



**Towards the Transformation of an Air Terminal Site**



*Research: Istanbul -> Site*  
*Design: The Line*  
*Conclusions*





Location



*What does one encounter in Istanbul?*





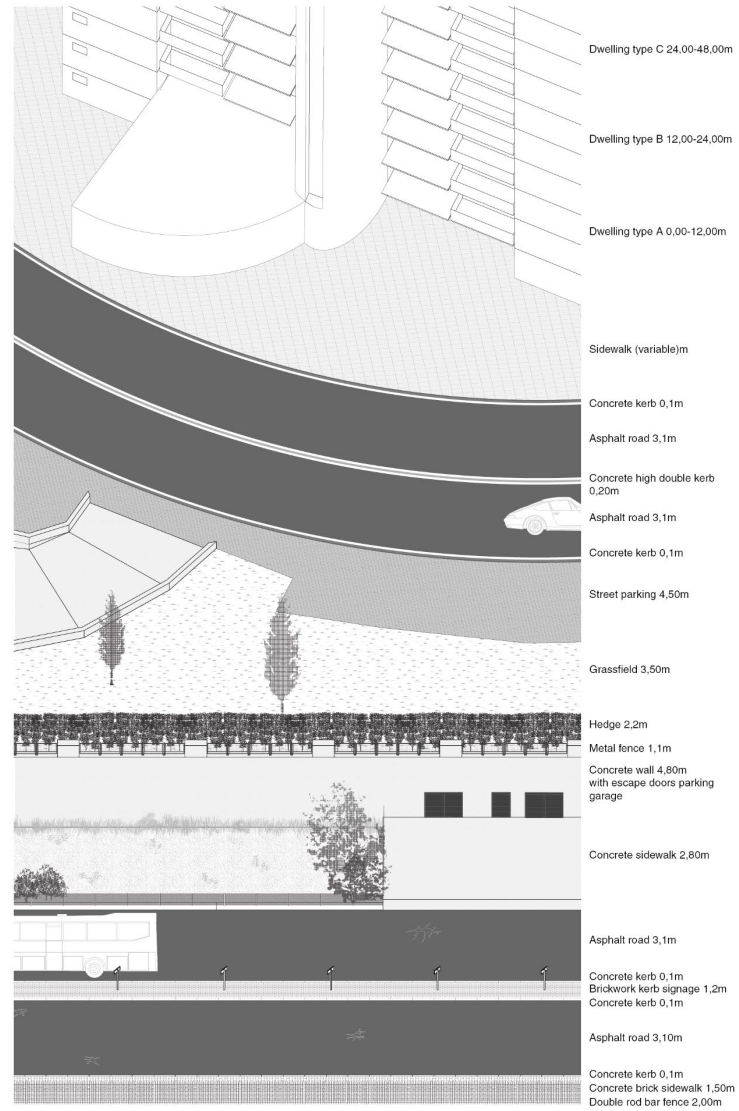


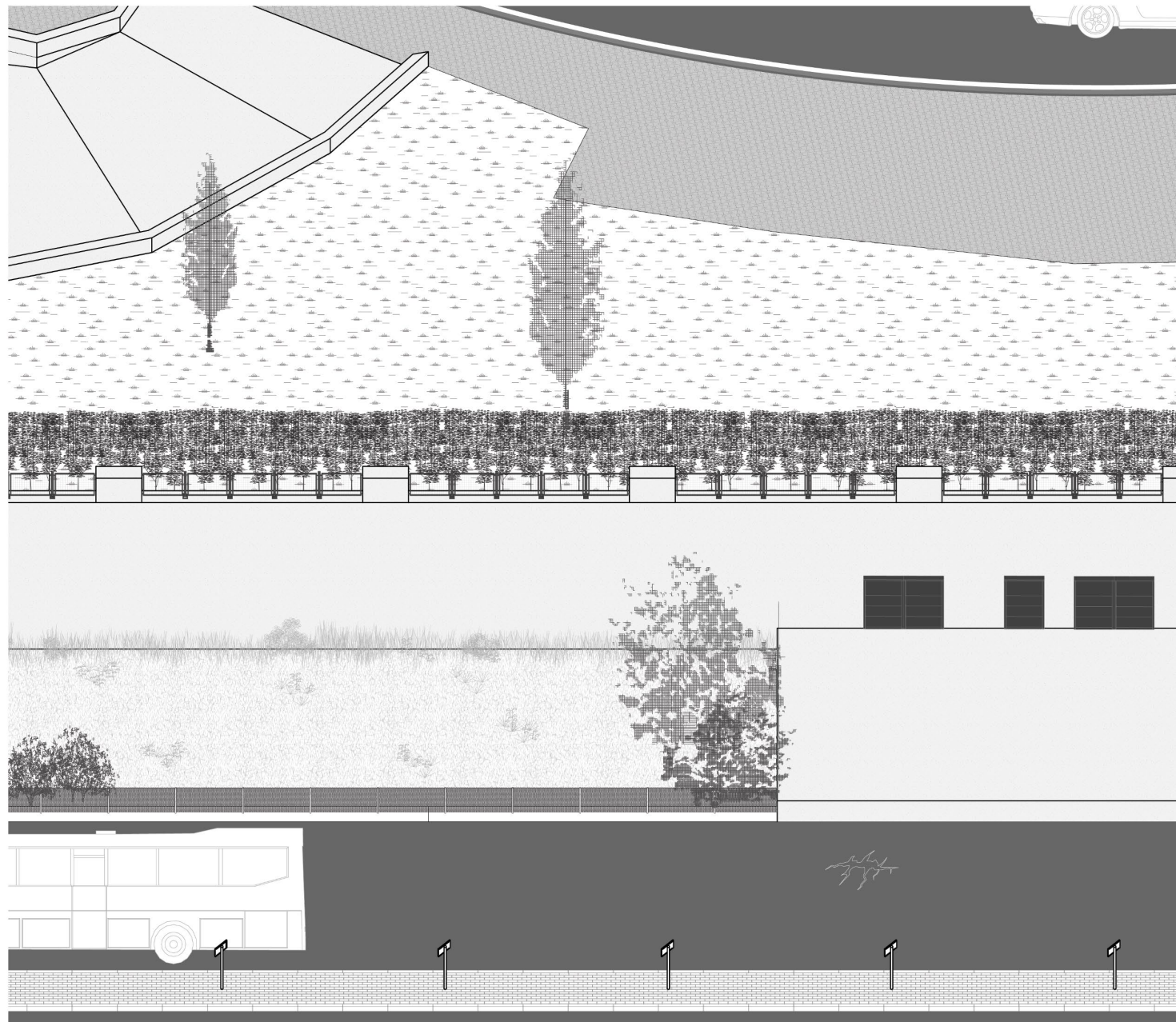






*How does the gated community and the enclosure function?*





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

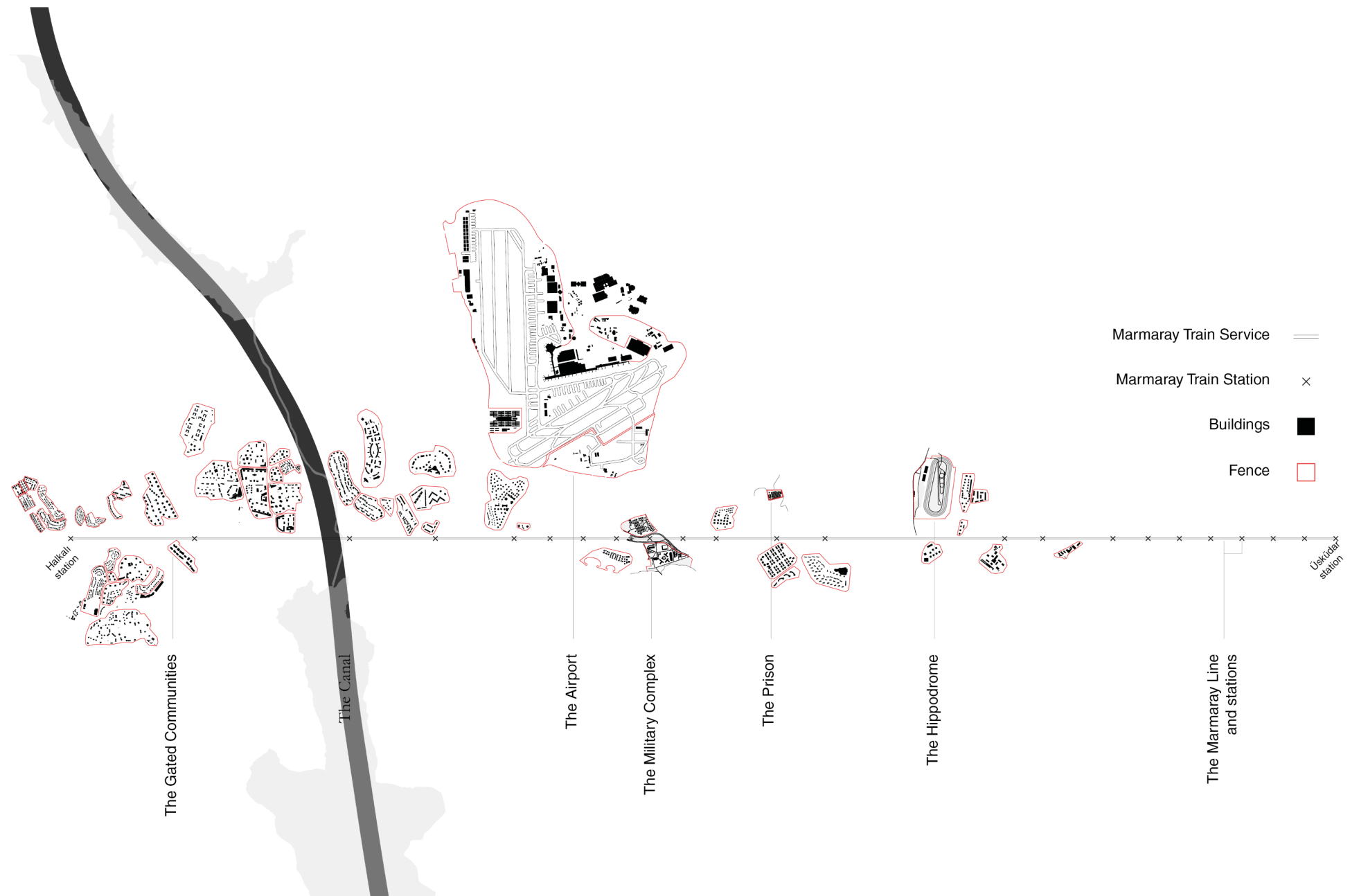


*How has the development of the city towards the West of Istanbul been shaped?*

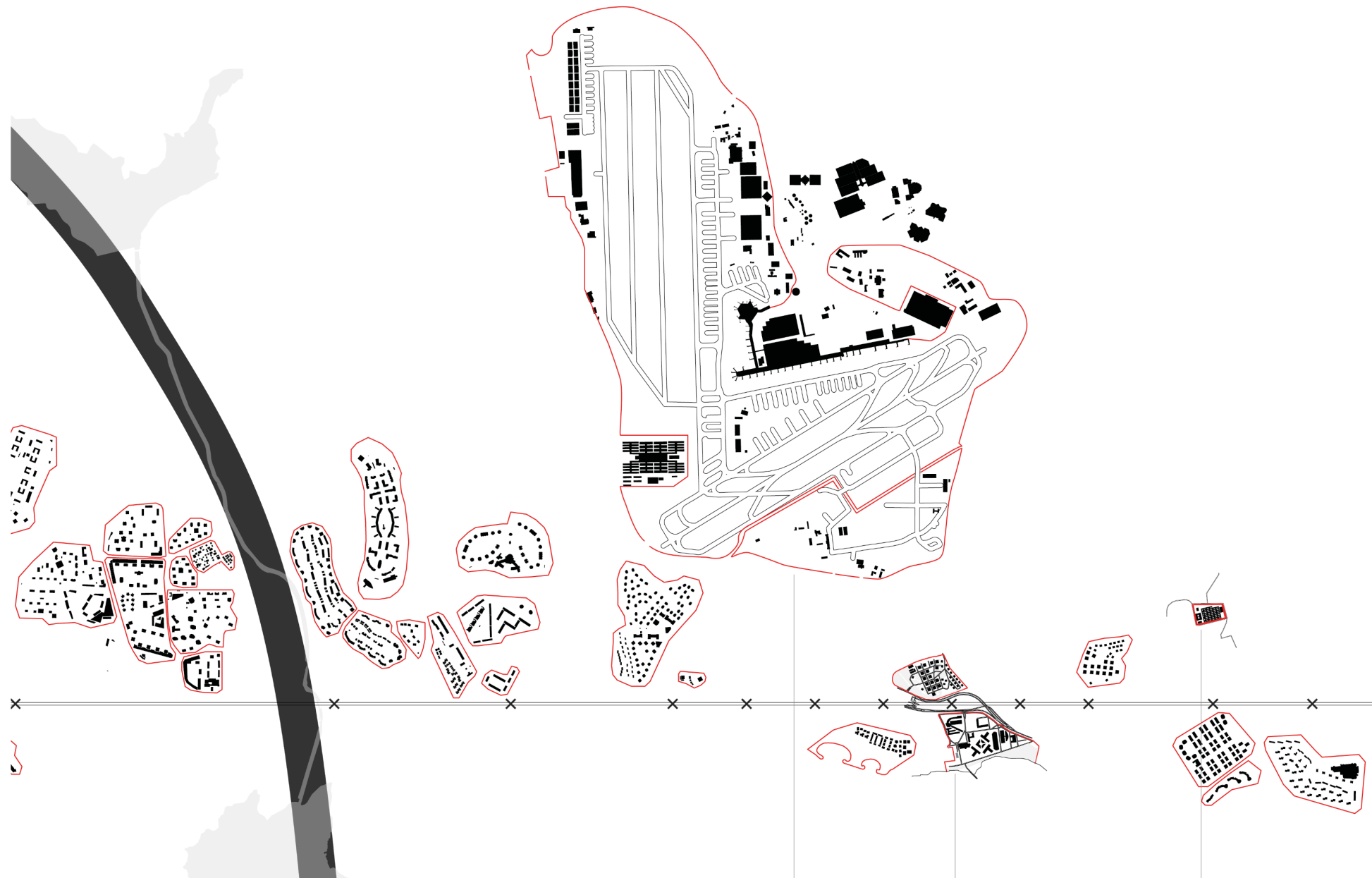




Camps along the Marmaray







Camps along the Marmaray



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

## Last flight leaves Ataturk as Istanbul switches airports

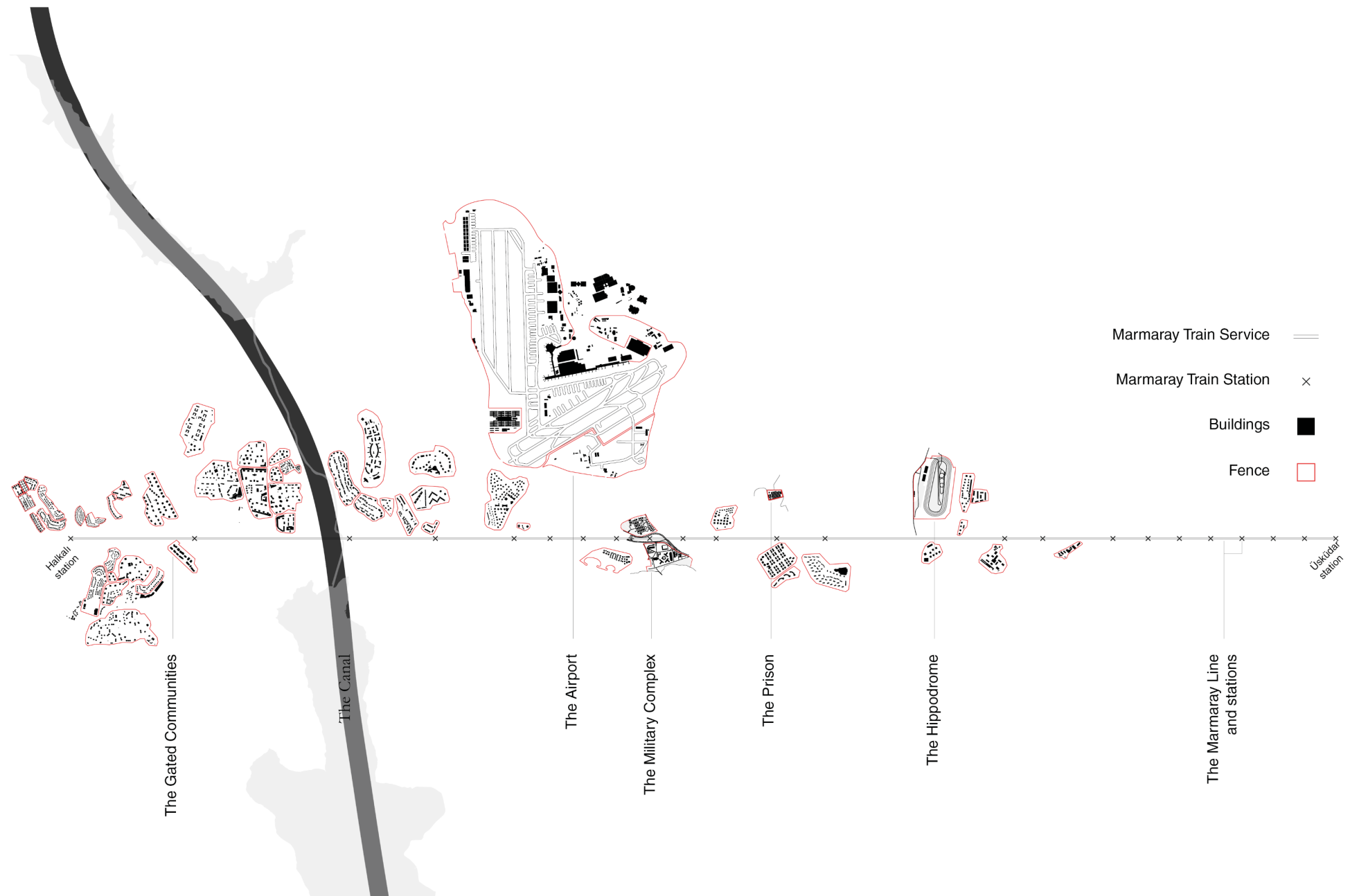


## *Design Assignment*



## *Design Assignment*

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















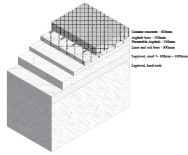
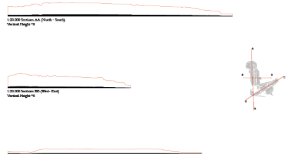

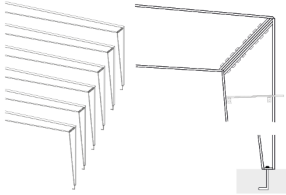
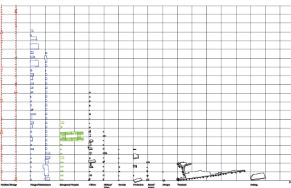




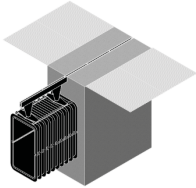

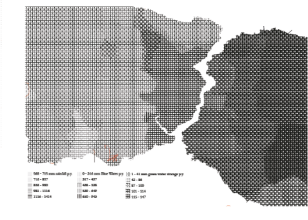
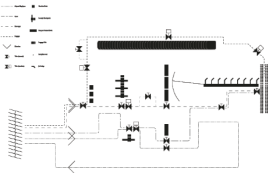
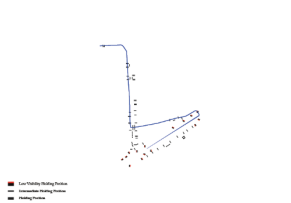
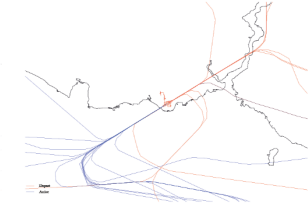


**The Void and the Perimeter**



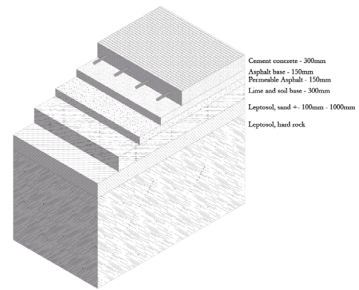
*What is present on site?*



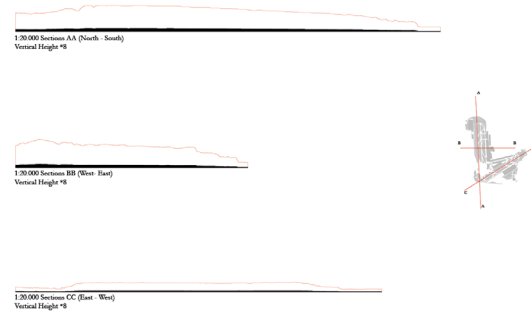
|                   | Small  | Medium  | Large   |
|-------------------|--|---|---|
| Soil              |    |    |    |
| Material          |    |    |    |
| Mobility          |    |    |    |
| Water             |   |   |   |
| Airport Specifics |  |  |  |



## Small



## Medium



## Large





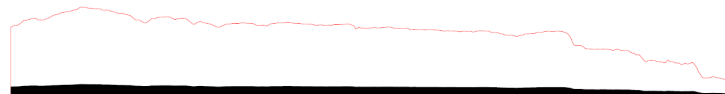


Leptosol: Soils having  
1) continuous hard rock within 25 cm from the soil surface directly overlying material with a calcium carbonate equivalent of more than 40 percent  
2) having no diagnostic horizons other than a mollic, ochric, umbric or yermic horizon

Luvisol: Soils having an argic horizon with cation exchange capacity equal to or greater than 24 cmol(+)kg<sup>-1</sup> 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.



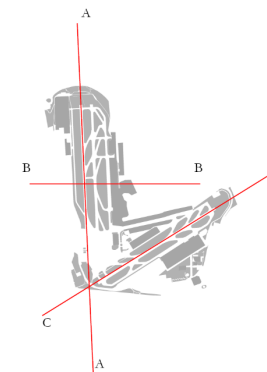
1:20,000 Sections AA (North - South)  
Vertical Height \*8

