# URBAN INTERFACE

What is the future of experiencing art?

## Graduation Report

MSc 4 | Public Building Graduation Studio

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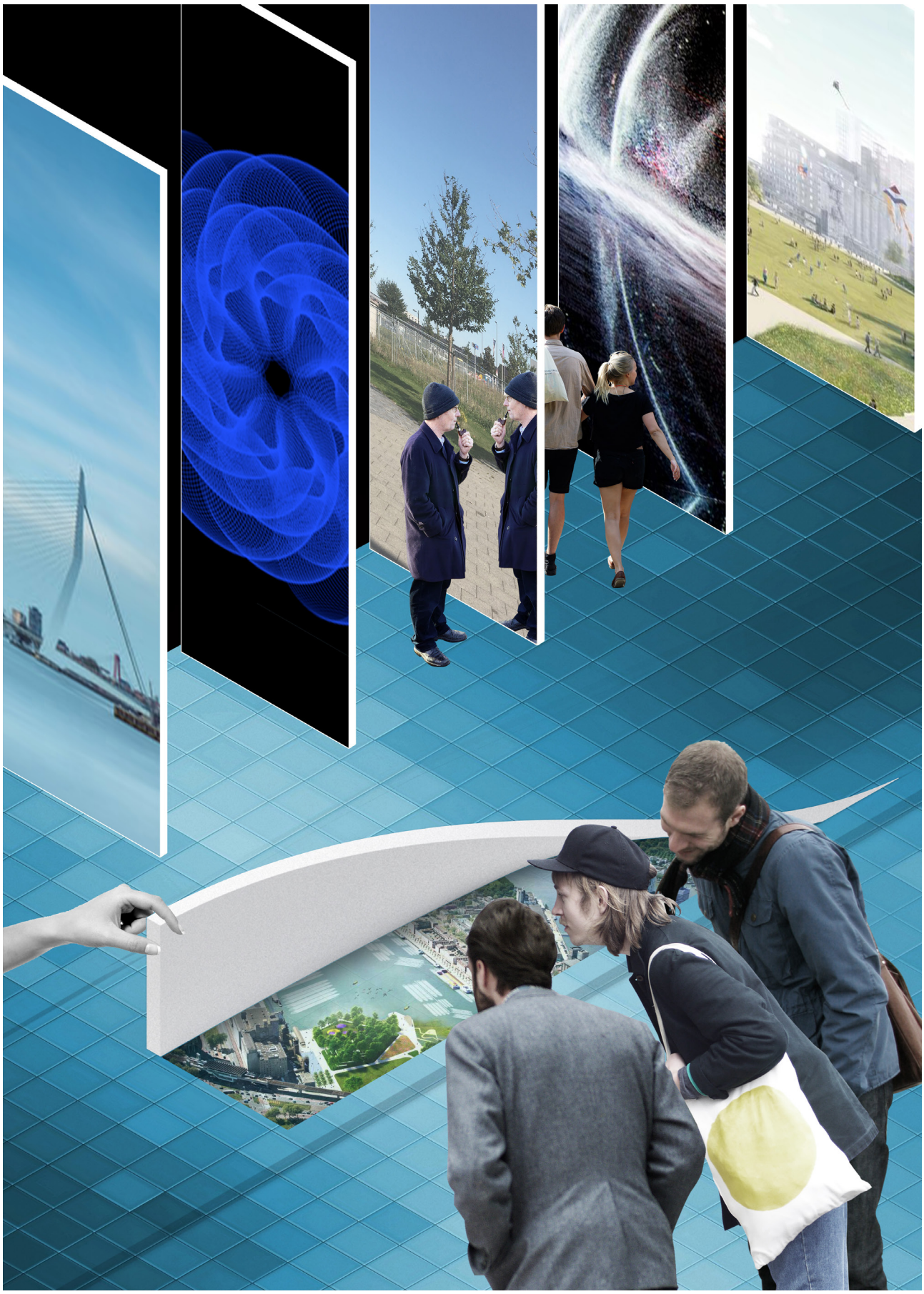
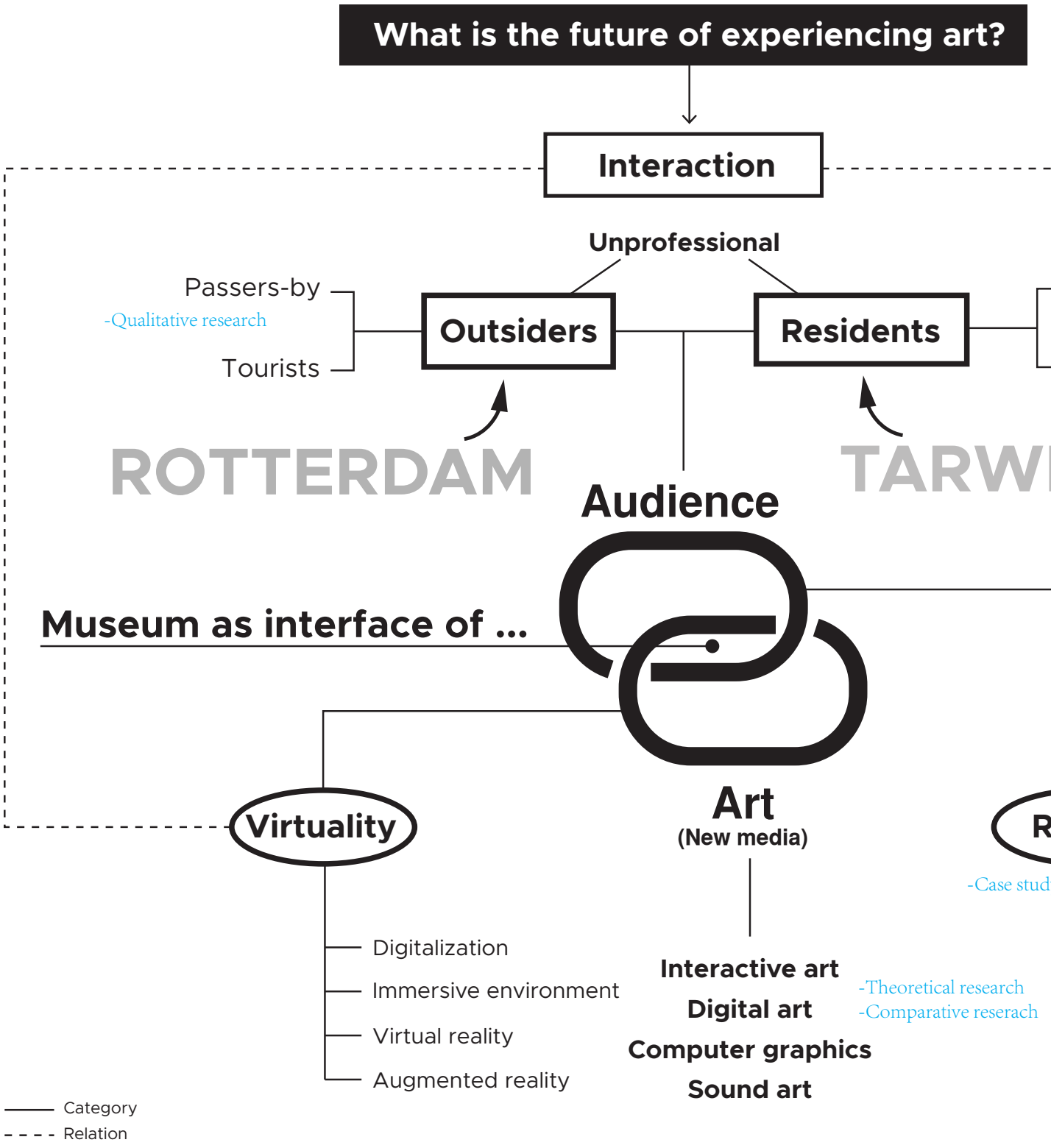
# Design Manifesto



# Abstract & Diagram




**Key words:** interface; art experience; new media; social relation

**Bibliography:**

Snoep, N. (2020). "Suggestions for a Post-Museum". In Von Oswald M. & Tinius J. (Eds.), *Across Anthropo Museums, and the Curatorial* (pp. 324-335). Leuven (Belgium): Leuven University Press.

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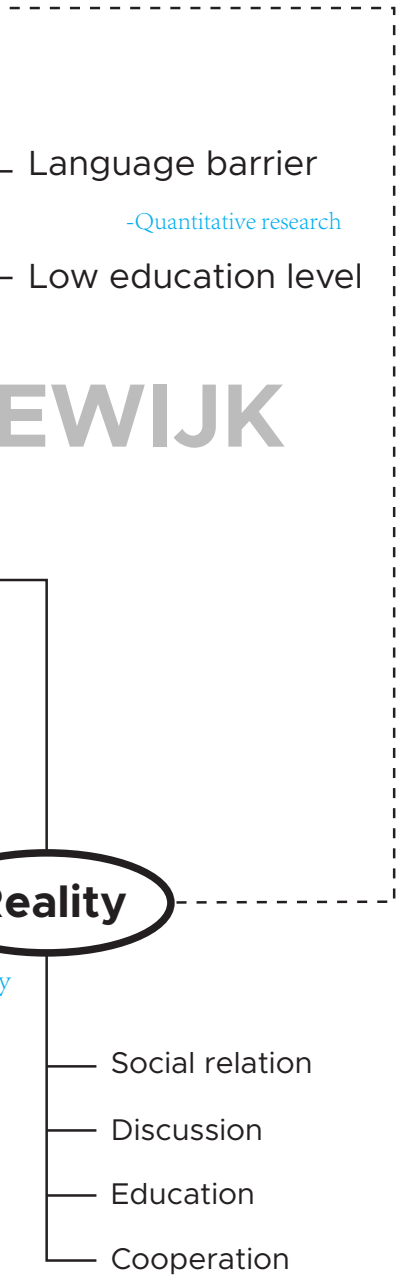



## Urban Interface

The term interface is commonly known as a device or program enabling man to use machine, and mainly associated with relationship between users and computer. Generally it means a point where two systems, subjects, organization, etc. meet and interact. A good interface would effectively raise efficiency and improve experience of the users. In concepts it also helps to interpret museum as interface, related with question: What is the future of experiencing art?

We could interpret interface in architecture by dividing the term into two parts: the prefix "inter-"means relation, which could be interpreted as the intangible side of architecture, i.e. socio-cultural relation; the suffix "face" means the meeting point, which refers to the tangible side of architecture, like doors, windows. Putting them together, architecture interface means a type of space/building condition in which the socio-cultural relations between two realms are established, like church interfacing human with Bibles, library interfacing human with information.

To build a museum in Tarwewijk, there are multiple relations to deal with. Zooming into building scale, obviously museum should mediate visitors with art. However, the visitors are varied from different education level and culture background considering the international immigrant identity of South Rotterdam. Art is abstract for unprofessionals, who would be the major group among audience. Thus, museum should offer inclusive and interactive experience. It is also the spirit of contemporary art, to engage visitors into artwork with the help of new media. In this sense, the role of museum in community is also changing. It is not an exclusive art temple anymore, but a cultural infrastructure adapted into communal activity. It asks for a new relation between public, curators and artists. As professionals, curators and artists should invite public into artwork producing and curating process. Their cooperation is important in contemporary museum. Zooming out to a larger scale, museum as a public space should immerge itself into urban life, revitalizing urban public sphere. Nowadays new digital technology has blurred the boundary between virtual world and physical reality which results in isolation between individual and social relation. Hence, museum as interface between virtuality (i.e. art) and physical reality should help to strengthen this social relation by attracting passer-by into relational urban life with the help of art, and in consequence helps to connect Southern and Northern Rotterdam.

In conclusion, museum should function as interface to not only mediate the artworks with people from no matter what socio-cultural background, but also adapt individual to physical urban life, so as to stimulate social relations among urban populations.

*ology: Troubling Colonial Legacies,*

*useu Arte Hoje*, São Paulo, Hedra &

*ntemporary Culture: New Directions*

# Design Brief

| **ASSIGNED AREAS** | Net Square Meters |
|---|---|
| **Exhibition** | **3,920** |
| **Programs and Events** | **600** |
| Events hall | 500 |
| Children Workshop | 100 |
| **Visitor Services** | **190** |
| Visitor Screening/Bag Check | 100 |
| Coat Check/Lockers | 60 |
| Ticketing and Information Deak | 20 |
| Storage | 10 |
| **Retail** | **300** |
| Museum and multi-media shop | 250 |
| Storage | 50 |
| **Dining** | **700** |
| Cafe/ Bar | 200 |
| Formal Restaurant | 130 |
| Kitchen | 370 |
| **Offices** | **500** |
| Administrative Offices | 60 |
| Education Offices | 60 |
| Curatorial Offices | 60 |
| Publication Offices | 60 |
| Marketing and Development Offices | 60 |
| Conference Room | 70 |
| Shared Work Room/Copy Room/File Storage | 55 |
| Archives | 75 |
| **Mediatheque** | **400** |
| Printed media library | 200 |
| Digital media library | 100 |
| Children reading space | 100 |
| **Laboratory** | **780** |
| Sound Dome | 100 |
| Panorama Lab | 60 |
| Rapid Prototyping Lab | 100 |
| Media Technology Studio (VR, AR, AI, Sensor tech) | 60*4 |
| Music Studio | 40*3 |
| Recording Studio | 40 |
| Work Residency | 20*6 |
| **Maintenance and Operations** | **230** |
| **Total Assigned Area** | **7770** |

**Balance: Nett + Tarra = 7770 + 4930 = 12,700**

# Individual Research Book

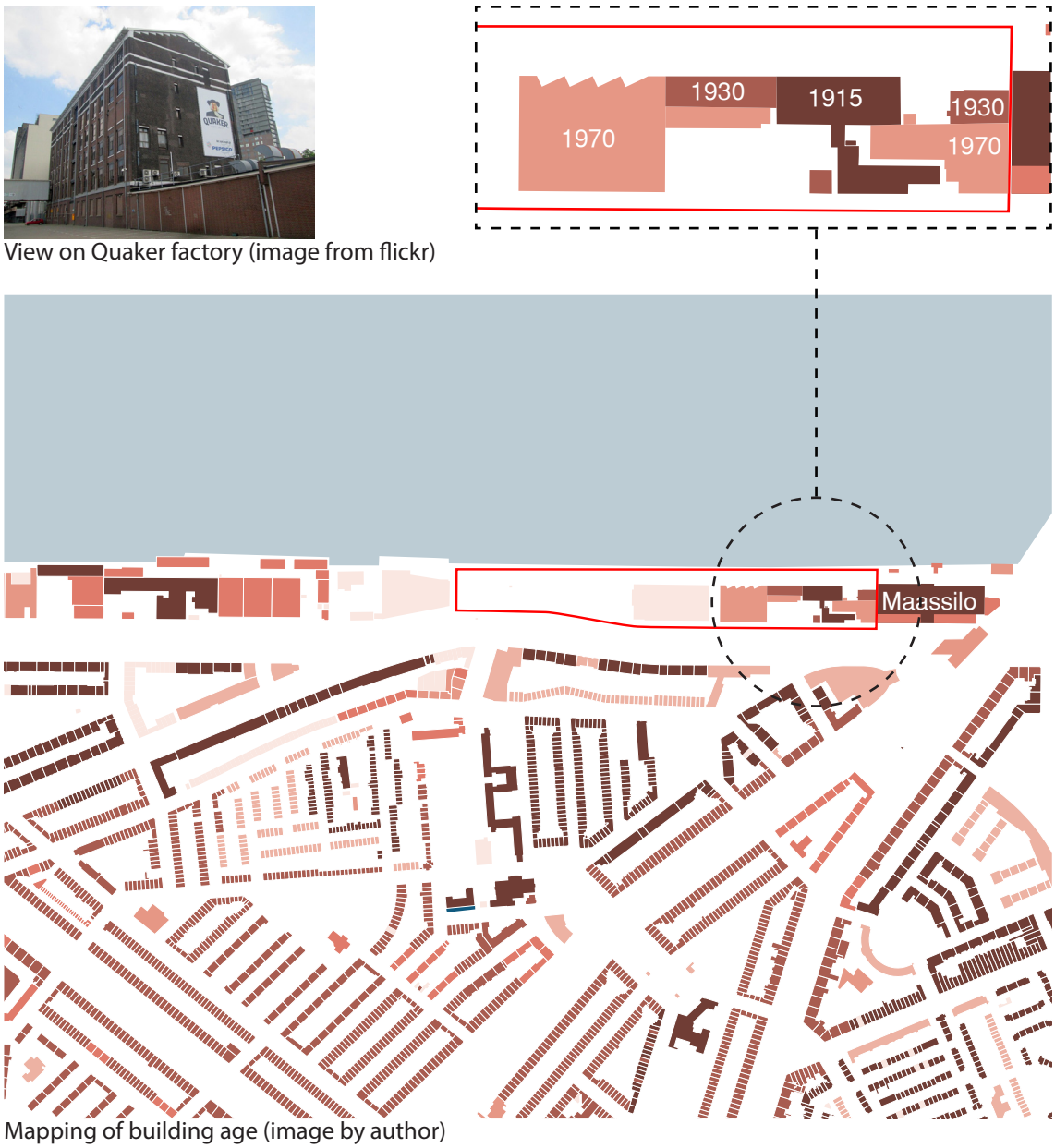
# History

**Heritage**

Tarwewijk is relatively a young community compared to the history of whole Rotterdam. According to the history booklet, the Maashaven was finished in 1905, so did Tarwewijk start to develop. Through studying the building history, it is found that the Quaker factory was built almost in the same period with its neighbour Maassilo, which is labeled as a heritage monument now. With decades of expansion, the main building was kept its original iconic appearance. It shows value on architecture heritage. Therefore, although it is included in the site, I propose to preserve its main building as built in 1915.



View on Quaker factory (image from flickr)

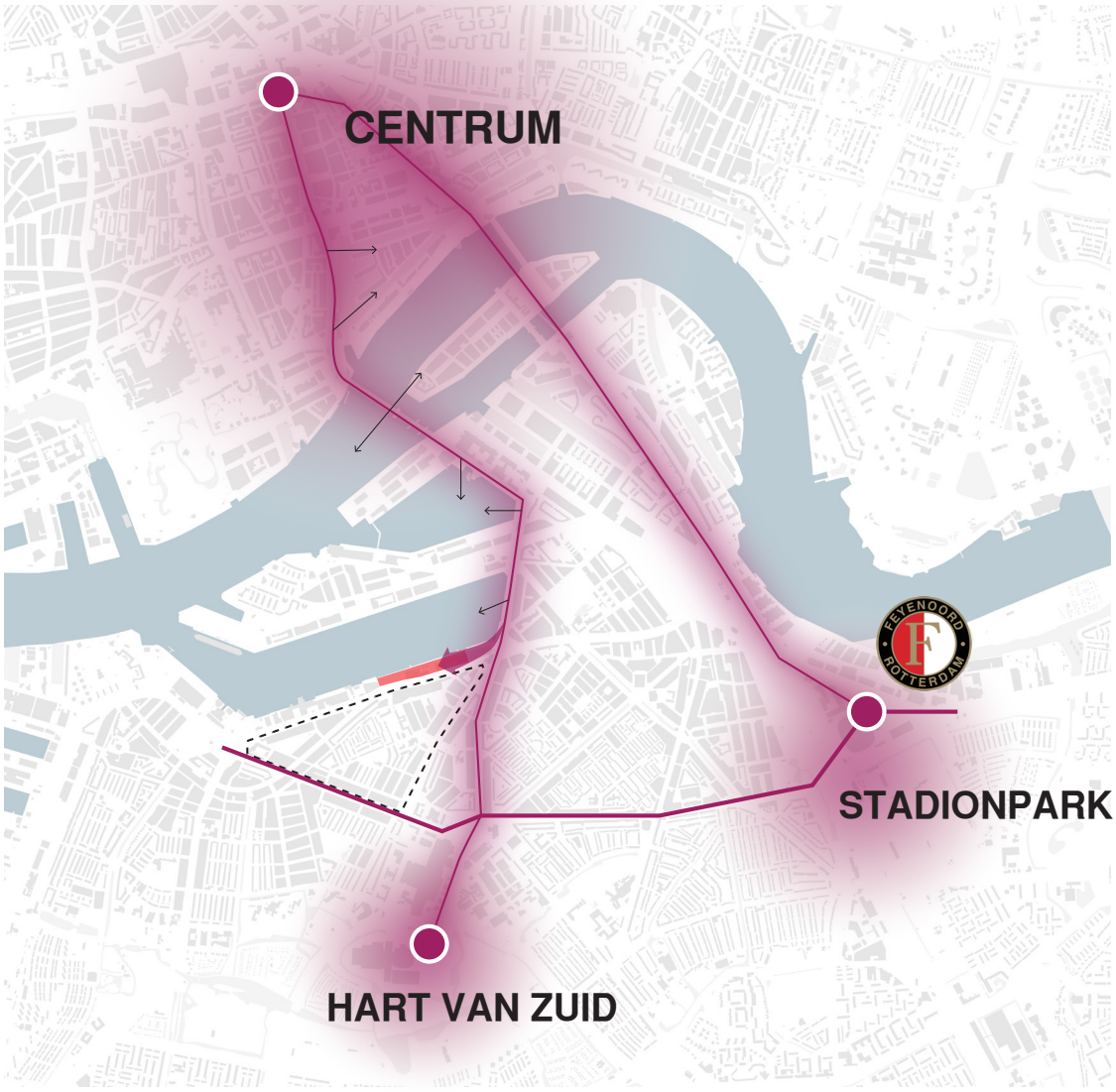



Mapping of building age (image by author)

# NPRZ

**Urban connection**
NPRZ (Nationaal Programma Rotterdam Zuid) is a national program aiming to get Rotterdam South up to the levels of the G4. They mostly focussed on education, labour participation and living conditions (Power booklet, 2020).

In their program, there will be two centers in Rotterdam South: Stadionpark and Hart van Zuid. They try to connect them with Rotterdam North through two urban path, both with convenient transportation and hotspots. The Feyenoord football club near Stadionpark forms the communal identity of South Rotterdamer, which could be intergrated into public space in building program.



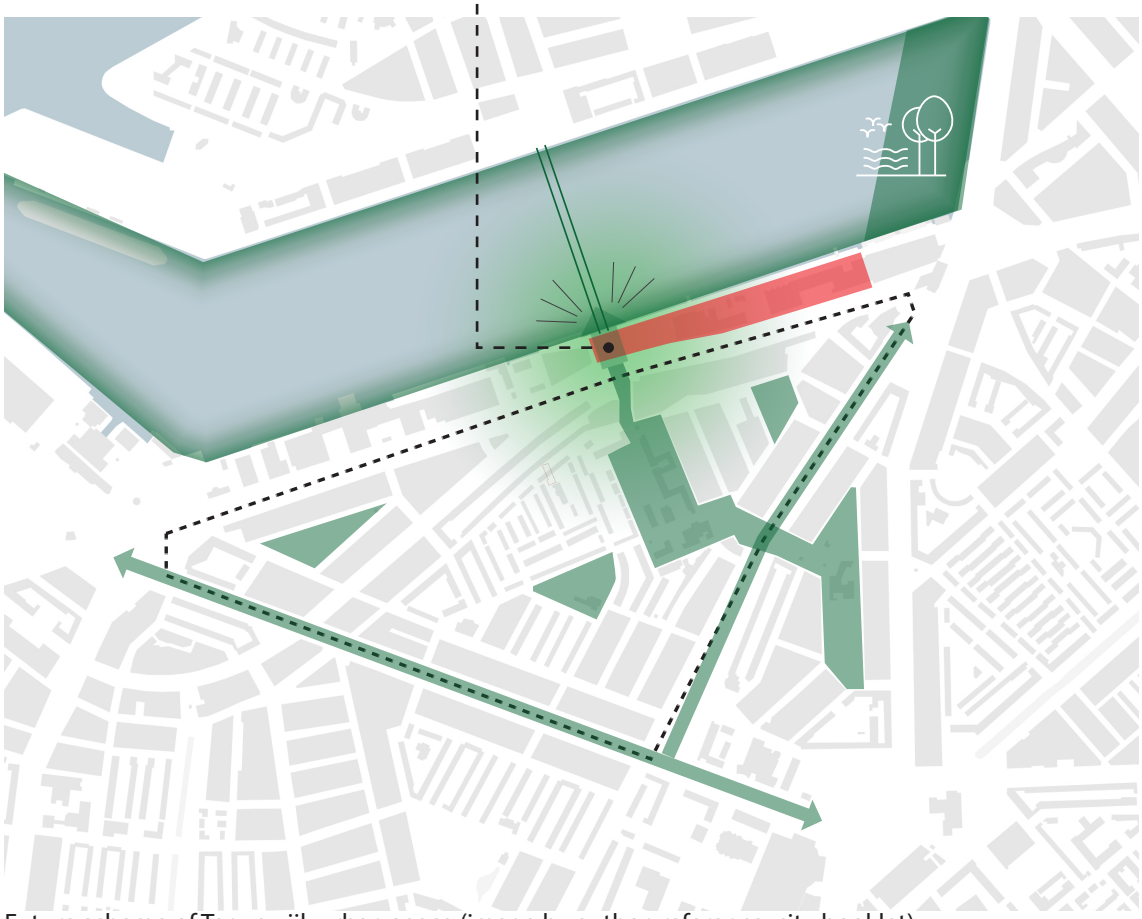

Urban connection (image by author, reference: Marco's presentation)

**Public space**

Their vision on Tarwewijk is to create an attractive living environment for new residents (Pastors, 2020). To achieve this, more public green space will be created in the future. For example, the Maashaven will be developed into an active urban space for citizens. A green connection will be made between Tarwewijk and Maashaven which goes through our site, Balkon park, in order to revitalize this public space.

Present situation of Balkon park (image by author)

Future vision of Maashaven (image from Stijnie's presentation)



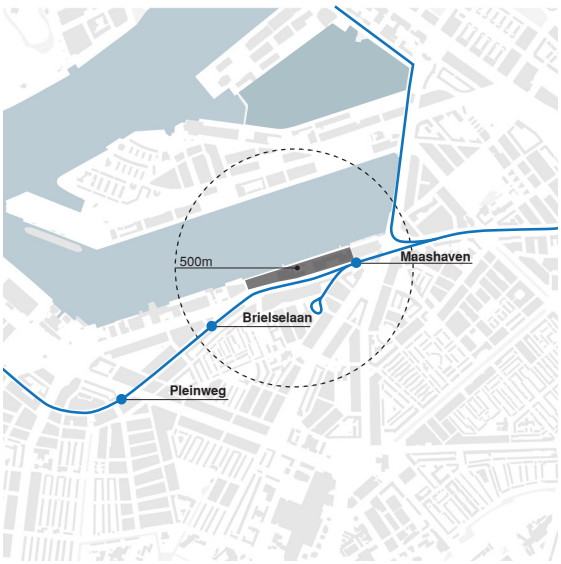
Future scheme of Tarwewijk urban space (image by author, reference: city booklet)

# Connection

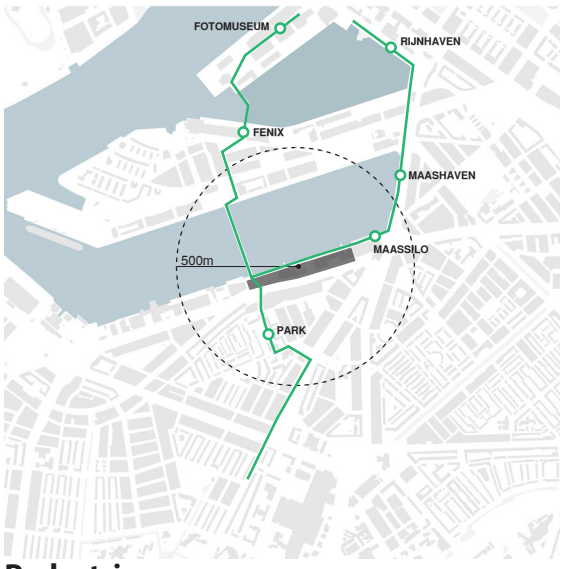
**Transportation**

The site is convinient to access for outsiders, as there are metro station and tram stop just nearby. Also walking is a good choice since a bridge is proposed to be built on Maashaven in the future, which connected hotspots in Rijnhaven, forming an urban path.

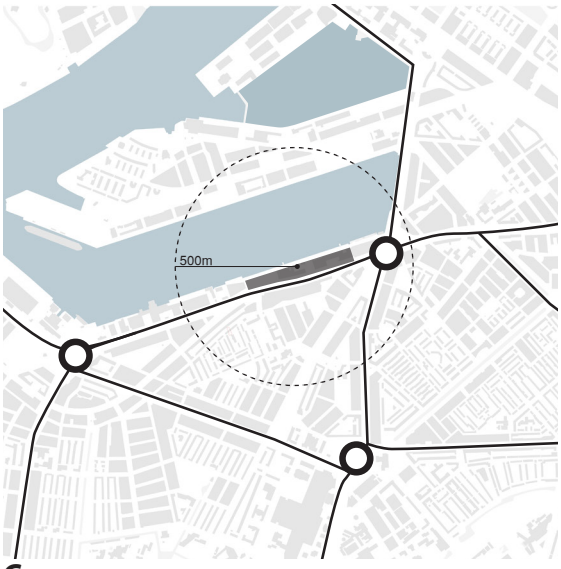
**Metro**




**Tram**




**Pedestrian**

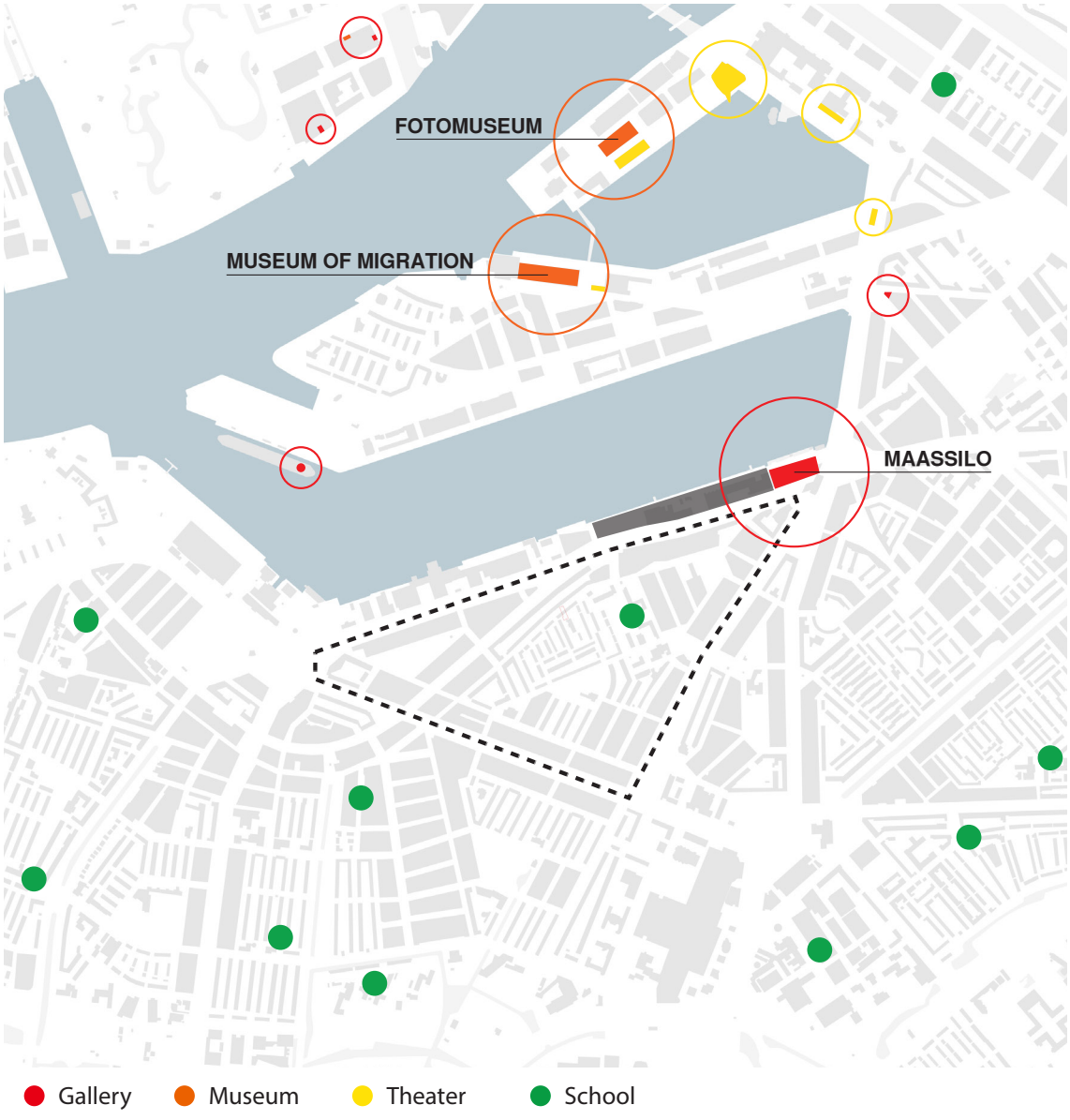



**Car**

Transportation mapping (image by author, reference: connection booklet)

# Culture

From the mapping we could conclude that Maashaven lacks culture infrastructure, compared with Rijnhaven. There is only the Maassilo functioning as a cultural space so far. However, there are far more education institutions in Charlois. Thus, the new museum in Tarwewijk could also offer education programs for school kids.




Culture service mapping (image by author, reference: culture booklet)

# General Definition

## Interface

*[noun]*

1. A device or program enabling a user to communicate with a computer - normally used in GUI (Graphic User Interface).

2. A point where two systems, subjects, organizations, etc. meet and interact.

*-Oxford Dictionary*

Nokia E6
(2011)

Revolution

Iphone 4
(2010)

**Why is interface important?**
Interface is the core of user experience. Since we are now stepping into a digital era, it is usually the vital part of products in high-tech company. Take iphone as an example, it revolutionized mobile phone industry several years ago because of its smart interface, which also changed our daily life.

# Architectural Definition

## Inter-

*[Prefix]*

1. Between; among.

2. Mutually; reciprocally.

[Intangible side]
This prefix "inter-" could be interpreted as the intangible side of architecture. In architecture design we will deal with lots of different relations covering social, economic, political, cultural and ecological domain. These relations form our society and represent "multiplicity" of our urban life. As architects we could not avoid discussing these facets in public spheres.

Zooming into museum as interface in our site, I will focus on relations between:

**Unprofessionals - art**

**Digital media - physical environment**

**Tarwewijk - northern Rotterdam**

**Individual - communal identity**

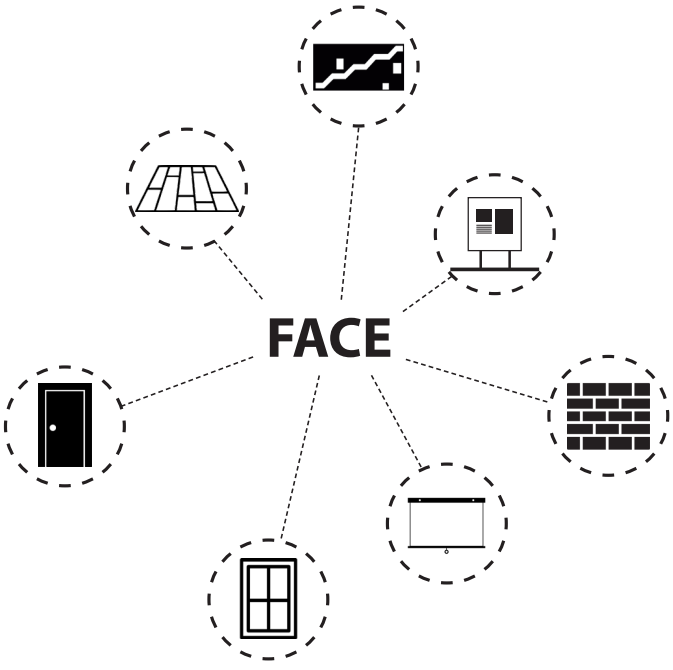
# -face

*[noun]*

The surface of a thing, especially one that is presented to the view or has a particular function.

[Tangible side]
In architecture, "Face" mainly refers to tangible building elements shaped like flat plane, like window, door, wall, floor, ceiling and facade. These are traditional architecture components, while in digital era "face" could also refers to **screen** which controls certain function of building. In museum, the display panel (wall) is one of the most important "face" since it directly mediates artworks with audience.

"Face" forms another important part in architecture design, which is more related with building techonology and materiality. It is closely linked with physical environment.



# Re-define Interface

## Interface

*[noun]*

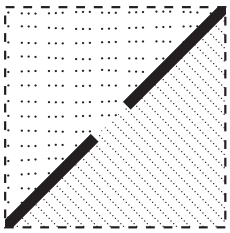
A type of space/building condition in which the socio-cultural relations between two realms are established.

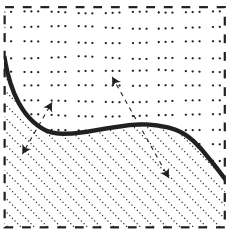
[Tangible-intangible]
In my project, I will deal with multiple relations, mediating audience and art, local and urban, virutality and reality, personal and collective. Interface appears to be between tangible and intangible. Tangible like perceptional stimulation; intangible like social interactions. In a micro scope, it affects everyday urban life within its instant surrounding; in a macro scope, it gives social relations spatial form.

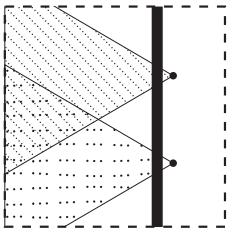
In physical environment interface could be divided into:

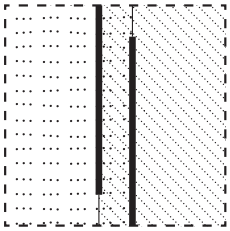
**CONNECTIVE INTERFACE**
Multi-functionnal; interactive; humane environment

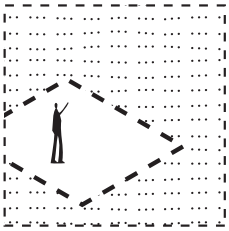
**DISJUNCTIVE INTERFACE**
Physical partition that articulate structure and planning

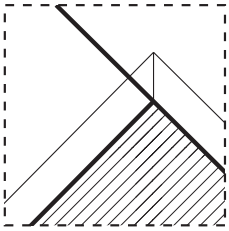

A connection


A separation


An augmentation


A transition


A boundary


A volume

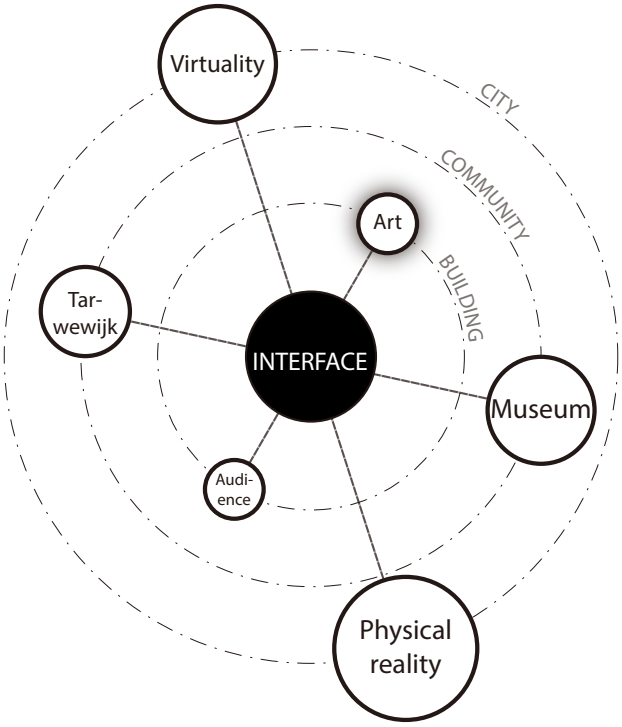
# Concept

## Urban Interface

A museum of new media art for social stimulation and interaction

The new media art museum will offer relational and interactive art experience, using digital instrument to attract both visitors and passer-by engaging in a playful experience with each other. It will also play an educational role for creative production through new media, inviting unprofessionals to co-create with professionals.

The museum will become a new public sphere of Tarwewijk, it will function as interface to not only mediate the artworks with people from no matter what socio-cultural background, but also adapt individual to physical urban life. In this sense, it will stimulate social relations among urban populations.


Virtuality
CITY
COMMUNITY
Art
BUILDING
Tar-
wewijk
INTERFACE
Museum
Audi-
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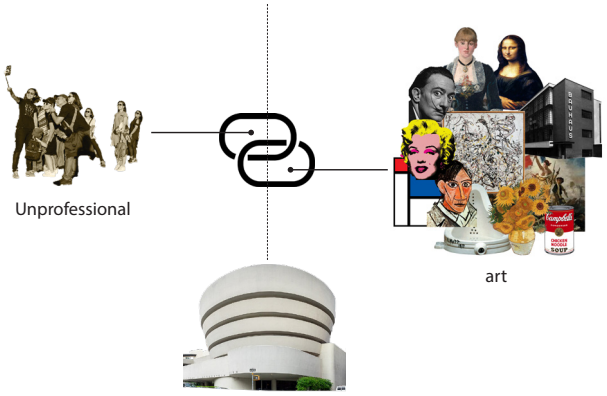
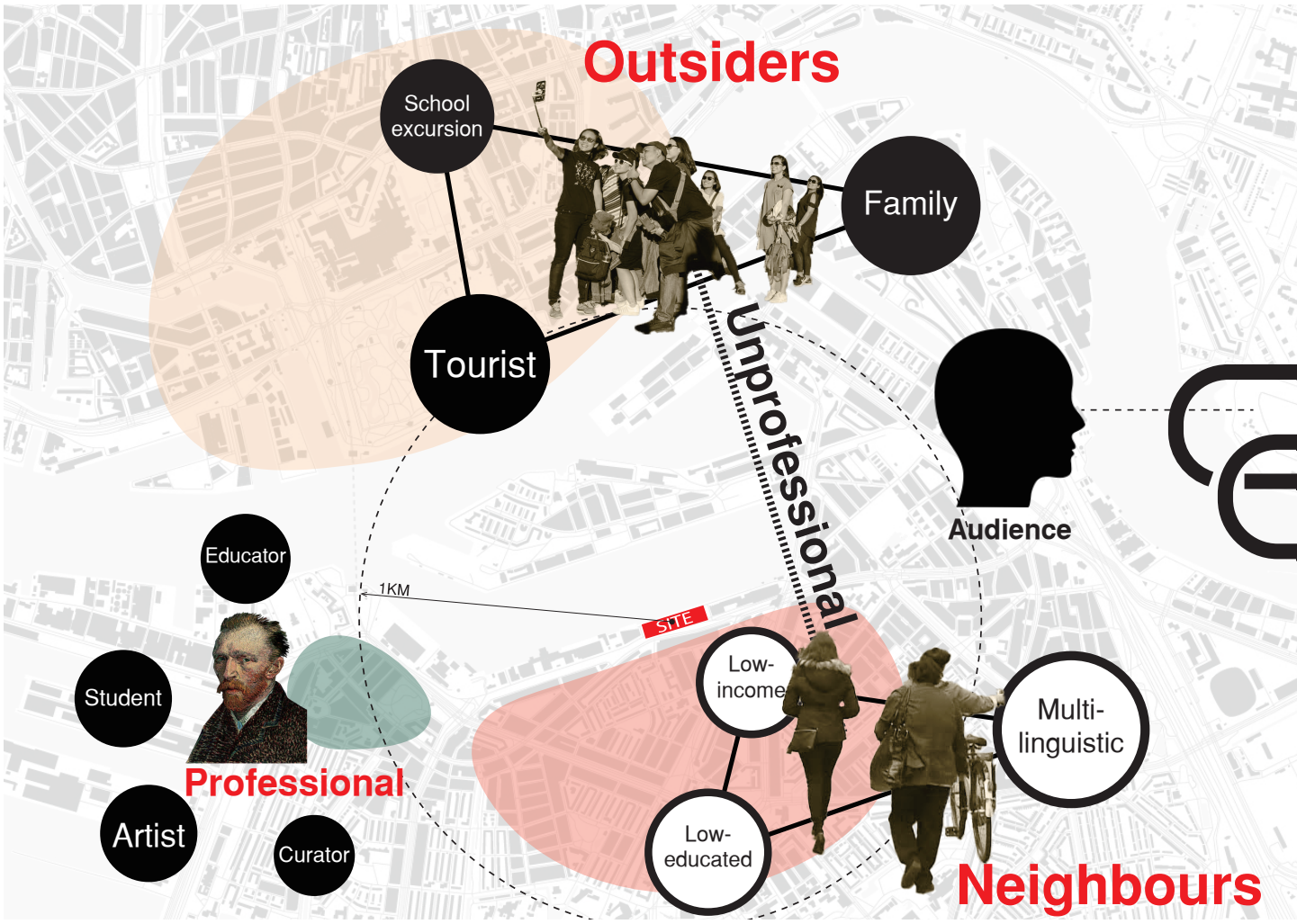
Physical
reality




Museum as interface mediating unprofessionals and art

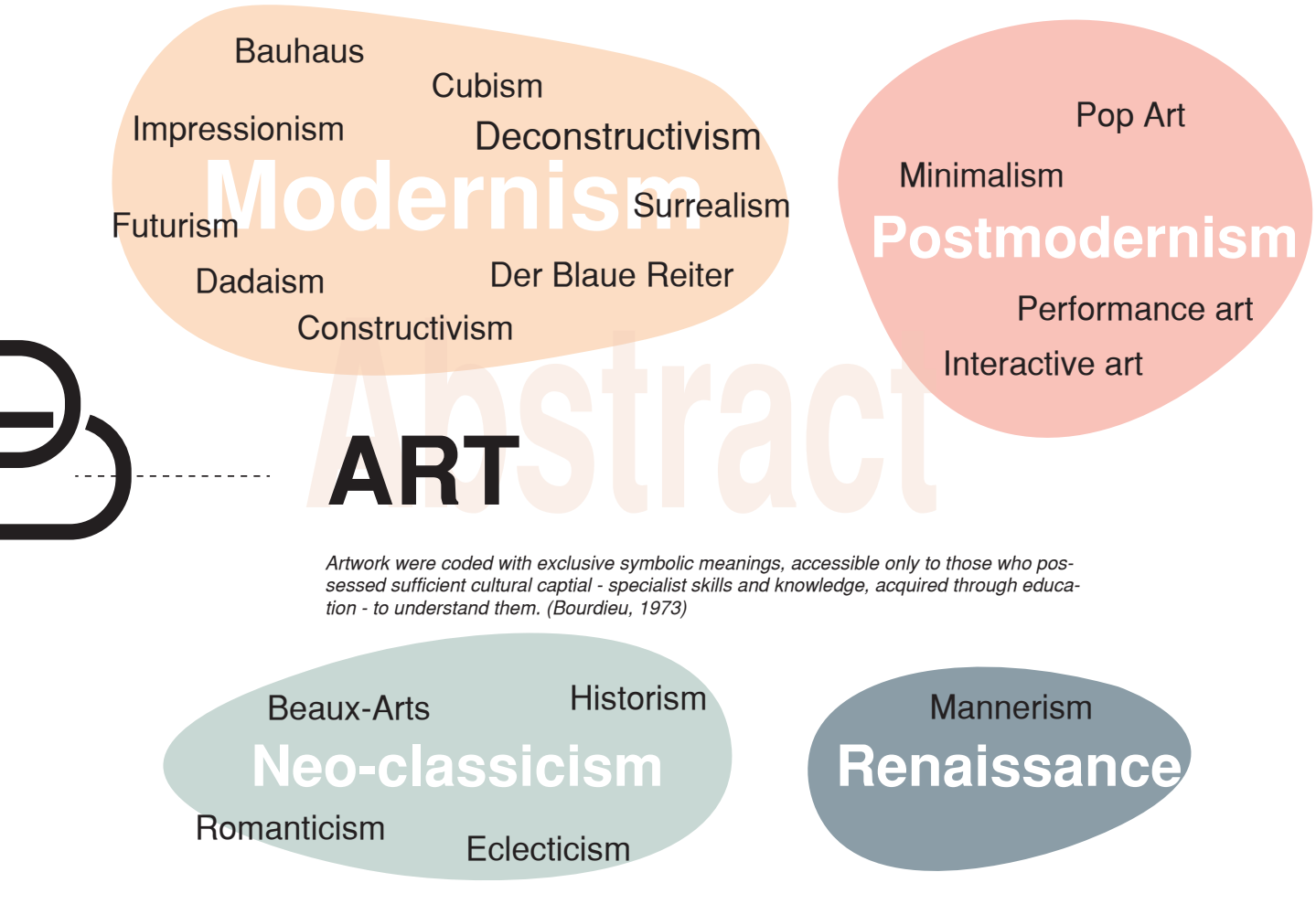
## Museum as interface

From the building scale, obviously the main role museum plays is to interface audience with art. According to the statistics from culture booklet, residents in Tarwewijk has lower income and education level than the average of whole Rotterdam. Besides, due to the historical reasons, most of them have immigrant background. Meanwhile, according to the power booklet, tourism is now the main industry of Rotterdam. In 2020 the tourism growth reaches 50%, taking the lead in Netherlands. The neighbours and outsiders consist of what I called "unprofessioinals", who are the majority of museum visitors.




Demographic mapping (image by author, reference: culture booklet)

But in the other side, art is an abstract system containing so many theories and genres. It is hard to understand if without certain level of skills and knowledge. In this sense the main problem to build a museum in Tarwewijk is how to mediate these unprofessionals with art, considering many of them do not speak English even Dutch and from different culture context.

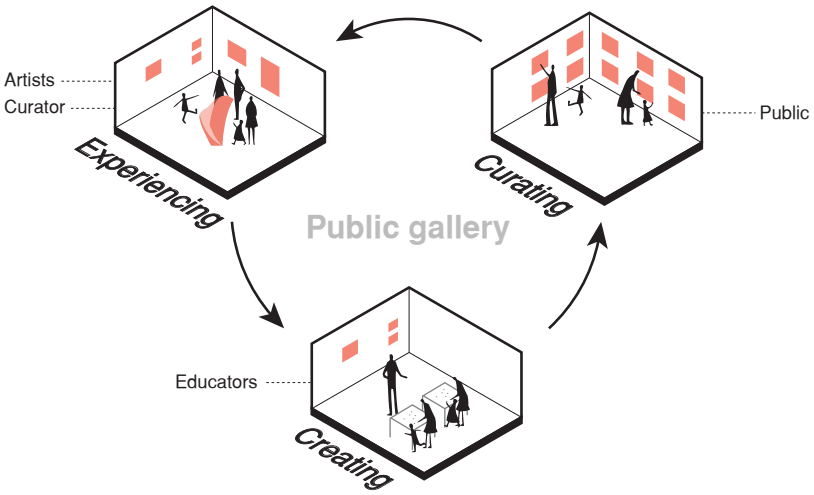


# Research Question

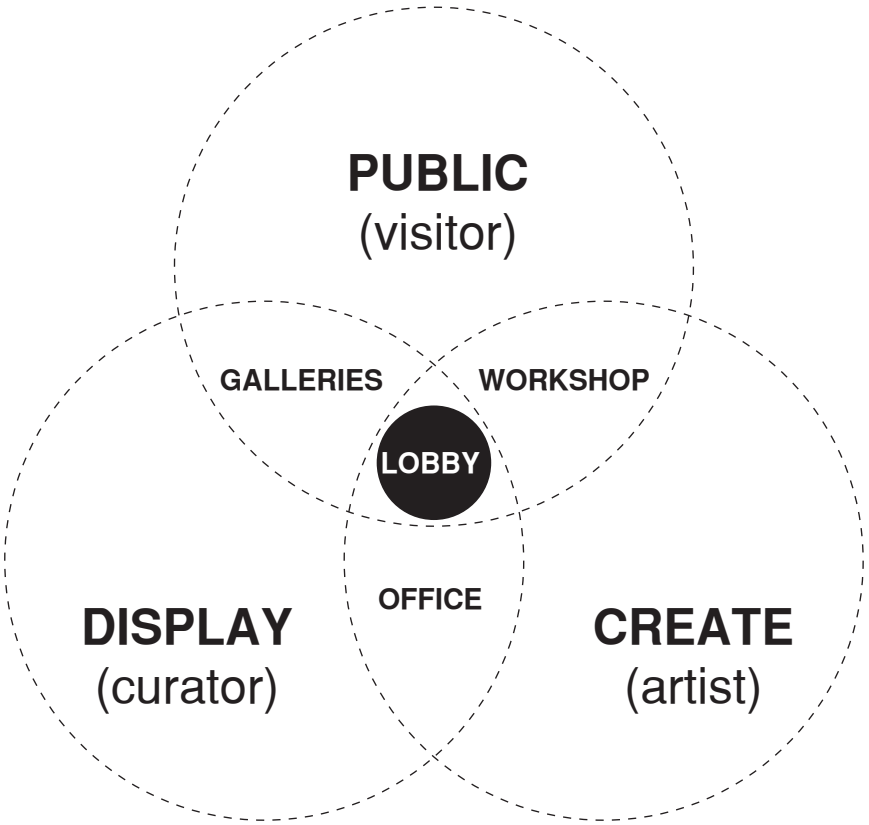
## What is the future of experiencing art?

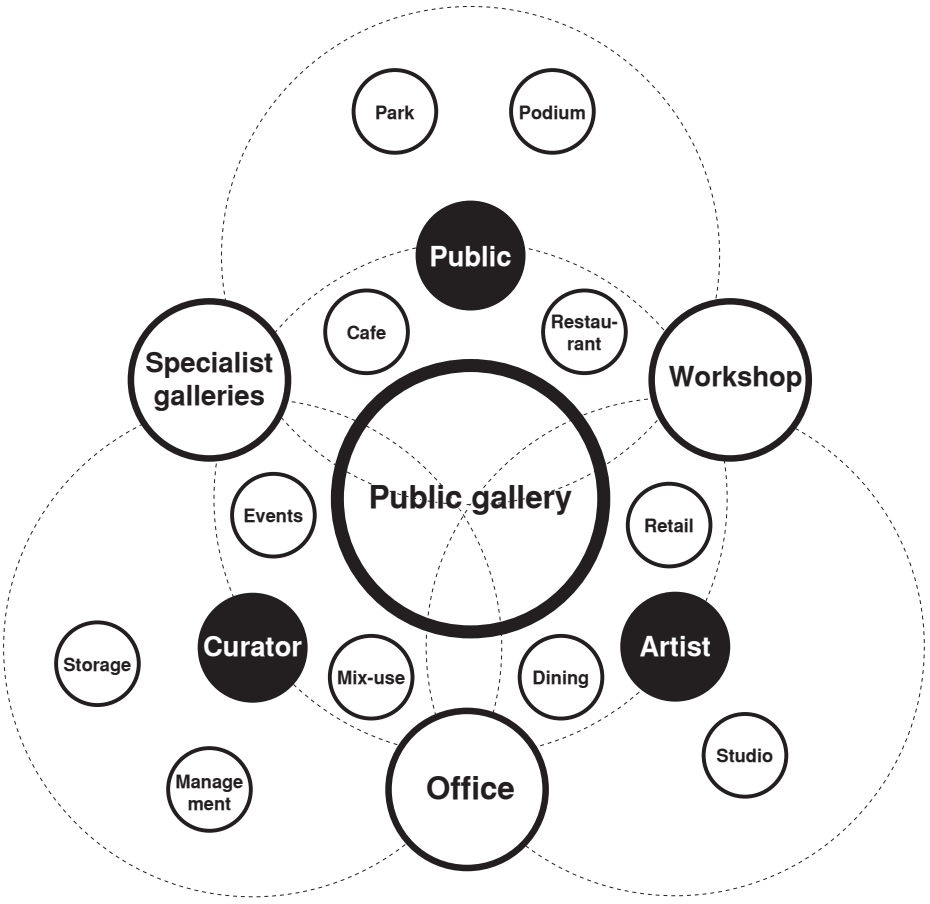
Nowadays public's attitude on culture has changed. We demand for a more inclusive and coorperative culture environment. So does art. Today the role of museum is also changing. New voice comes out from specialists that museum should be inclusive to public, no more like an art temple exclusive from urban life. In other words, curators and artists should engage public into artwork producing and curating process. The museum activities should be operated by cooperation between community, artists and curators (i.e. public gallery in my program). Thus, for visitors their experience of art would be active participatory, i.e. learning by doing.

In a larger scale, museum as a public space should be immerged into urban life, creating space for public activities. It is where virtuality (i.e. art) and physical reality interface. On one hand, passers-by are attracted into art space from physical world; on the other hand, by experiencing art their social relations are established when they interact with each other, i.e. they are brought back to reality from virtual world simultaneously.




"Public gallery" (image from author)




Concept diagram (image from author, reference: the Manetti Shrem Museum by SO-IL)

# Definition

## New media art

Artworks created with new media technologies,
including digital art, computer graphics, computer animation, virtual art, Internet art, interactive art, sound art, video games, computer robotics, 3D printing, cyborg art and art as biotechnology.

Old visual art: painting, sculpture, collage, installation art, etc.

New media art often involves **interaction** between artist and observer or between observers and the artwork, which responds to them.

In most cases it does not need audience equiped with certain level of knowledge or linguistic proficiency. Everyone could join in the artwork no matter young or old. In this sense it is suitable for Tarwewijk.

# Terminology

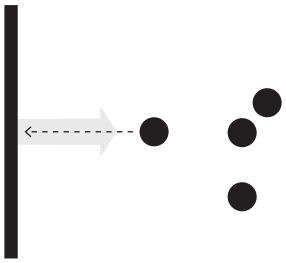
## Interactivity

*[noun]*

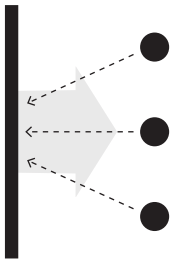
The process of two people or things working together and influencing each other.

**-TAKING TURNS**: each member of the public uses the installation one at a time, influencing it in their own way.

**-TAKING AVERAGES:** the system utilizes a mechanism to calculate the average user and produces an average result.



"Take turns"

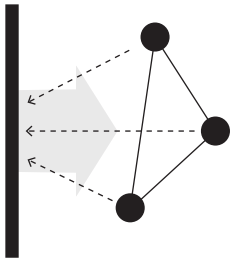


"Take averages"

## Relational

*[adjective]*

Express the multiplicity of relationships that artwork can generate.

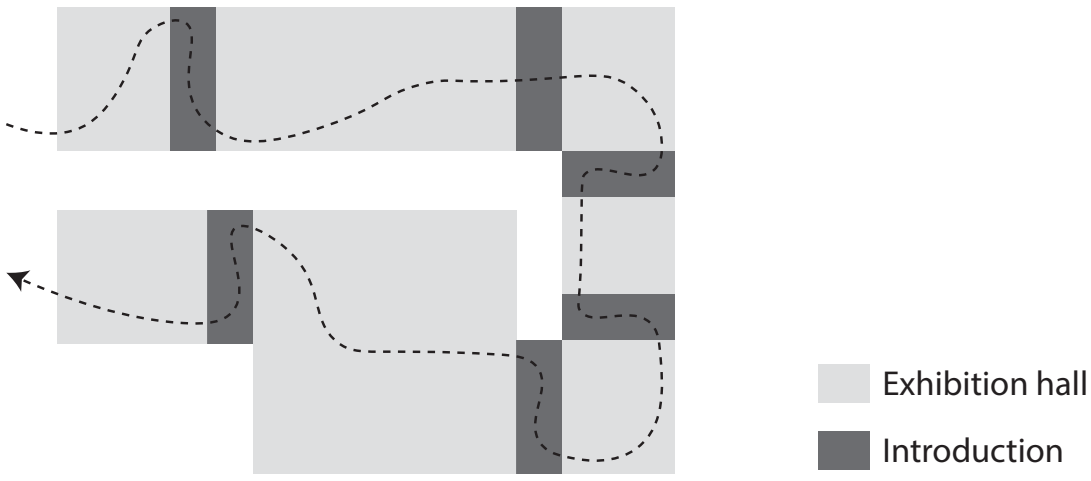


# Case Study

## Nxt museum

"The first museum in the Netherlands dedicated to new media art. Discover large scale, multi-sensory exhibitions which challenge assumptions and open minds."

Nxt museum is situated in North Amsterdam. The whole building appears like a factory divided by several exhibition halls, with only one storey but 10 meters high. From the outside it looks like a black box. All these indicate the spatial requirements of new media artwork: enough height, no natural light needed.




Fictional plan (image from author)

Nxt
Museum

Logo of Nxt museum (image from Google)

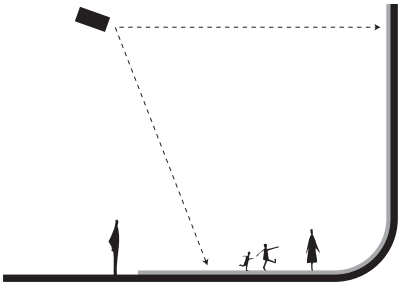
View on Nxt museum (image from Google)

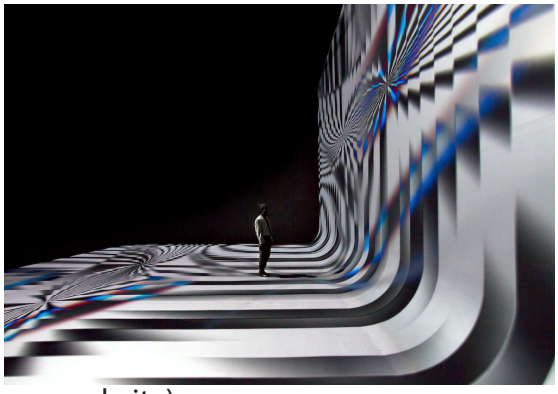
# Dimensional Sampling #1

An audio-visual installation by artist and coder Yuxi Cao (James) with sound artist Lau Hiu Kong (Lawrence) explores the rise of QR codes worldwide.

Perception: visual, sound, movement

Media: screen, stereo acoustics, computer graphic





Dimensional Sampling #1 (image from museum website)

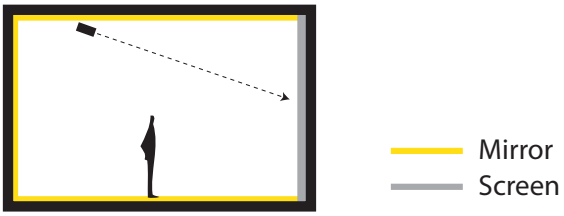
# Distortions in Spacetime

An audio-visual installation by Marshmallow Laser Feast (MLF), a London based experiential collective working at the intersection of science, art and technology.

In Distortions in Spacetime, visitors will see themselves reflected in this matter and will begin to understand the cosmic connection between black holes, dying stars and our very existence.

Perception: visual, sound, movement

Media: screen, mirror, stereo acoustics, computer graphic



Distortions in Spacetime (image from museum website)

# Body Movies – Relational Architecture 6

An outdoor installation by Rafael Lozano-Hemmer in Rotterdam (2001). He put two bright xenon lamps at ground level on the Schouwburgplein, projecting a powerful beam onto the wall of the Pathe cinema complex, displaying the shadow of passers-by.

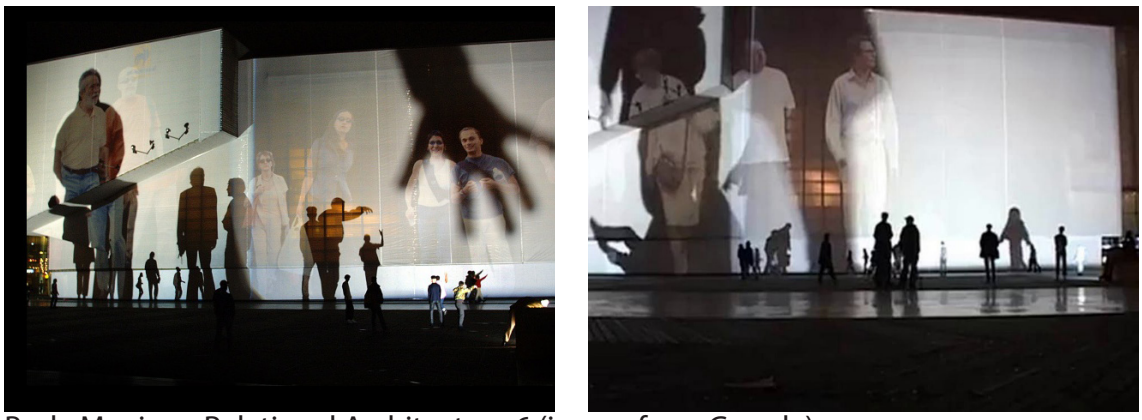
If the shadows of the passers-by precisely match the outlines of the people in the projected photograph, a new image would be projected.

Perception: visual, movement

Media: light, computer

A video clip to review this artwork:
https://www.lozano-hemmer.com/body_movies.php

*"An interactive system should be designed with a certain degree of openness so that users can appropriate it in ways not anticipated by the artist." (Waal, 2013)*



Body Movies – Relational Architecture 6 (image from Google)

# Ambiguity in architecture

## Definition

Ambiguity of meaning: betwixt and between

-"Meaning in architecture can be understood as the way in which a building communicates and delives information."

-Related with how we perceive, interpret, experience the object.

Ambiguity of program: between public and private, personal and collective

-"Smooth space": mediate people's passage between different space or threholds, like doorways, colonades, porches, and stairways.

-Related with how we use the space.

Ambiguity of context: between interior and exterior, building and landscape

-"Liminal state": the feeling of being in two places and in neither at the same time.

-Related with how we see and approach the building.

## Strategies:

L1: Between object and room (ambiguity of meaning) artwork-gallery

Methods: pixelating, scaling, mutating

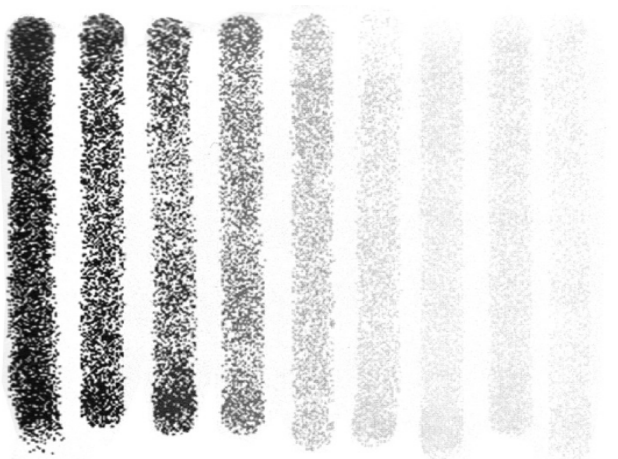
L2: Between room and building (ambiguity of program) community-museum

Methods: adding, neutralizing, adapting

L3: Between building and landscape (ambiguity of context) museum-urban setting

Methods: fragmenting, adding, subtracting, reflecting, copying and repeating

Smooth and Striated Space (Hubert, 2010)

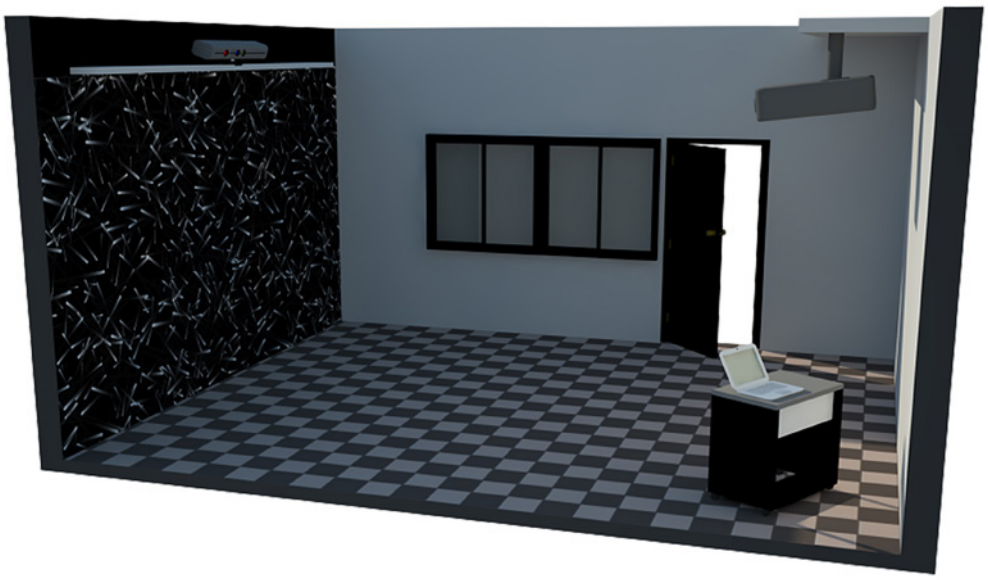


Endless Gradation line, Sou Fujimoto (Fujimoto, 2009)

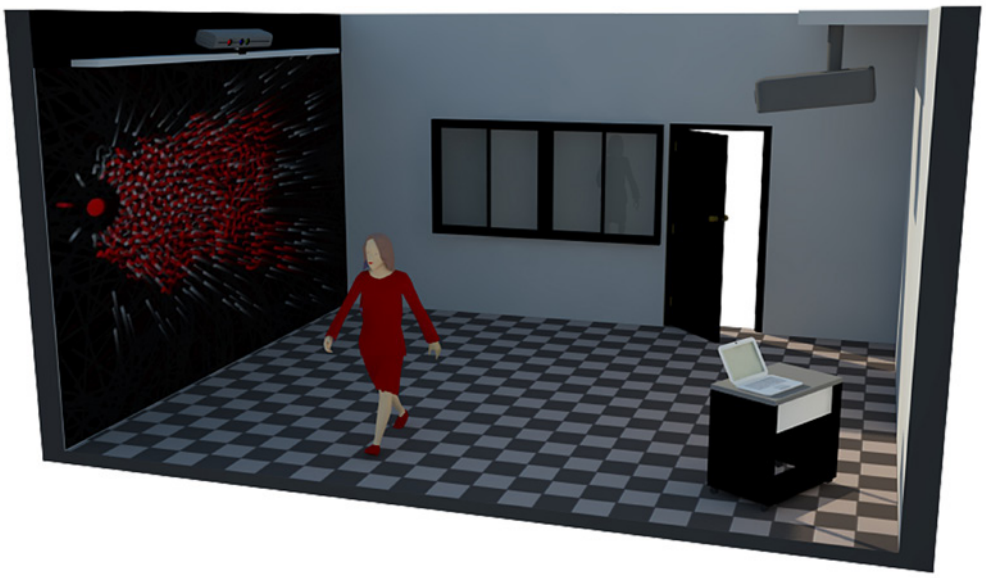
## Chameleon Skin

**ARCS (Architectural Chameleon Skin)**
*Architectural Chameleon Skin (ARCS), an installation that has the ability to transform static, motionless architectural surfaces into interactive and engaging skins.*

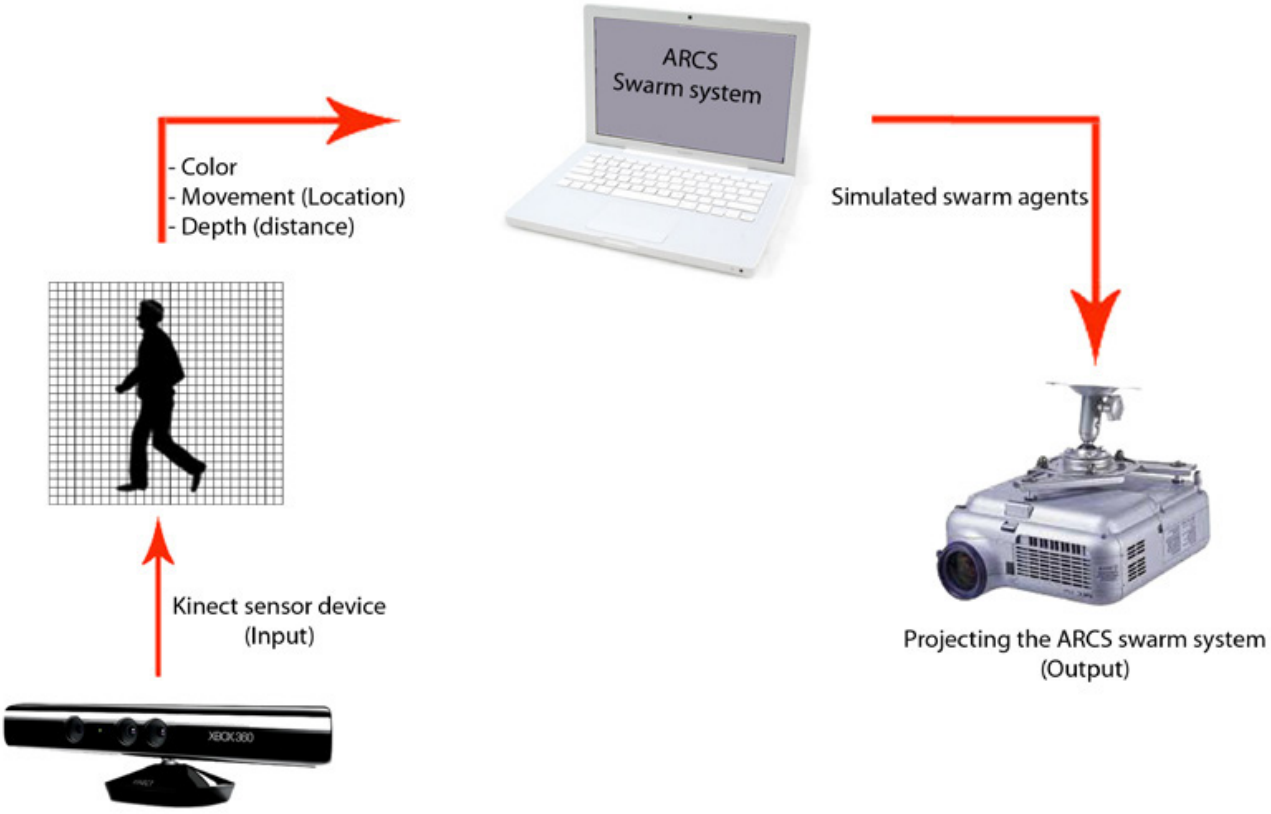
Stimuli may come from:
-interior visitor movement
-exterior passers-by movement
-colour of cloth
-Birds
-weather
-temperature
-...



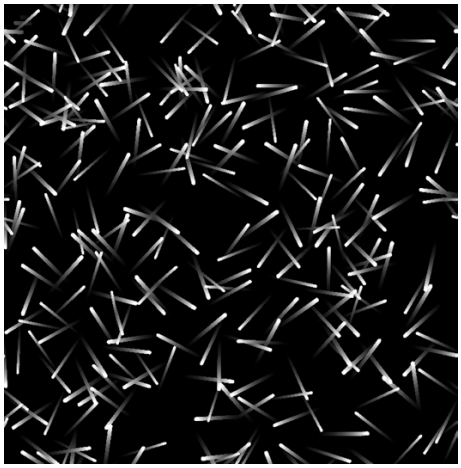
A visualization for ARCS installation in idling phase.

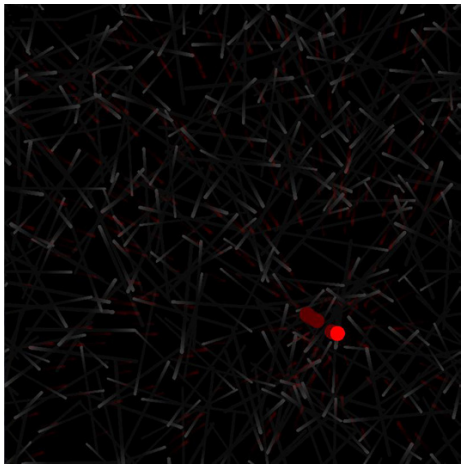


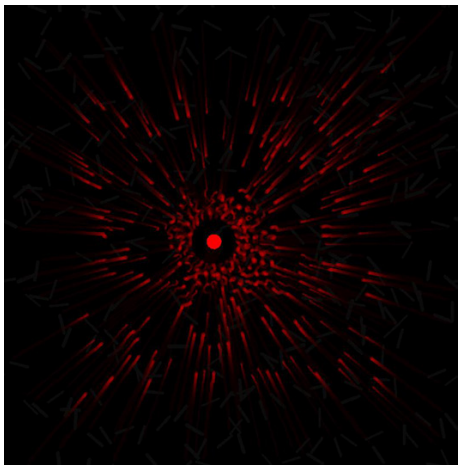
A visualization for ARCS installation in active phase.




A conceptual diagram showing the relationship between the main components of ARCS installation.







Example showing the transition process from idling state to stimulated state.

# Bibliography of Graduation Report

Beals, A. (2012). Blurring Boundaries: Strategies for the Creation of Ambiguity in Architecture. Master thesis, the Royal College of Art.

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Mohammed-Amin, R. & von Mammen, S. & Boyd, J. (2013). ARCS Architectural Chameleon Skin. TUDelft.

Pierce, E. (2011). The Architecture of Robert Venturi and Denise Scott Brown: Democratic and Dangerous. Volume 19 - 2011. 5.

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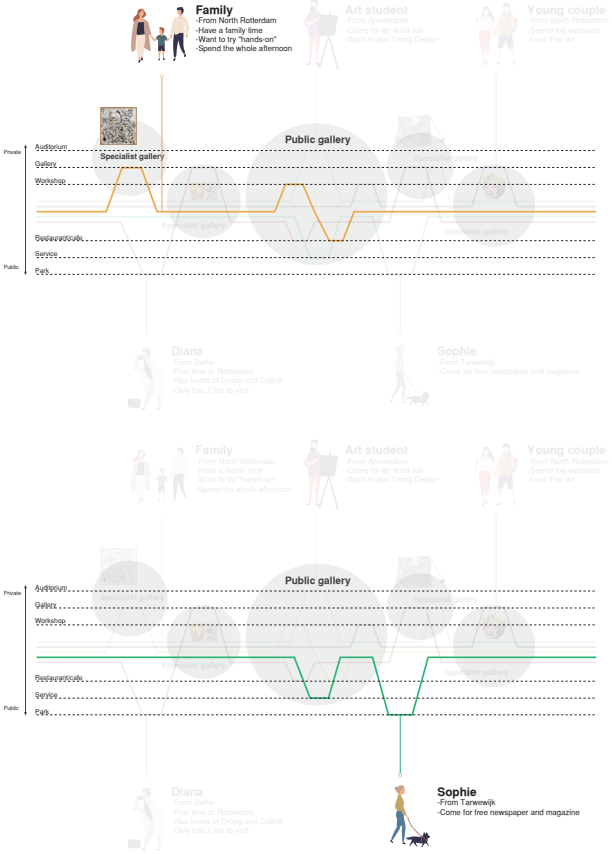
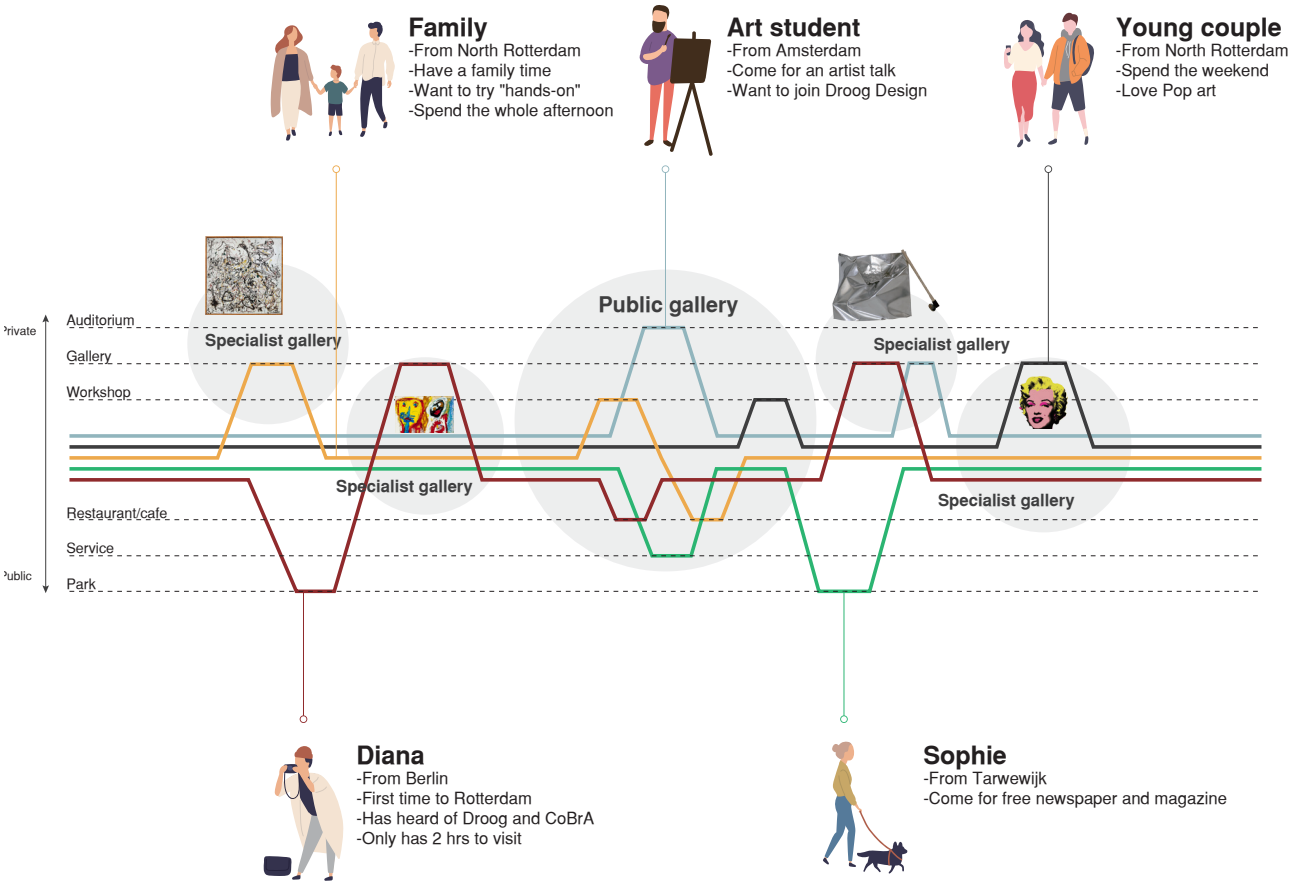
# Design Journal

# Personalised Experience

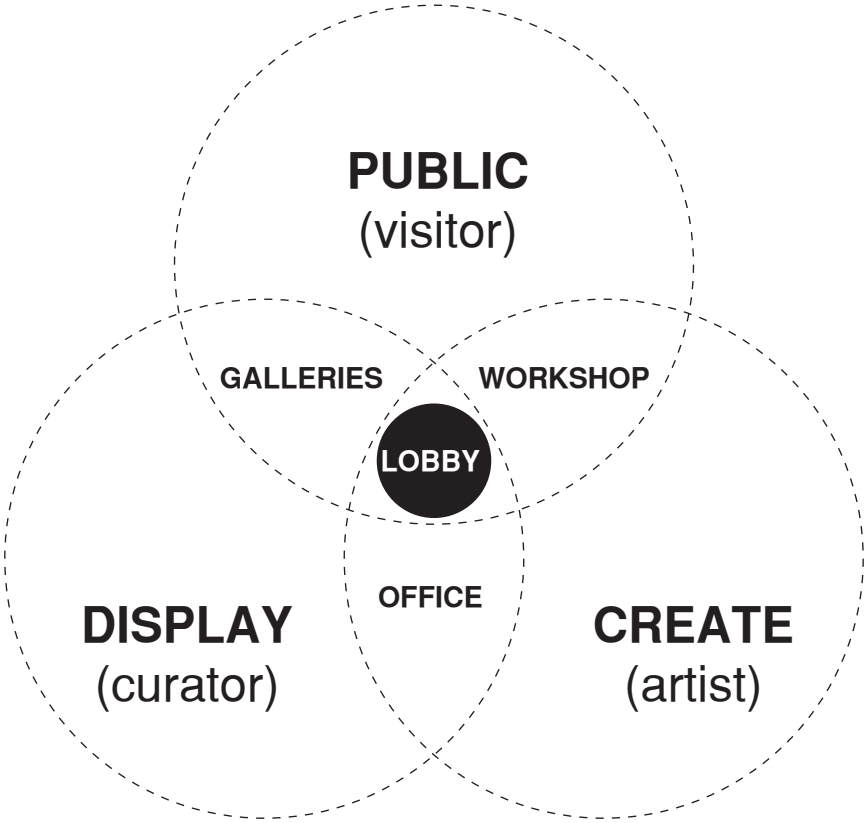
A new chart diagram was made to represent possible activities of different characters when they come to my museum. The X-axis represents visit process and the Y-axis represents space programs. The space programs are divided into private (upper) and public (below).

