

Delft University of Technology

Master of Architecture, Urbanism and Building Sciences

Department of Urbanism

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22 January 2013

FROM HARBOUR TO CITY

Transformation of the 'Havenstad' to a flexible and vibrant city district

1. Project definition

2. Theory

3. Development strategy

4. Analysis

5. Masterplan

6. Application dev. Strategy

7. Catalogue

8. Public space

9. Conclusions

Content



Project definition

Minerva harbour

Large scale vacancy. e.g.. Office parks

Reason: Changes in expected demands.

Urban developments are put on hold.

Reason: Uncertainty in future demands.

Project definition

Problem statement



Large scale vacancy. e.g.. Office parks

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Main issue: Continuously changing economic structure, labour and housing markets, availability of technology and lifestyle.

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Flexibility has to be integrated in urban planning/designing

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Flexibility has to be integrated in urban planning/designing

- New form of urban planning/designing is needed that can anticipate to these changes during the development process
- (New) urban areas will have to be able to facilitate these changes, even after completion: able to adapt without major reconstructions.



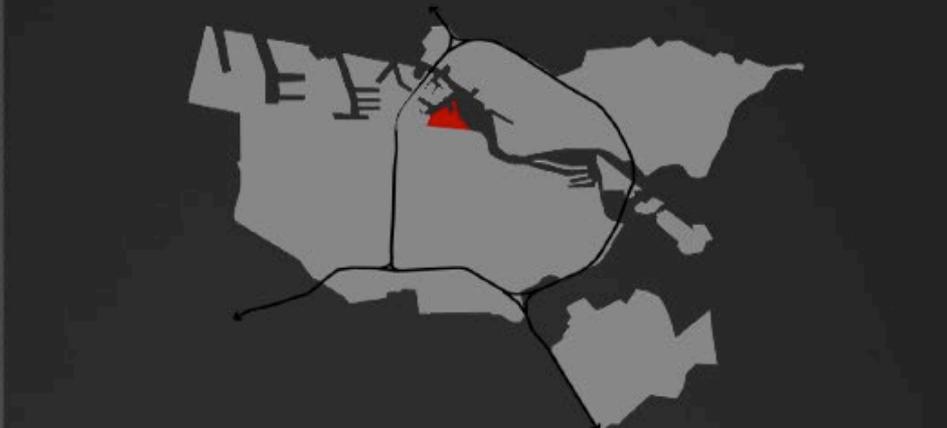
The location is the Minerva City-habour part of the 'Havenstad' in Amsterdam.
Large Harbour area close to the city centre that will be redeveloped

Project definition

Location



Location of Amsterdam within the Netherlands



Location of the Minerva City-habour within the municipality of Amsterdam

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The location is the Minerva City-habour part of the 'Havenstad' in Amsterdam.
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This is industrial area that is to be redeveloped into a new city district.



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Import precondition set by the municipality for the area: **Mixed-use**

A mix of **businesses, harbour activities, dwellings and amenities**



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A mix of **businesses, harbour activities, dwellings and amenities**

Multi-functionality will have to be integrated into an flexible and adaptable urban design



Aims of the project:

1. identifying what ways or methods there are for an urban design to be flexible in a spatial and functional way.
 2. Set up a general development strategy for flexible urban development
 3. Apply this development strategy on the Minerva City-harbour
1. combine mixed-use development with a flexible/adaptable urban design for the Minerva City-harbour

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Aim & RQ's

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Project definition

Aim & RQ's

Main research question:

What kind of strategic development plan is needed for the redevelopment of brownfields into a multifunctional area that is spatially and functionally flexible?

Sub research questions:

1. *What way(s) or method(s) are there?*
2. *What kind of urban typology?*
3. *How to combine flexibility with mixed-use?*

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2

Theory

Flexibility in Urban development: *the ability of an urban area to react and adapt to physical changes and changing circumstances with a low penalty in time efforts, costs and resources.*

Three aspects in Urban development

- Development process
- Urban structure
- Built environment/real estate

Theory

Flexibility

Theory

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flexibility in the set policy and legislations, some methods used to achieve this area:

- Gradual development
- Flexible zoning plan
- Flexible masterplan
- Layered approach

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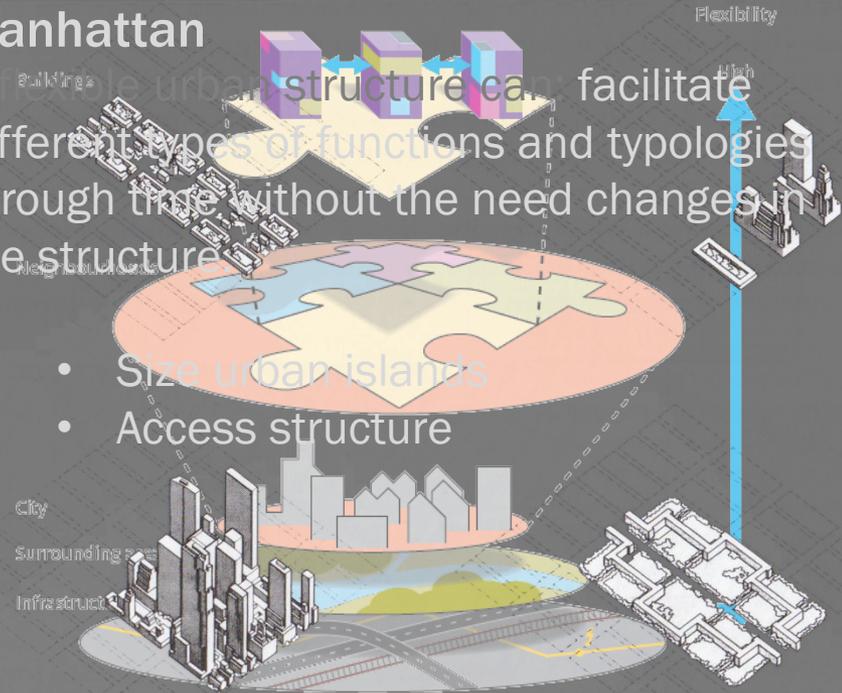
Theory

Flexibility

Manhattan

A flexible urban structure can facilitate different types of functions and typologies through time without the need changes in the structure

- Size urban islands
- Access structure



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Flexibility

the ability of a building to adapt to changes in functional demand.

- Separated building systems:
e.g. facades, loadbearing structure
- Open floor plans
- Extra floor-to-floor space
- Oversized loadbearing structure
- Multiple access systems

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Conclusion

For an urban design to be integrally flexible/adaptable, it will need to have some form(s) of flexibility in all three of the aspects.

Is an area where there is a functional mix of living, working and amenities.

In general mixed-use takes places on three different scale levels:

- Scale of the neighborhood/district,
- Scale of the the building block
- Scale of the building.

Mix of functions



Mix of users

- Different demands and requirements
- Mutual Nuisances

Theory

Mixed-use

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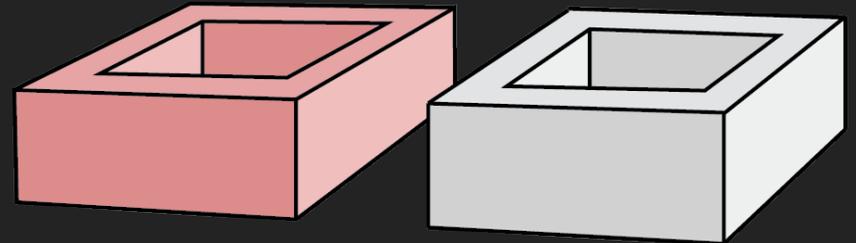
Mix of users



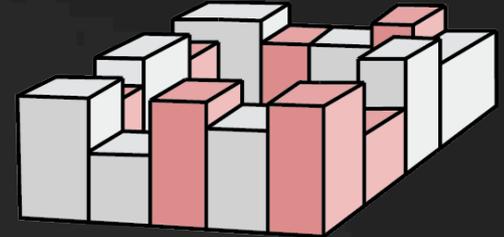
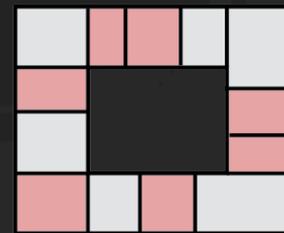
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Theory

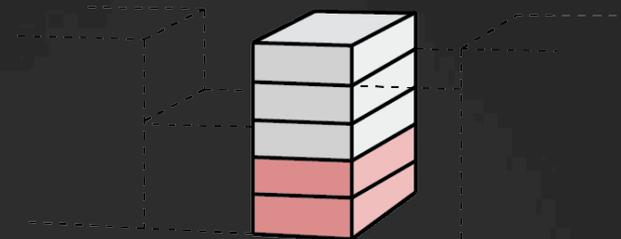
Mixed-use



Scale of the neighbourhood/district



Scale of the city Block



Scale of the building

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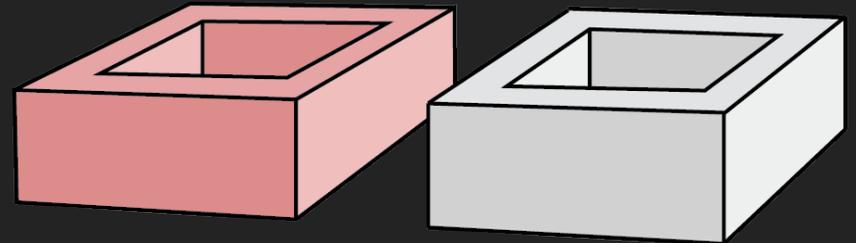
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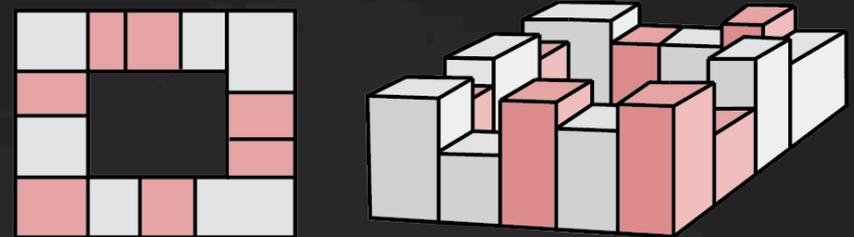
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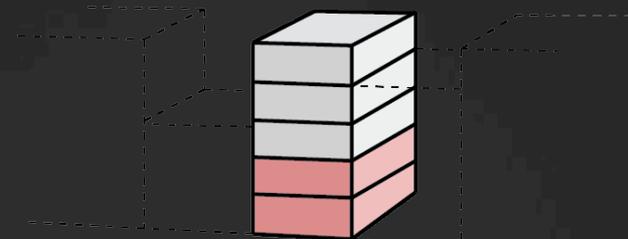
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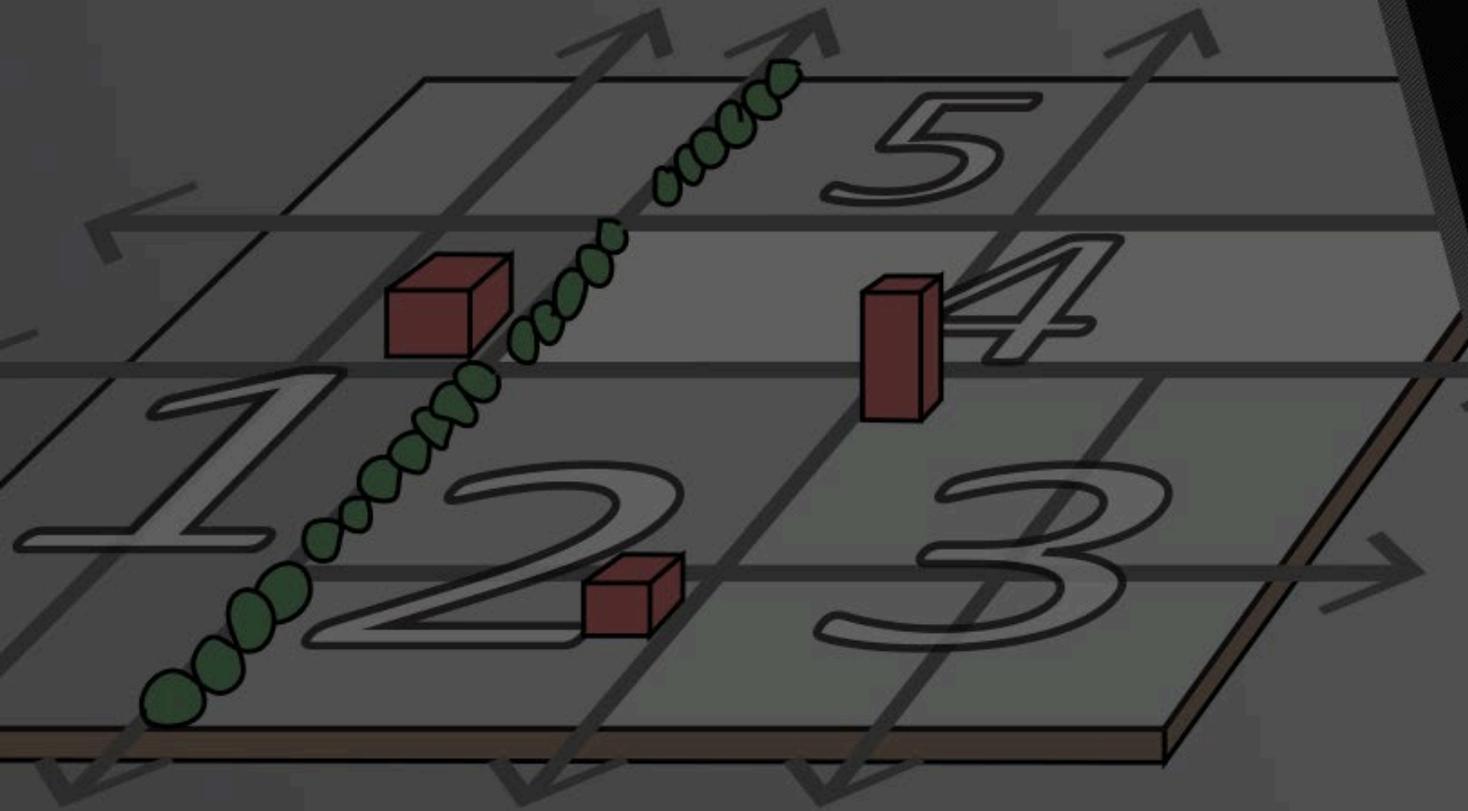
Theory

Mixed-use

Conditions that will help meet the different requirements and reduce the risk of nuisance.

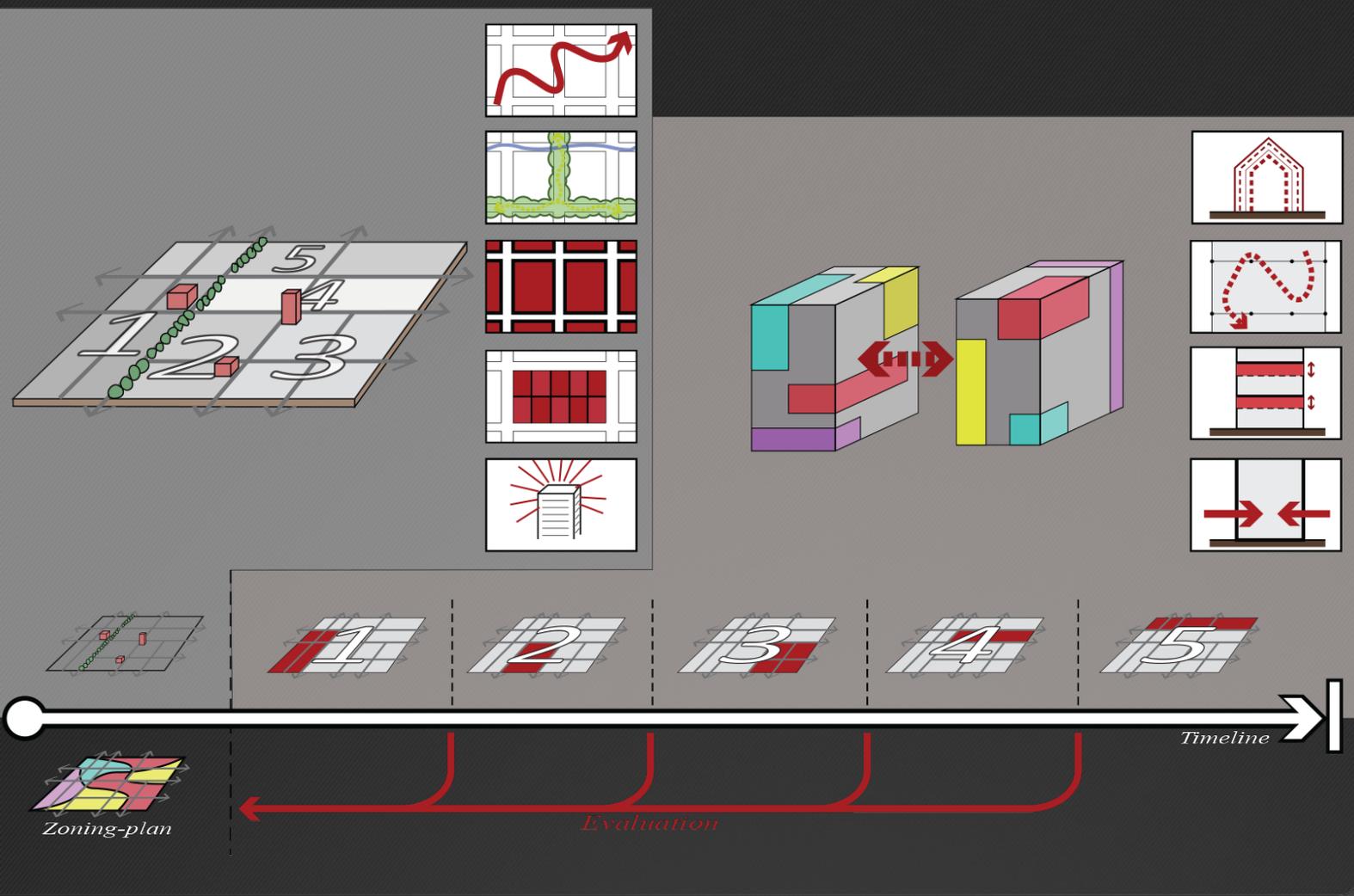
- Accessibility of the area, car and Public transport
- Good functioning access structure
- Diverse parceling
- Attractive area
 - Green and/water
 - Landmarks
 - Building facades

