

# Nature was never far away

Experiencing the urban forest through  
realms of living, moving and visiting

A graduation project by Madelief Dekker





# The Zuigerstraat







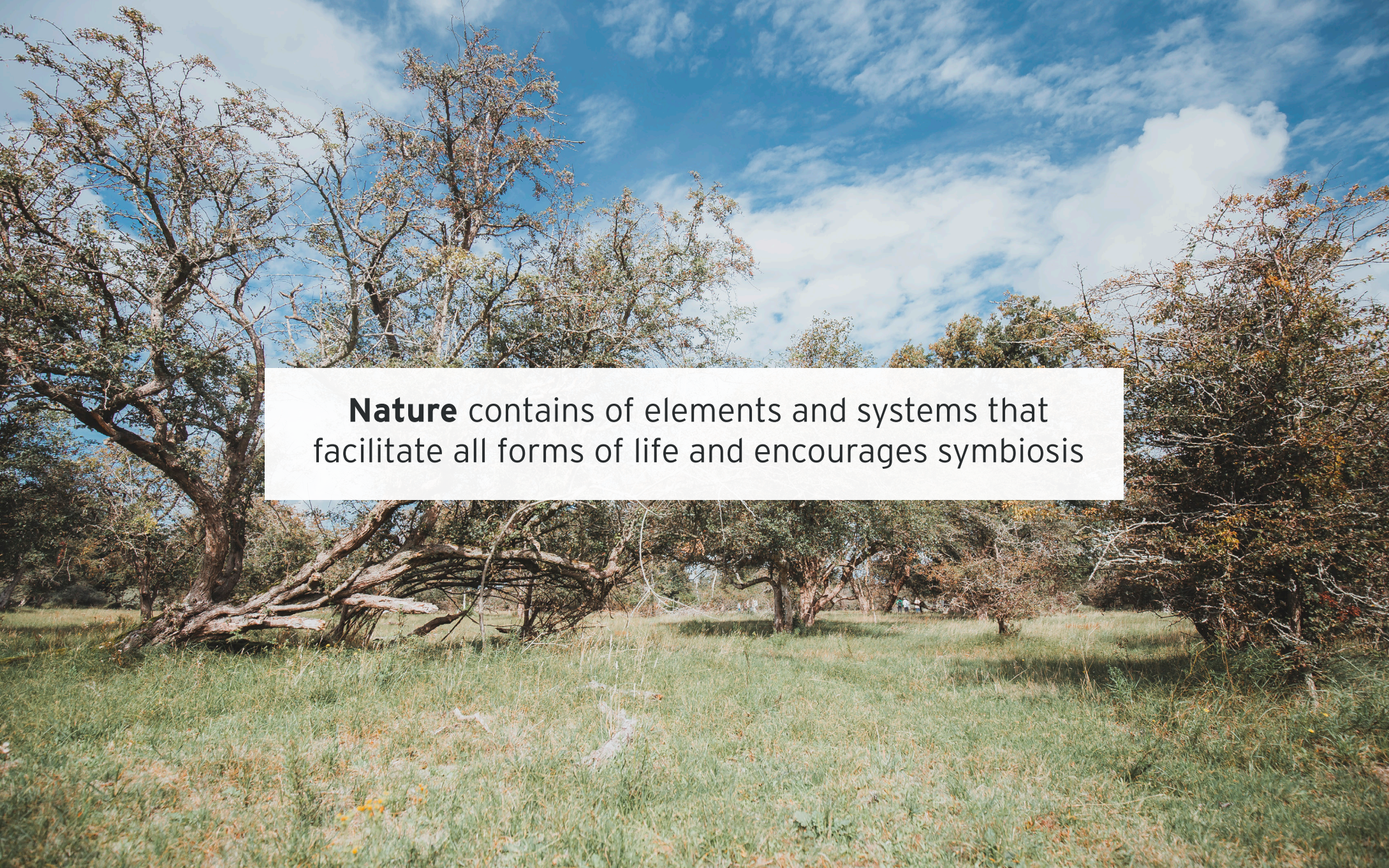
Lisa's home





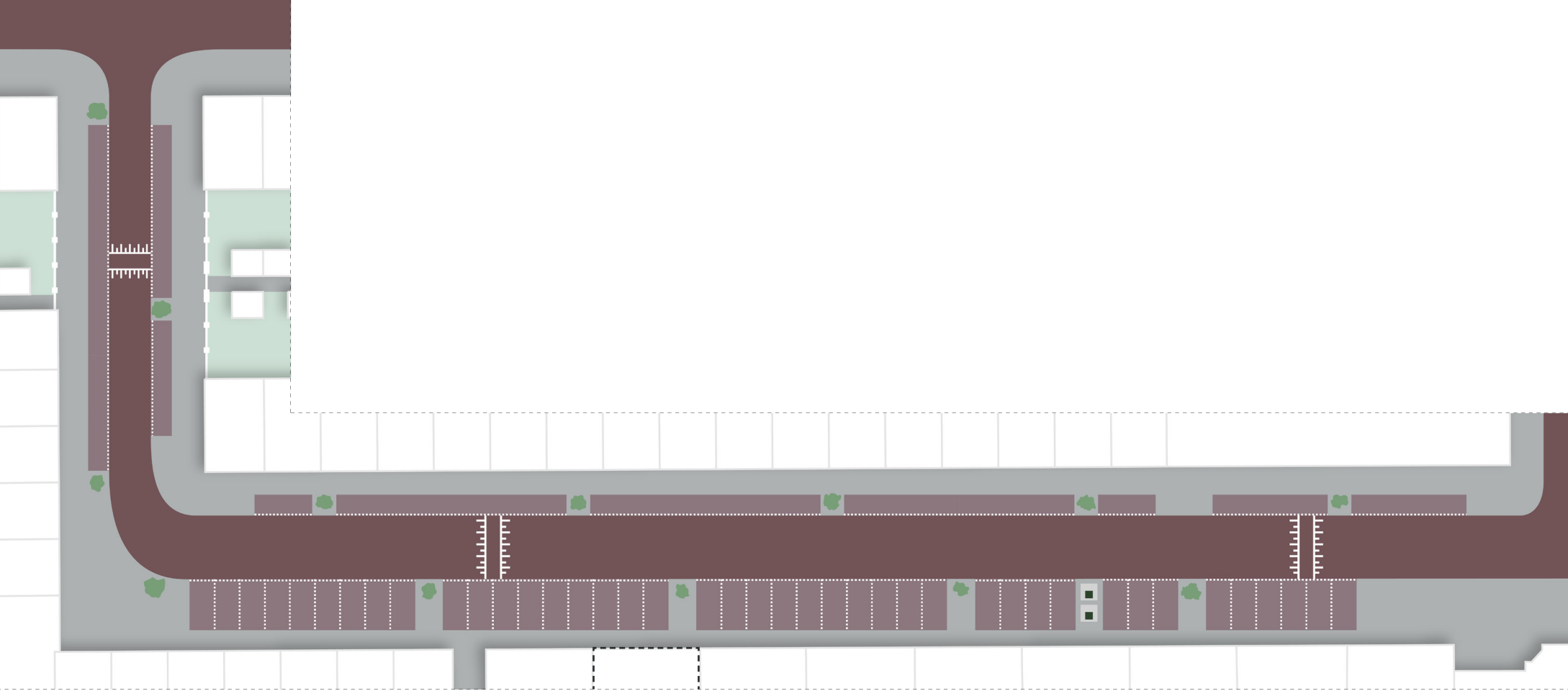






**Nature** contains of elements and systems that facilitate all forms of life and encourages symbiosis

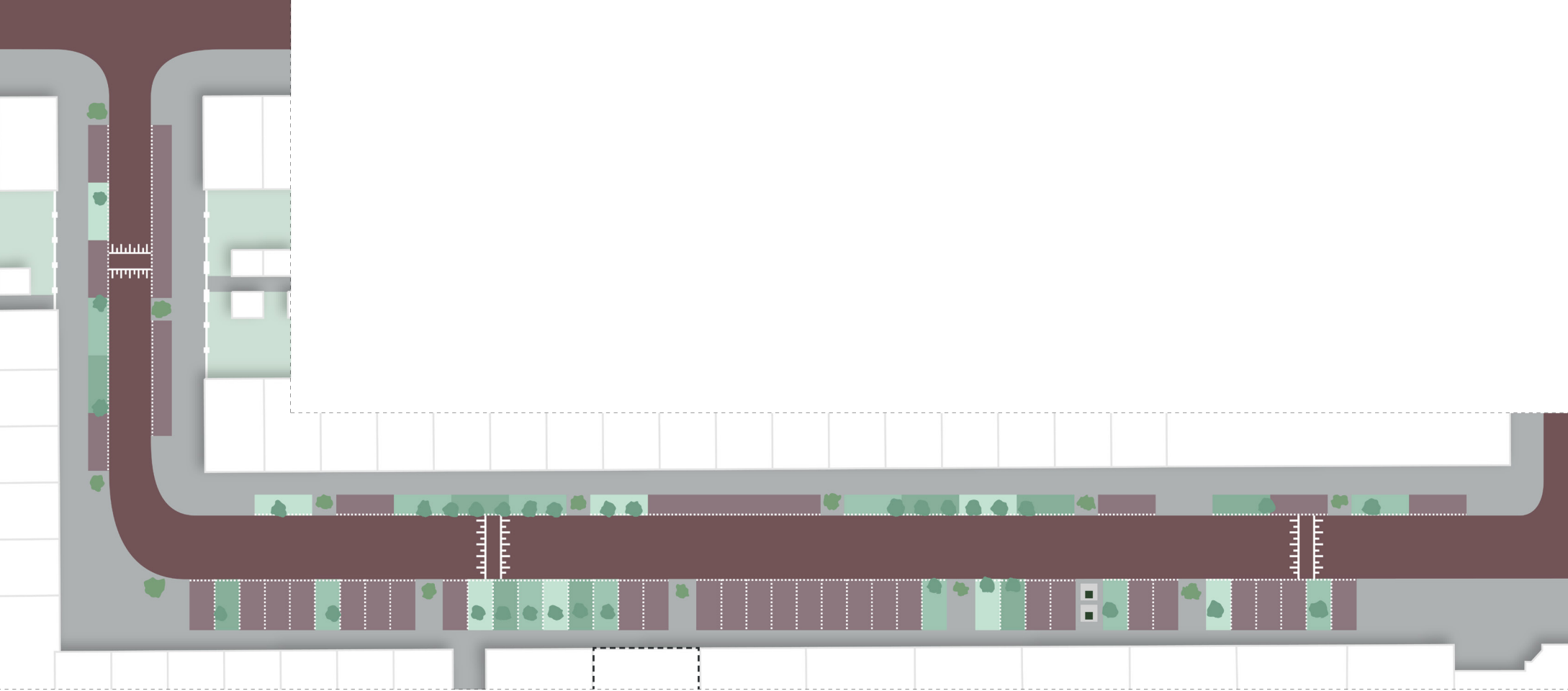




← Lisa's home

**Current situation**



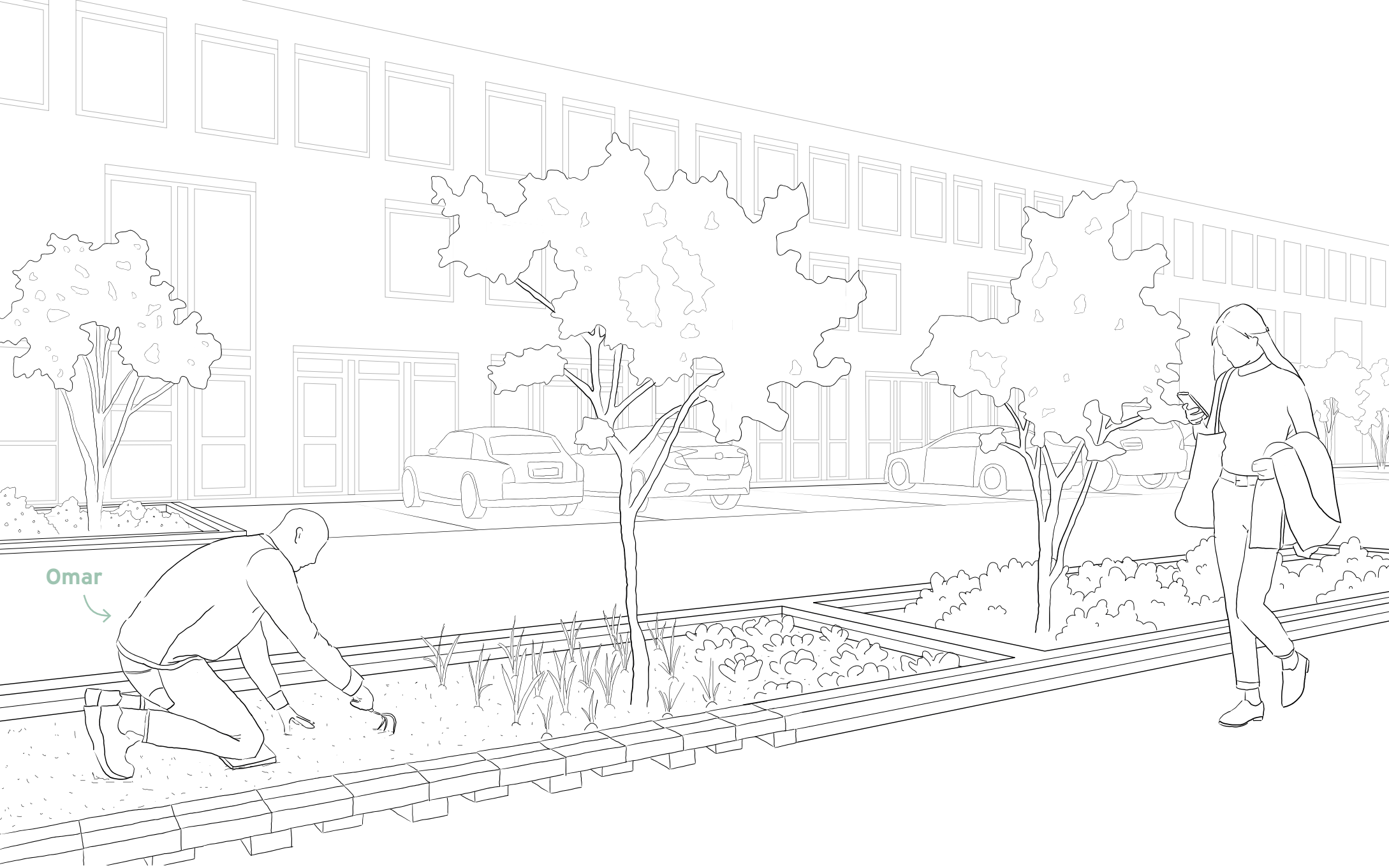


Lisa's home

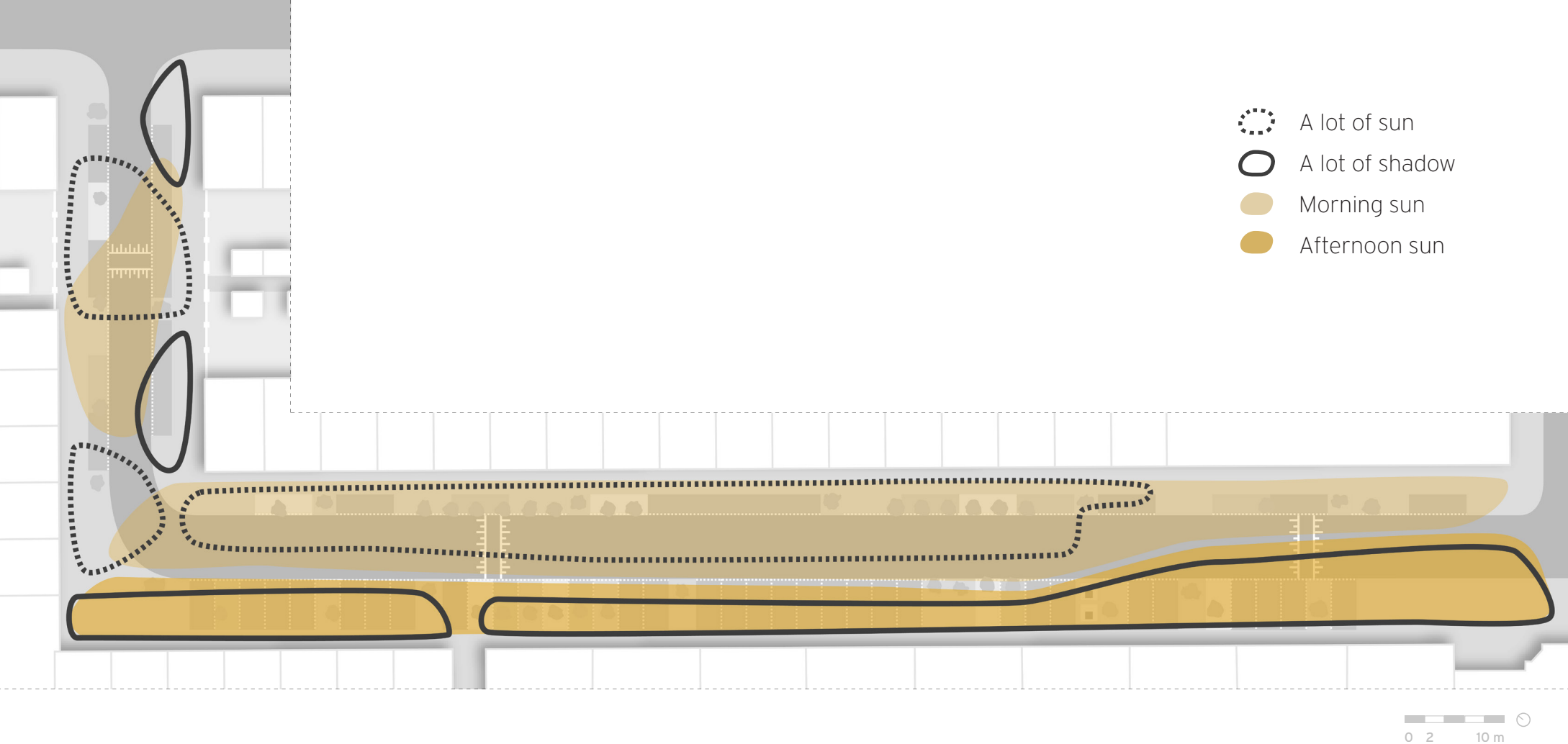


Phase 1



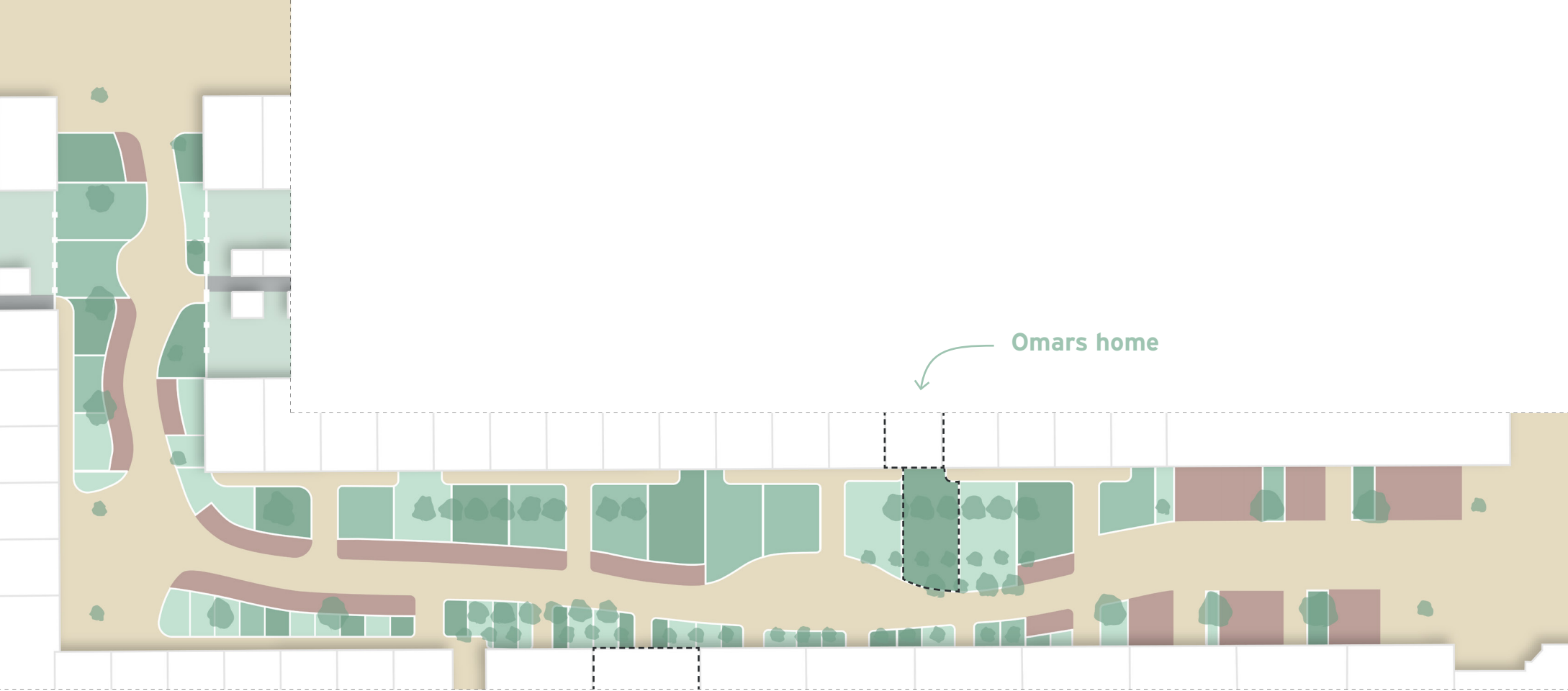






## Sun analysis





Omars home

Lisa's home

0 2 10 m

## Phase 2





LOW INTEREST IN NATURE



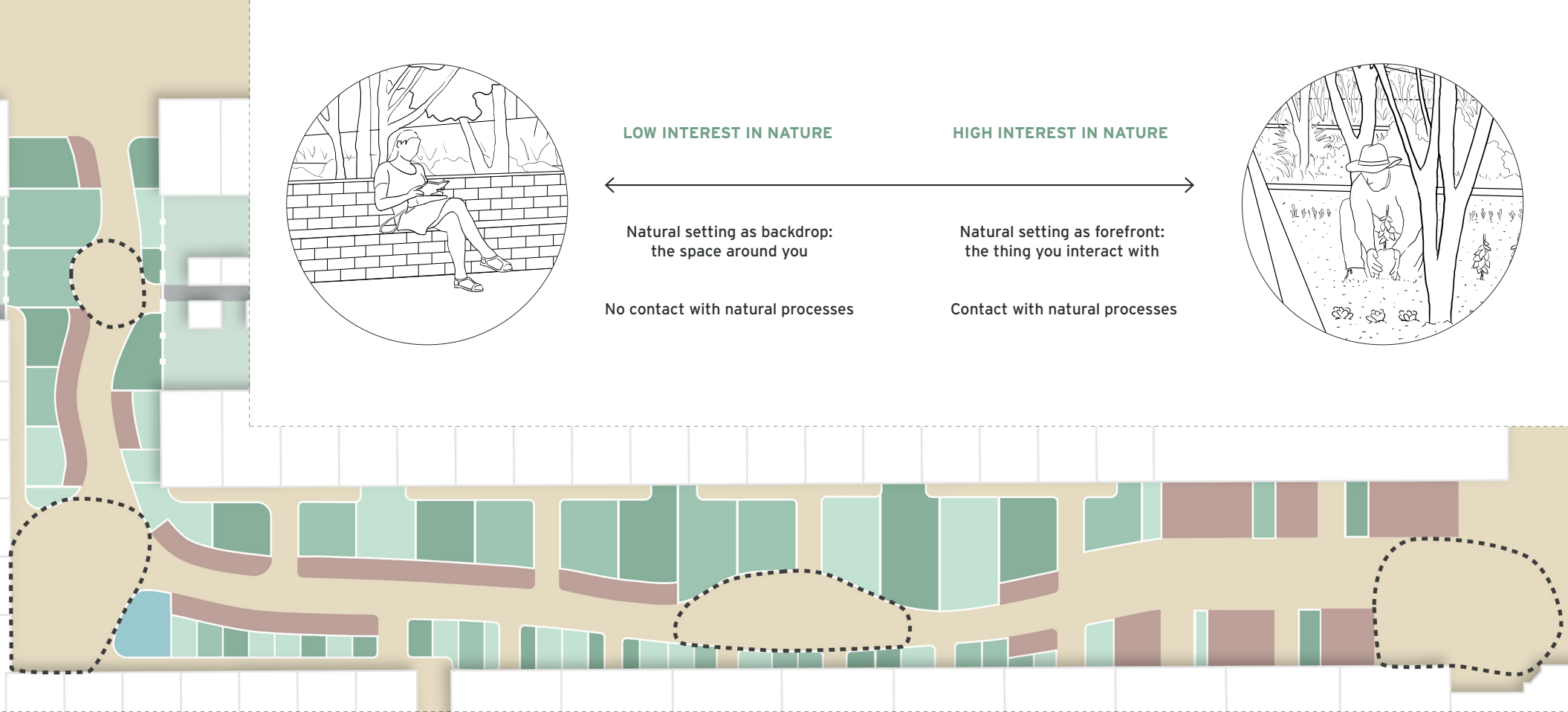
HIGH INTEREST IN NATURE



Natural setting as backdrop:  
the space around you

Natural setting as forefront:  
the thing you interact with

No contact with natural processes

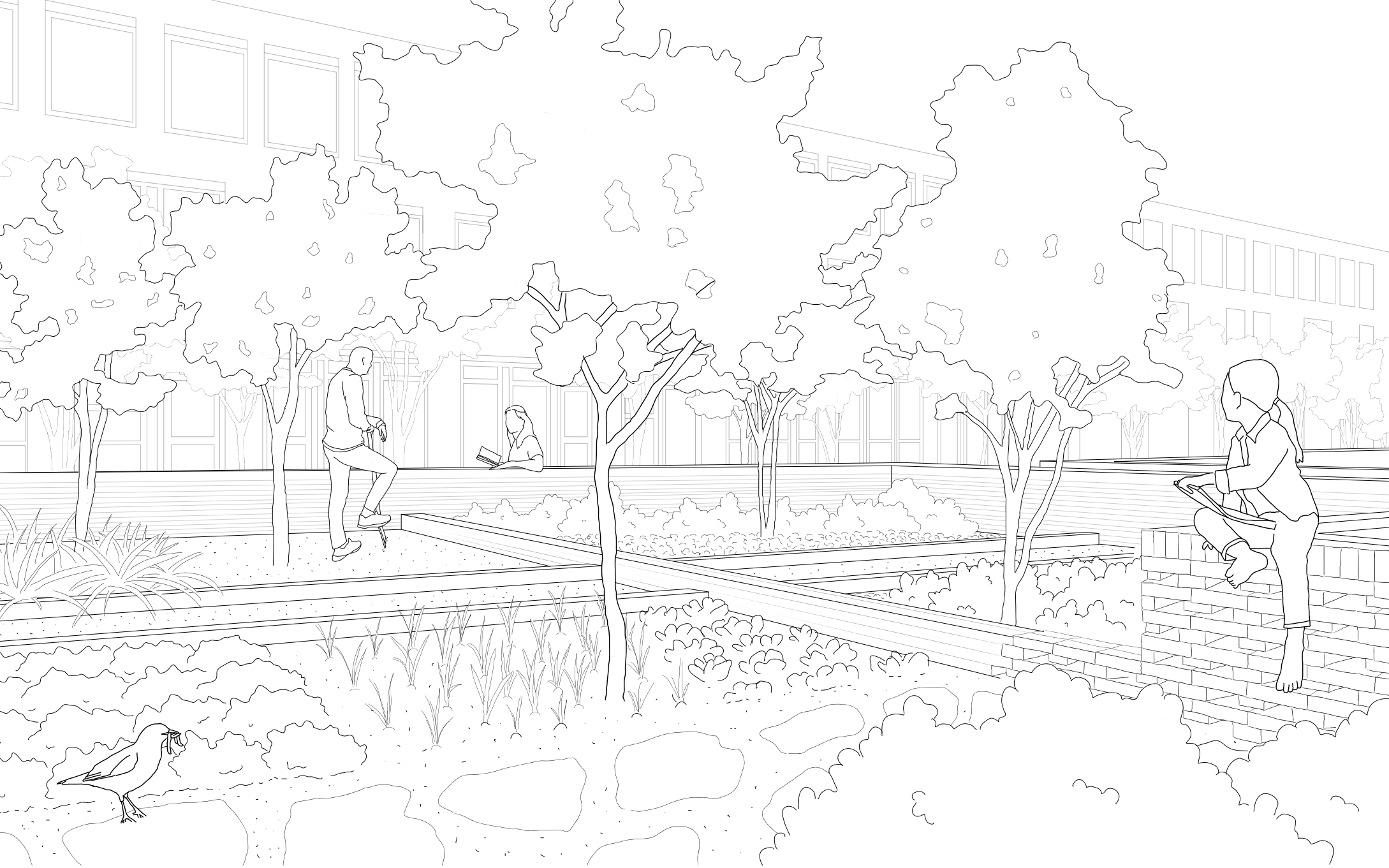
Contact with natural processes



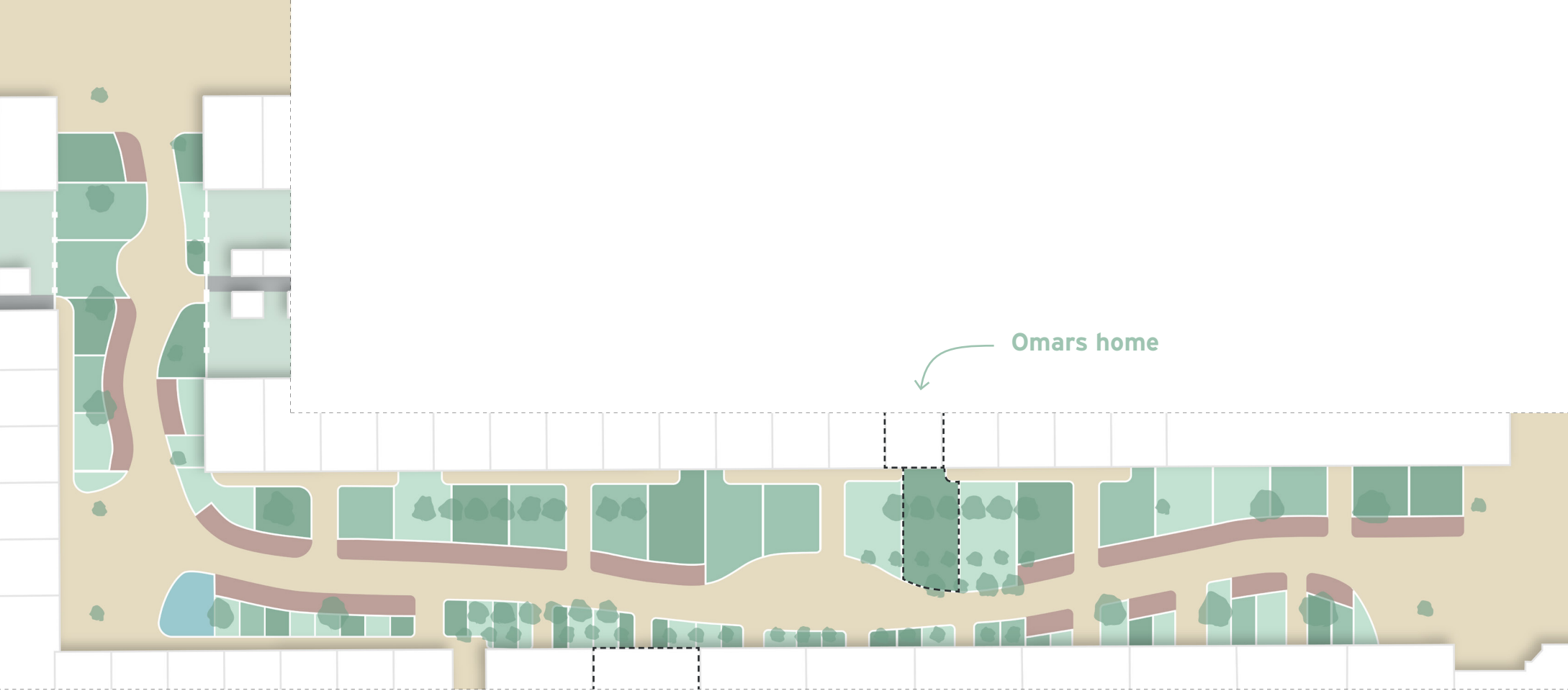
-  Squares
-  Adoptable gardens
-  Temporary parking spots

