



**a toolbox for the transformation
of postwar family row houses**

Dwelling Graduation Studio
Designing for Health and Care in an Inclusive Environment
Thyrza Tepper | 4840313 | Technical University Delft
June 21st, 2024

PAST FORWARD

THE POSTWAR NEIGHBOURHOOD ELDERLY-FRIENDLY

**a toolbox for the transformation
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Research
Location
The toolbox
The design

Get to meet...

Betty



Name: Betty

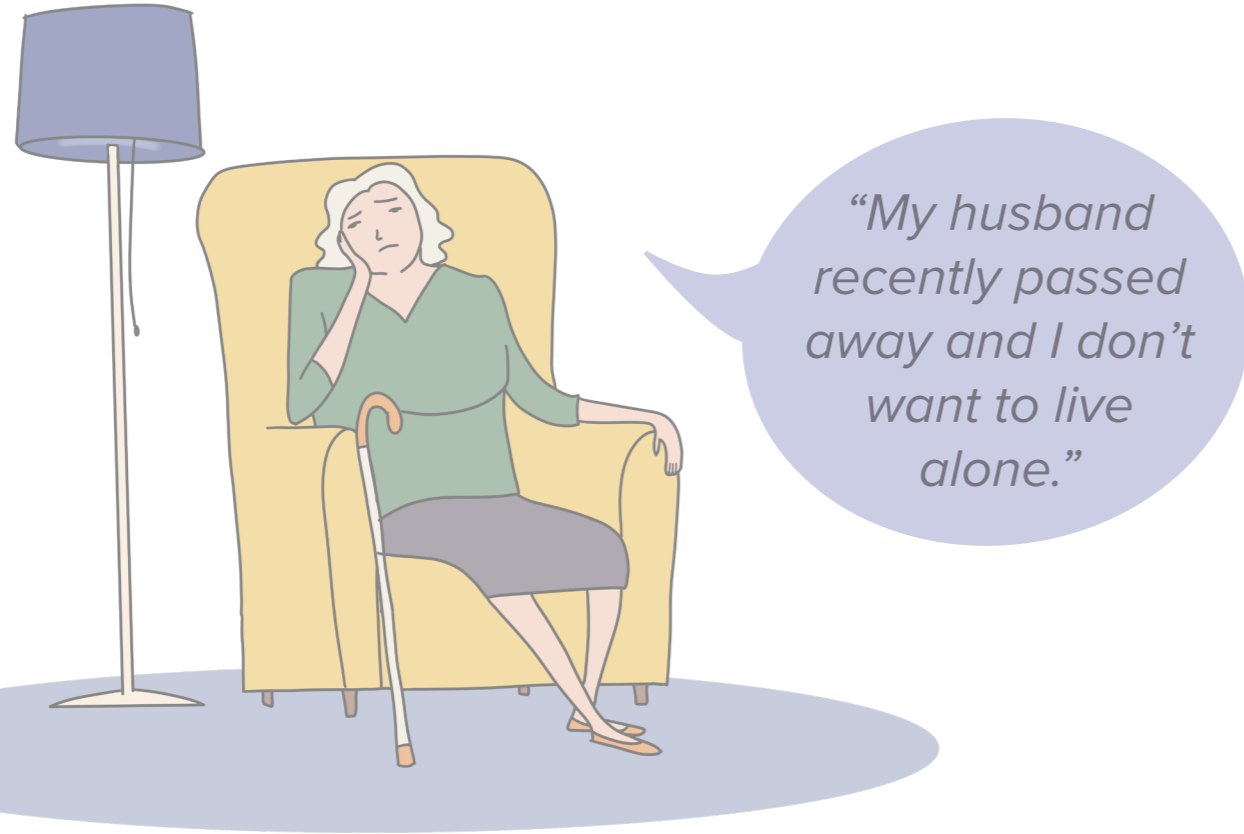
Age: 83

Family situation: Widow

Looking for...

A place where Betty can have social interaction with people and where healthcare is available

Get to meet...



Name: Betty

Age: 83

Family situation: Widow

Looking for...

A place where Betty can have social interaction with people and where healthcare is available

John & Claire



"Since our kids moved out, our family house is too big and too much work to maintain. However, we can't find an attractive alternative."

An illustration of an elderly couple, John and Claire, walking a small white dog on a leash. Claire is on the left, wearing a red top and a blue scarf, pointing towards the left. John is on the right, wearing a blue jacket and brown pants. They are standing on a light blue circular shadow on the floor.

Name: John and Claire

Age: 67 & 65

Family situation: Married & two children

Looking for...

A smaller apartment where they still can be active, have social contact, but also their private home

Trends in society

“Elderly people have to live independently for as long as possible”



Disbalance growing amount of elderly and pressure on healthcare



Urgent demand for suitable elderly housing



Challenges in the housing market

Solutions can be found in **the postwar neighbourhood**

The postwar neighbourhood

Betty and John & Claire are looking for a place...

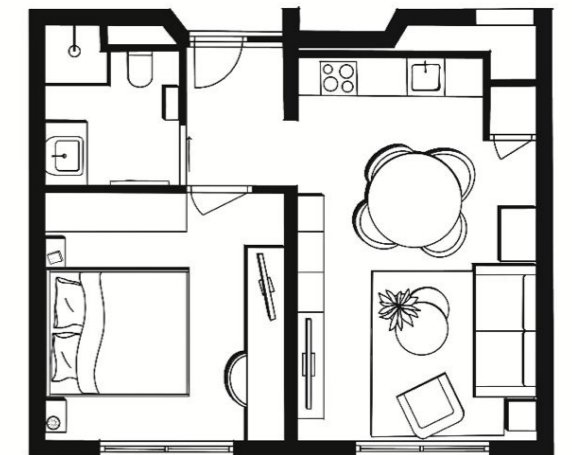
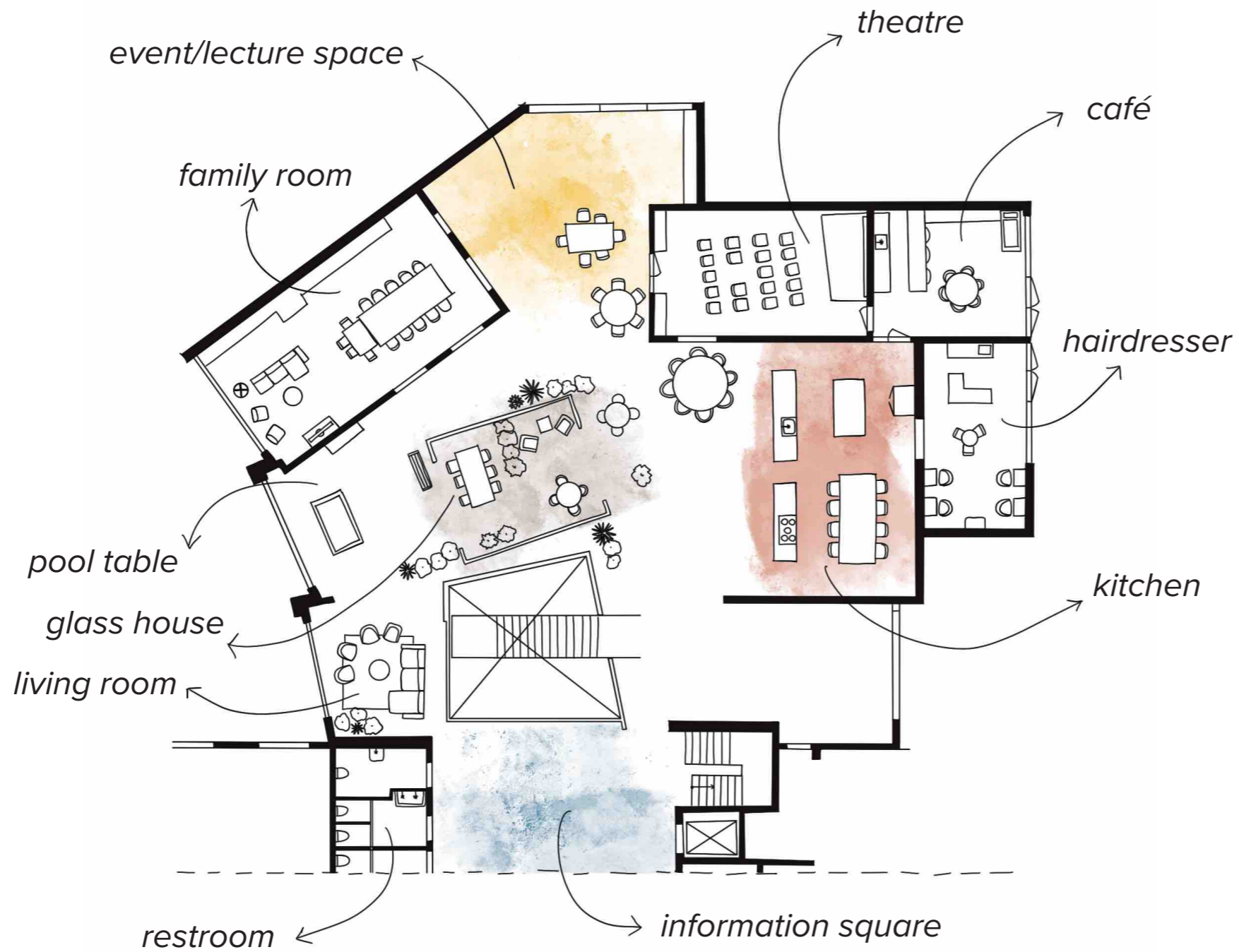
- equipped with facilities
- good accessible to the city centre
- rich in greenery



- P** • Family-focused
R • Monotone
O • Segregated facilities are not economic profitable anymore
B • High concentration of social housing for vulnerable groups
L • In need of renewal
E • Sustainability
M
S

Research into needs & preferences

Fieldwork week



Research into needs & preferences

Conclusions

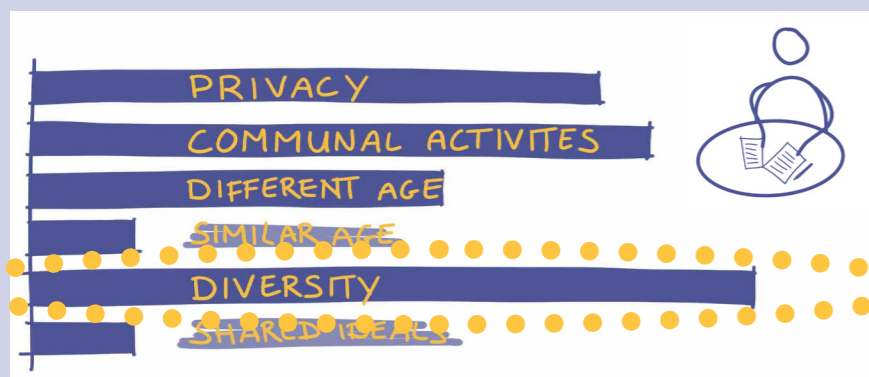
Out of fieldwork & literature

- Elderly's world becomes smaller
- Enough facilities on walking distance
- Physical activity & connection to nature
- Social interaction
- Diversity



Based on important input out of the fieldwork

What is the most important part of a community?



"After a life of traveling and adventure, it was time to settle down. I like that I still can be active and creative here by organising activities!"



"I felt not safe anymore to live alone, so I was looking for a place with social contact."



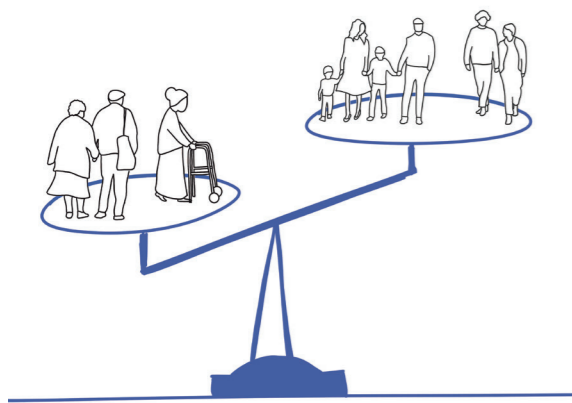
"The concept of social connection was attractive for us."



"I am so glad that the city centre is on walking distance. This helps me stay independent."

Conclusions into design principles

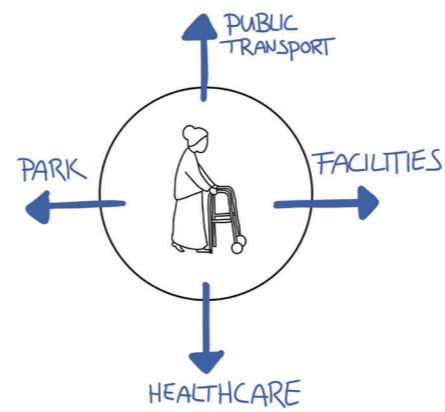
Input for the design strategy



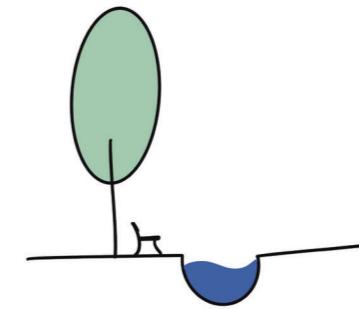
Diversity of people and functions



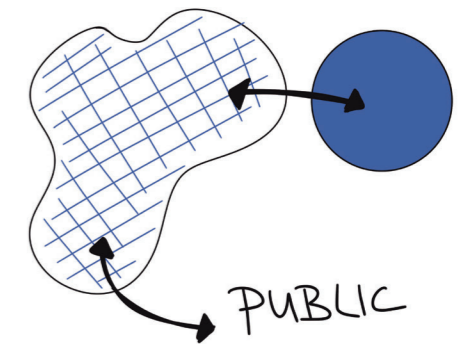
Sense of community



Elderly's world self-contained and pedestrian-friendly



Improve green & water structure



Balance between public and private by smooth transitions

Research
Location
The toolbox
The design

Testcase

Postwar single family houses, Betje Wolfflaan, Voorhof Delft



Why Betje Wolff?



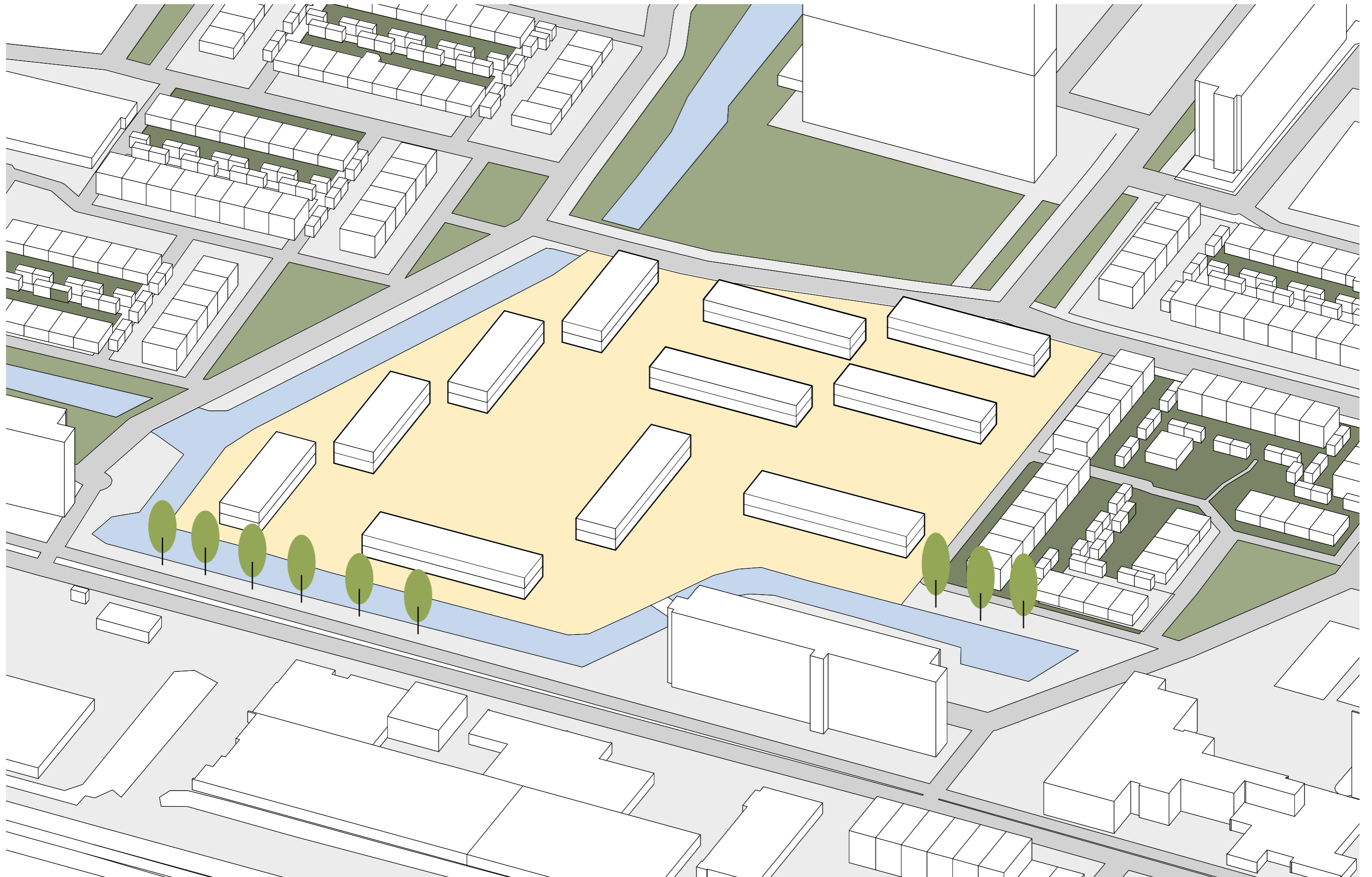
Strengths

- Close to all facilities at “De Hoven”
- Public transport on walking distance
- Supermarket and on 3 minutes walking distance
- Connection with surrounding neighbourhood, kinder garden (1) and community centre (2)

Weaknesses - to improve

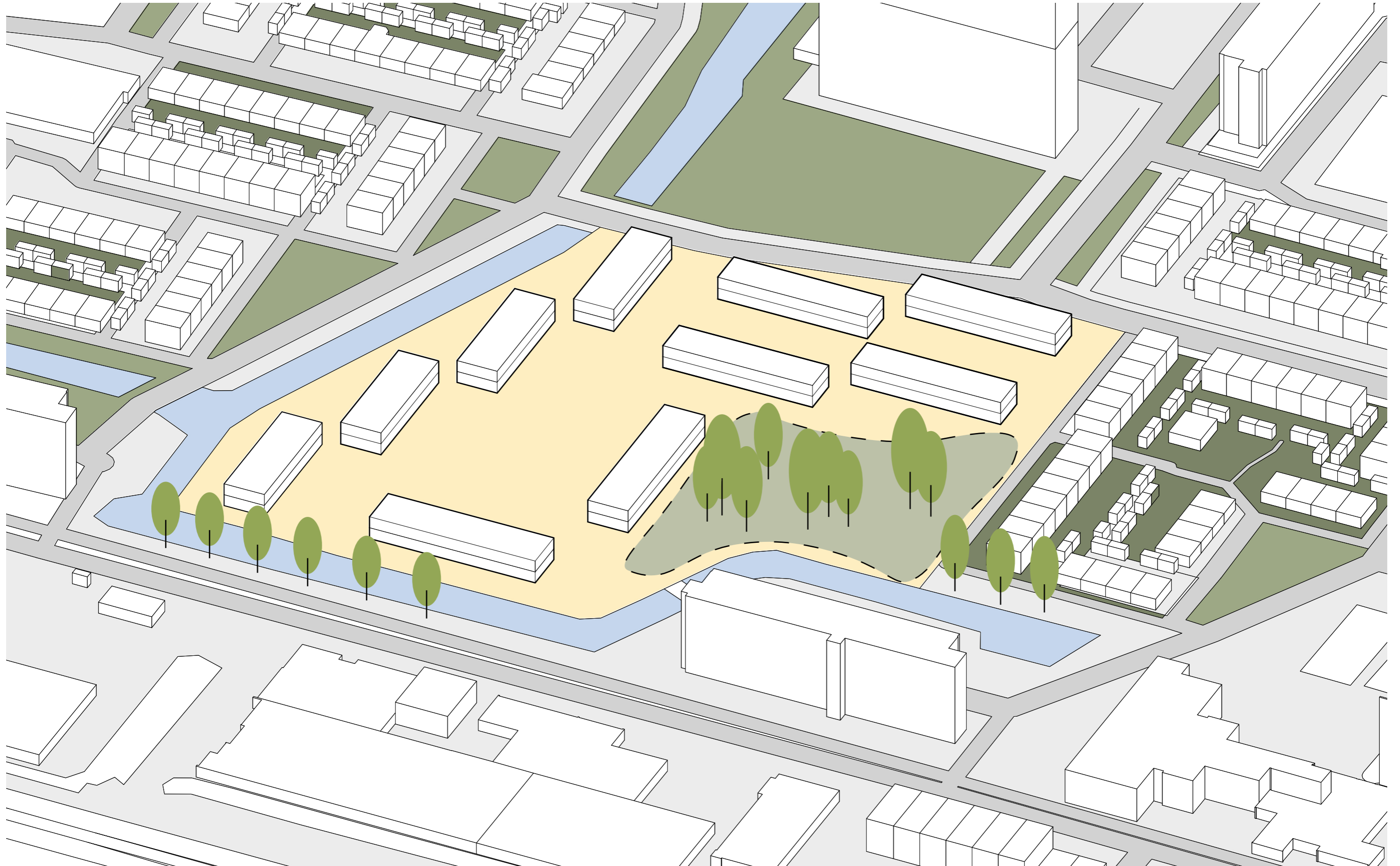
- No park on walking distance, greenery not well maintained
- Non-ageing-friendly family houses

