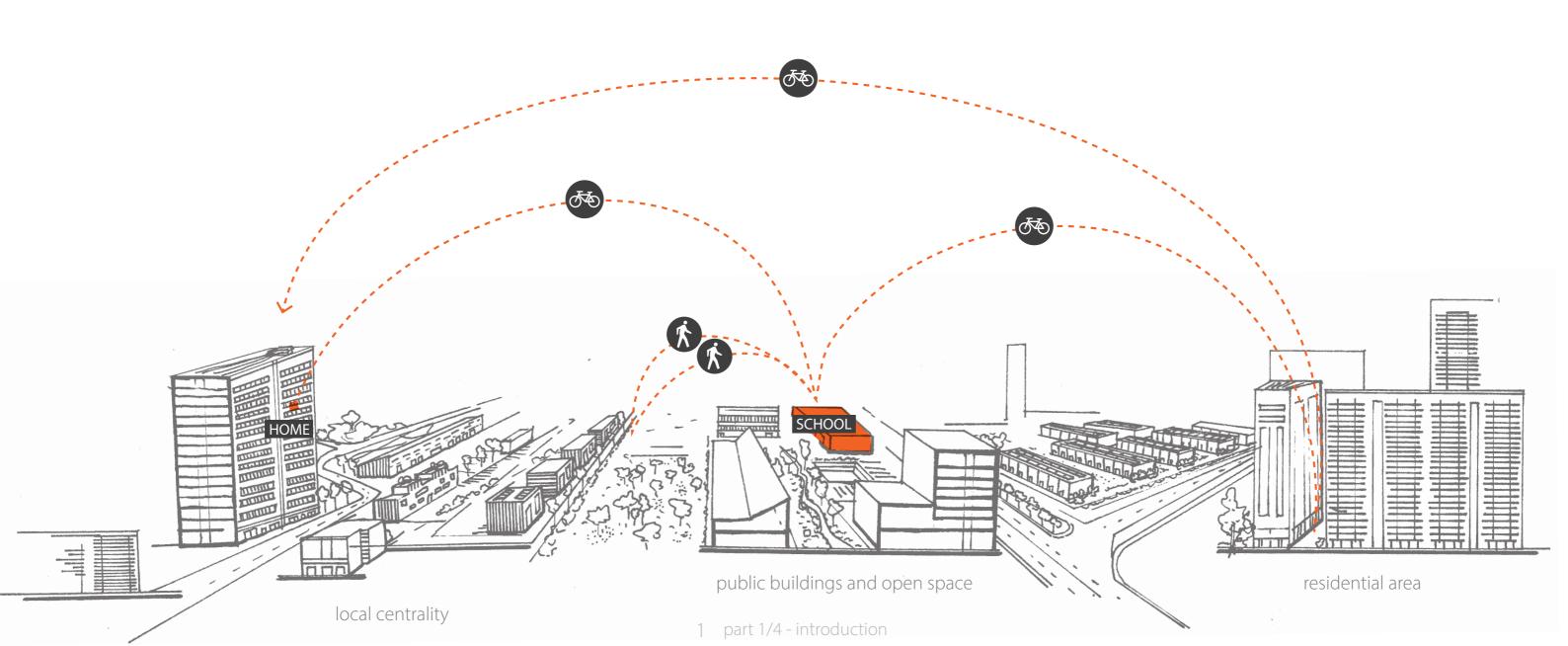
# WELCOME



"Door wonen, werken en voorzieningen op kortere afstand van elkaar te organiseren, en slim en efficiënt te combineren, neemt de verplaatsingsafstand en -tijd af. Zo ontstaat een 'stad om de hoek'. Een kortere reistijd om ergens te komen, stimuleert wandelen en fietsen, het is gezond, duurzaam en leidt tot ontmoeting."

- Omgevingsvisie Rotterdam (2021)

"By organizing living, working and facilities at a shorter distance from each other, and combining them in a smart and efficient way, travel distance and time decrease. This creates a 'city around the corner'. Shorter travel time to get somewhere encourages walking and cycling, it is healthy, sustainable and leads to encounters."



Strategic design interventions to alter the urban rhythm in the peri-urban areas of Rotterdam

#### MSc thesis

Juliette Brouwer
MSc Architecture, Urbansim and the Building Sciences
Delft University of Technology

#### oe krijg je de auto de stad uit?

n van de Wiel | 20 maart 2018 | 2 Reacties

loe beteugel je de auto en boek je erreinwinst voor fietsers, voetgangers e et openbaar vervoer? Elk stadsbestuur vorstelt met die vraag. Want pijnlijke euzes die soms op harde weerstand tuiten zijn onvermijdelijk. We inderzochten de situatie in Rotterdam, Itrecht en Den Bosch. "Ik had wel eens olitiebegeleiding nodig."



Ik woon aan een verkeersriool". Mathilde Toet



## CARS

lotterdam, Schiedam en Rijswijk zijn d neest vervuilde steden als het gaat om itstoot door verkeer en industrie. De emeenten Nederweert, Ede en larneveld, Velsen en Beverwijk hebber le hoogste concentraties fijnstof.

latasja de Groot 08-01-20, 13:27 aatste update: 08-01-20, 14:22

#### portage

Inallende uitlaten en onkende motoren: itgaan voor de een, verlast voor de ander

**laneren** Gemeentes worstelen net luid ronkende auto's en notoren, die rondjes door de stad jden en overlast veroorz<u>aken.</u>

Anne Corré © 11 oktober 2021 Leestijd 6 minuten



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#### Ministerie steunt 33 gemeenten om sneller woningen te bouwen

5 december 2021, 9:29









Het ministerie van Binnenlandse Zaken steunt 33 gemeenten met : miljoen euro om sneller tienduizenden betaalbare woning ze bouwen. Die woningen zijn pedoeld voor starters of mensen een middeninkomen.

#### Graag juist méér verdichting in Rotterdam

Verdere verdichting van Rotterdam s hard nodig om de verstedelijking n goede banen te leiden, stelt *Jaap yan der Want*. Daarom is de kritiek p de gemeentelijke

## SPACE SCARCITY



#### 20.000 nieuwe huize epland in kwetsbare ·bieden'

① 7 december 2021 eestijd 1 minuut

i de één miljoen woningen die tot 203 ouwd moeten worden, staan er 820.0 ebieden die last kunnen krijgen van eroverlast, droogte, hitte of lemproblemen. Daarvoor waarschuwt tacommissaris Peter Glas in een advie de regering. Huizen moeten normaa proken zo'n vijftig tot honderd jaar egaan. Wetenschappers zeggen dat he t ondenkbaar is dat de zeespiegel doo naatverandering in die periode twee ter stijgt. In zijn advies aan de

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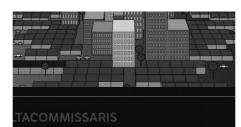


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#### noe keert arvoerputje Feijenoord het geweld en de verloedering?

**Kwetsbare wijk** De dure nieuwbouw illustreert hoe de stad steeds verder oprukt op Rotterdam-Zuid. Op pad met twee wetenschappers en een wijkraadslid, na een zomer met schietpartijen. "Het is een freudiaans stukje stad."

 Steven Verseput ○ 9 september 2021 Leestijd 8 minuten



deVolkskrant



Opinie: Sloop goede woningen in de

# SEGREGATION

stedenbouwkundig beleid dat segregatie en gettovorming voorkwam. Hou dat zo.

Tim Verlaan en Aimée Albers 30 juni 2021,











Ongelijkheid in gezondheid is een nationaal probleem

Coronaherstelplan Covid legde grote ongelijkheid bloot, rapporteerde het CBS deze week. Waar blijft het herstelplan voor achterstandswijken?, vragen Lodewijk Asscher, Ron Meyer en Marco Pastors.

○ 1 april 2022 ○ Leestijd 3 minuten



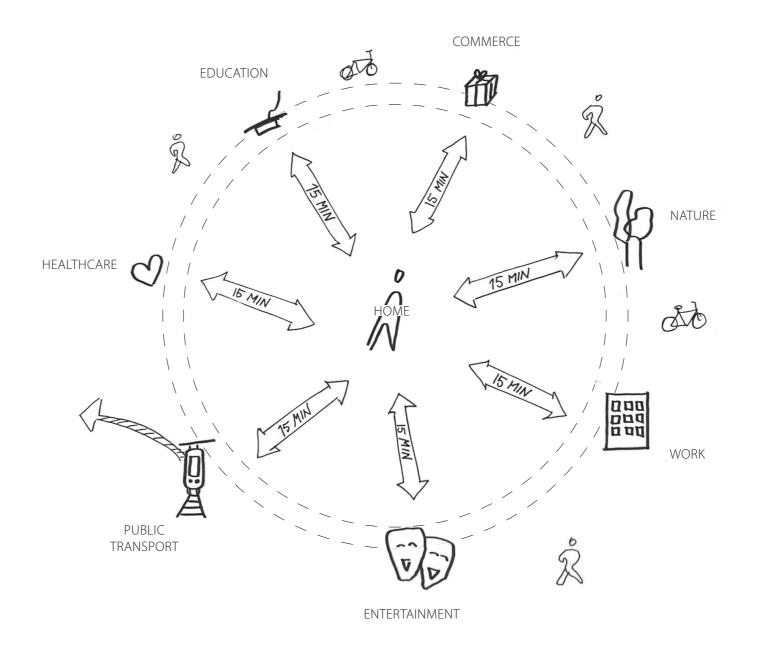
News. source: AD (2020), architectenweb (20

CARS SPACE SCARCITY SEGREGATION

**HUMANS** 

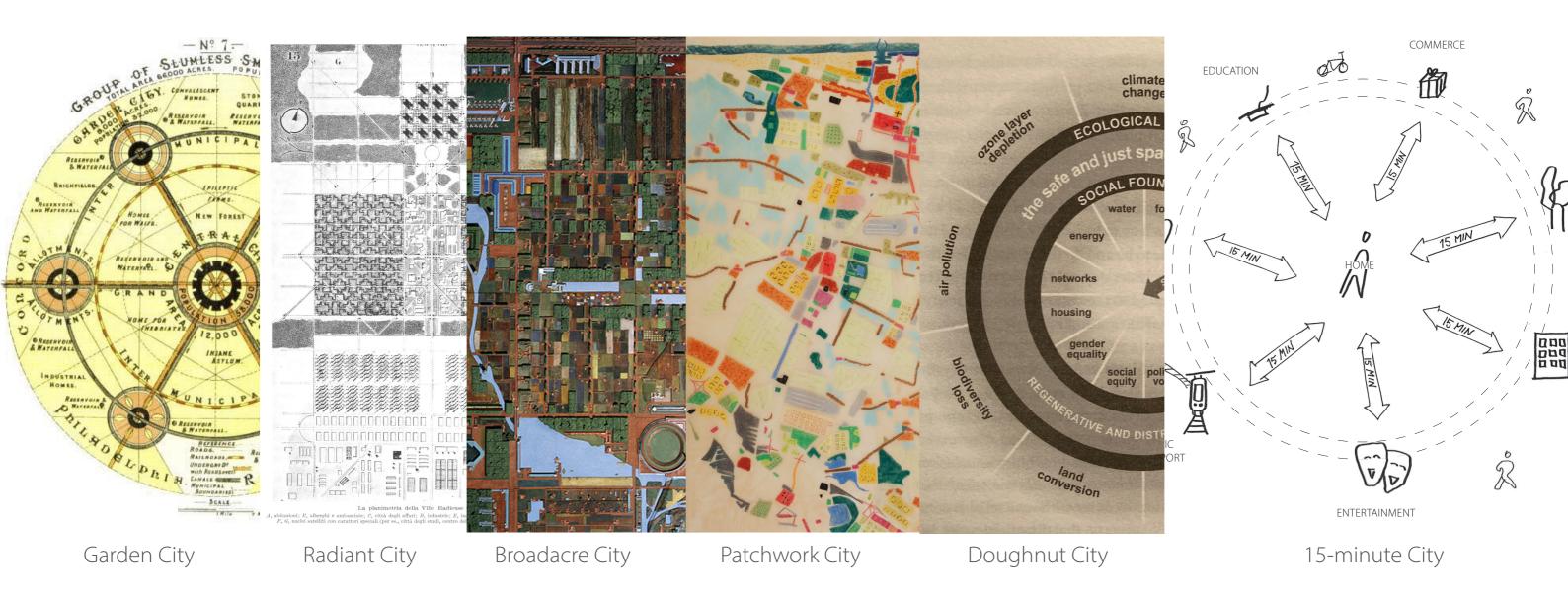
**MULTI PURPOSE** 

**LOCAL ACTIVITY** 



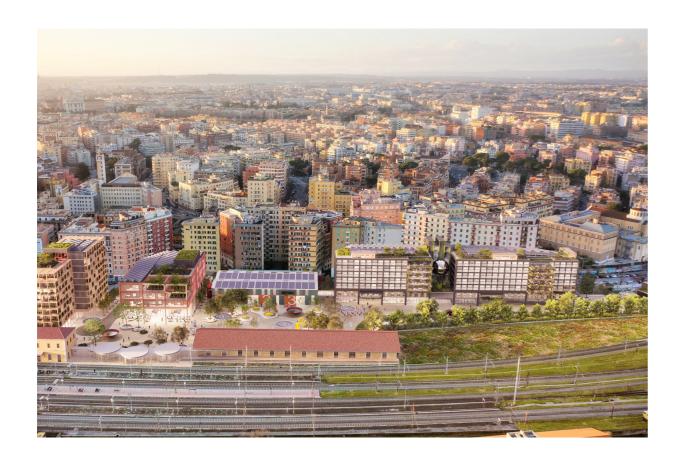
"In an 15 Minute City, all citizens are able to meet most or all of their needs within a short walk or bike ride from home."

- Pozoukidou, G., & Chatziyiannaki, Z. (2021). 15-Minute City: Decomposing the New Urban Planning Eutopia. Sustainability, 13(2), 928.



# UTOPIA

# DYSTOPRA







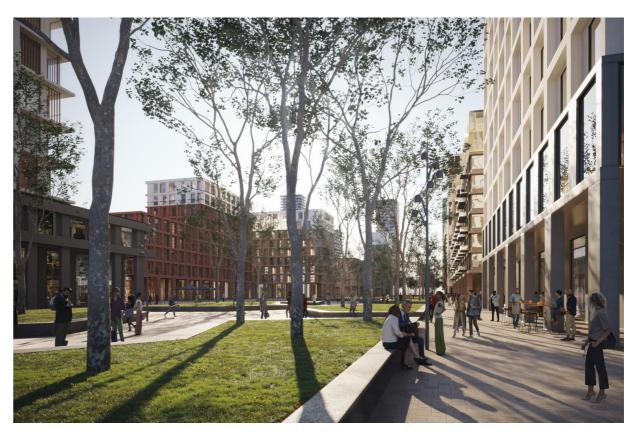
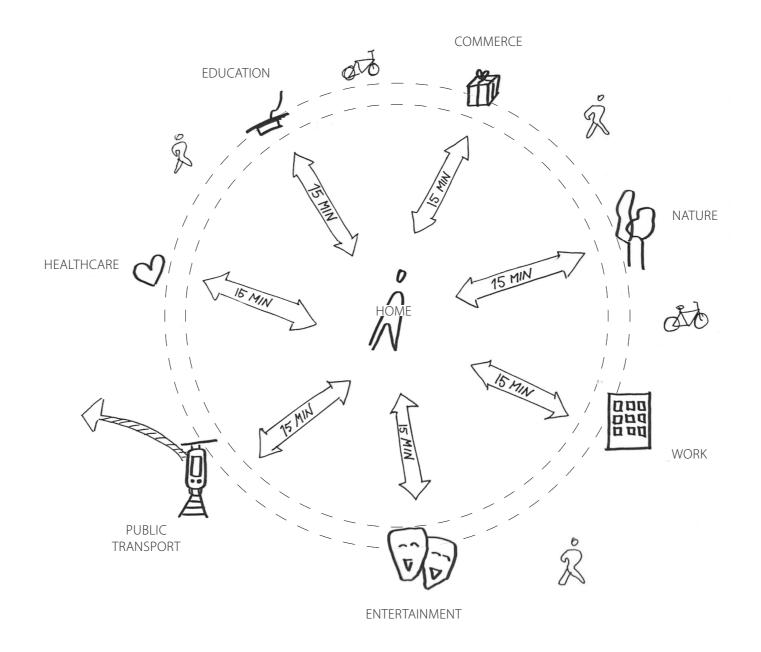


Figure 1: Recent projects that claim to develop a 15-minute City. From top to bottom: Campo Urbano (Rome) by Arney Fender Katsalidis, Qilong Innovation Park (Chengdu) by Chapman Taylor, The Point (Utah) by SOM, ZIL South (Moscow), by KCAP

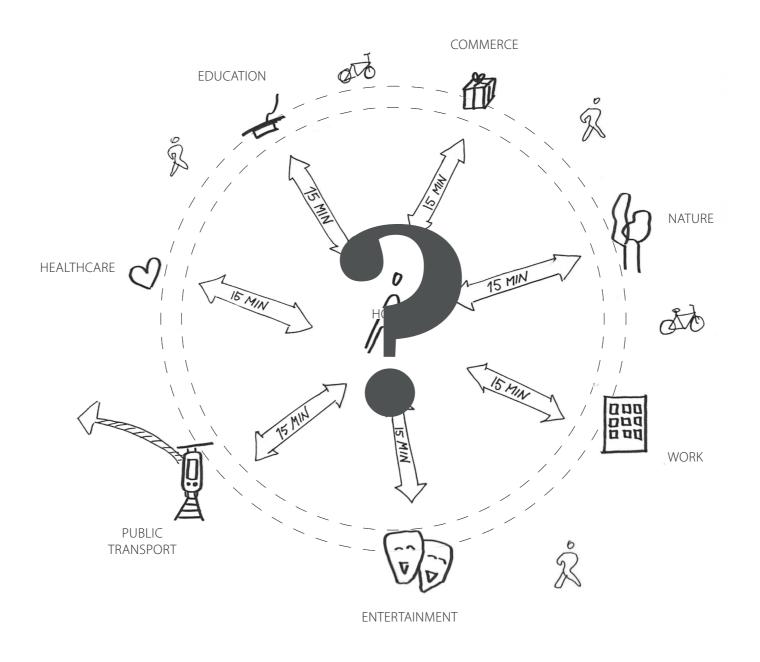
# SPATIAL CONCEPT

# SPABUZZ NAMEPT



"In an 15 Minute City, all citizens are able to meet most or all of their needs within a short walk or bike ride from home. It is intended to function as a model of reconnecting people to their neighbourhoods and localize city life"

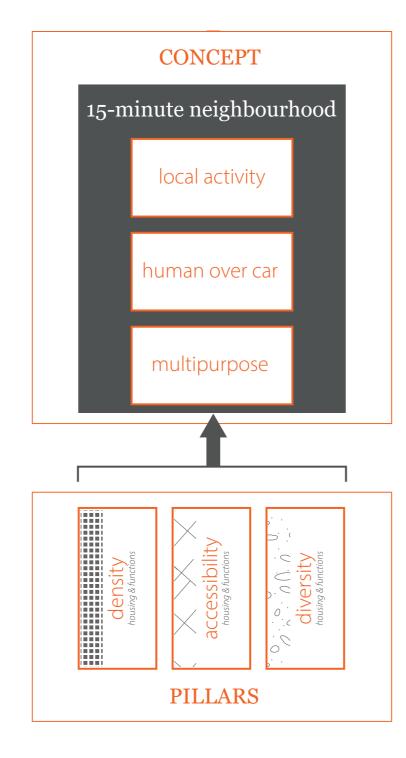
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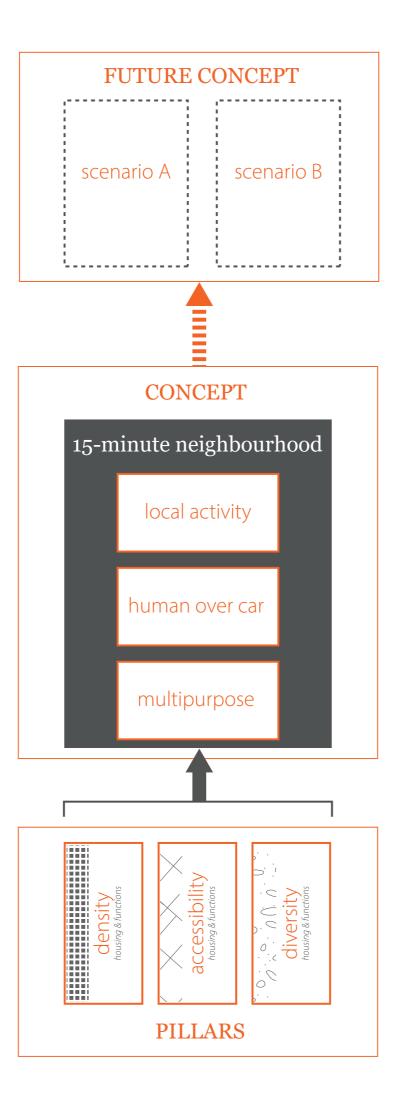


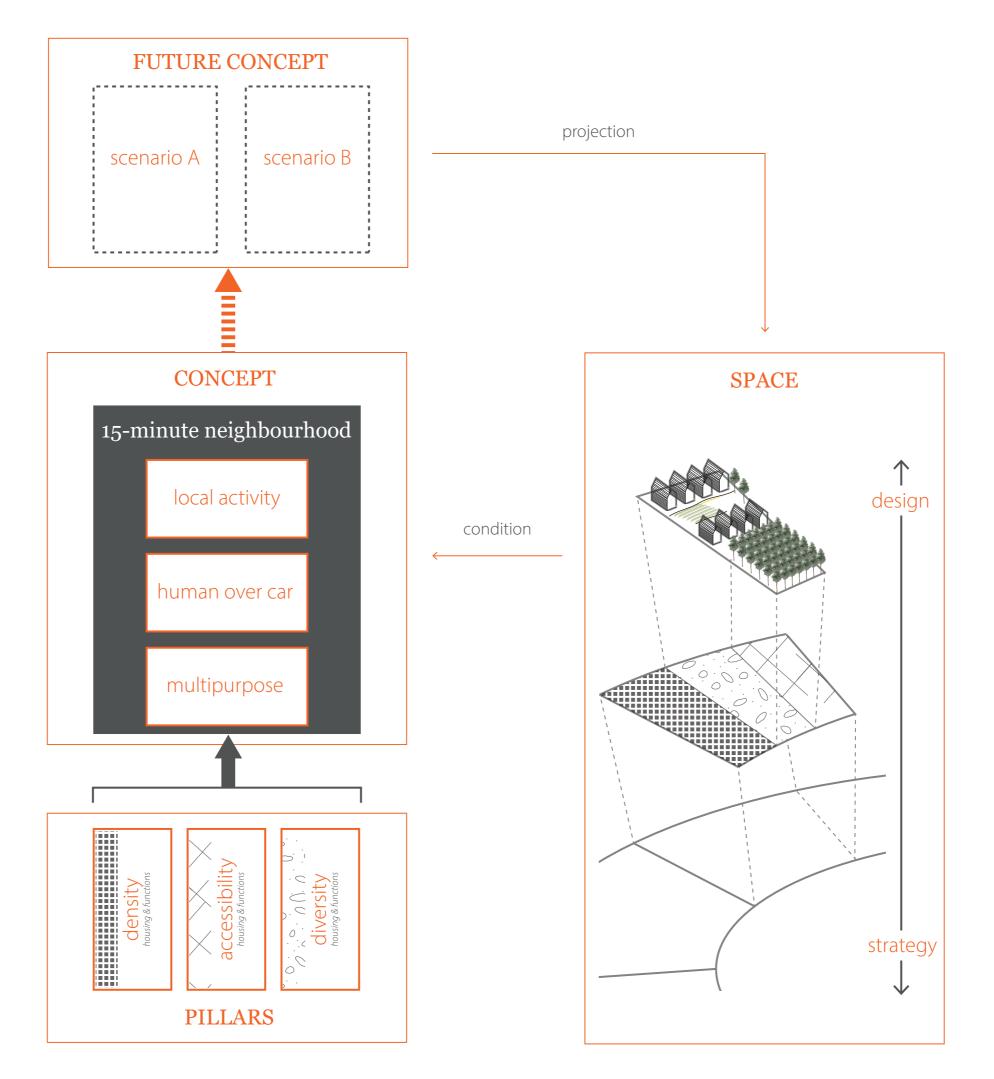
# What strategic urban design contributes to the 15-minute City?

