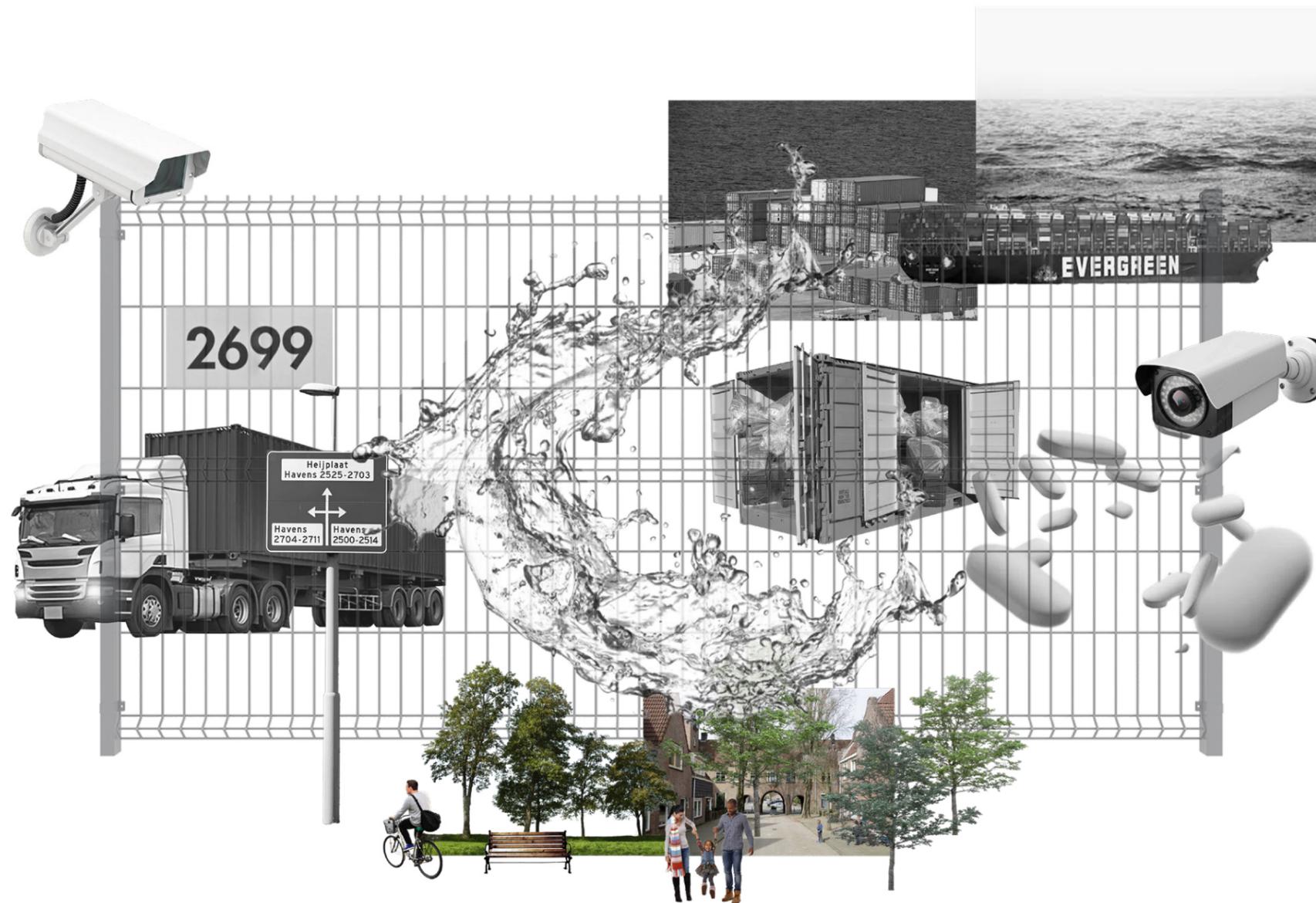


# The Soft Wall: Reframing Safety Between Port and Village

Safety-fying Port-Nested Village from Overlooked External Safety Risks of Working Port



## Keywords

Working Port, Port-Nested-Village, Wijkprofiel, Veiligheid, Security vs. Safety, External Safety



15km

Rotterdam

Nieuwe Maas

Rotterdam Zuid

Wijk 10 Noord  
Middelbuurt  
Middelbuurt  
Middelbuurt  
Middelbuurt

Europese  
Wijk voor  
cyclisten  
en fietsers  
aan  
de  
Maas

Maas  
aan  
de  
Maas

Maas  
aan  
de  
Maas

Van Bommel  
aan  
de  
Maas  
aan  
de  
Maas

De  
Maas  
aan  
de  
Maas

Oud-Charlois  
Calmisse

Tarwewijk  
Bloerhof

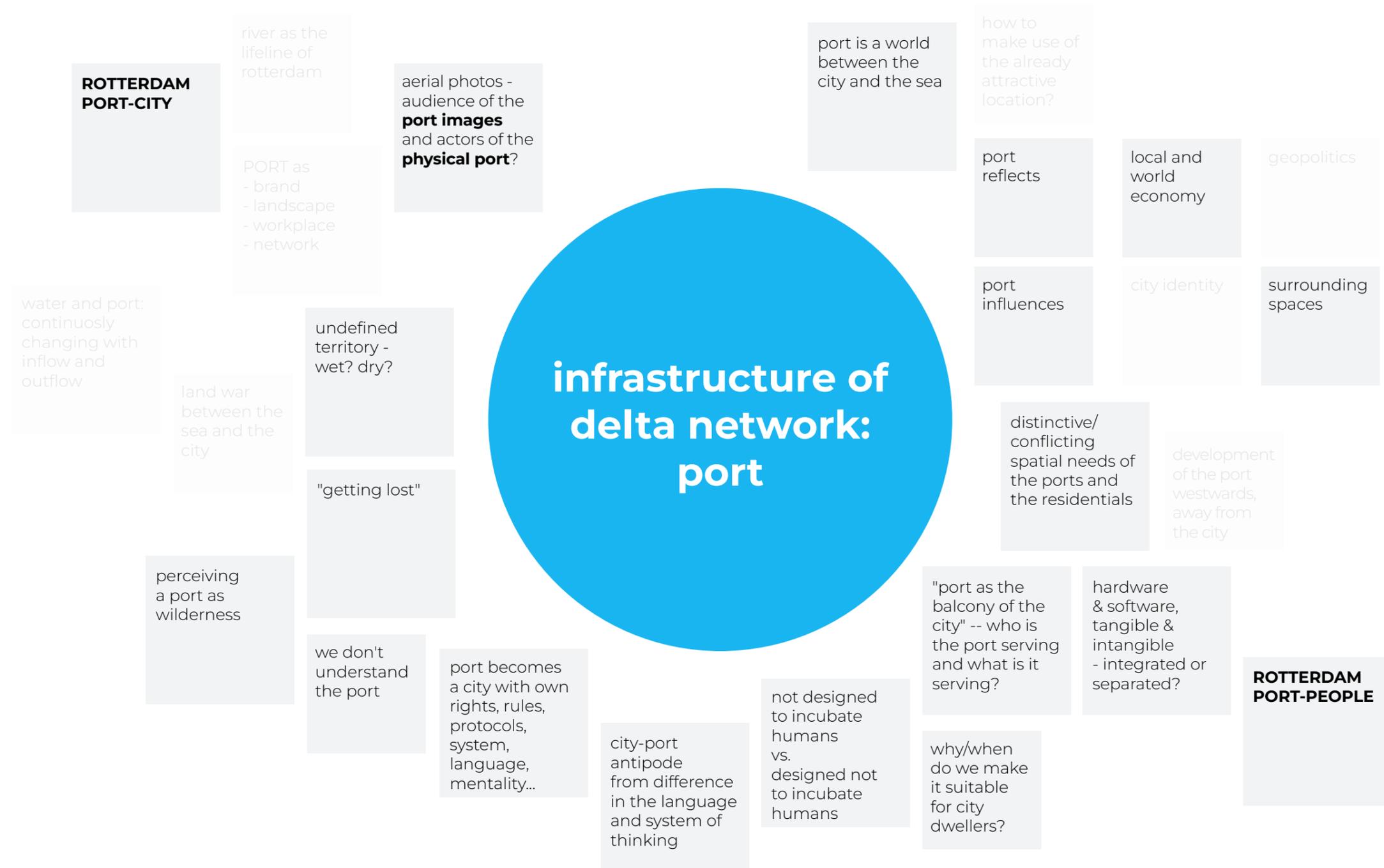
Hillesluis

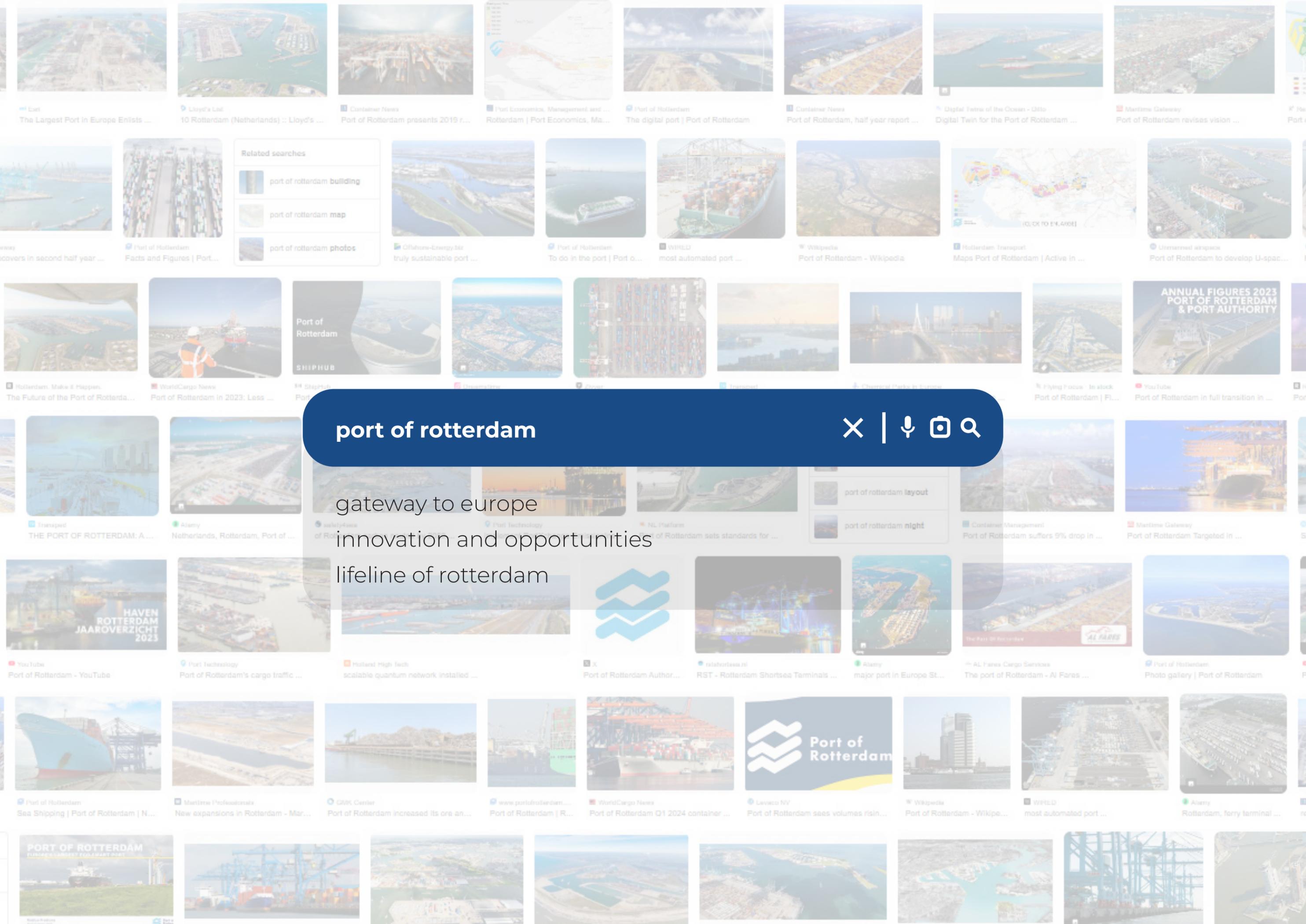
Feyenoord

Zuidpark

Jesselmonde

Charlois





port of rotterdam

gateway to europe  
innovation and opportunities  
lifeline of rotterdam

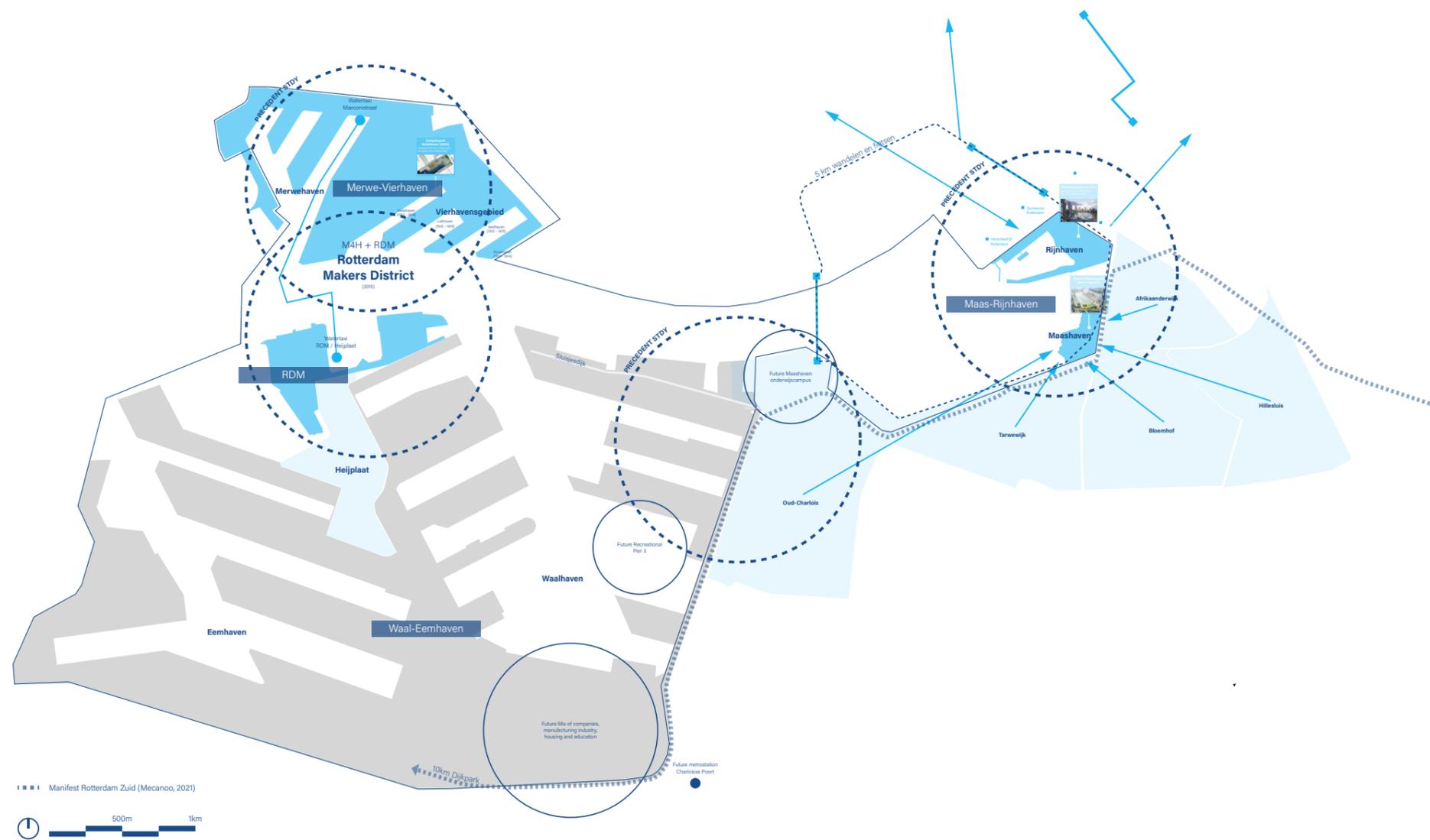




**"working ports"**



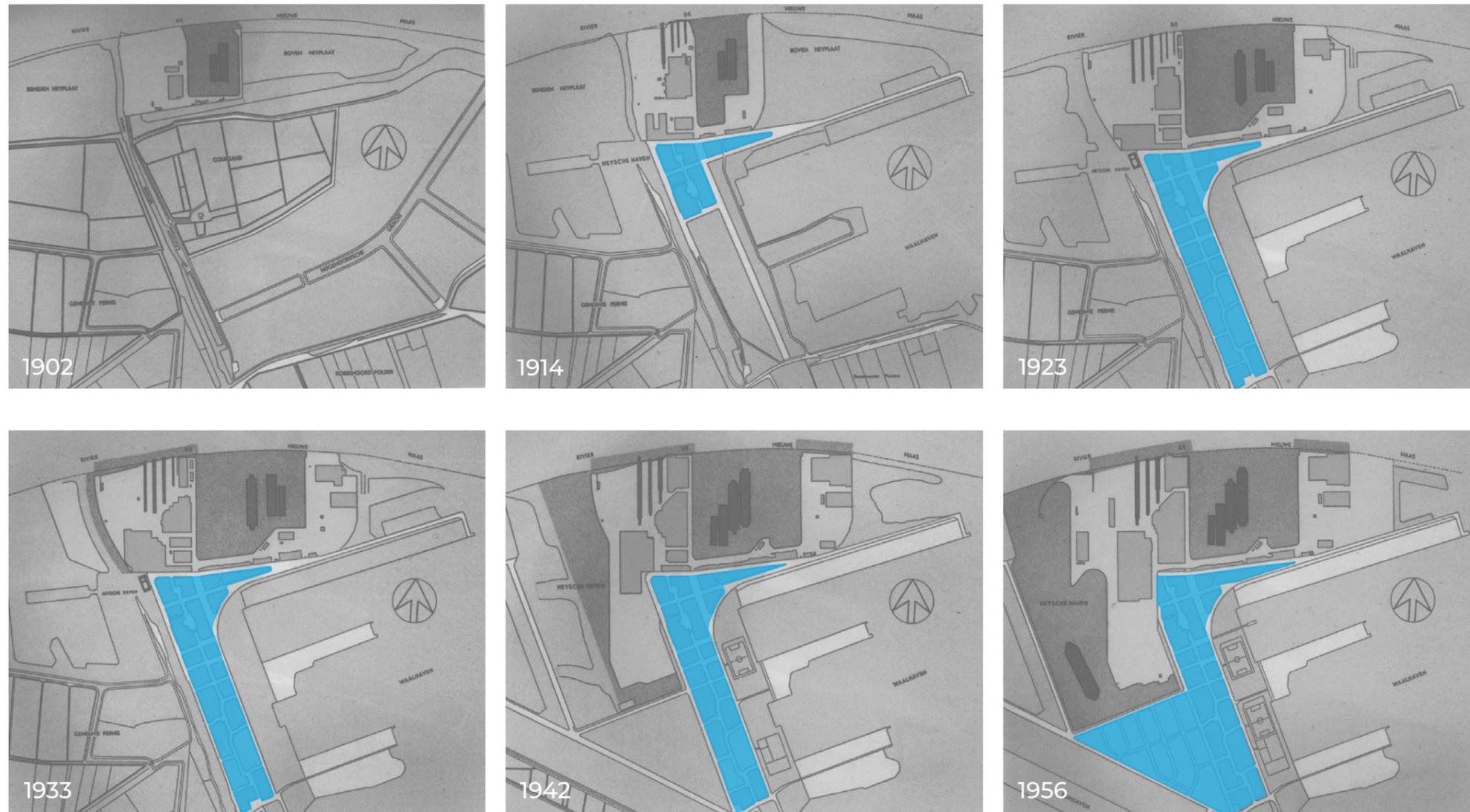
**re-making "post ports"**



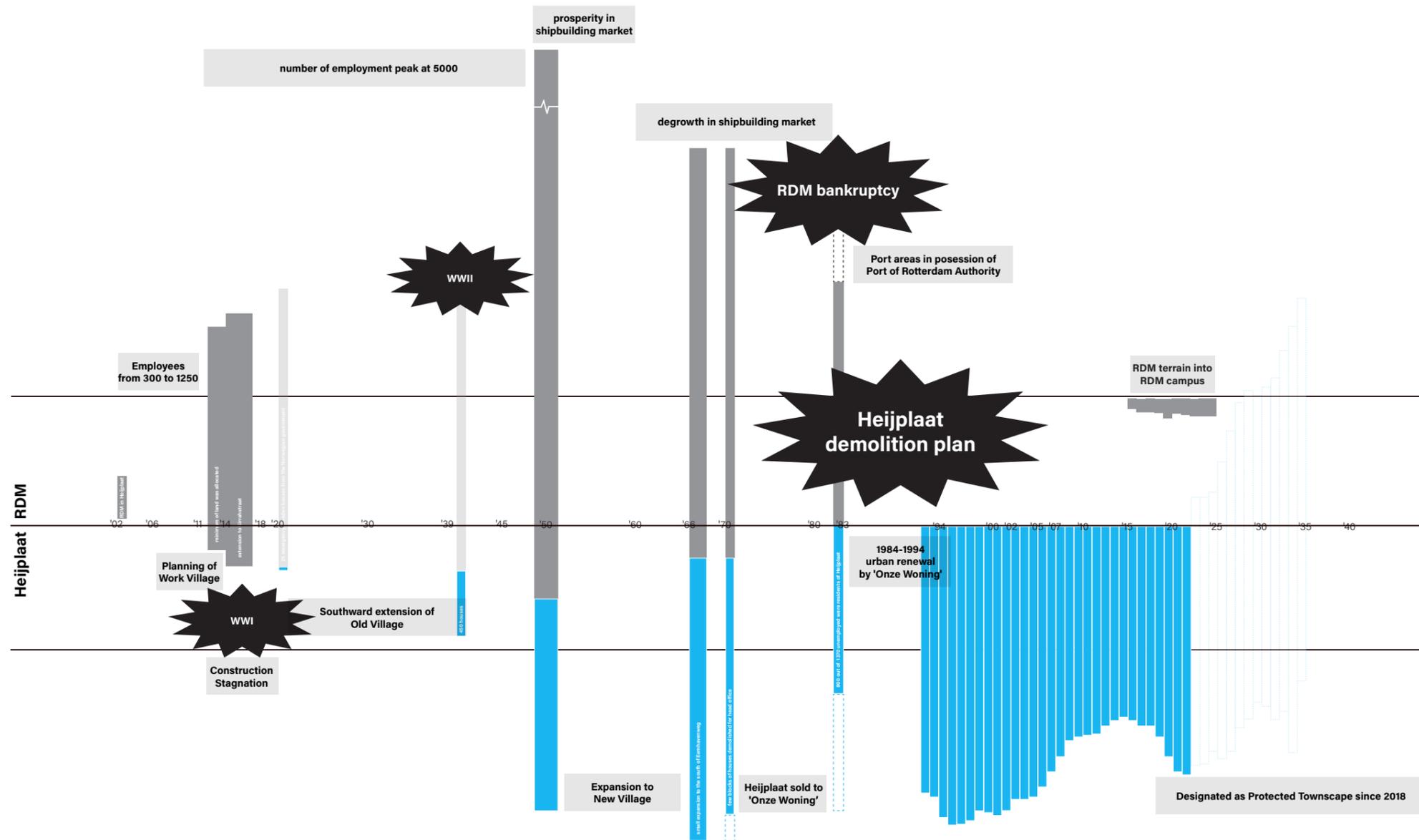
## waal/eemhaven, last working ports of rotterdam stadshaven



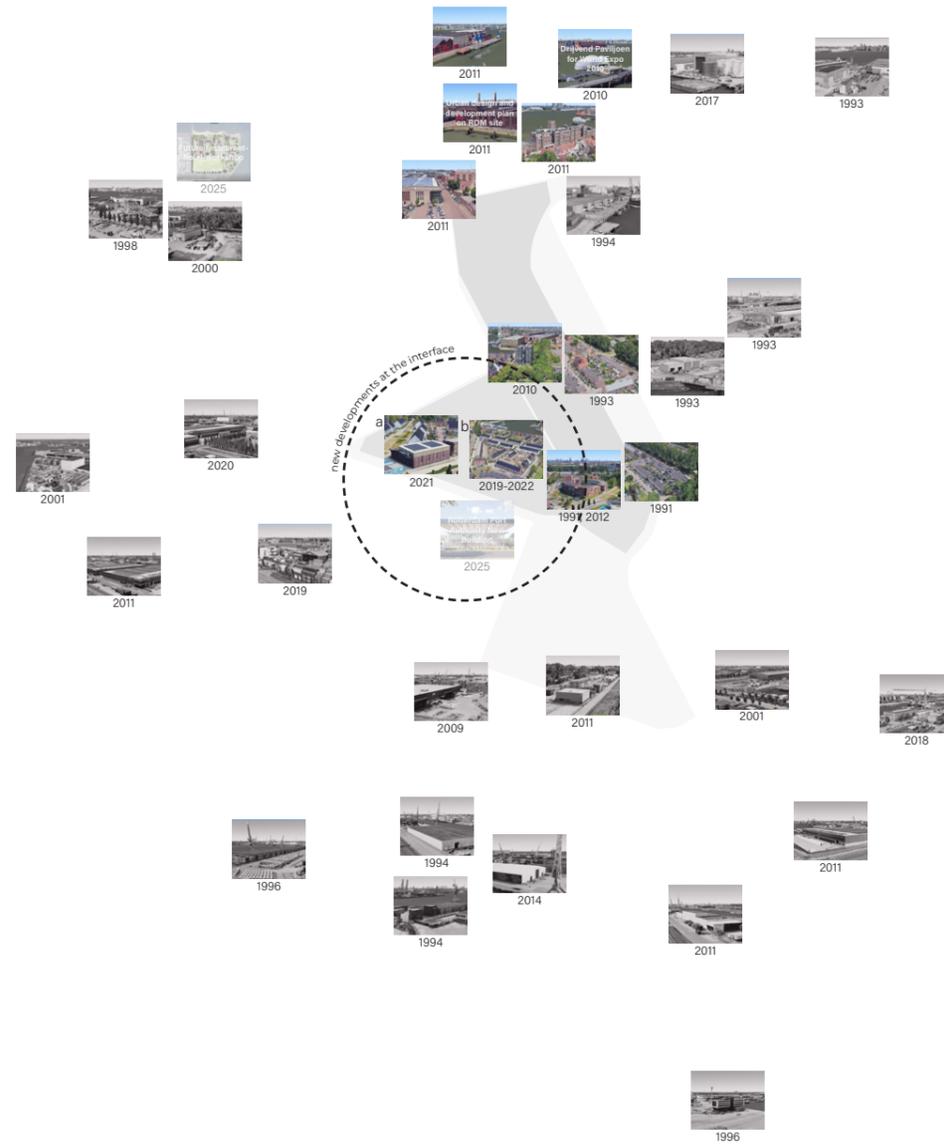
## heijplaat, "port-nested-village"



**village established by a shipbuilding company for the employees in 1910s**



## fading relationship between the port and the village today



## 1990-onward developments with own goals and priorities

# Port Functions



Water Body for Cargo Transport

Industrial Vehicular Network

All-weather Terminals

Built Structures

Industrial Ground

250m 500m

Eemhaven

Waalhaven

A15

S101

S101

S102

# Residential Functions

M4H\* + RDM  
Rotterdam Makers District

watertaxi

Watertaxi  
Quarantaineterrein

Quarantainestation

Watertaxi  
RDM / Heijplaat

RDM

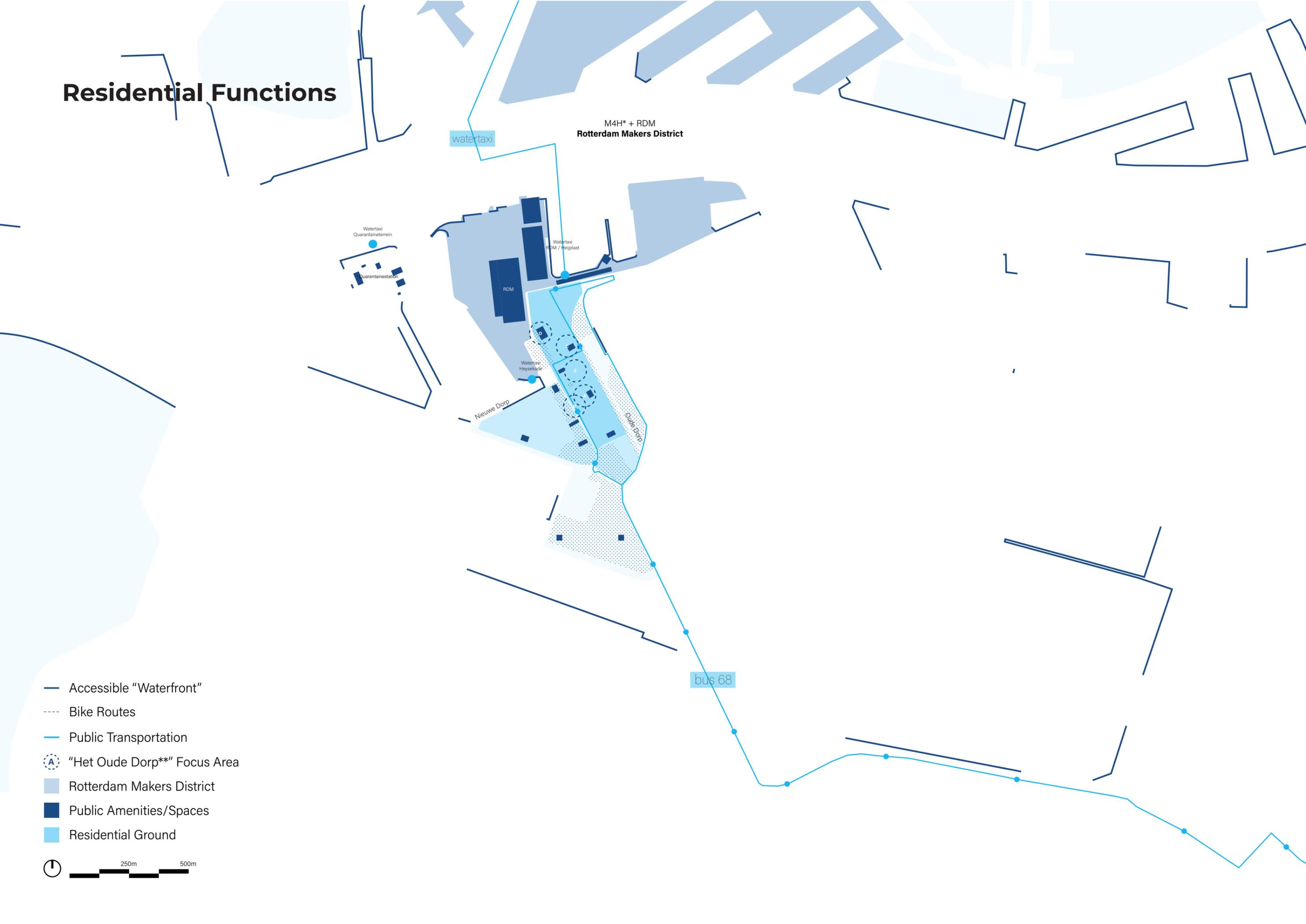
Watertaxi  
Heysekade

Nieuwe Dorp

Oude Dorp

bus 68

- Accessible "Waterfront"
- - - Bike Routes
- Public Transportation
- Ⓐ "Het Oude Dorp\*\*" Focus Area
- Rotterdam Makers District
- Public Amenities/Spaces
- Residential Ground