3



Development
Strategy

Development Strategy Scheme

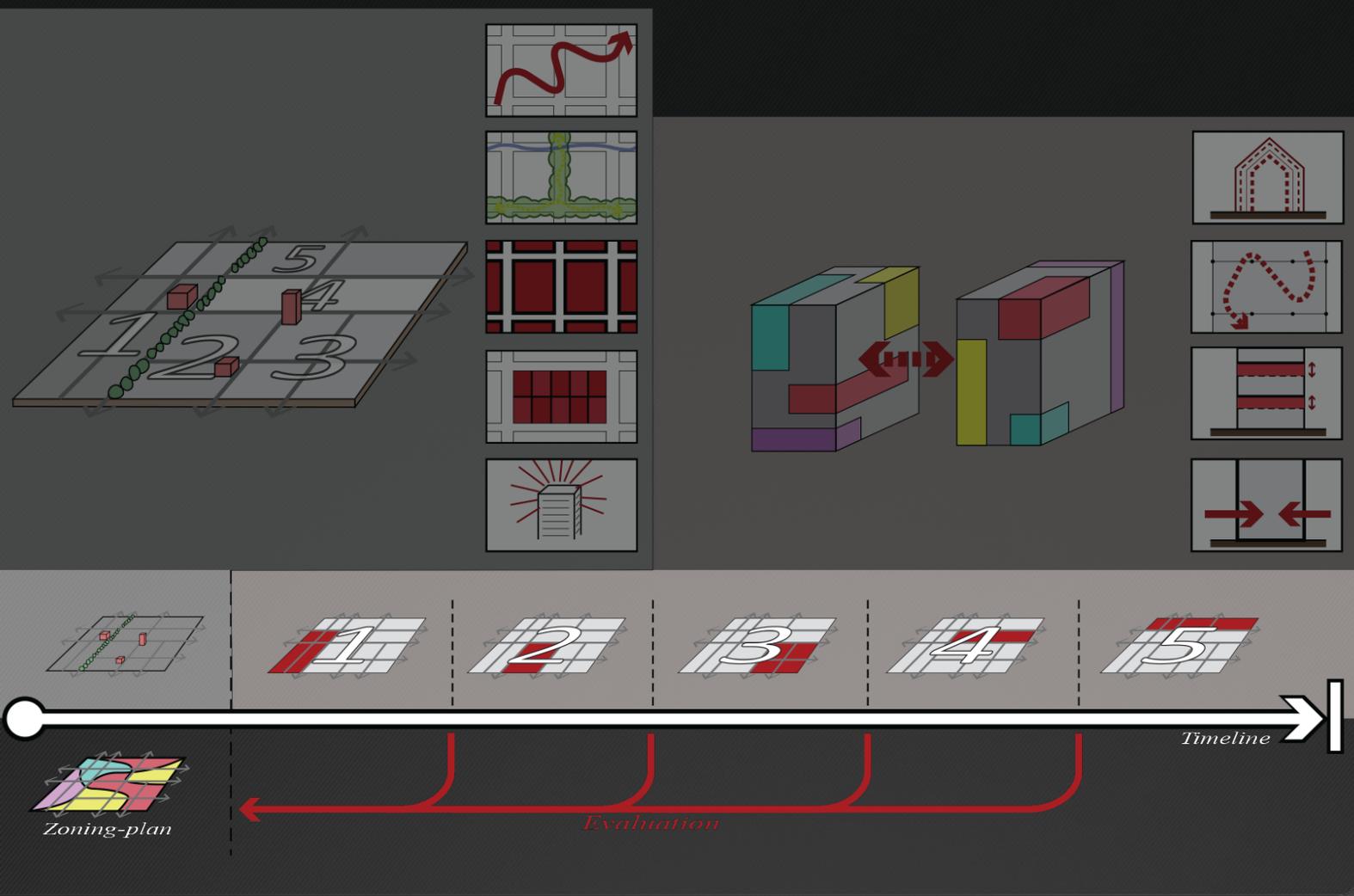


Development process

Urban structure

Built environment

Development Strategy Scheme



Development process

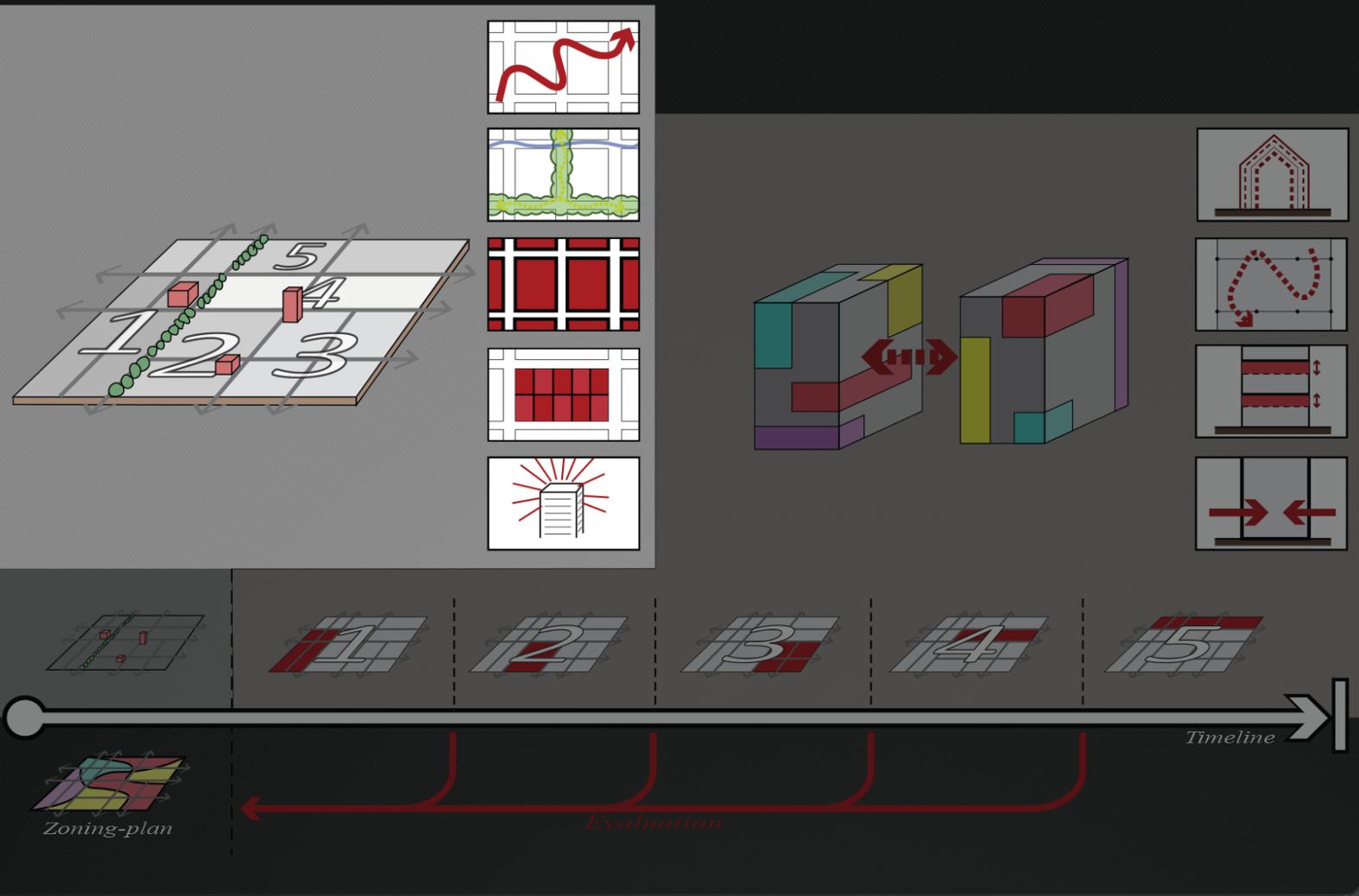
Urban structure

Built environment

Gradual development

Flexible zoning plan

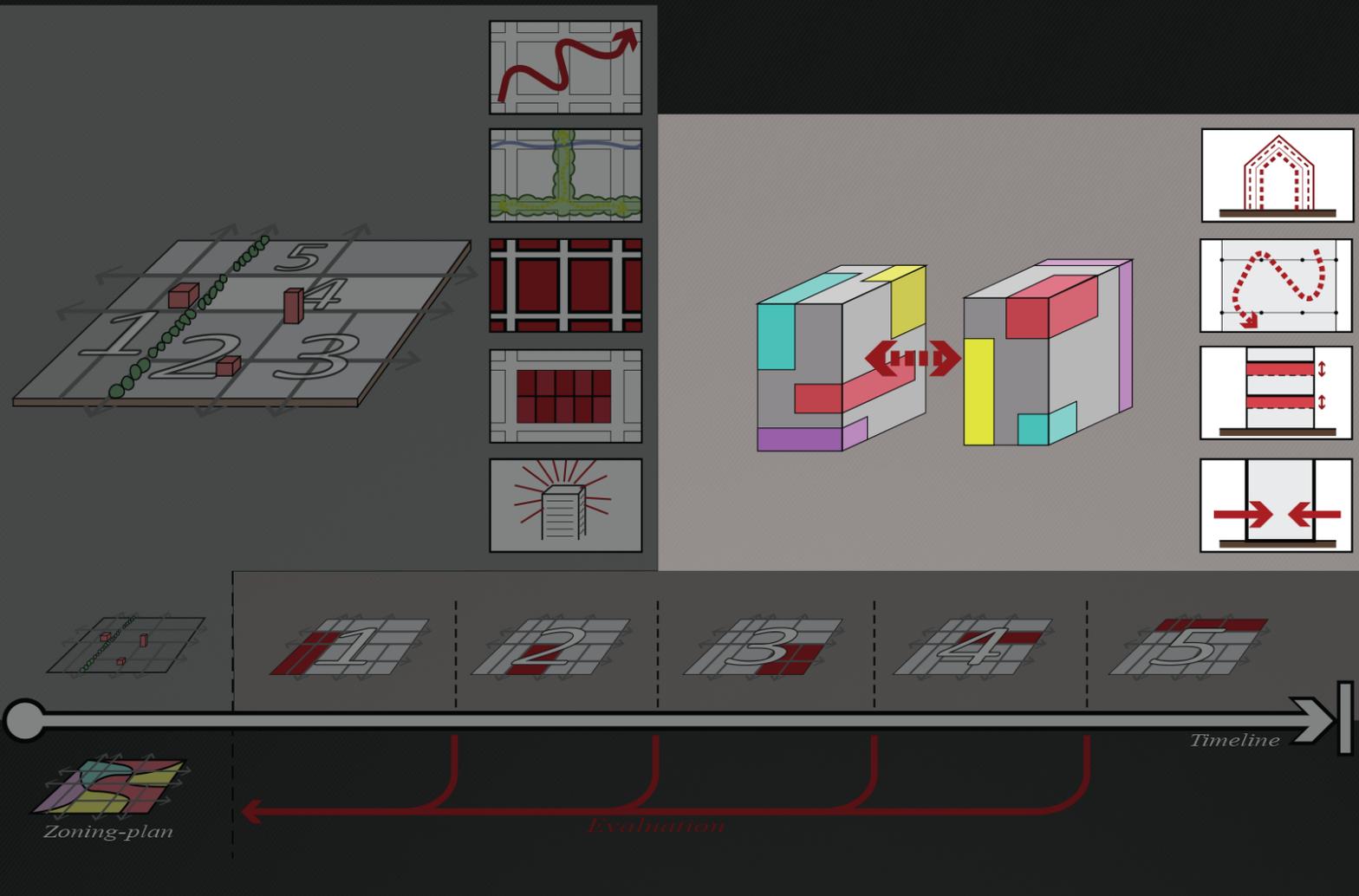
Development Strategy Scheme



Development process
 Urban structure
 Built environment

Access structure
 Green and/or water
 Grain size
 Parceling
 Landmarks

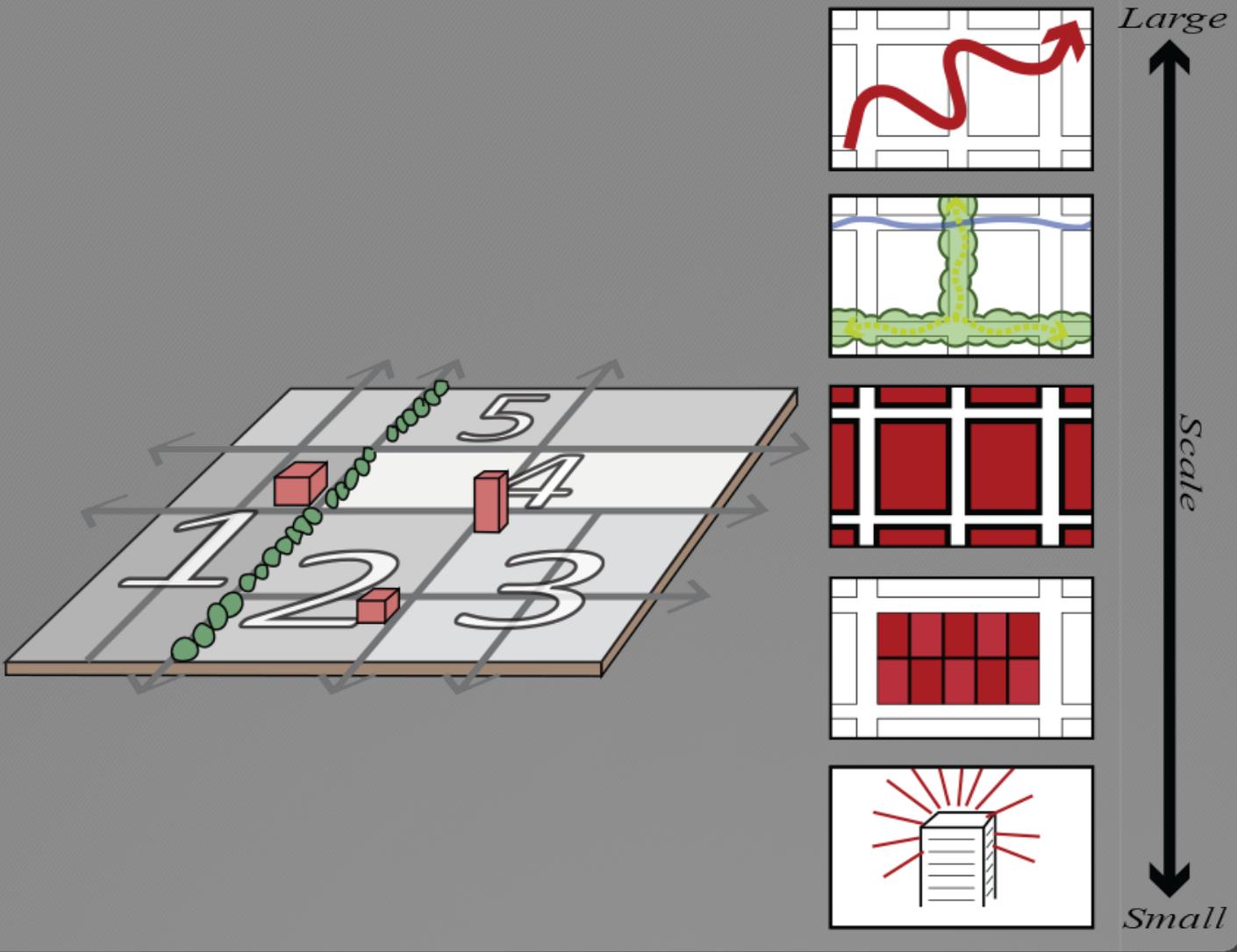
Development Strategy Scheme



Development process
 Urban structure
 Built environment

Separated building systems
 Open floor plans
 Extra floor-to-floor space
 Multiple access systems