### CONCEPT





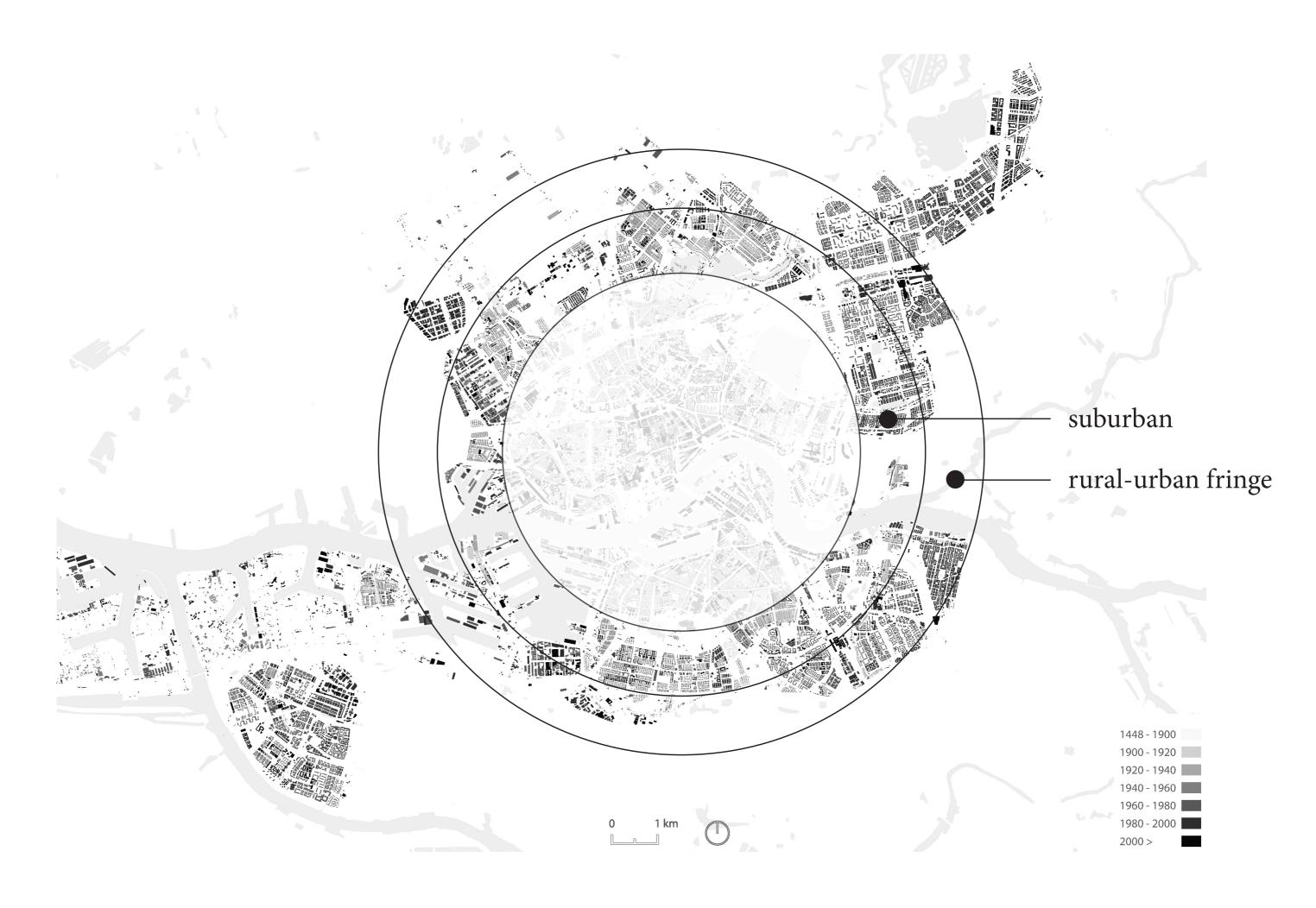




22 part 1/4 - introduction







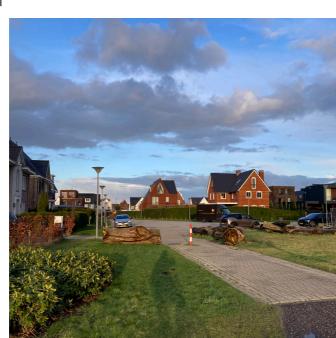


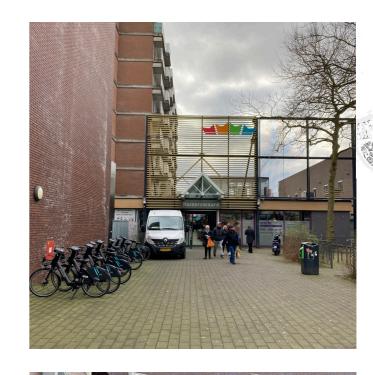






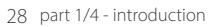












What strategic urban design contributes to the 15-minute neighbourhoods in the periphery of Rotterdam?





"spatial configuration is itself the most powerful single determinant of urban movement, both pedestrian and vehicular."

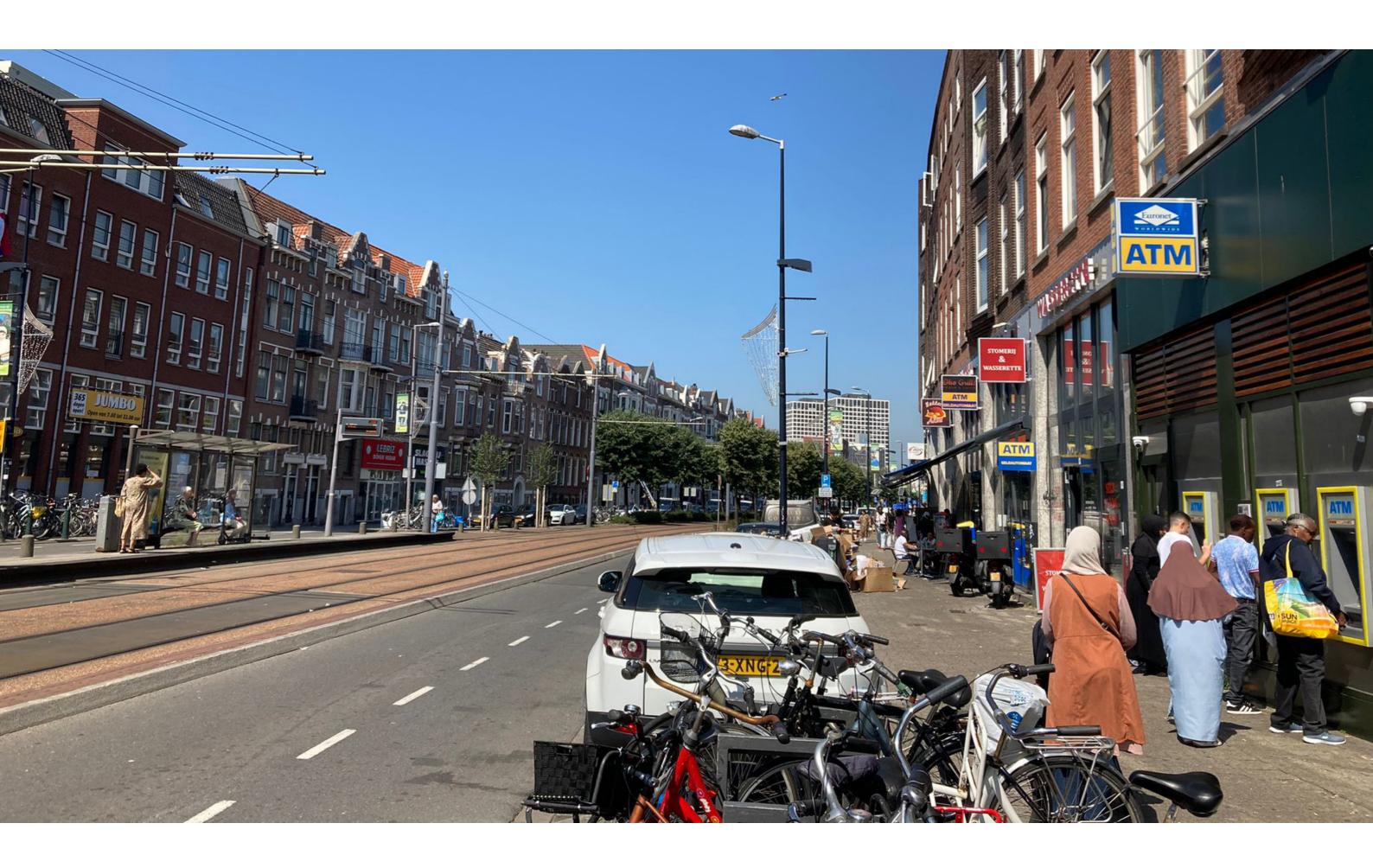
# "Natural movement"

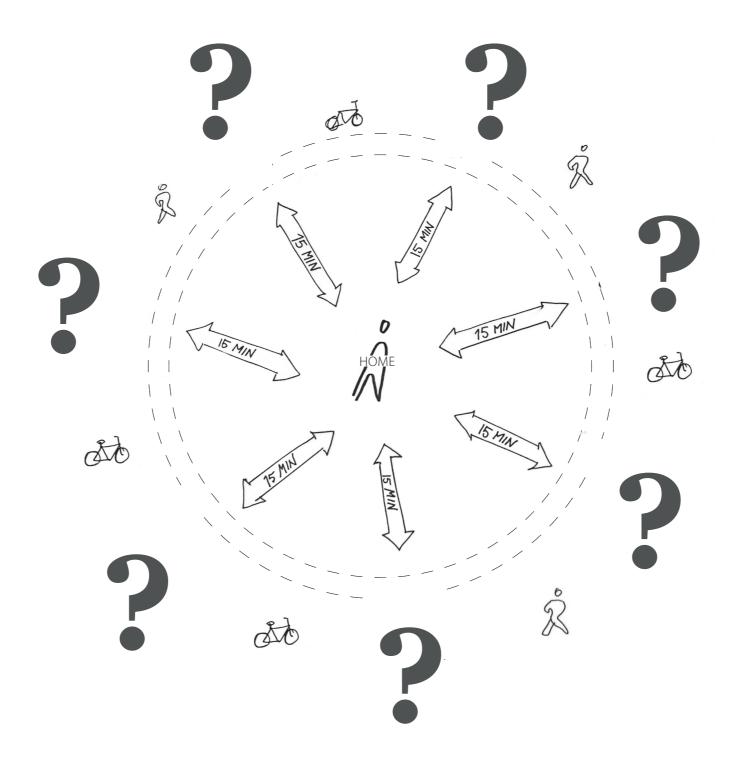
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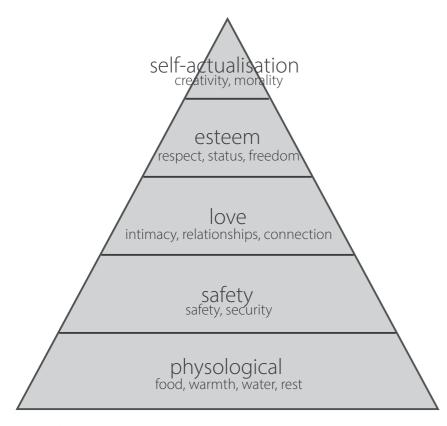
# "Natural movement"

"The more likely a street is used, the more potential for encounters, the more attractive this street is for economic and residential activity."

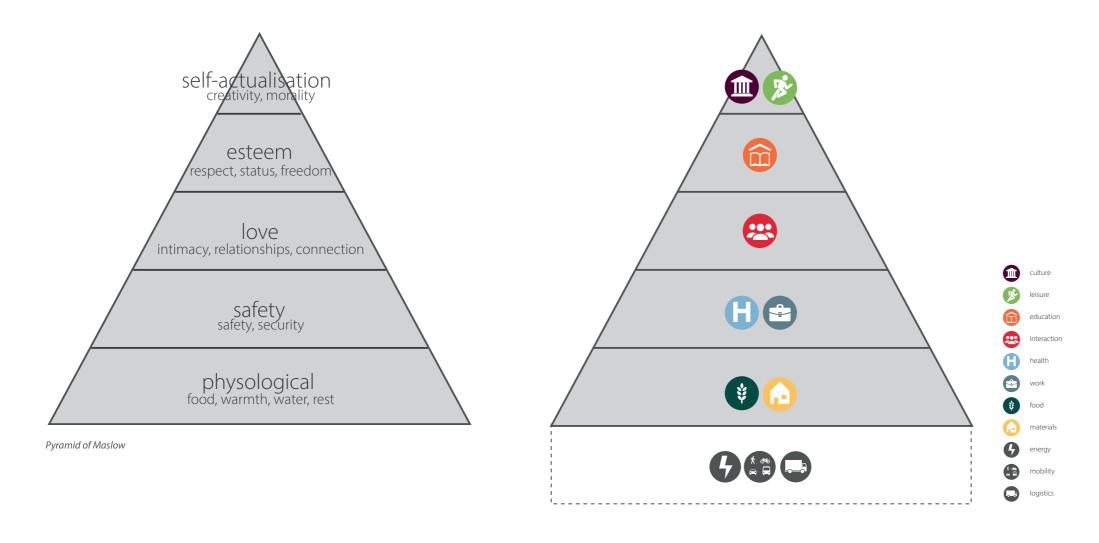
# "Movement economy"

