



Towards the Transformation of an Air Terminal Site

Research: Istanbul -> Site
Design: The Line
Conclusions



Location



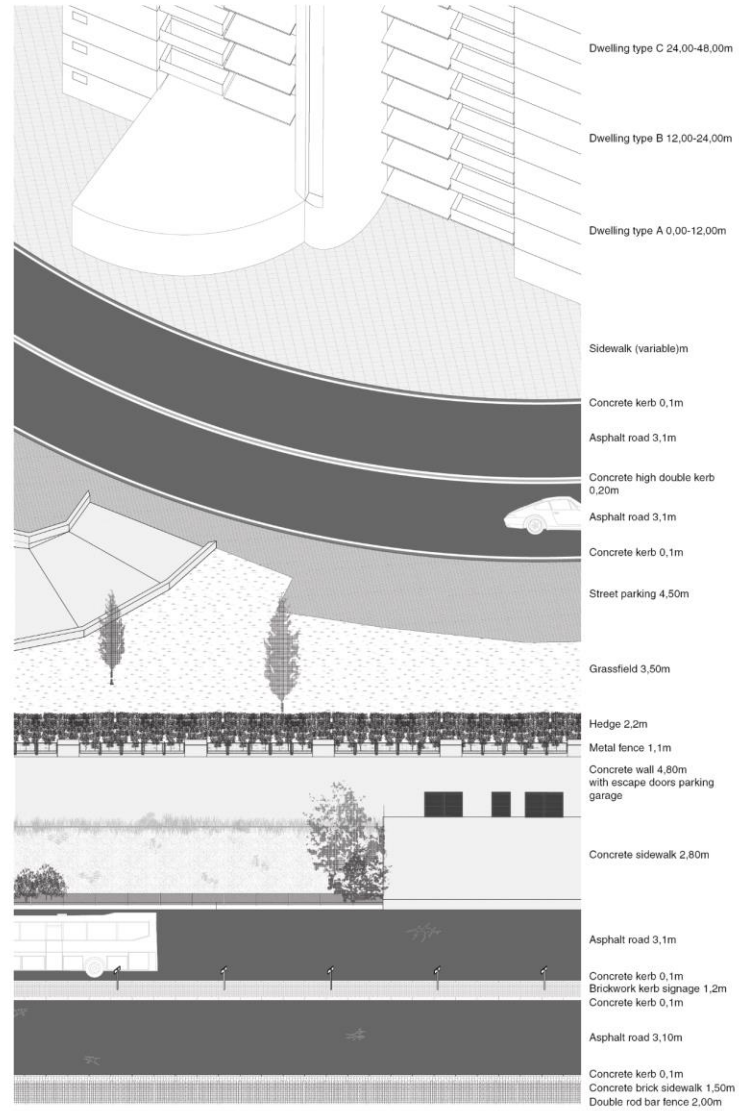
Location

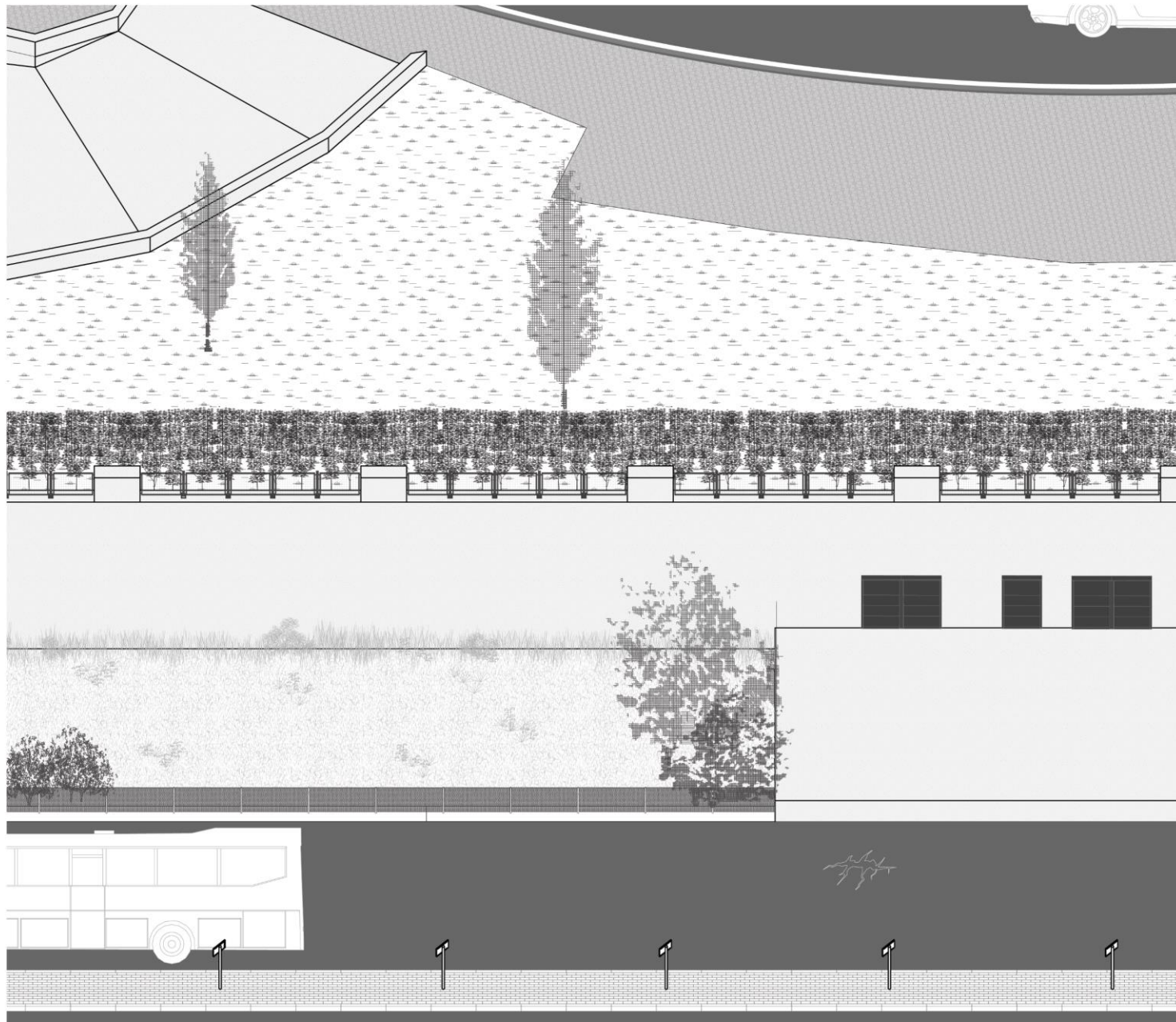
What does one encounter in Istanbul?





How does the gated community and the enclosure function?





Asphalt road 3,1m

Concrete kerb 0,1m

Street parking 4,50m

Grassfield 3,50m

Hedge 2,2m

Metal fence 1,1m

Concrete wall 4,80m
with escape doors parking
garage

Concrete sidewalk 2,80m

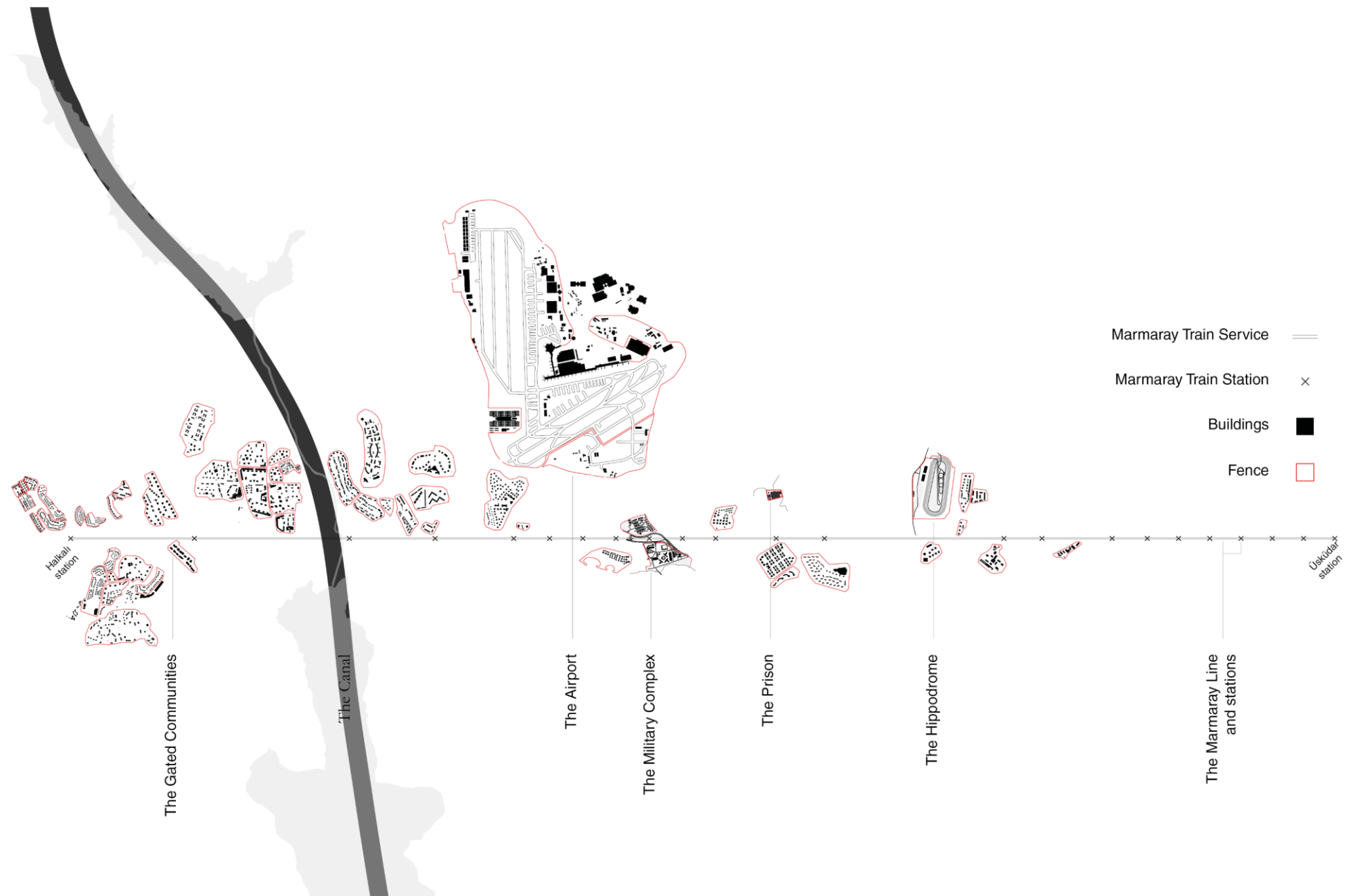
Asphalt road 3,1m

Concrete kerb 0,1m
Brickwork kerb signage 1,2m
Concrete kerb 0,1m

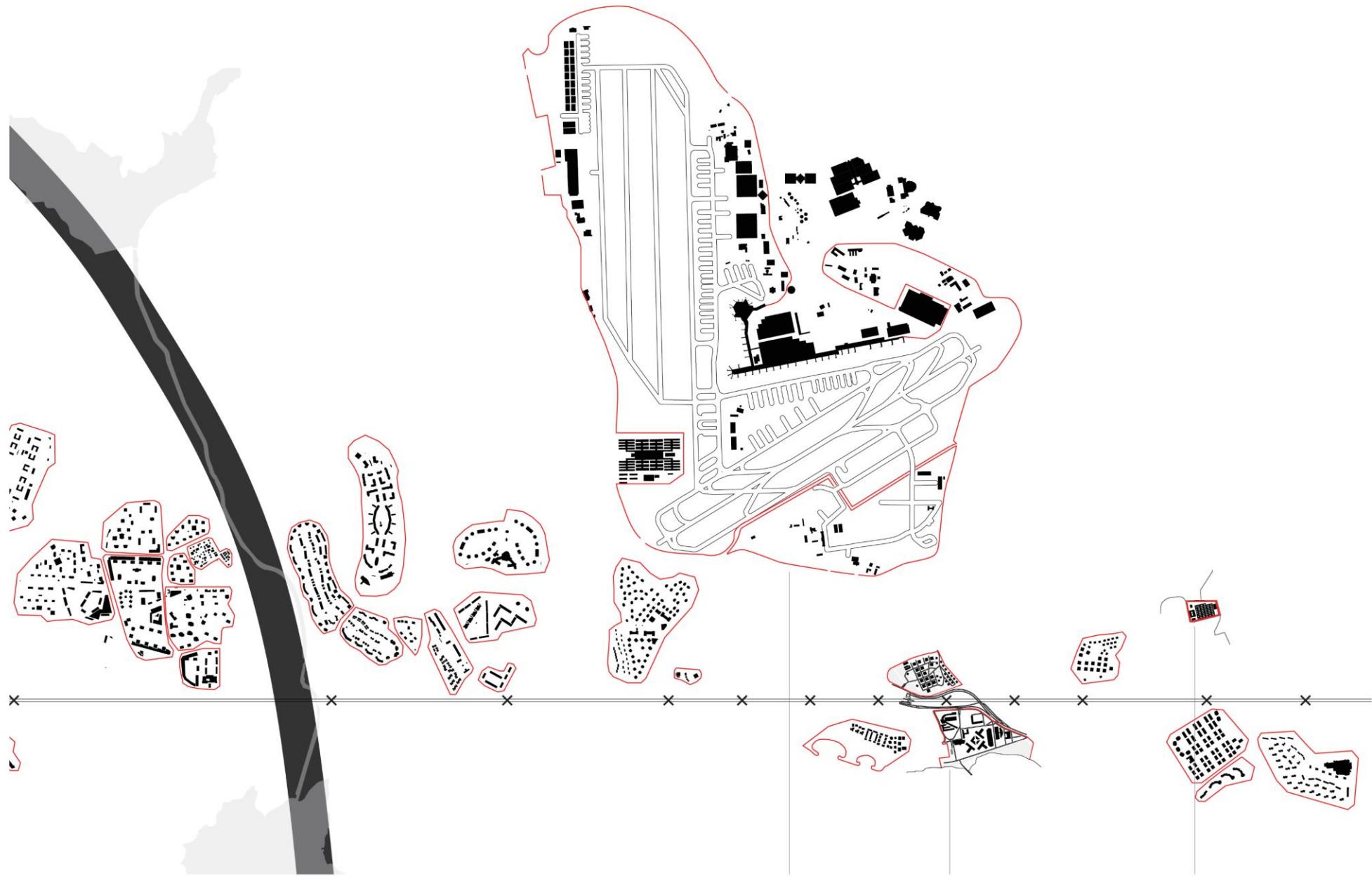
How has the development of the city towards the West of Istanbul been shaped?



