

Happy living environment for university students

Design of mentally supportive residential environment on campus

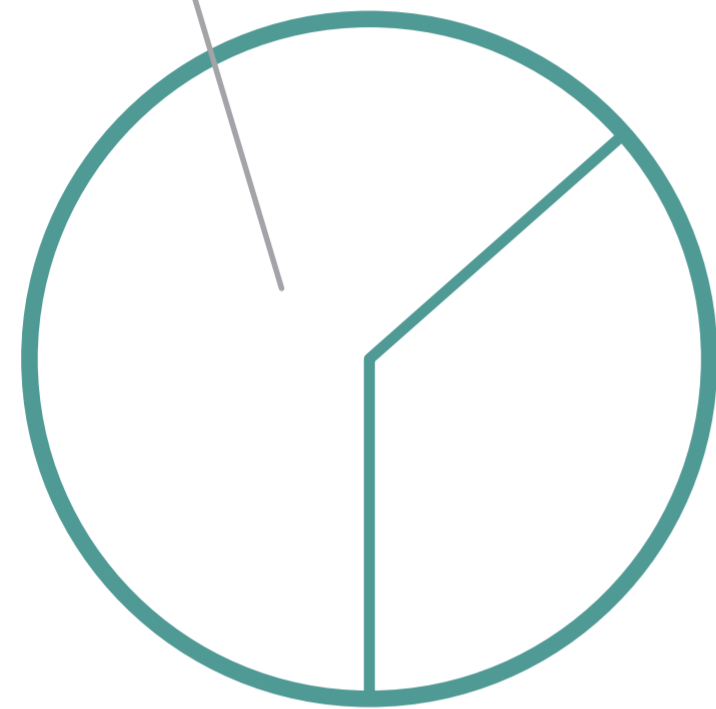
Ying Shen 5792371
Architecture Mentor: Birgit Jürgehake
Building Technology Mentor: Lex van Deudekom
Research Mentor: Leo Oorschot

Motivation

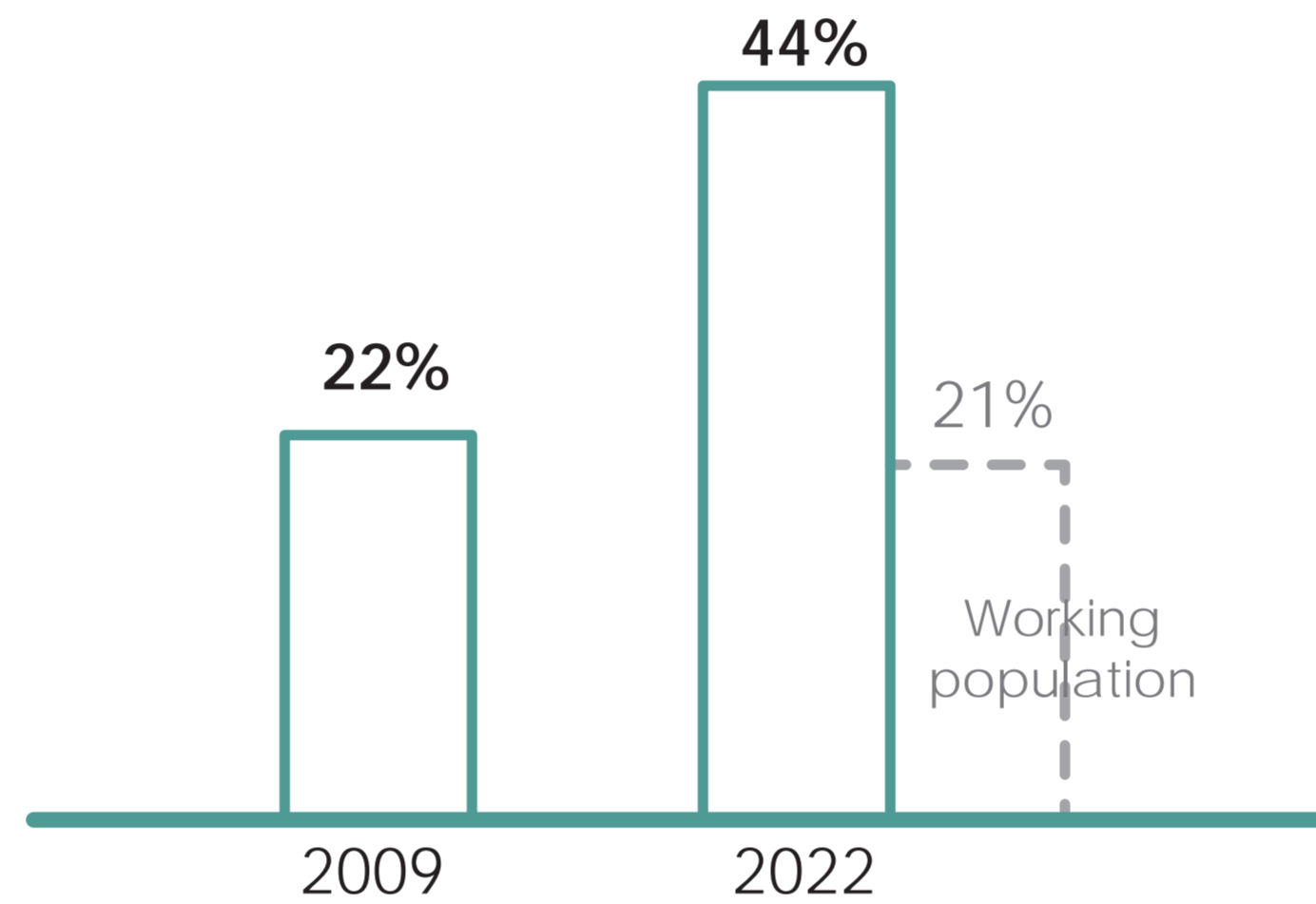


Problem statement

More than half



Emotional problem in university student
(Versteeg & Kappe, 2021)



Depressed university students in the Netherlands
(DUB, n.d.)

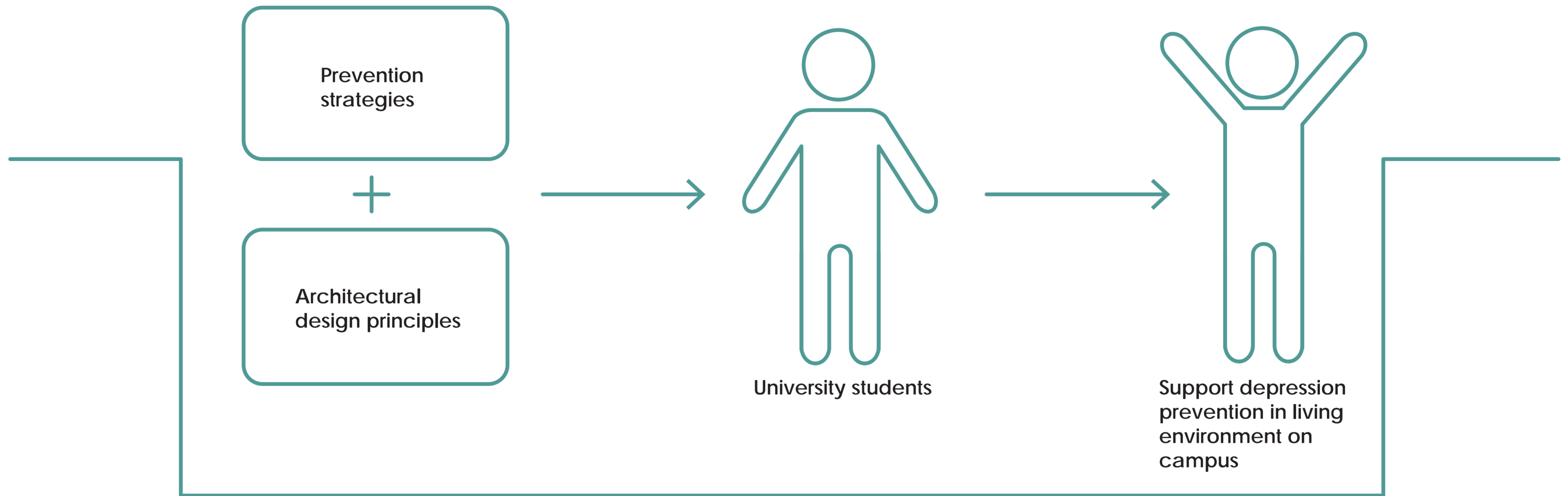


Difficulties of treatment
(Rekenkamer, 2020)
(Storrie et al., 2010)
(Tak et al., 2012)

"Prevention is better than cure"

—Desiderius Erasmus
(Psychiatry, 2022)

Research gap



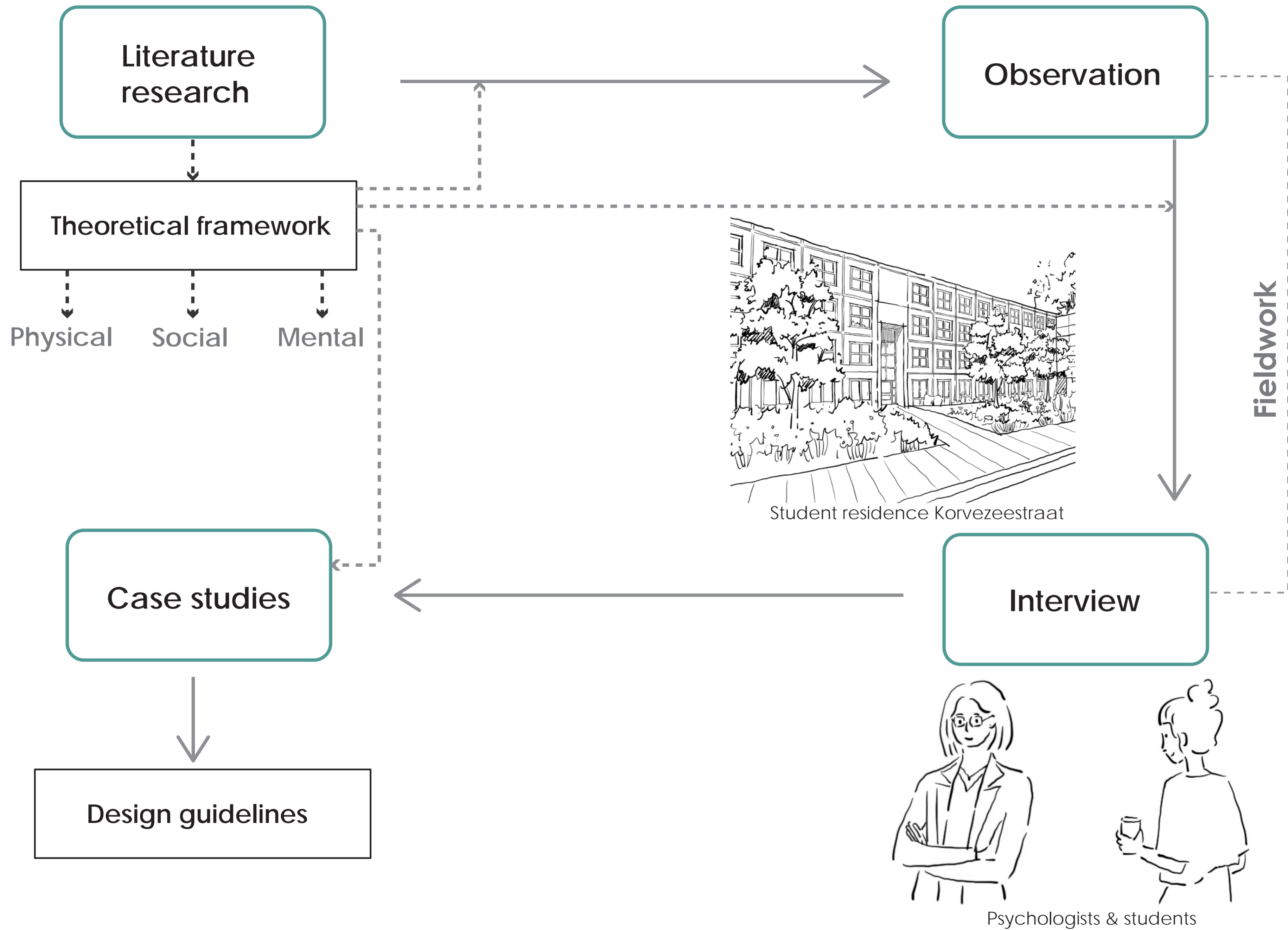
(Effectieve interventies en beleid mentale gezondheid en preventie, n.d.).

