

An architectural rendering of a modern urban greenway. On the left, a row of multi-story brick townhouses with white window frames and dark doors. A paved path made of grey cobblestones runs alongside the buildings. Two people, a man in a grey shirt and dark pants, and a woman in a purple jacket and light blue jeans, are walking away from the viewer on the path. To the right of the path is a lush garden bed filled with various plants, including tall red flowers, green foliage, and pink flowers. A large, leafy tree stands on the right side of the path, casting shadows. The sky is clear and blue.

Interclusive Urban Green

P5 presentation

Mark Geers, 4684869

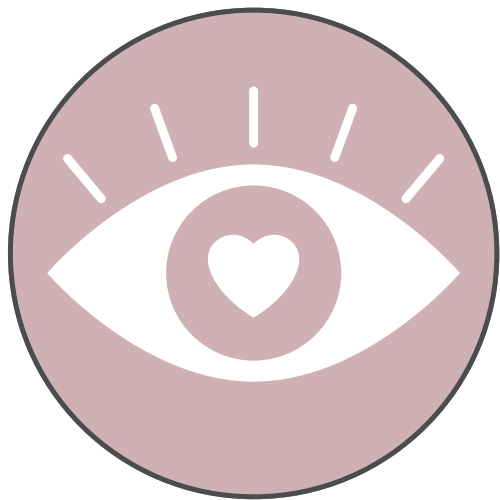
Fond memories



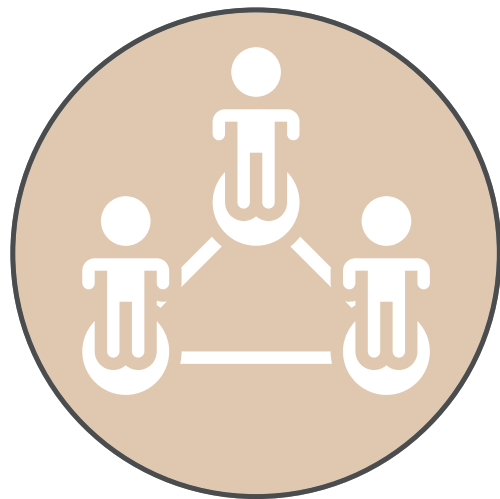
Problem field
Changing behaviour in Schiedam



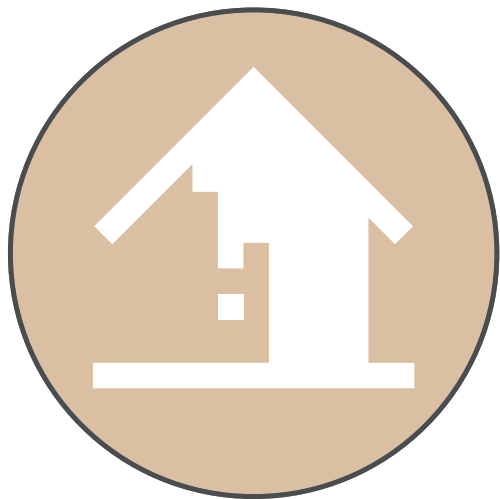
Decreasing liveliness



Not attractive anymore



Loss of social space



Empty facades



No 'uniqueness'



No urban green



Problem field
Ecological & Environmental concerns



Lack of urban green



Limited shade/moisture



Lack of permeability



Limited water storage

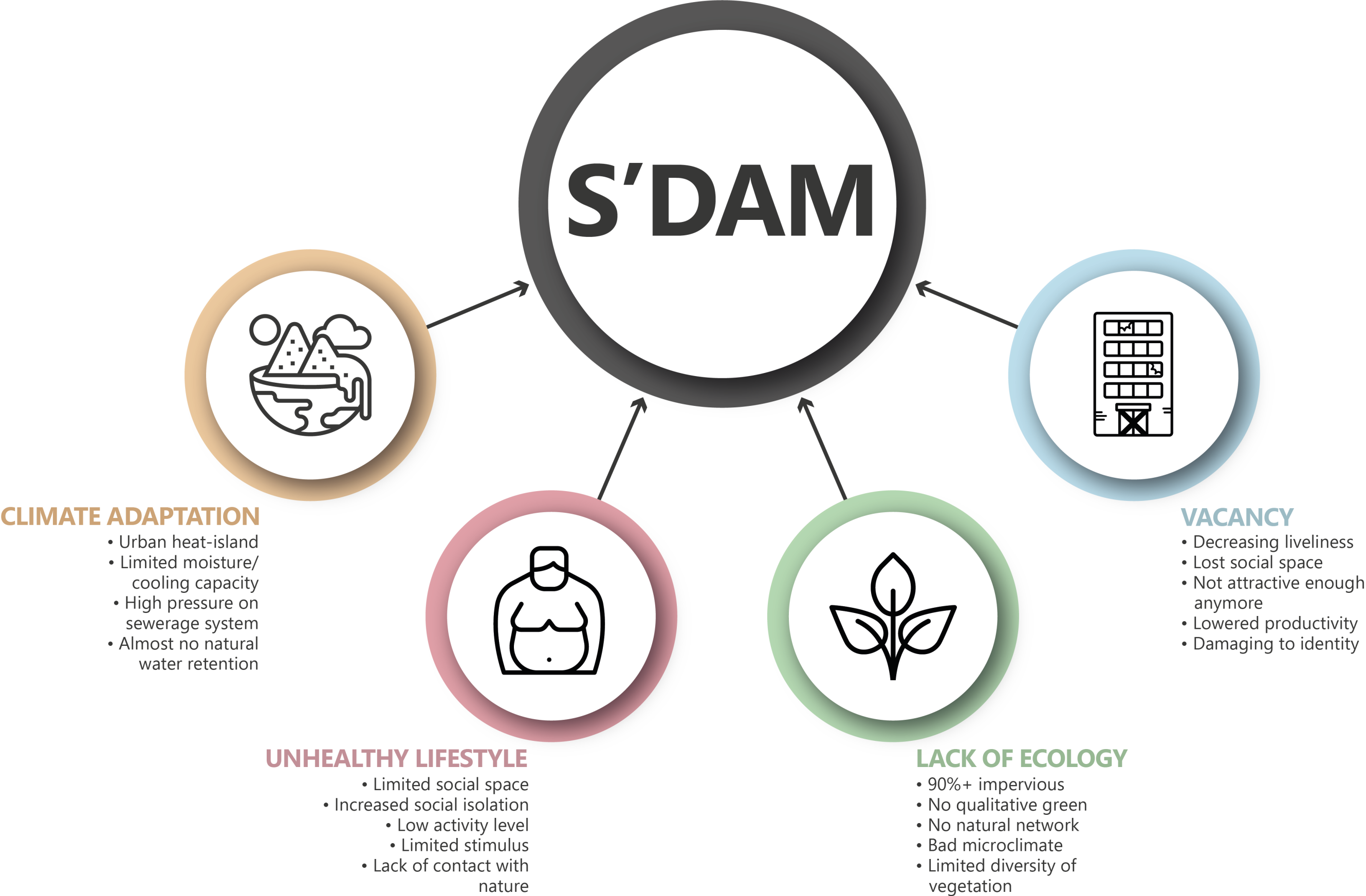


Car dominance



Urban Heat-Island

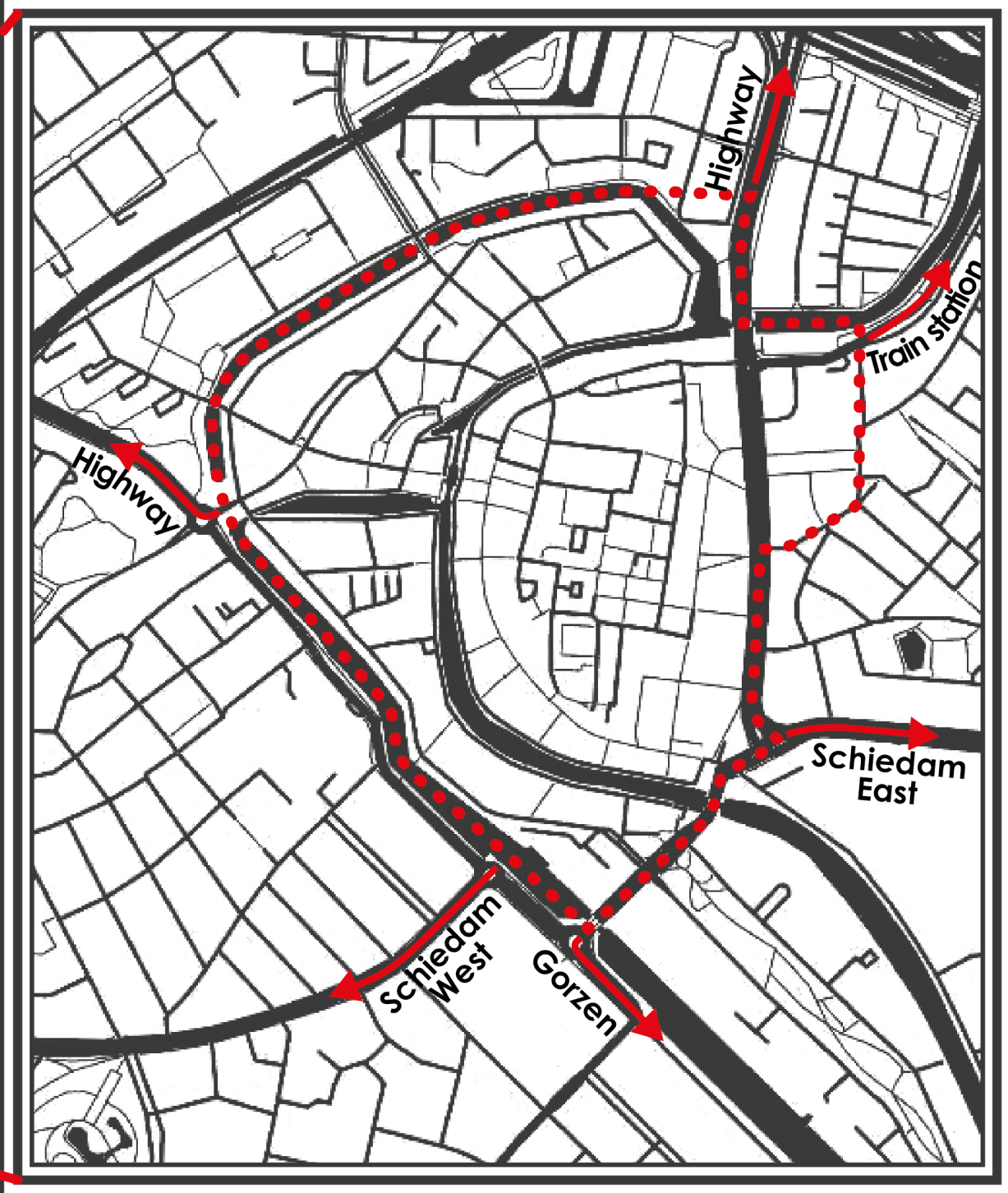




Project location



SCHIEDAM



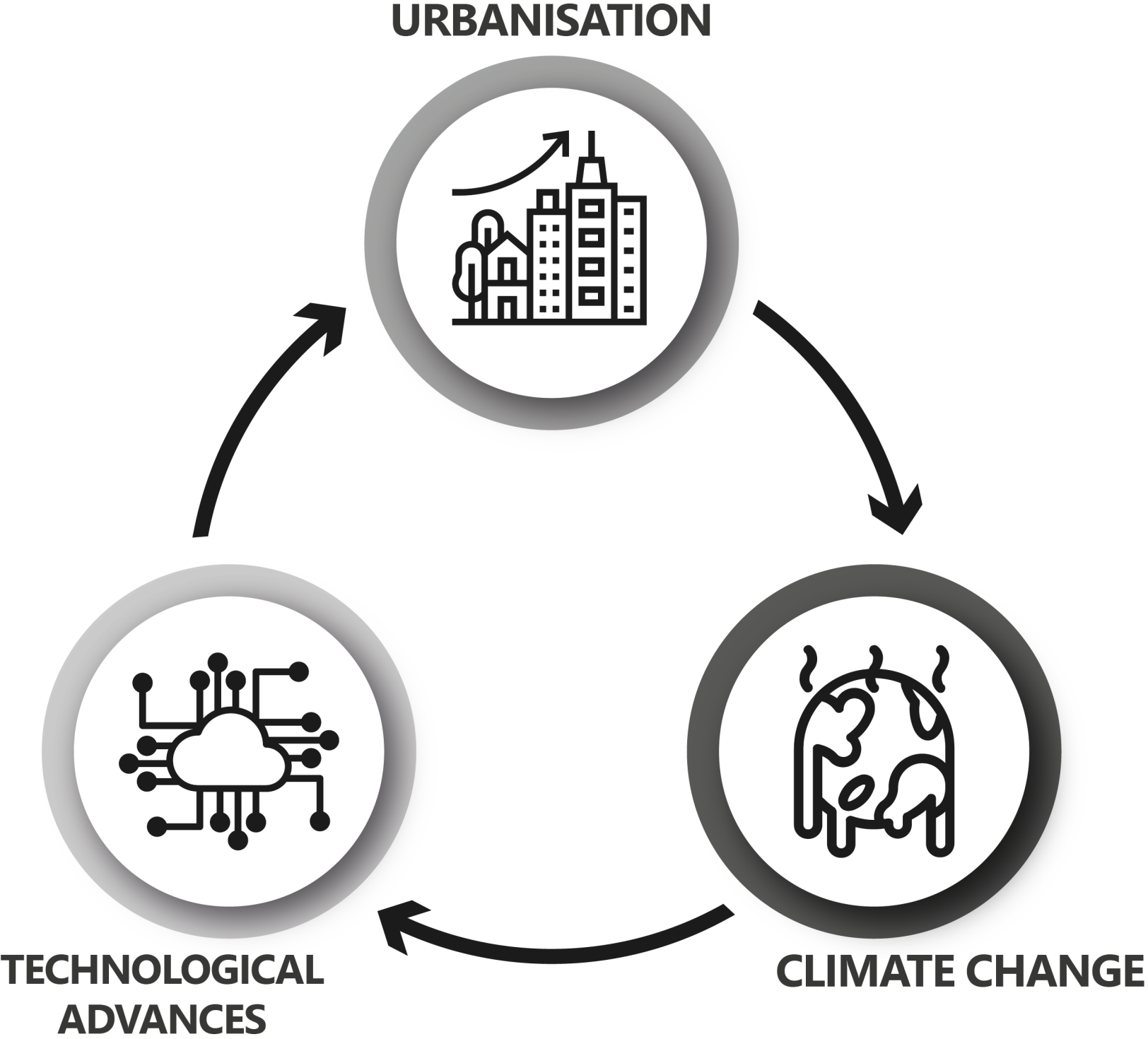
INNER CITY



THE IMAGE OF SCHIEDAM

Main urgencies

A rapidly changing world



Problem analysis

Problem statement

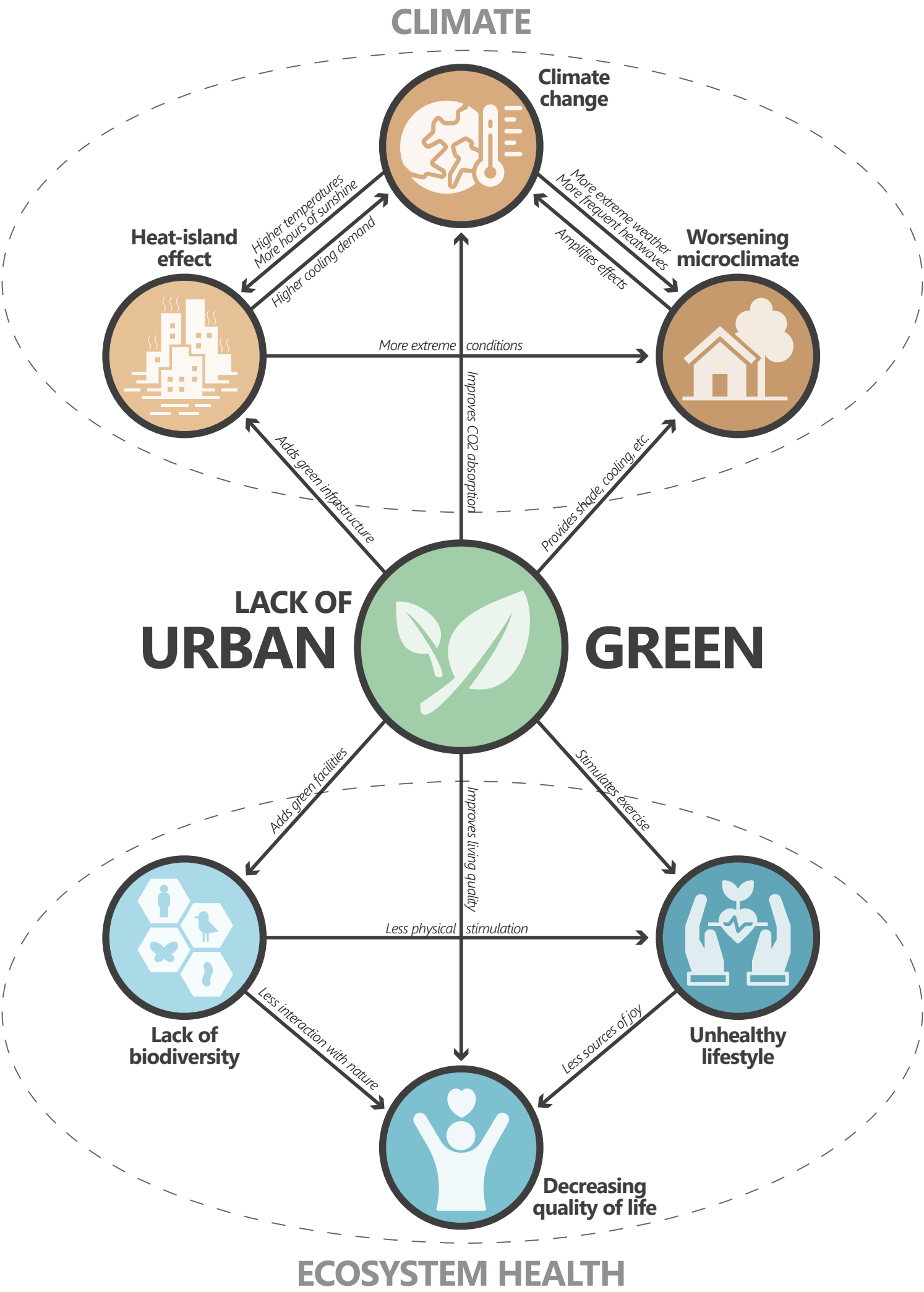
*It is a known fact that the **world is changing faster than ever before**. Rapid technological advances and climate change have significantly **altered the way humanity views and interacts with its surroundings**.*

*However, most **contemporary cities are unable to keep up** with the rapid change in demand, leading to an **imbalance** between human needs and available facilities. Furthermore cities are **unable to adapt fast enough** for the future.*

*Ultimately, if this same situation continues, this could leading to **increased social isolation**, a higher percentage of people living an **unhealthy lifestyle**, an **uncomfortable microclimate** and a **lack of resilience** in regard to environmental shocks and stresses.*

Problem analysis

Problematization diagram



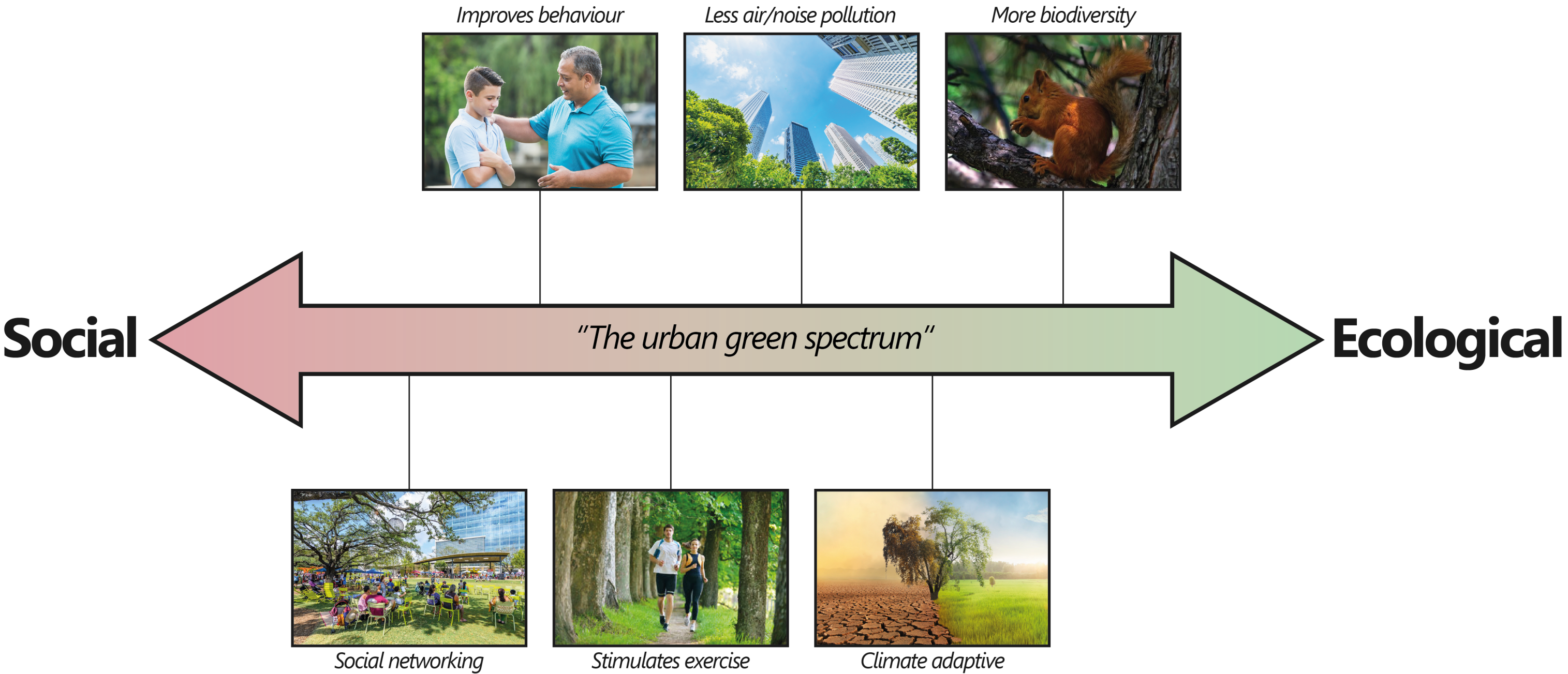
URBAN GREEN

Urban green

What is it exactly?

"Urban green space is defined as all urban land covered by vegetation of any kind. This covers vegetation on private and public grounds, irrespective of size and function, and can also include small water bodies such as ponds, lakes or streams".

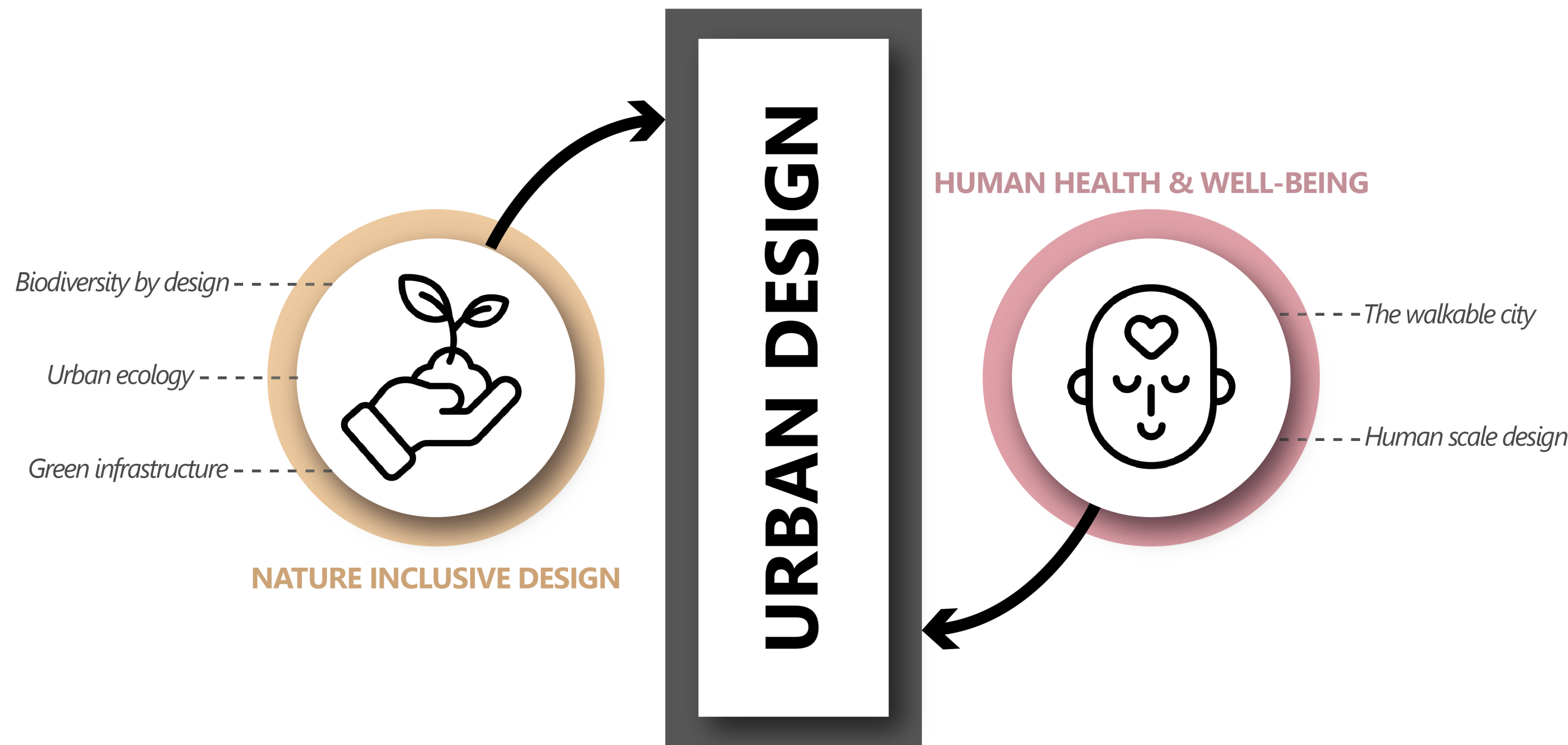
The versatility of green





METHODOLOGY

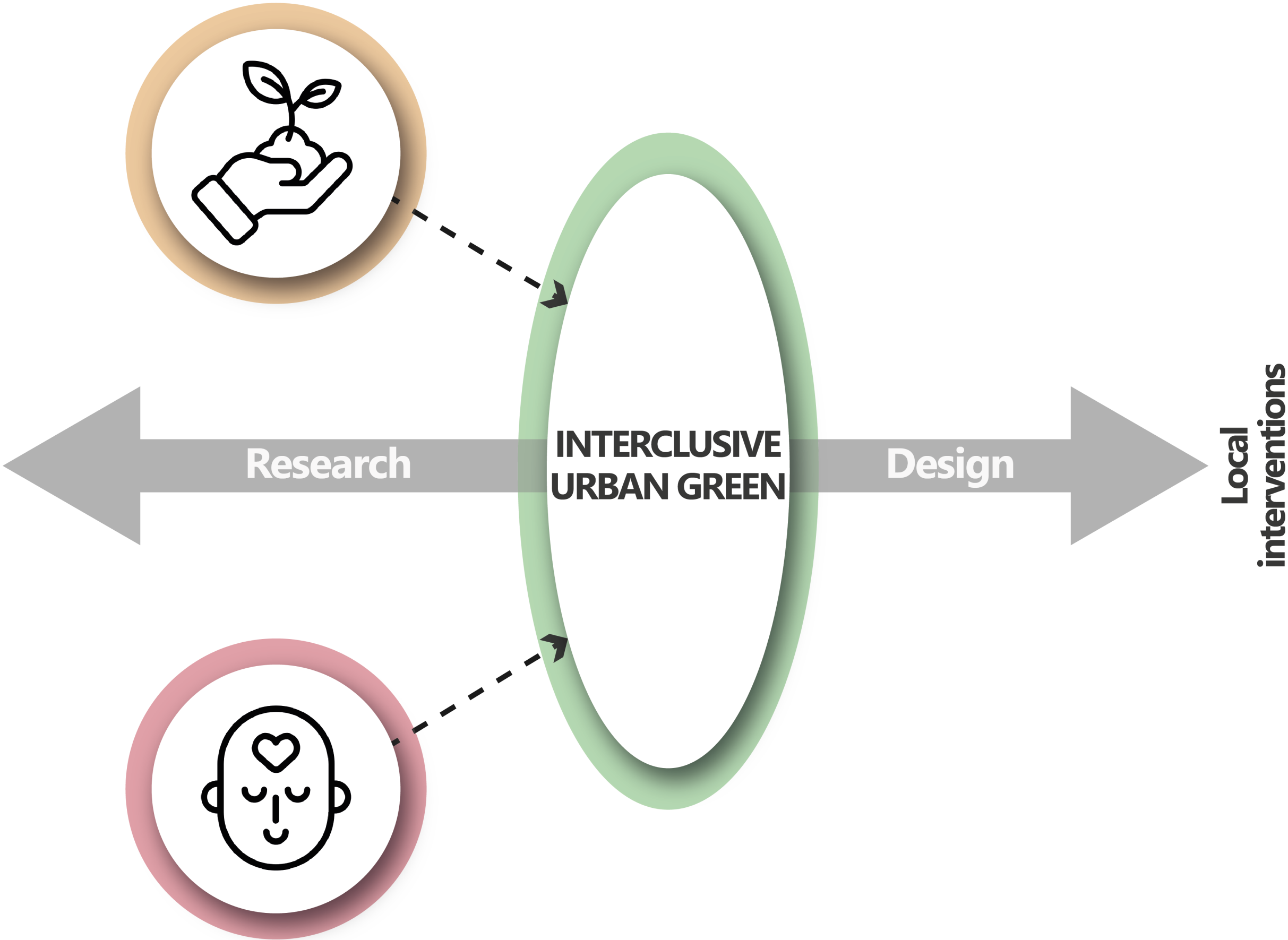
Theoretical framework





Conceptual framework

NATURE INCLUSIVE DESIGN



*“How can the implementation of **urban green** in the **inner city of Schiedam** contribute to resolving issues related to **ecological degradation, climate adaptation, social isolation, and vacancy** in an **integrated and inclusive** way?”*



