

# The Silent Epidemic:

How can **playful** living environments  
alleviate the feeling of **loneliness**?

Pendrecht, Rotterdam-Zuid

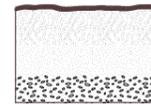


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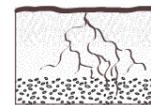
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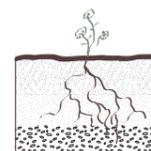
Problem Question and Context



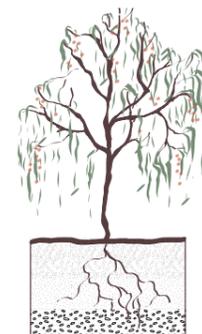
Field Research and Key Takeaways



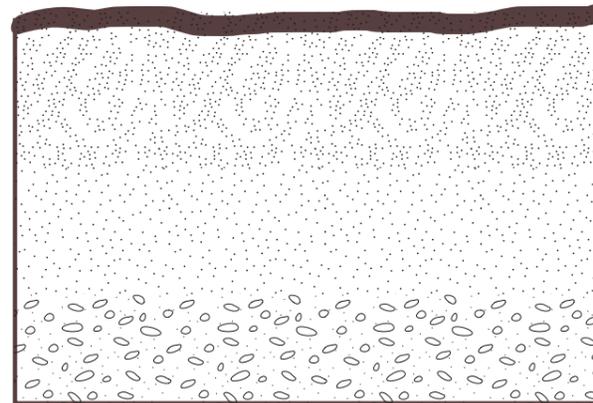
Key Ideas



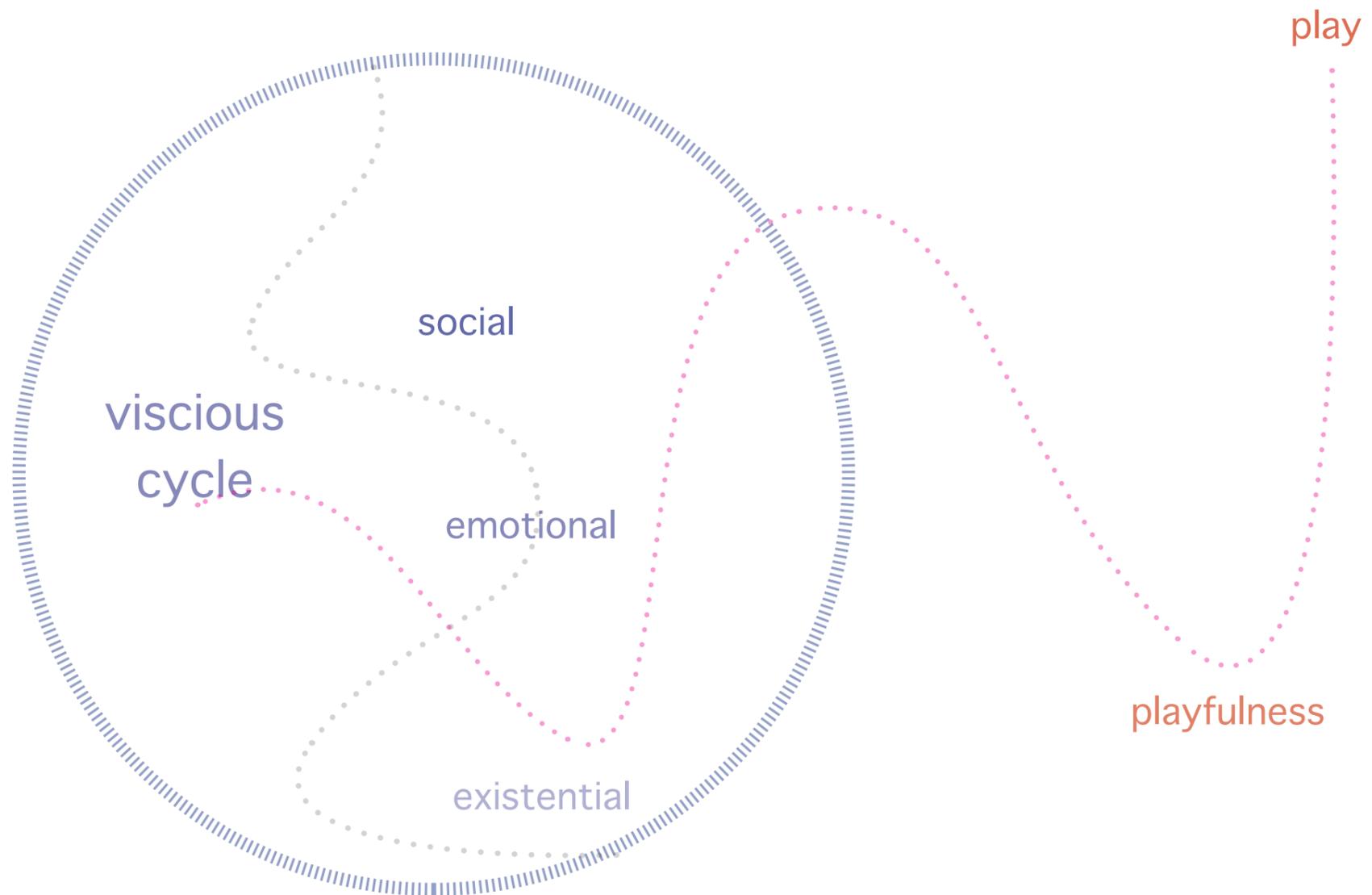
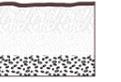
Final Design



## Problem Question and Context



# Loneliness





## How a Dutch tragedy made people take loneliness seriously

On 21 November 2013, the body of a 74-year-old woman was found at her home in Rotterdam. She had been dead for 10 years.

The woman was called Bep de Bruin. Born in what was the Dutch East Indies, she moved to the Netherlands as a teenager. She became isolated after experiencing an early trauma, breaking off contact with her only child.

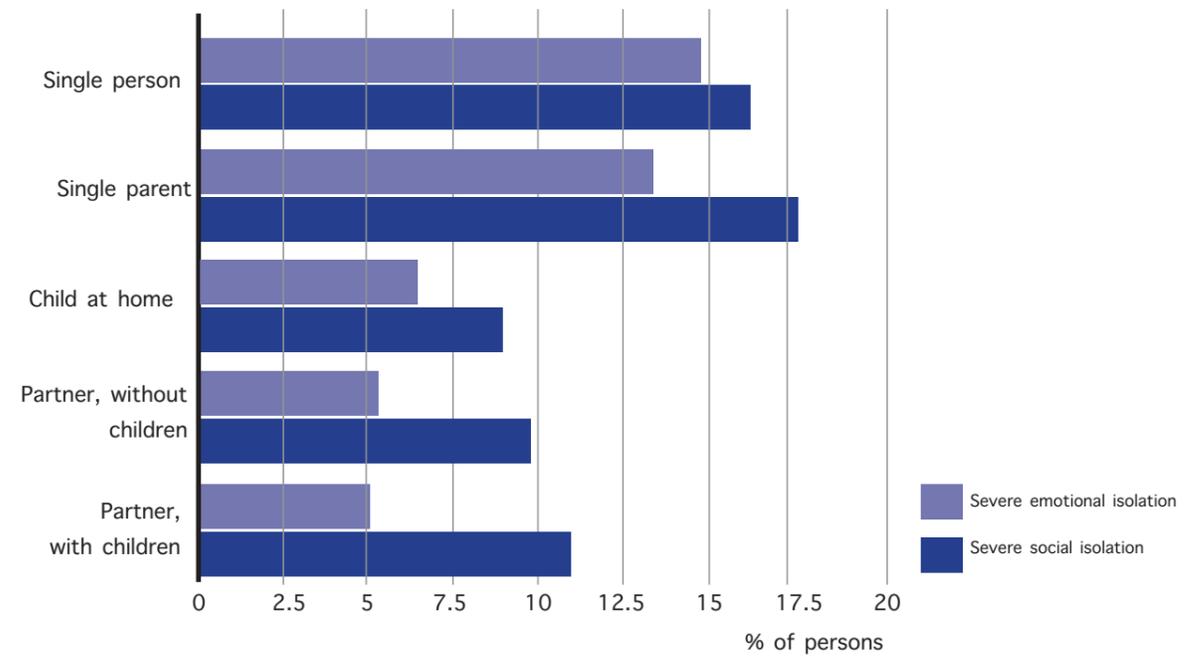
So when Bep died sometime in 2003, no-one realised. Her state pension automatically went into her bank account, while her rent was taken out. Bep's body was only discovered after gas engineers needed access to her flat. Police pushed past a mountain of post, which later helped them work out when she had died.

THE QUALITY OF BEING LONELY IN  
A CROWDED CITY IS A PARTICULAR  
ONE—IT CAN FEEL LIKE A FAILURE  
OF SOCIAL APTITUDE, OR AN  
INDIVIDUAL IMBALANCE.

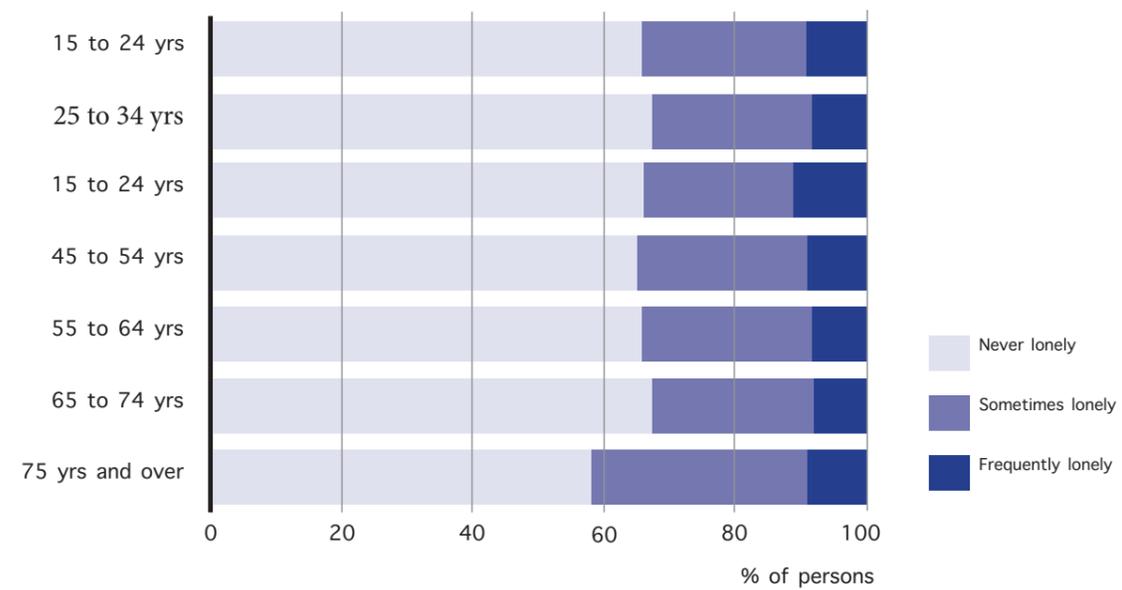
# Loneliness



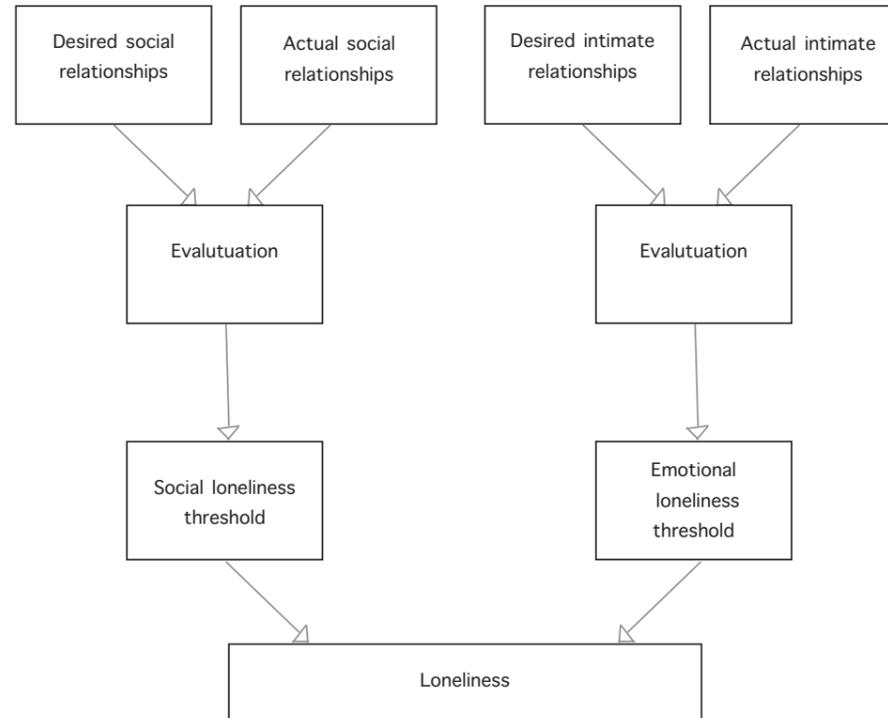
Loneliness by household position, 2019



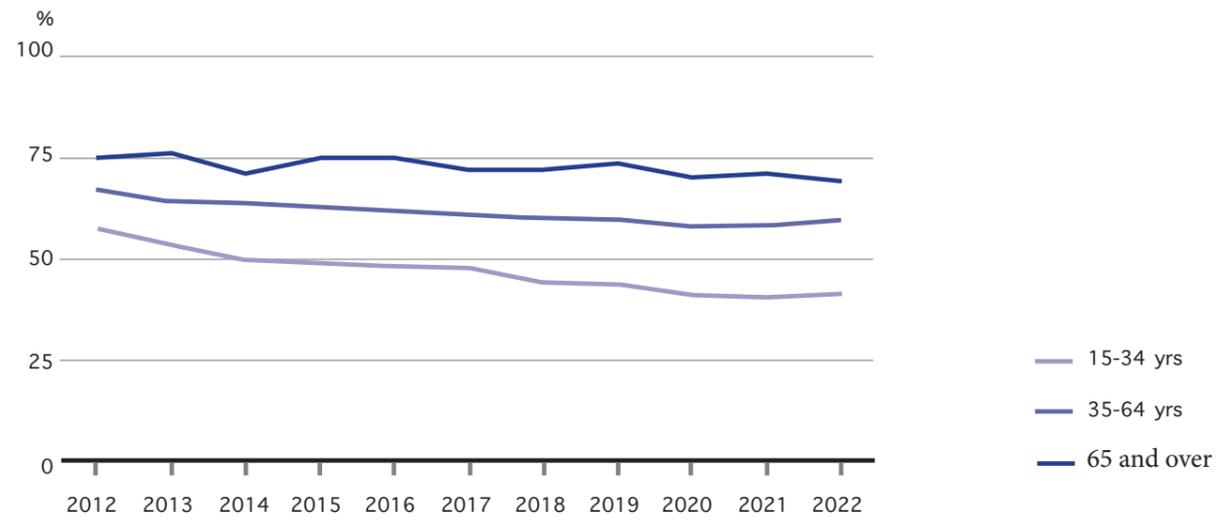
Loneliness by age, 2019



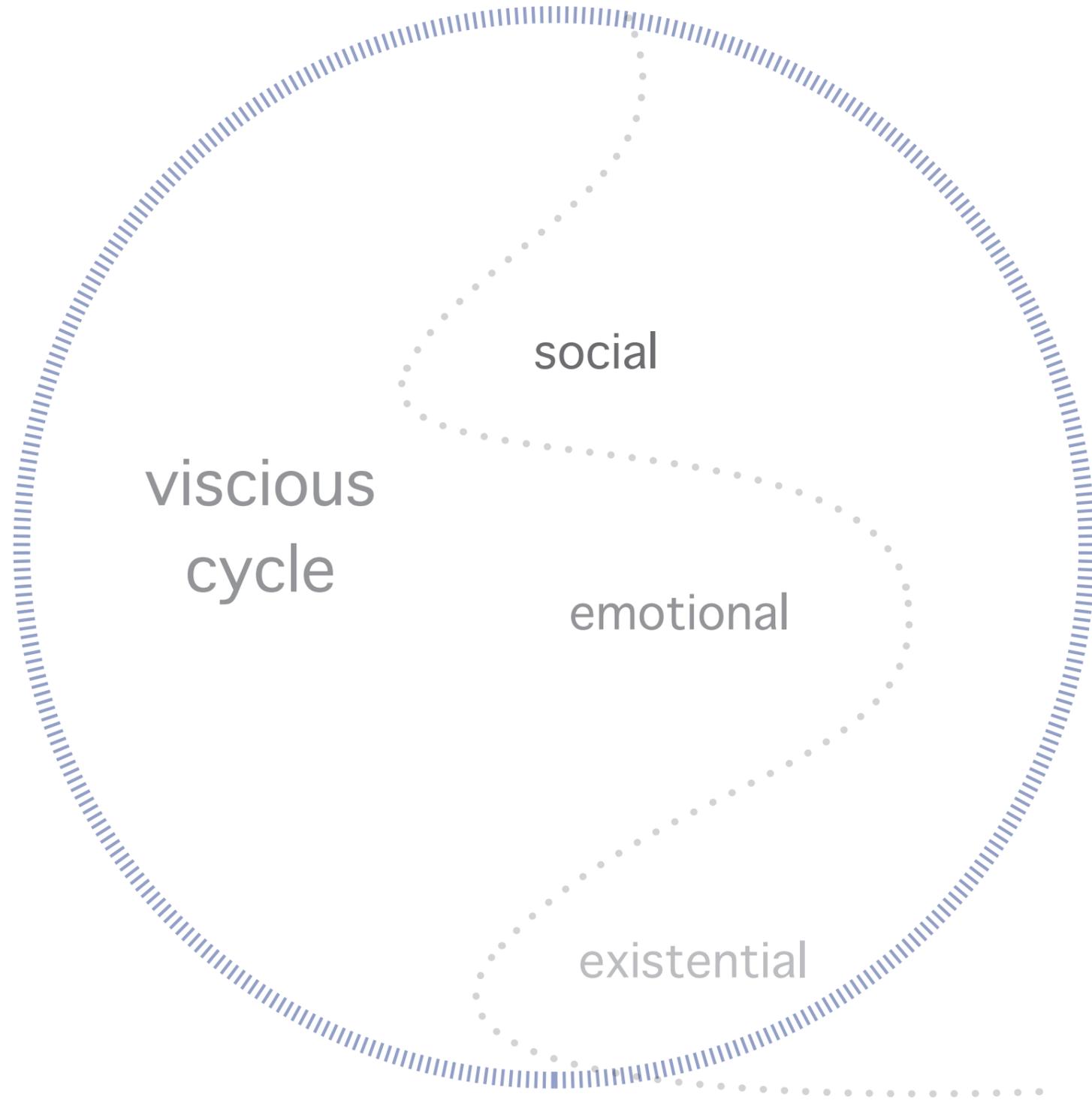
# Loneliness



Weekly contact with neighbours, 2022



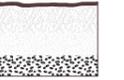
# Loneliness





# Playable Cities: the city that plays together, stays together





playfulness

The word ‘playfulness’ used in the context of a typically ‘nonplay’ scenarios is used to refer to the application of a light-hearted disposition and a spontaneous willingness or inclination to deviate from social expectation so as to positively transform the meaning of an activity or situation.

(Bateson 2014)

play

# Characters



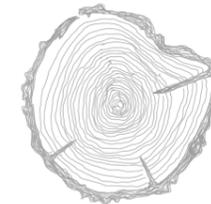
Emma



Denys



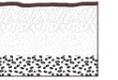
Niki



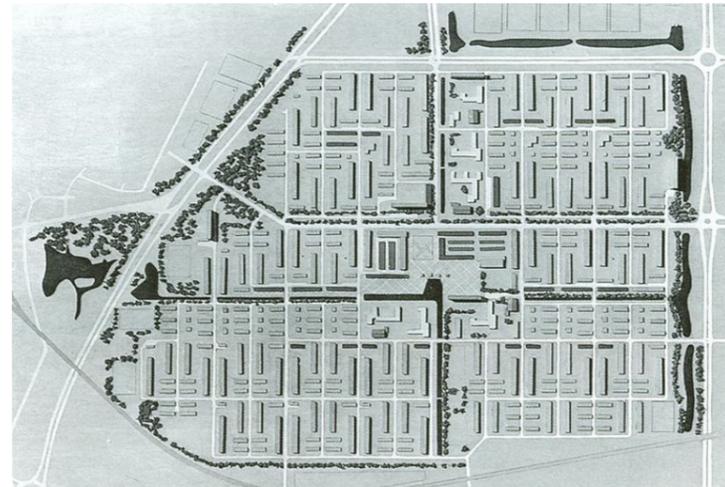
building social connections  
encouraging emotional expression  
enhancing mental wellbeing  
stress reduction  
boosts mood and optimism  
stimulating meaning-making  
promoting mindfulness and presence  
physical activity  
empowerment and self-confidence  
fostering intergenerational connections

# Pendrecht

high percentage of single parents (23%)  
elderly (16%)  
children (20%)  
people of migration status (73%)  
low-incomers (40%)



garden city

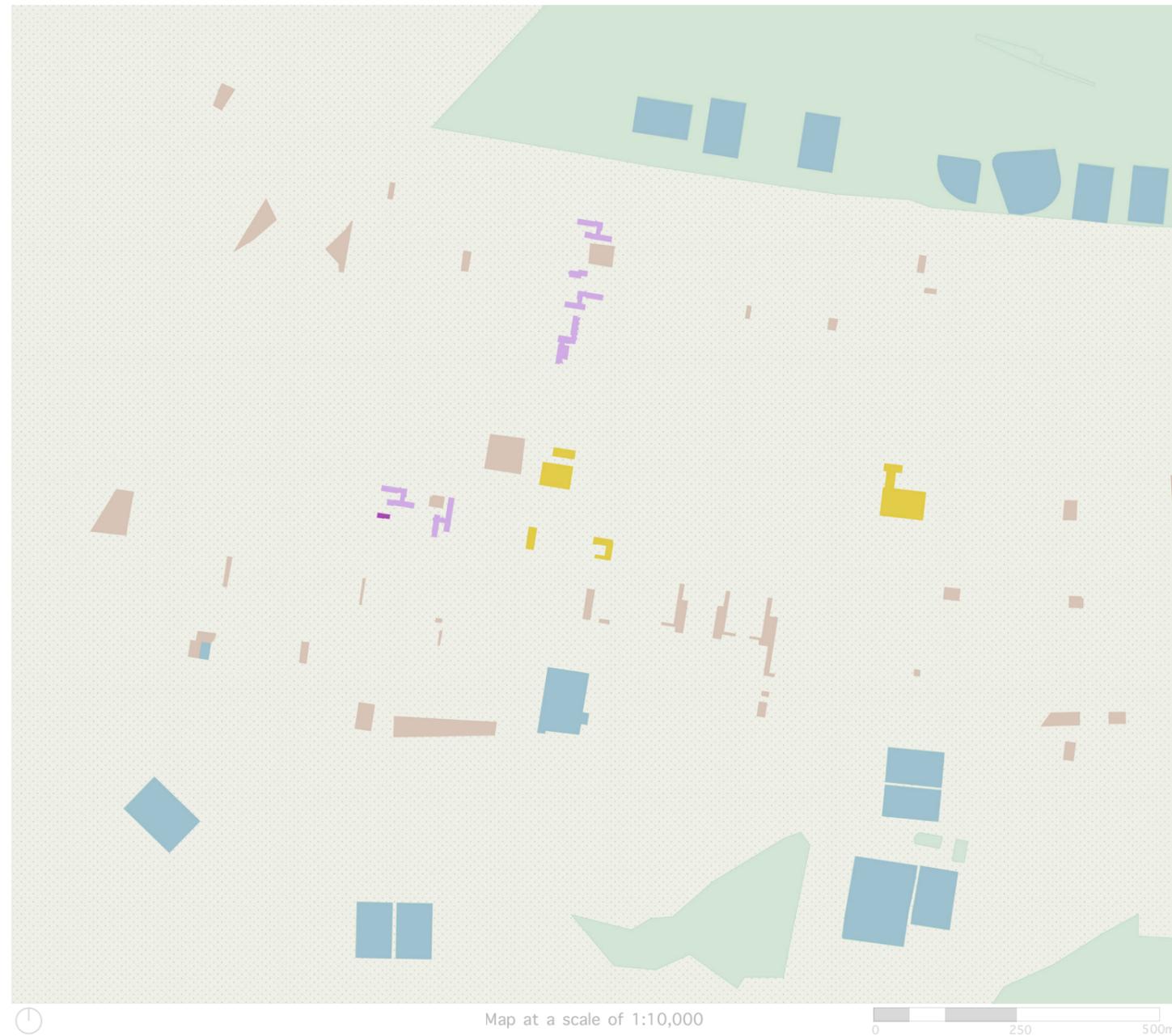
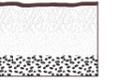


stamp structure



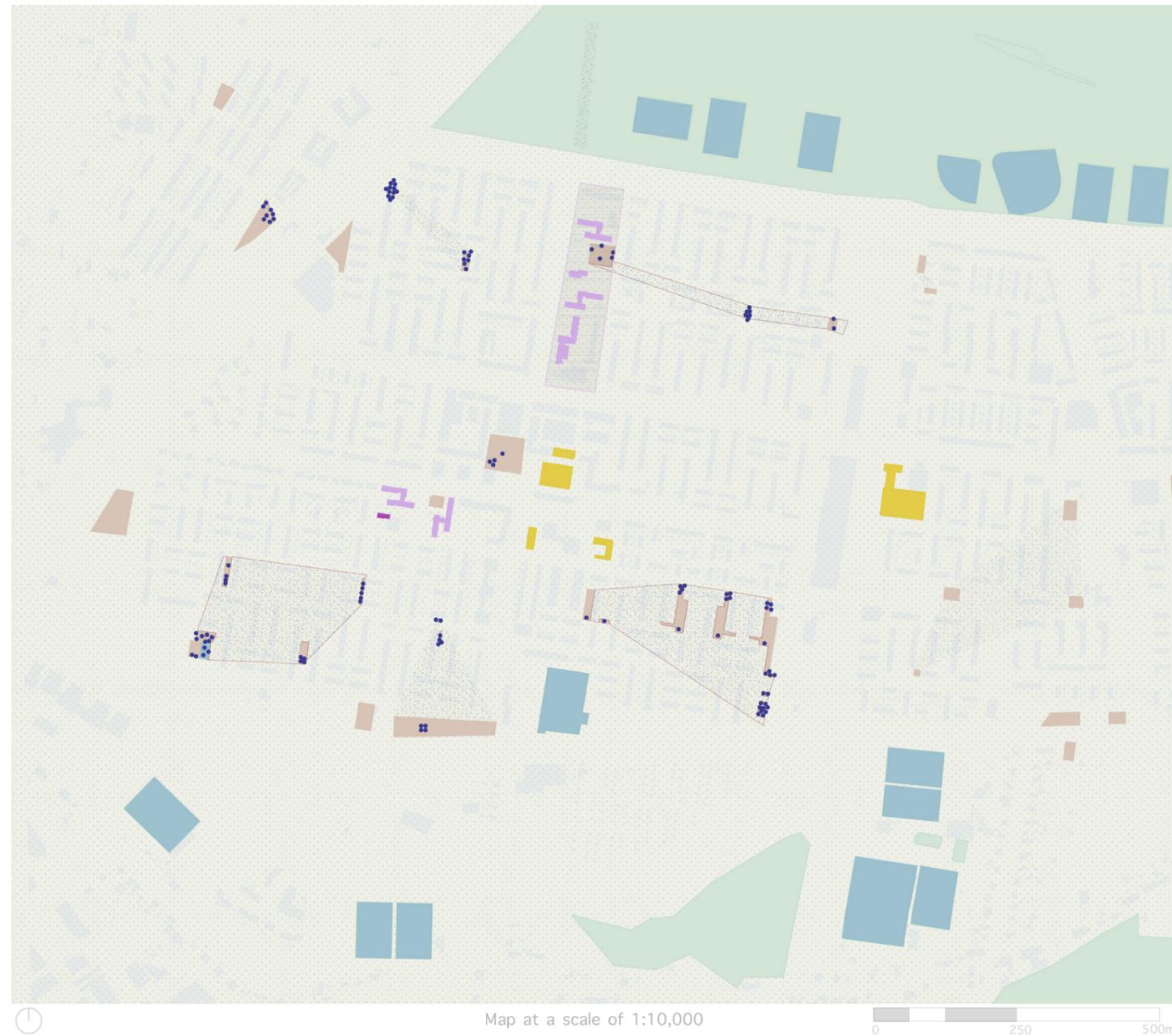
ornamental green spaces  
limiting use by children

