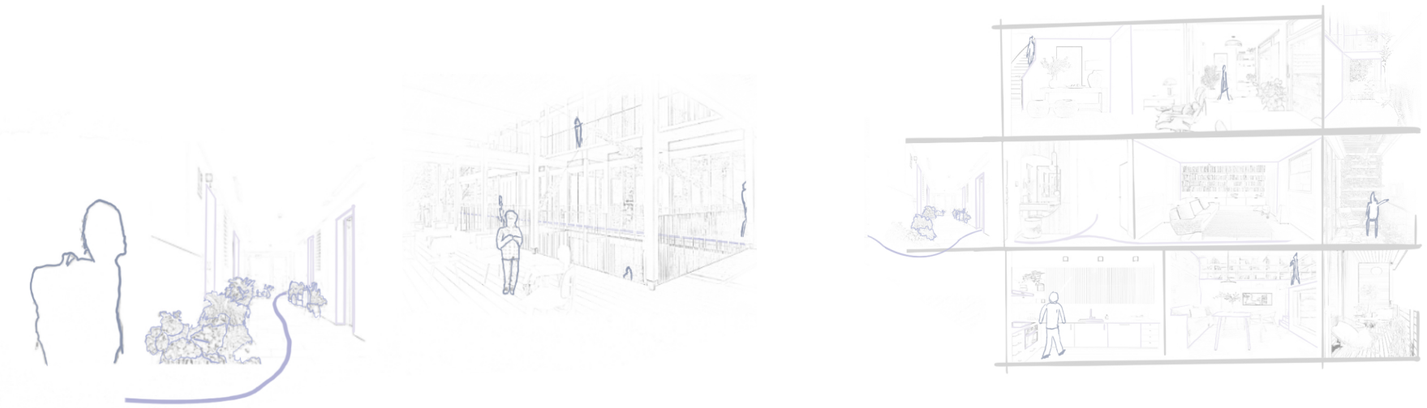


Verticalization of density

Exploring the Impact of Density on Social Quality of Life

Ryan Daun - 5709164 - TU Delft MSc Architecture - Advanced Housing Design, Densifying Amsterdam - P5 Presentation - April 9th 2025

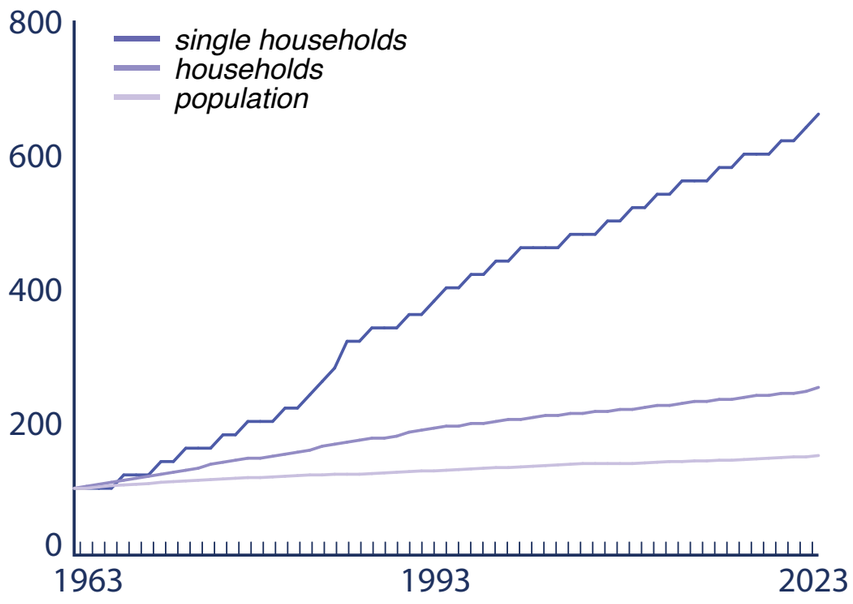
01

Contents

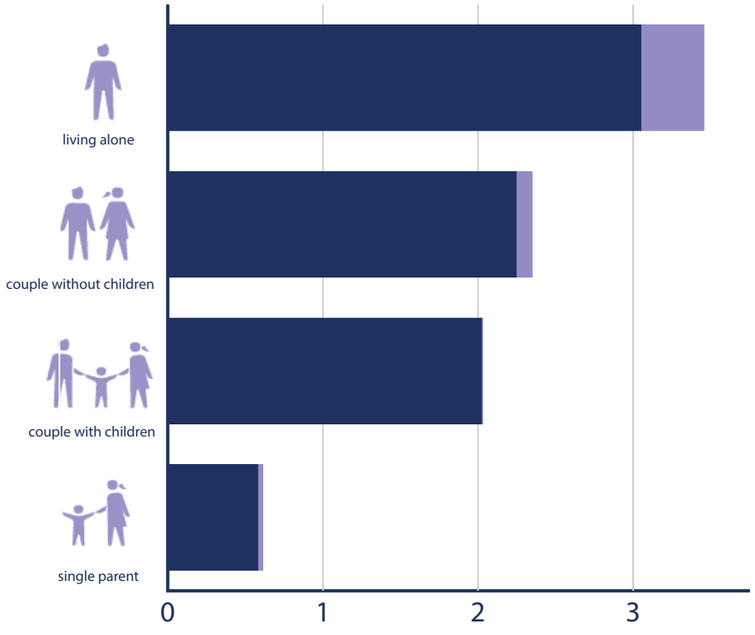
- Fascination & relevance
- Problem statement
- Research
- Design principles
- Design
- Detailing
- Strategies

HK policymakers focusing on ways to fix housing issue
- (China Daily, 2019)

Meer mensen, minder ruimte: het woningtekort is niet zomaar opgelost - (Schuttenhelm, 2024)



Population growth in relation to household types: by Author - data: (Centraal Bureau voor de Statistiek);



Households by types: by Author - data: (Centraal Bureau voor de Statistiek, 2018a)

Problem statement

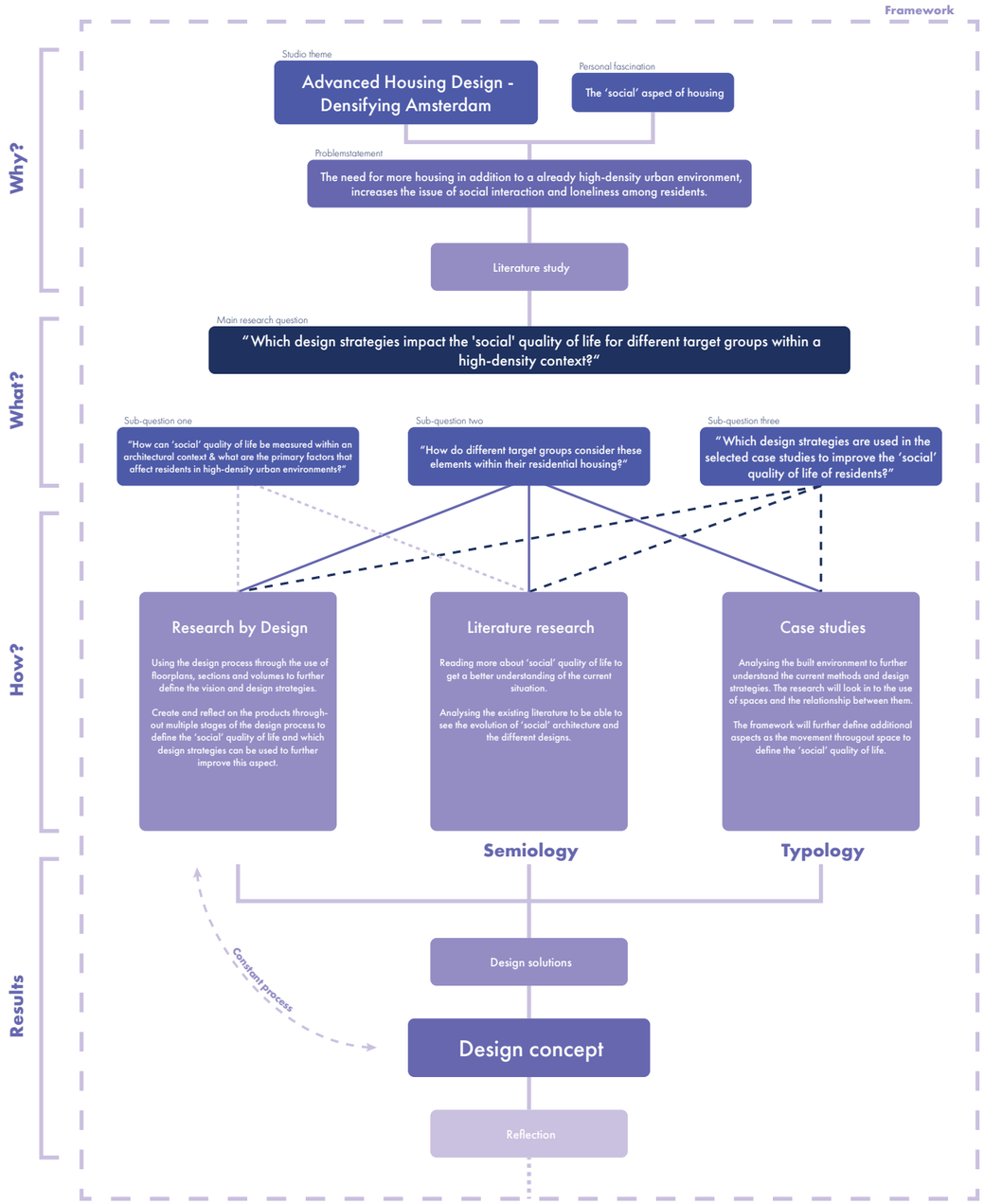
“The need for more housing within an already high-density urban environment, increases the issue of social interaction among residents, this decrease in the quality of social life makes creating a socially sustainable environment within a high-density context even more challenging”

Research Question

“Which design strategies impact the ‘social’ quality of life for different target groups within a high density context?“

- design
  - Human-centred design
  - Co-Housing
  - Programm & Typology
  - Public & Private spaces
  - Transitional & intermediate spaces
- ‘social’
  - Communities
  - Influence
  - Ownership
  - Participation
- target groups
  - Students
  - Starters
  - Families
  - Elderly
- high density context
  - Densification

Methodology



What?

Main research question

"Which design strategies impact the 'social' quality of life for different target groups within a high-density context?"

Sub-question one

"How can 'social' quality of life be measured within an architectural context & what are the primary factors that affect residents in high-density urban environments?"

Sub-question two

"How do different target groups consider these elements within their residential housing?"

Sub-question three

"Which design strategies are used in the selected case studies to improve the 'social' quality of life of residents?"

How?

Research by Design

Using the design process through the use of floorplans, sections and volumes to further define the vision and design strategies.

Create and reflect on the products through-out multiple stages of the design process to define the 'social' quality of life and which design strategies can be used to further improve this aspect.

Literature research

Reading more about 'social' quality of life to get a better understanding of the current situation.

Analysing the existing literature to be able to see the evolution of 'social' architecture and the different designs.

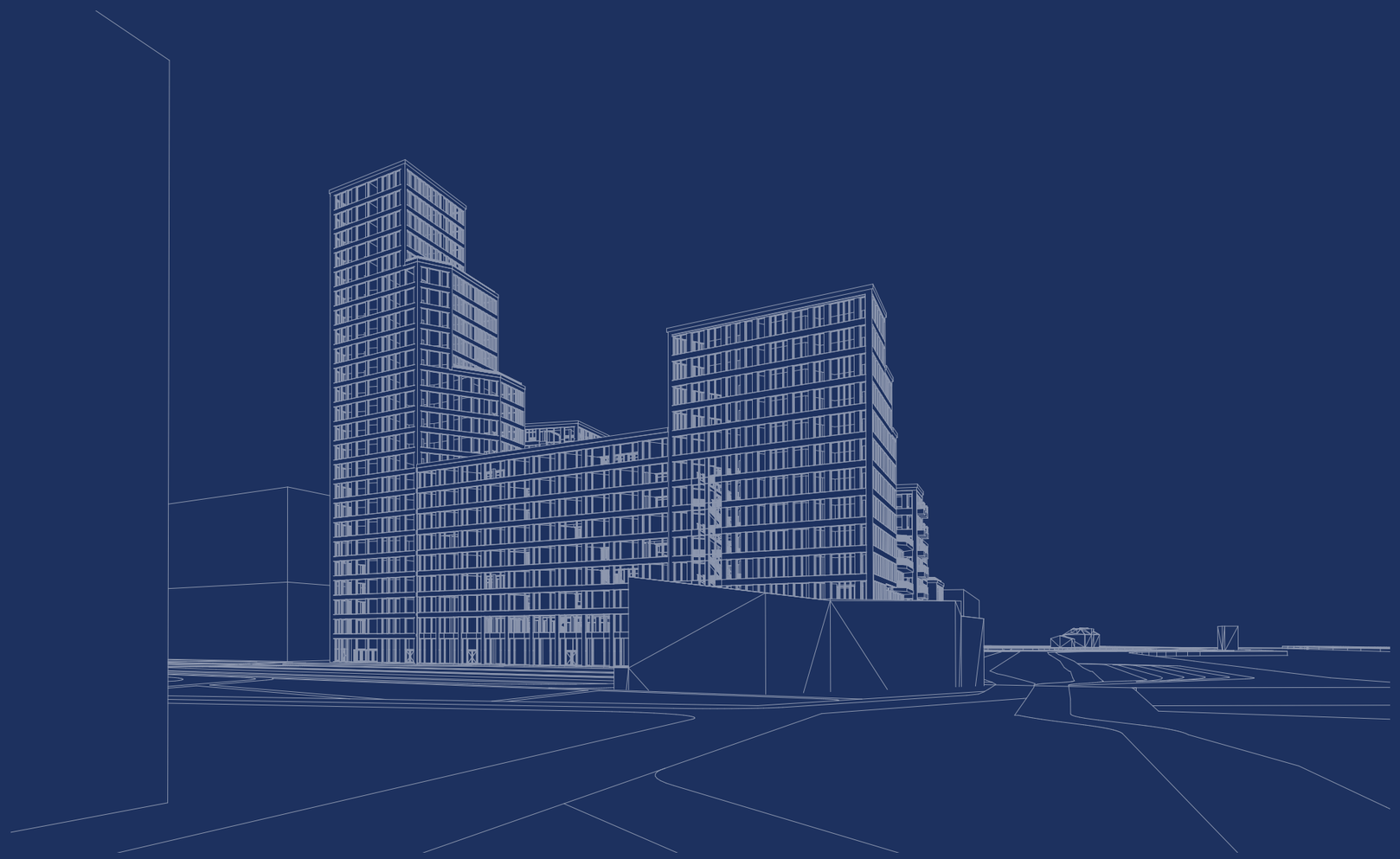
Case studies

Analysing the built environment to further understand the current methods and design strategies. The research will look in to the use of spaces and the relationship between them.

The framework will further define additional aspects as the movement througout space to define the 'social' quality of life.

Semiology

Typology



02

Research

Literature

Quotes

Er is een wereld tussen die van de intieme (prive)
en de anonieme in: de wereld van de groep.

- I. Altman (1972)

Public space, as the place where strangers meet (Sennett 1992a: 719), is meaningful, imaginary and symbolic (Watson 2002: 55). Seen as a fluid continuum, public space is contested through various forms of appropriation of space.

- T. Blokland (2017)

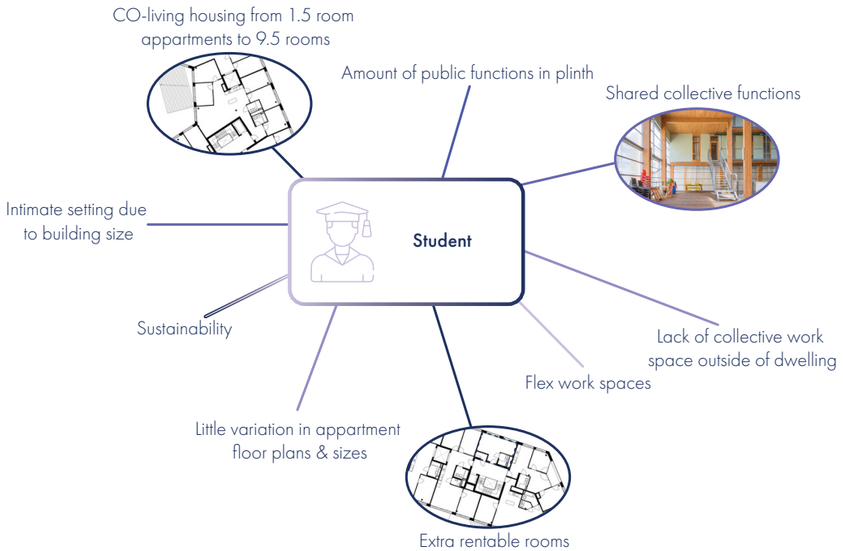
Groepen bestaan vaak ook uit groepen: privacy
gaat in een eindeloze reeks van zones

- M. van Dorst (2005)

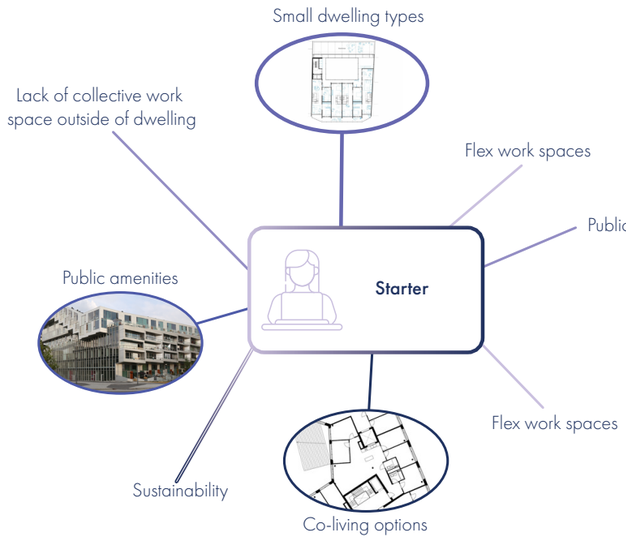
Personas

Target groups

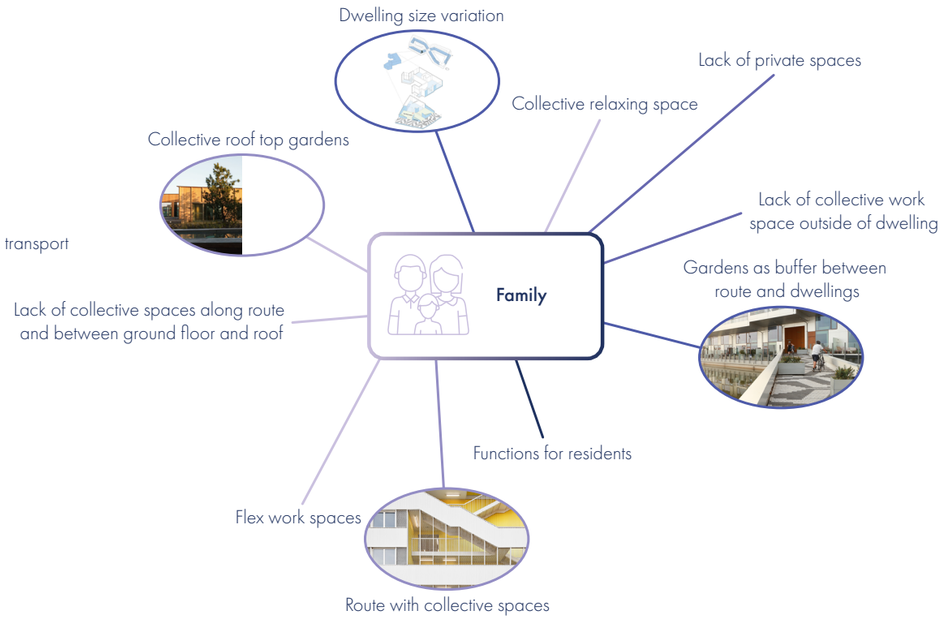
Student



Starter



Family

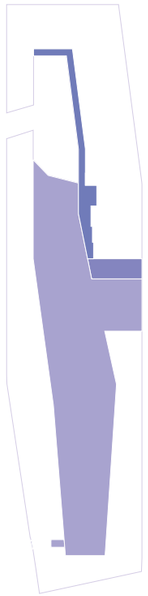


Collective spaces

Case studies

Jonas - orange architects
Kalkbreite - Müller Sigrist Architekten
Torre Júlia - Pau Vidal, Sergi Pons & Ricard Galiana
La Borda - Lacol
8 House - BIG

1.



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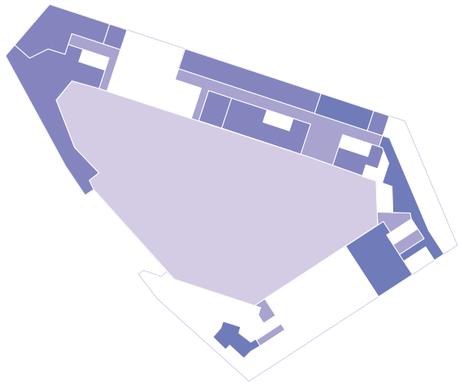
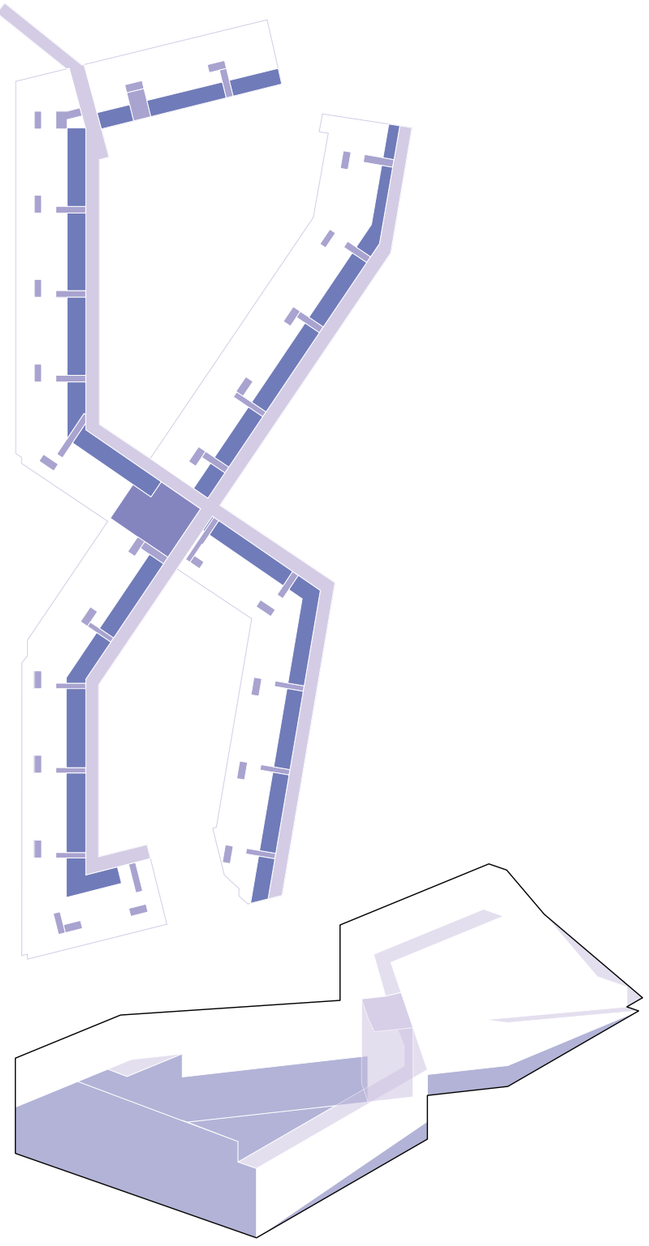
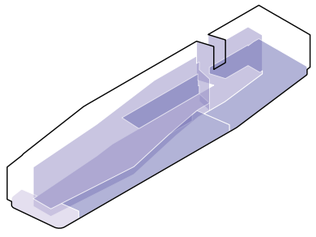


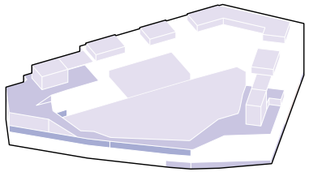
3.

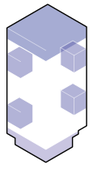
4.

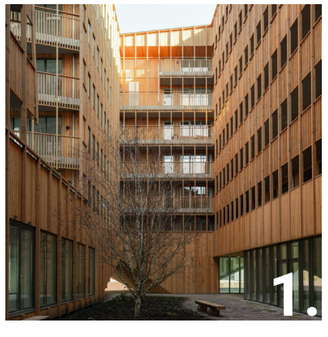
5.

