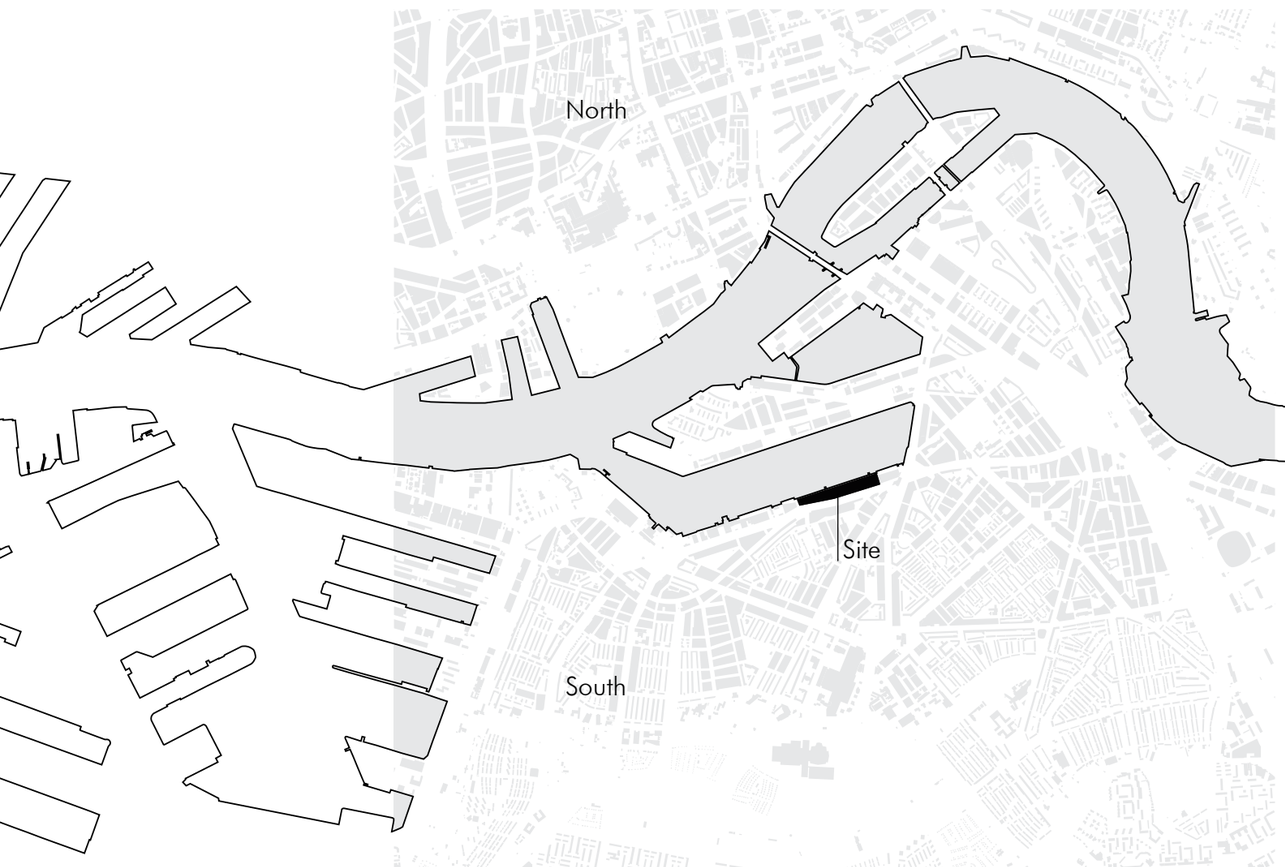
P5: Presentation
The New Museum for Contemporary Technology

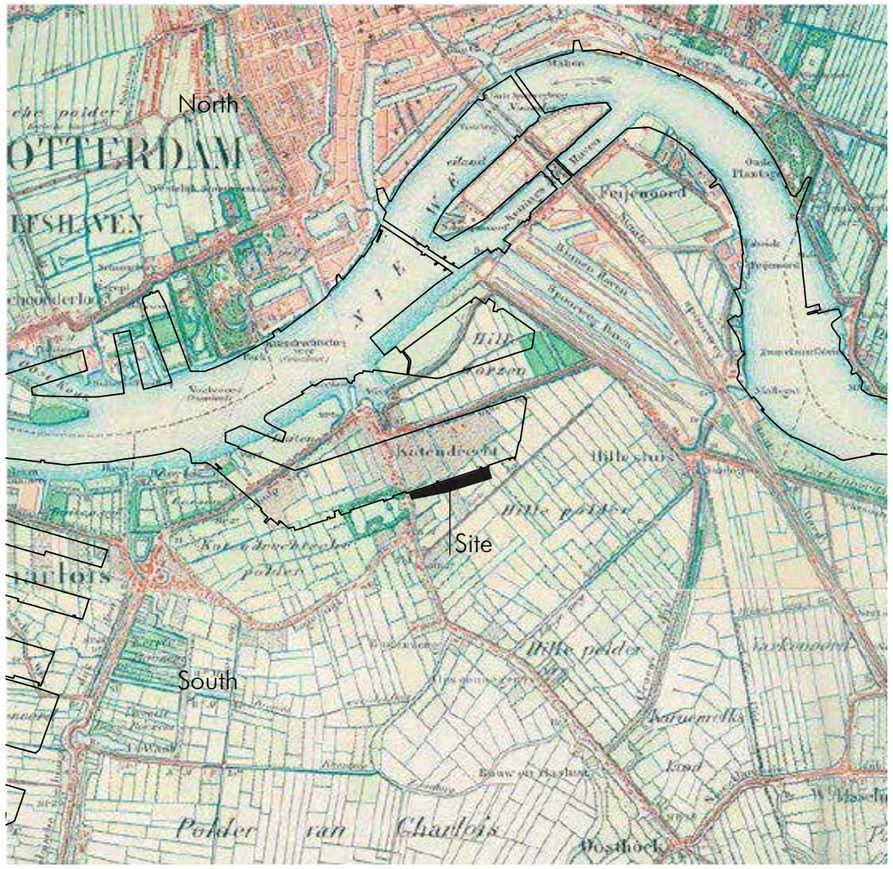
AR3AP100 | MSc3 | Public Building Graduation Studio
The New Museum | Art + the City Re-Wired | Rotterdam Zuid

Daul Chung
[5010314]

Site - Maashaven Zuidzijde, Tarwewijk, Rotterdam South



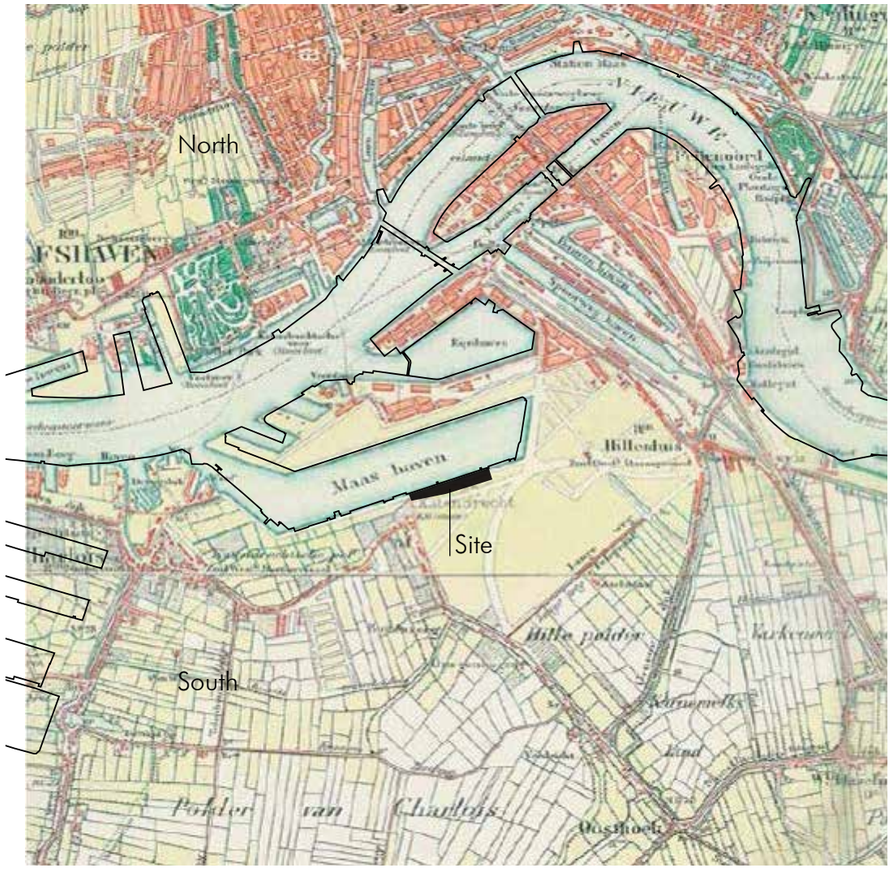
The site before 1905: Polder



Rotterdam History Map 1905, https://www.oldmapsonline.org/en/Rotterdam

Image from Guest Lecture RIVER AS A TIDAL PARK by Marit Janse De Urbanisten Rotterdam

The site from 1905: a Port for barges



Rotterdam History Map 1905, https://www.oldmapsonline.org/en/Rotterdam

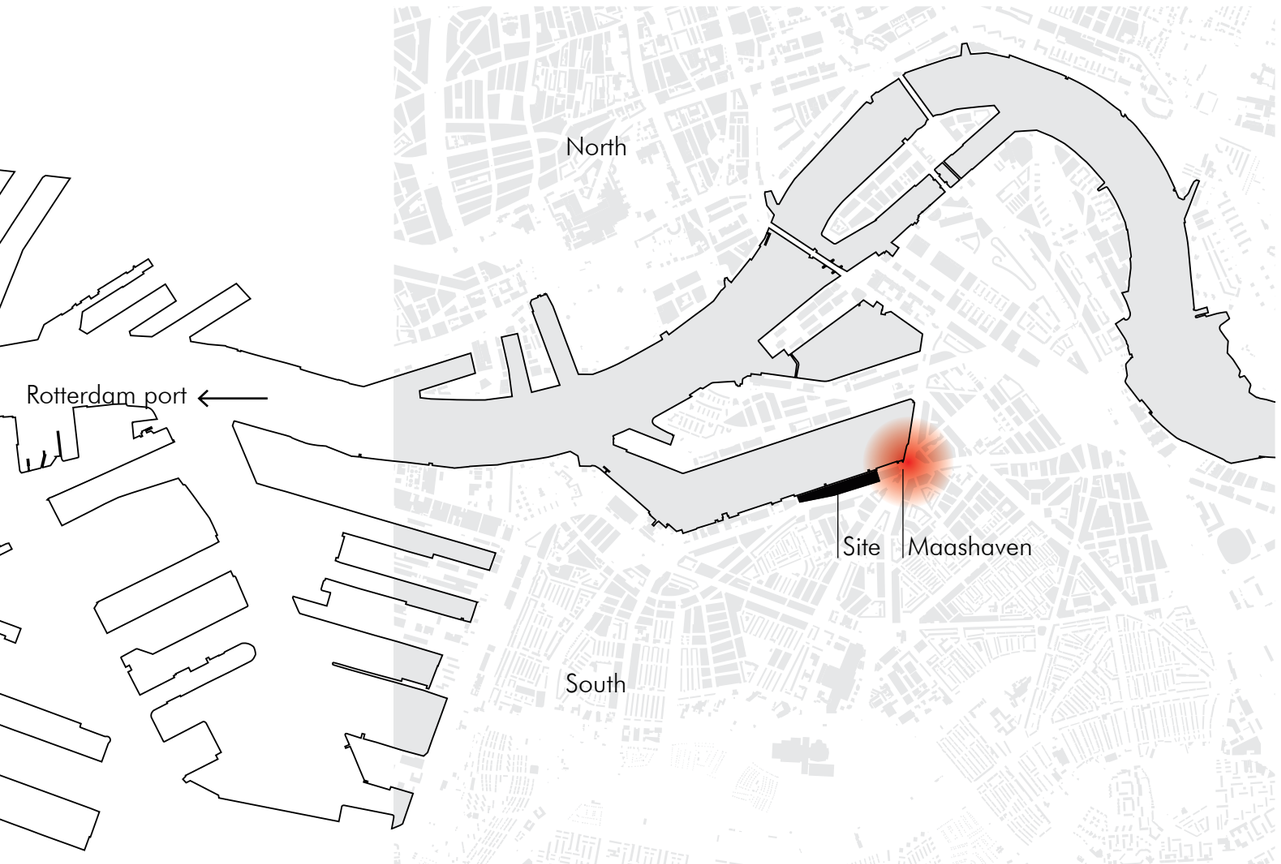
Rotterdam in 1940

Rotterdam as a contemporary city

Collage of art in public areas Rotterdam from Thematic Research: Culture

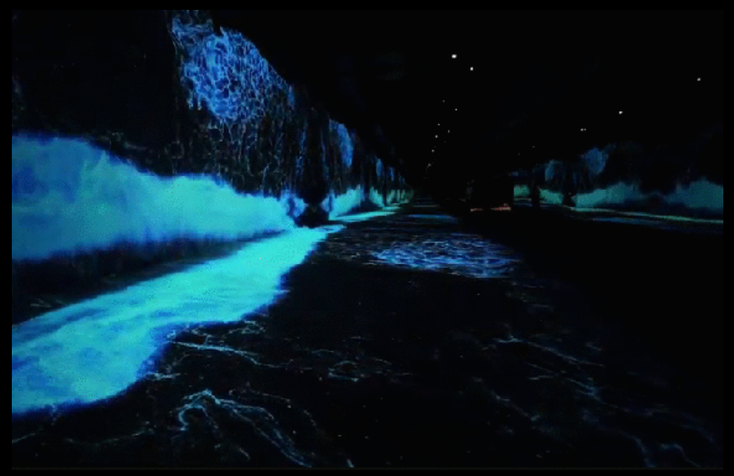
Iconic buildings in Rotterdam - collage from Thematic Research: Power

The present of the site >> Future

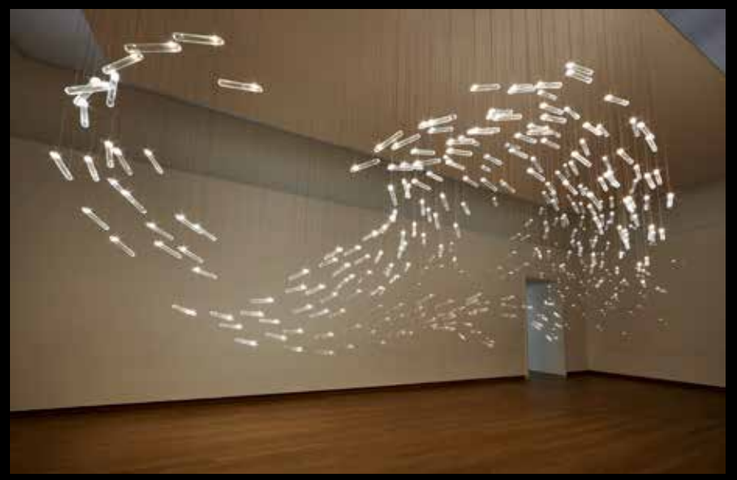


New Art Forms in Today's Technology

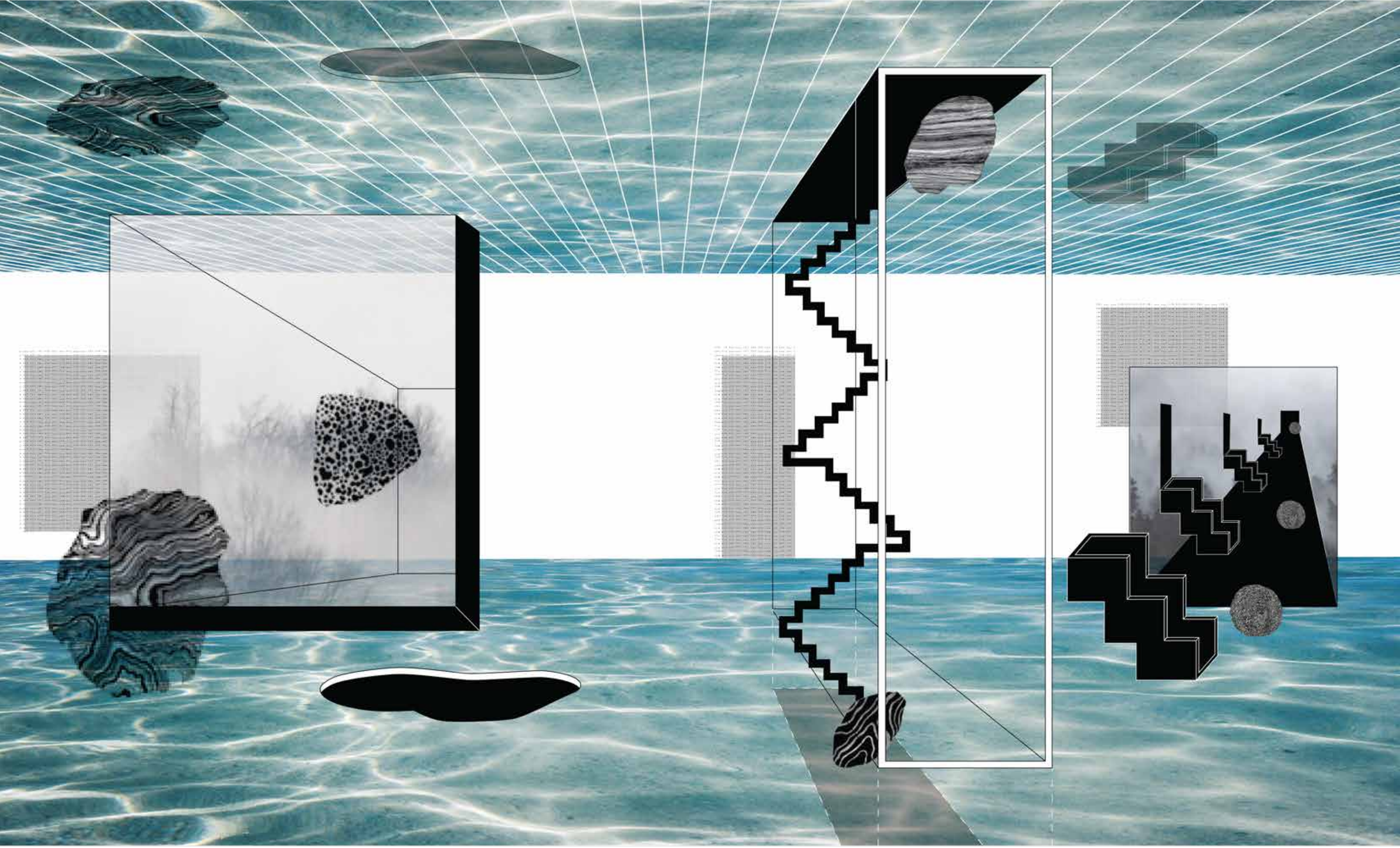
Jeffrey Shaw, Legible City, 1988



"Starry Beach" by a'strict, 2020



Drift Studio

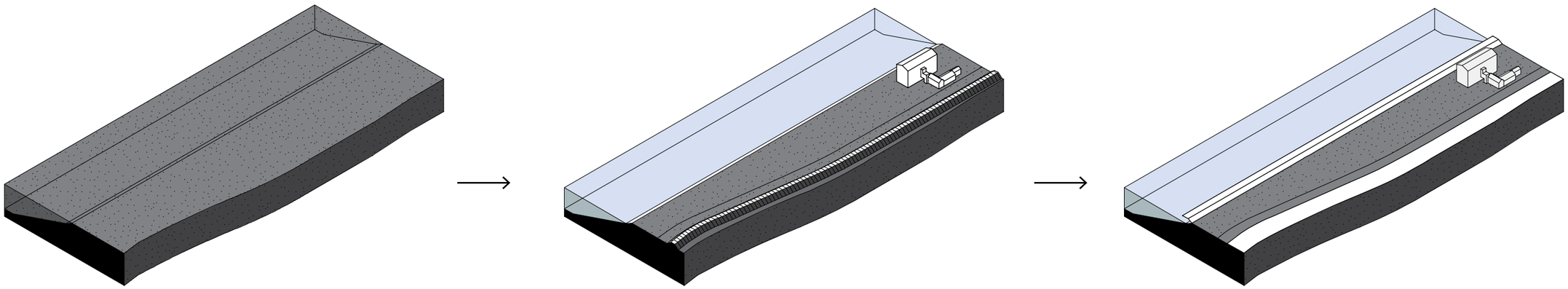


New Museum for Contemporary Technology:

Remediation, Discrete Representation, Modularity, Variability, and Transcoding

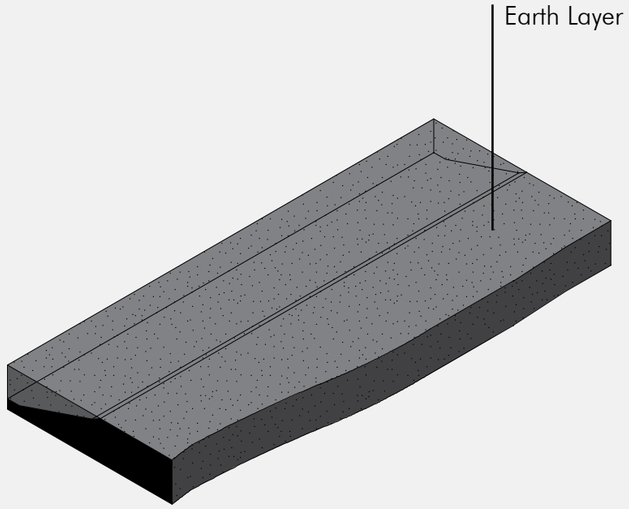
The NEW Museum aims to express new art forms in today's technology.

Mass Diagram

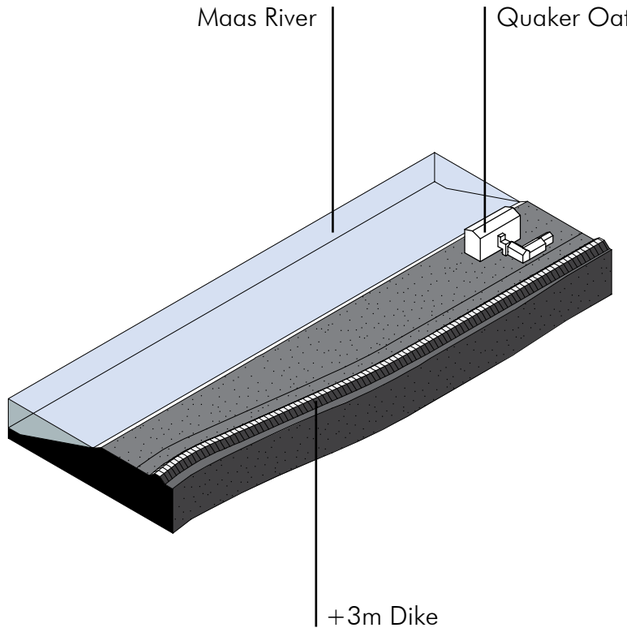


Step 01. Earth Layer

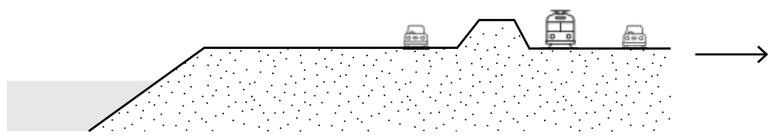
Image from Guest Lecture RIVER AS A TIDAL PARK by Marit Janse De Urbanisten Rotterdam 21.03.04

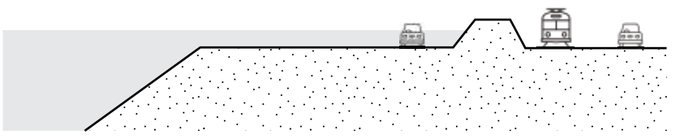


Step 02. Current Situation



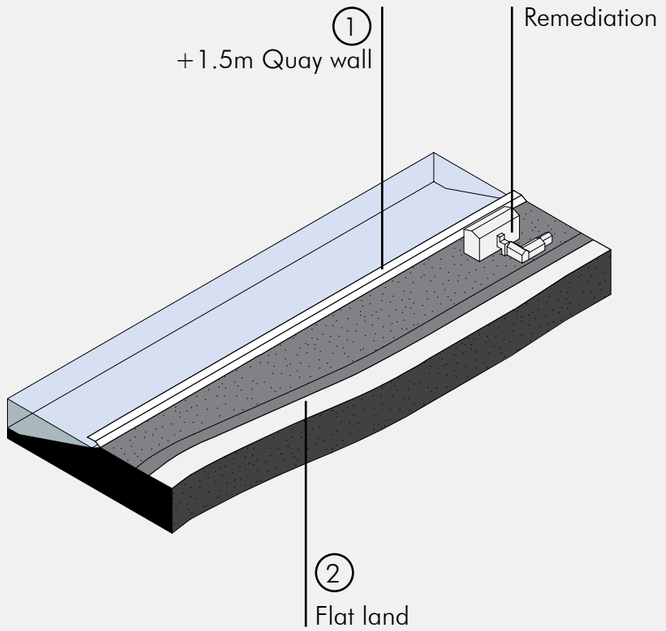
Current situation shows that there are three levels: the river, the site, and the dike.



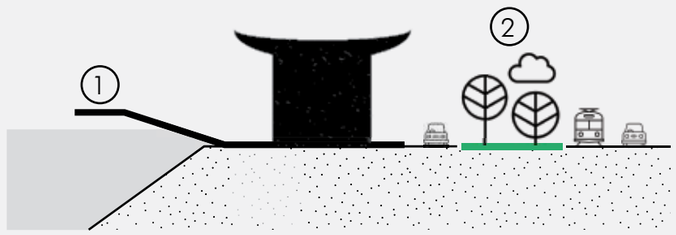


Due to climate change, sea level will rise 40cm by 2050 and 100cm by 2100. This causes high-water levels to rise in Rotterdam.

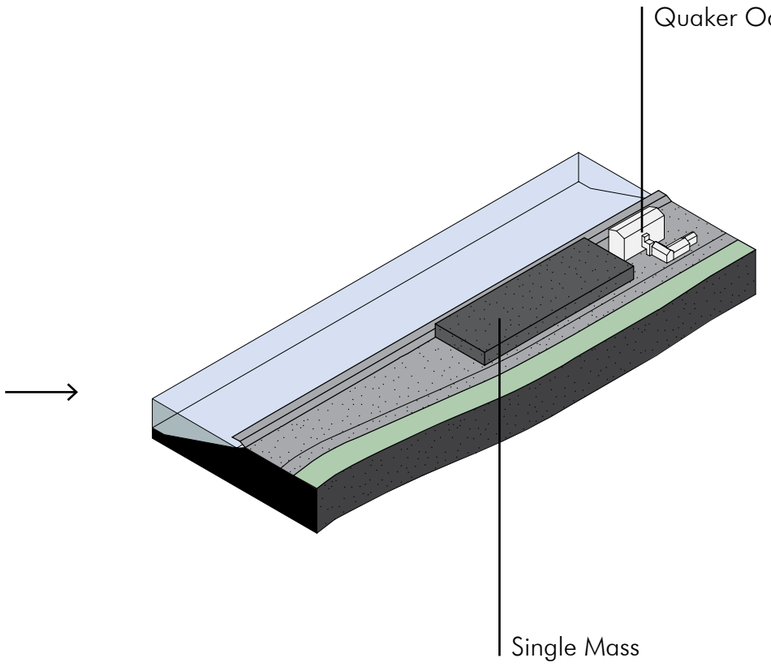
Step 03. Enhancing Quaywall



When the new dike which is 1.5m higher than current level is installed, existing old dike can be removed and new territory is made.