# Pendrecht: scattered play environments



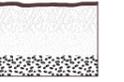
- Sports/ Activity based
- Nature based
- Fixed playgrounds
- Indoor play environments
- Education spaces

# Pendrecht: clusters of play environments



- Sports/ Activity based
- Nature based
- Fixed playgrounds
- Indoor play environments
- Education spaces

# Pendrecht: scattered play environments



Map at a scale of 1:10,000

0 250 500m

Sports/ Activity based

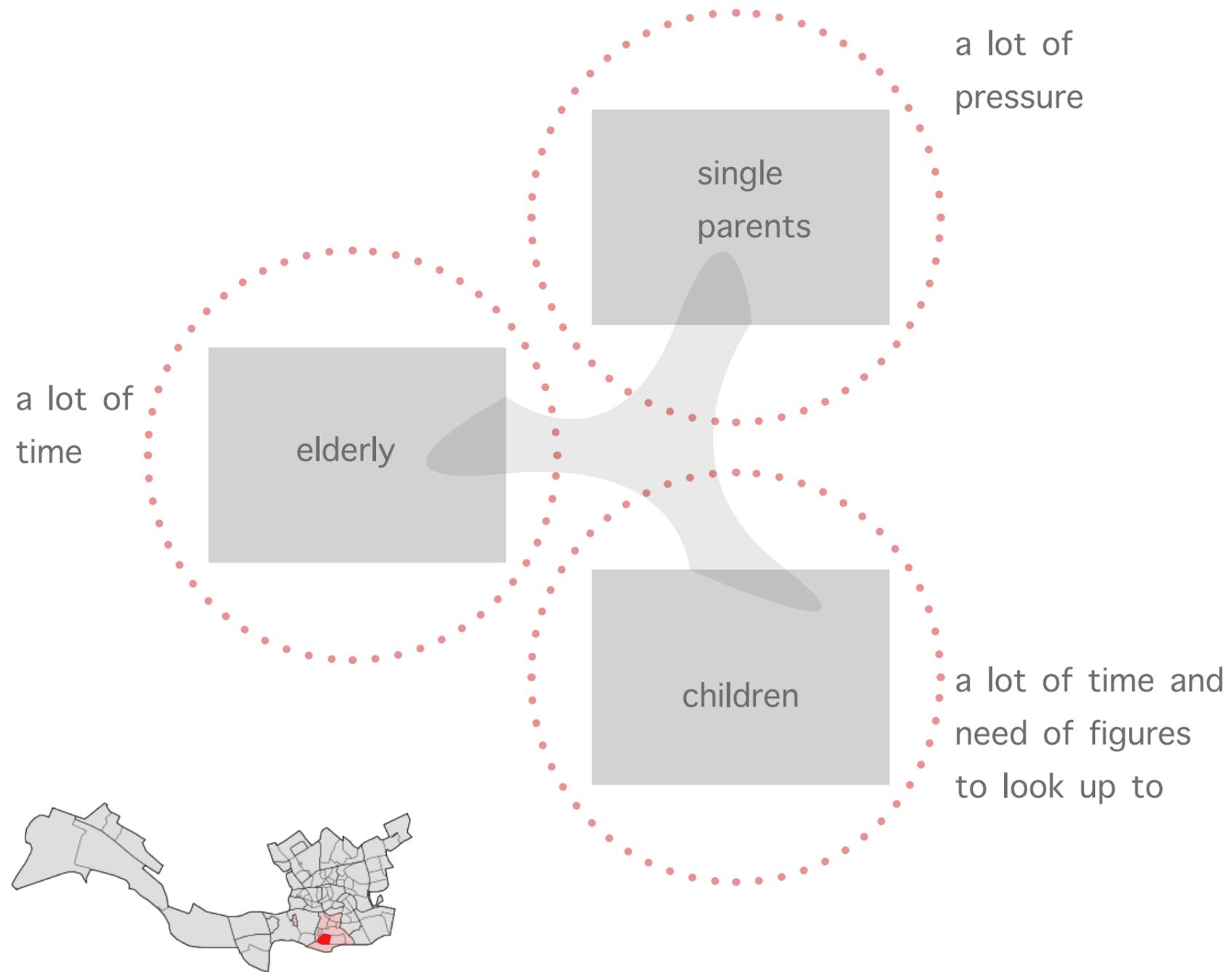
Nature based

Fixed playgrounds

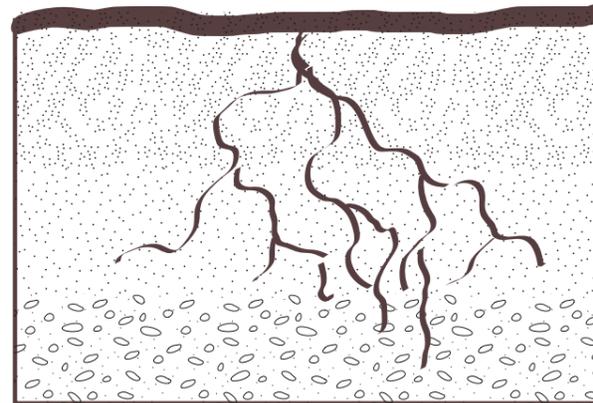
Indoor play environments

Education spaces

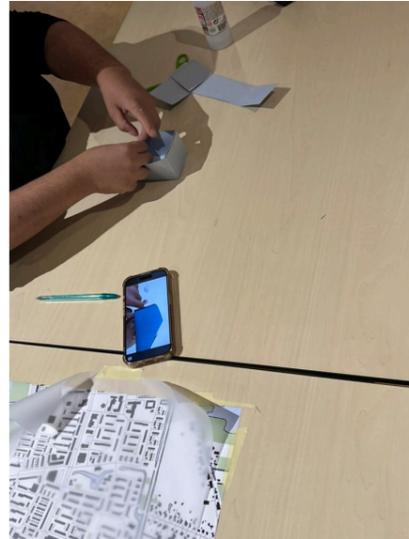
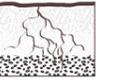
# Concept of intergenerational interaction

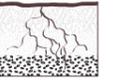


## Field Research and Key Takeaways



# Fieldwork





1



IK VOEL ME VAAK EENZAAM  
I OFTEN FEEL LONELY

2



IK VIND MIJN  
VRIENDENKRING TE BEPERKT  
I FIND MY CIRCLE OF FRIENDS TOO LIMITED

3



IK WOU DAT IK MEER  
HECHTE VRIENDSCHAPPEN  
HAD  
I WISH I HAD MORE CLOSE FRIENDSHIPS

4



SOMS ERVAAR IK EEN  
ALGEMEEN GEVOEL VAN  
LEEGTE  
I SOMETIMES EXPERIENCE A GENERAL FEELING OF  
EMPTINESS

5



IK WOU DAT IK MEER TIJD  
VOOR MEZELF HAD  
I WISH I HAD SOME MORE ALONE TIME

1



IK VOEL ME ZELDEN  
EENZAAM  
I RARELY FEEL LONELY

2



IK BEN BLIJ MET HET AANTAL  
MENSEN WAARMEE IK  
VERBONDEN BEN  
I AM HAPPY WITH THE AMOUNT OF PEOPLE I AM  
CONNECTED TO

3



IK VOEL ME HEEL NAUW  
VERBONDEN MET MIJN  
VRIENDEN  
I FEEL VERY CLOSELY CONNECTED TO THE PEOPLE  
AROUND ME

4



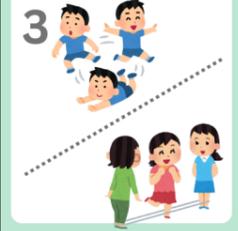
IK HEB EEN GEVOEL VAN  
DOELGERICHTHEID EN ERVAAR  
GEEN GEVOEL VAN LEEGTE  
I FEEL A SENSE OF PURPOSE AND DON'T EXPERIENCE  
A FEELING OF EMPTINESS

5



IK WOU DAT IK VAKER BIJ  
MENSEN WAS  
I WISH I WAS AROUND PEOPLE MORE OFTEN



<p>1</p>  <p>INDIVIDUEEL SPELEN INDIVIDUAL PLAY</p>	<p>2</p>  <p>STATIONAIR SPELEN STATIONARY PLAY</p>	<p>3</p>  <p>JONGENS EN MEISJES SPELEN SAMEN PLAYING WITH BOYS AND GIRLS</p>	<p>4</p>  <p>SPELEN MET ANDERE GENERATIES PLAYING WITH OTHER GENERATIONS</p>
<p>1</p>  <p>SPELEN MET ANDEREN PLAYING WITH OTHERS</p>	<p>2</p>  <p>ACTIEF SPELEN ACTIVE PLAY</p>	<p>3</p>  <p>JONGENS EN MEISJES SPELEN APART PLAYING APART</p>	<p>4</p>  <p>SPELEN MET MENSEN VAN MIJN LEEFTIJD PLAYING WITH PEOPLE MY AGE</p>
<p>5</p>  <p>SPELEN IN EEN SPECIFIEK GEBIED PLAYING IN ONE SPECIFIC AREA</p>	<p>6</p>  <p>ONBEGELEID SPELEN PLAY AT A PLAYGROUND</p>	<p>7</p>  <p>BEGELEID SPELEN SUPERVISED PLAY</p>	<p>8</p>  <p>GESTRUCTUREERD SPELEN STRUCTURED PLAY</p>
<p>5</p>  <p>SPELEN MET VARIATIE PLAYING WITH VARIETY</p>	<p>6</p>  <p>SPELEN IN DE NATUUR PLAY IN NATURE</p>	<p>7</p>  <p>ONBEGELEID SPELEN UNSUPERVISED PLAY</p>	<p>8</p>  <p>ONGESTRUCTUREERD SPELEN ZONDER REGELS UNSTRUCTURED PLAY WITHOUT RULES</p>

# Findings from fieldwork



*'I often feel lonely but I don't think I have enough time to do something about it. I would like to know more people and have more close relationships with the people I already know but that requires a lot of time and energy, which I do not have. So I somehow made peace with it.'*

**37 years old woman**  
mother of 5

**More time alone**

1 IK VOEL ME VAAK EENZAAM <small>I OFTEN FEEL LONELY</small>	2 IK VIND MIJN VRIENDENKRING TE BEPERKT <small>I FIND MY CIRCLE OF FRIENDS TOO LIMITED</small>	3 IK WOU DAT IK MEER HECHTE VRIENDSCHAPPEN HAD <small>I WISH I HAD MORE CLOSE FRIENDSHIPS</small>	4 SOMS ERVAAR IK EEN ALGEMEEN GEVOEL VAN LEEGTE <small>SOMETIMES EXPERIENCE A GENERAL FEELING OF EMPTINESS</small>	5 IK WOU DAT IK VAKER BIJ MENSEN WAS <small>I WISH I HAD MORE PEOPLE VISITING ME OFTEN</small>
1 IK VOEL ME ZELDEN EENZAAM <small>I RARELY FEEL LONELY</small>	2 IK BEN BLIJ MET HET AANTAL MENSEN WAARMEE IK VERBONDEN BEN <small>I AM HAPPY WITH THE AMOUNT OF PEOPLE I AM CONNECTED TO</small>	3 IK VOEL ME HEEL NAUW VERBONDEN MET MIJN VRIENDEN <small>I FEEL VERY CLOSELY CONNECTED TO THE PEOPLE AROUND ME</small>	4 IK HEB EEN GEVOEL VAN DOELGERICHHEID EN ERVAAR GEEN GEVOEL VAN LEEGTE <small>I FEEL A SENSE OF PURPOSE AND DON'T EXPERIENCE A FEELING OF EMPTINESS</small>	5 IK WOU DAT IK MEER TIJD <small>I WISH I HAD MORE TIME</small>

**social emotional**

**Seek closer relationships but it is difficult to outreach**

**10 years girl**

1 IK VOEL ME VAAK EENZAAM <small>I OFTEN FEEL LONELY</small>	2 IK VIND MIJN VRIENDENKRING TE BEPERKT <small>I FIND MY CIRCLE OF FRIENDS TOO LIMITED</small>	3 IK WOU DAT IK MEER HECHTE VRIENDSCHAPPEN HAD <small>I WISH I HAD MORE CLOSE FRIENDSHIPS</small>	4 SOMS ERVAAR IK EEN ALGEMEEN GEVOEL VAN LEEGTE <small>SOMETIMES EXPERIENCE A GENERAL FEELING OF EMPTINESS</small>	5 IK WOU DAT IK VAKER BIJ MENSEN WAS <small>I WISH I HAD MORE PEOPLE VISITING ME OFTEN</small>
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**social**

**90 years old Dutch woman**

1 IK VOEL ME VAAK EENZAAM <small>I OFTEN FEEL LONELY</small>	2 IK VIND MIJN VRIENDENKRING TE BEPERKT <small>I FIND MY CIRCLE OF FRIENDS TOO LIMITED</small>	3 IK WOU DAT IK MEER HECHTE VRIENDSCHAPPEN HAD <small>I WISH I HAD MORE CLOSE FRIENDSHIPS</small>	4 SOMS ERVAAR IK EEN ALGEMEEN GEVOEL VAN LEEGTE <small>SOMETIMES EXPERIENCE A GENERAL FEELING OF EMPTINESS</small>	5 IK WOU DAT IK VAKER BIJ MENSEN WAS <small>I WISH I HAD MORE PEOPLE VISITING ME OFTEN</small>
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**emotional existential**

*'Ever since my husband died I have been experiencing a lot more loneliness because I now live alone and my everyday life is very different.'*

*'The weekends are the most lonely time. This is because everyone is out and busy and no one is visiting.'*

*'Sometimes several days go by without talking to someone.'*

*'My daughter visits once a week.'*

*'Yes, I do feel lonely.'*

*'I would like to know more people.'*

*'Yes I want more time alone.'*

**Also feel lonely and seek time alone. Want to interact with older generations**



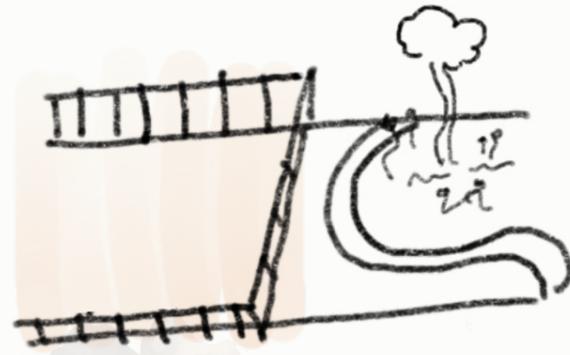
# Design Guidelines: Neighborhood Scale



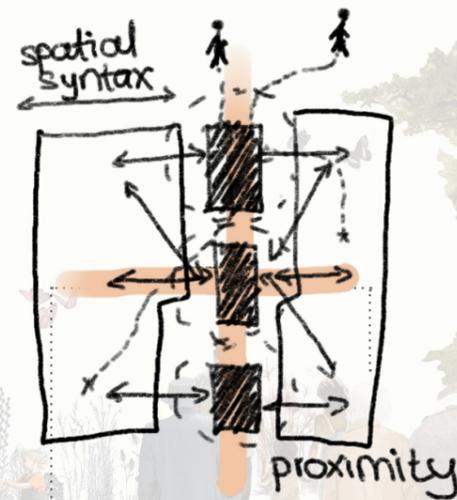
1. Spatial Proximity and Shallow Spatial Syntax
2. Routes, Walking and Way-finding
3. Soft boundaries and edges
4. Variety with Layered Spatial Hierarchies
5. Sociopetal Space to Sit
6. Slowing people down
7. Empty space
8. Connection to nature
9. Eyes and ears on the street/ play area



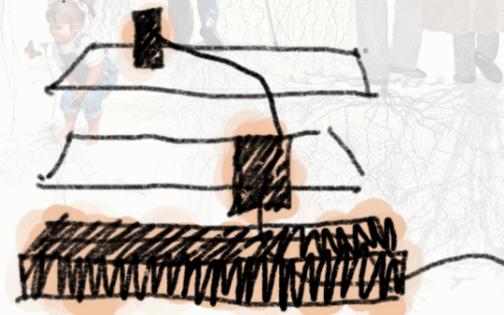
# Design Guidelines: Neighborhood Scale



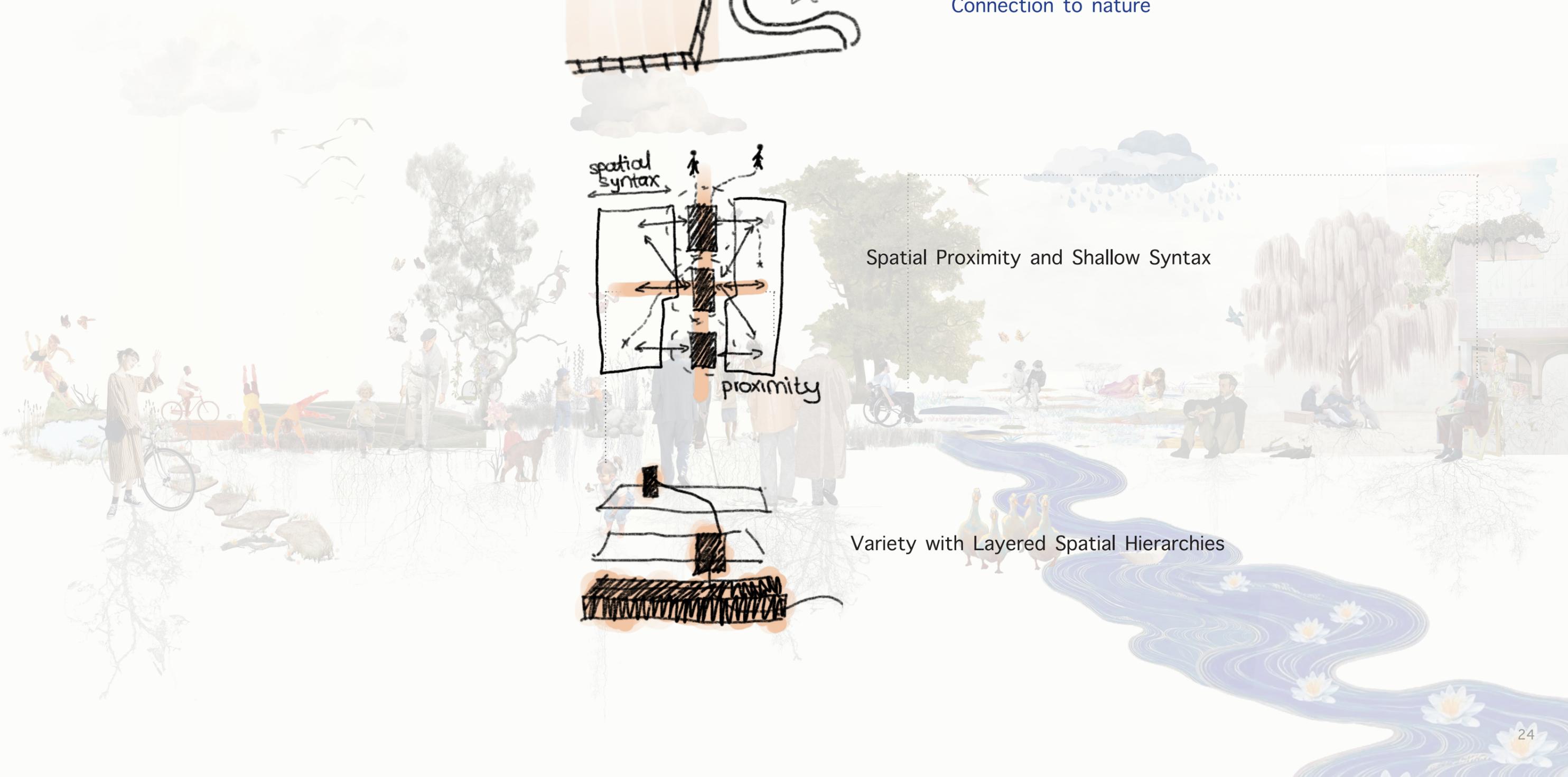
Connection to nature



Spatial Proximity and Shallow Syntax



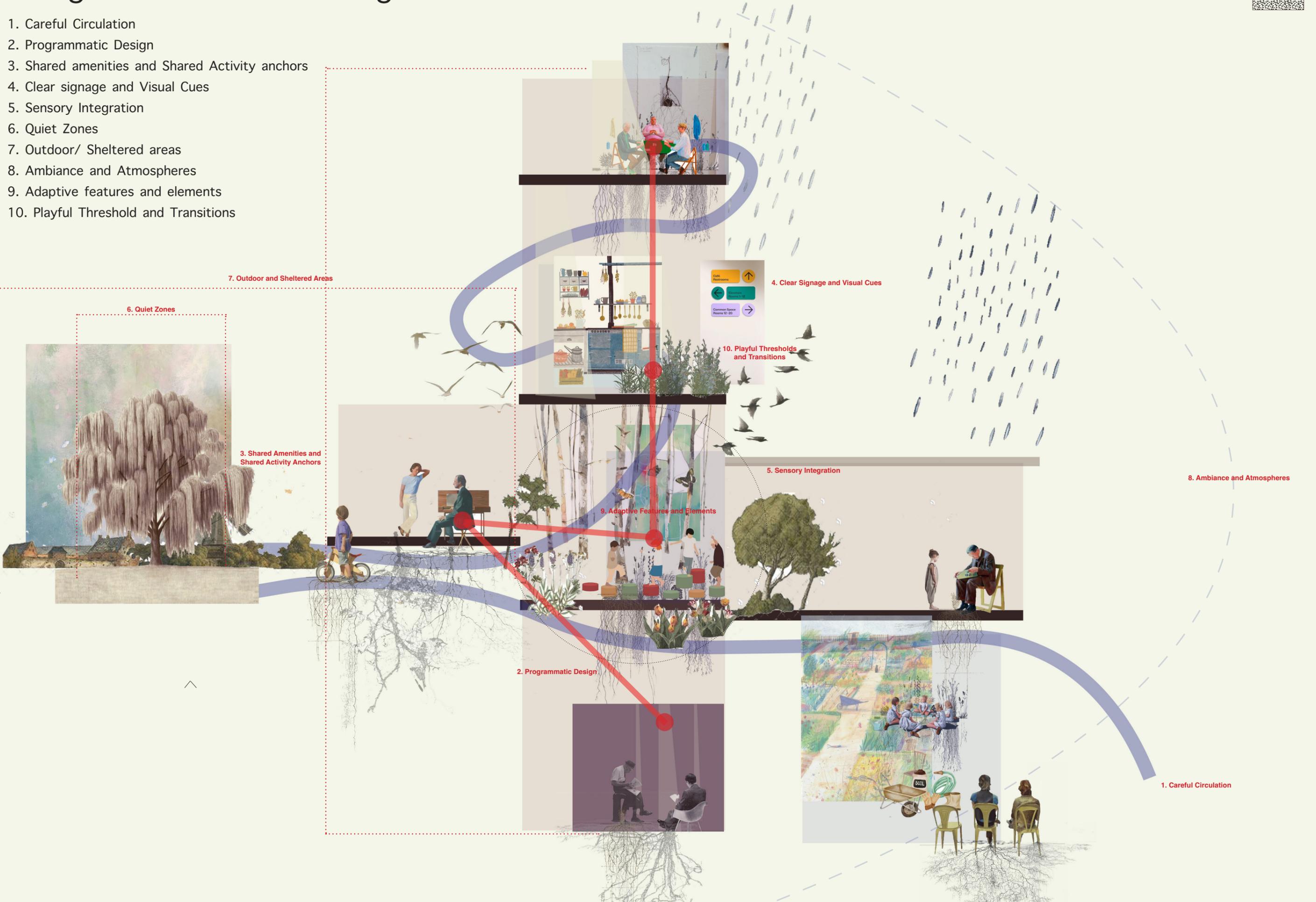
Variety with Layered Spatial Hierarchies