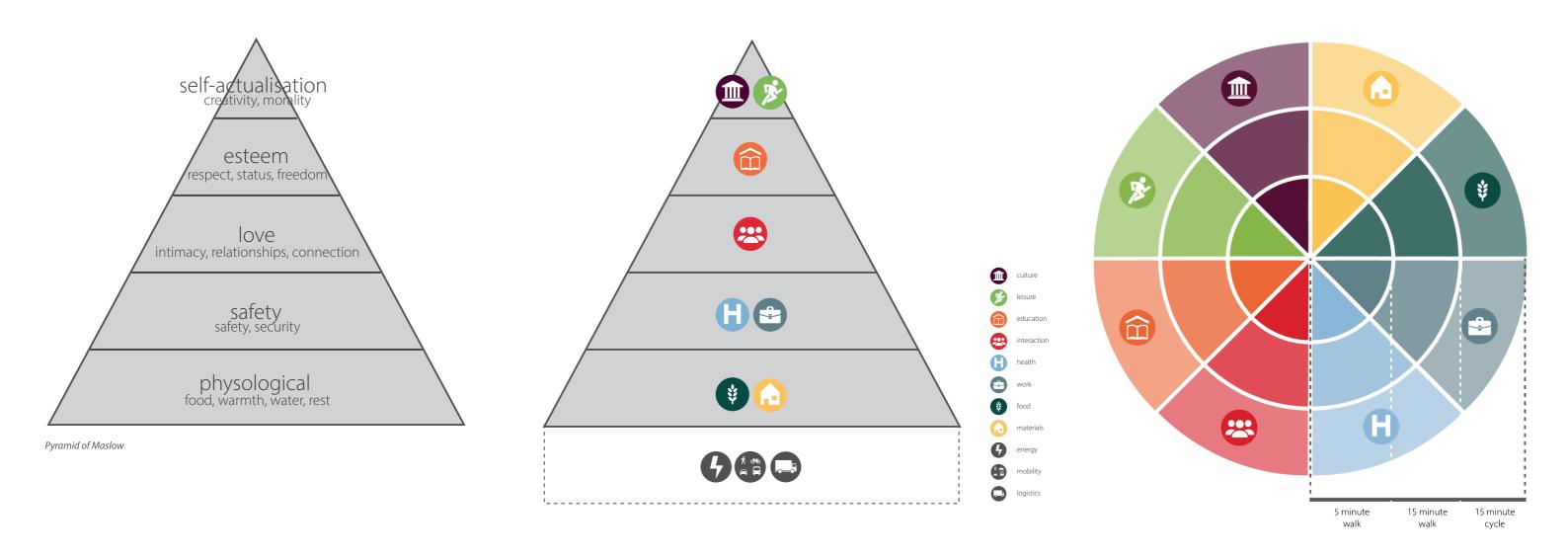


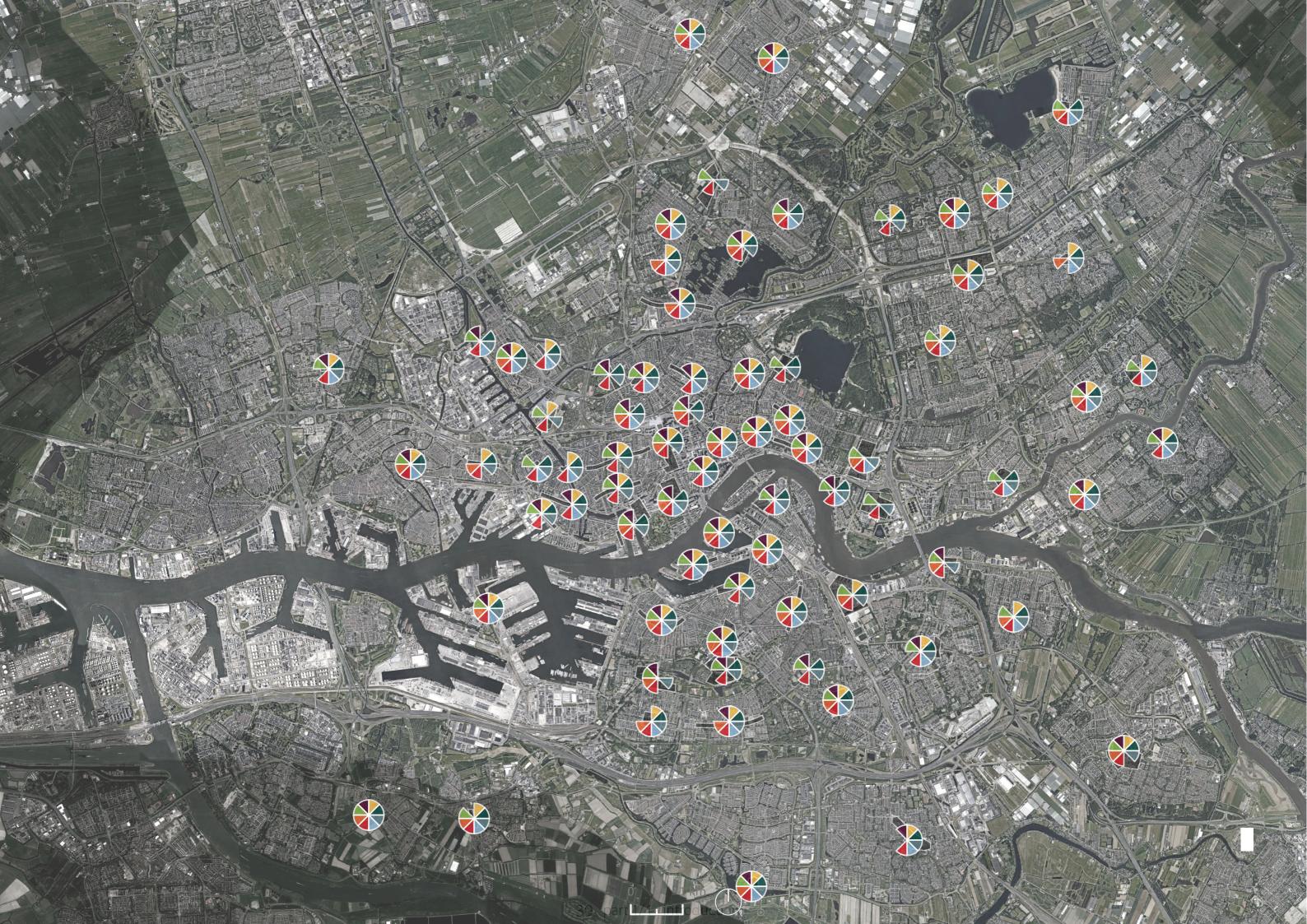


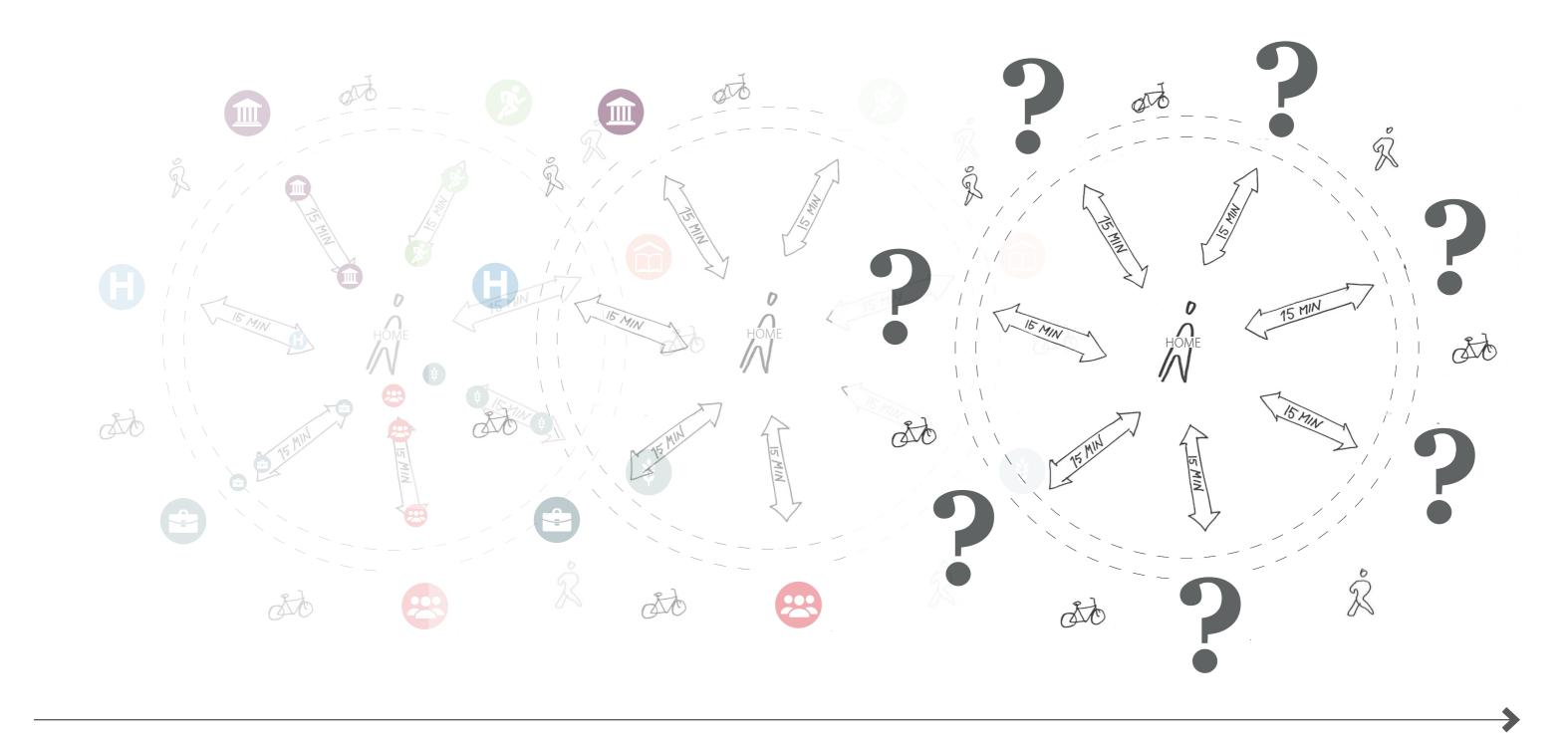


Pyramid of Maslow





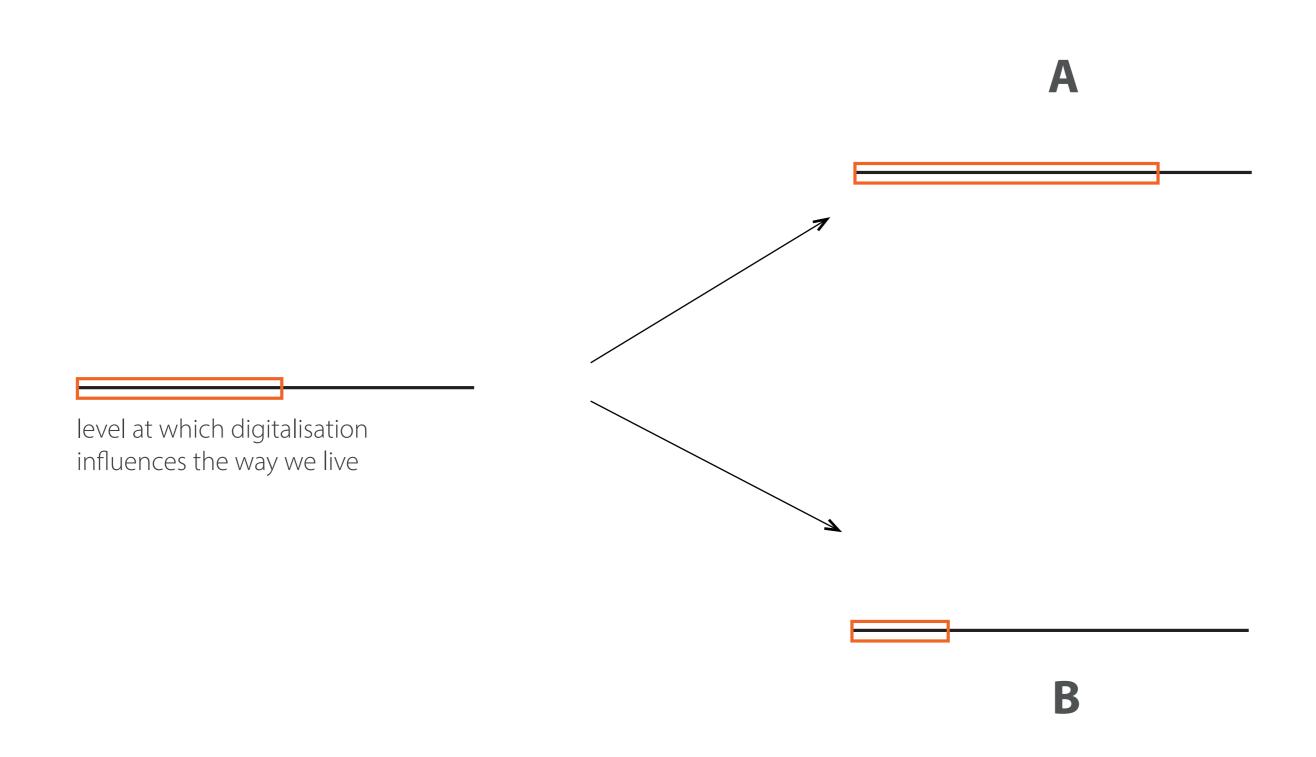




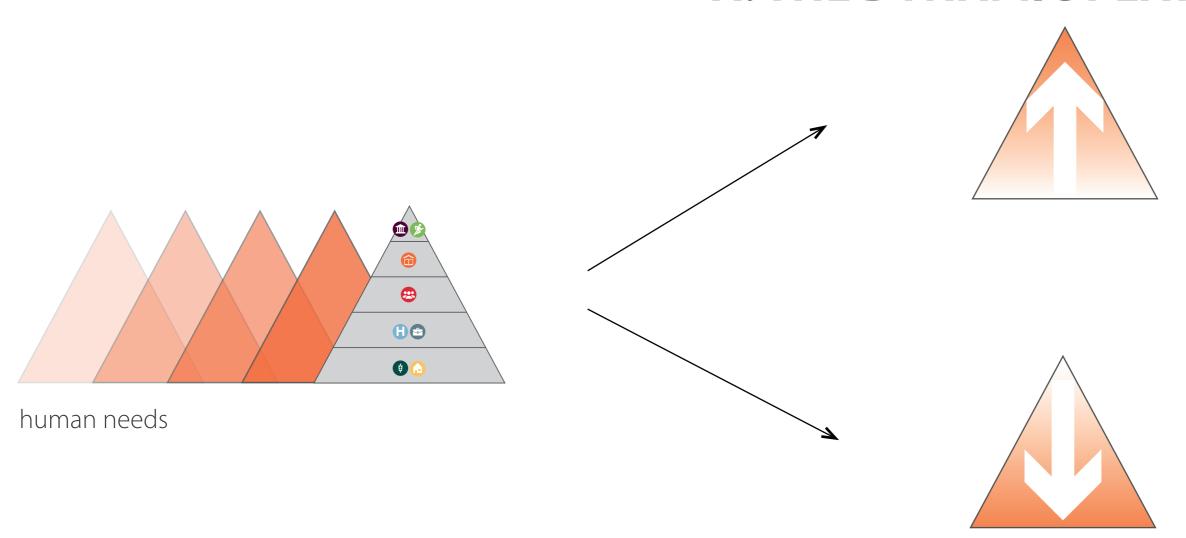
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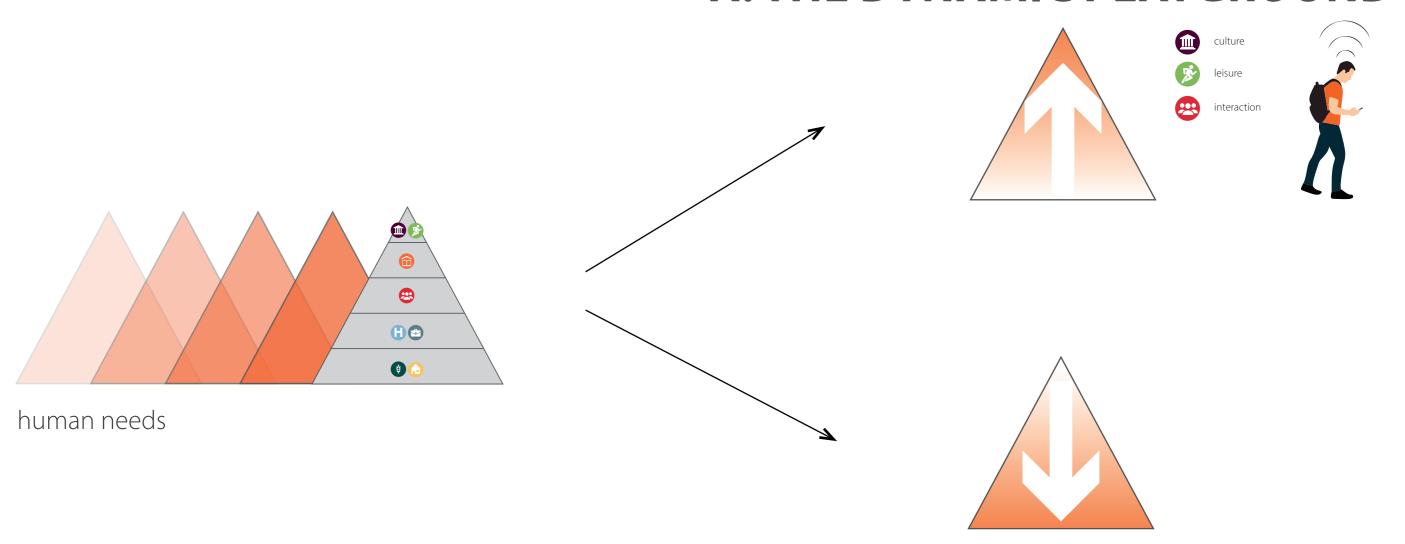


### A: THE DYNAMIC PLAYGROUND



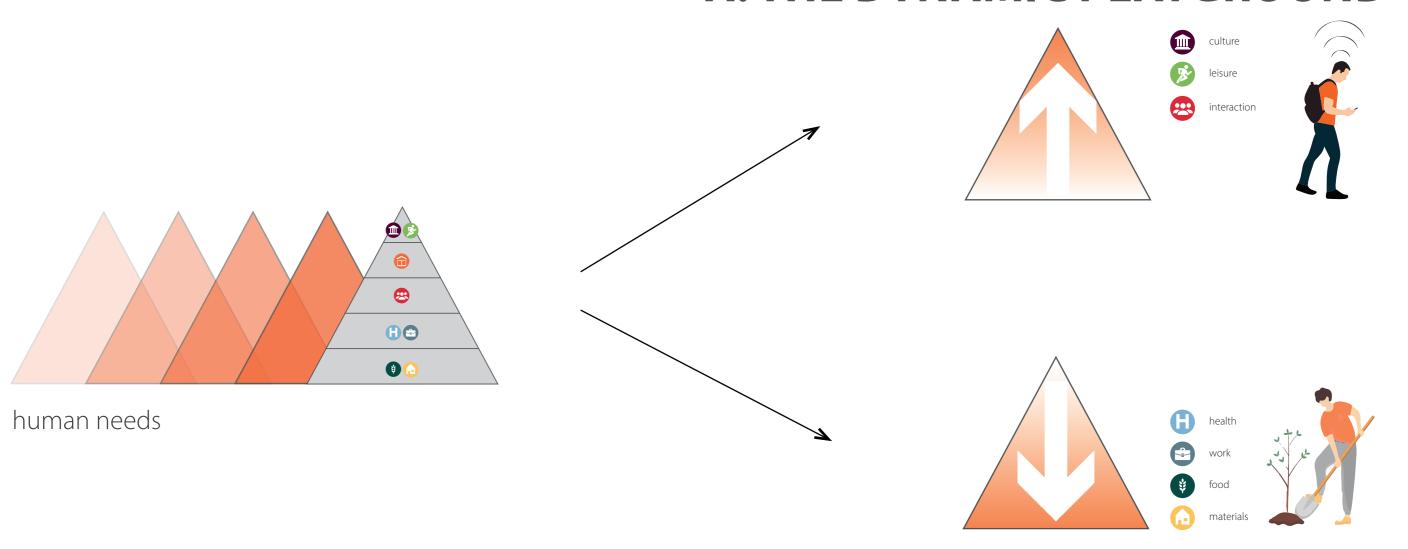
**B: THE PARADISE OF DEGROWTH** 

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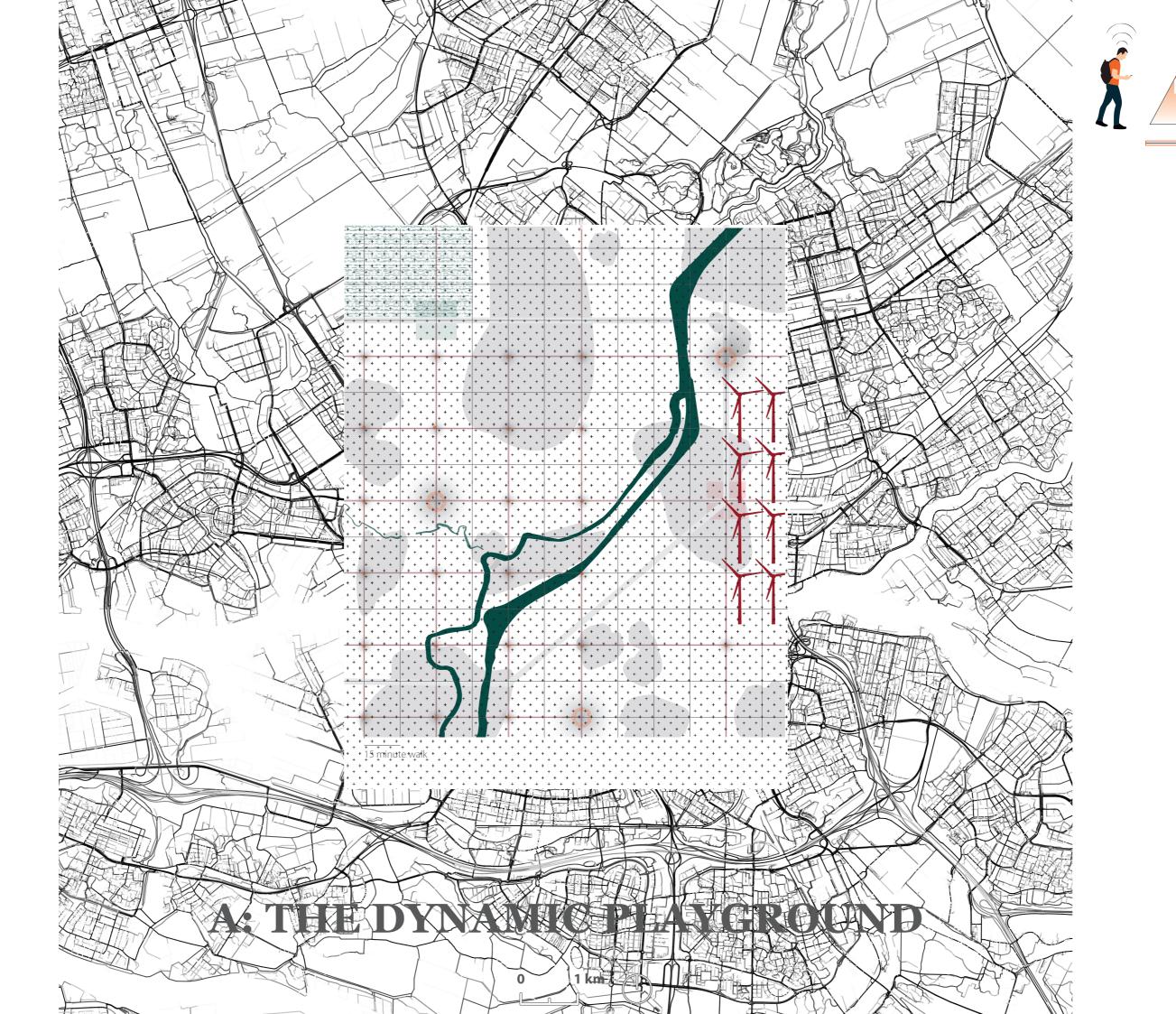


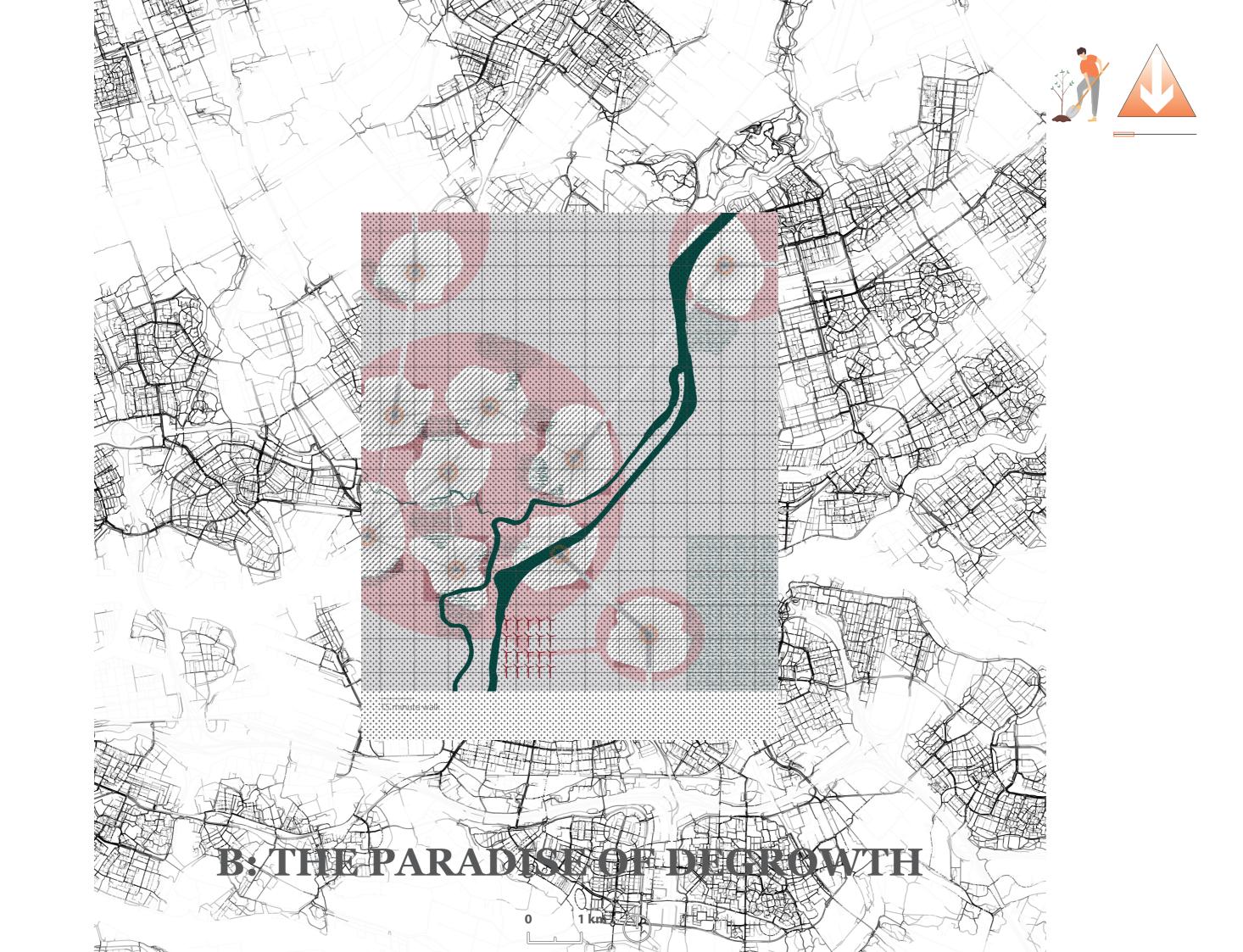
**B: THE PARADISE OF DEGROWTH** 

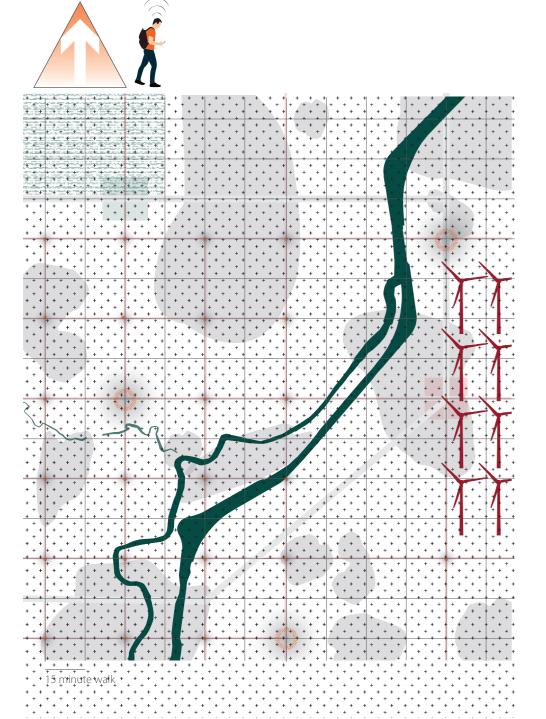
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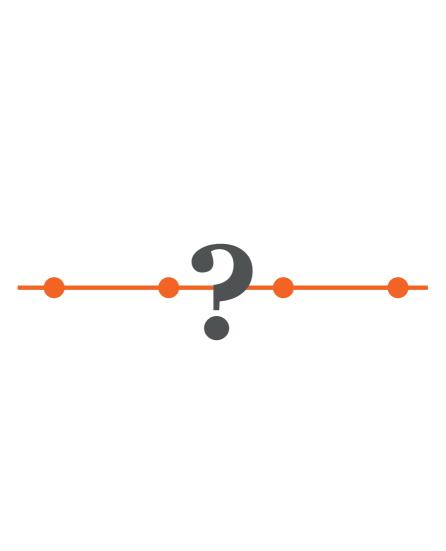


