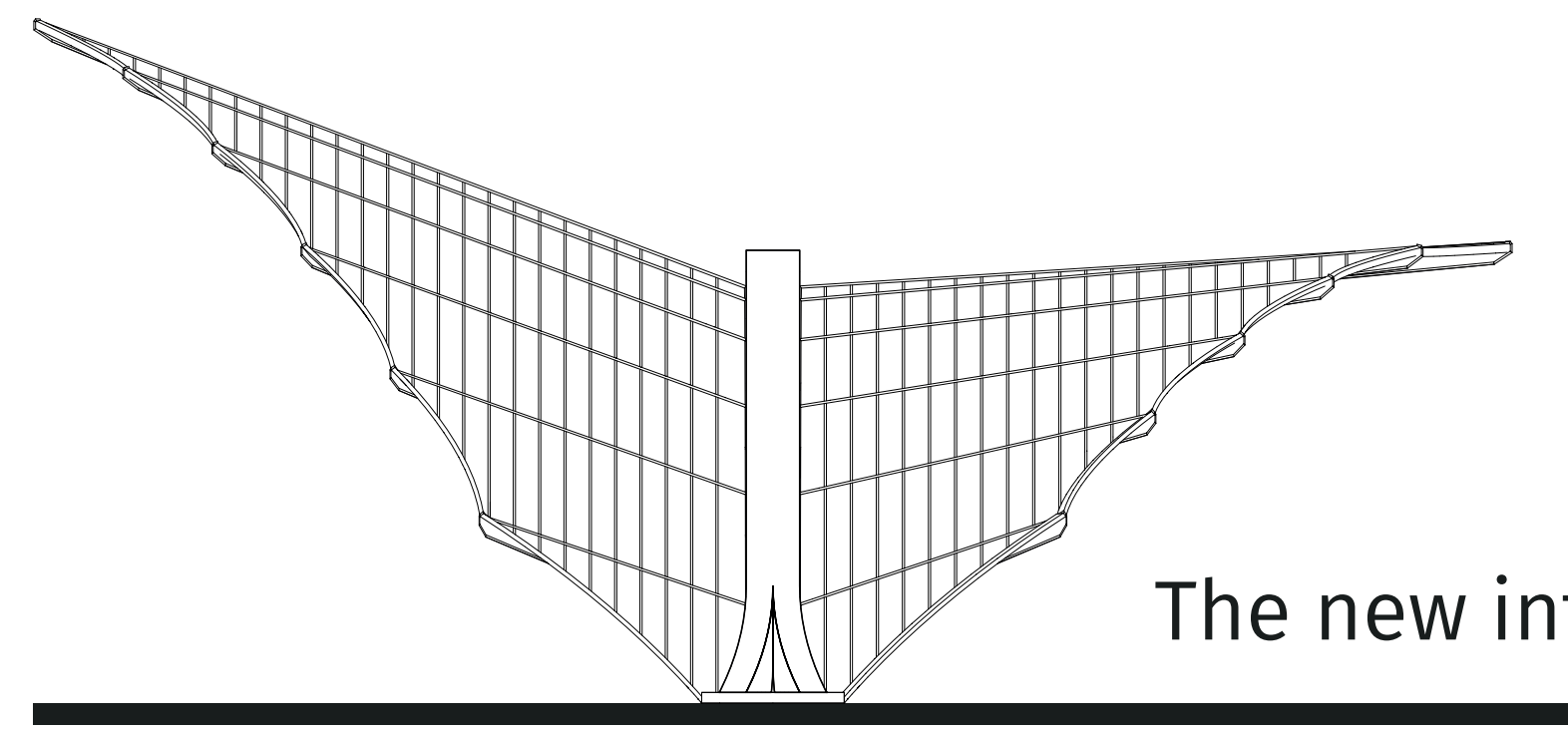
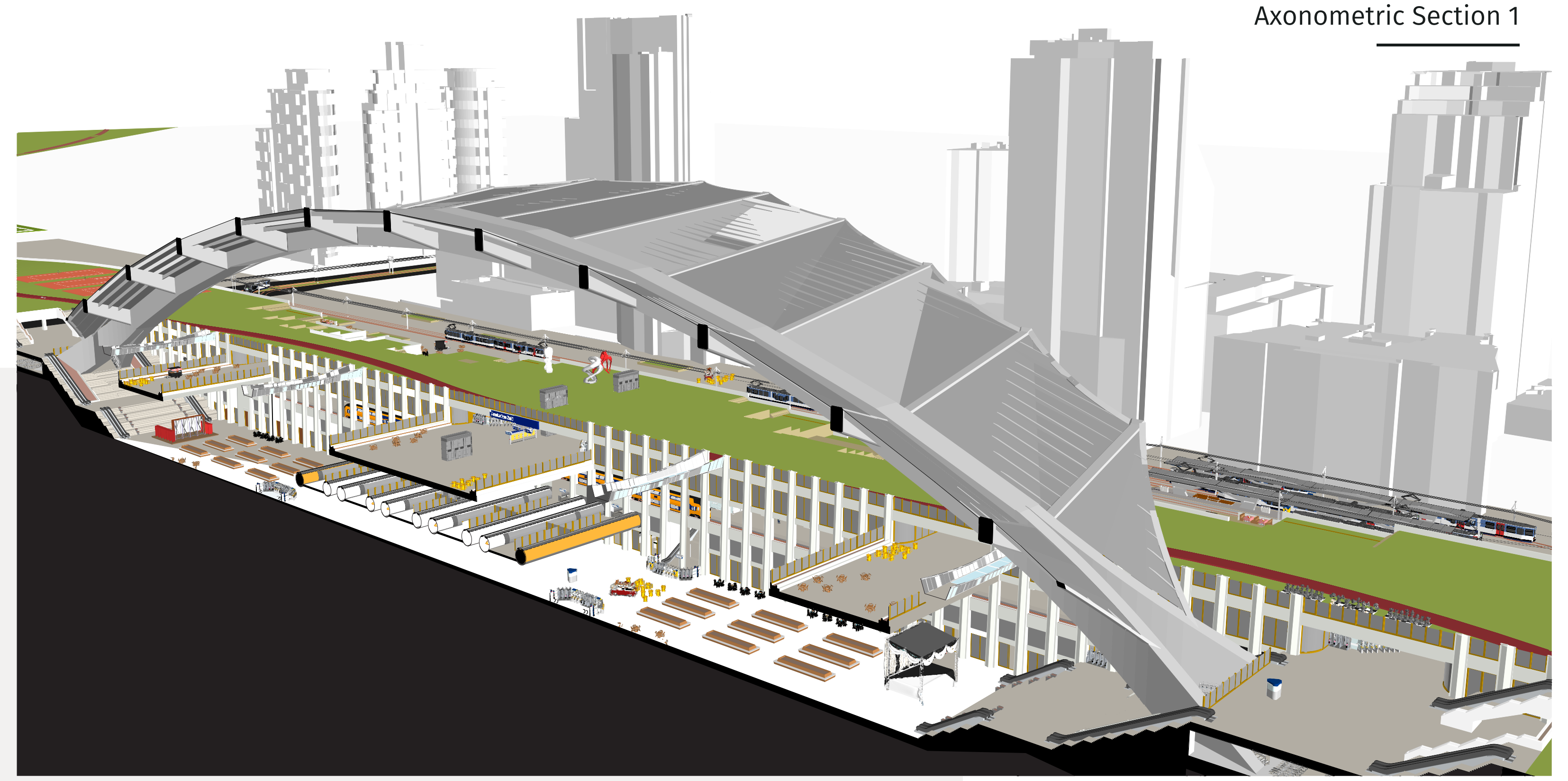