# Design Guidelines: Building Scale



1. Careful Circulation
2. Programmatic Design
3. Shared amenities and Shared Activity anchors
4. Clear signage and Visual Cues
5. Sensory Integration
6. Quiet Zones
7. Outdoor/ Sheltered areas
8. Ambiance and Atmospheres
9. Adaptive features and elements
10. Playful Threshold and Transitions



7. Outdoor and Sheltered Areas

6. Quiet Zones

3. Shared Amenities and Shared Activity Anchors

4. Clear Signage and Visual Cues

10. Playful Thresholds and Transitions

5. Sensory Integration

8. Ambiance and Atmospheres

9. Adaptive Features and Elements

2. Programmatic Design

1. Careful Circulation

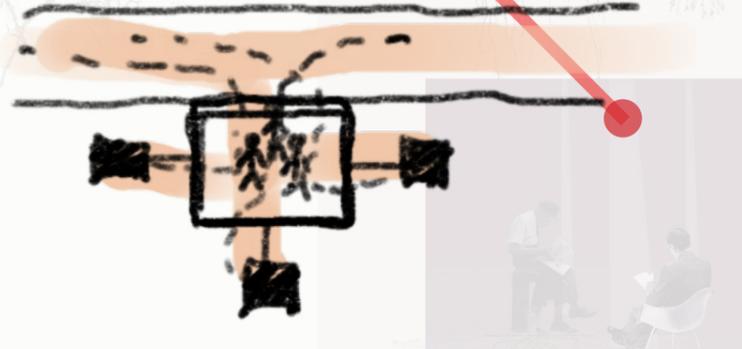
# Design Guidelines: Building Scale



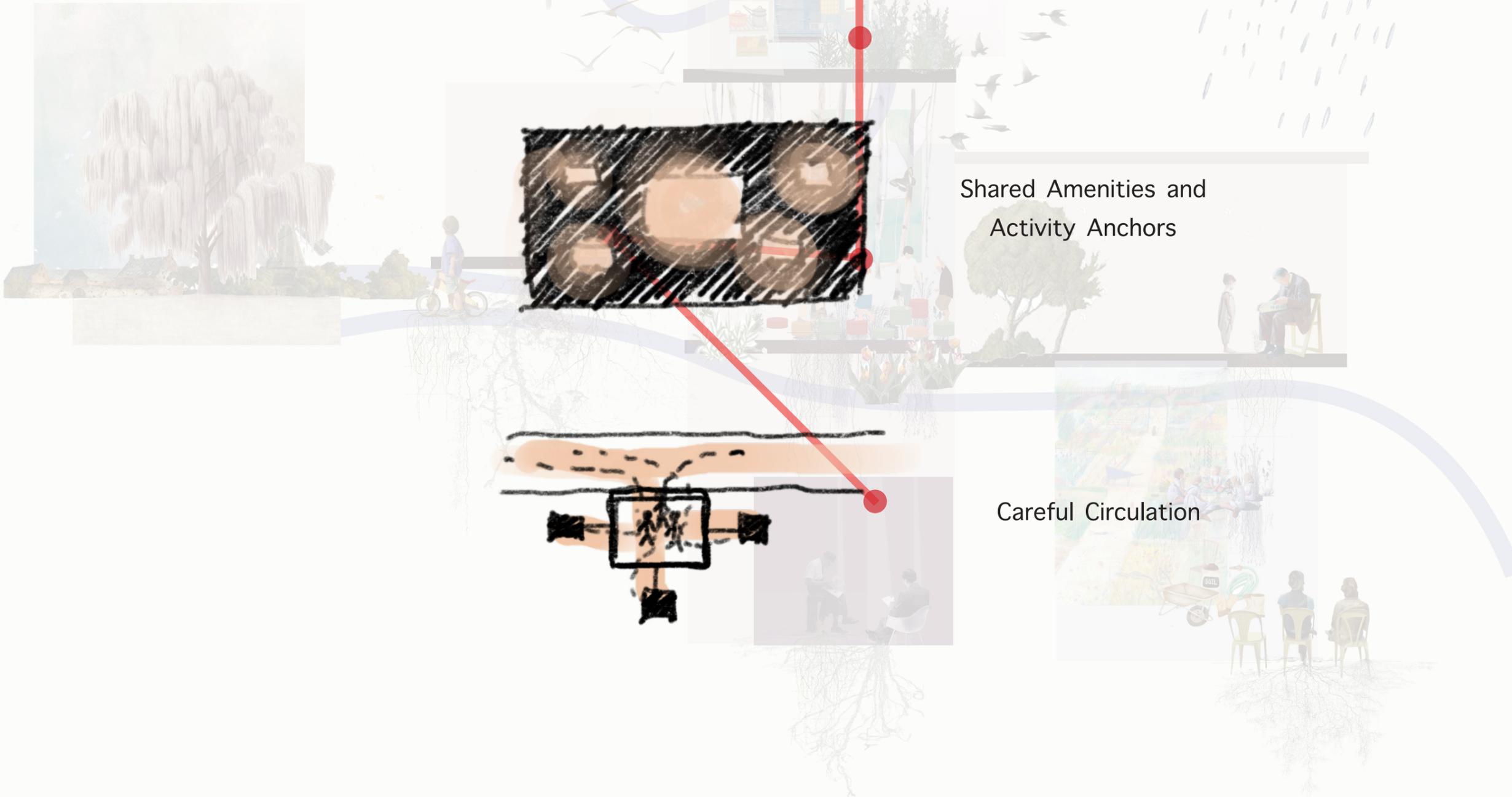
Sensory Integration

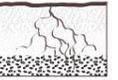


Shared Amenities and  
Activity Anchors



Careful Circulation





## Spatial Configurations

### 1. Bridging Physical and Functional Separation Through Layered Spatial Design

- Neighbourhood Scale:  
*Spatial Proximity and Syntax,*  
*Soft boundaries and edges*  
*Variety with Layered Spatial Hierarchies*
- Building Scale:  
*Careful Circulation*  
*Programmatic Design*  
*Shared Amenities and Activity Anchors*  
*Outdoor/ Sheltered Areas*

### 2. Reinvigorating Public Spaces with Universal Design Principles

- Neighbourhood Scale:  
*Routes, Walking and Way-finding,*  
*Soft boundaries and edges*  
*Sociopetal Spaces to Sit*  
*Slowing People Down*
- Building Scale:  
*Careful Circulation*  
*Clear signage and Visual Cues*  
*Outdoor/ Sheltered Areas*  
*Ambiance and Atmospheres*  
*Adaptive Feature Elements*  
*Playful Thresholds and Transitions*

### 3. Inviting Collaboration

- Neighbourhood Scale:  
*Spatial Proximity and Syntax,*  
*Routes, Walking and Way-finding,*  
*Soft boundaries and edges,*  
*Variety with Layered Spatial Hierarchies*  
*Sociopetal Spaces to Sit*  
*Slowing People Down*
- Building Scale:  
*Careful Circulation*  
*Programmatic Design*  
*Shared Amenities and Activity Anchors*  
*Sensory Integration*  
*Outdoor/ Sheltered Areas*  
*Ambiance and Atmosphere*  
*Adaptive Feature Elements*  
*Playful Thresholds and Transitions*

### 4. Combating Inflexibility with Universal Design and open spaces

- Neighbourhood Scale:  
*Routes, Walking and Way-finding,*  
*Empty Space*
- Building Scale:  
*Careful Circulation*  
*Adaptive Features and Elements*  
*Playful Thresholds and Transitions*

### 5. Ensuring safety within Open space

- Neighbourhood Scale:  
*Spatial Proximity and Syntax,*  
*Routes, Walking and Way-finding,*  
*Soft boundaries and edges*  
*Sociopetal Spaces to Sit*  
*Zones for dogs and pet free play areas*  
*Eyes and ears on the street/ play area*
- Building Scale:  
*Careful Circulation*  
*Programmatic Design*  
*Clear Signage and Visual Cues*  
*Quiet Zones*  
*Outdoor/ Sheltered Areas*  
*Adaptive Features and Elements*

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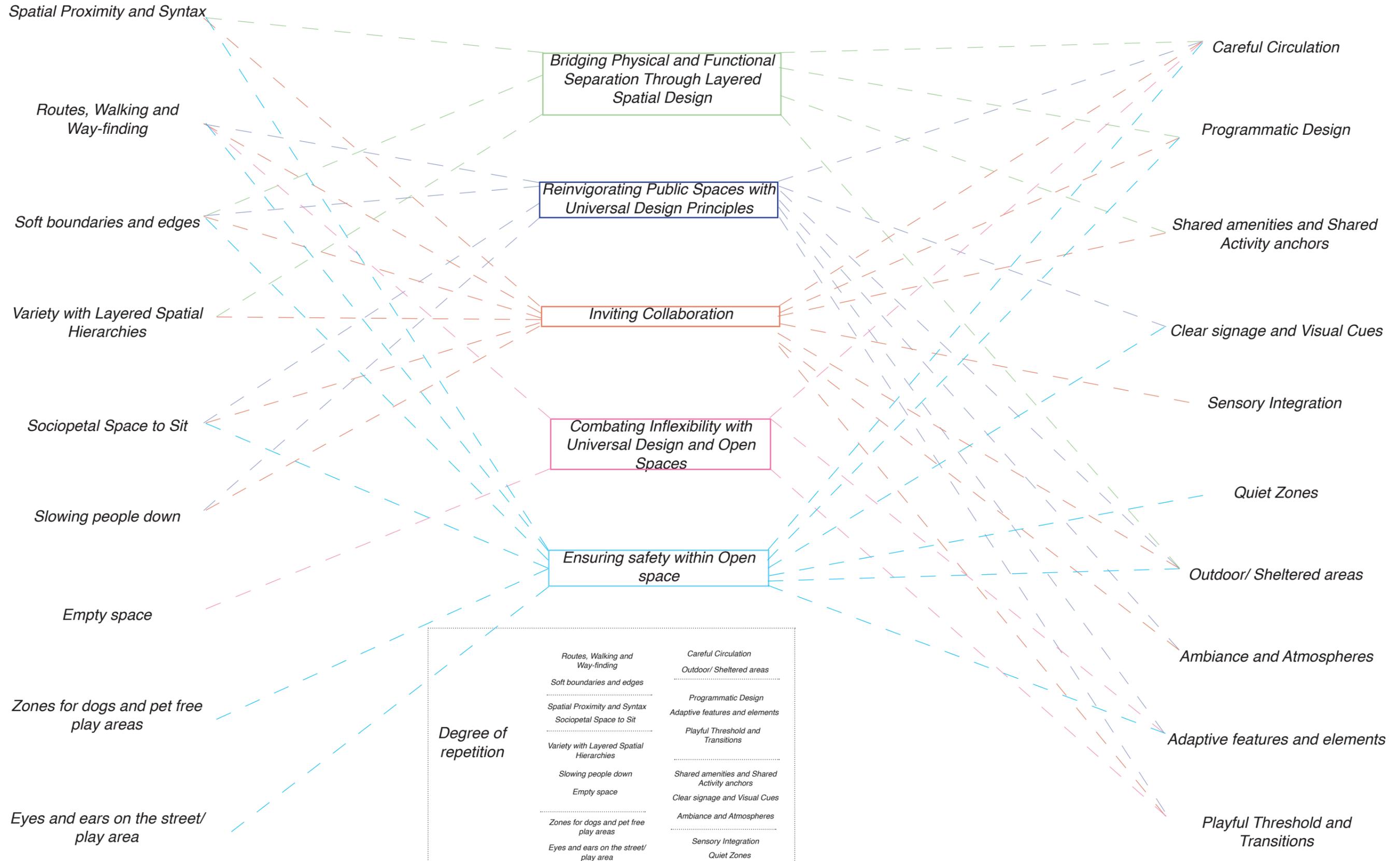
# Design Guidelines: Pattern Language



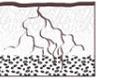
General Design Guidelines  
on Neighborhood Scale

Pendrecht Design  
Guidelines for Playfulness

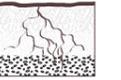
General Design Guidelines  
on Building Scale



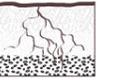
# The Playful Periphery



# The Playful Periphery



# The Site

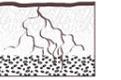


Connection to nature

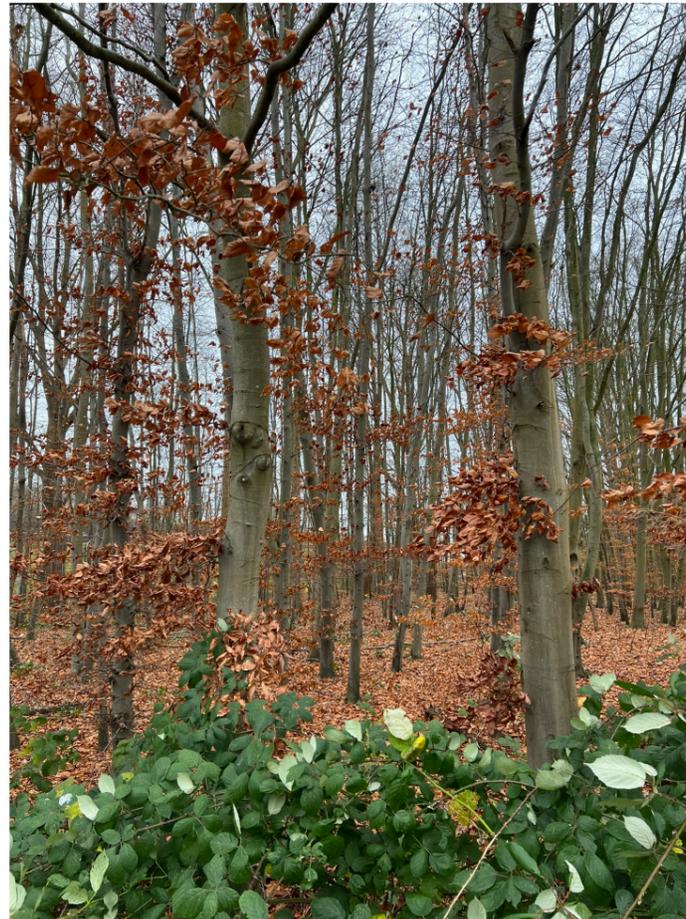
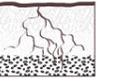


Sensory Integration

# The Site



# The Site

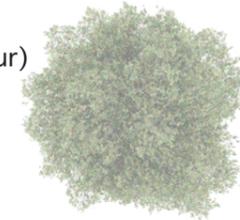


# The Site



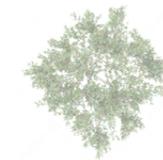
## Common Oak (*Quercus Robur*)

Age estimate: 4-60 years  
Height estimate: 20-25m



## Black Poplar

Age estimate: 30-40 years  
Height estimate: 25-30m



## London Plane (*Platanus x acerifolia*)

Age estimate: 30-50 years  
Height estimate: 15-20m



## Weeping Willow (*Salix babylonica*)

Age estimate of 40-60 years old  
Height estimate: 10-15m



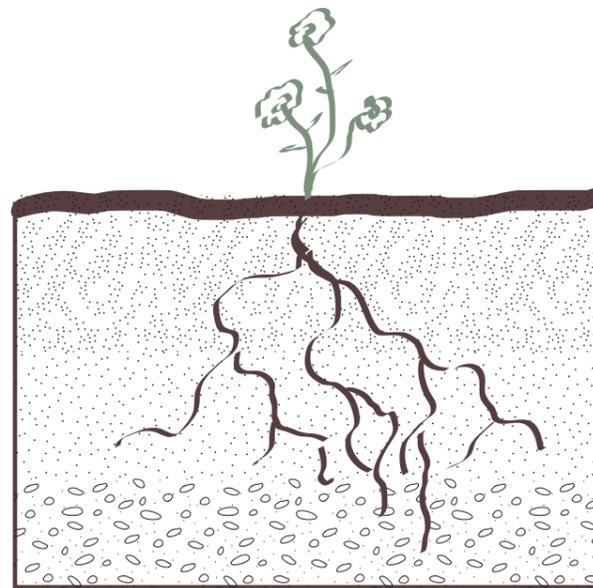
## European Beech (*Fagus Sylvatica*)

Age estimate: 5-15 years  
Height estimate: 4-6m

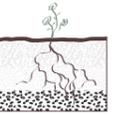


Map at a scale of 1:4000

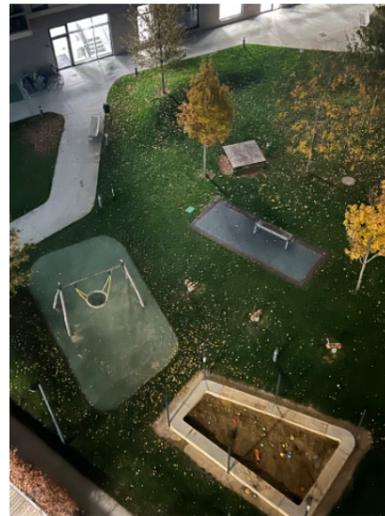
Key Ideas



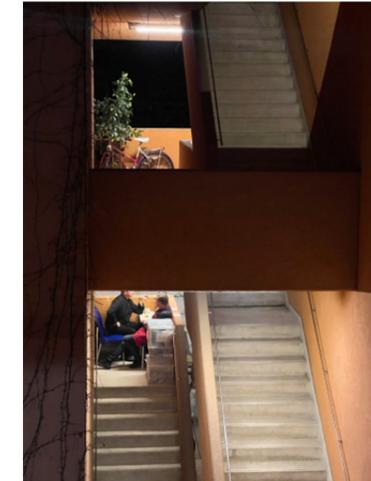
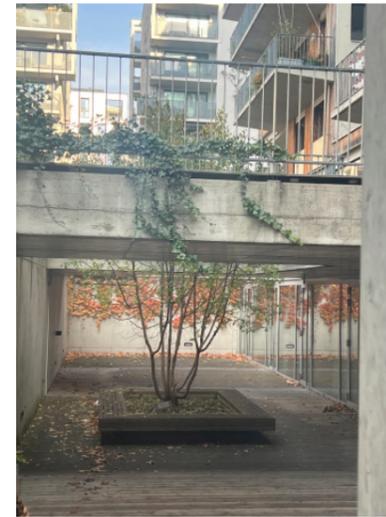
# Community Living



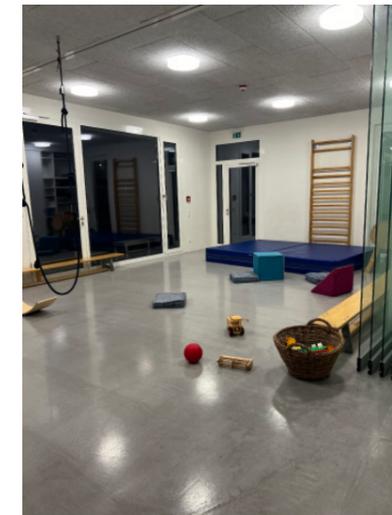
Playful thresholds



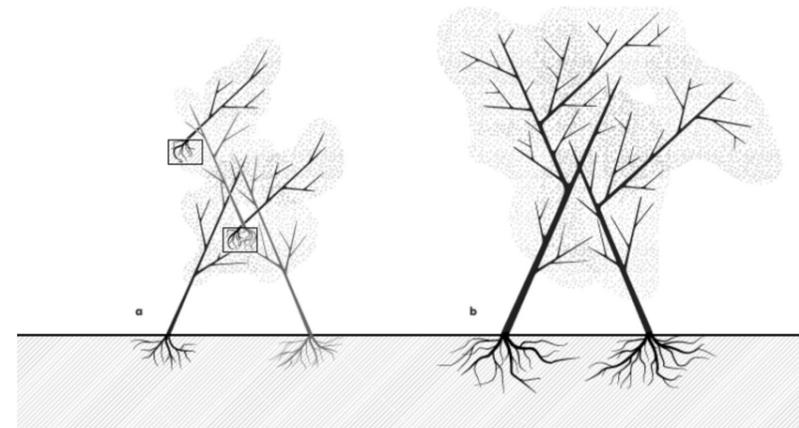
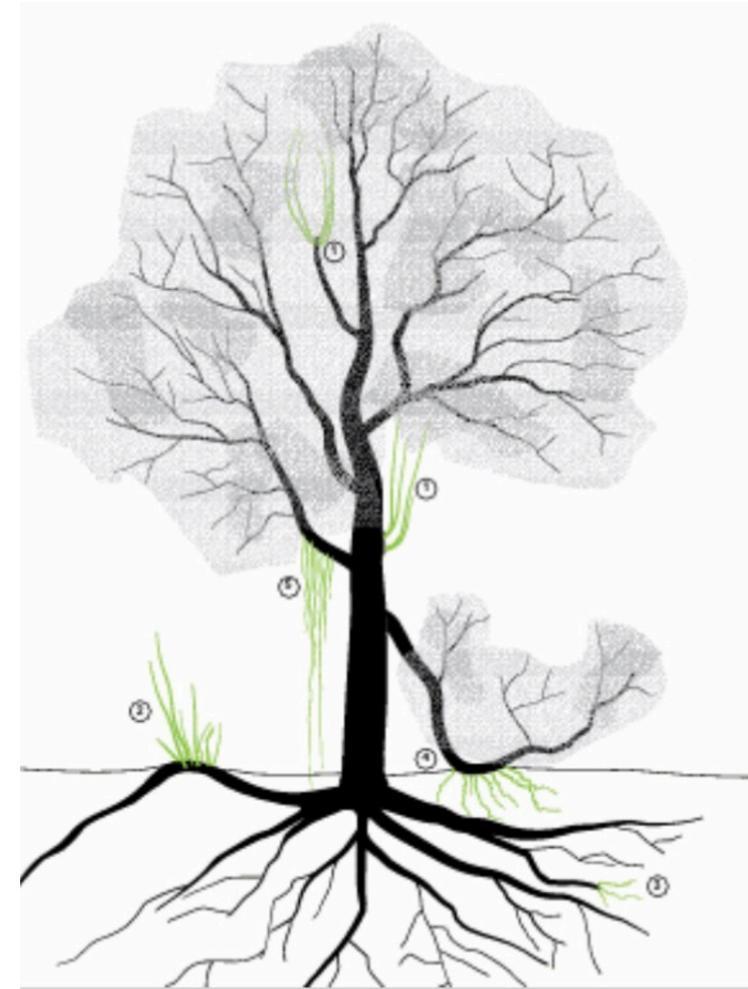
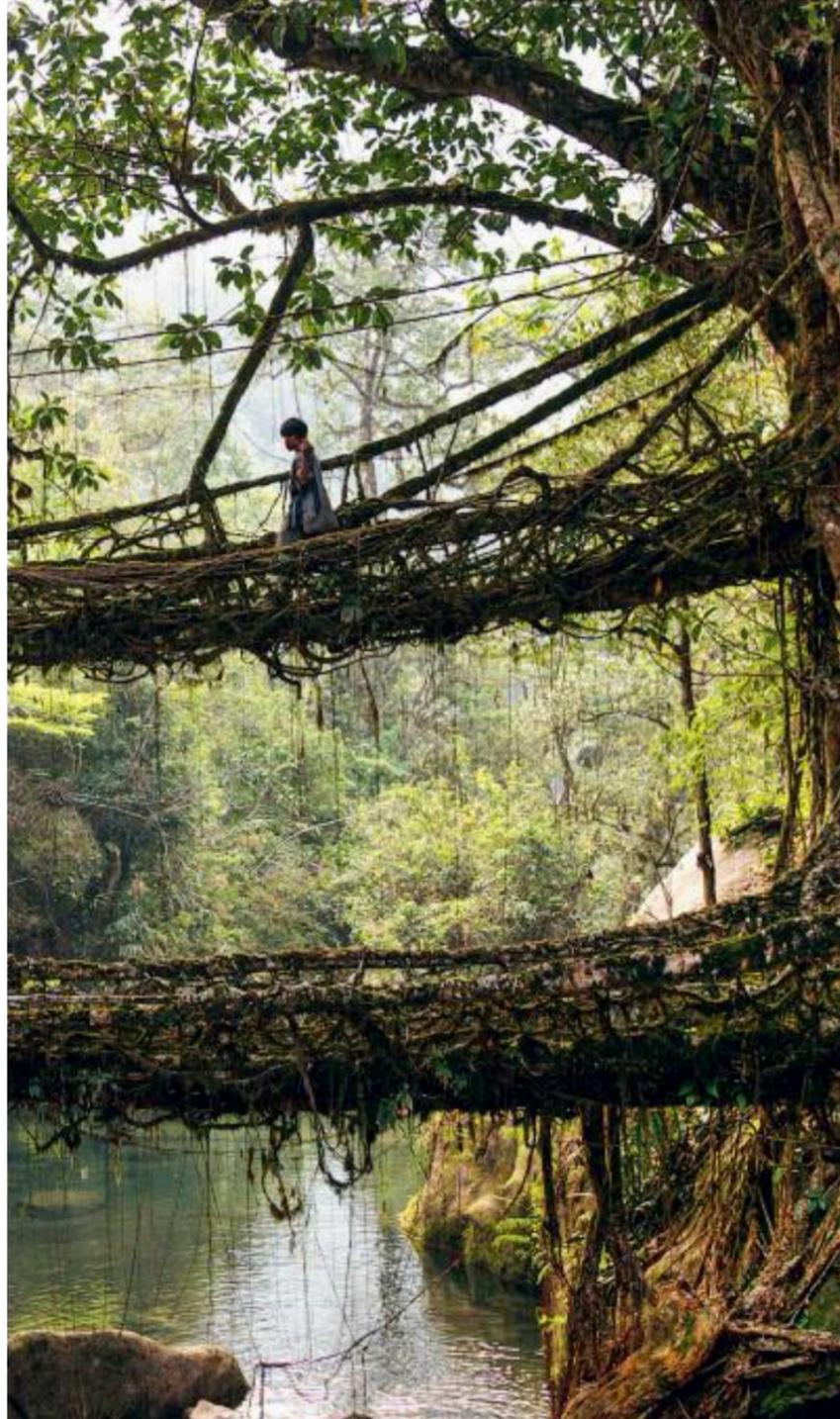
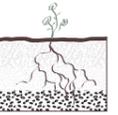
Common outdoor spaces  
- play environments  
- nature