My idea is that everyone can choose what they want to see and learn in this museum. Their experience is not restrained by curators or artists. Even for people not interested in art (i.e. Tarwewijk neighbours), the museum will simply function as a public space.

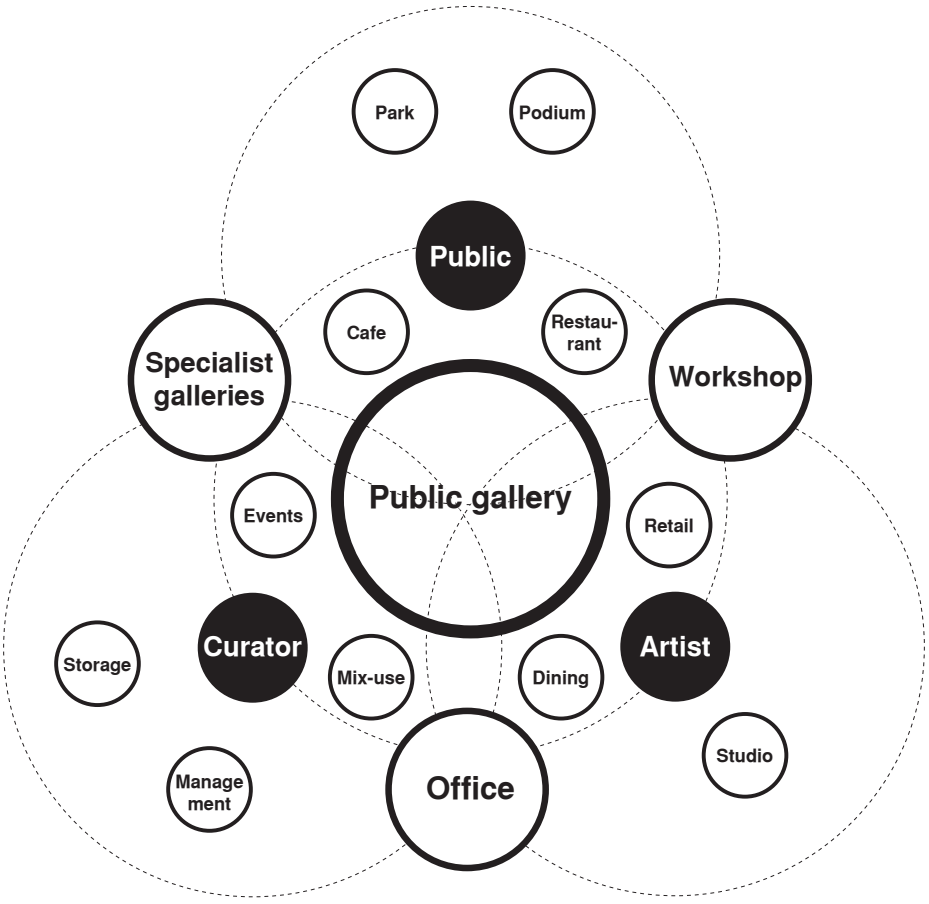


## New relationships




Credit by SO-IL, Diagram of the Manetti Shrem Museum at UC Davis, 2016




Self-made diagram

## Reference

# @droog

-A Dutch design studio based in Amsterdam

-Founded in 1993 by Renny Ramakers and Gijs Bakker

-Use of everyday, recycled materials, combined with a down-to-earth mentality. The designs where simple yet humoristic – literally 'dry'; 'Droog' in Dutch.

-Minimalist approach

-Organized events, dinners and festivals, we published books,

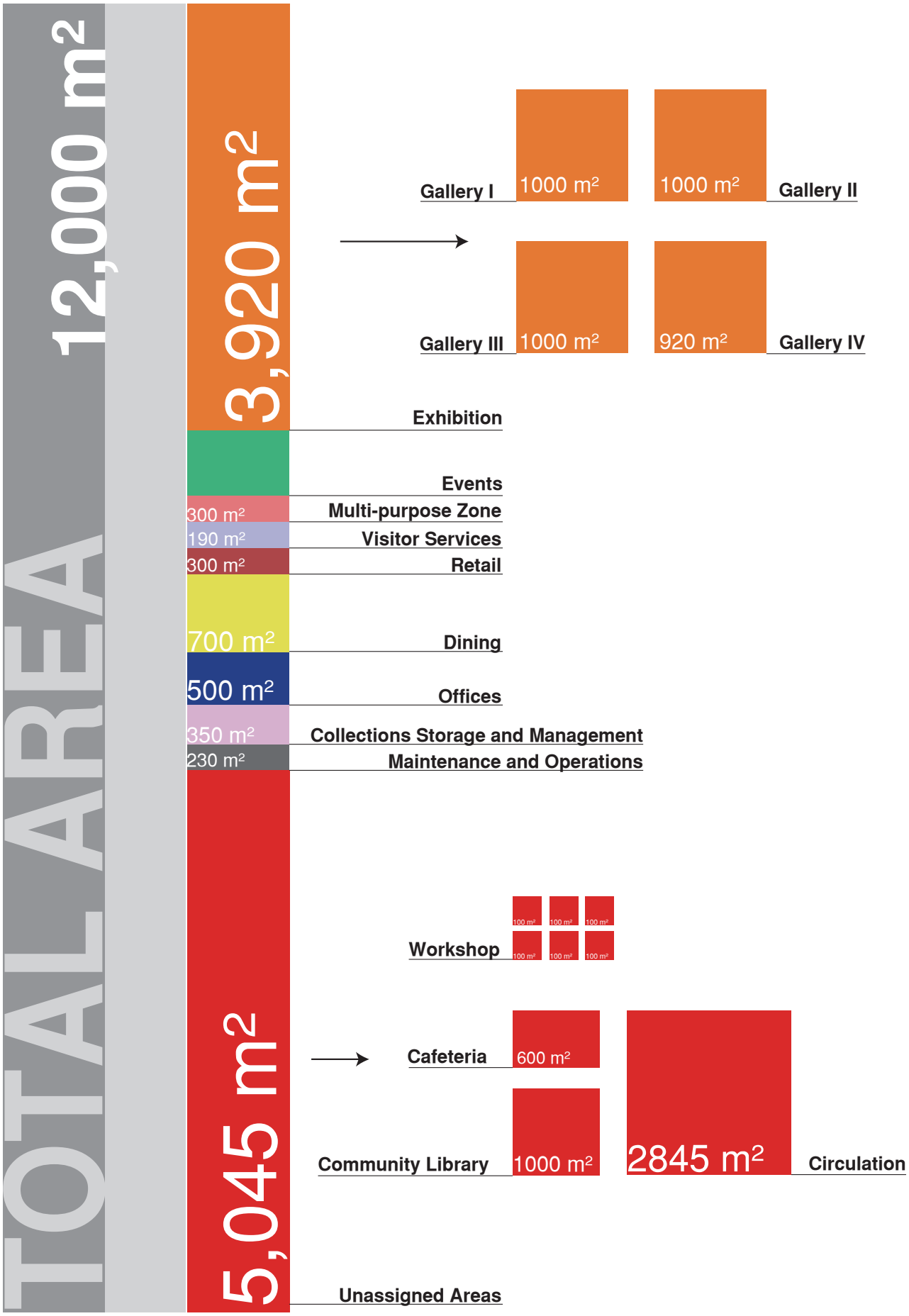
-They had shops in New York, Hong Kong and Las Vegas and carried out projects and exhibitions all over the world, from India to Senegal, from China to New Zealand.

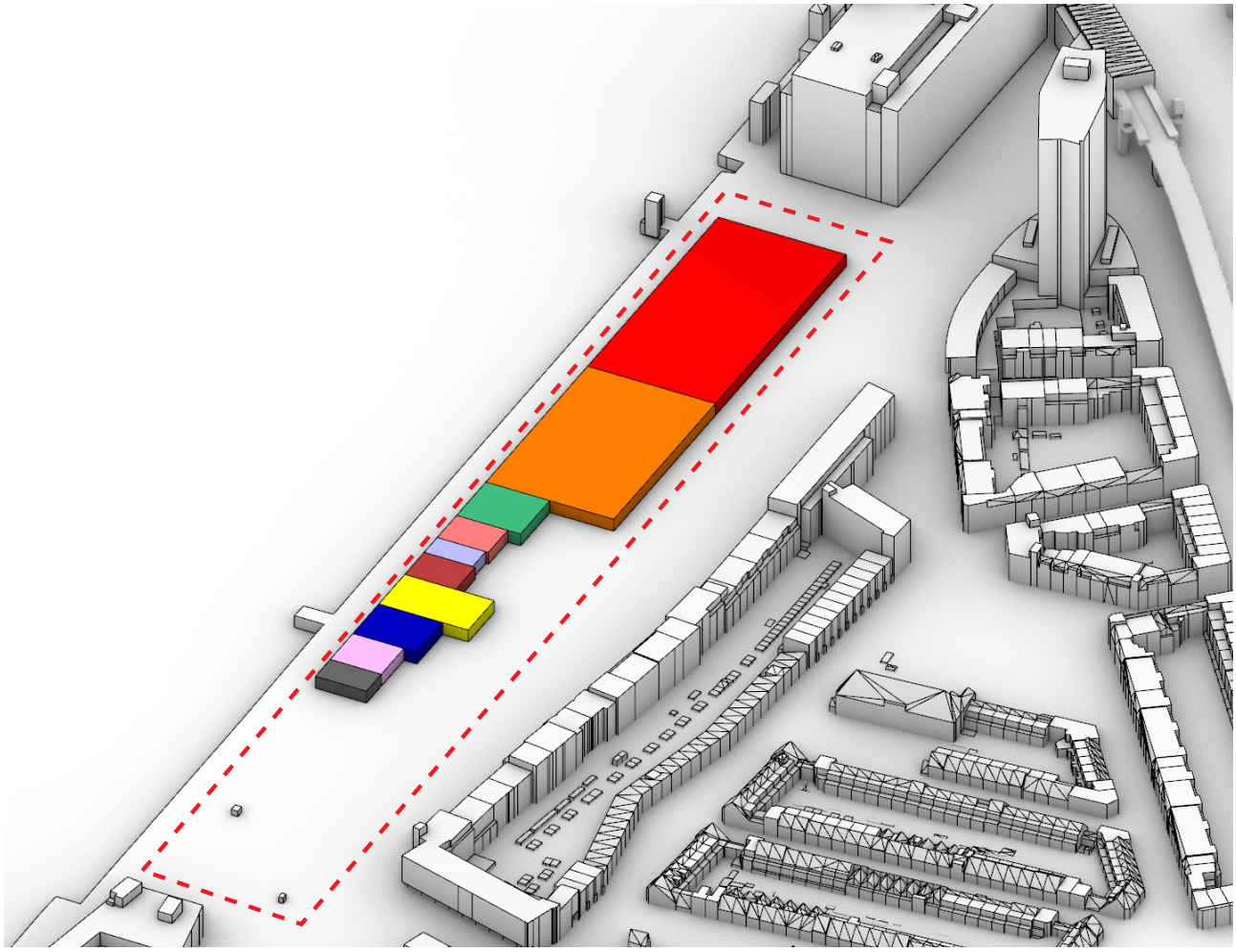
*"@droog, a place where you can shop, eat, drink, work, dream and think. A place where creative minds meet and where ideas for the future flourish."*

Tejo Remy : *You Can't Lay Down Your Memory* , design 1991

Marijn van der Poll : *Do Hit Chair – Unshaped* , design 2000

# Design Brief





The exhibition space is divided into four specialist galleries.

The education program contained workshop and library is intergrated into the design brief, which is public for everyone. Also, there is a new cafeteria.

Part of museum is rent by Droog design studio, with certain area of gallery, office, shop and workshop.

Putting these programs into site, it seems like the site is big enough to hold 12,000 sq.m.

@droog

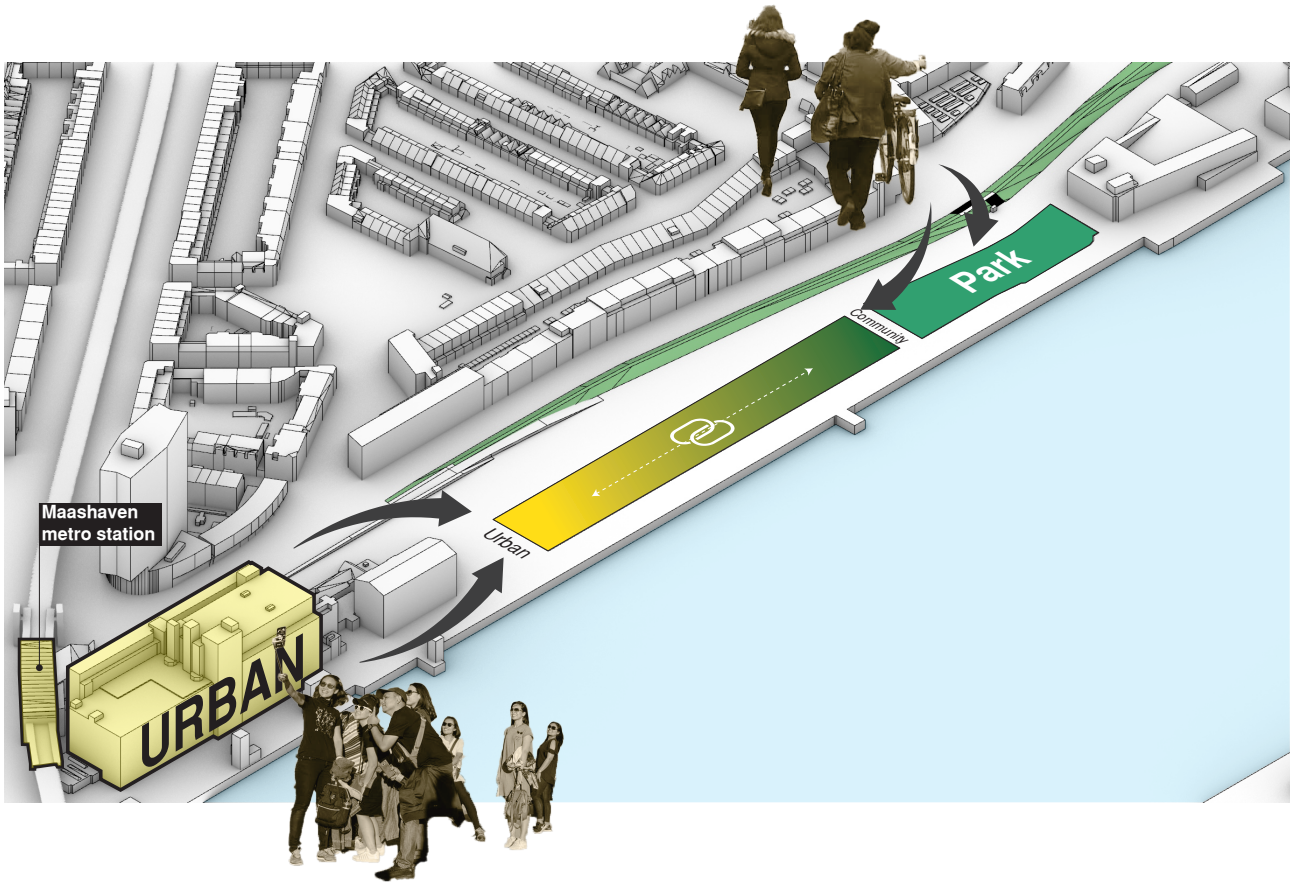
920 m² Gallery

200 m² Offices

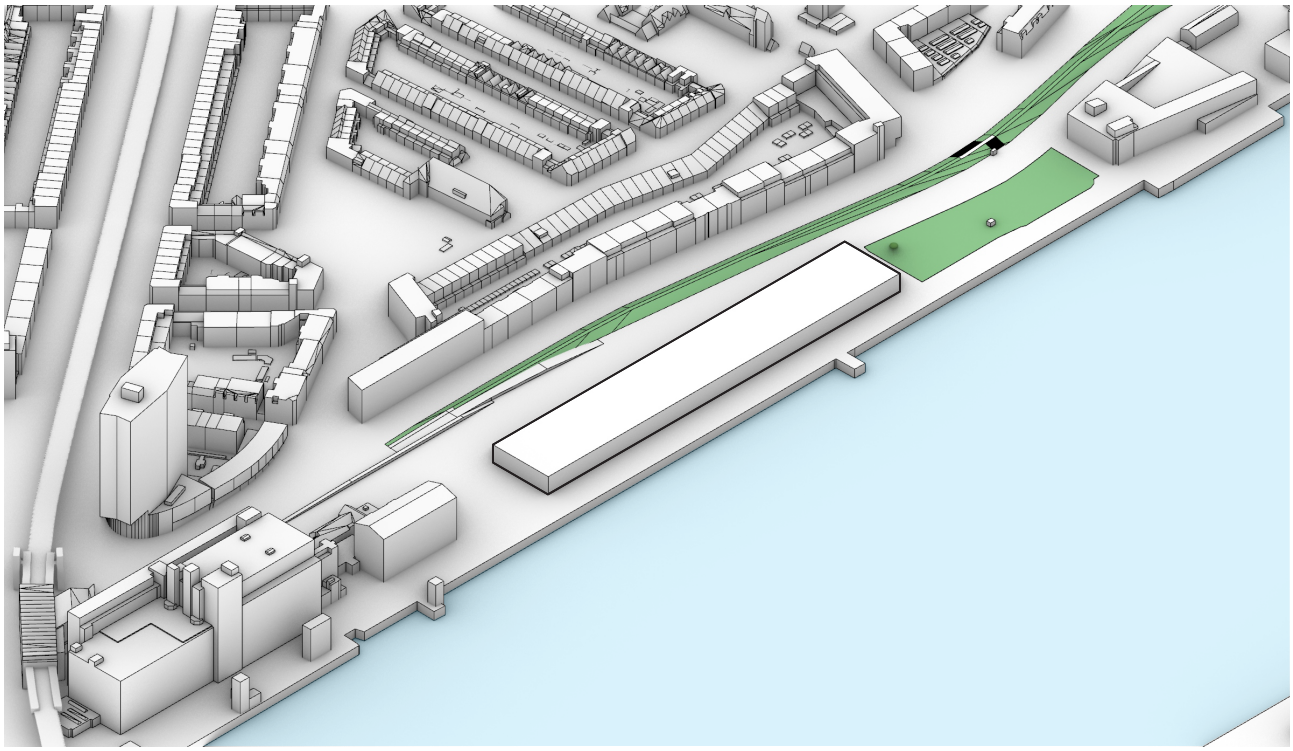
200 m² Retail

200 m² Workshop

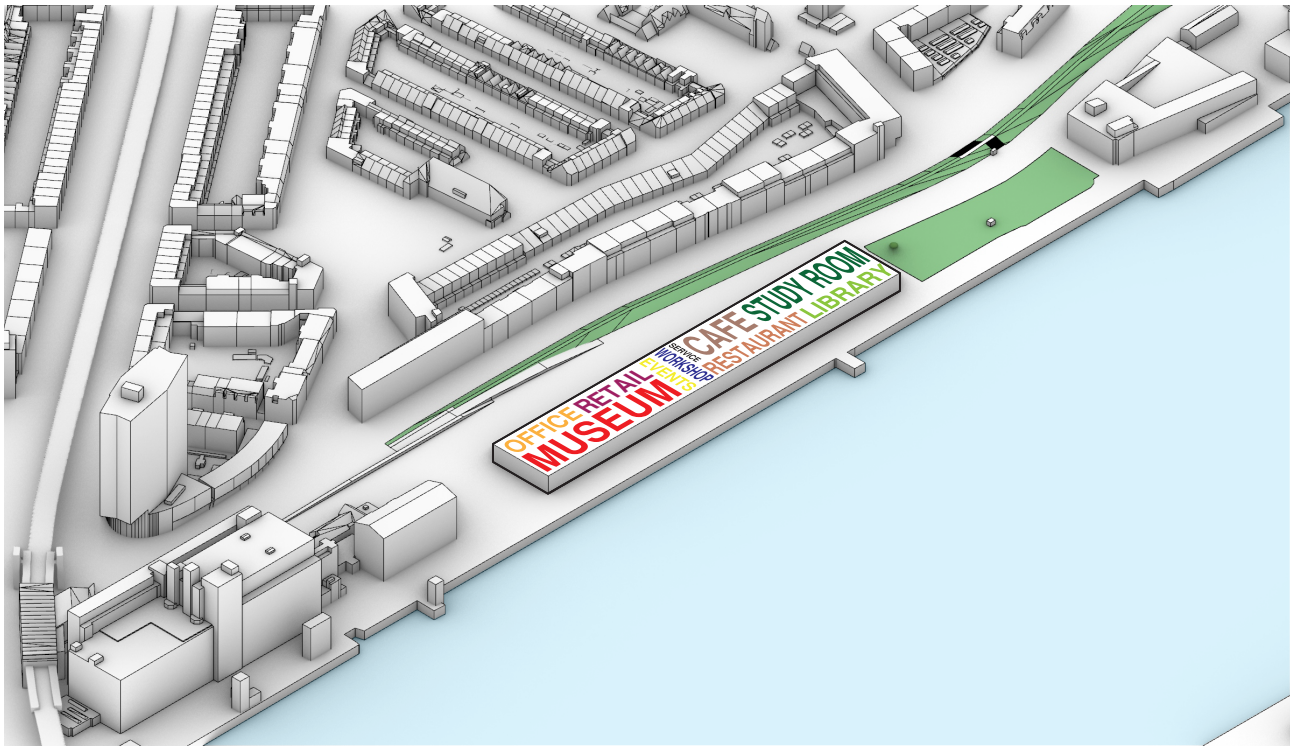
## Site Condition



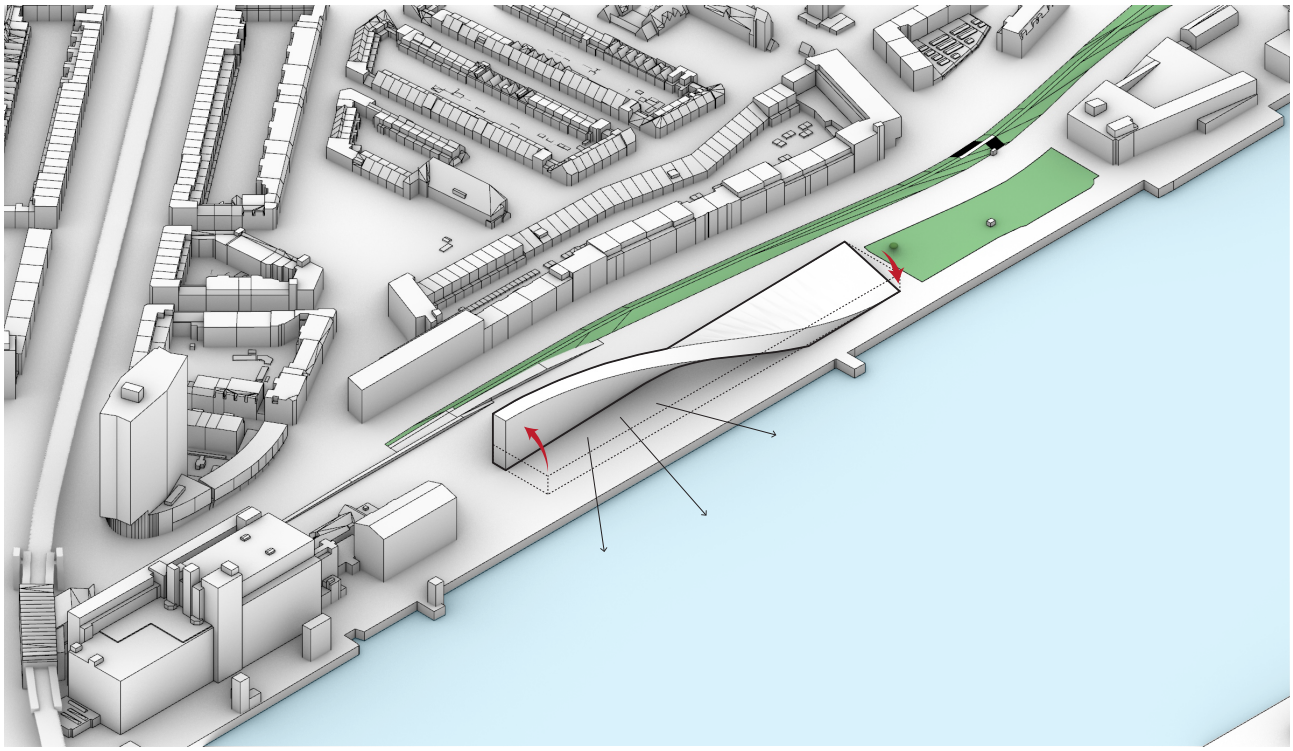

## Push-up



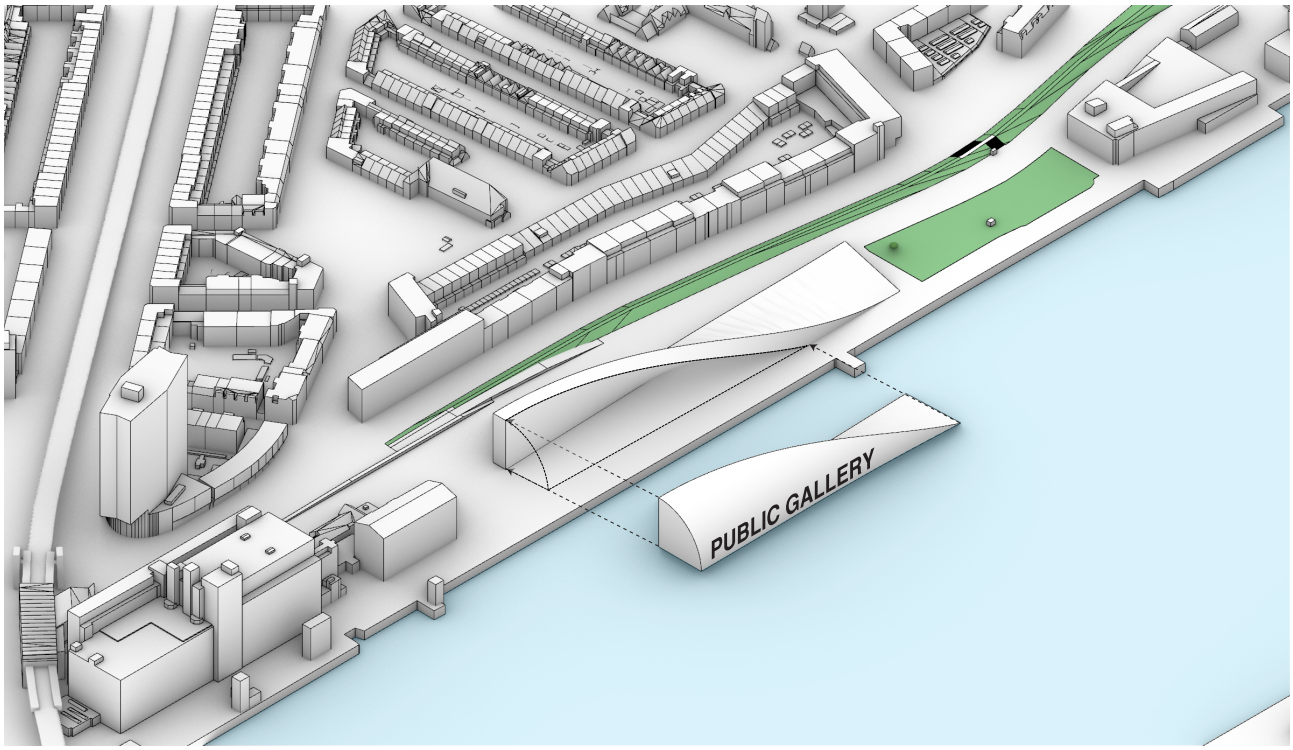
## Add Programs



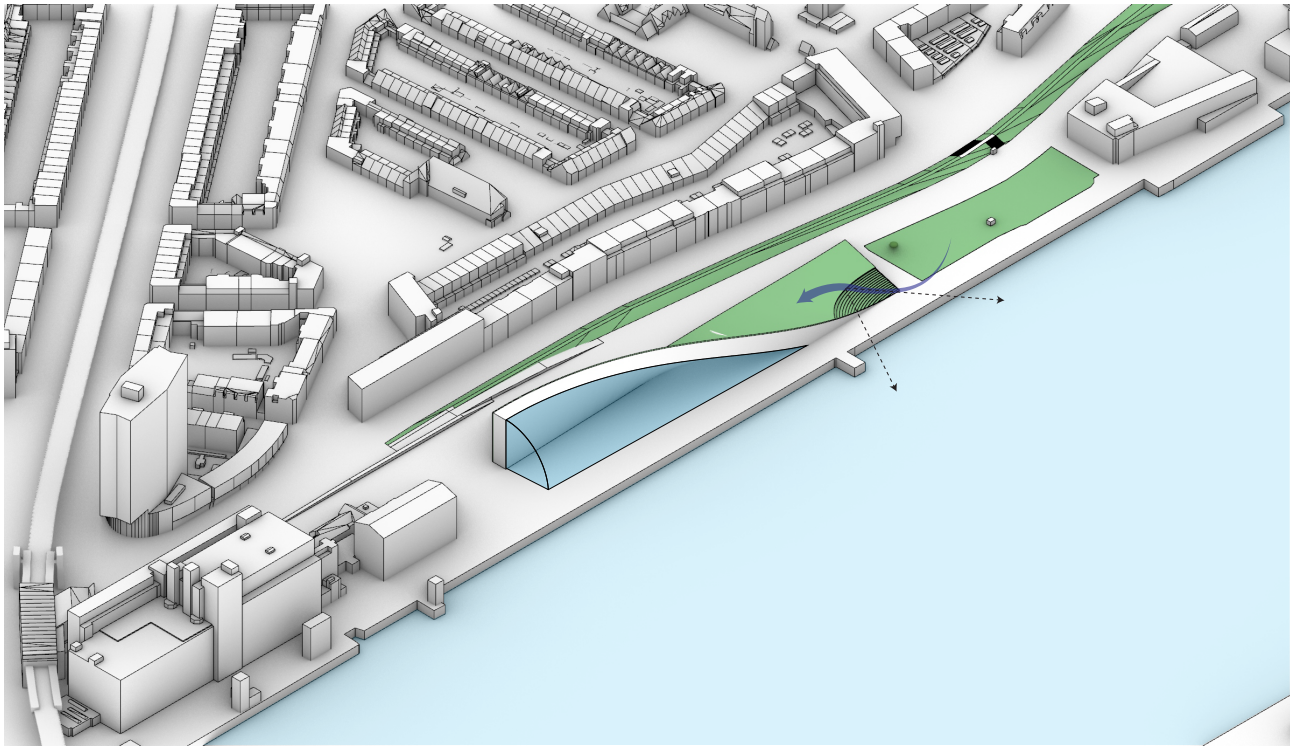

## Flip



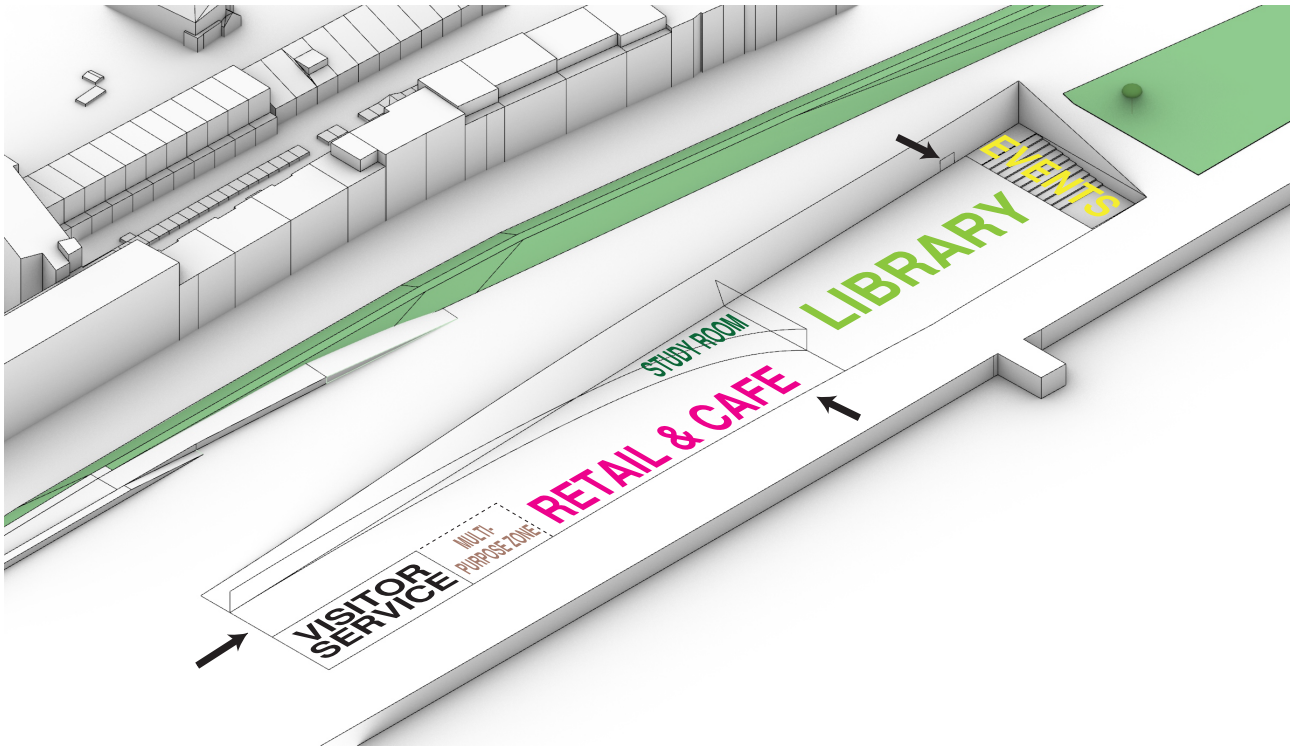
## Add Public Gallery



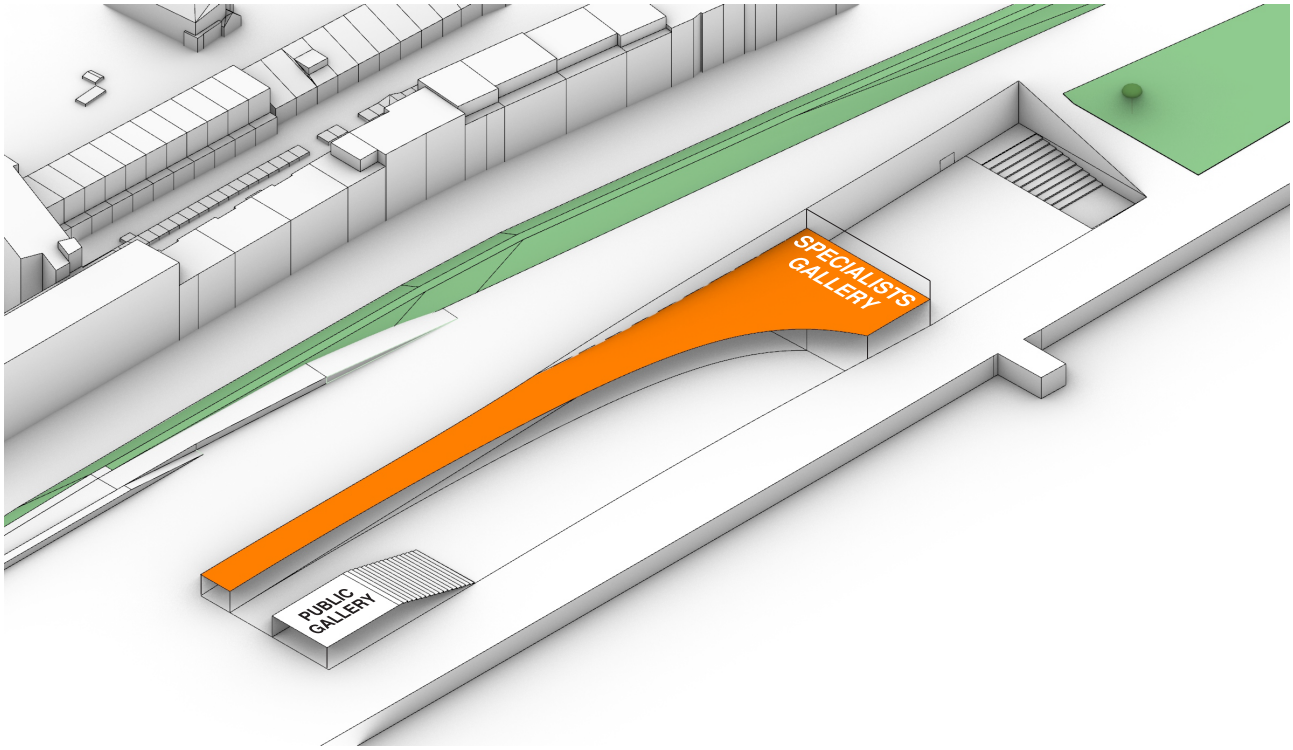

## Outdoor space



## Ground Floor




## F1



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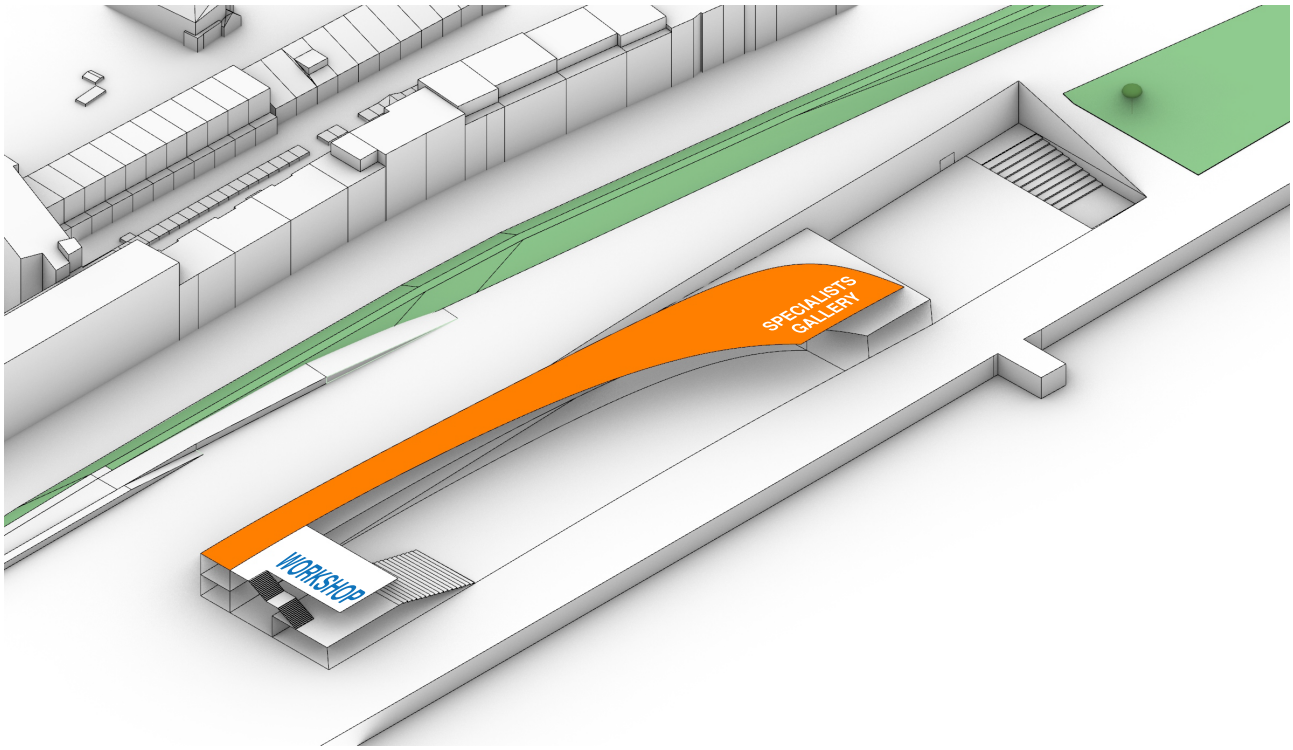
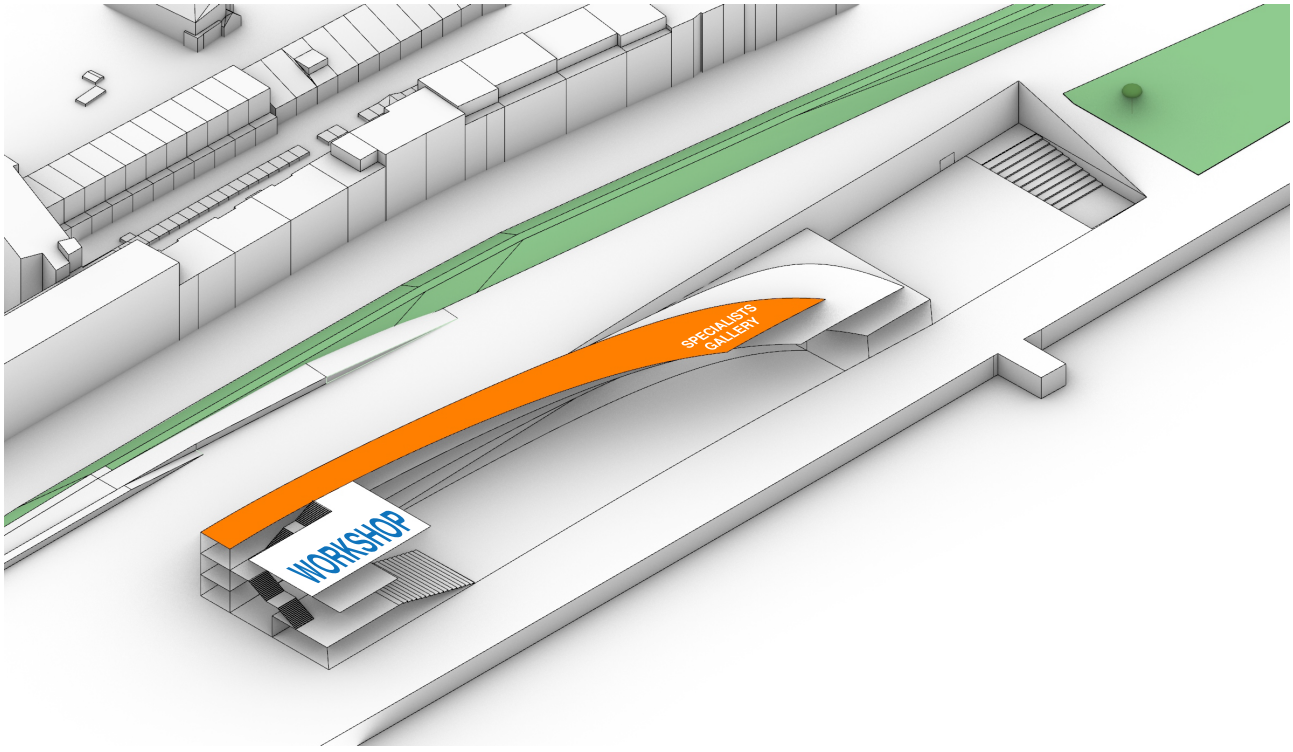
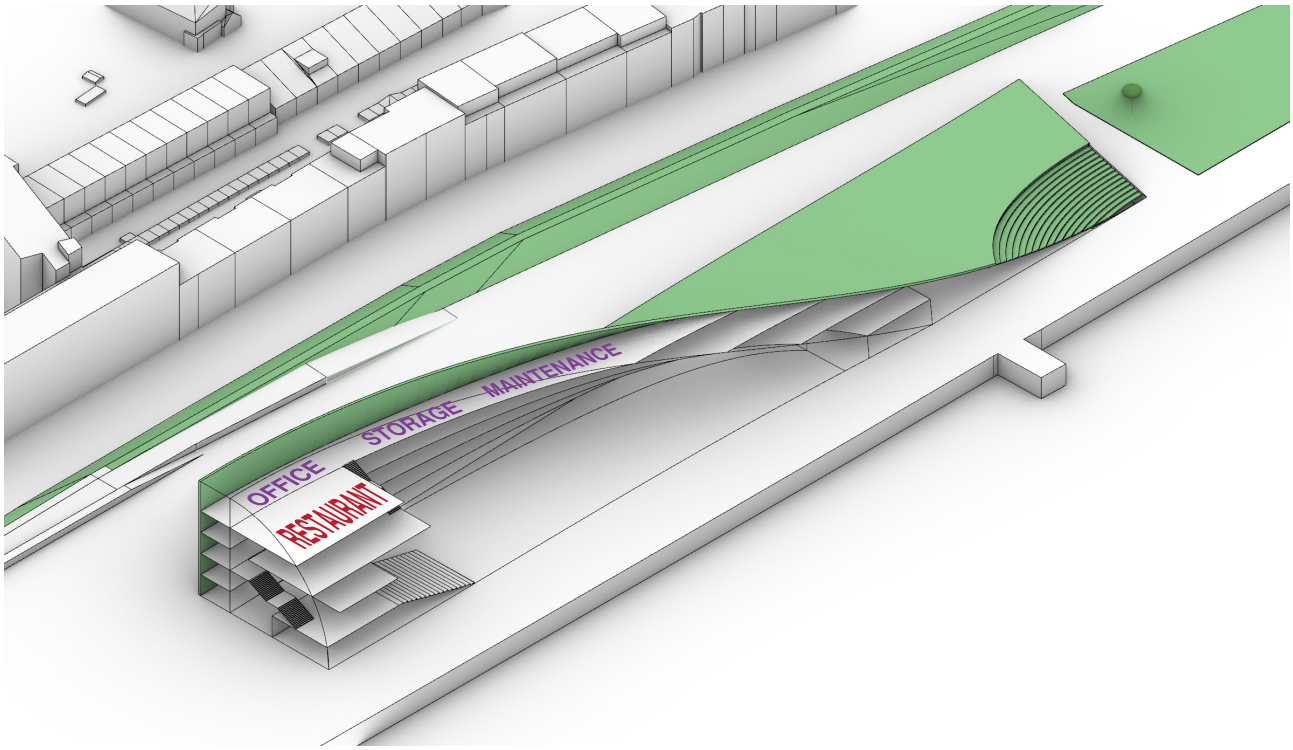

SPECIALISTS GALLERY
WORKSHOP

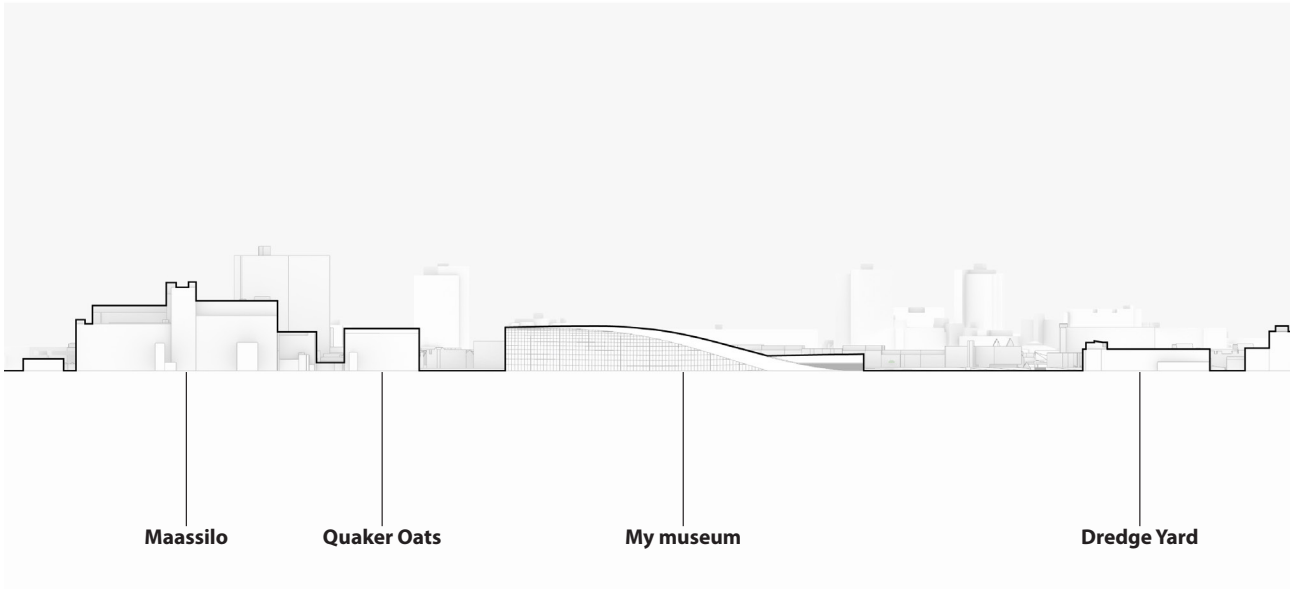
## F3


SPECIALISTS GALLERY
WORKSHOP

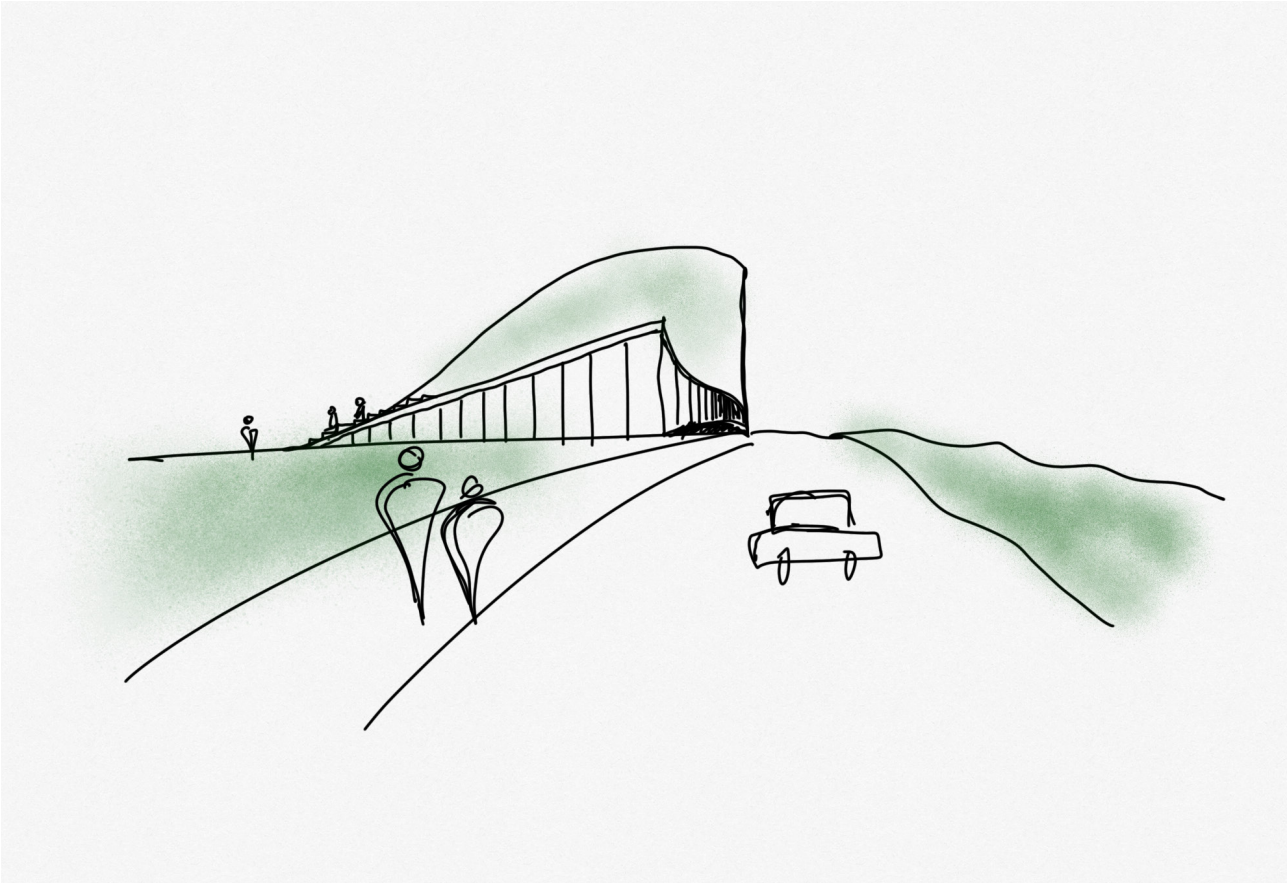
# F4



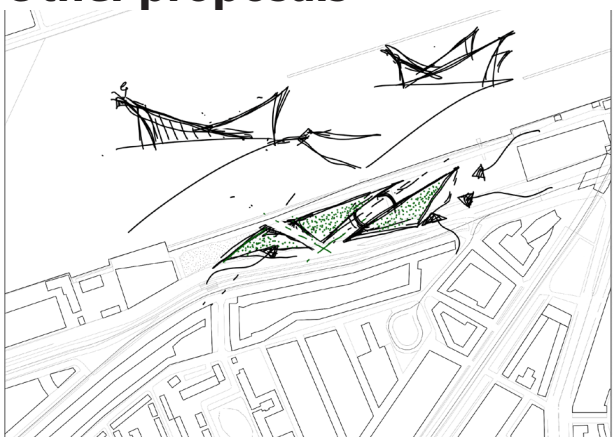

# Elevation

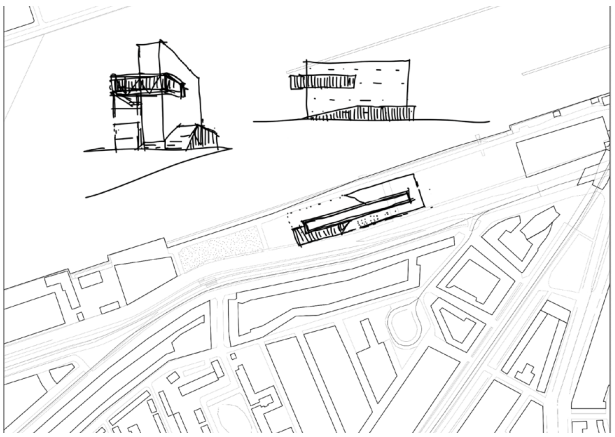


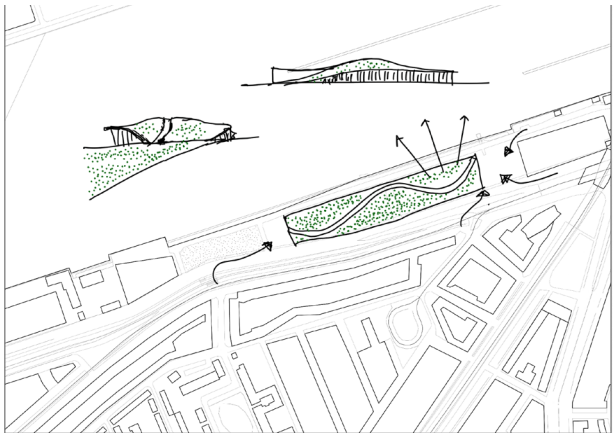
## Sketch

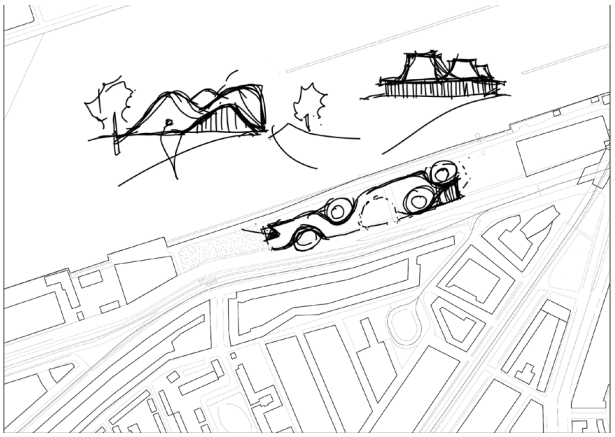


## Other proposals

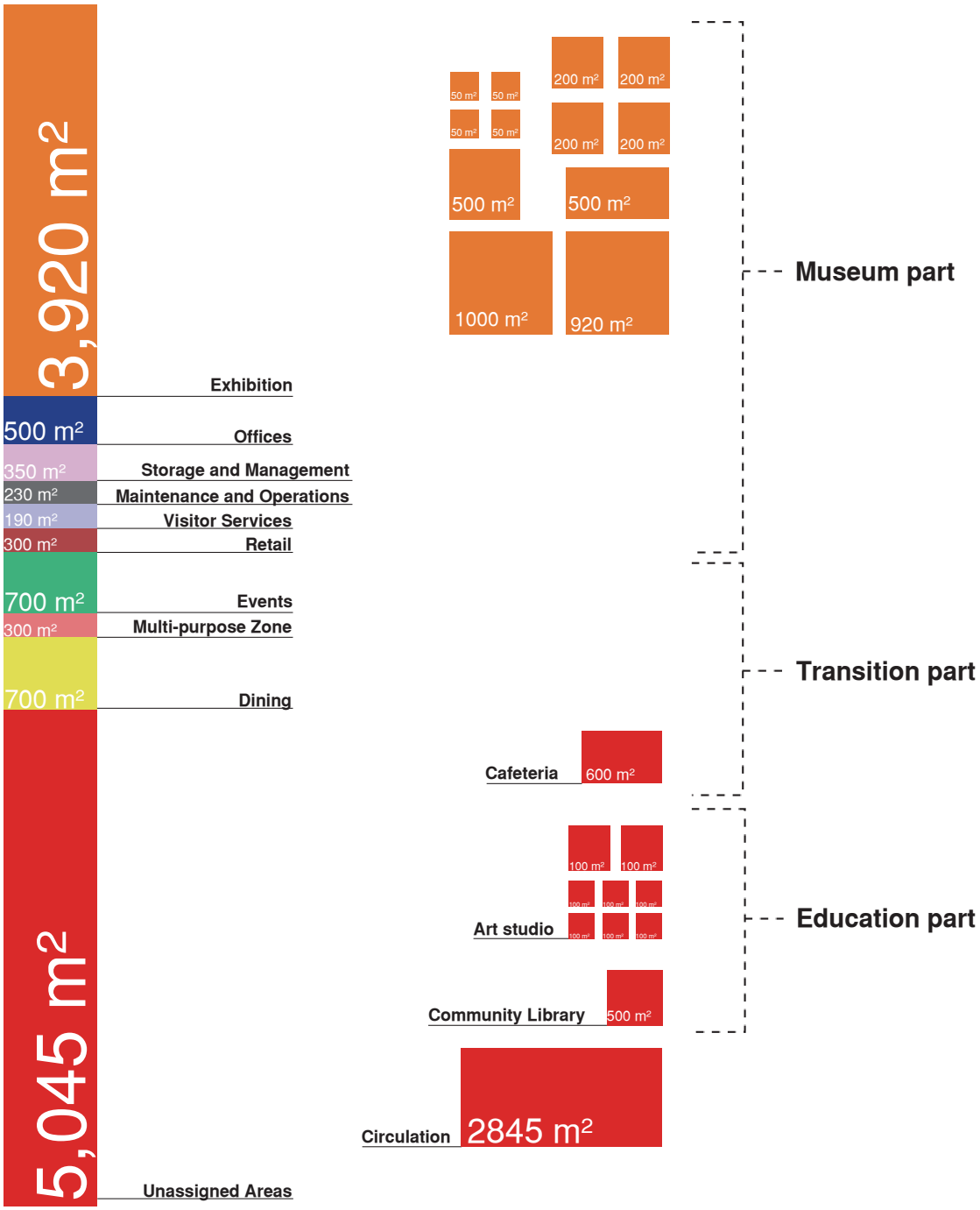








# Design Brief




**MUSEUM PART:**
Museum part consists of 12 galleries dividing by different scales, retail and administrative space.

**TRANSITION PART**
Transition part functions as a public gallery mediating museum part and education part. It should be open and intergrated into the circulation

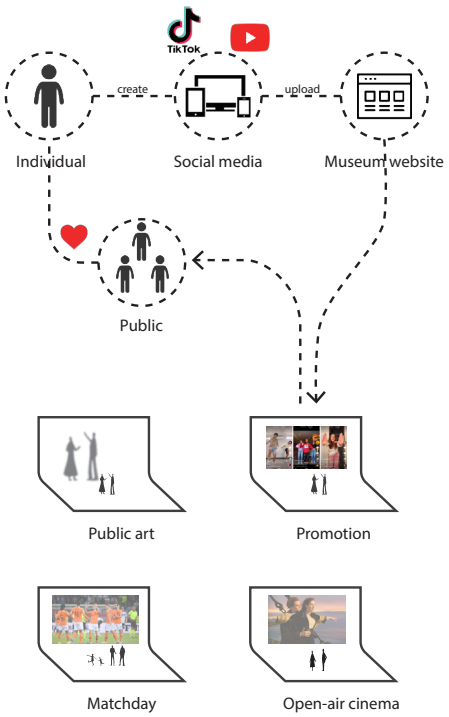
**EDUCATION PART**
Education part has several art studios which offers learning, creating and researching space. There is a library accessible by public.

# Fictional drawings

## Urban screen

Where social relations established

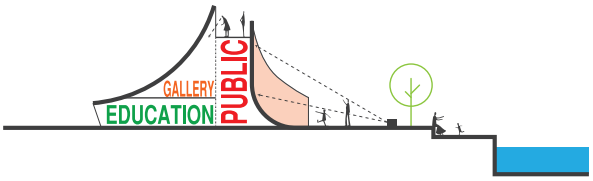
The large massing wall will function as "urban screen" immerged with waterfront activity. It will attract a temporary audience of strangers who briefly engage in a playful experience with each other by public art, or motivate individuals to participate communal events.

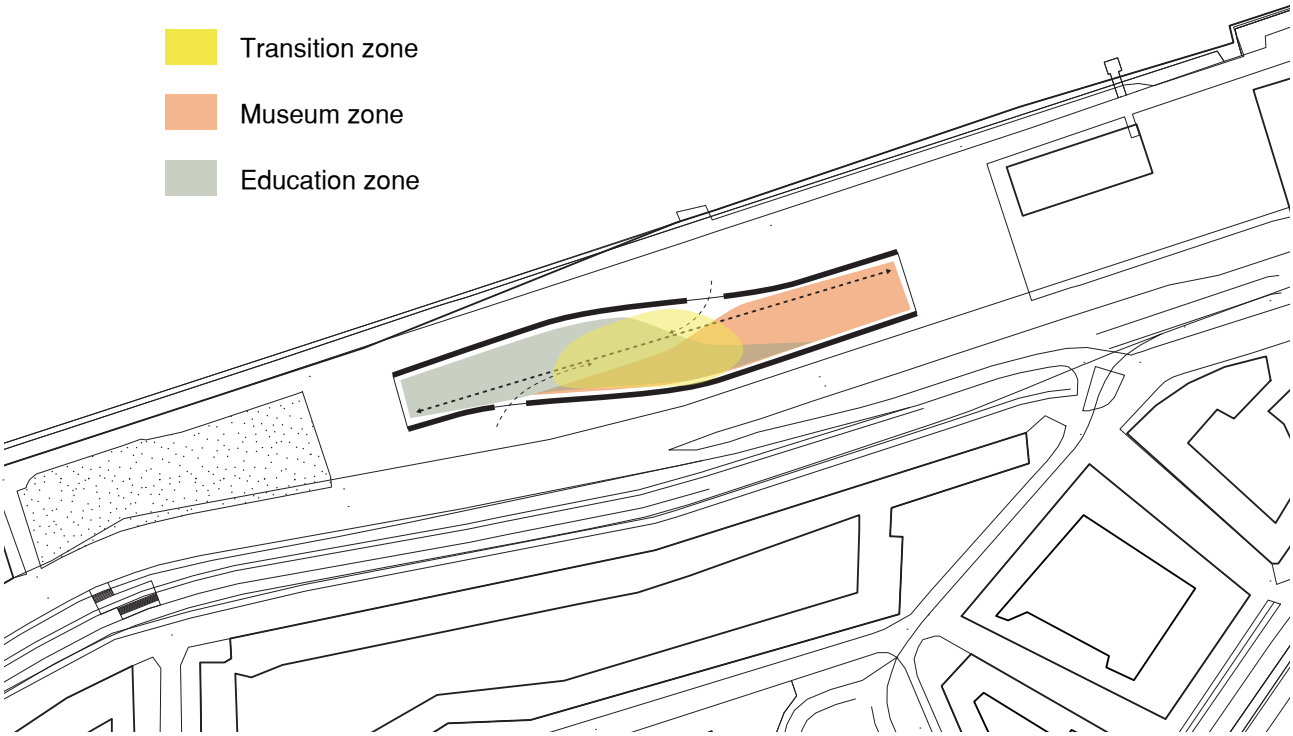



## Urban path

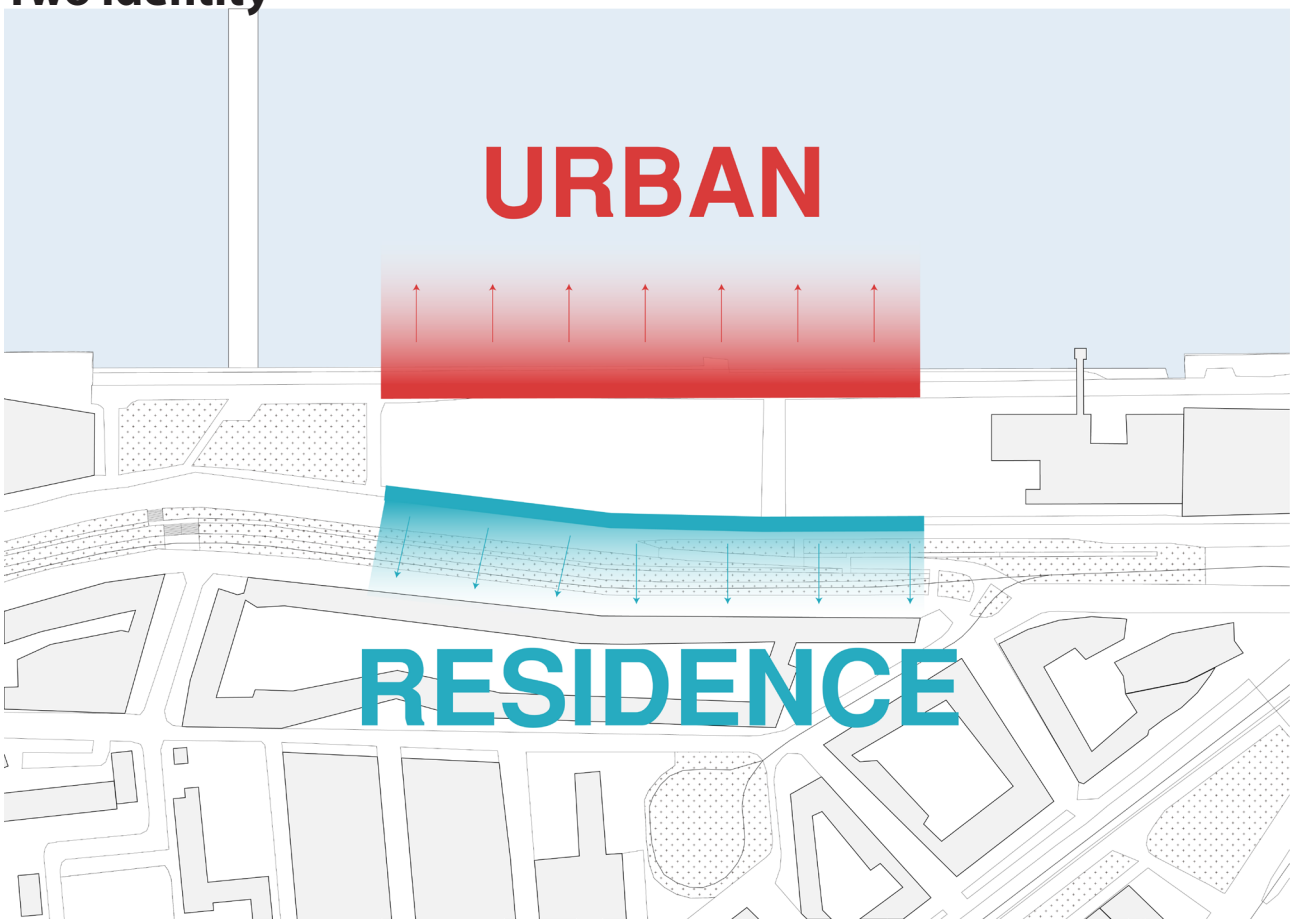
Offer public a peek of what happens inside building

In between the massing there will be an urban path connecting two sides of the site, where inhabitants and visitors have a chance to meet. Below it will be the transition part connecting gallery and education part