## Multiple usages









Omars home

Lisa's home

0 2 10 m

Phase 3

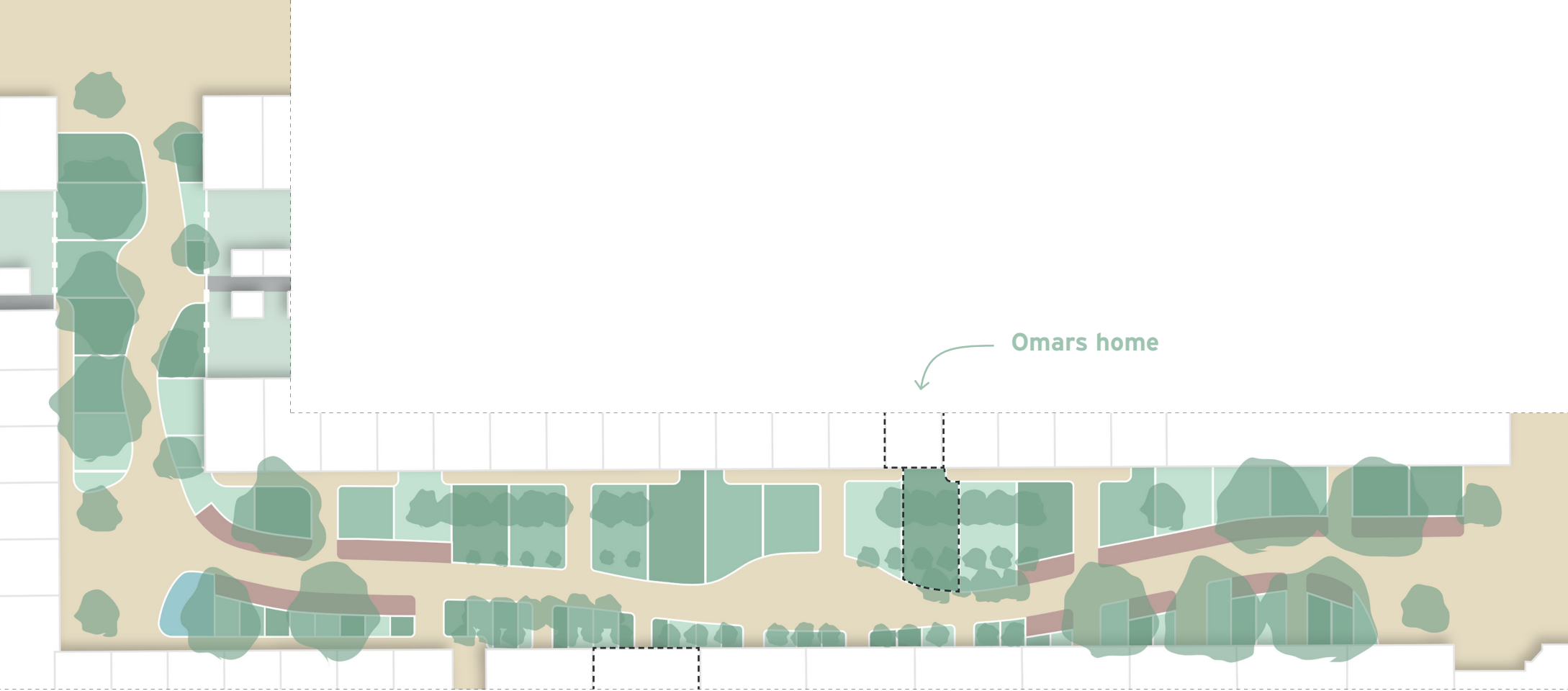












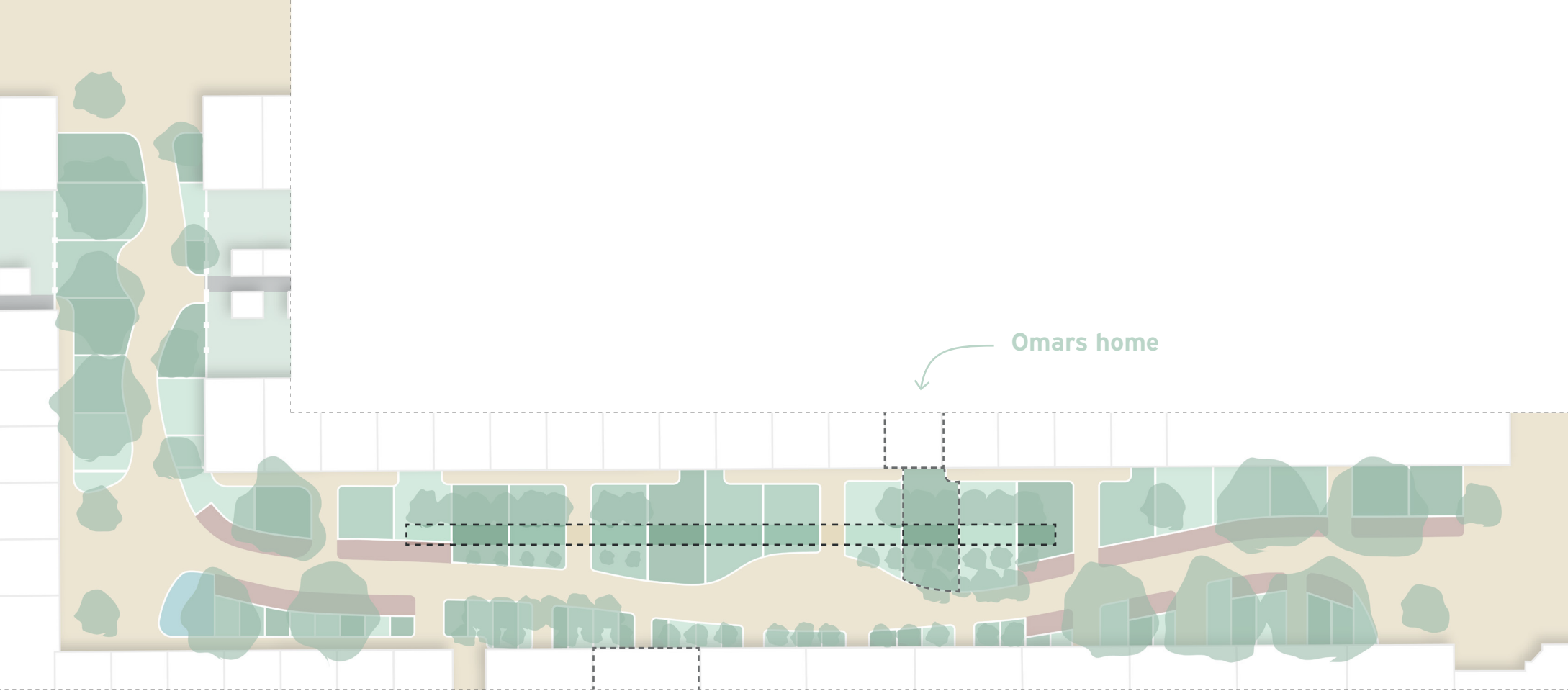
Omars home

Lisa's home

0 2 10 m

Phase 4



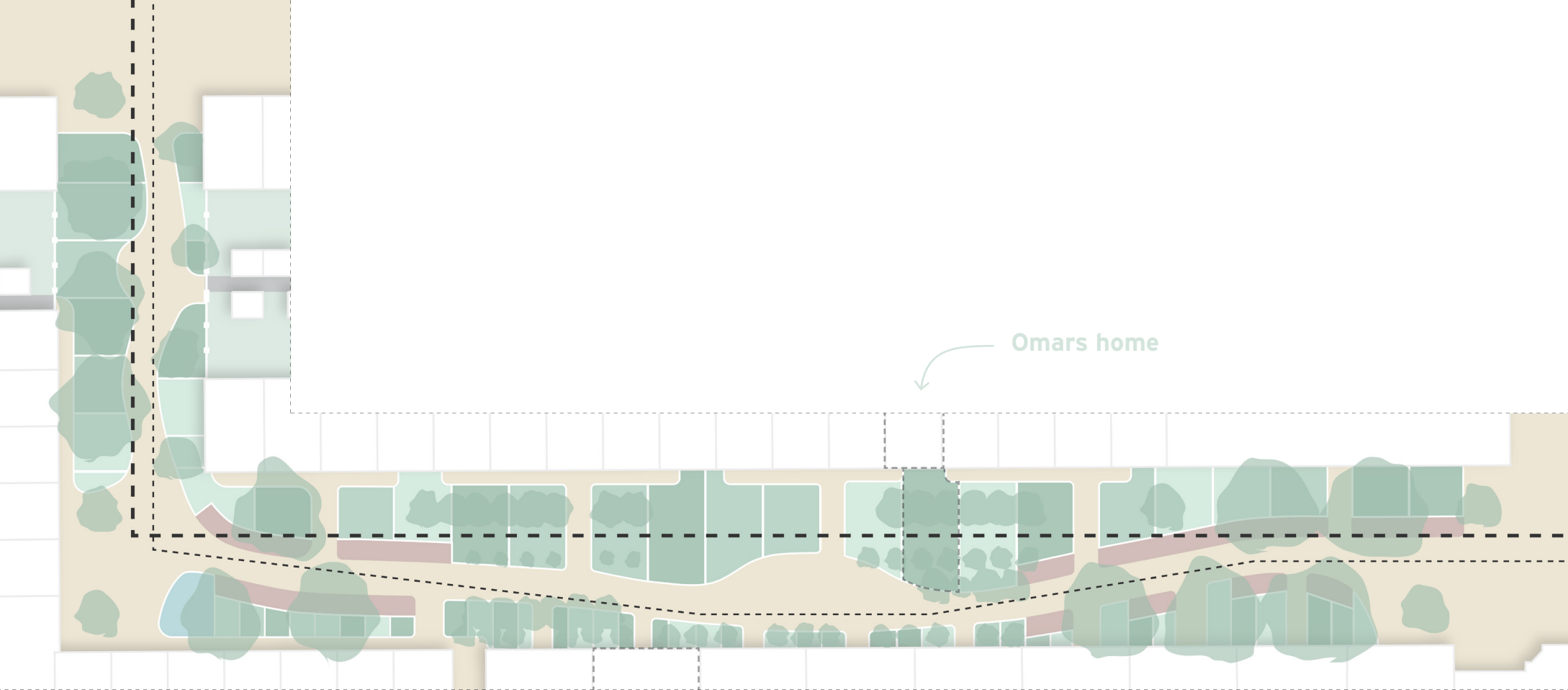


Omars home

Lisa's home



Phase 4



Omars home

Lisa's home

0 2 10 m

## Underground infrastructure

- Sewage
- ..... Bundled cables

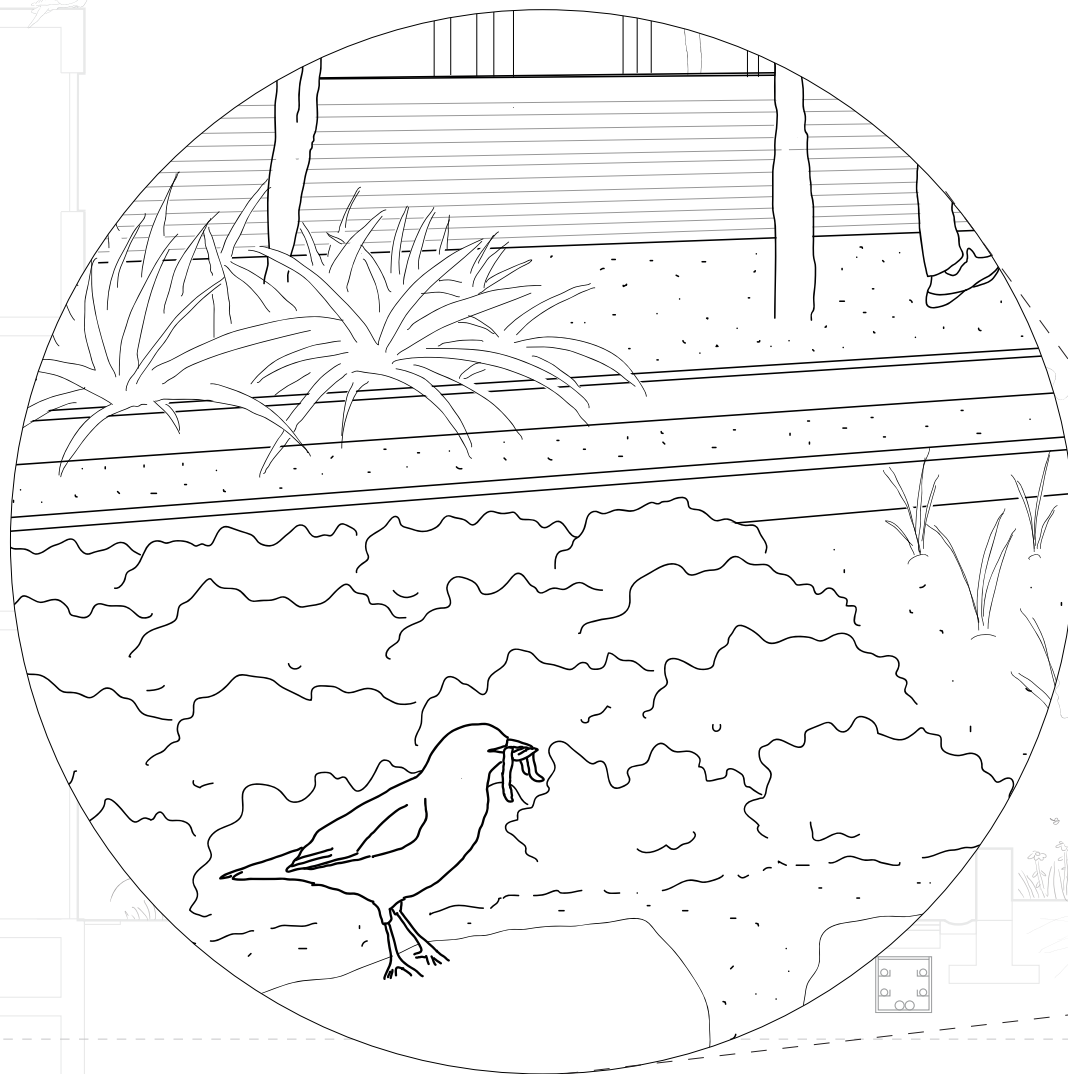




Ground water level

the sewage pipe

0 0,25 1 m



the sewage pipe



0 0,25 1m

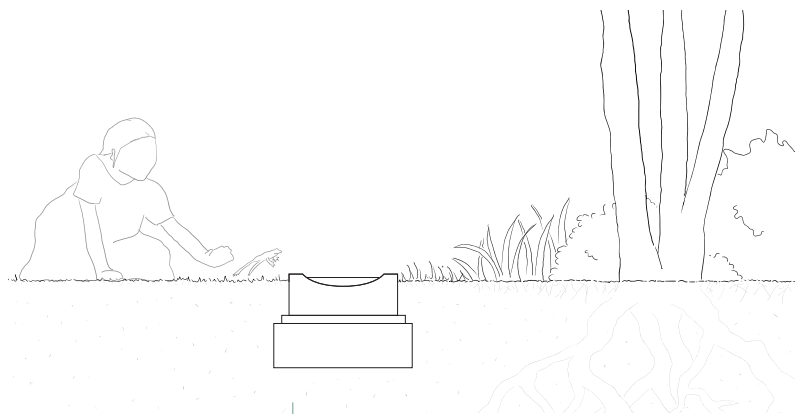




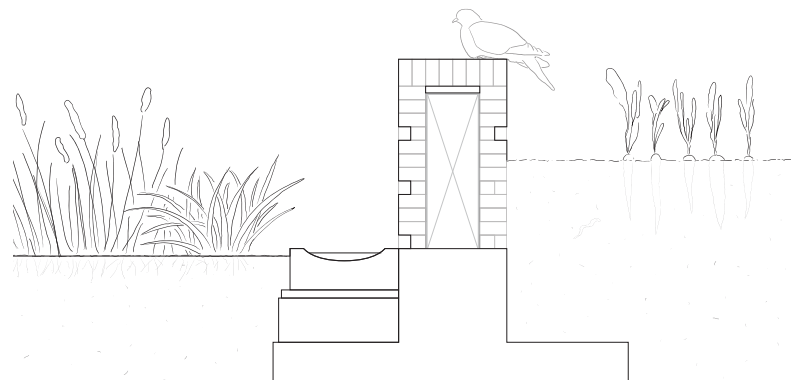
the cable box

Ground water level

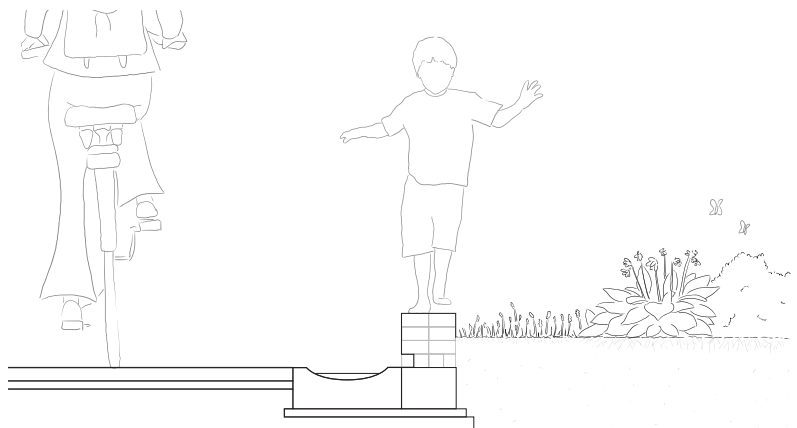
0 0,25 1 m



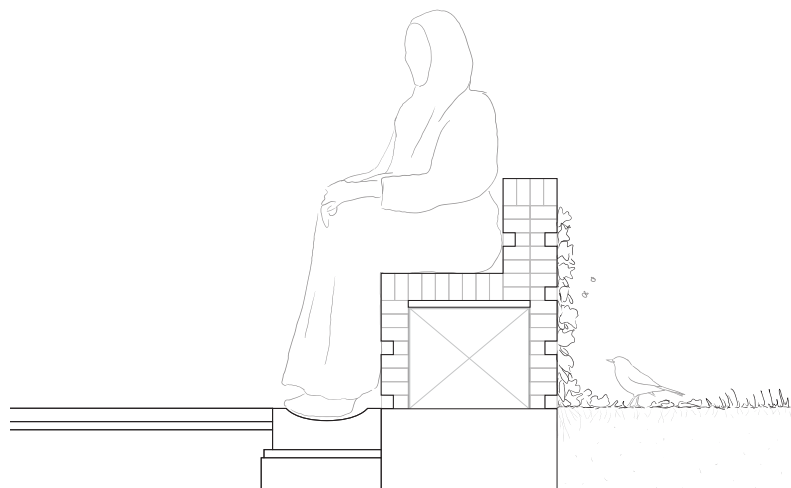
Open street gutter



Wall



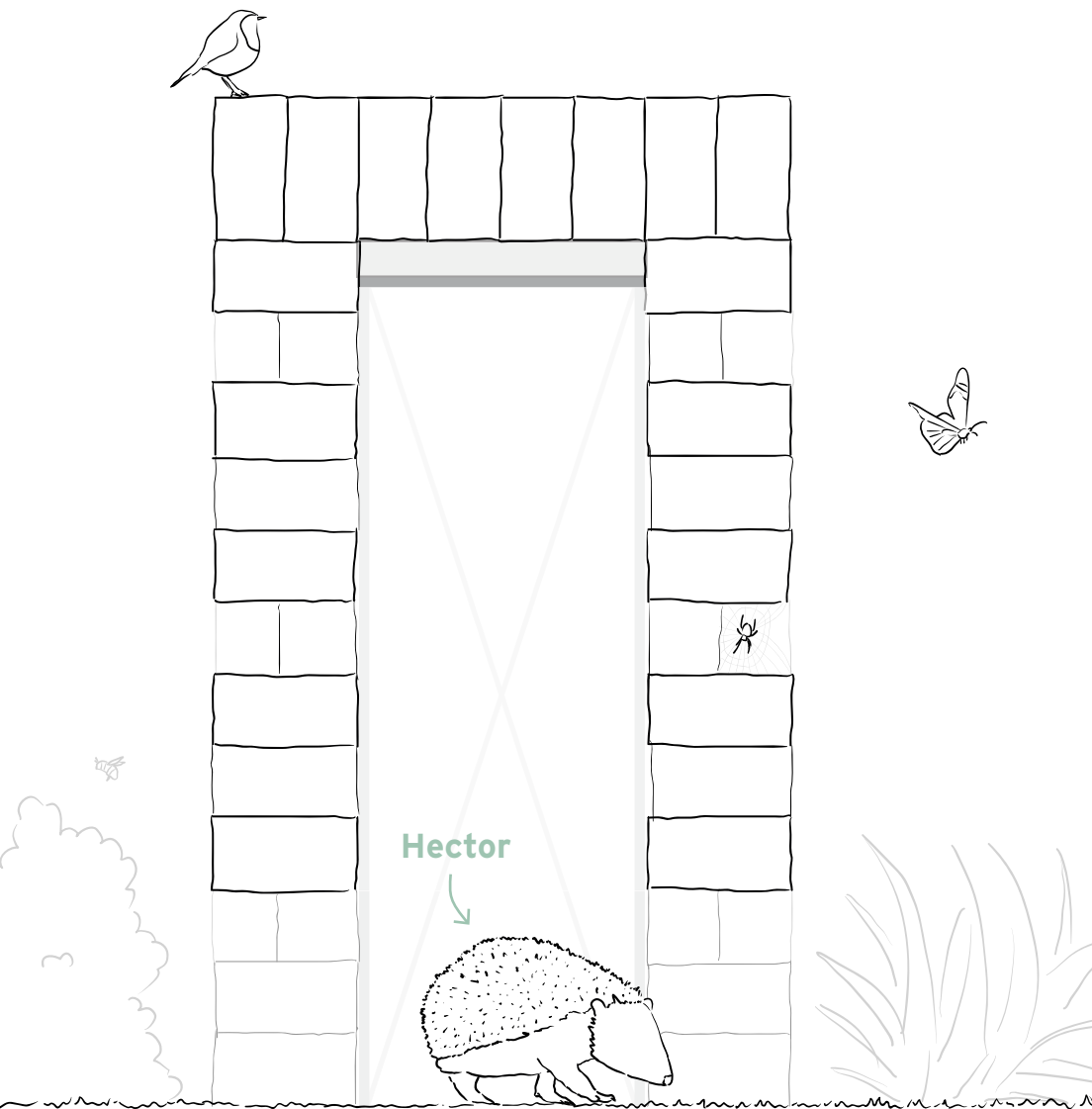
Edge



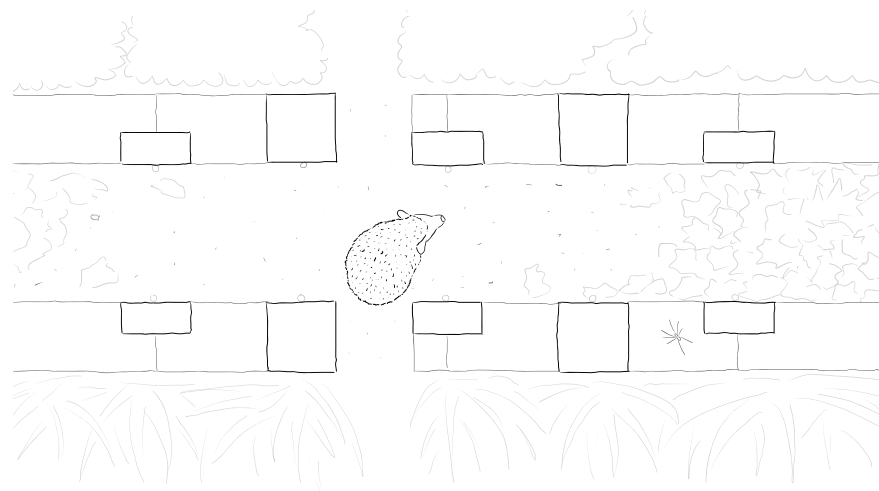
Bench

0 15 60 cm

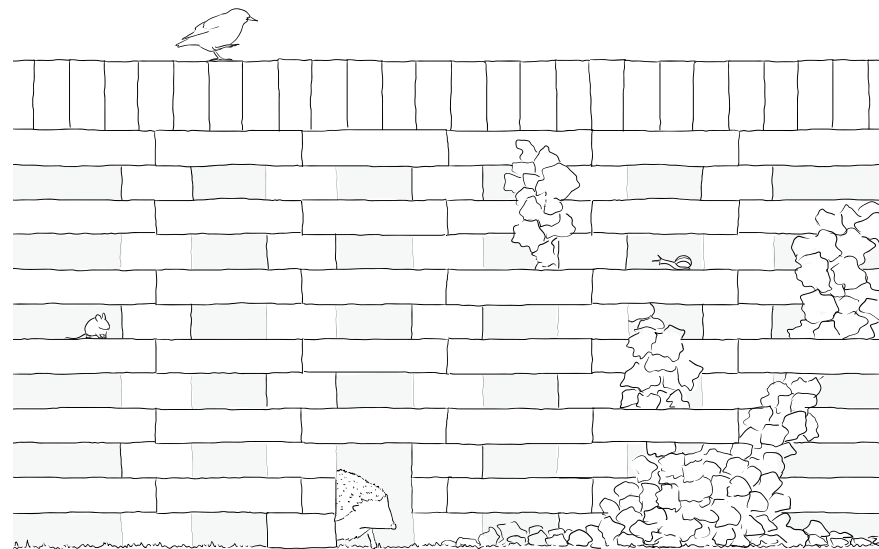