Development strategy
Inner city of Schiedam

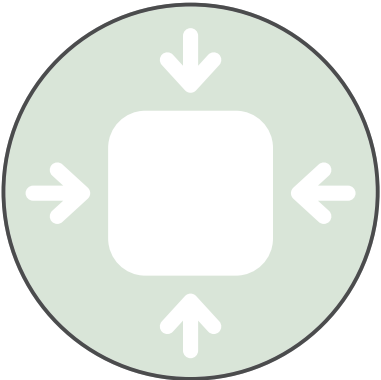


Design principles
Widely applicable

RESEARCH OUTCOME

Ecological condition

Current situation in Schiedam



Small patch size



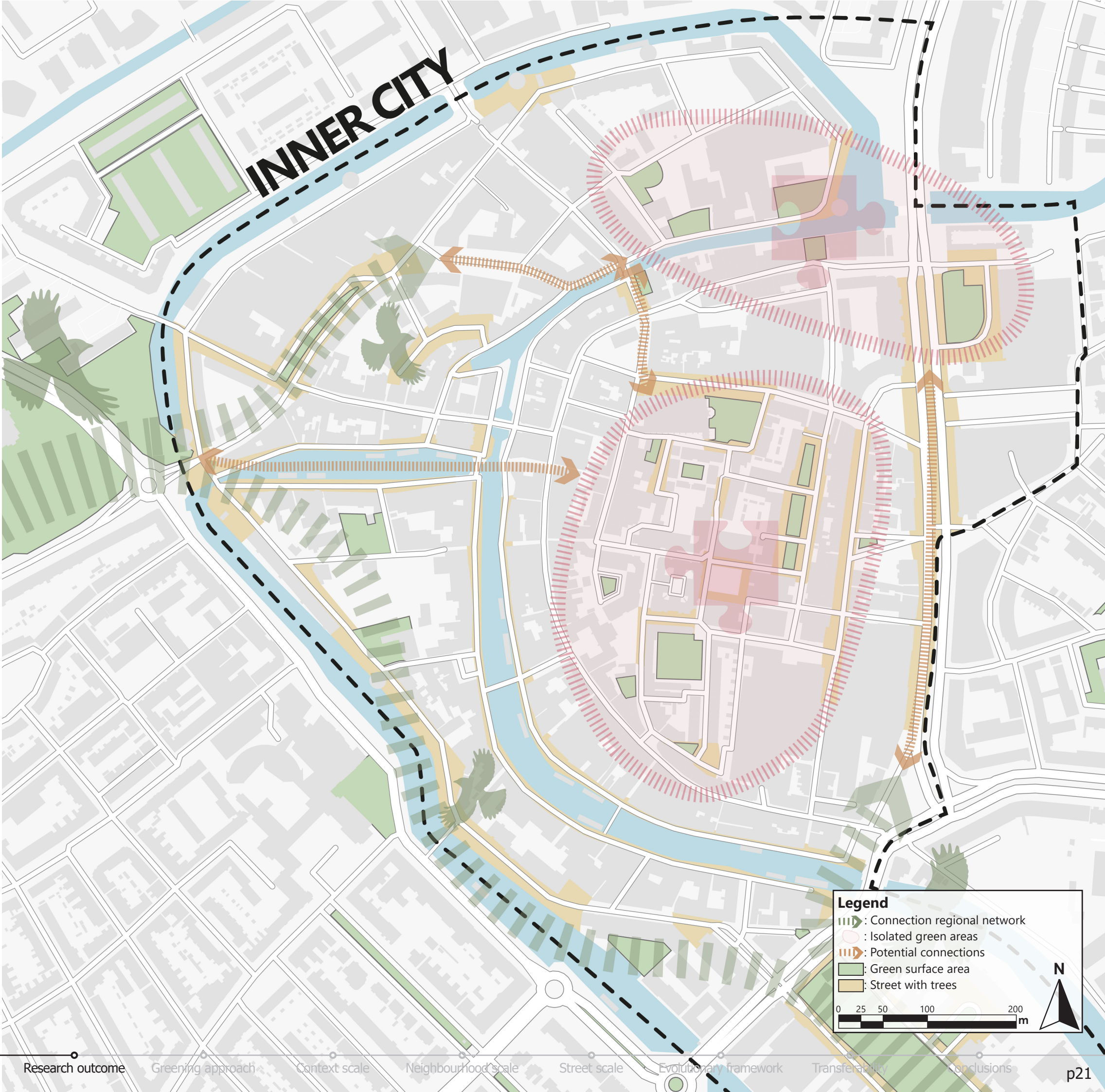
No corridors (connectivity)



