



Hybrid Complex
towards
Urban Connection and Transformation

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Module 3: In-Depth Projects

ARK128 Architecture and Urban Space Design
HT 2020- MPARC
Chalmers University of Technology

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a. URBAN CONTEXT

+ Module 2 Conclusion

Be a NODE!

Göteborg- Gullbergsvass- Postterminalen

Zooming out to the scale of whole Göteborg city area, a clear **urban axis** can be marked out. It's easy to tell that Postterminalen just locates on the spot where a likely sequence can keep going. Being adjacent to Odinsplatsen, both Brunnsparken and Körsvagen are within reach, **graphically**.

The truth goes right the opposite, however. People travelling north along Skånegatan will bump into a deadend at Odinsplatsen. Like bumping into **an invisible wall**, they turn either east or west, without a further glimpse at the big building ahead, as if it never exists.

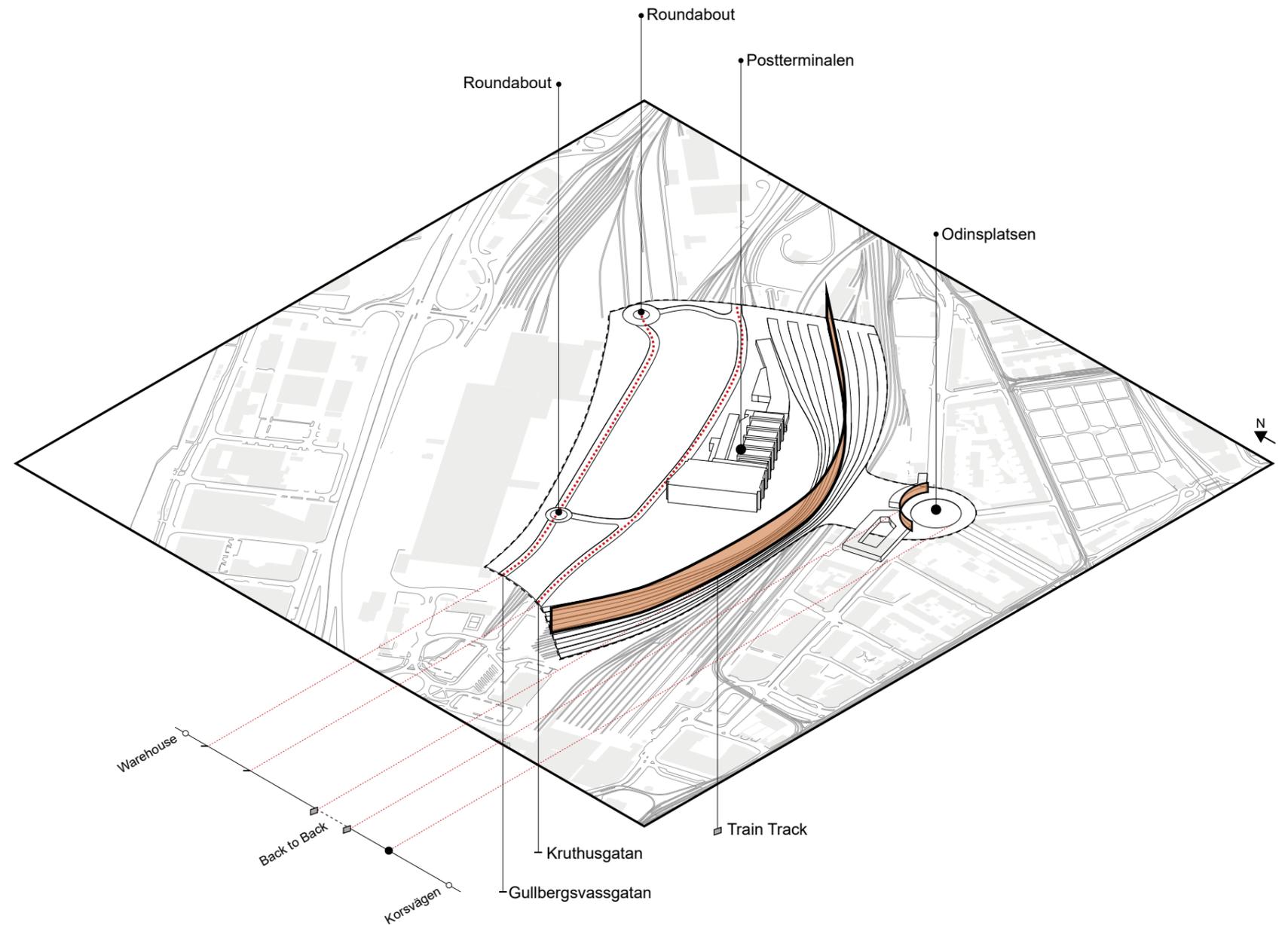
Gullbergsvass, where Postterminalen locates, is a developing district having close relationship, **graphically**, with the central city. The most attractive space in Gullbergsvass is the riverside along Götaälv. On the **fringe** of Gullbergsvass where nowhere else can be connected, Postterminalen, the inland area that is **embraced by trail tracks**, is not popular here as well.

Isolated and **"abandoned"** on both scale, but with huge potential and possibilities, Postterminalen is ready and has the ambition to become **a brand new node** in Göteborg. A node that **connects** different parts of the city, a node that **gets linked** to other parts of the city. Now the problem is just **how**.



b. SCOPE

+ Suprastructure Components



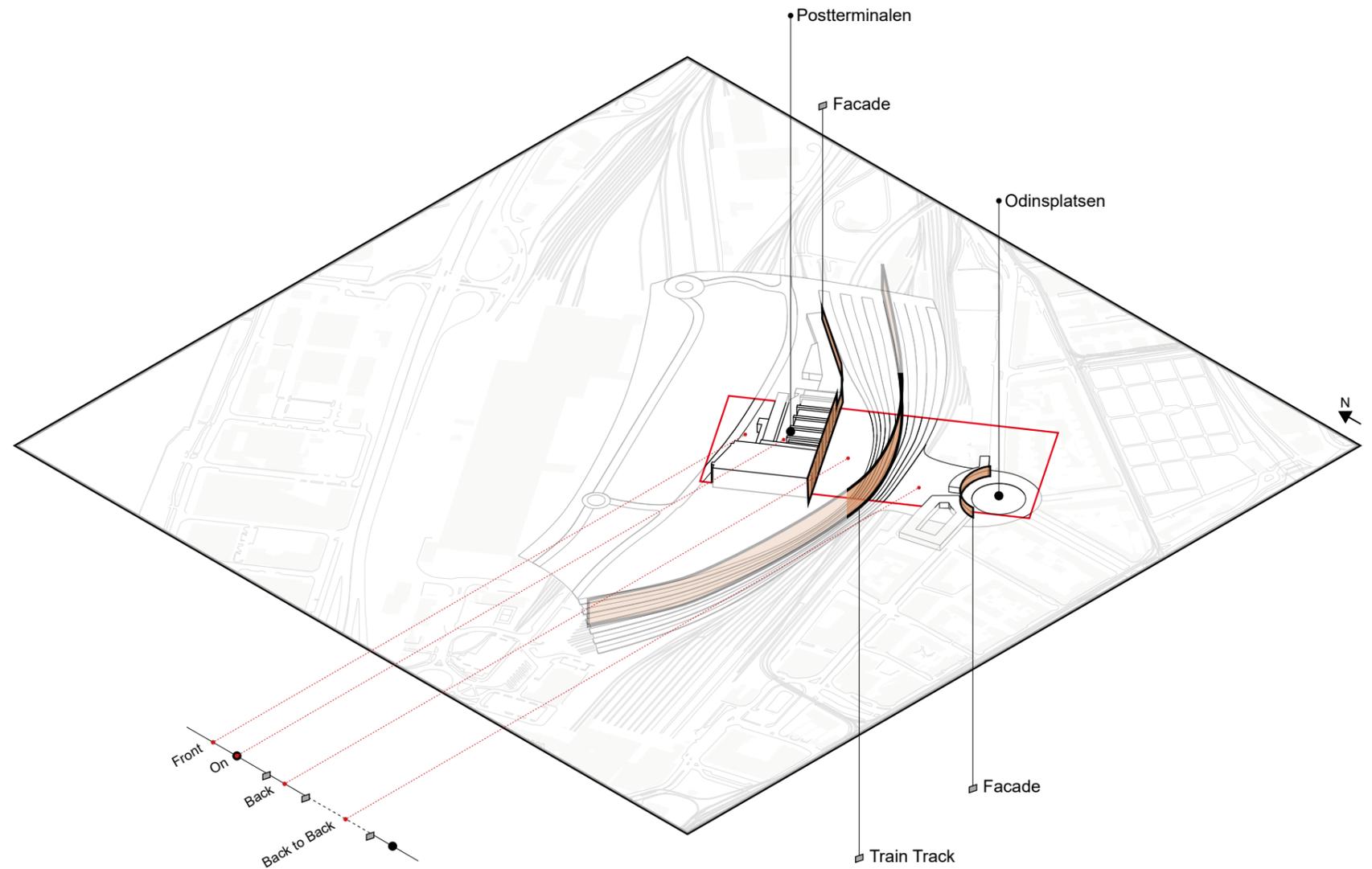
Beyond border

In Module 2, the filtered suprastructure included Odinsplatsen, which doesn't belong to Gullbergsvass district. It was driven with the foreseeing potential of researching beyond the defined district, and the attempt to go more into urban texture. When city develops, there's never a "border". It is always growing and blurring the existing borders.

Filtered Neighborhood Postterminalen

b. SCOPE
+ Suprastructure Components

<u>assets</u>		
2 points	●	
0 lines	—	
3 surfaces	■	
4 volumes	●	
<u>building</u>		
Postterminalen	●	■
Odinsplatsen1 & 9		■
<u>landscape</u>		
Odinsplatsen	●	
<u>infrastructure</u>		
Train track		■
<u>interstice</u>		
Front of building	●	
On building	●	
Back of Building	●	
Back to back	●	

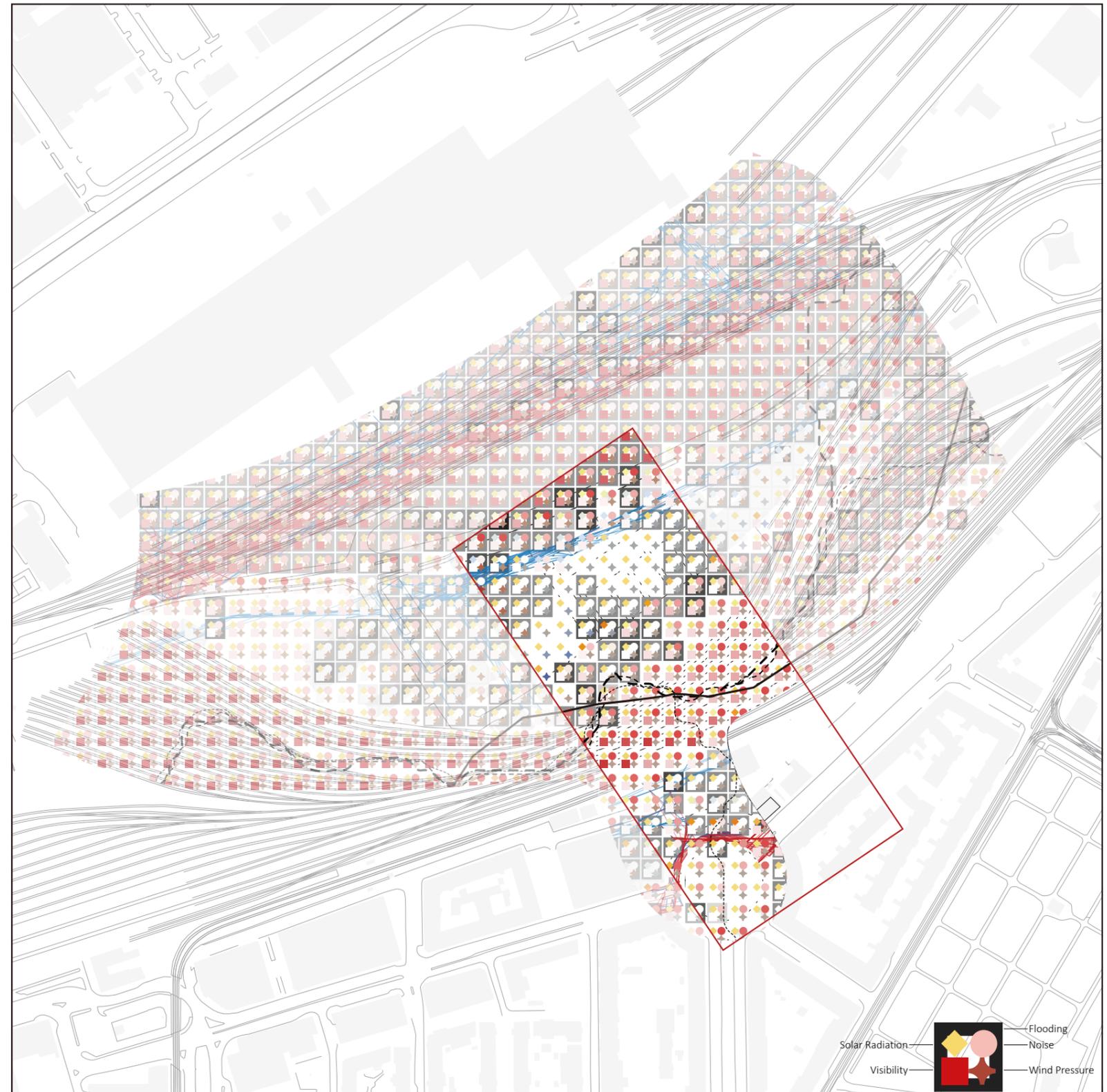
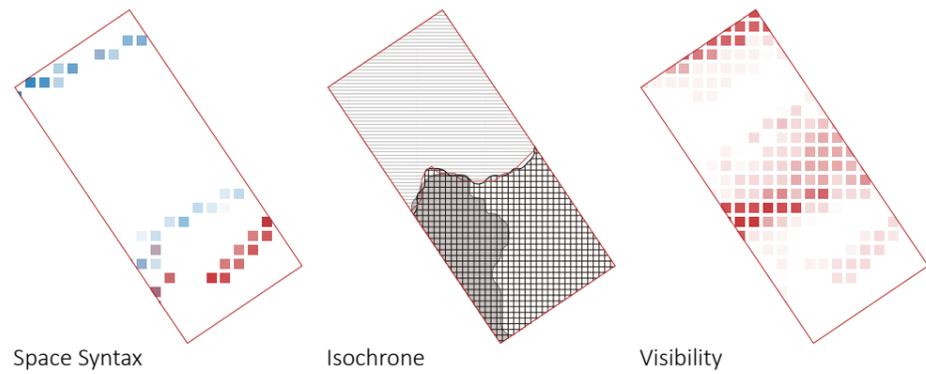
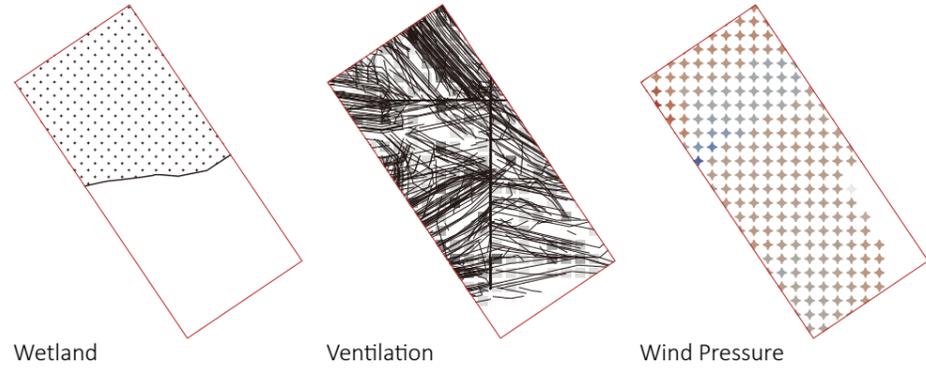
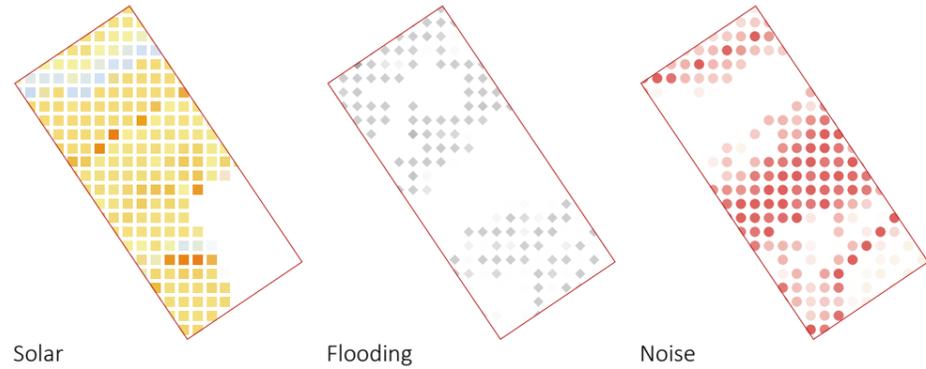


In-depth definition

As a starting point of Module 3, specifically interesting elements are chosen and defined. How assets and interstice as well as building, landscape and infrastructure exists nowadays on site is studied.

In-Depth Scope

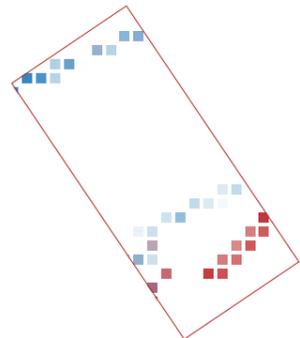
b. SCOPE
+ Components Actant Performance



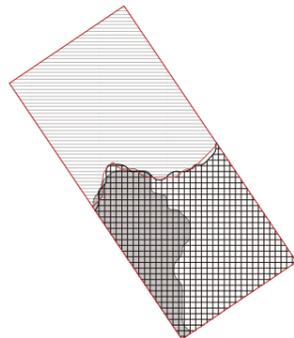
Actant Performance Overlap

b. SCOPE + Selected Actants

MOBILITY

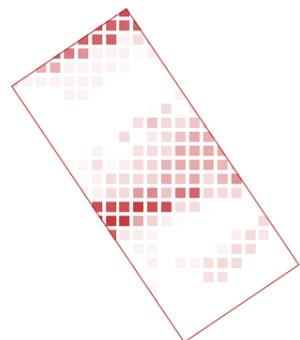


Space Syntax



Isochrone

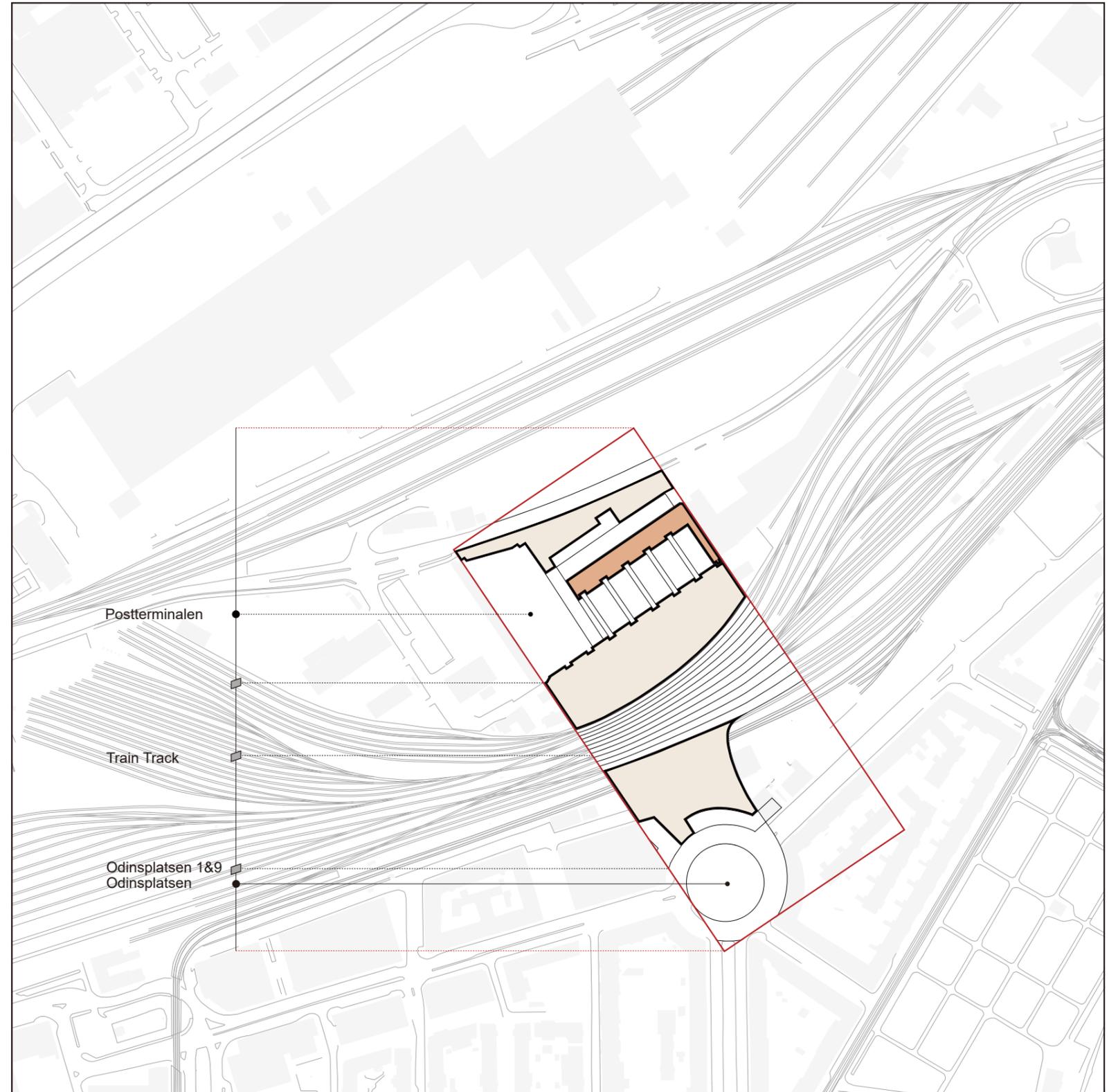
EXPERIENCE



Visibility

From previous analysis from Module 2, mobility and visibility are starting points. They have high relevance with the concept and idea on the site.