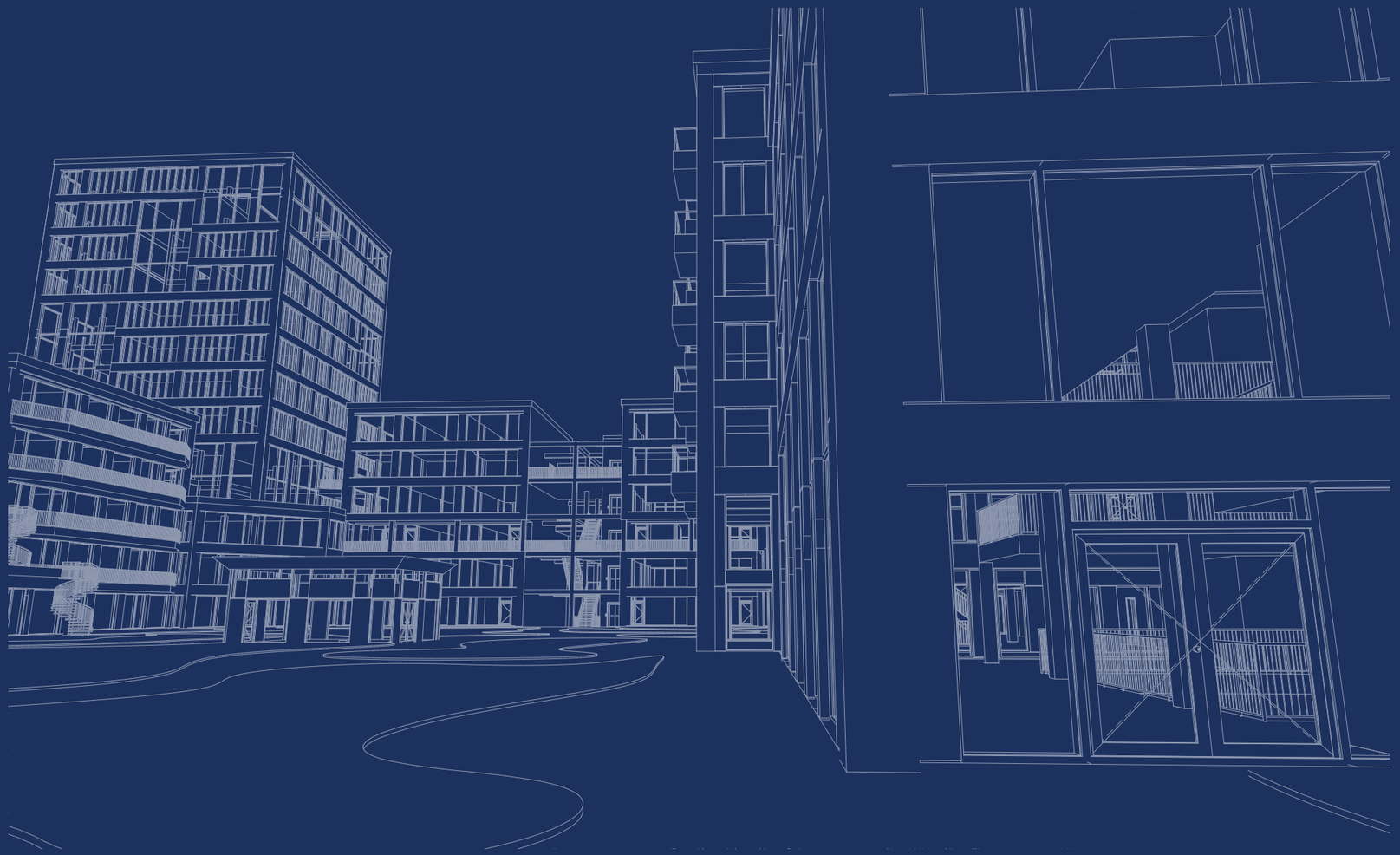










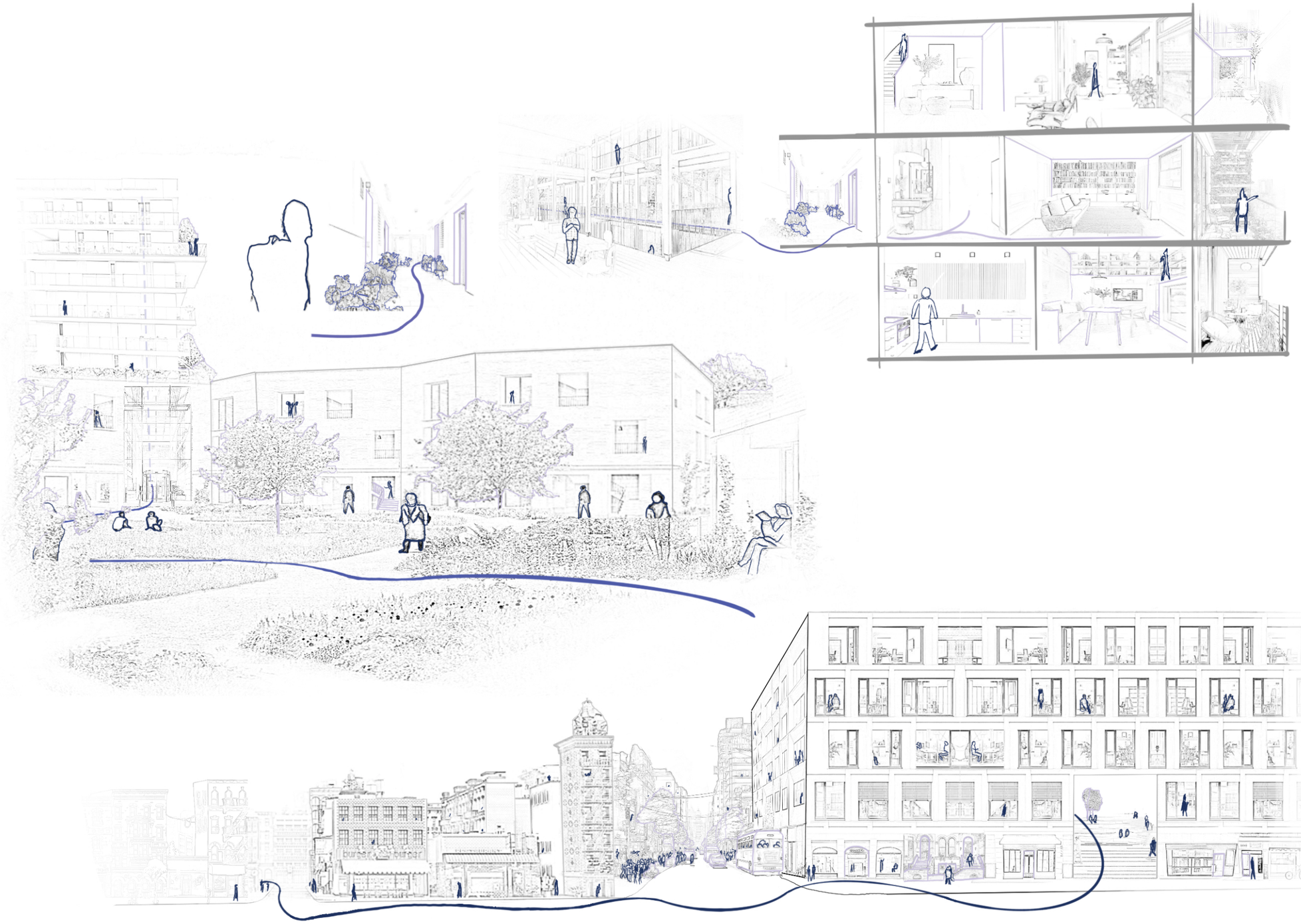


03

Findings

Research

Cancel the Corridor
- (Kemper, 2024)



Design principles

City scale

(Luft et al., 2010), (Egloff & Stollenwerk, 2019)

Design principles

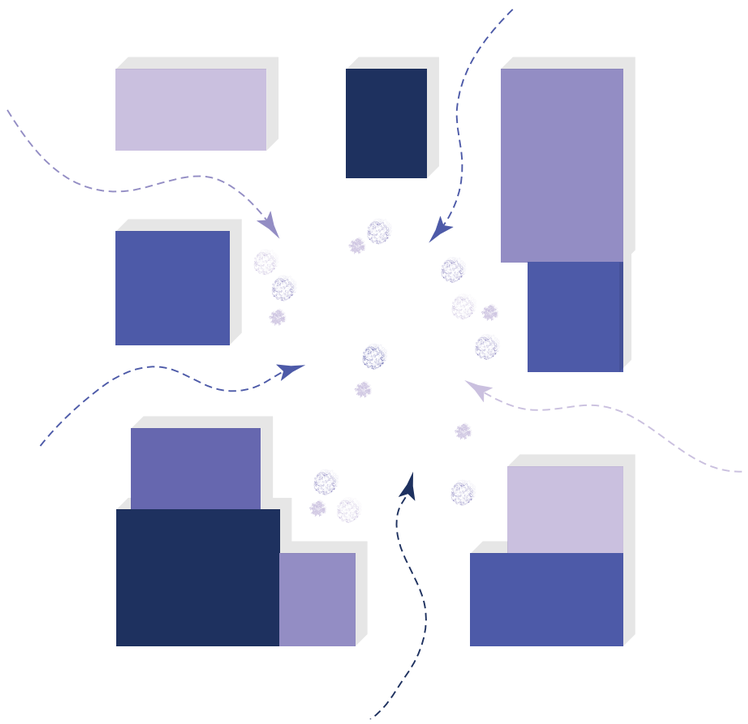
City scale

(Luft et al., 2010), (Egloff & Stollenwerk, 2019)

Design principles

City scale

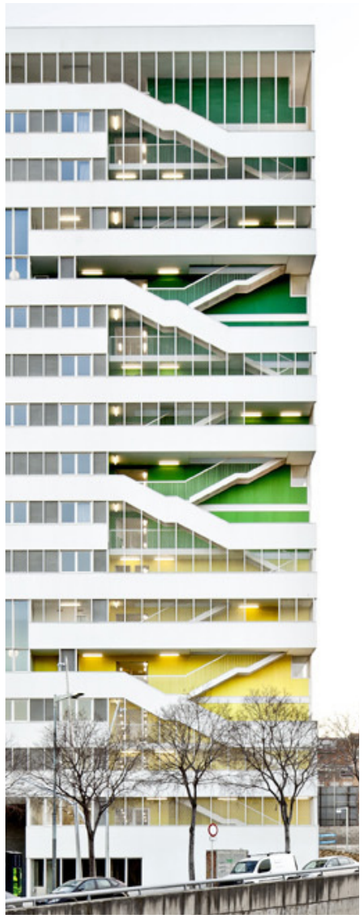
Dual Access



Porous Boundaries

Design principles

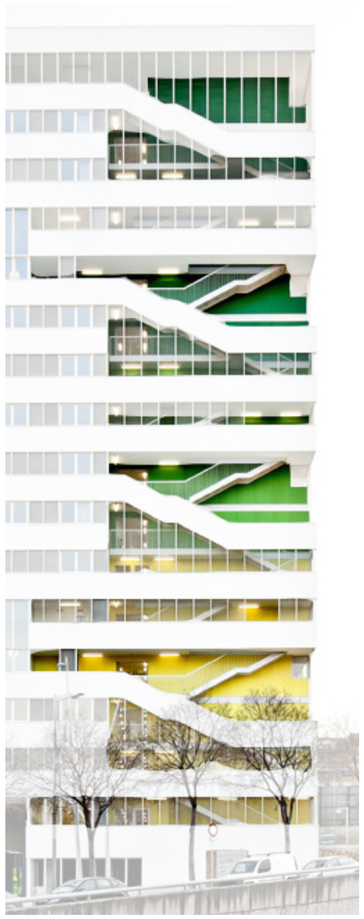
Neighbourhood scale



(Ferrando, 2022), (Egloff & Stollenwerk, 2019)

Design principles

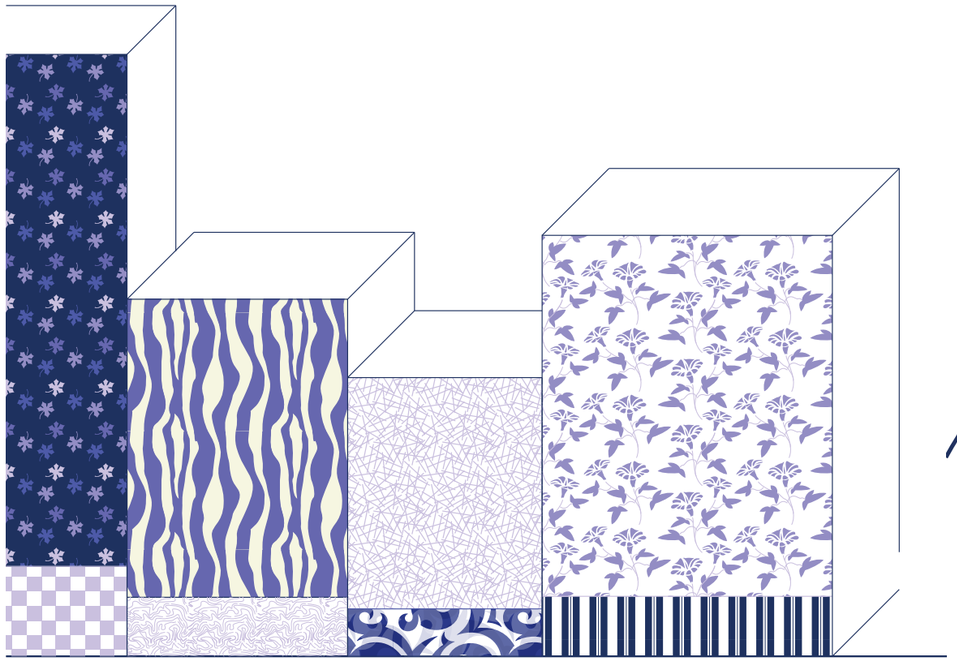
Neighbourhood scale



(Ferrando, 2022), (Egloff & Stollenwerk, 2019)

Design principles

Neighbourhood scale



Expressive Volumes

Communal Spine

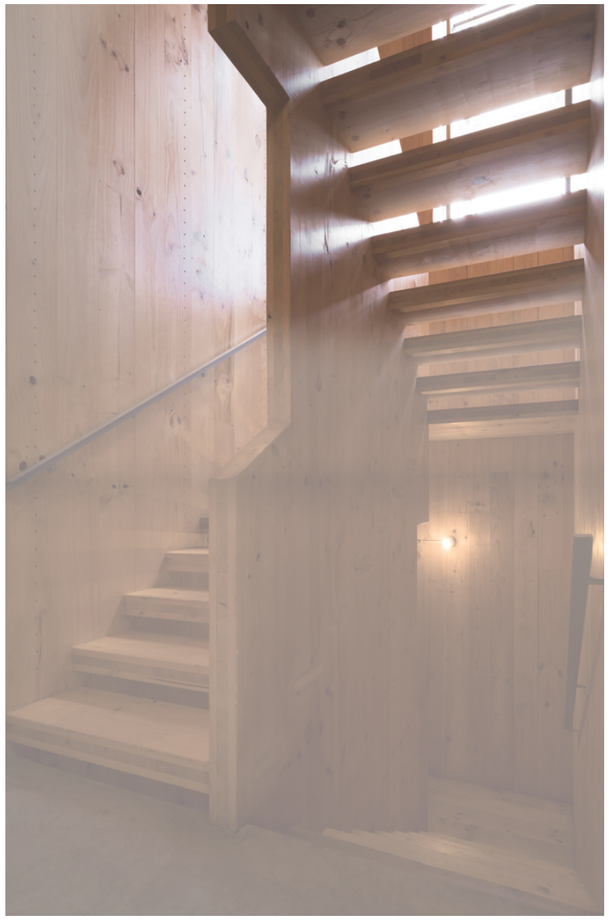
Design principles

Collective scale

(Miralles & Lacol, 2019), (Egloff & Stollenwerk, 2019)

Design principles

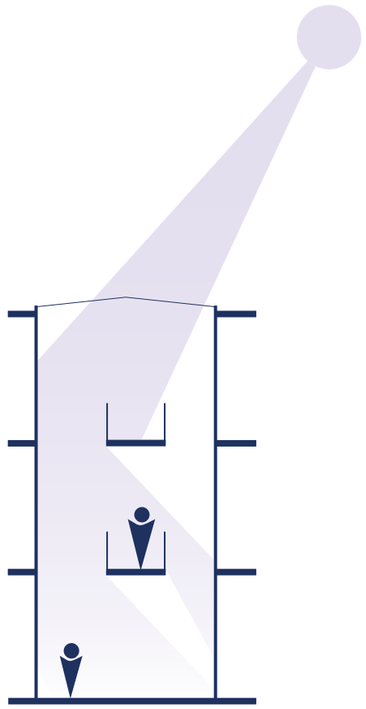
Collective scale



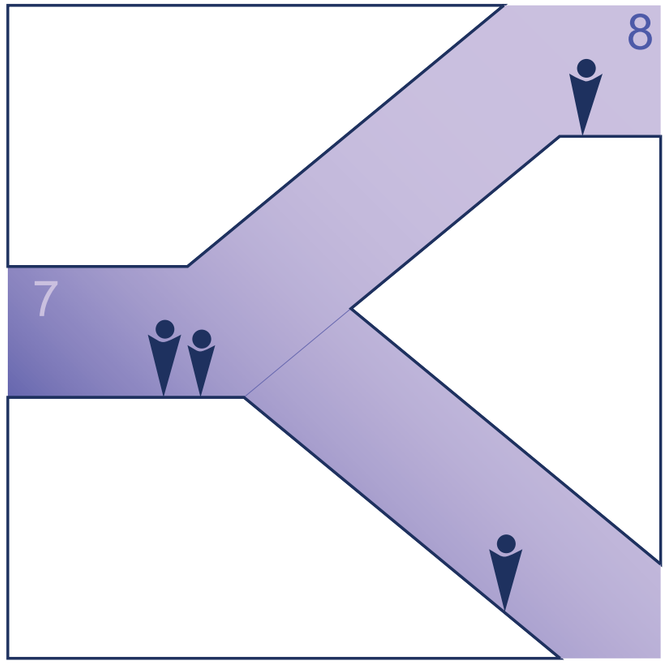
(Miralles & Lacol, 2019), (Egloff & Stollenwerk, 2019)

Design principles

Collective scale



Daylit Spaces



Expressive Routes

Design principles

Collective scale

(Ferrando, 2022), (Egloff & Stollenwerk, 2019)

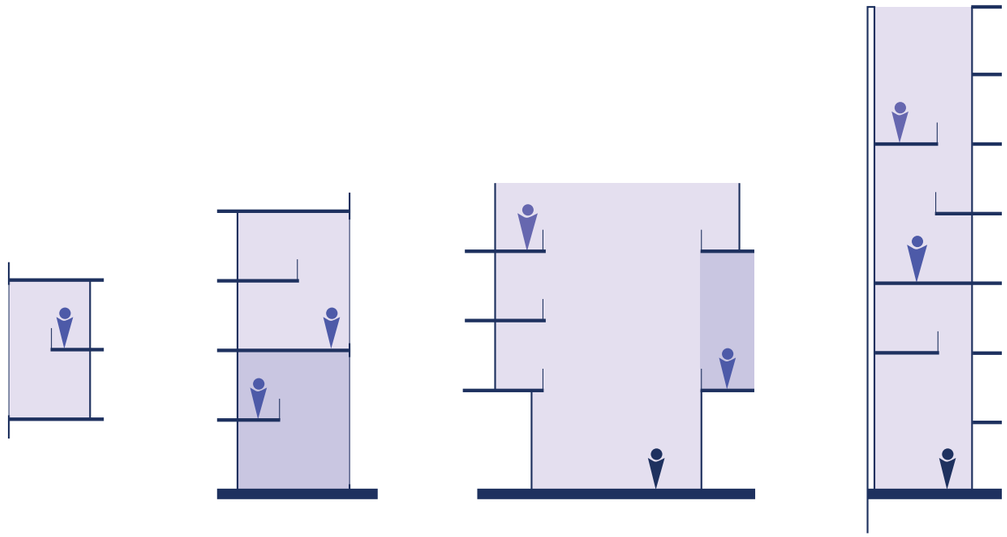
Design principles

Collective scale

(Ferrando, 2022), (Egloff & Stollenwerk, 2019)

Design principles

Collective scale



Layered Interaction

Design principles

Individual scale

(Ferrando, 2022), (Miralles & Lacol, 2019)

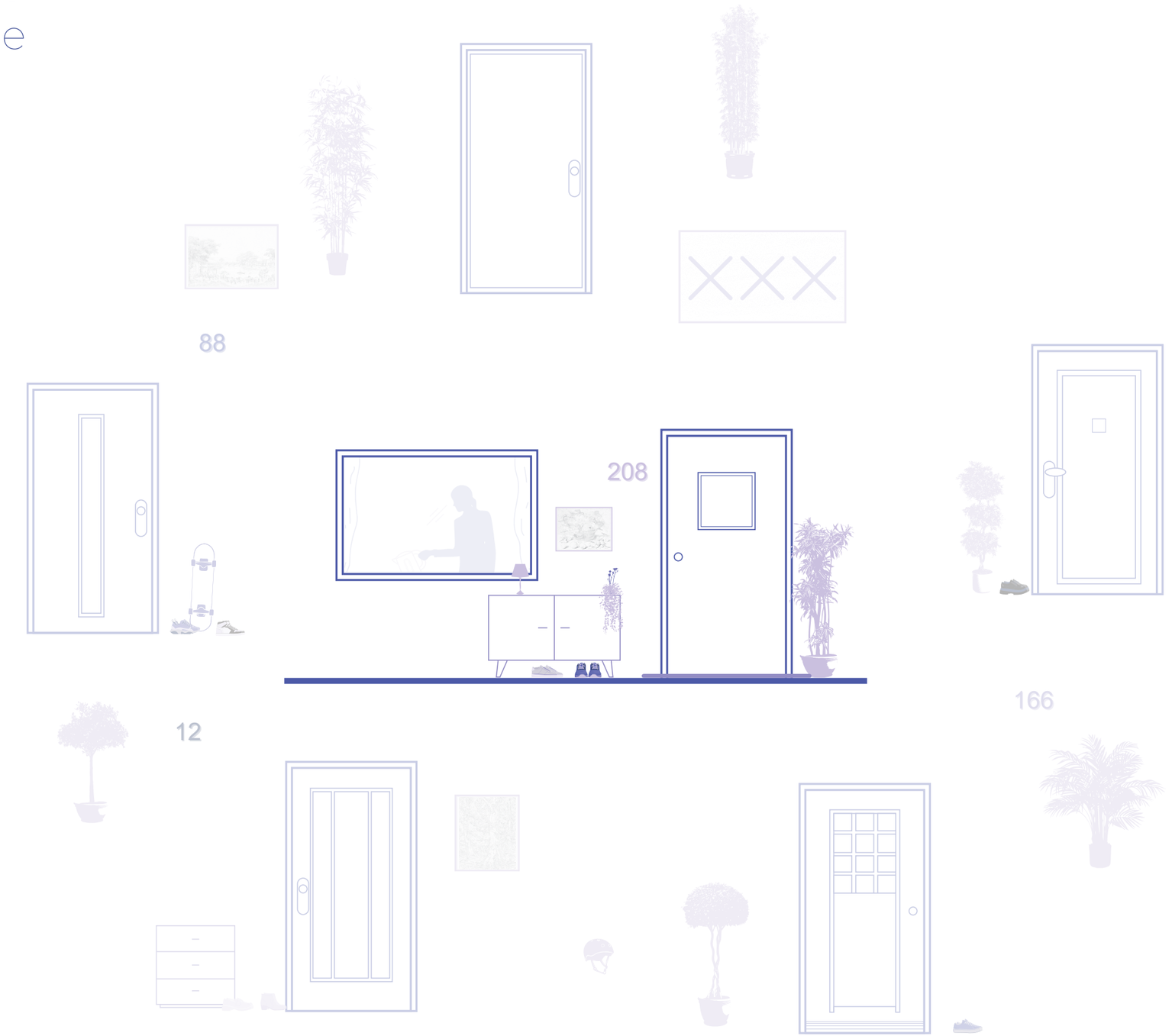
Design principles

Individual scale

(Ferrando, 2022), (Miralles & Lacol, 2019)