THE WHALE

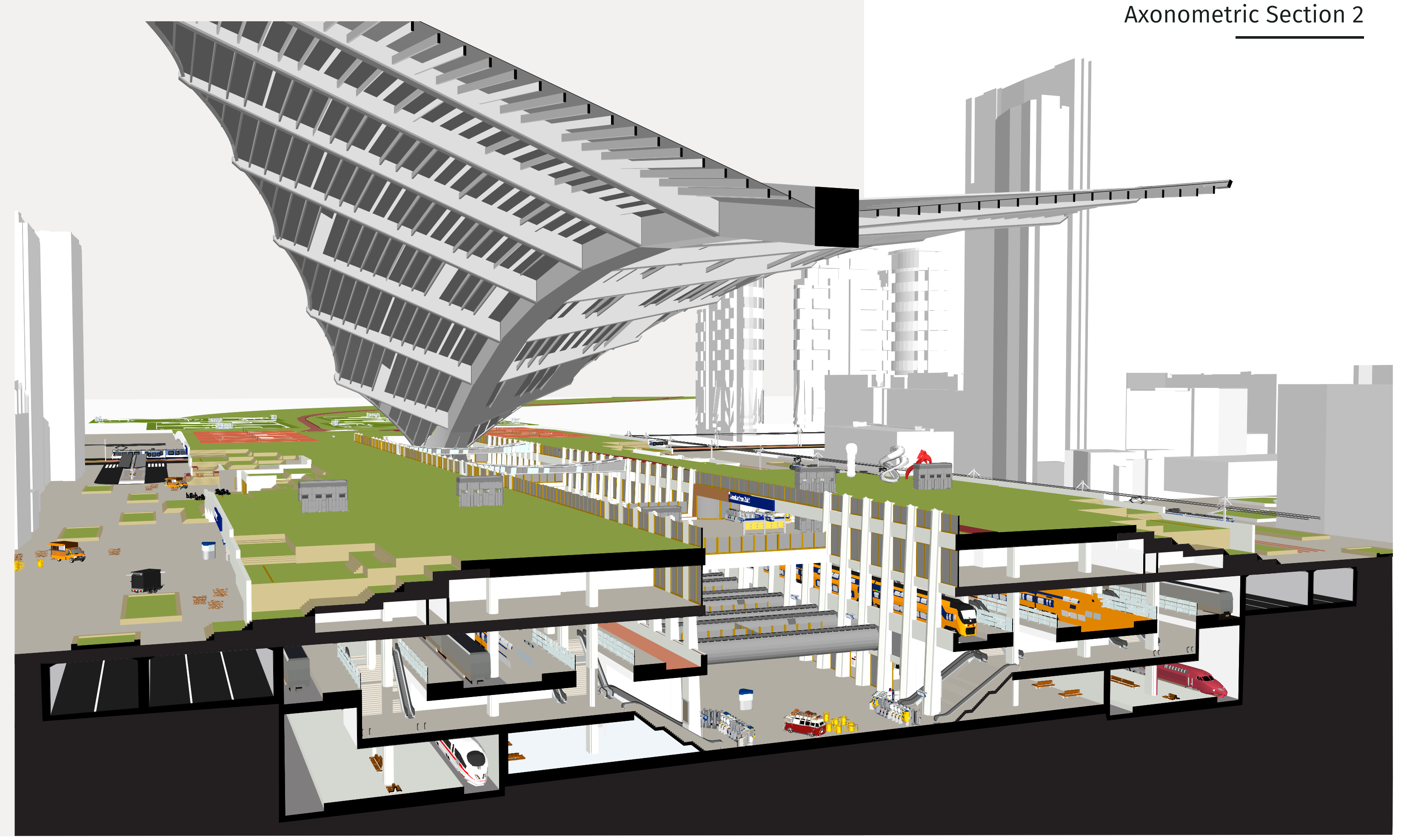
The new integrated urban multimodal hub at the Zuidas