The framed area is not a limitation to further design, but to help first concentrate on the most important aspects. It a starting point.



c. CONCEPT
+ Goals

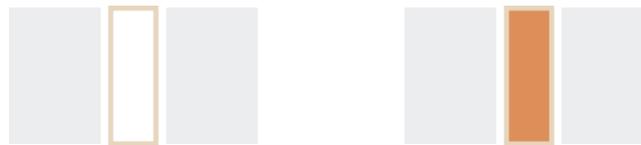
A

(break) border - (build) connection



A

(turn) undervalued and abandoned interstice - (into) promising and energetic space



A

(transform) fringe - (to) center



B

(build) multi-elevation urban interface & (create) a rich public topography



C

(respond to) built environment



c. CONCEPT
+ Geometry

Wall ?

With all the borders and occupying assets, they stand like visible or invisible walls. What is wall? Normally we view it as a two dimensional element that separate one side from the other. When we make holes, we get connection. In physical models, we use a piece of board to represent a wall.

What if we make it really big in scale, like a building?

function

Separation

Connection

Protection

Program

parameter

Length

Height (up/down)

Thickness

Direction

Material

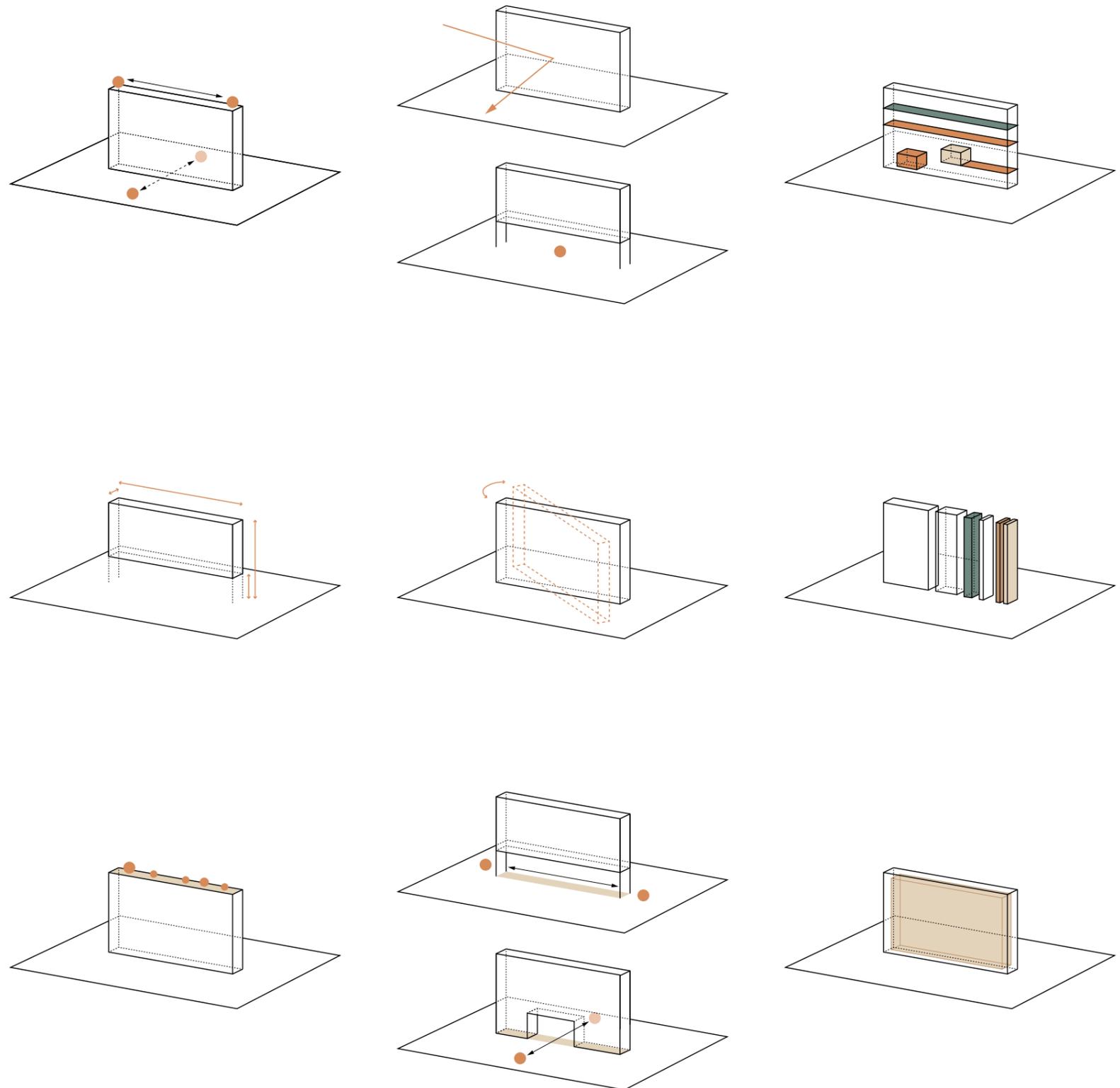
space

Above

Beneath (across/along)

In

Sides



d. GENERATION PROCESS

+

Filtered Context

building

Postterminalen ● □

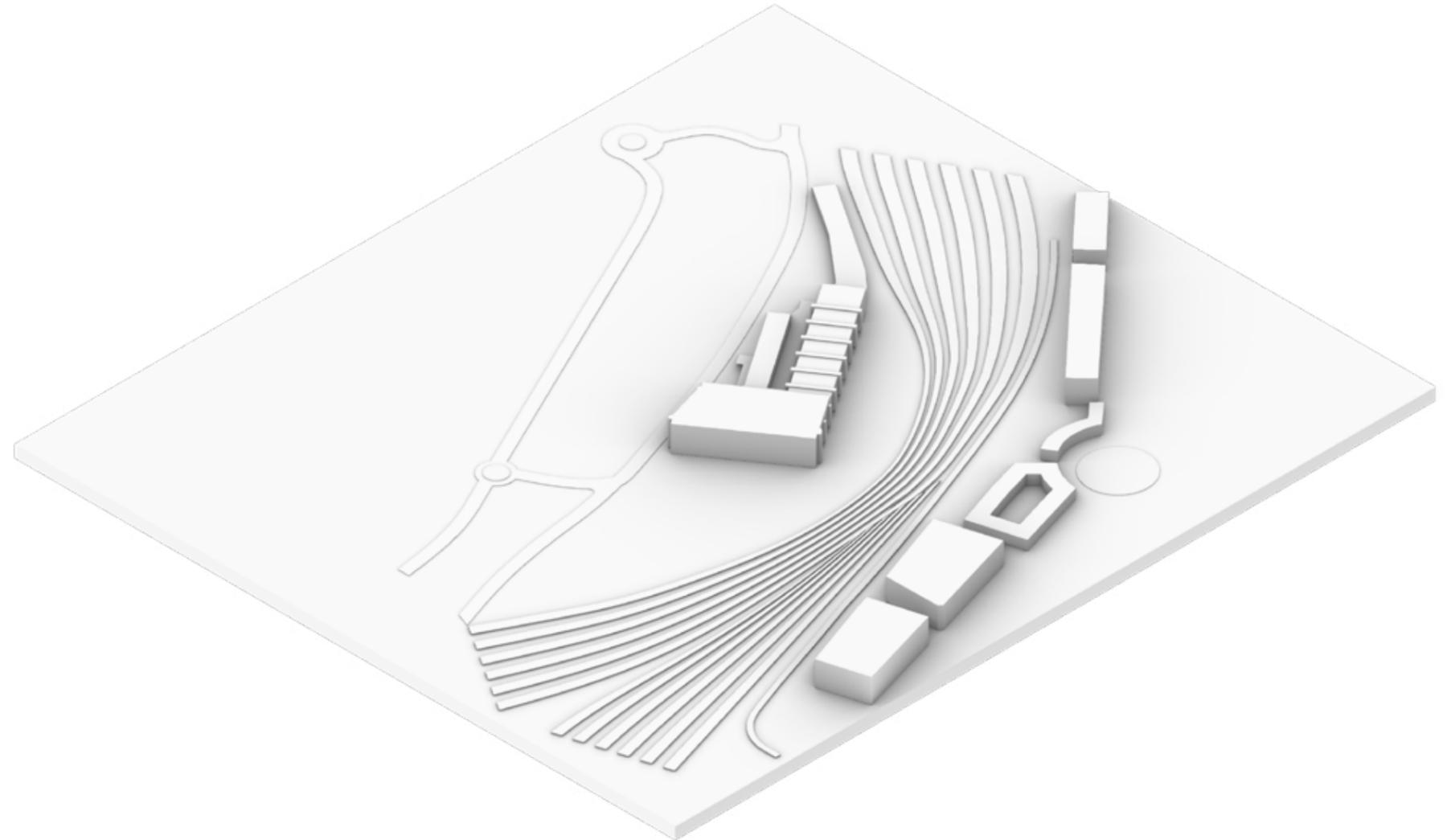
Odinsplatsen1 & 9 □

landscape

Odinsplatsen ●

infrastructure

Train track □



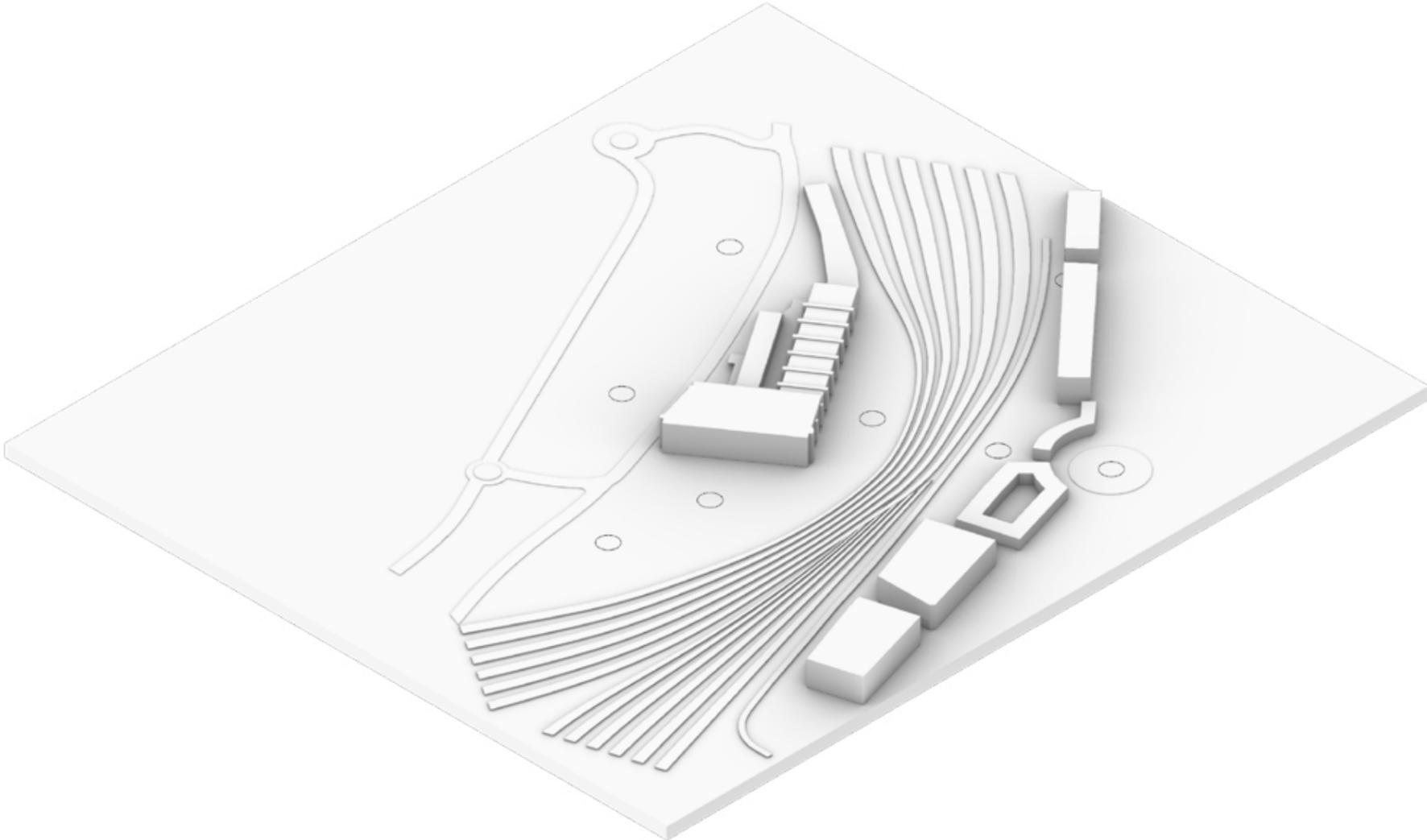
Following is the process of how the project is developed based on the concepts and actants.

d. GENERATION PROCESS

+

Attractive Spots

Places that have possibilities to get connected are marked out.

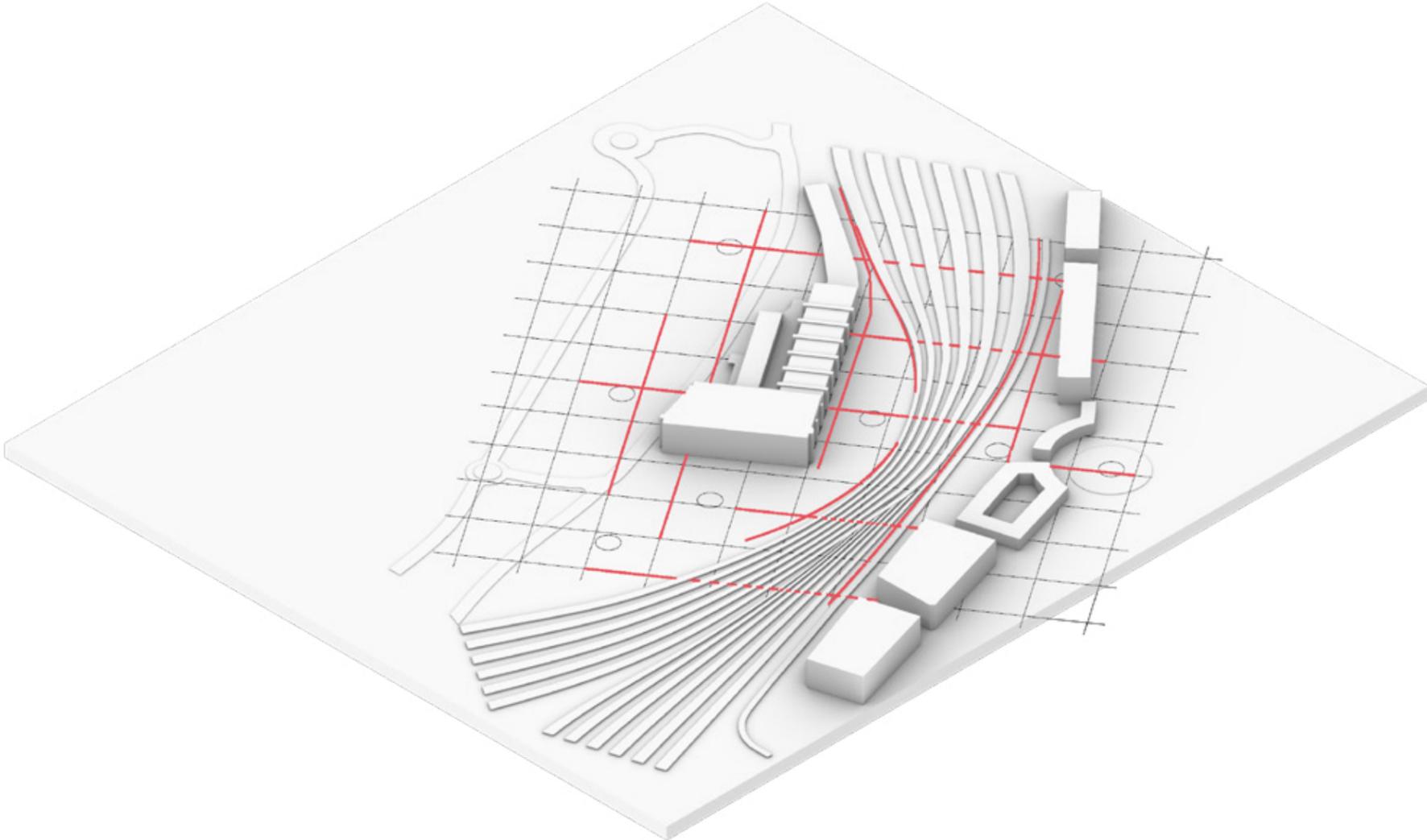
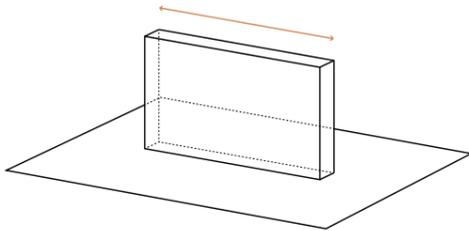


d. GENERATION PROCESS

+

Connections

A 50m grid is applied to start. Based on the marked out spots and grid system, connecting lines are defined.