Common indoor spaces  
- library  
- play spaces  
- kitchen

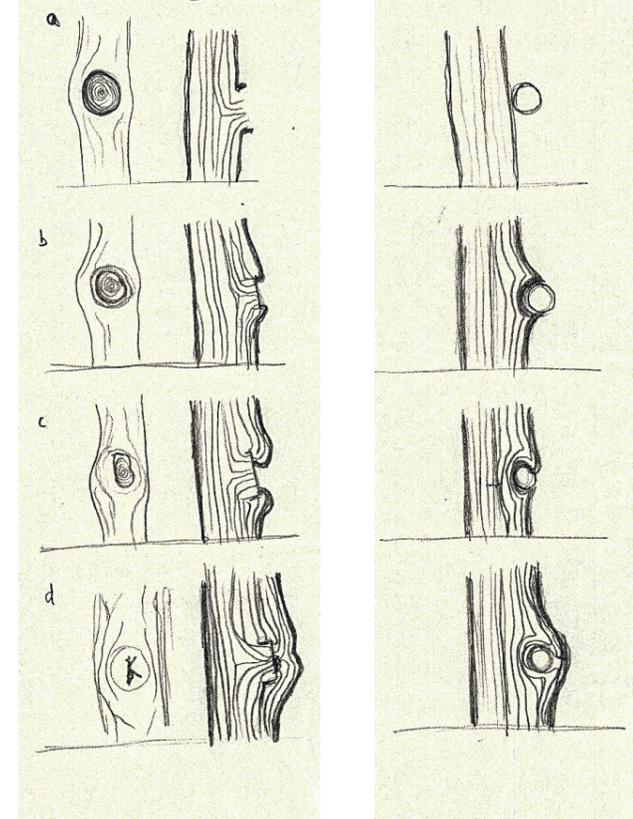
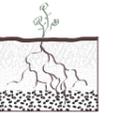


# Precedent: bridges developed by the Khasi and Jaintia peoples in India

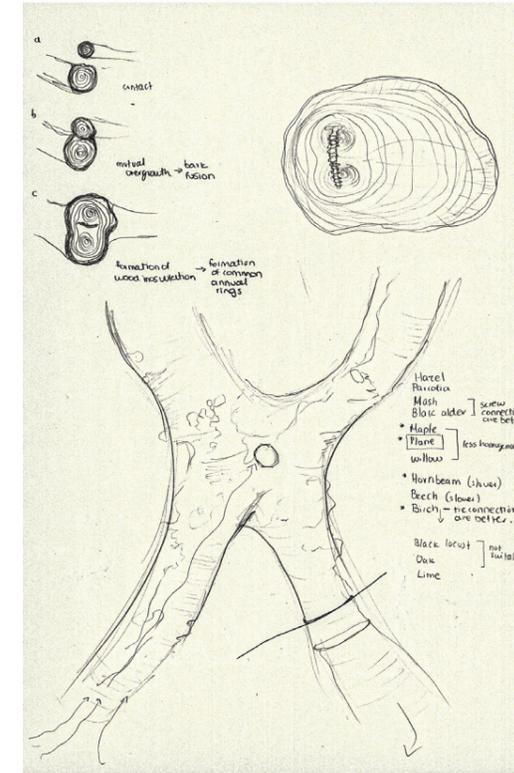
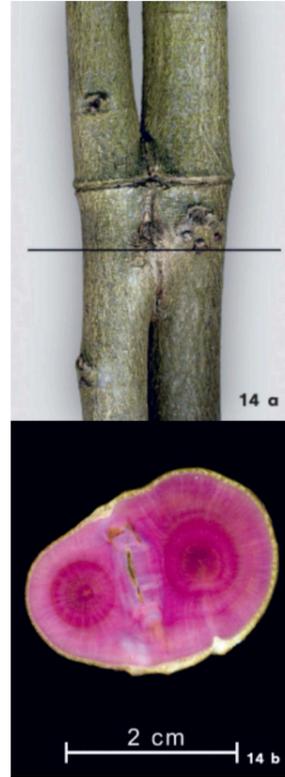
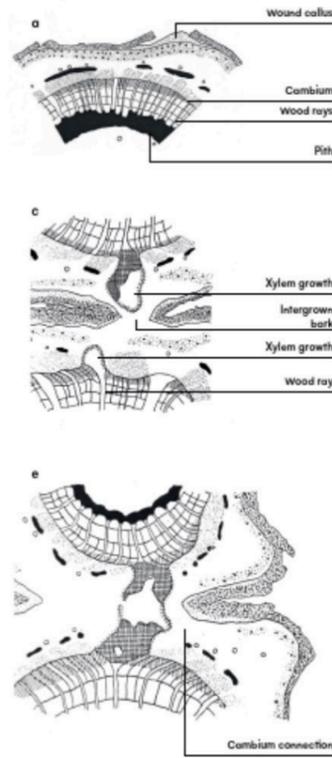
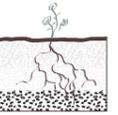


^

# Precedent: Baubotanik



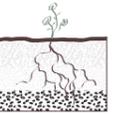
# Precedent: Baubotanik



# Concept



# Choice of tree structure



Factors:

1. Delicate bark
2. Light foliage
3. Sensory Richness
4. Climate resistance (Netherlands 2050+)
5. Biodiversity



*Betula pendula* // Silver Birch  
deciduous

*carpinus betulus* //  
european hornbeam  
marcescent



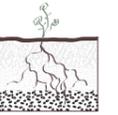
*Tilia Cordata*/ Small-leaved Lime)  
deciduous



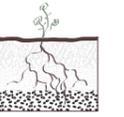
# Open ground floor



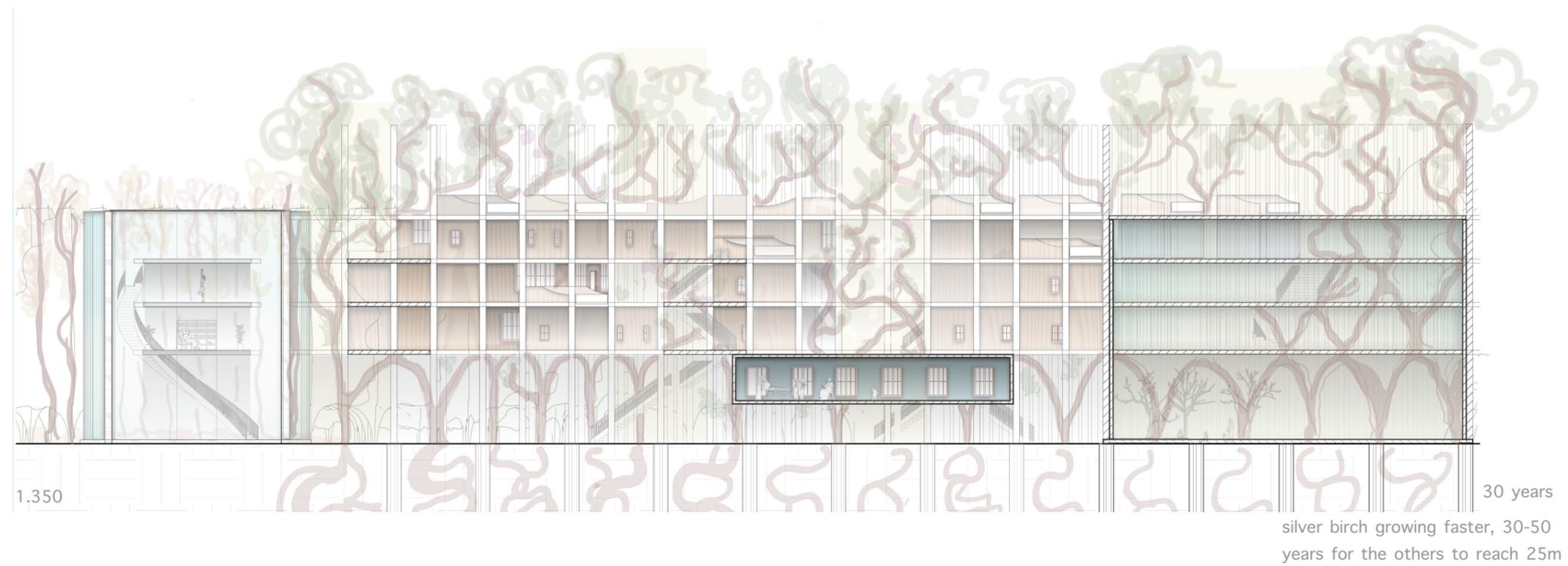
# Program



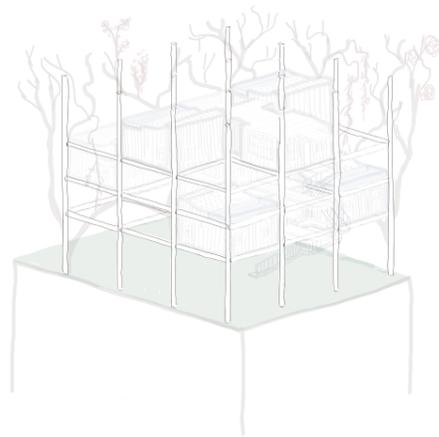
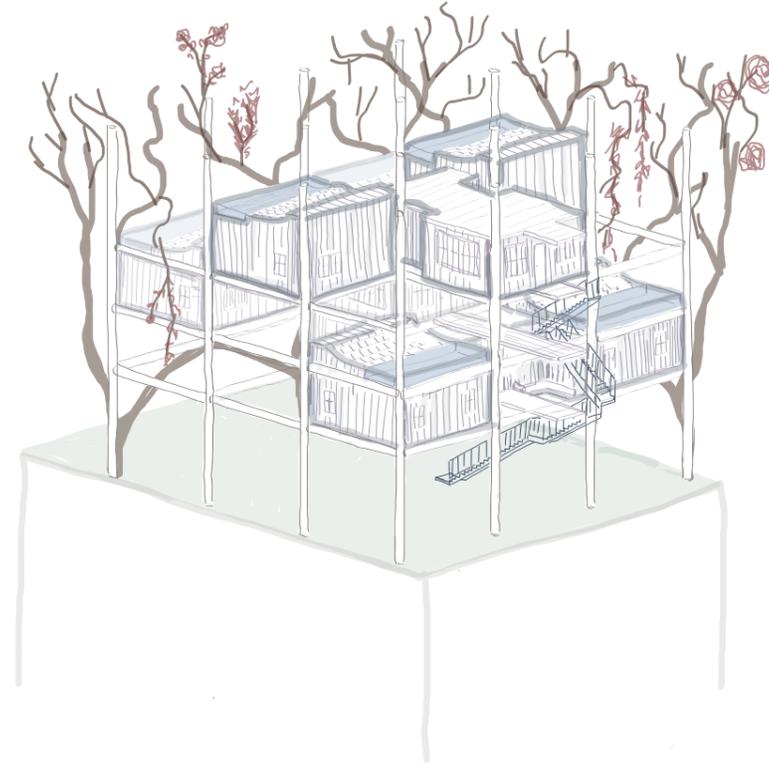
Phasing:



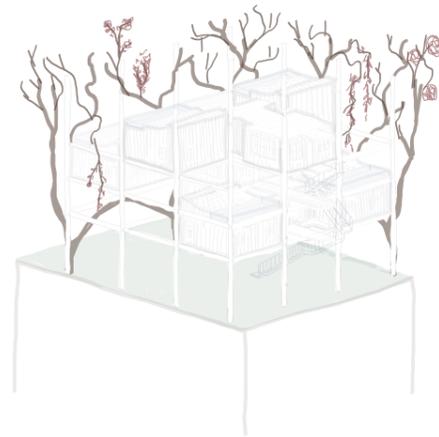
# Phasing



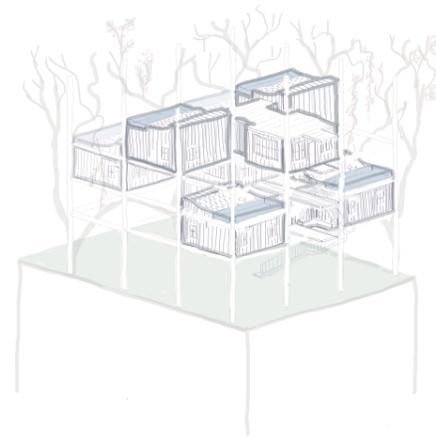
# Components:



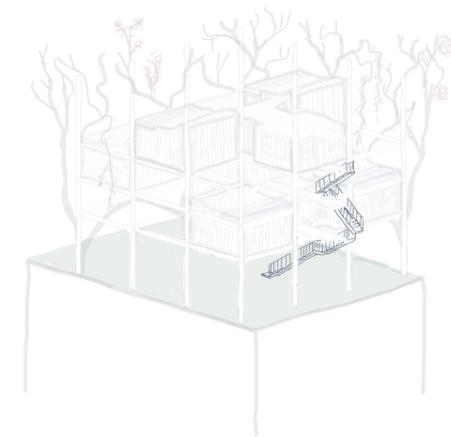
Man-made CLT and Glulam Structure



Natural Structure

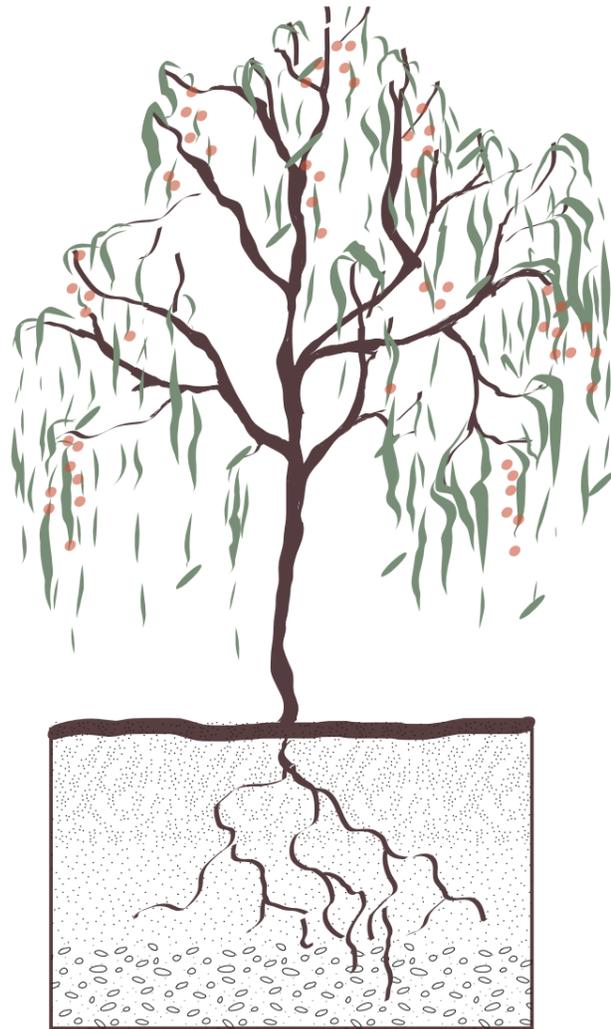


Housing Units



Staircases, Elevators

Final Design



# Characters



Emma



Denys

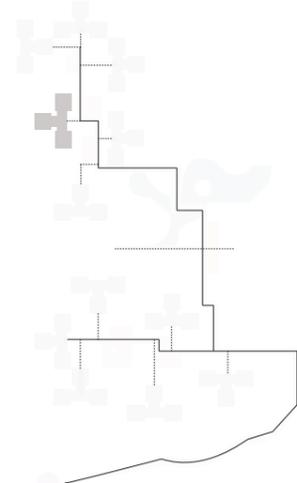
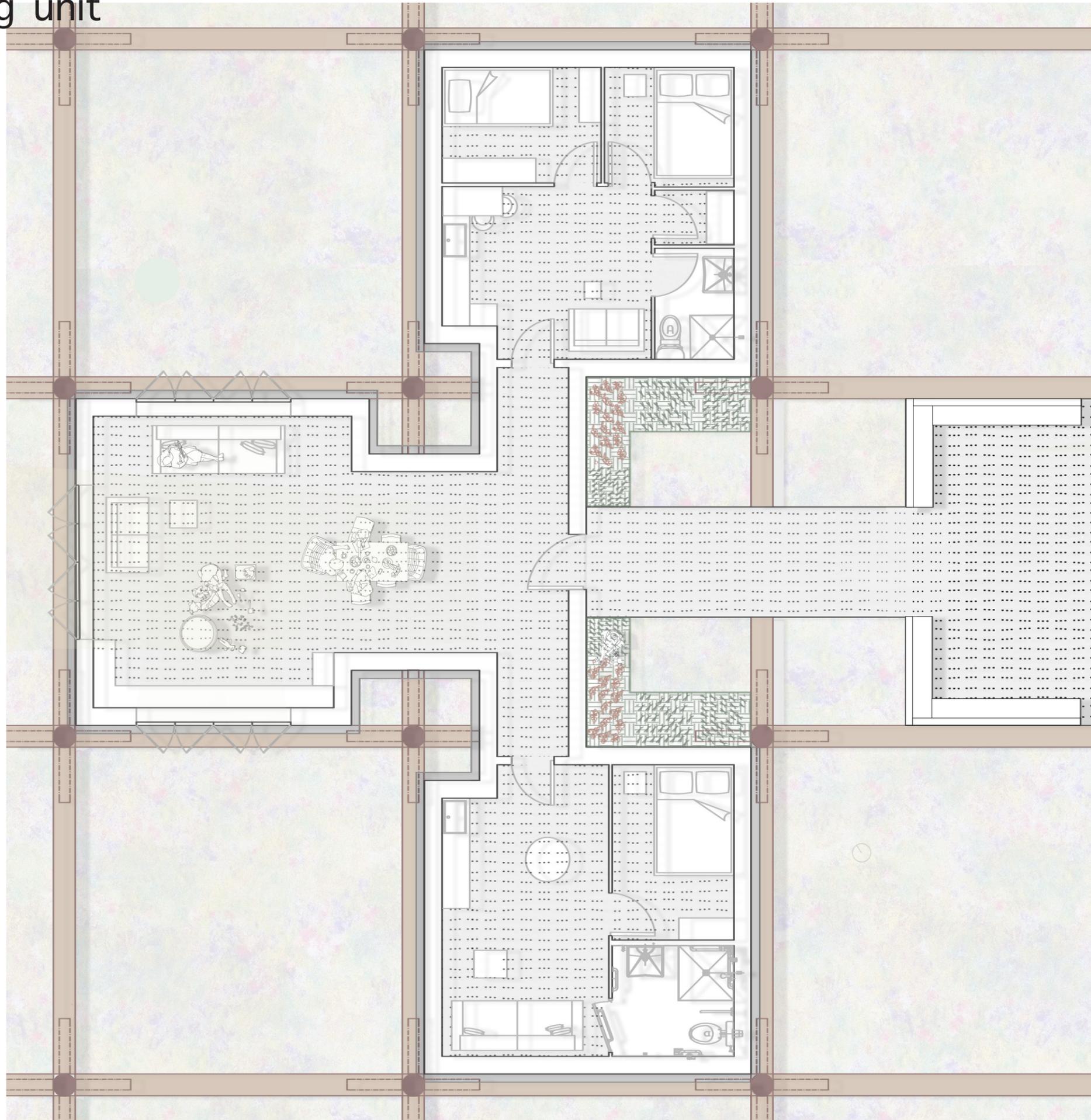


Niki



# Shared housing unit

1.25 on A3



Soft Boundaries and Edges

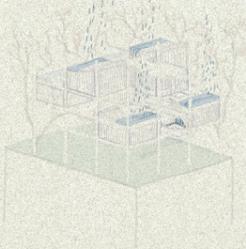


Sensory Integration



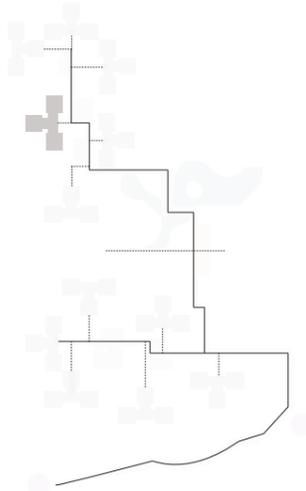
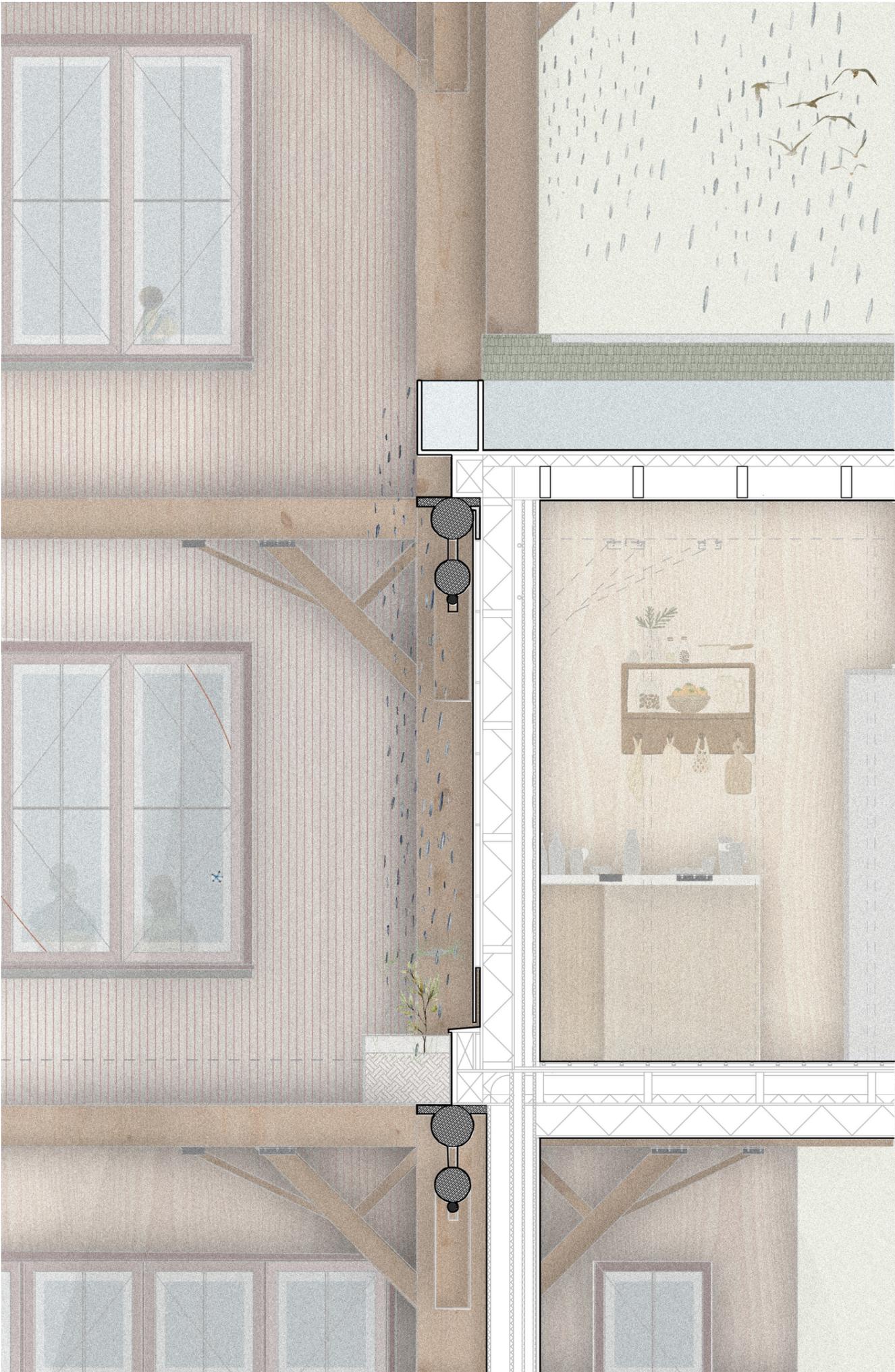
# Roof and water collection