Lack of green surfaces



Low density & diversity

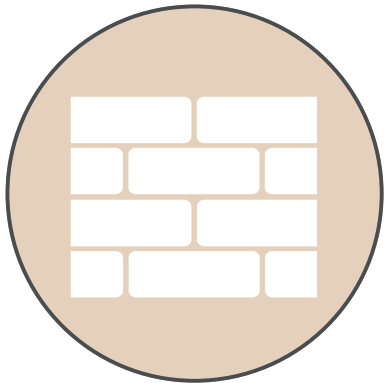


Environmental condition

Current situation in Schiedam



Lack of shade



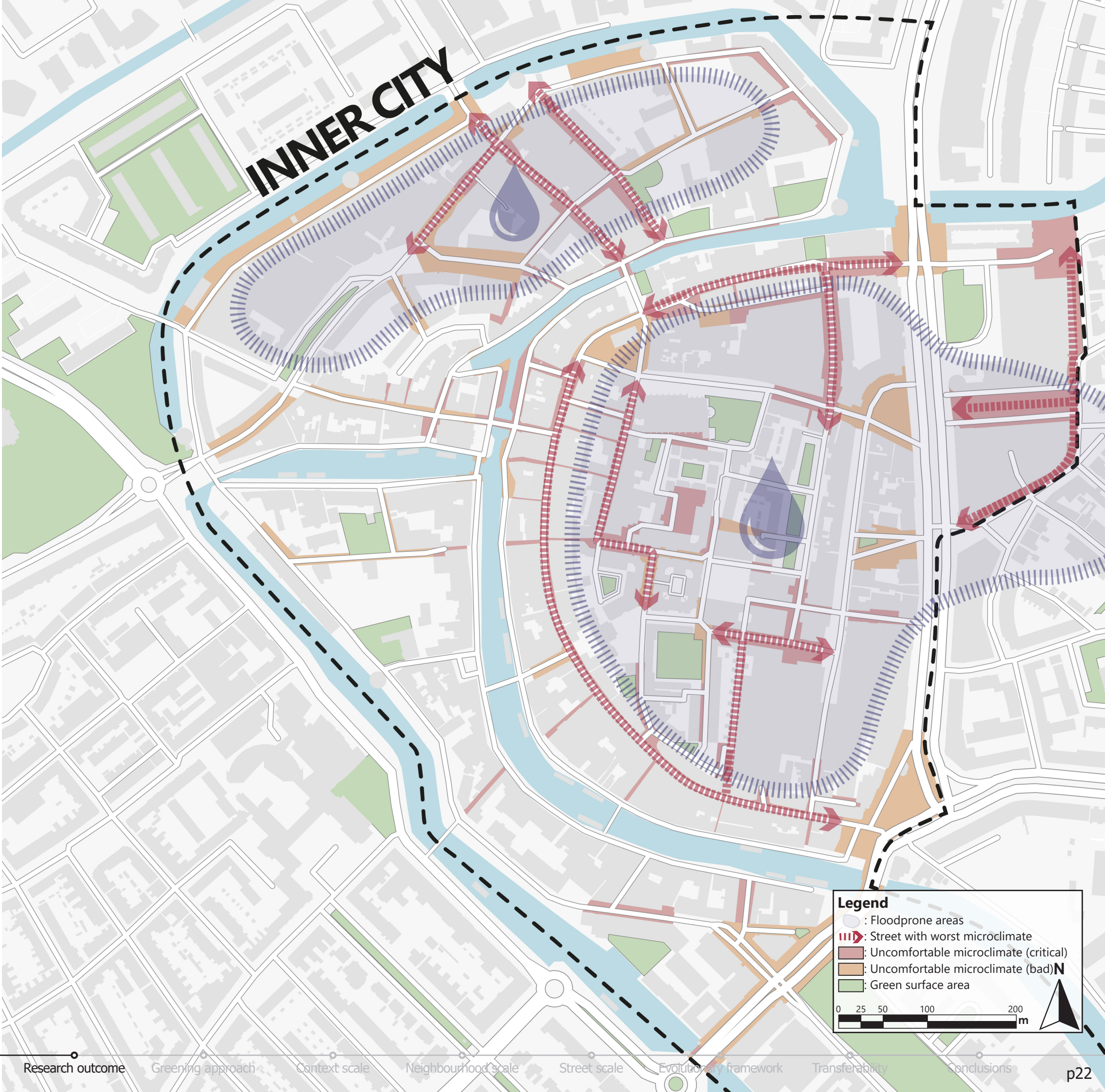
Too many dry surfaces



Little natural drainage

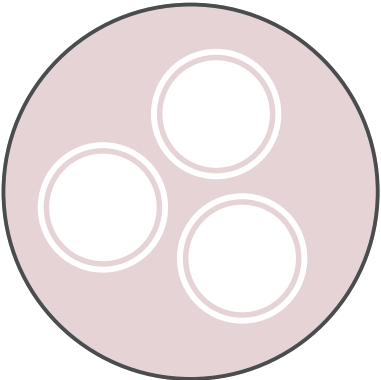


Uncomfortable microclimate



Social condition

Current situation in Schiedam



Monofunctional social spaces



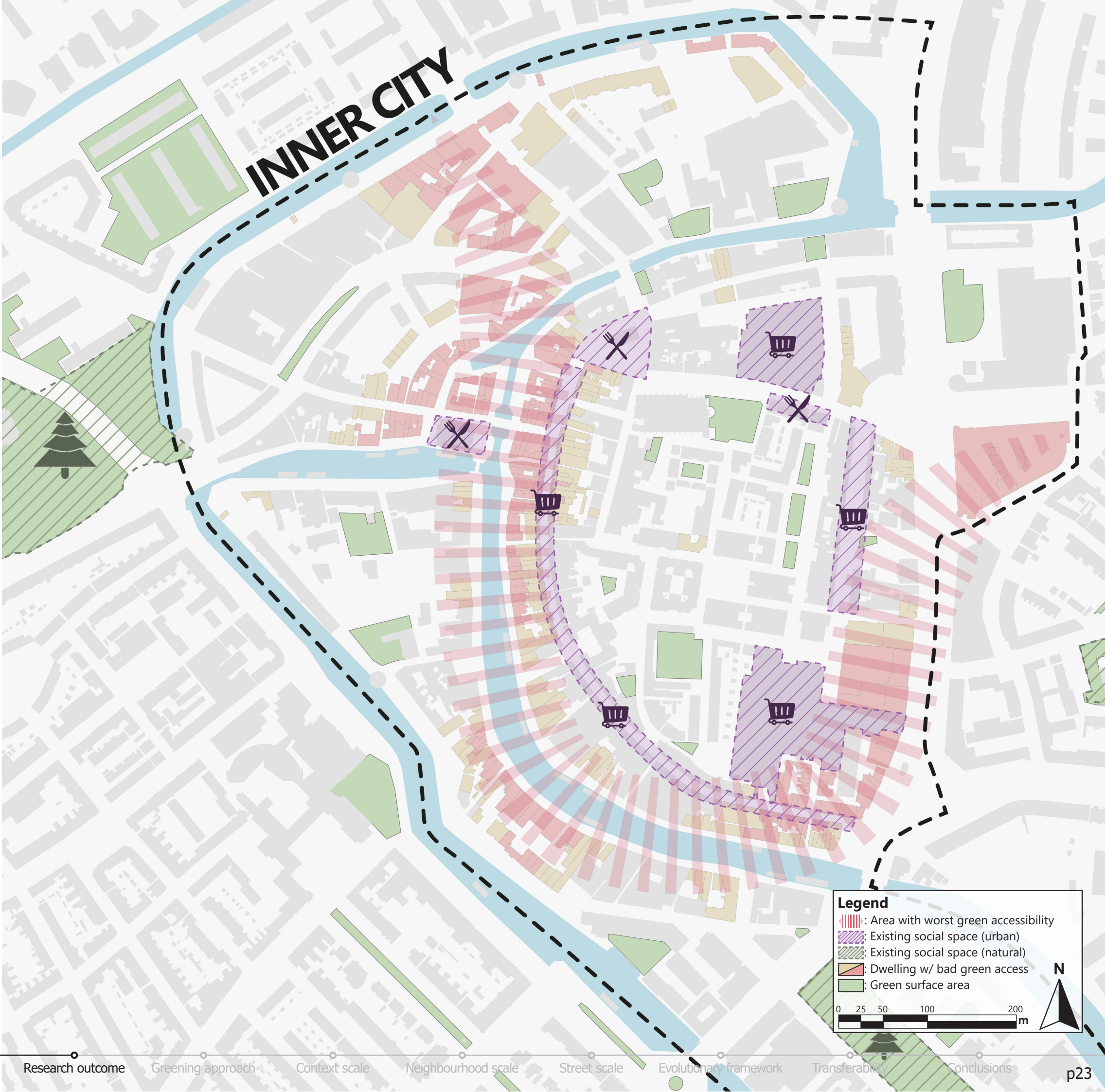
Too little green space/capita



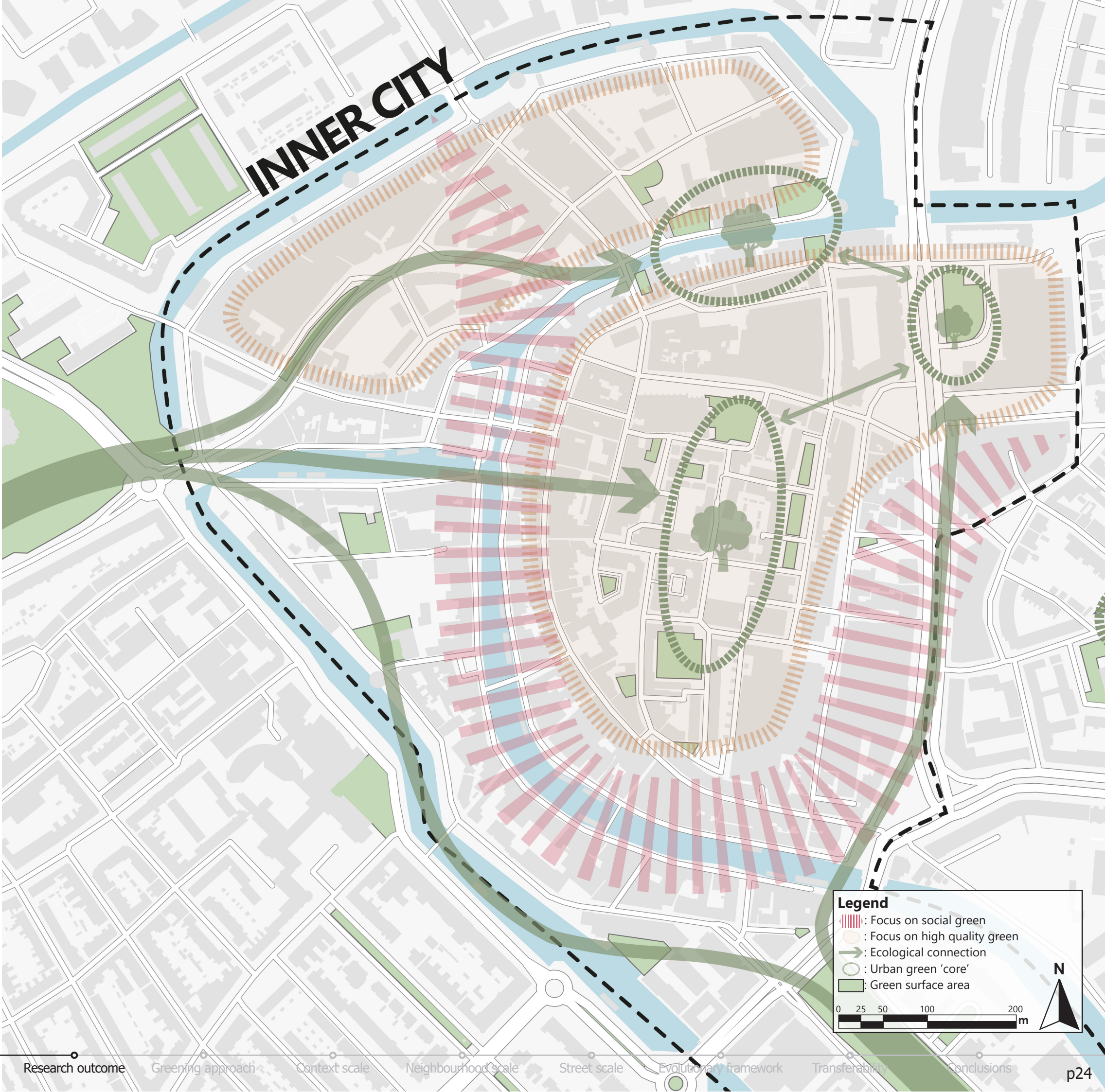
Decreasing attractiveness



Ineffective local spaces



Focus areas
Current situation in Schiedam



Reference cases

Copenhagen



S'DAM

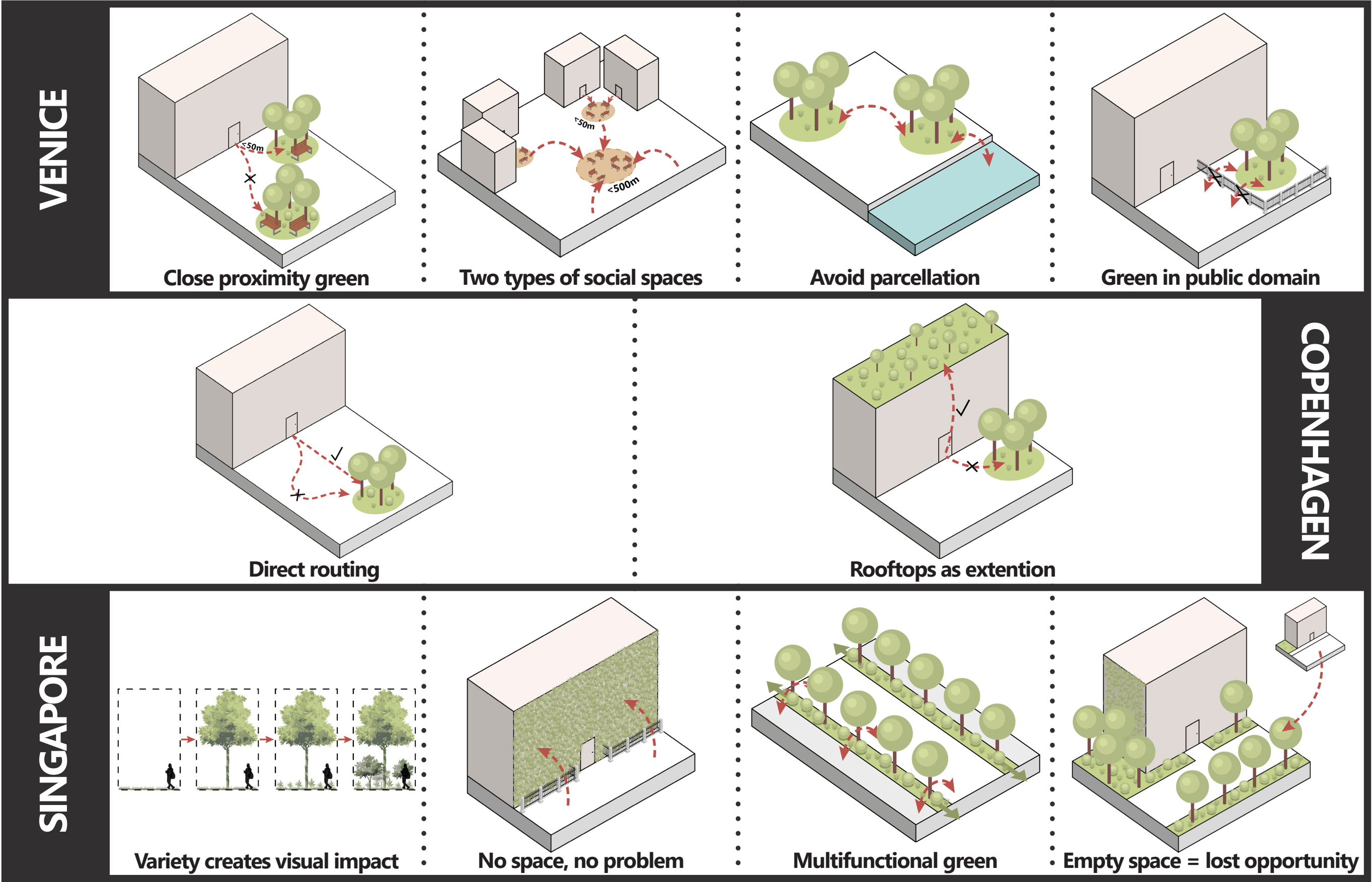
Venice



Singapore

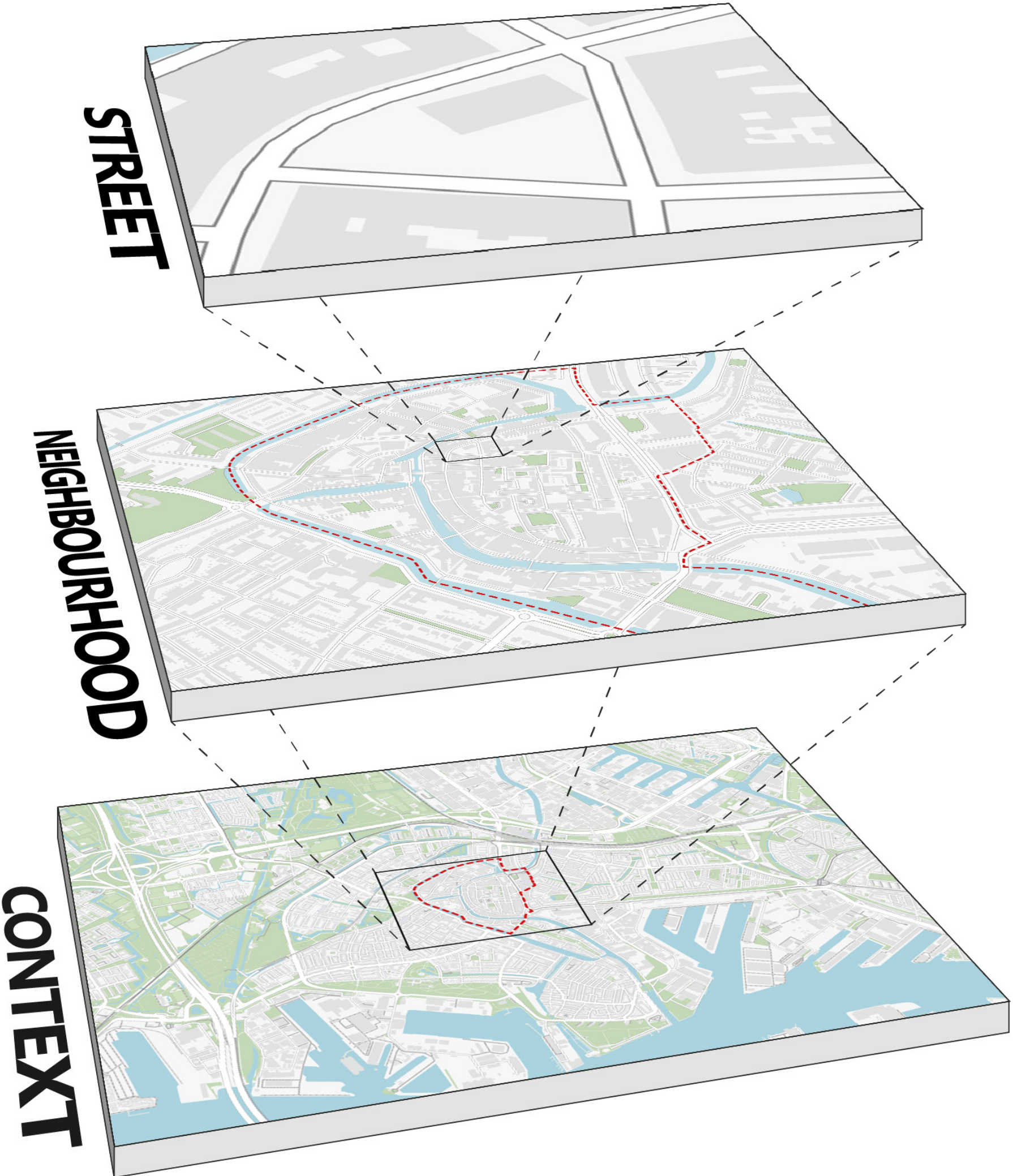


Design principles
Results of reference cases



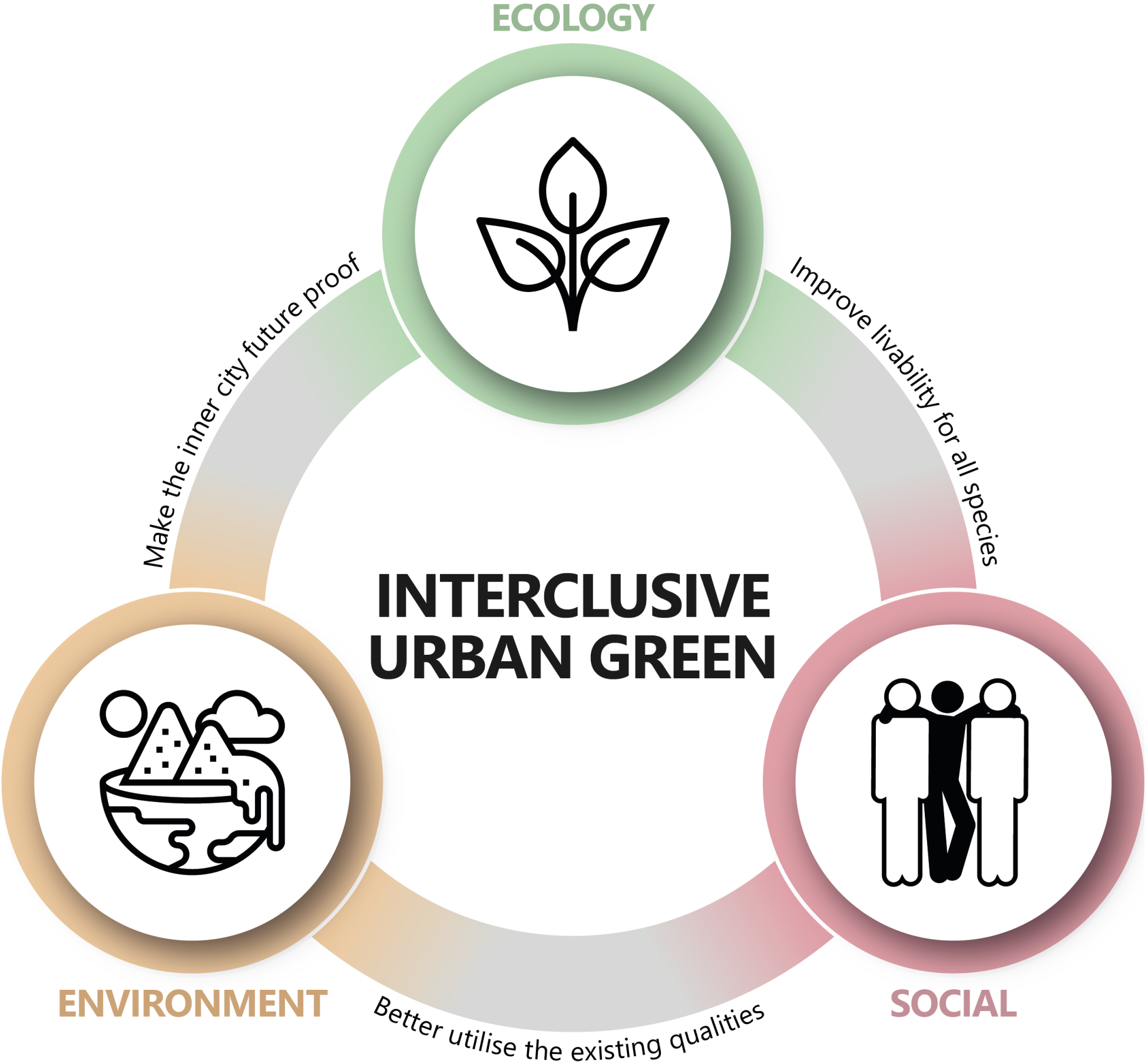
DEVELOPMENT STRATEGY

Greening approach
Main scales

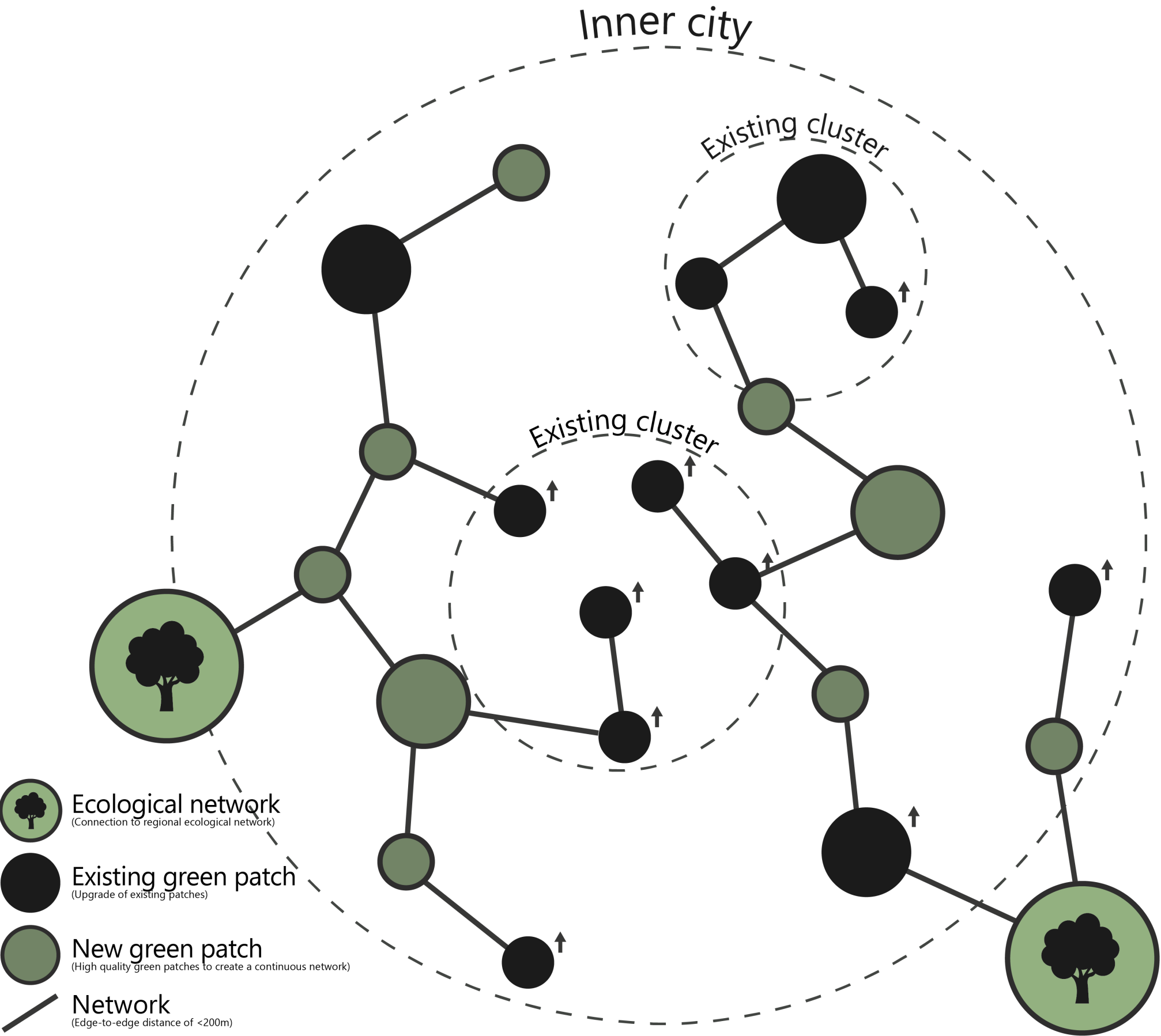


Greening approach

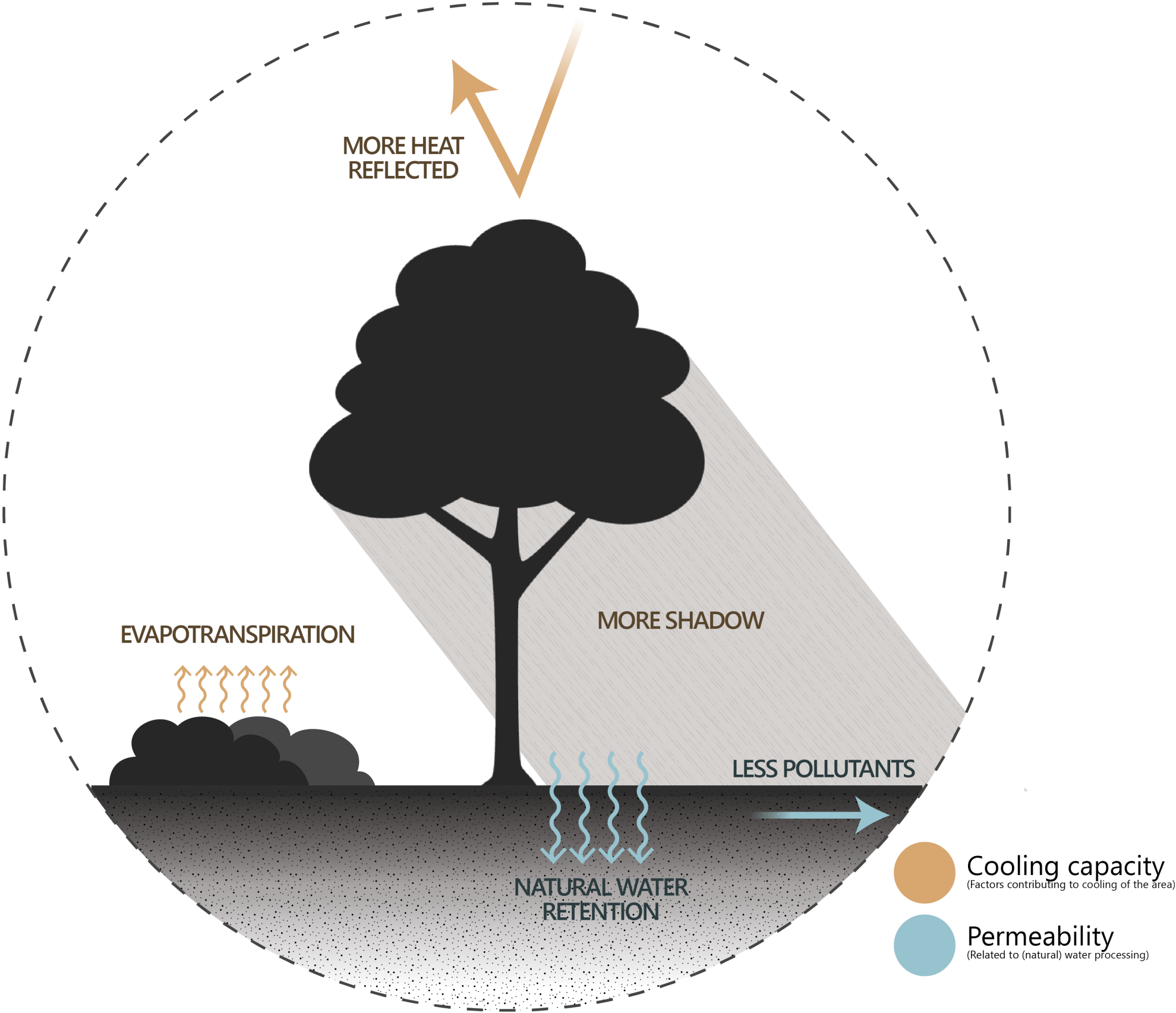
Main components



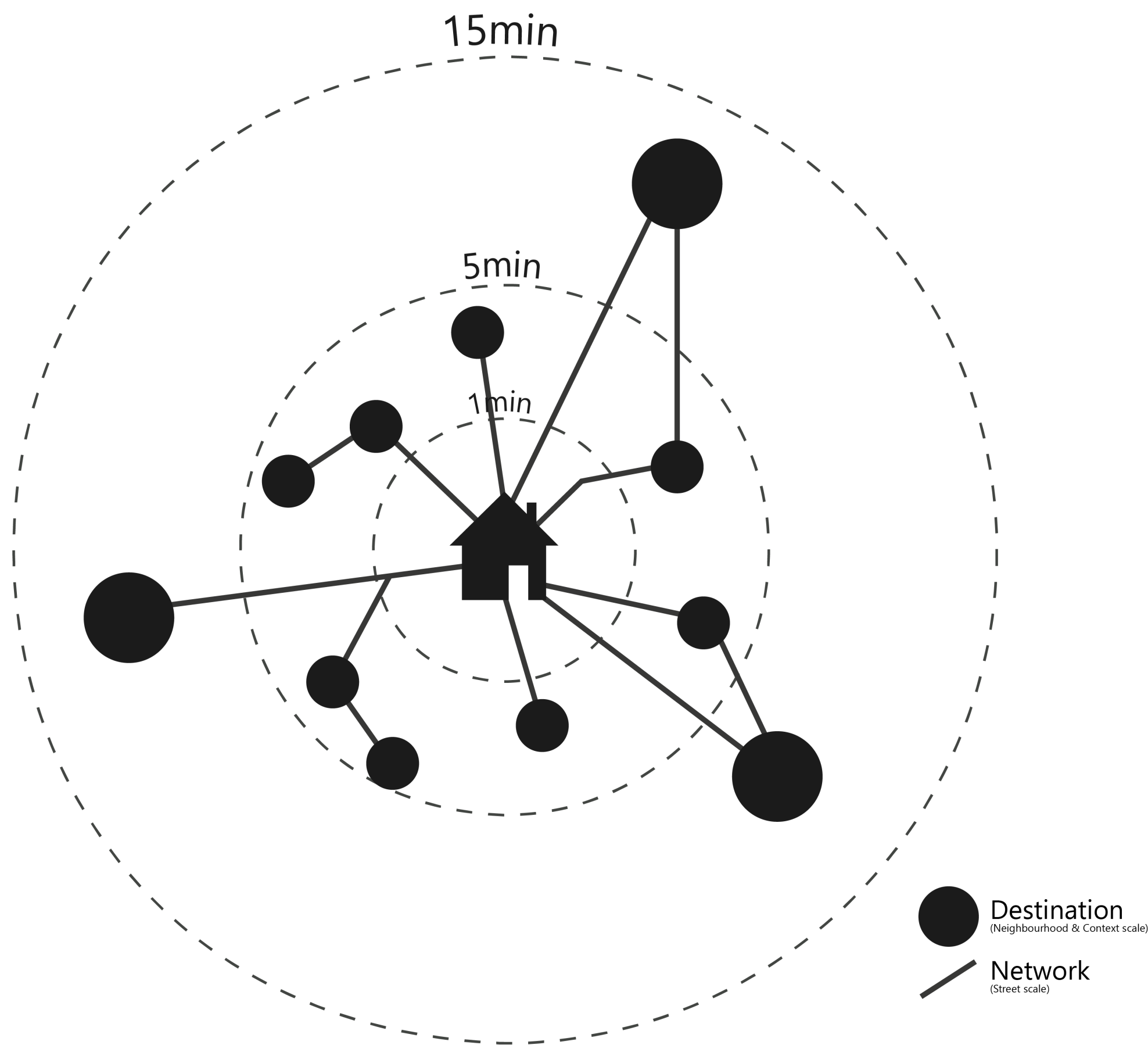
Ecological concept

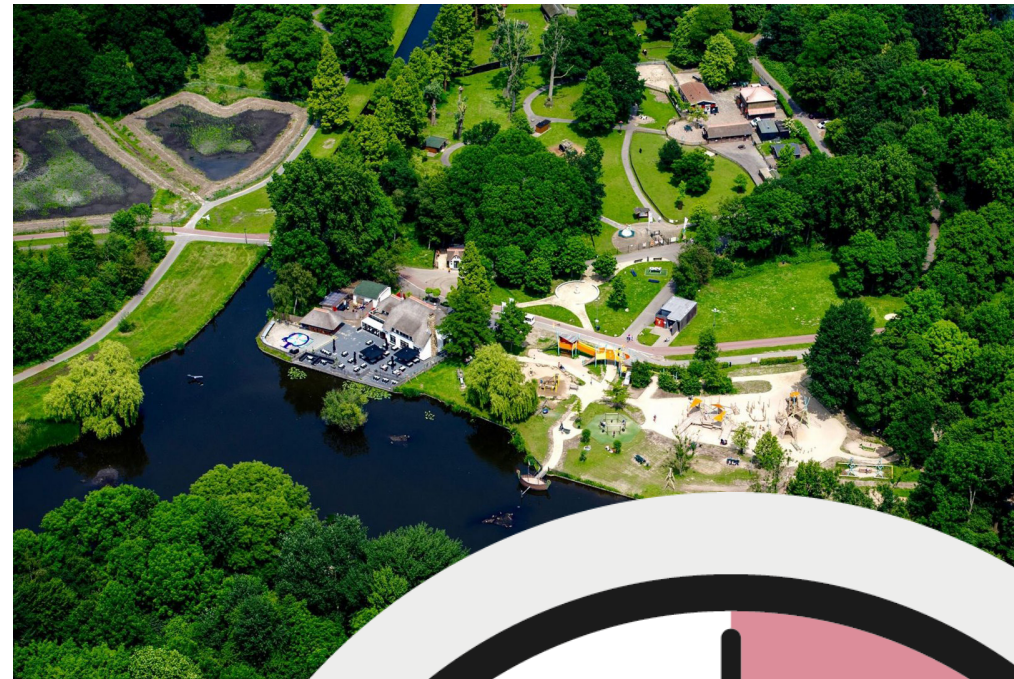


Environmental concept

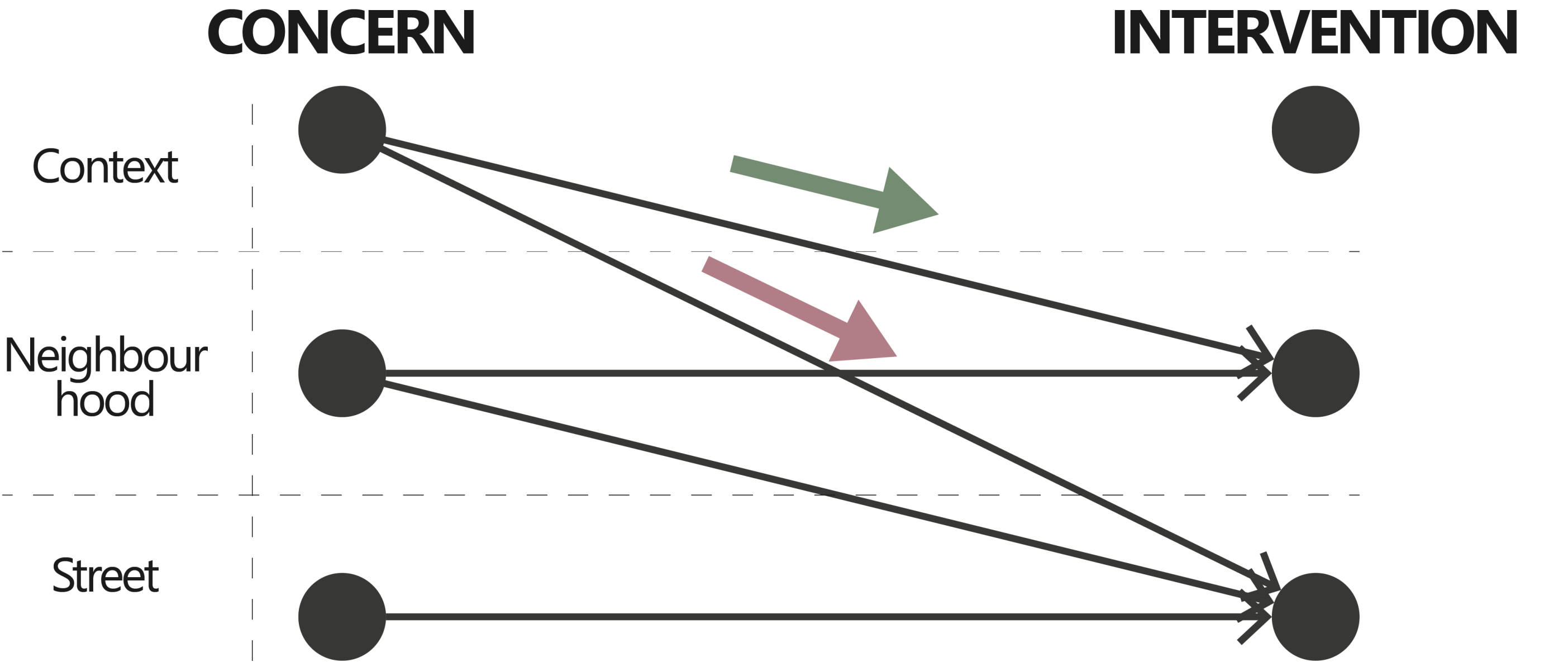


Social concept



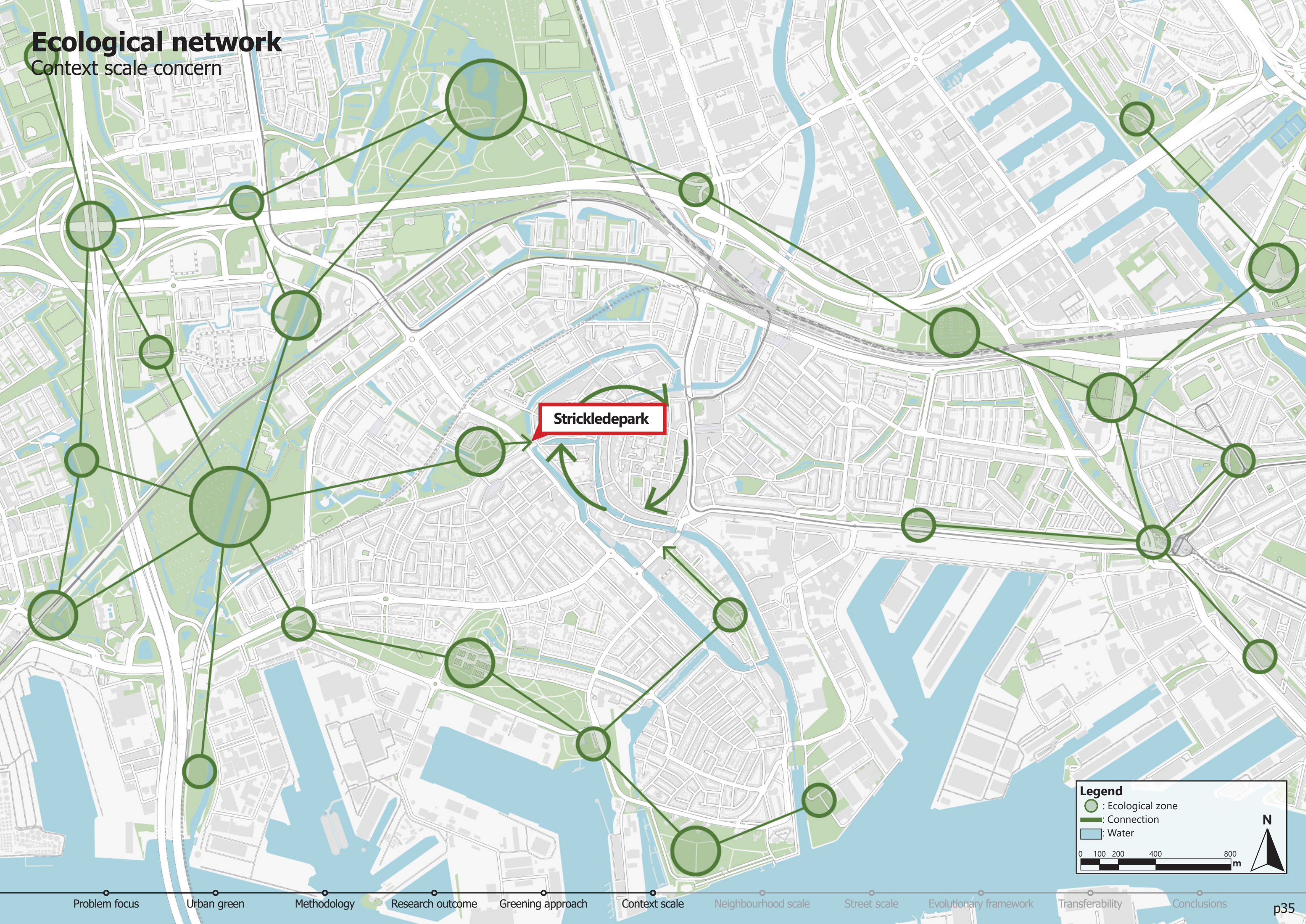


CONTEXT SCALE



Ecological network

Context scale concern



Legend

- : Ecological zone
- : Connection
- : Water

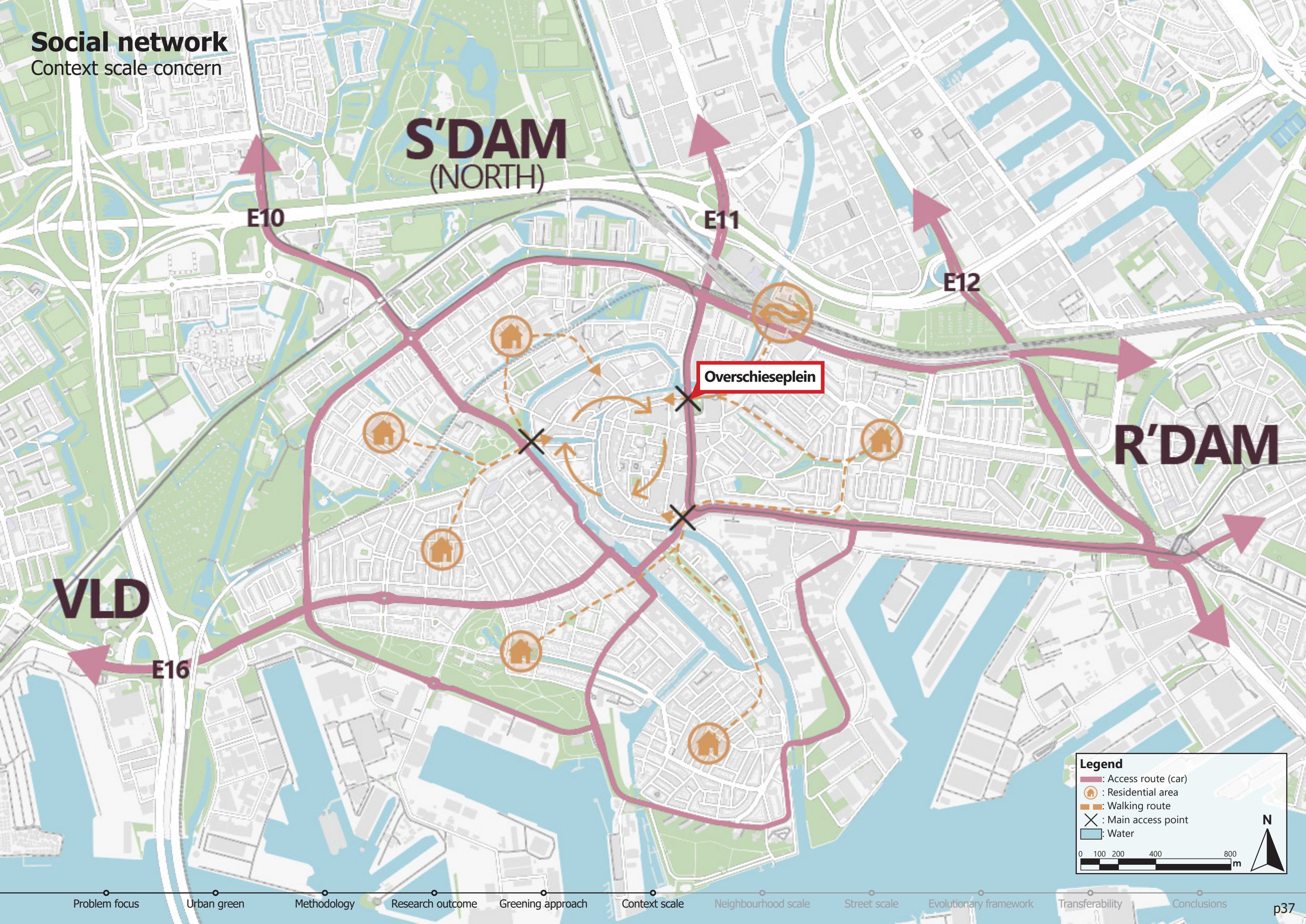
0 100 200 400 800 m

N

Ecological disconnect

Focused on neighbourhood scale





Legend

- Access route (car)
- Residential area
- Walking route
- Main access point
- Water

0 100 200 400 800 m

N

Route to inner city
Focus on street scale



Route to inner city

Focus on street scale





NEIGHBOURHOOD SCALE

Pocket parks

What is it exactly?