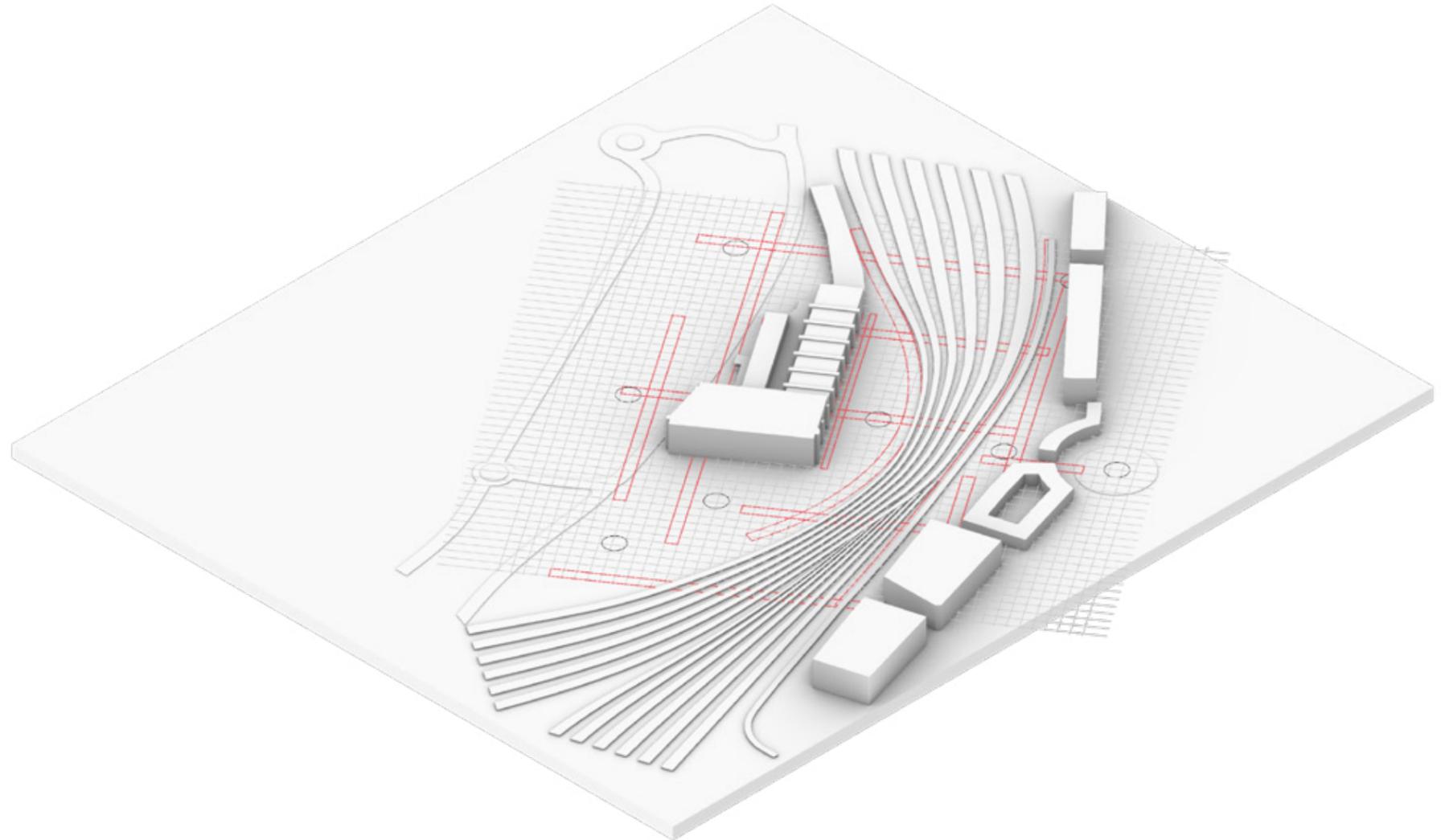
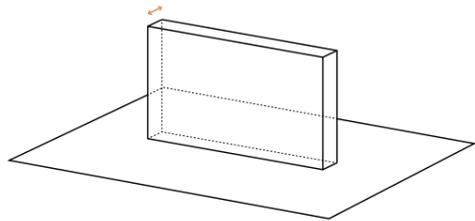


d. GENERATION PROCESS

+

Add Width

A smaller 10m grid is applied. A basic 10m width is added to almost all the connection lines. It is a basic scale that is available for housing function. Other functions all need larger space.



d. GENERATION PROCESS

+

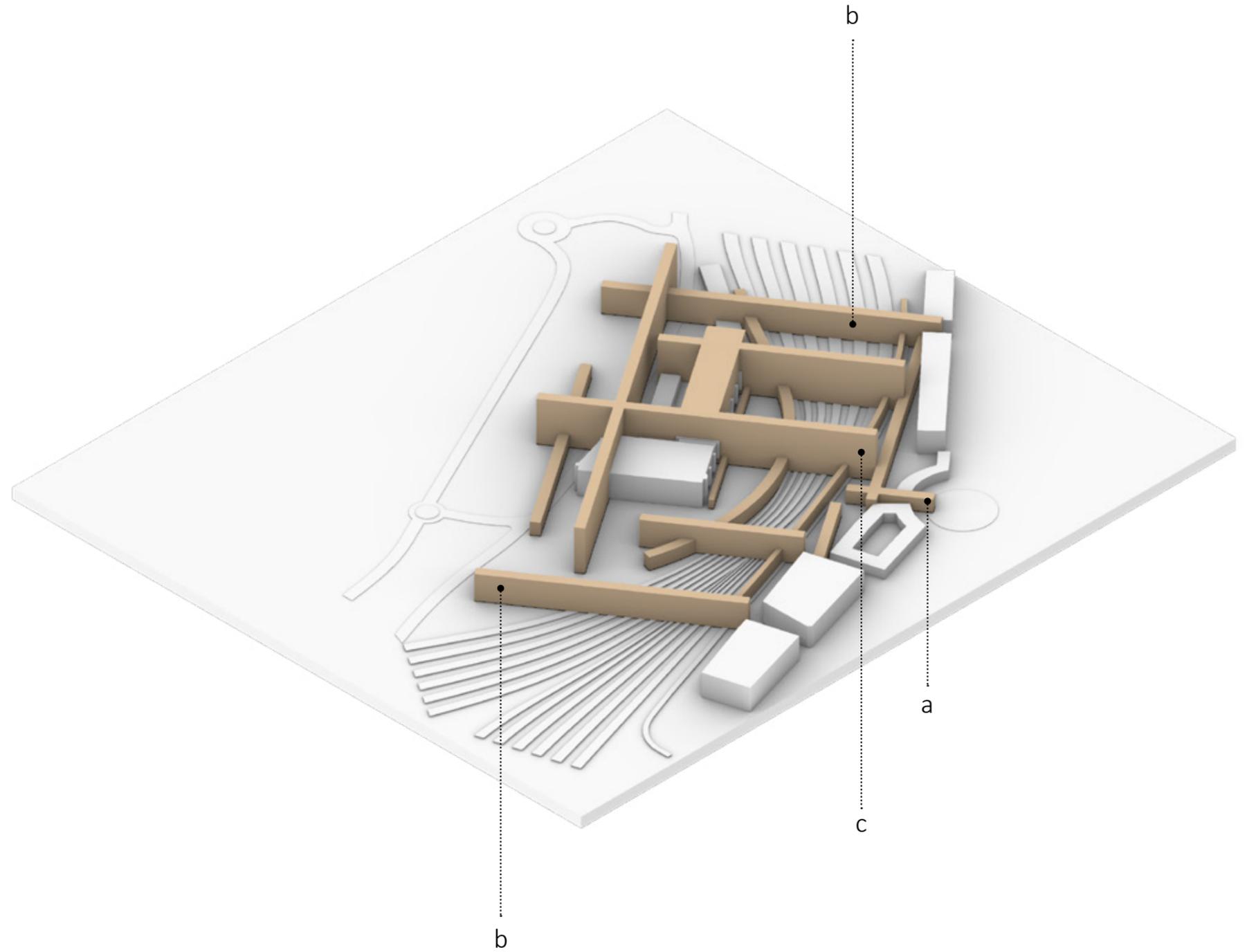
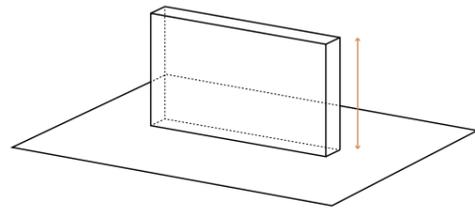
Add Height (upper)

Height is defined by the existing context. Based on where the connections cross over, different height is applied.

a. ground: 0m
+15m

b. track/low part: 10m
+20m

c. high part: 30m
+20m



d. GENERATION PROCESS

+

Add Height (lower)

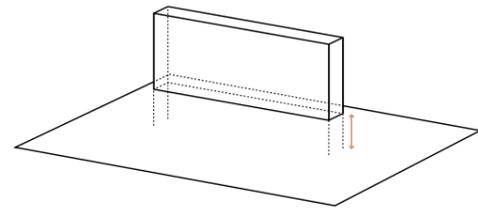
With the same rule, places that bump into the existing assets are taken away. A preliminary characteristic is also considered. For example, places where are more likely to be opened up in the bottom part to connect people along the direction of the "wall", are also lifted up 10m.

Four basic typologies of spaces start to shape.

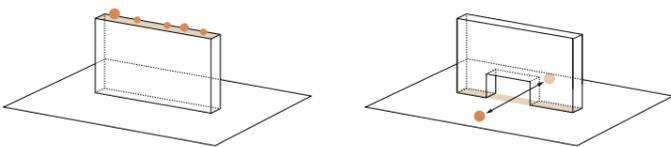
a. ground/protecting: 0m

b. track/low part/connecting: 10m

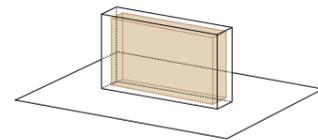
c. high part: 30m



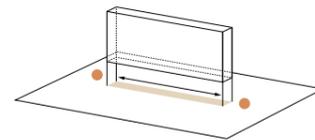
a. bridge



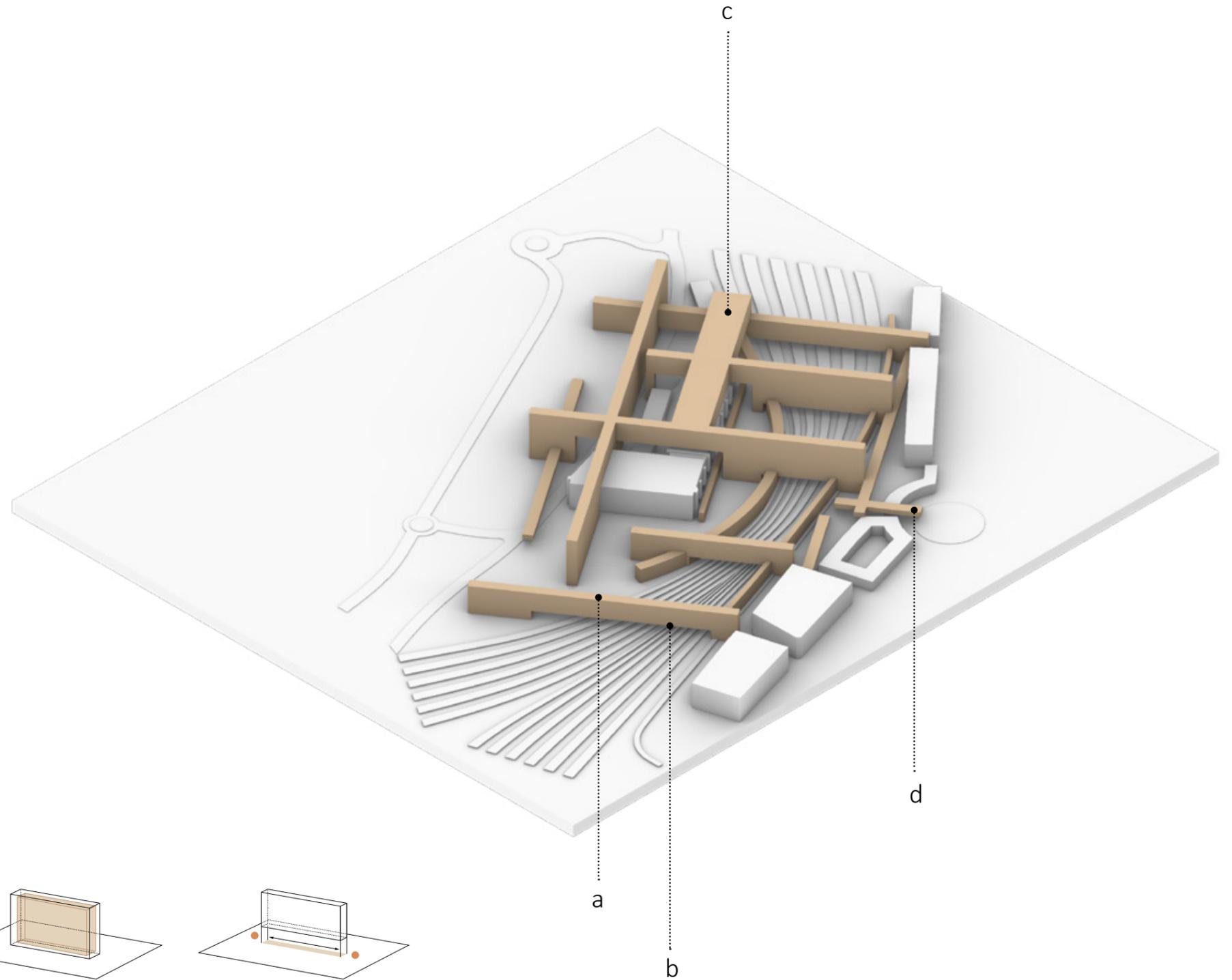
b. tunnel



c. box



d. corridor

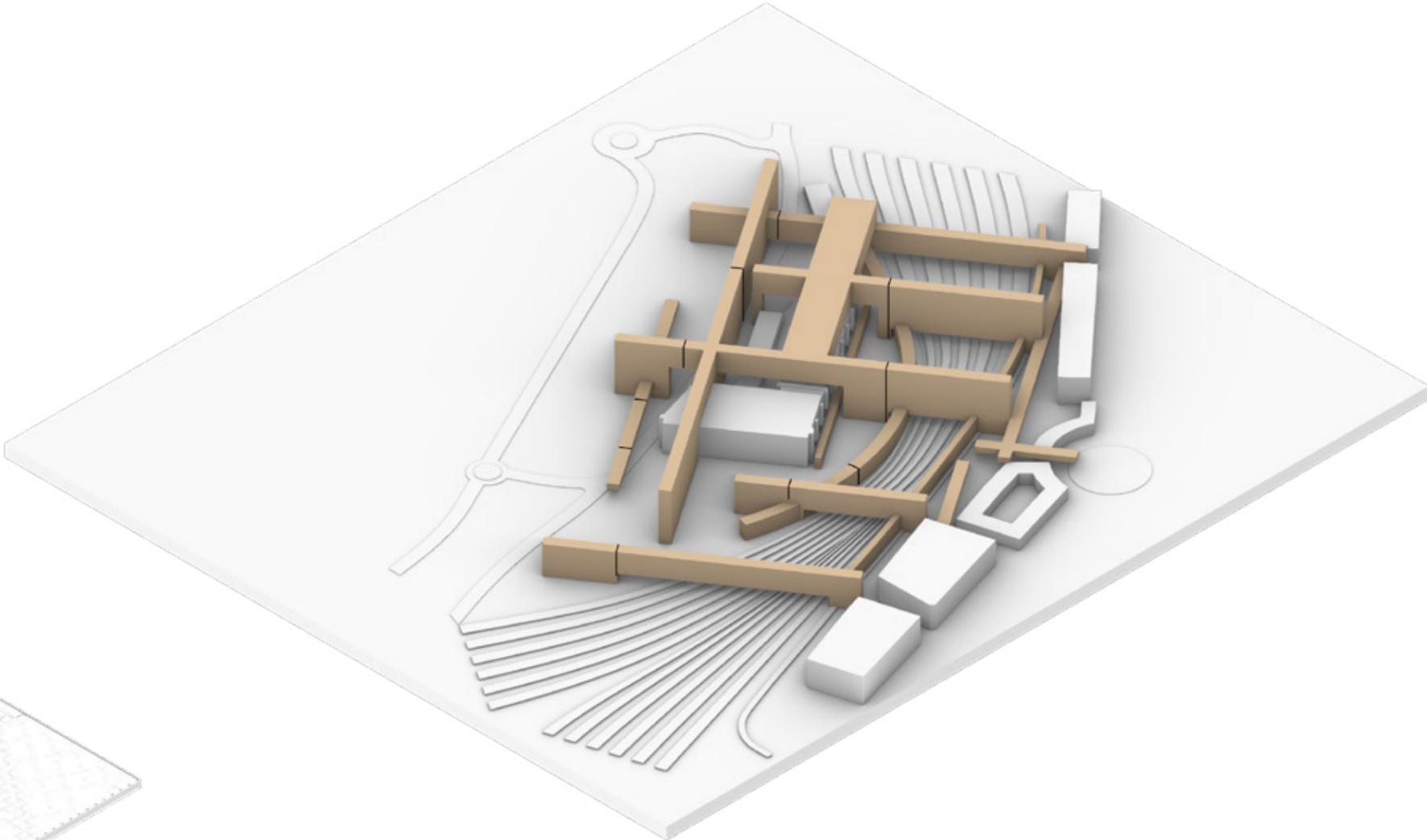
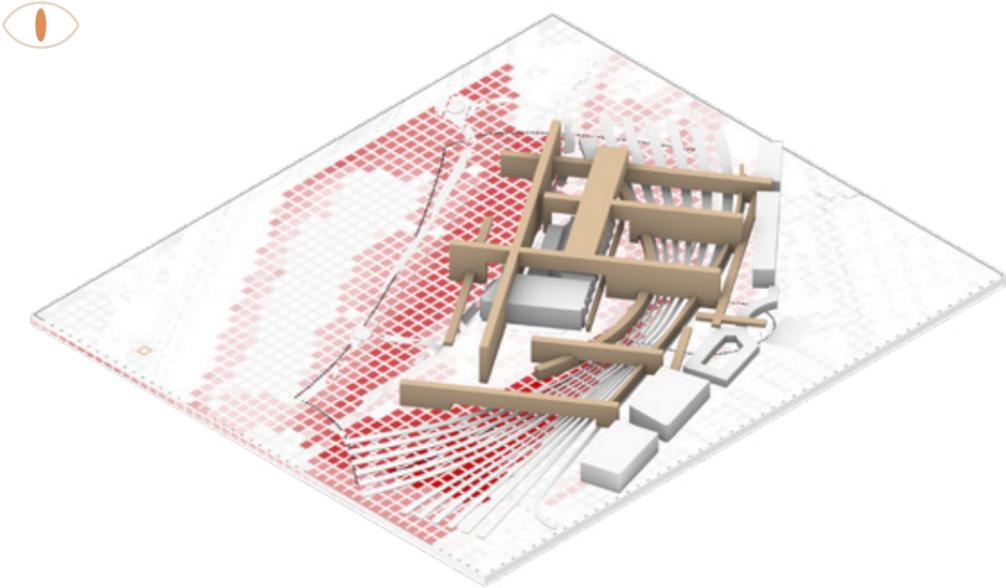


d. GENERATION PROCESS

+

Split - Visibility

Based on visibility mapping, big volumes are split up to get ready for further adjustment.



Visibility Mapping

d. GENERATION PROCESS

+

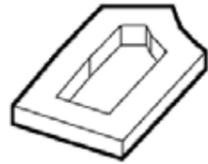
Reference Height

A height system is applied. More specific project centers are defined. The intention is to be higher in the inner part so good visibility can be reached from a distance and when people get closer, lower volumes in the front can be seen as well.

Height definition comes from the urban context.

