



THE BOUNDLESS MUSEUM

Intercultural exchanges across boundaries

PUBLIC BUILDING GRADUATION STUDIO

P5 Presentation

RESEARCH / BACKGROUND

CONCEPT / MANIFESTO

BUILDING / DESIGN

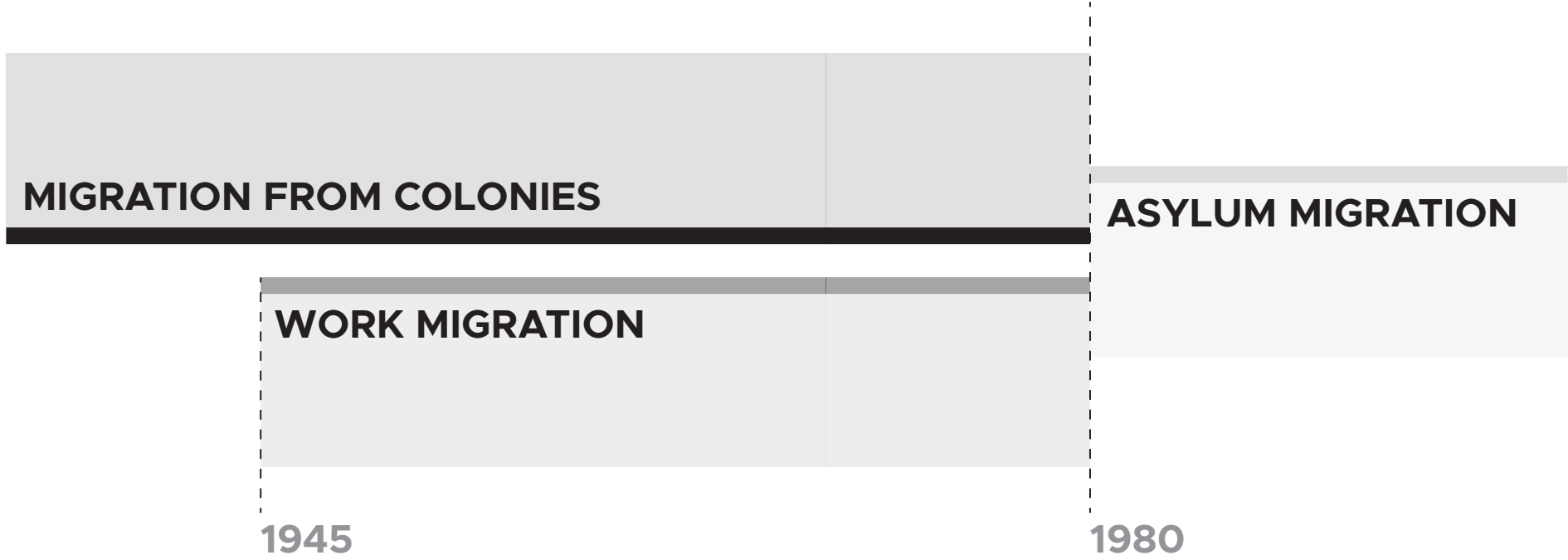
STRUCTURE / SUSTAINABILITY

TOUR / PERSPECTIVES

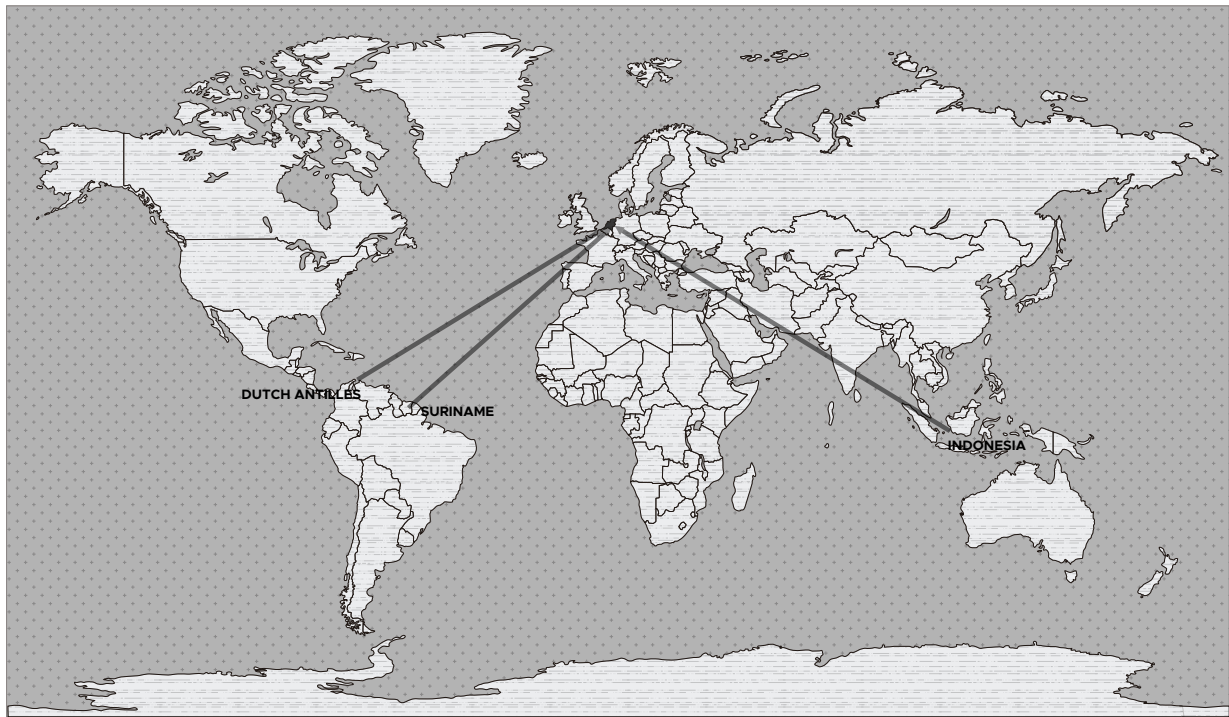
RESEARCH / BACKGROUND

RESEARCH BACKGROUND

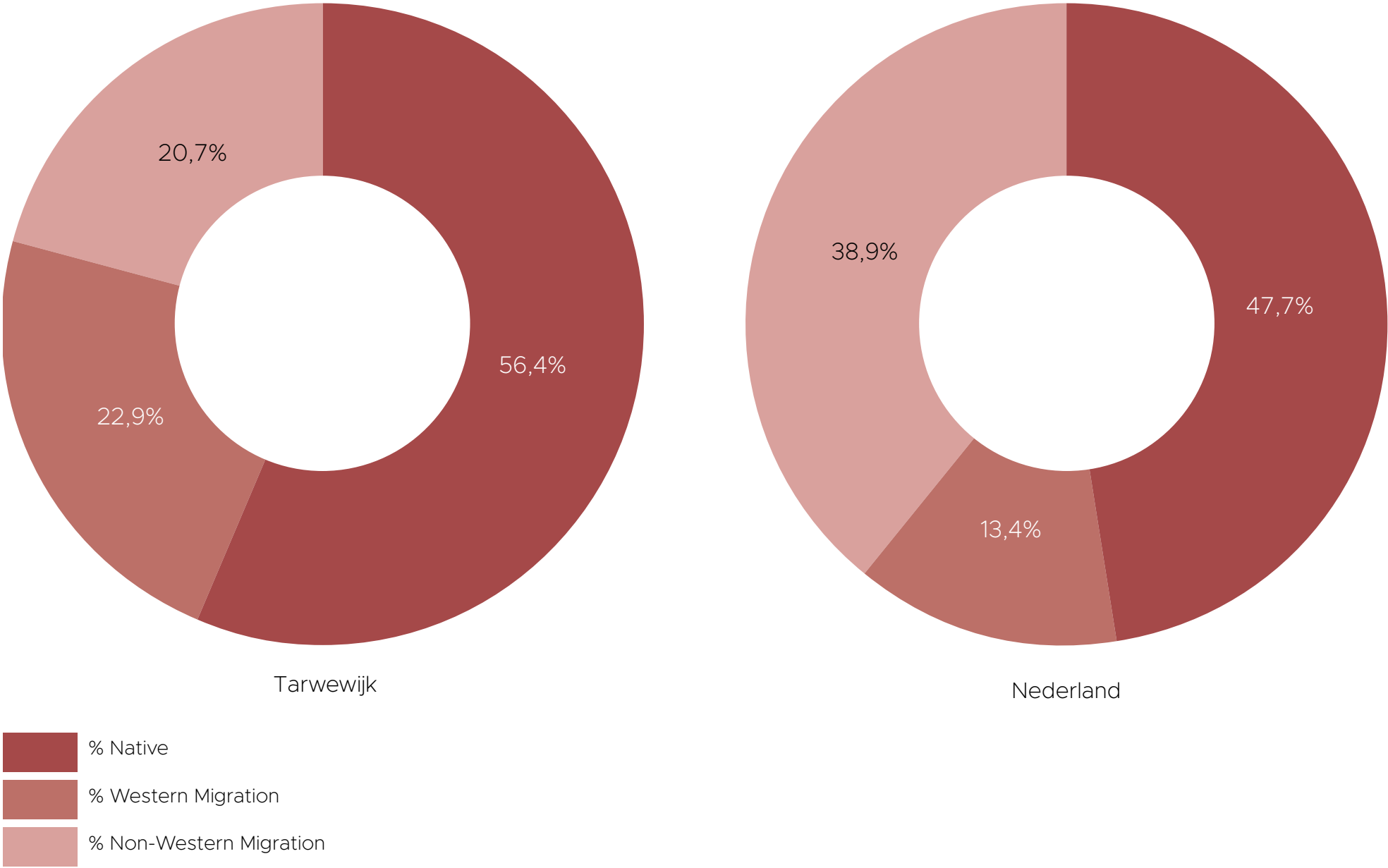
Rotterdam as an arrival city



Timeline of migration in Rotterdam
(Source: P1 "Power" Research, Group 4)



Colonial migration to the Netherlands
(Source: P1 "Power" Research, Group 4)

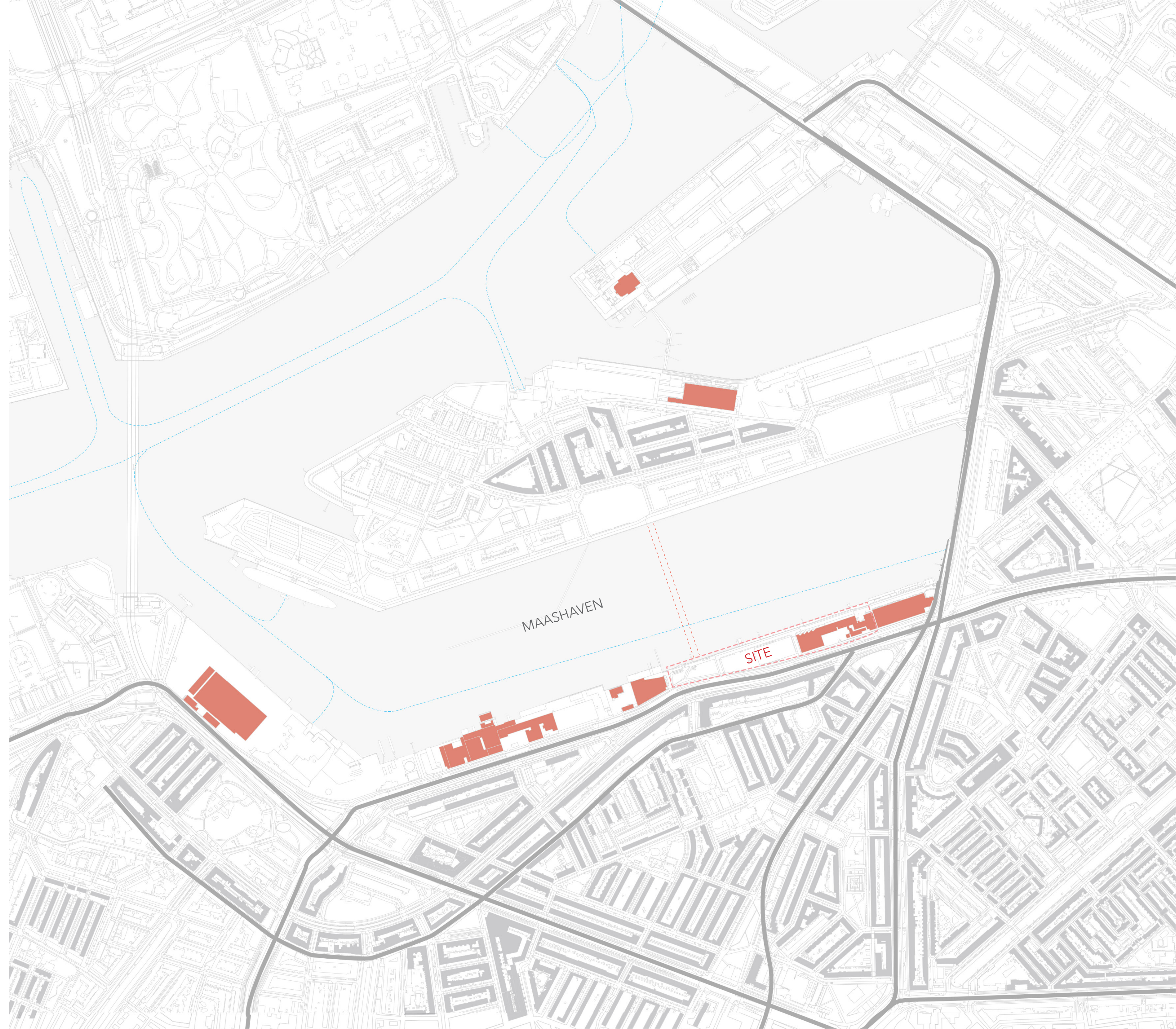
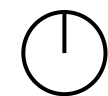


Proportion of native and migrants in Tarwewijk & Netherlands (2020)
(Source: onderzoek010.nl)

TARWEWIJK

Location of the site

Site Plan 1:1500



TARWEWIJK

As a dockworker neighborhood



AVR (1912)



WASTE

Meneba Factory (1915)



PRODUCTION

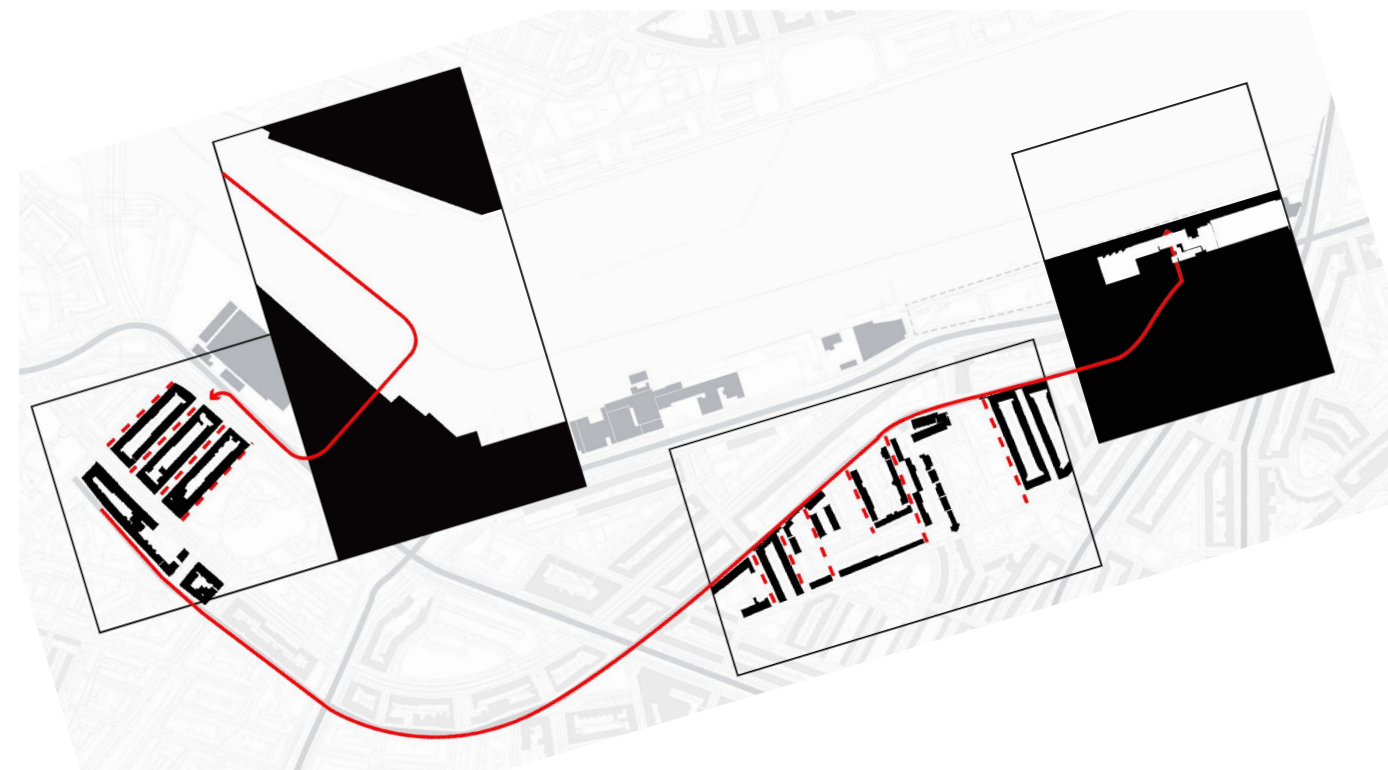
Quaker Oats (1935)



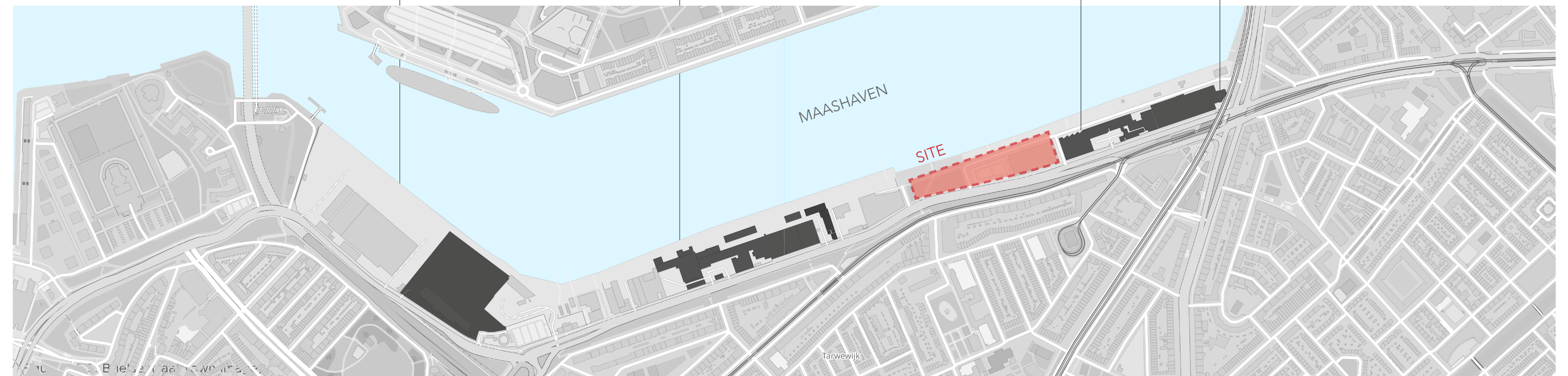
Maassilo (1911)



STORAGE



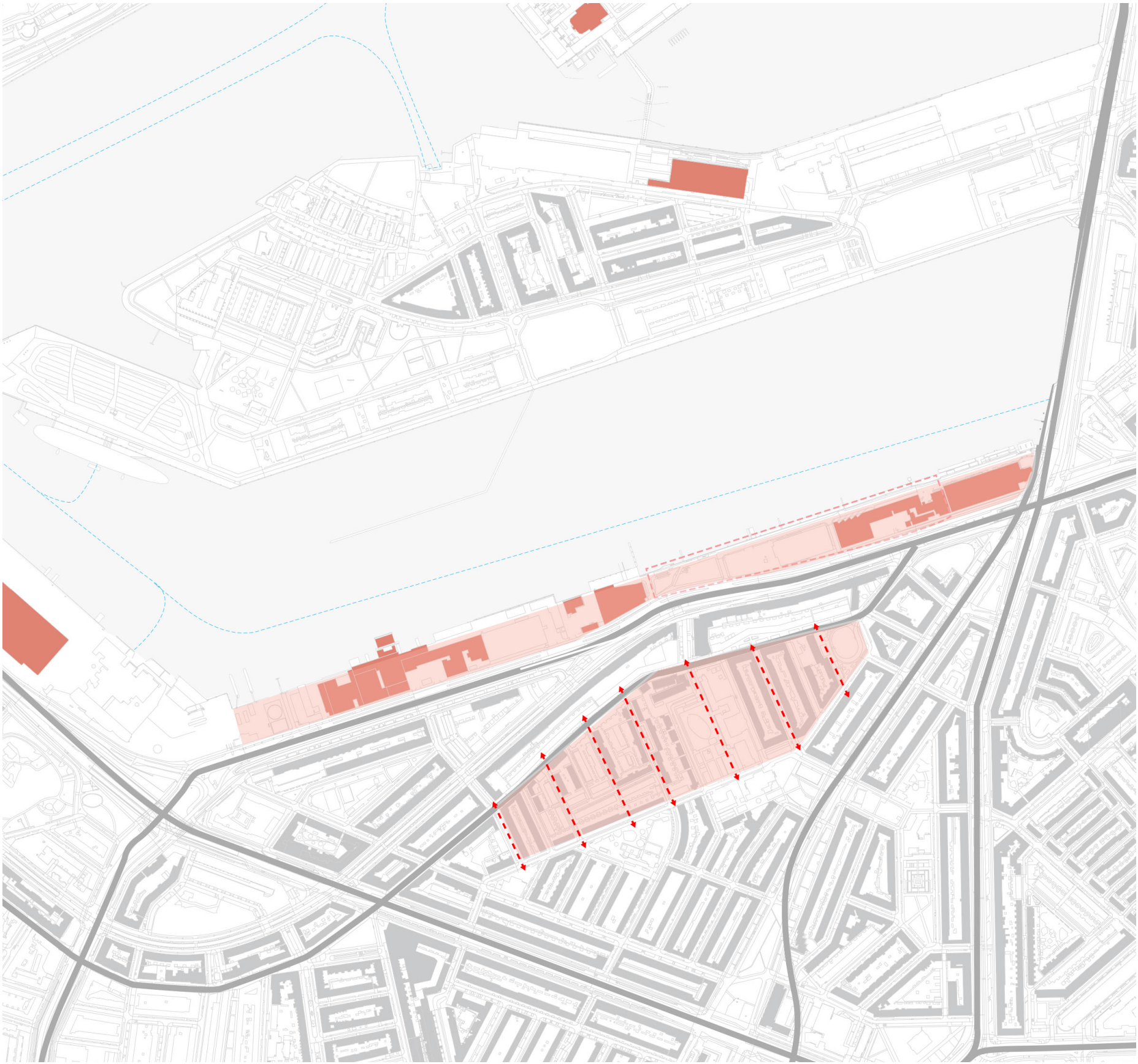
Labour migration from 1920s-60s



Grain-based Economy in Tarwewijk
(Source: P1 "Power" Research, Group 4)