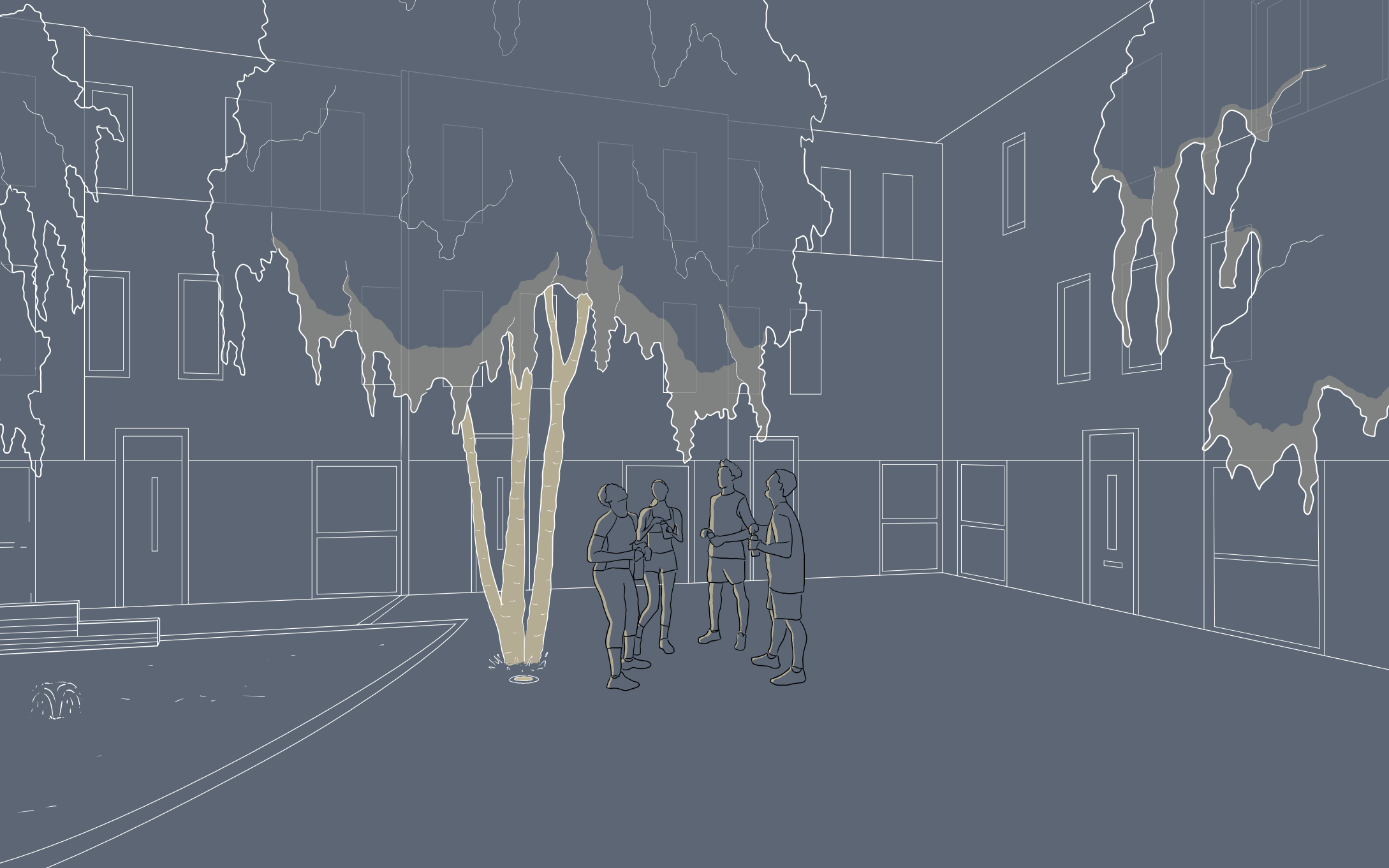
Vertical section

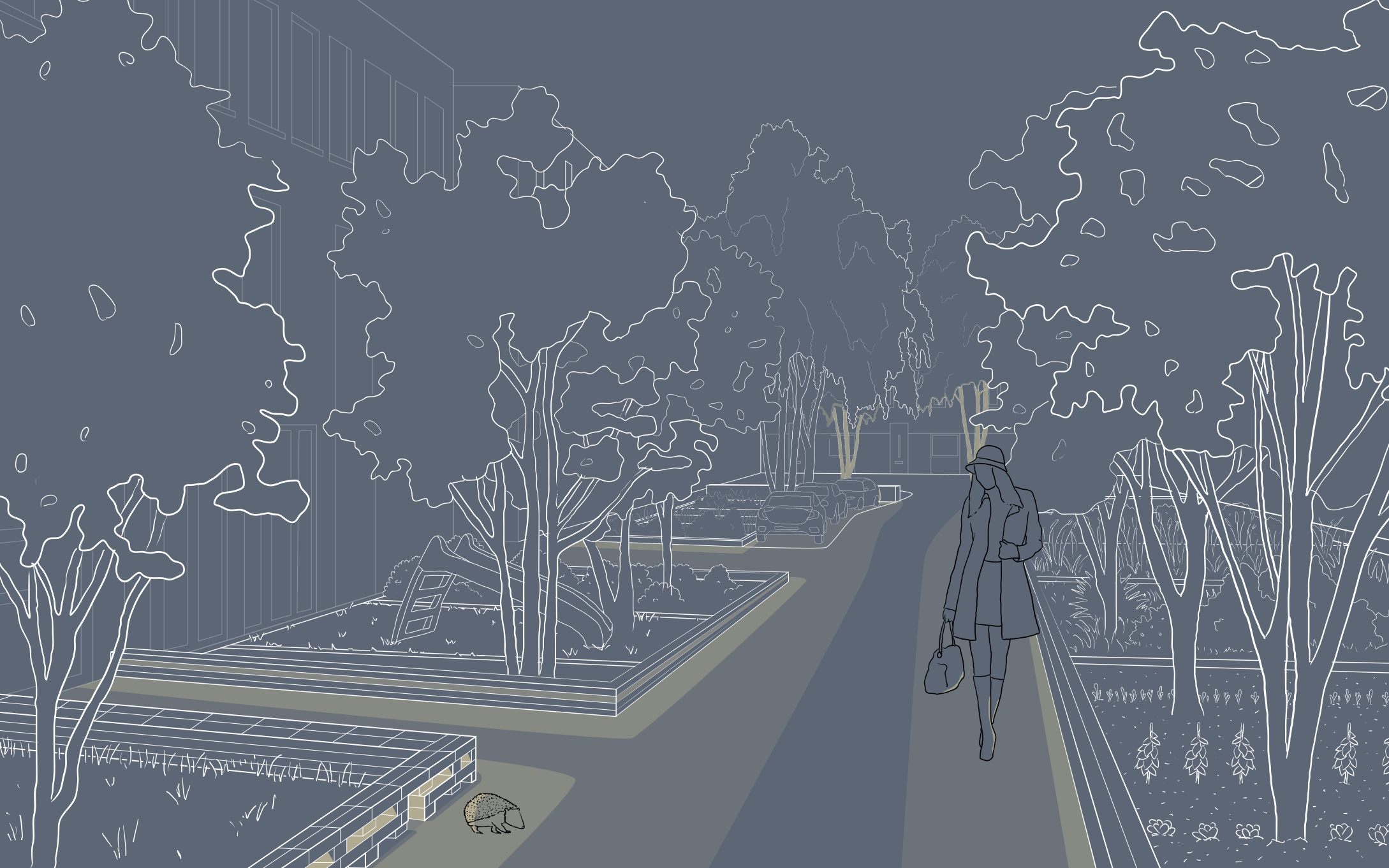


Horizontal section

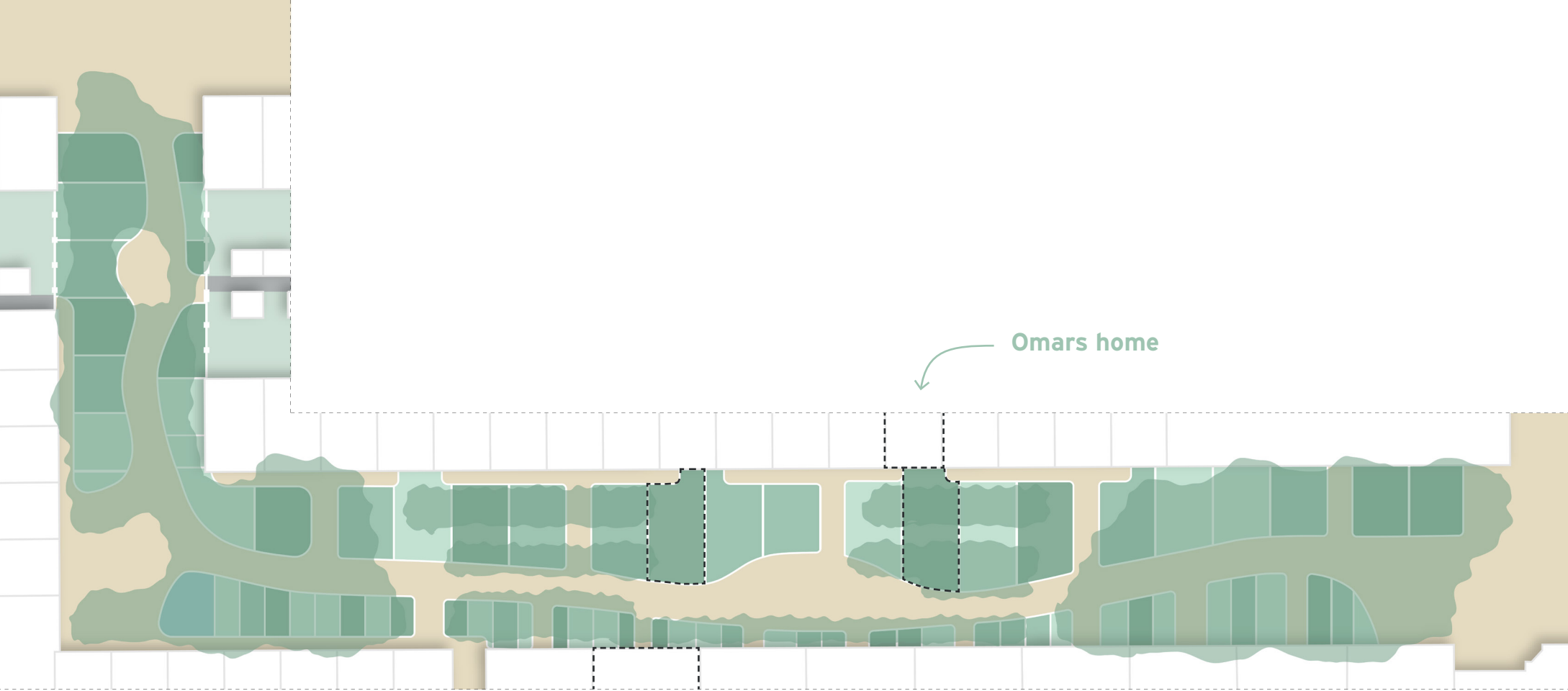


Front view

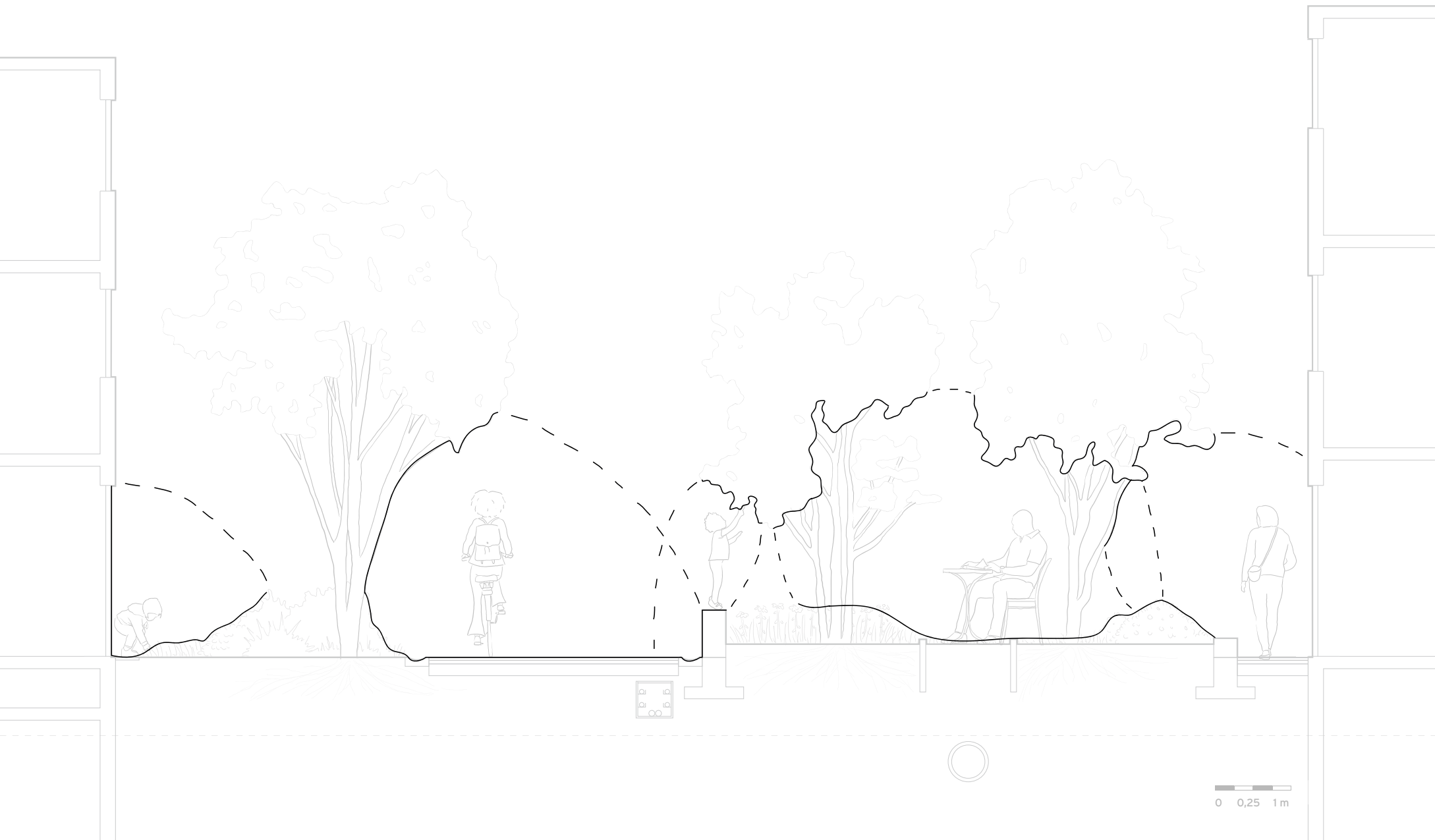




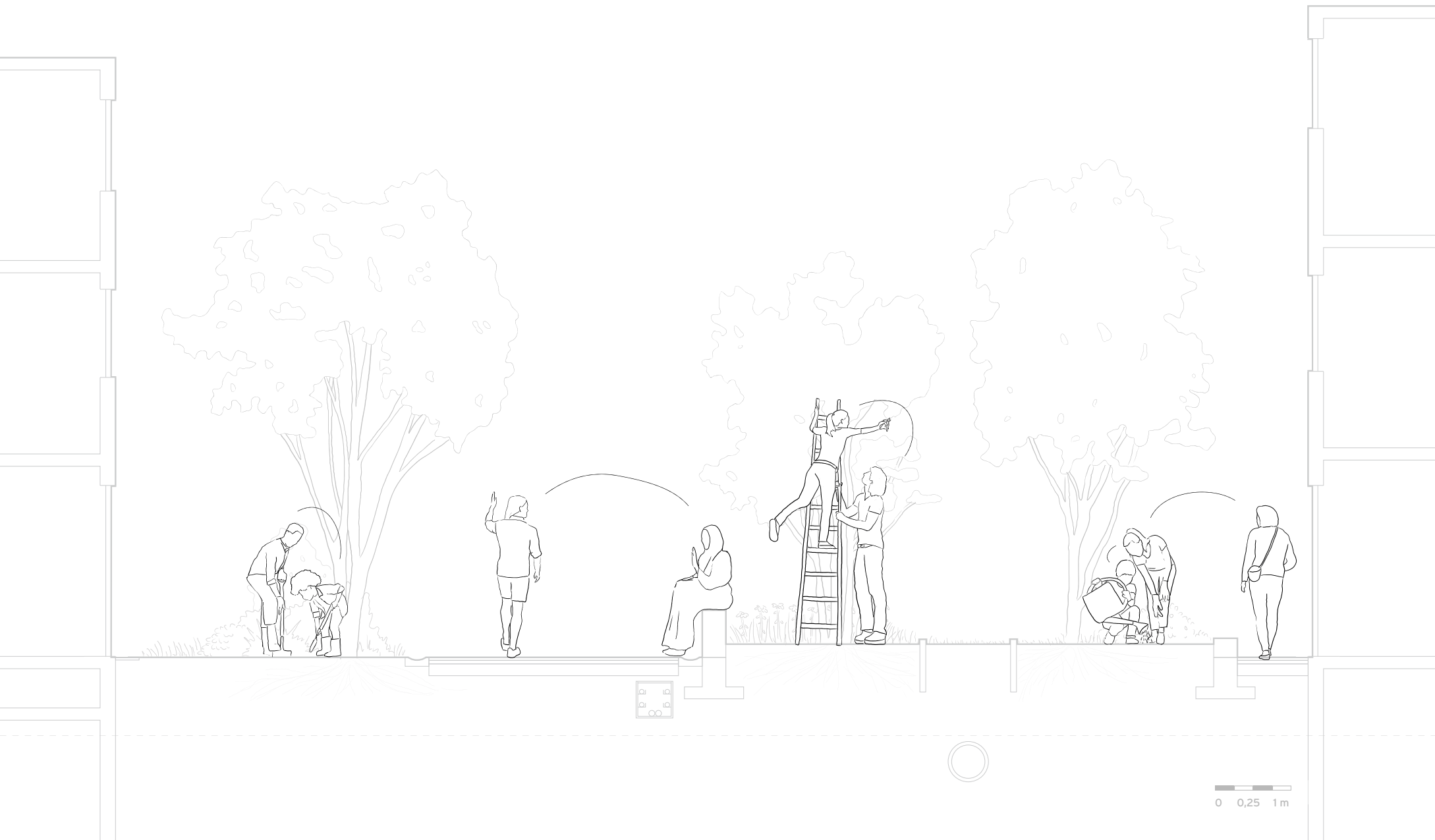




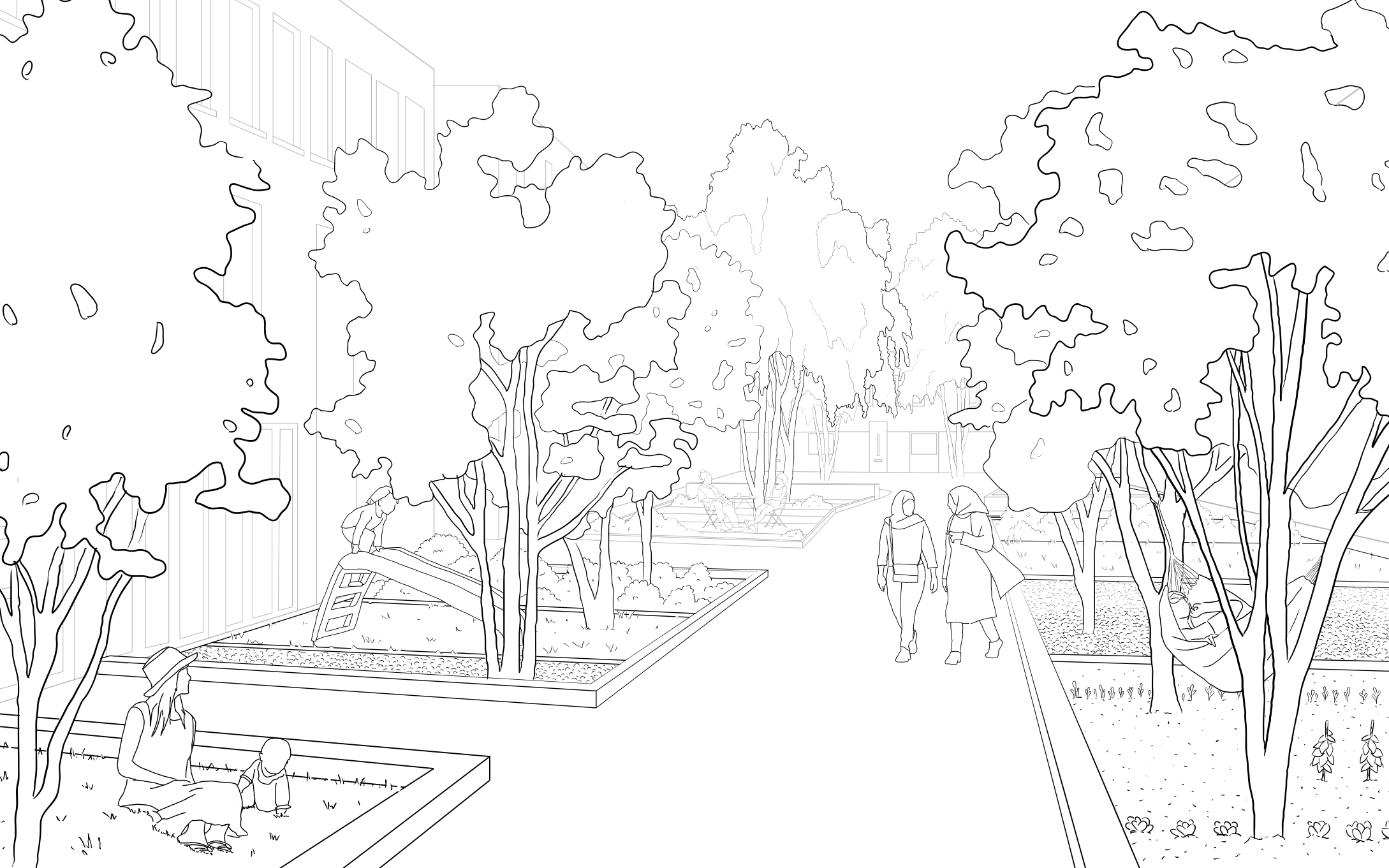
## Phase 5



0 0,25 1 m

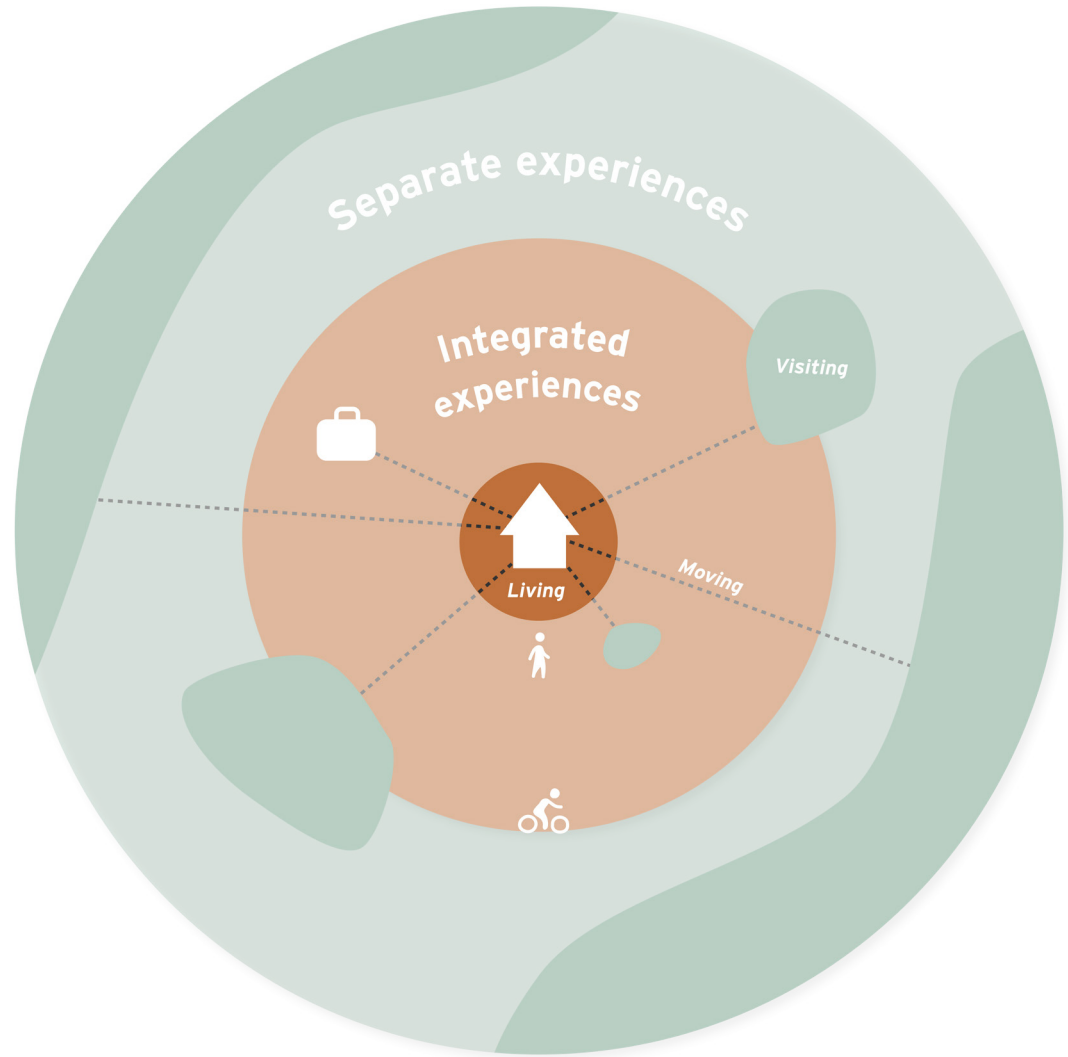








# Realms of experience



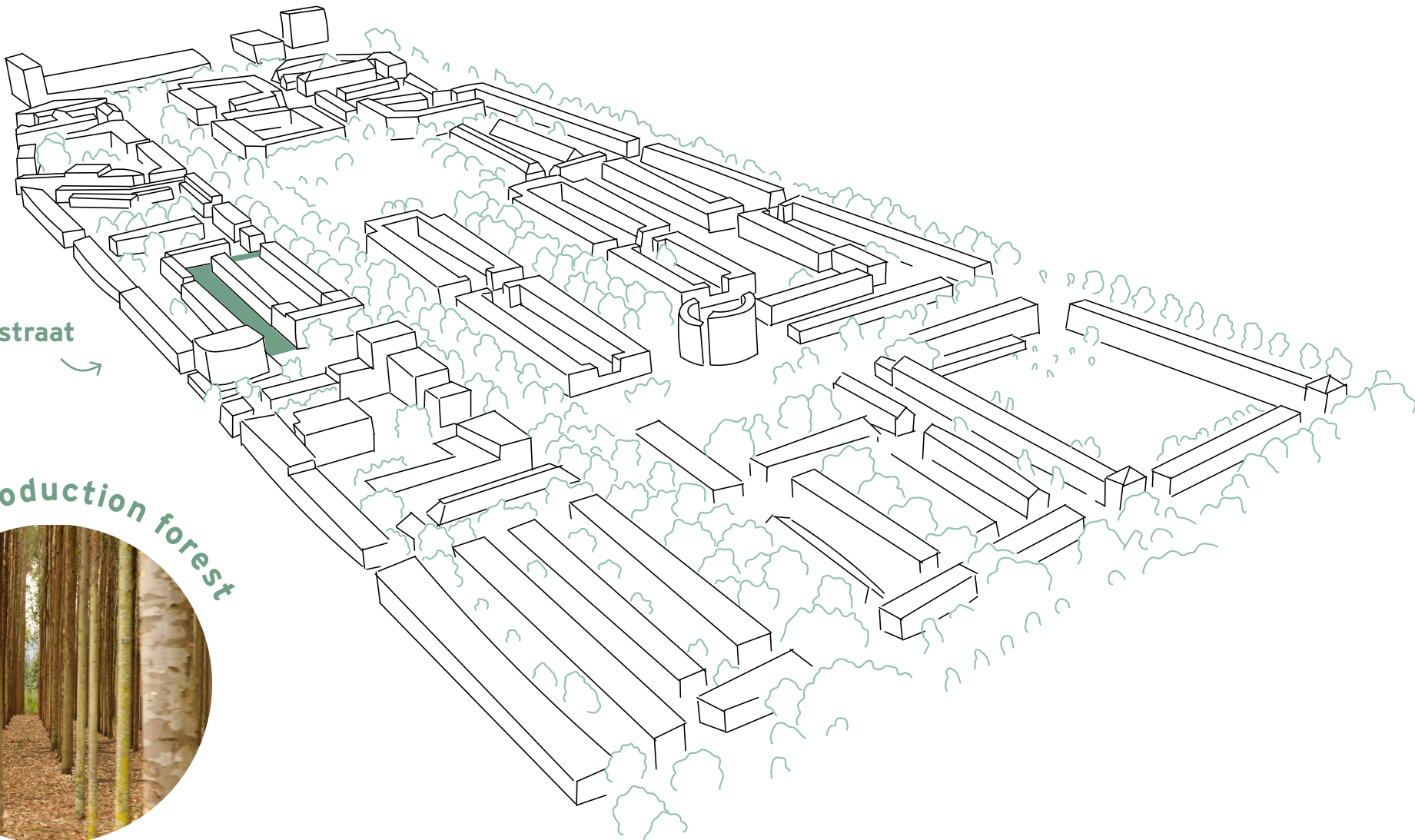


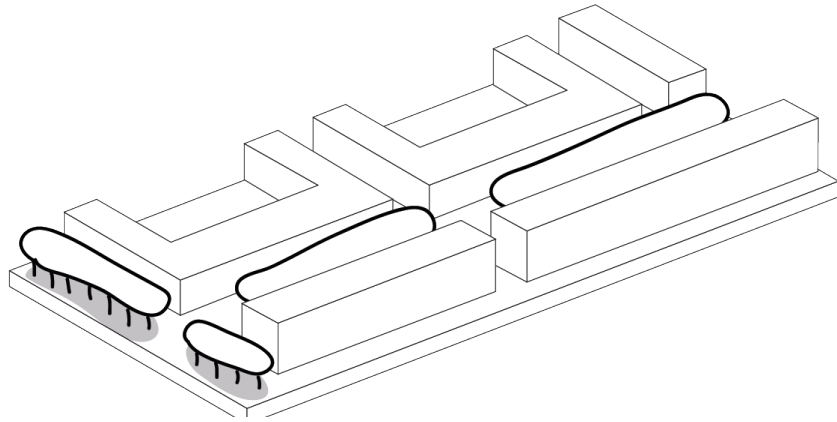


the Zuigerstraat



Linear production forest

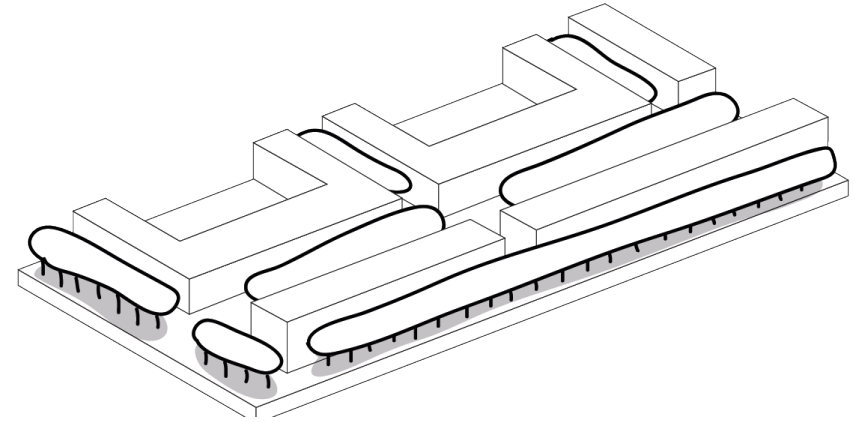




## Analysis

Trees provide shadow

Constant micro climate



## Vision


Increase amount of tree lines

Increase intensity of tree lines









**The urban forest** is a structure in the urban environment that's built out of elements that can be found in a forest and that brings the positive effects of a forest to the city