Design principles

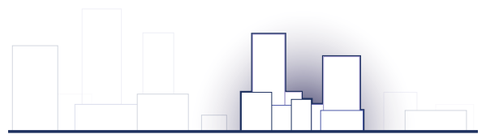
Individual scale



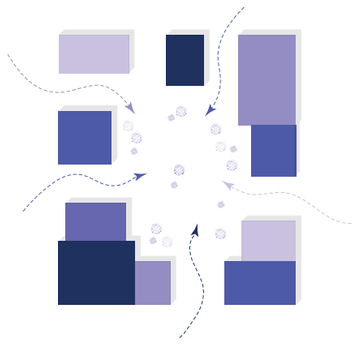
Design principles

City scale

Dual Access

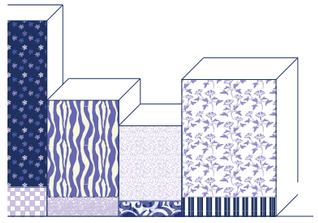


Keystone



Porous Boundaries

Neighbourhood scale

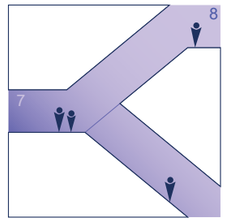


Expressive Volumes

Nested Communities

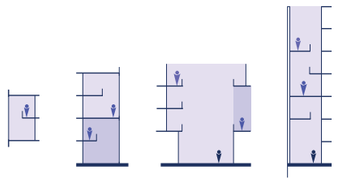
Communal Spine

Collective scale

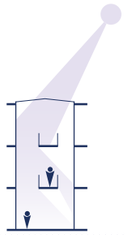


Expressive Routes

Integrated Clusters



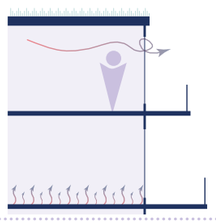
Layered Interaction



Daylit Spaces

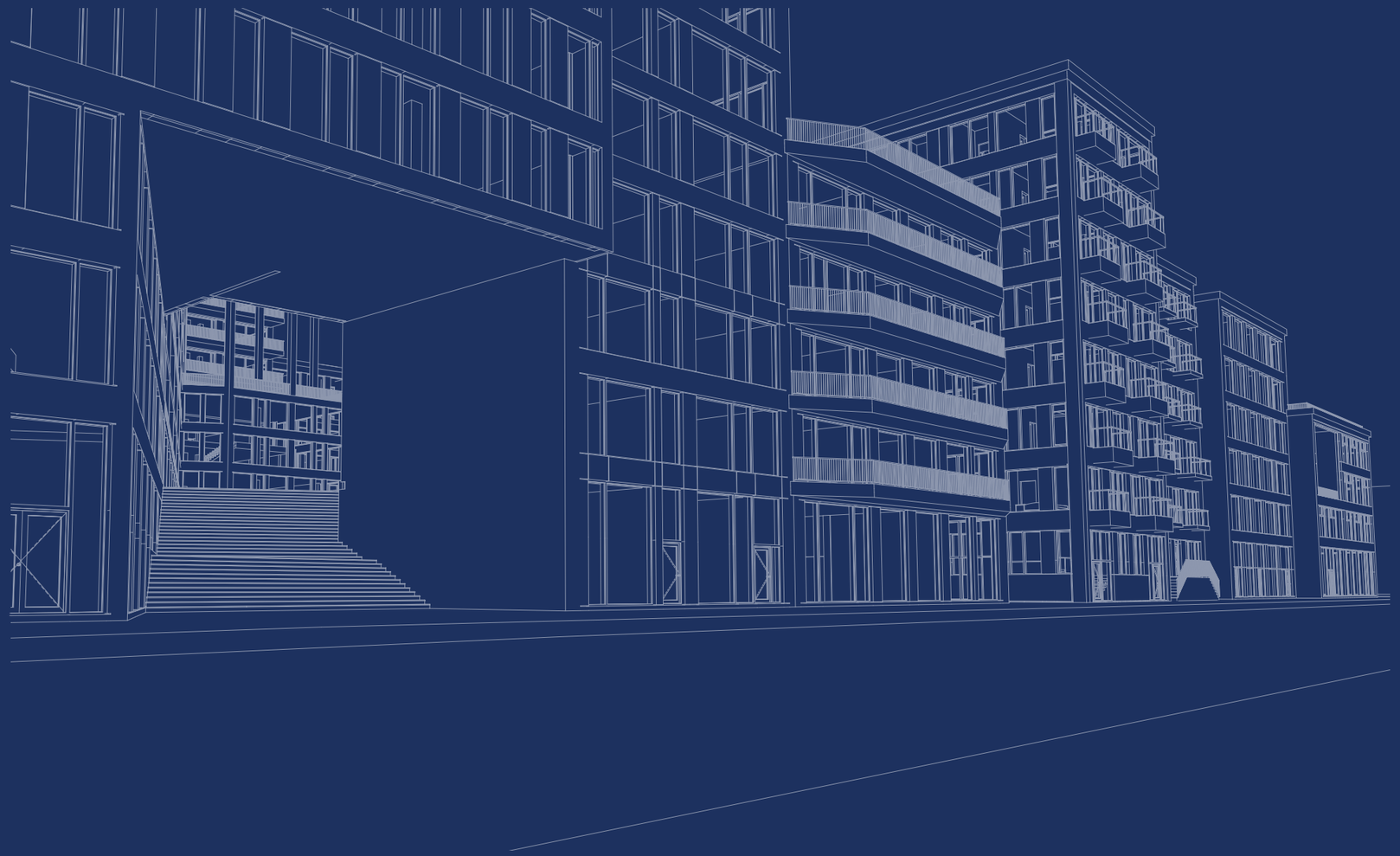
Individual scale

Engaged Routes



Cozy Living

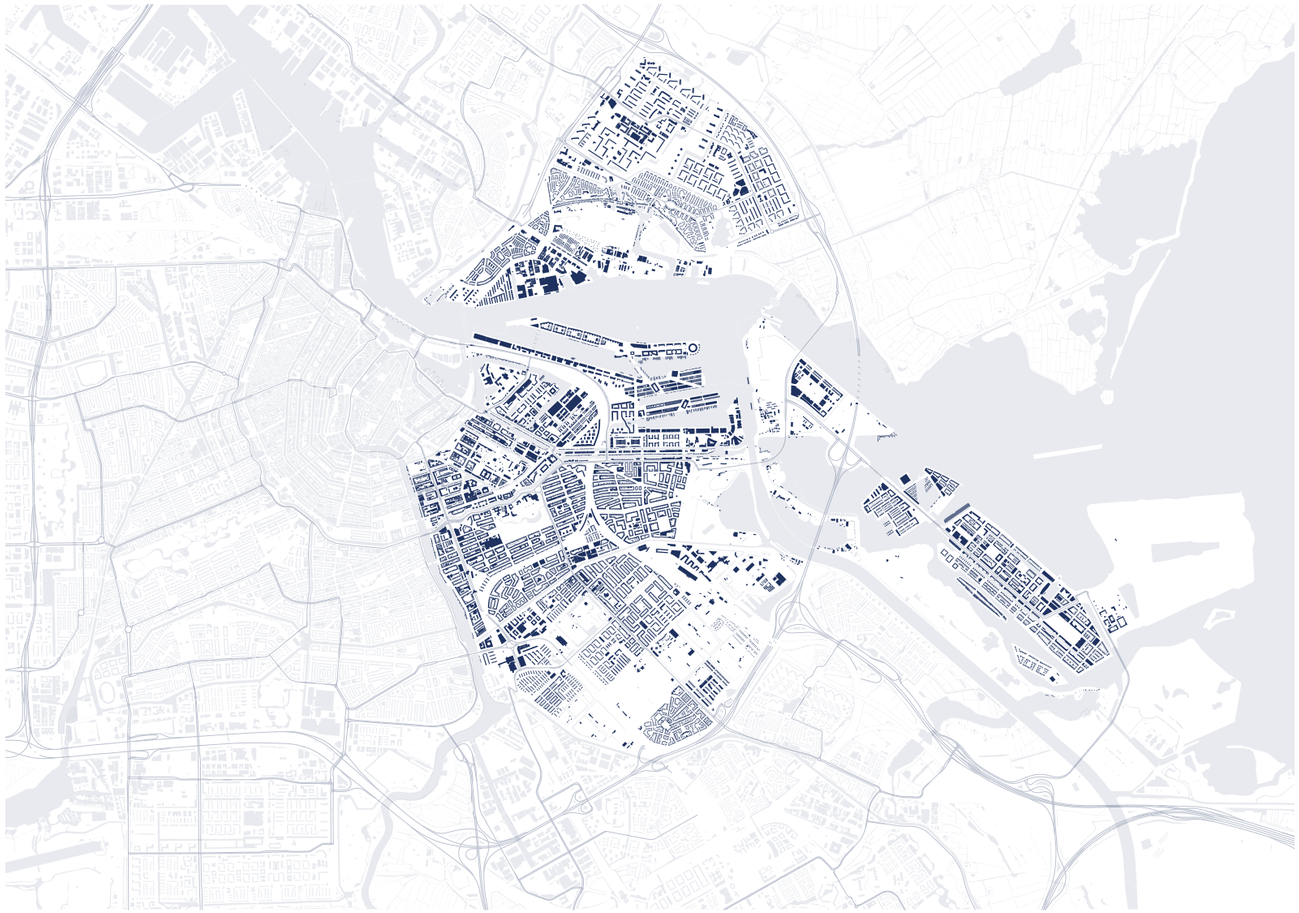
Private Identity



04

Location

Research



20 min car
20 min walk
30 min public transport
20 min cycle

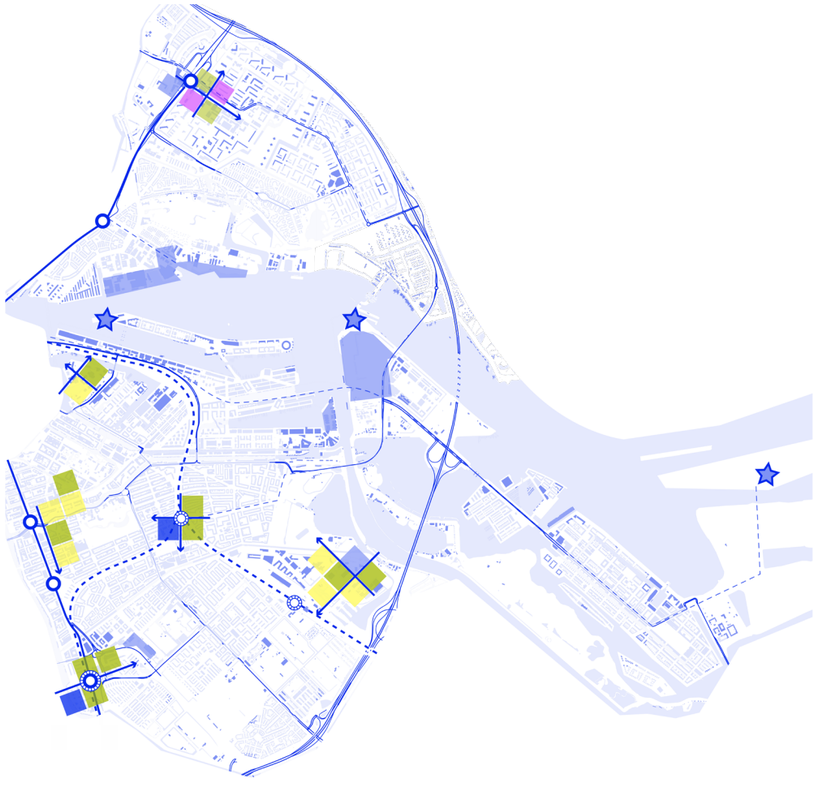
2023
- Termination of land lease agreements
- Begin drafting investment note with urban design plan for Baaibuurt West
- Start participating in Pakhuis de Zwijger at the initiative of the Baaibuurt West community

2024
- Finalize project note
- Decision-making on project note
- Participation in urban design plan
- Investment note with urban design plan for Baaibuurt West
- Official consultation on urban design plan concept

2025
- Decision-making on investment note and urban design plan

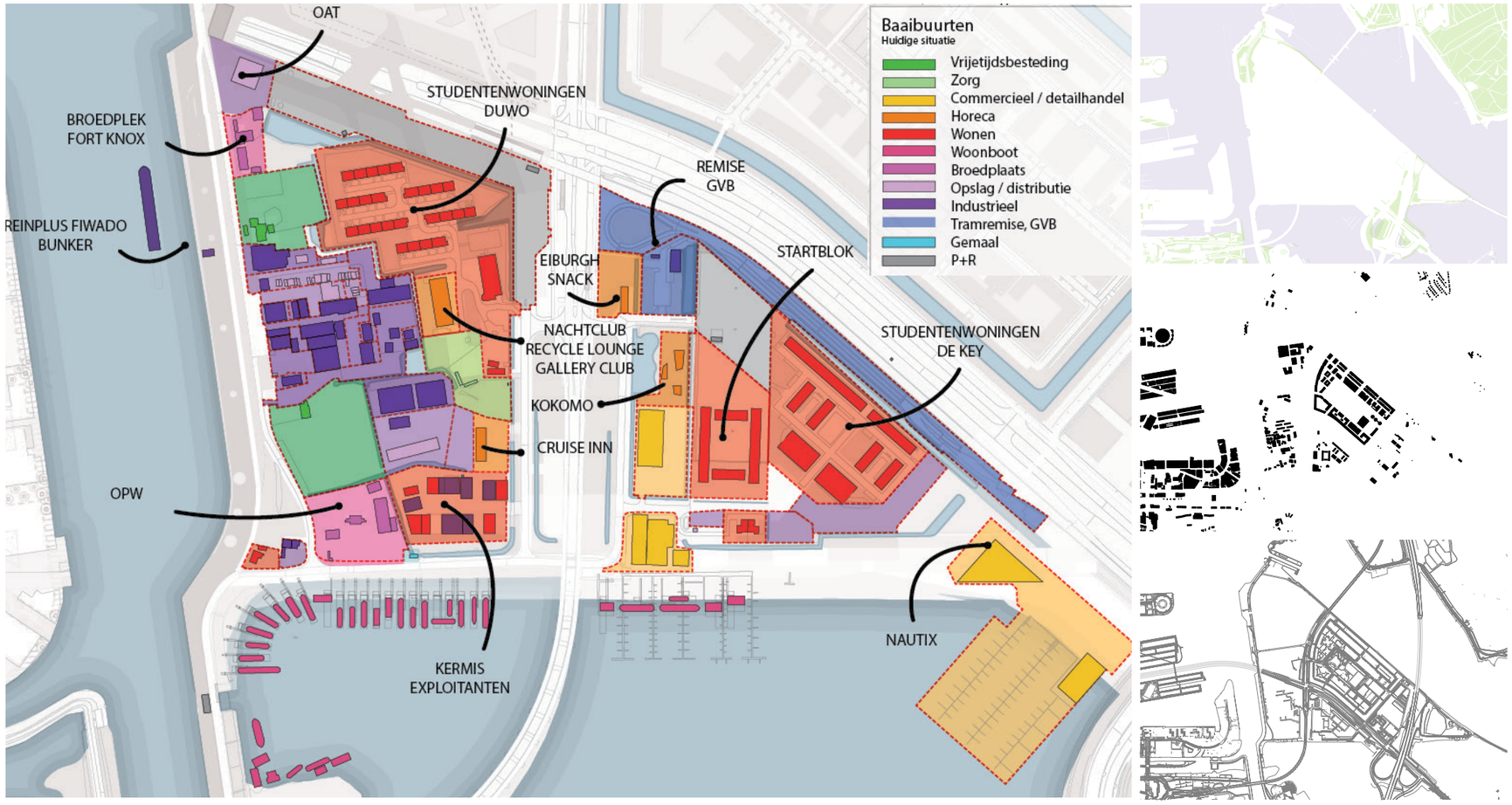
2025-2028
- Site cleanup and preparation for construction

2028
- Start construction of housing and facilities



Baaibuurt future development concept
- Group research (Gemeente Amsterdam, 2023)

(Gemeente Amsterdam, 2023)

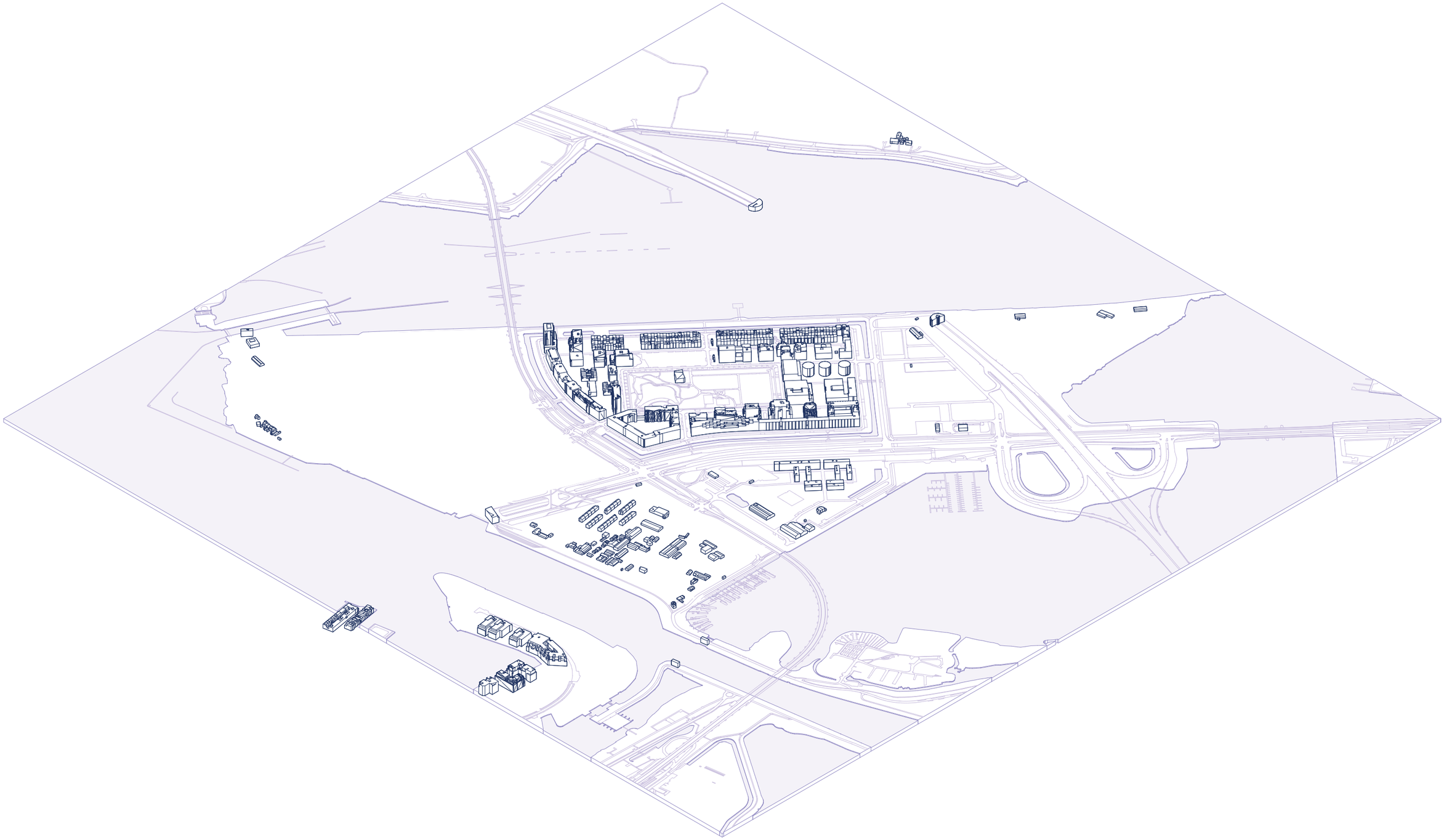


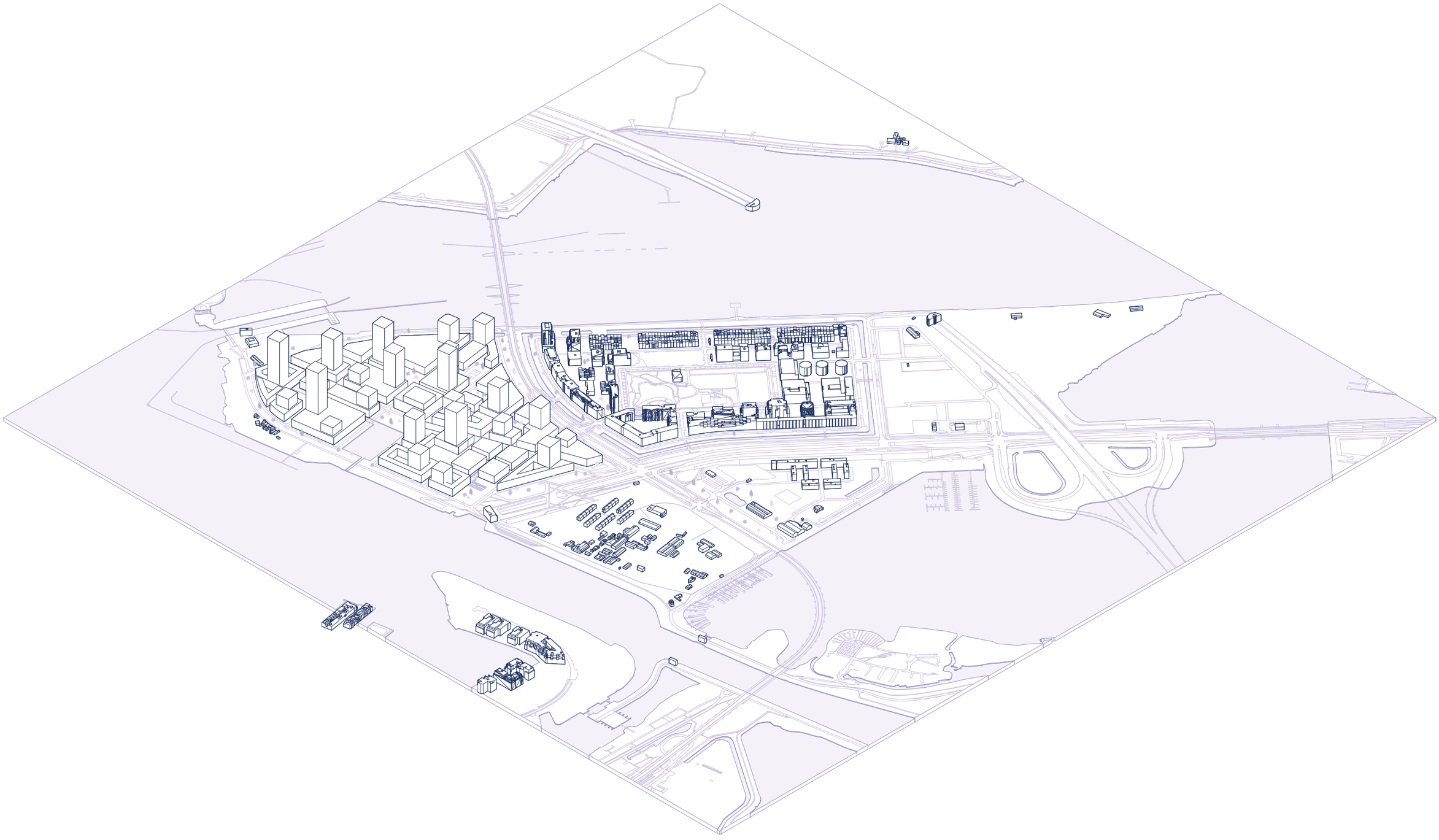
(Gemeente Amsterdam, 2023)

