

# Gardens of Tomorrow in Maassilo

Maashaven | Rotterdam



P5 Presentation  
Heritage and Architecture Graduation Studio

Tutors  
Lidy Meijers  
Frank Koopman  
Suzanne Fischer

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Concept

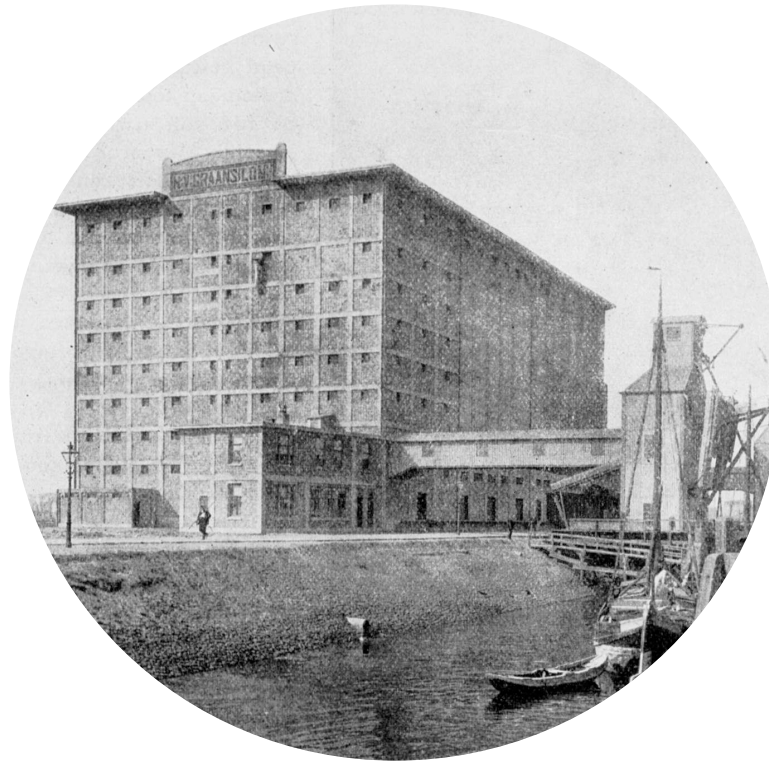
Sustainability

Experience

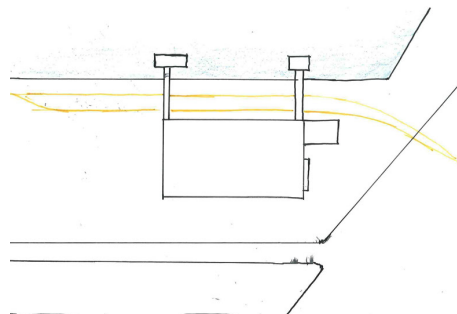
Building technology

Materiality

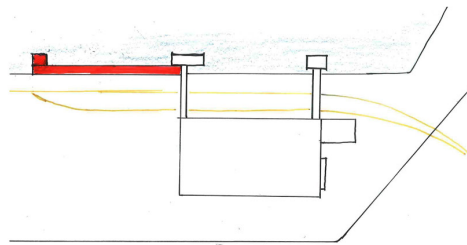
Details



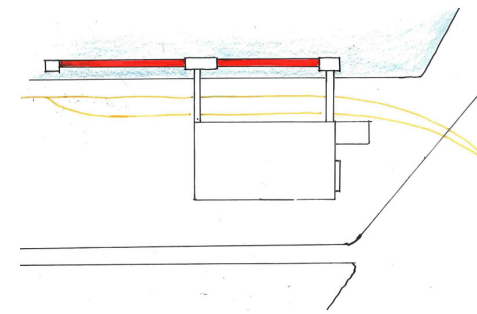
1910-1917



Between 1917-1925.

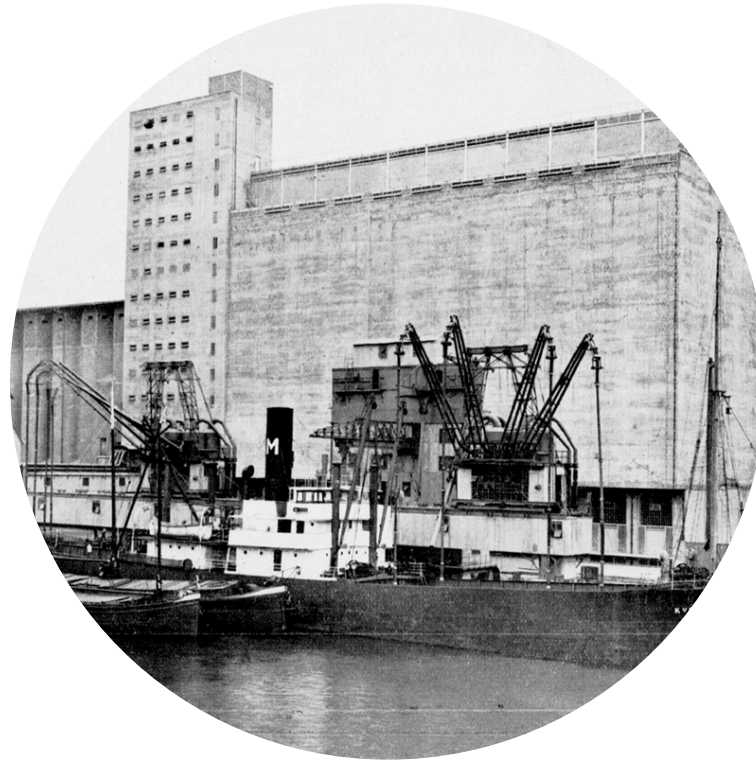


Between 1925-1930.

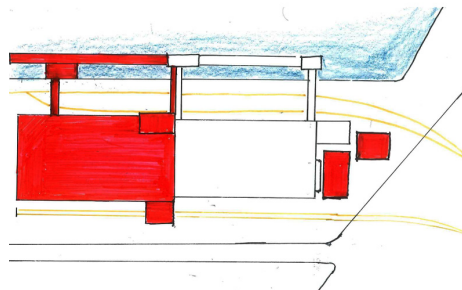


## 2nd Part

Brinkman and Van der Vlugt



1931



# 3rd Part

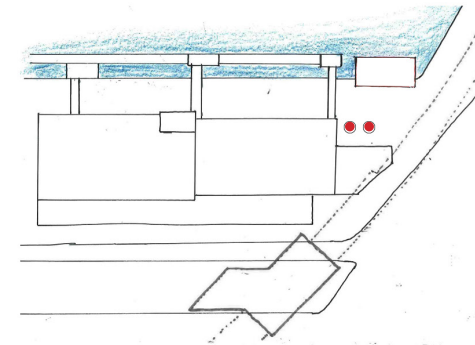
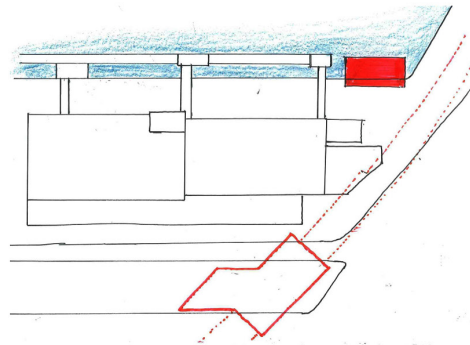
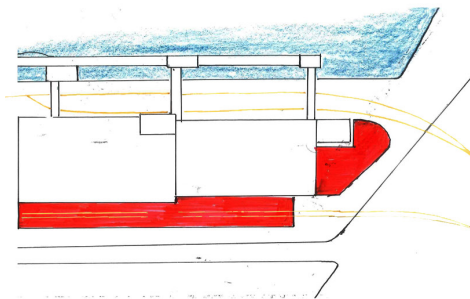
A.G. and J.D. Postma

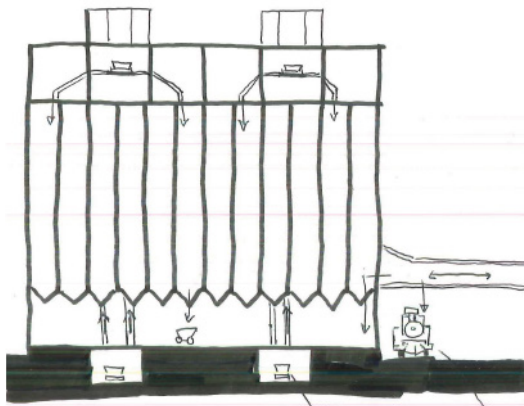
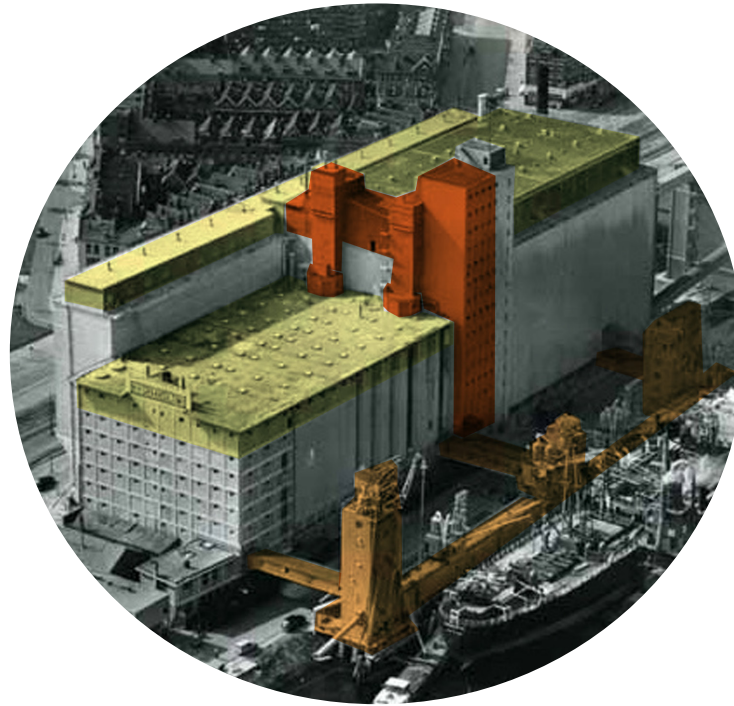


1951

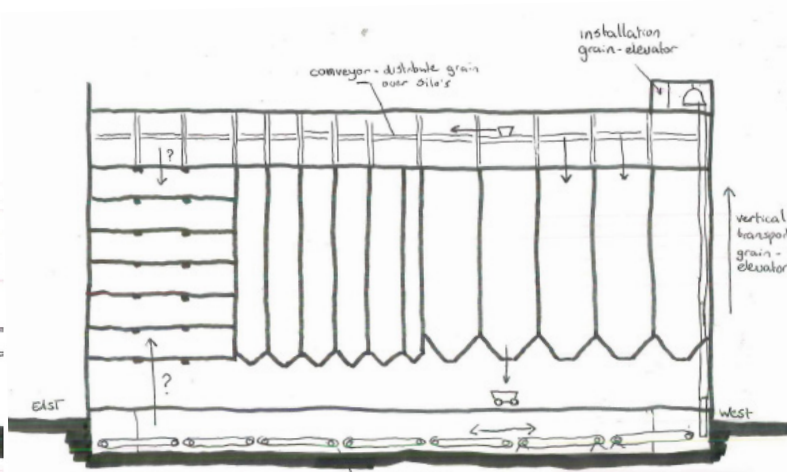
1963

Replacement of the supporting small buildings area, with the placement of two oil tanks. In 1980 the function of the office building by Haan changes its function into offices.

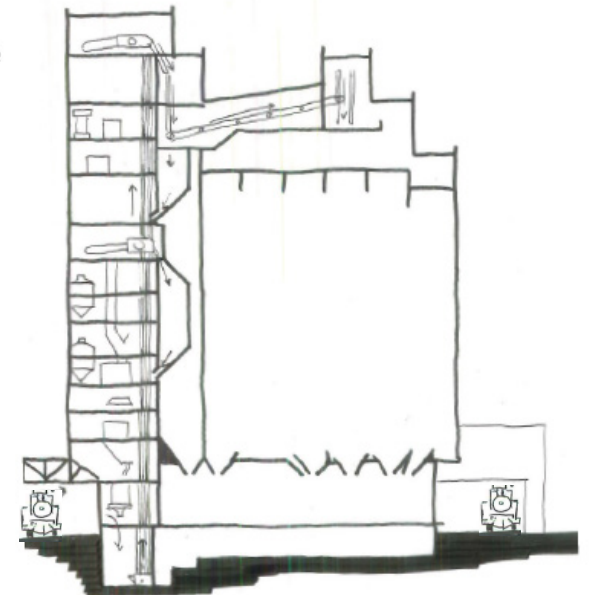




Section Logistics, B Bronswijk, 2016

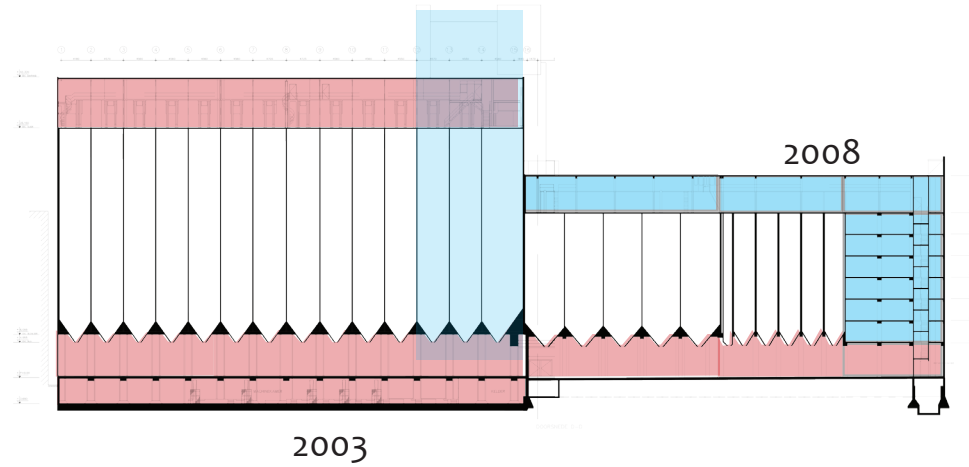


ion Logistics, B Bronswijk, 2016



Functionality diagram by Bram Bronswijk

# Existing situation



## NOW NOW



## Creative Factory



# Context



Infrastructure including the bridge and tunnel locations.



Public railway transport.



Functions of the city, close to the Maassilo.

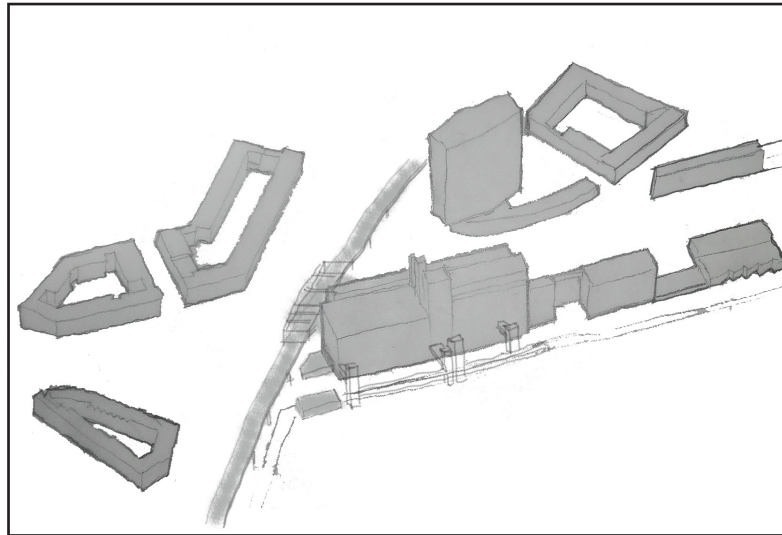
- Maassilo
- Industrial buildings
- Public buildings
- mixed use (housing/shops)
- Housing



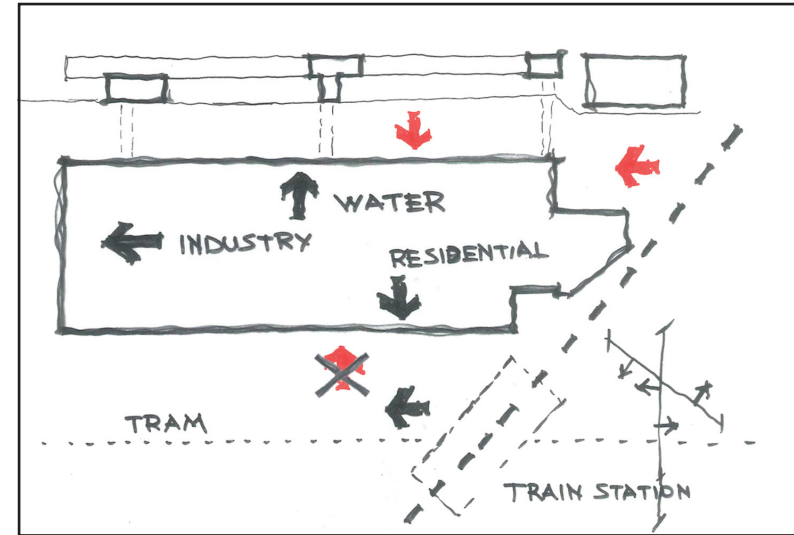
Areas outside (blue) and inside (green) of the dike.

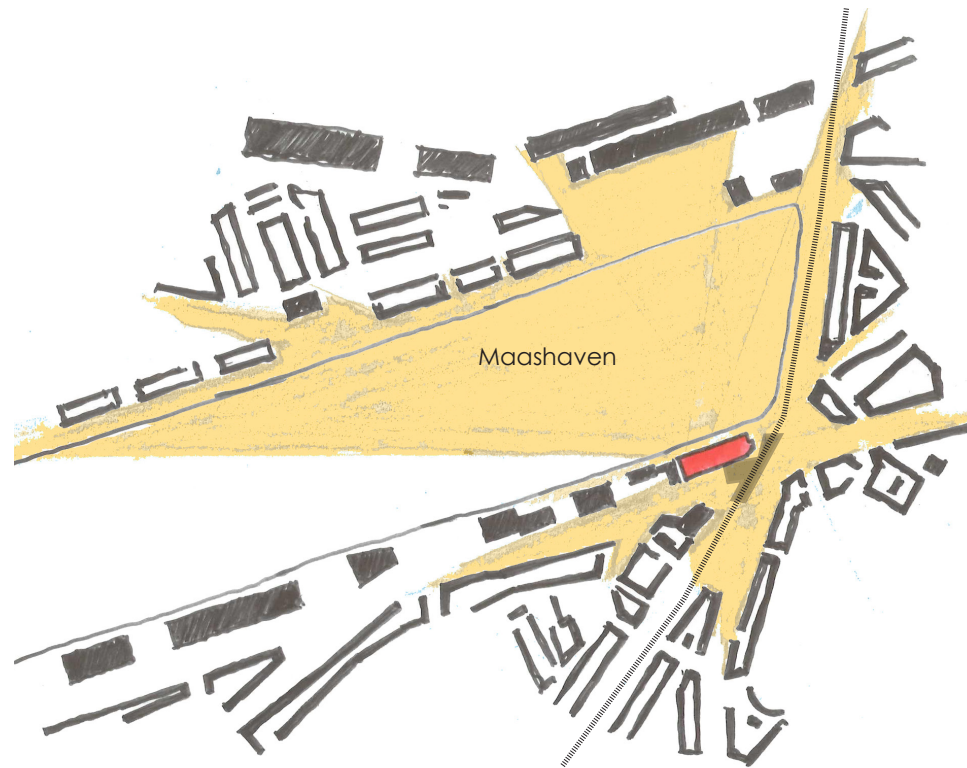


Legible context



Connections-disconnections





Maashaven



Maassilo

Section of the Maassilo, Maashaven and Rijnhaven.

