

An architectural rendering of a sustainable urban industrial development. The scene features a mix of building types: a tall, modern glass skyscraper with a grid-like facade, a smaller brick building with a dark roof, and a large, modern building with a white facade and large glass windows. A central courtyard with green lawns, trees, and a playground is visible. The background shows a body of water and a distant city skyline. The text is overlaid in the center of the image.

Designing Sustainable Mix in Urban Industrial Areas, Using M4H, Rotterdam as an Example

- A Reflection on Trendy Mix

P3 presentation
Yuwei Zhao, 5585015
05/14/2024

Goal of this project

1 To **design a sustainable mix** for M4H.

2 To propose **values and spatial principles** of Sustainable Mix through the design.

Introduction

- 1. Context: M4H**
- 2. Design goals**

Process

- 1. Experiment with eastern philosophy**
- 2. Developing process**

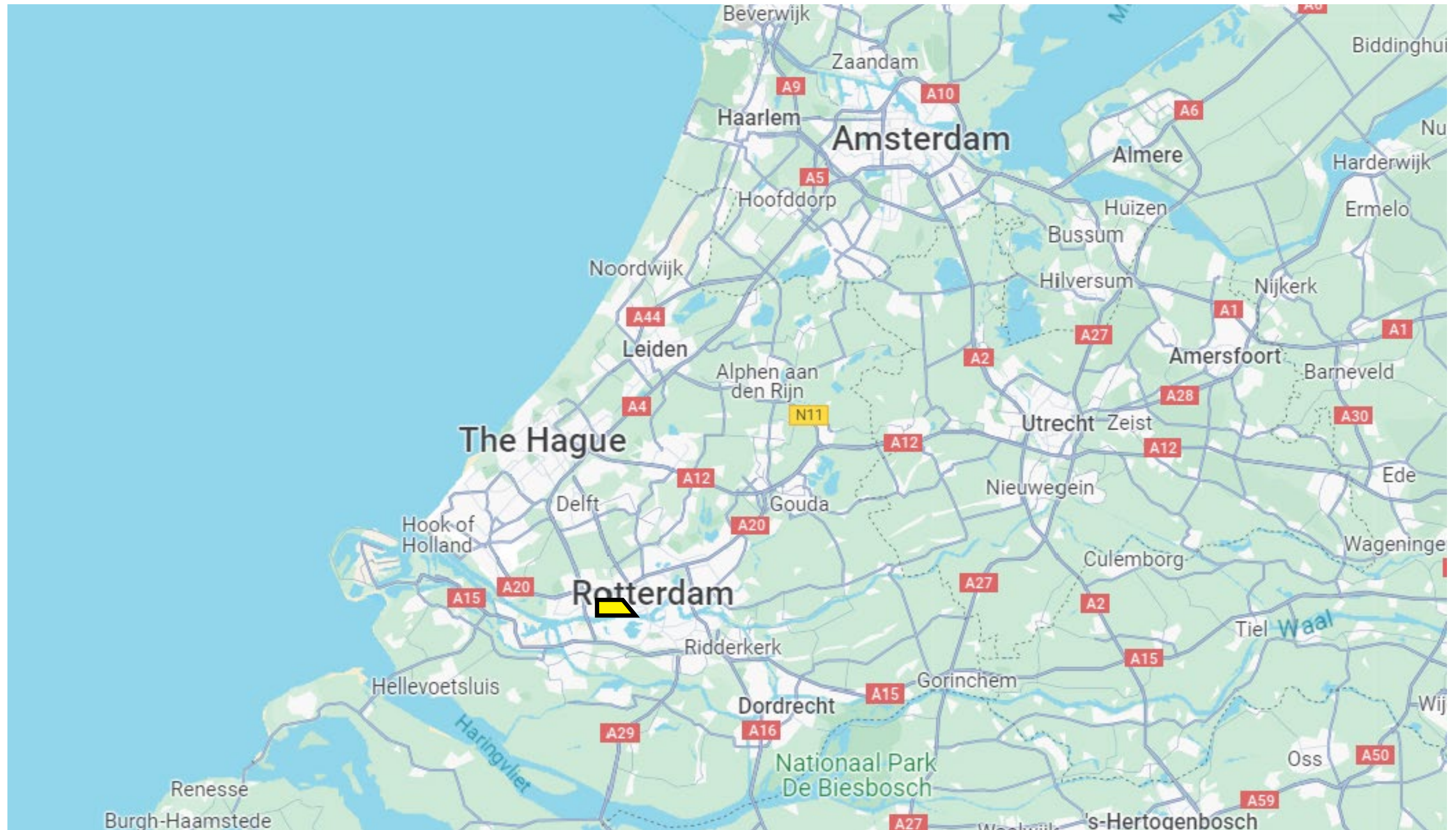
Design

- 1. Materplan**
- 2. Three special measurements**
- 3. Zoom-in: daily life environment**

Conclusion

- 1. Values and principles of a sustainable mix**
- 2. Future research suggestion**

Location



Location

Merwe-Vierhaven (M4H), land area is 165Ha



- Site outline
- Railway
- Primary road
- Site entrance of vehicles
- Internal road



Port-in-use

Manufacture industry

Port-in-use

Storage & logisitics

Tech/Bio Innovative company

Makerspace

Port storage

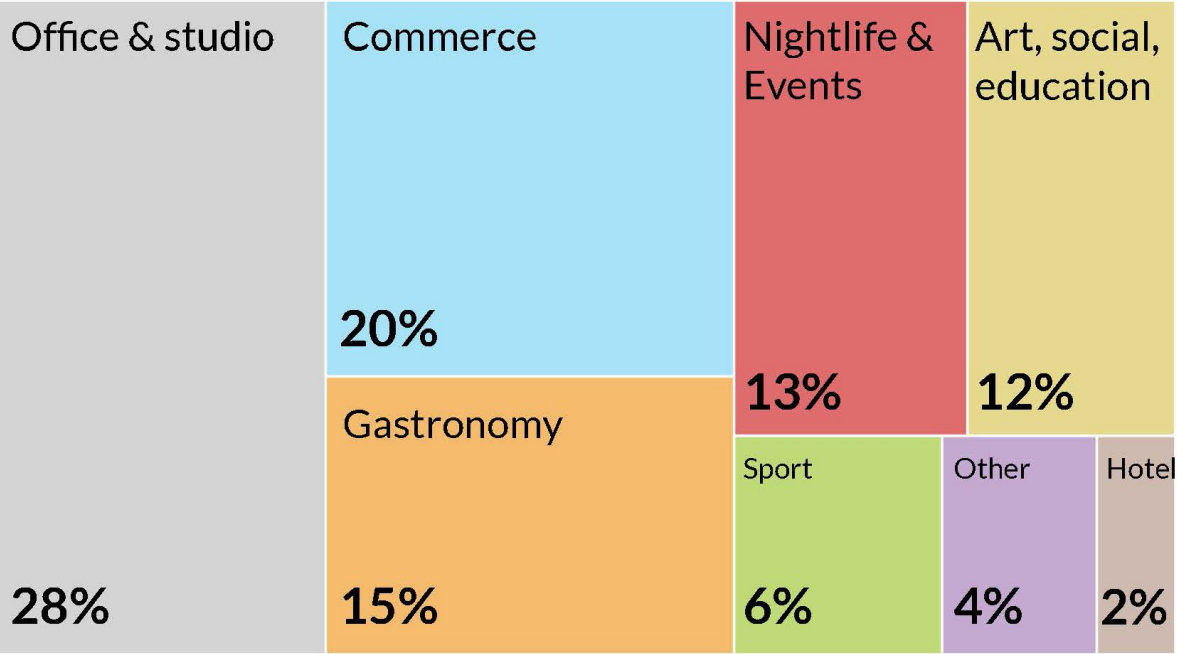
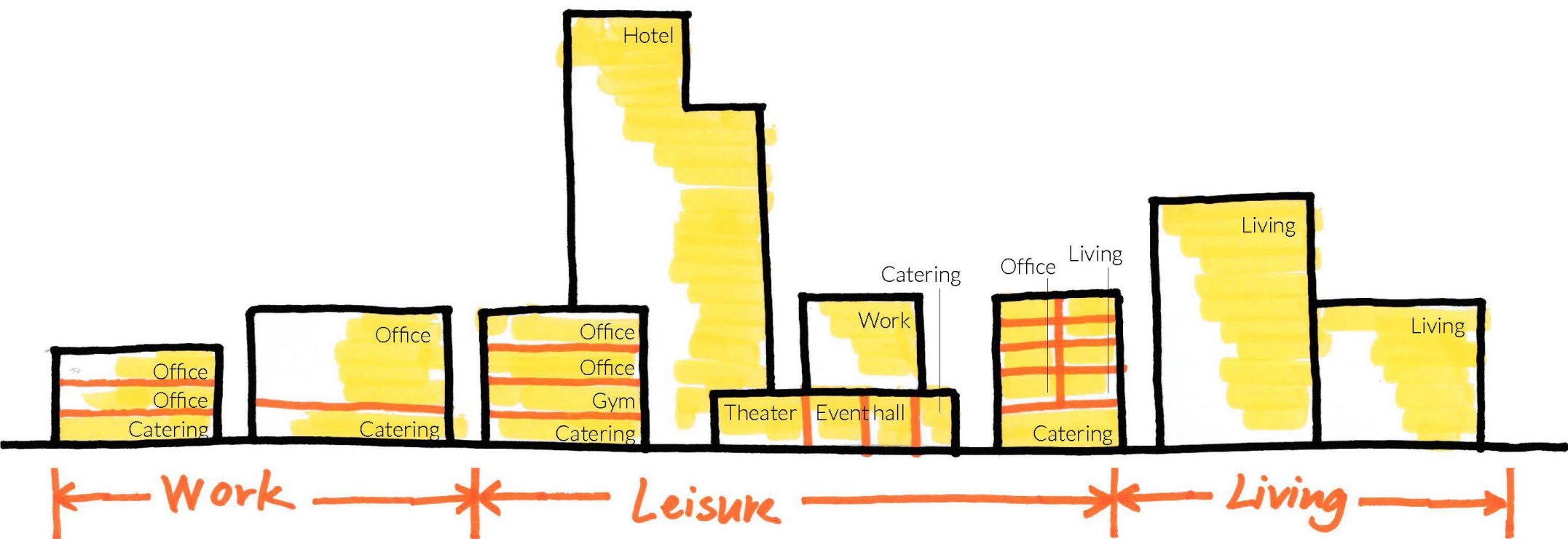
Municipality's vision for M4H: Trendy Mix



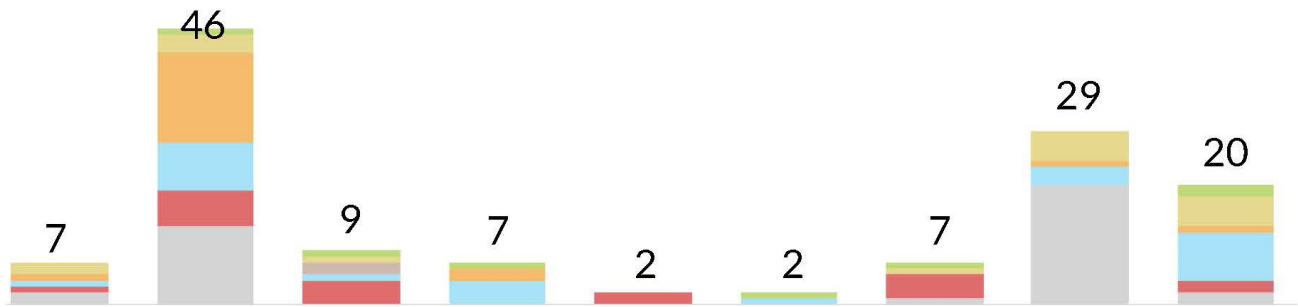
Source: Gemeente Rotterdam

Trendy Mix

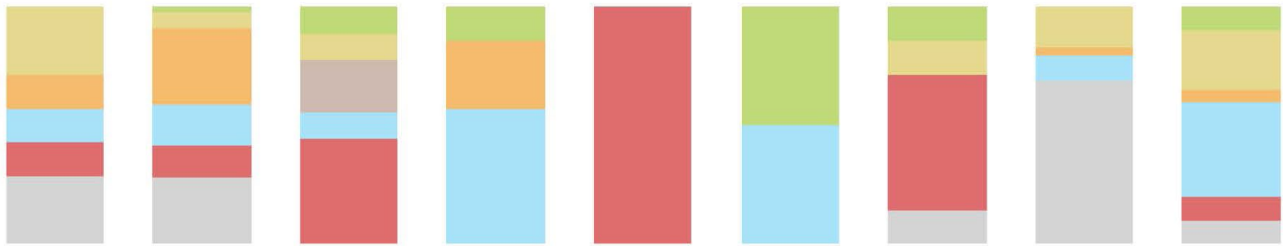
Often with this specific spatial arrangement.