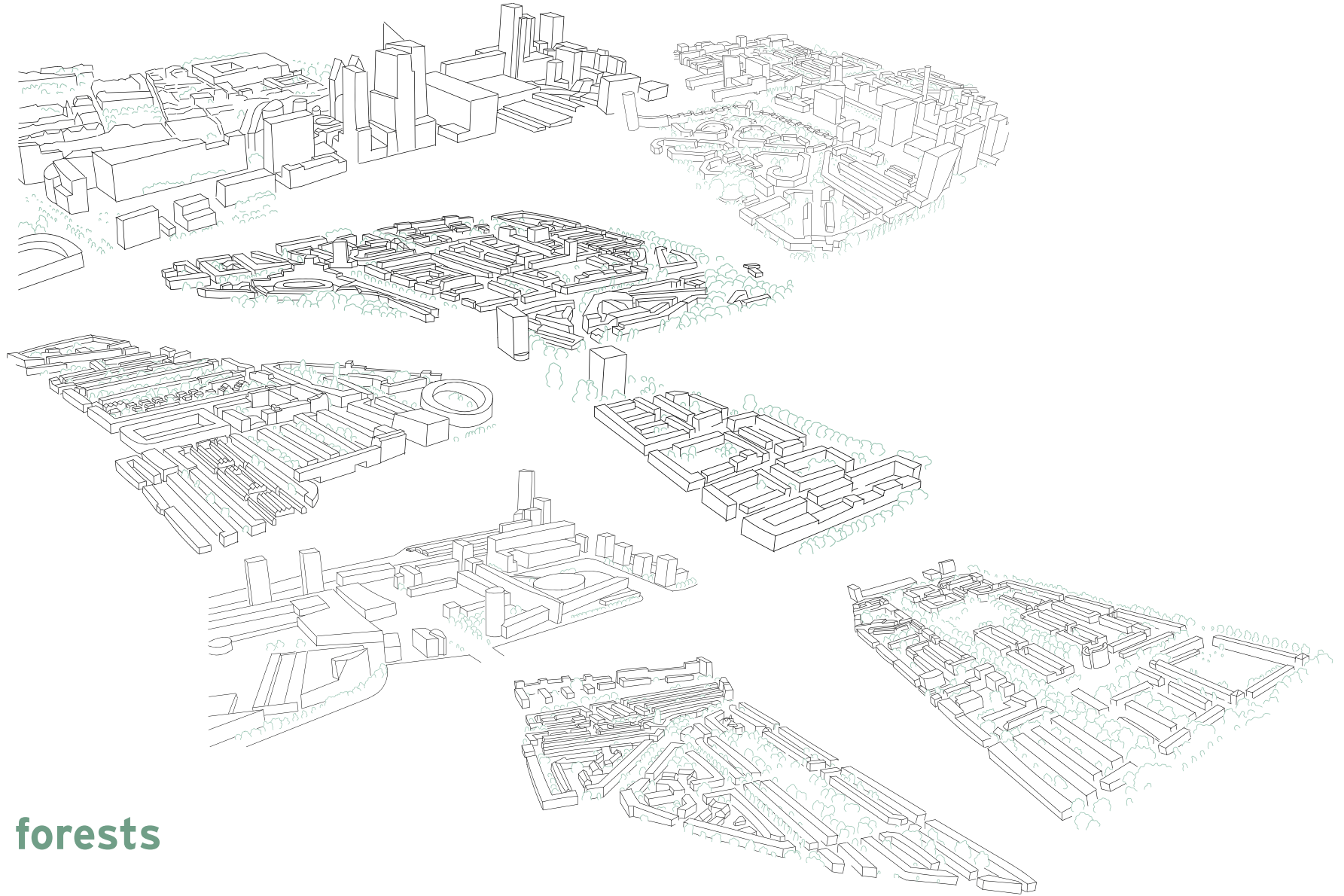


Tree canopy layer



the Zuigerstraat





Urban forests



1: Scattered tree line



2: Scattered oasis



4: Linear tree nursery



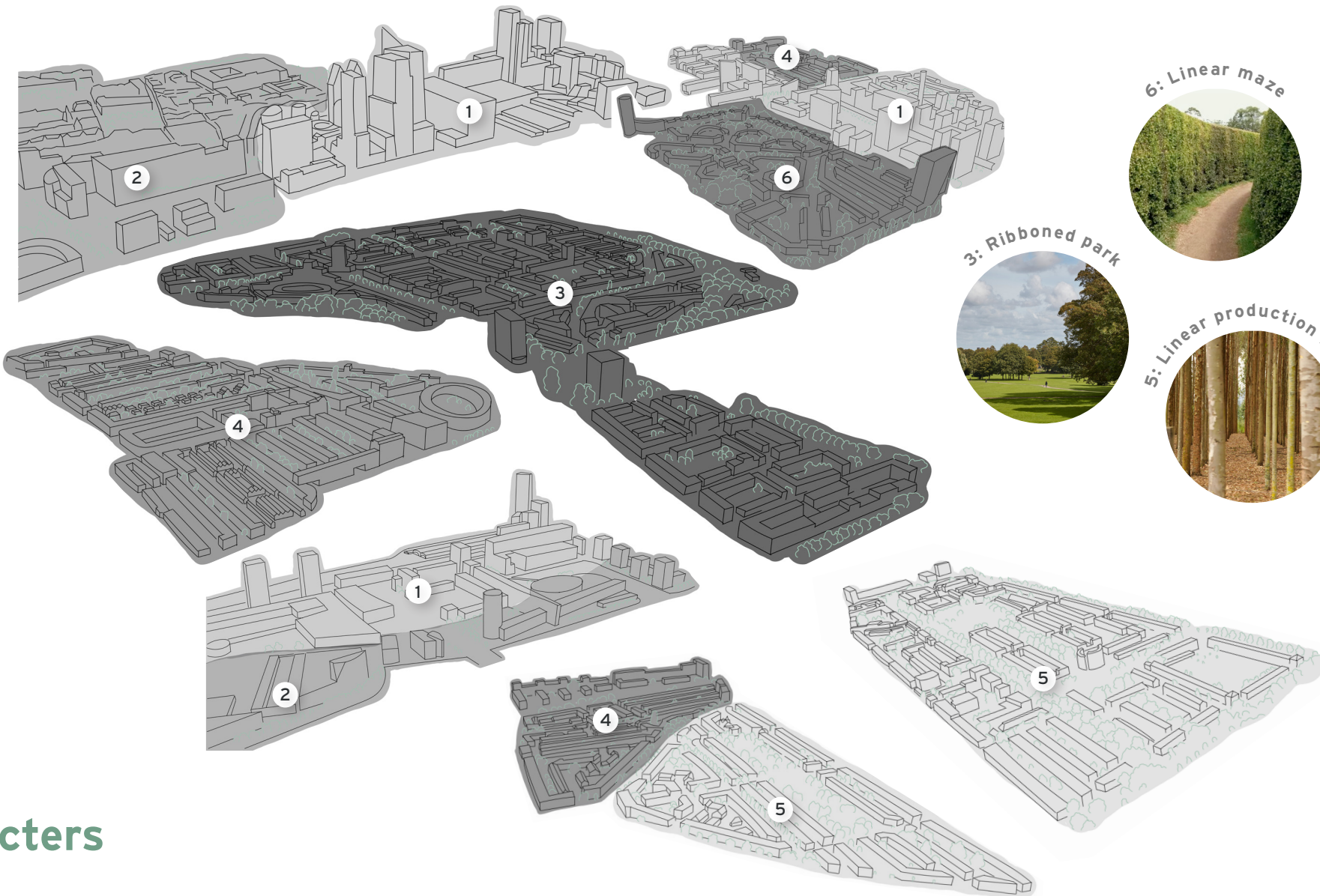
6: Linear maze



3: Ribboned park



5: Linear production forest



Characters

1: Scattered tree line



2: Scattered oasis



4: Linear tree nursery



6: Linear maze



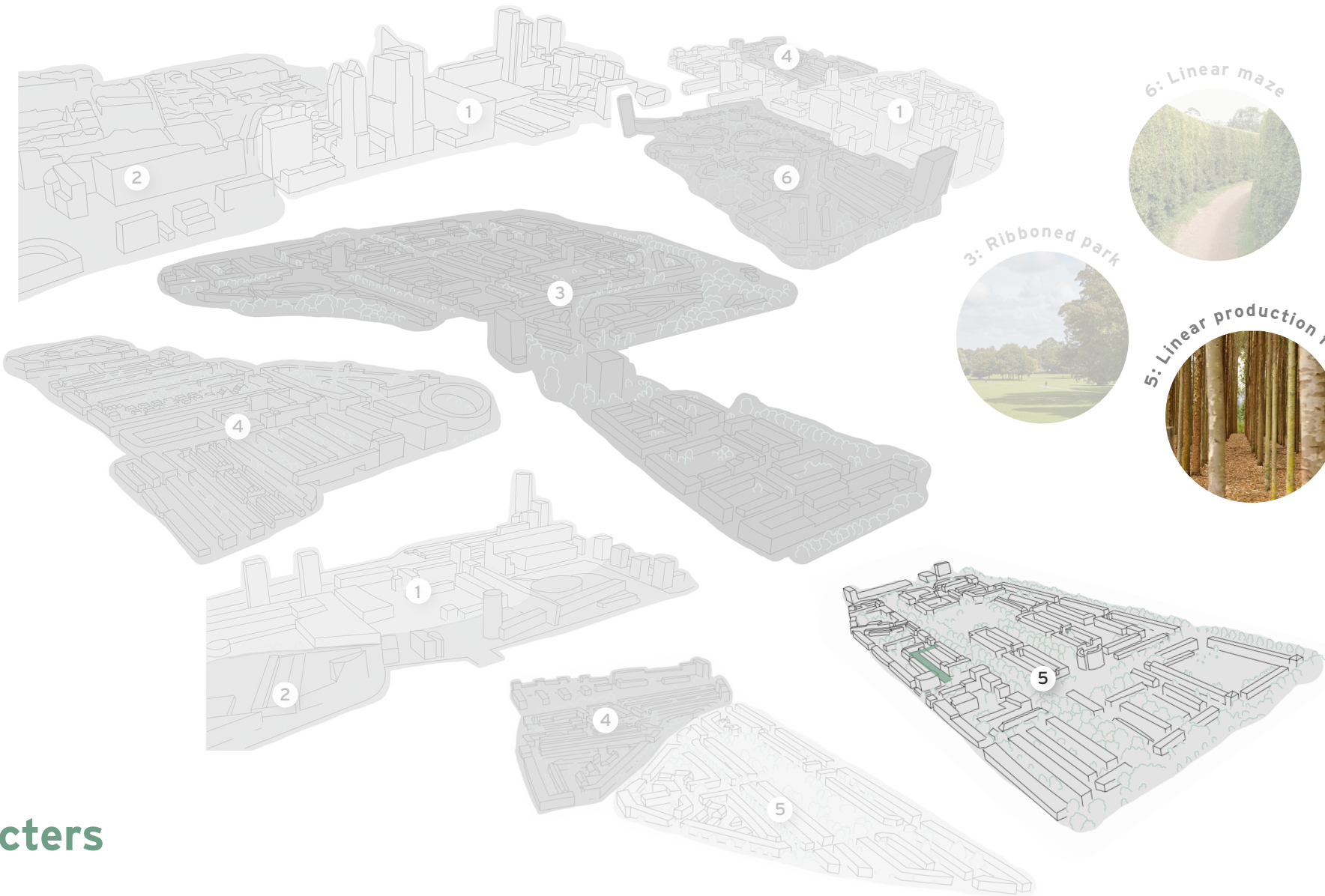
3: Ribboned park



5: Linear production forest



## Characters





1: Scattered tree line



2: Scattered oasis



4: Linear tree nursery



6: Linear maze



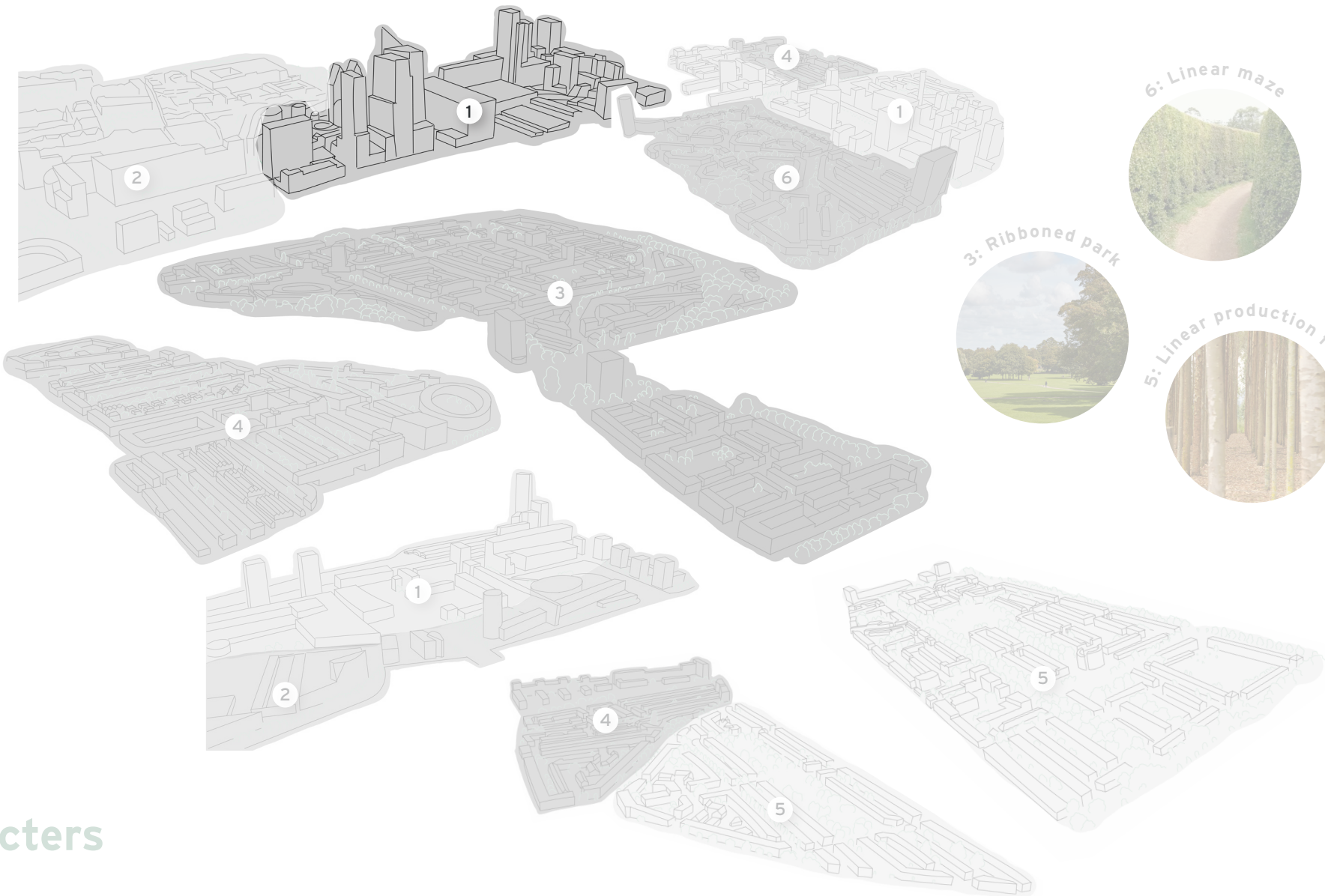
3: Ribboned park



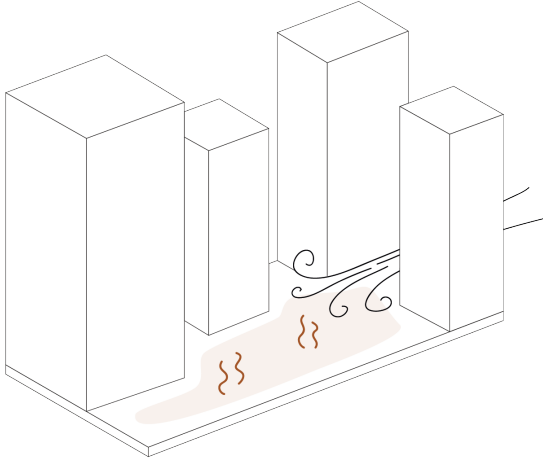
5: Linear production forest



## Characters

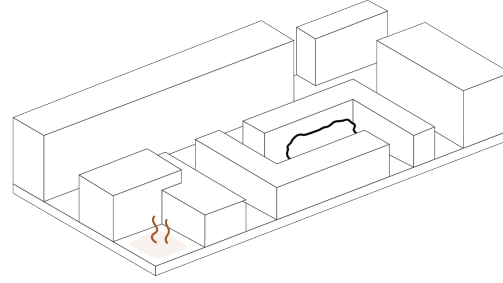


# Analysis



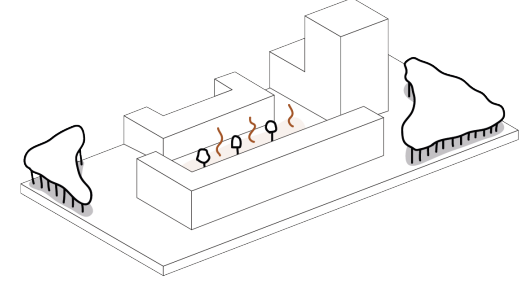
**Scattered tree line**

(Sudden) gusts of wind	Heat island effect
(Almost) no trees and vegetation	Monotone (horizontal)
High in legibility and coherence	Low in mystery and complexity



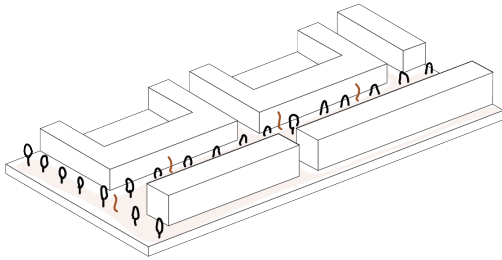
**Scattered oasis**

Big contrasts in micro climate	Heat island effect in desert part
Big horizontal contrasts	
Low in legibility	High in mystery



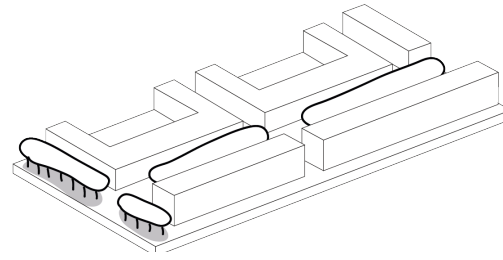
**Ribboned park**

Differences in micro climate	Cool corridors
Connected corridors	A bit monotone (horizontal)
Contrasts between spaces with different tree sizes	



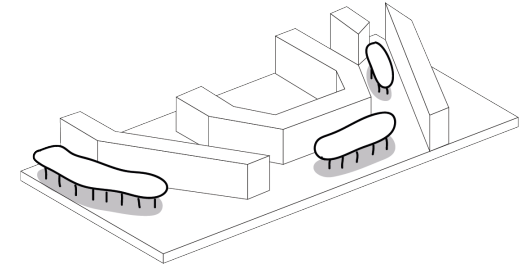
**Linear tree nursery**

ENVIRONMENTAL	Heat island effect, trees give almost no shadow
ECOLOGICAL	Too thin lines to create a corridor
SPATIAL	Young forest, feels not finished yet



**Linear production forest**

Trees provide shadow	Constant micro climate
Constant forest	A bit monotone
The classic street lane	
High in coherence and legibility	

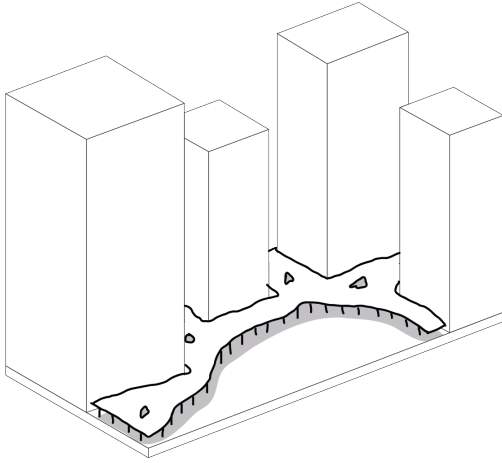


**Linear maze**

Trees provide shadow	Constant micro climate
Constant forest	A bit monotone
High in mystery and complexity	



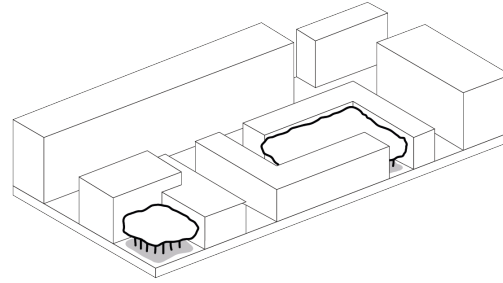
# Vision



Scattered tree line

Add small trees in streets

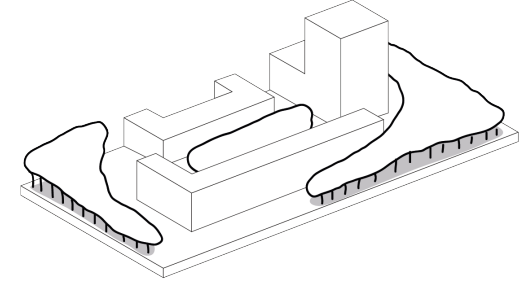
Keep clearings on squares



Scattered oasis

Increase amount of oases

Increase intensity of oases

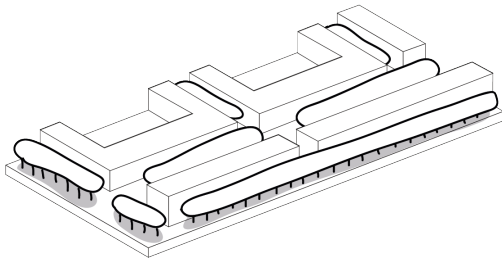


Ribboned park

Increase amount of ribbons

Increase intensity of ribbons

Connect some ribbons

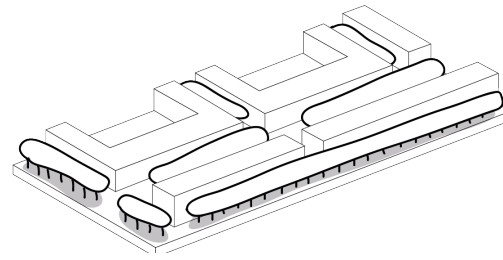


Linear tree nursery

Turn into linear production forest

Lack of space: add smaller tree species

Enough space: add right trees for these conditions

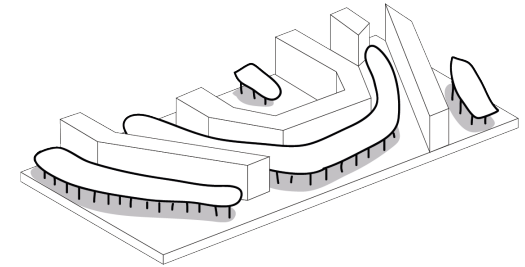


Linear production forest

Increase amount of tree lines

Increase intensity of tree lines

Connect some tree lines



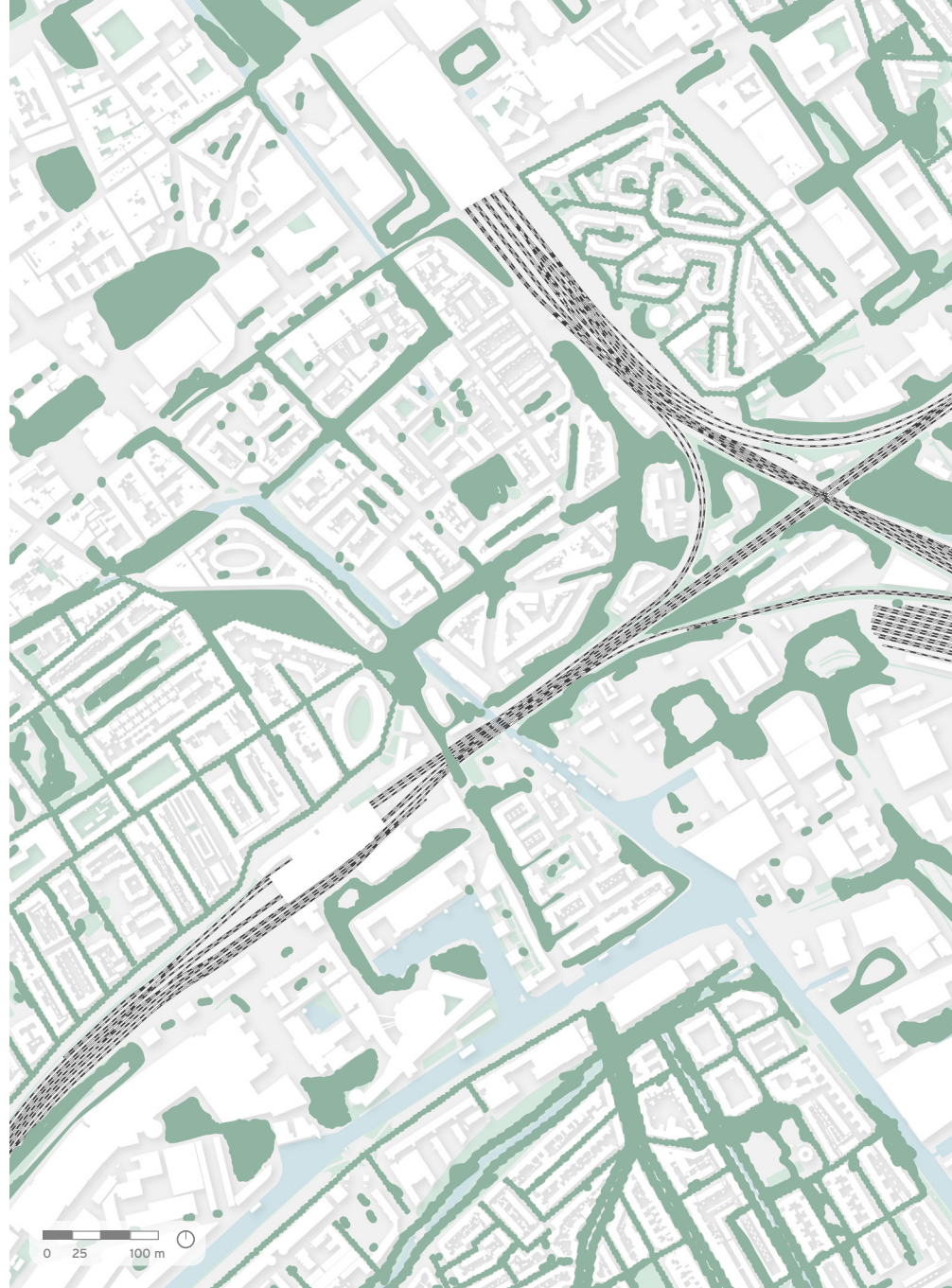
Linear maze

Increase amount of tree lines

Increase intensity of tree lines

Connect some tree lines

## New situation



## Lisa's route

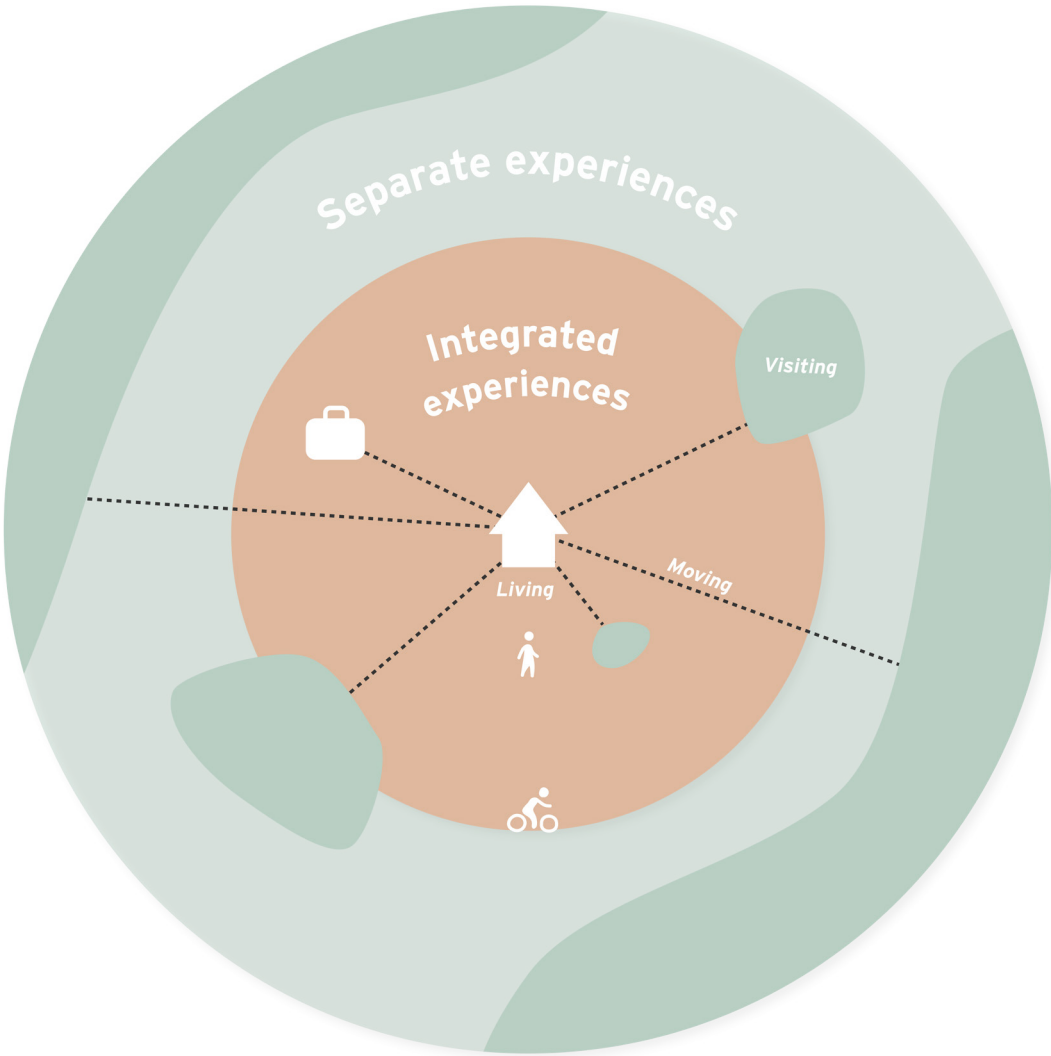


**WORK**

**HOME**



# Moving



# Urban forest characters on the route

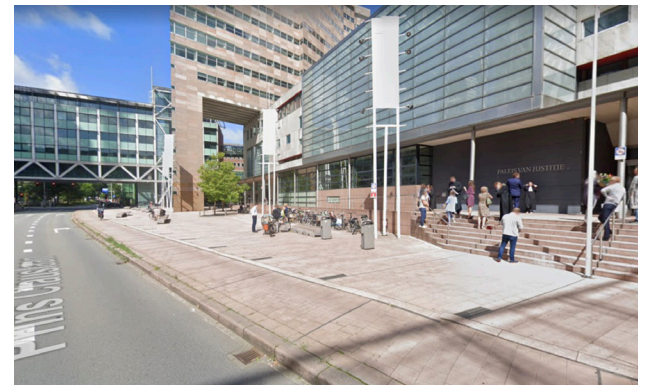
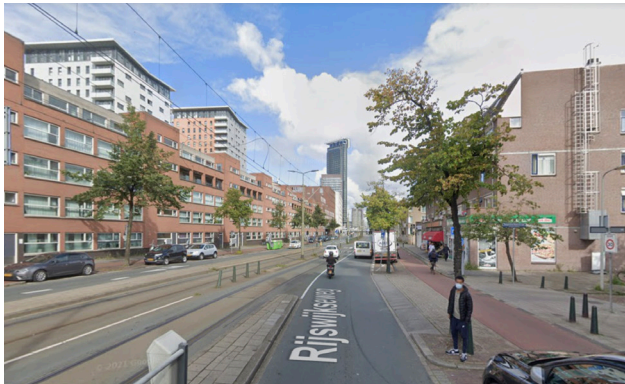