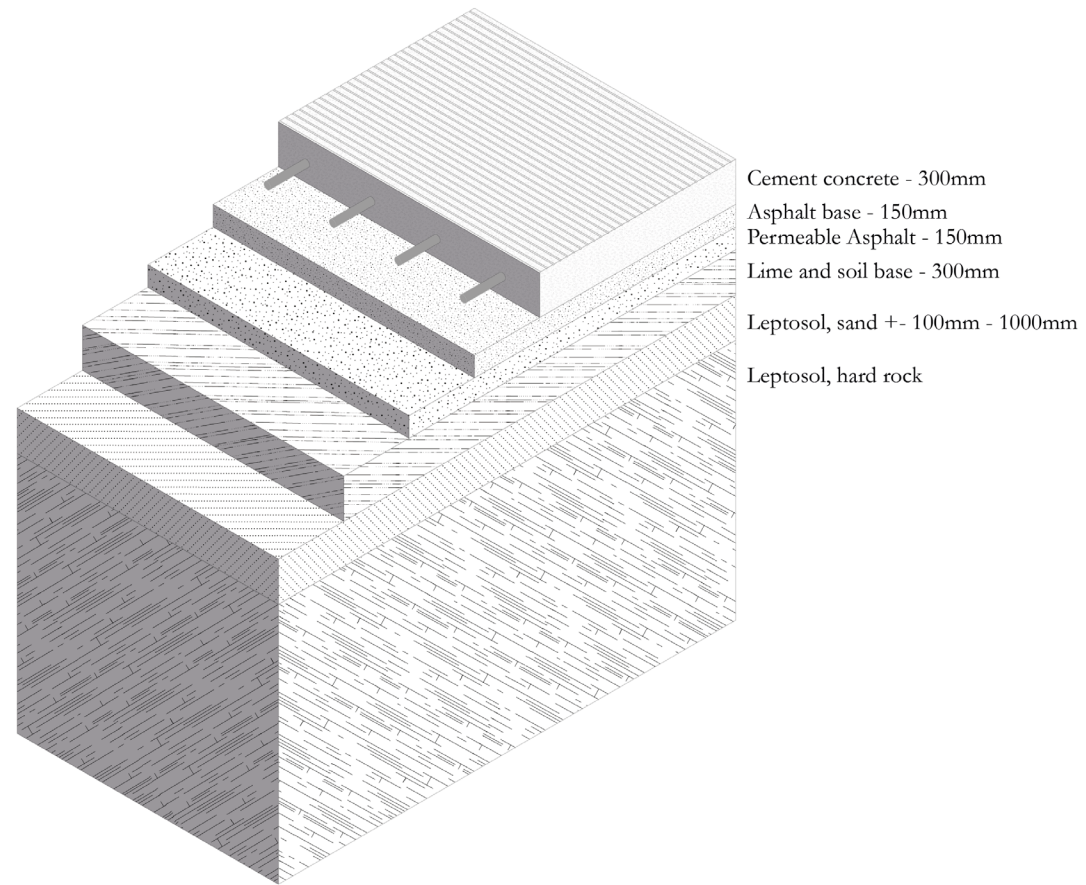


1:20,000 Sections BB (West- East)  
Vertical Height \*8



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





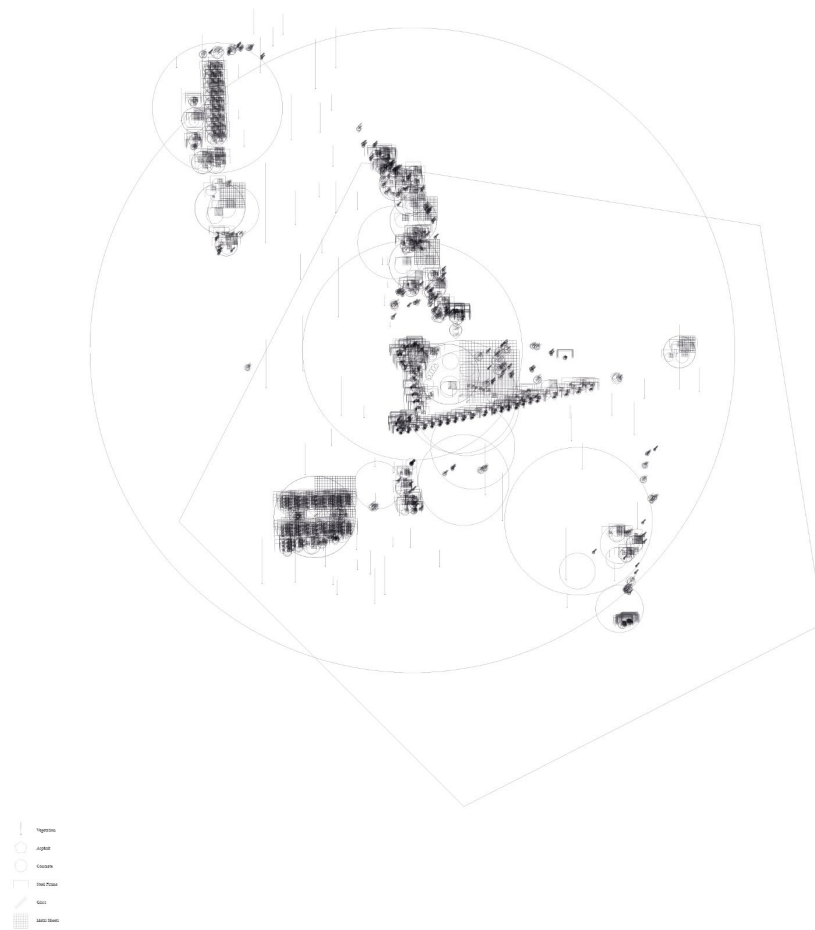


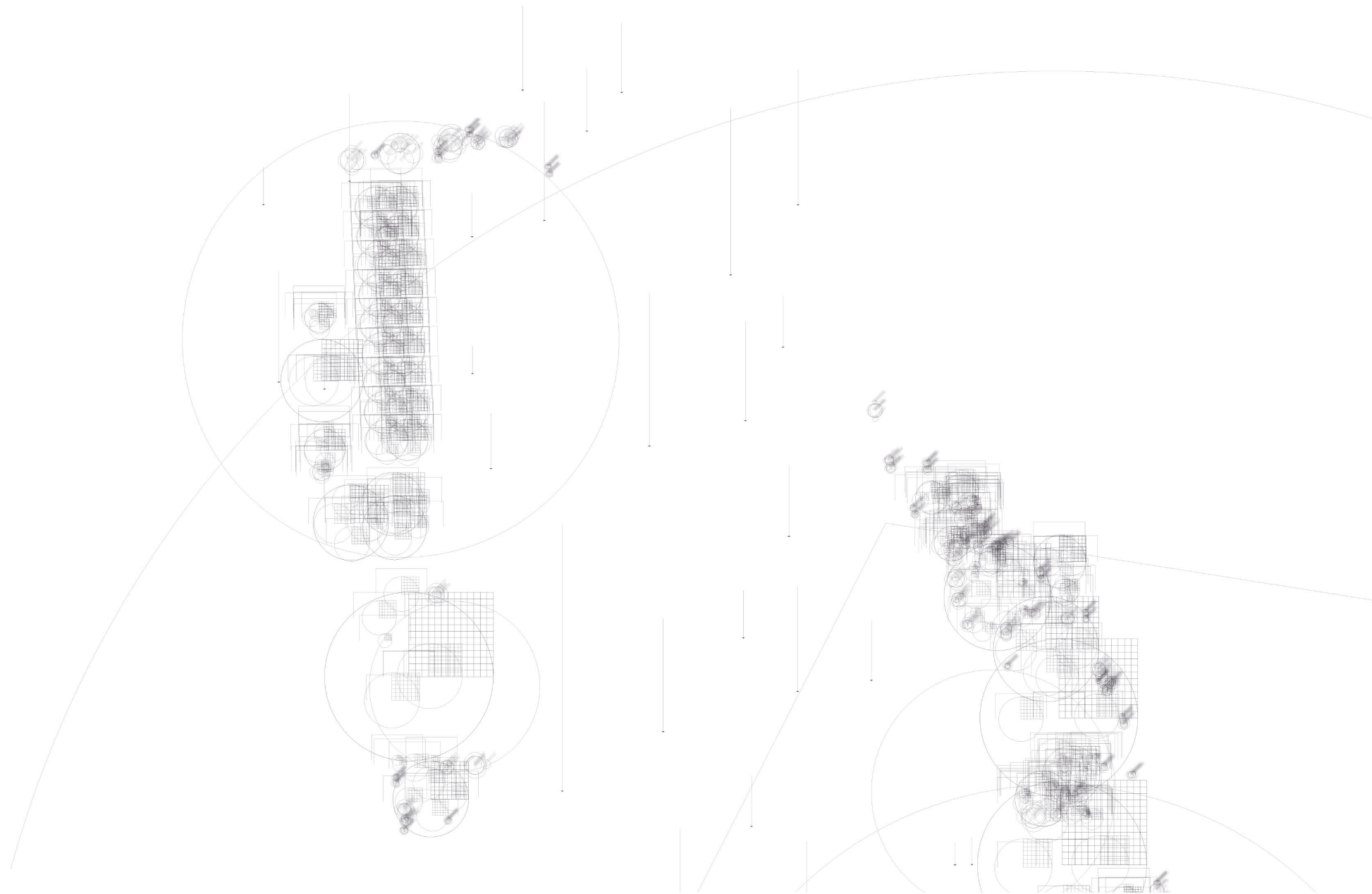






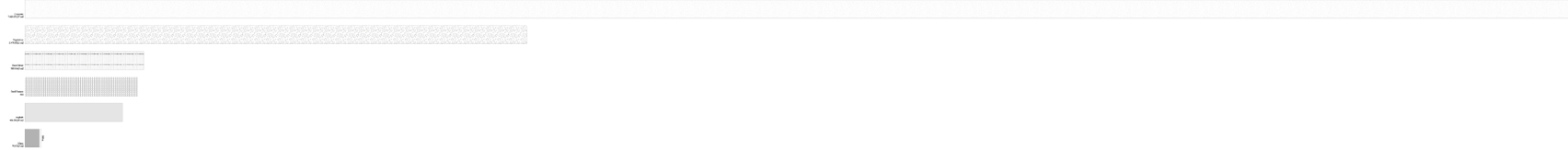






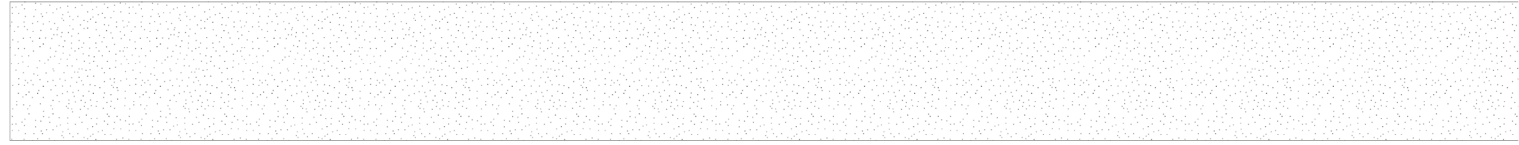


School Summer Graph  
1/10/2020

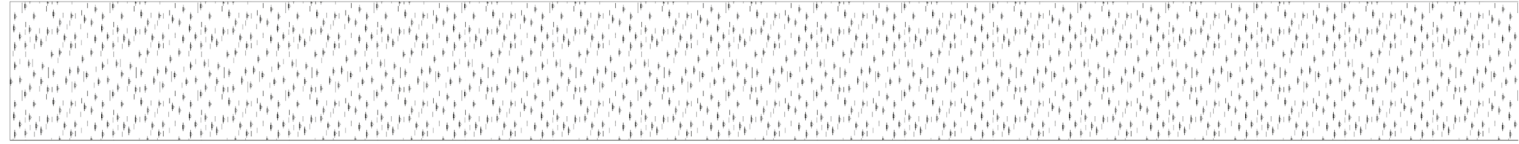




Concrete:  
7.683.231,27 m<sup>2</sup>



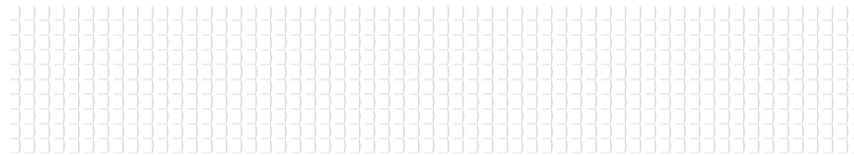
Vegetation:  
2.478.832,1 m<sup>2</sup>



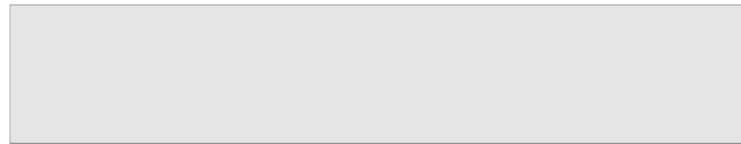
Sheet Metal:  
585.964,5 m<sup>2</sup>



Steel Frames:  
580



Asphalt:  
481.580,45 m<sup>2</sup>



Glass:  
70.672,0 m<sup>2</sup>

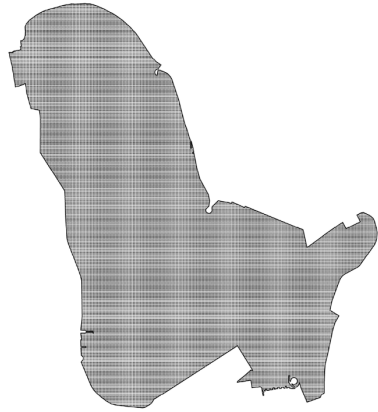


300 m



*What are the extents of what is possible?*





### *Worst Case Earthquake Relief*

*Site could house:  
maximum 170.445 people  
= 45m<sup>2</sup> per person*



### *Reforested Forest Area* *m<sup>2</sup> site: 7.670.021,39 = 767 ha*

*Maximum carbon capture: 767 \*  
10 = 7.670 tonnes CO<sub>2</sub> captured  
per year*

*For context: 9,500,000 tons of  
CO<sub>2</sub> 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*

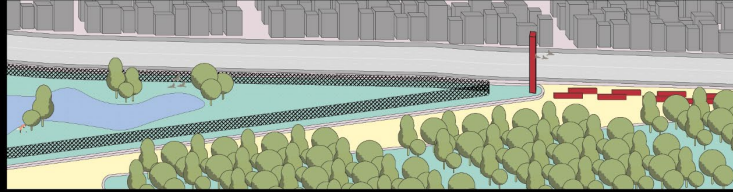




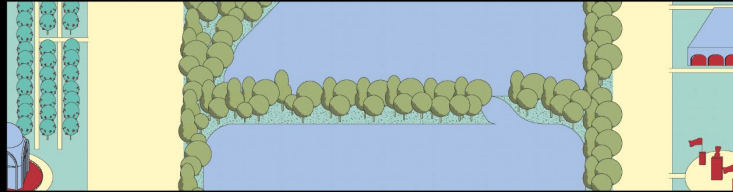
*How could such a large site be structured?*