Mix of programmes in leisure-oriented area



Programmes in each mix-use building



Werk1 Werk3 Werk4 Werk5 Werk7 Werk9 Werk12 ECKhaus Coco

Proportion of programmes mixed in buildings

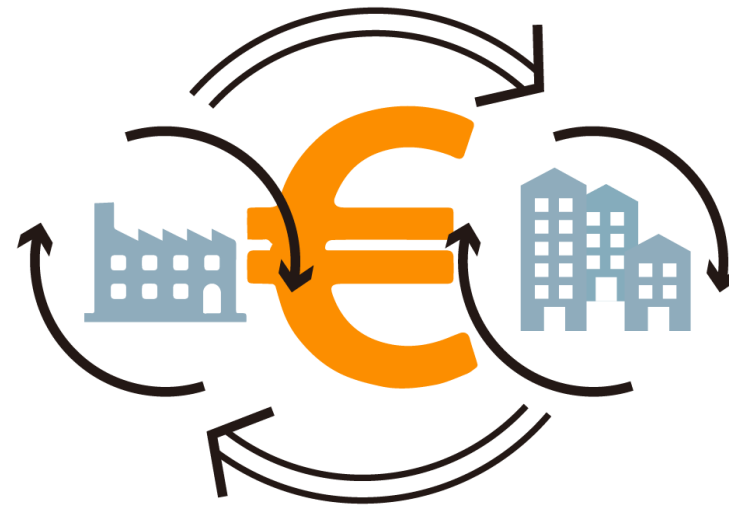


Source: Delva

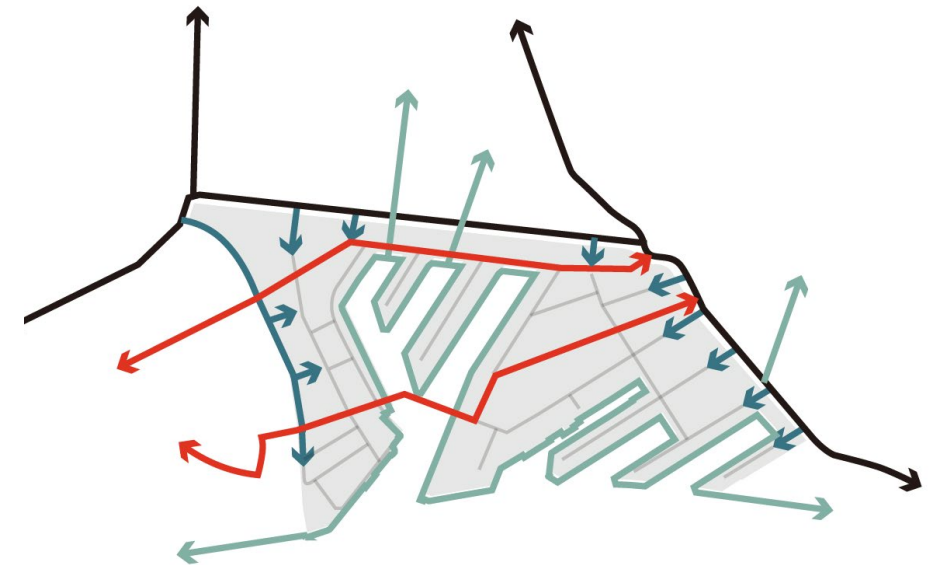
Goals of Sustainable Mix



1 Inclusive living
accommodate different
groups of people



2 Diverse work
the pillar - manufacture &
growth poles - makerspace



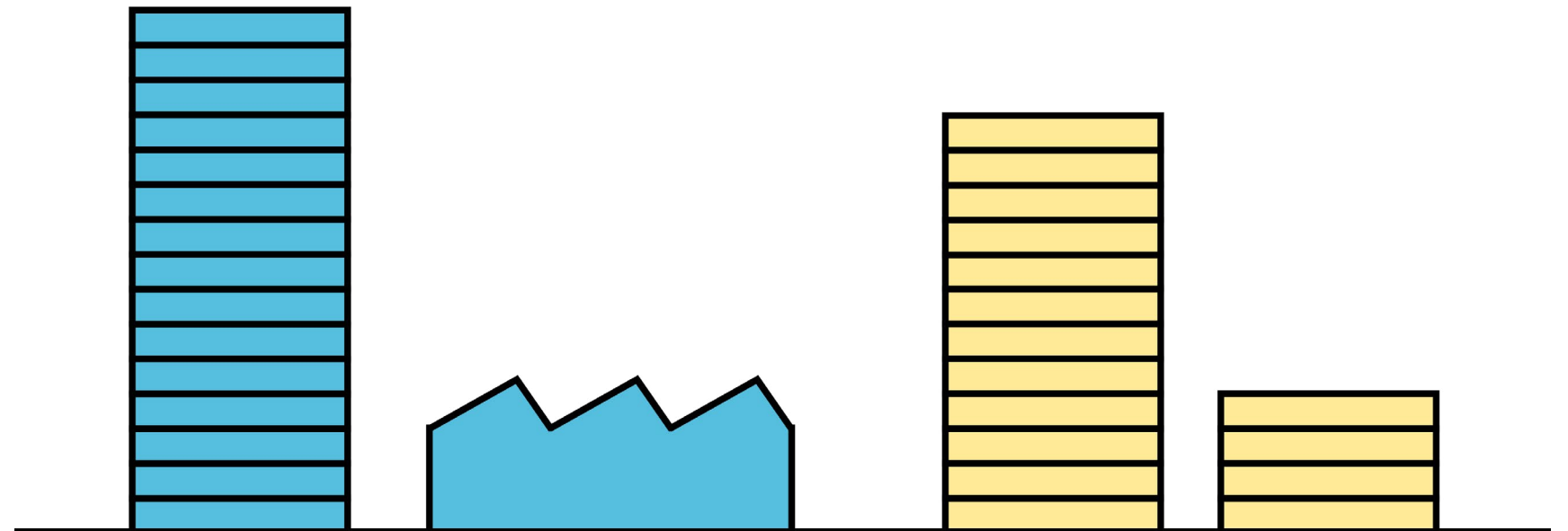
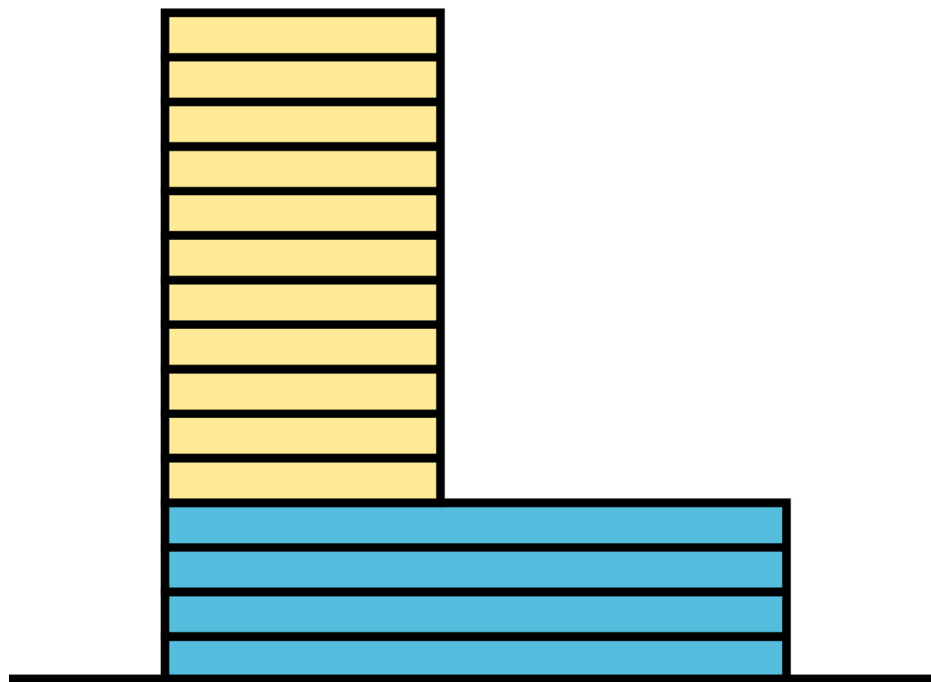
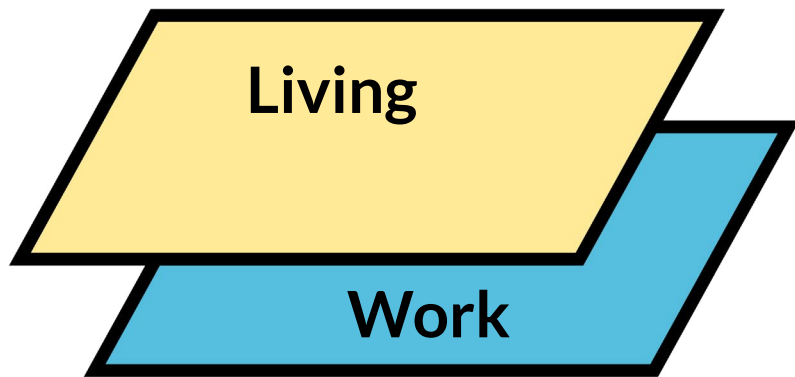
3 Enhance connectivity
- among communities, &
- between two cities

Sustainable Mix Scheme

Trendy Mix



Sustainable Mix



PROCESS

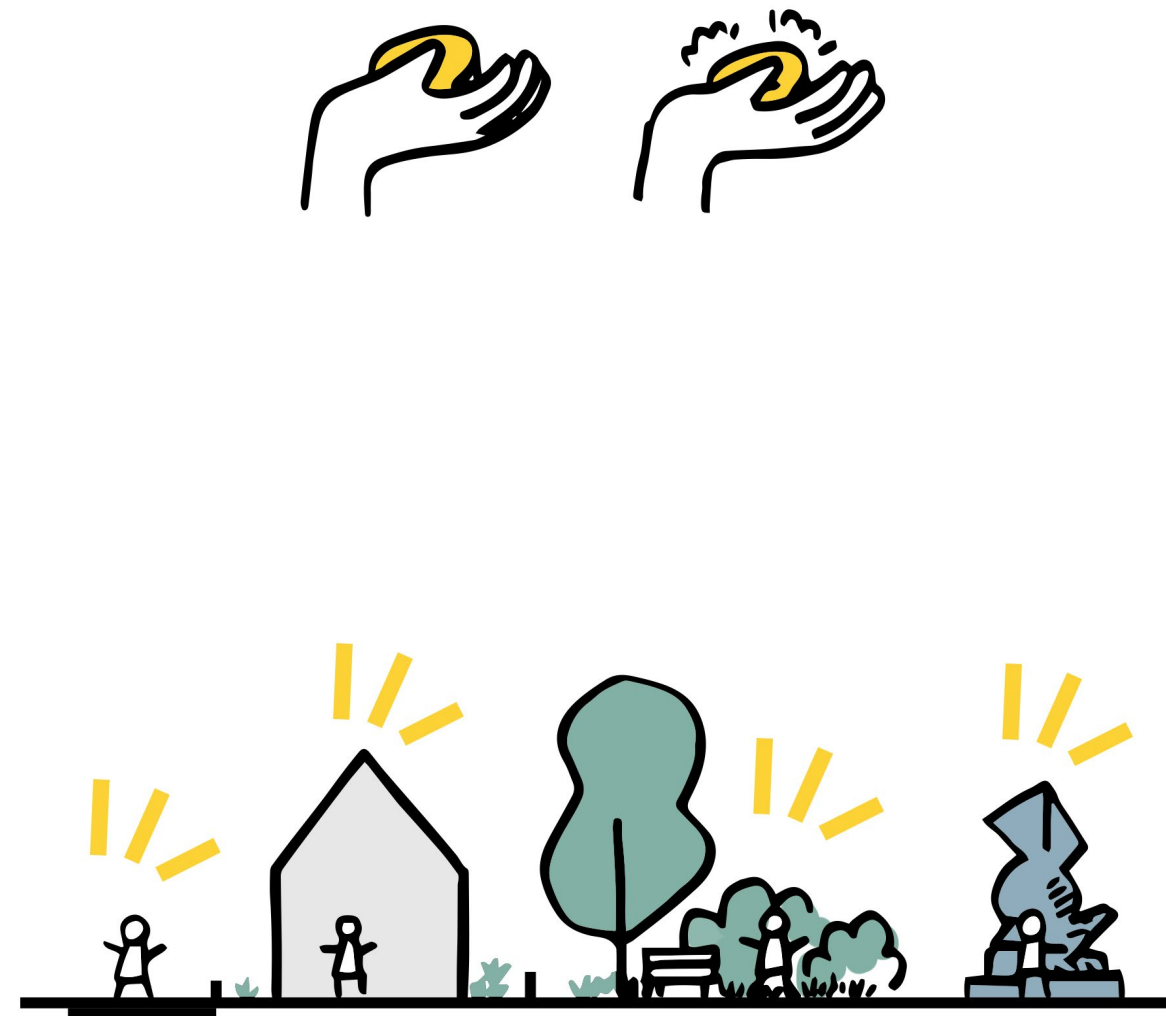
1. Experiment with eastern philosophy
2. Developing process