HOME  WORK



0 1 2 3 4 7 8 10 13 minutes



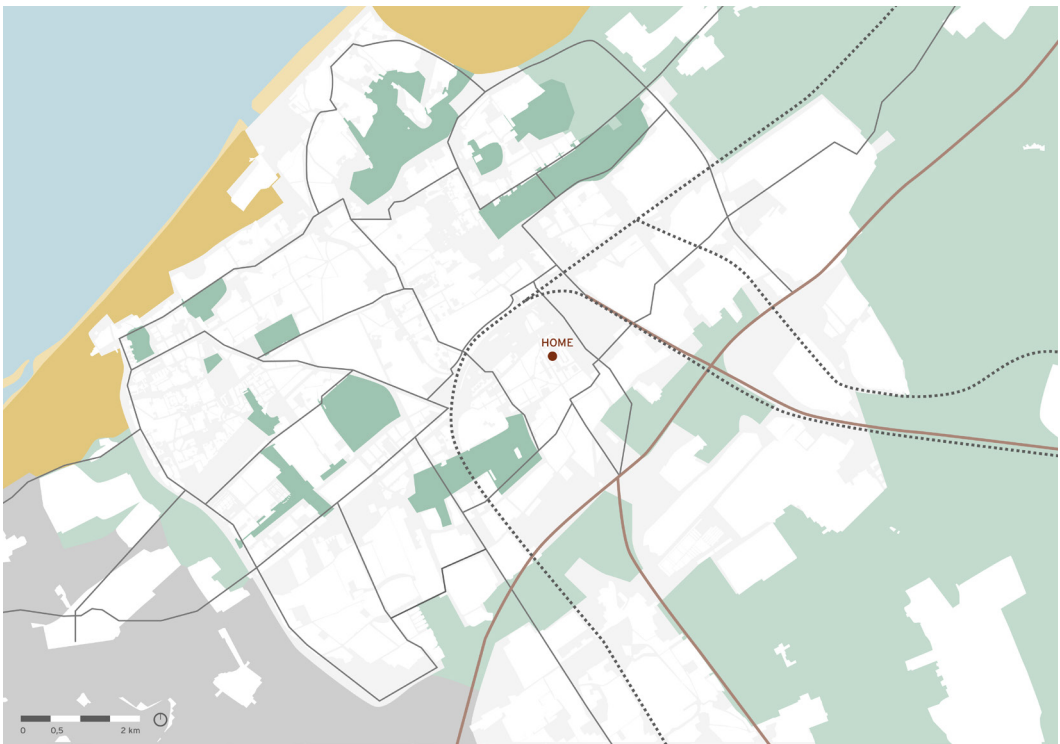




# Main road network

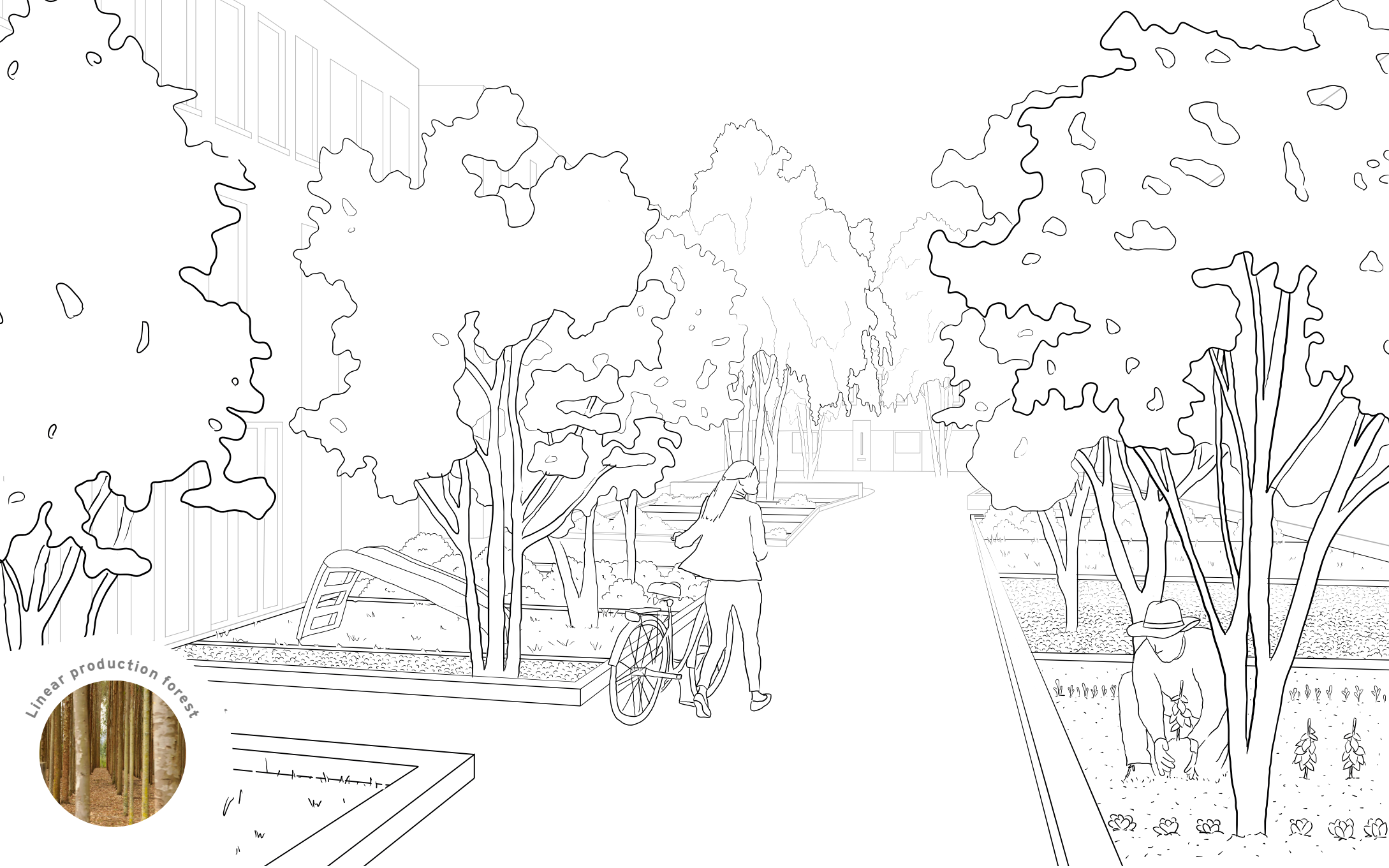


Current situation

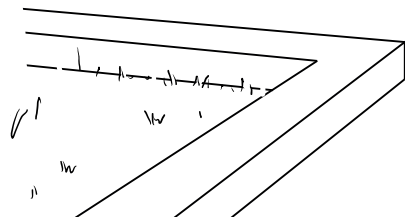


New situation





Linear production forest

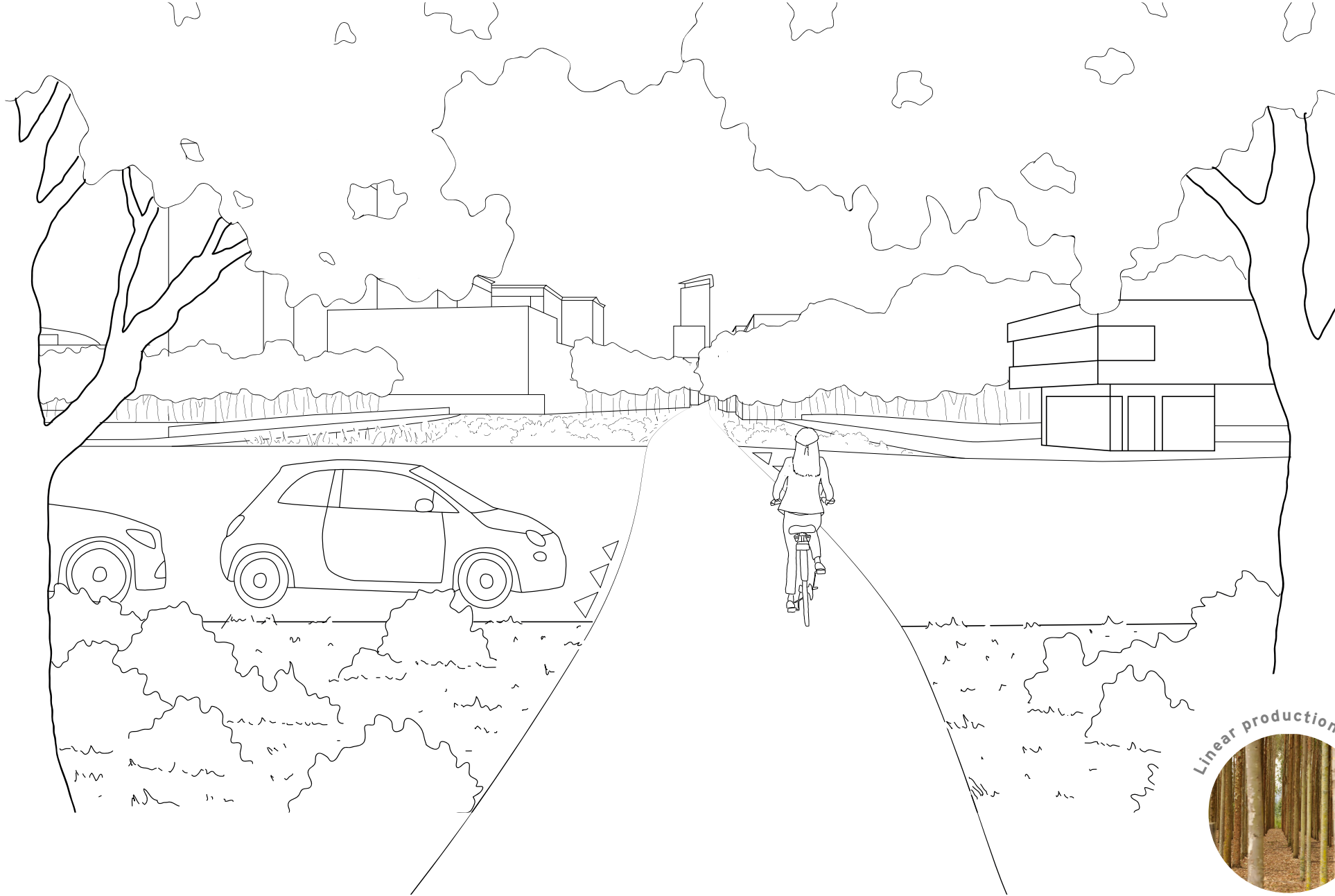




Linear production forest

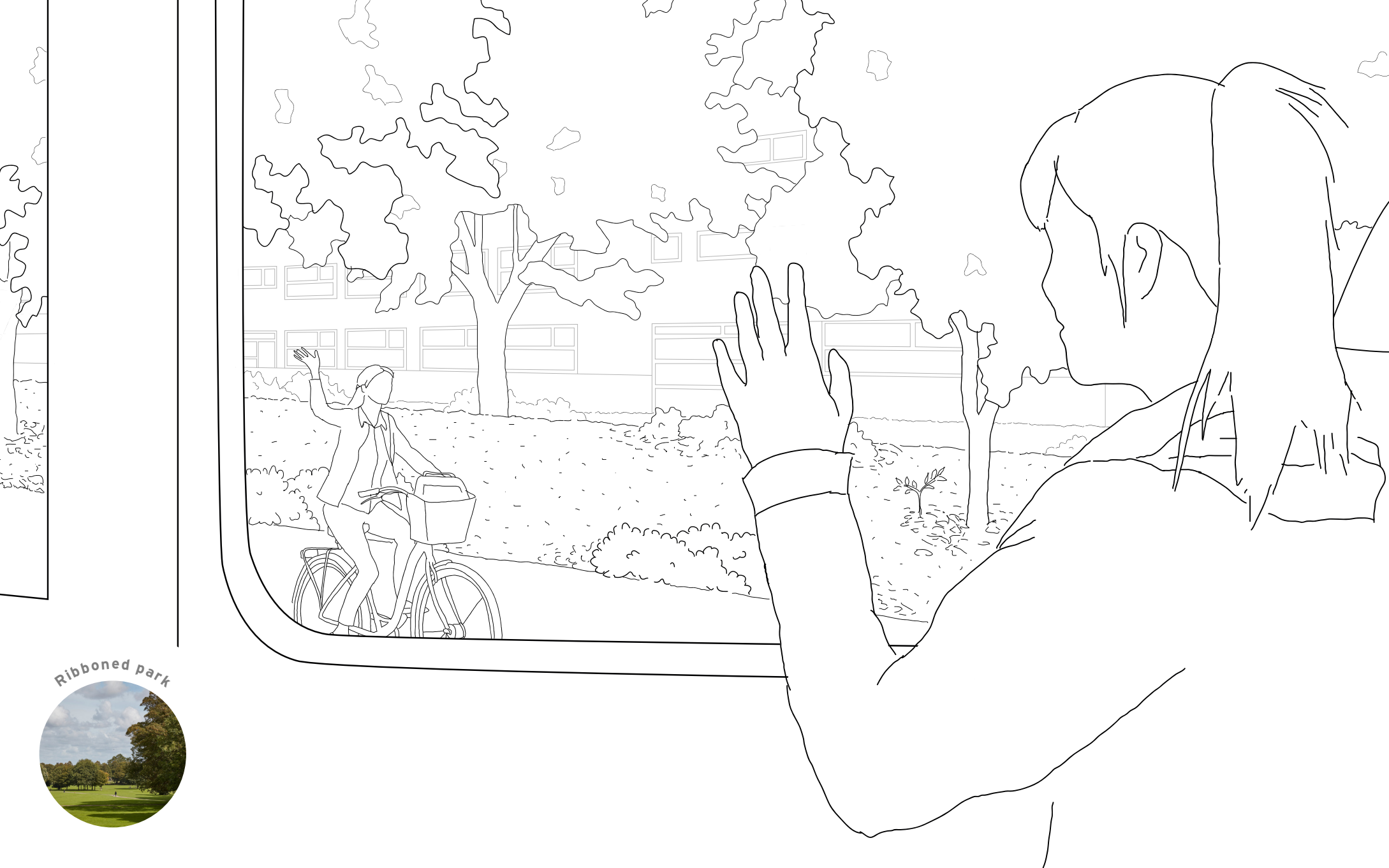






Linear production forest





Ribboned park





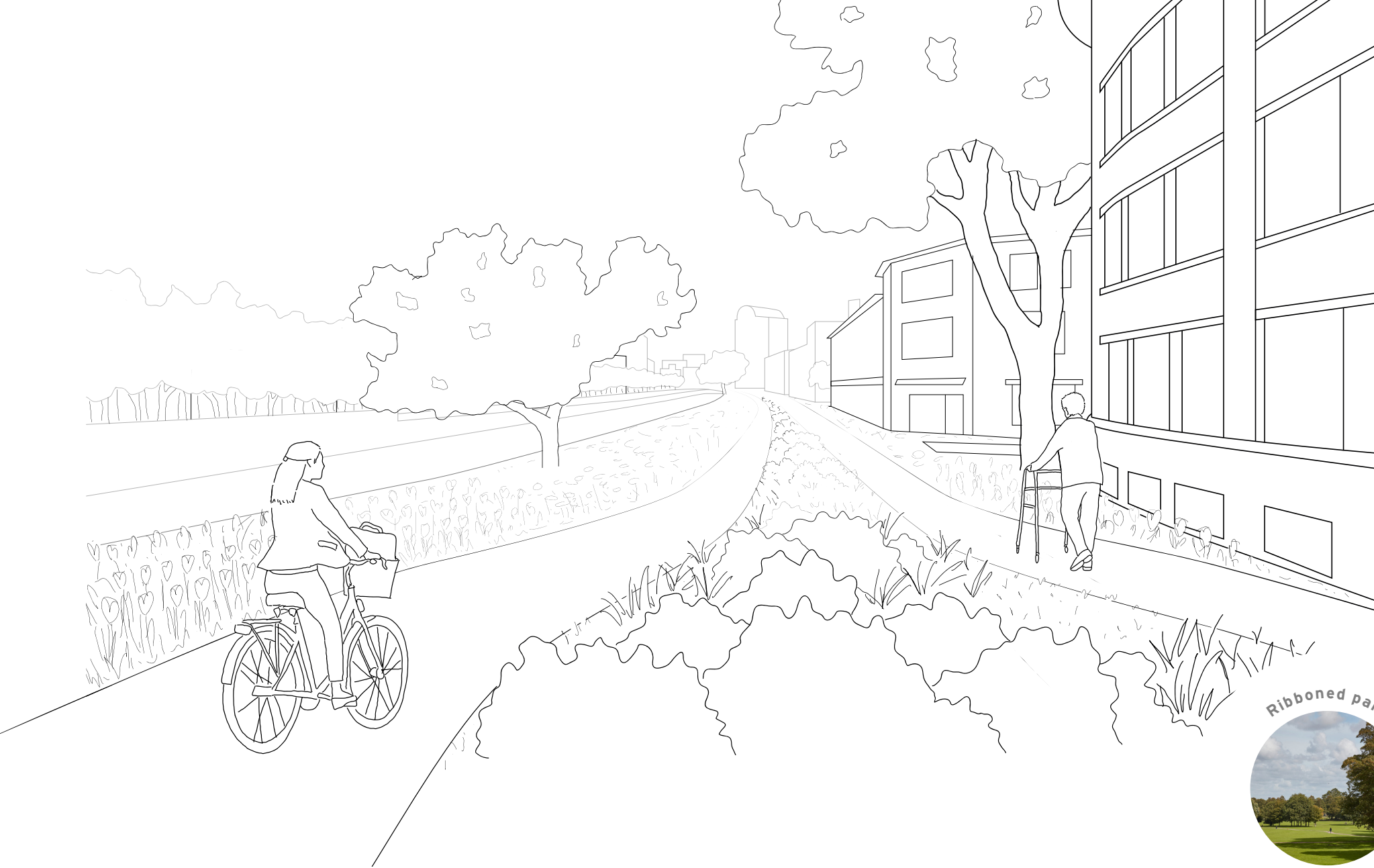
Ribboned park



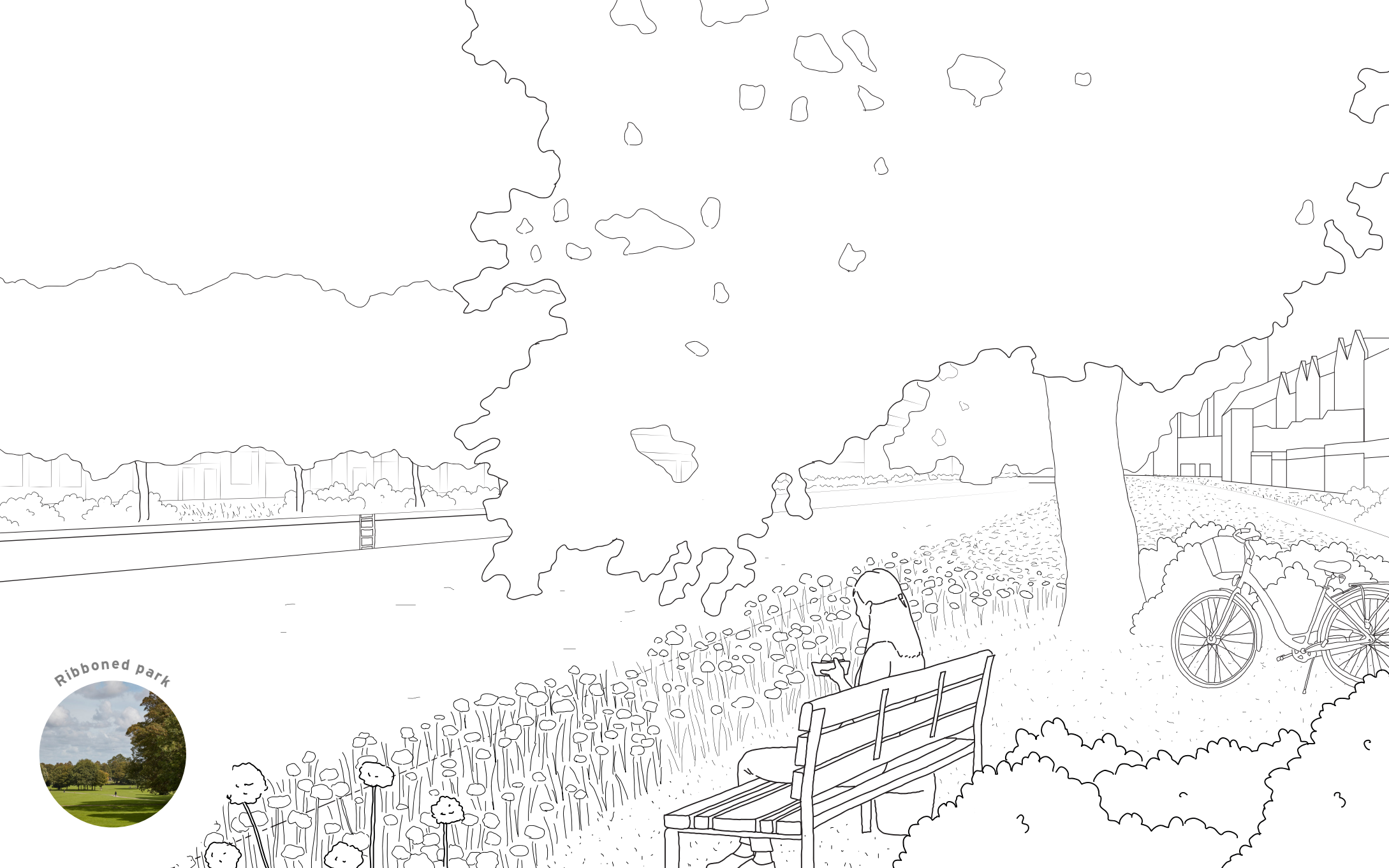












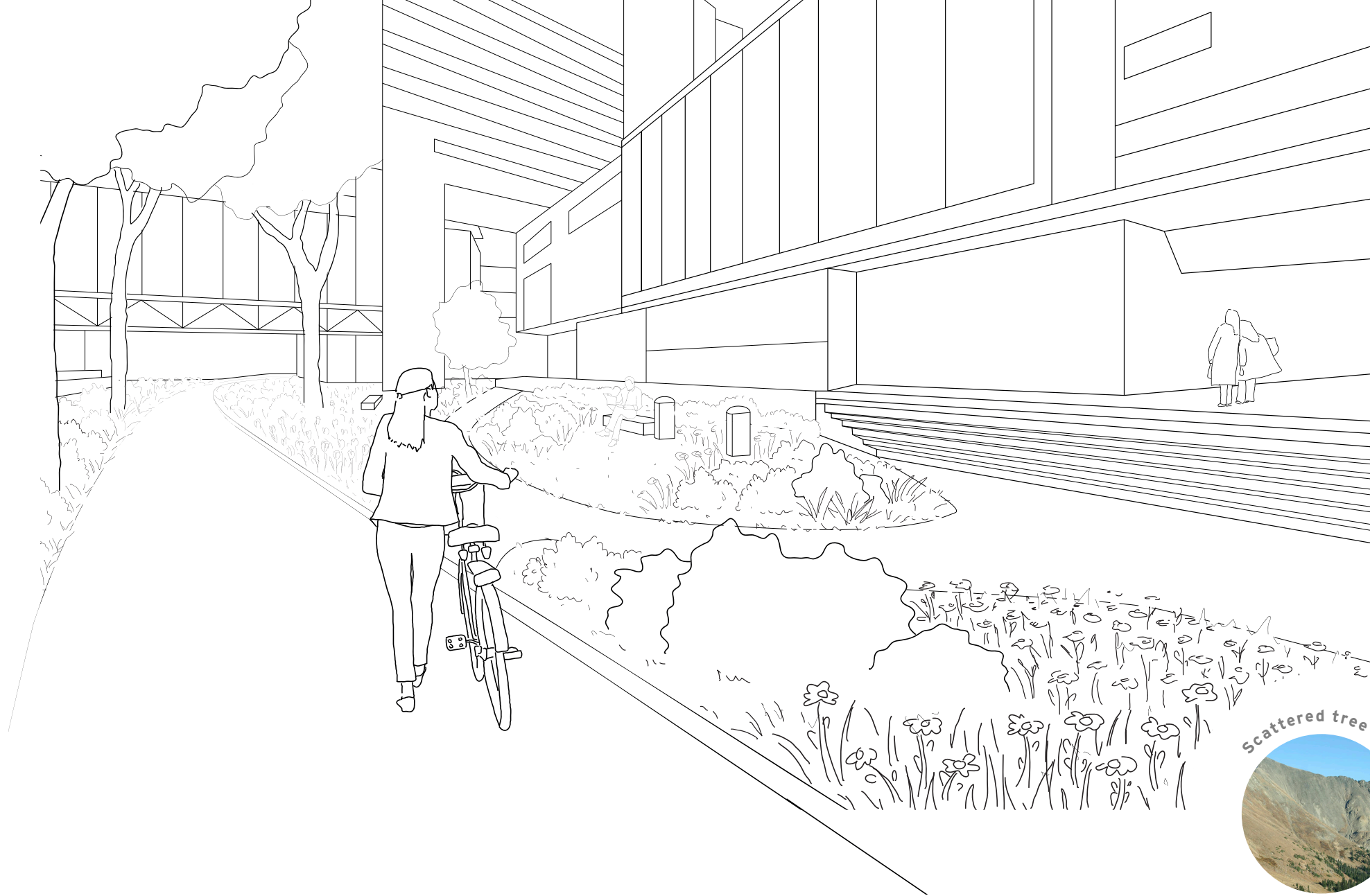
Ribboned park





Scattered tree line



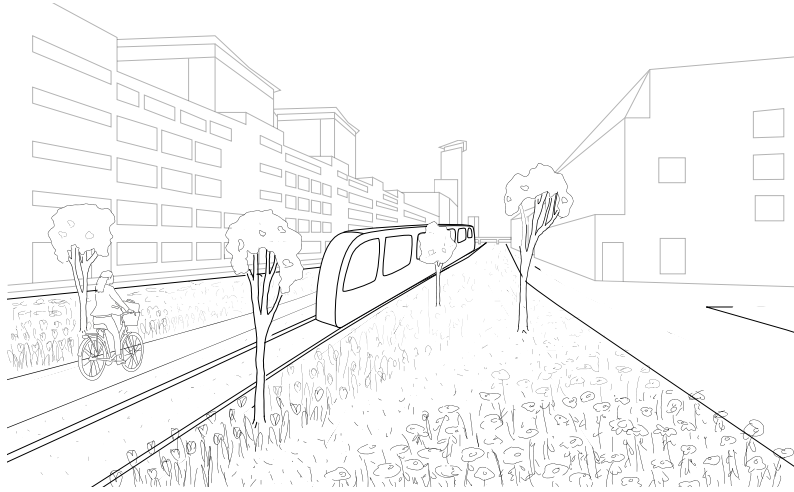


Scattered tree line

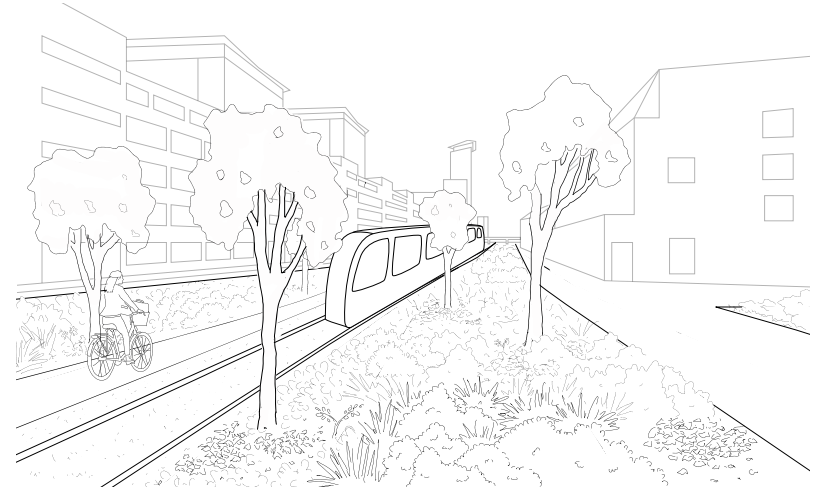




# Slow growing forest



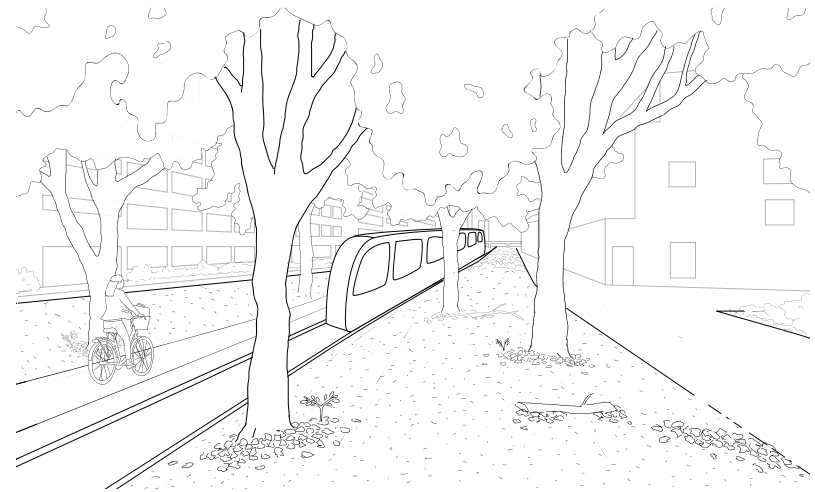
Phase 1: Grasslands



Phase 2: Grasslands and roughs

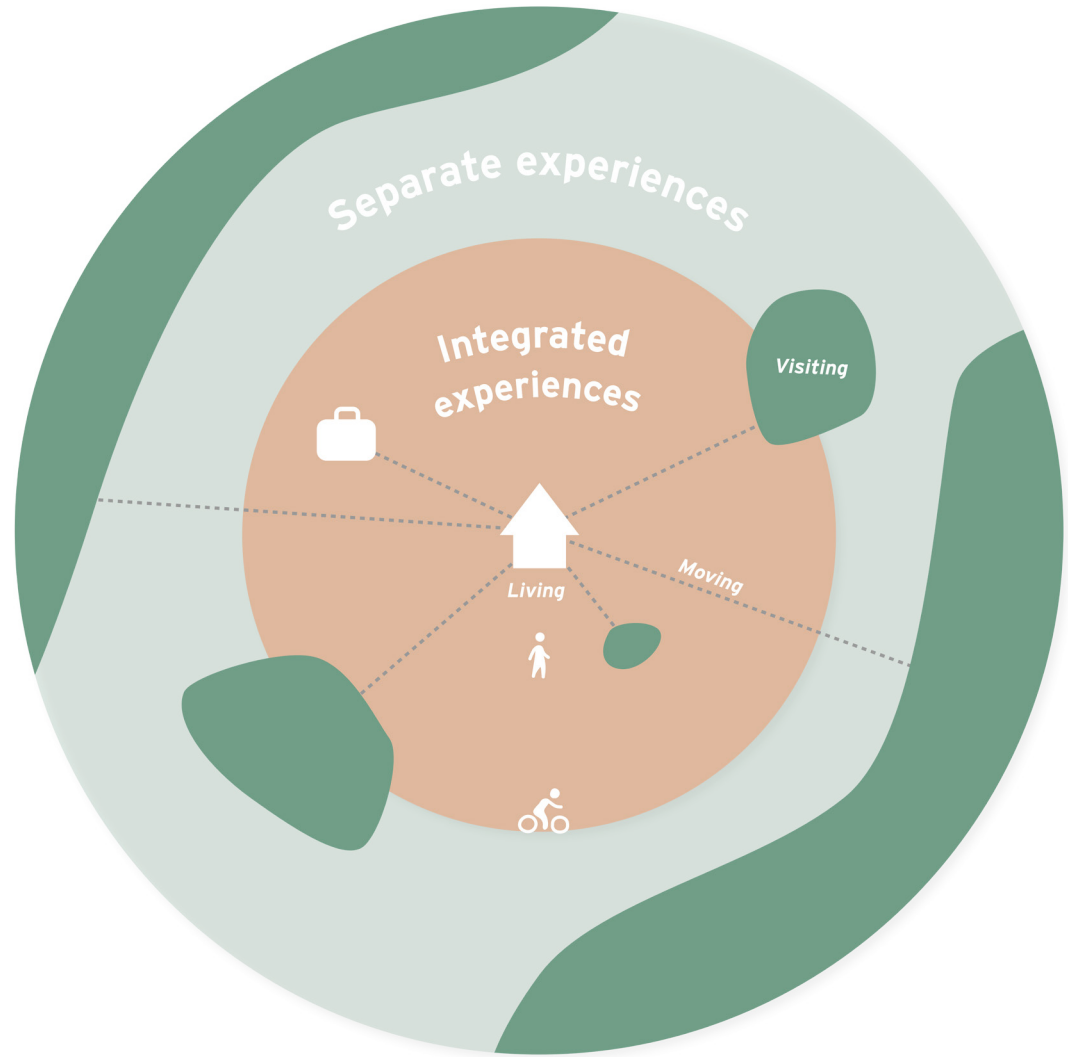