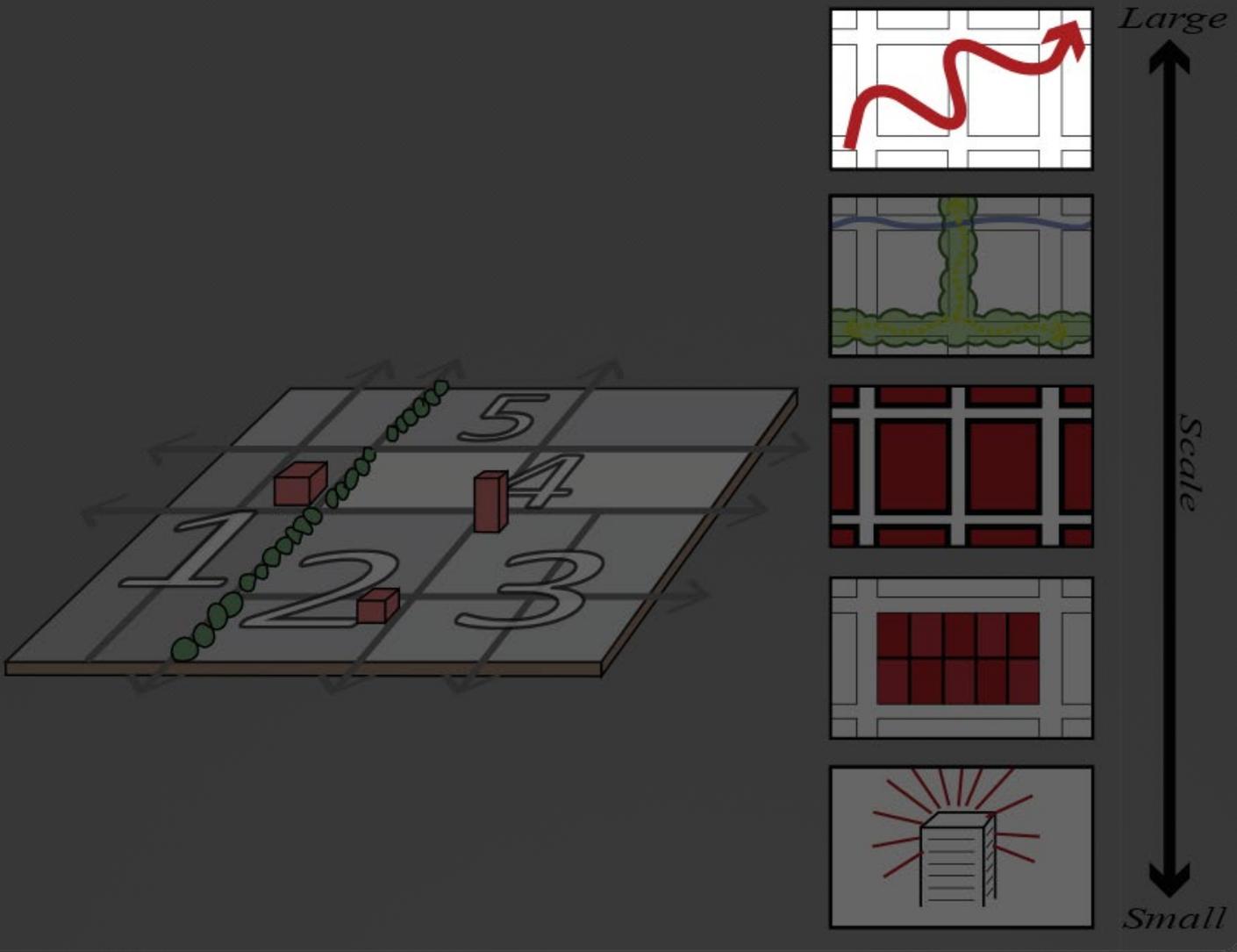
Development Strategy Scheme



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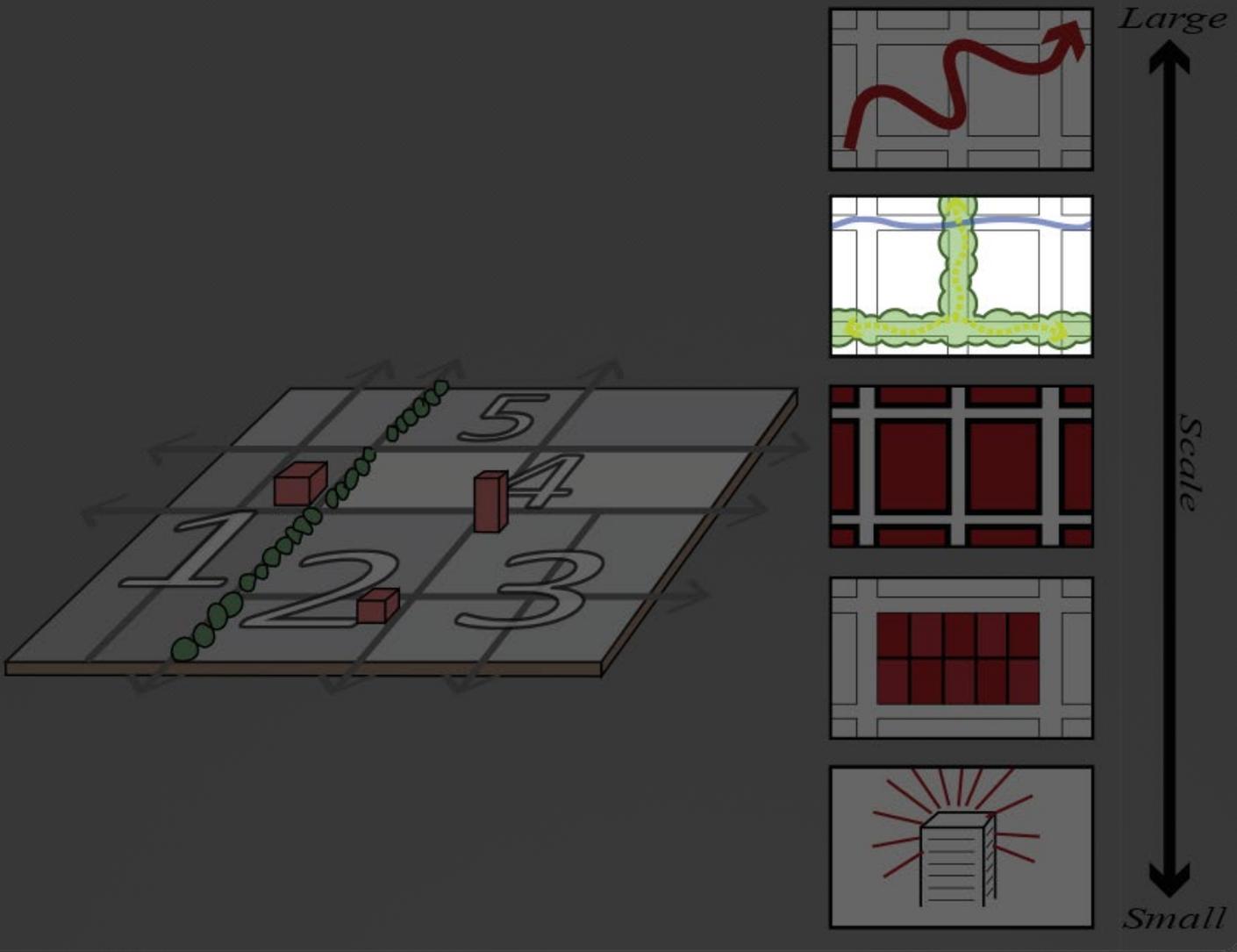
Development Strategy Scheme



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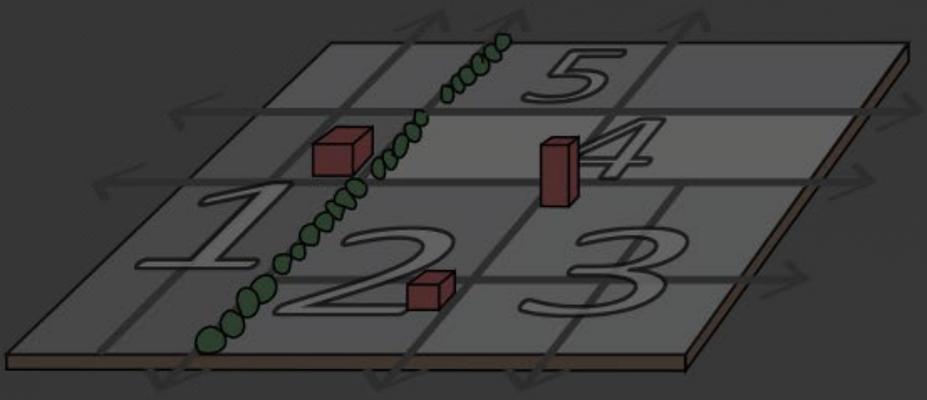
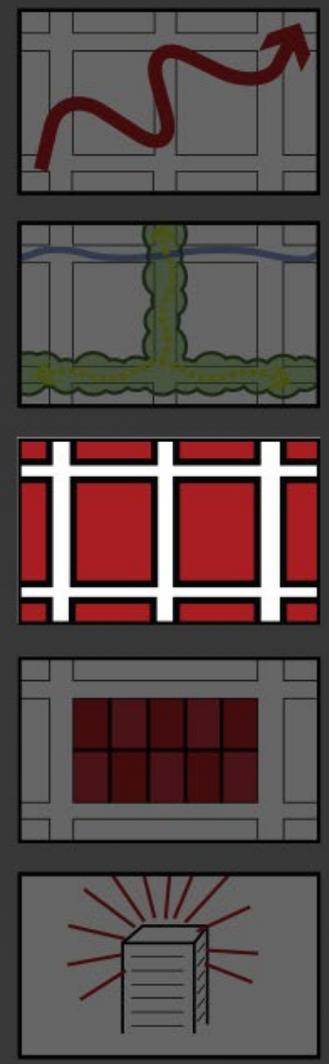


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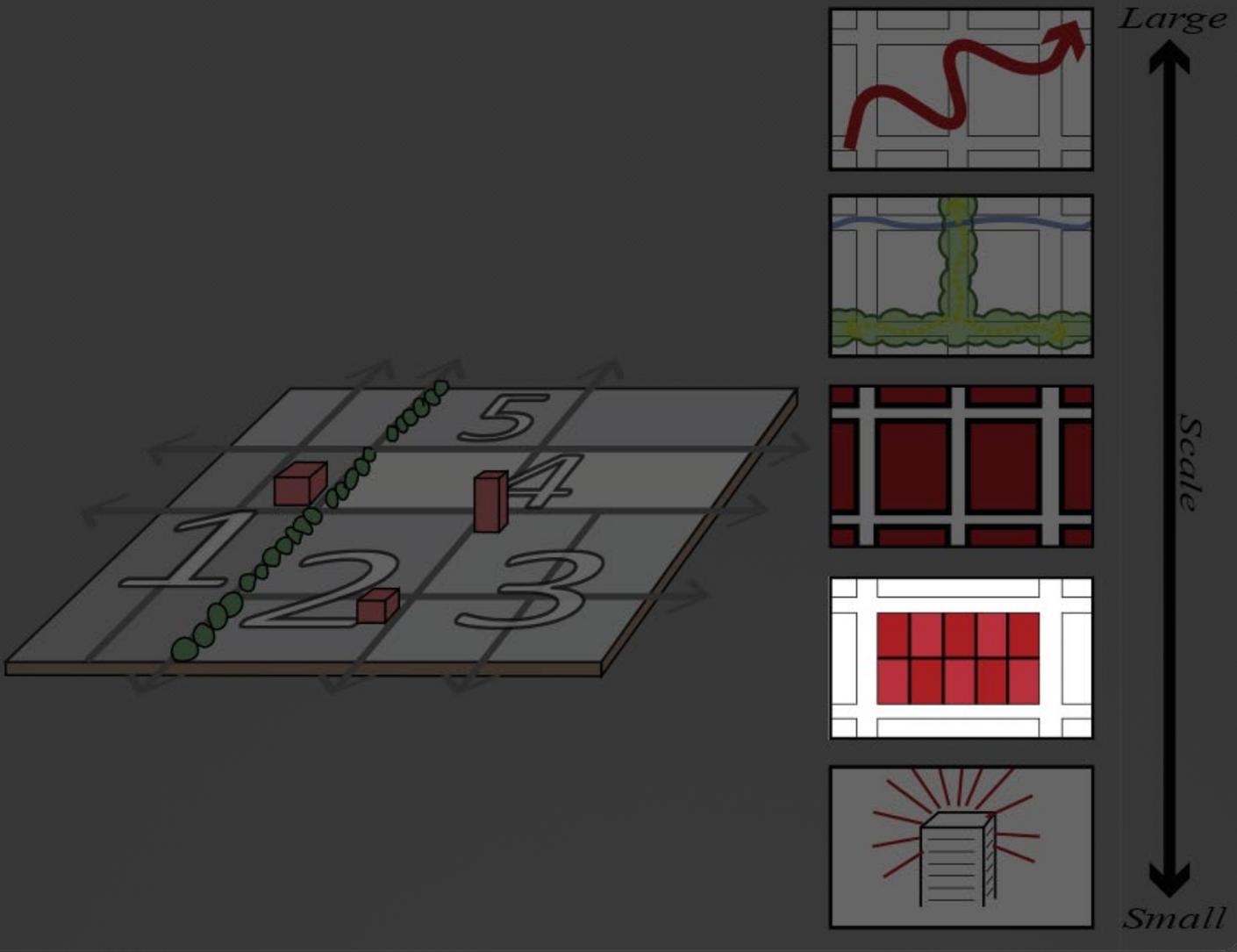
Large  Scale  Small



Development process
Urban structure
Built environment

Access structure
Green and/or water
Grain size
Parceling
Landmarks

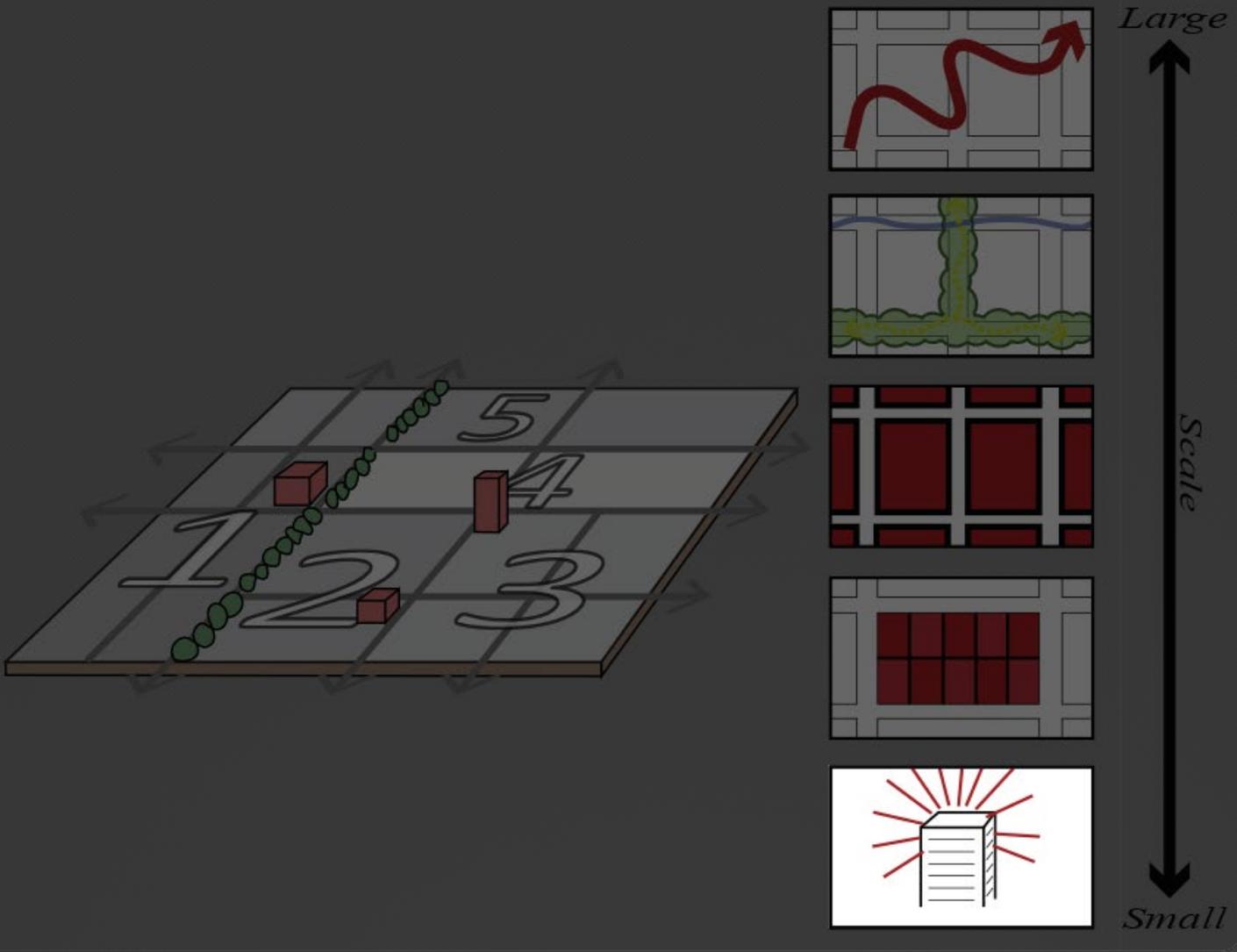
Development Strategy Scheme



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Development Strategy Scheme



Development process

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Access structure

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Grain size

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4

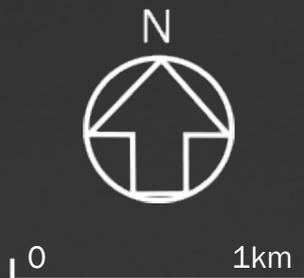


Analysis



Analysis

Location



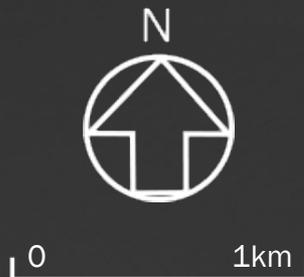
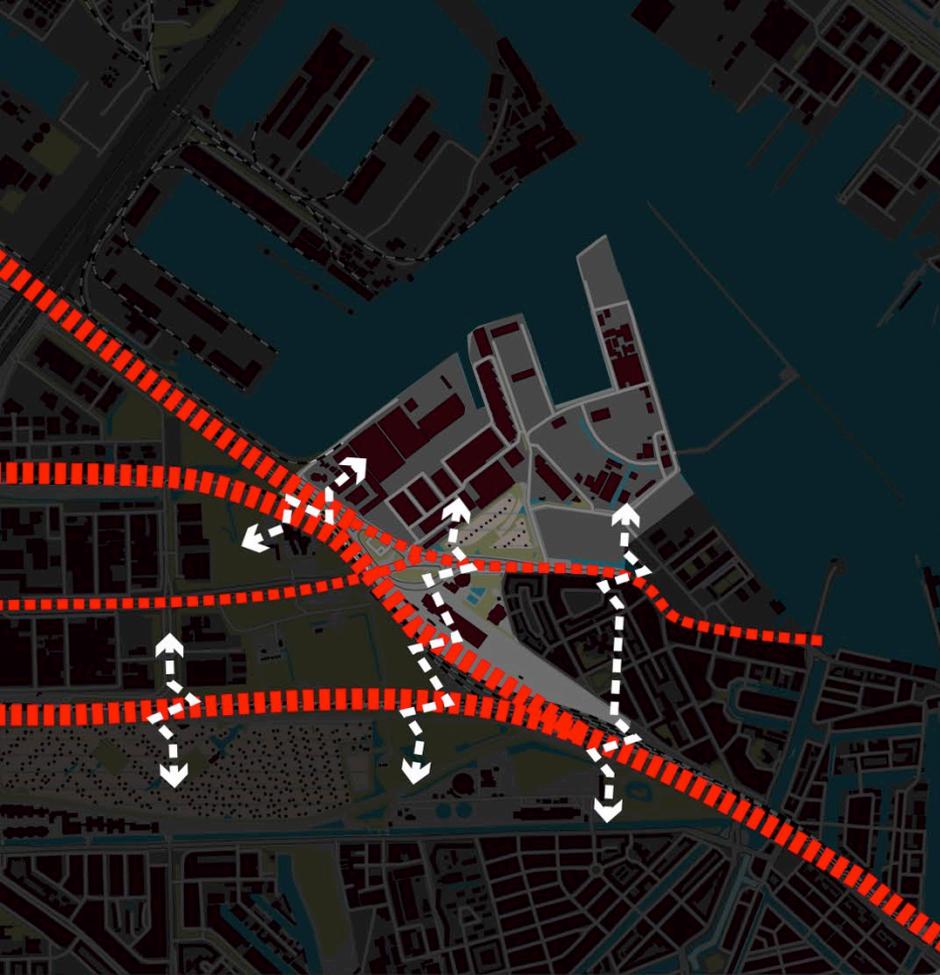
Legend

- Location boundaries
- Barriers
- Polluting companies
- Public transport

Conclusions

Analysis

Location



Legend

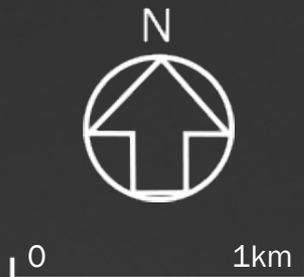
-  Category 1
-  Category 2
-  Category 3
-  Category 4
-  Category 5