(Householder, n.d.)
(Fernandez et al., 2016)
(Worsley et al., 2023)

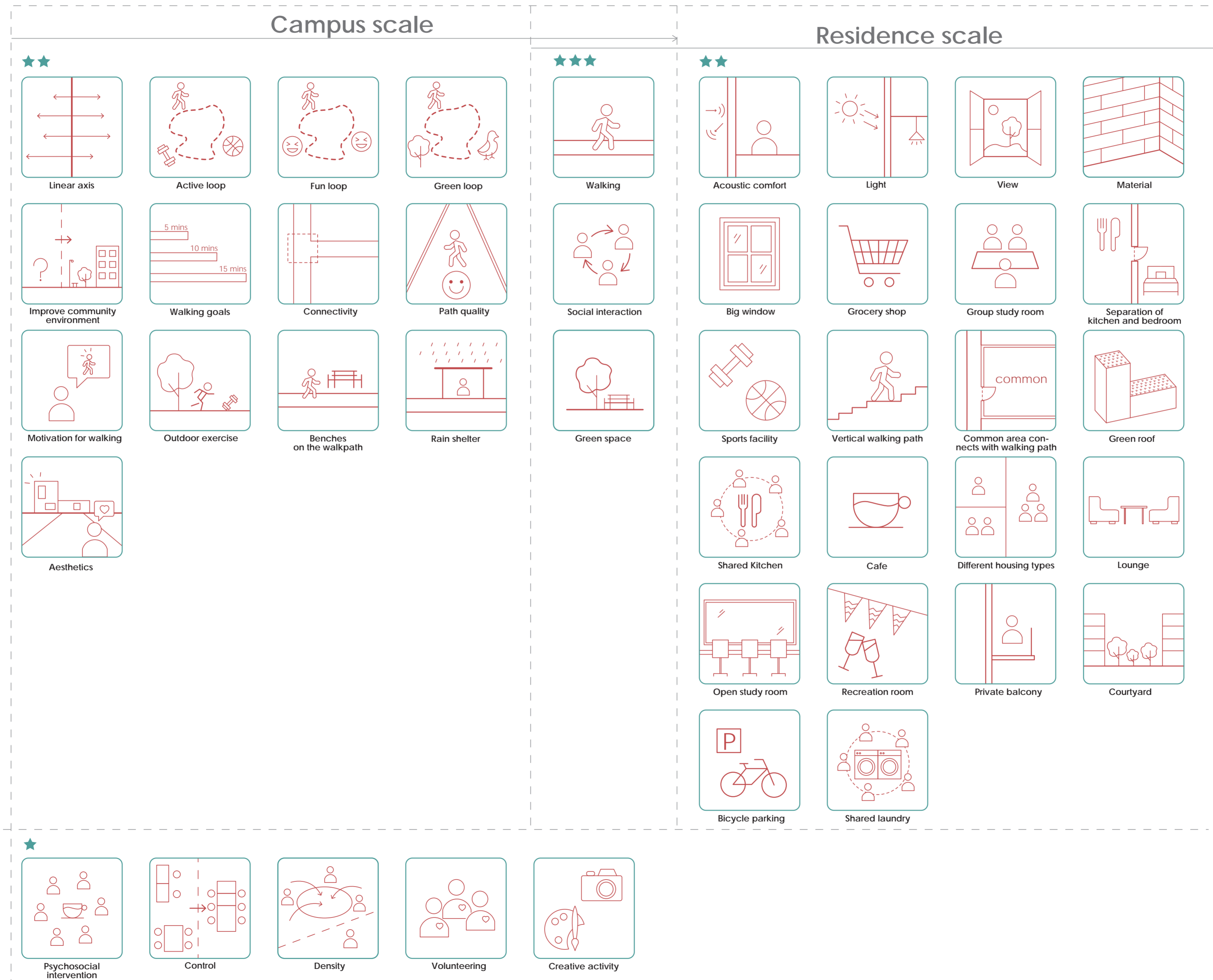
Research question

What architectural and built environment features of residential environment on a university campus can have a positive impact on depression prevention of university students?

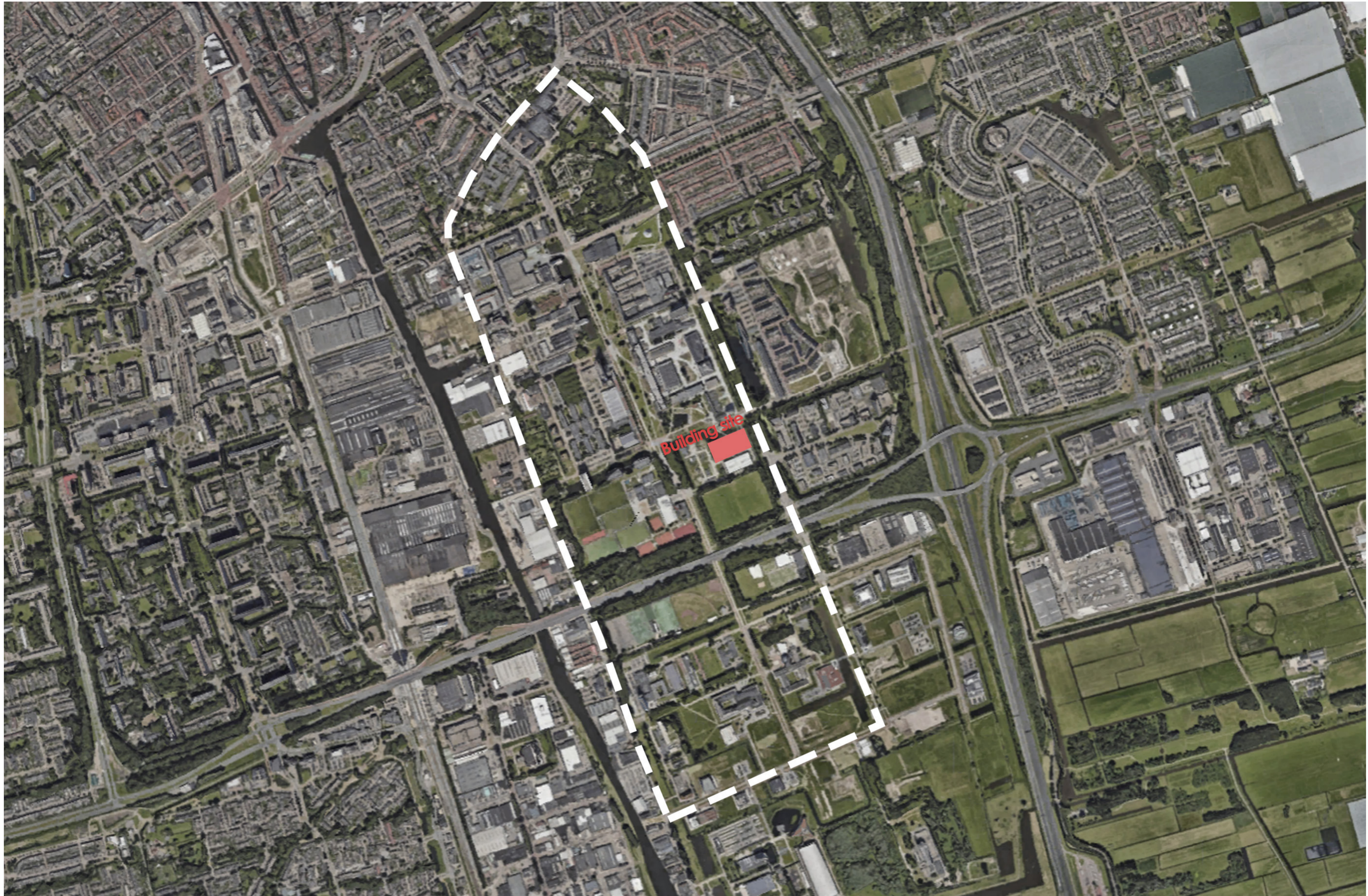
Research methods



Design guidelines



Location



Location



Site analysis



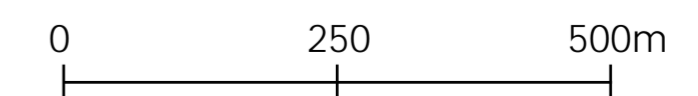
Walking path



Outdoor public space

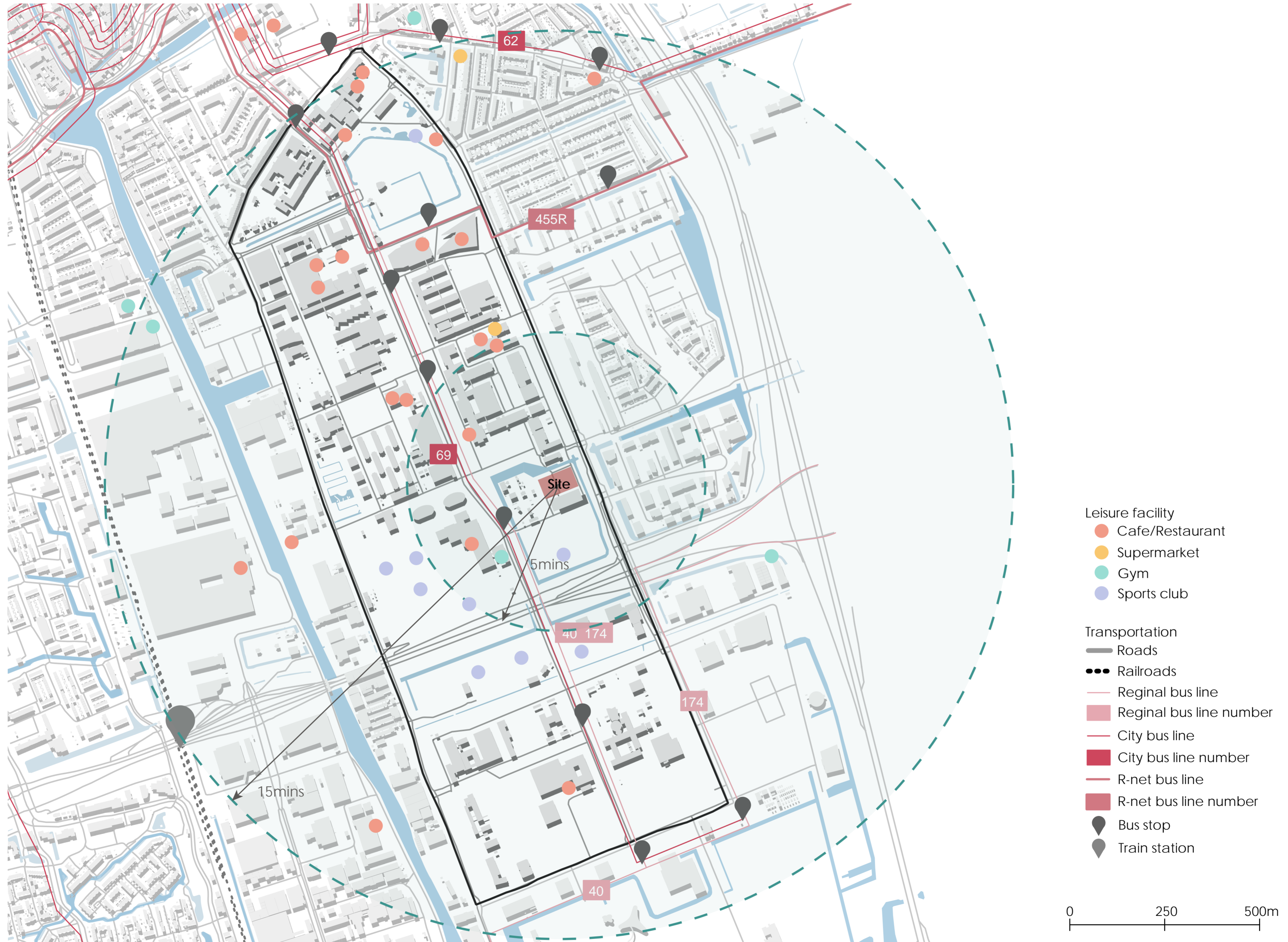


- Outdoor public space
- Walking path
- Roads
- Railroad
- Land use
- Allotment garden
- Park and public garden
- Sports ground
- Water
- Greenery
- Buildings
- Student residence