Camps along the Marmaray



Camps along the Marmaray



Camps along the Marmaray

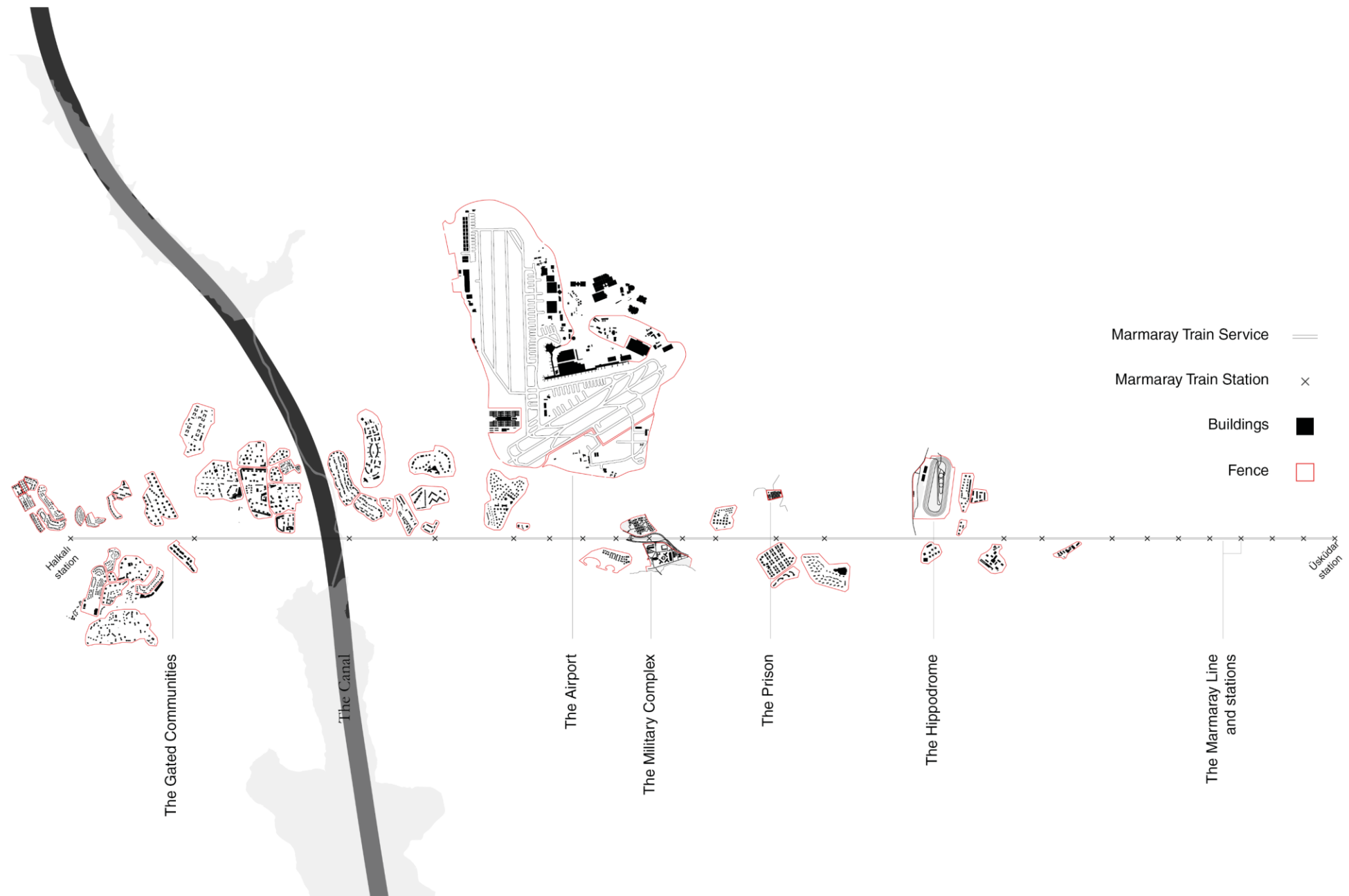
EMERGING MARKETS APRIL 6, 2019 / 3:49 PM / UPDATED 4 YEARS AGO

Last flight leaves Ataturk as Istanbul switches airports

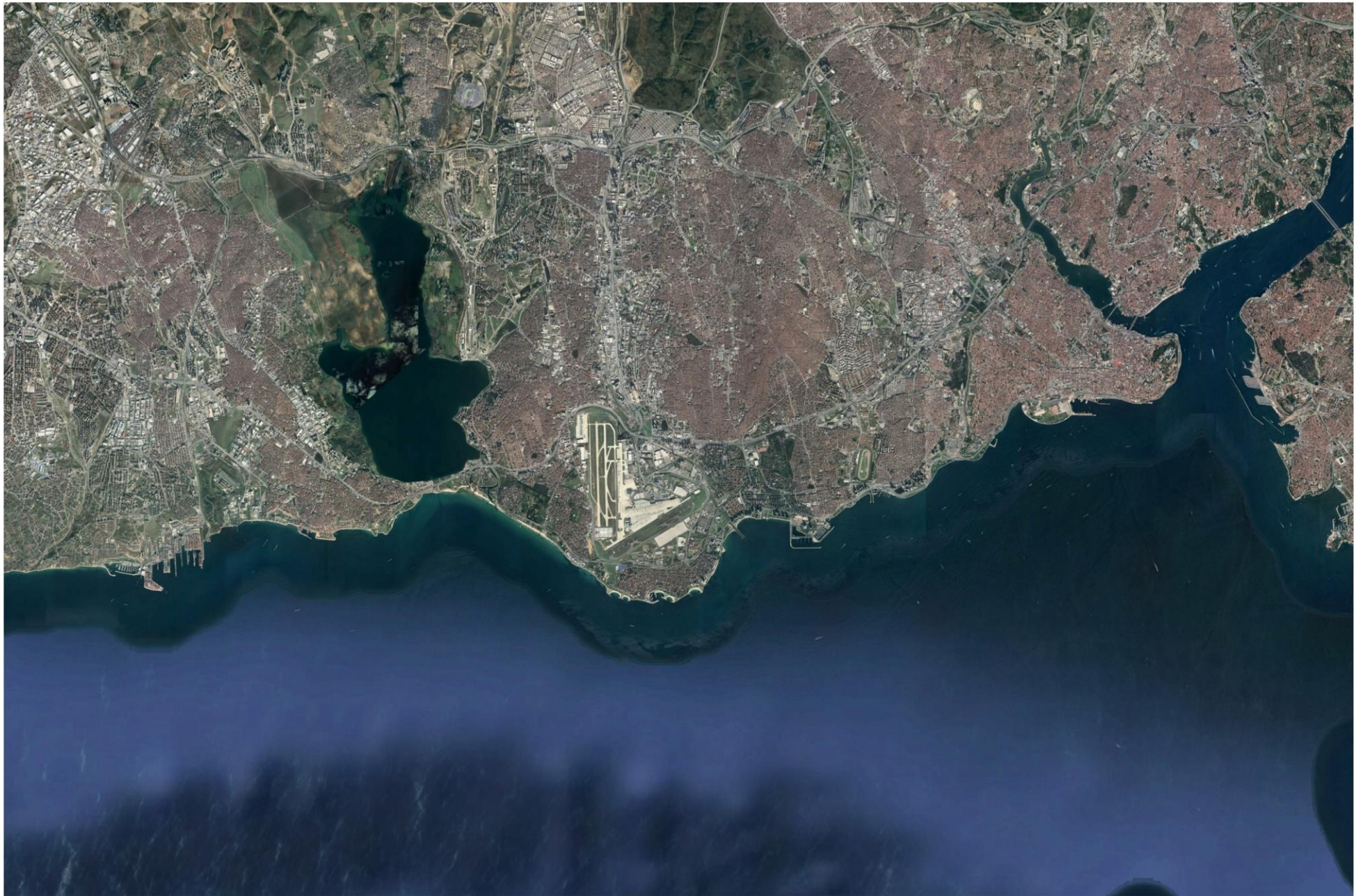
Design Assignment

Design Assignment

How could architecture transform enclosed urban areas and engender their transformation into public space?





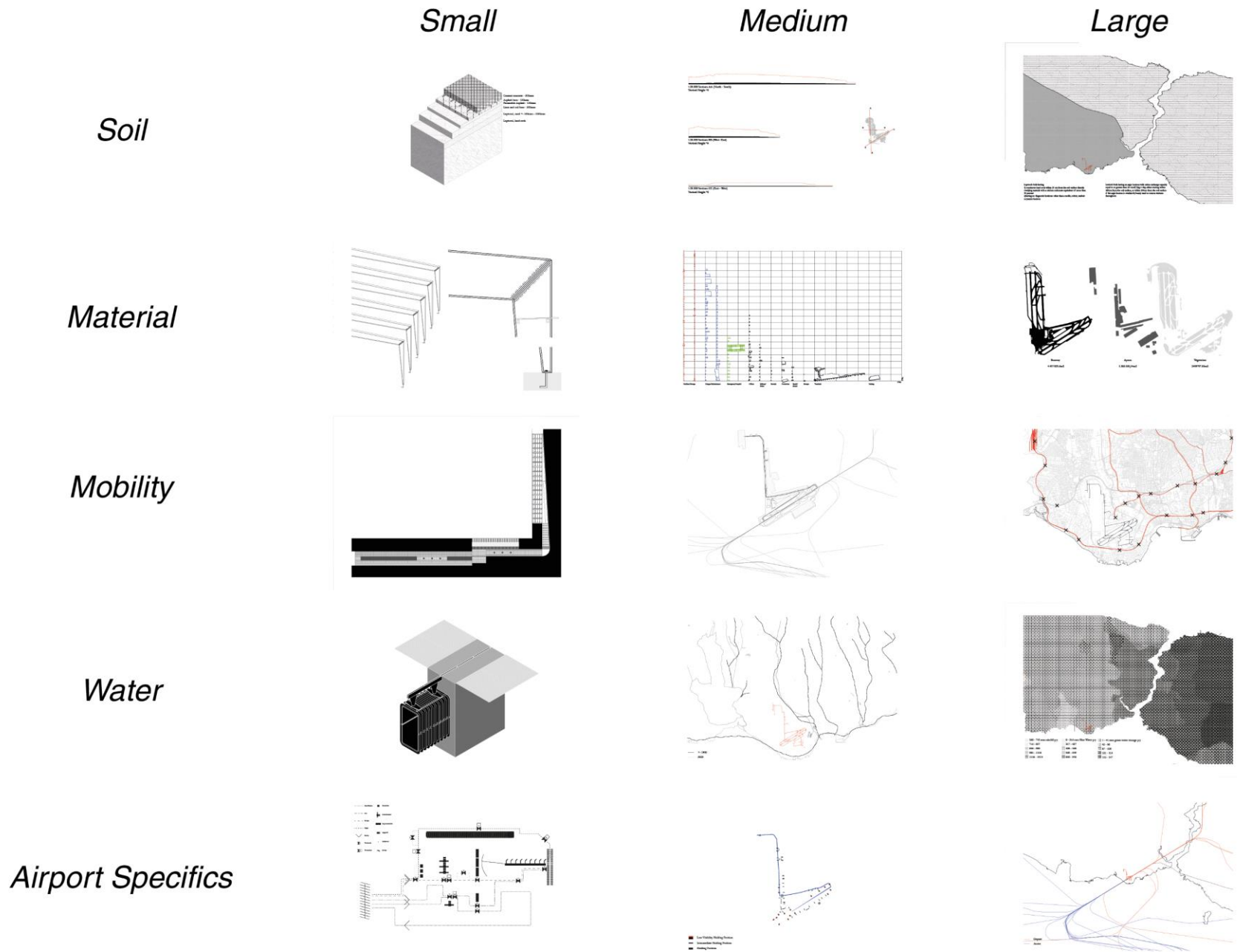






The Void and the Perimeter

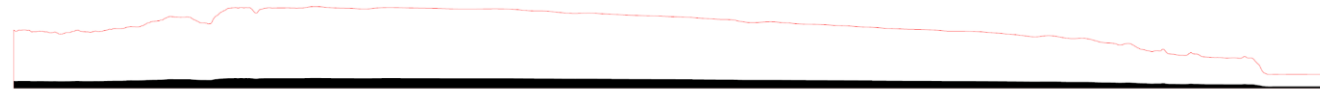
What is present on site?



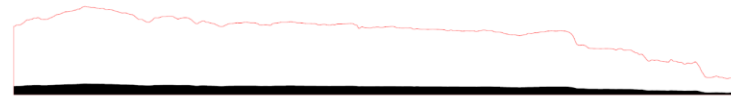


Leptosol: Soils having
1) continuous hard rock within 25 cm from the soil surface directly overlying material with a calcium carbonate equivalent of more than 40 percent
2) having no diagnostic horizons other than a mollic, ochric, umbric or yermic horizon

Luvisol: Soils having an argic horizon with cation exchange capacity equal to or greater than 24 cmol(+)kg⁻¹ clay, either starting within 100cm from the soil surface, or within 200cm from the soil surface if the argic horizon is overlain by loamy sand or coarser textures throughout.



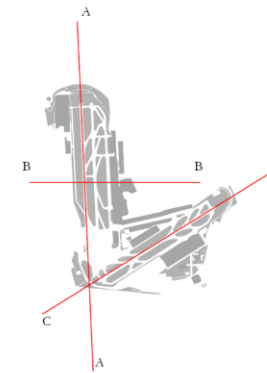
1:20,000 Sections AA (North - South)
Vertical Height *8

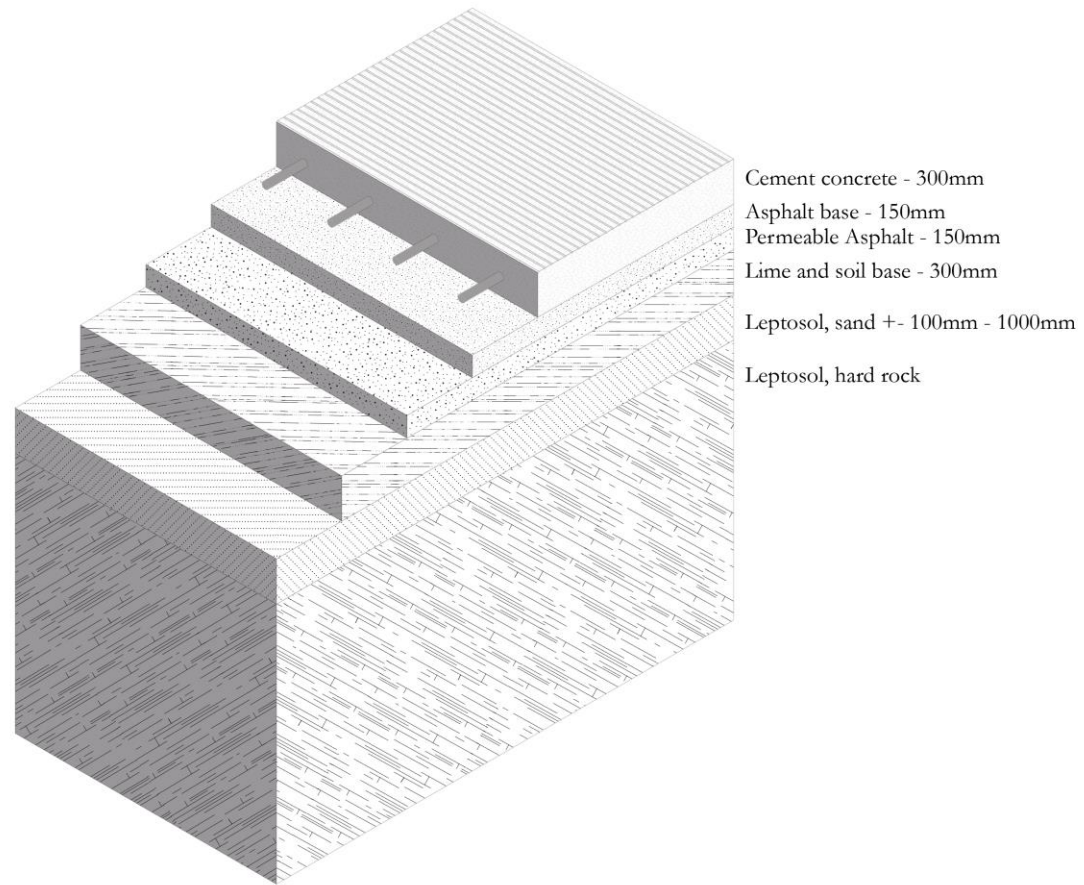


1:20,000 Sections BB (West- East)
Vertical Height *8



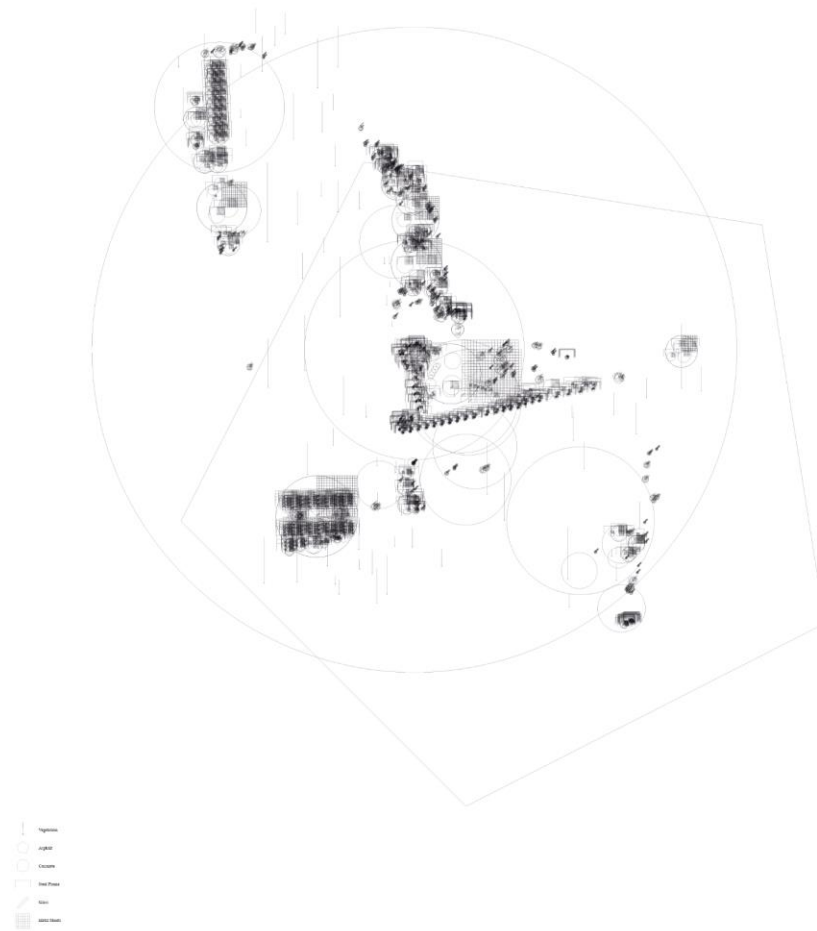
1:20,000 Sections CC (East - West)
Vertical Height *8