Maashaven

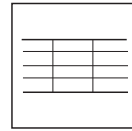
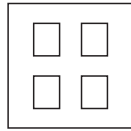
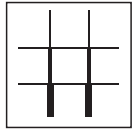
Rijnhaven

# Skin

Openings

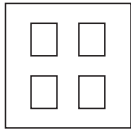
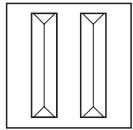
structure

columns



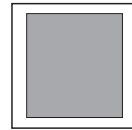
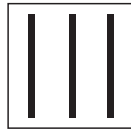
octagonal silos

Openings



Visible structure

Silos as one surface

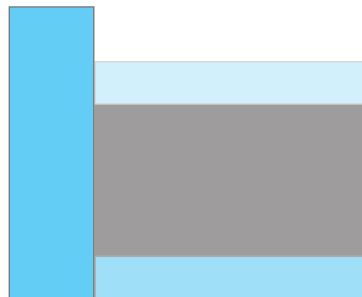
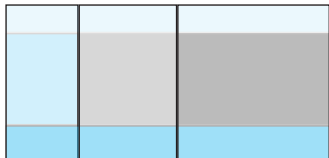
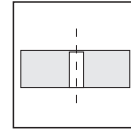
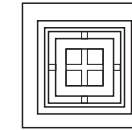
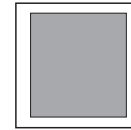


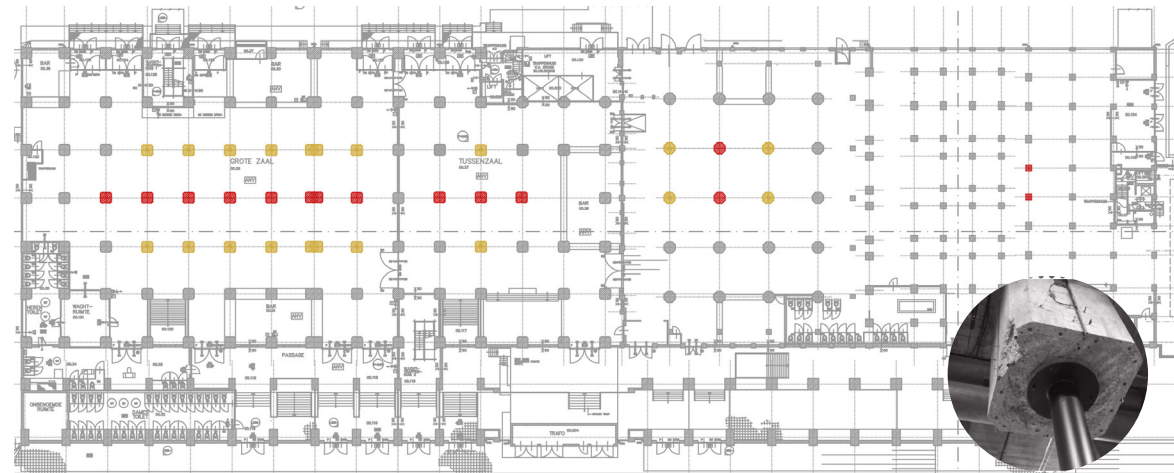
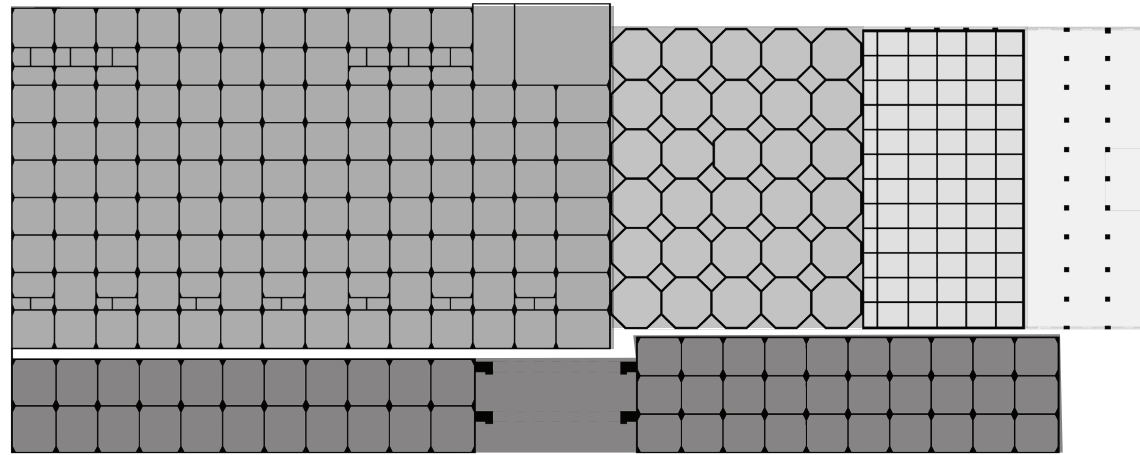
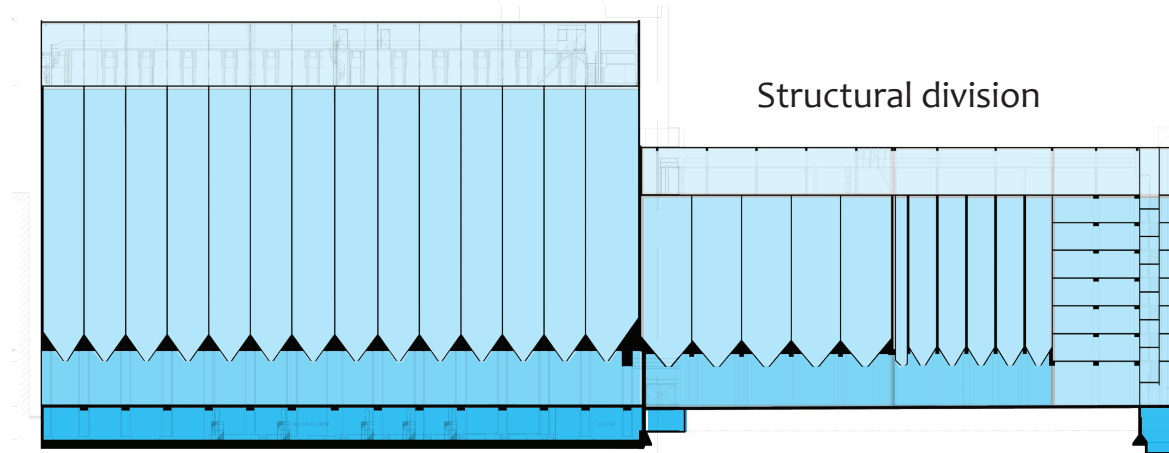
Visible structure

Silos as one surface

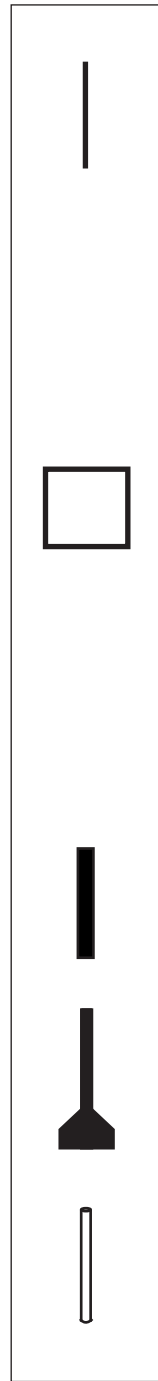
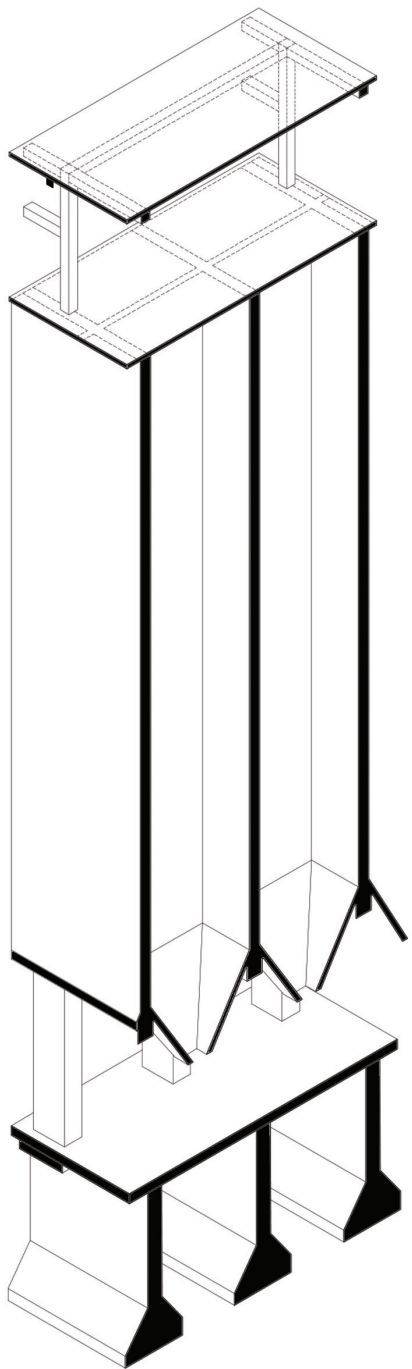
Ornament

Symmetry





### Structural principle of silos



Light structure

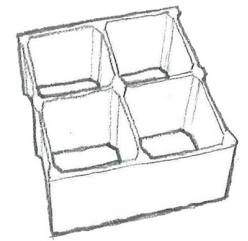
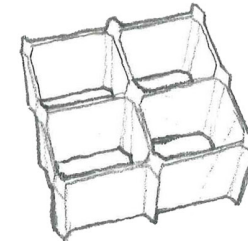
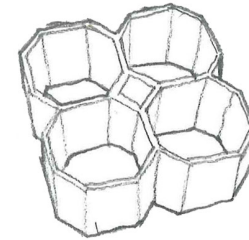
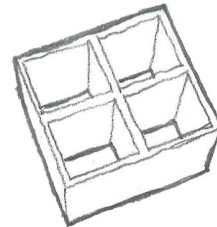
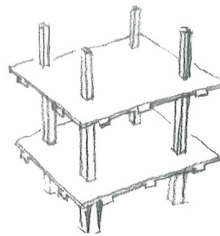
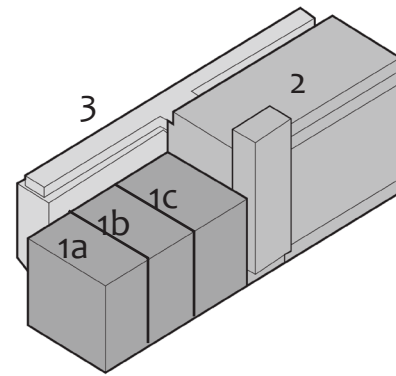
Silo cells

Ground floor

Foundation

Pillars

### Differentiations



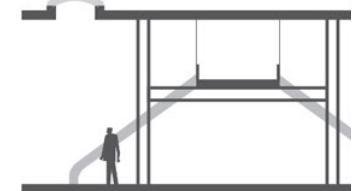
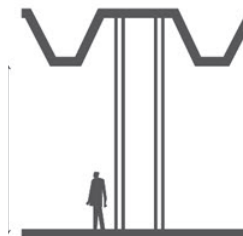
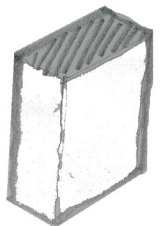
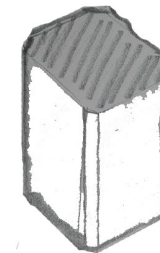
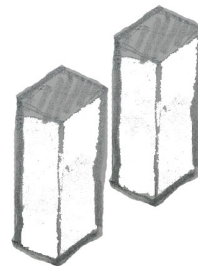
1a

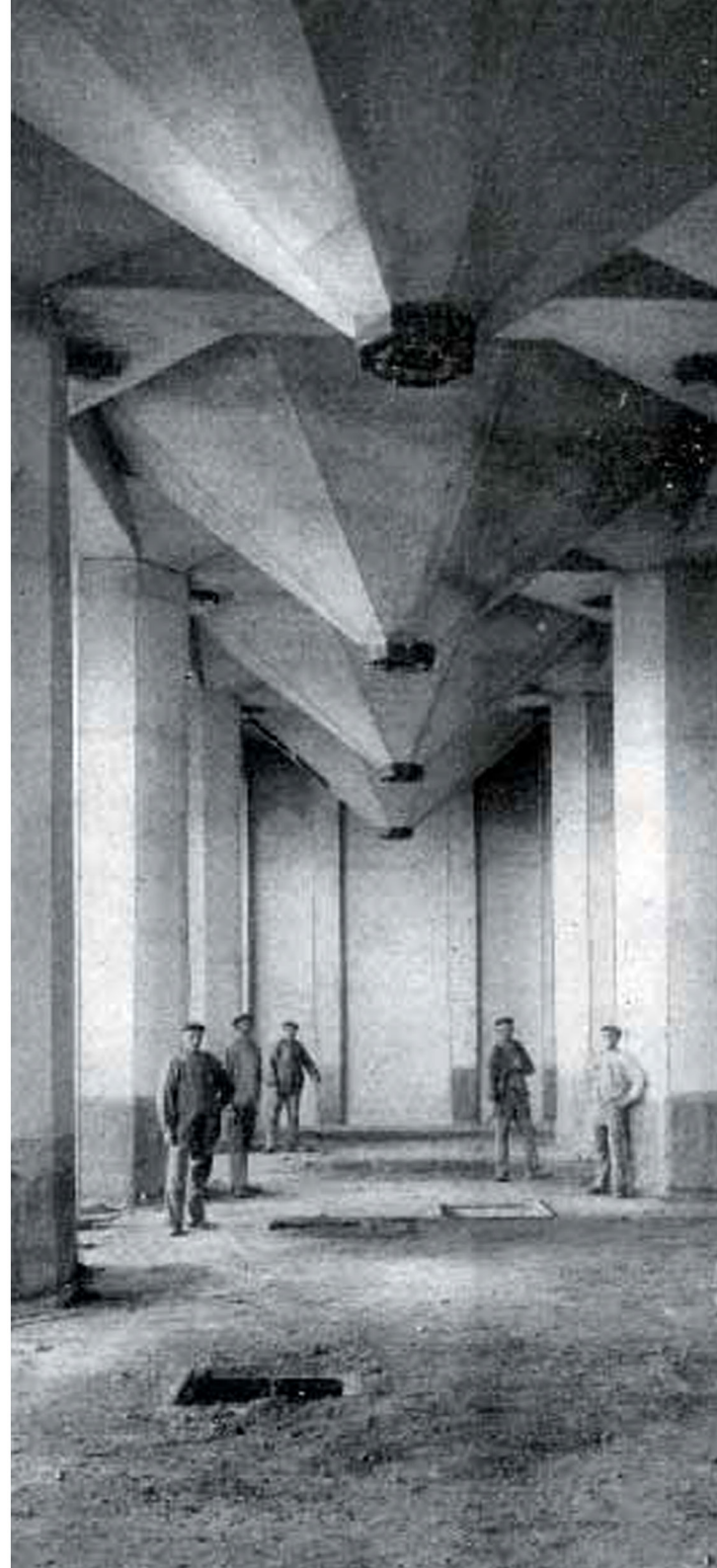
1b

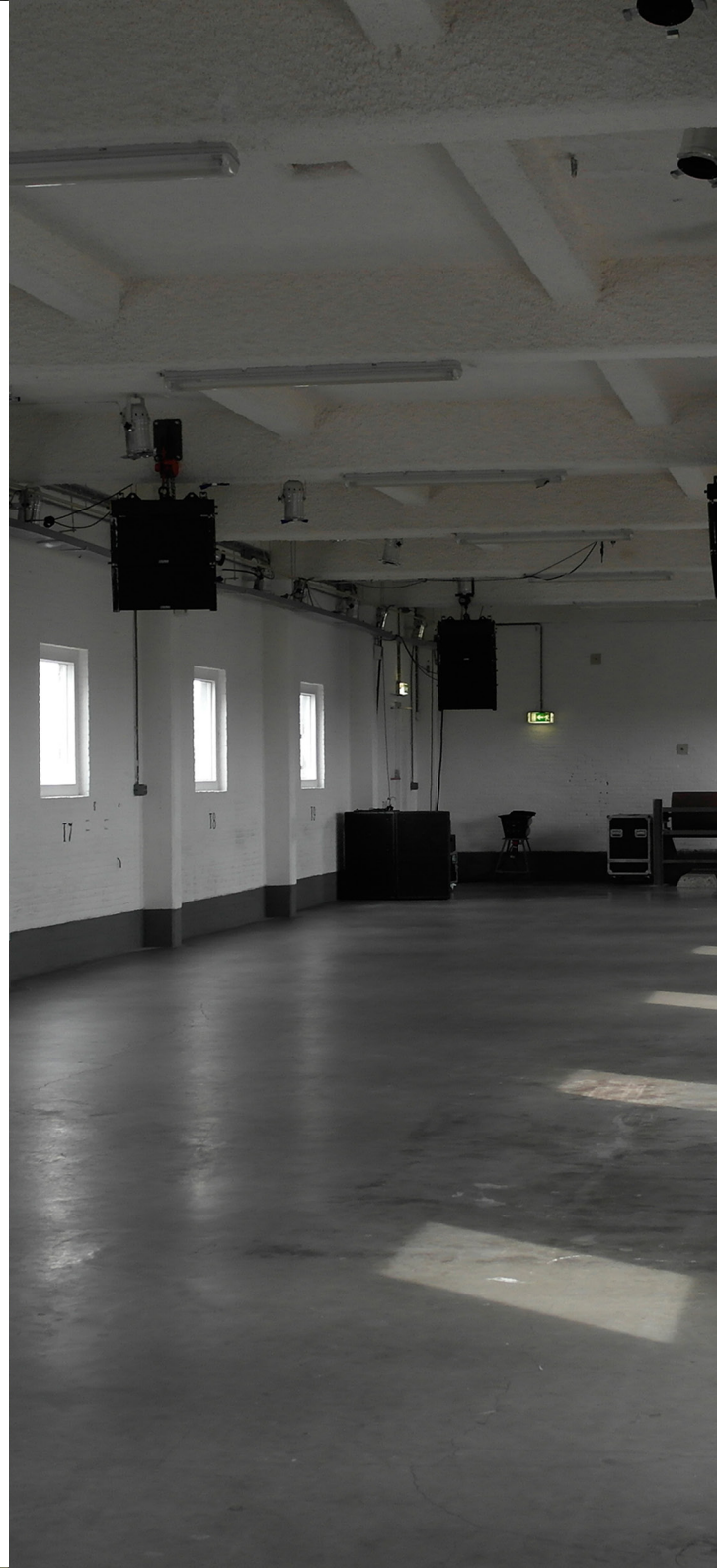
1c

2

3

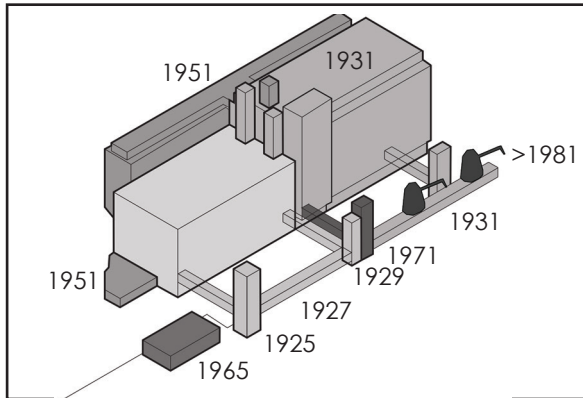




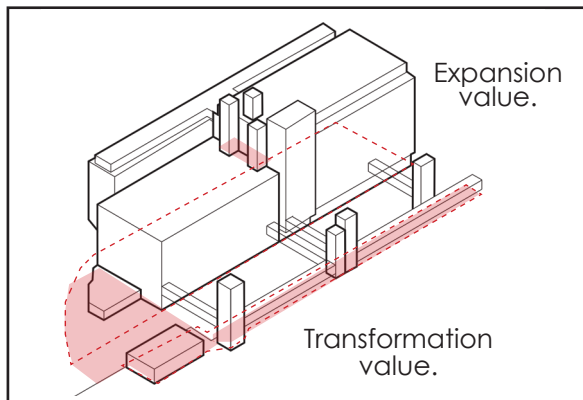


# Conclusions

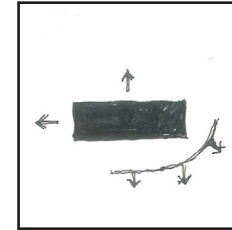
Complex development



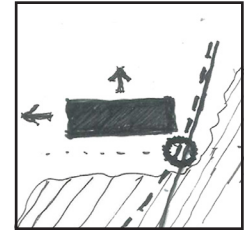
Ensemble character



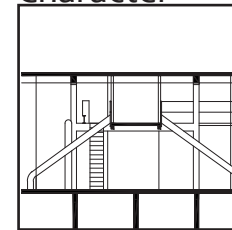
Relations



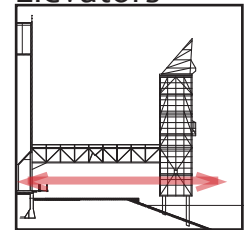
Intersection



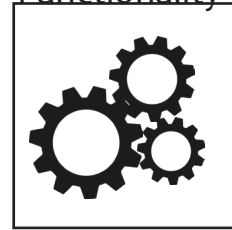
Character



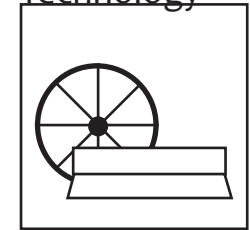
Elevators



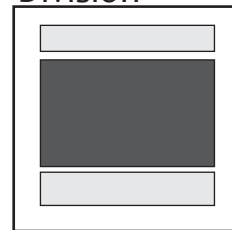
Functionality



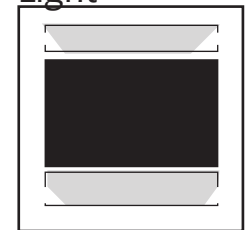
Technology



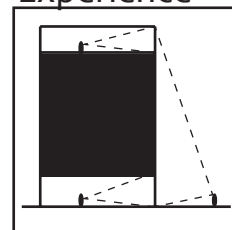
Division



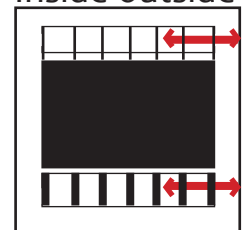
Light



Experience



Inside-outside




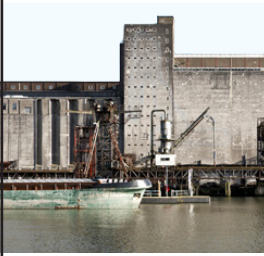



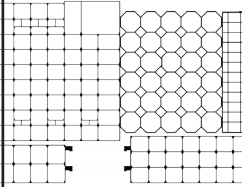
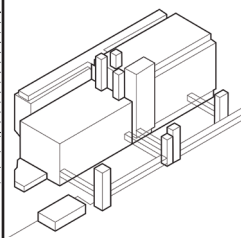