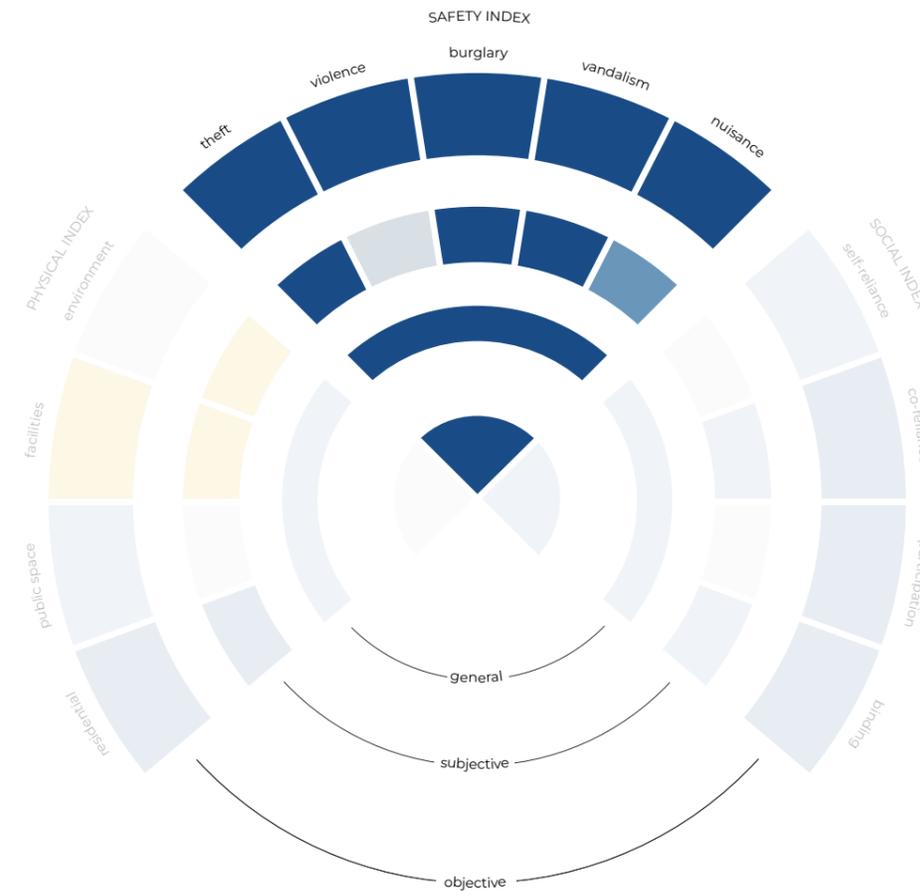




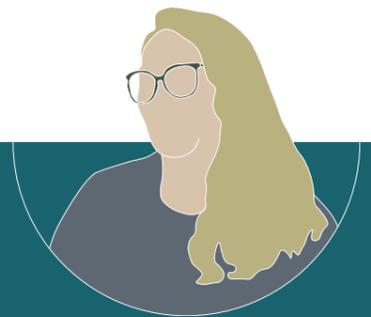
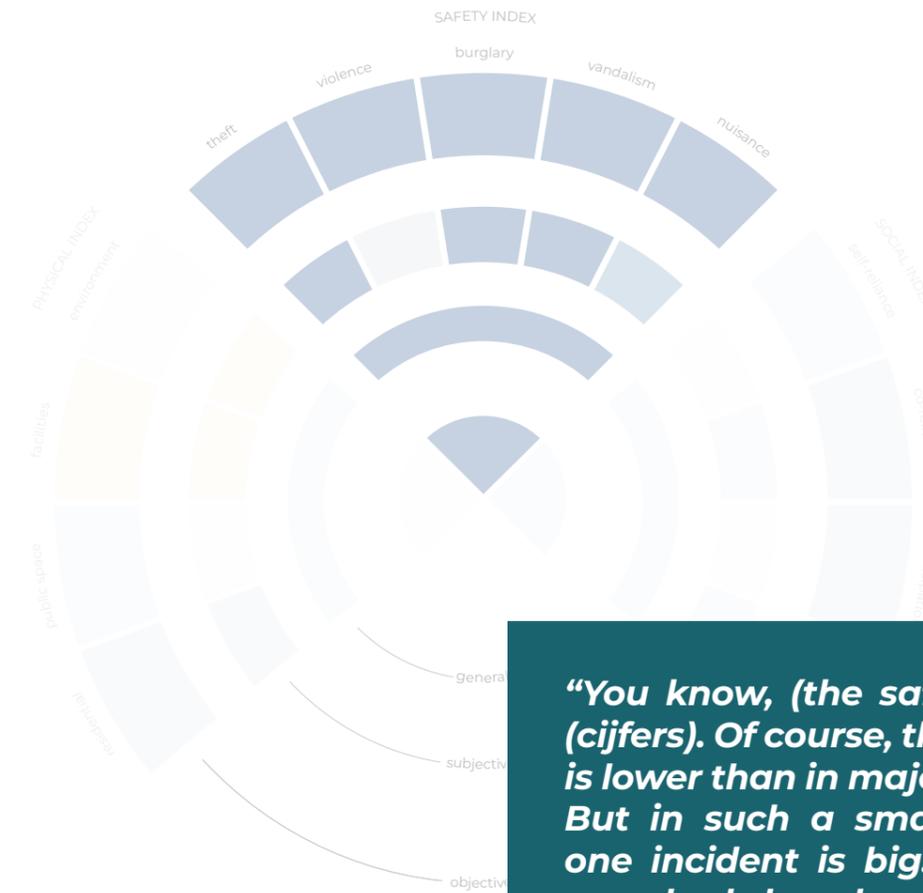
**industrial background still serving heijplaat village today**



**obscure border between the two territories**



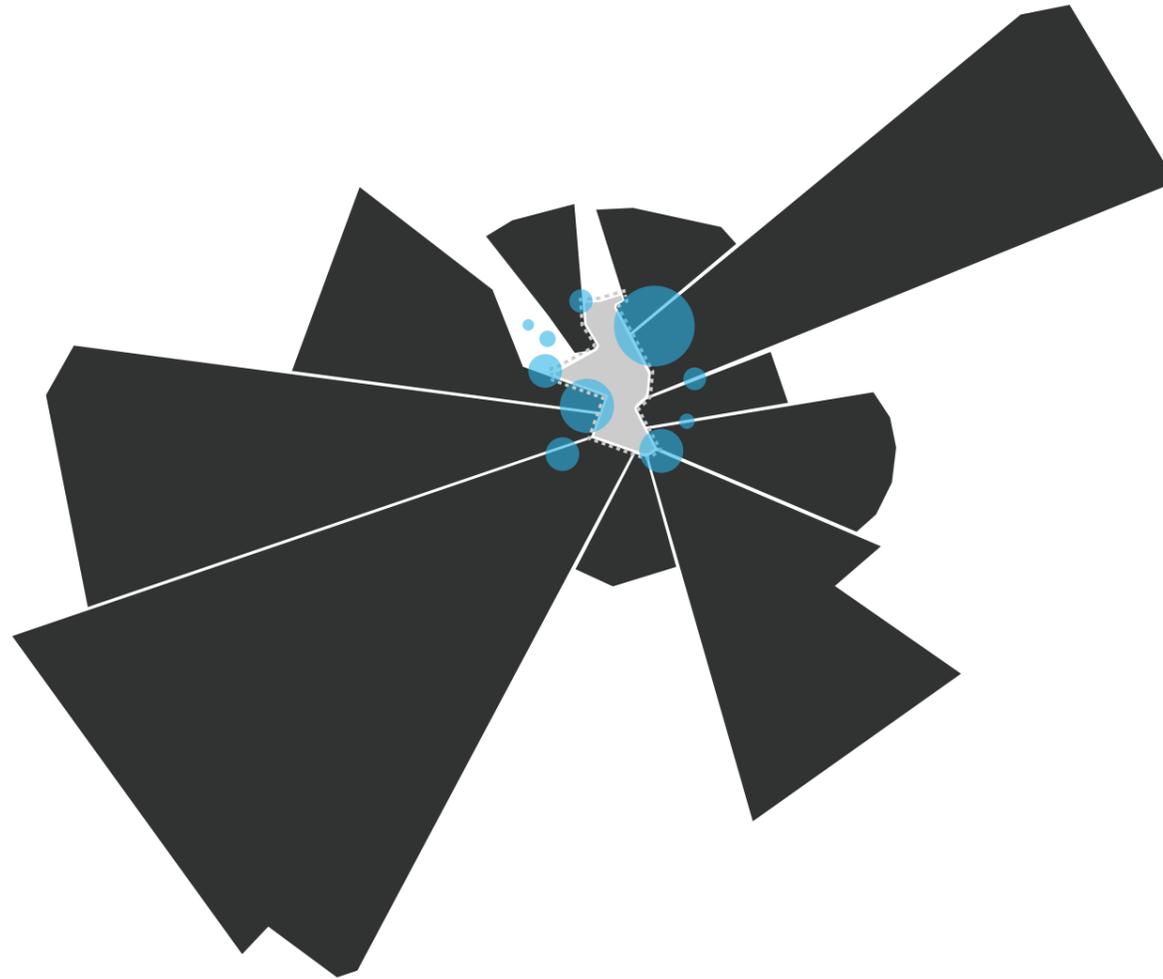
**classified as a "very safe neighborhood" by the municipality**



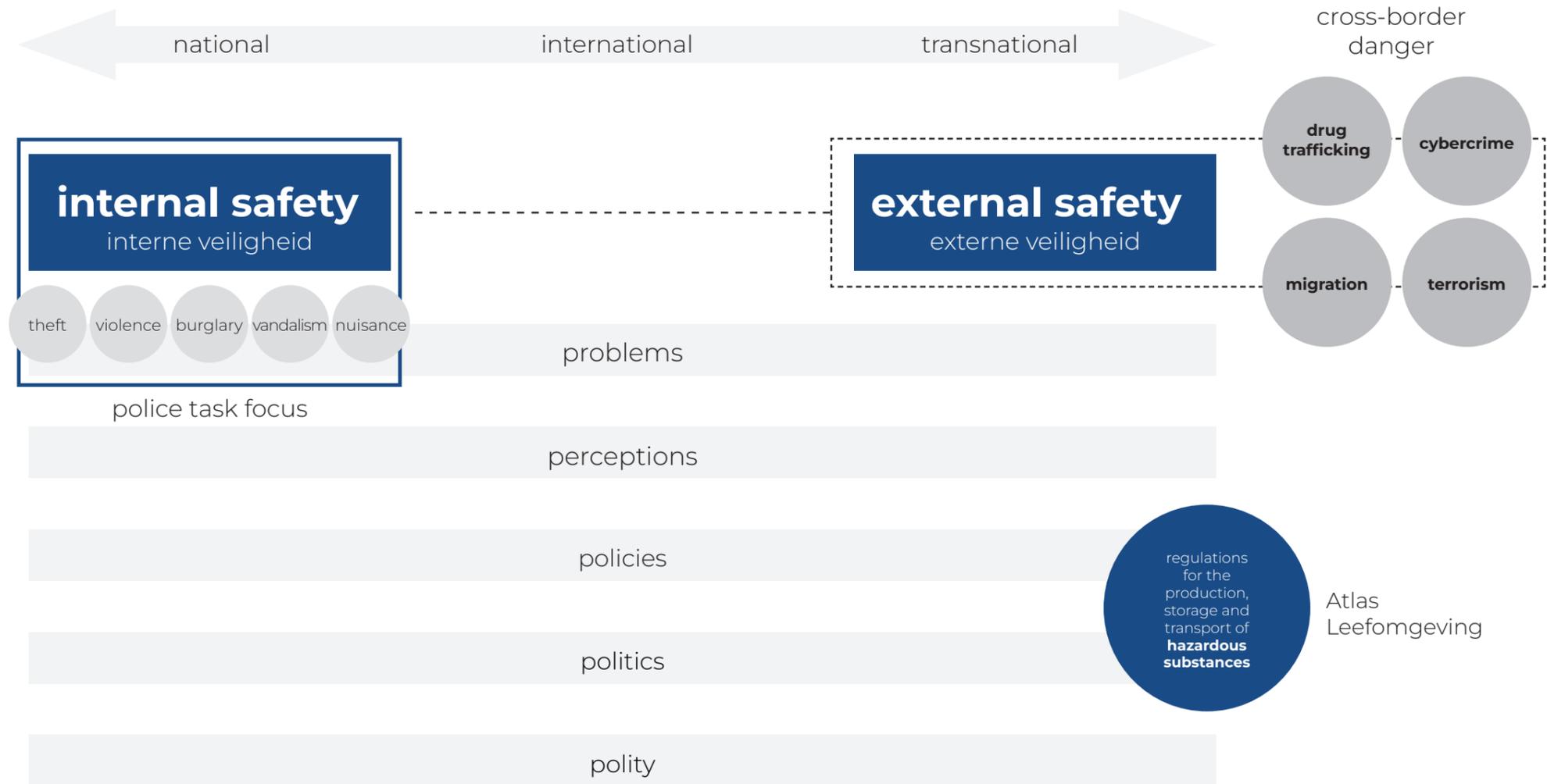
***“You know, (the safety index) is based on figures (cijfers). Of course, the absolute number of incidents is lower than in major neighborhoods of Rotterdam. But in such a small village, the impact of even one incident is big. When one incident happens, everybody here knows within a day and talks about it for the whole week.”***

Municipality expert focusing on Heijplaat and Pernis, January 2025

## **overlooking the impact of one incident in a small village**



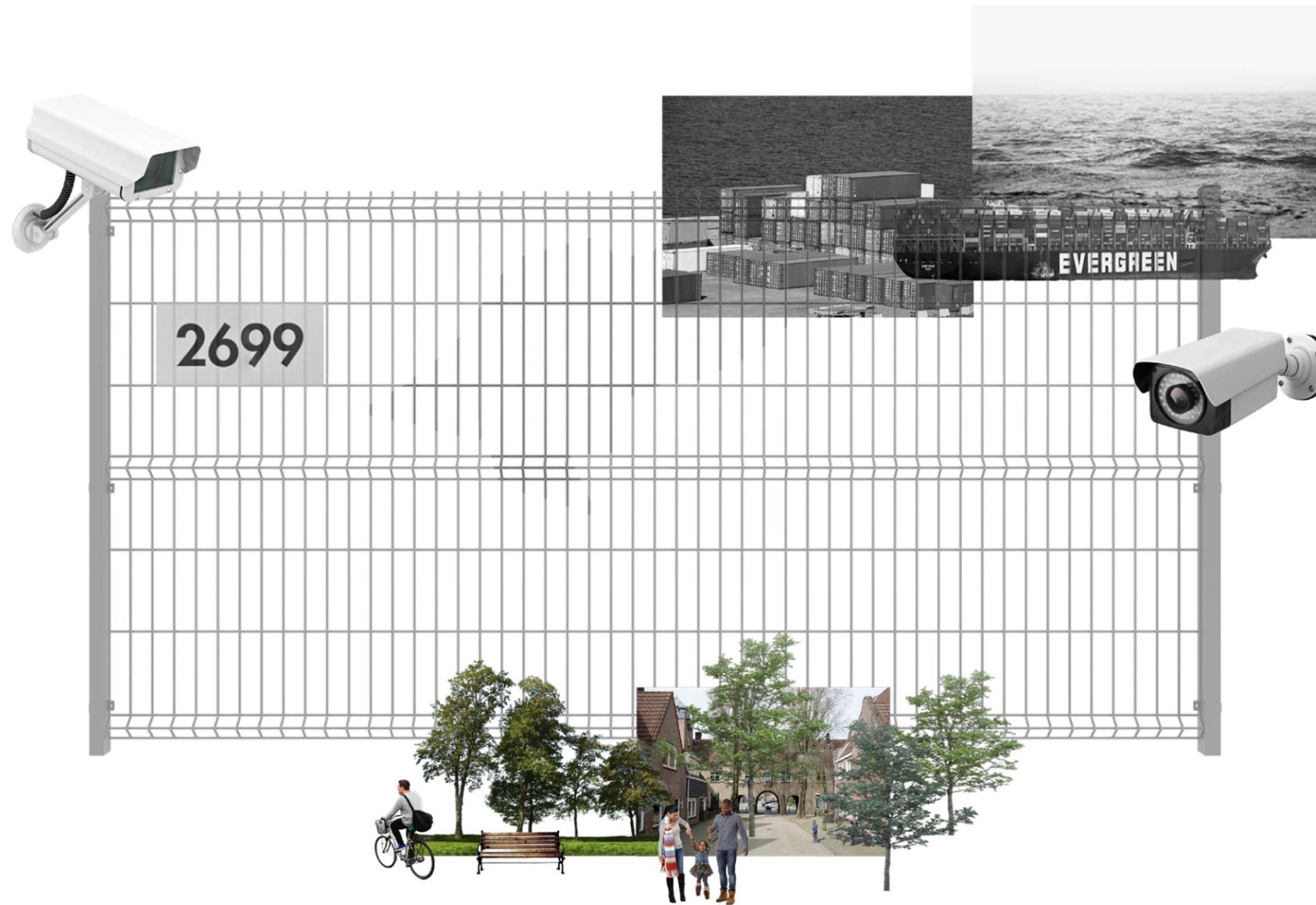
**oblivios of the external safety risks from the port**



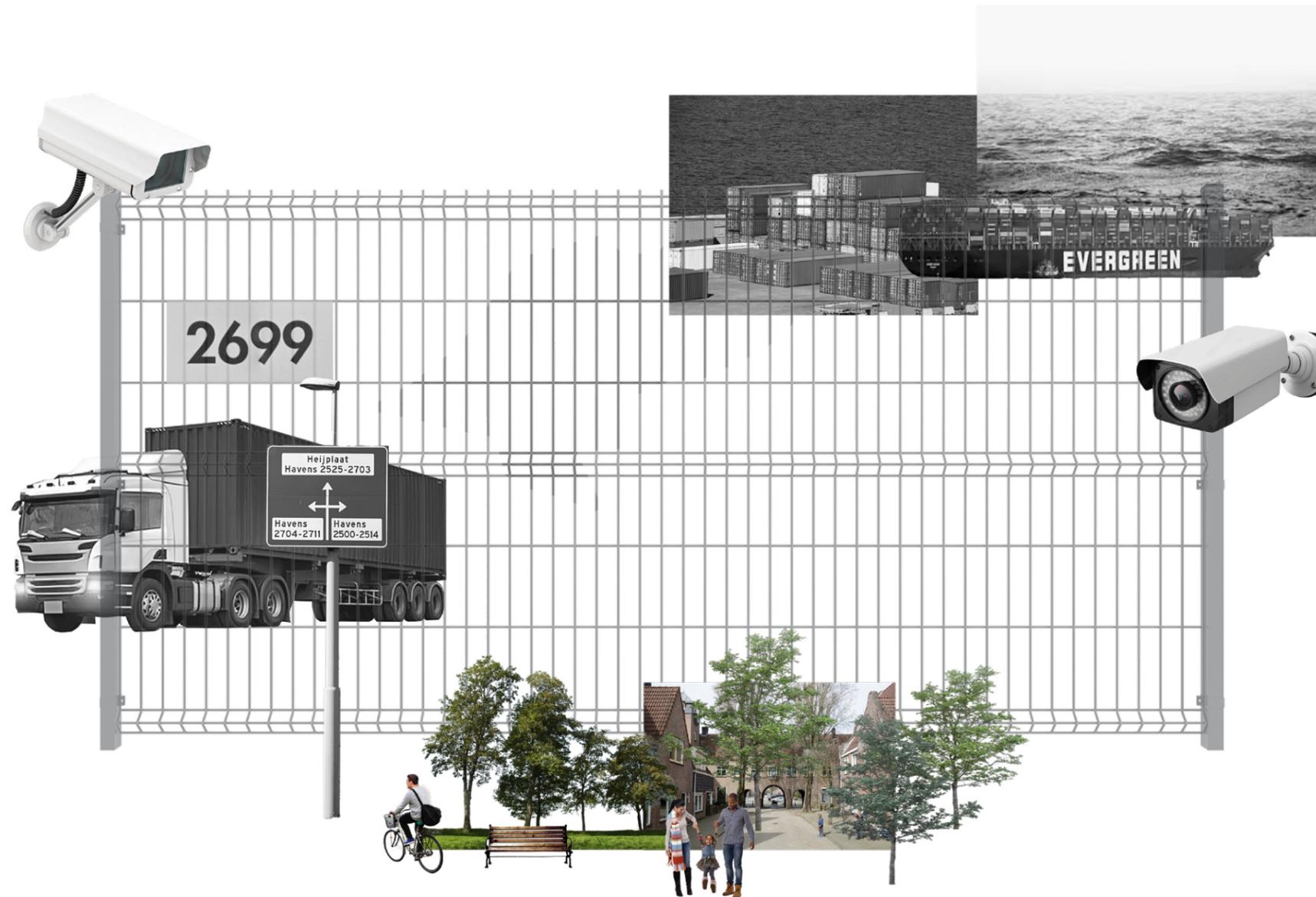
### different scope of internal and external safety



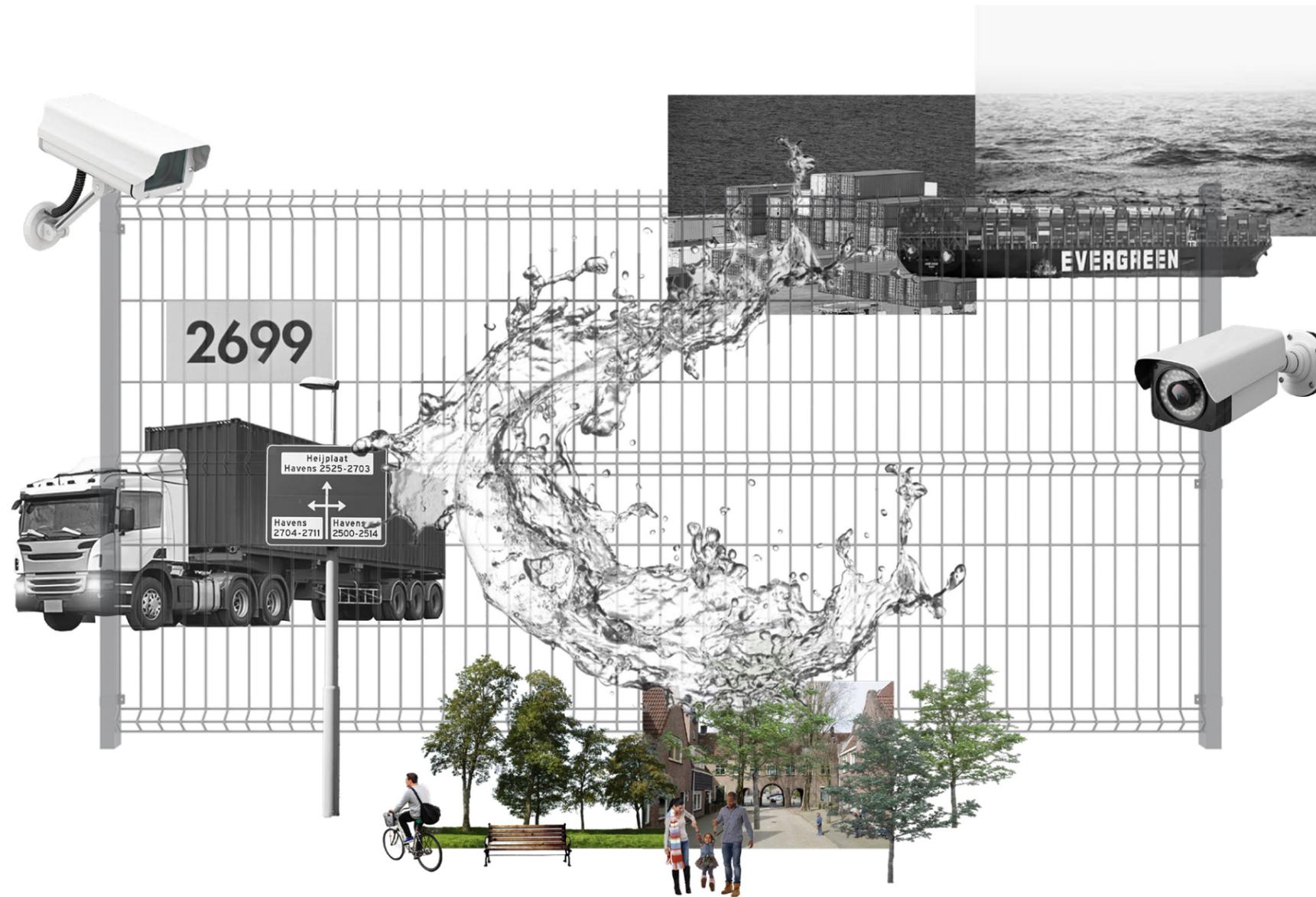
**fences, the current port-village interface**



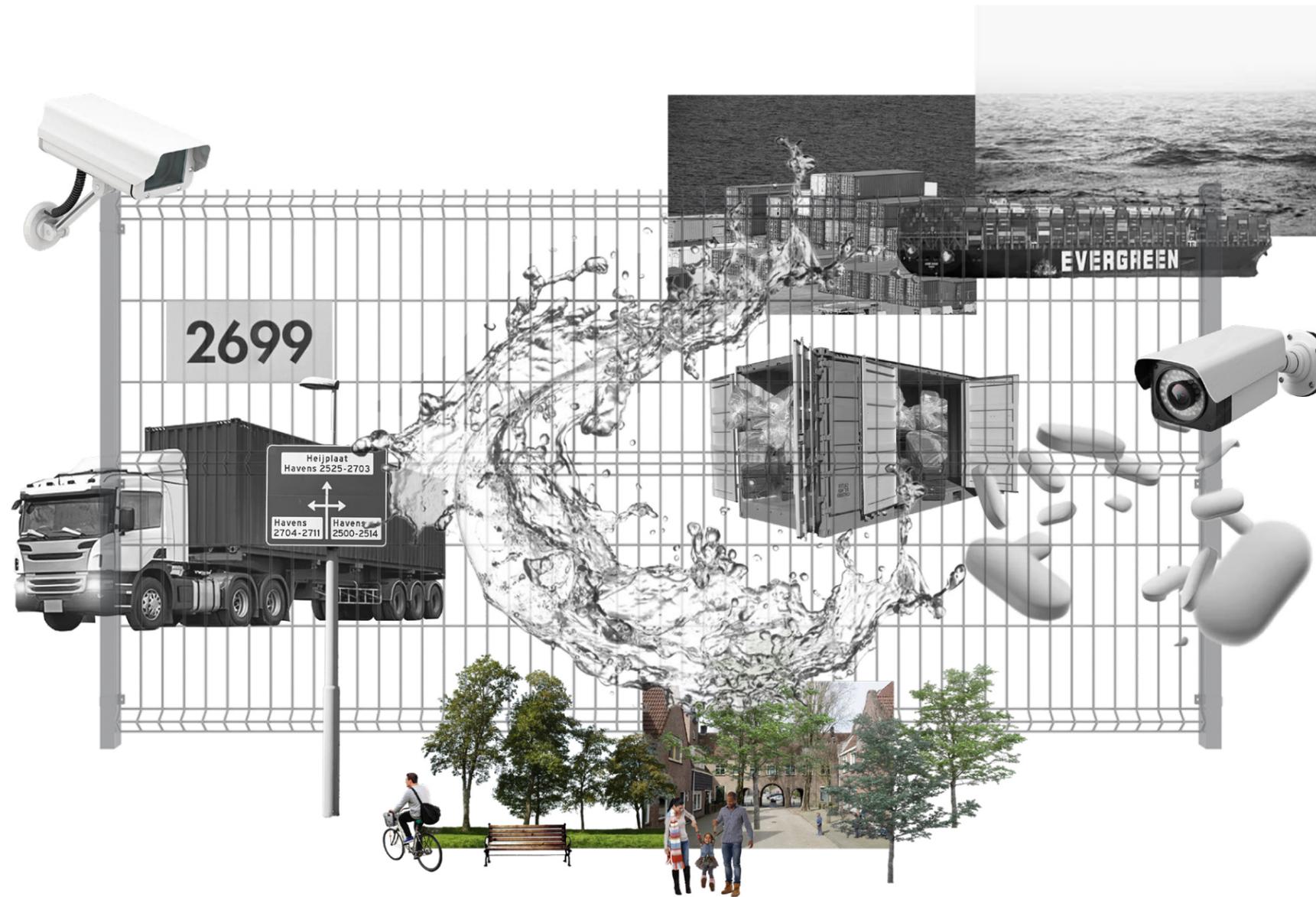
**breachable of external safety risks from the port**



**external safety risk one, road hazards**



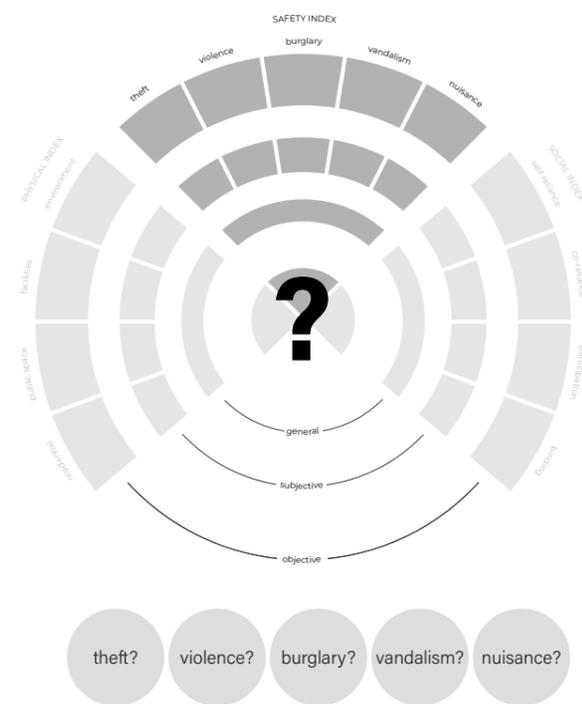
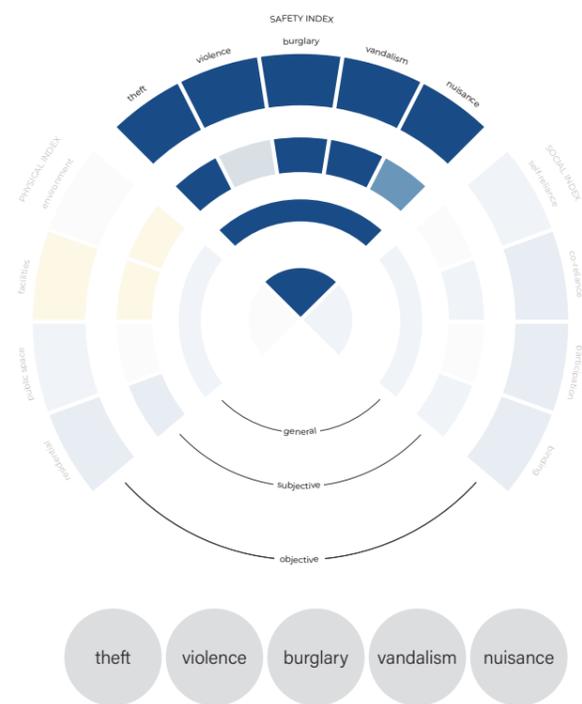
**external safety risk two, flooding**



**external safety risk three, drug smuggling**



**question of "safety" in the port-nested-village**



**need for "extended" safety index for its geographical specificity**

## **"Good fences make good neighbors"**

Fence as Interface, not as Separation - Creating Sense of Safety without Isolating

## system of security

: reference to inward/personal feelings

: network of partners in cooperation

## sense of safety

: perception of the environments

: "experience (ervaren)", "perception/sense (beleving)", "feel (voelen)"

**difference in the nuance of "veiligheid" in the port and the village**



**Patrol Boats**

Patrol boats managed by the Harbour Water Service, conduct continuous surveillance of sensitive ships and harbor infrastructure assets or critical operations in collaboration with the Security Service and Dutch Customs. The Port of Rotterdam is equipped with a Patrol System (PS) which includes infrastructure and water facilities for PSV (Patrol Service Vessel) operations and is used to monitor and control the port area. The PSV (Patrol Service Vessel) is equipped with a Patrol System (PS) which includes infrastructure and water facilities for PSV (Patrol Service Vessel) operations and is used to monitor and control the port area.