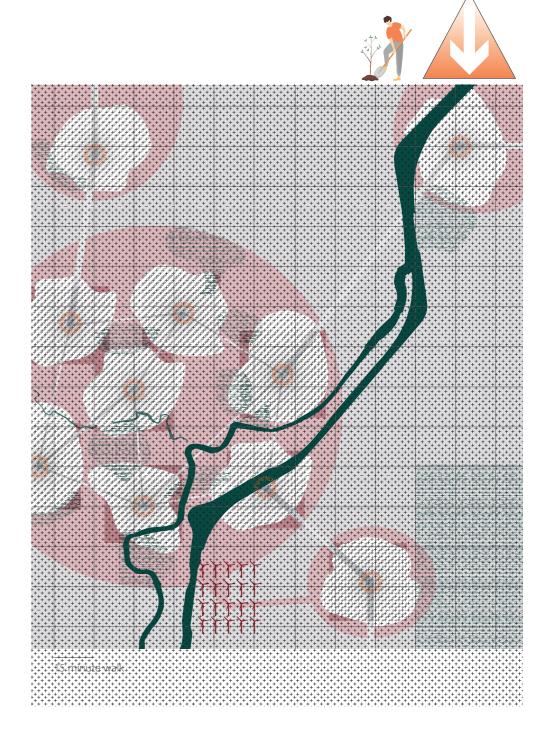
**B: THE PARADISE OF DEGROWTH** 

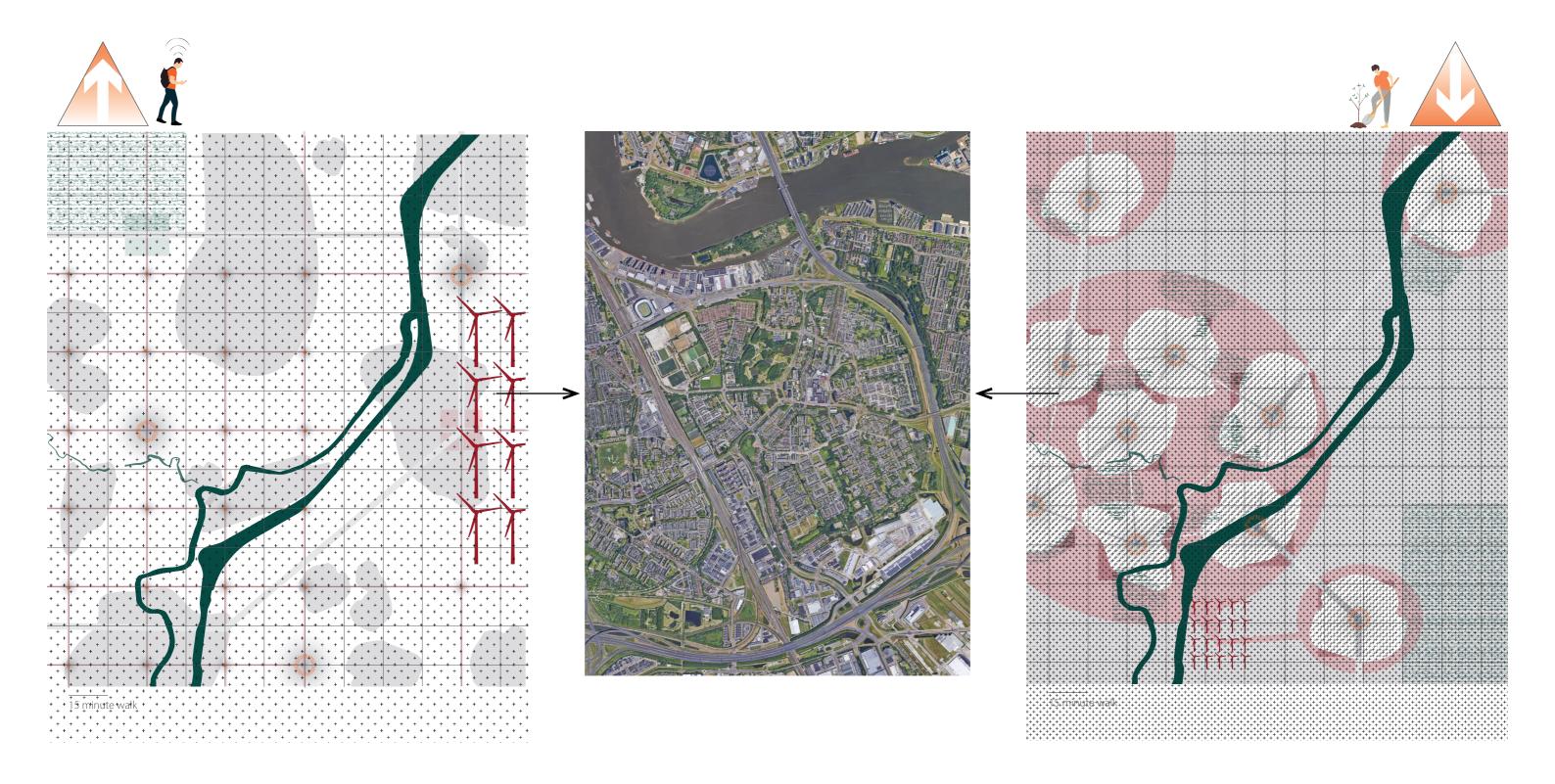


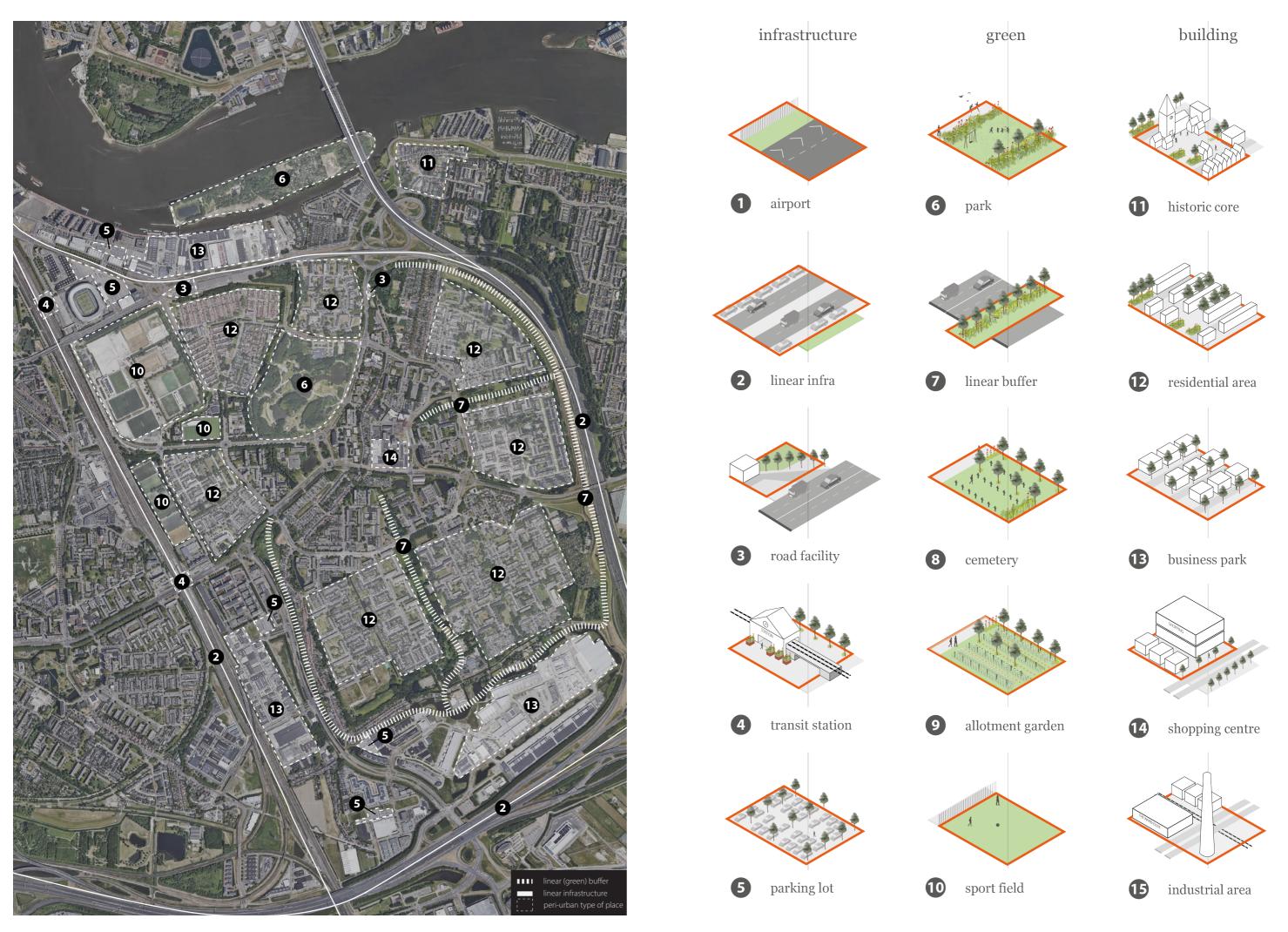


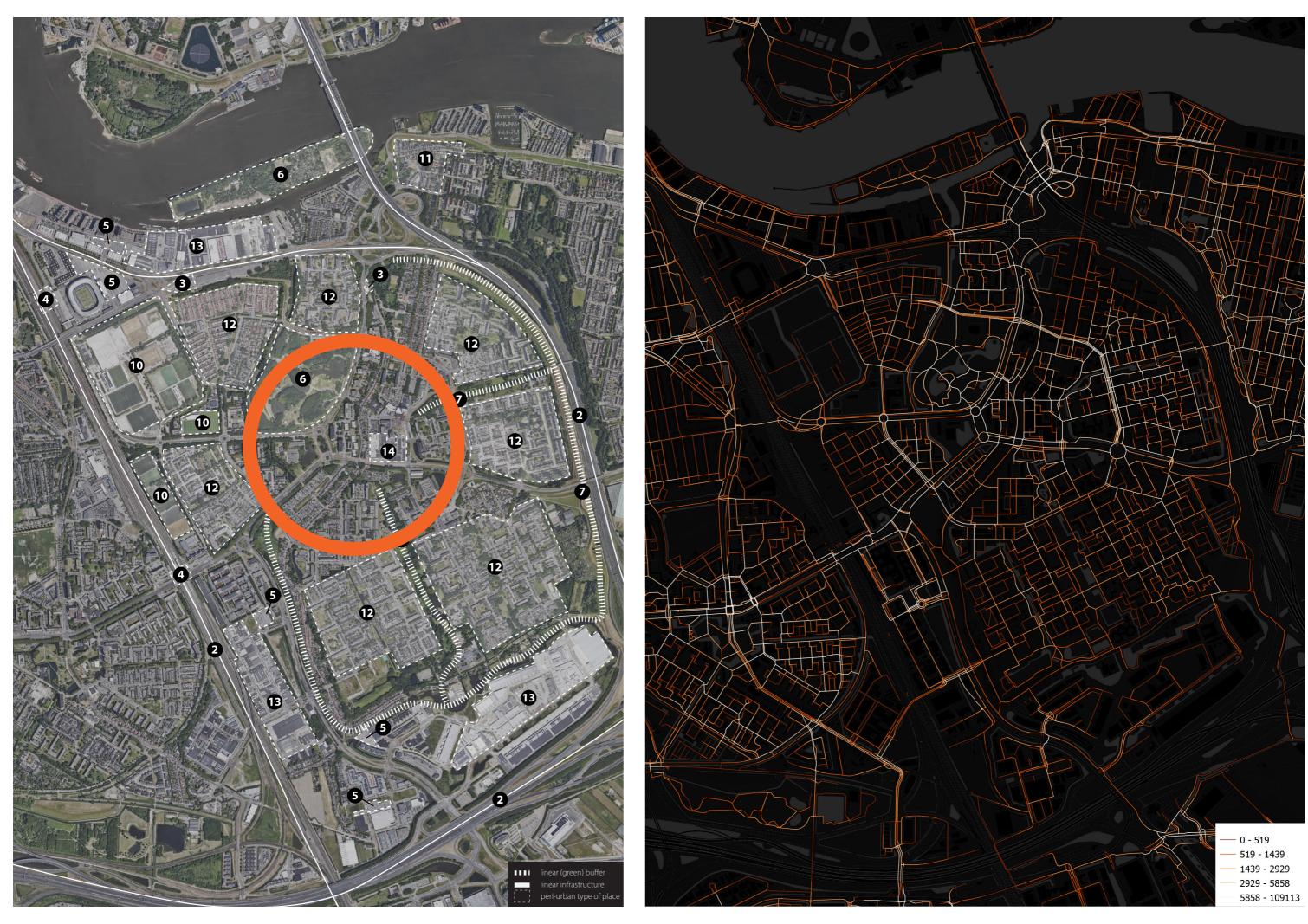


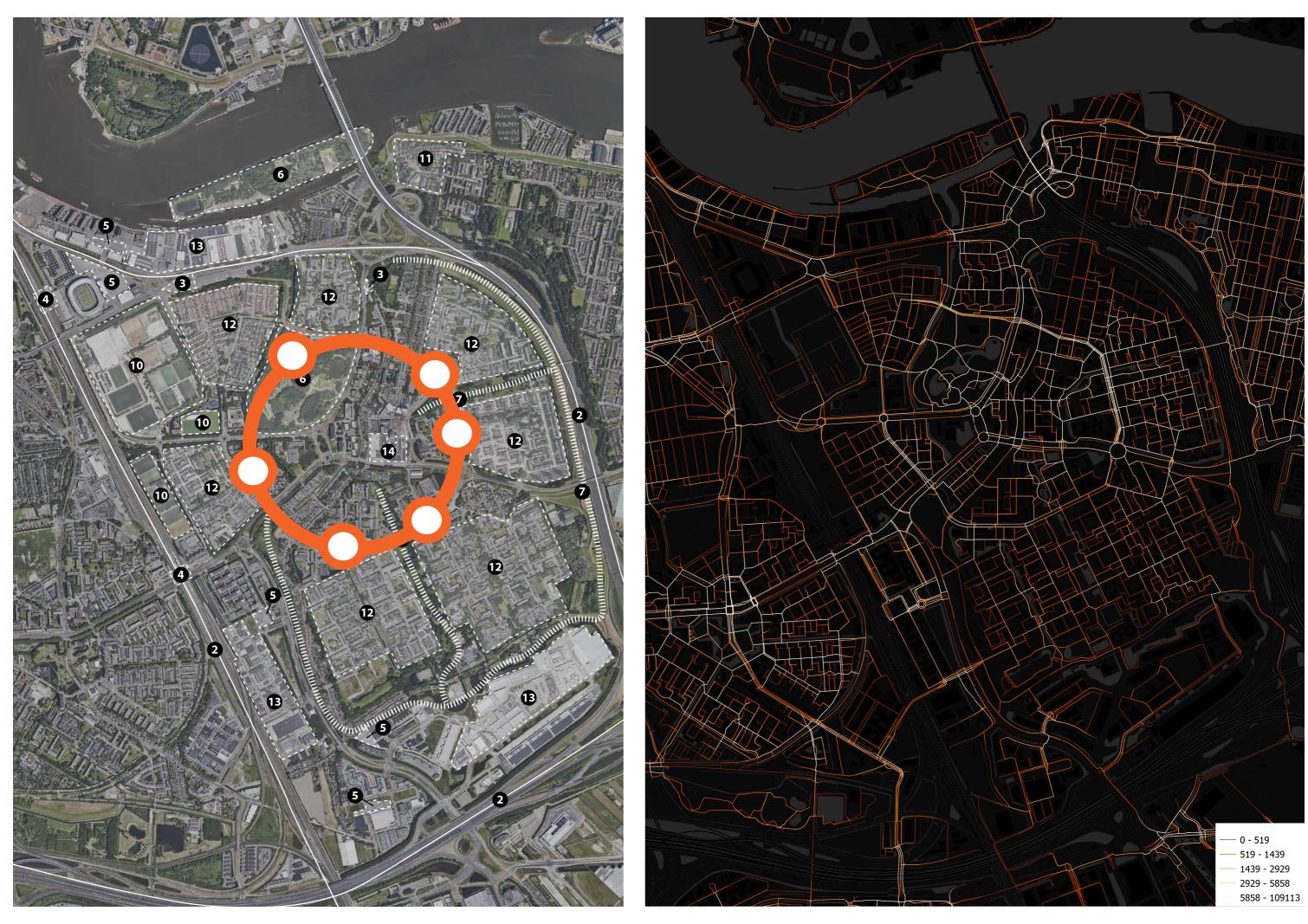








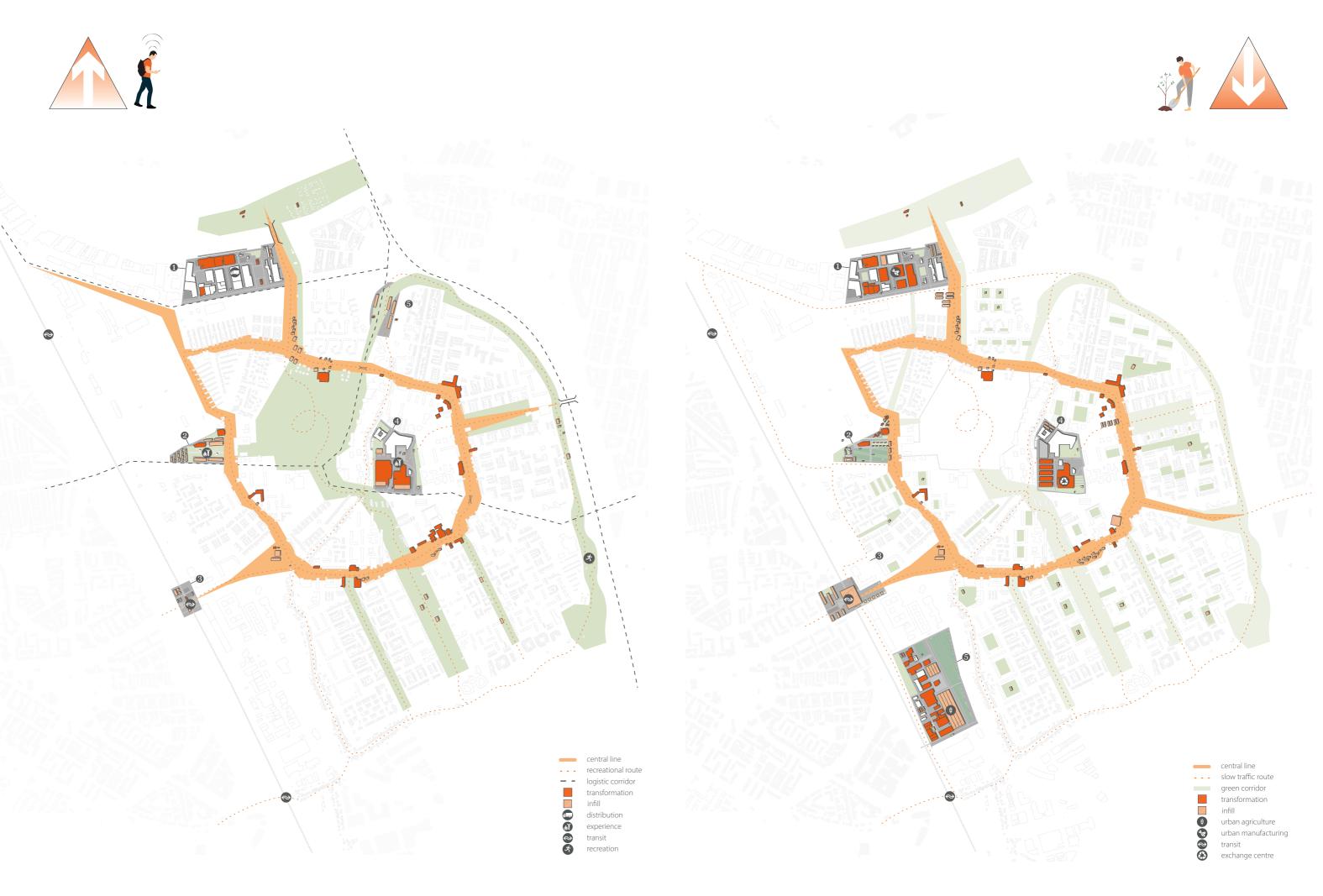




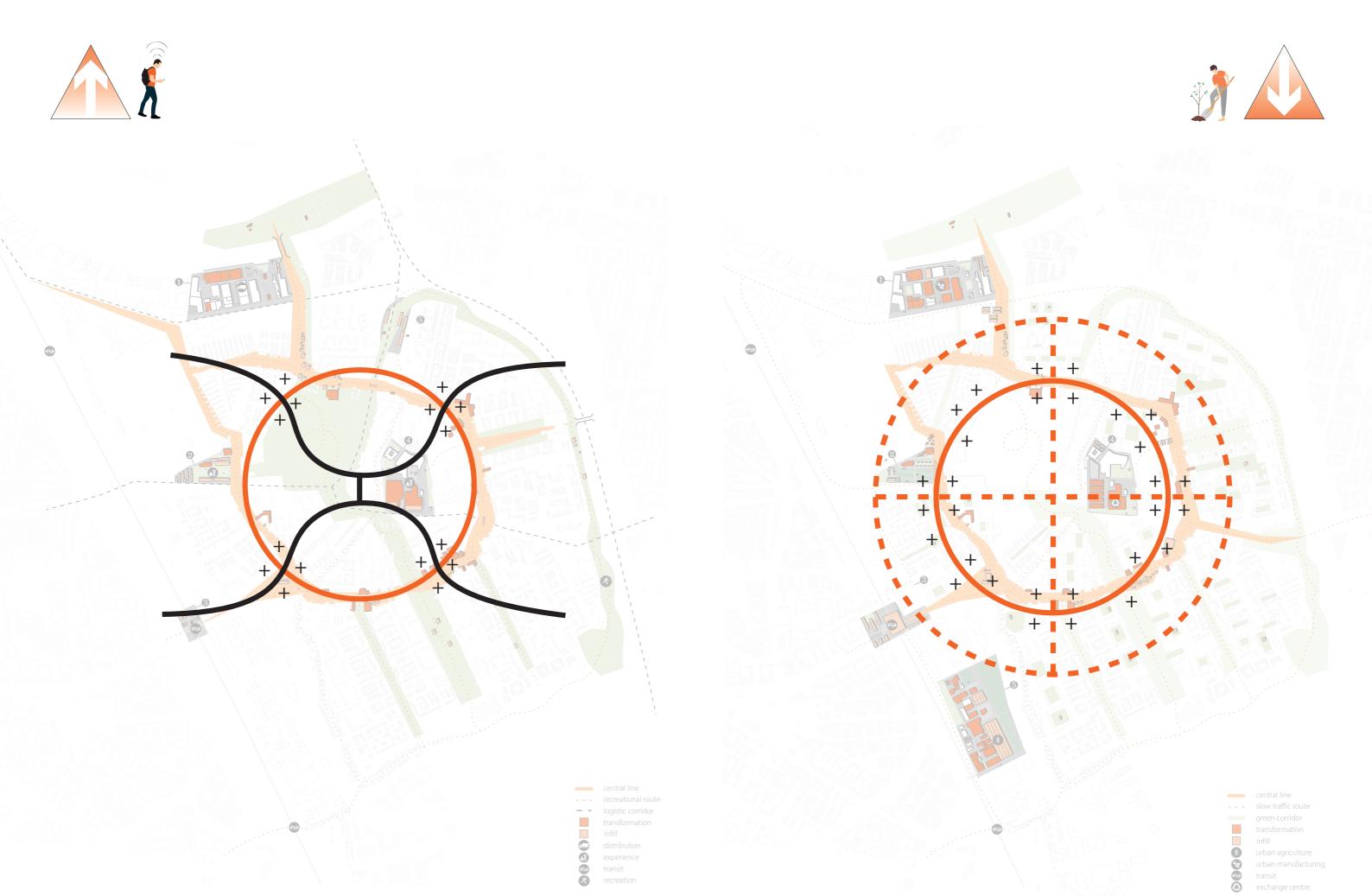


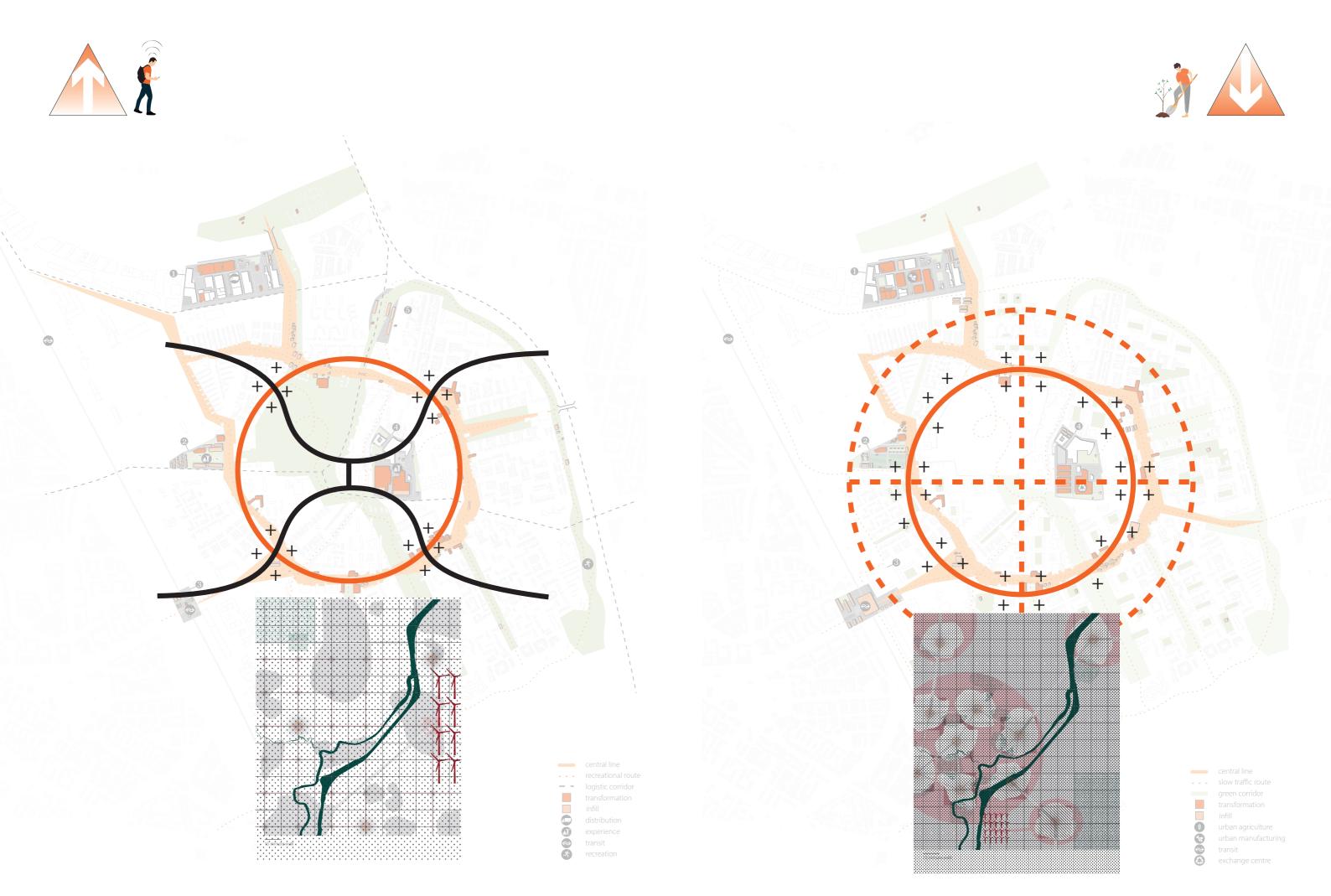


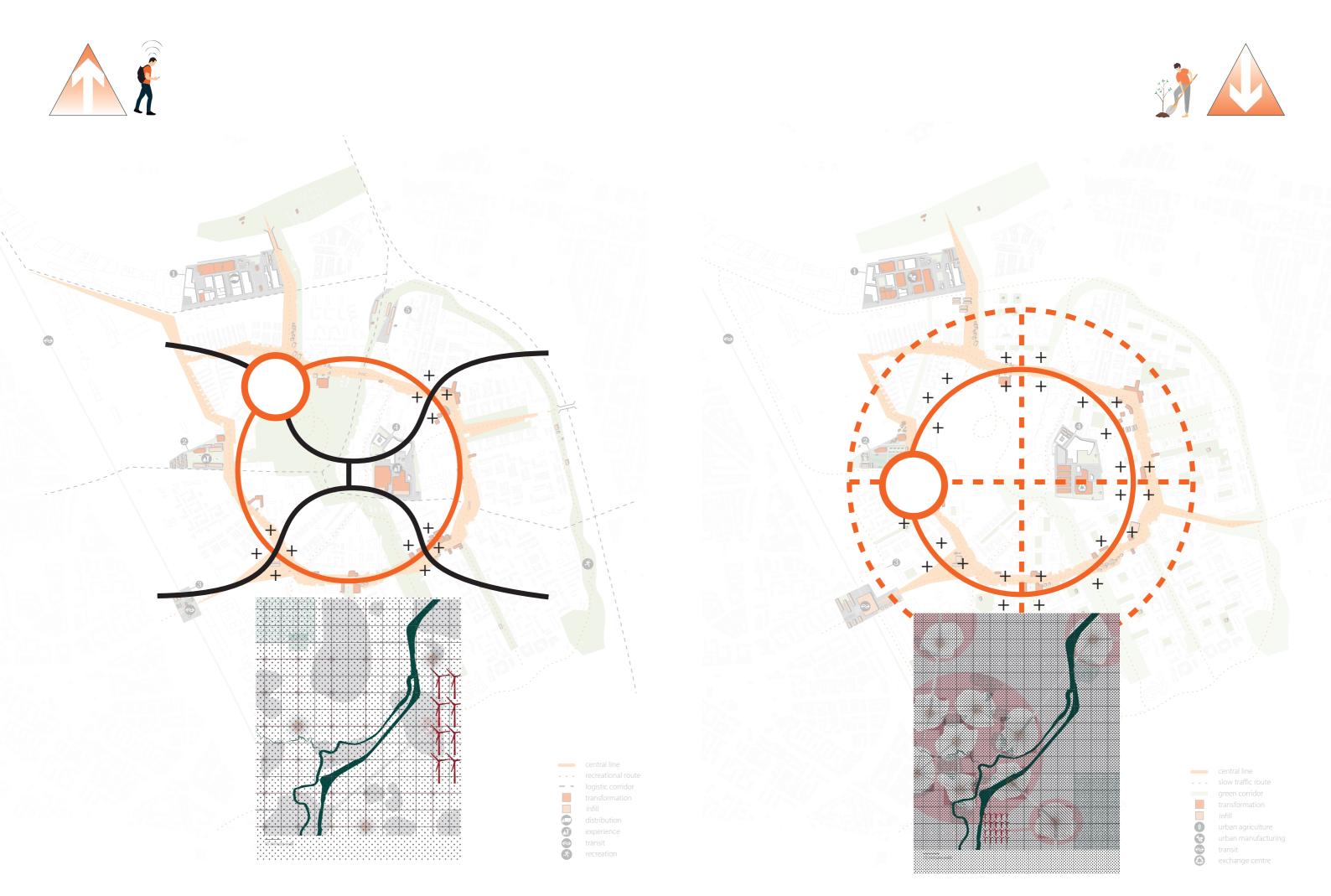


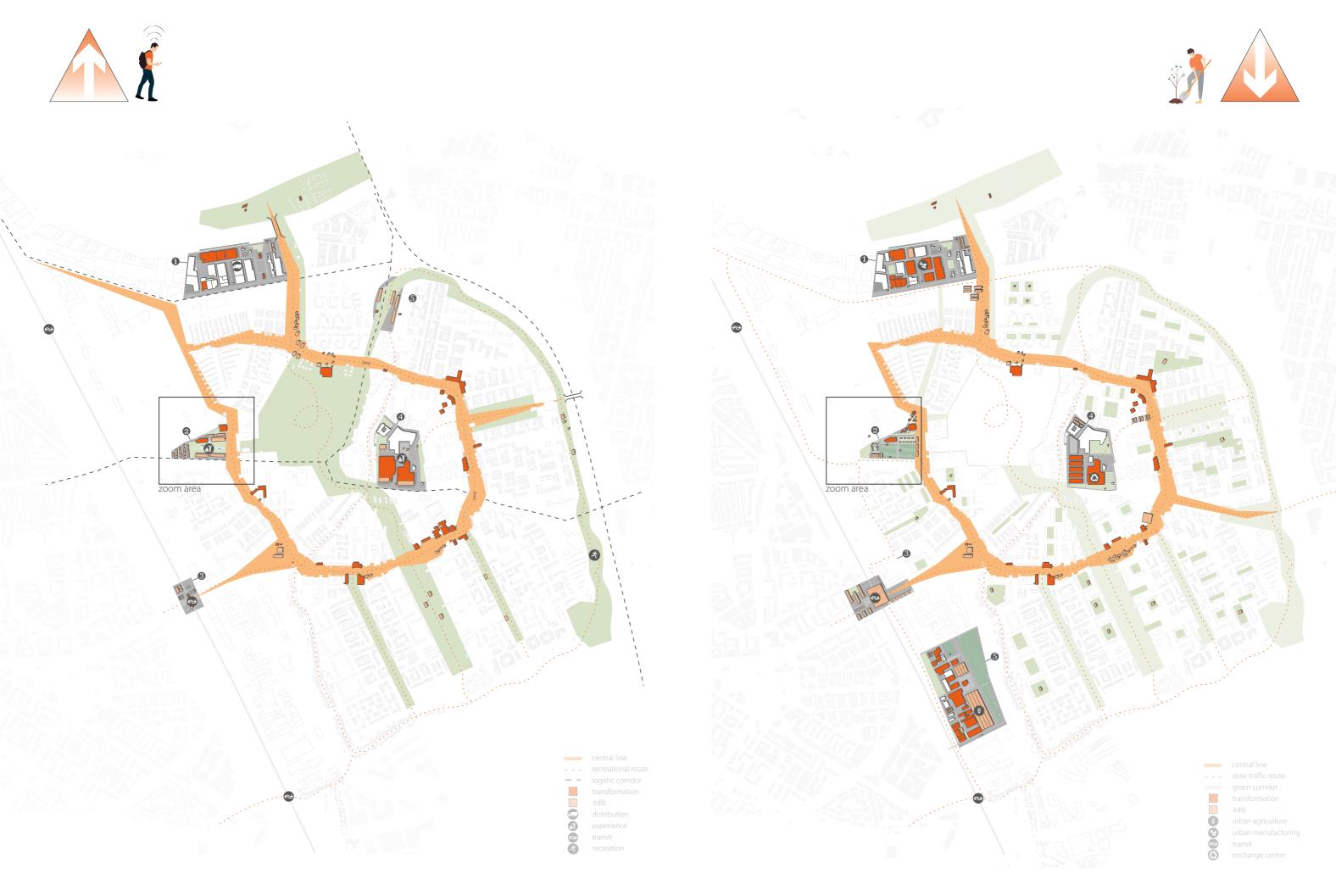


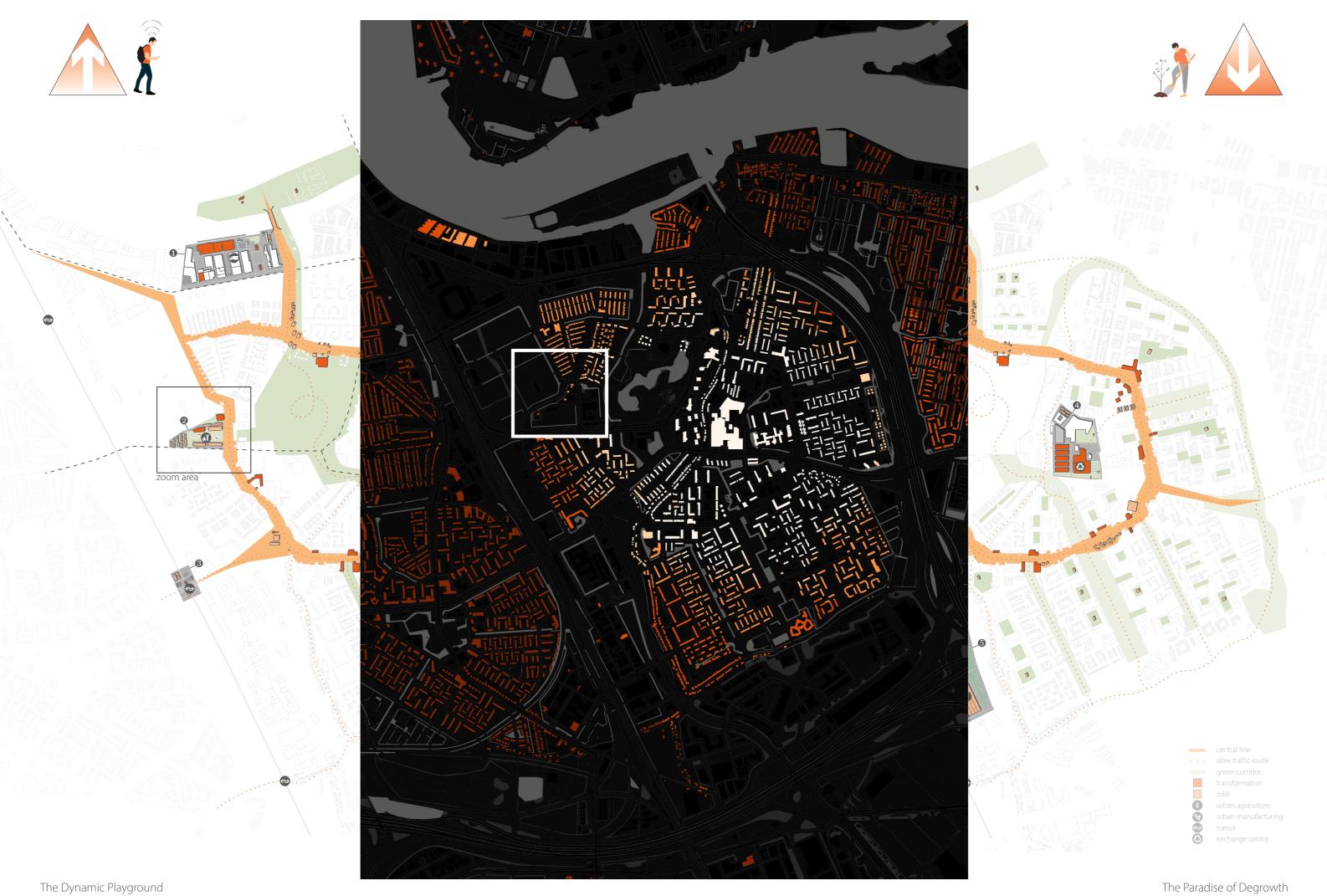
"Building density is an important driver for the intensity of pedestrian flow. The denser, the higher the intensity."











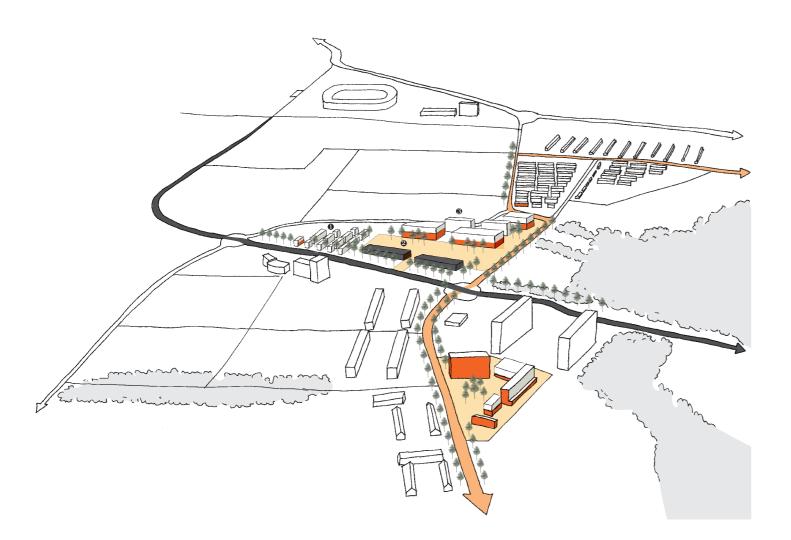
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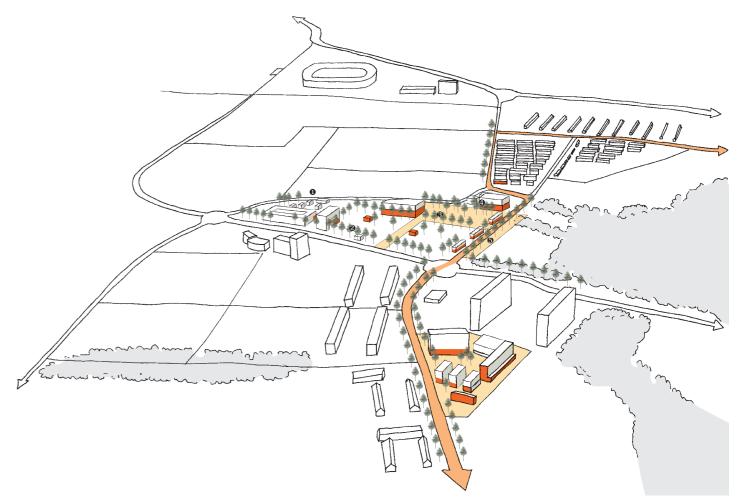