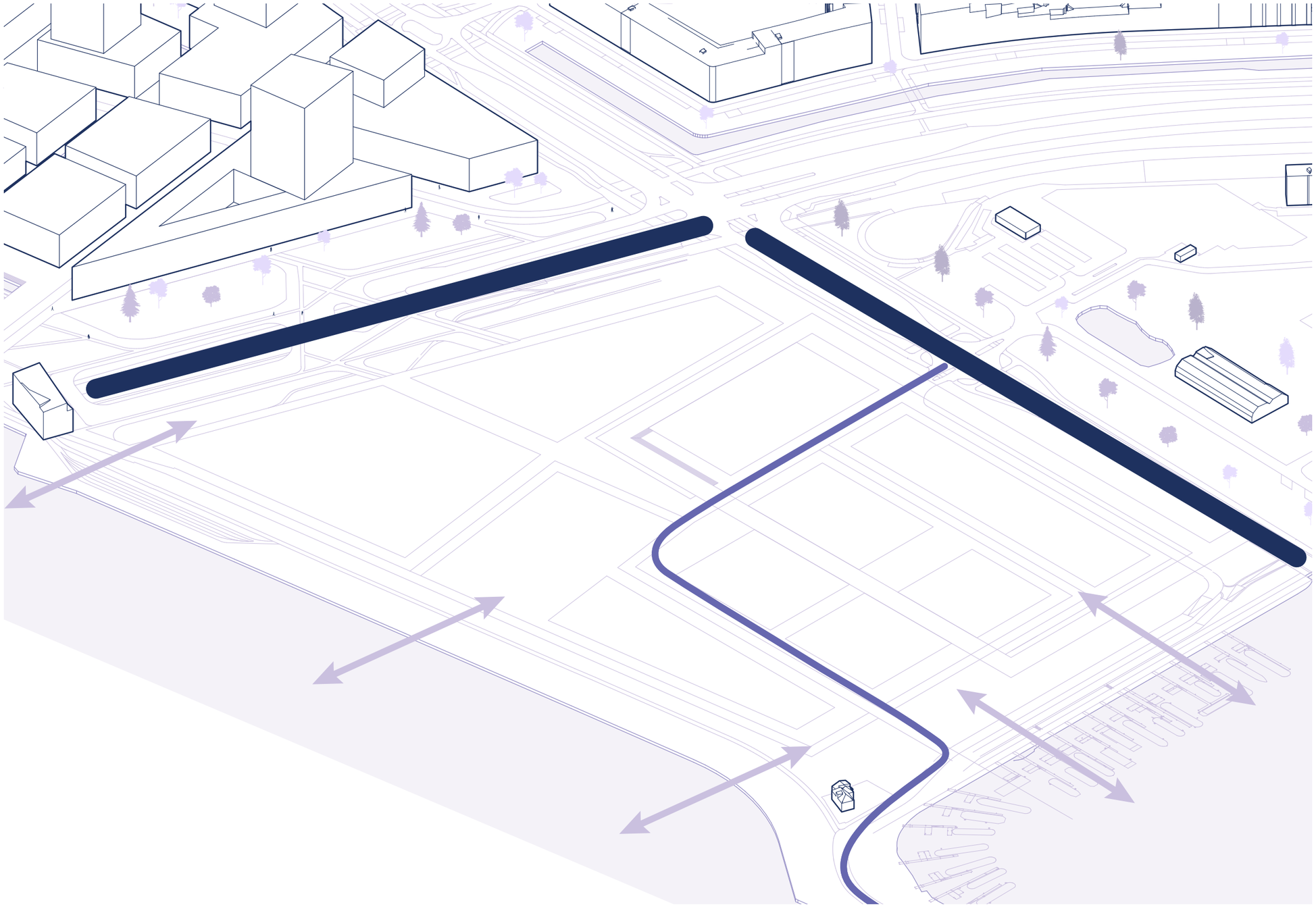
05

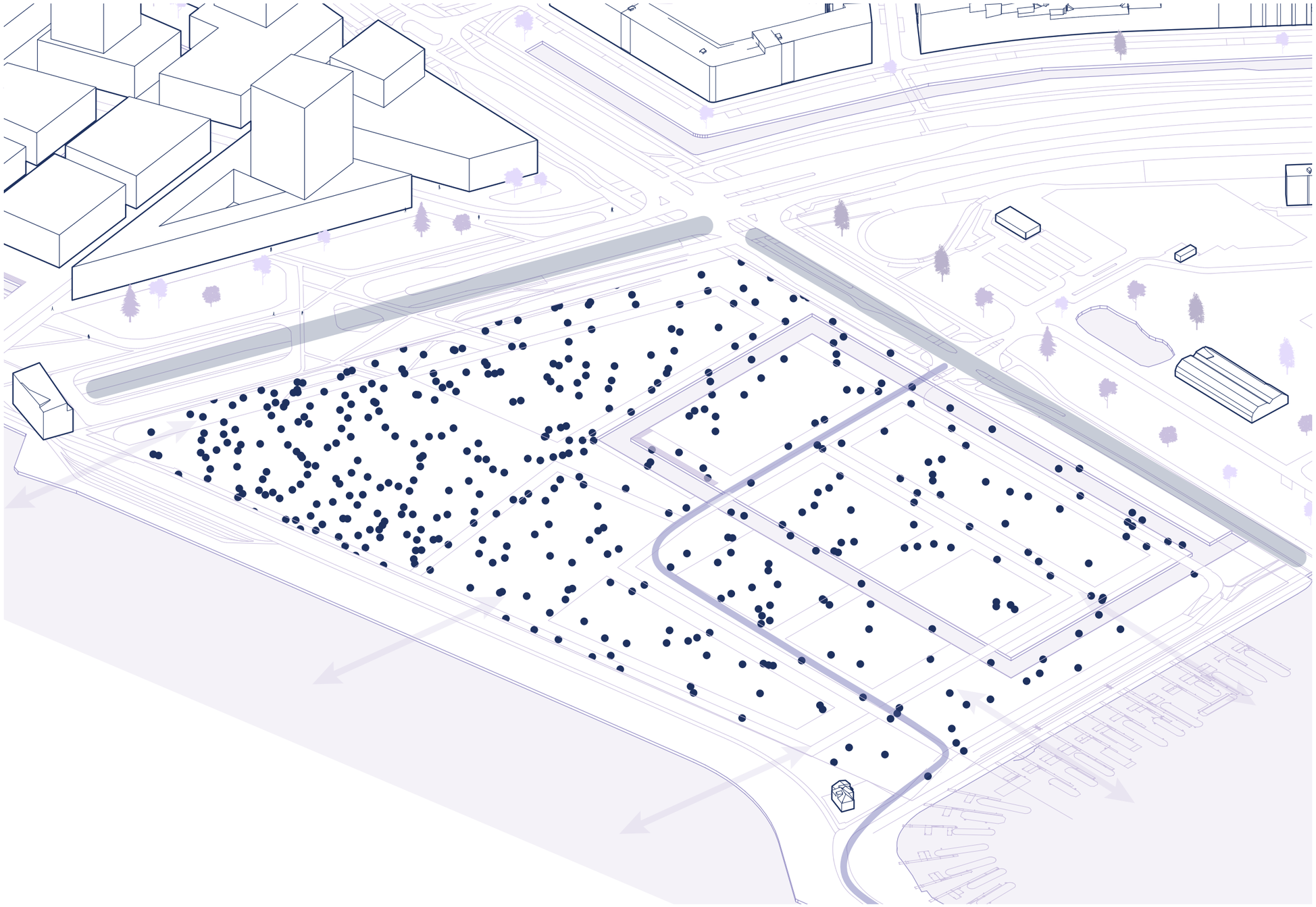
Design

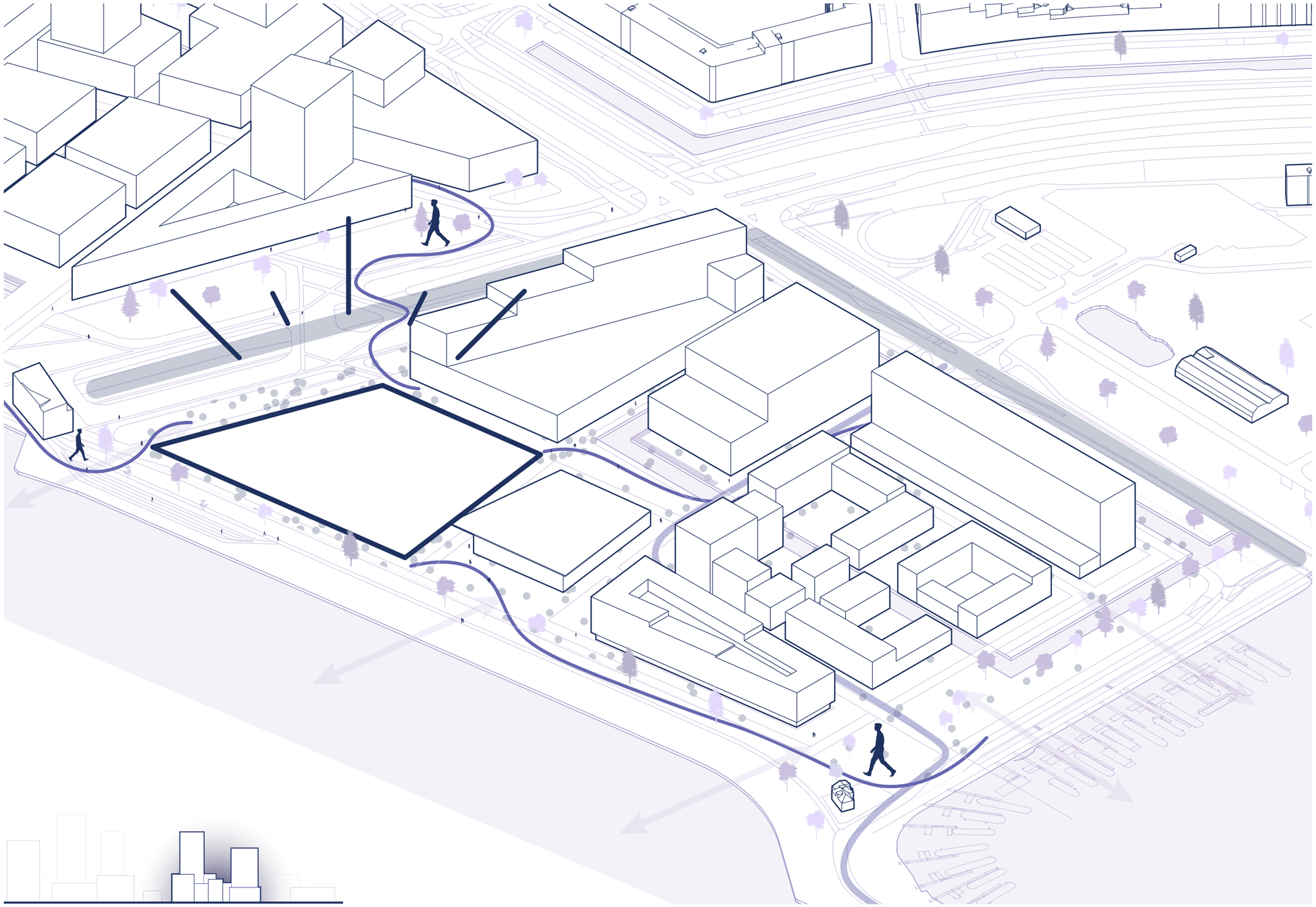
Research



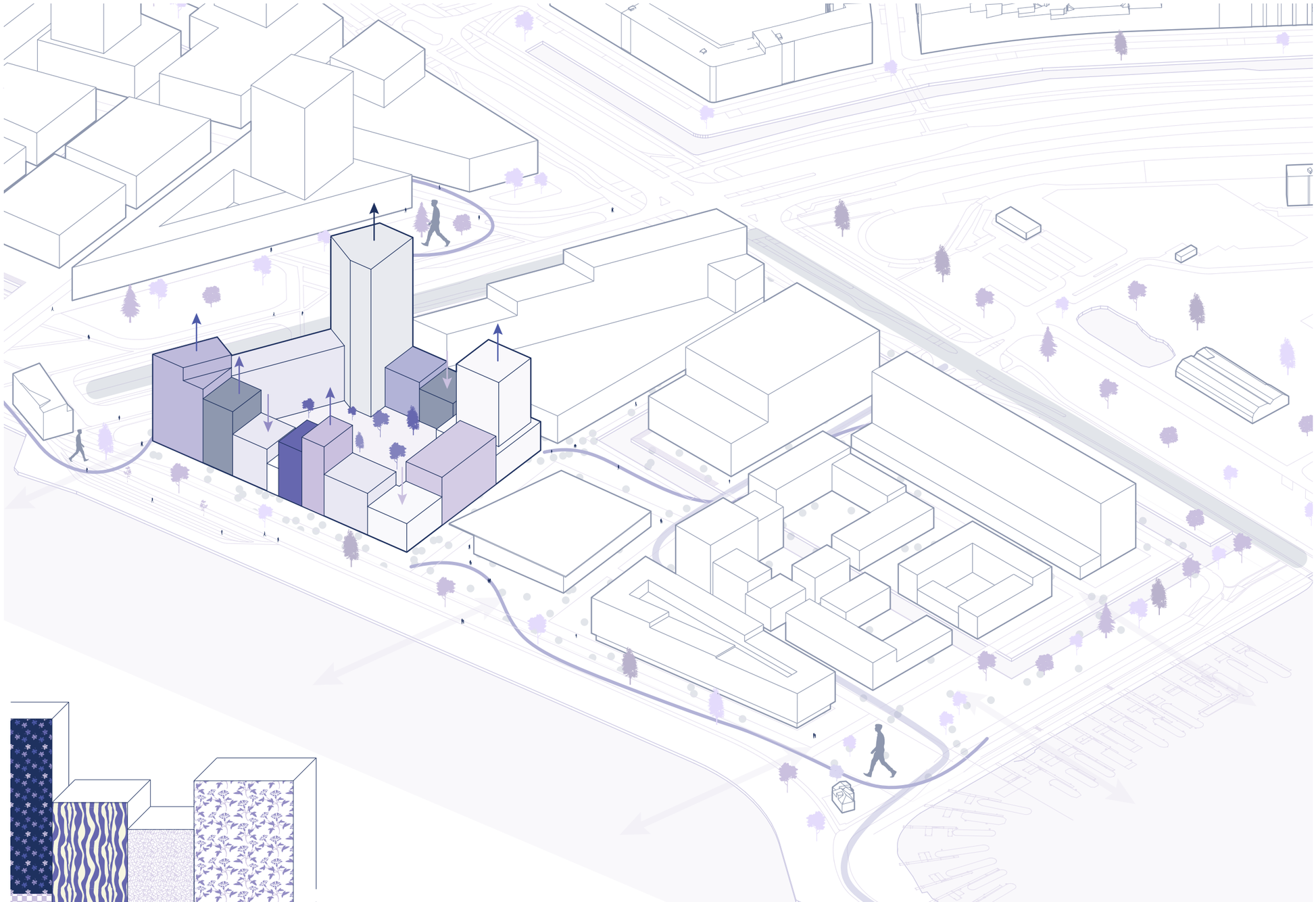


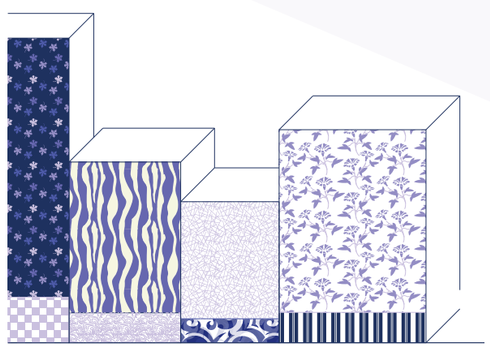




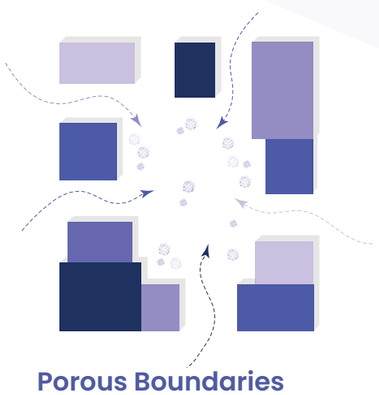


Keystone





Expressive Volumes



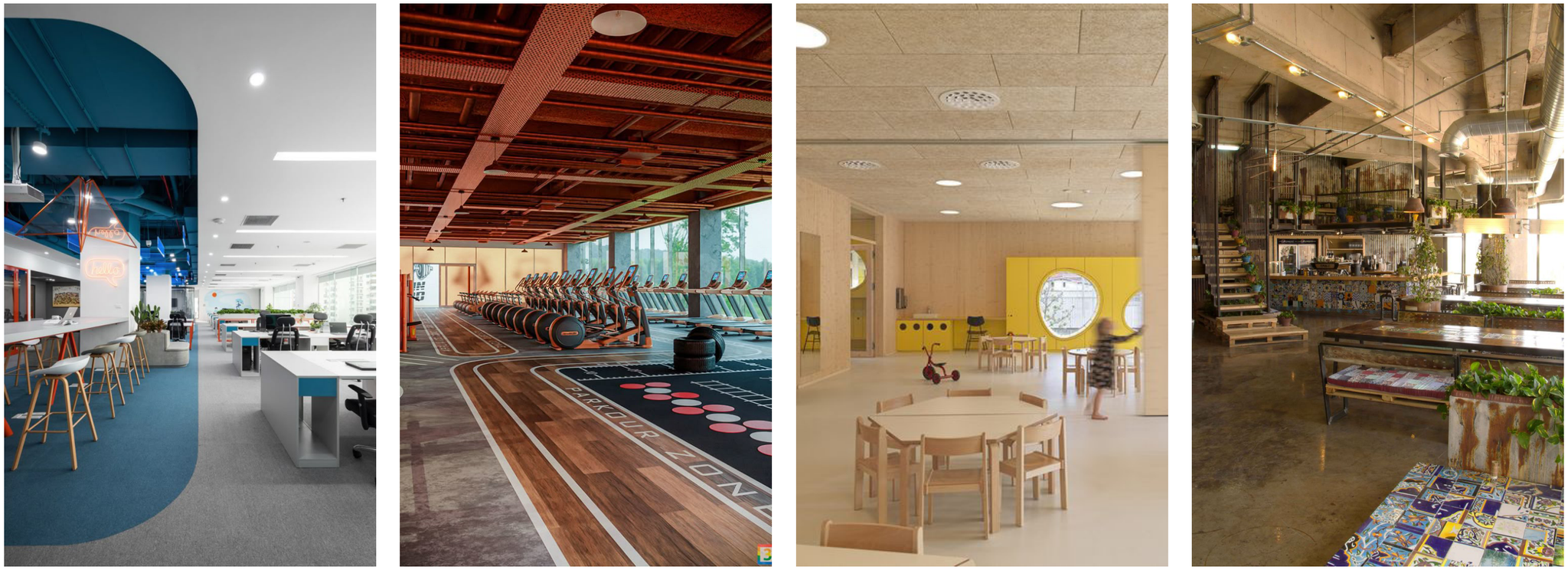
Porous Boundaries

RESIDENTIAL
RESIDENTIAL
GYM
REPAIR
CAFE
RESIDENTIAL
LIBRARY
DAYCARE
STORE
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
RESIDENTIAL

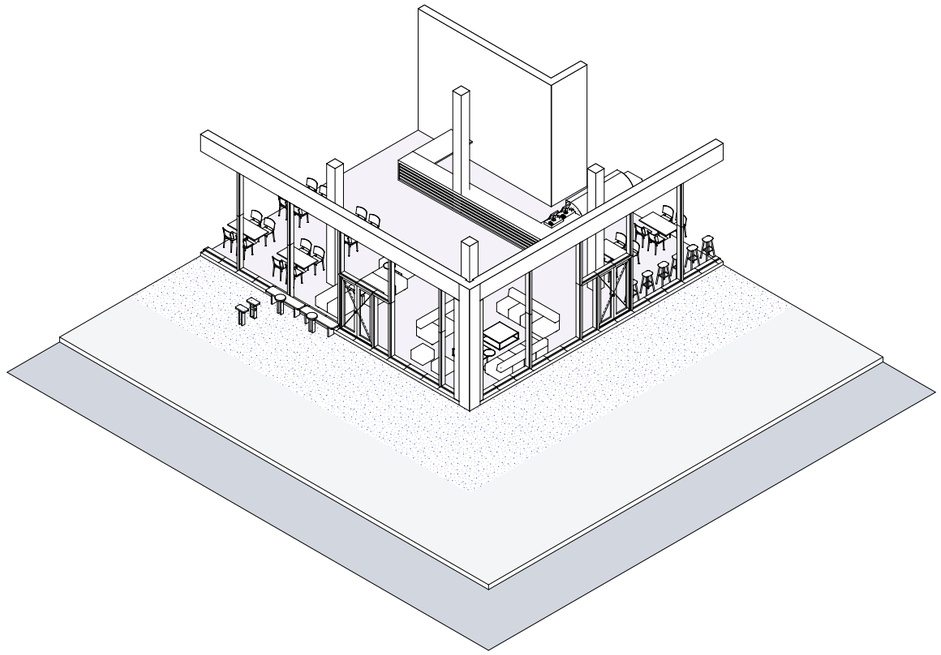
Dual Access

Public spaces

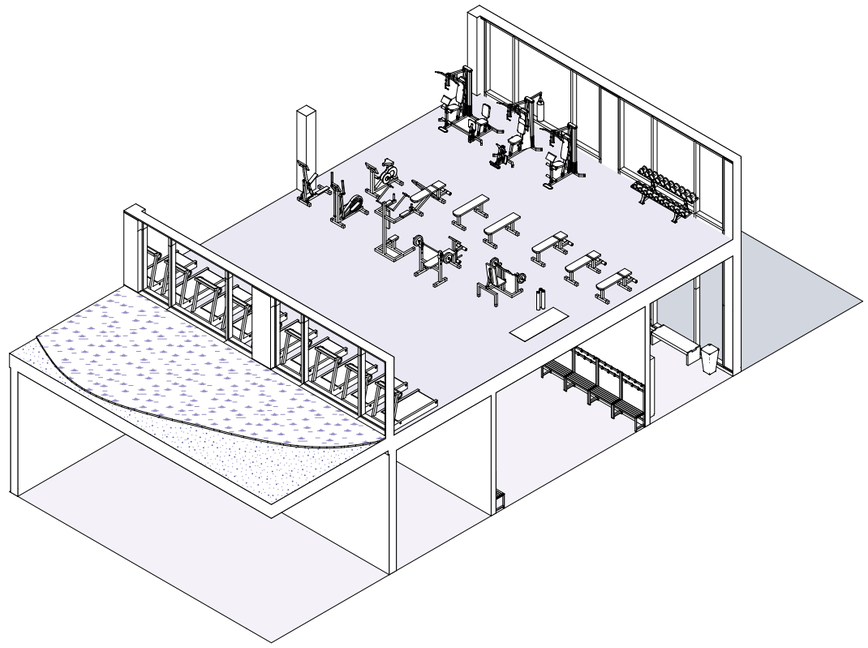
Impression



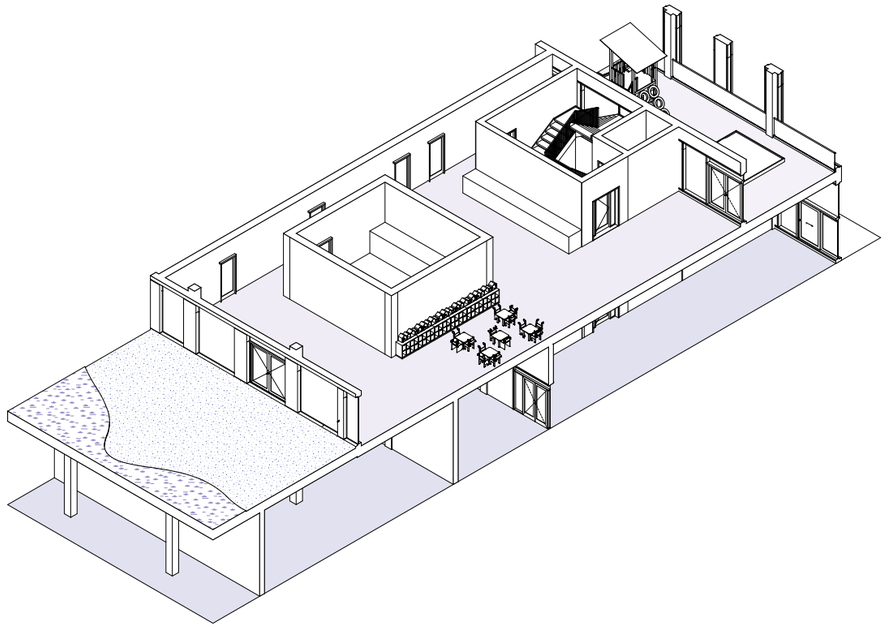
(Pinterest, 2025)



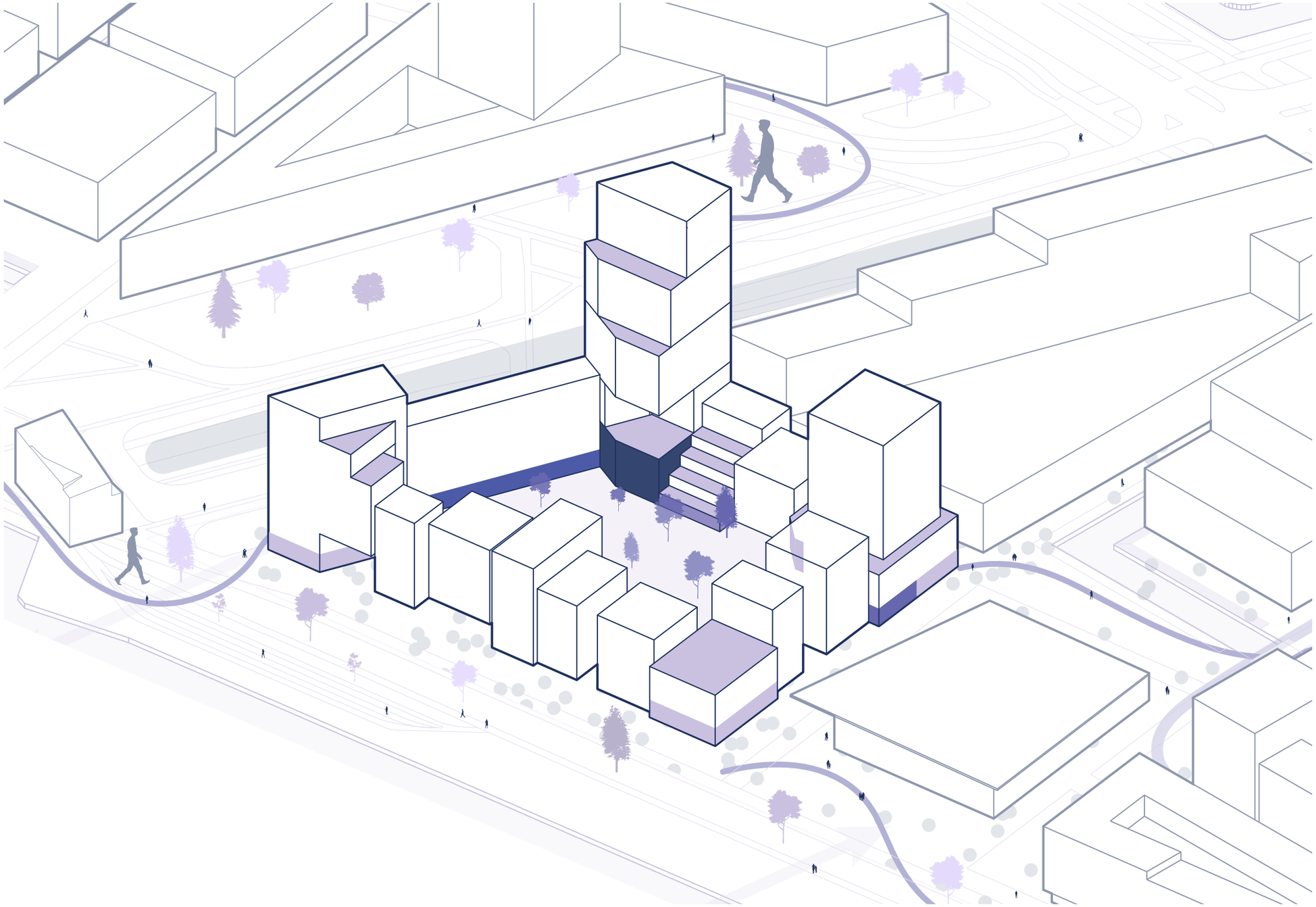
Cafe



Gym



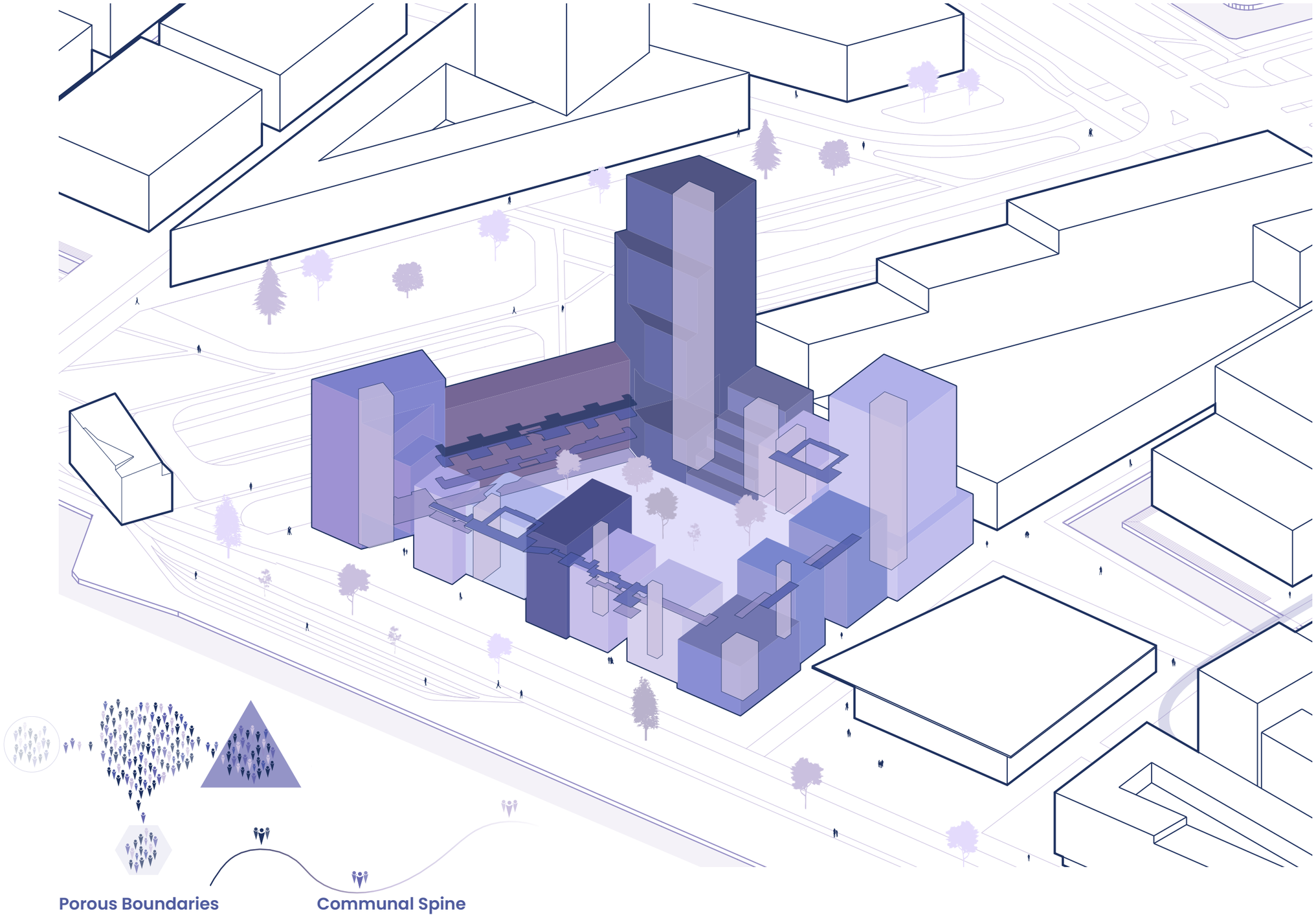
Daycare



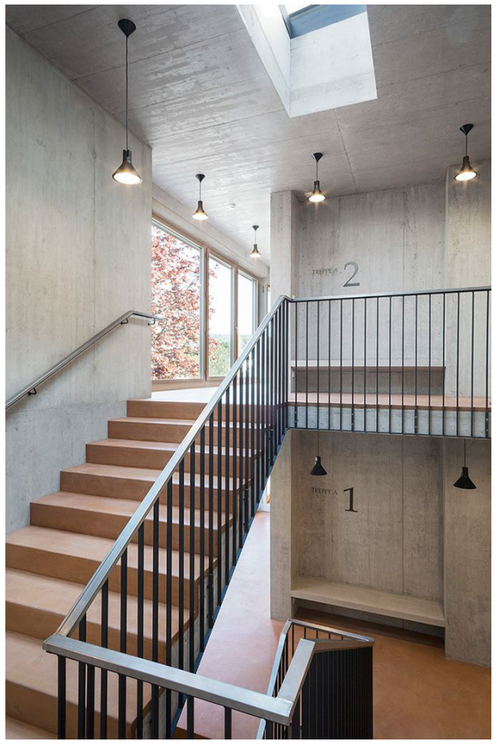
Routing

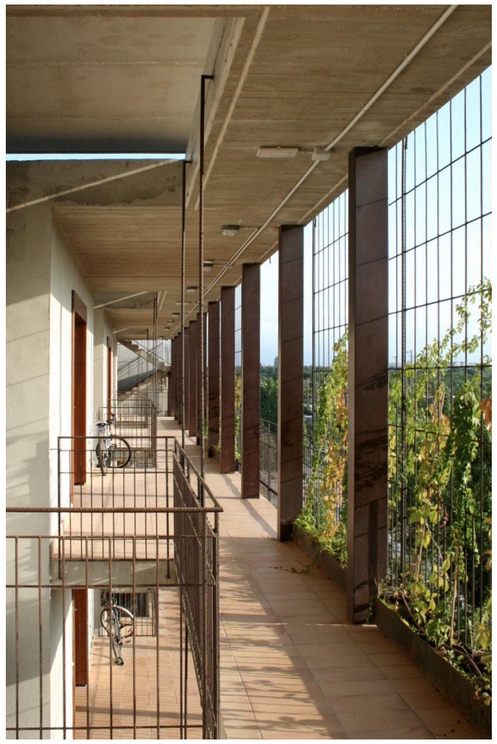
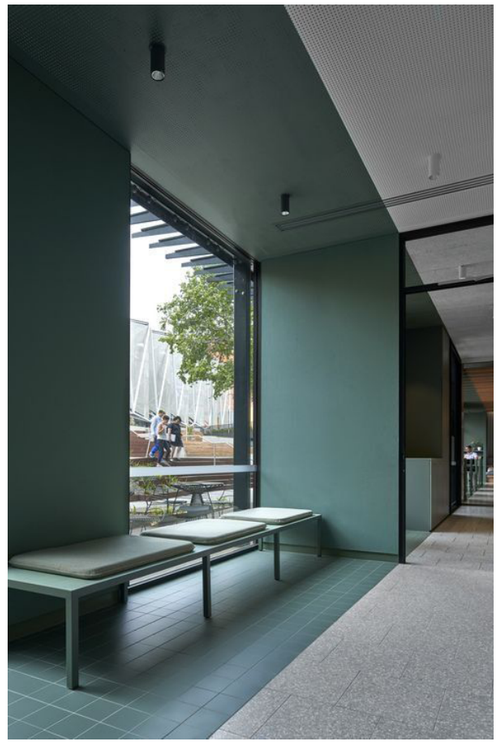
Floor plan - 0

1. Office space
2. Stores
3 .Repair Cafe
4. Cafe
5. Library
6. Gym
7. Bicycle shop
8. Parking
9. Daycare


Porous Boundaries
Communal Spine

Routing
Impression



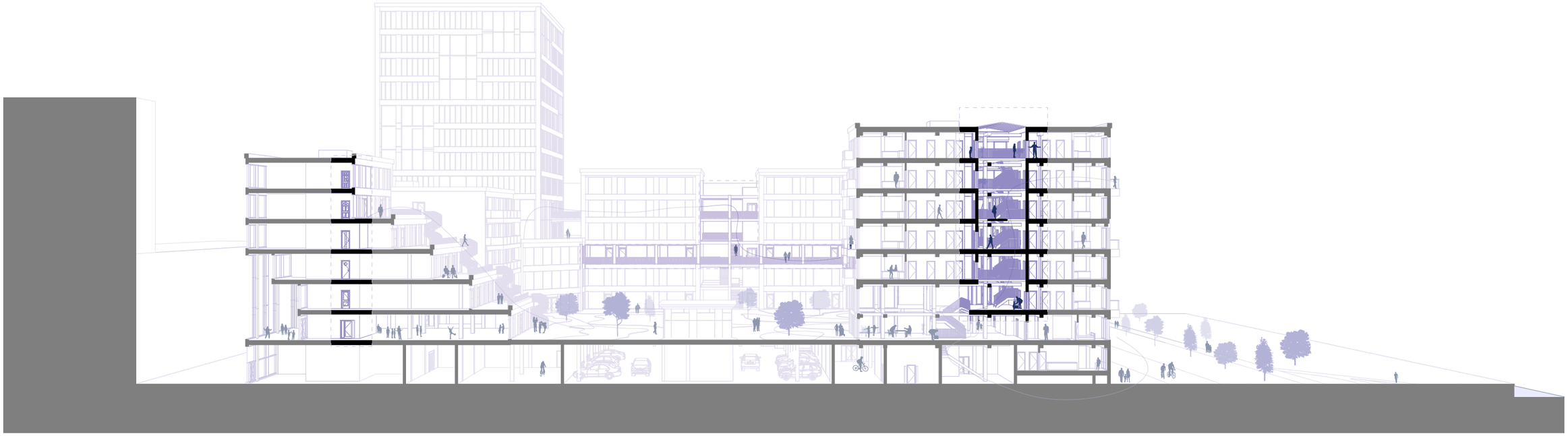
(Pinterest, 2025)