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Conclusions

Analysis

Conclusion



Solving these issues

↳ Impact on larger area

Larger scale Masterplan needed

- Infrastructure
- Public transport
- Green network

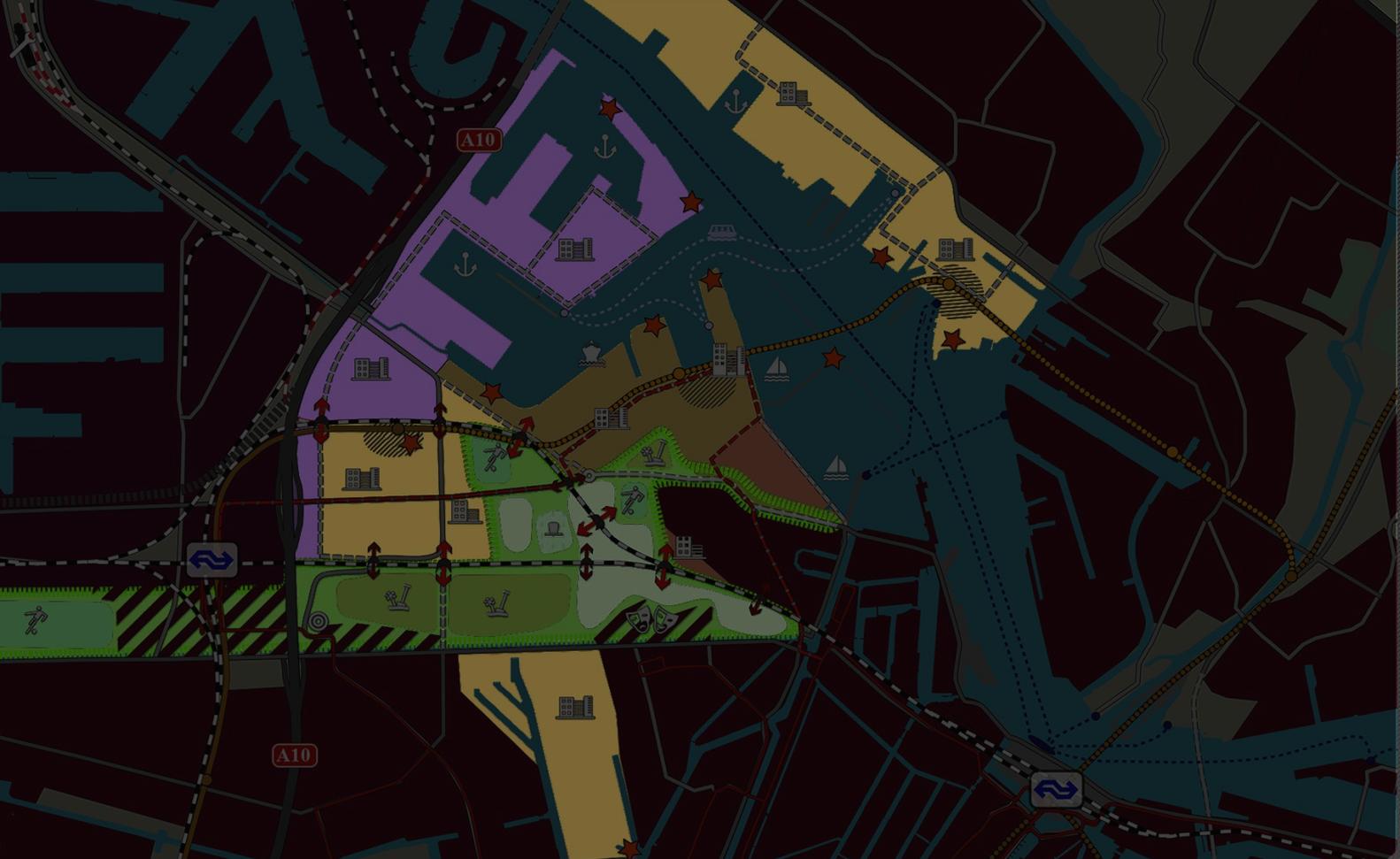
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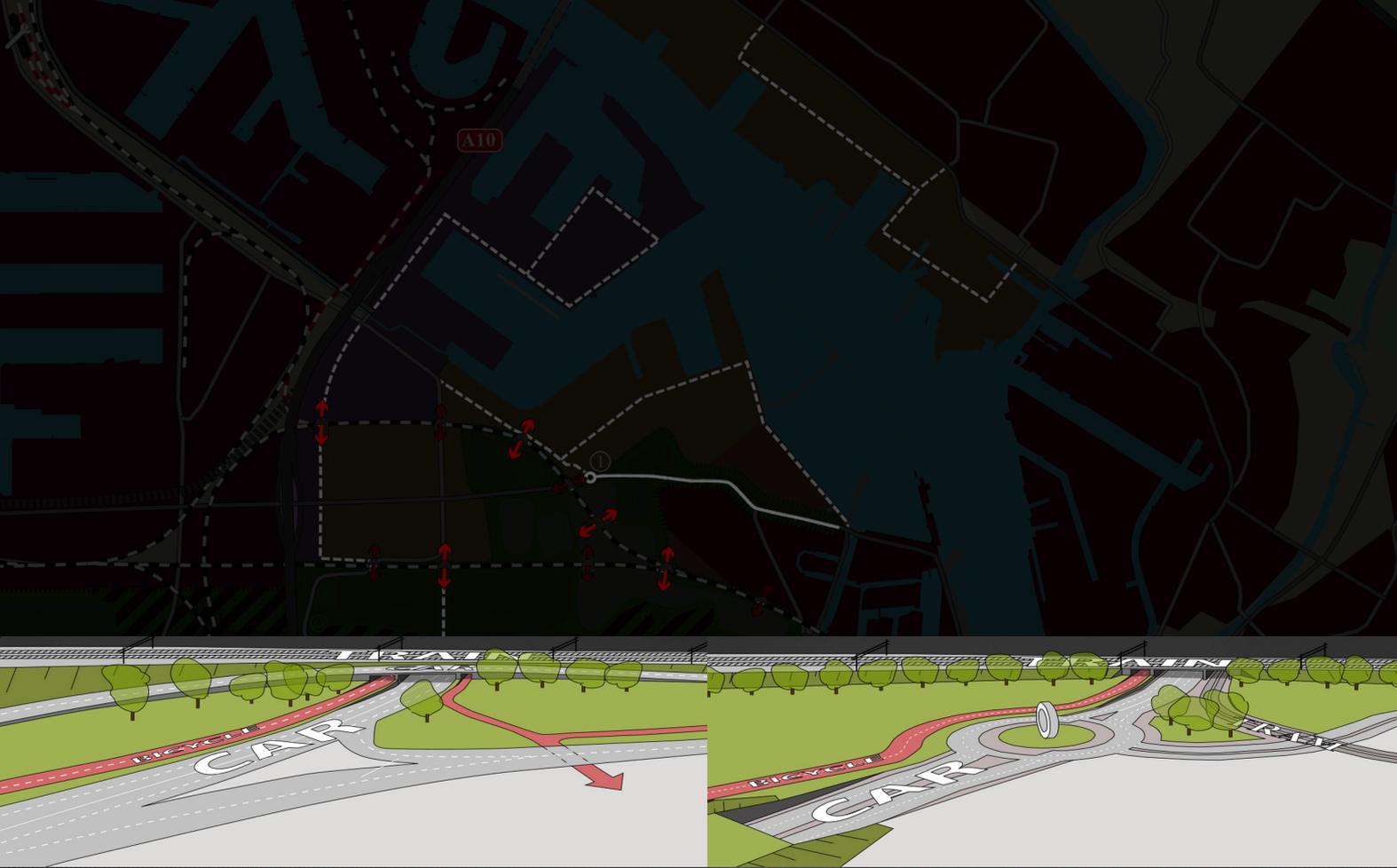
Masterplan

Masterplan

Vision 2050



Masterplan Infrastructure



Legend

- Highway
- Highway, underground
- Highway under construction
- City access road
- City access road, underground
- Proposed city access road
- Proposed city access road, underground
- Neighbourhood access road
- Proposed Neighbourhood access road
- Railway
- Proposed railway
- Railway crossings
- Proposed railway crossings
- New train-yard
- Remodelled infrastructural node



Masterplan Public Transport



Legend

- Subway lines, above ground
- Subwaylines, underground
- Proposed subwayline, underground
- Subway stations
- Tramlines
- Proposed tramline
- Ferry connections
- Proposed ferry connections
- Trainstation
- ① First phase the subway line
- ② Isolatorweg
- ③ Spaarndammerstraat



6

A stylized map of a city grid. The grid consists of red and grey rectangular blocks. A large blue area is highlighted on the left side, and a green area is highlighted in the center, containing several small black squares. A blue dashed line with an arrow points from the top right towards the green area. A green dashed line with an arrow points from the bottom left towards the green area. The map is tilted slightly to the right.

Application
Dev. Strat

Urban plan



- Water
- Roads
- Trace of the car tunnel
- Pedestrian area
- Existing buildings
- Standard sized blocks
- Off-sized blocks
- New blocks outside the project area
- Tram-line
- Public green
- Private green
- Green slope
- Trees
- Outdoor swimming pool
- Barges

- Allotment gardens
- Football pitches
- Public swimming pool
- Barge moorings
- Marina
- Graveyard
- Adventure playground
- Subway station
- Tram stop
- Ferry departure point

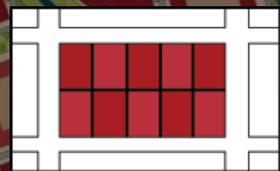
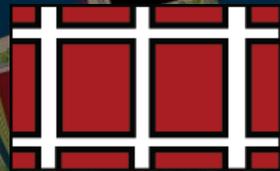
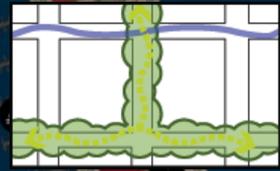


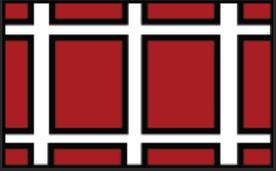
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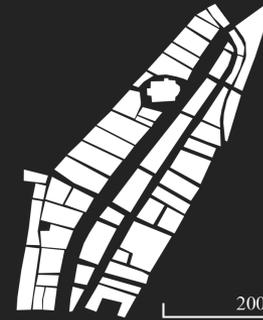
Urban plan

Grain size

Small grain size for Amsterdam

Blocksize: max 6000 m²

Long edge: max 100 m



200

Red light district



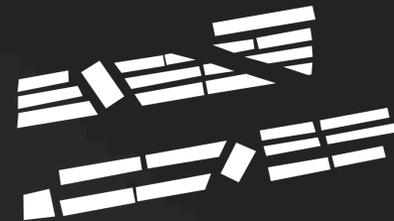
200

Canal zone



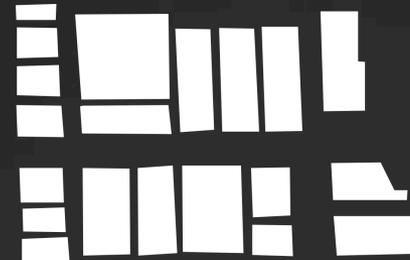
200

De Pijp



200

Eastern harbour area



200

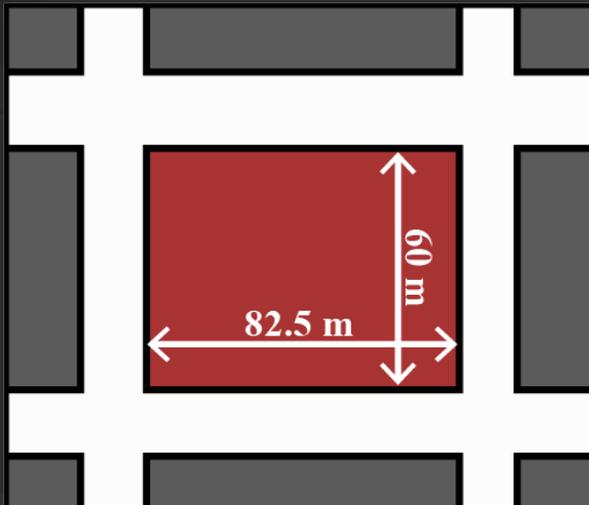
Westpoort, businesspark



Small grain size for Amsterdam

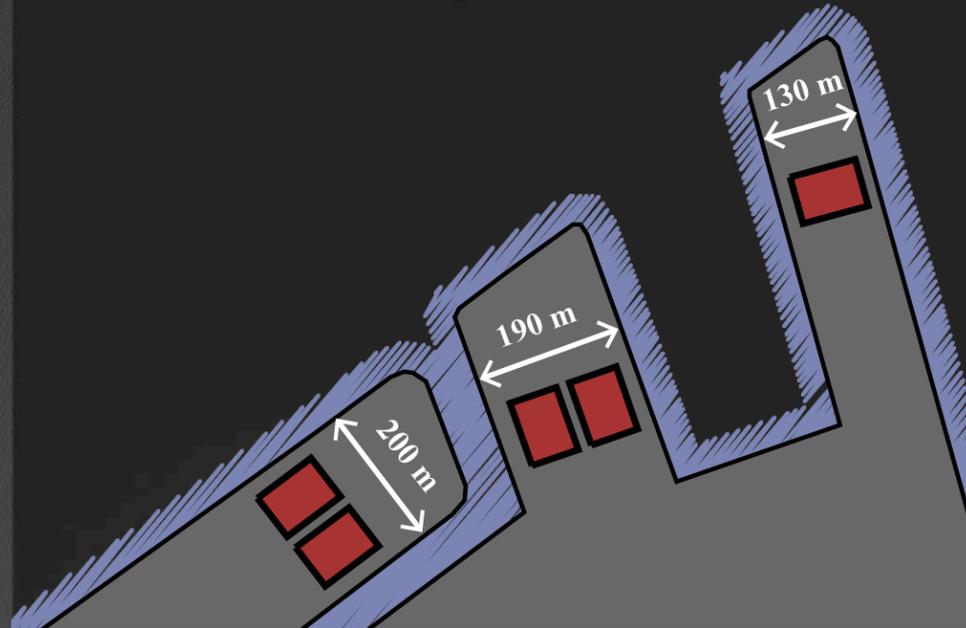
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Urban plan

Grain size



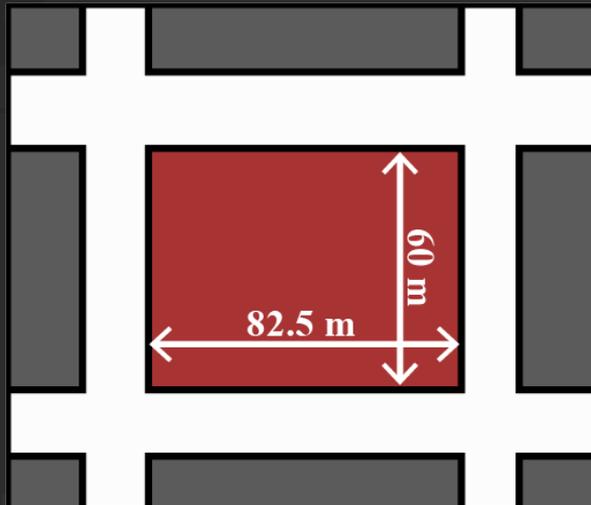
Pier sizes are decisive for the size of the blocks



Small grain size for Amsterdam

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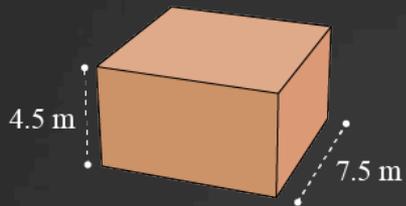
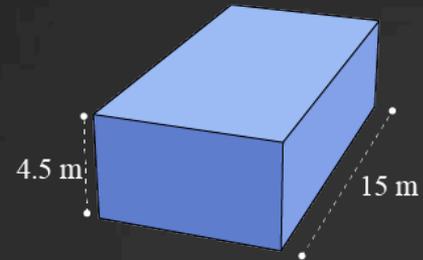
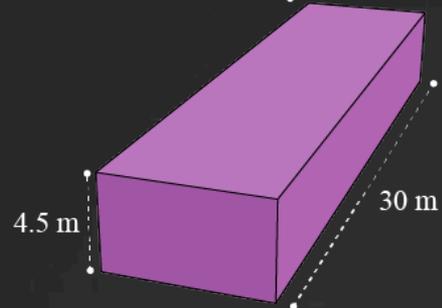
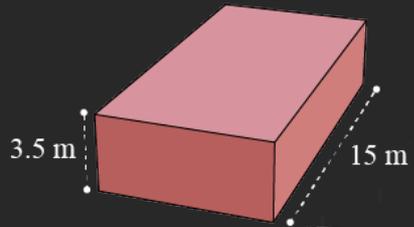
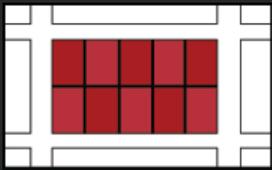