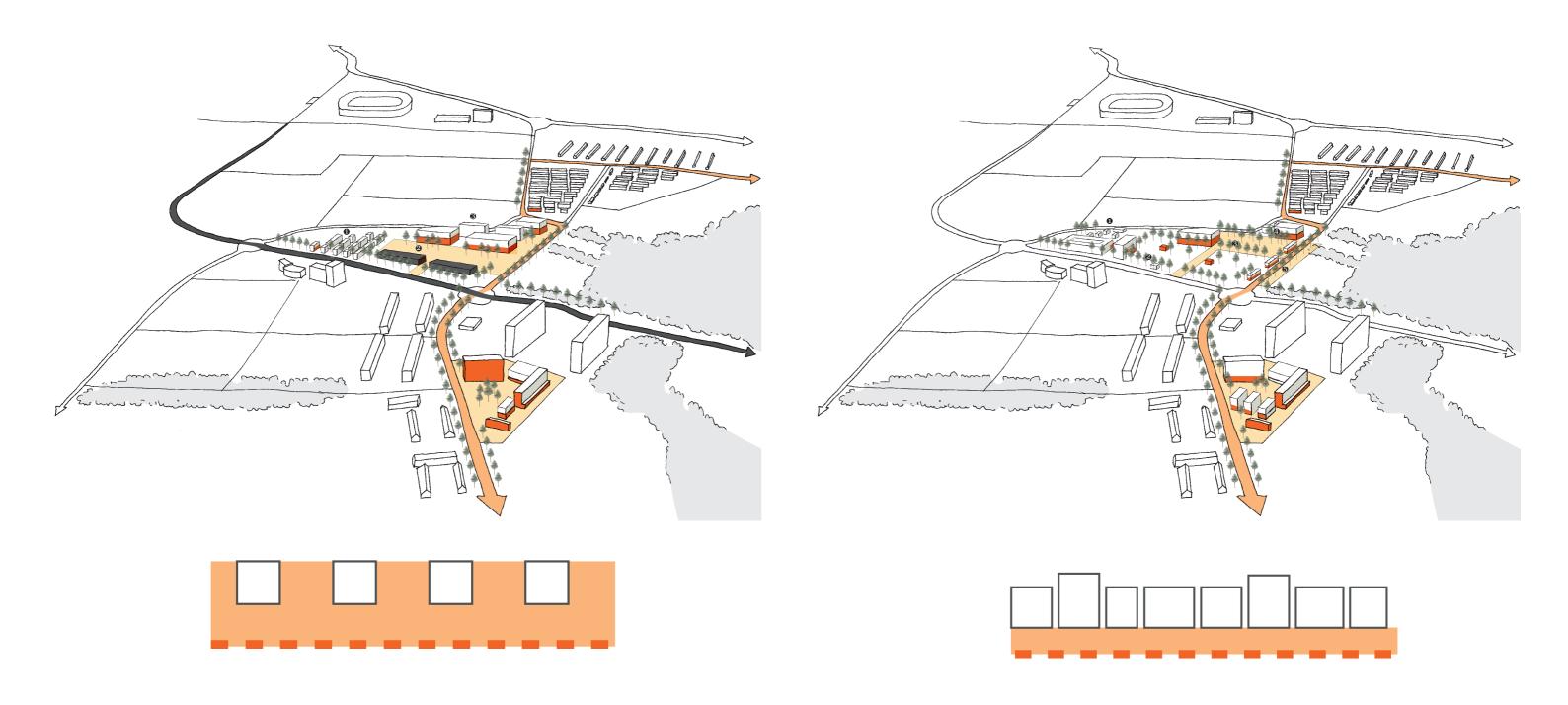






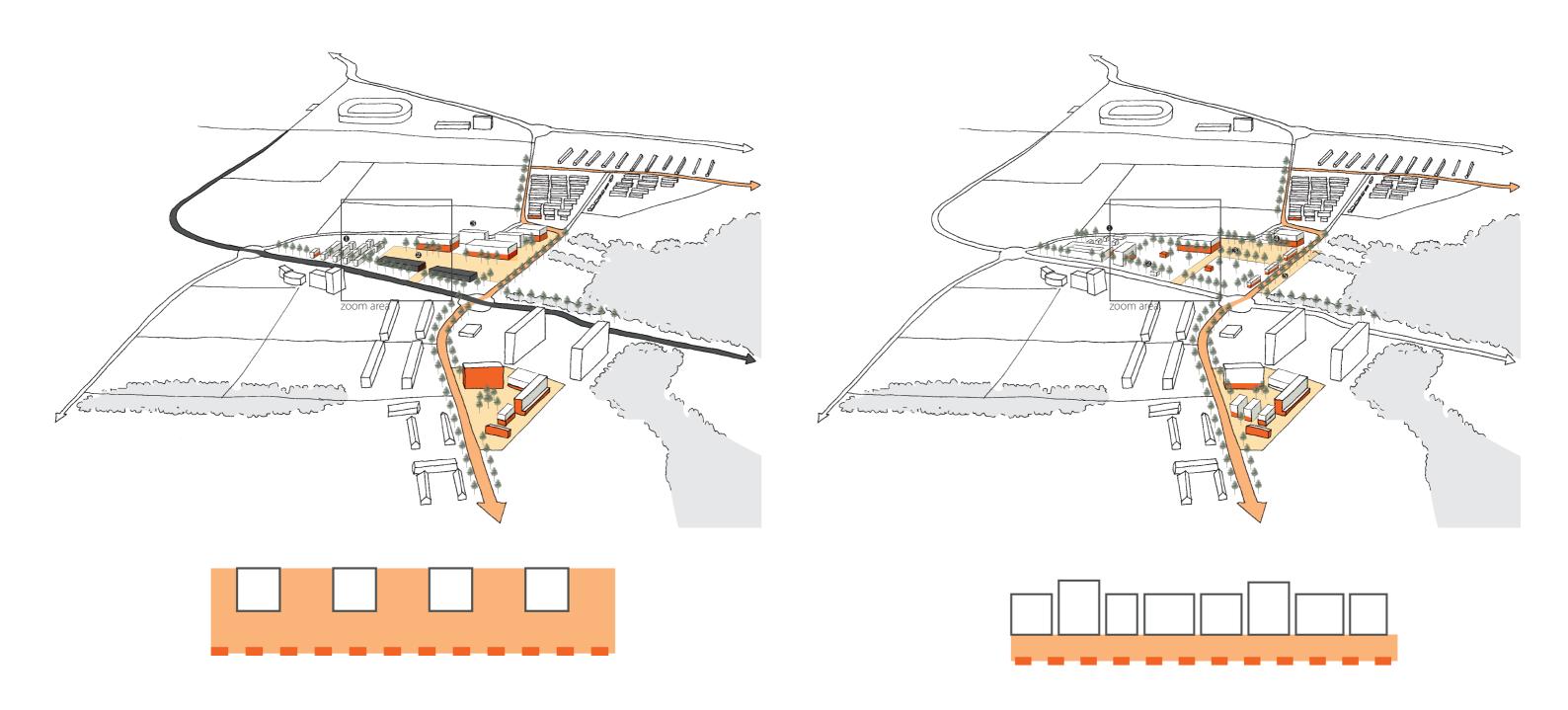






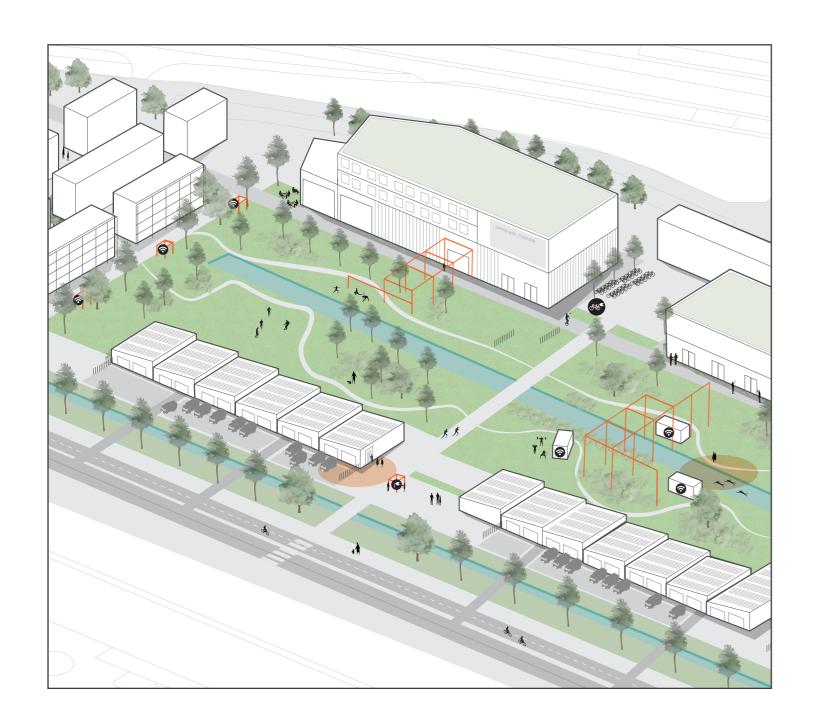








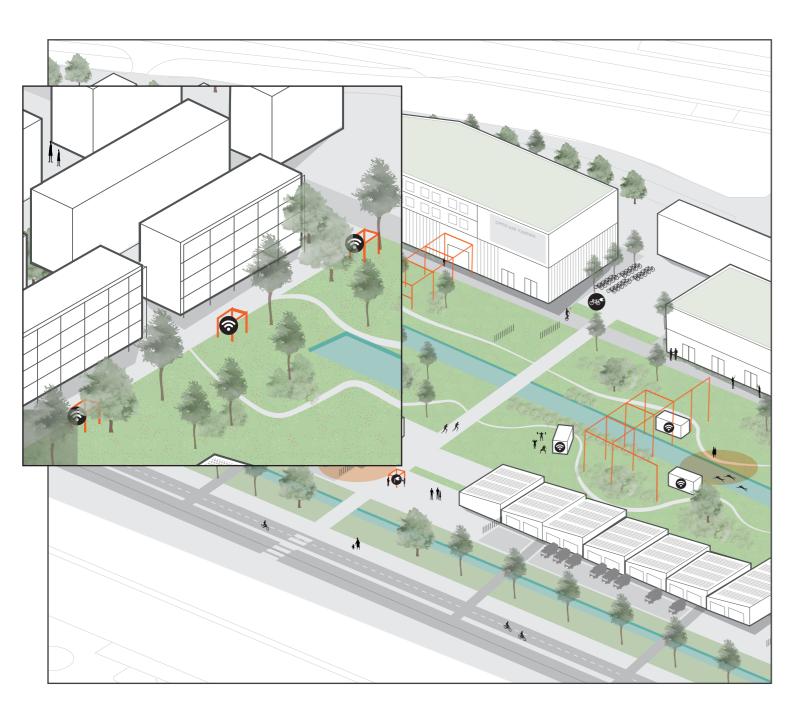


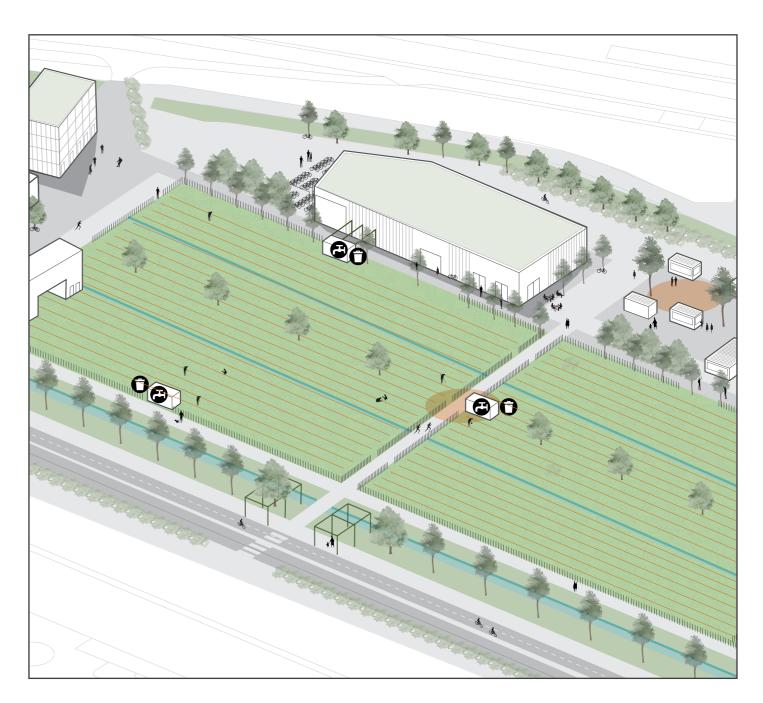








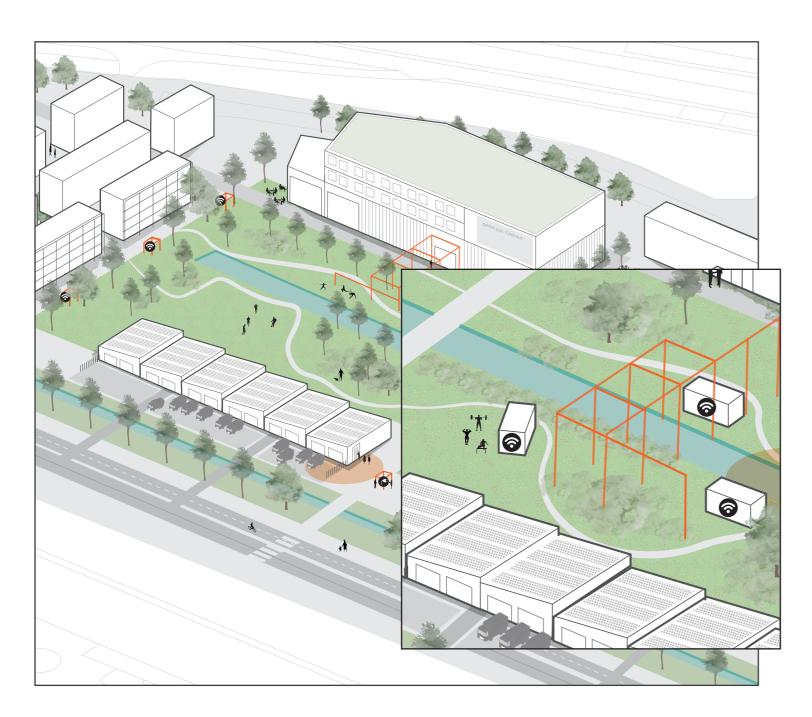






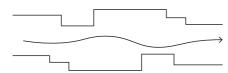






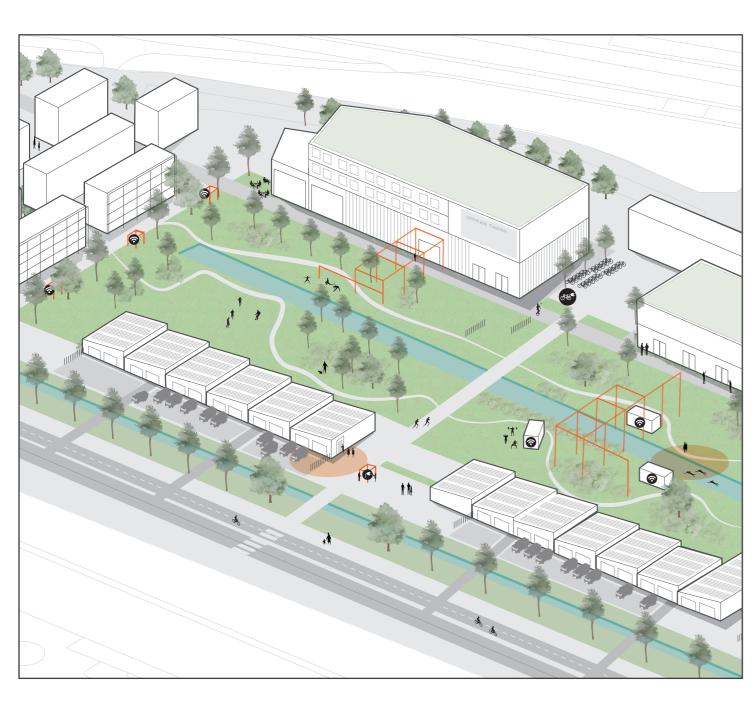


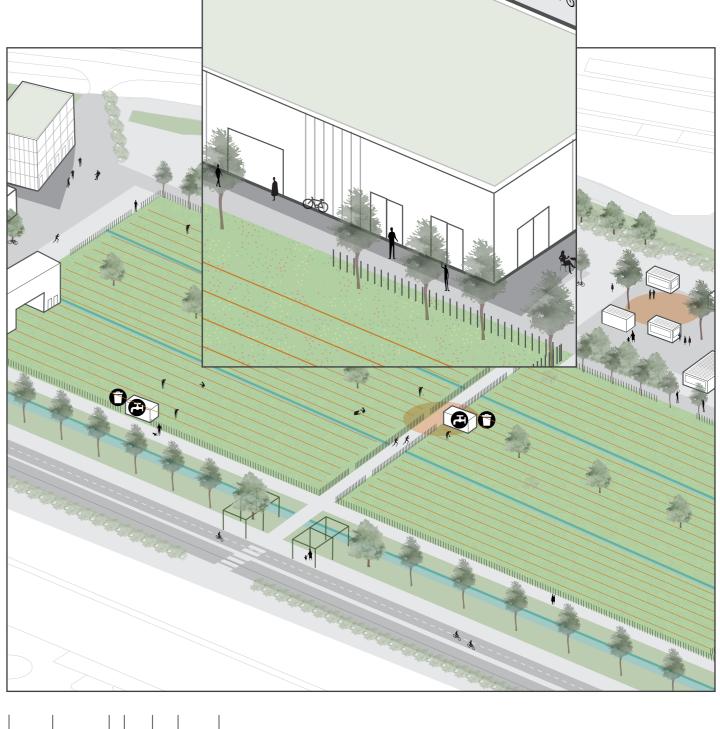


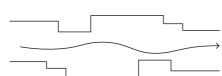








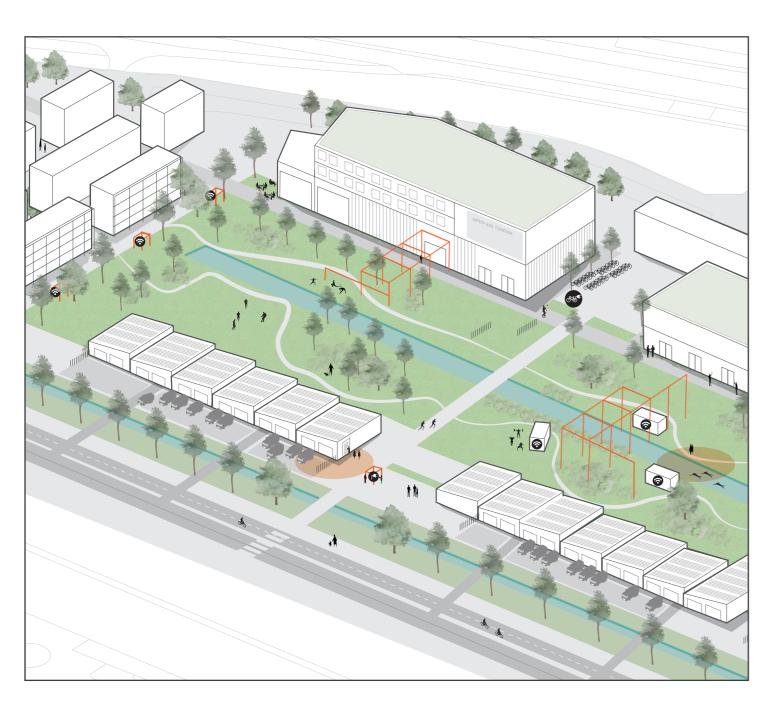


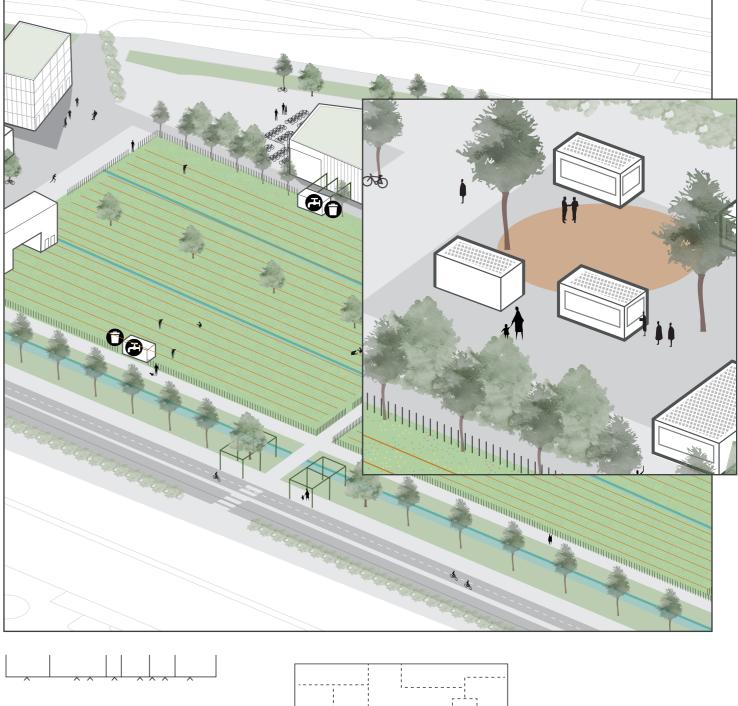


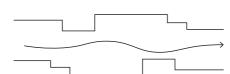


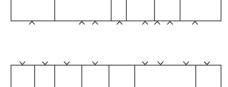












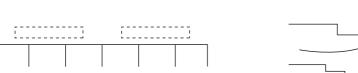


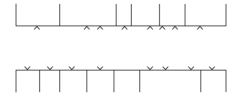


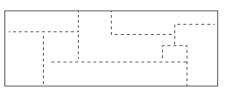


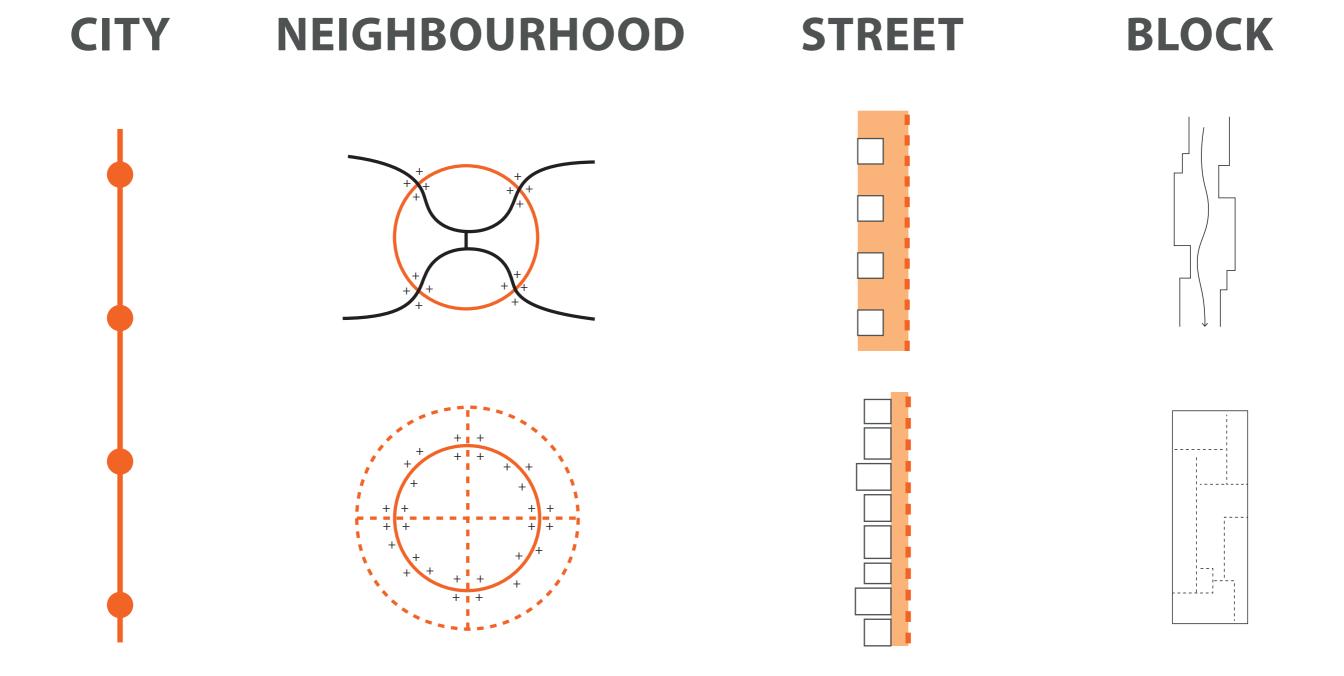




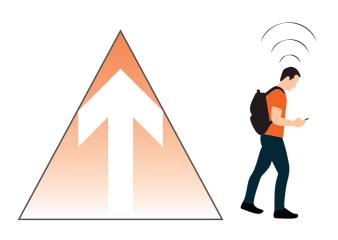






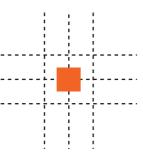


What strategic urban design contributes to the 15-minute neighbourhoods in the periphery of Rotterdam?