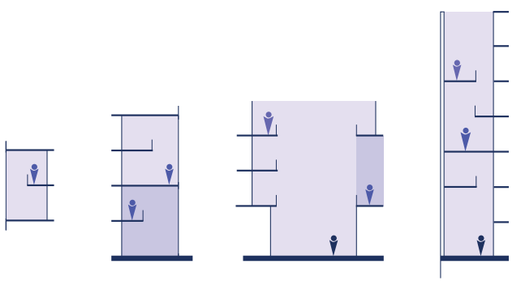
Expressive Routes

Daylit Spaces

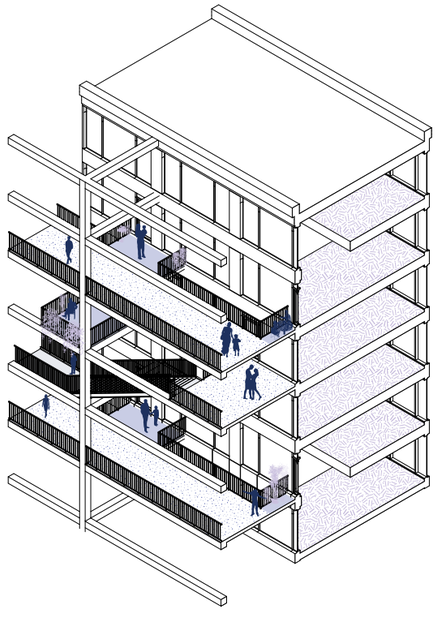
Routing

Section

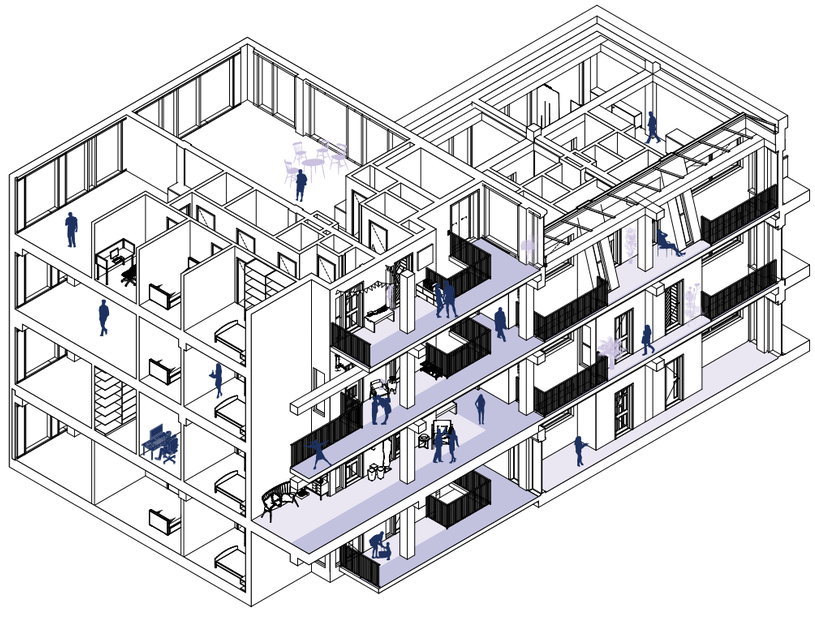




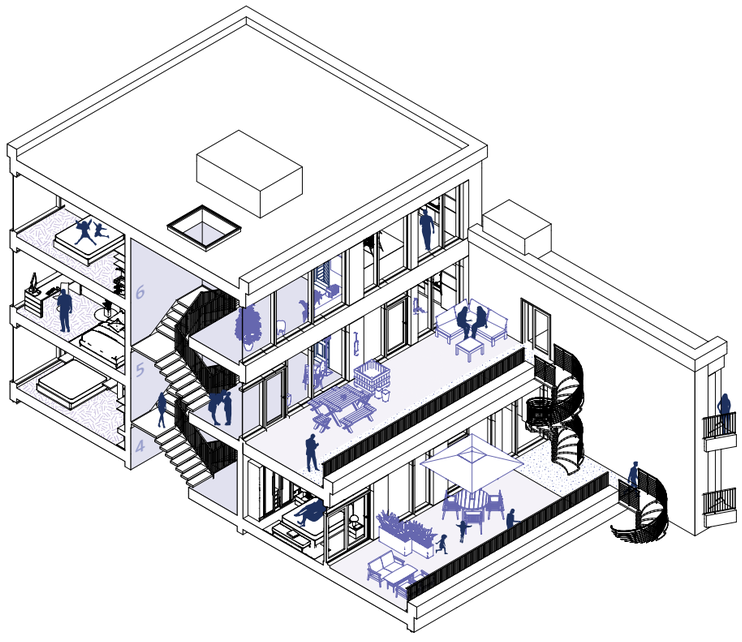
Layered Interaction



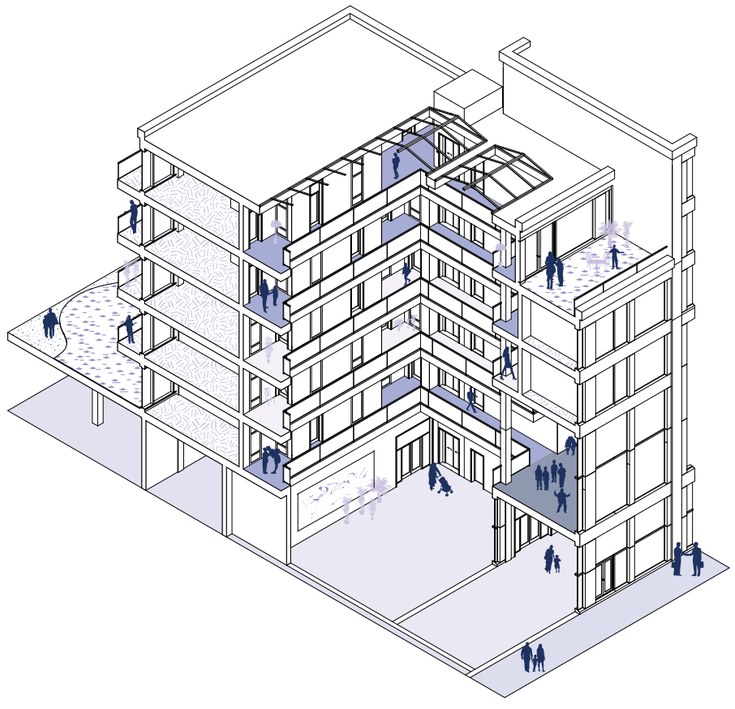
Gallery



Corridor



Stairway



Communal

Routing

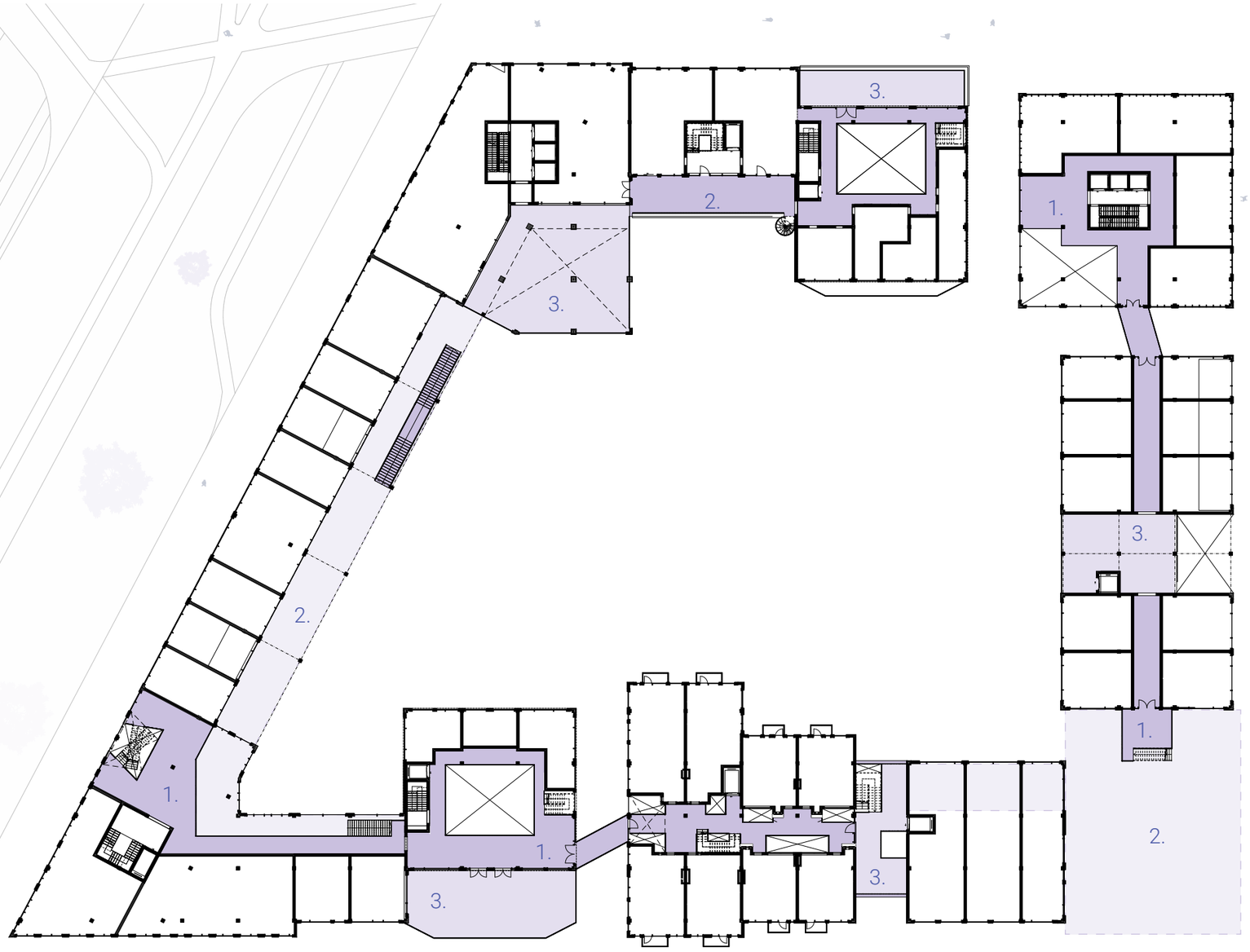
Floor plan - 1

1. Office space
2. Stores
3 .Repair Cafe
4. Cafe
5. Library
6. Gym
7. Bicycle shop
8. Parking
9. Daycare

0 25 m

Routing

Floor plan - 5



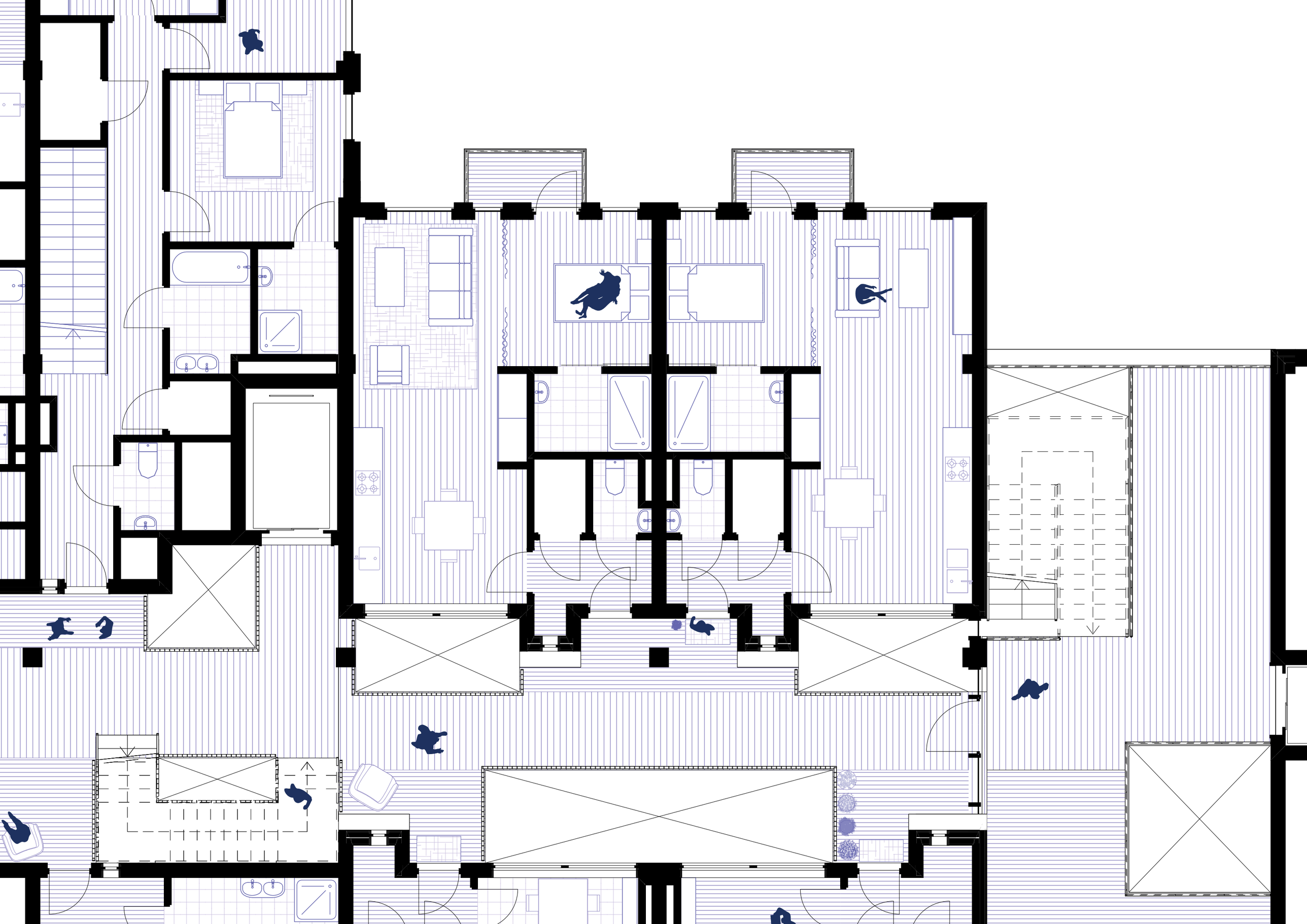
1. Routing
2. Routing on other floor
3. Collective space

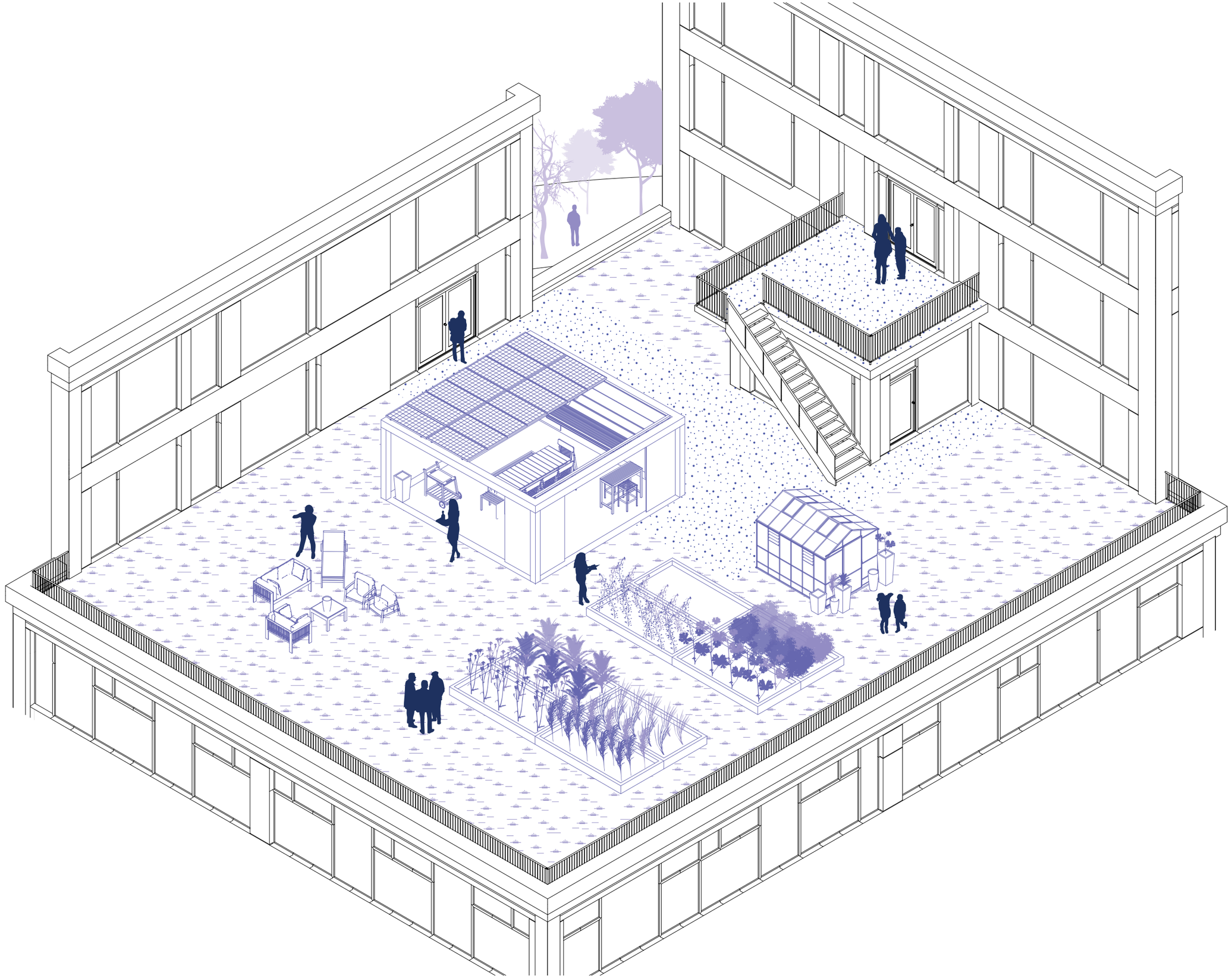
0 25 m

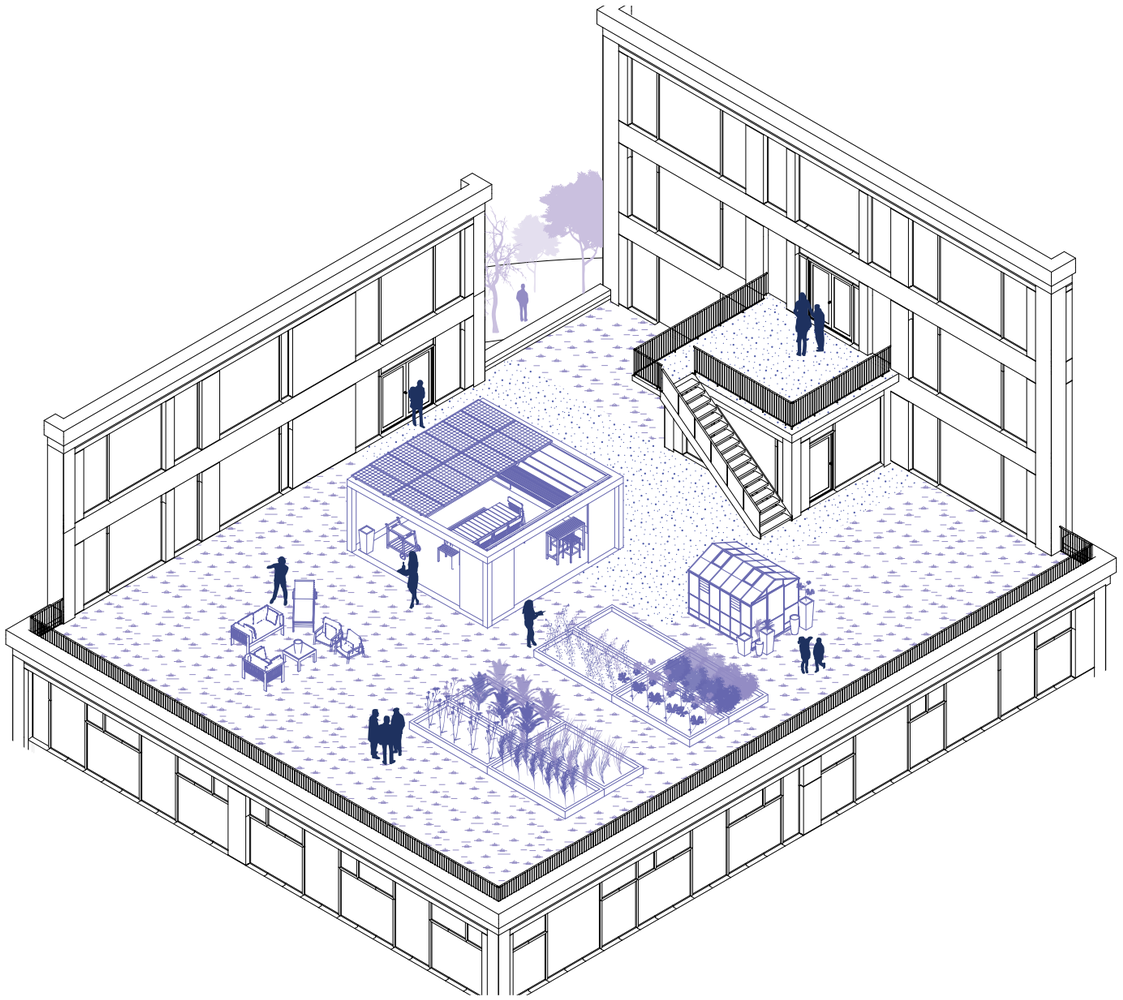
Routing
Elements

(Pinterest, 2025)

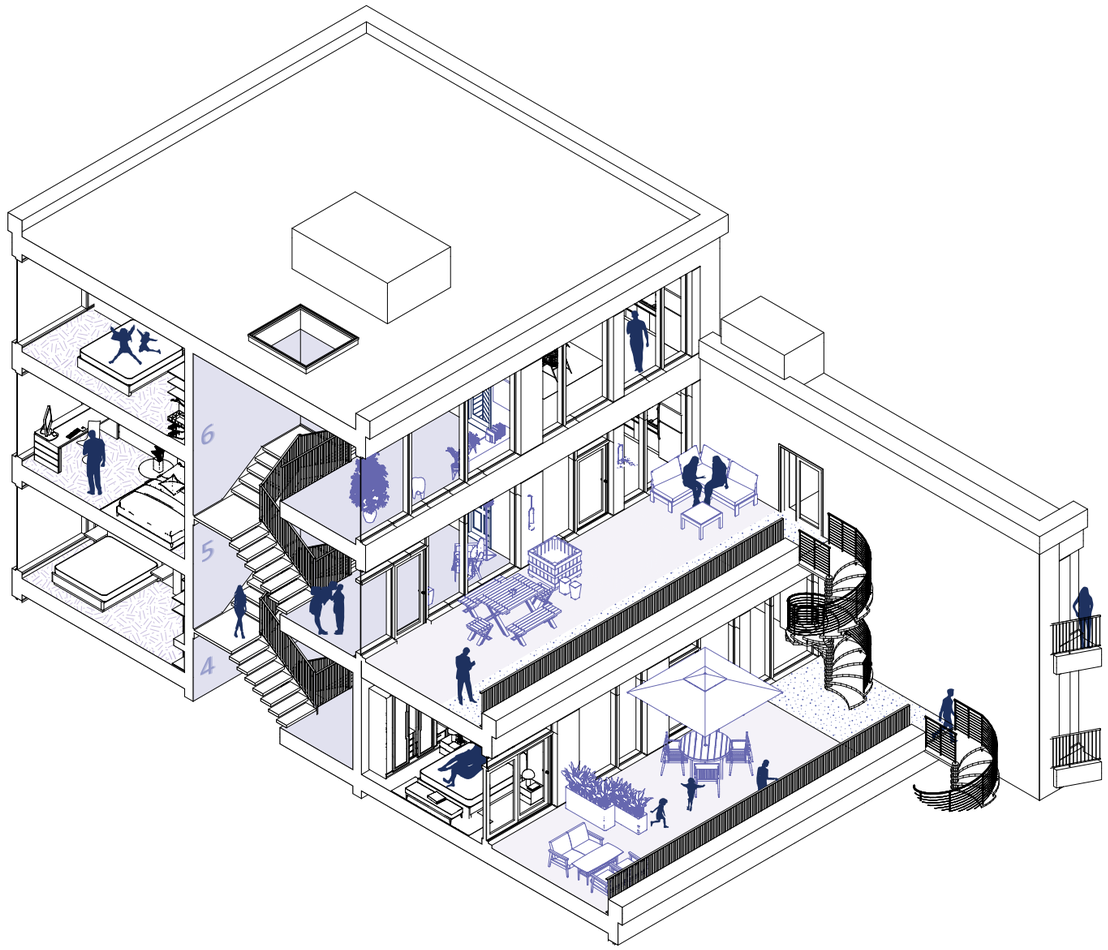
Private Identity



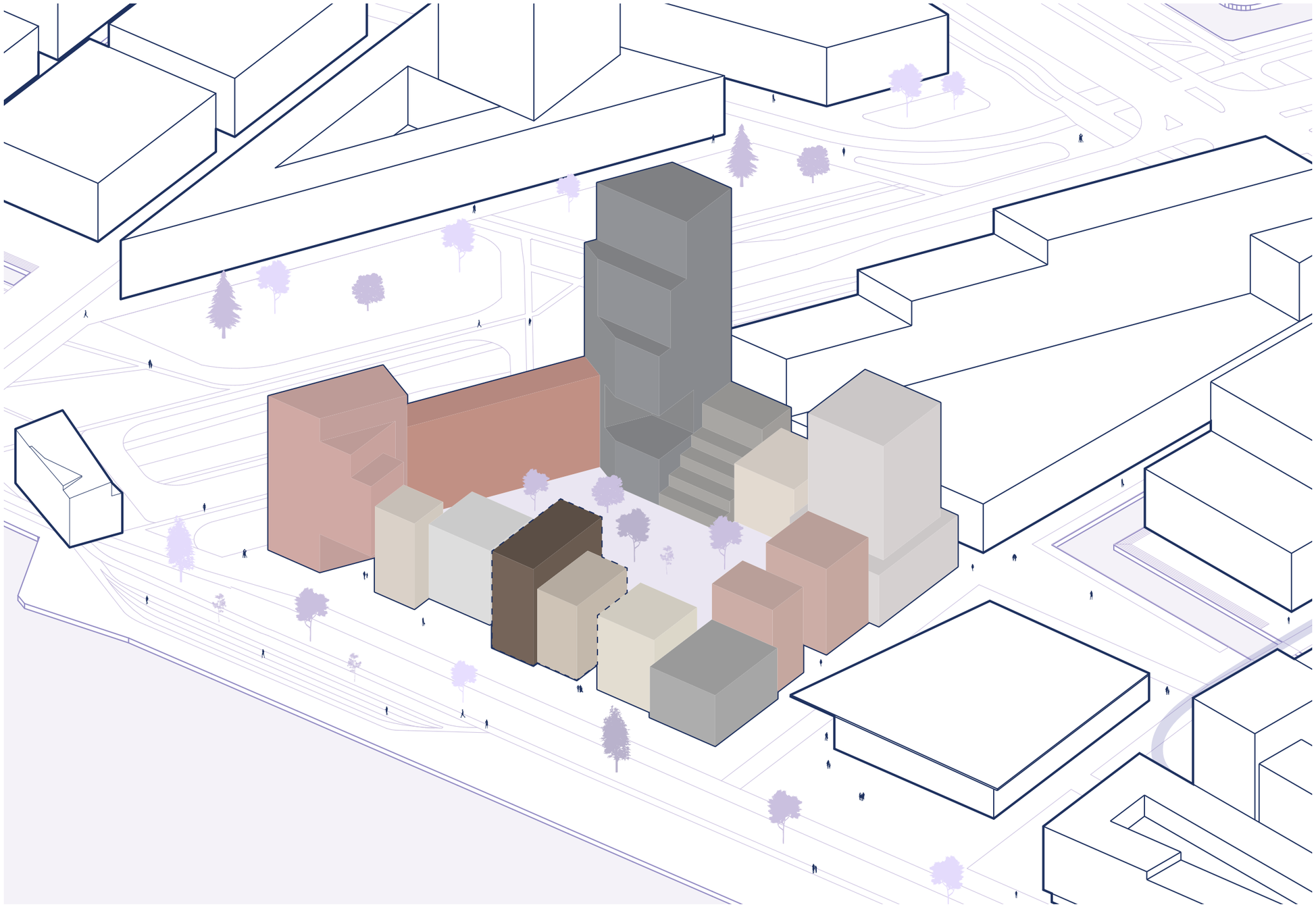


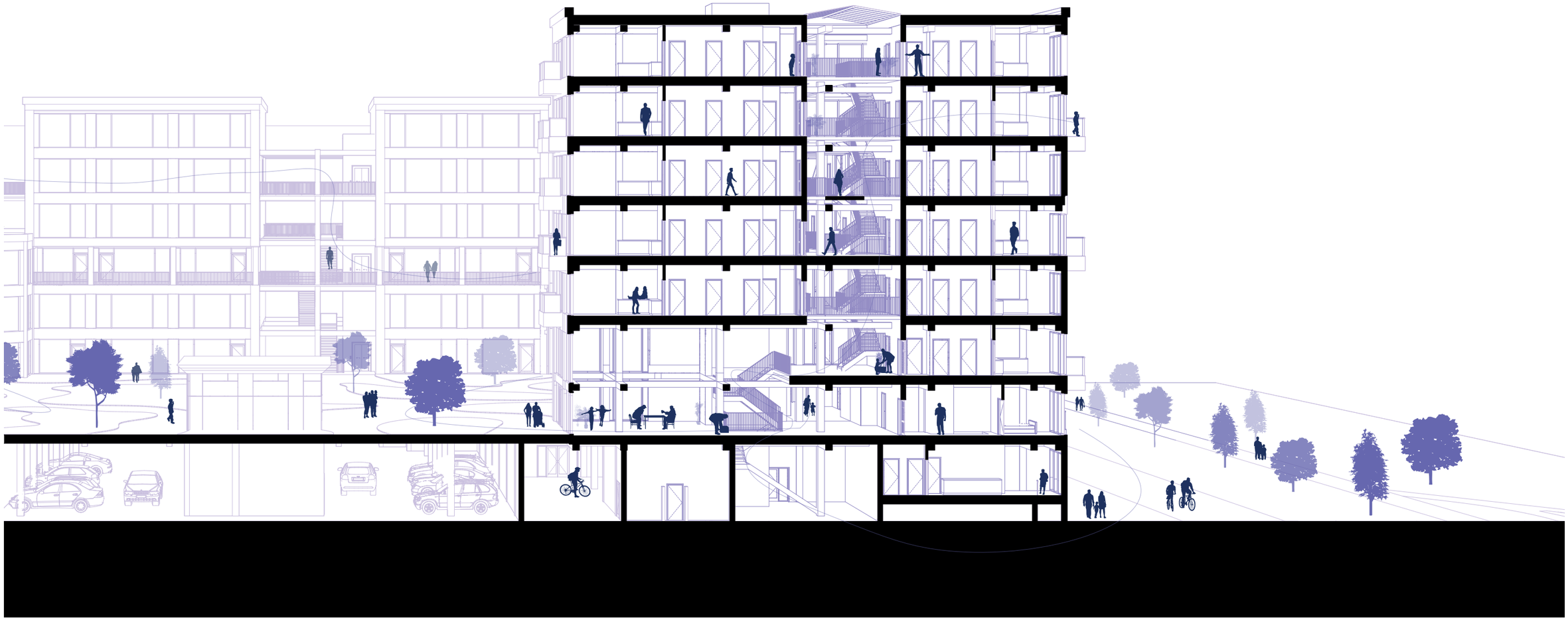


Participation



Ownership



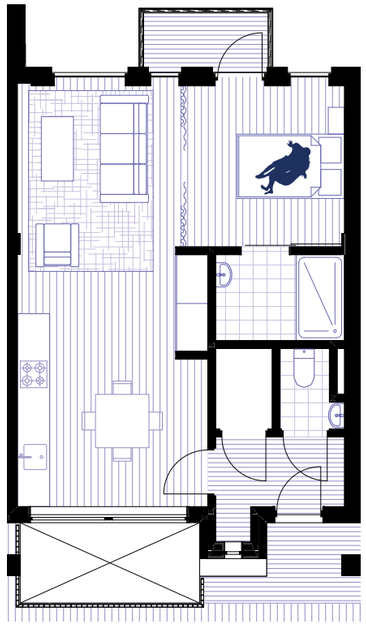


Dwelling
Impression

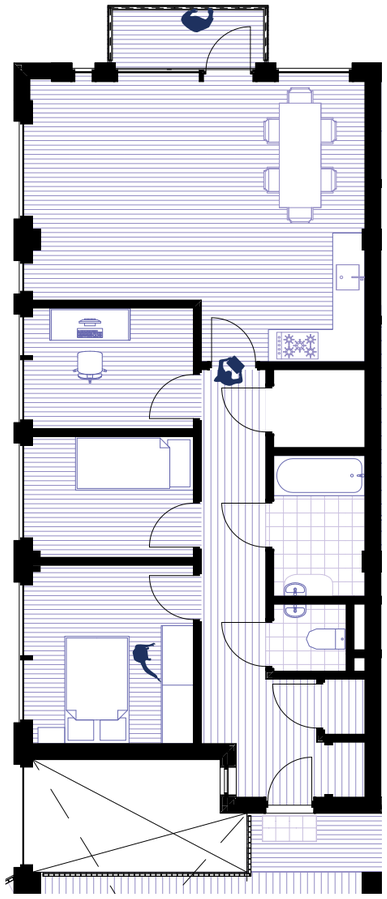
(Pinterest, 2025)