1.25 on A3



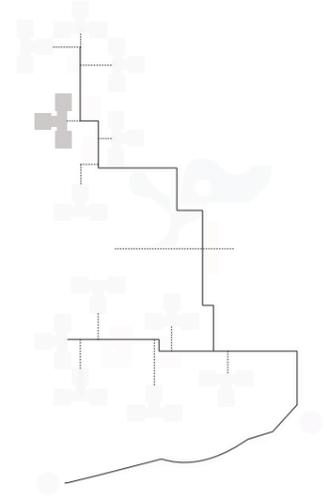
# Fragment of Housing

1.50 on A3  
(1.70)



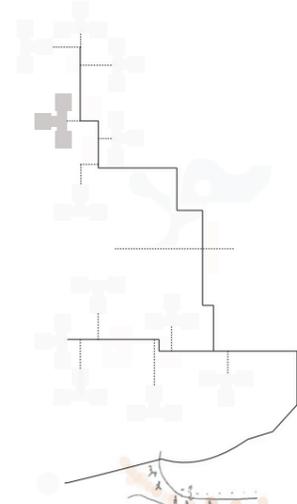
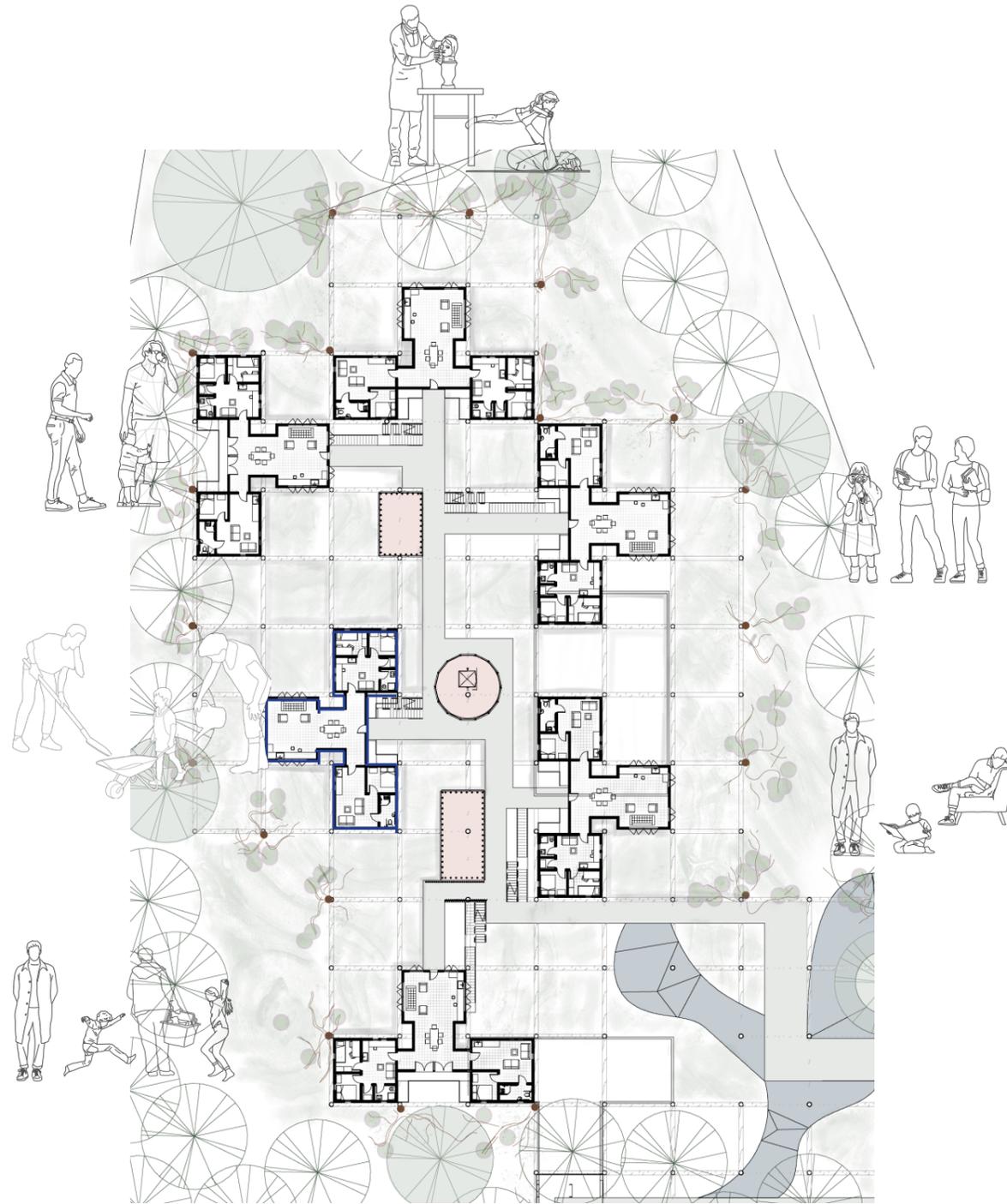
# Fragment of Housing

1.50 on A3  
(1.70)



# Horizontal Cluster

1.500 on A3



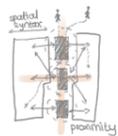
Slowing people down through narrowed paths



Shared Amenities and Shared Activity Anchors



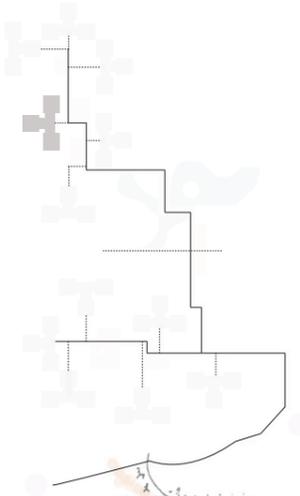
Playful Thresholds and Transitions



Spatial Proximity and Syntax

# Horizontal Cluster

1.500 on A3



Slowing people down through narrowed paths



Shared Amenities and Shared Activity Anchors



Playful Thresholds and Transitions



Spatial Proximity and Syntax

# Natural Climatising



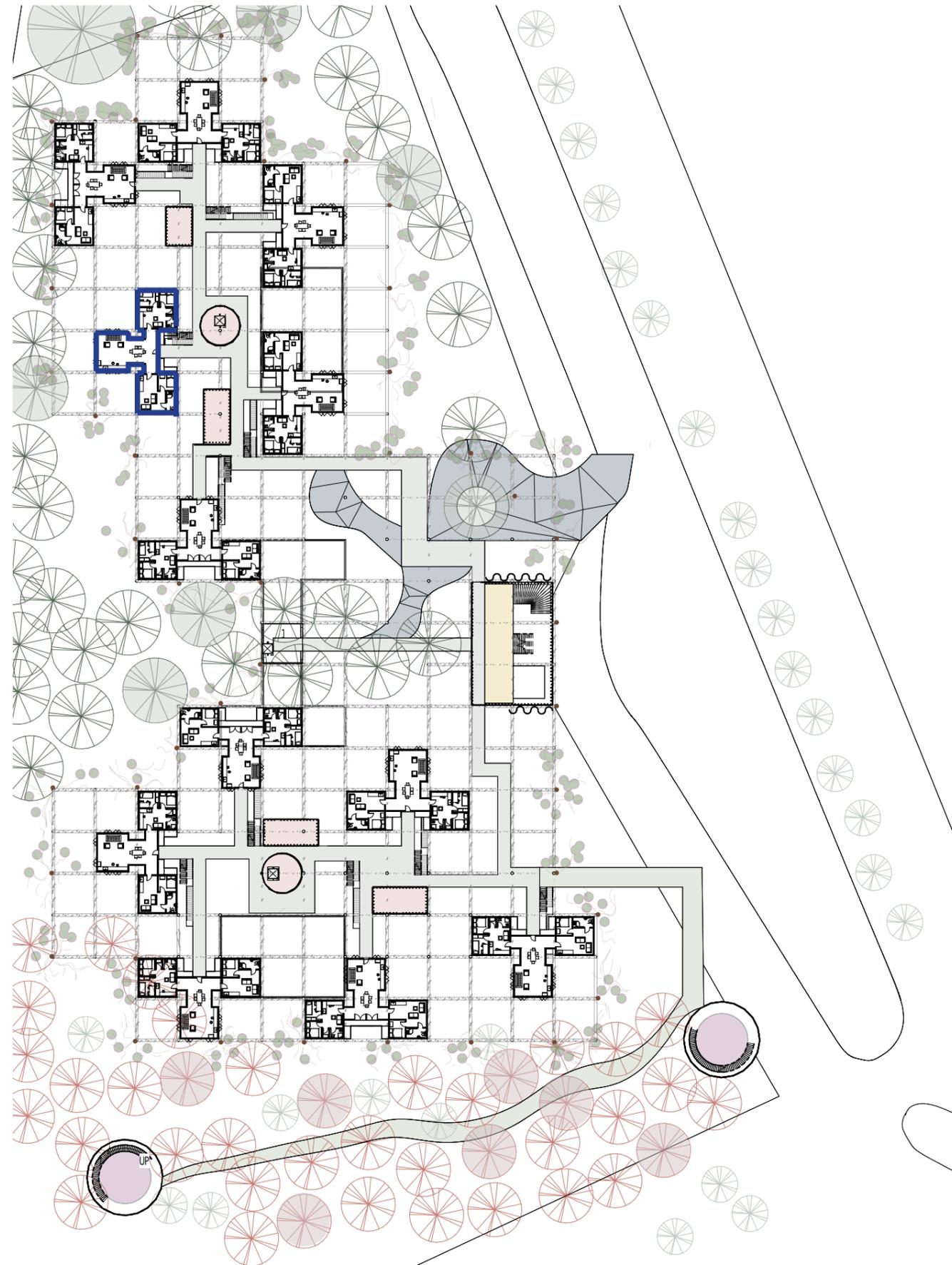
winter



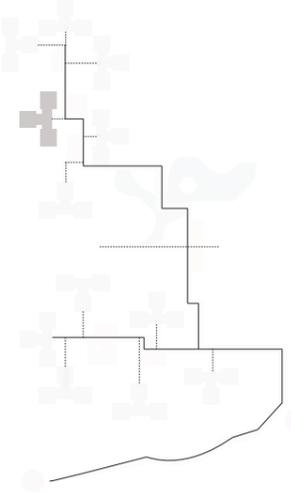
summer

# Floor Plan 1

1.500 at A3 (1.750)



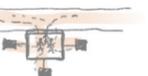
trees drawn are indicative



Shared Amenities and Shared Activity Anchors



Programmatic Design



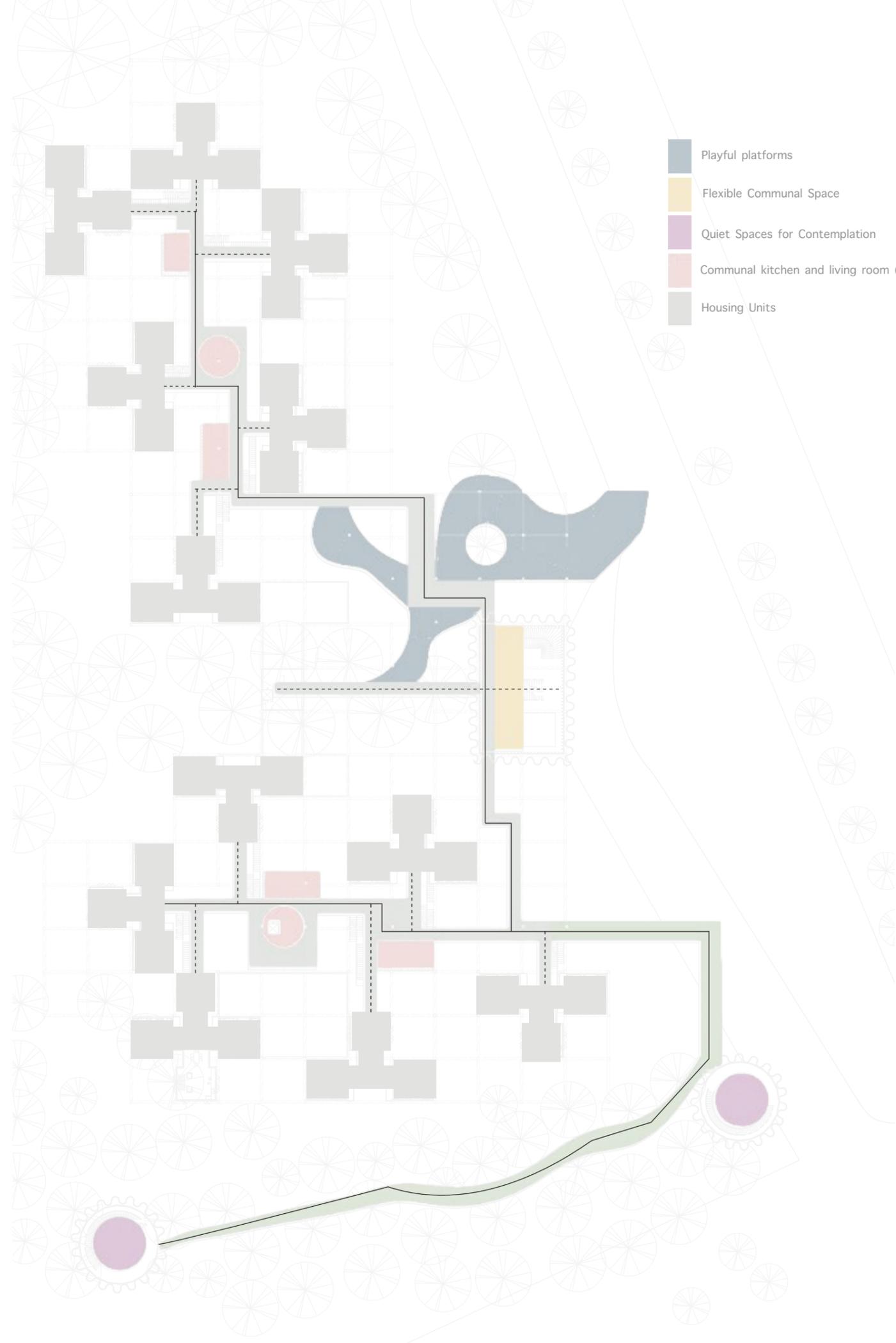
Careful Circulation



Quiet Zones

# Components:

1.500 at A3 (1.750)



- Playful platforms
- Flexible Communal Space
- Quiet Spaces for Contemplation
- Communal kitchen and living room (cafe)
- Housing Units



# Elevation of cluster

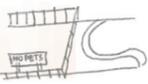
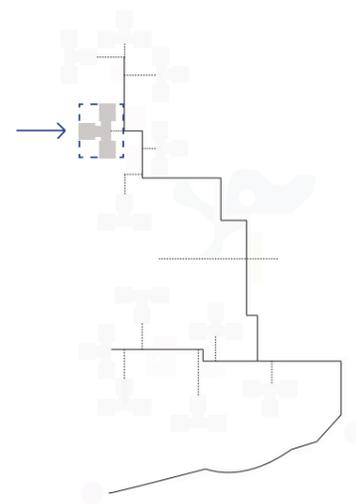
West  
1.75 at A3



# Cluster

West

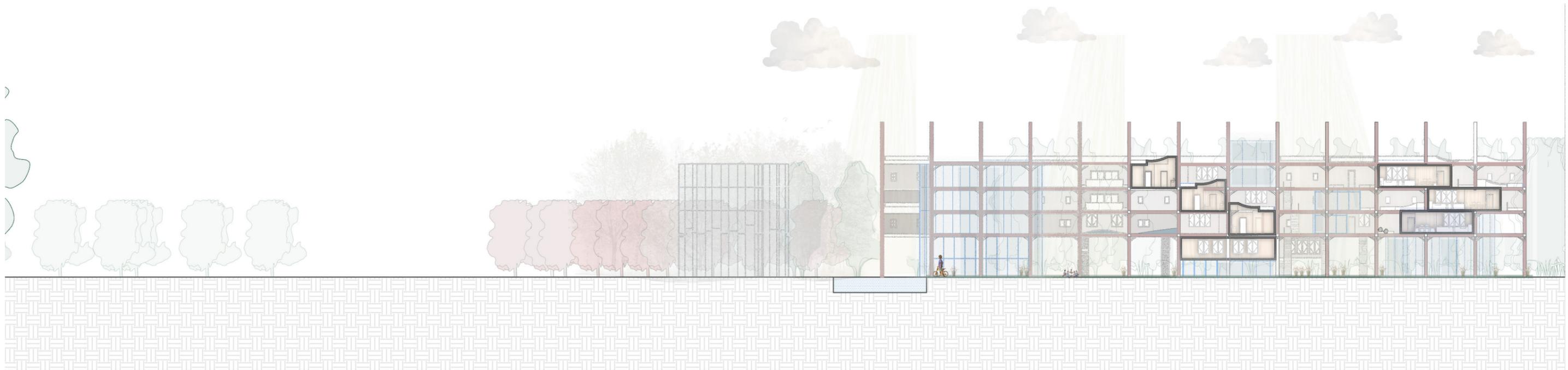
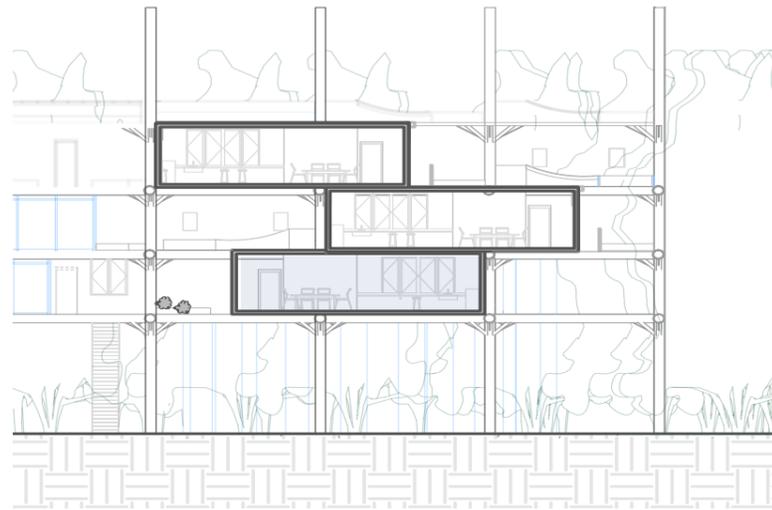
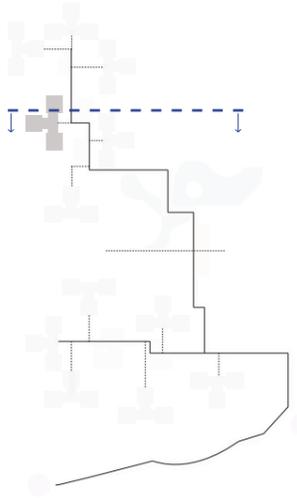
1.75 at A3



Connection to nature

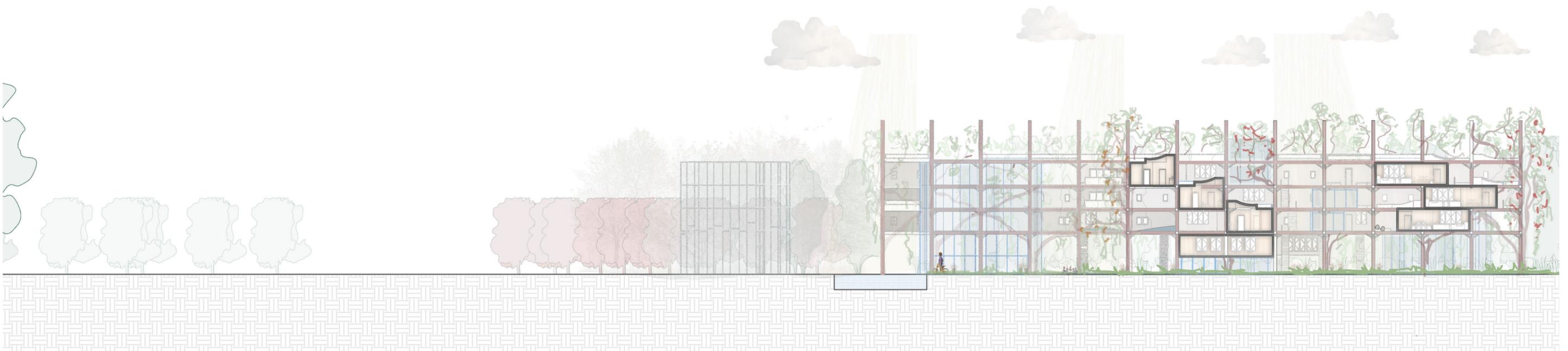
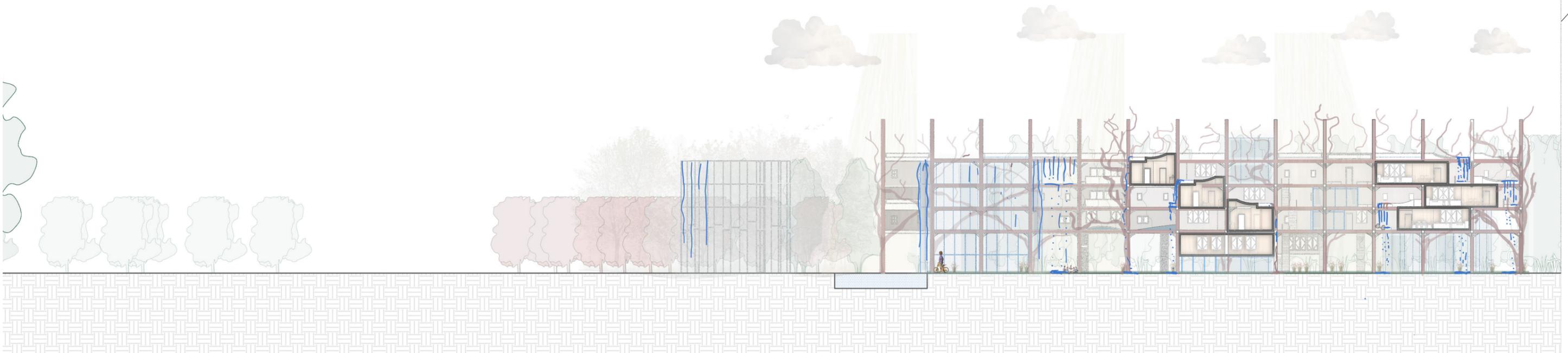
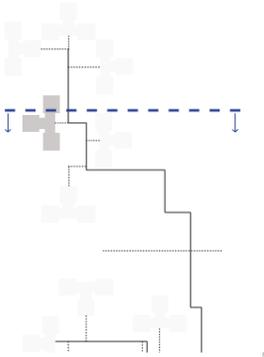
# Vertical cluster