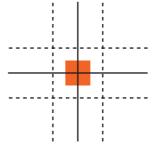




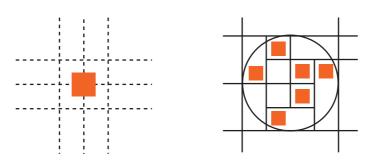


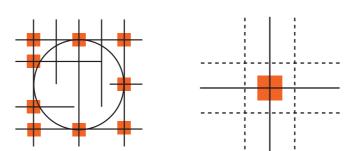






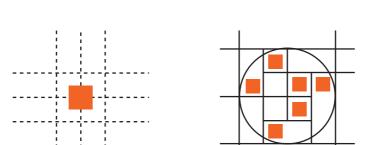


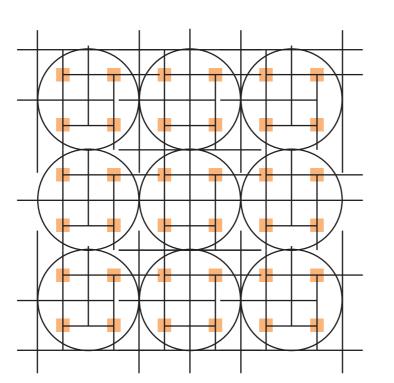






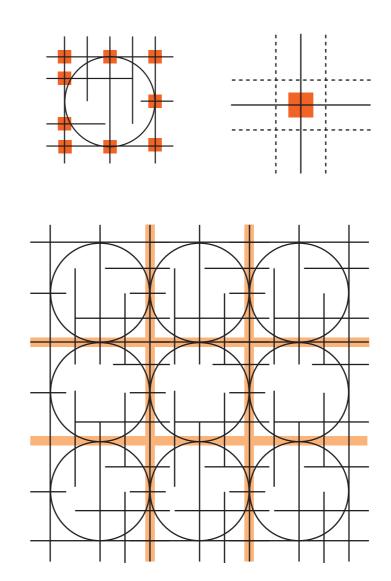




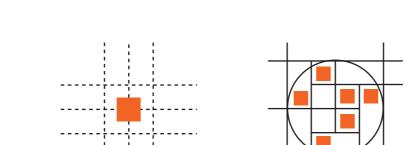


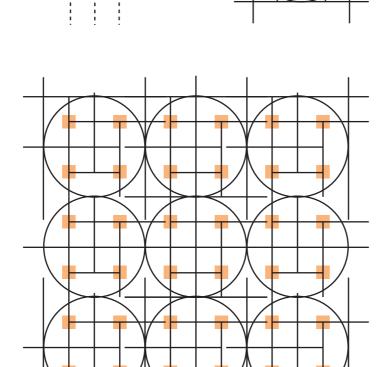


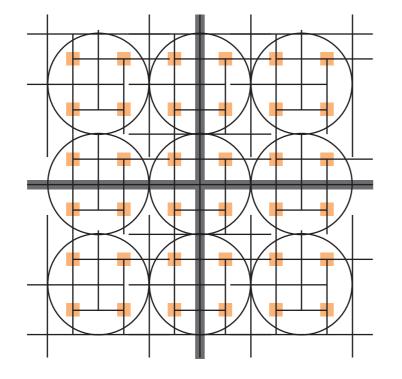




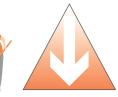


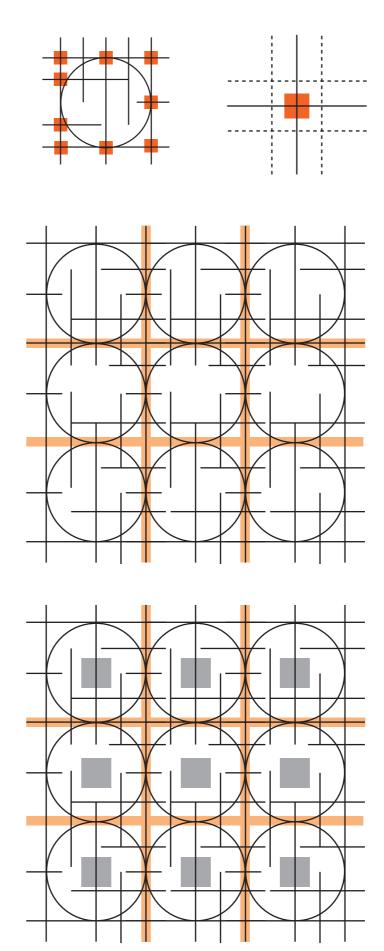


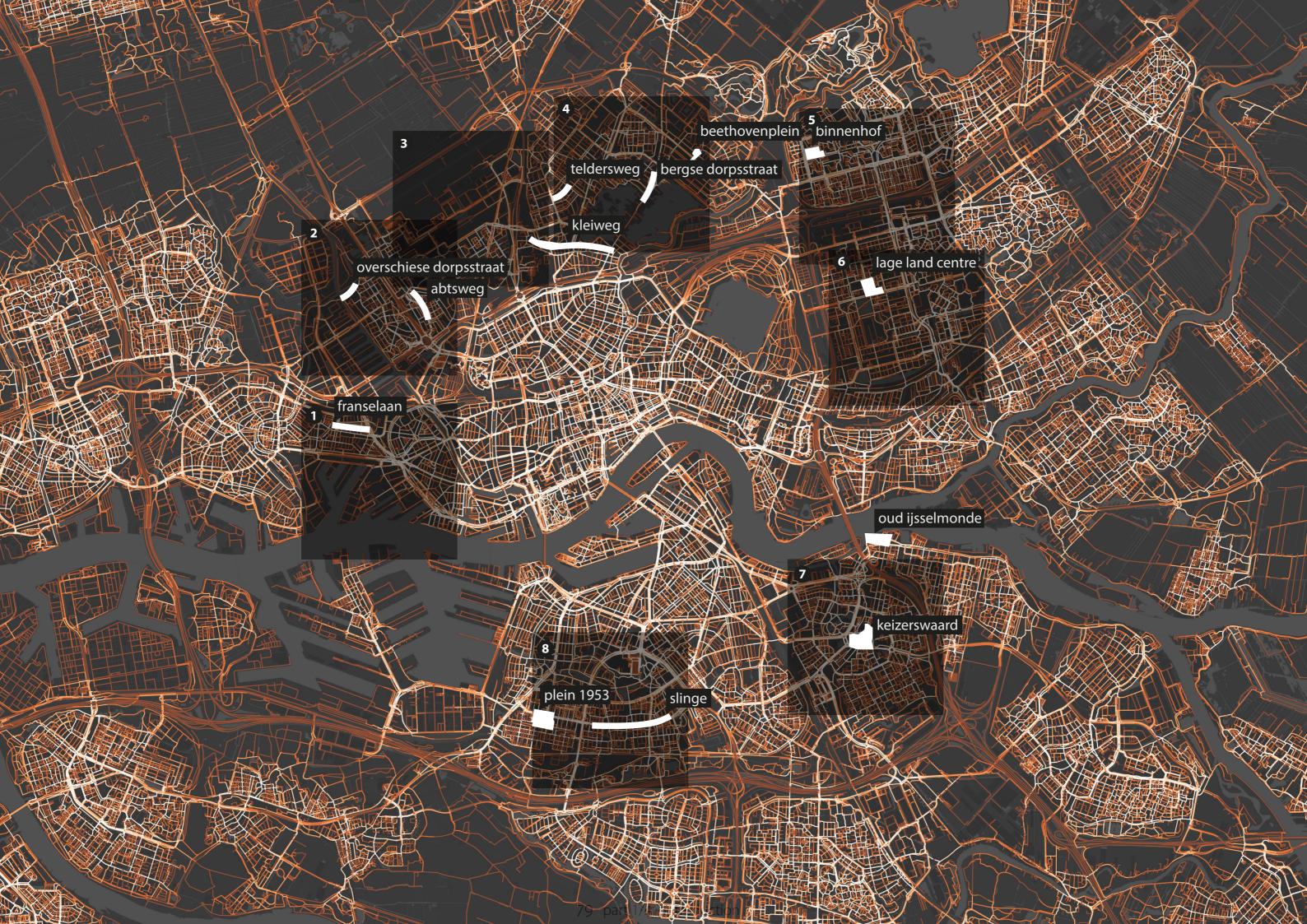




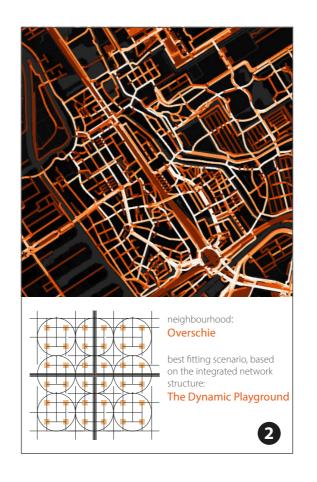


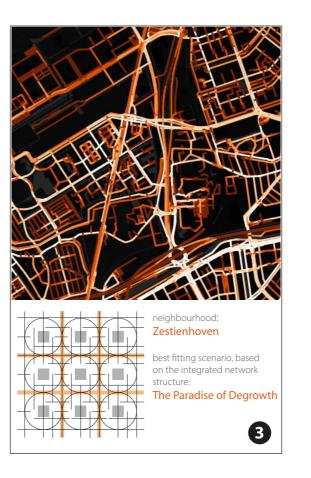


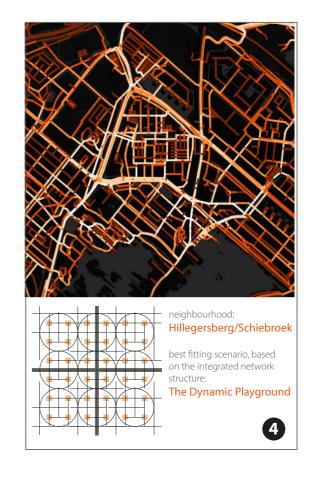


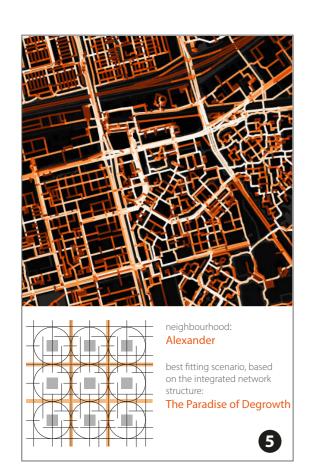


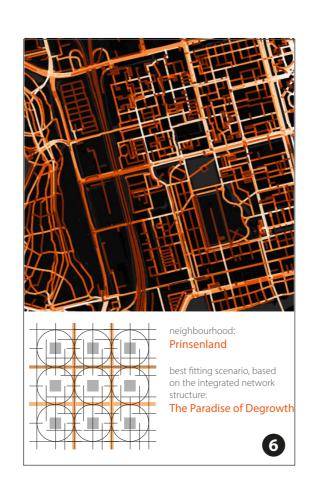


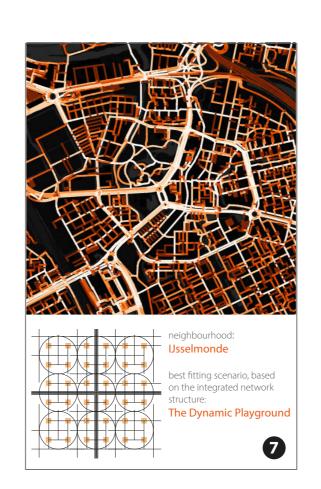


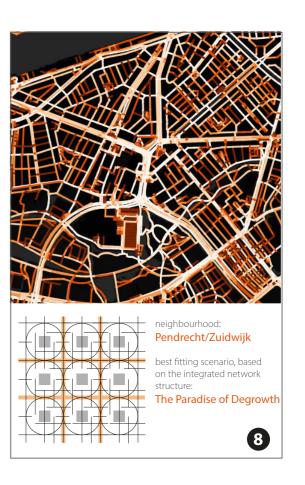




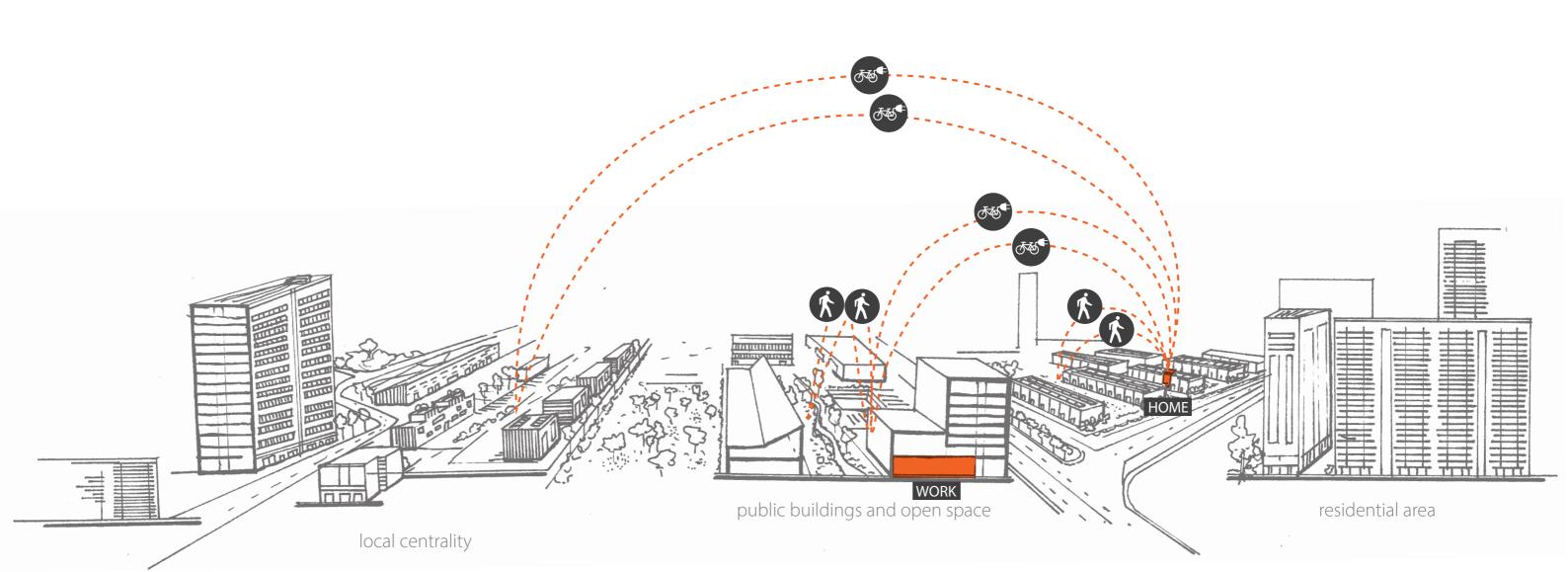








# THANK YOU!

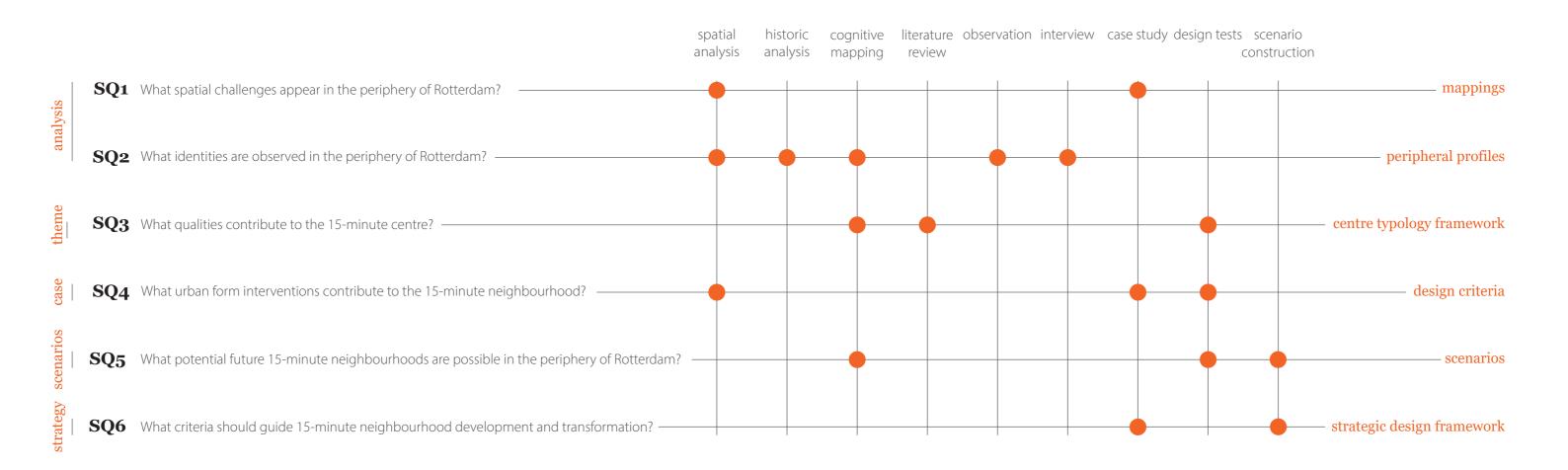


## recommendations

- varify the set of variables
  - test in more contexts
- Social safety and demographic resistance