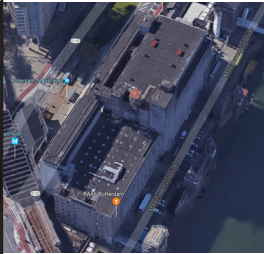


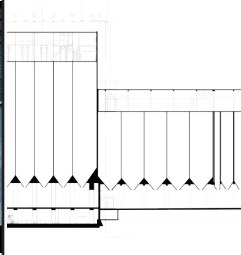







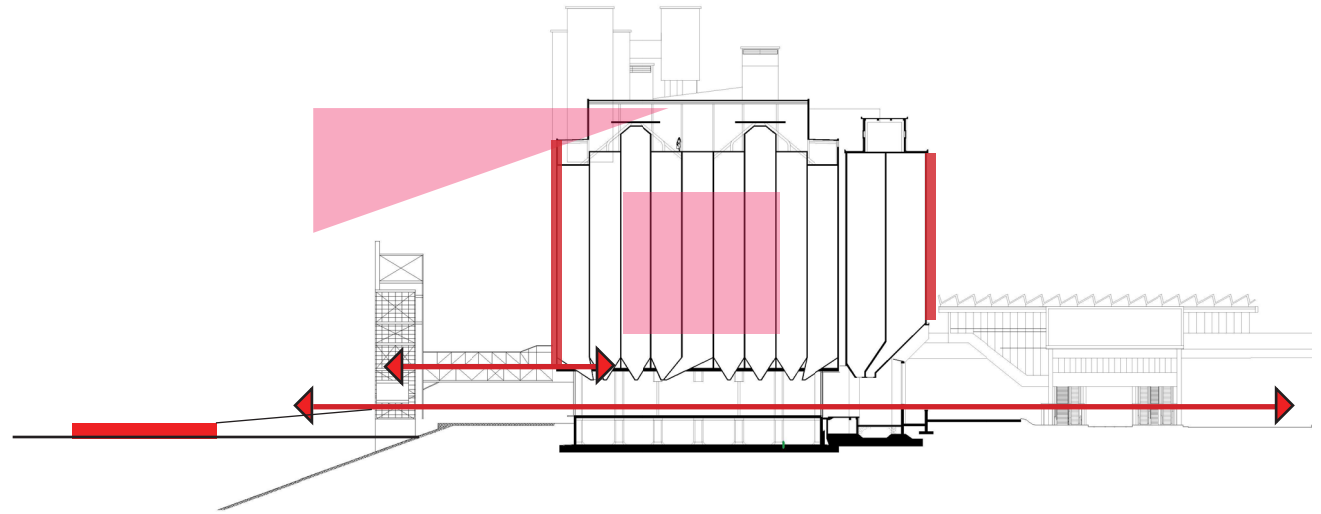
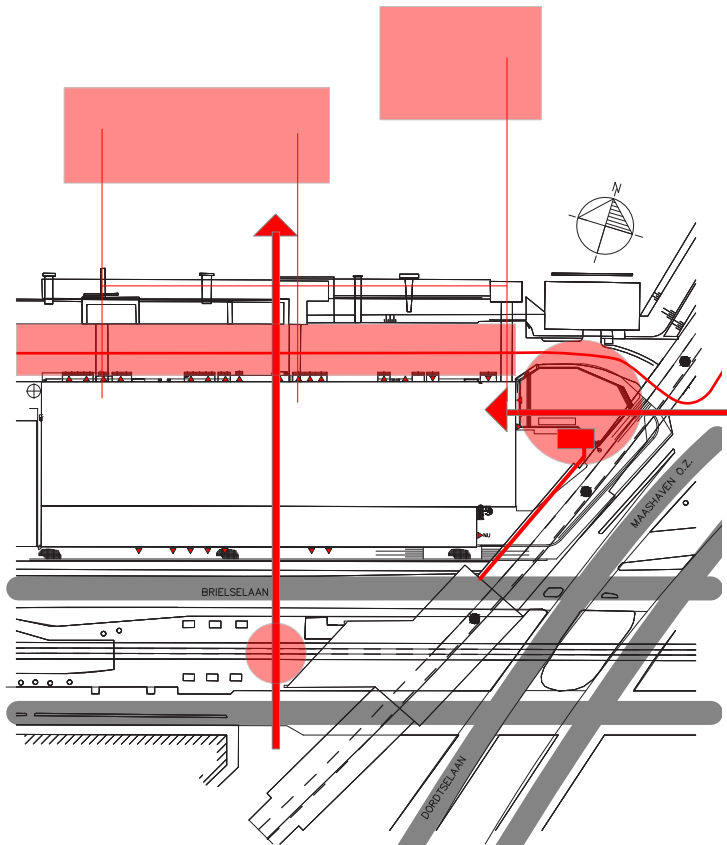


# Evaluation scheme

	Age	Historical	Artistic	Commemorative	Use	Newness	Conflict
Site							
Structure							
Skin							
Space plan							
Services							
Stuff							
Story							

# Framework of transformation

	Structure (columns, beams)	Funnels	Elevator buildings	Typological integrity (facade)	Authentic Machinery	Conveyors and tubes	The transformation building
Focus on retaining and preserving							
Important to keep but with possibility of intervention	Silo cells 	Ensemble outline 	Old separation walls 	Roof 	Interior of the office building. 		
Intervention is applicable or even necessary.	Closed off old openings to be reopened. 	Enable the experience of the silo cells. 	Entrance of the building - recognizable 	Generous floor plans, by demolishing the later walls. 	Take out the closing panels on the south facade. 	New window frames. 	Later walls on the attic of the 1931 part have to be removed. 



<b>Public space</b>	Create a public space as a gathering area and distribution point.	Create the heart of the building, an intimate place of gathering.
<b>Accessibility and circulation</b>	Enhance the building's connection to its parts and its context in which people can easily navigate and approach the building.	Creation of a clear and legible circulation system which will connect the different parts and will provide a unique experience and self-consciousness to the user.
<b>Identity</b>	A new strong identity which will attract people and will be an important node in the city's network.	Create a hybrid identity of old and new, with variety of spatial qualities which will enhance this relation.
<b>Cultural value</b>	Retain as much as possible of the buildings values and highlight them.	Create a unique space for the people where the new function and the old structure are celebrated.

### Existing Capacity

+2.523 m<sup>2</sup>  
-537 m<sup>2</sup>

+3.427 m<sup>2</sup>  
-2.000 m<sup>2</sup>

x6 

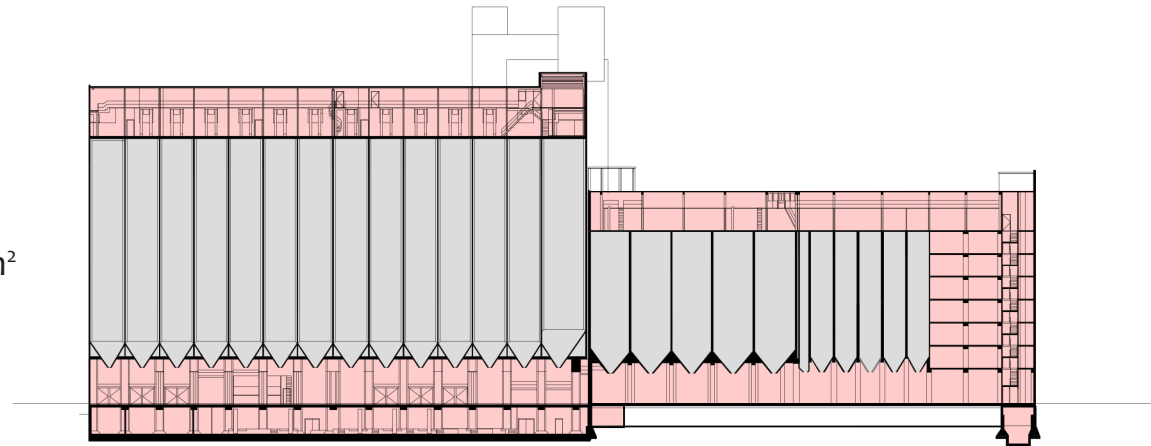
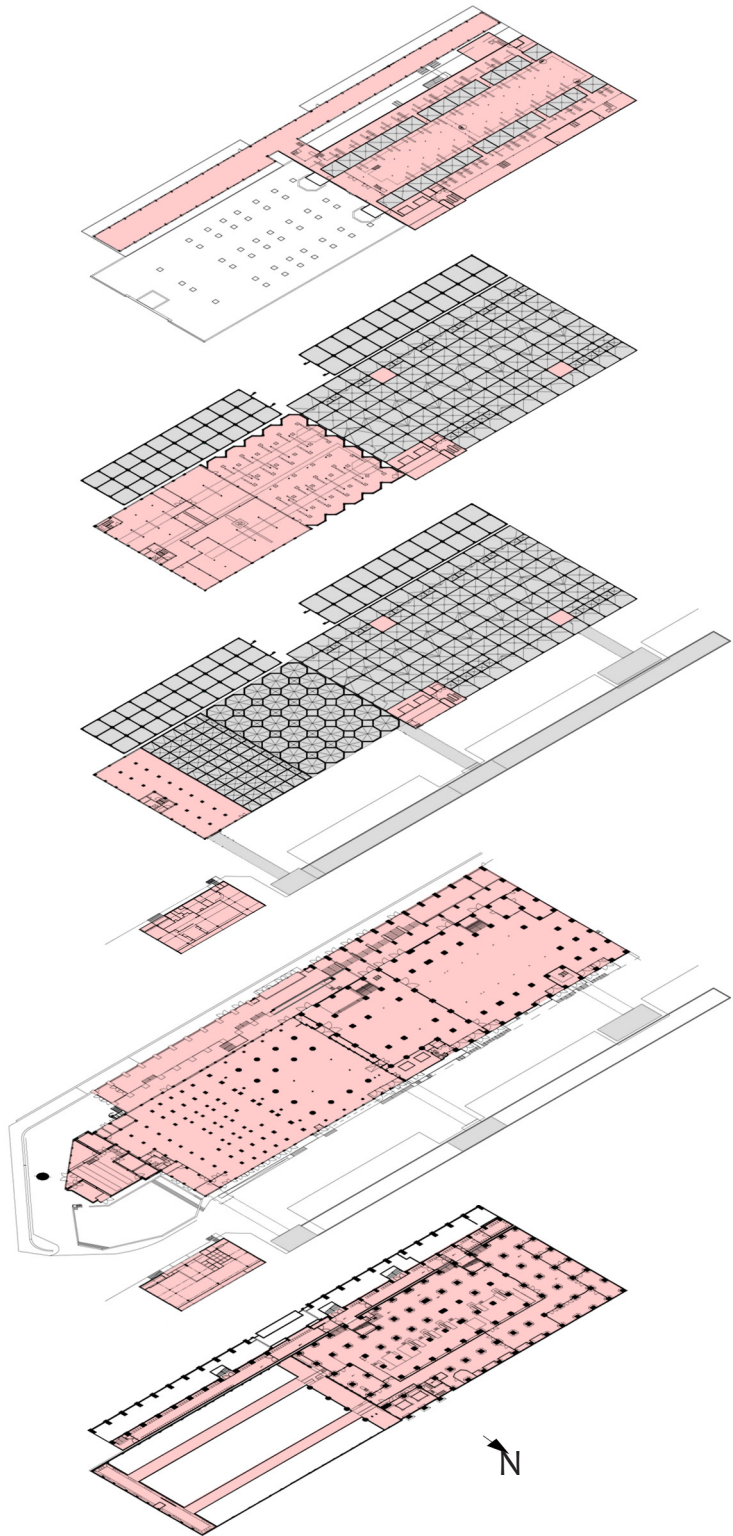
+587 m <sup>2</sup>	+3.522 m <sup>2</sup>
-4.840 m <sup>2</sup>	-29.040 m <sup>2</sup>

  
+312 m<sup>2</sup>  
-910 m<sup>2</sup>

+5.980 m<sup>2</sup>  
-180 m<sup>2</sup>

+3.300 m<sup>2</sup>

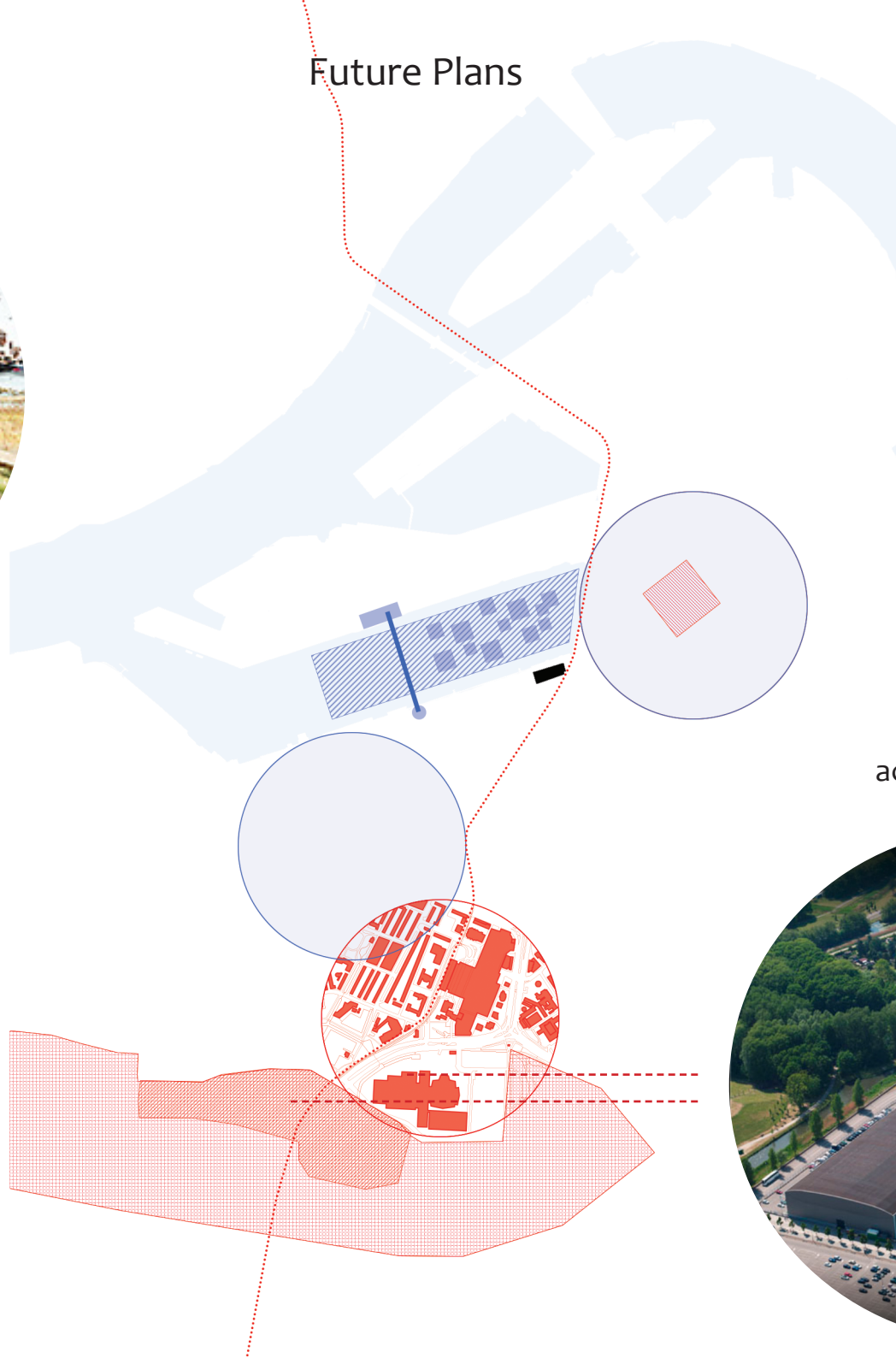
In total  
+19.064 m<sup>2</sup>  
-(32.667 - 43.000) m<sup>2</sup>



Riverside developments

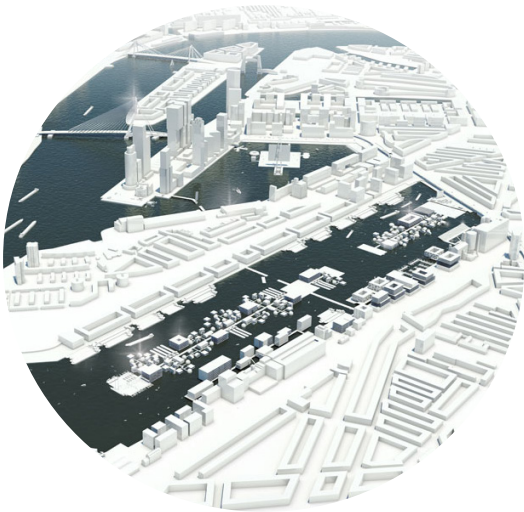


Future Plans



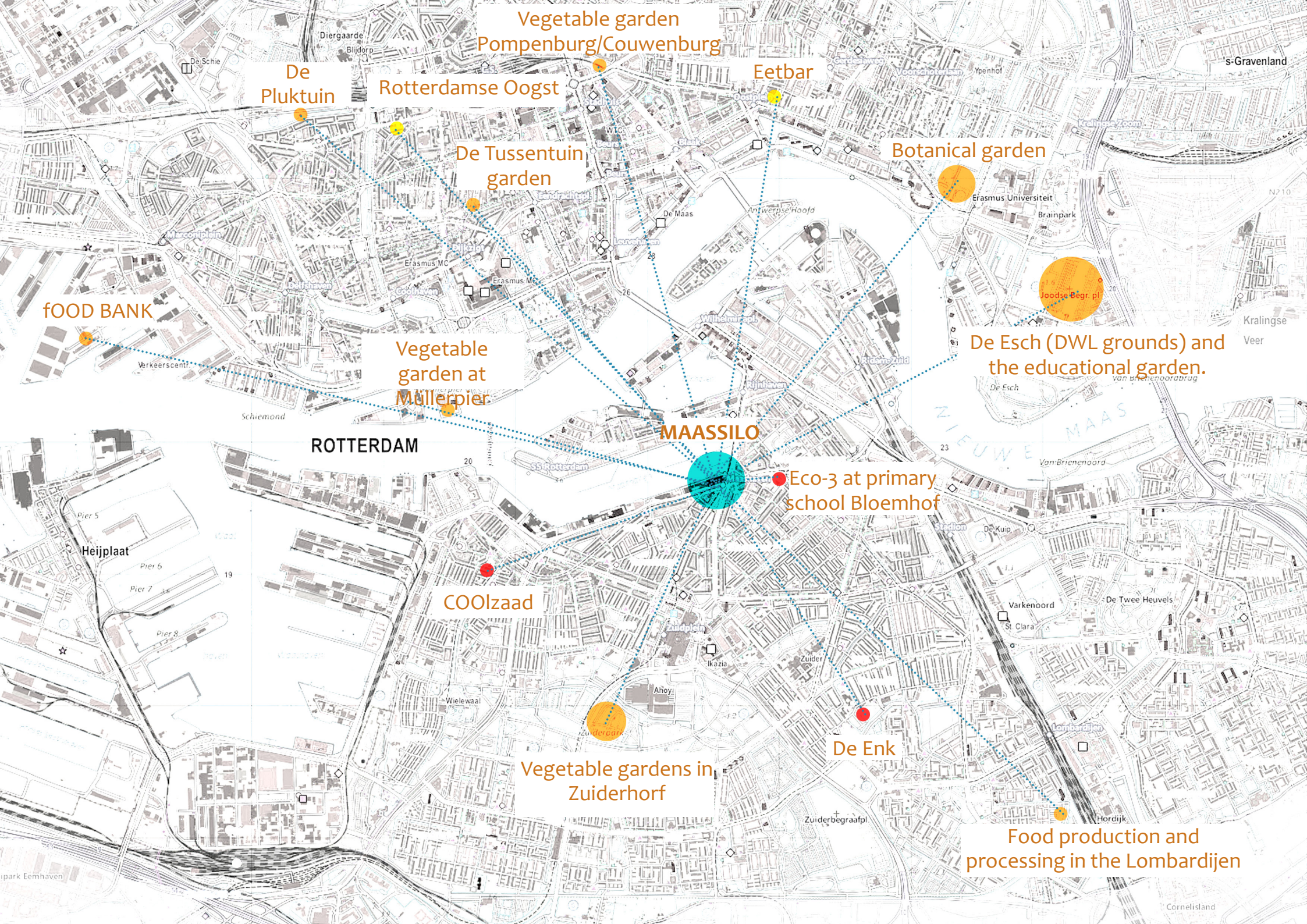
Program

Floating city



Existing activities center (AHOY) and Zandman





Vegetable garden  
Pompenburg/Couwenburg

De  
Pluktuin

Rotterdamse Oogst

Eetbar

De Tussentuin  
garden

Botanical garden

FOOD BANK

Vegetable  
garden at  
Müllerpier

De Esch (DWL grounds) and  
the educational garden.