1.500

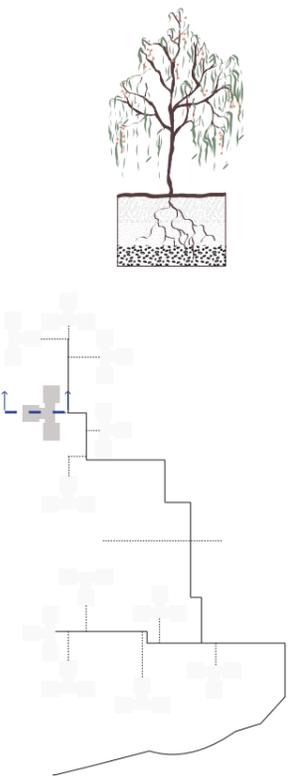
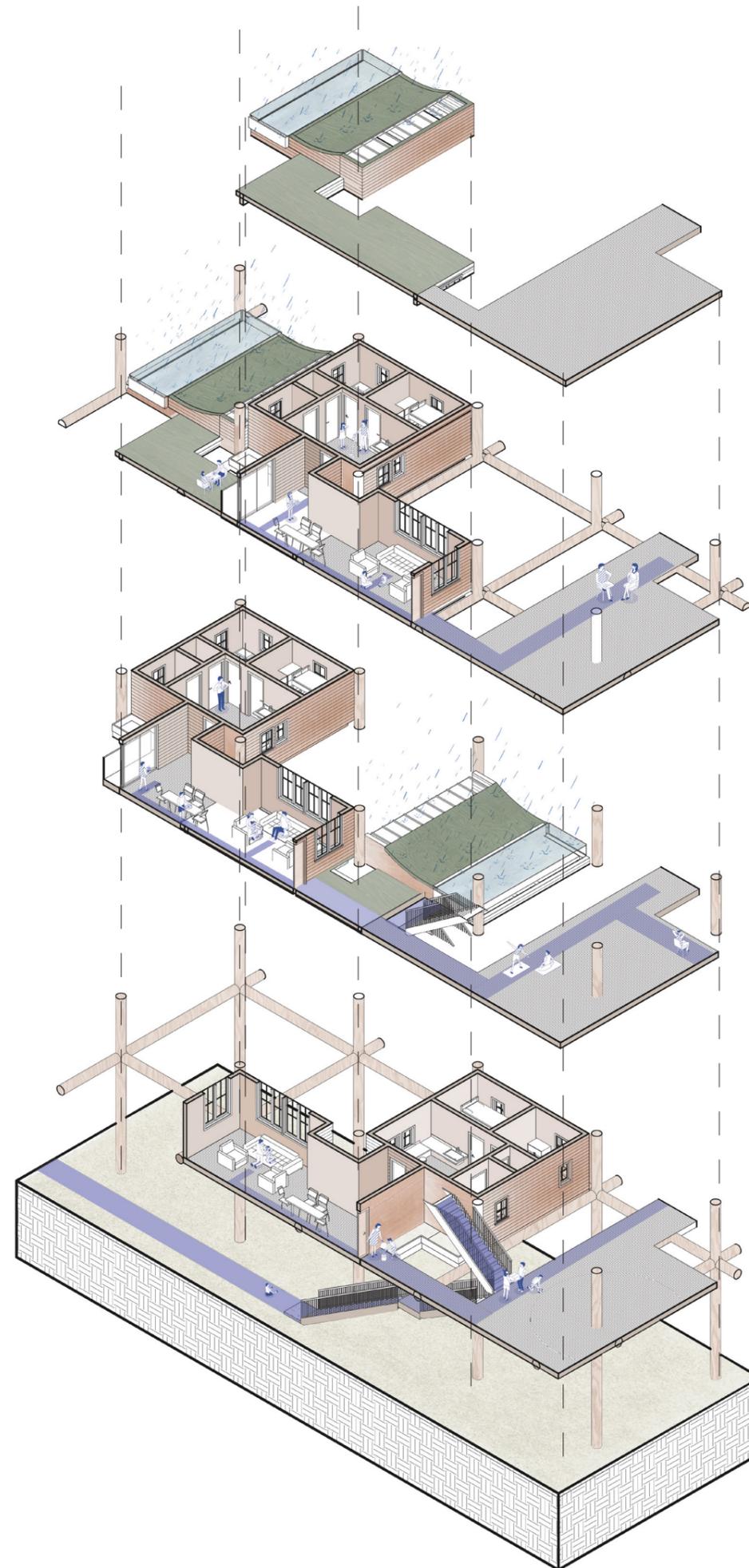


# Changing seasons

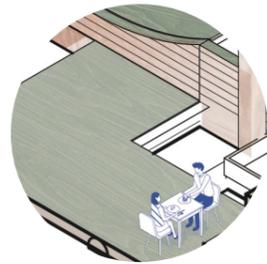
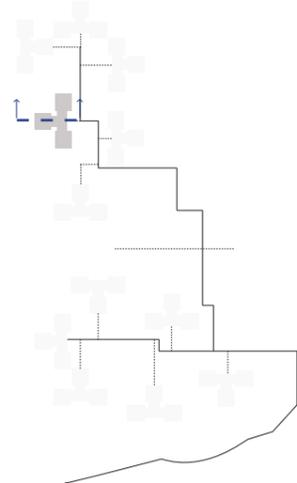
1.500



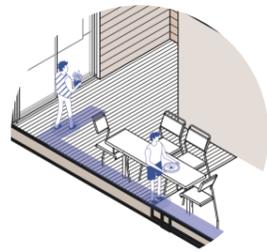
# Vertical Cluster - Routes



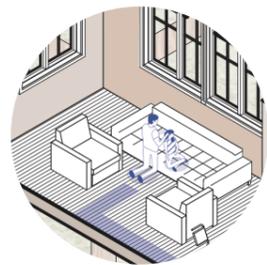
# Vertical Cluster - Moments



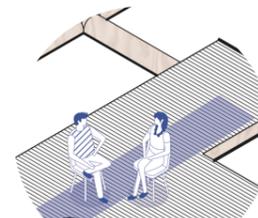
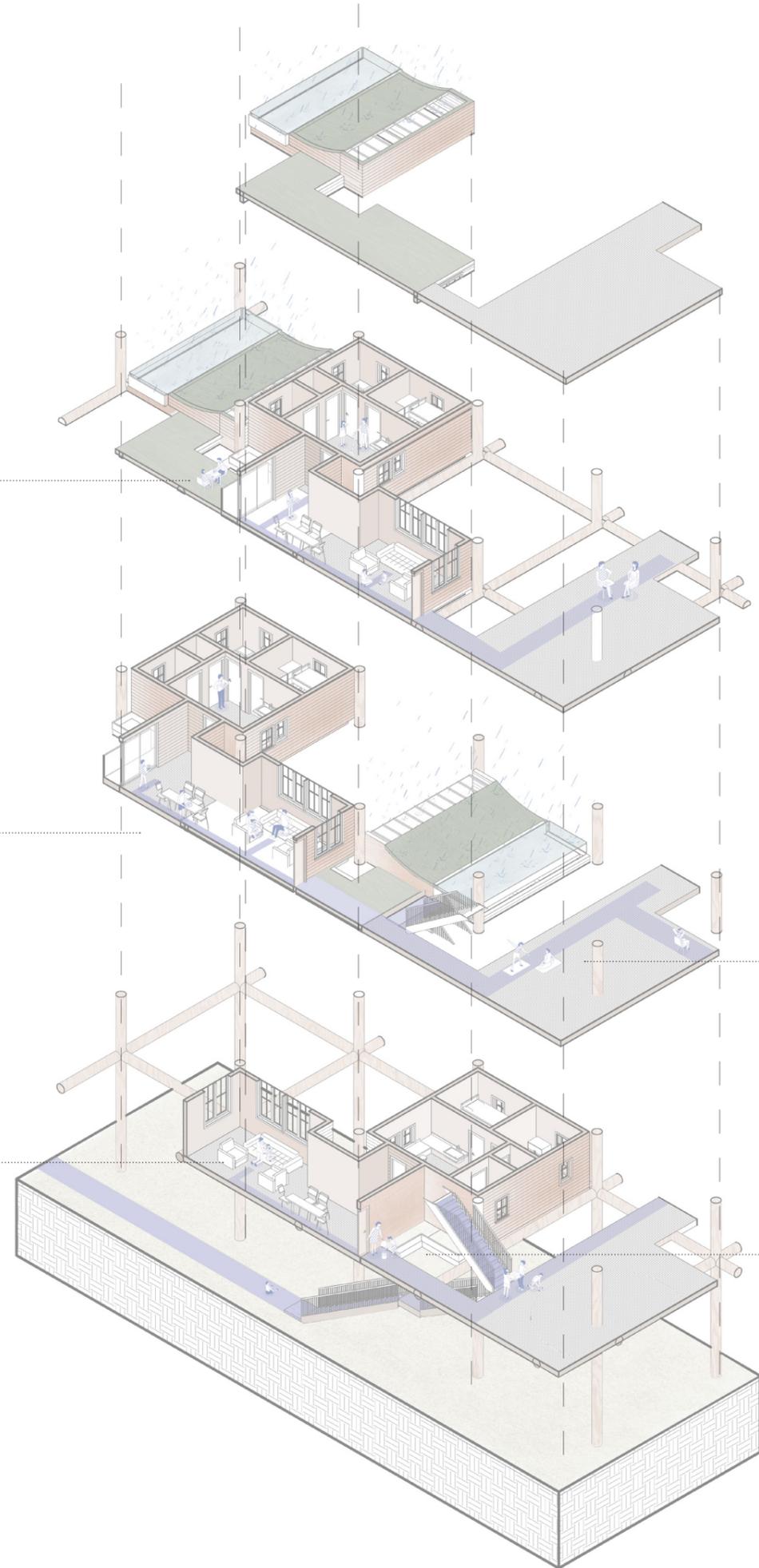
Outdoor space with small garden



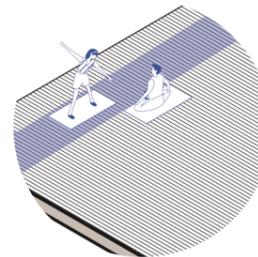
Kitchen



Living room



Seating

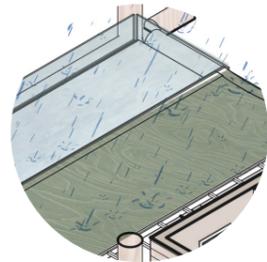


Activity

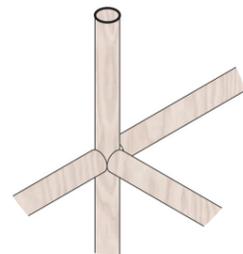


Planting

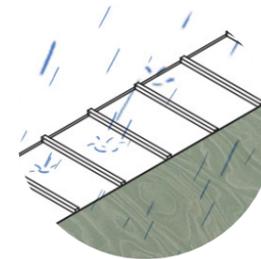
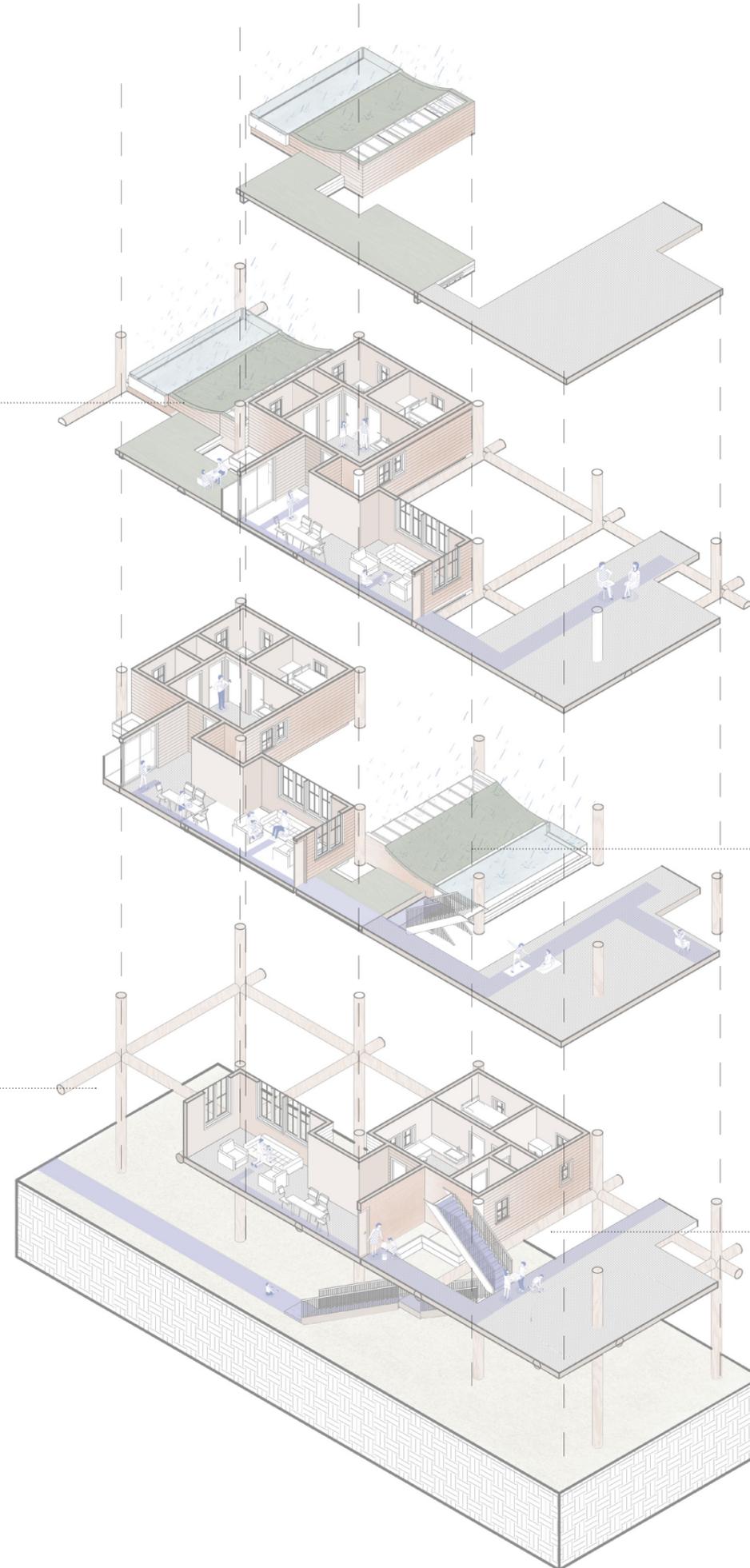
# Vertical Cluster- Materiality



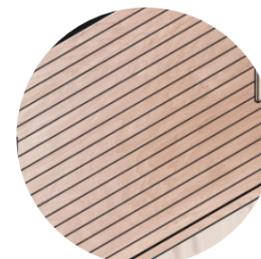
Wooden and Zinc shingles, with small water reserve



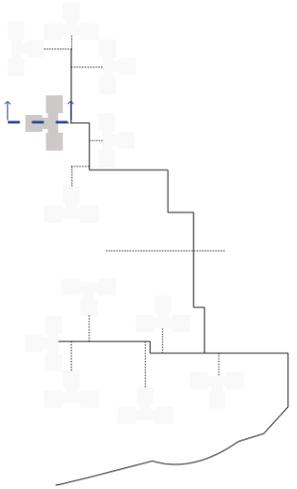
CLT and Glulam structure



Glass

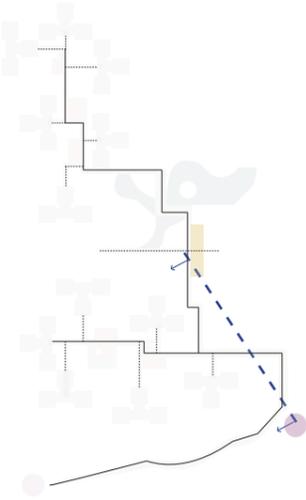


Douglas fir coated with linoleum pigment (Tel Aviv)

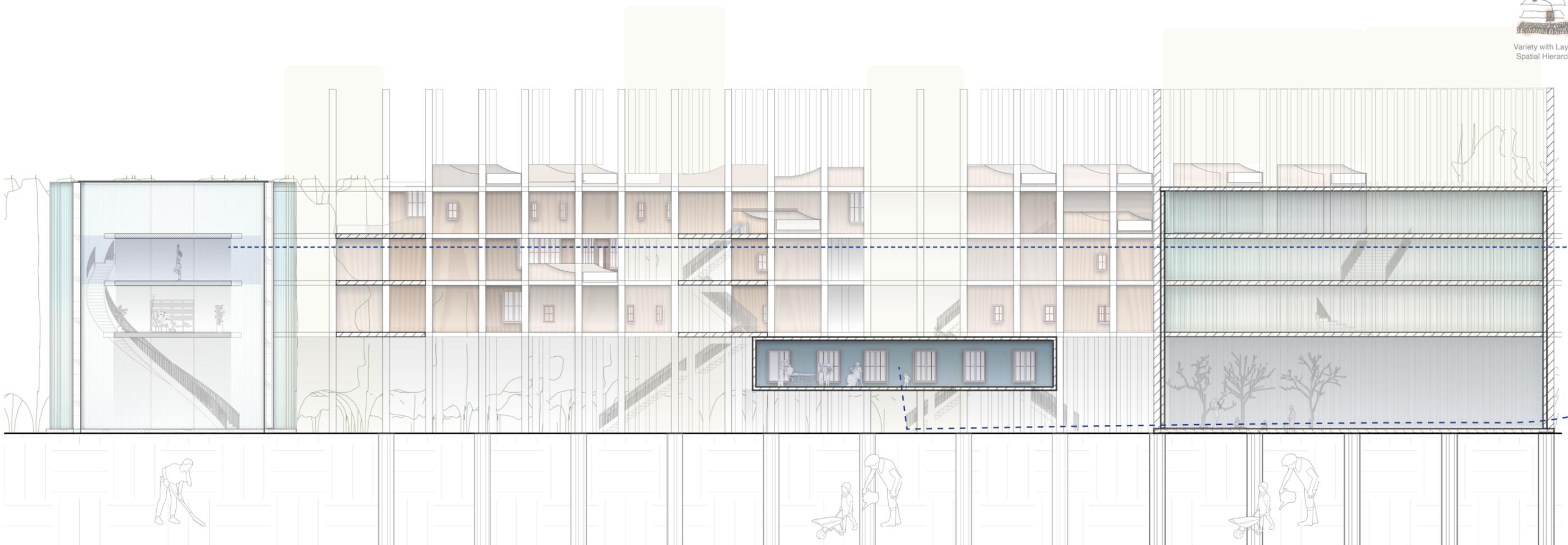


# Characters' journey

1.250

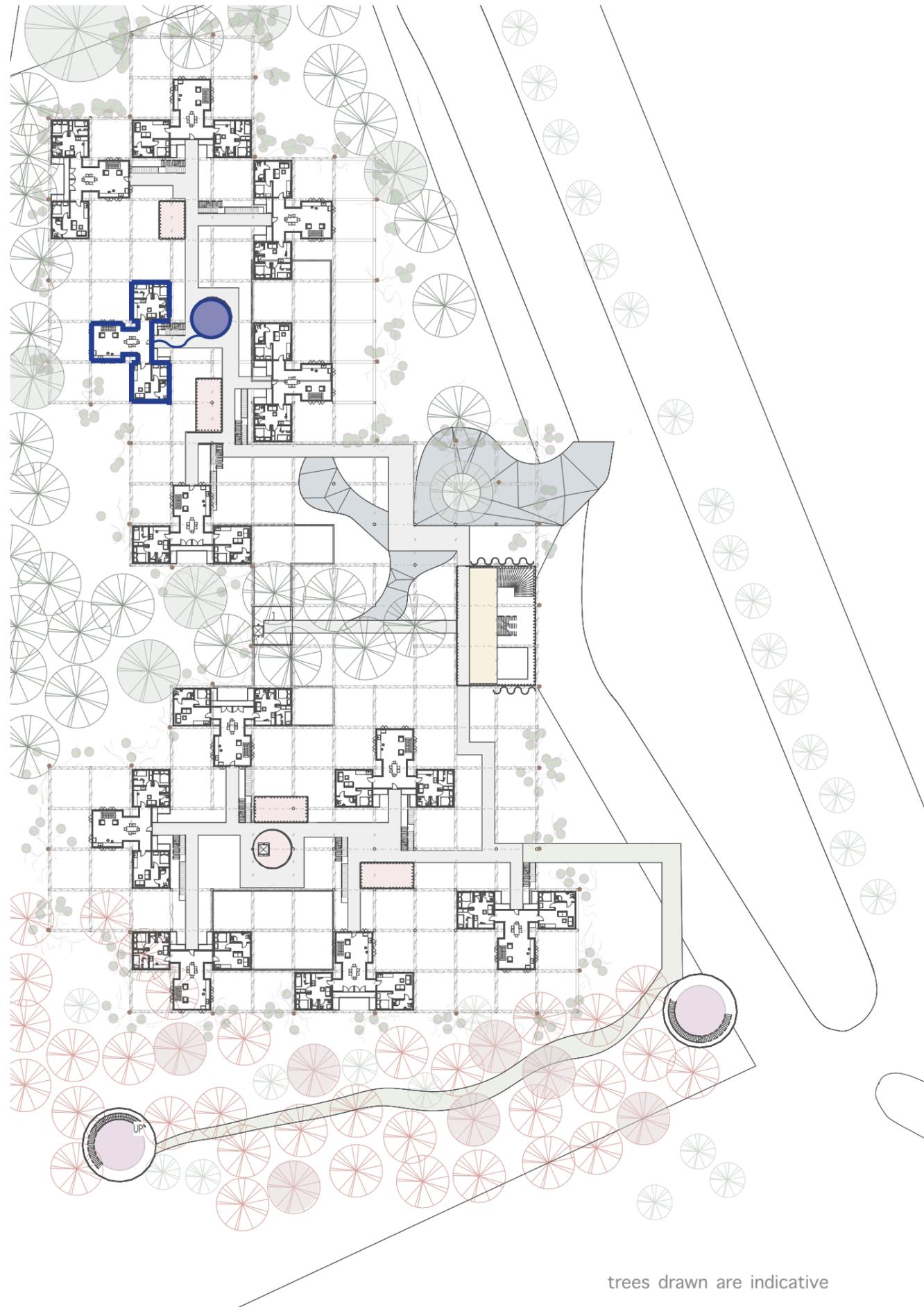


Variety with Layered Spatial Hierarchies

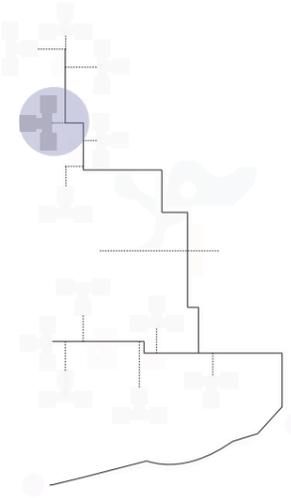


# Floor Plan 1

1.500 at A3 (1.750)

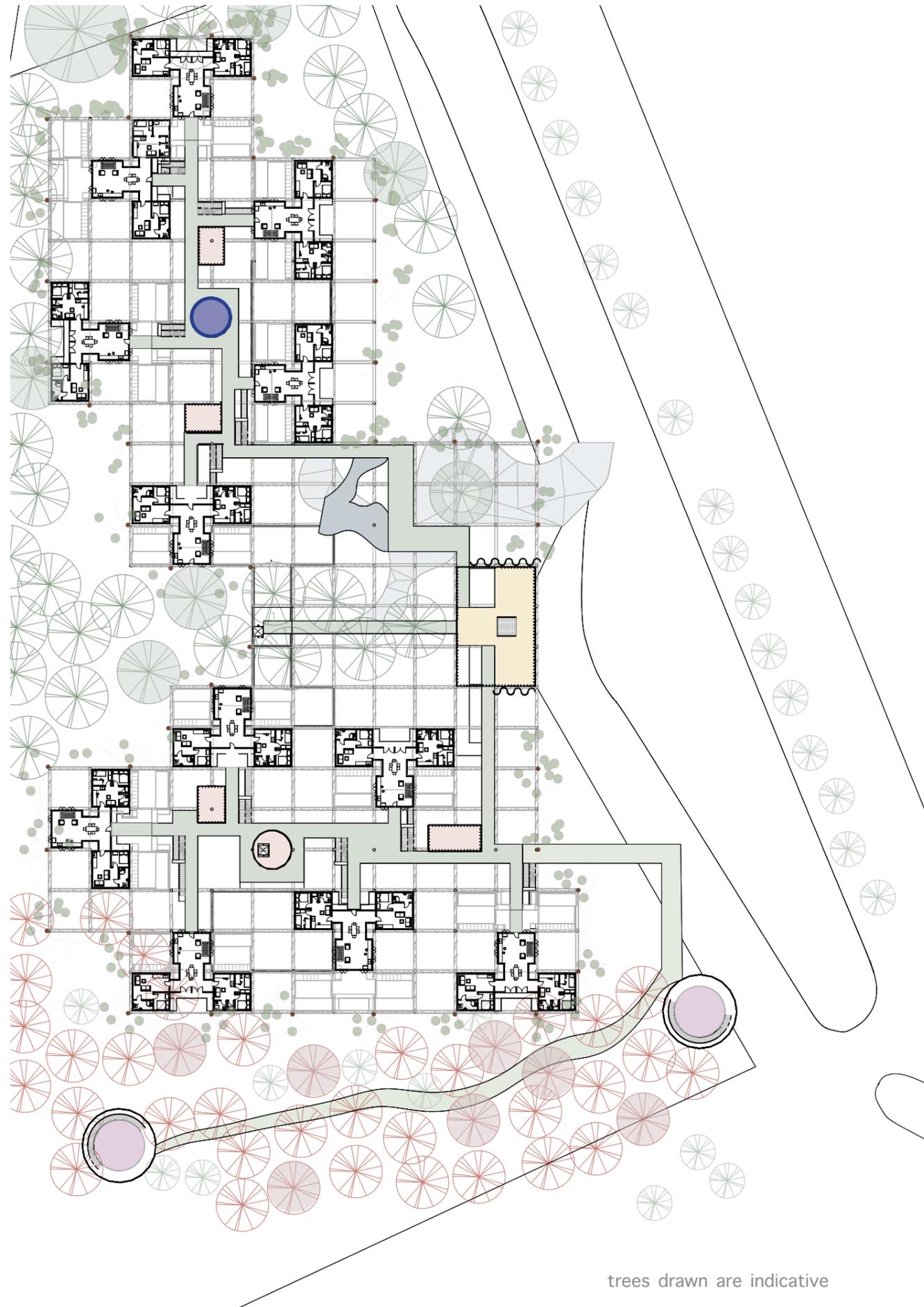


trees drawn are indicative

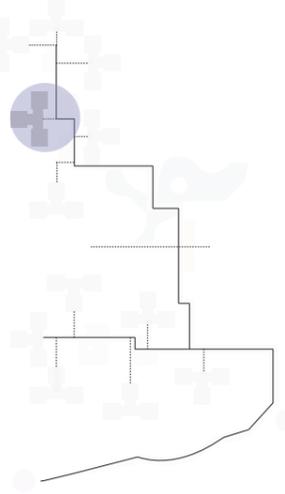


# Second floor plan

1.500 at A3 (1.750)