Phase 3: Slow growing forest



Phase 4: Slow growing forest

# Visiting





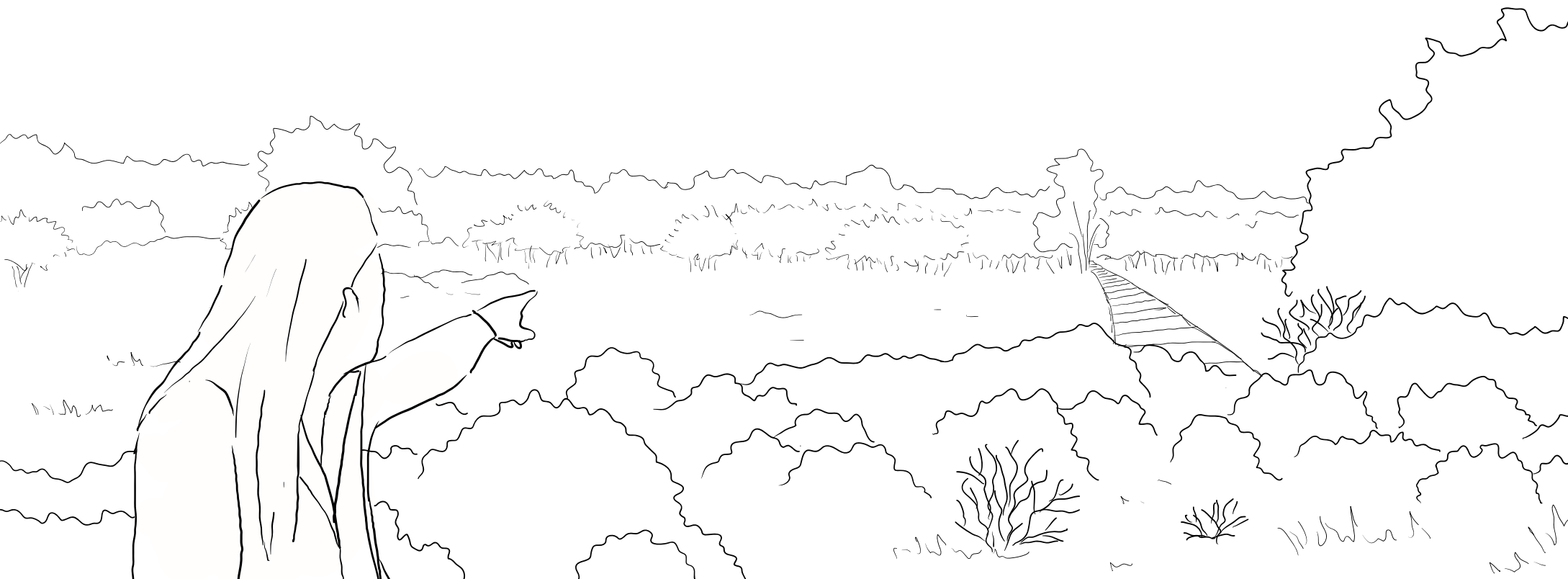






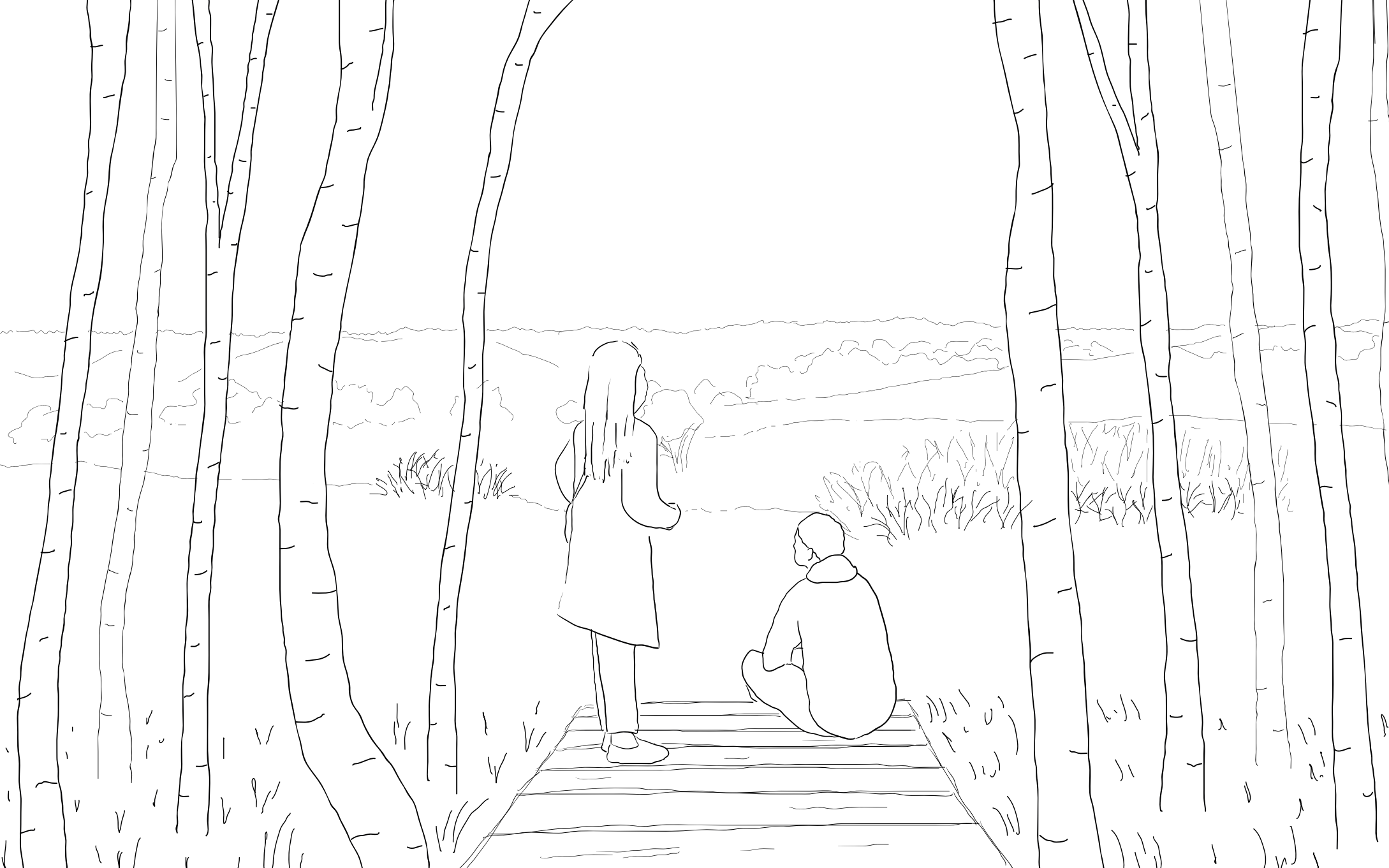


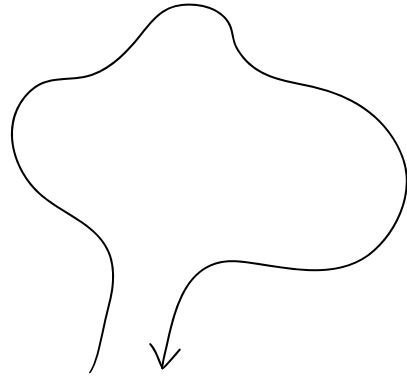




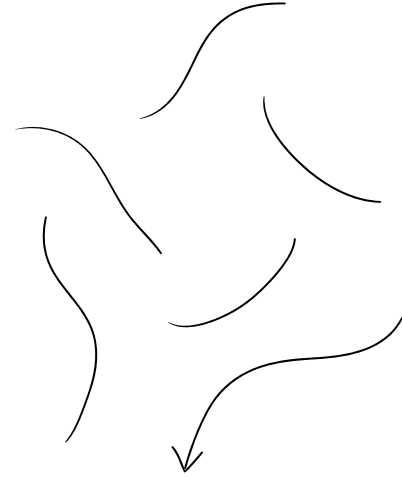








Traditional way of routing:  
one strict route



New way of routing:  
no strict route

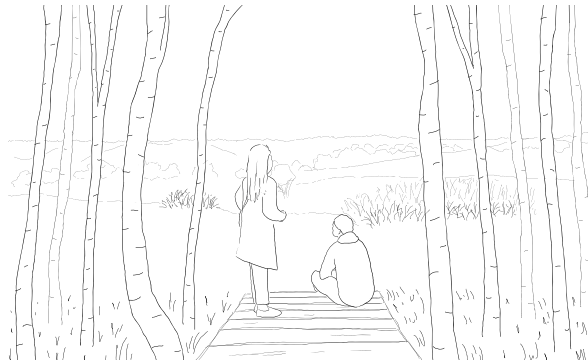
## Three methods to help someone find their own way



# Three methods to help someone find their own way



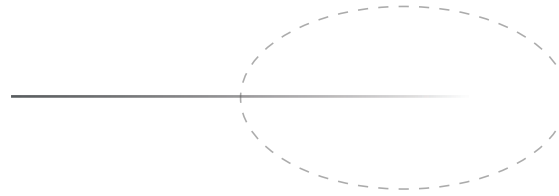
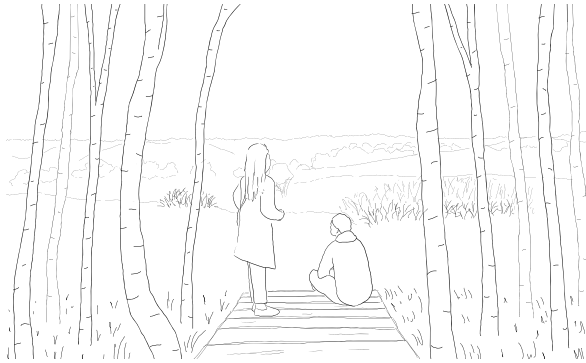
**Abruptly ending**  
a way-finding cue



## Three methods to help someone find their own way



**Abruptly ending**  
a way-finding cue



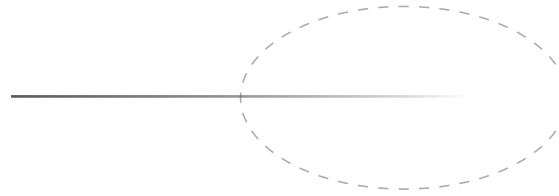
**Gradually ending**  
a way-finding cue



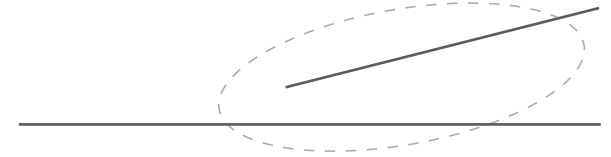
# Three methods to help someone find their own way