ROTTERDAM

MAASSILO

Eco-3 at primary  
school Bloemhof

COOLzaad

Vegetable gardens in  
Zuiderhorf

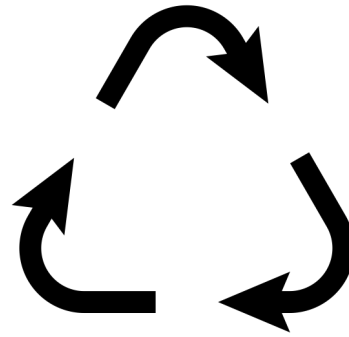
De Enk

Food production and  
processing in the Lombardijen

Program

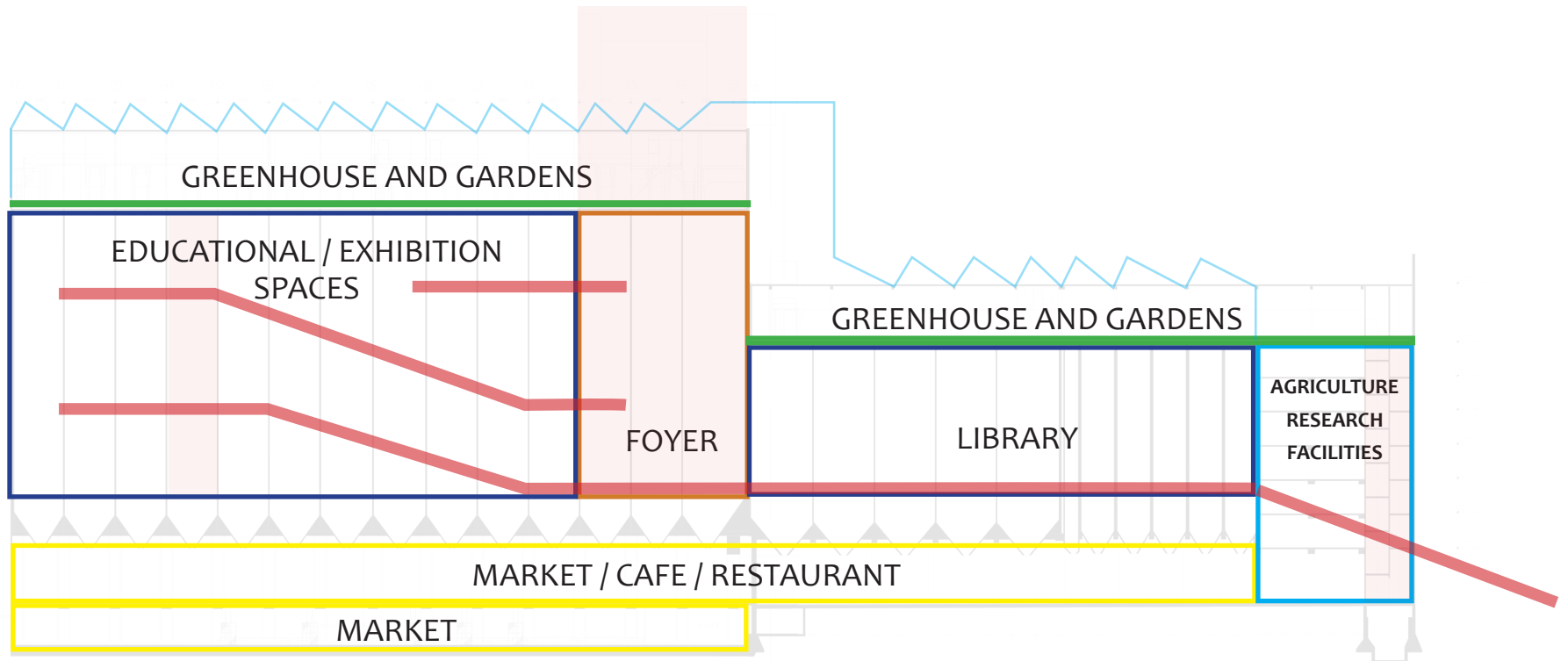
Program

Education

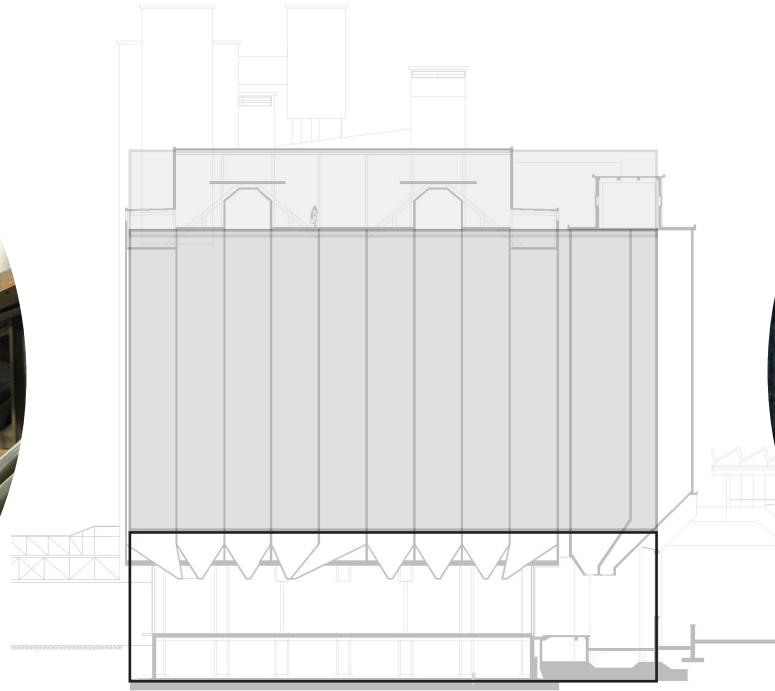
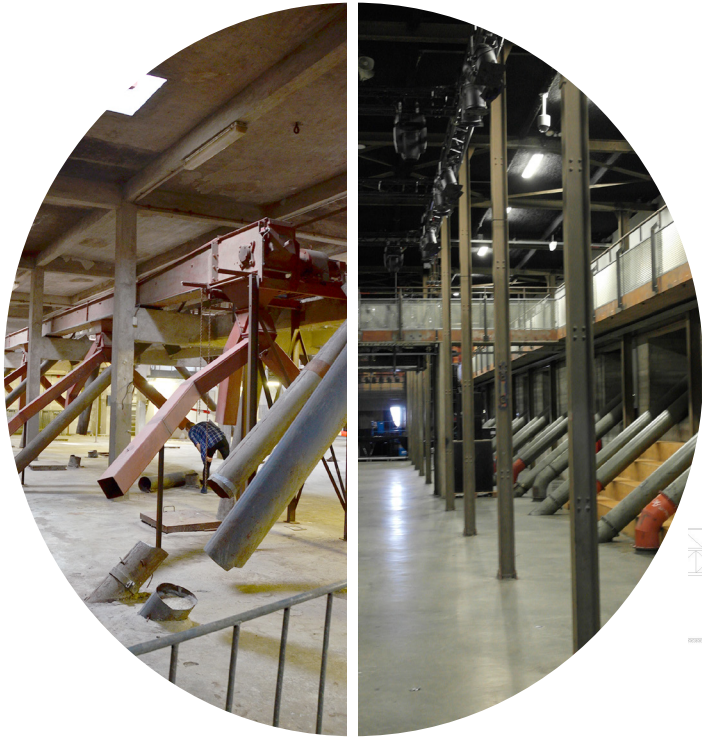


Consumption

Production

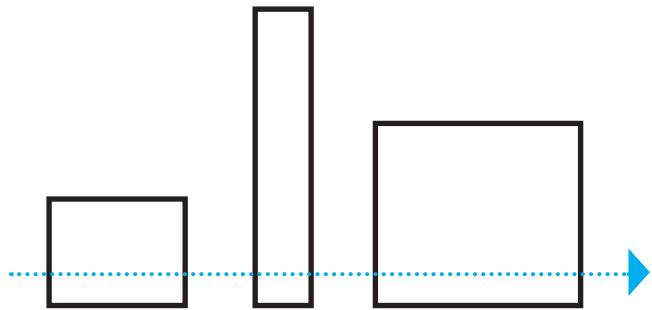


# Design approach

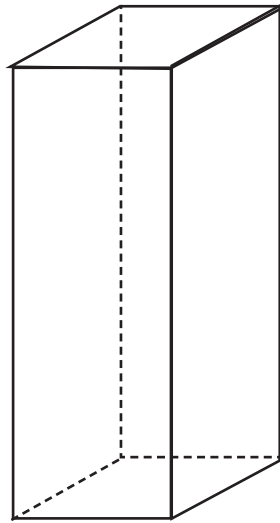




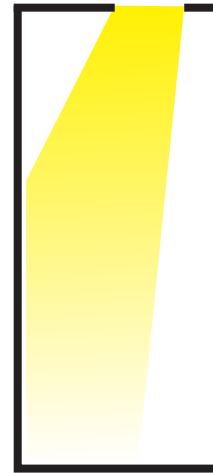
# Principles of spatial qualities



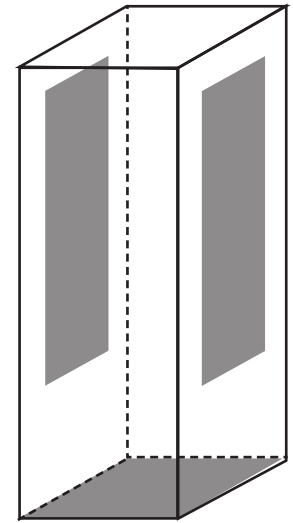
sequence / transition



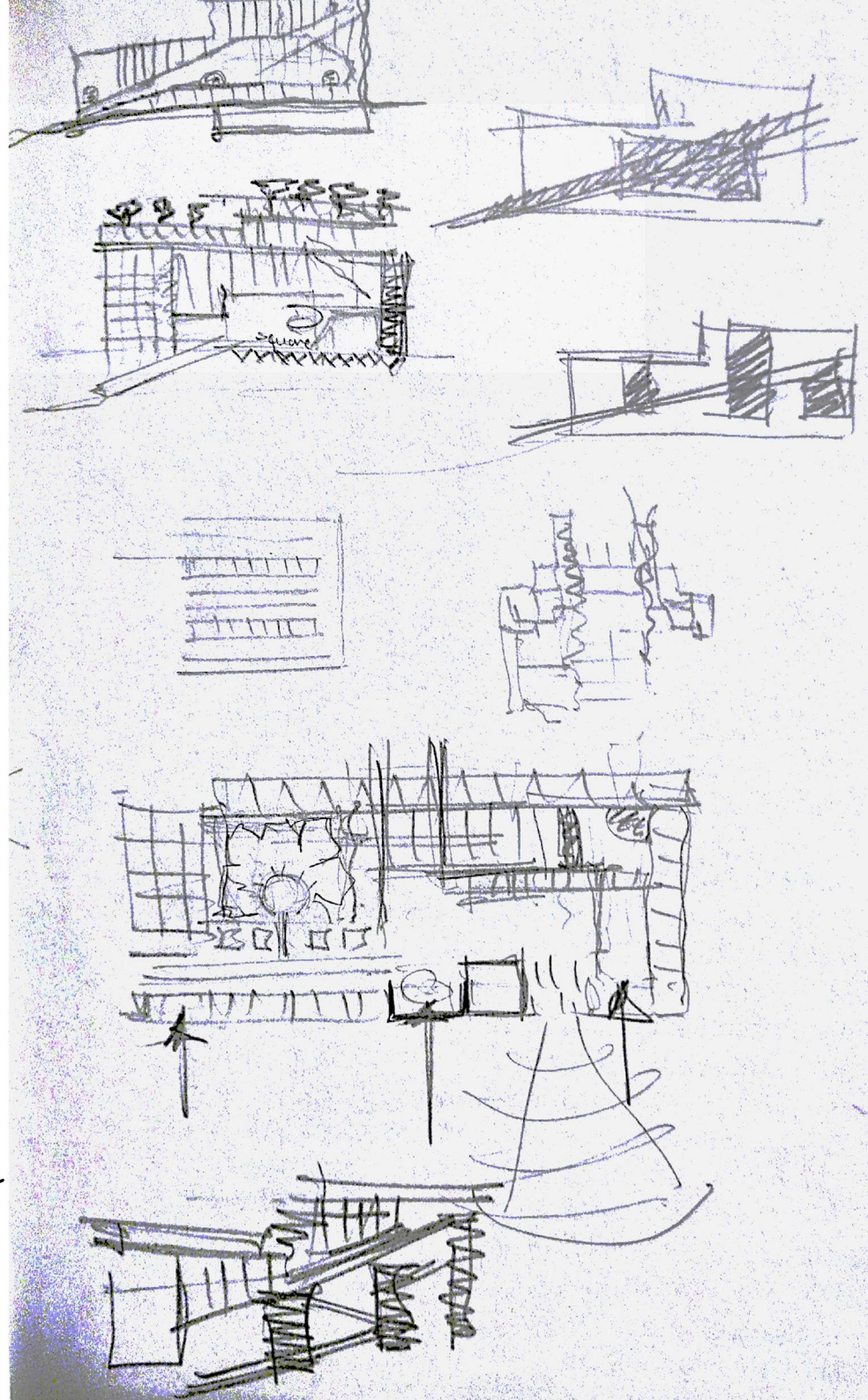
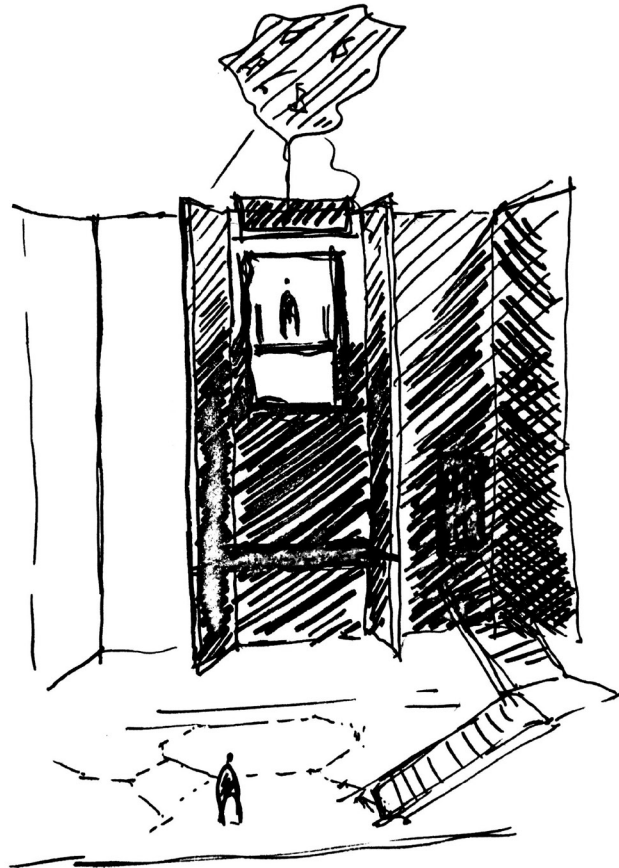
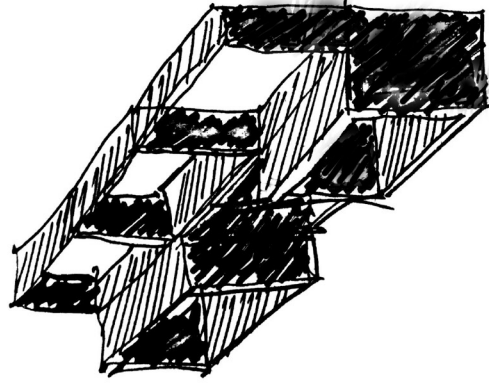
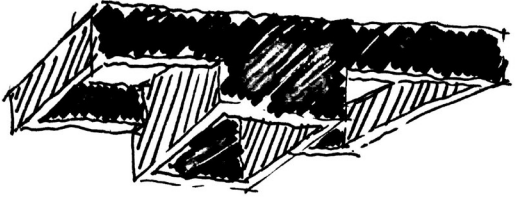
scale



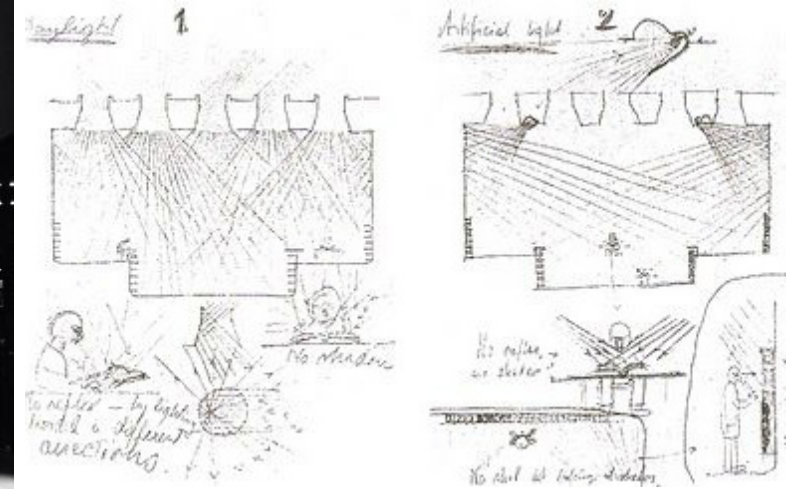
lighting



surfaces

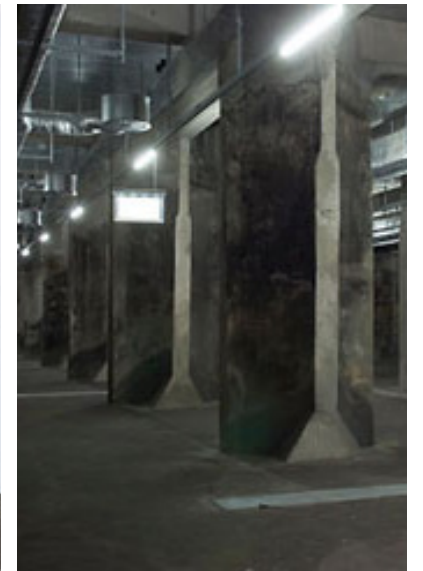
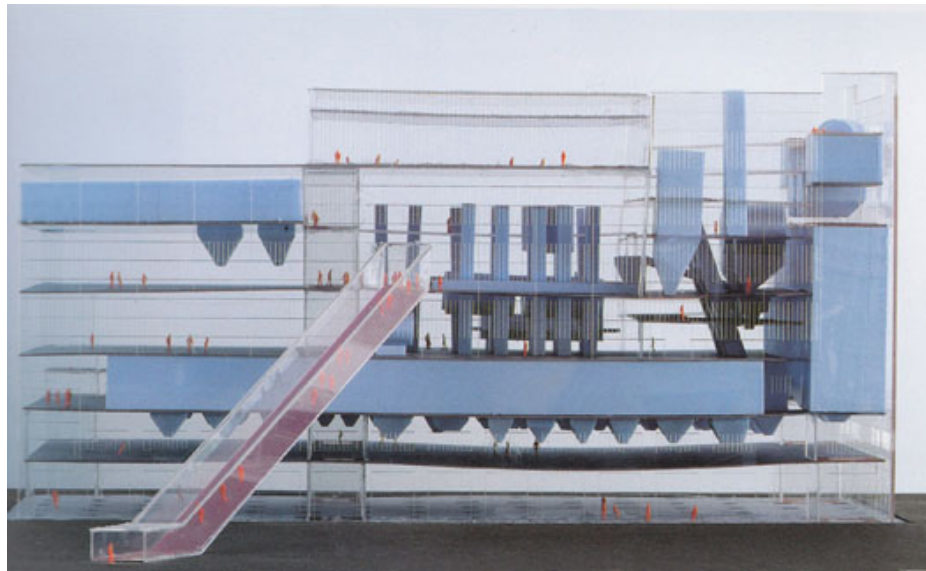


## Ideas and references

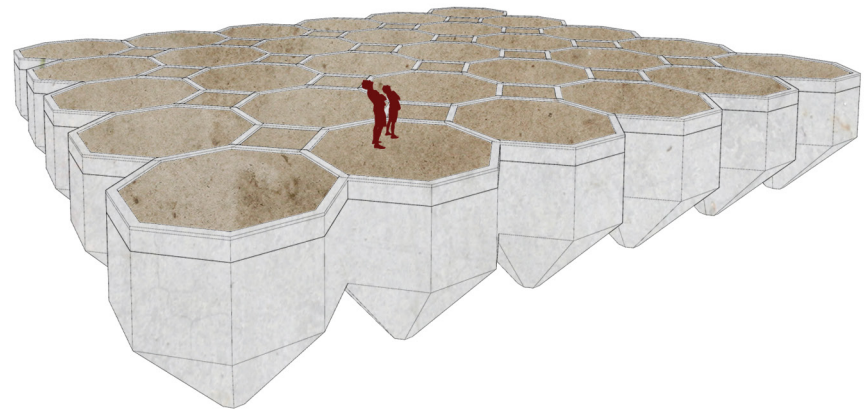
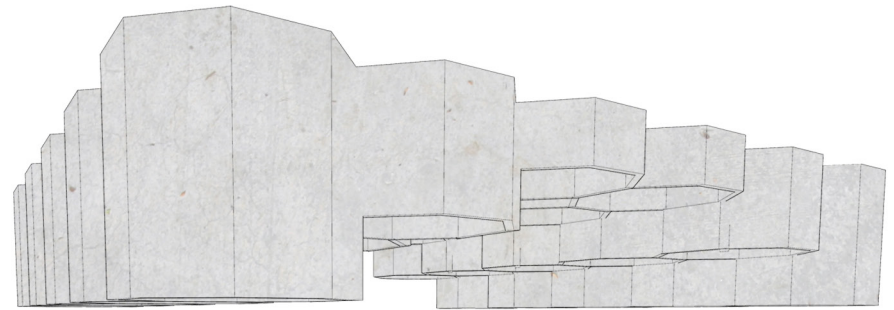
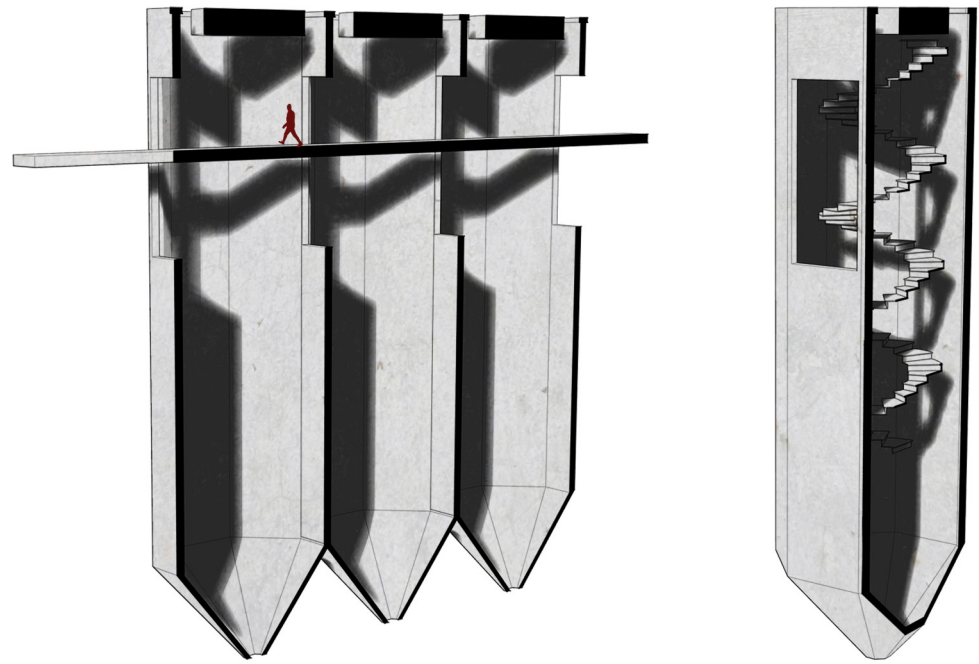
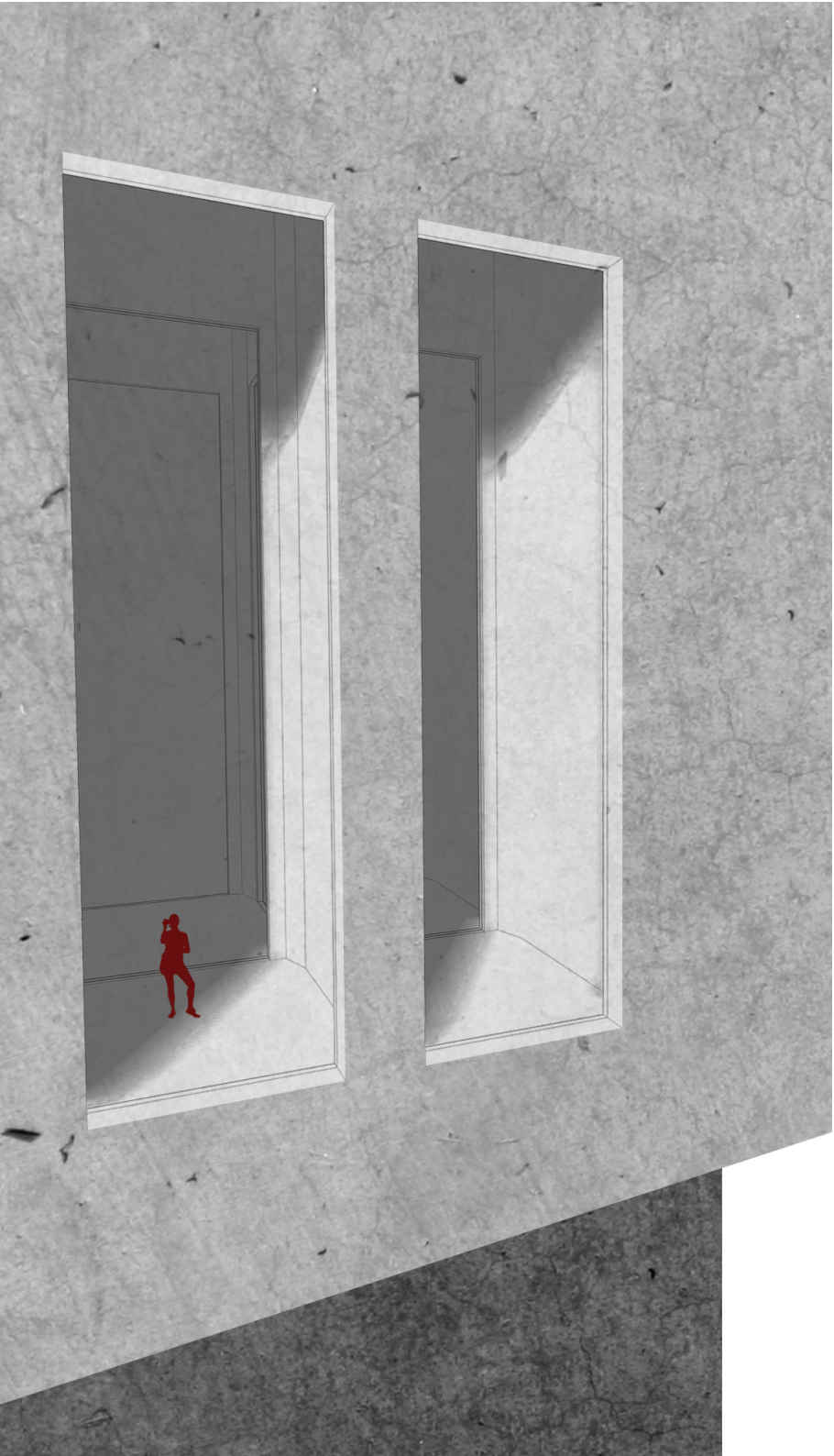