Concept

Mindset of possessing

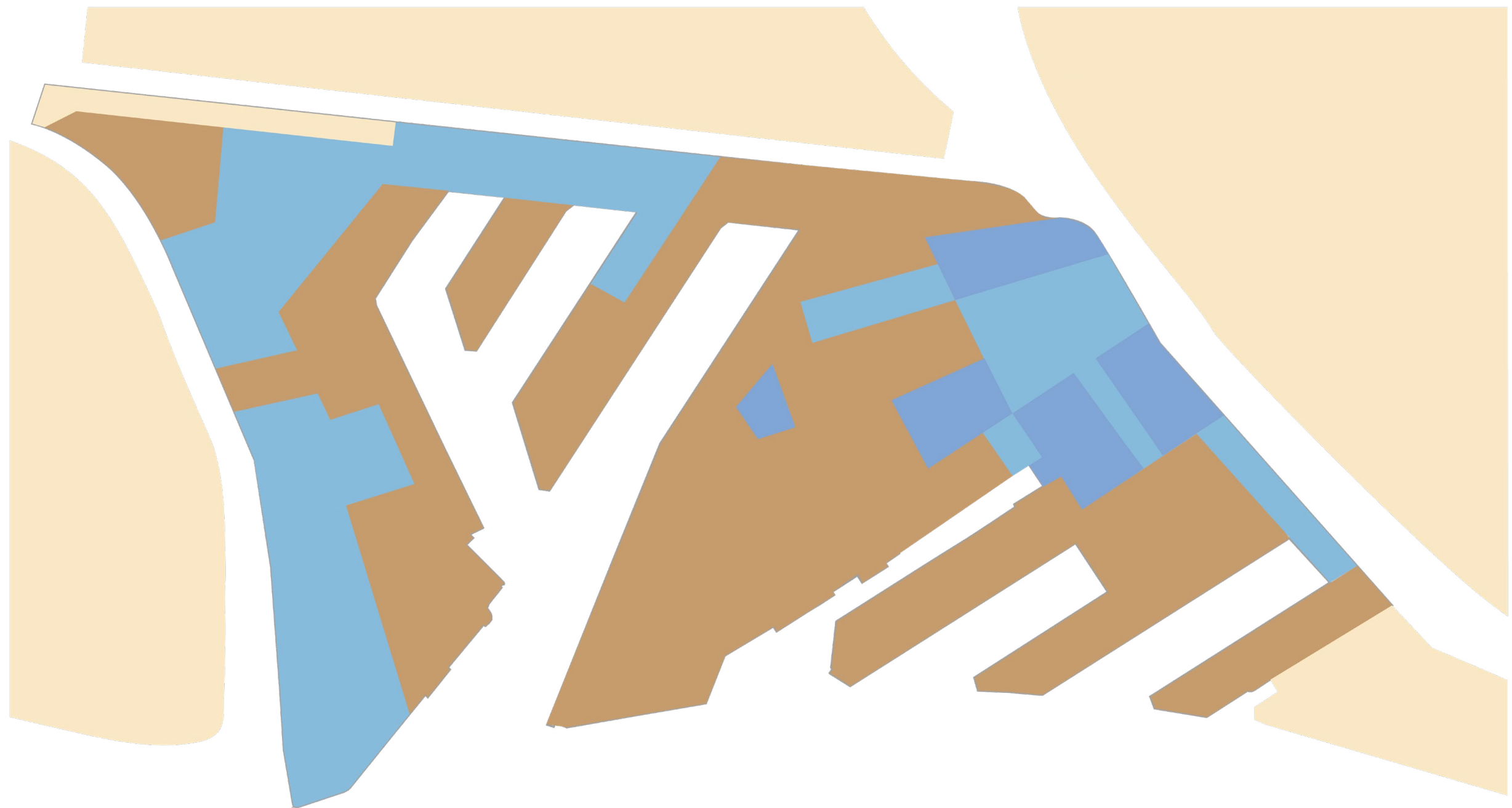


Mindset of appreciating

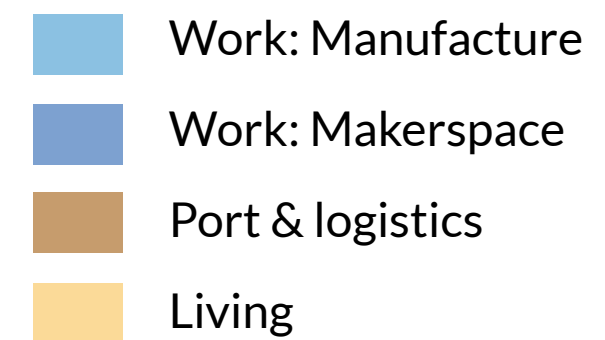


* 天下大同

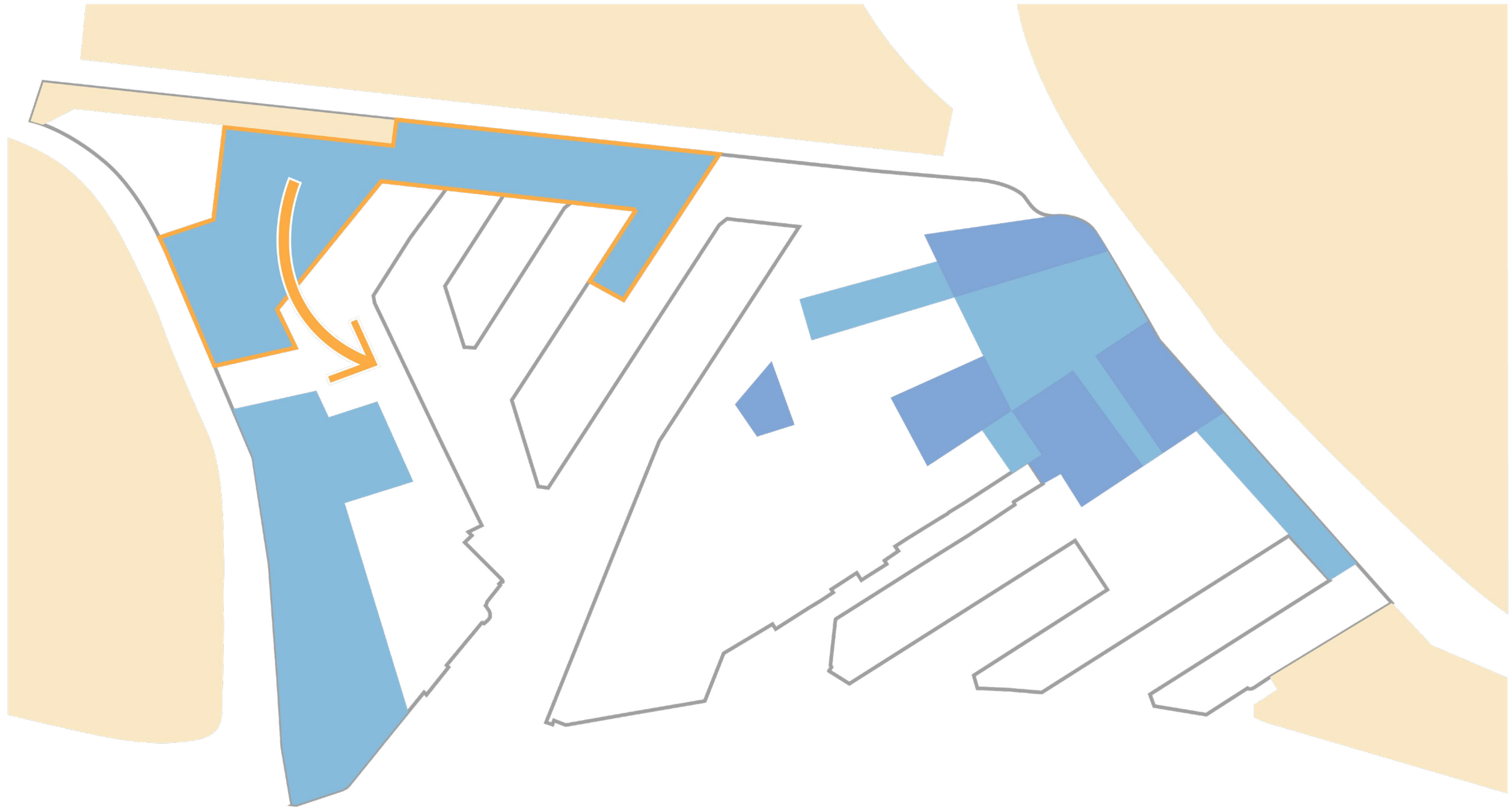
Development process - step 1



from an industrial with three
types of works

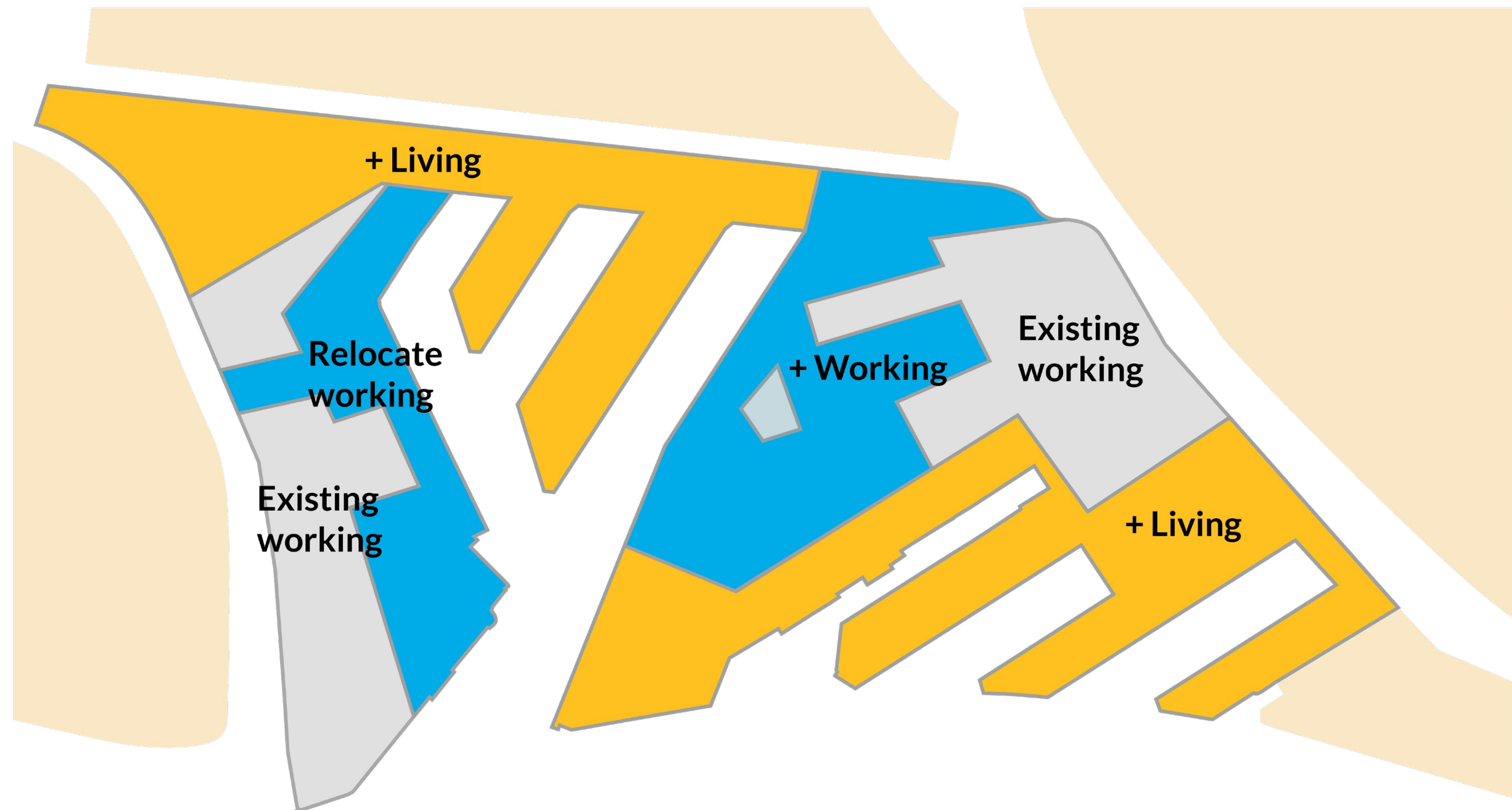


Step 2



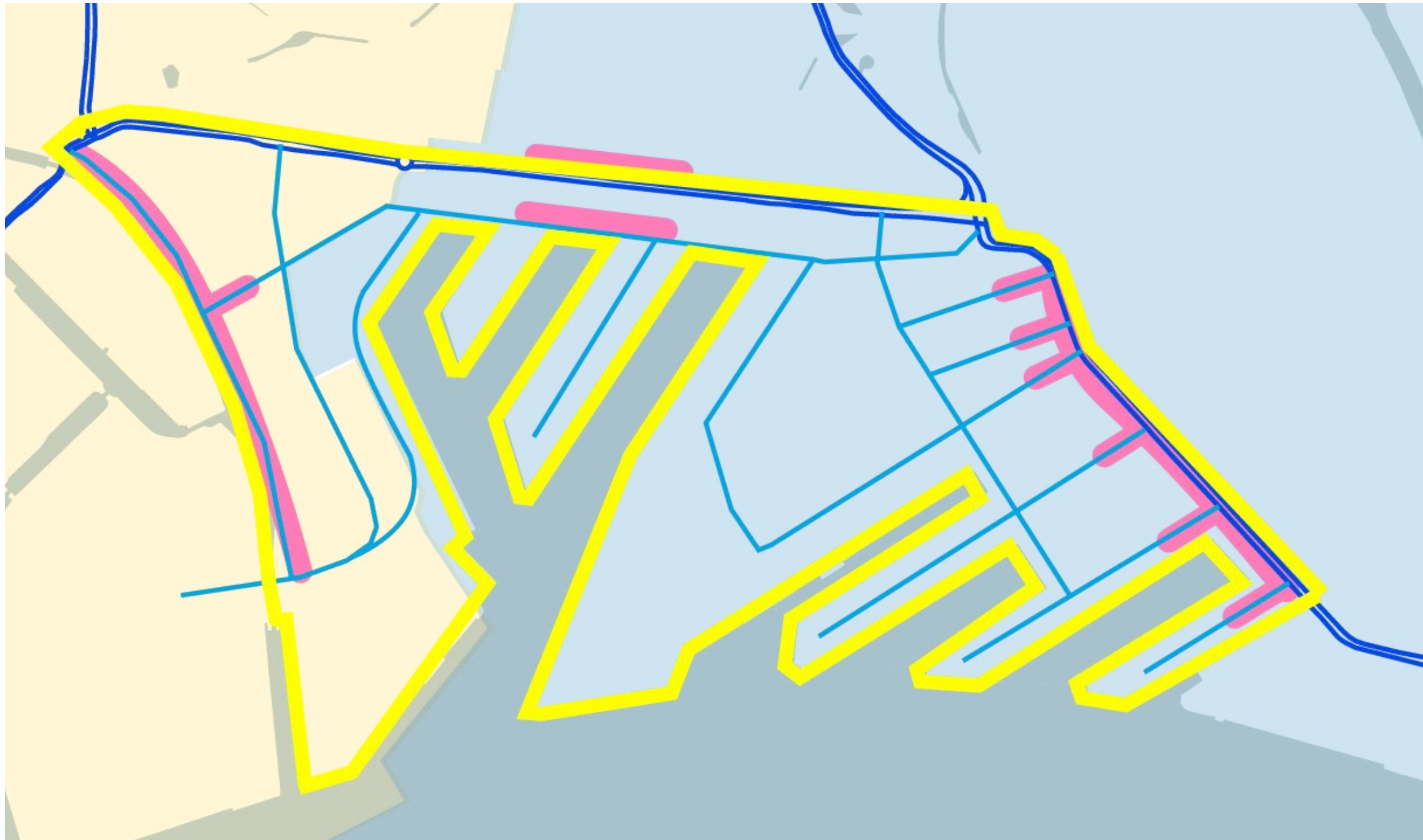
**Remove port, and relocating
manufacture to the left island**

Step 3



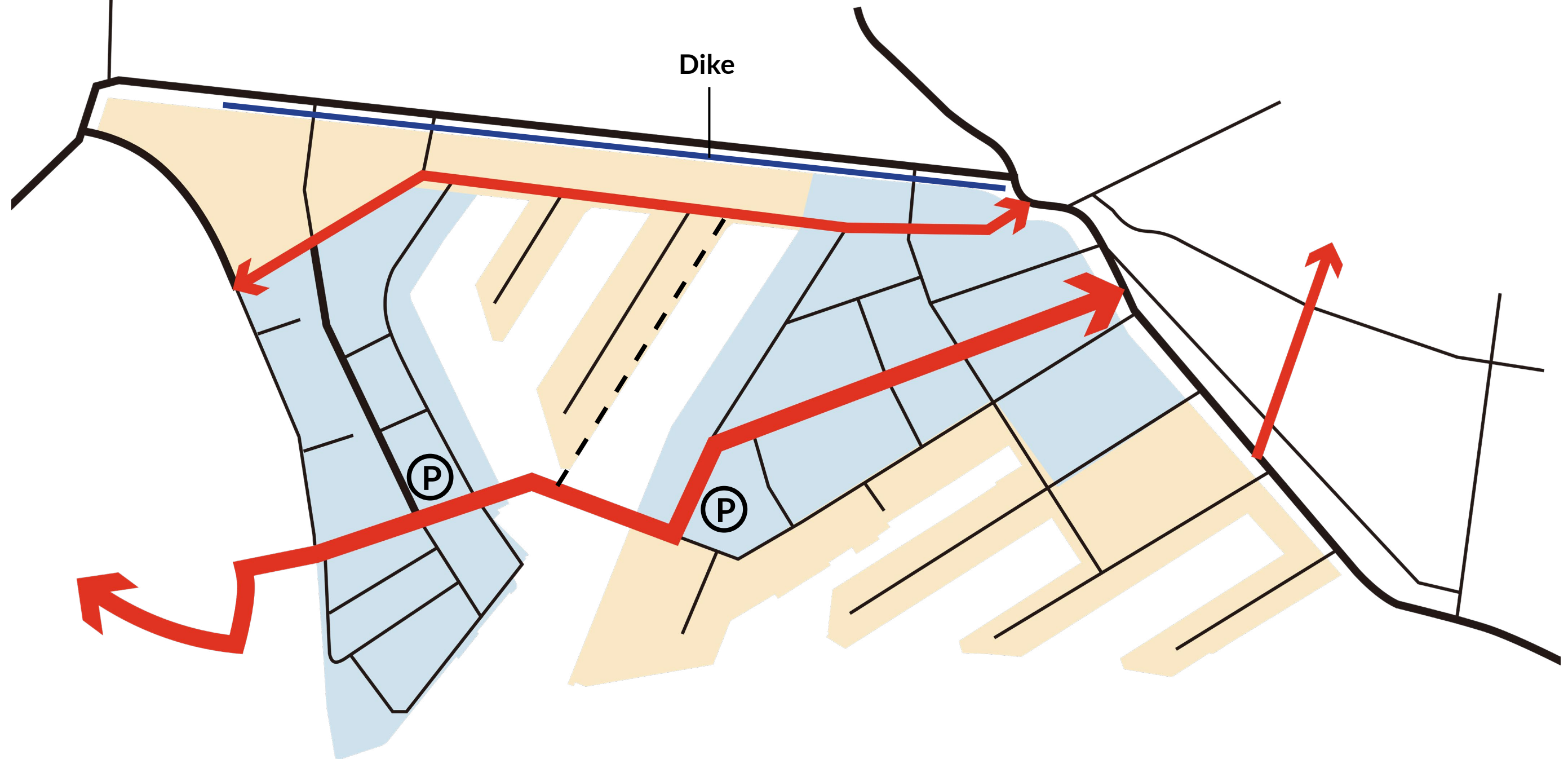
Add living and working parcels
to empty land

Step 4



Multiple entrances, no roads crossing the site, nor roads linking left and right island.

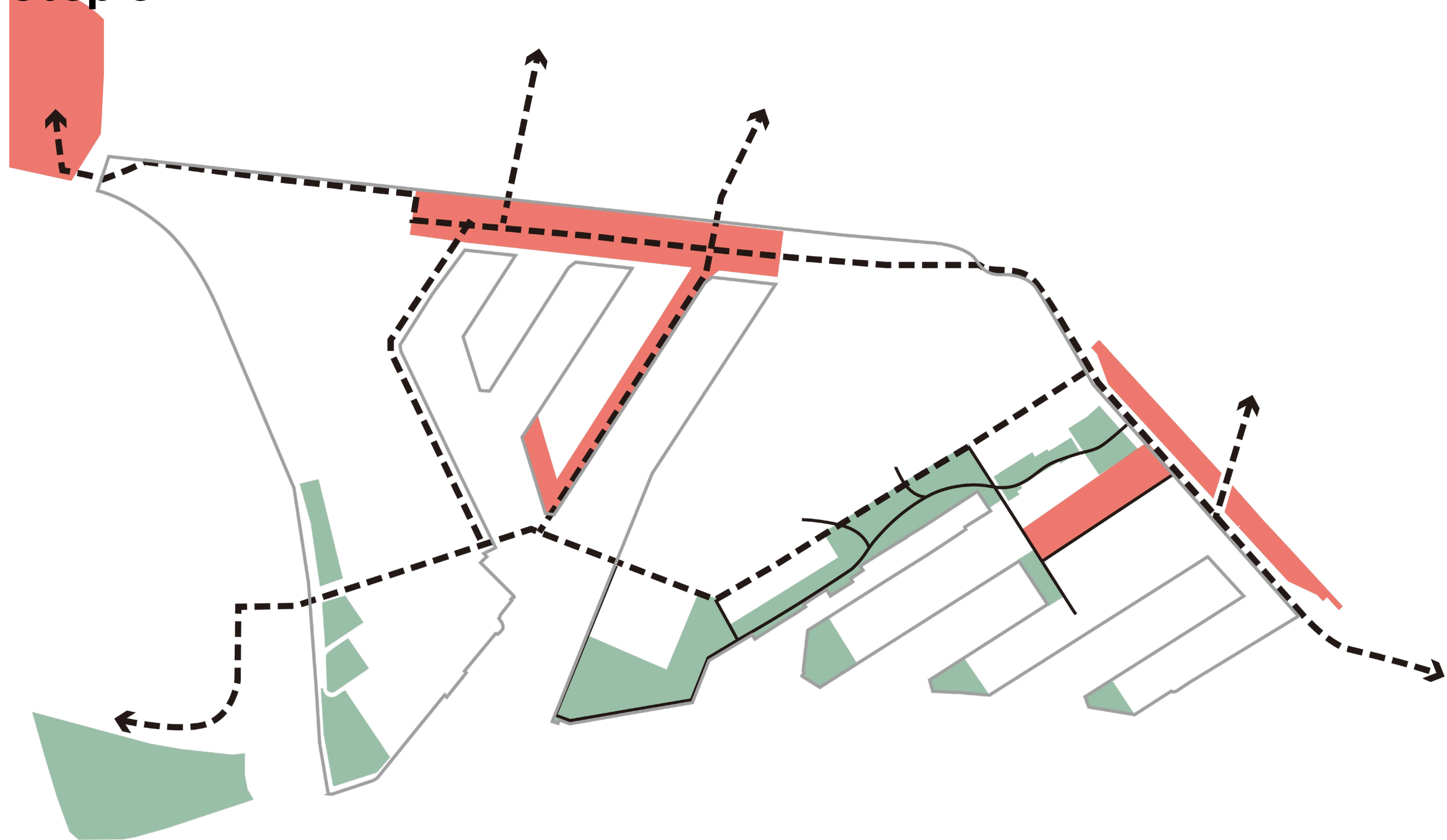
Step 5



Add roads linking left and right island, and connecting R'dam & Schiedam.