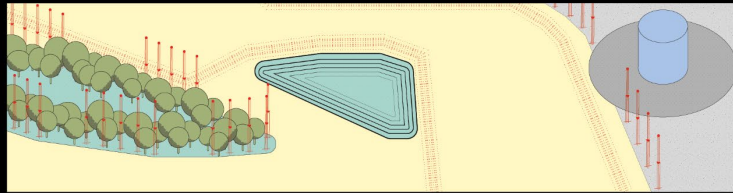
The Perimeter



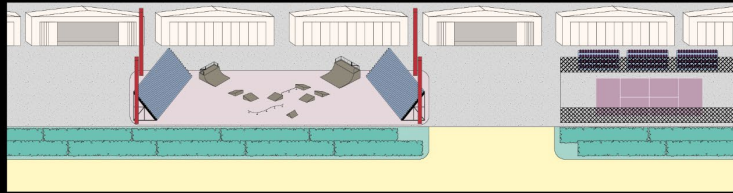
The Collective Muses



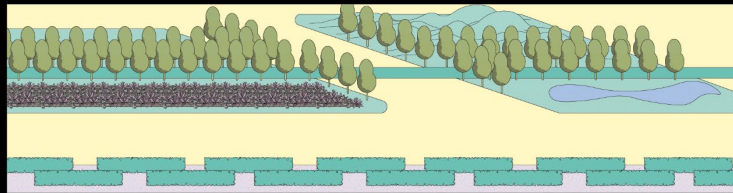
The Infrastructures of the Frontline



The Arenas

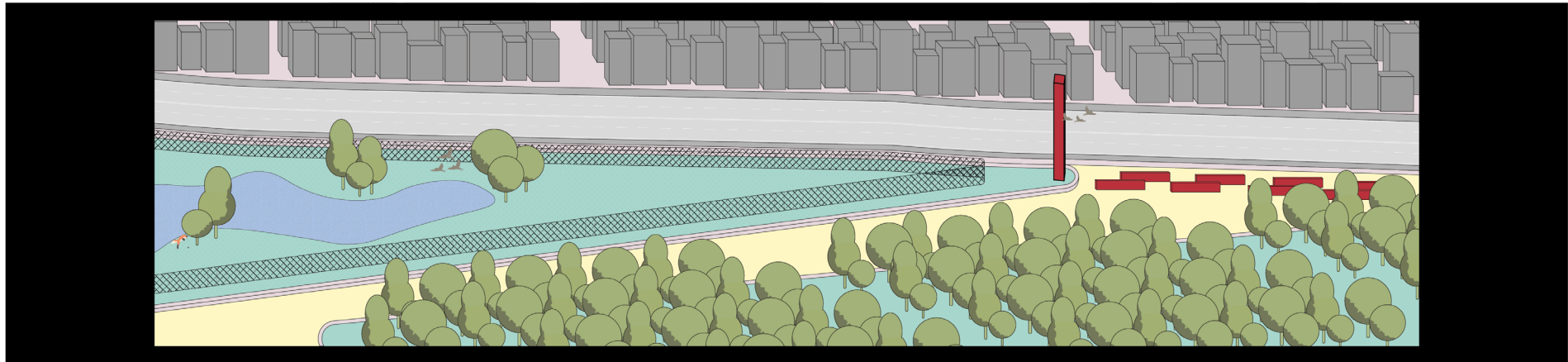


The Corridors





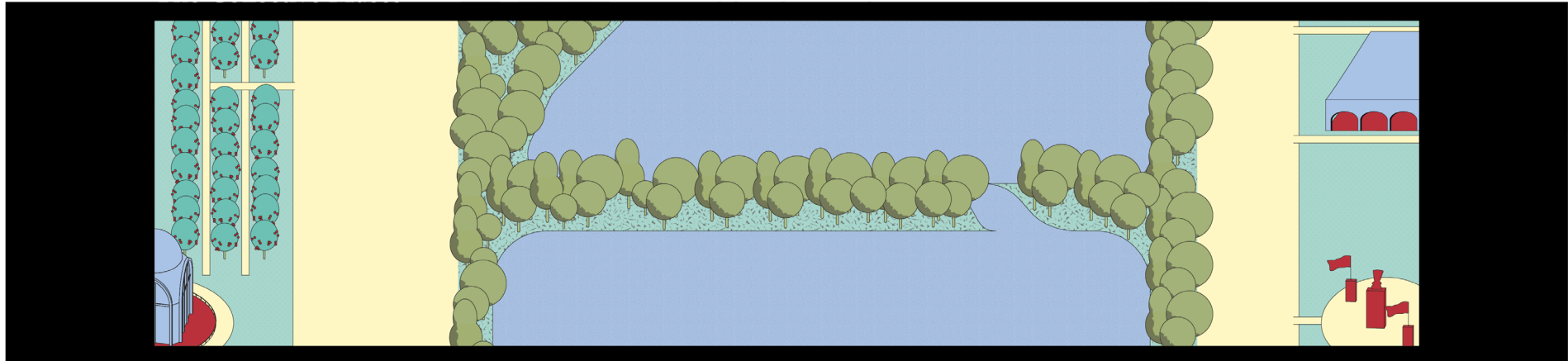
## *The Perimeter*





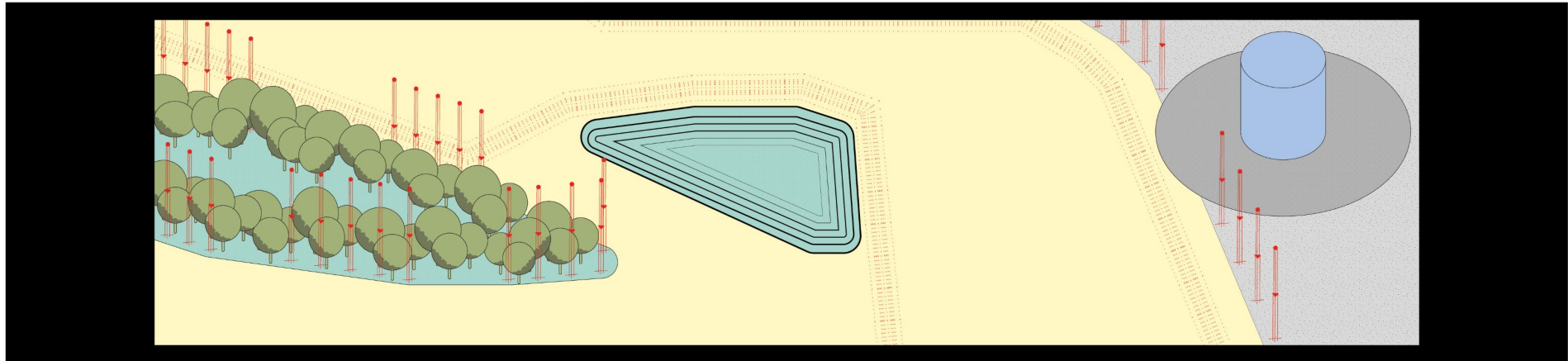


## *The Collective Muse*



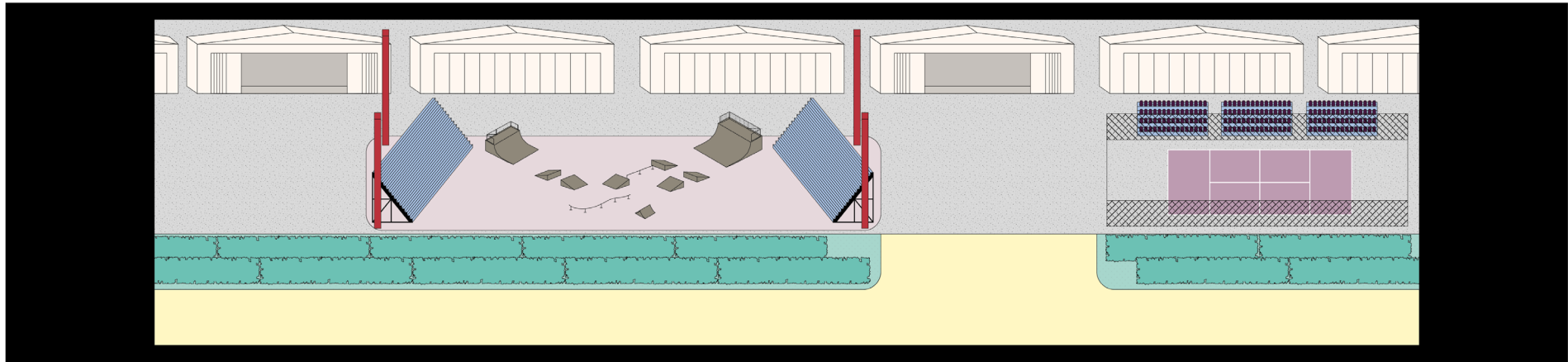


## *Infrastructures of the Frontline*





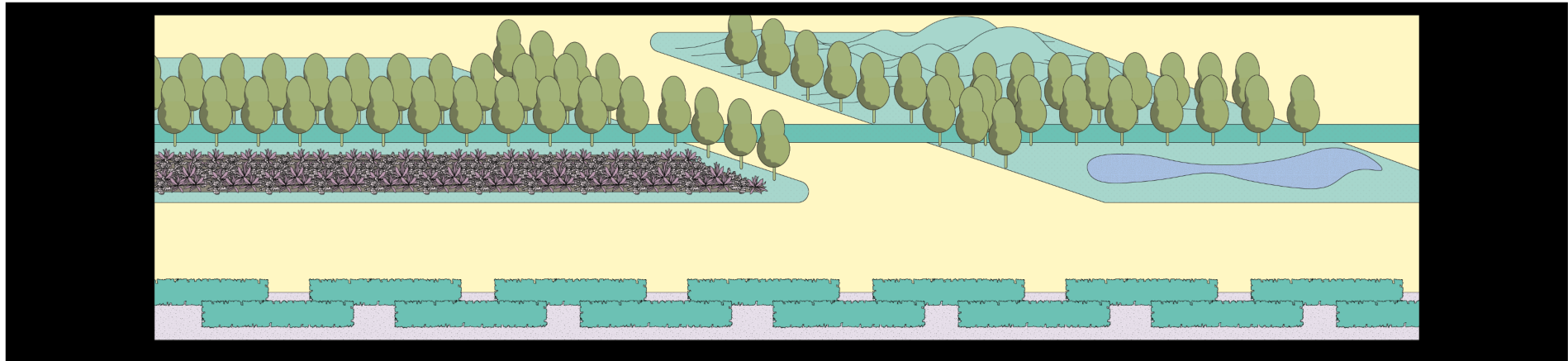
## *The Arenas*

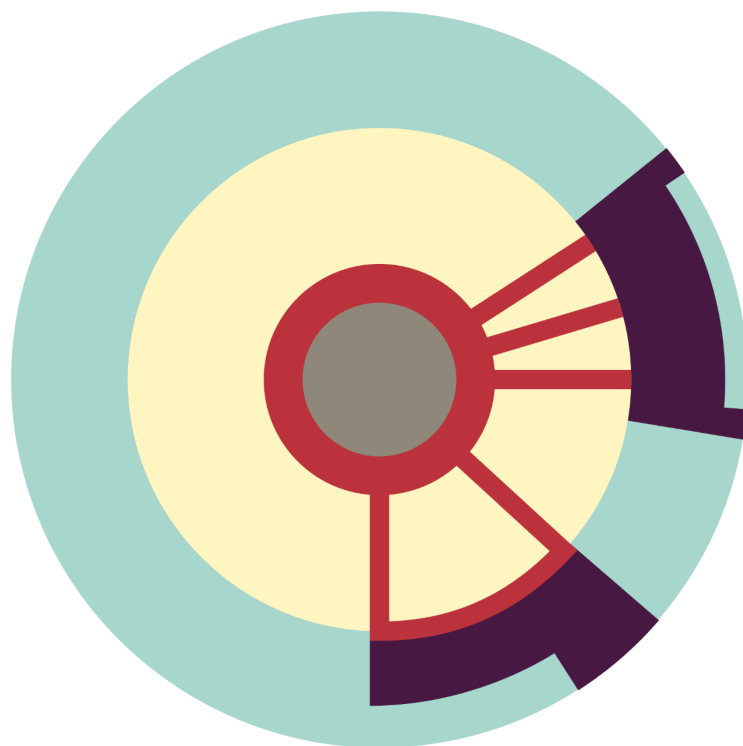






## *The Corridors*





**The Perimeter**



**Arena's**



**Infrastructure of  
the Frontline**

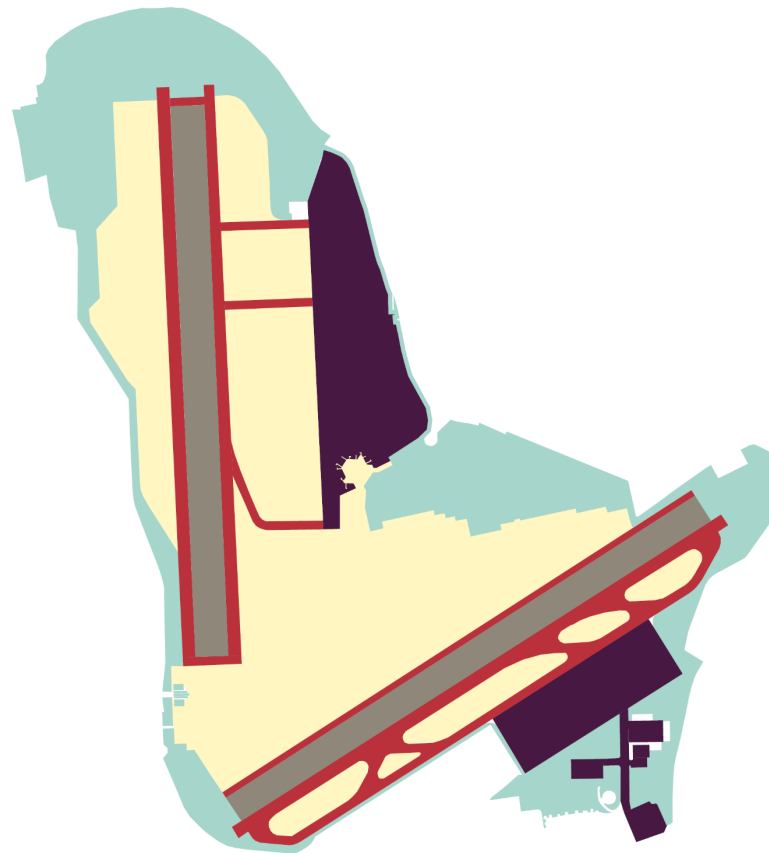


**Corridors**



**Collective Muse**

**The camp**



**The Perimeter**



**Arena's**



**Infrastructure of  
the Frontline**



**Corridors**



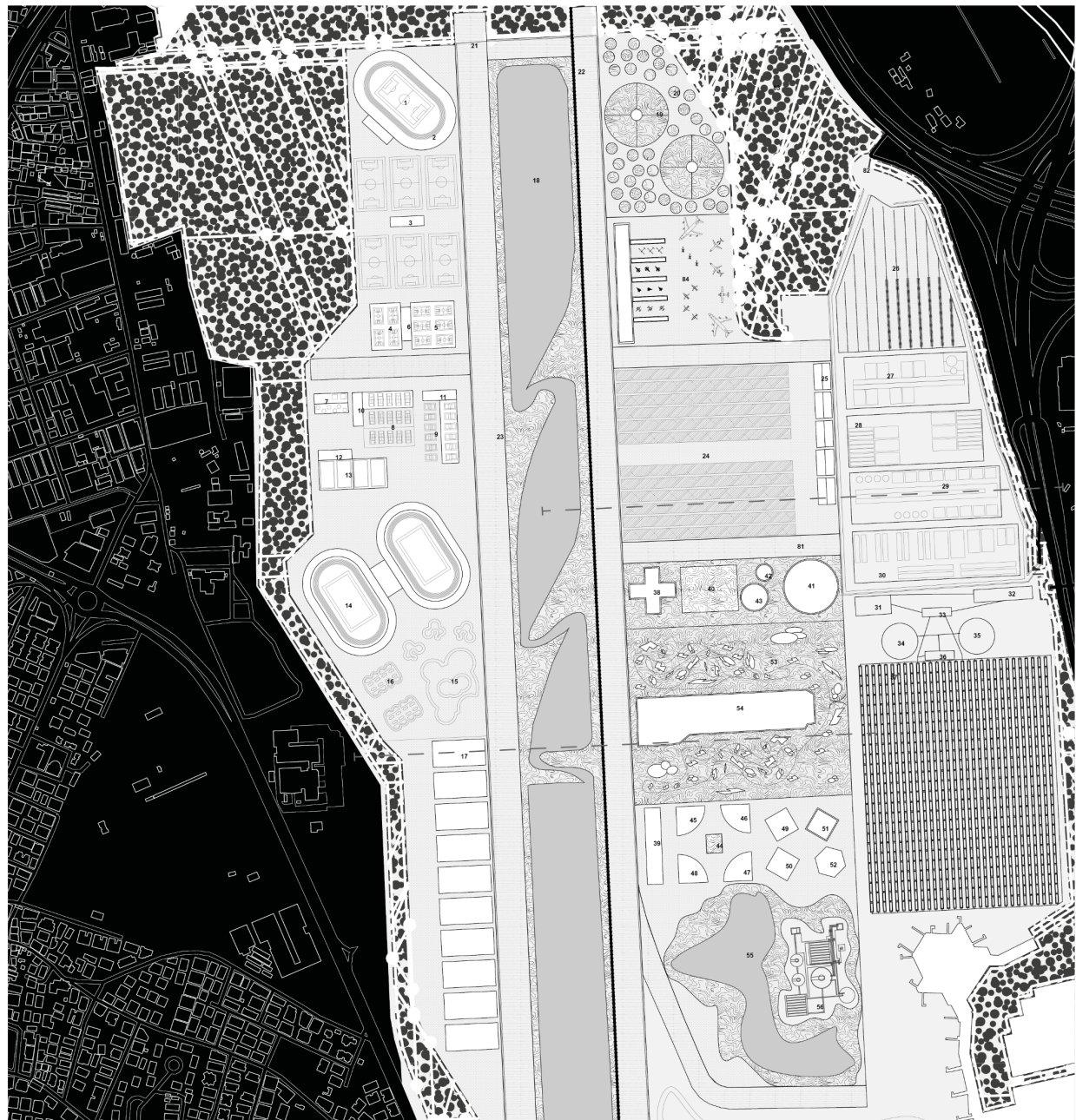
**Collective Muse**

**The camp**



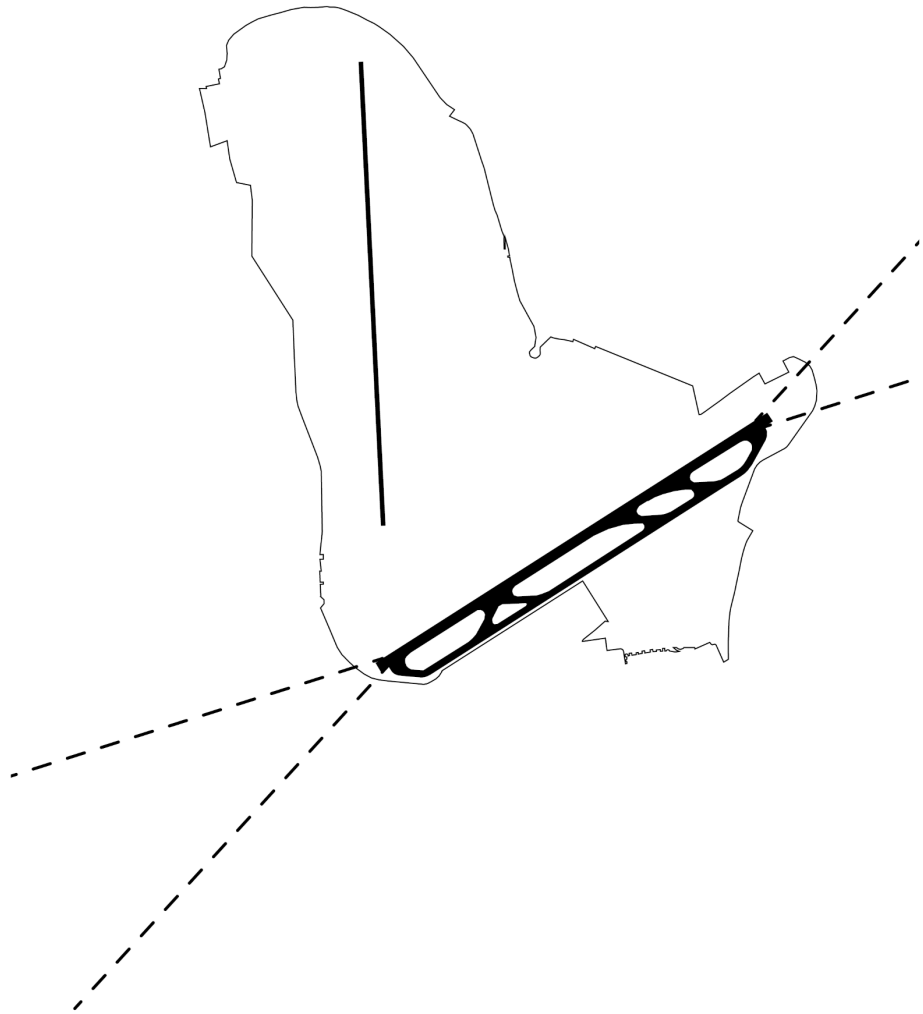
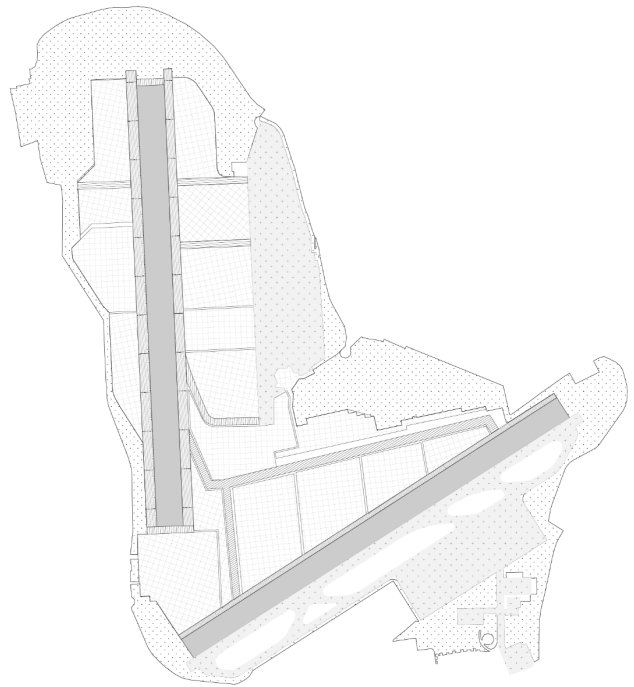