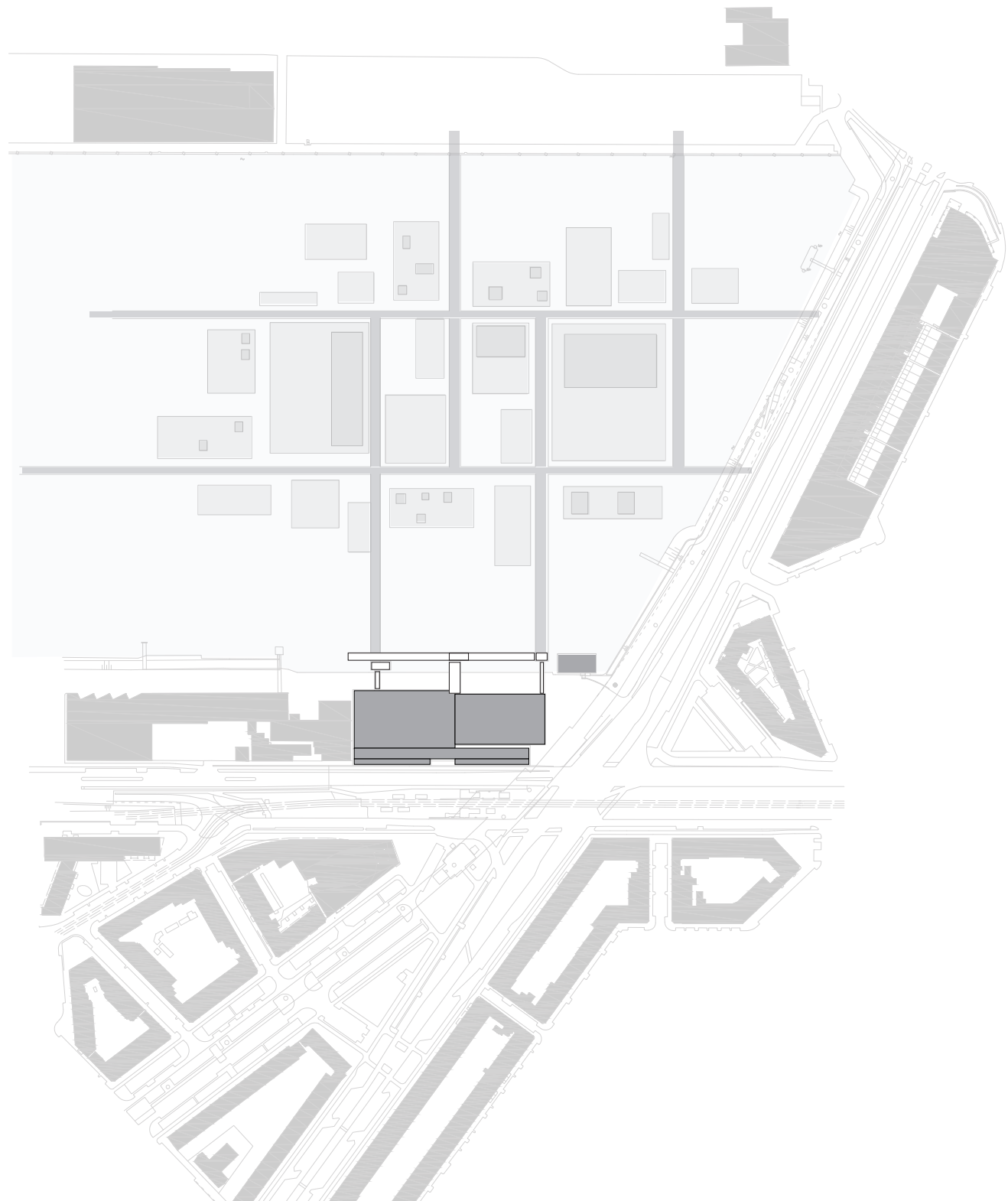
Tate Modern museum London  
designer: Herzog & De Meuron

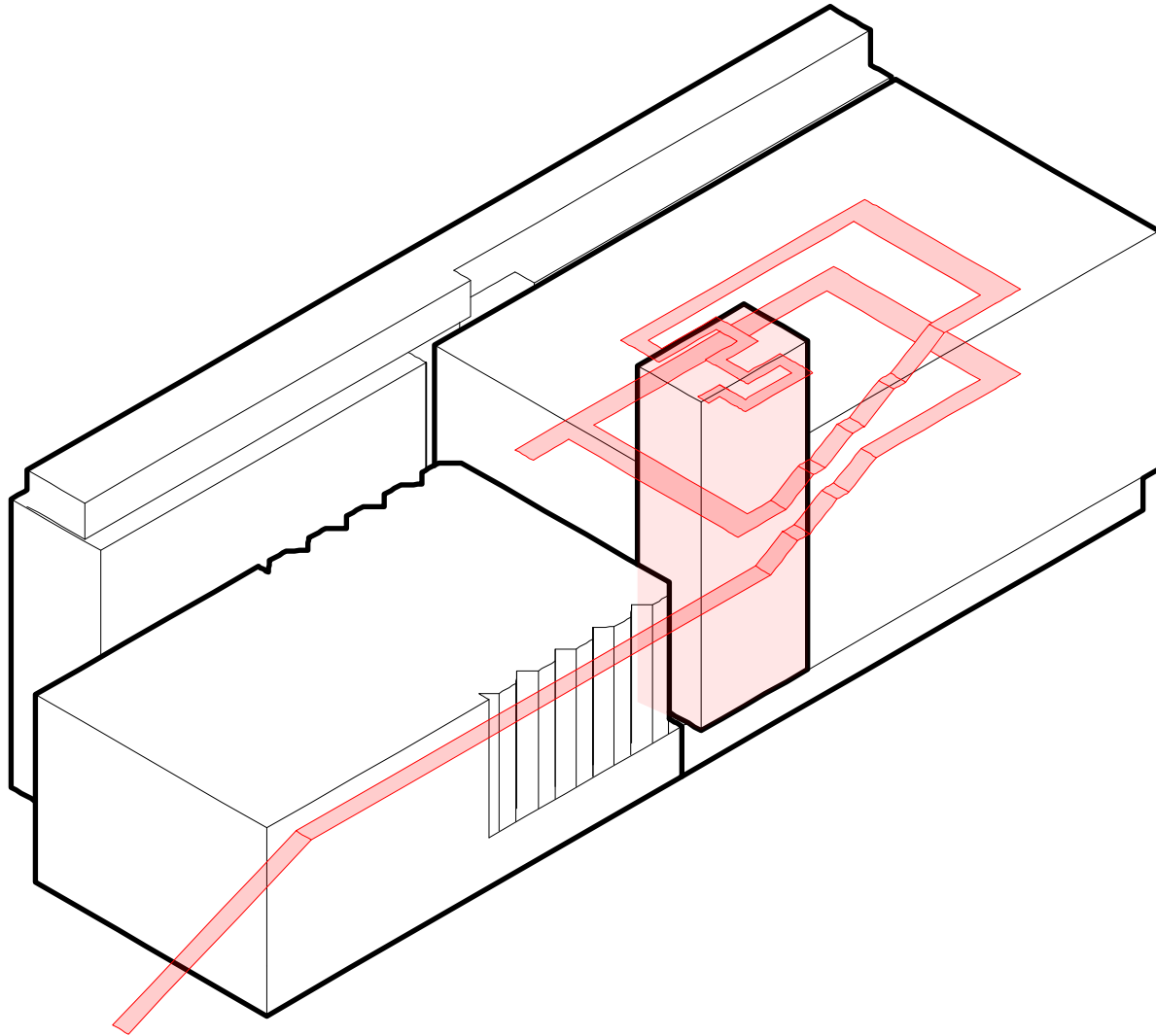
Sketches of lighting by Alvar Aalto

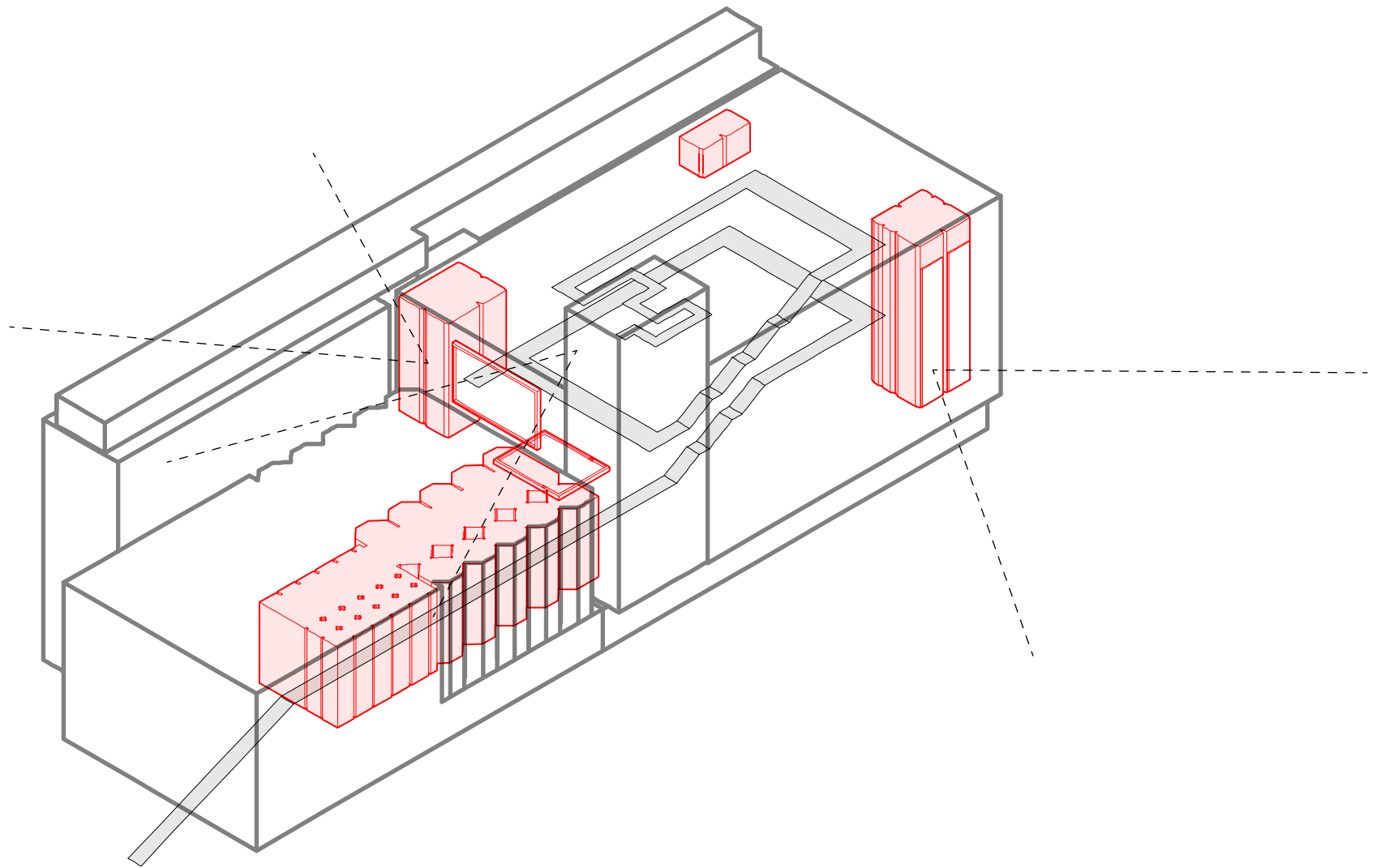


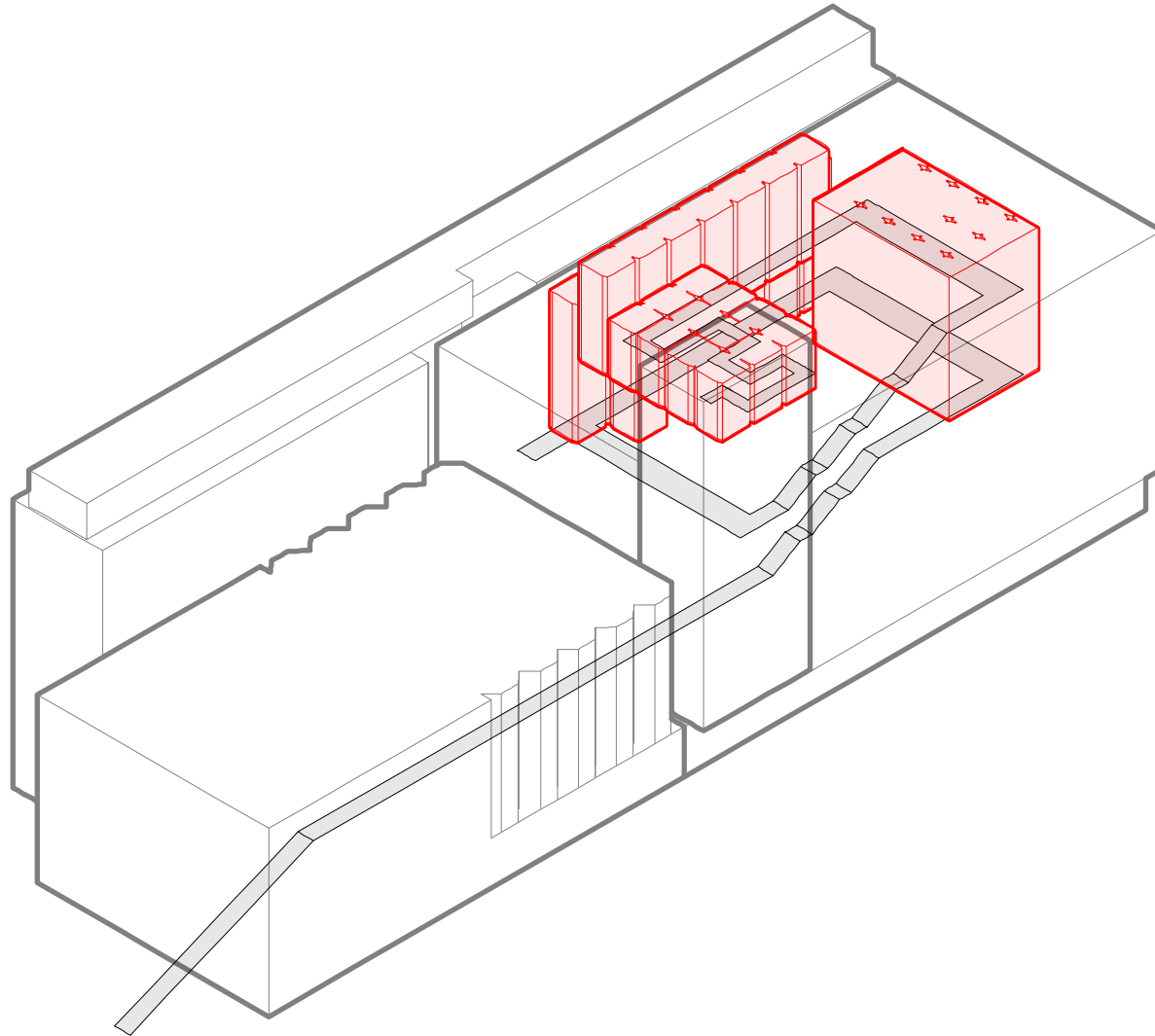
Ruhrmuseum (Essen Zeche Zollverein)  
Designer: OMA