Floor plan

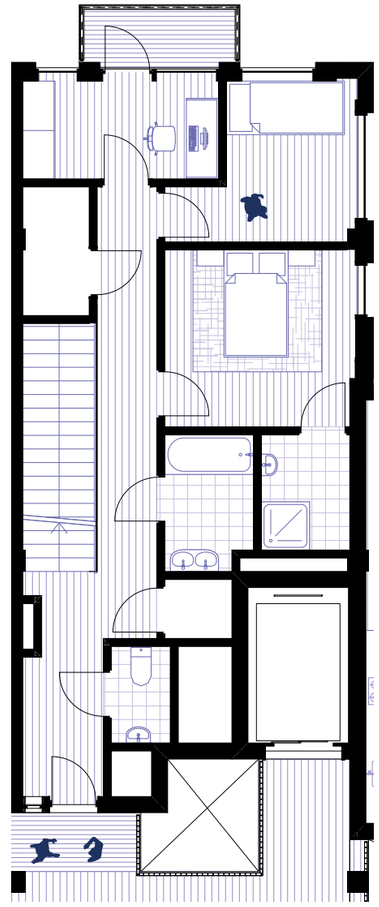
Dwellings

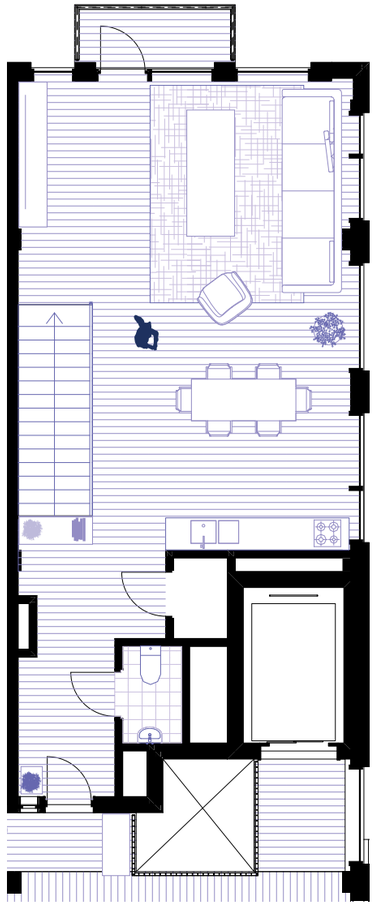


Studio
Area - 46 m²
Target group - Students/starter



Apartment
Area - 73 m²
Target group - Starter/family

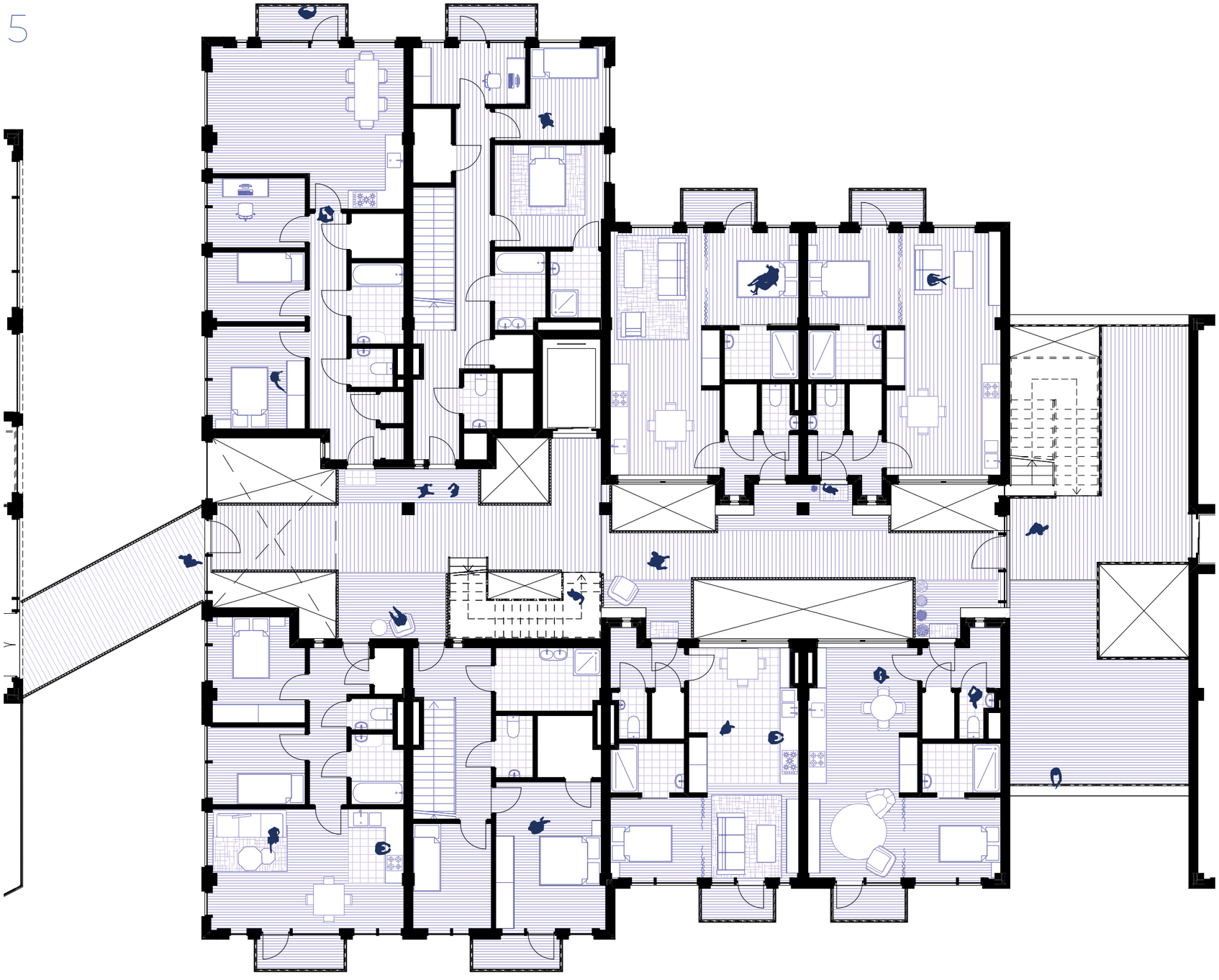




Maisonette
Area - 115 m²
Target group - Family

Floor plan

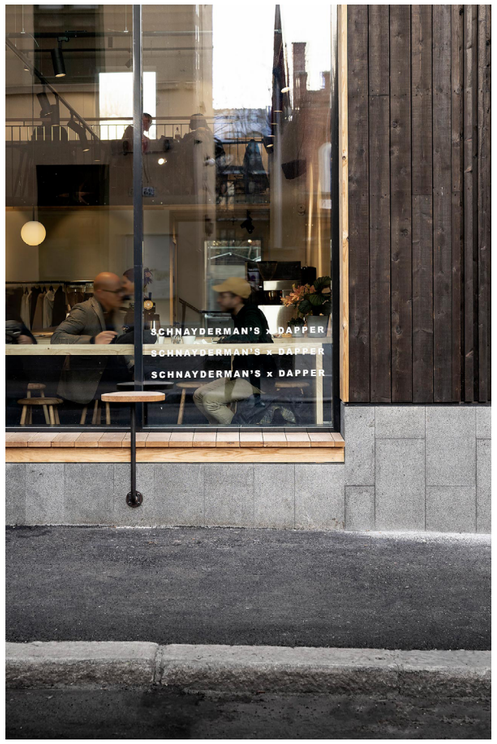
Typical - 5



56

Material

Impression



(Pinterest, 2025)

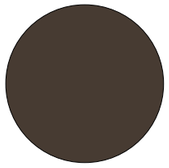
Detailing

Fragment

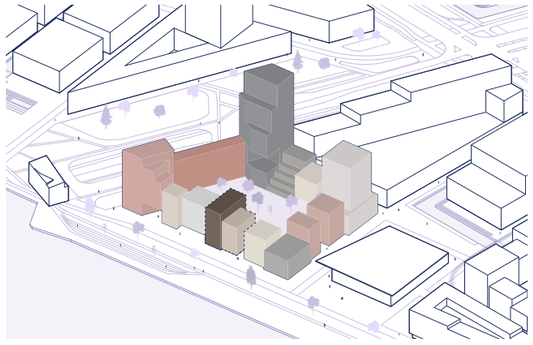
Facade

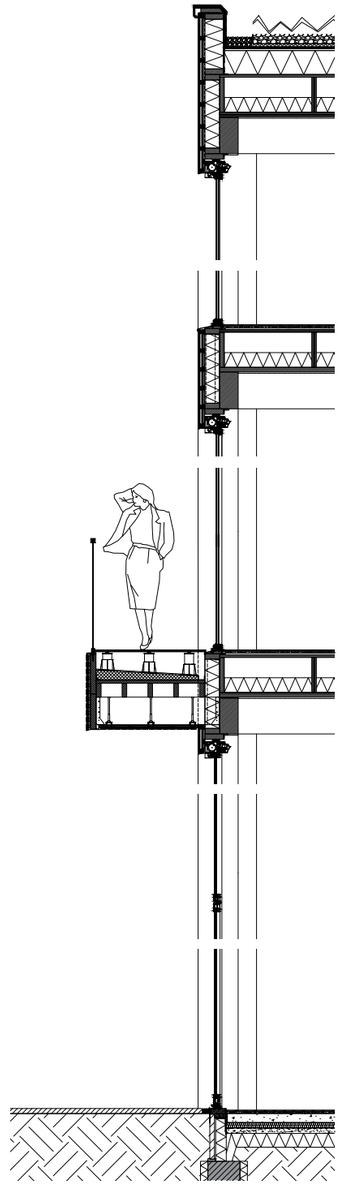
Balcony

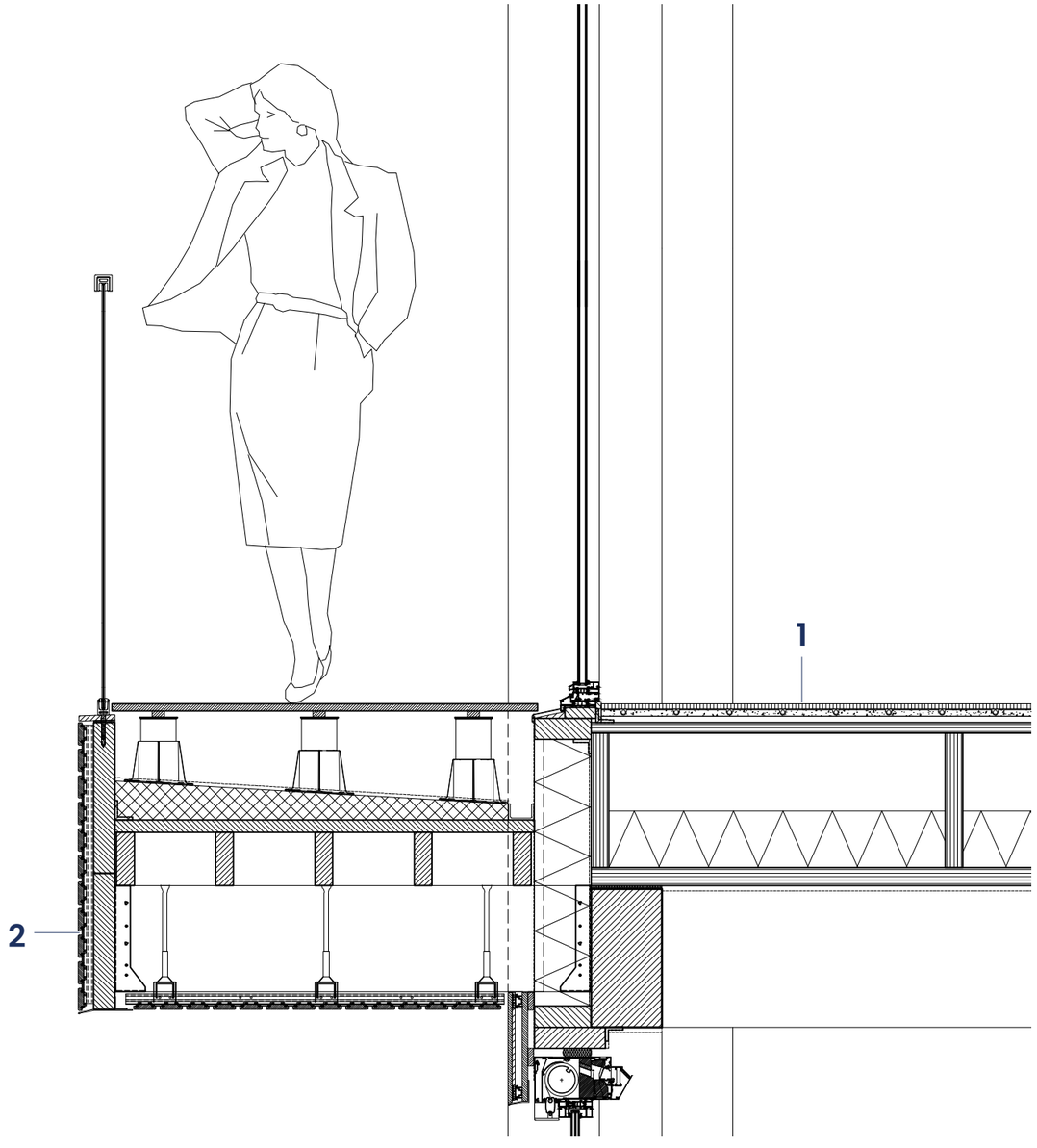
Finish



Elements

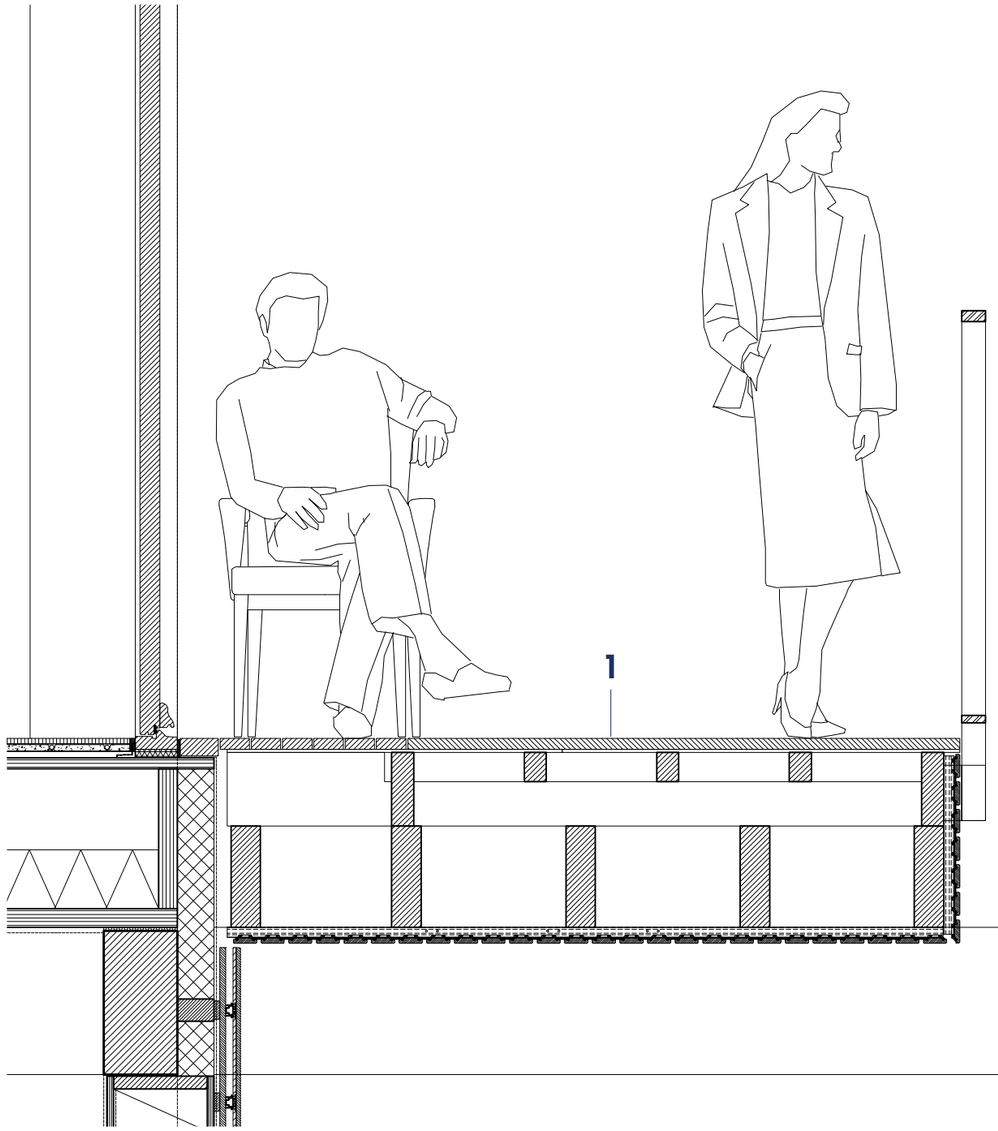


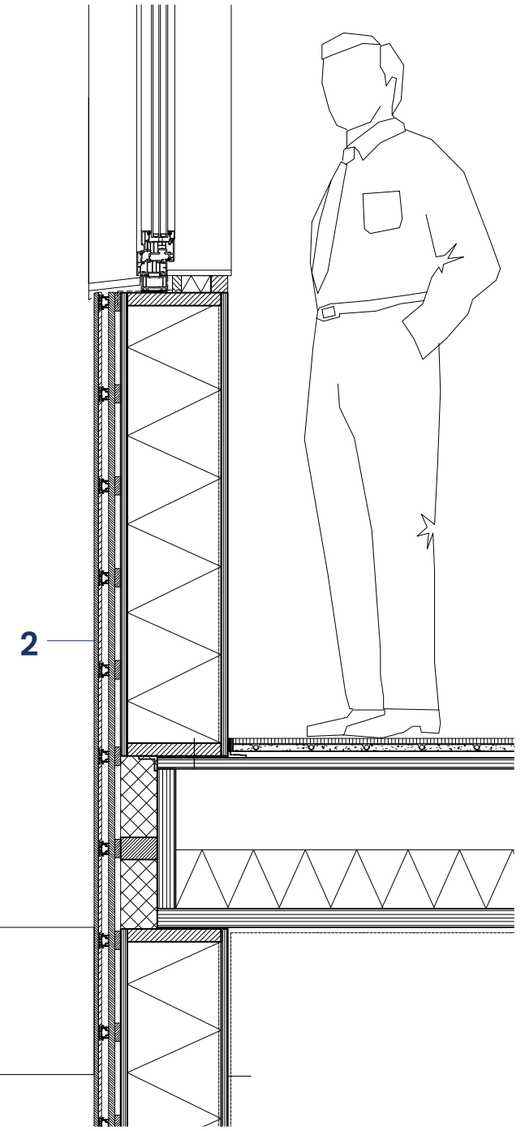




1 10mm linoleum, Compact filling mass, Varioprofile tube 11.6 x 1.5 laser, 18 mm gypsum fiberboard, Kerto-Ripa box element 460mm (with 160mm insulation), Ceiling finish

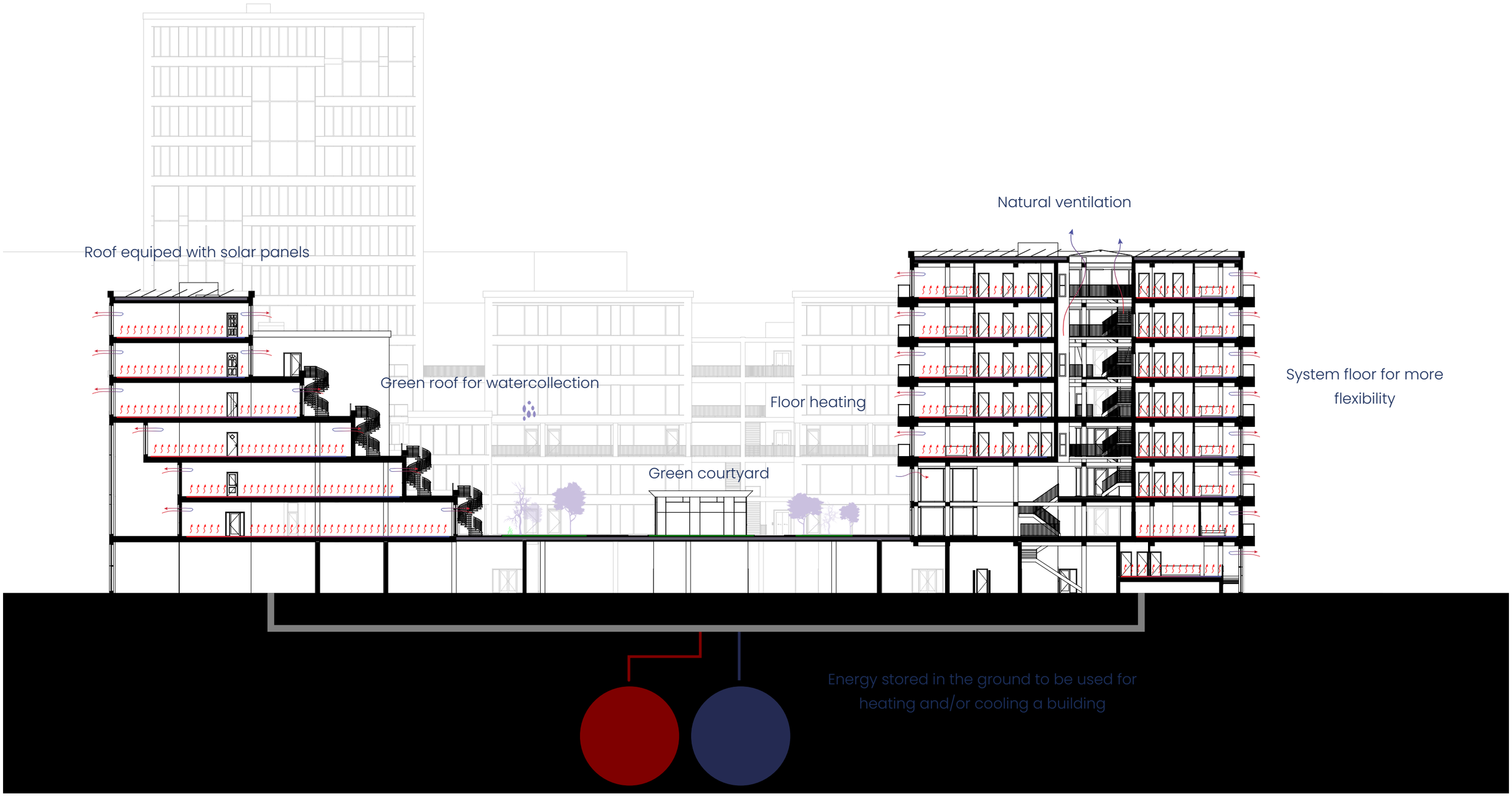
2 Accoya wood (Shou-sugi ban), Derarko facade system, wooden battens, Water-resistant foil, DucoTwin 120, Plaster finish Dentimex





1 Accoya wood, Wooden beam, Derarko facade system (ceiling), Accoya wood

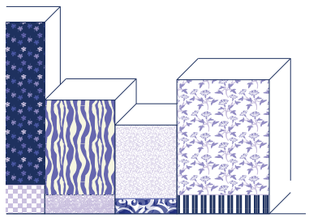
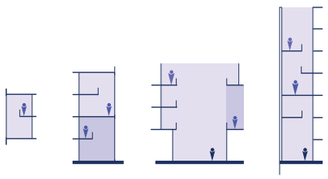
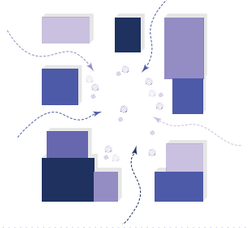
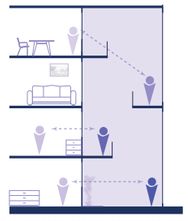
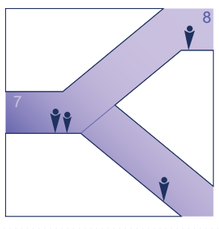
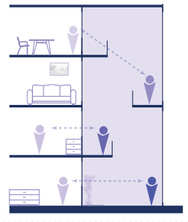
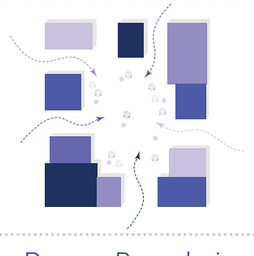
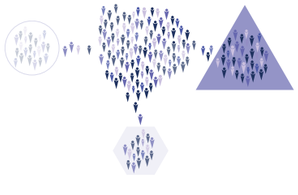
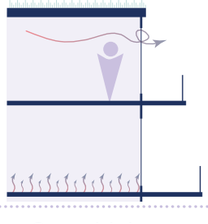
2 Accoya wood, Derarko facade system, wooden battens, Water-resistant foil, 18mm plywood, Isovlas insulation 0.035 m2 K/W, Vapor barrier foil, 18mm plywood finish, Plaster finish Dentimex