**Streetlight**

In the area of building foot and the Harbor Village, street lighting fixtures are used to reach different target groups and provide a high level of safety and security. The street lighting fixtures are used to reach different target groups and provide a high level of safety and security. The street lighting fixtures are used to reach different target groups and provide a high level of safety and security.

**X-Ray Imaging**

In large ports, X-ray scanning facilities are strategically positioned. They have scanning areas to inspect containers as they enter or leave the port. X-ray scanning facilities are strategically positioned. They have scanning areas to inspect containers as they enter or leave the port. X-ray scanning facilities are strategically positioned. They have scanning areas to inspect containers as they enter or leave the port.

**Physical Fence**

Between the port ground and the village ground, there is a physical barrier. This barrier is a physical barrier.

**Human Inspection**

Human inspection is a key element of port security. It involves the use of human resources to inspect containers and other port infrastructure. Human inspection is a key element of port security. It involves the use of human resources to inspect containers and other port infrastructure. Human inspection is a key element of port security. It involves the use of human resources to inspect containers and other port infrastructure.

**Pavement**



**“We think the neighborhood is very safe but there are not many people out in the evening. The street in the village is a bit bumpy and we don't want to trip. We would take a stroll in the RDM plot with bright streetlights and even pavement.”**

Heijplaat resident leading the Monday evening stroll group, December 2024

**taking advantage of port operation to maintain "safe" village life**



**highlighting everyday life with industrial background again**

# National "Protected Townscape"

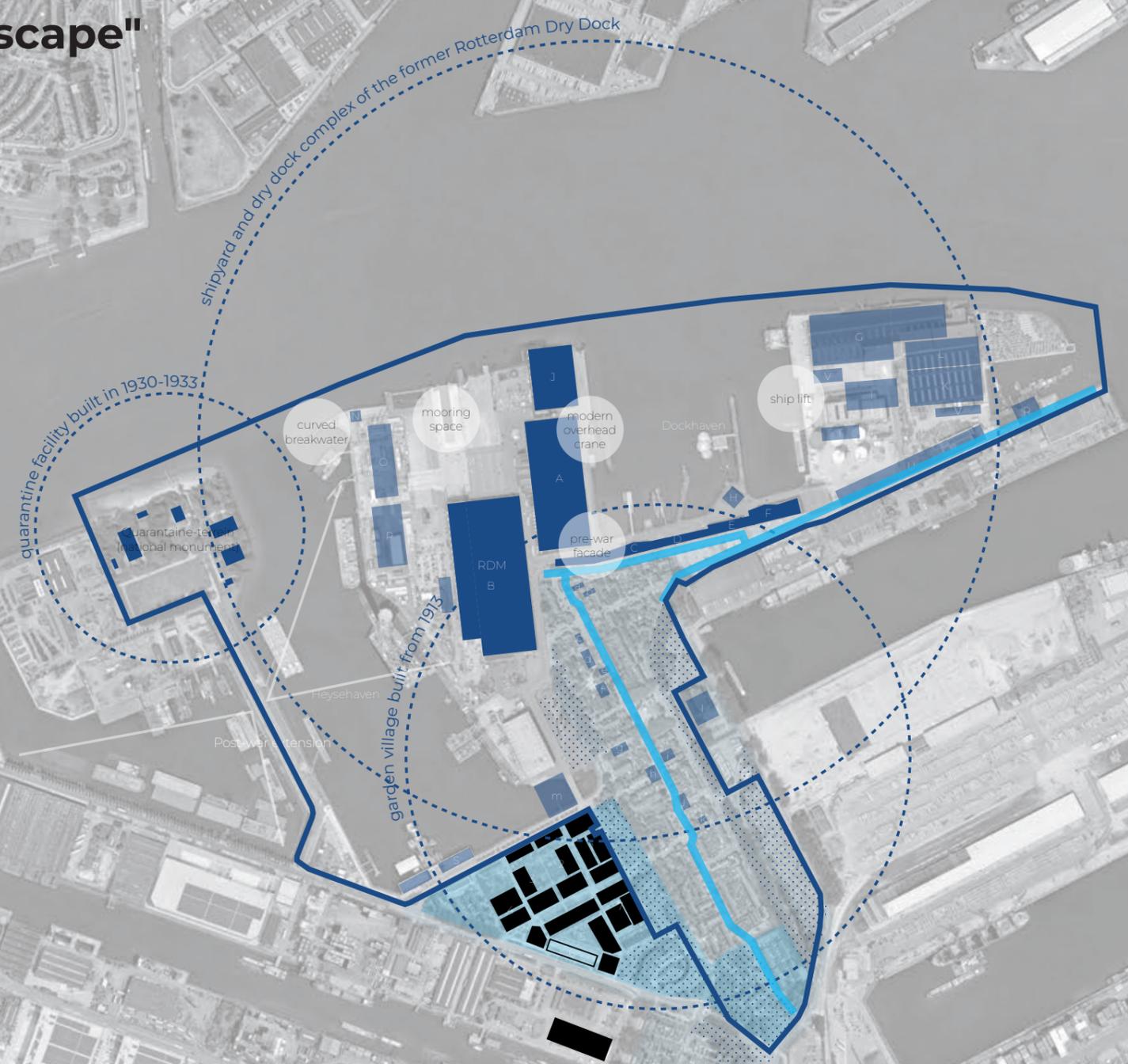
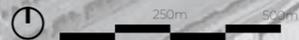
## RDM Historical Complex

- A Machine Factory (1903-)
- B Shipbuilding Shed (1920-)
- C Head Office Annex Gatehouse (1913-)
- D Former Canteen (1913-1914)
- E Dock Shed (1918; 1958)
- F Central Warehouse (1918; 1958)
- G Boiler Shop and Forge (1920; 1938-1939)
- H Dock Office (1920; 1938-1939)
- I Submarine Shed (1929)
- J Former Foundry (1929-1930)
- K Equipment Hall
- L New Equipment Hall
- M Shipyard
- N Office/Storage
- O Carpentry Shed
- P Warehouse
- Q Plate Sorting Area
- R Office krve
- S West dock office
- T Other buildings
- U Warehouses
- V Other buildings

## Historical Public Building

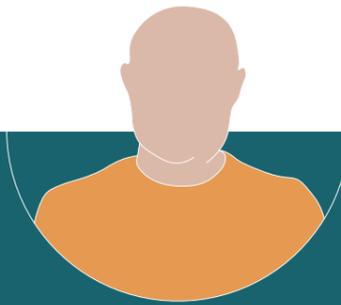
- a conference building
- b shop
- c laundry building
- d school
- e bachelor house
- f special school
- g party building (large theatre hall, office room, bowling alley and conservatory)
- h nursery school
- i reformed church
- j roman catholic church
- k protestant church
- l soccer field
- m swimming pool

- Post-war Extension
- ⊙ "Het Oude Dorp" Focus Area (est. 2025-2028)
- ▨ Green Spaces
- Public Spaces
- New Town
- Old Town



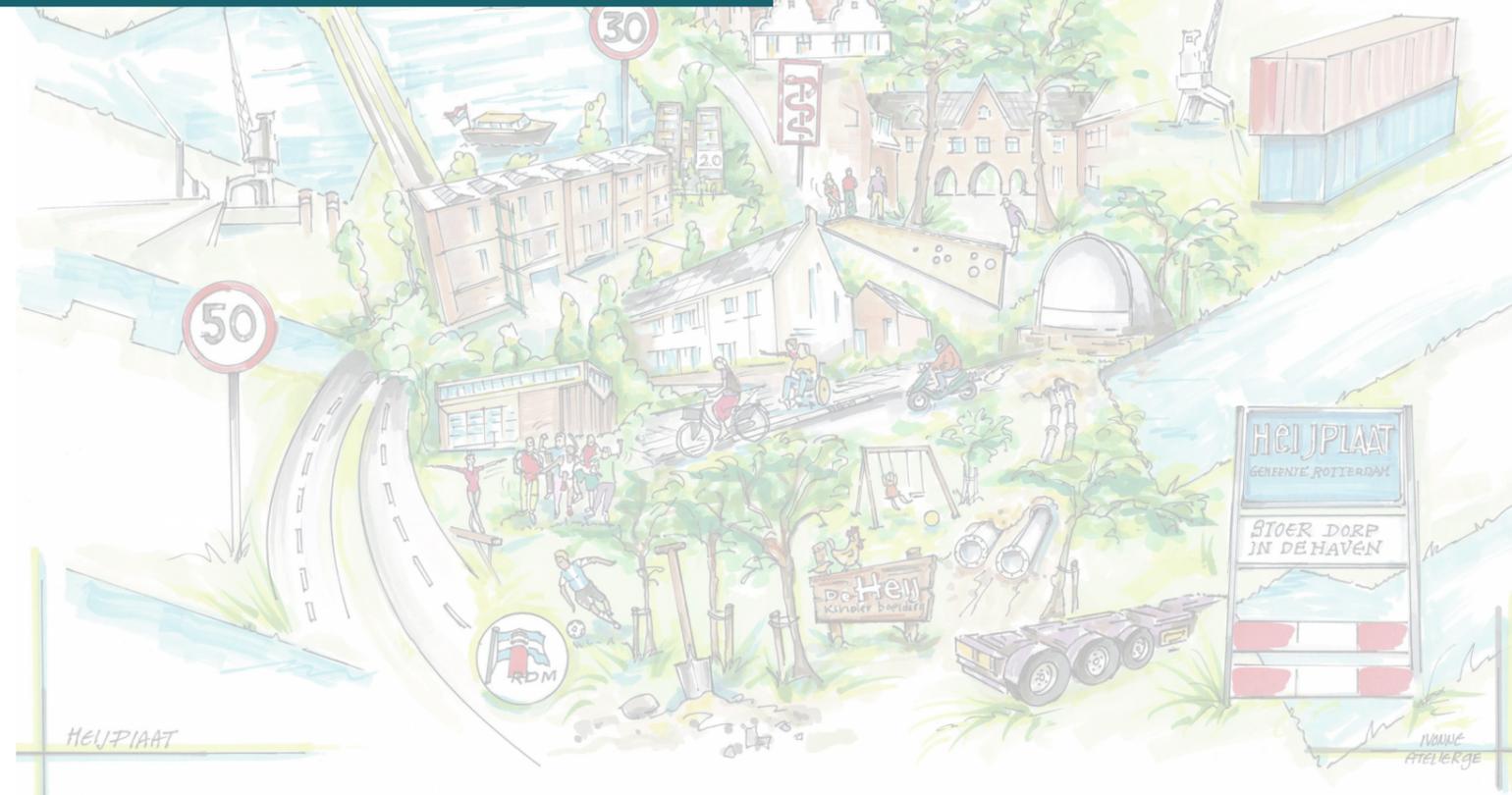


currently promoted as "cool village in the port"

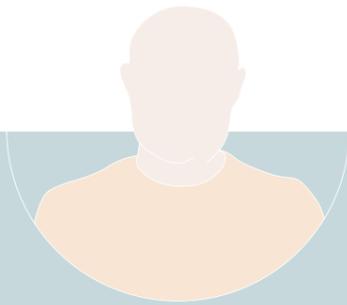


*“I’ve been working at the port company X for over 20 years but I’ve never entered the Heijplaat village. What is there to do?”*

Port company employee heading home from work, September 2024



**often forgotten behind the shadow of large industrial port**

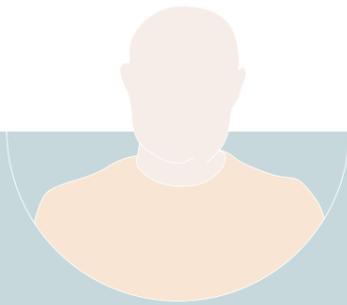


*"I've been working at the port company for over 20 years but I've never entered the Heerlen village. What is there to do?"*

Port company employee heading home from work,



**reintroduce unique combination of port-village-public space**



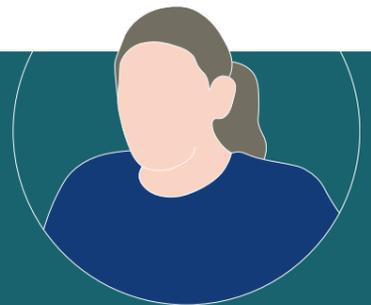
*“I’ve been working at the port company X for over 20 years but I’ve never entered the Heijplaat village. What is there to do?”*

Port company employee heading home from work, September 2024



*“I joined the obstacle run for the third time together with my colleagues. The idea of using containers as obstacles is interesting. It’s something you don’t see and access normally.”*

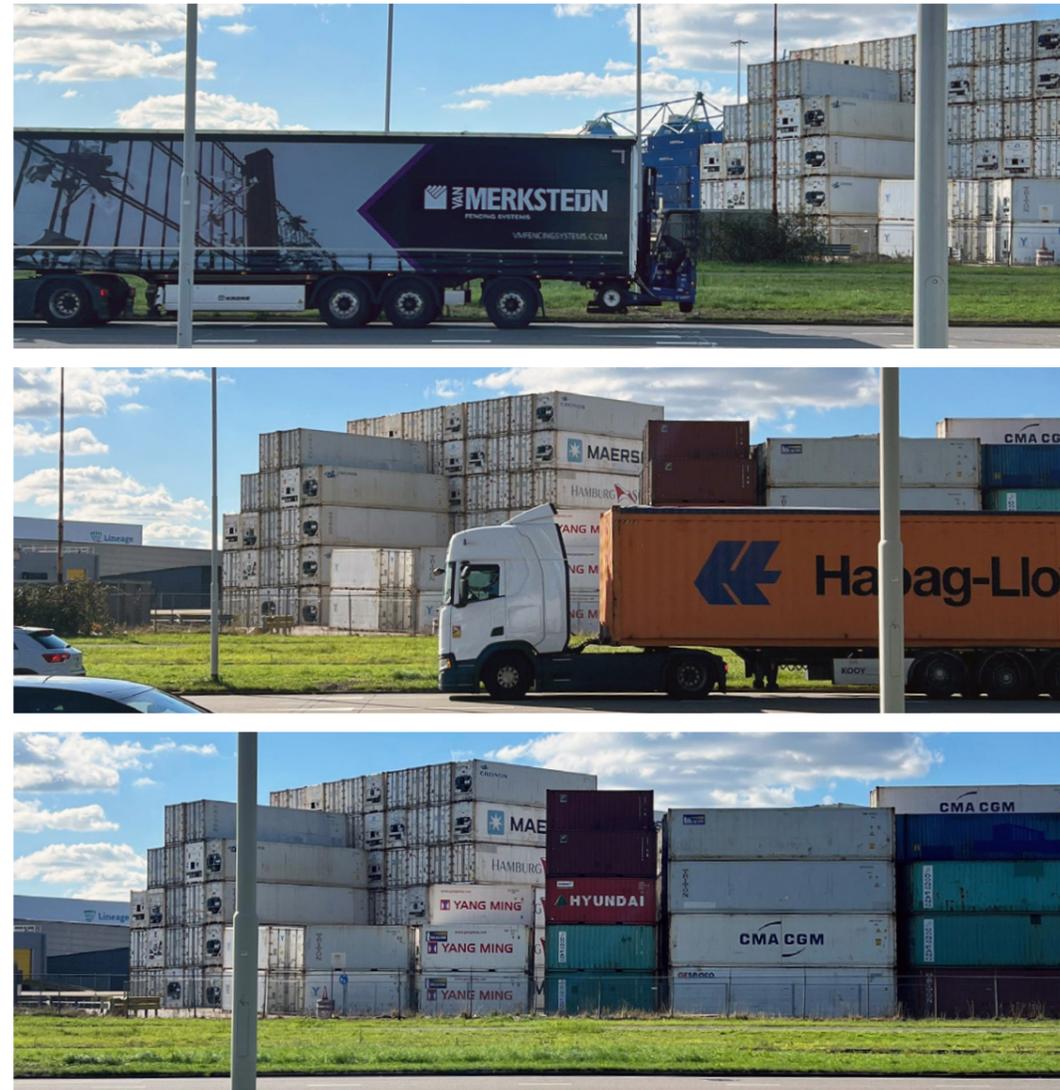
Veldacademie alumna with graduation project in Heijplaat, November 2024



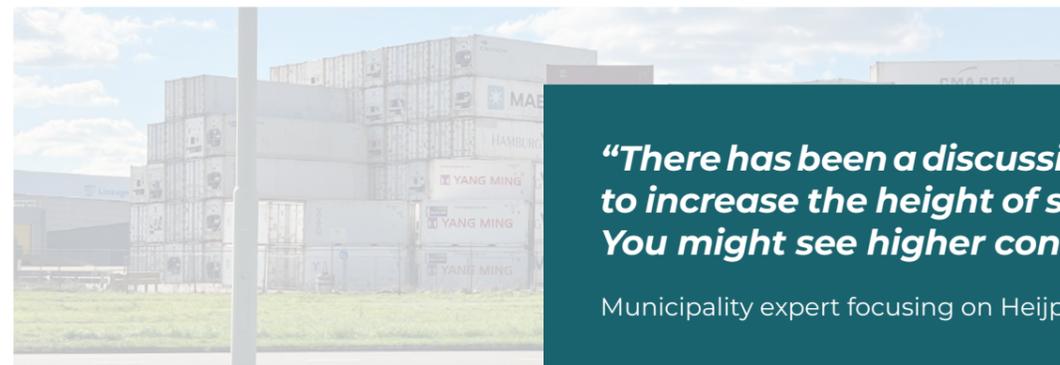
## **new paradigm of port-nested-village in rotterdam south**



**village and port sharing one road as the only inland connection**

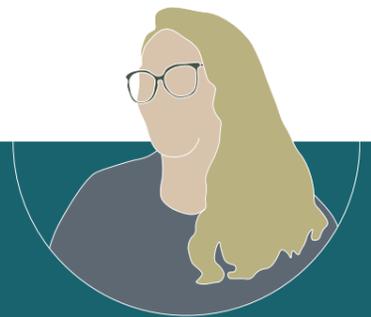


**repeating scenes making the trip less approachable**

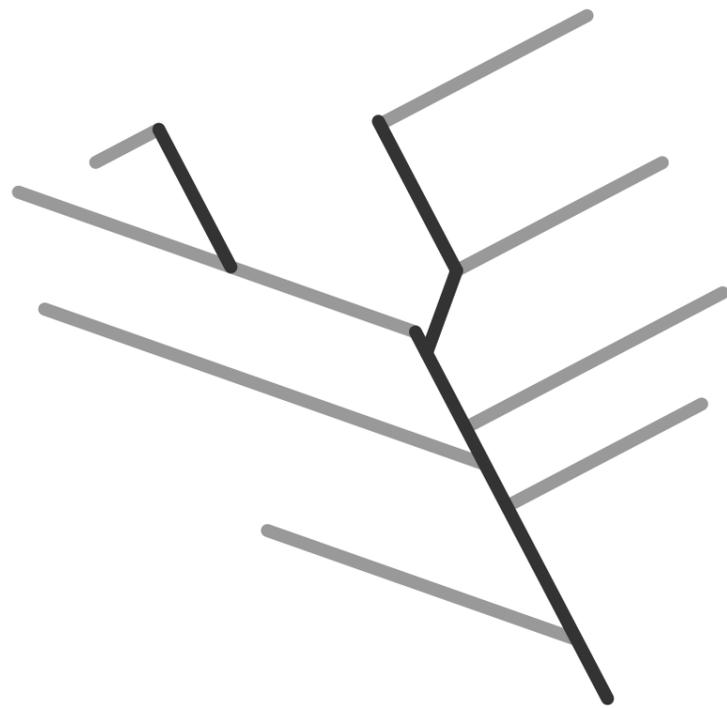


*“There has been a discussion among port companies to increase the height of stacked containers by 20%. You might see higher containers along the road.”*

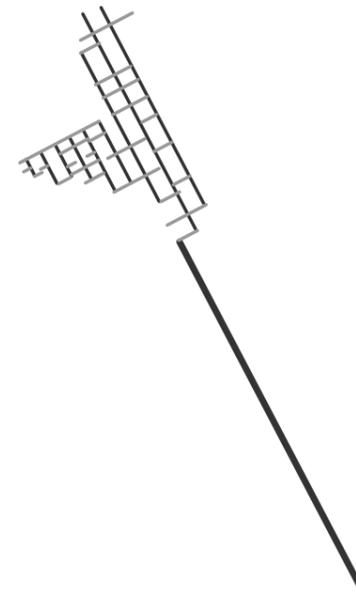
Municipality expert focusing on Heijplaat and Pernis, January 2025



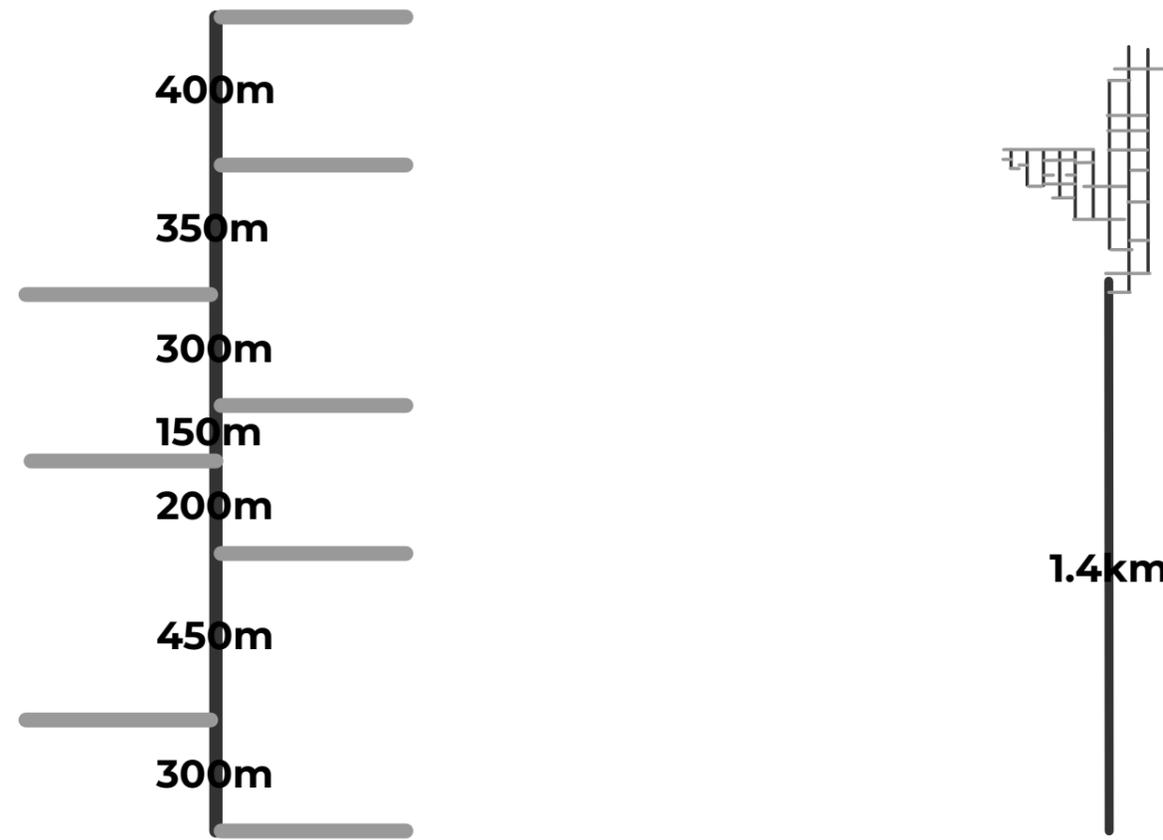
**project starting from the urban strategies**