R. Koelmans
4482557

Axonometric Section 1

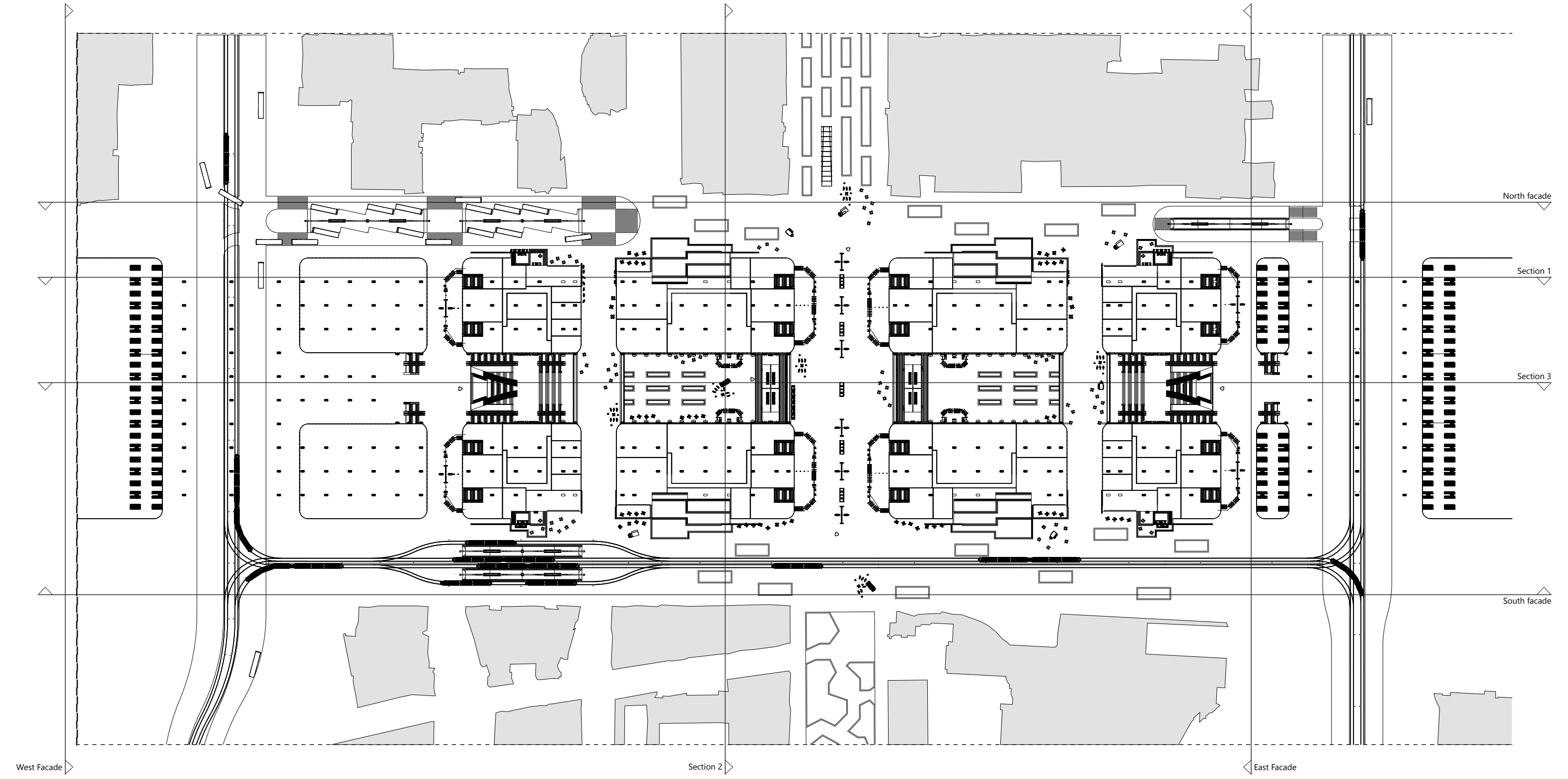


Axonometric Section 2



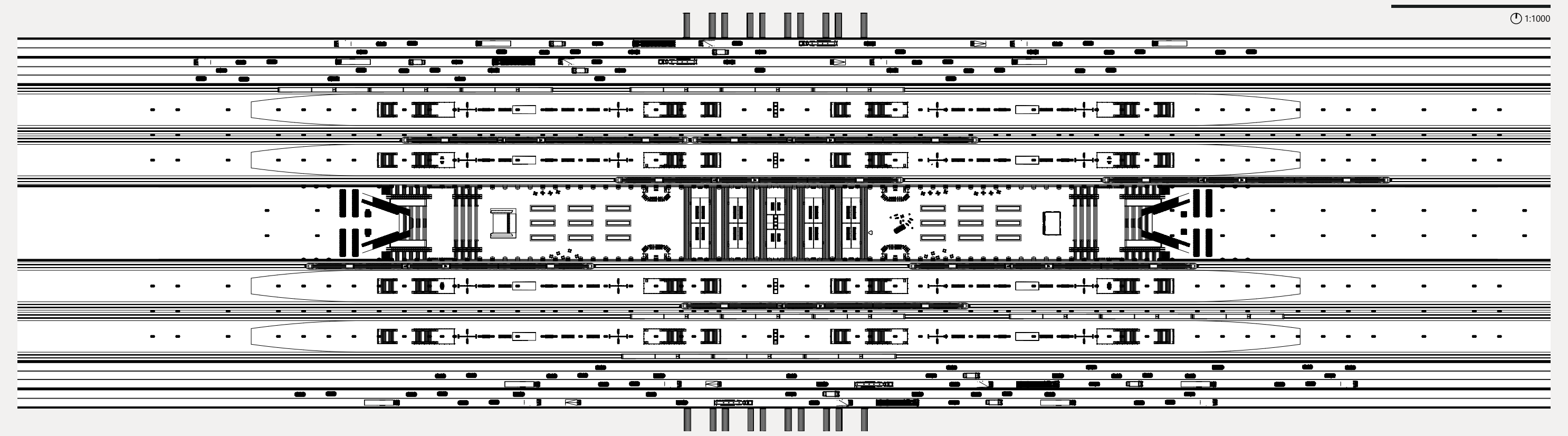
Ground Floor

1:1000


North facade
Section 1
Section 3
South facade
East Facade
West Facade
Section 2

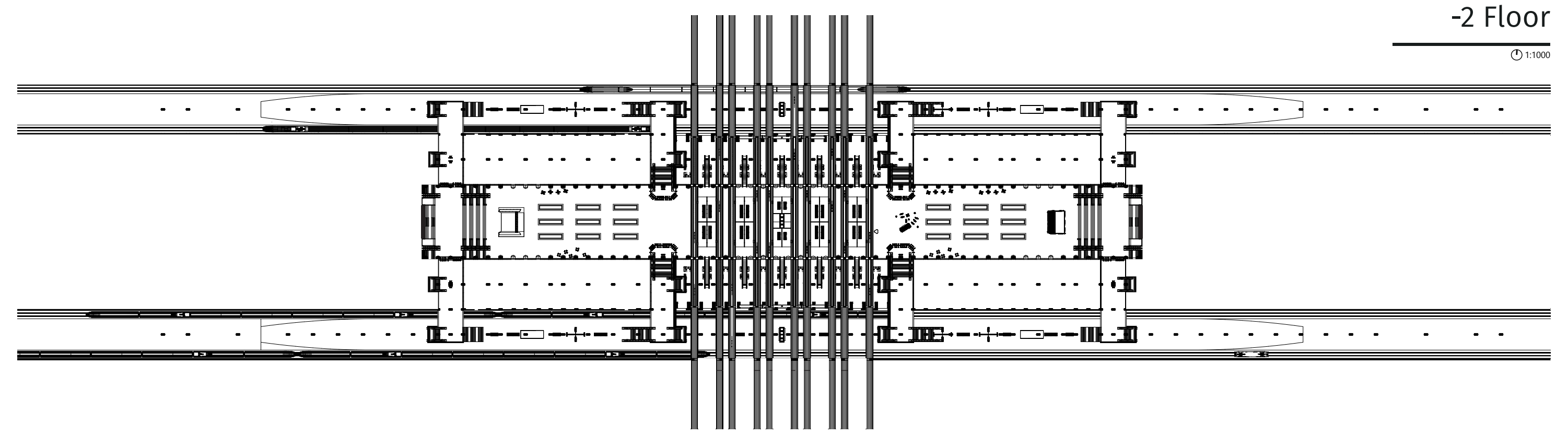
-1 Floor

1:1000



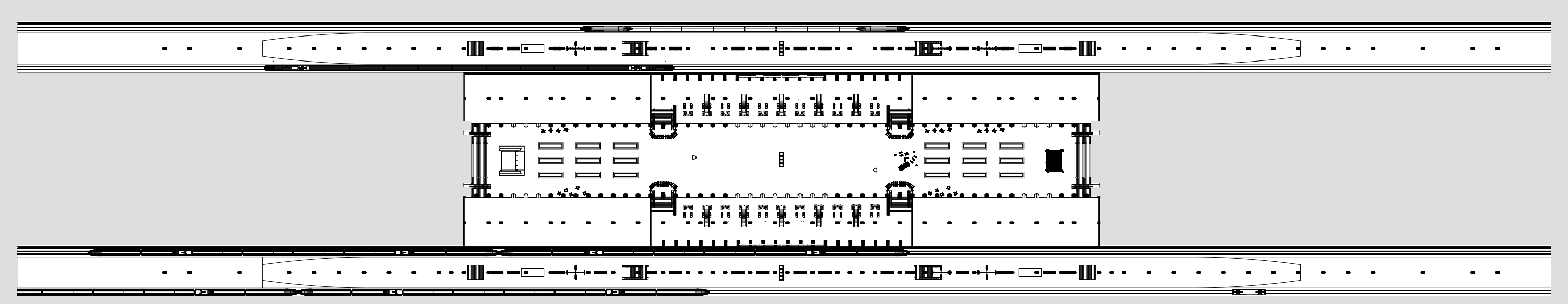
-2 Floor

1:1000



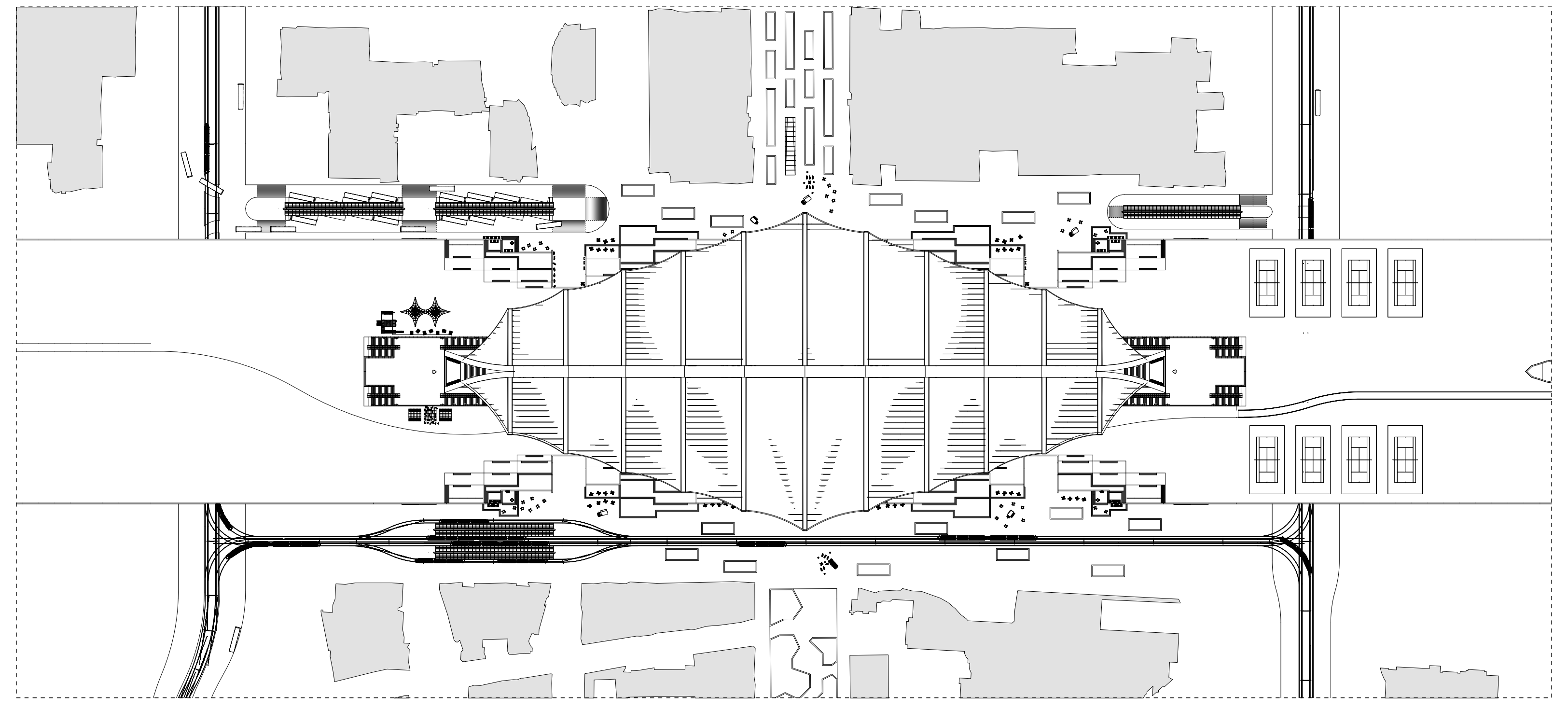
-3 Floor

1:1000



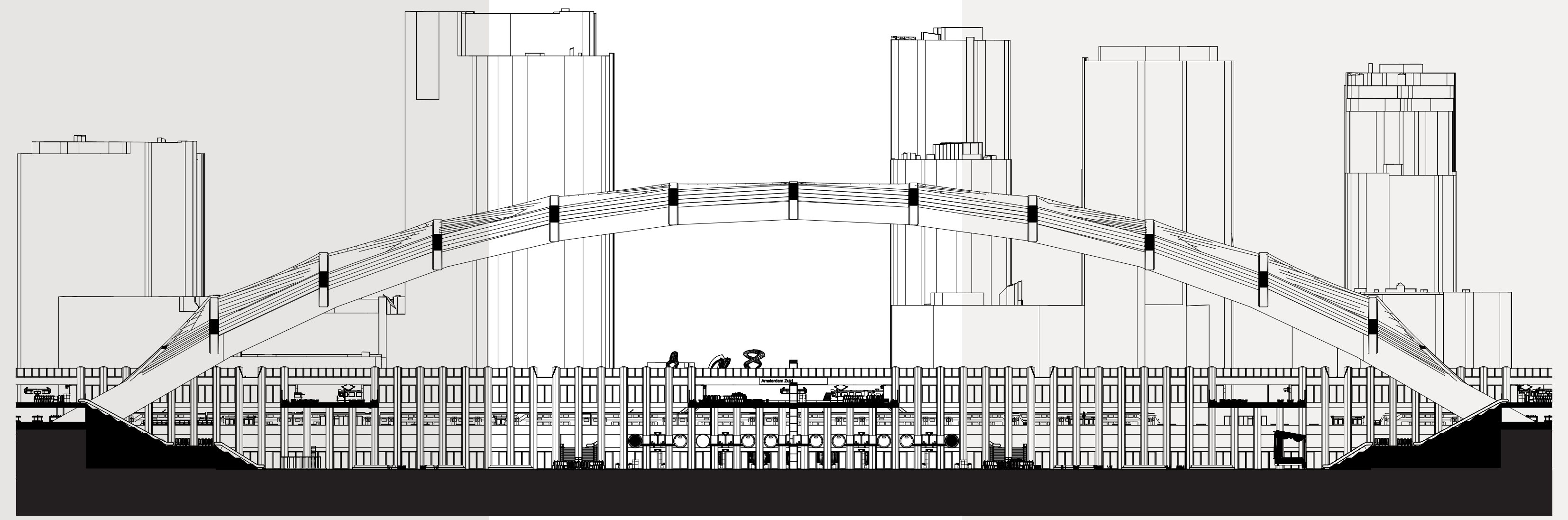