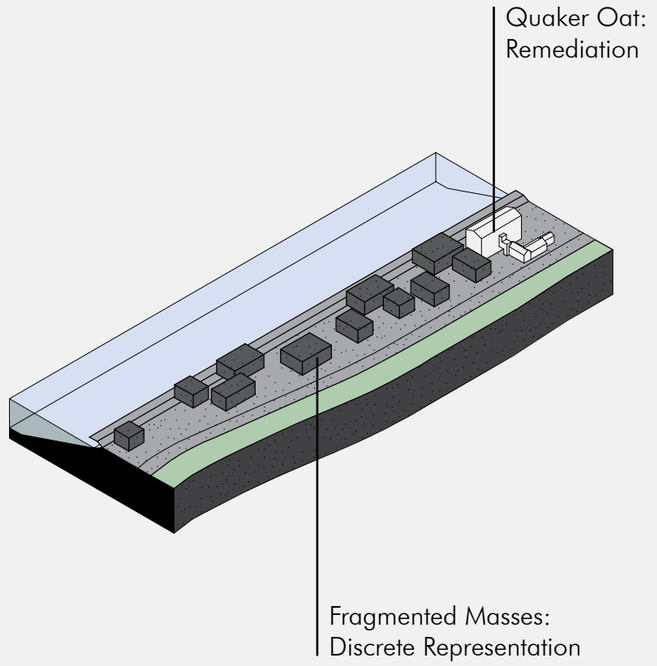
Step 04. Full Mass

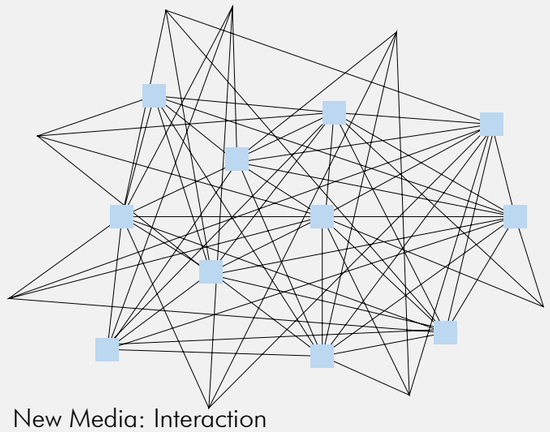


Order of presentation

Analog media: Fixed

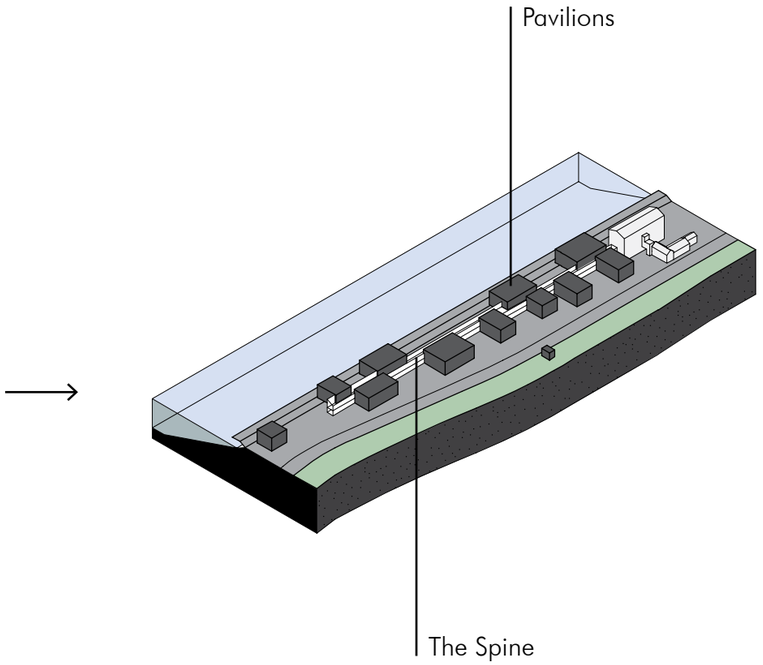
Step 05. New Media Art



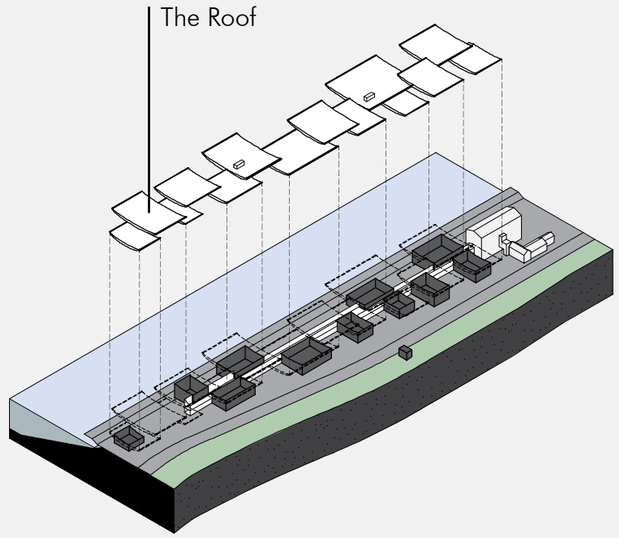


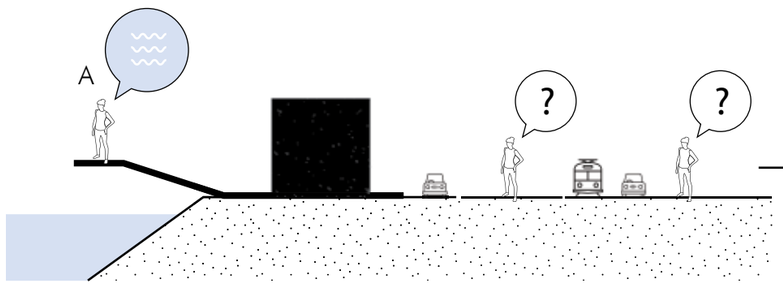
New Media: Interaction

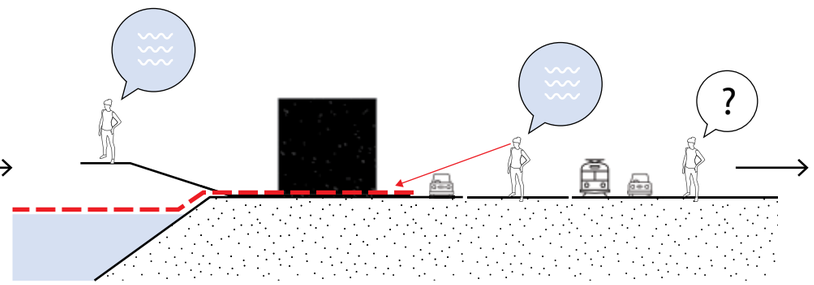
Step 06. The Spine

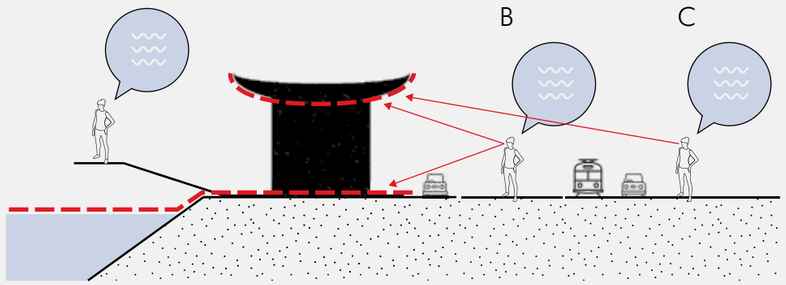


Step 07. The Roof



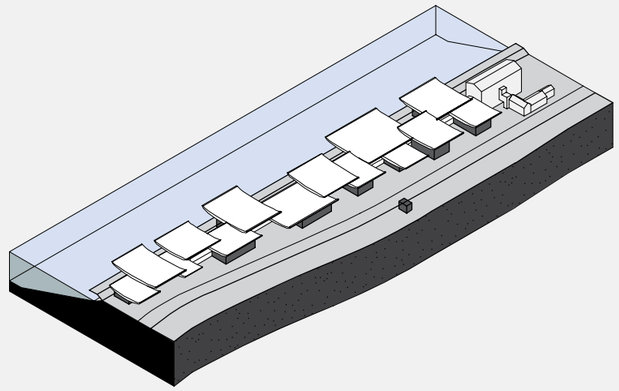




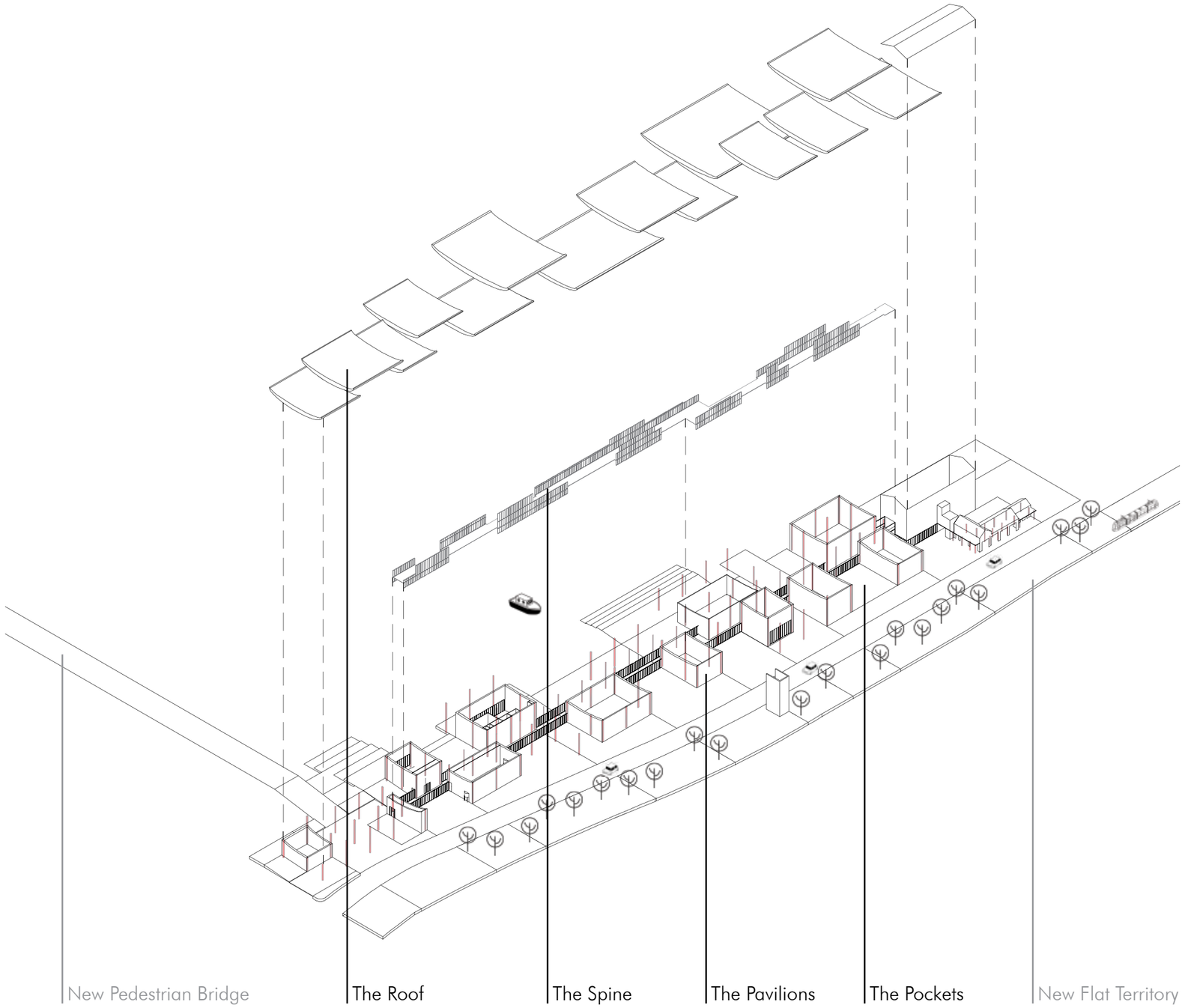


Subtle Waves of Maas River

riverwave image https://www.pexels.com/search/water%20background/



Axono Diagram



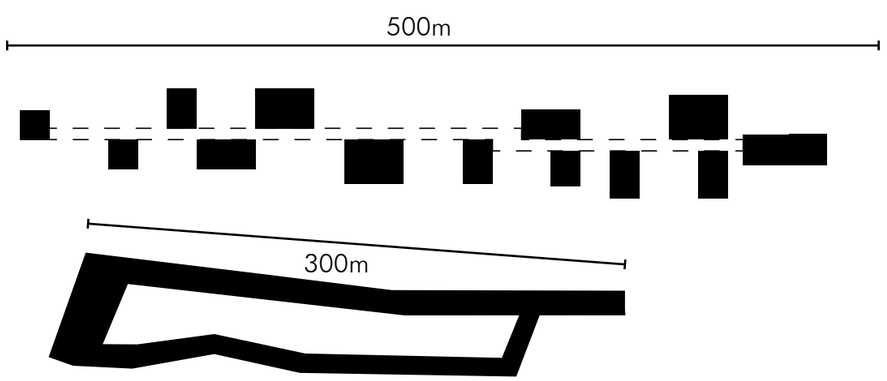
The Vision

Nolli Plan

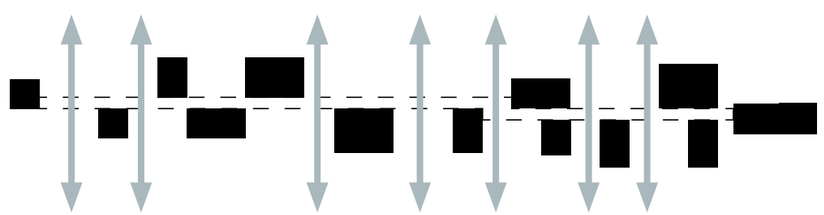
Katendrecht

Maashaven

Discrete Representation

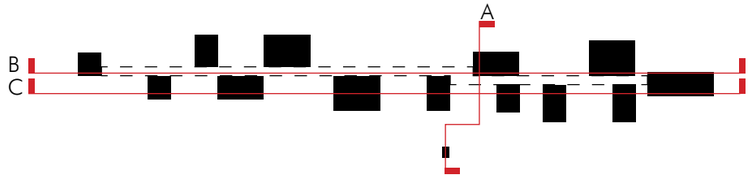


Accessibility & Permeability

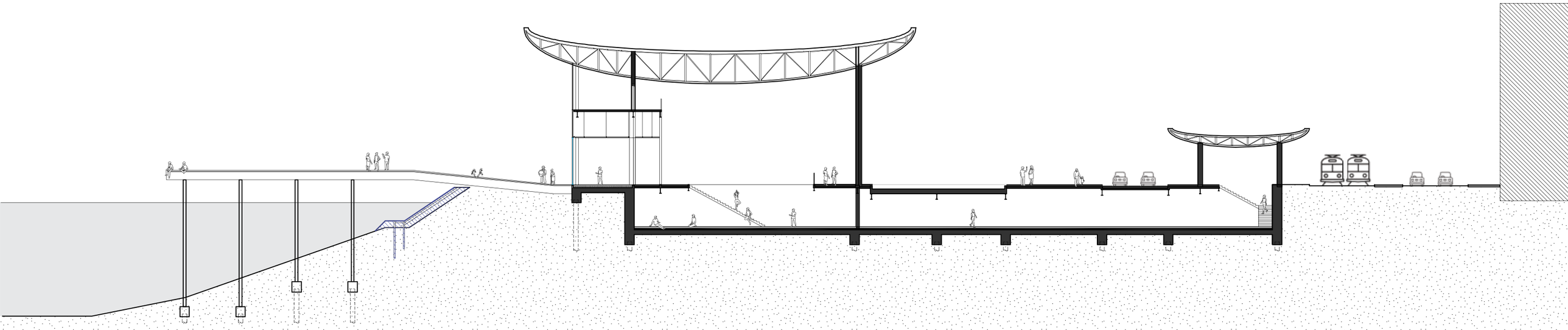


New Flat Territory

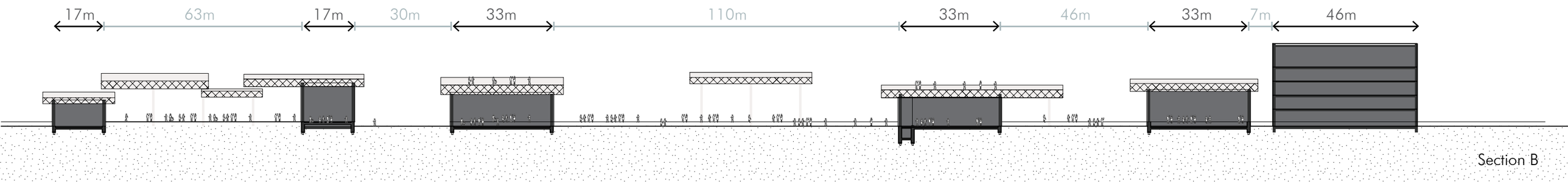
Site Cross-cut



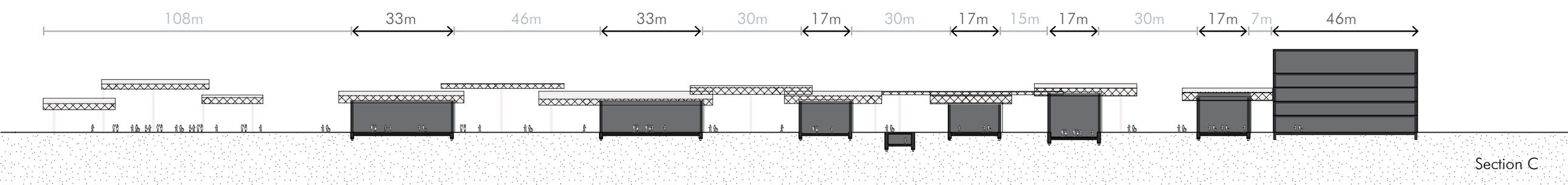
River | New Quaywall + The Pocket | The Pavilion | The Pocket | Road | New territory | Road | Town



Section A

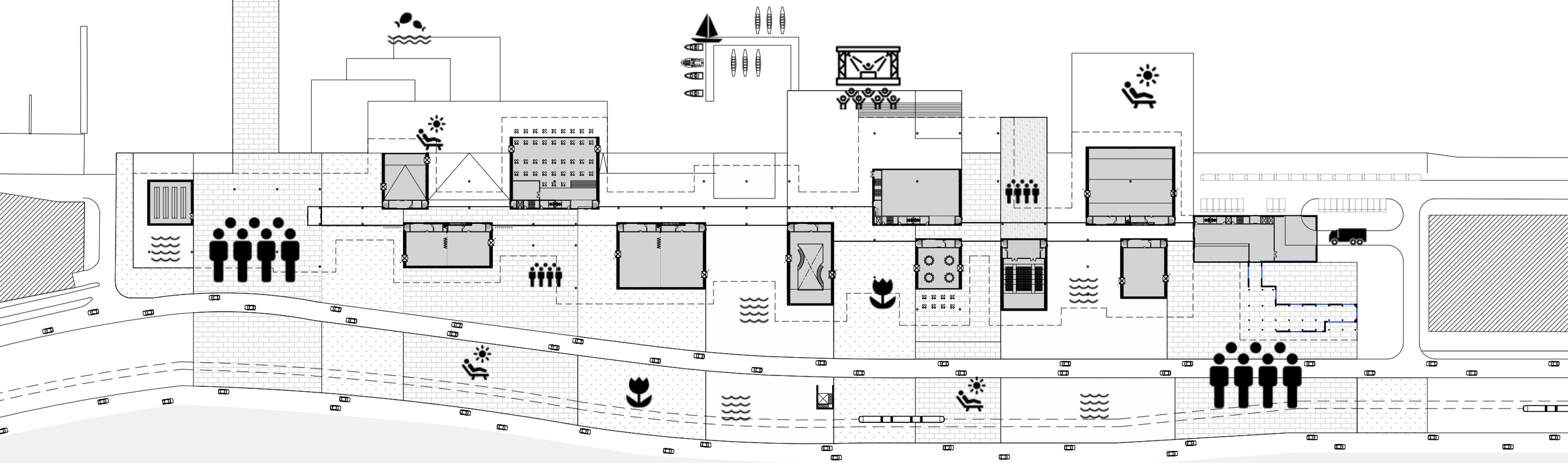


Section B

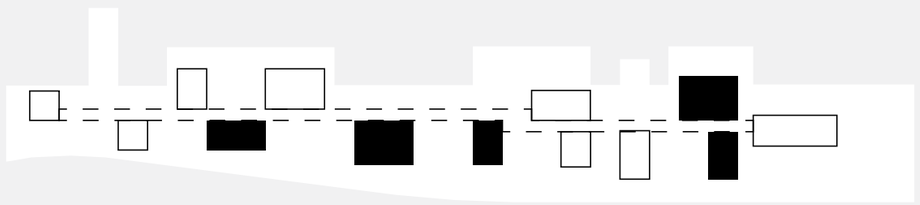


Section C

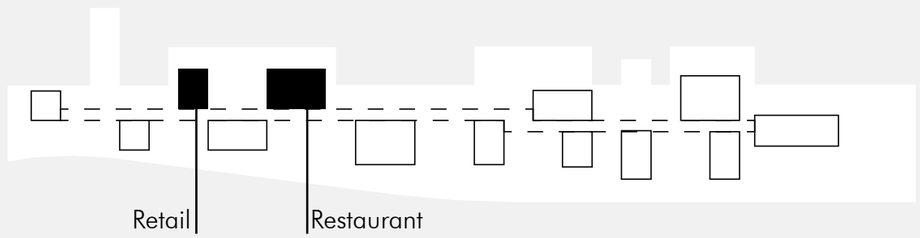
The Pavilion + The Pocket



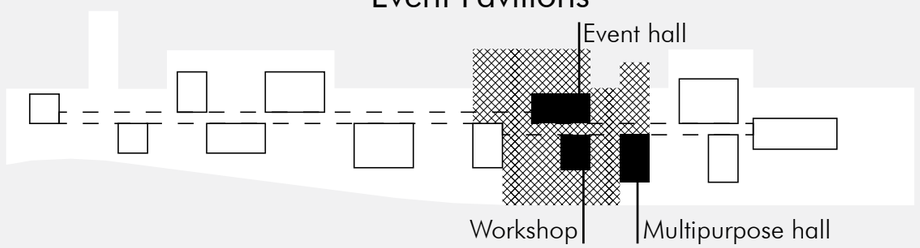
Exhibition Pavilions



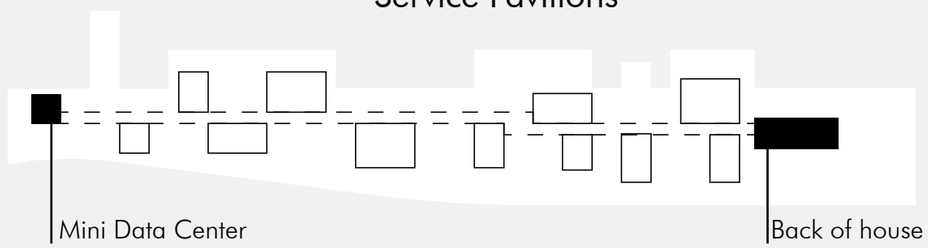
Retail Pavilions



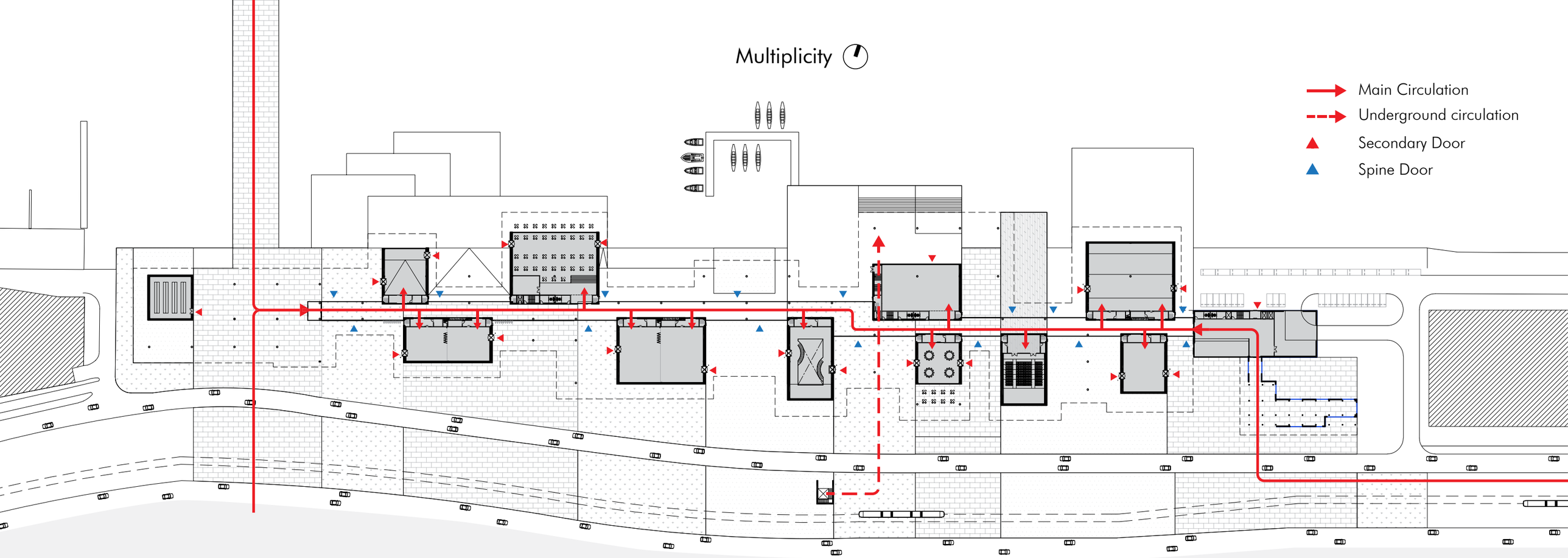
Event Pavilions

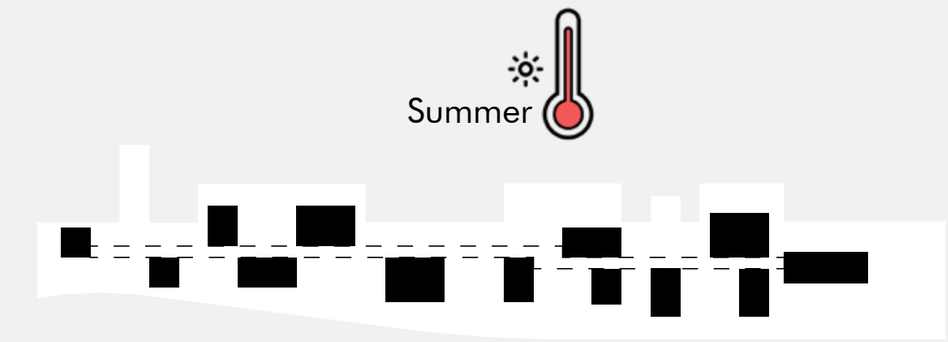


Service Pavilions

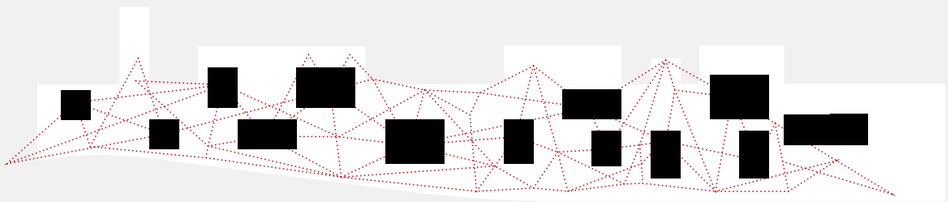


Multiplicity



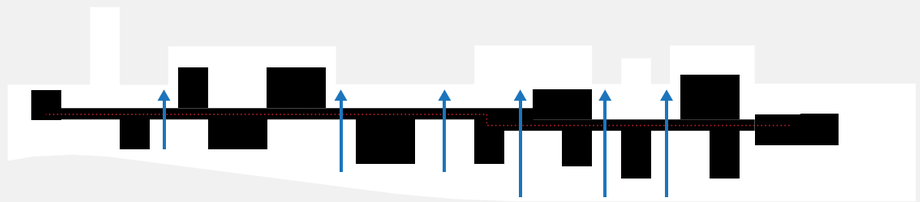


During summer, the spine disappears to provide more outdoor spaces.