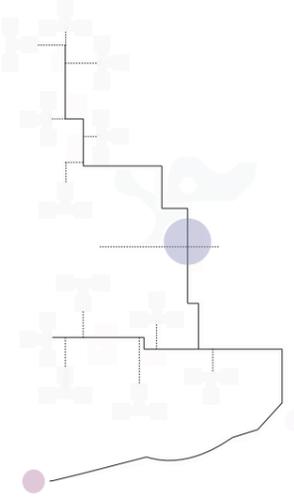
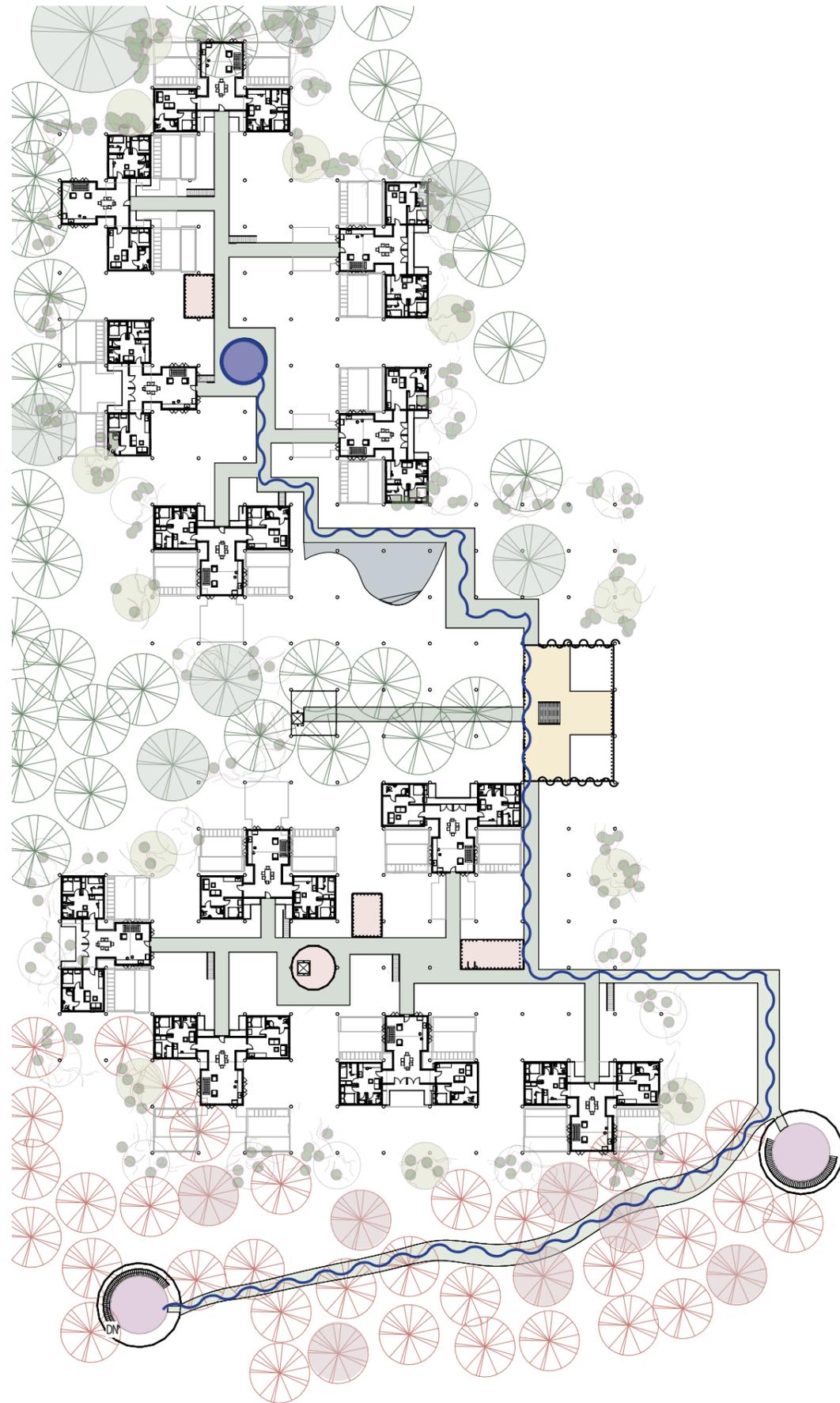


trees drawn are indicative



# Third floor plan

1.500 at A3 (1.750)

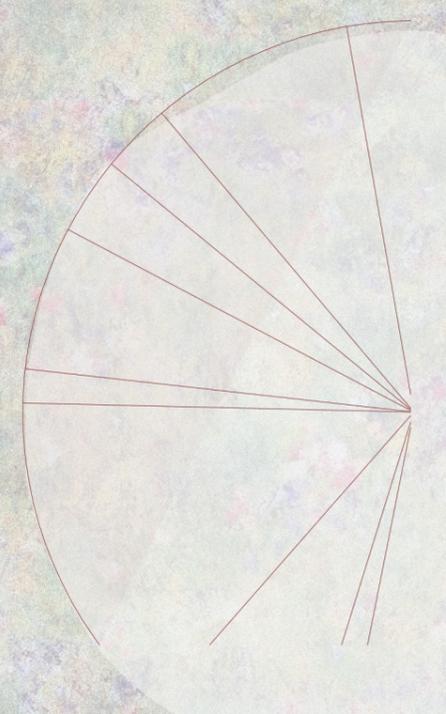
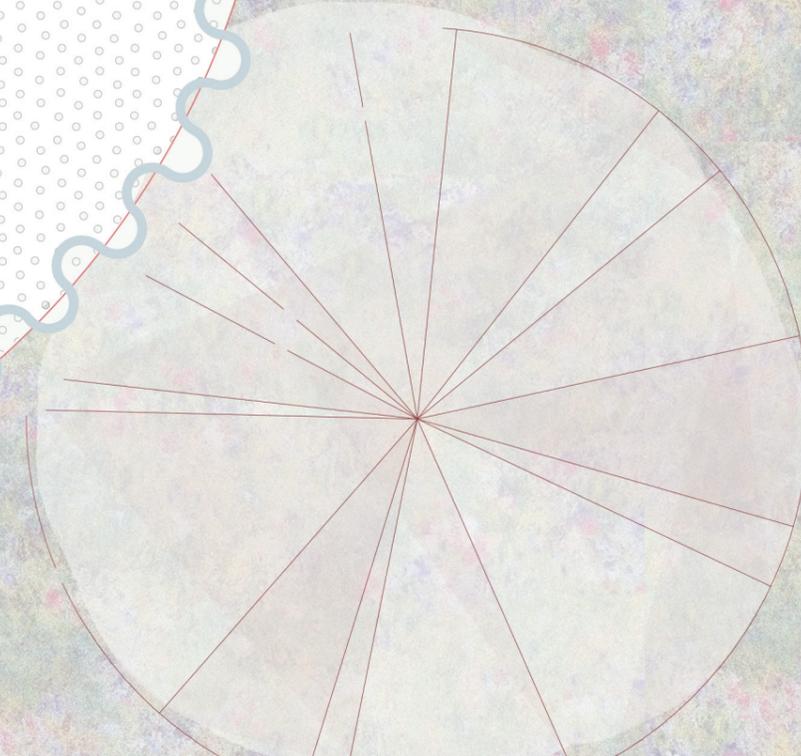
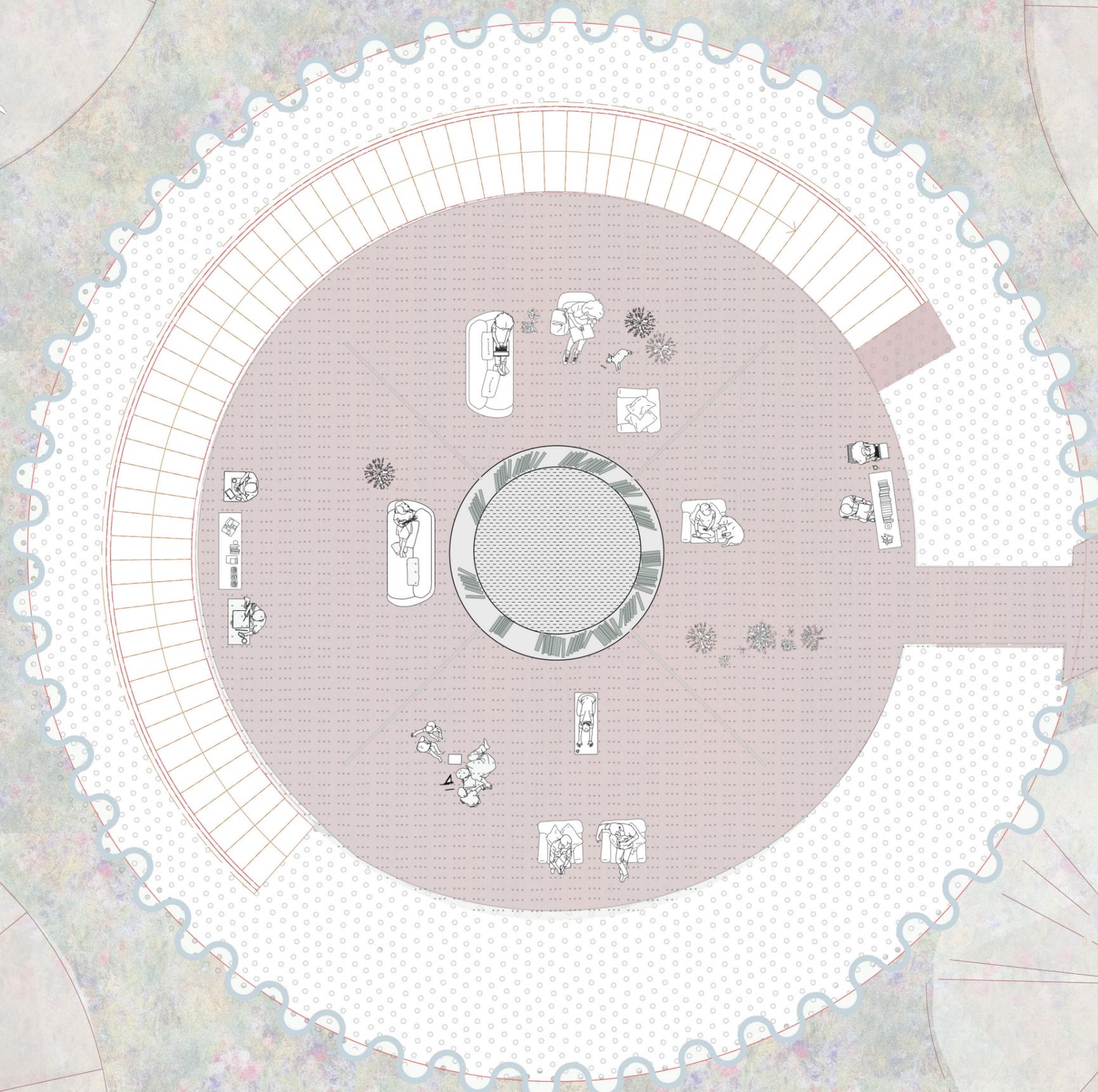
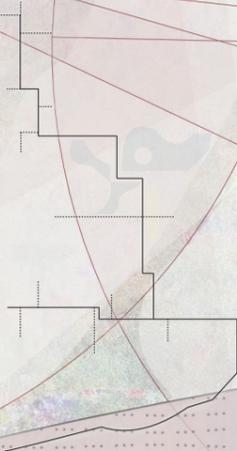
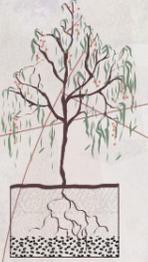


Eyes and Ears on the Street/ Play Area

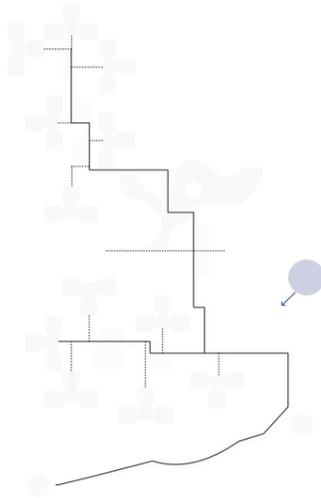
trees drawn are indicative

# Quiet Spaces

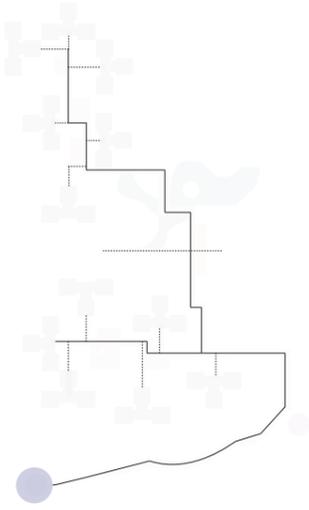
1.50



# View towards quiet space

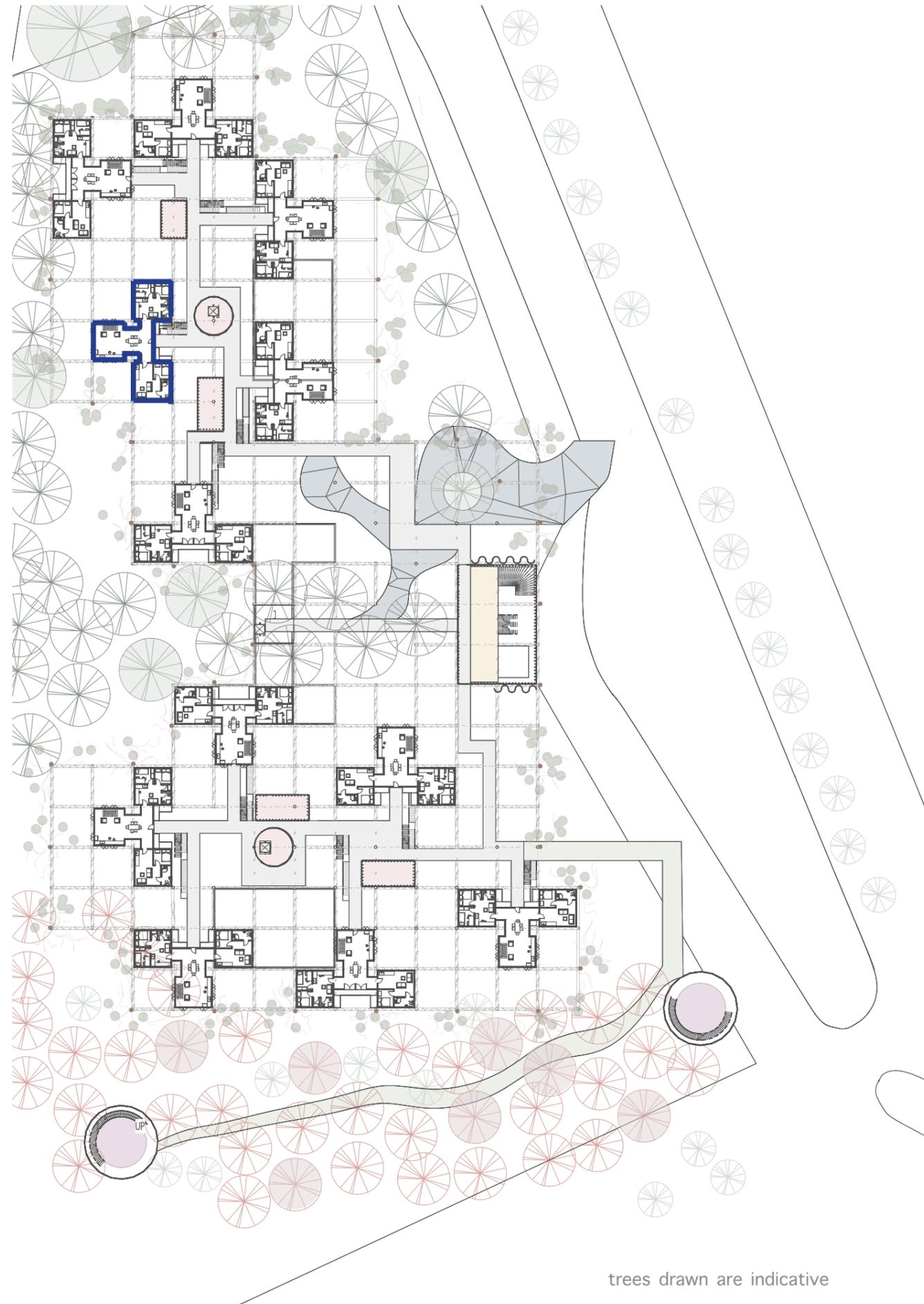


# View of quiet space

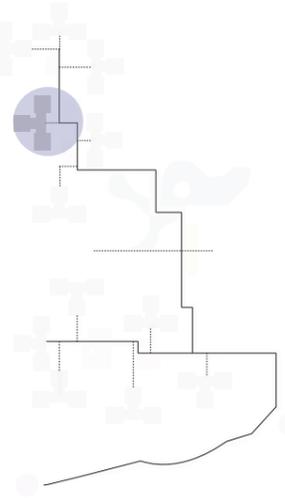


# Floor Plan 1

1.500 at A3 (1.750)

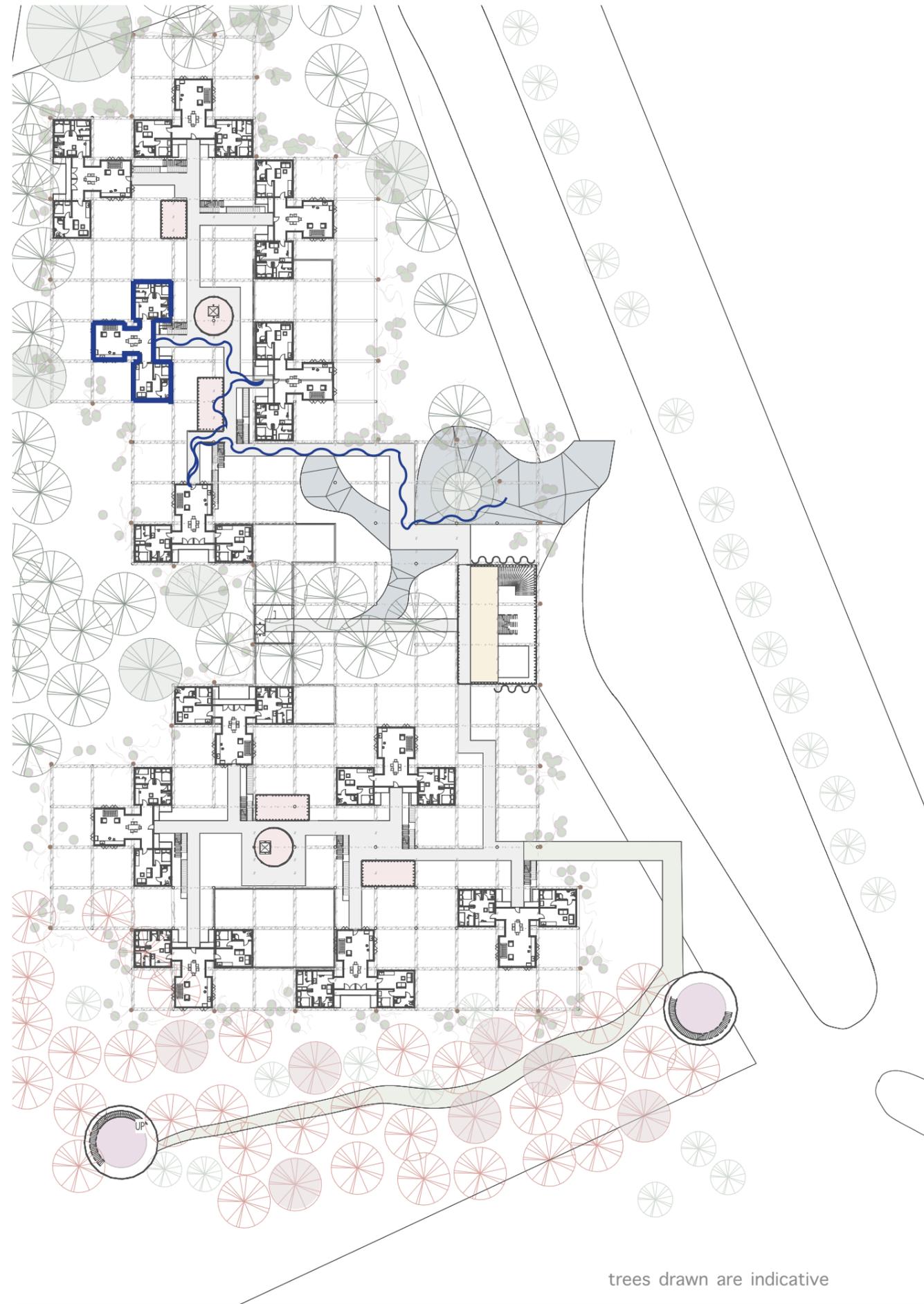


trees drawn are indicative

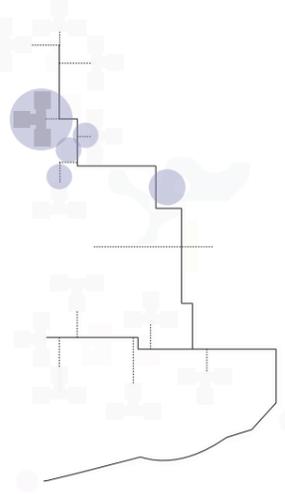


# Floor Plan 1

1.500 at A3 (1.750)

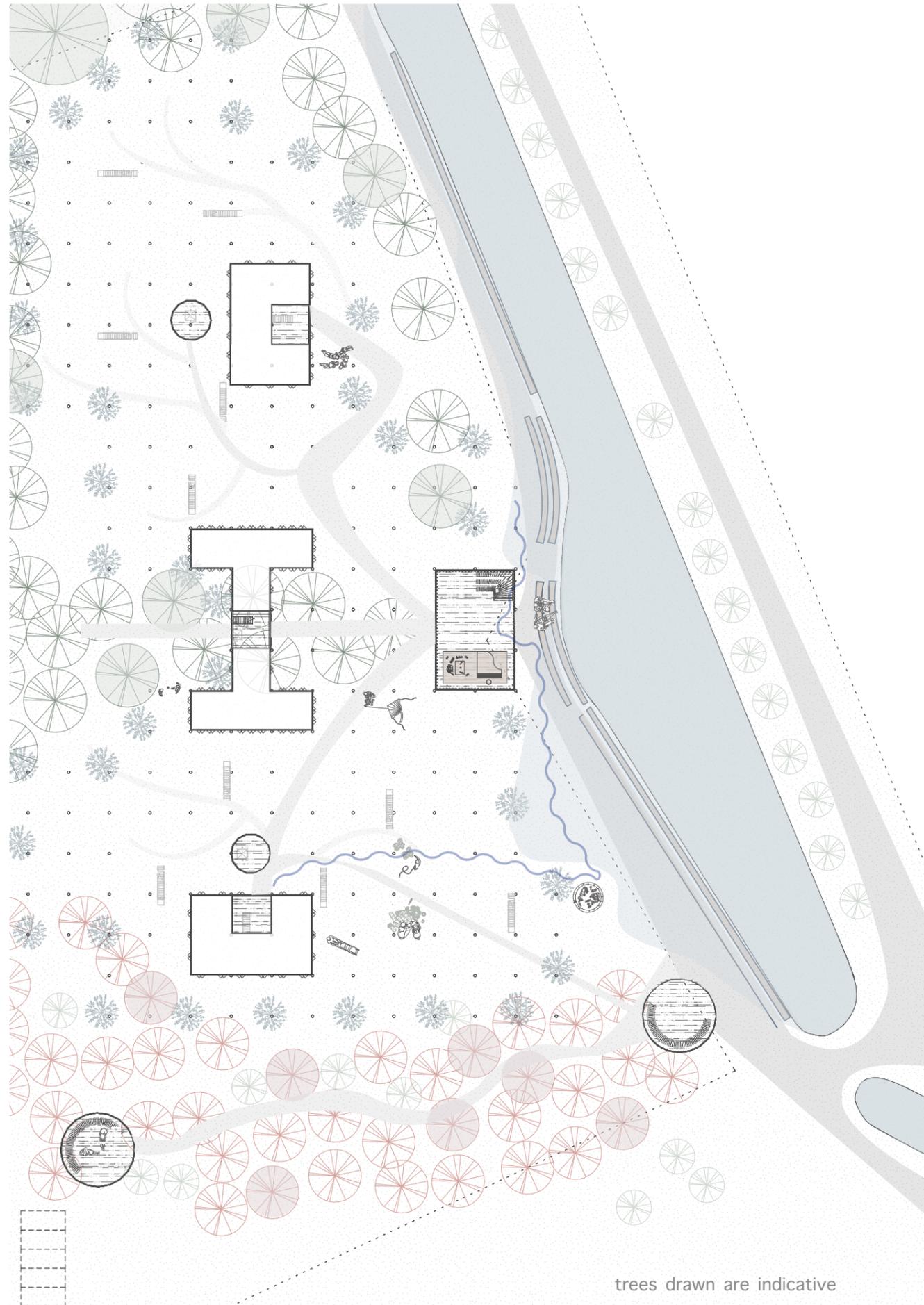


trees drawn are indicative

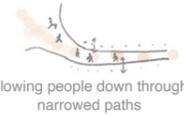


# Ground floor

1.500 at A3 (1.750)