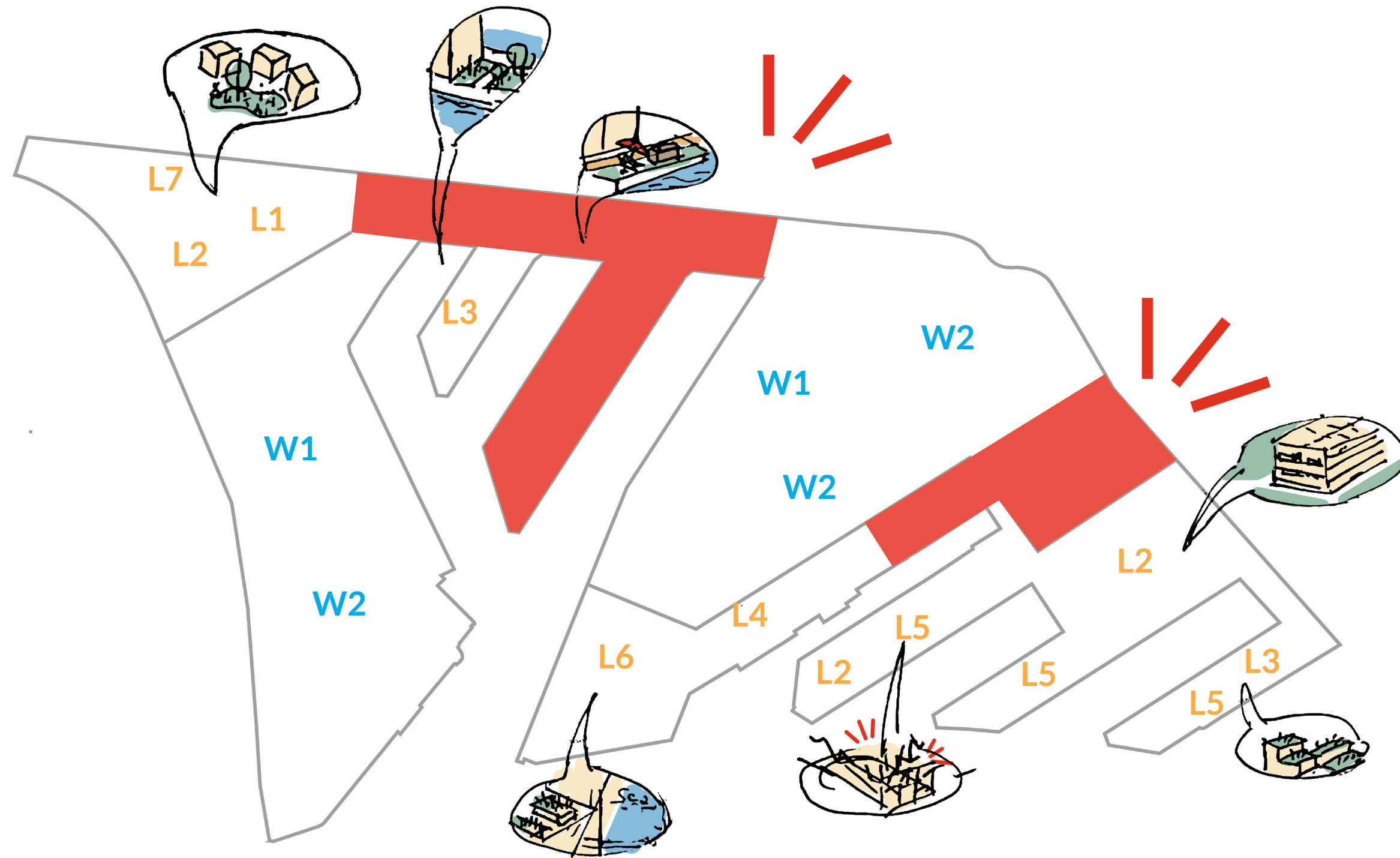
Working
Living

Step 6



Design a public space network to offer people good quality of stay.

Step 7



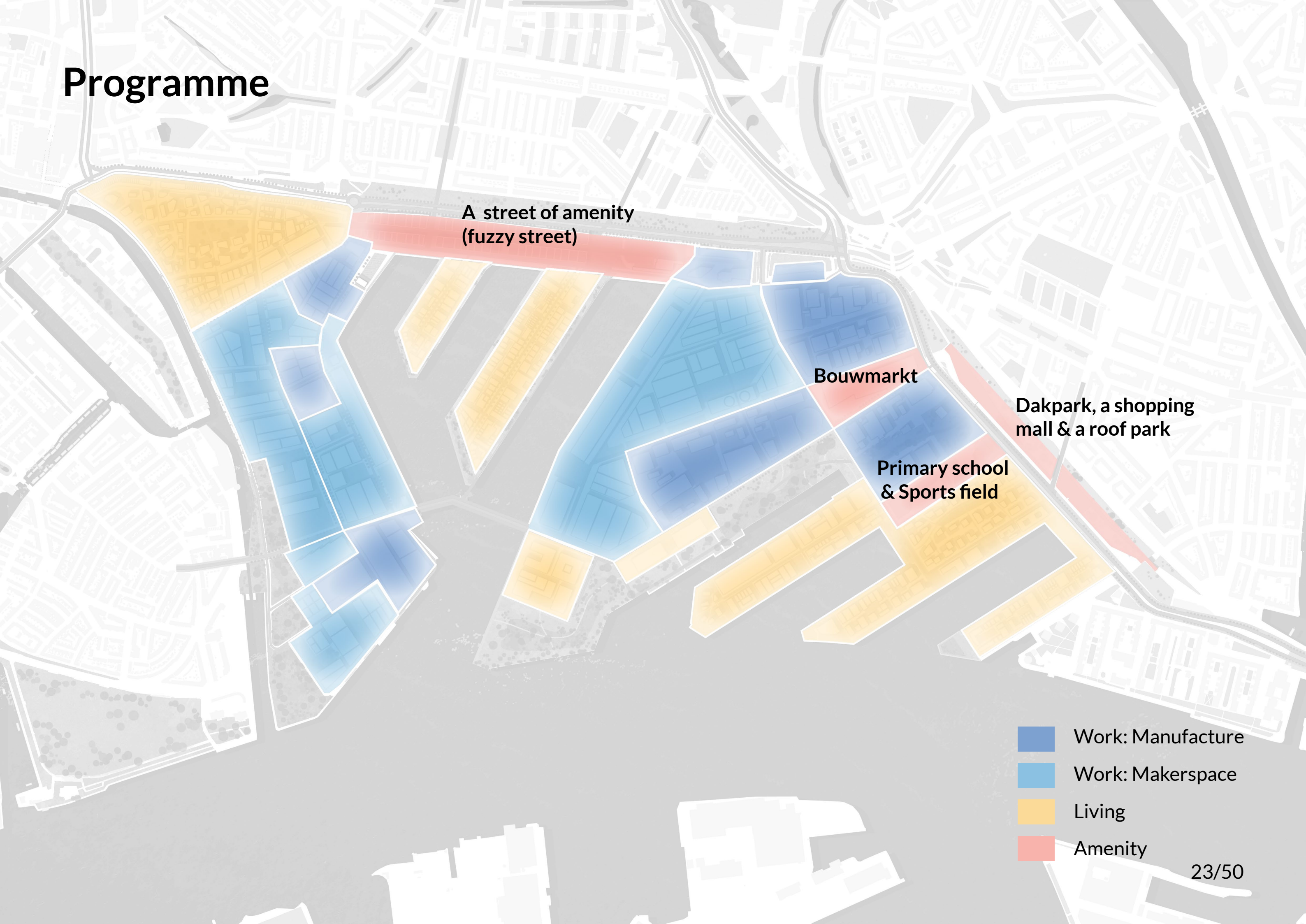
Cut large plot into small blocks with distinct characters.

THE DESIGN

1. Materplan
2. Special measurements
3. Zoom-in: daily life environment



Programme



A street of amenity
(fuzzy street)

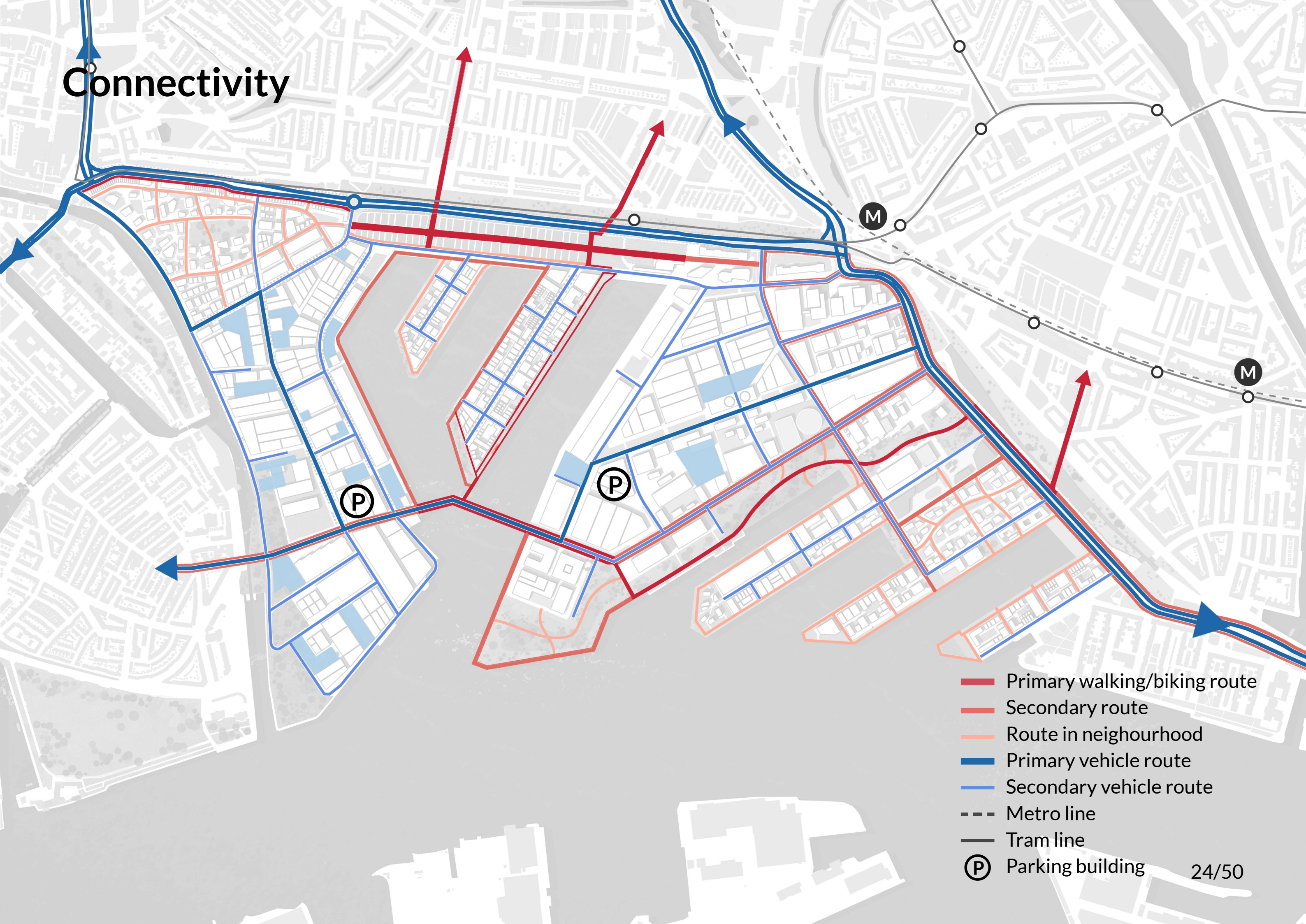
Bouwmarkt

Primary school
& Sports field

Dakpark, a shopping
mall & a roof park

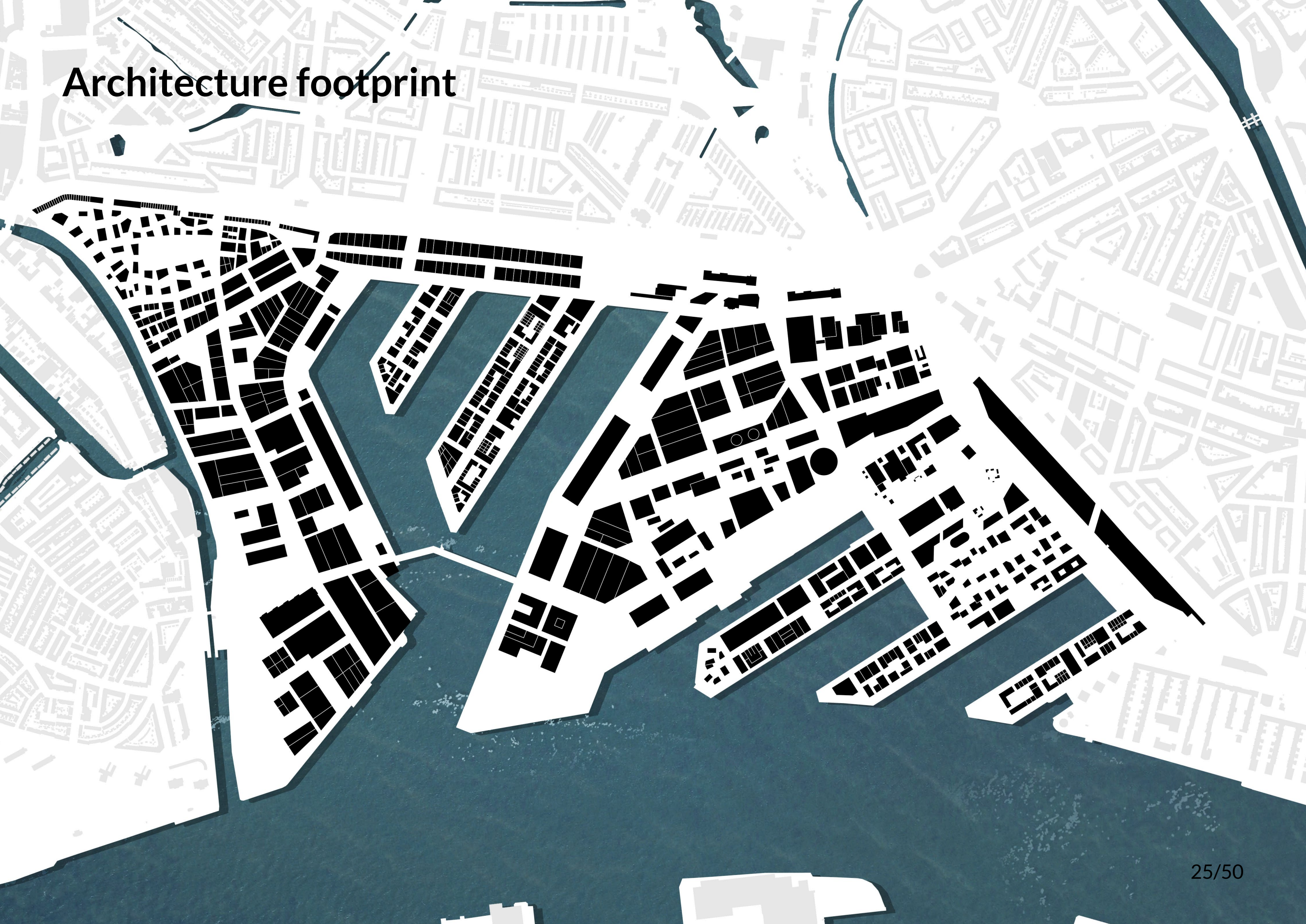
- Work: Manufacture
- Work: Makerspace
- Living
- Amenity

Connectivity



- Primary walking/biking route
- Secondary route
- Route in neighbourhood
- Primary vehicle route
- Secondary vehicle route
- Metro line
- Tram line
- (P) Parking building