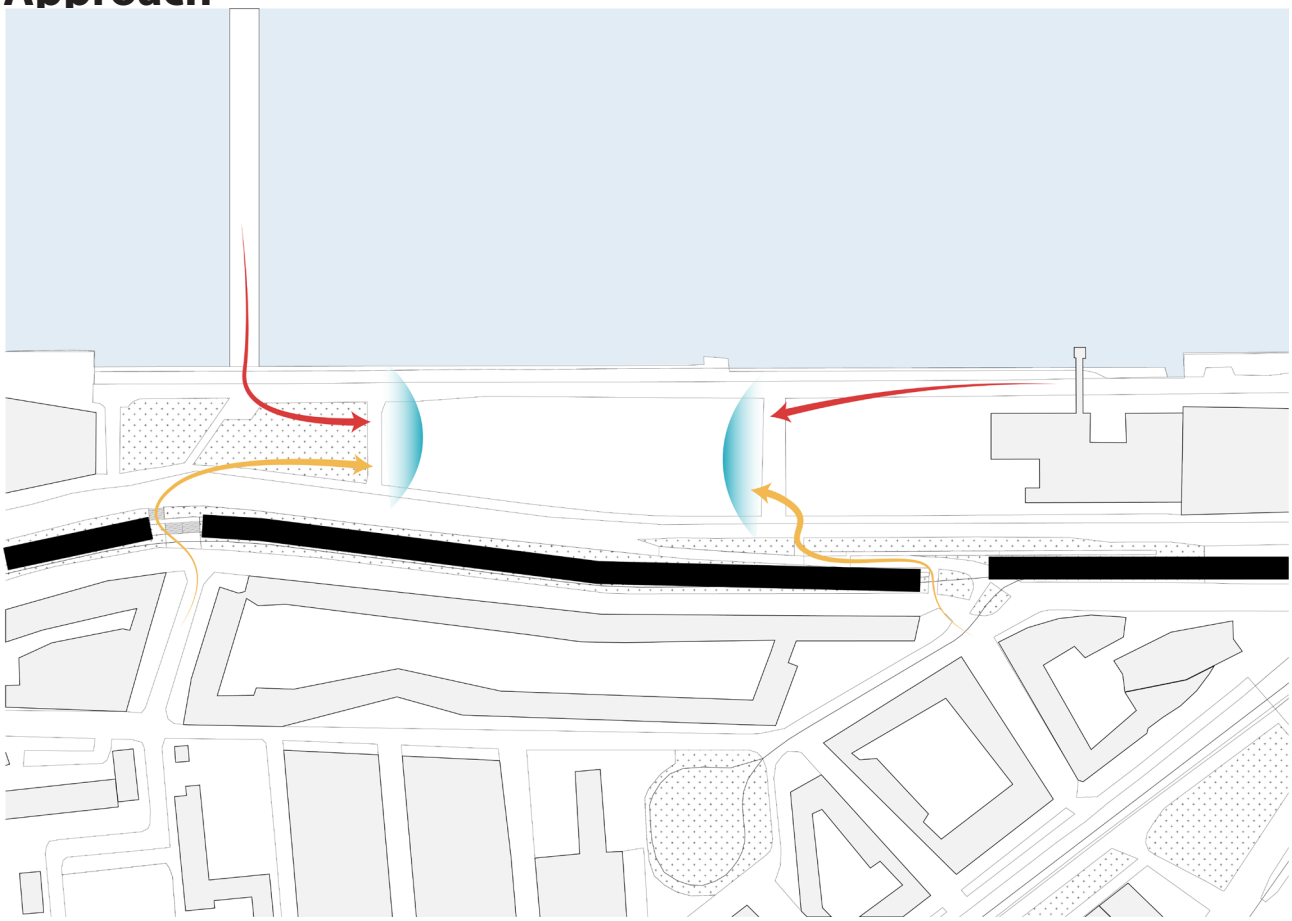




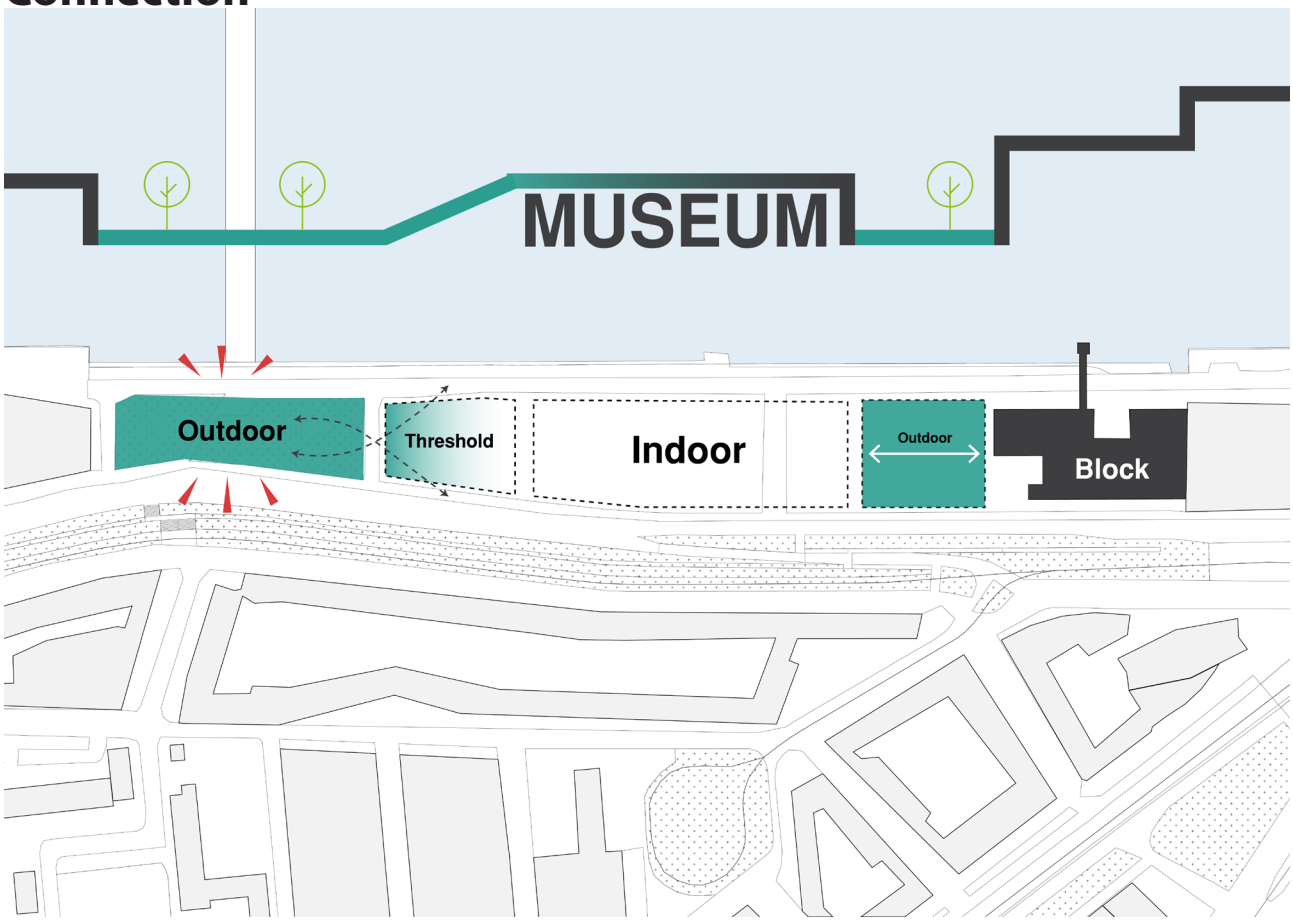
## Two Identity



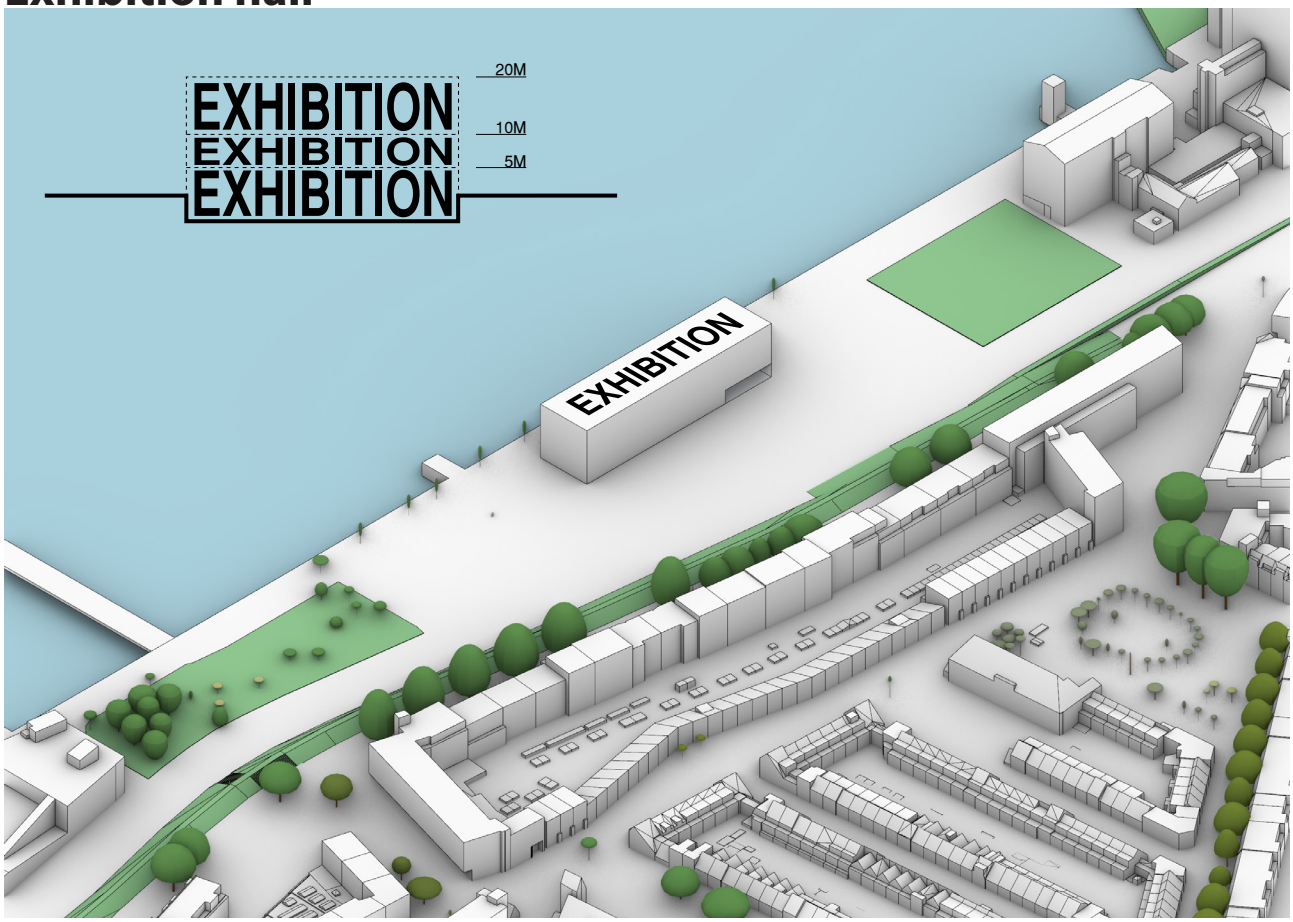

## Approach



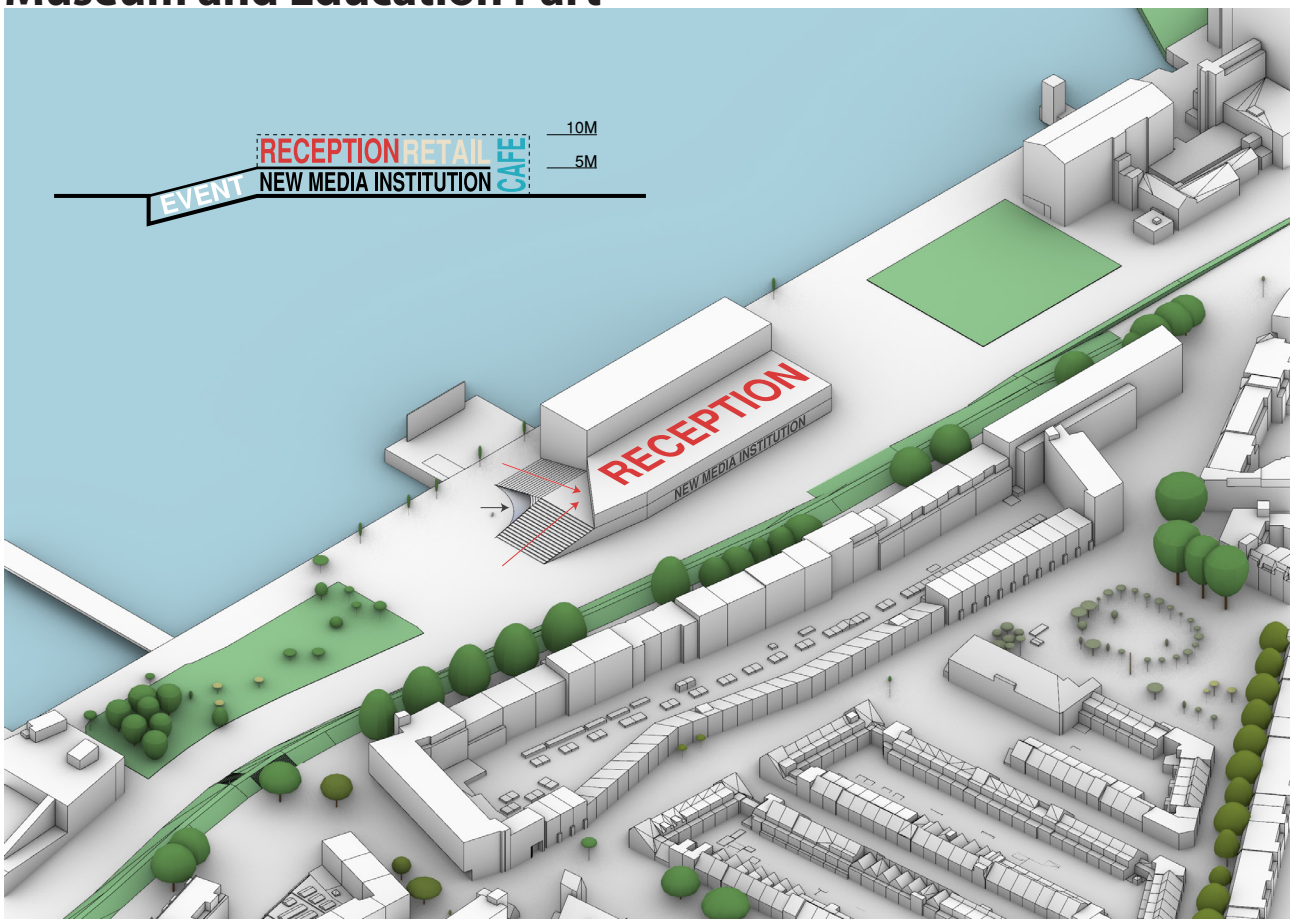
## Connection



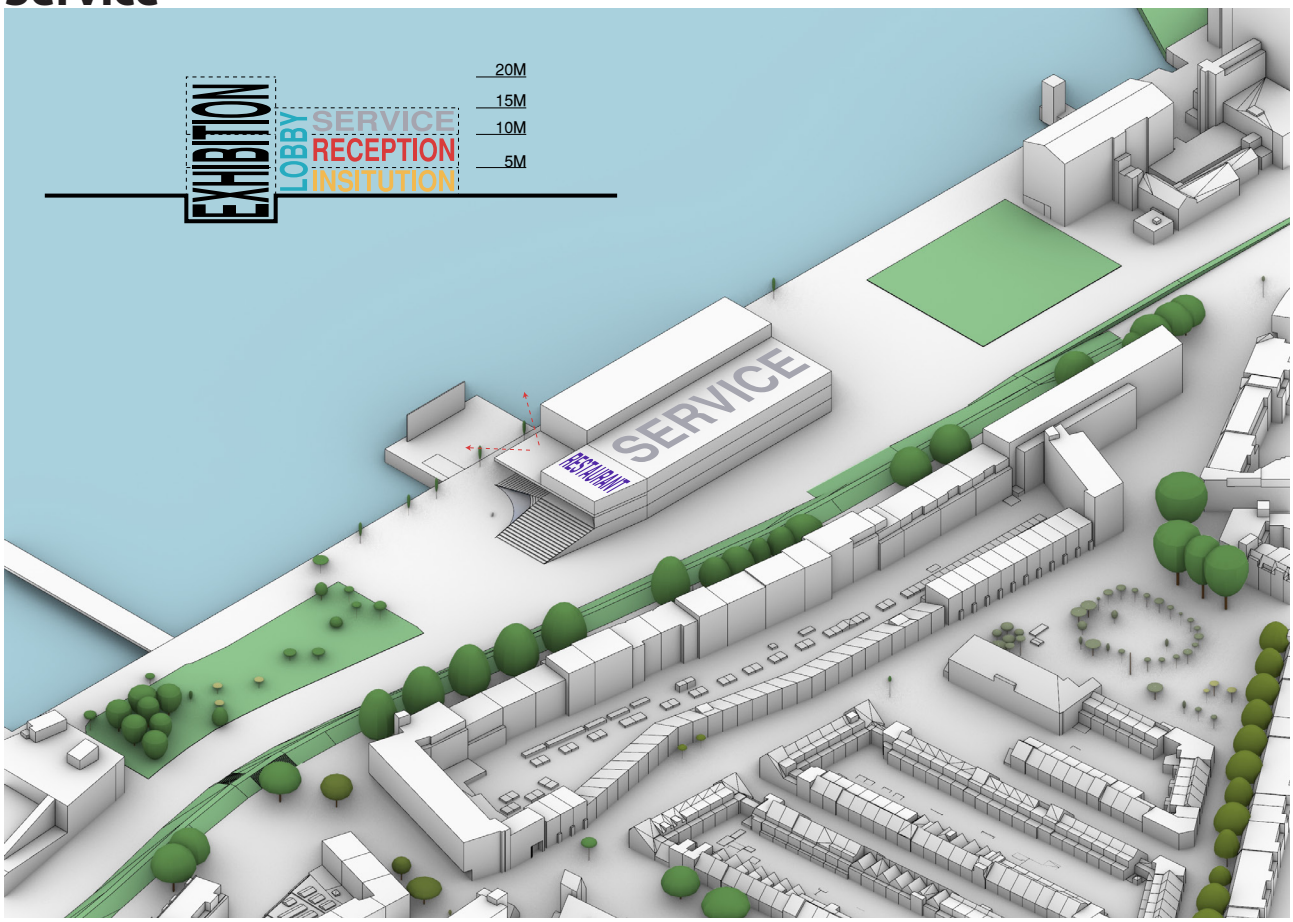

## Exhibition hall



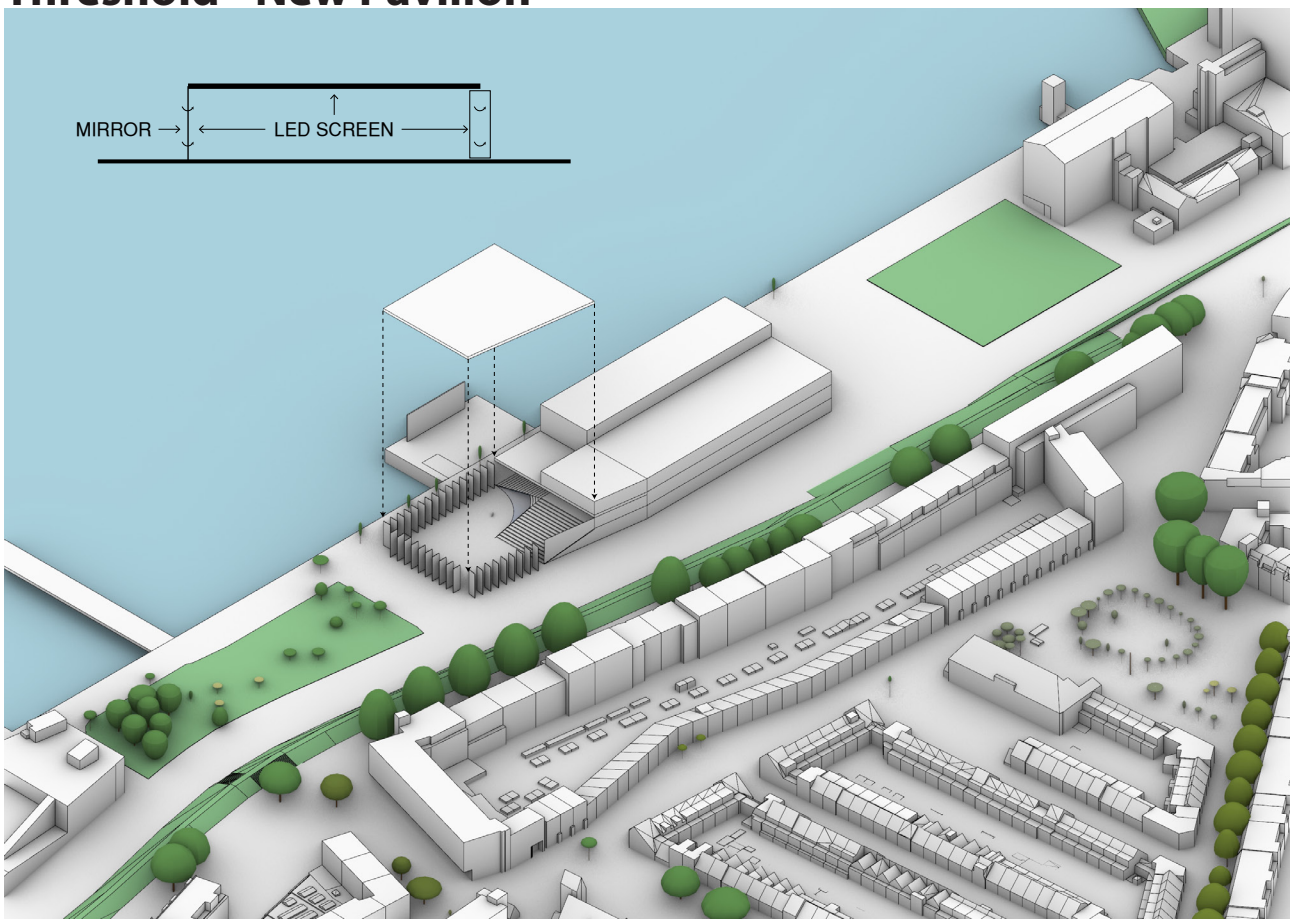
## Museum and Education Part



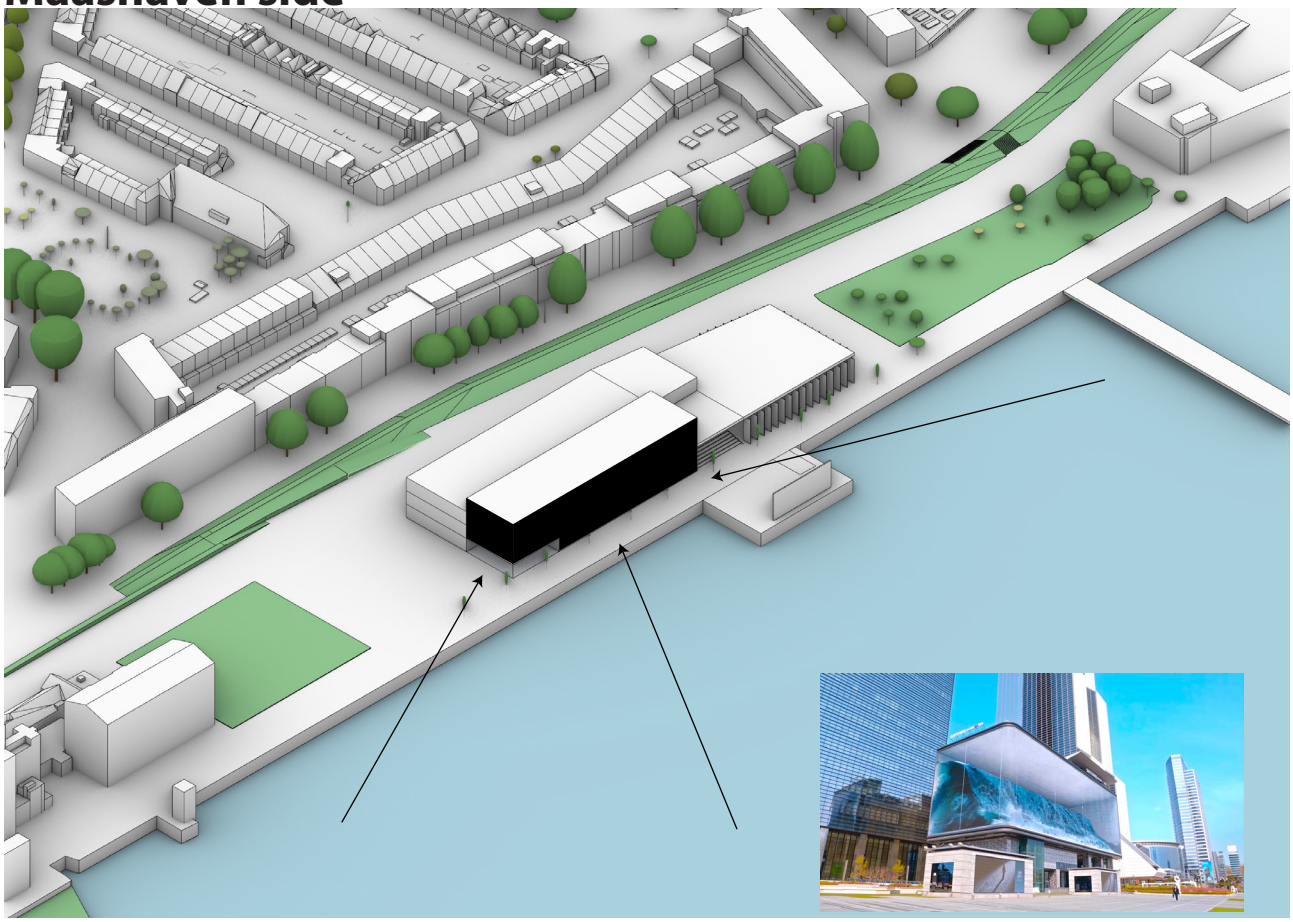

## Service



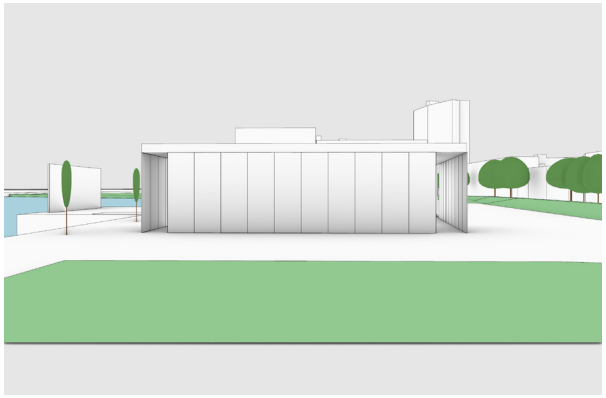
# Threshold - New Pavilion




# Maashaven side

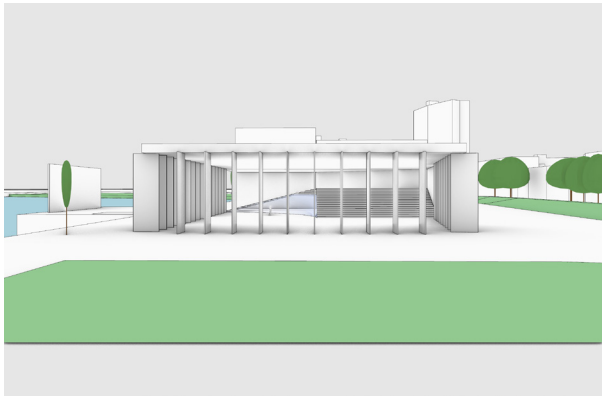


# Outside pavilion



## DAY TIME

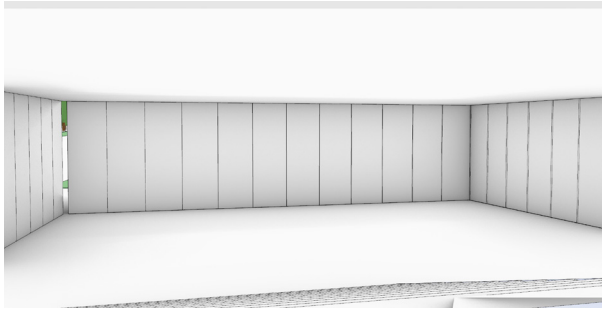
-Permeable
-Market
-Playground
-Public exhibition

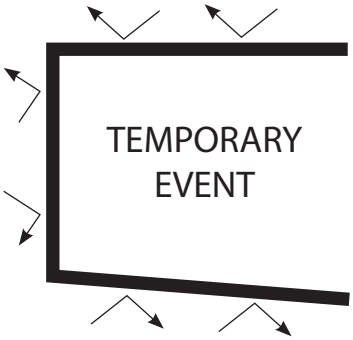


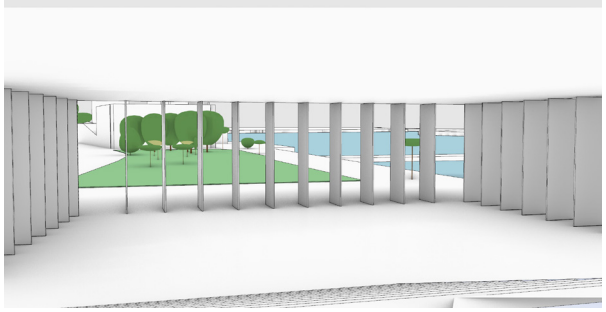
## NIGHT

-Footmatch
-Outdoor cinema
-Live concert

# Inside pavilion



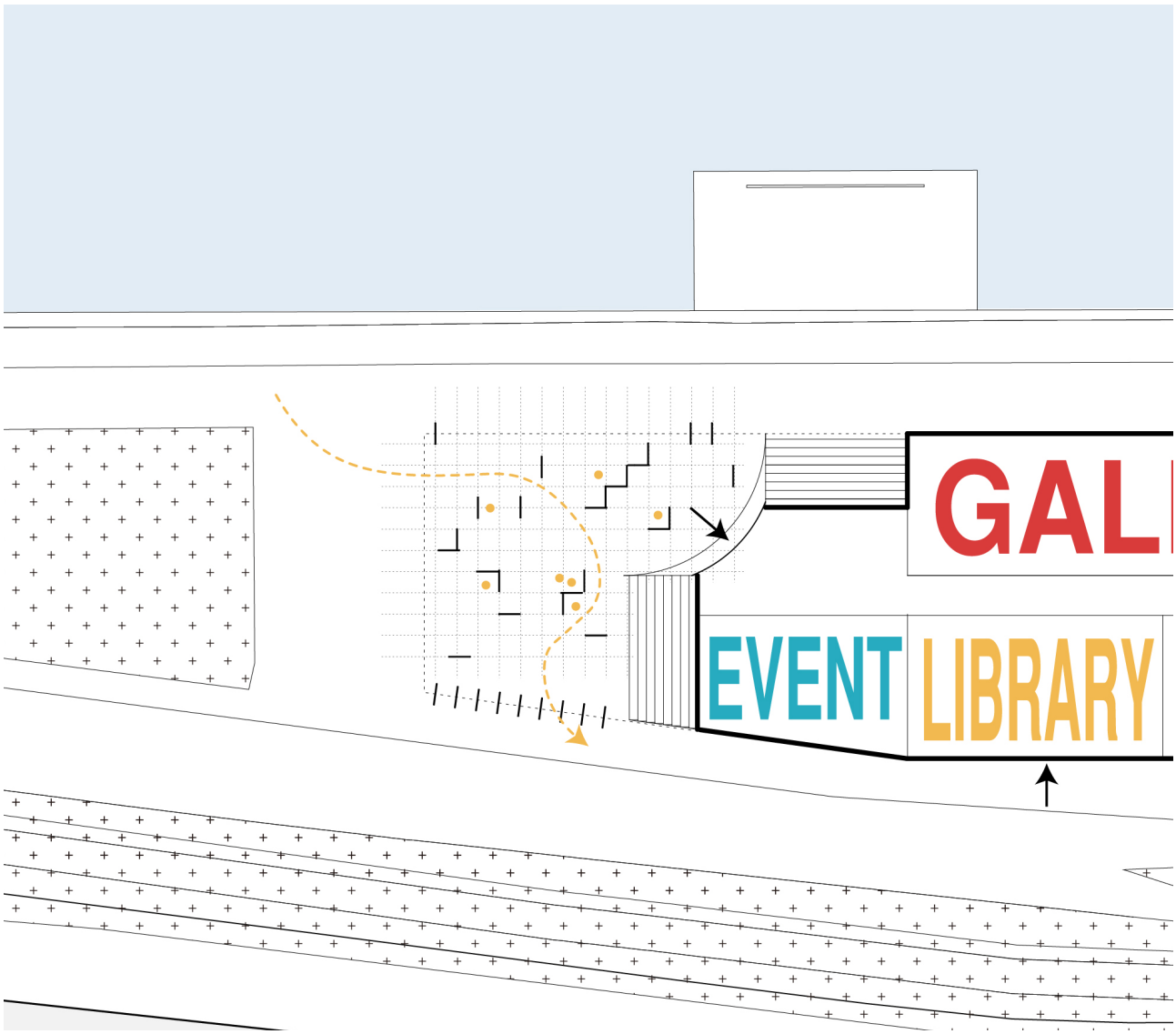


The benefits to cover panel by mirror on one side is that when the pavilion is closed to hold some temporary events, the volume will not appear as a black box from the outside. It could still be blended into urban life.

# Ground Floor

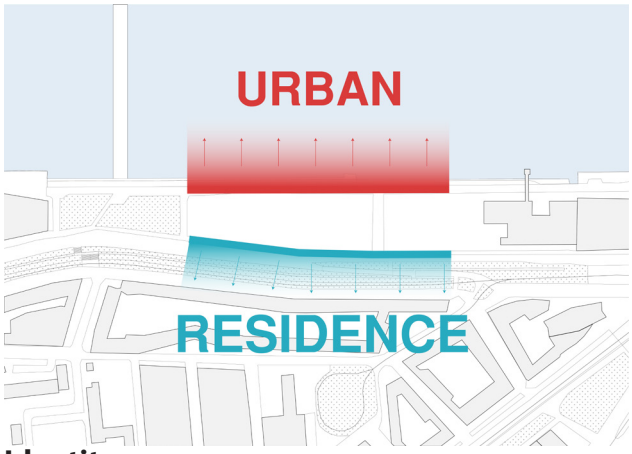
# Shuffling panels to create public exhibition



# Manifesto Version 1.0

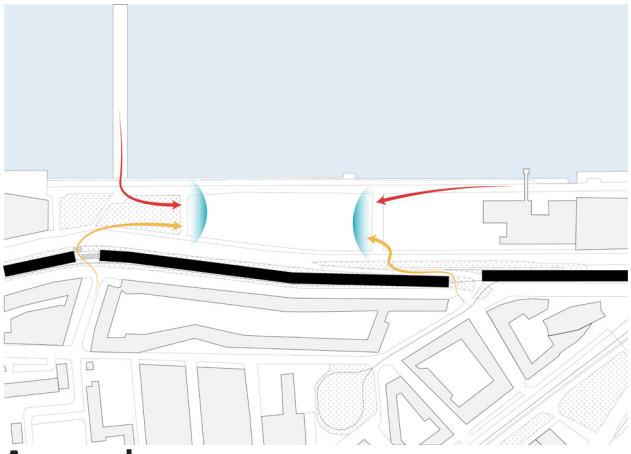
# Manifesto Version 2.0

# Site Condition



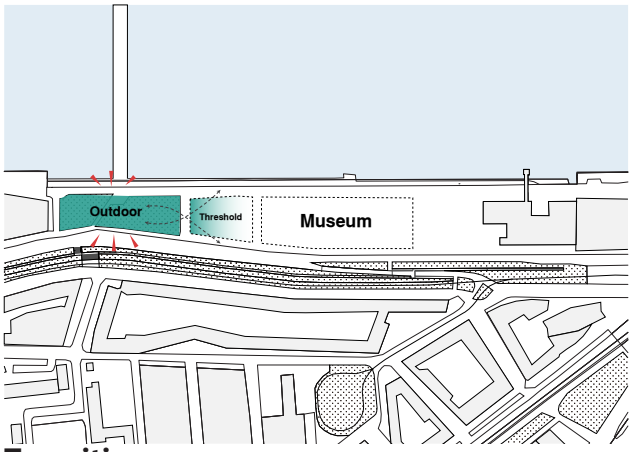

**Identity**

The north side faces Maashaven, showing urban identity, should be active; the south side faces Tarwewijk residence, showing community identity, should be undisturbed.



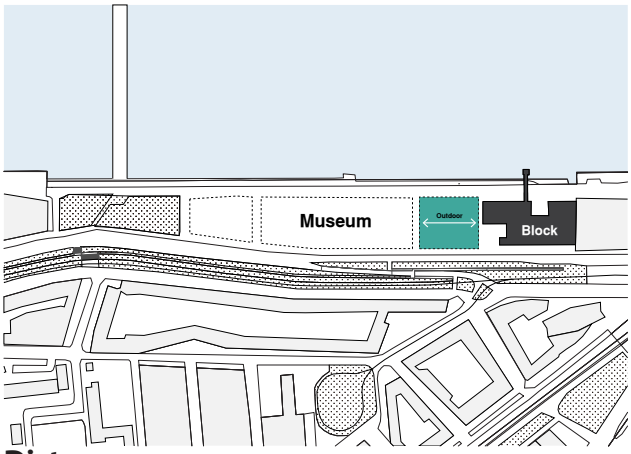
**Approach**

Visitors will mainly approach the site from east and west, so the main entrance should be on two short side.




**Transition**

On the west side, the Balkon park is one of the few public space of Tarwewijk. There should be a threshold space between museum and park so as to revitalize the public realm.

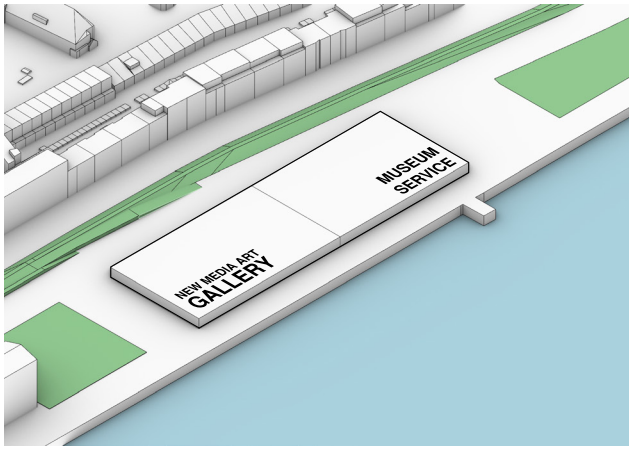



**Distance**

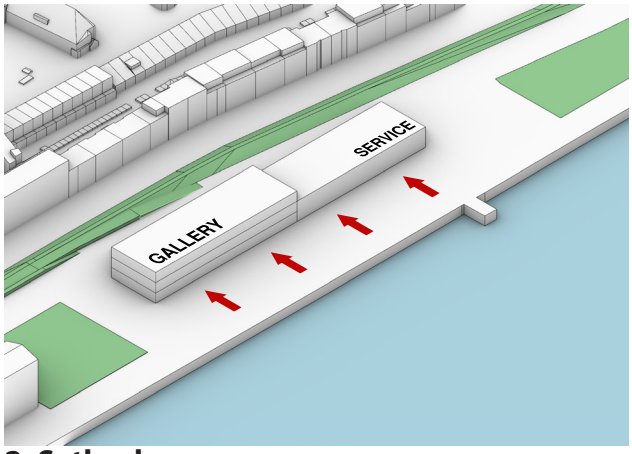
On the east side, the Quaker factory building shows negative in publicness. Therefore, the museum should keep certain distance with it, to let the public "breathe".

# Conceptual section

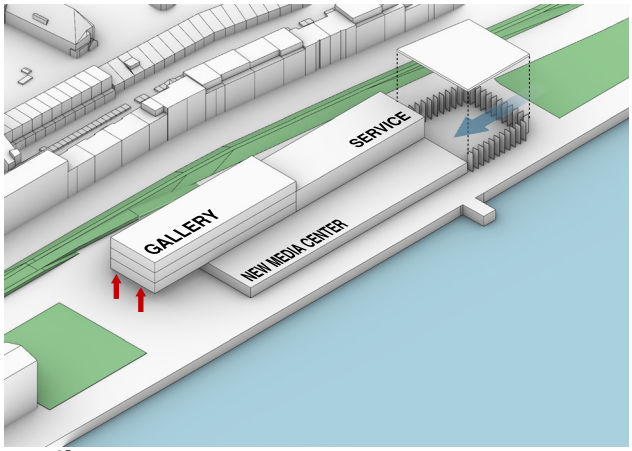
# Volumetric Massing



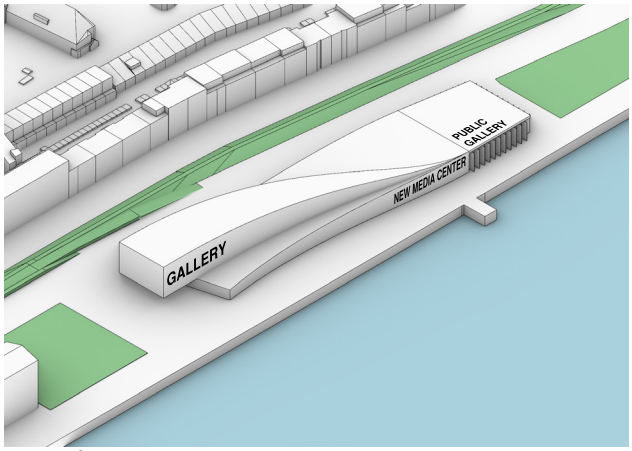

**1. Lay out**
If we lay out the museum as single storey box, it will occupy the most area of site.



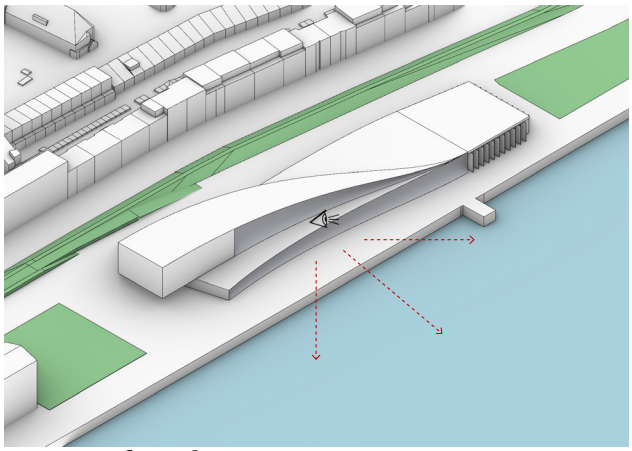

**2. Setback**
By transform the museum into multi-storey volume, we make space for other programs.



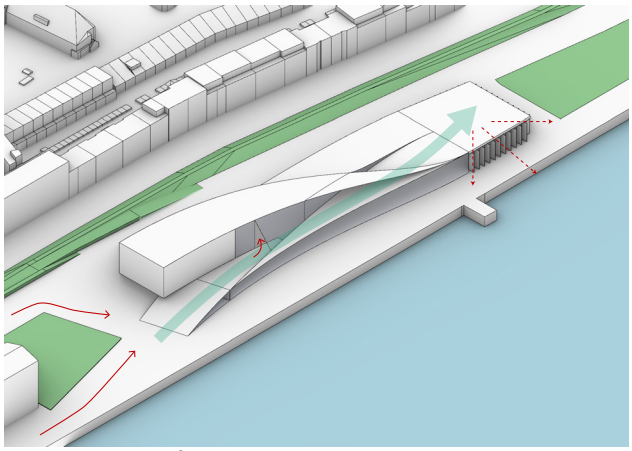

**3. Pile up**
Lift up museum program above the institution program and add "threshold" space between park and volume.




**4. Twist**
By merging museum volume and institution volume with public gallery, they form as an entity.

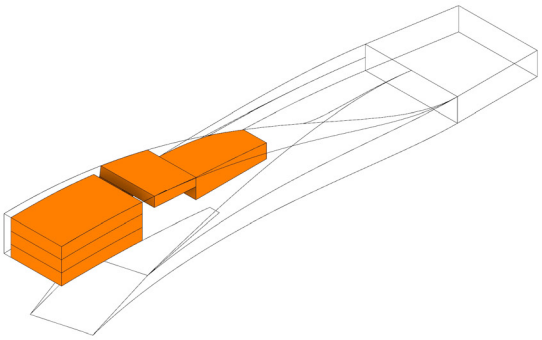


**5. Open facade**
Reveal the north facade to Maashaven.

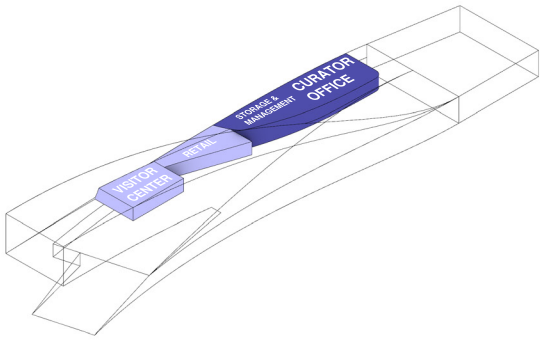


**6. Connect city**
Adjust outdoor space to make connection between museum and urban context.

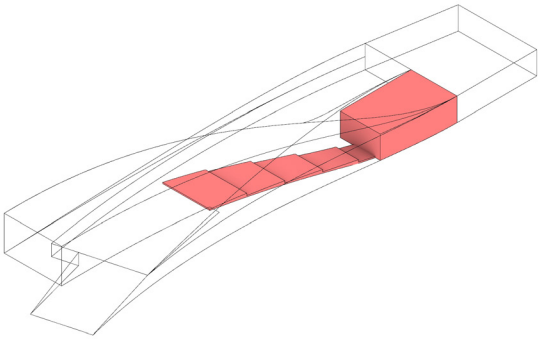
# Spatial Structure



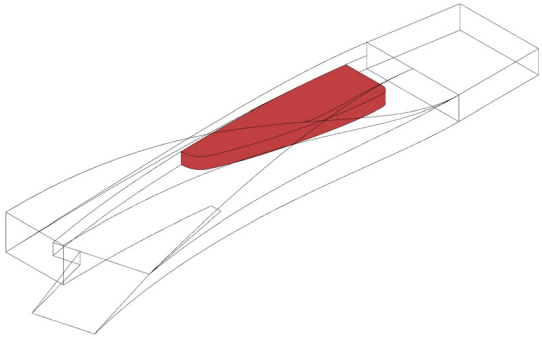
**Specialist gallery**



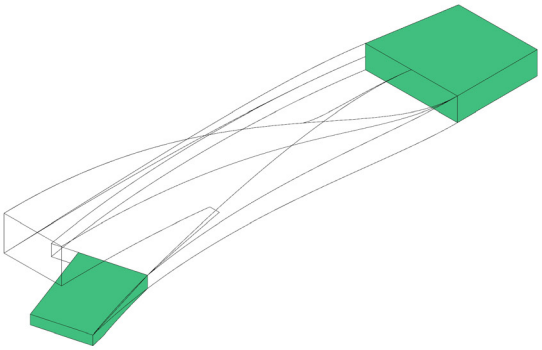

**Museum service**



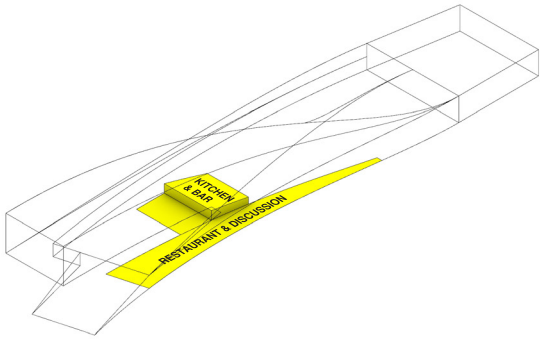
**Public gallery**



**Artist studio**



**Events**




**Dining**

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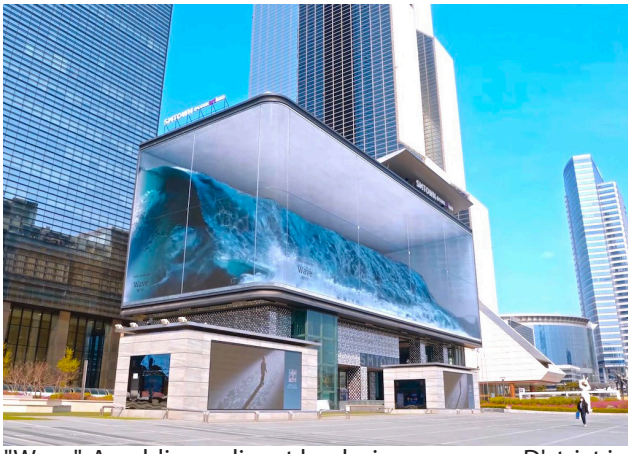
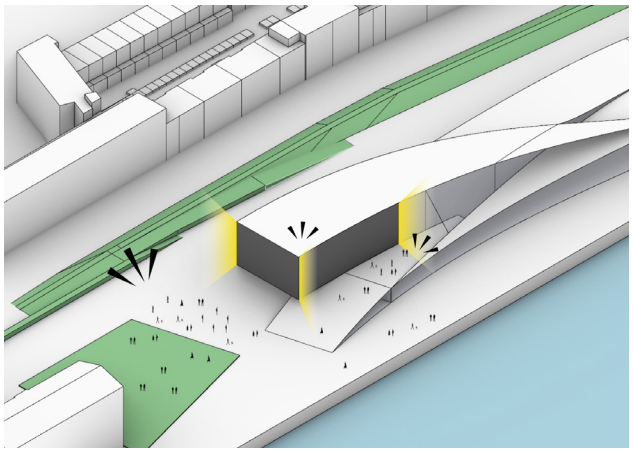
# Urban Screen

"Body Movies – Relational Architecture 6", An outdoor installation by Rafael Lozano-Hemmer in Rotterdam

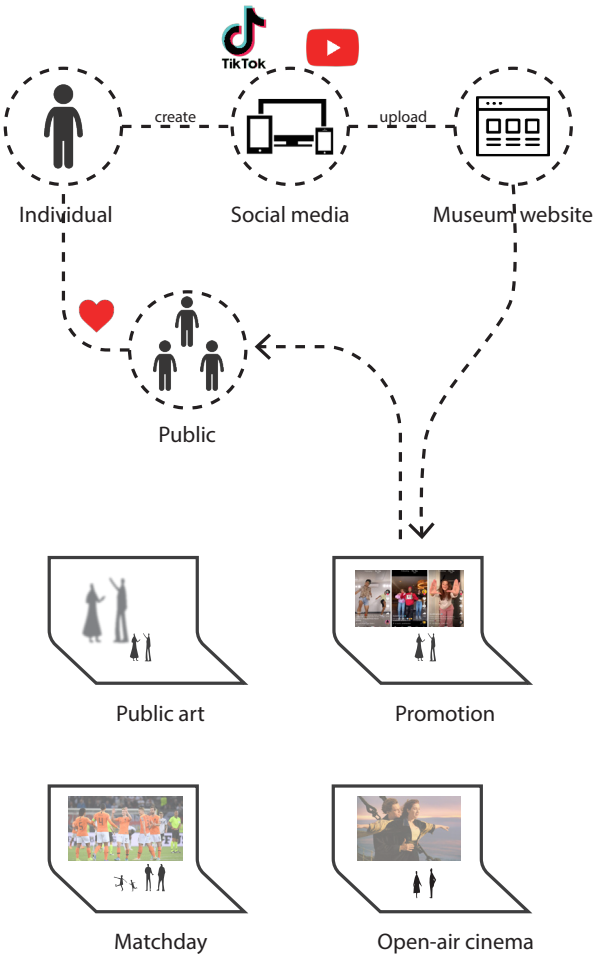


"Wave", A public media art by design company D'strict in Seoul, South Korea.

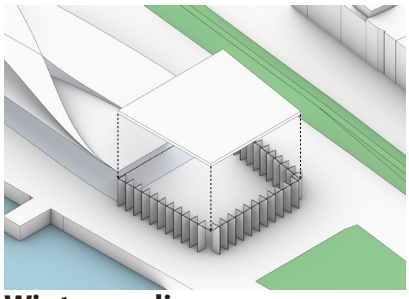
"Urban screen" is not a new word. It normally refers to the large LED billboards in shopping street which are used for advertising and address the public as consumers. But why not use it to address art? With the advance of technology, these huge screens could become interactive, serving new meda artwork, like the "wave" in Seoul. Even the "Body Movies" by Rafael, though not using a LED screen, could also be seen as an urban screen. These urban screens function as interface which not only connected art with public realm, but also mediated virtuality with physical world.



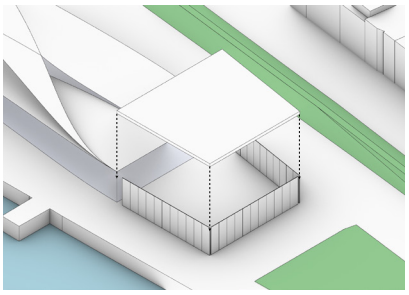
In my project, because the new media artwork needs dark space to display, typically its exhibition space does not need transparent elevation. Therefore, I propose to use the facade of gallery as "urban screen". It could serve multiple programs, like art display, open-air cinema, live concert, live football match, even used as promotion of social media account. It will attract a temporary audience of strangers who briefly engage in a playful experience with each other by public art, or motivate individuals to participate communal events.



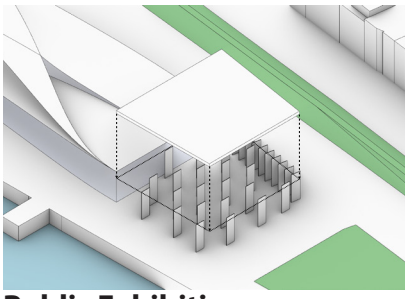
# Public Gallery



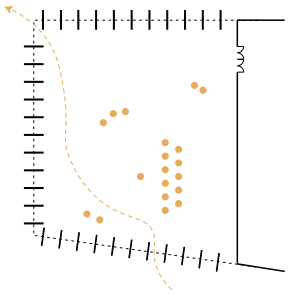
**Winter podium**

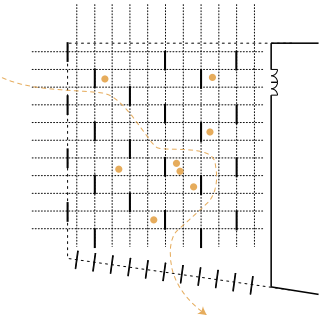


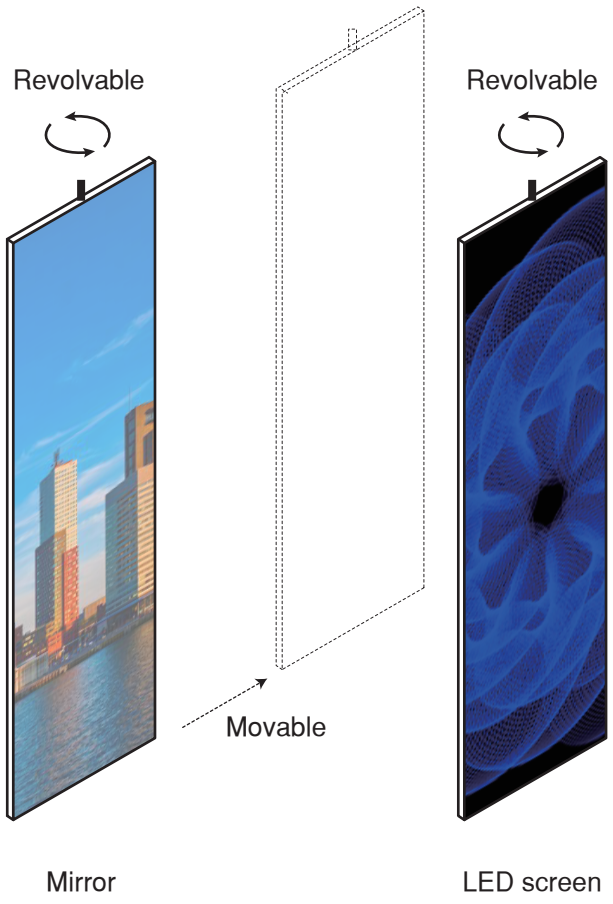
**Events**



**Public Exhibition**





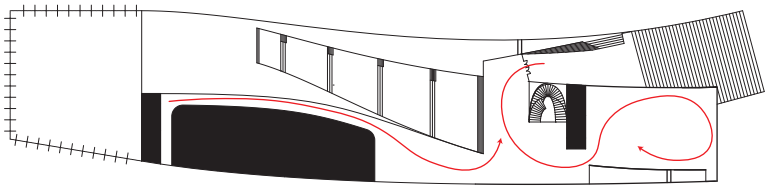



As mentioned previously, there should be a "threshold space" between museum and Balkon park in order to invite neighbours come into museum, also revitalizing public space. In my design, this threshold turns out to be a flexible pavilion space. It is enclosed by digital panels, one side mirror, the other side LED screen, with 9m high and 3m wide. All panels could move orthogonally and revolve, depending on the programs happen inside. When it is open, just like a normal public podium which is sheltered from rain and snow. When it closed, from the outside it functions as a public installtions reflecting city, and inside it could hold different public events. By moving the panels it becomes public exhibition gallery.

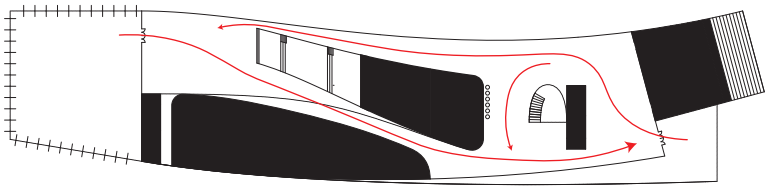
The whole space is like an invitation attracting people into museum space. Its multiplicity on function shortens the distance between public and art.

# Circulation

## Horizontal circulation

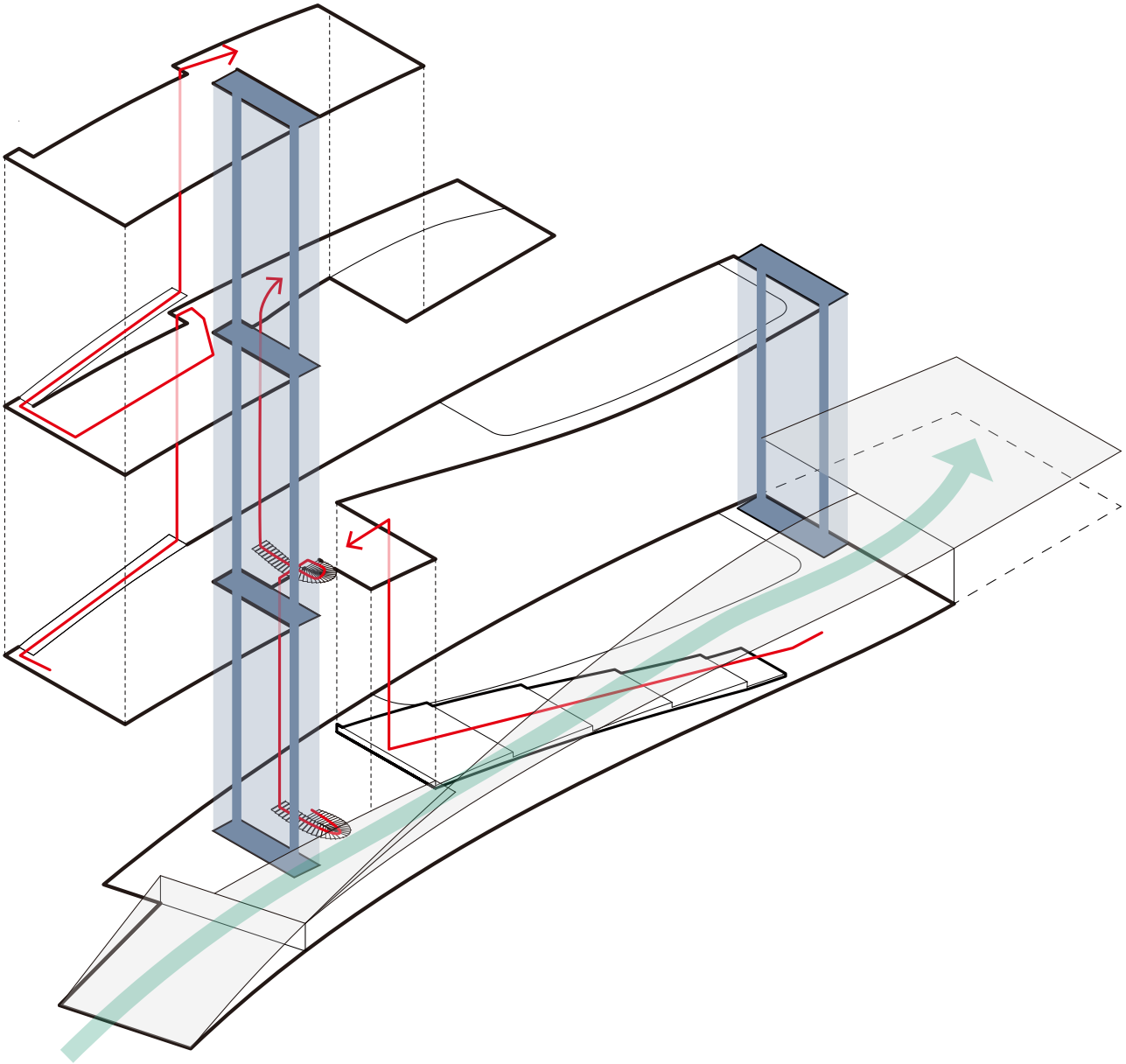


1st floor

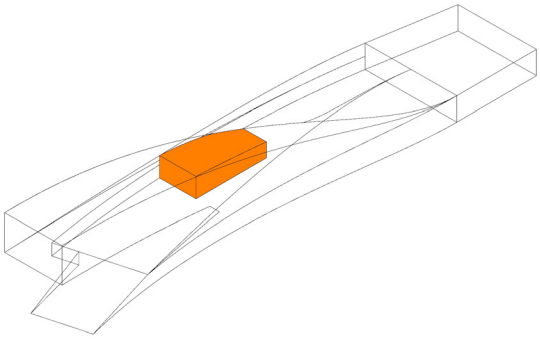


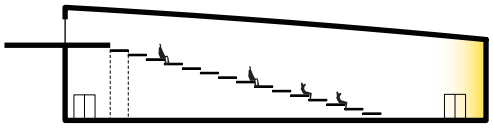
Ground floor

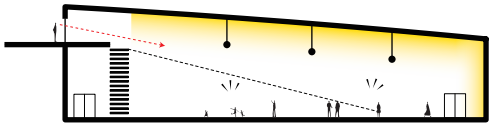
## Vertical circulation



# Special Program

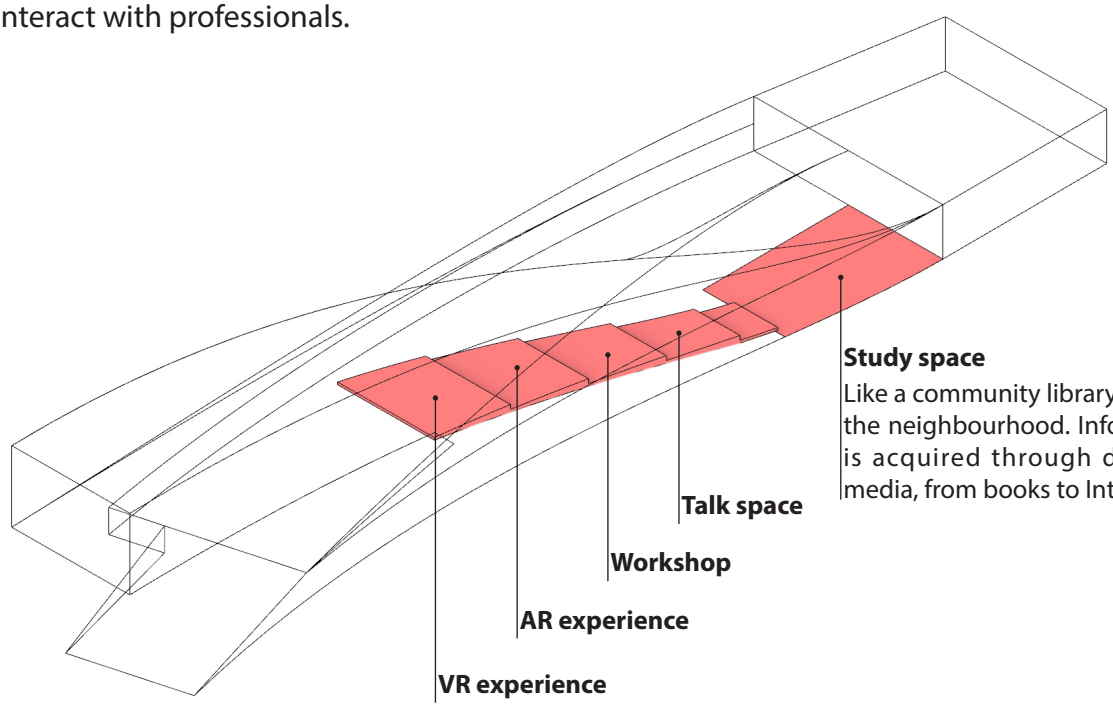




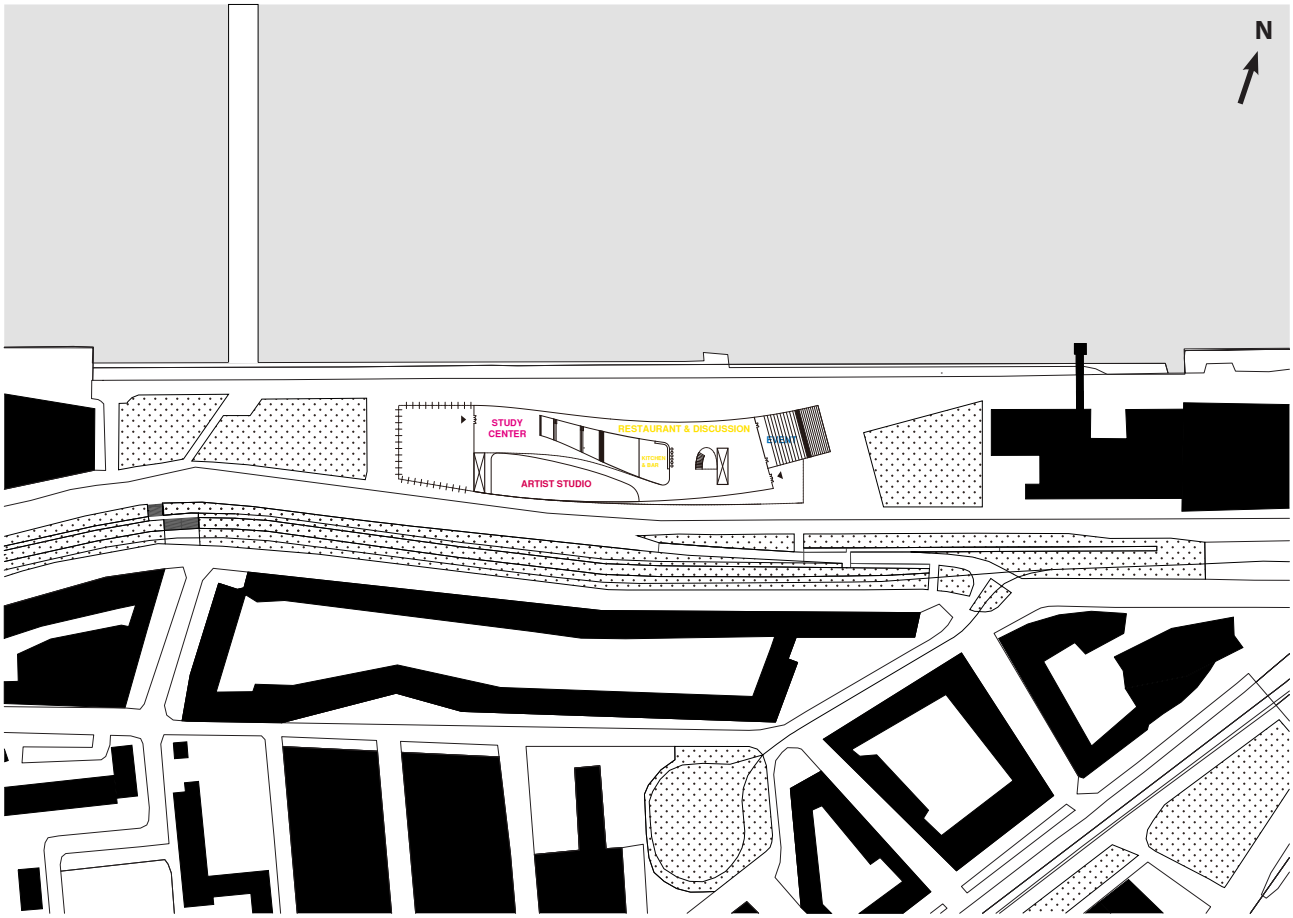


**Multifunctional hall**
Some new media artwork needs multi-storey space. By using a flexible seat system, the original cinema space could be transformed into an immersive exhibition hall, fitting multiple purposes.

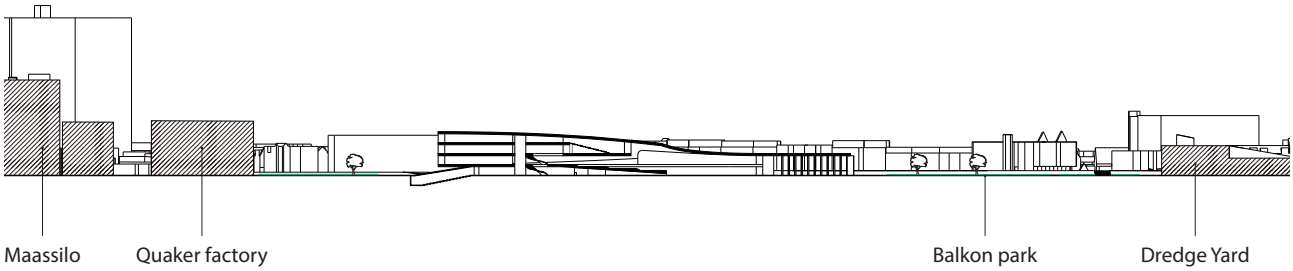
**Public gallery**
The biggest open circulation space functions as public gallery mediating curators, artists and visitors. Containing experience programs for public to explore new media, education programs allowing unprofessionals to practice and interact with professionals.