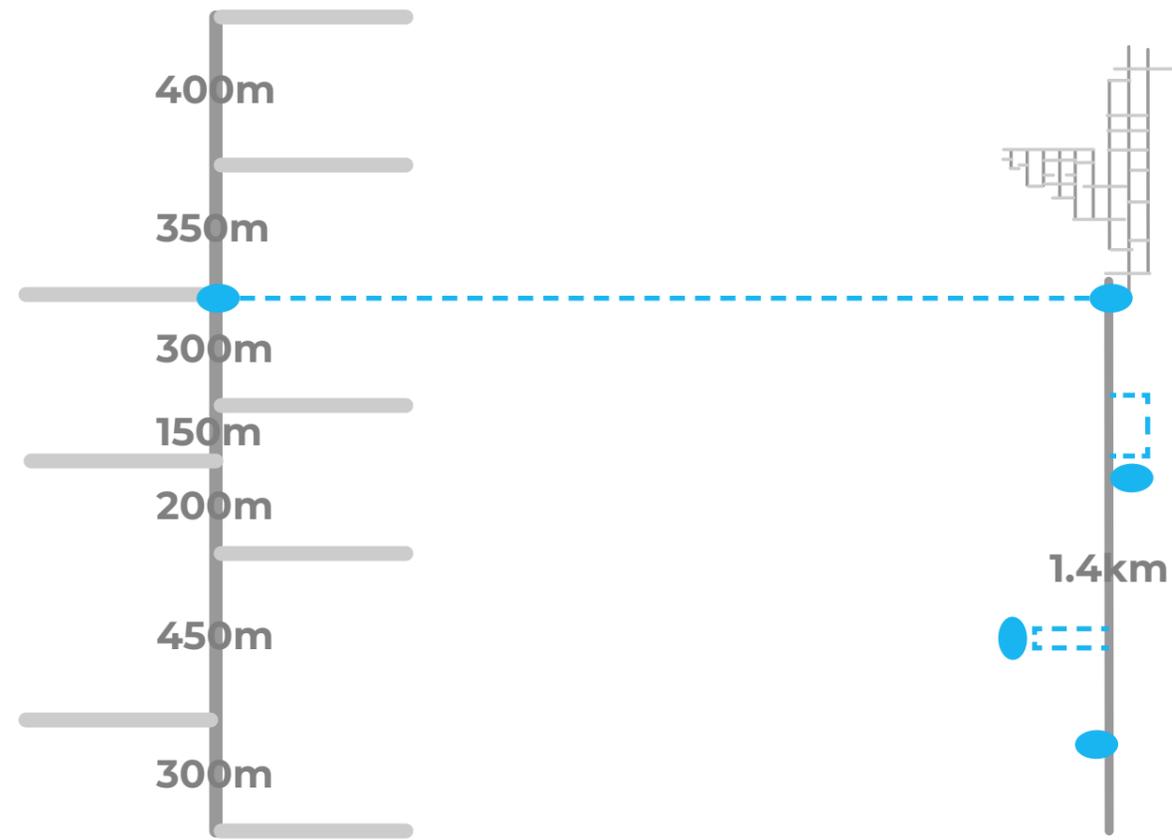
**road network of port**



**road network of village**

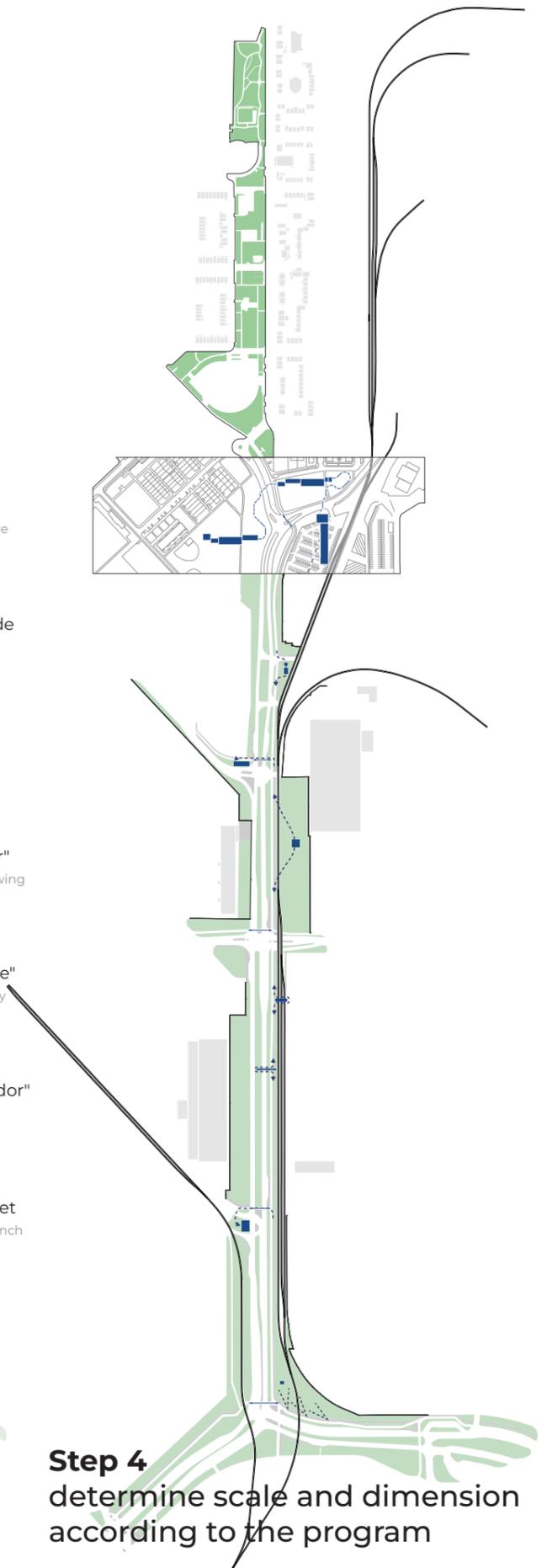
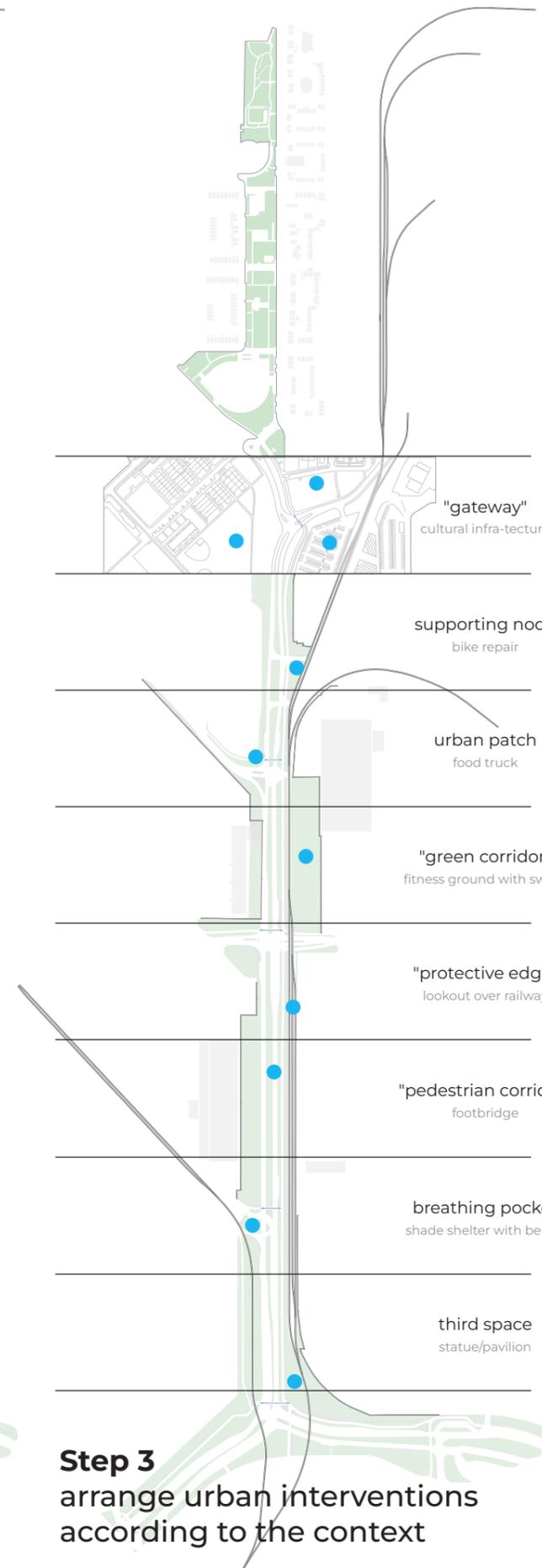
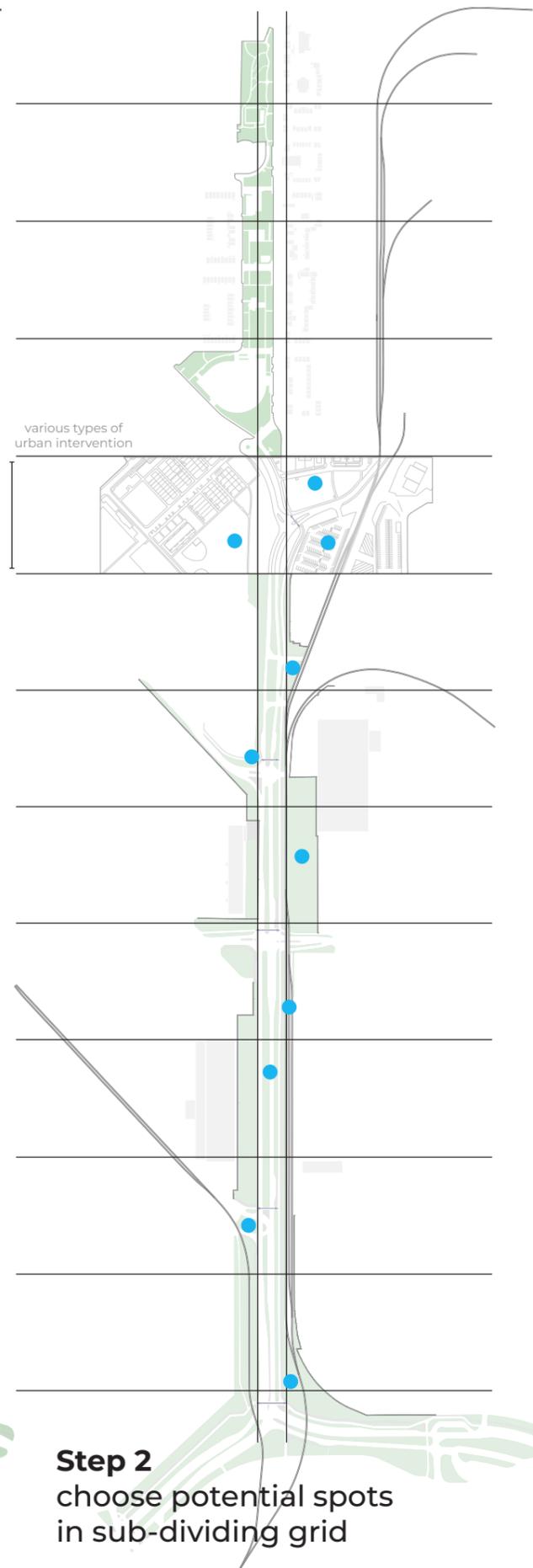
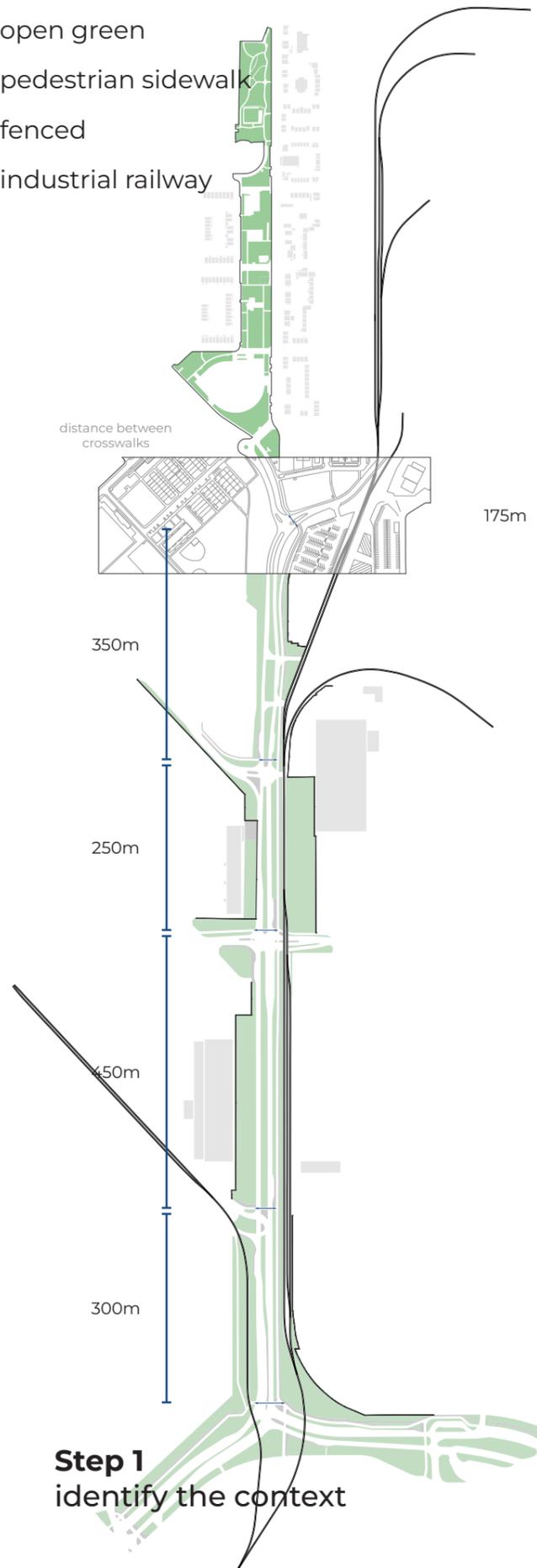


**turning the 1.4 km journey into a part of the experience**



**small interventions breaking down the long road**

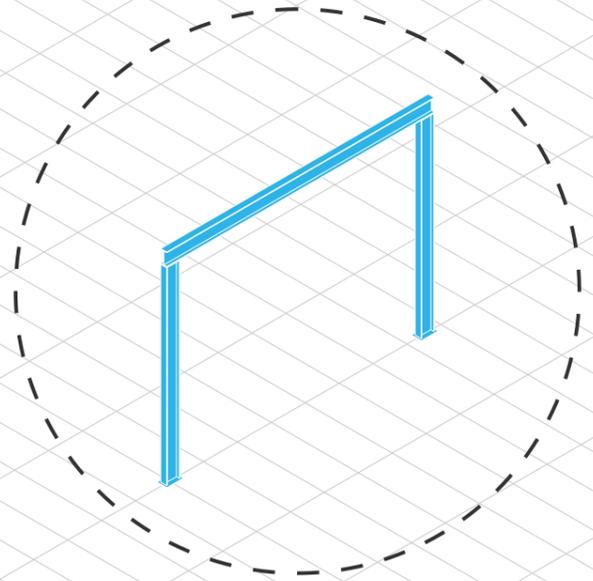
- open green
- pedestrian sidewalk
- fenced
- industrial railway



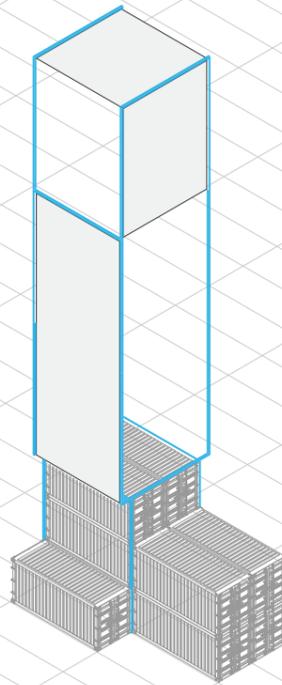


**portal frame inspiration from port gantry crane**

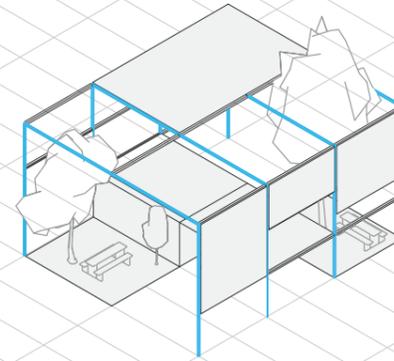
# Urban Follies with Portal Frame Structure



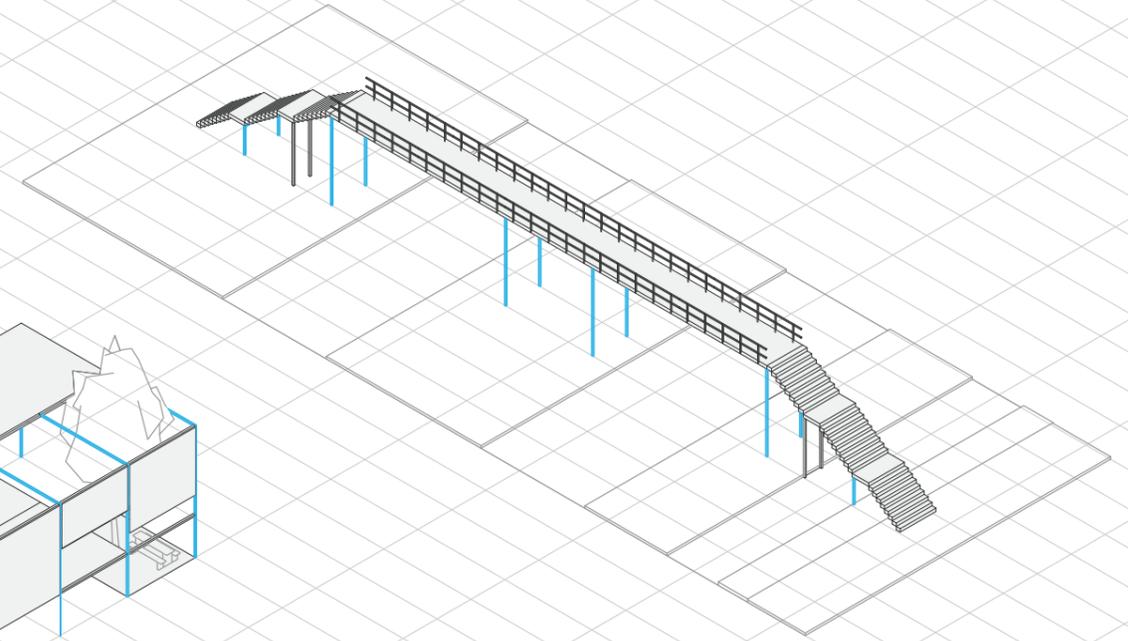
- permanent portal frame
- temporary/adjustable infill



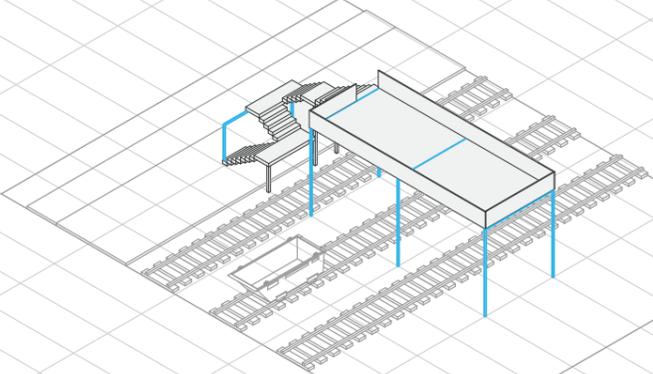
statue



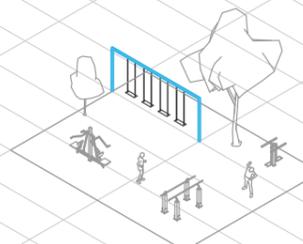
shade shelter with bench



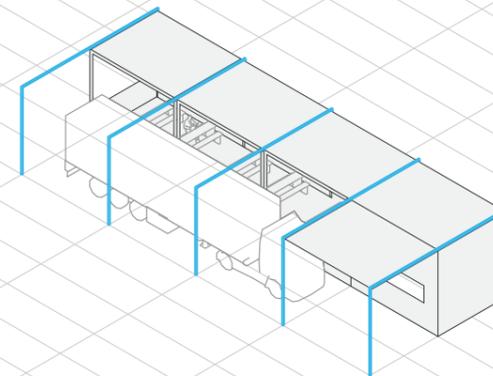
footbridge



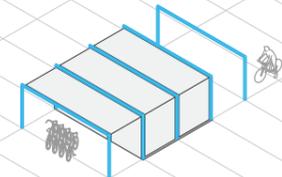
lookout over railway



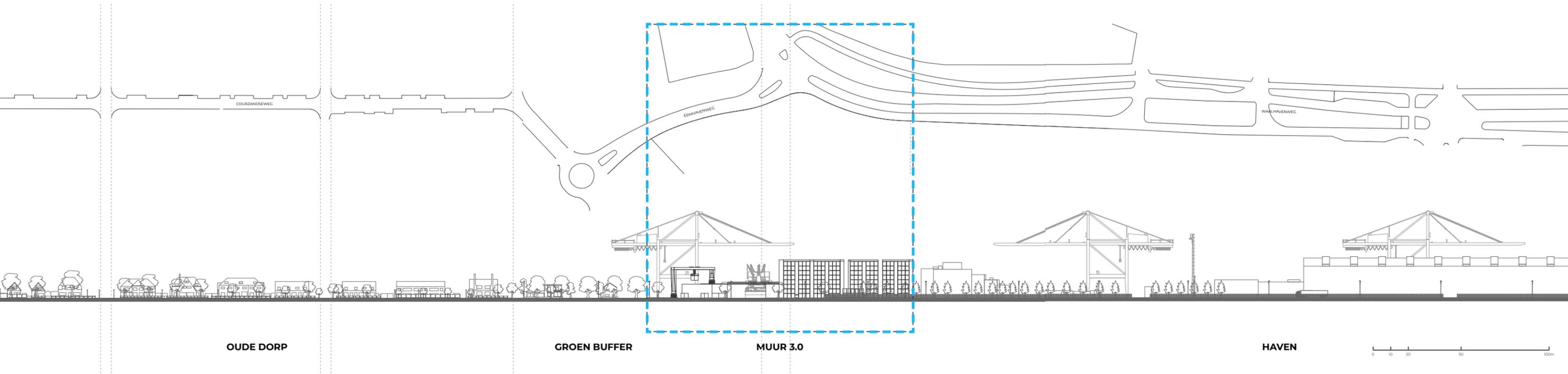
fitness ground with swing



food truck



bike repair



**slowly transitioning from the port to the village**



**current entrance to the port-nested-village**



**reinventing the entrance to port-nested-village**

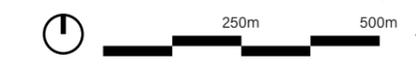
# External Safety Risks Vulnerability Map

-  Residential Grounds
-  Green Surfaces
-  Industrial Fence
-  Dike Line
-  Vehicular + Pedestrian Path

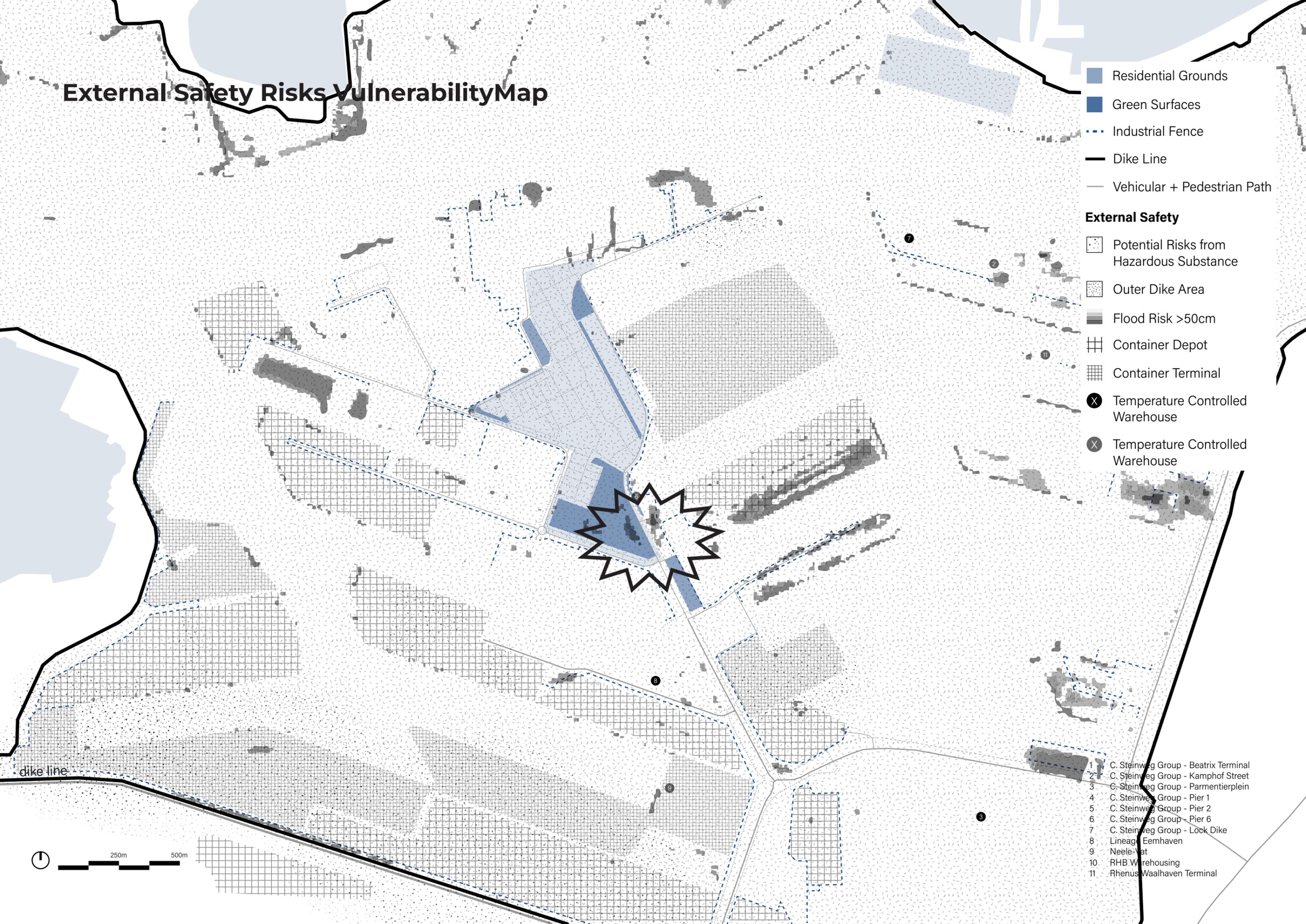
## External Safety

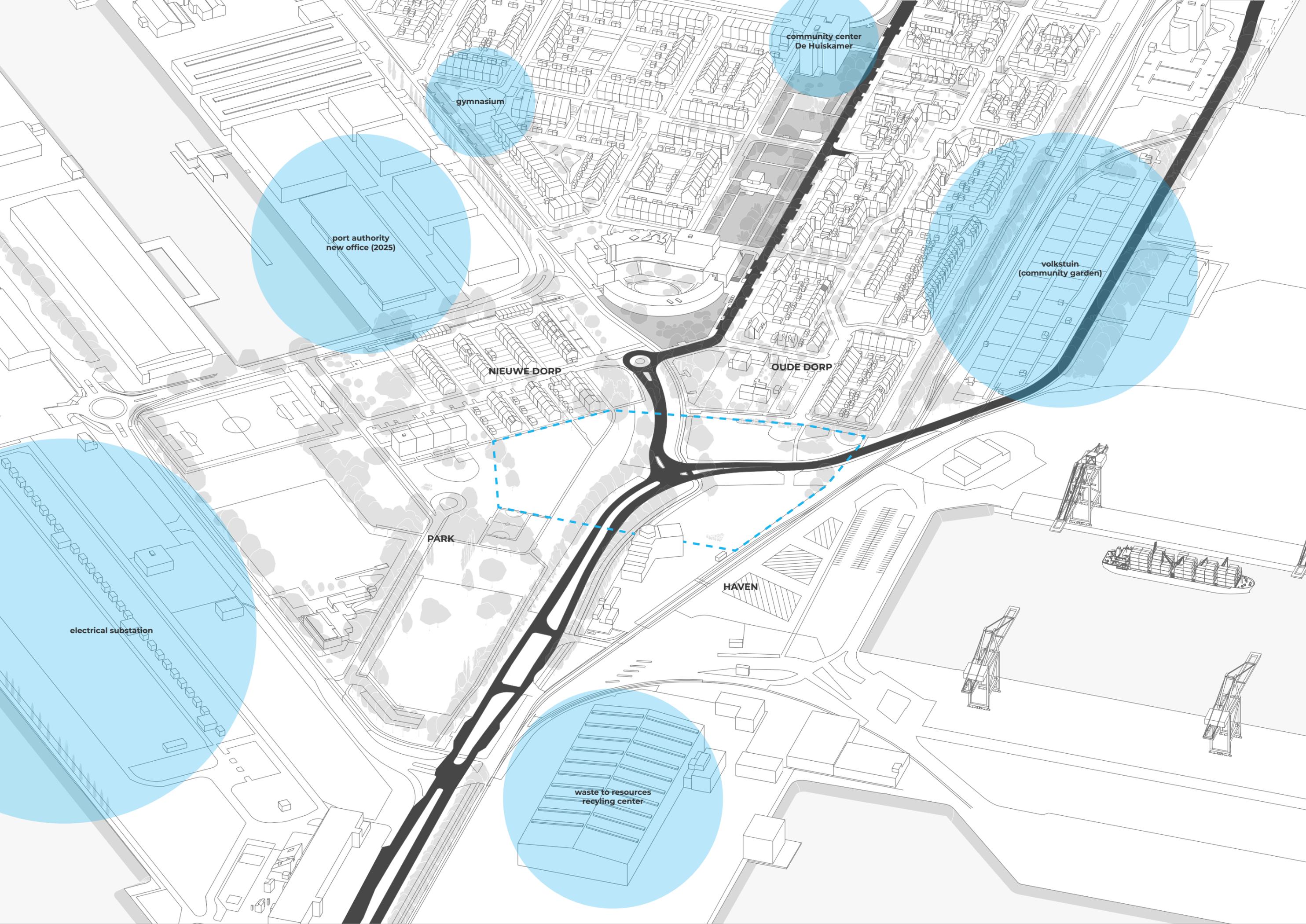
-  Potential Risks from Hazardous Substance
-  Outer Dike Area
-  Flood Risk >50cm
-  Container Depot
-  Container Terminal
-  Temperature Controlled Warehouse
-  Temperature Controlled Warehouse

- 1 C. Steinweg Group - Beatrix Terminal
- 2 C. Steinweg Group - Kamphof Street
- 3 C. Steinweg Group - Parmentierplein
- 4 C. Steinweg Group - Pier 1
- 5 C. Steinweg Group - Pier 2
- 6 C. Steinweg Group - Pier 6
- 7 C. Steinweg Group - Lock Dike
- 8 Lineage Eemhaven
- 9 Neele-Vat
- 10 RHB Warehousing
- 11 Rhenus Waalhaven Terminal



dike line





community center  
De Huiskamer

gymnasium

port authority  
new office (2025)

volkstuin  
(community garden)

NIEUWE DORP

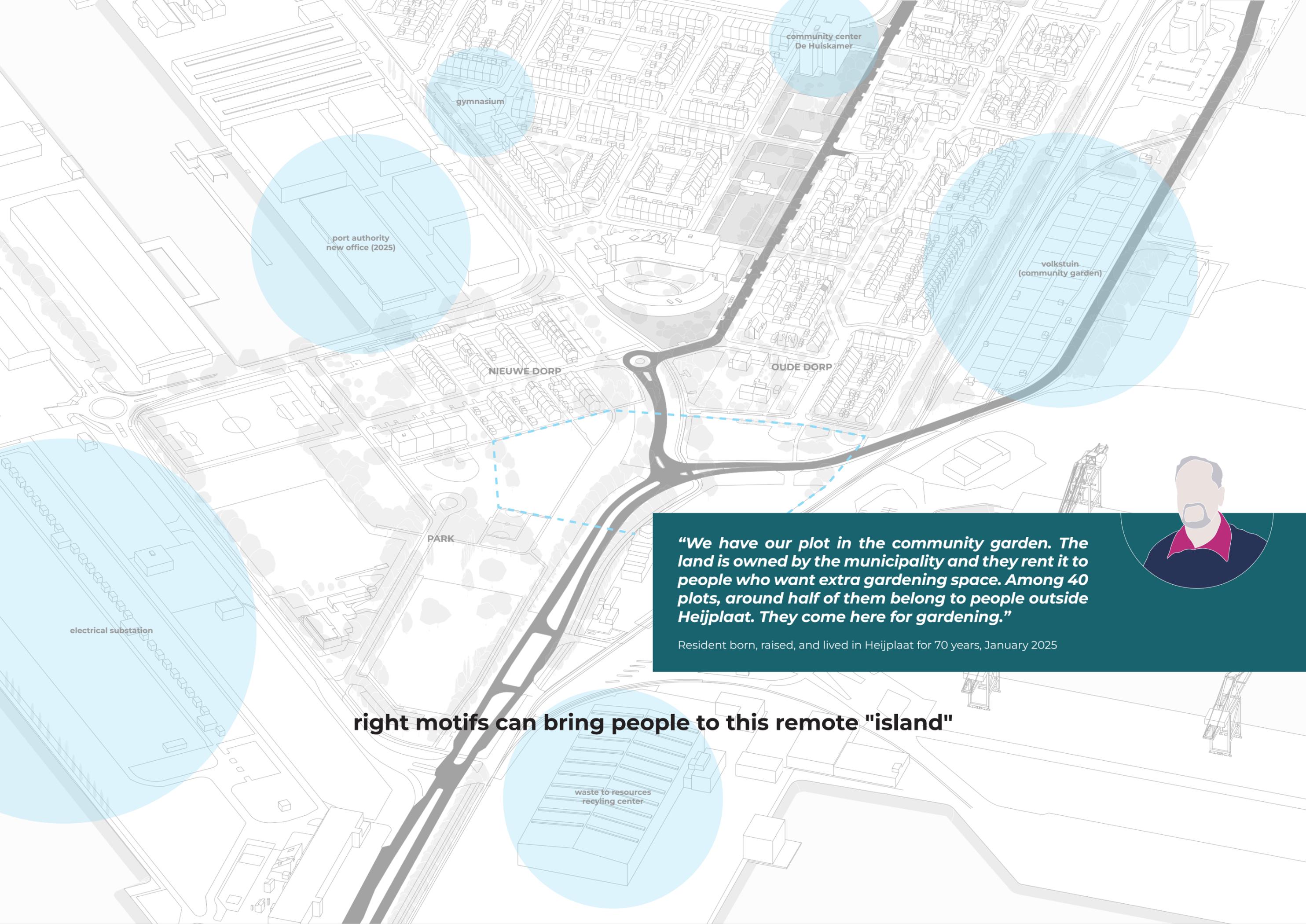
OUDE DORP

PARK

HAVEN

electrical substation

waste to resources  
recycling center



port authority  
new office (2025)

gymnasium

community center  
De Huiskamer

volkstuin  
(community garden)

NIEUWE DORP

OUDE DORP

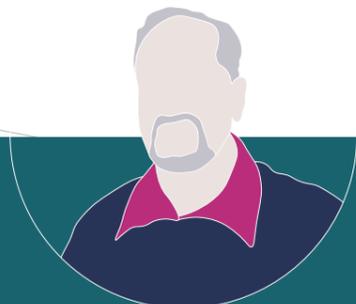
PARK

electrical substation

waste to resources  
recycling center

*“We have our plot in the community garden. The land is owned by the municipality and they rent it to people who want extra gardening space. Among 40 plots, around half of them belong to people outside Heijplaat. They come here for gardening.”*