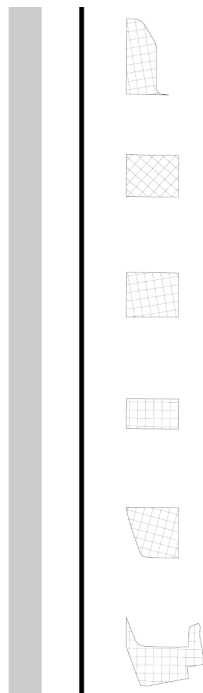




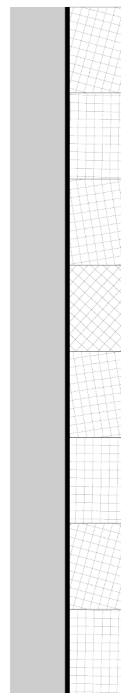




*How can a line become a spatial, indexical and generative tool to transform the site?*



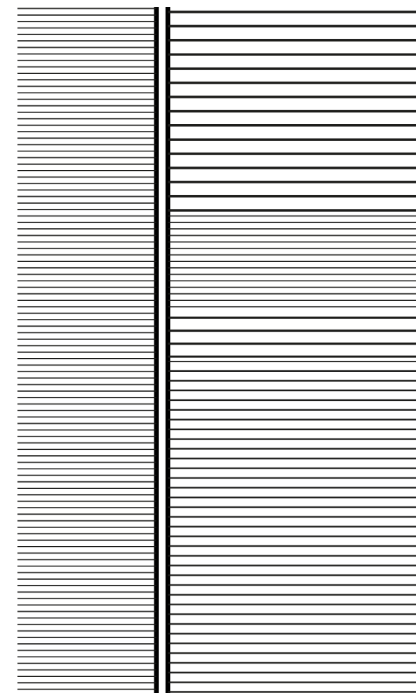
*Functions along the line*



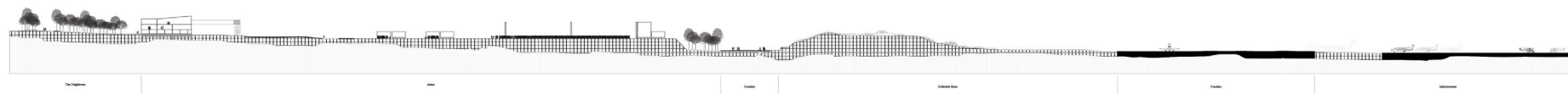
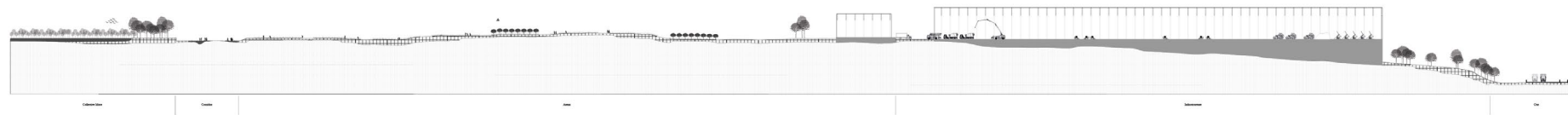
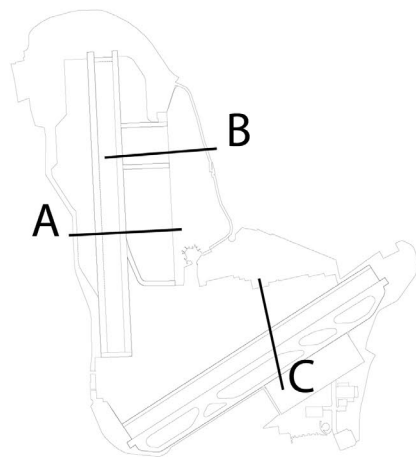
*Integrate*