Urban plan

Grain size

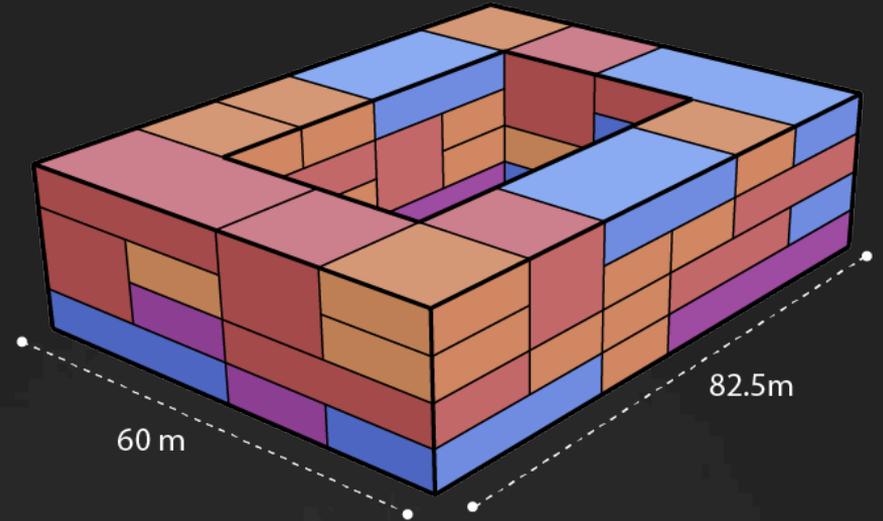


Standard sized blocks

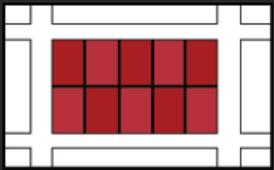


Urban plan

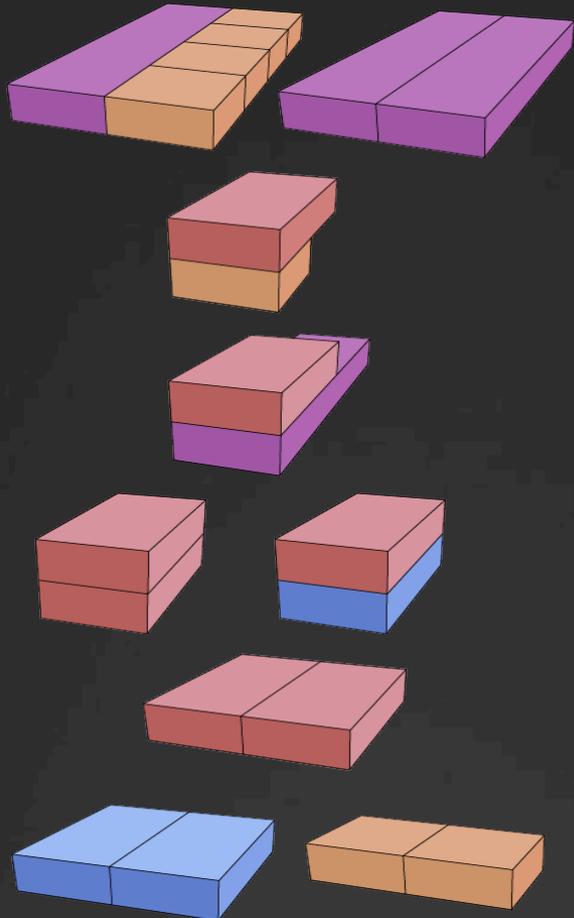
Parcel sizes



Block composition with the units

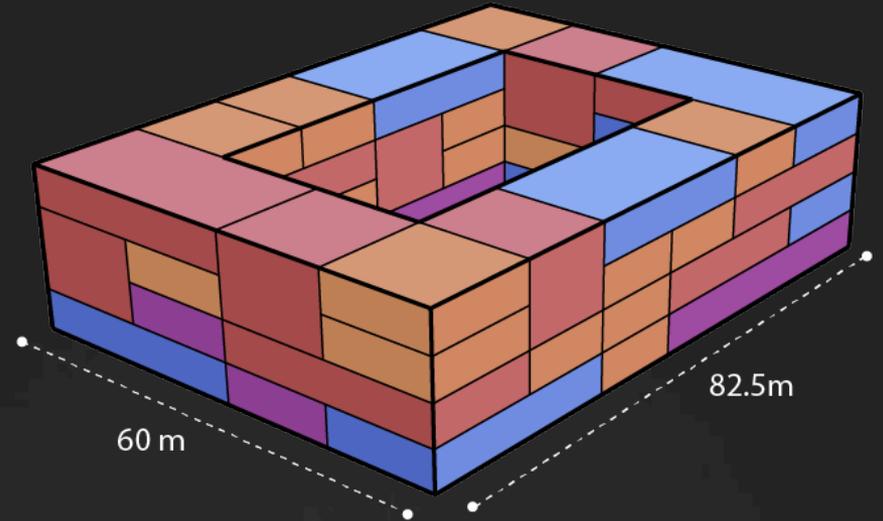


Connection between units to create larger units



Urban plan

Parcel sizes



Block composition with the units

Urban plan

Access structure

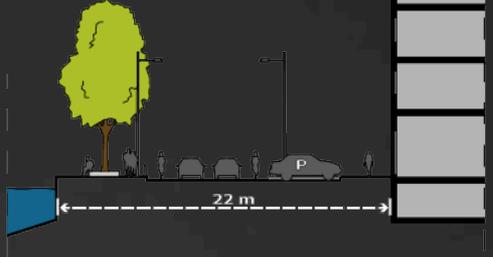


Access by car

Primary roads

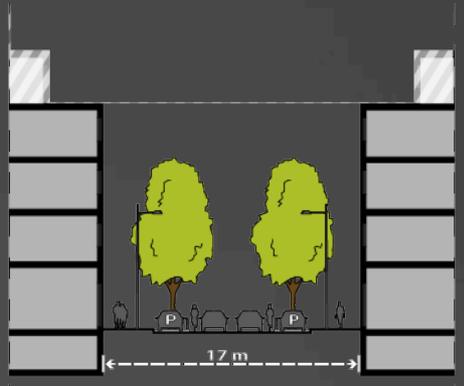


25 m



22 m

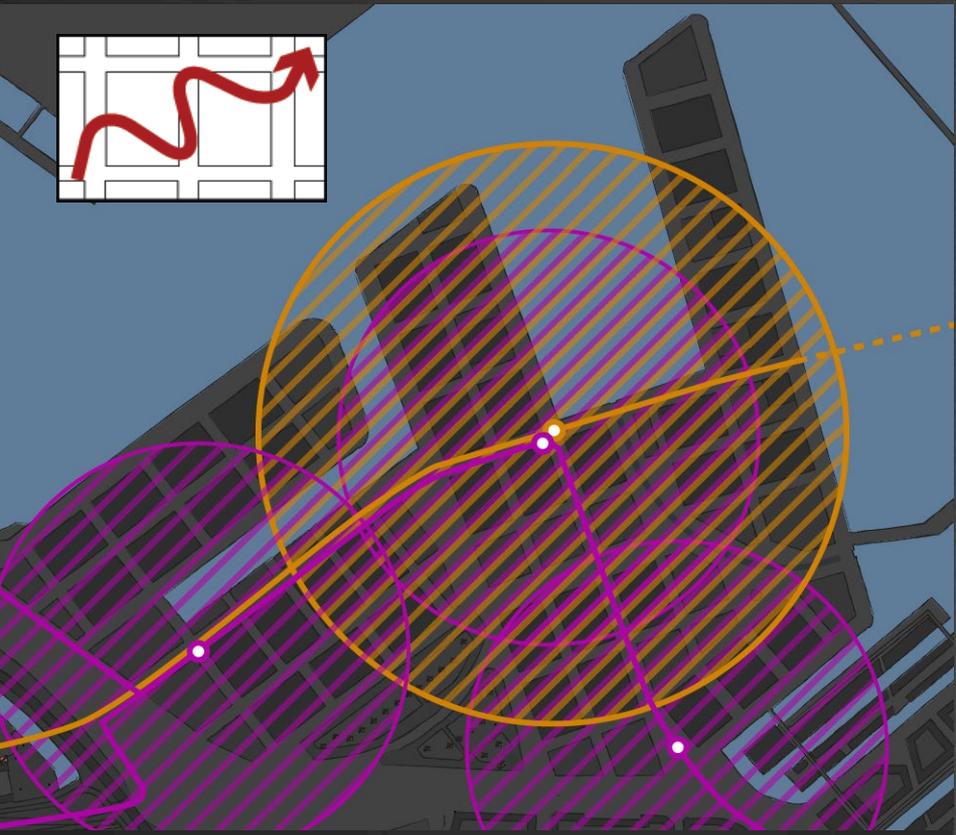
Secondary roads



17 m

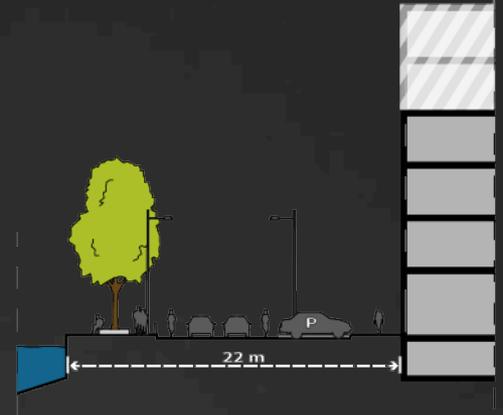
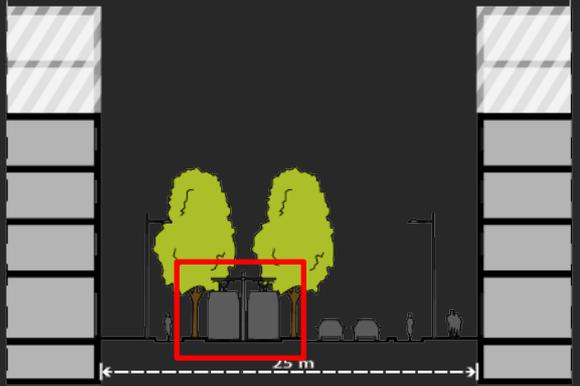
Urban plan

Access structure

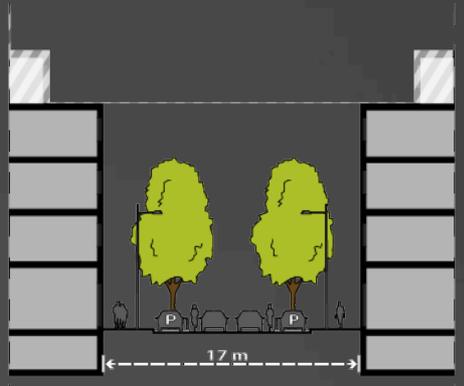


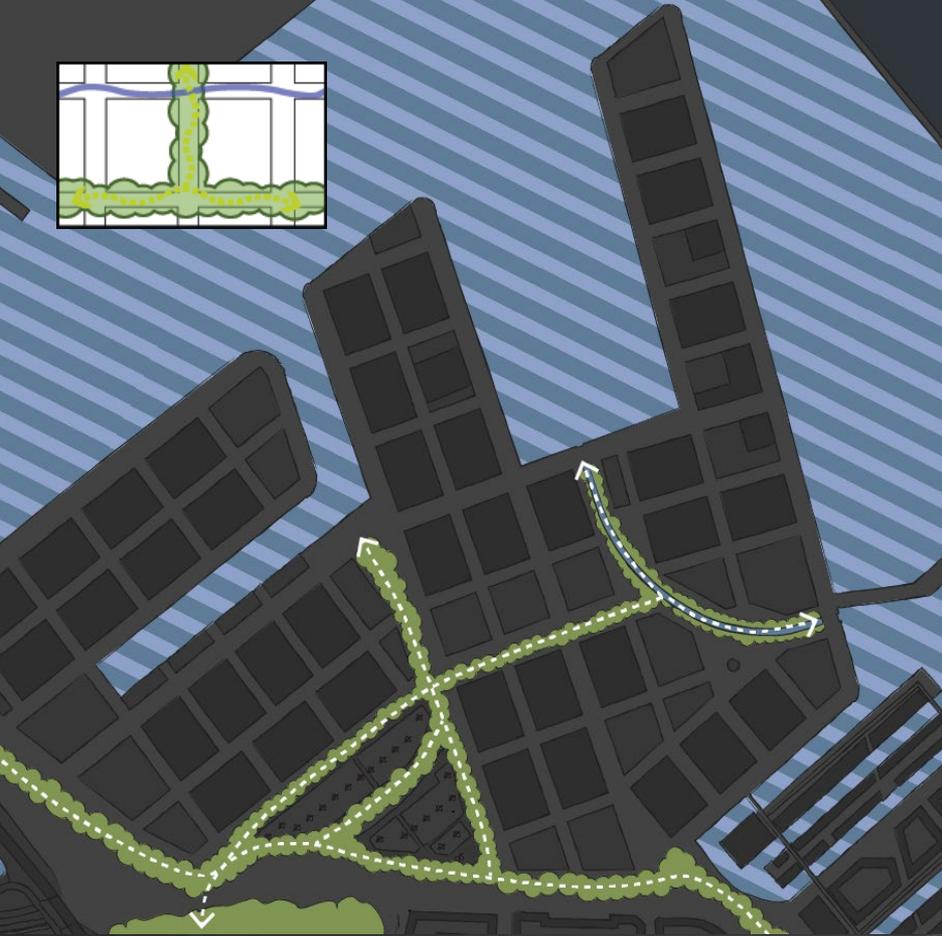
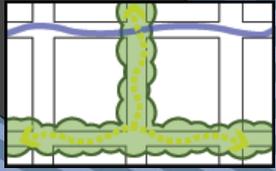
Access by public transport

Primary roads



Secondary roads





Urban plan

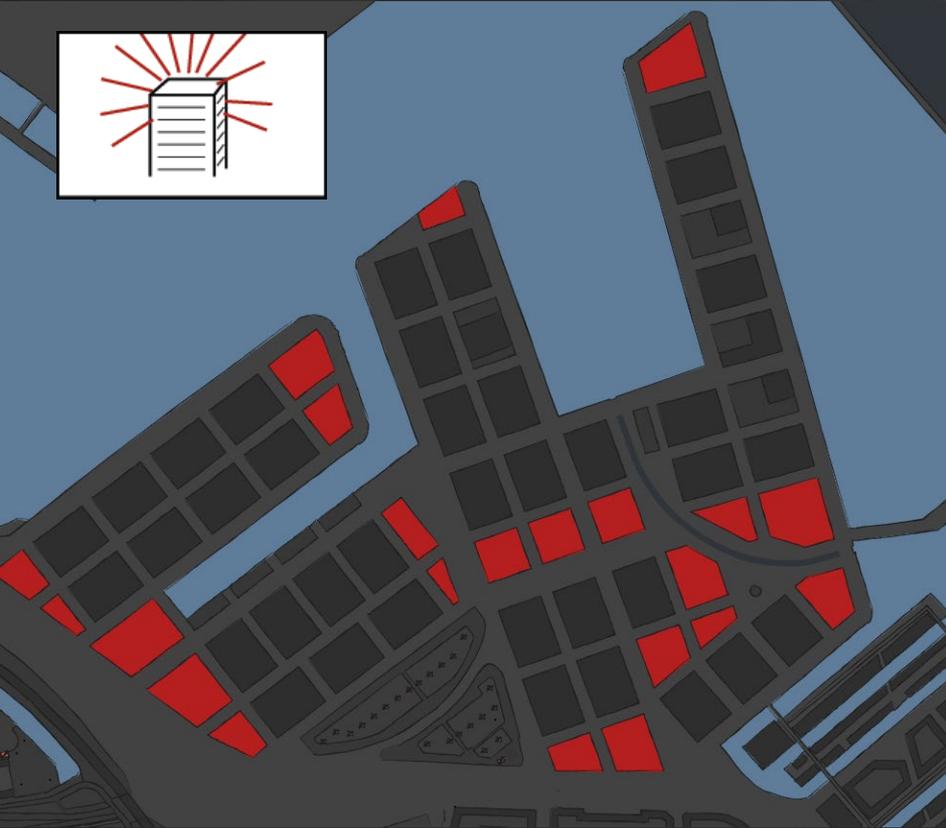
Green and water

The presence of green and/or water gives an enormous boost to the attractiveness of an area.



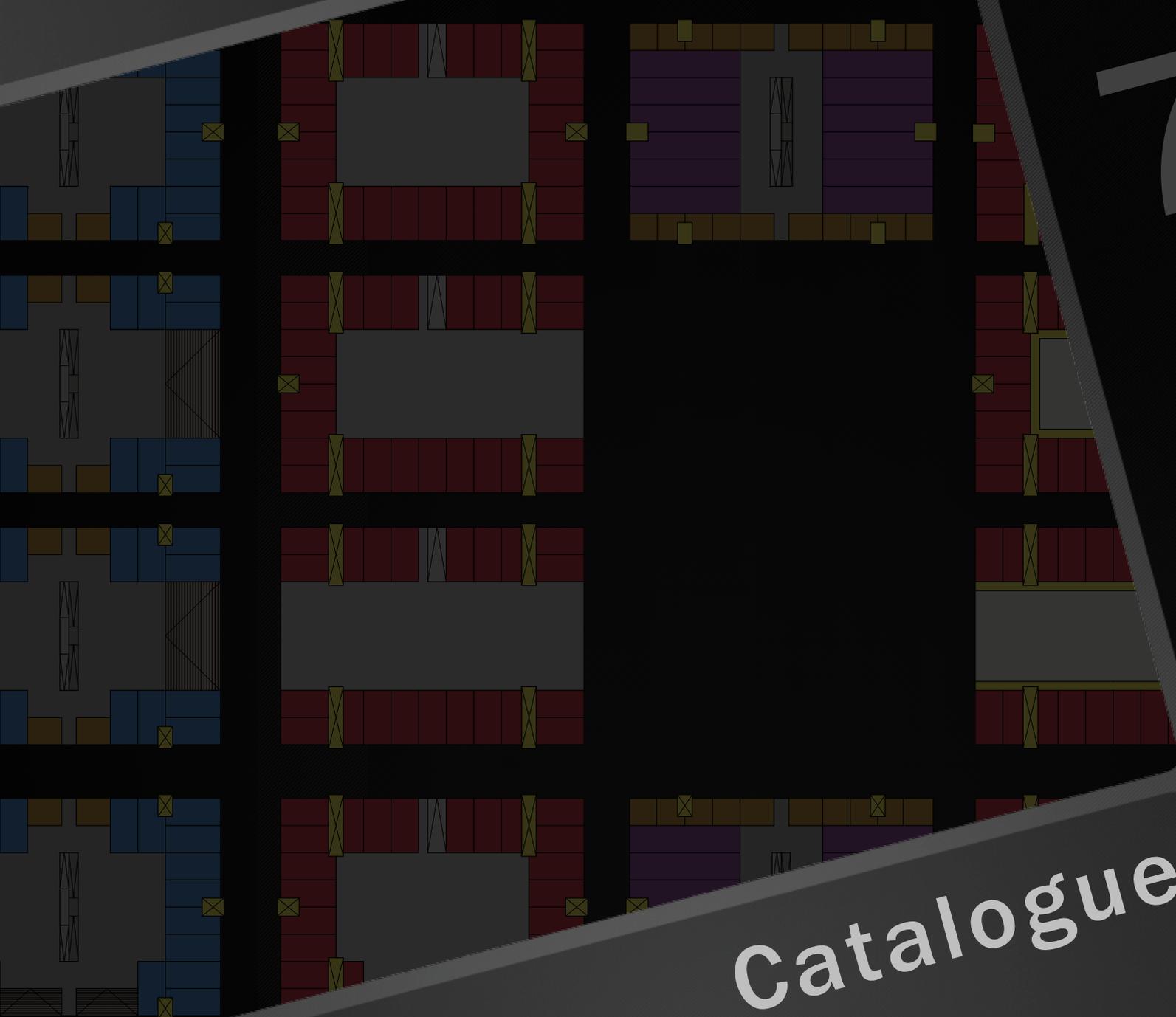
Urban plan

Landmarks



Non-standard sized blocks are potential landmark locations



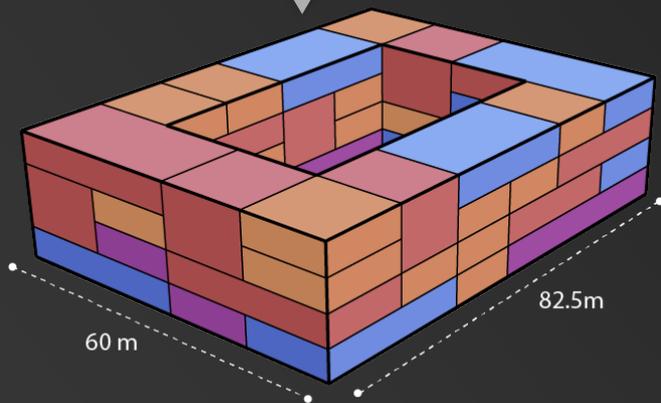
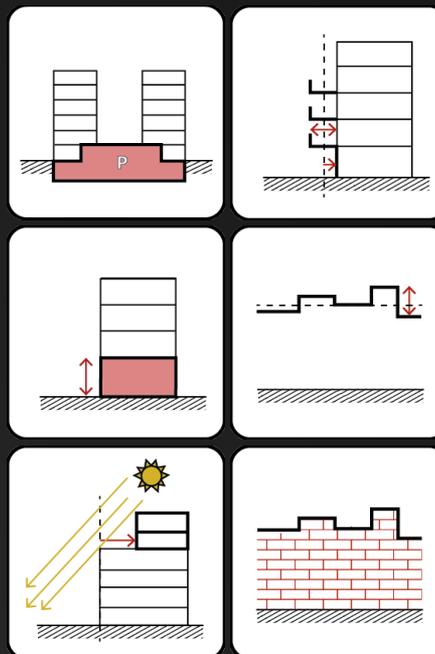
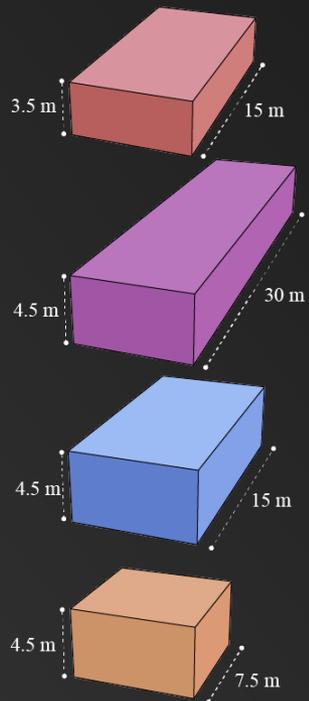
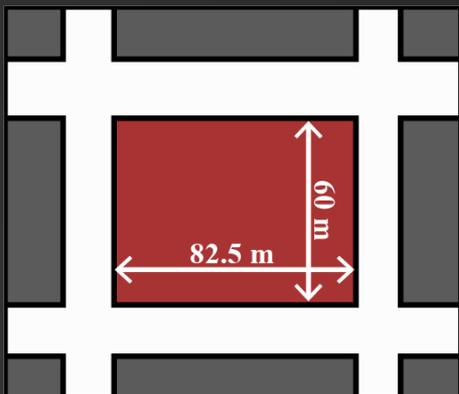