SITE CONDITION

Physical and perceived boundaries around Tarwewijk



Site Plan 1:1500



Events/Routing across boundaries

- Industrial/Cultural points
- Open Space
- Circulation



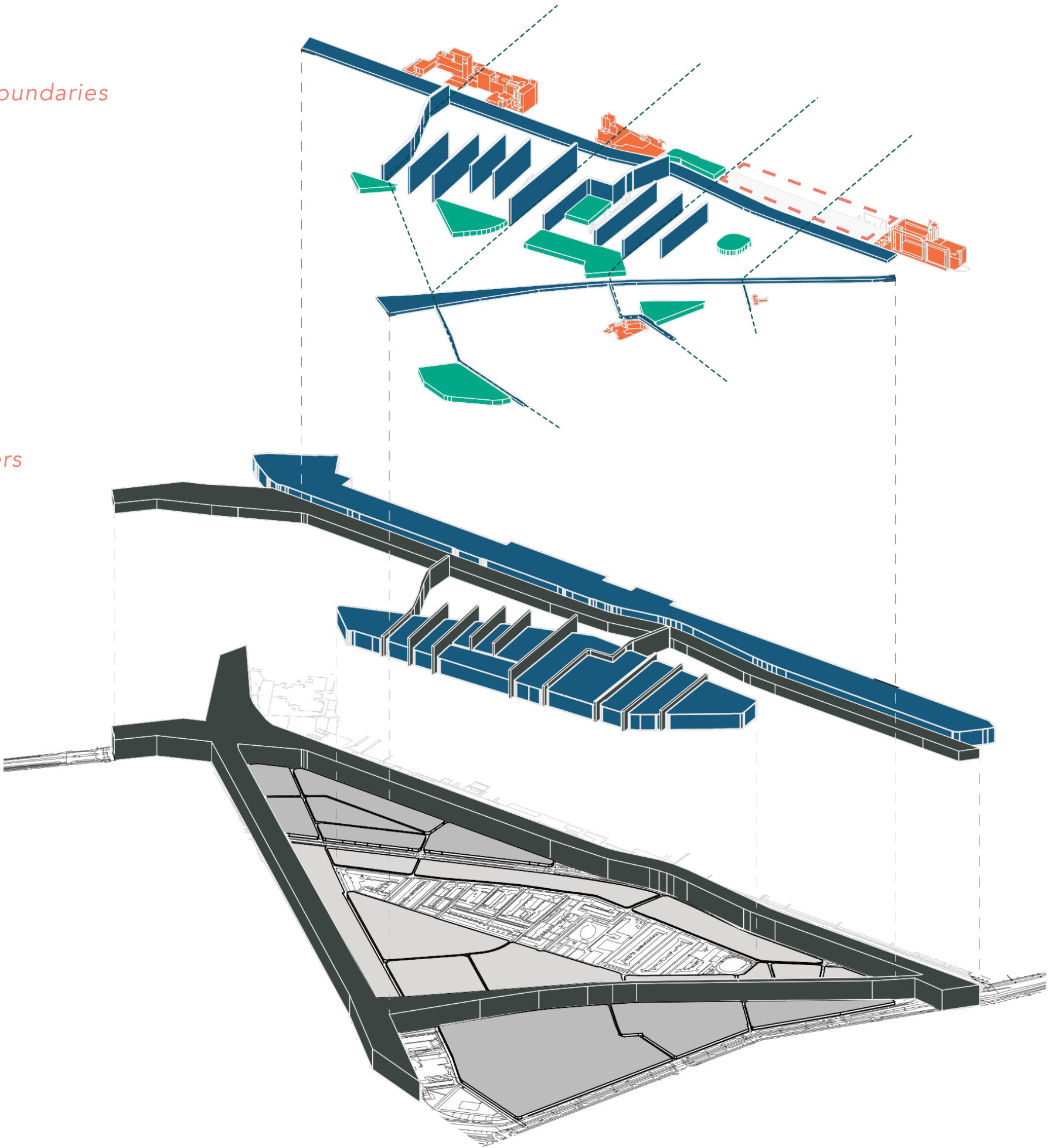
History of migrant workers

- Secondary Streets
- Tarwebuurt & Industry

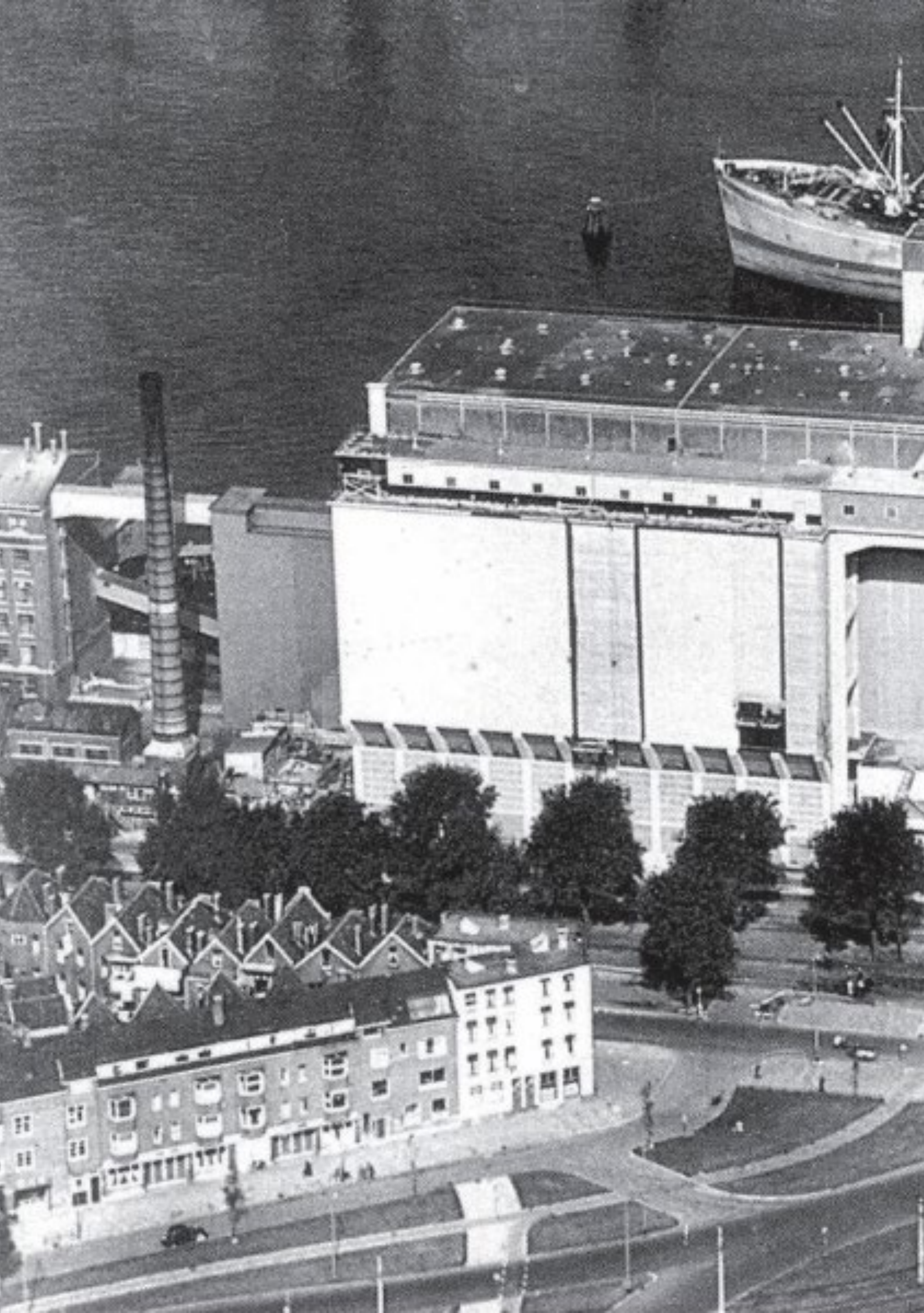


Existing boundaries

- Primary Network
- Fragmented Districts



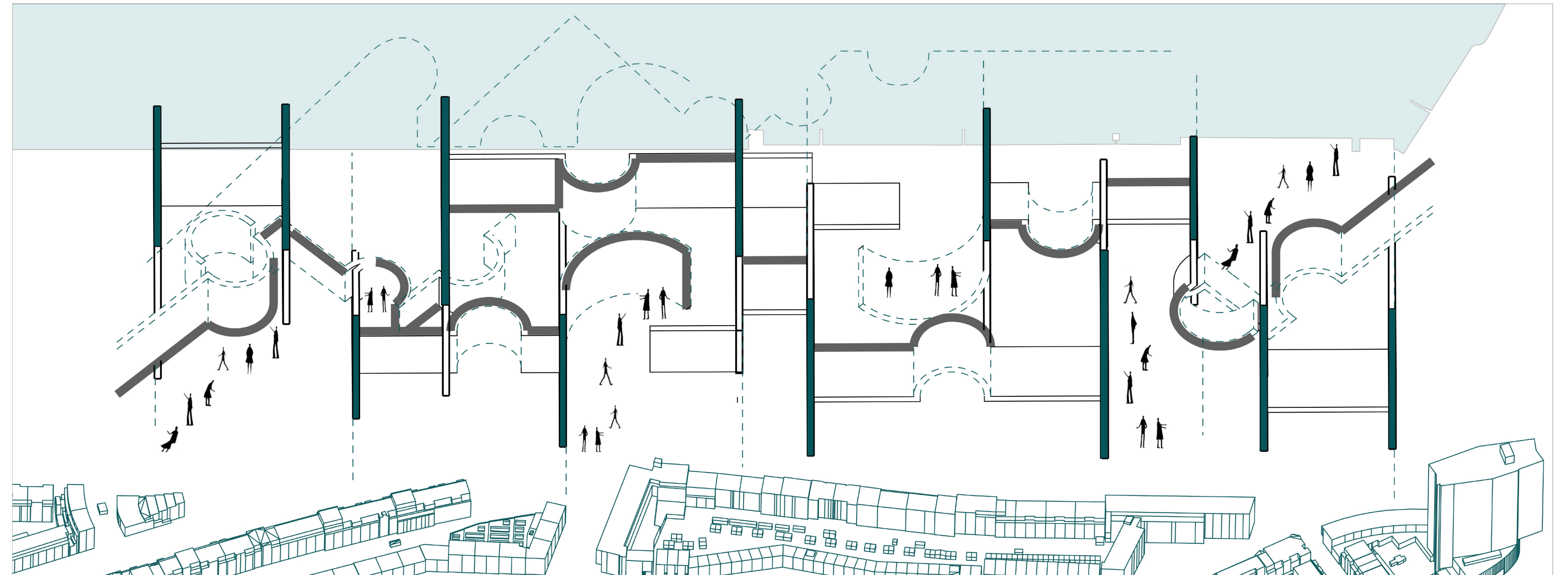
Analysis of Tarwewijk in layers



How can a local art museum facilitate intercultural exchanges beyond boundaries in Rotterdam?