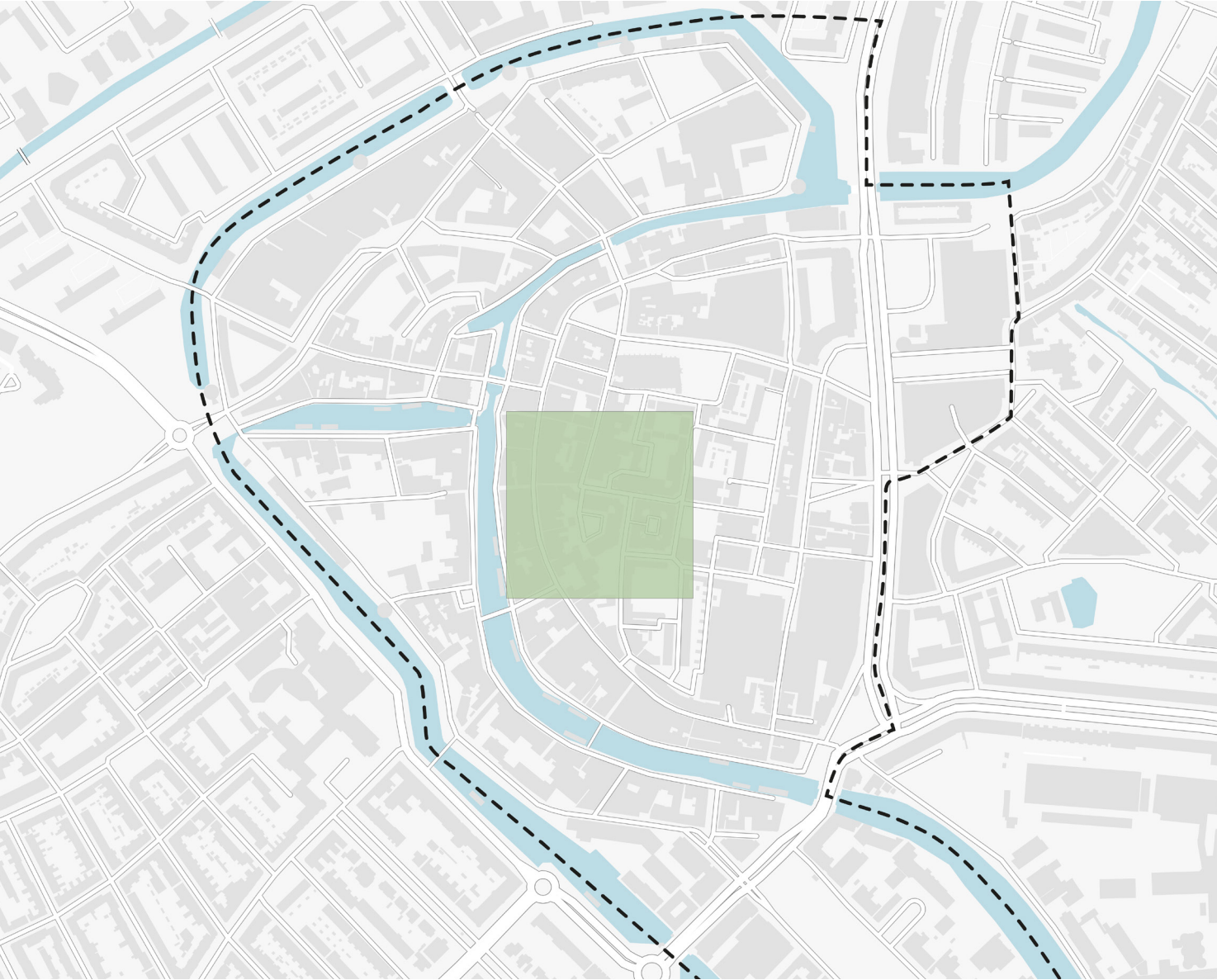
*"Pocket parks can be defined as a '**public urban green space** at a **very small scale**'. As **densification** continues and **green space per capita** is decreasing, these small urban parks are becoming more valuable."*

Pocket parks
Essential qualities

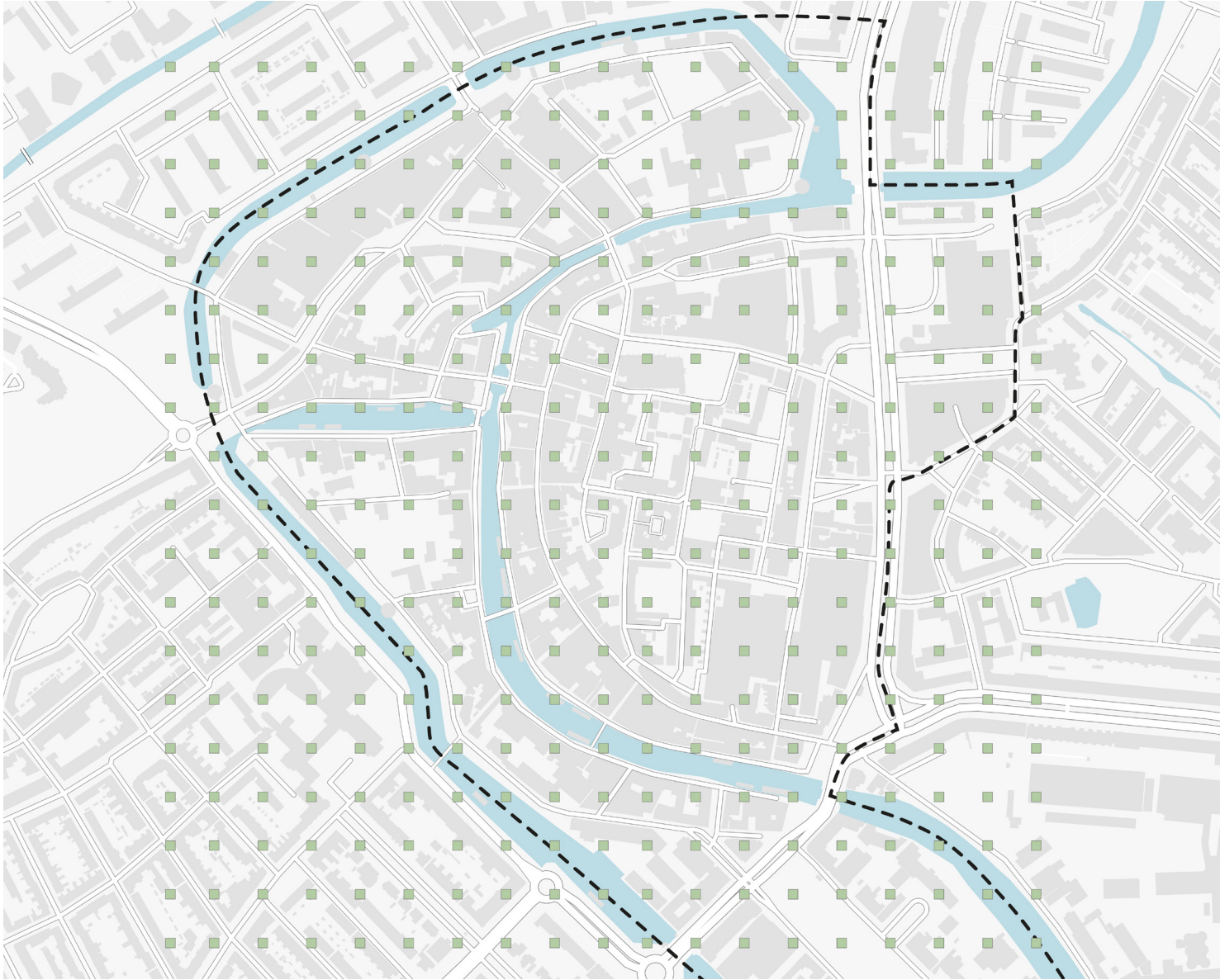


Pocket parks

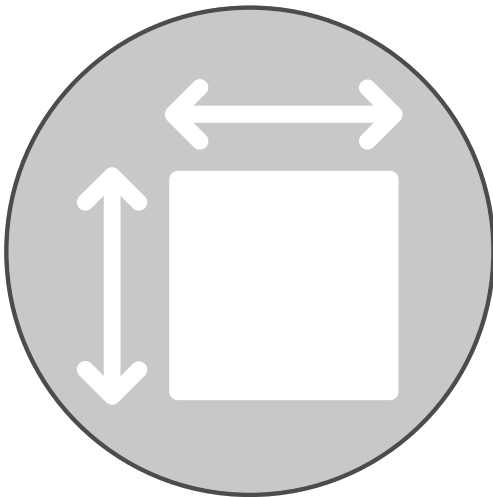
Amount of green space



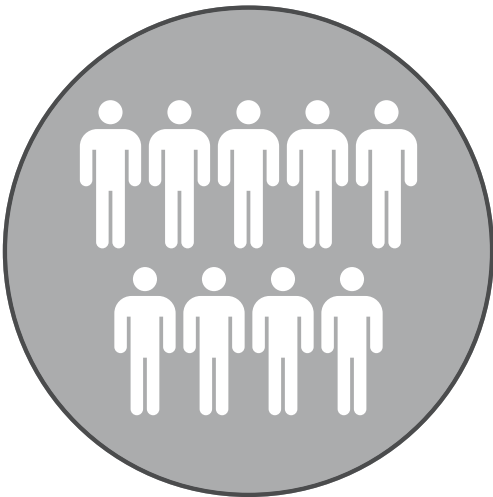
One large green patch (9m²/capita)



Pocket parks of 100m² (9m²/capita)



~9% green surface



1/9th pocket park



Accessible in 5 minutes

Pocket park types
Overview of the five types



Pocket park types

Type 1 - Restoration



RESTORATION

Target audience

- People looking for a quiet space [2]
- People that come alone (or w/ 1 person) [1]
- No playing children

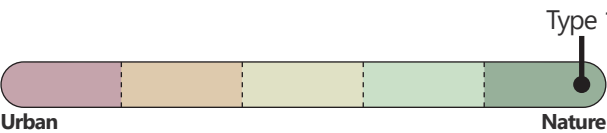
Characteristics

- Enclosed space with 'small pockets' [1]
- Natural sounds (like a fountain) [2]
- No playing equipment
- Calm environment [2]
- Size of 80-100m² or larger [3]

Potential location

- Away from noise sources [2]
- Close to working/residential areas

Level of nature



[1] = Kerishnan & Maruthaveeran, 2021
[2] = Nordh & Østby, 2013
[3] = Nordh et al., 2009a



Pocket park types

Type 2 - Relaxation



RELAXATION

Target audience

- People wanting to relax outside in nature [1]
- Elderly and women [1]
- No playing children

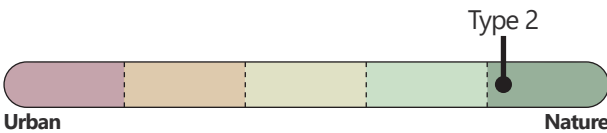
Characteristics

- Colourful vegetation (w/ flowers) [1]
- Enclosed space, semi-open inside [1]
- No playing equipment
- Calm environment [2]
- Size of 80-100m² or larger [3]

Potential location

- Away from noise sources [2]
- Close to residential areas

Level of nature



[1] = Kerishnan & Maruthaveeran, 2021
[2] = Nordh & Østby, 2013
[3] = Nordh et al., 2009a



Pocket park types

Type 3 - Gathering



GATHERING

Target audience

- People looking to socialise outside [1]
- All ages
- No playing children

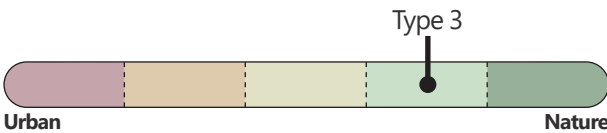
Characteristics

- Semi-enclosed space, open inside [1]
- No playing equipment
- Lively environment [1]
- Space for exercise/small events [1]
- Size of 200-250m² or larger [2]

Potential location

- Close to busy pedestrian areas
- Close to a café/food vendor [1]

Level of nature



[1] = Kerishnan & Maruthaveeran, 2021

[2] = Nordh & Østby, 2013

[3] = Nordh et al., 2009a

Pocket park types

Type 4 - Playing



PLAYING



Target audience

- Children that want to play/socialise outside
- Parents/other people that come along

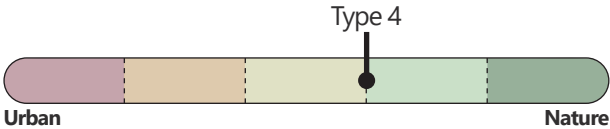
Characteristics

- Semi-enclosed space, open inside [1]
- Playing equipment
- Lively environment [1]
- Open space for different activities [1]
- Size of 200-250m² or larger [2]

Potential location

- Close to busy pedestrian areas
- Close to residential areas with children

Level of nature



[1] = Kershnan & Maruthaveeran, 2021
[2] = North & Ostby, 2013
[3] = Nordh et al., 2009a

Pocket park types

Type 5 - Hospitality



HOSPITALITY

Target audience

- People looking to socialise
- People that want to spend money

Characteristics

- Open space with multiple access routes
- Large amount of furniture (terraces)
- Lively environment
- Size can vary significantly

Potential location

- Close to main pedestrian areas
- Close to landmark(s)

Level of nature



[1] = Kerishnan & Maruthaveeran, 2021
[2] = Nordh & Østby, 2013
[3] = Nordh et al., 2009a