- quantitative assessment: test the change of network integration when the new designs are applied

15-miute pillars 15-miute pillars accessiblity diversity density accessiblity diversity density catchment area function density functional diversity destinations catchment area function density functional diversity destinations functions/sq km 15-minute program piechart functions/sa km 15-minute program piechart population density household diversity attraction reach home population density attraction reach households/sq km building typologies home households/sq km network centrality network density modality diversity network mobility types network centrality network



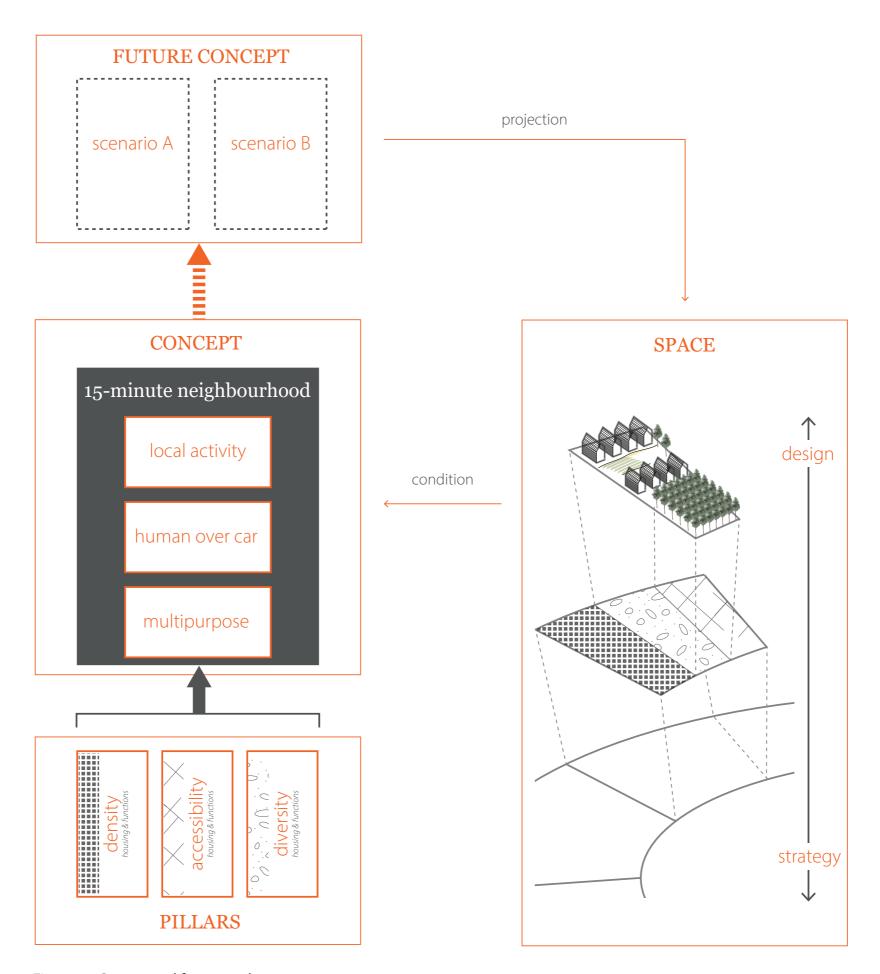


Figure 2: Conceptual framework



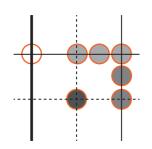
### **4.3** CONCLUSIONS

When designing for a 15-minute City, one should look at centralities.



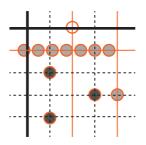
## Functional centrality

From a functional perspective, centralities have different target groups and uses. Through this, some functions form synergies with others. Because of economic or societal necessities those functions cluster together. Those clusters of functions attract people to the places where they are situated: they are a reason of local human activity.



#### Connectivity

However, centrality is not only based on functions. The connectivity of a place is essential. The network integration impacts the publicness of a place. Therefore, the network builds a precondition of a functioning centre. Connectivity is an essential element in the design of successful 15-minute centres.

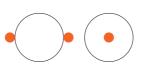


## Composition of central places

When looking at district or city scale, different compositions of centralities are possible. It is place-dependent what composition suits best. The **frequency** of centres is dependent on the population density of a certain place. The **size of centres** is dependent on the needed land-cover for a certain activity. The placement of the centres is dependent on the complementary characters of other centres. Therefore, in the next chapter, specific cases will be assessed

to understand suitable

compositions of centralities.



#### Role of the edge

Often, centralities do not allign with the centre of the administrative boundary.

Centralities at borders of neighbourhoods, which is the case in Zestienhoven, integrate two areas and are often characterised by a diversity of spaces and uses.

Centralities that do allign with the administrative centre, give the neighbourhood een inward focus, resulting in a centre that is not so flexible to open up to new uses.

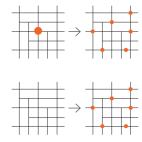


#### Linear centrality

It is concluded that in both cases there is need for a new guiding element that leads people to everyday life.

Because of the layered and extended character, a line appears as the potential centrality form.

In the design assignment of the following chapter, this line appears as the core element that will restructure the neighbourhood towards a 15-minute centre. It is explored how this line manifests itself in a real spatial context and what design interventions are needed.



#### Local cores

In both cases, there is a need for more spread 5- and 15-minute destinations. This means, a network of hyper local cores needs to be established, which replaces the situation of just one core (IJsselmonde) or no core at all (Zestienhoven).

#### Spatial qualities

The following lessons have been learned about how spatial interventions achieve certain spatial qualities that are desired in The Dynamic Playground. The proposed *spatial interventions* are based on examples of vital places in Rotterdam.

#### THE CENTRAL LINE

Readable linear axis for movement and (economic) activity

Low to no open space betwen buildings to guide people along the axis (although the building types are different)



Figure 3: Zaagmolenkade, source: versbeton.nl (2013)

High built density along line (to enhance pedestrian movement on the axis)

Addition of layers on top of existing buildings that border the central line



Figure 4: Hermes City Plaza source: vanwilsumvanloon.nl (2017)

Freedom of movement

No categorisation of traffic space for movement of pedestrians and cyclists



Figure 8: Binnenrotte, source: architectenweb.nl (2018)

Alternation with big openness to give people the opportunity to also move to more quiet places



#### **GREEN SPACES**

Readable linear axis for movement and (recreational) activity

The slow traffic thoroughways are continuously bordered with green



Figure 5: Plaszoom Kralingse Bos, source: wonderfulwanderings.com (2022)

Alternation of open spaces for recreation (in the sun)



#### RESIDENTIAL AREA

Small scale accomodations for interaction

A frequent amount of parkingspot sized areas that have a different (soft) materialisation



Figure 6: Hoogstraat, image by MVRDV, source: architectenweb.nl (2020)

#### FRINGE

Alternation of building plot scales (to overcome fragmentation)

Cutting up large plots intro different pieces of different shapes



Figure 7: Weelde, source: Google streetview (2022)

#### Spatial qualities

The following lessons have been learned about how spatial interventions achieve certain spatial qualities that are desired in The Paradise of Degrowth. The proposed *spatial interventions* are based on examples of vital places in Rotterdam.

#### THE CENTRAL LINE

Readable linear axis (for movement and economic activity)

Low to no open space betwen buildings to guide people along the axis (although the building types are different)



Figure 9: Zaagmolenkade, source: versbeton.nl (2013)

Visual heterogeneity in buildings at eye level (to trigger interaction or activity)

Open plinths



Figure 12: Zwaanshals, source: Rotterdamthroughmylens.nl (2015)

High density of entrances



Pedestrian priority, space for all

types of pedestrian movement

(chitchat at the door, walking

the dog, skating)

**Broad sidewalk** 

Figure 19: Oudedijk

Corner points as a place to stay on the axis



Figure 10: Proveniersstraat, source: debuikvanrotterdam.nl (2019)

Figure 11: Mathenesserweg, source: veilingnotaris.nl (2019)

#### LINEAR GREEN

Readable linear axis (for movement and recreational activity)

The slow traffic thoroughways (for movement from A to B) are continuously bordered with green



Figure 13: Plaszoom Kralingse Bos (source: wonderfulwanderings.com, 2022)

Variation in materialisation of pedestrian paths to emphasise adventurous spaces



Figure 16: Kralingse Bos, source: dewandeldate.nl (2014)

#### **GREEN PATCHES**

Hidden places (to facilitate a communal ambience)

Green spaces on plot size, pocket parks, as interruption of a residential urban block



Figure 14: Schat van Schoonderloo, source: coolhaveneiland.com (2021)

activity)



PUBLIC OPEN SPACE

Hierarchy in open space (to

stimulate different types of

Small height differences

Figure 17: Deliplein, source: rotterdamarchitectuurpijs.nl, 2010)

Narrow entrances leading to hidden public spaces

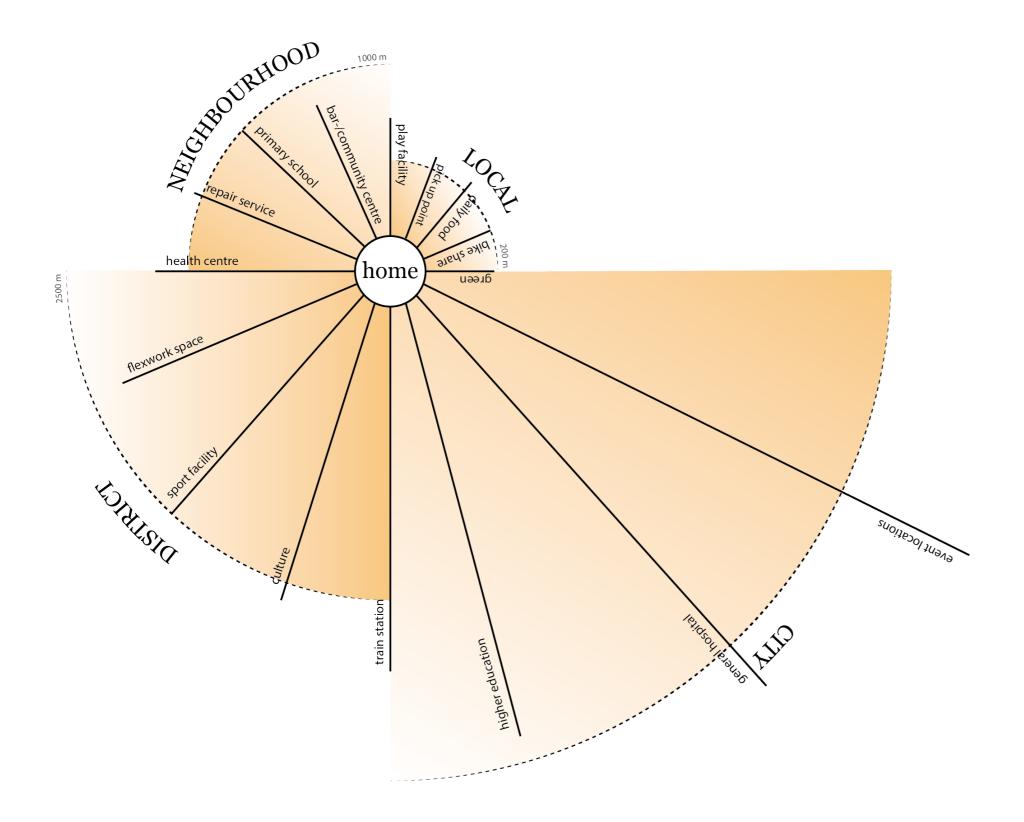


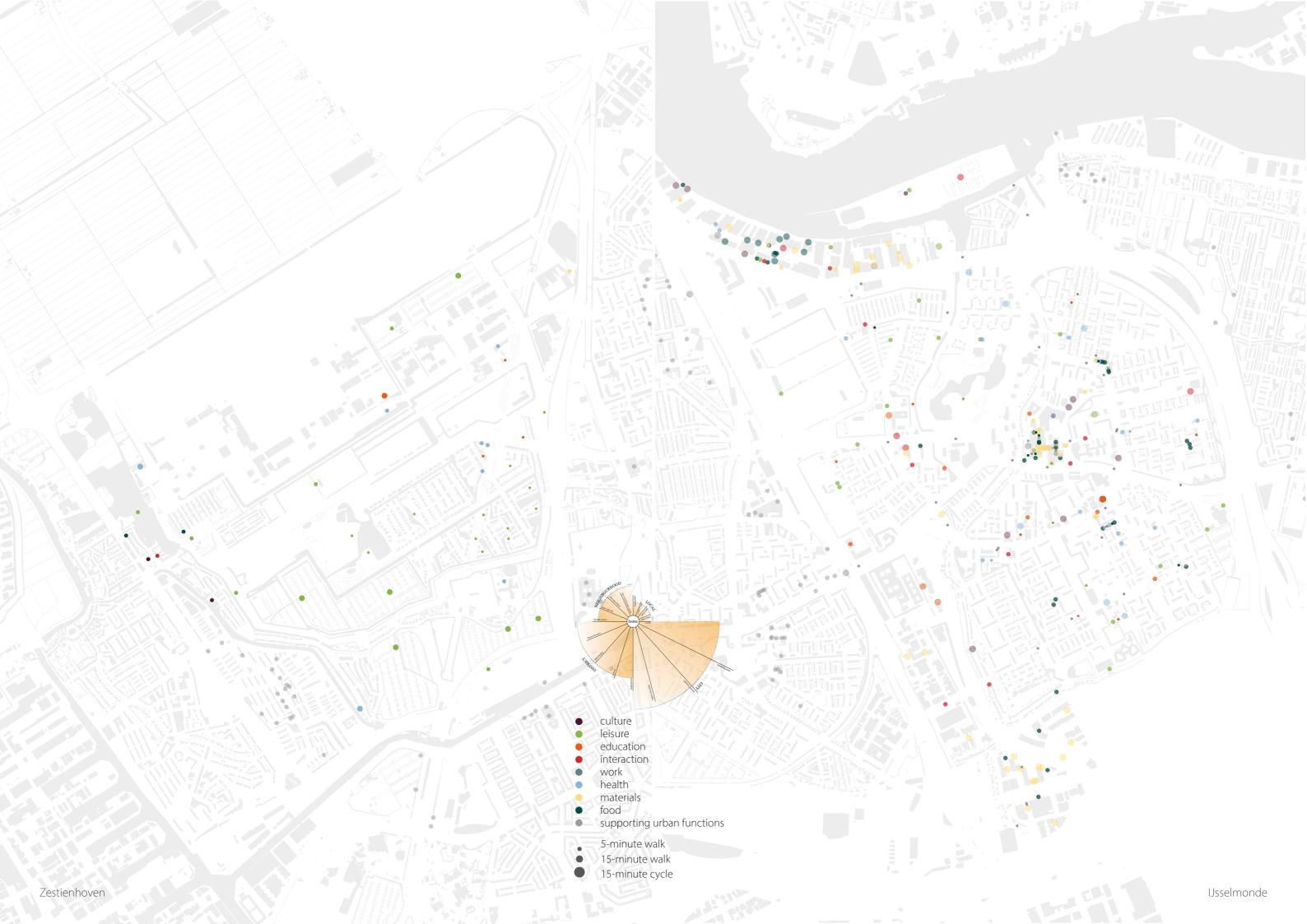
Figure 15: Achterhaven, source: architectenweb.nl (2011)

Seating on the edges of the space to accomodate seating with an (over) view



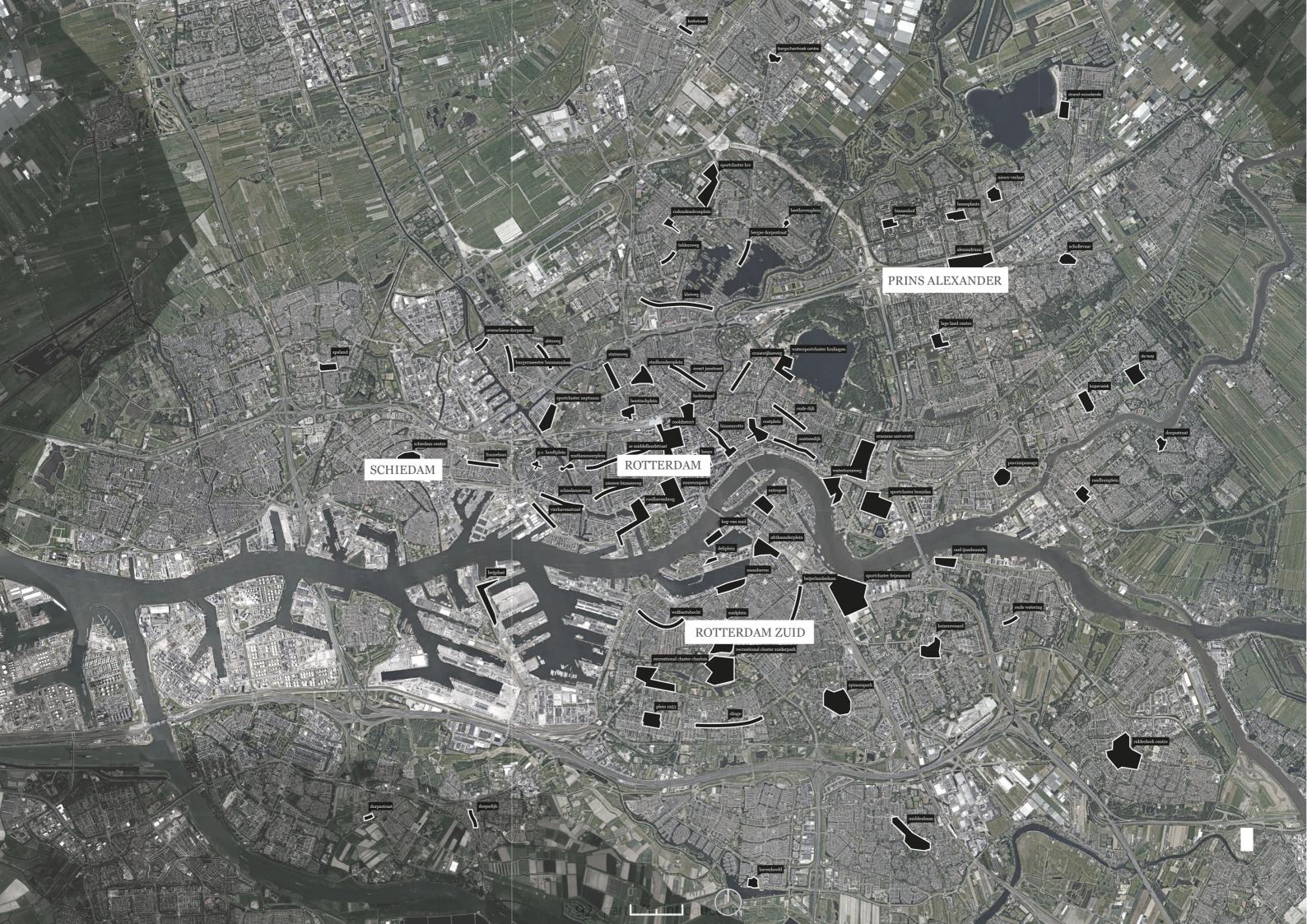
Figure 18: Heemraadspark, source: Google streetview (2022)