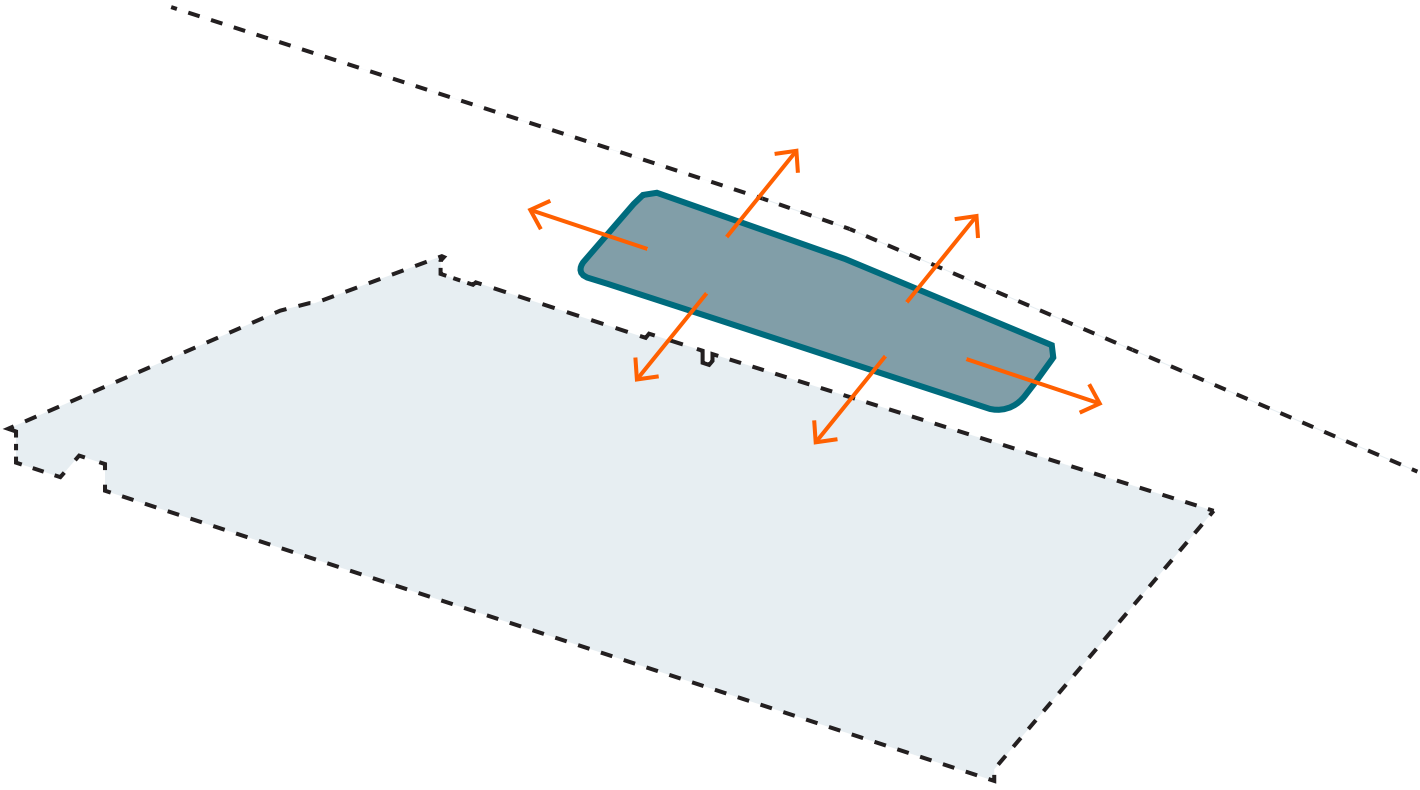
MANIFESTO

Boundless movement across the building

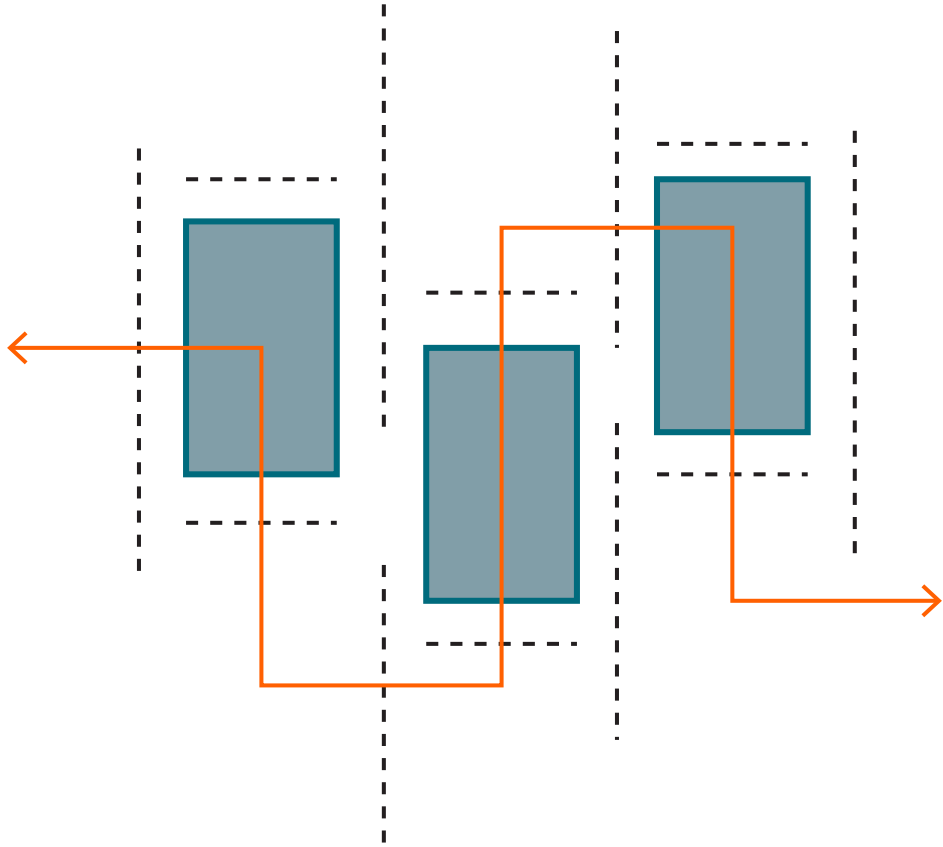


*The Boundless Museum:
intercultural exchanges beyond boundaries*

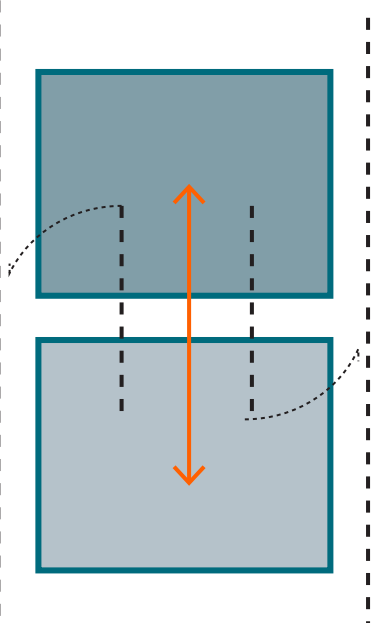
**CONCEPT OF
"BOUNDLESSNESS"**



Site connection



Flexible routing across walls

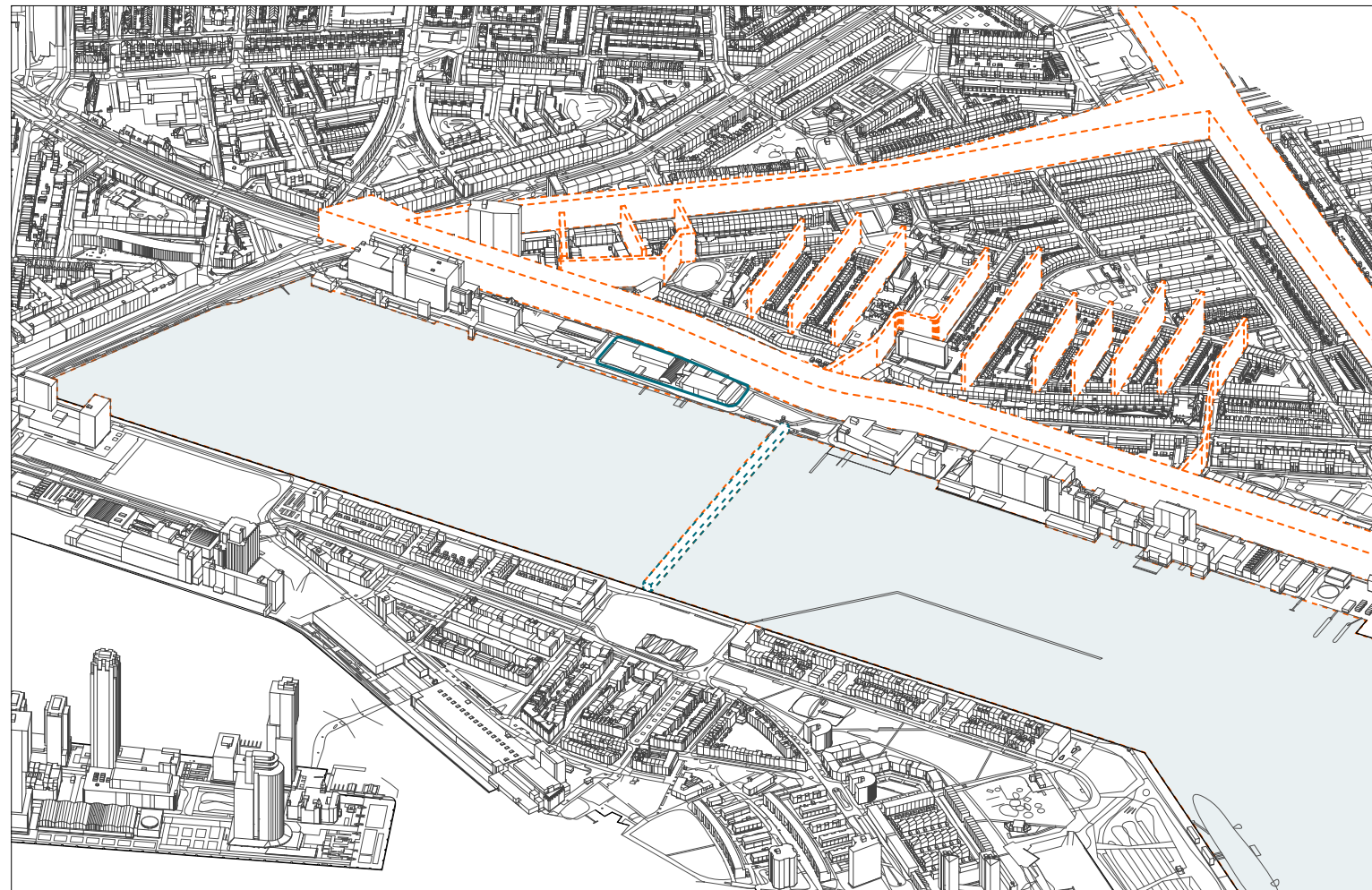


Flexible merge/separation of space

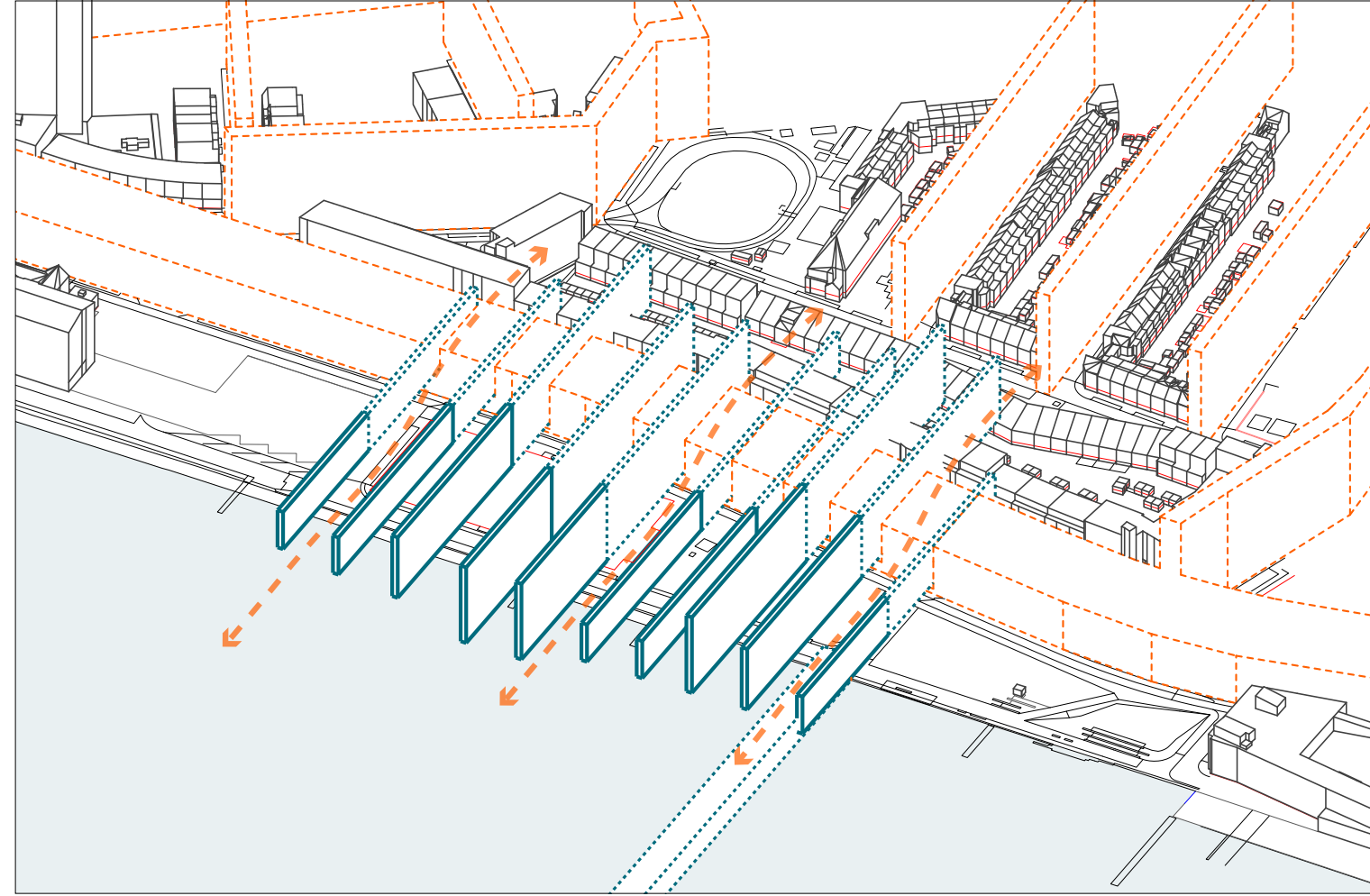
**SITE CONNECTION:
BREAKING THROUGH SITE BOUNDARIES**

DESIGN DEVELOPMENT

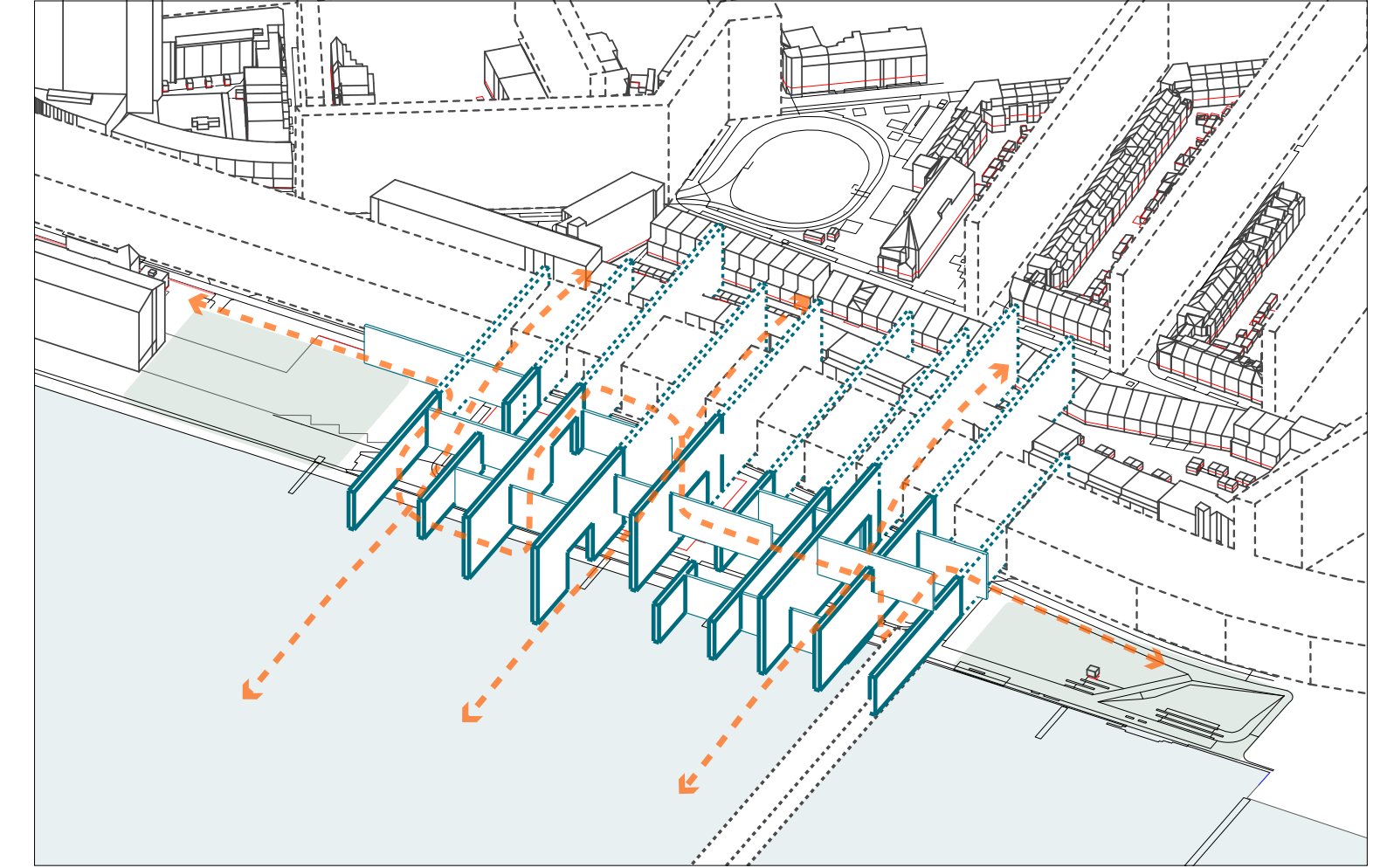
From site conditions to architectural form



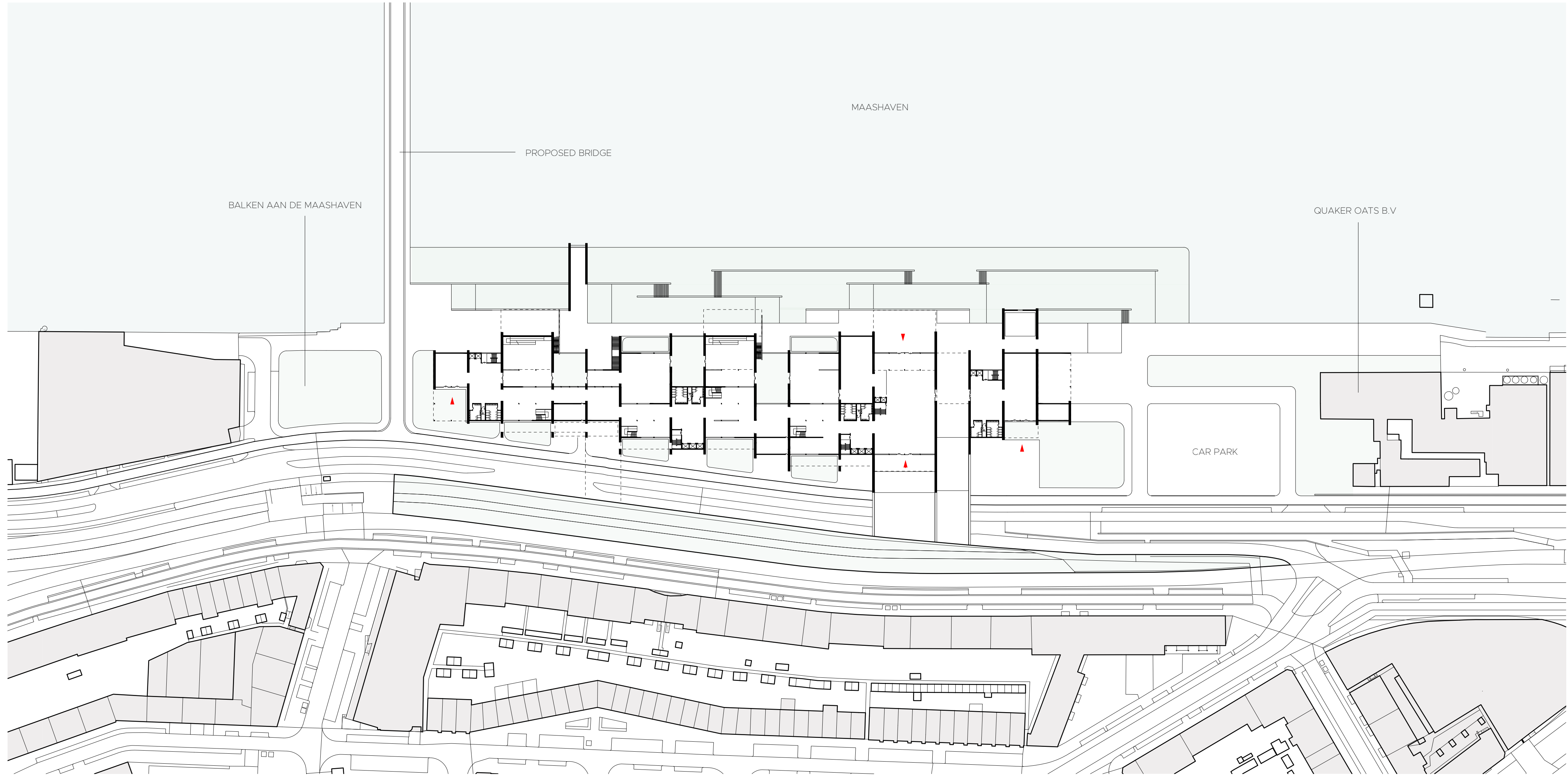
Existing boundaries due to traffic network and dyke