Pocket parks
Distribution guidelines



>330m to similar type parks



Upgrade/Greenify existing



Access from each dwelling



Avoid any unused spaces

POCKET PARK SIMULATION

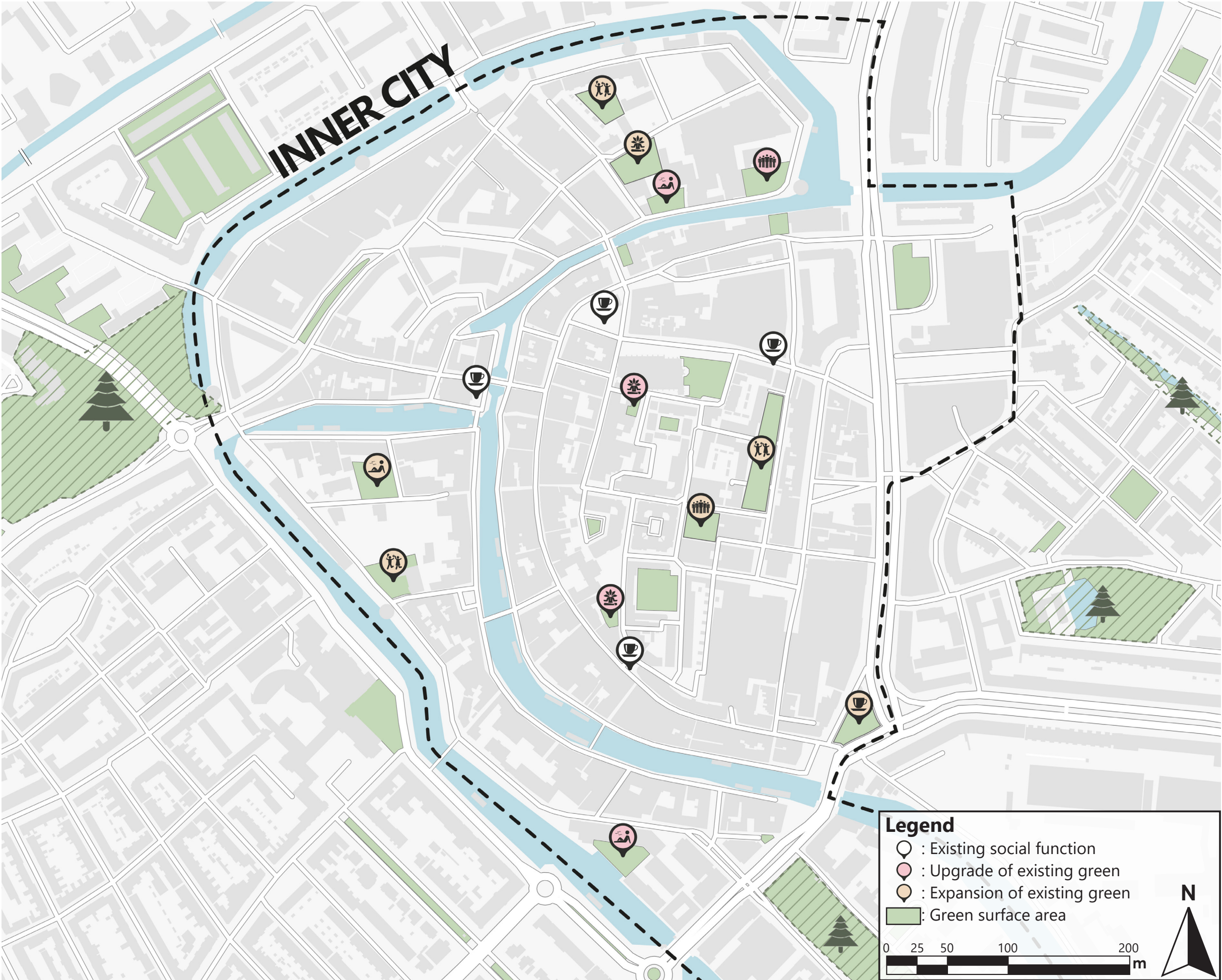
Pocket park simulation

Step 1 - Identifying potential areas



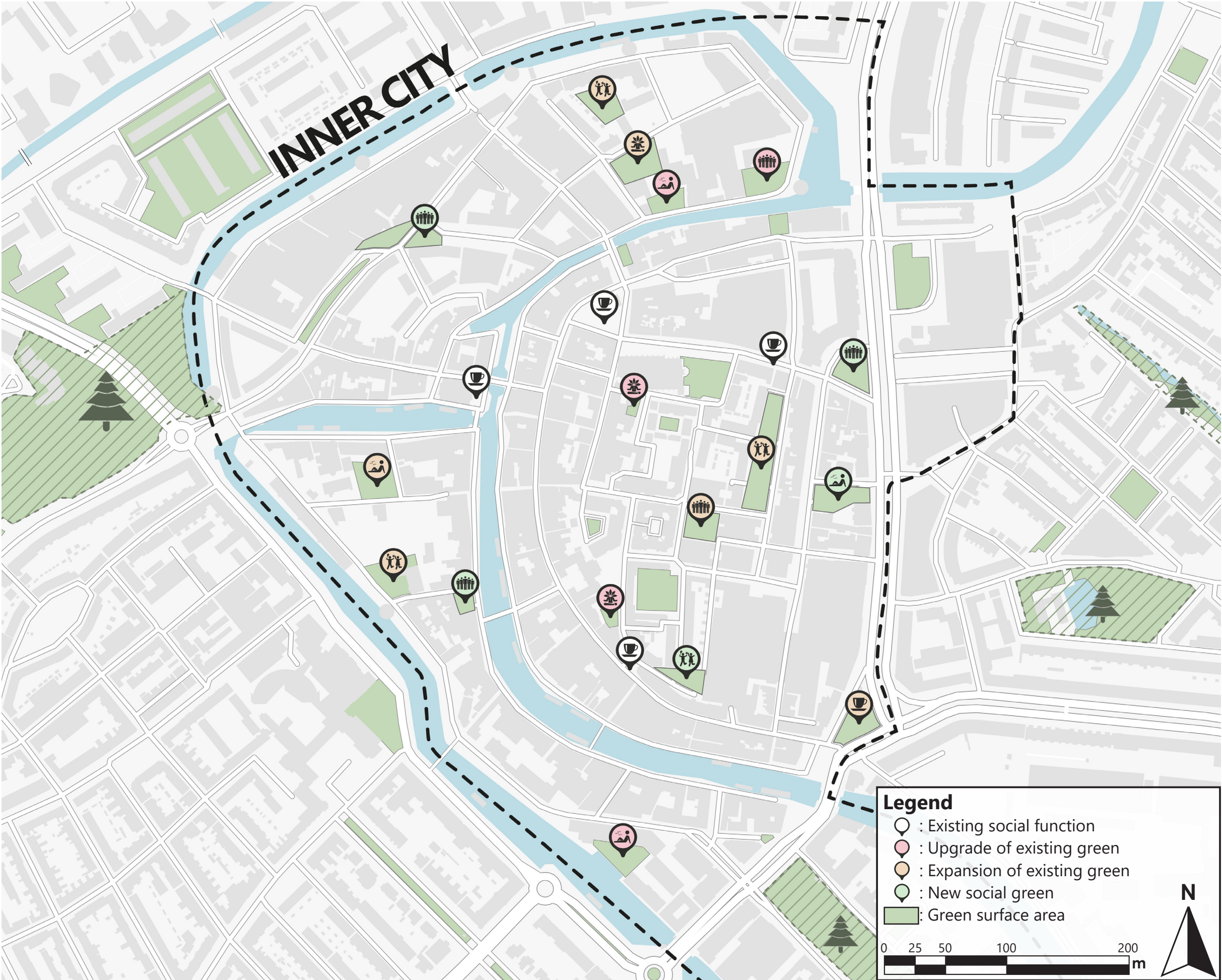
Pocket park simulation

Step 2 - Upgrading/Expanding existing locations



Pocket park simulation

Step 3 - Adding new green spaces



Pocket park simulation

Impression



Pocket park simulation

Step 4 - Completing the ecological network



Pocket park simulation

Essential connections - existing situation



Pocket park simulation

Essential connections - future situation

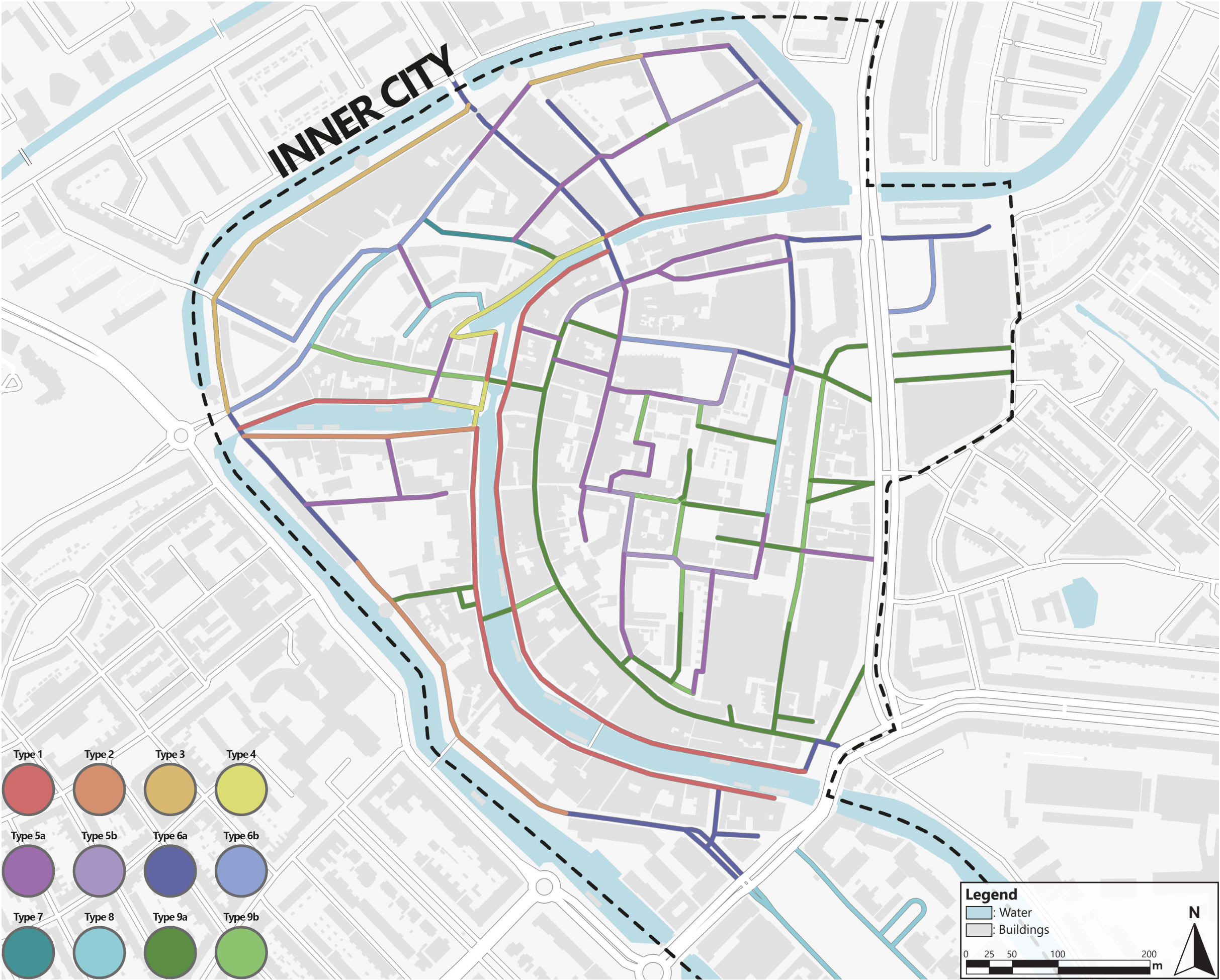




STREET SCALE

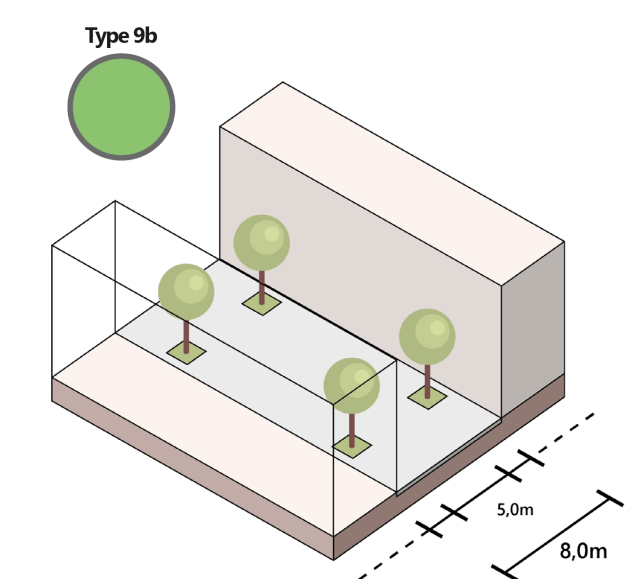
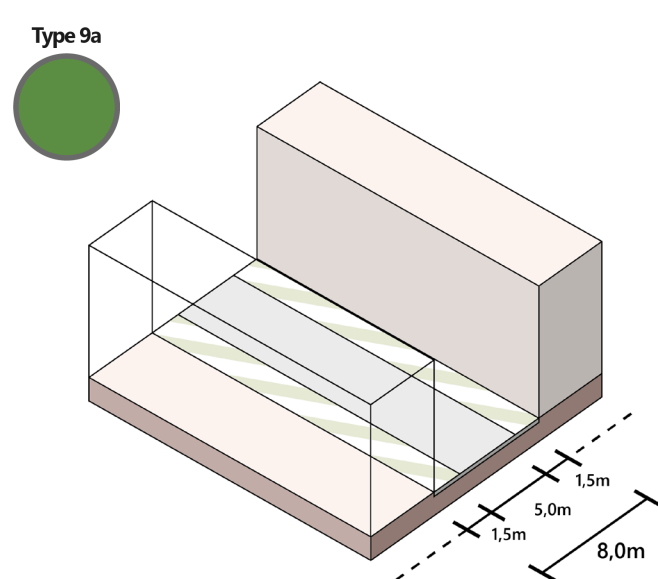
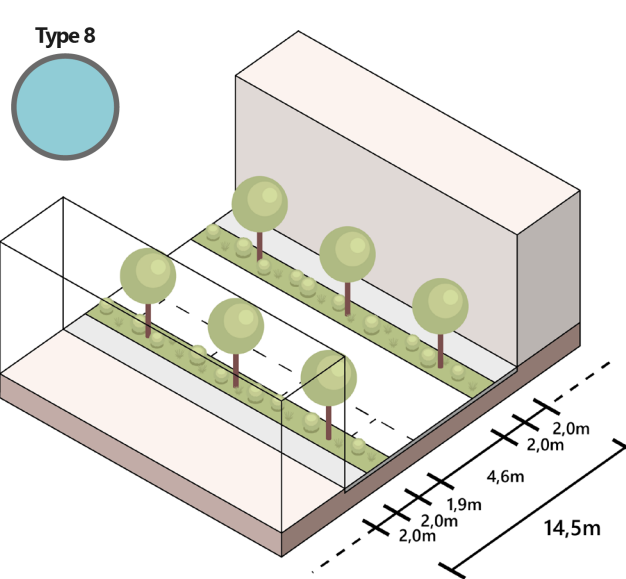
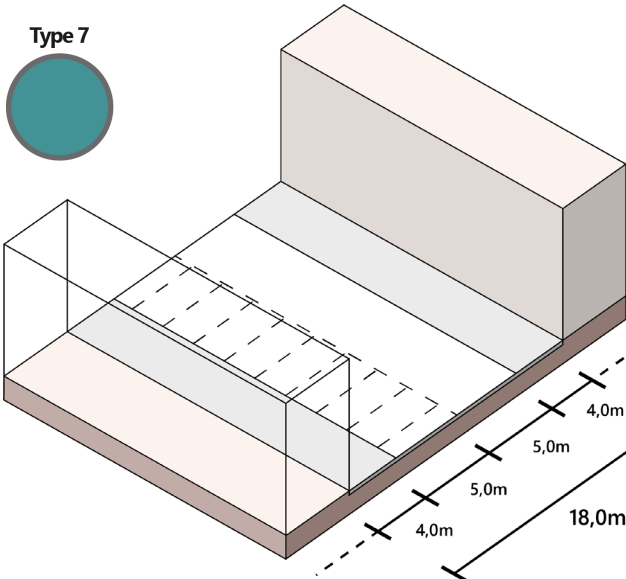
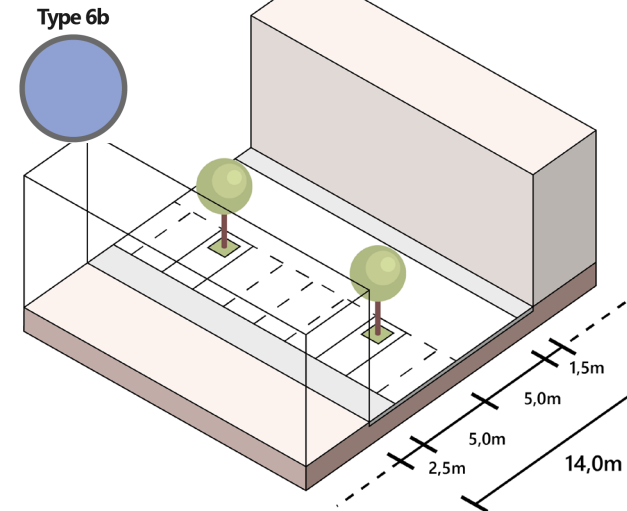
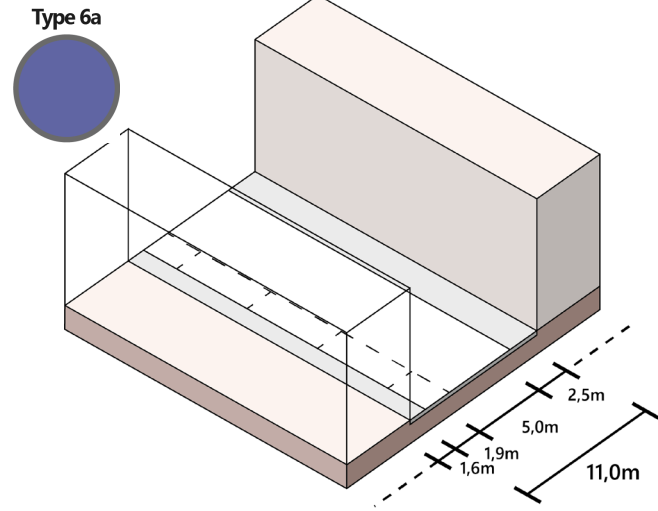
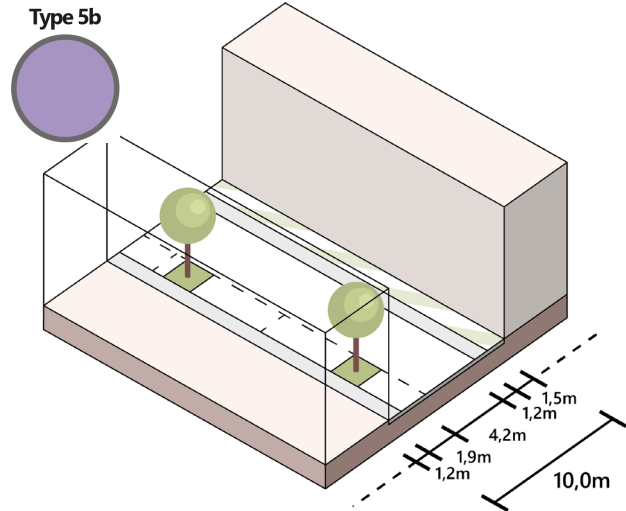
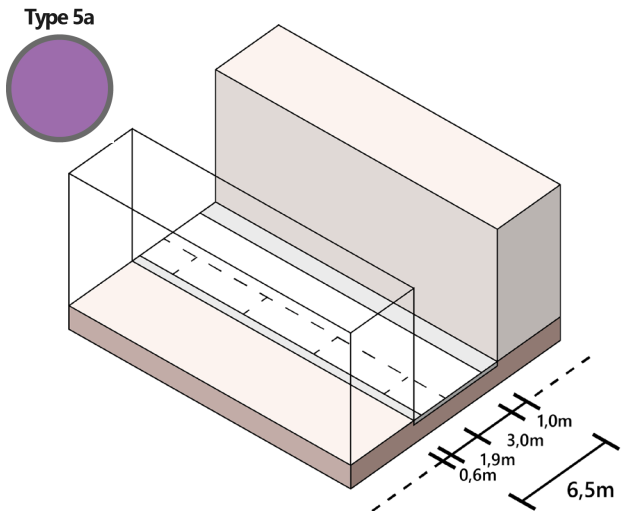
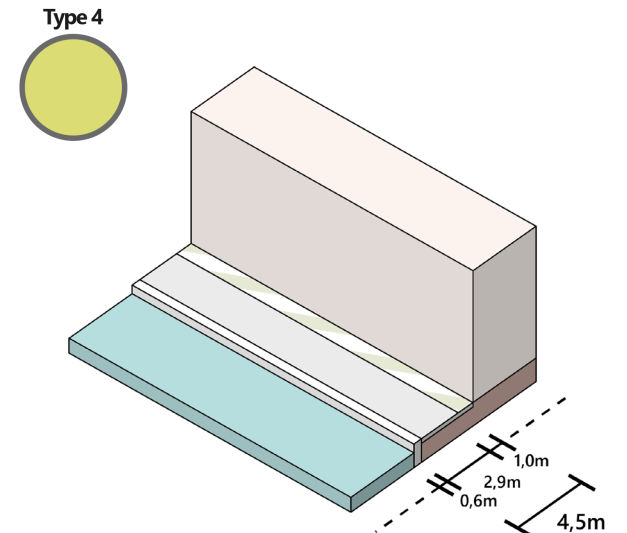
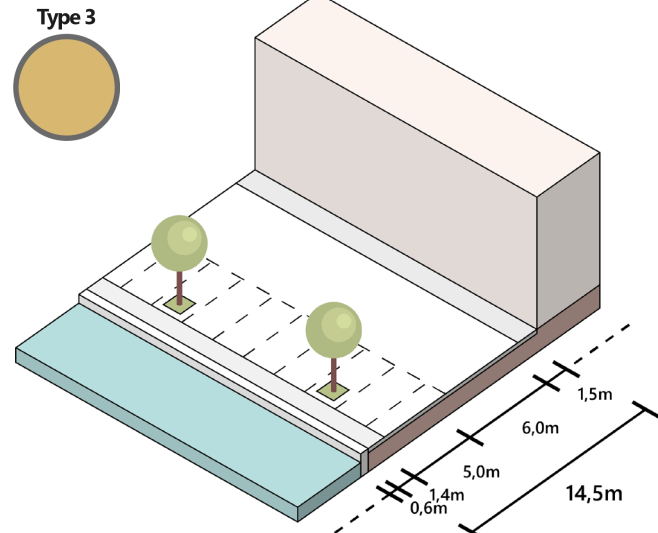
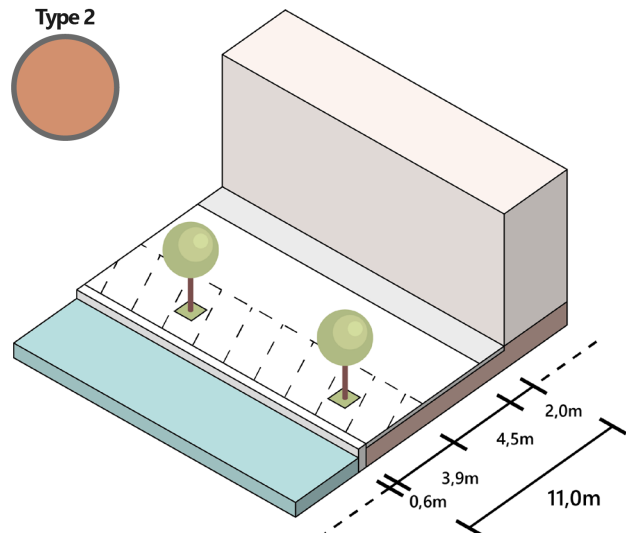
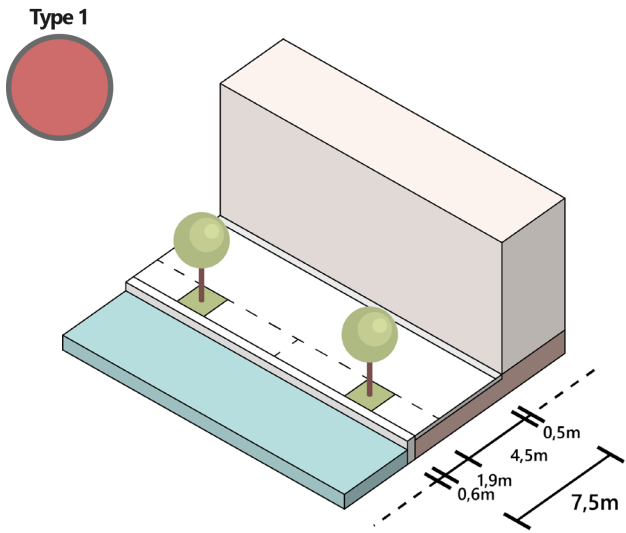
Street typology

Overview map



Street typology

All street types in Schiedam



Evaluation matrix

Social dimension

Social			
Component	Constraint	Score	Explanation
Sidewalk	<1,5m	Low	<p>Sidewalks are an essential component of any street. It promotes opportunities for citizens to connect with their community and creates safer pedestrian environments (Adams et al, n.d.). However, for these benefits to come to fruition, it does need a certain width. The minimum width of any sidewalk is 1,8 metres, of which 1,5 metres should be without any obstruction (Gemeente Leiden, 2013).</p> <p>However, this width does not provide the maximal benefit, because it is not that easy to pass each other on a sidewalk of 1,5 metres wide. As such, the optimal width of the sidewalk is at least 2,5 metres wide (Gemeente Leiden, 2013).</p>
	1,5-2,5m	Medium	
	>2,5m	High	
Separation (from fast traffic)	No separation	Low	<p>A buffer zone can be defined as a barrier between cars and pedestrians. It promotes pedestrian mobility by increasing comfort and safety (Adams et al, n.d.). It can be anything from vegetation to a row of parked cars. In this, the bigger the better, however, a minimum size of 0,6 meters has been established, as that will provide enough distance to improve safety. Streets without separation between the car and pedestrians on the other hand often feel significantly less safe, decreasing pedestrian mobility (Adams et al, n.d.).</p> <p>Streets without car access are much more enticing for people to visit, as they feel safer here. Furthermore, car-free streets "have the potential to promote socially inclusive streets" (Rainwater & Rivett, 2020). Streets where the pedestrian is the main user in terms of hierarchy also fall under this category.</p>
	Buffer of >0,6m	Medium	
	No car access	High	
Shared space*	<4,5m	Low	<p>While the low maximum speed (30km/h) of shared streets should make it possible for slow and fast traffic to coexist safely, the speed limit is very regularly exceeded (Verkade, 2021). This has even been rated as the number one 'public annoyance' in the Netherlands (Verkade, 2021). As a result, these shared streets are often perceived as less safe than intended.</p> <p>To establish an actual safe width for shared streets, the minimal width of a one-lane car street – which is 3 metres (Peeters, 1998) – is added to the sidewalk widths found at the top of this diagram. By adding the necessary space for both cars and pedestrians together, it can be assured that enough space is available for them to coexist.</p>
	4,5m-5,5m	Medium	
	>5,5m	High	
Extra facilities	No facilities	Low	<p>"On average, pedestrians choose to walk around 10% farther than their shortest path" (MIT Senseable City Lab, 2021). Outside of the aforementioned components, street facilities also play a crucial role here. People tend to prioritise streets that make the walk seem more enticing - i.e. something to look at. For example, walking alongside a canal or green strip is generally preferred over a street full of cars.</p> <p>Furthermore, street furniture provides pedestrians with the feeling that they are welcome, making the street a more comfortable place to be (SF Better Streets, 2019). Additionally, it adds vitality to the pedestrian realm.</p>
	View or Street furniture	Medium	
	View & Street furniture	High	

Evaluation matrix

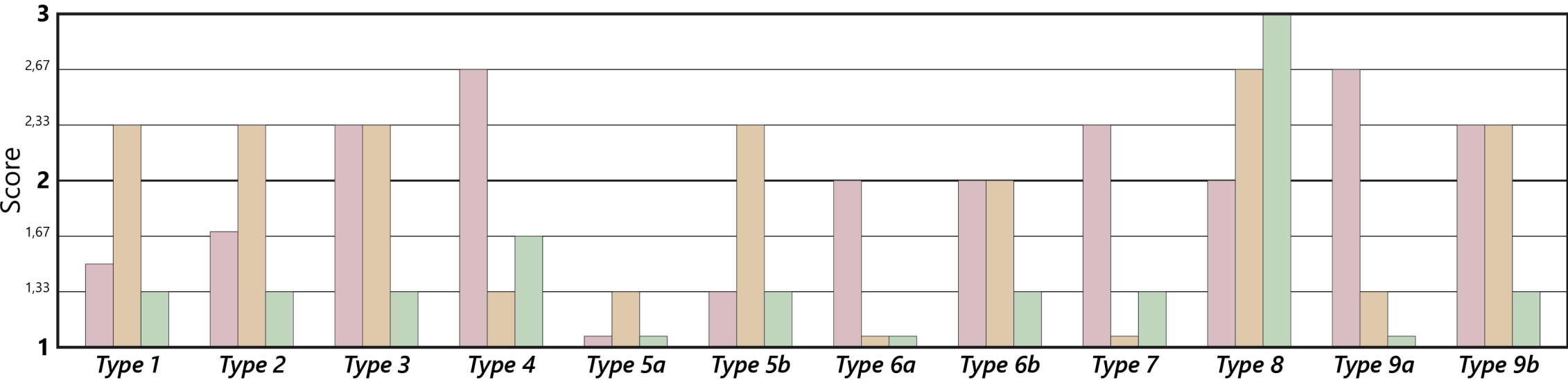
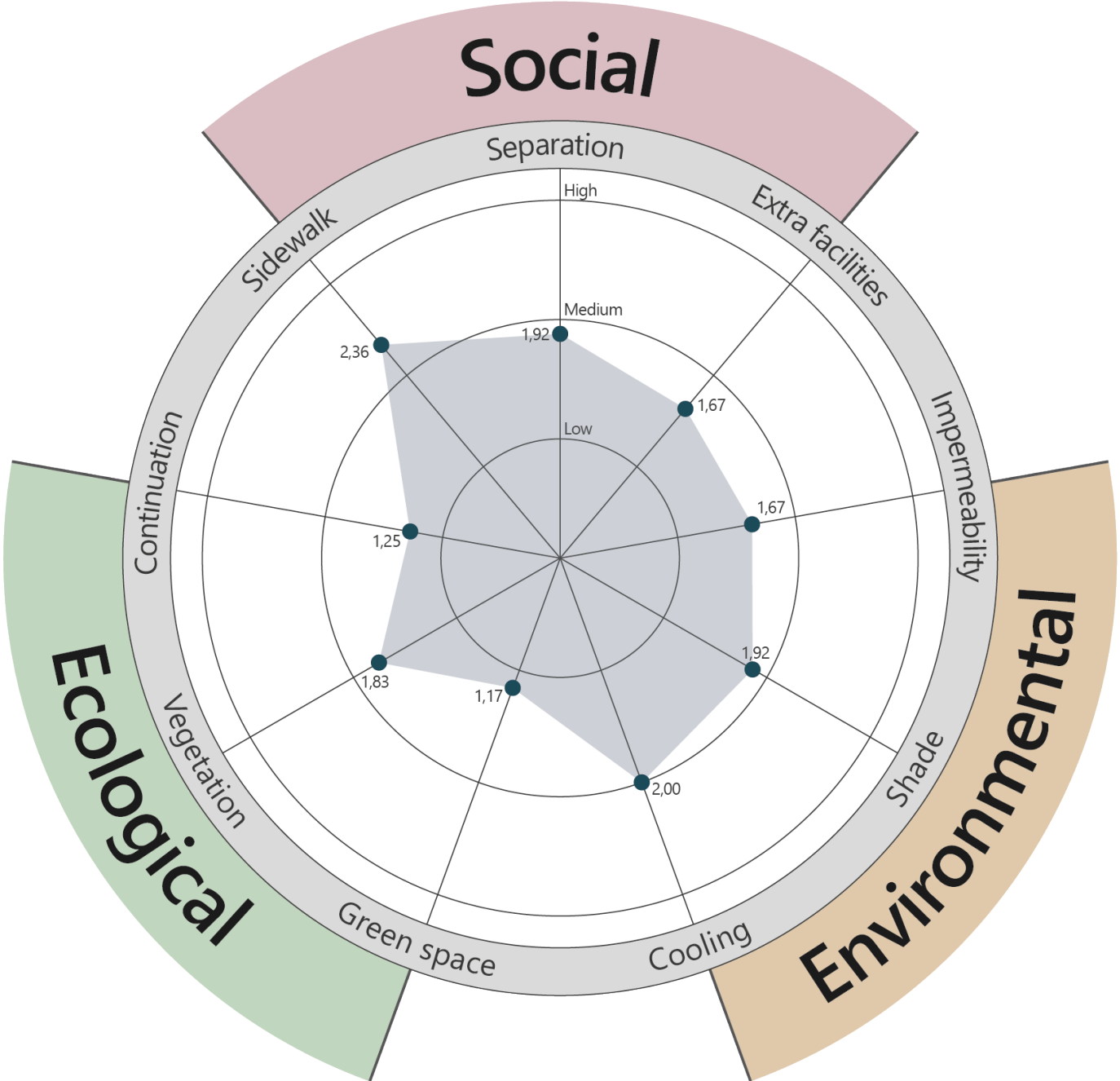
Environmental and ecological dimension

Environmental	
Component	Constraint
Impermeability	100%
	85-100%
	<85%
Shade	Wide street, no trees
	Narrow street / Wide street, trees
	Narrow street, trees / Wide street, many trees
Cooling	No cooling
	Some vegetation / Canal
	Dense vegetation / Some vegetation, canal

Ecological	
Component	Constraint
Green surface	0%
	0-15%
	>15%
Vegetation	No vegetation
	Some trees/plants
	Diverse vegetation
Continuation	No continuation
	Semi-continued
	Green strip

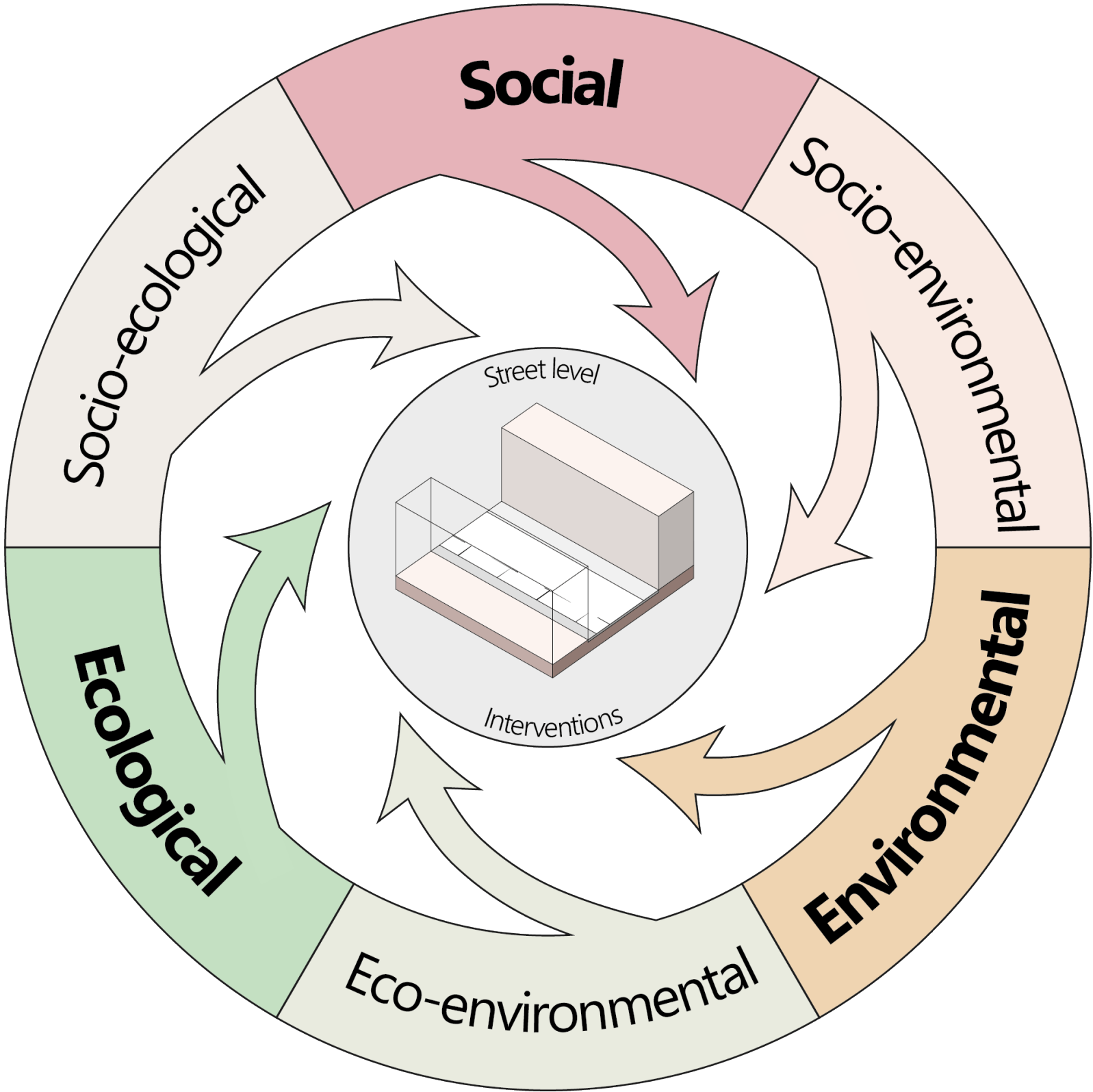
Evaluation matrix

Results of existing street types




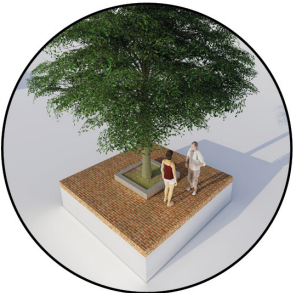



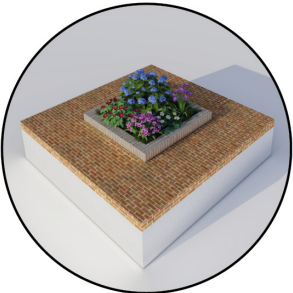

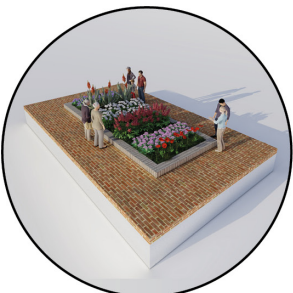
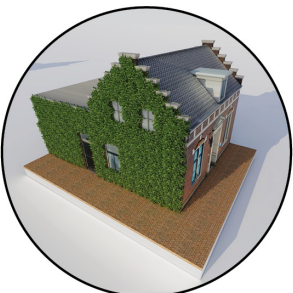

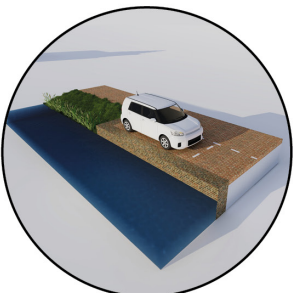
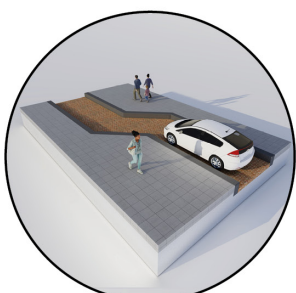
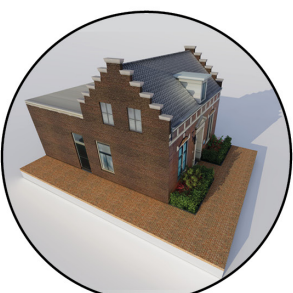
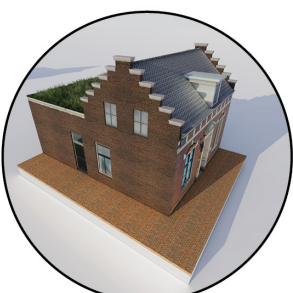


Streetscape development

Domains of the interventions



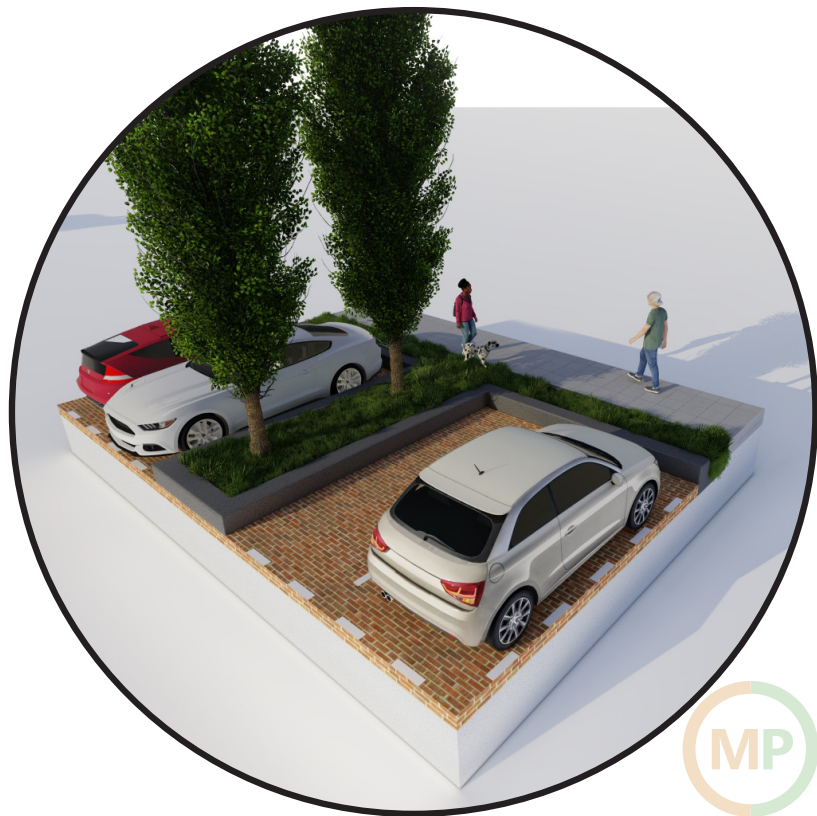
Streetscape development

Intervention toolbox

Social	Socio-Environmental	Environmental	Eco-Environmental	Ecological	Socio-Ecological
 <p>PUBLIC FURNITURE</p> <ul style="list-style-type: none"> • 1/2 benches (w/ optional trash can) • In places with a view (water, green, etc.) • In areas/streets with open character • Not right next to parked cars • Not in the way of traffic flows 	 <p>PLACE WITH SHADE</p> <ul style="list-style-type: none"> • A tree in place without shade • Next to walking route • In areas with limited shade from buildings • Not right next to parked cars • Should be easily accessible to stand underneath 	 <p>PERMEABLE PAVEMENT</p> <ul style="list-style-type: none"> • Alternative if no space is available for green surface area • Areas with most urgent flooding risk • In parking spaces • In combination with street renewals 	 <p>MAXIMISE PATCHES</p> <ul style="list-style-type: none"> • At existing trees/bushes/etc • Increase patch size to maximum • Not in the way of current functions • In streets that currently have some, but very limited green space 	 <p>DIVERSITY AT TREE</p> <ul style="list-style-type: none"> • More diverse plants at trees and small green patches • At every tree/patch • Can be in combination with other green ones • Should not block view at important intersections 	 <p>FLOWERS (COLOURFUL)</p> <ul style="list-style-type: none"> • In combination with year-round plant species • In visible places from pedestrian routes • Not right next to parked cars • Scattered throughout the neighbourhood
 <p>WIDENED SIDEWALK</p> <ul style="list-style-type: none"> • Bulging of sidewalk by removing a parking spot • Safe area to stop and talk • Outside main walking route • In combination with (small) barrier to fast traffic • Not in the way of traffic flows 	 <p>SHARED GARDEN</p> <ul style="list-style-type: none"> • Centrally located in a neighbourhood • In well accessible places without car access • With multiple access routes • In cooperation with local residents • Not in the way of traffic flows 	 <p>GREEN FACADES</p> <ul style="list-style-type: none"> • In streets where green groundspace is not viable • Not on monuments/main identity zone • Limited to 20% of all buildings in a street • Should be used as a last option 	 <p>GREEN IN EMPTY SPACES</p> <ul style="list-style-type: none"> • Green surface area in empty 'rest spaces' • Not in the way of traffic routes • In streets lacking ecological/environmental value • In combination with diverse vegetation • Inaccessible for people 	 <p>GREEN EMBANKMENT</p> <ul style="list-style-type: none"> • Removal of car parking to add green alongside the canal • Not in main identity zone • Should connect to other green • Not in the way of traffic flows 	
 <p>CHANGE STREET PRIORITY</p> <ul style="list-style-type: none"> • From car to pedestrian first • Not in shared space streets • In streets with currently insufficient sidewalks • Not in main traffic routes • In combination with parking space reduction 		 <p>FRONT GARDENS</p> <ul style="list-style-type: none"> • Small front gardens with green requirement • In areas with limited street width • Introduces semi-private transition area • Not right next to parked cars • Not in the way of traffic flows 	 <p>GREEN ROOFS</p> <ul style="list-style-type: none"> • Green space on existing flat roofs • In areas with worst microclimate • Areas with most urgent flooding risk • Used in moderation • In combination with building renewals 		
			 <p>ROW OF TREES</p> <ul style="list-style-type: none"> • Adds some level of nature • Placed alongside roads • Not most effective due to lack of green space • Used in areas where groundspace is limited • Use in order to provide shade 		 <p>GREEN STRIP</p> <ul style="list-style-type: none"> • Separating slow and fast traffic • Continuous, with diverse vegetation • In streets with sufficient street width • Inaccessible for people • In combination with 1,5m+ sidewalk width
					<p>All three domains</p>