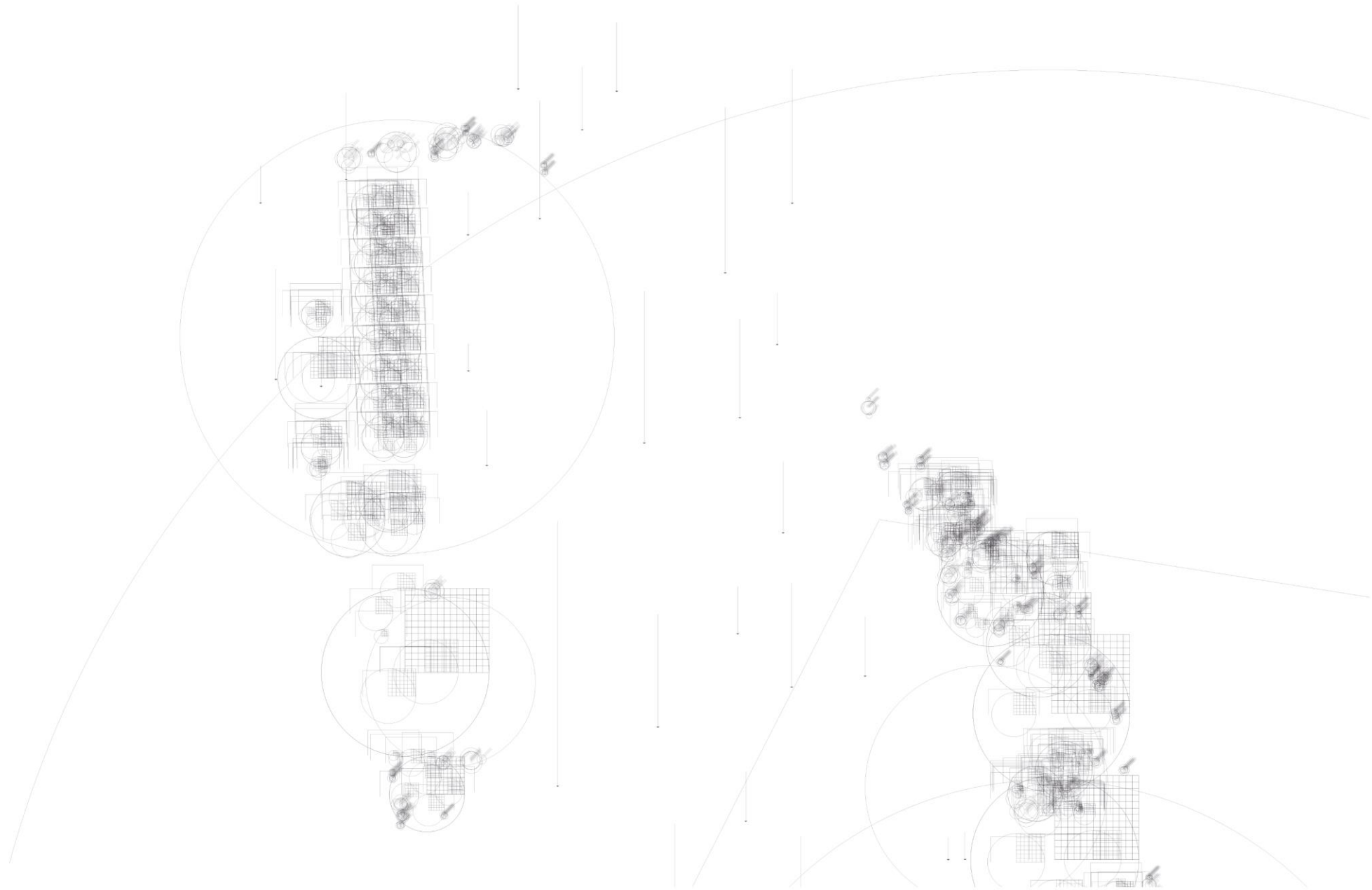




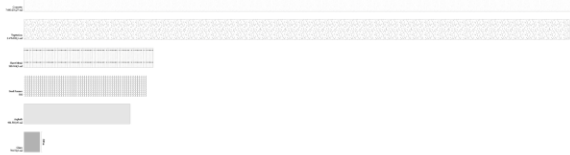


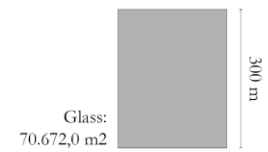
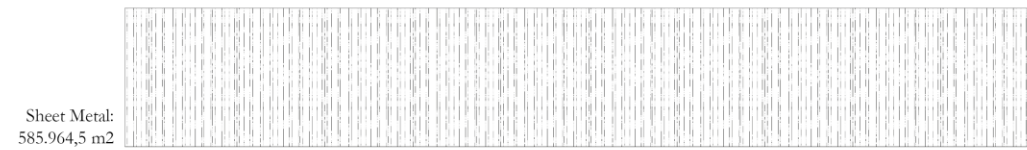
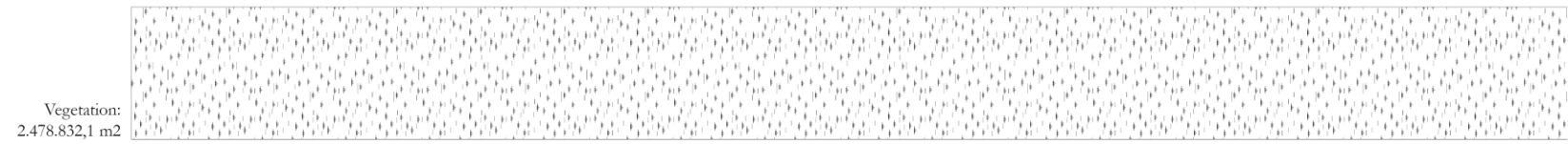
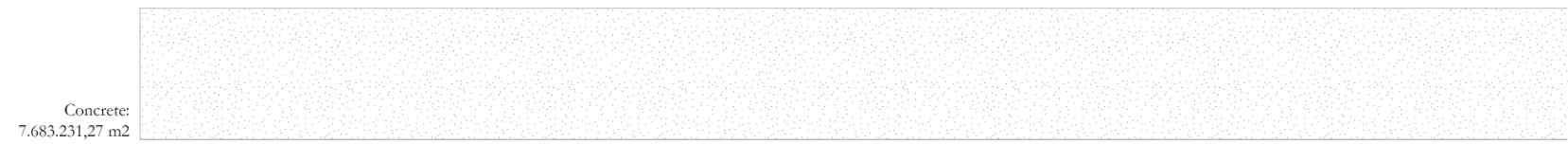




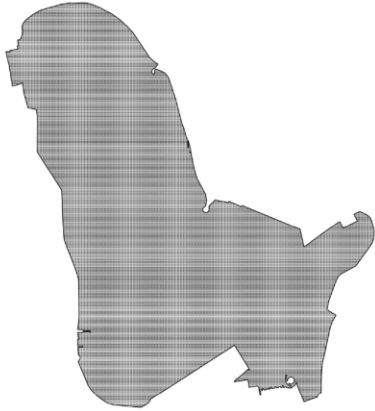


Output Summary Graph
1/1/2000





What are the extents of what is possible?



*Worst Case Earthquake
Relief*

*Site could house:
maximum 170.445 people
= 45m² per person*



*Reforested Forest Area
m² site: 7.670.021,39 = 767 ha*

*Maximum carbon capture: 767 *
10 = 7.670 tonnes CO₂ captured
per year*

*For context: 9,500,000 tons of
CO₂ are emitted from on-road
motor vehicles annually in Istanbul
Metropolitan Region.*



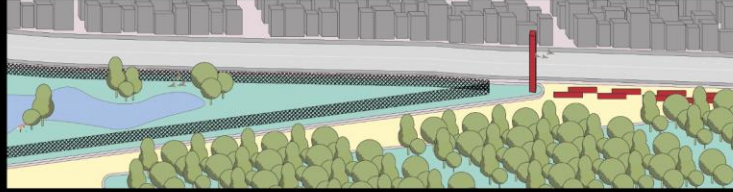
Production Landscape

*Vegetable production for
142.228 people annually*

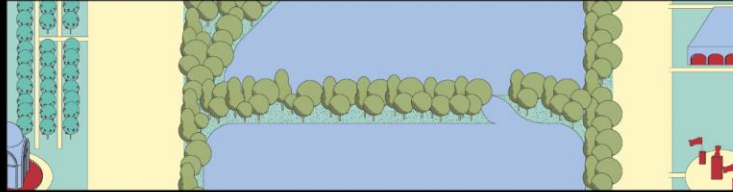
Autarkic camp within the city
Recycle materials found on site
Alternative to 'the masterplan' on an architectural scale

How could such a large site be structured?