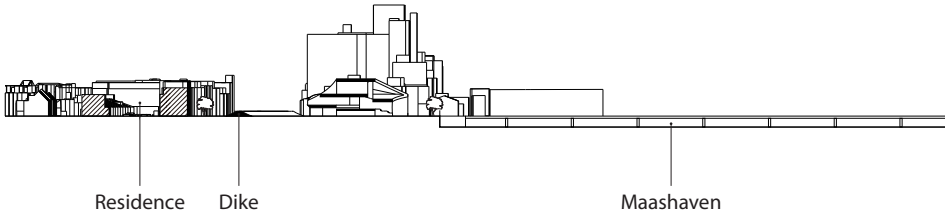
# Nolli Plan




# Cityscape Section

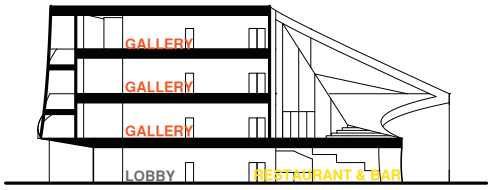



**East-West**

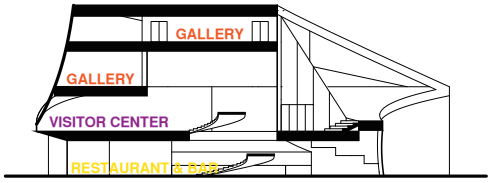



**South-North**

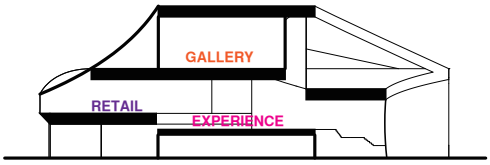
# Section



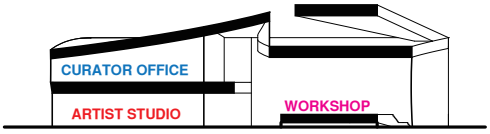

1-2 section




2-2 section

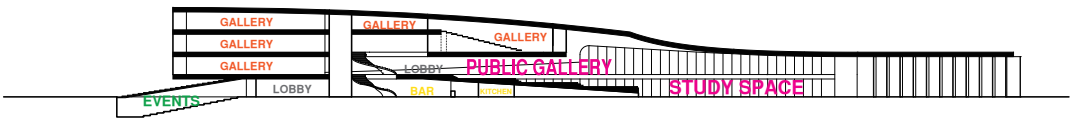



3-3 section




4-4 section

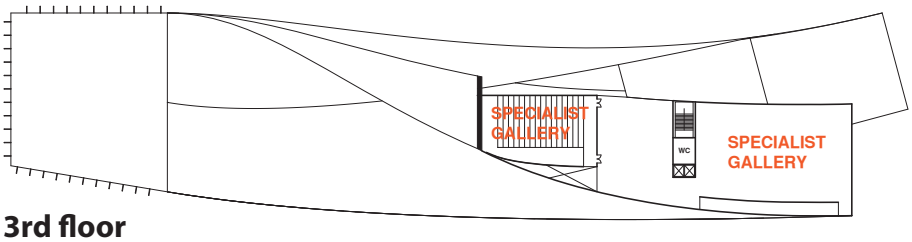
A-A section



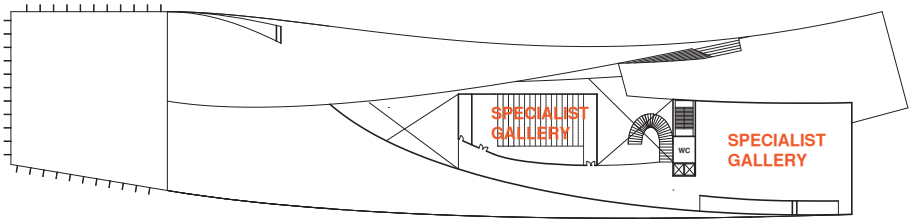

B-B section

# Floor Plan

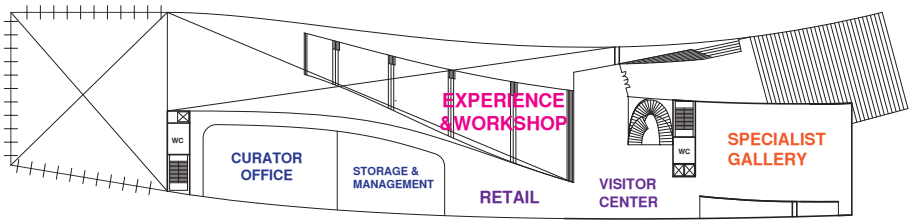
0m 10m 30m 80m



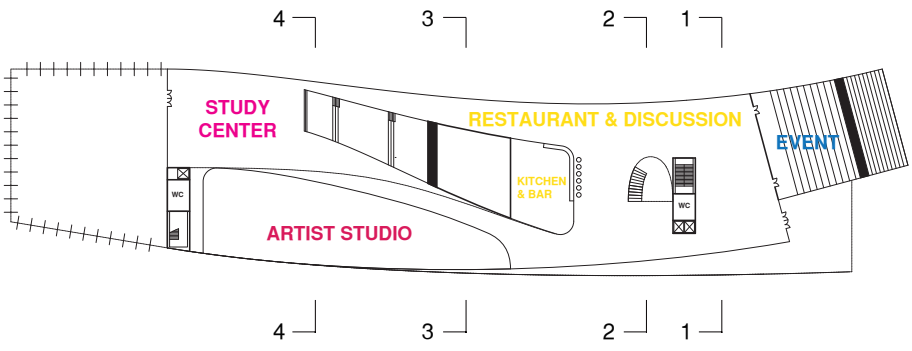

3rd floor




2nd floor

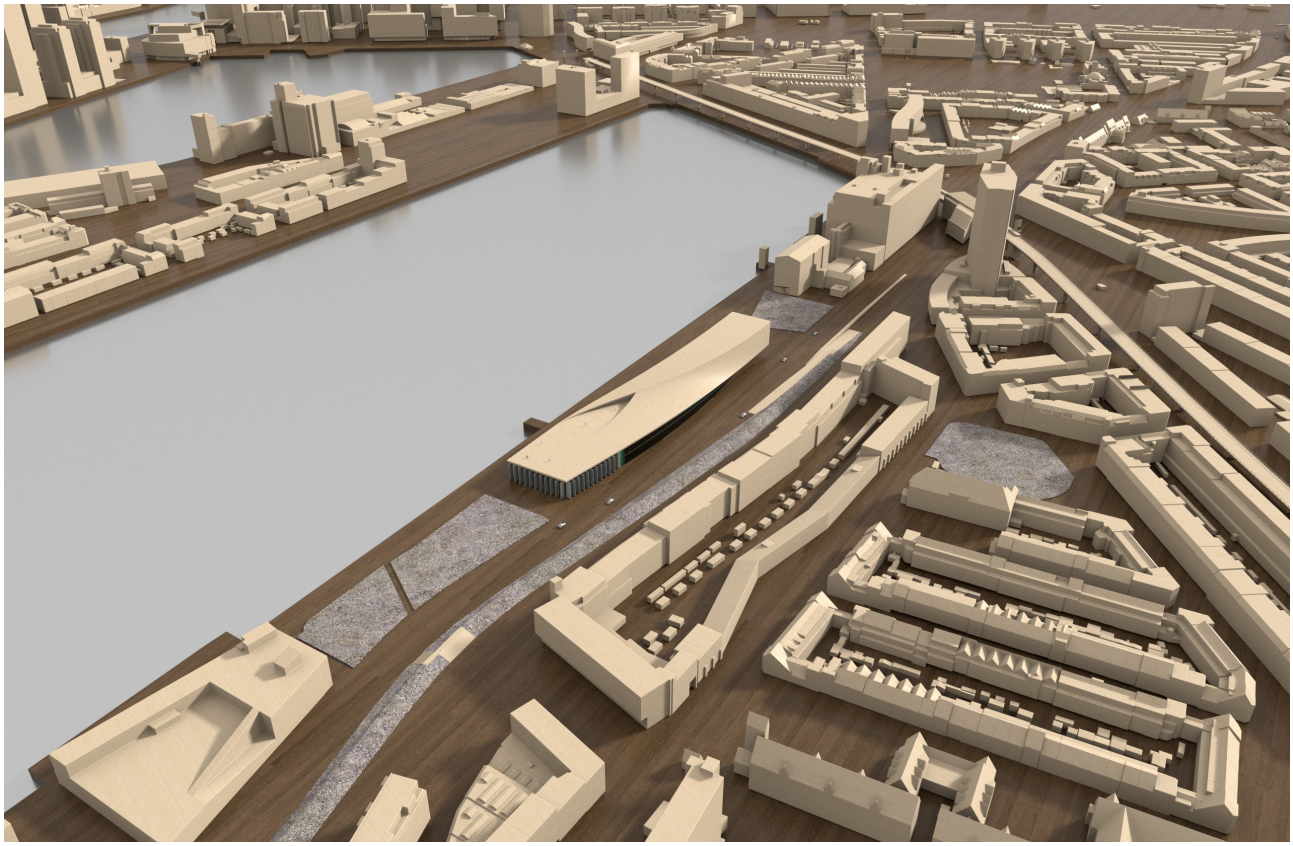


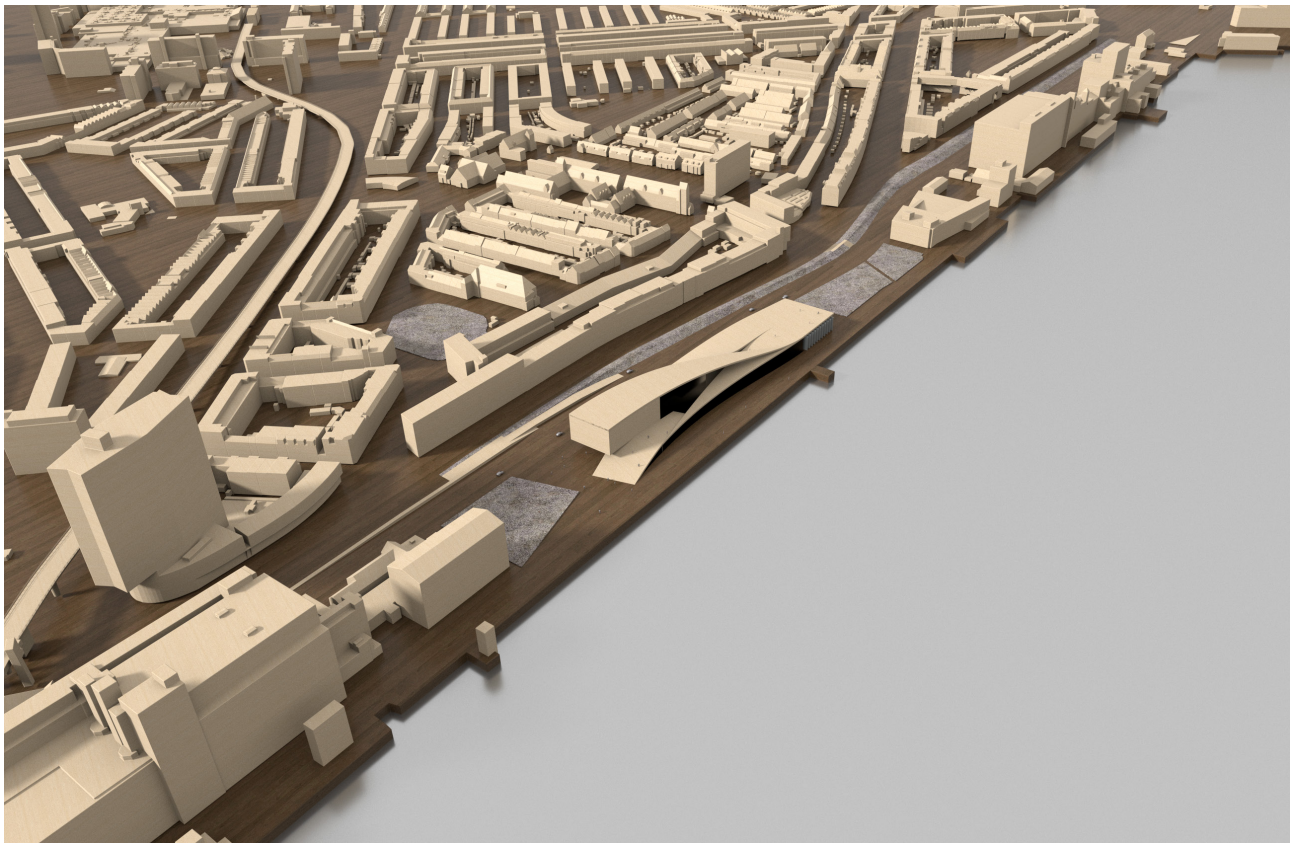

1sd floor



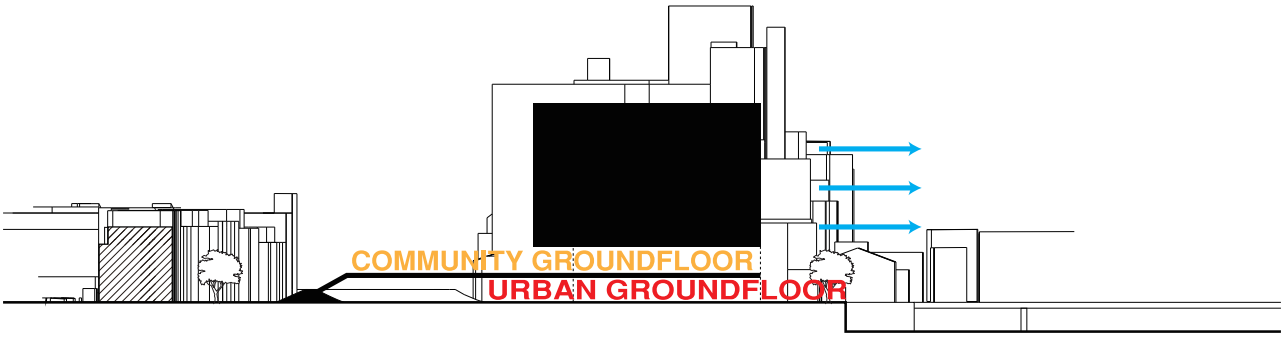

Ground floor

# 3D model

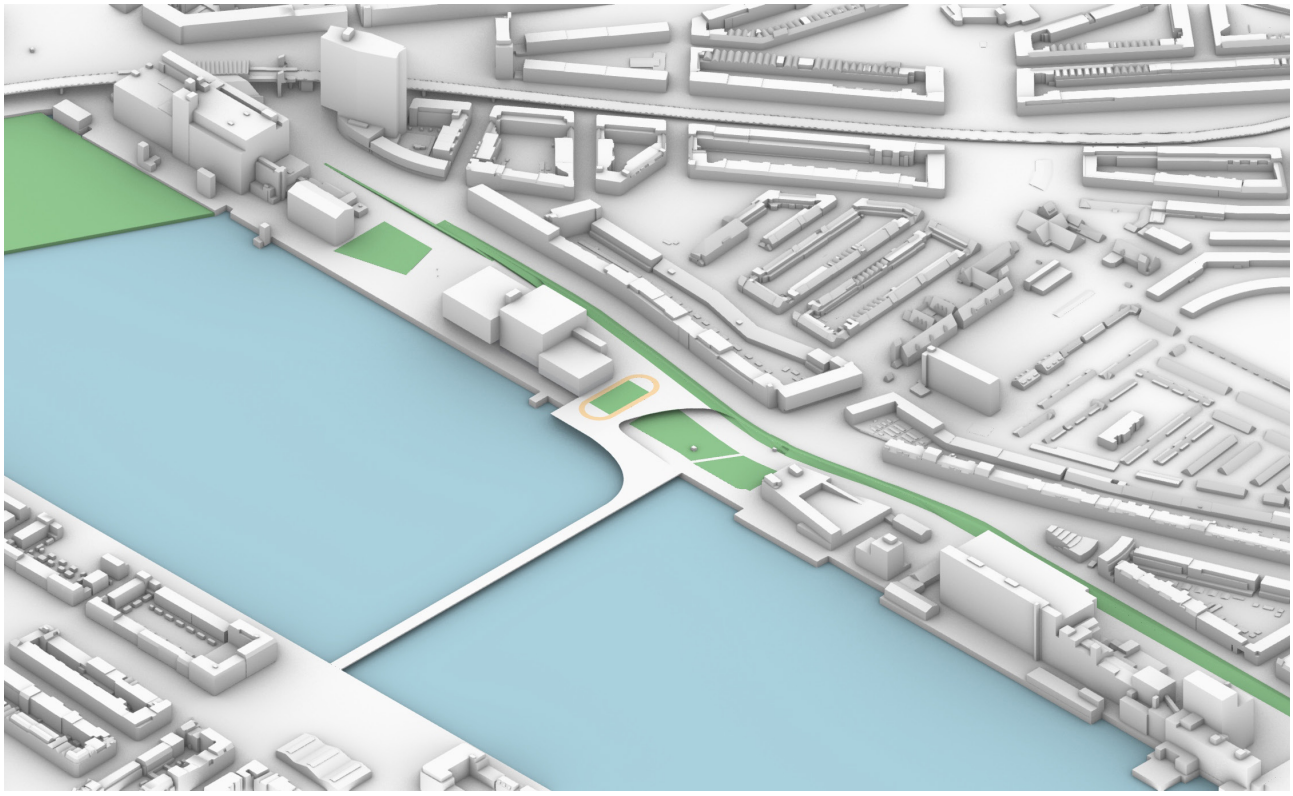


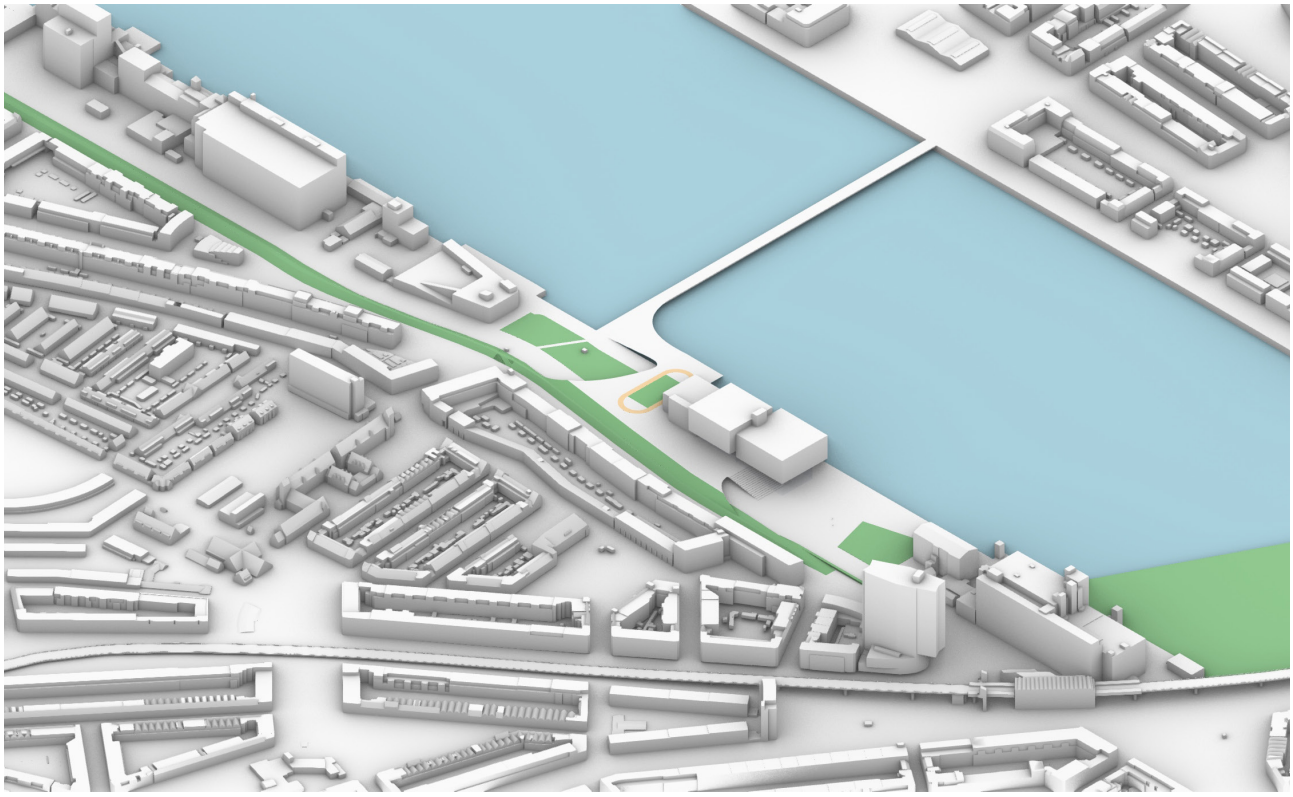


Waterfront section

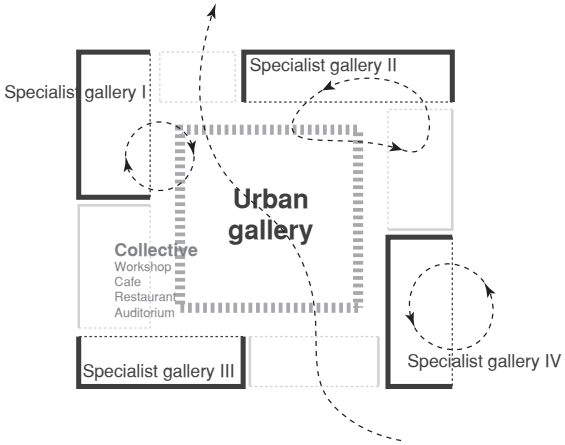



Contextual section

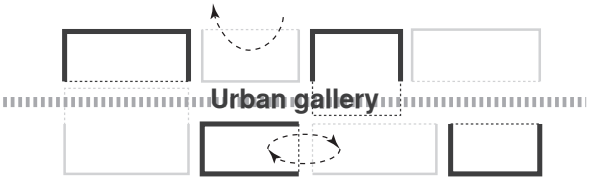




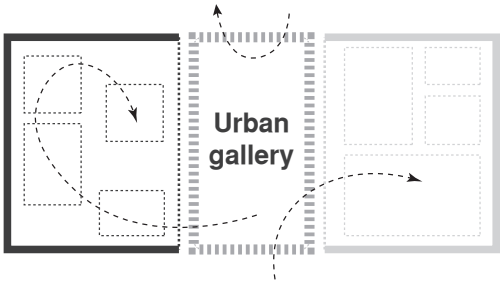
# Spatial prototype



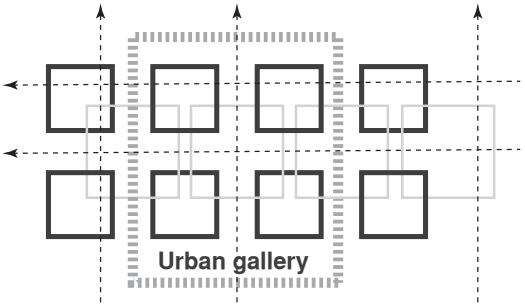

Conurbation




Enfilade

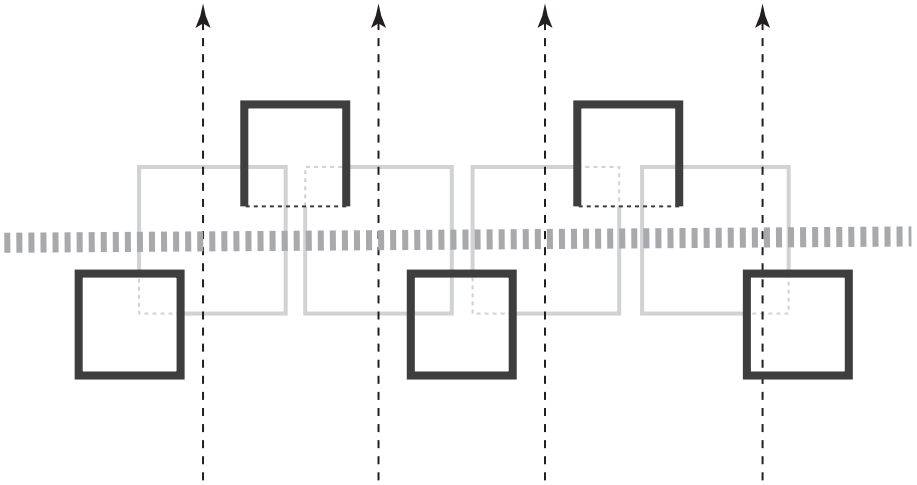


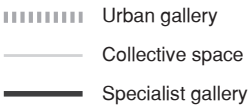

Juxtaposition

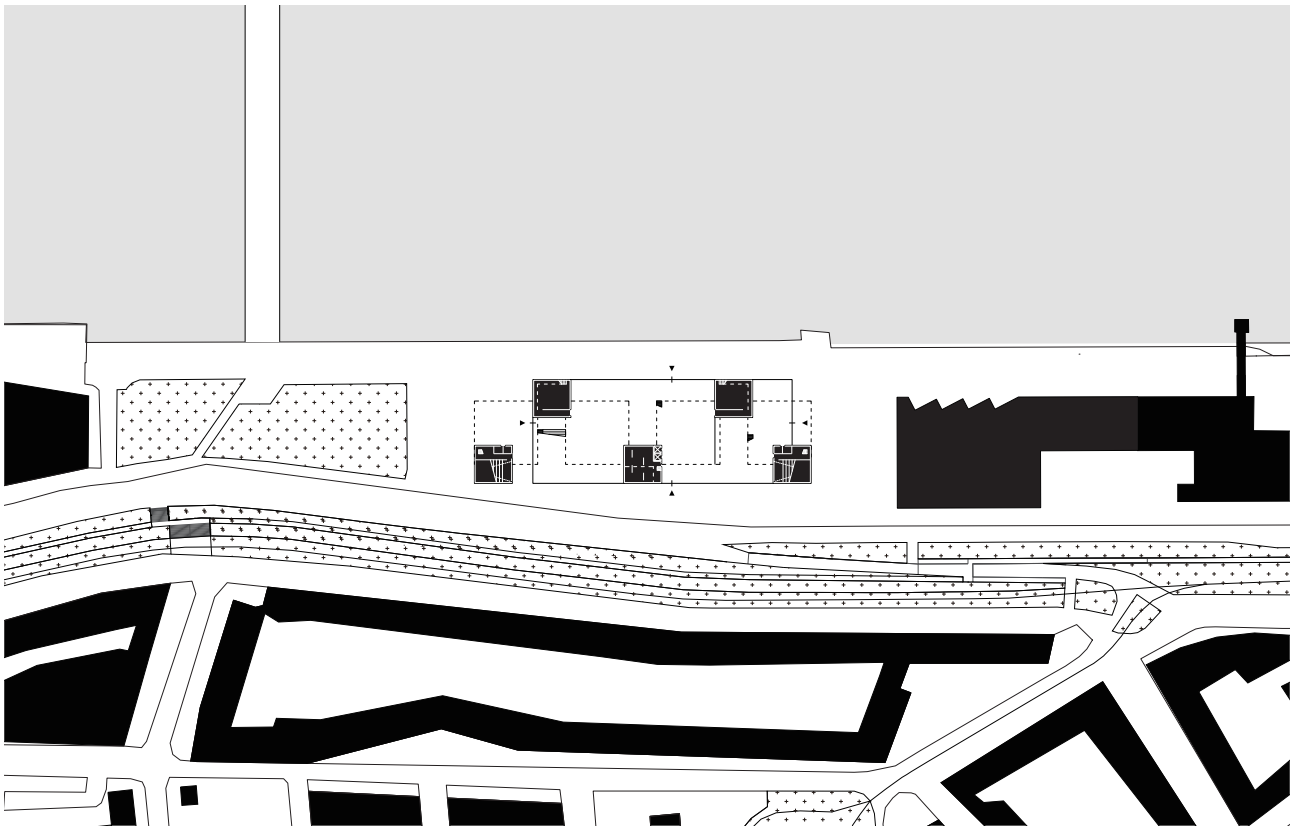


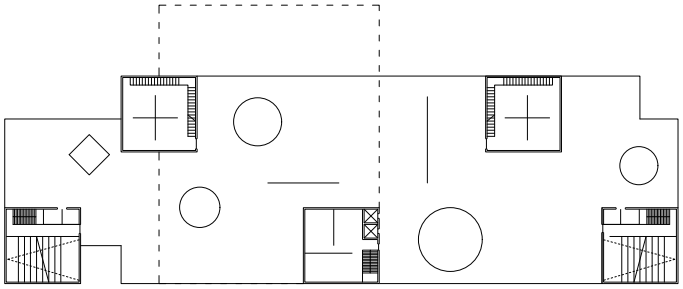

Superimposition

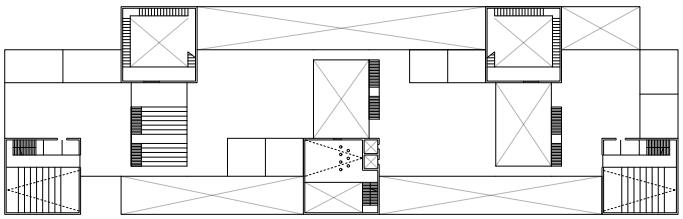
# Proposed prototype

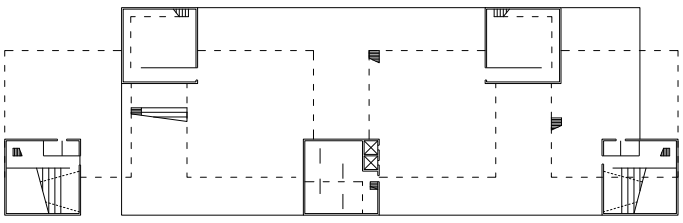


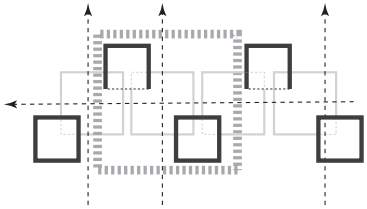




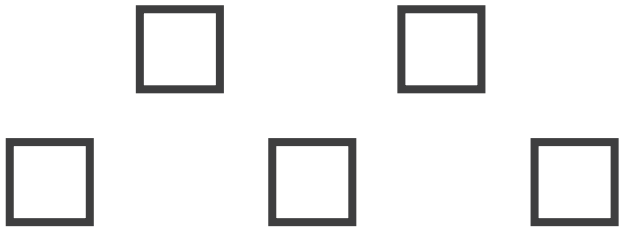


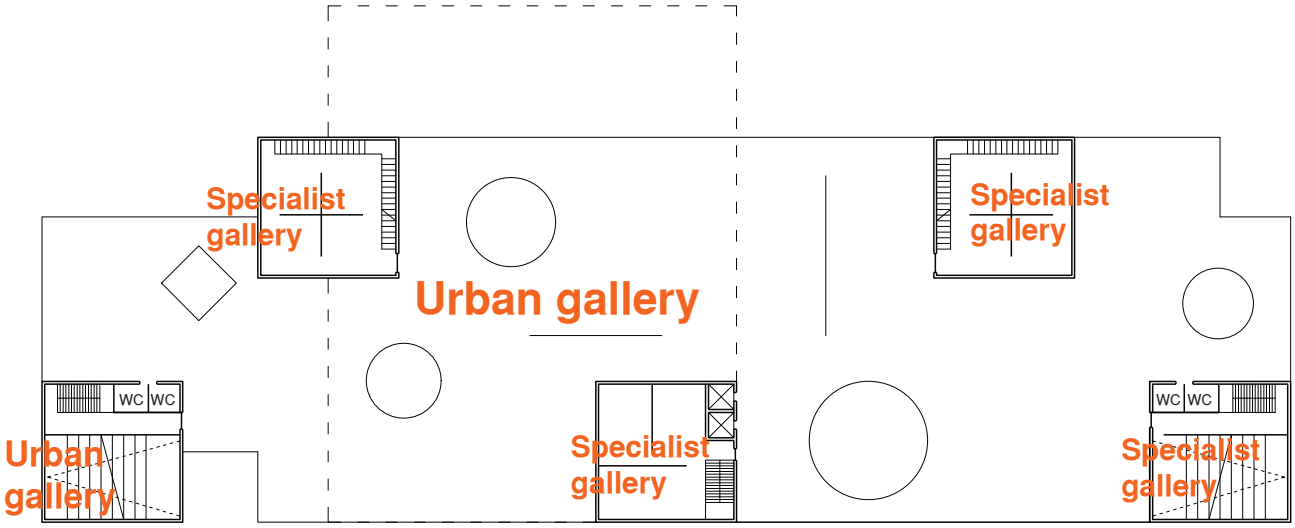




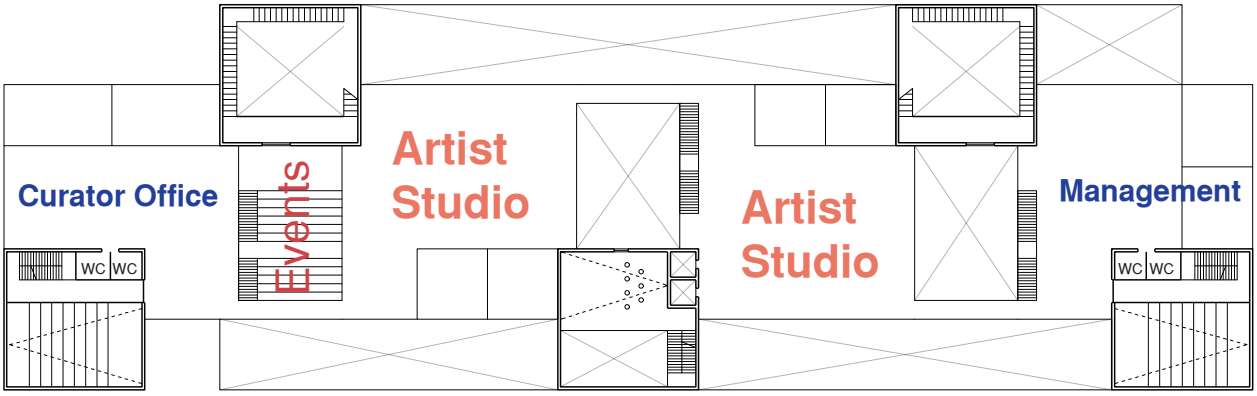


## Program

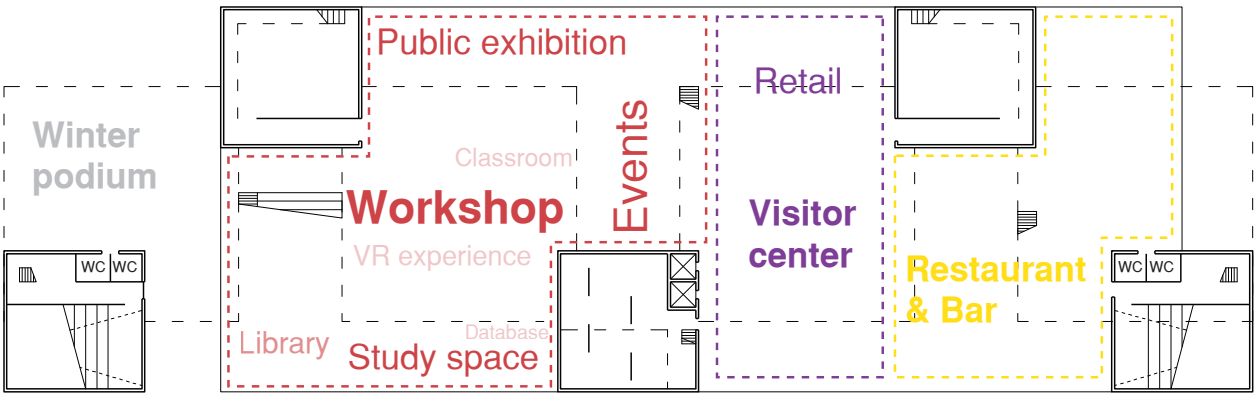





Roof balcony

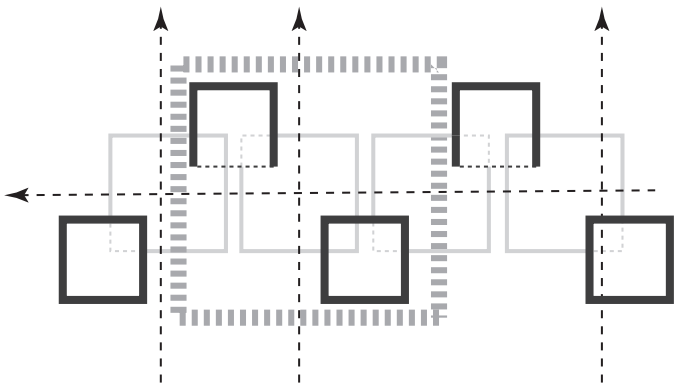


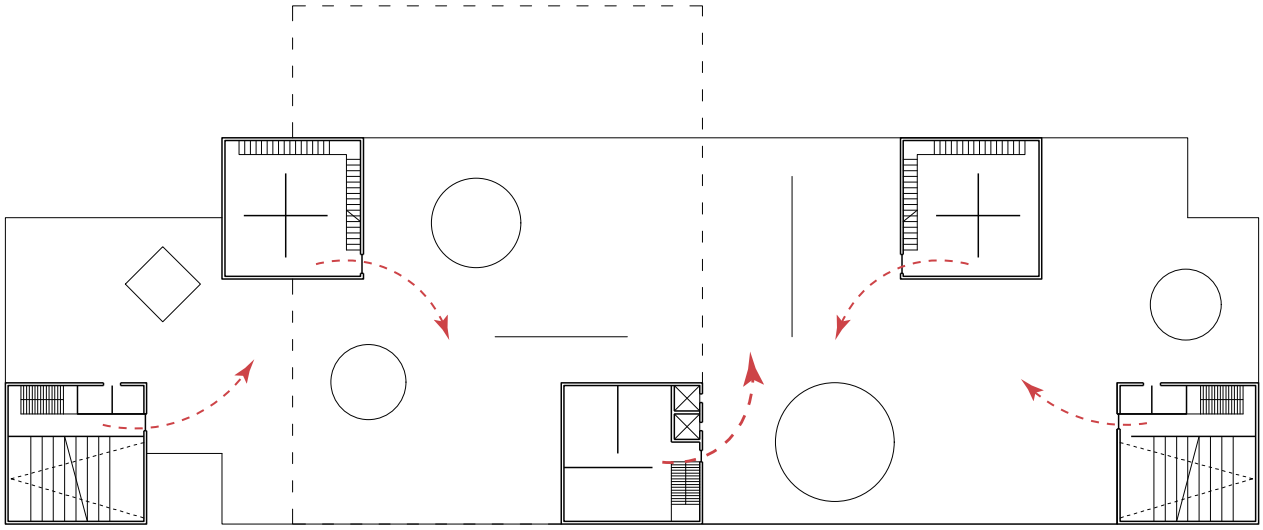

First floor



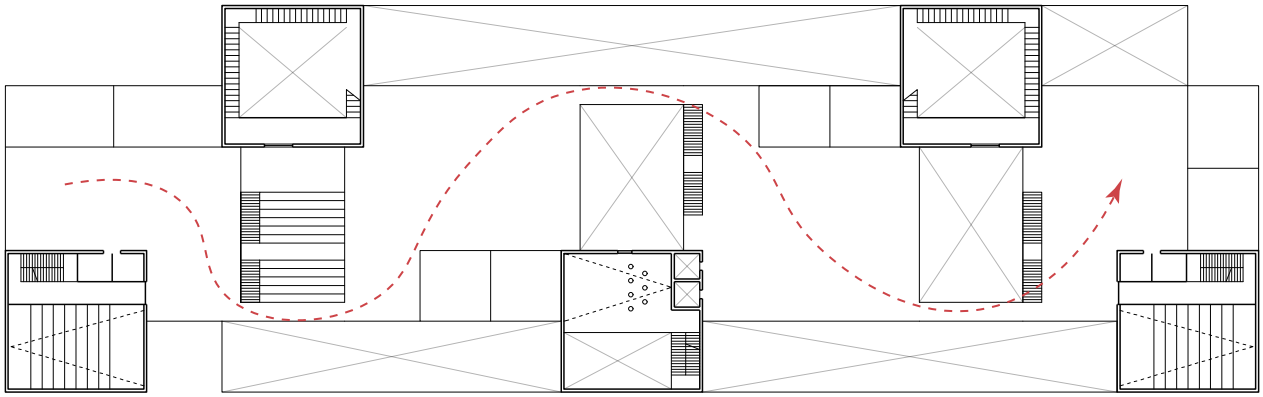

Ground floor

# Circulation

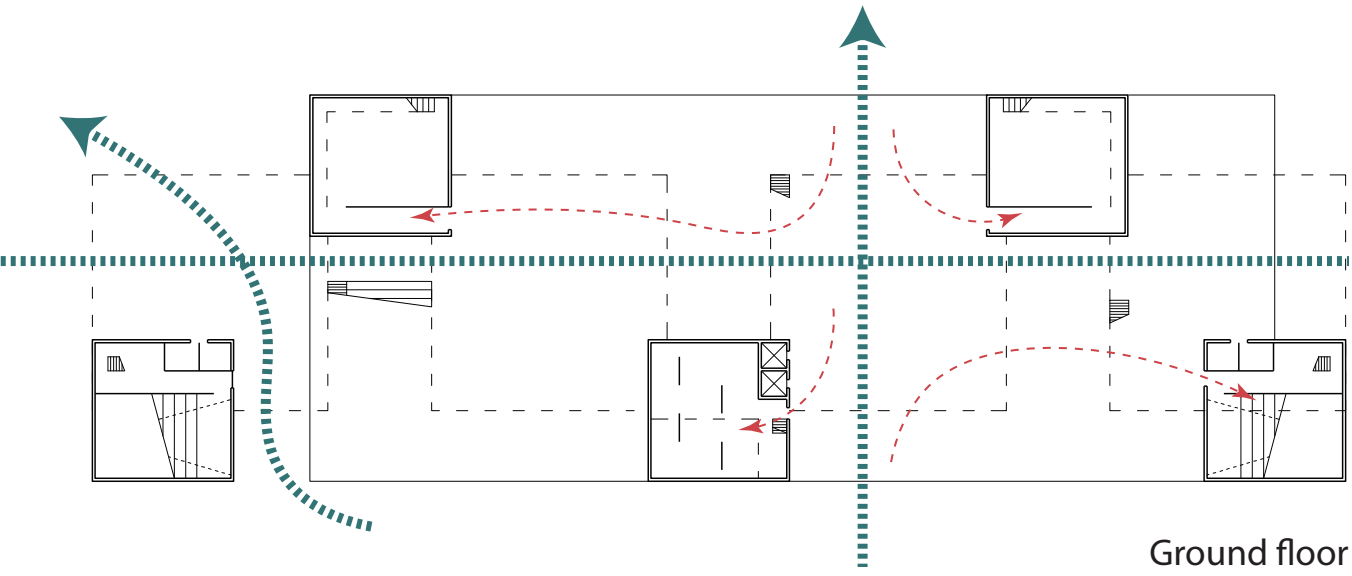




Roof balcony

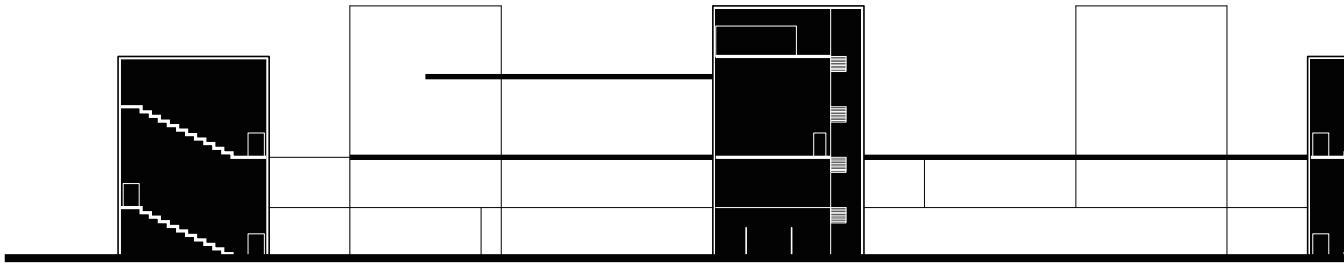


First floor

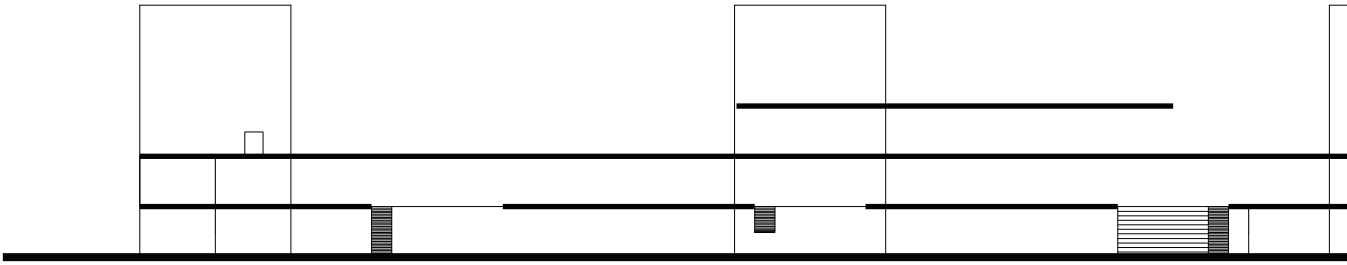


Ground floor

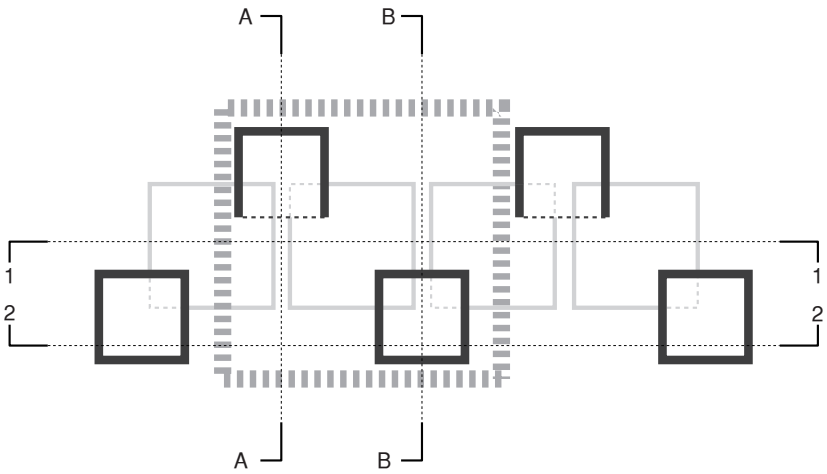
# Section

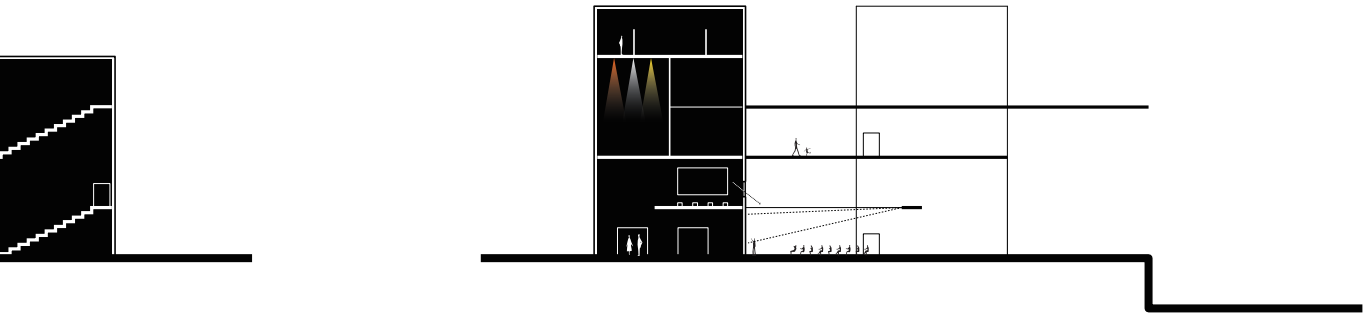


2-2 Section

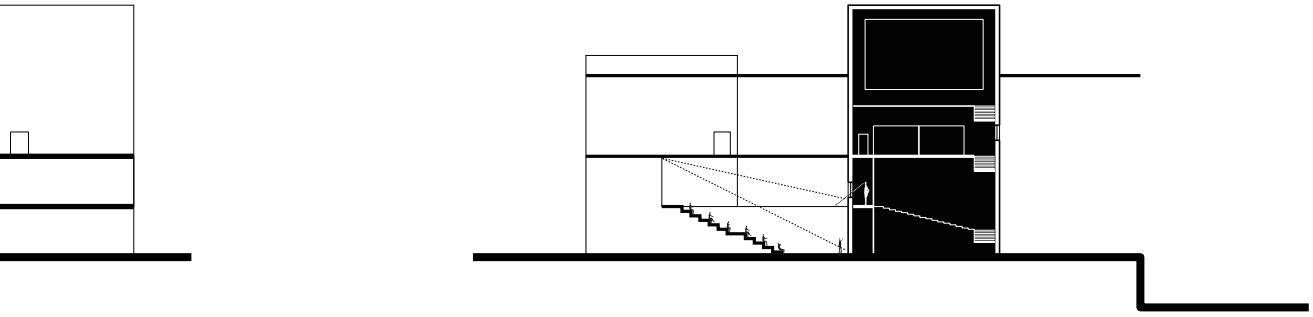


1-1 Section

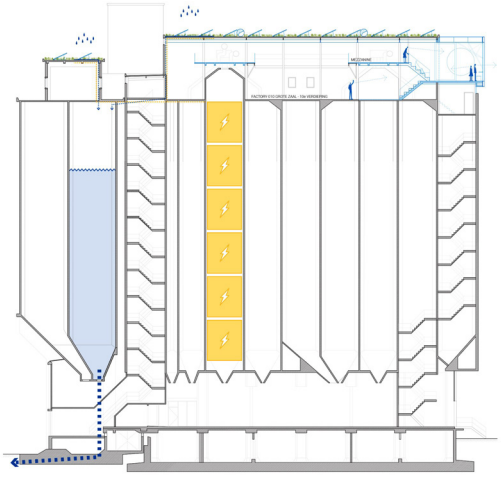


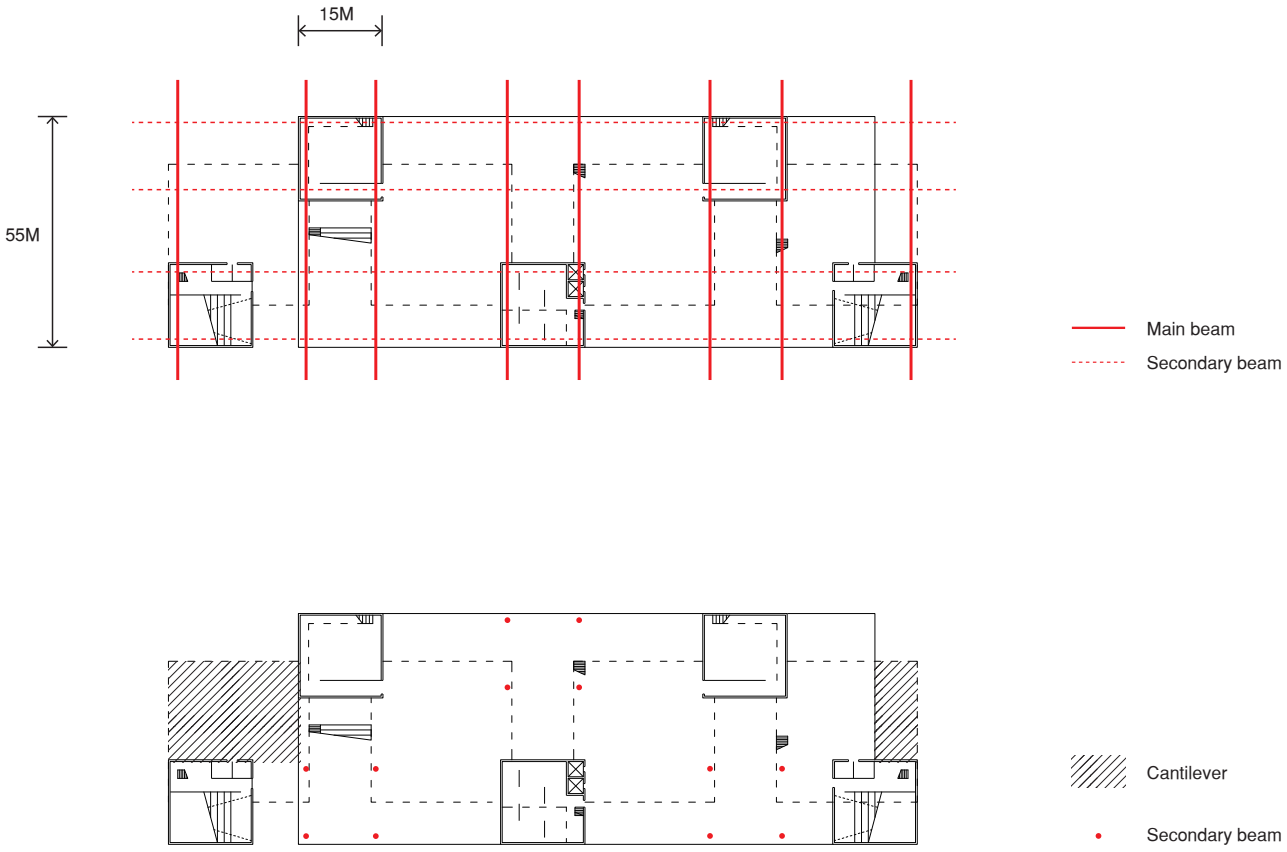


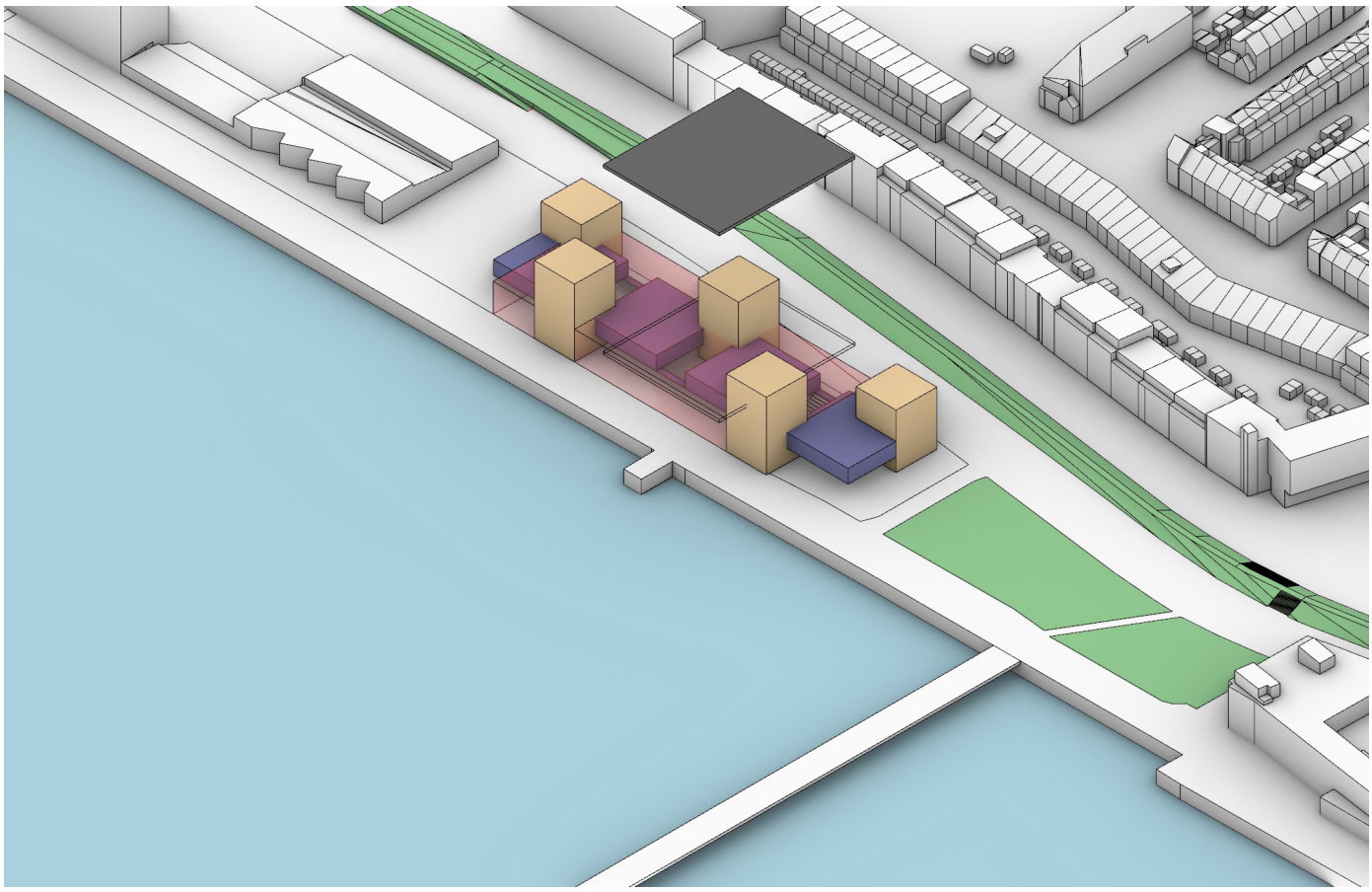
B-B Section

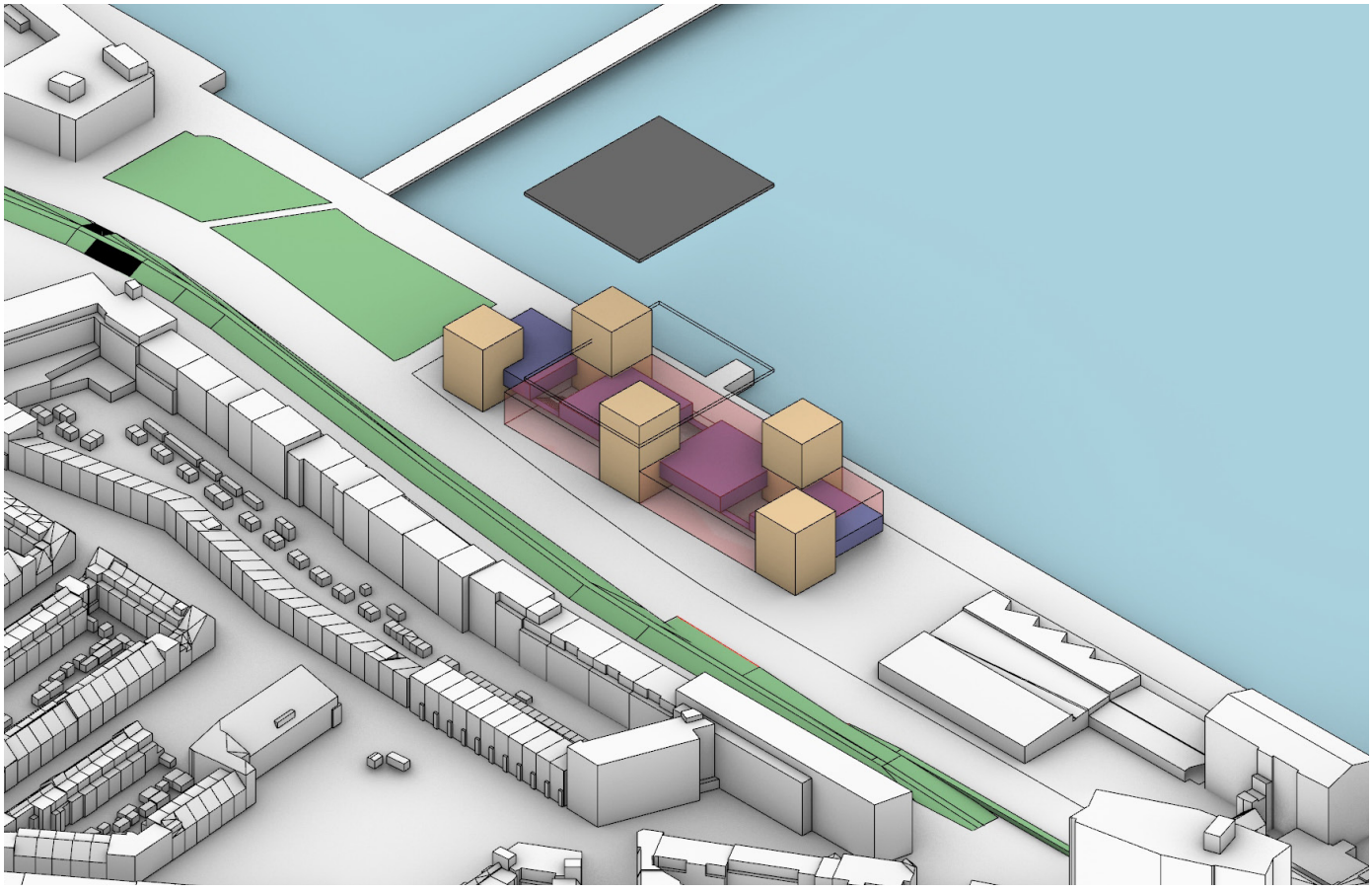


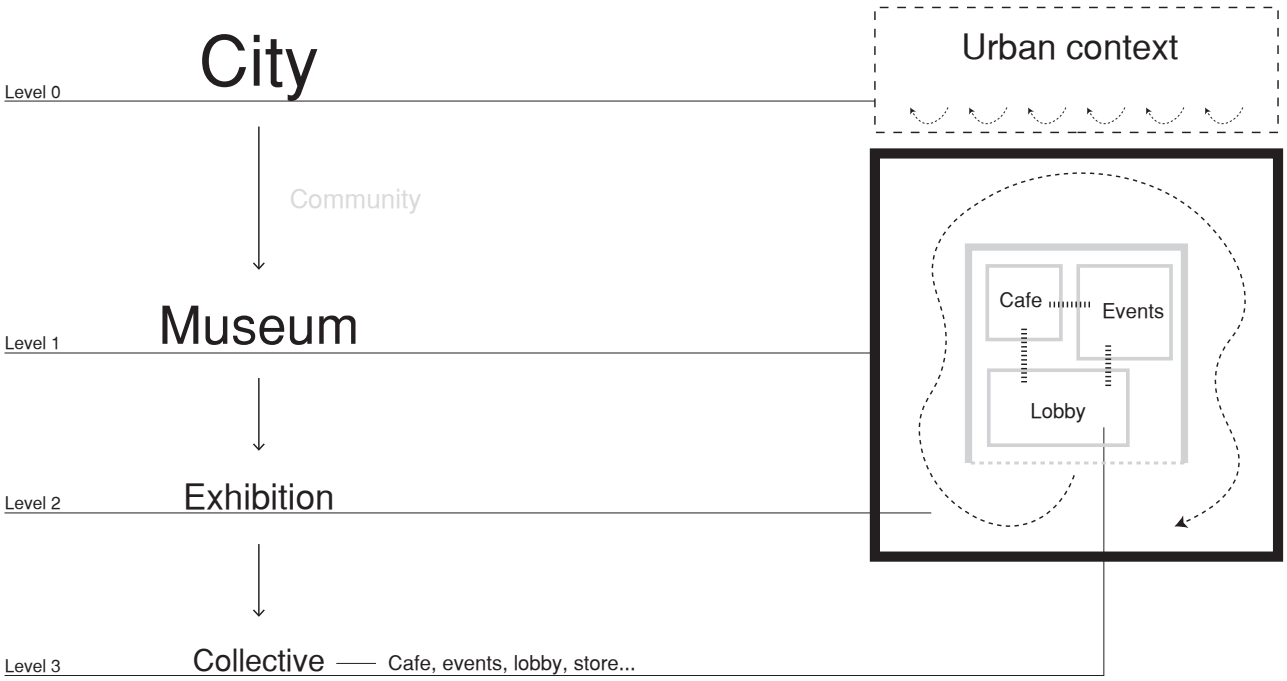
A-A Section

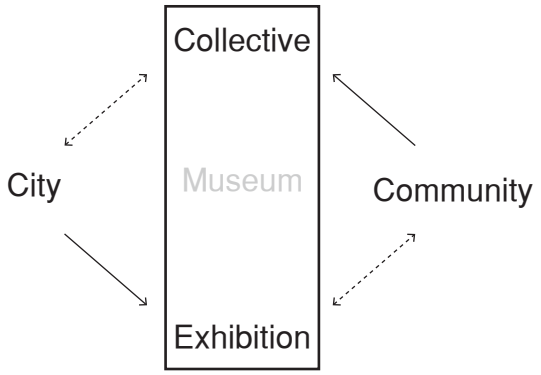


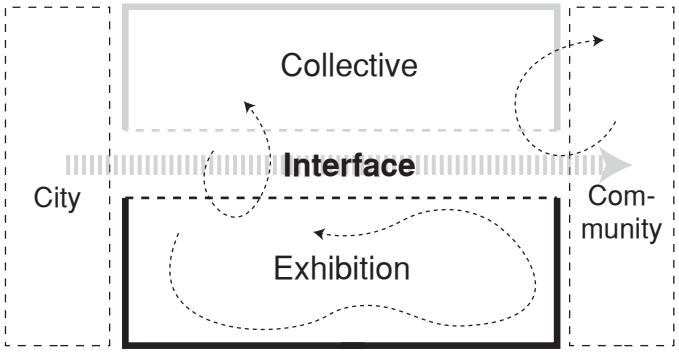

15M
55M
Main beam
Secondary beam
Cantilever
Secondary beam

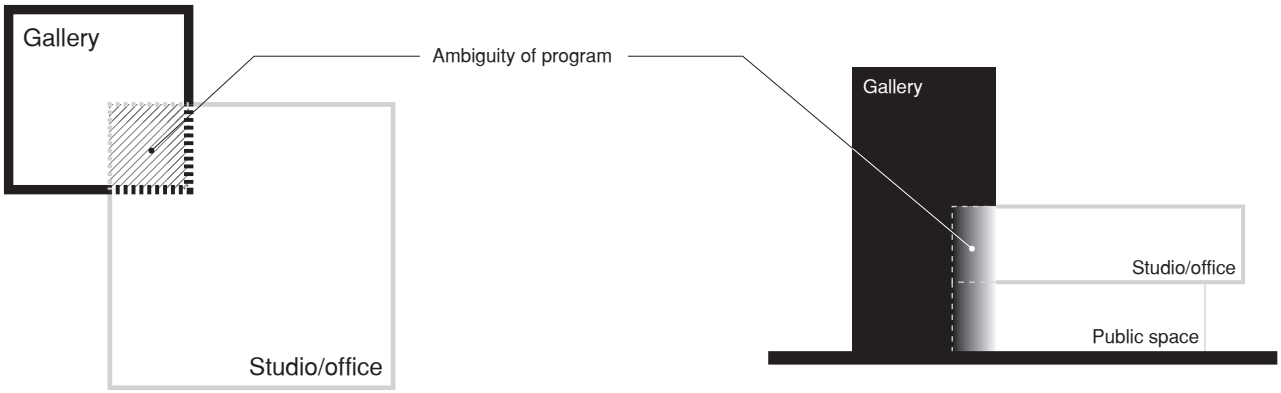


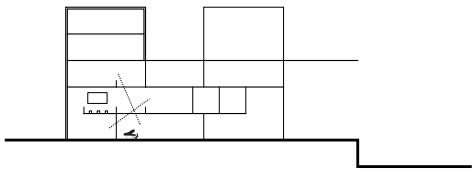


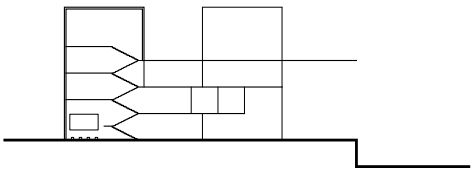

City
Level 0
Urban context
Community
Museum
Level 1
Cafe
Events
Lobby
Exhibition
Level 2
Collective
Level 3
Cafe, events, lobby, store...

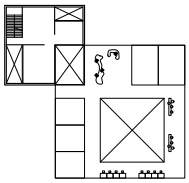

Collective
City
Museum
Community
Exhibition

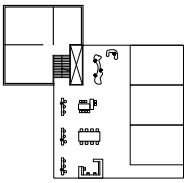

Collective
Interface
City
Com-
munity
Exhibition

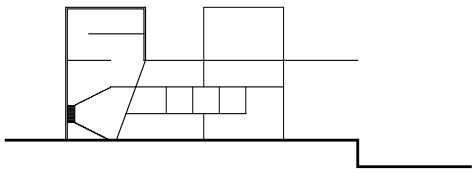

Gallery
Ambiguity of program
Studio/office
Gallery
Studio/office
Public space

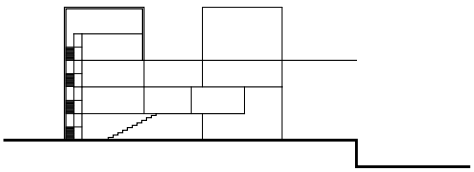


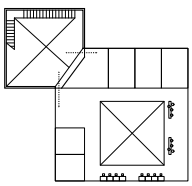


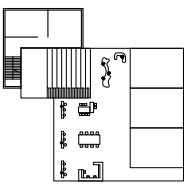


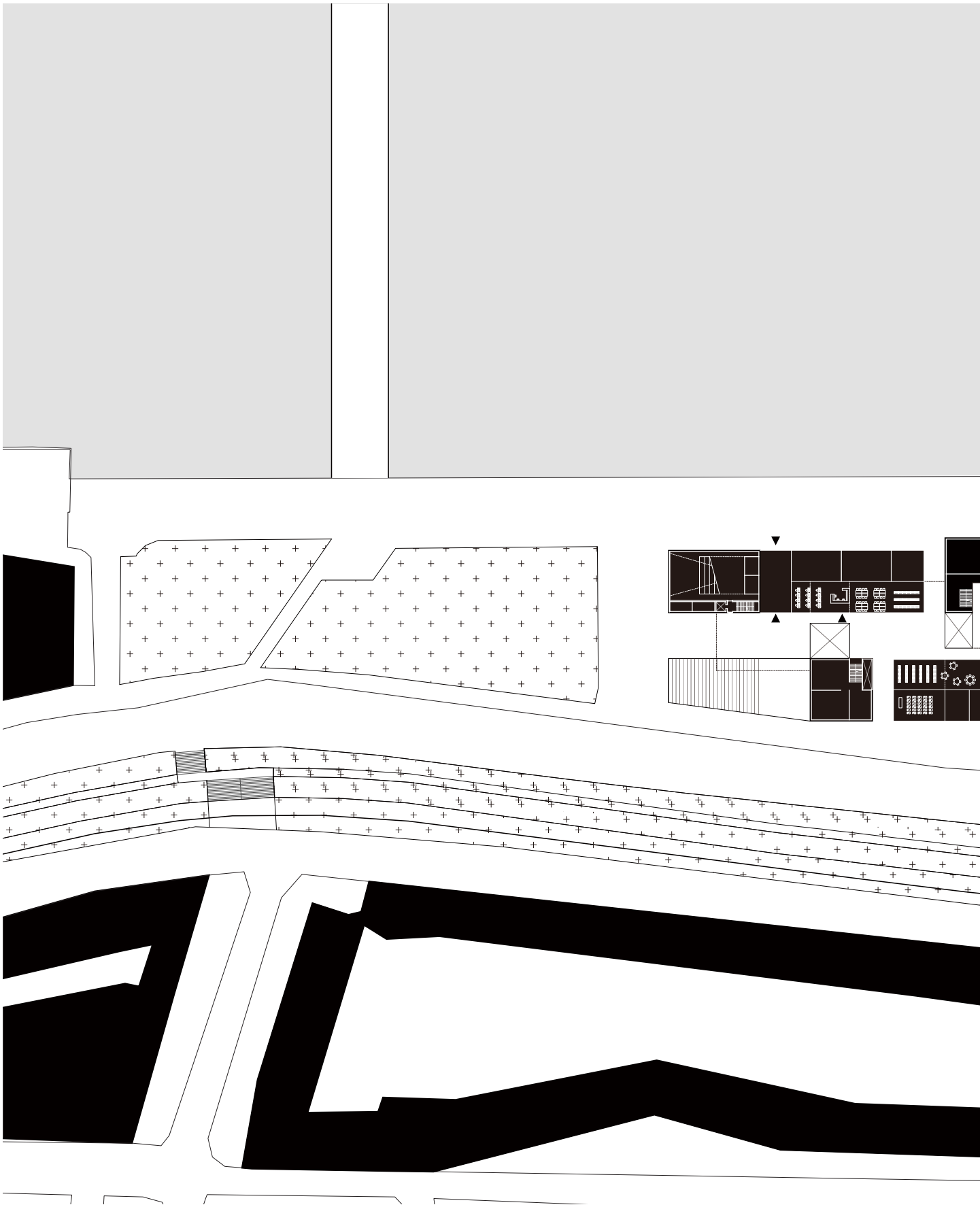


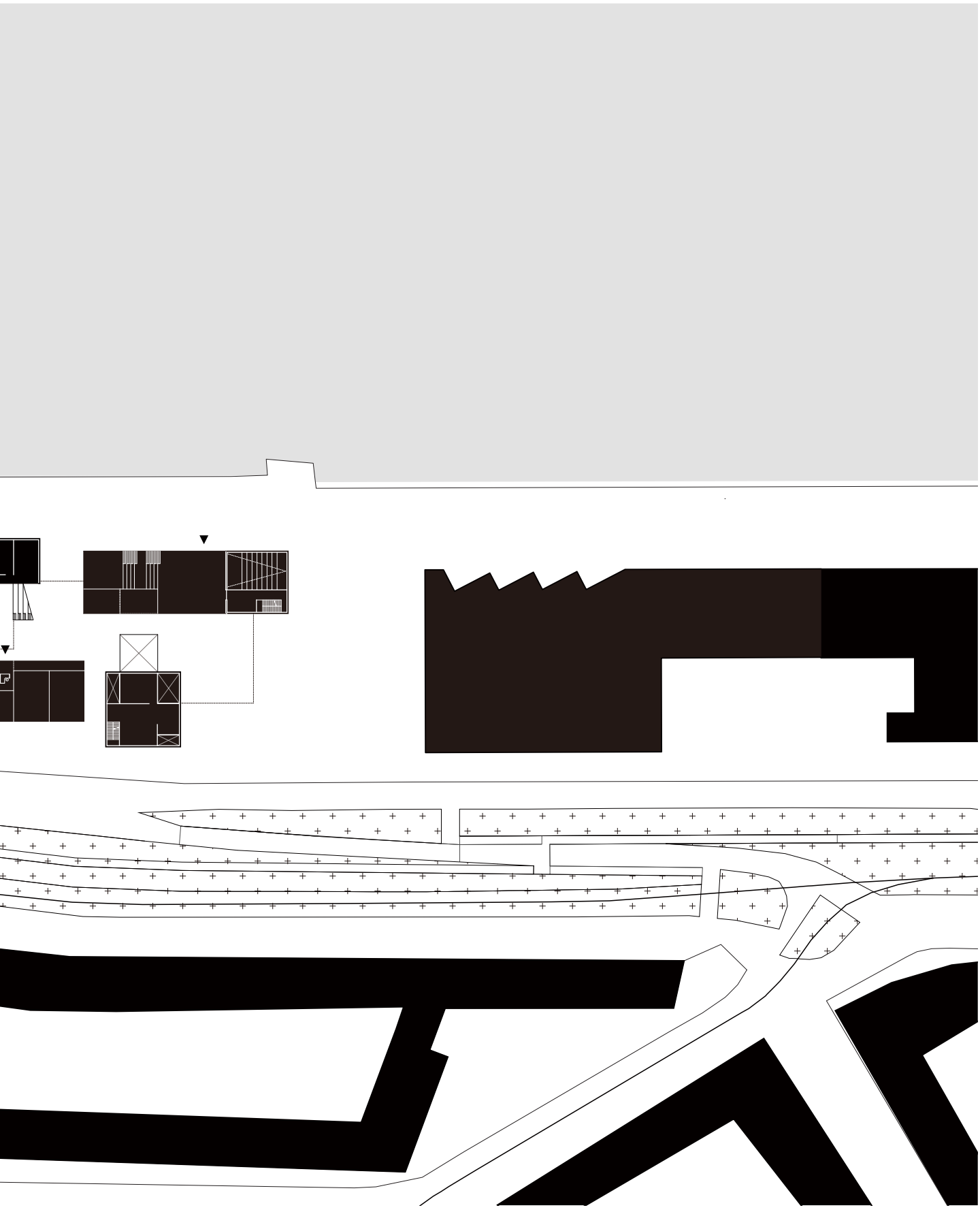


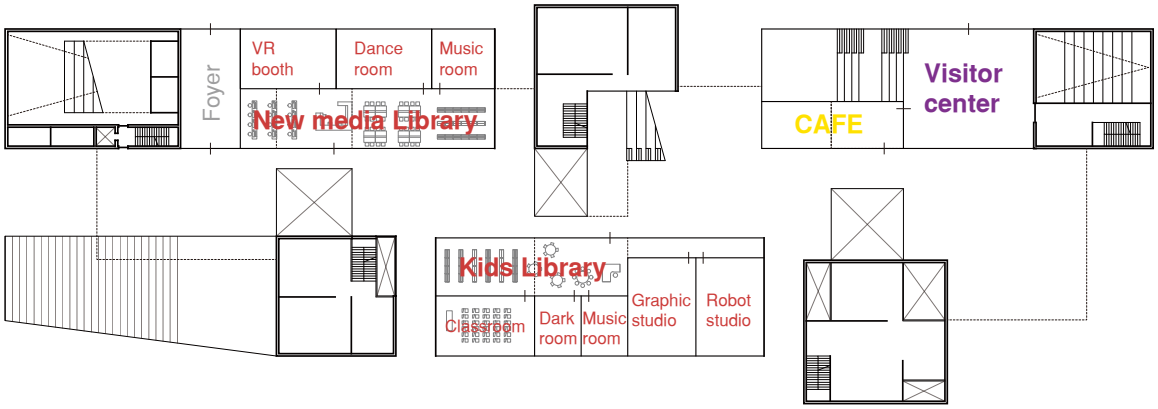




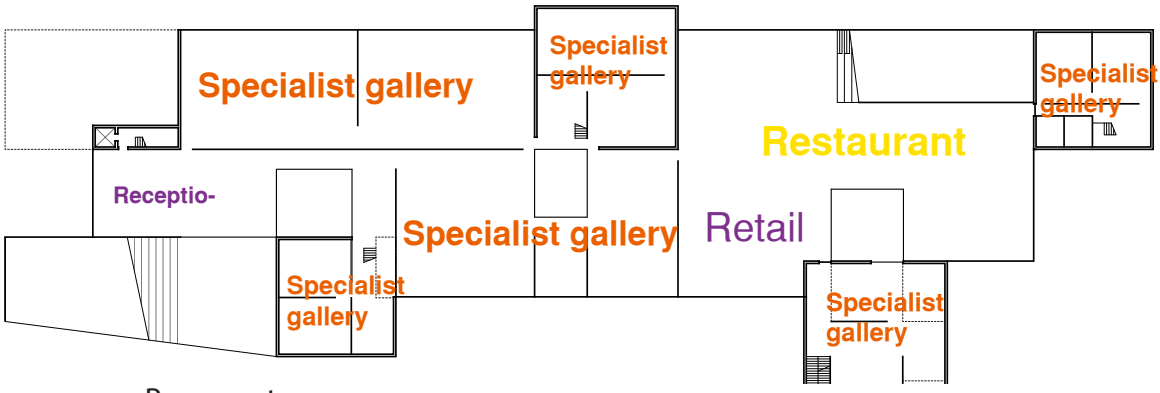




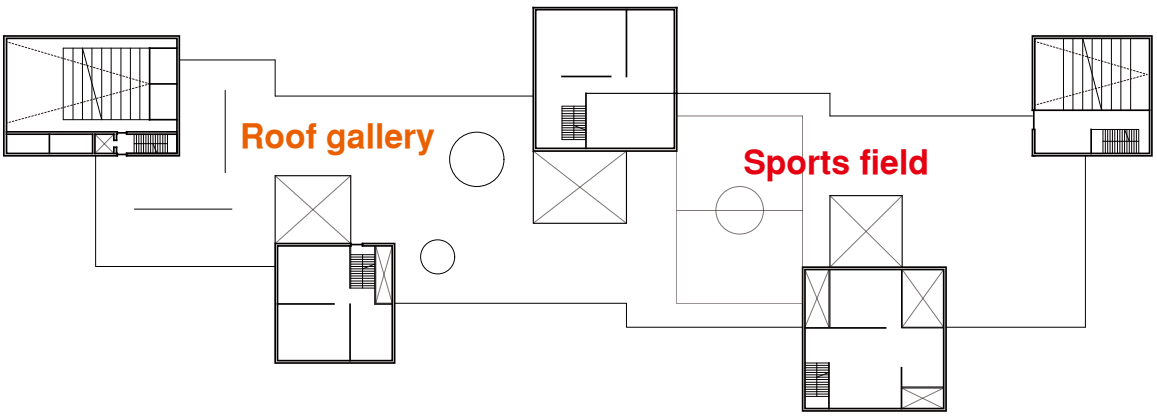




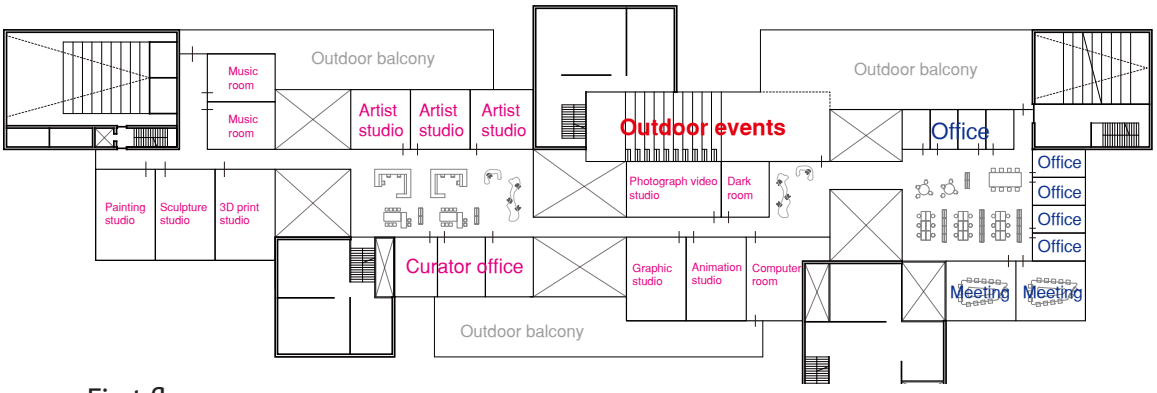

Ground floor



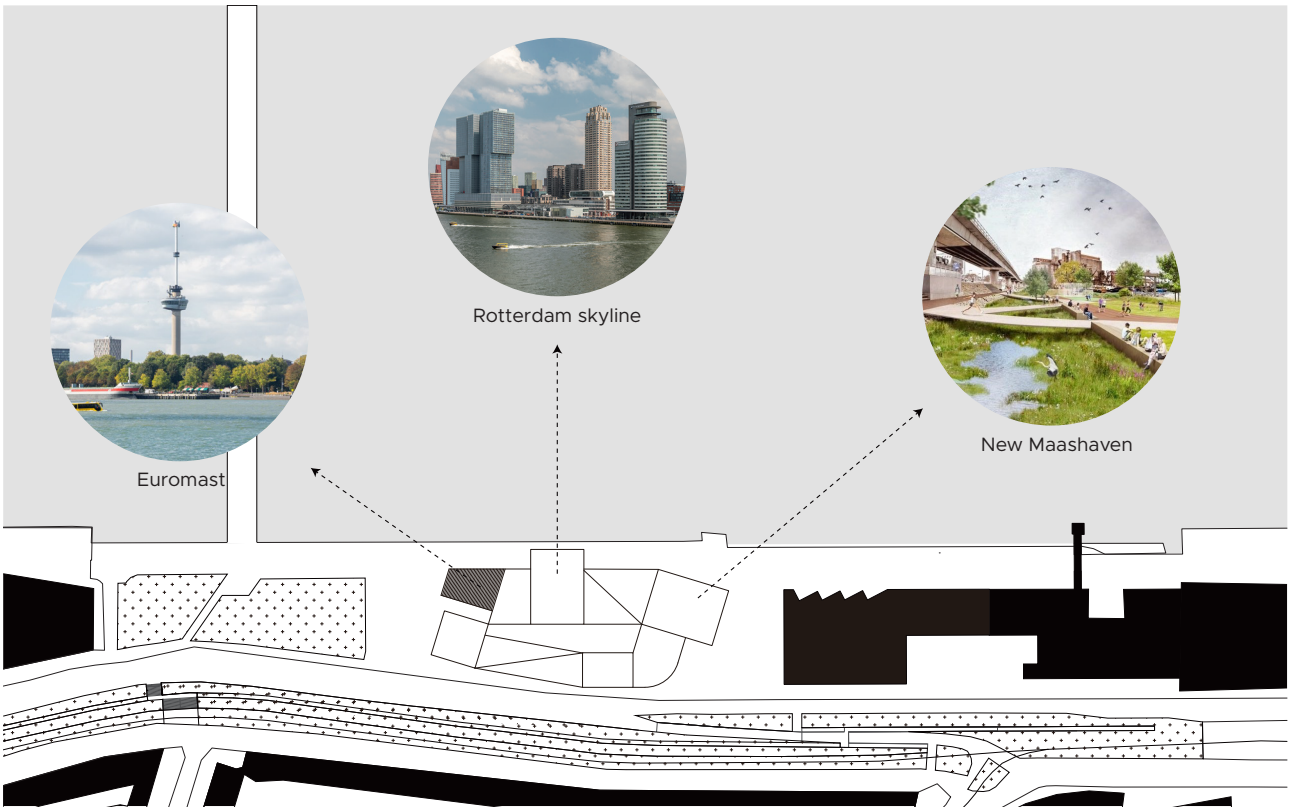

Basement

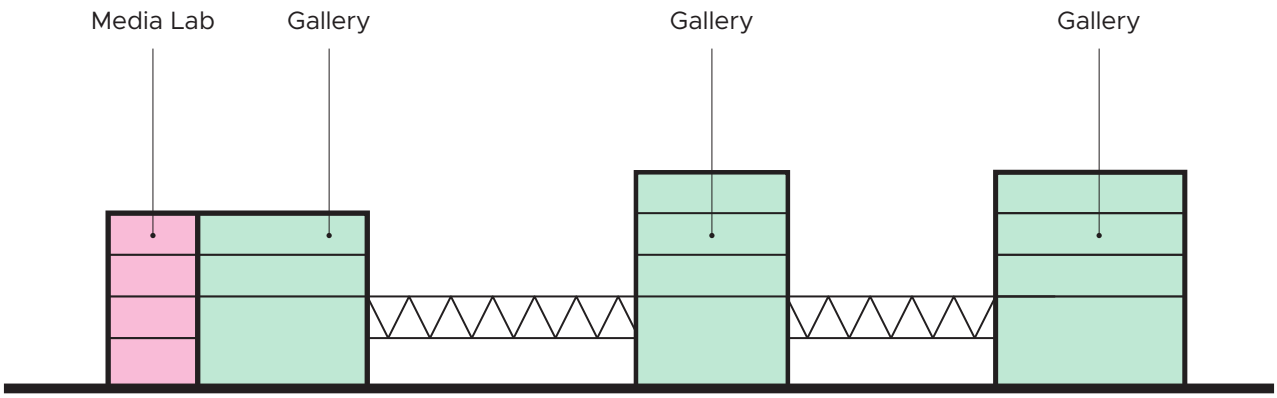


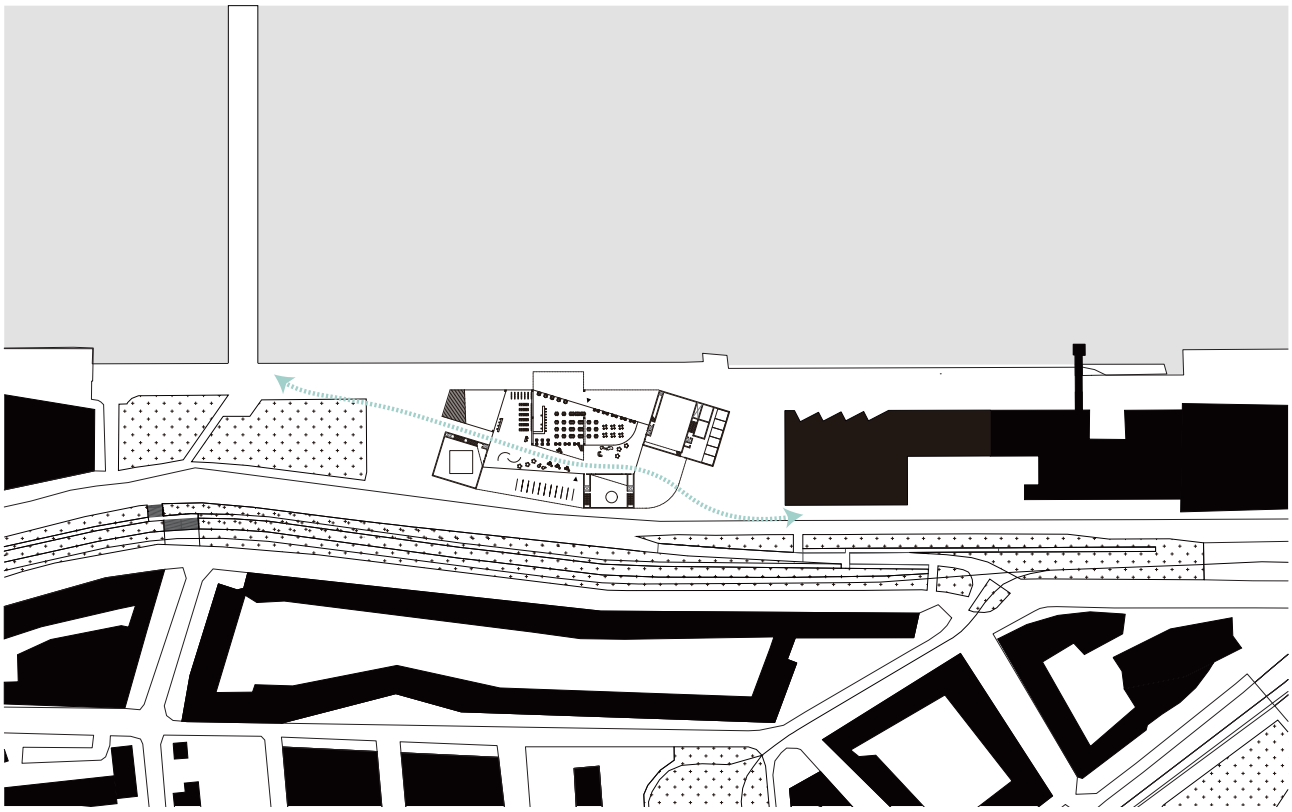

Roof

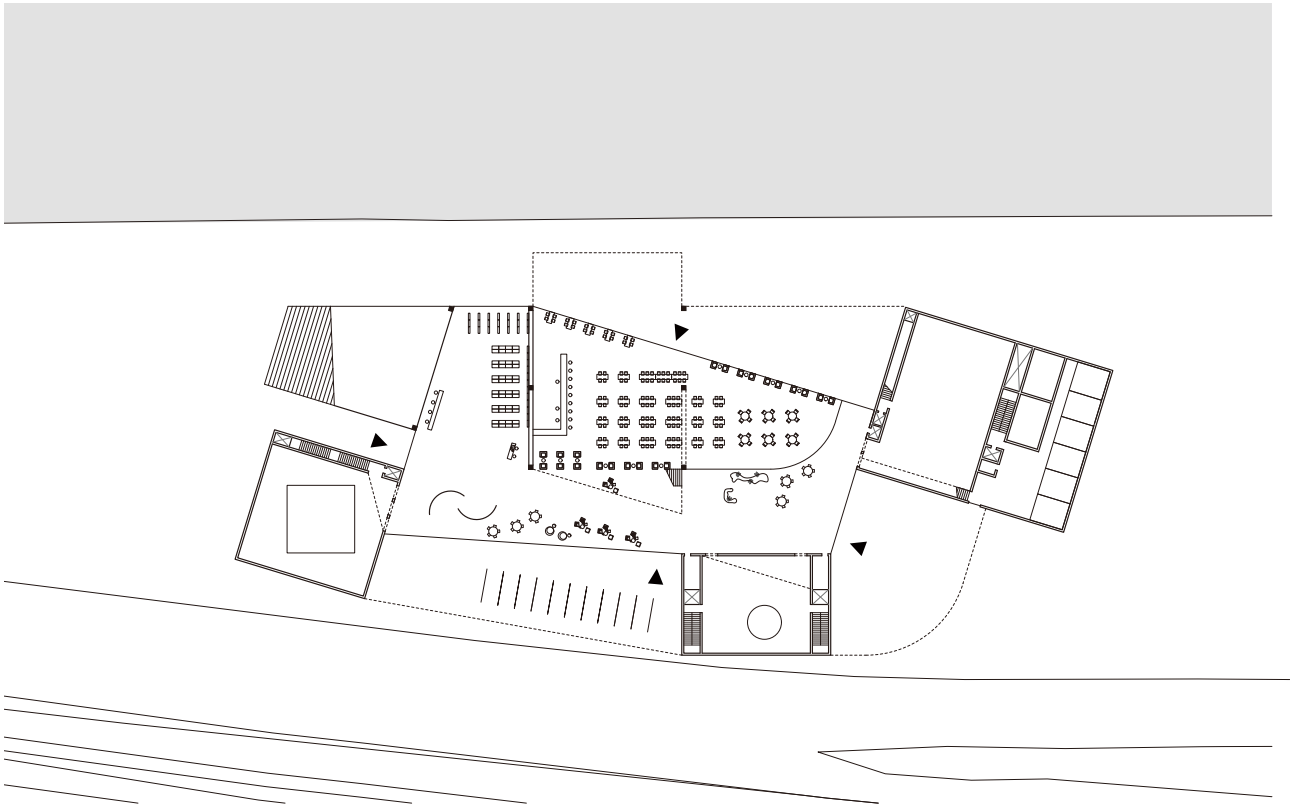


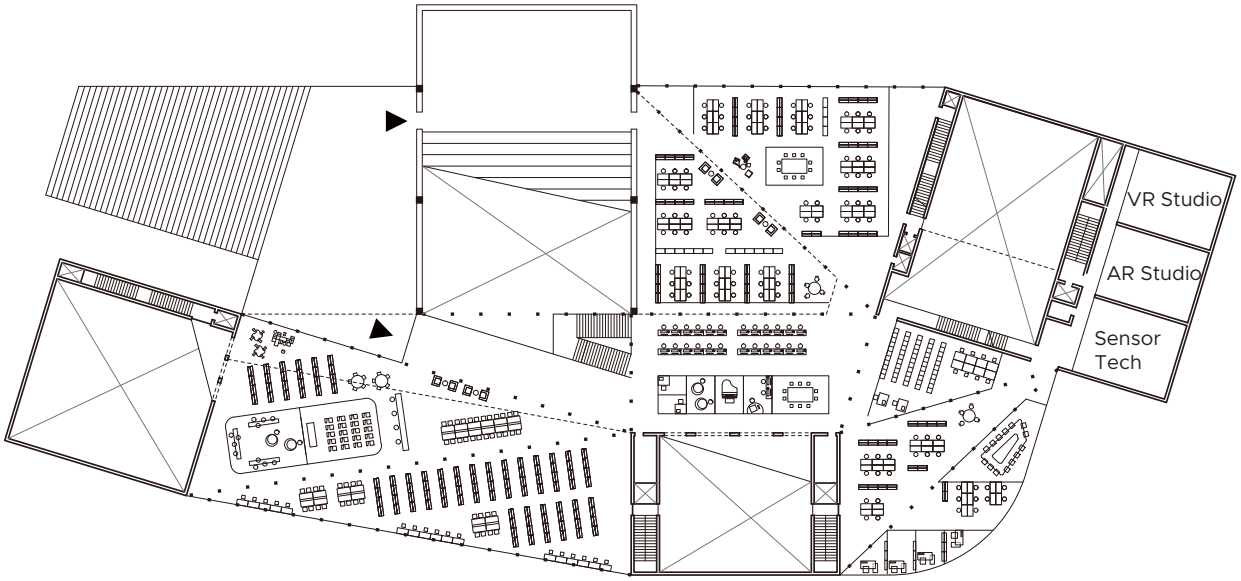

First floor

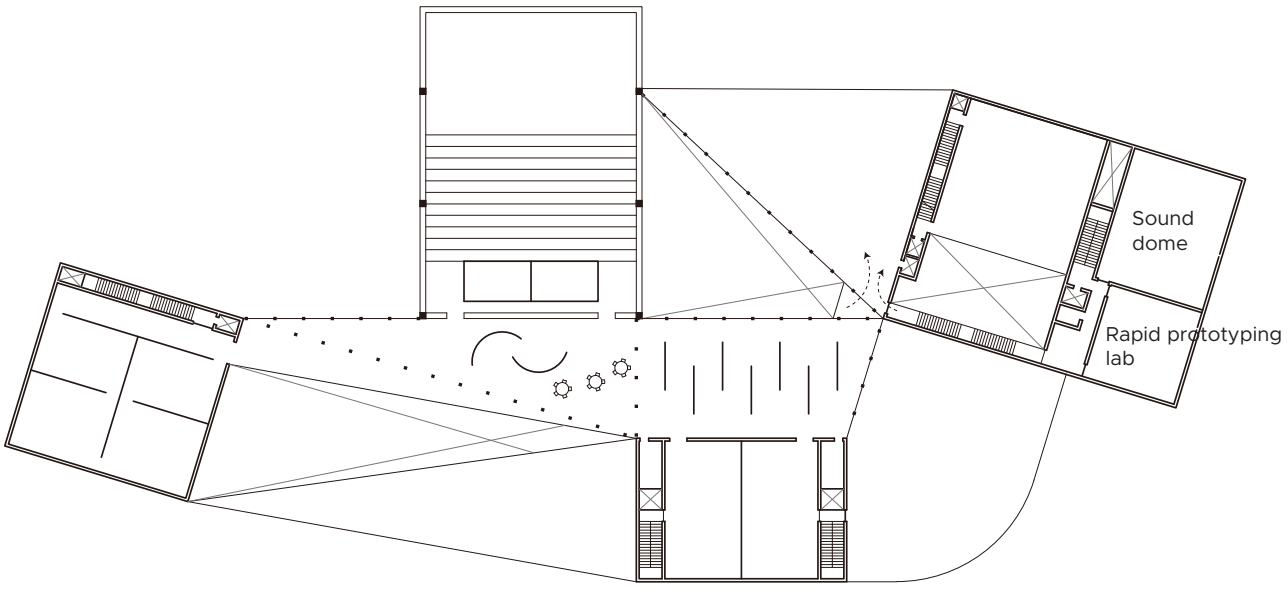

Euromast
Rotterdam skyline
New Maashaven


Media Lab
Gallery
Gallery
Gallery

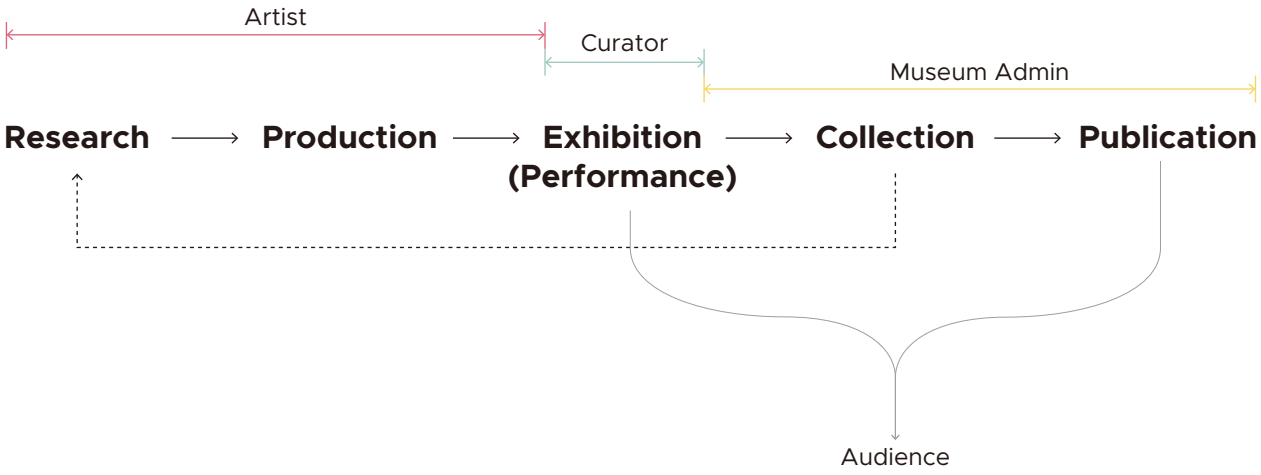


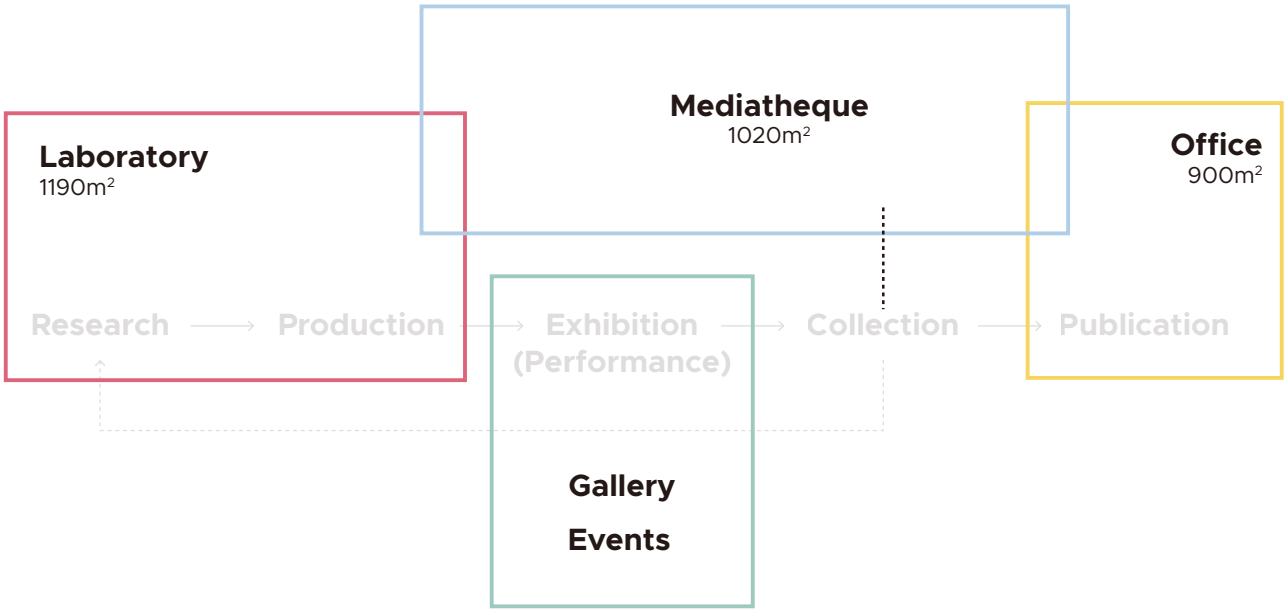



VR Studio
AR Studio
Sensor
Tech


Sound
dome
Rapid prototyping
lab

# Advanced Program



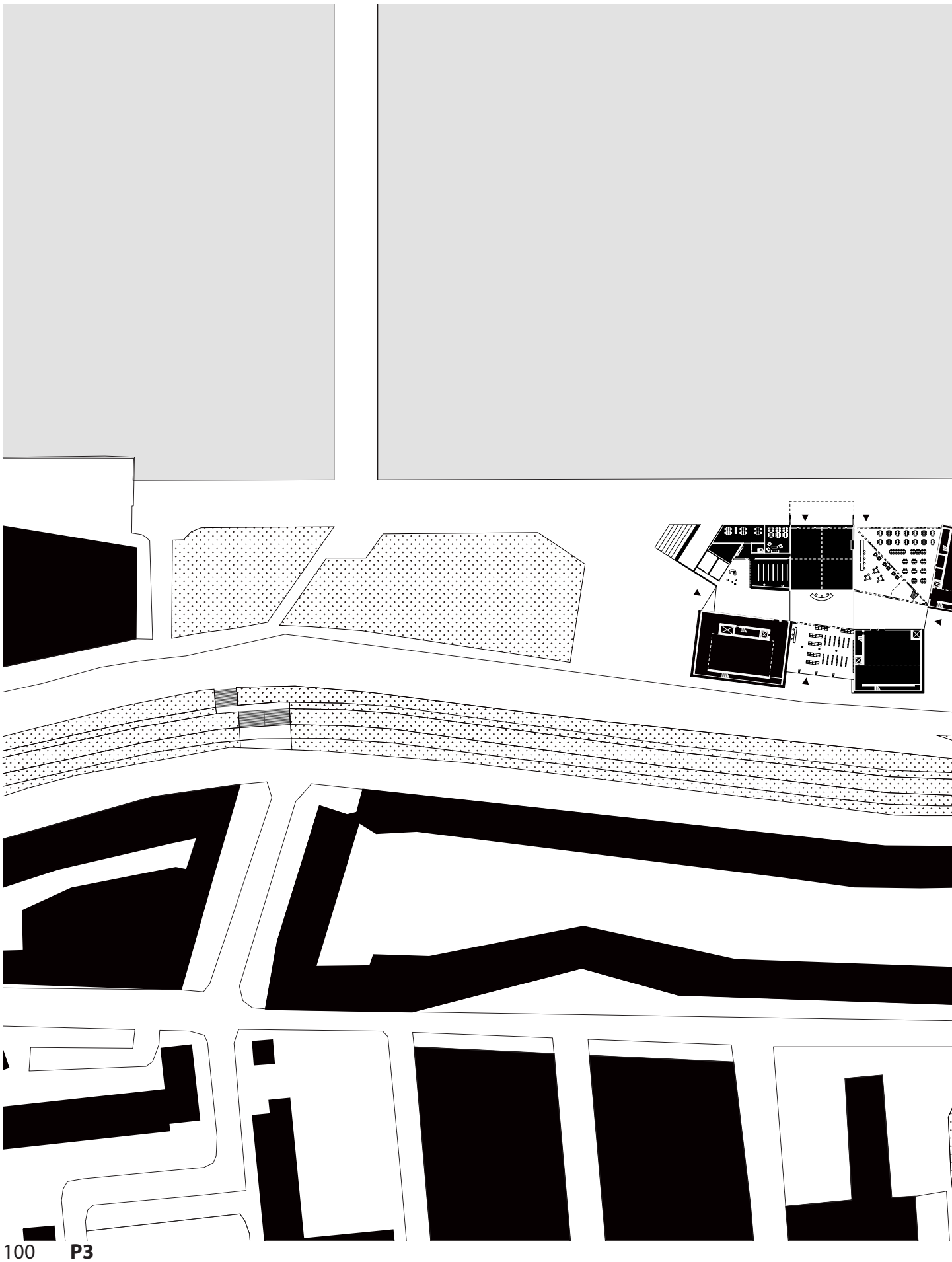

To optimize program and design brief of my project, I researched on the lifecircle of new media artwork. There is a loop from research to collection, reflecting on the workflow of artists. Also the publication is very important which is the trait of new media.