Current situation



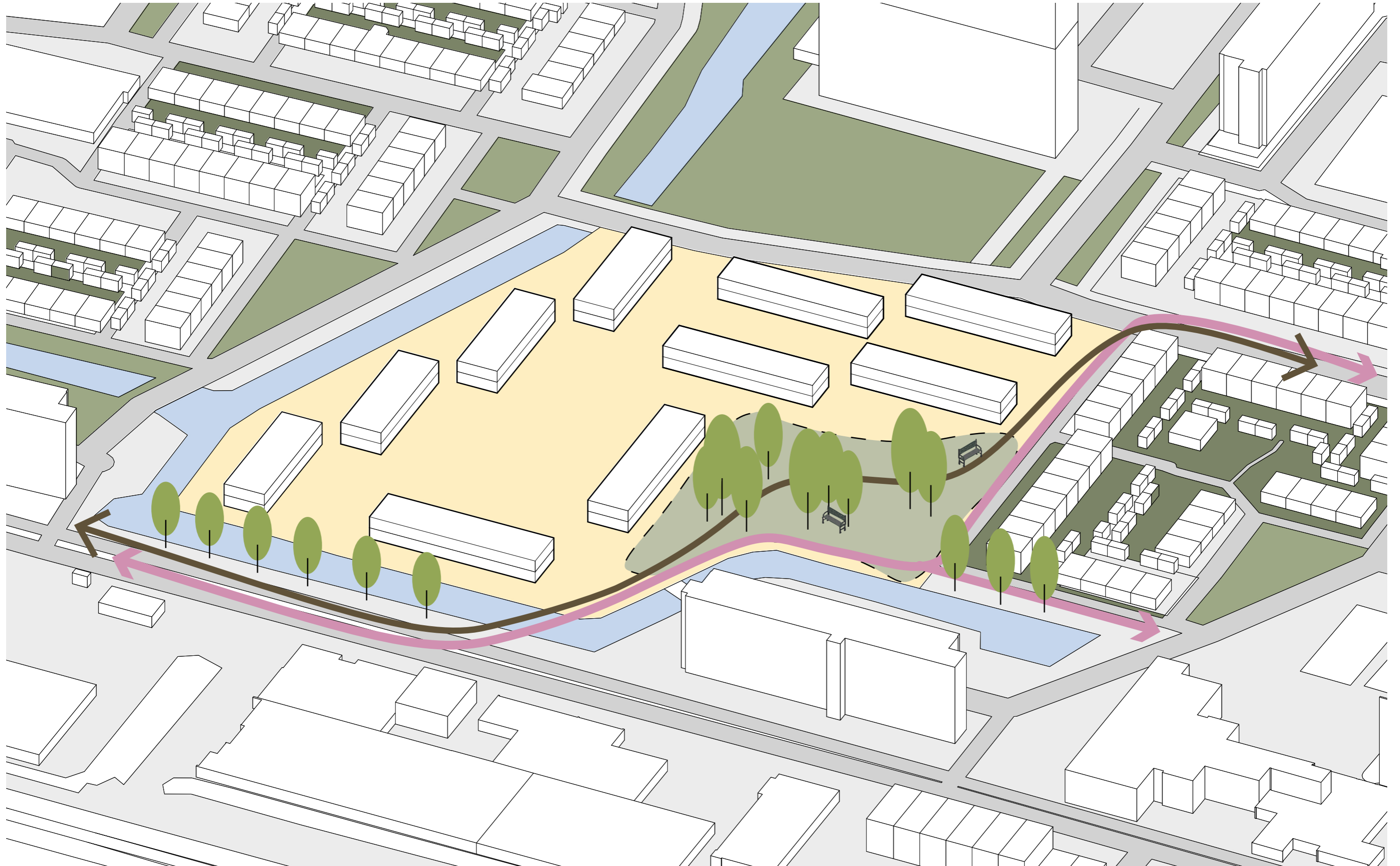
Interventions urban scale

Extend greenery and create a park



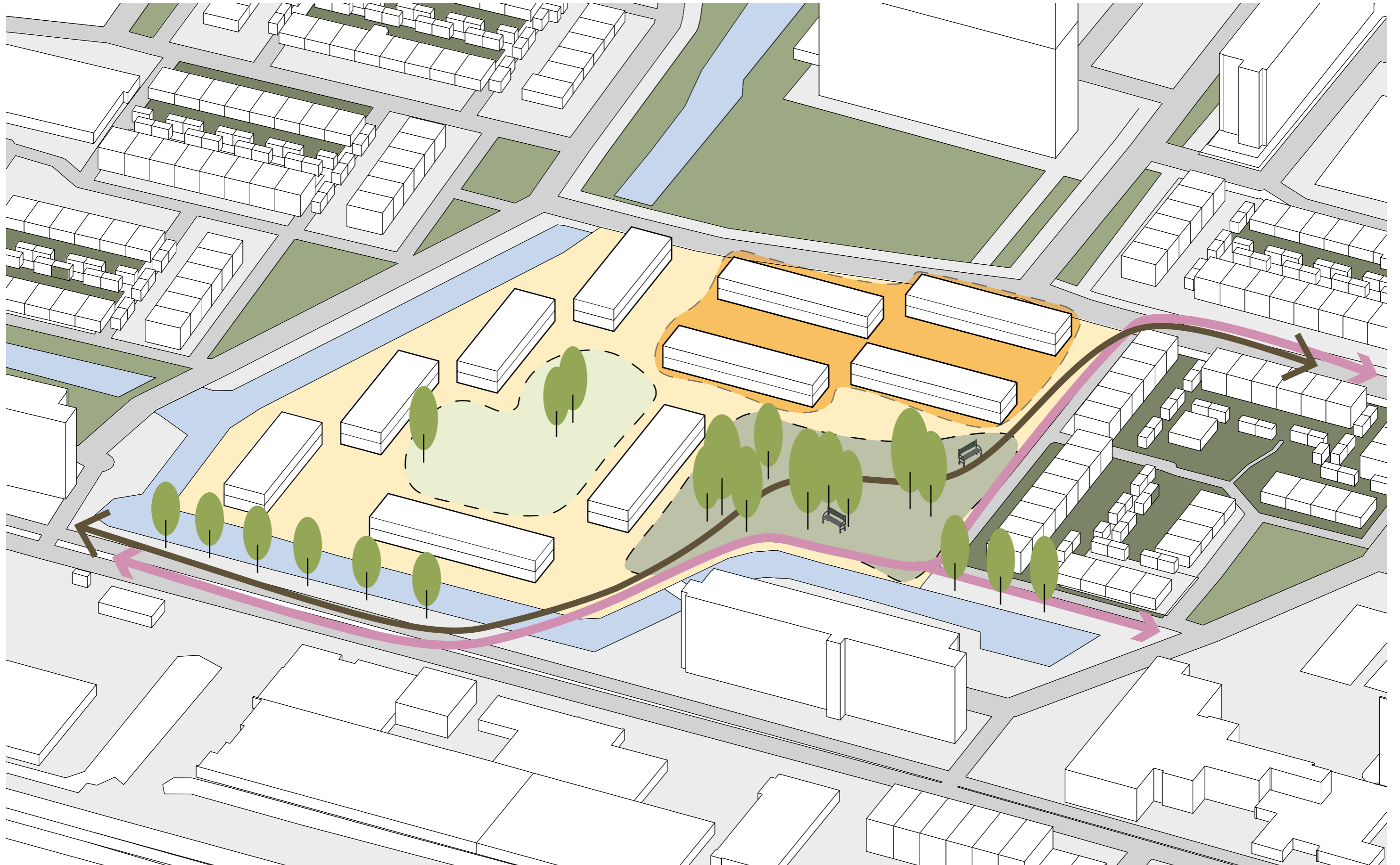
Interventions urban scale

Slow traffic route through greenery and a safe path for bicycles



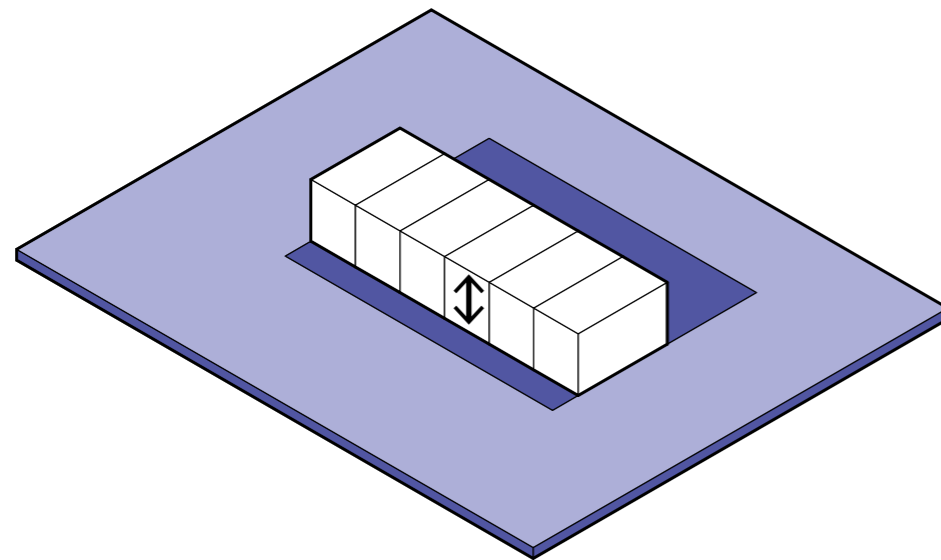
Interventions urban scale

Three areas: park, public area and communal courtyard

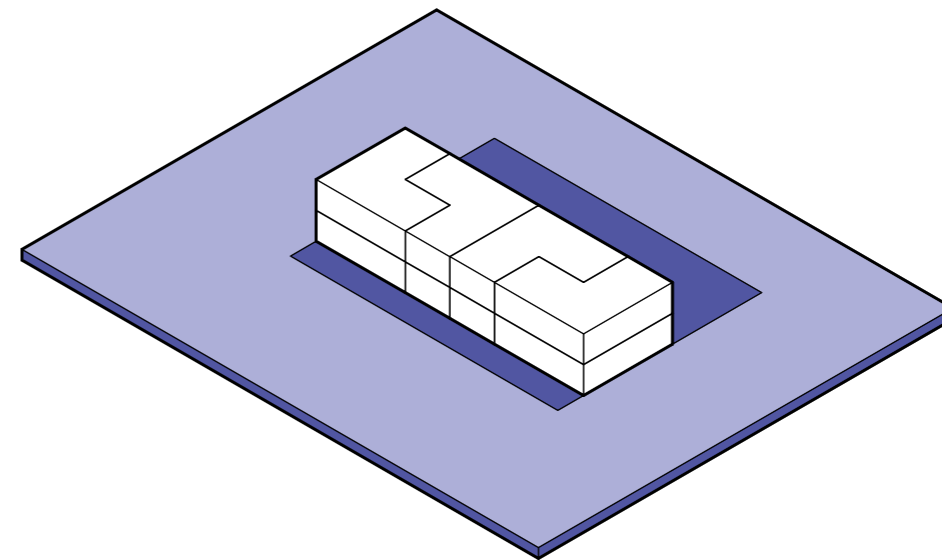


Research
Location
The toolbox
The design

Toolbox interventions

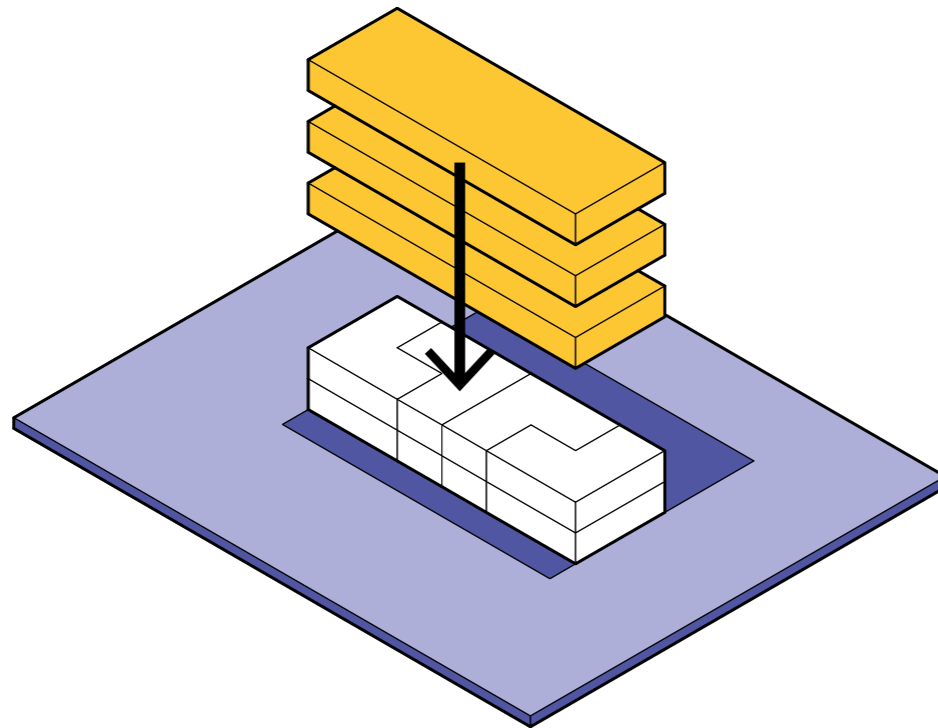


Existing postwar family row houses

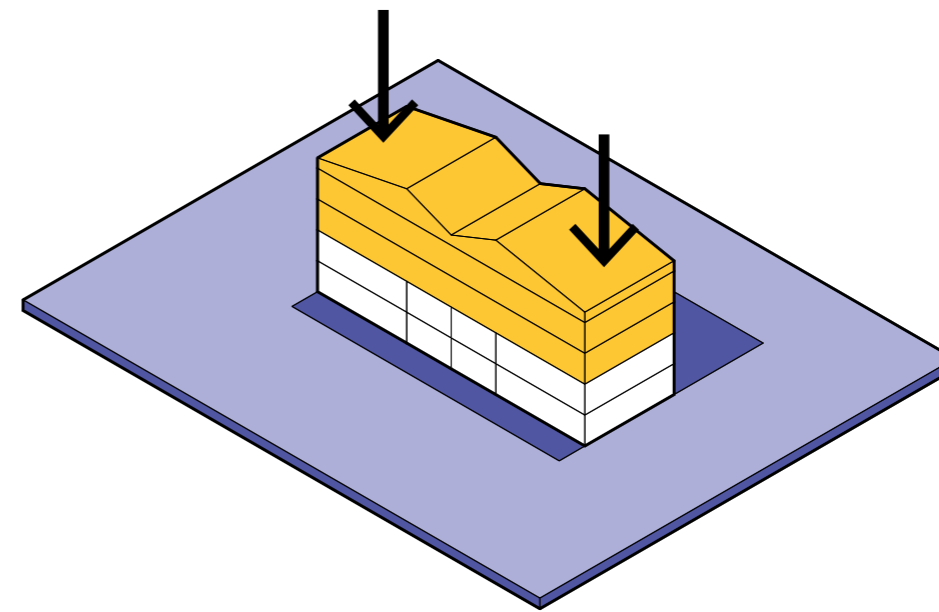


Create one storey elderly- friendly apartments by splitting

Toolbox interventions

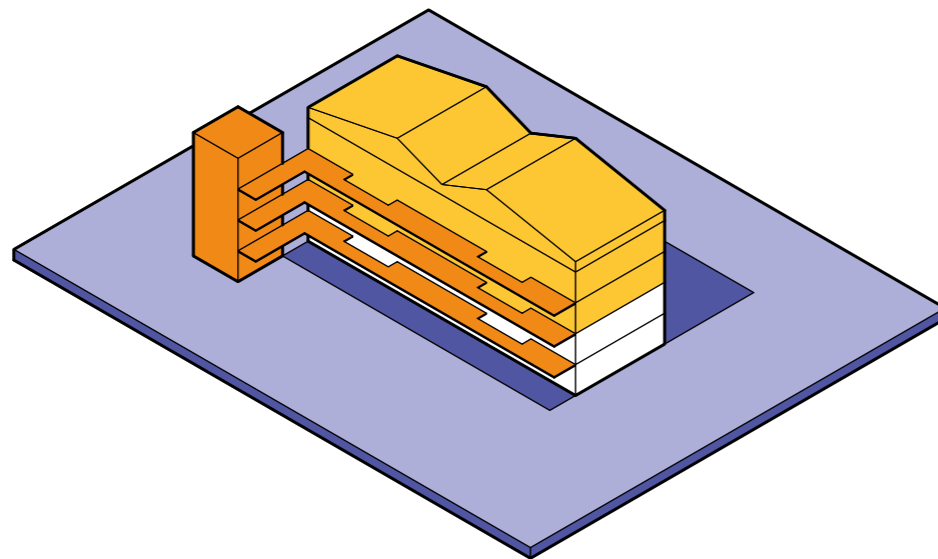


Expand by building on top to densify and add different target groups

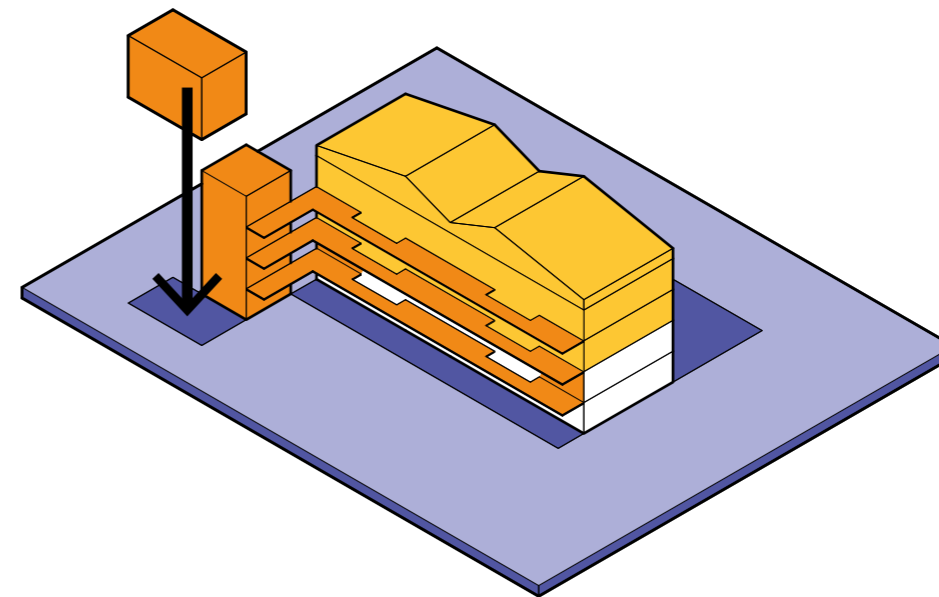


Create character by a house-like shape

Toolbox interventions

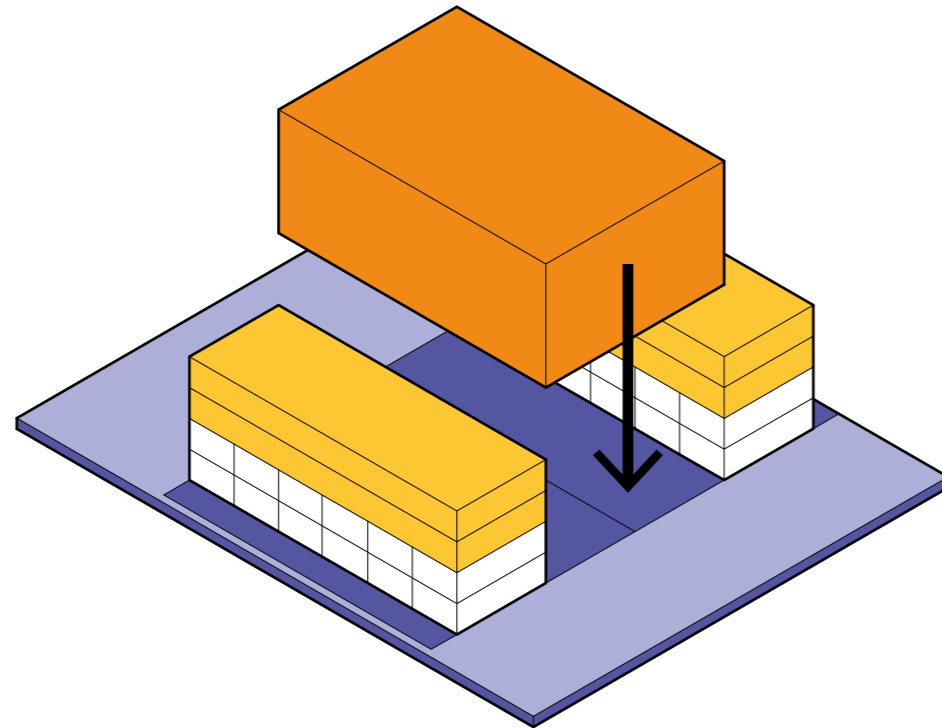


Add an external access hub for elevator and stairs, and connect with gallery access

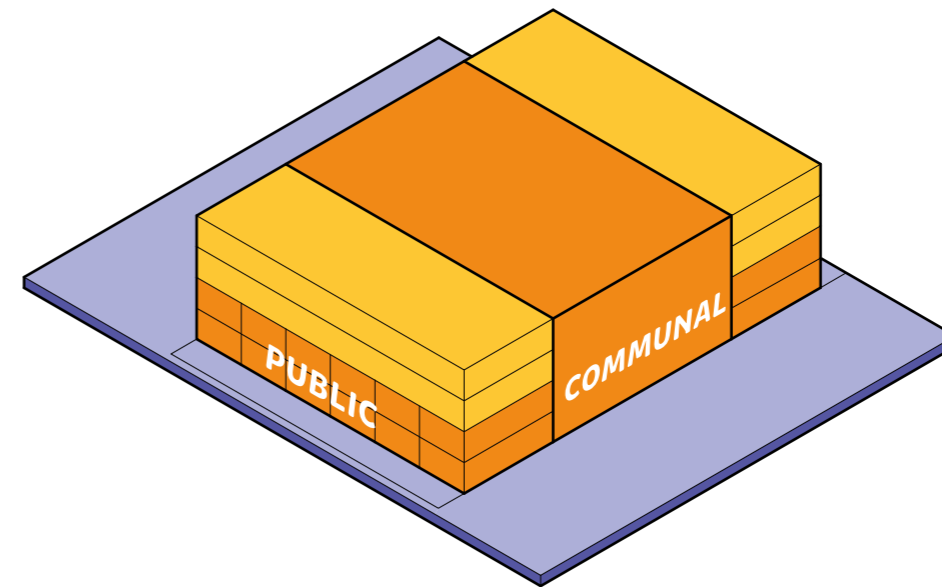


Add extra spaces for encounter and other additional spaces to the hub

Toolbox interventions



Use the space in between two blocks to create a larger building



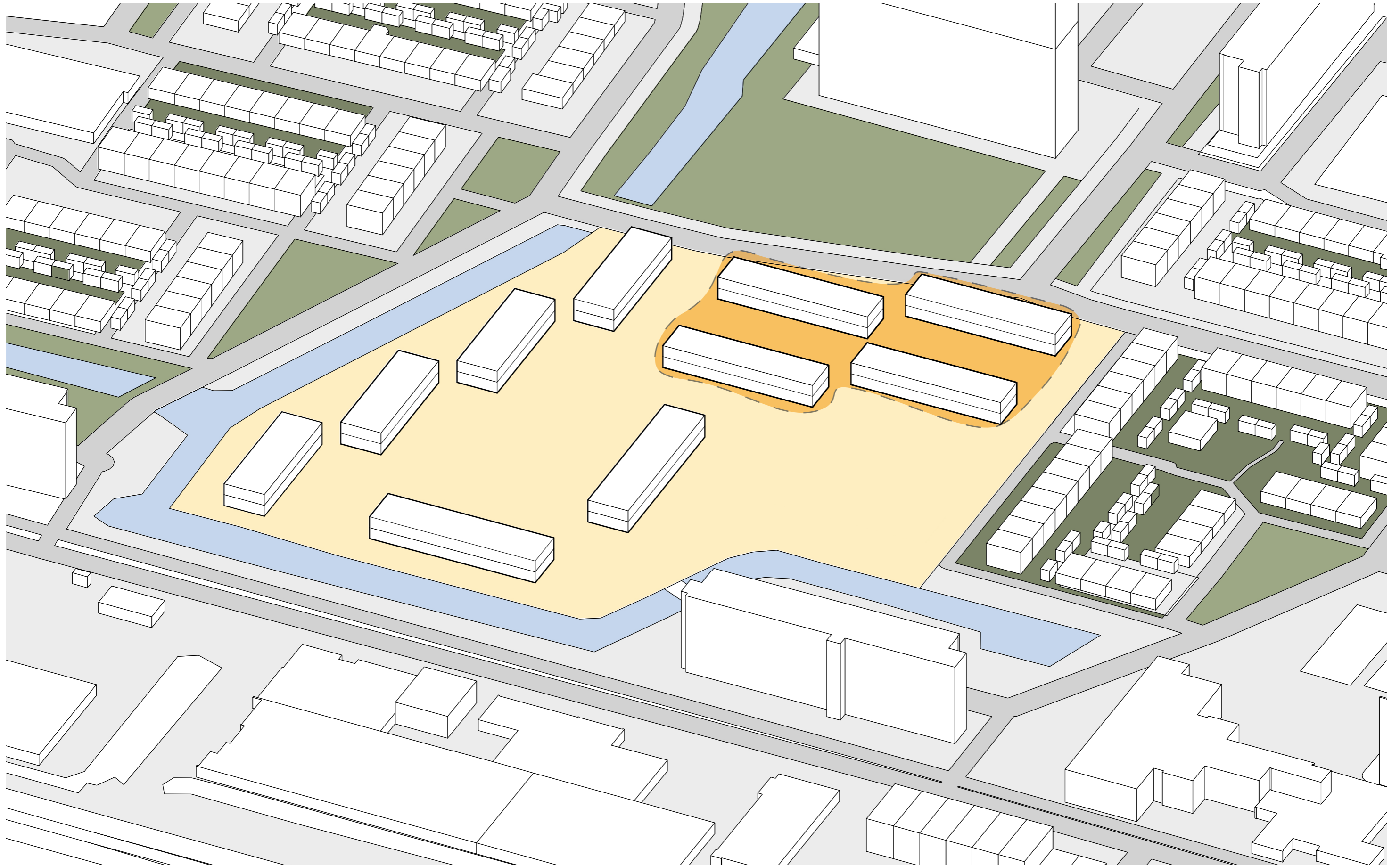
Create a communal center and bring public functions to building

Research
Location
The toolbox
The design

- **Public building**
- **Private living blocks**
- **Construction & façade**
- **Hubs**
- **Climate**
- **Masterplan**

Interventions urban scale

Three areas: park, public area and communal courtyard



What do they need?

Facilities:

- *To stay independent*
- *Healthcare*
- *Physical activity*
- *Place for social interaction*

Looking for...

Social interaction and healthcare

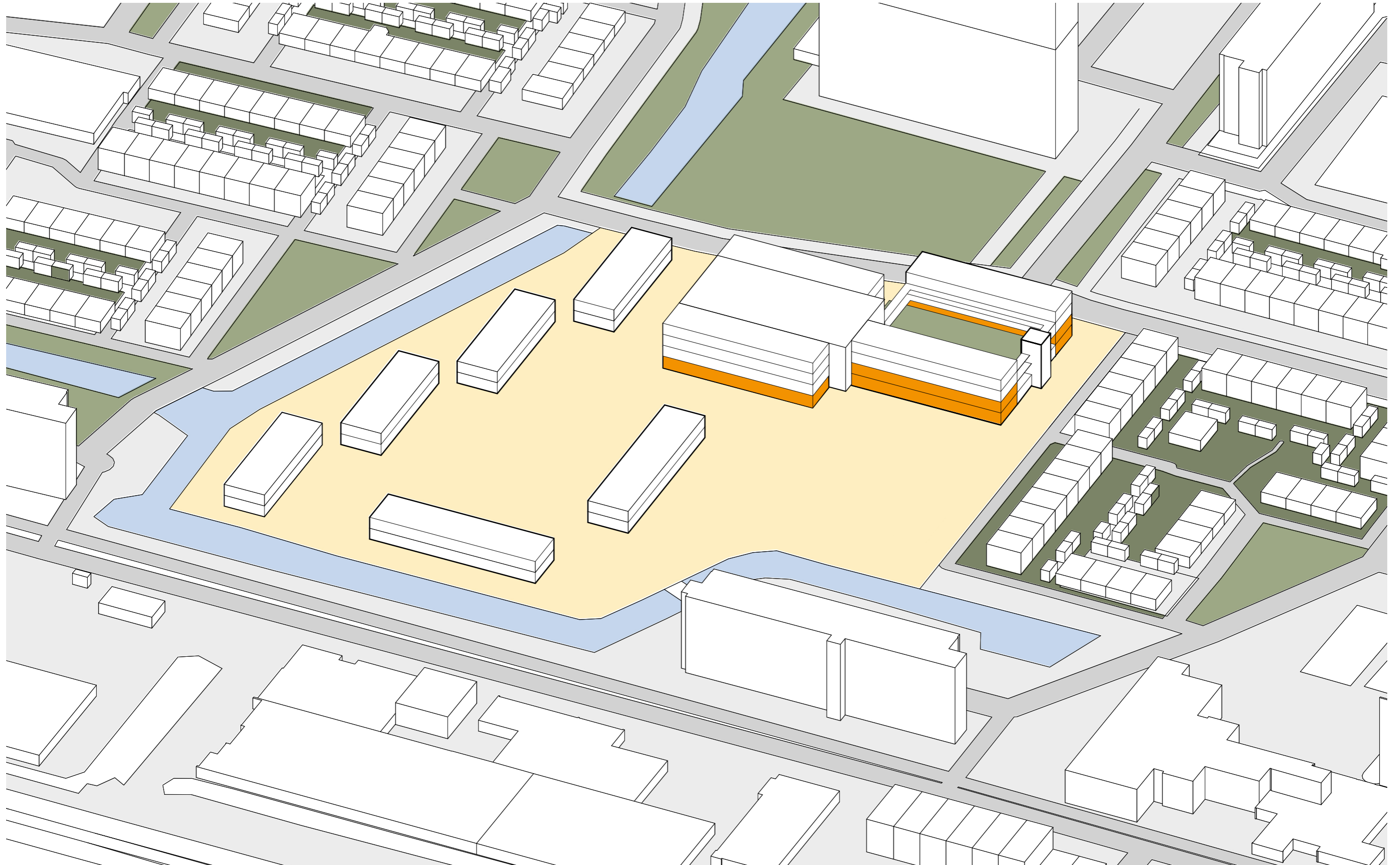


Needs & requirements

- Studio / one bedroom apartment (around 50 m²)
- One-level and wheelchair-friendly
- Interesting **view** on greenery
- Space for **social interaction**
- Facilities on walking distance
- Healthcare available