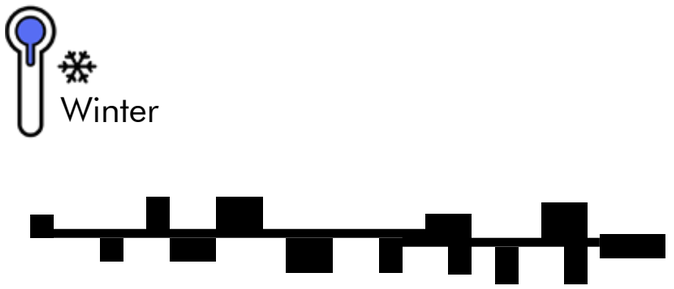
During summer, it is meant to be interactive as much as possible.

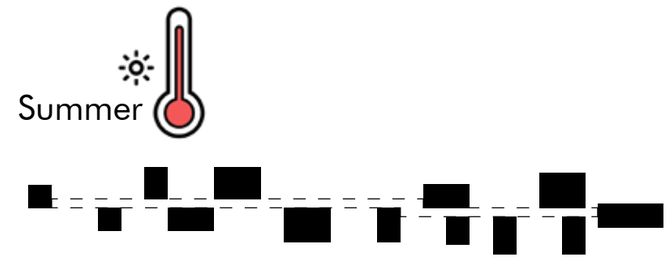
During winter, the spine appears to provide comfortable temperature.



During winter, the main circulation is the spine. However, there are several doors to reach the waterfront.

The Spine





Exhibition Pavilion + The Spine

The Spine

Lockers

③ The Spine wall pocket

② Folding

① The Spine Wall
(Double glazing)

Vestibule

Control rm

Storage

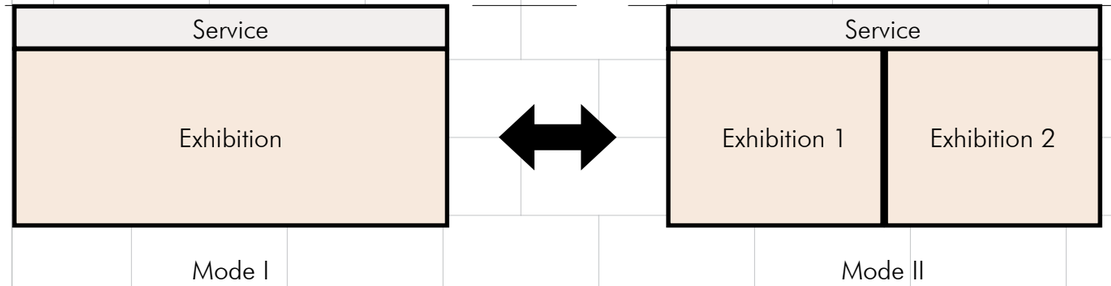
Vestibule

QR code scanner

QR code scanner

Division wall for resilient exhibition

Exhibition Pavilion

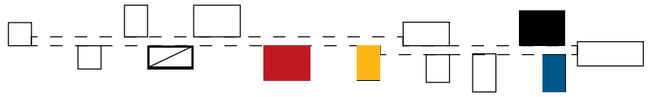


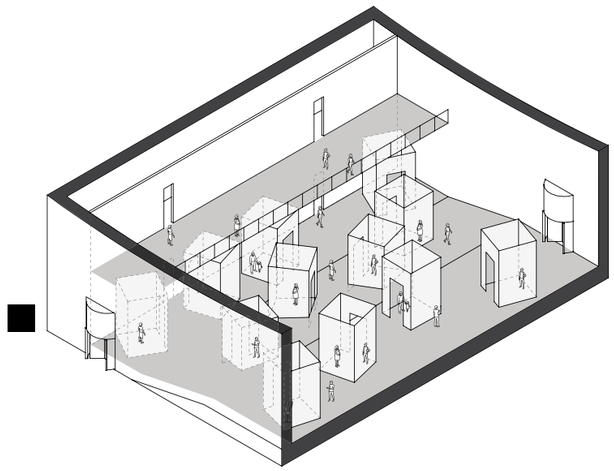
Mode I

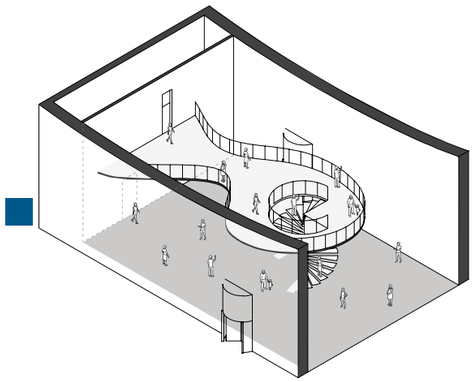
Mode II

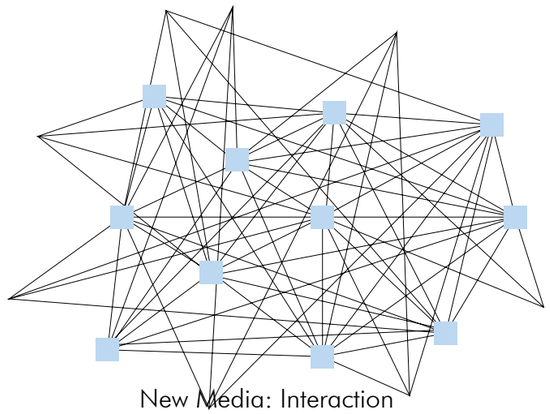
Atmosphere - Exhibition Pavilion

Exhibition Pavilions

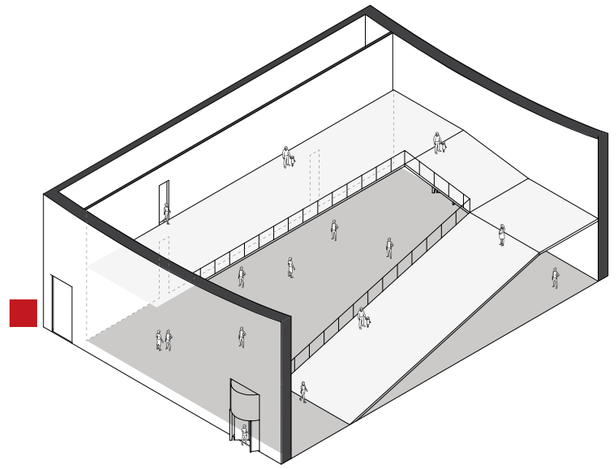


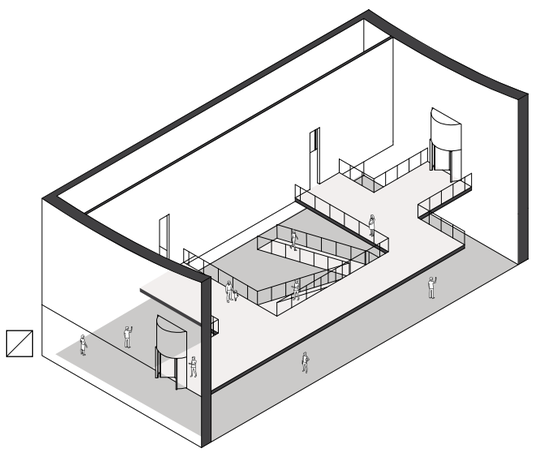


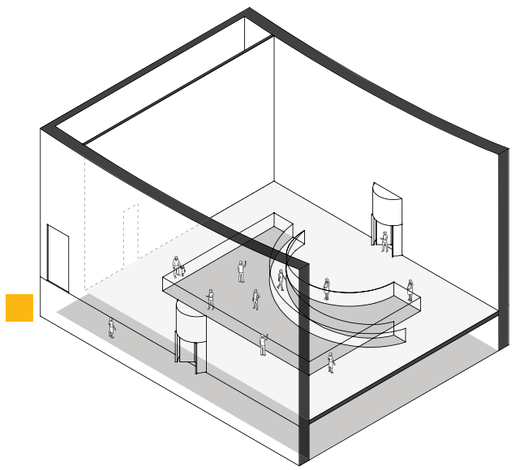




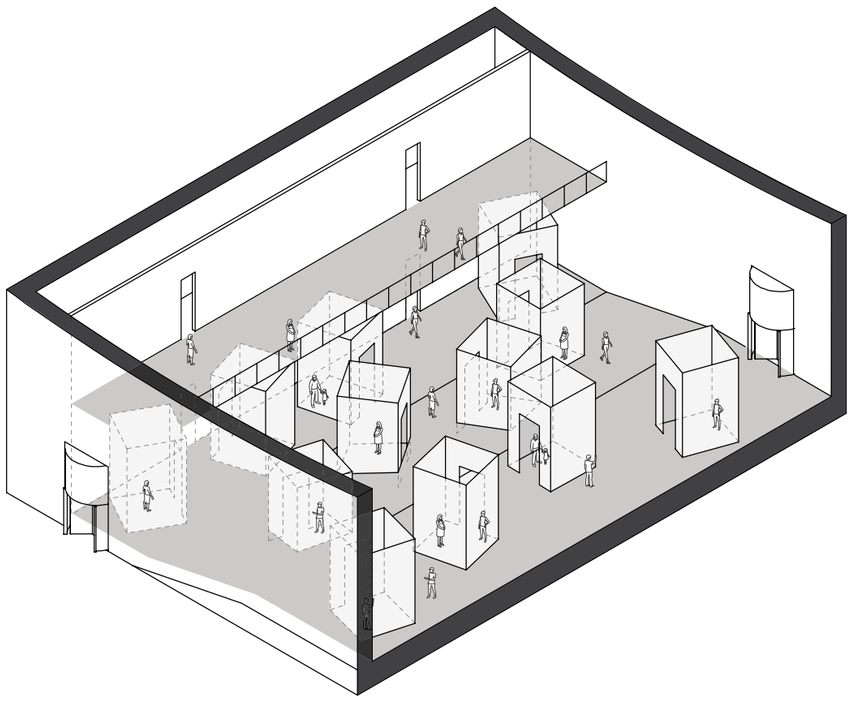
New Media: Interaction

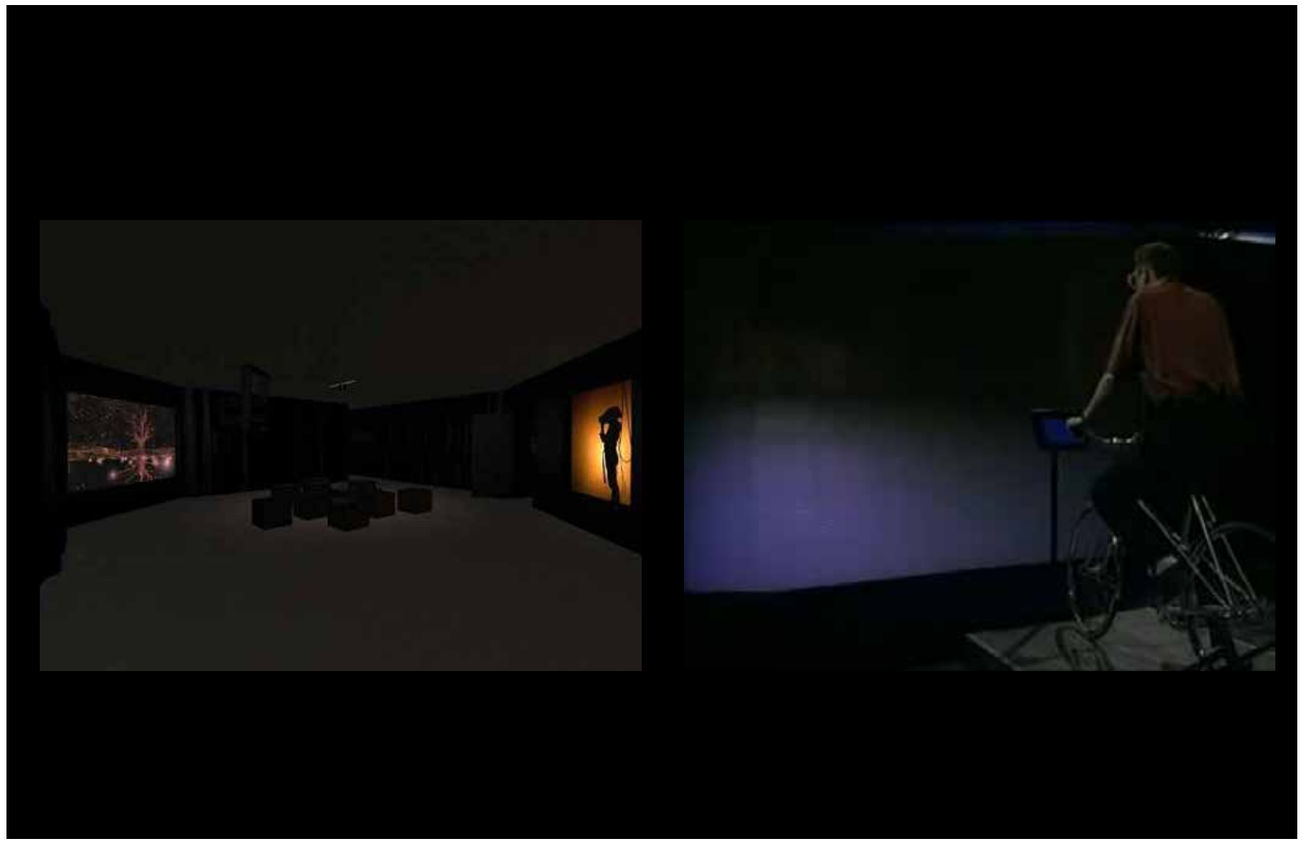






Exhibition Pavilion ■

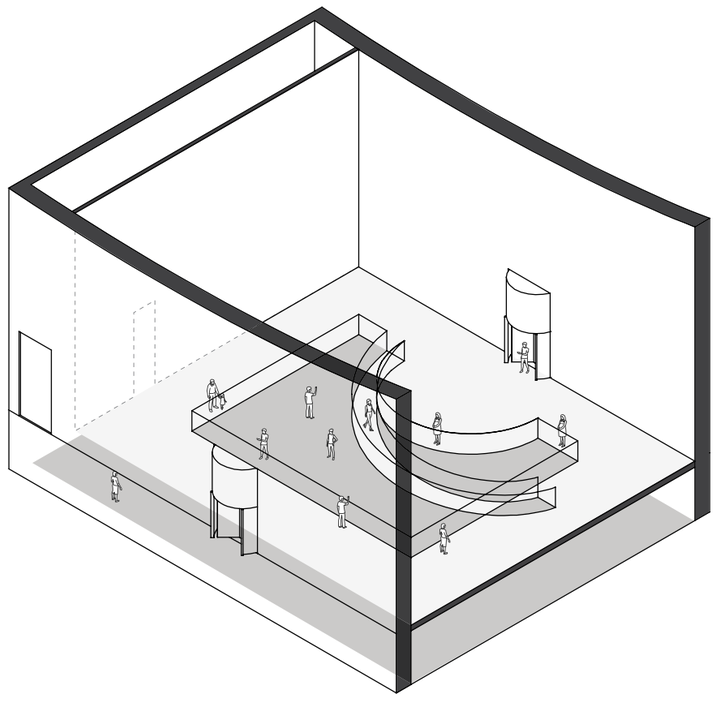


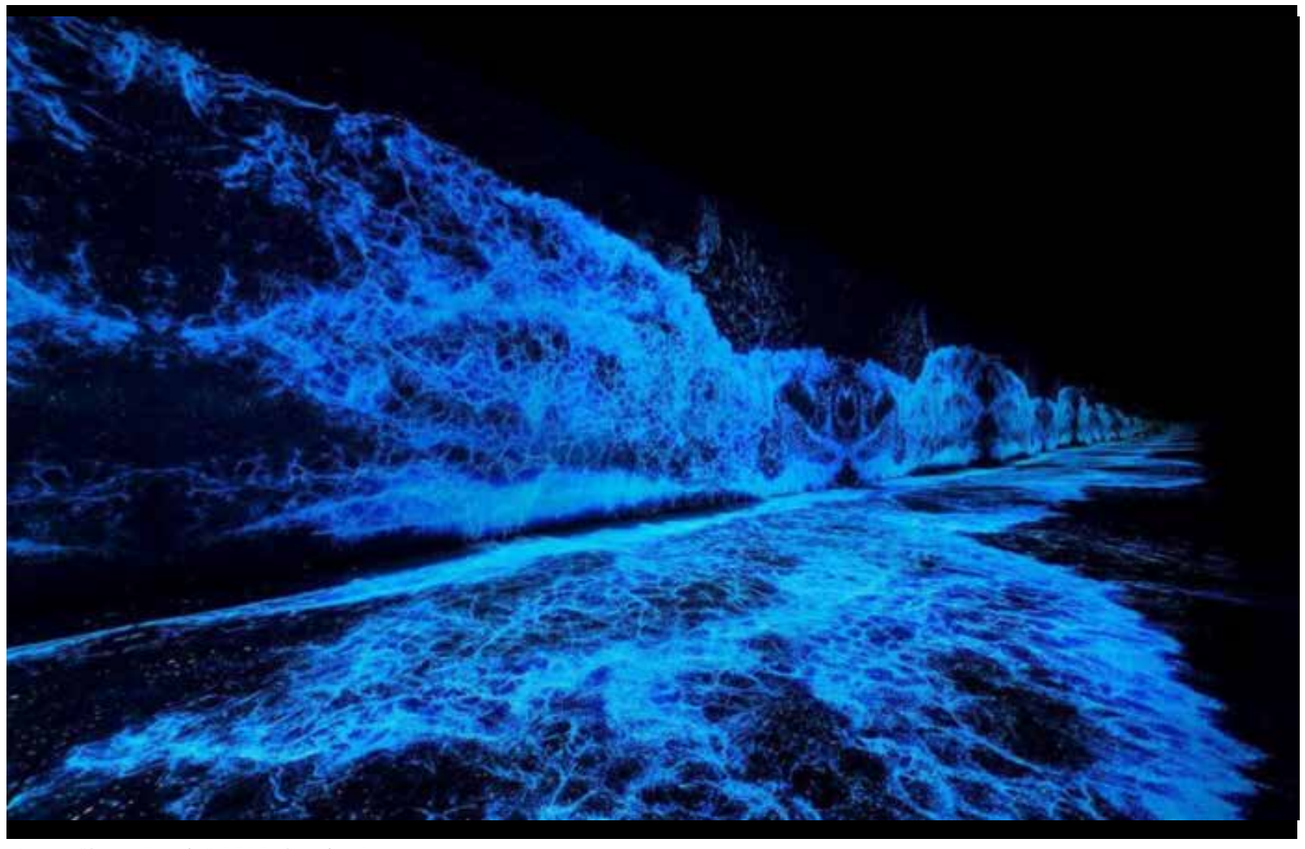


Davies, Char. "Osmose." 1995.
Char Davies Immersant. http://www.immersence.com

Shaw, Jaffrey. "The Legible City." 1989.
Jeffery Shaw Compendium.
https://www.jeffreyshawcompendium.com/portfolio/legiblecity/