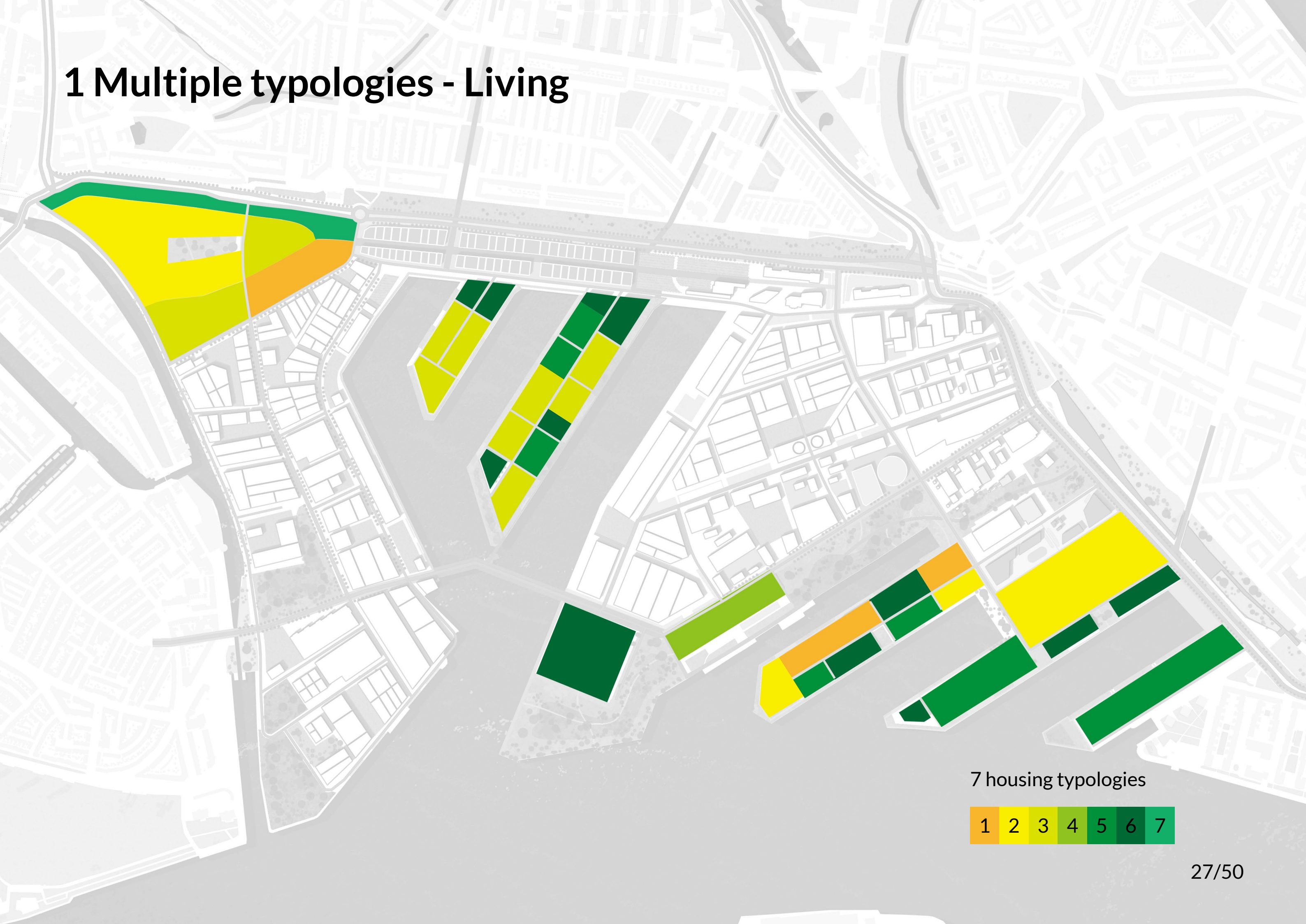
Architecture footprint



Special measurements:

- 1) Multiple typologies
- 2) Public space network
- 3) Landscape

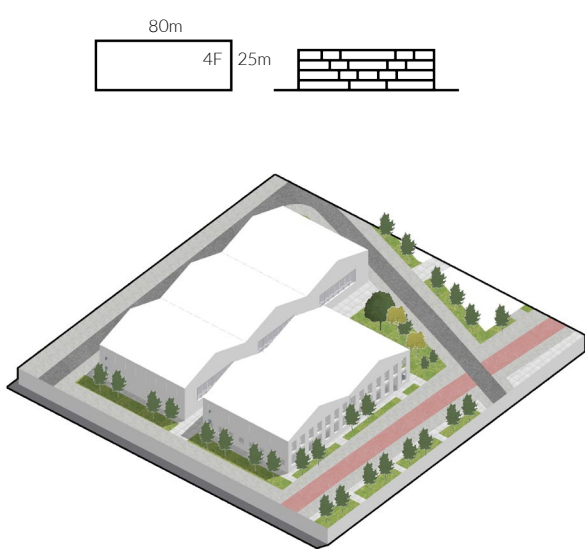
1 Multiple typologies - Living



7 housing typologies



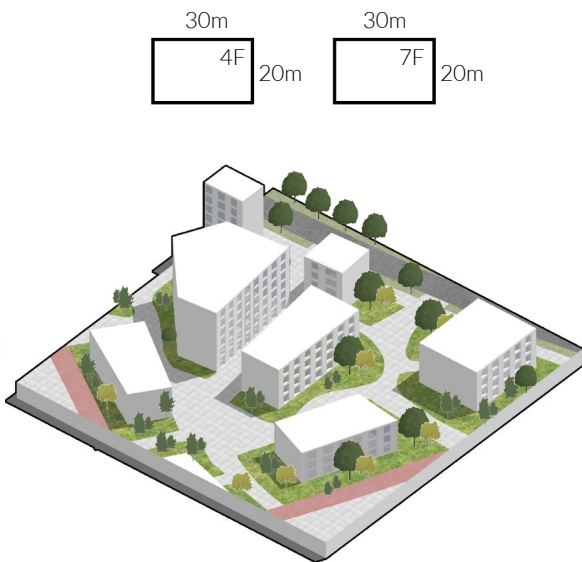
1 From factory to housing



Housing for young adult/ students, & housing for temporal stay

150 persons per Ha

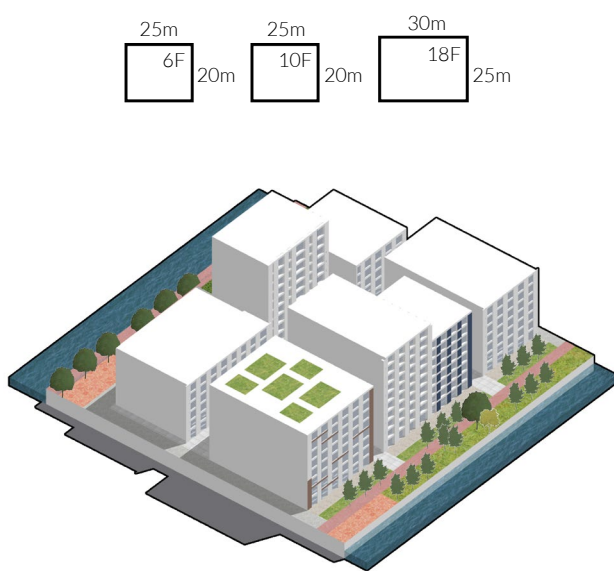
2 Naturally scattered housing



70% market housing, 30% social housing

310 persons per Ha

3 Modern block



Family housing, for new couples around 30, and middle-aged partners moving back from suburban

600 persons per Ha

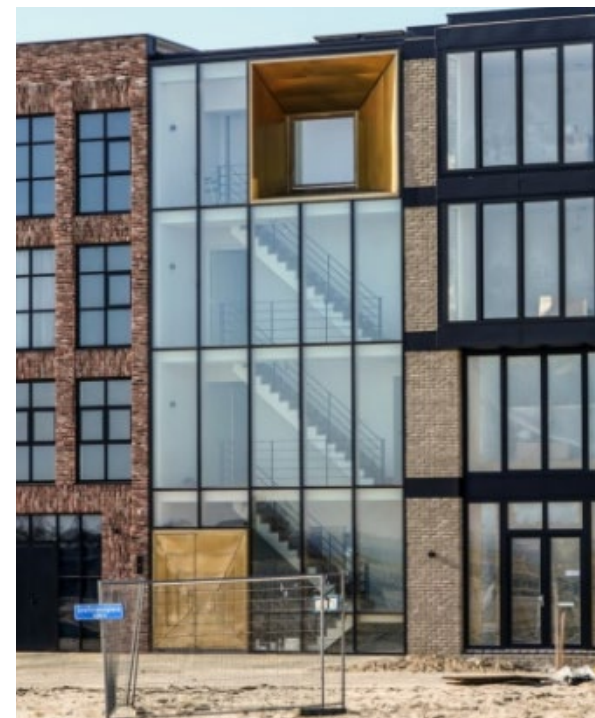
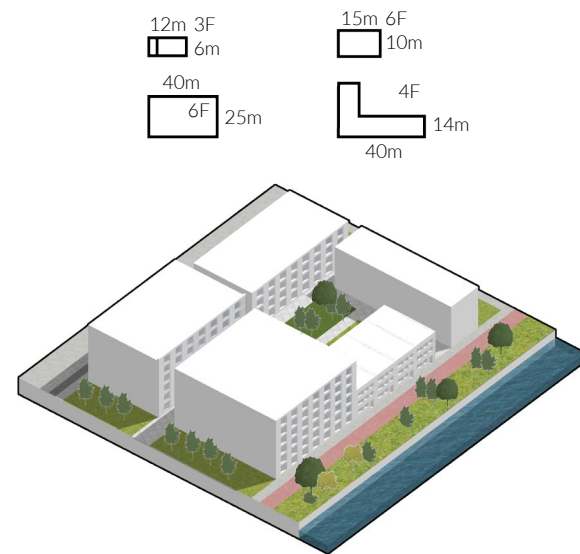
4 Tower



Market apartments with various sizes

500 persons per Ha

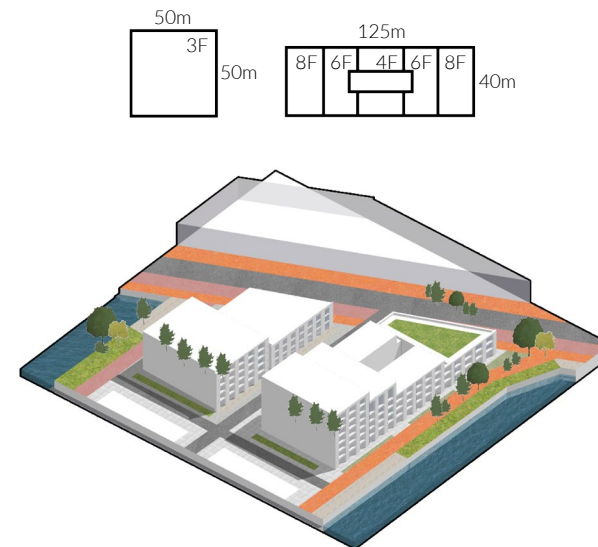
5 Blender



Family home;
detached house;
and housing for singles,
young couples.
30% social housing.

350 persons per Ha

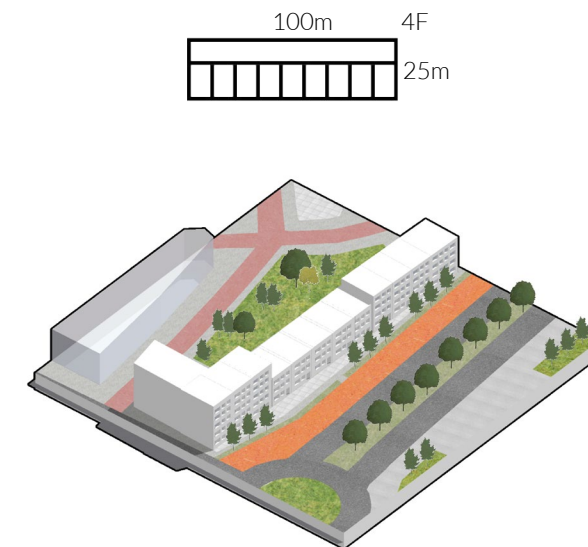
6 Cohousing



Family home,
housing for singles,
and houses for young
couples.
40% of social housing