Top View

1:1000



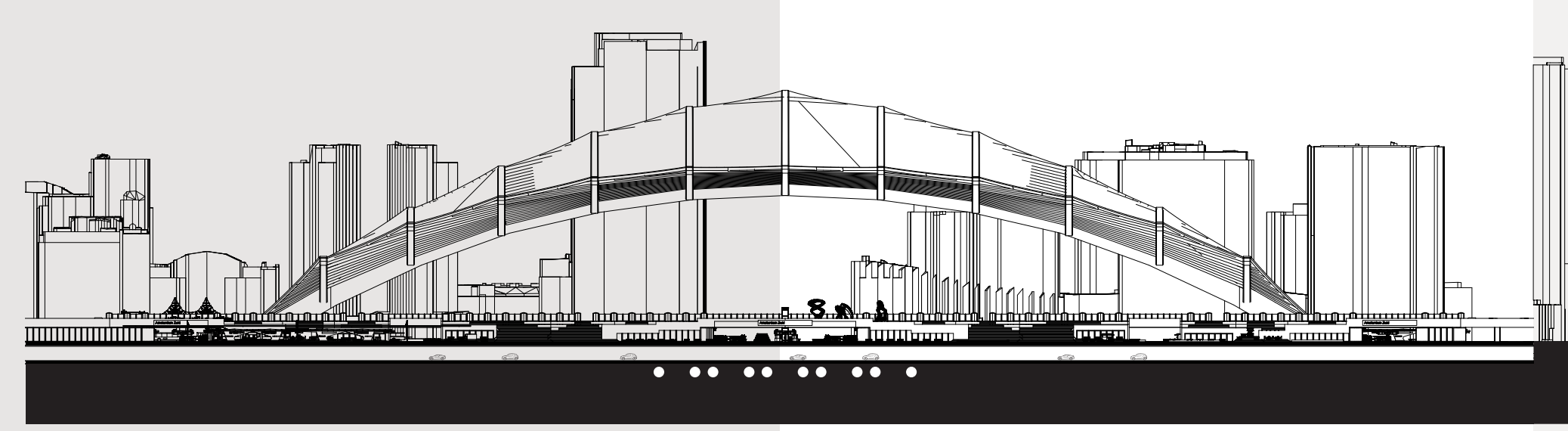
Section 1

1:500


Amsterdam Zuid

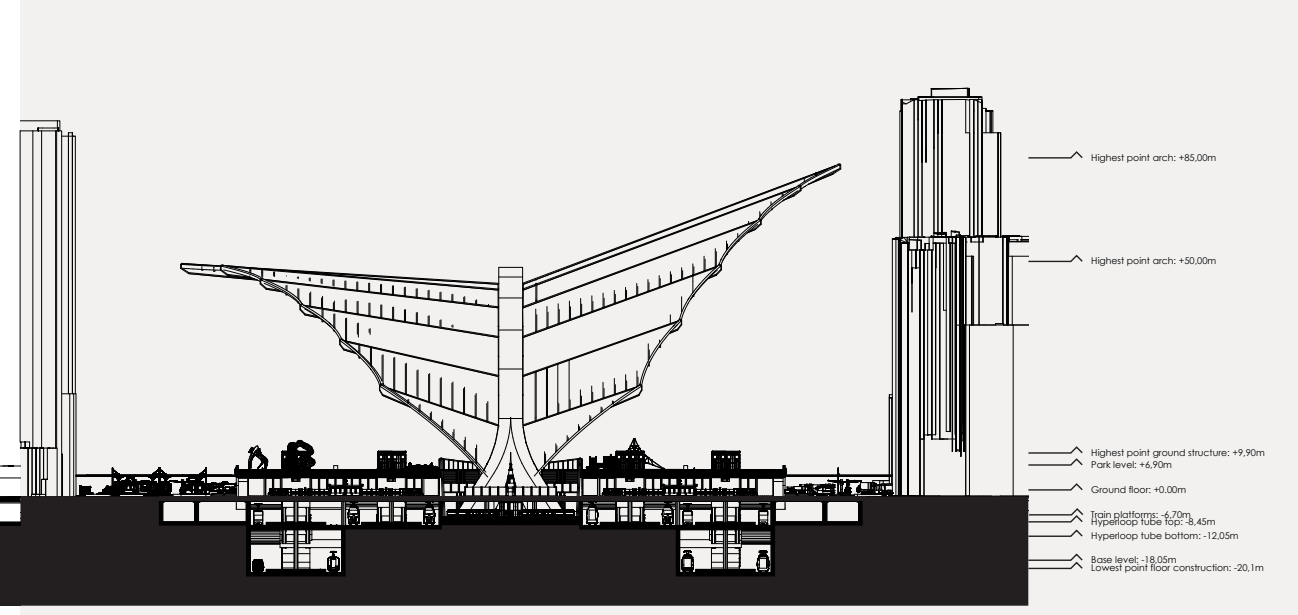
South Facade

1:1000



East Facade

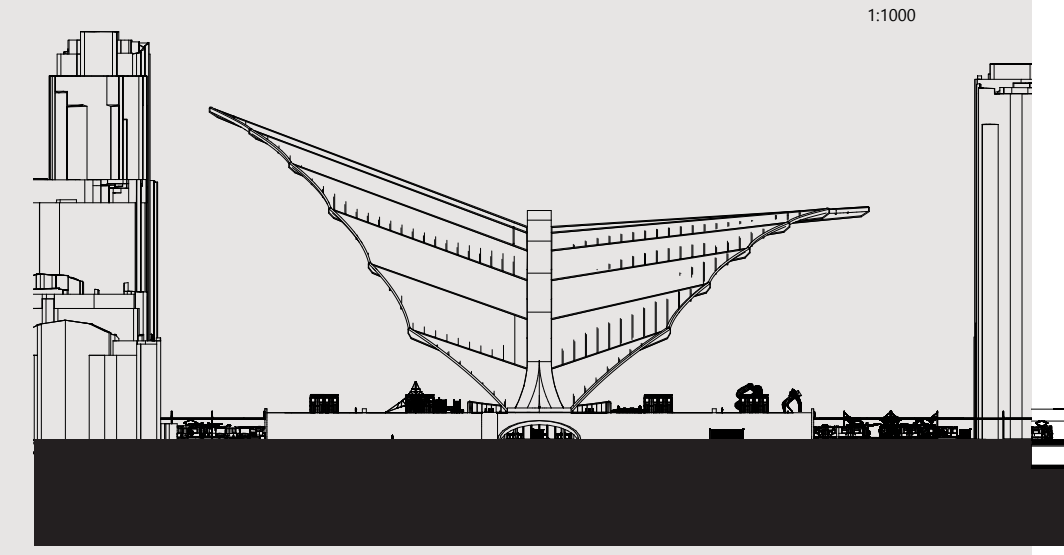
1:1000


Highest point arch: +85,00m
Highest point arch: +50,00m
Highest point ground structure: +9,90m
Park level: +6,90m
Ground floor: +0.00m
Train platforms: -6,70m
Hyperloop tube top: -8,45m
Hyperloop tube bottom: -12,05m
Base level: -18,05m