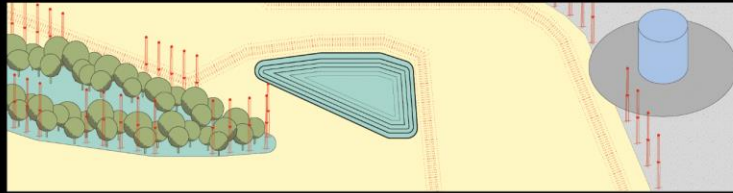
The Perimeter



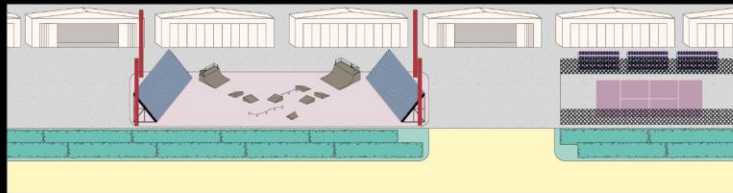
The Collective Muses



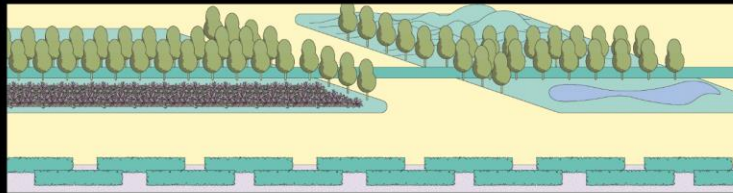
The Infrastructures of the Frontline



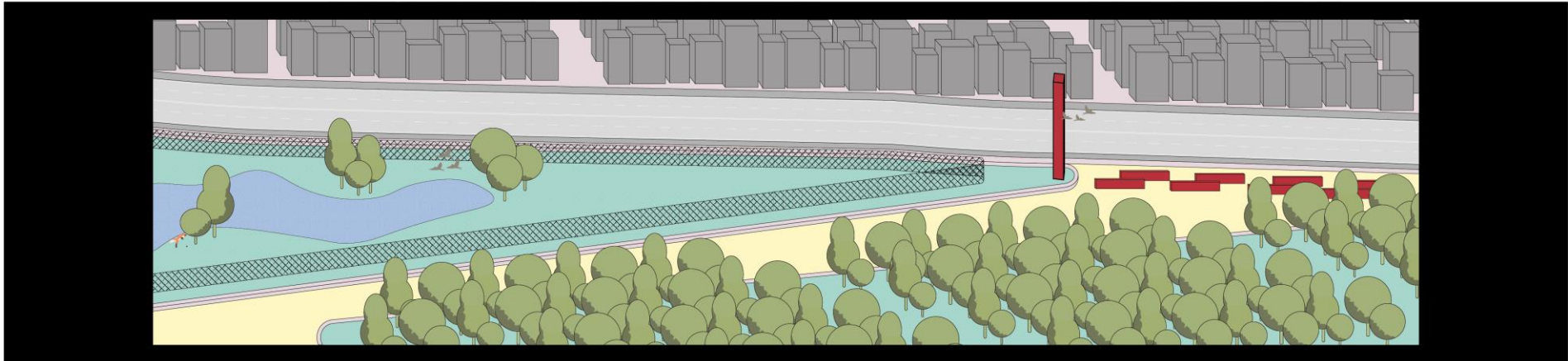
The Arenas



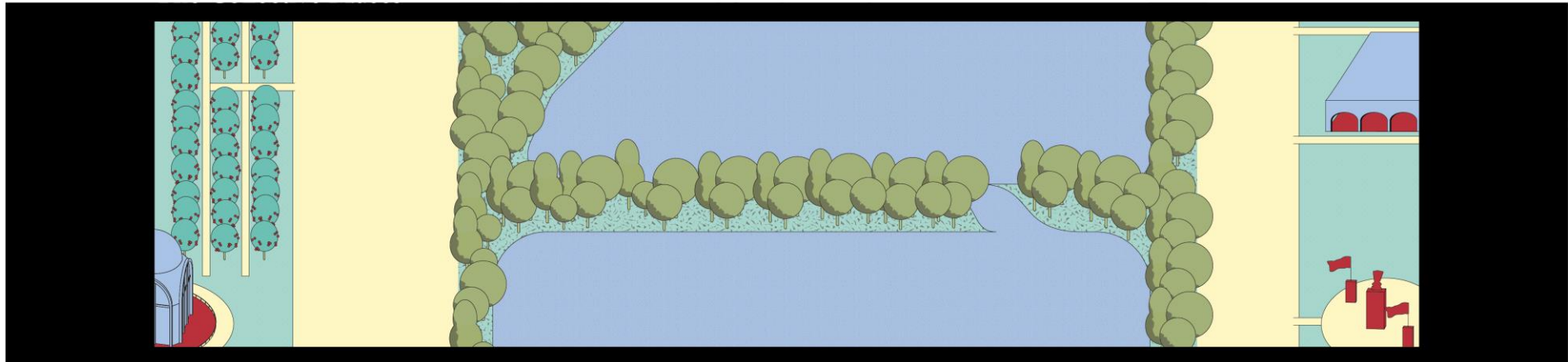
The Corridors



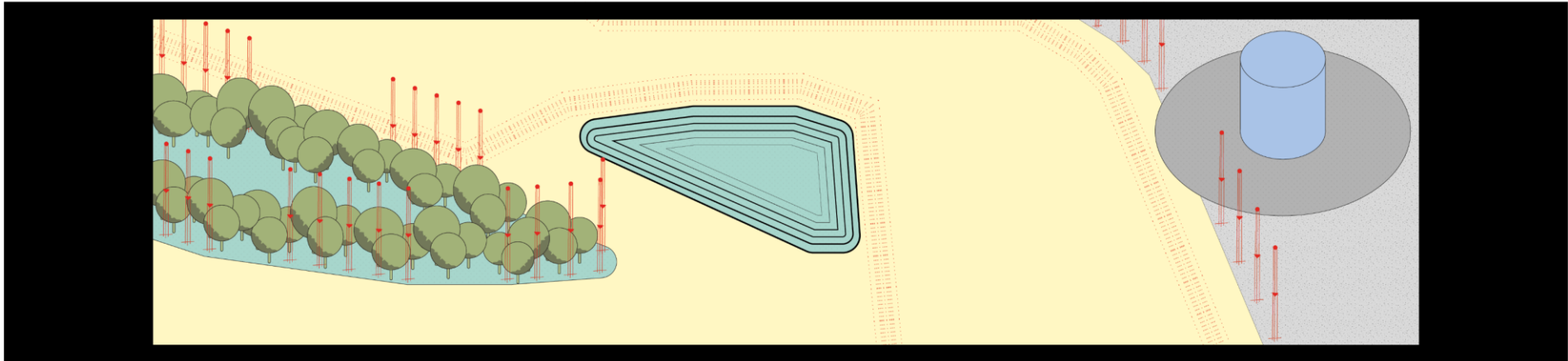
The Perimeter



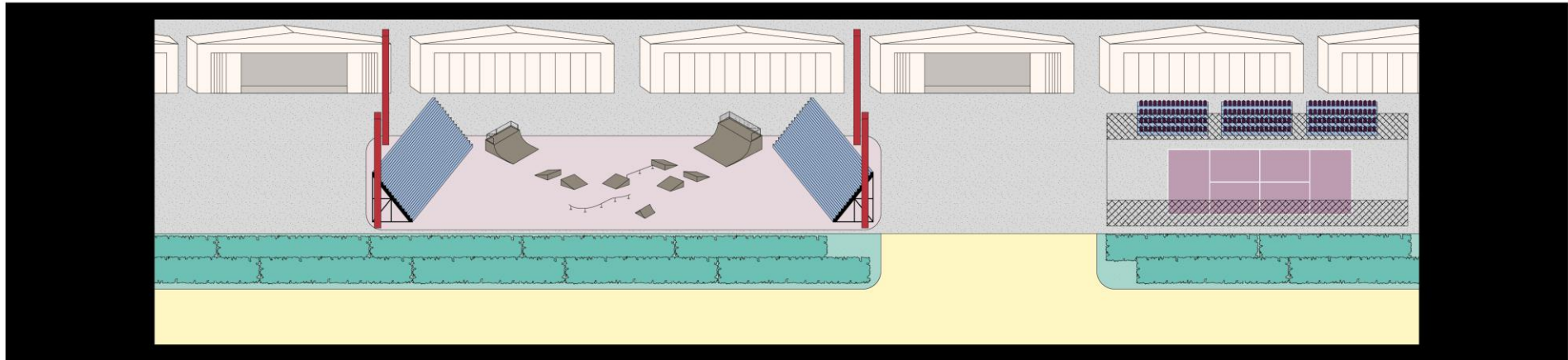
The Collective Muse



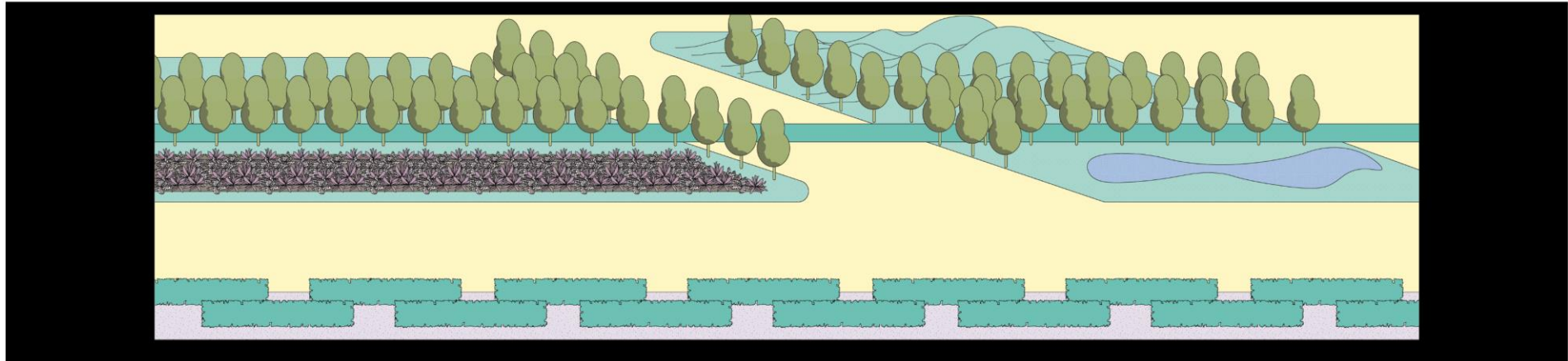
Infrastructures of the Frontline

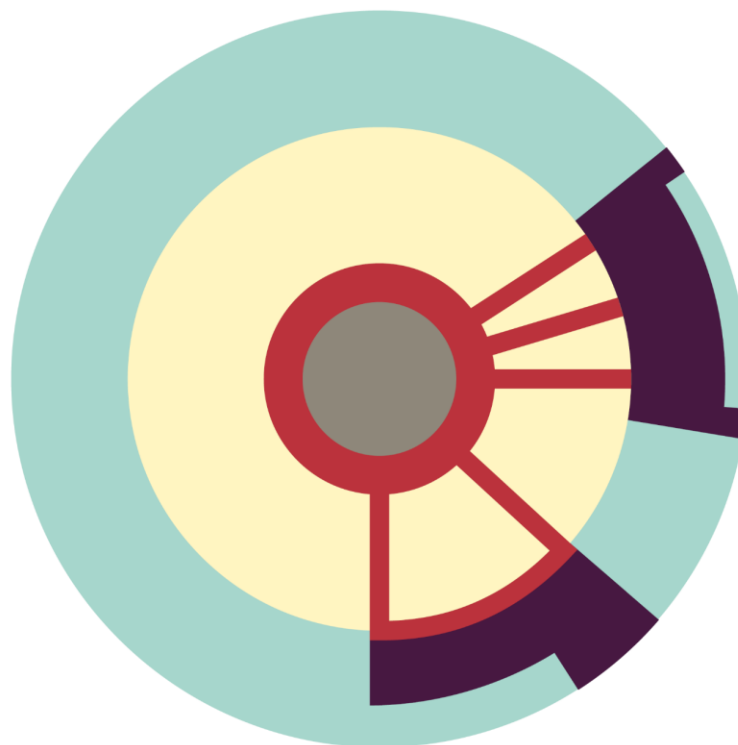


The Arenas



The Corridors





The Perimeter



Arena's



**Infrastructure of
the Frontline**

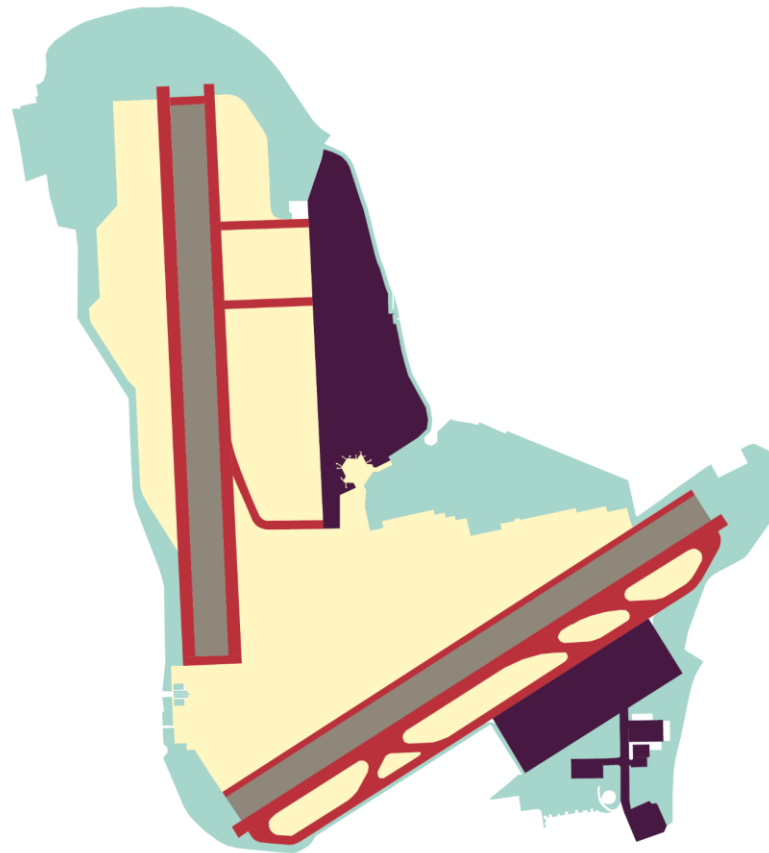


Corridors



Collective Muse

The camp



The Perimeter



Arena's



**Infrastructure of
the Frontline**

The camp

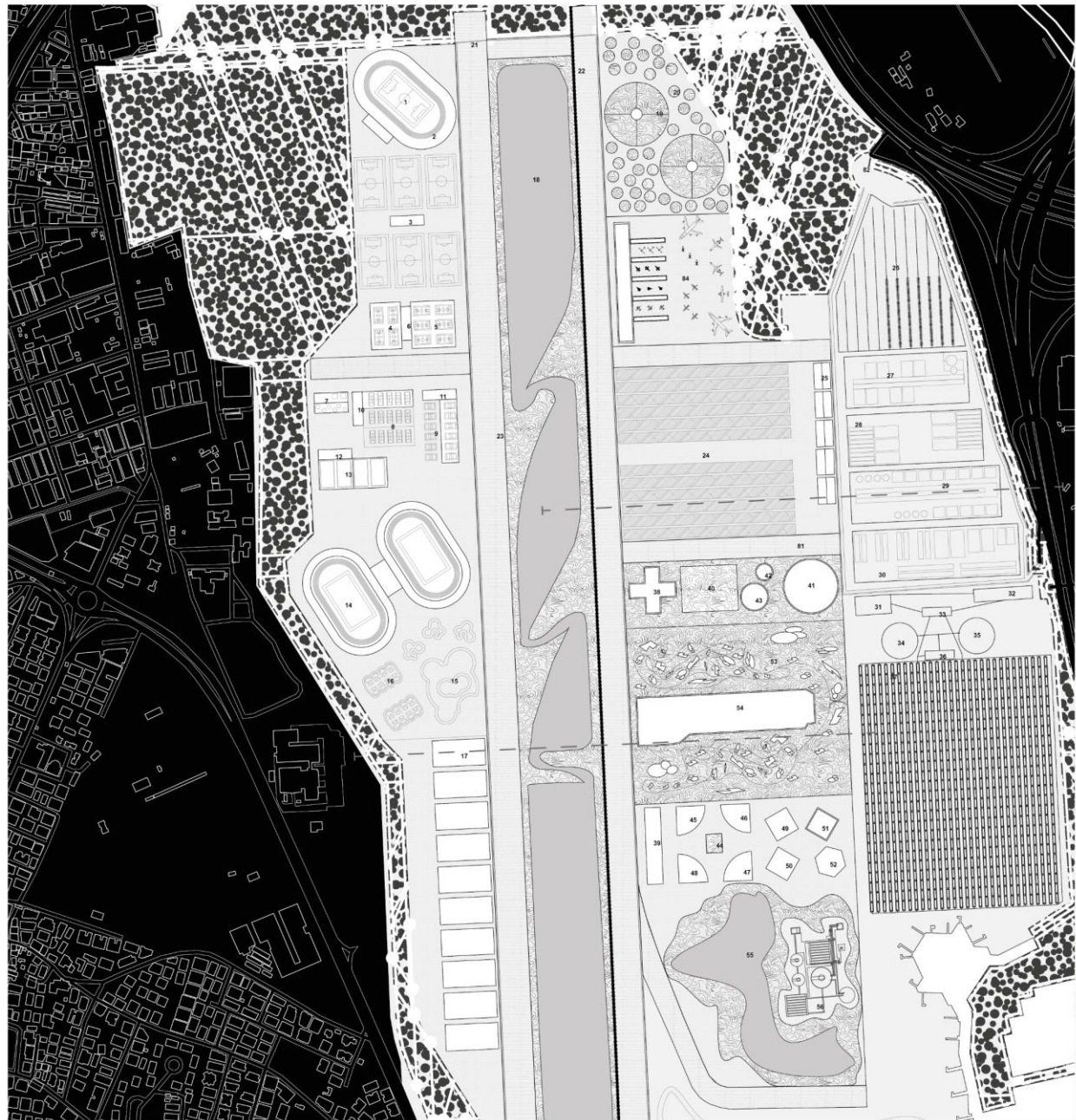


Corridors

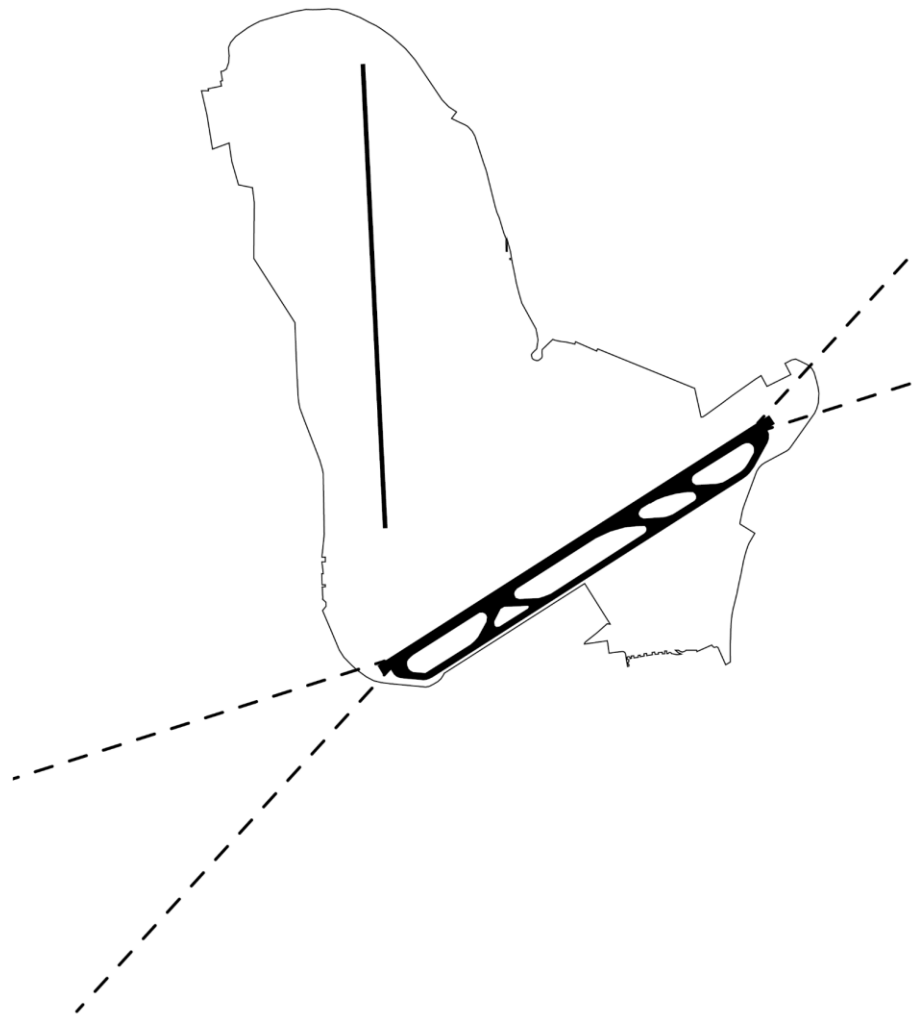
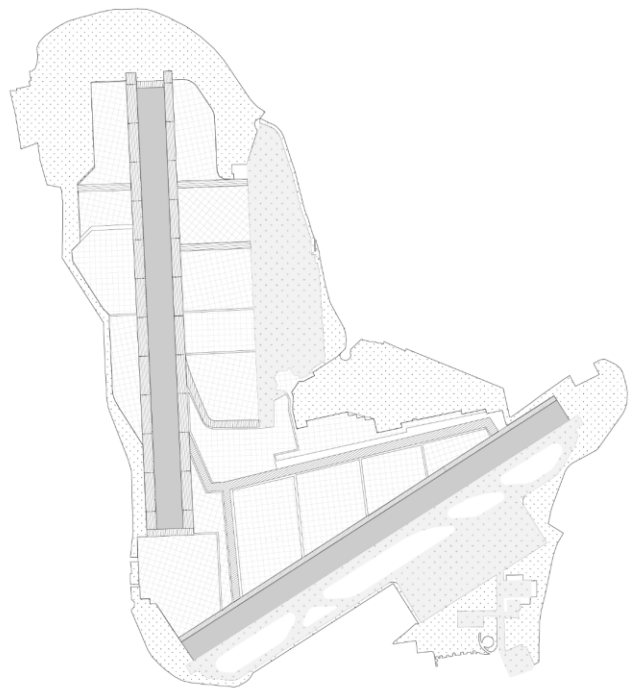


Collective Muse

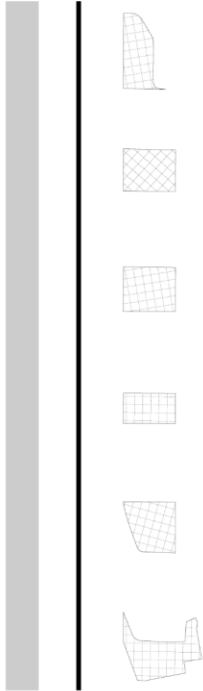




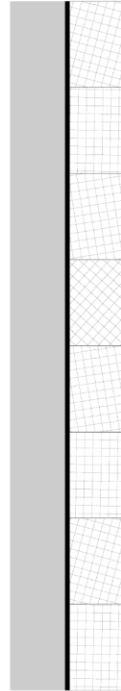




How can a line become a spatial, indexical and generative tool to transform the site?