100 to 500 persons
per Ha

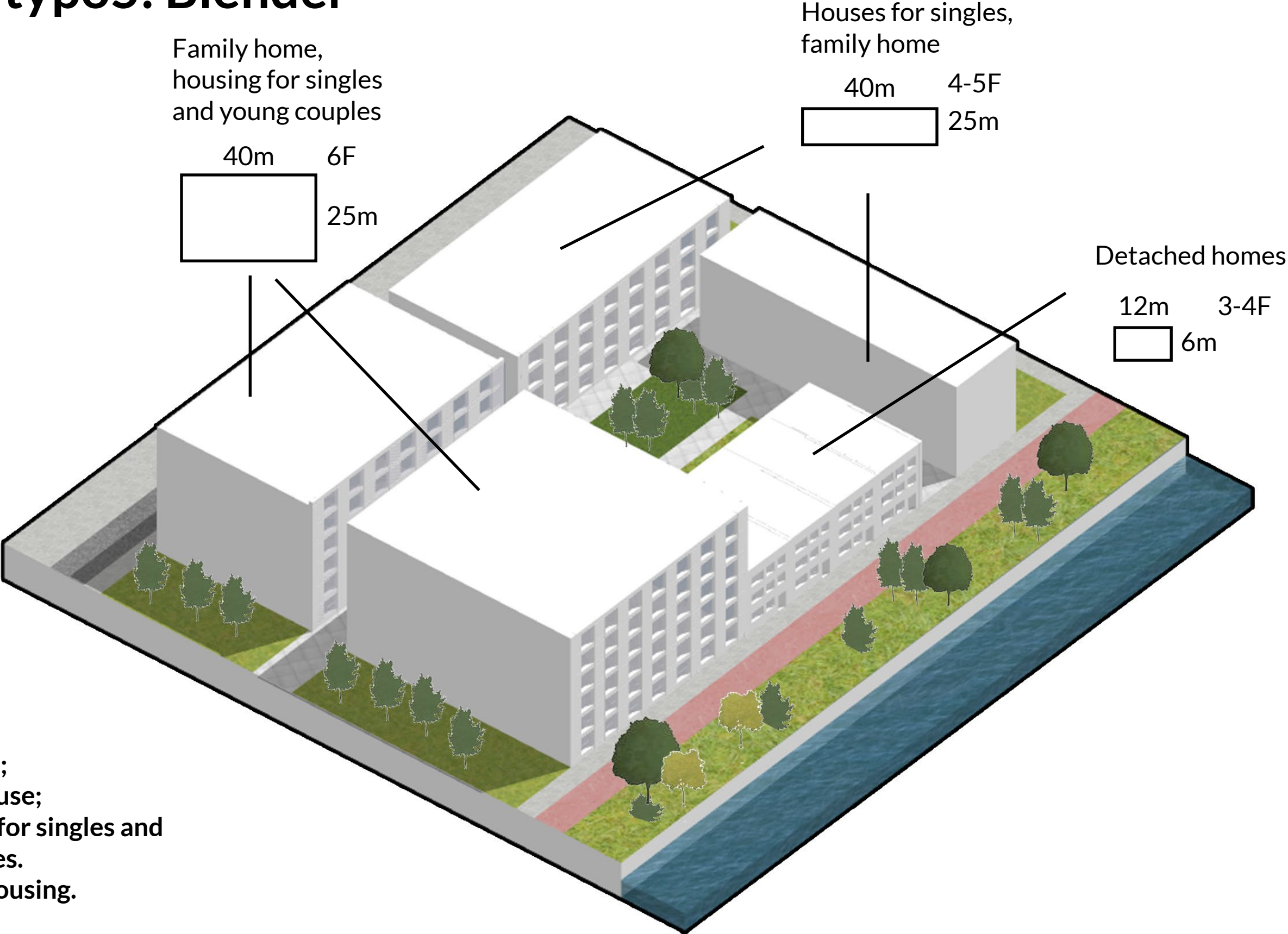
7 Row housing



Regular apartment;
50% market housing
50% social housing

250 persons per Ha

Living typo5: Blender

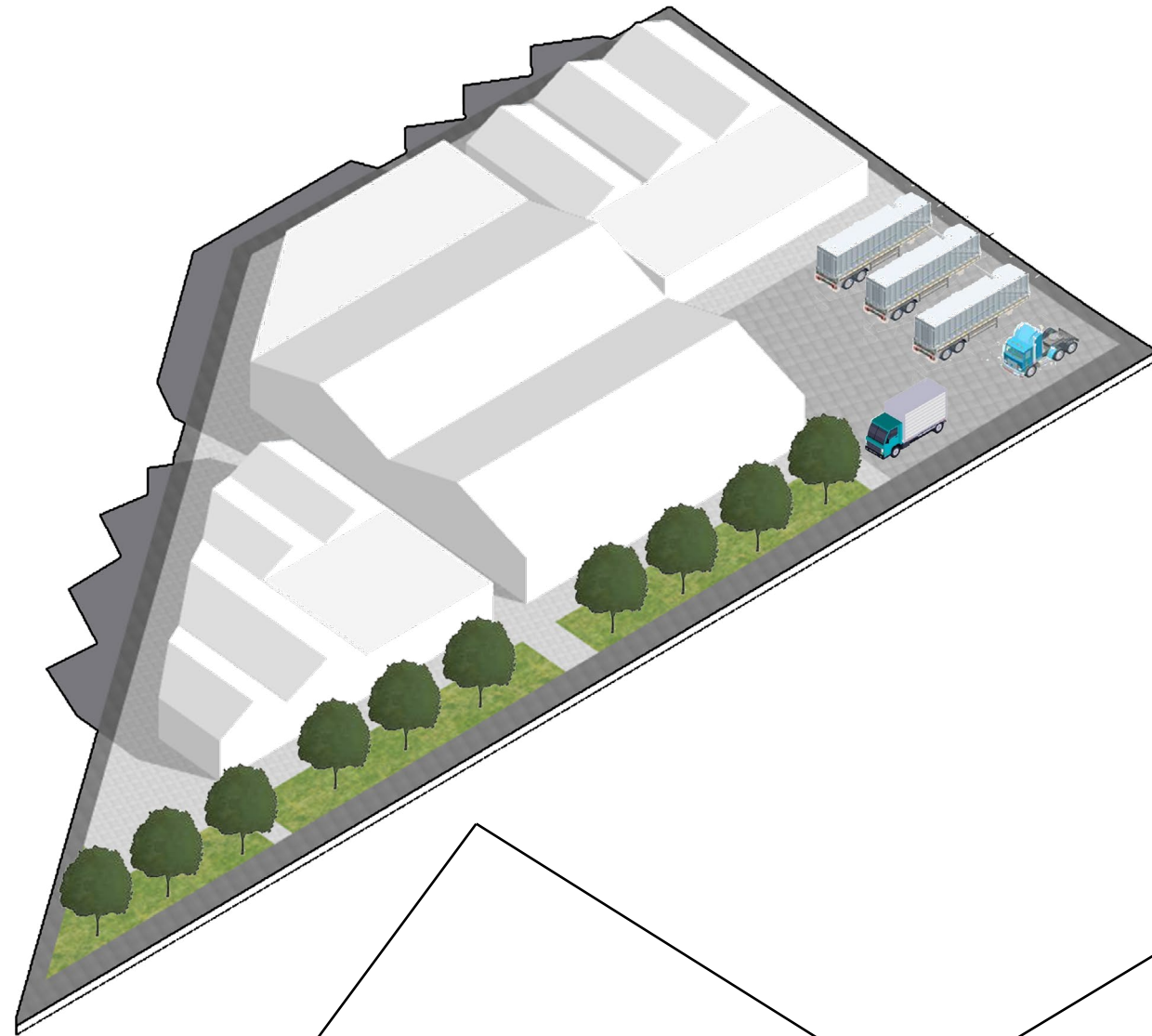


350 persons per Ha

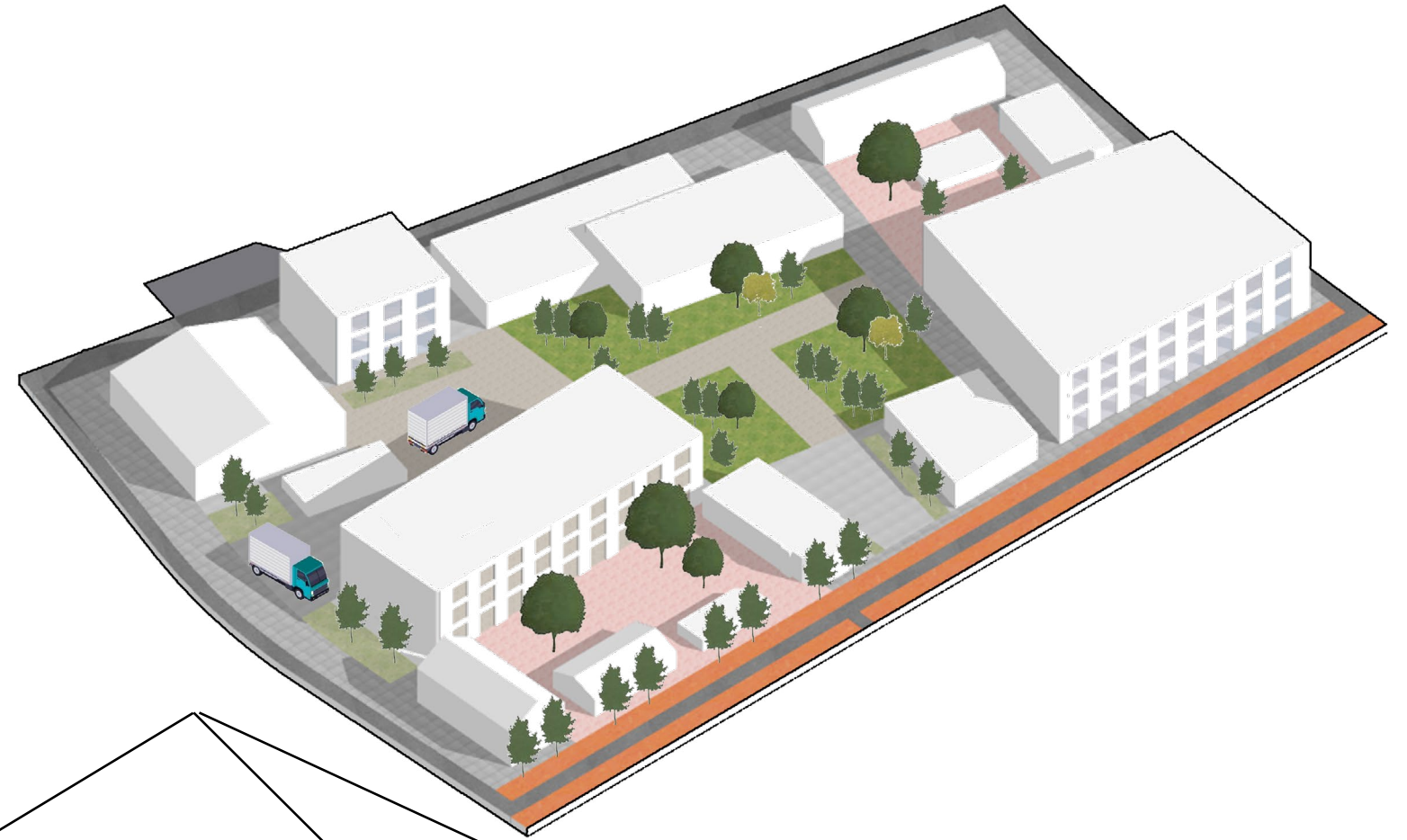


Work

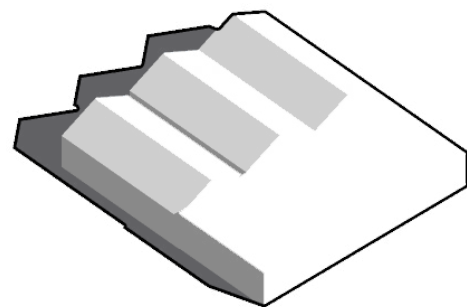
1 Manufacture



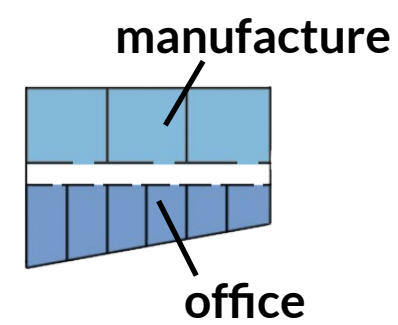
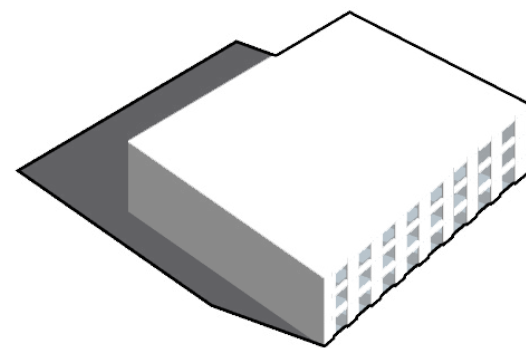
2 Makerspace