Streetscape development

Example of domain eco-environmental



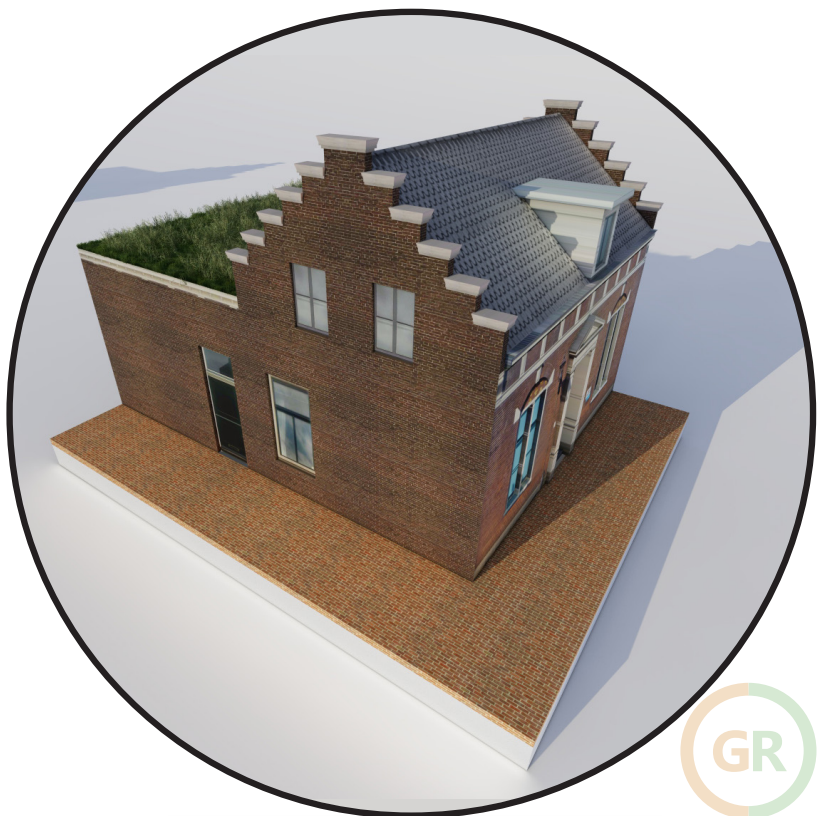
Maximise Patches



Row of Trees



Green in Empty Spaces

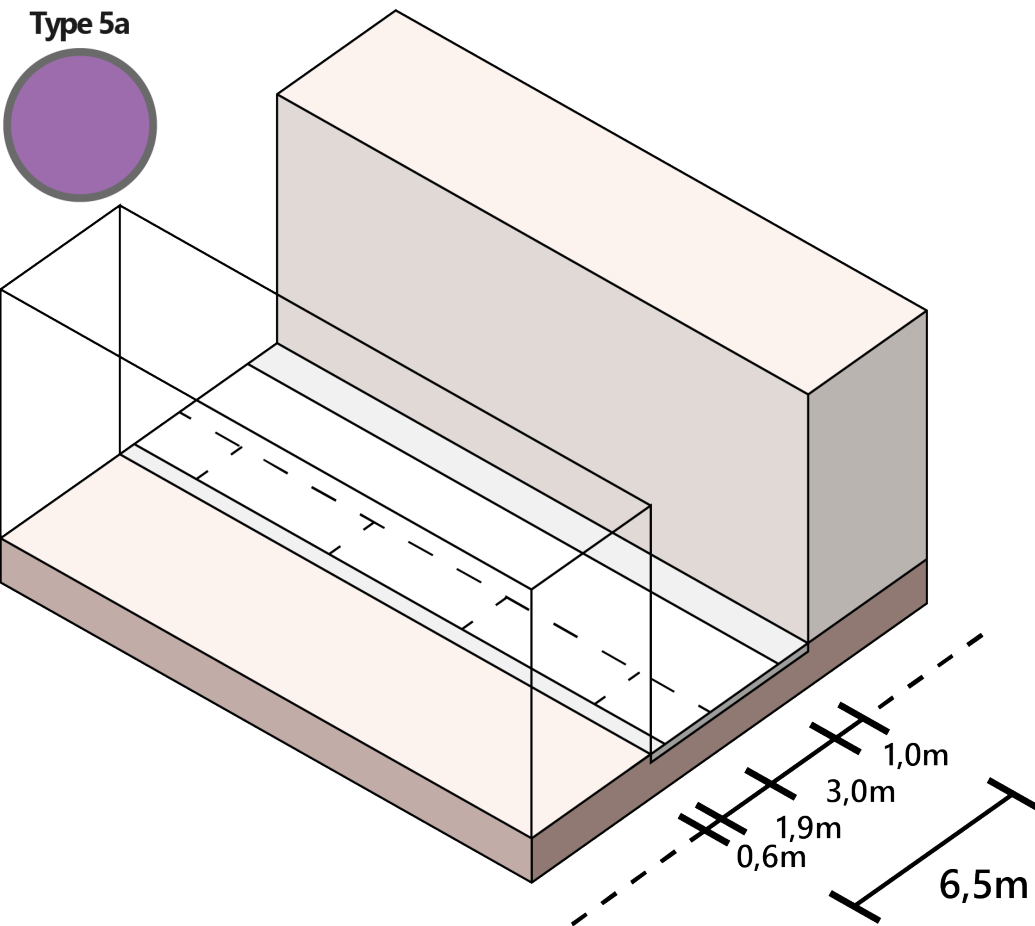


Green Roofs

STREET SIMULATION





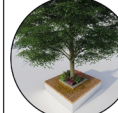
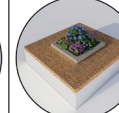
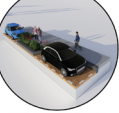

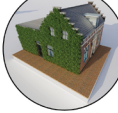

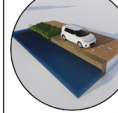





Development simulation

Location of selected streetscape



Development simulation

Evaluation and potential development options

Social	Socio-Environmental	Environmental	Eco-Environmental	Ecological	Socio-Ecological
 <p>PUBLIC FURNITURE</p> <ul style="list-style-type: none">• 100 benches (not optional) for cars• 100 benches (not optional) for bikes• 100 benches (not optional) for pedestrians• 100 benches (not optional) for dogs• 100 benches (not optional) for children• 100 benches (not optional) for elderly• 100 benches (not optional) for disabled• 100 benches (not optional) for all	 <p>PLACE WITH SHADE</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>PERMEABLE PAVEMENT</p> <ul style="list-style-type: none">• Alternative if no space is available for green• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>MAXIMISE PATCHES</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>DIVERSITY AT TREE</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>FLOWERS (COLOURFUL)</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade
 <p>WIDENED SIDEWALK</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>SHARED GARDEN</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>GREEN FACADES</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>GREEN IN EMPTY SPACES</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>GREEN EMBANKMENT</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	
 <p>CHANGE STREET PRIORITY</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade		 <p>FRONT GARDENS</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade	 <p>GREEN ROOFS</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade		
			 <p>ROW OF TREES</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade		 <p>GREEN STRIP</p> <ul style="list-style-type: none">• A tree in place without shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade• A tree in place with shade

Input

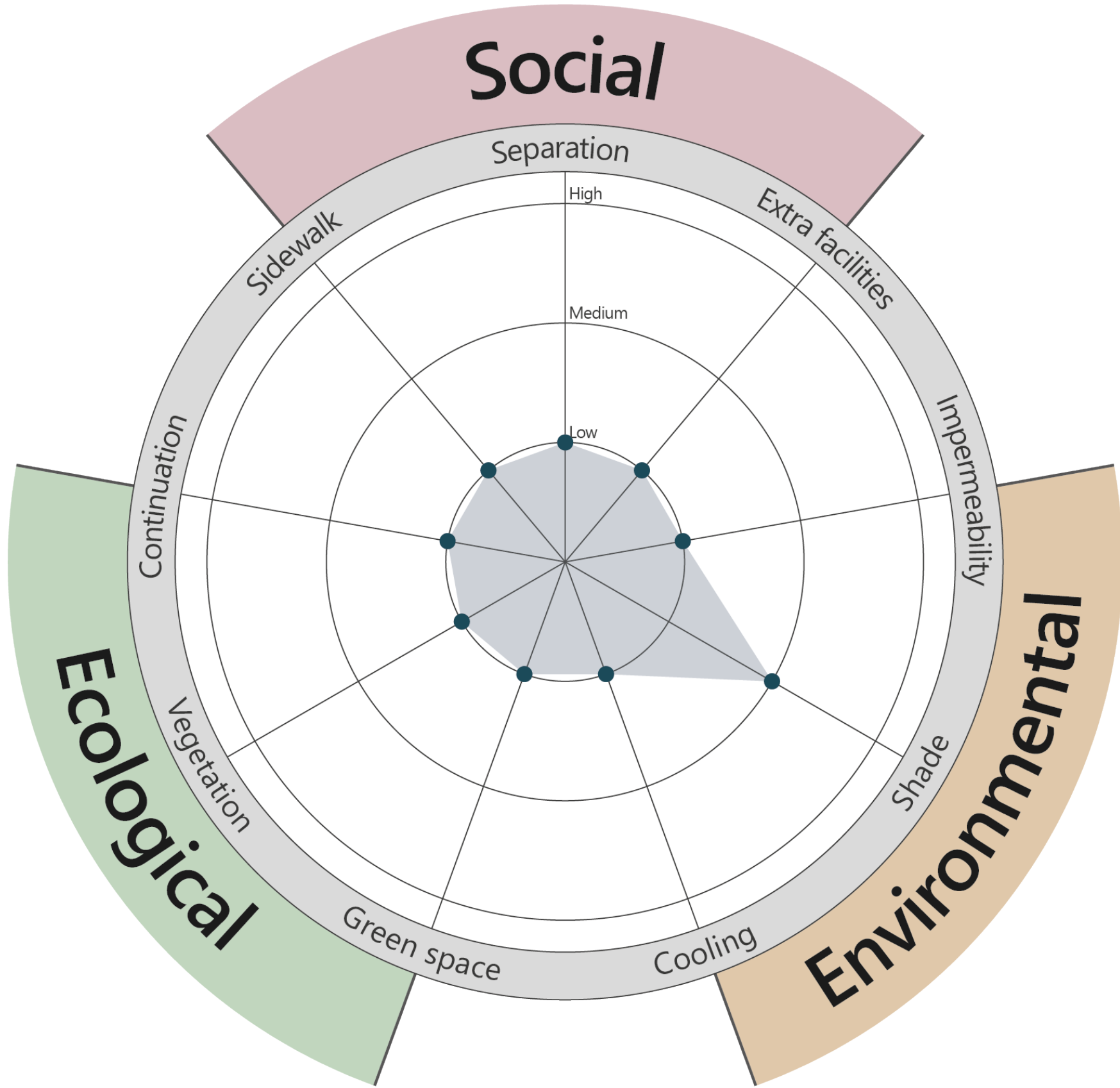
Output

Primary tools

- WS** Widened sidewalk
- PP** Permeable pavement
- GF** Green facades
- ES** Green in empty spaces
- GR** Green roofs

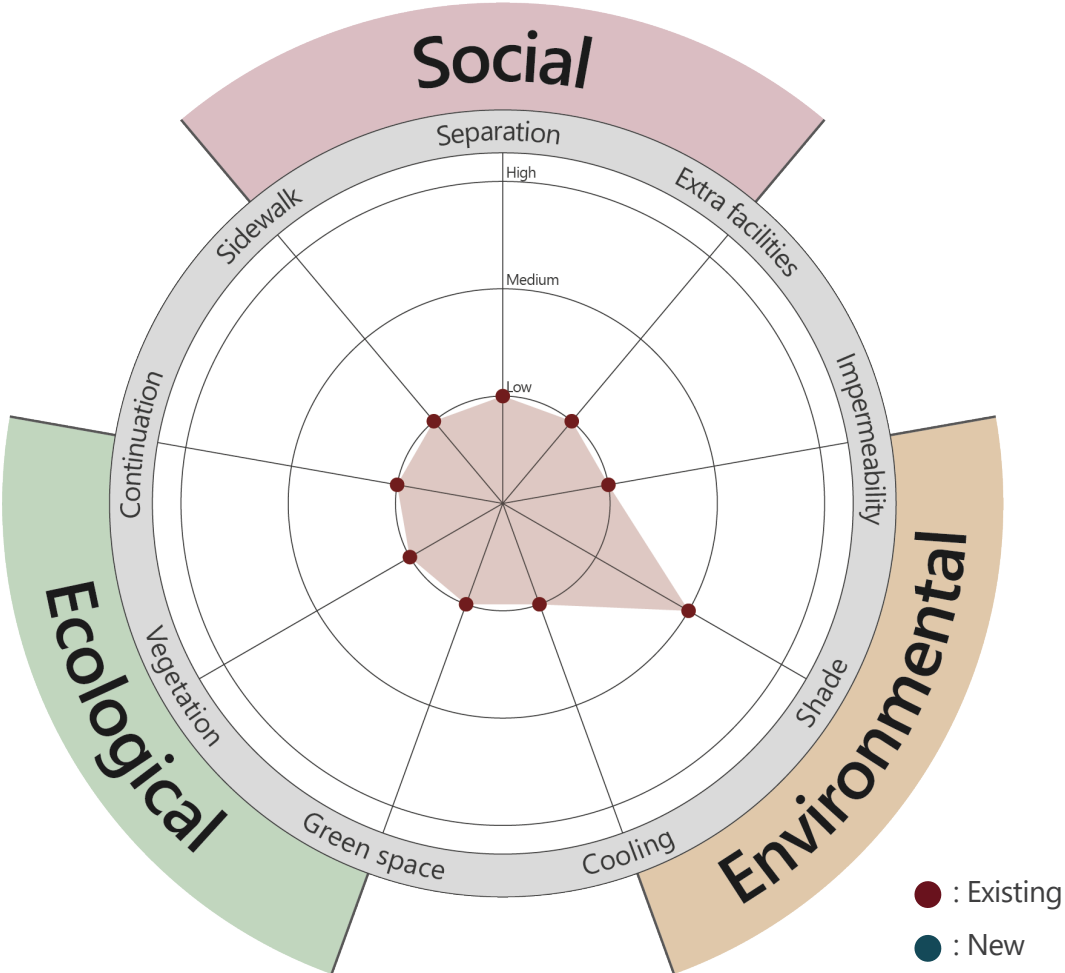
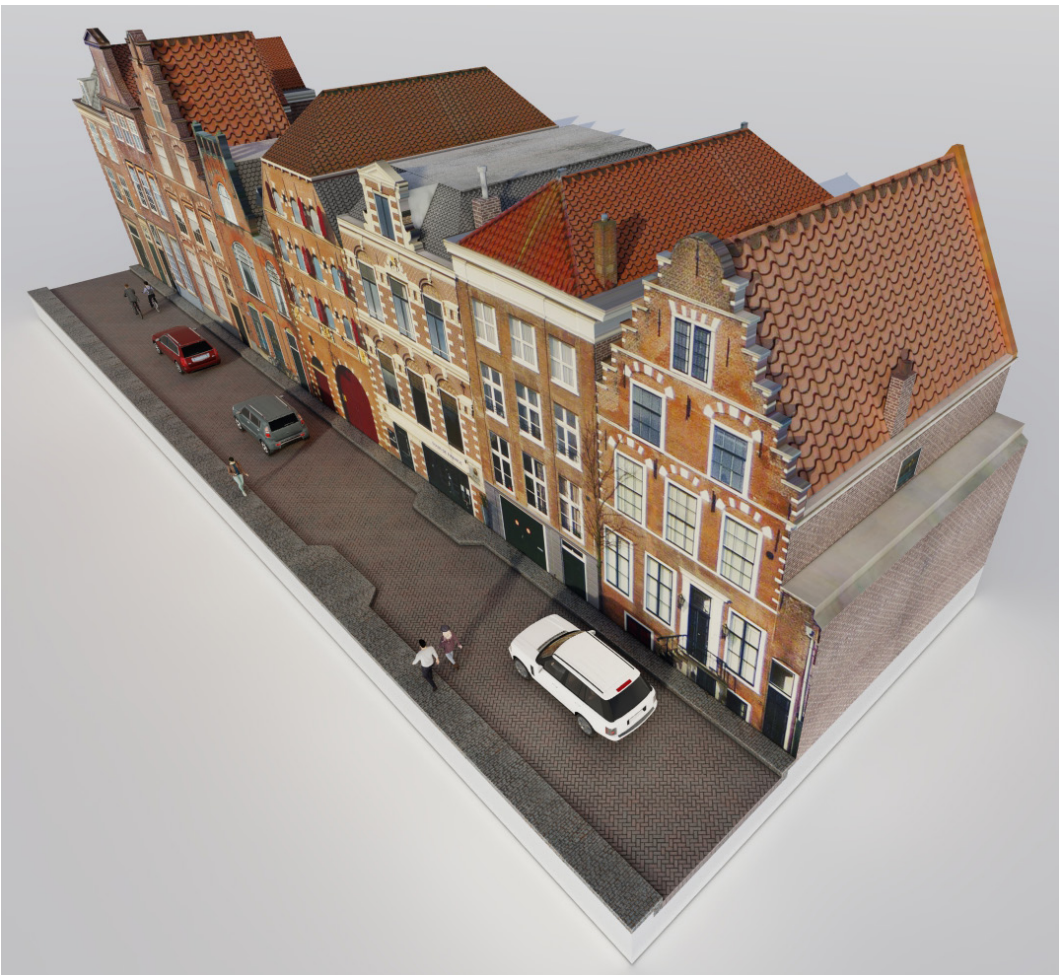
Secondary tools

- SP** Change street priority
- RT** Row of trees
- FC** Flowers (colourful)
- GS** Green strip



Development alternatives

Existing situation

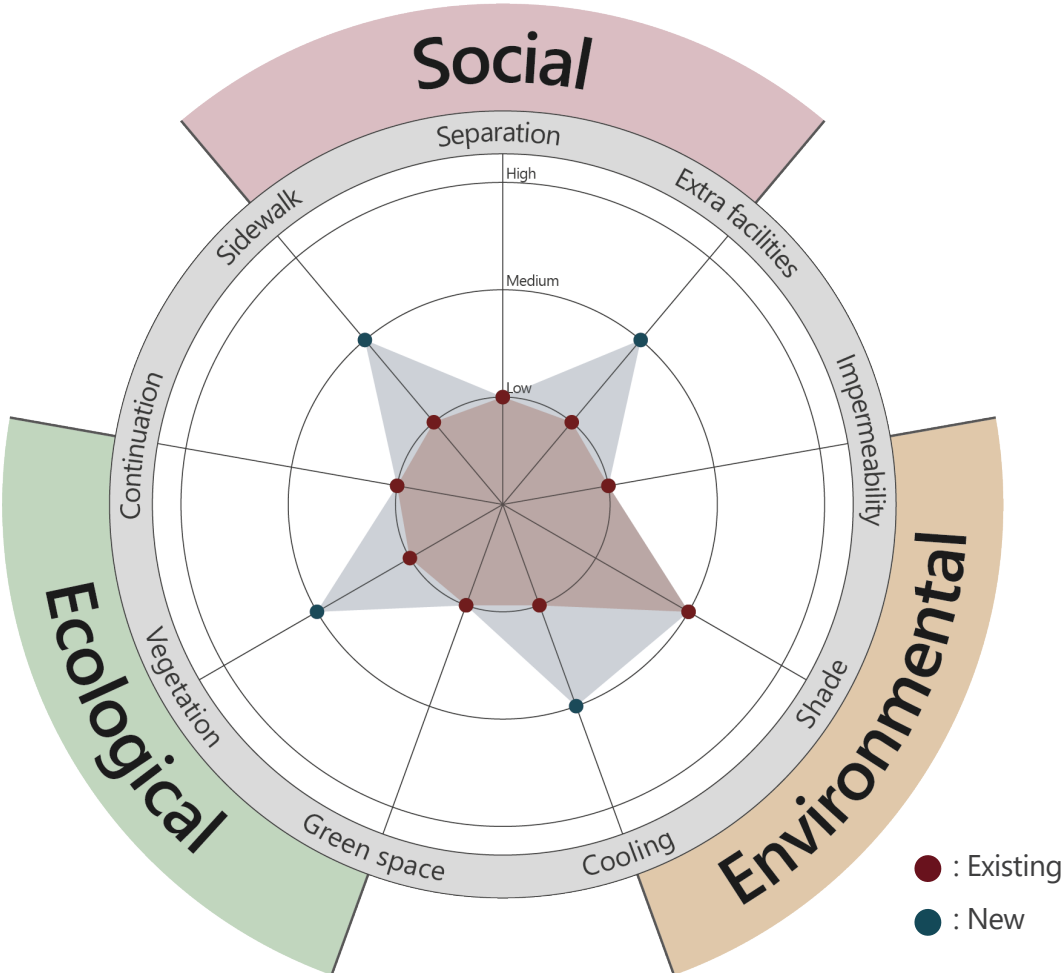


Development alternatives

Alternative 1 (Minimalist)

Tools used

- WS** Widened sidewalk
- GF** Green facades
- FC** Flowers (colourful)

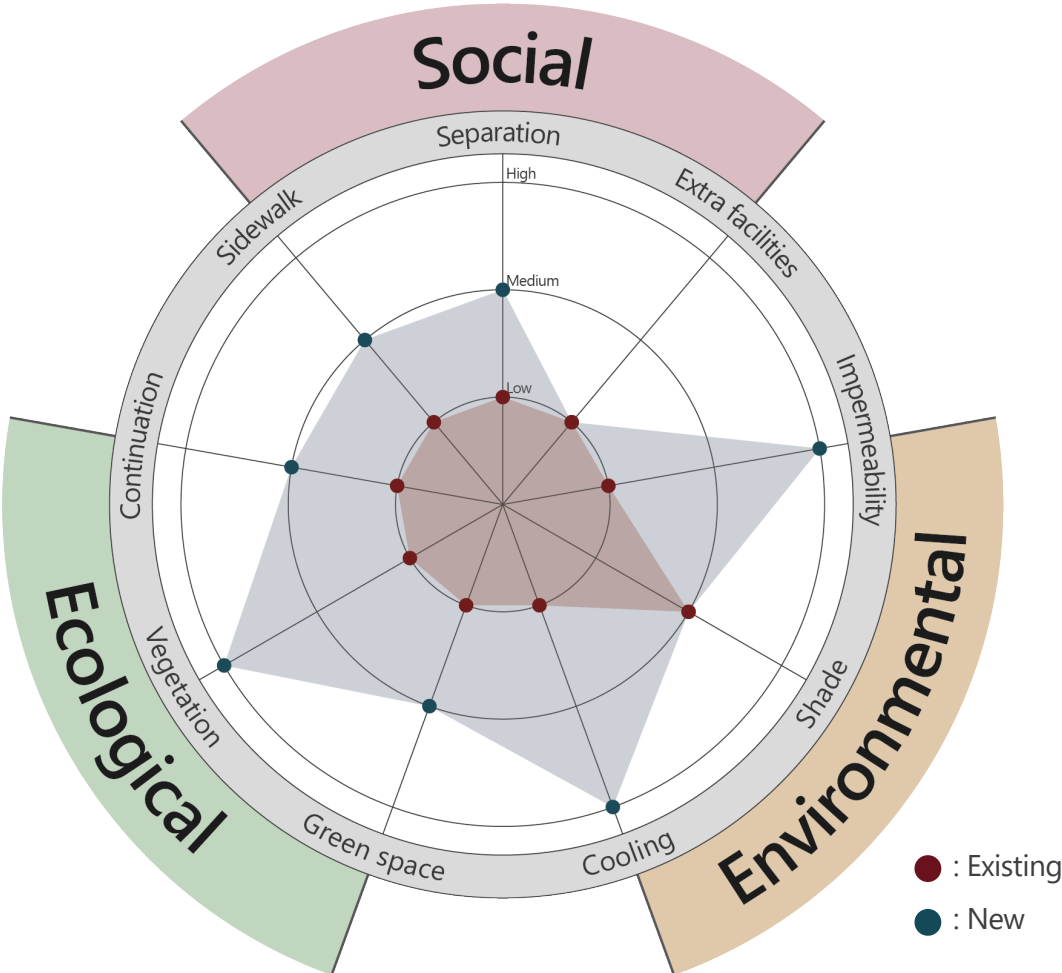


Development alternatives

Alternative 2 (Street priority)

Tools used

- SP** Change street priority
- PP** Permeable pavement
- ES** Green in empty spaces
- GS** Green strip

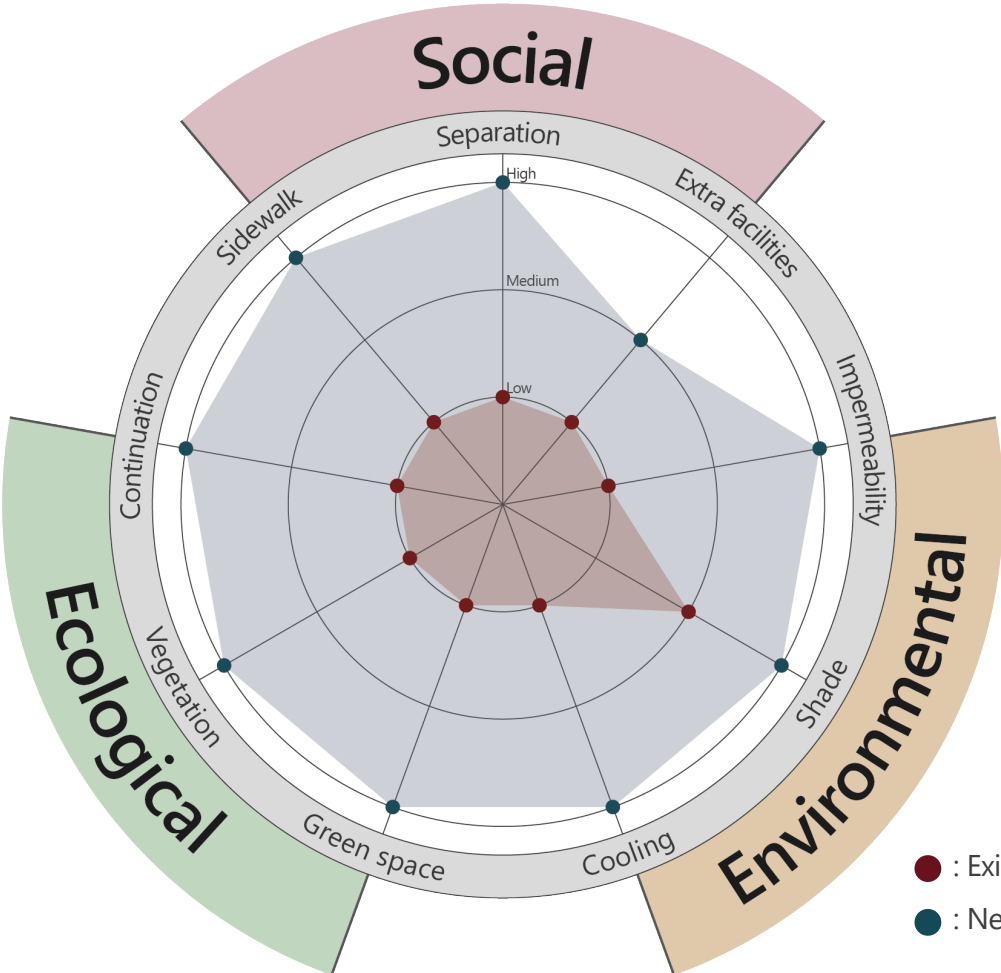
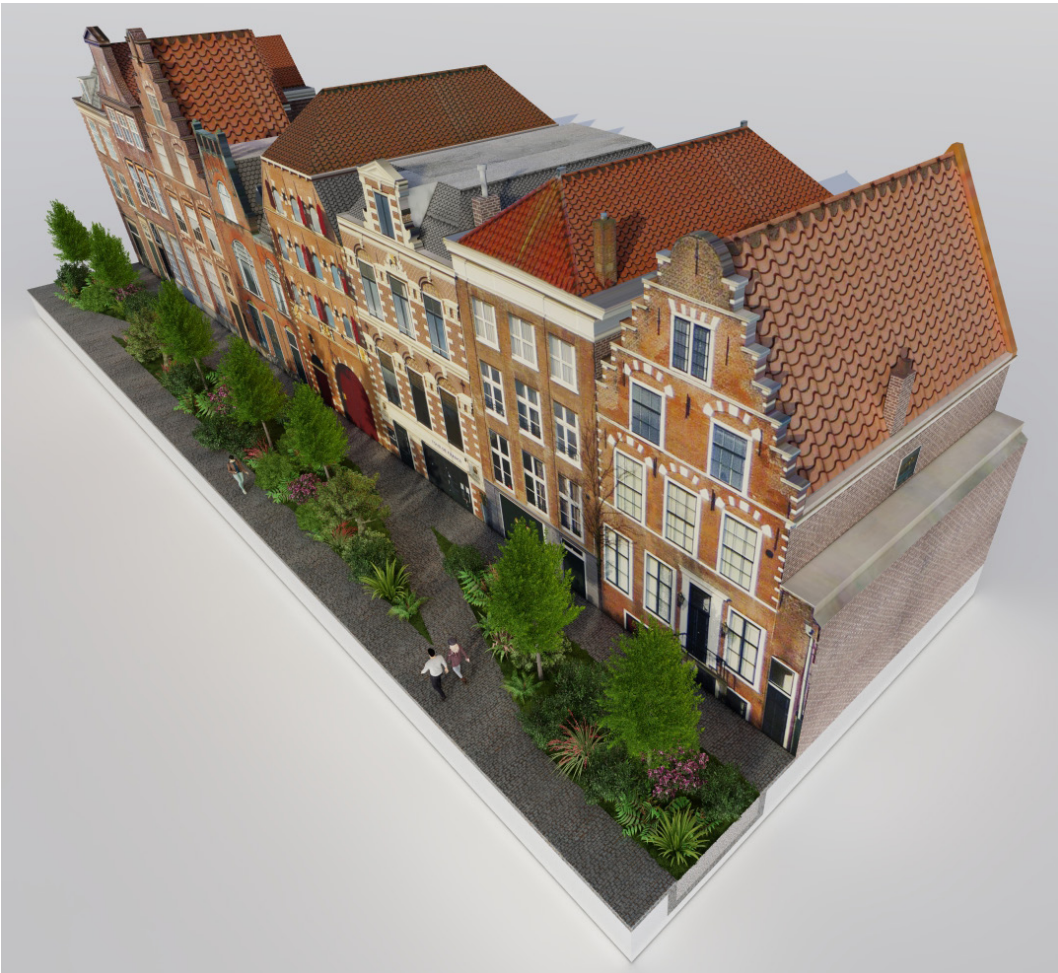