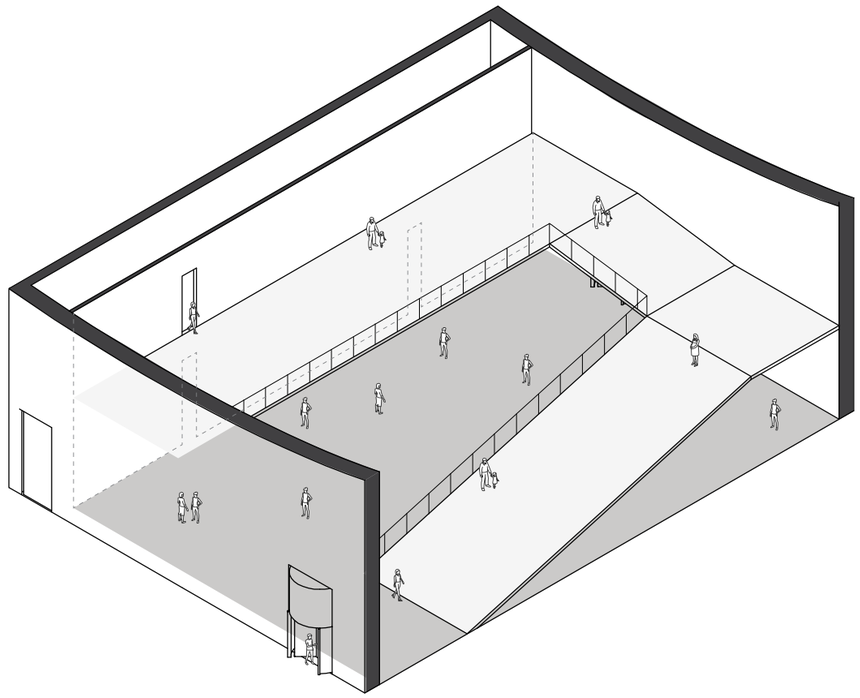
Exhibition Pavilion





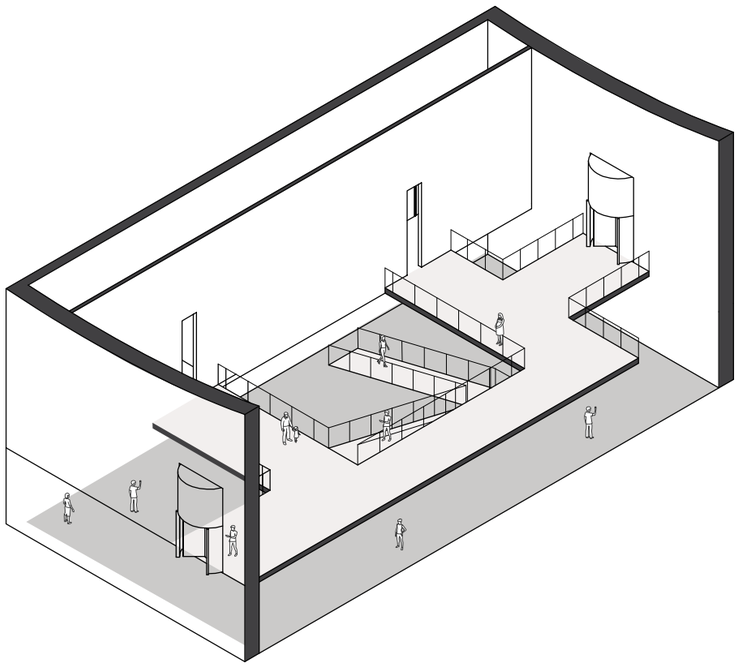
a’strict. “Starry Beach.” 2020. Seoul, KR
http://www.dstrict.com/arttechfactory/kr/65-Public_Media_Art_1.html.

Exhibition Pavilion



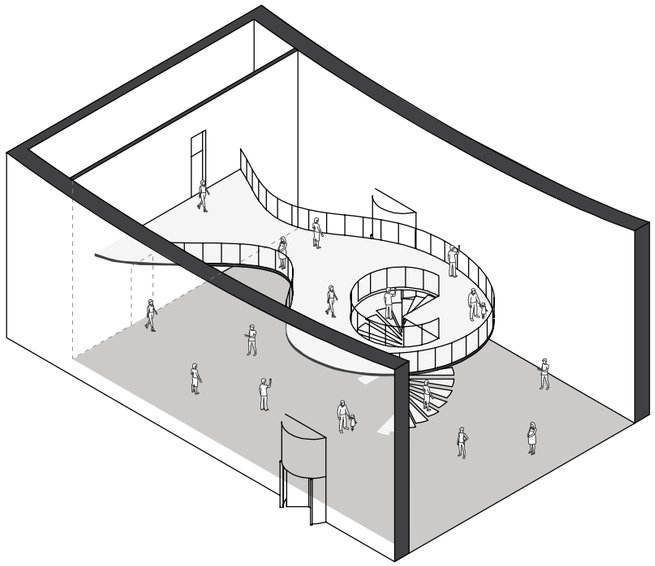
Ceramic-porcelain-3d-printer by Olivier van Herpt Logo
https://oliviervanherpt.com/blue-and-white-porcelain/

Exhibition Pavilion



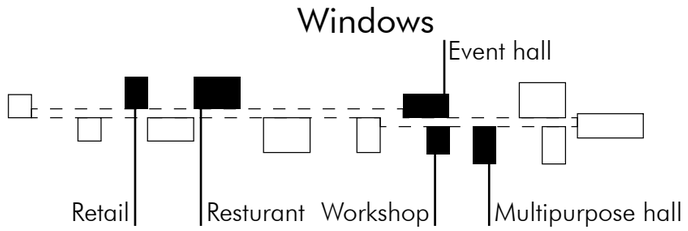
IN 20 STEPS by DRIFT
https://www.studiodrift.com/work#/work/in-20-steps/

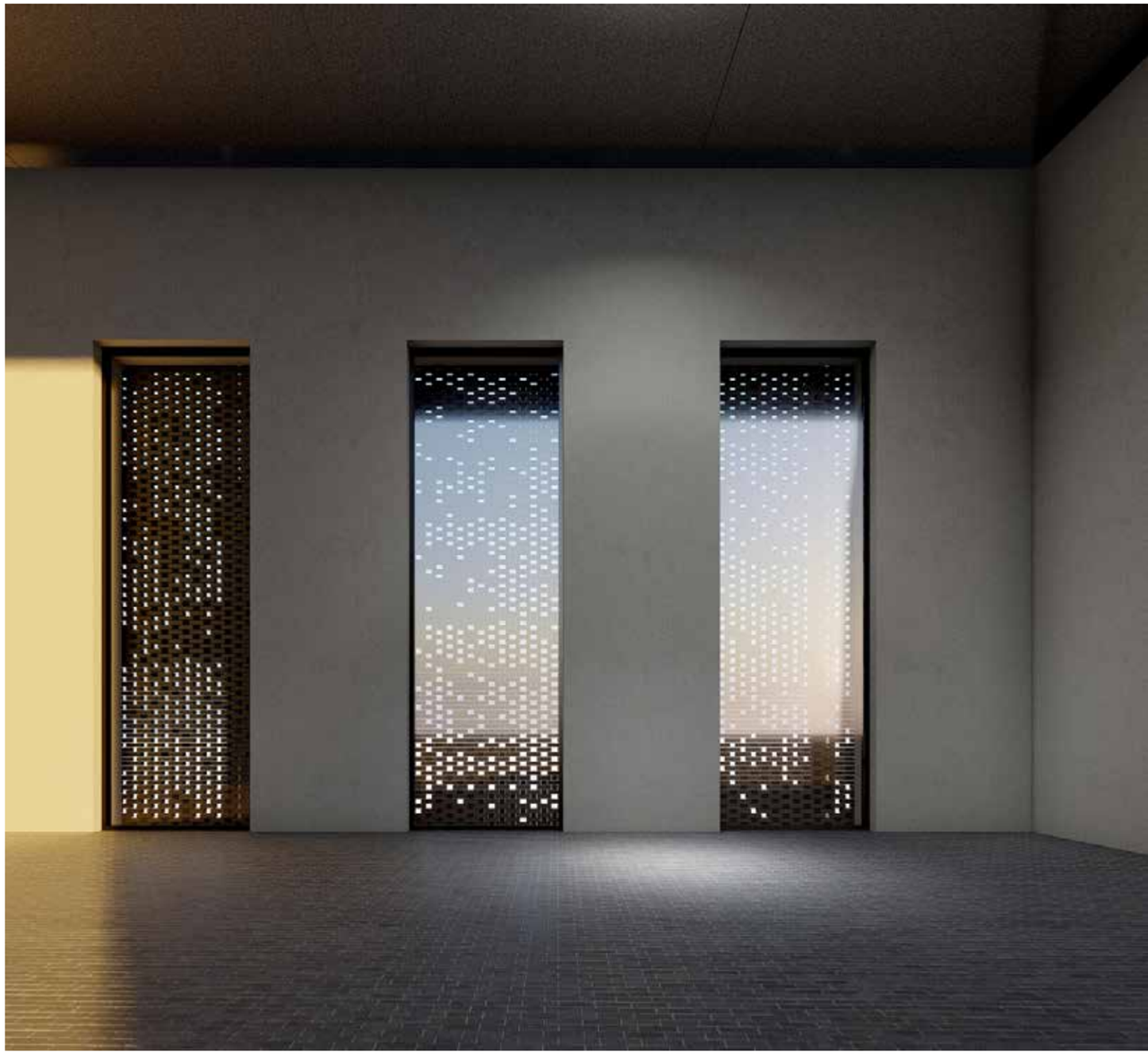
Exhibition Pavilion



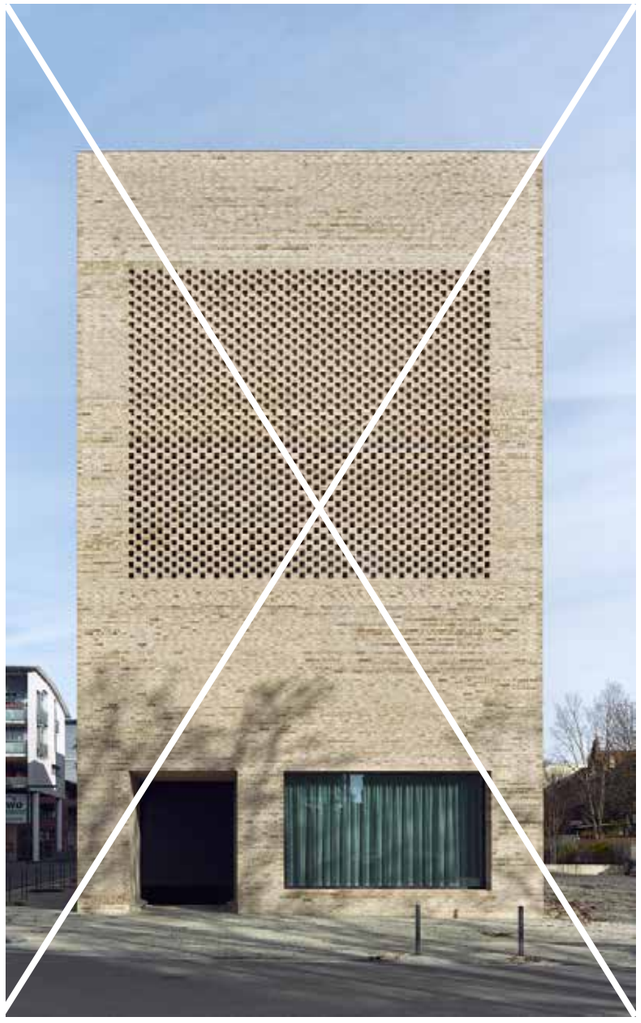
RECENT OUIJA by ED ATKINS
https://www.stedelijk.nl/en/exhibitions/70432

Atmosphere - Restaurant Pavilion


Windows
Event hall
Retail
Resturant
Workshop
Multipurpose hall

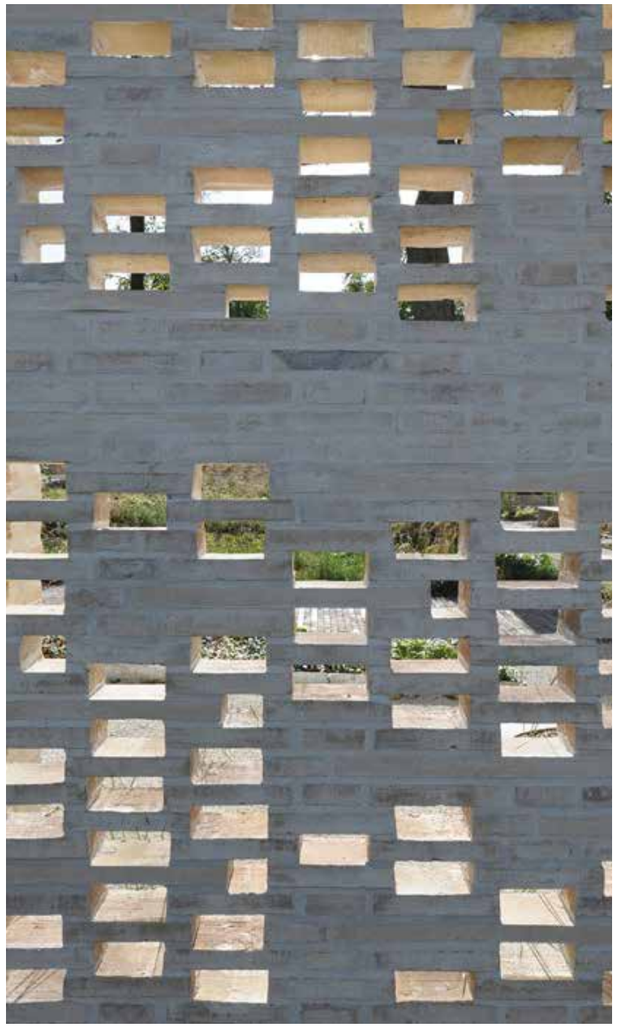


Brick Patterns



City Library Heidenheim / Max Dudler
https://www.archdaily.com/891245/city-library-heidenheim-max-dudler?ad_medium=gallery

the Maggie's Centre at Monklands General Hospital
https://www.dezeen.com/2014/10/20/reiach-and-hall-architects-maggies-centre-lanarkshire-walled-gardens/



Earthy Material for the Pavilion

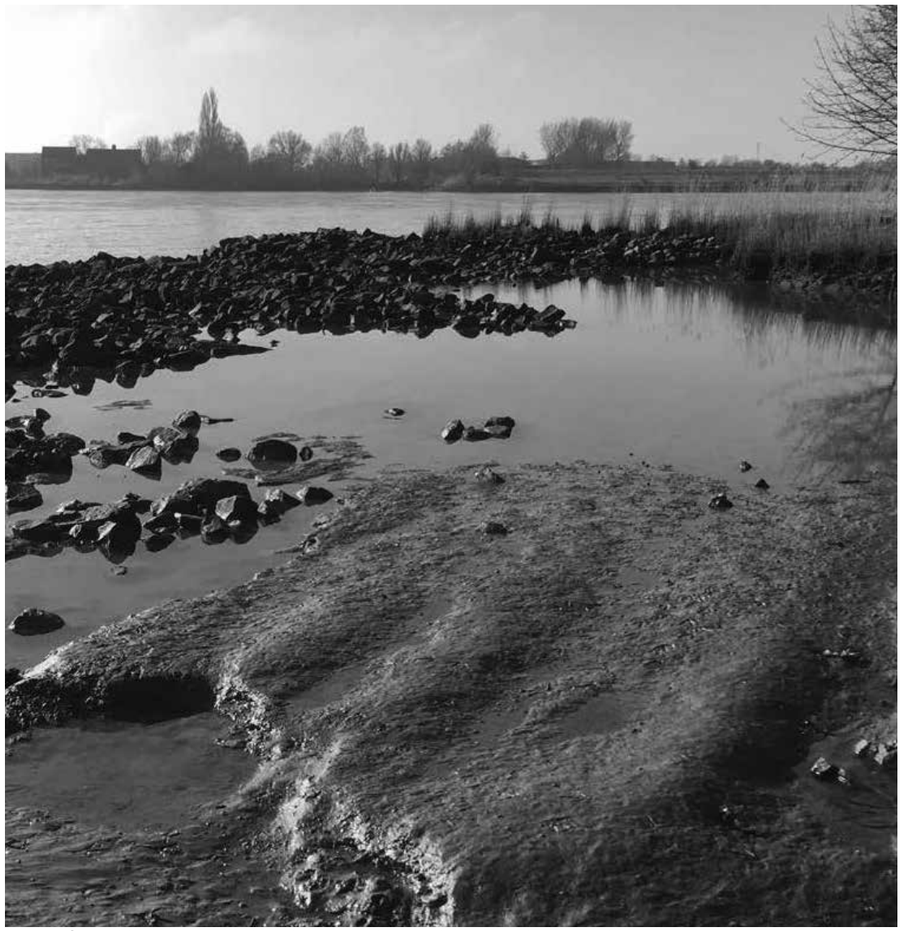
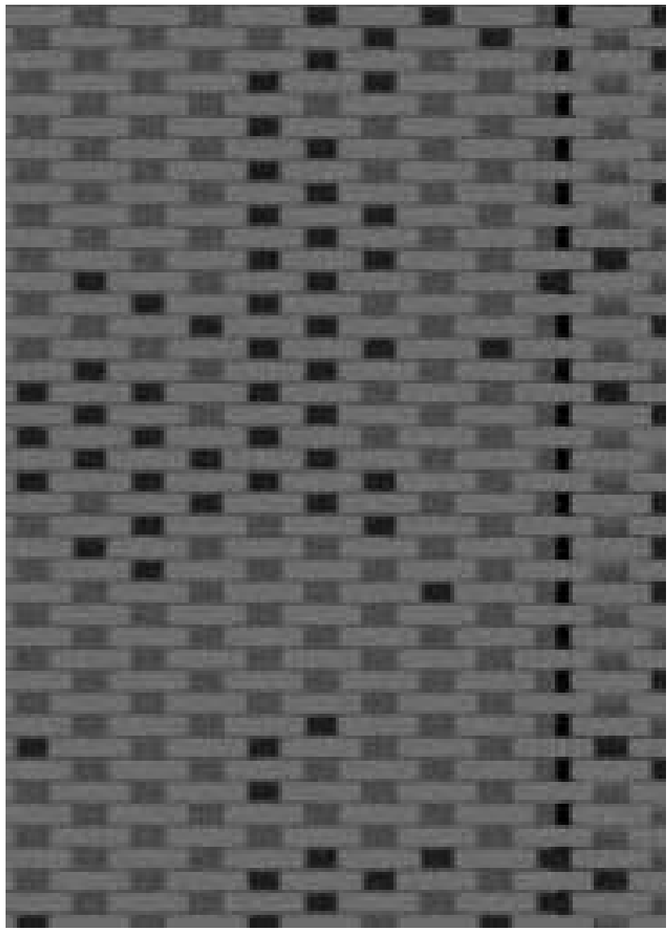