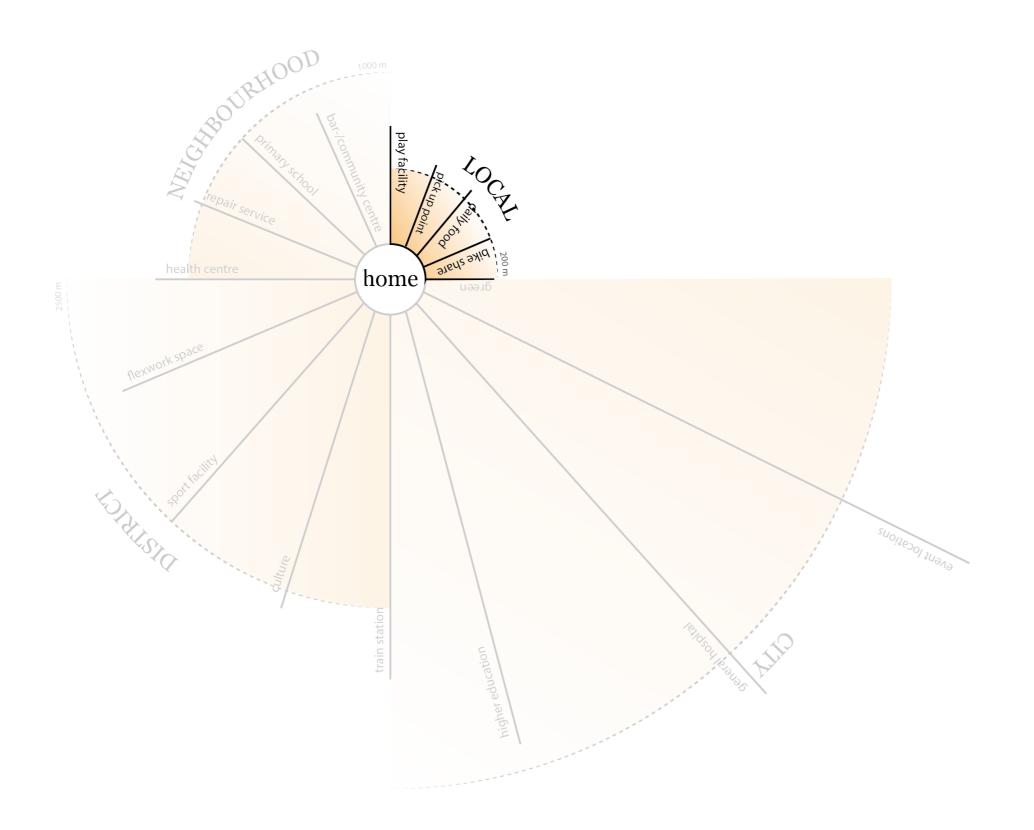




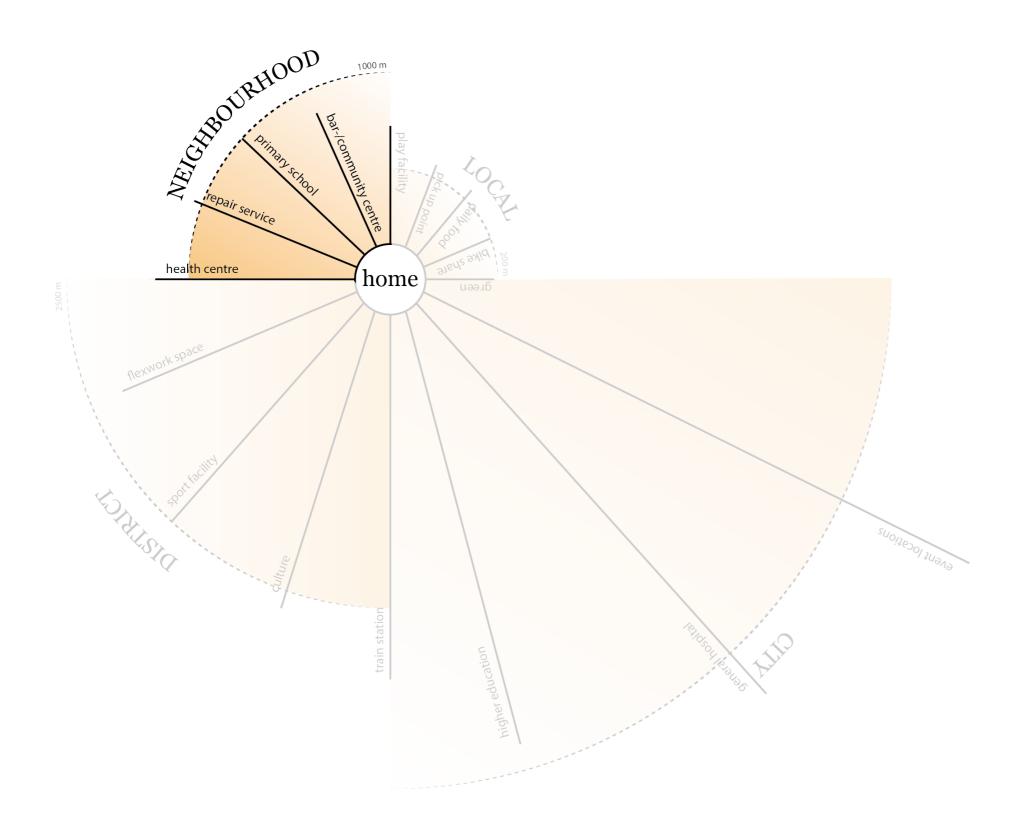
91 part 1/4 - introduction





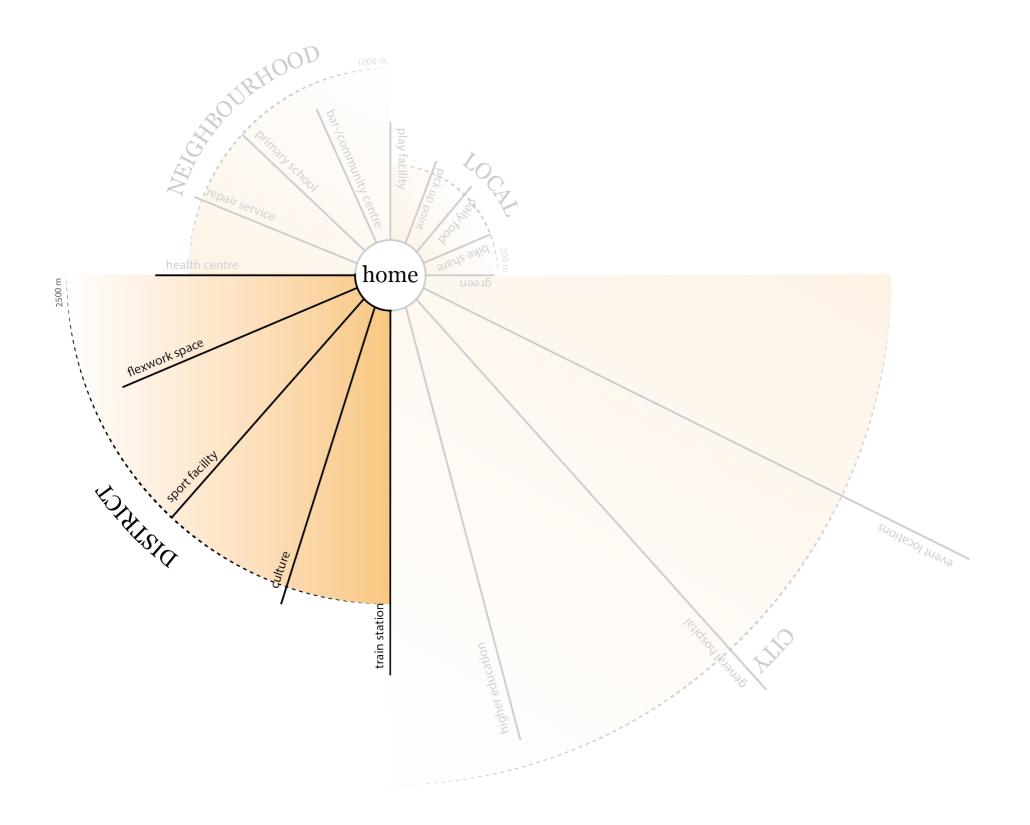




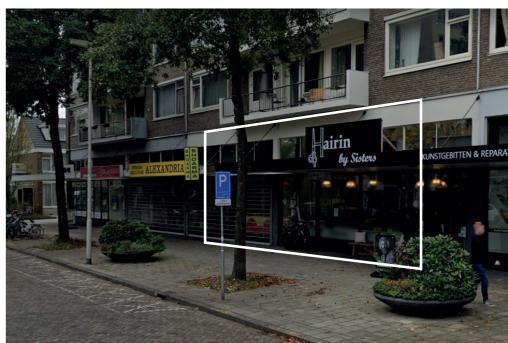


























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local street

neighbourhood street

city street





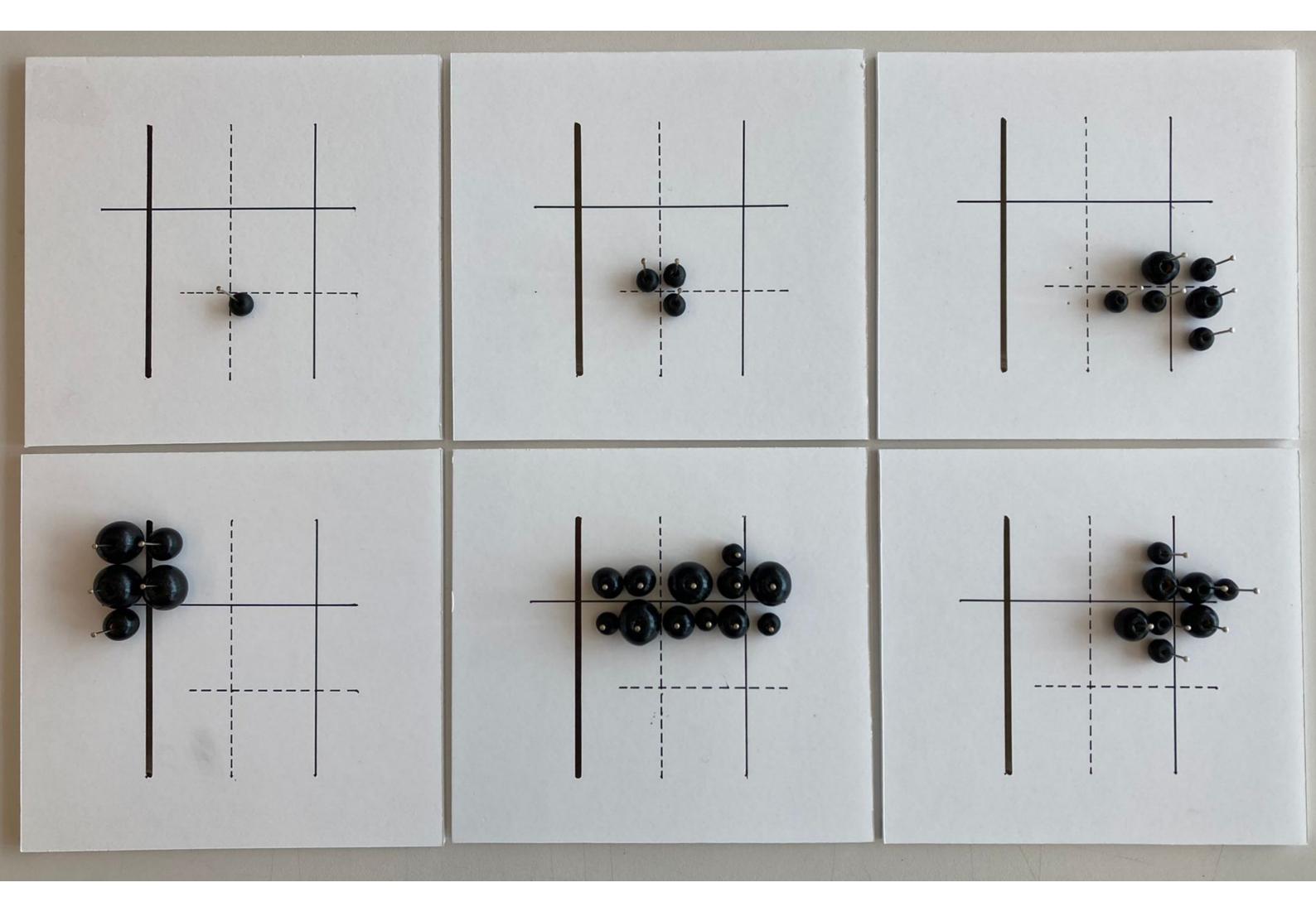


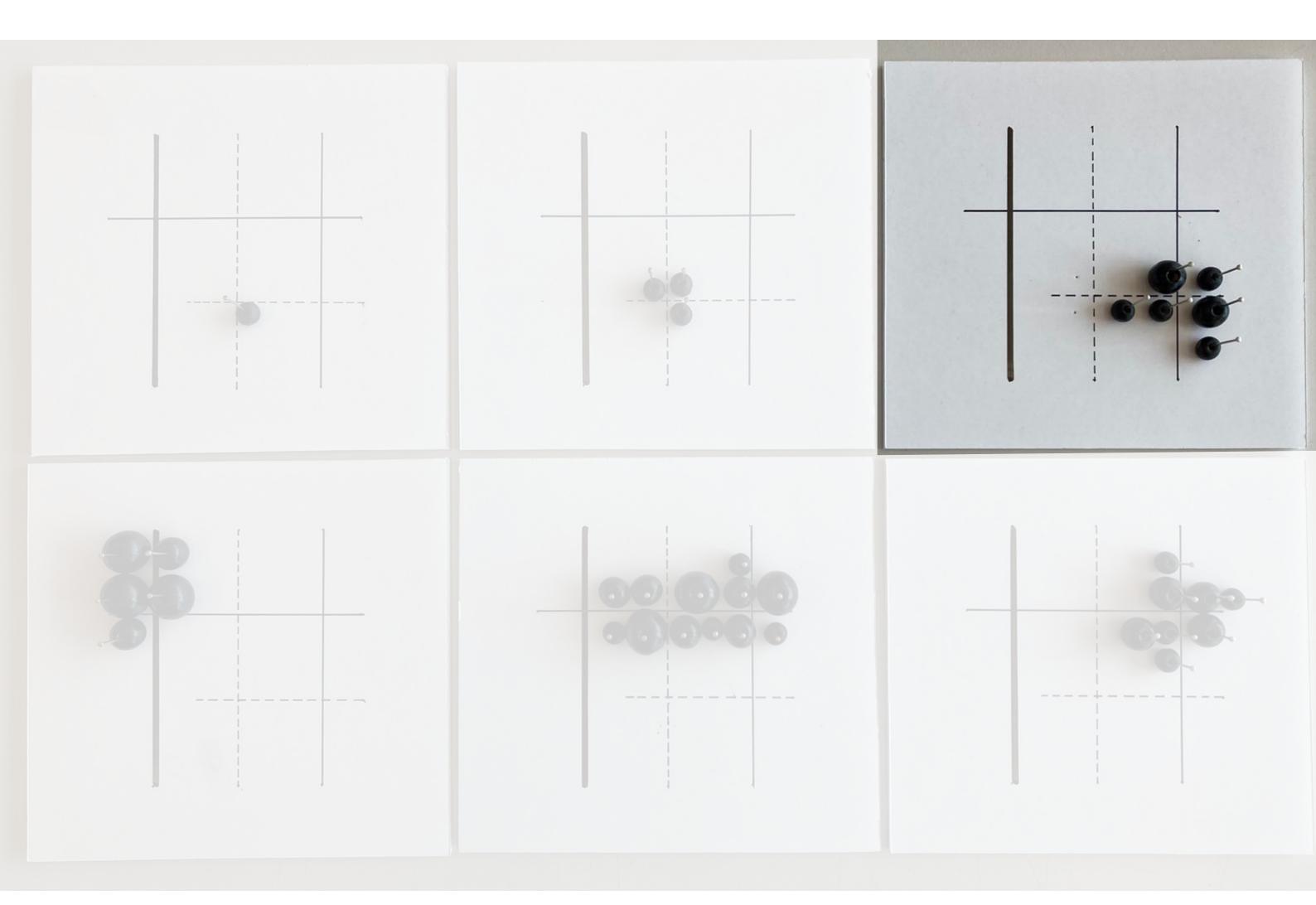




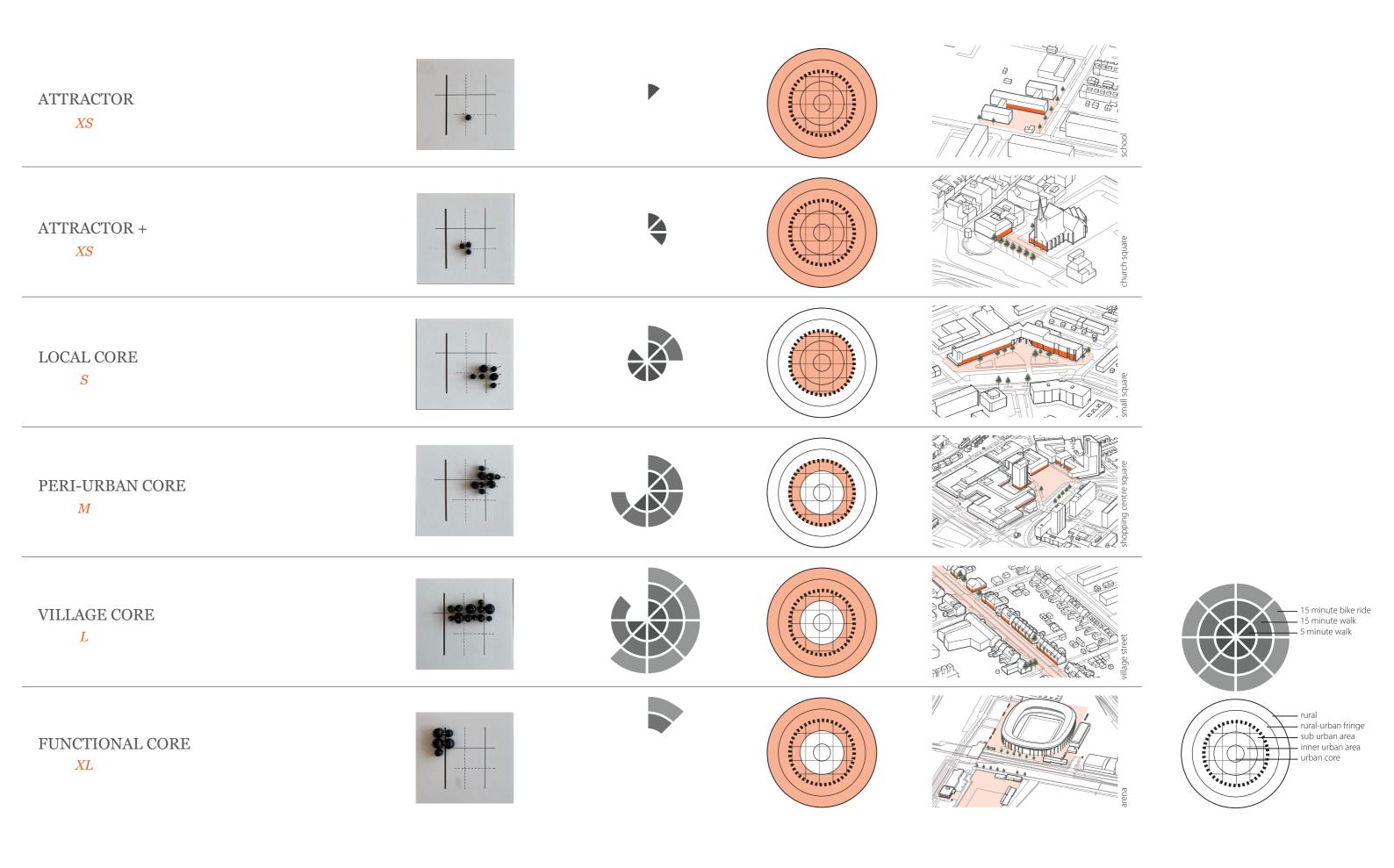


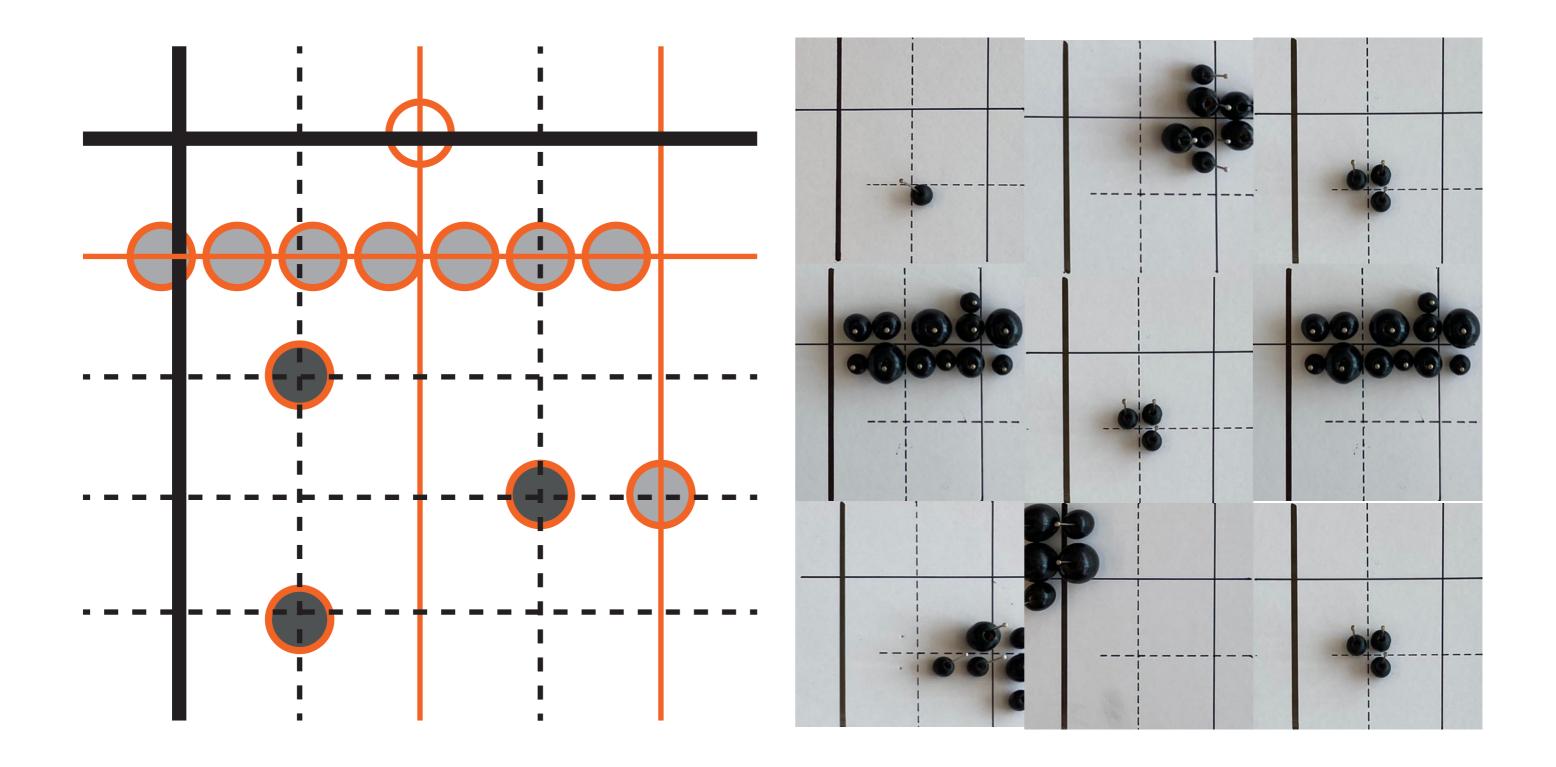
98 part 1/4 - introduction

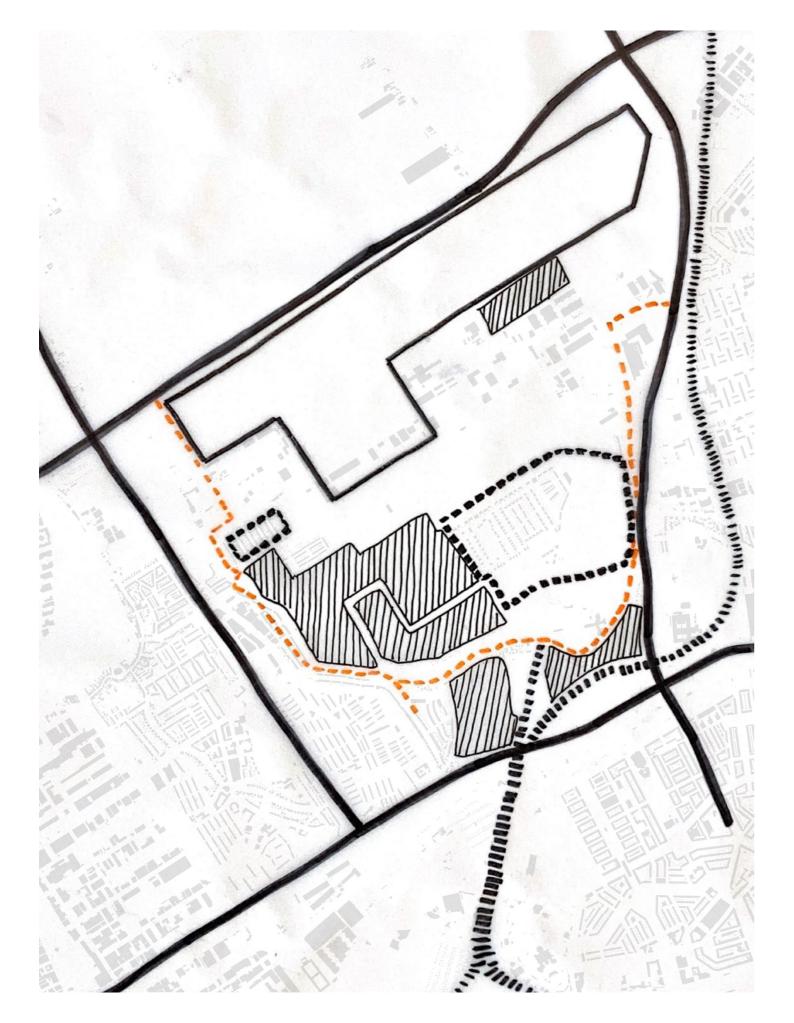












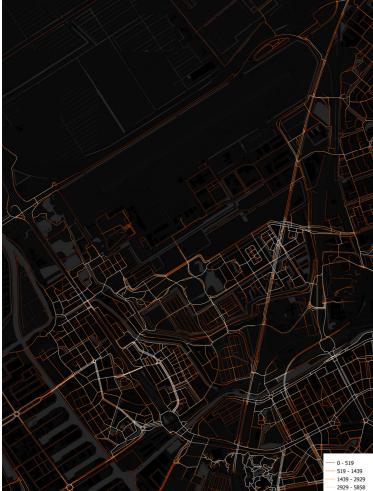




"spatial configuration is itself the most powerful single determinant of urban movement, both pedestrian and vehicular."

Hillier, B. (2007). Space is the machine: a configurational theory of architecture: Space Syntax.

"Natural movement"



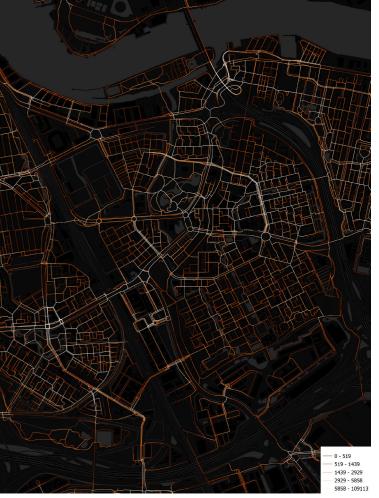
Angular choice 800w

"The more likely a street is used, the more potential for encounters, the more attractive this street is for economic and residential activity."

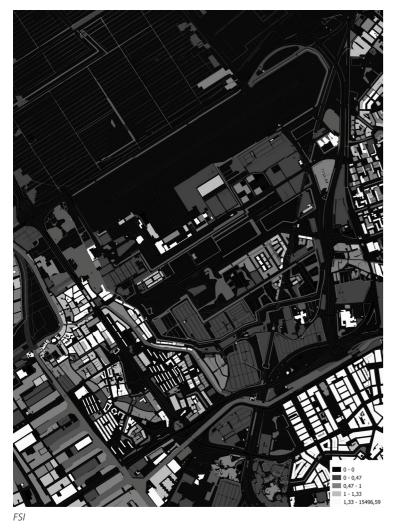
"Movement economy"

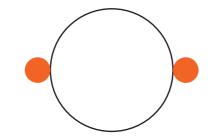


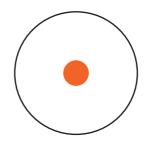




Angular choice 800w













Angular choice 800w