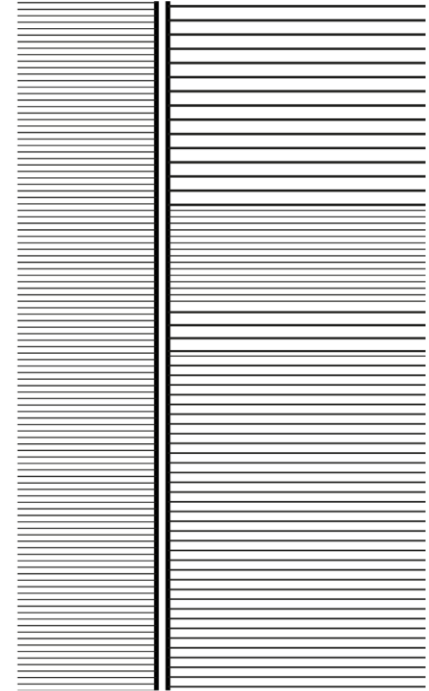
Functions along the line



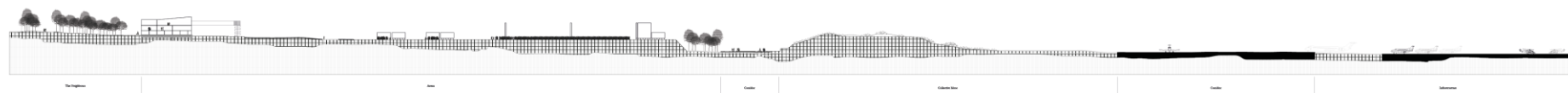
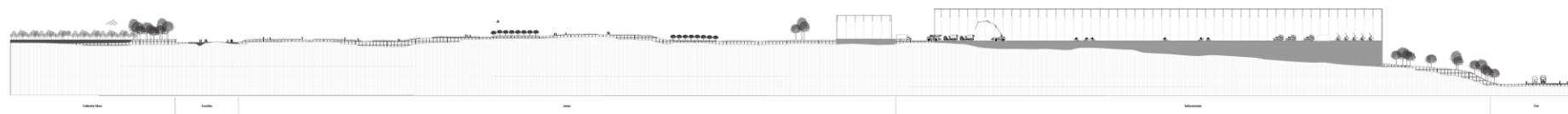
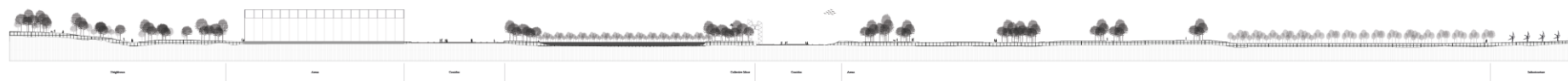
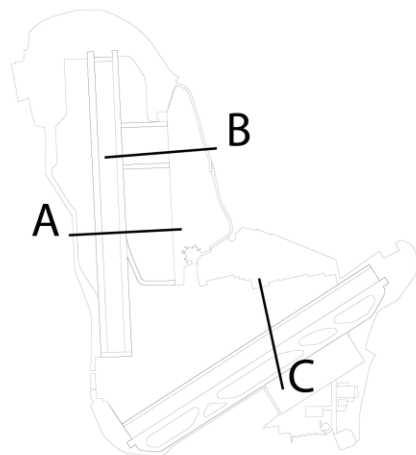
Integrate

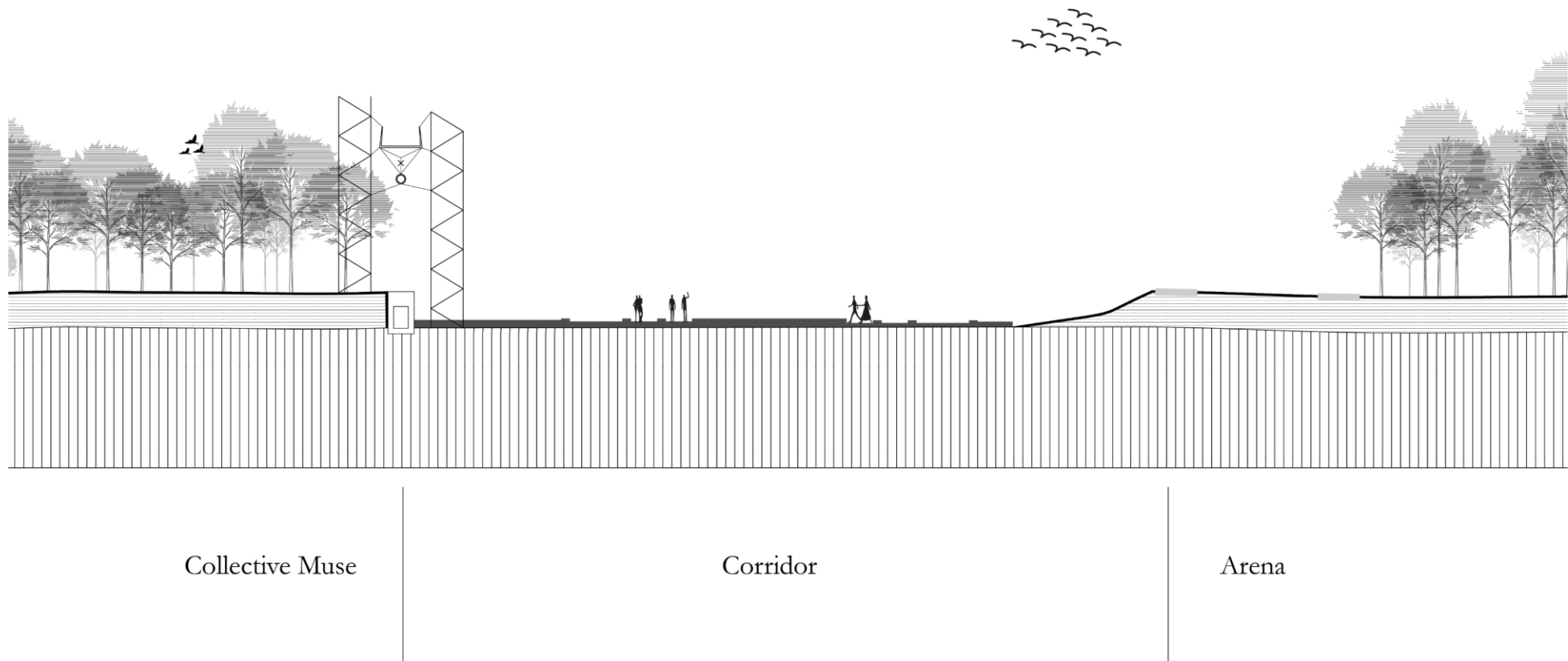


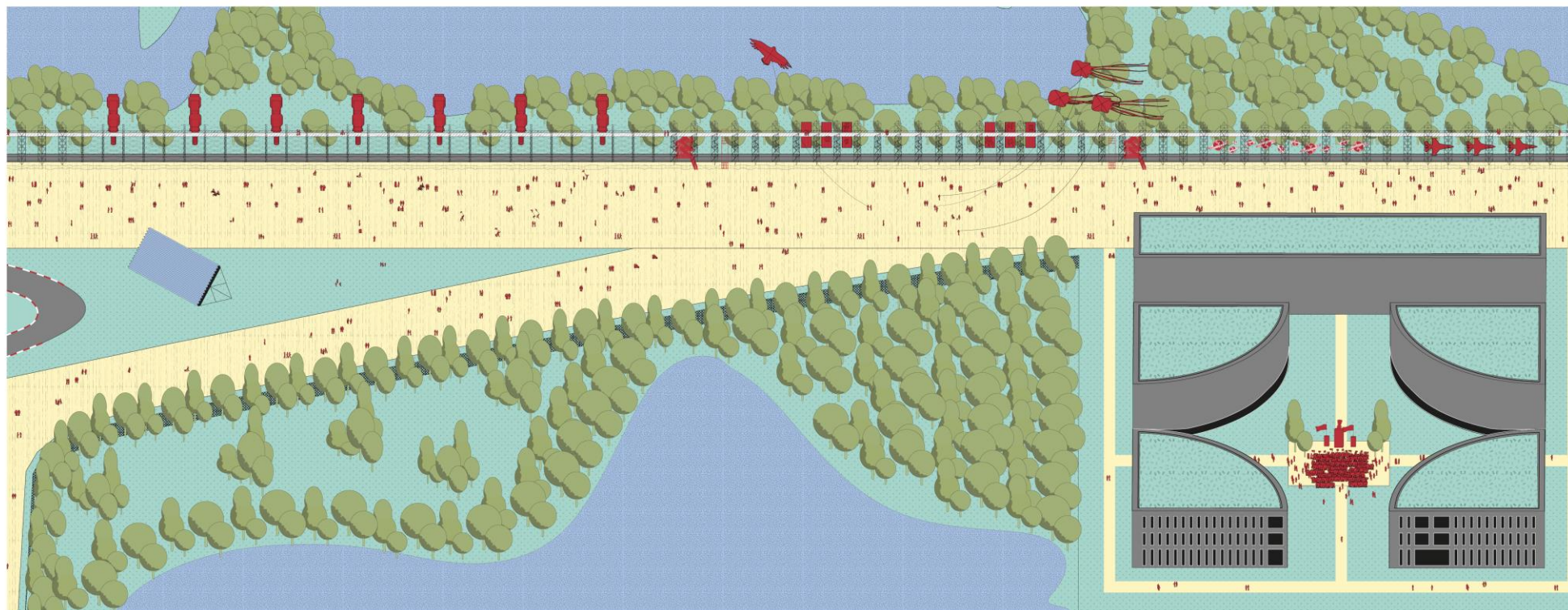
Coalesce

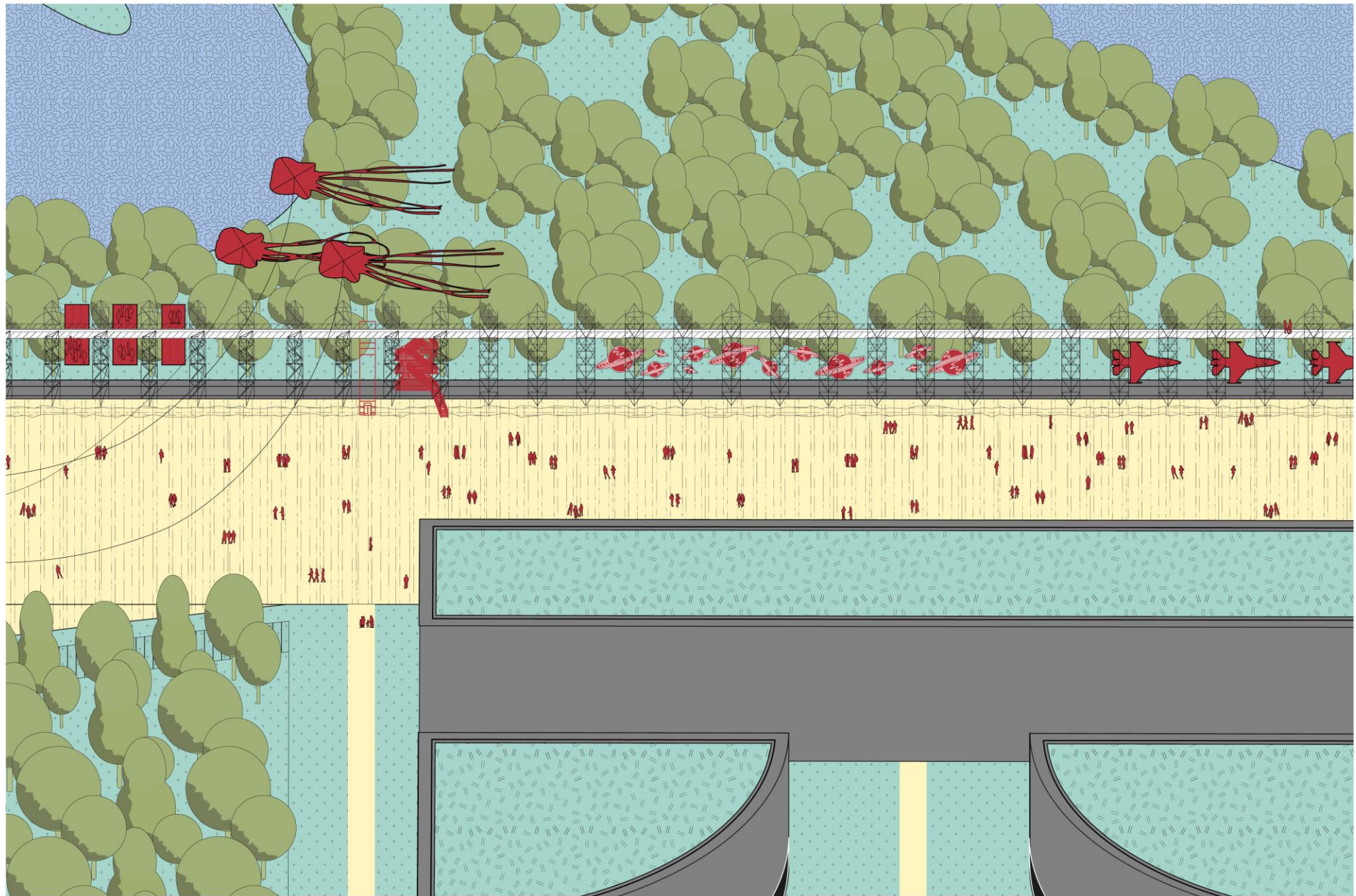


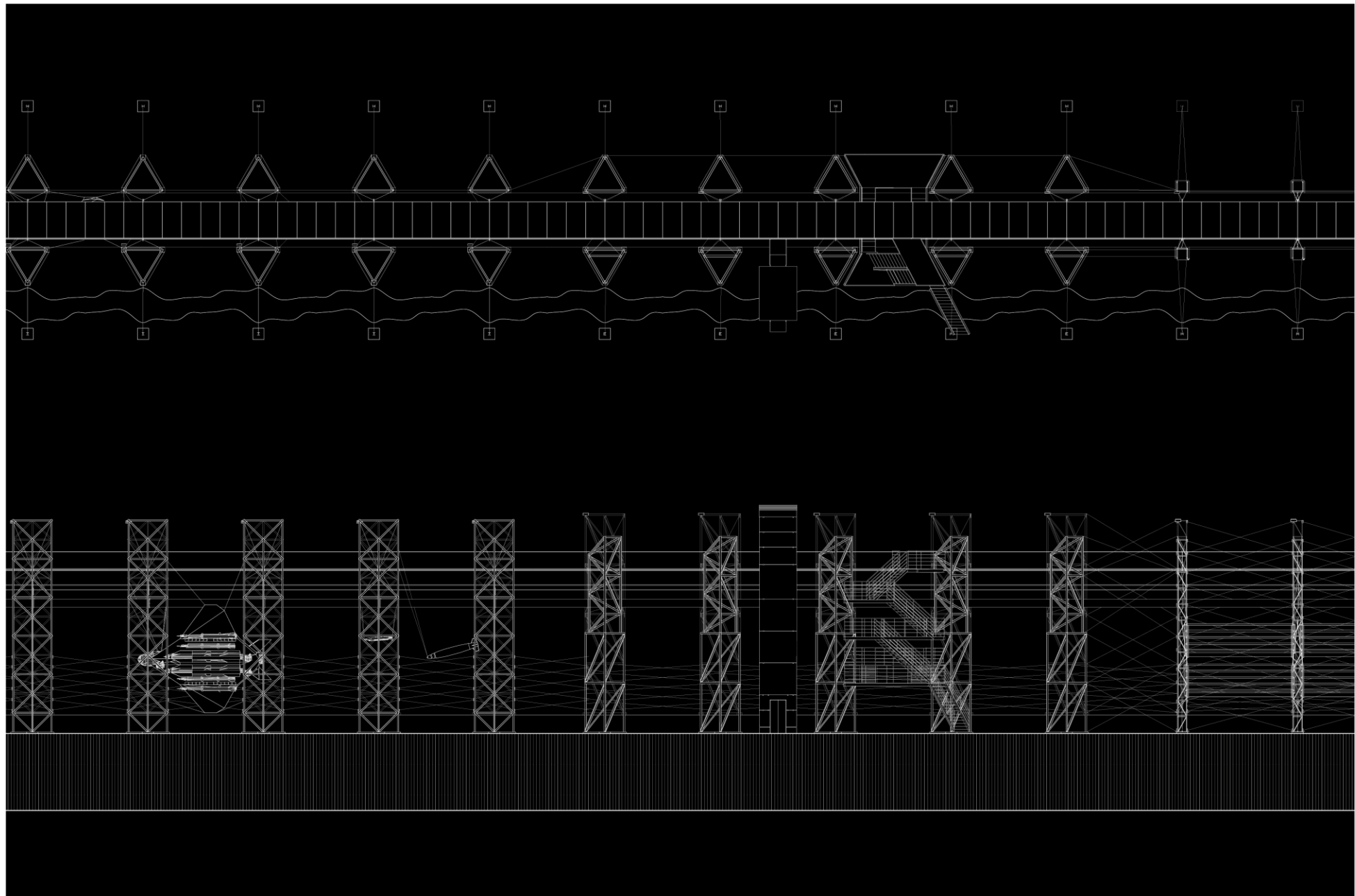
Generate



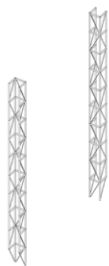
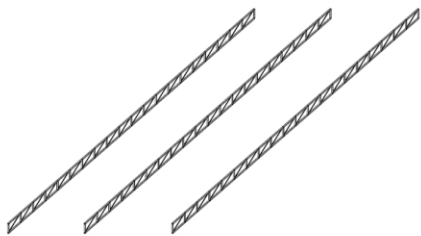




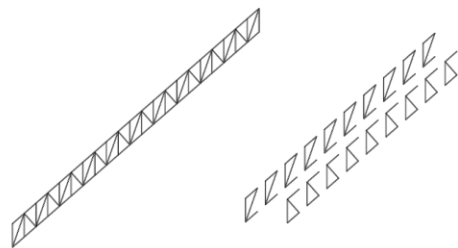




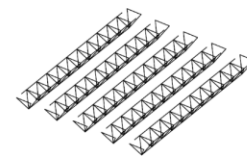
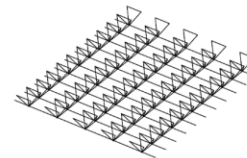
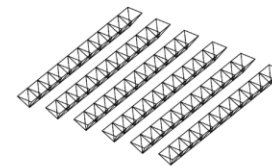
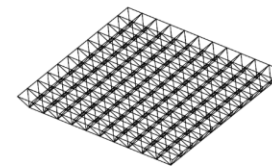
How is the line assembled?