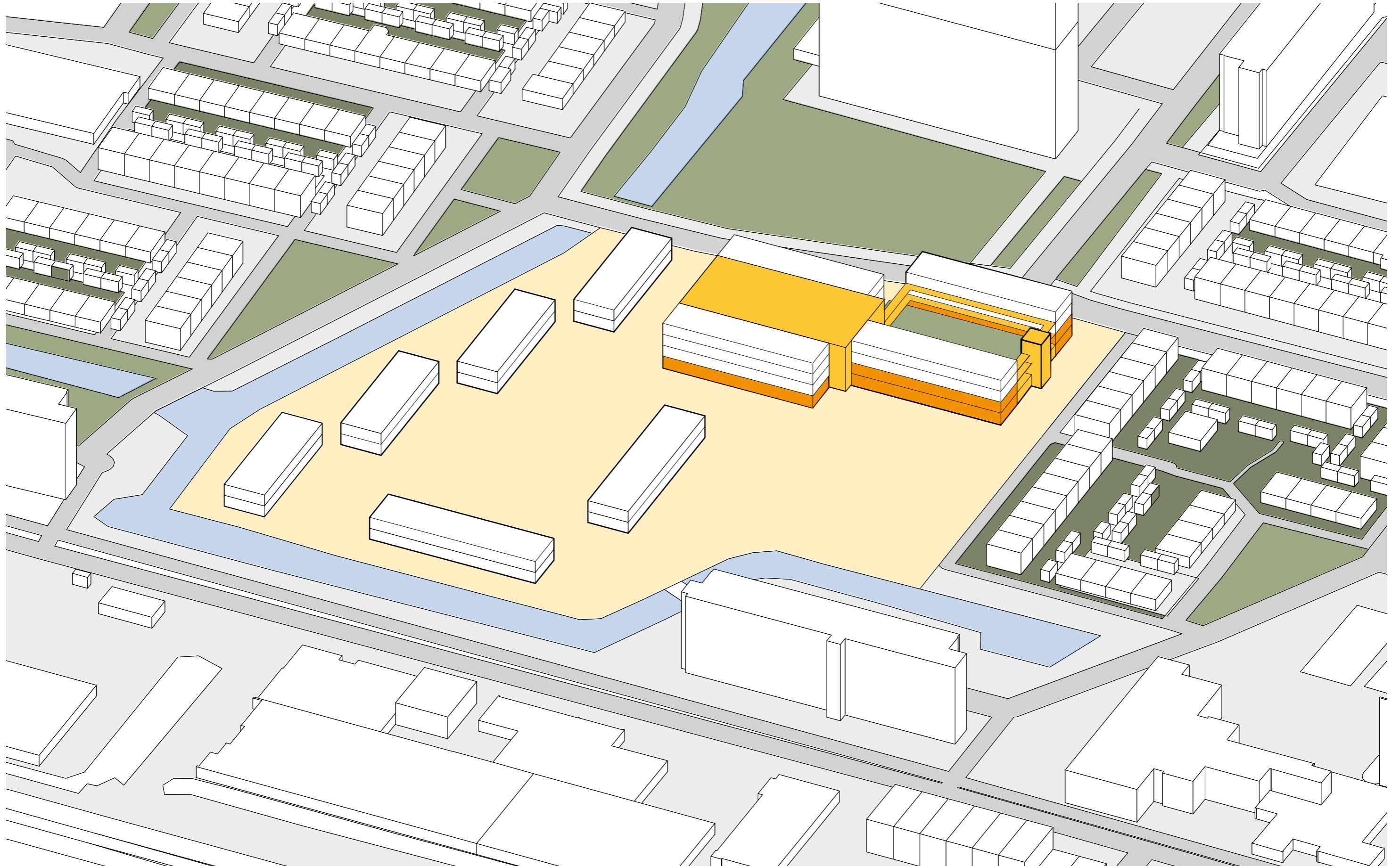
Public plinth

Larger building



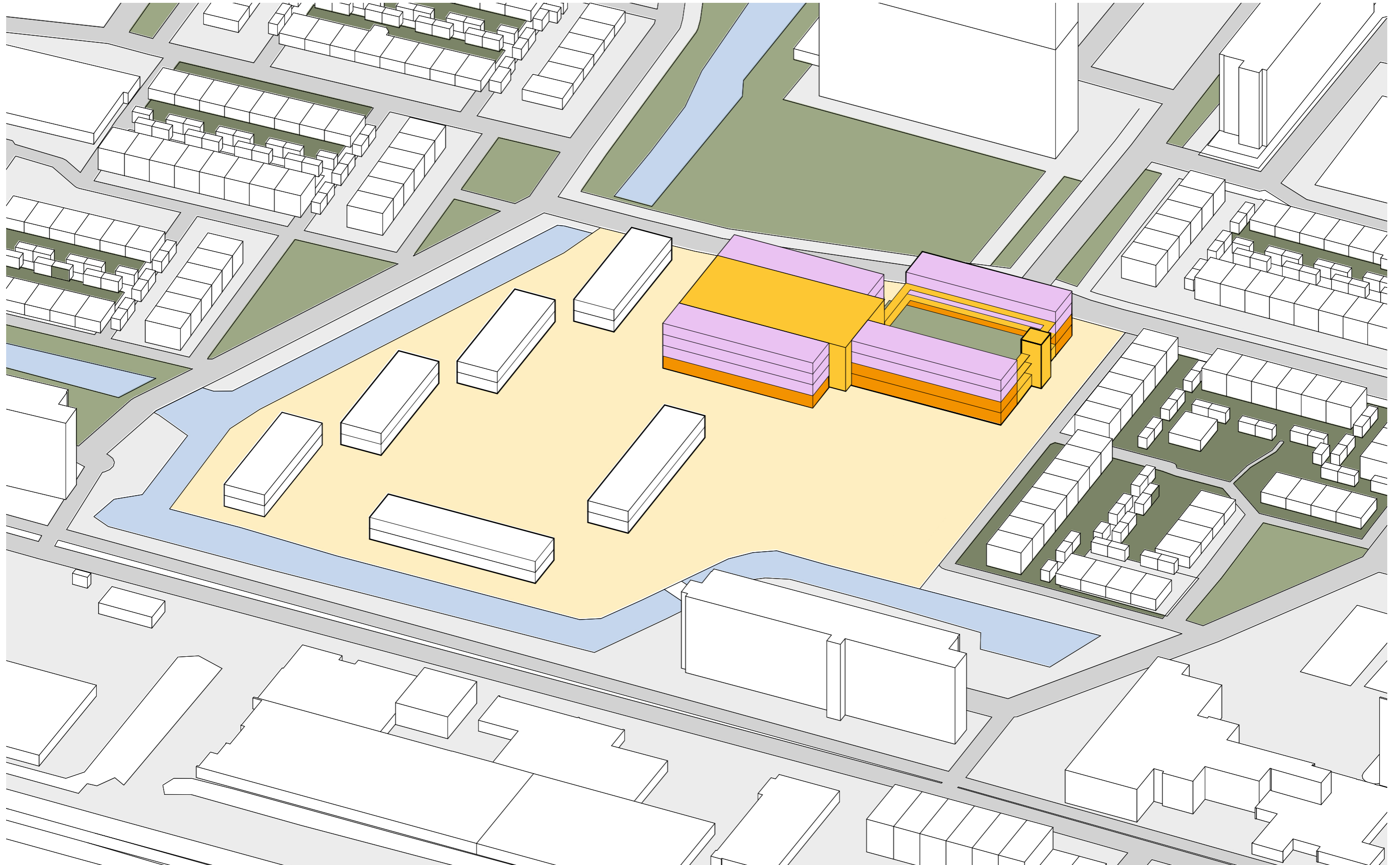
Communal atrium and roof garden

Communal center for the community



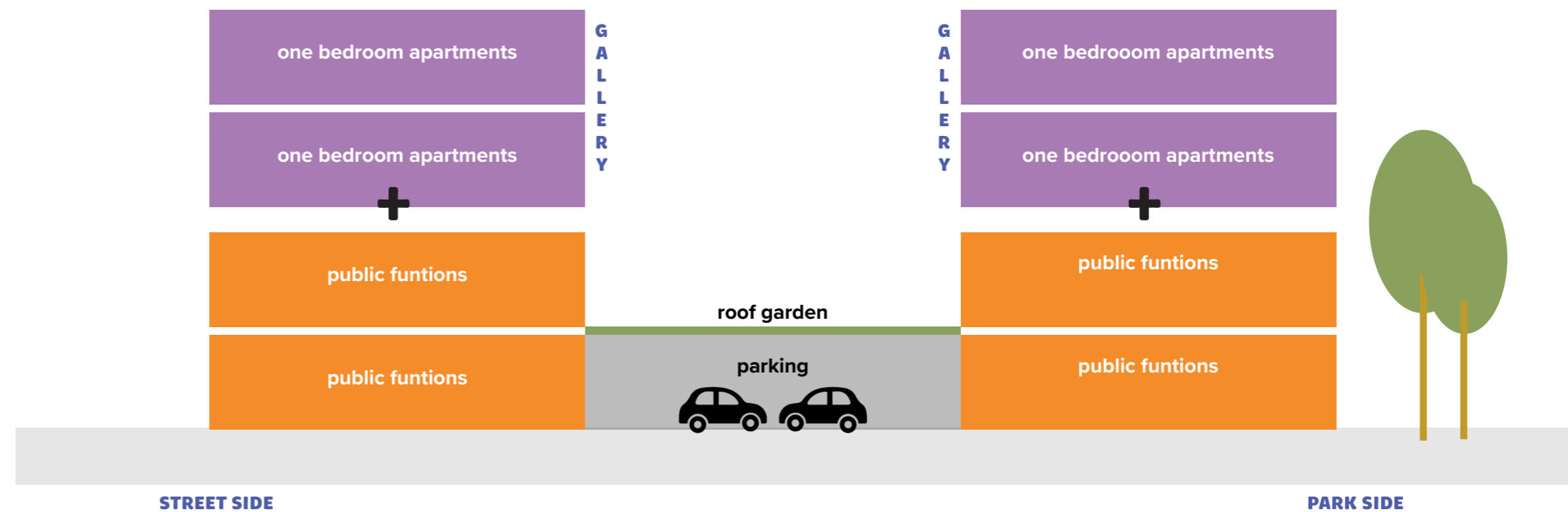
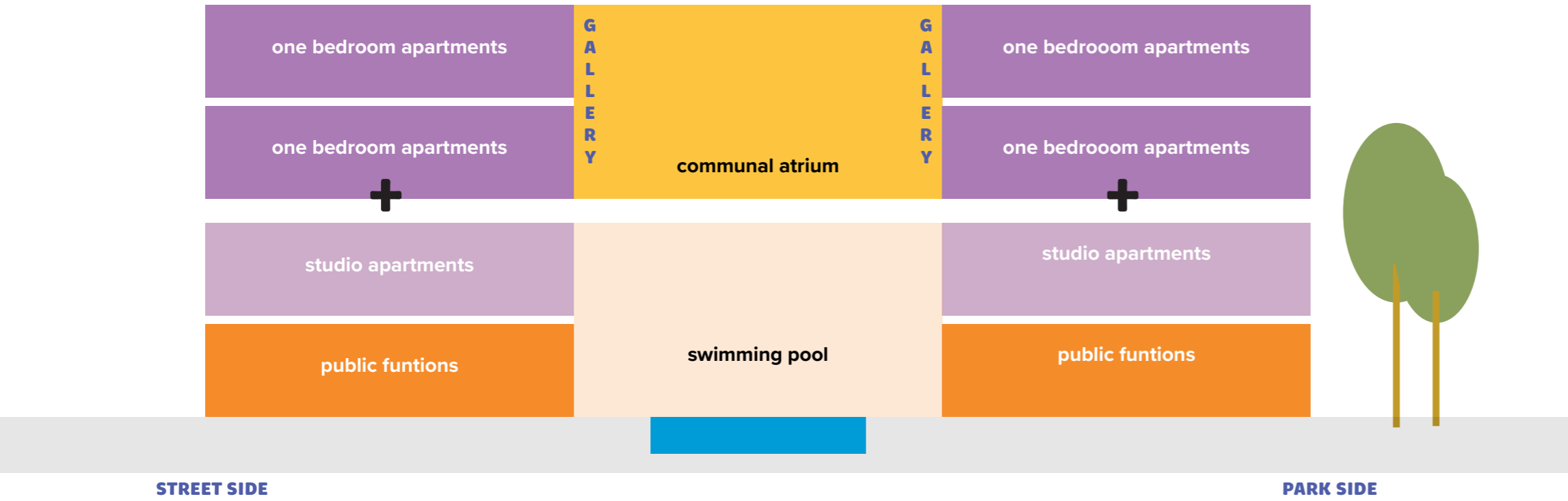
Apartments for elderly

With a higher demand fo care



Scematic section

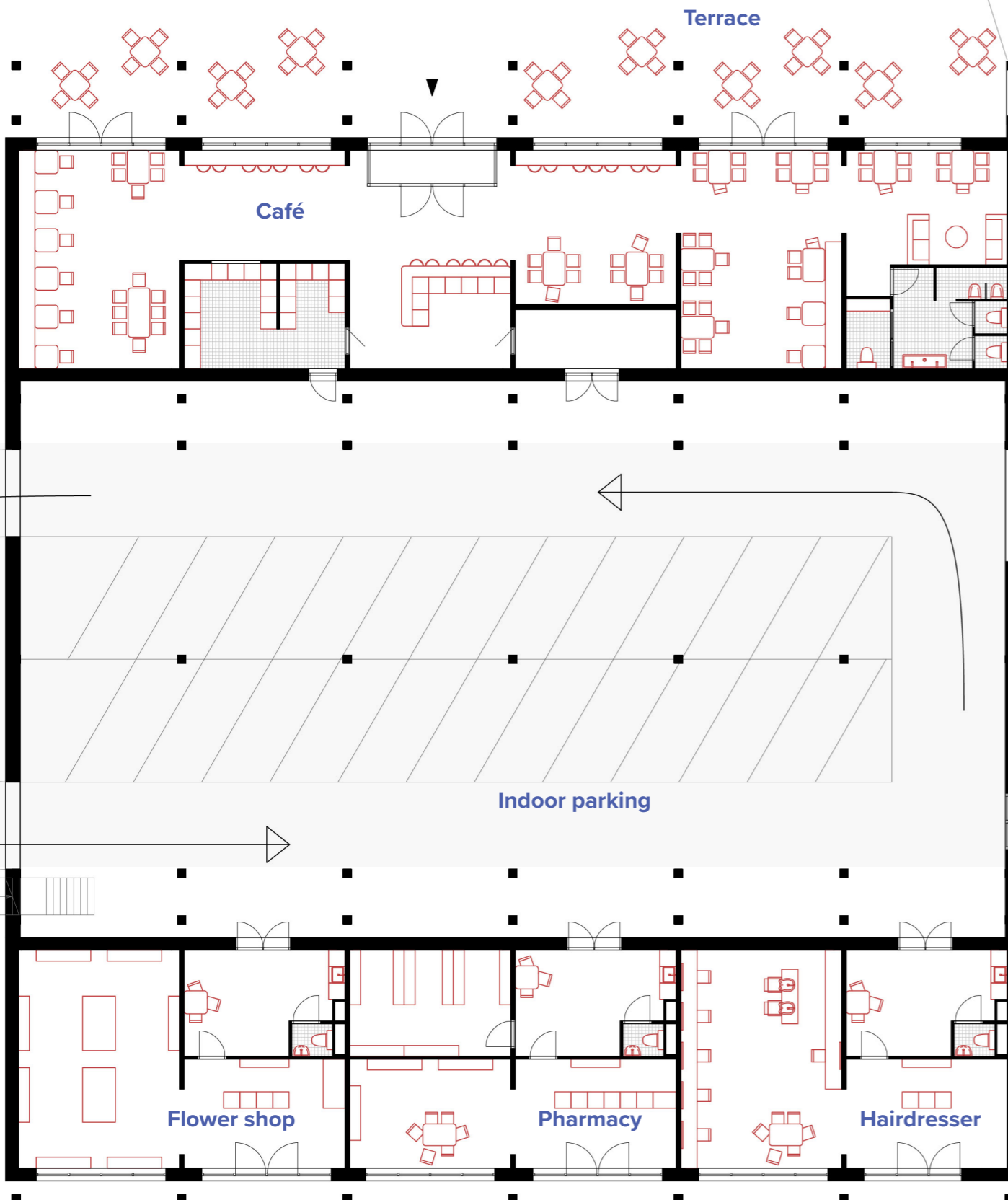
Roof garden & swimming pool



Public plinth

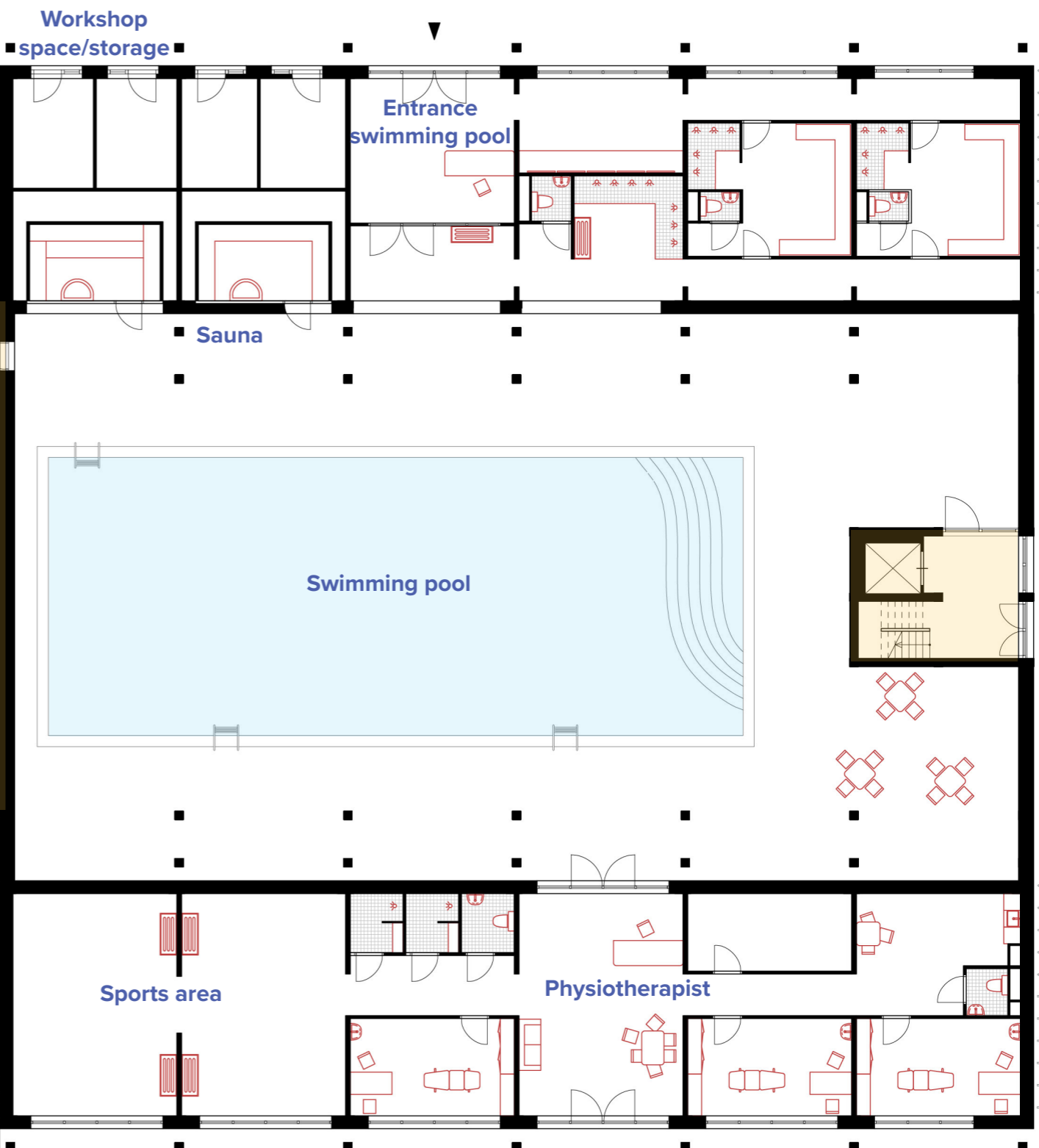
Ground floor

PARK SIDE



Block 9 & 10 public

1:200



Block 7 & 8 public

1:200

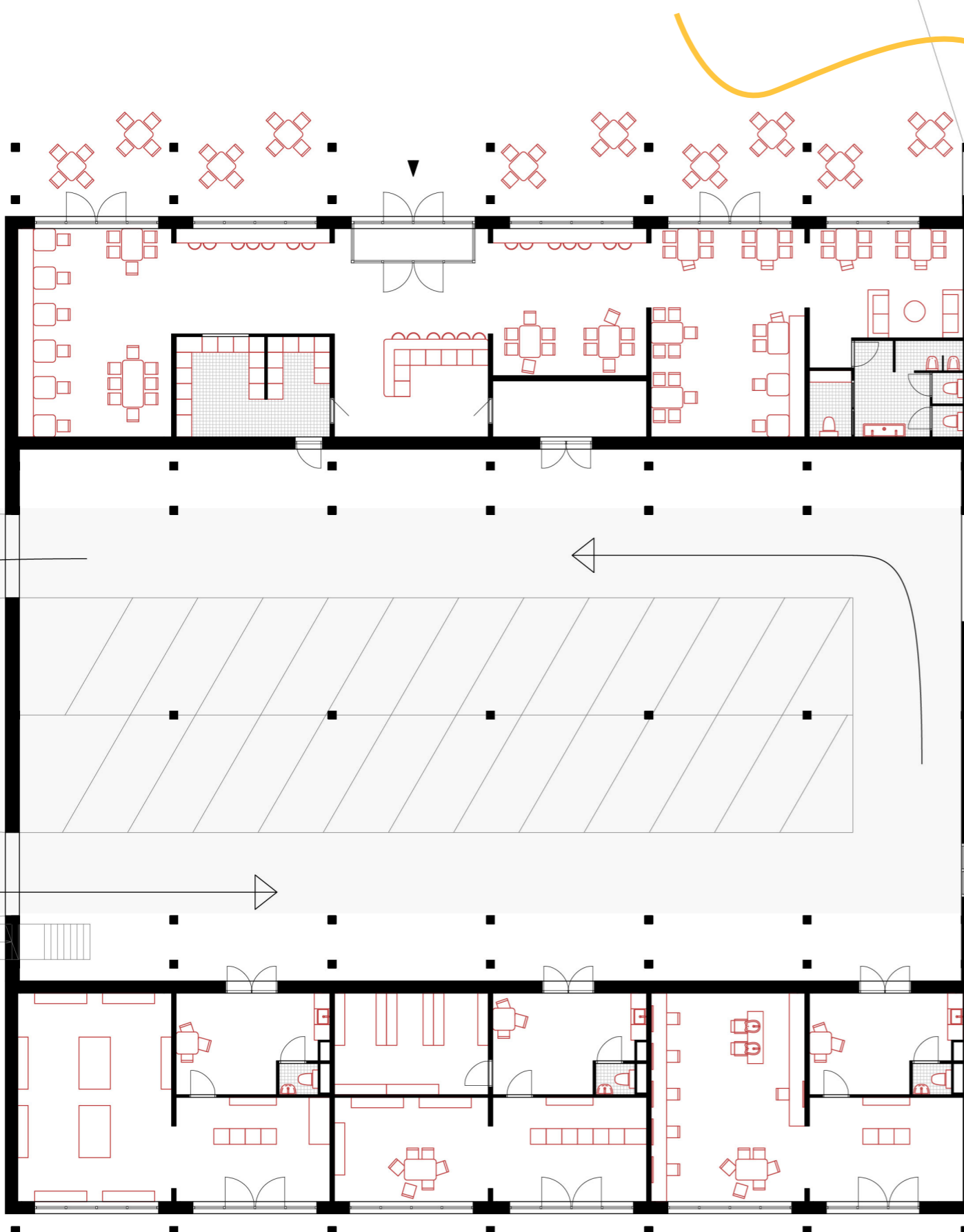
STREET SIDE



Public plinth

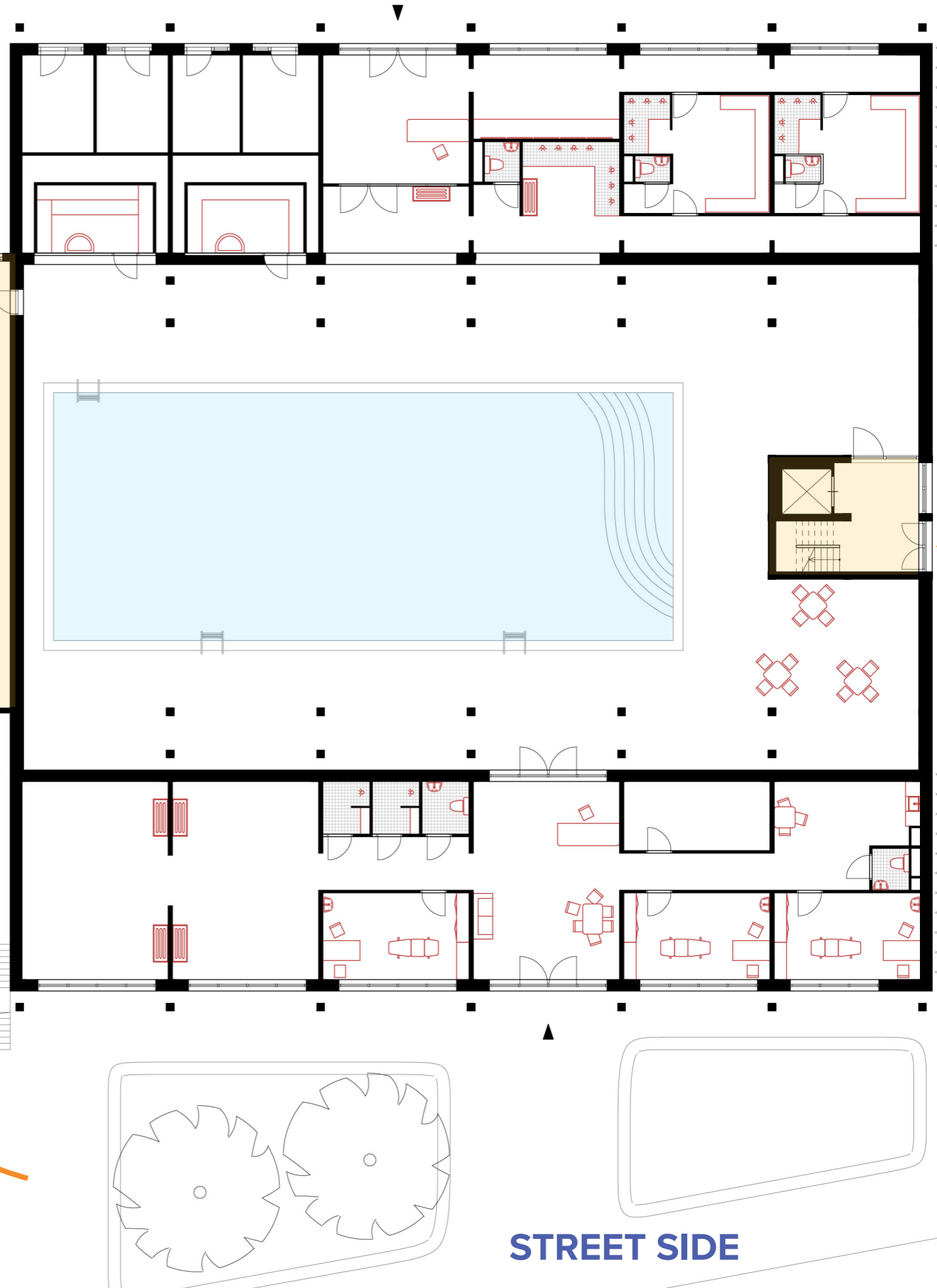
Ground floor

PARK SIDE



Block 9 & 10 public

1:200



Block 7 & 8 public

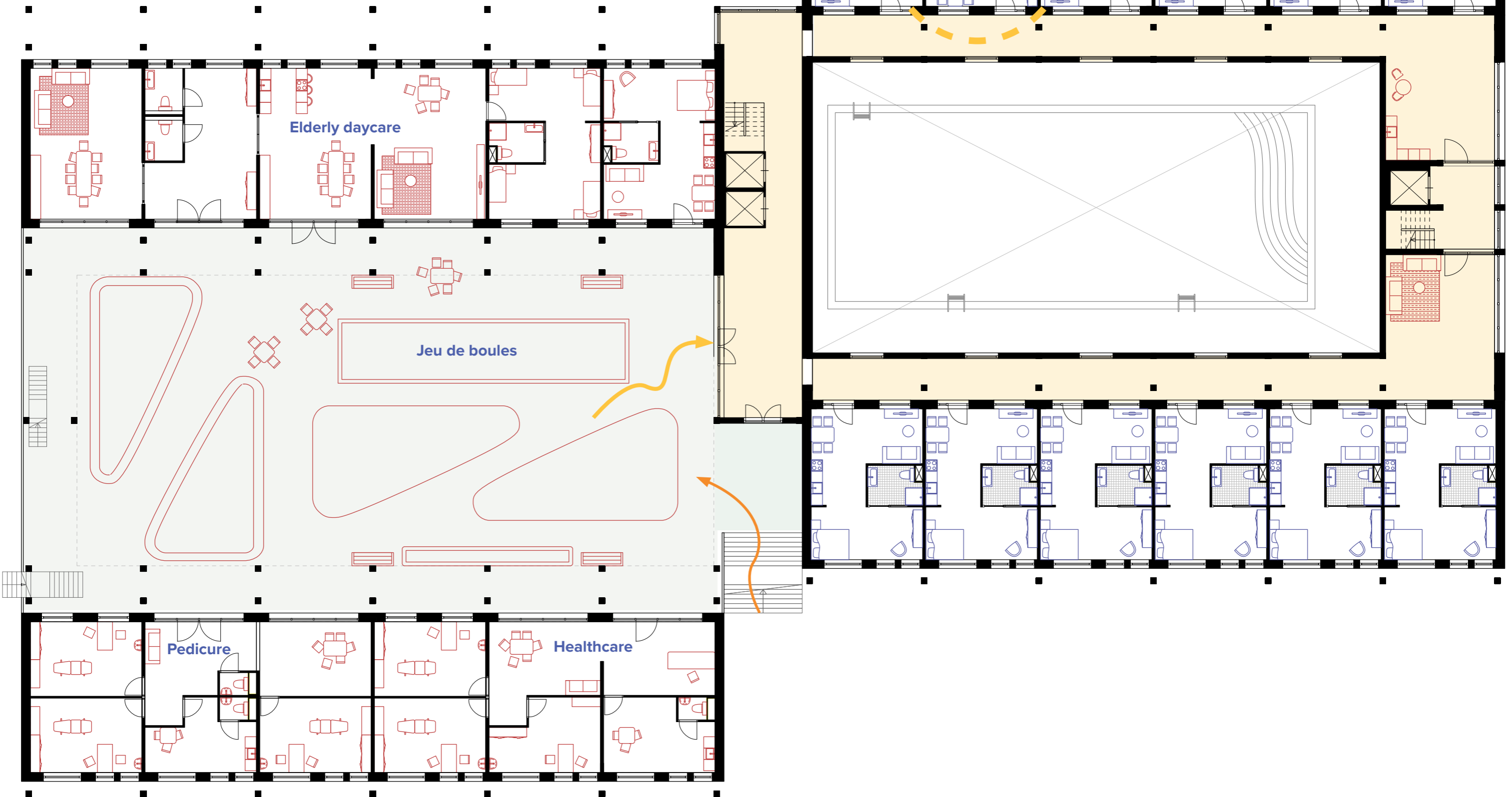
1:200

STREET SIDE



Roof garden

First floor



Block 9 & 10 public

1:200

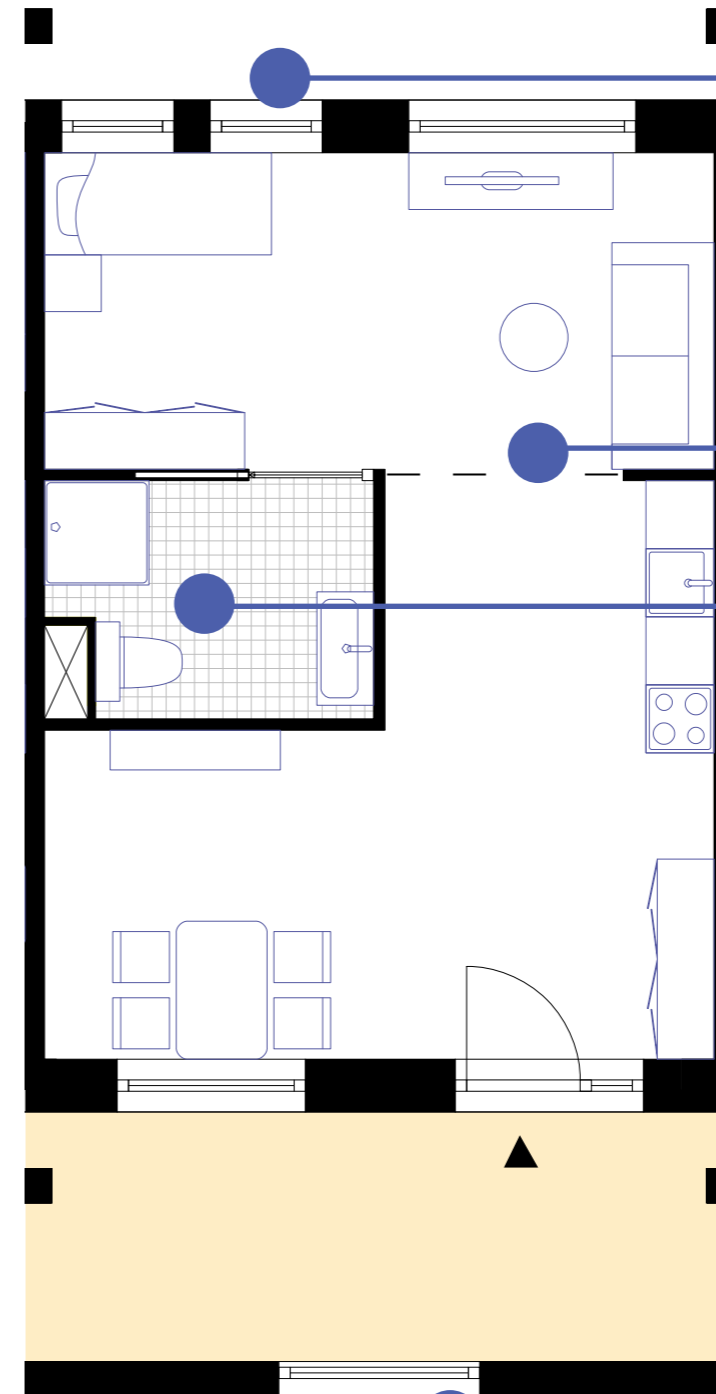
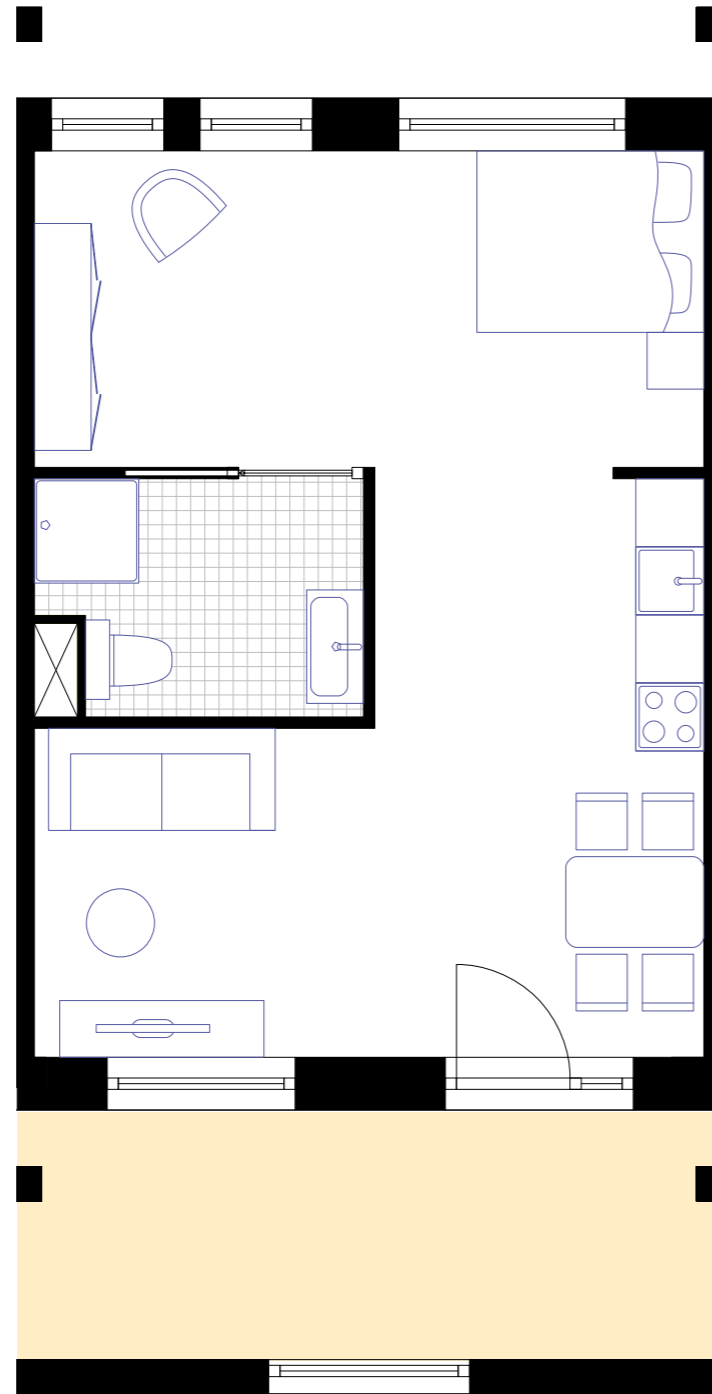
Block 7 & 8 studio's