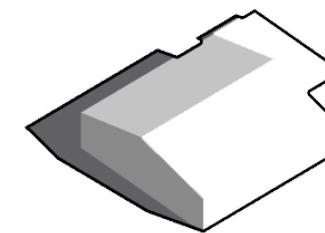
Typo1: Factory



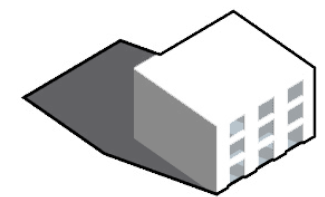
2: multi-industry building



3: Art&design studio

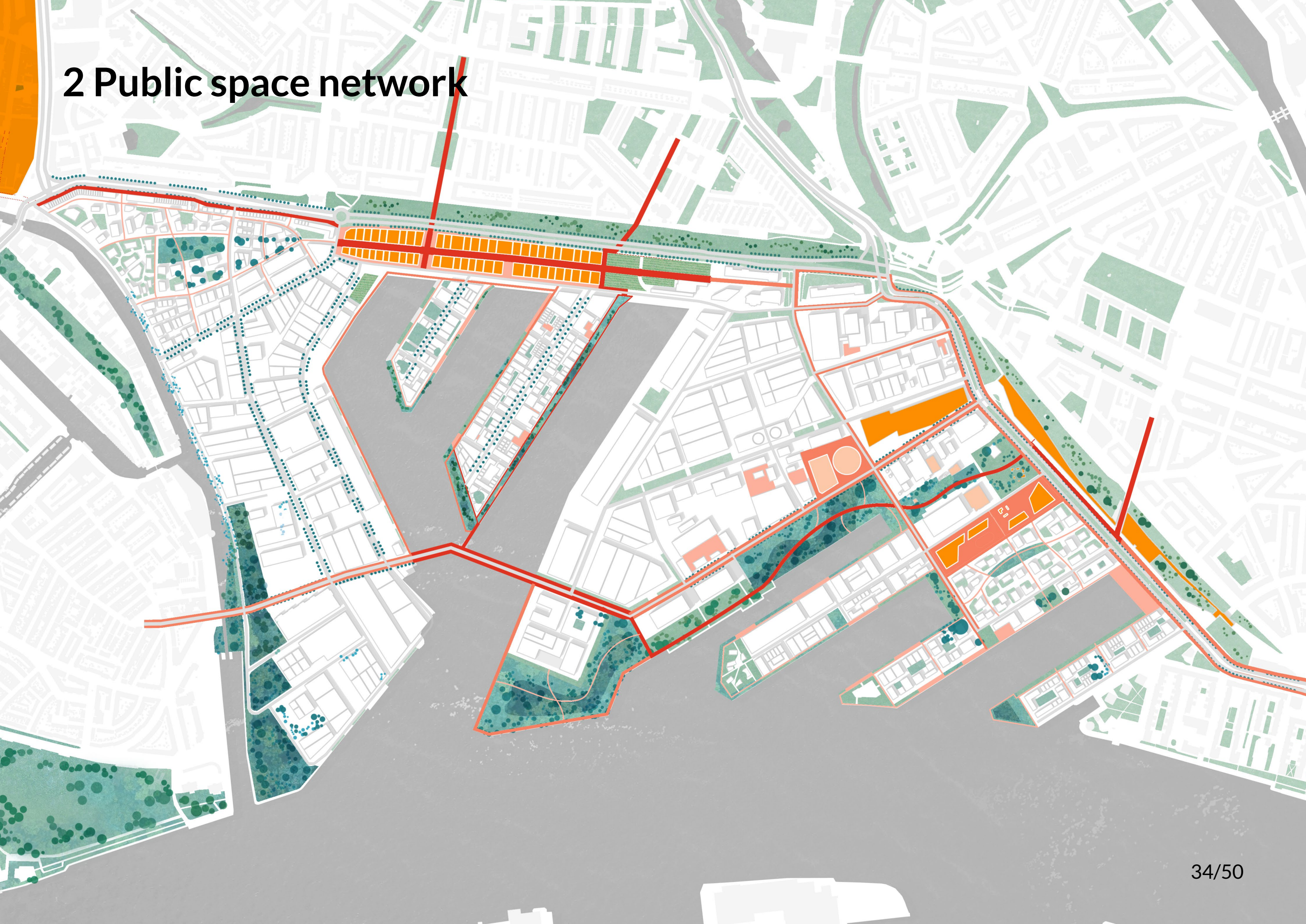


4 Regular office





2 Public space network



Regular street

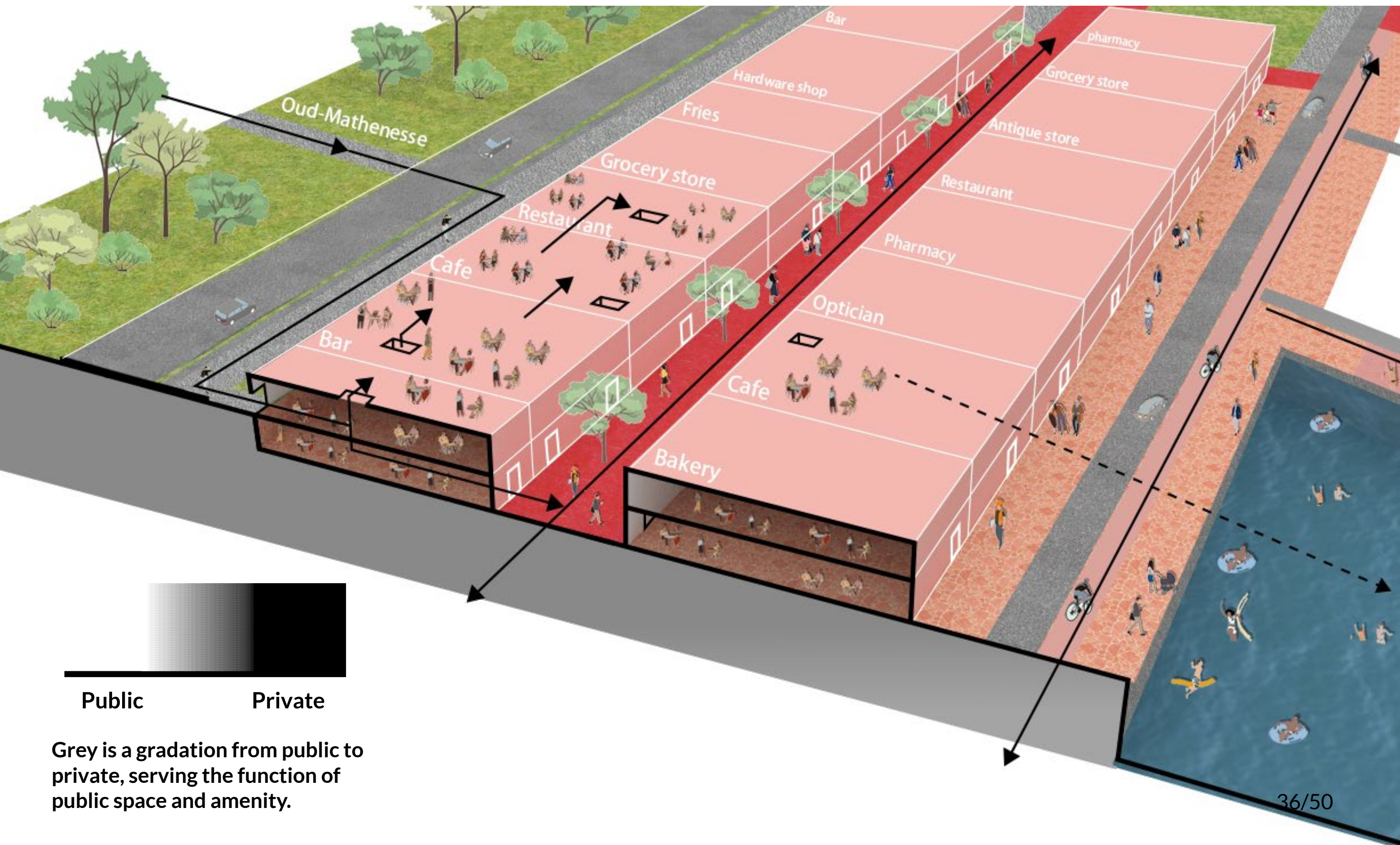


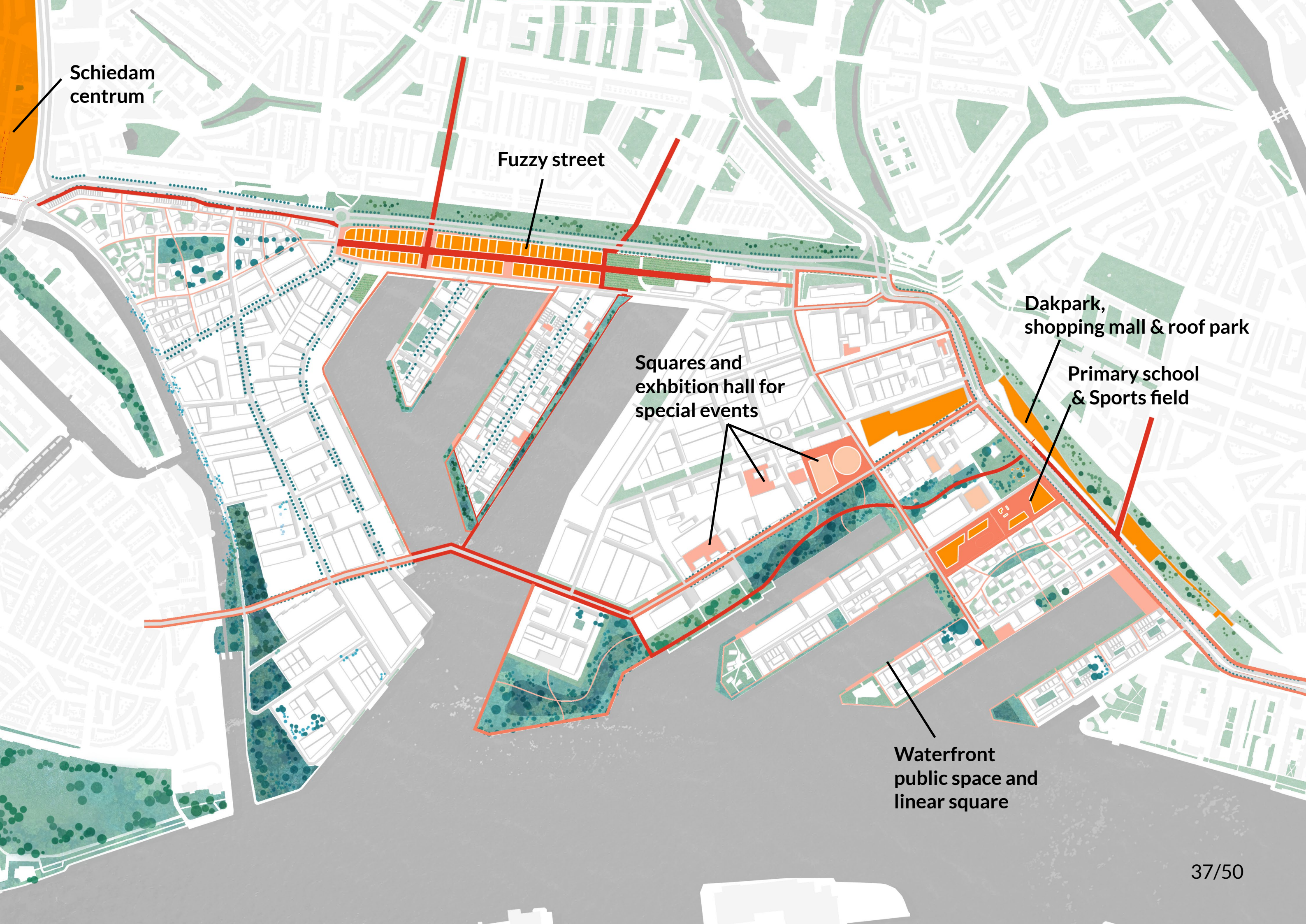
Public

Private

A typical streetscape with
a clean separation between
public and private.

Fuzzy street





Schiedam
centrum

Fuzzy street

Squares and
exhibition hall for
special events

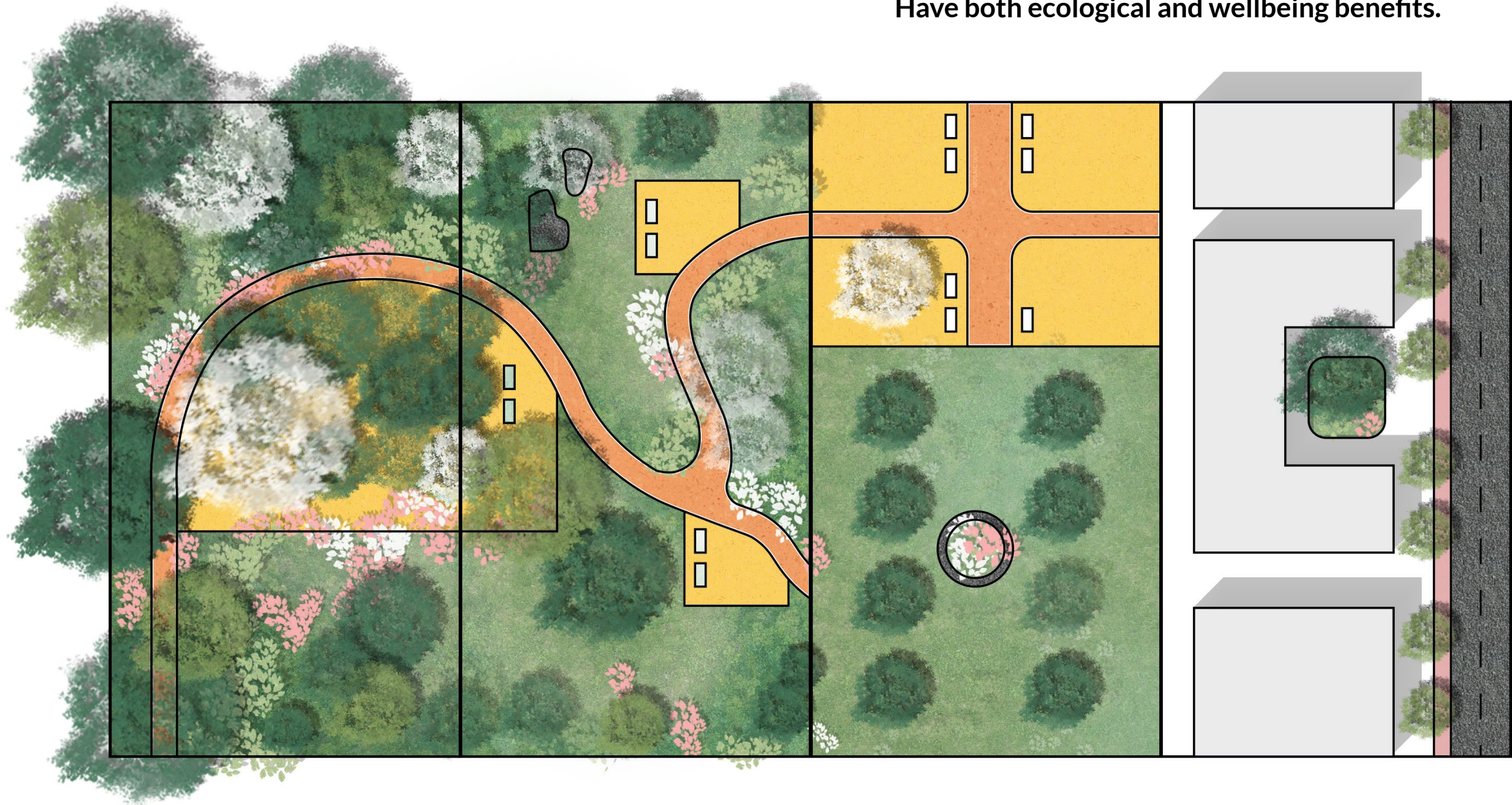
Dakpark,
shopping mall & roof park

Primary school
& Sports field

Waterfront
public space and
linear square

3 Landscape

It provides a spectrum of greens from people-maintained trees to natural growing landscape. Have both ecological and wellbeing benefits.



Landscape 3

Greenery grows back to nature. Limited accessibility for people



Landscape 2

Vegetation grows to a natural shape. Still there are places for people.



Landscape 1

Greenery, people can walk on it and relax.



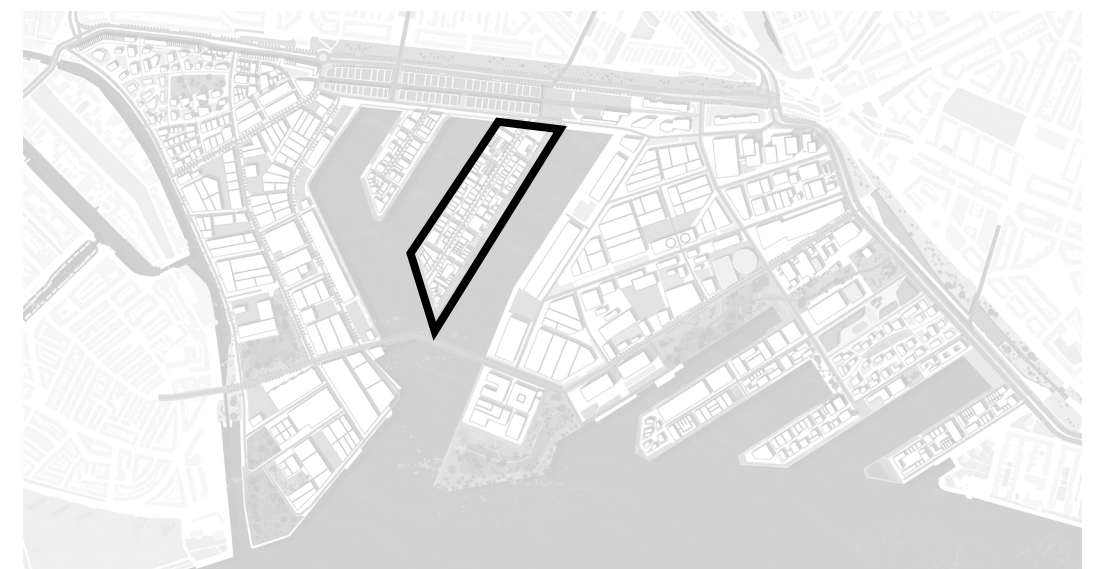
Landscape 0

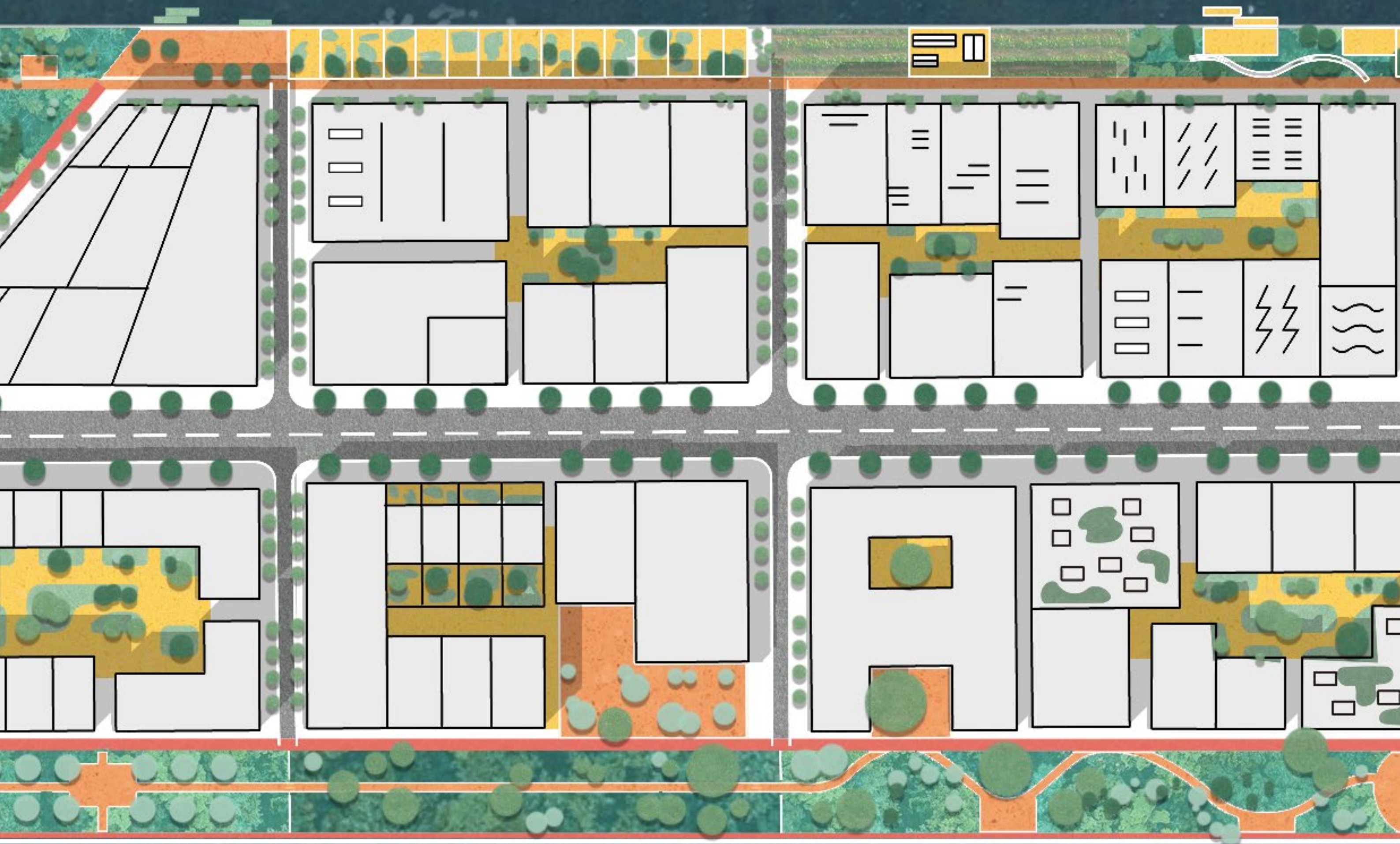
Roadside trees and courtyard.