Development alternatives

Alternative 3 (Car-free)

Tools used

- SP** Change street priority
- ES** Green in empty spaces
- RT** Row of trees
- GS** Green strip



Project validation

Minimal financial gain (30 year period)

Health

€1.383.262

Climate adaptation

€1.398.448

Real estate

€32.770.269

Recreation & Leisure

€1.583.304

Quantitative

Benefit most from;

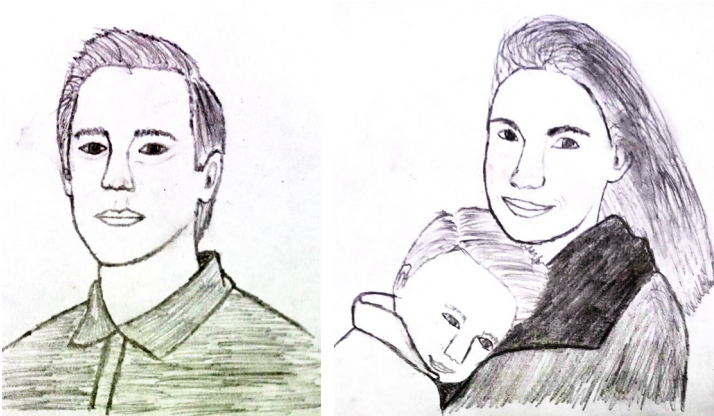
Pocket parks



Streetscape development



Both

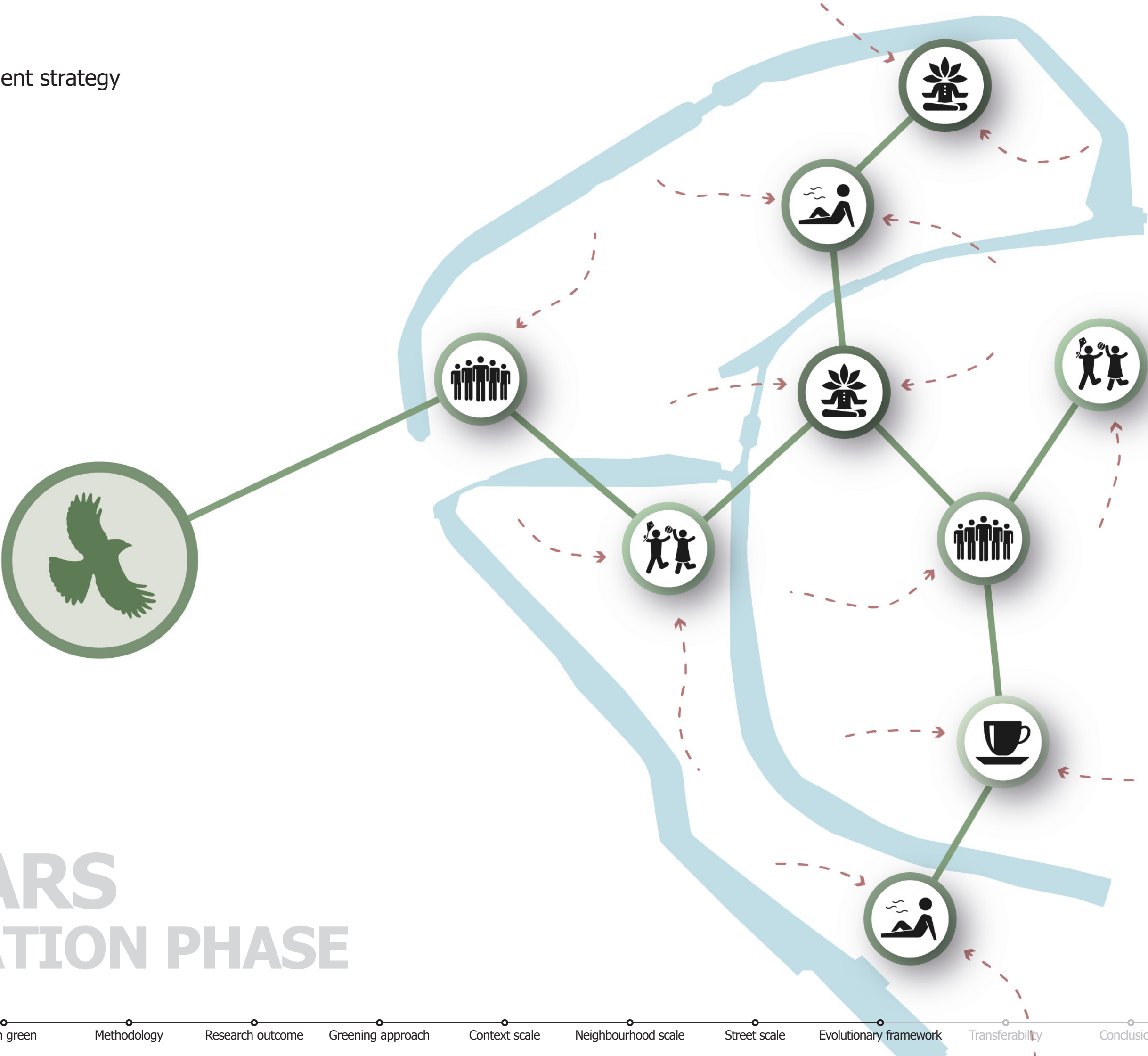


Qualitative

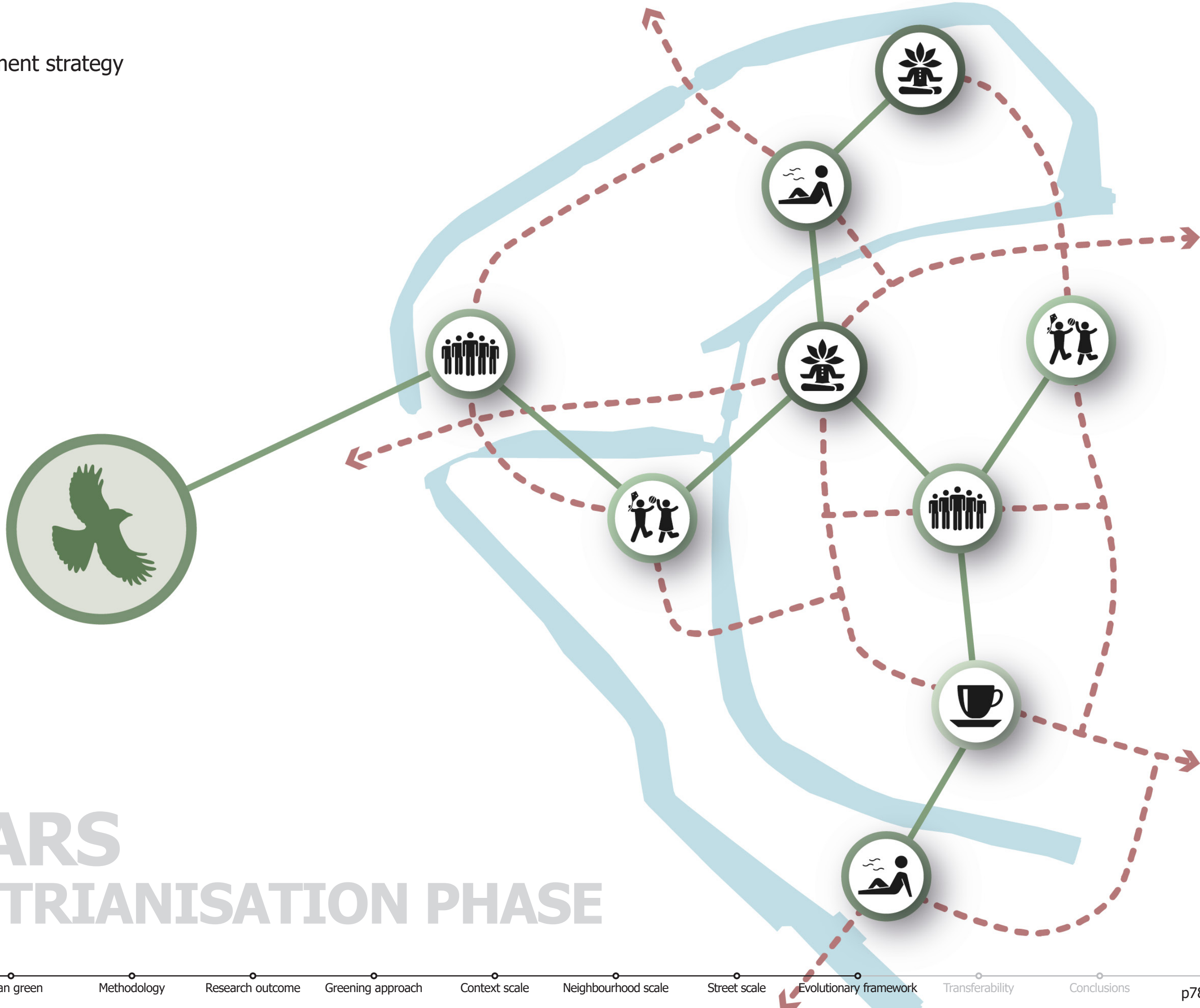


EVOLUTIONARY FRAMEWORK

Phasing
Phase 1 of development strategy

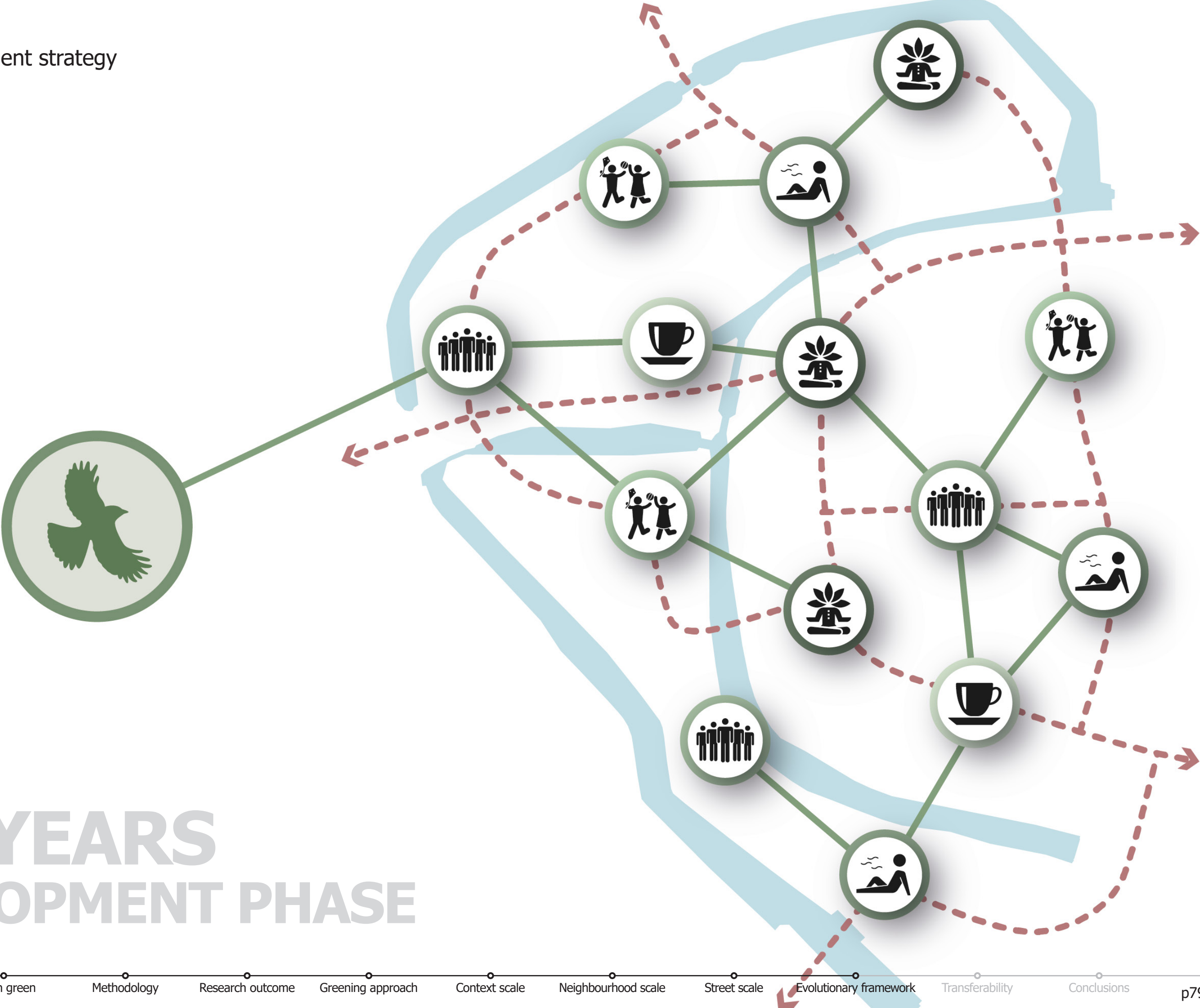


5 YEARS
INITIATION PHASE



5 YEARS PEDESTRIANISATION PHASE

Phasing
Phase 3 of development strategy

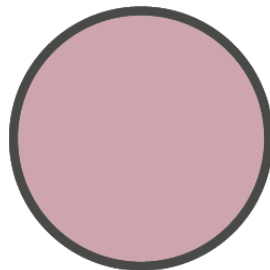
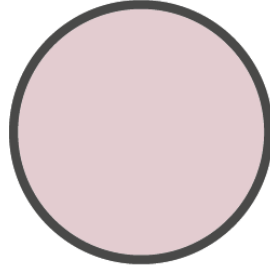
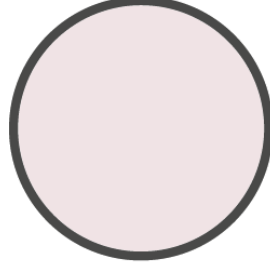


40+ YEARS
DEVELOPMENT PHASE

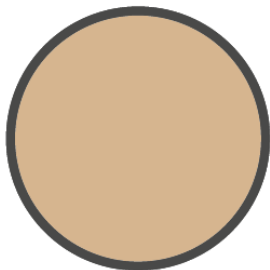
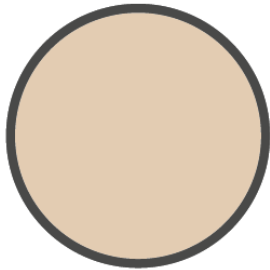
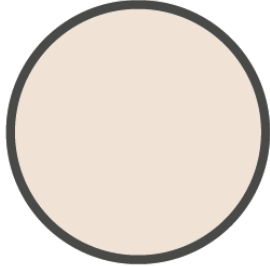
Vacancy

Characteristics of a successful shopping street

SHOPS RELATED

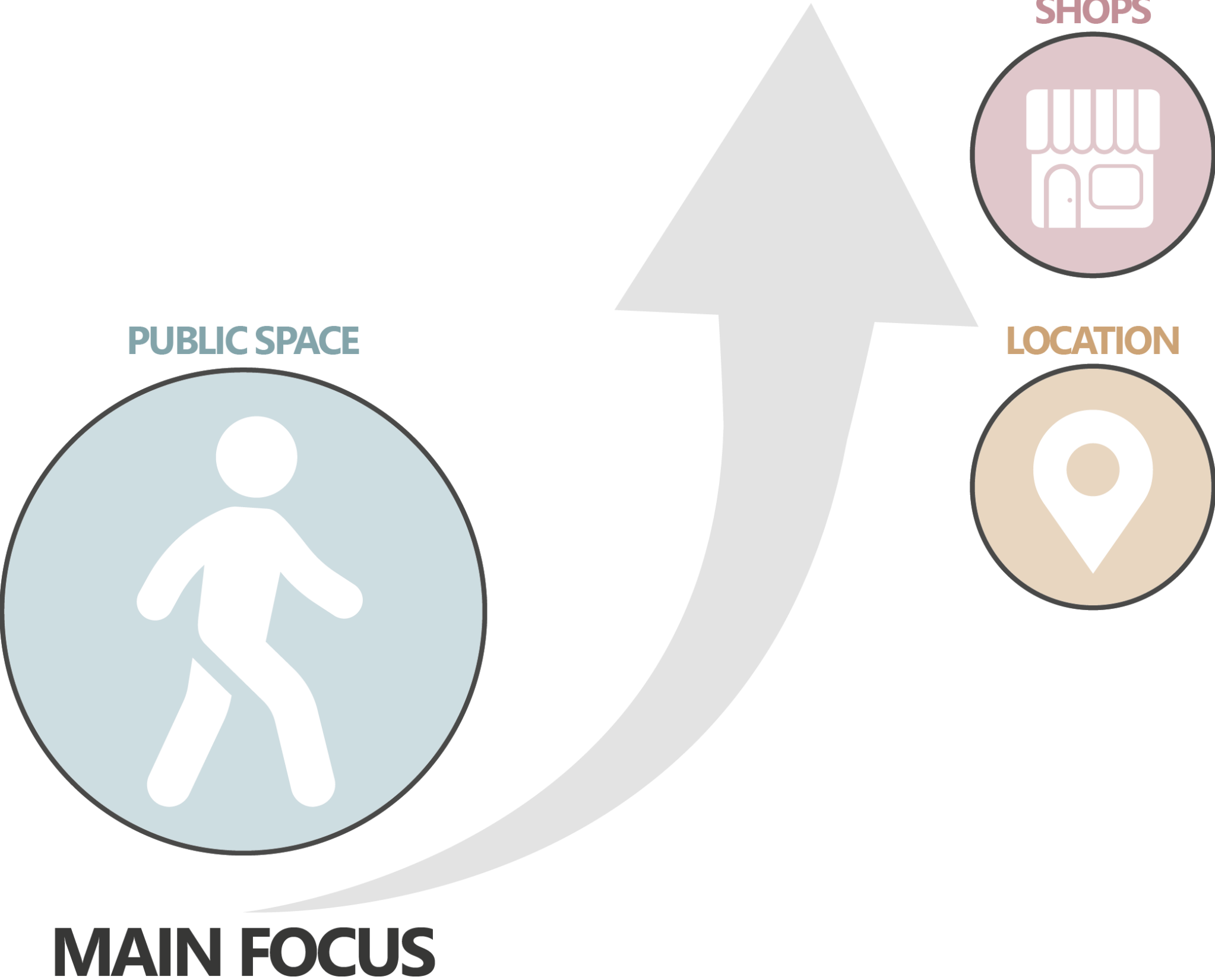
- **Open facades**
Colourful, active and inviting facades.
(Gehl Architects, 2008)
- **All sensations**
Integrate smell (of food), sound (of music), theatrical performances, etc.
(Mullins et al., 1999)
- **Mixed shops**
Everything from communal facilities like coffee shops to independent stores.
(Mehta, 2007)
- **Mixed activities**
A variety of activities should be provided in a shopping area.
(Jones et al., 2016)

LOCATION RELATED

- **Ease of access**
No barriers, dangerous crossings, etc. should prevent people from coming.
(Jones et al., 2016)
- **Accessibility**
The shopping street should be accessible from all sides - both length and width.
(Jones et al., 2016)
- **Centrality**
The shopping street should be located centrally between neighbourhoods.
(Jones et al., 2016)

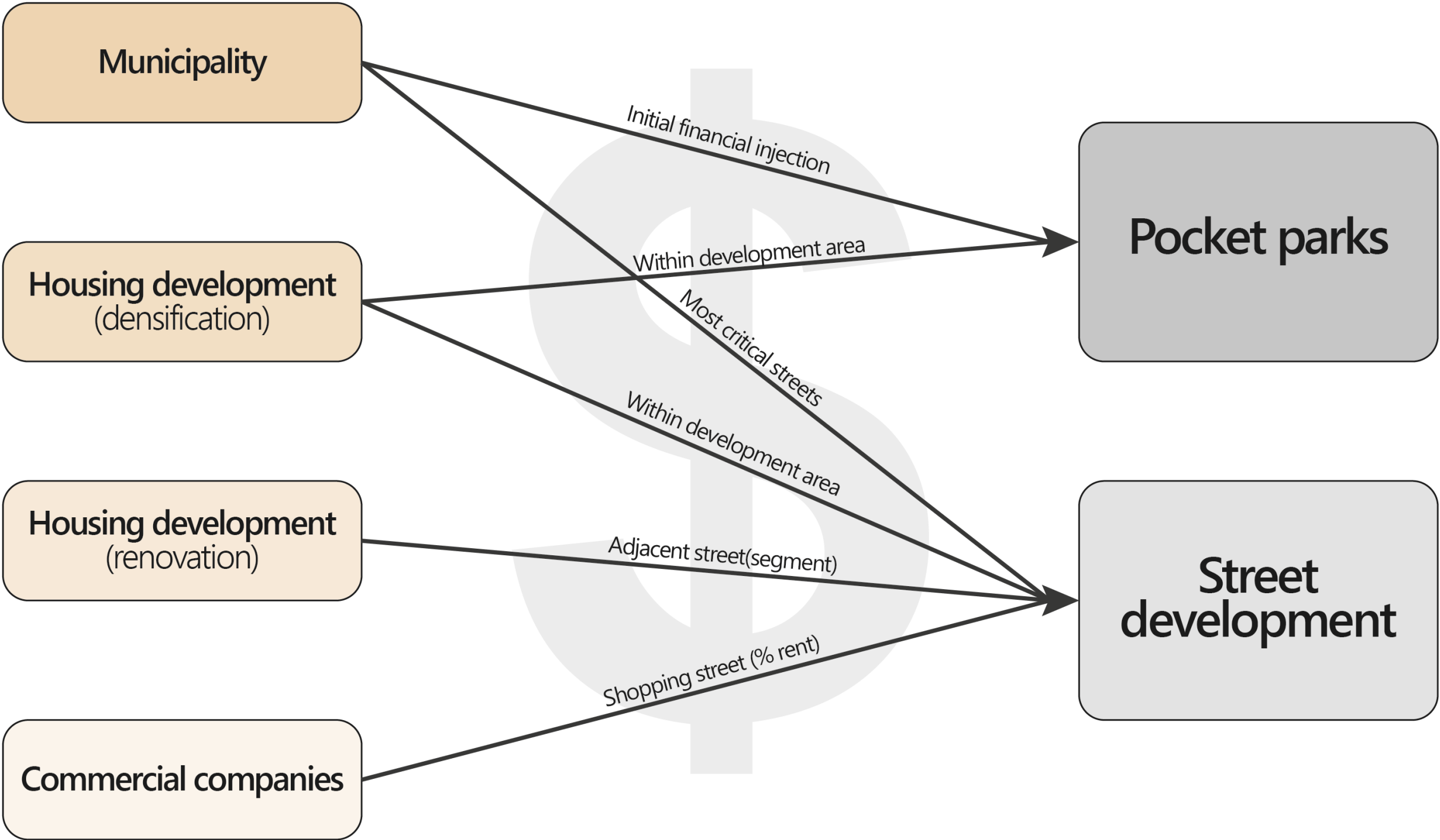
PUBLIC SPACE RELATED

- **Commercial/social**
Blurring between social and commercial is beneficial for people to stay longer.
(Jones et al., 2016)
- **Leisure/Tourist**
Focus should be on experience shoppers rather than functional shoppers.
(Howard, 2007)
- **Urban furniture**
Especially (free) seating areas are essential in providing the right street qualities.
(Gehl Architects, 2008)
- **Pedestrianisation**
Everything should be specialised towards to best fit the need of pedestrians.
(Jones et al., 2016)
- **Visual richness**
An interesting composition with different colours, shapes, materials etc.
(Jones et al., 2016)