Relinking the site to the south and extending it to the harbour

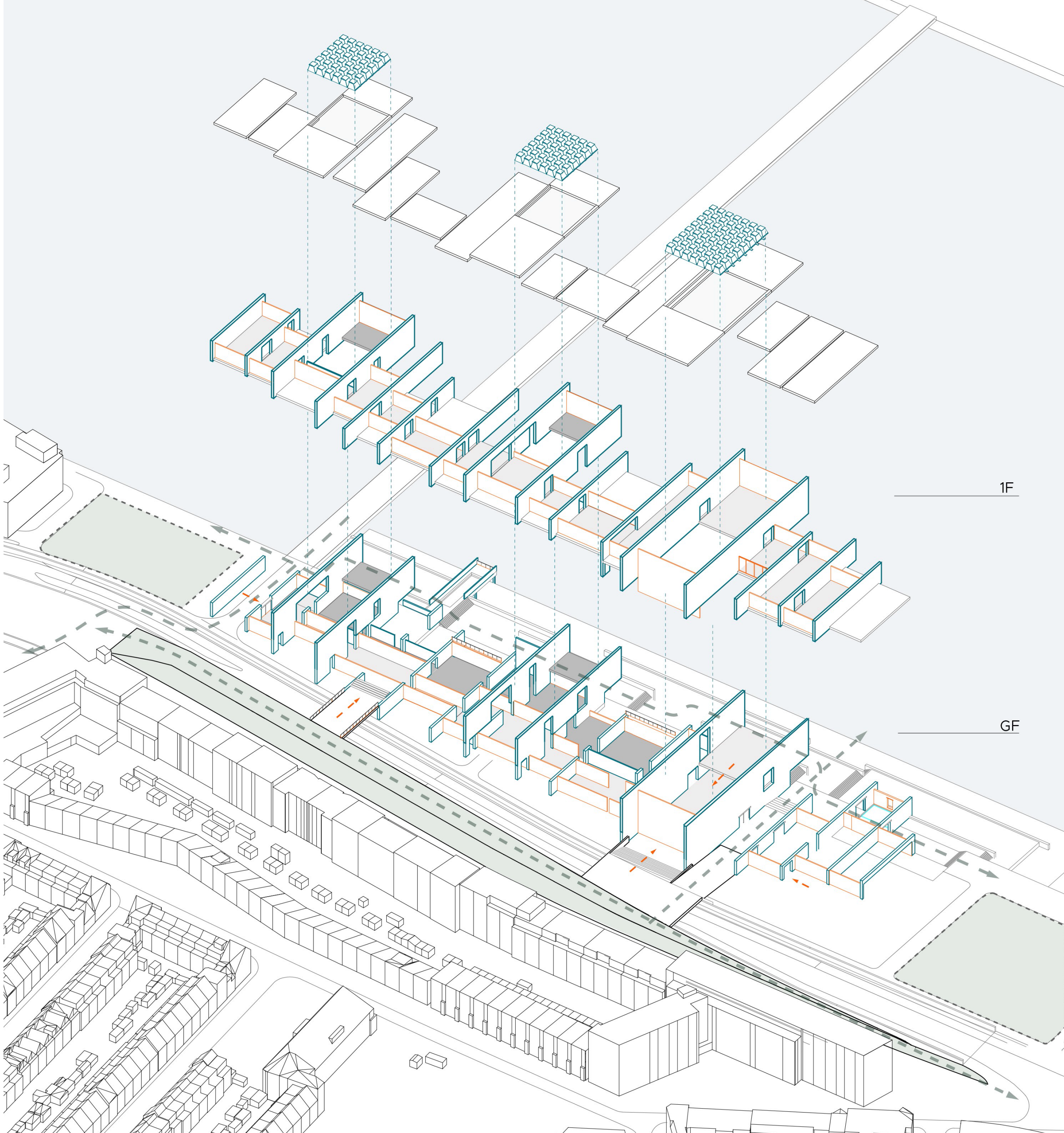


Directing EW and NS orientated interaction lines



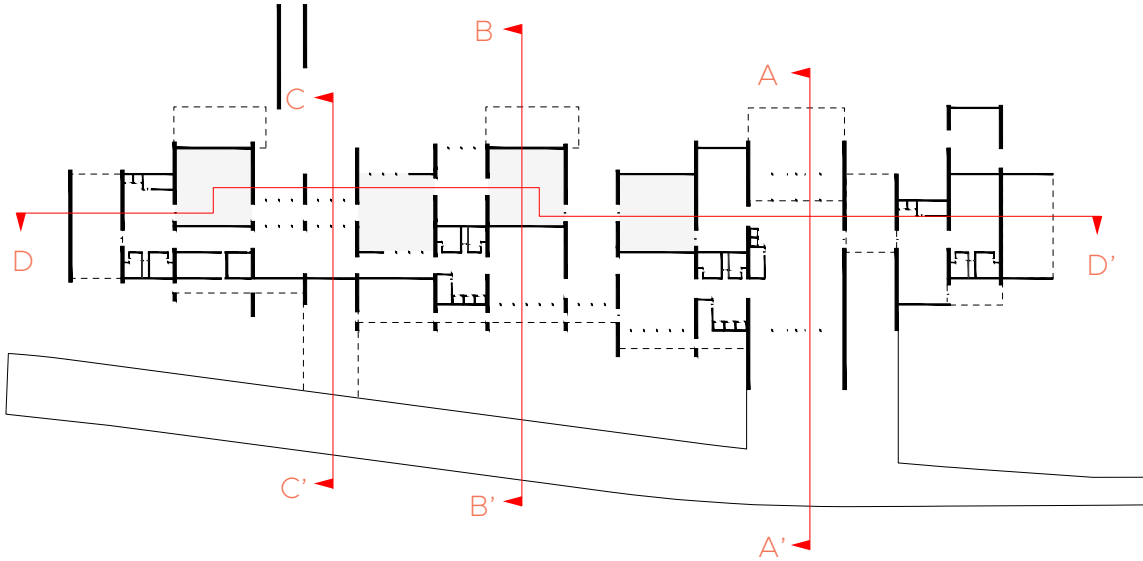
CONTEXT/CIRCULATION

- Public / Free Area
- Exhibition / Paid Area
- Outdoor Circulation

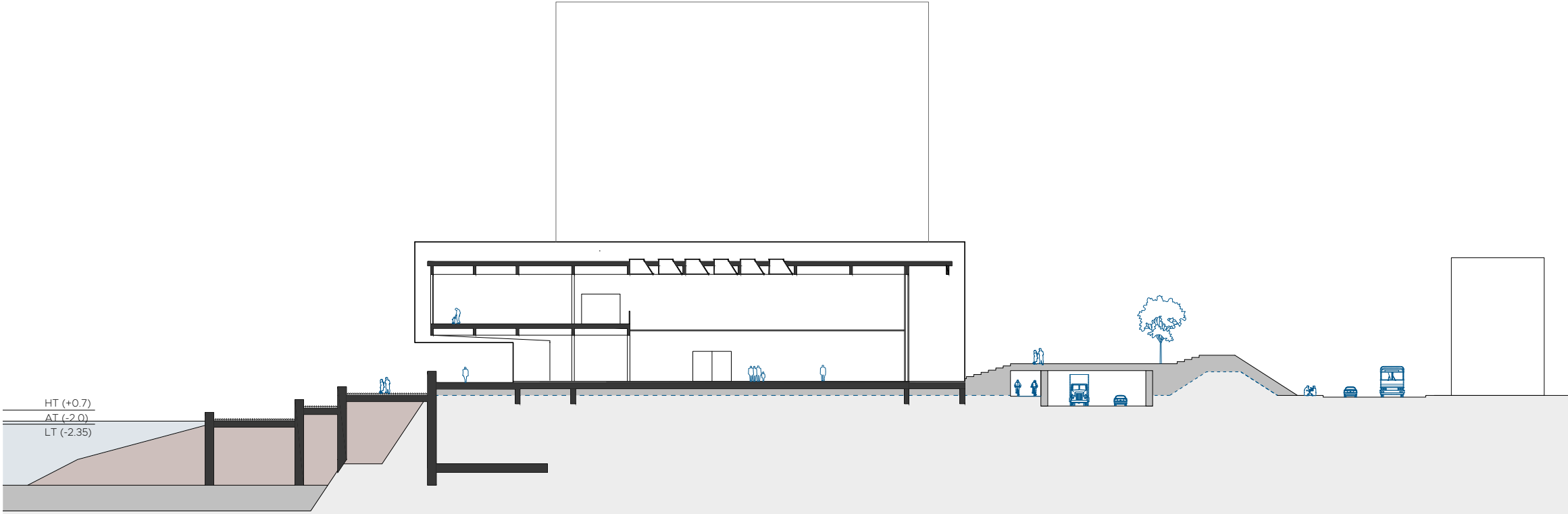


CONTEXTUAL BOUNDARIES

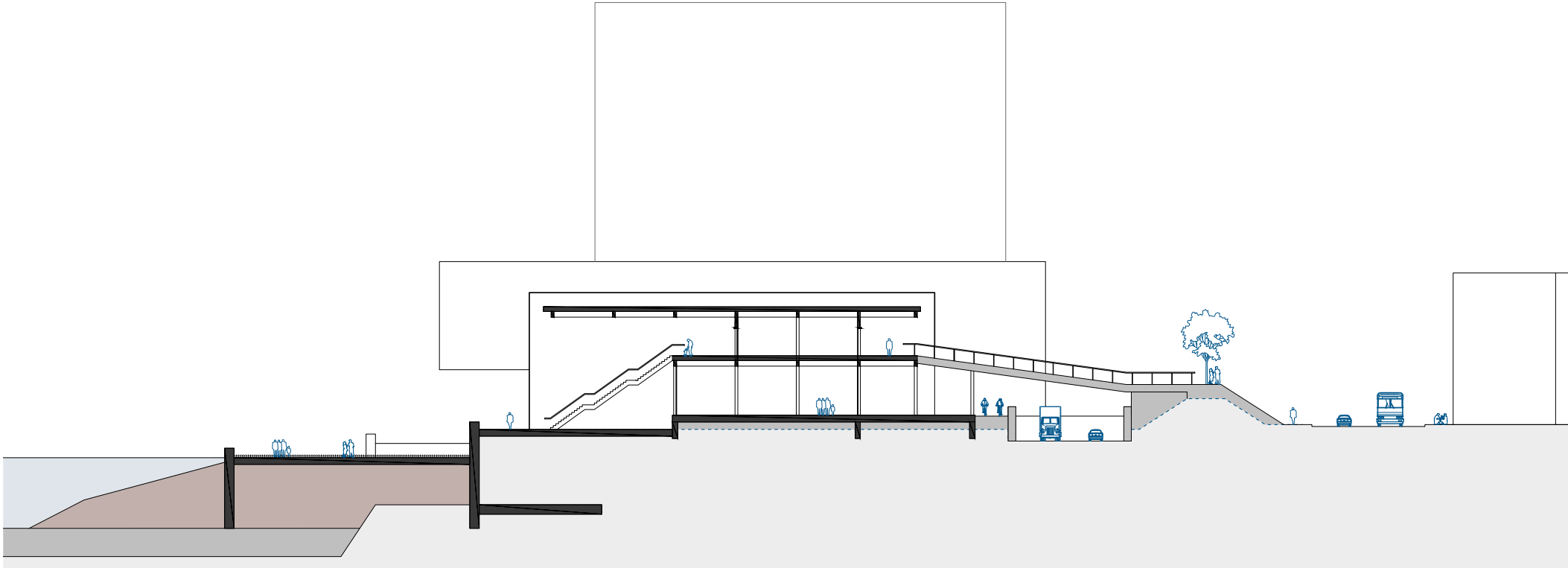
Tidal park and dike reinforcement



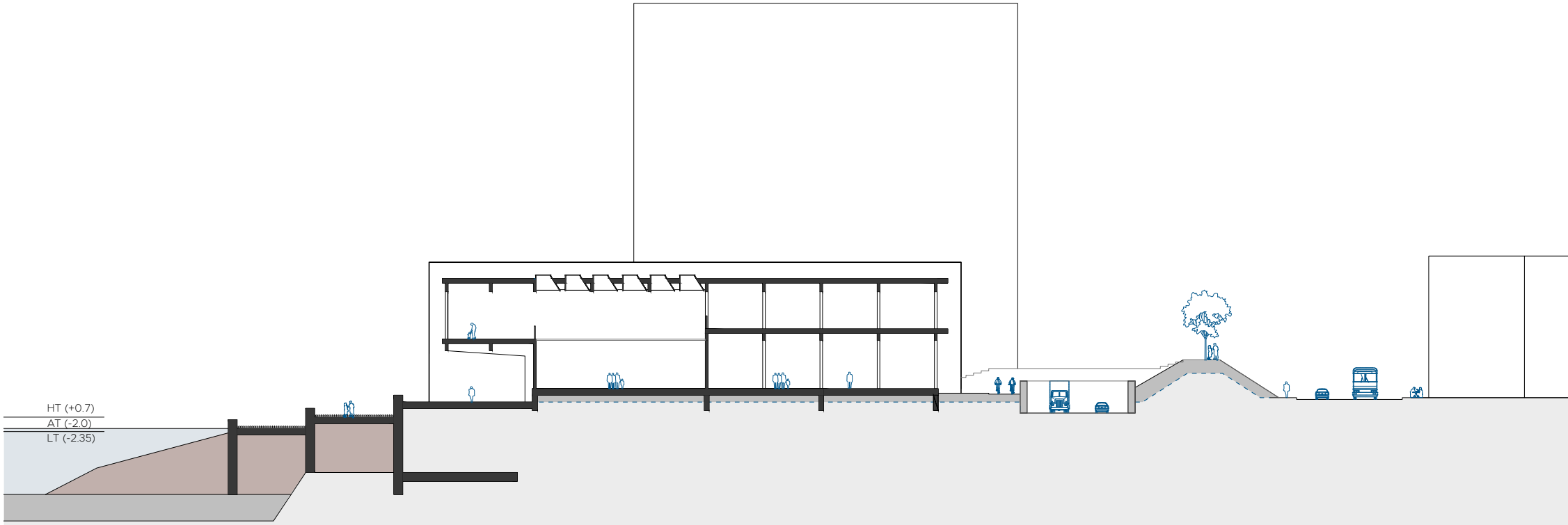
Section AA' 1:600



Section CC' 1:600



Section BB' 1:600





*Harbourfront
promenade*

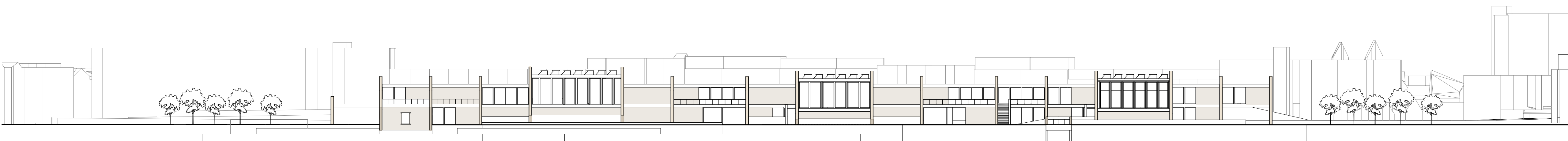
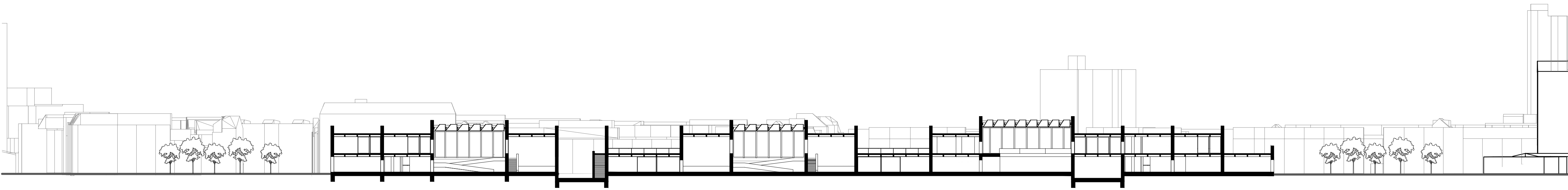
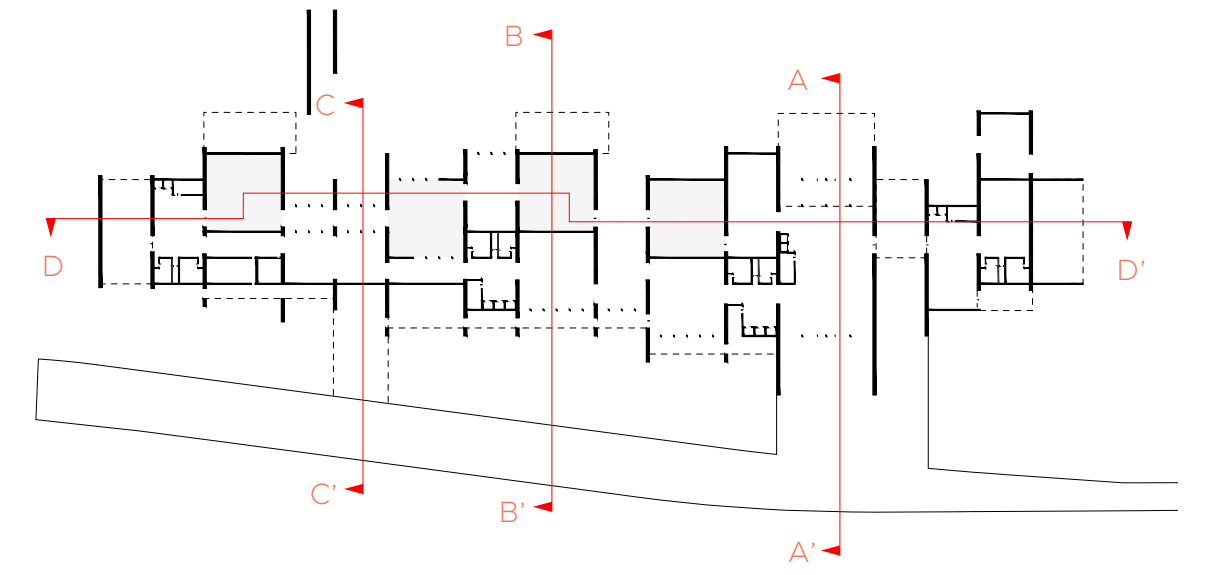


*Southern
connection
to the dyke*

**BUILDING DESIGN:
TRAVELLING THROUGH WALLS**

THROUGH THE WALLS

A spatial journey through transformations



PROGRAM ARRANGEMENT

From site conditions to architectural form

- Exhibition (Paid)
- Exhibition (Free Entry)
- Transition Area
- Public Service
- Multipurpose/Library/Artist Studios
- Offices/Retail
- Toilets/Storage/Mechanical Rooms

OFFICE, MANAGEMENT & STUDIOS

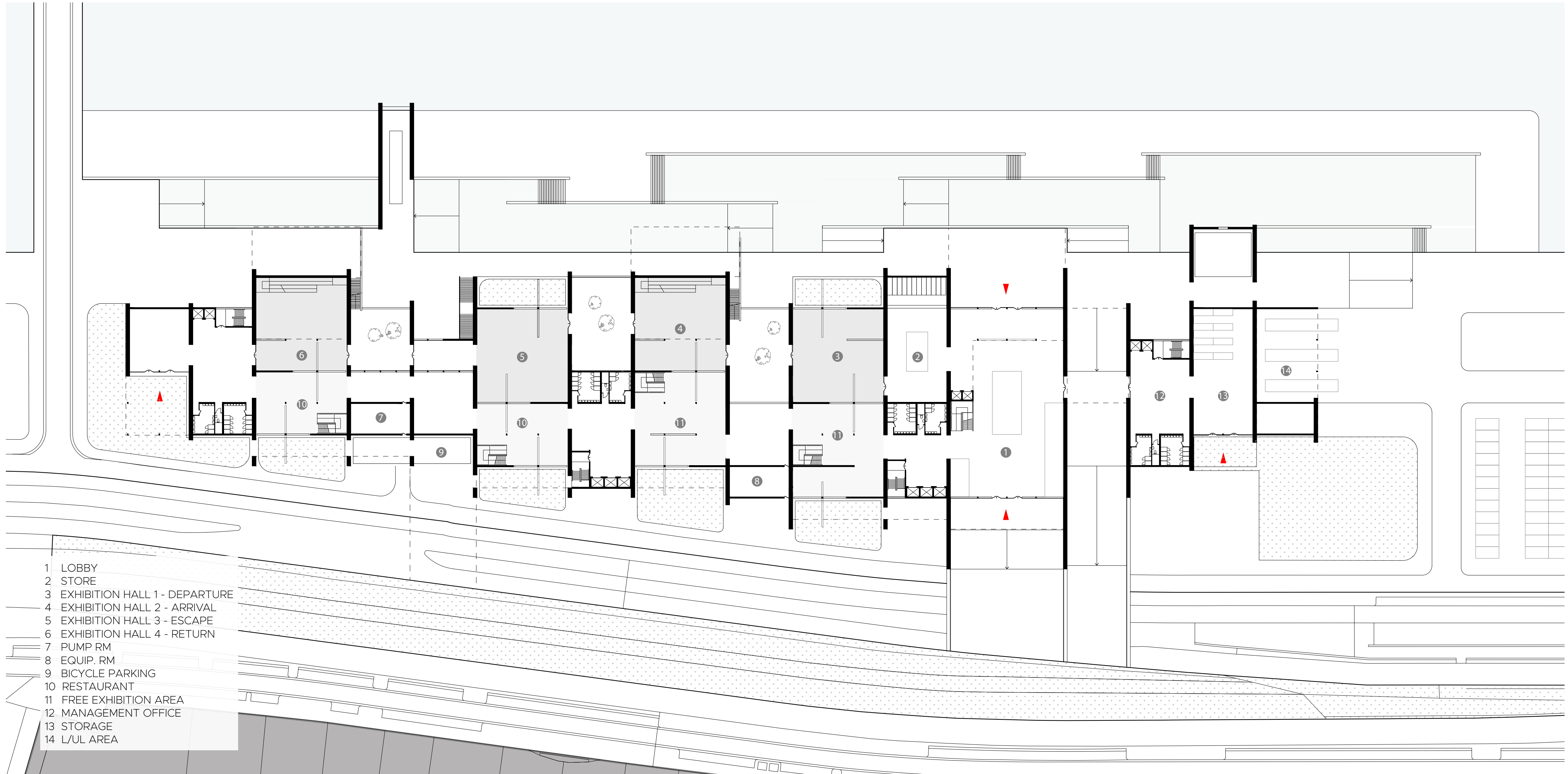
MAIN ENTRANCE & PUBLIC SERVICES

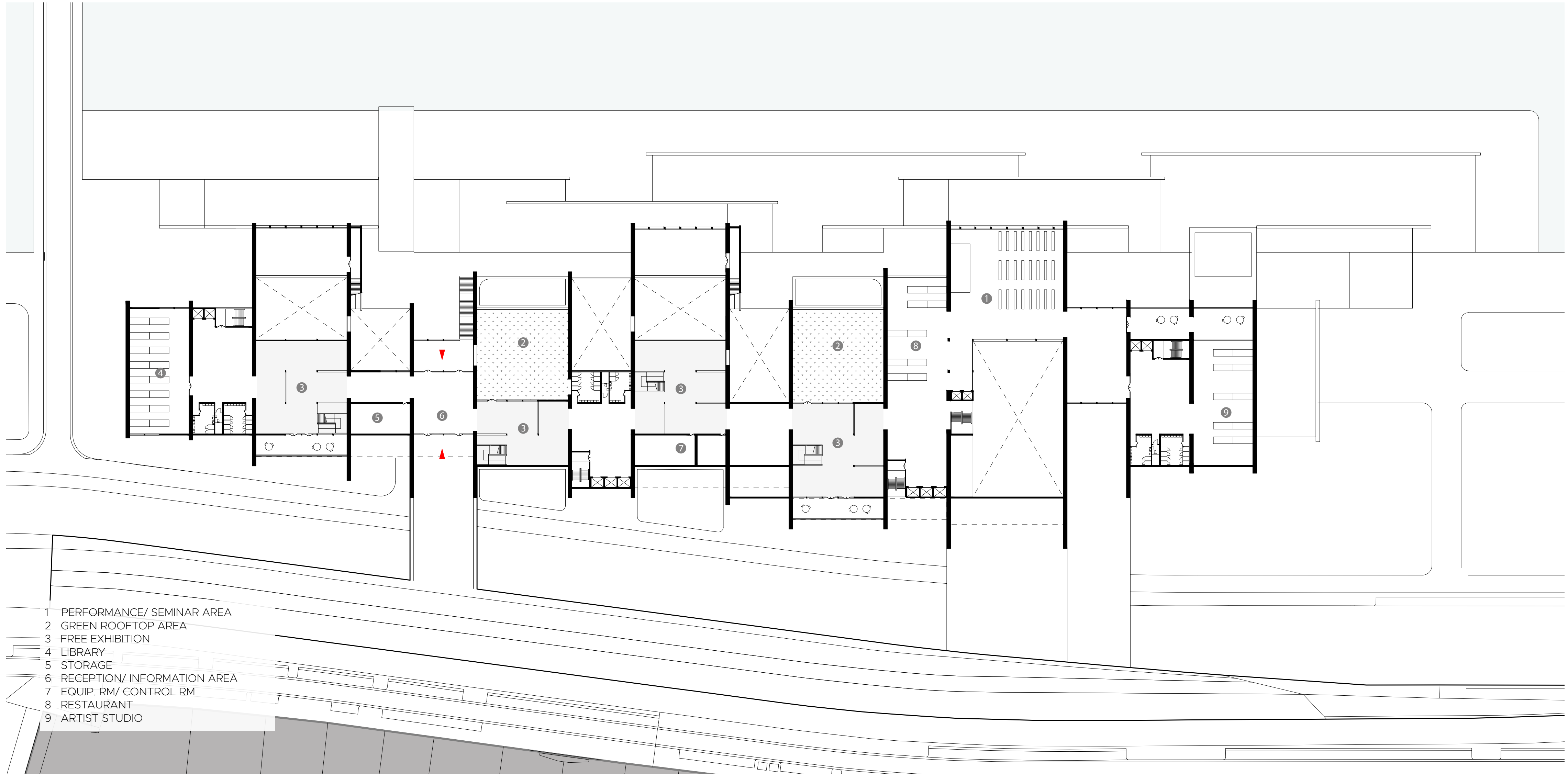
EXHIBITION HALLS

EASTERN ENTRANCE & PUBLIC SERVICES

SOUTHERN BOUNDARY (DYKE AND TRAFFIC ROAD)



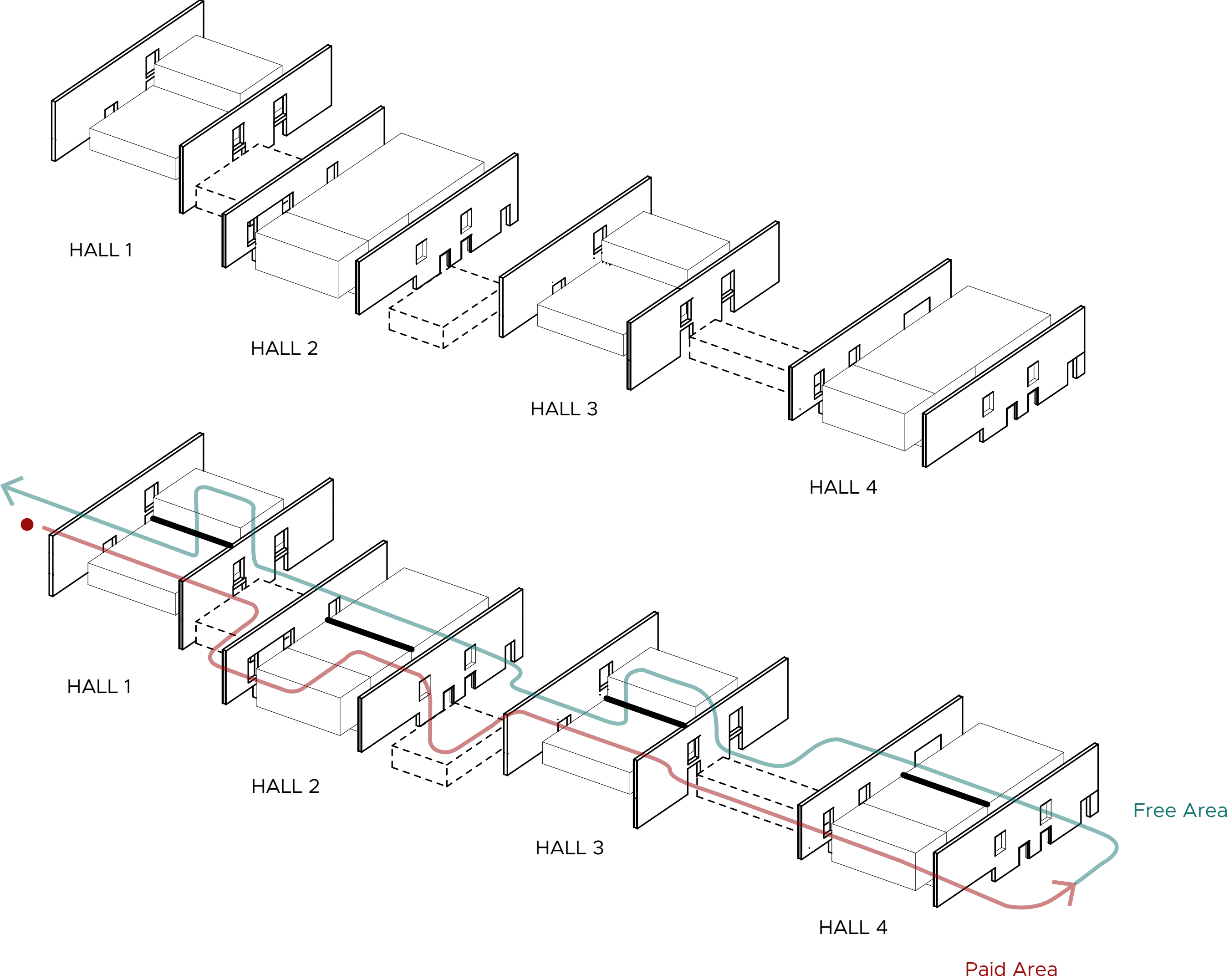


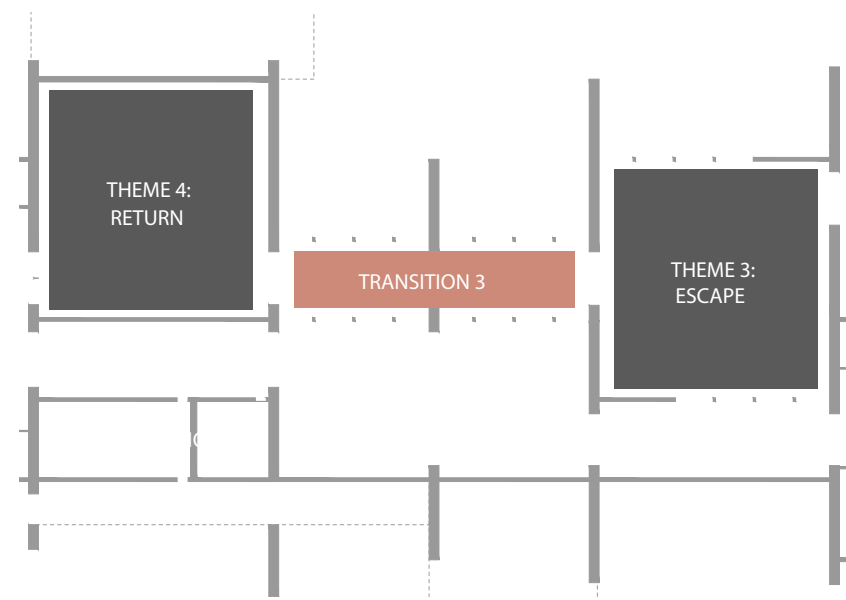


- 1 PERFORMANCE/ SEMINAR AREA
- 2 GREEN ROOFTOP AREA
- 3 FREE EXHIBITION
- 4 LIBRARY
- 5 STORAGE
- 6 RECEPTION/ INFORMATION AREA
- 7 EQUIP. RM/ CONTROL RM
- 8 RESTAURANT
- 9 ARTIST STUDIO

JOURNEY THROUGH TRANSFORMATIONS

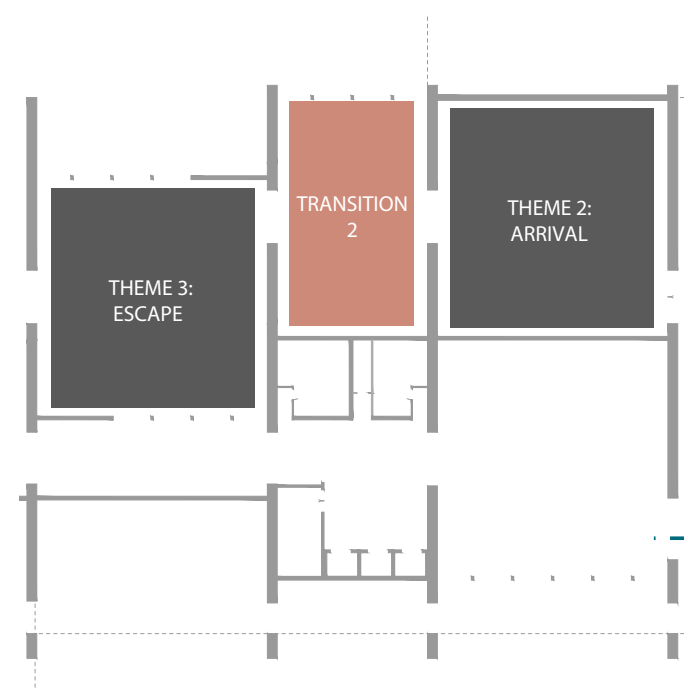
Circulation as a loop





*Indoor Transition
between exhibitions*





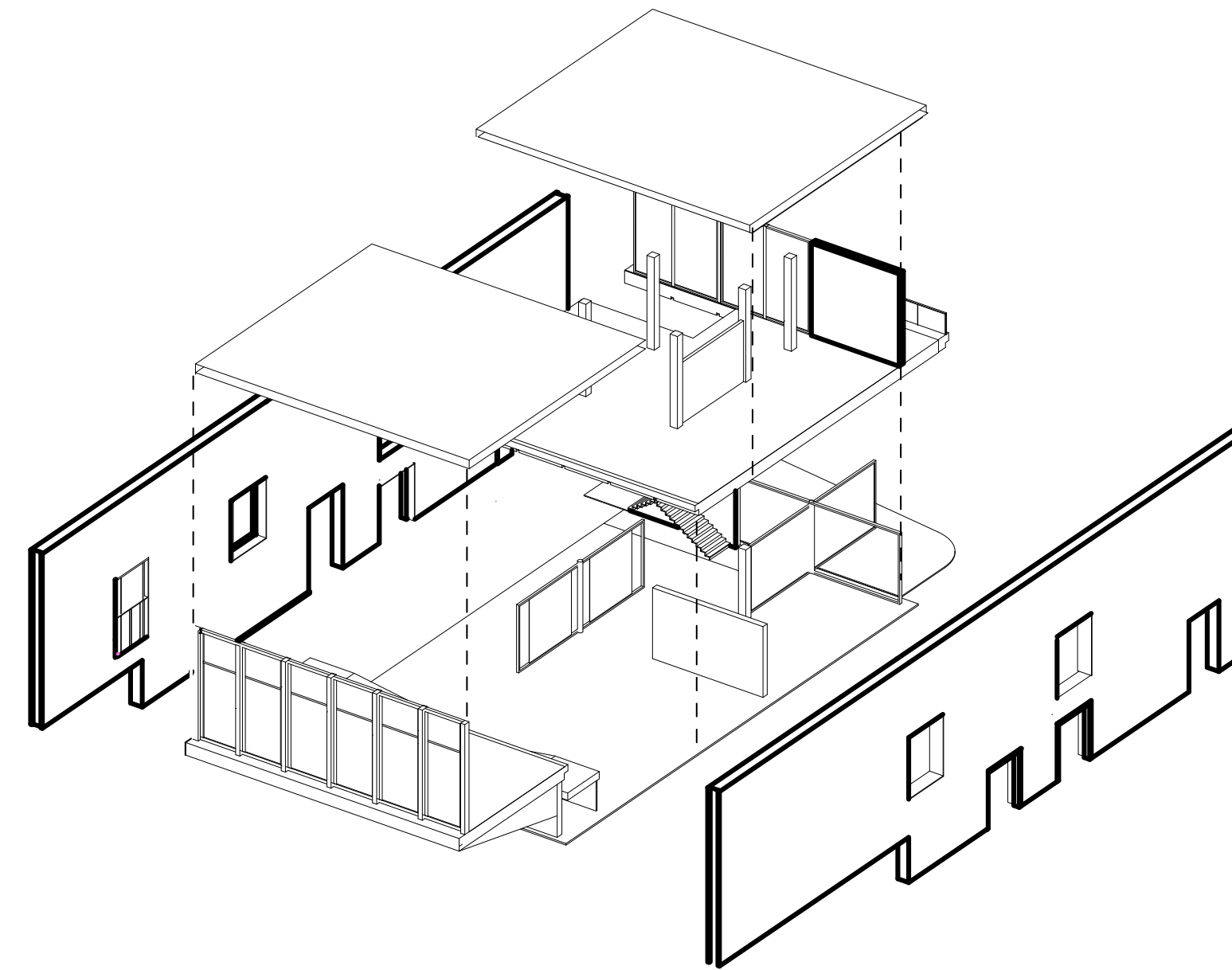
*Outdoor Transition
between exhibitions*