7

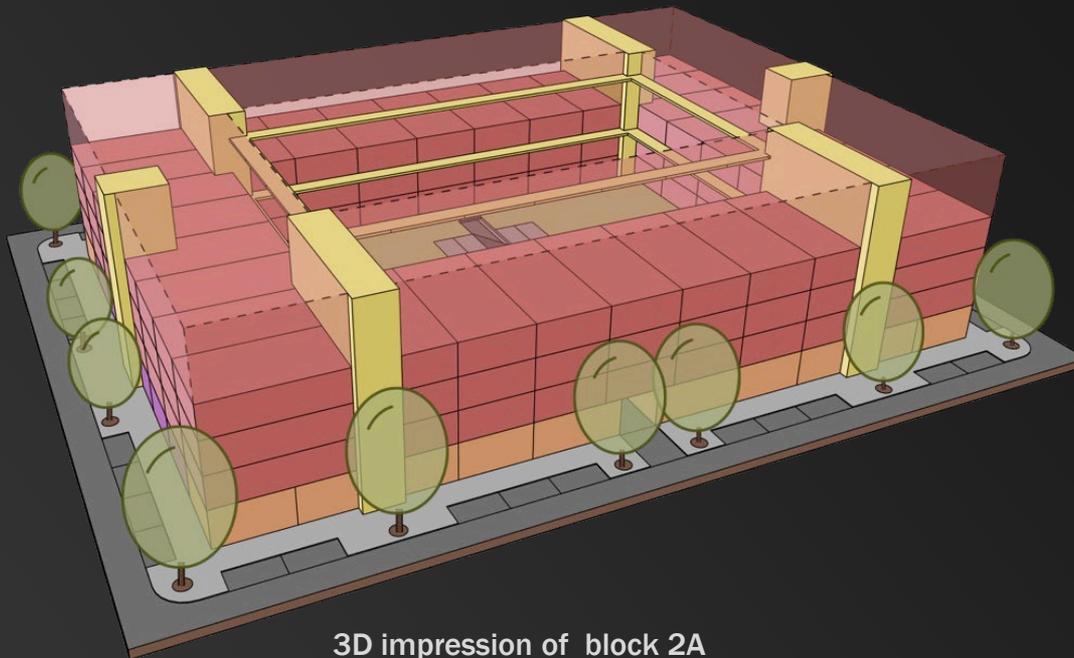
Catalogue

Catalogue

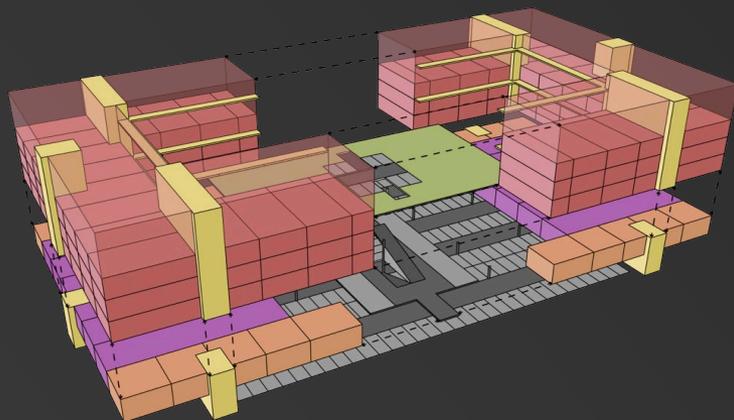
input



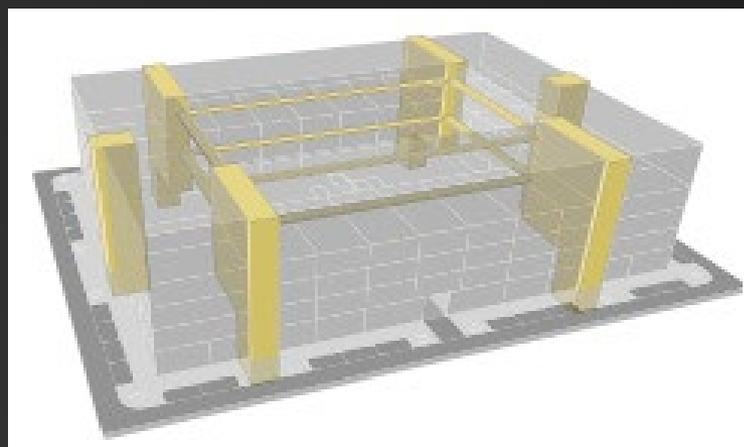
Example: 2A



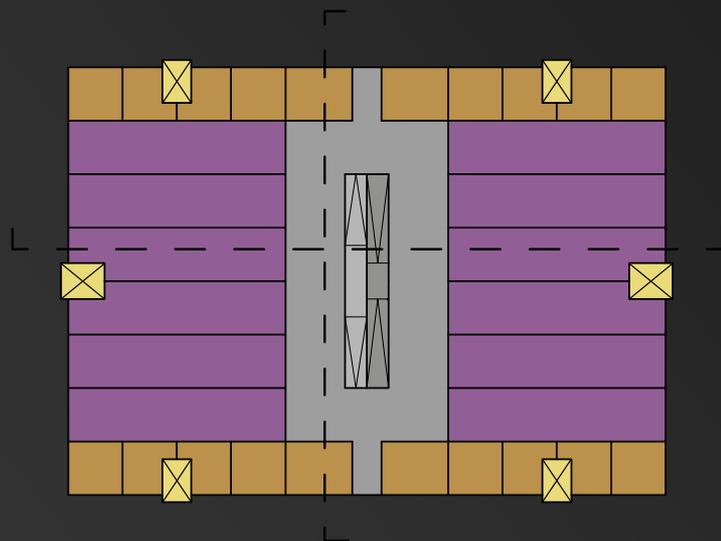
3D impression of block 2A



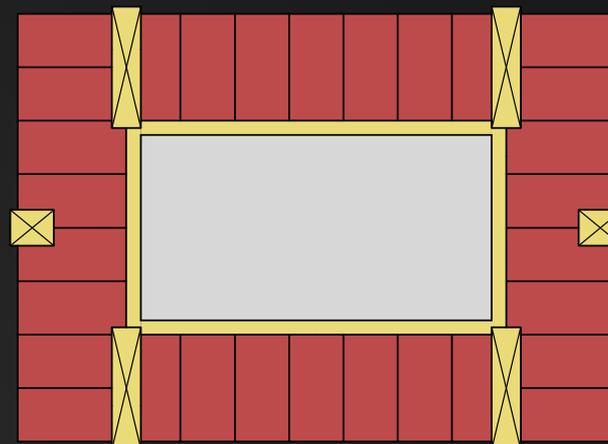
Exploded view of the block



Access of the block: Portico and gallery access



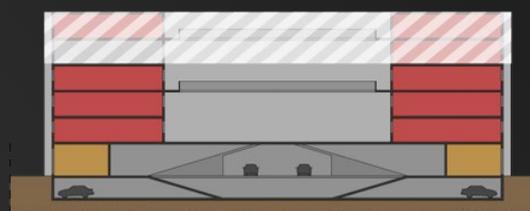
Ground floor



Other floors



Section A-A



Section B-B

Block composition:

Unit A:	90 -150
Unit B:	12
Unit C:	-
Unit D:	20

Parking:

Needed parking spaces: **339**

Parking spaces in the block: **286**

Access systems:

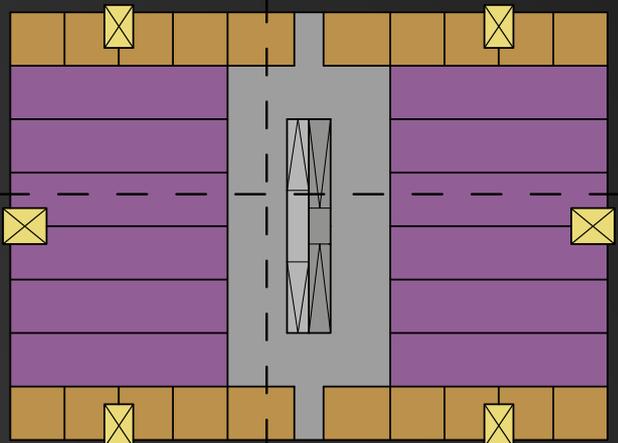
Portico and gallery access, from the street and courtyard.

Densities:

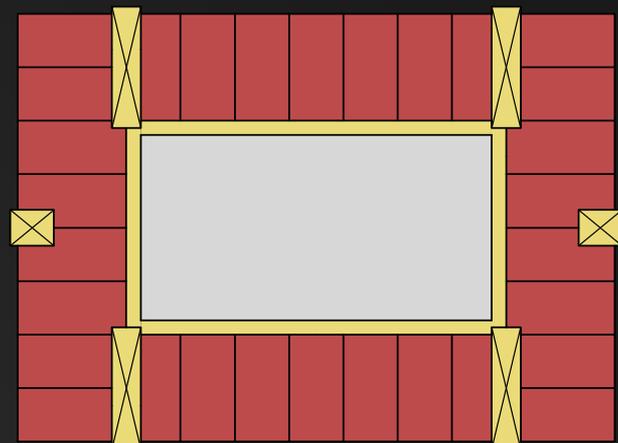
FSI of the block:	min: 2.8	max: 4.2
FSI parking + infrastructure:		1.2
FSI including public space (streets):	min: 1.8	max: 2.4