Image from Guest Lecture RIVER AS A TIDAL PARK by Marit Janse De Urbanisten Rotterdam 21.03.04



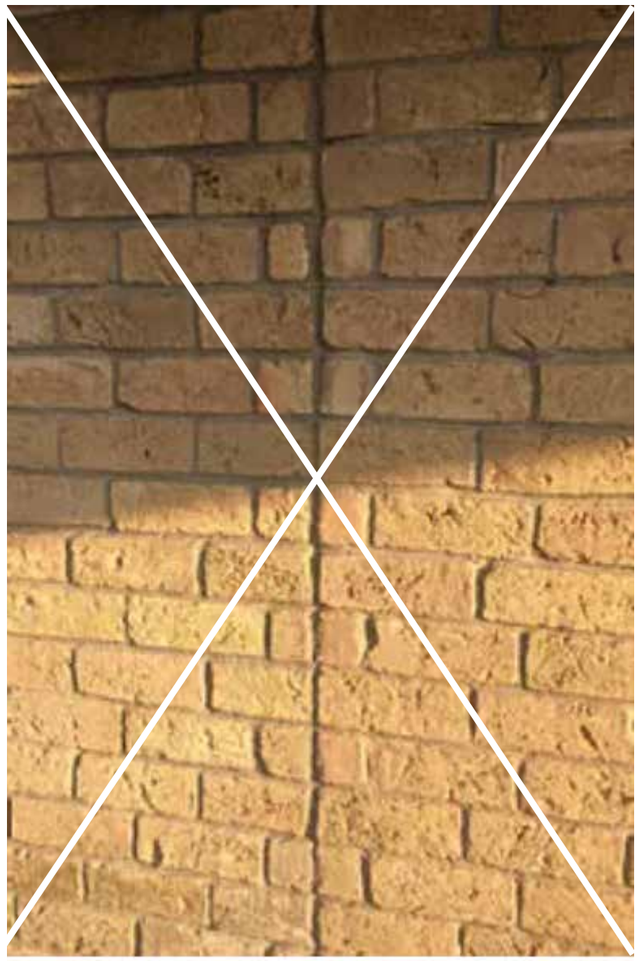
wastebasedbrick

WasteBasedBrick_Sustainable material

waste from construction image
https://www.stonecycling.com/wastebasedbricks

wastebasedbrick image
https://www.stonecycling.com/wastebasedbricks

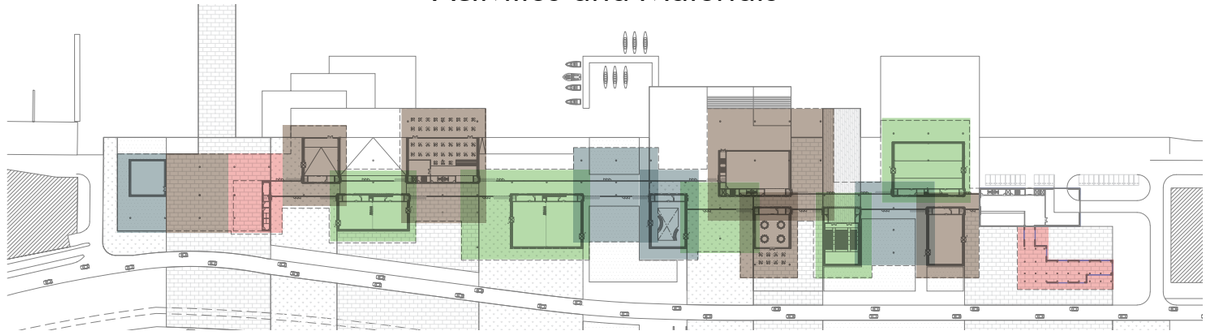
Dilatation joint



Expansion joints can look like brick mortar failure or vertical cracks in the brick.
https://anchorfoundationrepair.net/blog/foundation-repair-false-signs/

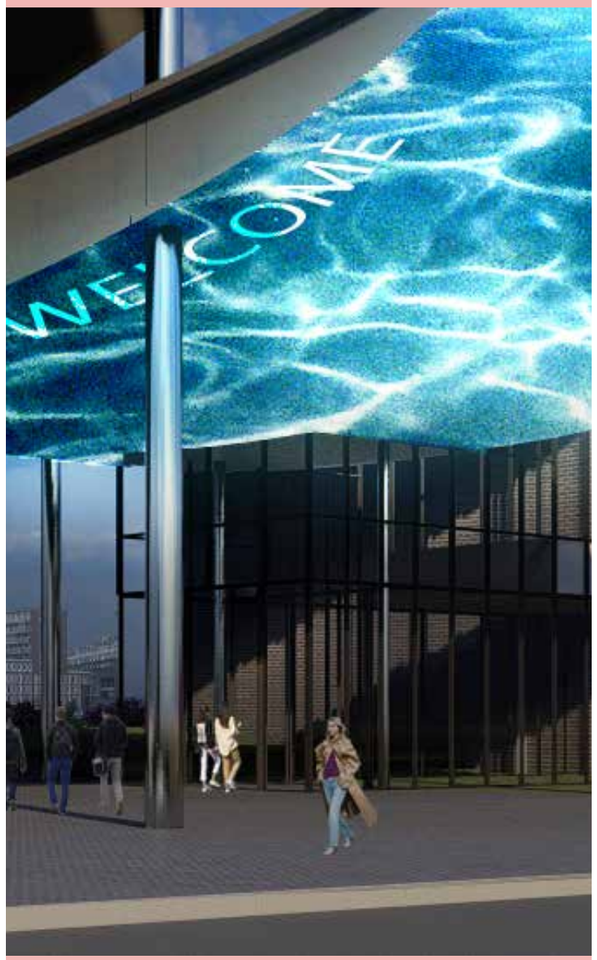
ARoS Aarhus Art Museum in Denmark
https://www.visitaarhus.com/aarhus/plan-your-trip/aros-aarhus-art-museum-gdk1077501

Activities and Materials



TYPE A

Media Ceiling



Main Entrance

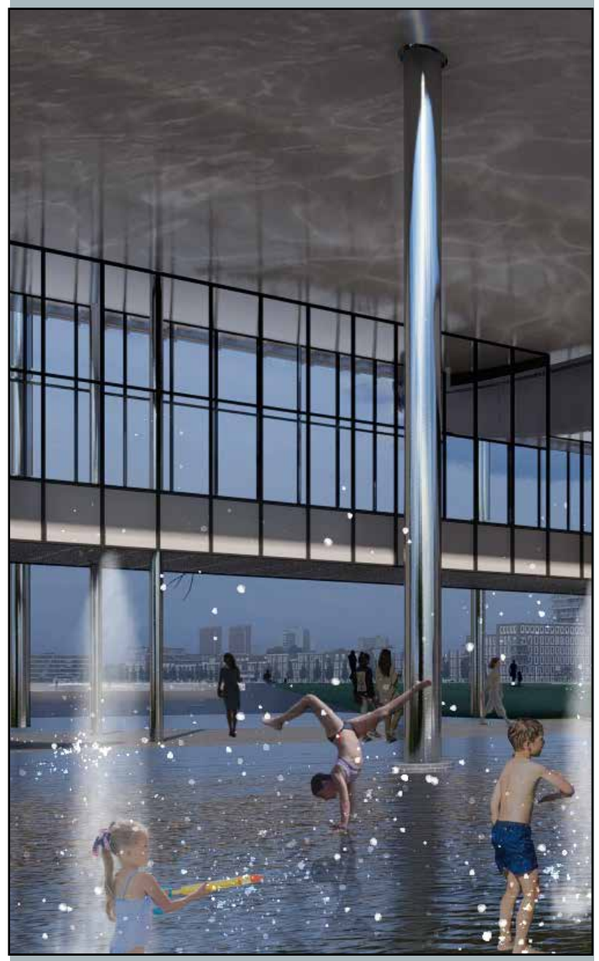
TYPE B

Mirror Stainless Steel

Movement

TYPE C

Matt Ceiling



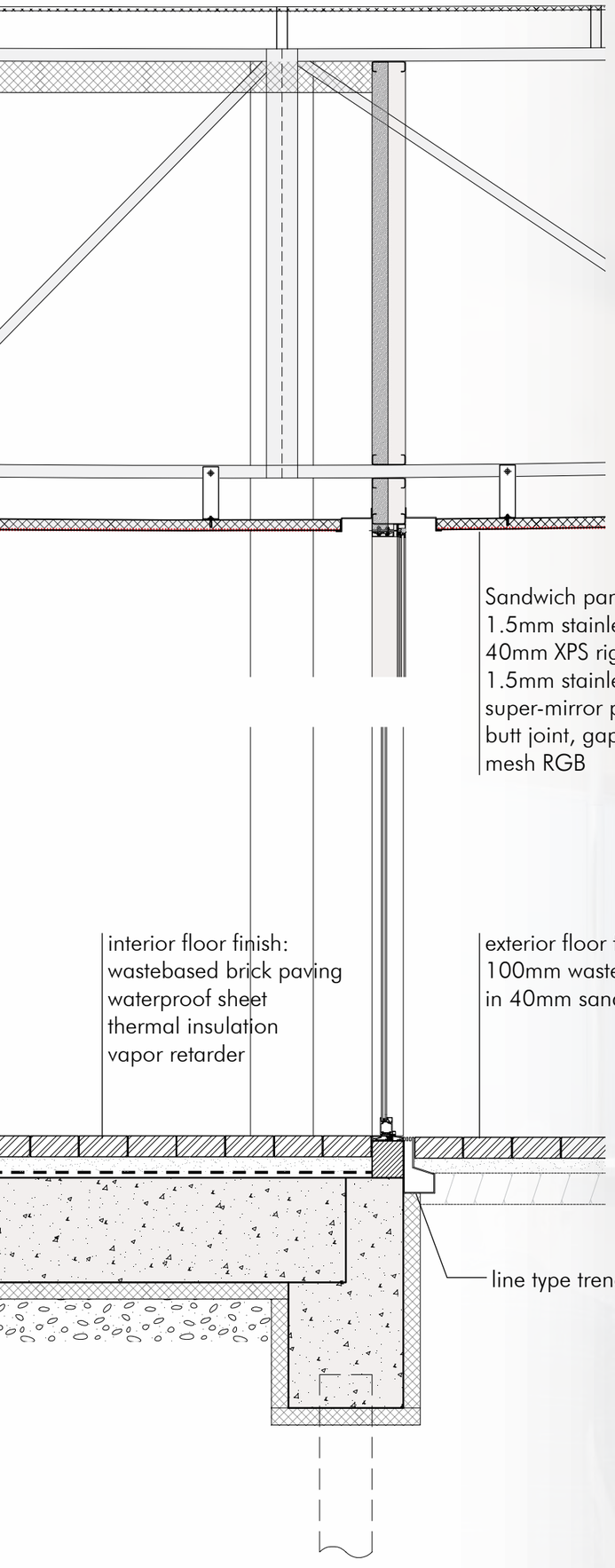
Water Garden

TYPE D

Perforated Ceiling

Green Garden

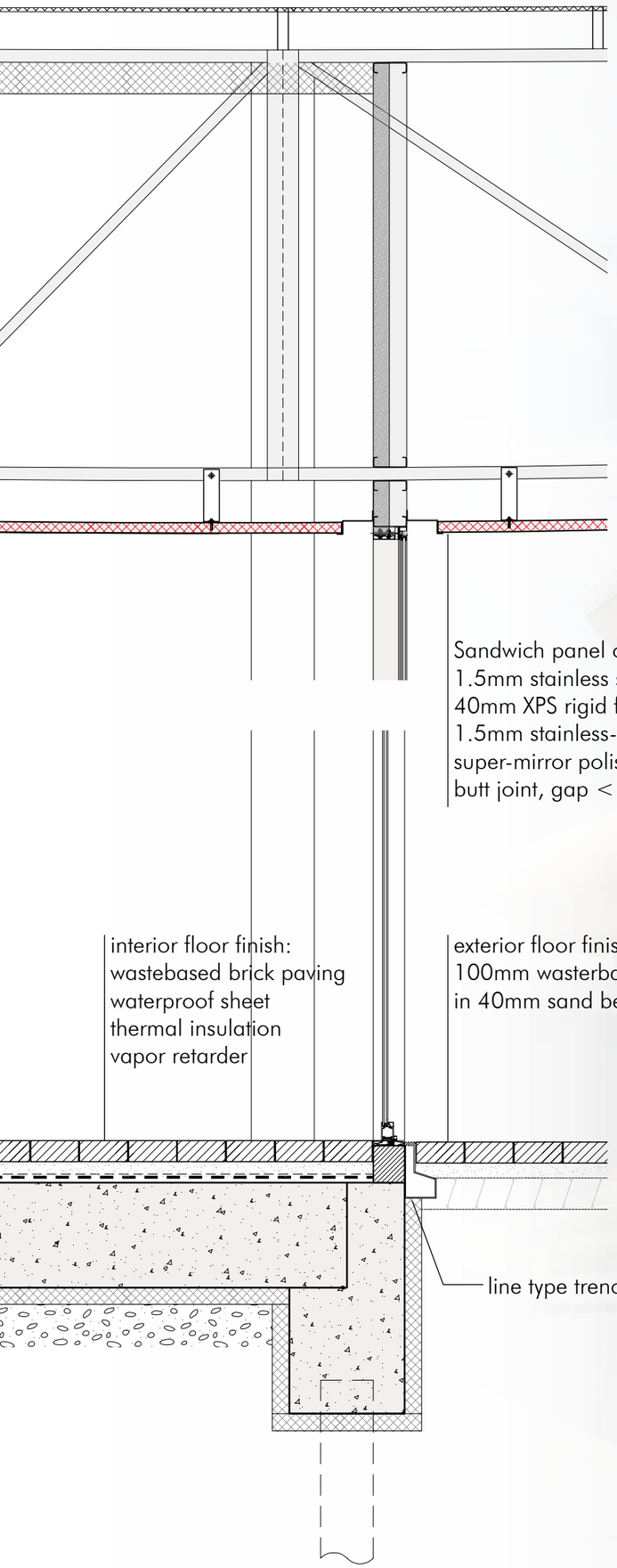
Type A: Media Facade Ceiling & Pavement



Type A: Media Facade Ceiling & Entrance

https://esidesign.com/work/221-main-street-san-francisco/

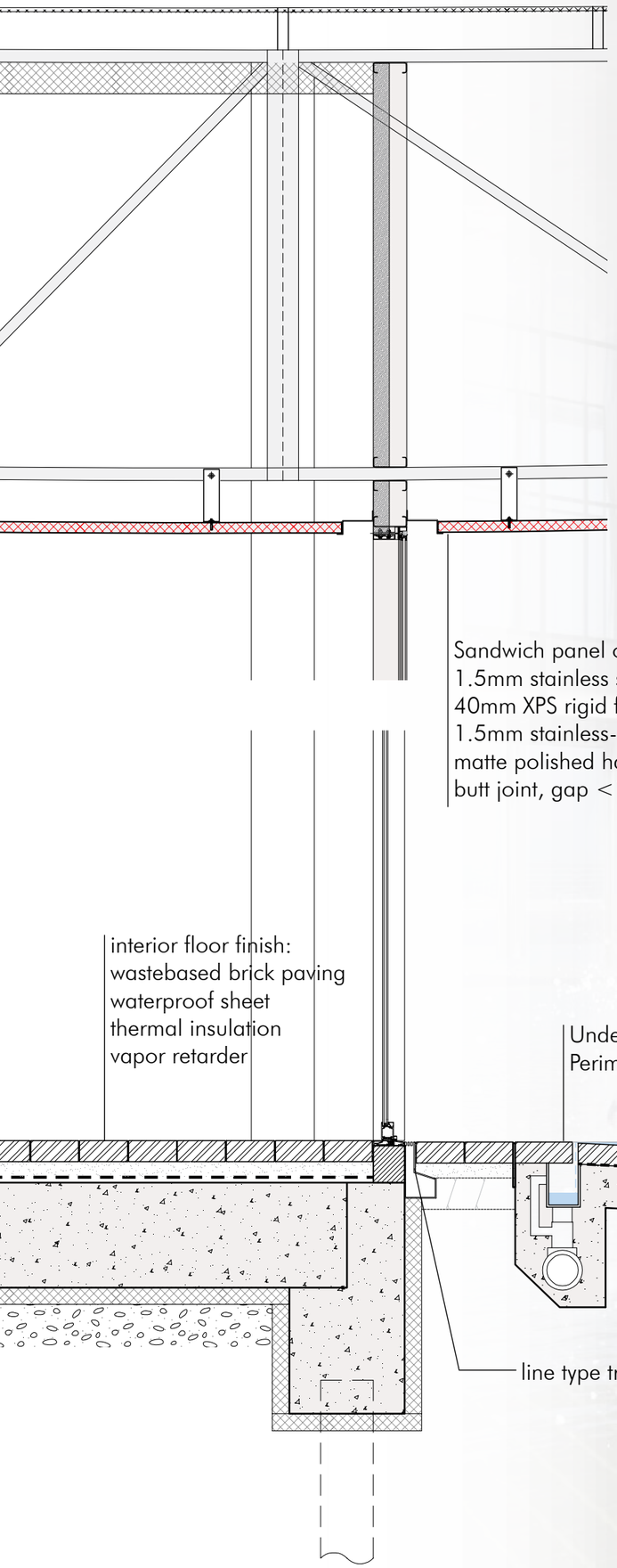
Type B: Mirror Stainless Steel & Pavement



Type B: Mirror Stainless Steel & Pavement

The Vieux Port Pavilion in Marseille, by Foster + Partners
https://www.archdaily.com/340004/vieux-port-pavilion-foster-partners