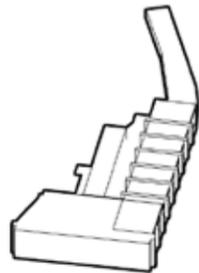
15m
Built Environment

Neighbour Blocks



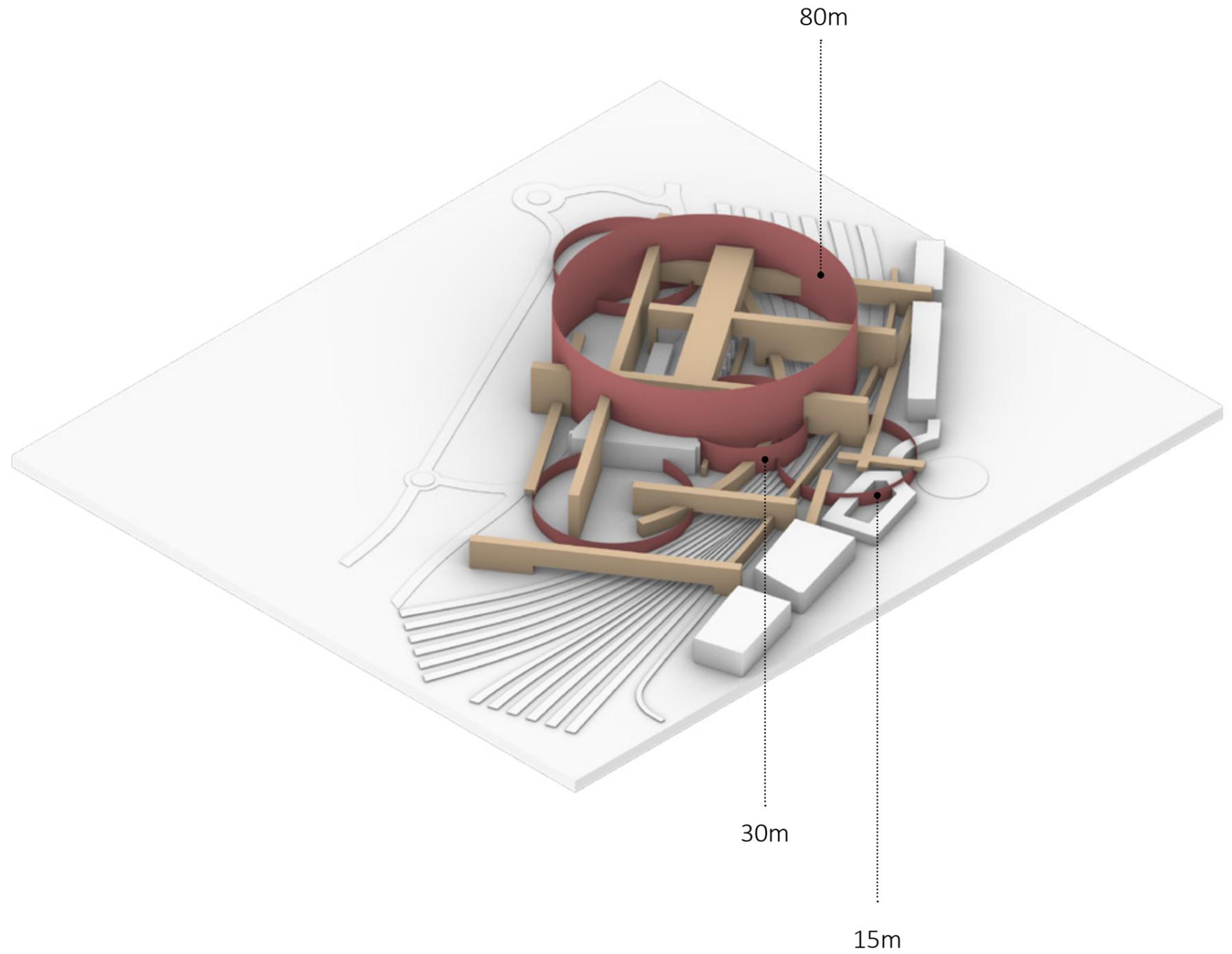
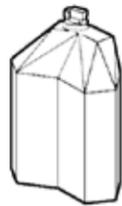
30m
Asset

Postterminalen



80m
Landmark

Lilla Bommen

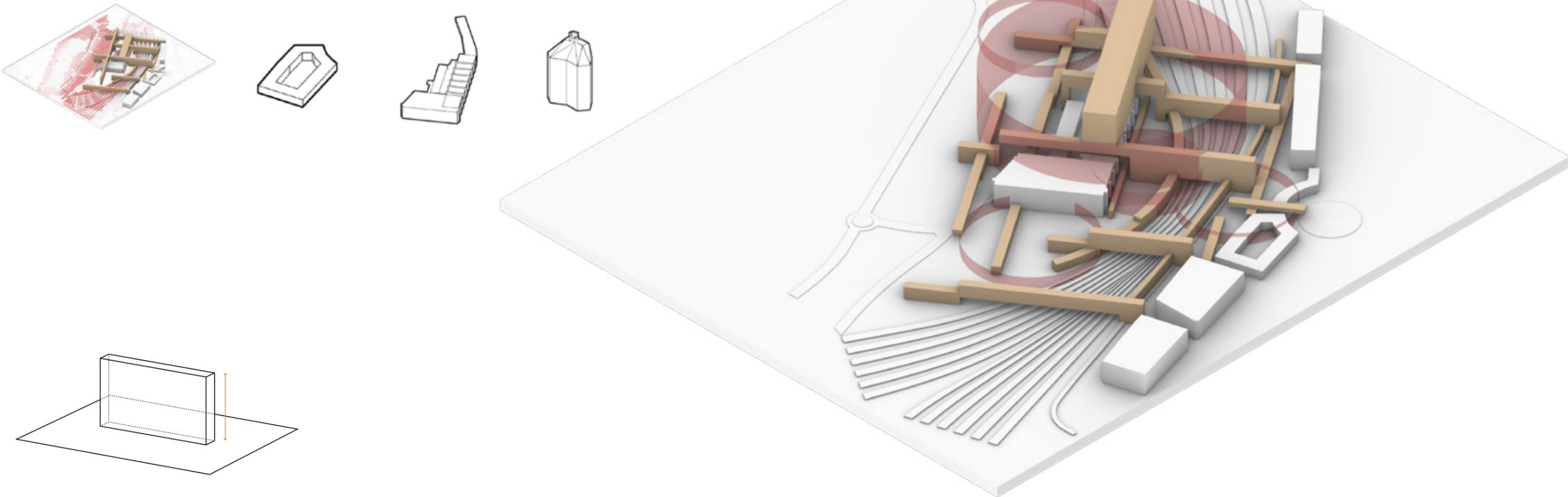


d. GENERATION PROCESS

+

Height Adjustment - Visibility + Reference Height

Rooted from the height system and the split from visibility mapping, certain rules are followed to adjust height of different parts.



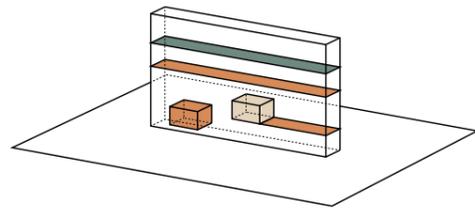
d. GENERATION PROCESS

+

Program - Mobility



Based on current mass, mobility is analyzed to generate a preliminary distribution of programs. Volumes are separated as lower and higher parts, to start giving hybrid among programs.



Integration

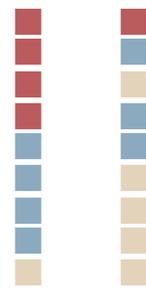


Connectivity



FUNCTION

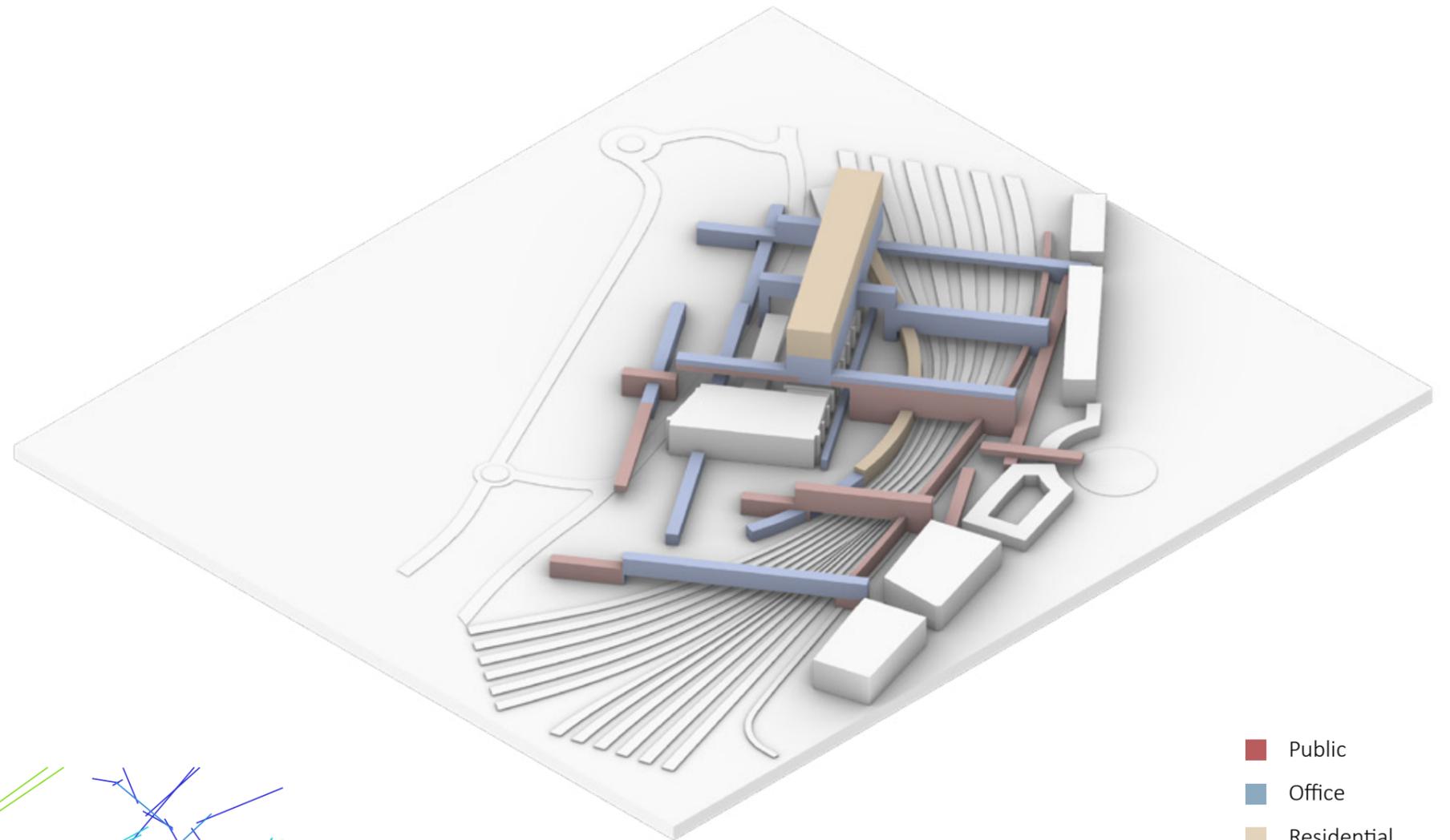
lower upper



Integration



Connectivity



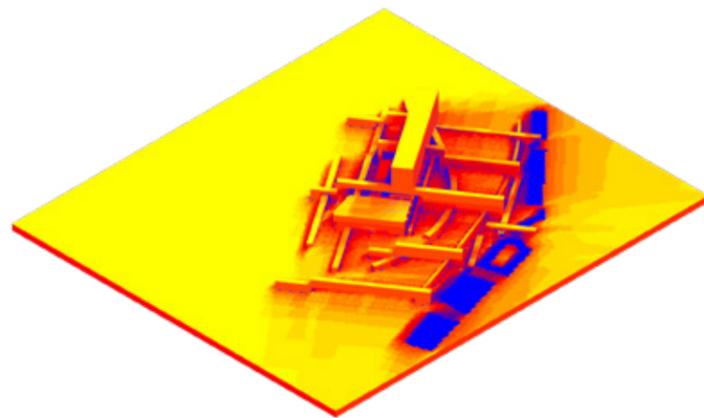
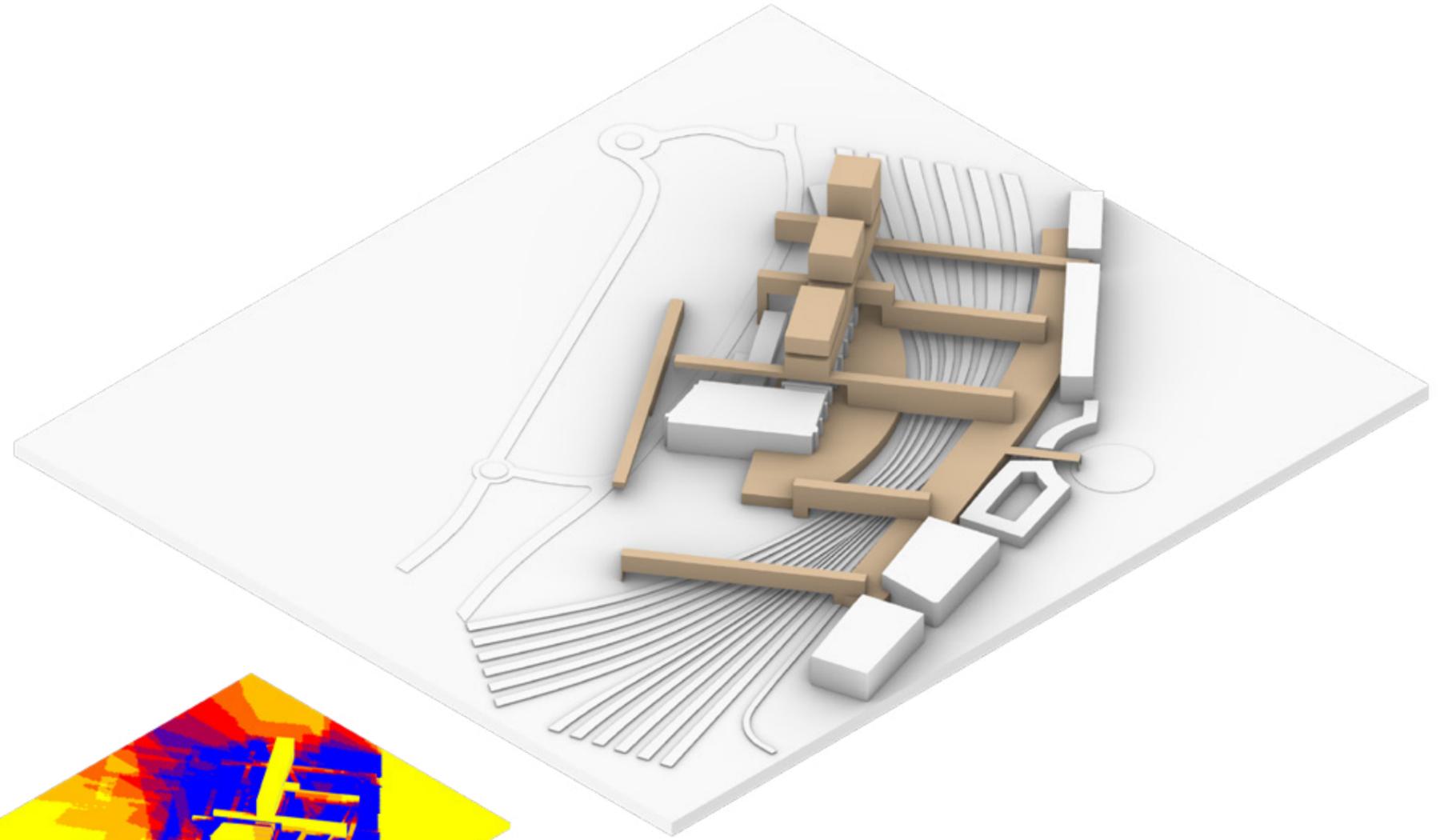
- Public
- Office
- Residential

d. GENERATION PROCESS

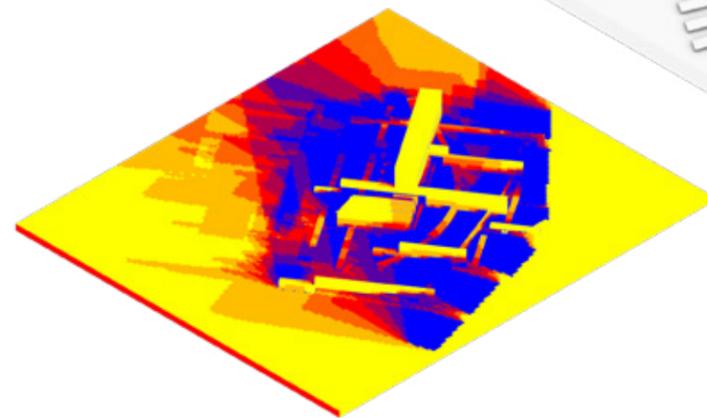
+

Volume - Daylight

While started from visibility and mobility, a new actant, daylight, is taken into consideration at this phase. Sunlight hour is extremely important. From the analysis of previous mass and the program definition, volumes are simplified, merged or split up.



Sunlight Hour- Summer



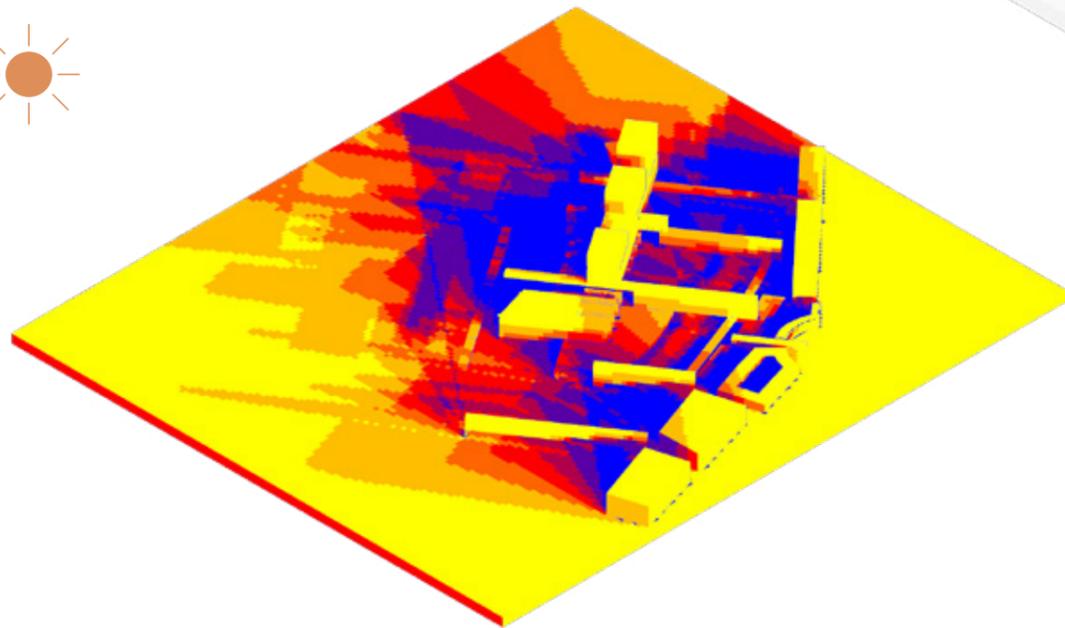
Sunlight Hour- Winter

d. GENERATION PROCESS

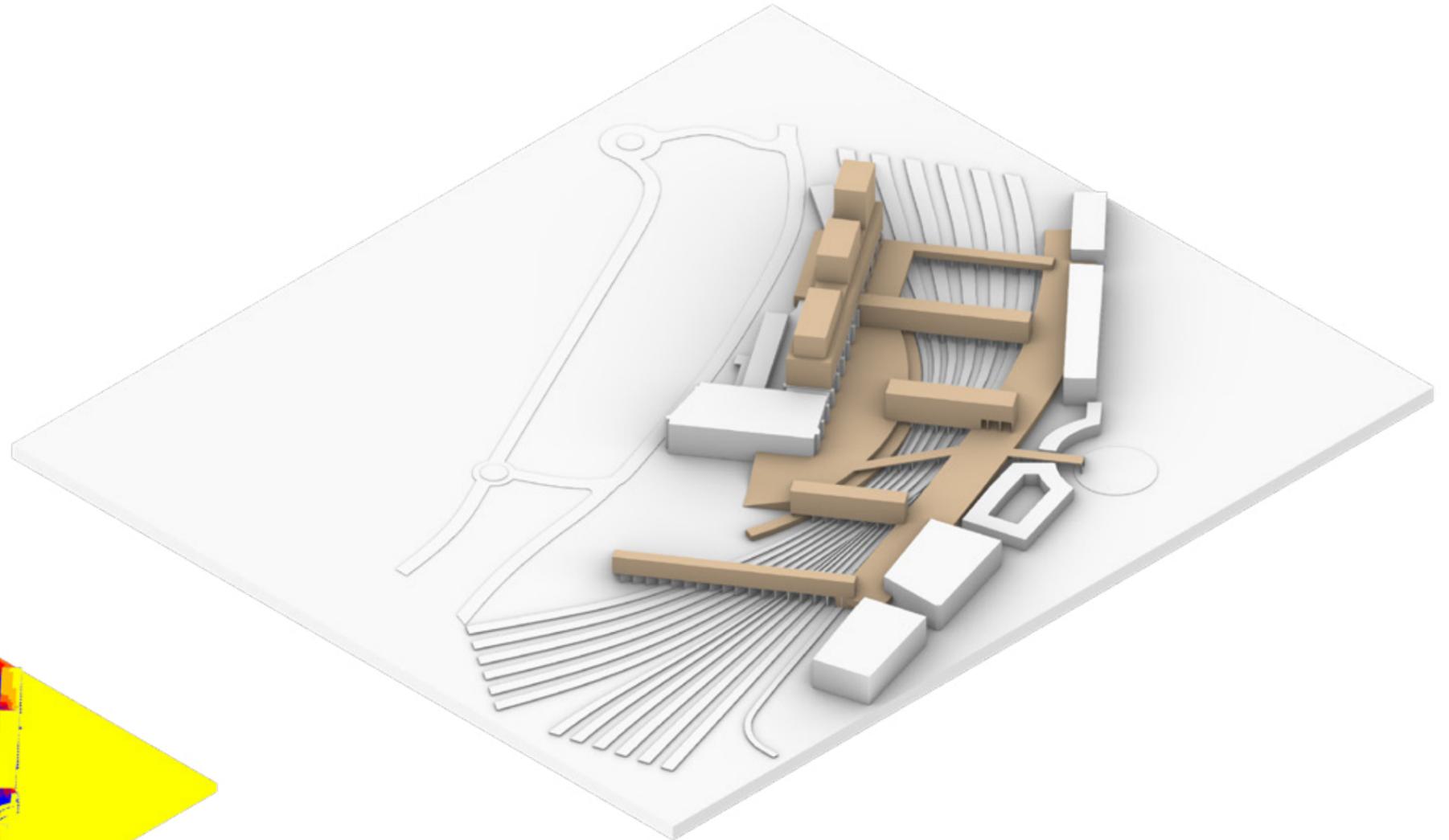
+

Detailed Definition

Sunlight analysis keeps going along the process. Scope of the project becomes clearer and the shape are further adjust towards an architectural design result.