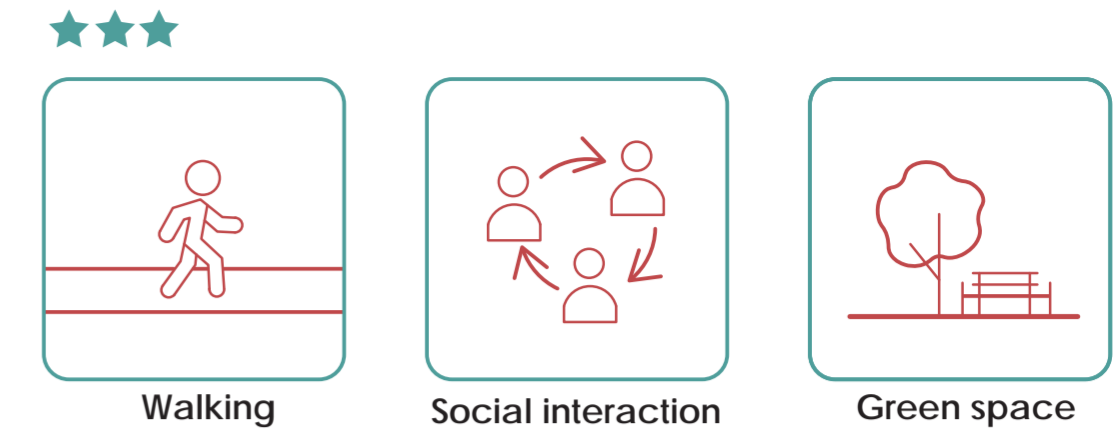


Site analysis

Motivation to walk for leisure and transport

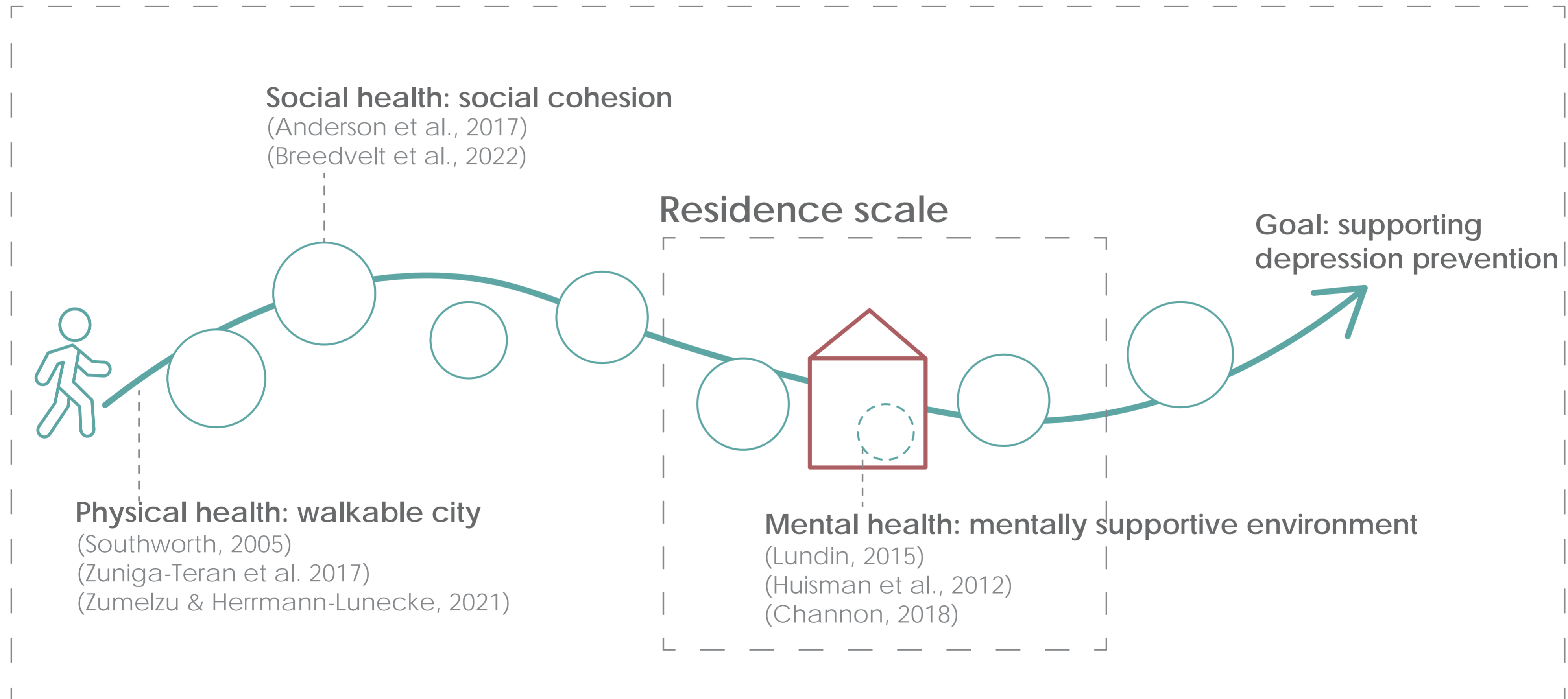


Guiding scheme



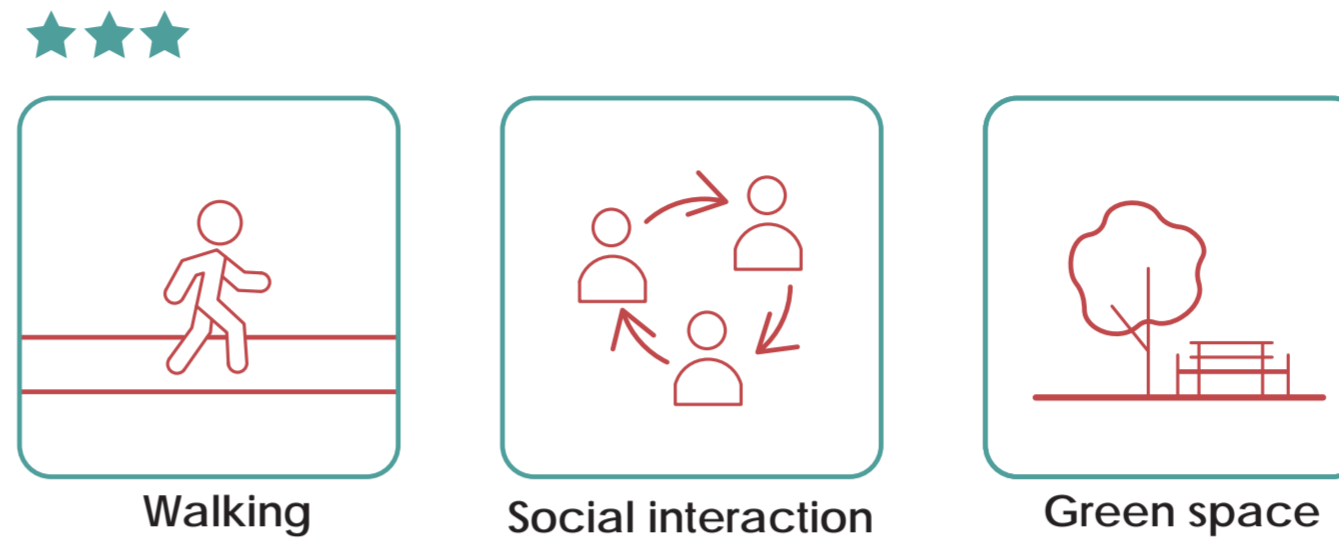
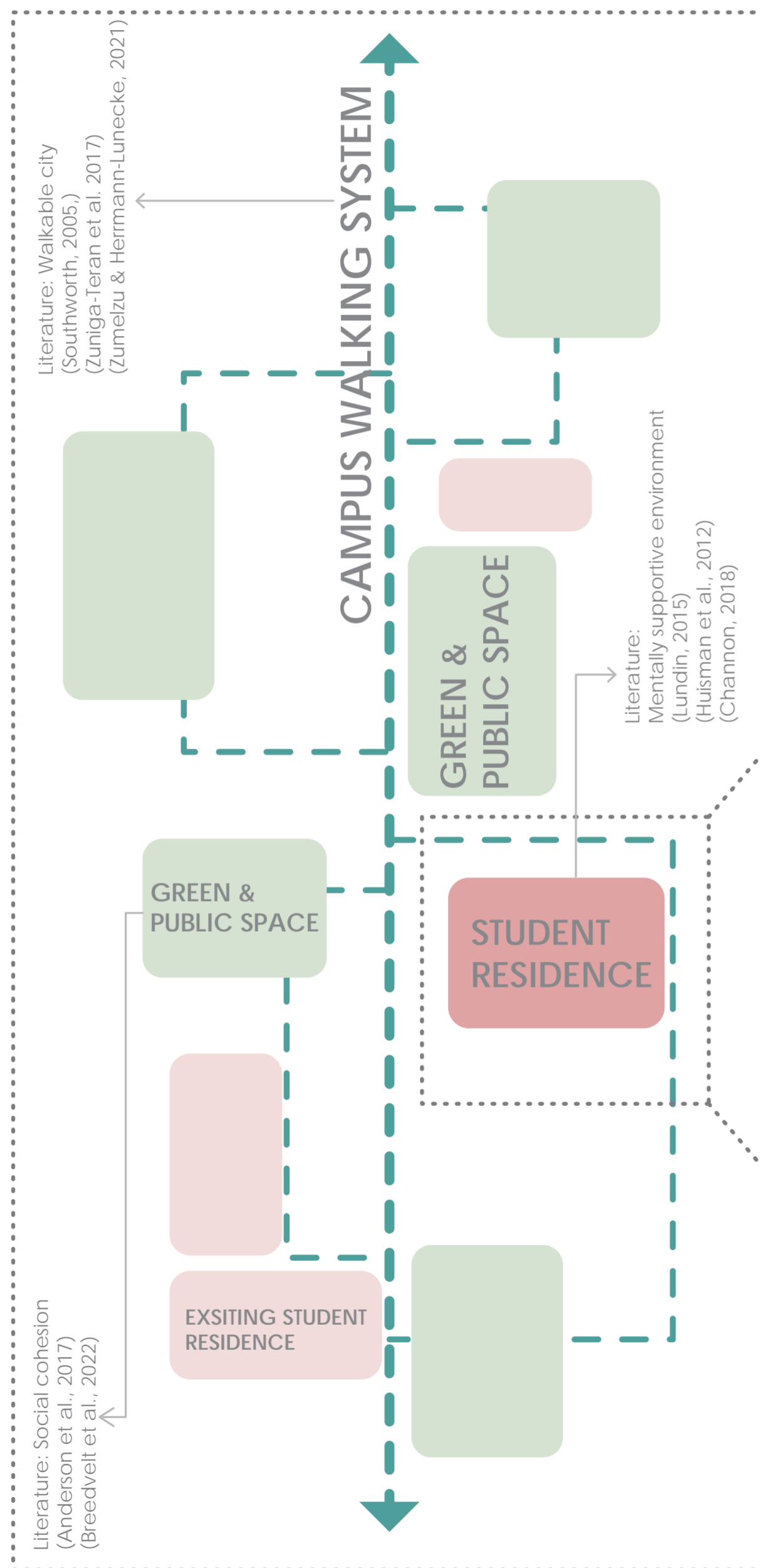
A walking-friendly campus