Frame A

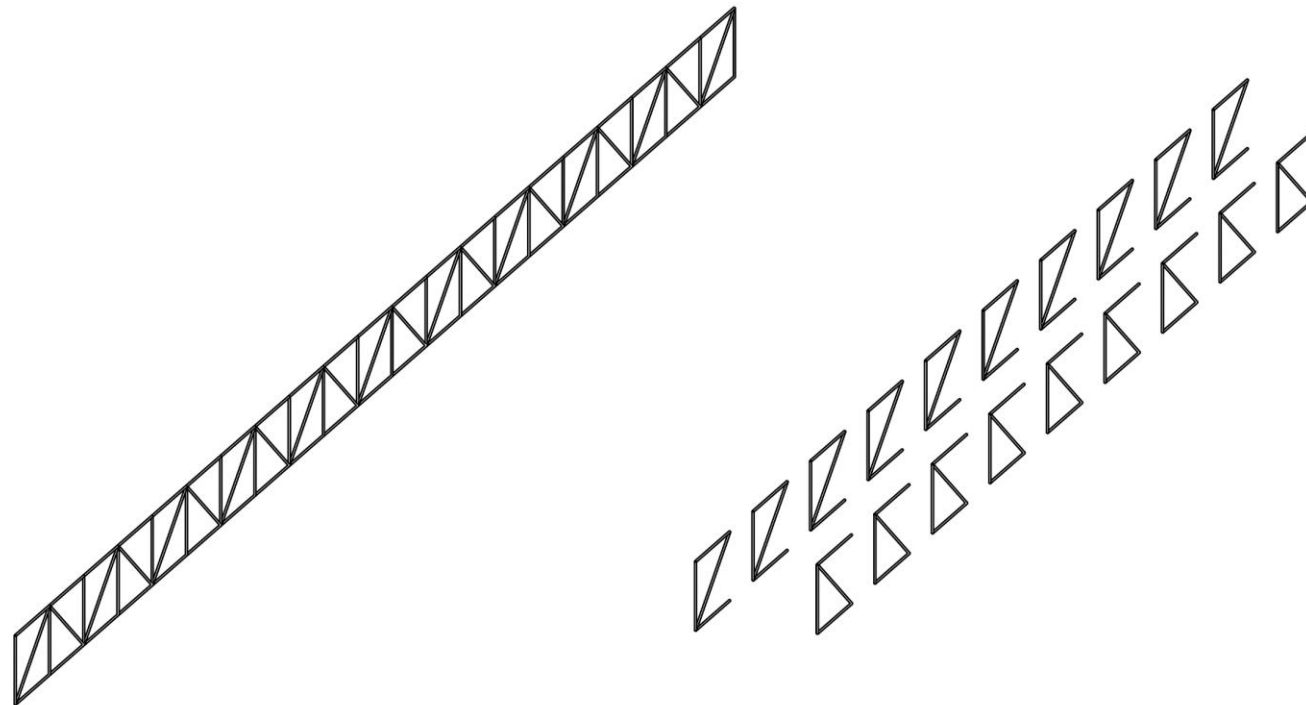


Frame B

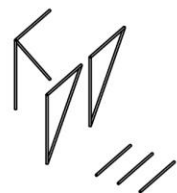


Frame C

1.



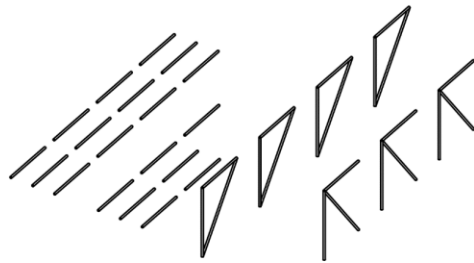
2.



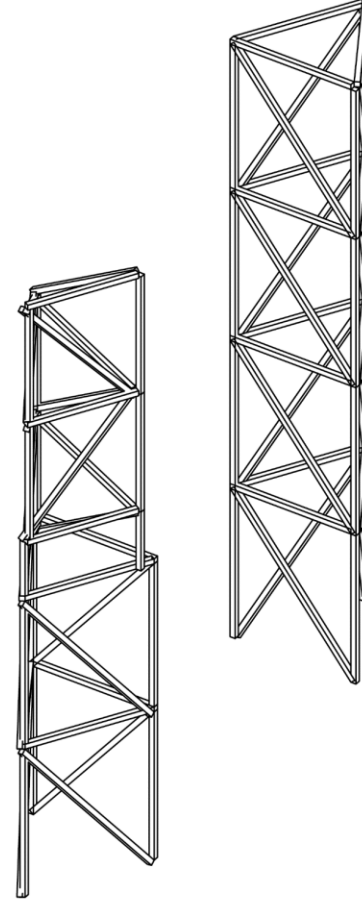
3.

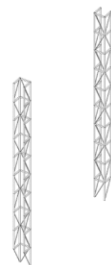
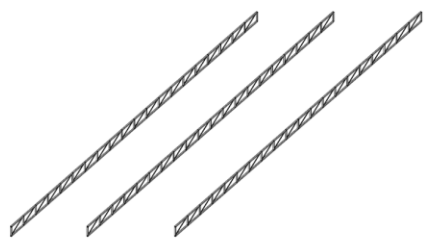


4.

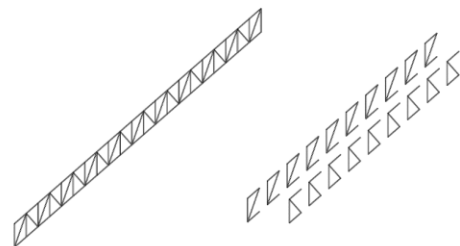


5.

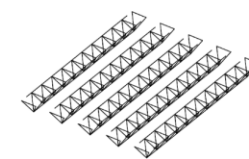
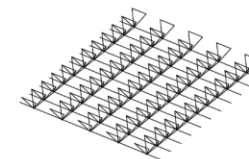
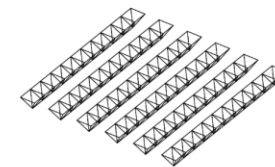
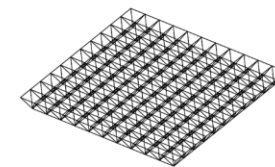




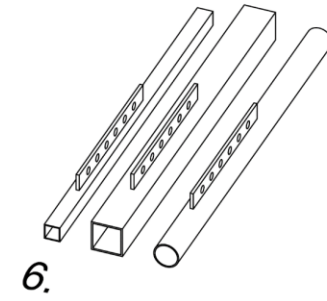
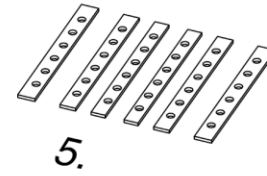
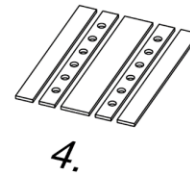
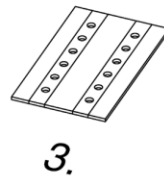
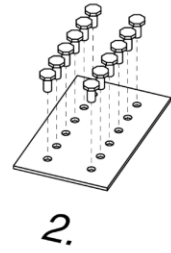
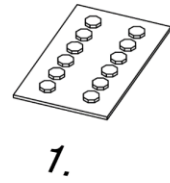
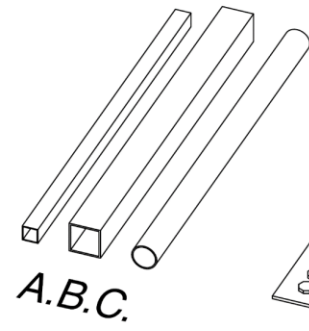
Frame A