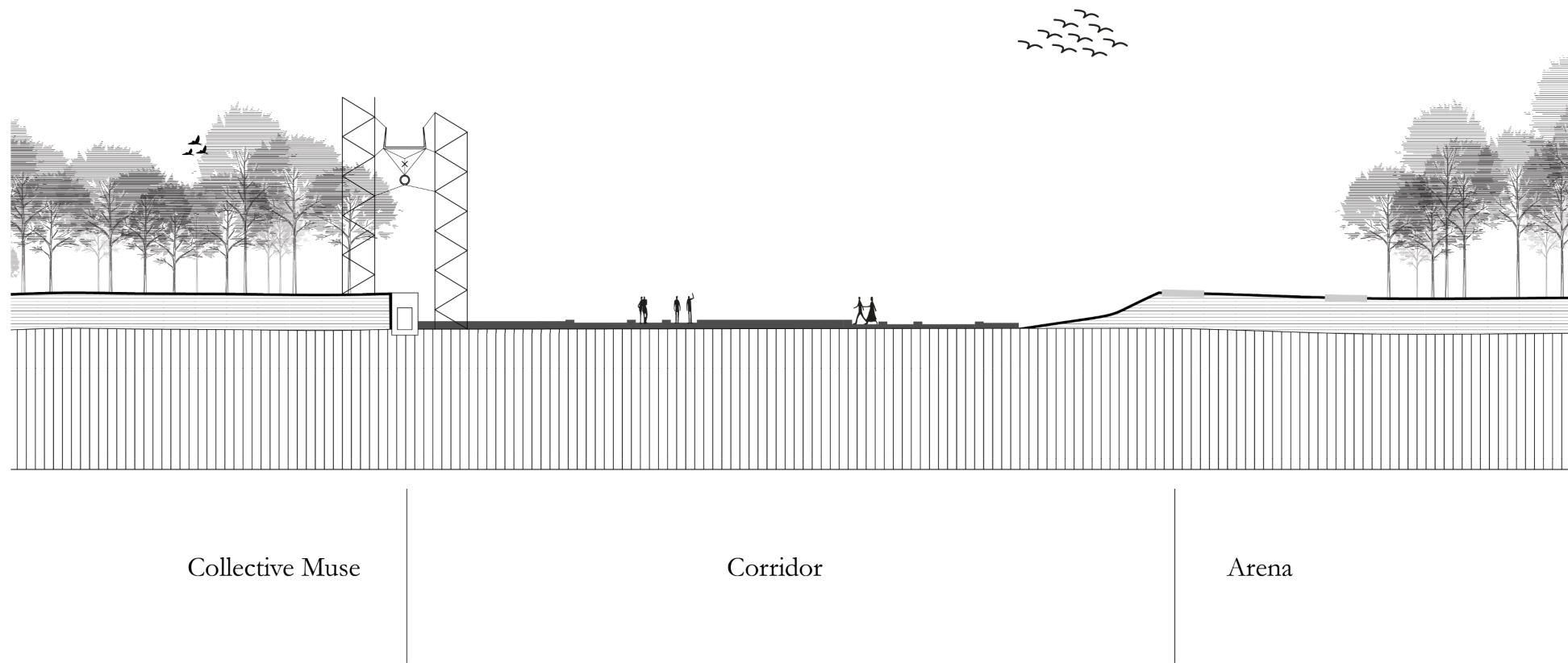
*Coalesce*

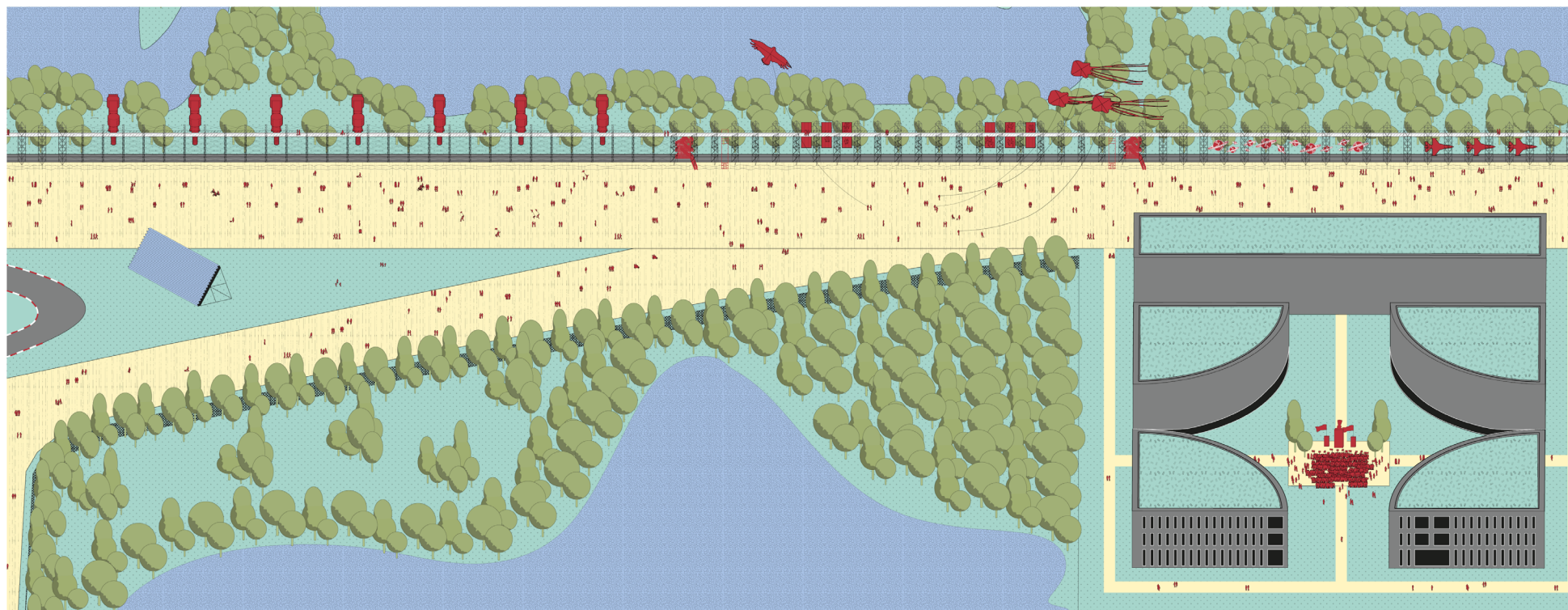


*Generate*

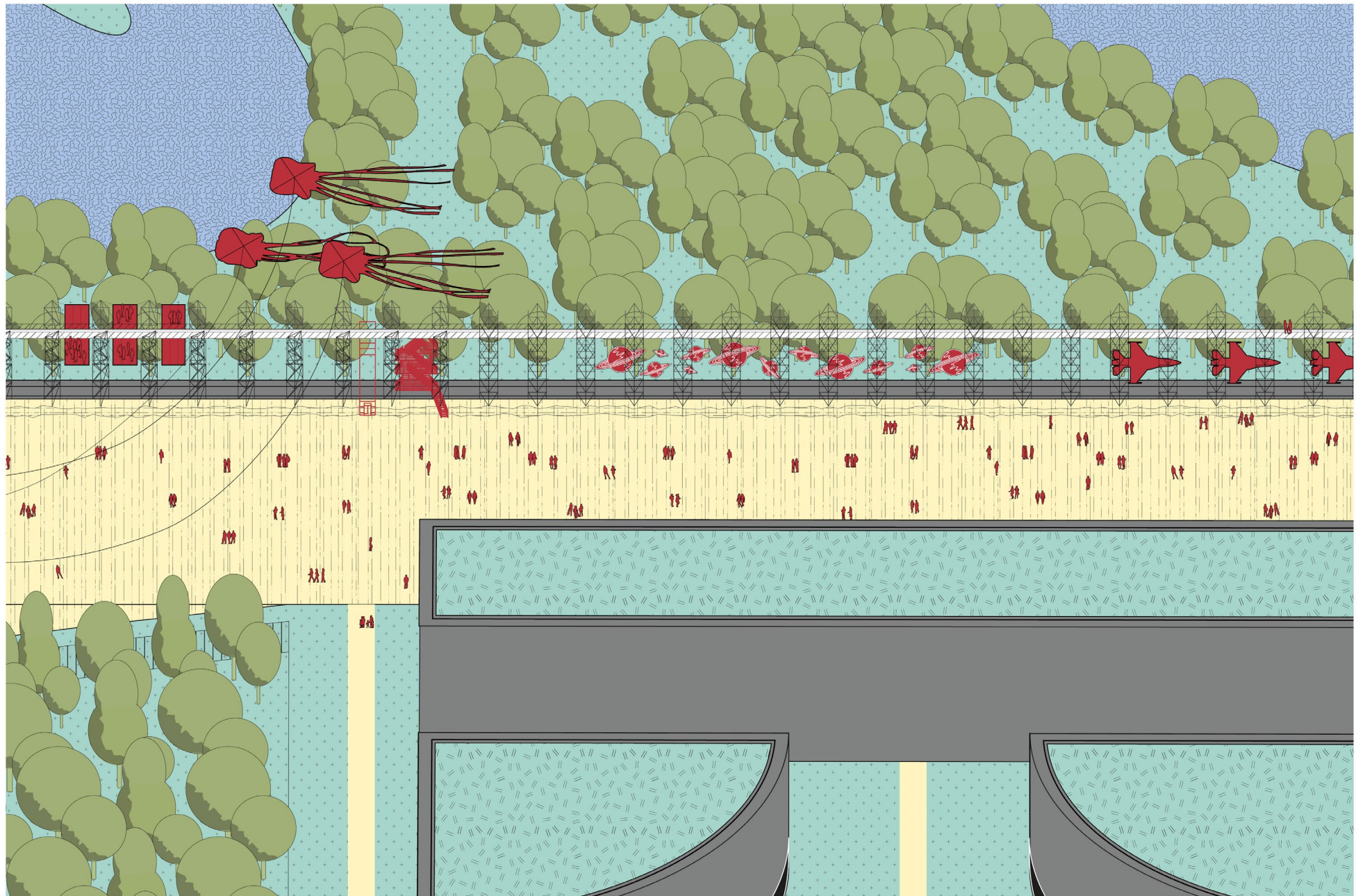


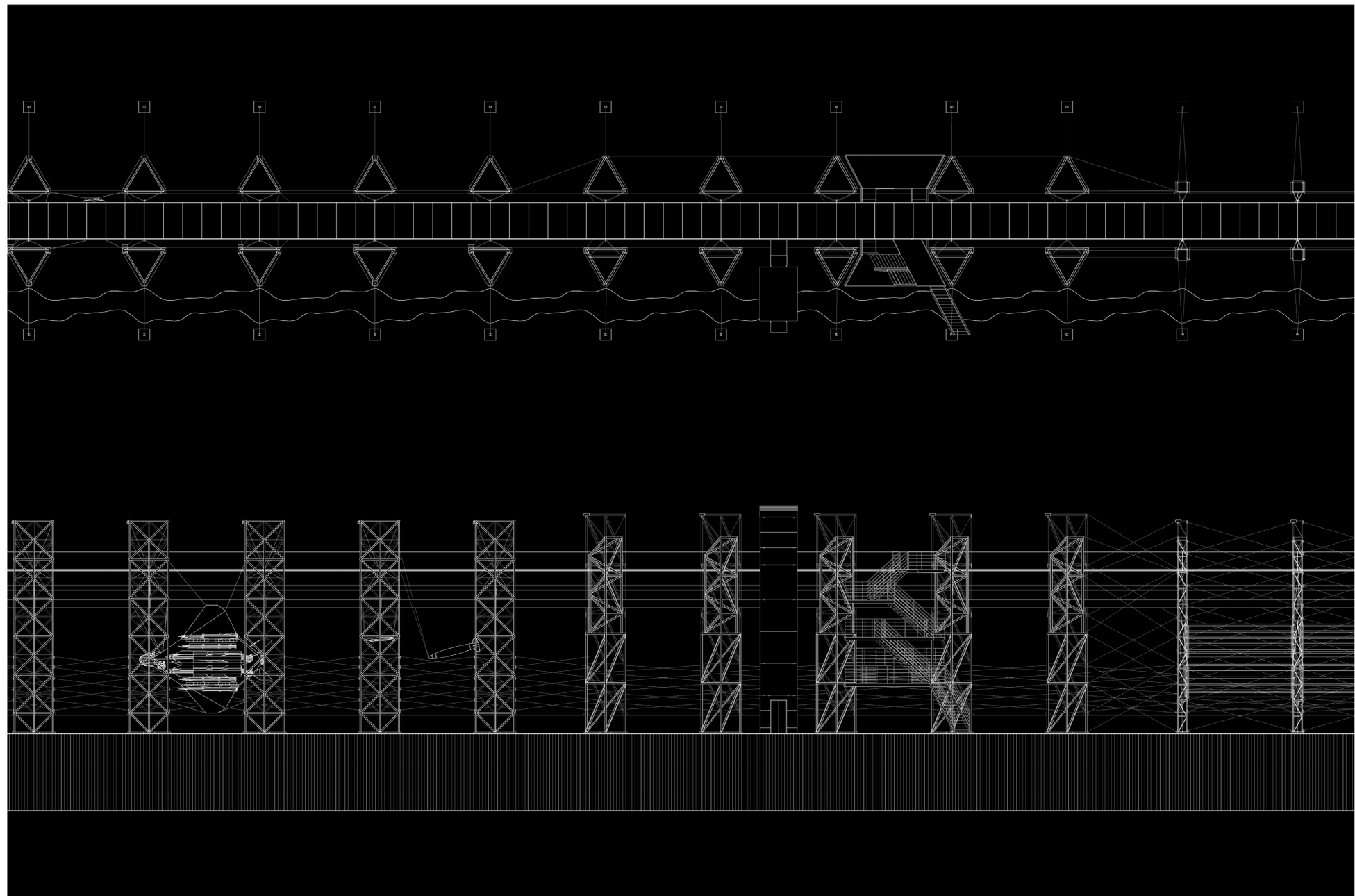








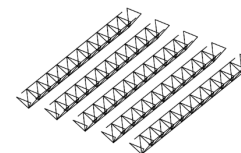
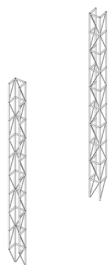
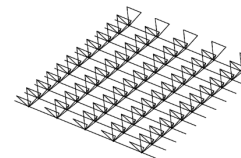
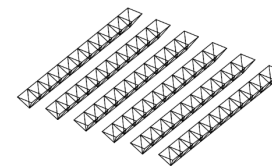
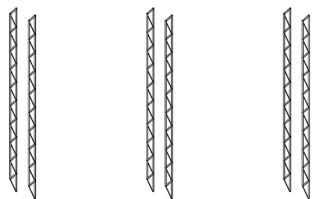
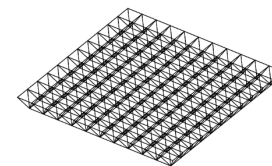
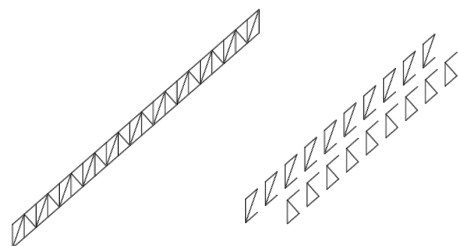
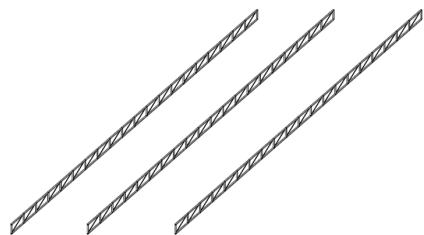








*How is the line assembled?*



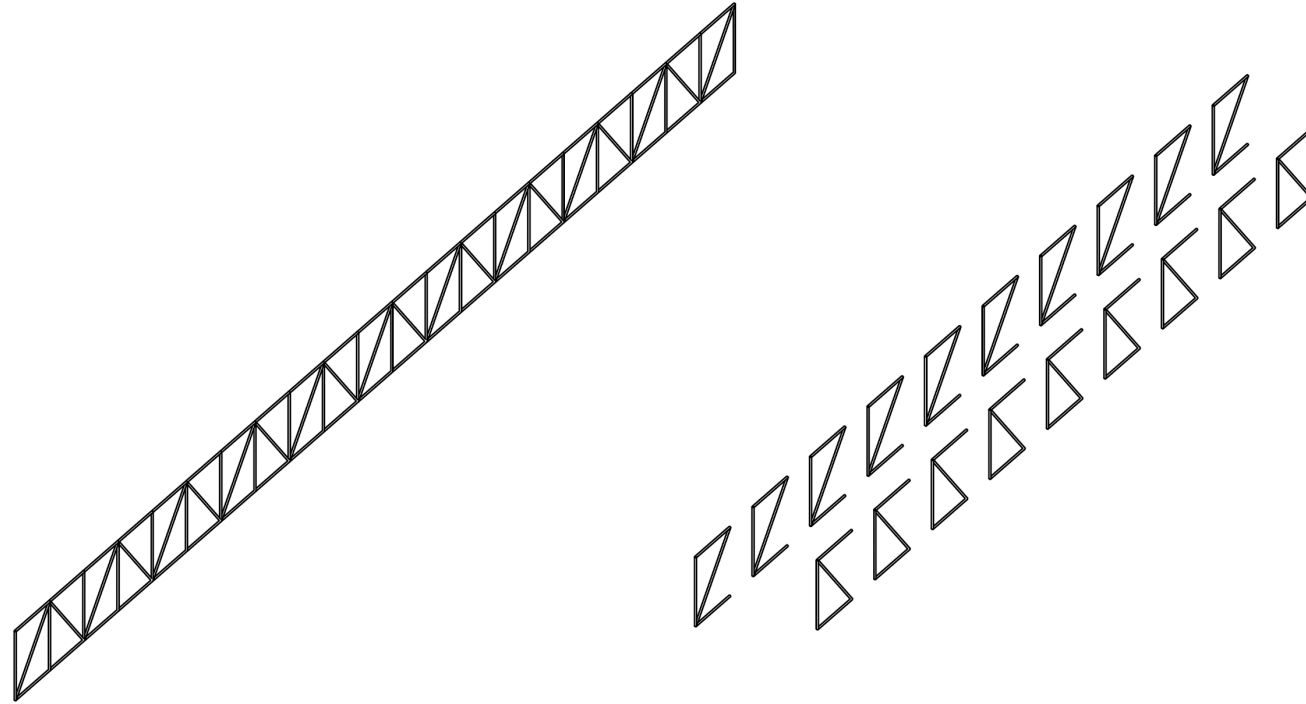
*Frame A*

*Frame B*

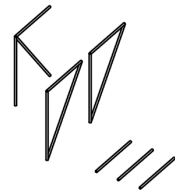
*Frame C*



1.

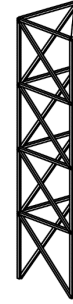
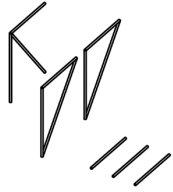


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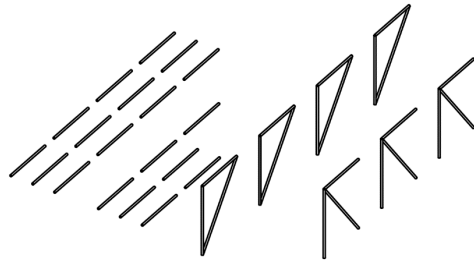