Campus scale

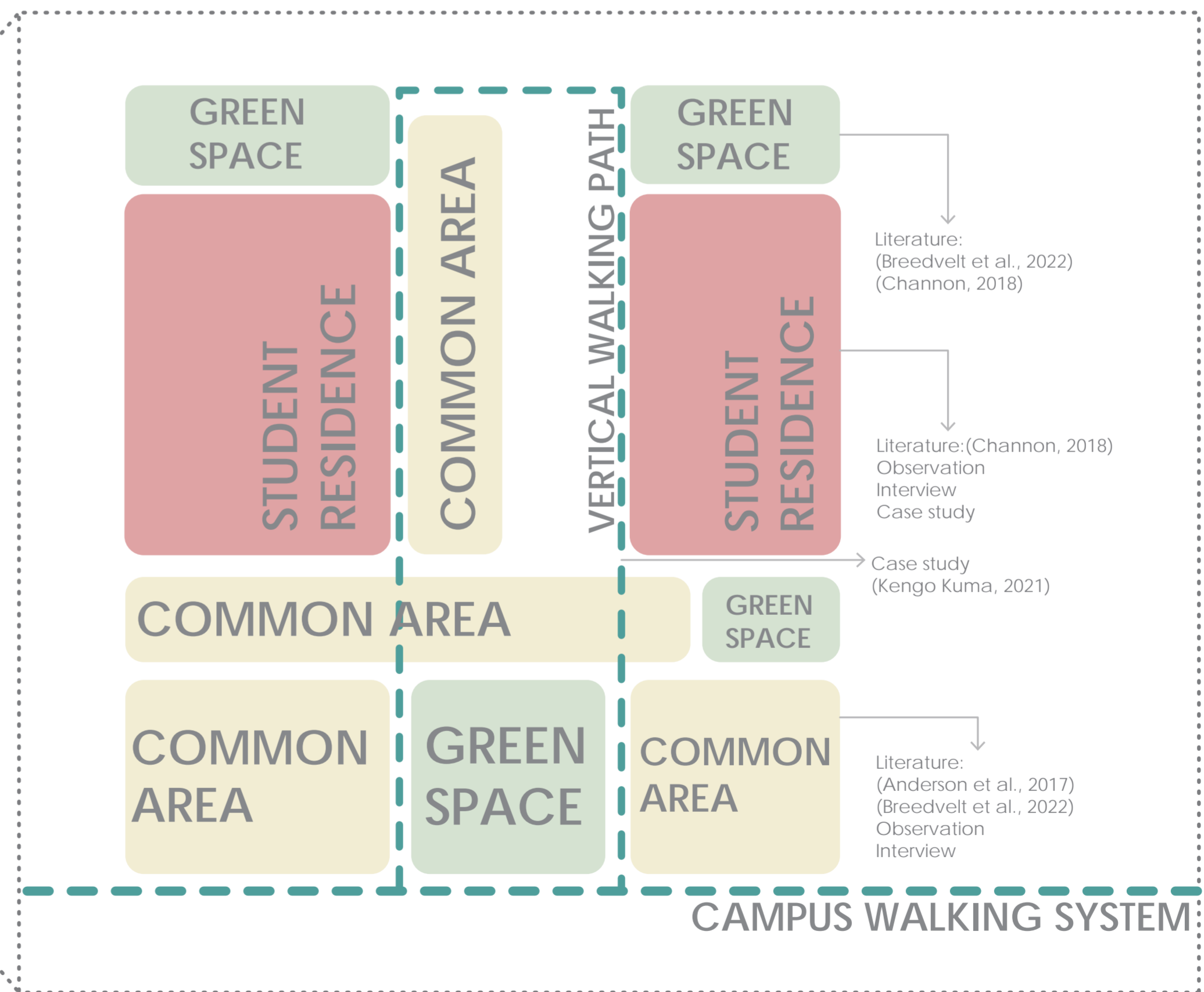


Conceptual scheme

Campus scale



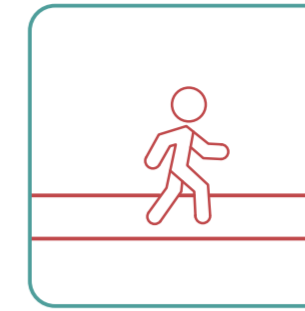
Residence scale



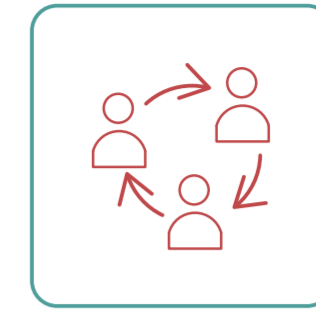
Design program

Campus scale

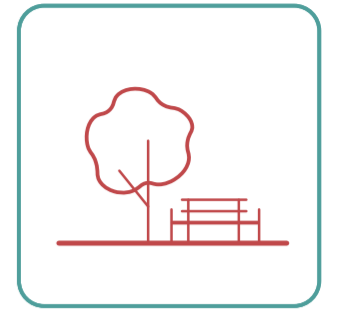
★★★



Walking



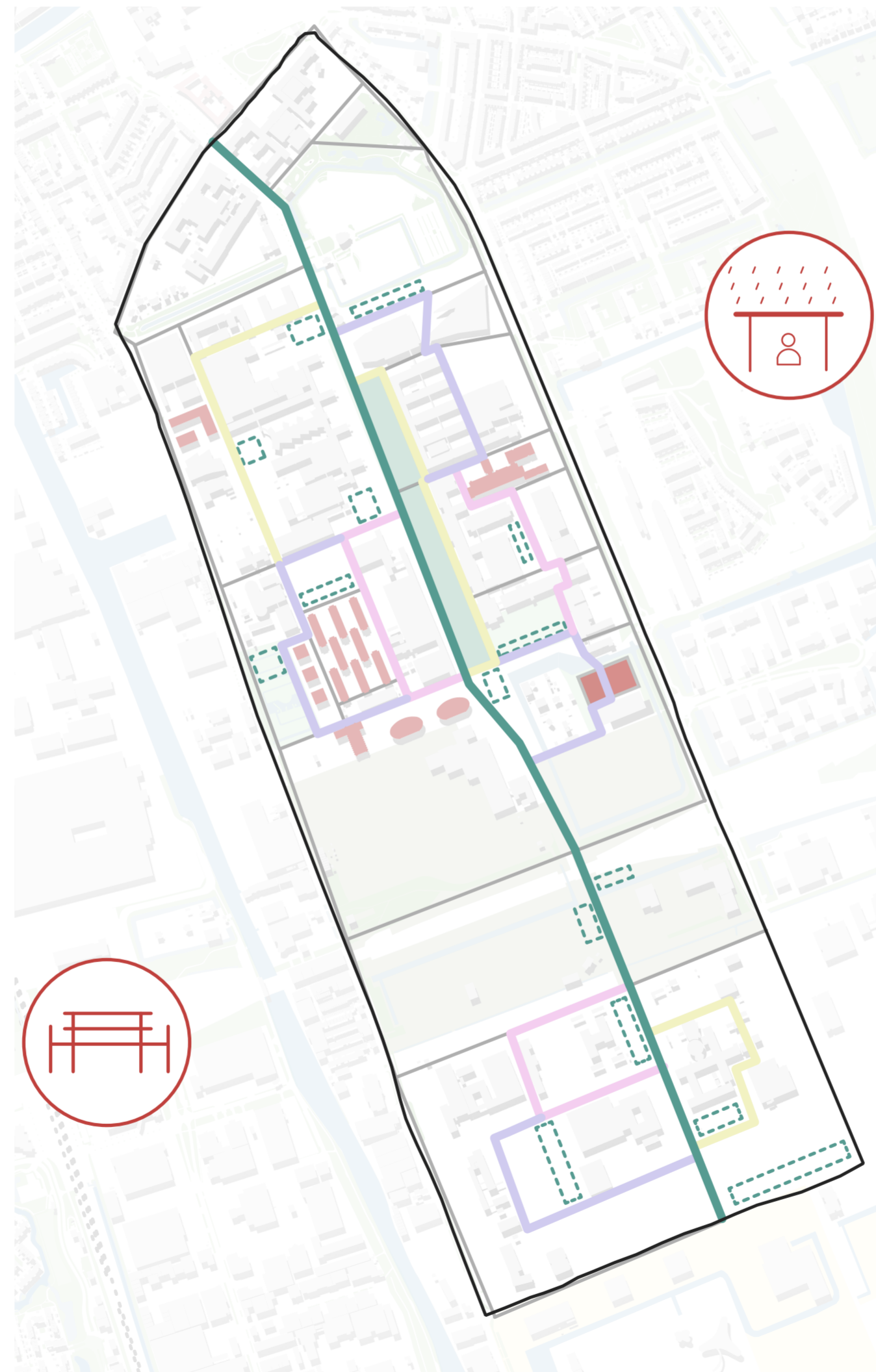
Social interaction



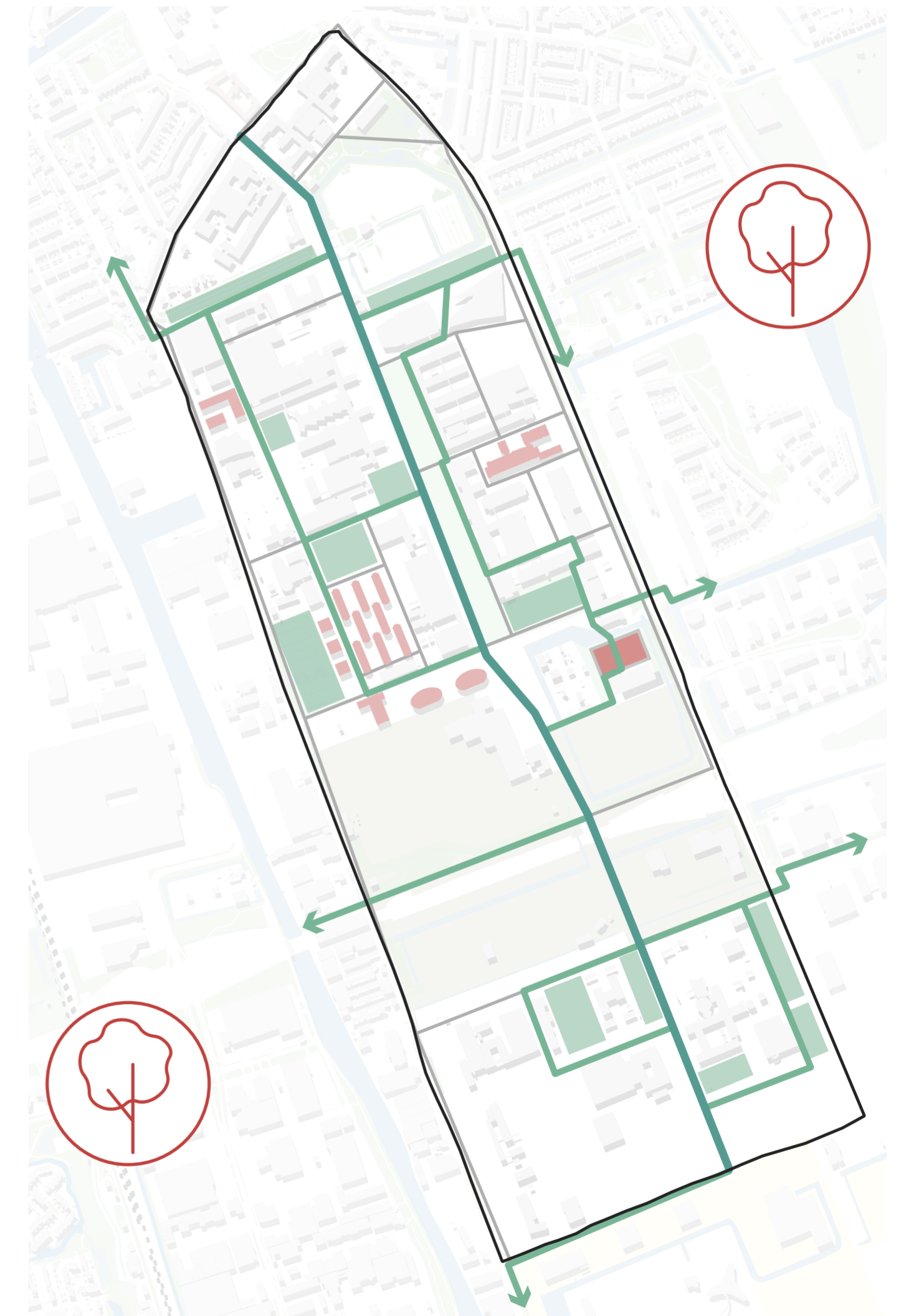
Green space



Active loop



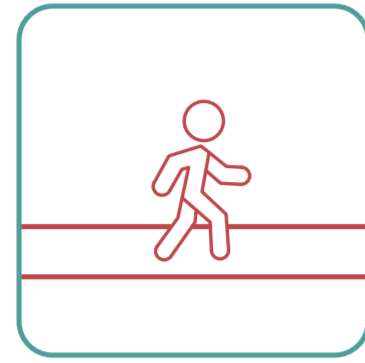
Fun loop



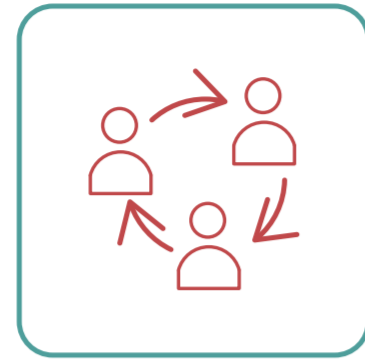
Green loop

Design program

Residence scale



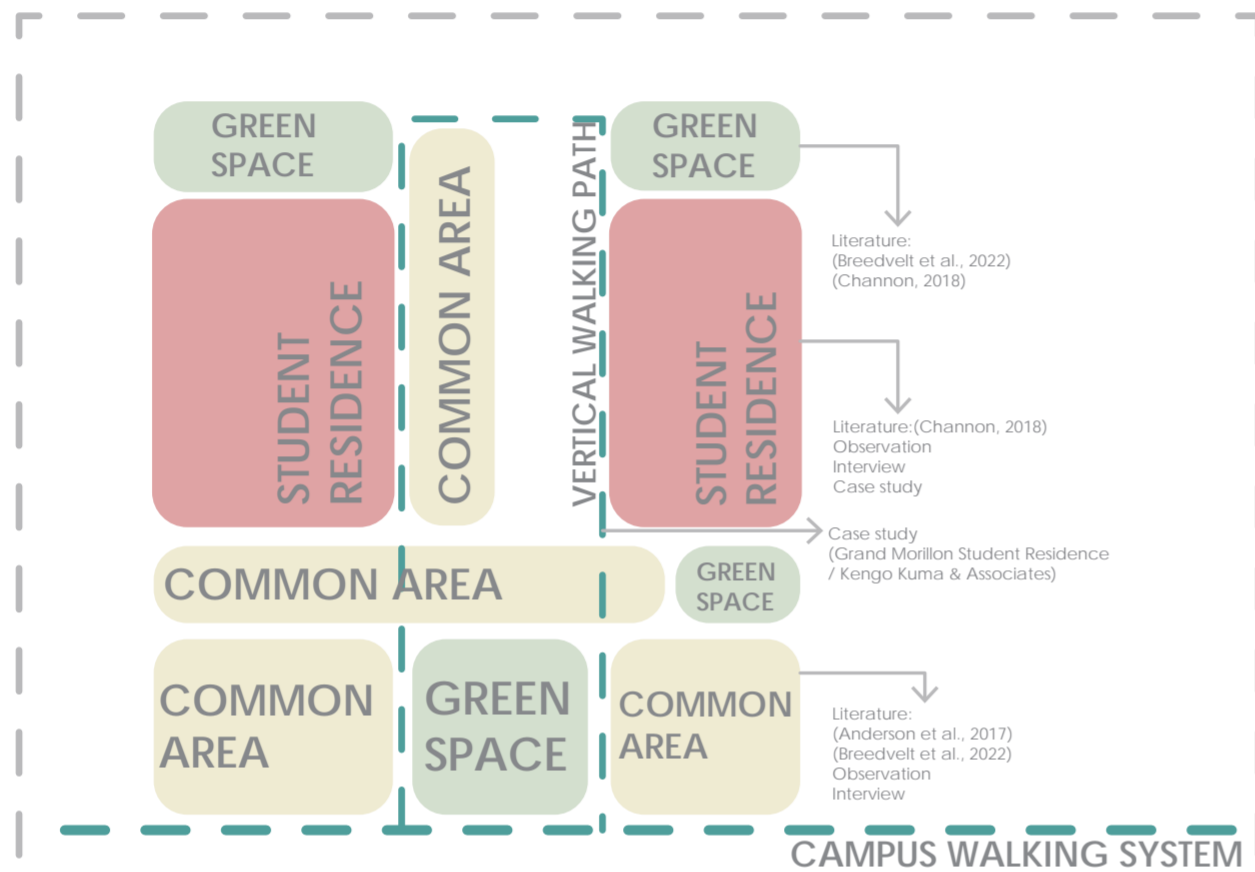
Walking



Social interaction



Green space



Case study:
(Grand Morillon Student Residence / Kengo Kuma & Associates)

80% Housing

- 60%: Individual studio with kitchen