1:200



Studio apartment

People with a higher demand for care



Park view

Sliding doors to close of bedroom area

Wheelchair-friendly bathroom

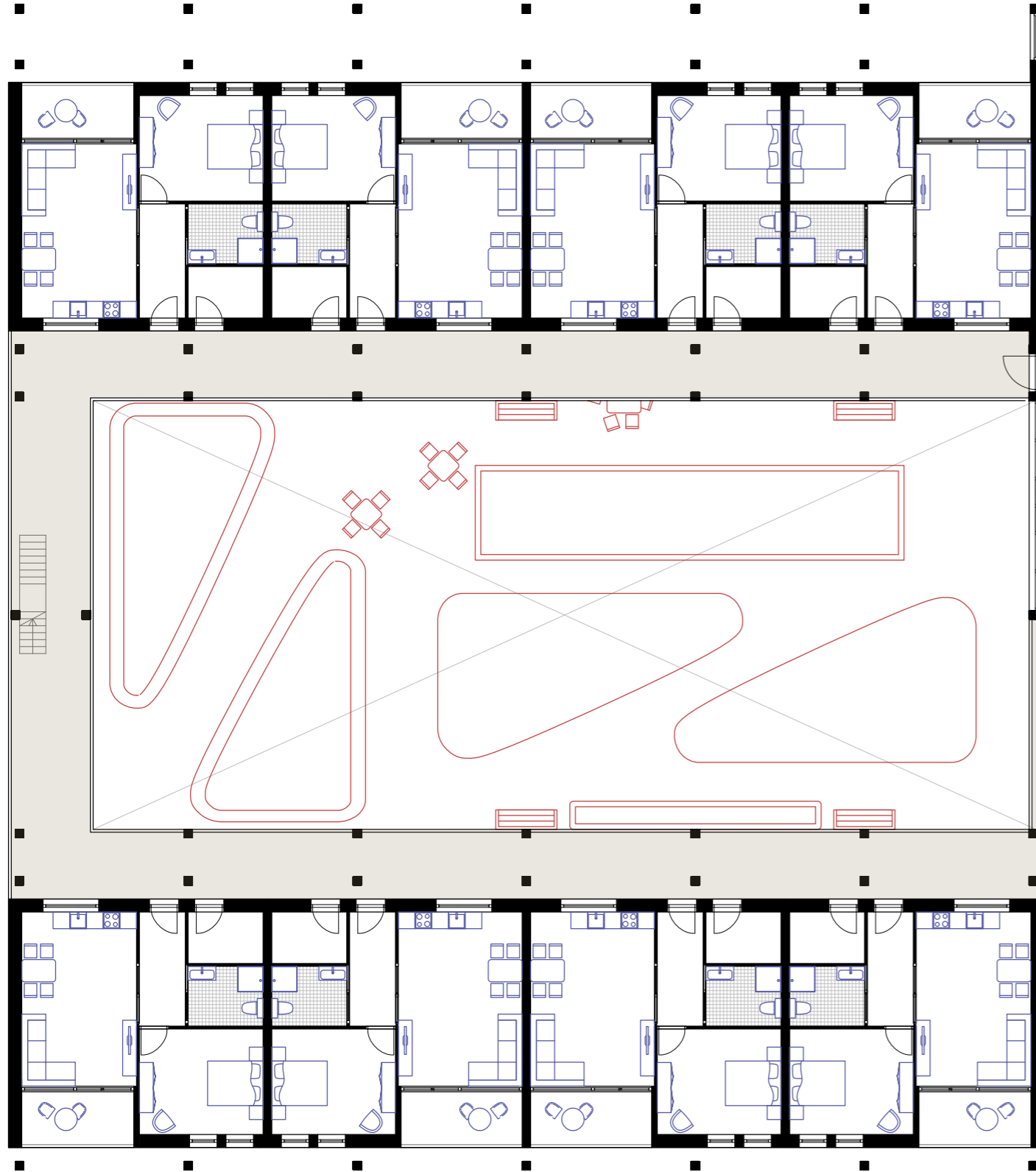
Visual connection to communal space

Studio apartment
45 m²
12x

1:50

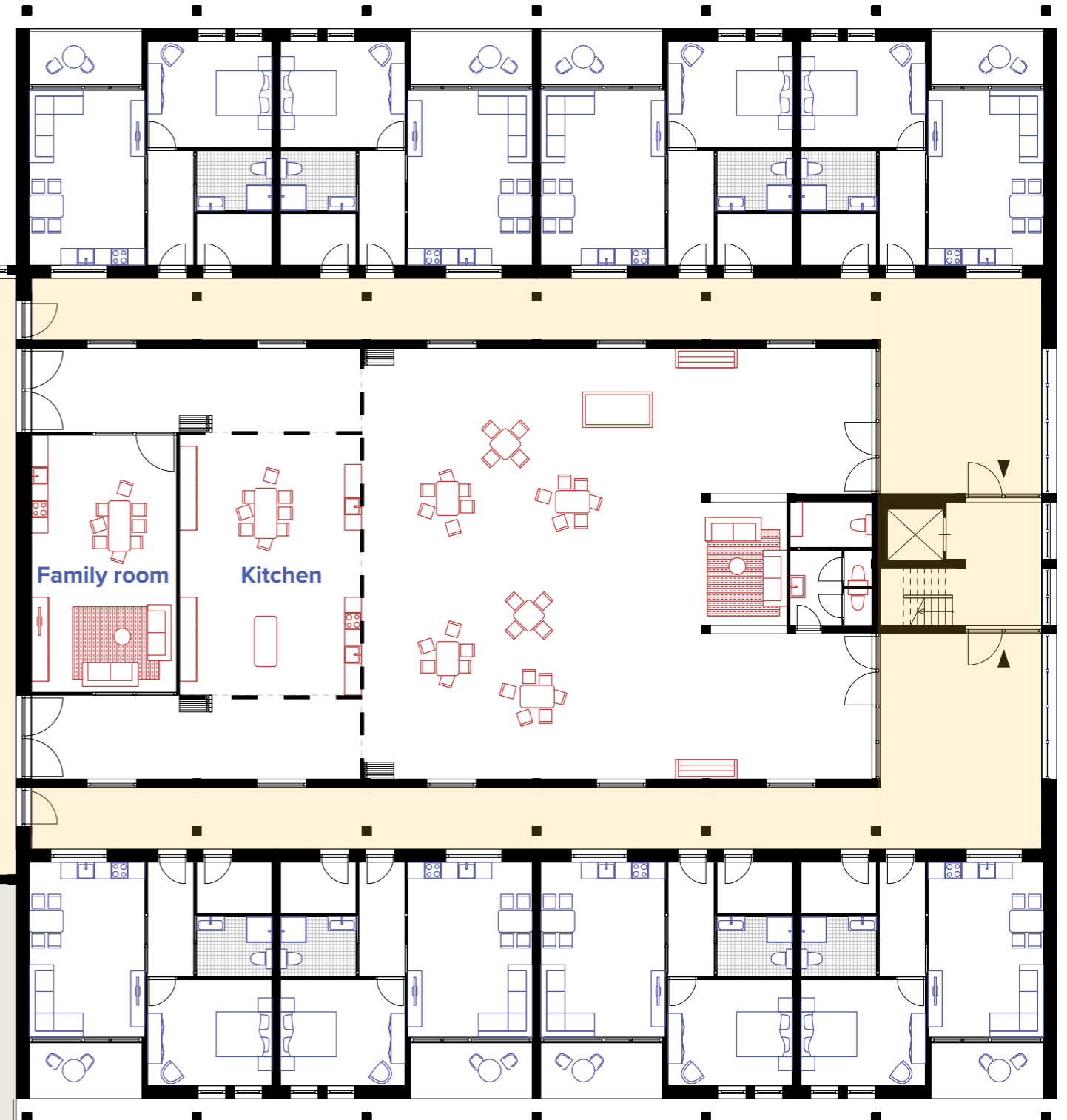
Communal center

Second floor



Block 9 & 10 one bedroom apartments

1:200



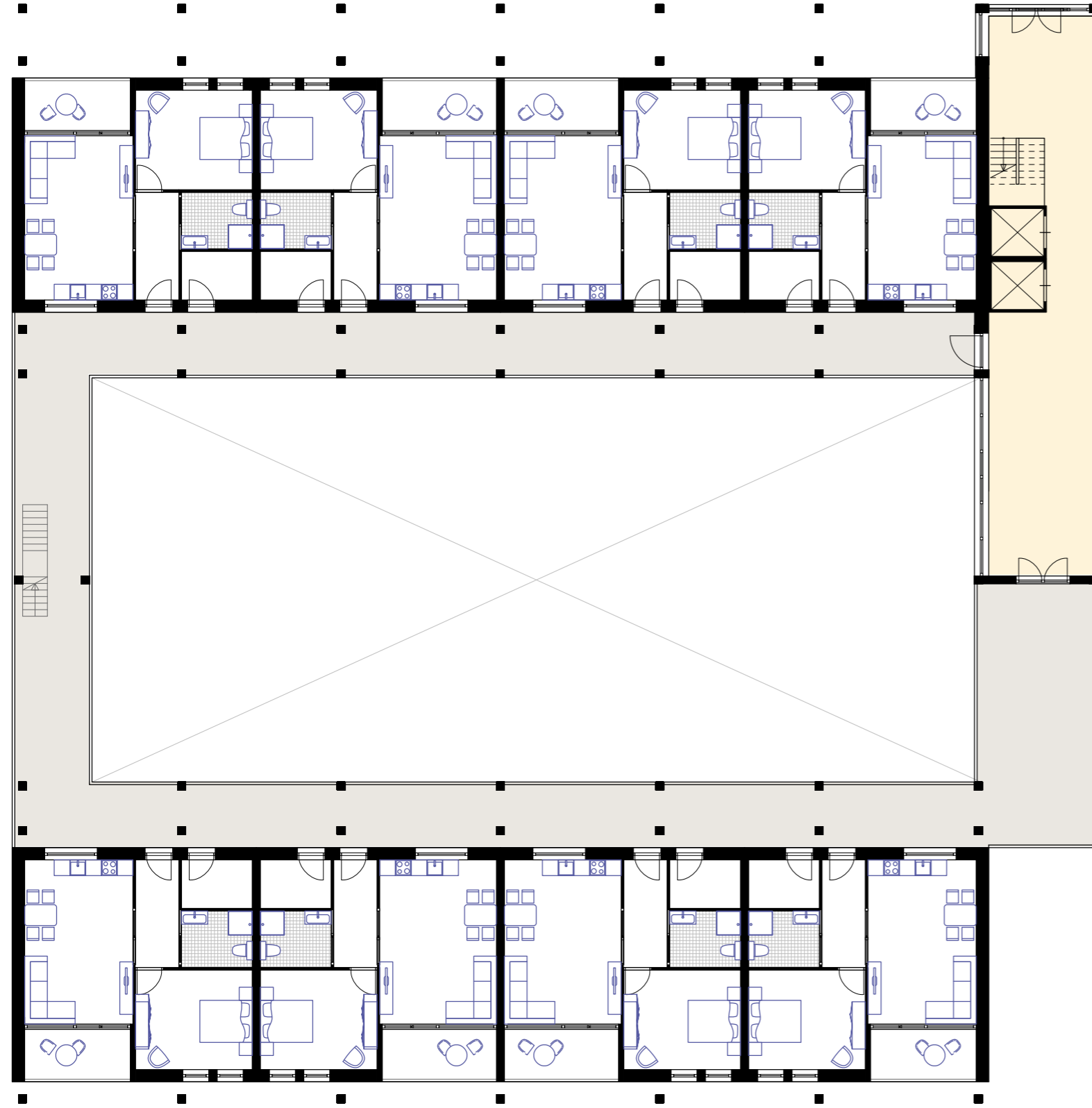
Block 7 & 8 communal center

1:200

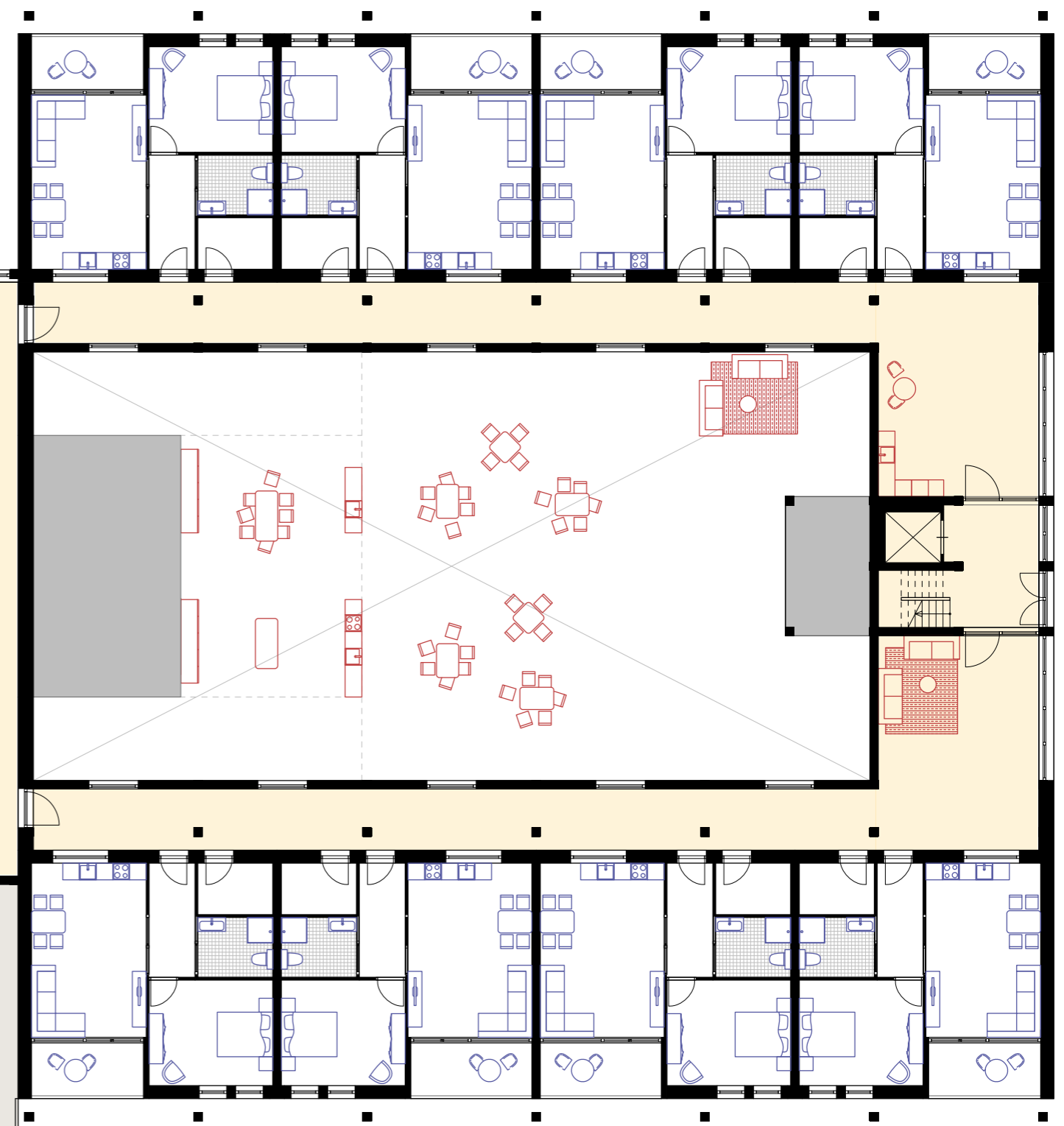


Apartments

Third floor



Block 9 & 10 one bedroom apartments 1:200

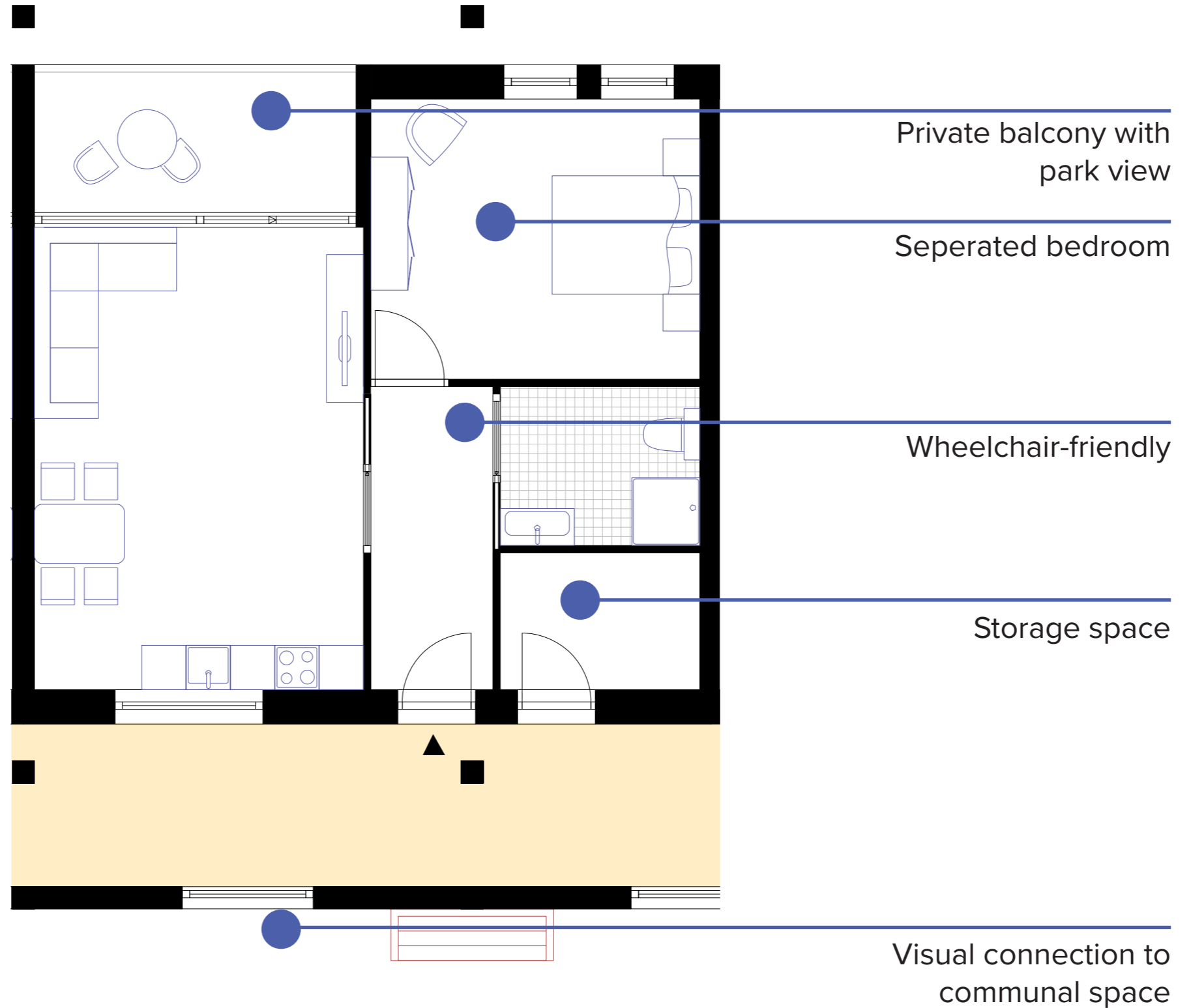


Block 7 & 8 one bedroom apartments 1:200



One bedroom apartment

Elderly with desire to be connected to the communal center, like Betty!



One bedroom apartment
65 m²
32x

1:50

Street side

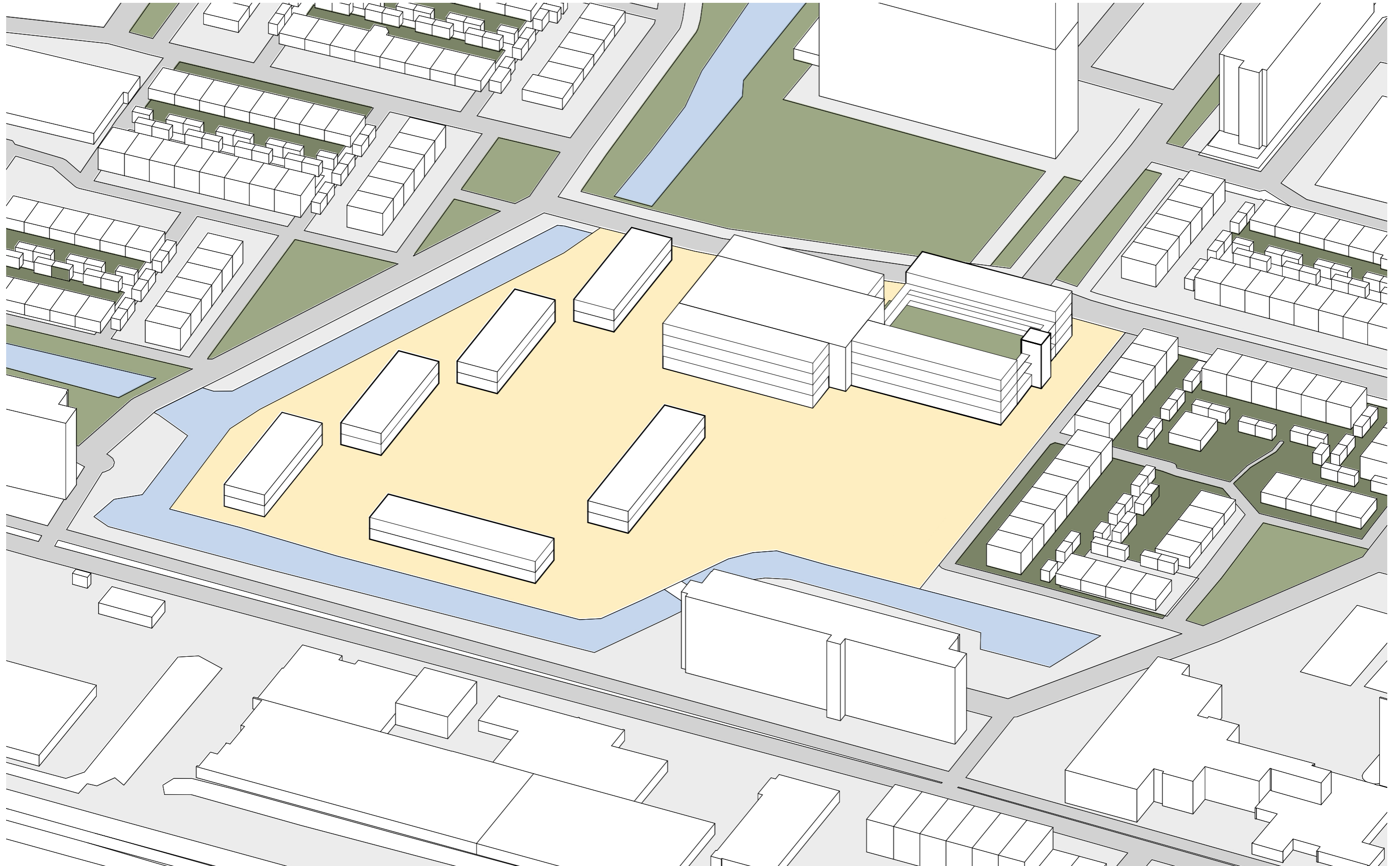


Research
Location
The toolbox
The design

- **Public building**
- **Private living blocks**
- **Construction & façade**
- **Hubs**
- **Climate**
- **Masterplan**

Private living with communal hubs

Other approach

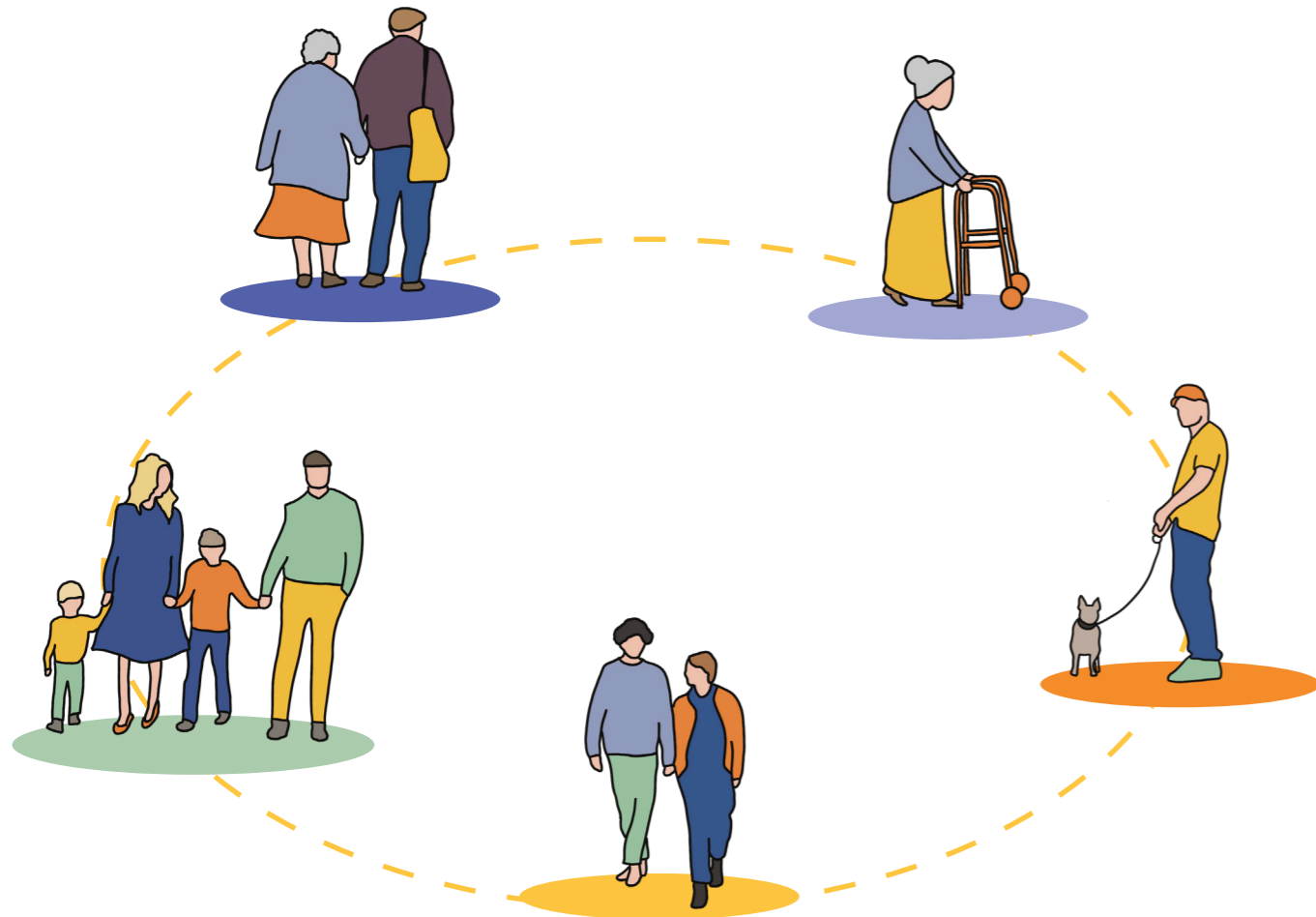


What do they need?

Place to stay active and carry out hobbies

Private home

Diversity is key!



Looking for...