**INTERIOR LAYOUT:
SOFTENING IN-OUT, FREE-PAID BOUNDARIES**

PROGRAM BOUNDARIES

Merge of space under different occasions



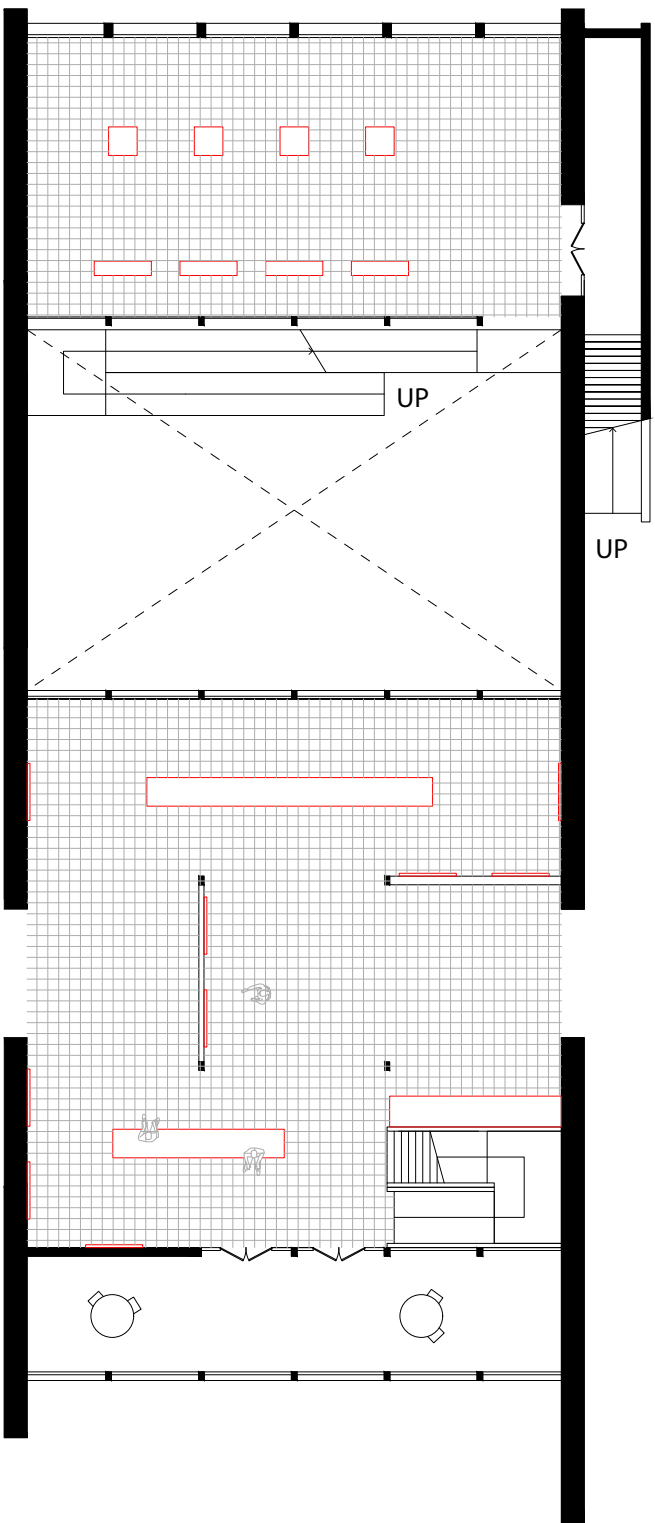
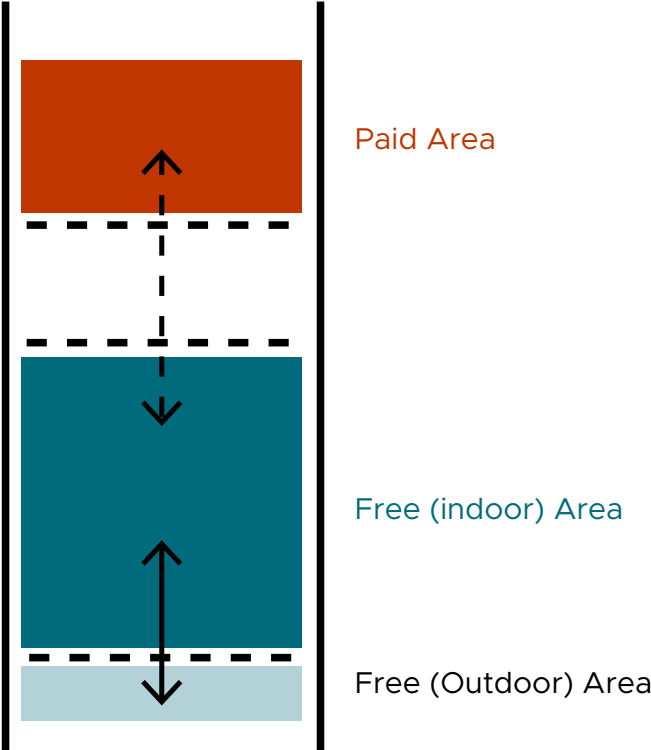
HALL 2 & 4



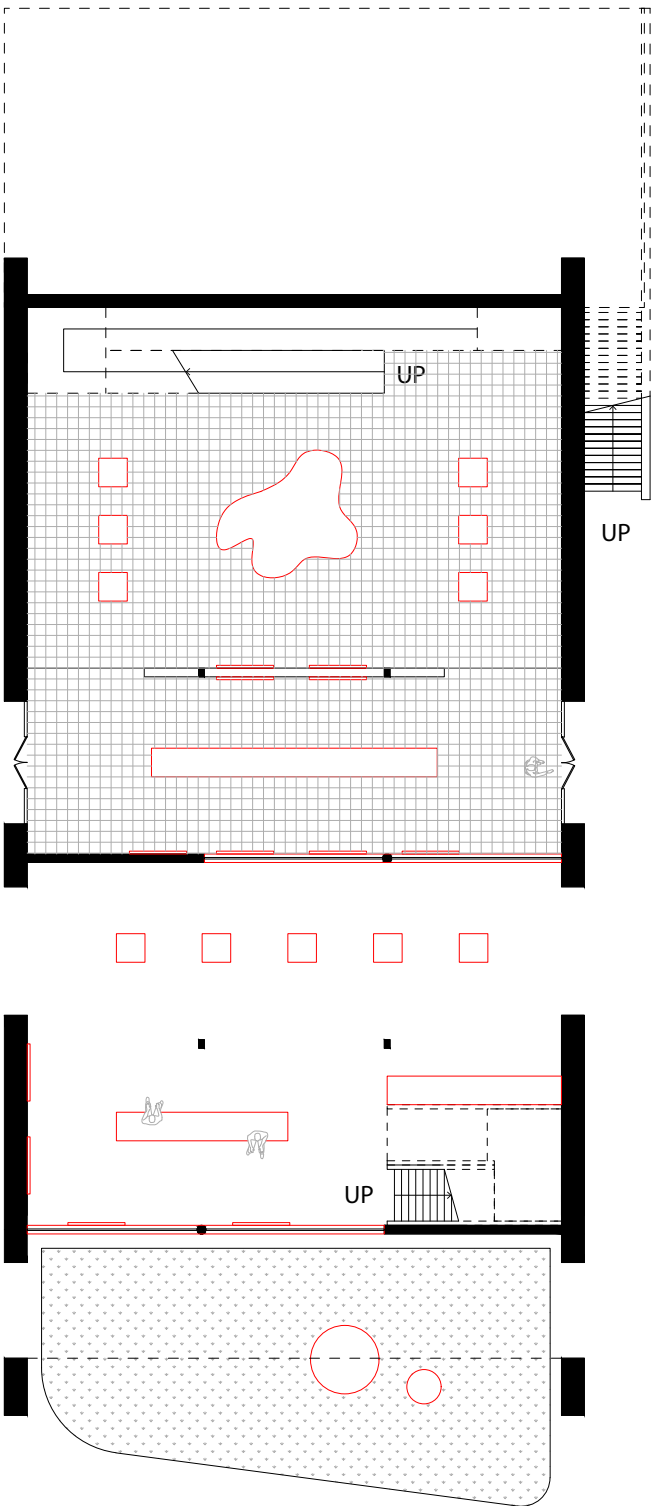
*Atrium between
exhibition zones*

PROGRAM BOUNDARIES

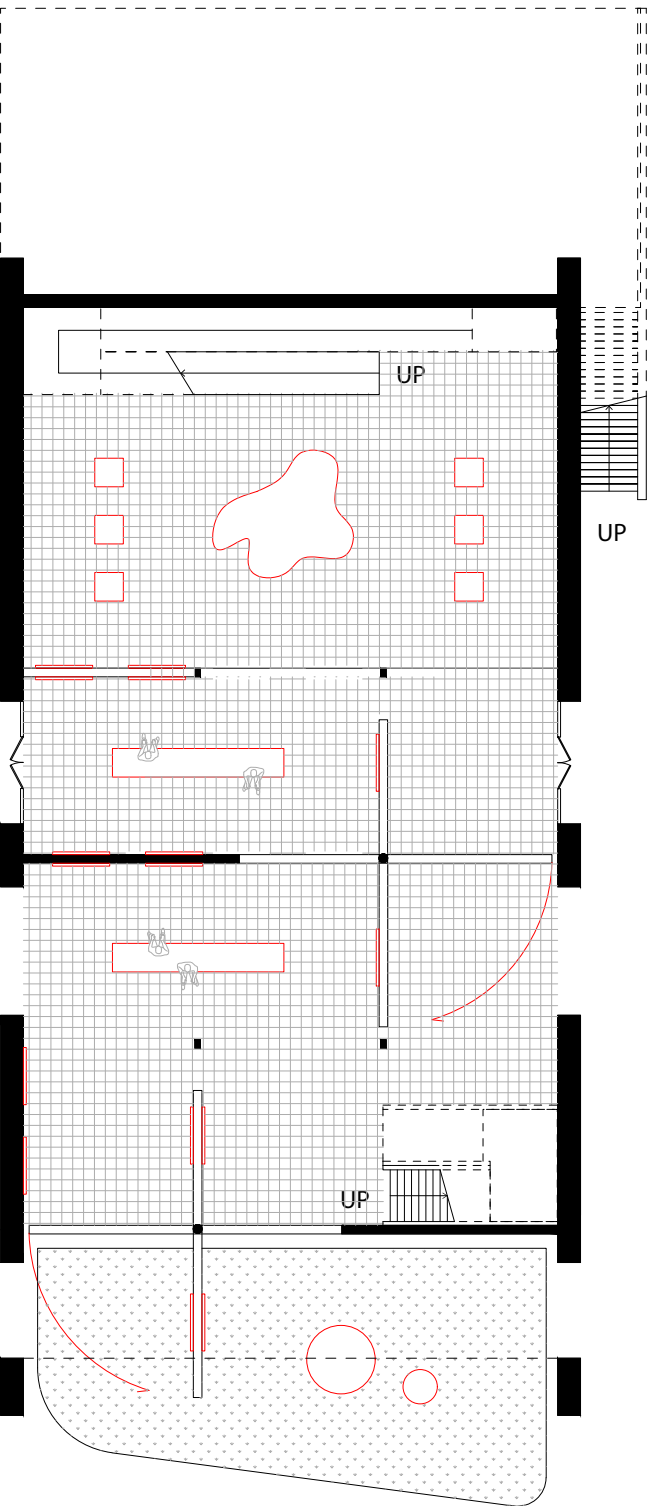
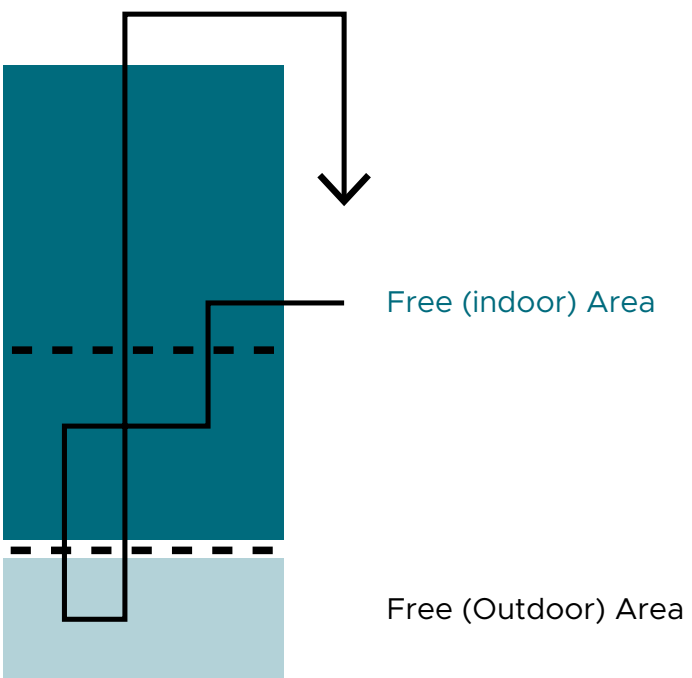
Use of space under different occasions



Mezzanine Floor and First Floor



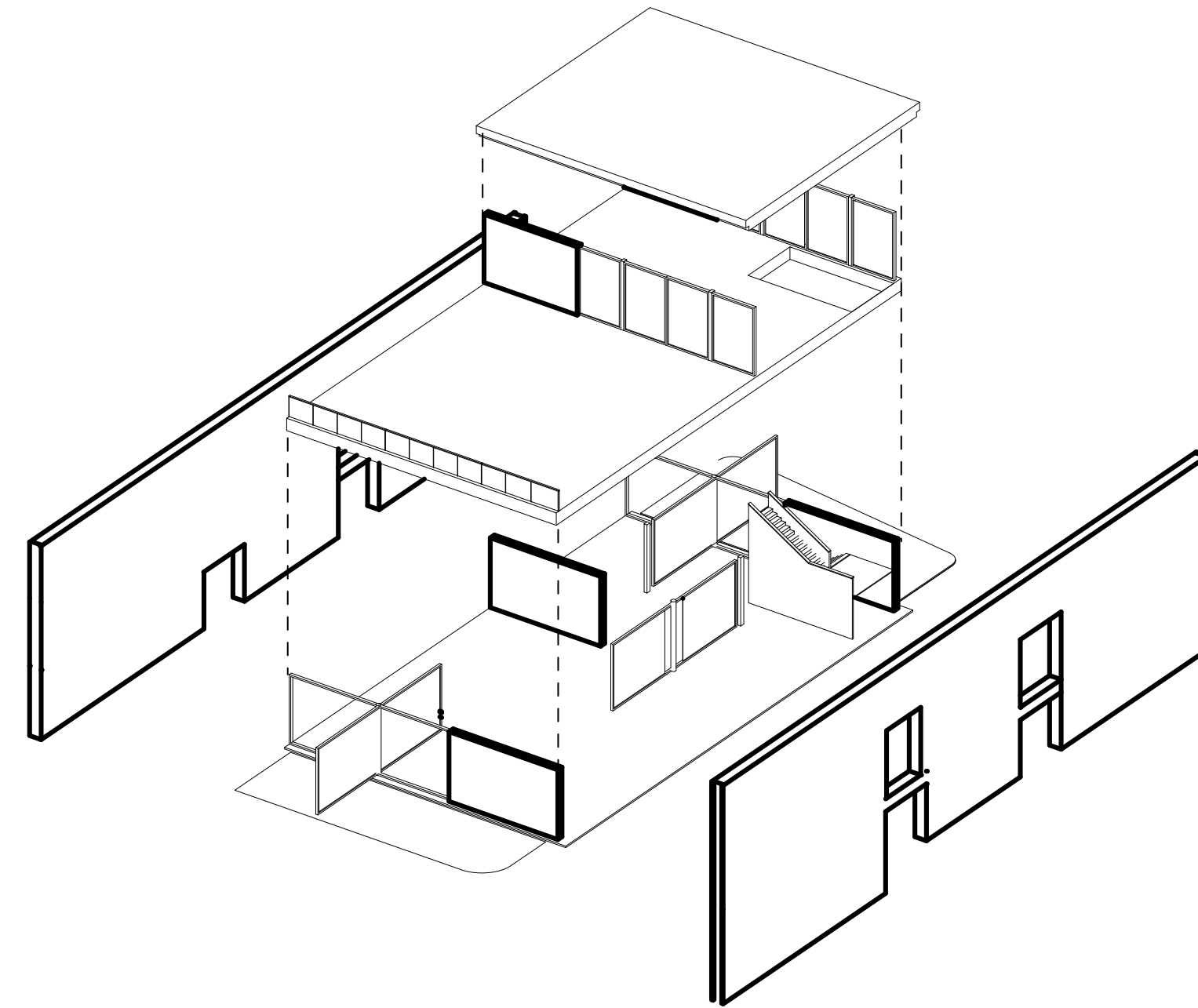
Ground Floor (Normal Days)



Ground Floor (Open Day/Special Festivals)

PROGRAM BOUNDARIES

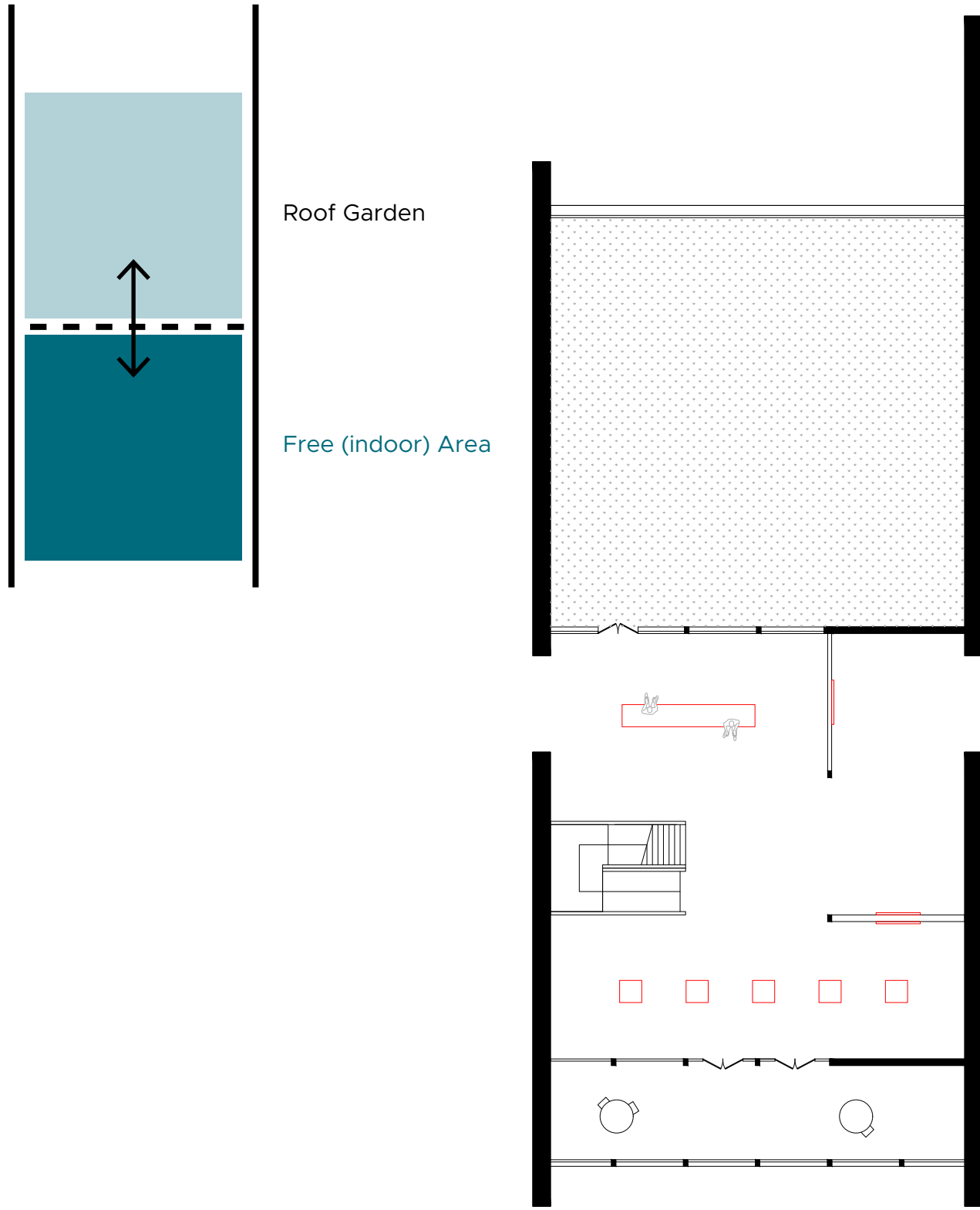
Merge of space under different occasions