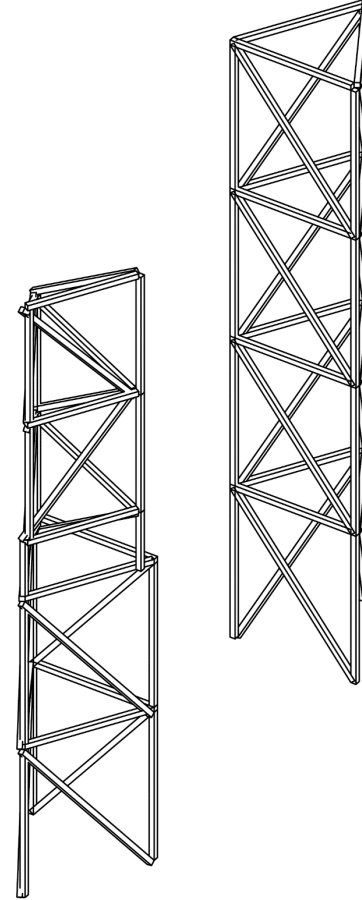
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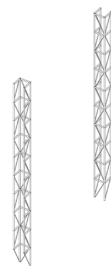
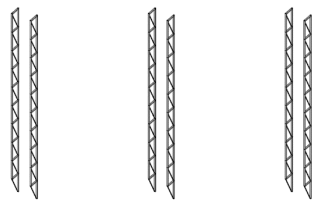
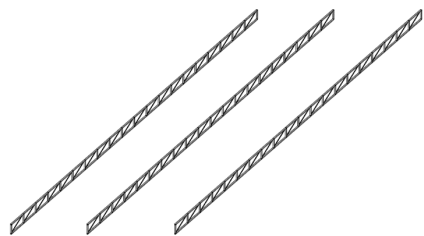
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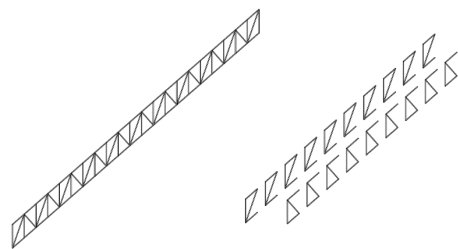
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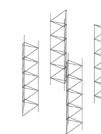
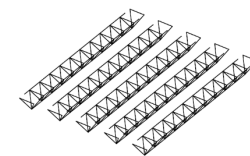
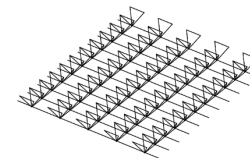
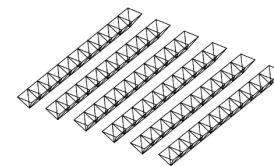
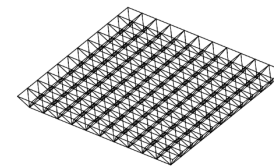




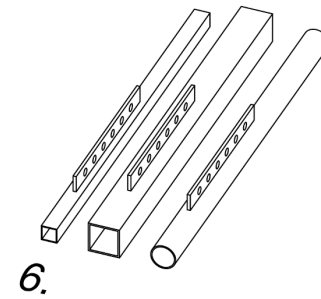
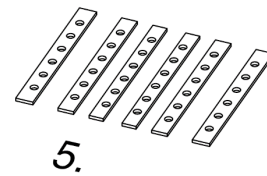
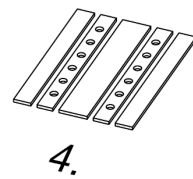
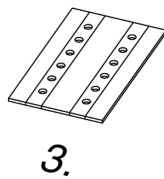
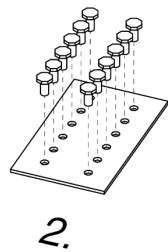
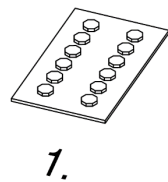
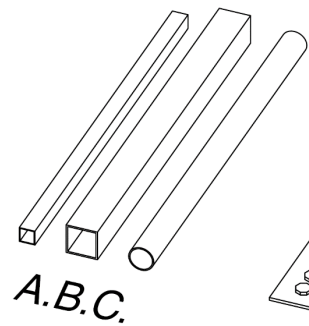
*Frame A*