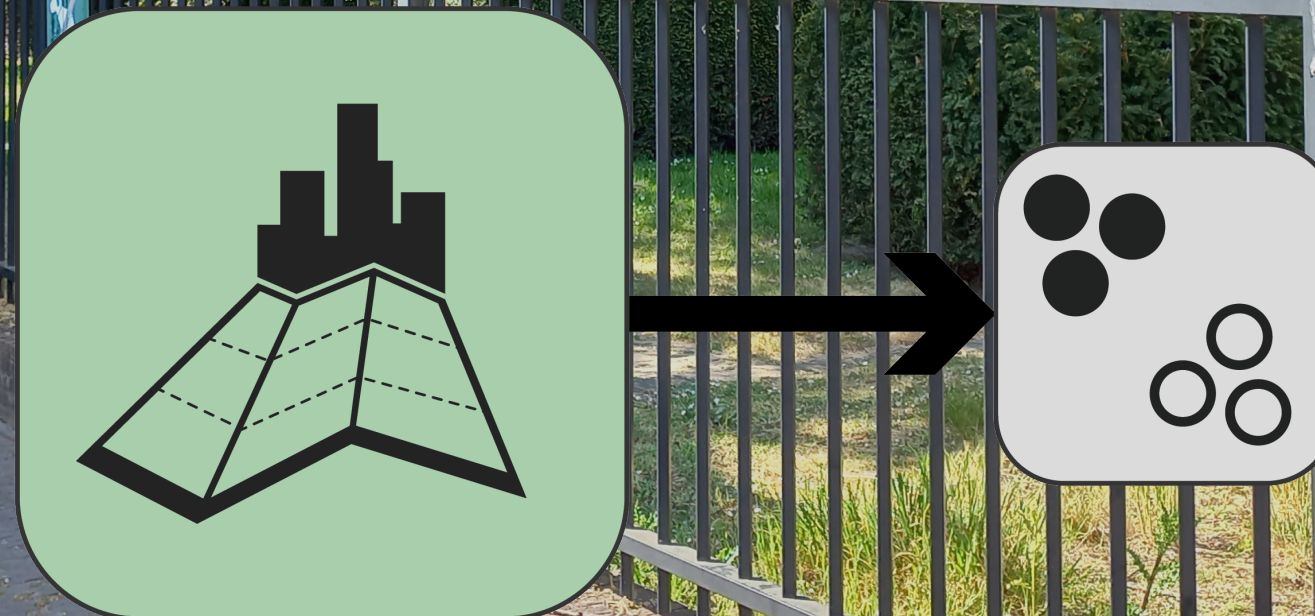


Finances

Rough financial outline

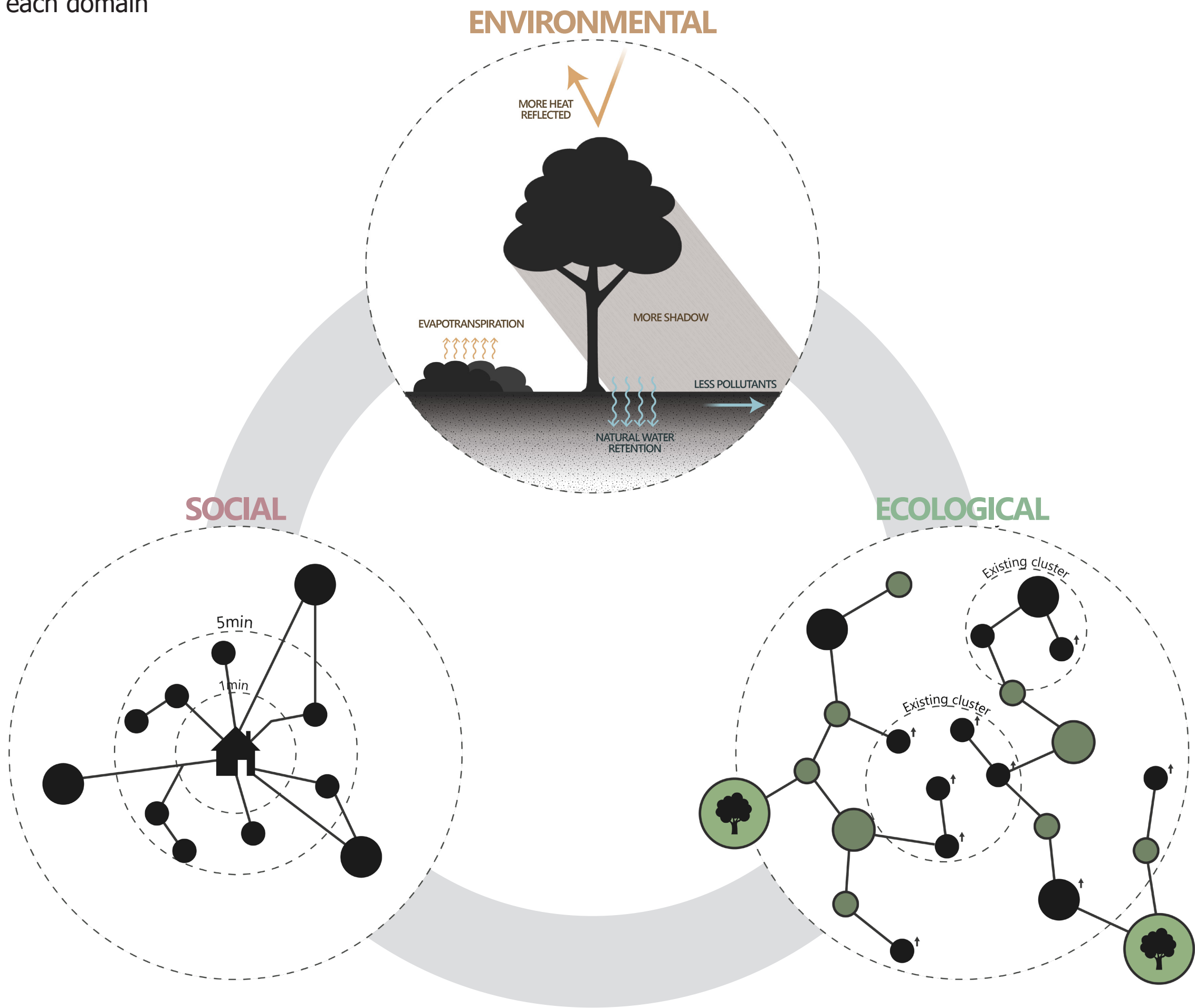


TRANSFERABILITY



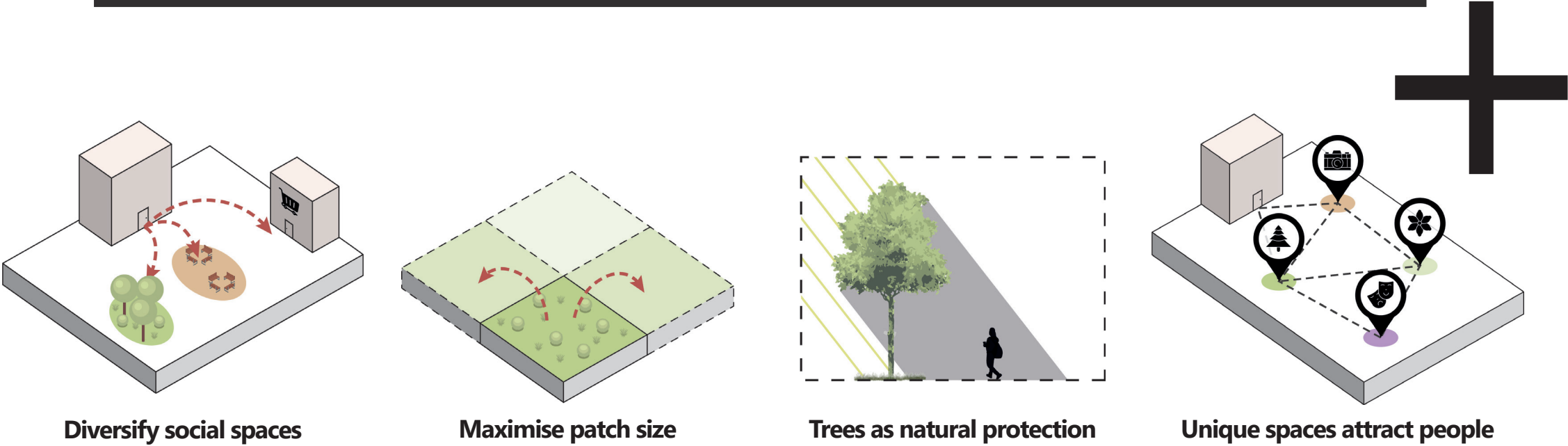
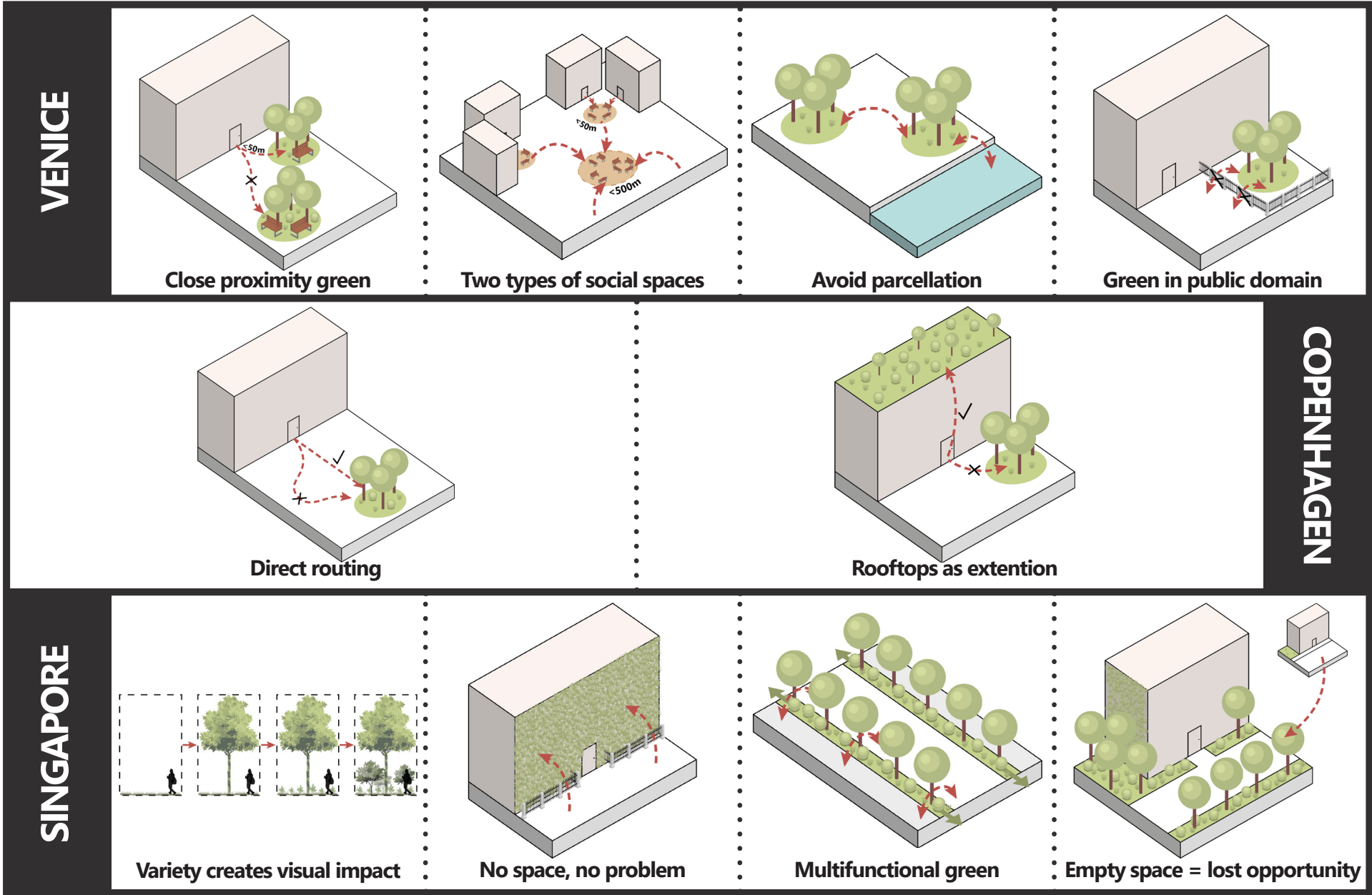
Universal concepts

Main concepts of each domain

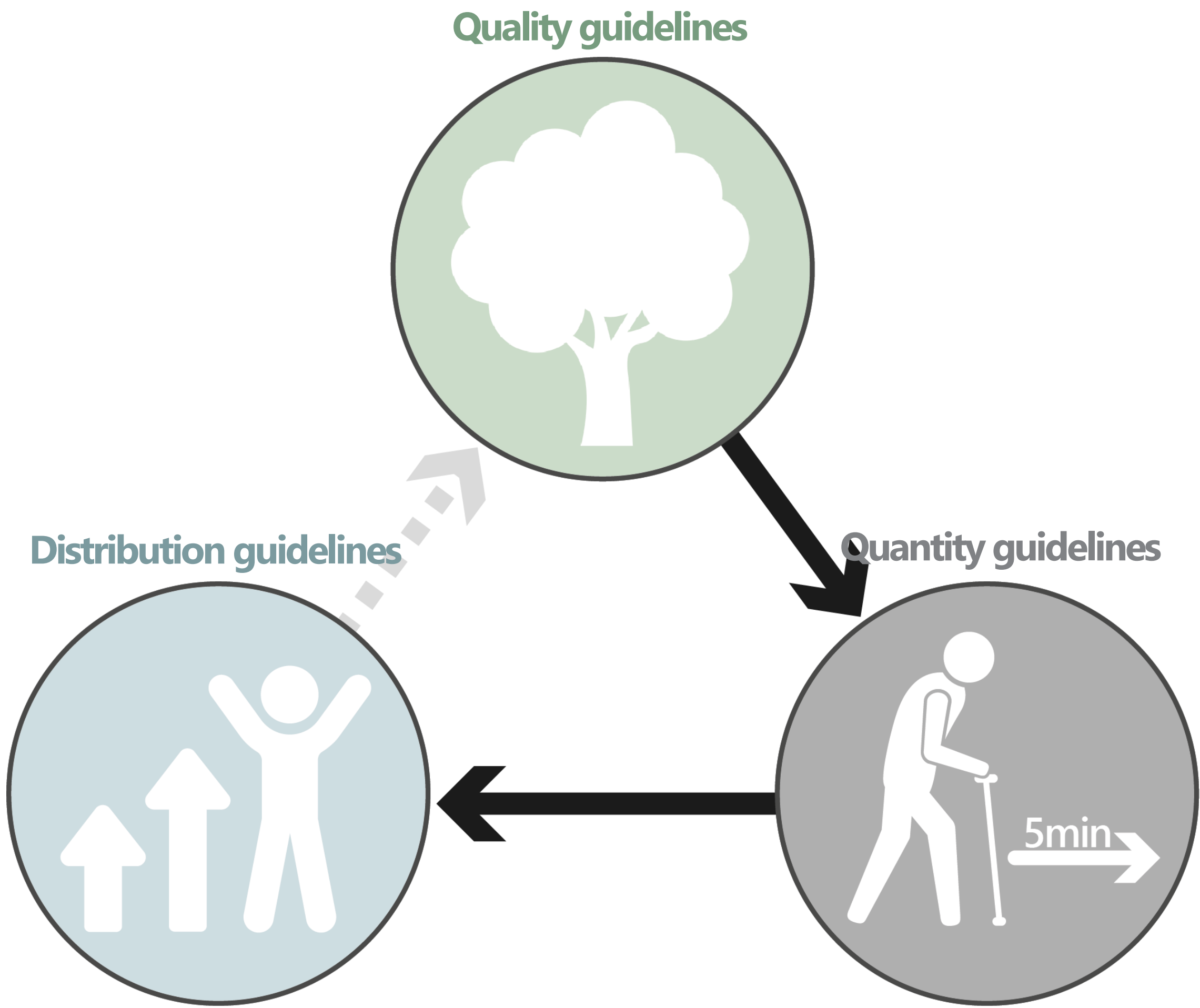


Universal concepts

Design principles

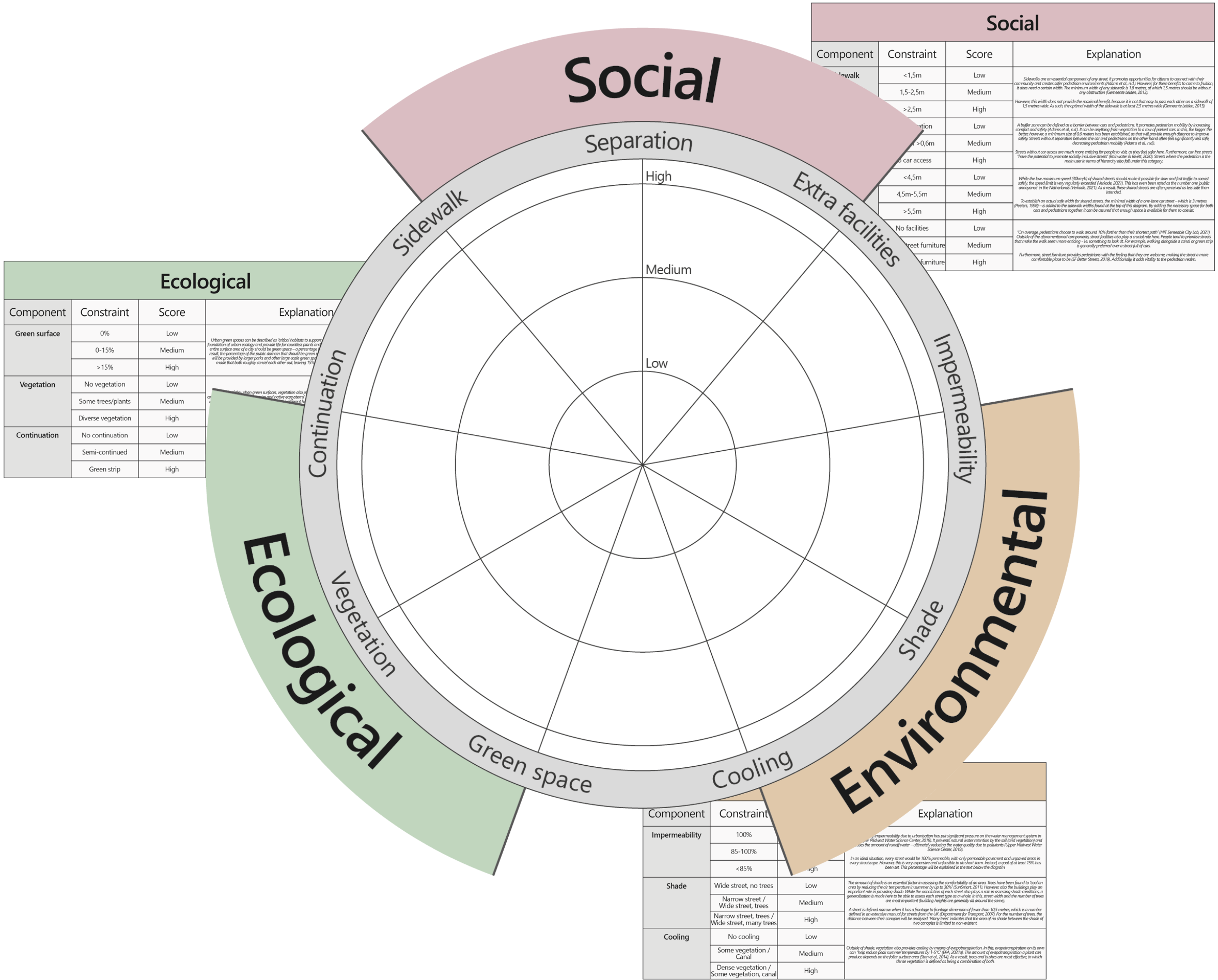









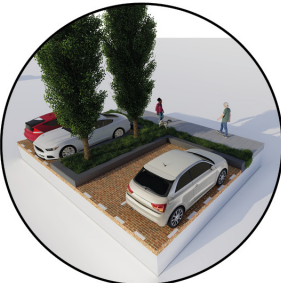
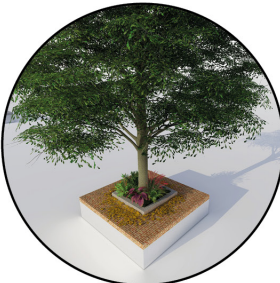
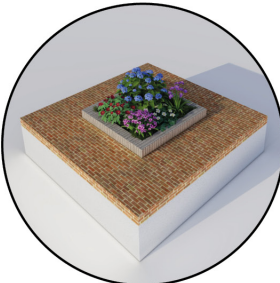
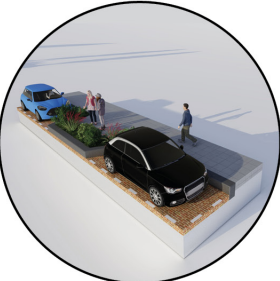

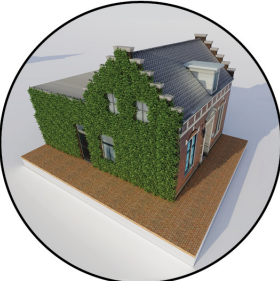
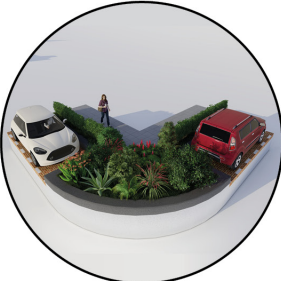
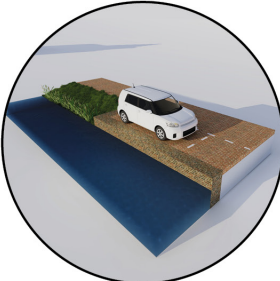
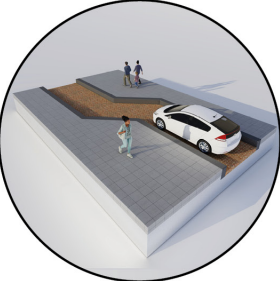
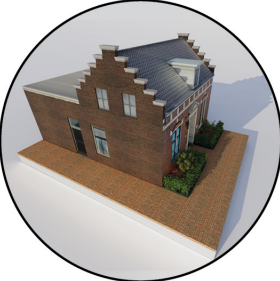
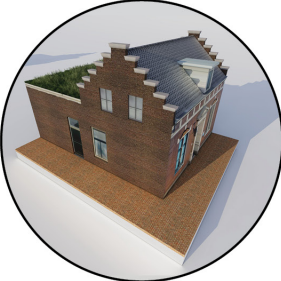


Street development

Evaluation matrix

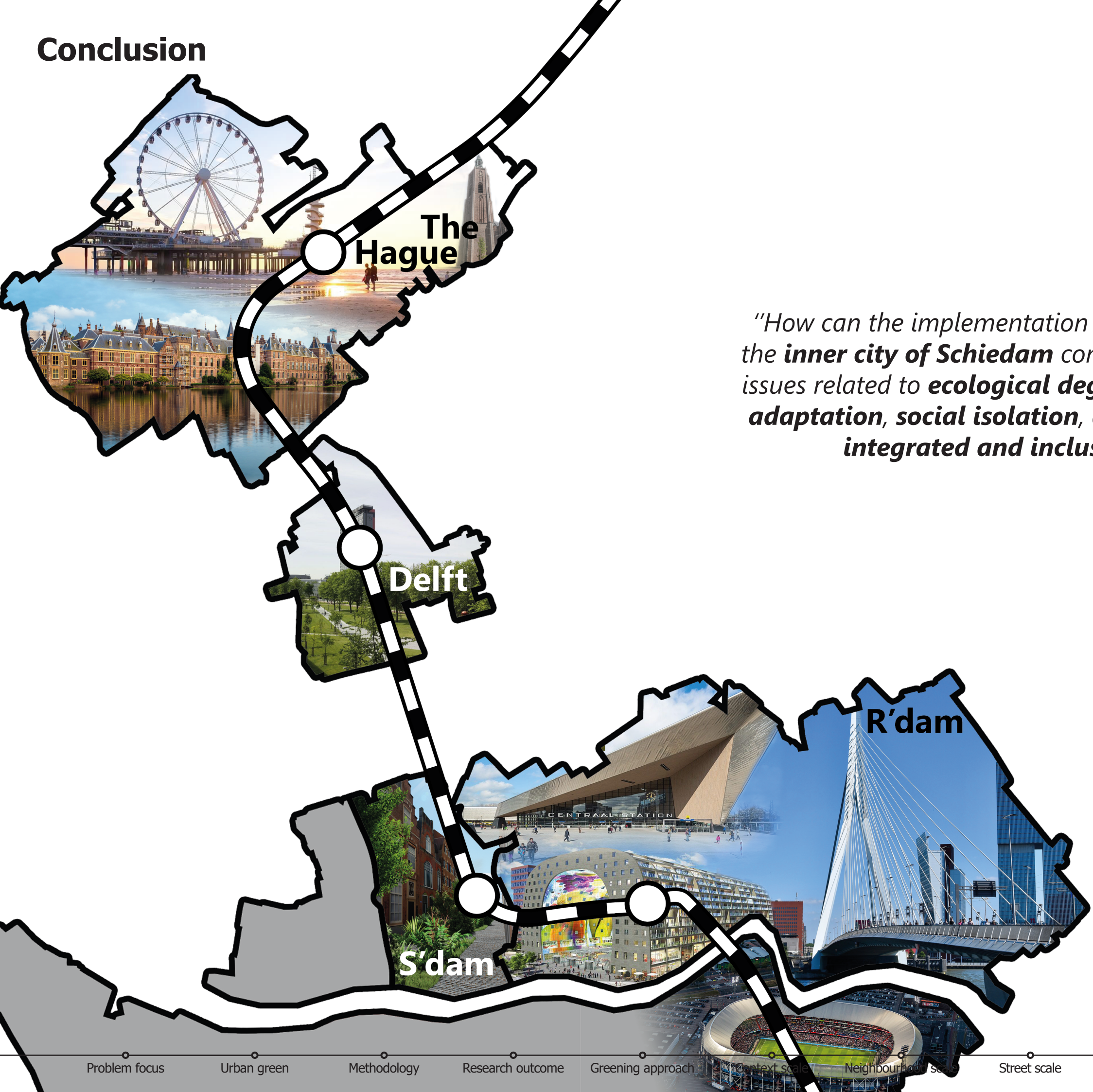


Street development

Intervention toolbox

Social	Socio-Environmental	Environmental	Eco-Environmental	Ecological	Socio-Ecological
 <p>PUBLIC FURNITURE</p> <ul style="list-style-type: none"> • 1/2 benches (w/ optional trash can) • In places with a view (water, green, etc.) • In areas/streets with open character • Not right next to parked cars • Not in the way of traffic flows 	 <p>PLACE WITH SHADE</p> <ul style="list-style-type: none"> • A tree in place without shade • Next to walking route • In areas with limited shade from buildings • Not right next to parked cars • Should be easily accessible to stand underneath 	 <p>PERMEABLE PAVEMENT</p> <ul style="list-style-type: none"> • Alternative if no space is available for green surface area • Areas with most urgent flooding risk • In parking spaces • In combination with street renewals 	 <p>MAXIMISE PATCHES</p> <ul style="list-style-type: none"> • At existing trees/bushes/etc • Increase patch size to maximum • Not in the way of current functions • In streets that currently have some, but very limited green space 	 <p>DIVERSITY AT TREE</p> <ul style="list-style-type: none"> • More diverse plants at trees and small green patches • At every tree/patch • Can be in combination with other green ones • Should not block view at important intersections 	 <p>FLOWERS (COLOURFUL)</p> <ul style="list-style-type: none"> • In combination with year-round plant species • In visible places from pedestrian routes • Not right next to parked cars • Scattered throughout the neighbourhood
 <p>WIDENED SIDEWALK</p> <ul style="list-style-type: none"> • Bulging of sidewalk by removing a parking spot • Safe area to stop and talk • Outside main walking route • In combination with (small) barrier to fast traffic • Not in the way of traffic flows 	 <p>SHARED GARDEN</p> <ul style="list-style-type: none"> • Centrally located in a neighbourhood • In well accessible places without car access • With multiple access routes • In cooperation with local residents • Not in the way of traffic flows 	 <p>GREEN FACADES</p> <ul style="list-style-type: none"> • In streets where green groundspace is not viable • Not on monuments/main identity zone • Limited to 20% of all buildings in a street • Should be used as a last option 	 <p>GREEN IN EMPTY SPACES</p> <ul style="list-style-type: none"> • Green surface area in empty 'rest spaces' • Not in the way of traffic routes • In streets lacking ecological/environmental value • In combination with diverse vegetation • Inaccessible for people 	 <p>GREEN EMBANKMENT</p> <ul style="list-style-type: none"> • Removal of car parking to add green alongside the canal • Not in main identity zone • Should connect to other green • Not in the way of traffic flows 	
 <p>CHANGE STREET PRIORITY</p> <ul style="list-style-type: none"> • From car to pedestrian first • Not in shared space streets • In streets with currently insufficient sidewalks • Not in main traffic routes • In combination with parking space reduction 		 <p>FRONT GARDENS</p> <ul style="list-style-type: none"> • Small front gardens with green requirement • In areas with limited street width • Introduces semi-private transition area • Not right next to parked cars • Not in the way of traffic flows 	 <p>GREEN ROOFS</p> <ul style="list-style-type: none"> • Green space on existing flat roofs • In areas with worst microclimate • Areas with most urgent flooding risk • Used in moderation • In combination with building renewals 		
			 <p>ROW OF TREES</p> <ul style="list-style-type: none"> • Adds some level of nature • Placed alongside roads • Not most effective due to lack of green space • Used in areas where groundspace is limited • Use in order to provide shade 		 <p>GREEN STRIP</p> <ul style="list-style-type: none"> • Separating slow and fast traffic • Continuous, with diverse vegetation • In streets with sufficient street width • Inaccessible for people • In combination with 1,5m+ sidewalk width
					<p>All three domains</p>

Conclusion



*"How can the implementation of **urban green** in the **inner city of Schiedam** contribute to resolving issues related to **ecological degradation, climate adaptation, social isolation, and vacancy** in an **integrated and inclusive** way?"*

A vibrant, high-quality architectural rendering of a garden or park. In the foreground, a paved path made of light-colored rectangular stones leads into the distance. Two people, a man in a light blue shirt and khaki pants, and a woman in a brown coat and hat, are walking away from the viewer. To the right, a large, dense garden bed is filled with various plants, including ferns, purple-leafed plants, and tall, thin stalks with reddish-brown seed heads. In the background, more people are visible: a man and a woman sitting on a low stone wall, and another person sitting on a bench further back. The garden is surrounded by large, mature trees with thick canopies, creating a sense of enclosure and shade. The sky is a clear, bright blue with a few wispy clouds. The overall atmosphere is peaceful and inviting, showcasing a well-designed outdoor space.

Thank you!