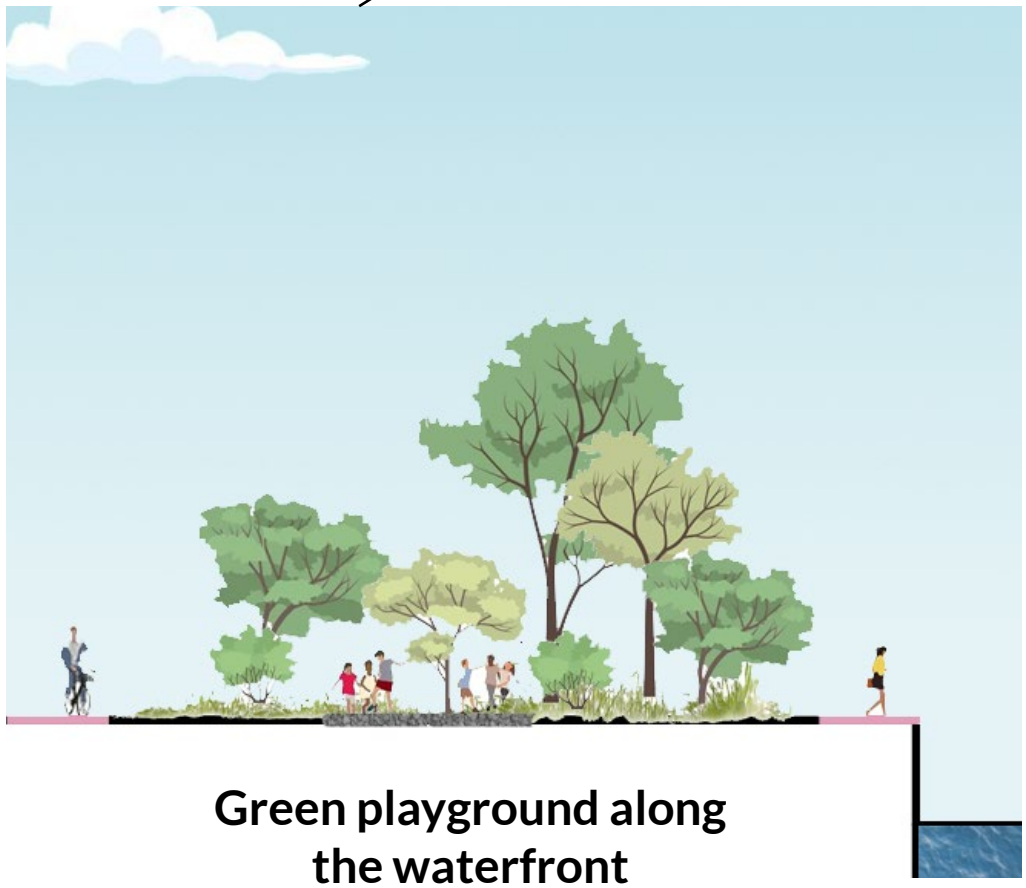
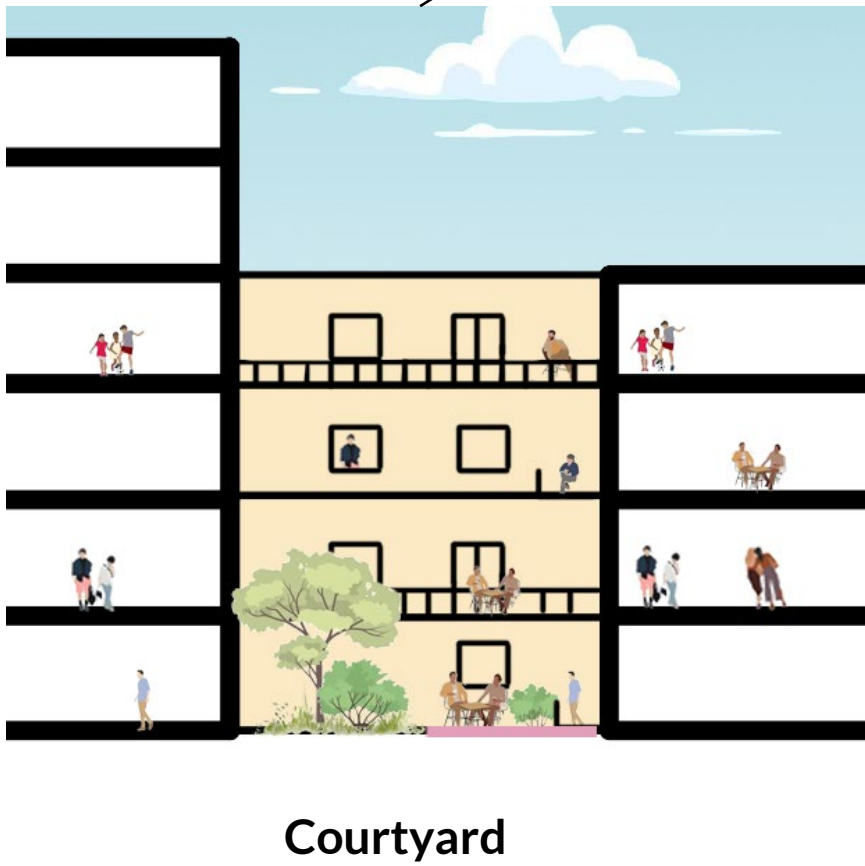
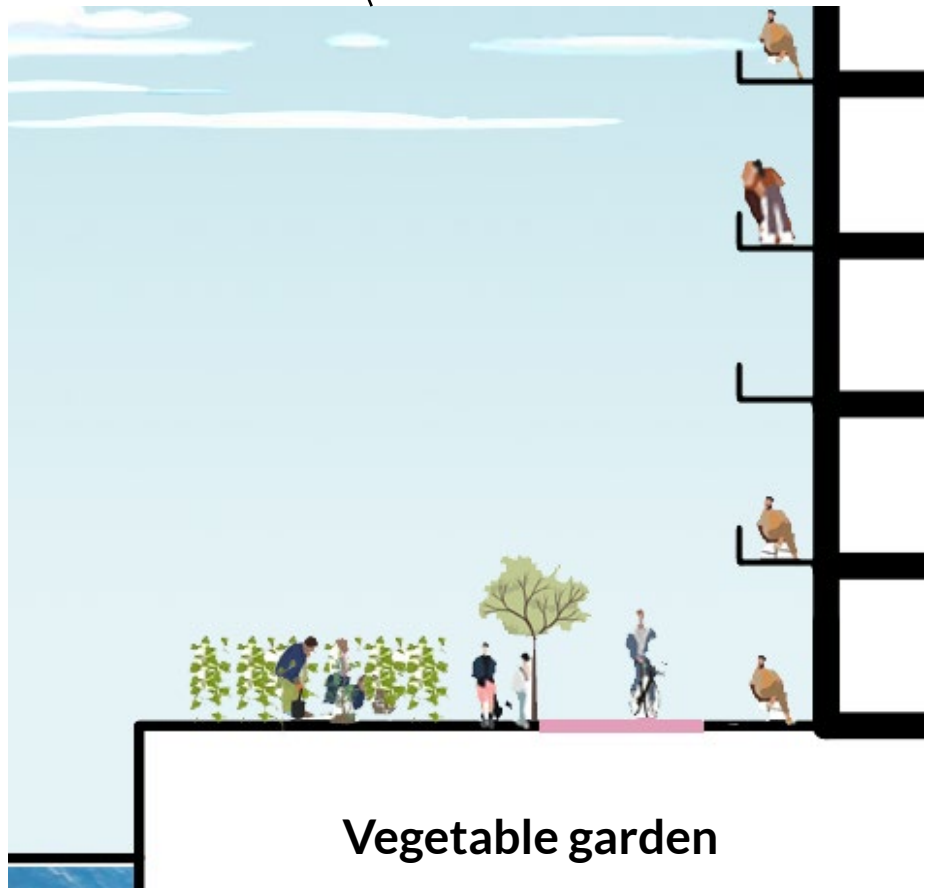
Zoom-in

Zoom-in





Section





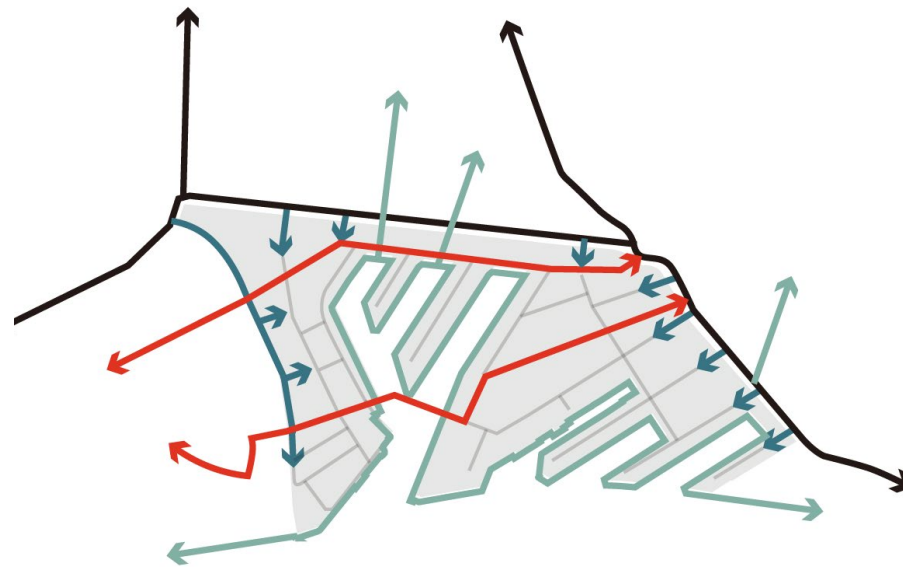
CONCLUSION

1. Values and principles of a sustainable mix
2. Future research suggestion

Values



Provide diverse work, live, and amenity for everyone

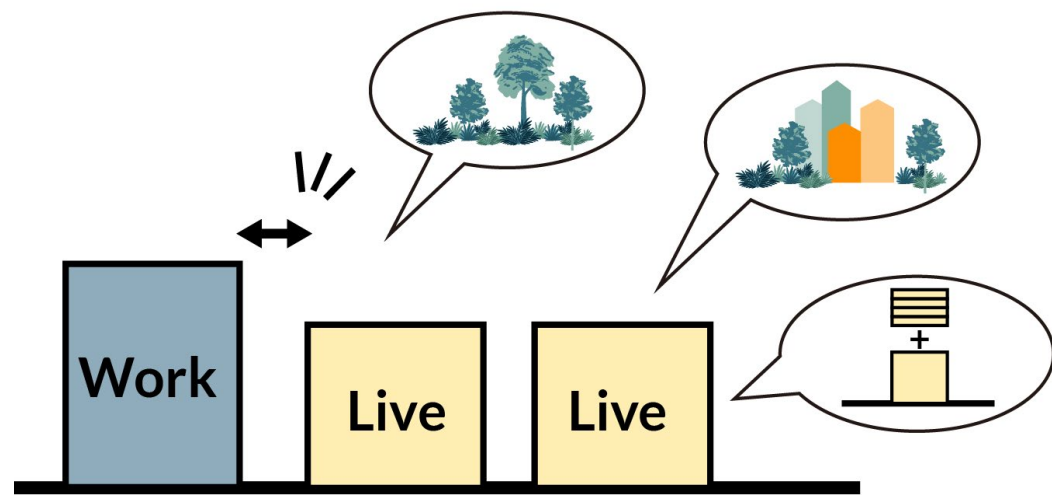


Enhance connectivity among communities

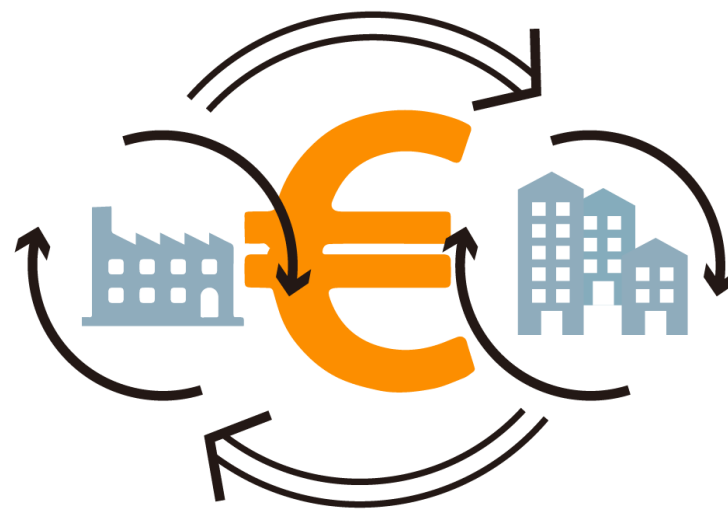


Create sustainable living environment

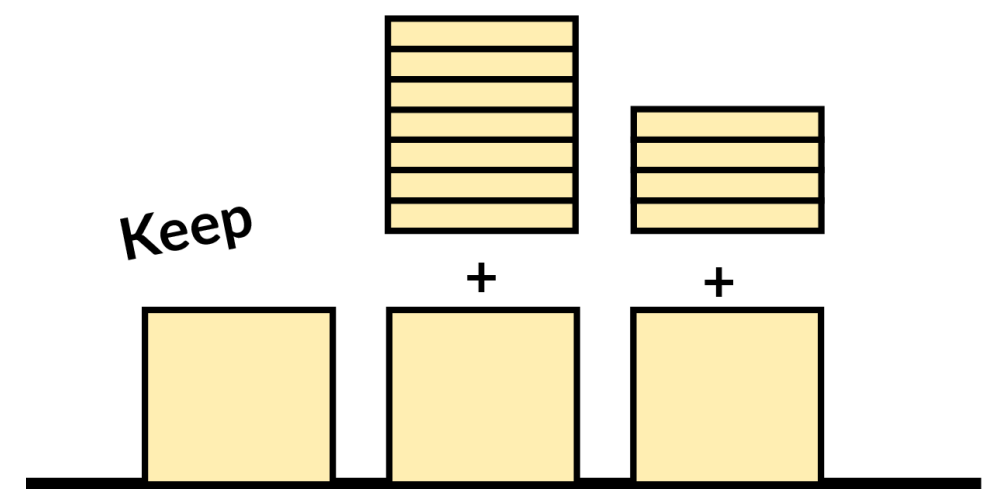
Principles



1 Mix living and working horizontally



2 Create a robust and diverse economic environment

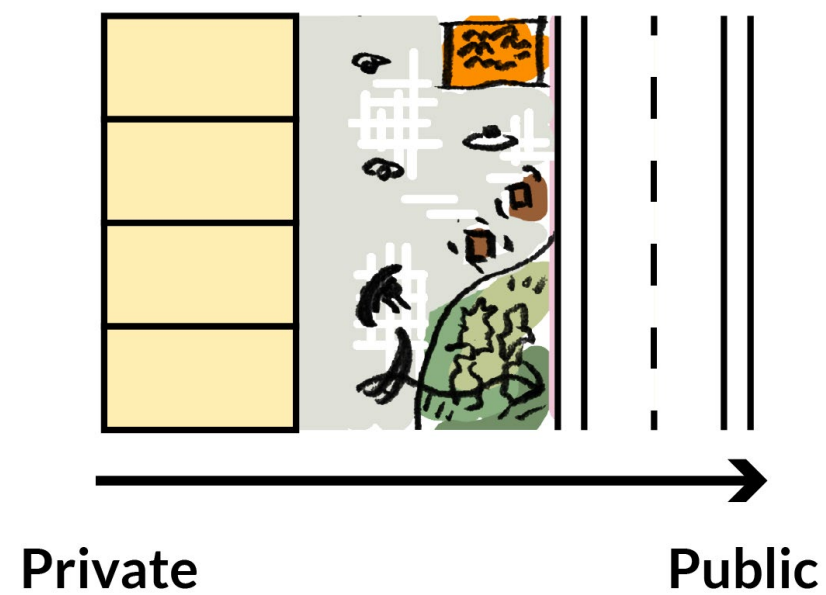


3 Properly densified housing

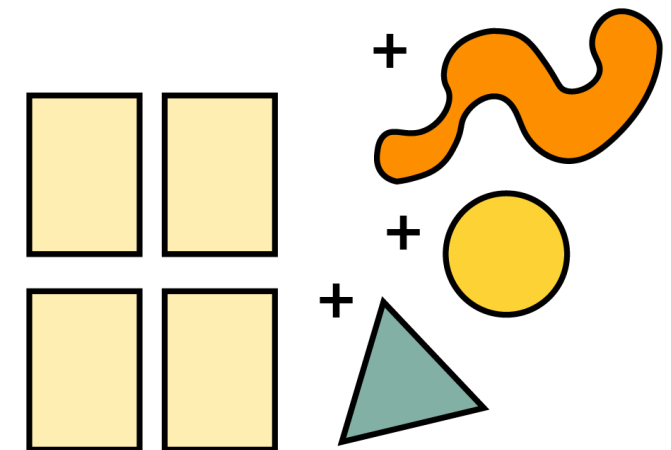
Principles



4 Nature in Urban district



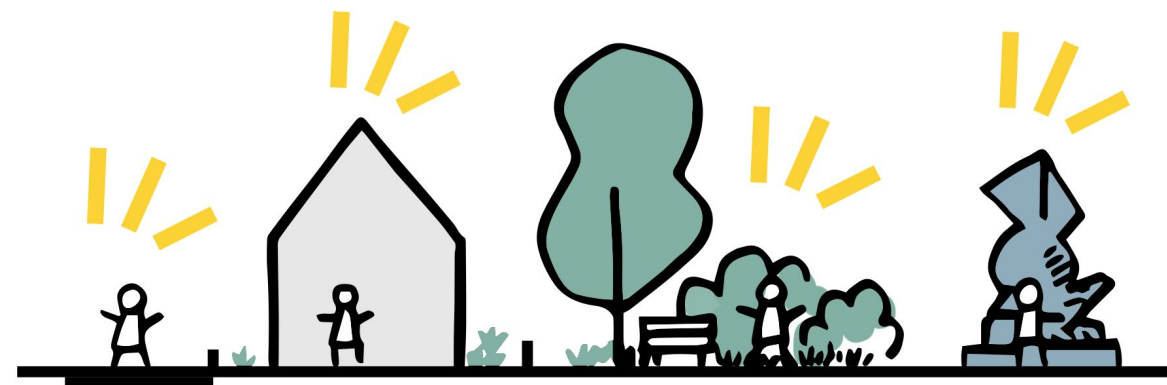
5 A gradient transition from public to private



6 Secret of diversity: dare to combine different elements

Future research suggestion

Mindset of appreciating





LIVING TOWER

NATURE PARK

MAKERSPACE

MANUFACTURING

PUBLIC PARK

LOGISTICS YARD