Resident born, raised, and lived in Heijplaat for 70 years, January 2025



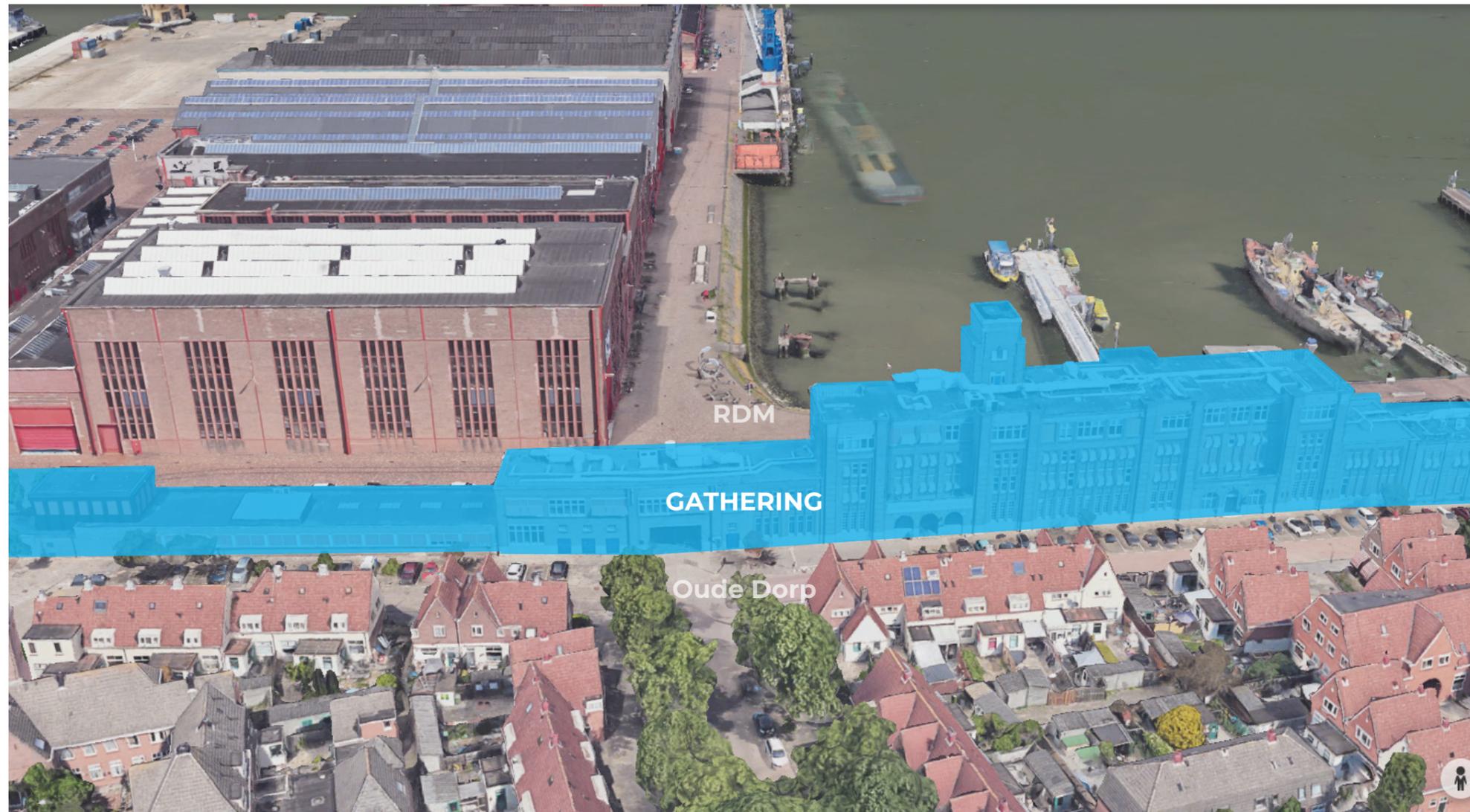
**right motifs can bring people to this remote "island"**



**project sitting at the interface of port-village-park**

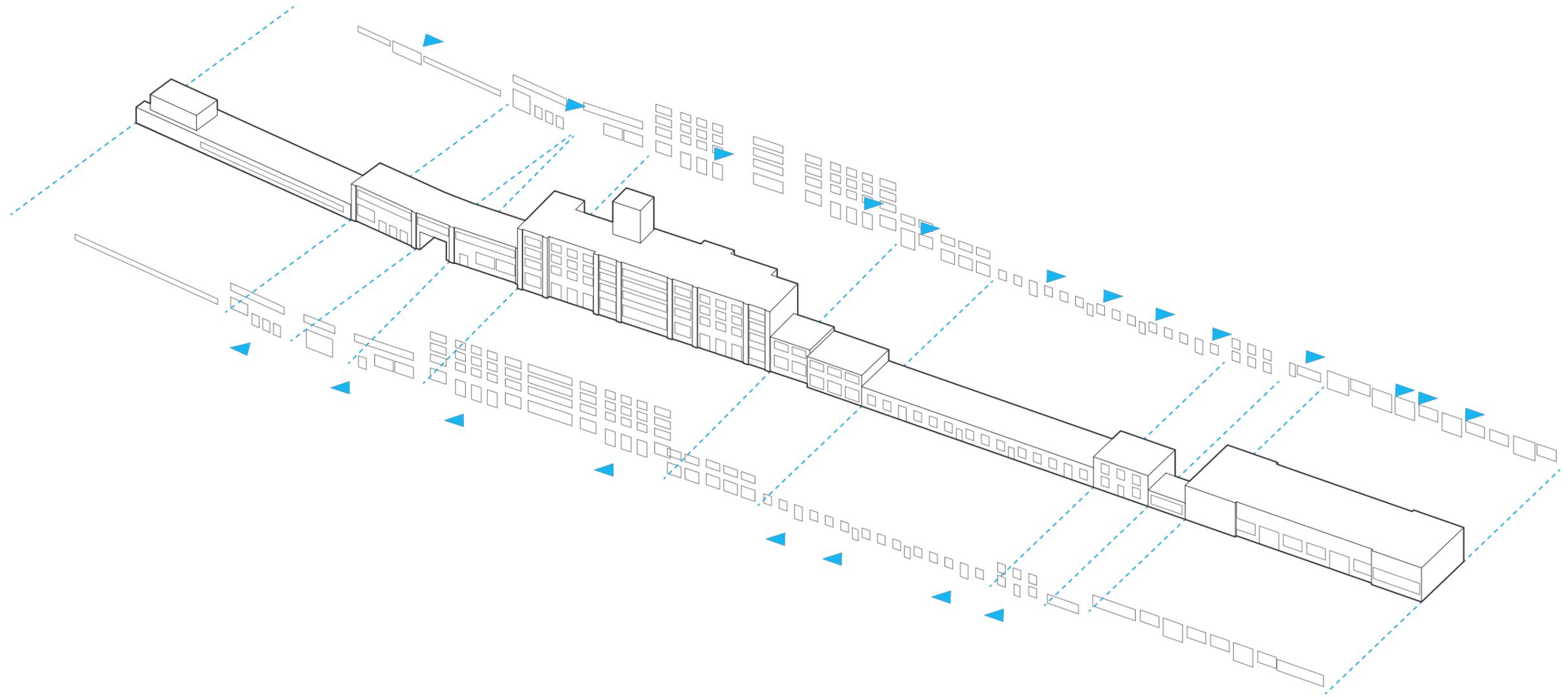


## learning from the current port-village interface

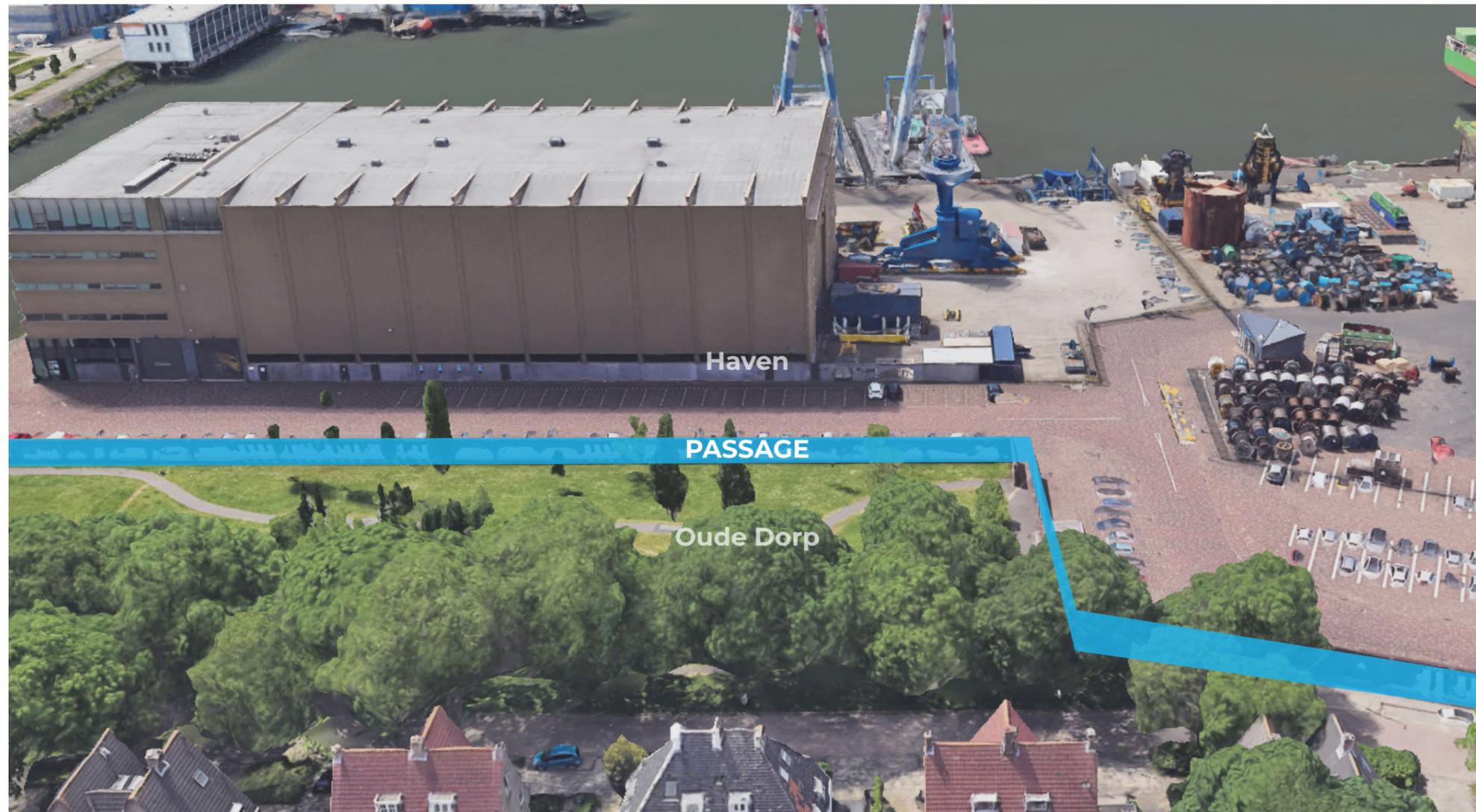


### "de muur" 1912-16 (2015 restored)

340-metre long wall formed the separation between the village of heijplaat and the factories of the rotterdam dry dock company



**wall that houses social functions in volumes of different depth**



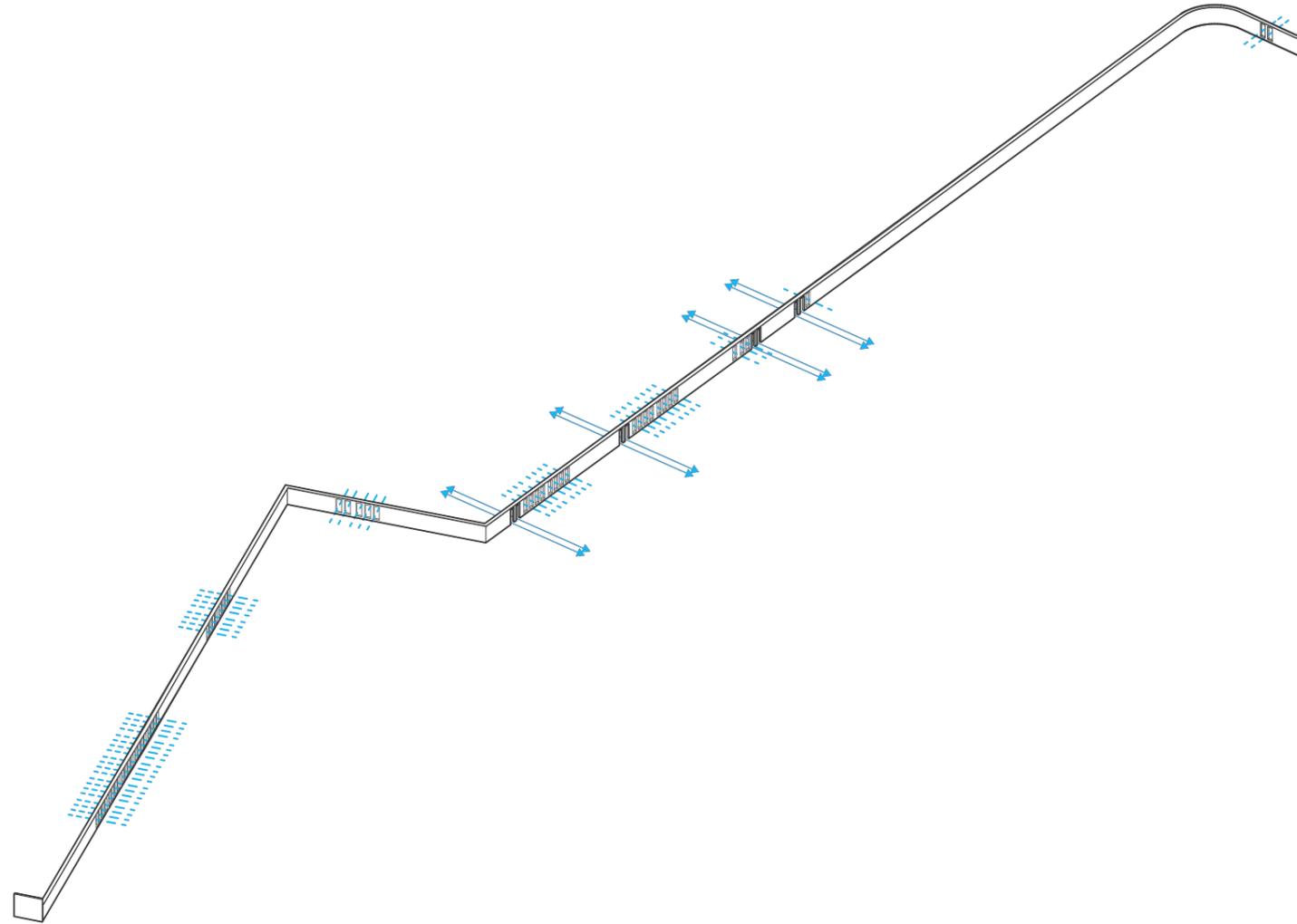
## renovated brick wall 2015

previous 370m metal wall renovated as a brick wall with punctures that allow free movement between village ground and port ground

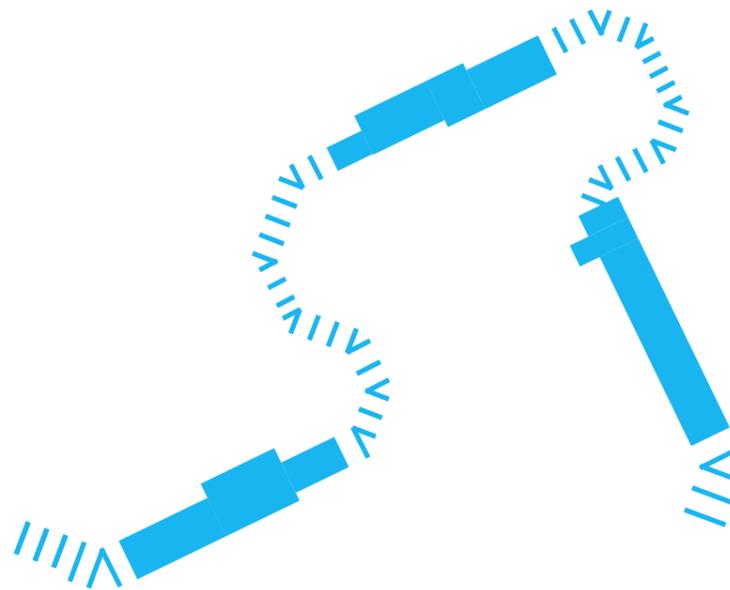


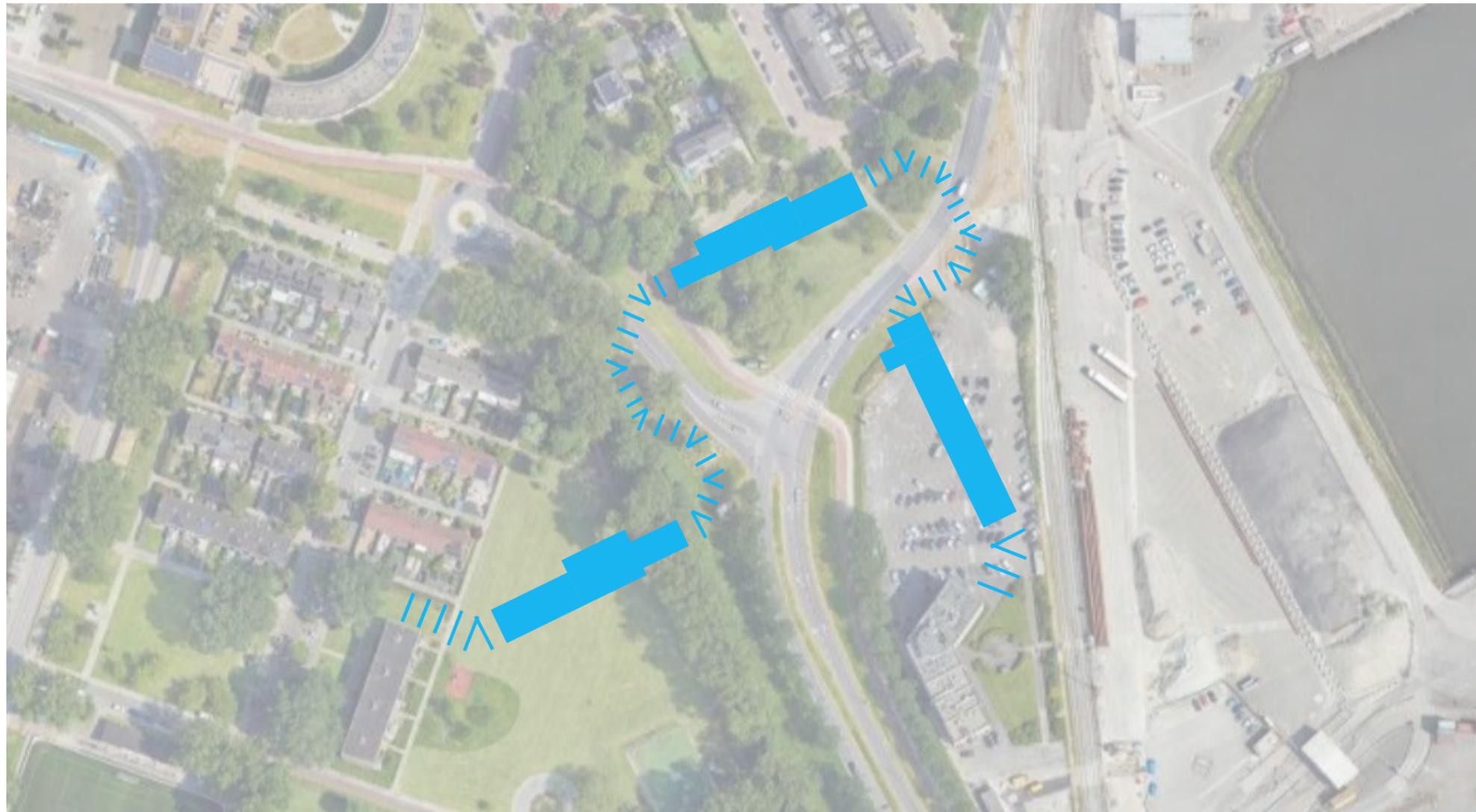
## renovated brick wall 2015

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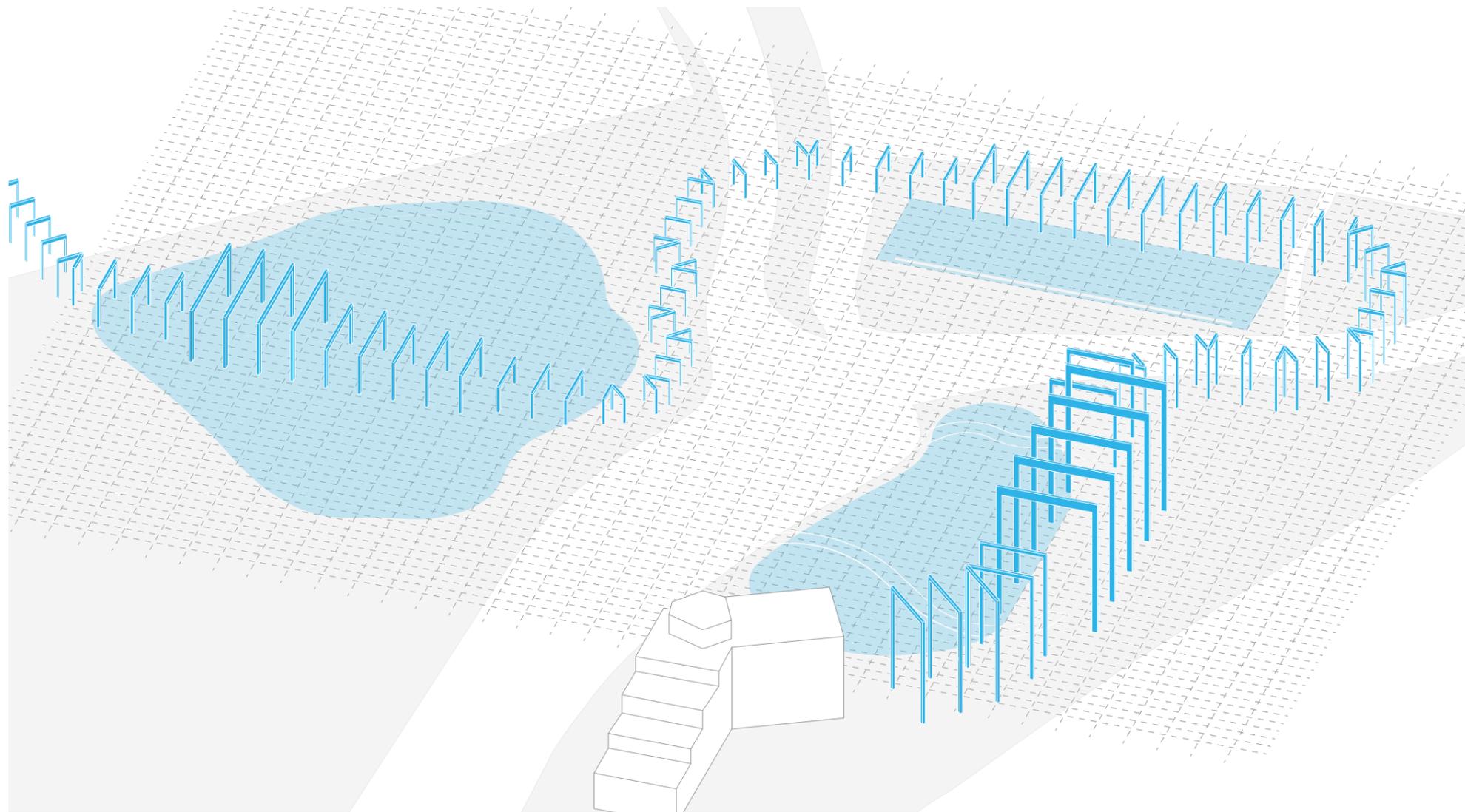
**wall that allows free passage between the two territories**



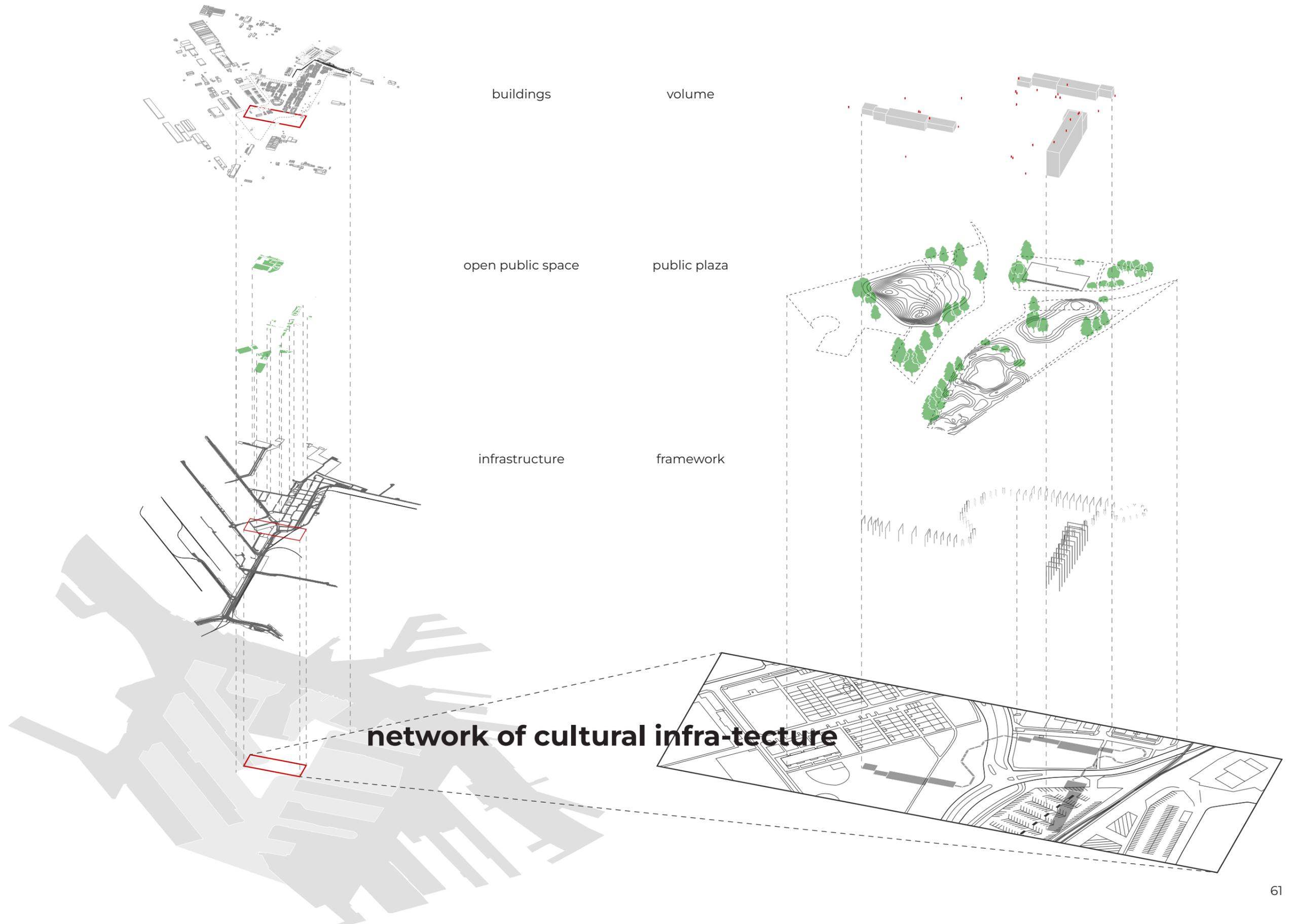


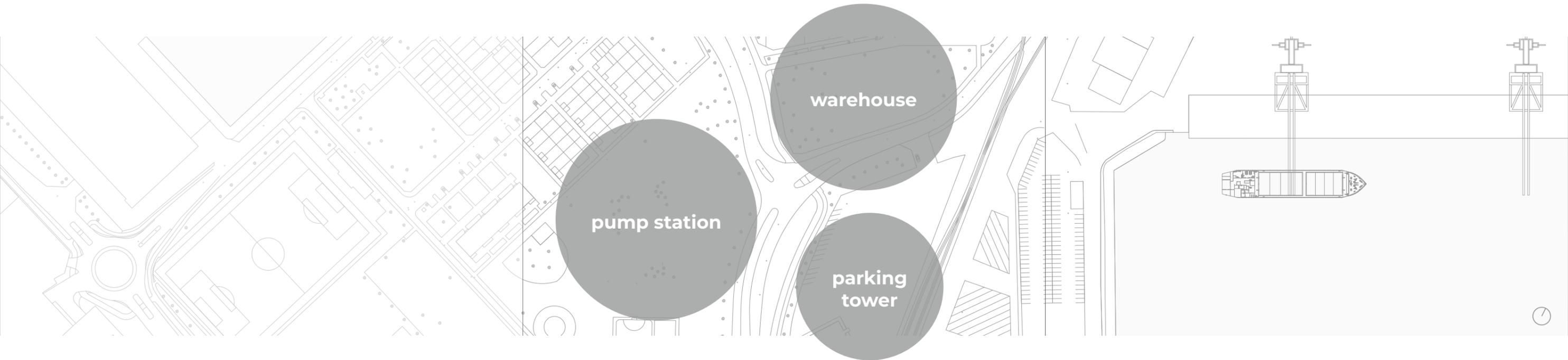
### **the soft wall 2025**

420-meter network of infra-tecture (205m) with public open space connected by elevated walkway (215m)