Sunlight Hour- Winter



d. GENERATION PROCESS

+

Architectural Details

With final development of the shaping of mass, main characteristic of the project is clear. Space design doesn't go into extreme detail, but proposal and ideas on how the spaces may look like are defined.

For example, the southern part two-storey platform may have holes to bring light to lower part like patios, can create connection between floors. Greenery and stairs can be further designed in those areas.

Three main typologies can be found in the project: gallery (corridor), tunnel-wall, stacked boxes. They are all like either a visible or invisible wall, shaping and defining spaces.

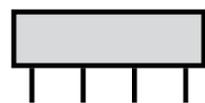
+ Gallery (corridor): main space is beneath the flat roof with pillars. It defines a blurred boundary space. People are led along the direction of the "wall". Above the roof is an open space where served as a platform or a bridge.

+Tunnel-wall: a relatively solid geometry with the lower part opened up for getting across. The huge walls will be supporting structure, presenting a strong sculptural sense. People are led against the direction of the "wall". Upper volume is available for functions.

+Stacked boxes: Solid mass with different possible compositions of functional boxes. When breaking up the large piece into smaller parts, spaces are generated in between for better sunlight, ventilation, views, transportation and activities.



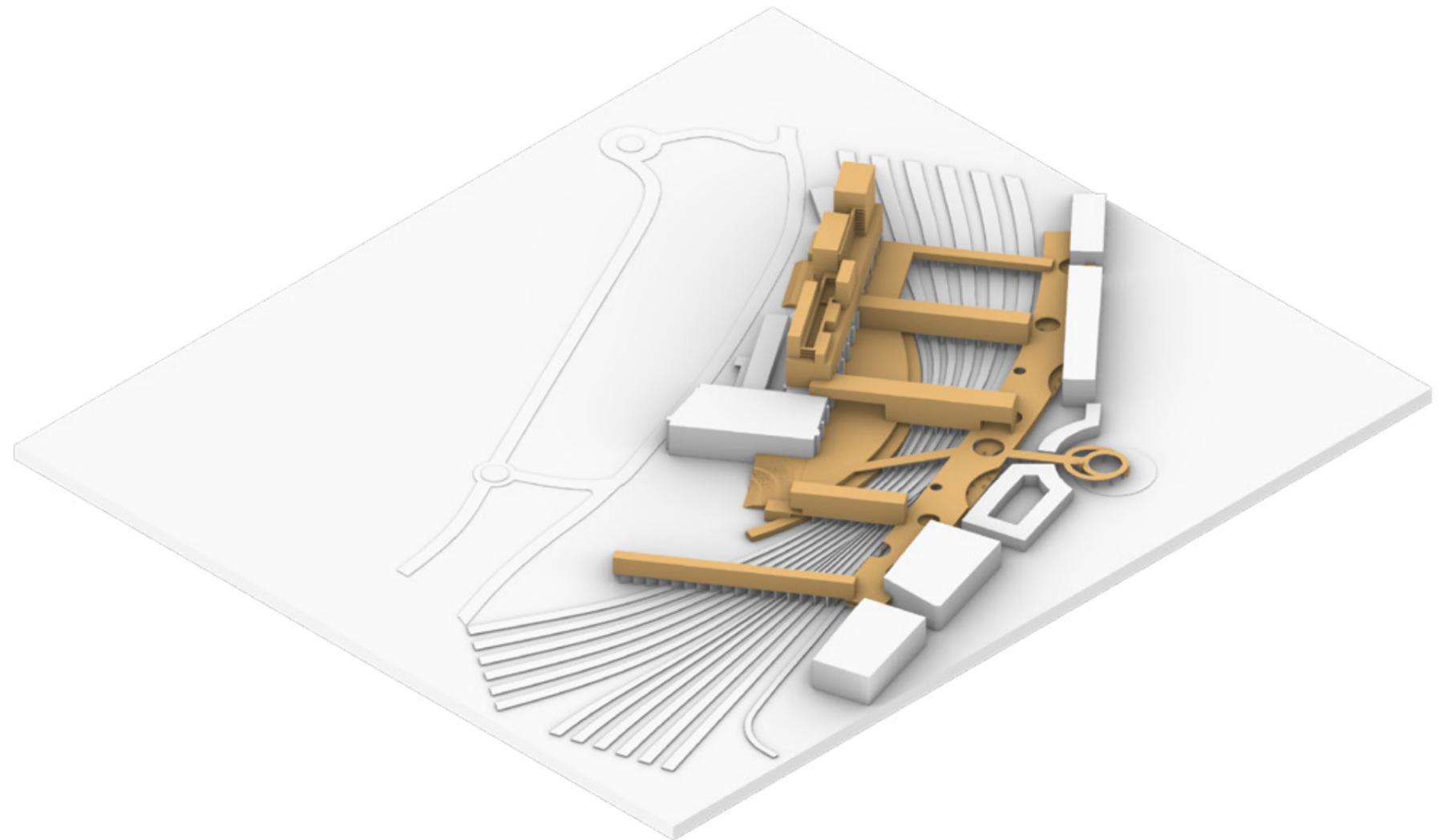
Gallery (Corridor)



Tunnel-Wall



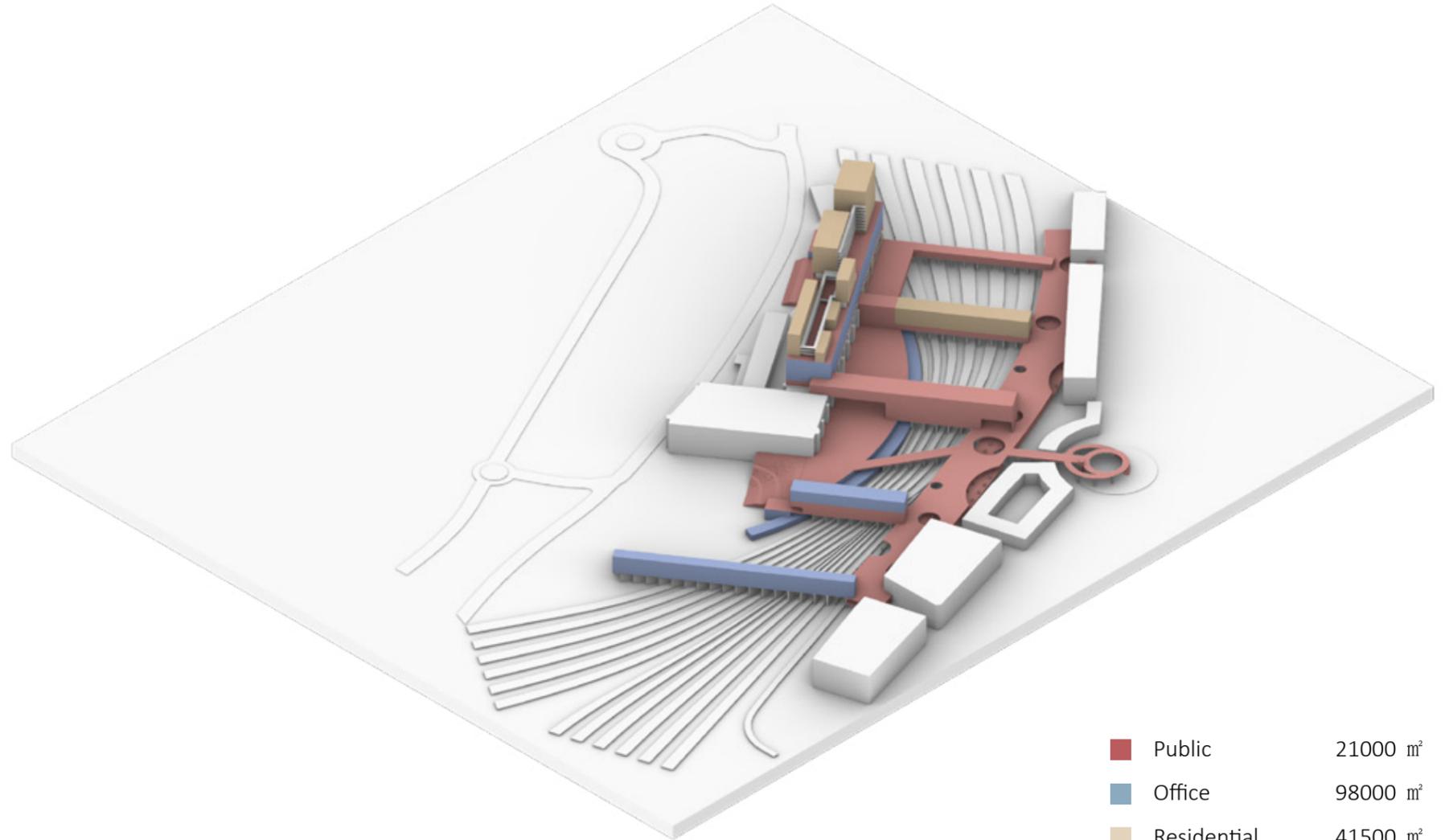
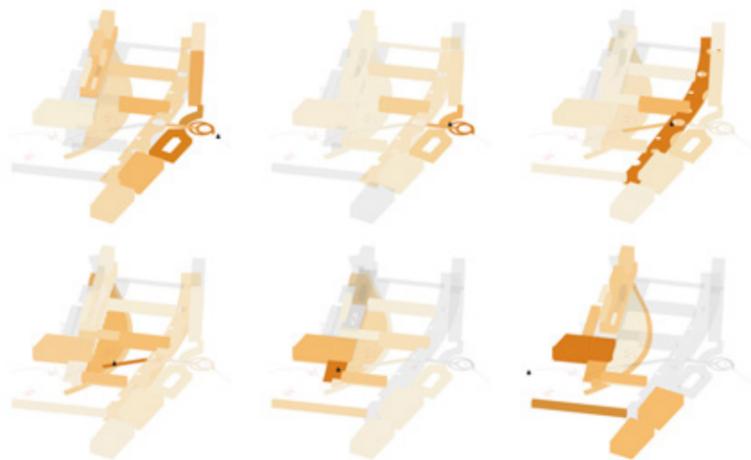
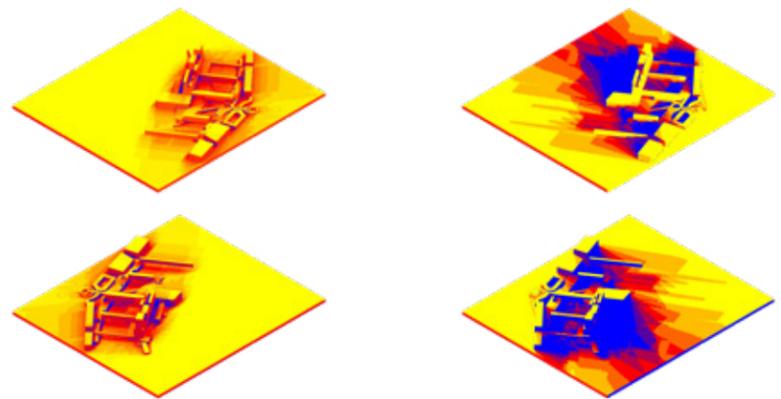
Stacked Boxes



d. GENERATION PROCESS

+

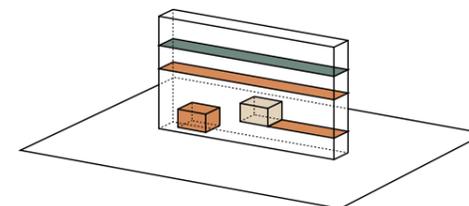
Program - Daylight + Mobility + Visibility



Public	21000 m ²
Office	98000 m ²
Residential	41500 m ²
TOTAL	160500 m²



The three analysis are made based on the final mass. Programs are decided based on all three results. It is also an examination on how the key actants perform on the project.

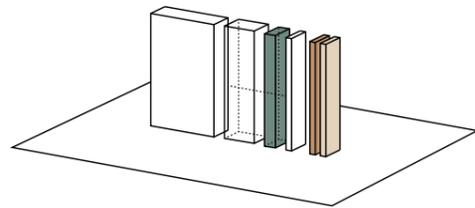


d. GENERATION PROCESS

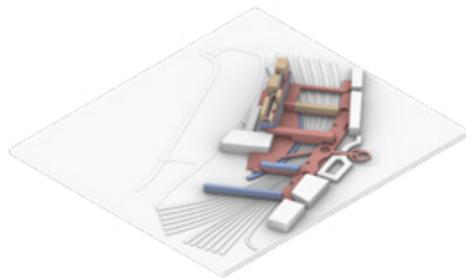
+

Facade & Atmosphere

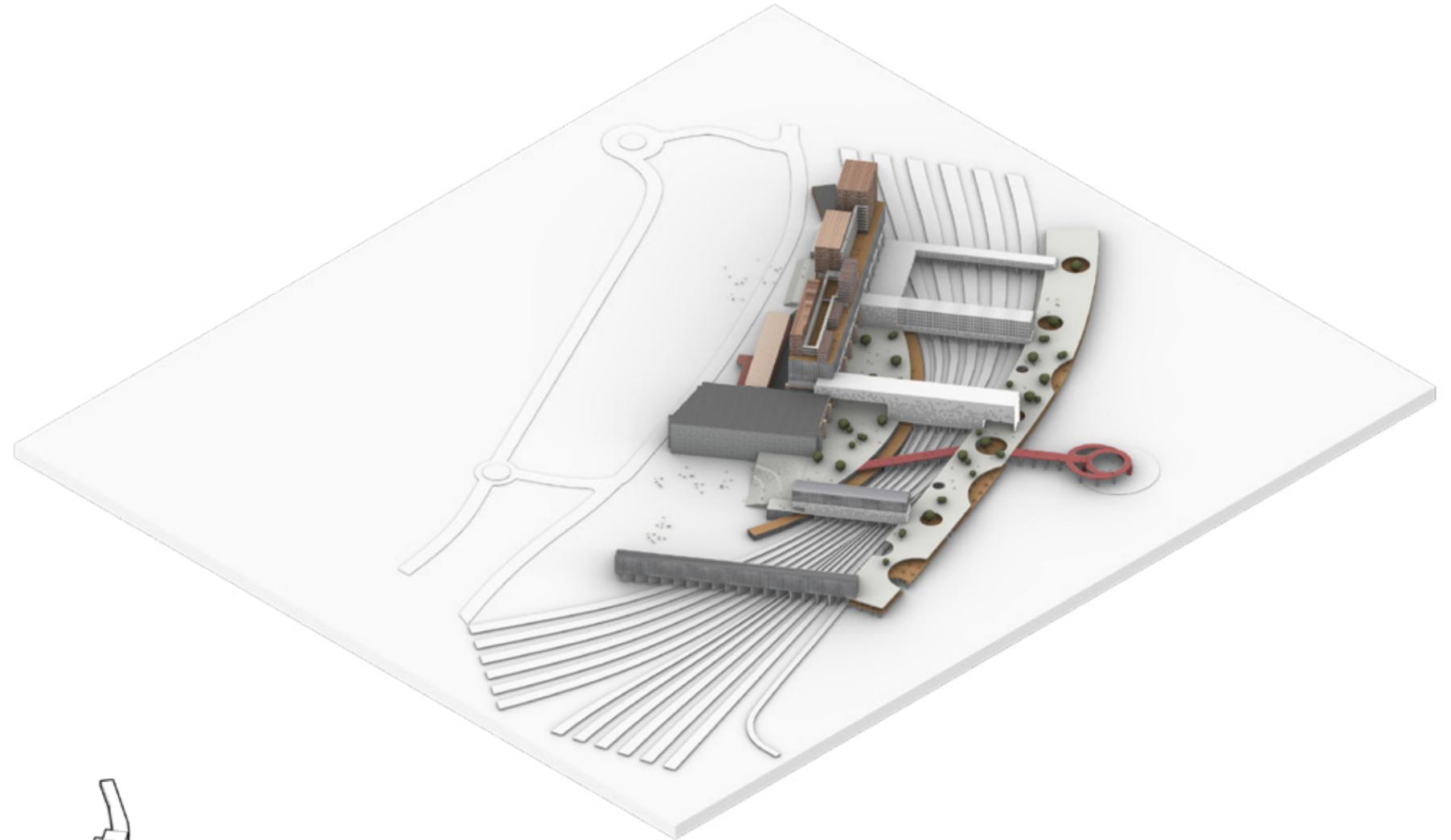
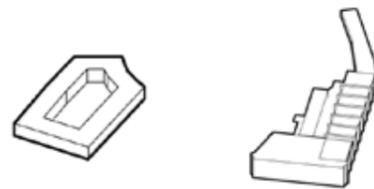
Facade is designed to make the project more lively and give proposal on the characteristic of the environment. It is based on the programs and local context. The intention is to make different programs obvious and distinctive but also respond to the built environment to better fit in the context. Design is not aiming for a specific detail, but mainly to express an atmosphere.