*Private apartment,
social contact and a
place to be active*

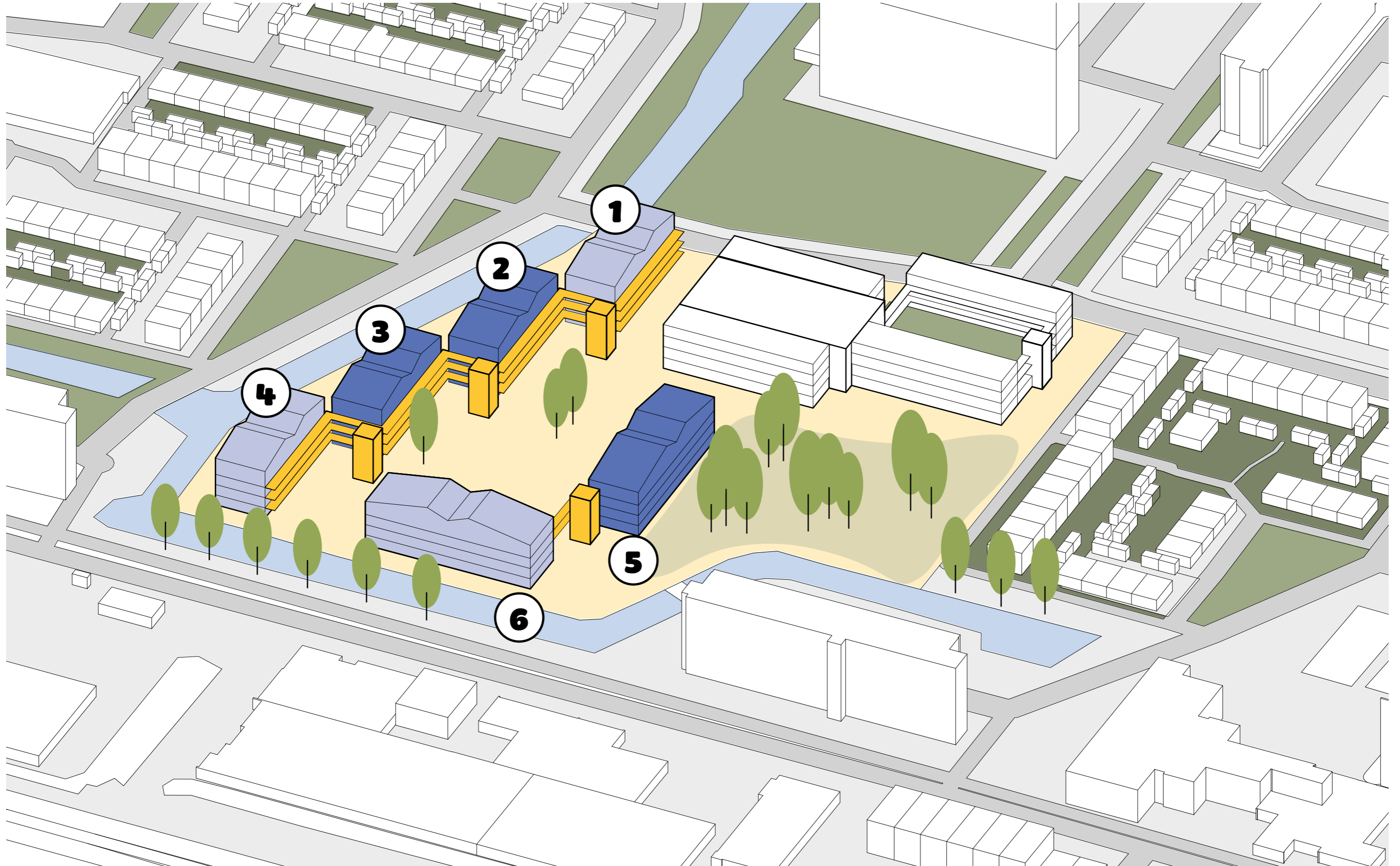


Needs & requirements

- One or two bedroom apartment (around 65 m²)
- One-level and wheelchair-friendly
- Garden or additional place for gardening
- Additional **space to carry out hobbies and activities**
- Facilities close by
- Greenery to walk

Private living with communal hubs

Intergenerational blocks



Private living with communal hubs

Intergenerational blocks

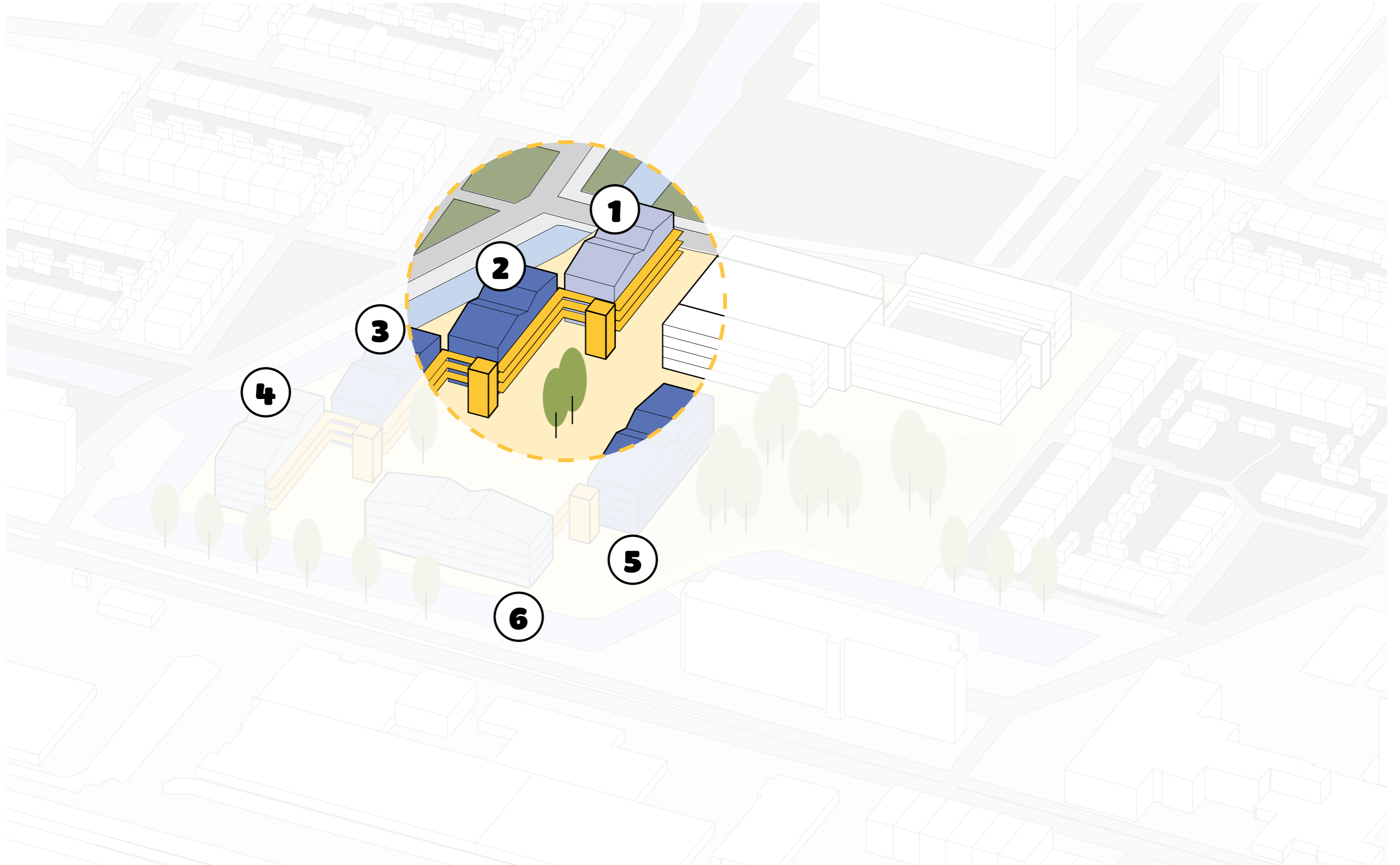
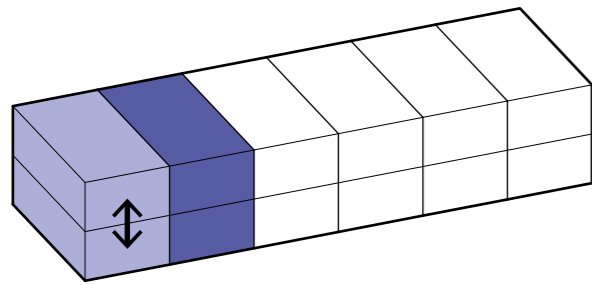
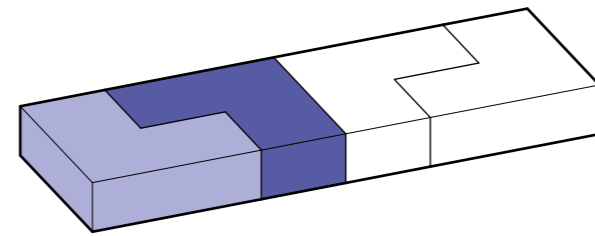
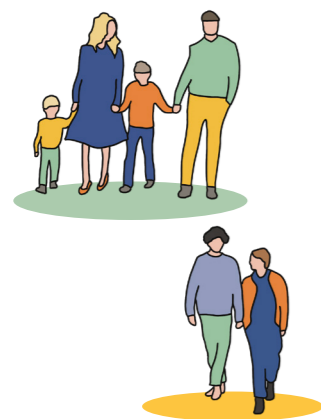


Diagram plans

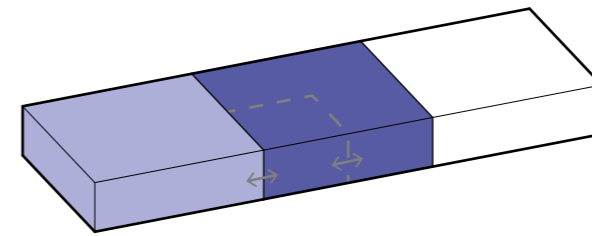
Create different plans in existing structure



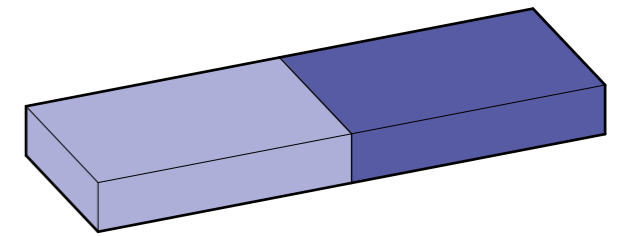
Two storey family homes



One bedroom apartments



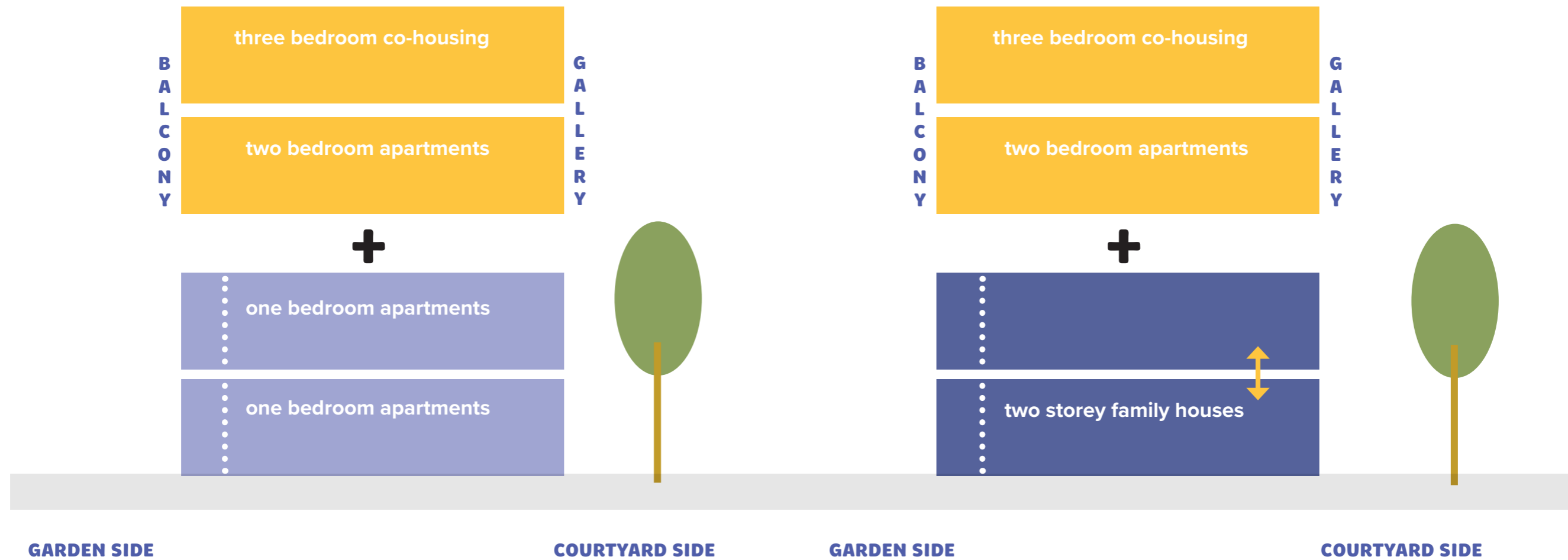
Two bedroom apartments



Three bedroom apartments



Scematic section block 1-6



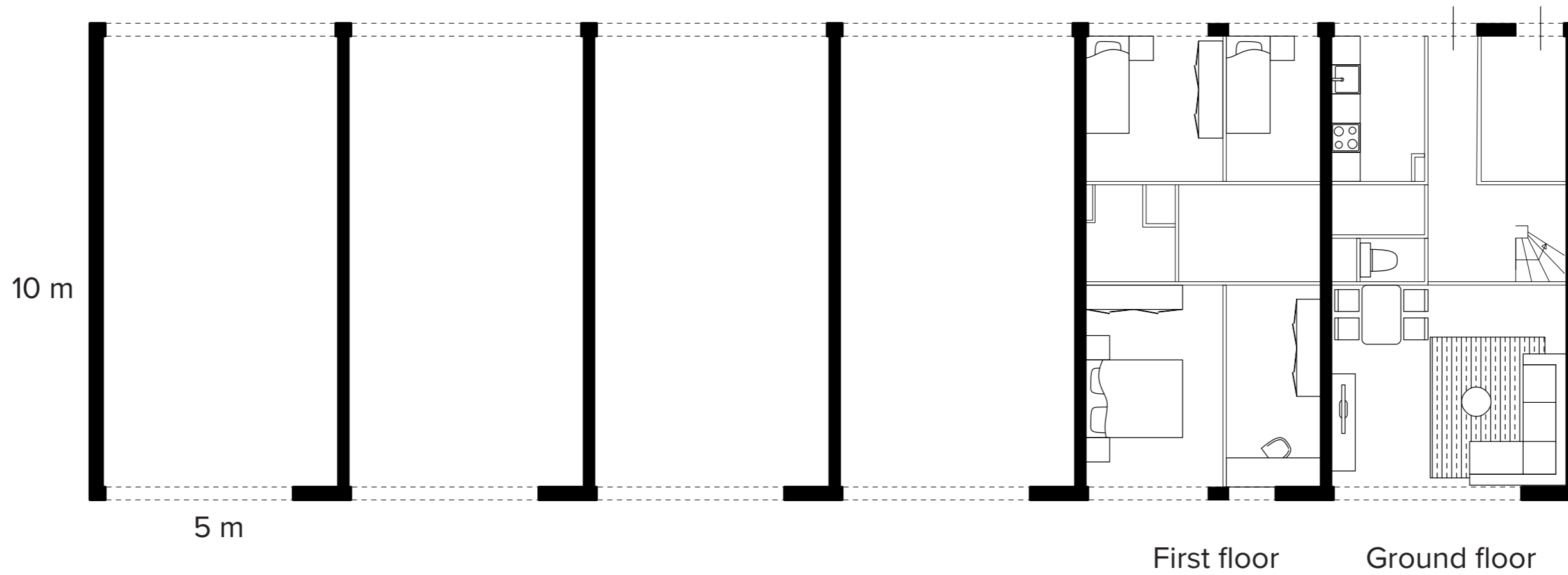
Block 2, 3 & 5

Block 1, 4 & 6

Plans block 1-6

Existing situation two storey family houses

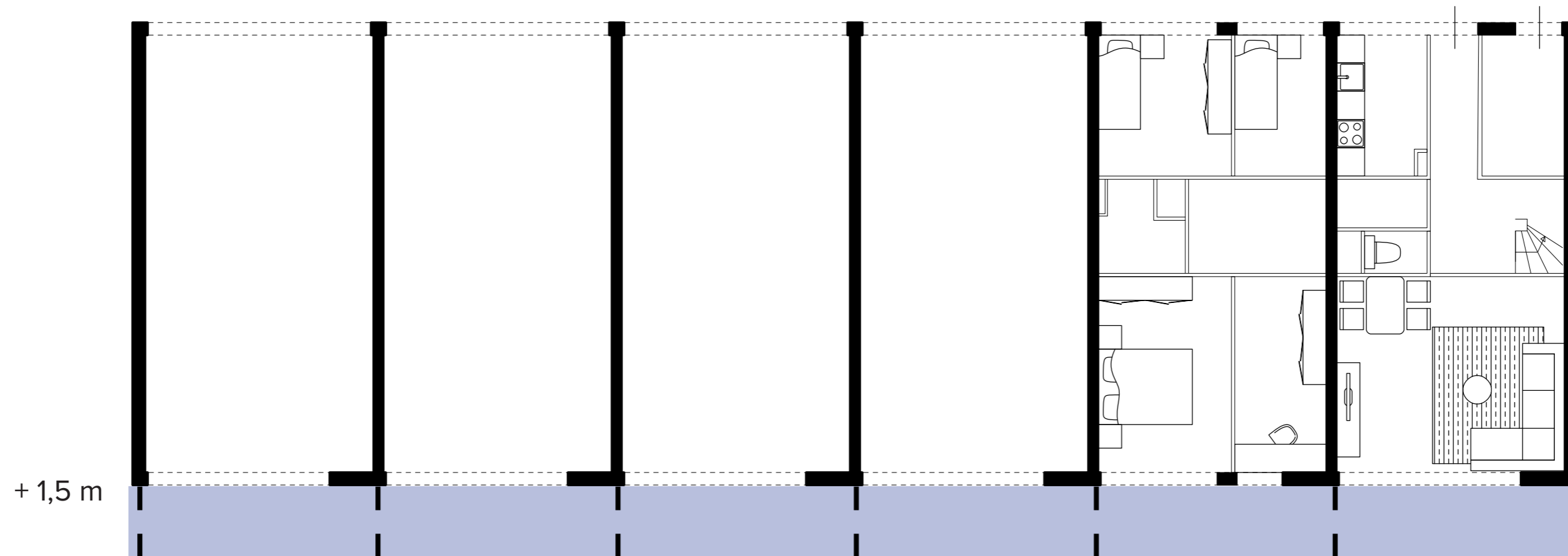
STREET SIDE



GARDEN SIDE

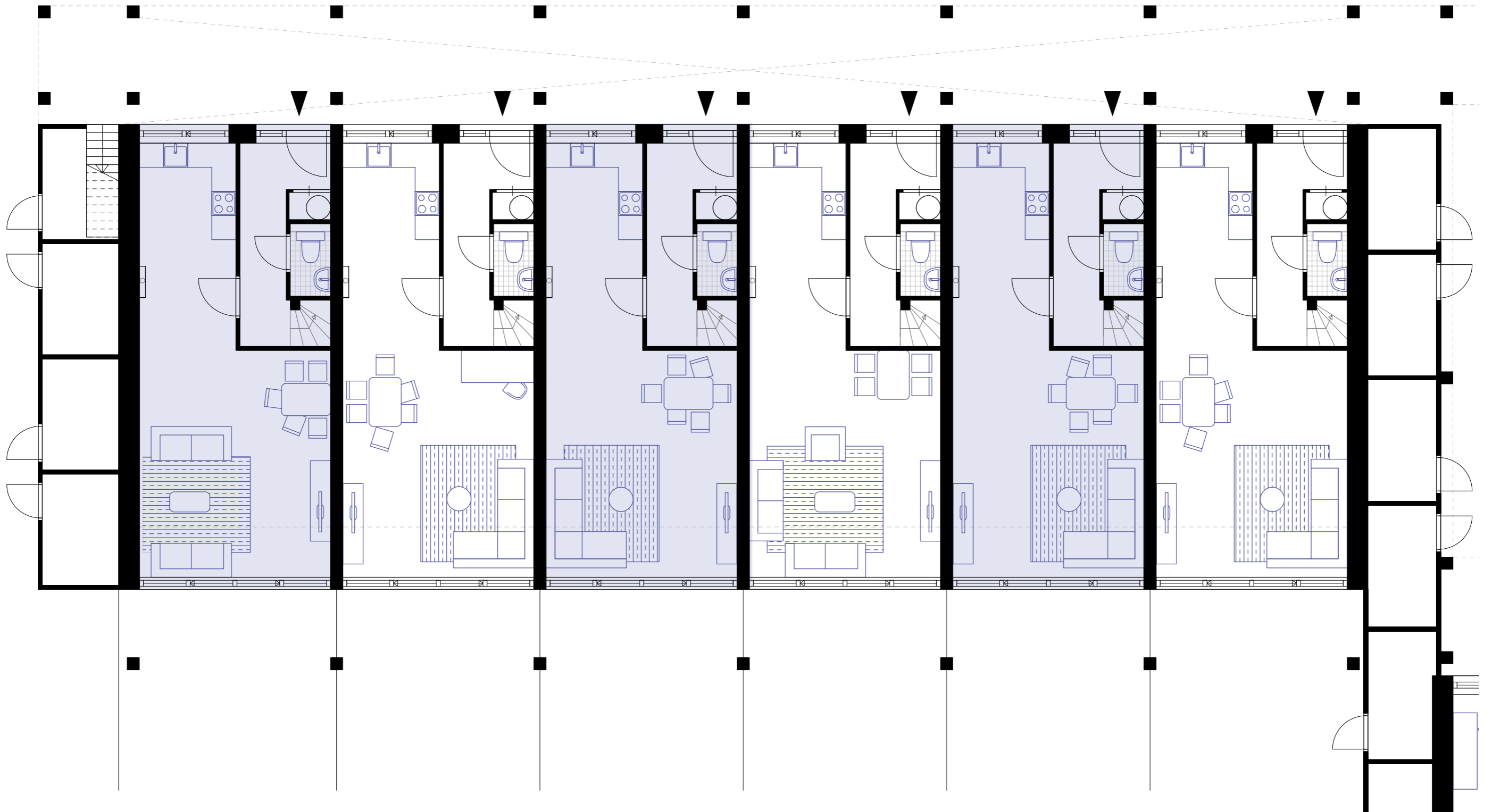
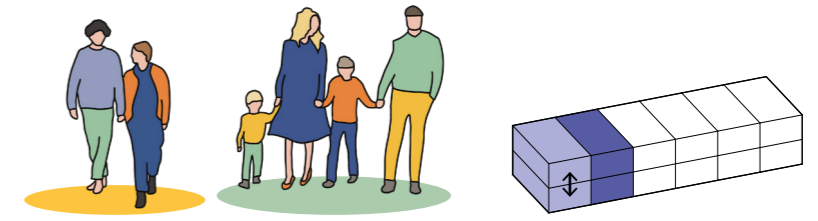
Plans block 1-6

Extension on the garden side



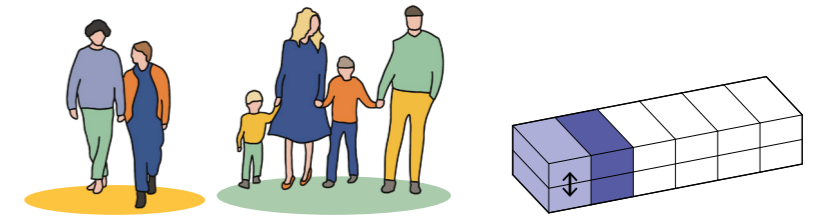
Plans block 1-6

Ground floor family homes



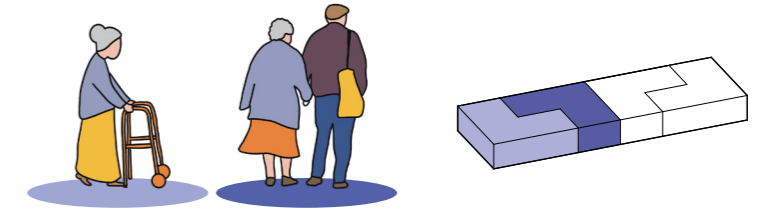
Plans block 1-6

First floor family homes



Plans block 1-6

Ground floor



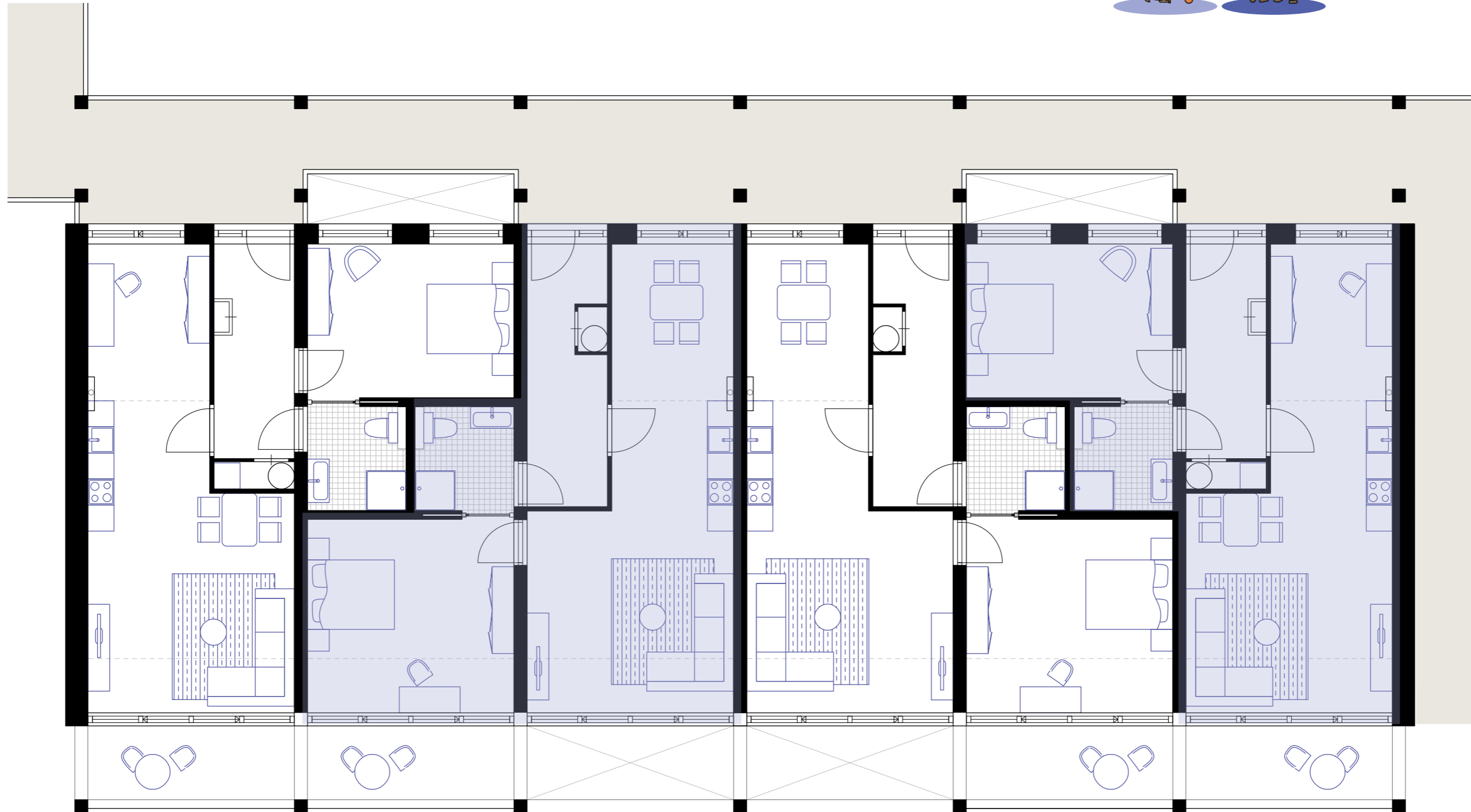
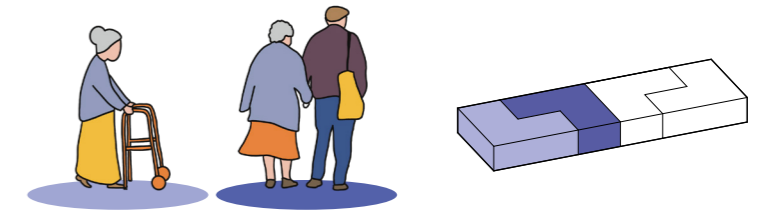
One bedroom apartments for elderly 75 m²

12x

1:100

Plans block 1-6

First floor



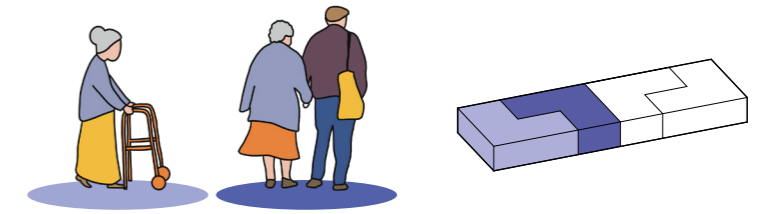
One bedroom apartments for elderly 75 m²