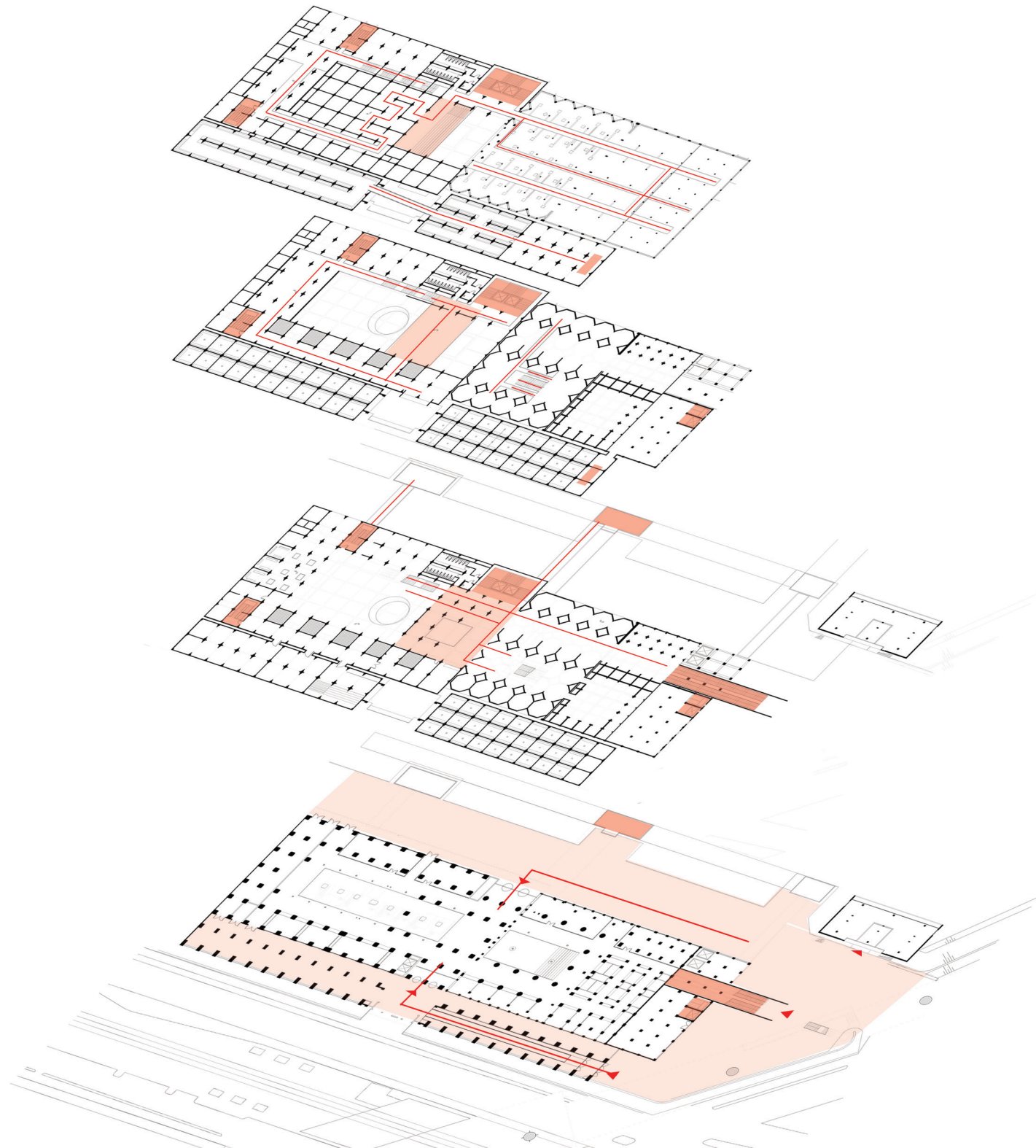


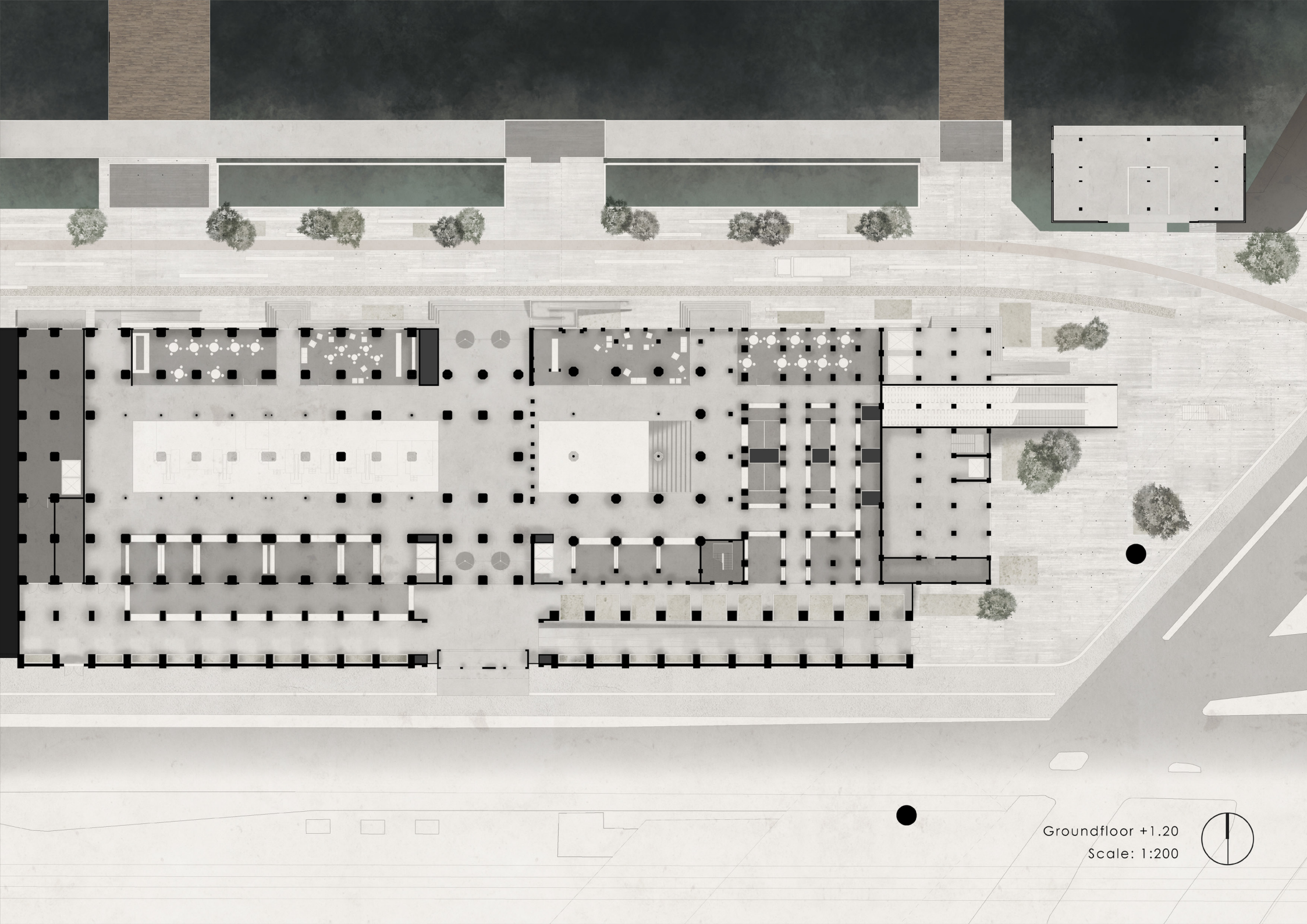




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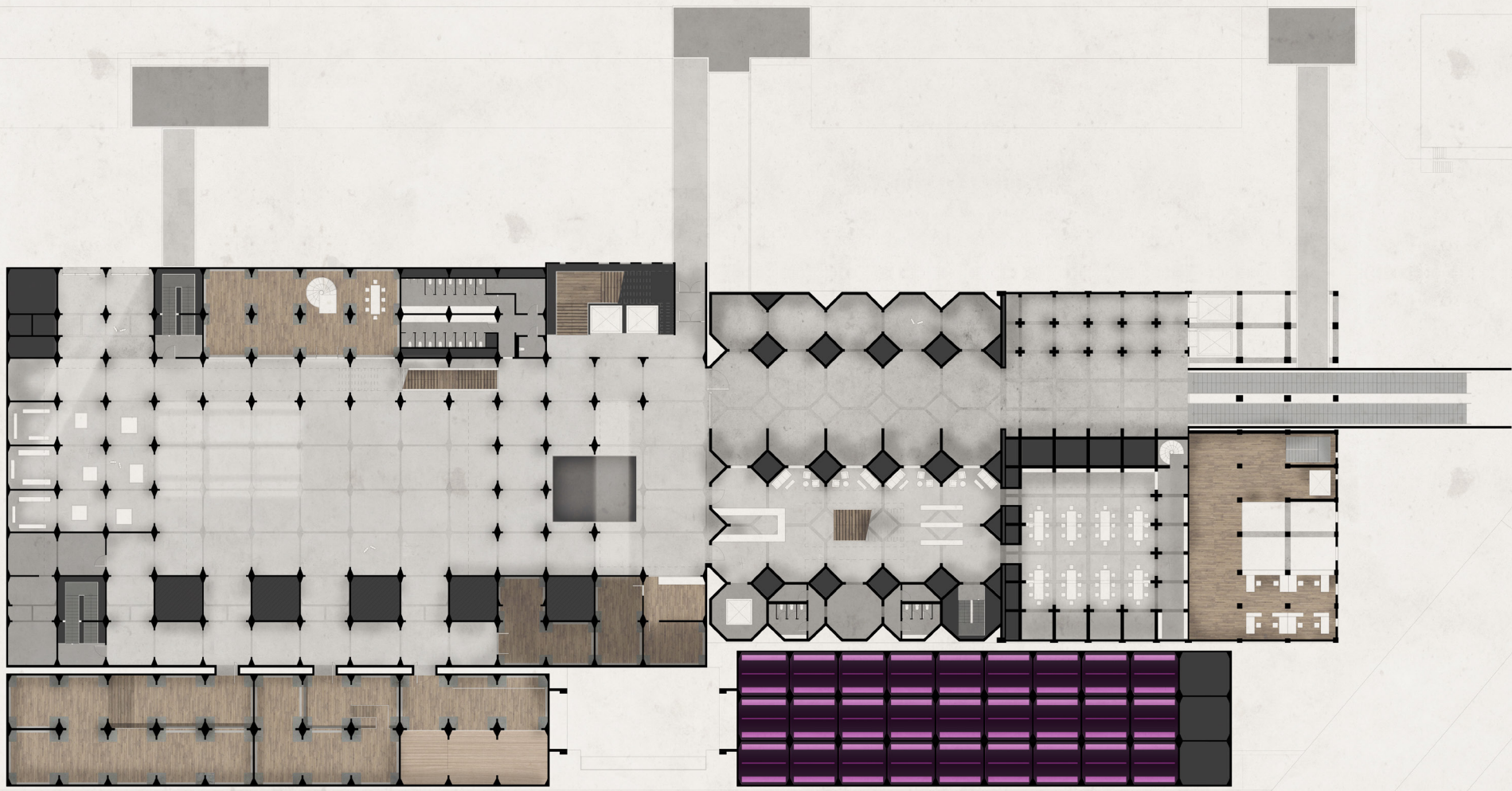






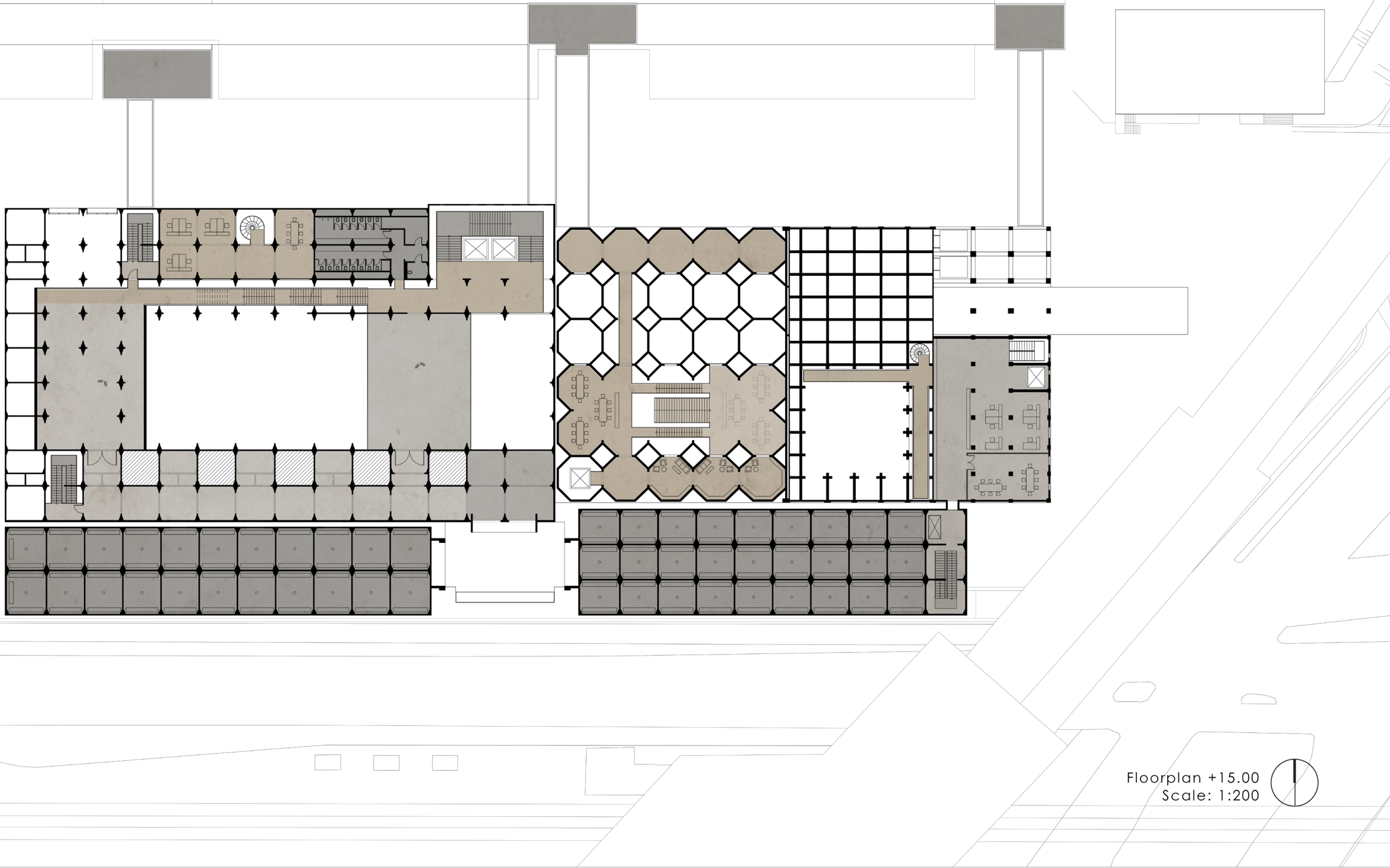
Groundfloor +1.20  
Scale: 1:200





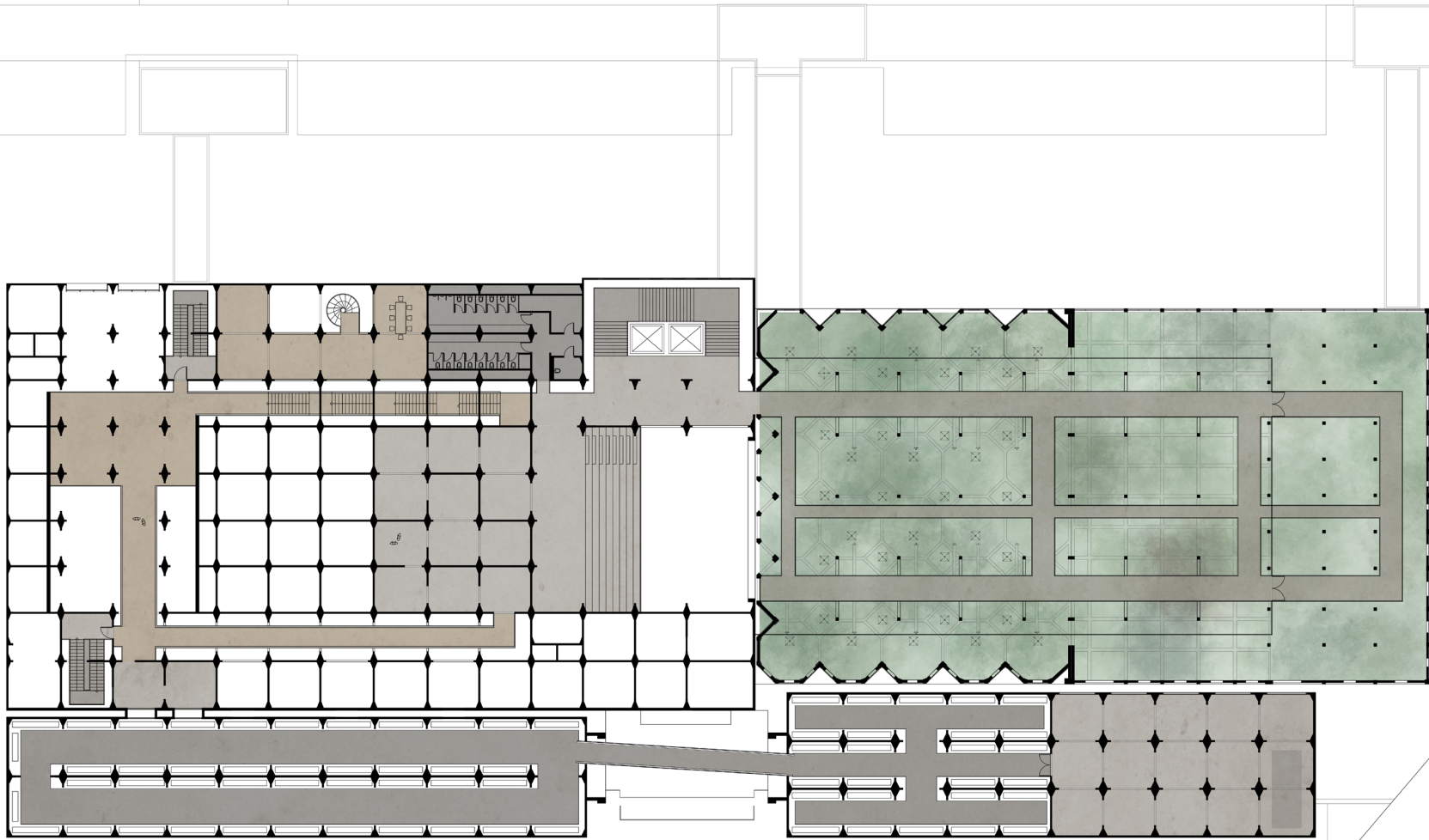
Floorplan +11.00  
Scale: 1:200





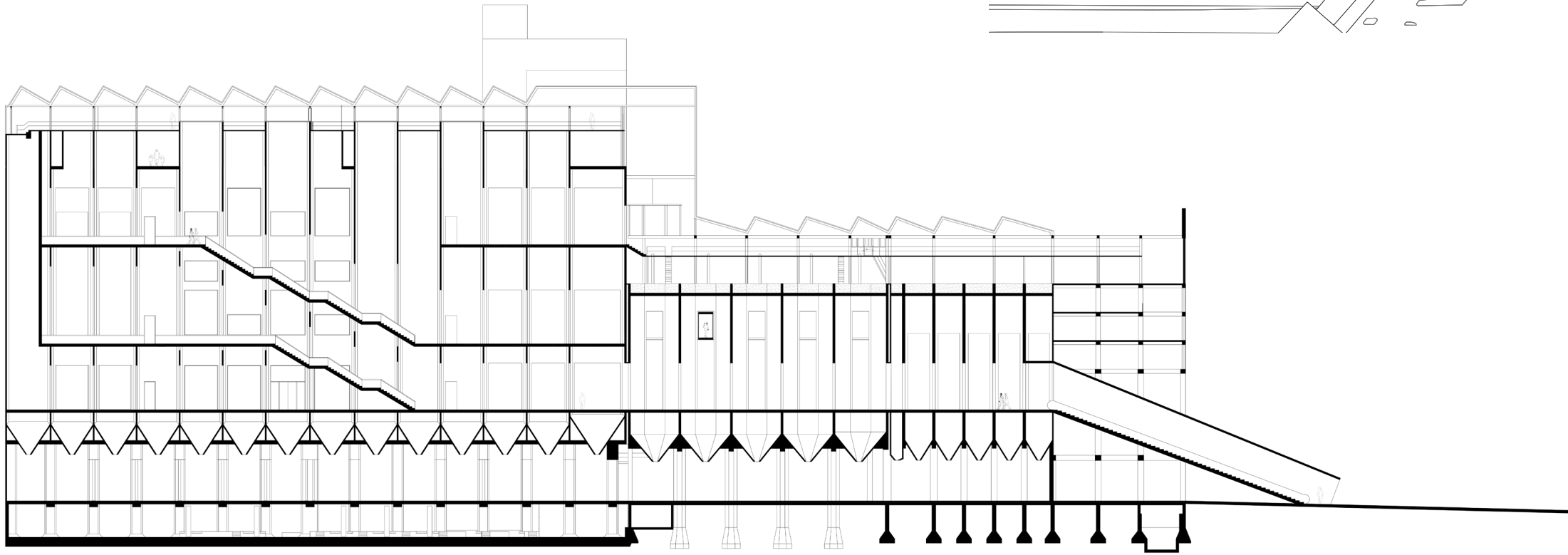
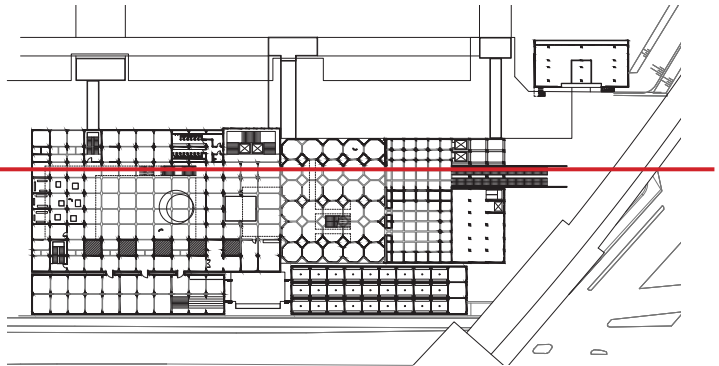
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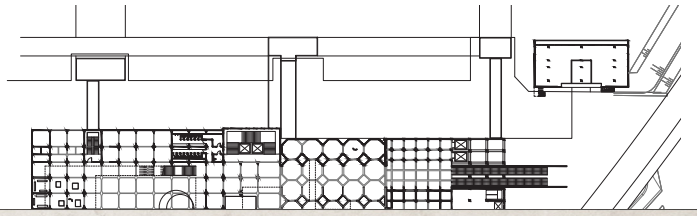