**one continuous row of narrow and tall portal frames with varying dimensions**





**representation of innate or overlooked vulnerabilities in port-nested-village**

infra-structure  
public space  
building

visitor center  
280 sqm

communal warehouse  
800 sqm

reconfigurable plaza  
1400 sqm

water square  
2400 sqm

pump station  
400+1400 sqm

water lab  
280 sqm

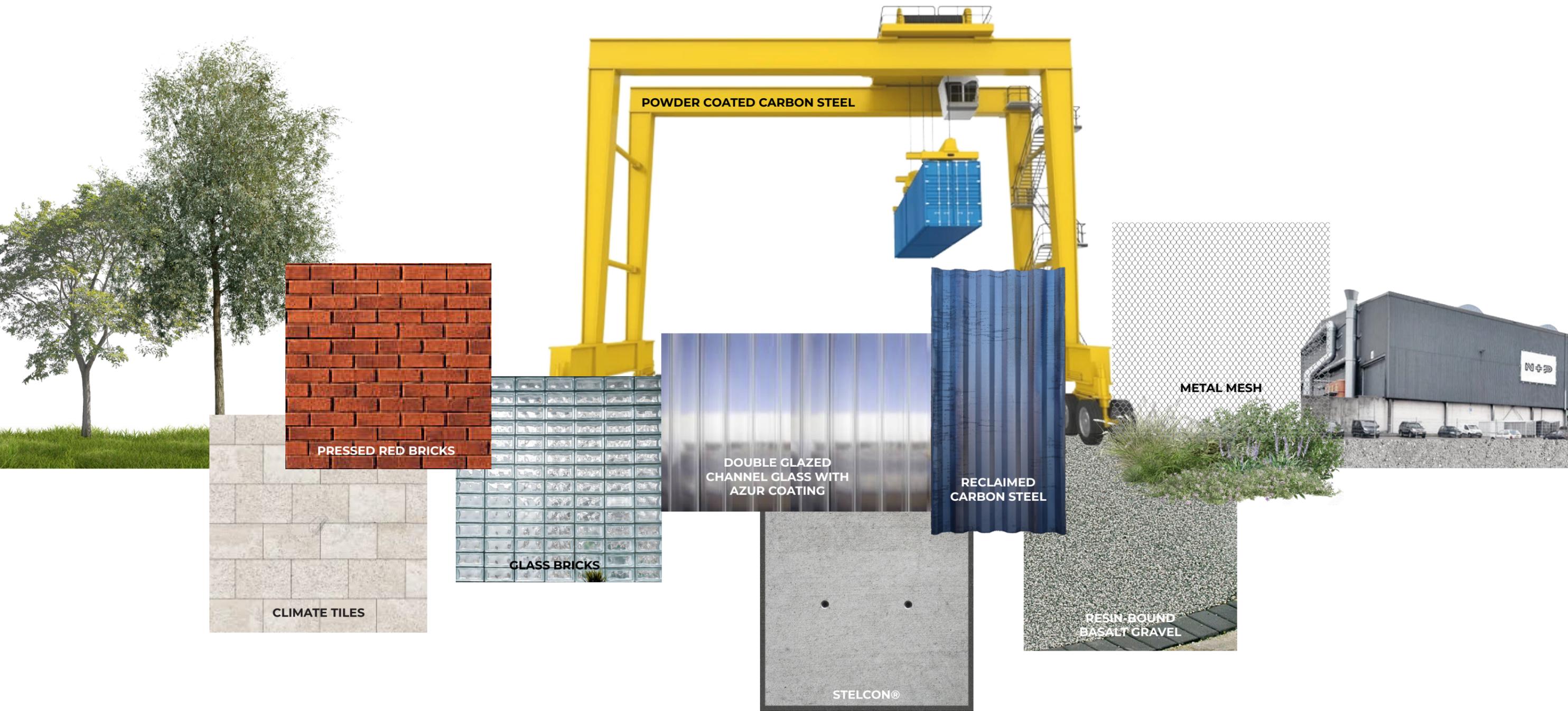
rooftop observation deck  
850 sqm

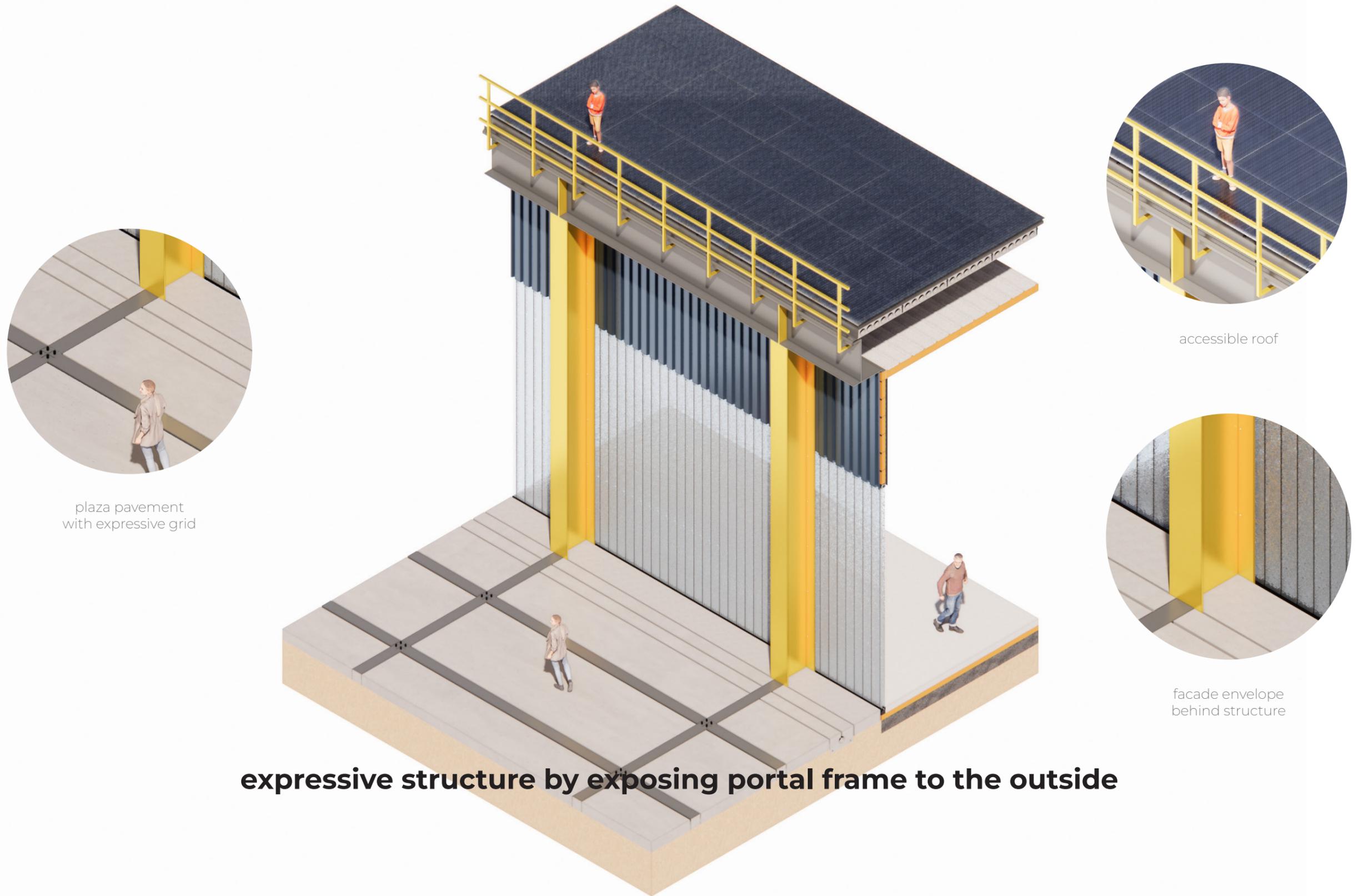
dune garden  
2600 sqm

automated parking tower  
6800 sqm







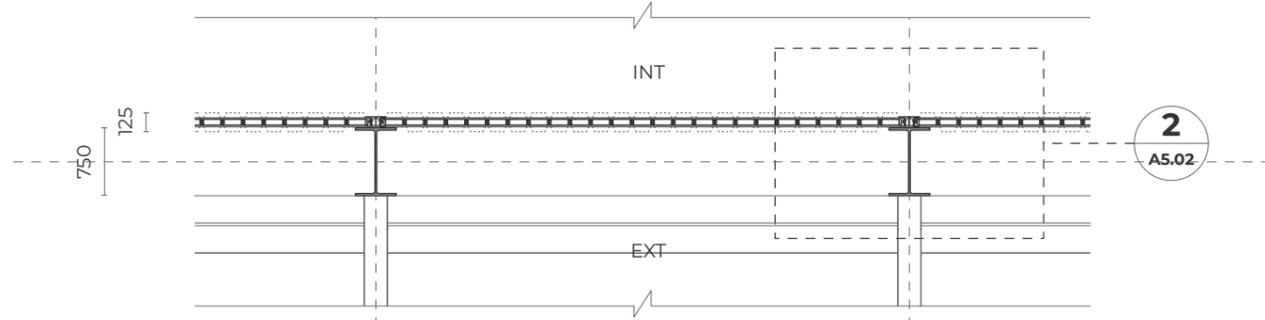


plaza pavement  
with expressive grid

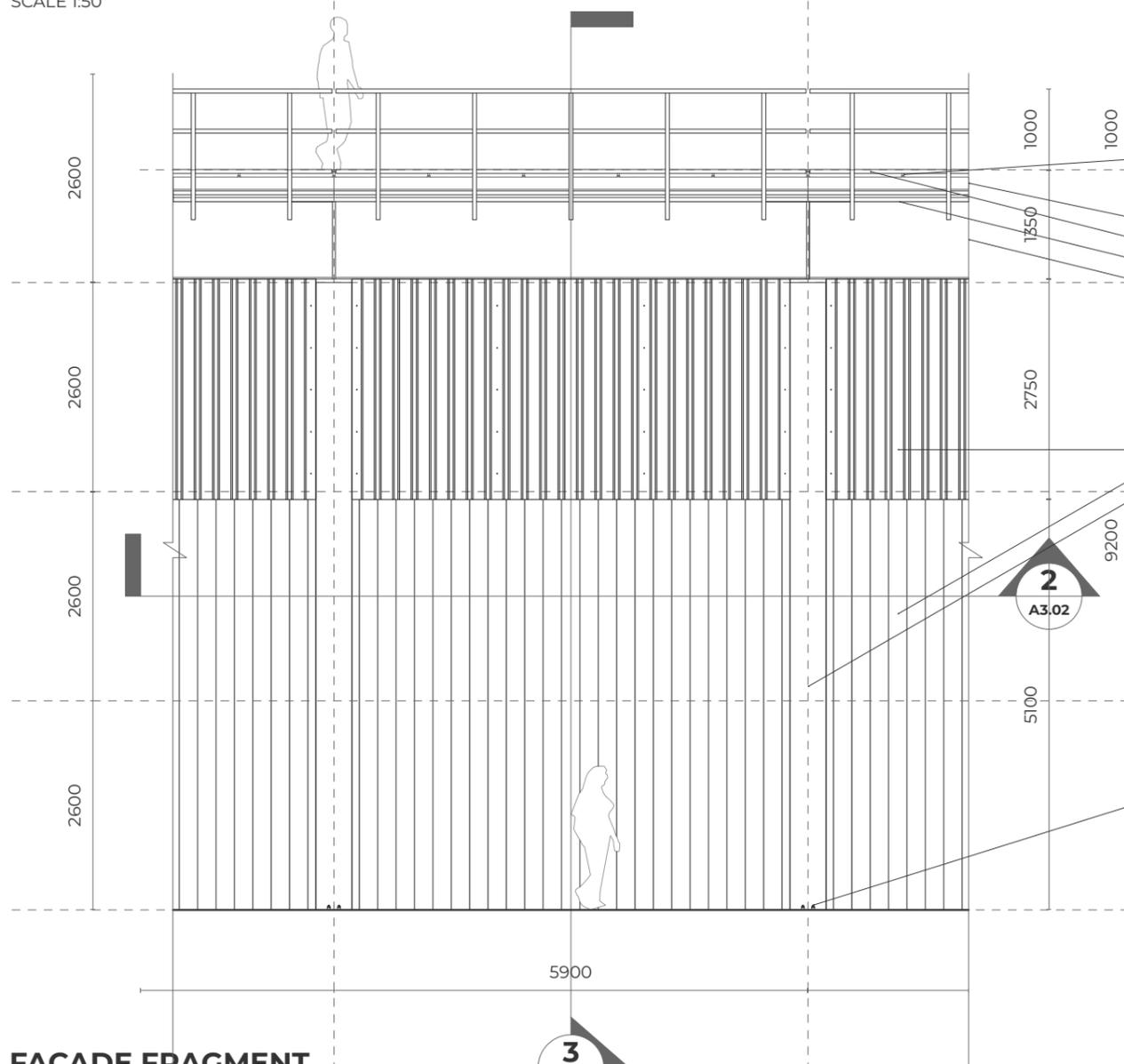
accessible roof

facade envelope  
behind structure

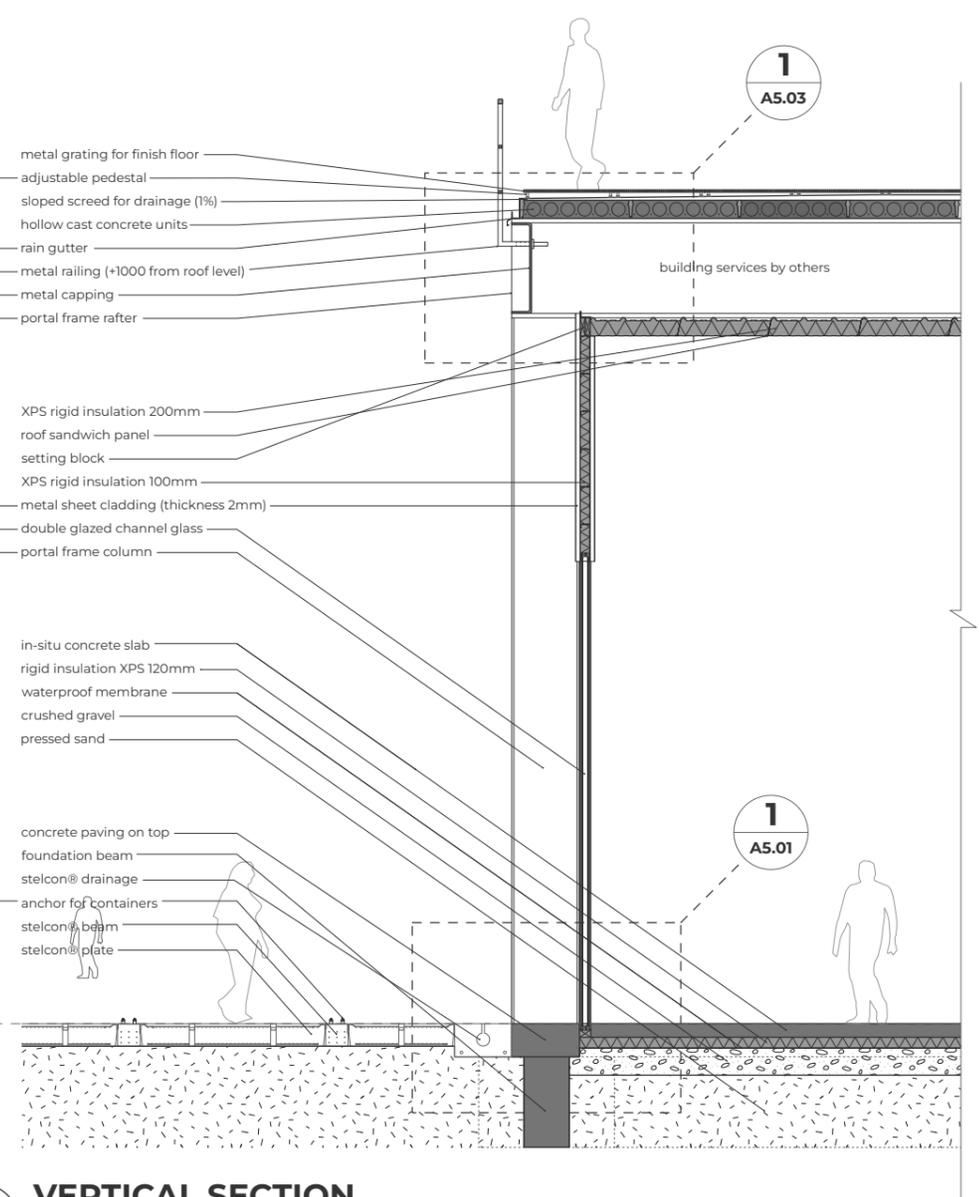
**expressive structure by exposing portal frame to the outside**



**2 HORIZONTAL SECTION**  
A3.02 SCALE 1:50

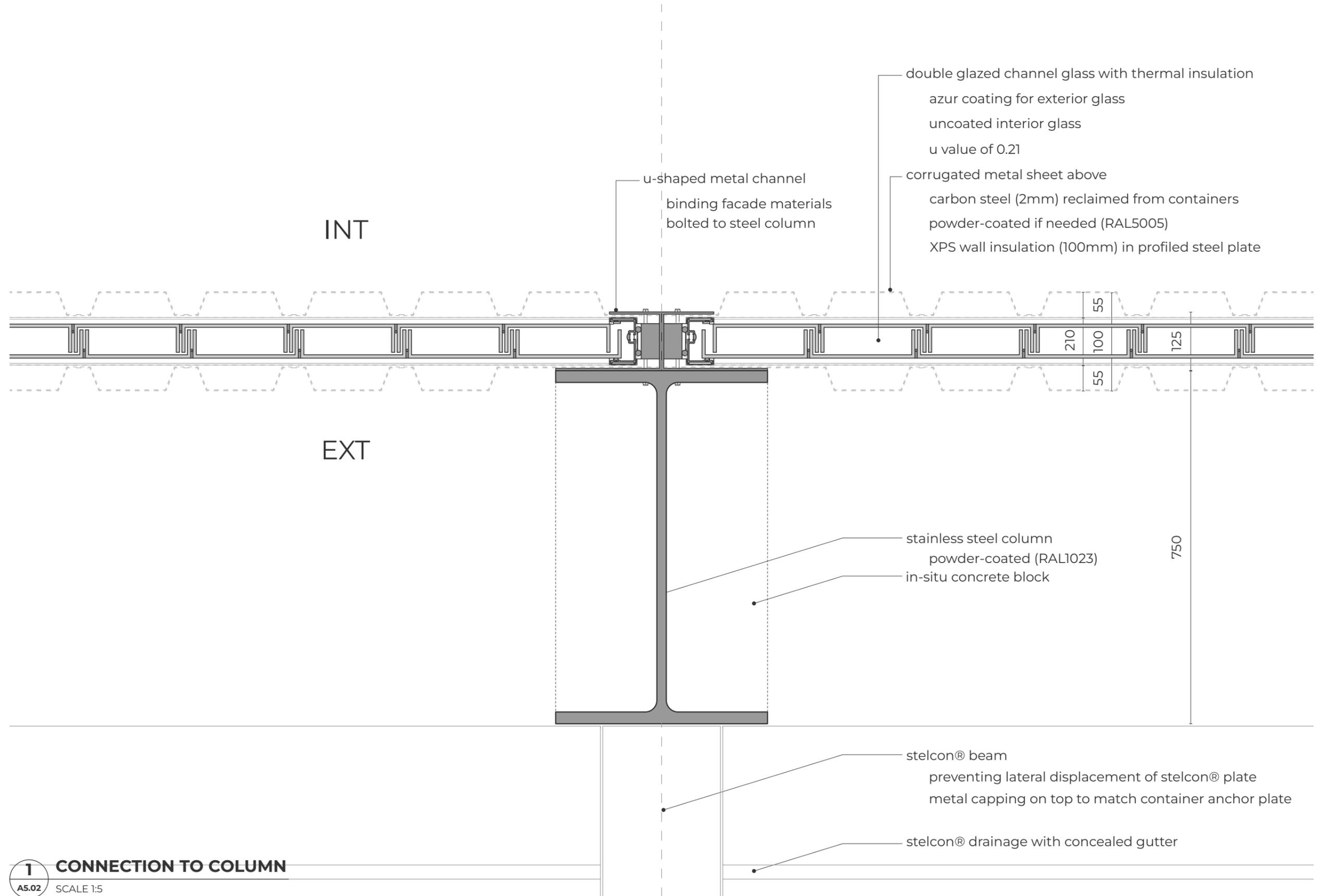


**1 FACADE FRAGMENT**  
A3.02 SCALE 1:50



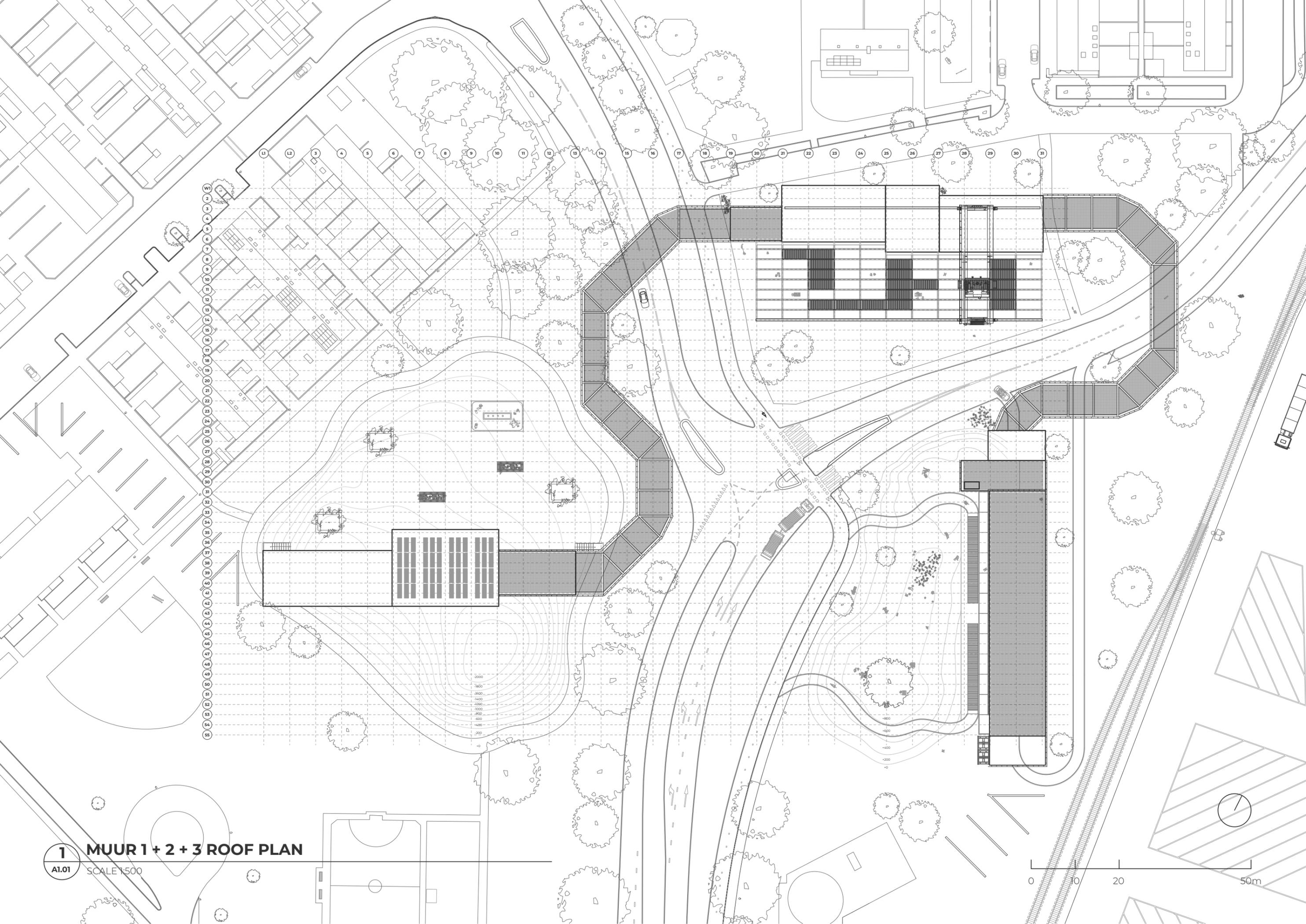
**3 VERTICAL SECTION**  
A3.02 SCALE 1:50

- metal grating for finish floor
- adjustable pedestal
- sloped screed for drainage (1%)
- hollow cast concrete units
- rain gutter
- metal railing (+1000 from roof level)
- metal capping
- portal frame rafter
- building services by others
- XPS rigid insulation 200mm
- roof sandwich panel
- setting block
- XPS rigid insulation 100mm
- metal sheet cladding (thickness 2mm)
- double glazed channel glass
- portal frame column
- in-situ concrete slab
- rigid insulation XPS 120mm
- waterproof membrane
- crushed gravel
- pressed sand
- concrete paving on top
- foundation beam
- stelcon® drainage
- anchor for containers
- stelcon® beam
- stelcon® plate



**1 CONNECTION TO COLUMN**  
A5.02 SCALE 1:5

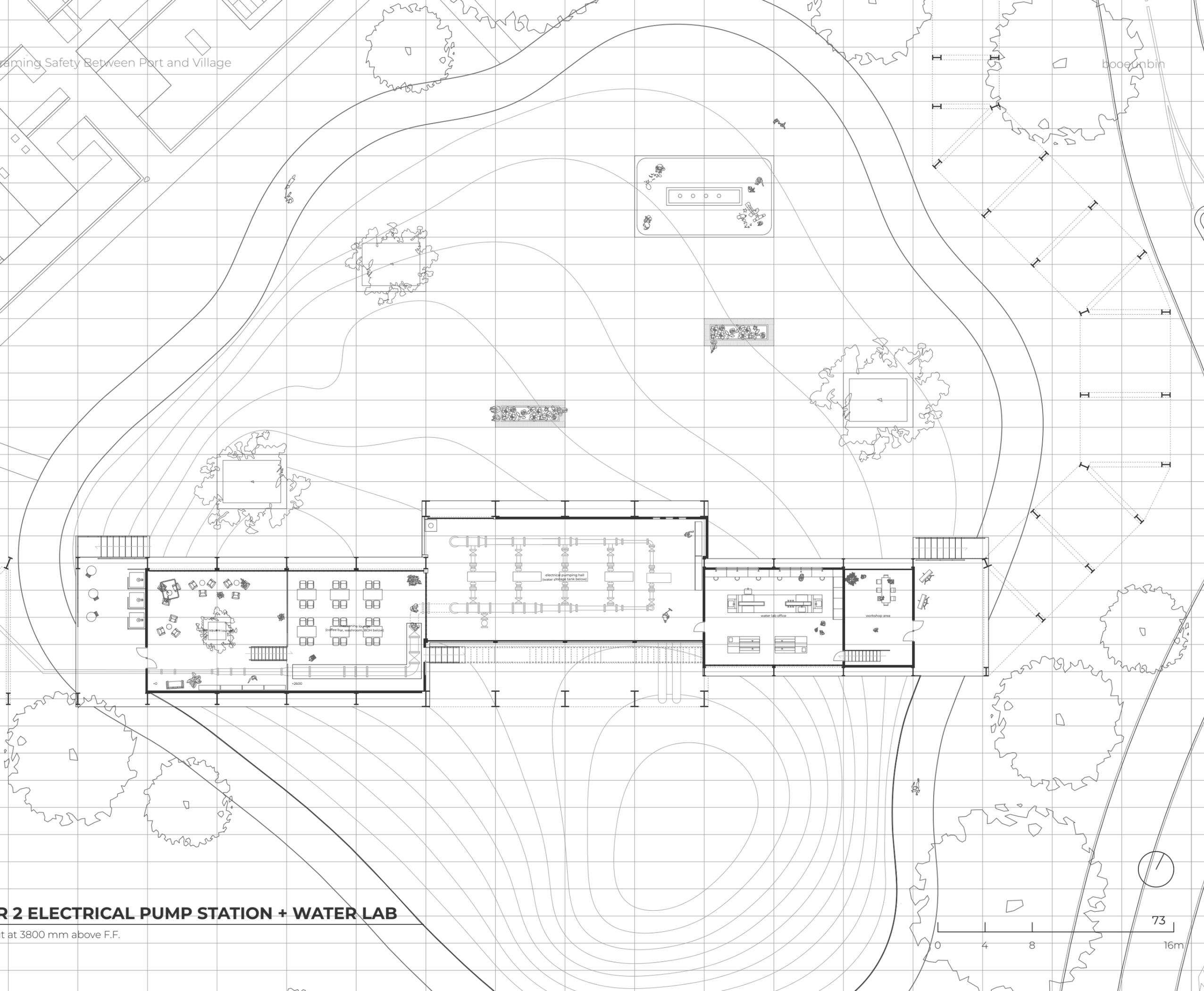




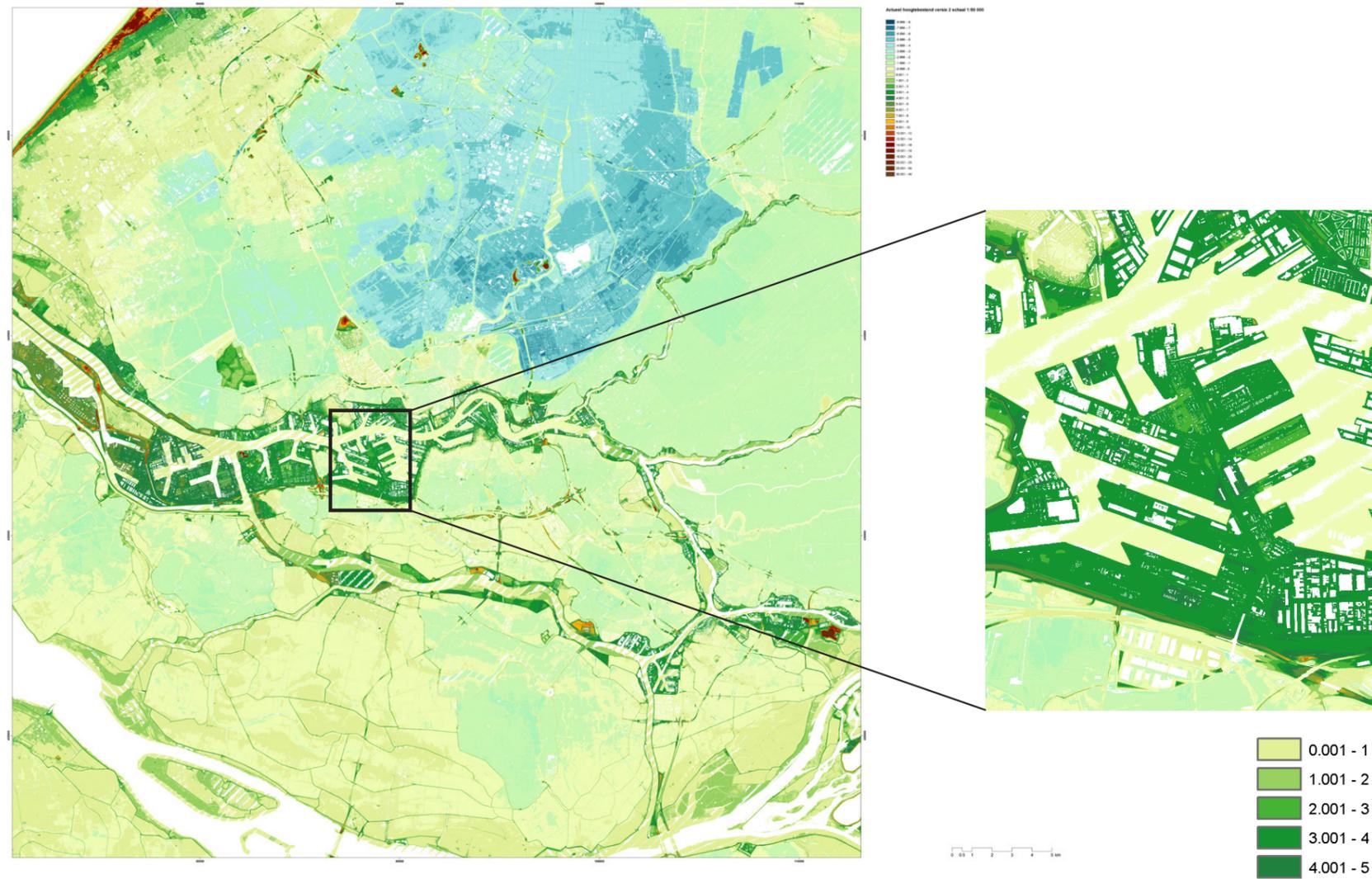
**1** MUUR 1 + 2 + 3 ROOF PLAN  
 A1.01 SCALE 1:500