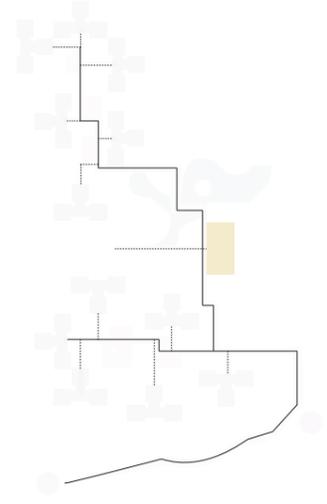


trees drawn are indicative



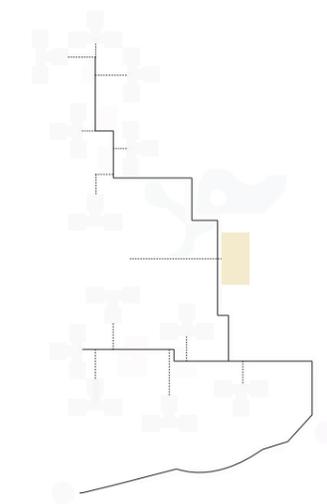
# Fragment of Community Space

1.50 on A3  
(1.70)

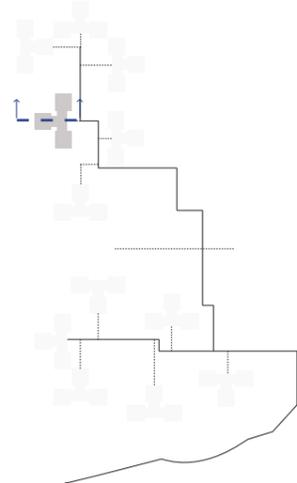
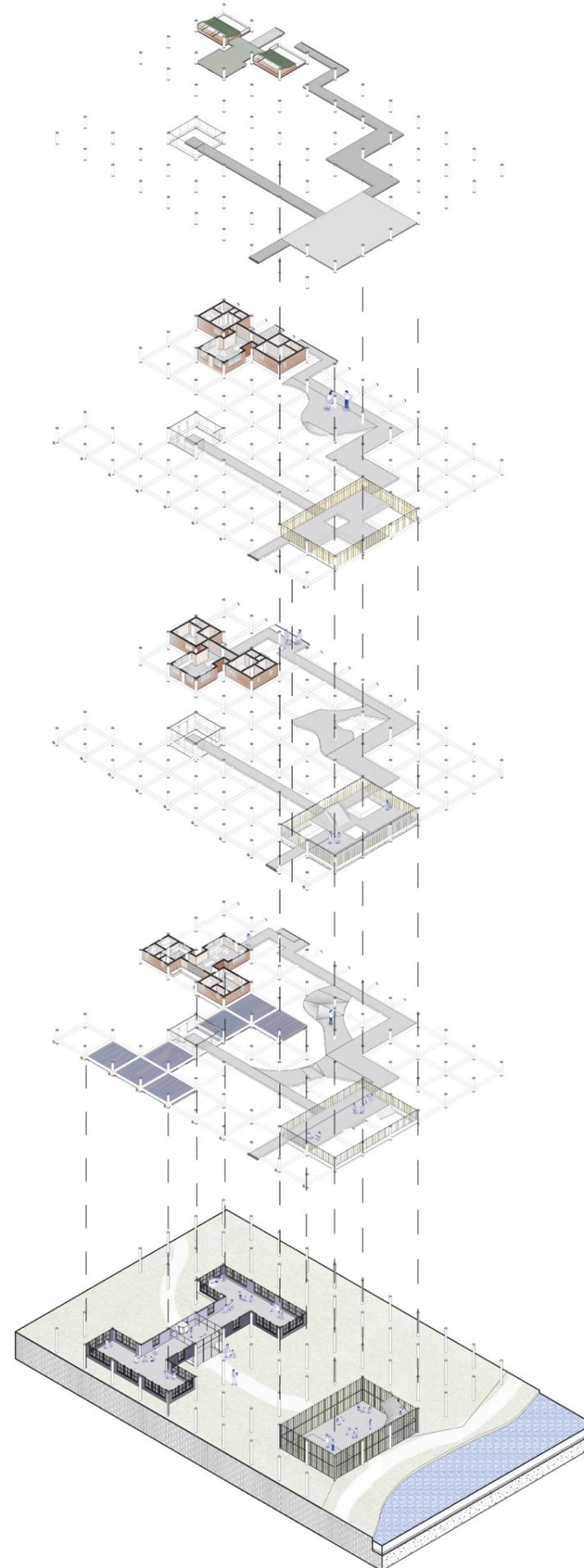


# Ageing of Community Space

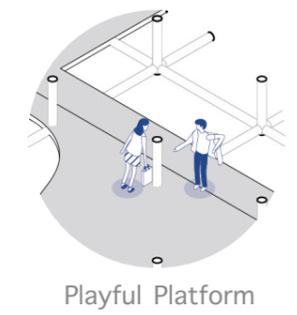
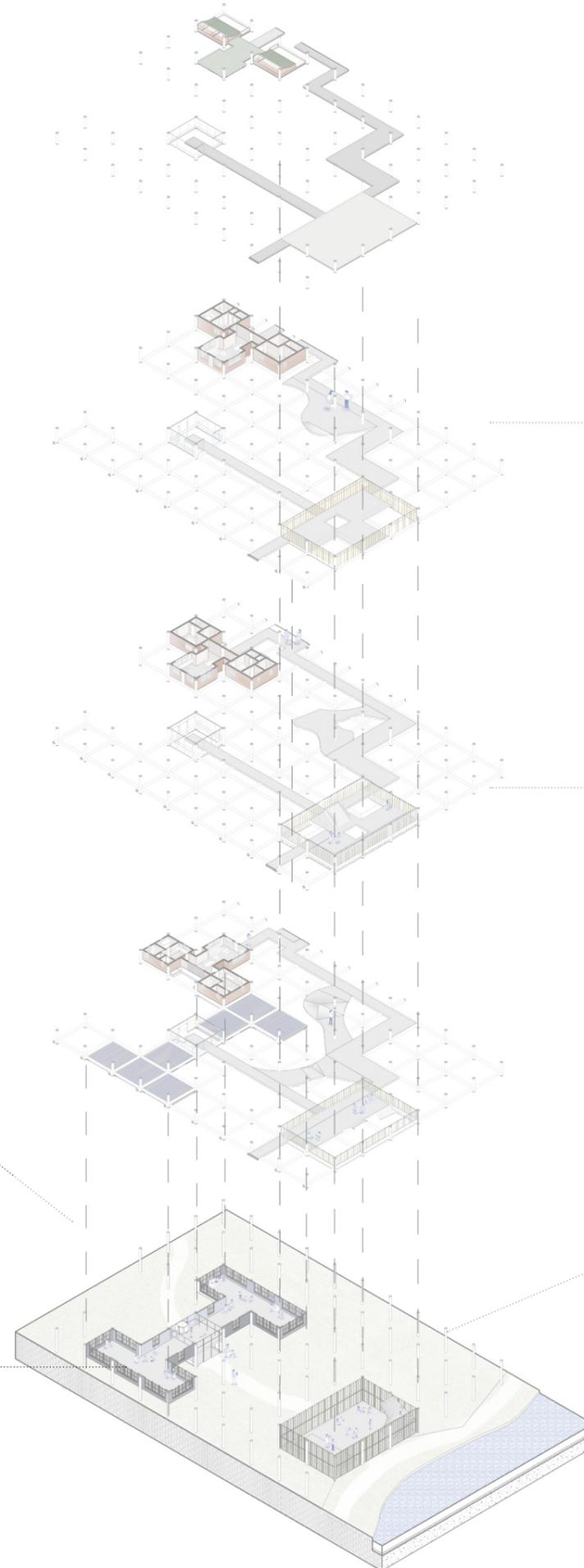
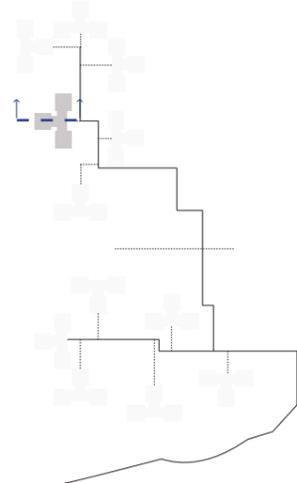
1.50 on A3  
(1.70)



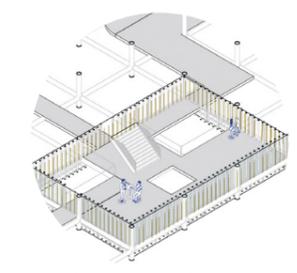
# Vertical Cluster - Community Spaces



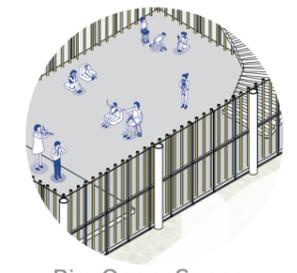
# Vertical Cluster - Moments



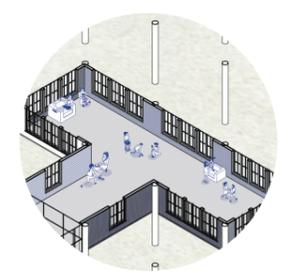
Playful Platform



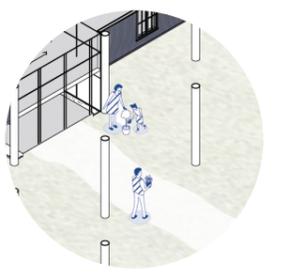
Common Space



Big Open Space

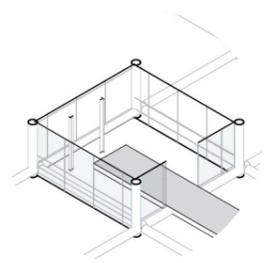
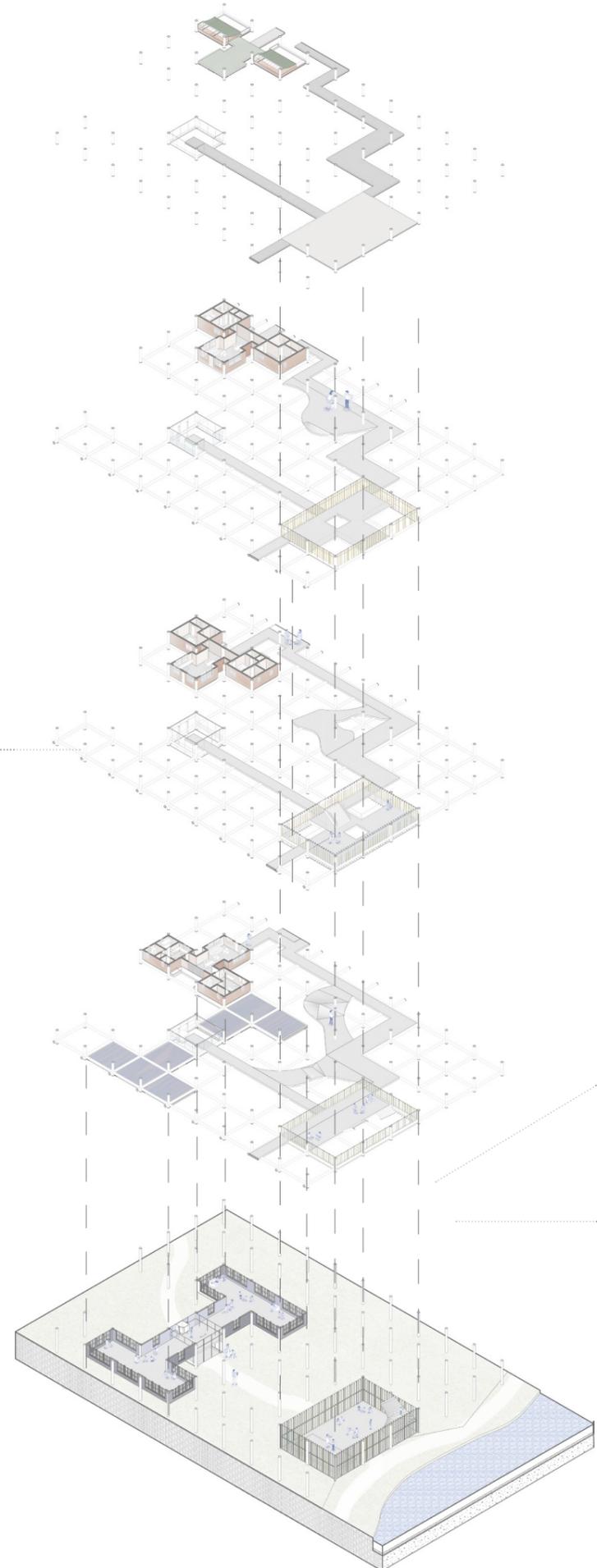
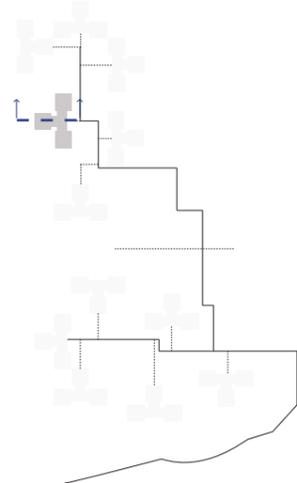


Kindergarten

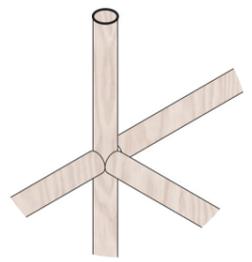


Gardening

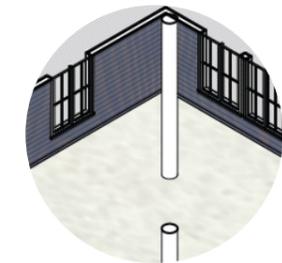
# Vertical Cluster- Materiality



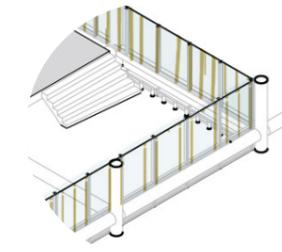
Glass



CLT and Glulam structure



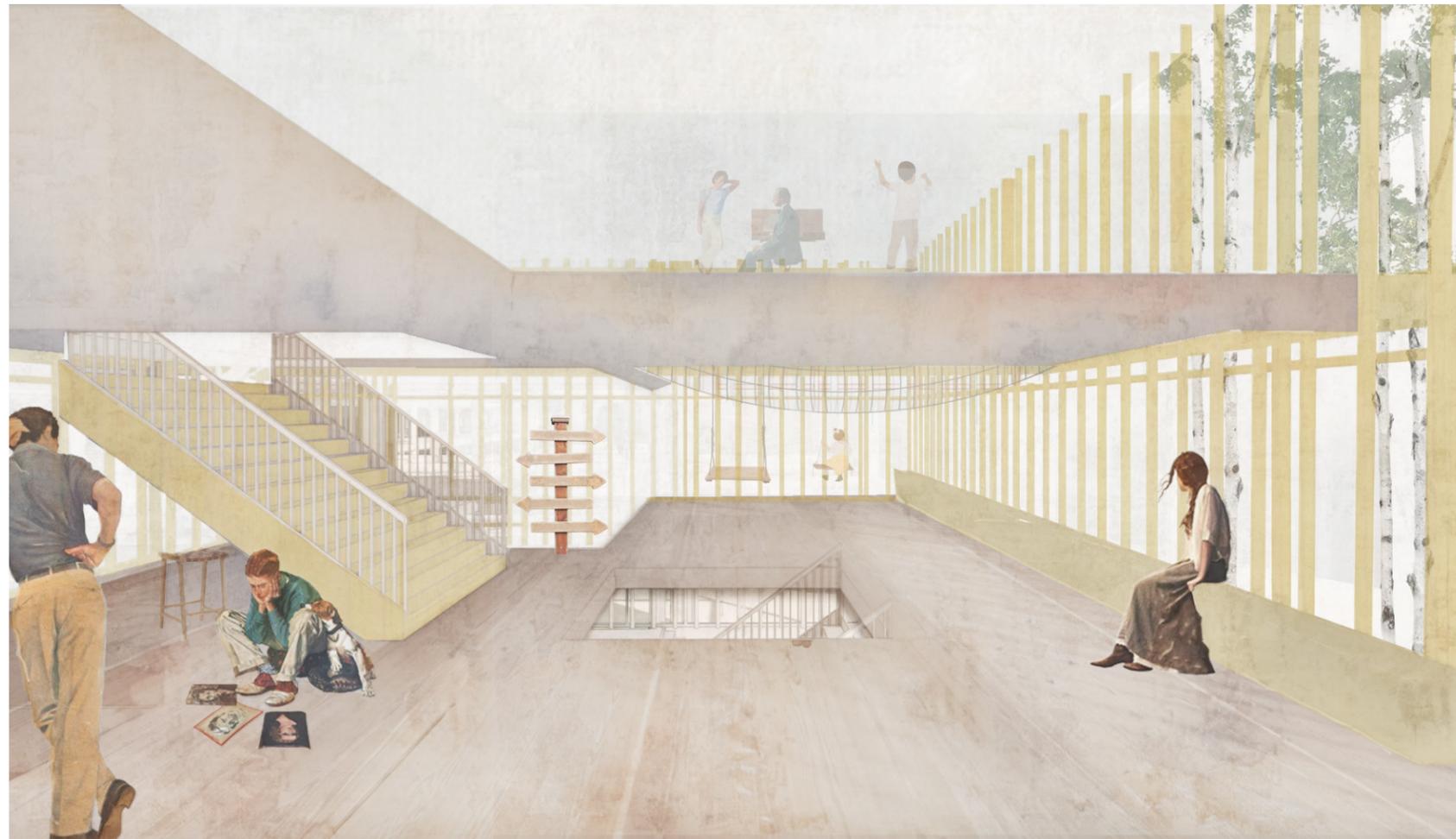
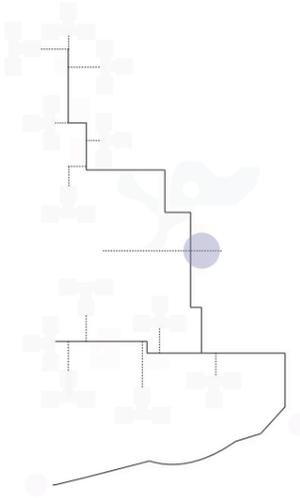
Douglas fir coated with linoleum pigment



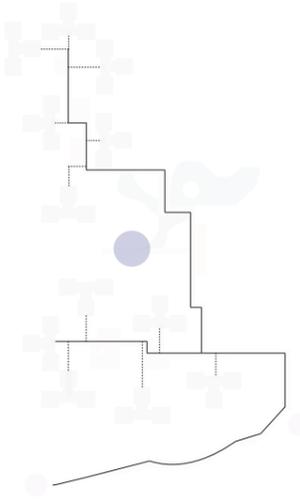
Douglas fir coated with linoleum pigment with glazing



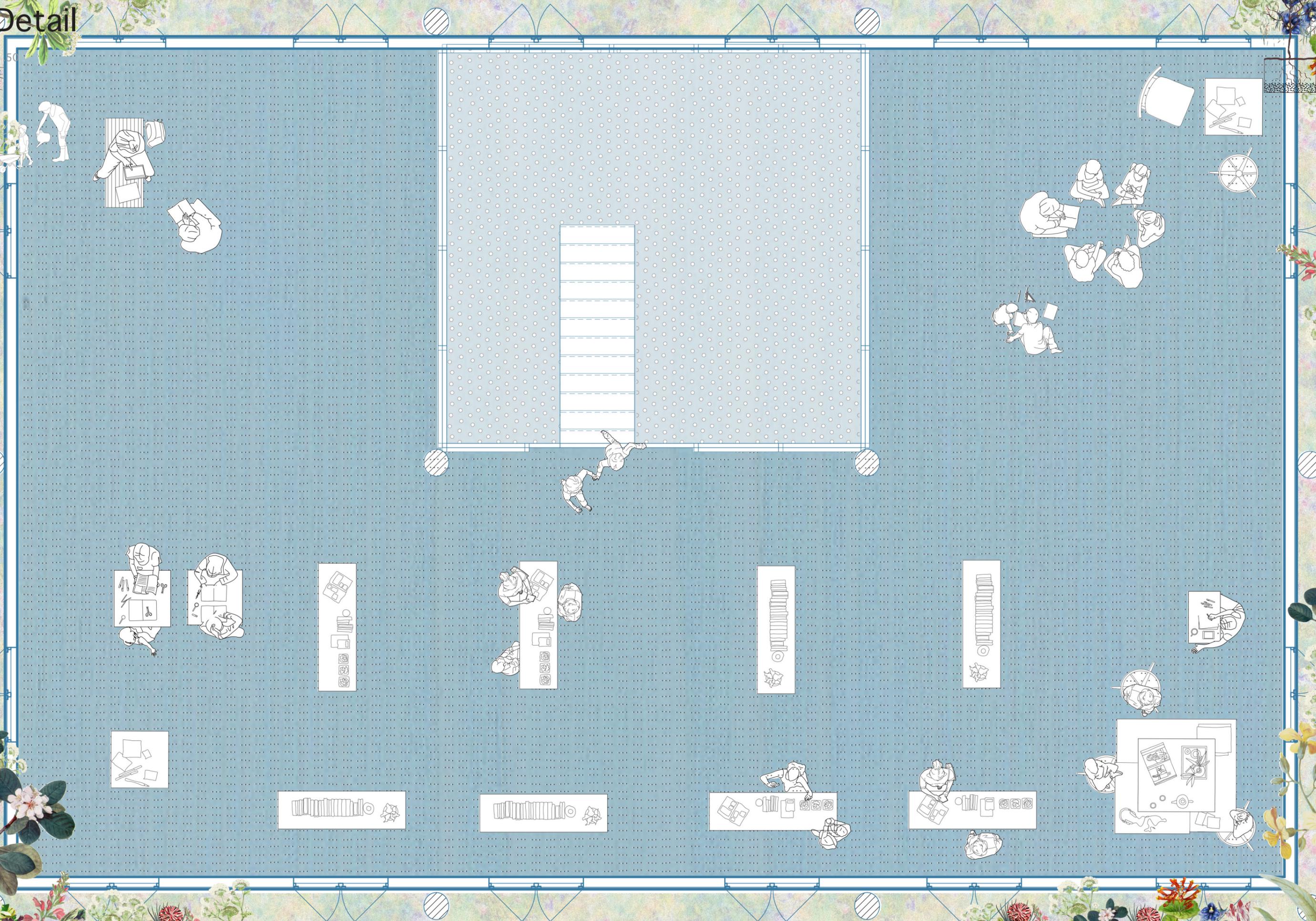
# View of community space



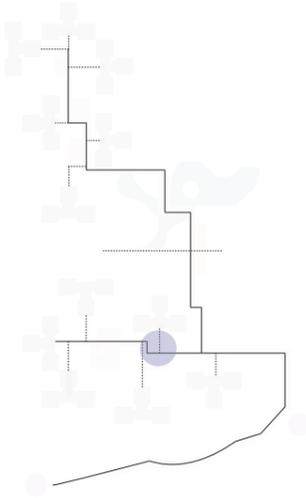
# View looking into the kindergarden



# Detail



# View of craft space





Thank you!