- 15%: Individual studio without kitchen
- 10%: 2 bedrooms
- 15%: 3 bedrooms

Case study:
(Grand Morillon Student Residence / Kengo Kuma & Associates)
Survey by author

20% Common area

Walking

- Vertical walking path

Case study:
(Grand Morillon Student Residence / Kengo Kuma & Associates)

Green space

- Courtyard
- Green terraces
- Green rooftops

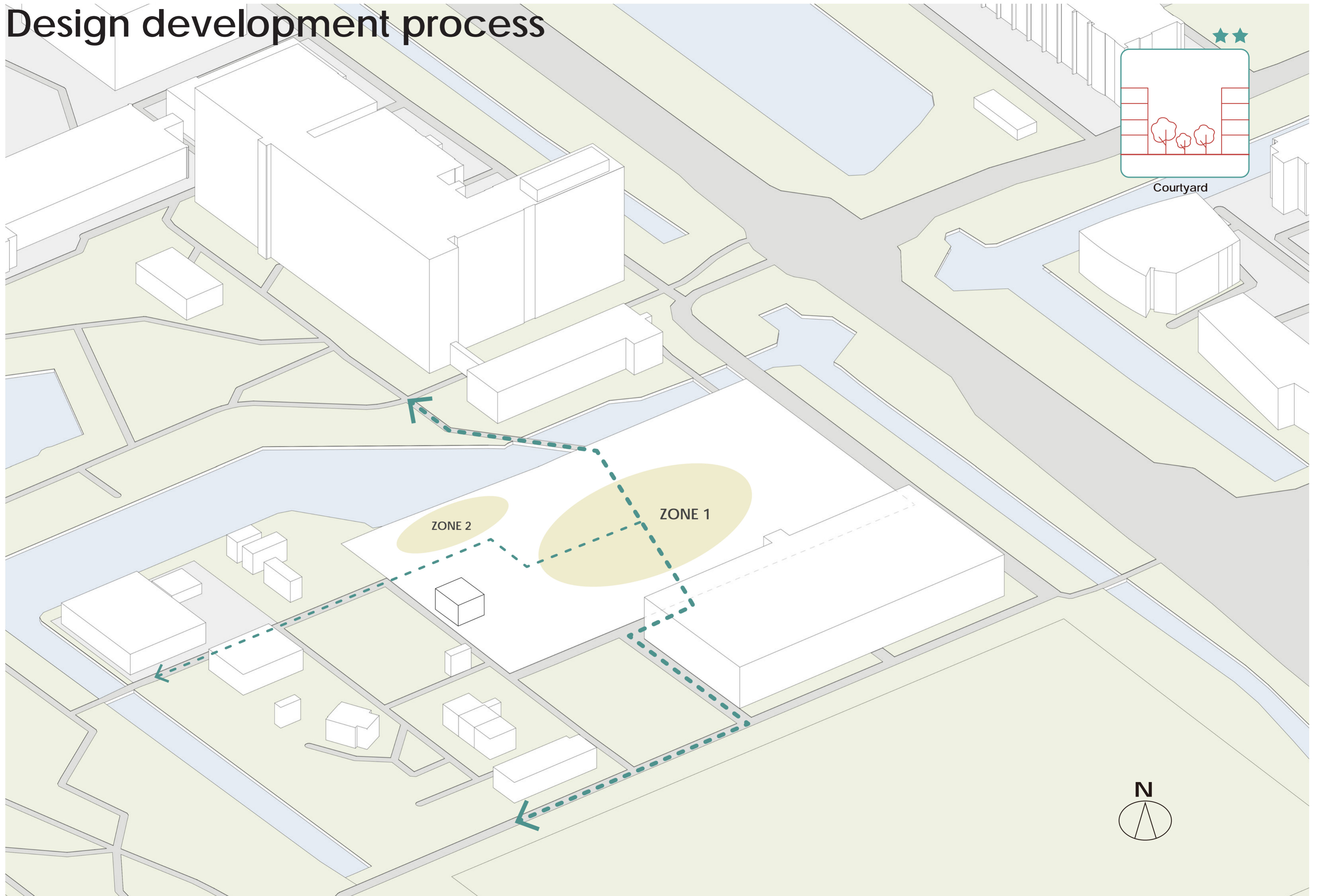
Case study:
(Grand Morillon Student Residence / Kengo Kuma & Associates)
(Student Experience Minervahaven / VURB Architects)

Social interaction

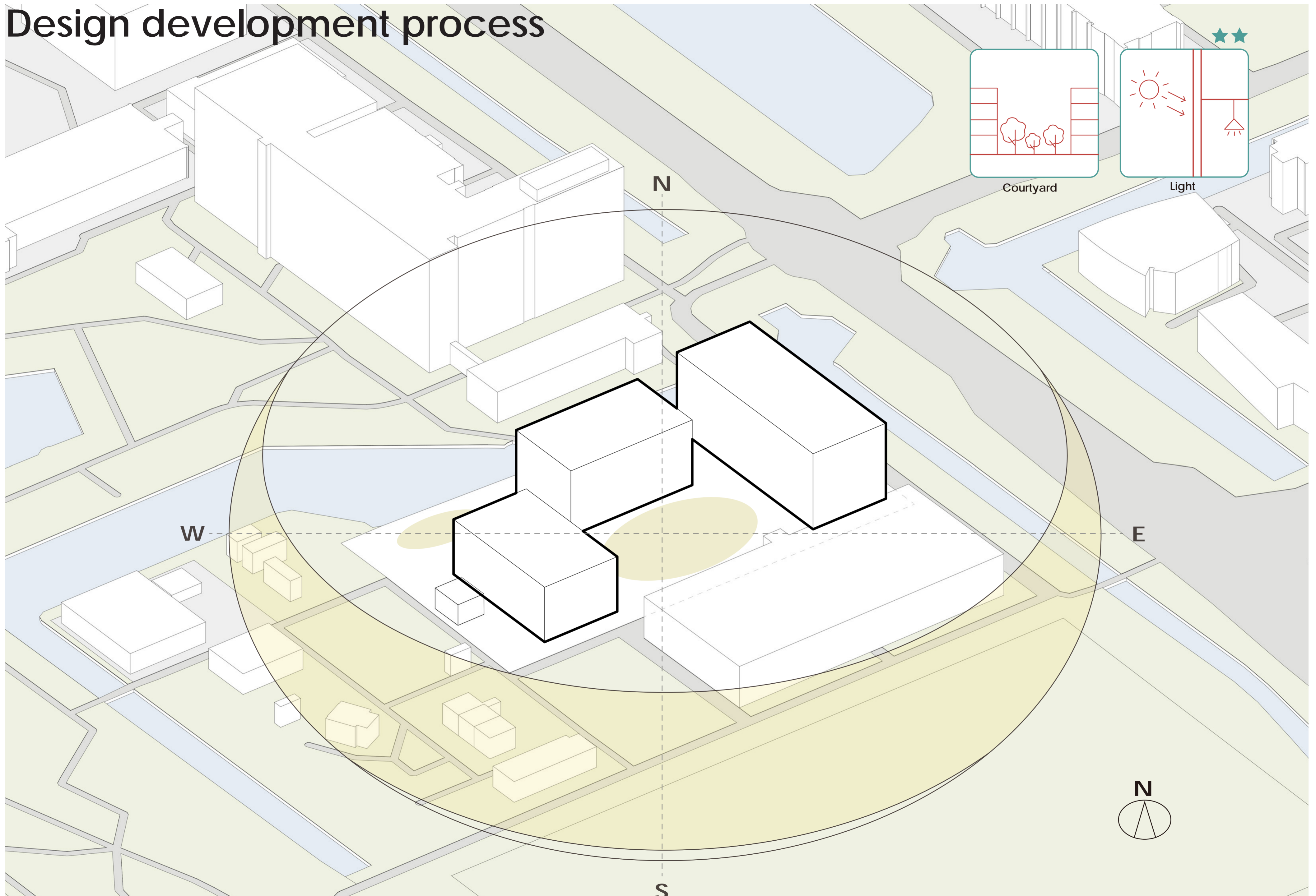
- Recreation room
- Group study room
- Shared kitchen with dining room
- Sport facilities
- Cafe(bar)
- Open study room
- Meeting room
- Lounge
- Grocery shop
- Laundry
- Bicycle parking