**Abruptly ending**  
a way-finding cue



**Gradually ending**  
a way-finding cue



**Tempting someone**  
to follow an alternative way-finding cue









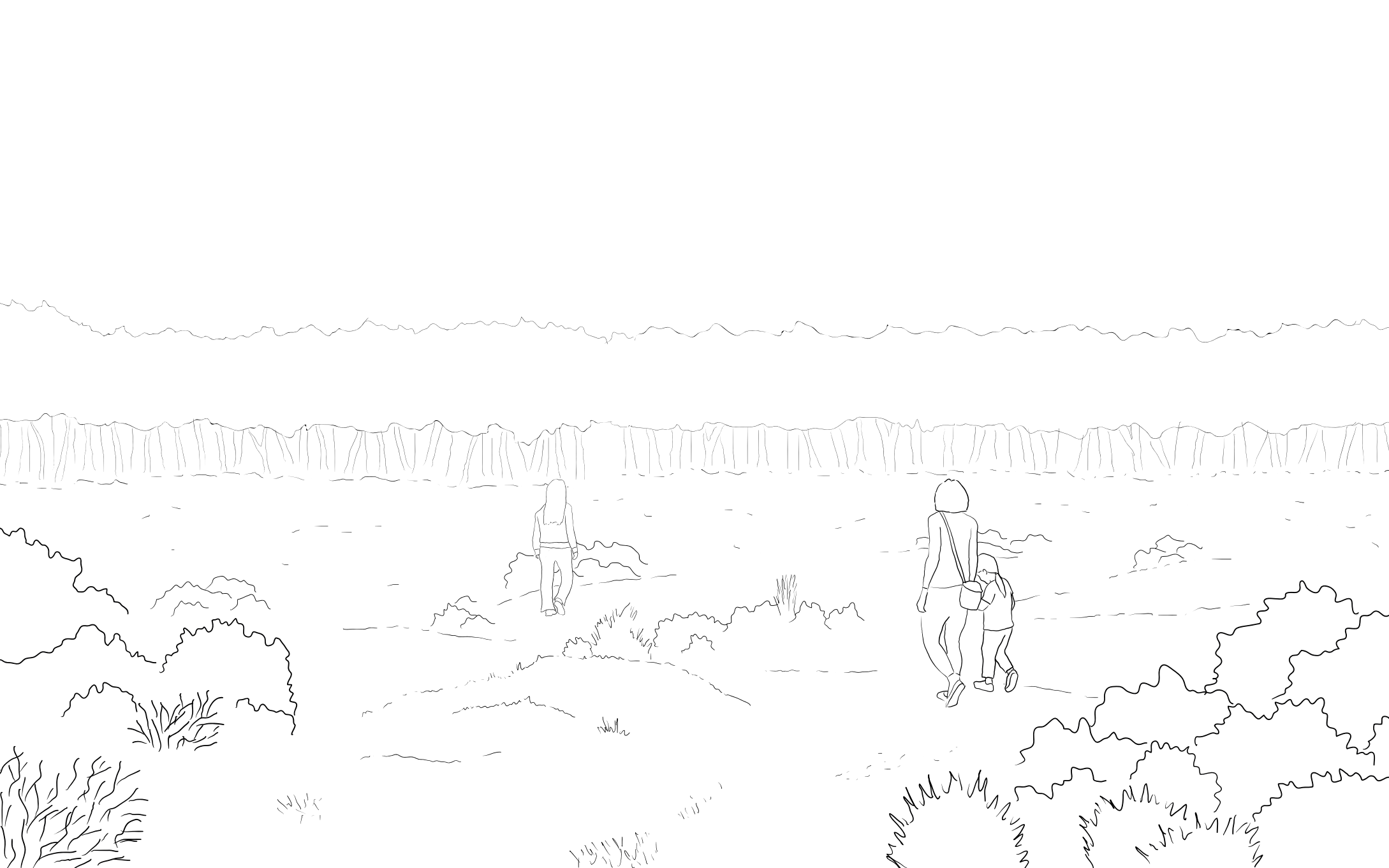














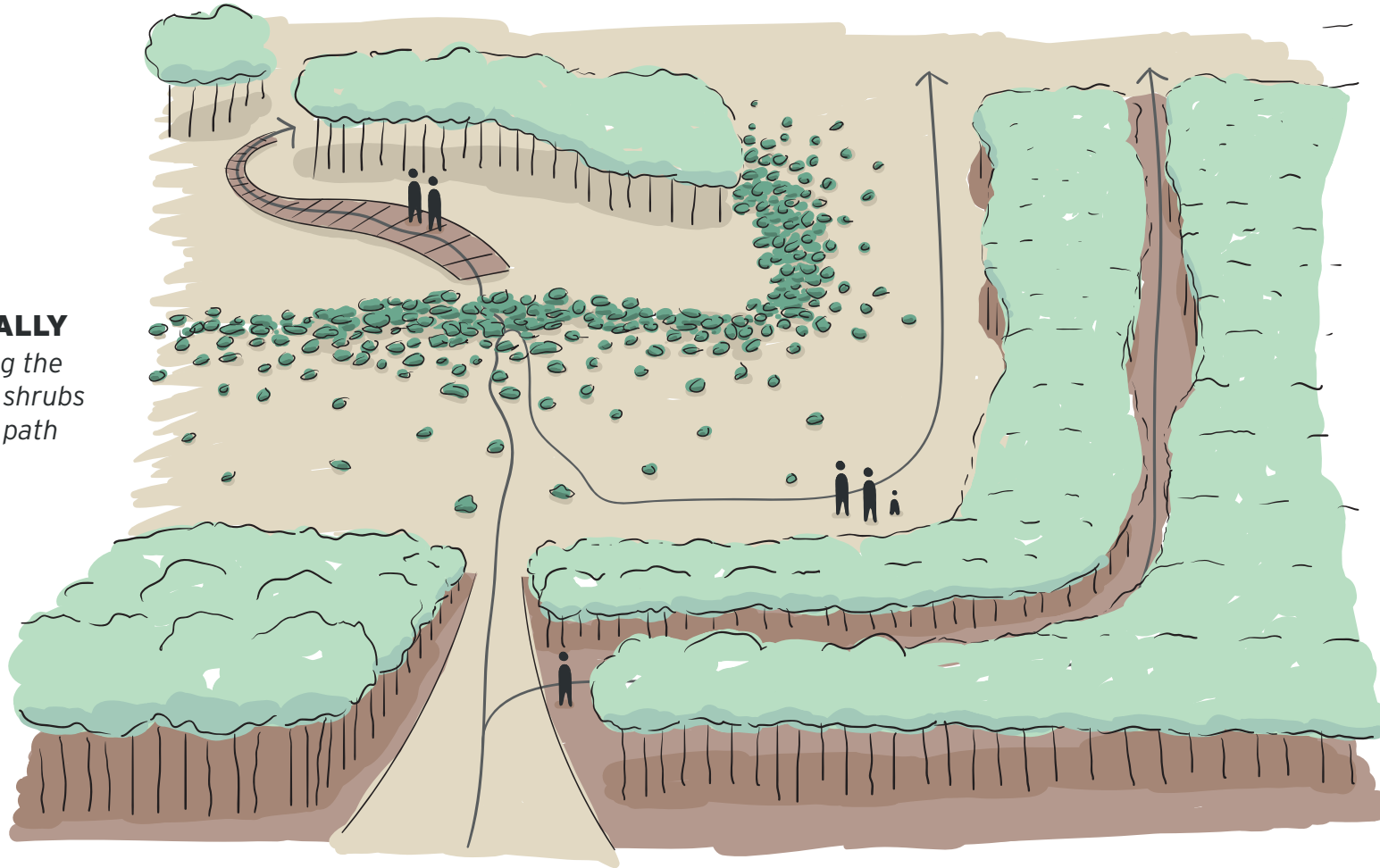






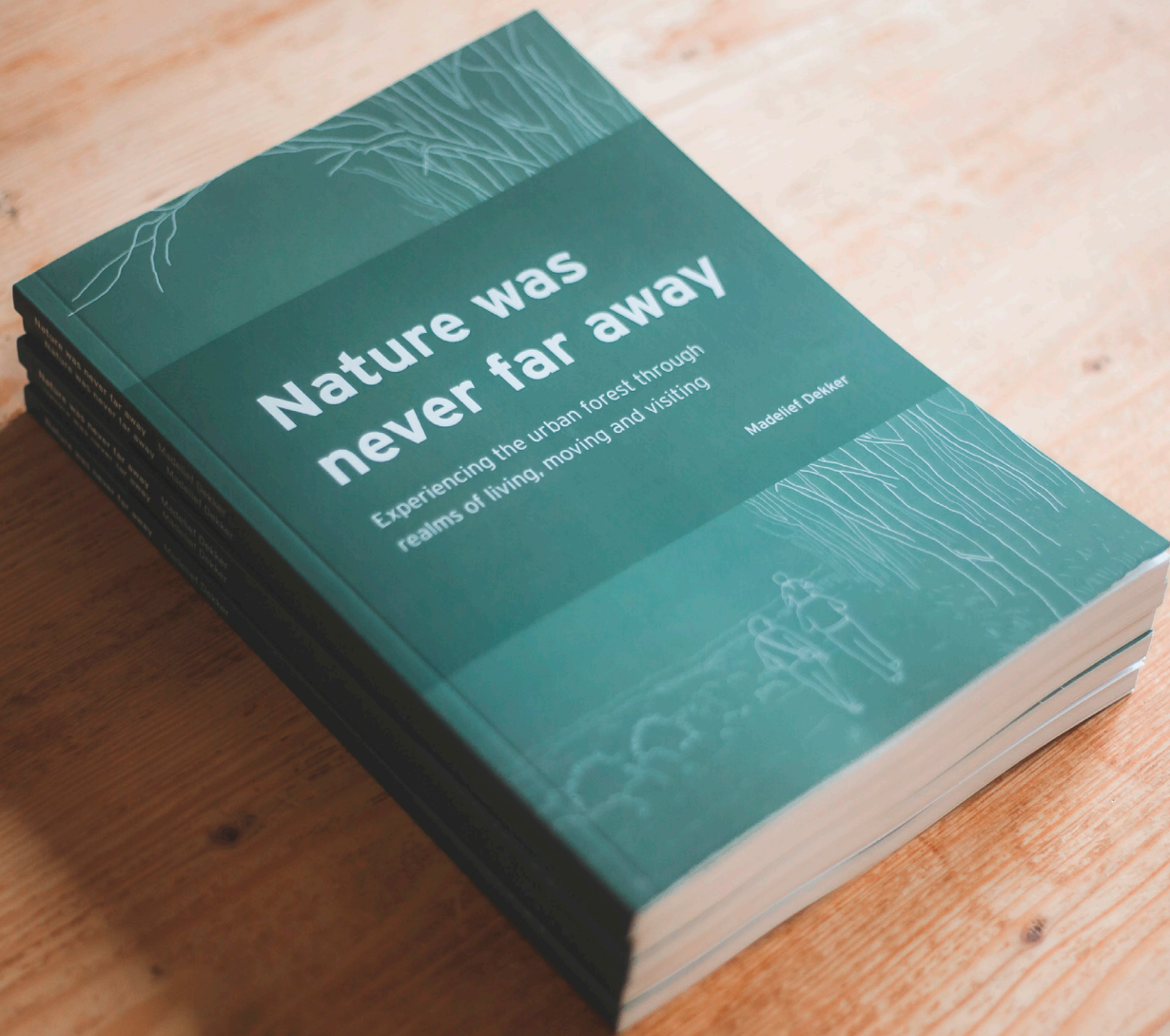
**ABRUPTLY**  
*ending a path*

**GRADUALLY**  
*increasing the  
amount of shrubs  
to end a path*



**TEMPTING**  
*someone to  
following an  
open space in  
the forest*





# Nature was never far away

Experiencing the urban forest through  
realms of living, moving and visiting

Madeleine Dekker

# NARRATIVE

## ANALYSIS

URBAN FOREST TYPOLOGY

LAYER APPROACH

NATURE DIAGRAM

THE METHOD

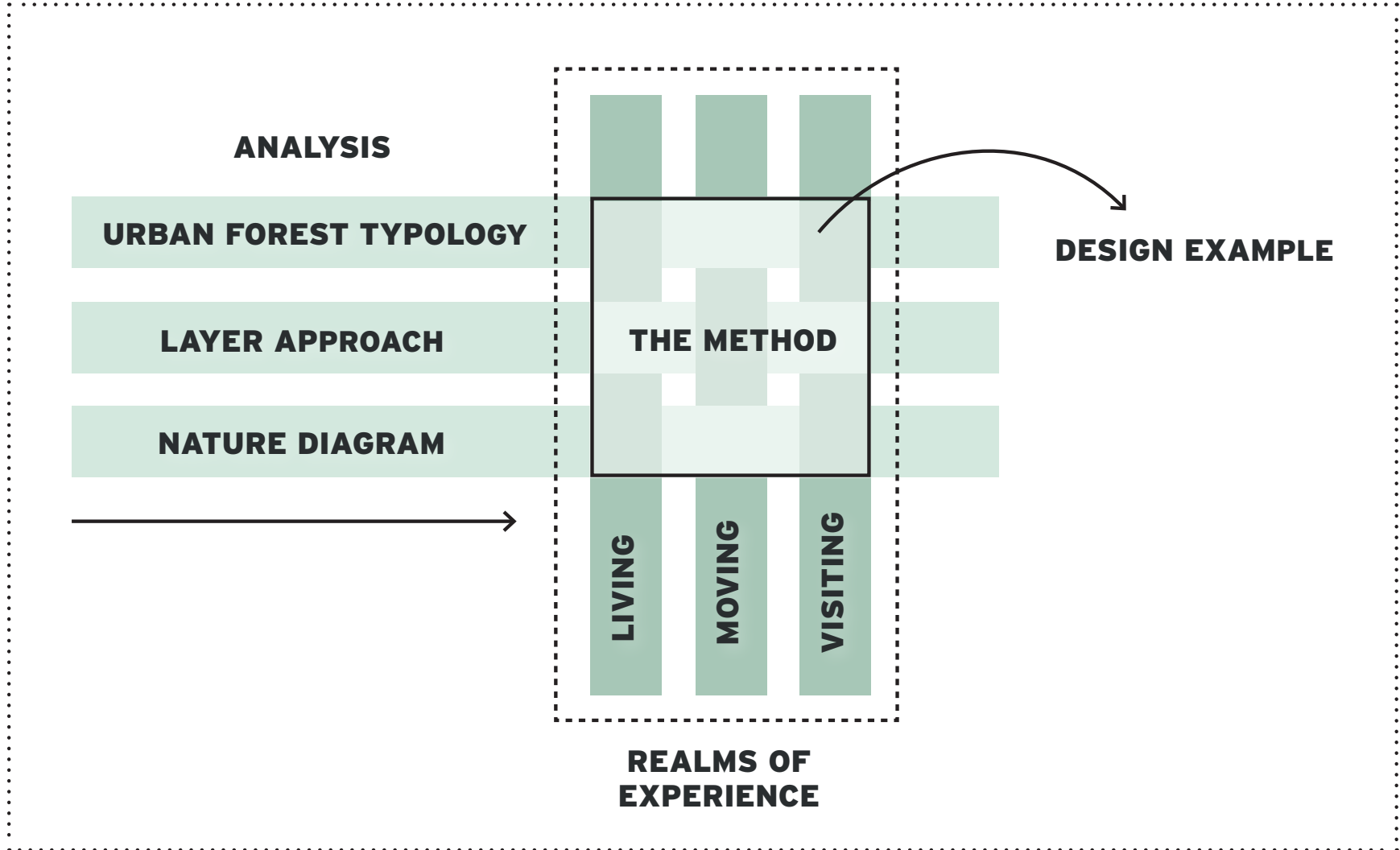
LIVING

MOVING

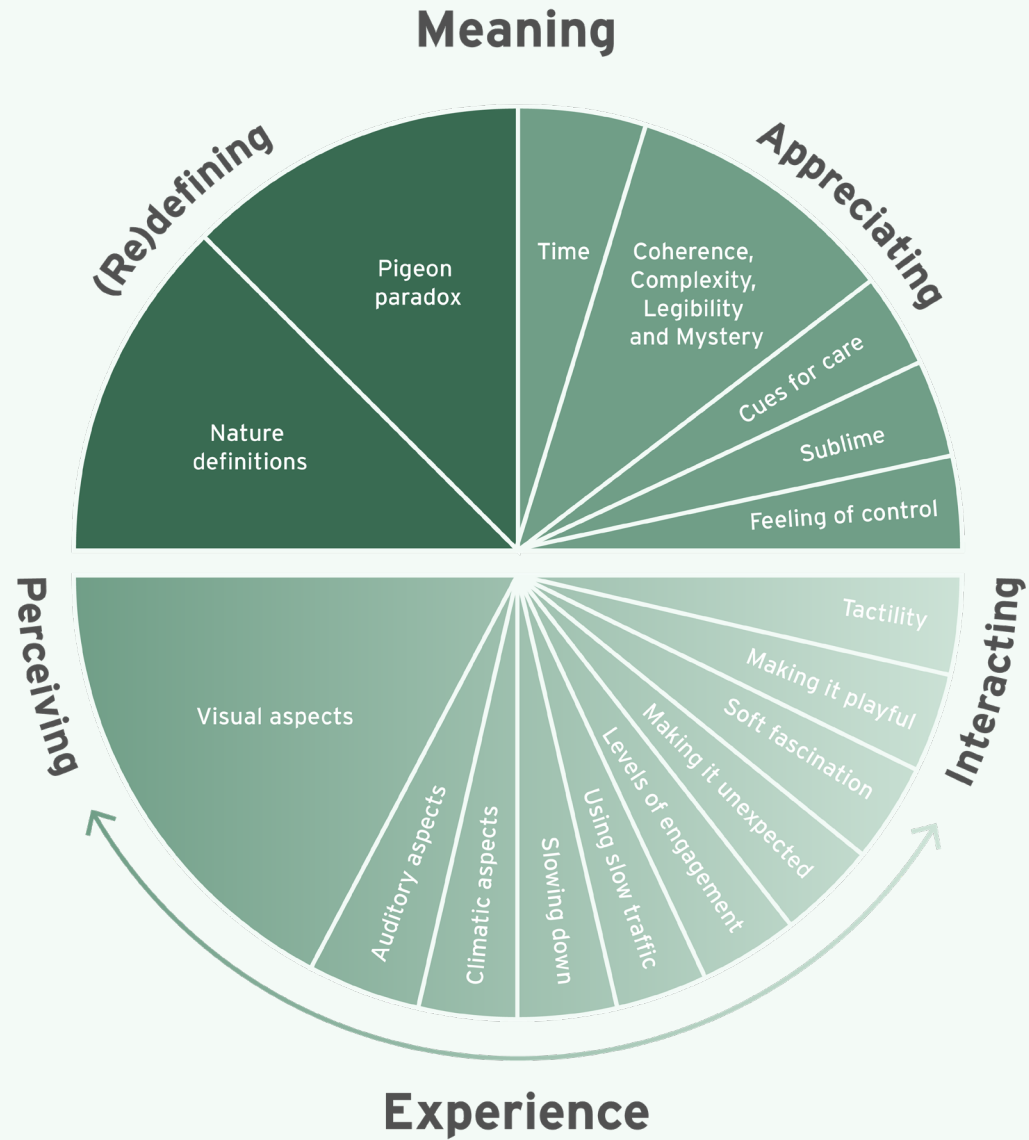
VISITING

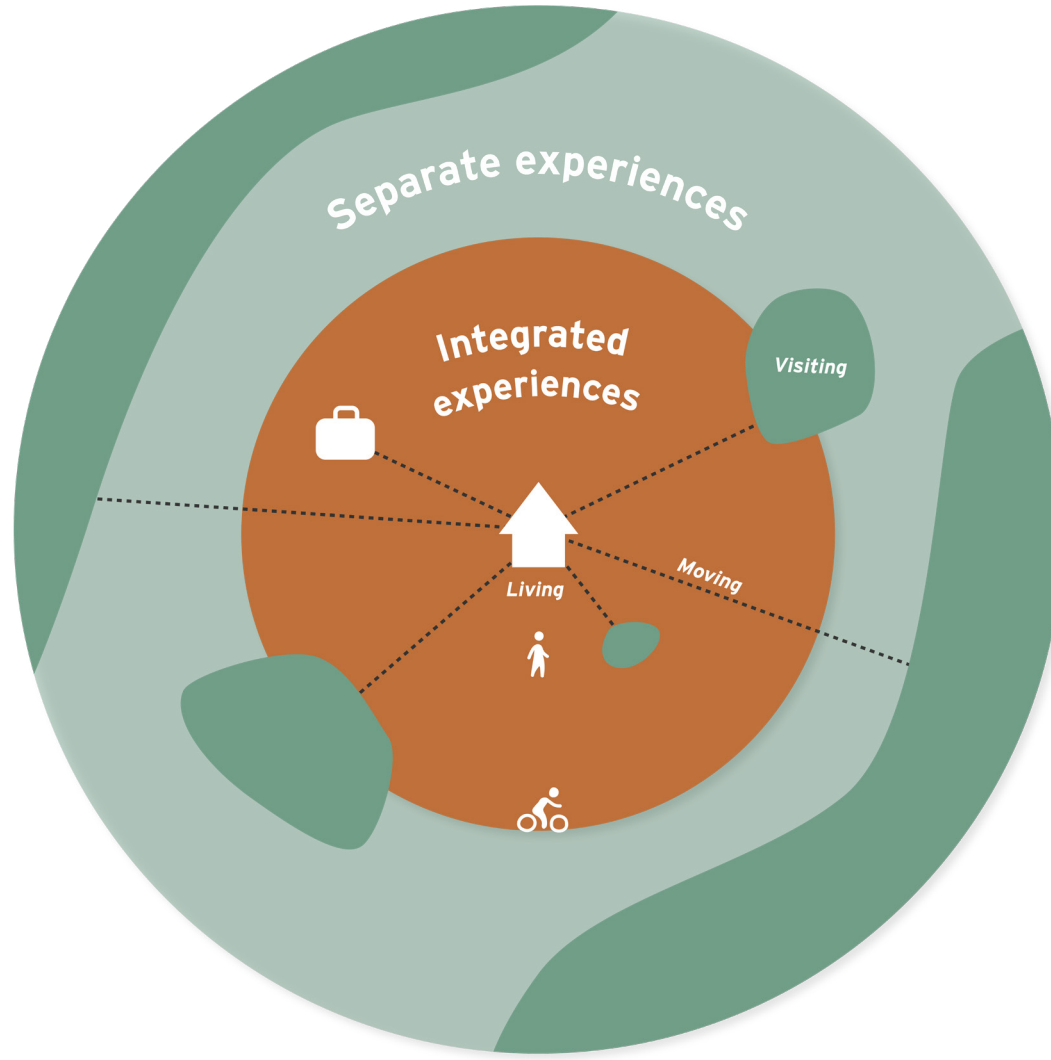
REALMS OF  
EXPERIENCE

DESIGN EXAMPLE











**VISITING**

**DISTRICTS**

**MOVING**

**LIVING**





## Layer approach

### Reaching two goals at the same time

As mentioned in the introduction the layer approach can be used to reach two goals at the same time: improving the overall quality of the design and making it easier for people to become aware of their connection to nature. For the realm of living this means different things for each layer.

#### Spatial layer

When adding elements to the street it should be kept in mind that you design spaces with these elements. So it is the negative space that you create when you add the positive space of the objects that is the space that people will experience.

#### Ecological layer

To create a thriving ecosystem multiple things should be done: add a vertical gradient in the

vegetation, add native vegetation, prevent light nuisance and optimize the connection with the underground (see page 72).

#### Environmental layer

The goal for the environmental layer is to create a more sustainable way of living and creating a more pleasant micro climate along the way. This should be done by disconnecting the rain water and reusing it, adding vegetation and using permeable pavement.

#### Social layer

For the social layer it is important to create spaces that facilitate interaction between people, where they can share, help and inspire each other. This interaction should also be possible between people that are sitting and people that are moving.

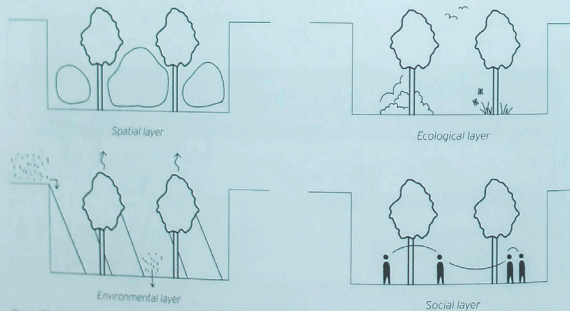


Figure 70: The four layers

## Layers shown in section

To show the topics of the different layers in the design one section is taken and drawn four times to highlight the parts of the design for each layer, which can be seen in figure 71 on the next page.

#### Creating spaces

In this section five spaces that are formed by the design are highlighted. From left to right:

- The small strip of pavement alongside the building that can be used as an adventurous path for kids to play on
- The main street with on one side the shrubs and the tree as a boundary and on the other side the small wall
- The wall in itself forms a space as well