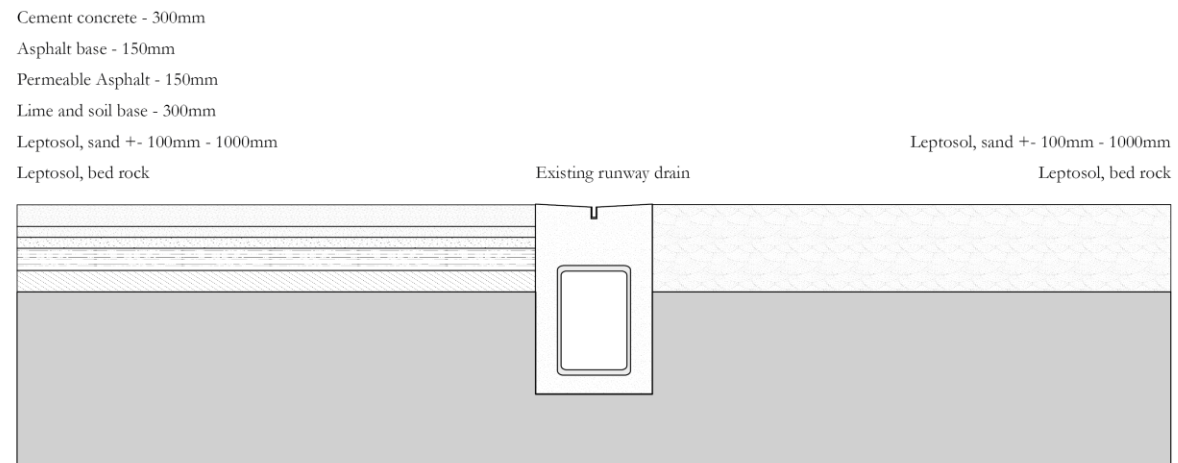


Frame B

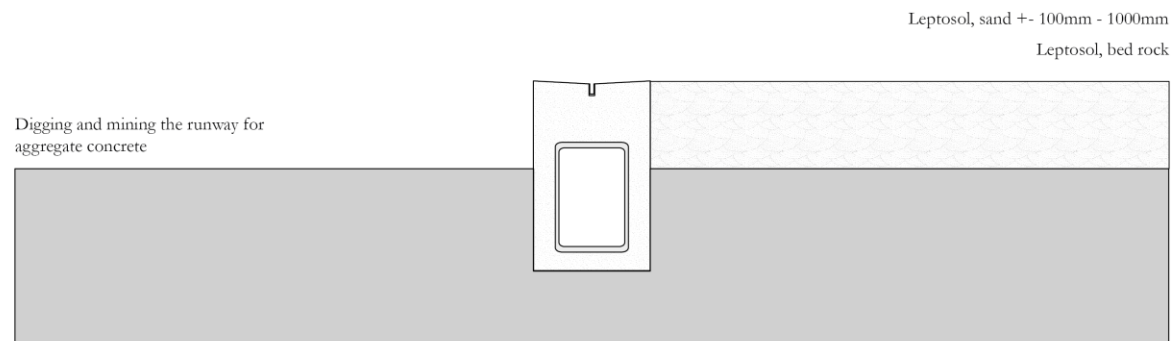


Frame C

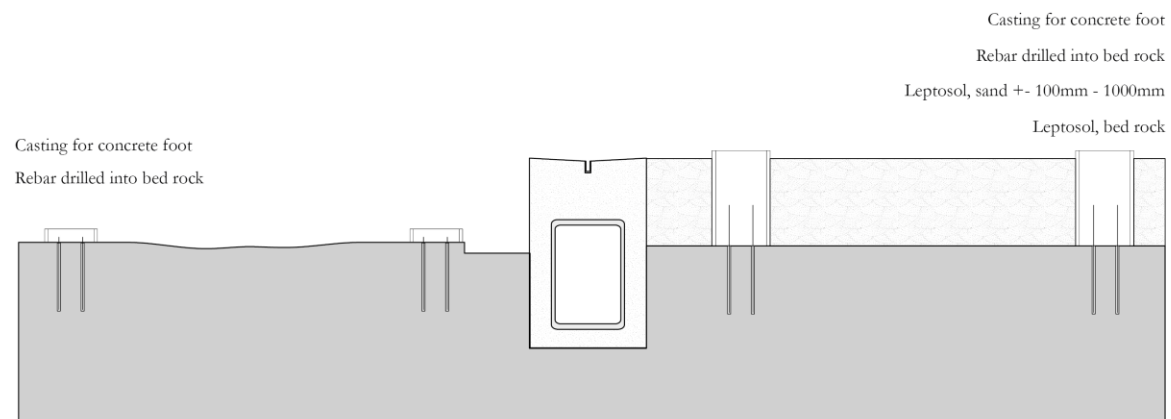




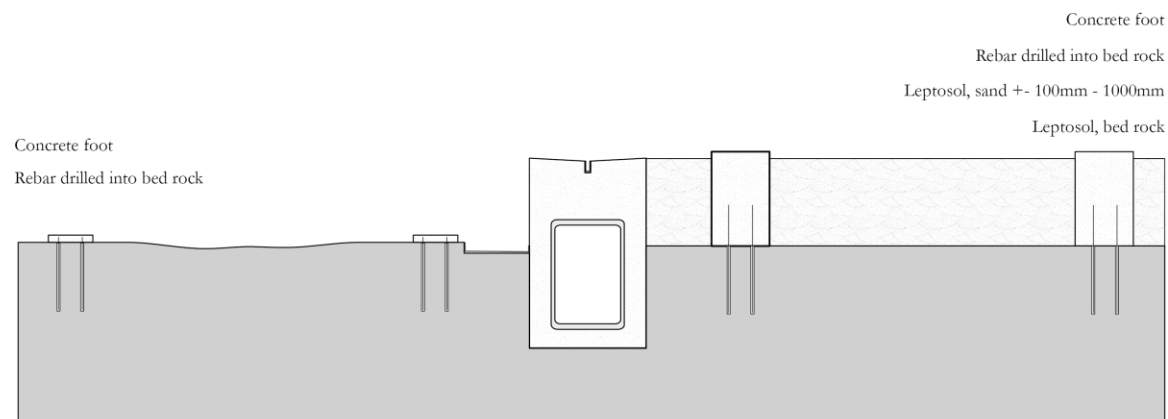
Assembly process: existing

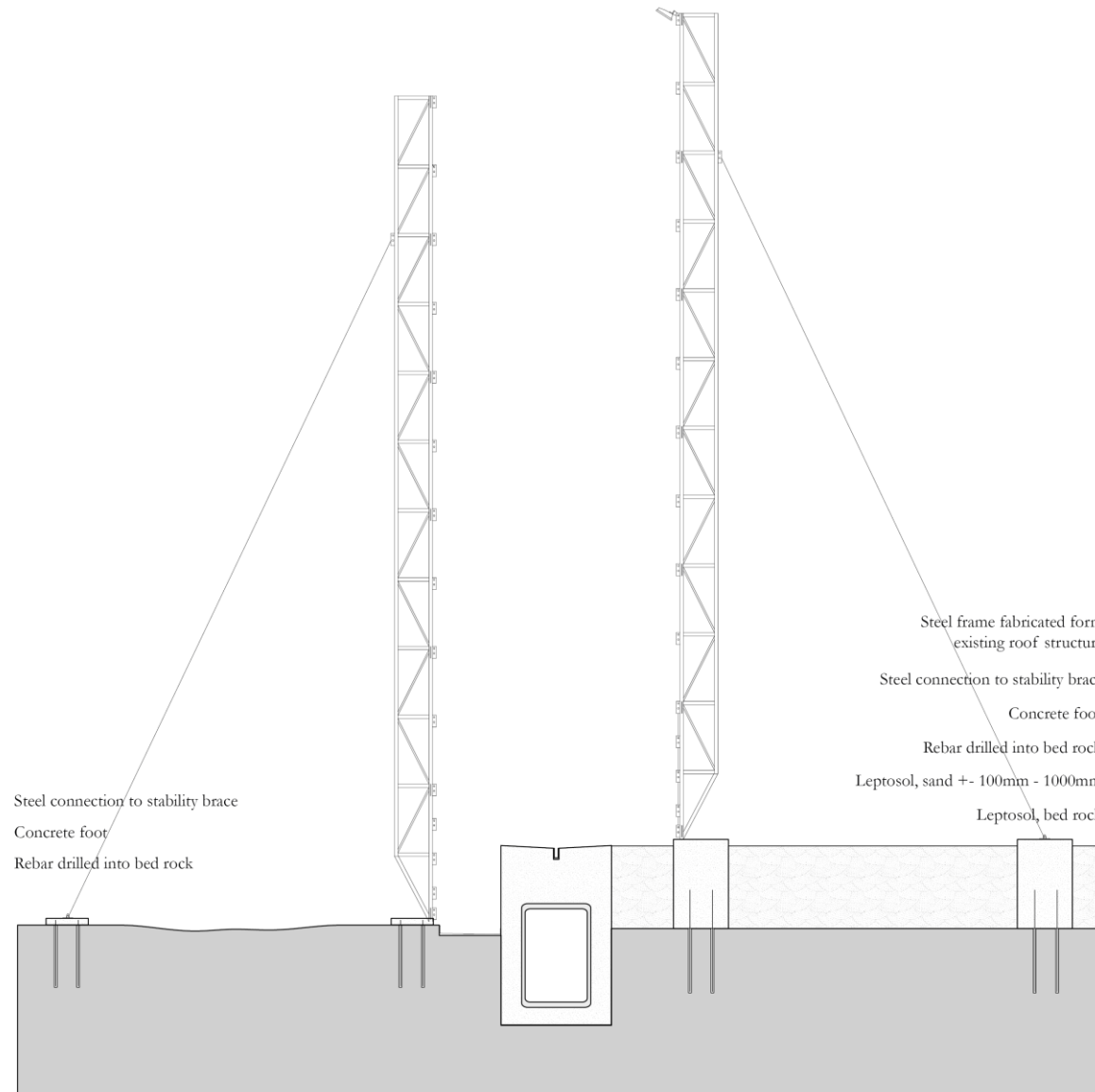


Excavate and extract

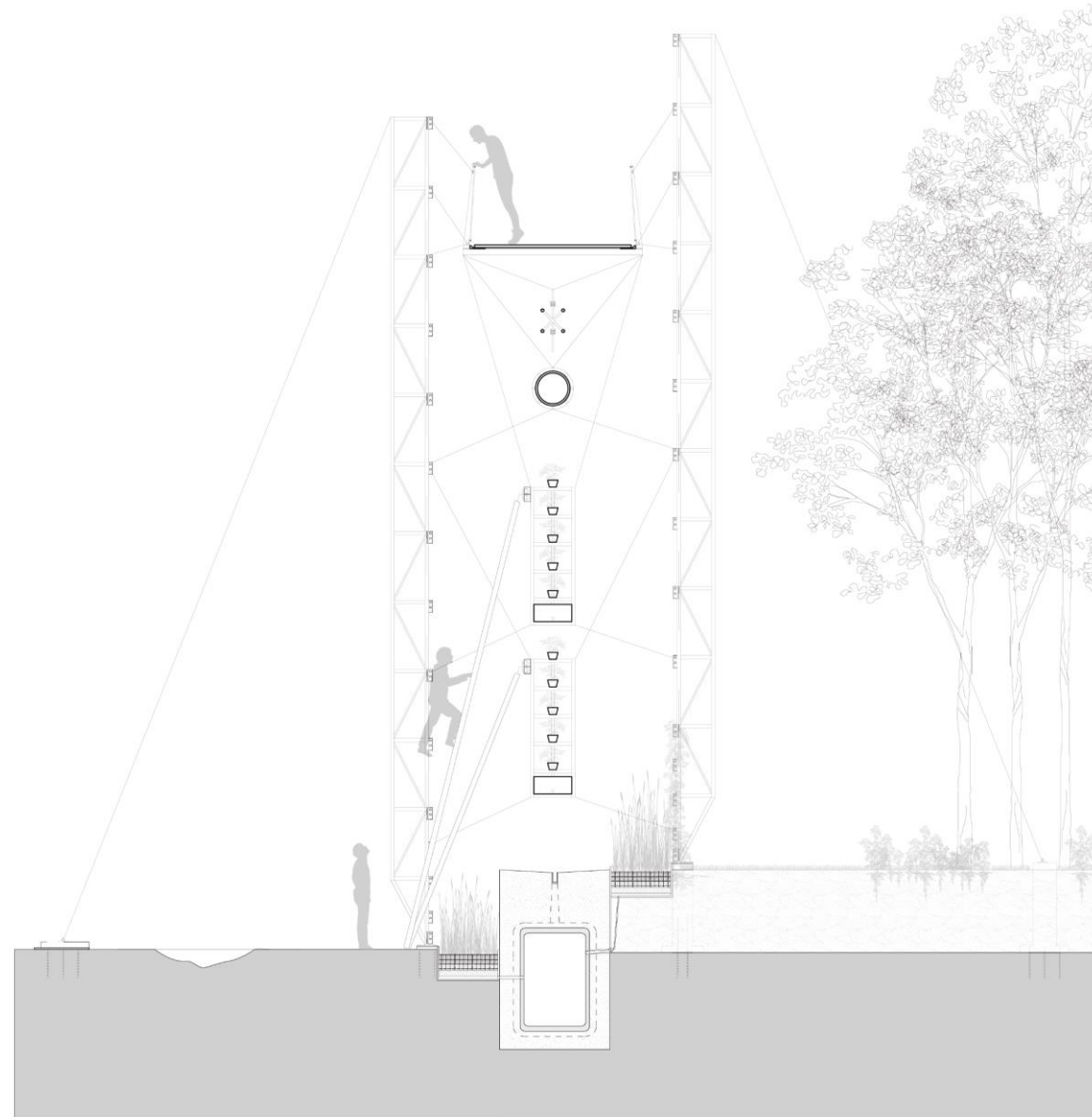


Bracing for impact

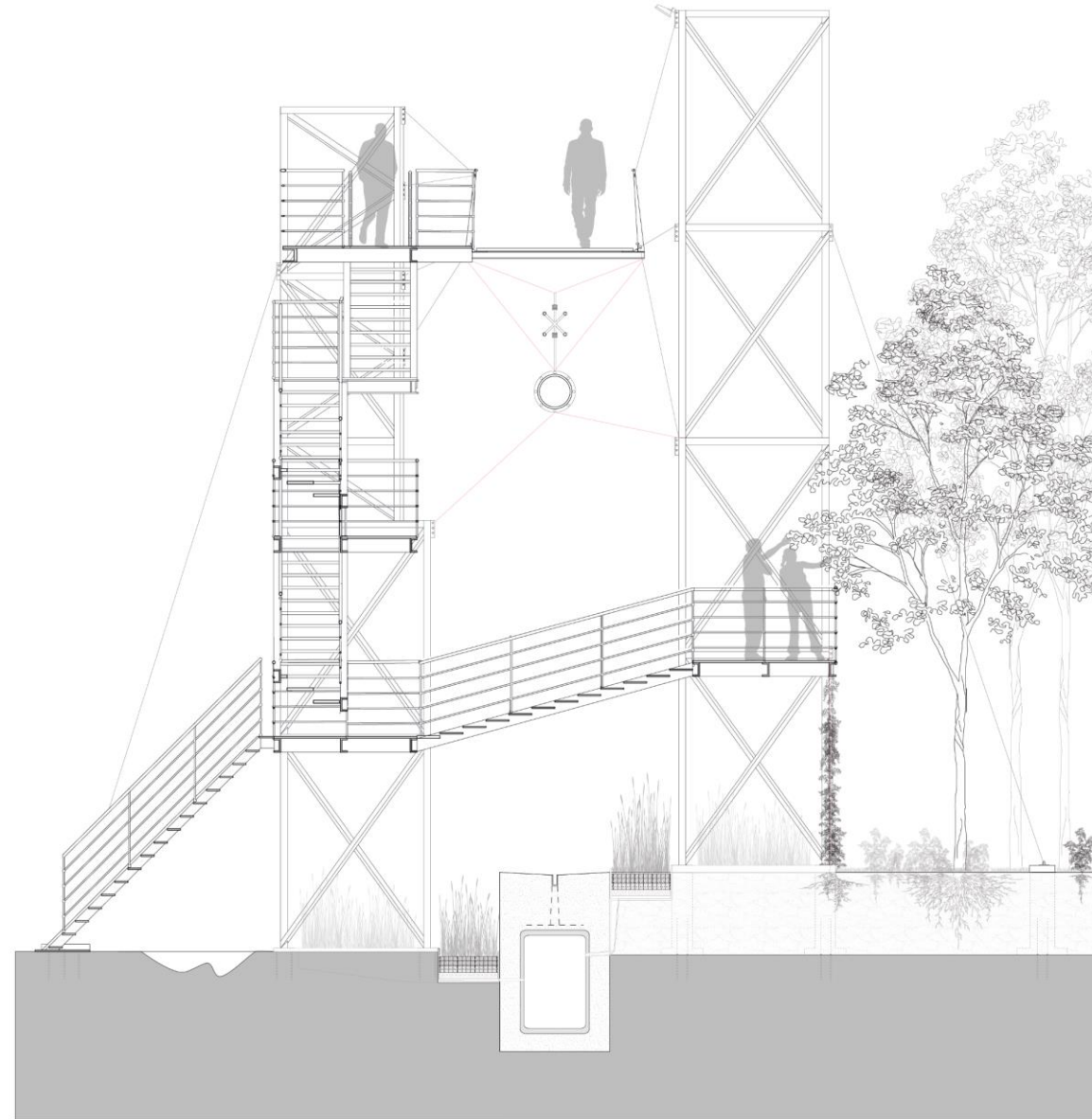




Brace and structure frame A



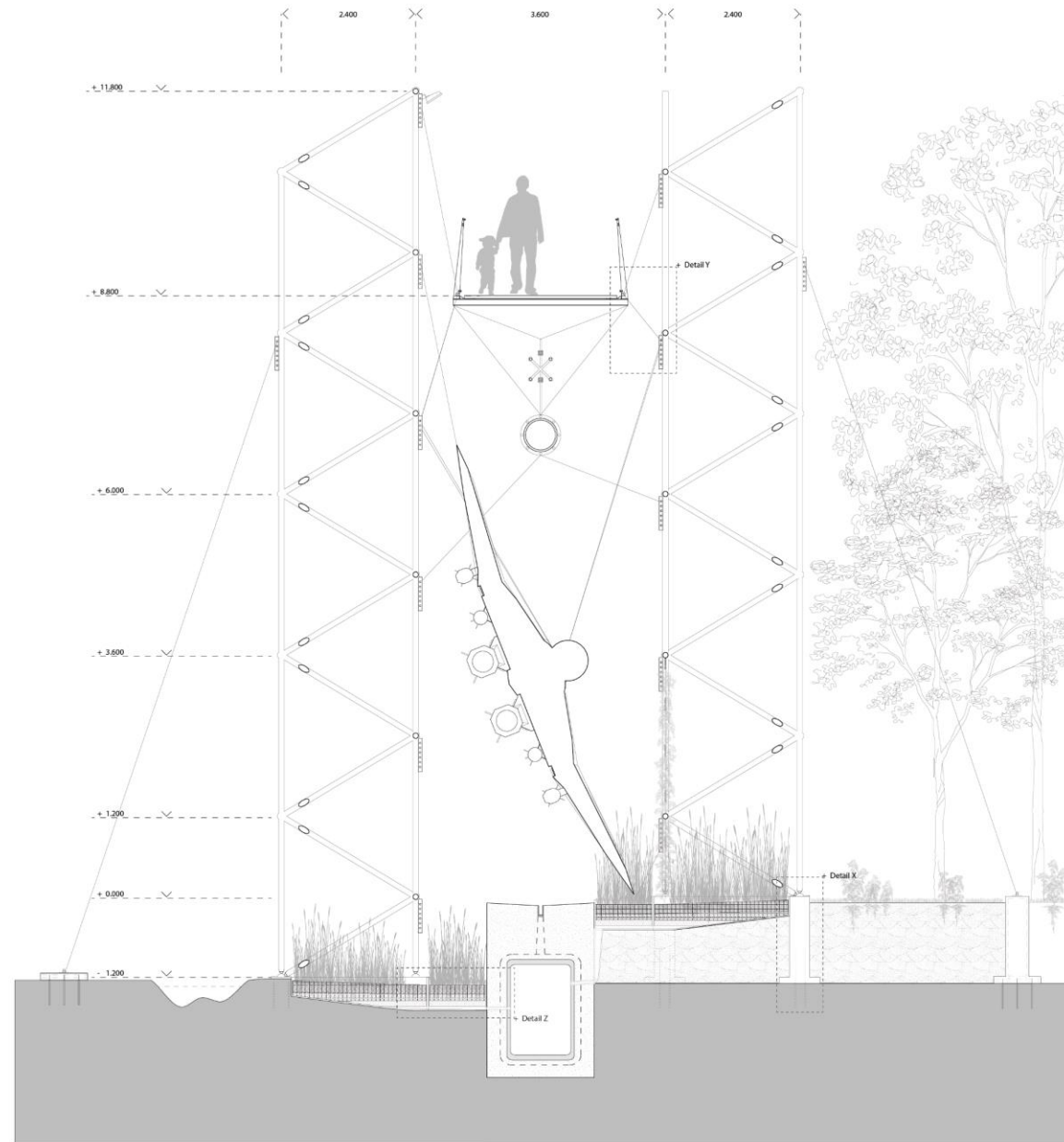
Frame A: Vertical Farming



Frame B: Staircase and transition

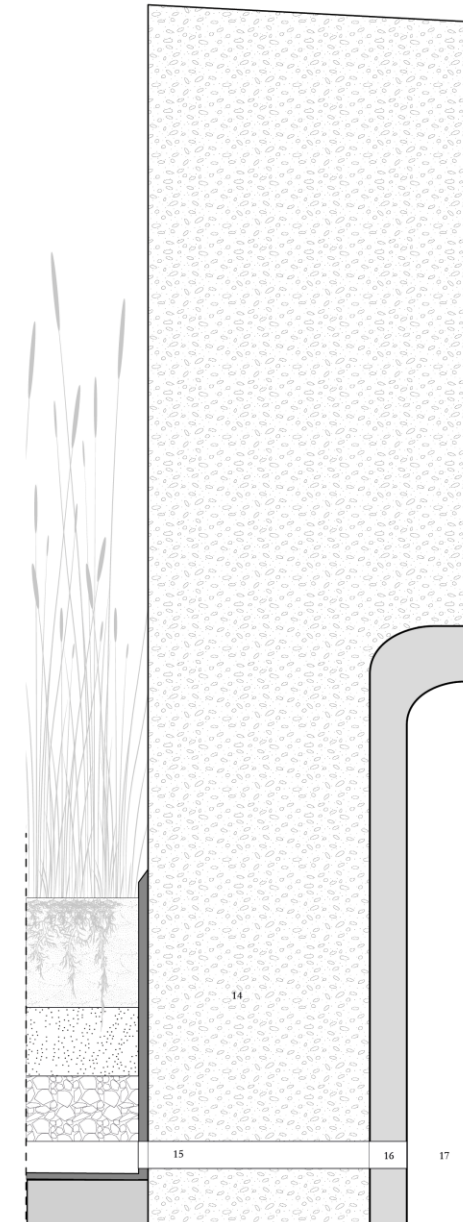
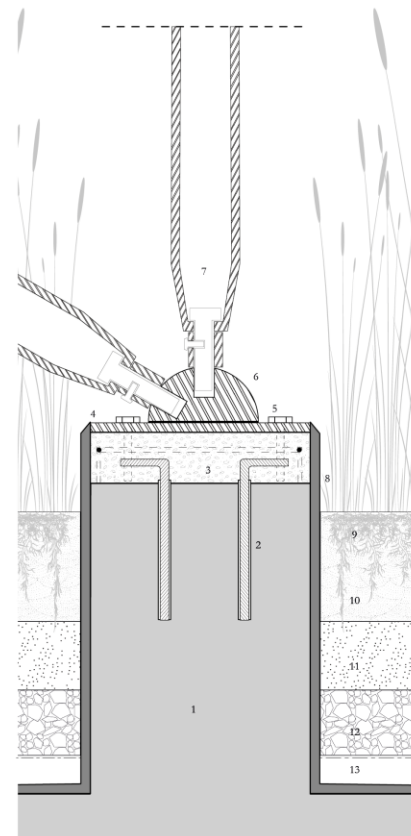