**let's take a stroll along the wall!**



**1** 1/F MUUR 2 ELECTRICAL PUMP STATION + WATER LAB  
A1.03 SCALE 1:200, cut at 3800 mm above F.F.

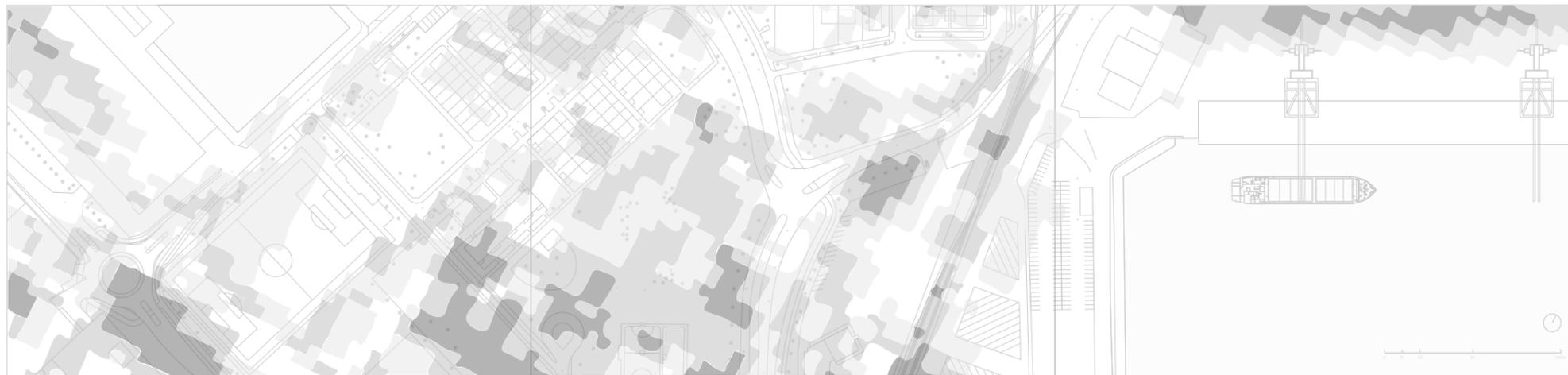


**port-nested-village sitting in the outer-dike (buitendijks) area**

riverwater flooding

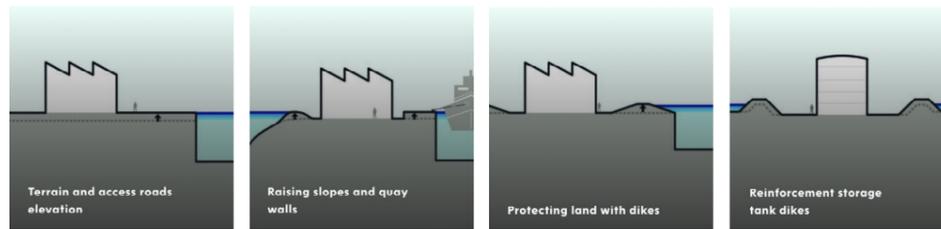


extreme precipitation

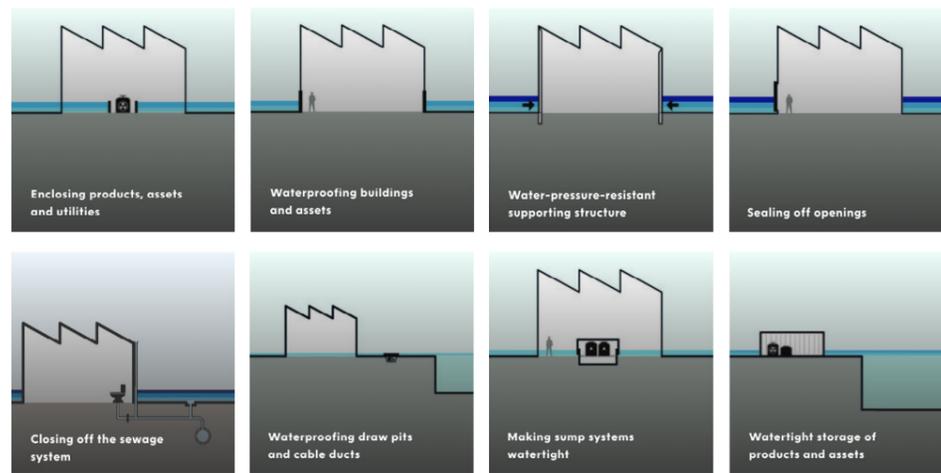


## water infrastructure reacting to riverwater flooding and extreme precipitation

ACTIVE MEASURES



PASSIVE MEASURES



ACTIVE MEASURES

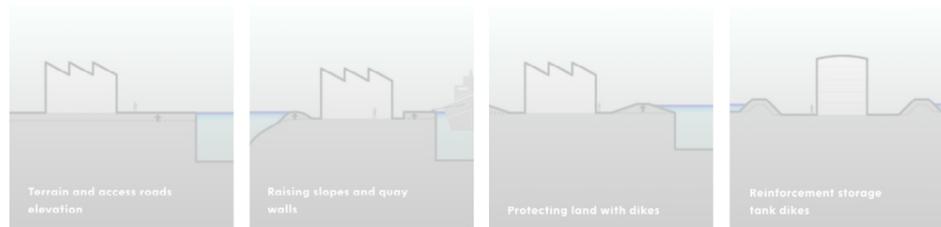


PASSIVE MEASURES

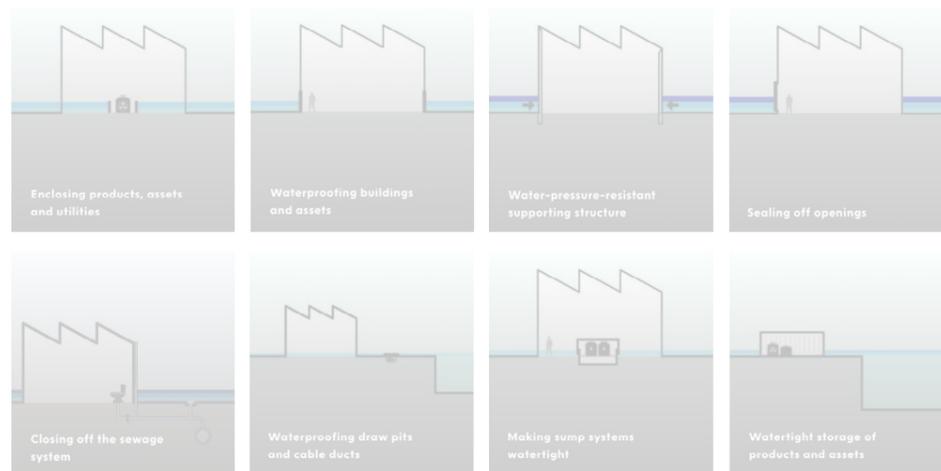


**adopting water resiliency measures in the port and the village**

ACTIVE MEASURES



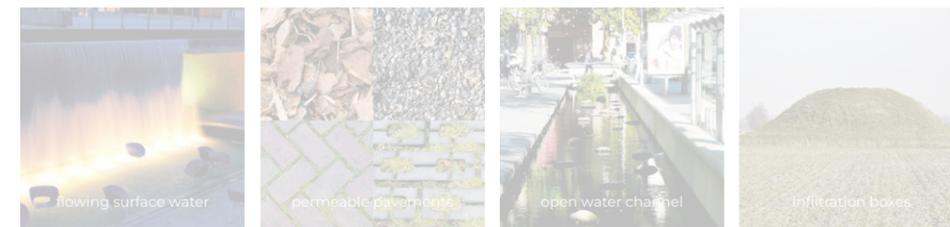
PASSIVE MEASURES



ACTIVE MEASURES



PASSIVE MEASURES

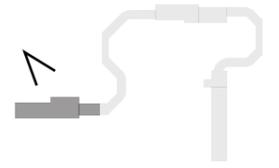


**“Can you see the terrain is higher in the New Village? When there is a heavy rainfall, the water flows to the Old Village and floods the streets. The drainage system has to be replaced soon.”**

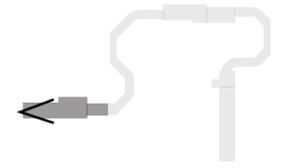
Residents born, raised, and lived in Heijplaat for 70 years, January 2025



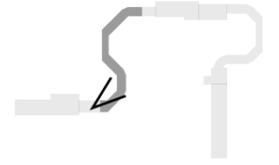
**combining function and leisure together**



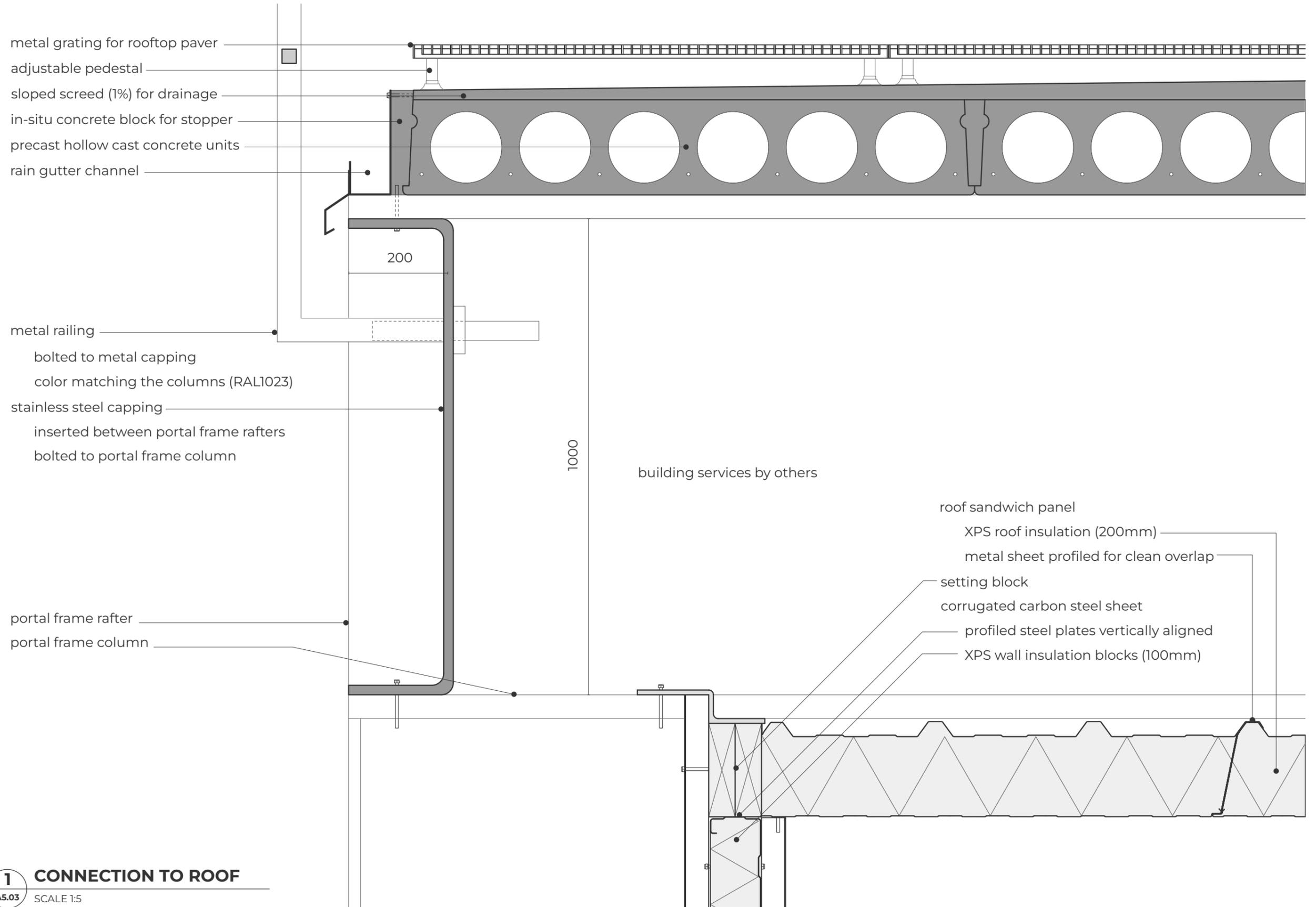
**muur 2 water retention basin functioning as water square in normal days**



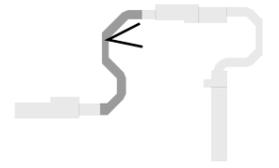
**blending functional facilities into the social space for the residents**



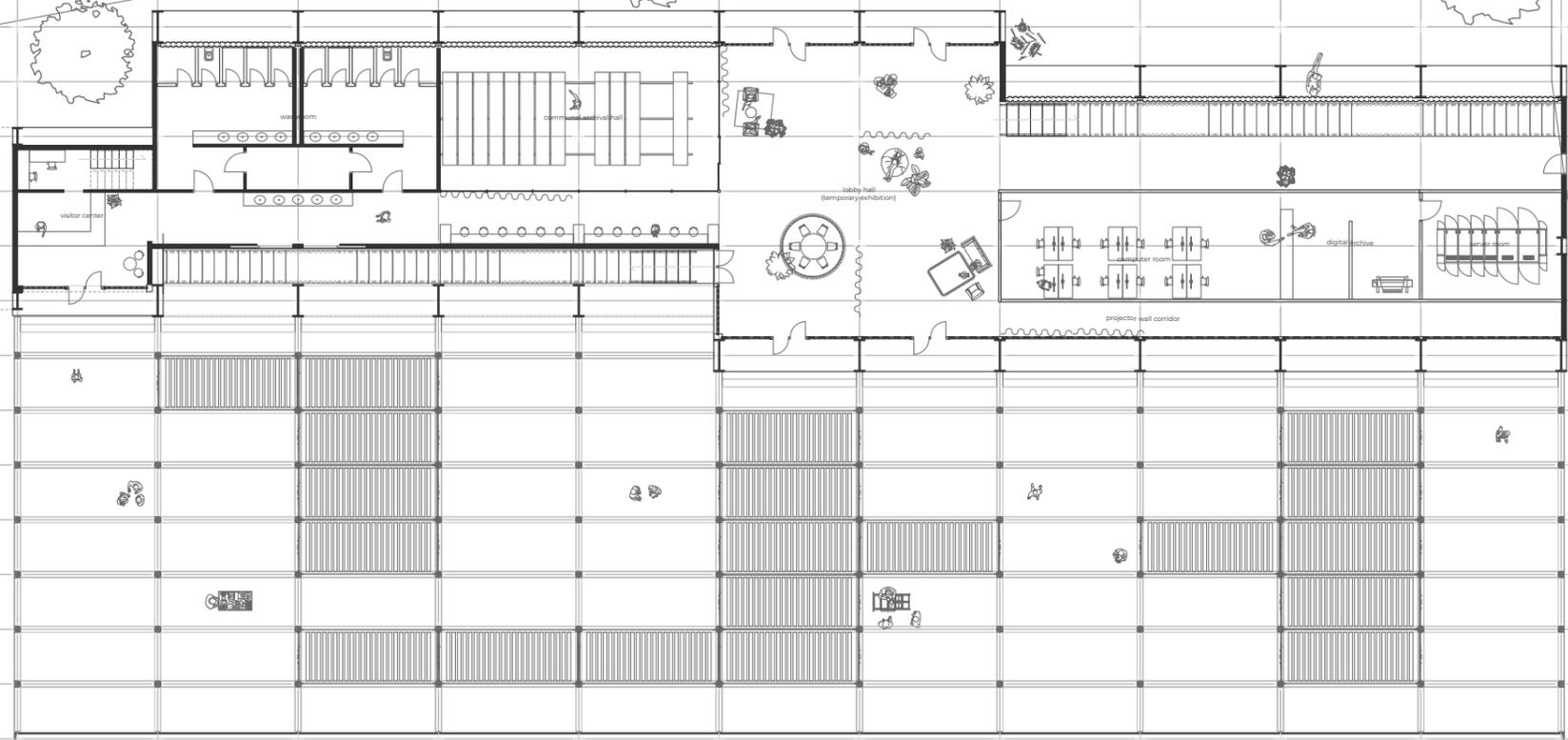
**continuing to muur 1 from the rooftop of water lab**



**1 CONNECTION TO ROOF**  
A5.03 SCALE 1:5

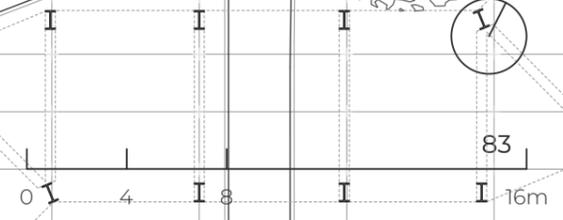


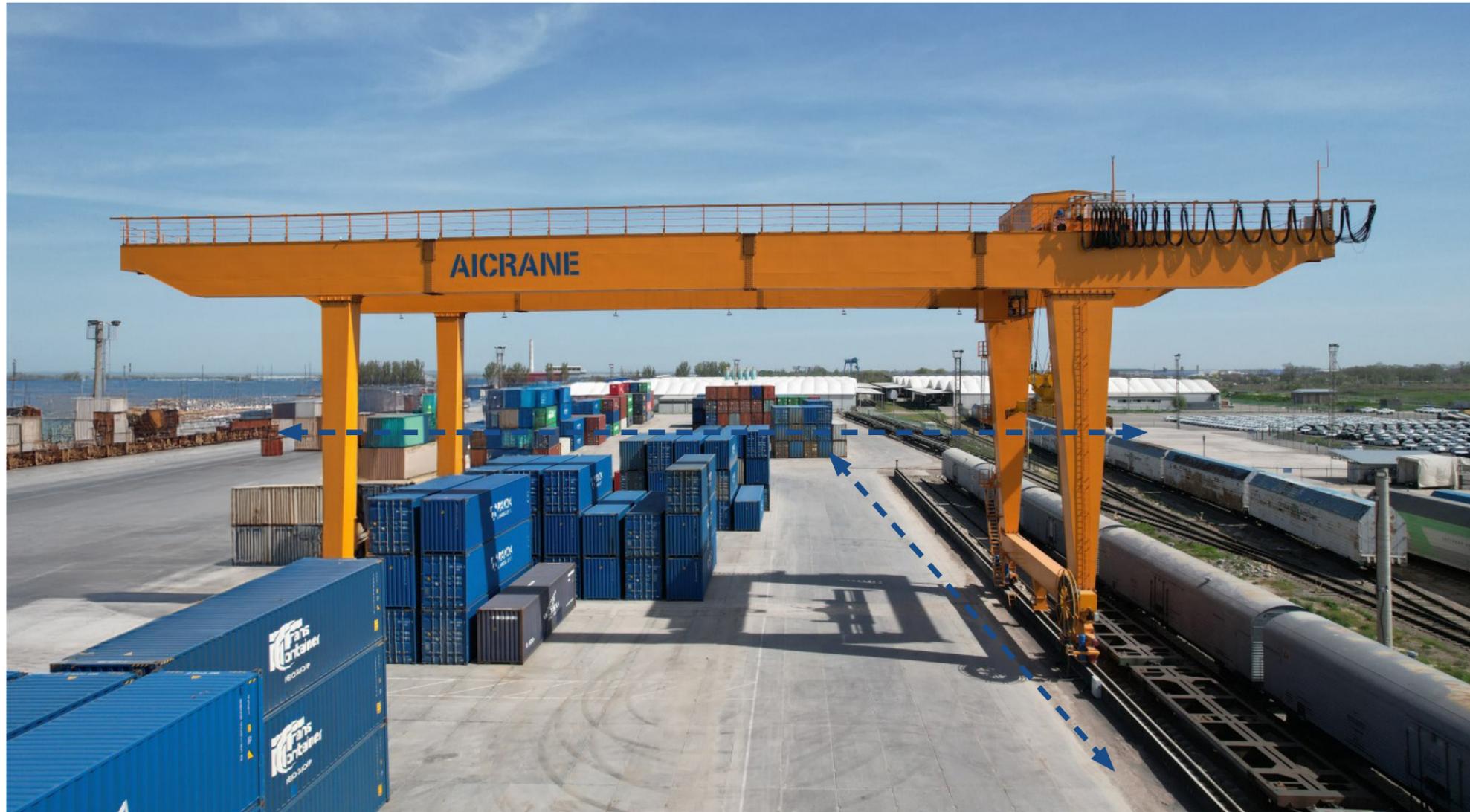
**sitting at the crossroads to the village and the port**



**1 G/F MUUR 1 COMMUNAL WAREHOUSE + RECONFIGURABLE PLAZA**

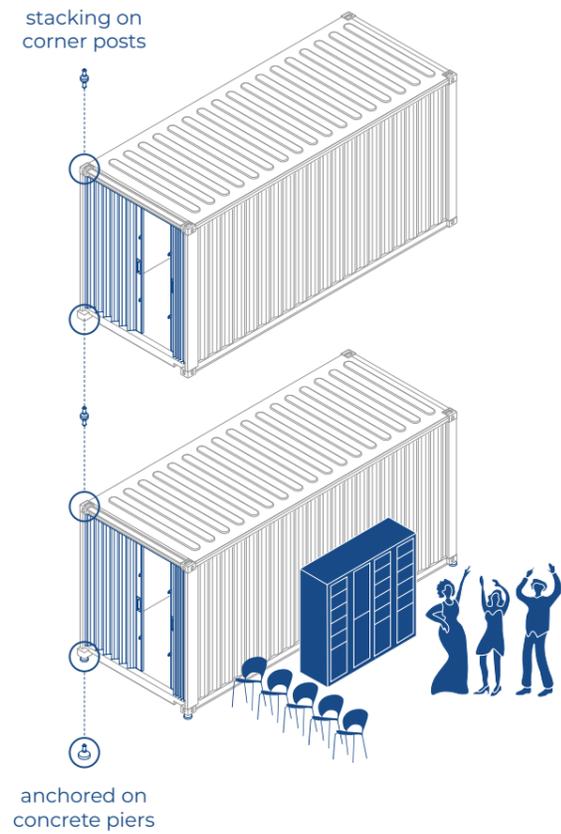
A1.02 SCALE 1:200





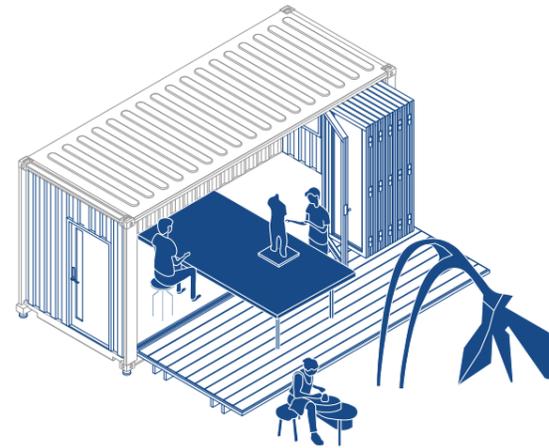
**integrating railway gantry crane into the building**





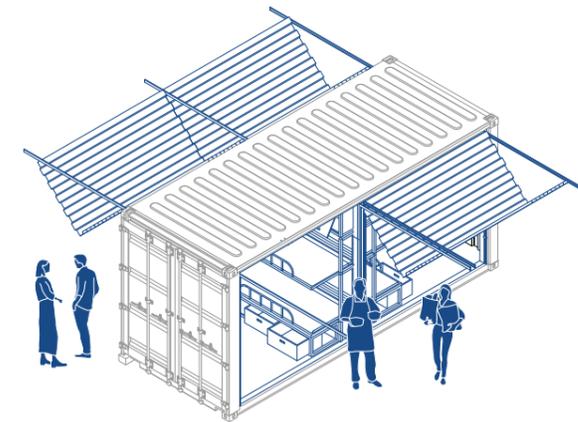
storage pod

event gears storage, village archival  
(minimal change to the container)



creative pod

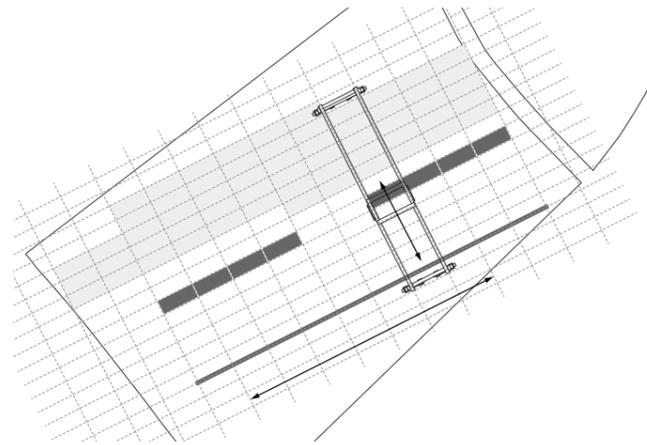
sculpture/ceramics workshop, makerspace  
(one long side open & expandable deck)



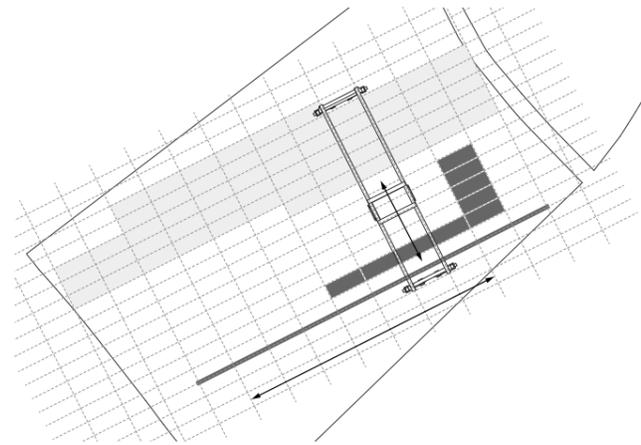
showcase pod

market stall, exhibition booth  
(two long sides open)

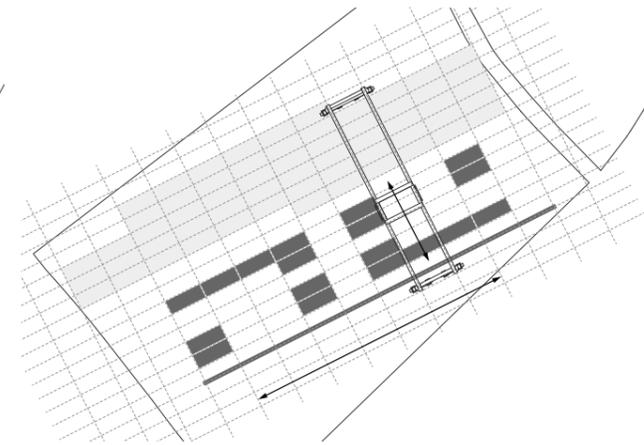
## reclaimed containers transformed into movable pods for social events



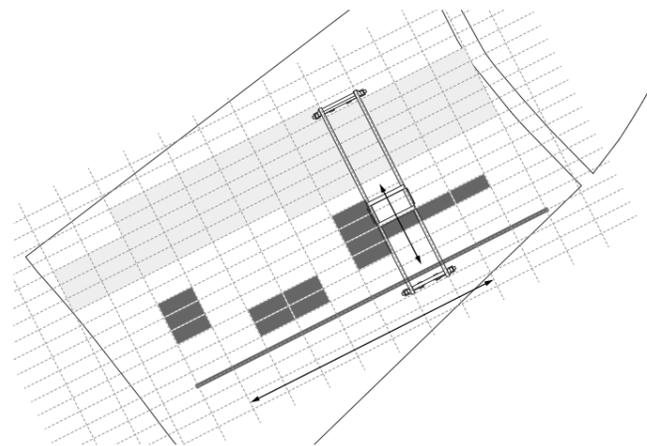
no event



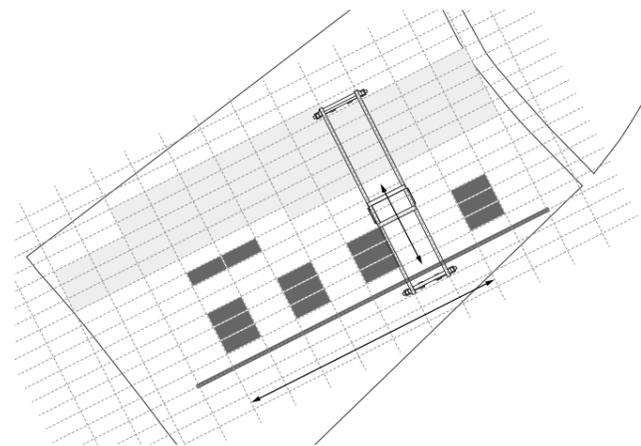
open air cinema



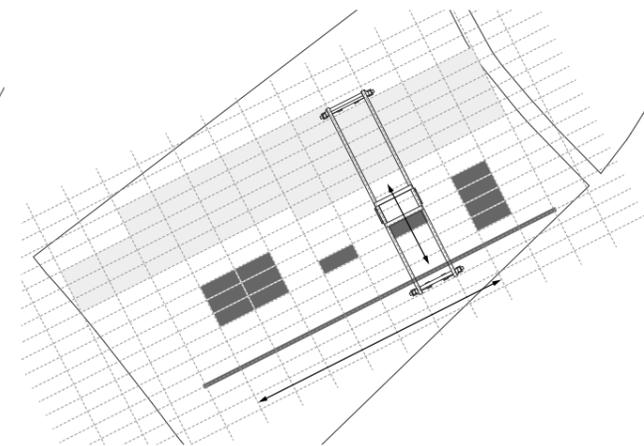
metal workshop



music festival

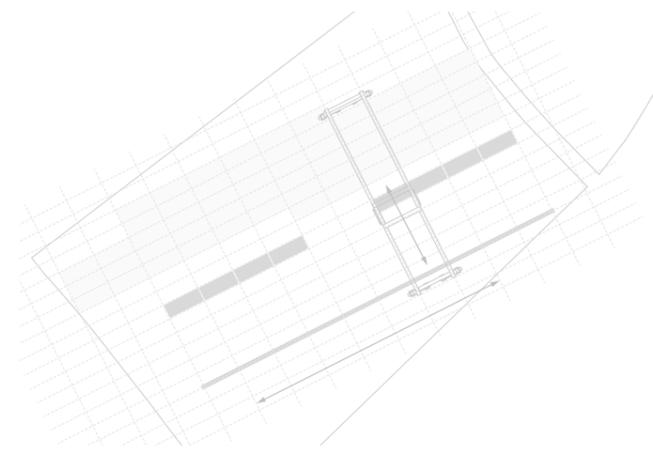


heij-haven exchange

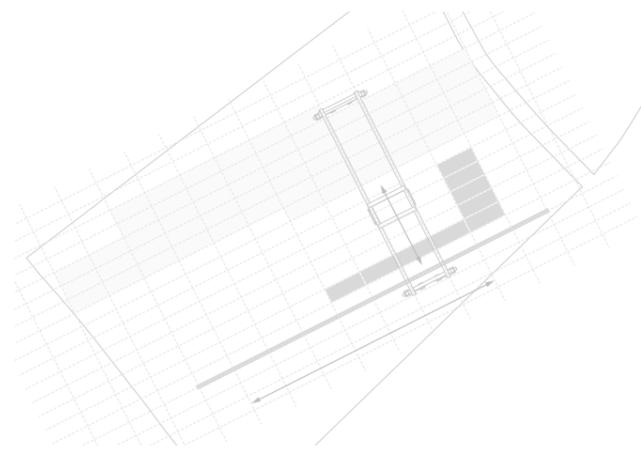


flea market

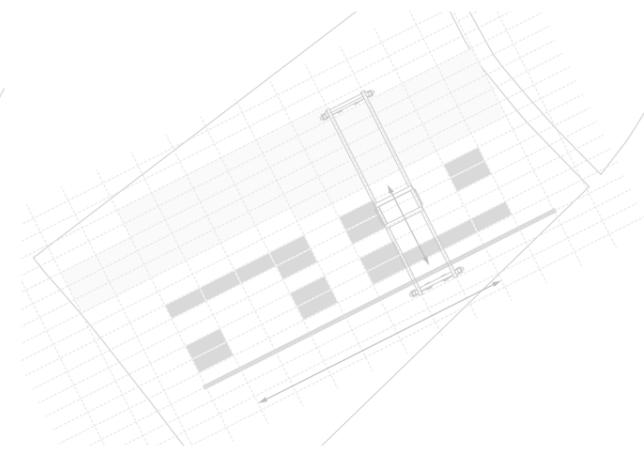
## integrated gantry crane reconfiguring plaza with container pods