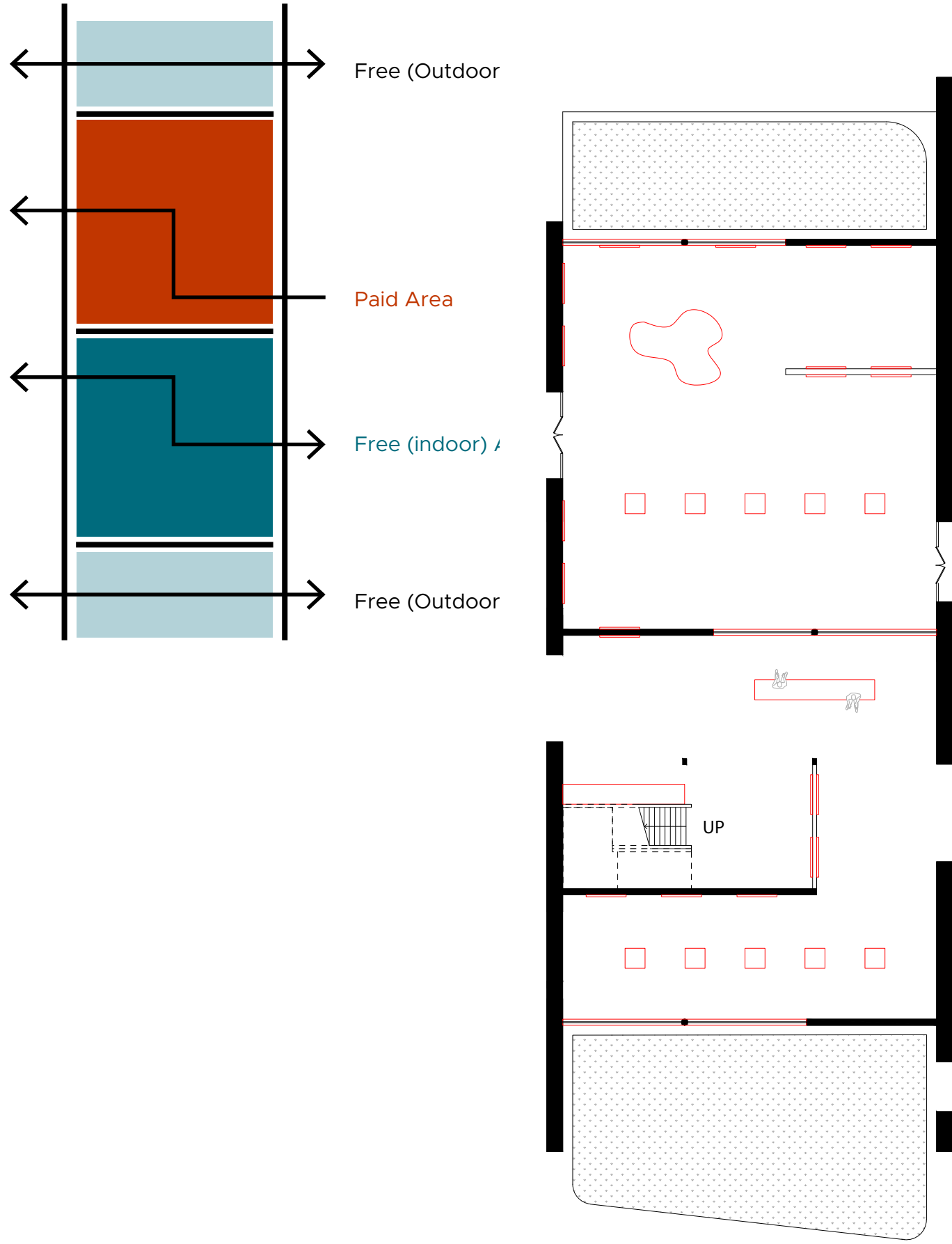
HALL 1 & 3

PROGRAM BOUNDARIES

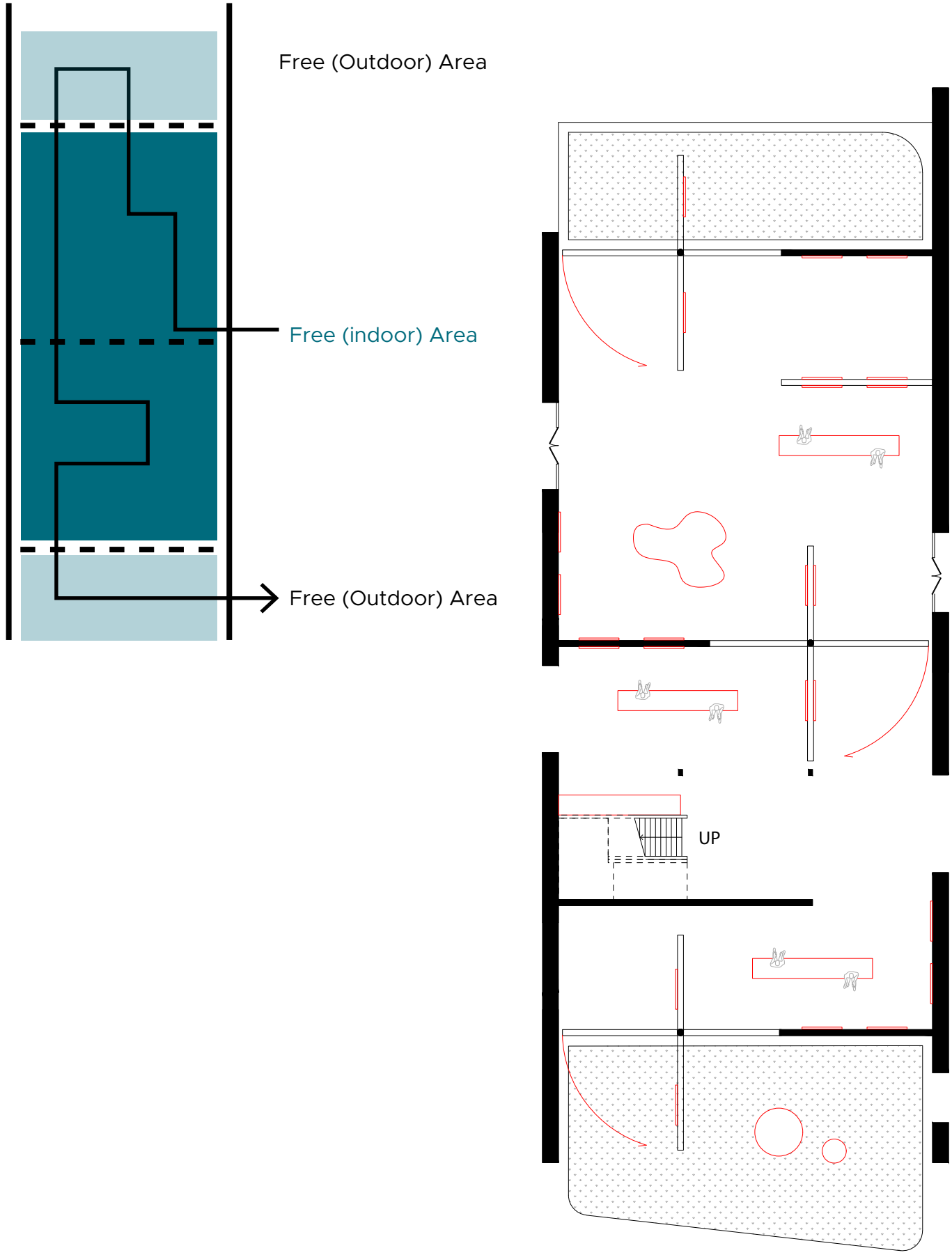
Use of space under different occasions



First Floor



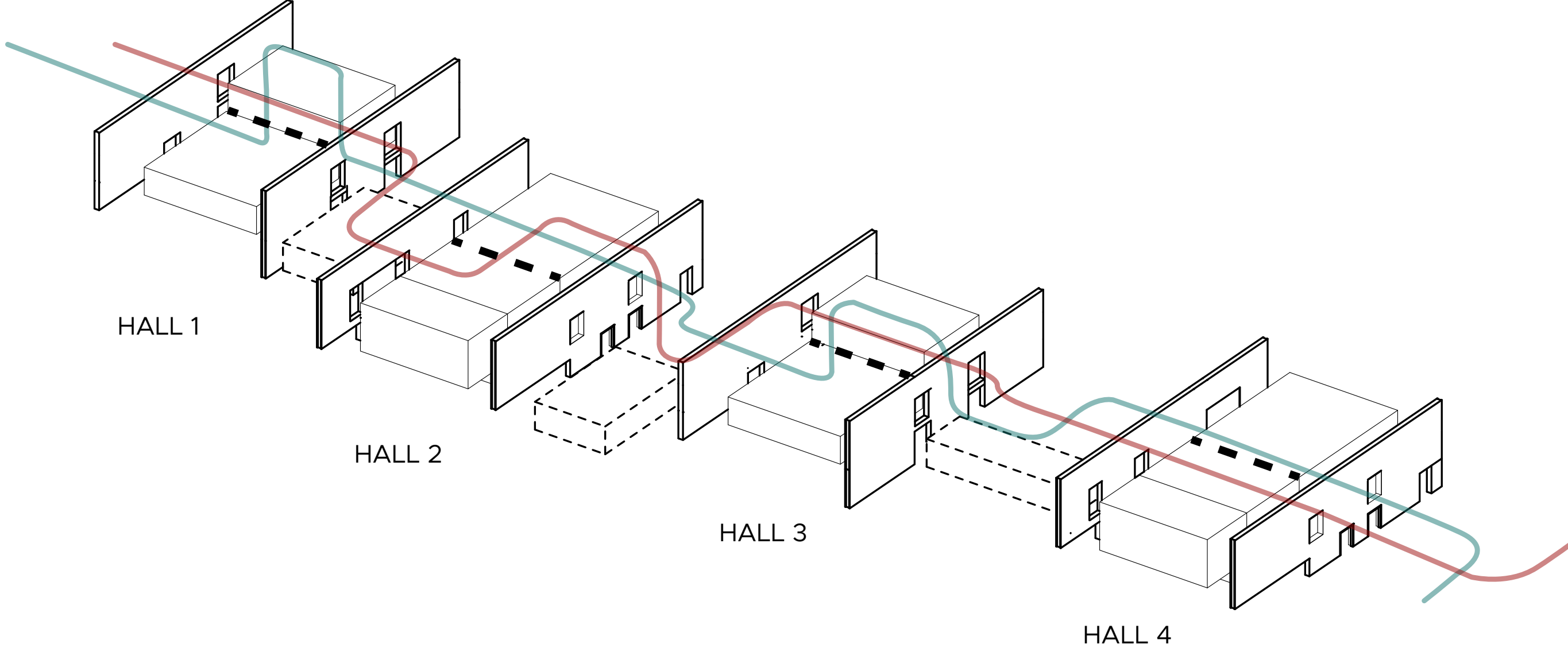
Ground Floor (Normal Days)



Ground Floor (Open Day/Special Festivals)

PROGRAM BOUNDARIES

Flexible use of space



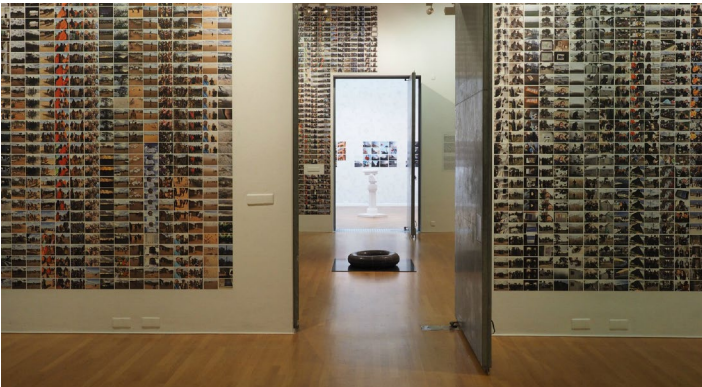


*GF Free exhibition zone
(with pivot walls opened)*

ARTWORK AND SPACE
REFLECTION OF A PORT CITY/ ARRIVAL CITY

ARTWORKS AND SPACE

Immersive Experience of water and passing through walls



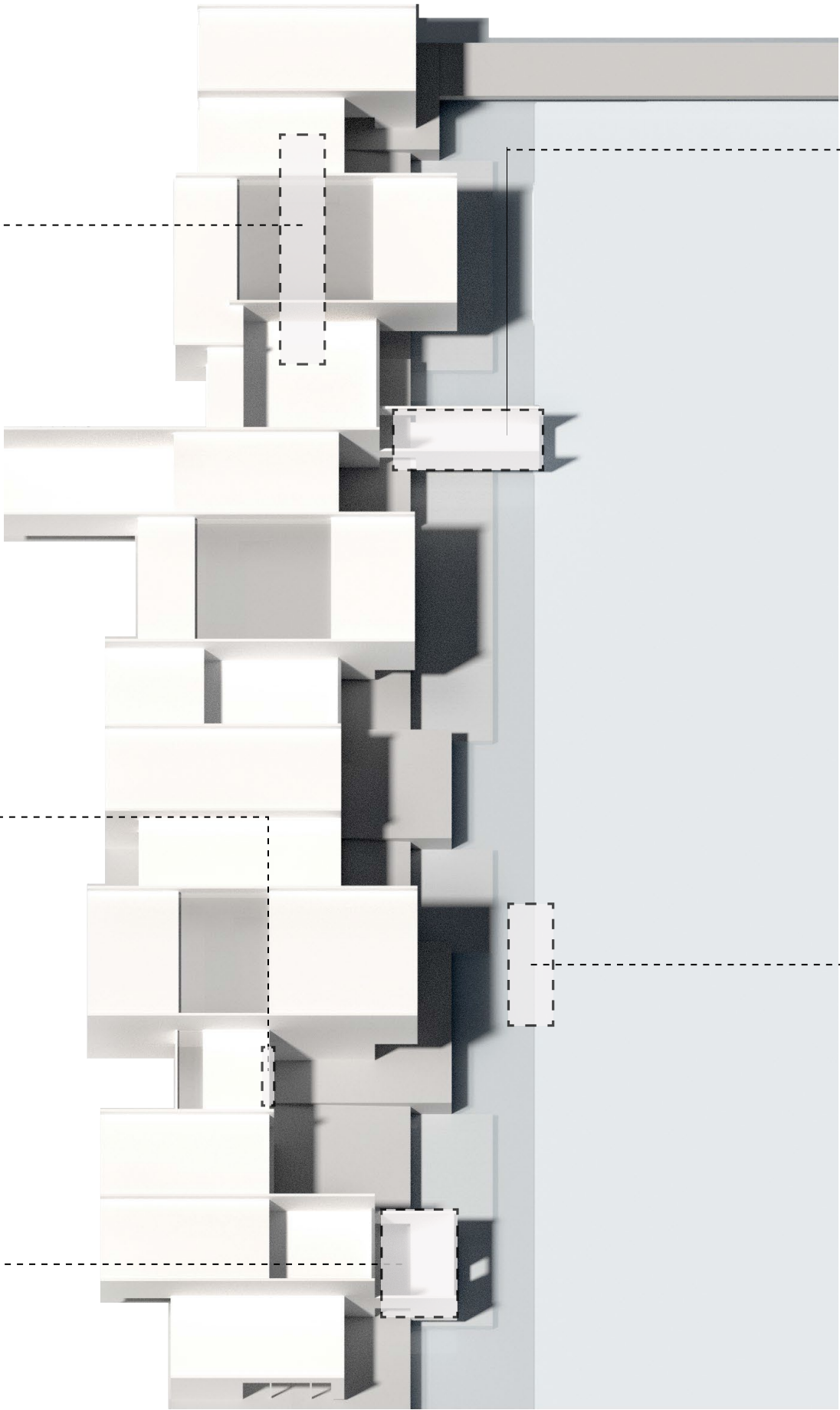
Safe Passage (2016)
Ai Weiwei
Photos/Sculptures



Open Door (2019)
ICY and SOT
Installation



The Sea of Pain (2016)
Raúl Zurita
Poem



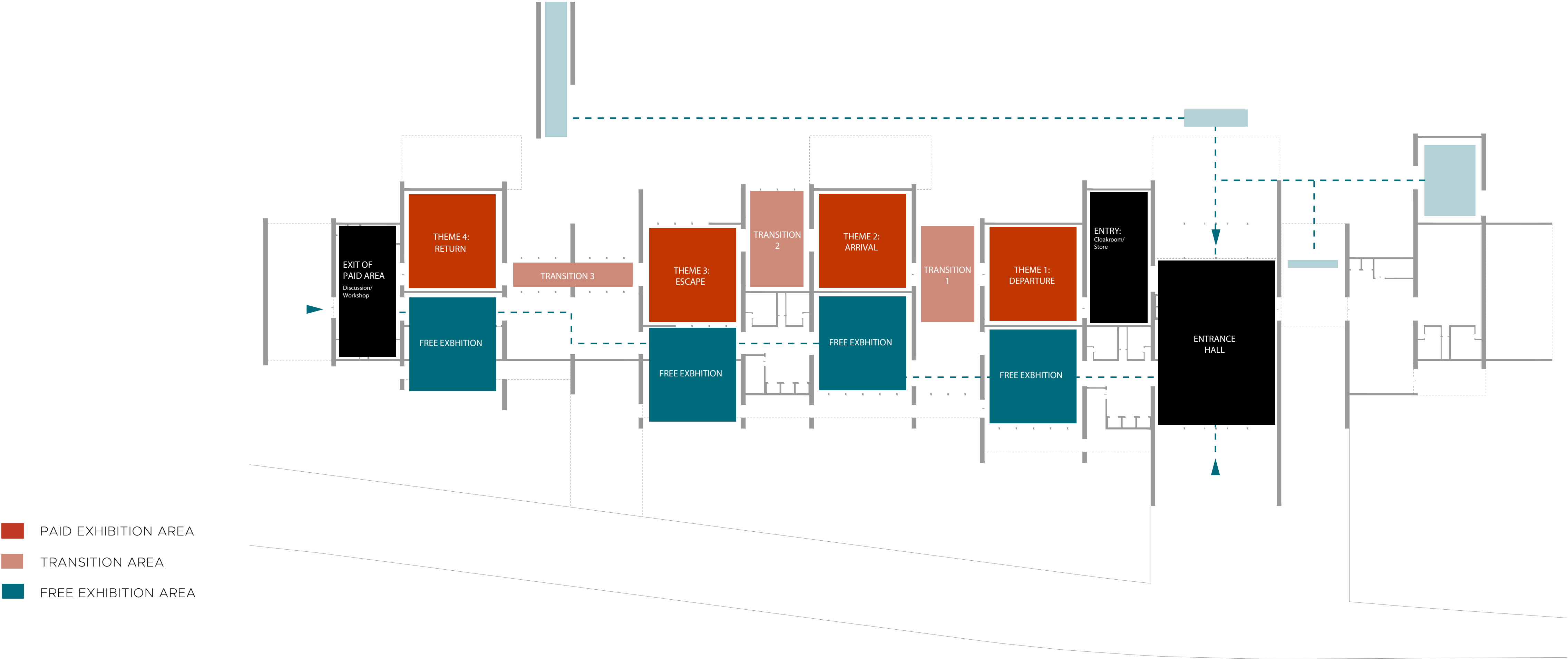
A Voyage (2013)
Adrian Paci
Video scene

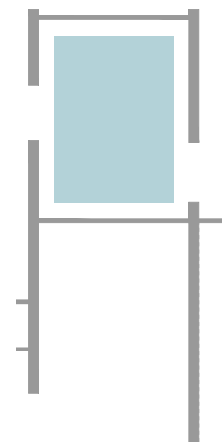


Mediterranean rescue ship (2020)
Banksy
Real Event

EXHIBITION SEQUENCE

Permanent artworks and exhibition themes



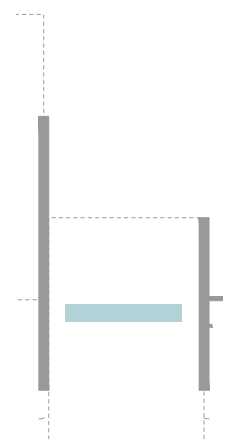


The Sea of Pain (2016)
Raul Zurita





The Column (2013)
Adrian Paci

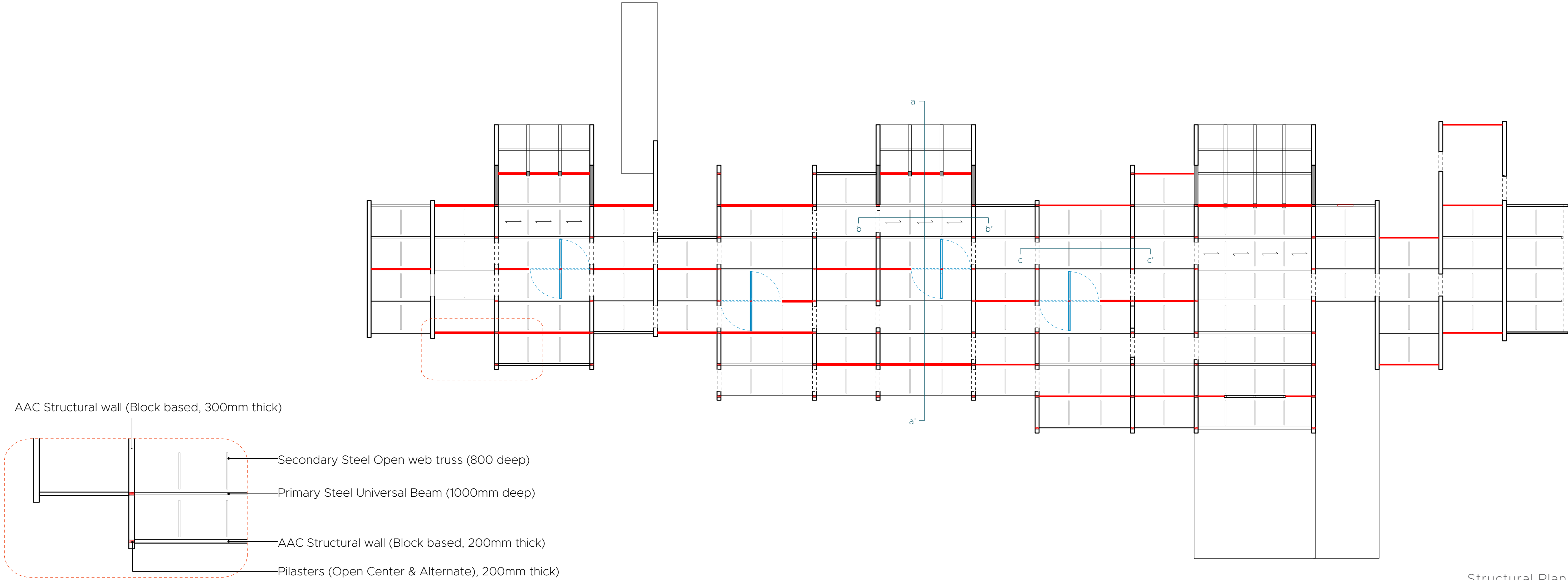


Open Door (2019)
ICY and SOT

STRUCTURE / SUSTAINABILITY

STRUCTURE

Loading bearing AAC blockwork, pilasters and steel beams

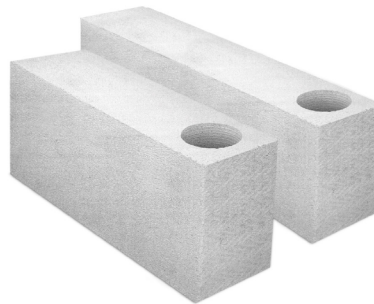


STRUCTURAL COMPONENTS

Loading bearing AAC blockwork, pilasters and steel beams



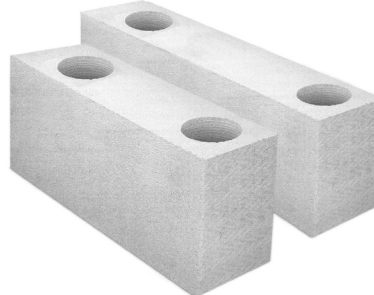
Type 1: Solid block (300x200x608mm)



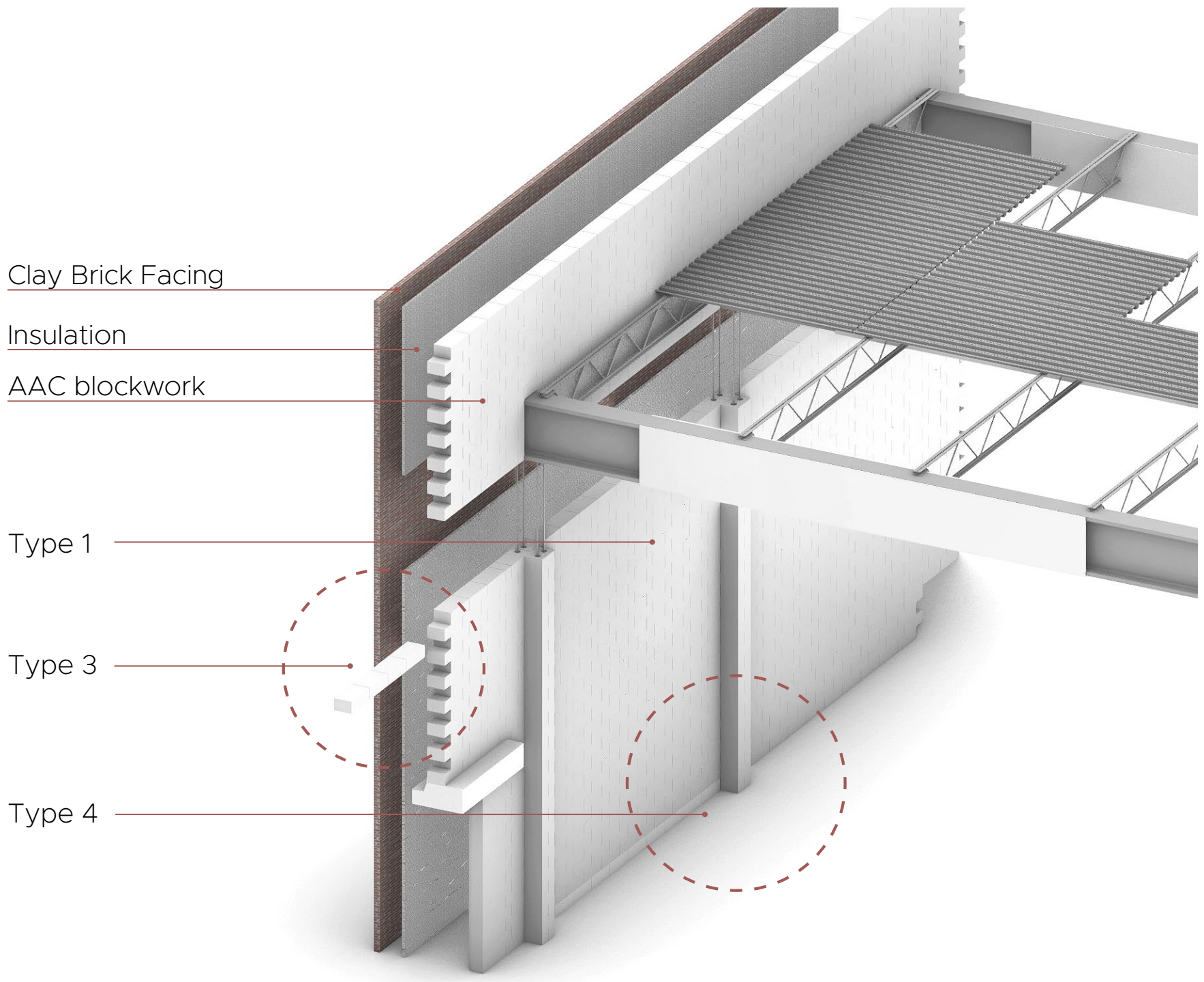
Type 2: O block (300x200x608mm)