Program

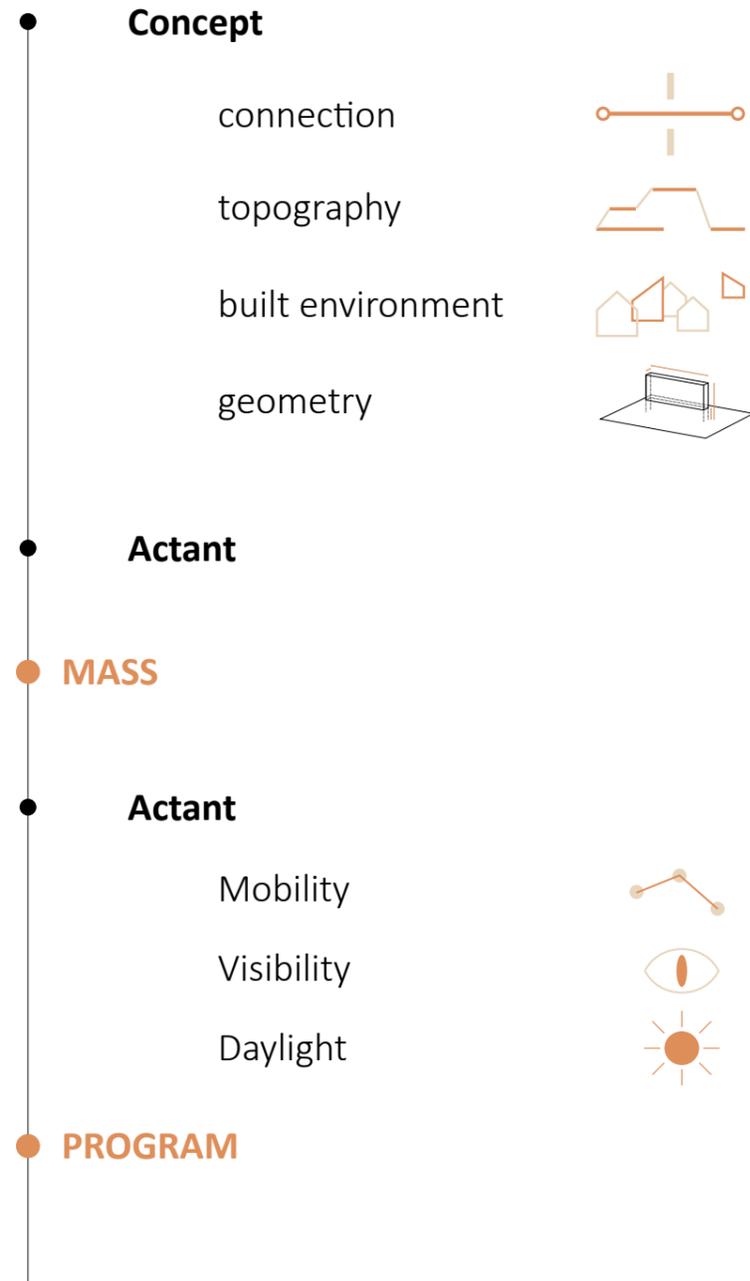


Local Context



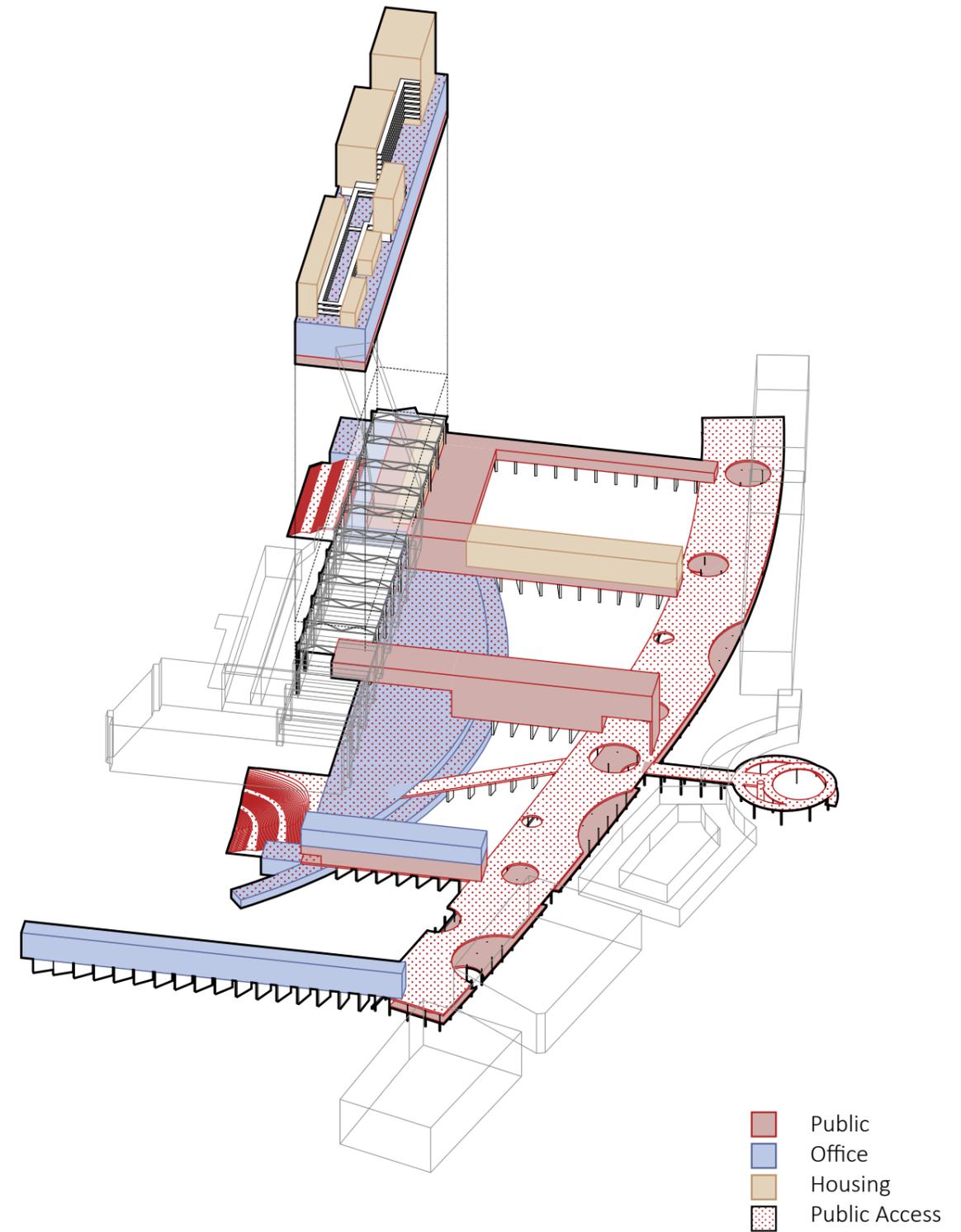


e. PROPOSAL
+ Hybrid Programmatic System



The program is the result of series development. Concept and actants work together to shape the mass, which runs through the analysis again and finally leads to the programs.

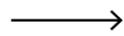
With the main concept of creating connection and public topography, public spaces are spreaded within the plans. They locate on each important height level of the project, thus creating both horizontal and vertical connection.



e. PROPOSAL
+ Hybrid Architectural System

Original

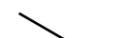
Interstice



Assets



Infrastructure



Interstice



Landscape



New

Assets

Reference

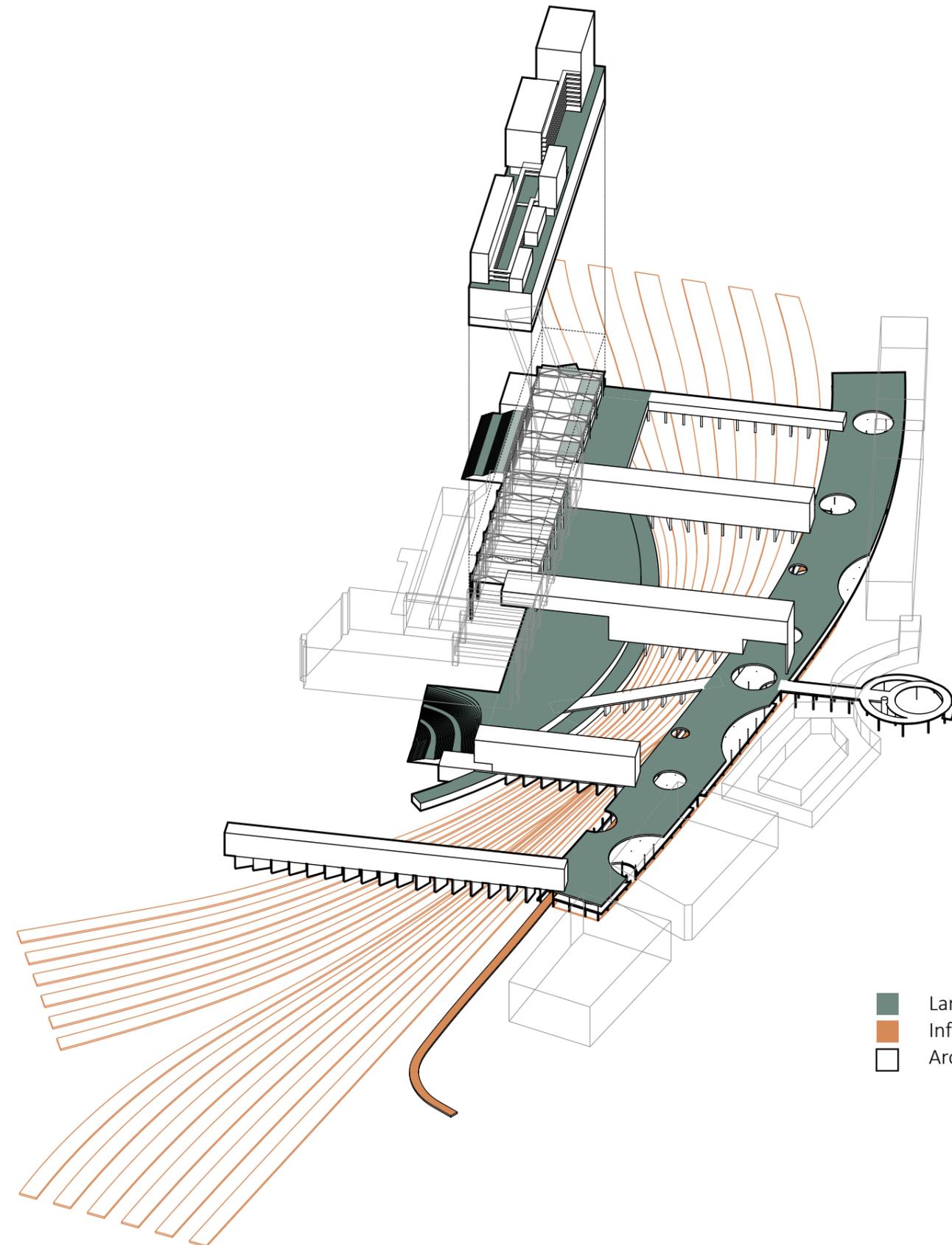
Architecture

Infrastructure

Landscape



With a mutual relationship, architecture, infrastructure and landscape are both shaping and being shaped. The main infrastructure in this project are about movement of transportations and people.



- Landscape
- Infrastructure
- Architecture

e. PROPOSAL

+ Plan



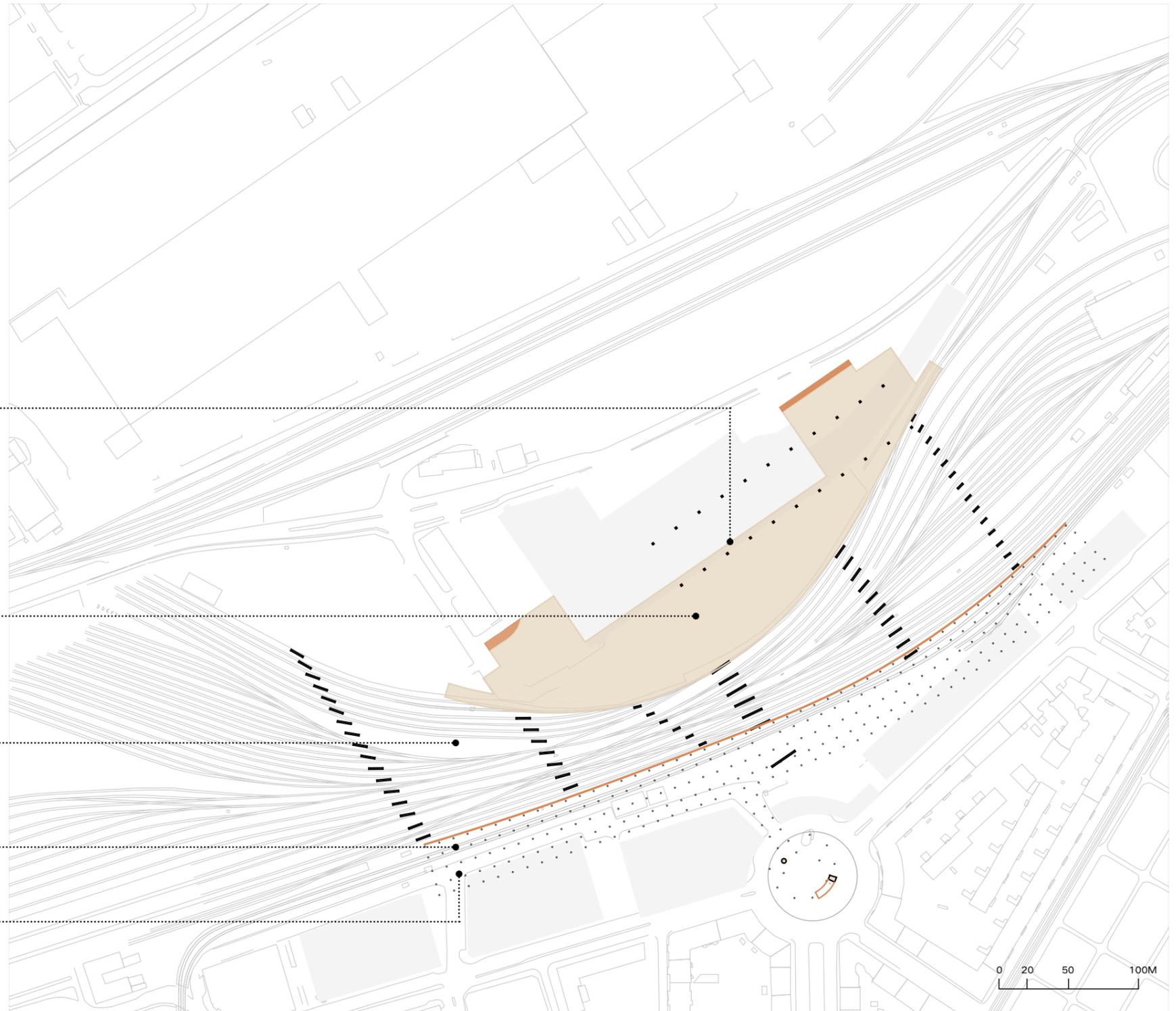
possibility for renovation project between the old and new building, expanding working area of Postterminalen

office

train tracks

bus route

parking lots



2m

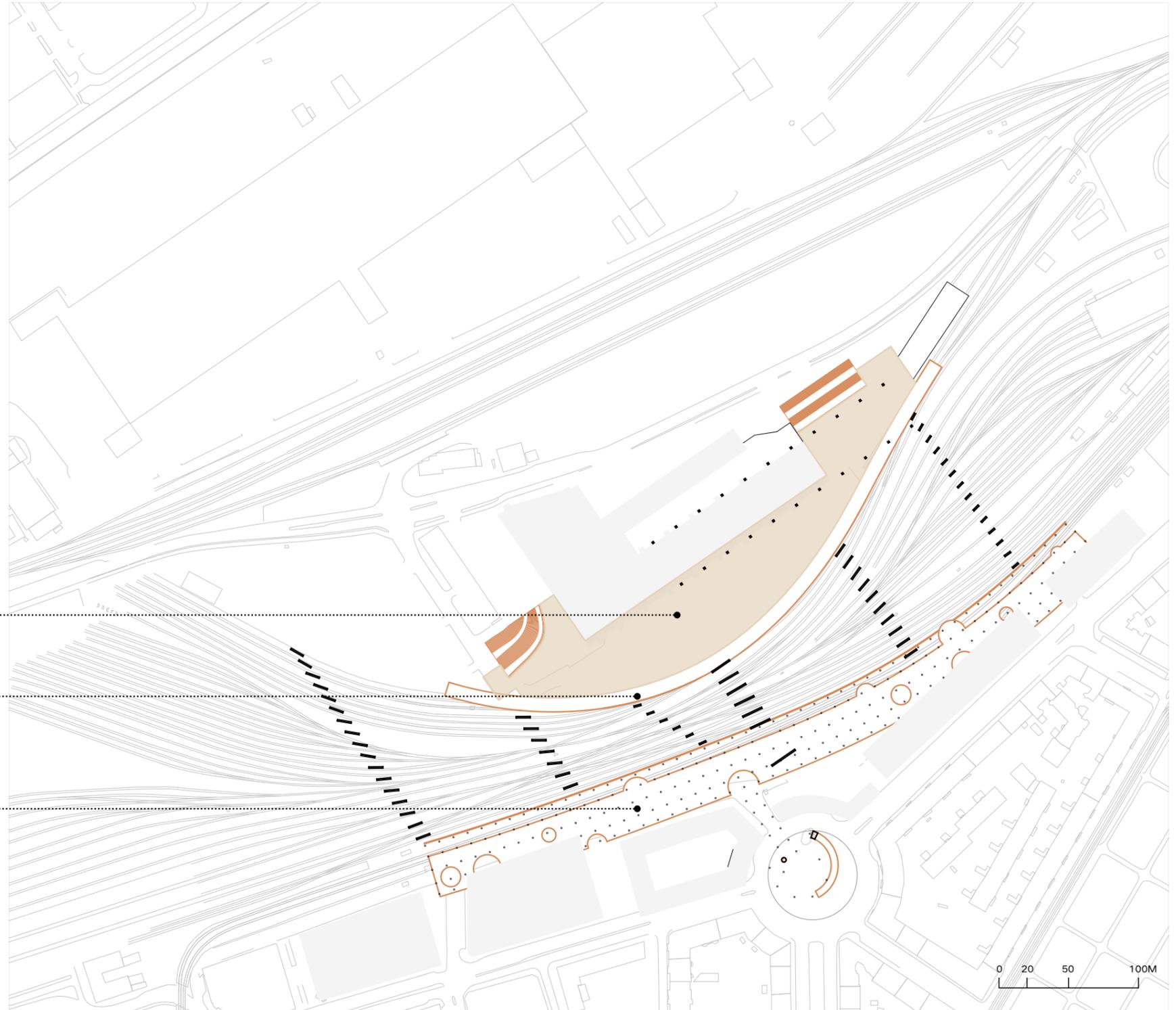
e. PROPOSAL
+ Plan



office

outdoor platform

platform, can be developed with solid
public functions



7m

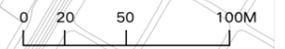
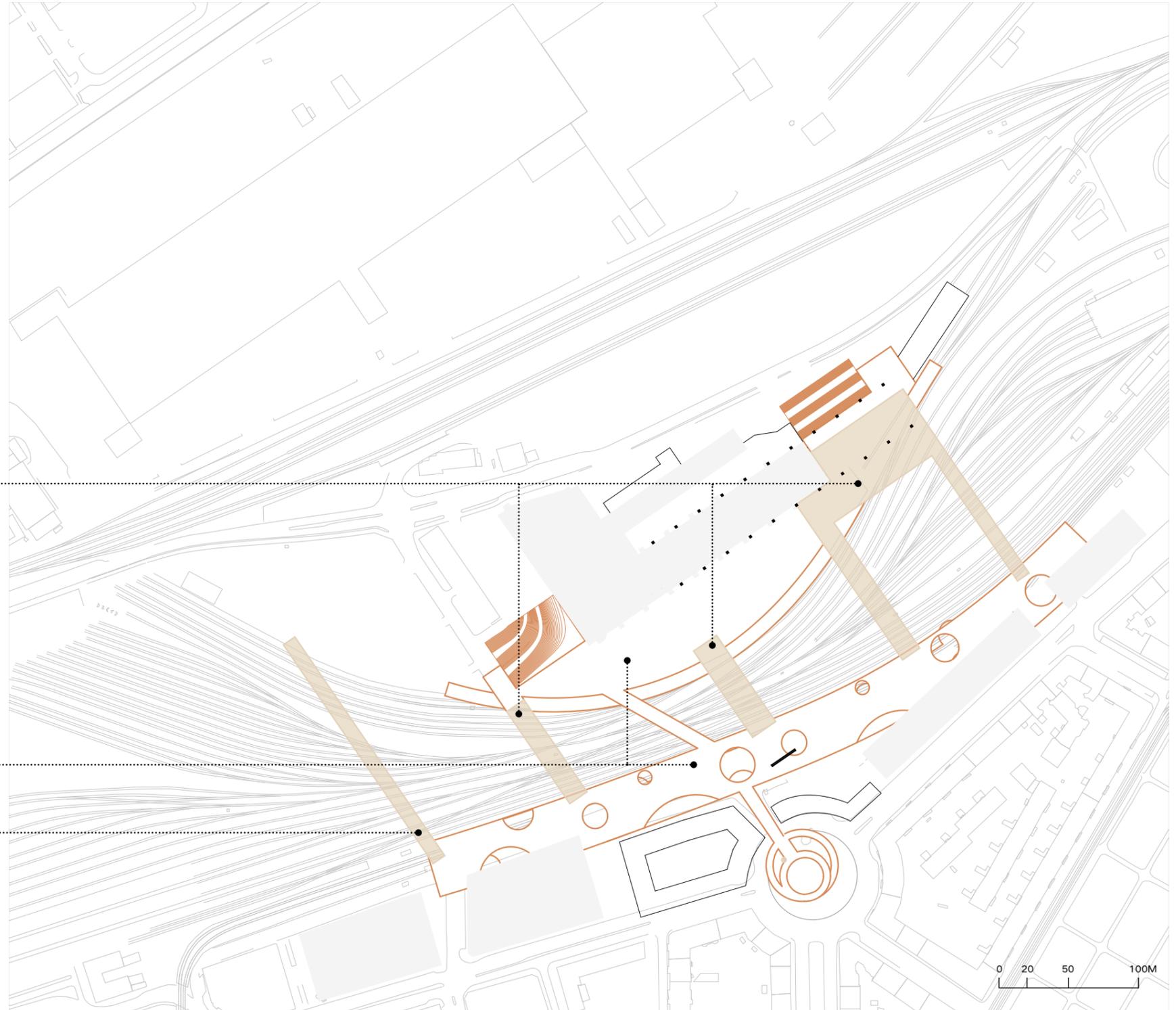
e. PROPOSAL
+ Plan