12x

1:100

Plans block 1-6

First floor



One bedroom apartments for elderly 75 m²

12x

1:100

Plans block 1-6

Second floor



Two bedroom apartments for elderly or starters 90 m²

24x

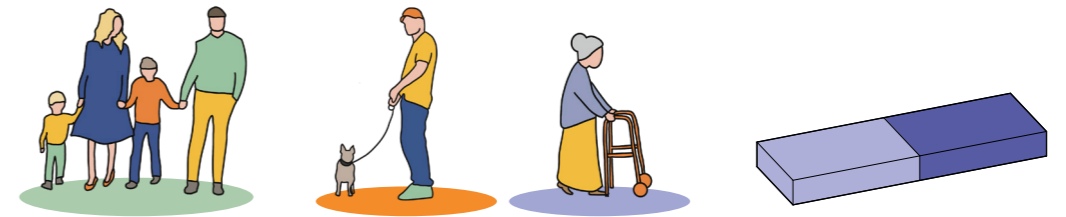
1:100

Plans block 1-6

Third floor

Thyrza Tepper

Co-housing three people



Two bedroom apartments for elderly or starters 90 m²

24x

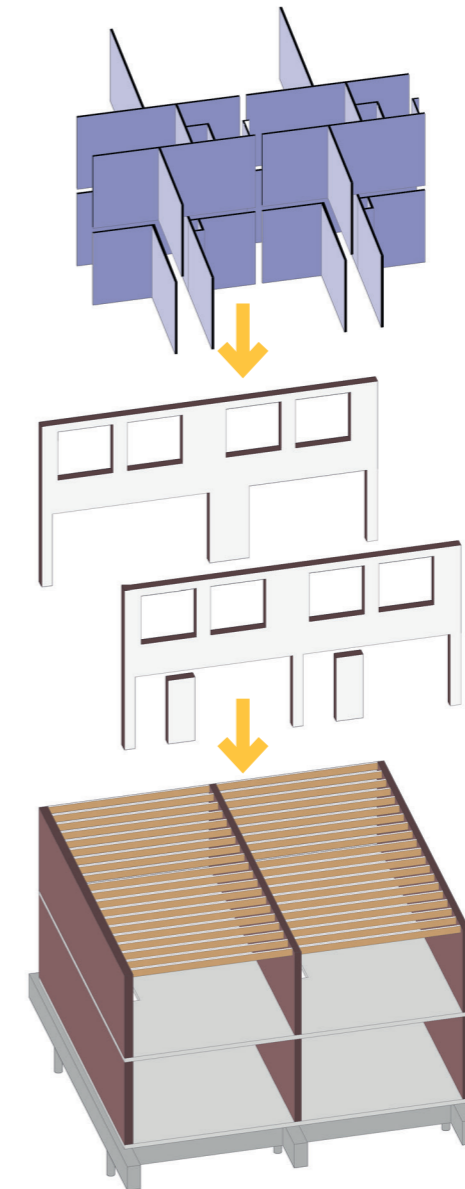
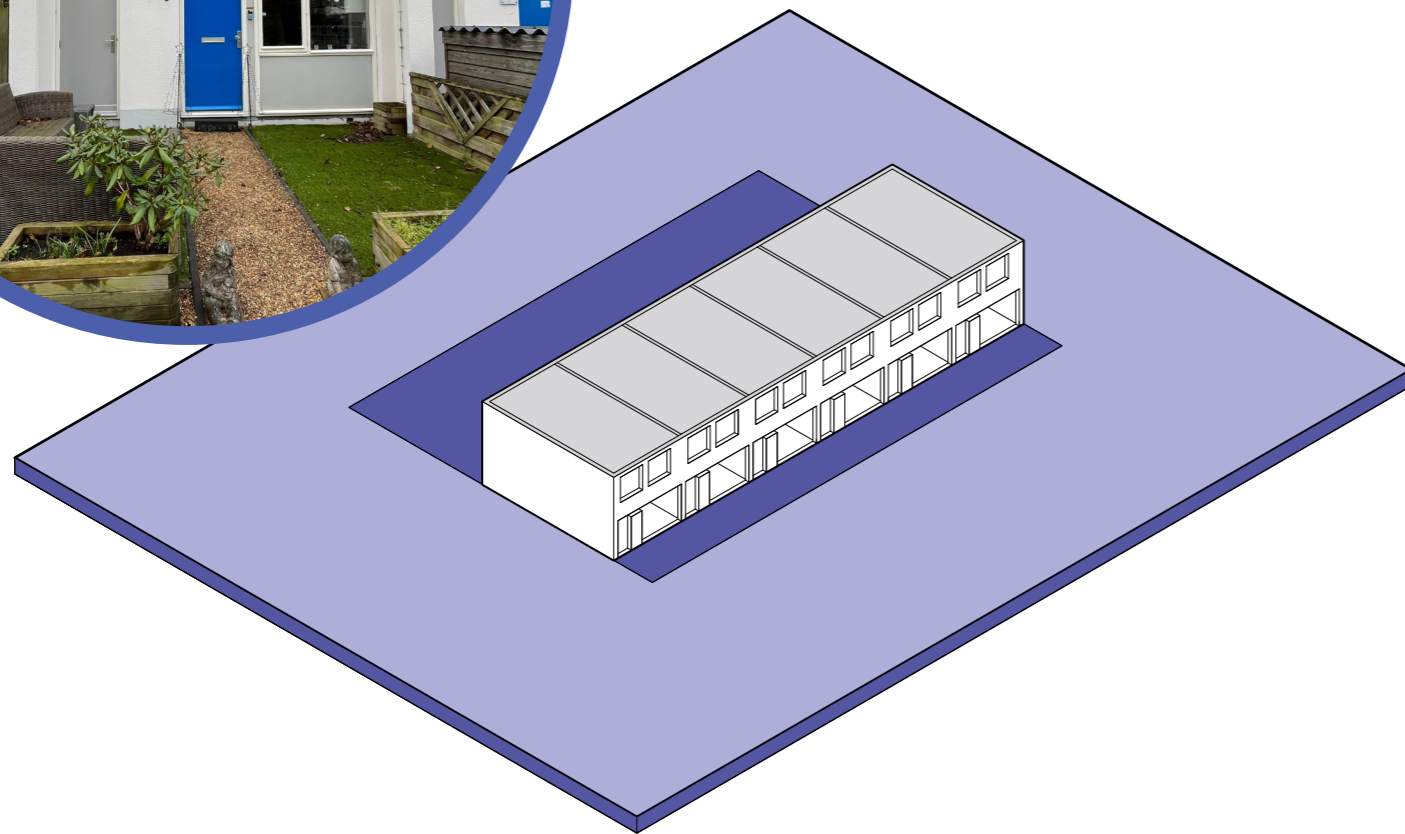
1:100

Research
Location
The toolbox
The design

- **Public building**
- **Private living blocks**
- **Construction & façade**
- **Hubs**
- **Climate**
- **Masterplan**

Existing situation

Different layers



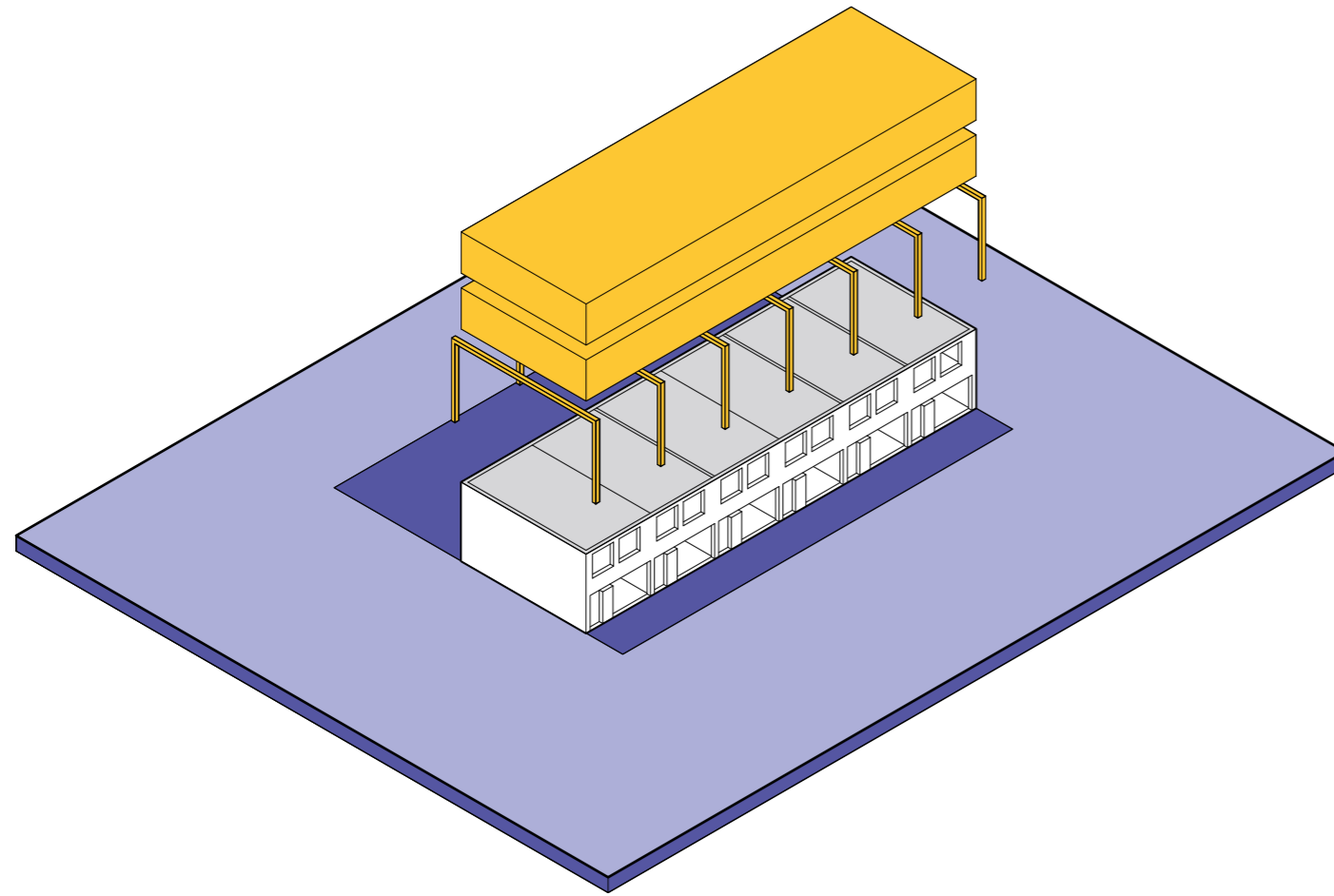
lay-out
concrete brick

façade
brick, stucco, thin insulation layer,
windows/doors and frames

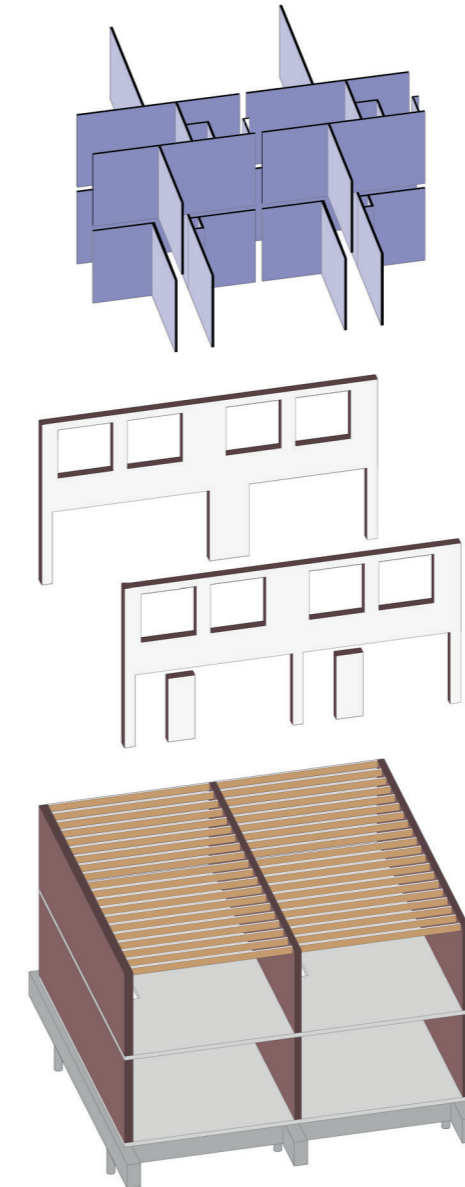
construction
brick, concrete, wood

Toolbox adjustments

Minimum adjustment



Keep the existing as it is and only add the extension



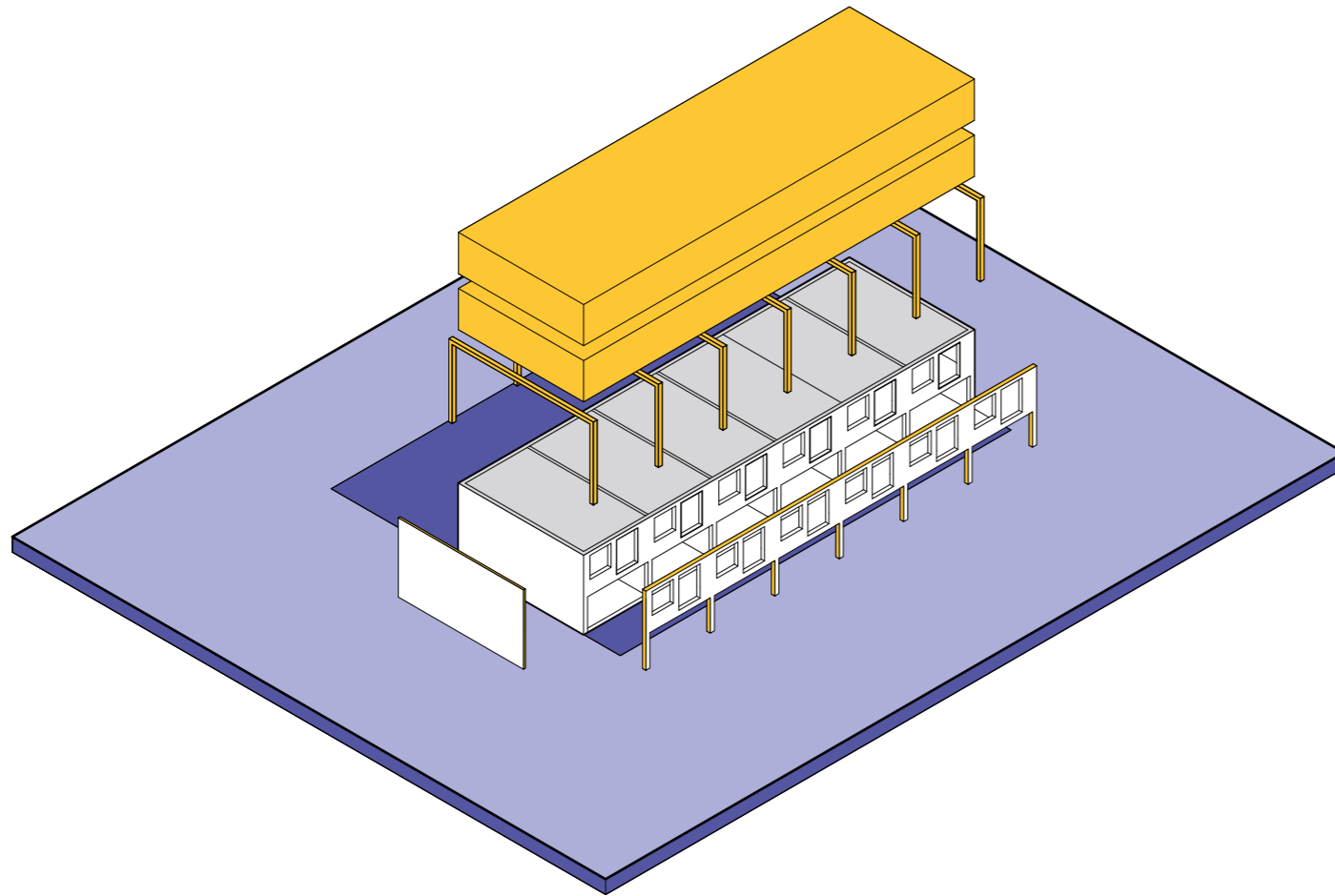
lay-out
KEEP

façade
KEEP

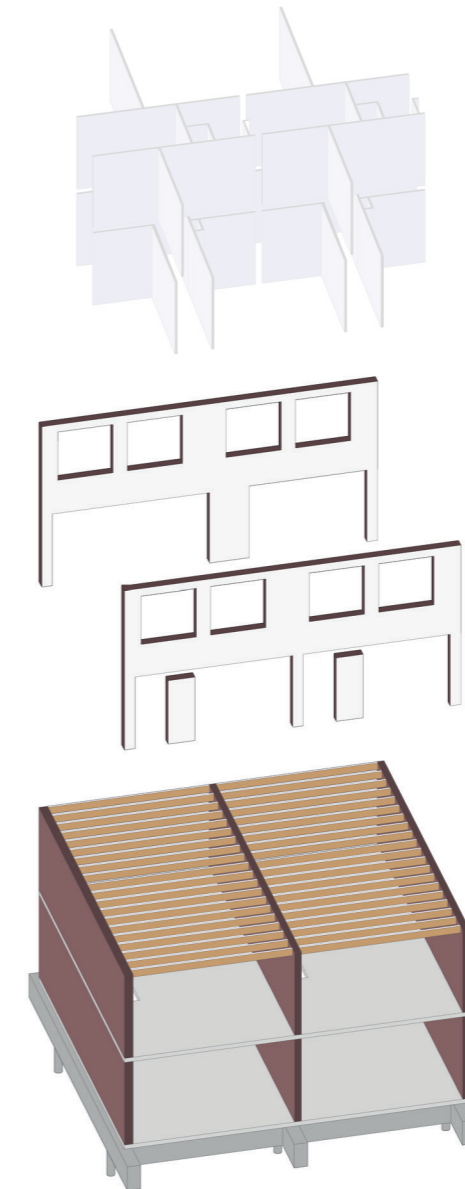
construction
KEEP

Toolbox adjustments

Moderate adjustment



Rearrange the lay-out, keep structure and facade, add insulation and make bigger openings if necessary

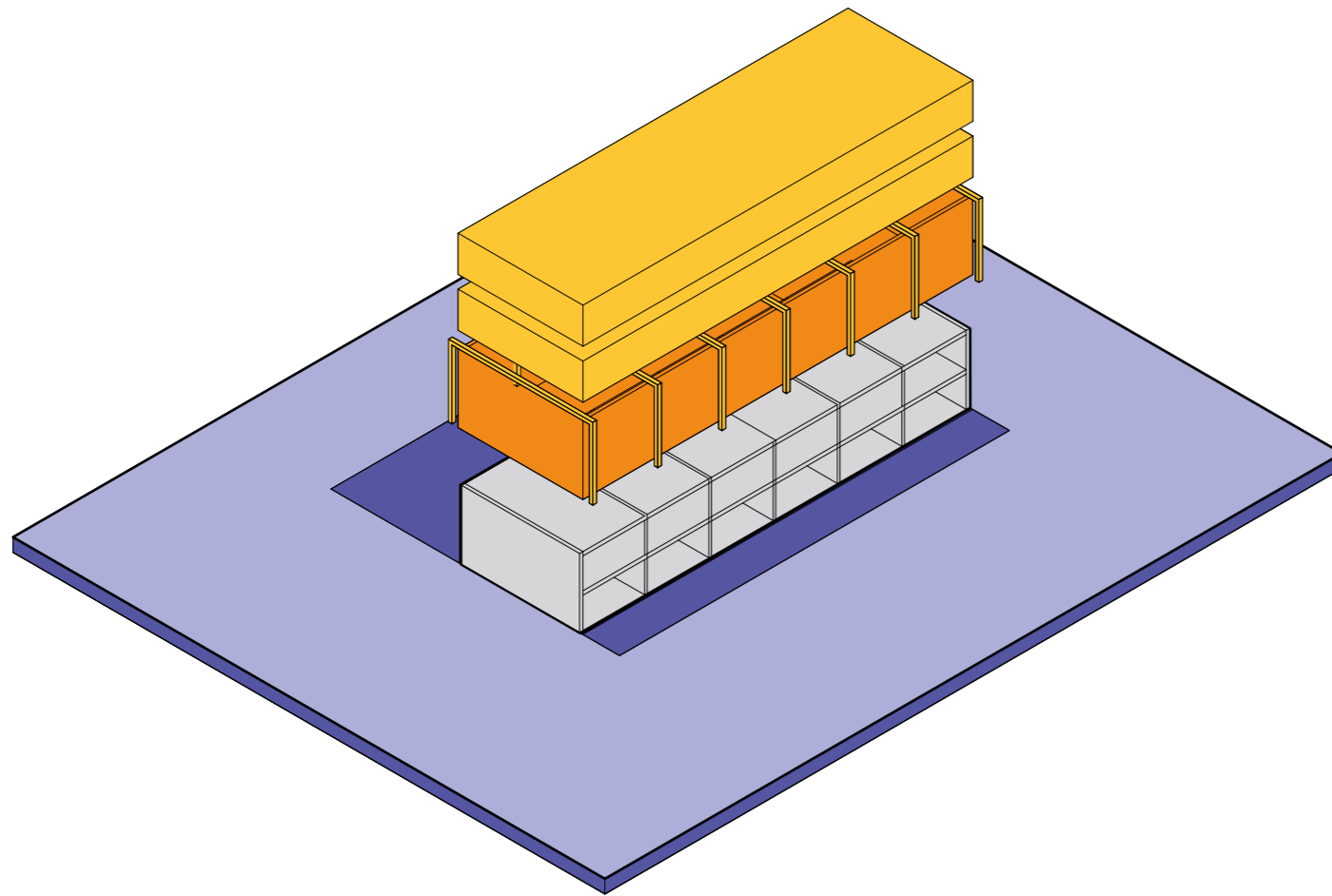


façade
SMALL ADJUSTMENTS

construction
KEEP

Toolbox adjustments

Maximum adjustment



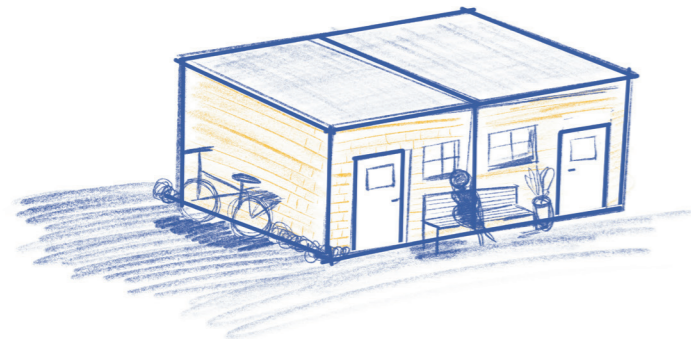
Rearrange the existing building, change the lay-out and façade



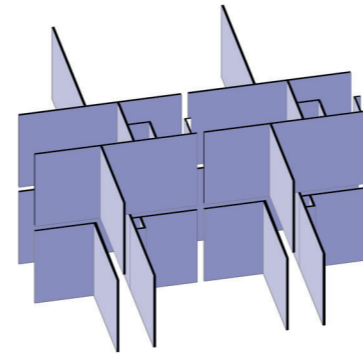
construction
KEEP

Circularity strategy

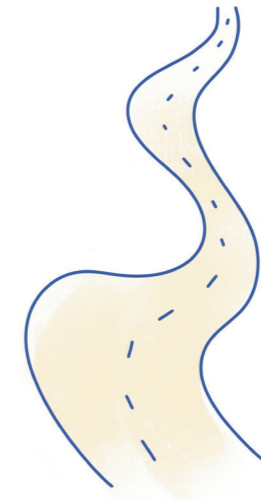
Waste management



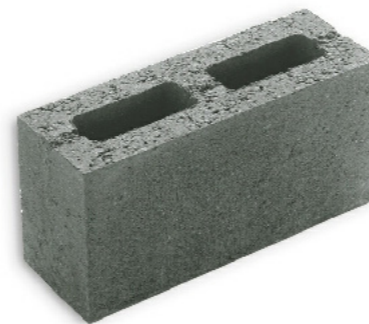
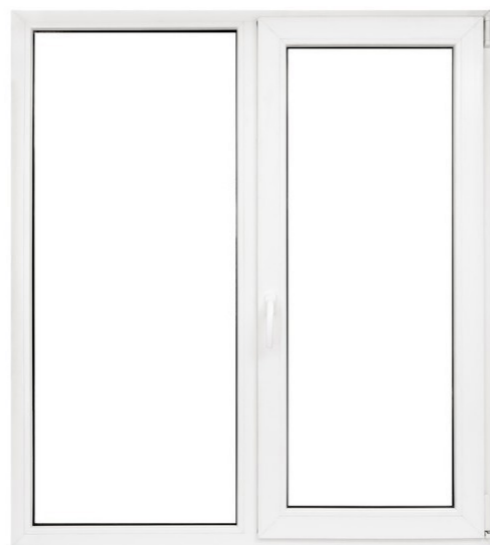
Bricks and windows used for the ateliers spaces in the courtyard



Bricks and concrete bricks reused for internal and external walls public part

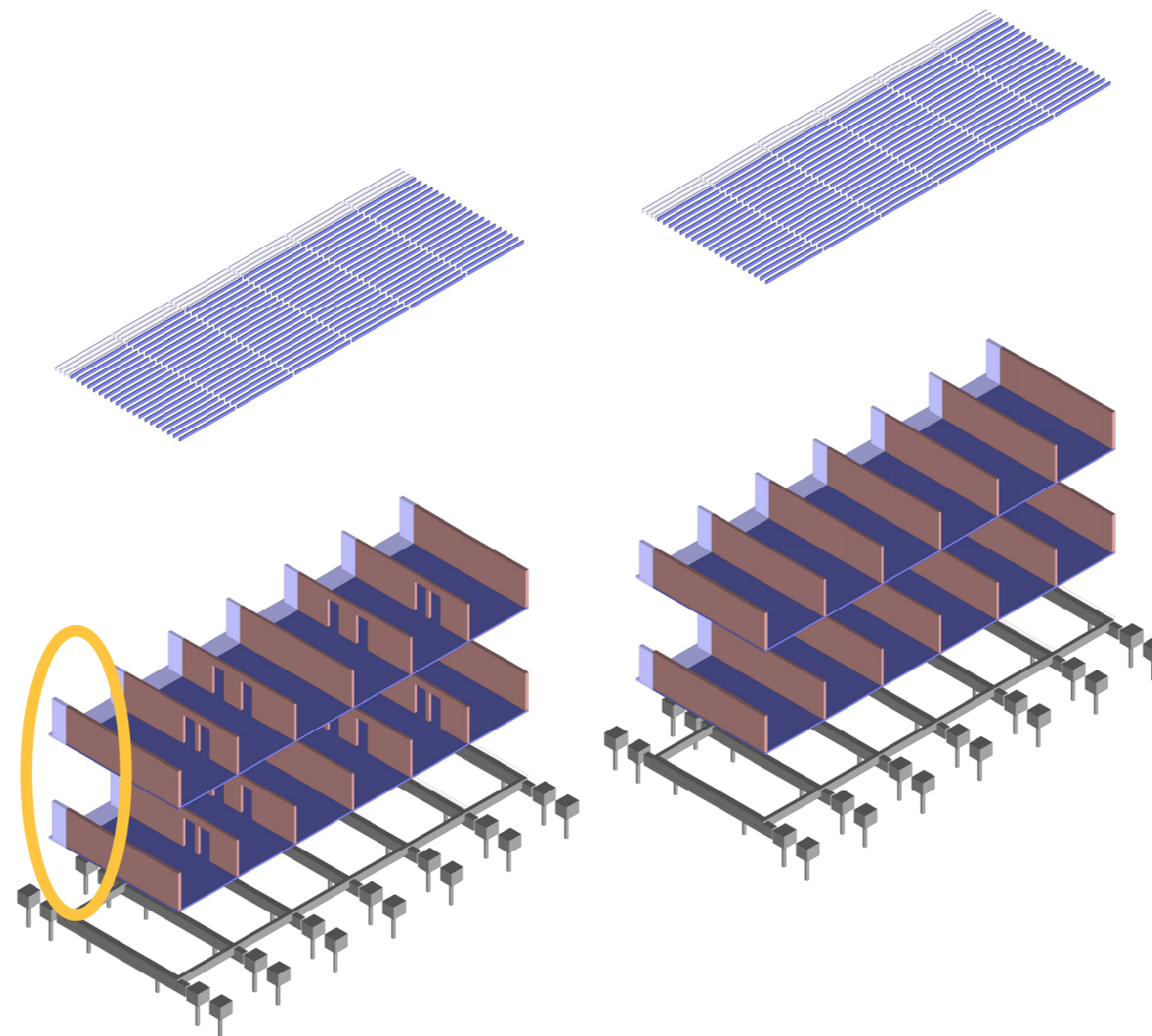


Rest bricks used for gravel pathways and sustainable disposal



Construction axo

Existing 60's building with extension

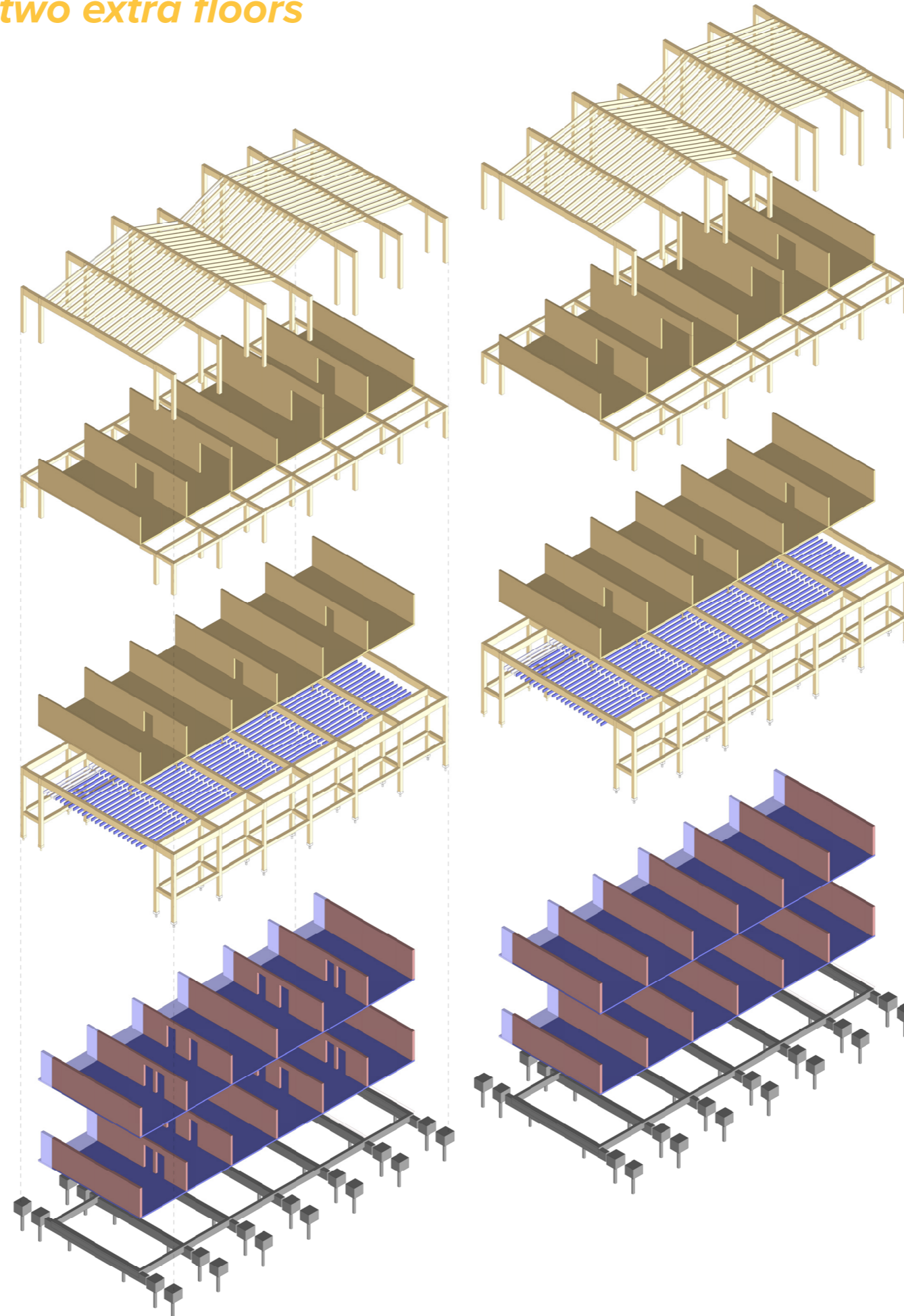


Existing structure:

- Concrete foundation
- Concrete hollow-core floor slab 140 mm
- Brick load bearing walls
- Extension on the garden side with 1,5m
- Timber roof

Construction axo

Add a new construction for two extra floors



Existing structure:

- Concrete foundation
- Concrete hollow-core floor slab 140 mm
- Brick load bearing walls
- Extension on the garden side with 1,5m
- Timber roof

New structure:

- Timber beams and columns
- CLT floors and walls
- Concrete foundation

Façade elevation

North side, gallery access



Block 2

Block 1

Façade elevation

South side, balcony

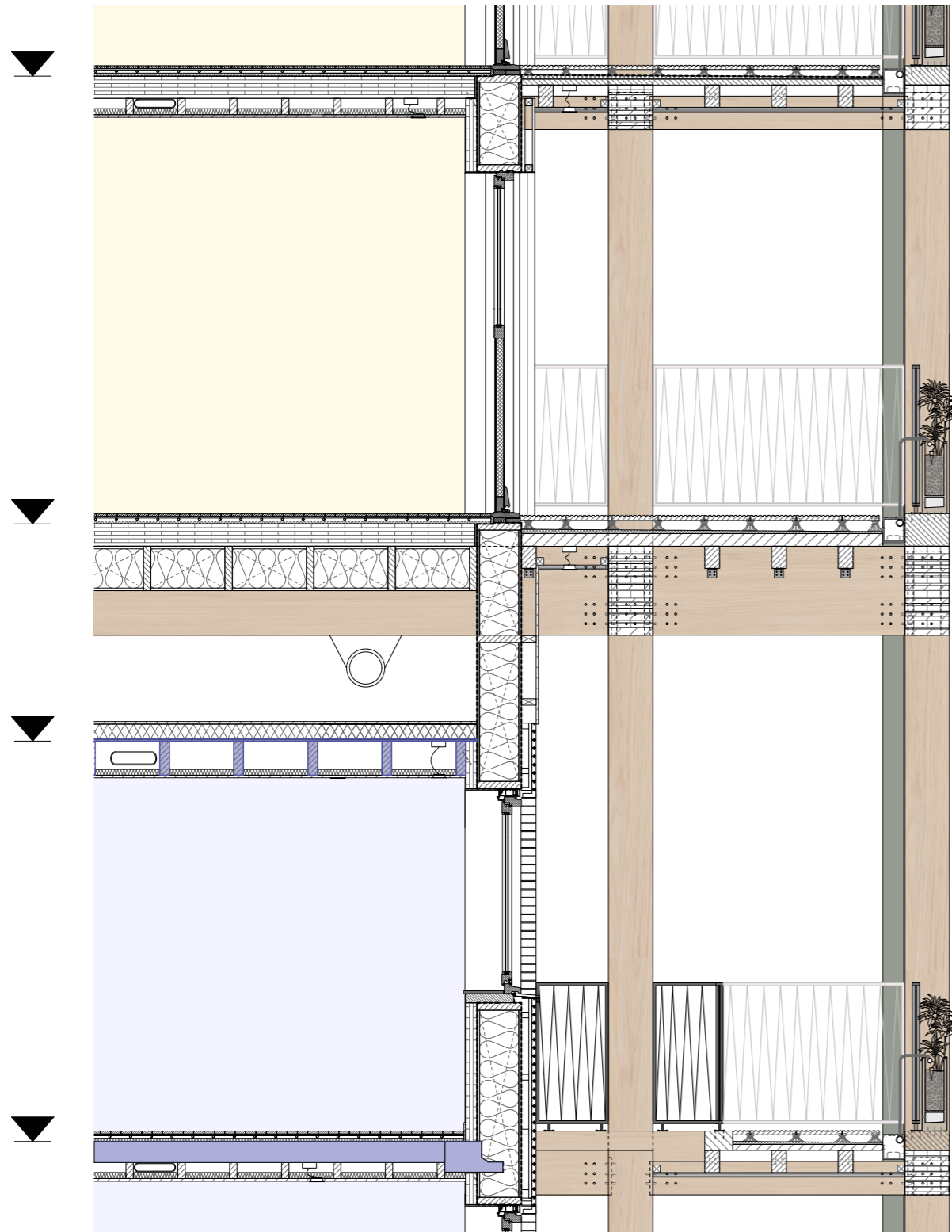


Block 1

Block 2

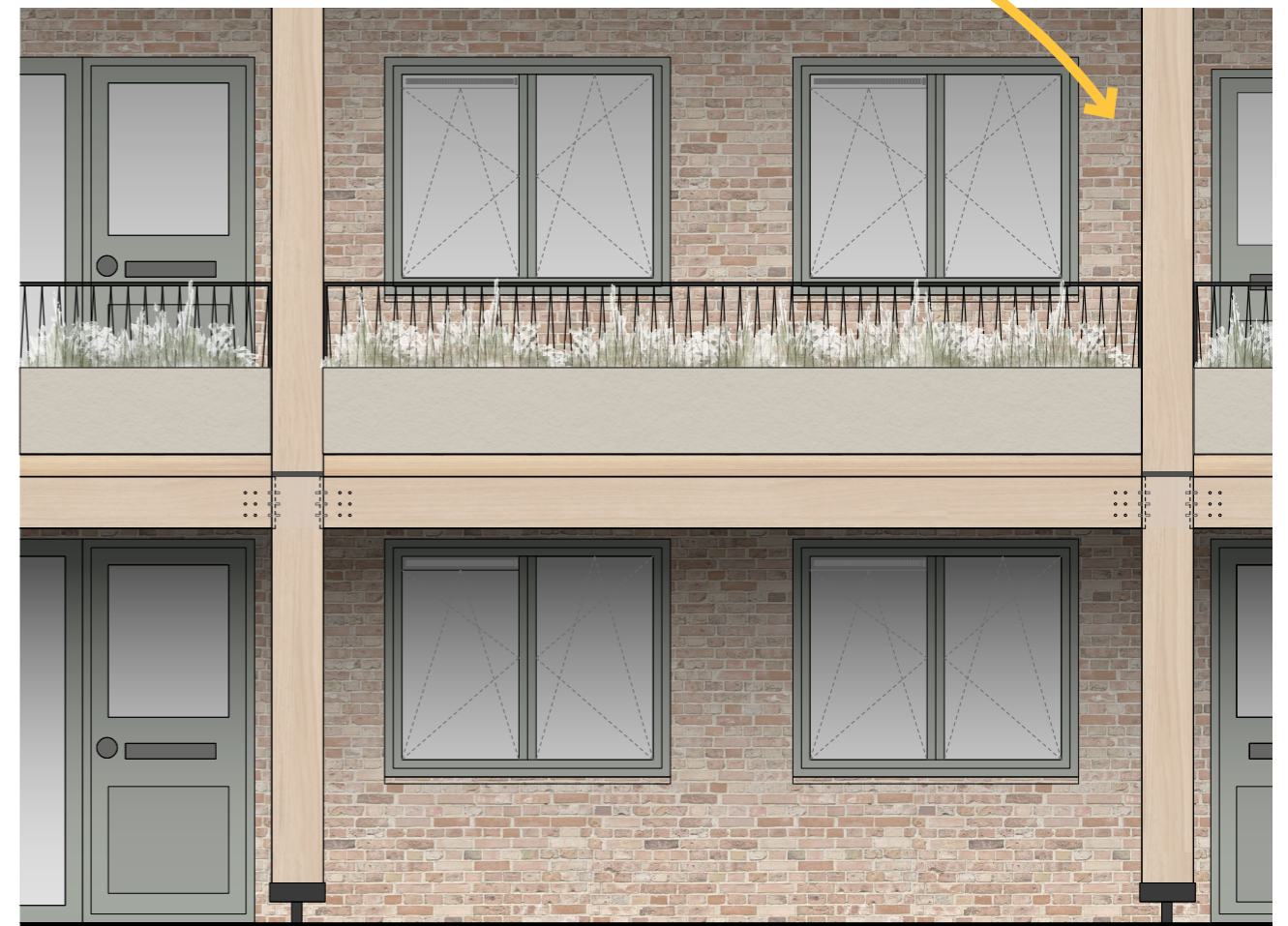
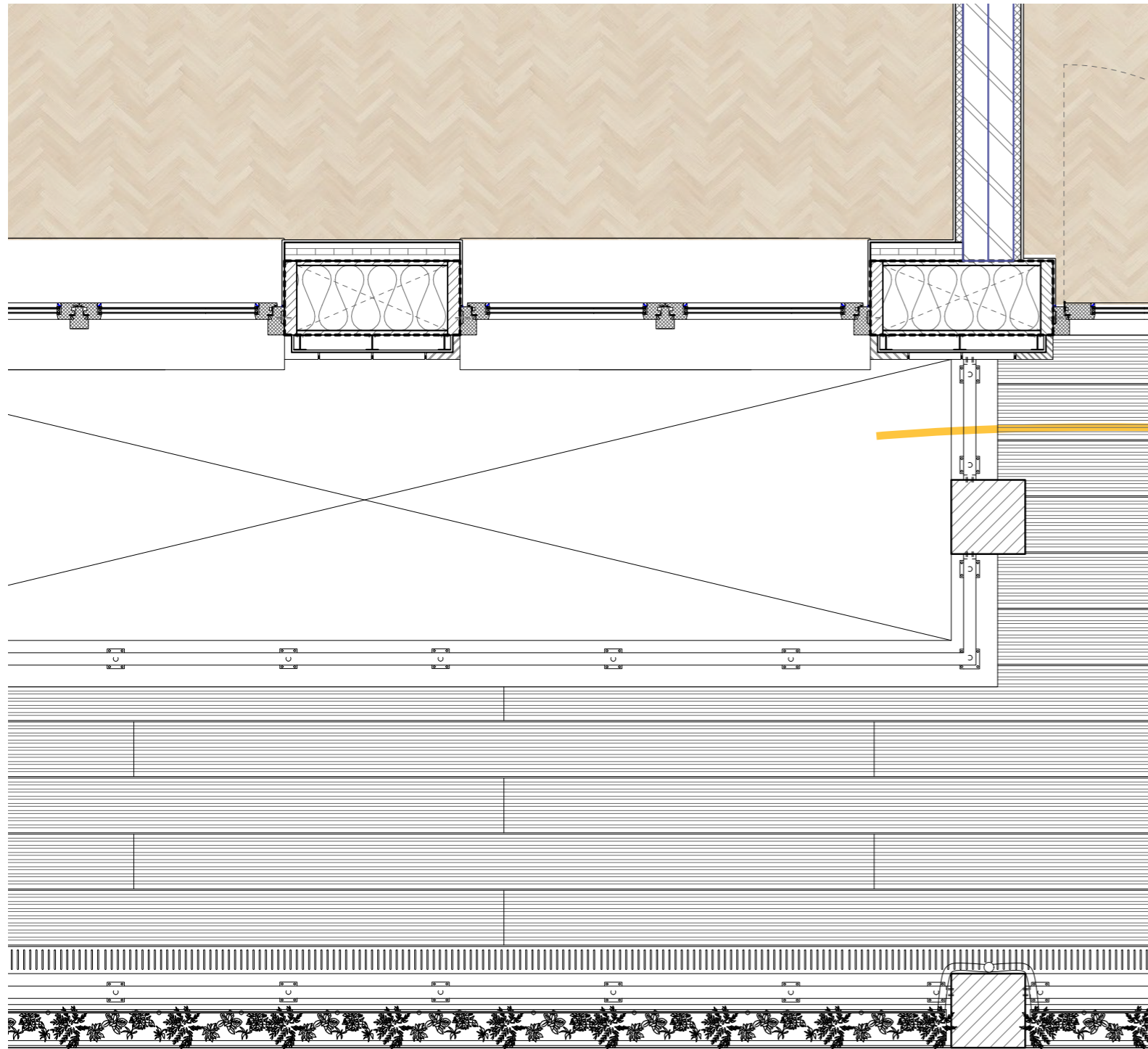
Façade fragment

Transition existing to expansion



Horizontal detail

Void in gallery access



Research
Location
The toolbox
The design

- **Public building**
- **Private living blocks**
- **Construction & façade**
- **Hubs**
- **Climate**
- **Masterplan**

John & Claire

One bedroom apartment with garden

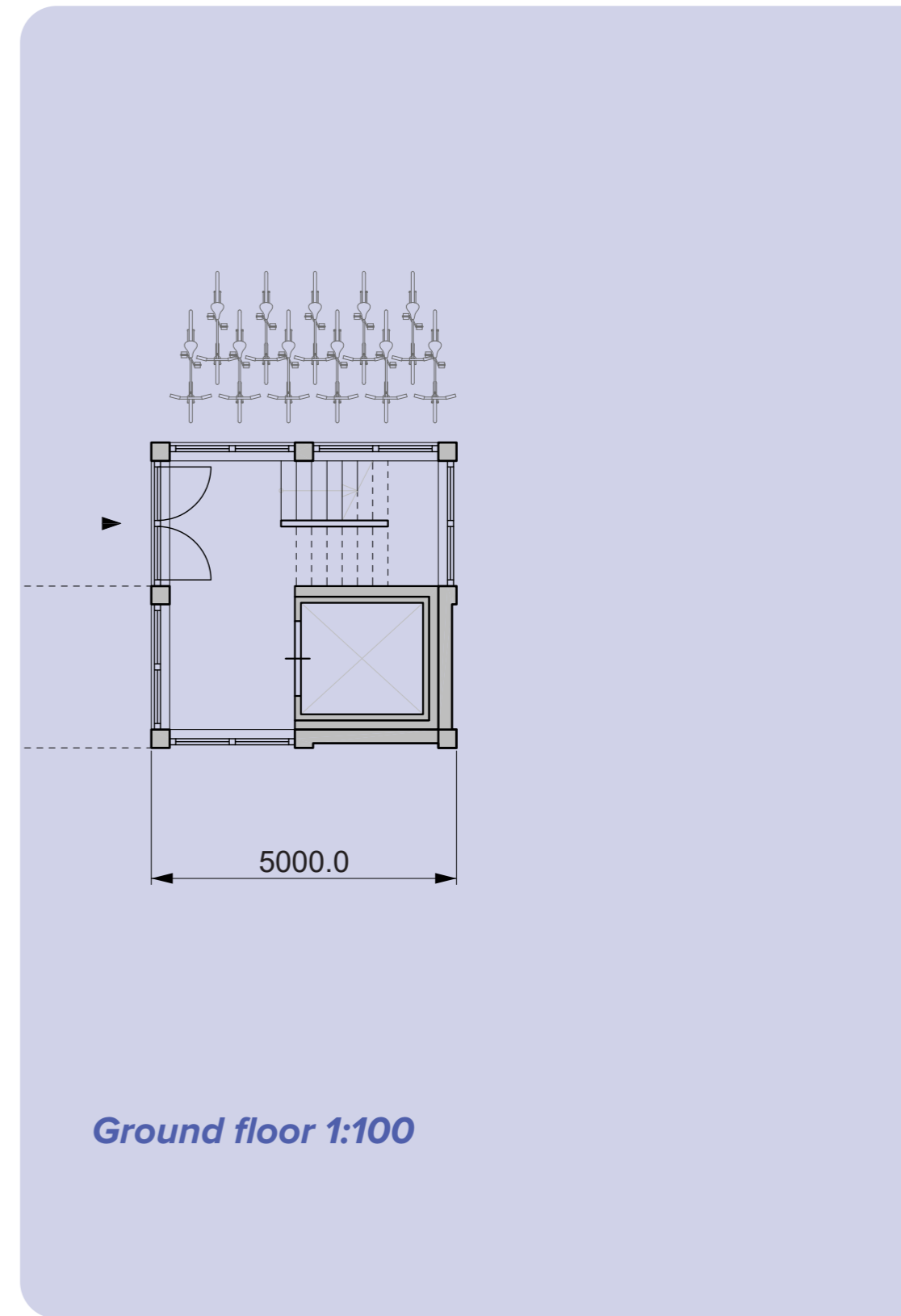
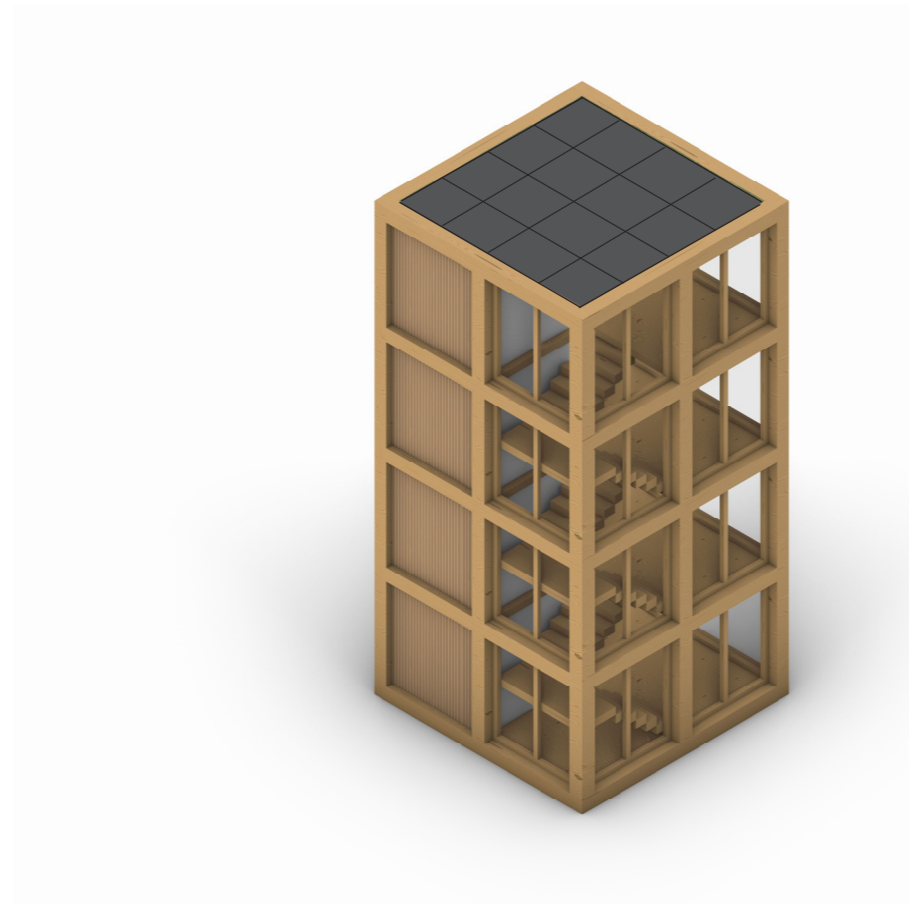
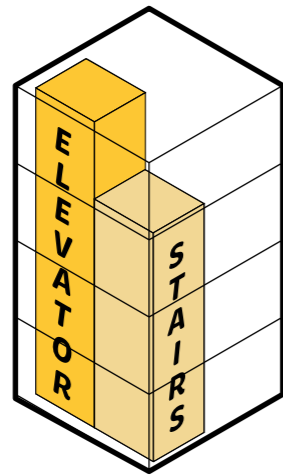


One bedroom apartment
75 m²
24x

1:100

HUB Small

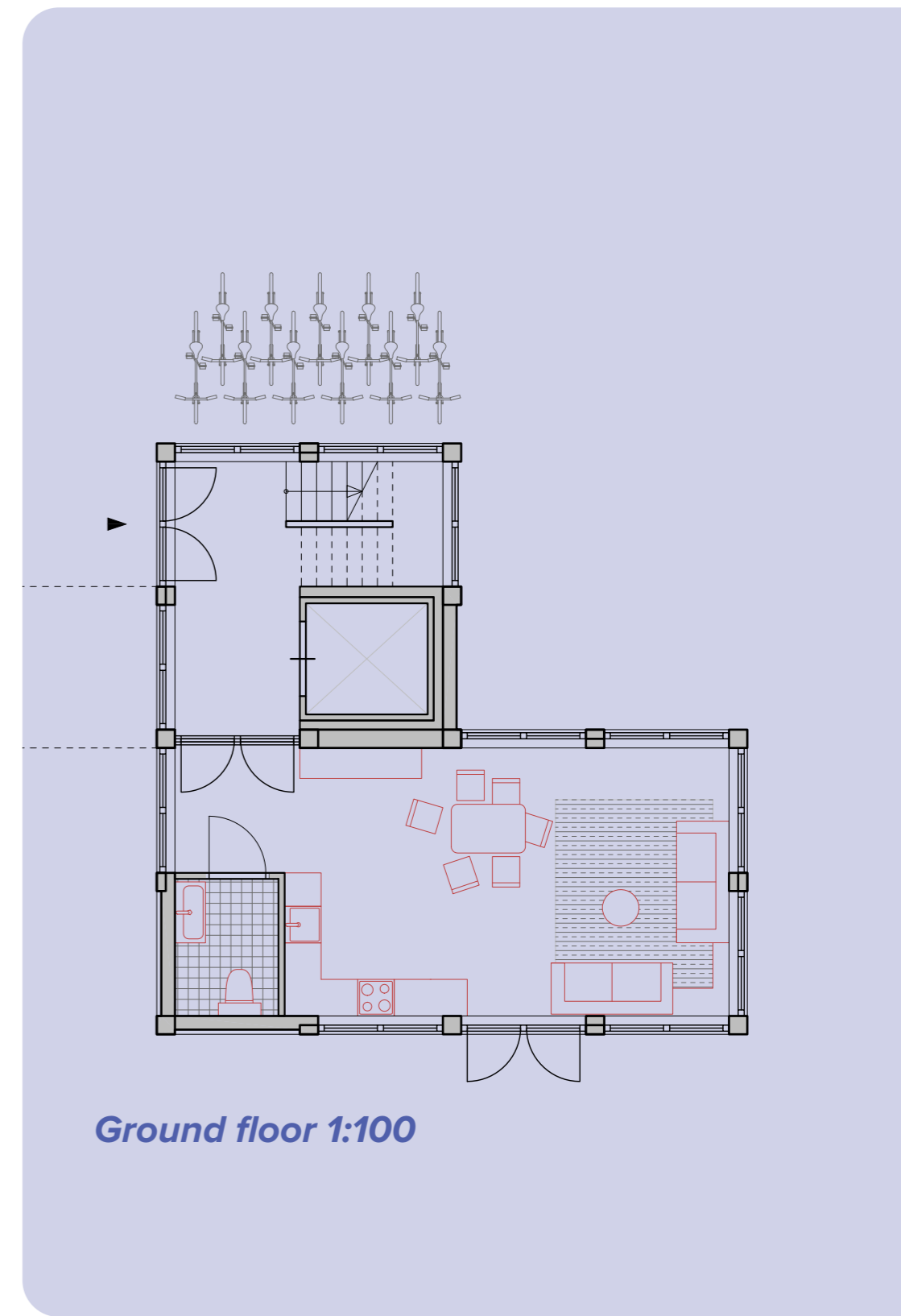
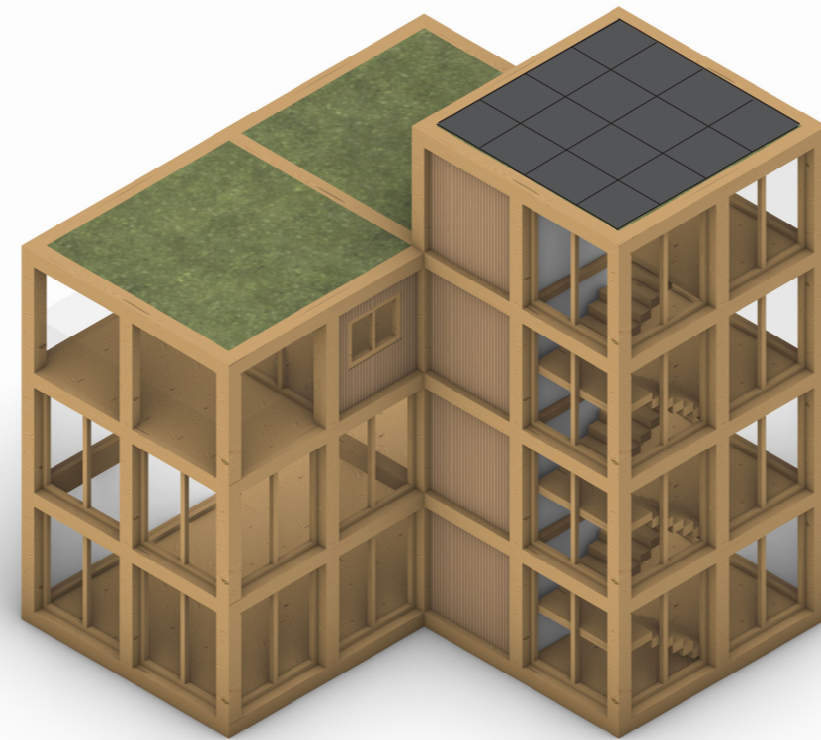
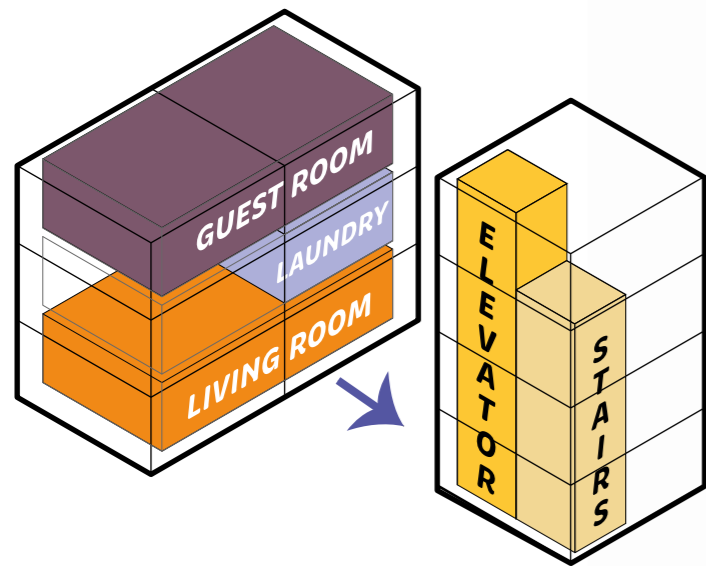
Access area