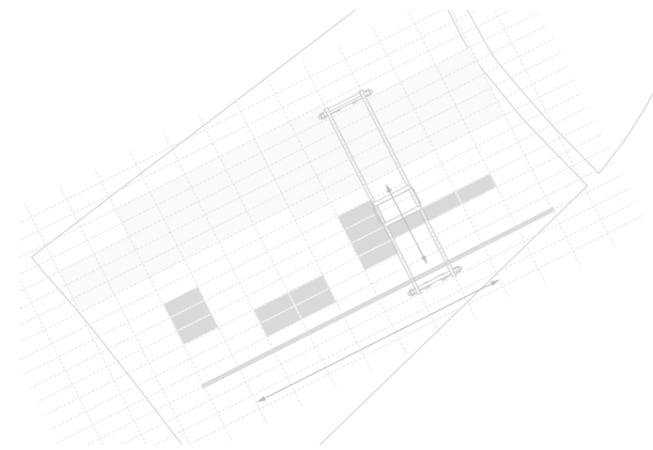
no event



open air cinema



metal workshop



music festival



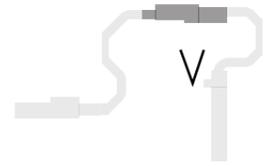
heij-haven

*“We used to live in Schiedam for a long time and recently moved to Heijplaat due to the increase in the rental price of the previous property. We enjoy watching the changing scenery, ships coming and going, from our own living room.”*

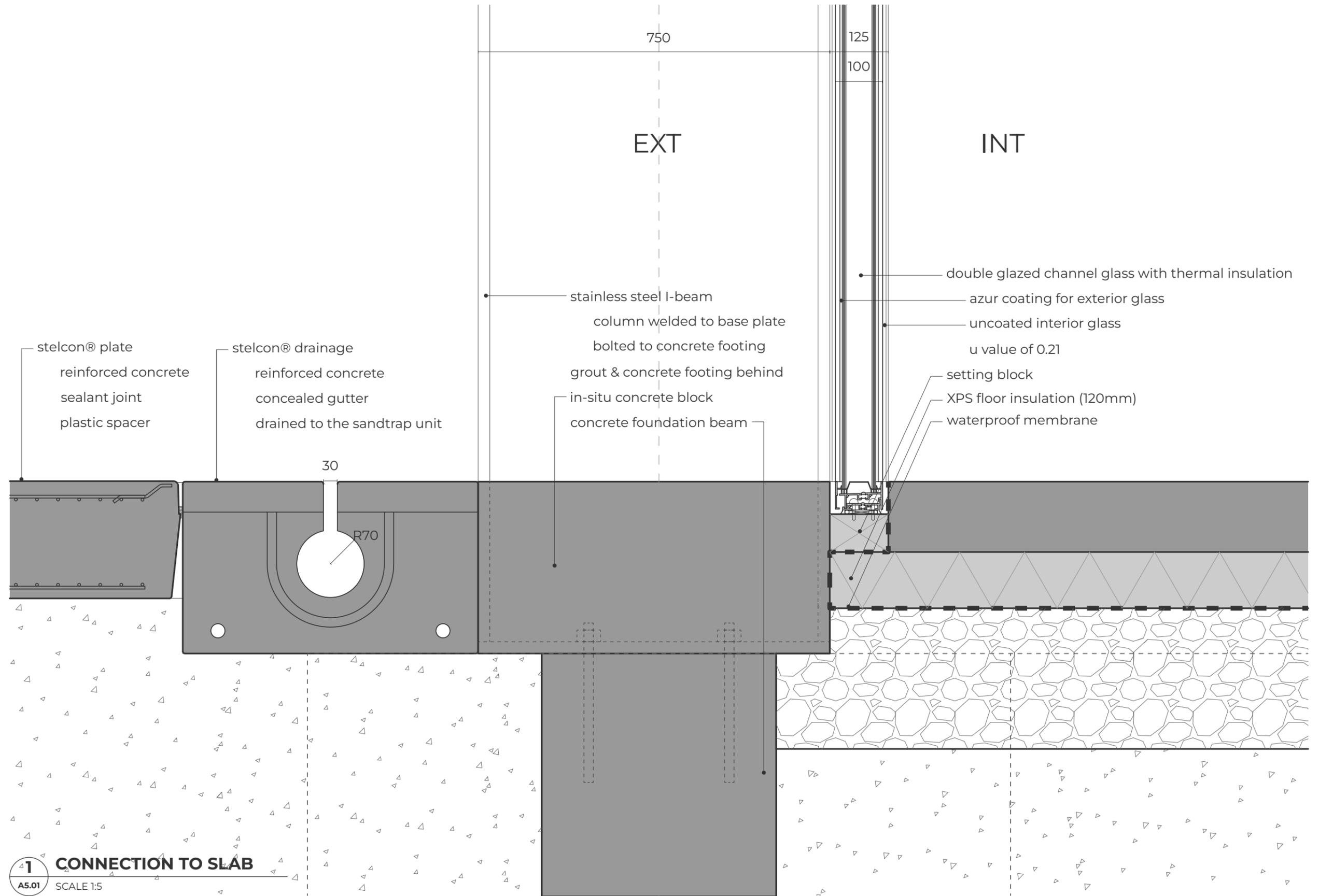
A couple in their 30s taking a stroll on RDM premises, October 2024

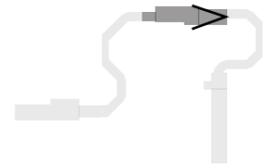


**hosting events that attract outsiders and contribute to residents' social lives**



**presenting difference scenes at the entrance to the port-nested-village**

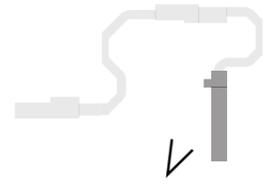




**communal archive of phy-sital materials about port-nested-village**



**continuing to muur 3 from the communal warehouse**



**former horizontal parking pot turned into a vertical parking tower**



- Getting into a port is hard, isn't it?  
- No, man, that's what people think.



Like a strip joint you always go to.  
You know the rooms and the toilets.



You're worried they'll use violence to  
get away from the police?



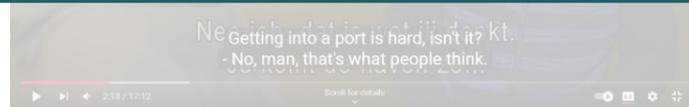
We don't know when they'll come,  
or how they get in. No idea.

## hazards around container ports unspoken in the port-nested-village

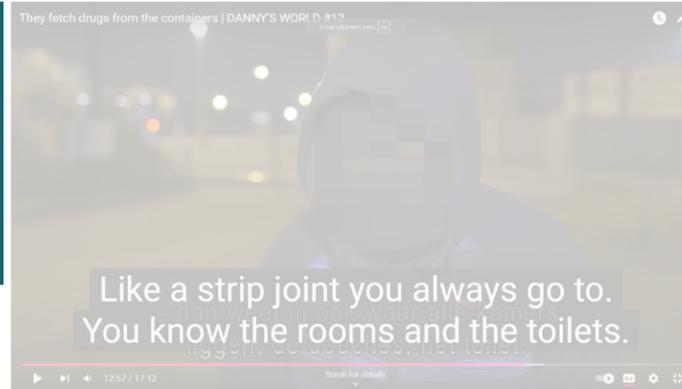


**"Port employs more and more security measures to fight the drug smuggling issues. The village should be safe - there is fence around the port property."**

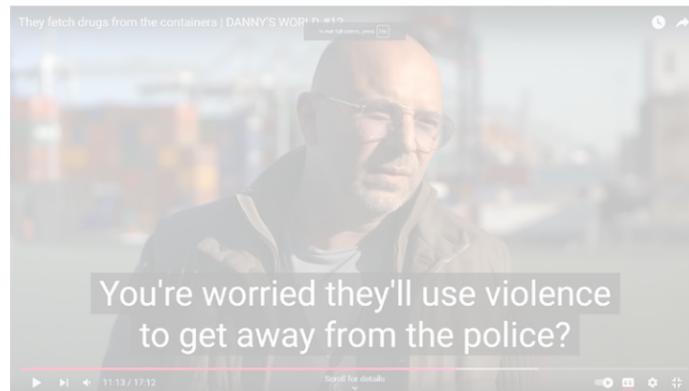
Municipality expert focusing on Drug Crime at Port, December 2024



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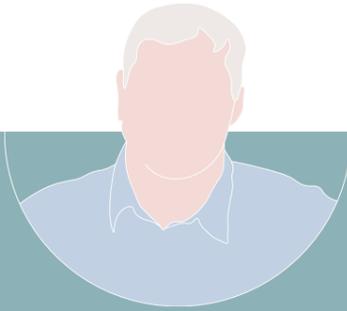


You're worried they'll use violence to get away from the police?



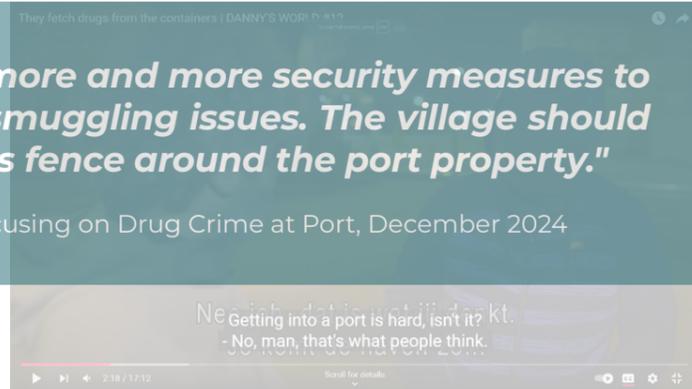
We don't know when they'll come, or how they get in. No idea.

## loophole in the mechanical surveillance system

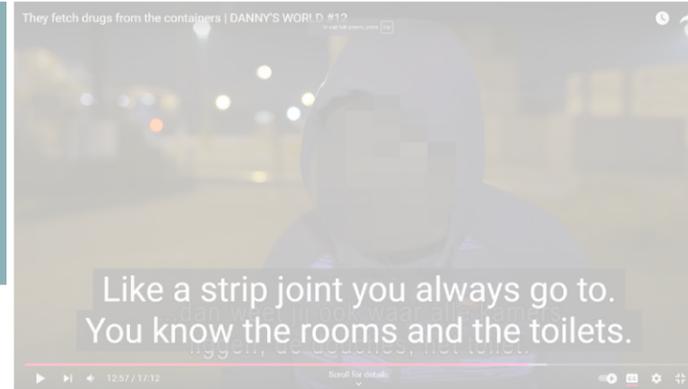


**"Port employs more and more security measures to fight the drug smuggling issues. The village should be safe - there is fence around the port property."**

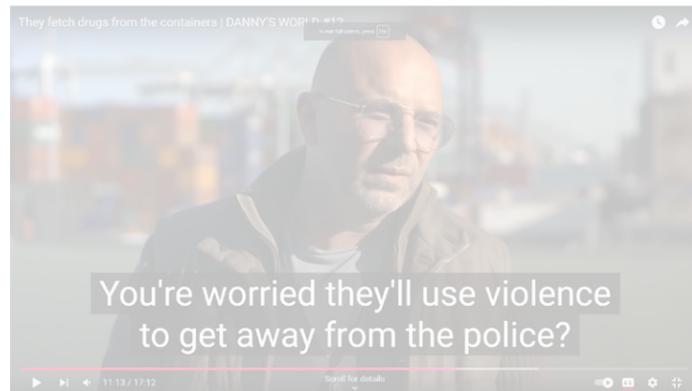
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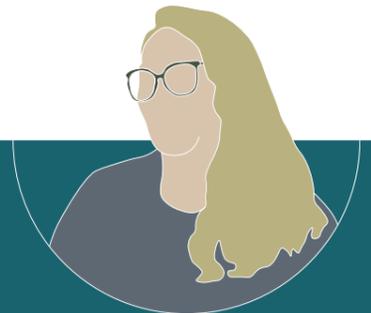


You're worried they'll use violence to get away from the police?

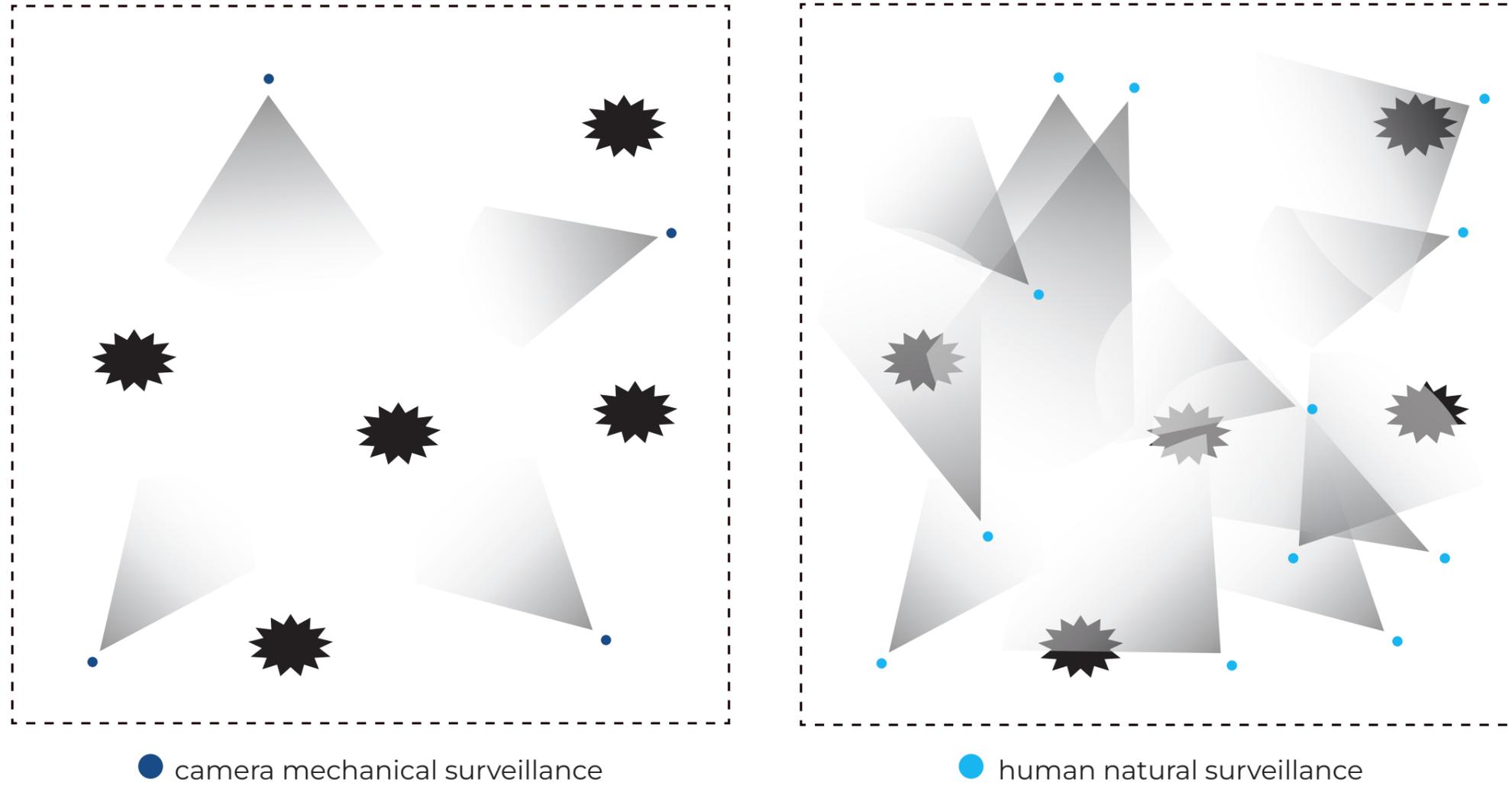


**"A few years back, there was an incident involving a young Heijplaater but it was not discussed so much in public. Afterward, the police department and the municipality conducted a short survey and easily concluded that youth in Heijplaat is safe from getting involved into drug smuggling at the port. No one sees this as a problem, but I do."**

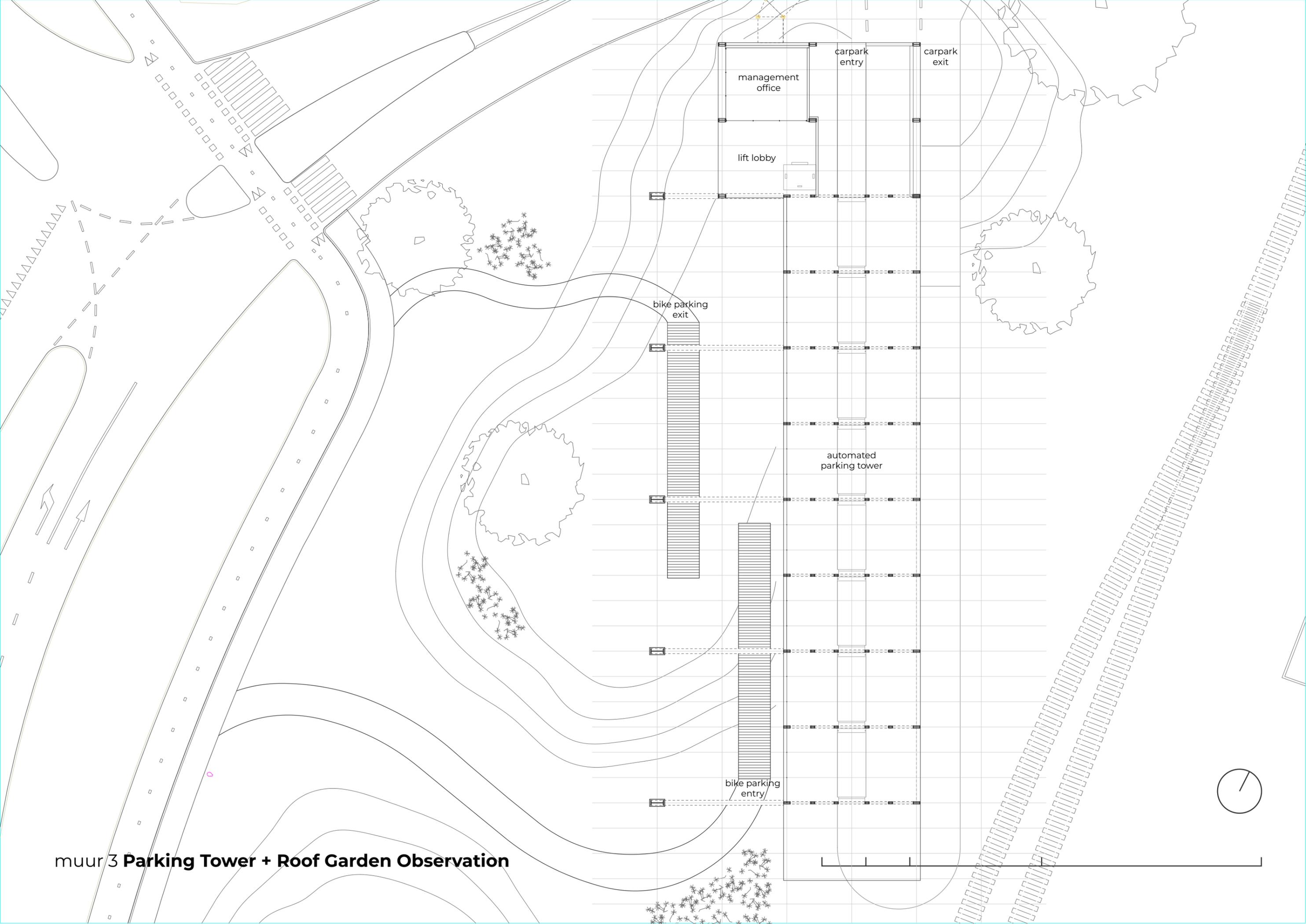
Municipality expert focusing on Heijplaat and Pernis, January 2025



## limitations of combating unpredictable events



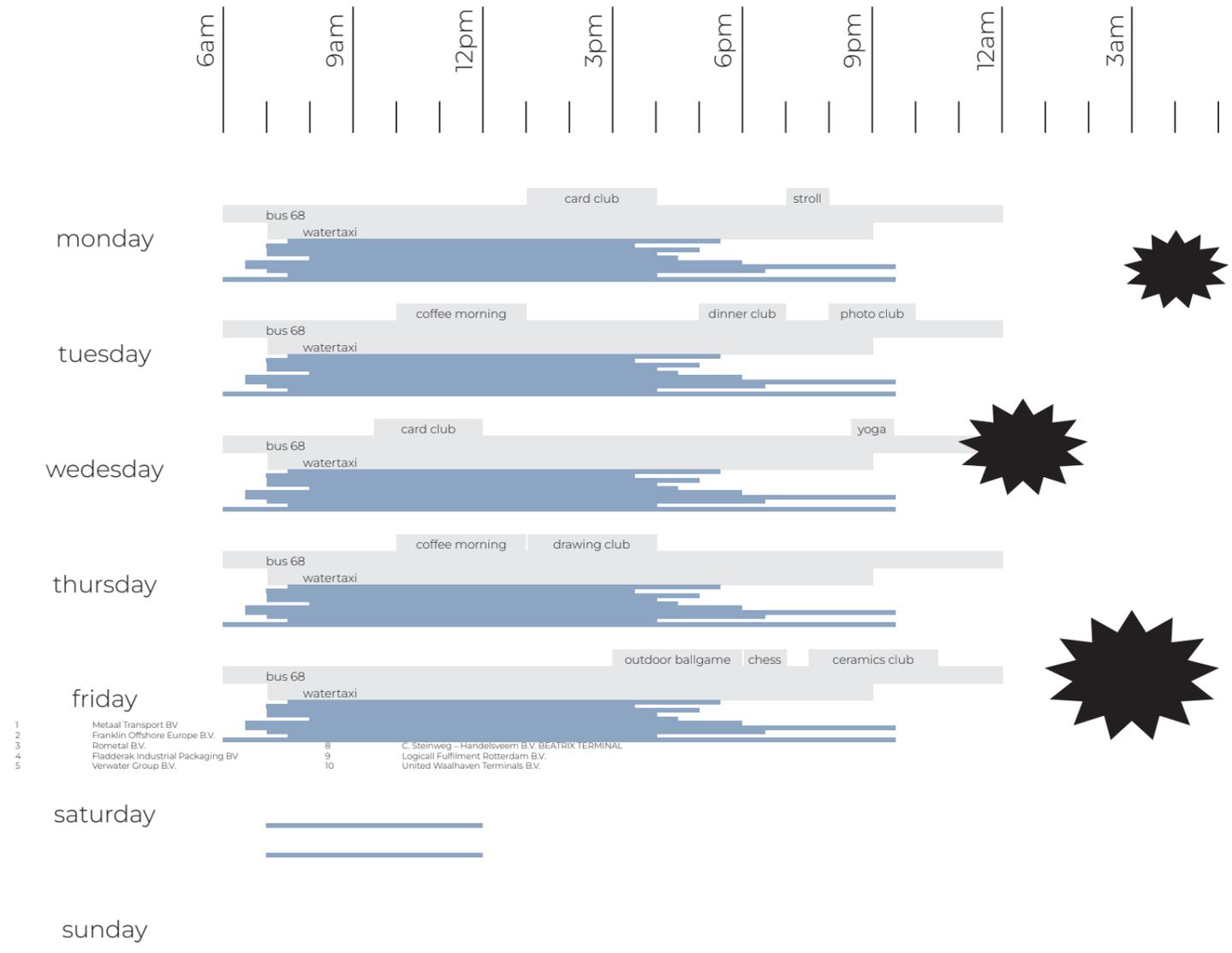
**inviting human eyes to be dynamic actors of natural surveillance**



**muur3 Parking Tower + Roof Garden Observation**



**automated parking tower for the increased parking traffic from the visitors**



1 Metaal Transport BV  
 2 Franklin Offshore Europe B.V.  
 3 Rometal B.V.  
 4 Fladderak Industrial Packaging BV  
 5 Verwater Group B.V.

8 C. Steinweg – Handelsveem B.V. BEATRIX TERMINAL  
 9 Logica! Fulfillment Rotterdam B.V.  
 10 United Waalhaven Terminals B.V.

**dangers outside the "normal activity hours"**

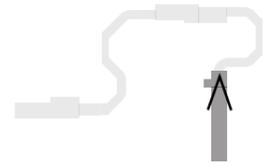


**“Can architecture actually prevent drug smuggling in the port or the picking of the drug? Should we rather think about the time when the residents/visitors are active vs. the time when criminals are active?”**

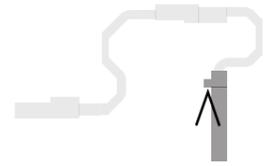
TU Delft PhD working on Predictive Model under FORT-PORT, November 2024



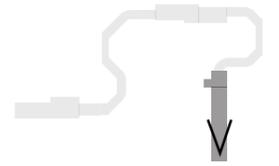
**passive prevention rather than active response**



**irregular visits activating the tower at different hours**



**inviting "eyes on the street" to the structure higher than the surrounding**



**unique scene of rotterdam city in the background and port in the foreground**



**possibility of managing a network of cultural infra-tecture via digital twin**

**background**

port-city

rotterdam center

industrial port

system of security

external safety

**foreground**

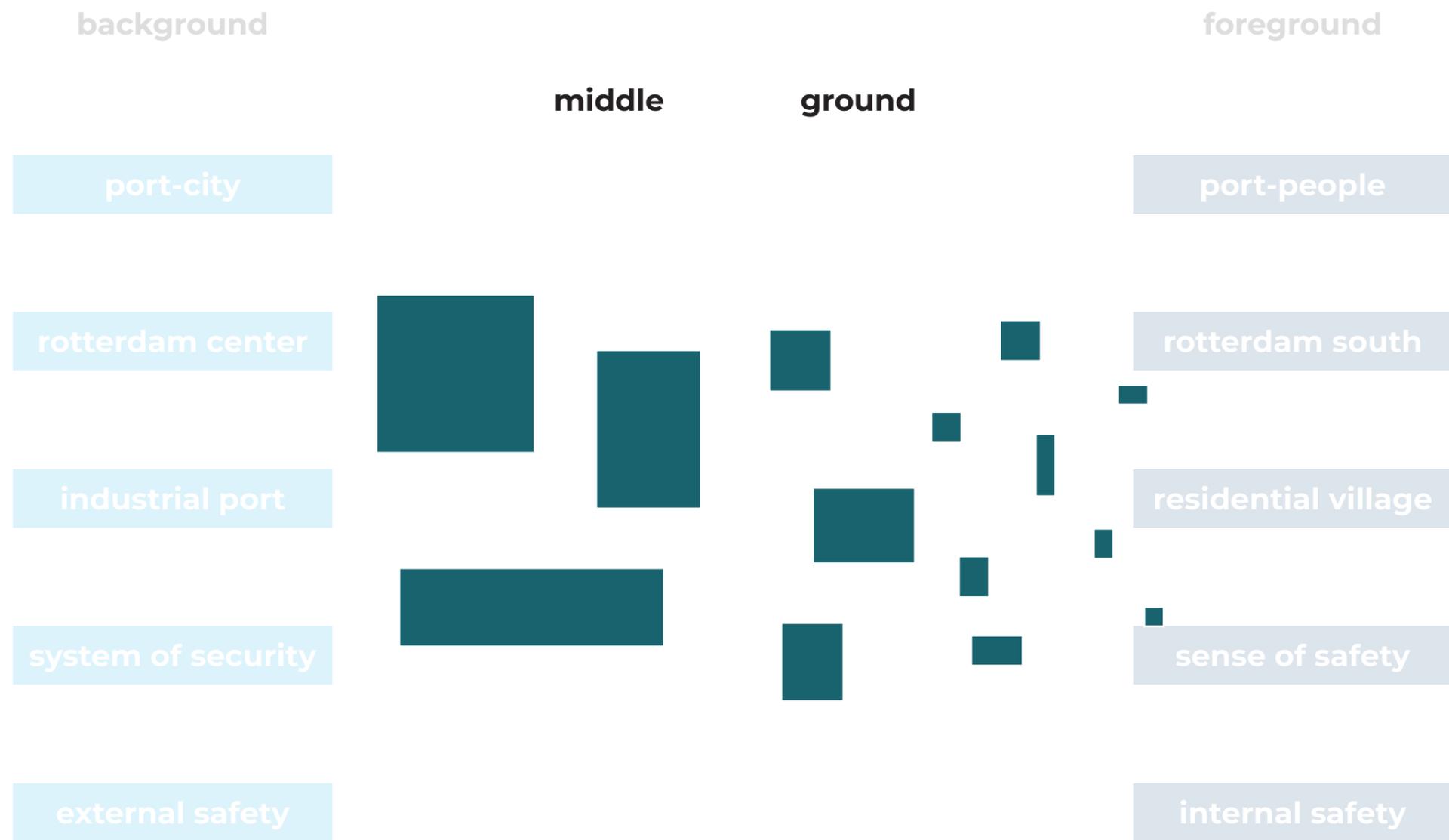
port-people

rotterdam south

residential village

sense of safety

internal safety



research  
through  
**literature**

research  
through  
**visualization**

research  
through  
**interaction**

internality



externality

# playing unsafe