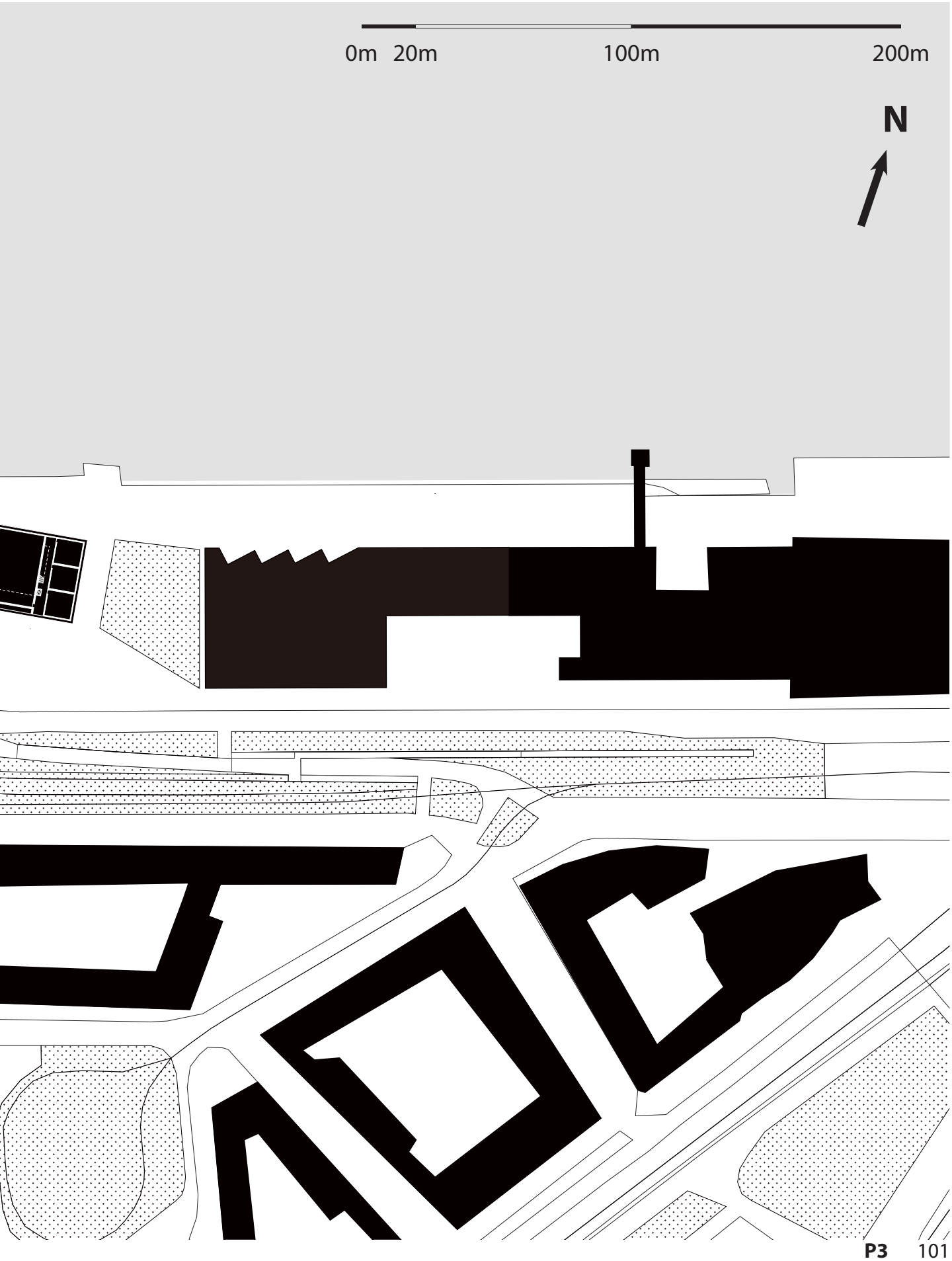
# Advanced Design Brief

| **ASSIGNED AREAS** | Net Square Meters |
|---|---|
| **Exhibition** | **3,920** |
| **Programs and Events** | **500** |
| **Visitor Services** | **190** |
| Visitor Screening/Bag Check | 100 |
| Coat Check/Lockers | 60 |
| Ticketing and Information Deak | 20 |
| Storage | 10 |
| **Retail** | **300** |
| Museum and multi-media shop | 250 |
| Storage | 50 |
| **Dining** | **700** |
| Cafe/ Bar | 200 |
| Formal Restaurant | 130 |
| Kitchen | 370 |
| **Offices** | **700** |
| Administrative Offices | 130 |
| Education Offices | 60 |
| Curatorial Offices | 60 |
| Publication Offices | 60 |
| Marketing and Development Offices | 100 |
| Conference Room | 75 |
| Shared Work Room/Copy Room/File Storage | 55 |
| Archives | 170 |
| **Mediatheque** | **400** |
| Printed media library | 200 |
| Digital media library | 100 |
| Children reading space | 100 |
| **Laboratory** | **830** |
| Sound Dome | 150 |
| Panorama Lab | 100 |
| Rapid Prototyping Lab | 100 |
| Media Technology Studio (VR, AR, Sensor tech) | 60*3 |
| Music Studio | 40*3 |
| Recording Studio | 60 |
| Work Residency | 20*6 |
| **Maintenance and Operations** | **230** |
| **Total Assigned Area** | **7770** |

**Balance: Nett + Tarra = 7770 + 4330 = 12100**

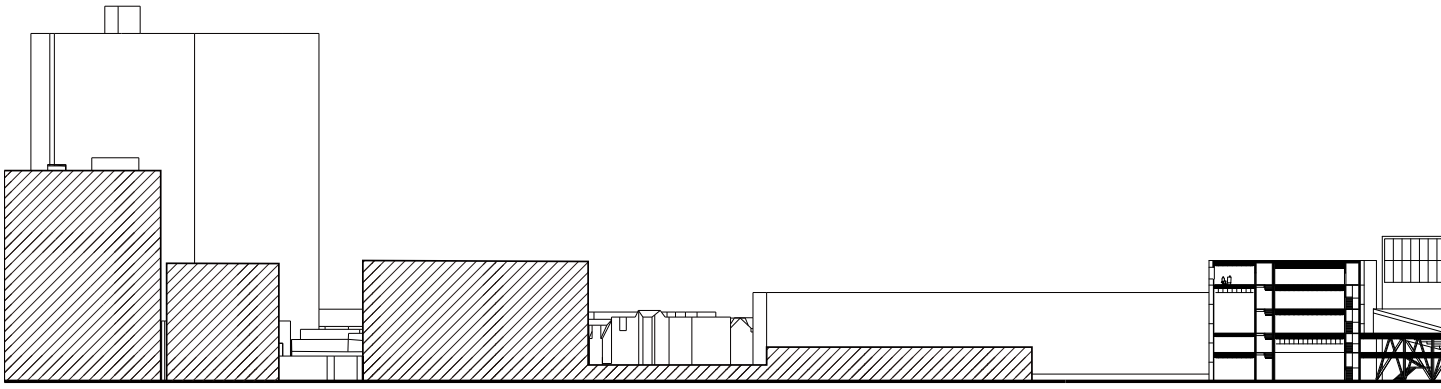
# Nolli Plan



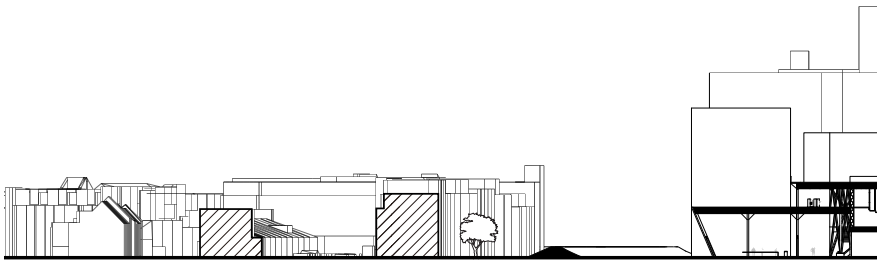

0m 20m
100m
200m
N

# Cityscape Section

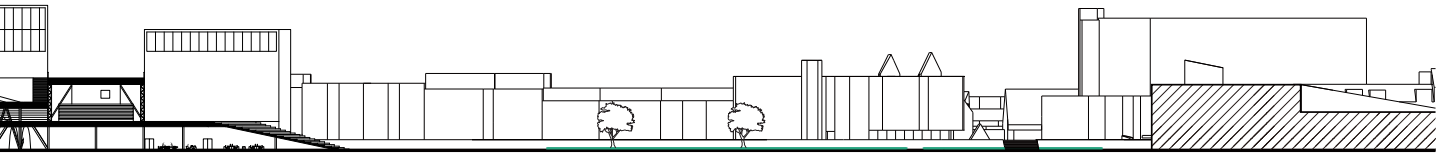
0m 20m 100m 200m



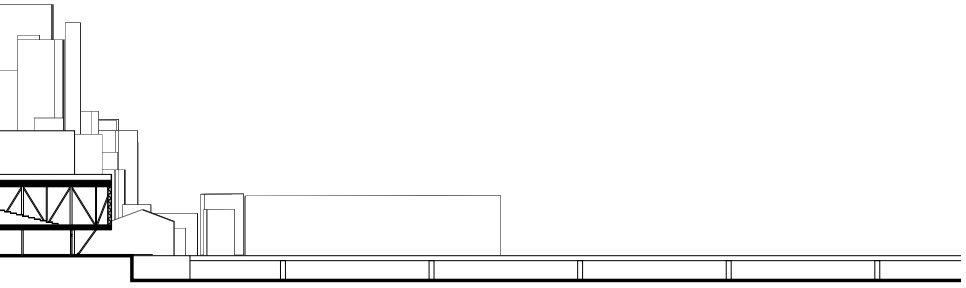
East-W



South-E

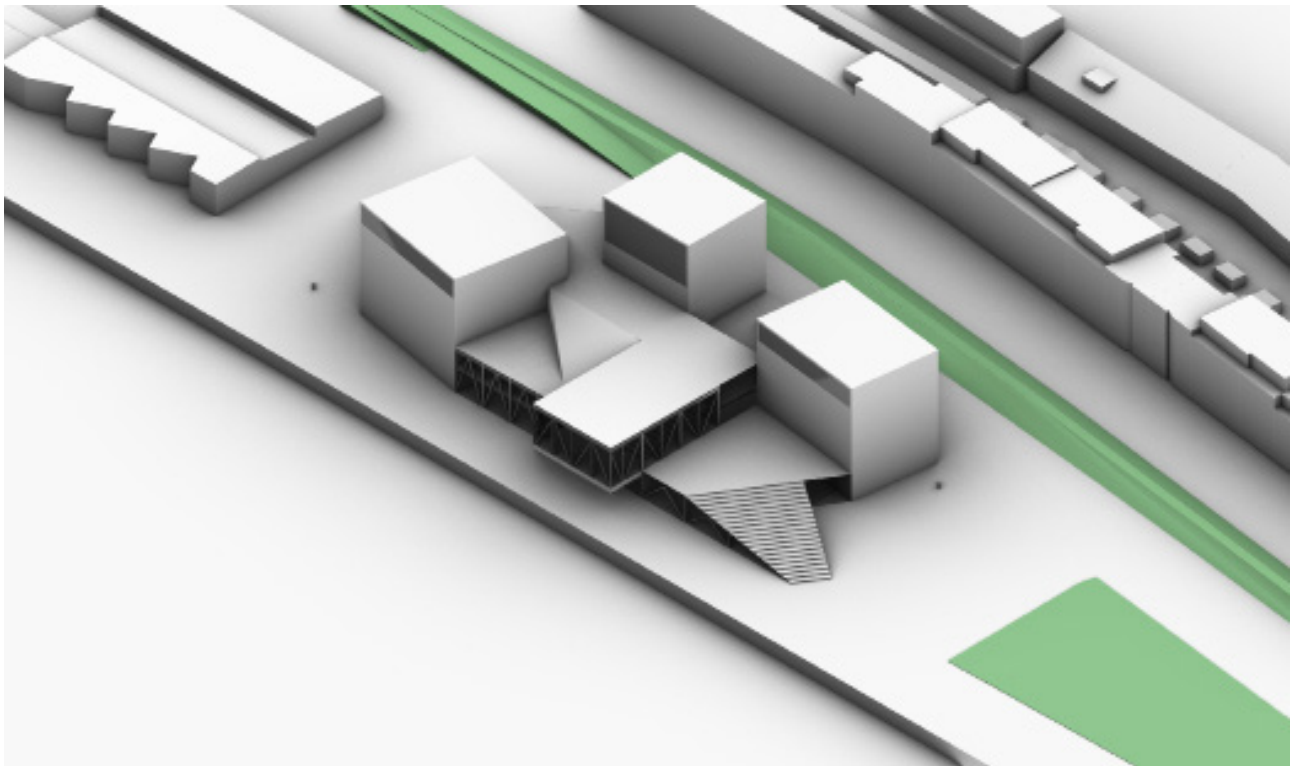


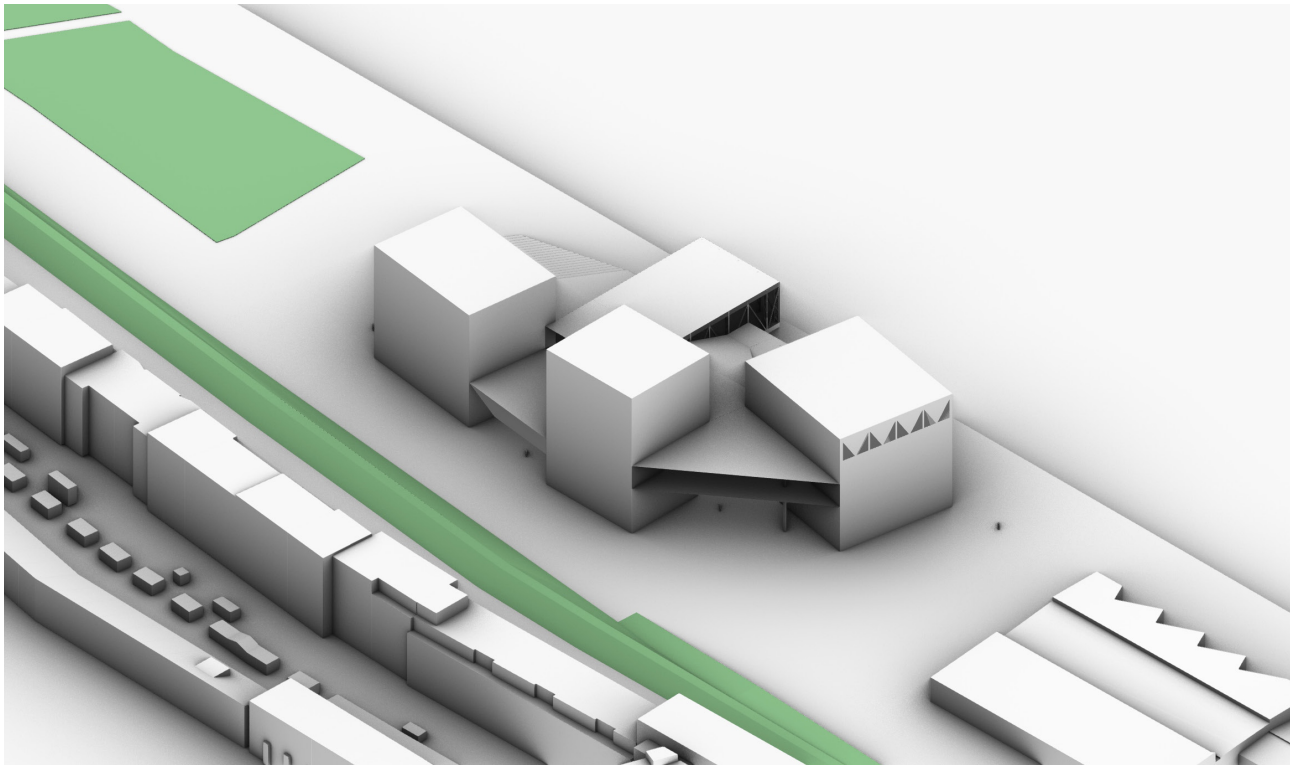
## West



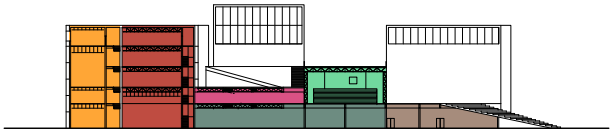
## North

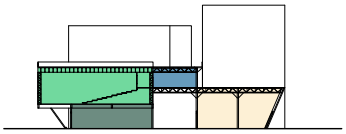
# 3D Model

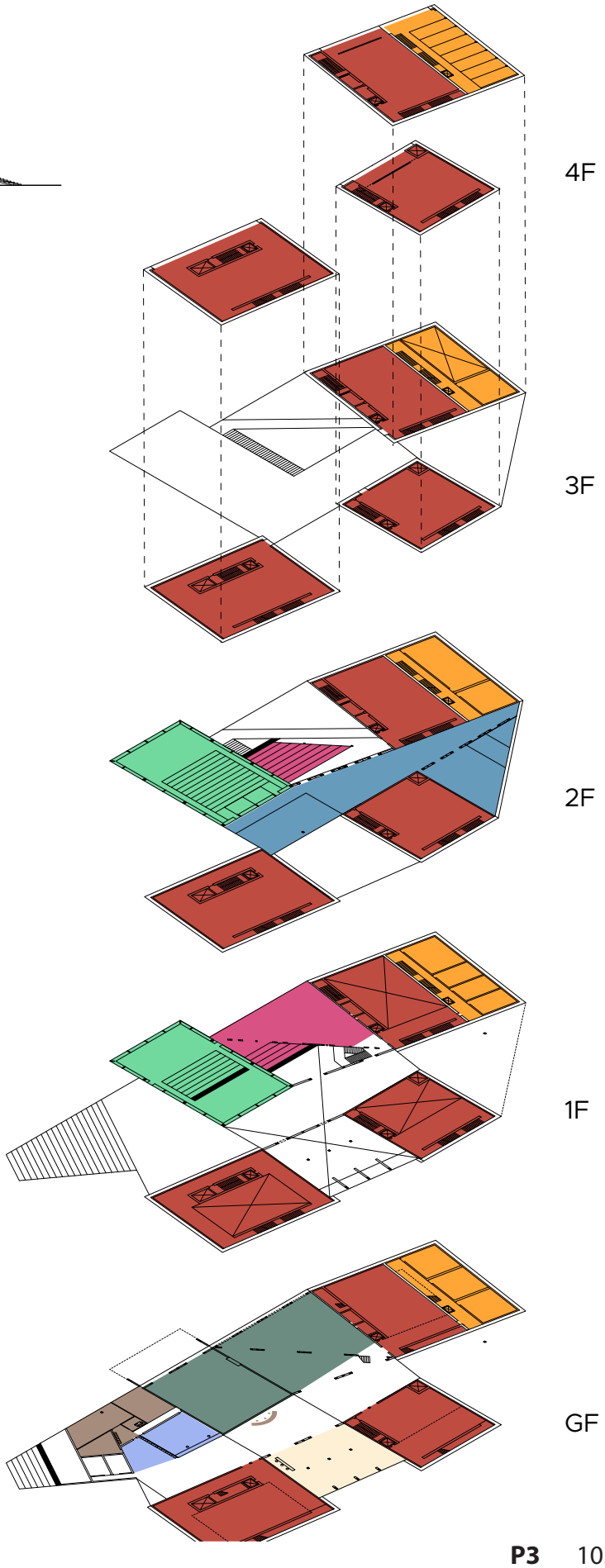




# Programmatic Displacement

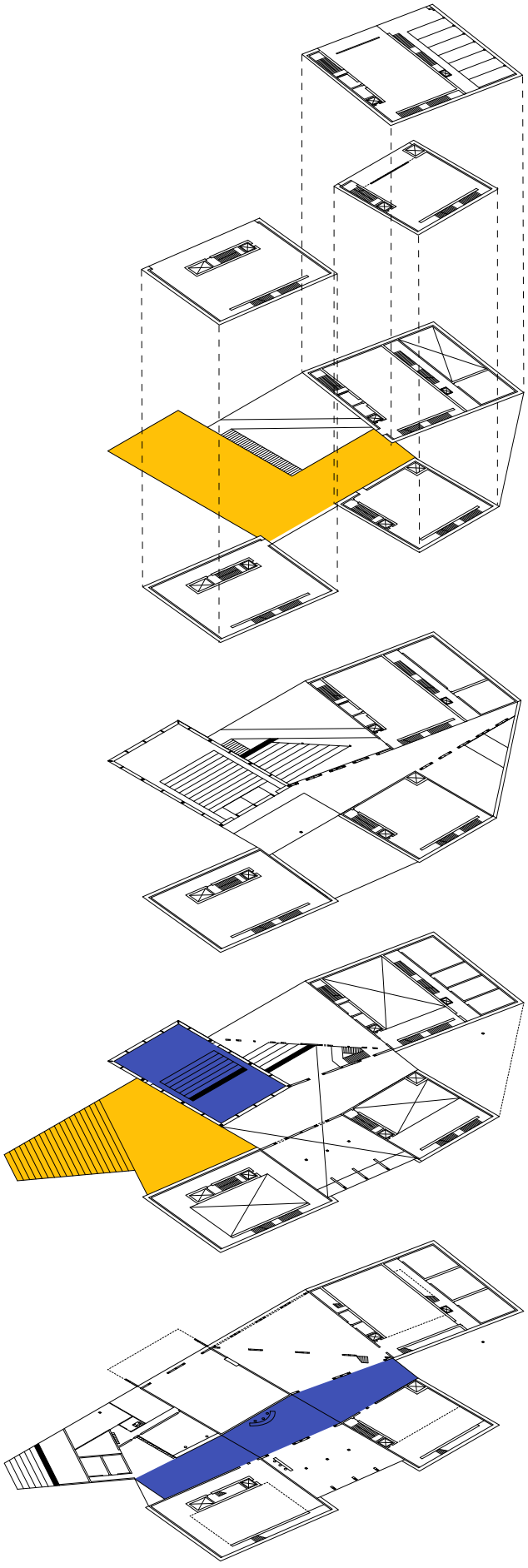







- Maintainance
- Retail
- Events
- Dining
- Visitor service
- Office
- Media-lab
- Mediatheque
- Exhibition

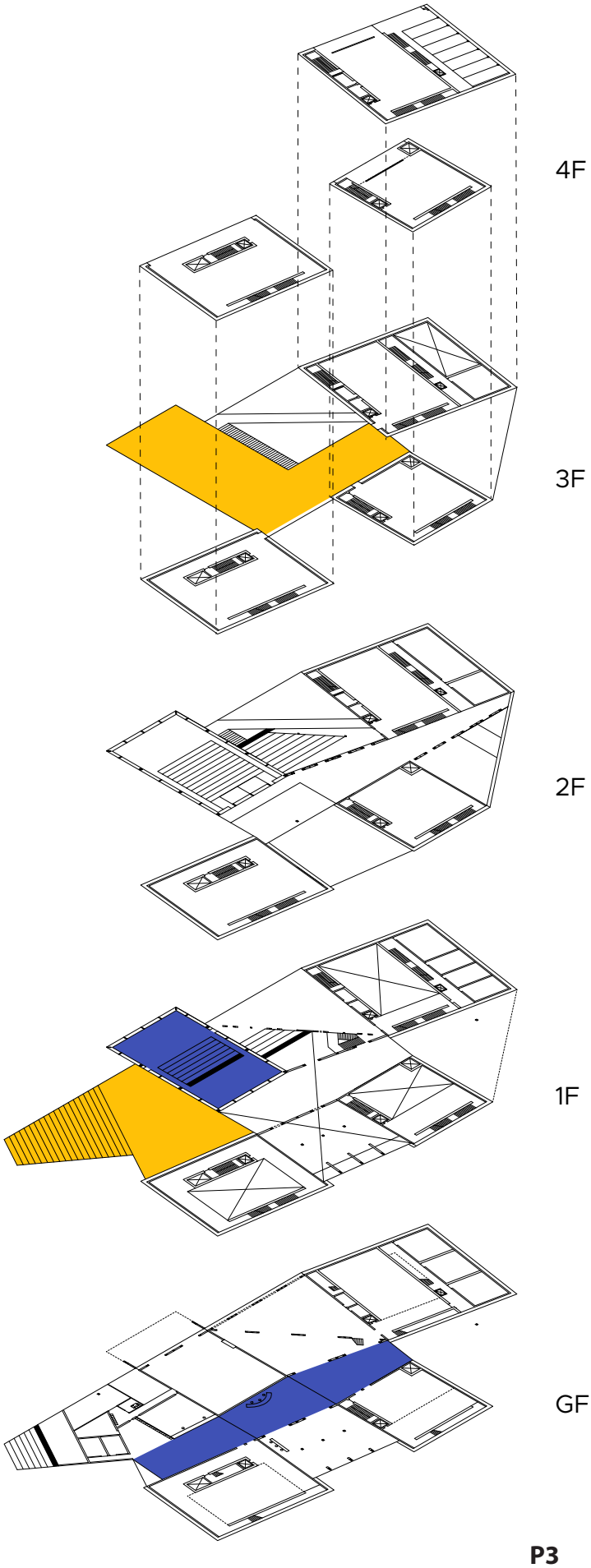
# Gathering Space




Outside gathering space

Inside gathering space

# Circulation

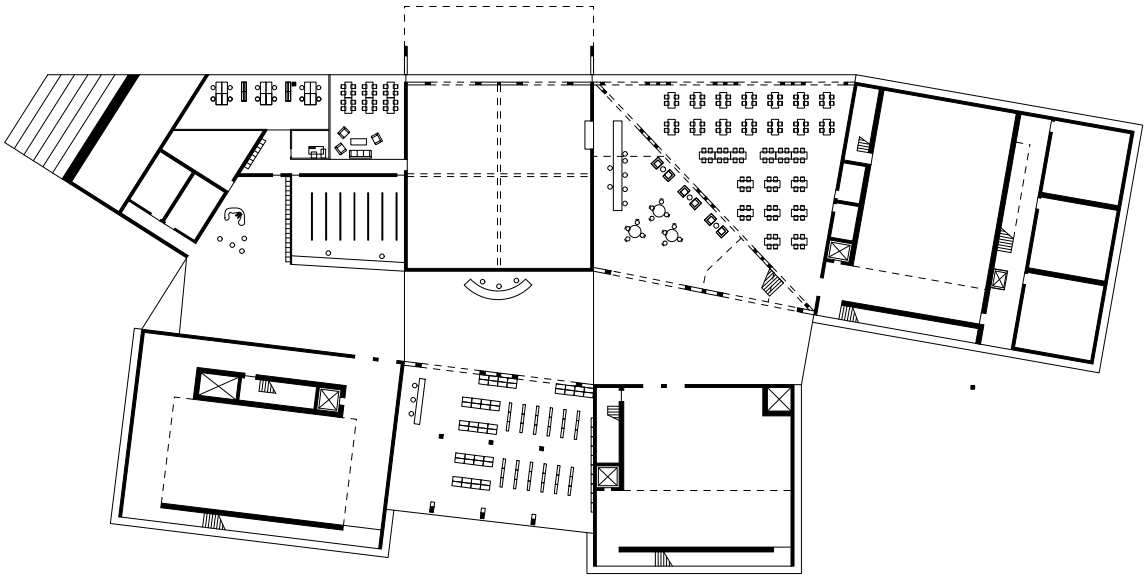



Outside gathering space

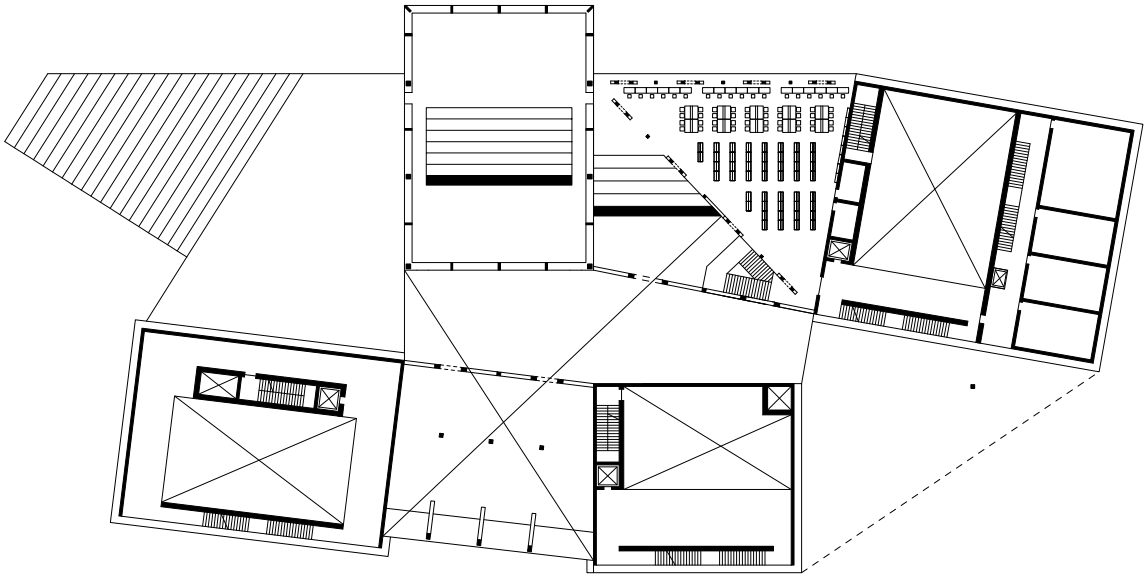
Inside gathering space

# Floor Plan

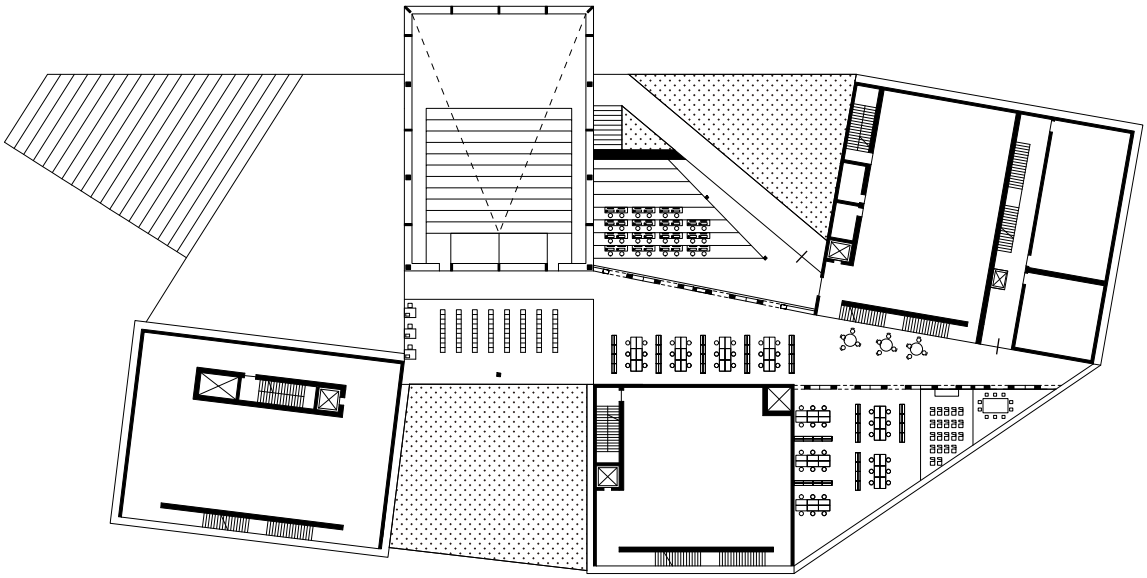
0m 10m 30m 80m



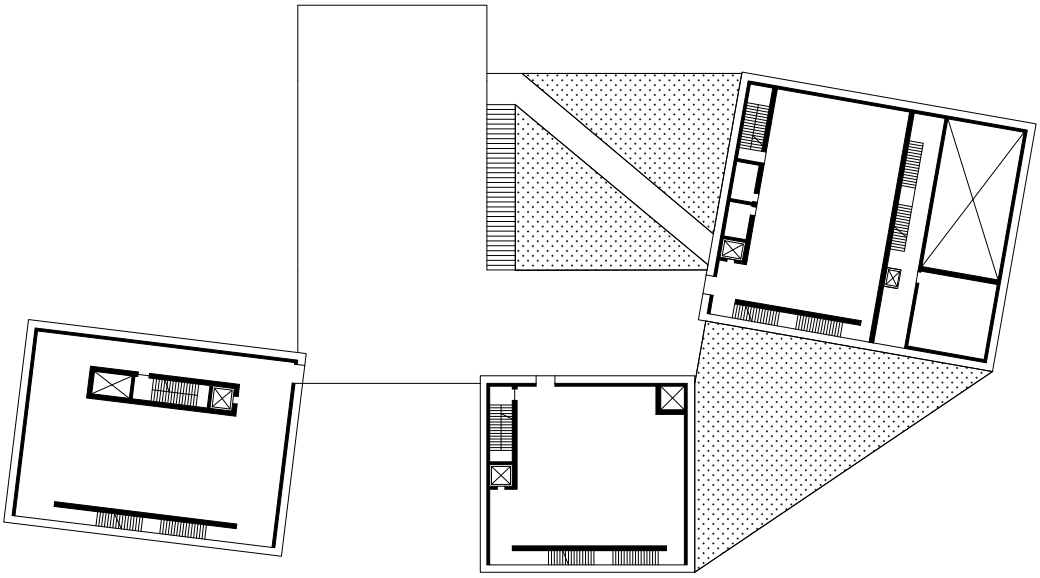
Ground floor plan



First floor plan

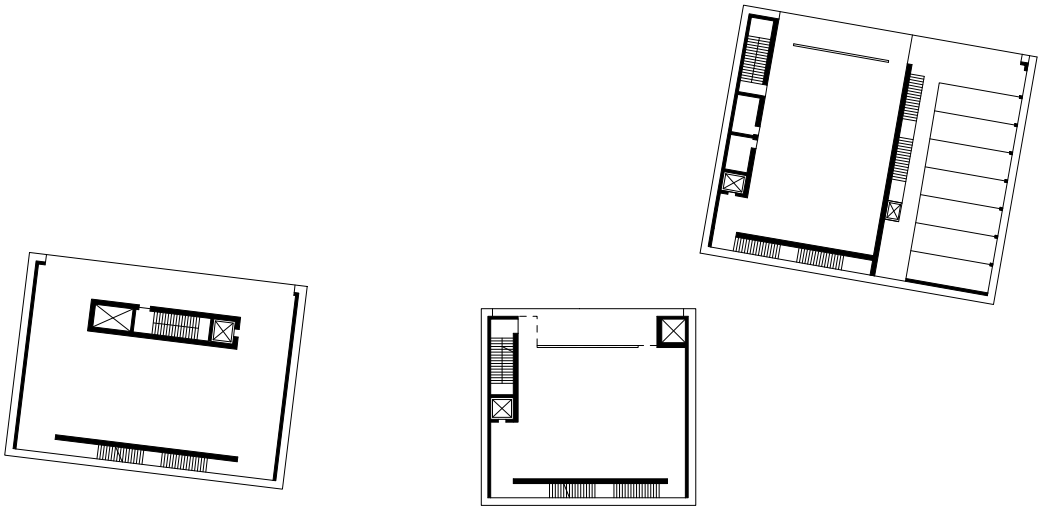


Second floor plan



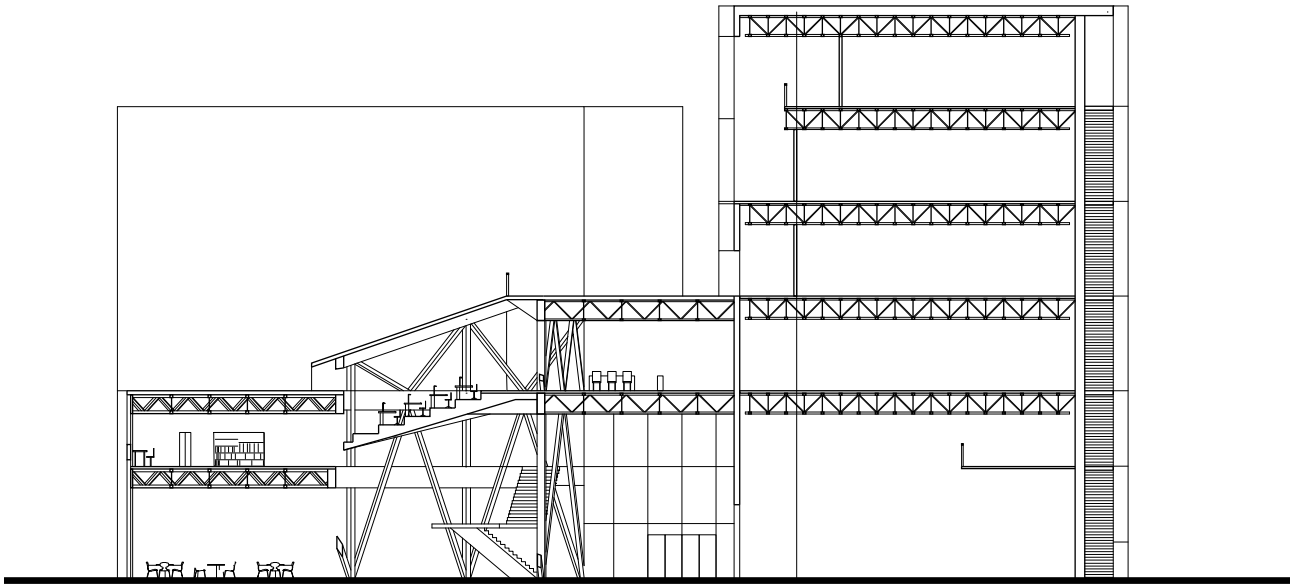
Third floor plan

## Floor Plan

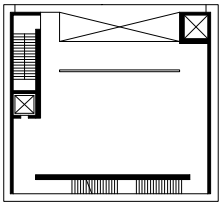


Fourth floor plan

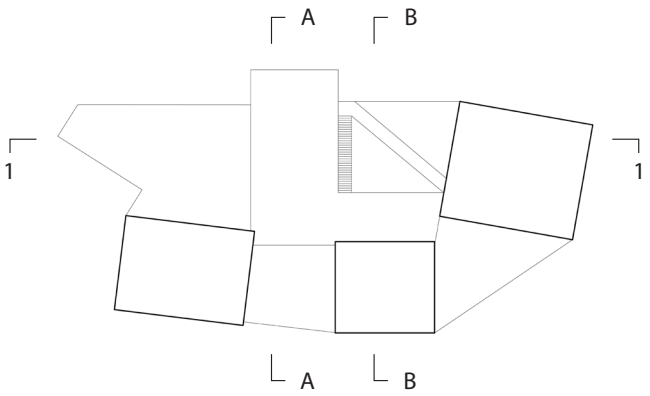
## Section



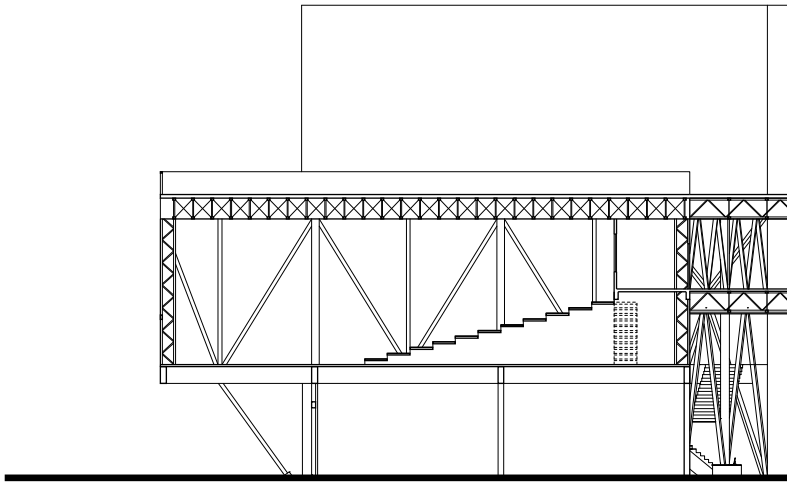
B-B section



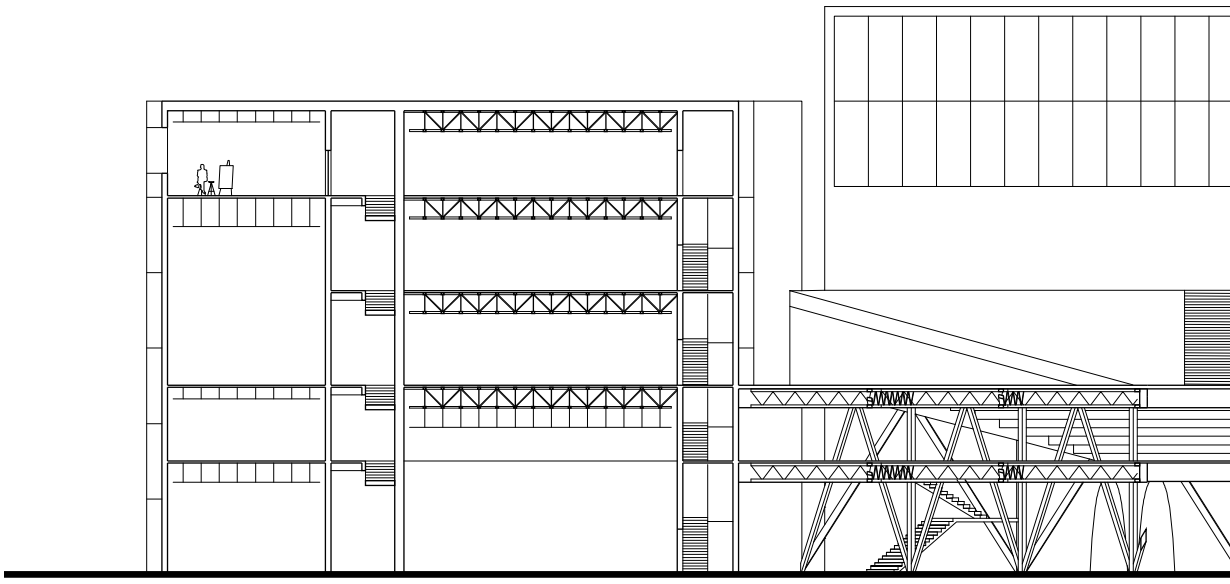
Fifth floor plan



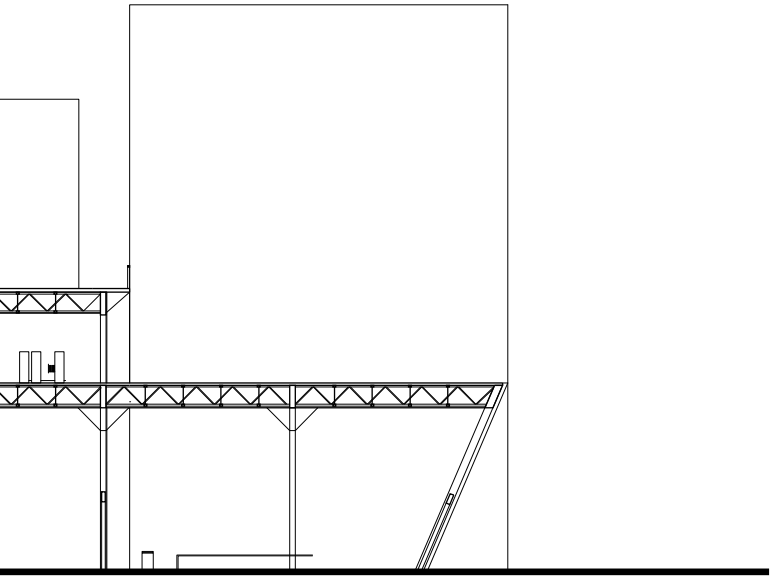
# Section



A-A se



1-1 s



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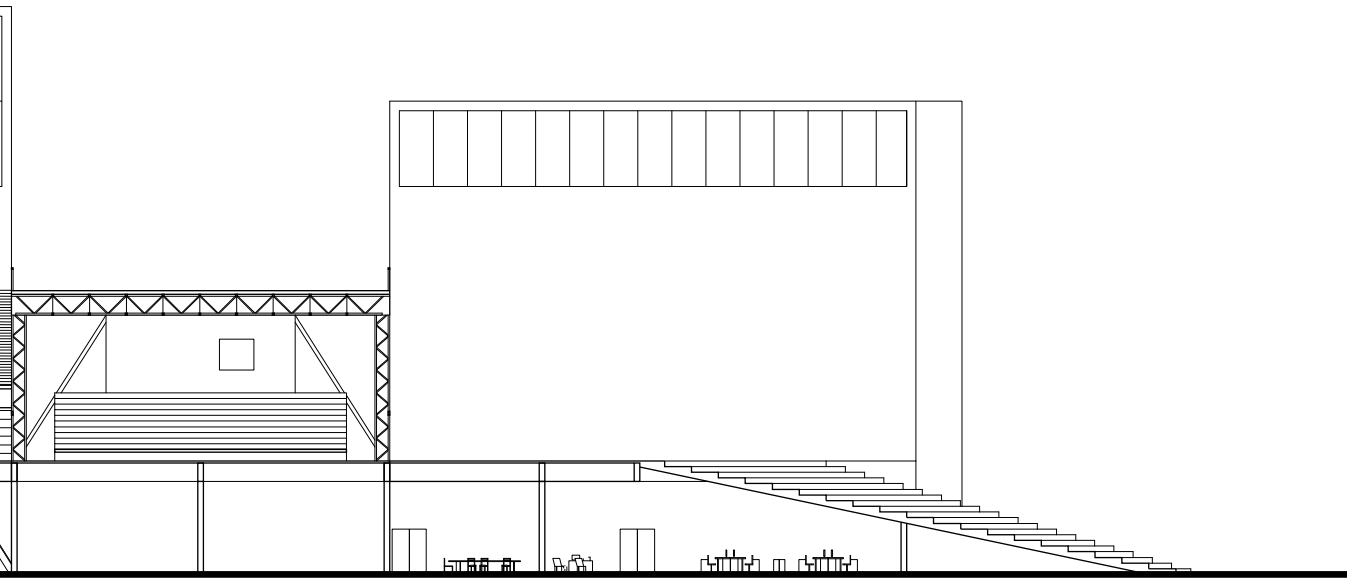
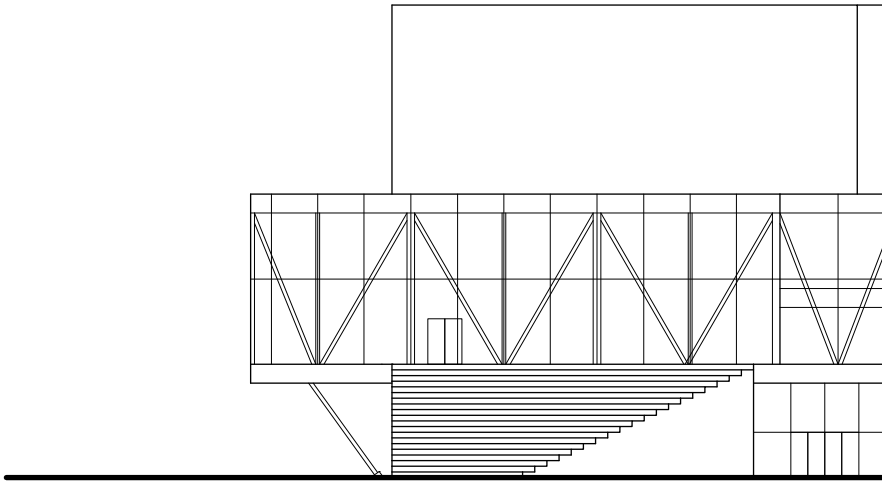
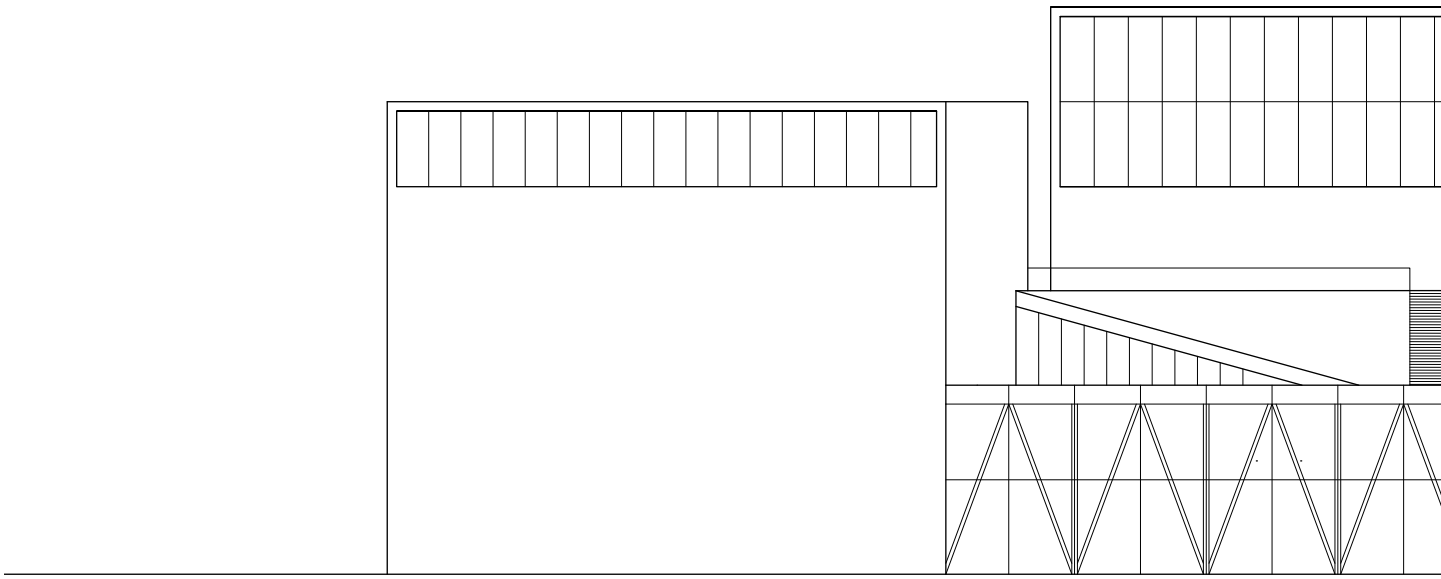


section

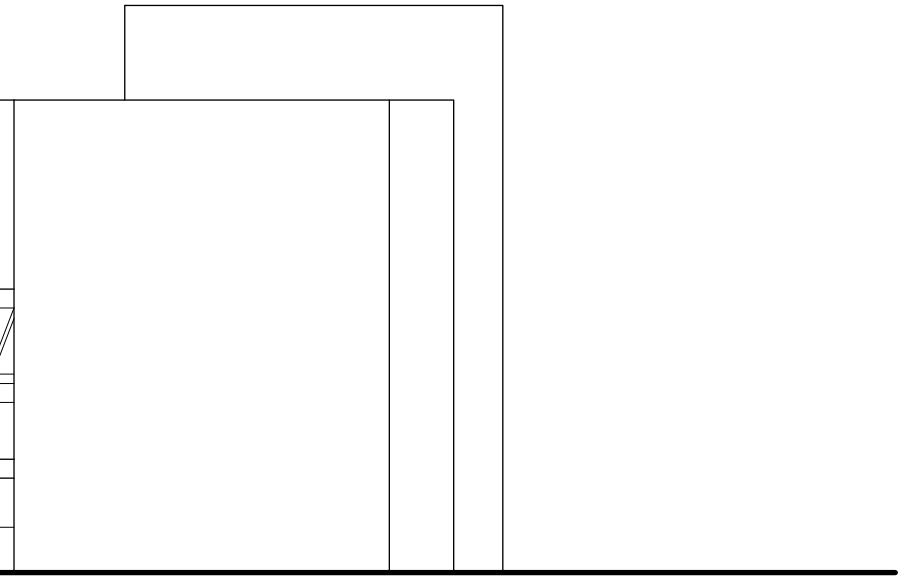
# Elevation



West eleva



North elev



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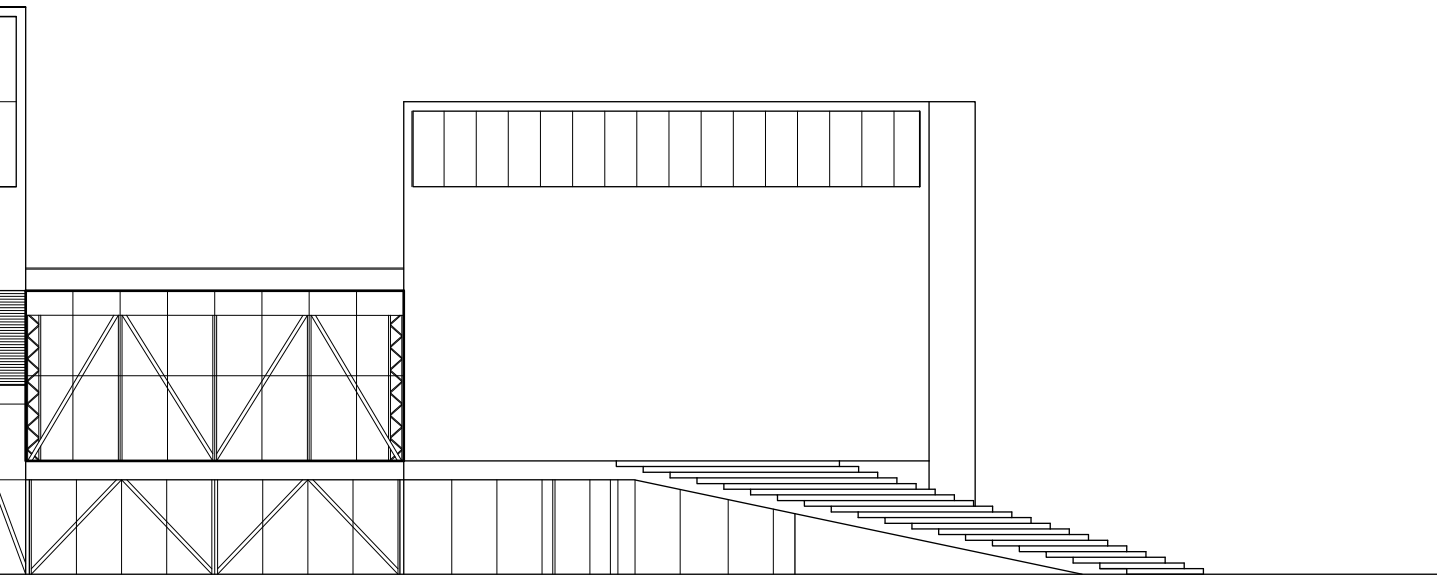
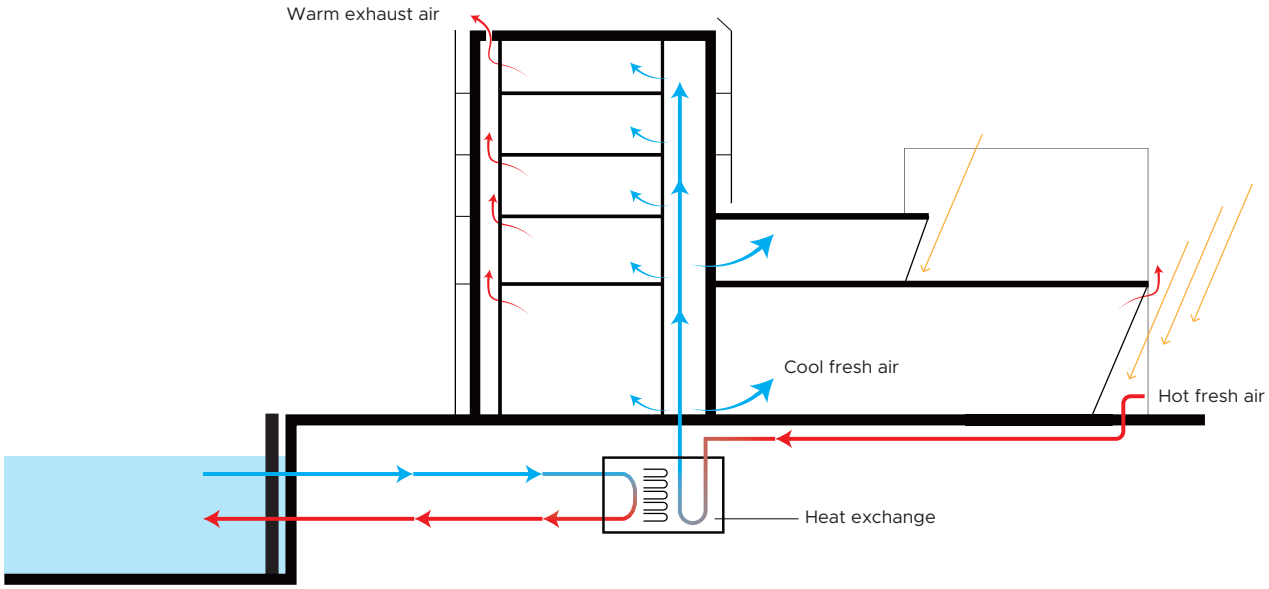
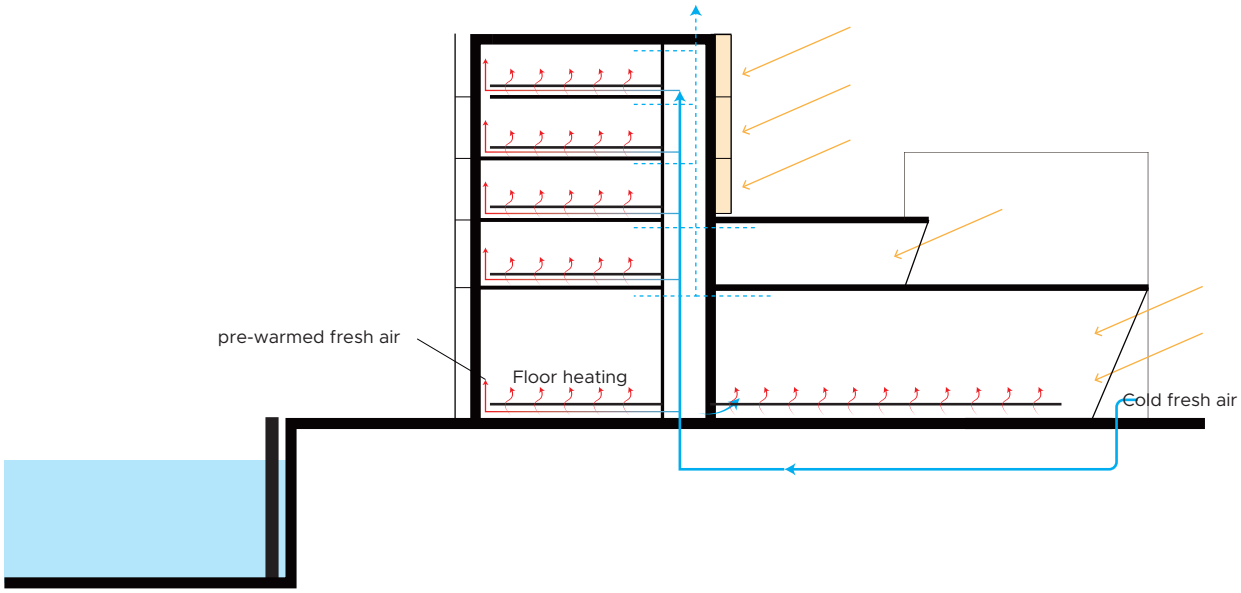


vation

# Climatic Scheme

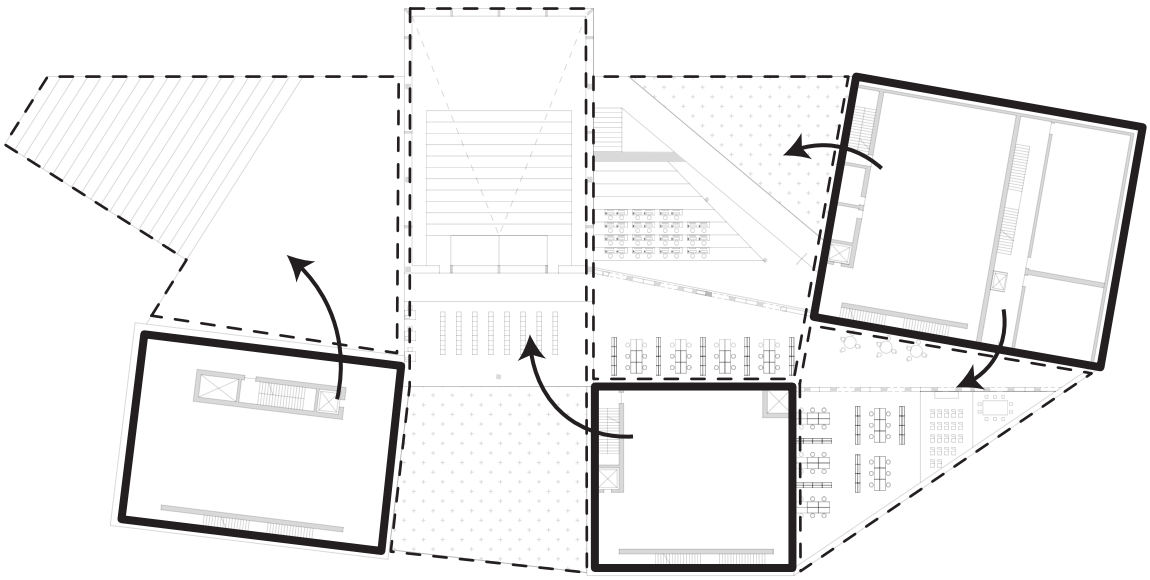



Summer scheme

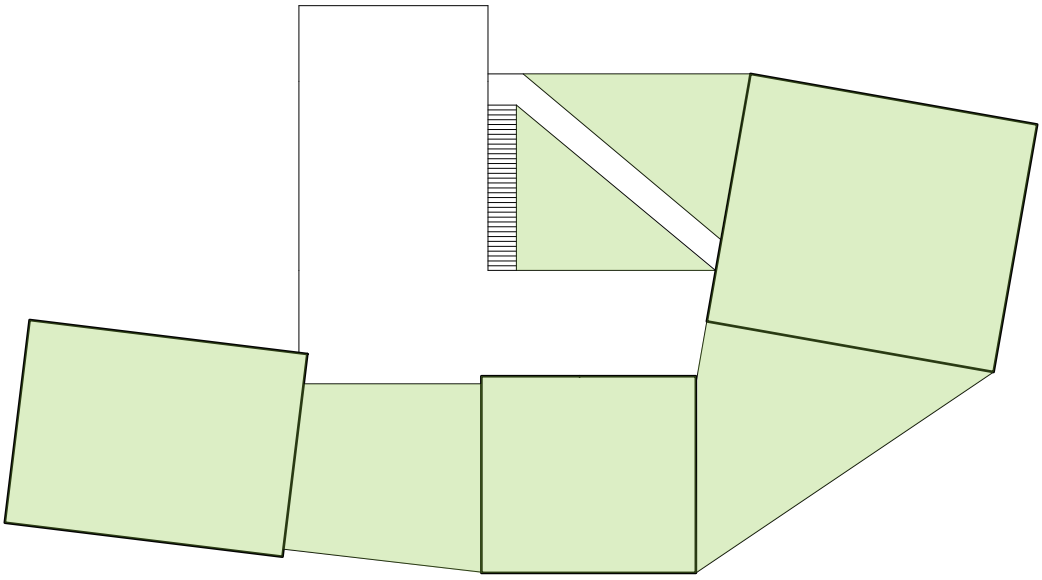



Winter scheme

The south facade of building is angled by sunlight so that in summer it cannot penetrate directly into building, which prevents overheating; while in winter it could shine in to gain more heat.

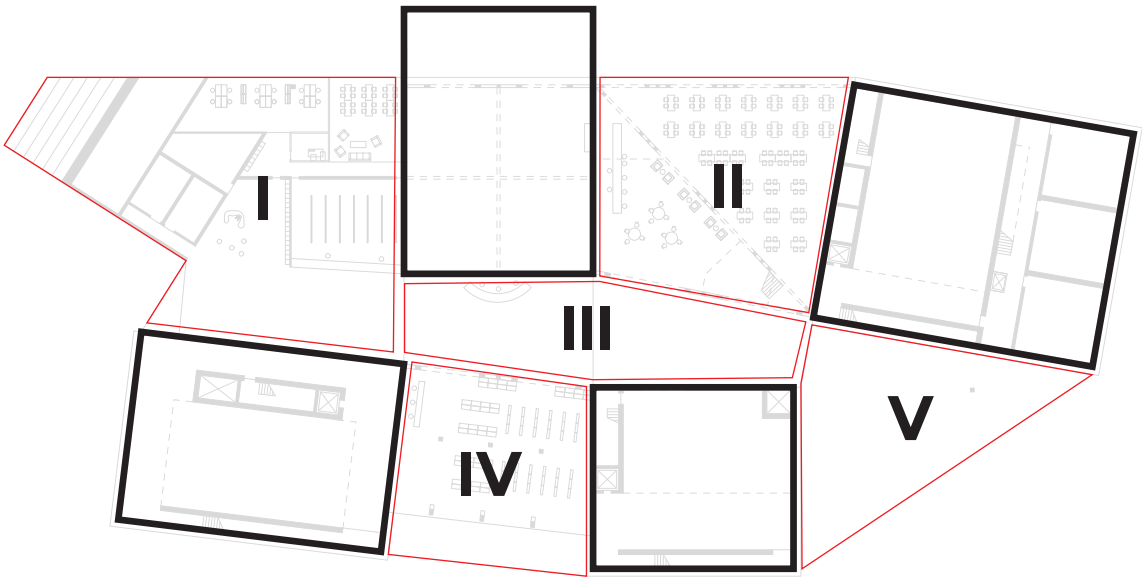


The interior is divided into two different climate zone. The concrete tower as heavy mass has great inertia to temperature change, saving more energy for cooling and heating, which is different with glass space. Secondly, different tower will in charge of the air conditioning and heating for different zones.



Cover area of greenroof
The green roof in integrated with photovoltaic panel to generate electricity power.

# Structure




The structure outside tower is divided into five parts, according to their different truss span and direction

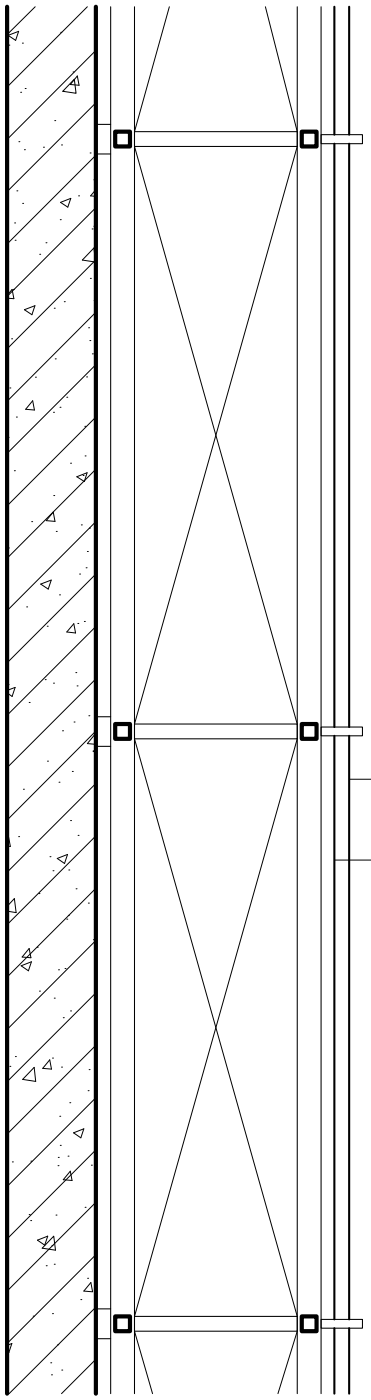
Main truss beam

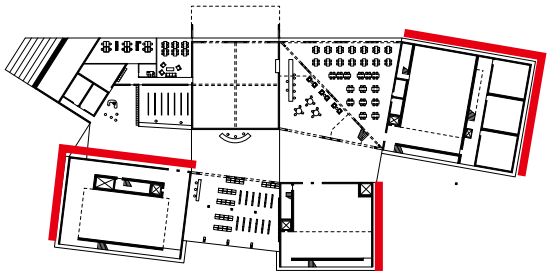
Secondary truss beam

Joist

Wood truss installation

# Facade detail

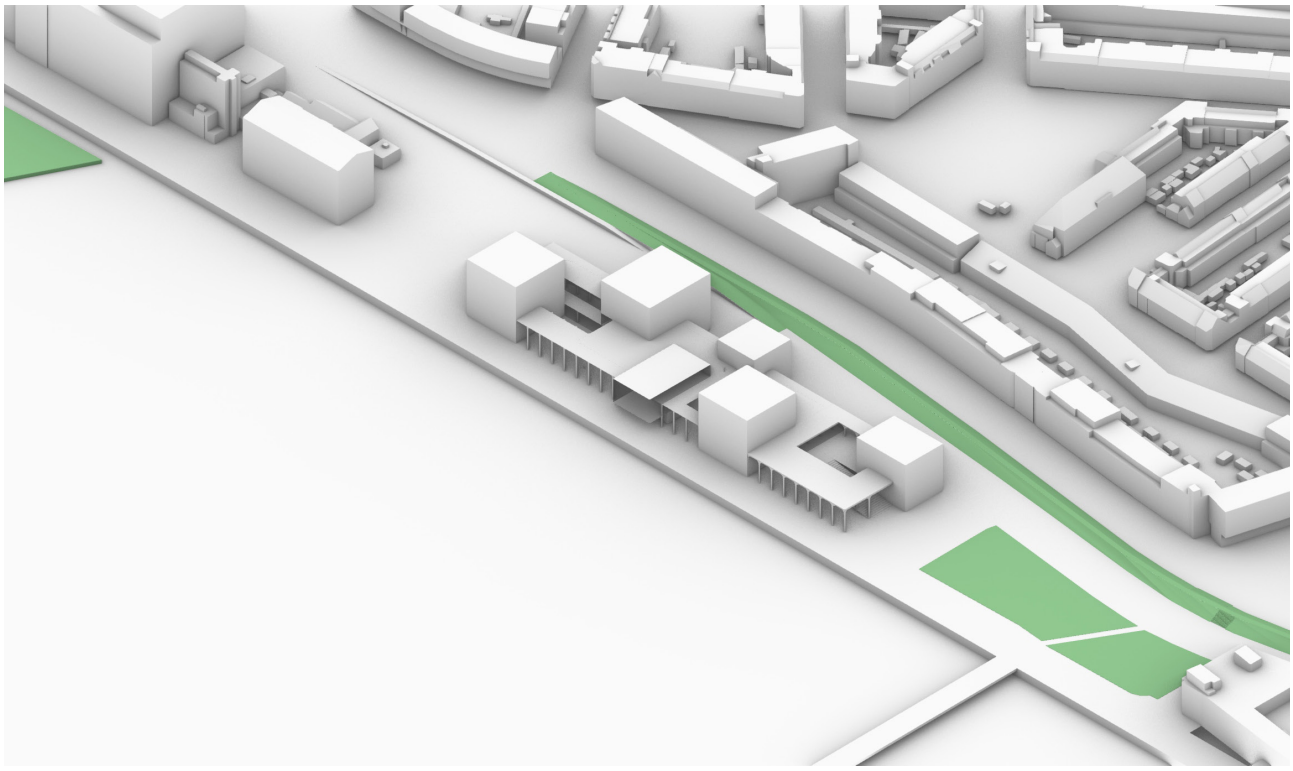




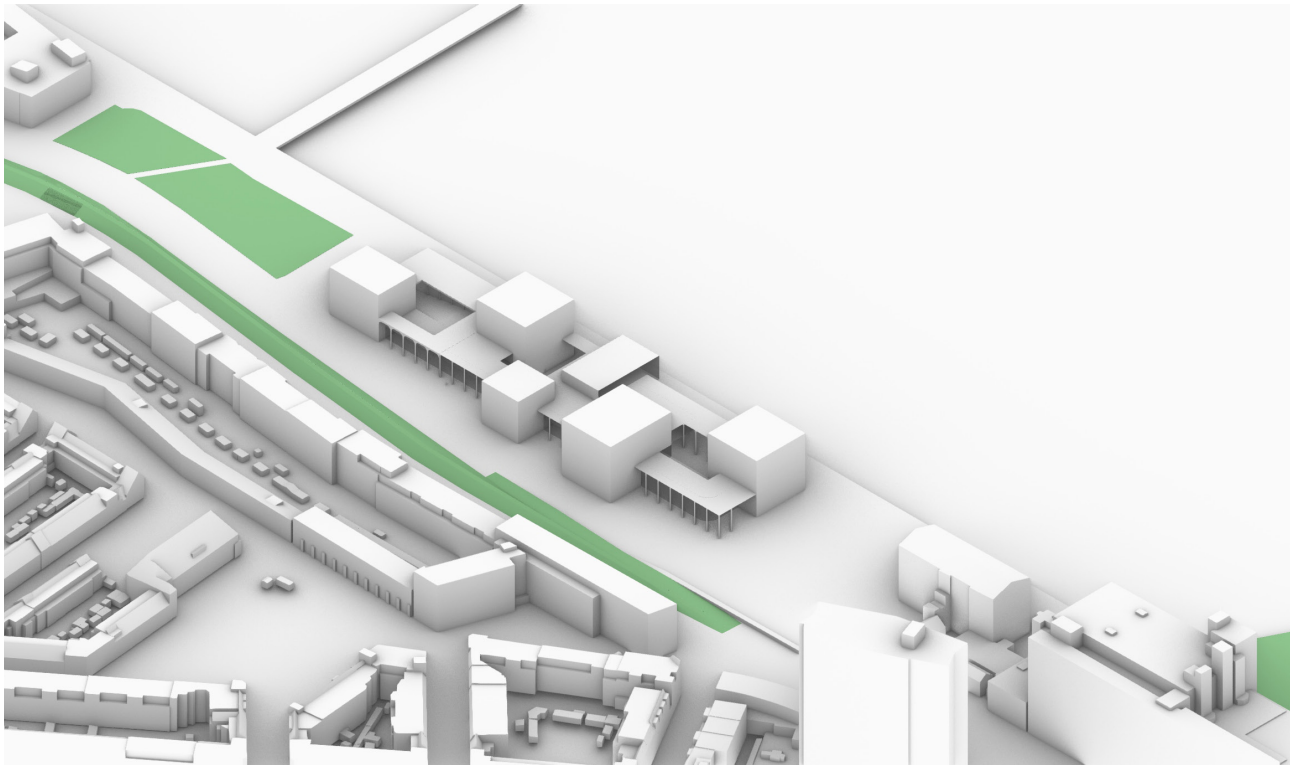
Glass

LED transparent screen

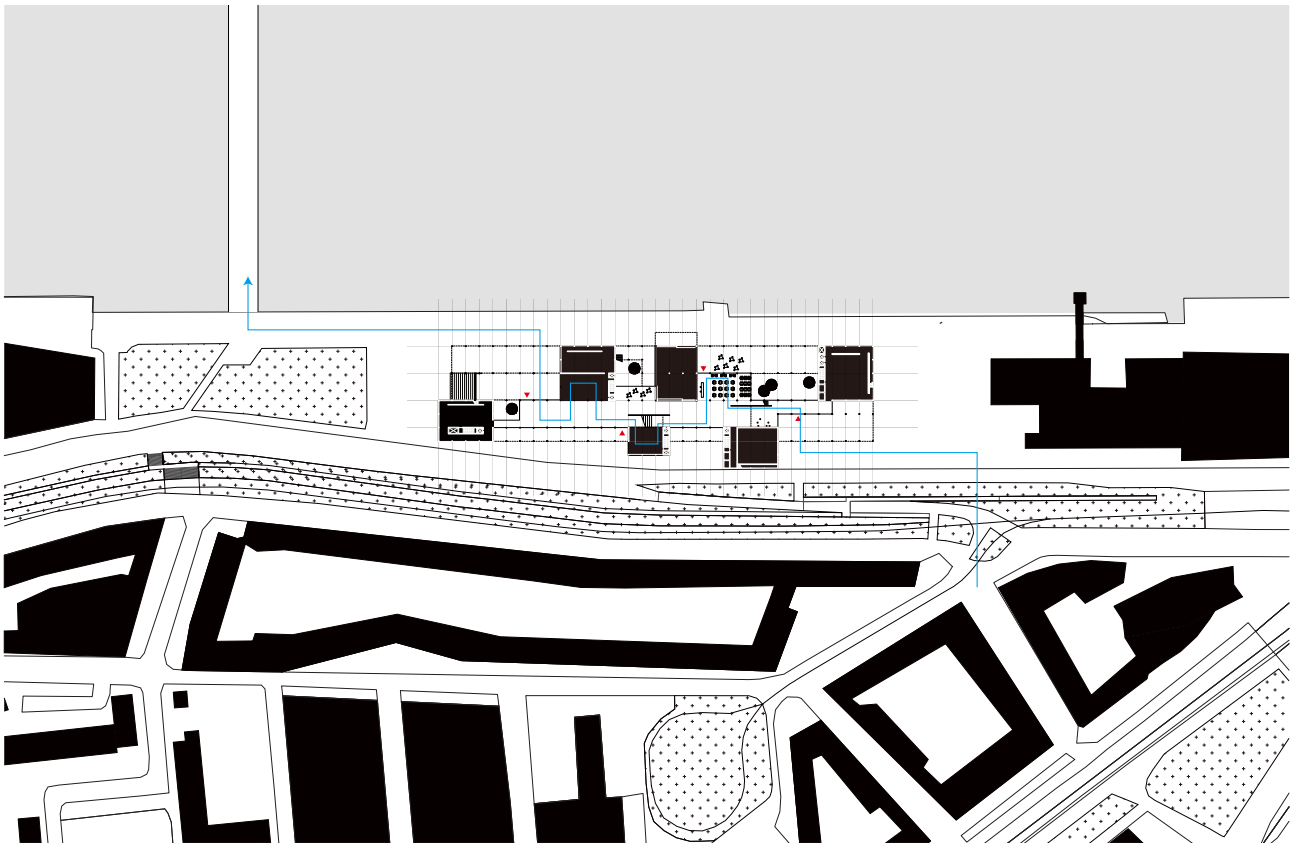
The facade of tower is partly covered by LED screen, the detail shows the relation of this facade system and conrete wall.