Type C: Matte Stainless Steel & Pond



Sandwich panel on roof underside:
1.5mm stainless steel sheet
40mm XPS rigid foam
1.5mm stainless-steel sheet,
matte polished hairline,
butt joint, gap <1mm

interior floor finish:
wastebased brick paving
waterproof sheet
thermal insulation
vapor retarder

Underwater Coping
Perimeter Overflow

Sallow water
deepest depth=80mm

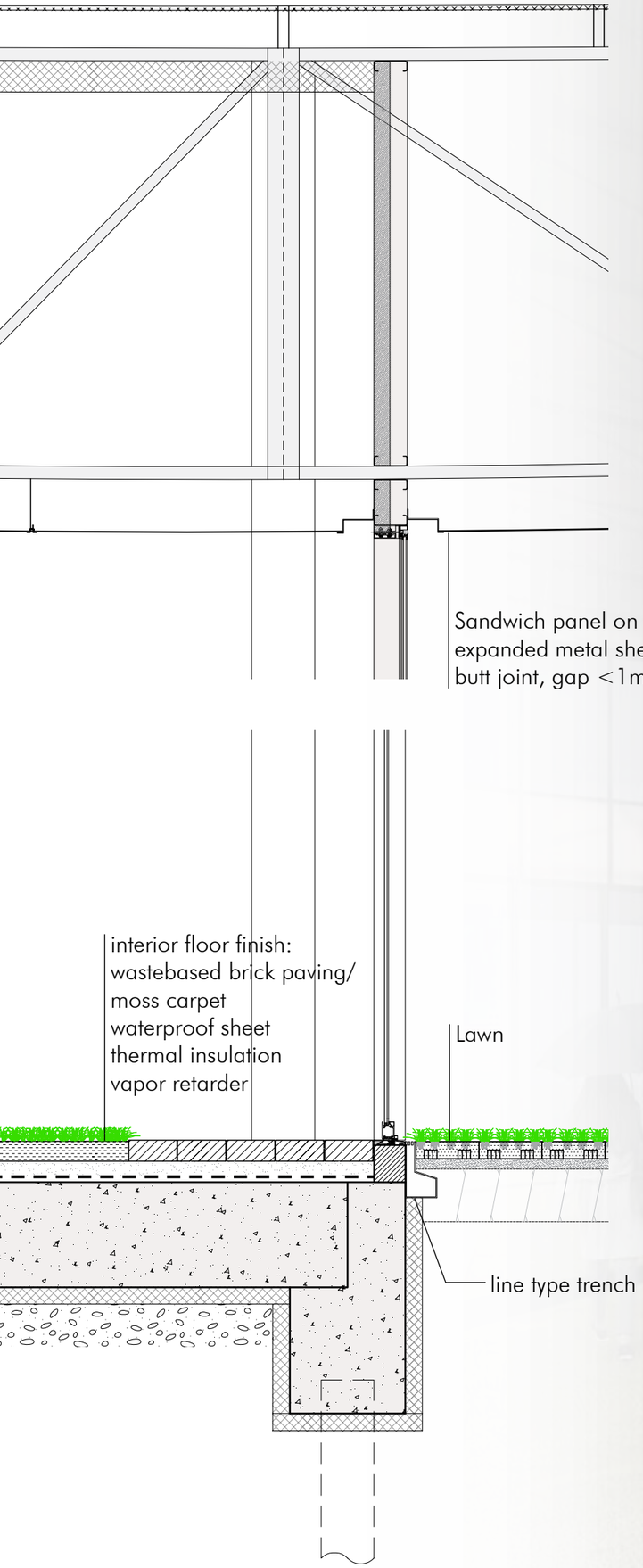
line type trench

Type C: Matte Stainless Steel & Pond

Public Gallery Design Of Yuexiu Tianyue Bay / XAA
https://www.archdaily.com/923110/public-gallery-design-of-yuexiu-tianyue-bay-xaa?ad_source=-search&ad_medium=search_result_all

https://i.pinimg.com/1200x/b4/62/c7/b462c73a820cbfde22b08e4410f8c277.jpg

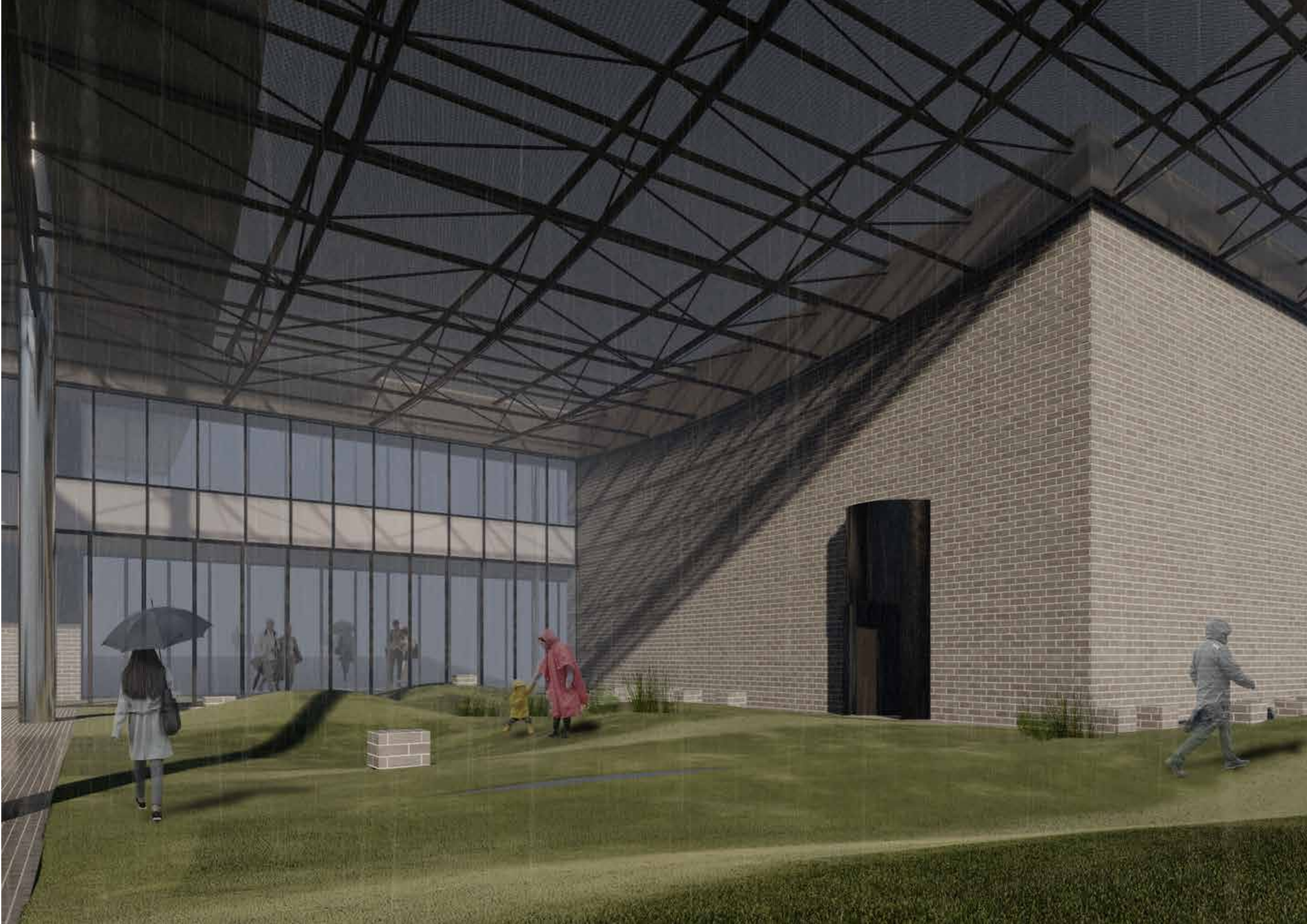
Type D: Perforated metal sheet & Green



Type D: Perforated metal sheet & Green

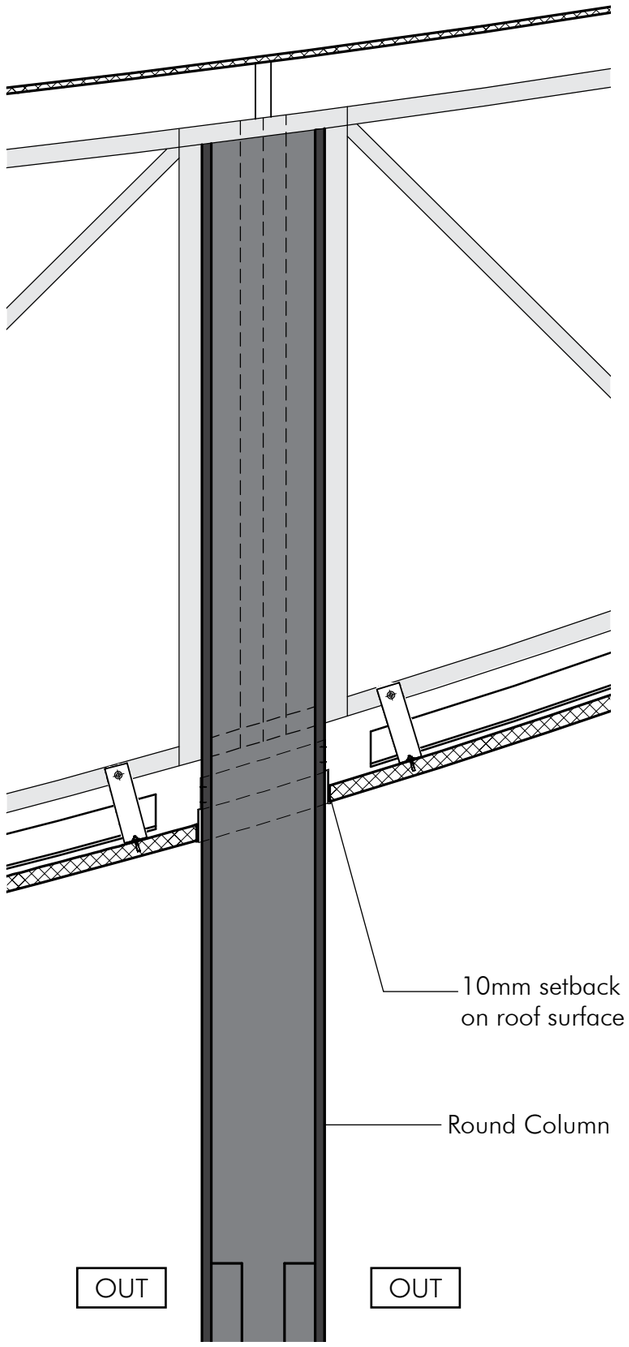
Art gallery in London by L'Atelier Senzu
https://lateliersenzu.com/galerie-mai/