Frame B: Water and transition

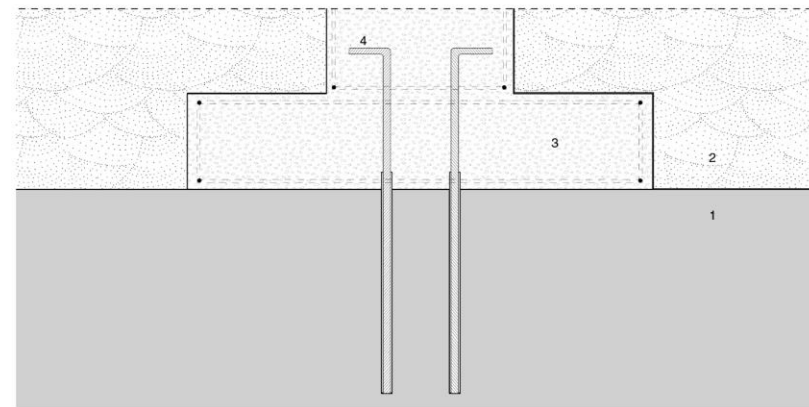
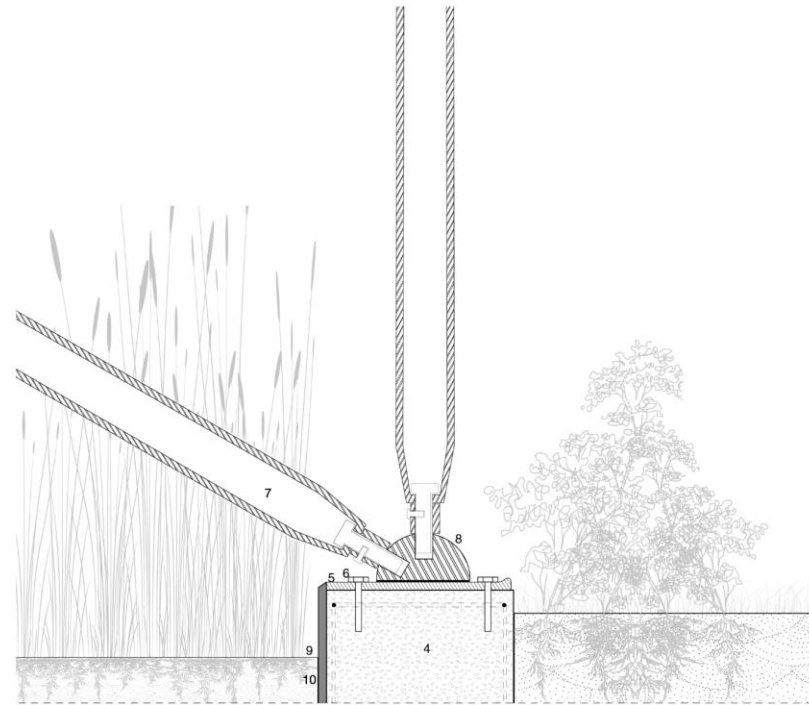


Frame C: Drone exhibition

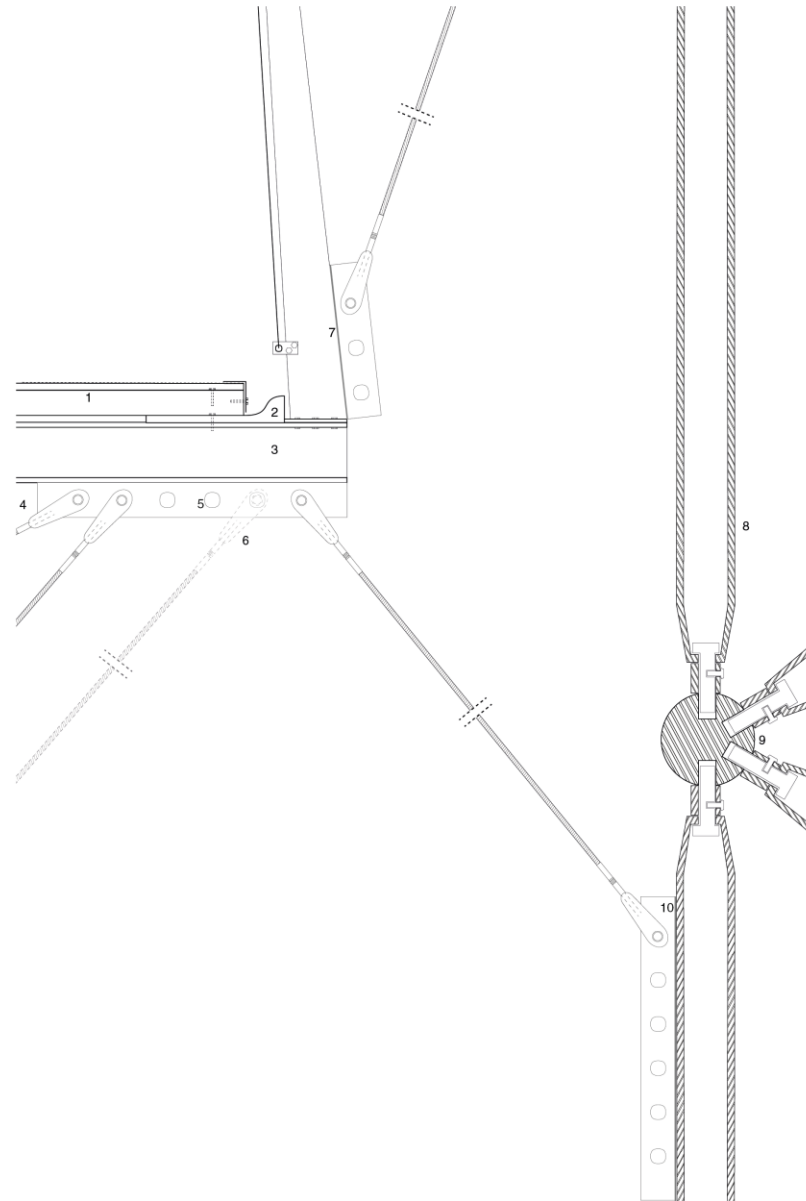
1. *Leptosol - Bedrock Soil*
2. *Rebar connection to bedrock*
3. *Concrete footing*
4. *Steel plate bolted to concrete foot*
5. *Bolt connection*
6. *Space Frame Member Connections*
7. *Vertical Space Frame Member 100mm diameter - Treated linseed oil-based anti-corrosion nanocomposite coating material*
8. *Planter*
9. *Plants: Cattail*
10. *Filter layer 1: Sand*
11. *Filter layer 2: Coarse sand*
12. *Filter Layer 3: Coarse rock aggregate*
13. *Drainage Pipe: protected with root cloth*
14. *Existing Airport Drain: Concrete*
15. *Existing Airport Drain: Plastic Tube*
16. *Existing Airport Drain: Tube through drilled hole for draining from gutter*
17. *Existing Airport Drain: Cavity*

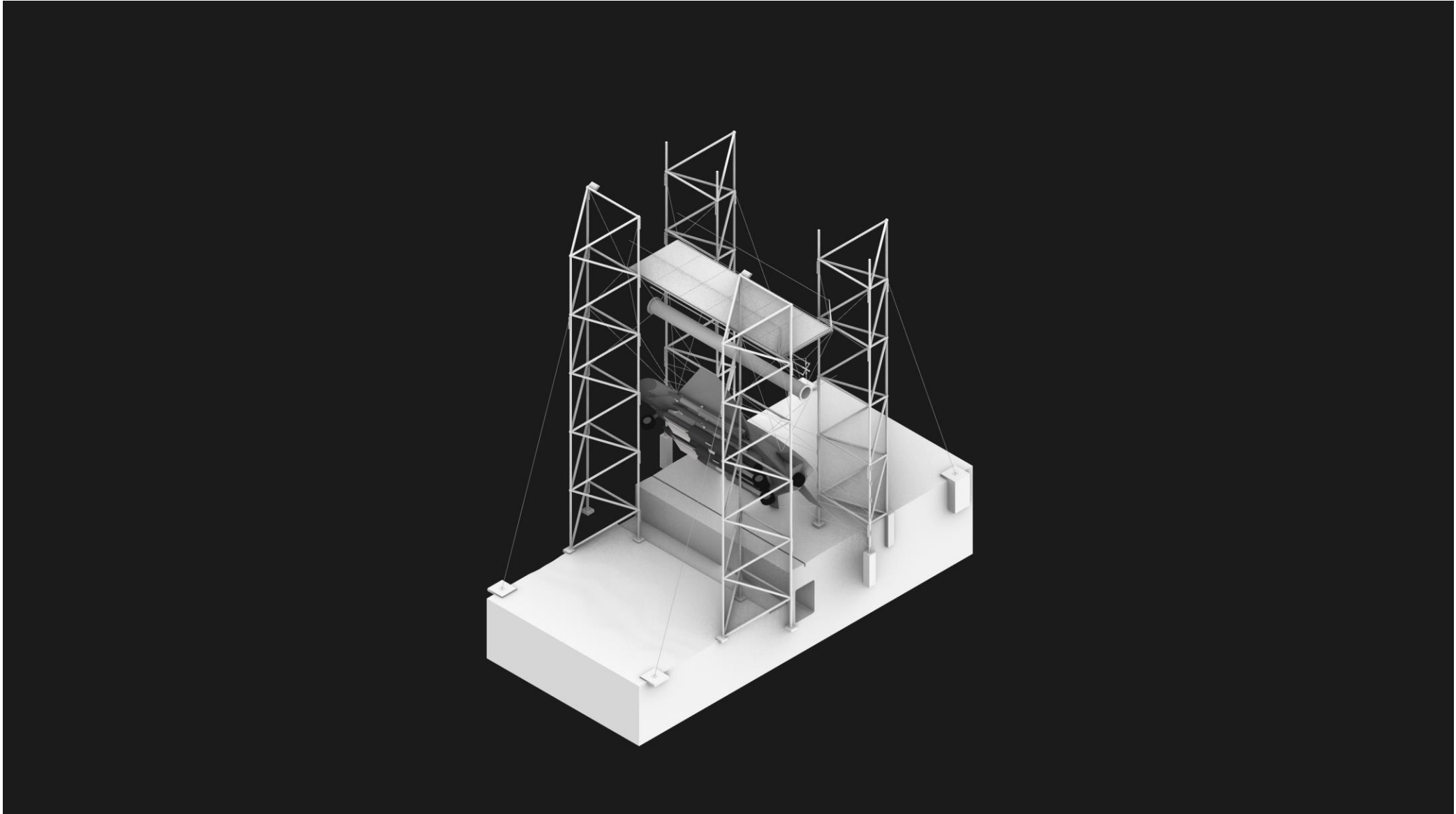


1. *Leptosol - Bedrock Soil*
2. *Leptosol - Sand Soil*
3. *Concrete footing*
4. *Rebar connection to bedrock*
5. *Steel plate bolted to concrete foot*
6. *Bolt connection*
7. *Vertical Space Frame Member 100mm diameter - Treated linseed oil-based anti-corrosion nanocomposite coating material*
8. *Space Frame Member Connections*
9. *Plants: Cattail*
10. *Planter*
11. *Filter layer 1: Sand*



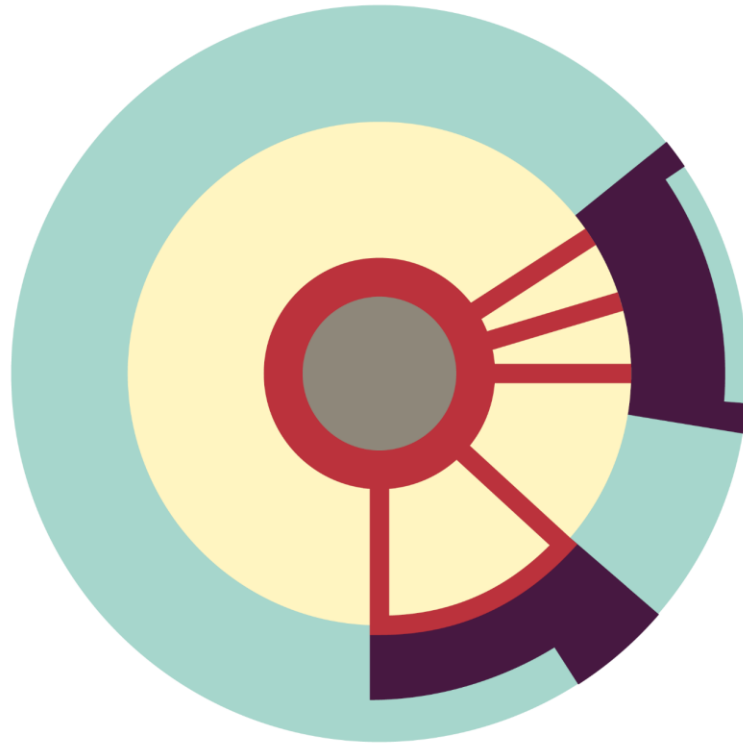
1. *Steel Mesh Floor Structure 2400x1200mm panels + Steel Tread Plates on 1% slope*
2. *Flatbulb profile - height: 31mm - incl. drain*
3. *HEA100*
4. *Steel Open Spelter Socket Steel Cable Connection*
5. *Potential Connection Spot*
6. *Potential Suspension Cable Connection*
7. *Medium Size Profile Welded Connection*
8. *Vertical Space Frame Member 100mm diameter - Treated linseed oil-based anti-corrosion nanocomposite coating material*
9. *Space Frame Member Connections*
10. *Large Size Profile Welded Connection*

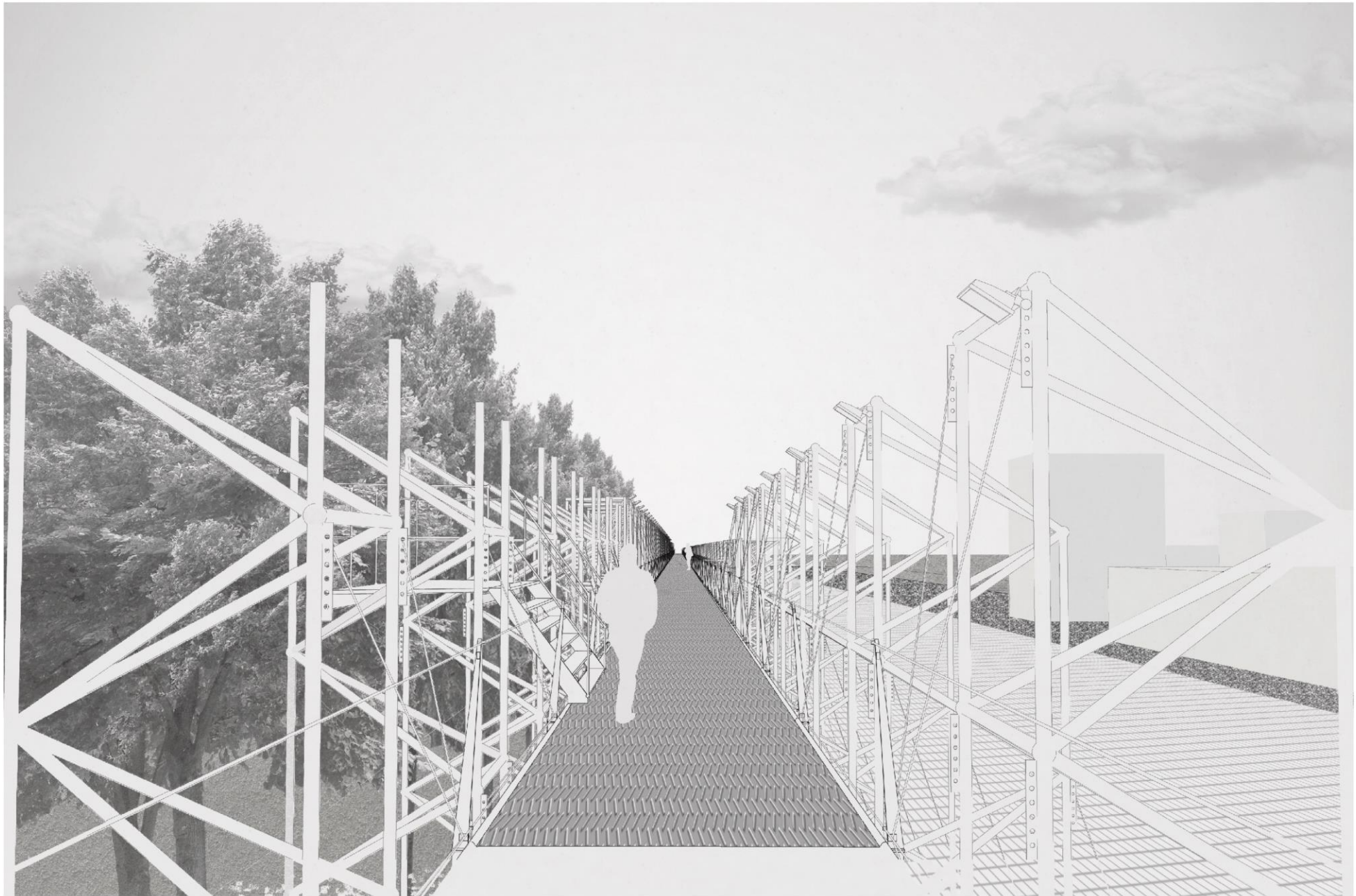




To conclude:

How could architecture transform enclosed urban areas and engender their transformation into public space?





Line as a space