public

outdoor platform

office



12m

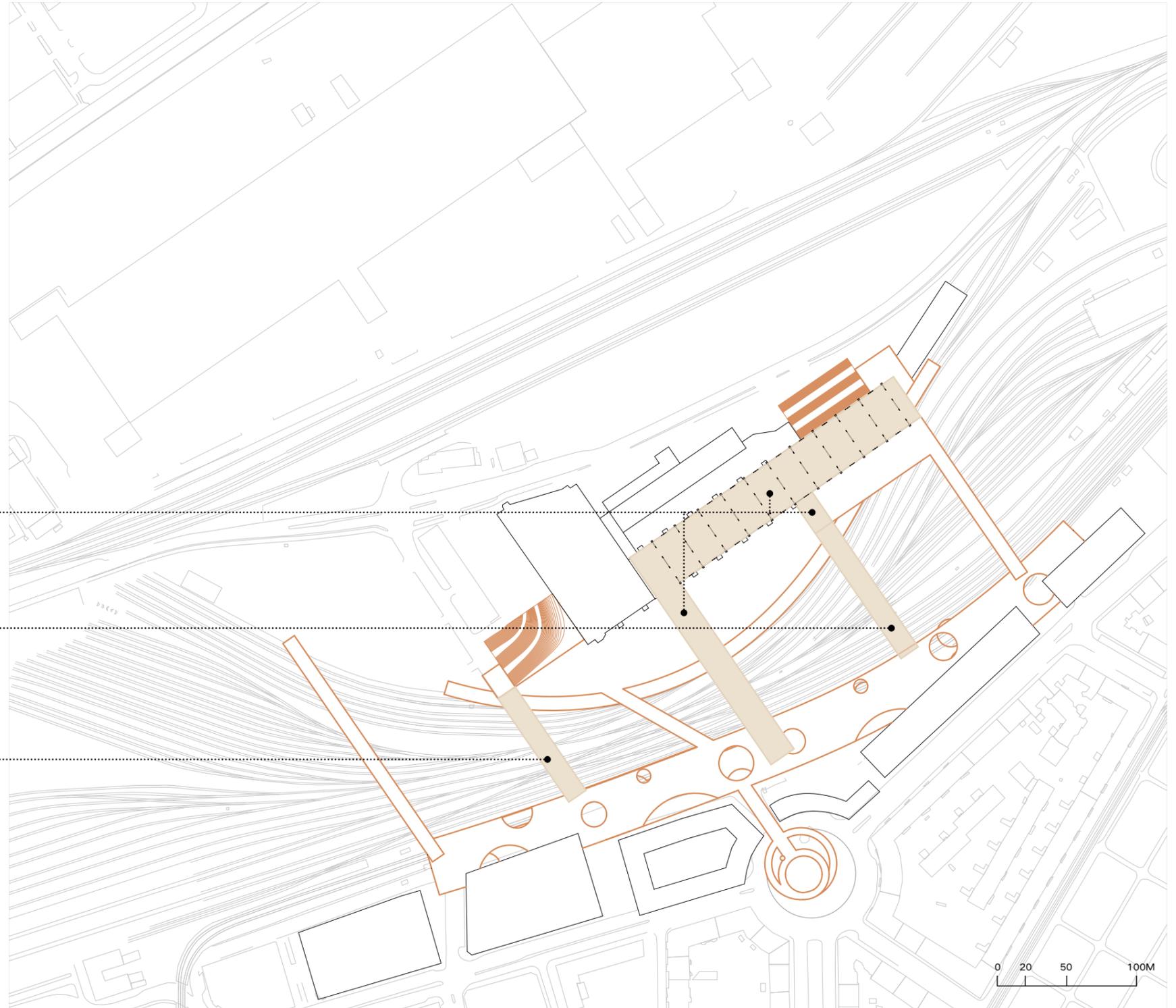
e. PROPOSAL
+ Plan



public

housing

office



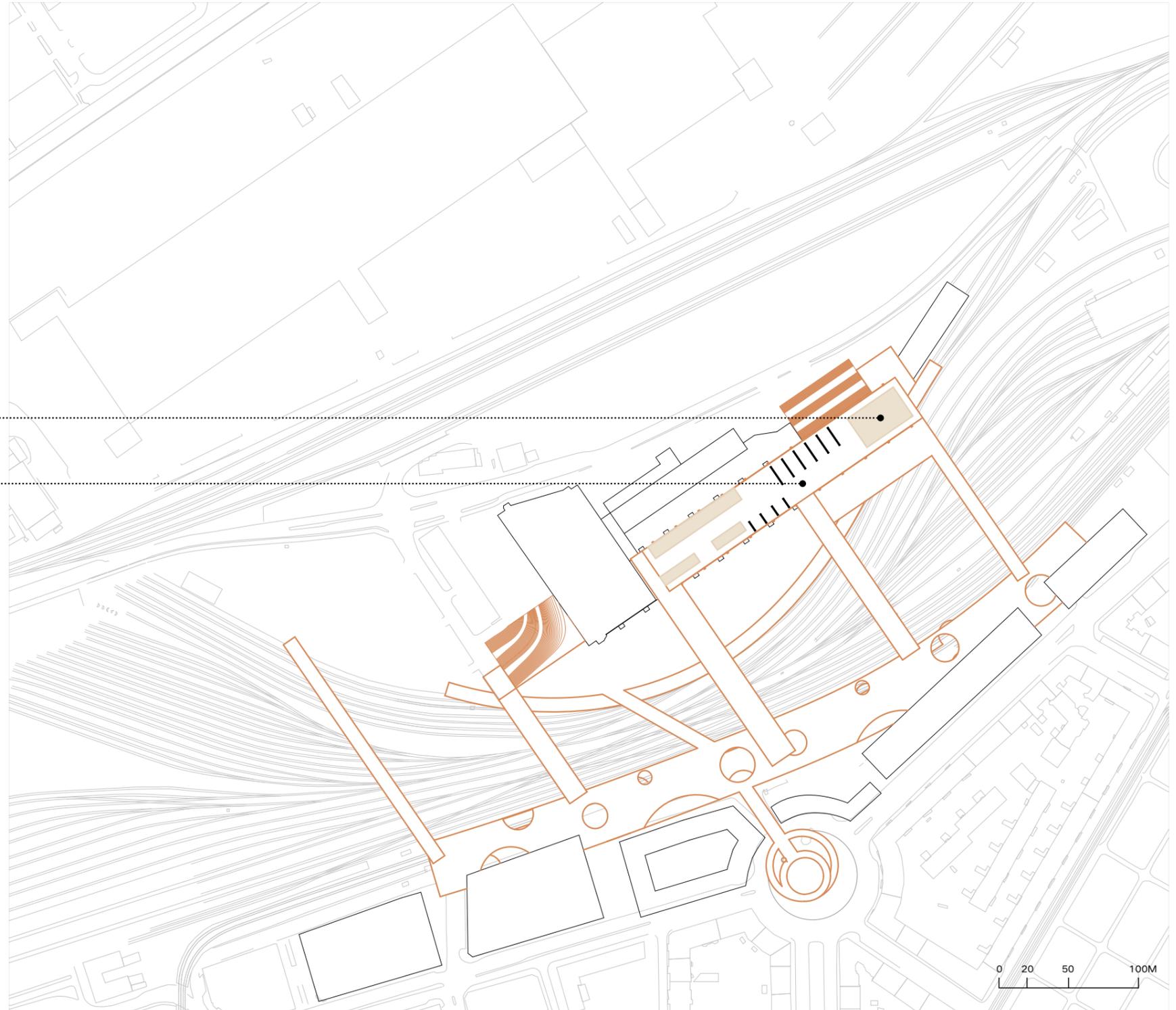
28m

e. PROPOSAL
+ Plan



housing

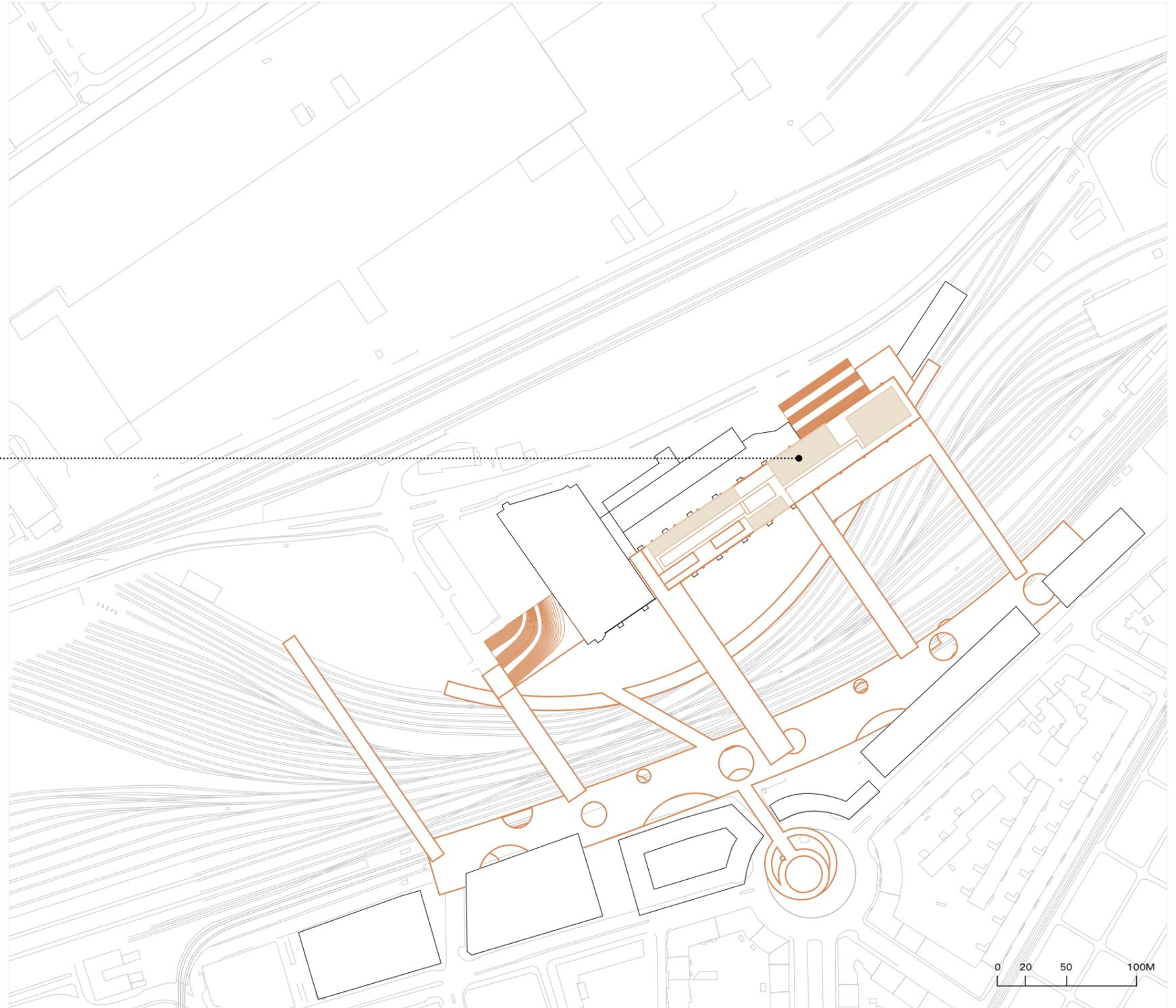
community platform



52m

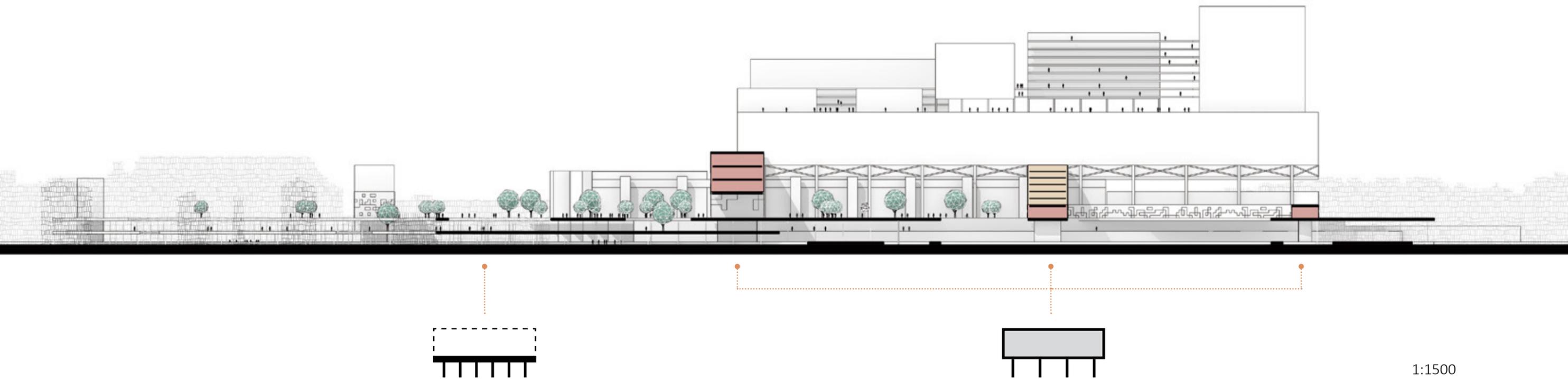
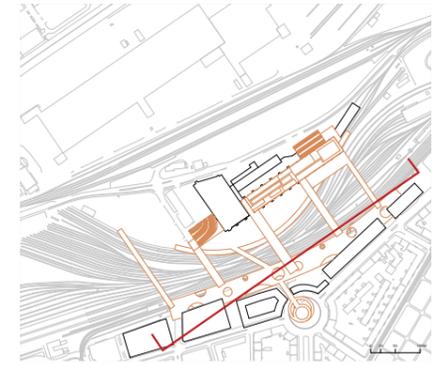
e. PROPOSAL
+ Plan

housing



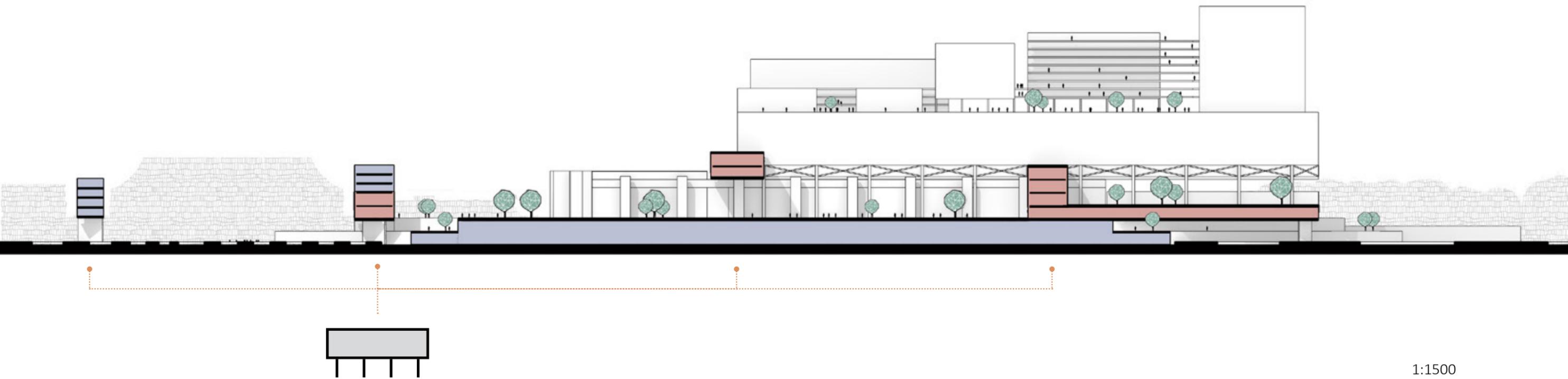
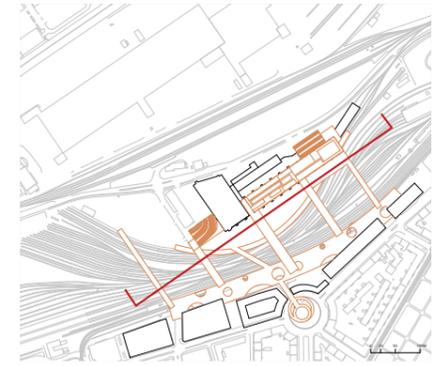
67m

e. PROPOSAL
+ Section



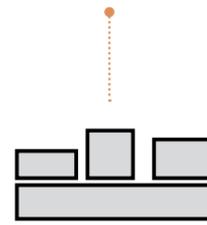
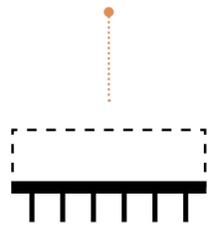
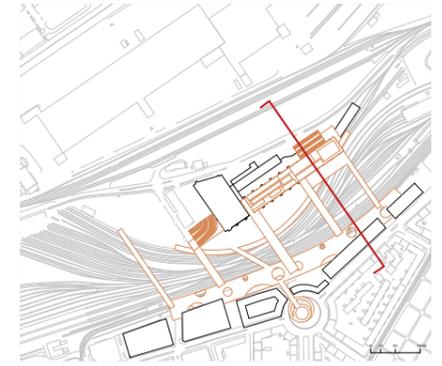
1:1500

e. PROPOSAL
+ Section



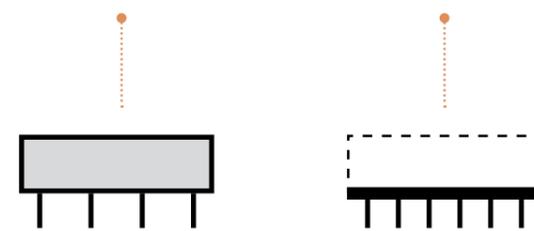
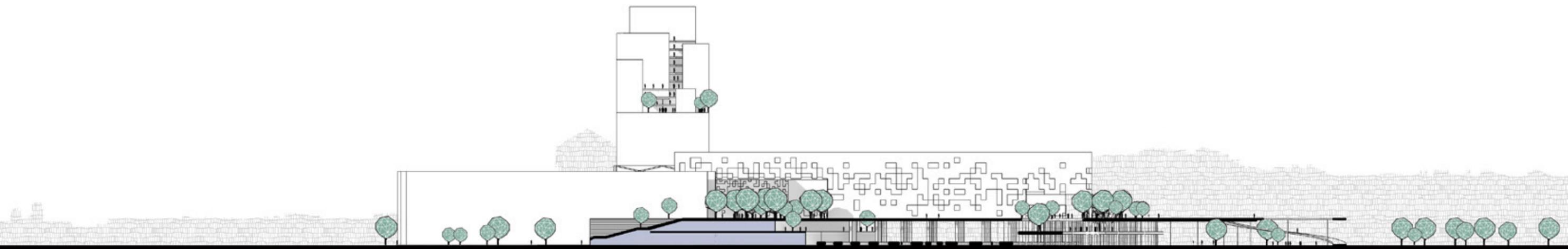
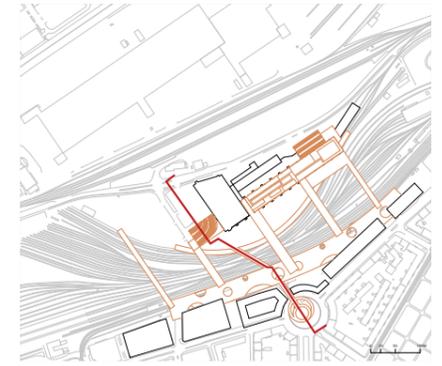
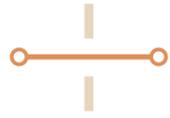
1:1500

e. PROPOSAL
+ Section



1:1500

e. PROPOSAL
+ Section



1:1500

e. PROPOSAL
+ Urban Interface

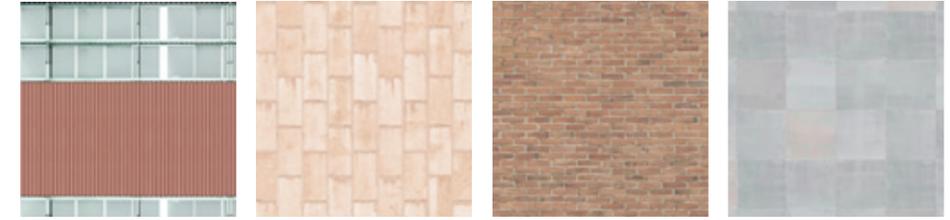


Built Environment

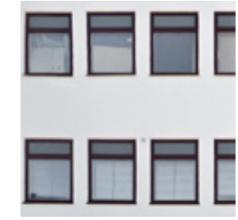
Industrial
Warm
Complex

Clean

Postterminalen

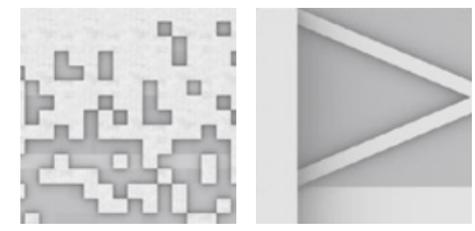


Odinsplatsen, Housing



Public

Open
Attractive
Gradient
Structural



Working

Modern
Simple



Housing

Warm
Characteristic
Modern



Horizontal Interface

Functional
Recognizable



The new urban interfaces intend to show the characteristic of each program. They also take references from the local context. The overall goal is to build a modern, attractive, pleasant and functional atmosphere.