Type 3: U block (300x200x608mm)



Type 4: Double-O block (300x200x608mm)



Clay Brick Facing

Insulation

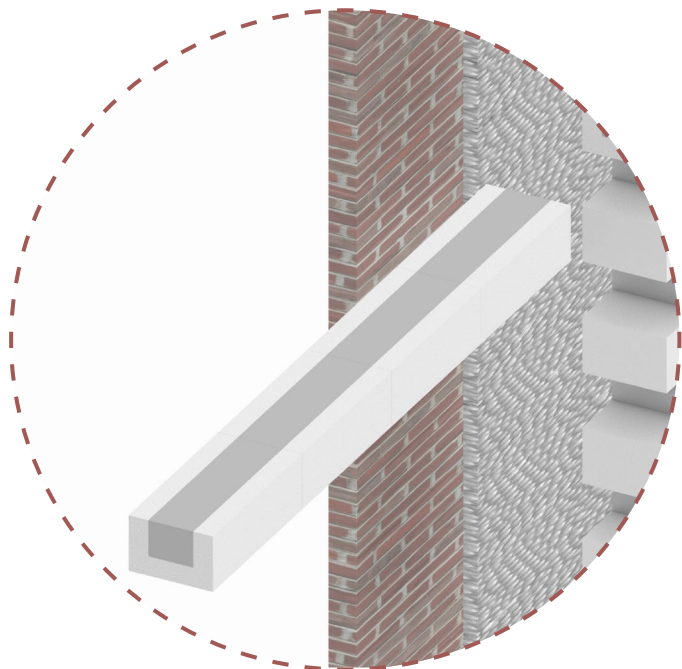
AAC blockwork

Type 1

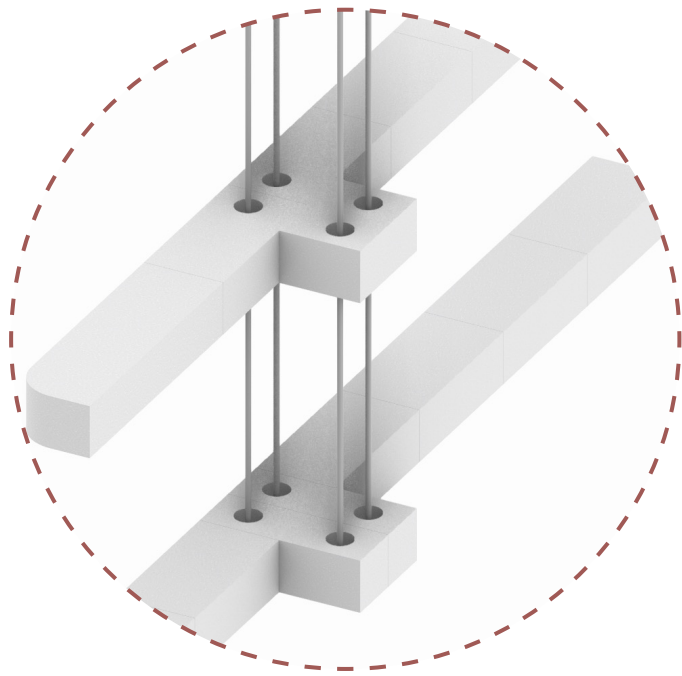
Type 3

Type 4

Illustration of structural composition (Wall to floor system connection)

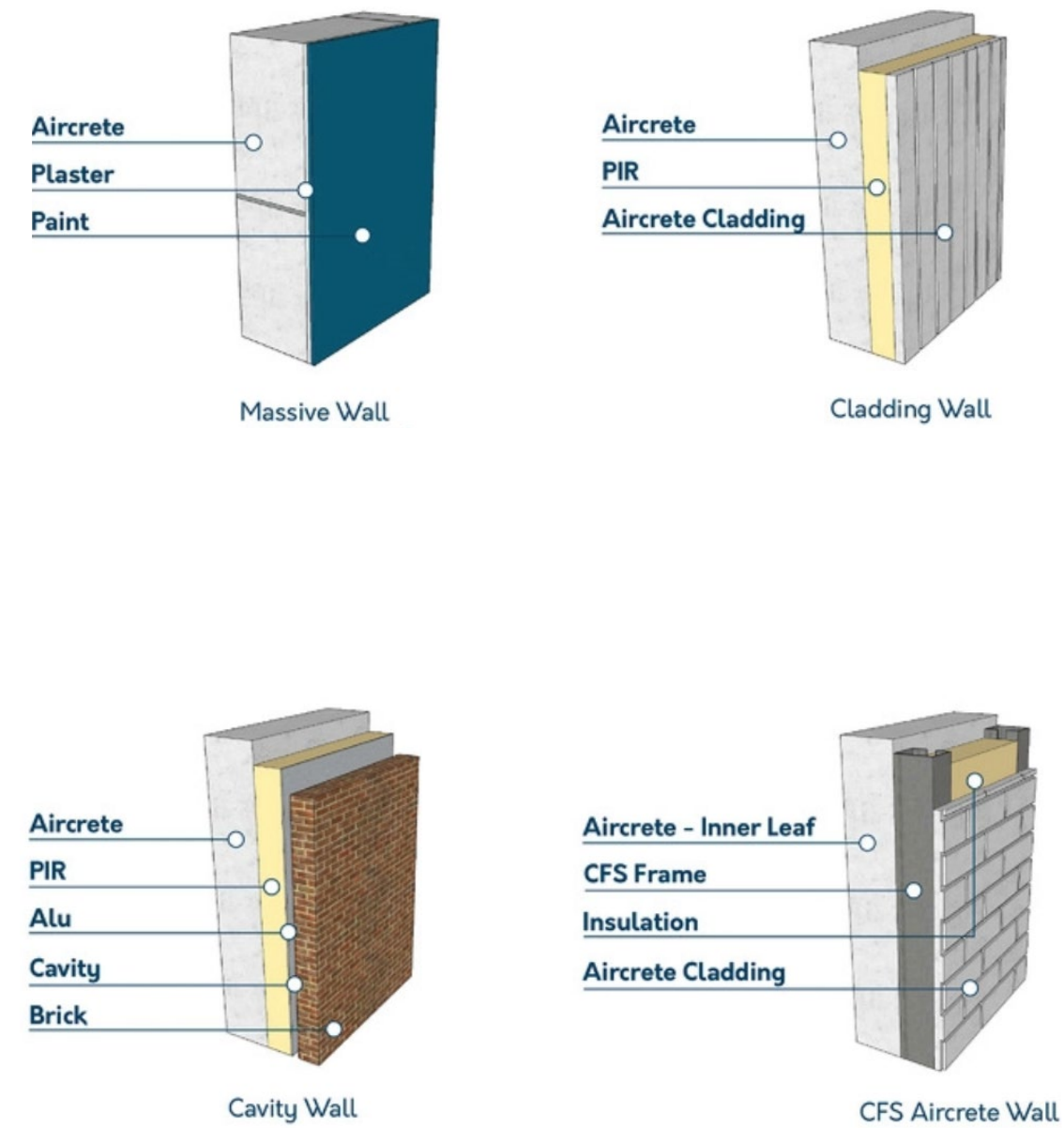


Type 3: U block



Type 4: Pilasters made by double-O blocks

REFERENCES



Types of Application of Aircrete (AAC) on walls
(Source: Willem van Boggelen)

Name of project: Villa Mörtnäs

Location: Stockholm, Sweden

Architect: Fourfoursixsix

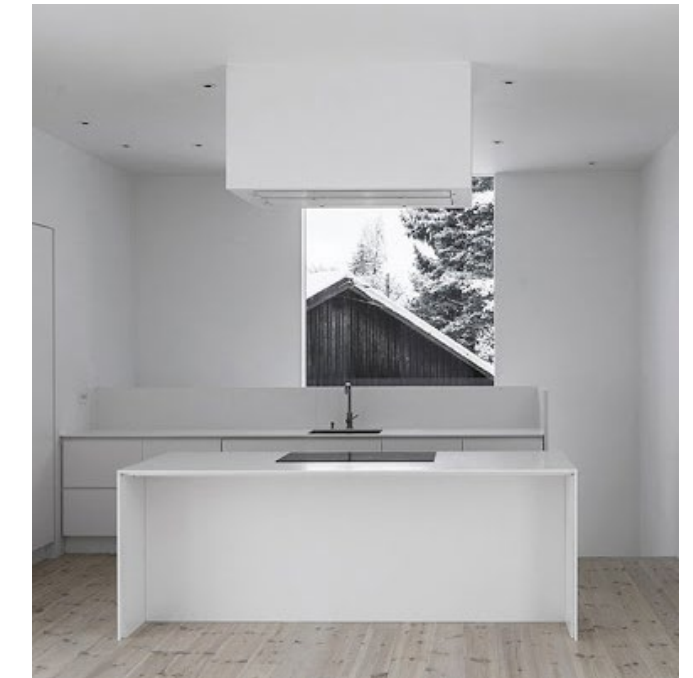
Year of completion: 2014

Design specifications:

- single-leaf 300mm insulative aerated concrete block, natural lime render



(Source: Divisare)



Name of project: Hornehoof

Location: Vogelsbleek, NL

Architect: Inbo Architecten,
Architecten Aan de Maas

Year of completion: 2017

Design specifications:

- double-leaf 300mm aerated concrete block, PIR insulation panels, brick facing

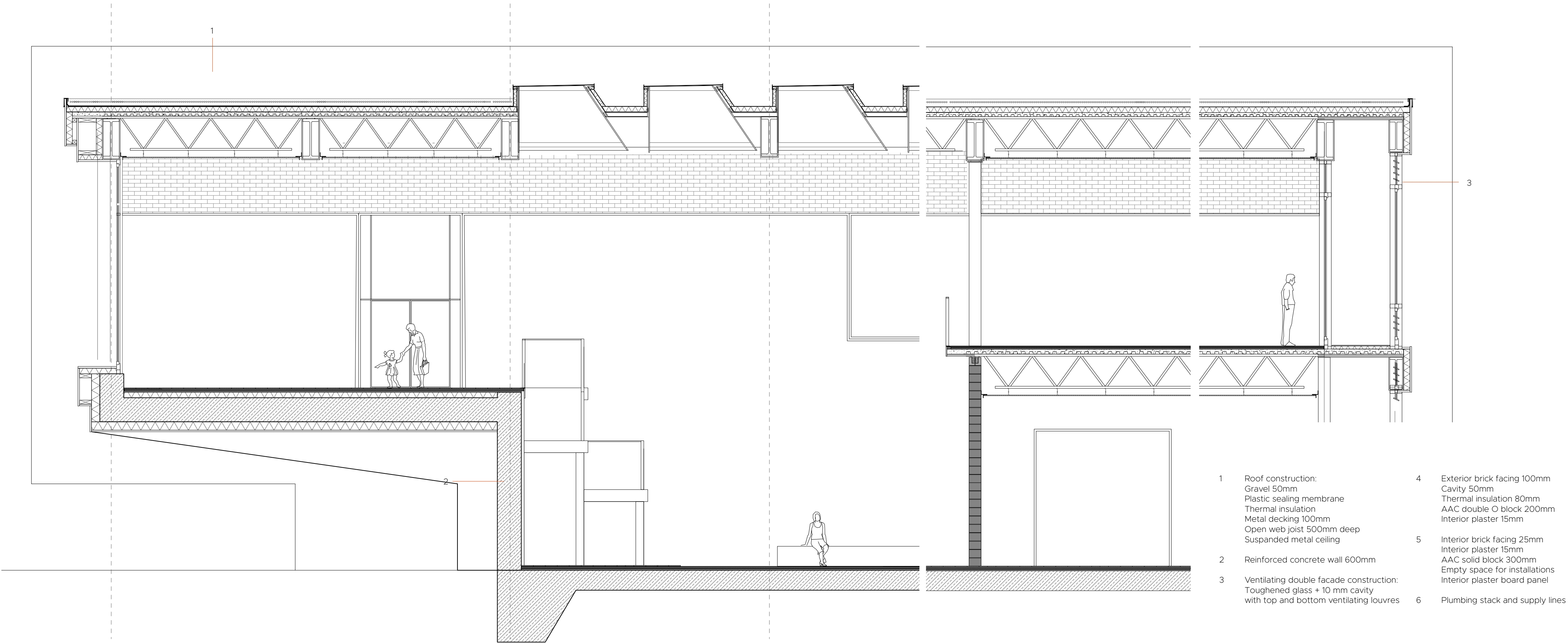


(Source: weertdegekste.nl)



STRUCURAL DETAILS

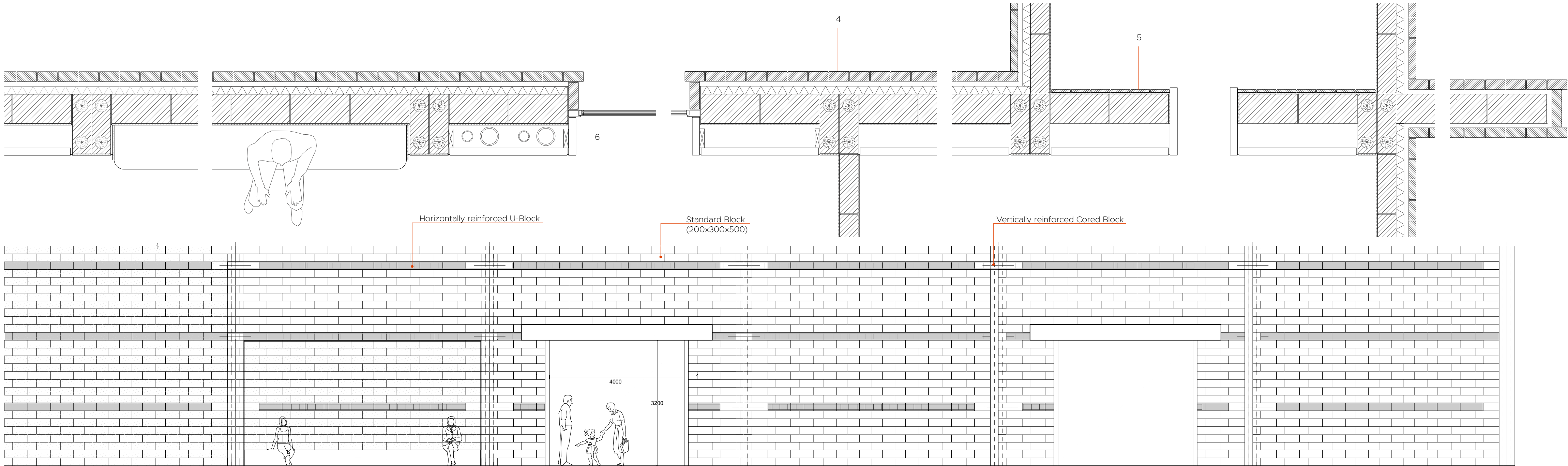
NS section



- | | |
|---|---|
| <p>1 Roof construction:
Gravel 50mm
Plastic sealing membrane
Thermal insulation
Metal decking 100mm
Open web joist 500mm deep
Suspended metal ceiling</p> <p>2 Reinforced concrete wall 600mm</p> <p>3 Ventilating double facade construction:
Toughened glass + 10 mm cavity
with top and bottom ventilating louvres</p> | <p>4 Exterior brick facing 100mm
Cavity 50mm
Thermal insulation 80mm
AAC double O block 200mm
Interior plaster 15mm</p> <p>5 Interior brick facing 25mm
Interior plaster 15mm
AAC solid block 300mm
Empty space for installations
Interior plaster board panel</p> <p>6 Plumbing stack and supply lines</p> |
|---|---|

STRUCURAL DETAILS

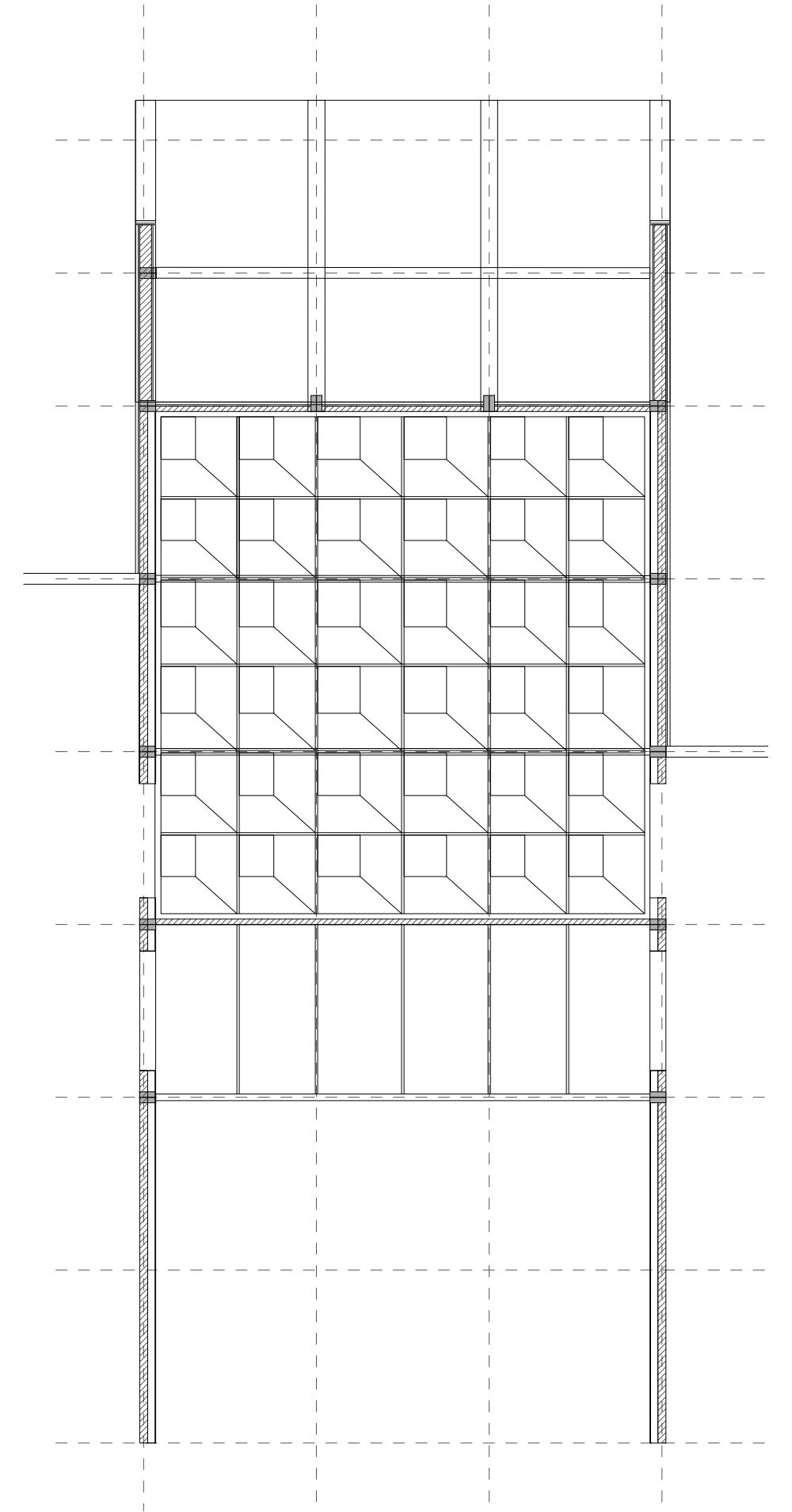
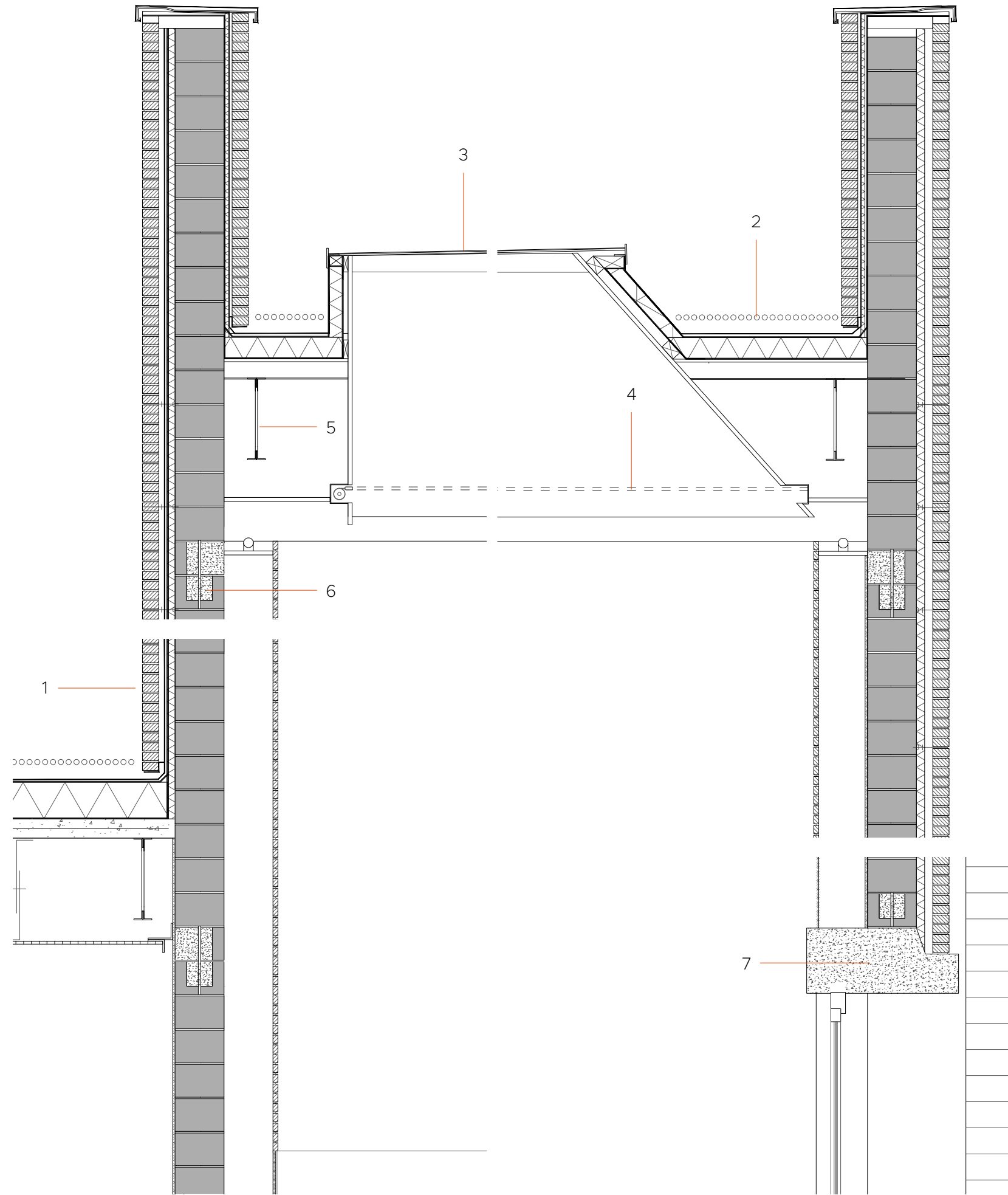
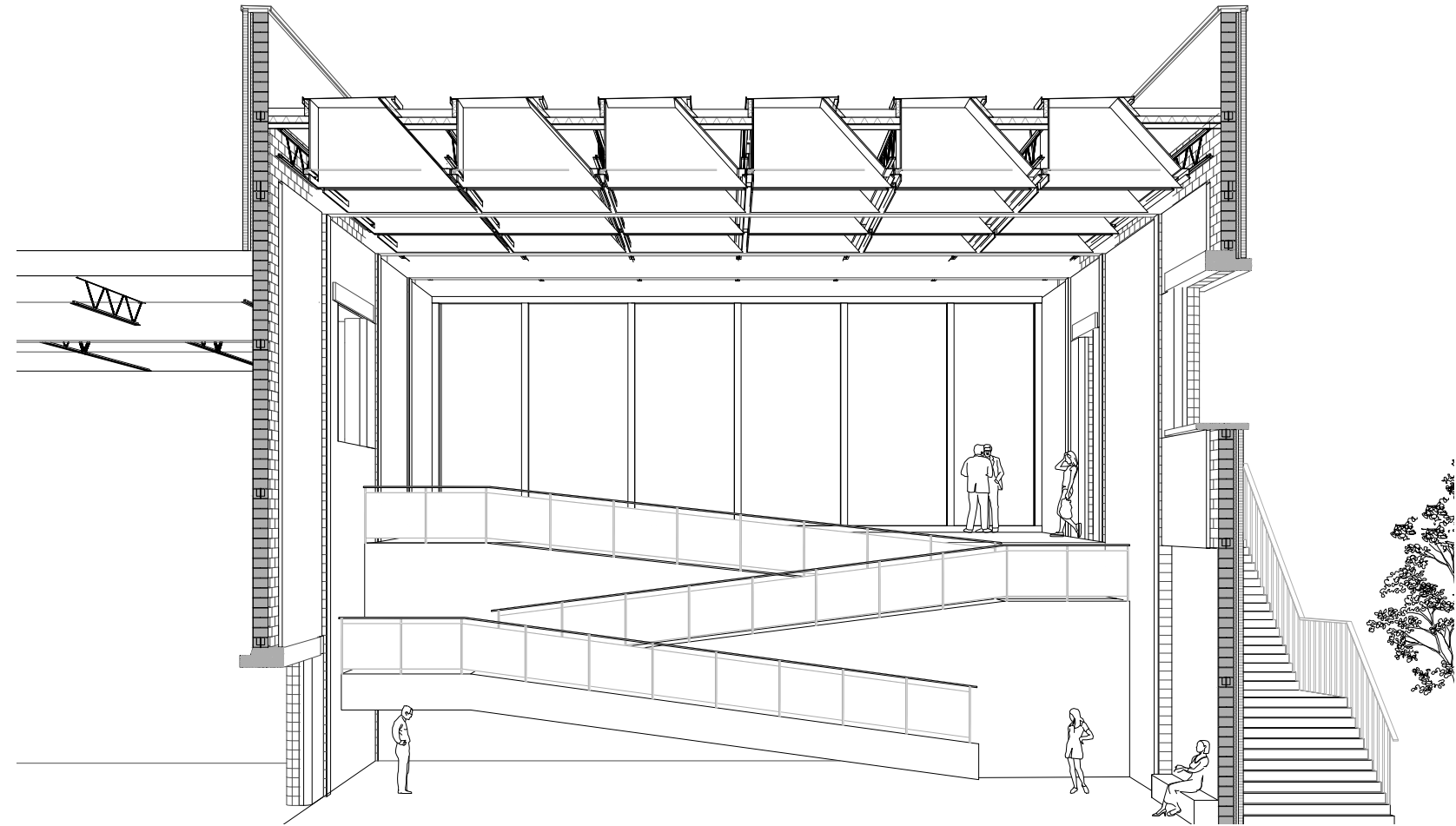
Wall with pilasters