Roof equiped with solar panels
Green roof for watercollection
Natural ventilation
Floor heating
System floor for more flexibility
Green courtyard
Energy stored in the ground to be used for heating and/or cooling a building

Strategies

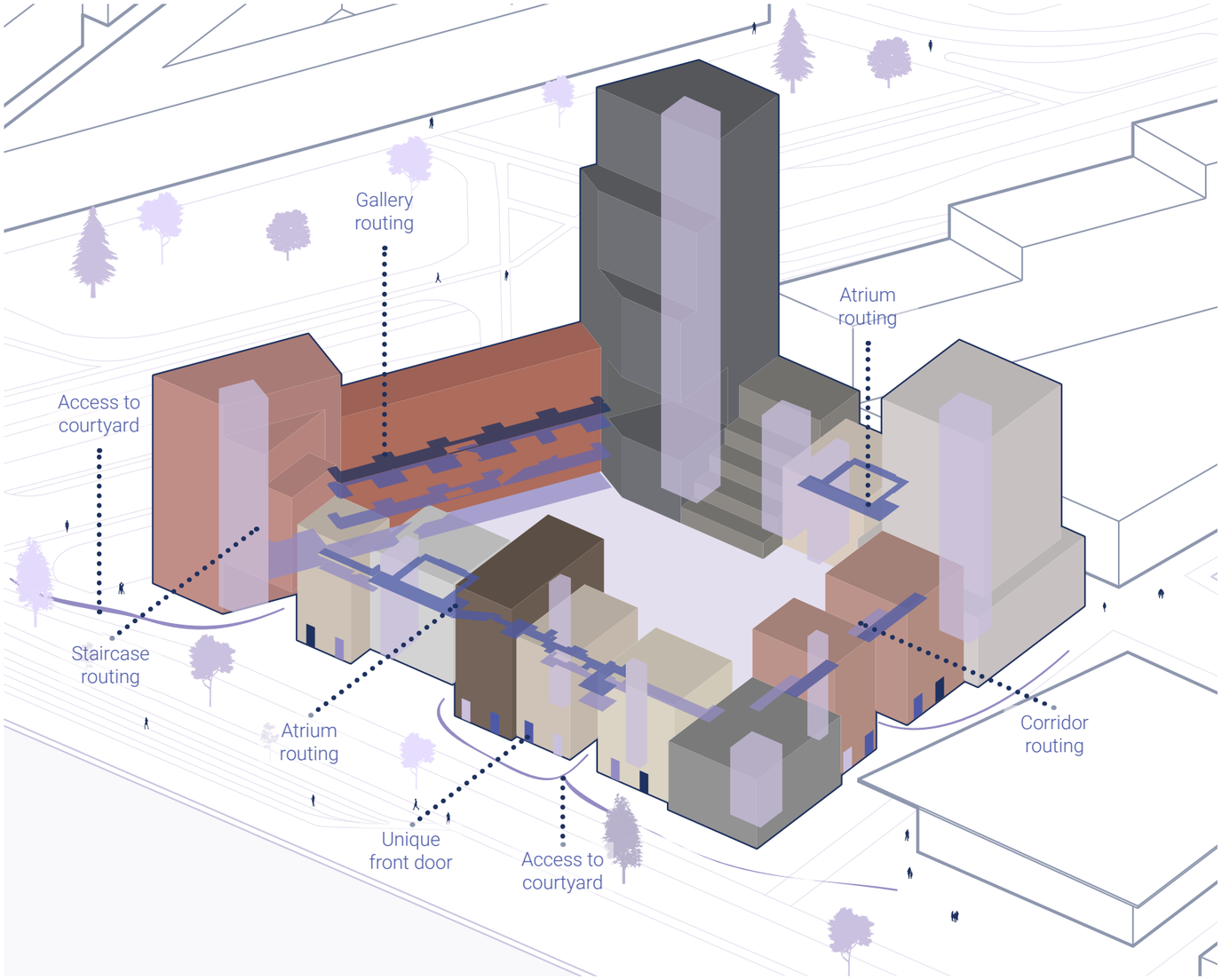
Design

Scales

	City	Neighbourhood	Communal	Individual
Public Space				
	Dual Access	Expressive Volumes	Layered Interaction	Private Identity
Communal Space				
	Porous Boundaries	Nested Communities	Integrated Clusters	Engaged Routes
Transitional Space				
	Dual Access	Communal Spine	Expressive Routes	Engaged Routes
Private Space				
	Porous Boundaries	Nested Communities	Integrated Clusters	Cozy Living