Catalogue

Example: 2A



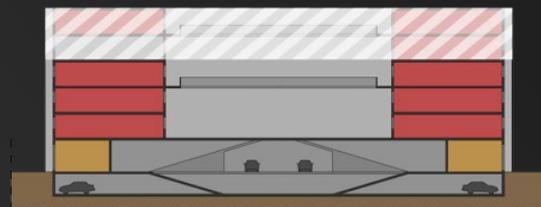
Ground floor



Other floors



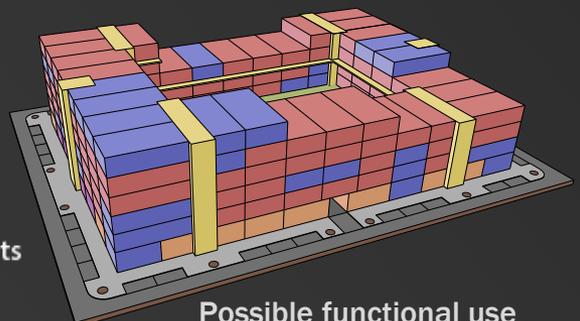
Section A-A



Section B-B

Example of a possibility for block 2A

- Office space
- Dwellings
- Shops
- Businesses
- Bars and restaurants

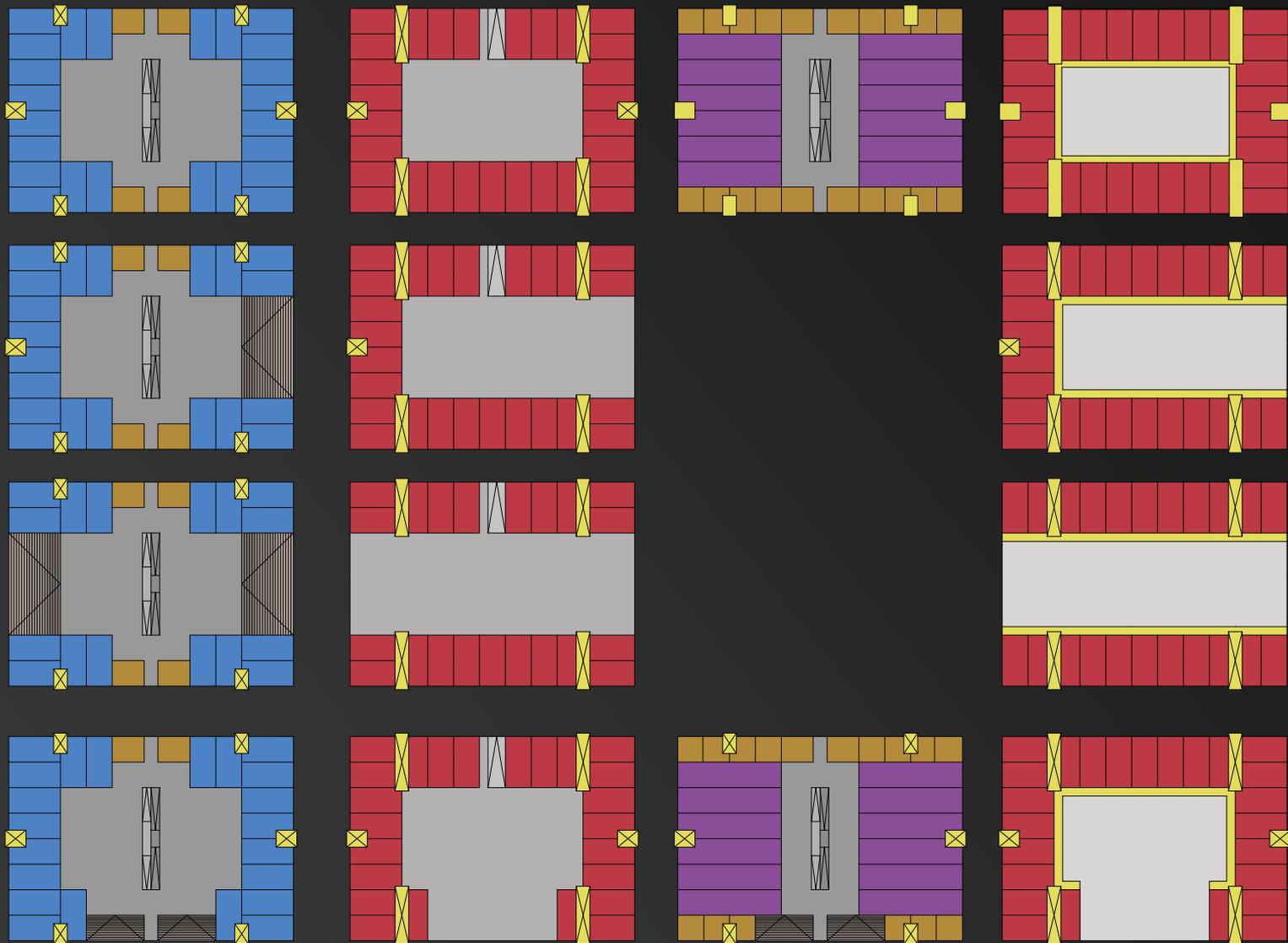


Possible functional use

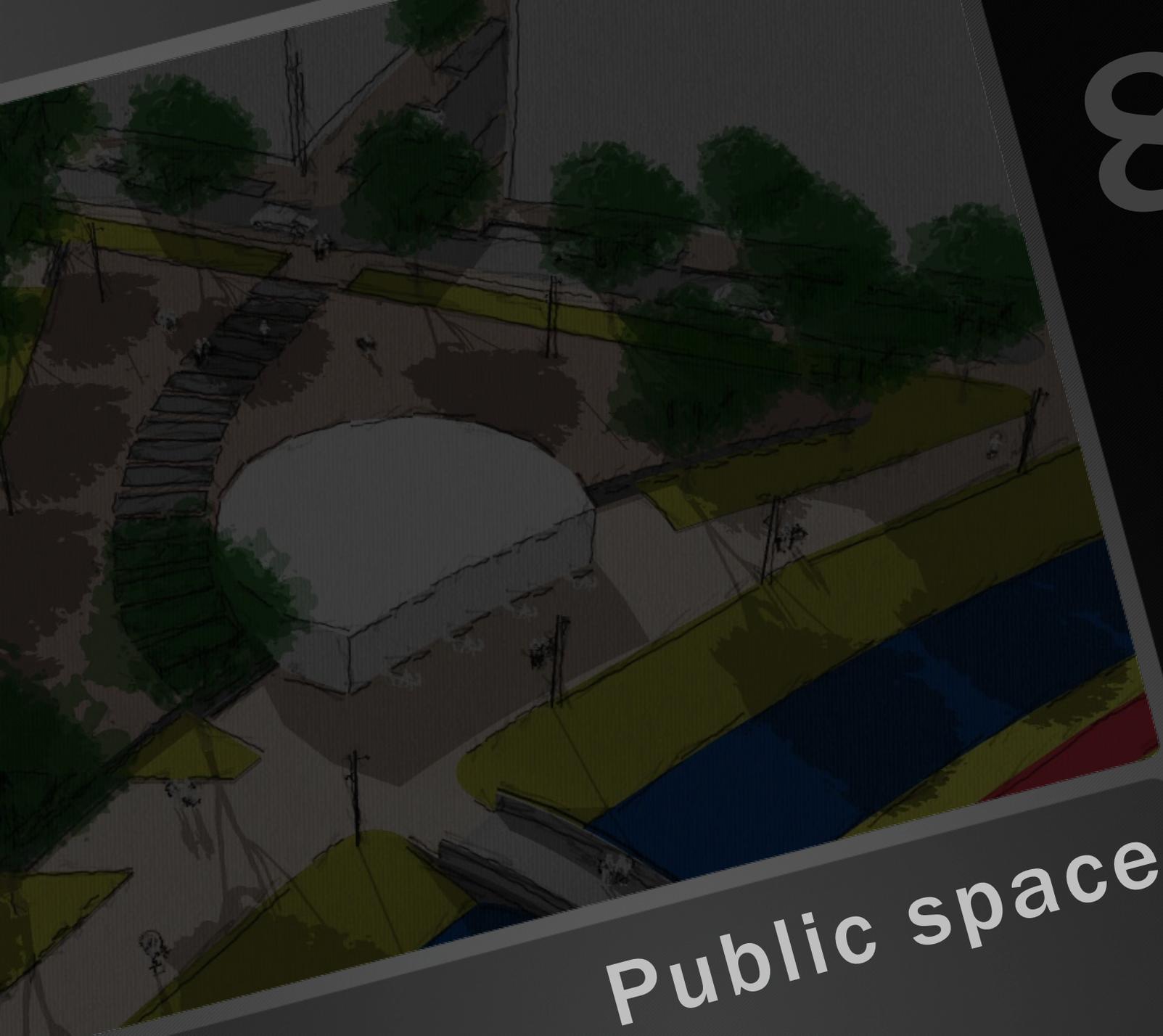


Impression of a possible scenario

Catalogue



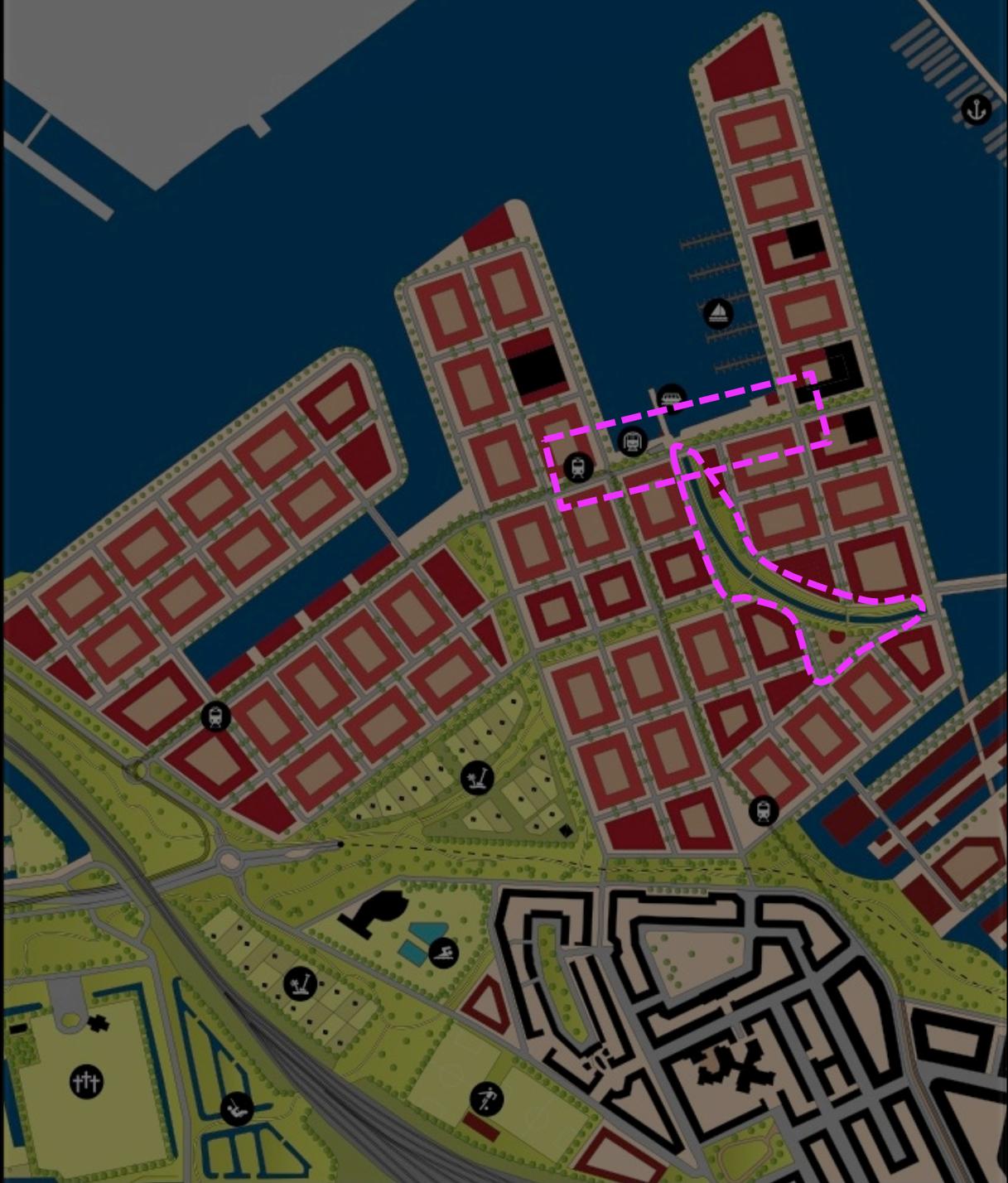
Floor plans of the different block compositions in the catalogue



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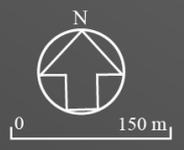
Public space

Public space



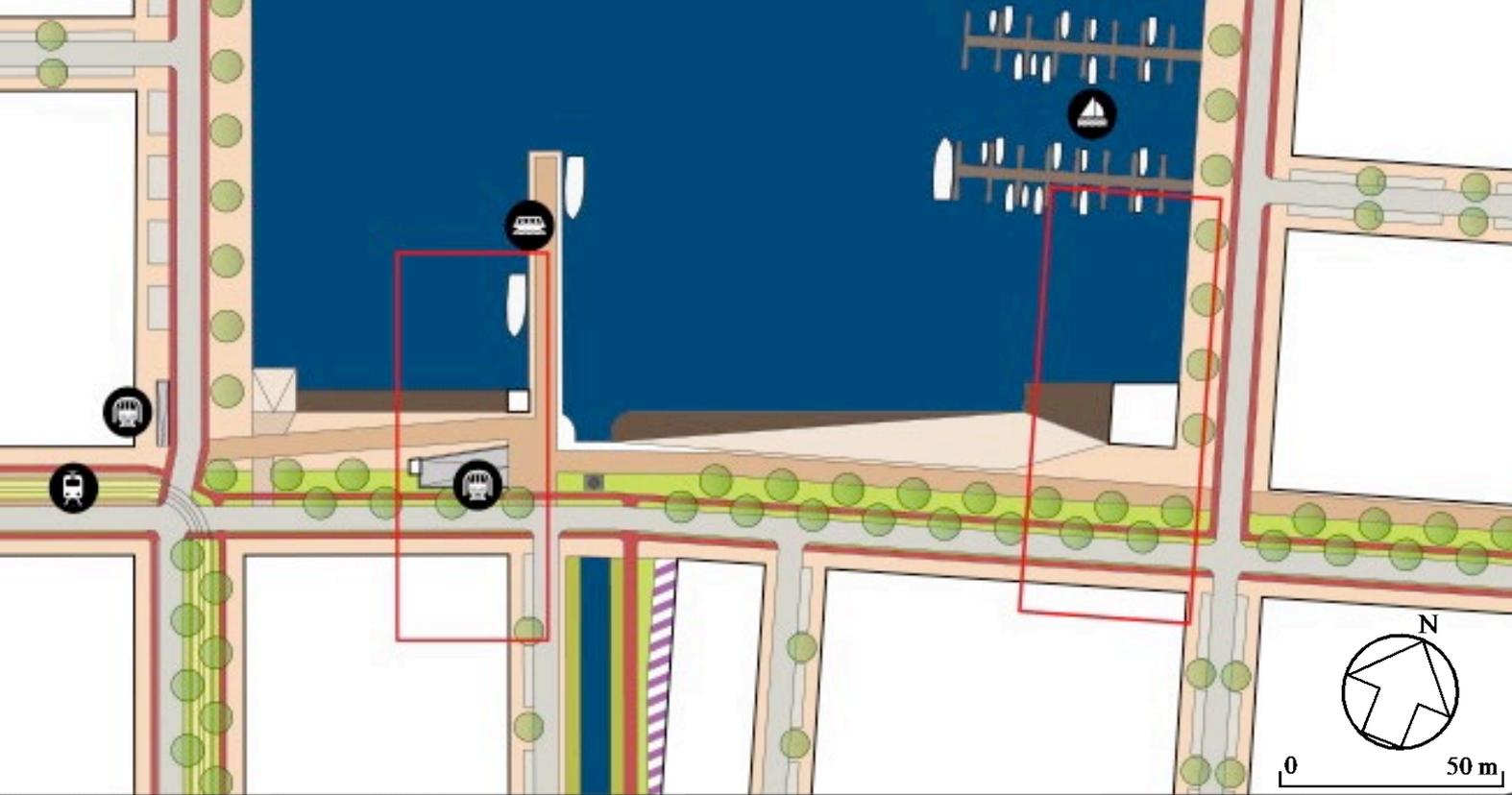
- Water
- Roads
- Trace of the car tunnel
- Pedestrian area
- Existing buildings
- Standard sized blocks
- Off-sized blocks
- New blocks outside the project area
- Tram-line
- Public green
- Private green
- Green slope
- Trees
- Outdoor swimming pool
- Barges

- Allotment gardens
- Football pitches
- Public swimming pool
- Barge moorings
- Marina
- Graveyard
- Adventure playground
- Subway station
- Tram stop
- Ferry departure point

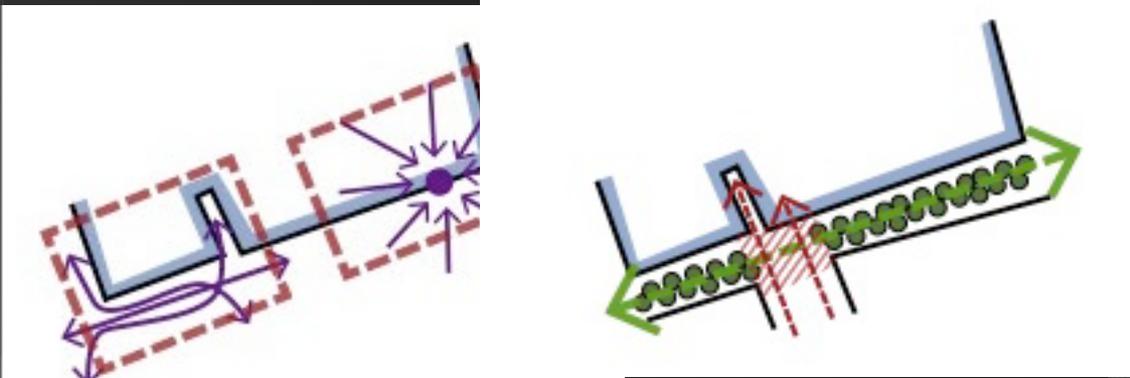


Public space

Harbour basin



Concepts

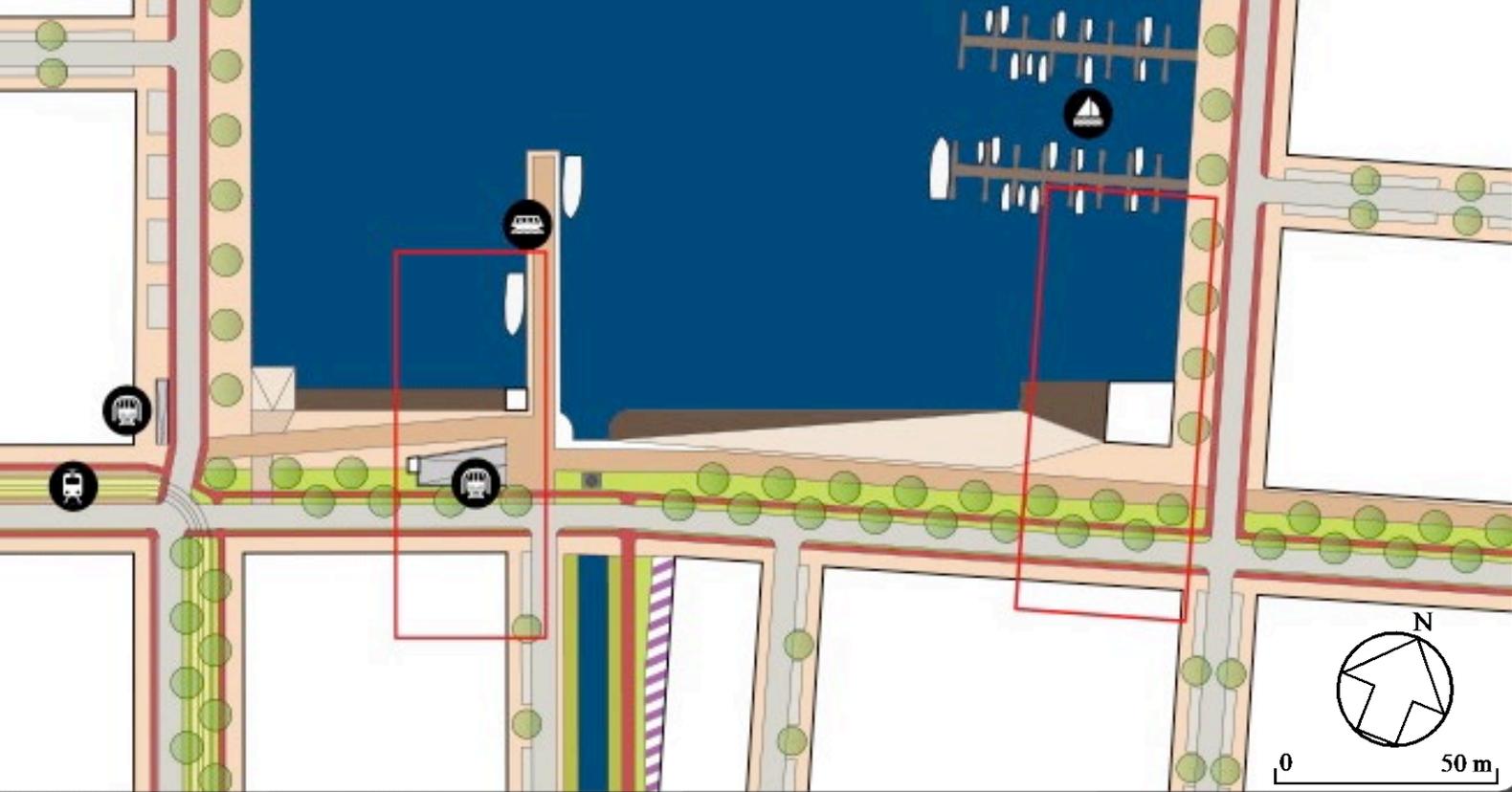


Two areas with different character

Continuity with rows of three

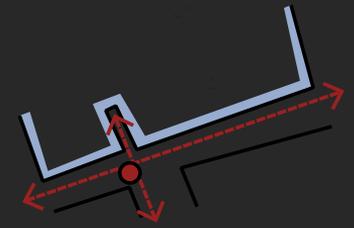
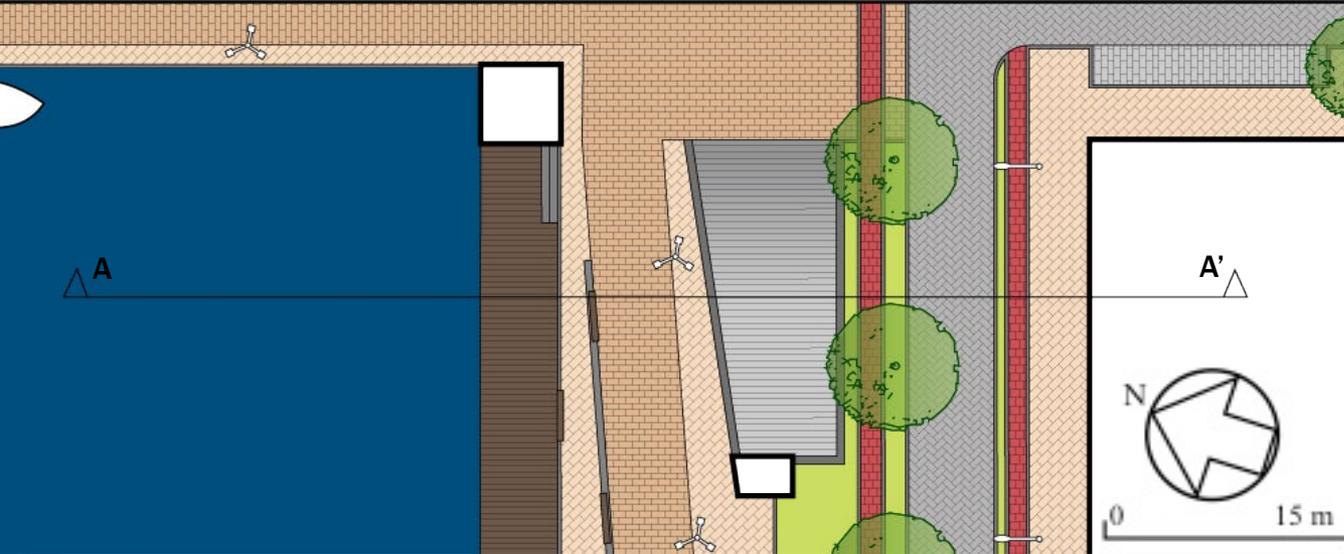
Public space

Harbour basin

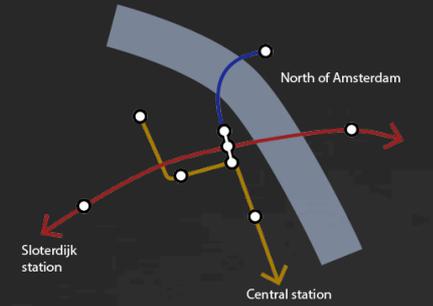


Public space

Harbour basin



Location subway entrance



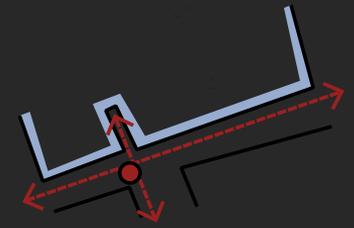
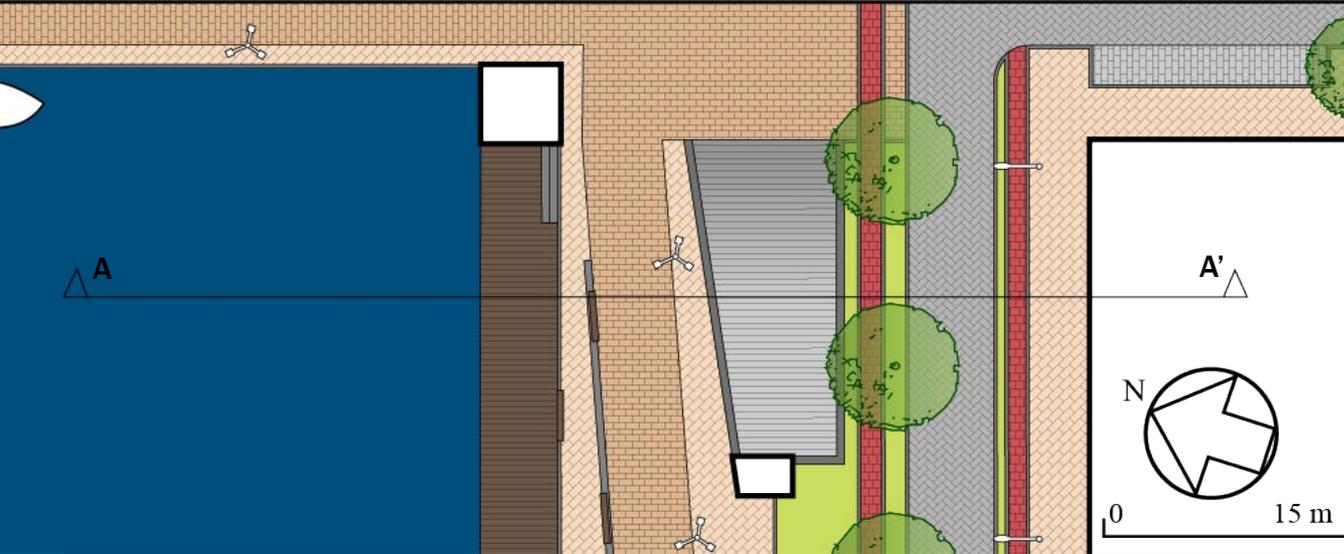
New Public transport network