Interview with students
Case study:
(Grand Morillon Student Residence / Kengo Kuma & Associates)
(Student Experience Minervahaven / VURB Architects)

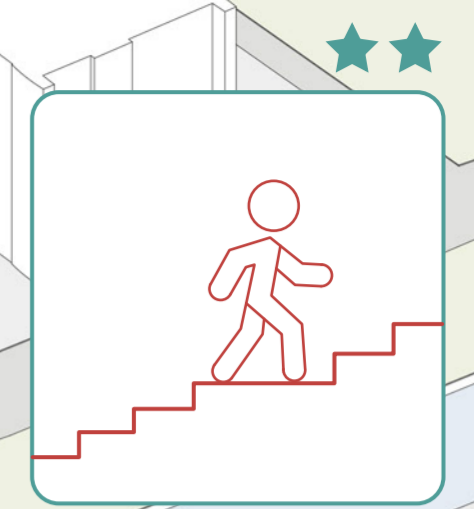
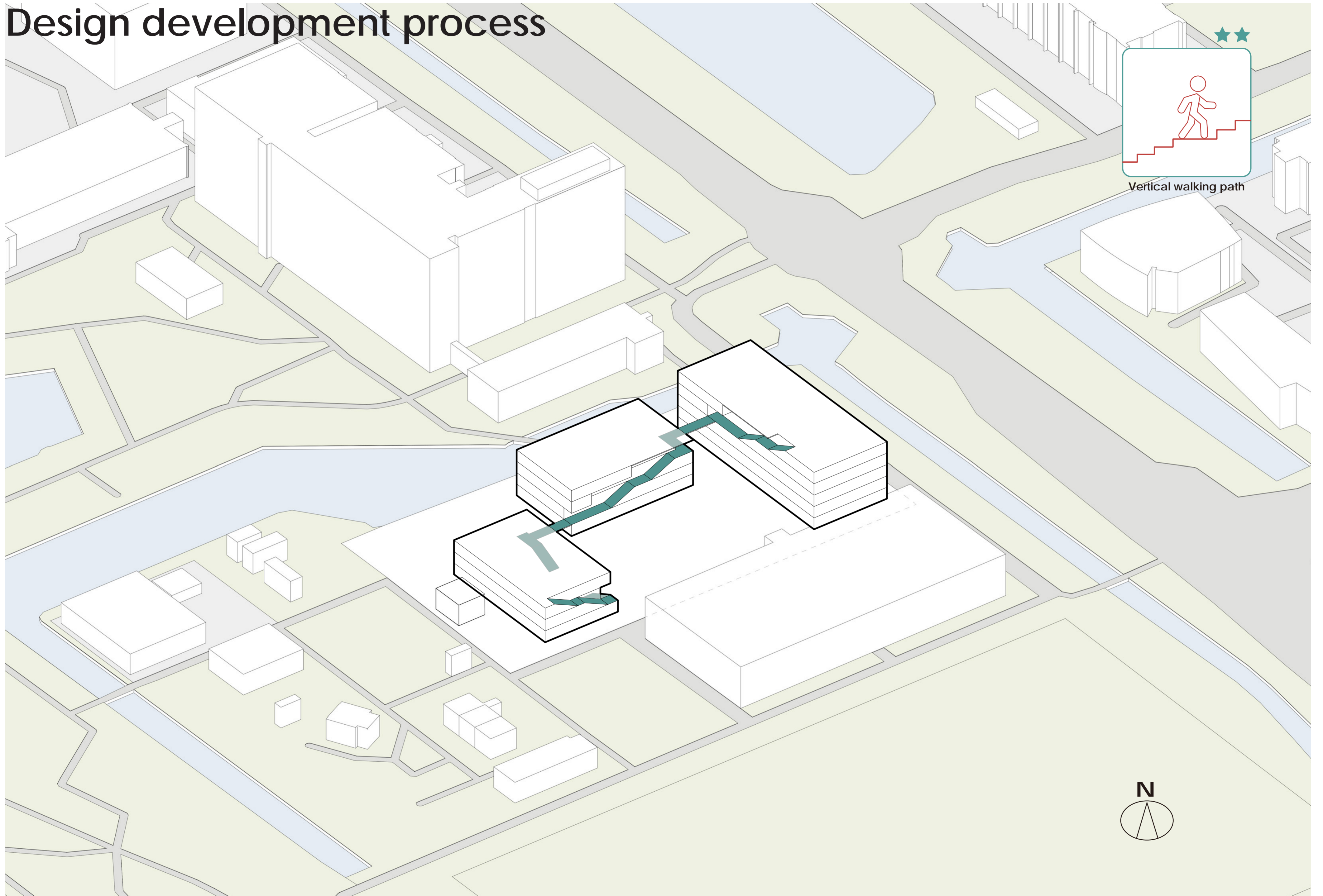
Design development process



Design development process



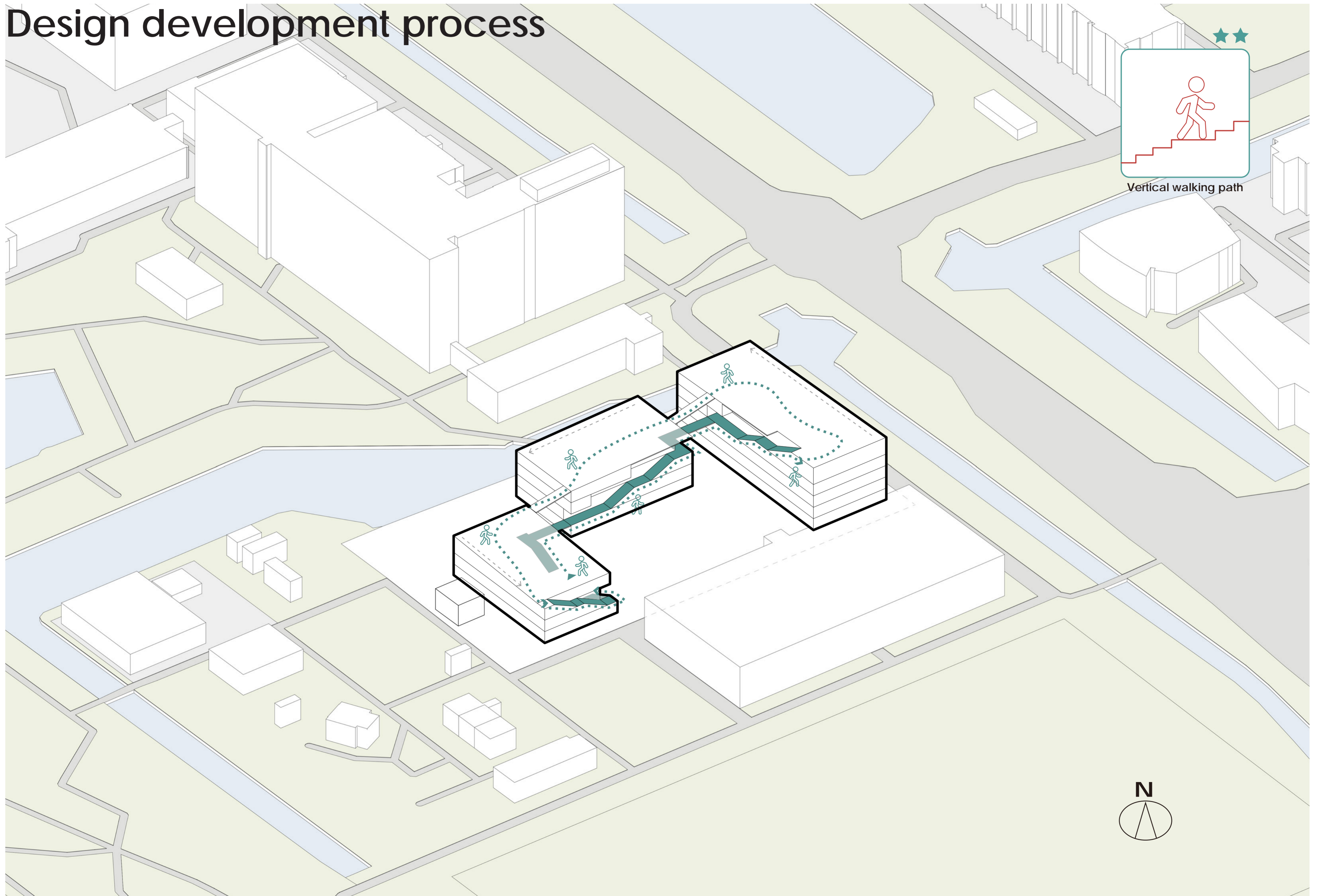
Design development process



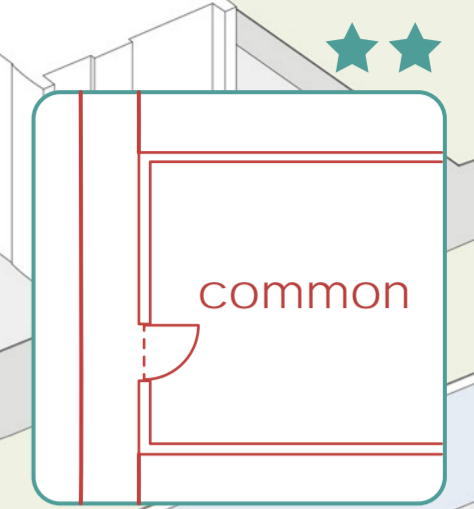
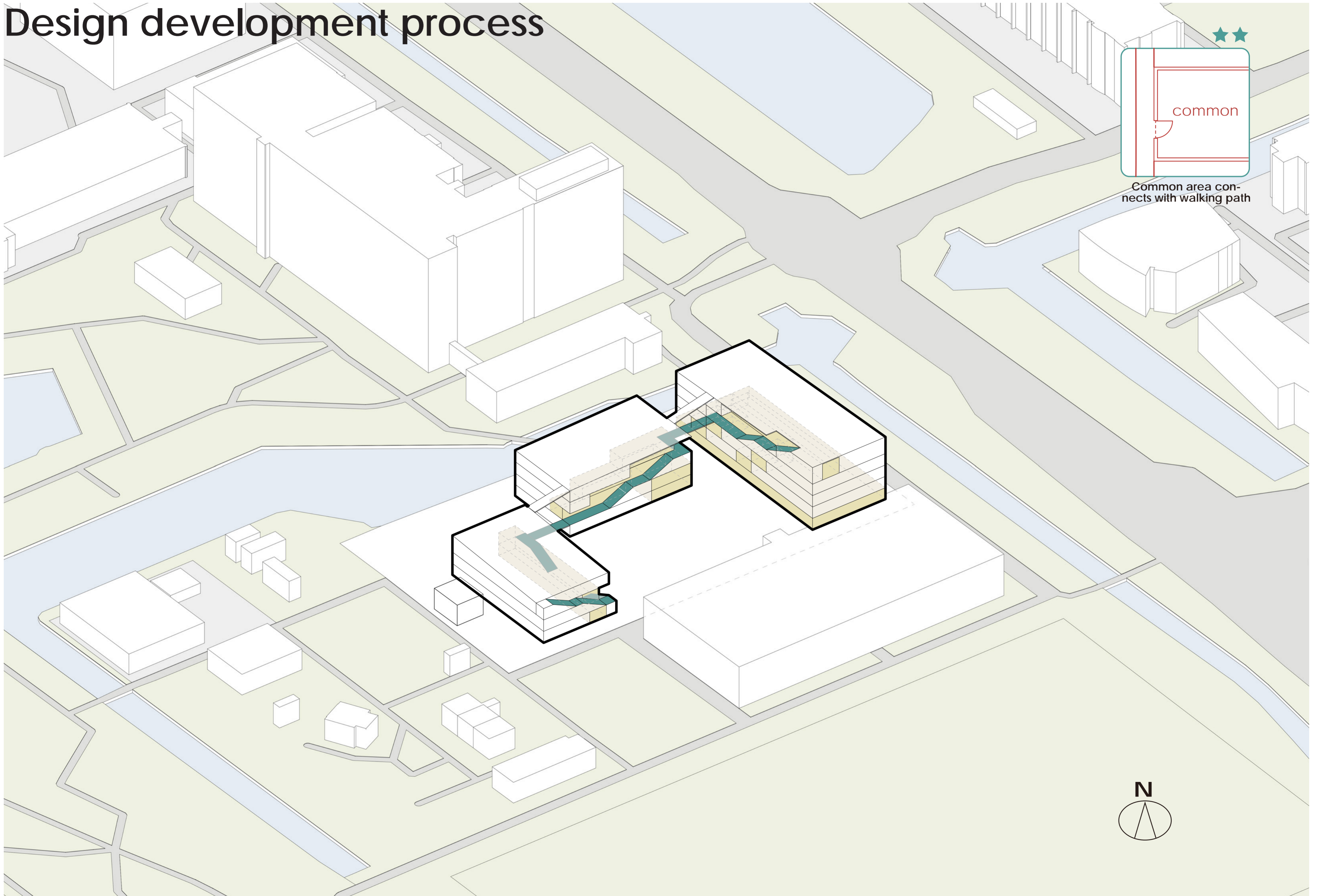
Vertical walking path