Lowest point floor construction: -20,1m

1:1000

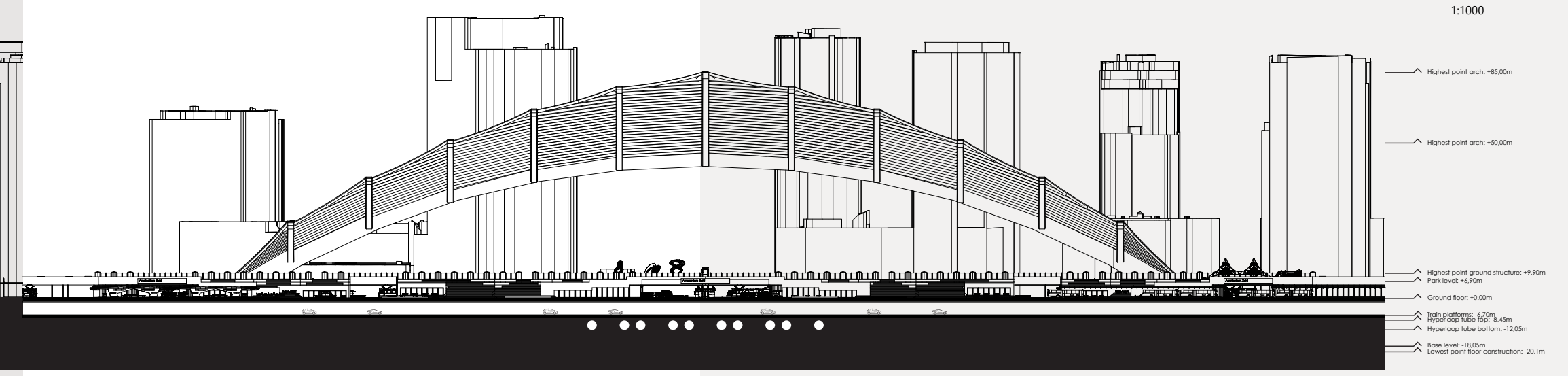
West Facade

1:1000



North Facade

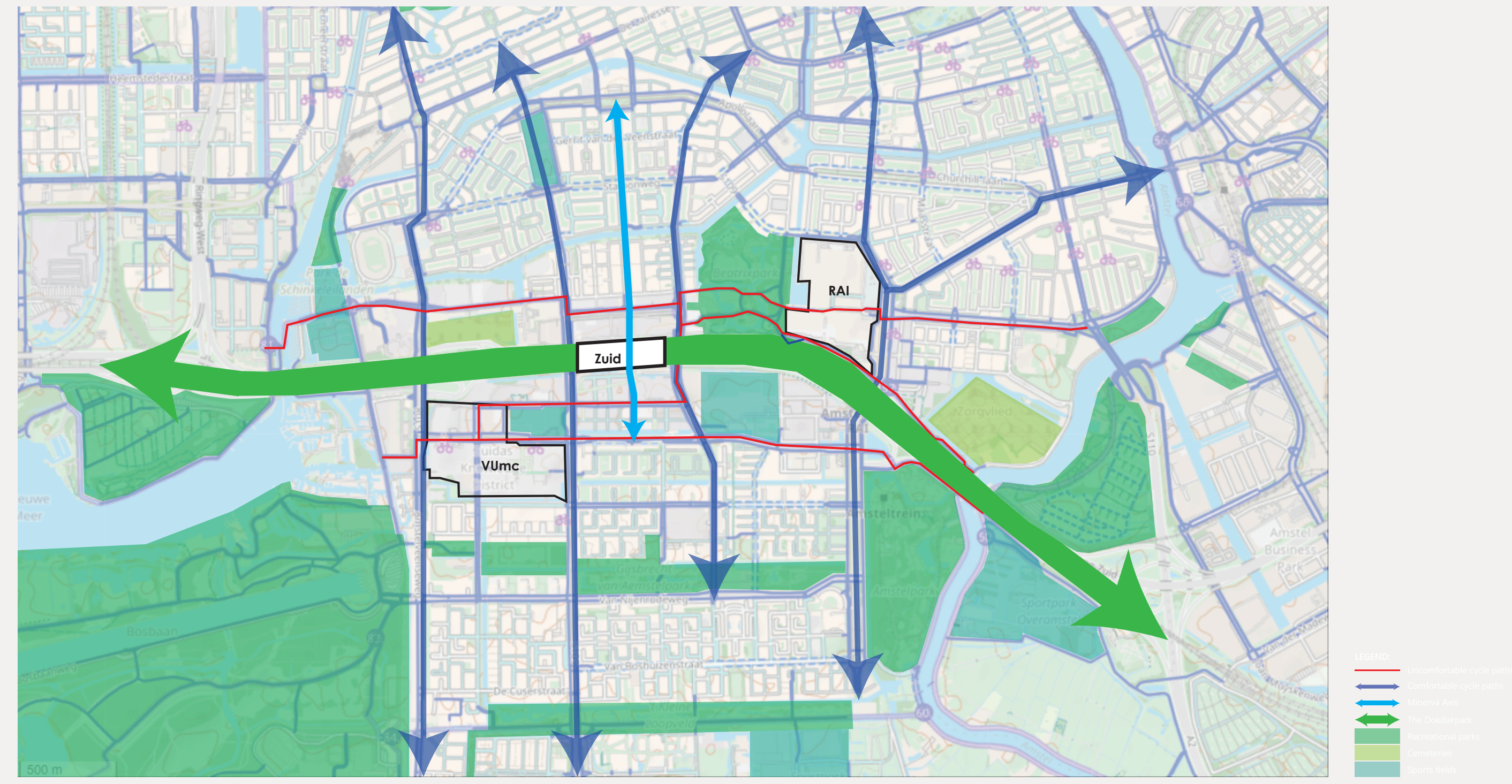
1:1000


Amsterdam Zuid
Highest point arch: +85,00m
Highest point arch: +50,00m
Highest point ground structure: +9,90m
Park level: +6,90m
Ground floor: +0.00m
Train platforms: -6,70m
Hyperloop tube top: -8,45m
Hyperloop tube bottom: -12,05m
Base level: -18,05m
Lowest point floor construction: -20,1m