e. PROPOSAL
+ Facade



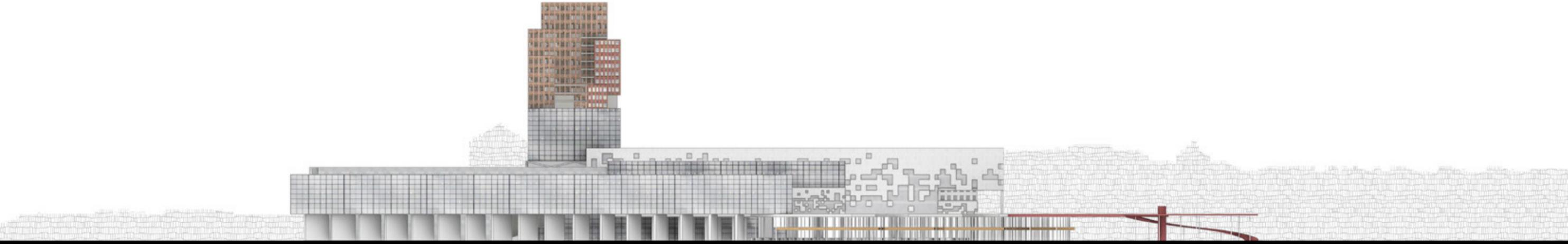
North Facade 1:1500

e. PROPOSAL
+ Facade



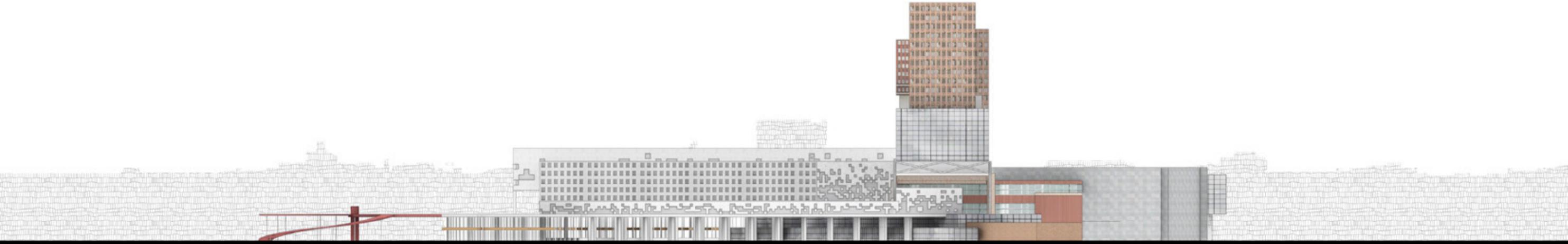
South Facade 1:1500

e. PROPOSAL
+ Facade



West Facade 1:1500

e. PROPOSAL
+ Facade



East Facade 1:1500

e. PROPOSAL + Skyline



Lilla Bommen
85m

Clarion Hotel Post
45m

Västra Götalandsregionen
60m

Skansen Lejonet
45m

The project aims to be a new landmark of Göteborg city but not an oversized building that stands extremely out of the urban skyline. Thus, the scale is under control by taking reference from important nearby structures.

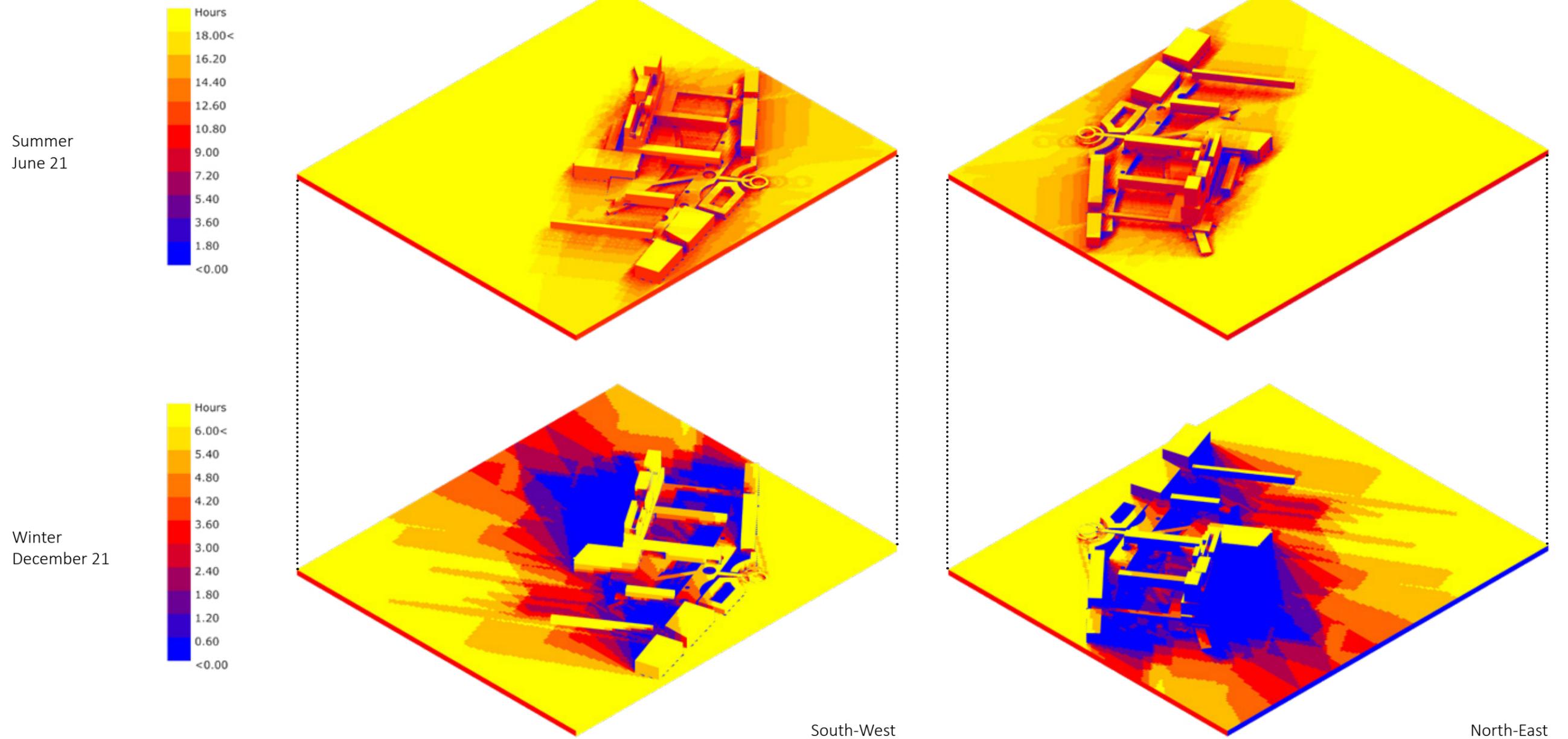
e. PROPOSAL
+ Synthesized Performance Drawing

Sunlight Hour Analysis



There is good sunlight for all the housing parts all year round.

The public plazas all receive pleasing sunlight. Even in deep winter, they still have large areas where have long time of radiation. People can thus enjoy the nice outdoor area and get exposed to nature, which is an important part for local people.



e. PROPOSAL

+ Synthesized Performance Drawing

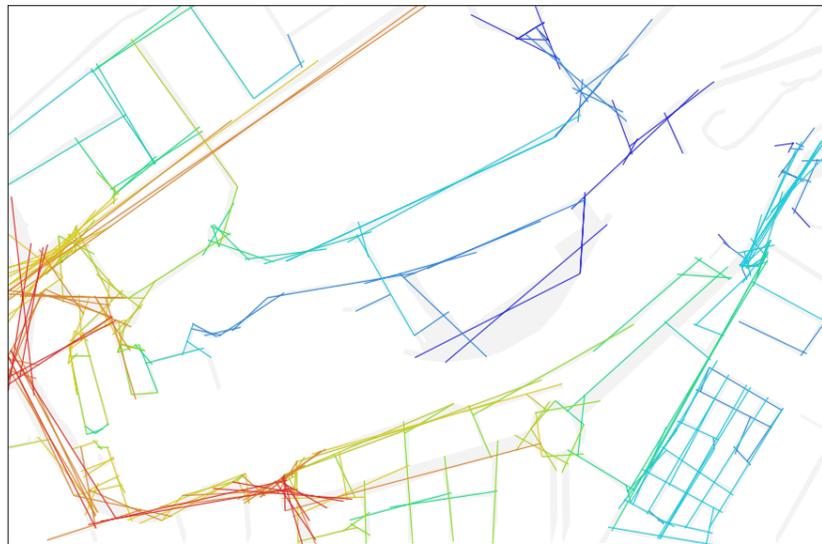
Mobility



2m plan shares the same integration with the original site.

The 12m plan is however the real urban interface, where connections are actually made. At this level Odinsplatsen becomes a highly integrated place. The connection above the rail track is also easy to get access, thus making Postterminalen and Odinsplatsen promising attraction spots

Decisions on program distribution are highly relied on these mappings, along with sunlight hour analysis.



2m



12m



28m

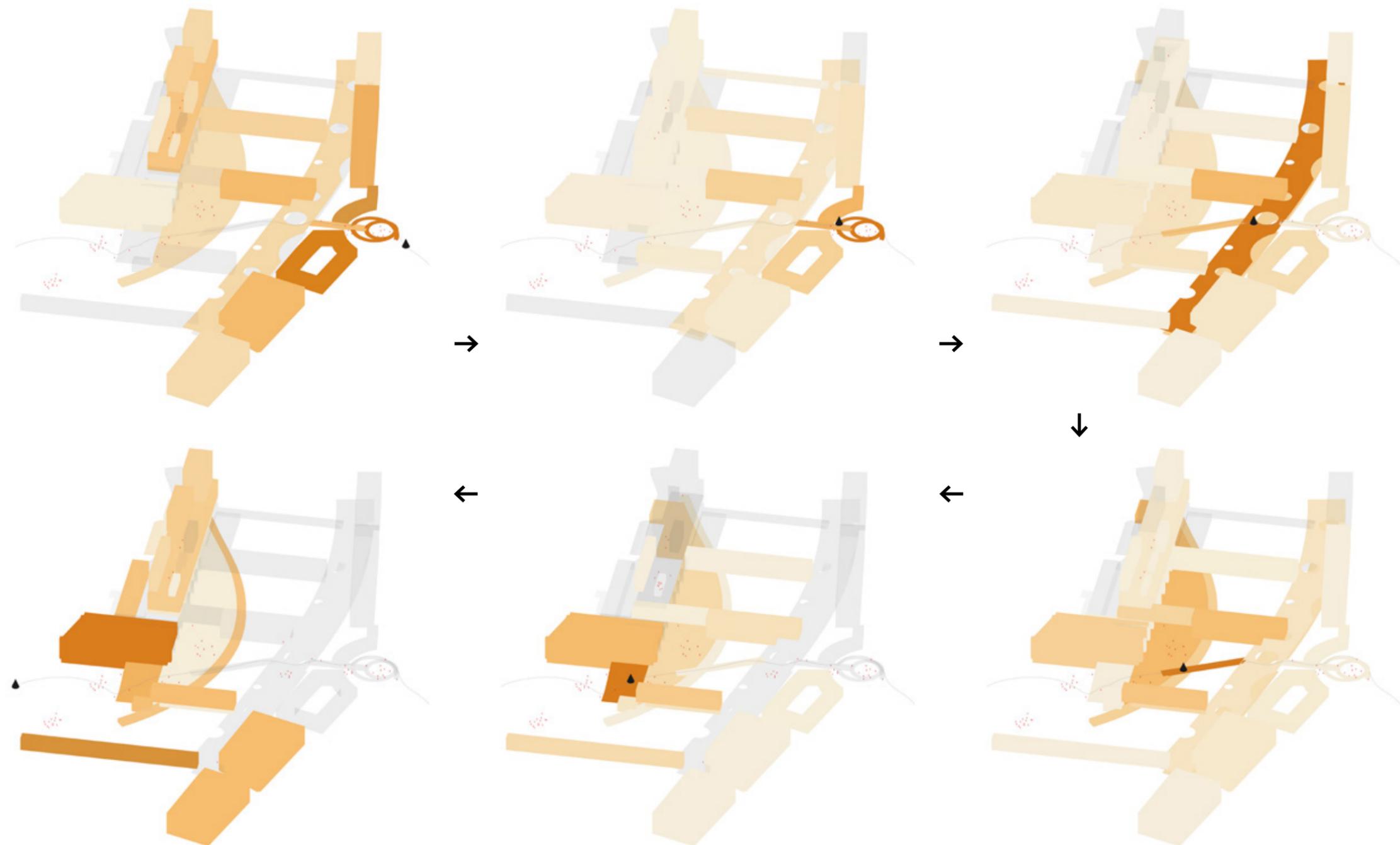
e. PROPOSAL
+ Synthesized Performance Drawing

Visibility



The diagram shows visibility analysis along the main flow. The high-rise above Postterminalen are highly visible when at distance, which performs well as the intention to attract people.

The public spaces are always visible. So people can be well attracted by those active places and get involved in the things happening on site.



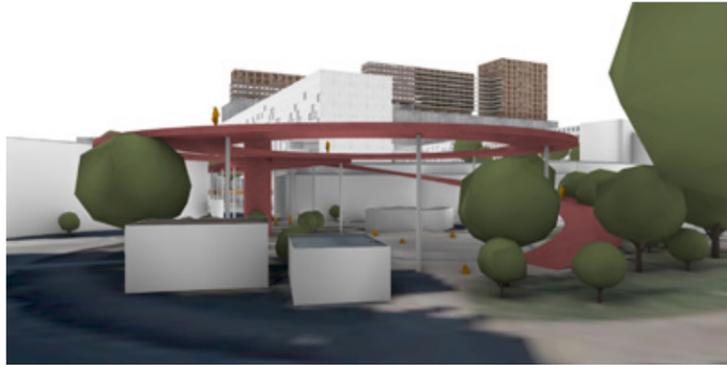
e. PROPOSAL
+ Perspectives



e. PROPOSAL
+ Perspectives



e. PROPOSAL
+ Perspectives



Odinsplatsen



Odinsplatsen- Upper Floor



Gullbergsvassgatan



Northern Plaza



Southern Gallery



Entering Göteborg by Train



Entering Göteborg by Train

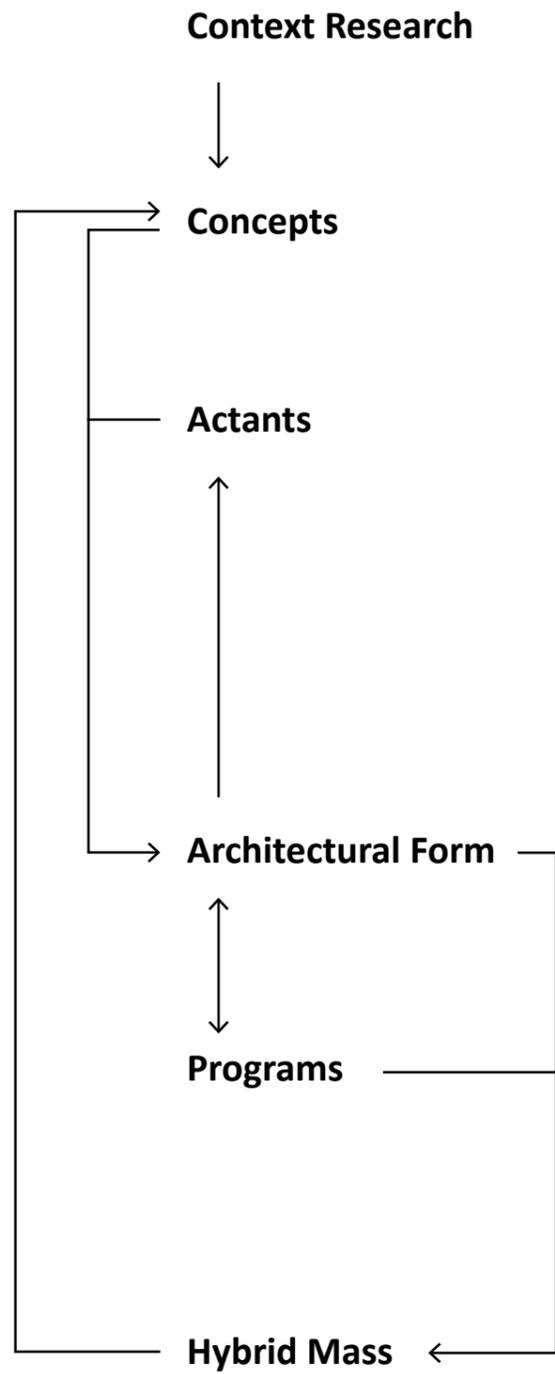


Leaving Göteborg by Train



Skyline Community

f. METHOD
+ Logic Flow



Context Research
/ArchMap, grasshopper.../

Goals

Geometry

Visibility

/Grasshopper- DeCodingSpaces/

Mobility

/depthMapX/

Daylight

/Grasshopper- Ladybug/

Typologies and Mass

/Rhino/

Public

Office

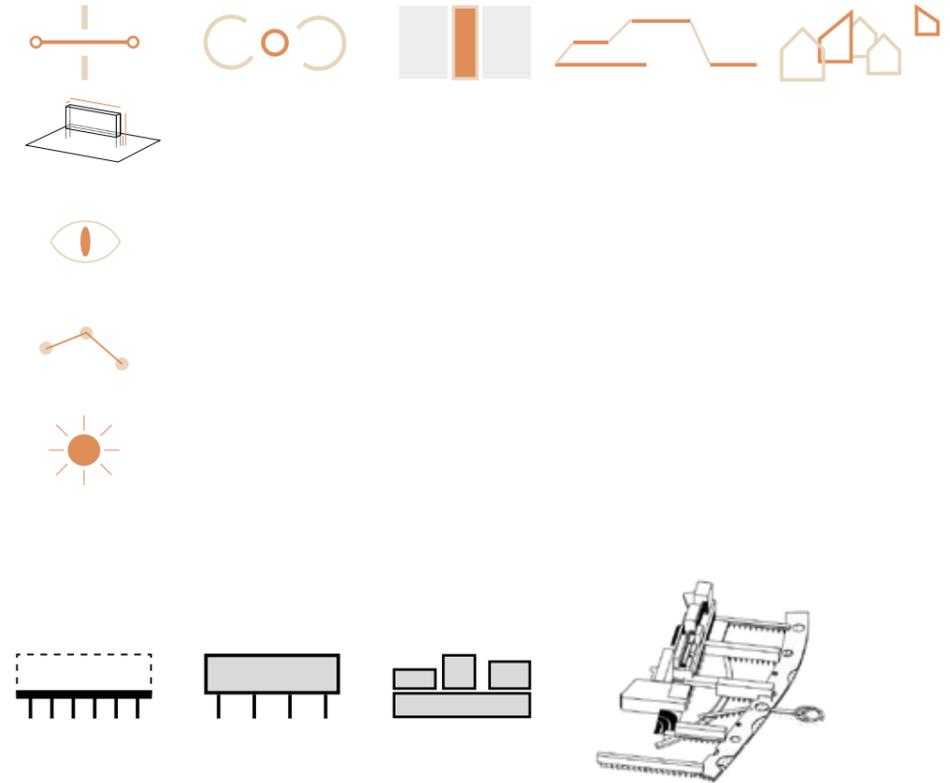
Housing

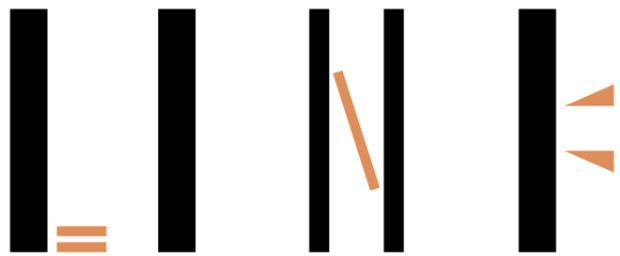
Programs

Architecture

Landscape

Infrastructure





SPACE

CONTEXT