Design development process



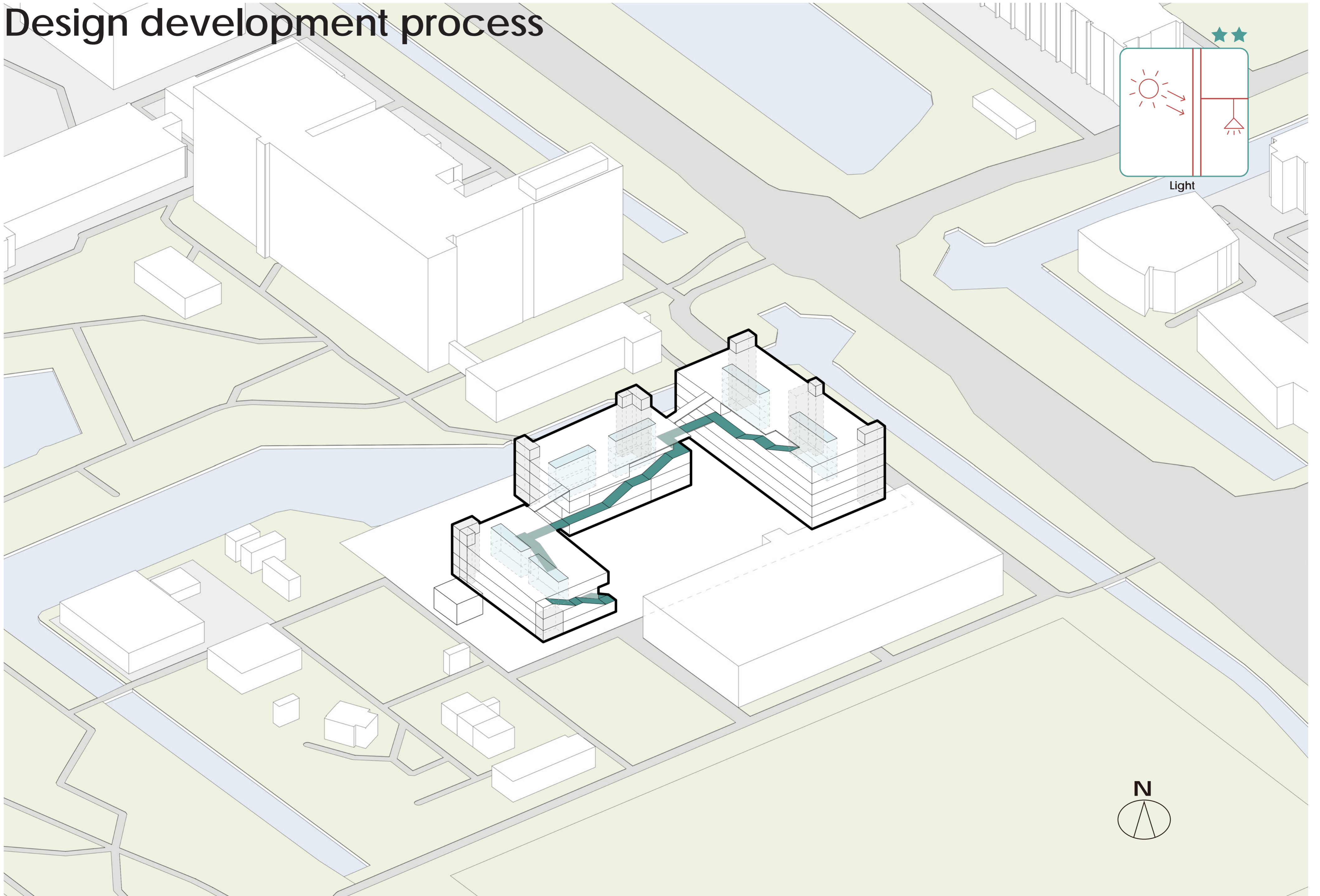
Design development process



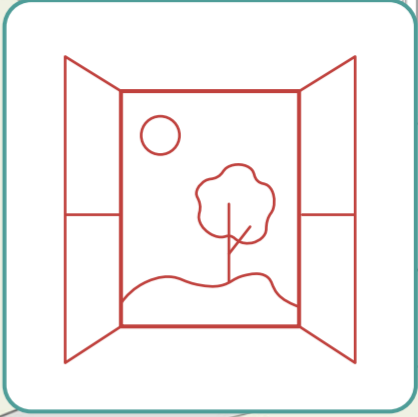
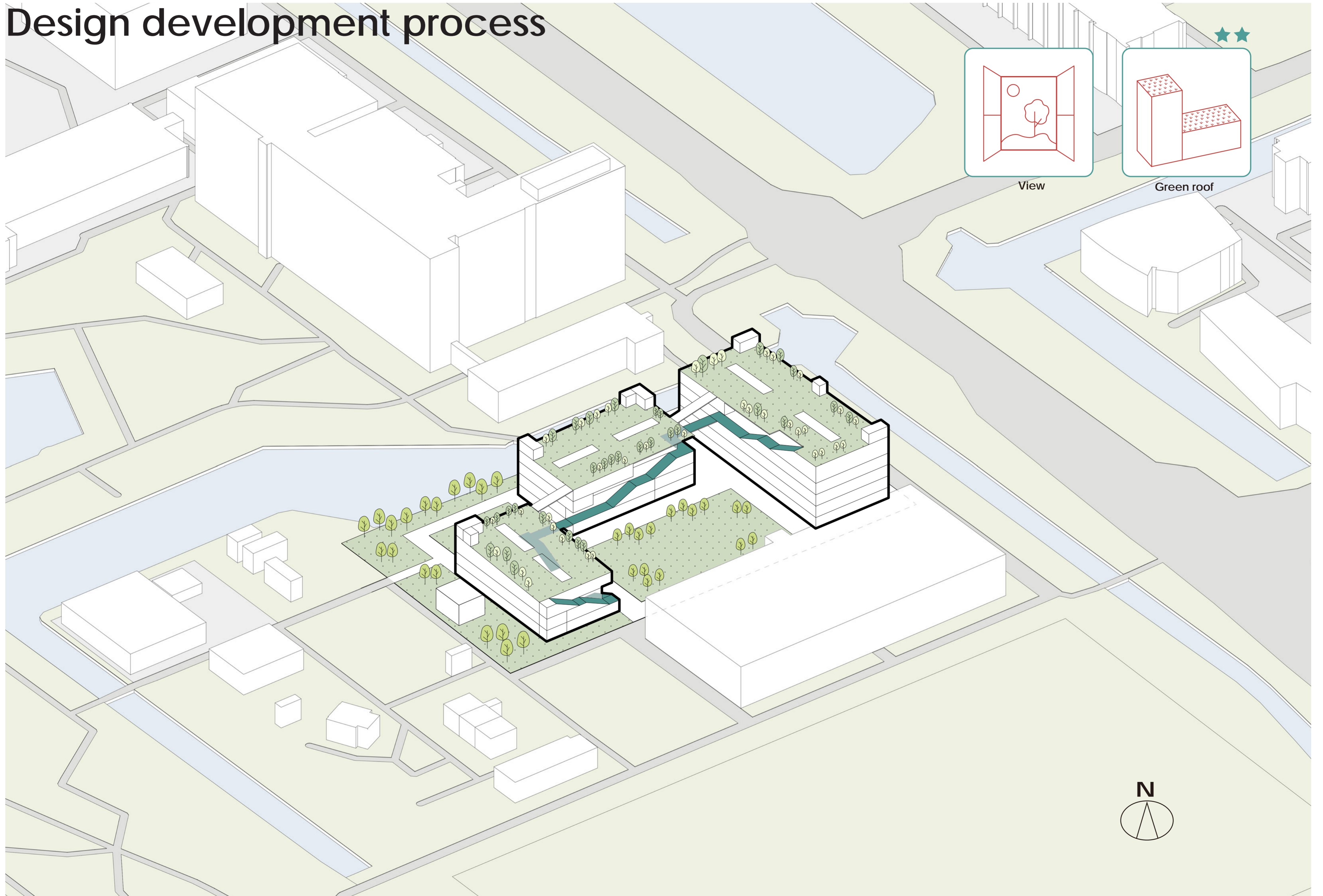
Common area connects with walking path