Ground floor 1:100

HUB Medium

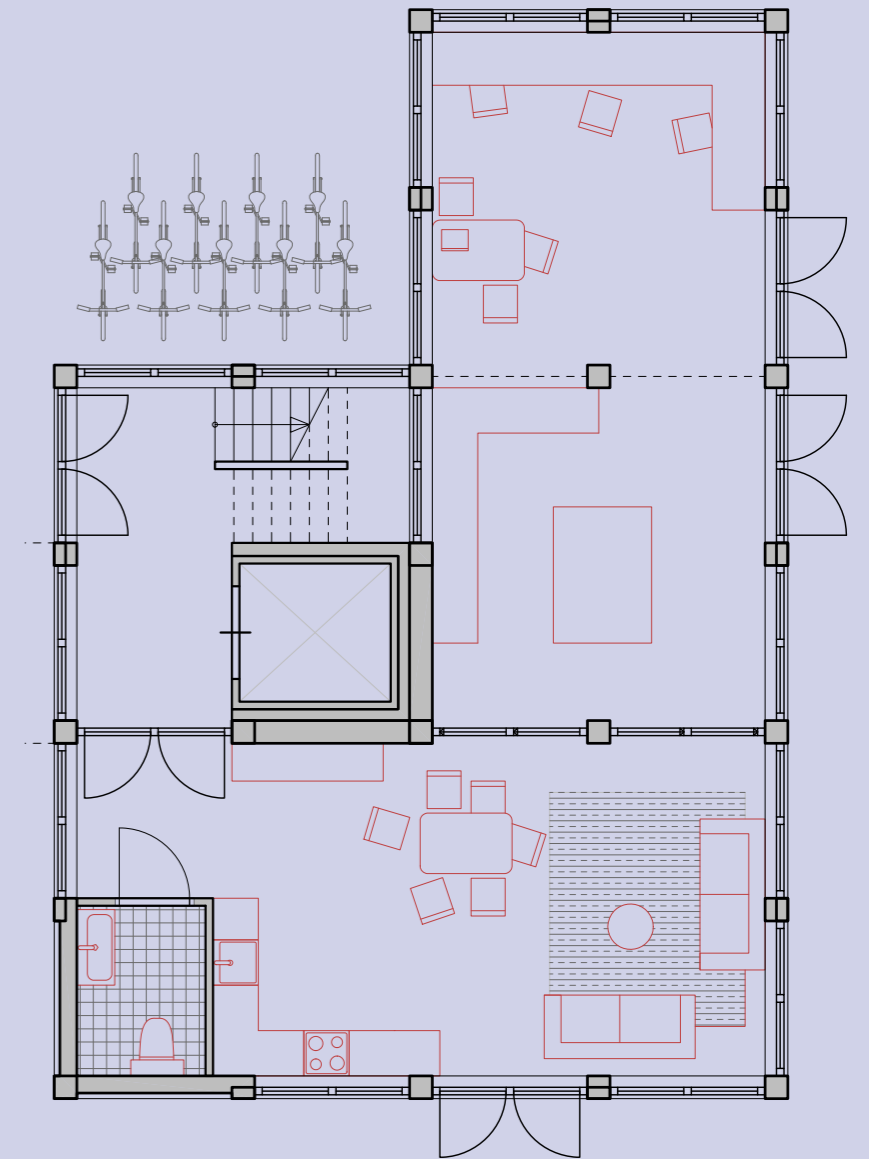
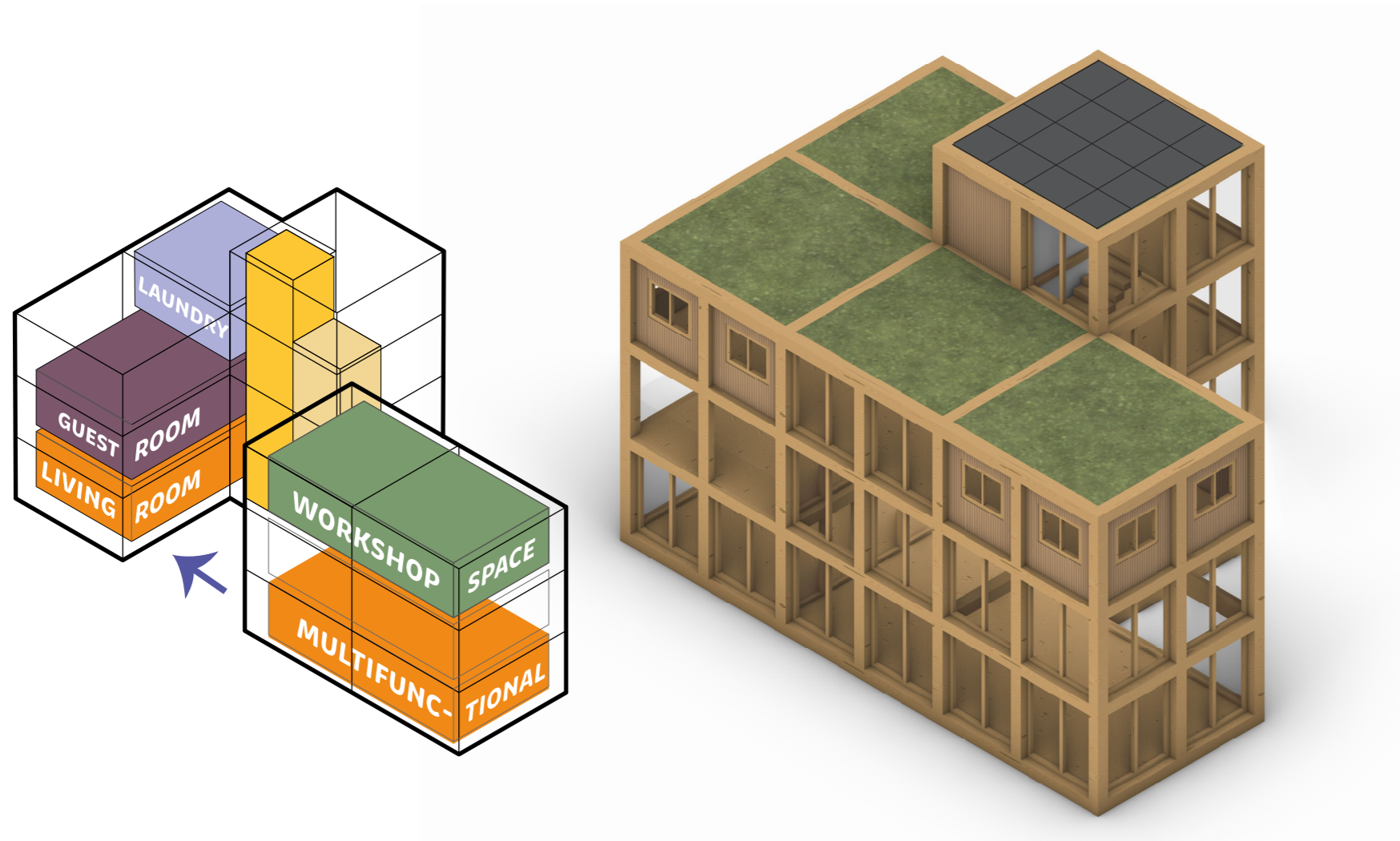
Center for encounter



Ground floor 1:100

HUB Large

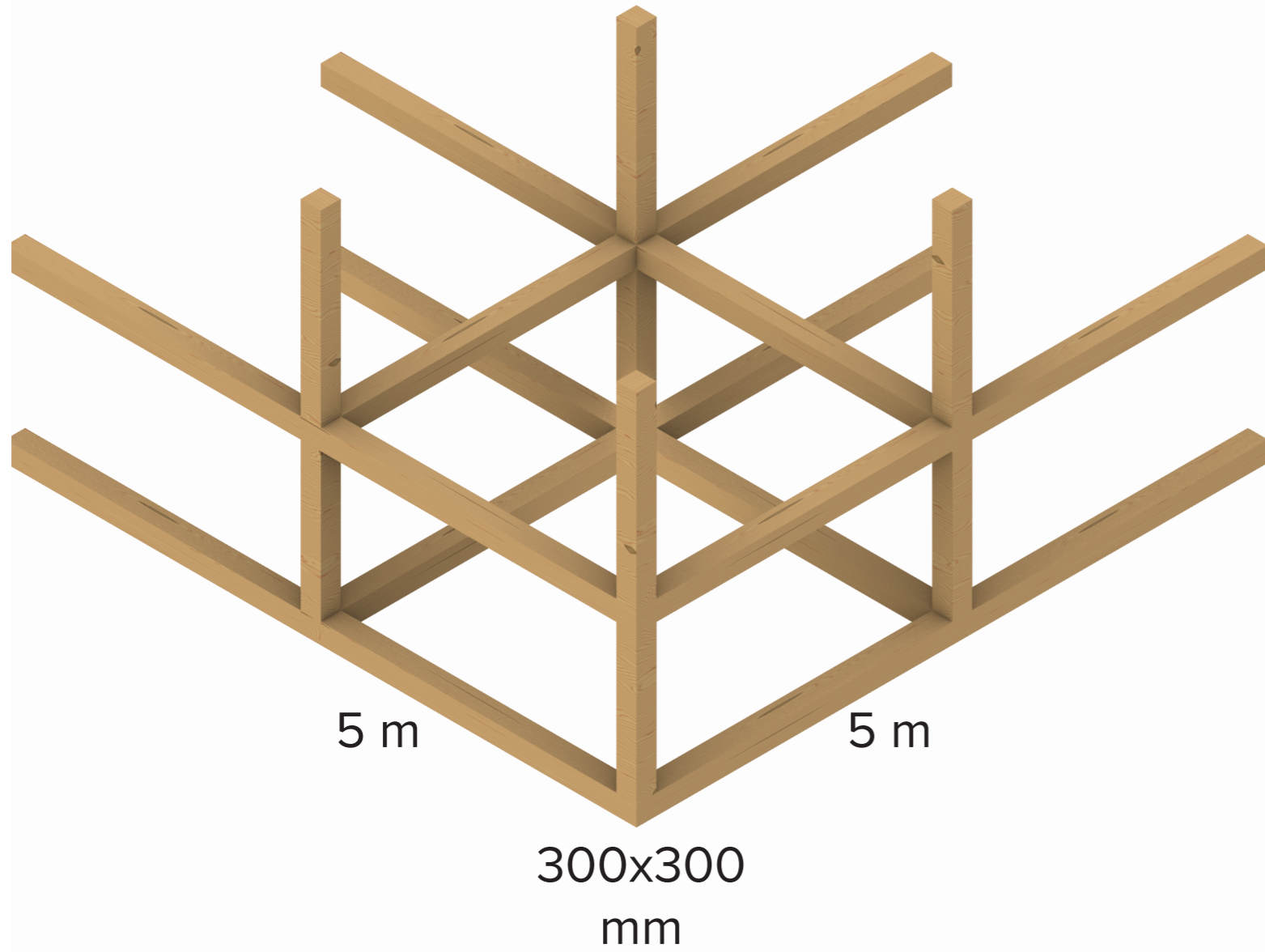
Centre for encounter & activities



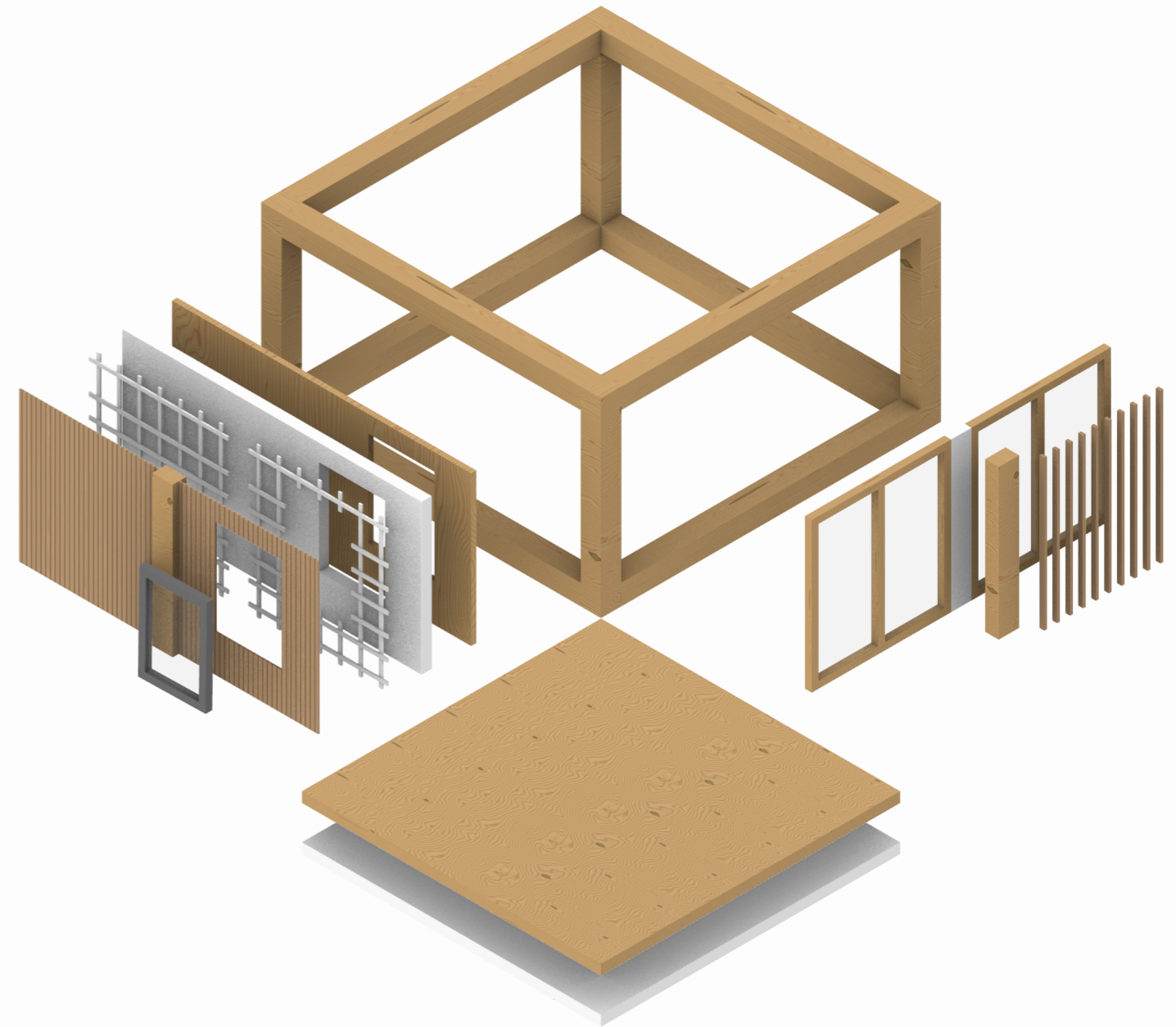
Ground floor 1:100

Modular and flexible

Structure



Different facade elements



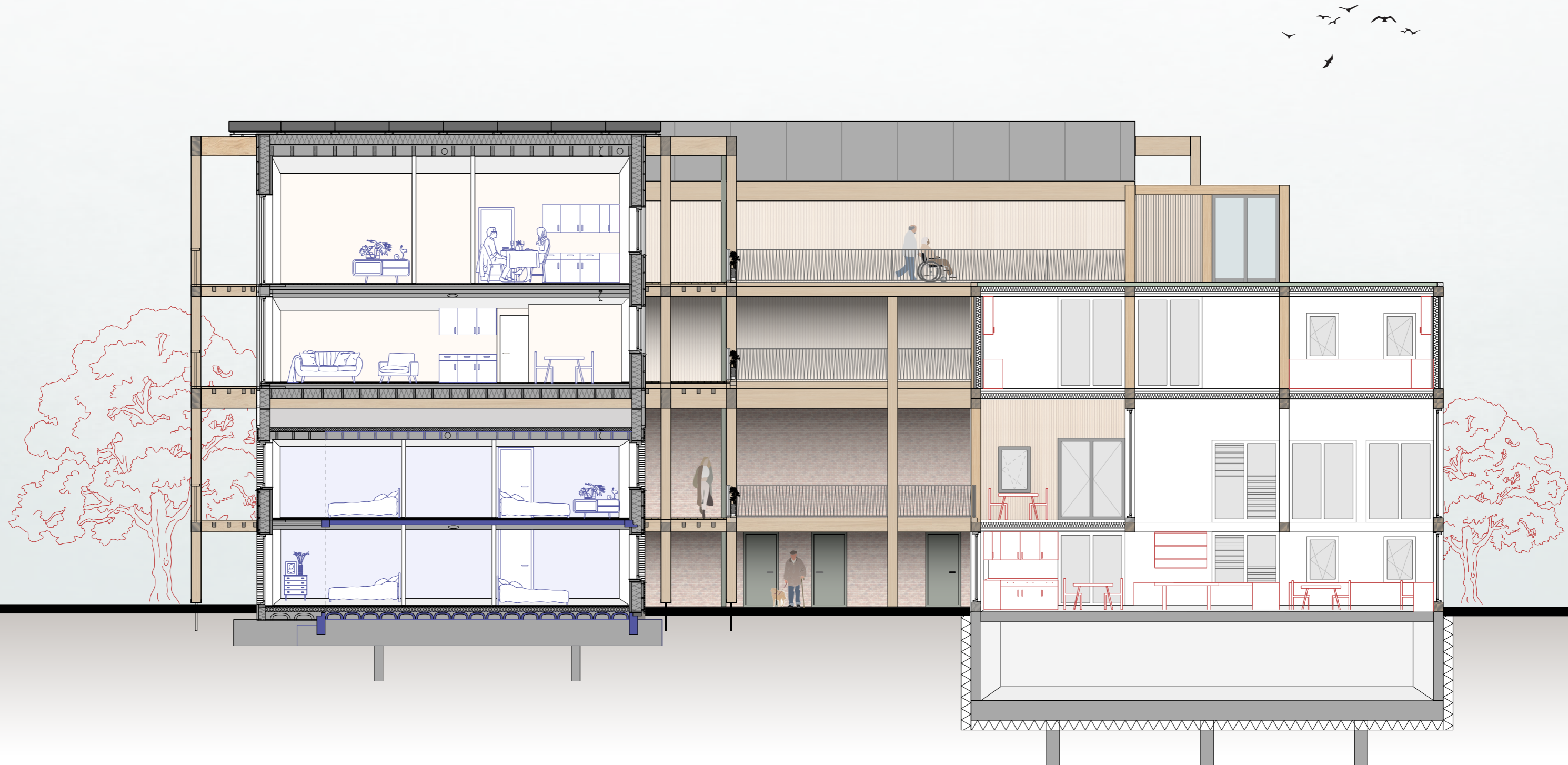
Connection hubs and blocks



Connection hubs and blocks



Doorsnede blok & HUB Large

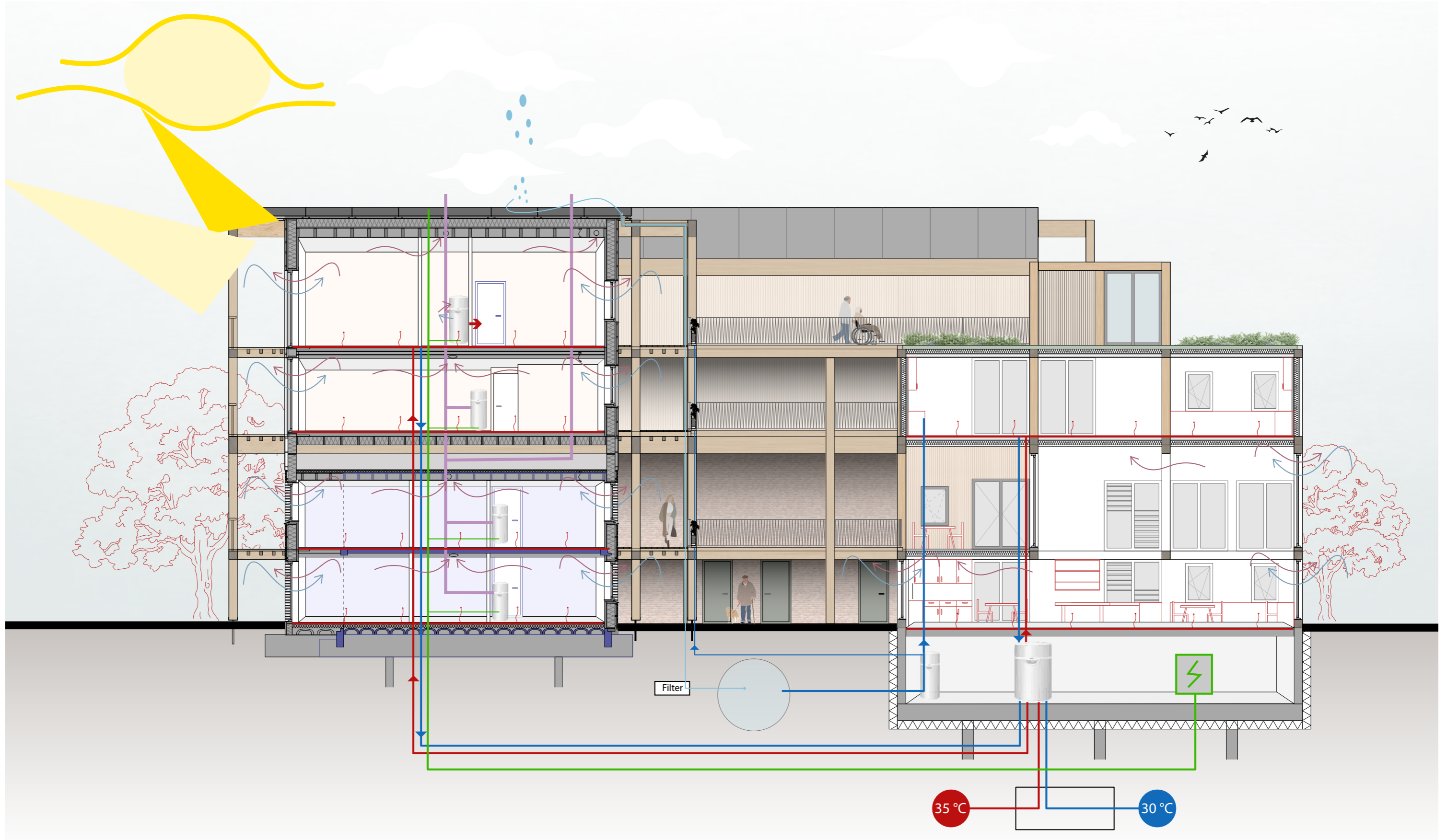


Research
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The design

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- **Masterplan**

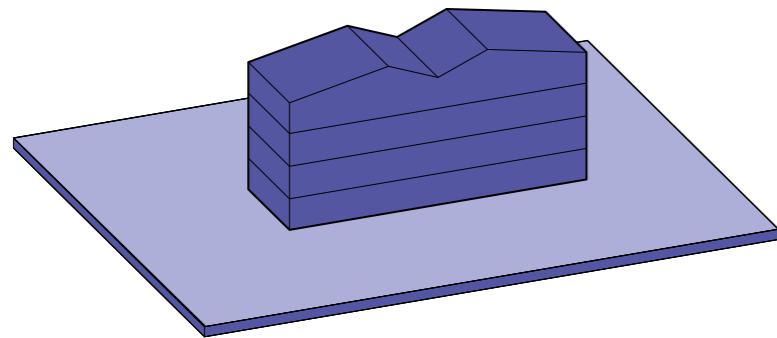
Climate principle

Summer and winter situation



Space climate qualities

Different zones

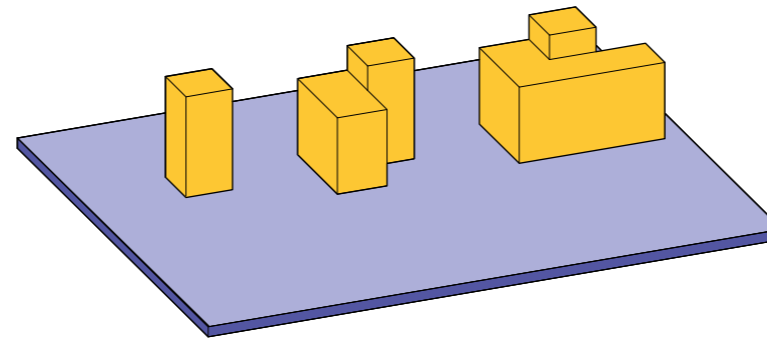


Zone A
Housing units

Permanent residence

Space climate qualities:

- Ventilation type C*
- Between 18-21 °C*
- View on nature*
- Enough daylight*
- Relative humidity between 40-70%*
- Healthy indoor climate and acoustics*

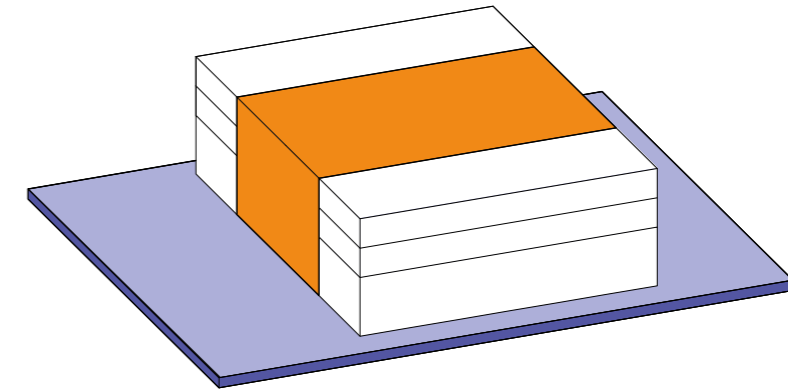


Zone B
Communal hubs & public spaces

Temporary residence, smaller spaces

Space climate qualities:

- Ventilation type C*
- Around 18 °C*
- View on lively courtyard (community)*
- Relative humidity between 40-70%*



Zone C
Communal atrium & swimming pool

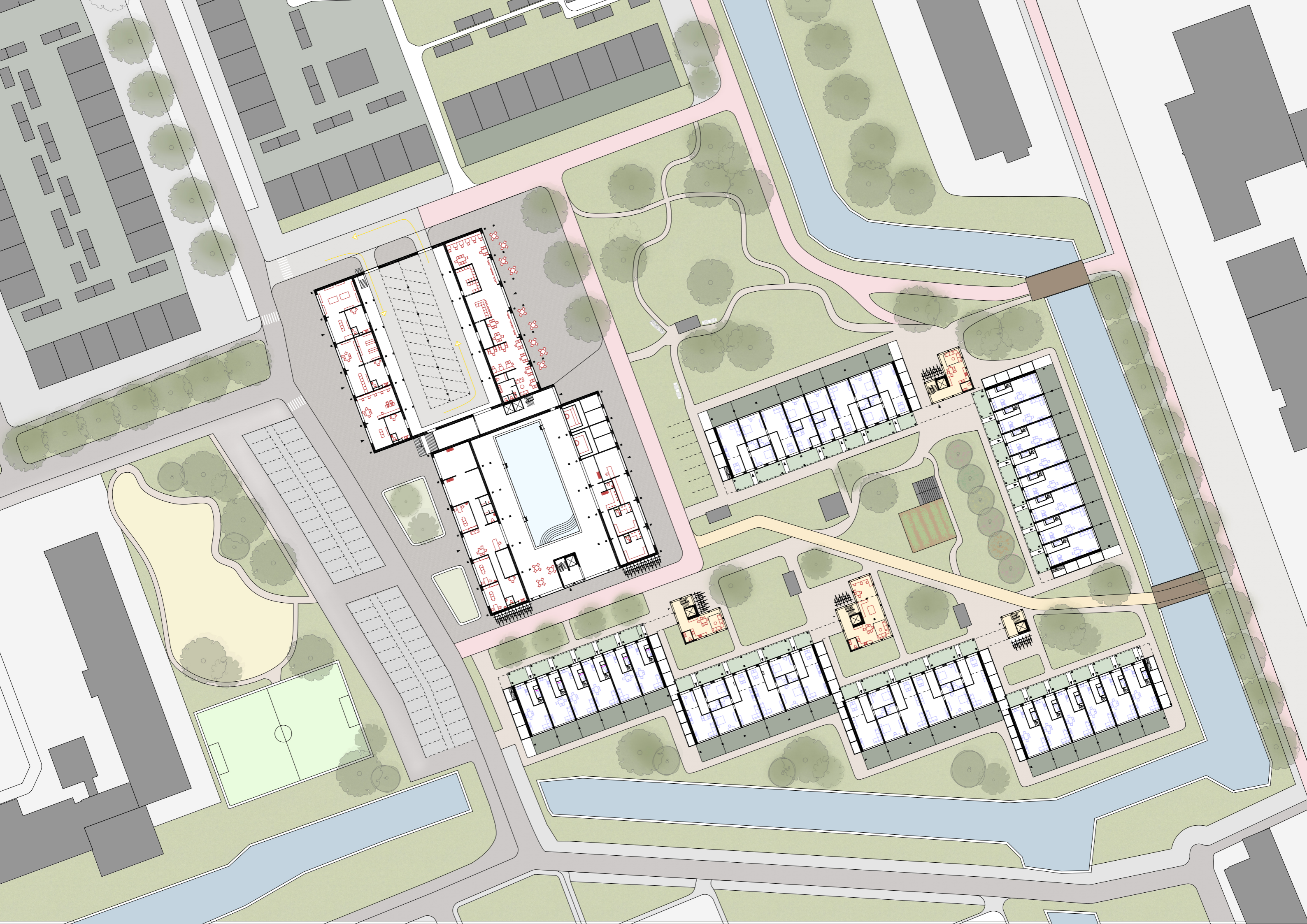
Temporary residence, large spaces

Space climate qualities:

- Ventilation type D*
- Around 18 °C*
- Relative humidity between 40-70%*
(swimmingpool 50-70%)

Research
Location
The toolbox
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- **Private living blocks**
- **Construction & façade**
- **Hubs**
- **Climate**
- **Masterplan**



Thank you!