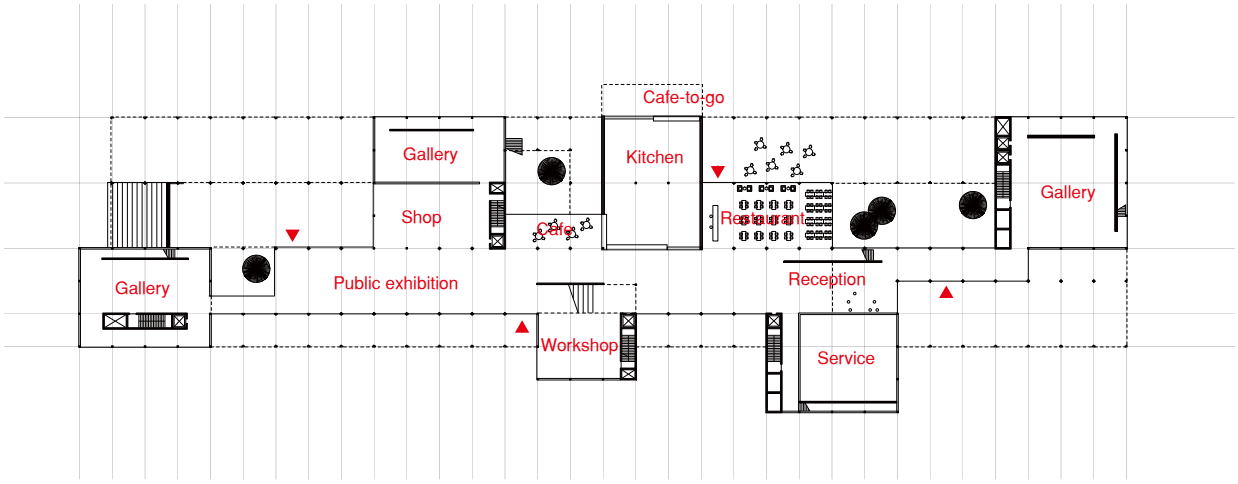
Maashaven side



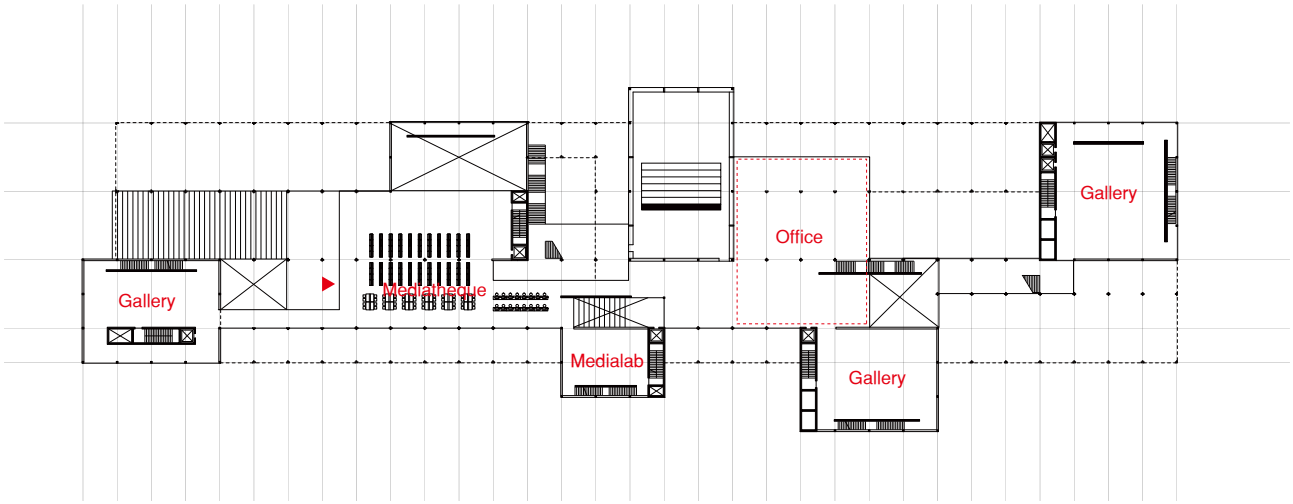
Tarwewijk side



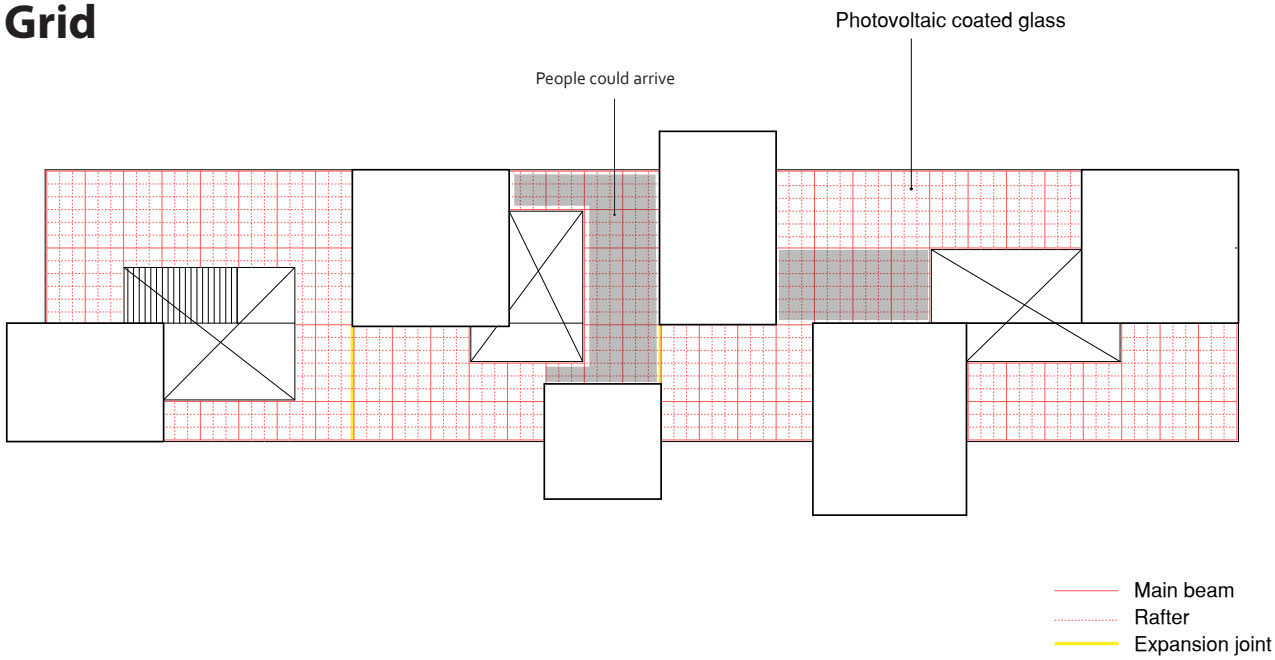
# Ground floor plan



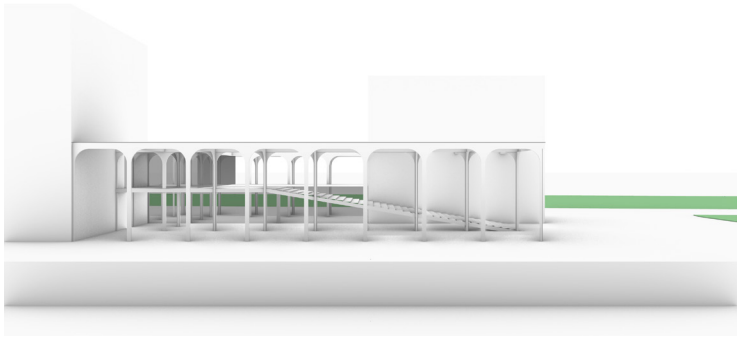

# Fisrt floor plan




# Grid

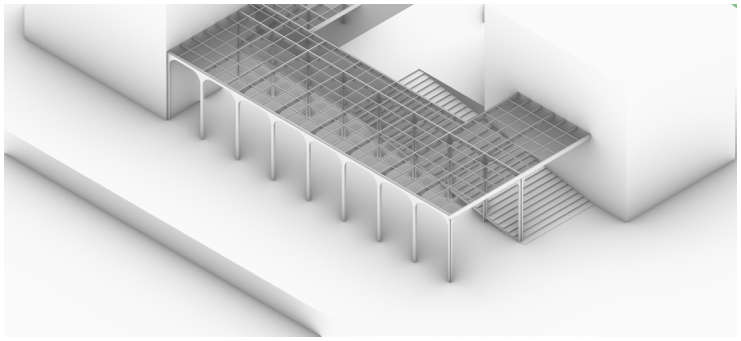


# Column option

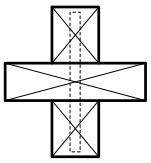


Facade

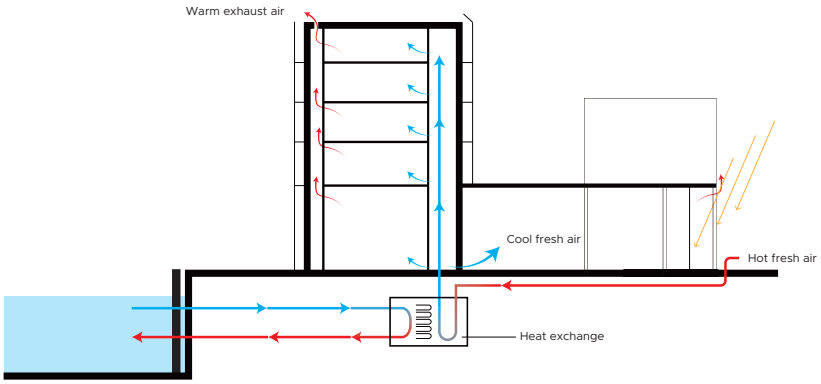
Interior



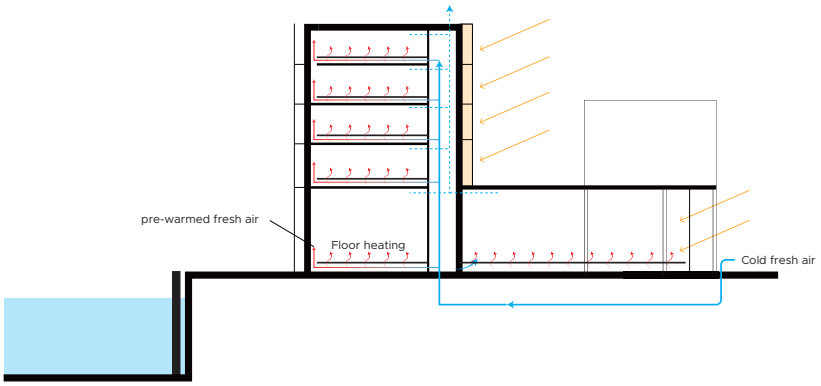
Isometric



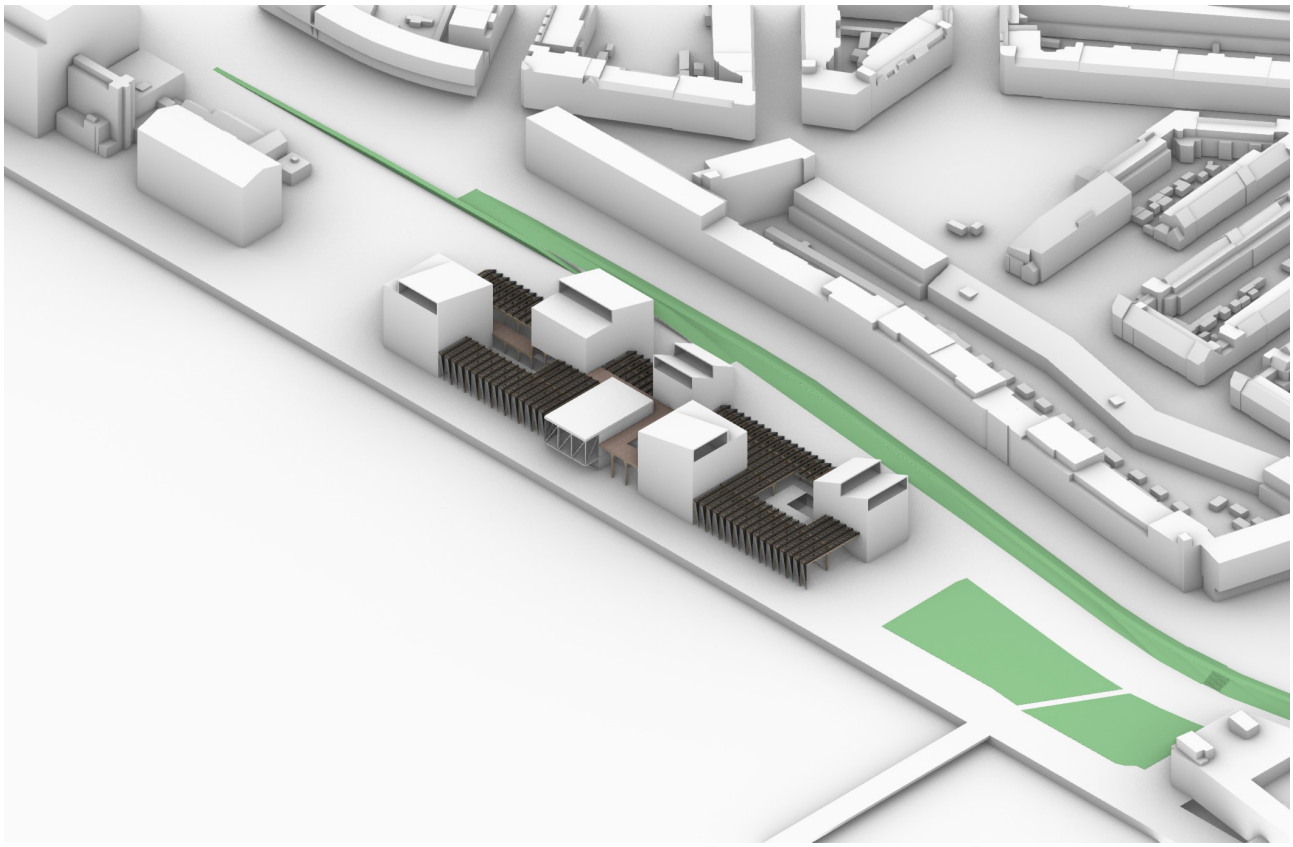
Column section
(Bolt anchored)

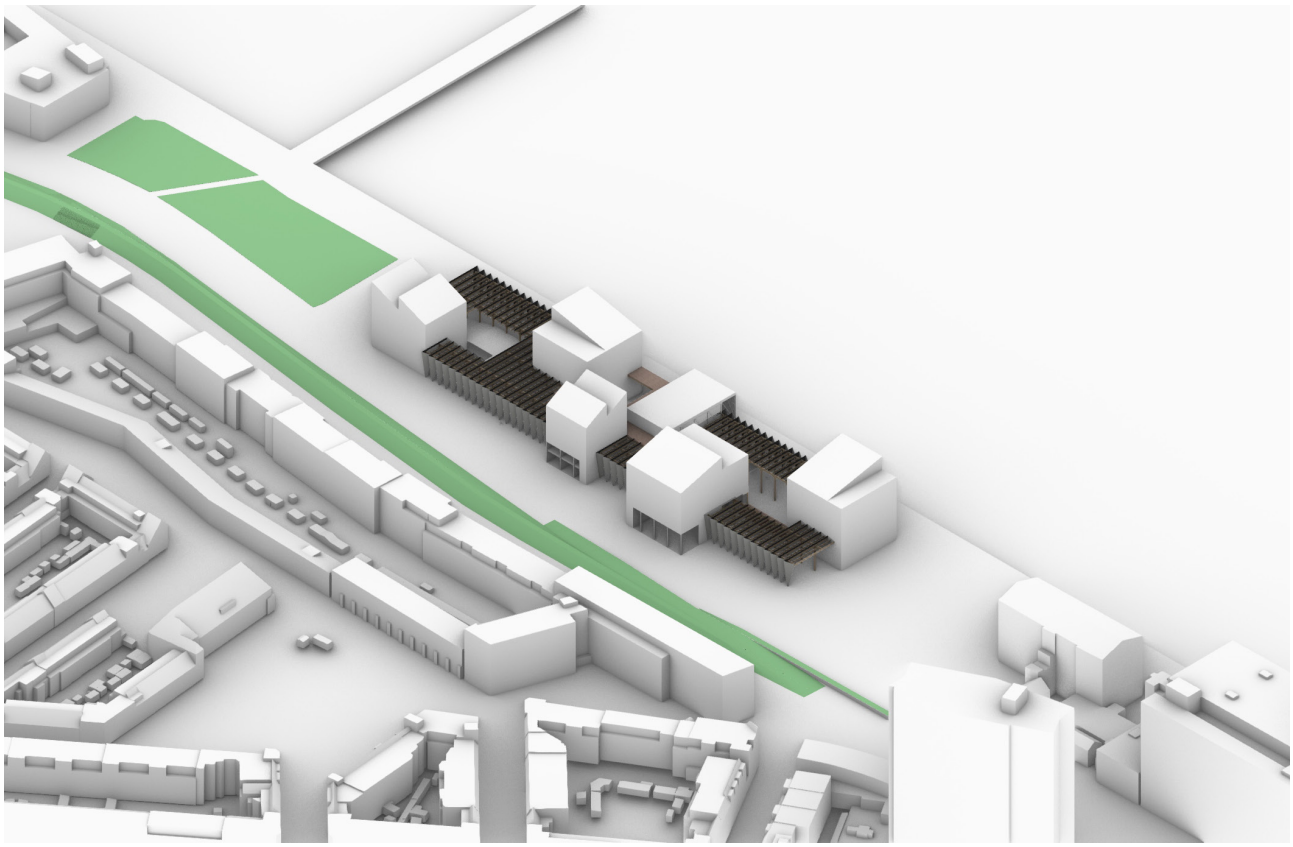


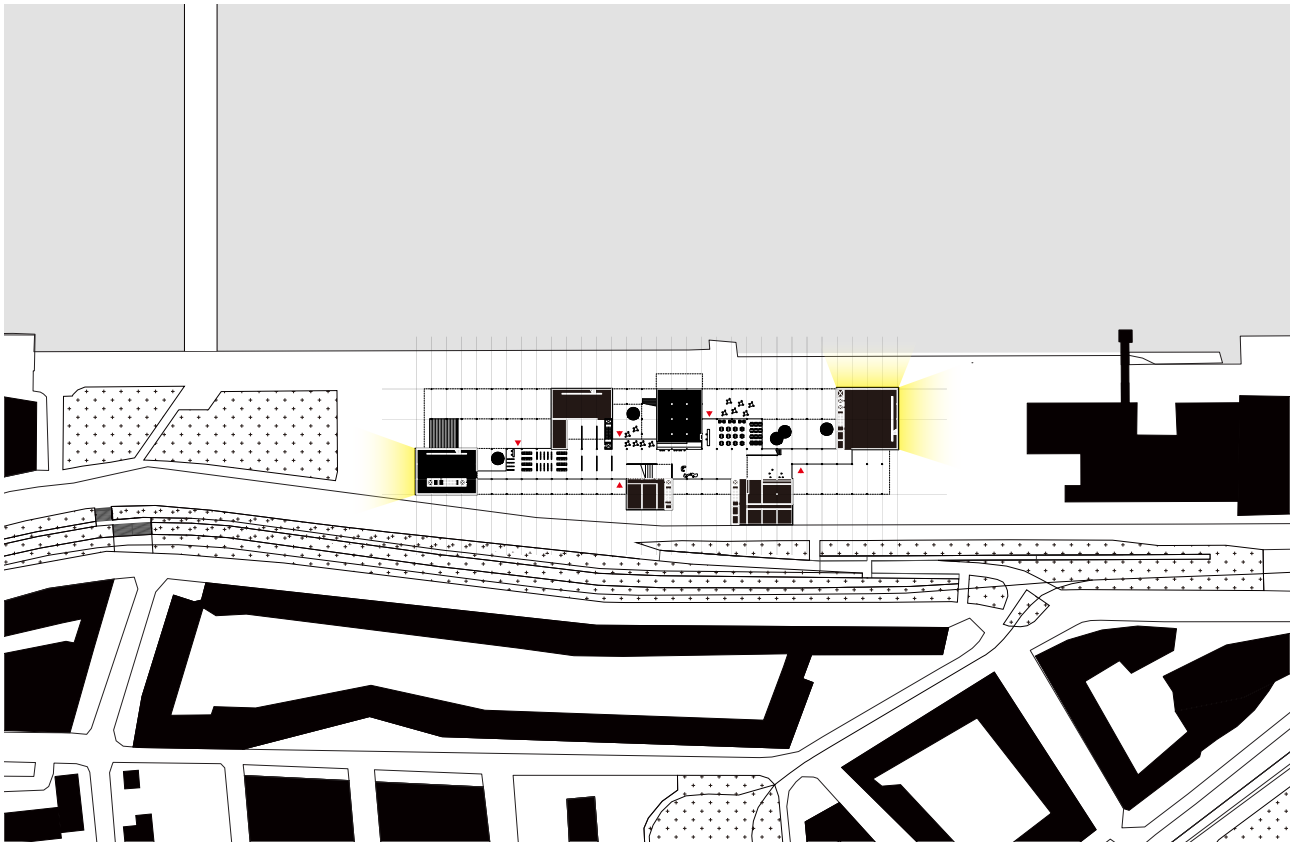

Summer scheme



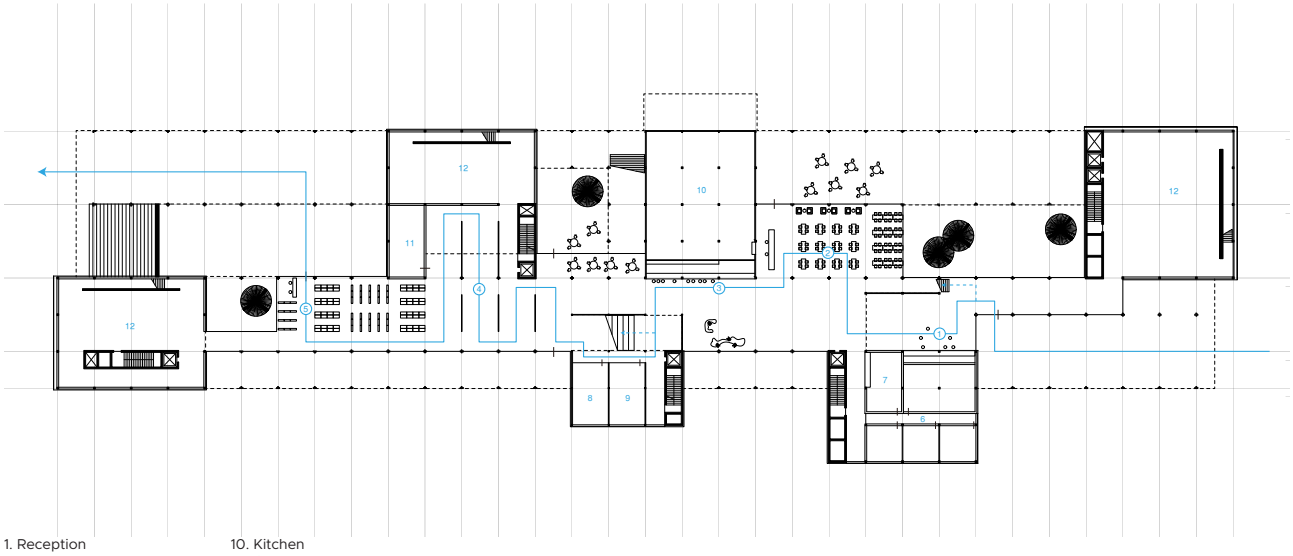

Winter scheme





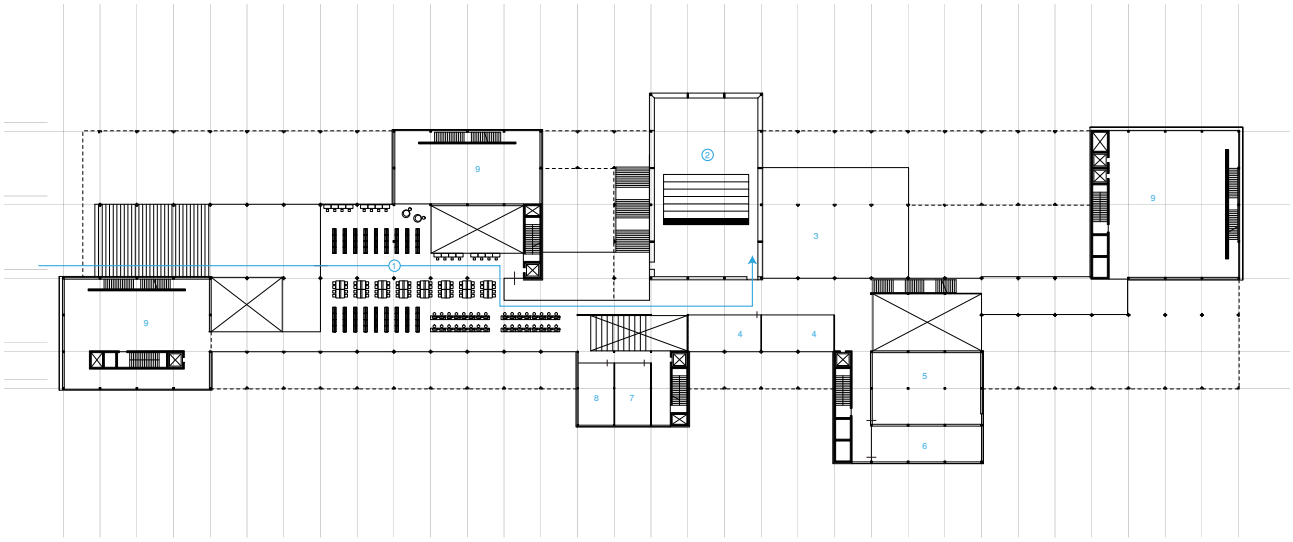


# Ground floor plan



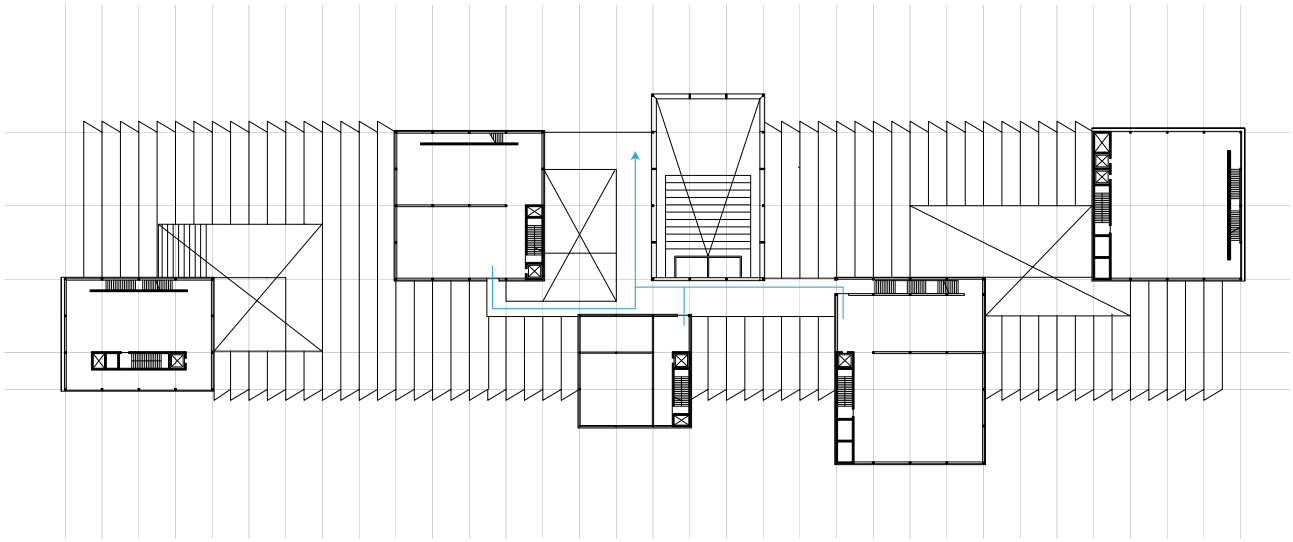
1. Reception
2. Restaurant
3. Cafe & Bar
4. Public exhibition
5. Museum shop
6. Management & service
7. Coat check & Locker
8. AR studio
9 VR studio
10. Kitchen
11. Shop storage
12. Exhibition

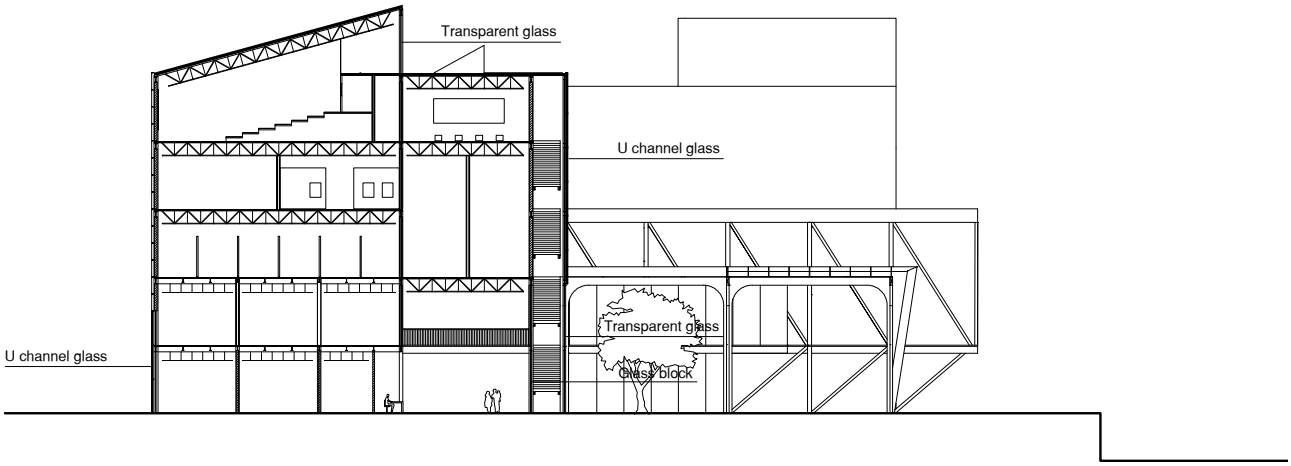
# First floor plan

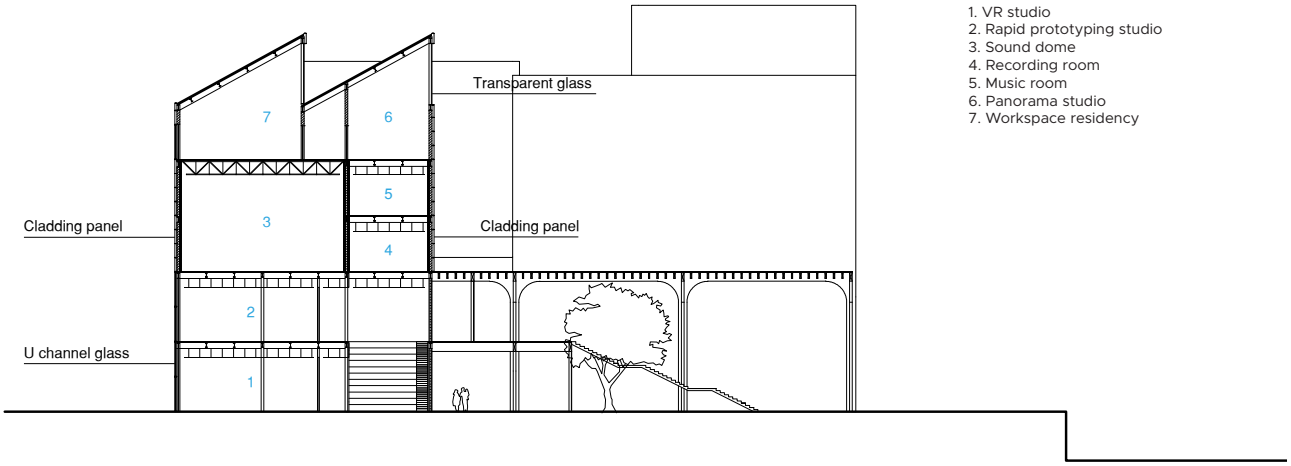


1. Mediatheque
2. Events hall
3. Office
4. Conference room
5. Archive
6. Curator office
7. Sensor tech studio
8. Rapid prototyping lab
9. Exhibition

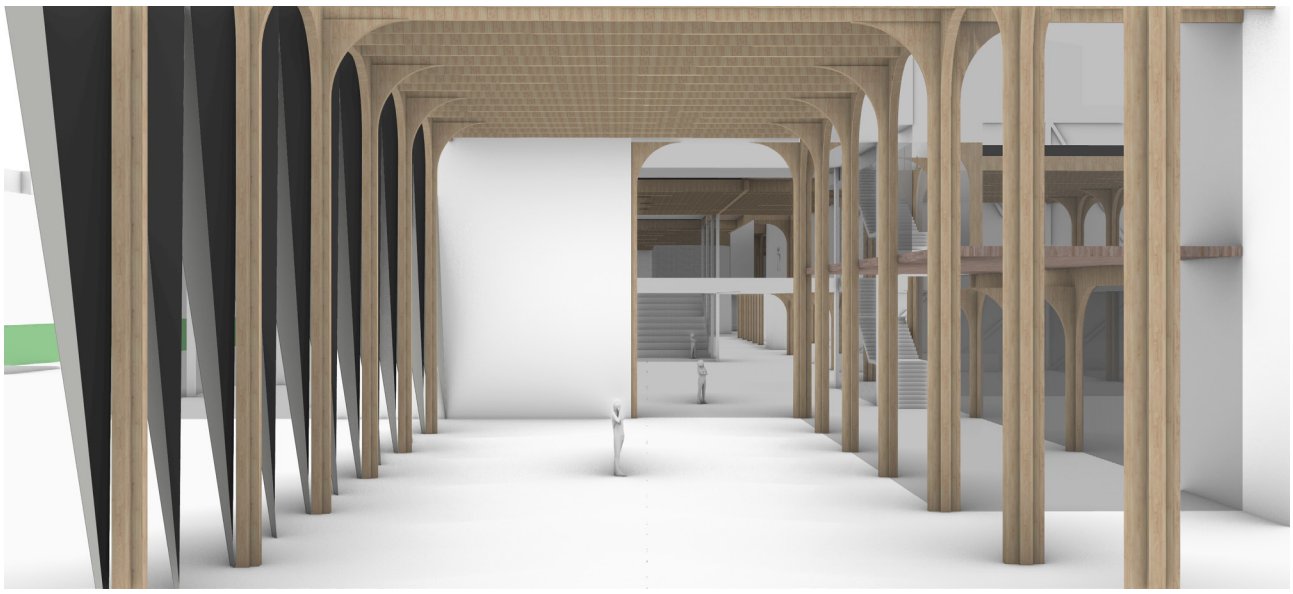
# Second floor plan

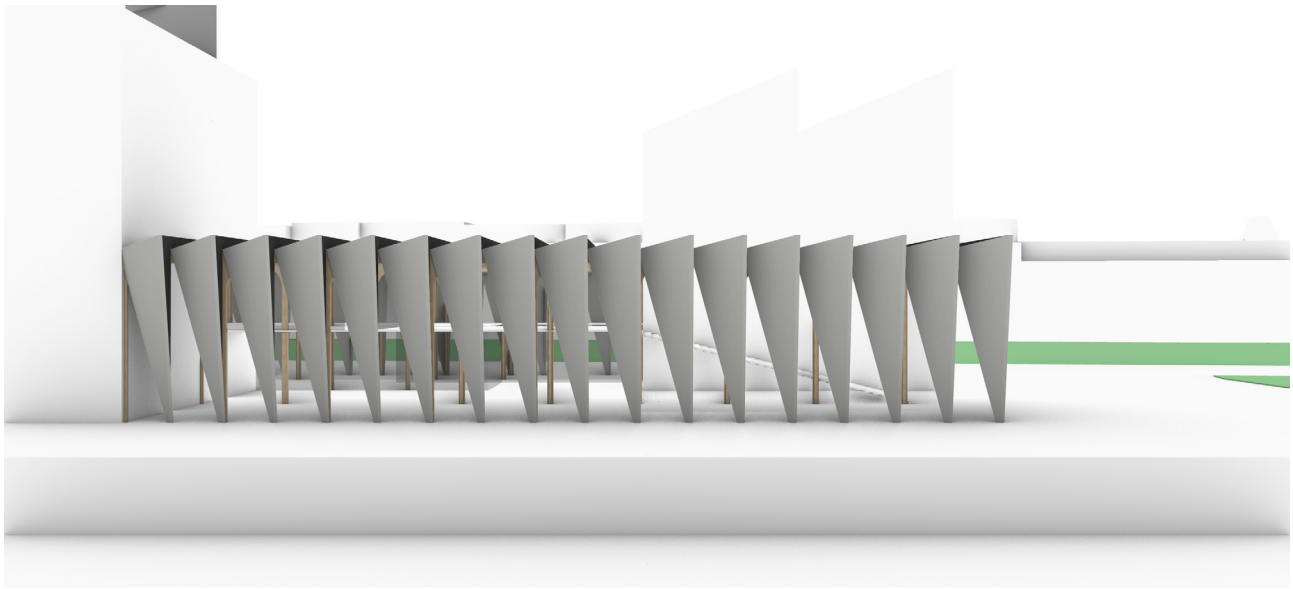


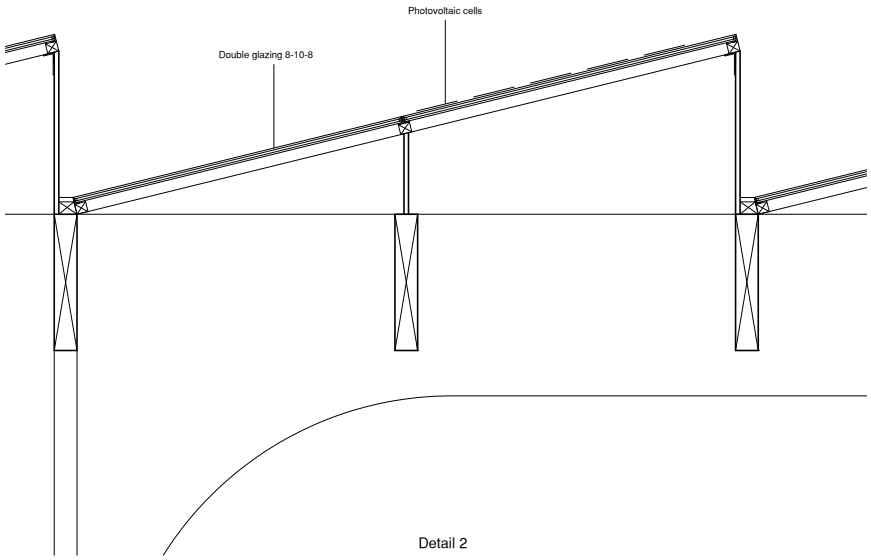


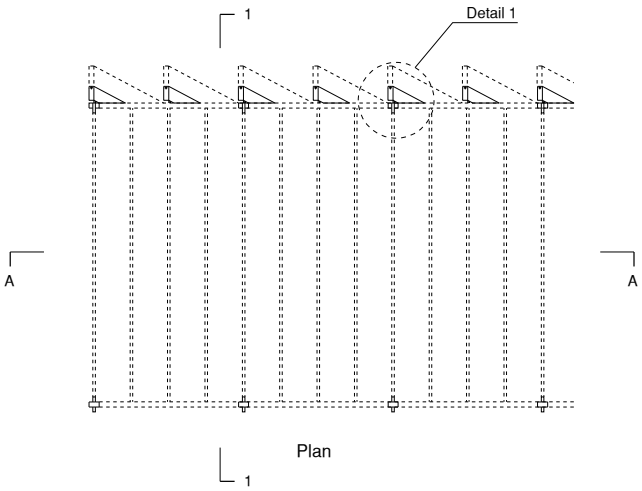

1. VR studio
2. Rapid prototyping studio
3. Sound dome
4. Recording room
5. Music room
6. Panorama studio
7. Workspace residency