- The space that is created under the small trees in the garden to sit under
- The path alongside the building that has a small edge that kids can walk on

#### Creating a thriving ecosystem

In this section the aspects that are part of the ecosystem are highlighted:

- The vertical gradient in the vegetation
- The native vegetation that attracts insects
- Birds eating fruits and berries
- The improved soil quality
- Protecting the roots of the trees during maintenance by adding a cable box and underground walls above the sewage pipes
- No lighting in the gardens

#### Improving micro climates

In this section the aspects that influence the environment are highlighted:

- The disconnecting of the rainwater from the sewage system
- The opportunity to use rainwater to water the gardens on the water square (which will be elaborated further on page 88)
- The permeable pavement which results in direct water filtration in the ground
- The decrease of the urban heat island effect due to an increase in shadow and evaporation by the trees

#### Facilitating sharing, helping and inspiring

In this section the aspects that facilitate social interaction are highlighted:

- Opportunities to share, inspire and help other (potential) gardeners
- The street where cyclists and pedestrians can interact with people sitting on the small wall or who are working in the gardens
- The sidewalk where pedestrians can interact with people in the gardens

Green pages  
= method

White pages  
= design



## Toolbox for the realm of living

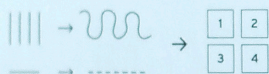
### Design principles

The design principles that are used in the realm of living are summarized within this toolbox.



1: In-line 2: In contrast 3: Exaggerated

Choose an urban forest strategy



Determine dominant processes

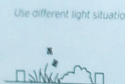
Cut into phases



Use an existing structure as cue for care



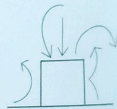
Create space for participation



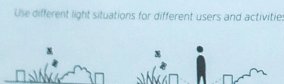
Not lighting up spaces for animals



Choose the right tree and improve soil quality



Make elements multifunctional



Lighting up the ground level for moving



Lighting up above ground level for gathering

Figure 13: The toolbox for the realm of living

### Integrated experience: Living



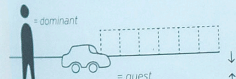
Do a sun analysis



and draw implications for the design



Facilitate elements and other people to get distracted by



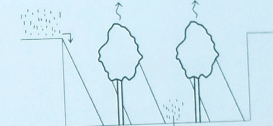
Make streets pedestrian oriented



Create a gradient in interacting with nature



Create spaces



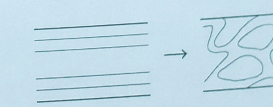
Disconnect the rain water, use permeable materials and improve micro climates



Add vertical gradients, add vegetation and trees

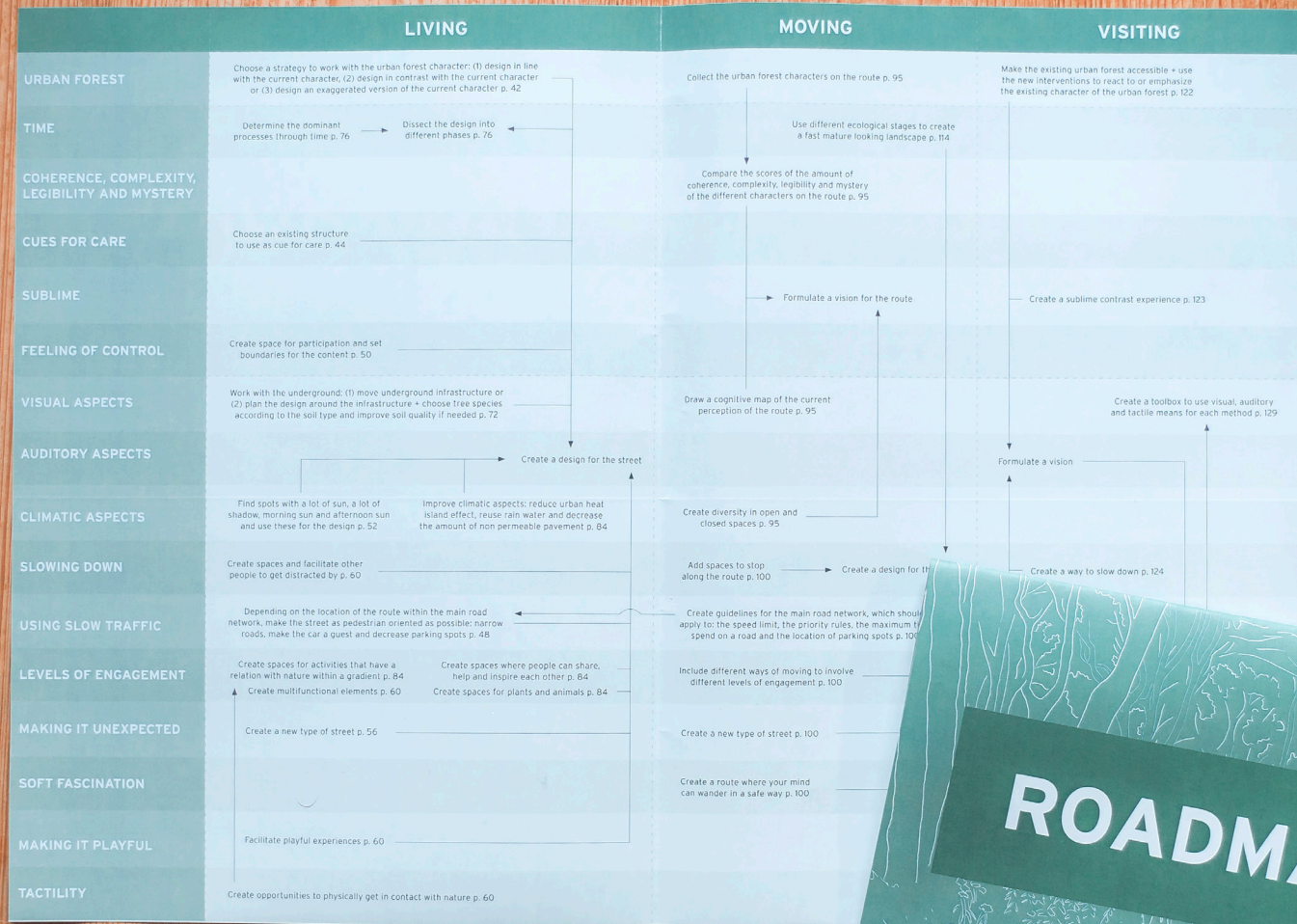


Facilitate sharing, helping and inspiring

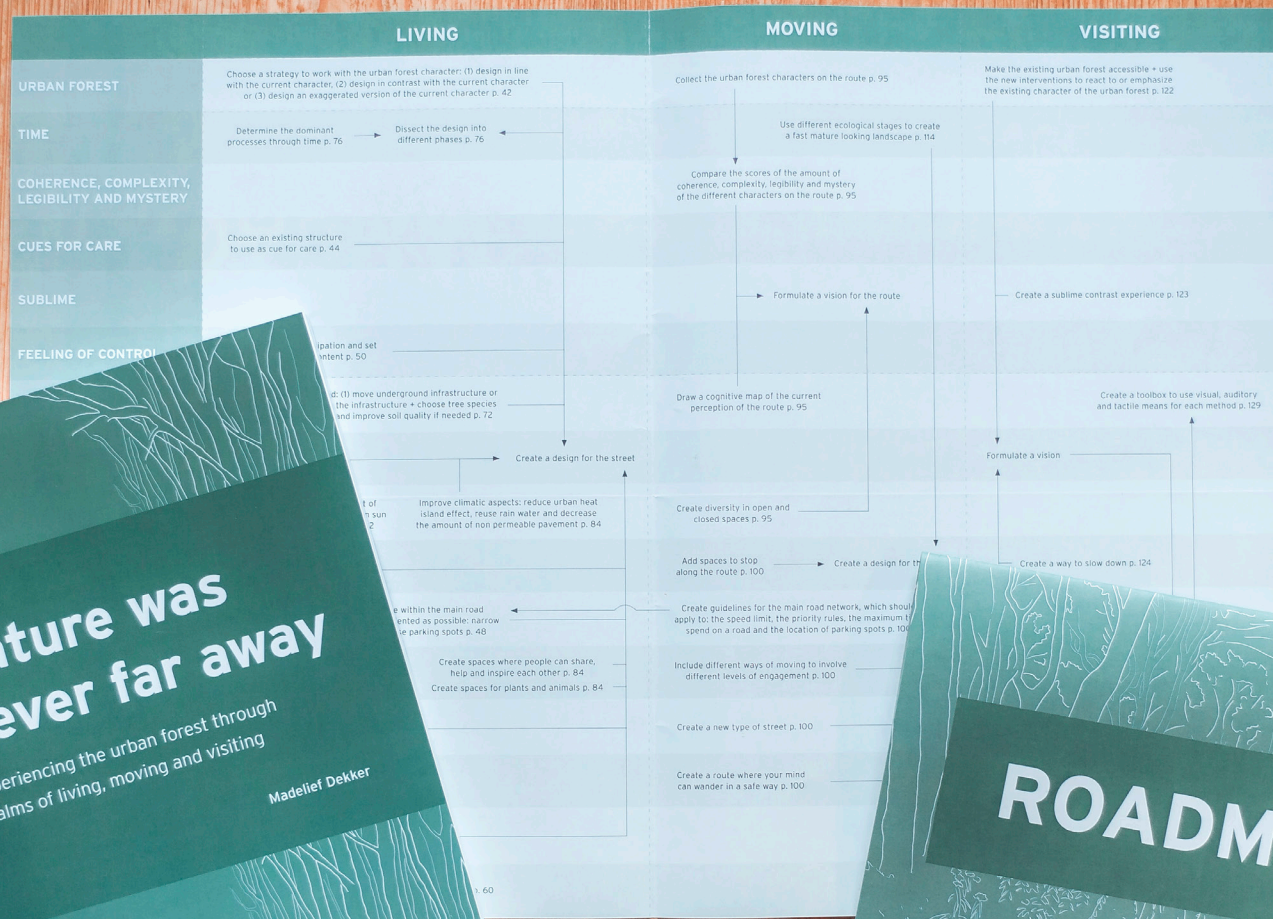


Create a new kind of street by thinking outside known structures













**Nature was never far away**