Design Strategy

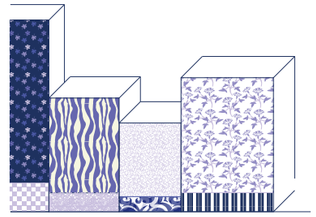
Public



Public Space

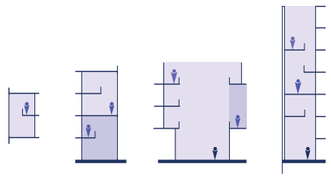
City

Dual Access



Neighbourhood

Expressive Volumes



Communal

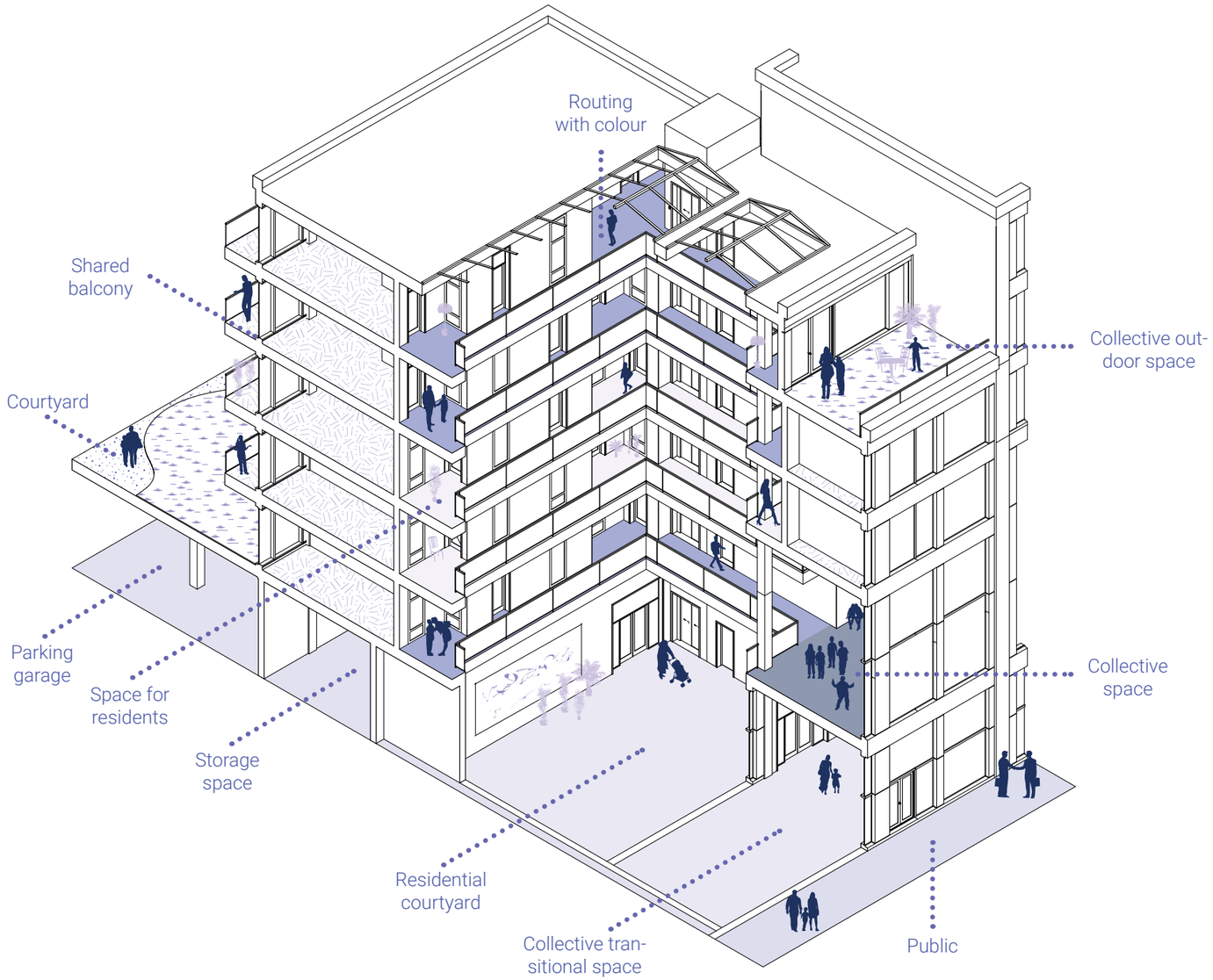
Layered Interaction

Individual

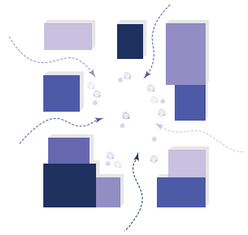
Private Identity

Design Strategy

Communal



Communal Space



Porous Boundaries

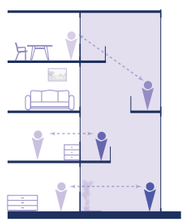
City

Nested Communities

Neighbourhood

Integrated Clusters

Communal

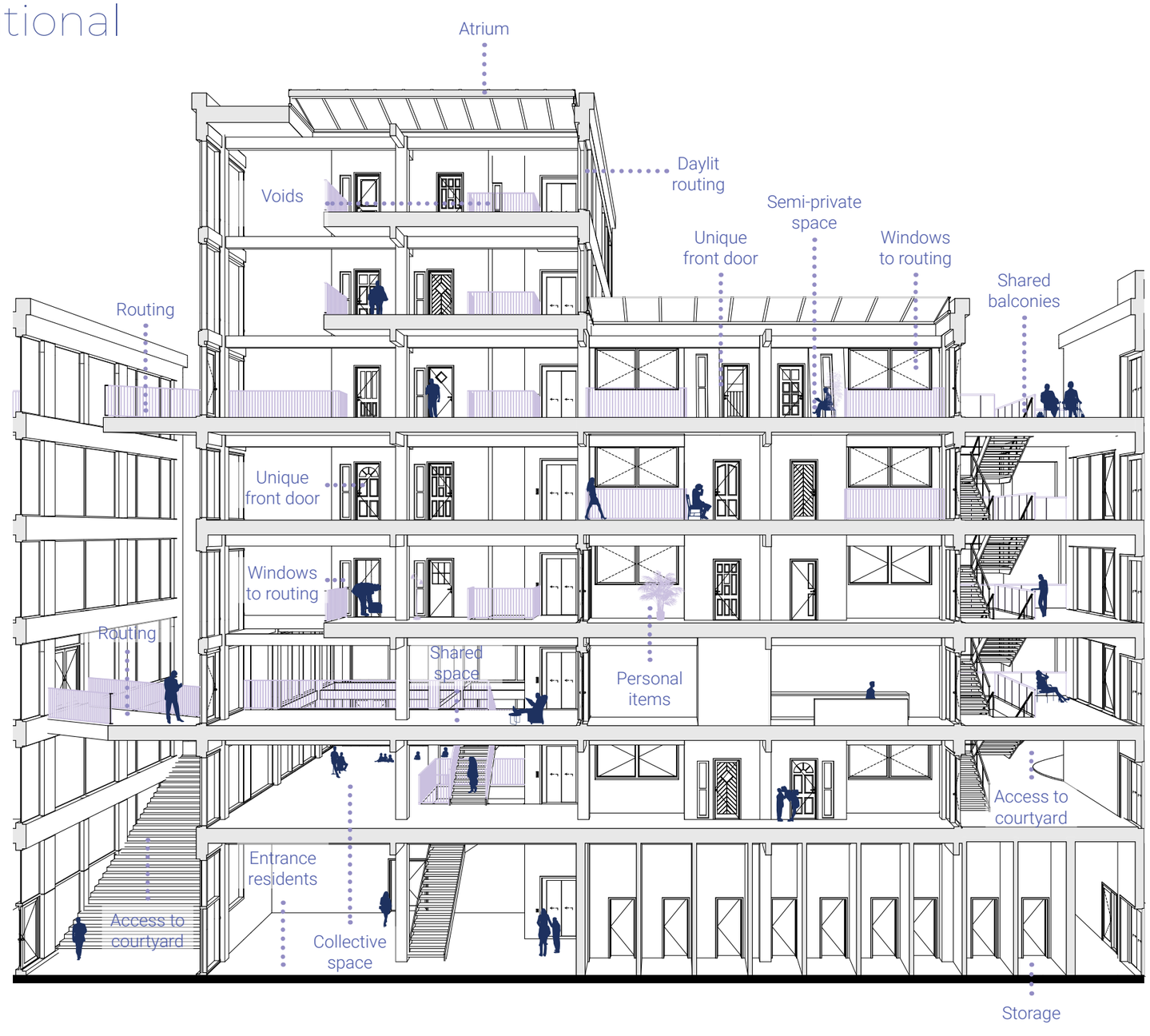


Engaged Routes

Individual

Design Strategy

Transitional



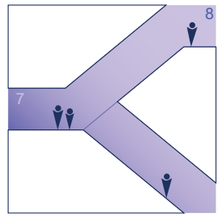
Transitional Space

Dual Access

City

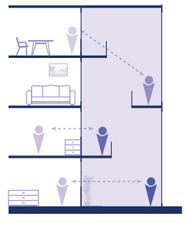
Communal Spine

Neighbourhood



Expressive Routes

Communal

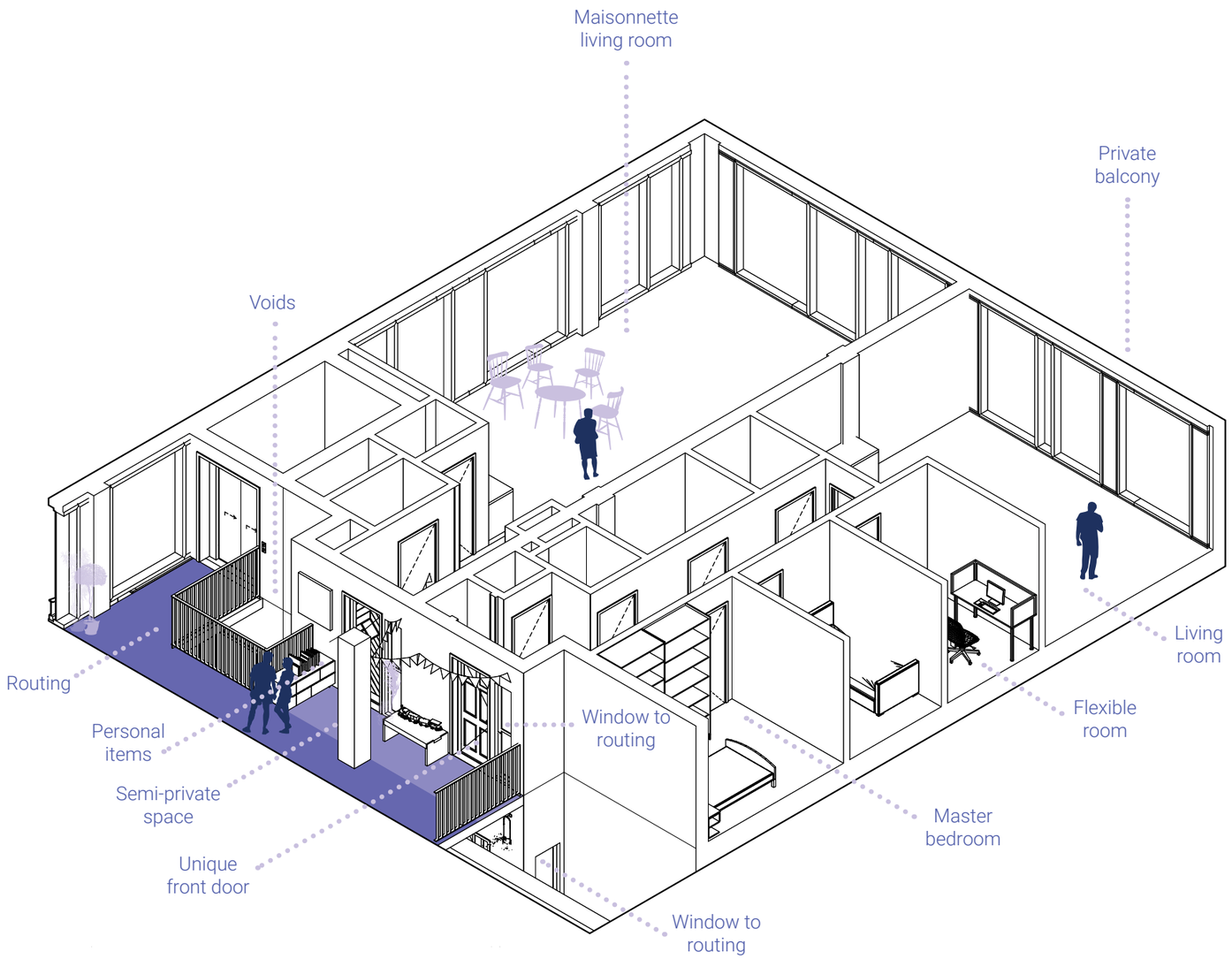


Engaged Routes

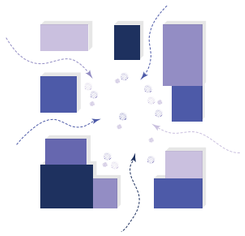
Individual

Design Strategy

Private



Private Space



Porous Boundaries

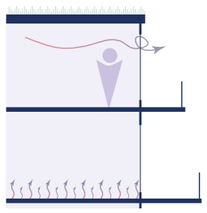
City

Nested Communities

Neighbourhood

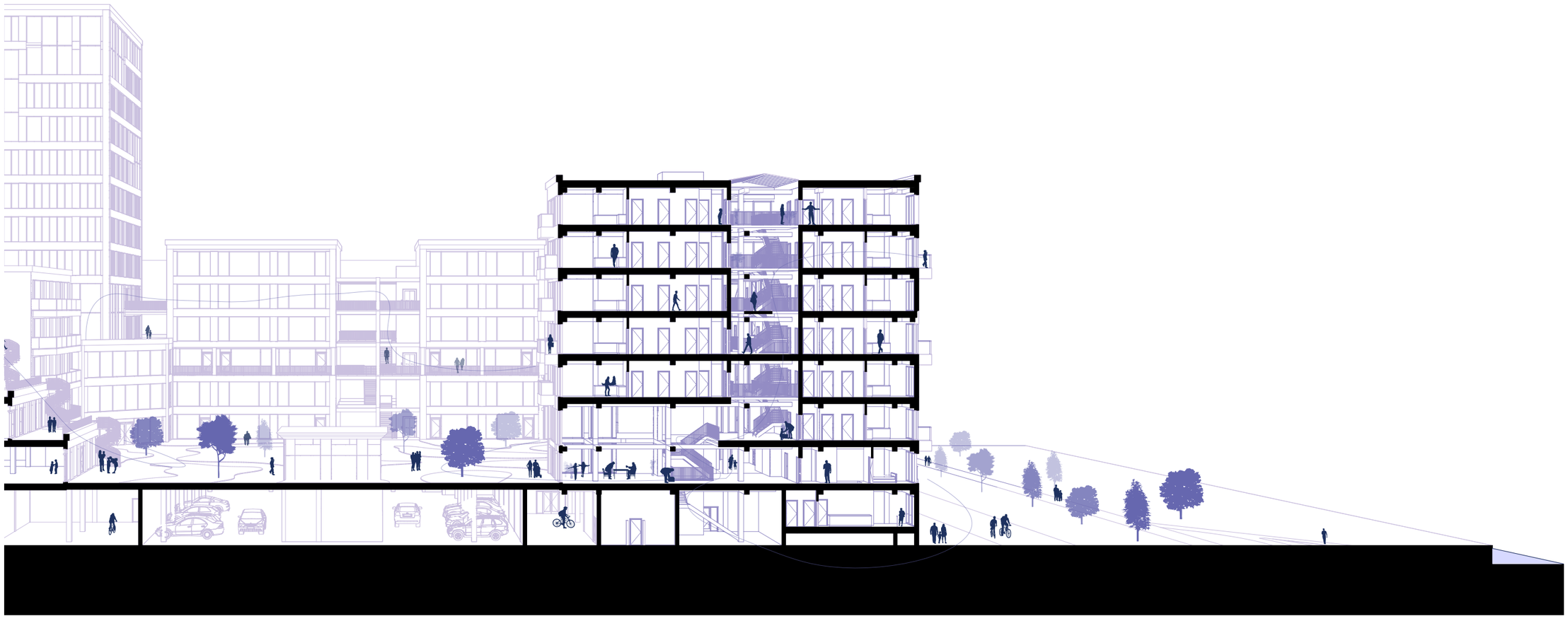
Integrated Clusters

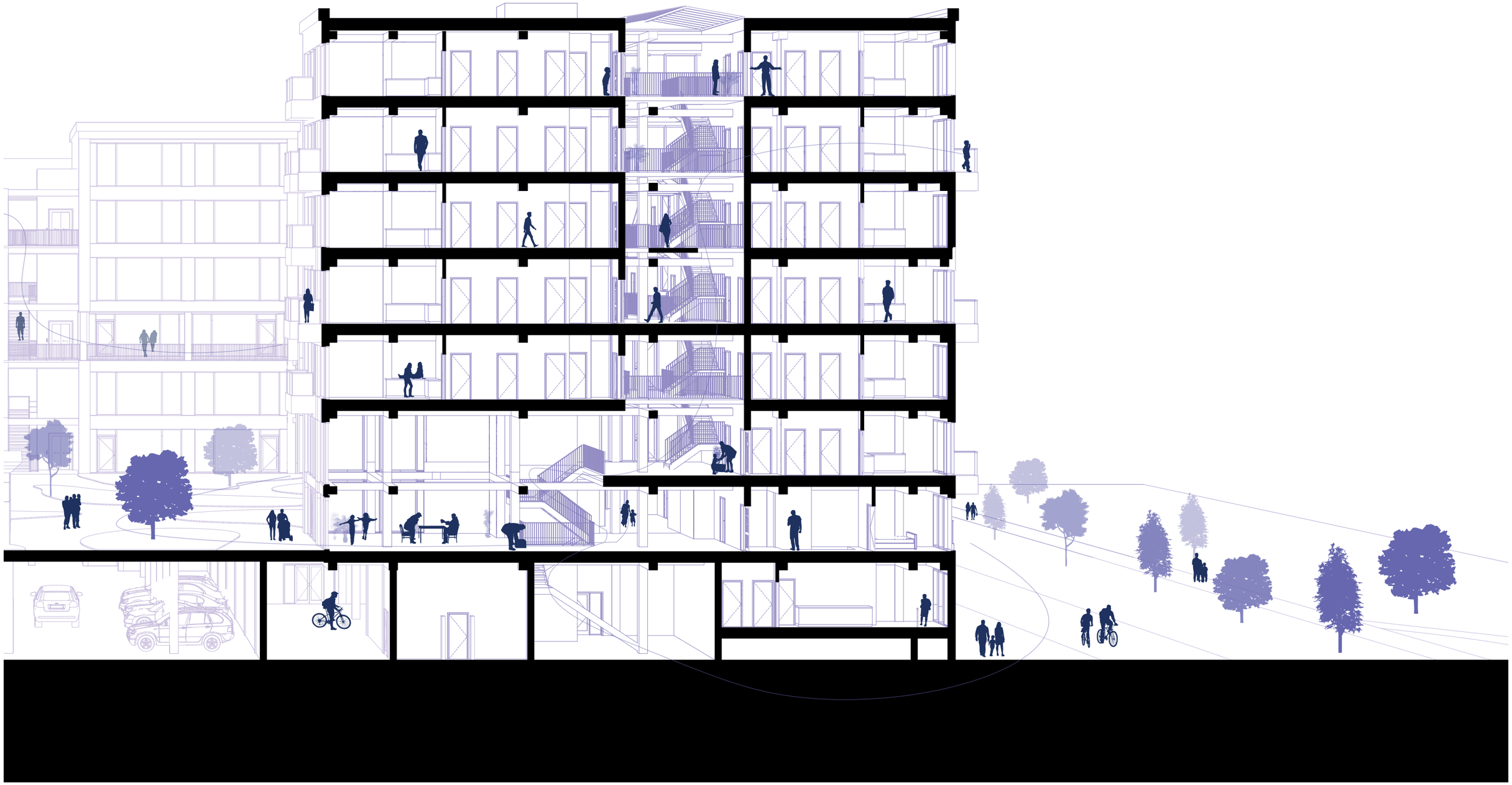
Communal

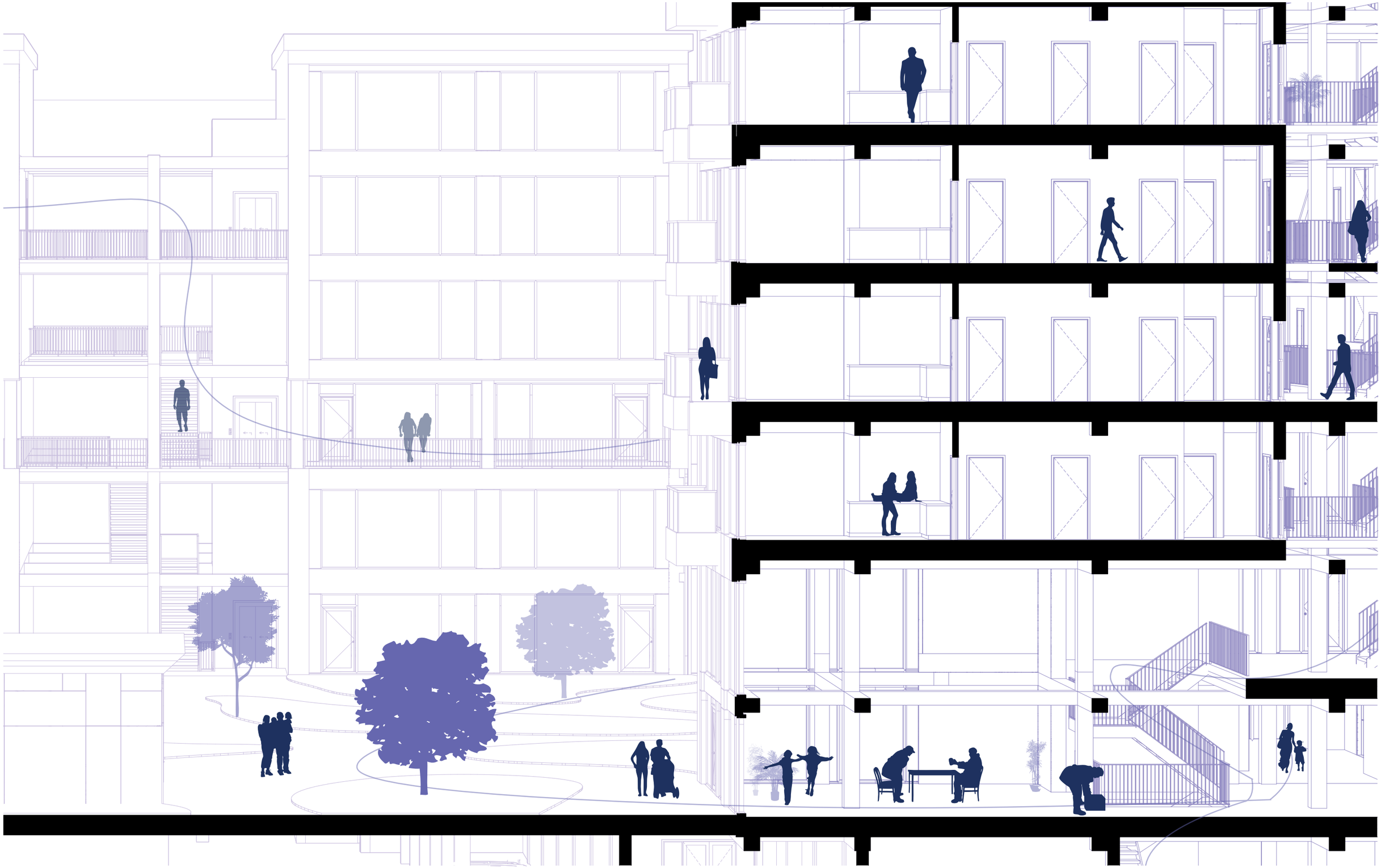


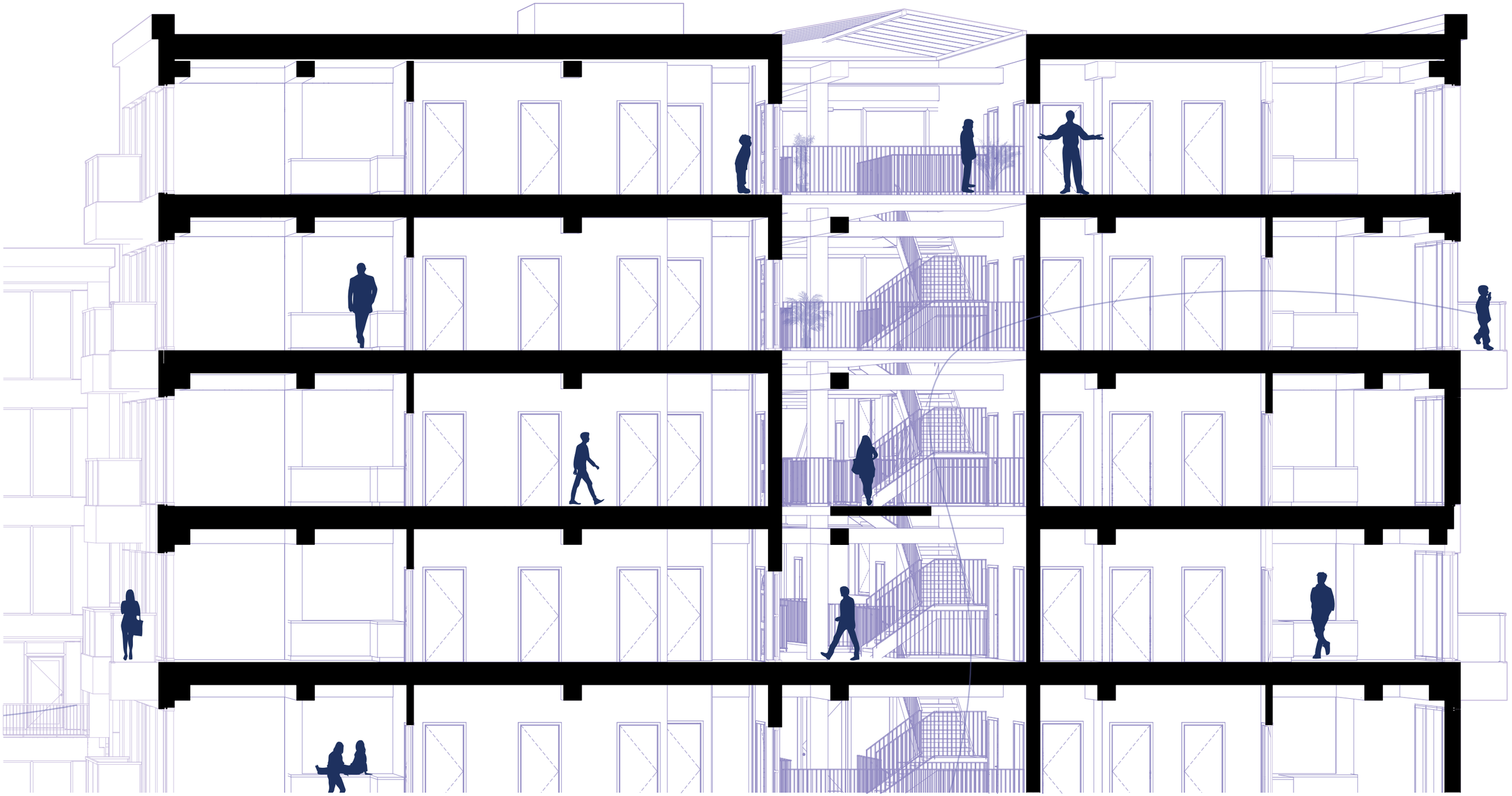
Cozy Living

Individual



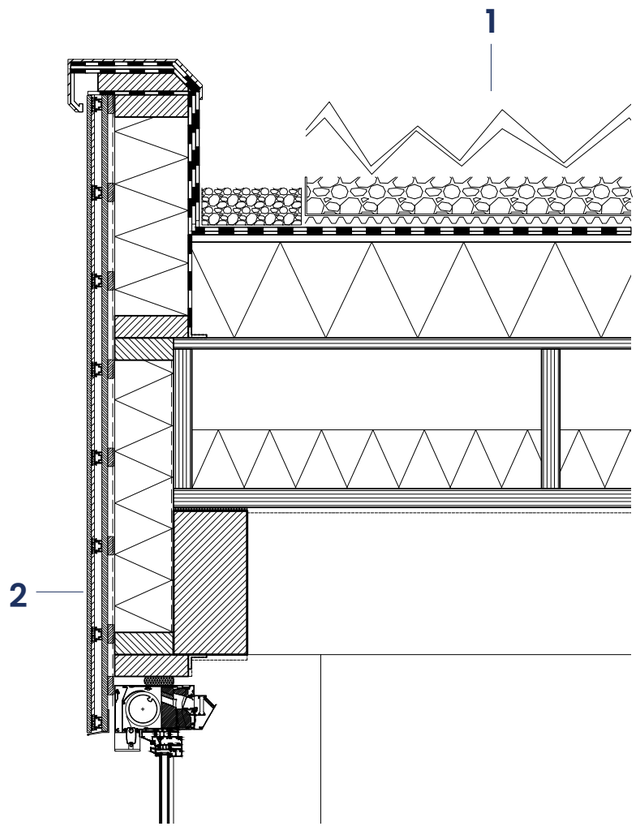






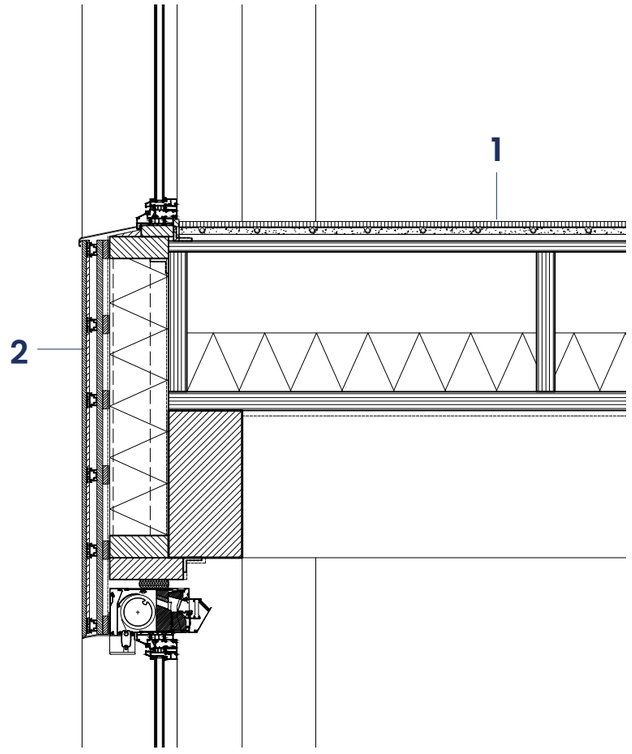
Thank you.

Questions?



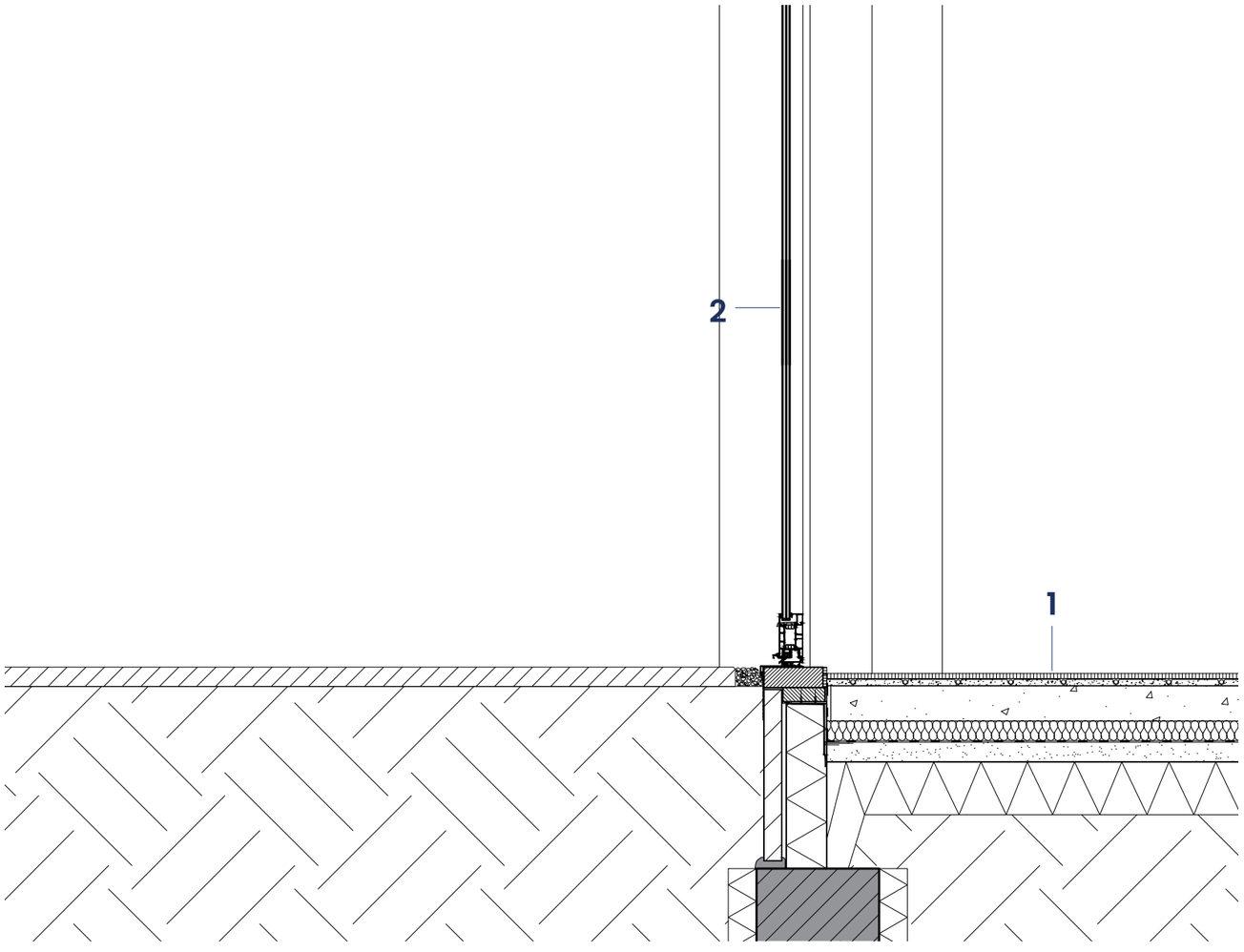
1 Green roof vegetation, Substrate, Drainage system, Water and root barrier, Isovlas insulation 0.035 m2 K/W, Kerto-Ripa box element 460mm, Ceiling finish finish

2 Accoya wood (Shou-sugi ban), Derarko facade system, wooden battens, Water-resistant foil, 18mm plywood, Isovlas insulation 0.035 m2 K/W, Vapor barrier foil, Wooden beam



1 10mm linoleum flooring, Compact filling mass, Varioprofile tube 11.6 x 1.5 laser, 18 mm gypsum fiberboard, Kerto-Ripa box element 460mm (with 160mm insulation), Ceiling finish

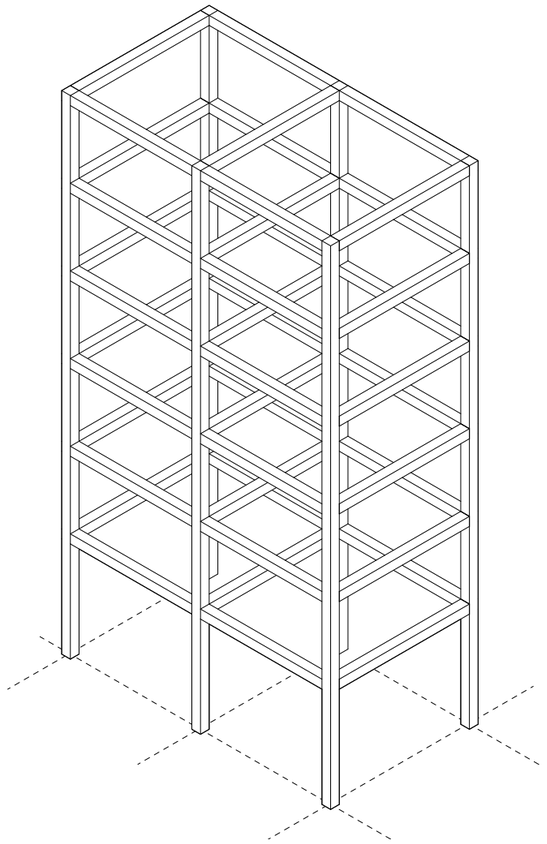
2 Accoya wood (Shou-sugi ban), Derarko facade system, wooden battens, Water-resistant foil, 18mm plywood, Isovlas insulation 0.035 m2 K/W, Vapor barrier foil, Wooden beam



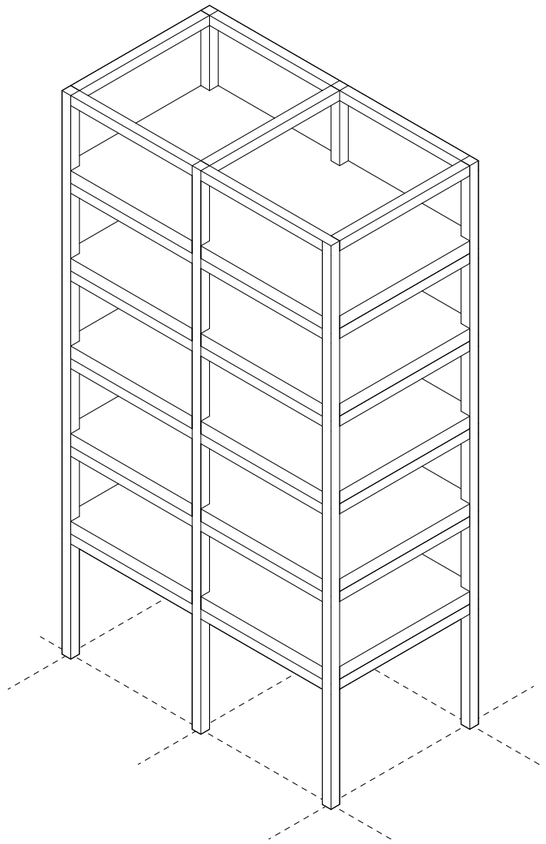
1 10mm linoleum, Compact filling mass, Varioprofile tube 11.6 x 1.5 laser, 18 mm gypsum fiberboard, PE construction foil, Concrete floor slab, Rockwool Rockfloor 60mm, DPM, Sand bedding, Hardcore

2 Reynaers CS77 window frame

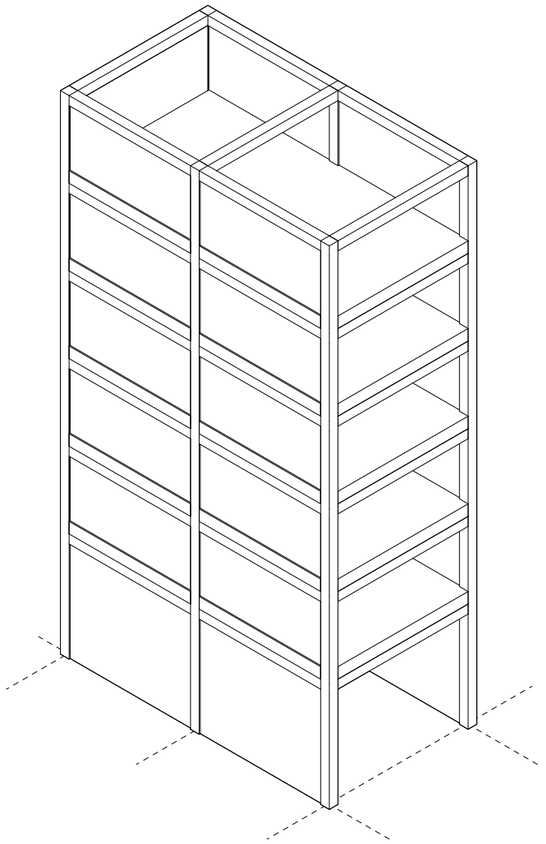
Structure



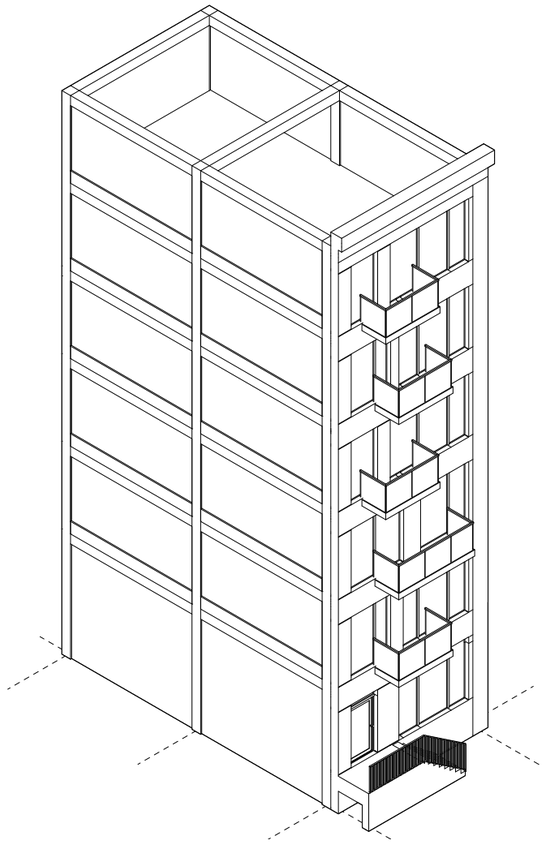
Columns and beams - Wood



Floors - Kerto-ripa



Walls - Timber frame



Facade - Wood

Main research question:

“Which design strategies impact the ‘social’ quality of life for different target groups within a high density context?“

Sub questions:

“How can ‘social’ quality of life be measured within an architectural context & what are the primary factors that affect residents in high-density urban environments?“

“How do different target groups consider these elements within their residential housing?“

“Which design strategies are used in the selected case studies to improve the ‘social’ quality of life of residents?”

Theoretical Framework

Co-living, Mvrdv (2024)

Three phases of Danish cohousing Henrik Gutzon Larsen (2019)

Co-housing

'Human' architecture

Spatial Agency - Other Ways of Doing Architecture, Awan, N., Schneider, T. & Till, J. (2011)

Reassembling the Social, Latour, B. (2005)

Architectural features that influence the perception of density (Cheng, 2010)

Elements of Sense of Community Mcmillan, D. W., & David, D. (1986)

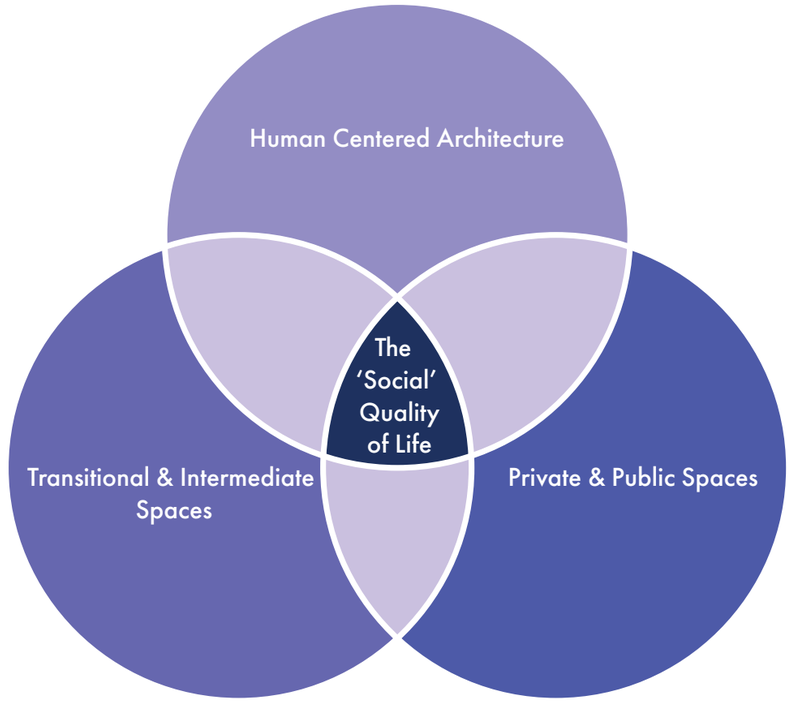
Individual & societal level of Quality of Life Noll, H. (2002)

'Social' Quality of life

Public & private (Spaces)

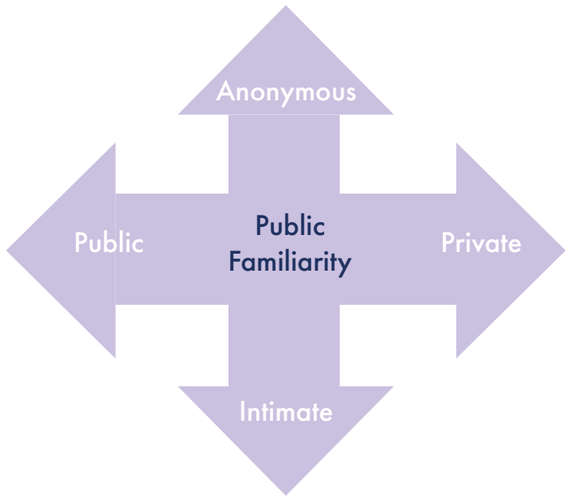
The continuum of privacy and access, Blockland (2017)

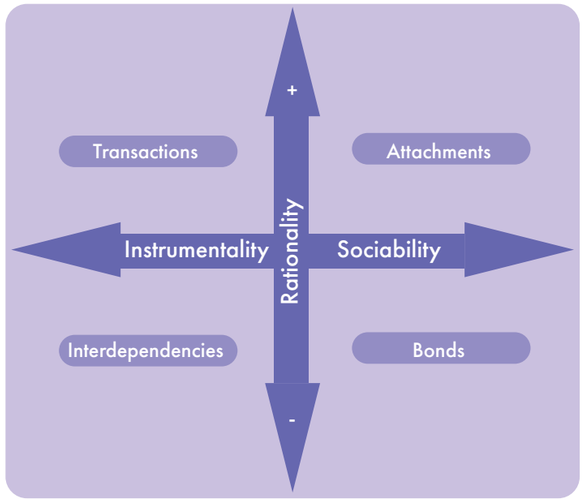
The Production of Space, Lefebvre, H. (1991)



Private & public spaces

Blokland

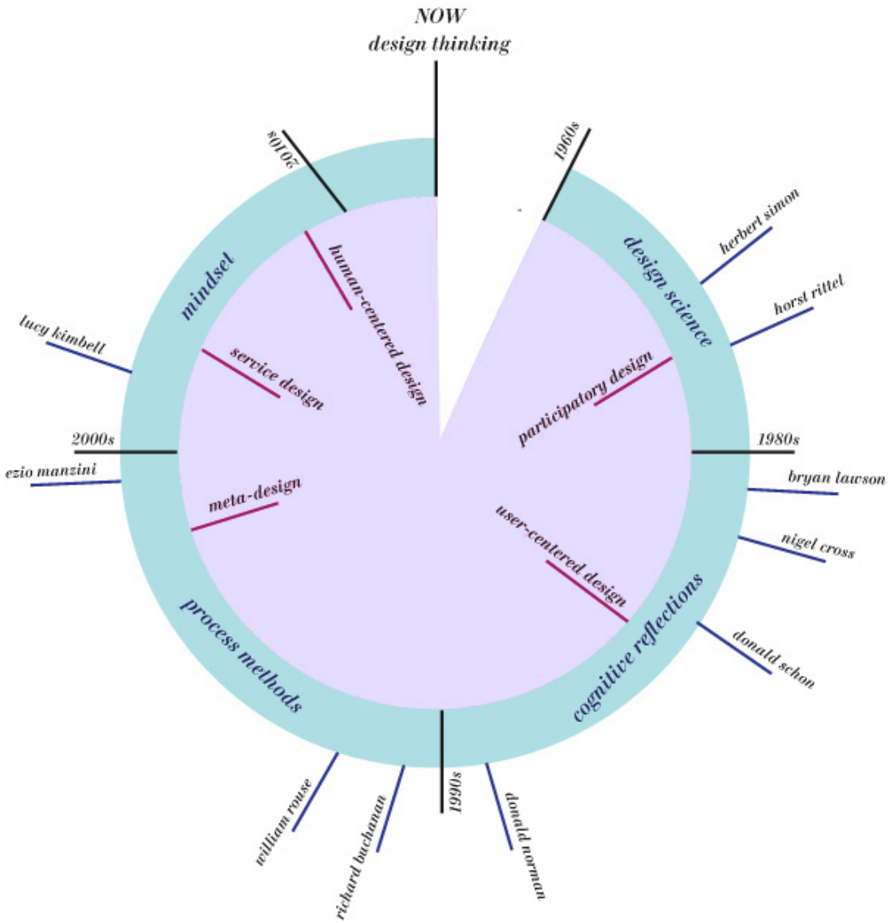


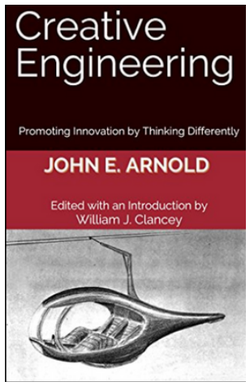


The continuum of privacy and the continuum of access & A typology of social ties - (Blokland, 2017)

Human-centred design

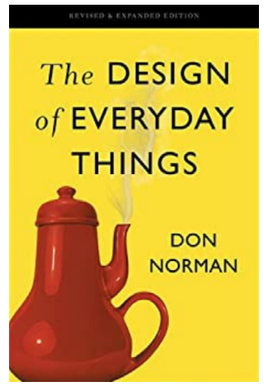
Evolution





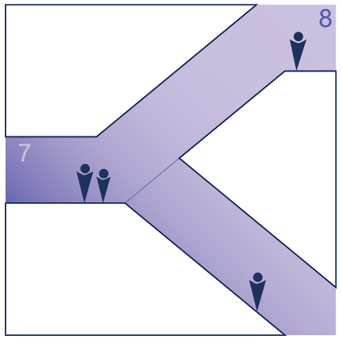
Towards human-centred design

Participartory design



User-centred design

Evolution of design thinking
- (Di Russo, 2012)
The Story of Design Thinking
- (Baytaş, 2021)
UTOPIA: Participatory Design
from Scandinavia to the World
- (Sundblad, 2011)
Norman, D. A., & Draper, S. W. (1986). User centered system design; Norman, D. (2013). The design of everyday things
- (amazon)



Expressive Routes