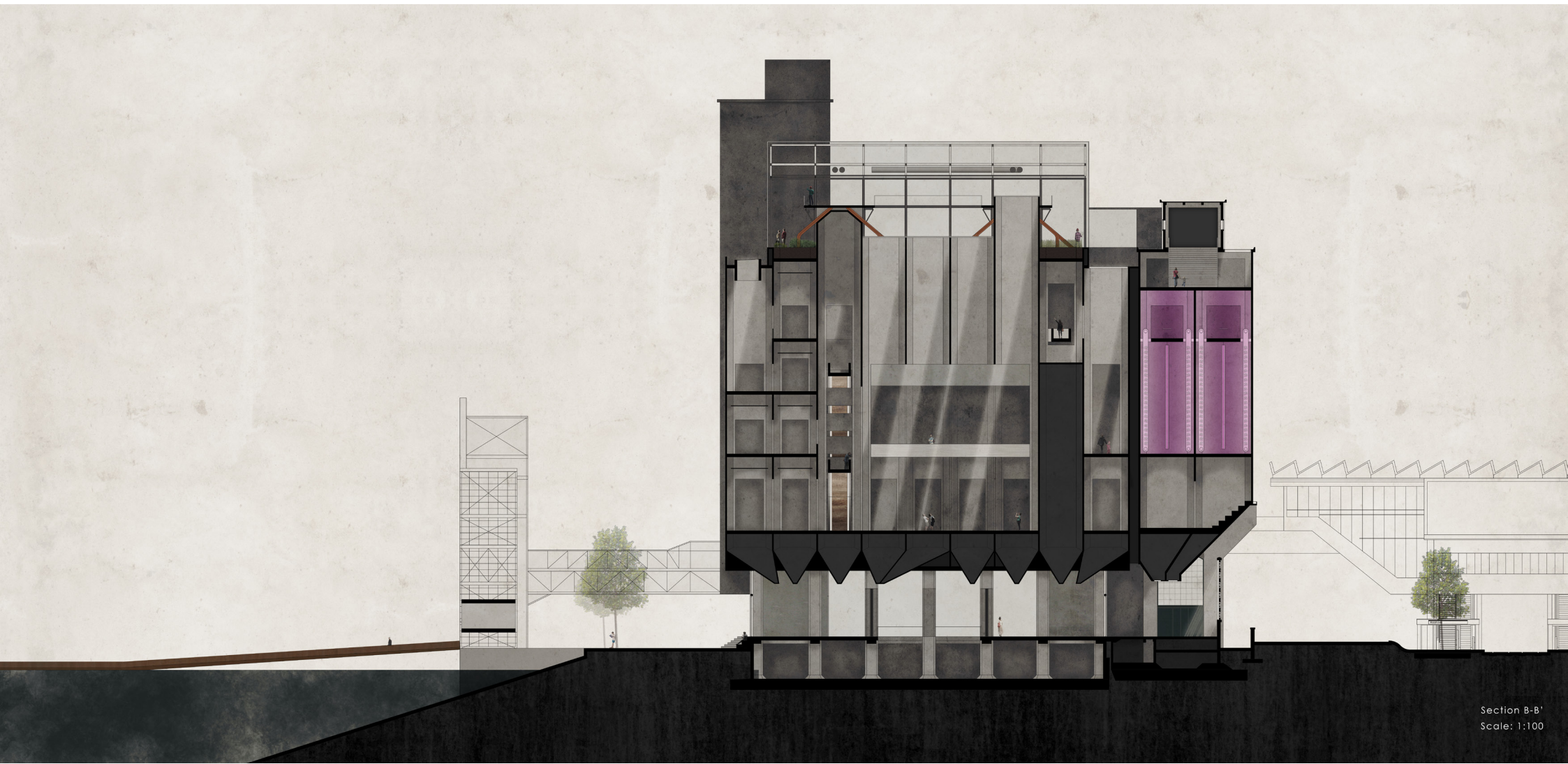
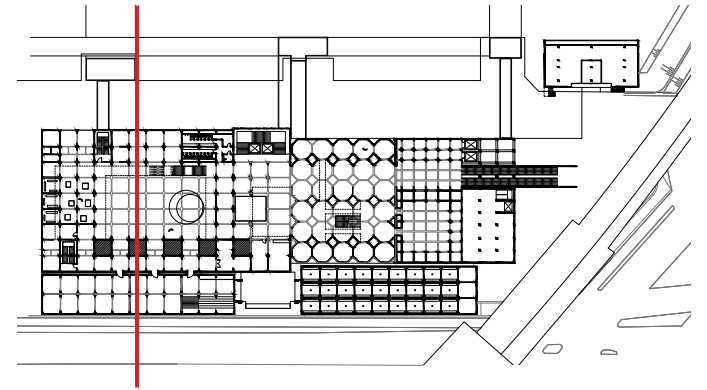
Floorplan +28.50  
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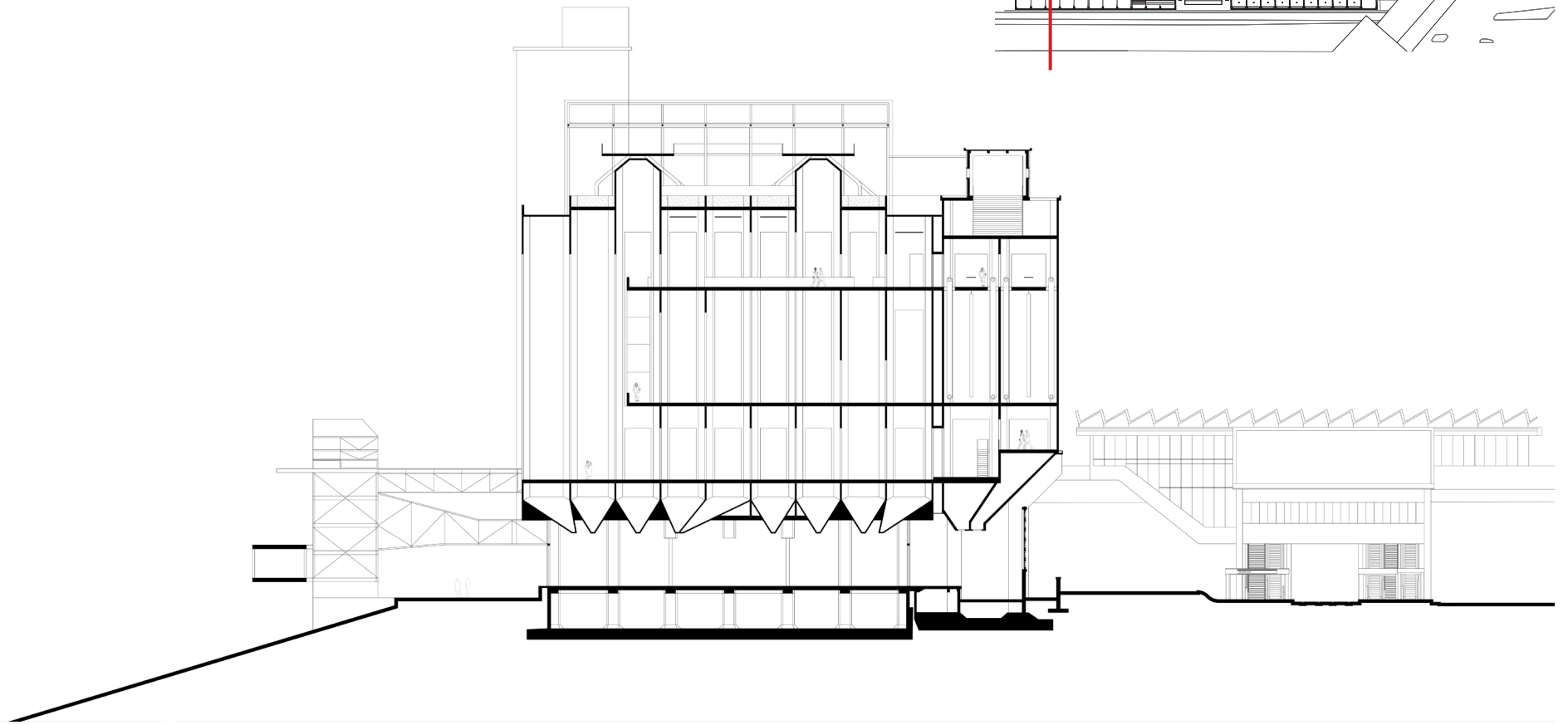
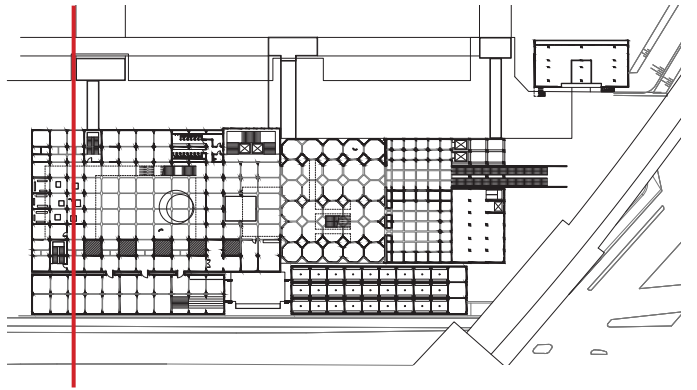


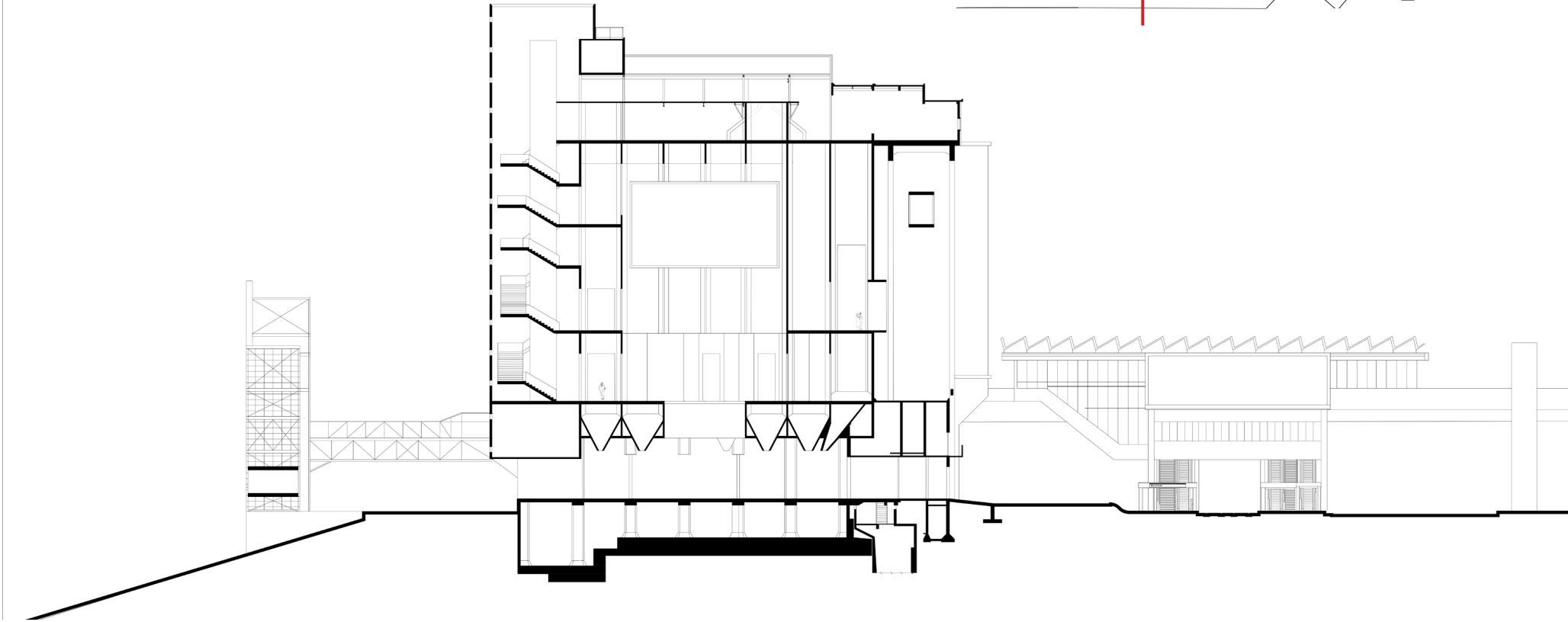
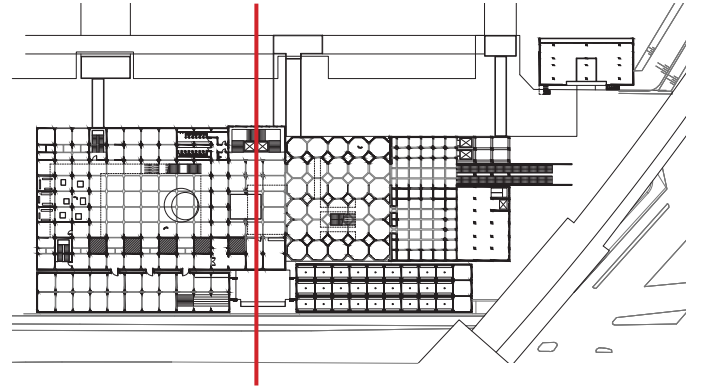


Section A-A'  
Scale: 1:200







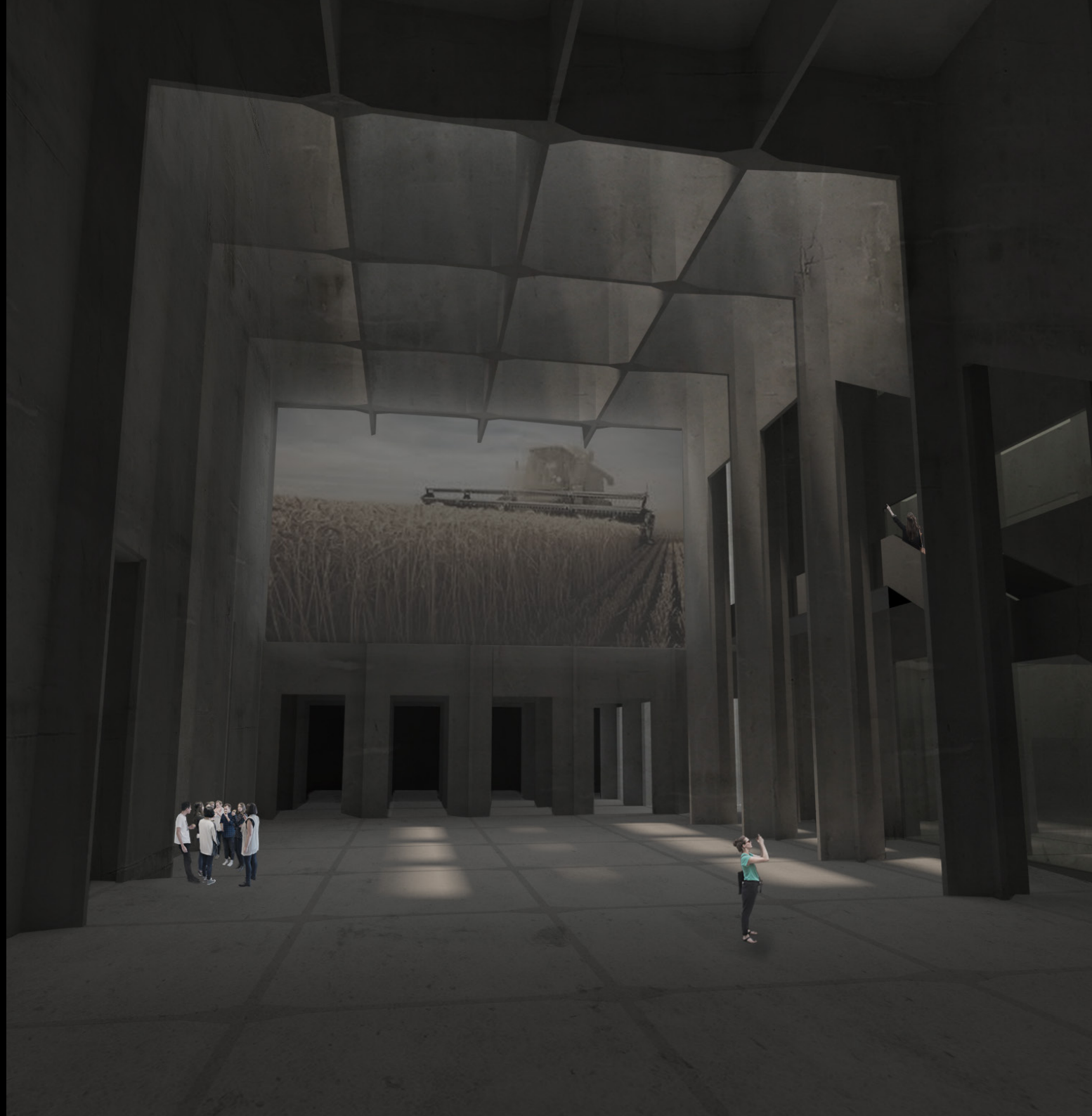




North Facade  
Scale: 1:200

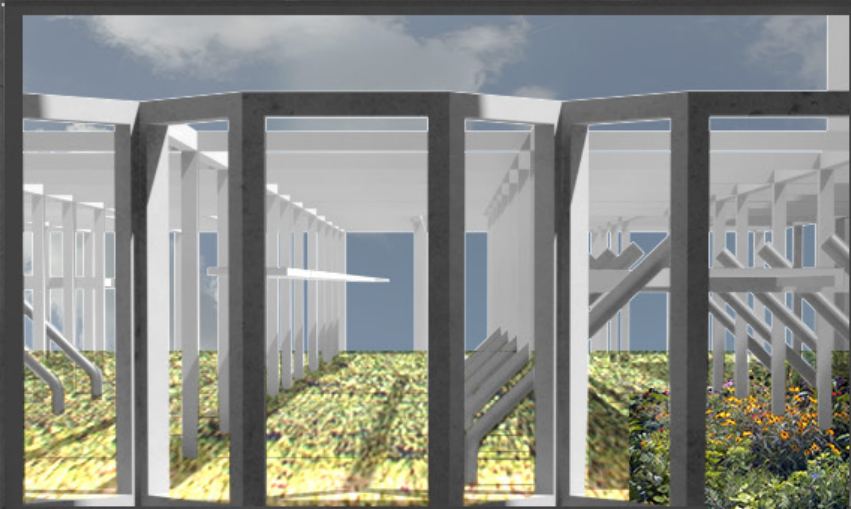


North Facade  
Scale: 1:200





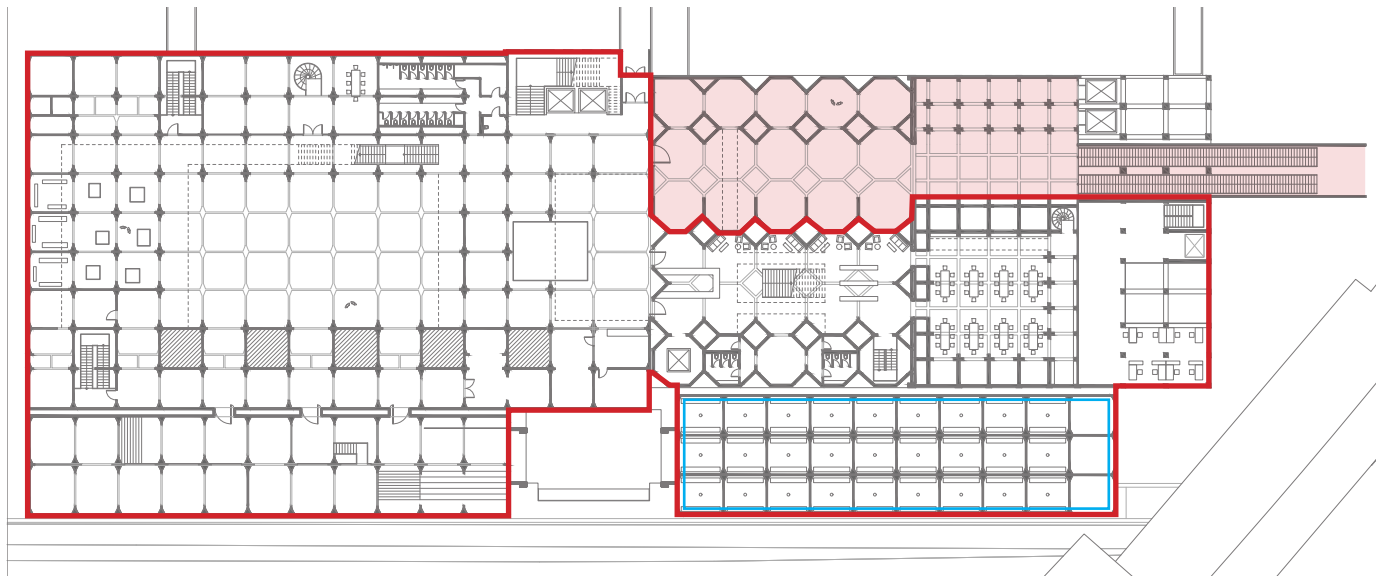
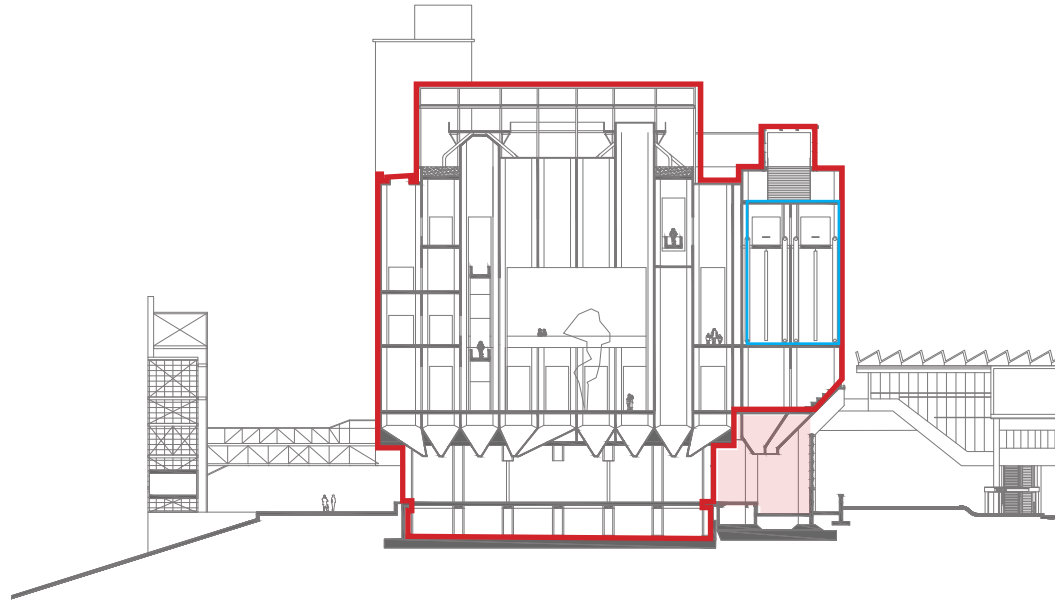




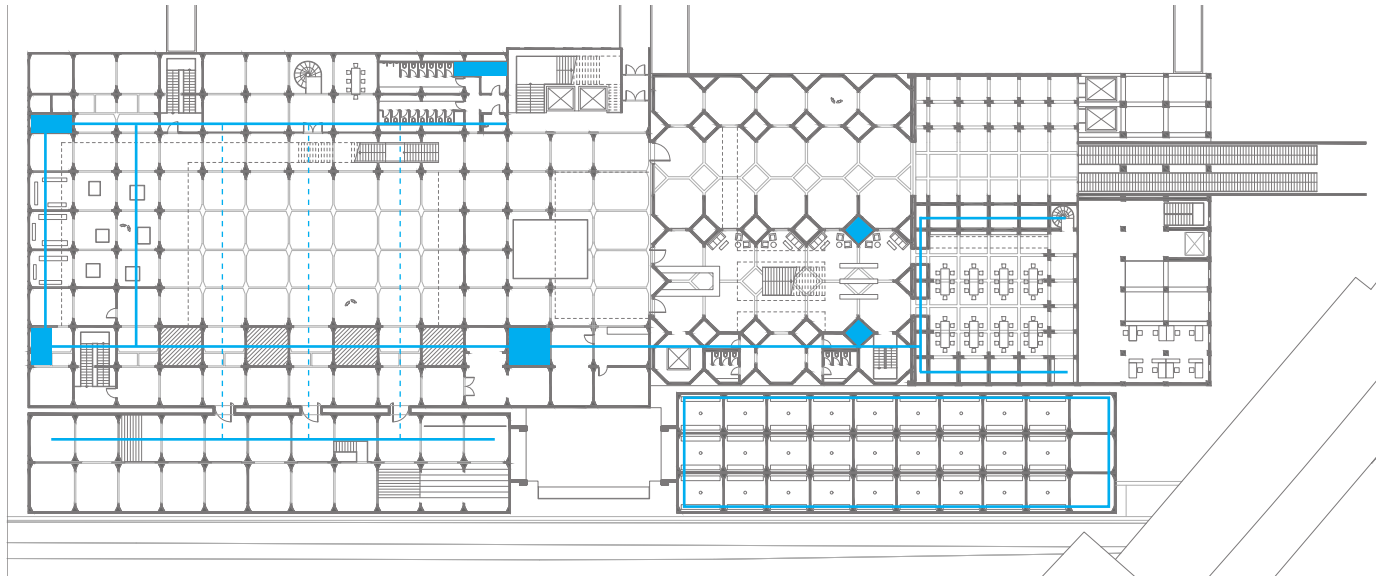
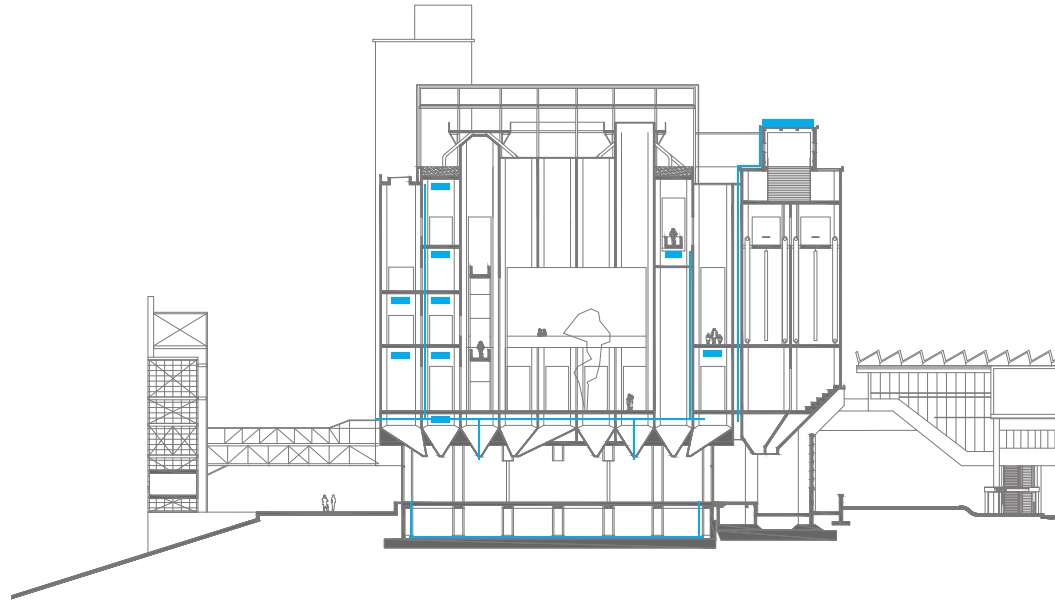