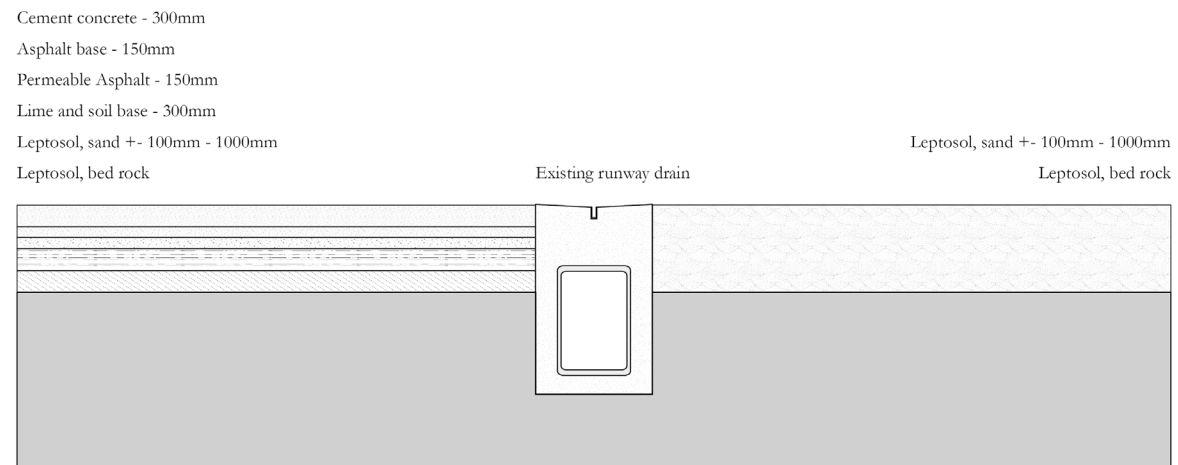


*Frame B*

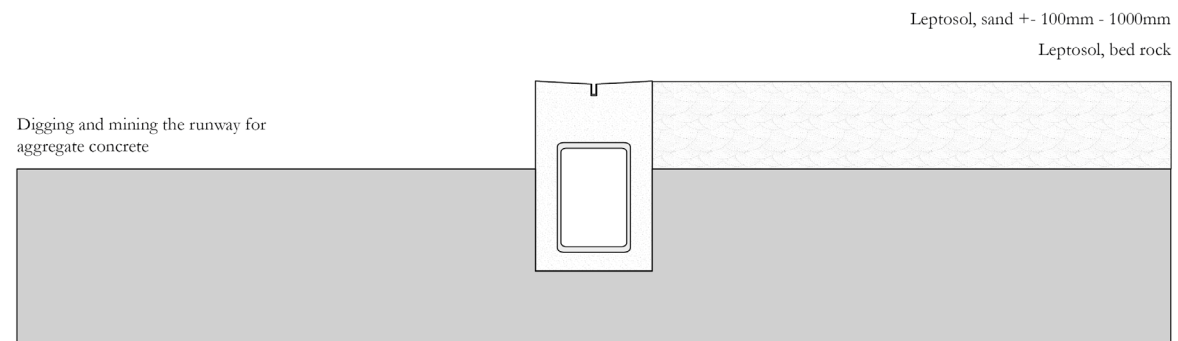


*Frame C*



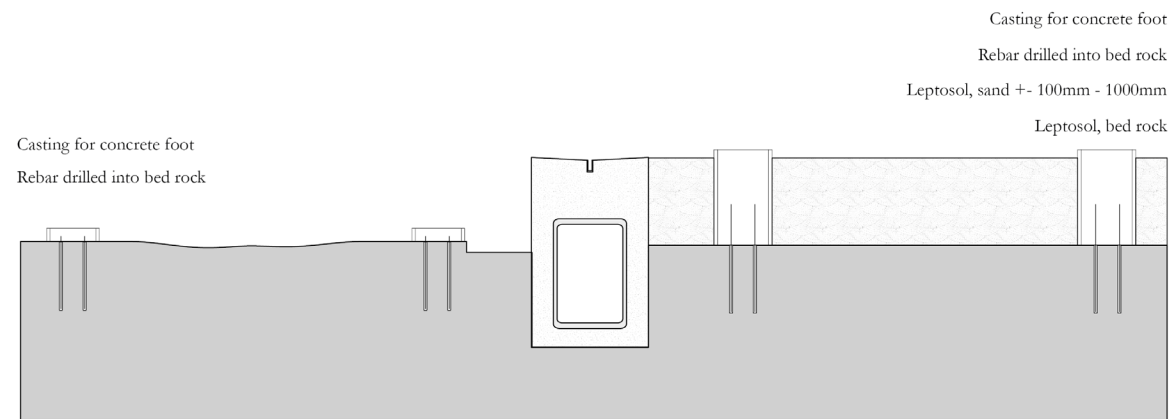


**Assembly process: existing**

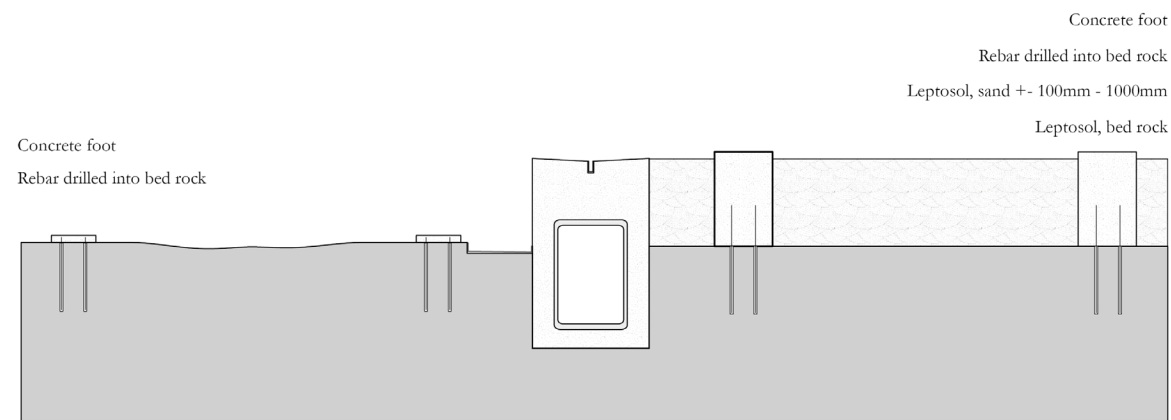


**Excavate and extract**

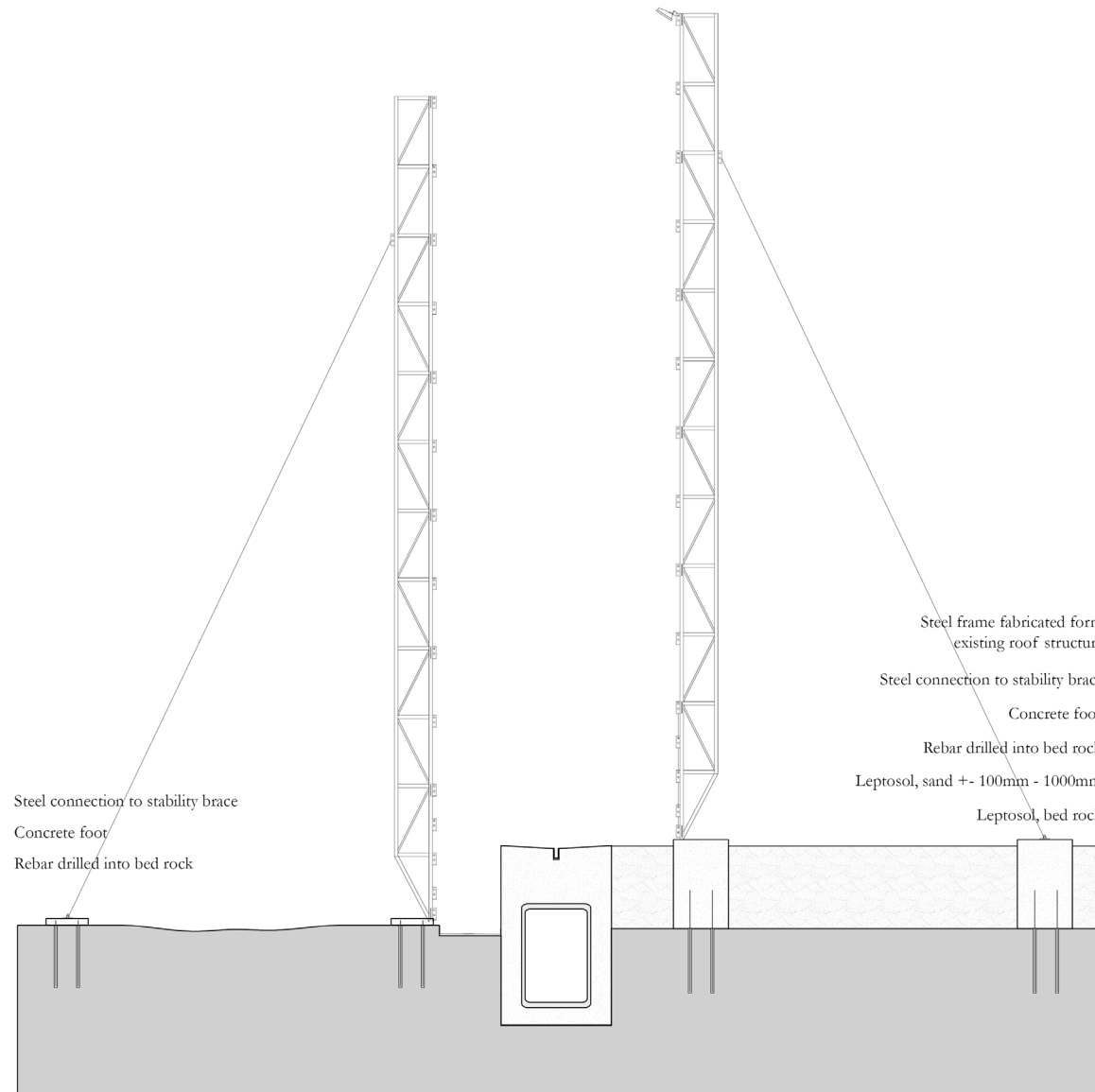




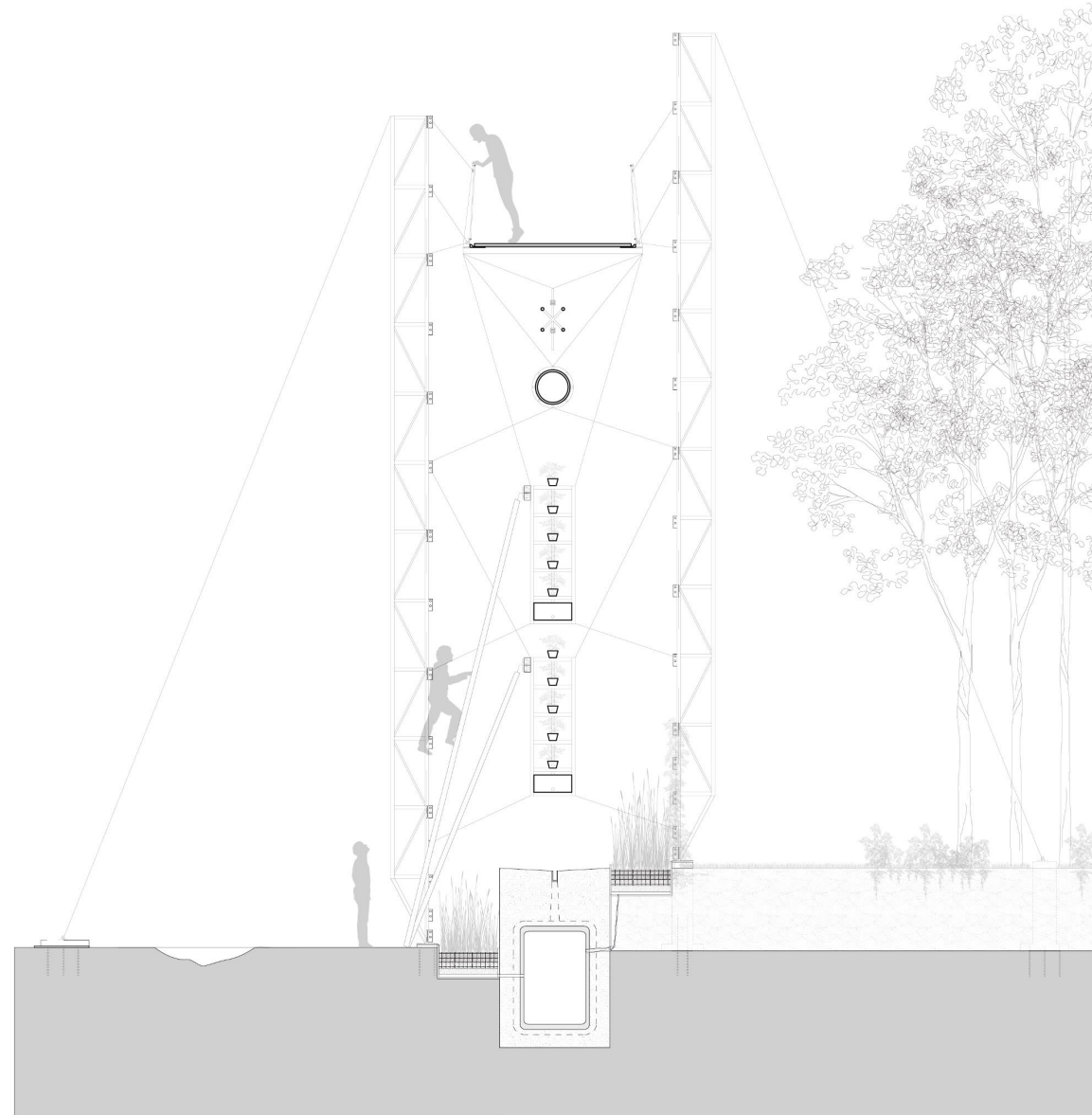
## Bracing for impact



**Casting**



**Brace and structure frame A**



**Frame A: Vertical Farming**

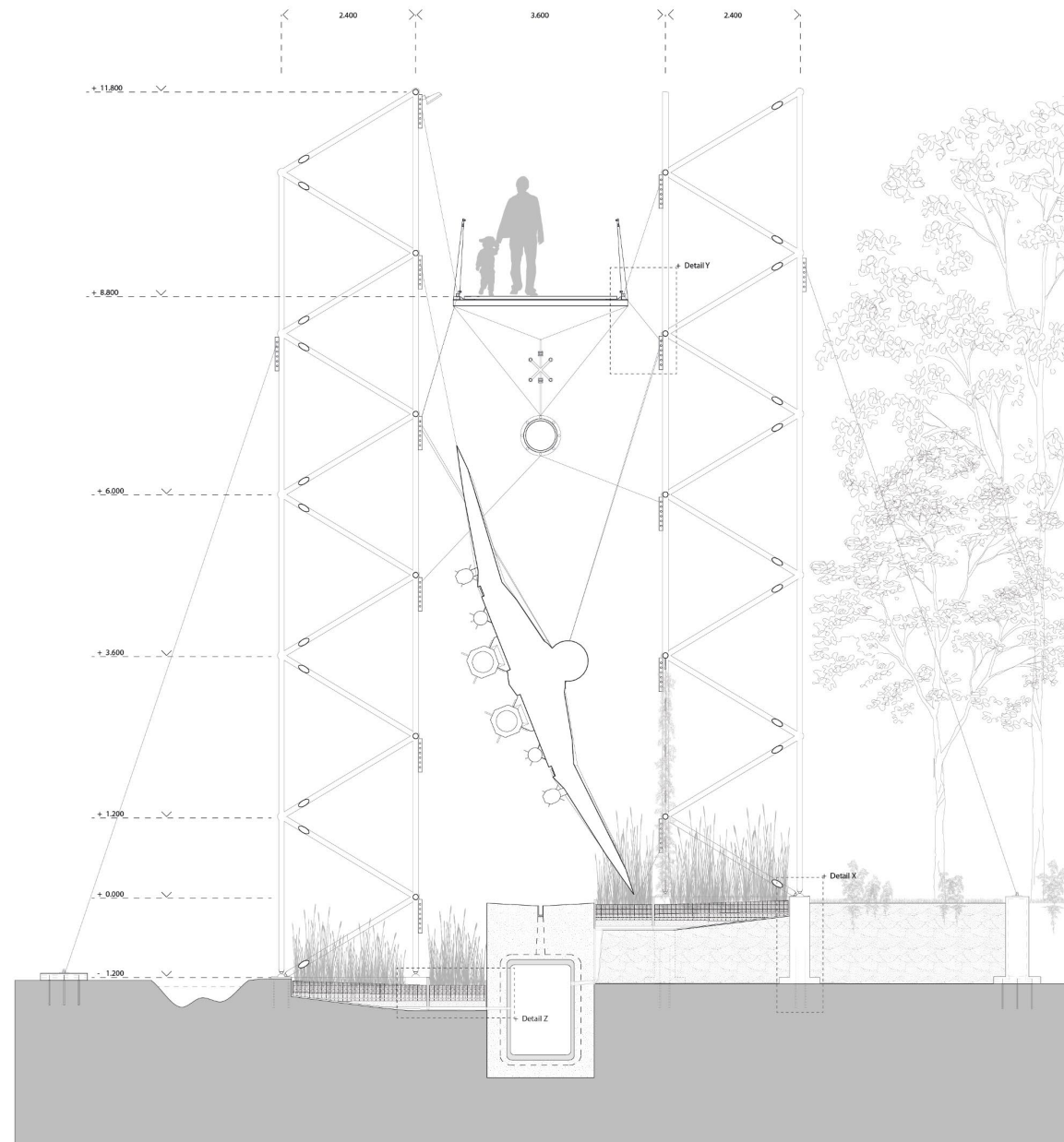




**Frame B: Staircase and transition**

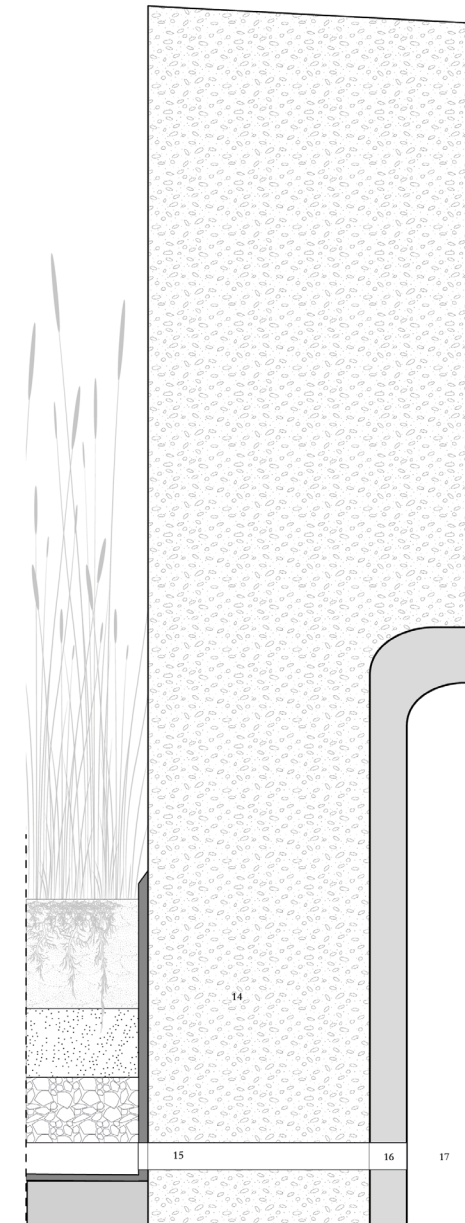
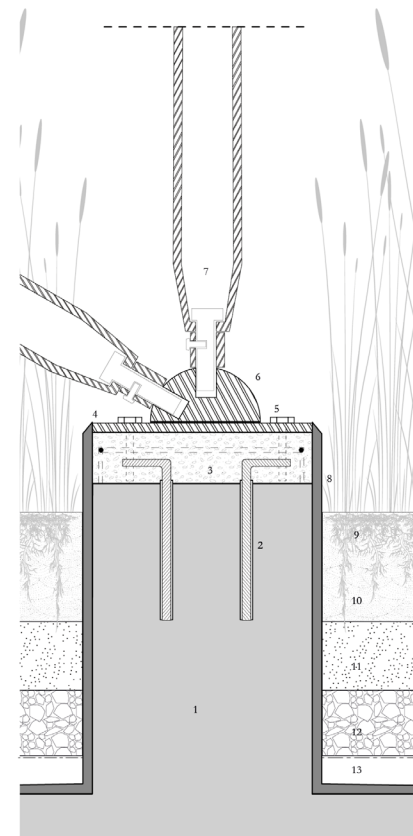


**Frame B: Water and transition**



Frame C: Drone exhibition

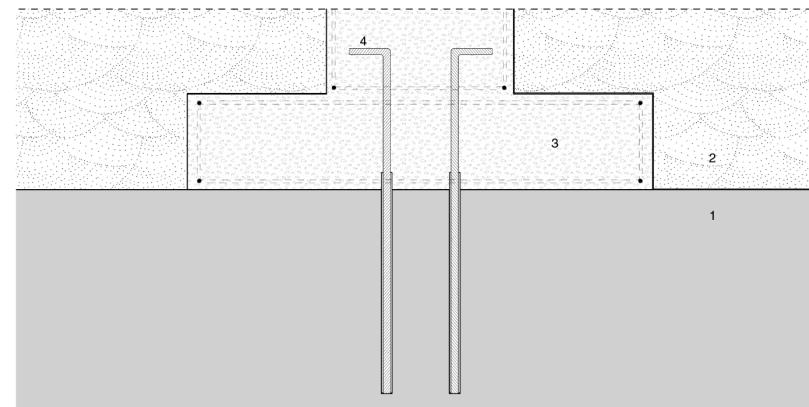
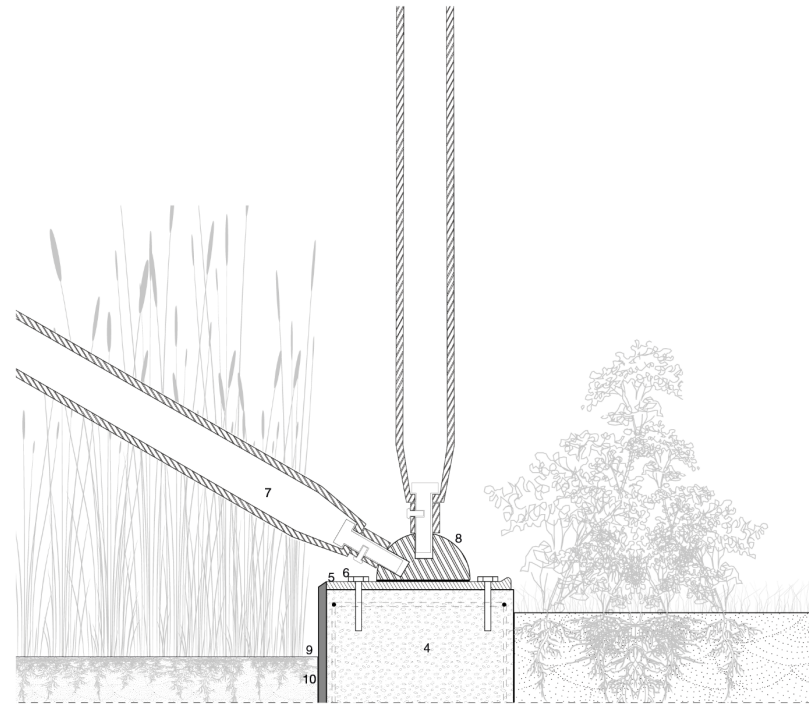
1. Leptosol - Bedrock Soil
2. Rebar connection to bedrock
3. Concrete footing
4. Steel plate bolted to concrete foot