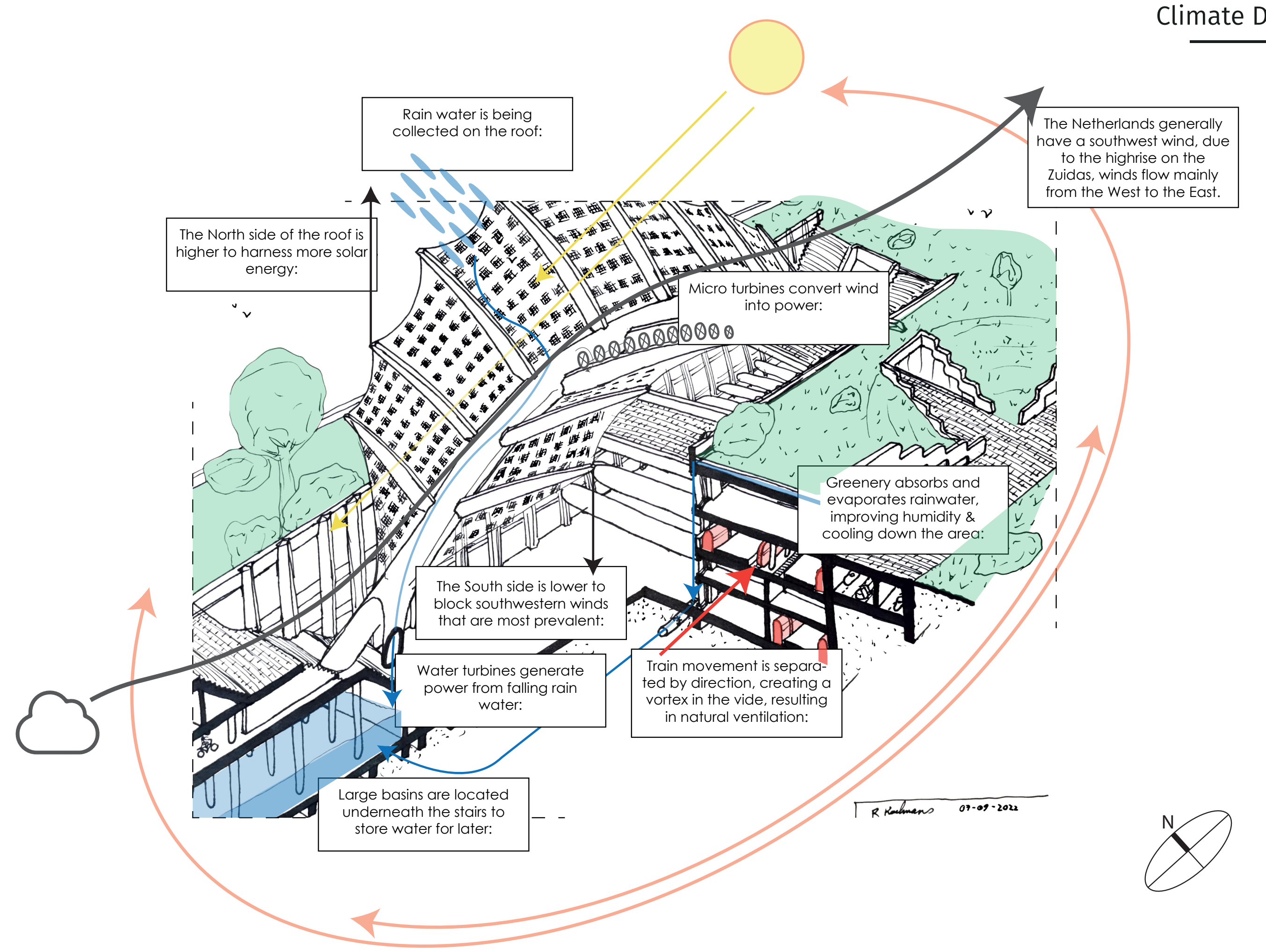
1:1000

Dokdakpark & Minerva Axis

1:1000


Zuid
RAI
VUmc
Amstel Business Park
LEGEND:
Uncomfortable cycle paths
Comfortable cycle paths
Minerva Axis
The Dokdakpark
Recreational parks
Cemeteries
Sports fields

Climate Design



Rain water is being collected on the roof:

The North side of the roof is higher to harness more solar energy:

Micro turbines convert wind into power:

The Netherlands generally have a southwest wind, due to the highrise on the Zuidas, winds flow mainly from the West to the East.

Greenery absorbs and evaporates rainwater, improving humidity & cooling down the area:

The South side is lower to block southwestern winds that are most prevalent:

Water turbines generate power from falling rain water:

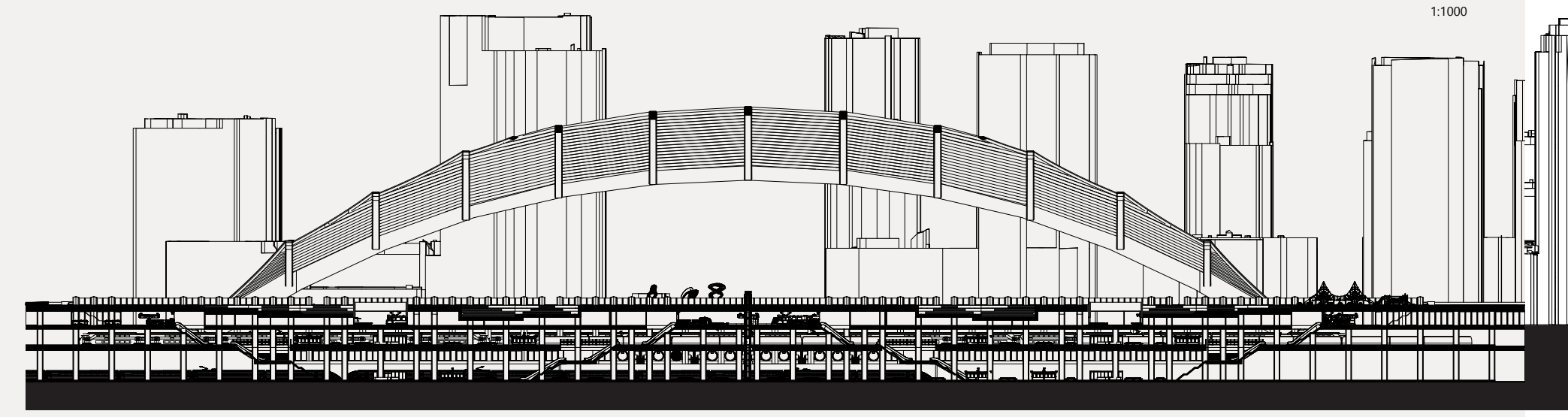
Train movement is separated by direction, creating a vortex in the vide, resulting in natural ventilation:

Large basins are located underneath the stairs to store water for later:

R Koelmans 07-09-2022

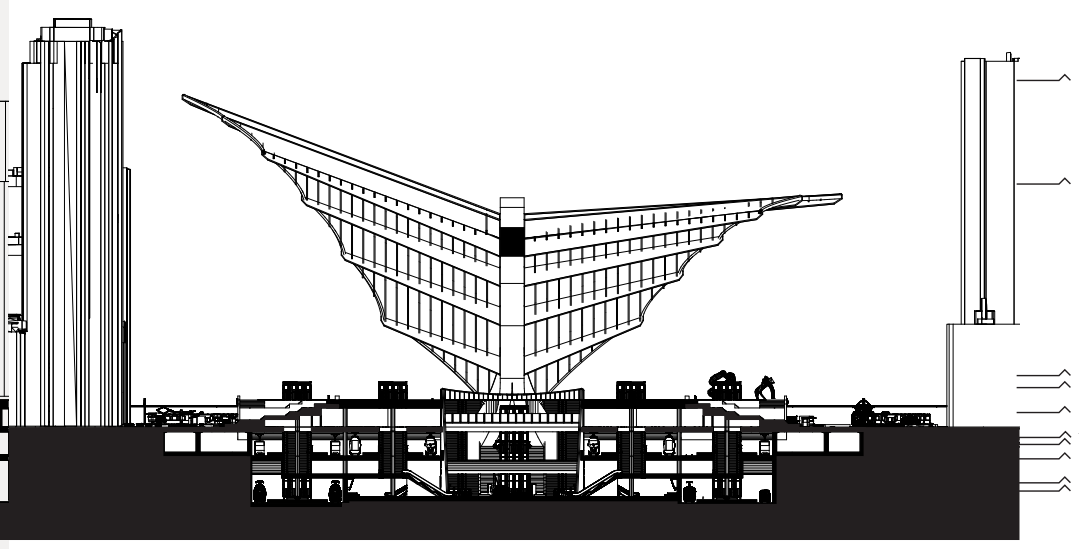
Section 2

1:1000



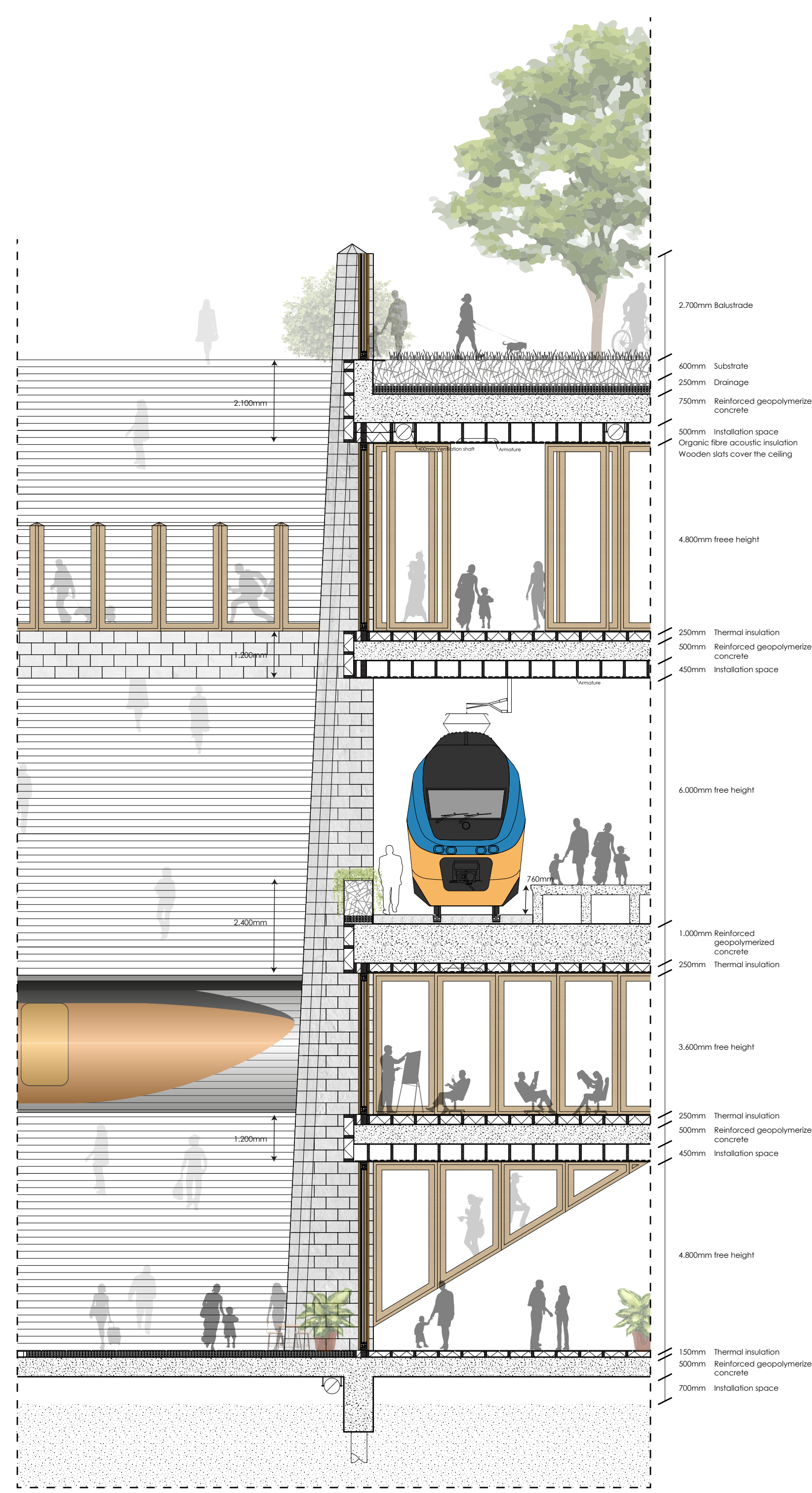
Section 3

1:1000


Highest point arch: +85,00m
Highest point arch: +50,00m
Highest point ground structure: +9,90m
Park level: +6,90m
Ground floor: +0.00m
Train platforms: -6,70m
Hyperloop tube top: -8,45m
Hyperloop tube bottom: -12,05m
Base level: -18,05m
Lowest point floor construction: -20,1m