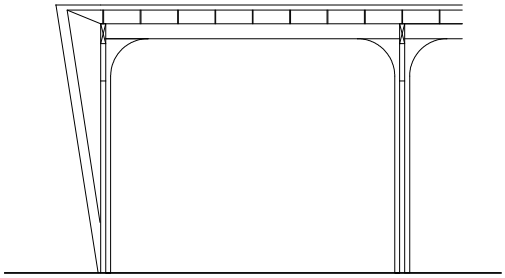




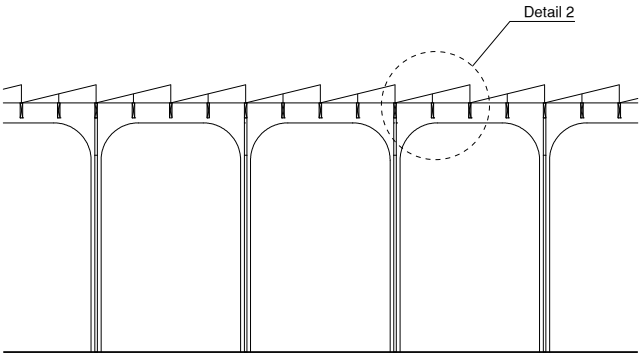

Detail 2



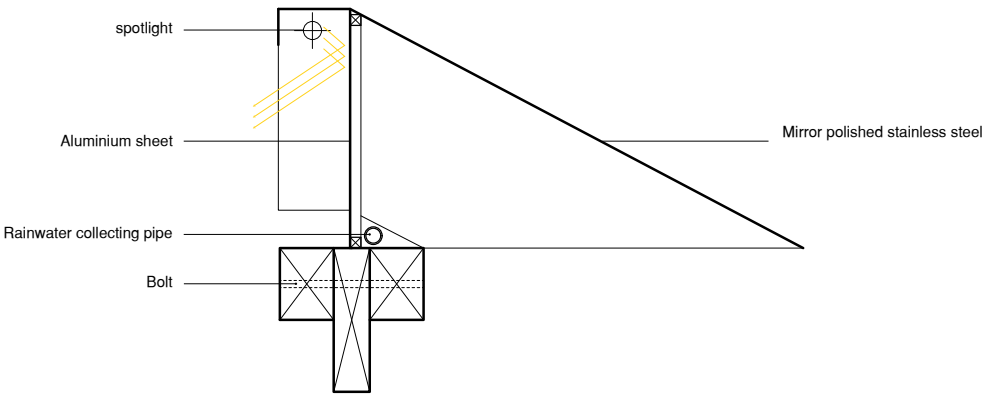

Plan



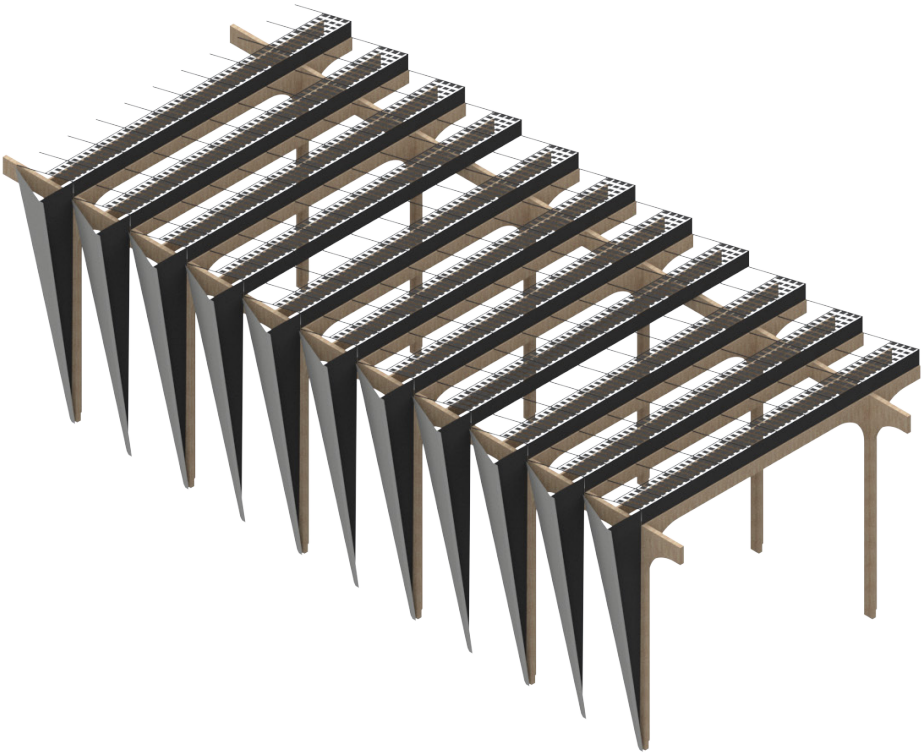
1-1 section

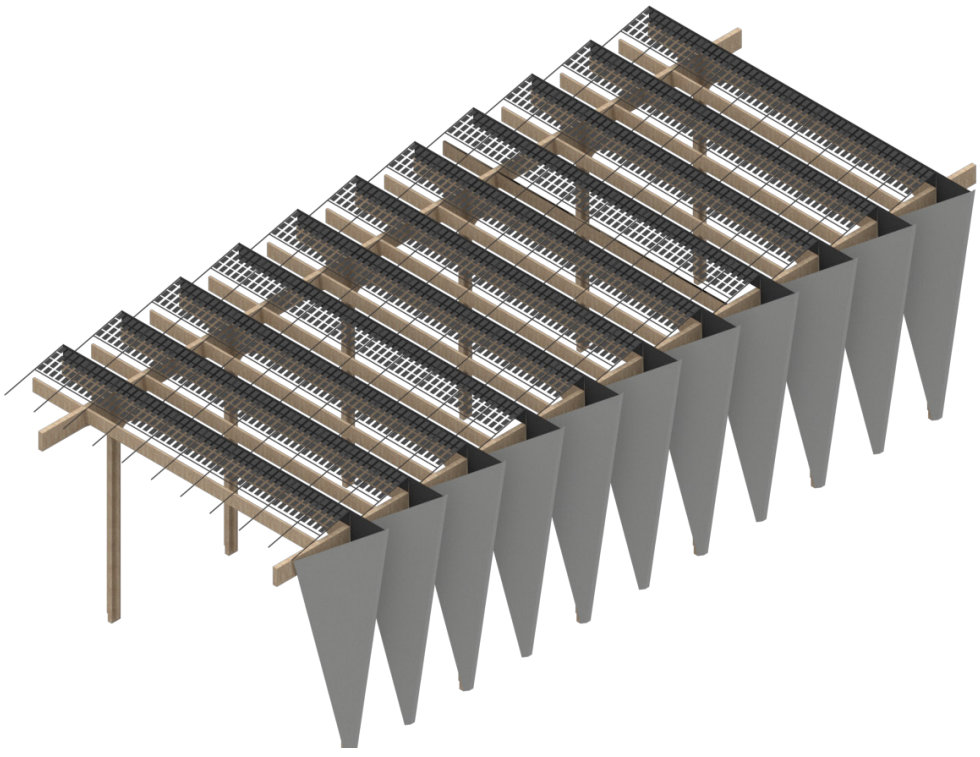


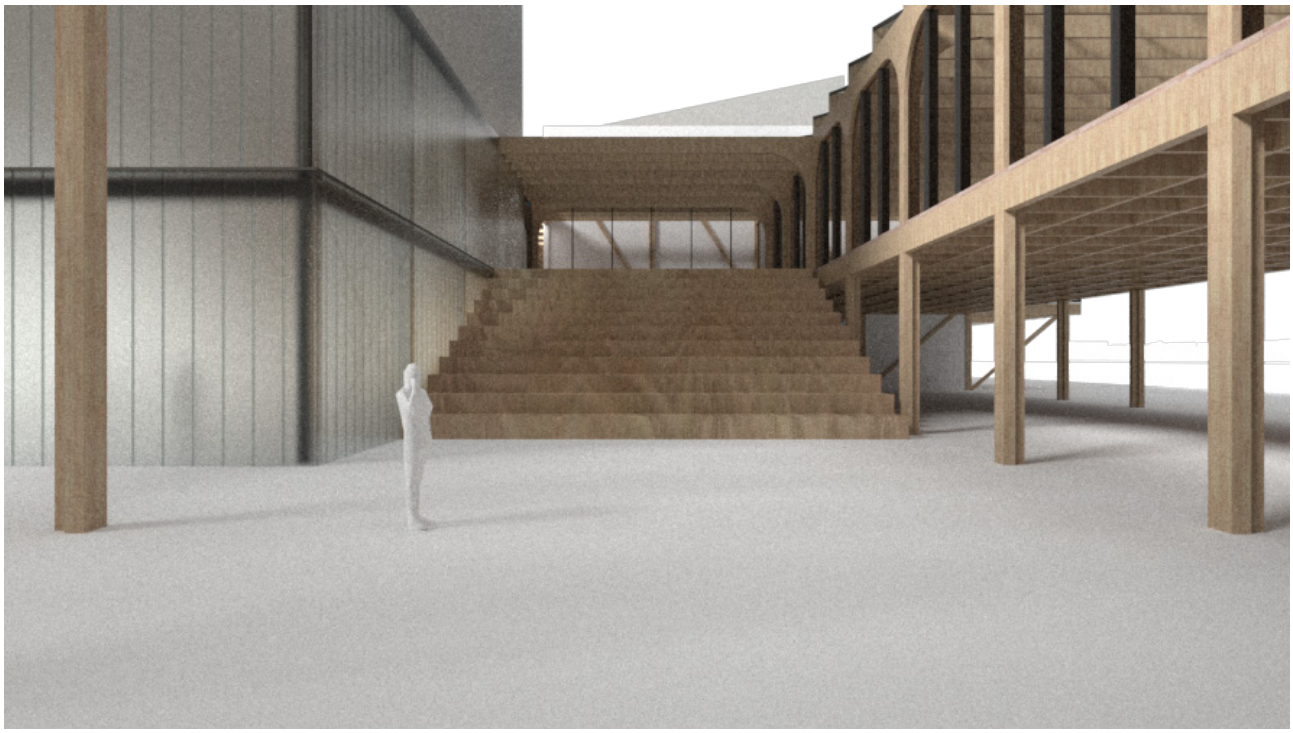

A-A section

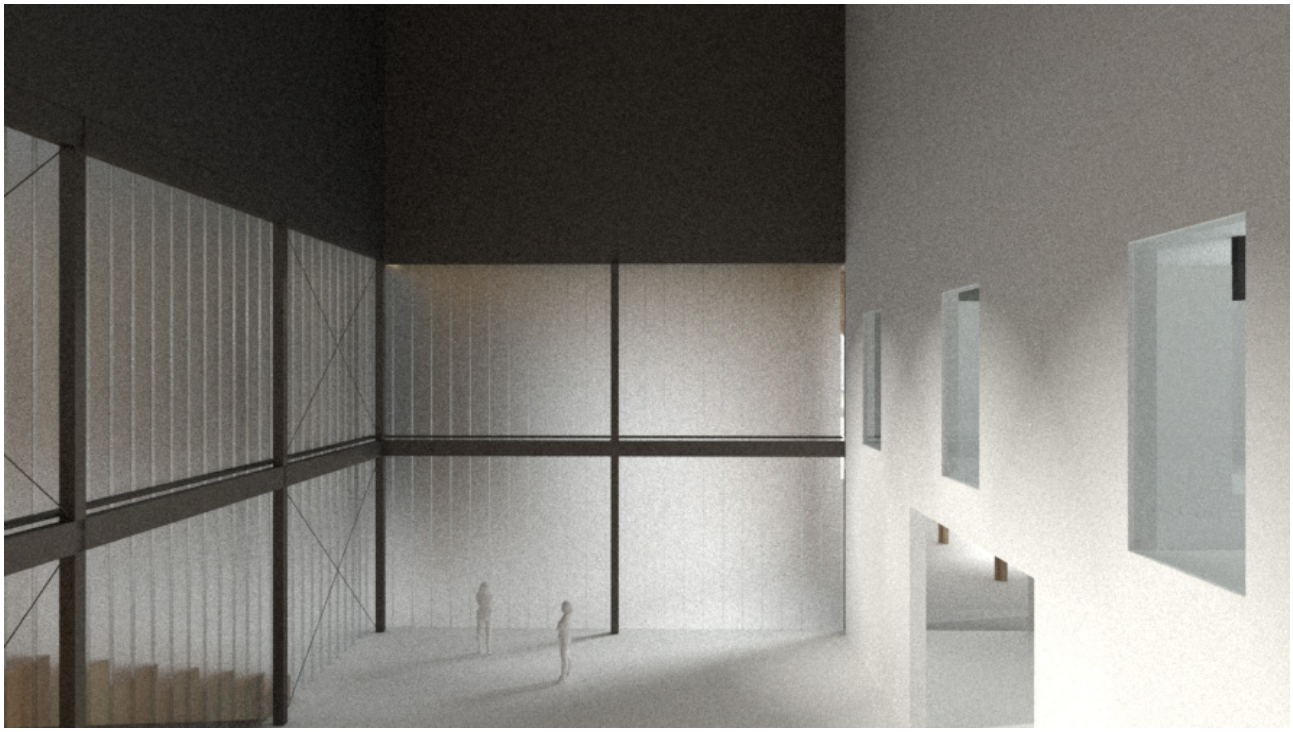


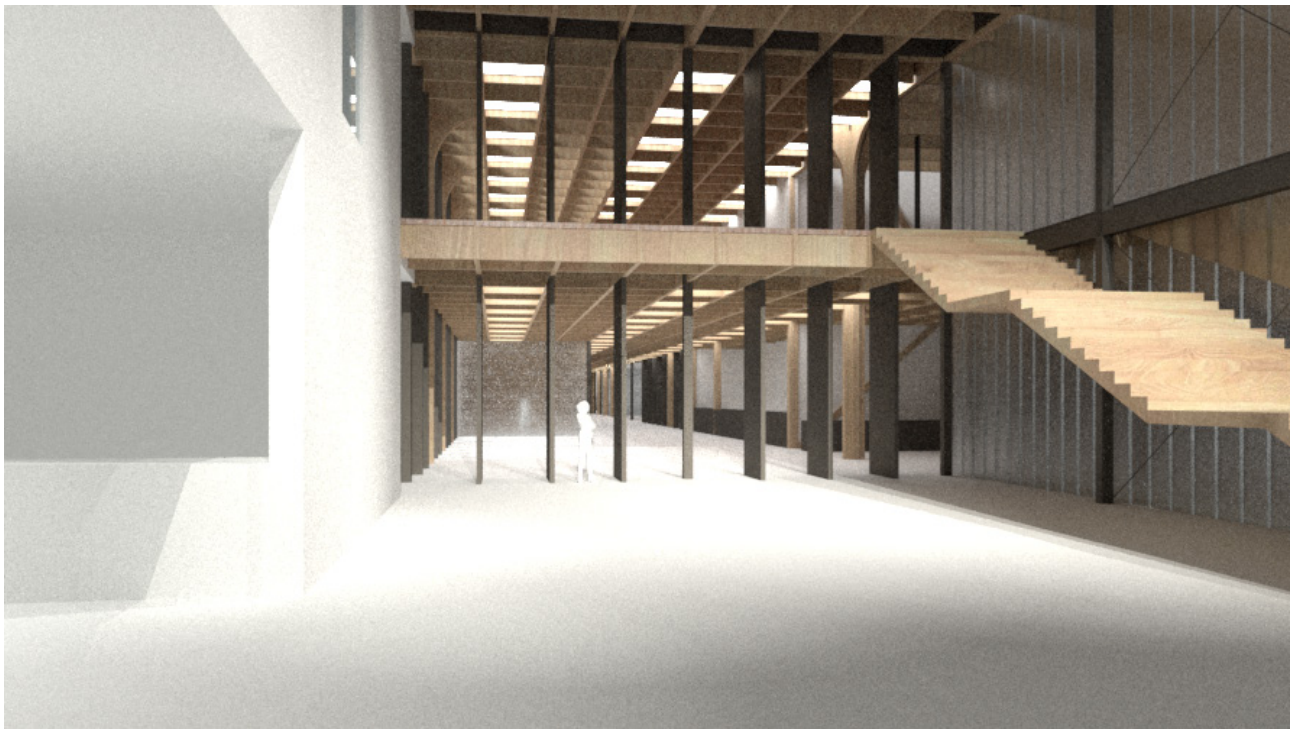

Detail 1

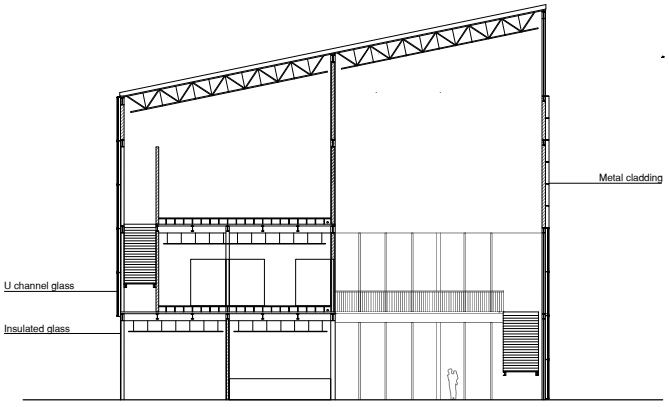


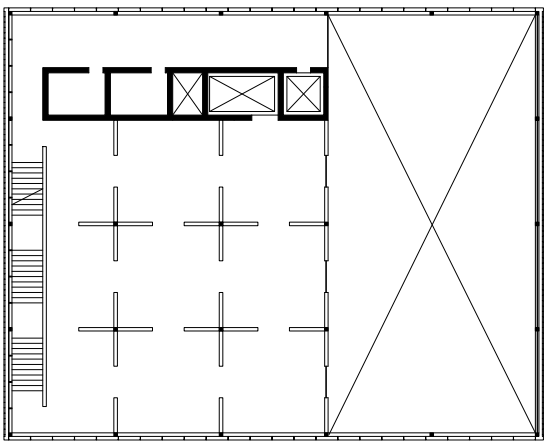


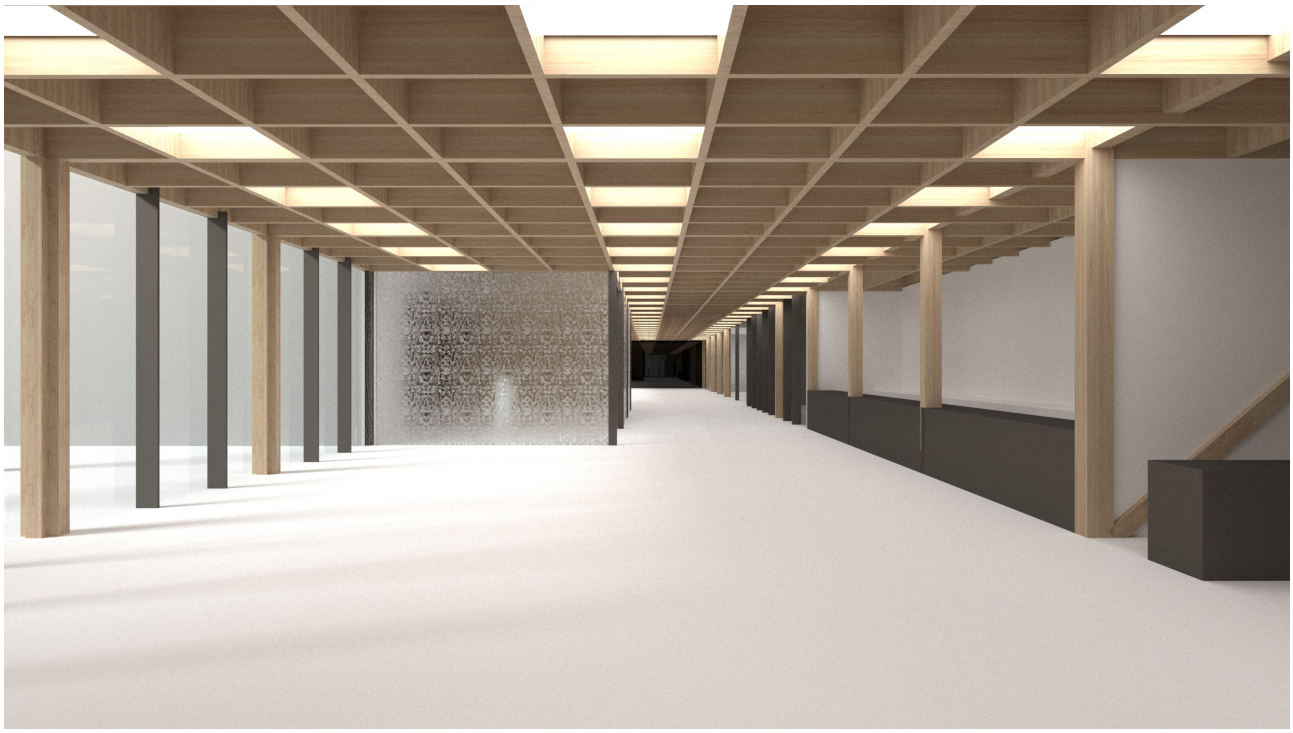


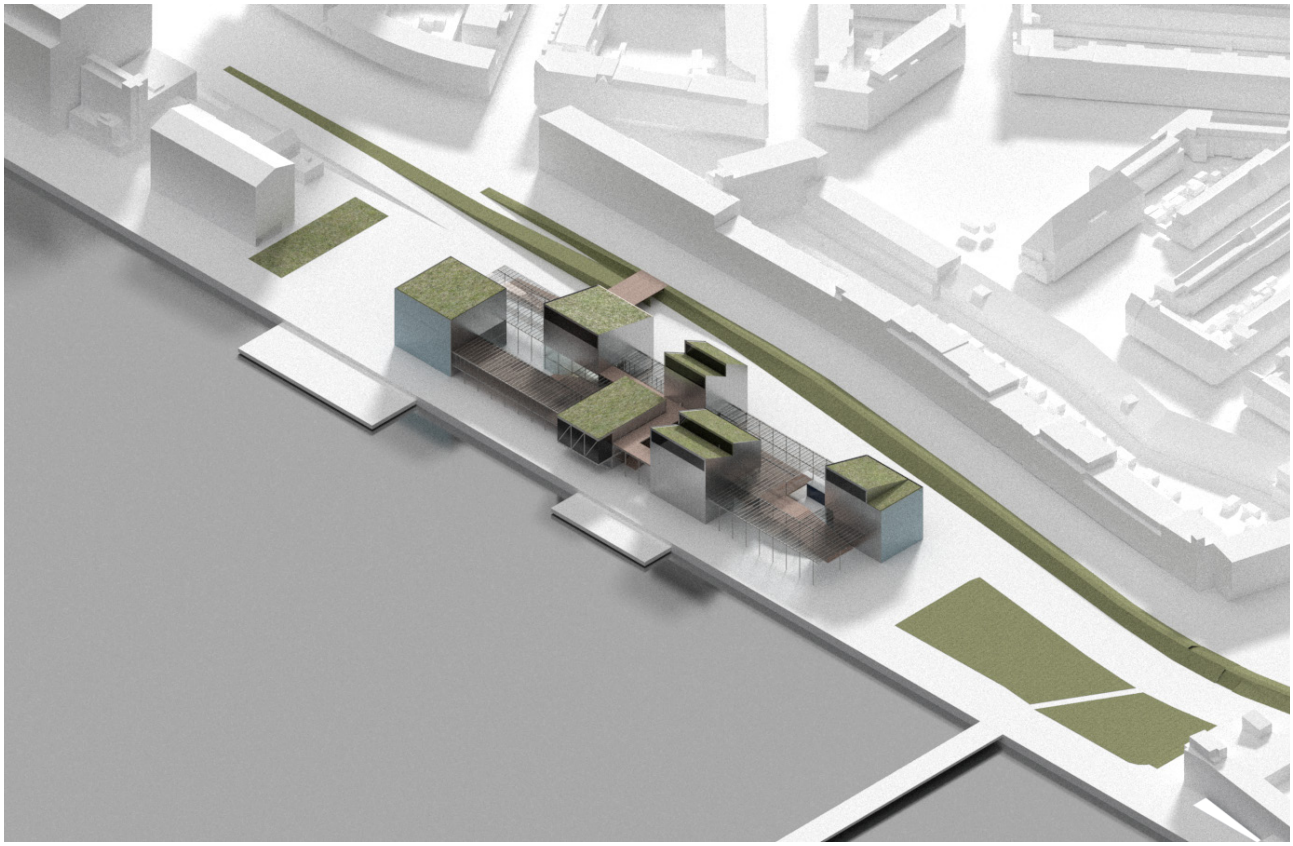


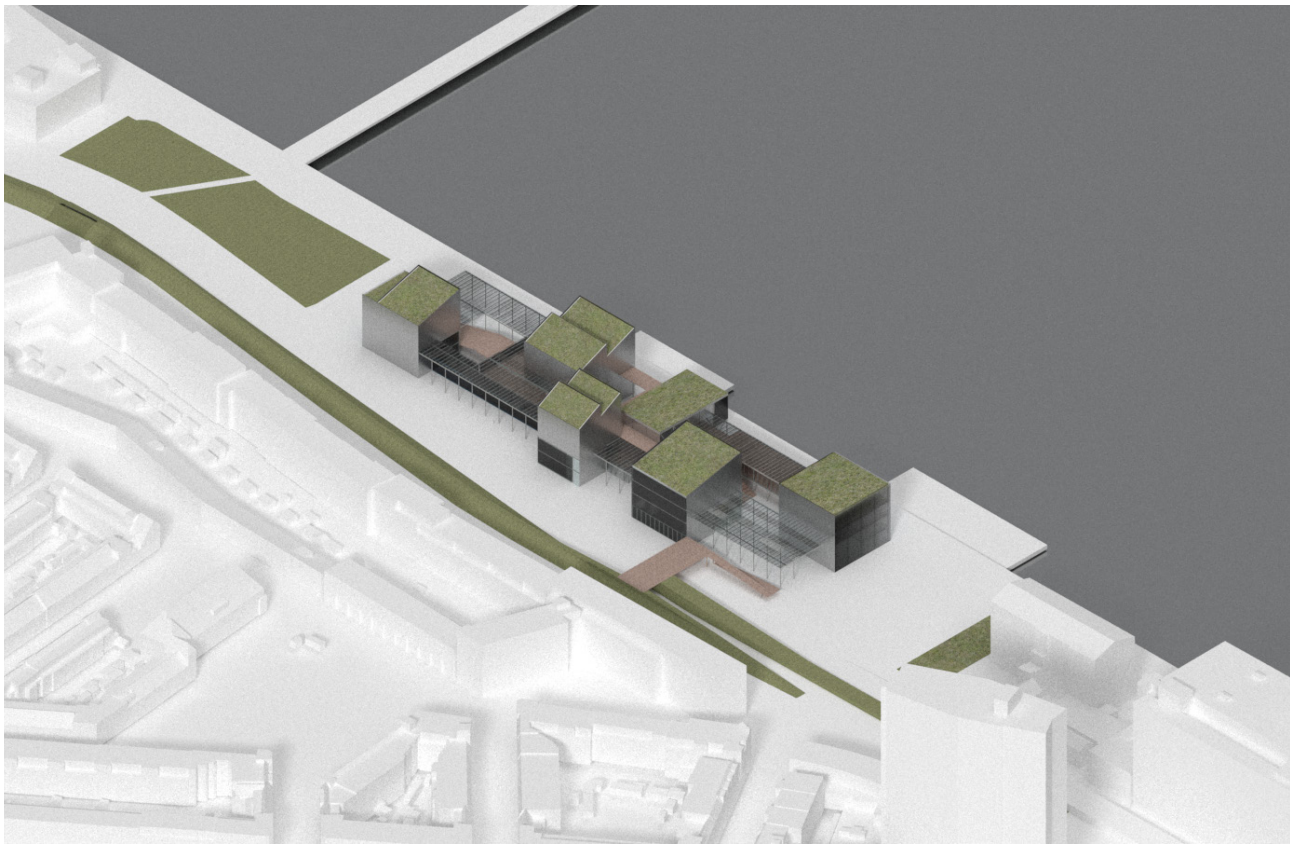



Metal cladding
U channel glass
Insulated glass

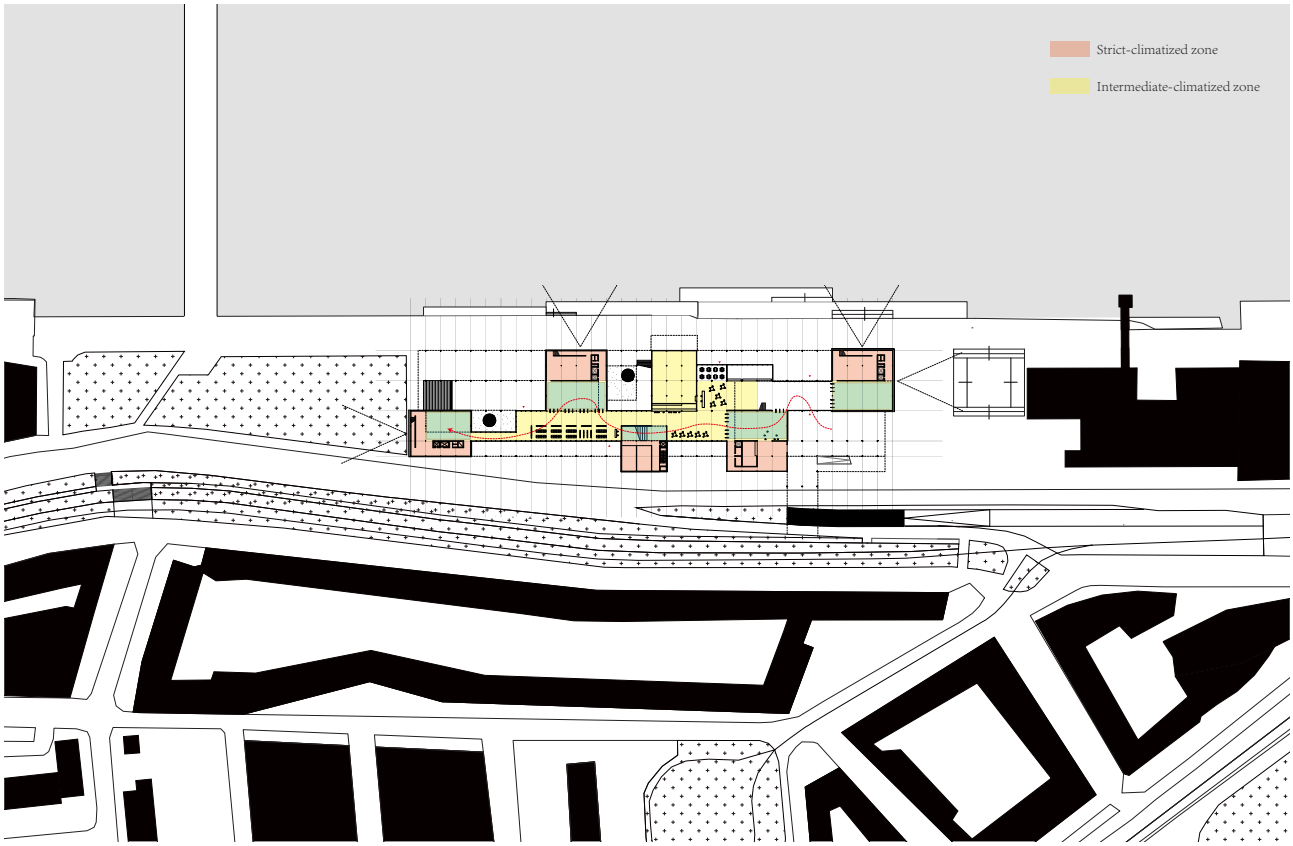




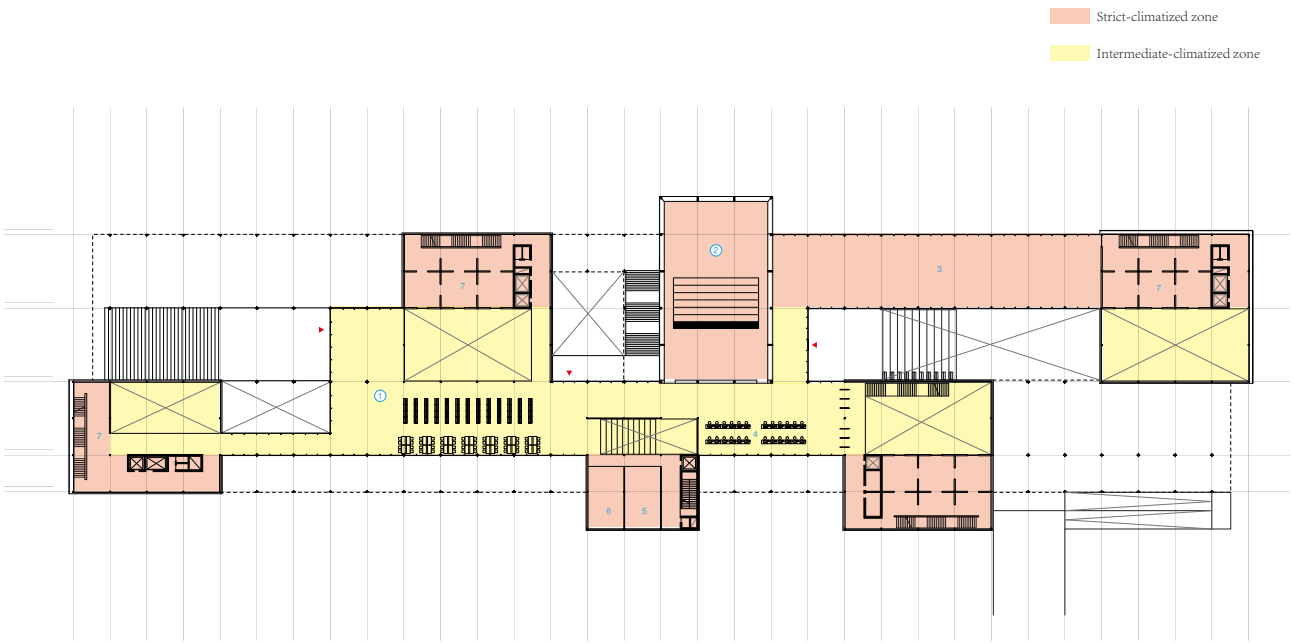




# Nolli plan

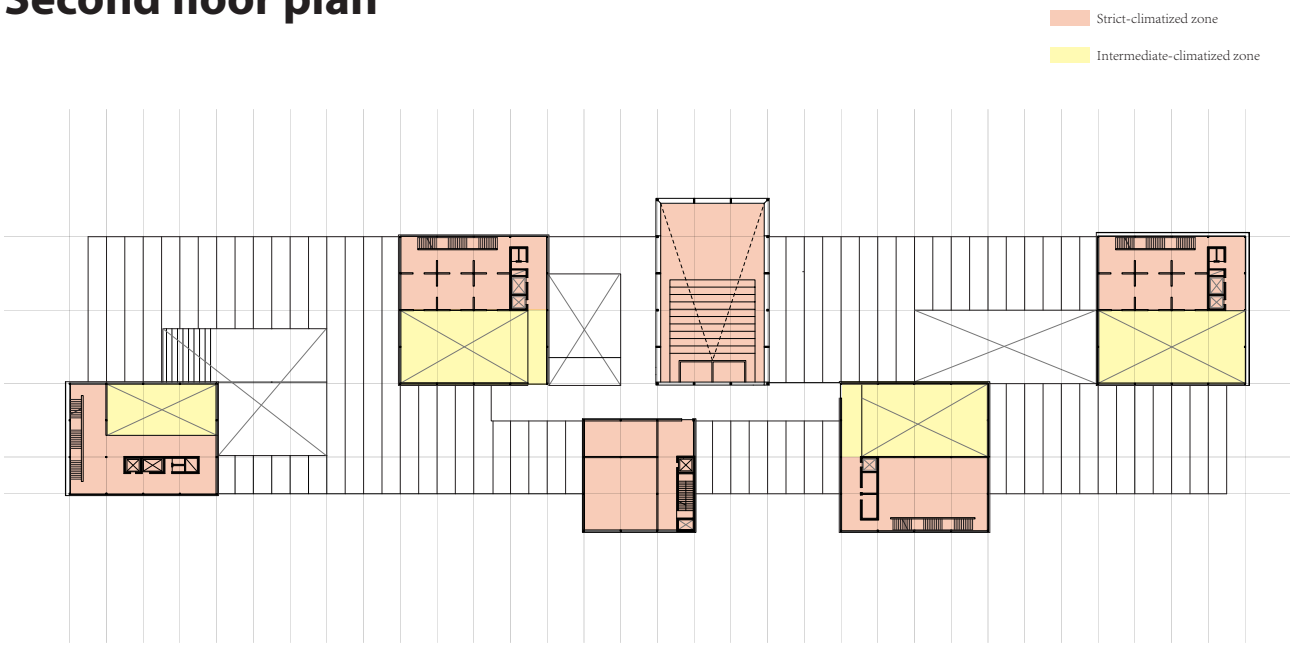



# First floor plan

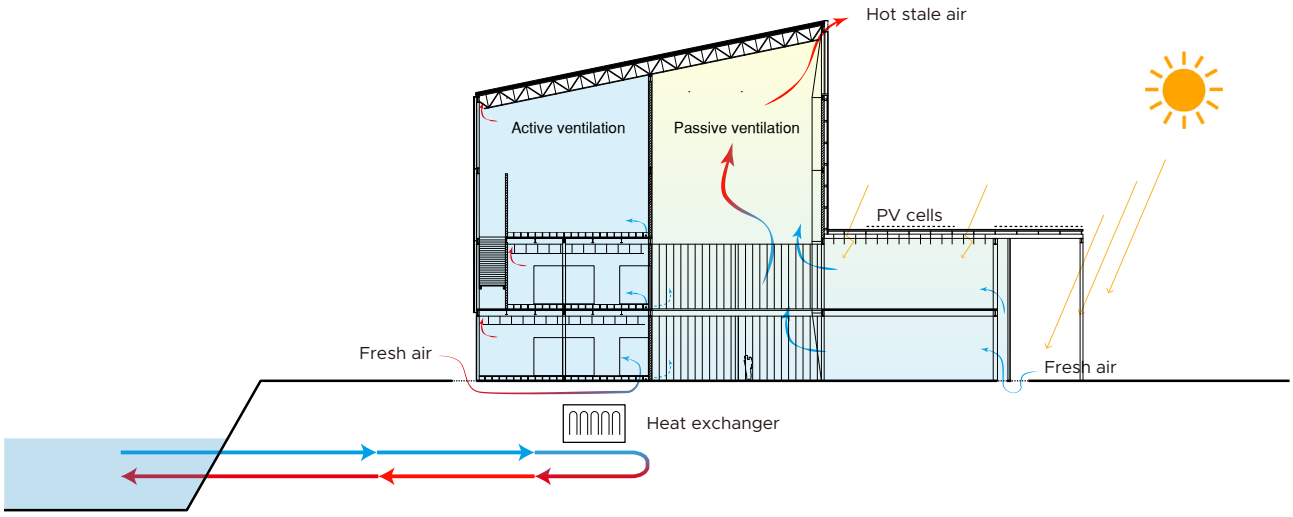



1. Mediatheque
2. Events hall
3. Office
4. Digital archive
5. Sensor tech studio
6. Rapid prototyping lab
7. Exhibition

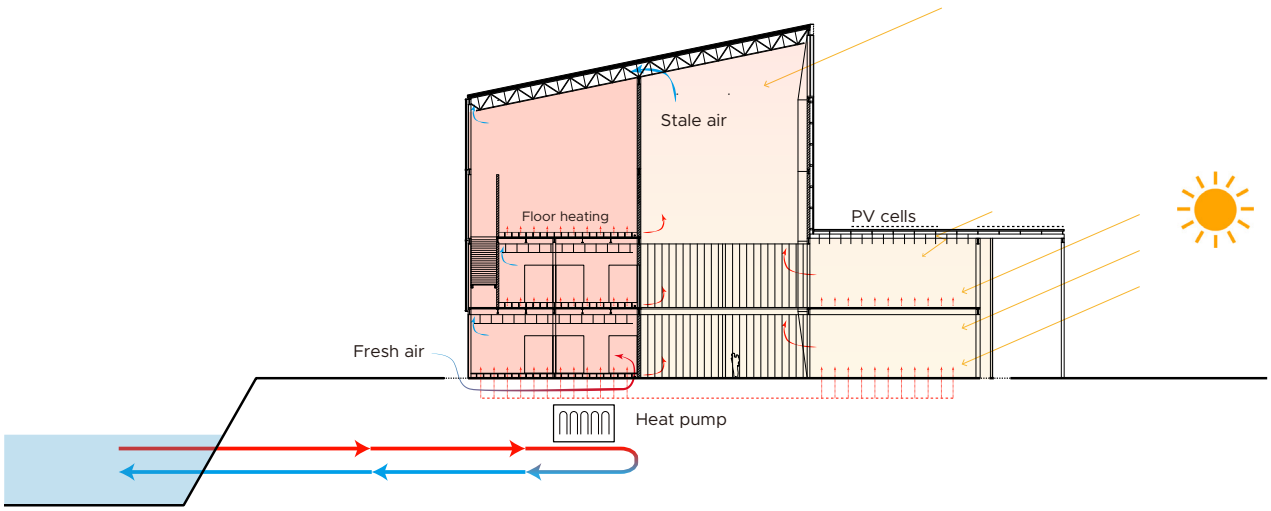
# Second floor plan

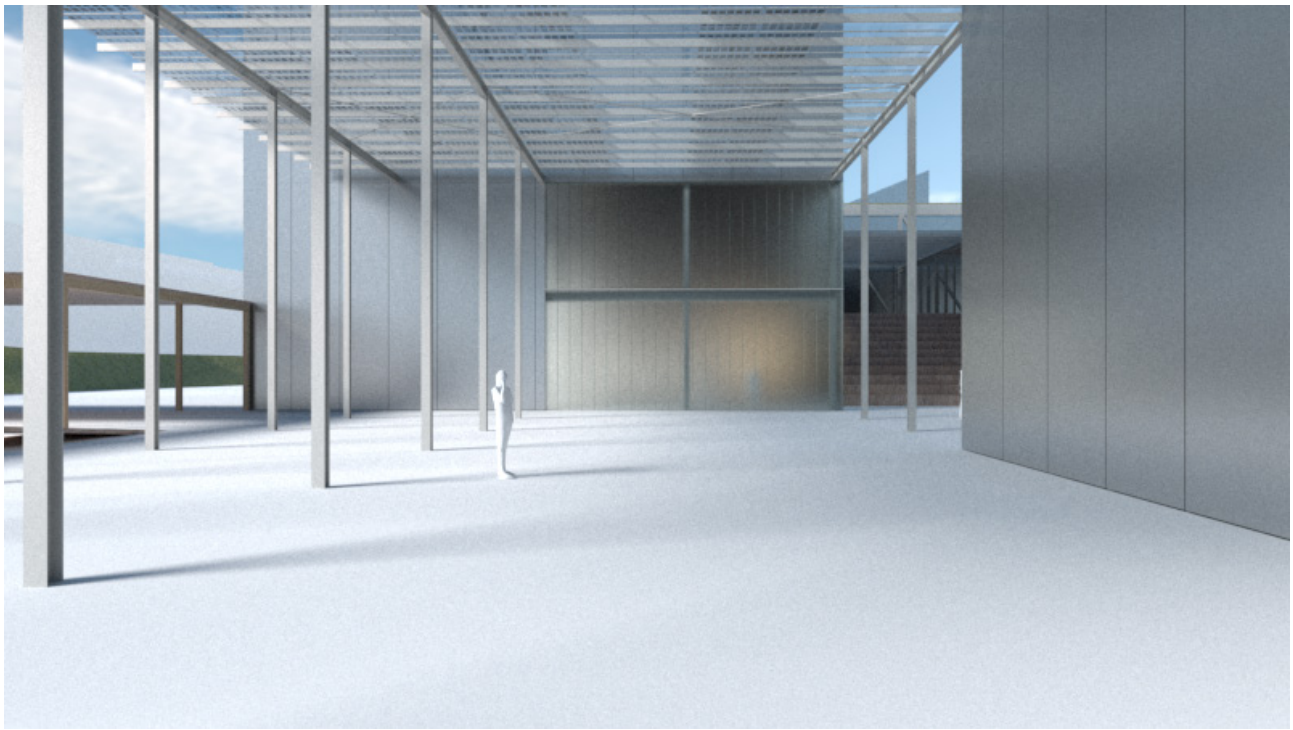


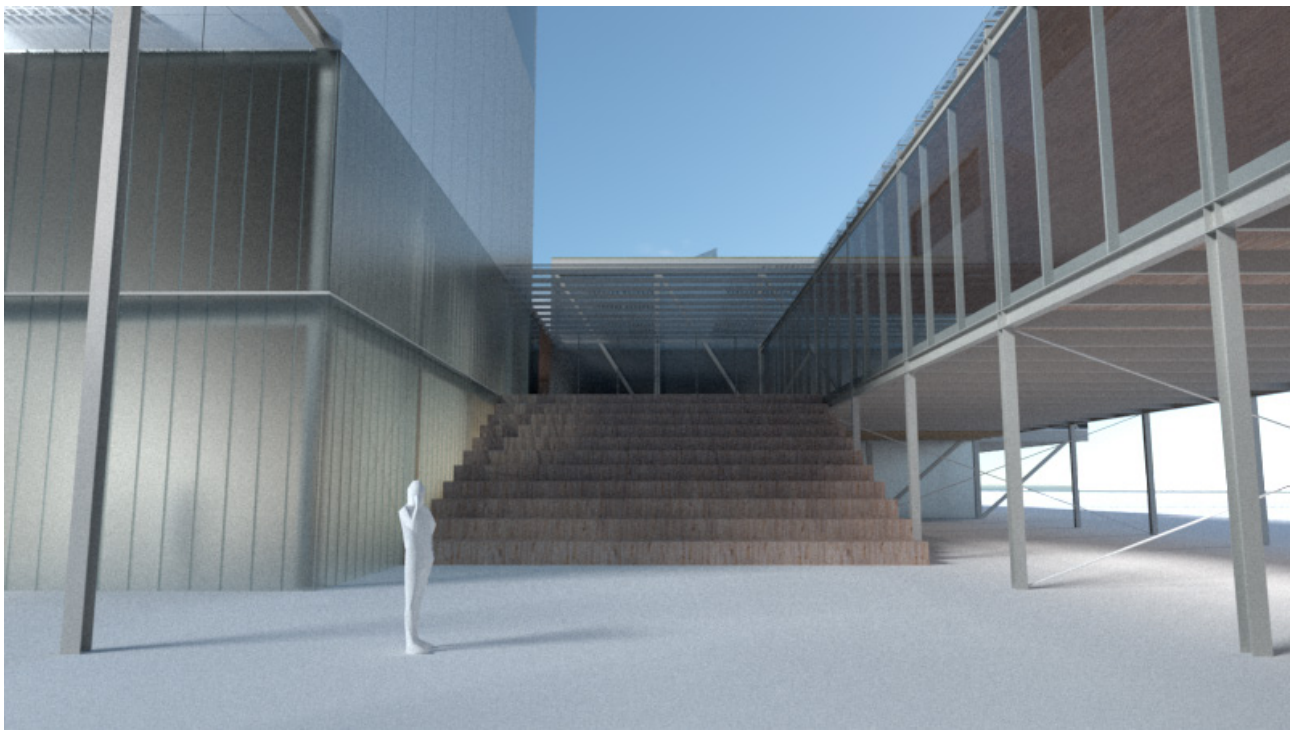

# Summer scheme



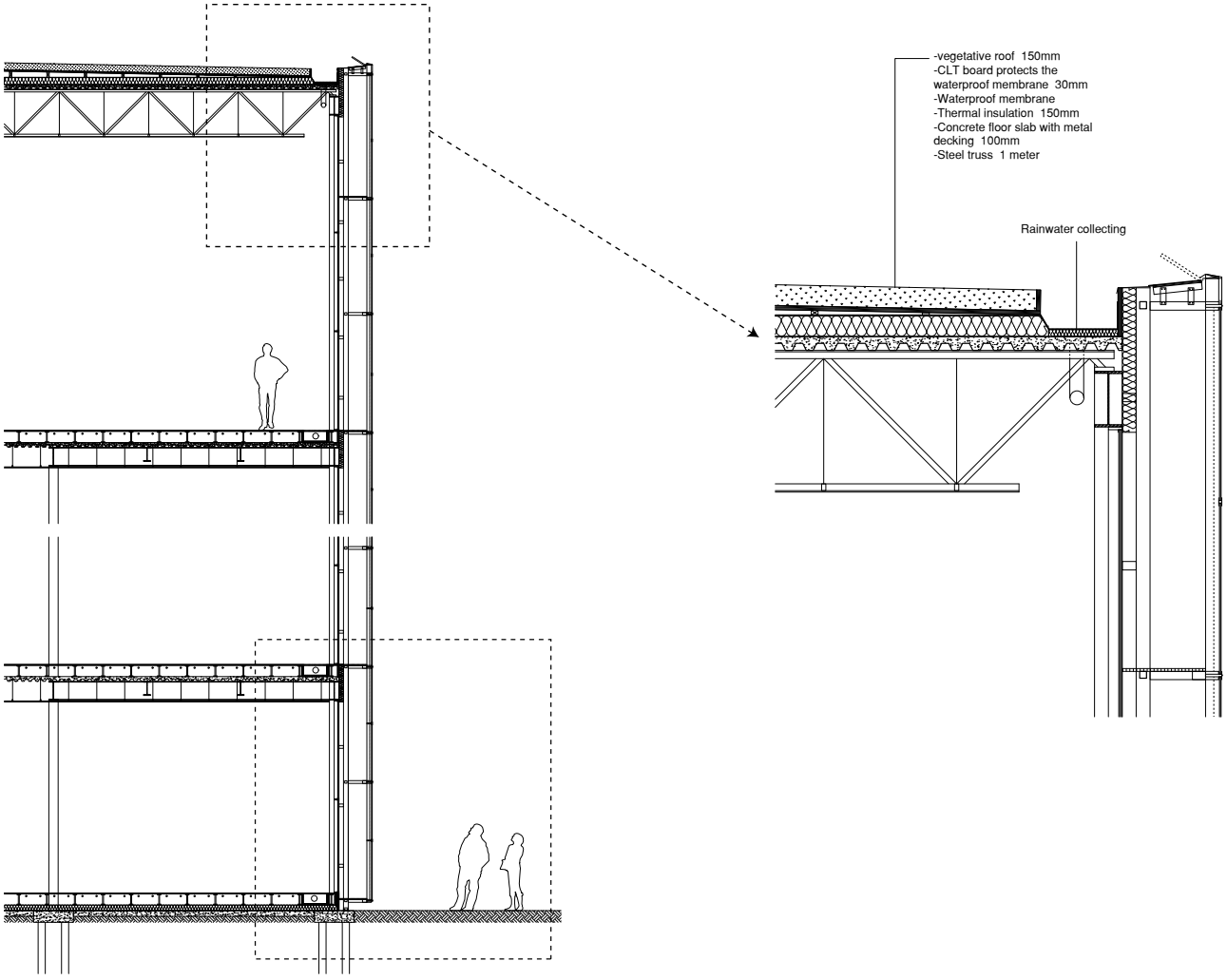

# Winter scheme

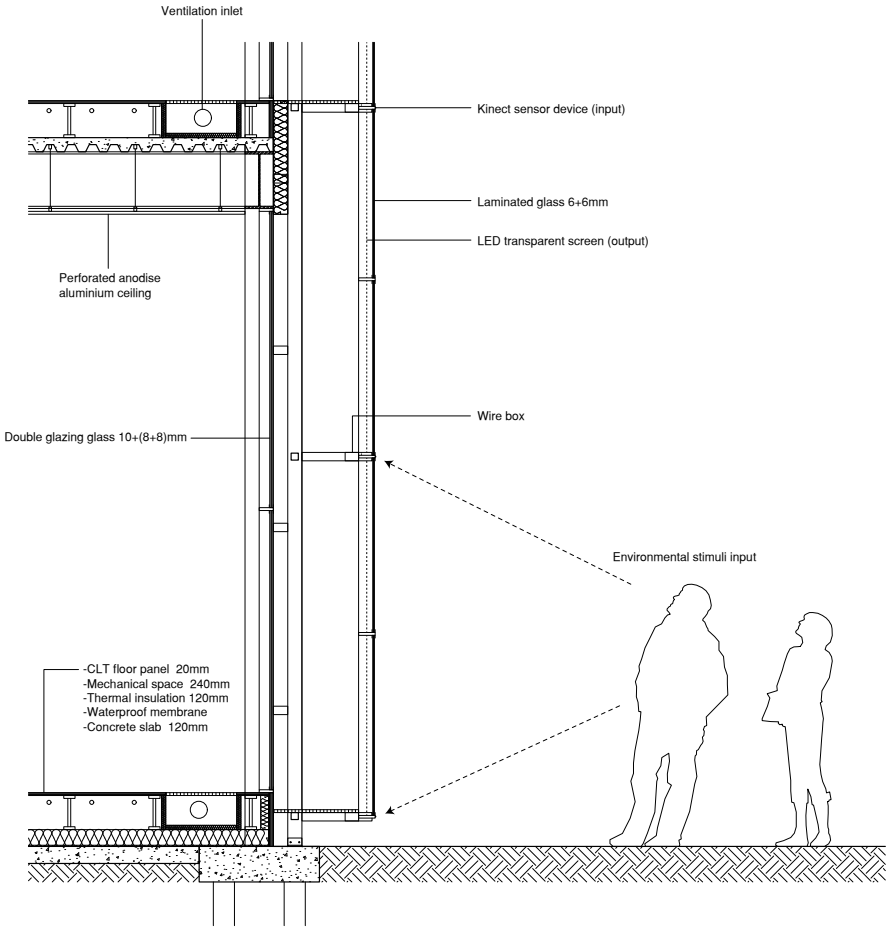


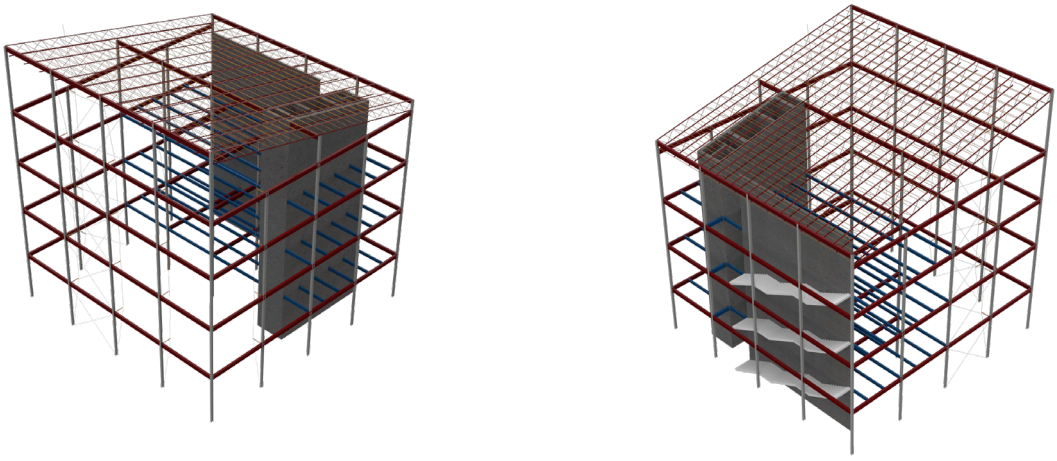




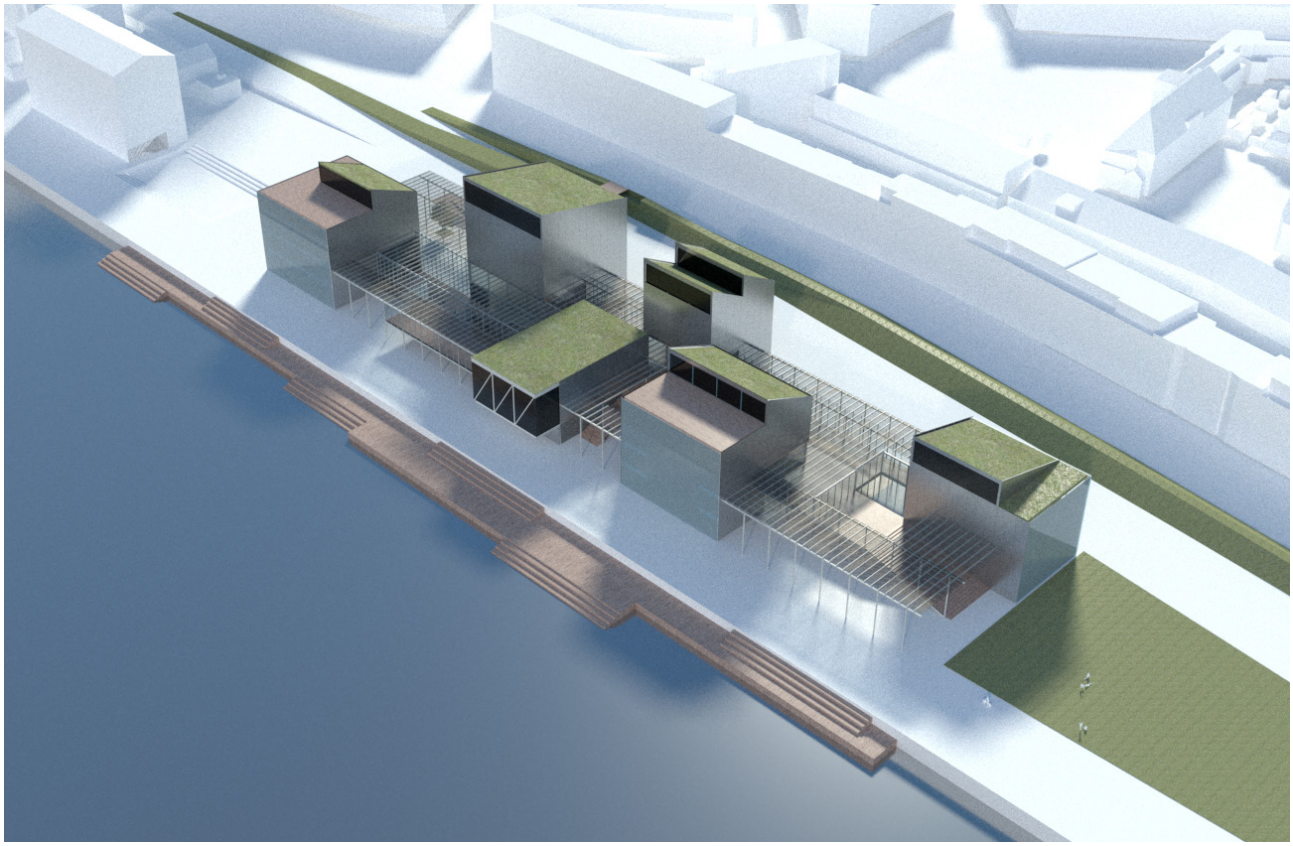
# Facade detail

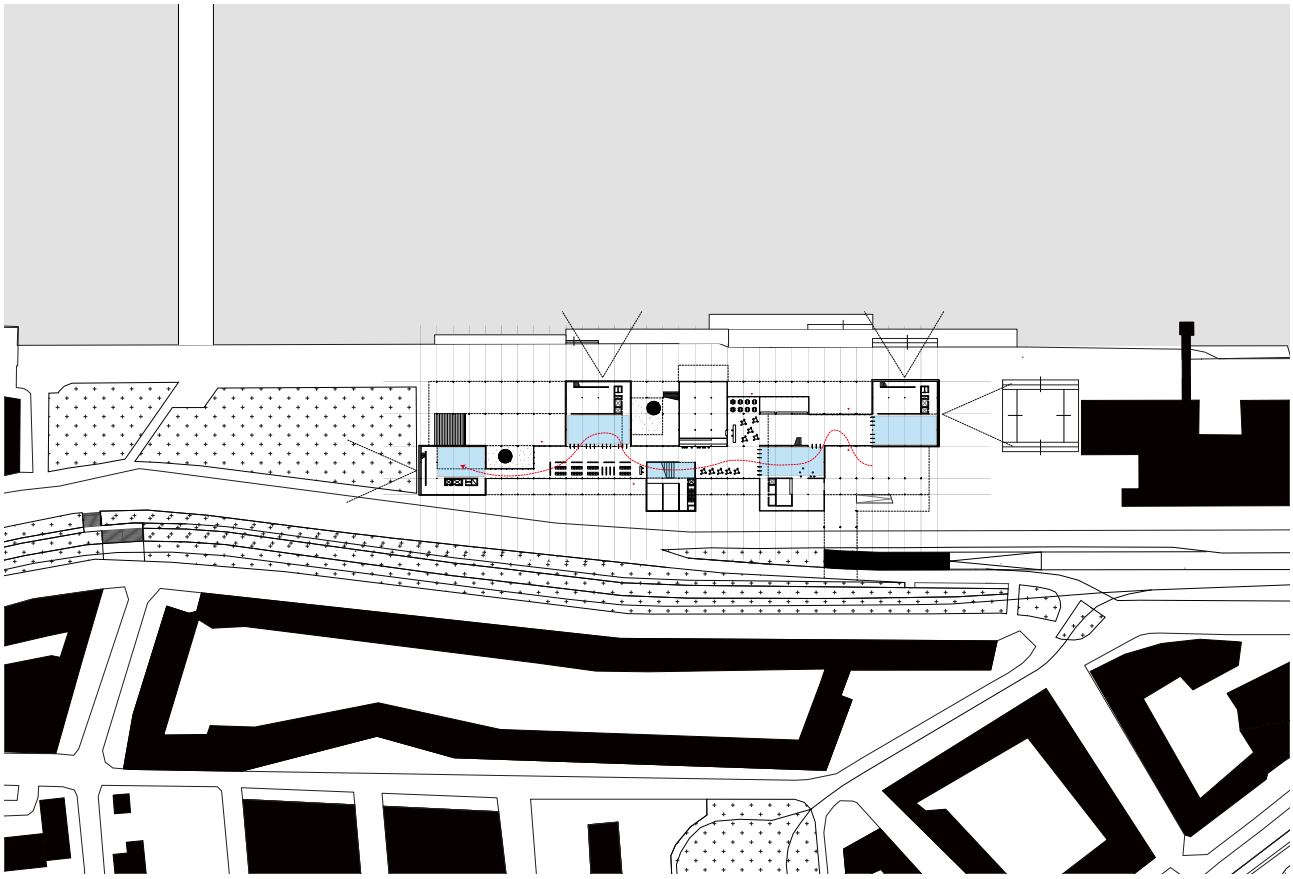


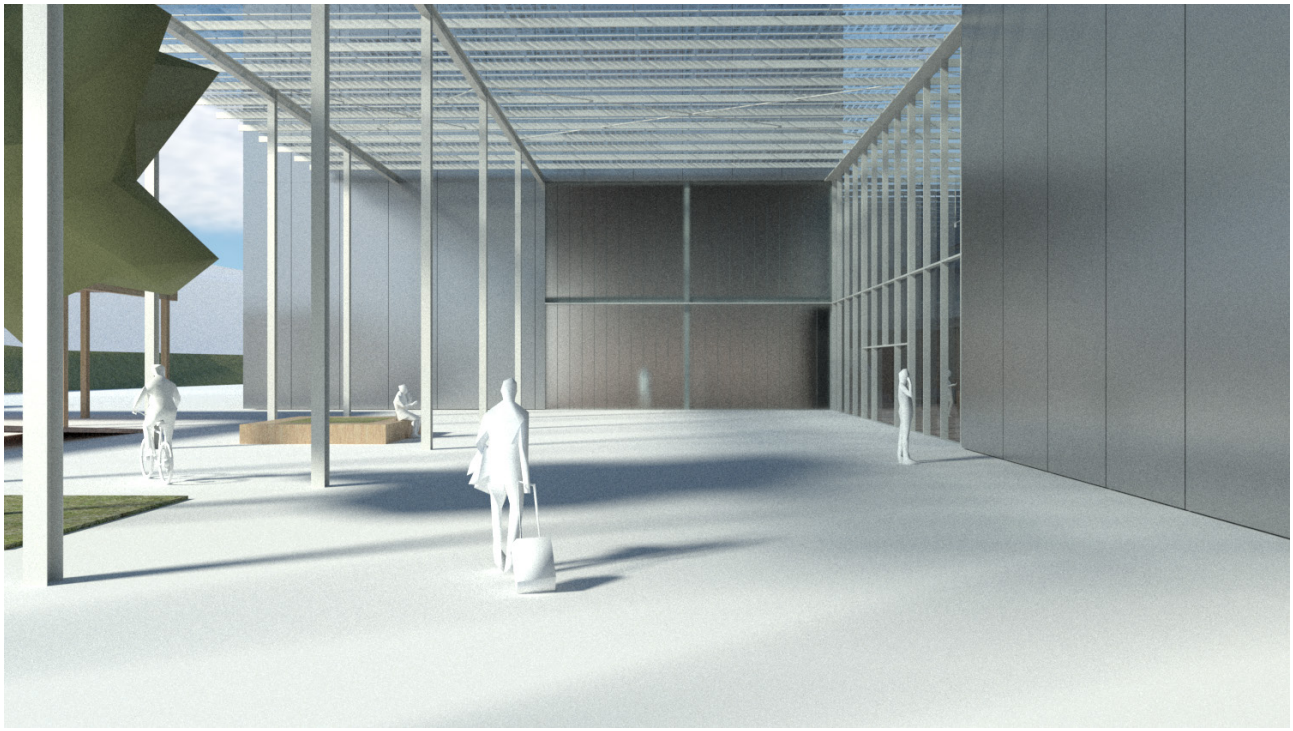


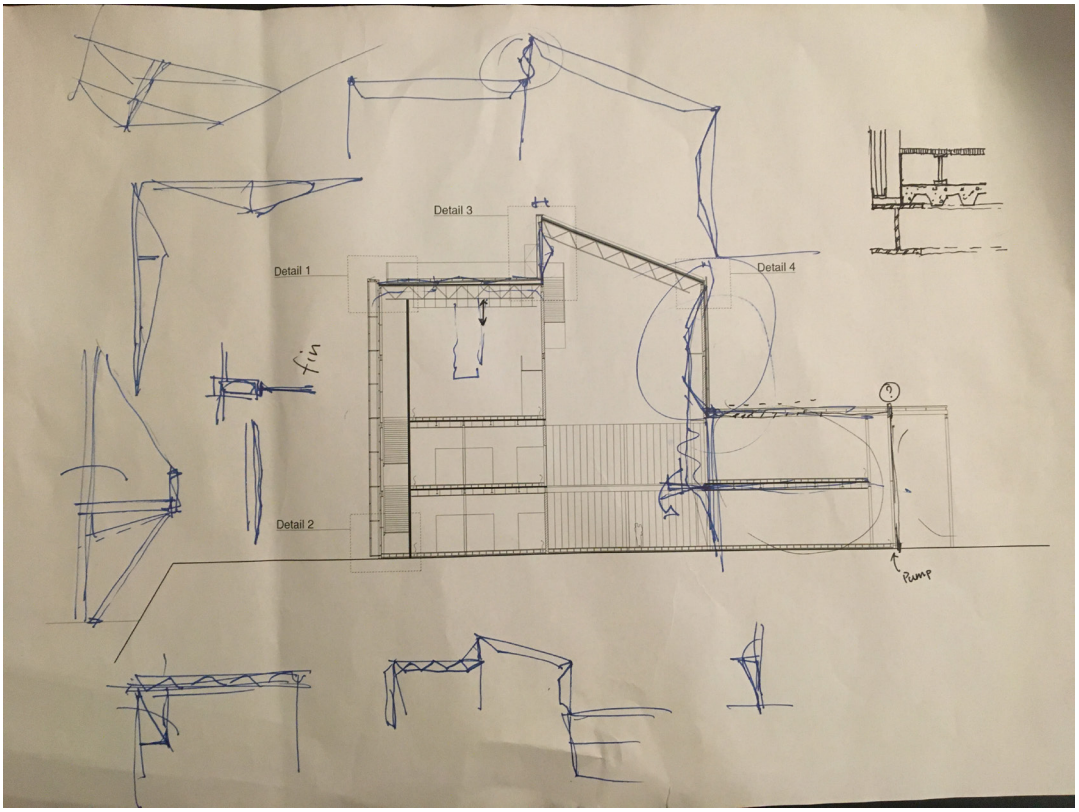
Red: Main beam
Blue: Secondary beam
Yellow: stablizing component

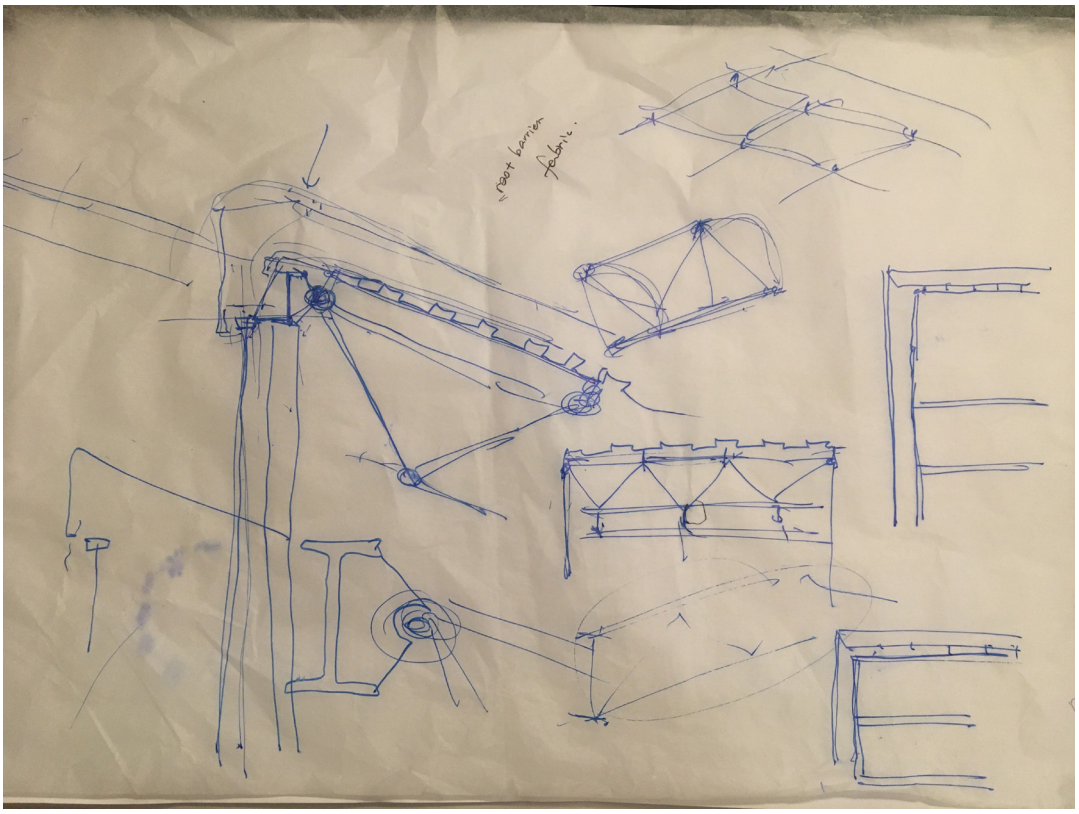






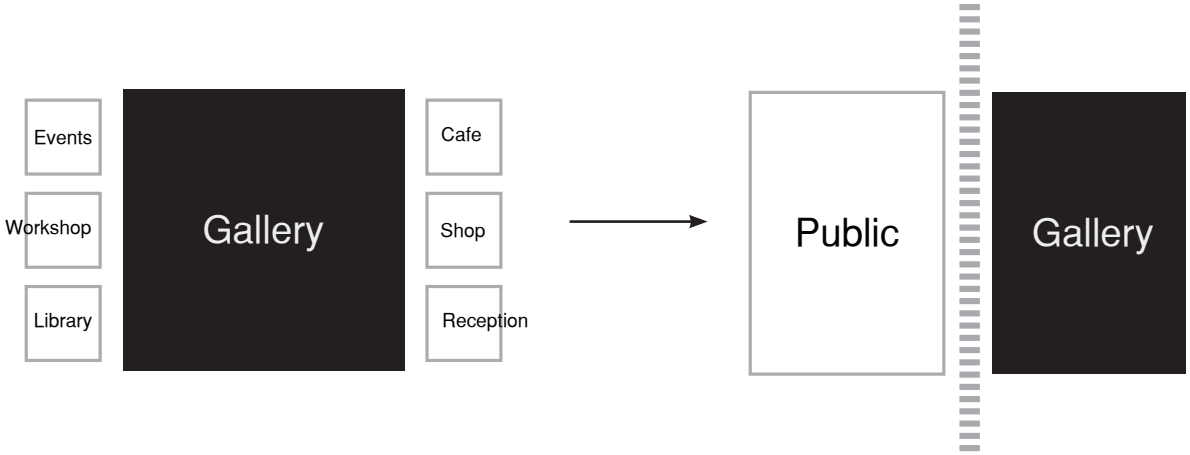
# Faculty meeting with Florian



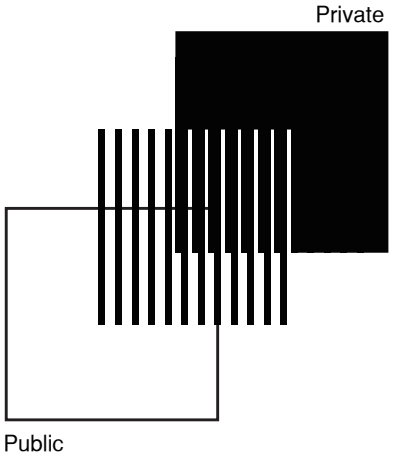



# Final Design

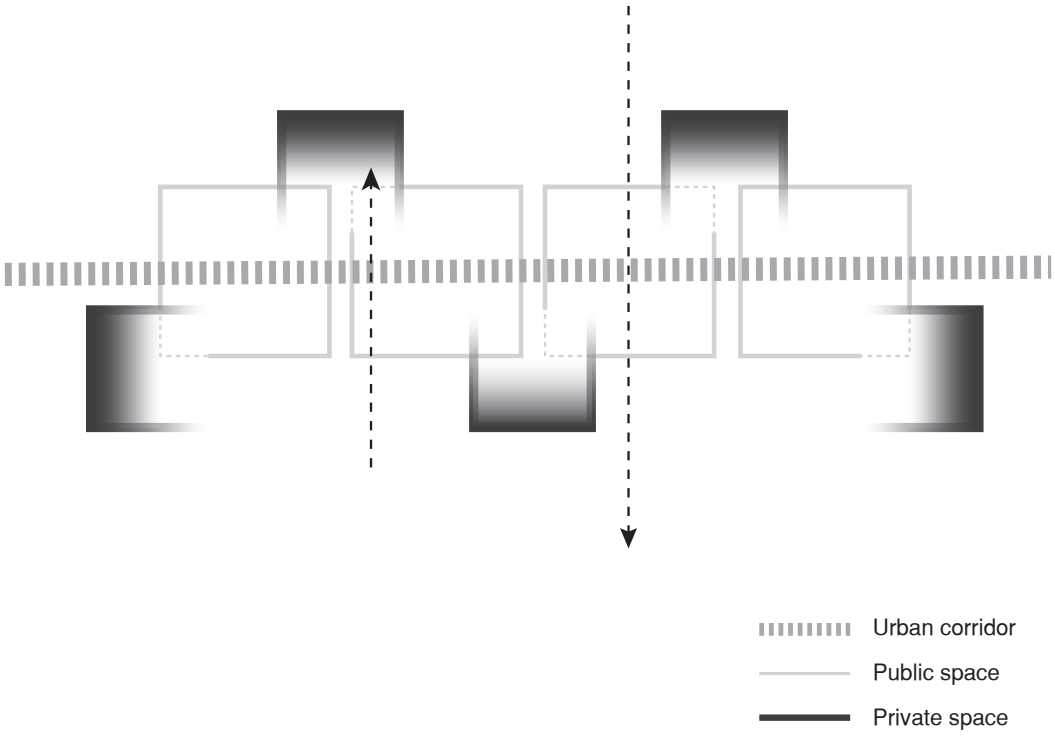
# Concept Diagrams




Traditional museum put exhibition space in the dominant place while all the other public space is affiliated to it. The new museum should balance between public and private function so that art could be re-wired to the city. The boundary between public and private serves as an interface mediating audiance and art. By blurring this boundary, the museum acheives true publicity.

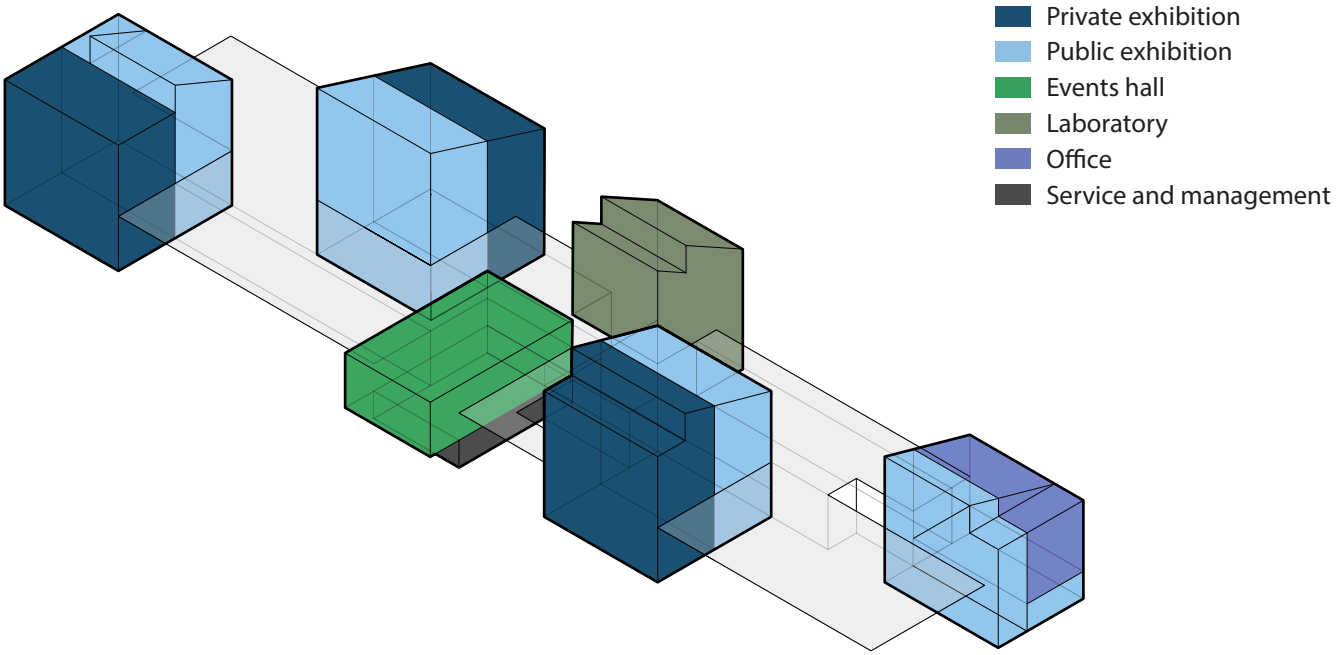



## Spatial Prototype

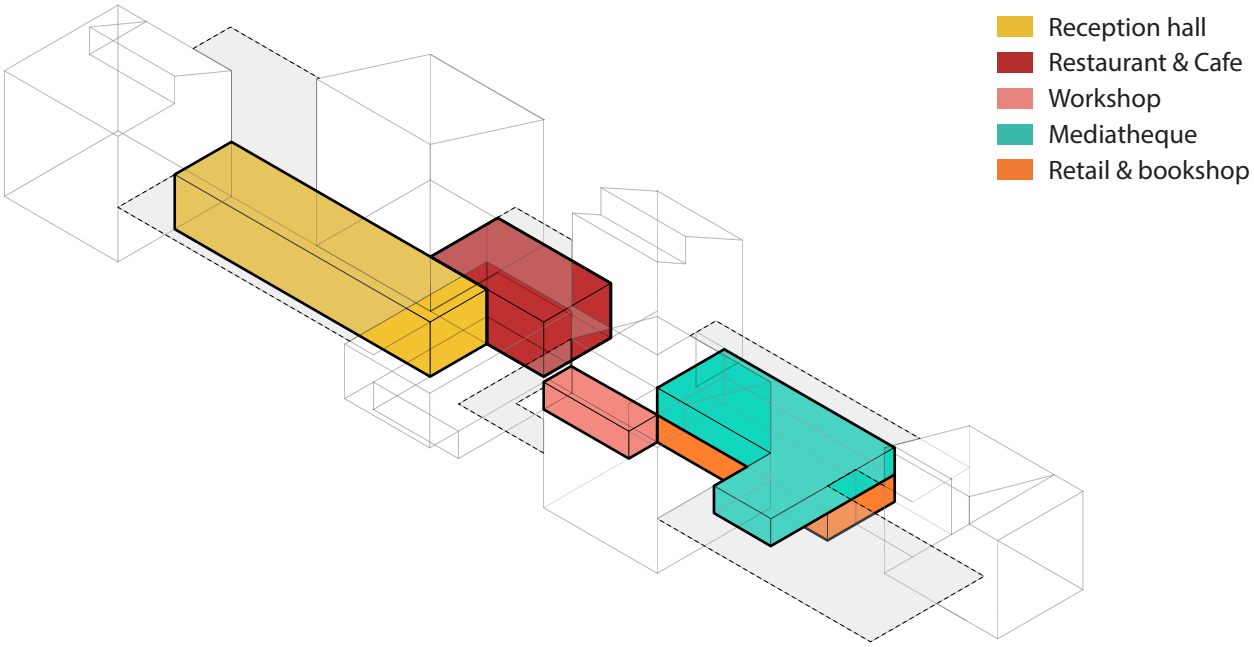


# Programatic Distribution

Box program

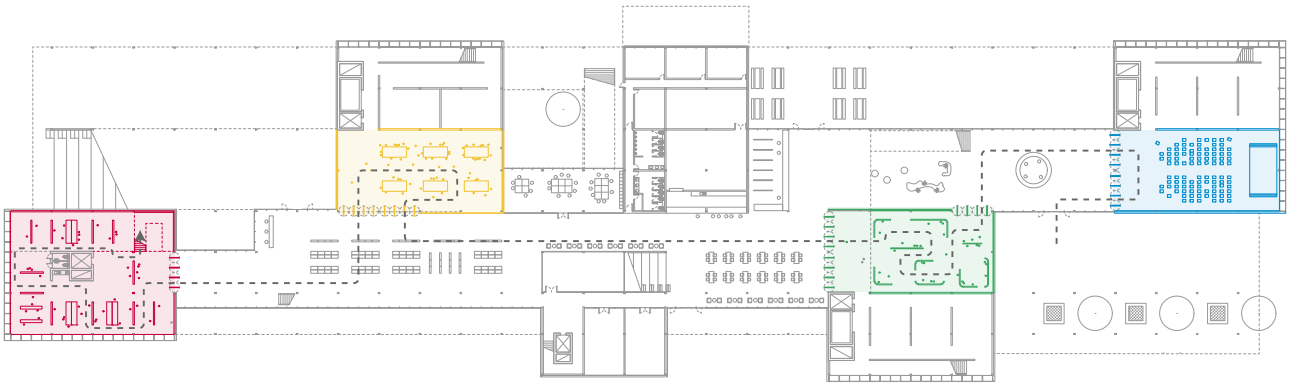


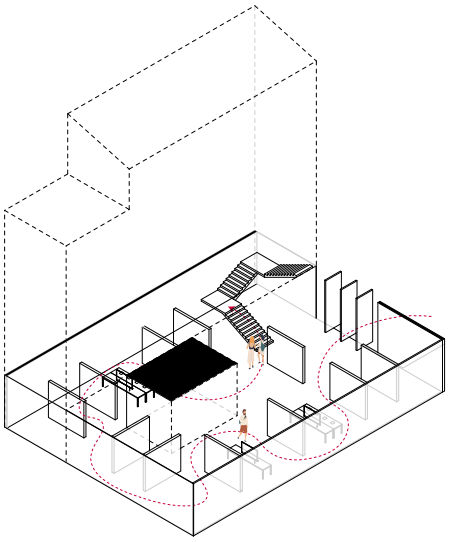

Corridor program



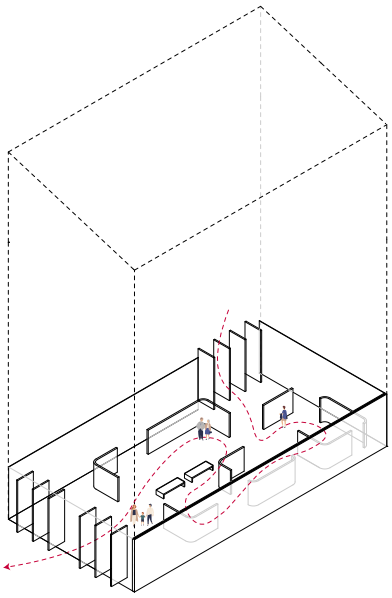

Conceptual section

# Multiplicity

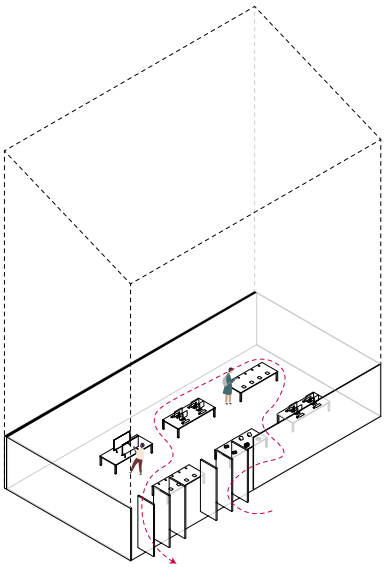




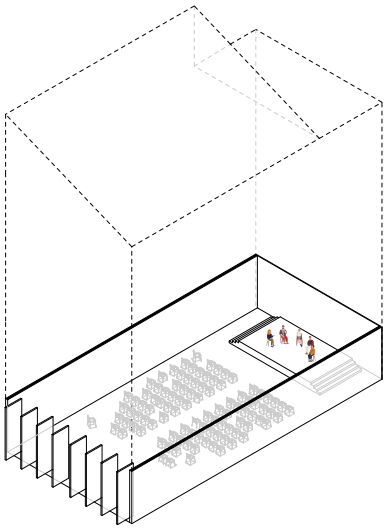
Public exhibition



Art fair

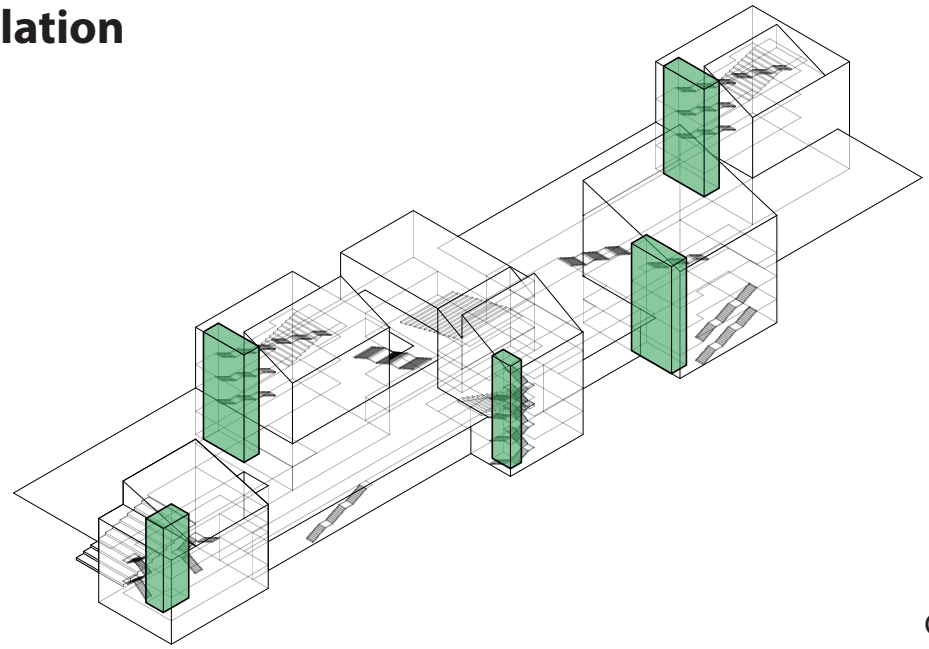


Experience activity

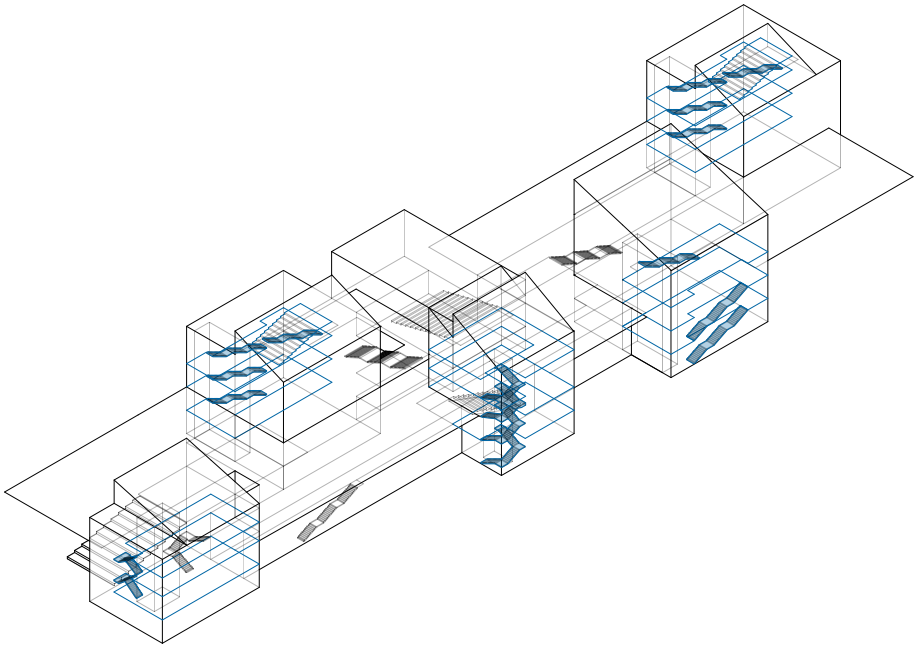


Public lecture

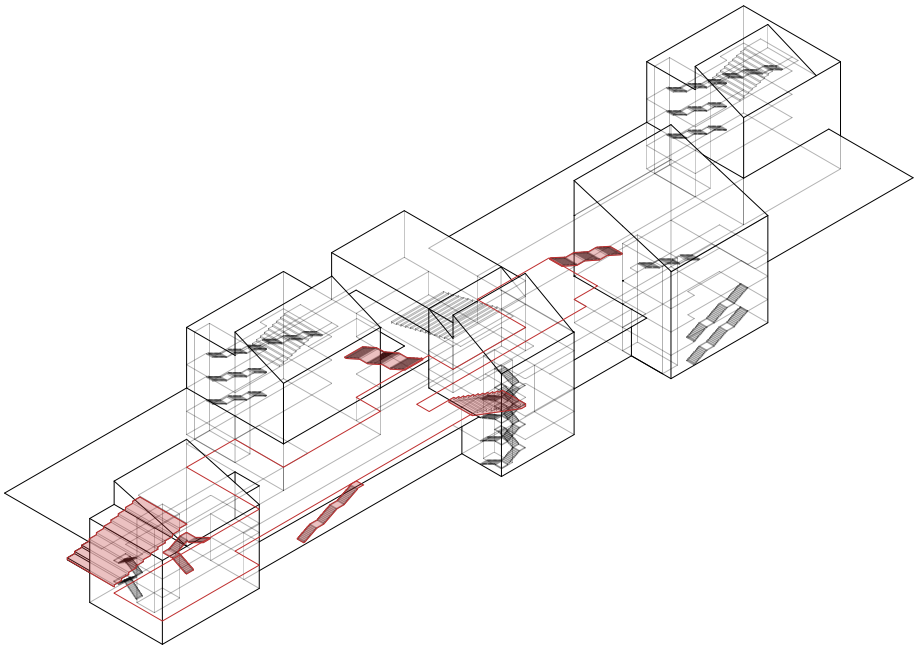
# Circulation



Core

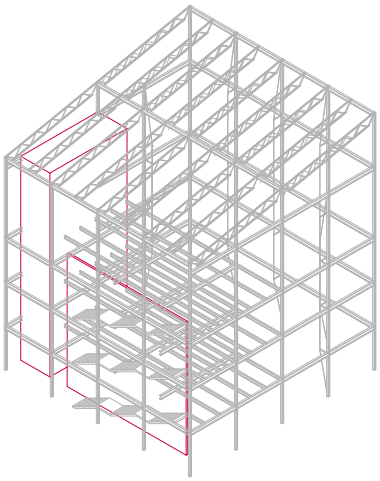


Private circulation

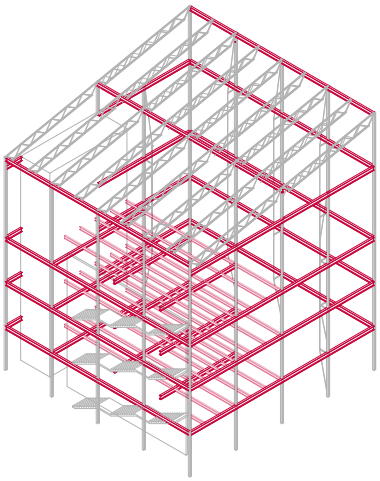


Public circulation

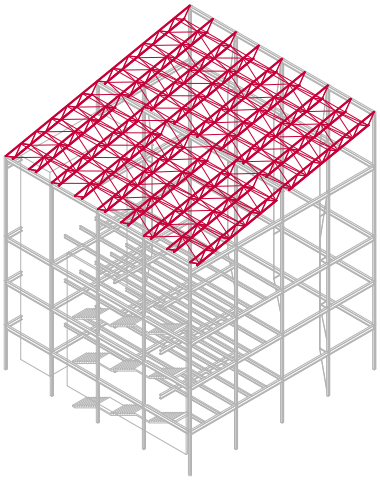
# Structure Diagram



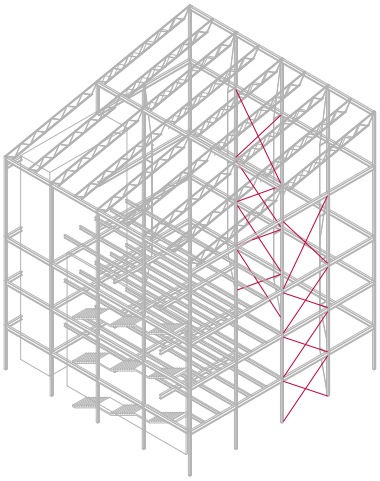
Concrete core and slab



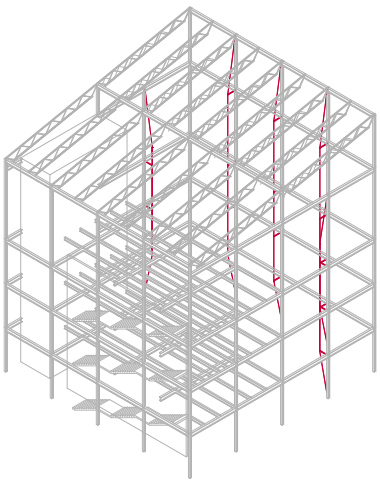
Beams (Dark red: main beam; light red: secondary beam)



Truss

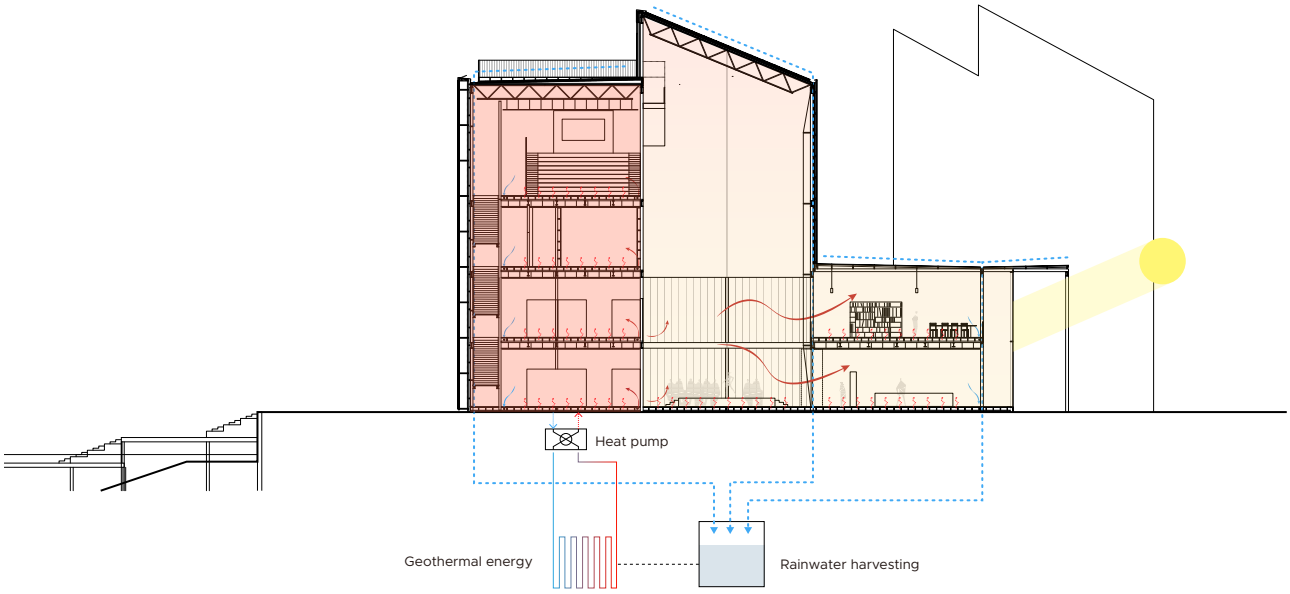


Cross bracing

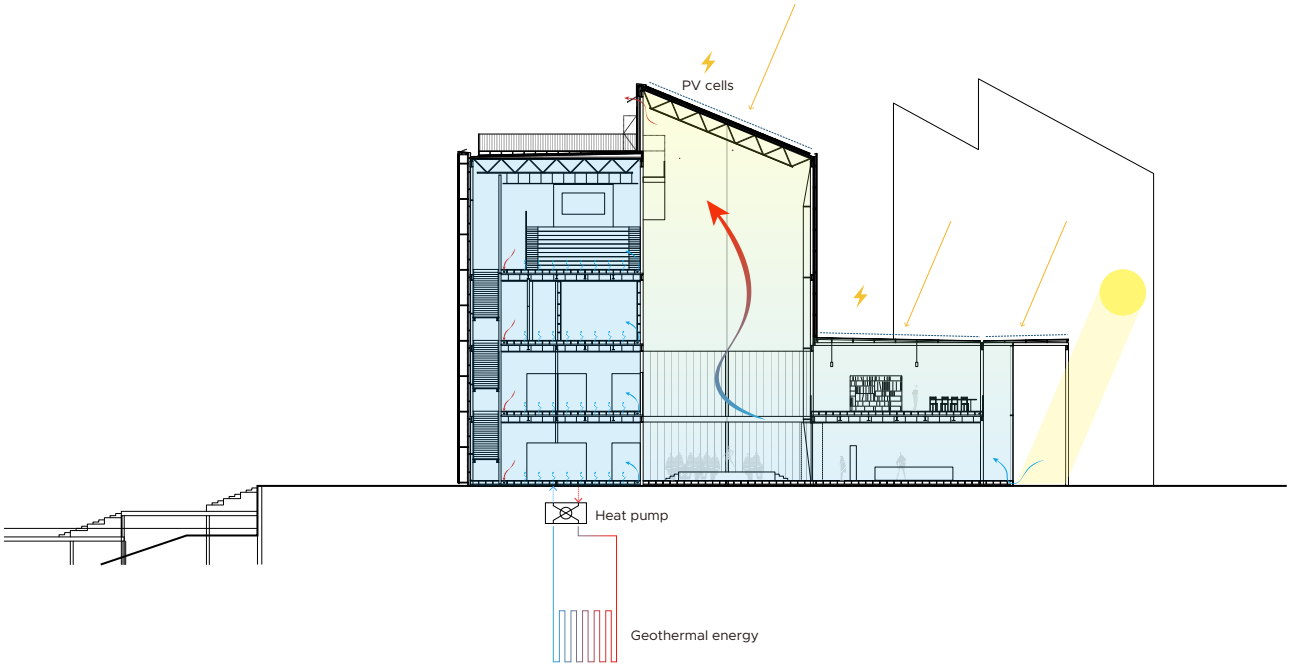


Stablilizing element to prevent buckling of column

# Climate strategy

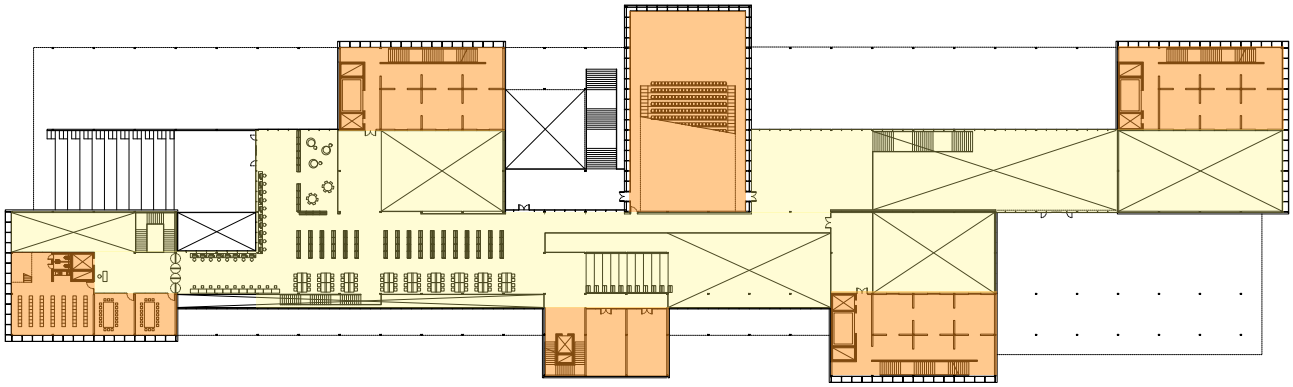



Winter scheme




Summer scheme

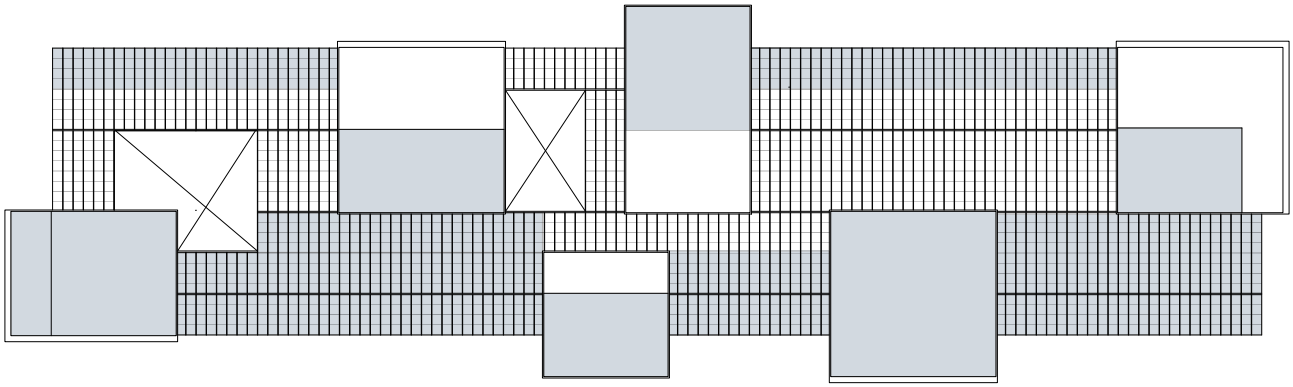
# Energy Efficiency



Climate zone division

Strict-climatized zone

Intermediate-climatized zone

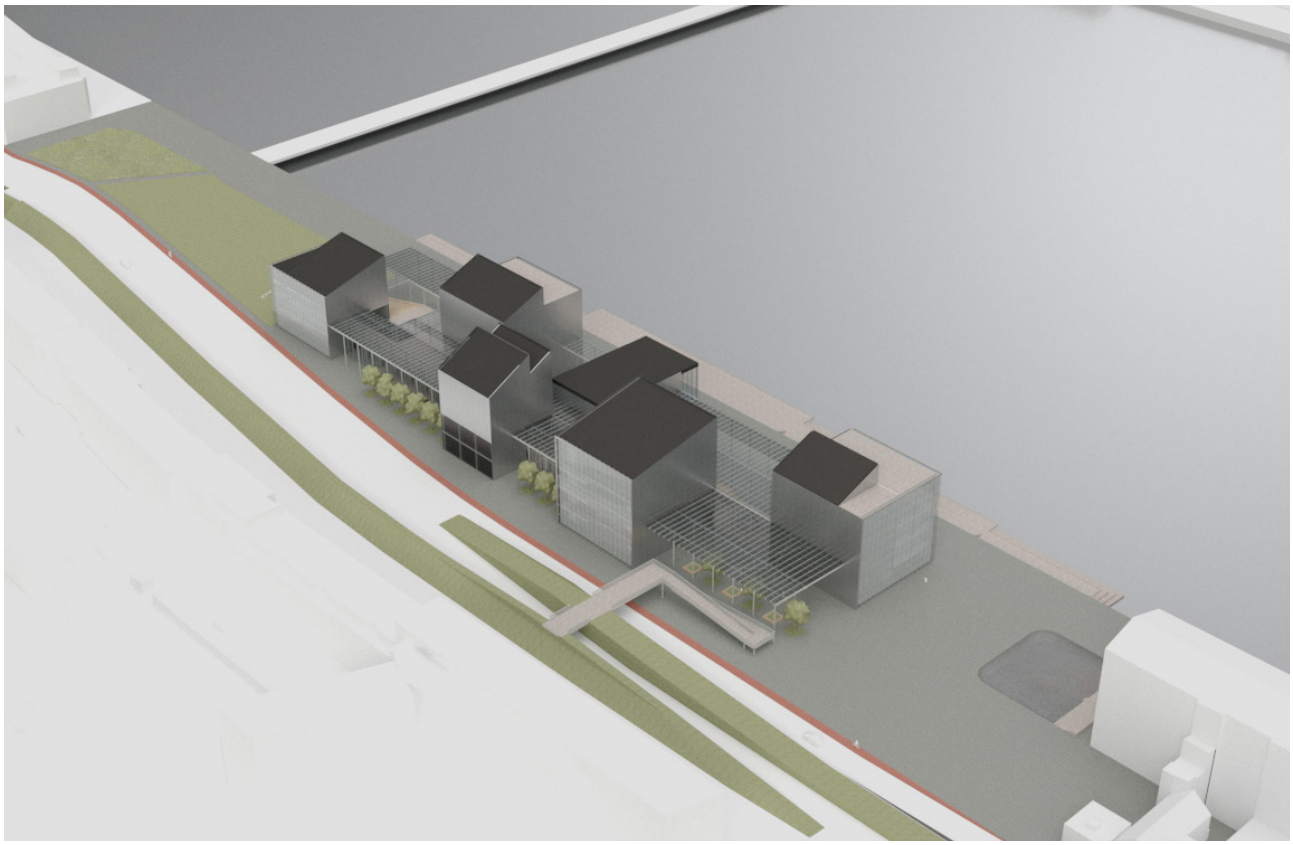


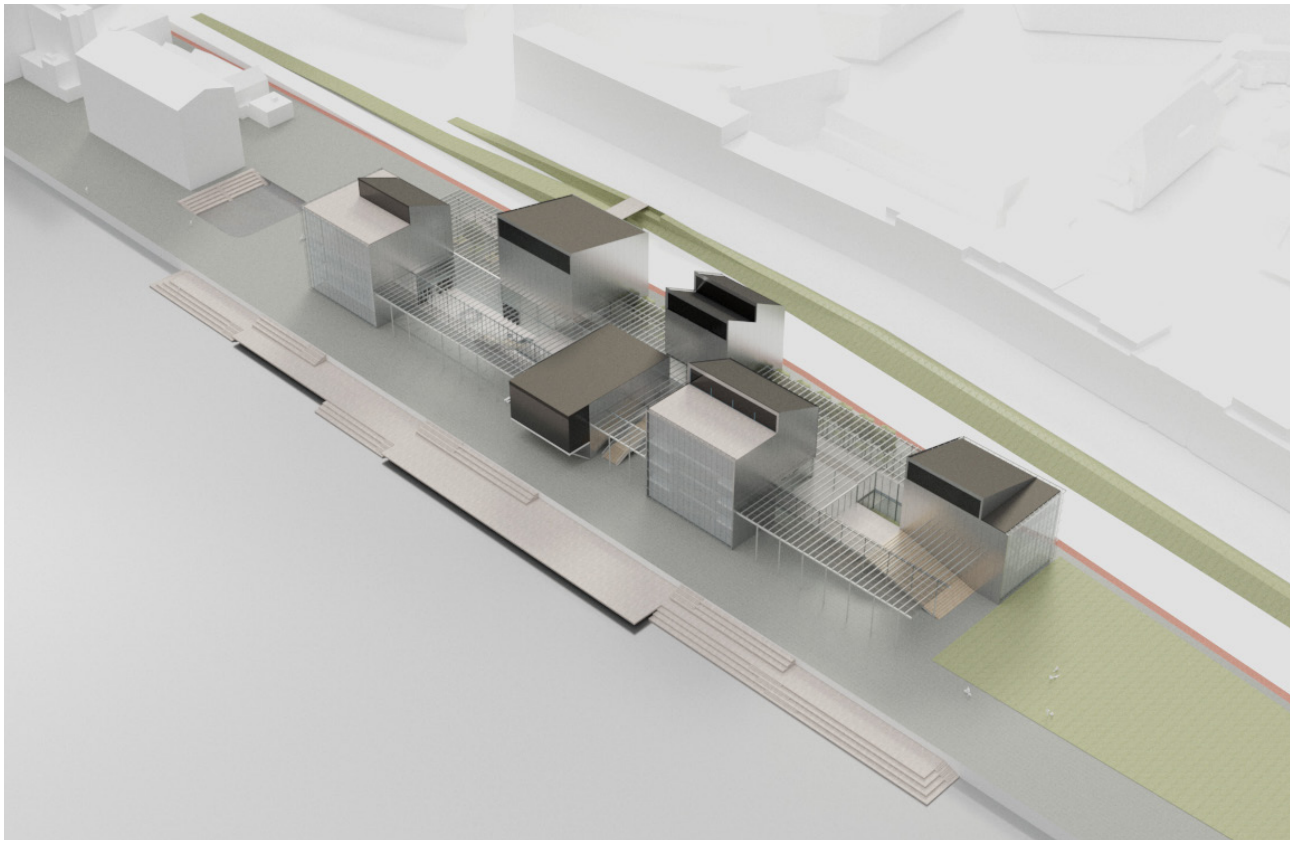
PV cells cover area

Covering area of PV cells: 4500 sqm

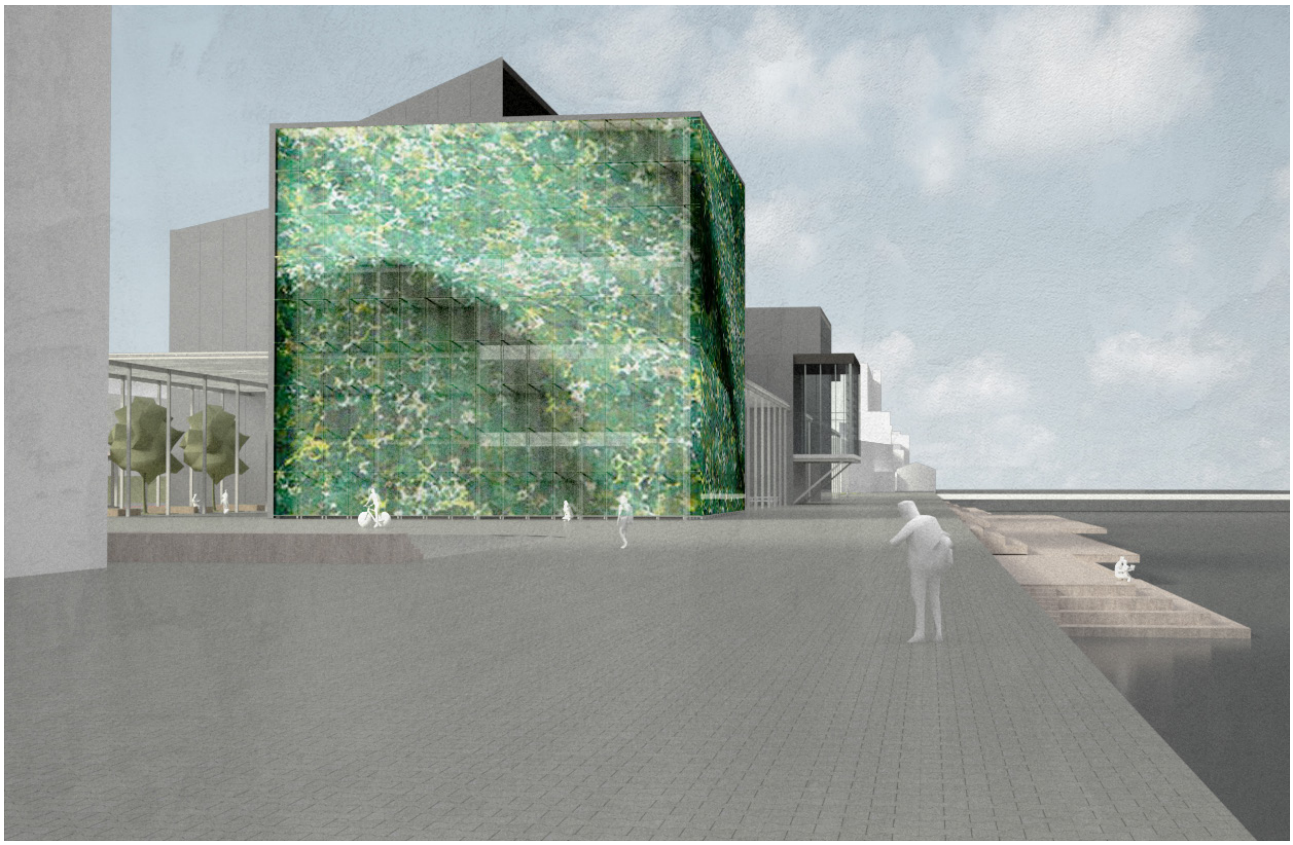
Expected electricity generation: 278000 KWh / yr

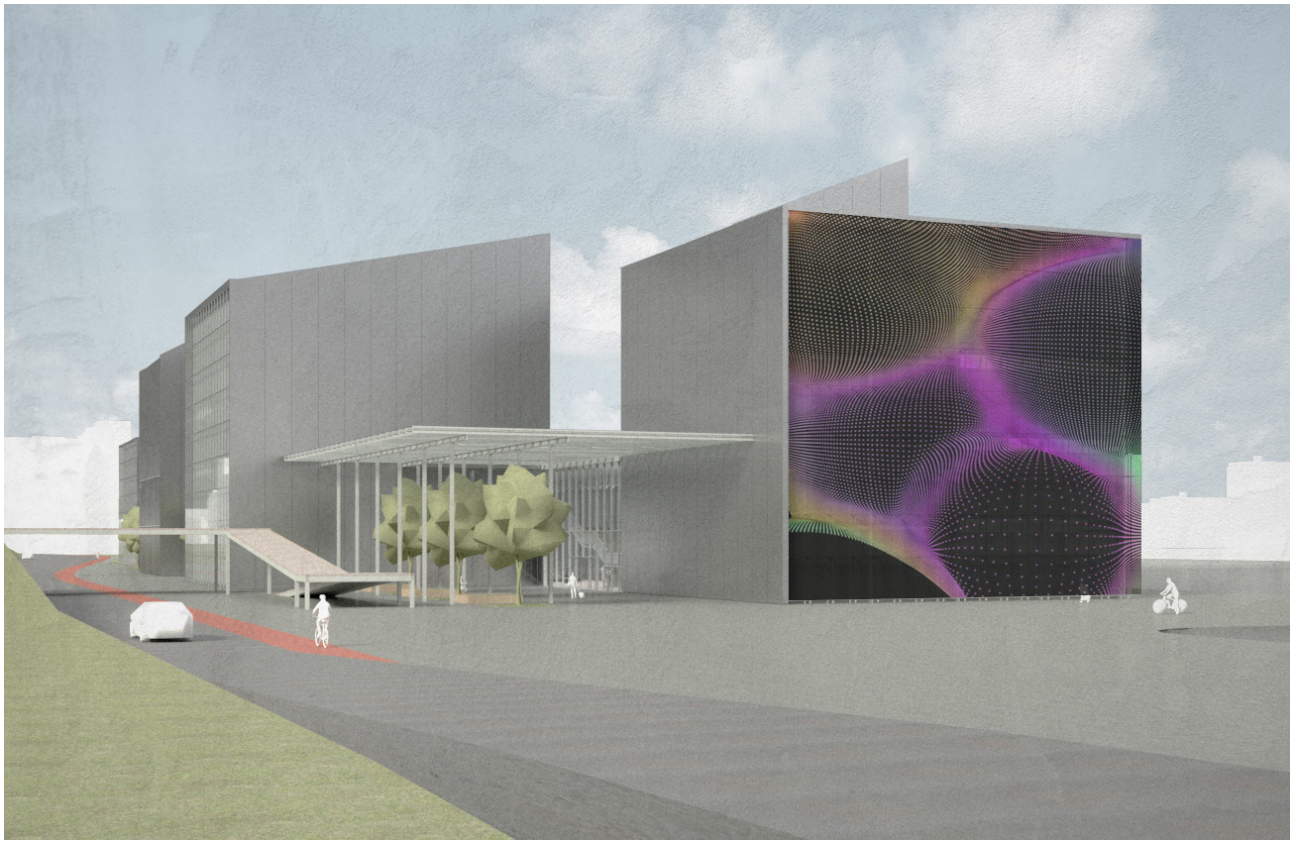
# 3D Model



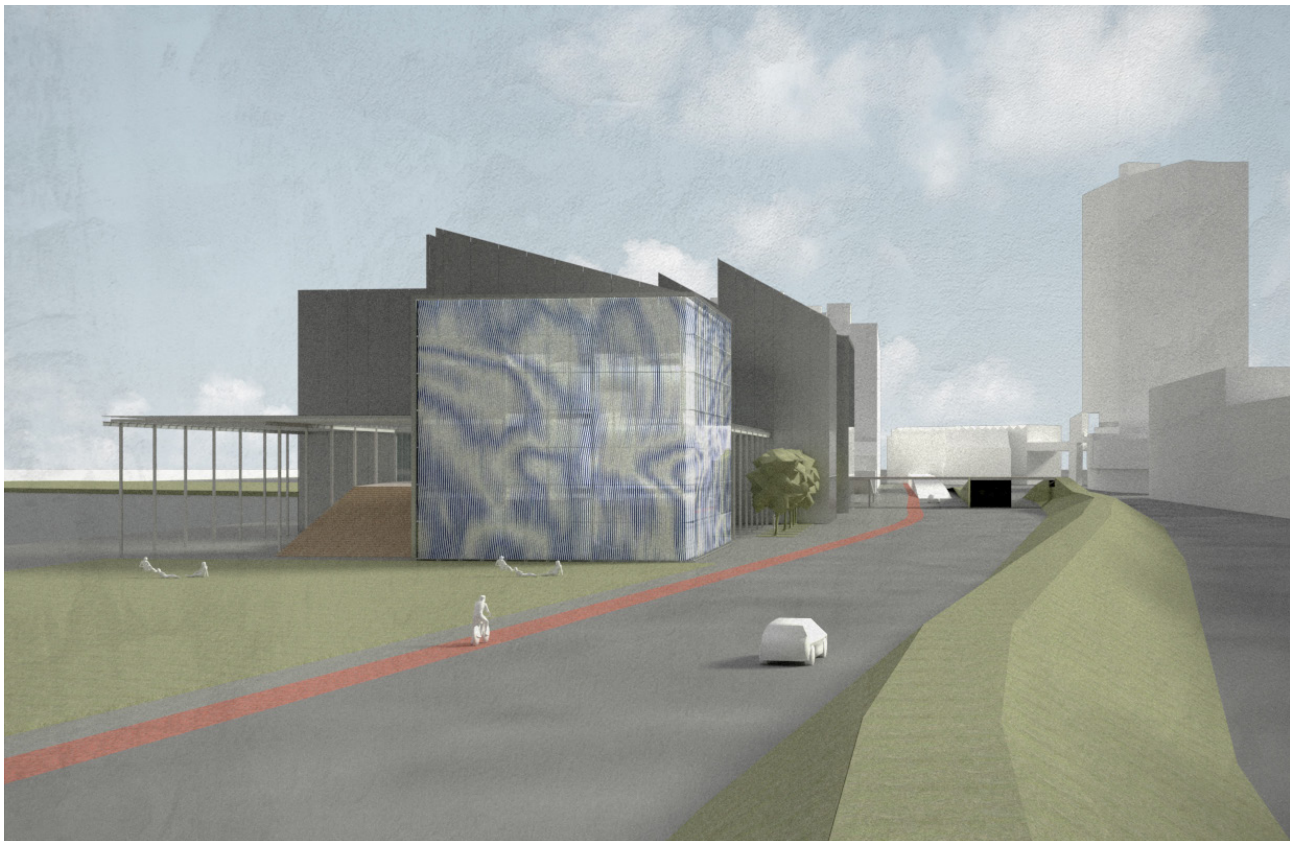


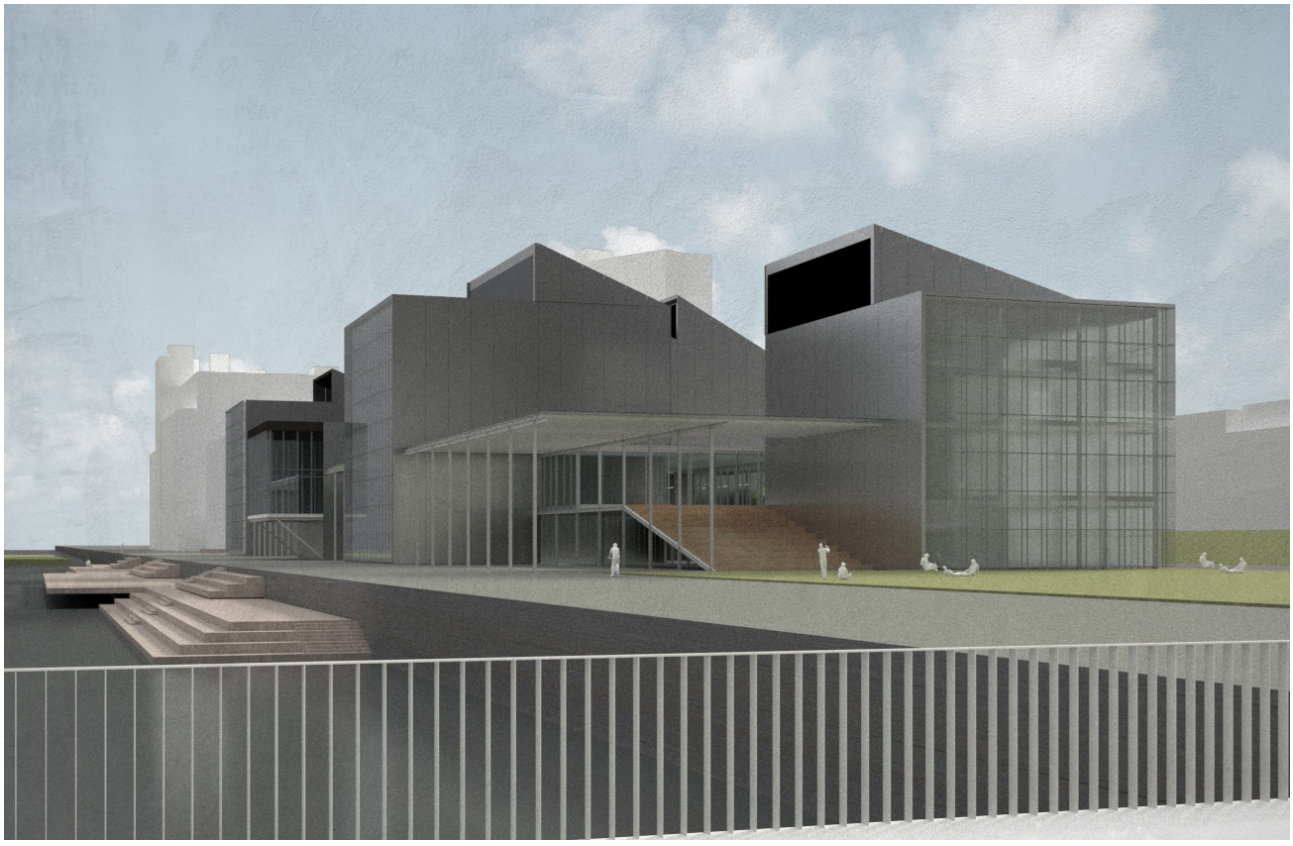
# Approach



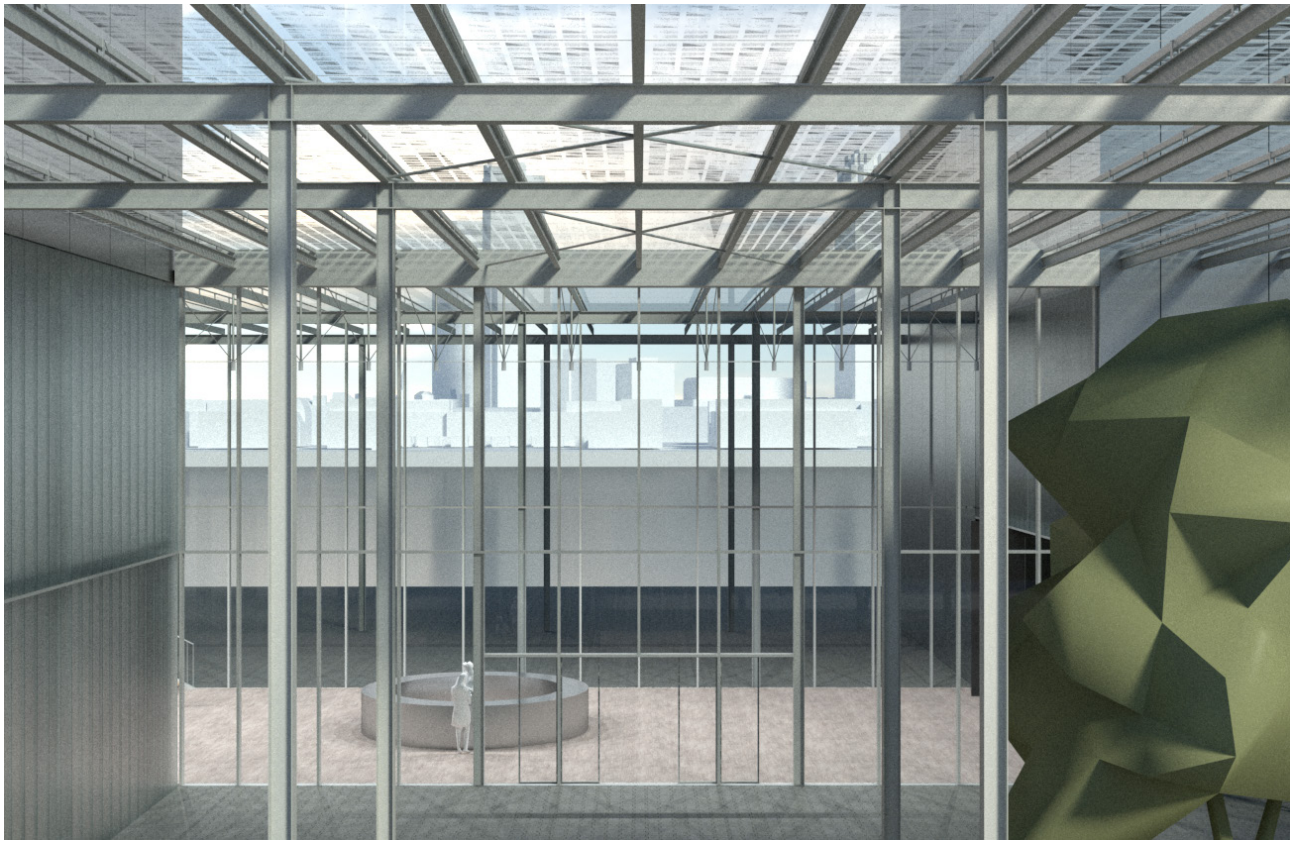


# Approach

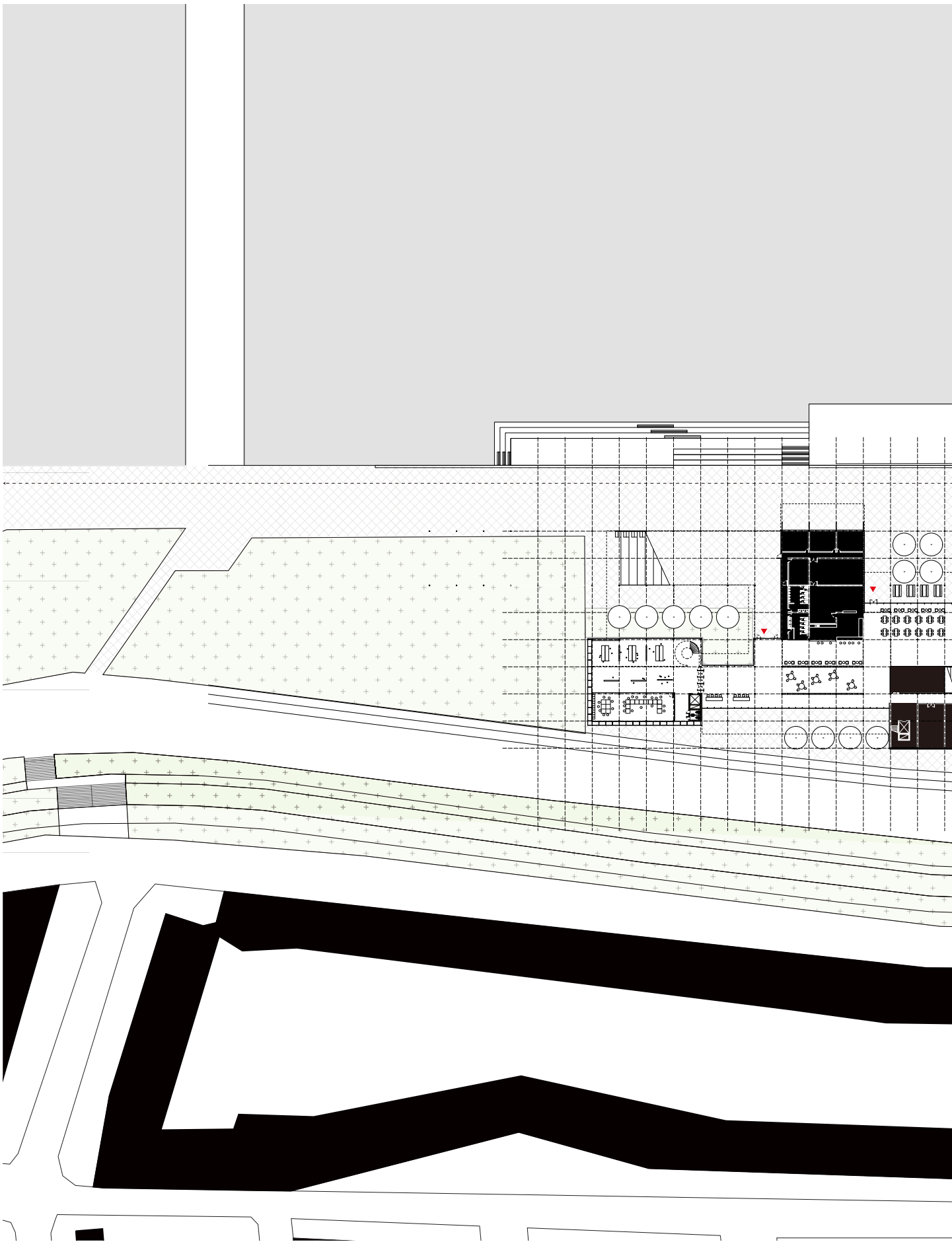


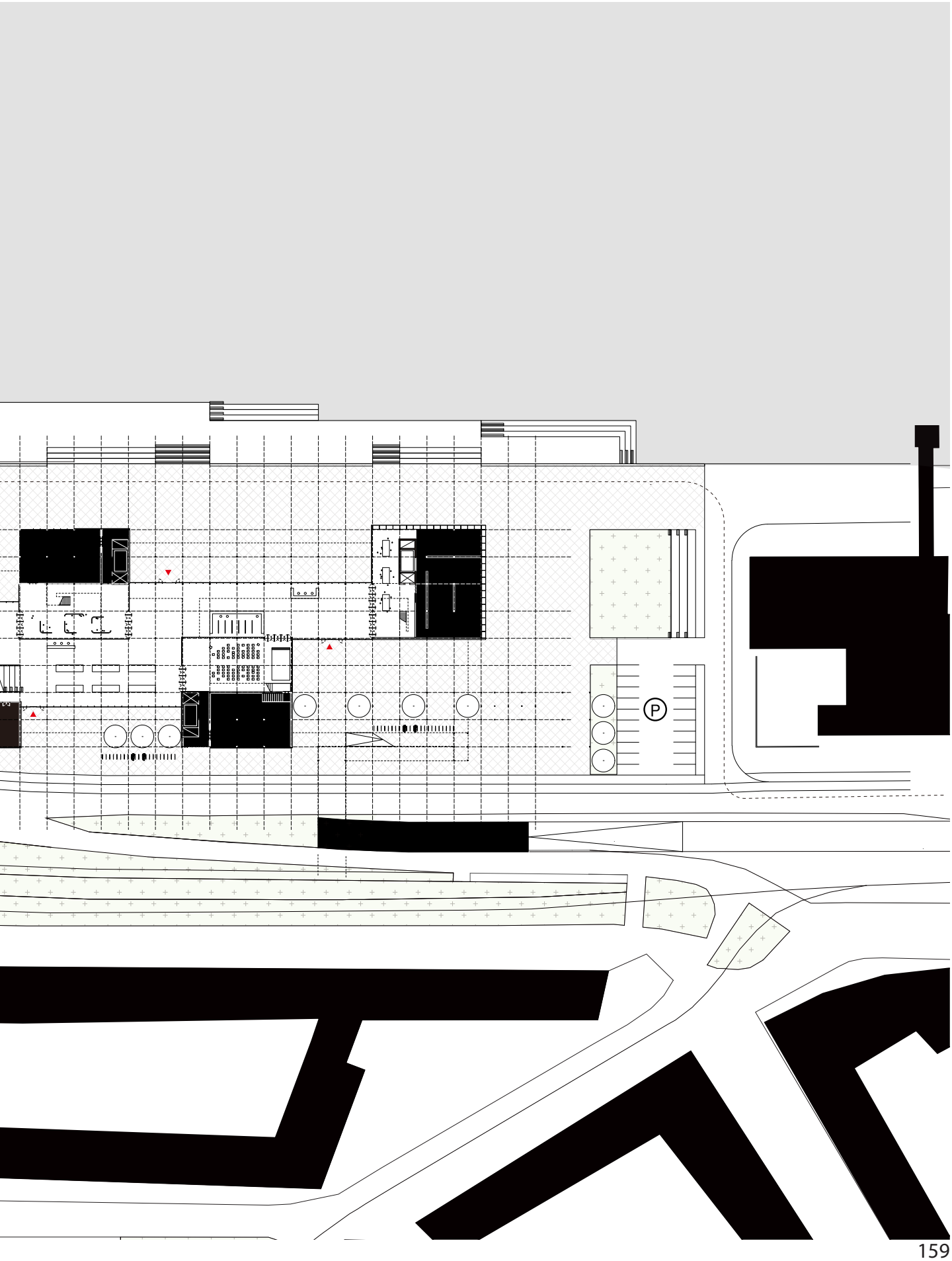


# Approach



# 'Nolli' Plan

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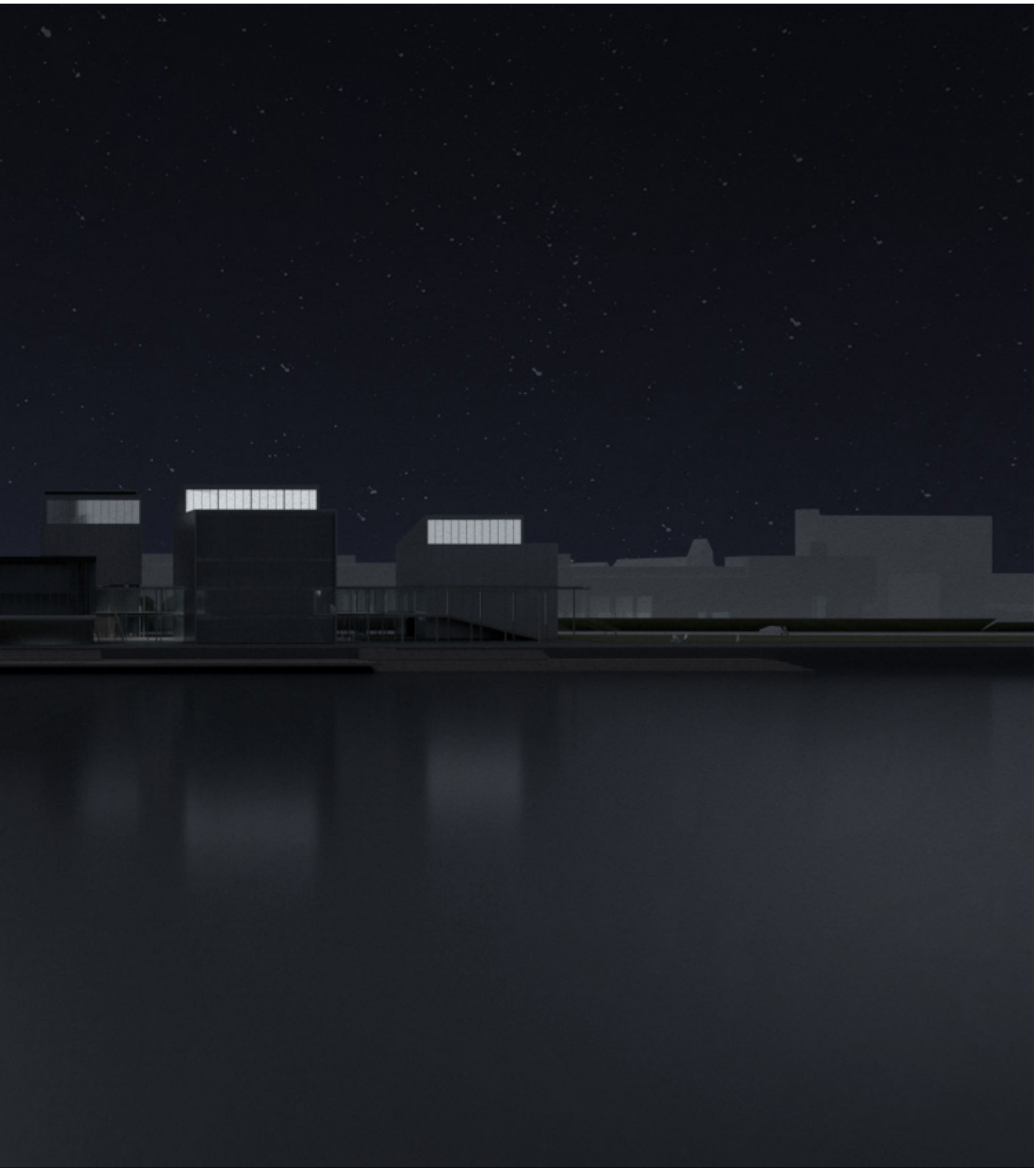
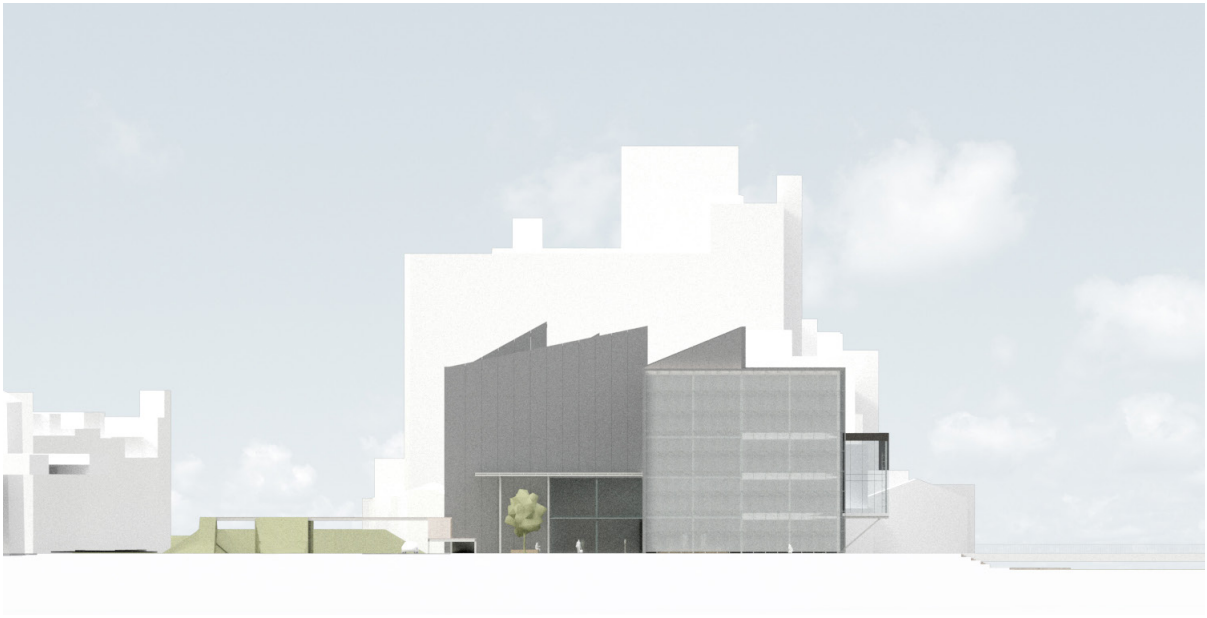
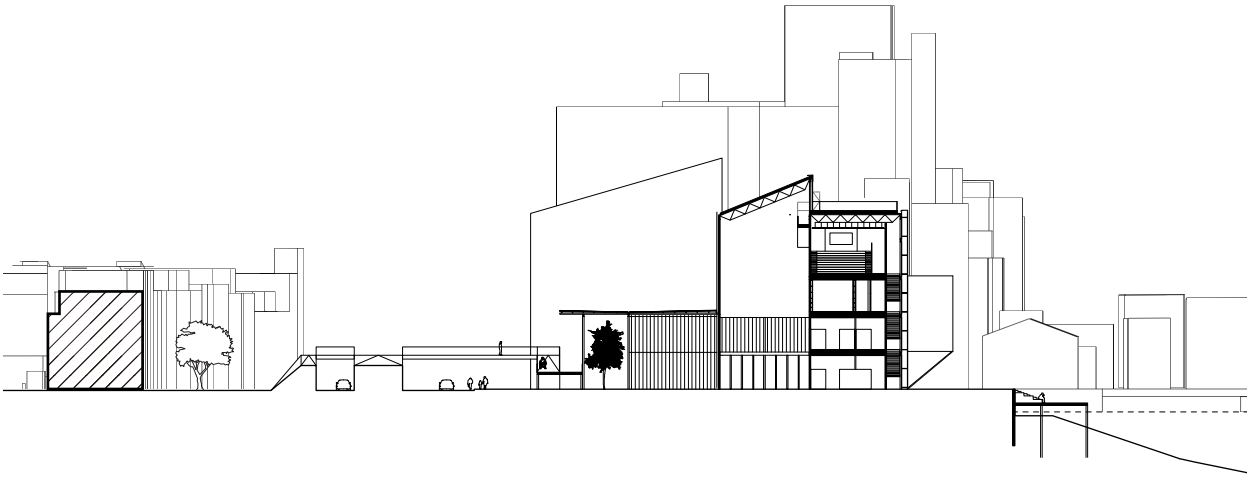
# Waterfront Night Scene