Indoor green - moss
https://azumamakoto.com/209/

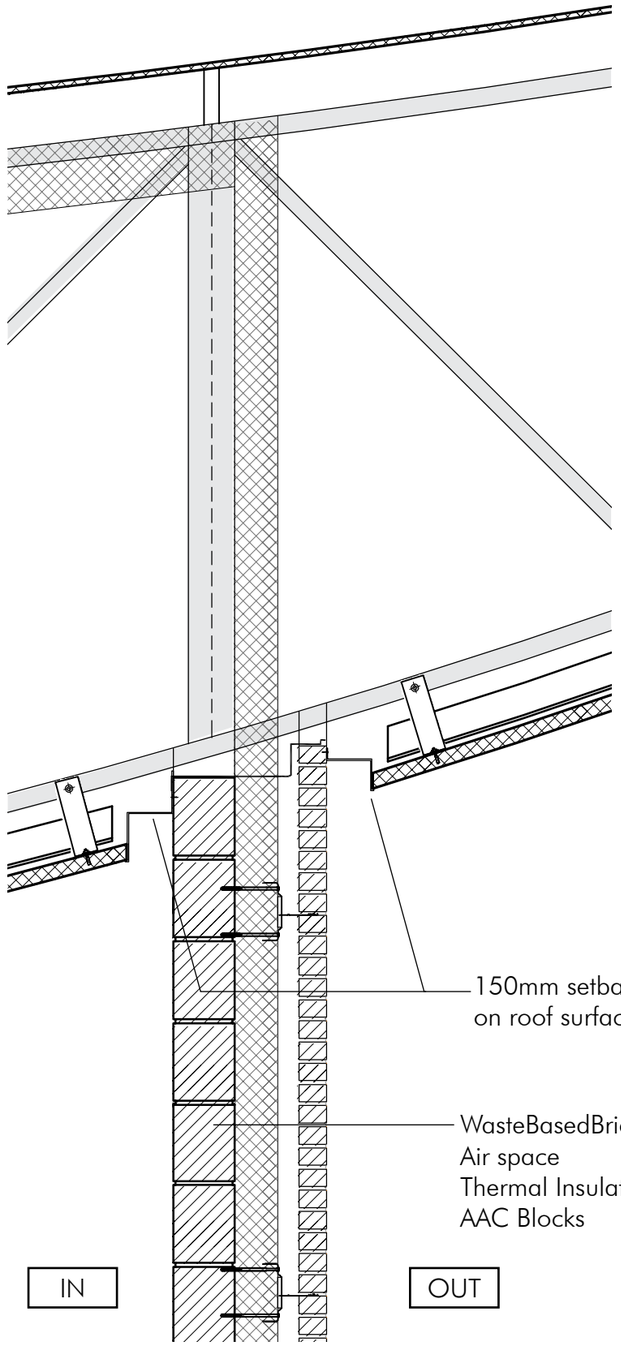


Relation between Roof Surface & Vertical Elements

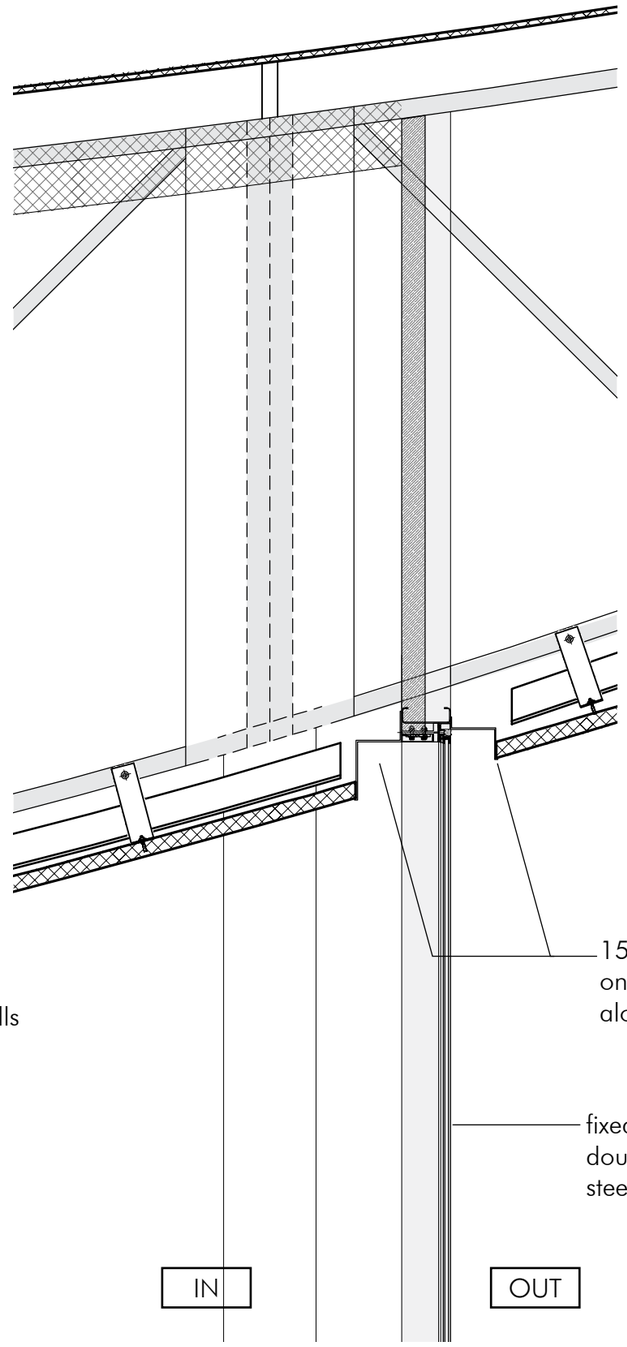
with round columns



with brick walls

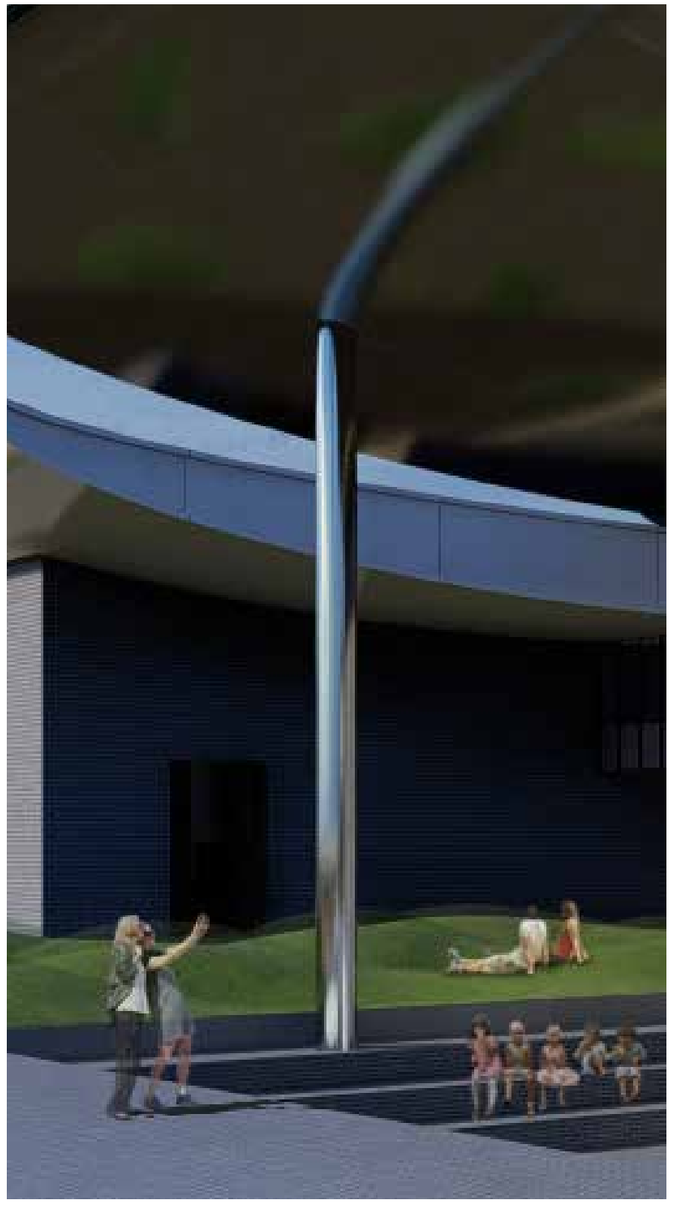


with glass walls



Relation between Roof Surface & Vertical Elements

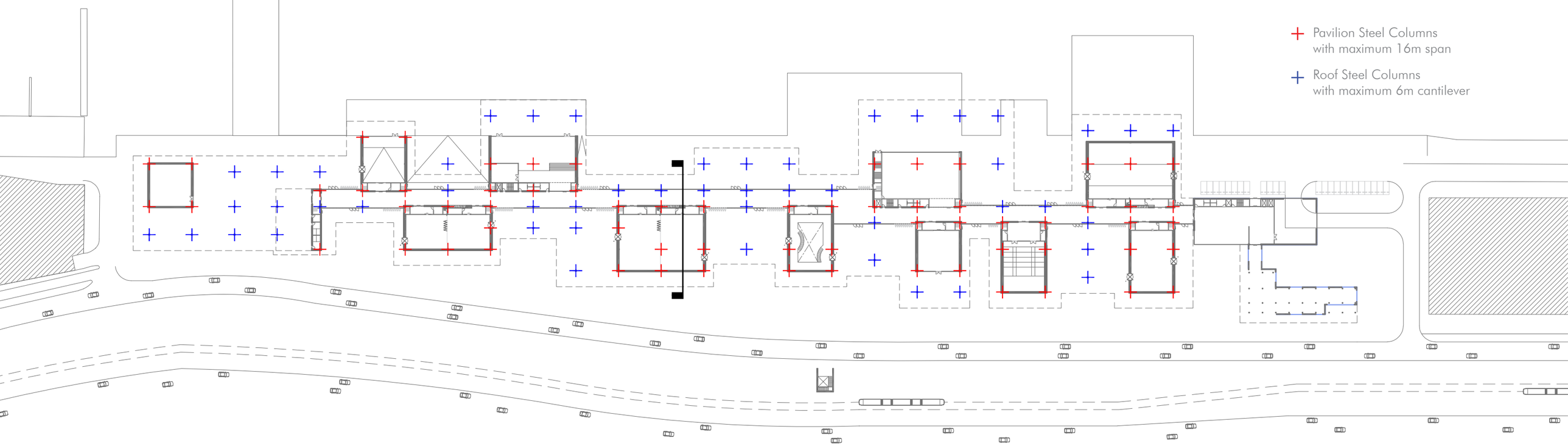
with round columns



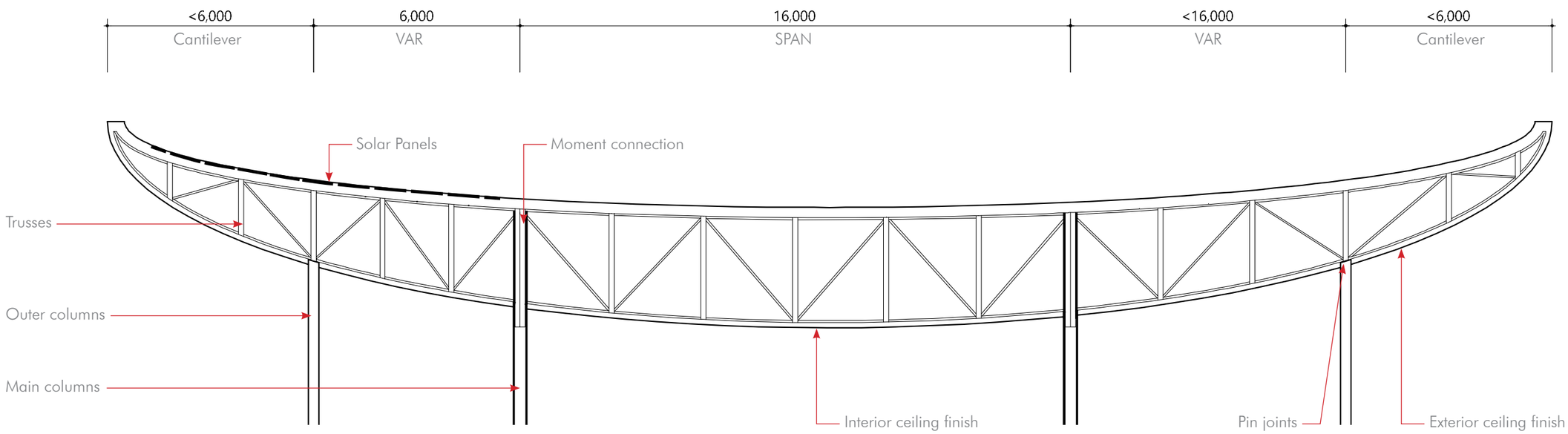
with brick walls

with glass walls

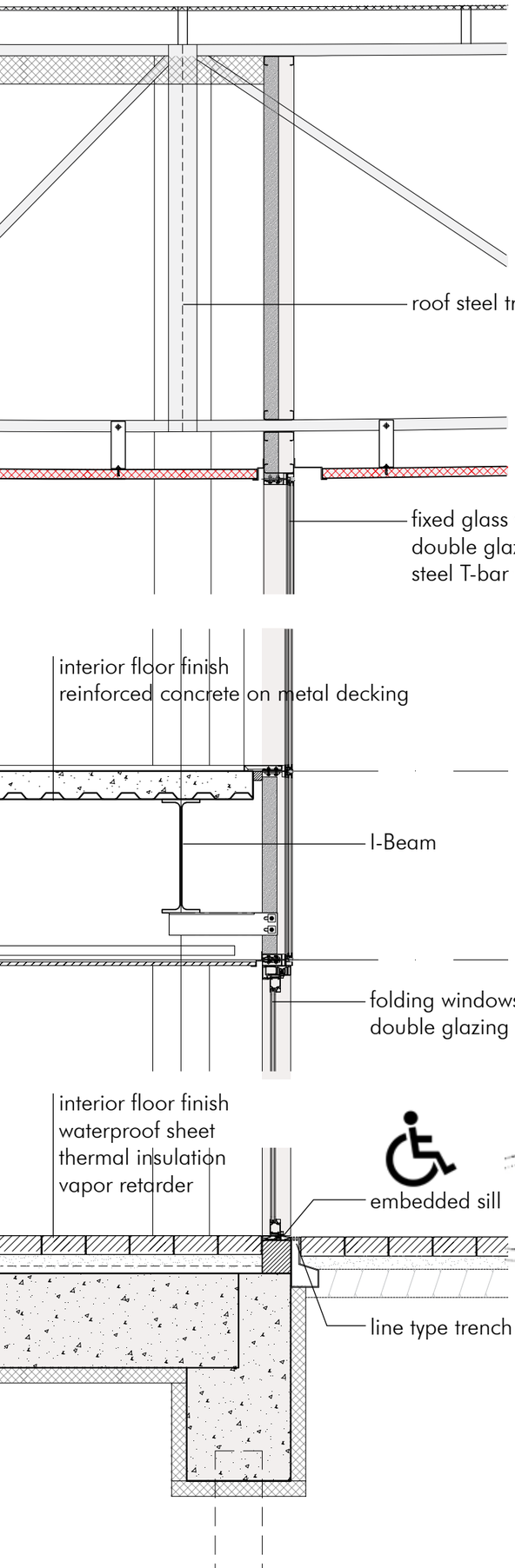
Structure Concept

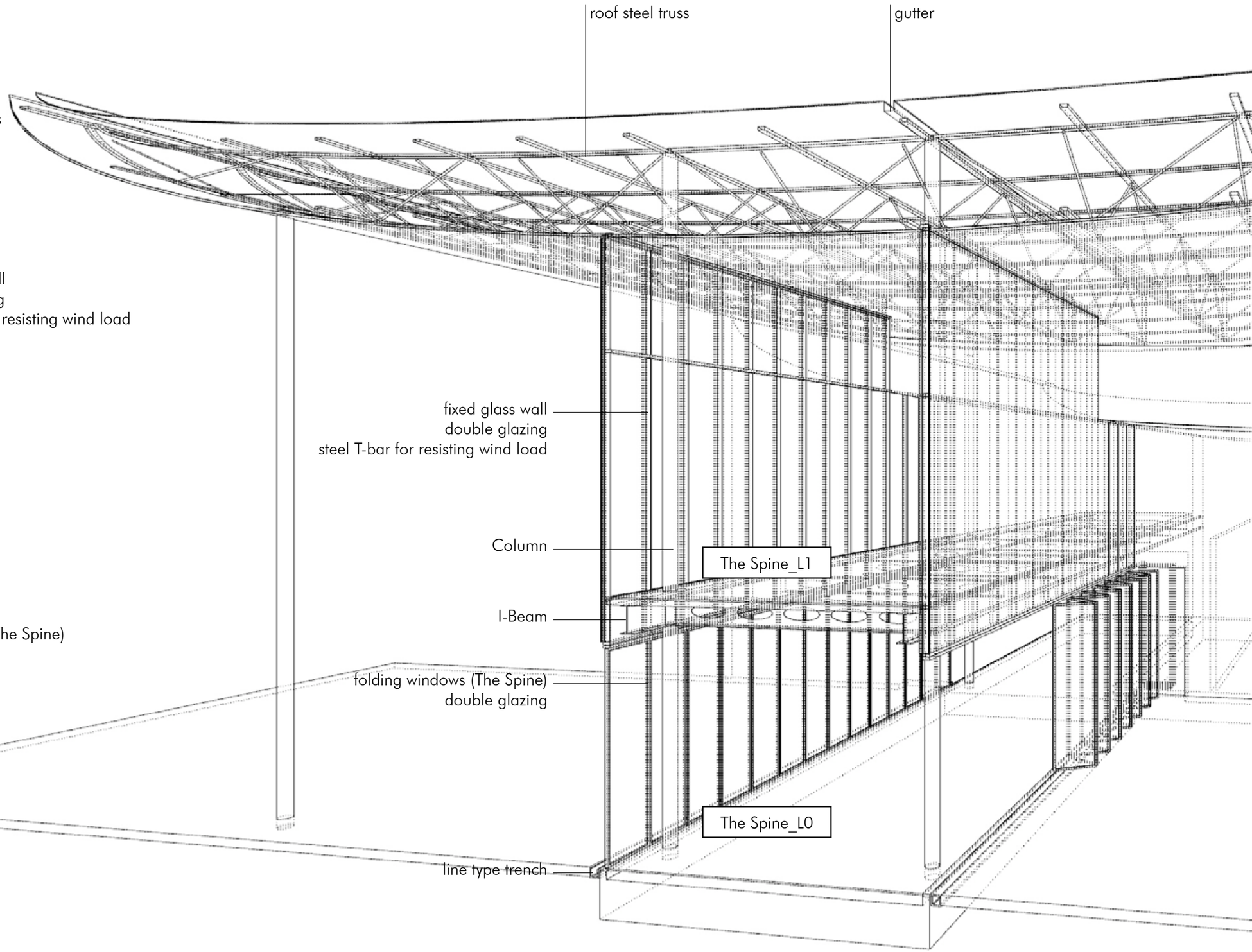


Typical Section for Roof Structure



Structure

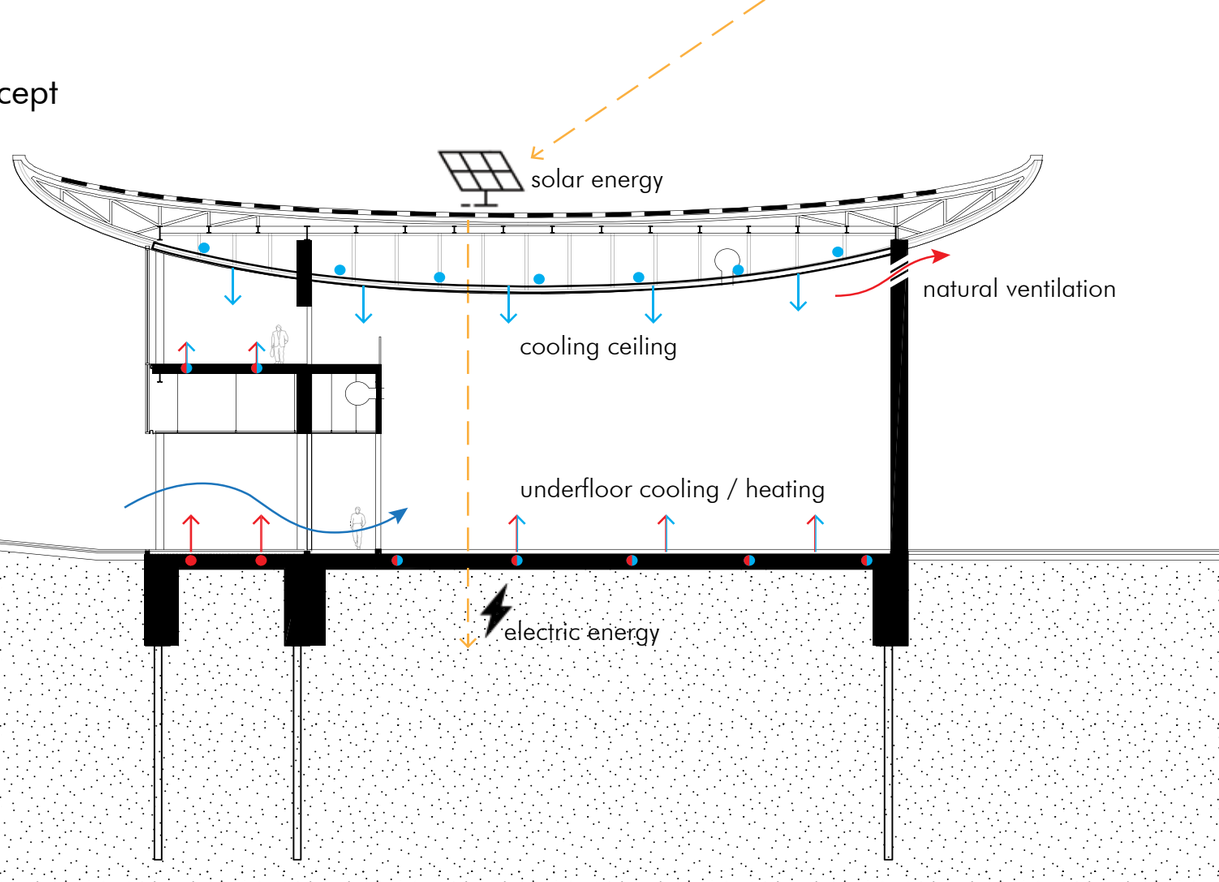

roof steel truss
fixed glass wall
double glazing
steel T-bar for resisting wind load
interior floor finish
reinforced concrete on metal decking
I-Beam
folding windows (The Spine)
double glazing
interior floor finish
waterproof sheet
thermal insulation
vapor retarder
embedded sill
line type trench


roof steel truss
gutter
fixed glass wall
double glazing
steel T-bar for resisting wind load
Column
The Spine_L1
I-Beam
folding windows (The Spine)
double glazing
The Spine_L0
line type trench

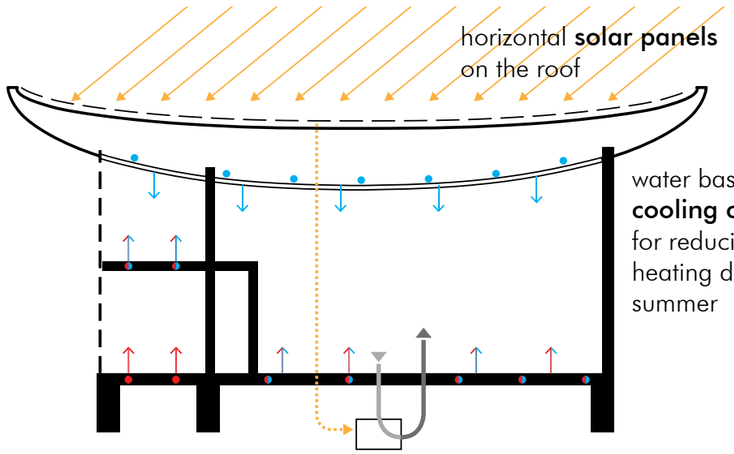
Roof Profile from the Spine 1F

Climate Concept

Due to climate change, rising sea level cuases high-water levels to rise in Rotterdam. The higher dike is newly installed on the river bank.



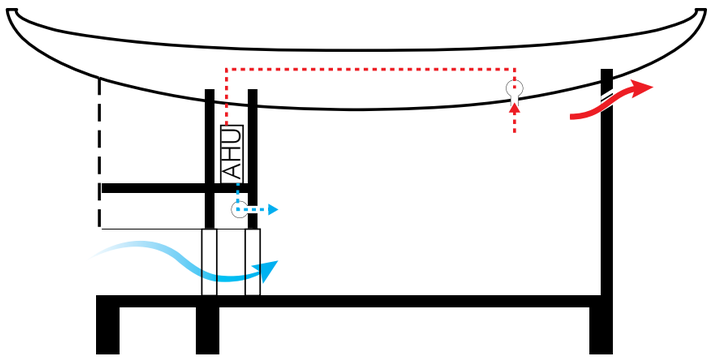
Cooling/Heating



water based
underfloor cooling & heating
Floor heating with low energy temperature is installed to balance the whole building

heat pump
using the electricity gained by the solar panels

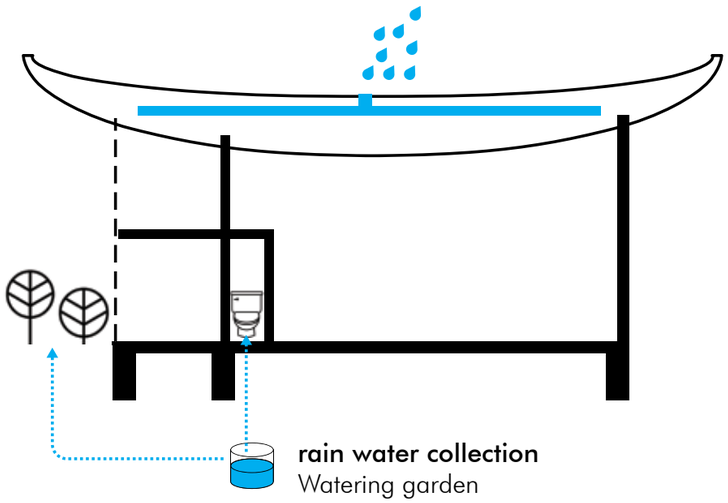
Hybrid Ventilation



primary - **mechanical ventilation**
as an exhibition space

secondary - **natural ventilation**
using roof shape

Rainwater



rain water collection
Watering garden
Flushing toilets
Supplementing the water supply in case of fire