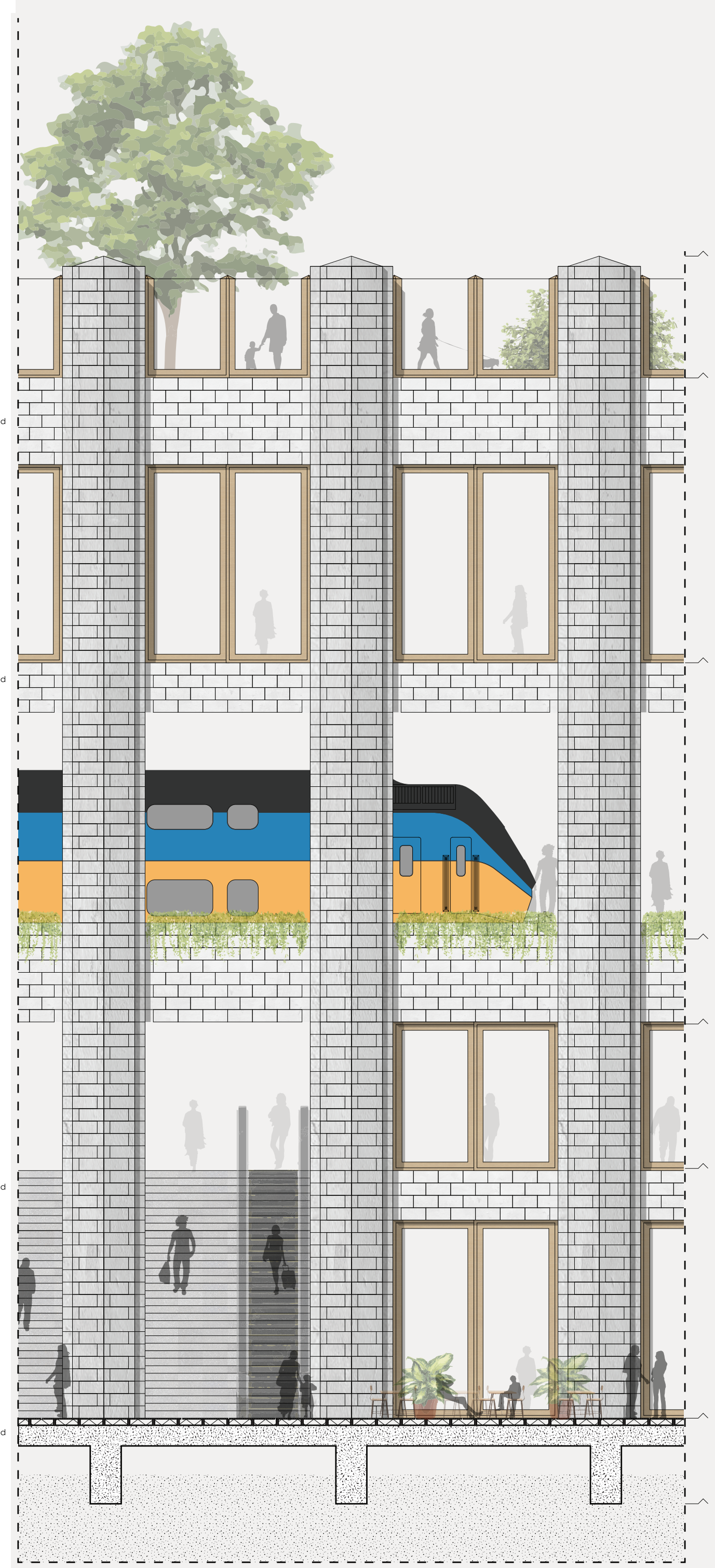
Cross Section

1:50


2.100mm
1.200mm
2.400mm
760mm
Armature
2.700mm Balustrade
600mm Substrate
250mm Drainage
750mm Reinforced geopolymerized concrete
500mm Installation space
Organic fibre acoustic insulation
Wooden slats cover the ceiling
4.800mm freee height
250mm Thermal insulation
500mm Reinforced geopolymerized concrete
450mm Installation space
6.000mm free height
1.000mm Reinforced geopolymerized concrete
250mm Thermal insulation
3.600mm free height
250mm Thermal insulation
500mm Reinforced geopolymerized concrete
450mm Installation space
4.800mm free height
150mm Thermal insulation
500mm Reinforced geopolymerized concrete
700mm Installation space

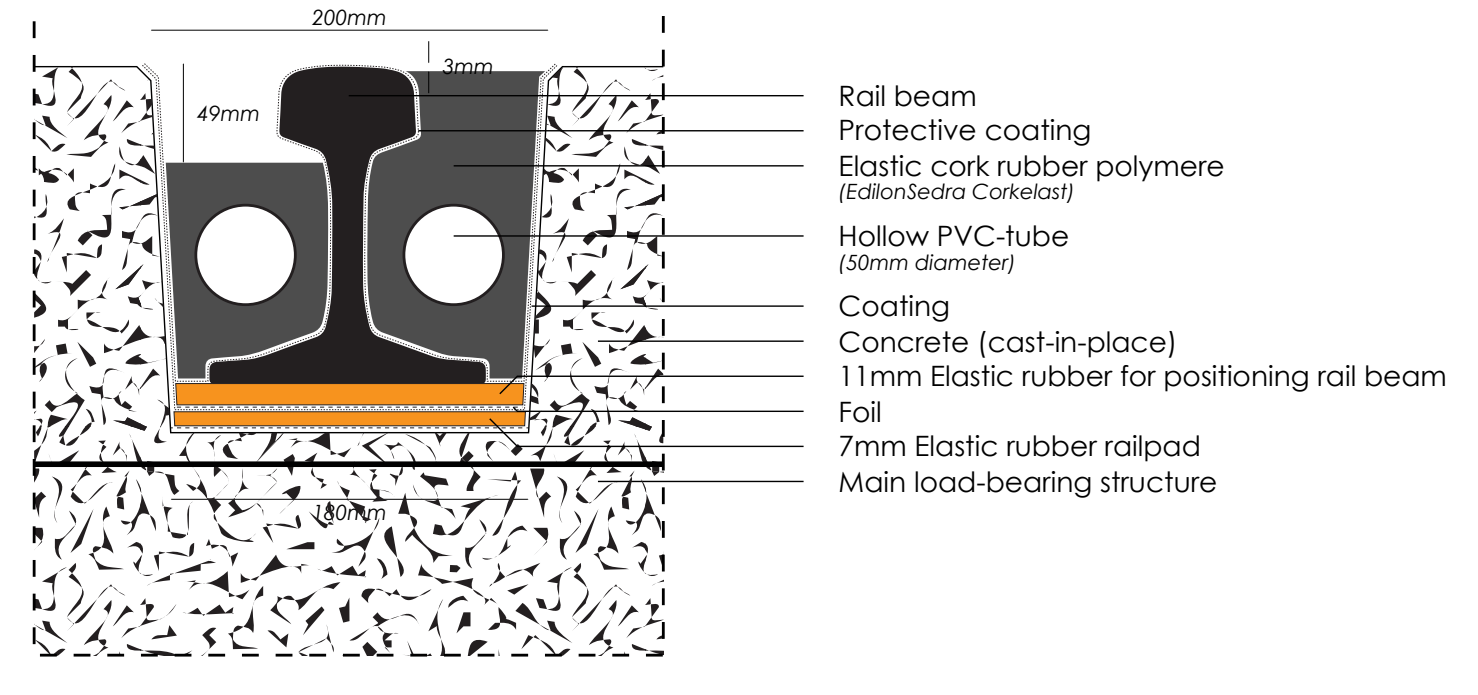
Elevation

1:50


Highest point: +9,90m
Park level: +6,90m
Ground floor: +0.00m
Train platforms: -6,70m
Hyperloop tube top: -8,45m
Hyperloop tube bottom: -12,05m
Base level: -18,05m
Lowest point construction: -20,1m

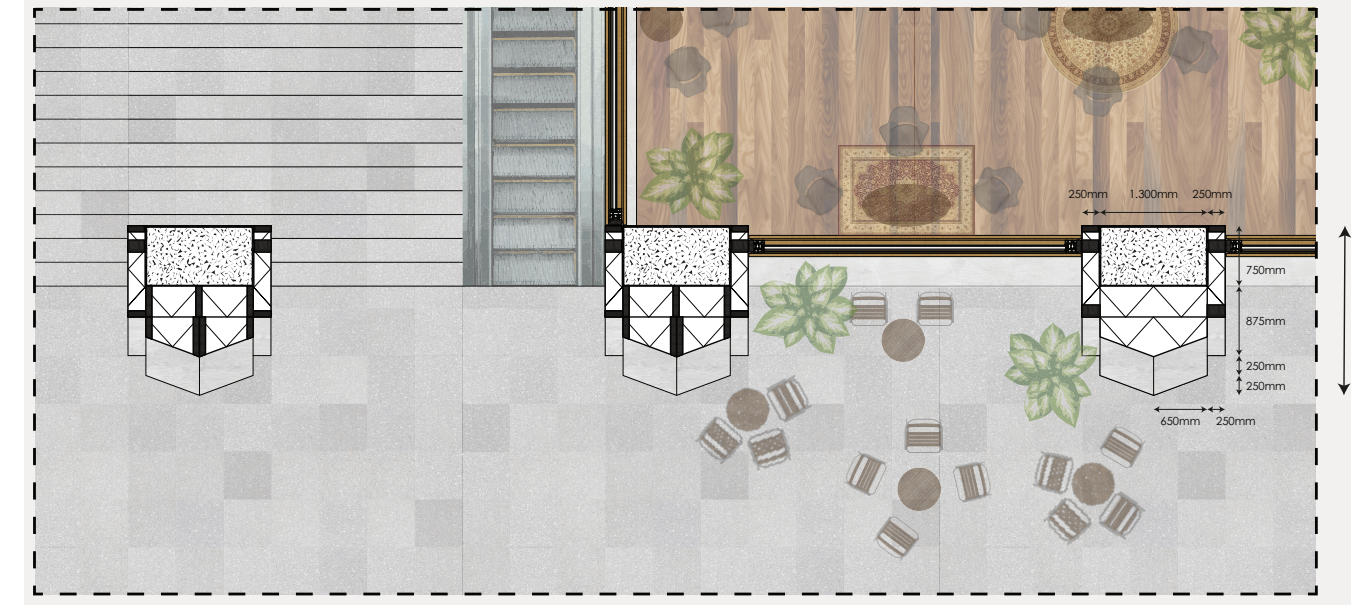
Elastically embedded rail detail

1:1


200mm
200mm
49mm
3mm
180mm
Rail beam
Protective coating
Elastic cork rubber polymere
(EdilonSedra Corkelast)
Hollow PVC-tube
(50mm diameter)
Coating
Concrete (cast-in-place)
11mm Elastic rubber for positioning rail beam
Foil
7mm Elastic rubber railpad
Main load-bearing structure

Floor Plan

1:50


6.000mm h.o.h.
1.800mm h.o.h.
4.200mm h.o.h.
1.800mm h.o.h.
2.150mm column depth at base