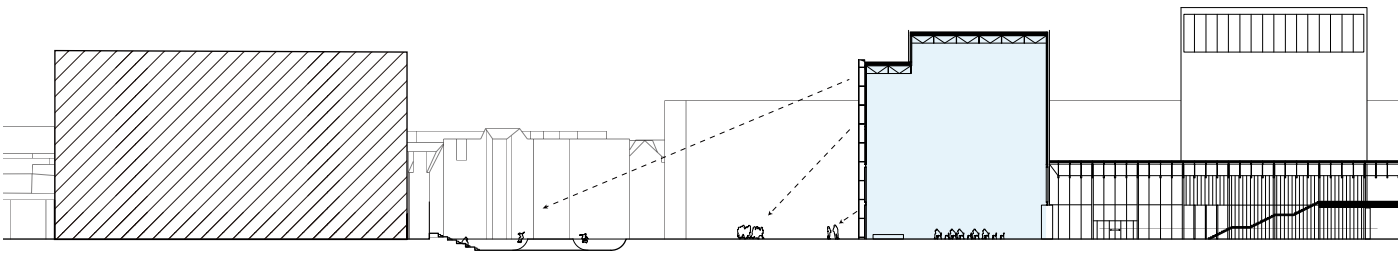




East Elevation

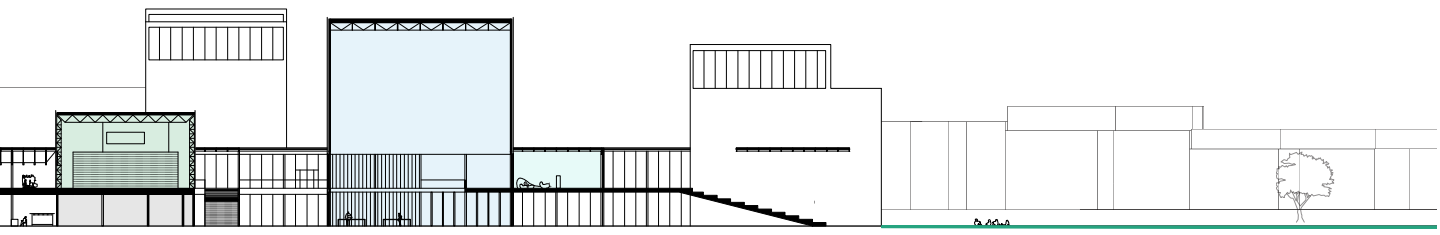


Cityscape 3-3 section

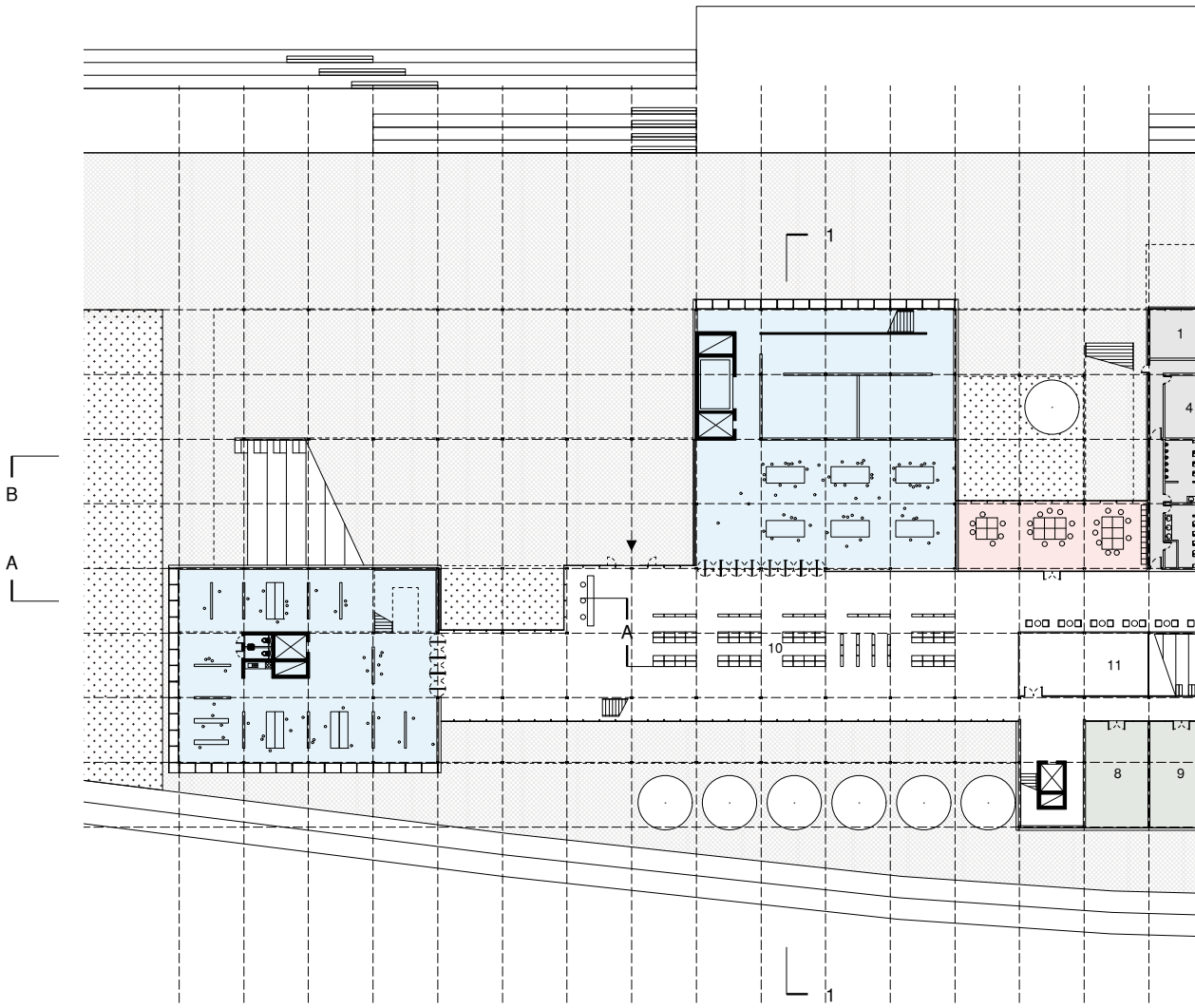


Cityscape B-B section

West Elevation



# Ground floor plan




Exhibition

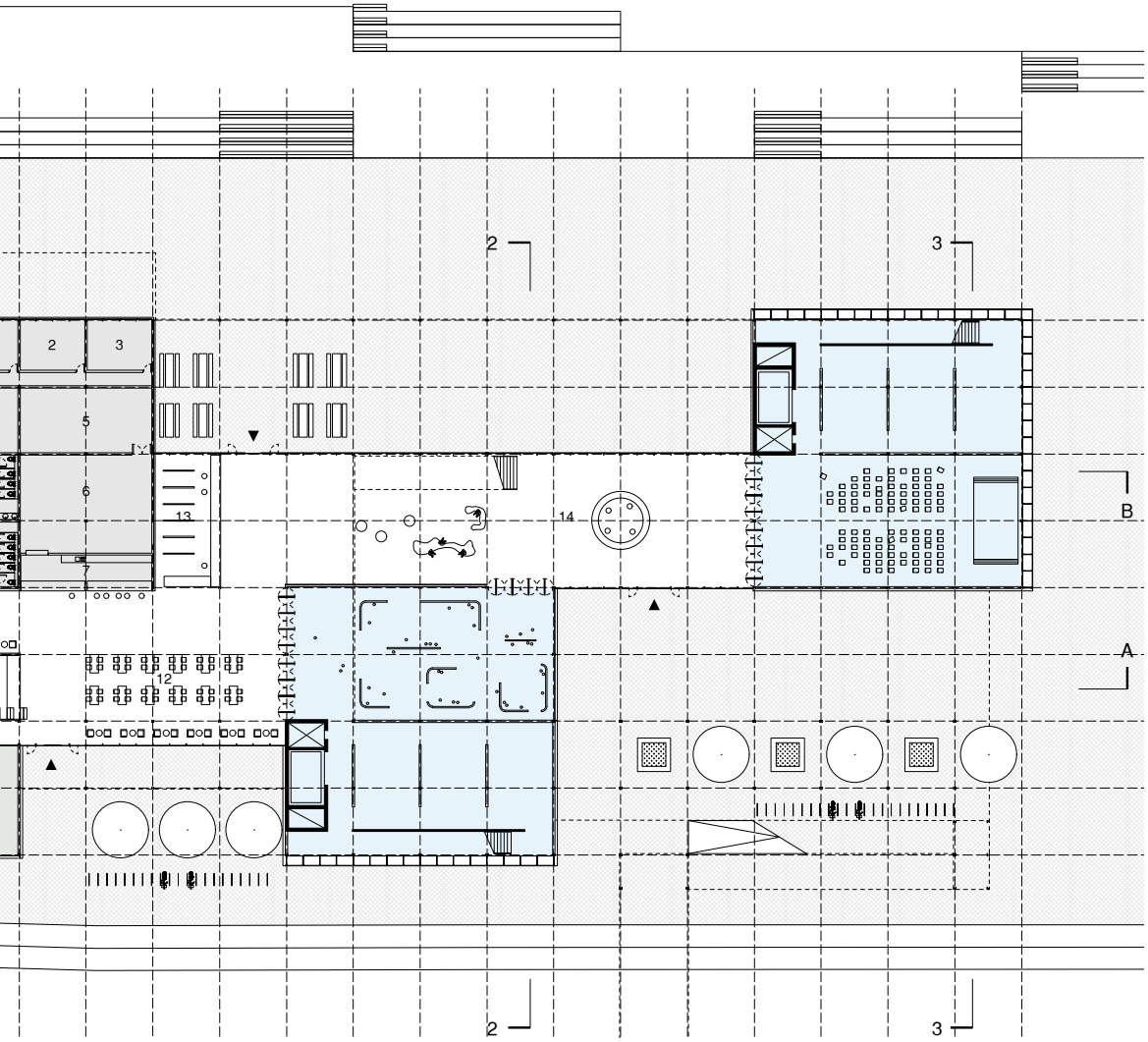
Workshop

Service & management

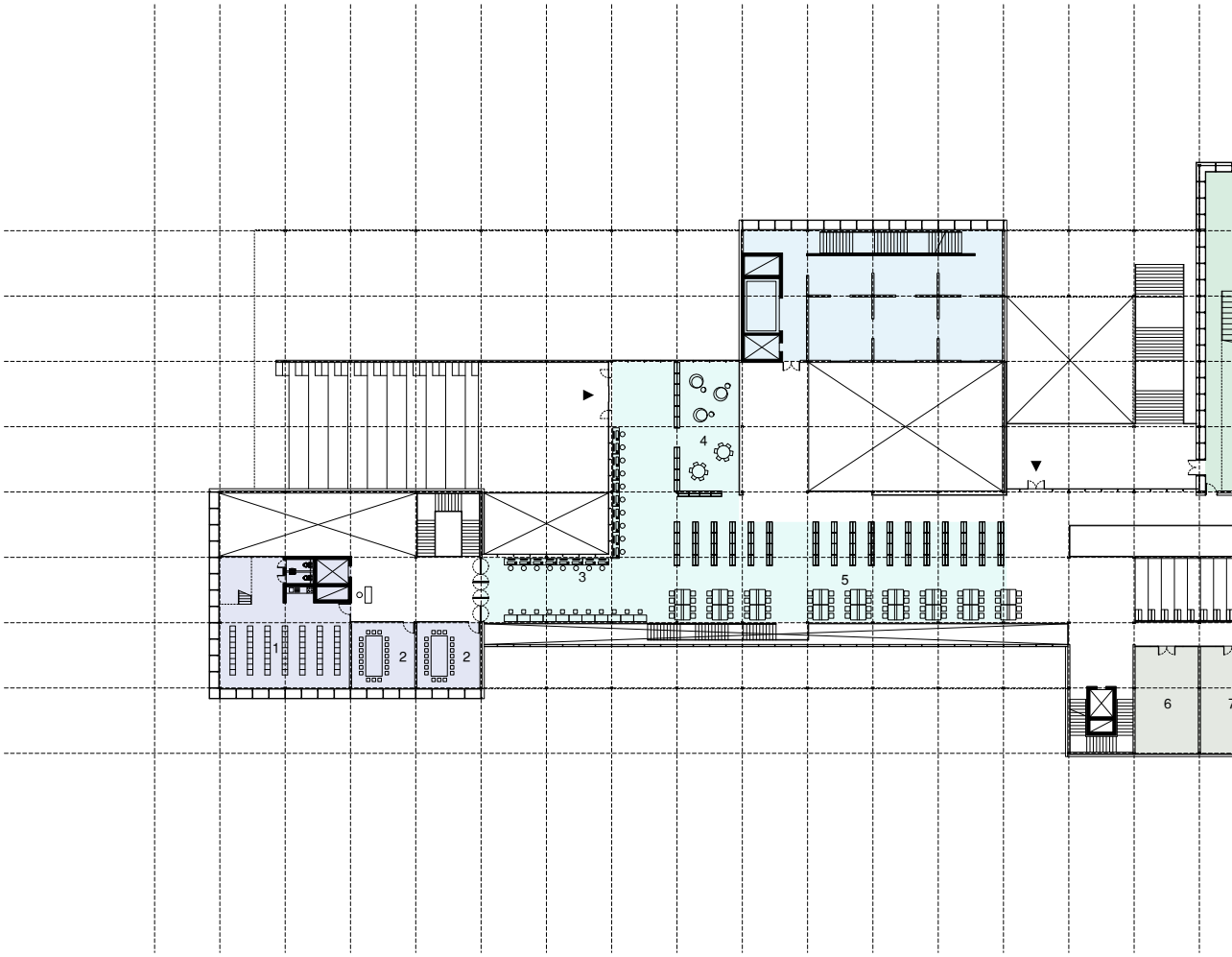
1. Security Office
2. Custodial Office
3. IT Server, Workroom, and Staff Offices
4. Equipment
5. Kitchen Storage
6. Kitchen
7. Bar

Laboratory

8. AR studio
9. VR studio
10. Retail & bookshop
11. Retail Stock Room and Offices
12. Restaurant
13. Coat/bag Check
14. Reception


2
3
2
3
5
6
7
12
13
14
A
B

# First Floor Plan




Exhibition

Events Hall

Office

1. Archive
2. Conference Room

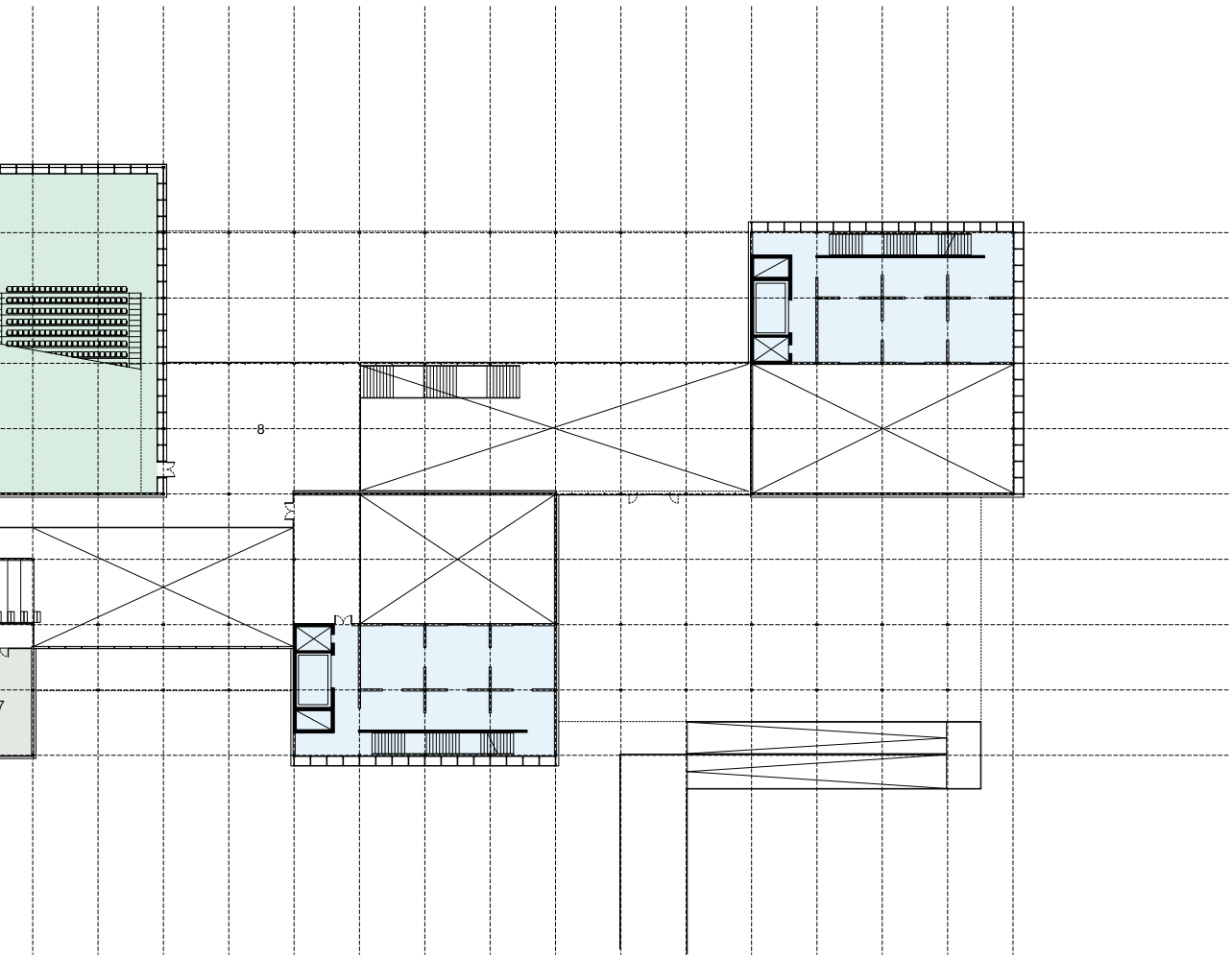
Mediatheque

3. Digital Database
4. Children Library
5. Printed Library

Laboratory

6. AI Studio
7. Sensor Tech studio

8. Foyer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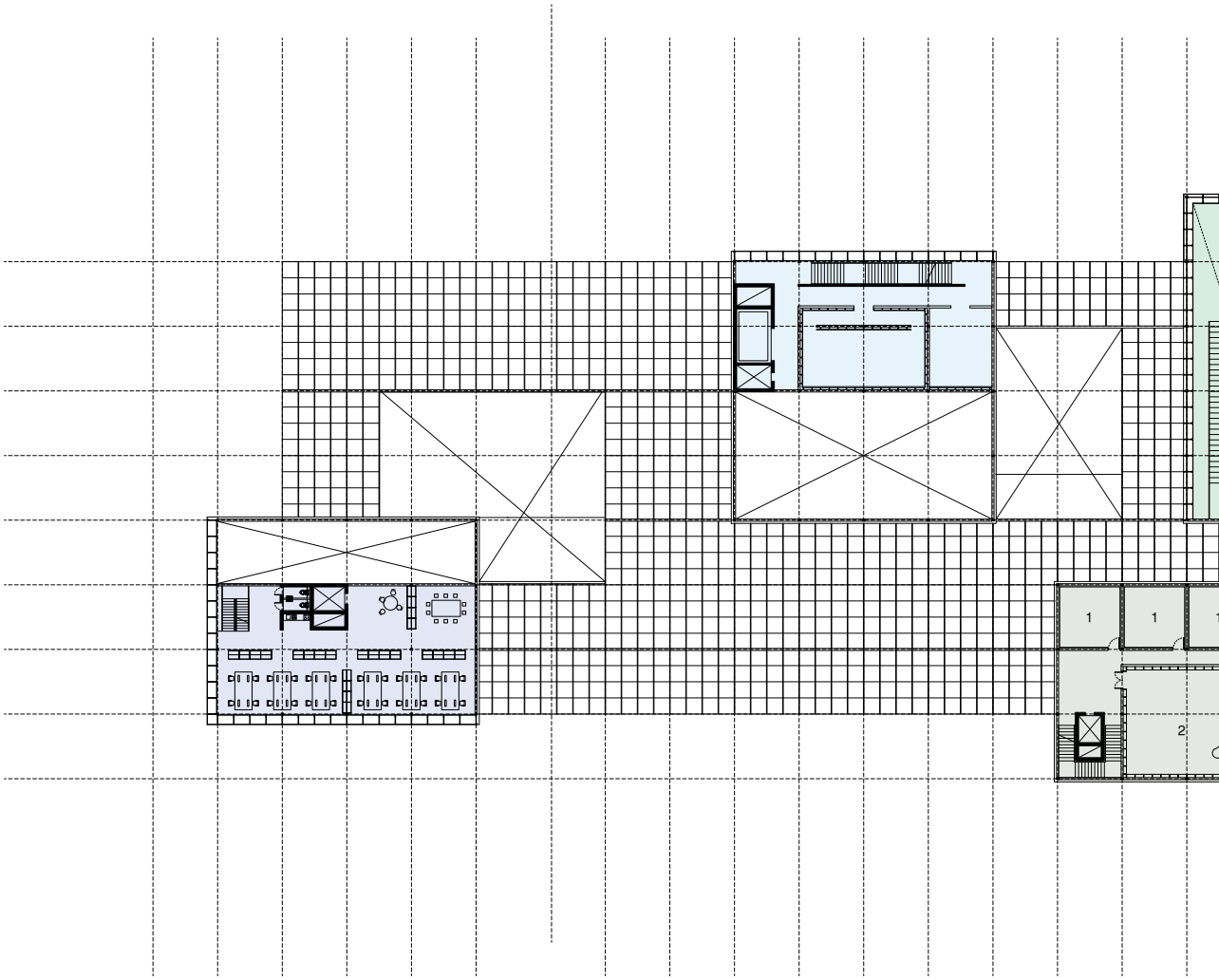
# Second Floor Plan



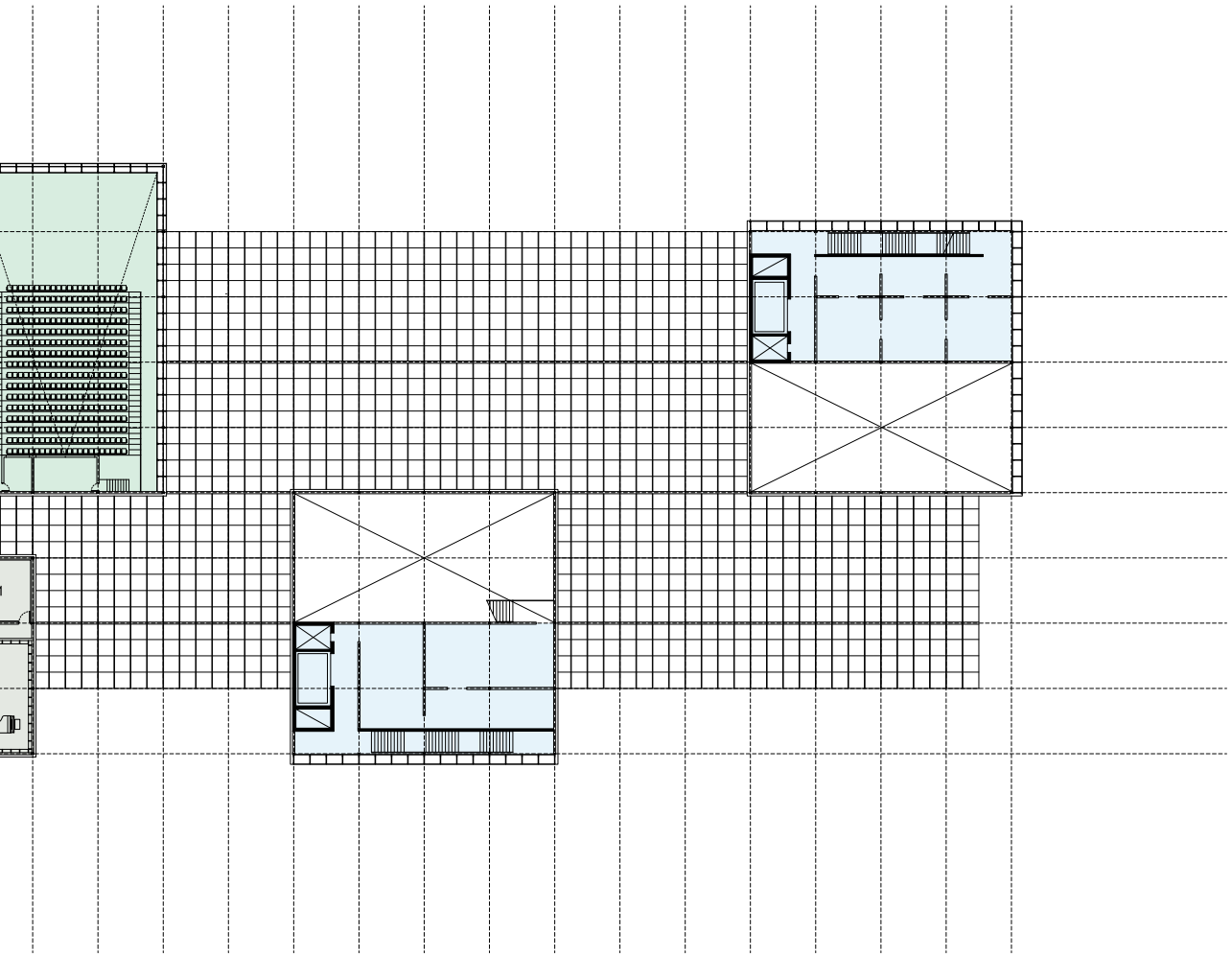

Exhibition

Events Hall

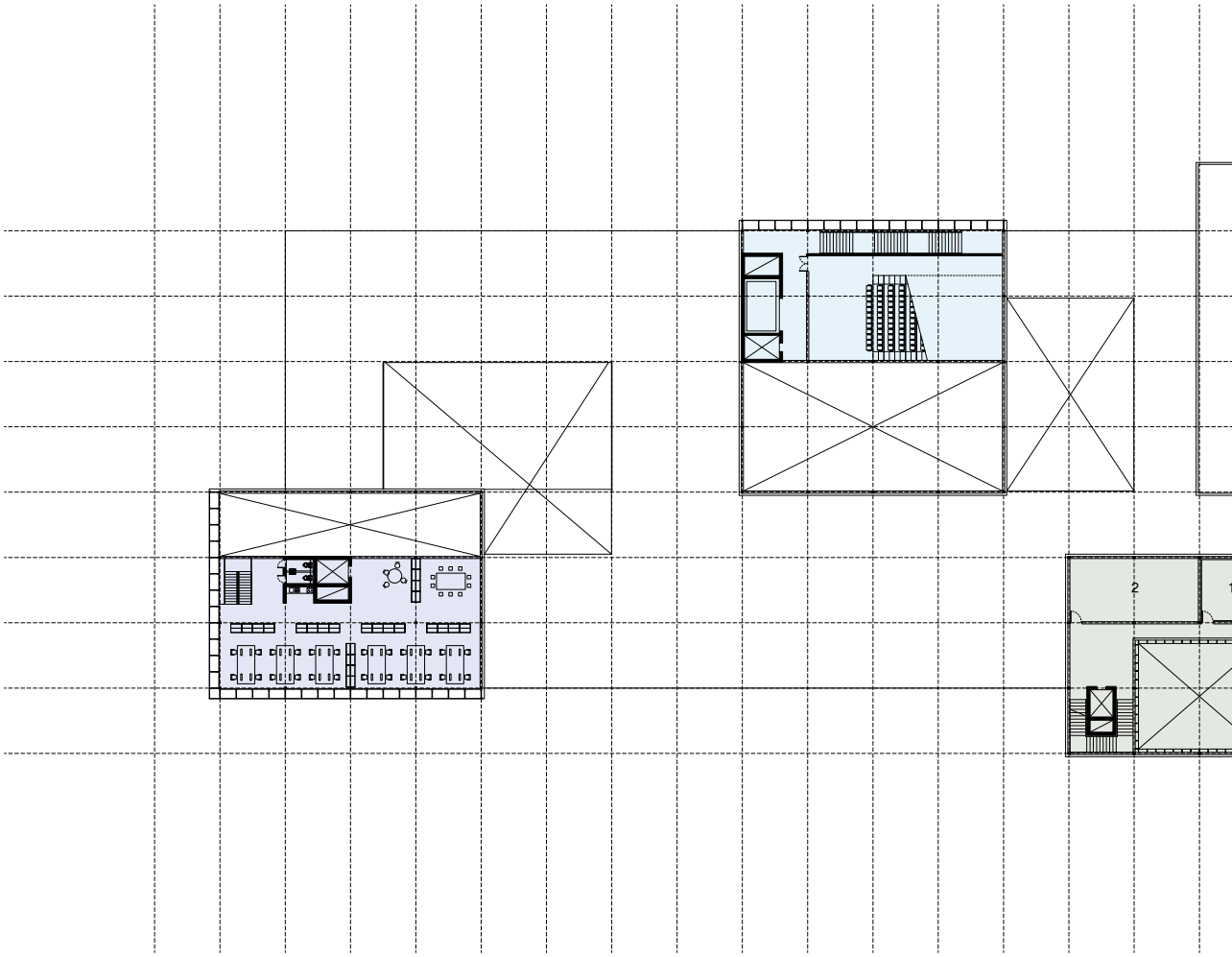
Office

Laboratory

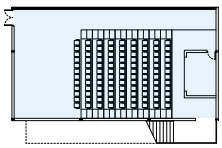
1. Music Room
2. Sound Dome

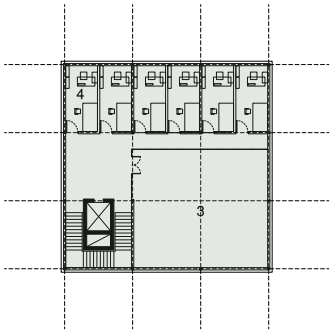


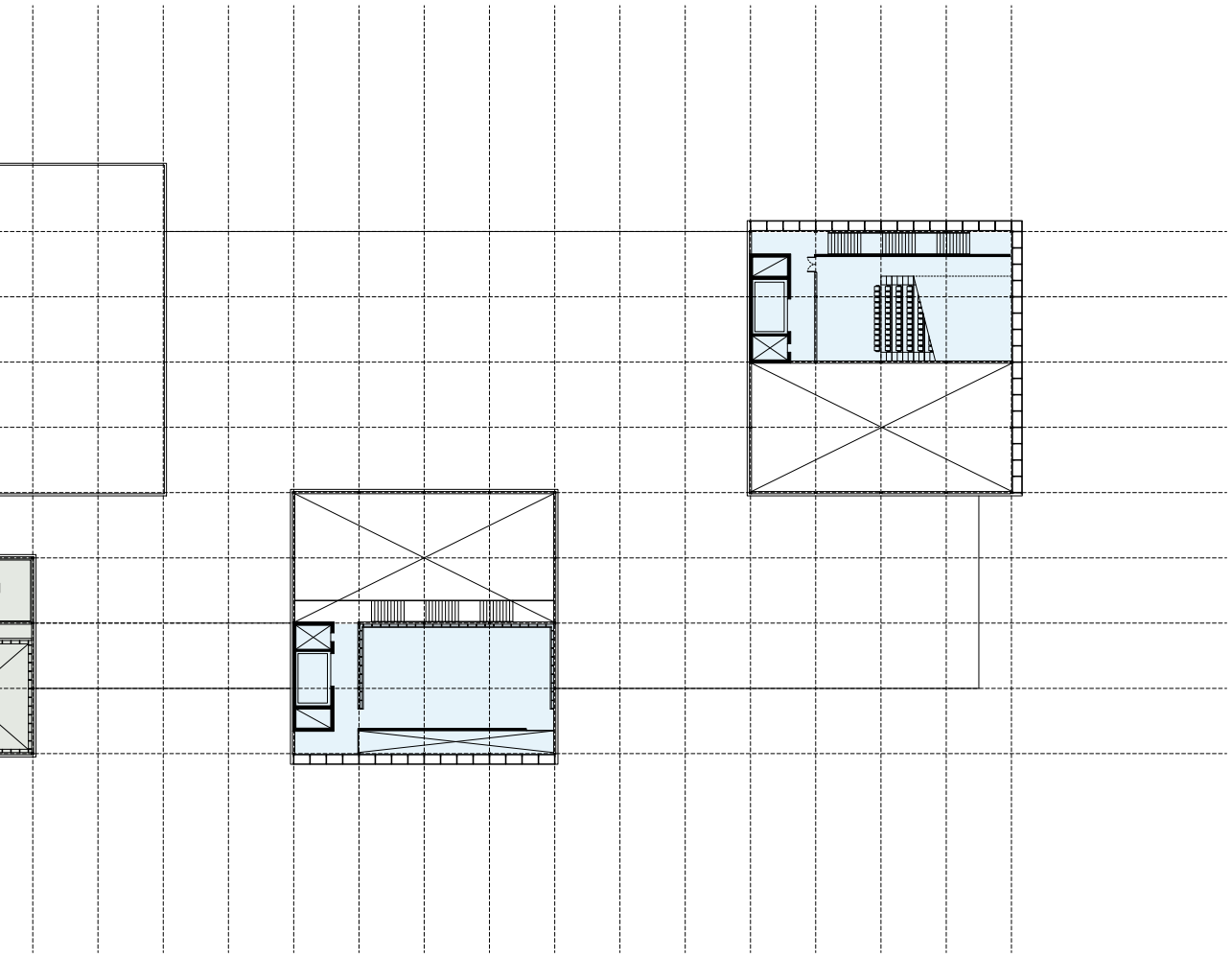
# Third Floor Plan




# Fourth Floor Fragment







Exhibition

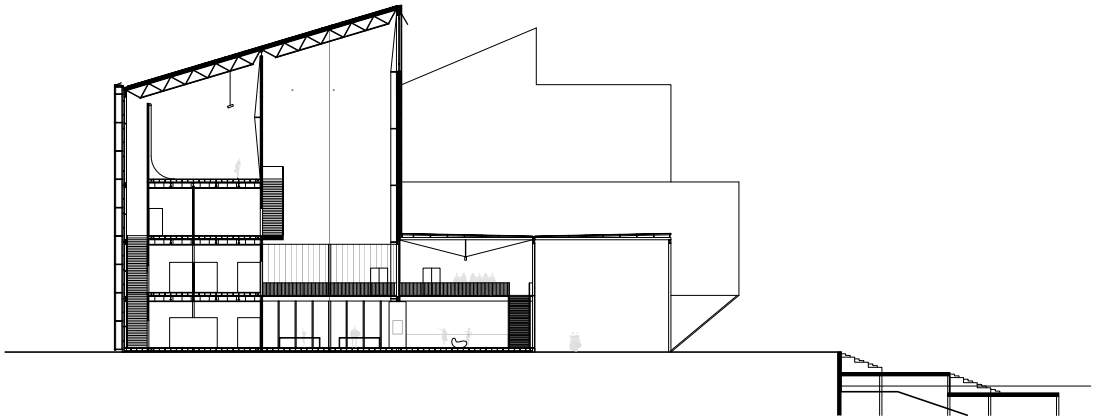
Events Hall

Office

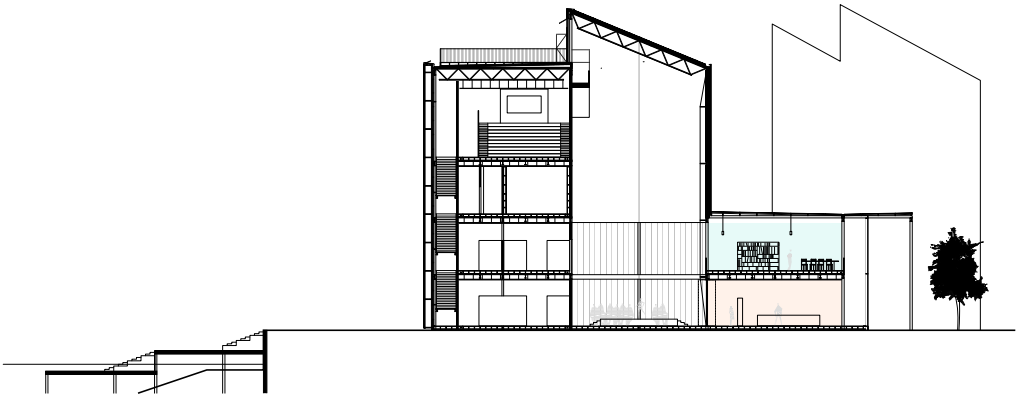
Laboratory

1. Recording Studio
2. Panorama Lab
3. Rapid Prototyping Lab
4. Work Residency

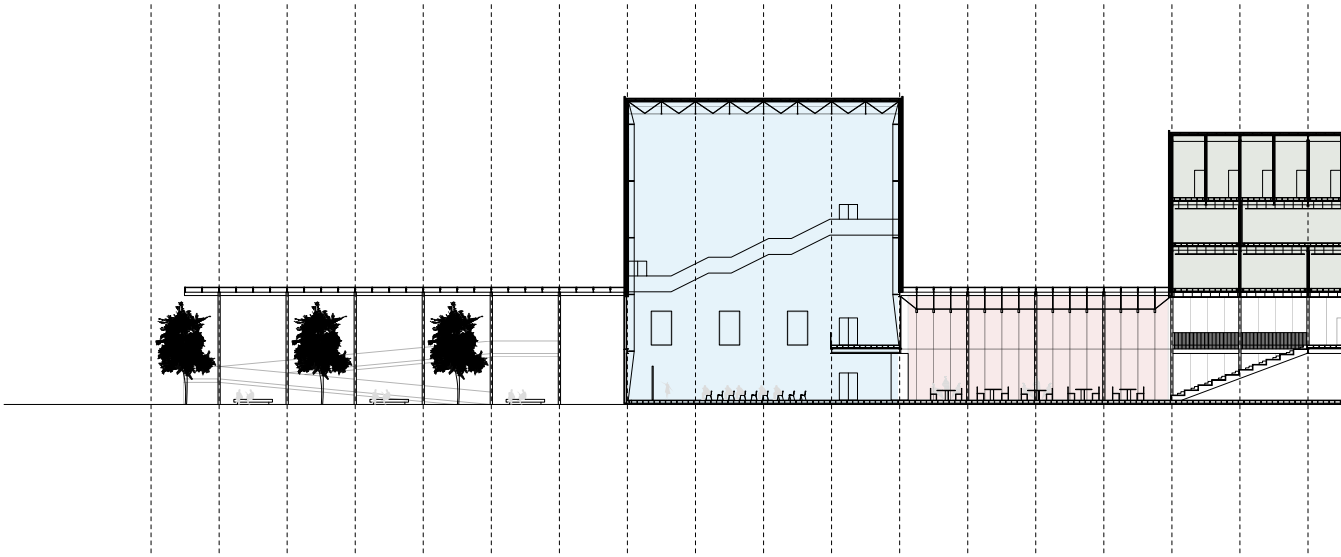
# Section



2-2 Section



1-1 Section



A-A Section

Exhibition

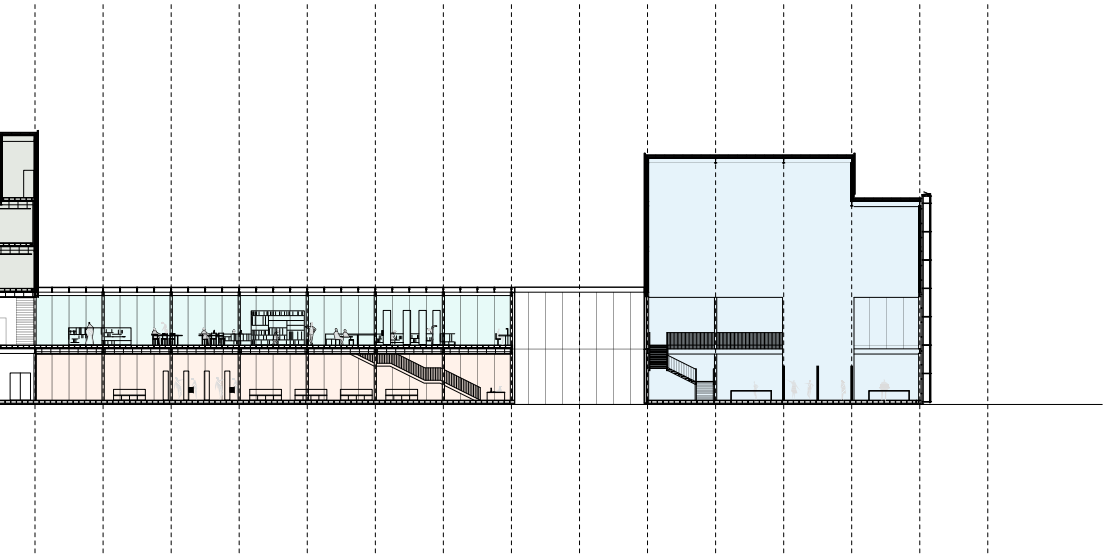
Events Hall

Mediatheque

Retail & Bookshop

Restaurant

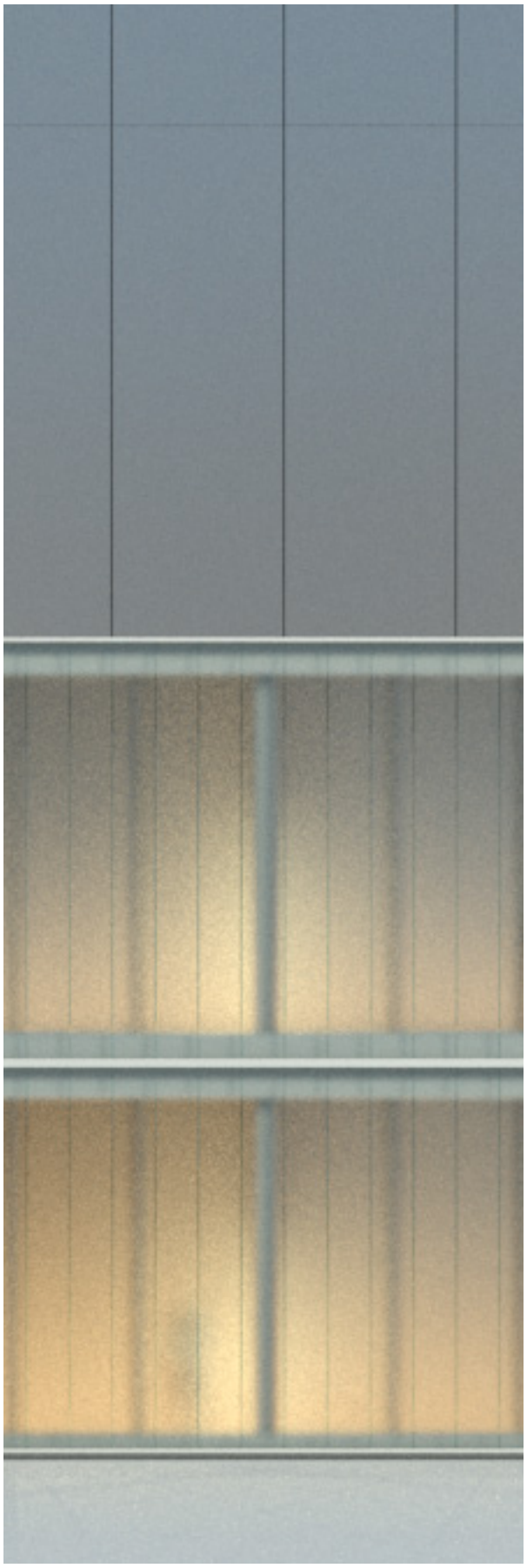
Laboratory

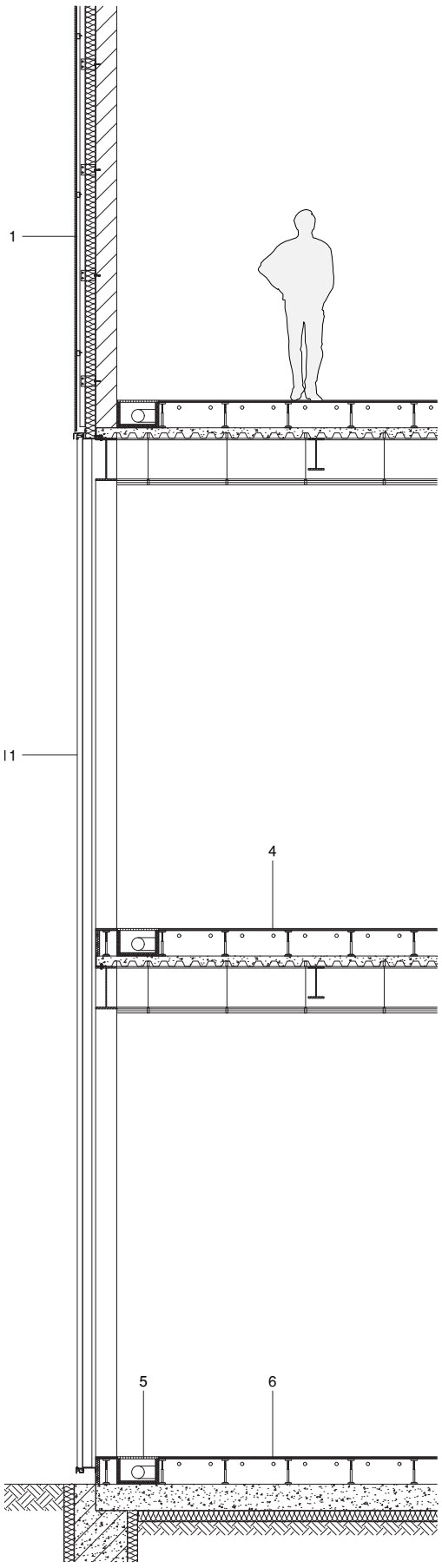


# Interior Perspective

# Interior Perspective

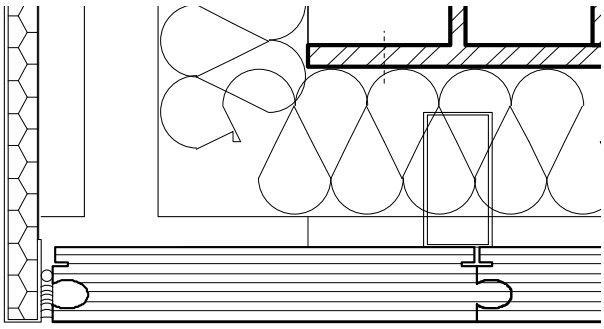
# Detail

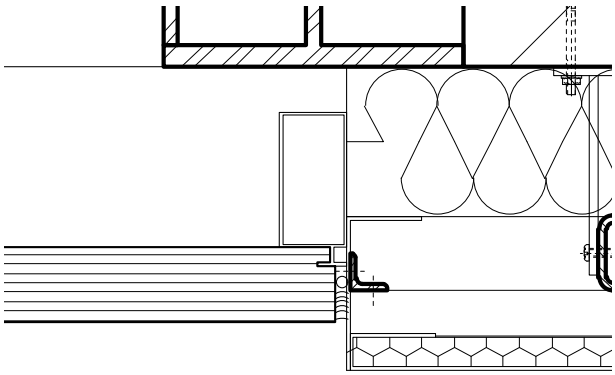




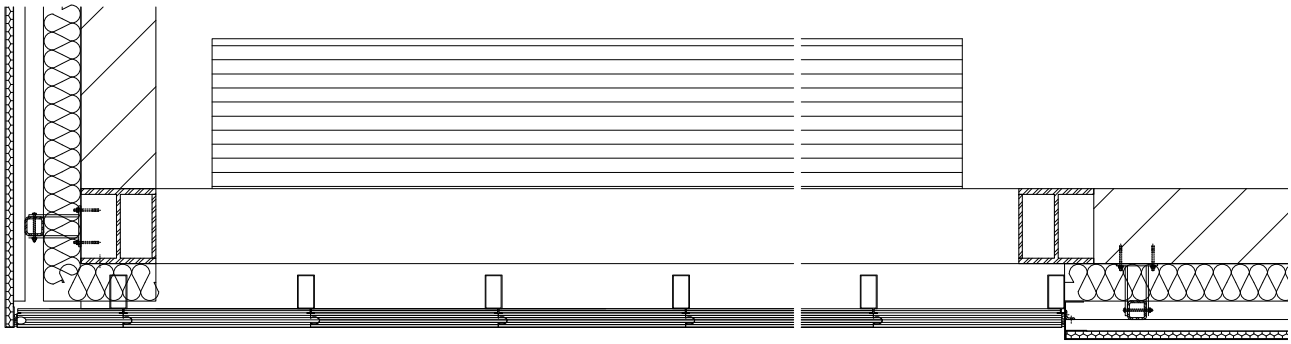

Facade Fragment

1. Aluminium honeycomb panel t=2+20+1mm
   Insulation layer 100mm
   Concrete block wall 200mm
3. Double glazing glass 10+(8+8)mm
4. Cross laminated timber floor 30mm
   Mechanical space 240mm
   Concrete floor slab with metal decking 100mm
   Suspended aluminium sheet ceiling
5. Ventilation duct
6. Cross laminated timber floor 30mm
   Mechanical space 240mm
   Insulation layer 120mm
   Waterproof membrane
   Concrete slab 120mm
11. U channel glass



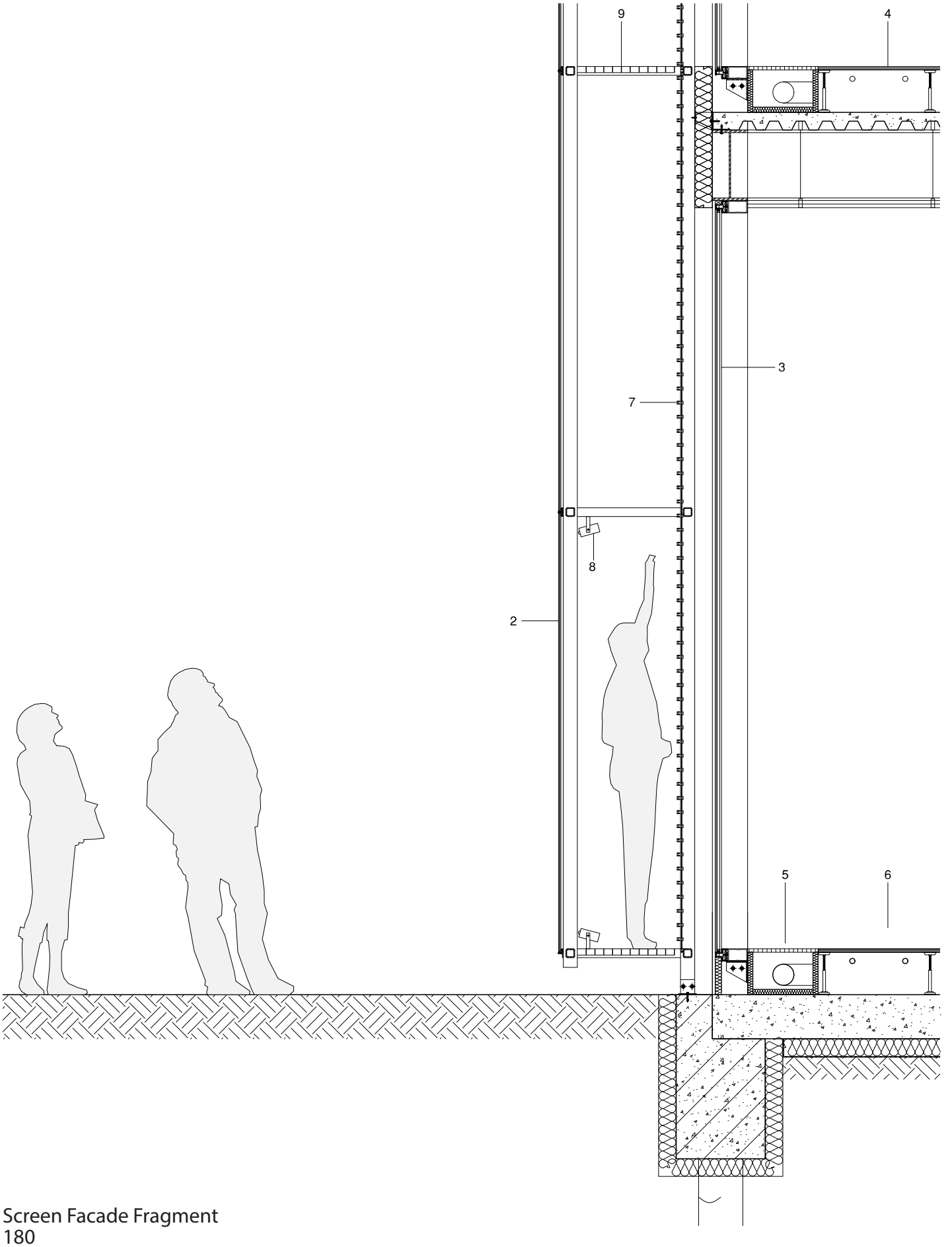


## Material Joint



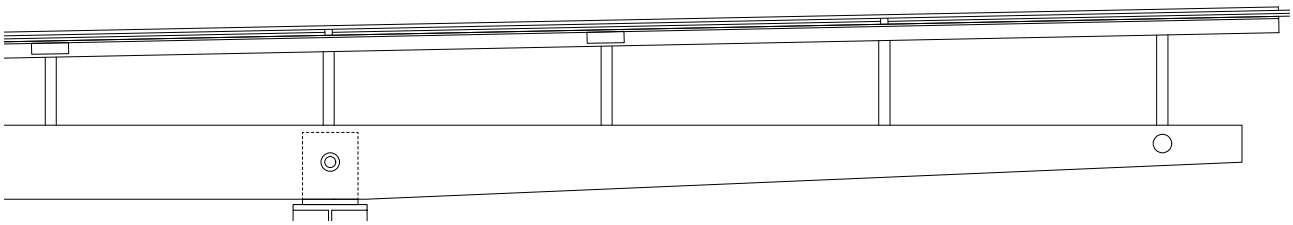
## Plan Fragment

# Detail

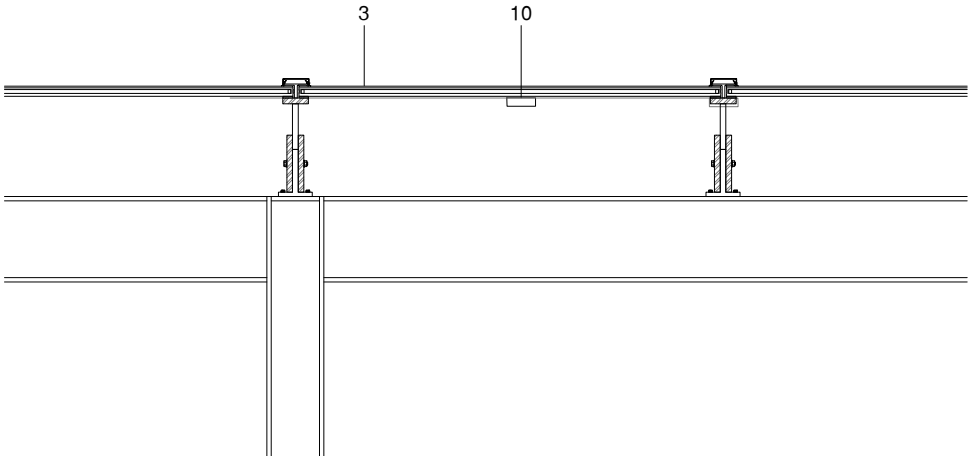



Screen Facade Fragment
180

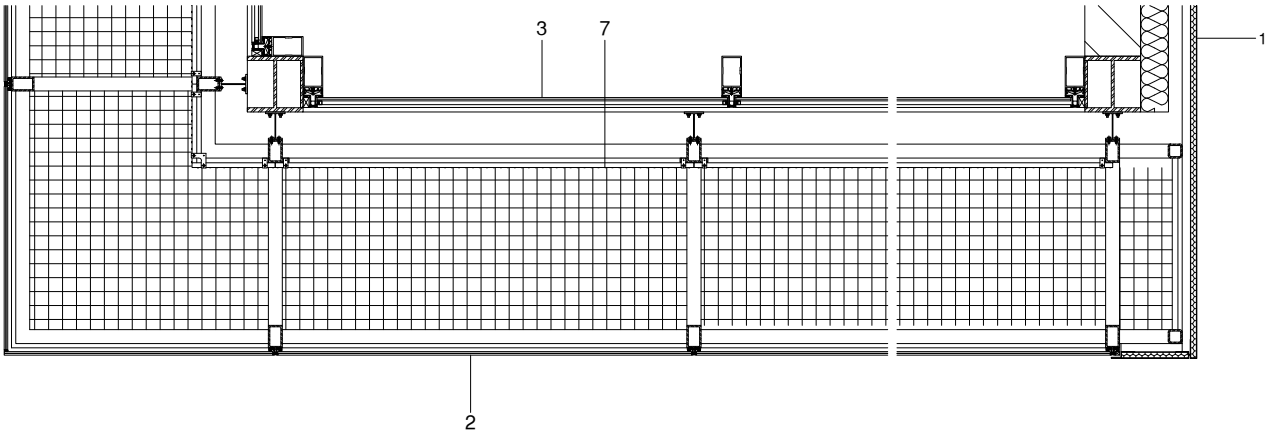
2. Laminated glass 6+6mm
3. Double glazing glass 10+(8+8)mm
4. Cross laminated timber floor 30mm
   Mechanical space 240mm
   Concrete floor slab with metal decking 100mm
   Suspended aluminium sheet ceiling
5. Ventilation duct
6. Cross laminated timber floor 30mm
   Mechanical space 240mm
   Insulation layer 120mm
   Waterproof membrane
   Concrete slab 120mm
7. LED strip (P25)
8. Detective device
9. Welded steel grating catwalk
10. Junction box



Glass Canopy Section Fragment



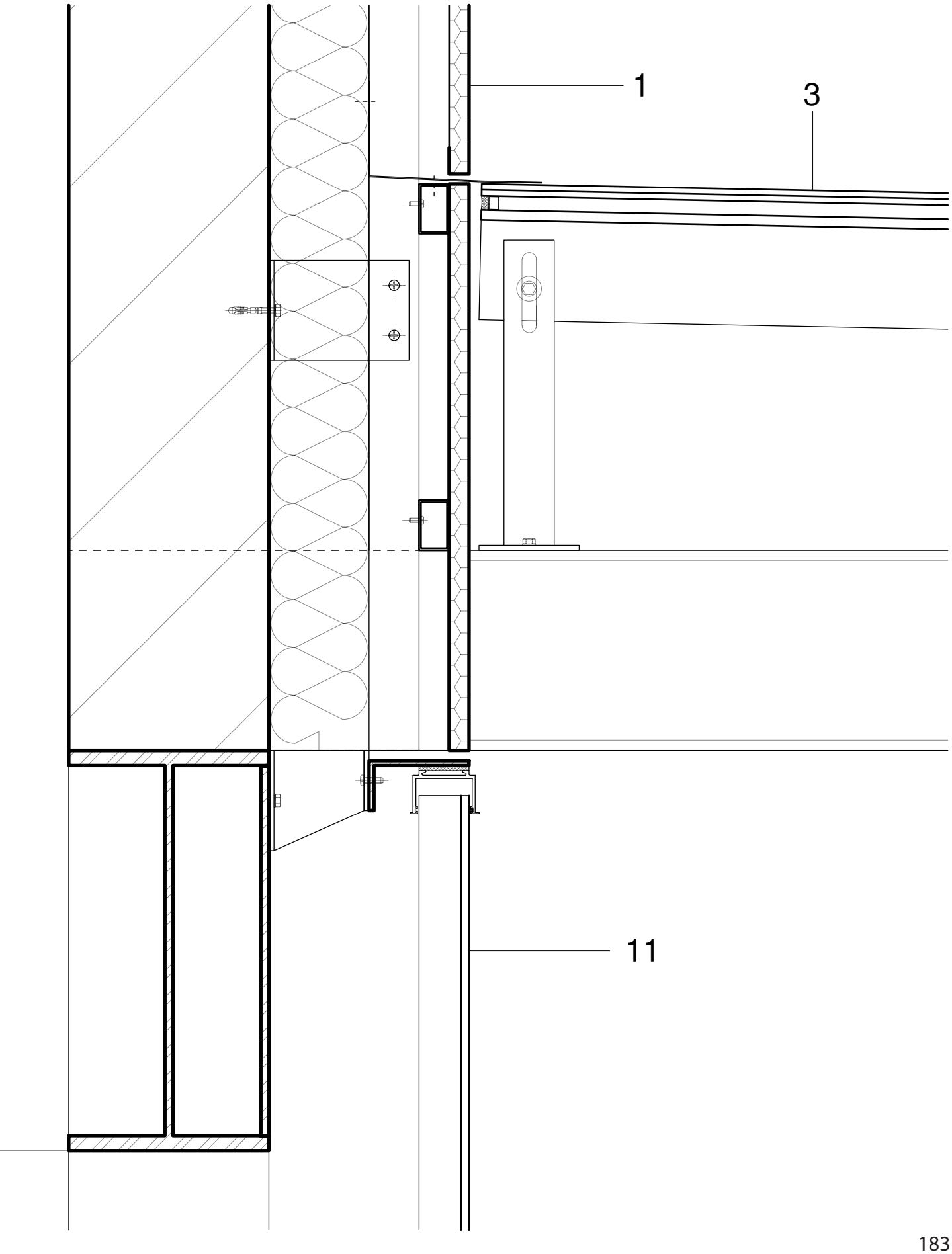

Glass Canopy Section Fragment




Screen Facade Plan

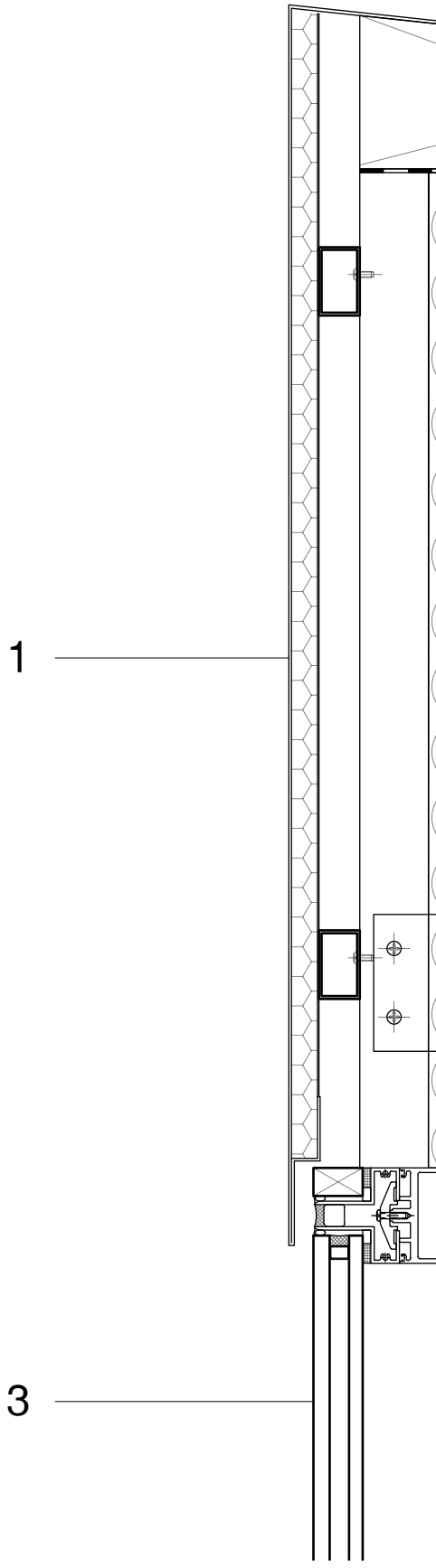
# Material Joint

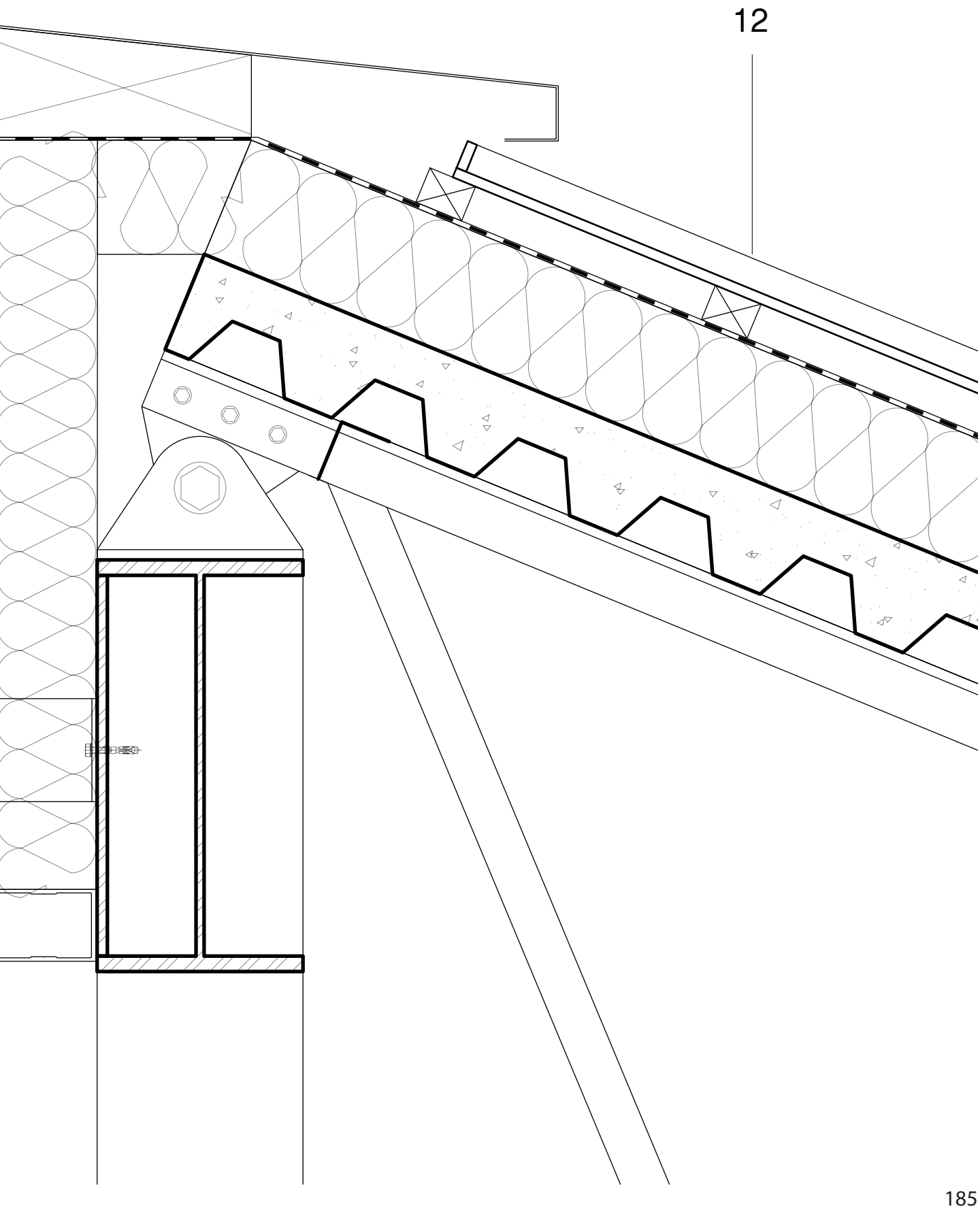
1. Aluminium honeycomb panel t=2+20+1mm
   Insulation layer 100mm
   Concrete block wall 200mm
3. Double glazing glass 10+(8+8)mm
11. U channel glass


1
3
11

# Roof Detail

1. Aluminium honeycomb panel t=2+20+1mm
   Insulation layer 100mm
3. Double glazing glass 10+(8+8)mm
12. Photovoltaic panel
    Anchor and rail
    Waterproof membrane
    Insulation layer 150mm
    Concrete floor slab with metal decking 100mm
    Steel truss 1 meter high

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# Final Reflection

The journey from P1 to P4 in Public Building Studio, to me, is not easy and smooth. Reflecting on the past several months, I found myself a lot of times struggling with architecture forms while lost my original concept. The reason why I chose "interface" as the keyword for my concept is simply because I want to design a museum adapted to the contemporary age and somehow look forward to the future. Since we are stepping into the digital era now, the way we perceive art is also changing. The medium of art is switching from canvas to digital screen. And the interface is one of the most characteristic elements helping us to understand this new age. Since my project topic is "museum as interface", here I am trying to argue that the new museum should function as a mediator between different relations. Such relations are varied. They could be between artists and curators, or artists and audience; museum and community; public and private. It is a summary of my P2 presentation, and tutors expressed their interest on this topic. But for the design part, the most reflection about my project is the loss of context with surrounding. The design in this stage is too alienated in the site. After that specifically studied the site and made several site visits, I concluded two traits of our site that might influence my design principal. First one is the industrial background of the site. As a once-glorious harbour, its industrial identity is so strong that cannot be wiped off by South Rotterdamers. The new design should reflect on this characteristic, in order to adapt itself with Maassilo and Meneba. Second one is the "new glory" of Rotterdam. What I mean here is the new skyline constituted by different iconic buildings, especially in Kop van Zuid, which stimulates the tourism of Rotterdam. The new design could witness this transition process of city function: the harbour is moving westward, while a tourism city left flourishing.

In the beginning of P3, which is the program massing stage, I met some troubles. When talking with prof. Nathalie, she particularly criticized upon the "harmonious" relation I want to create among artists, curators and visitors. She thought that the role of curators is so powerful, their job is to control everything about exhibition, which made it impossible to reach the evenly co-working between curators and artists. It is a radical feedback, but since my main topic is "new museum" for future, I consider such a new relationship could create a new form or new typology of museum. The word "interface" emphasizes the heterogeneity between two objects, so as here between artists, visitors and curators. That is the one of hardest difficulty I am tackling with in my project.

Meanwhile, the idea of multiplicity is also embodied on this new typology. Museum is not only an institution or "cabinets of curiosities" any more. Beside the collection and exhibition, my new museum will also focus on new function like publication, education and creation. New media has changed the way people perceiving art, and also changed the way of art promotion. My museum will not only about new media art, but also exploring the possibility for publishing media embedded into museum.

The toughest time happens in the middle of P3 part, when I was so obsessed with forms that forgot my topic "interface". At that time I kept thinking that graduation project should be crazy and "new". Every week I brought a new idea of form to the tutor but seldomly brought my thought on site and concept. In the middle time my tutor Henk offered me some inspirations of "blurriness and ambiguity in architecture", that trying to help me concretizing the design concept, but I was still lost. Henk found it a bit "dangerous" and gave me a warning in P3 presentation. During the week after P3 I thought really a lot. Simple is not a bad thing, I should not make the design complicated to understand and creating problems for myself. Again I gave a new design to the tutor in the first week of P4 stage, but this time integrating more with site and the idea of "blurring boundary". It is quite a big and successful leap since P3 and finally that new idea was kept until P4 now.

I should admit that I am not so good in structure and climate control. But BT tutor helps me a lot in finding the right structure. He always kept reminding to find the relevant reference but not inventing anything by myself. Then I started to look at the projects by Renzo Piano and SANNA. The simplicity and minimalism embodied in their project attracts me a lot, since in my design there are big pavilions and glass canopy, which are one of the symbols of their work. During the meeting with my third mentor Sang, he pointed out some problems in terms of building technology, for example, the problematic mixture of timber structure and steel structure. It helps a lot in improving the space quality and atmosphere. Towards the end of P4, Henk reminded me to pay attention to how to illustrate my design concept clearly, not simply using black and white plan and section, but catch the essence in it and revise it with the help of perspective drawings. Perspective drawings are not only used to perceive atmosphere, but also help to make the right detailing. As I tend to shape my idea in a minimalism style, the connection and joint between different material became important. That is the main thing I worked during the last few weeks before P4 presentation.

Looking back to the whole progress, I ultimately realize the significance of a graduation project. It is a really long period, long enough for me to find and correct some vocational mistakes which would help in my architect career. I am proud of what I have done so far and never regret on vain work previously. Look forward to the final stage in Public Building Studio and wish a successful ending.