5. Bolt connection
6. Space Frame Member Connections
7. Vertical Space Frame Member 100mm diameter - Treated linseed oil-based anti-corrosion nanocomposite coating material
8. Planter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



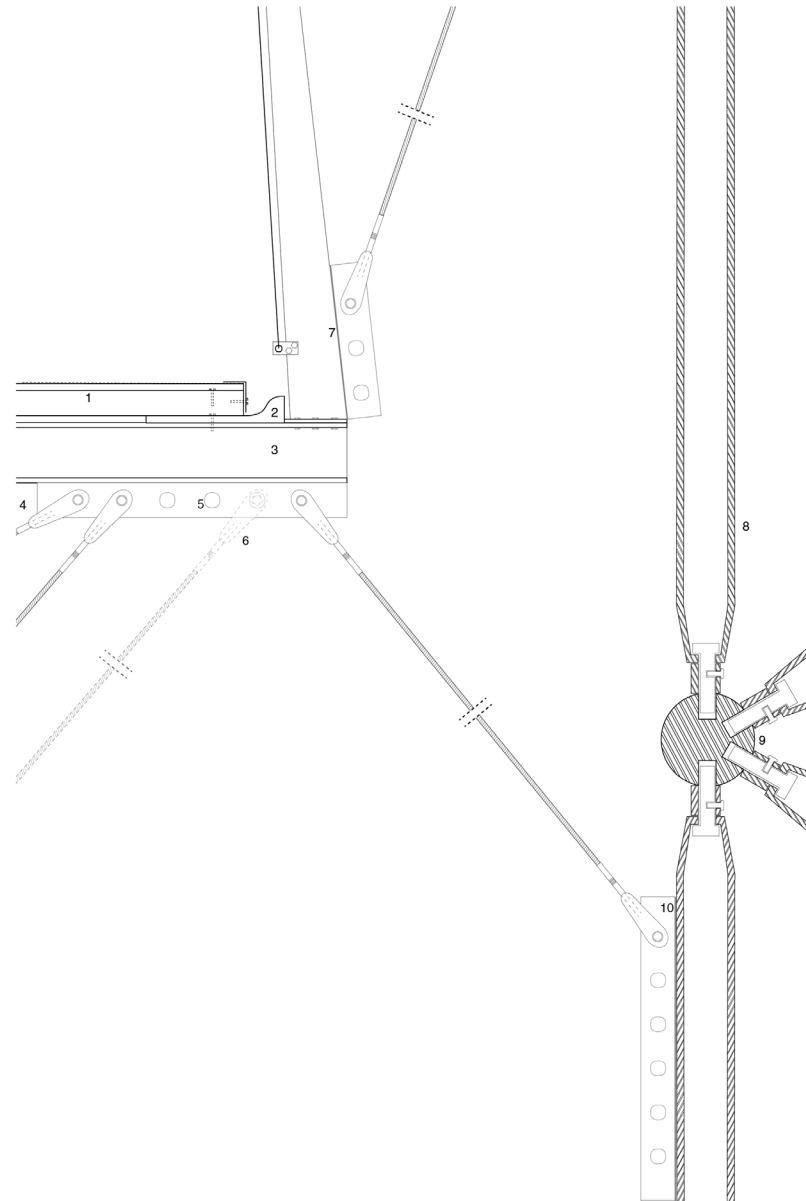


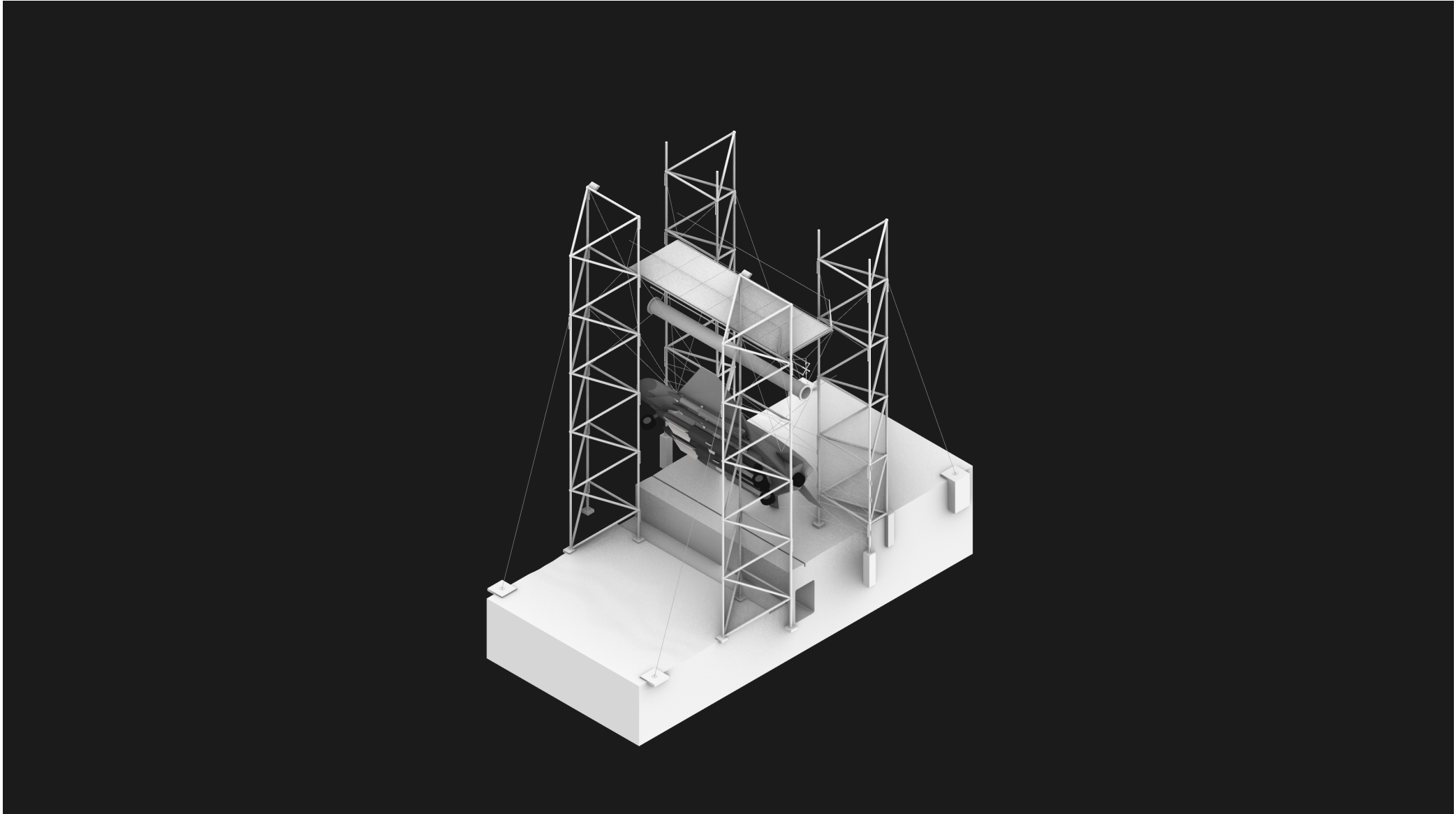


1. *Leptosol - Bedrock Soil*
2. *Leptosol - Sand Soil*
3. *Concrete footing*
4. *Rebar connection to bedrock*
5. *Steel plate bolted to concrete foot*
6. *Bolt connection*
7. *Vertical Space Frame Member 100mm diameter - Treated linseed oil-based anti-corrosion nanocomposite coating material*
8. *Space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





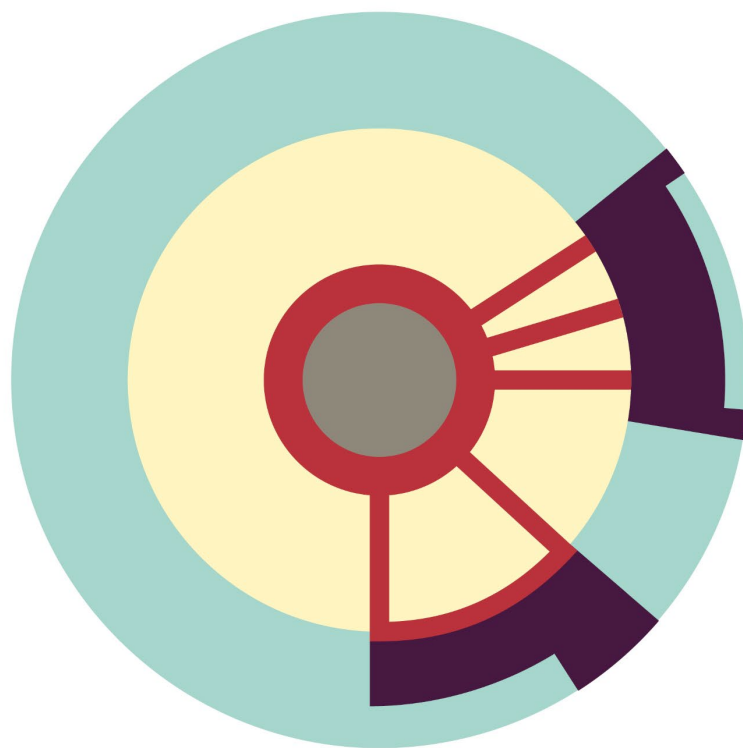
Potential of the line



*To conclude:*

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







**Line as a space**