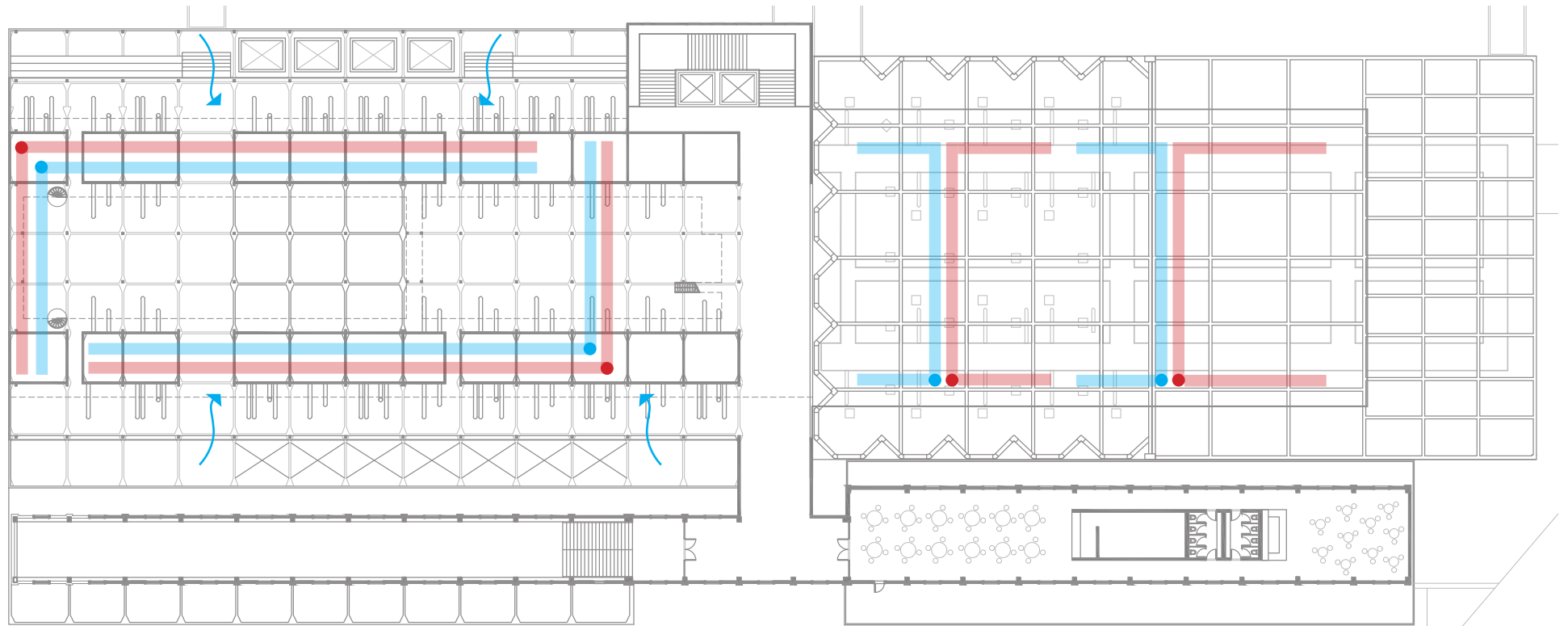
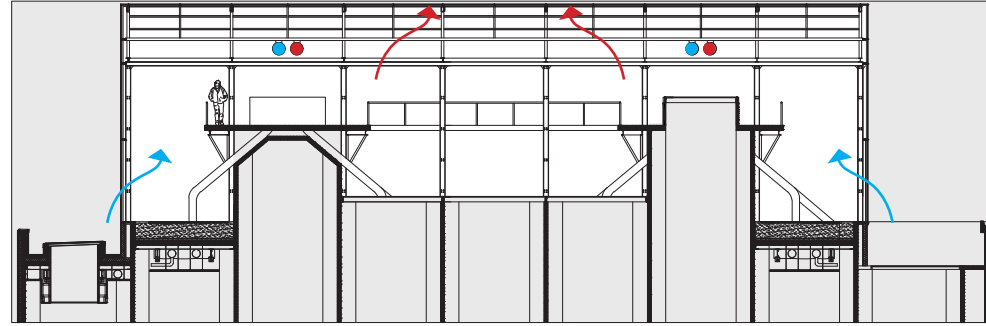


# Thermal insulation



# Installation network





# Sustainability

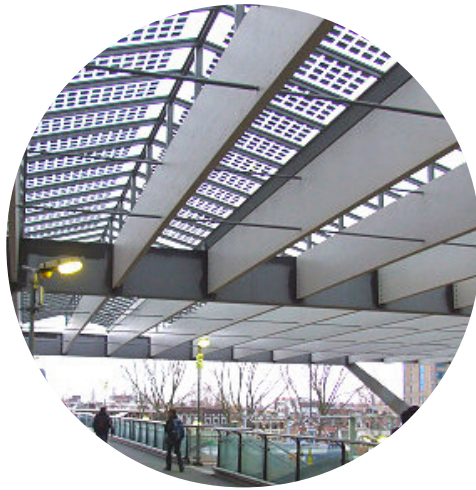


Photo-voltaic panels - shading

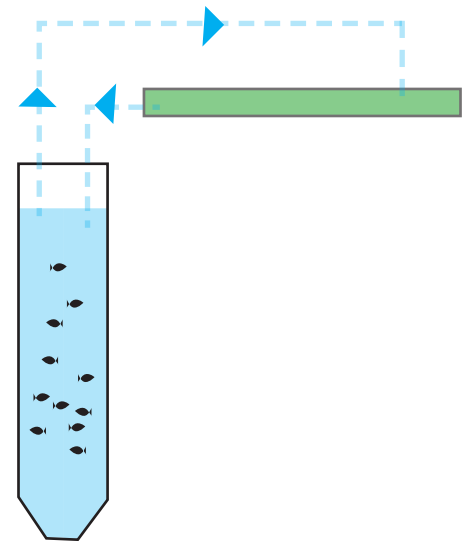
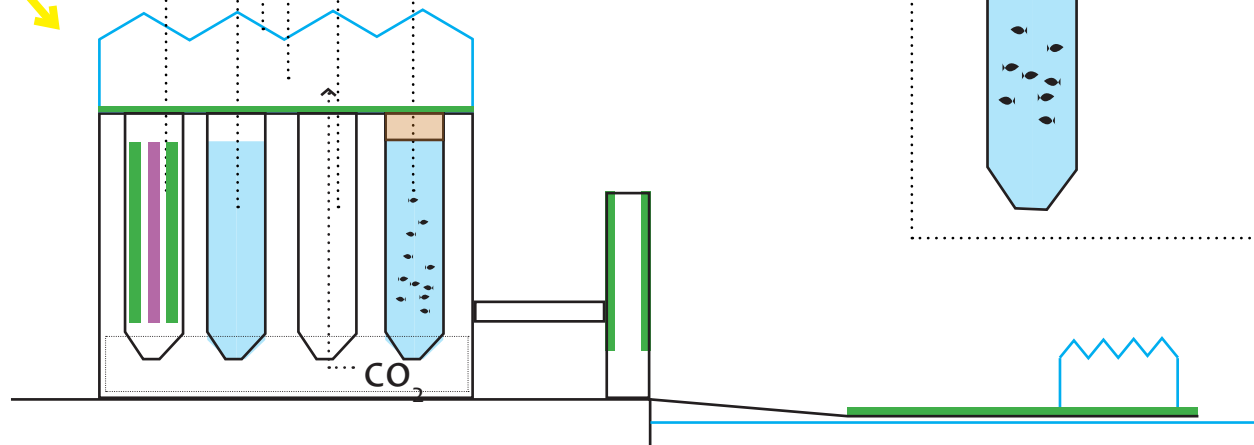
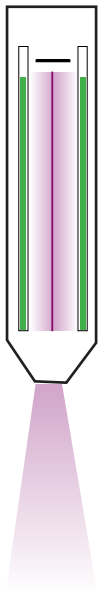
Heat collection / storage

Rainwater collection

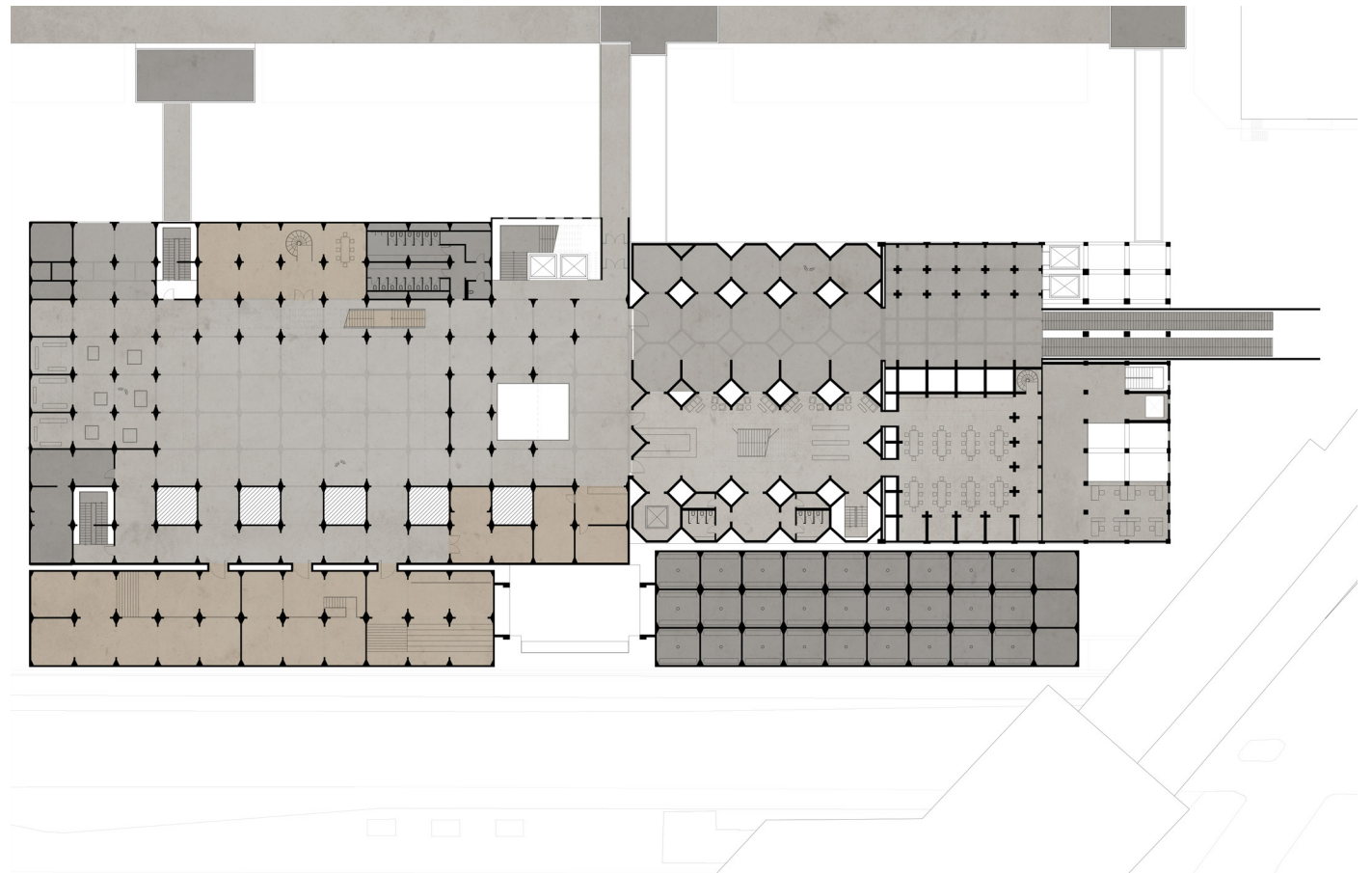
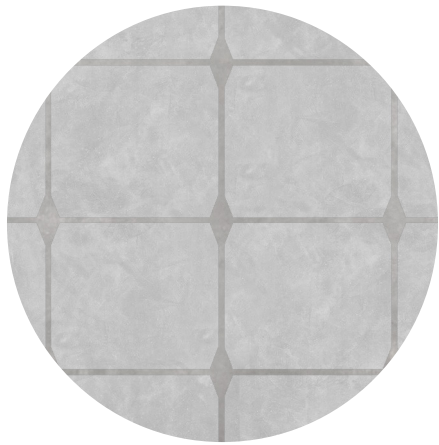
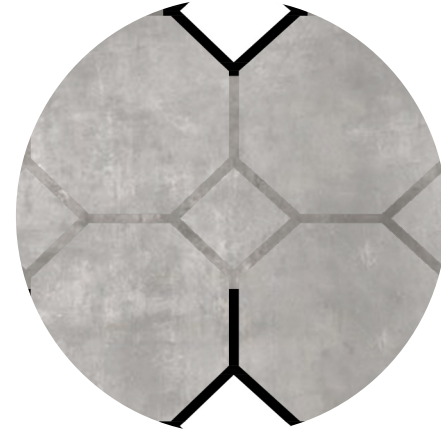
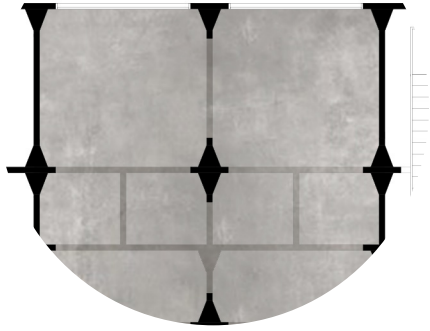
CO<sub>2</sub> redistribution

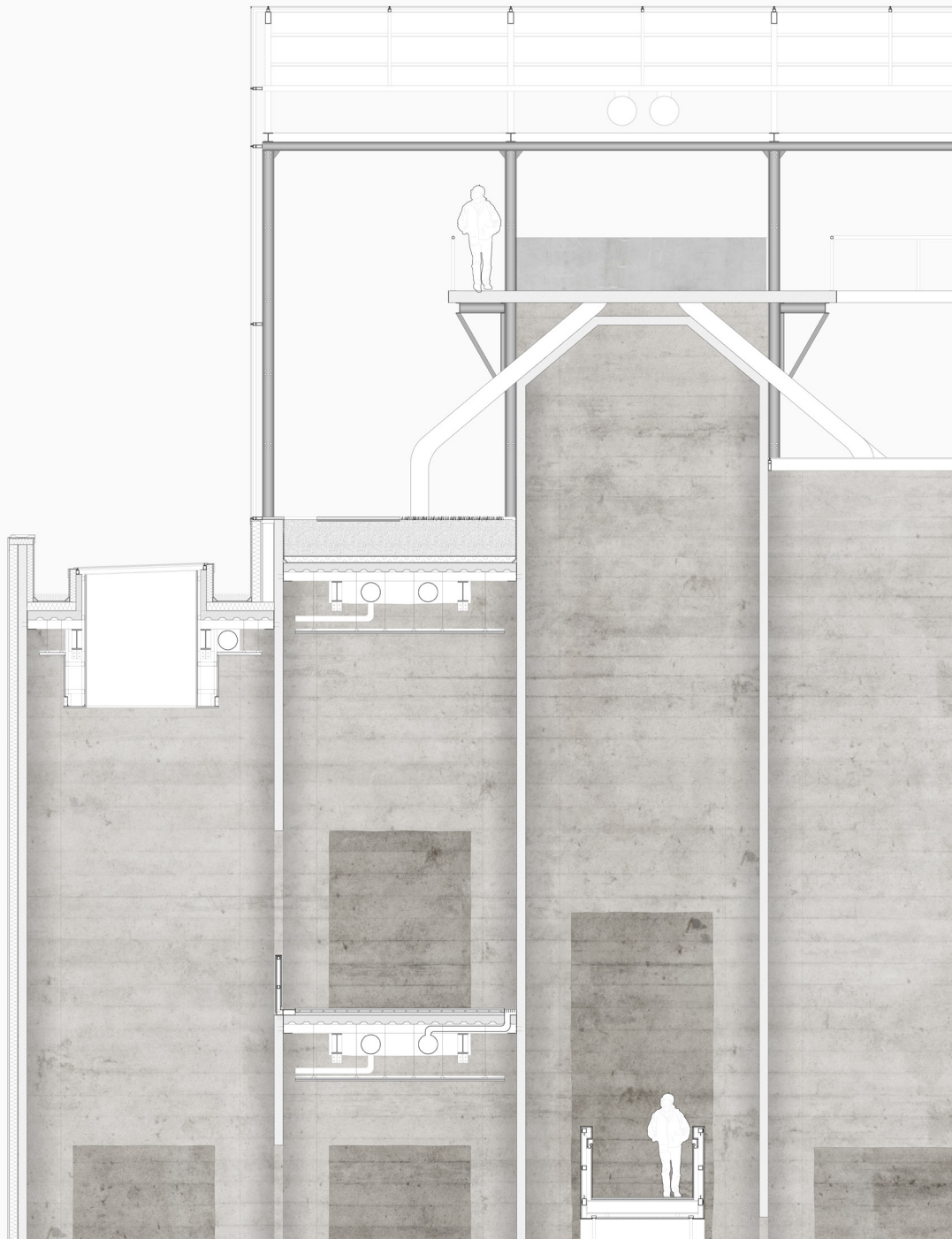
Agriculture by LED

Aquaponic cycle



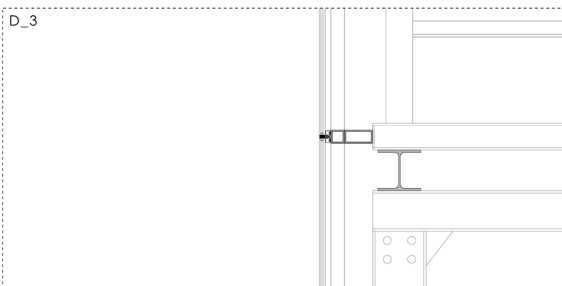
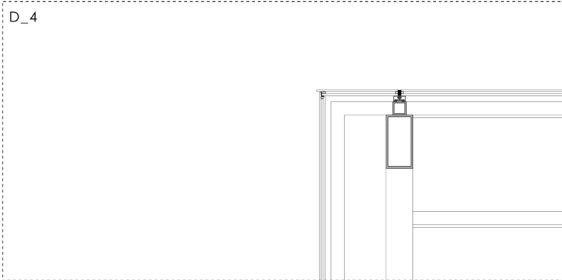
# Floor materials





Details 1:5

- 1 Portland cement lime stucco,  
thermal insulation 15mm,  
waterproofing layer,  
existing concrete walls 15mm,  
thermal insulation 10mm,  
vapour control layer,  
waterproof membrane
- 2 Gravel,  
waterproof membrane,  
thermal insulation 15mm,  
vapour control layer,  
concrete slab,  
steel decking,  
steel I beams 160x82 mm
- 3 Laminated safety glass to roof light; (2x5 mm float glass)
- 4 Steel beams 50x70
- 5 U shaped support studs
- 6 Plasterboard
- 7 Steel I beam 340x170
- 8 Steel fixing (connection between main floor steel beam and existing concrete wall)
- 9 Steel L shaped beams 310x160 (connection between secondary floor beams and existing concrete walls)
- 10 Light fixture
- 11 Soil with plantings,  
filter fabric,  
reservoir layer,  
moisture retention layer,  
aeriation layer,  
concrete slab,  
steel decking,  
steel I beams 160x82 mm



Details 1:5

- 1 Aluminium sheet, adhesive fixed to 20mm plywood
- 2 Support studs
- 3 Steel beams 75x75 (part of the supporting truces)
- 4 Extruded aluminium handrail
- 5 Wood flooring,  
plywood 20 mm,  
soft fibreboard
- 6 Steel beams 100x75 (part of the supporting truces)
- 7 Steel tread support 235x60
- 8 Ceiling support
- 9 Light fixture
- 10 Plywood 20 mm,  
wood panels
- 11 Electric services duct
- 12 Wood flooring,  
floor heating (poure method),  
insulation,  
concrete slab,  
steel decking,  
steel I beams 160x82 mm
- 13 Ventilation duct (output)
- 14 Steel grill