4 Exterior brick facing 100mm
 Cavity 50mm
 Thermal insulation 80mm
 AAC double O block 200mm
 Interior plaster 15mm

5 Interior brick facing 25mm
 Interior plaster 15mm
 AAC solid block 300mm
 Empty space for installations
 Interior plaster board panel

6 Plumbing stack and supply lines



- 1 Wall Construction:
Exterior brick facing 100mm
Cavity 50mm
Thermal insulation 80mm
Empty space between pilasters
Interior brick facing 25mm
- 2 Roof construction:
Gravel 50mm
Plastic sealing membrane
Thermal insulation
Structural roof deck support
Suspended metal ceiling
- 3 Roof glazing with alum. frame
- 4 Black out screens
- 5 Open web joist 500mm deep
- 6 AAC U-block (horizontally reinforced)
- 7 Concrete lintel



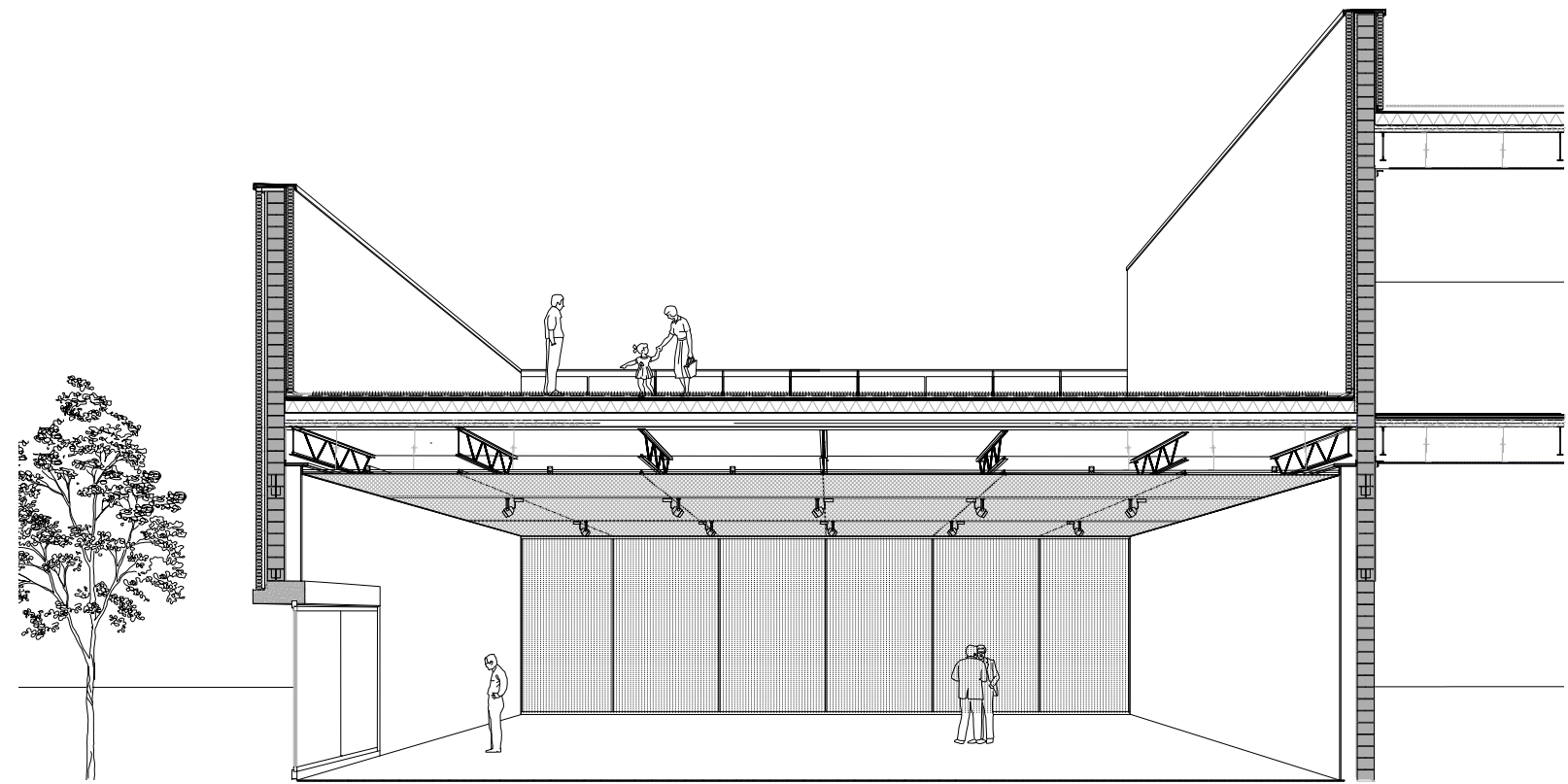
*Exhibition zone
on 1F*



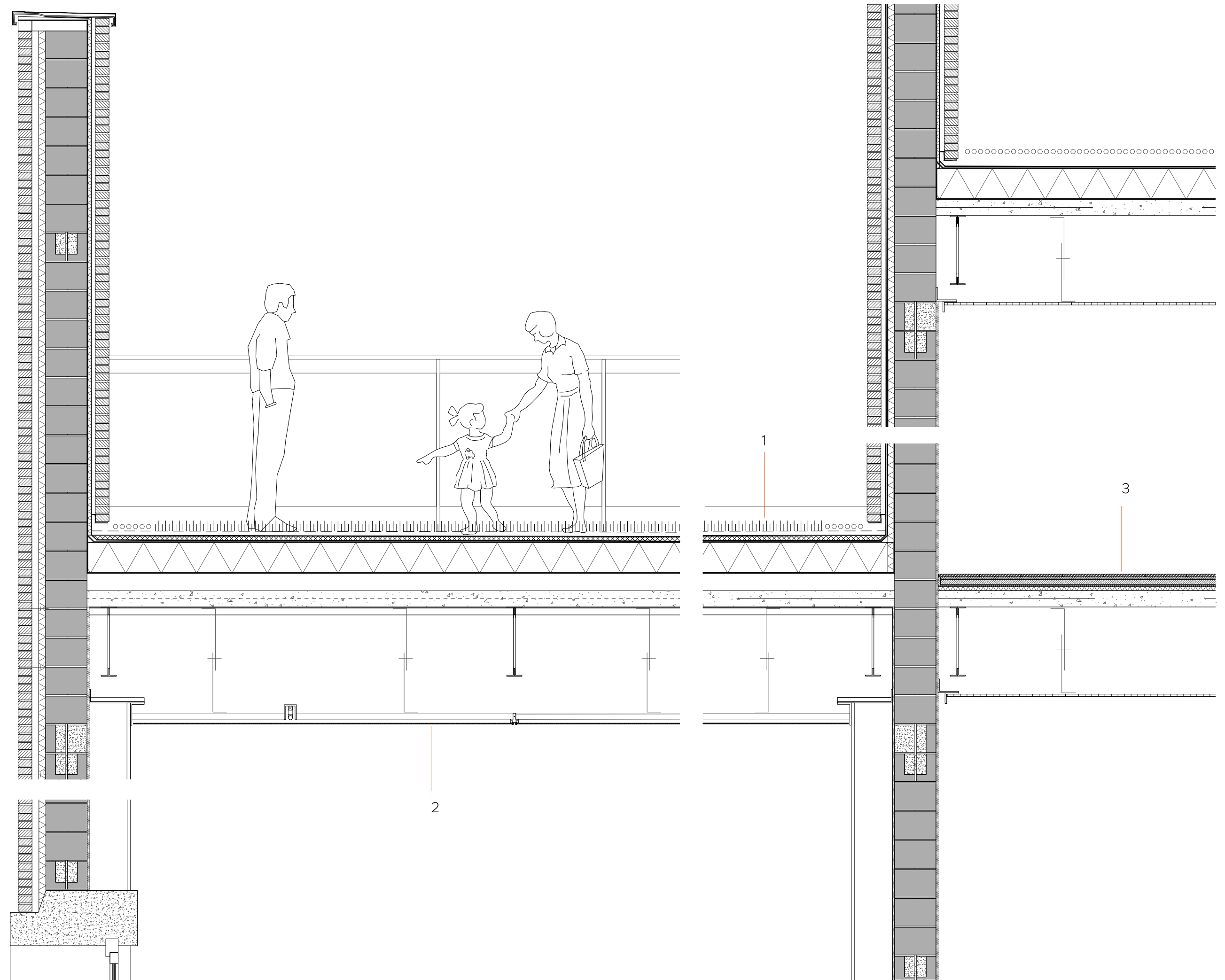
*Exhibition zone
on GF*



*Atrium between
exhibition zones*



- 1 Green Roof Construction:
Substrate, filter mat 80mm
Bituminous roofing seal
Polystyrene insulation 200mm
Metal decking 120mm
- 2 Suspended metal ceiling
- 3 Floor construction:
Tile paving 20mm
Screed around underfloor heating 60mm
Impact-sound insulation 10mm
Thermal insulation 30mm
Metal decking 120mm

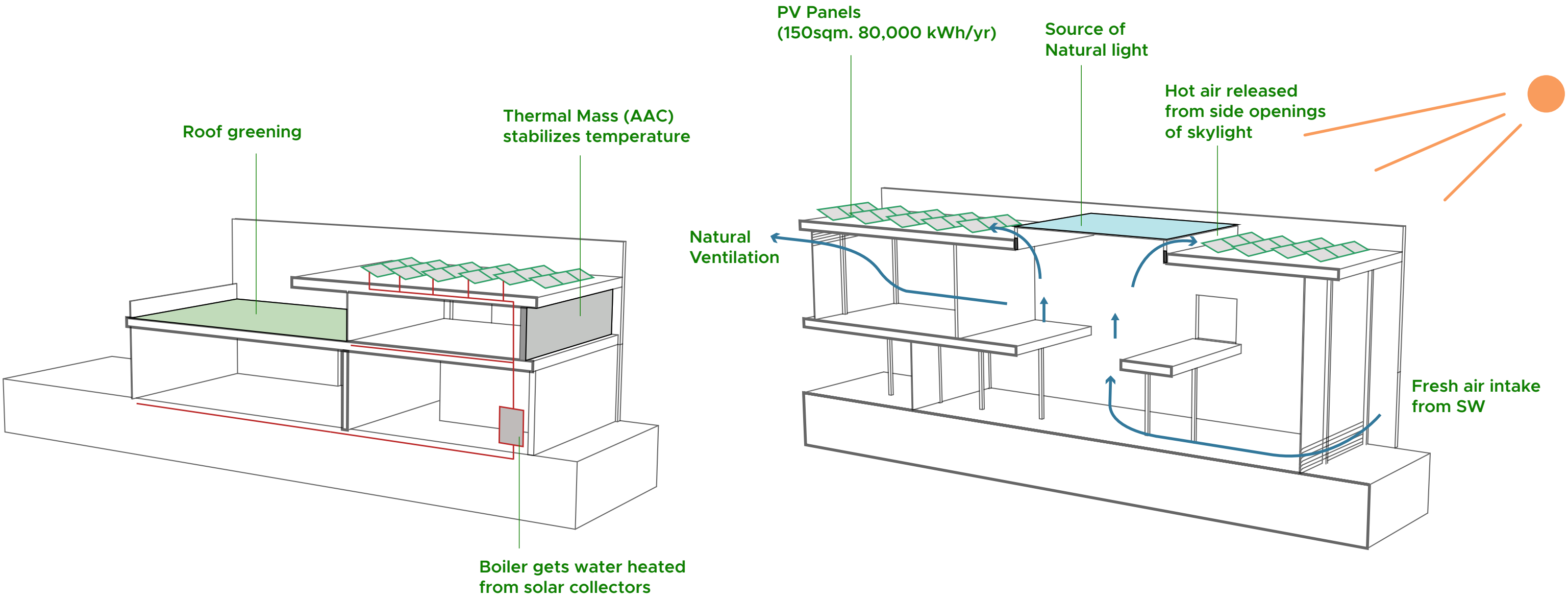




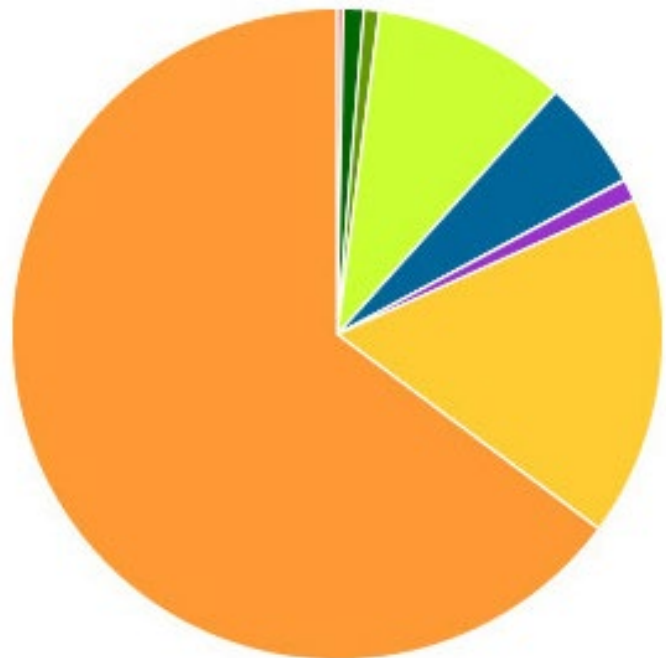
*Exhibition zone
on GF*

ENERGY SAVING MEASURES

Passive measures/ Building structure

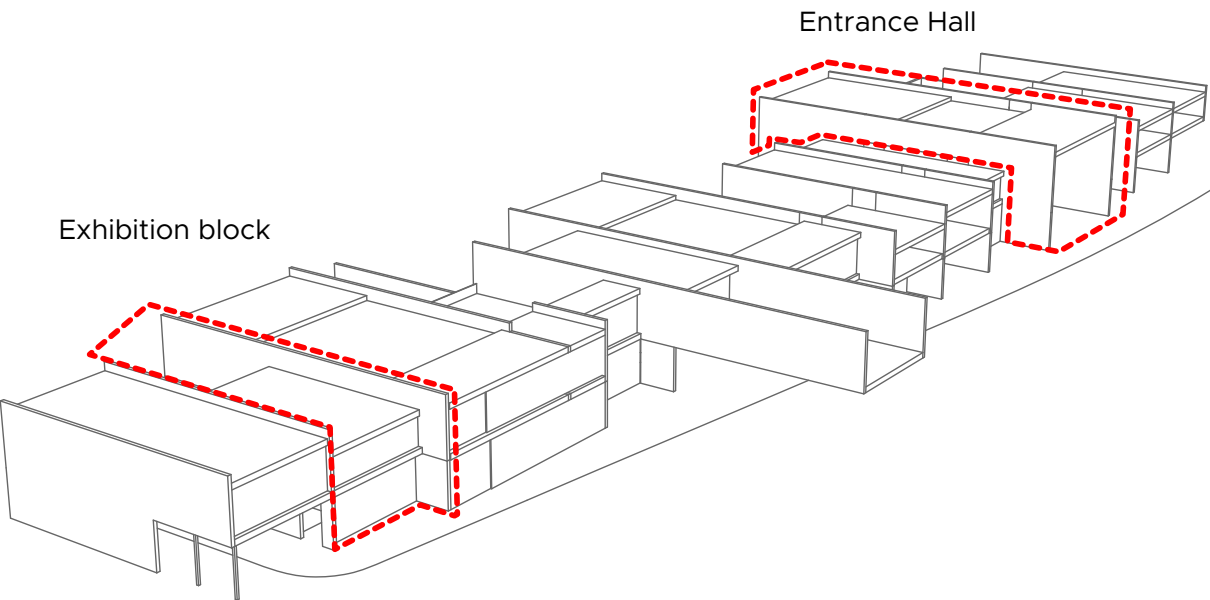


Average environmental impact of the museums in Netherlands



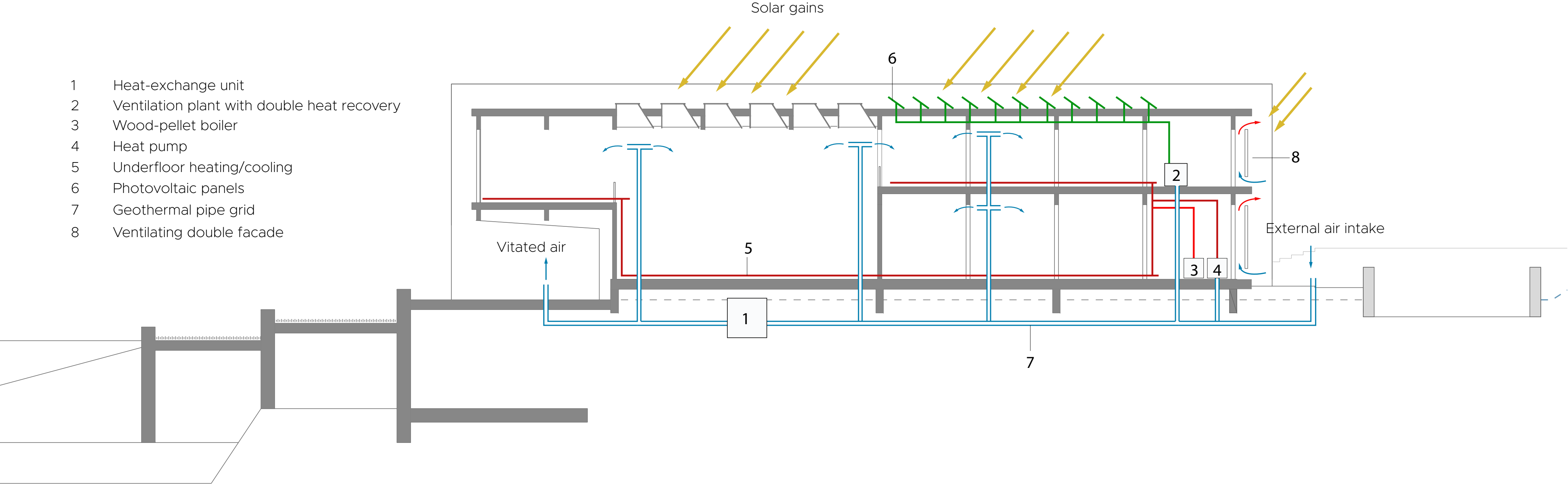
- Office Paper: 0,30%
- Freight transport: 1,0%
- Business traffic: 0,76%
- Commuter traffic: 9,6%
- Hazardous waste: 0,0035%
- Commercial waste: 5,5%
- Emissions: 0,035%
- Water & Wastewater: 1,0%
- Fuels & heat: 17%
- Electricity: 65%

Source: Envirometer, 2017



ENERGY SAVING MEASURES

Passive measures/ Building structure



TOUR / PERSPECTIVES



Thank you