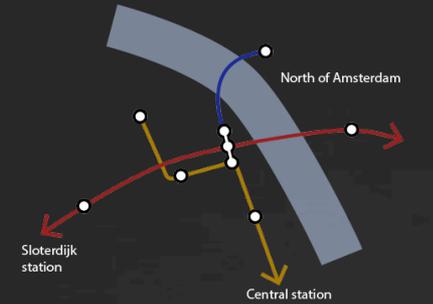
Section A-A'

Public space

Harbour basin

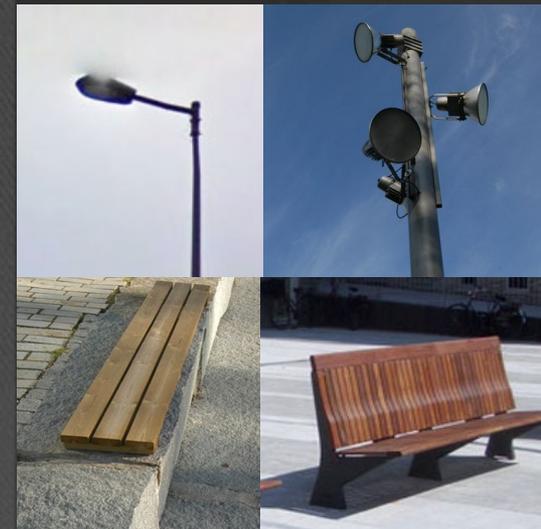
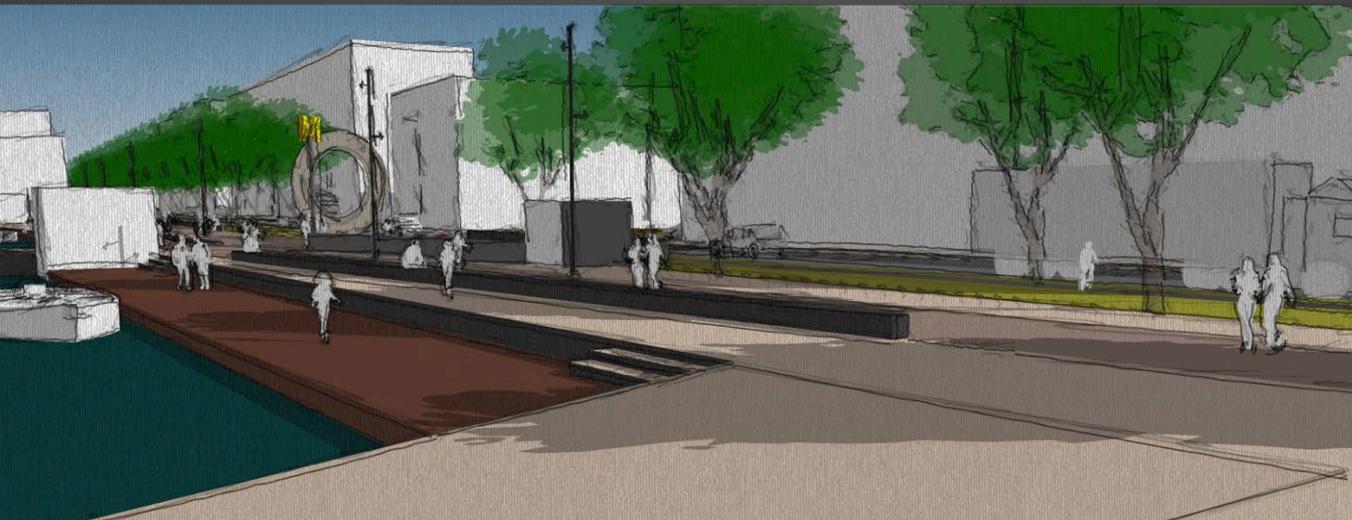


Location subway entrance



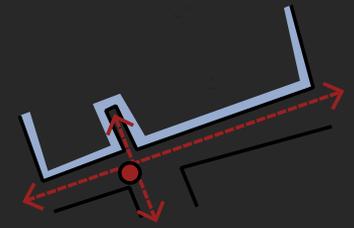
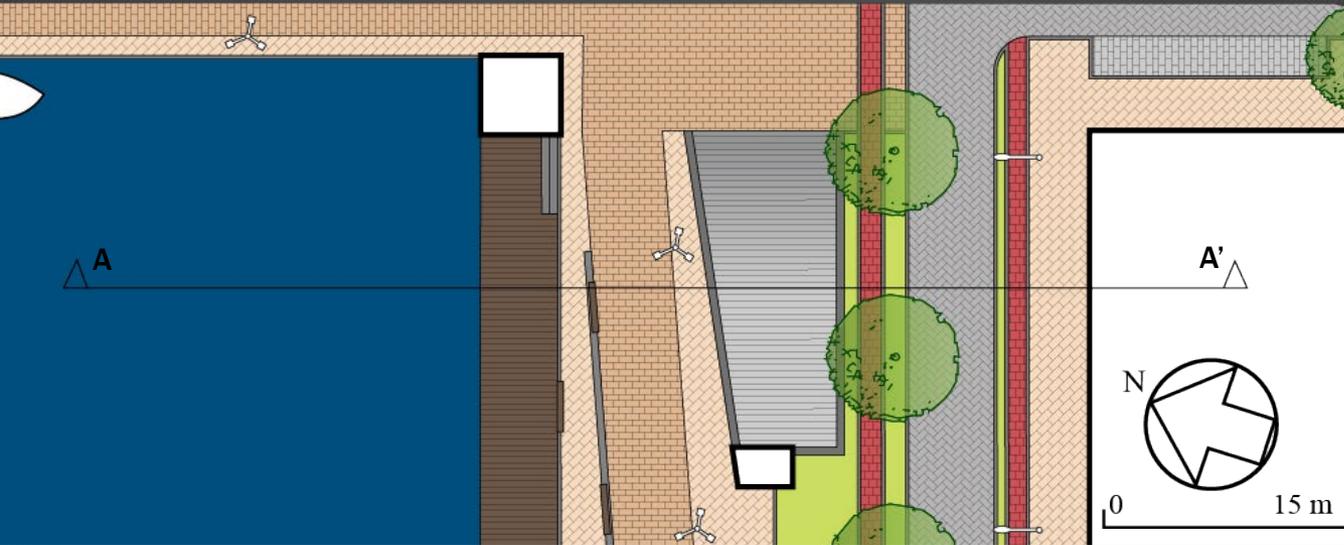
New Public transport network

Furniture

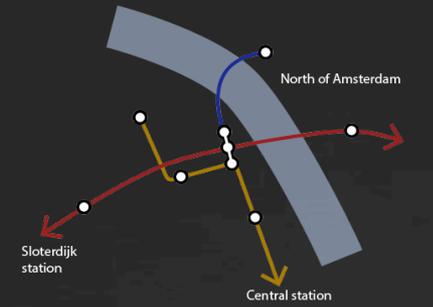


Public space

Harbour basin



Location subway entrance



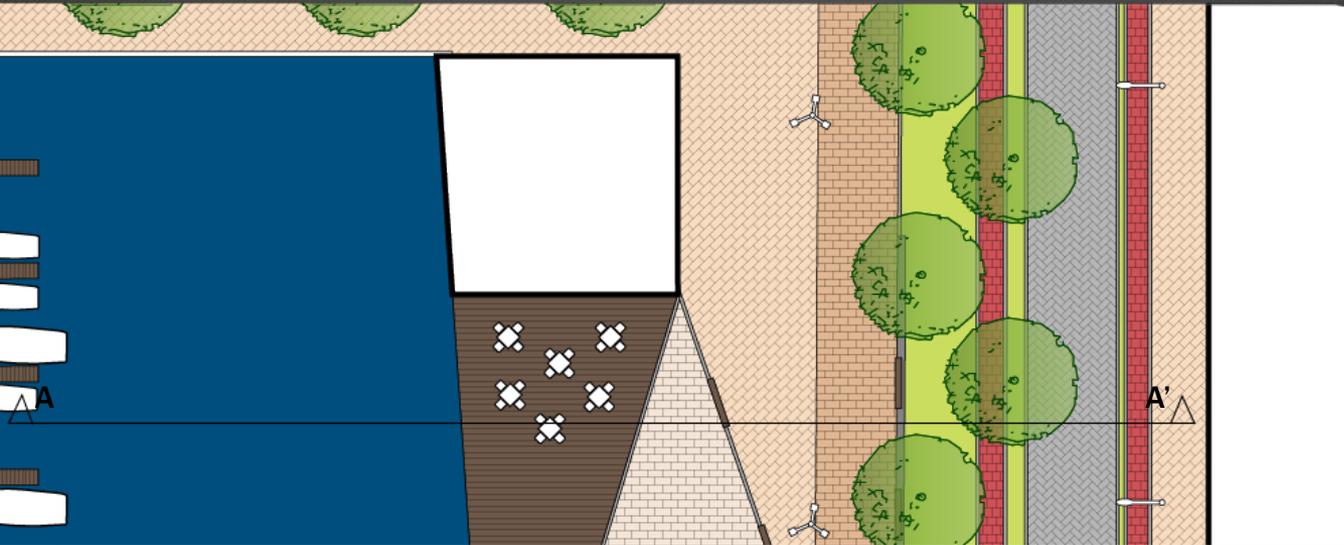
New Public transport network

Materialization

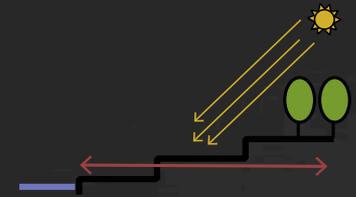


Public space

Harbour basin



Layered quay



Wide quay to allow for enough sunlight

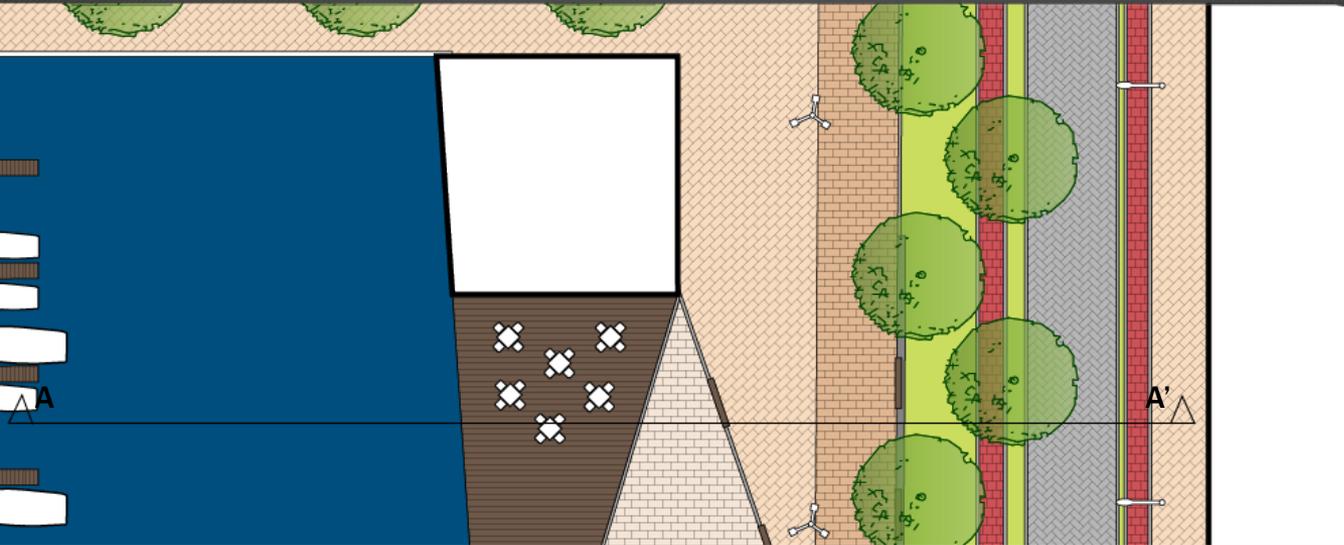
Materialization



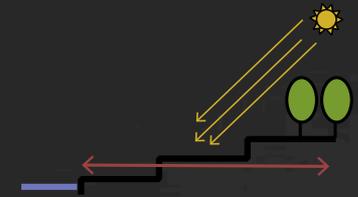
Section A-A'

Public space

Harbour basin

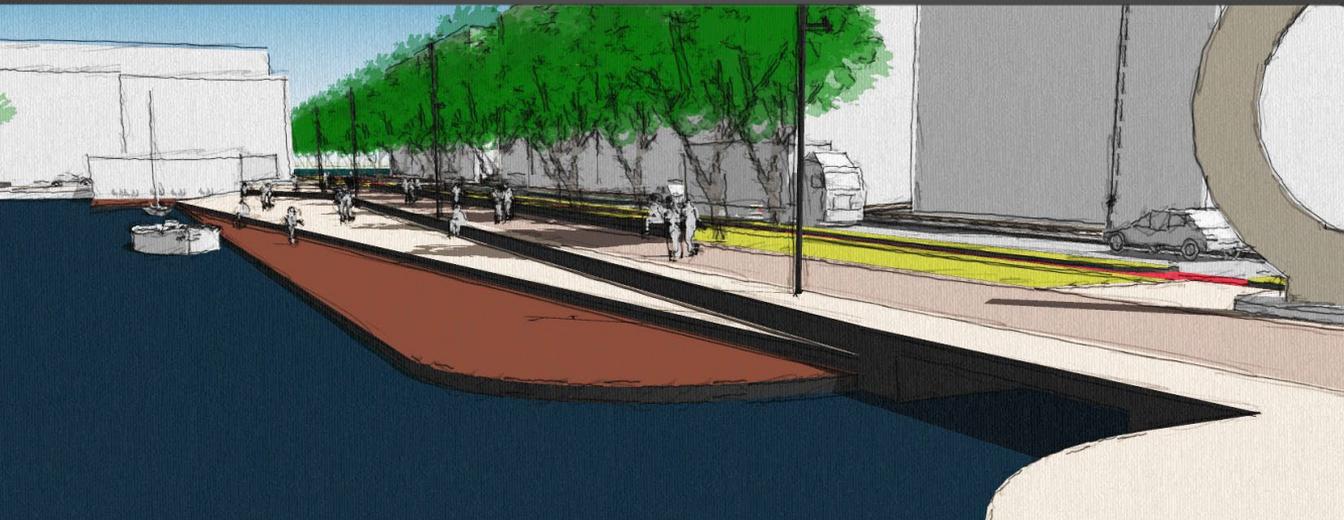


Layered quay



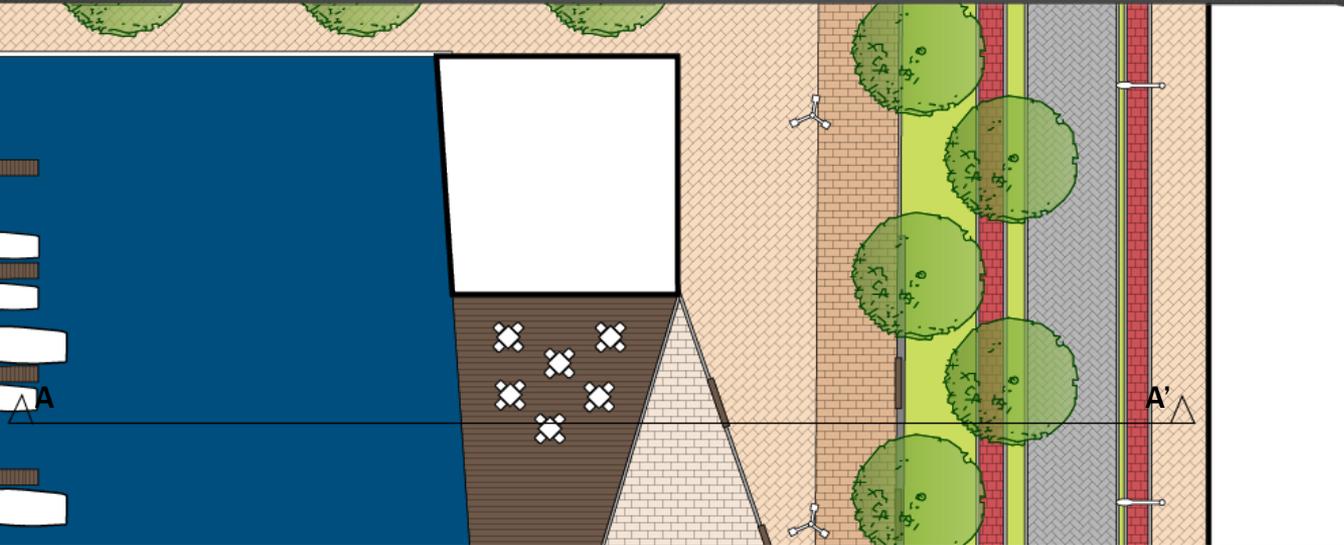
Wide quay to allow for enough sunlight

Materialization

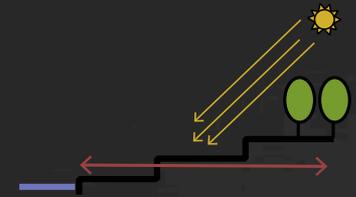


Public space

Harbour basin



Layered quay



Wide quay to allow for enough sunlight

Materialization





Conclusion

For an urban design to be integrally flexible/adaptable, it will need to have some form(s) of flexibility in all three of the aspects; The development process, urban fabric and the built environment

There are a number of spatial conditions for the urban fabric that will help create an adaptable urban plan:

- Small grain size
- Diverse parcelling
- Good accessibility
- Presence of green and/or water
- Landmark/characteristic buildings
- Enough parking facilities

Flexibility and mixed-use development will in general combine very well, since there are many very similar spatial conditions.

The combination of flexibility and mixed-use does limit the flexibility of an area to some extent. However, this is not have to be a bad thing, since plans can also be TOO flexible.