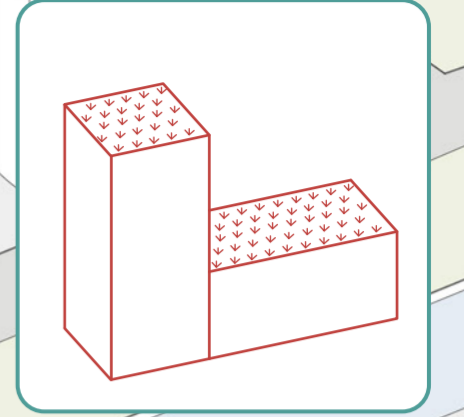
Design development process



Design development process



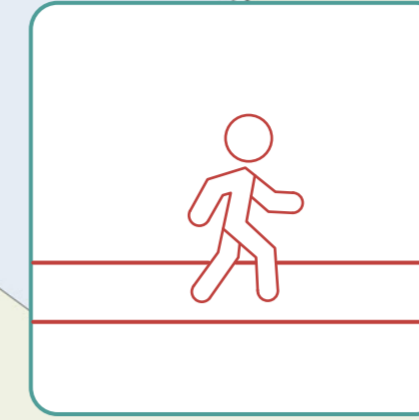
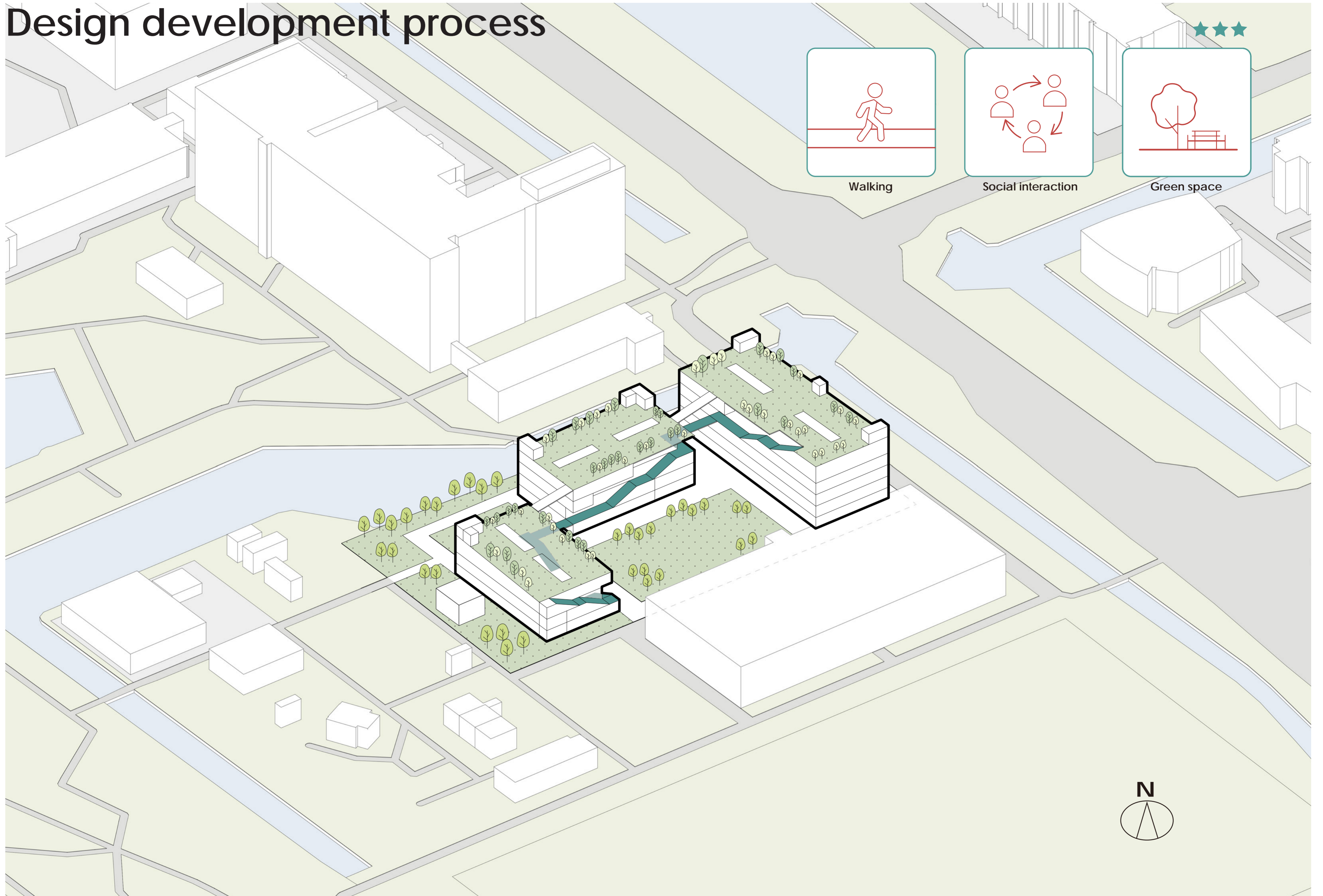
View



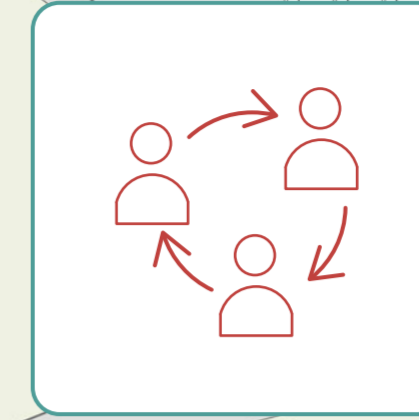
Green roof



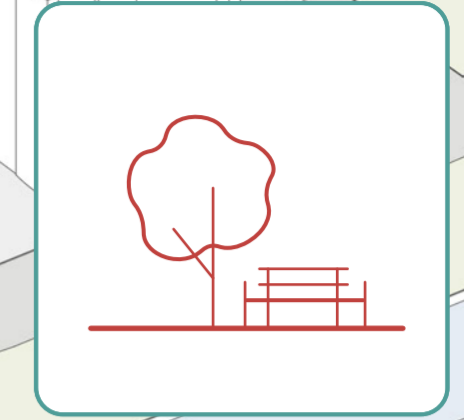
Design development process



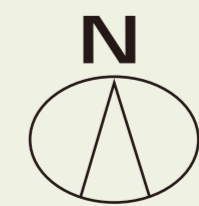
Walking



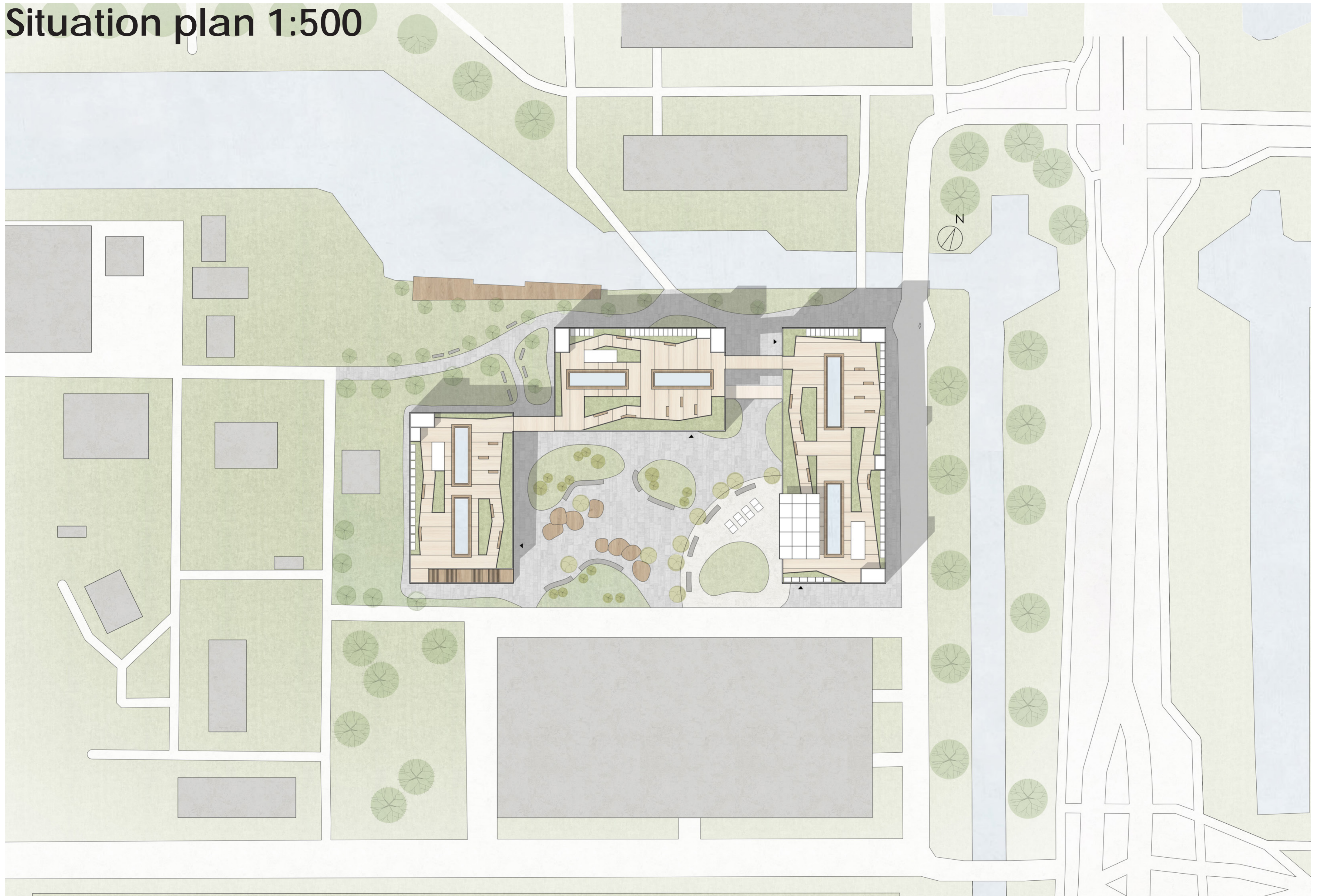
Social interaction



Green space



Situation plan 1:500



Overview



Courtyard



Ground floor plan 1:200

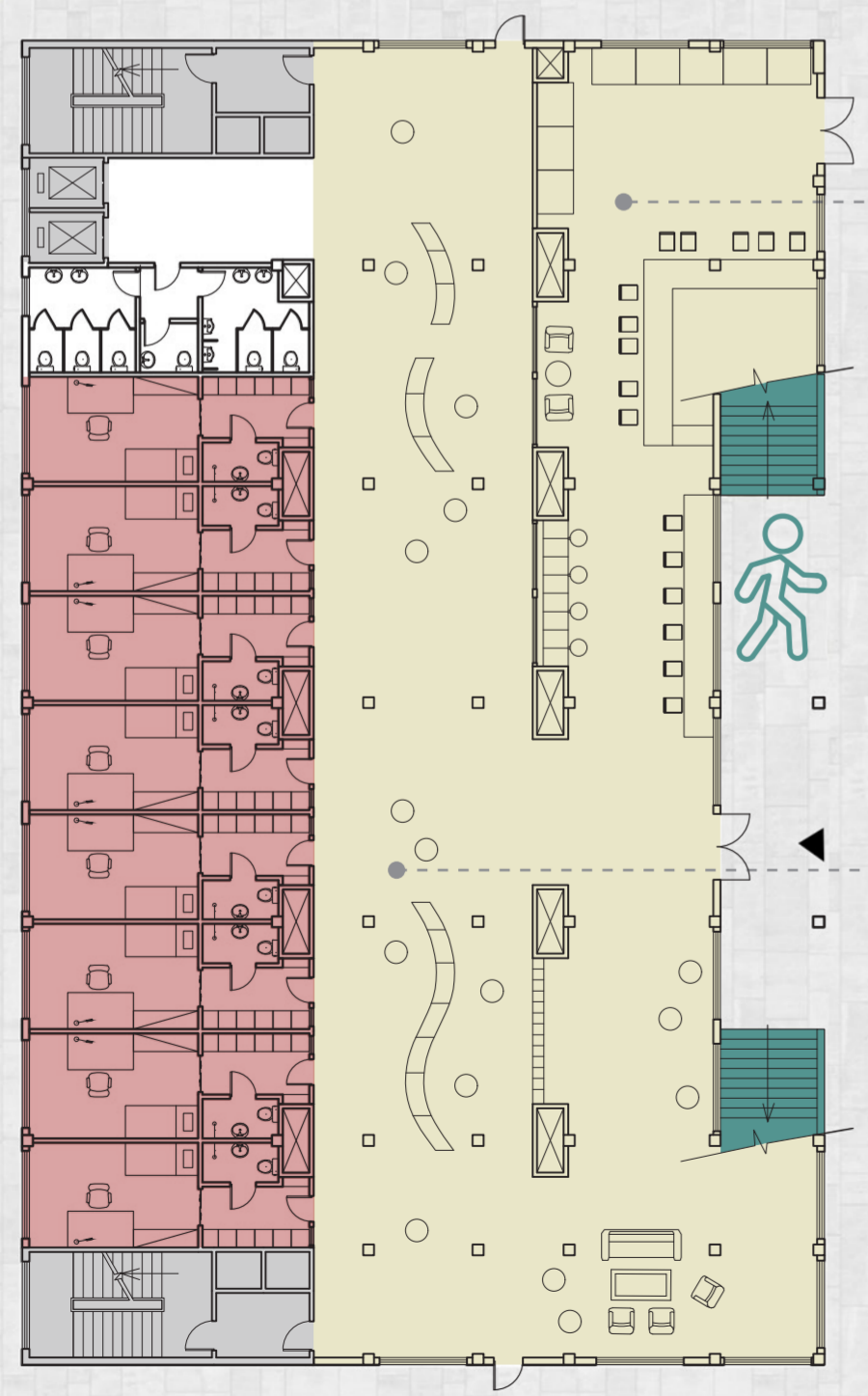
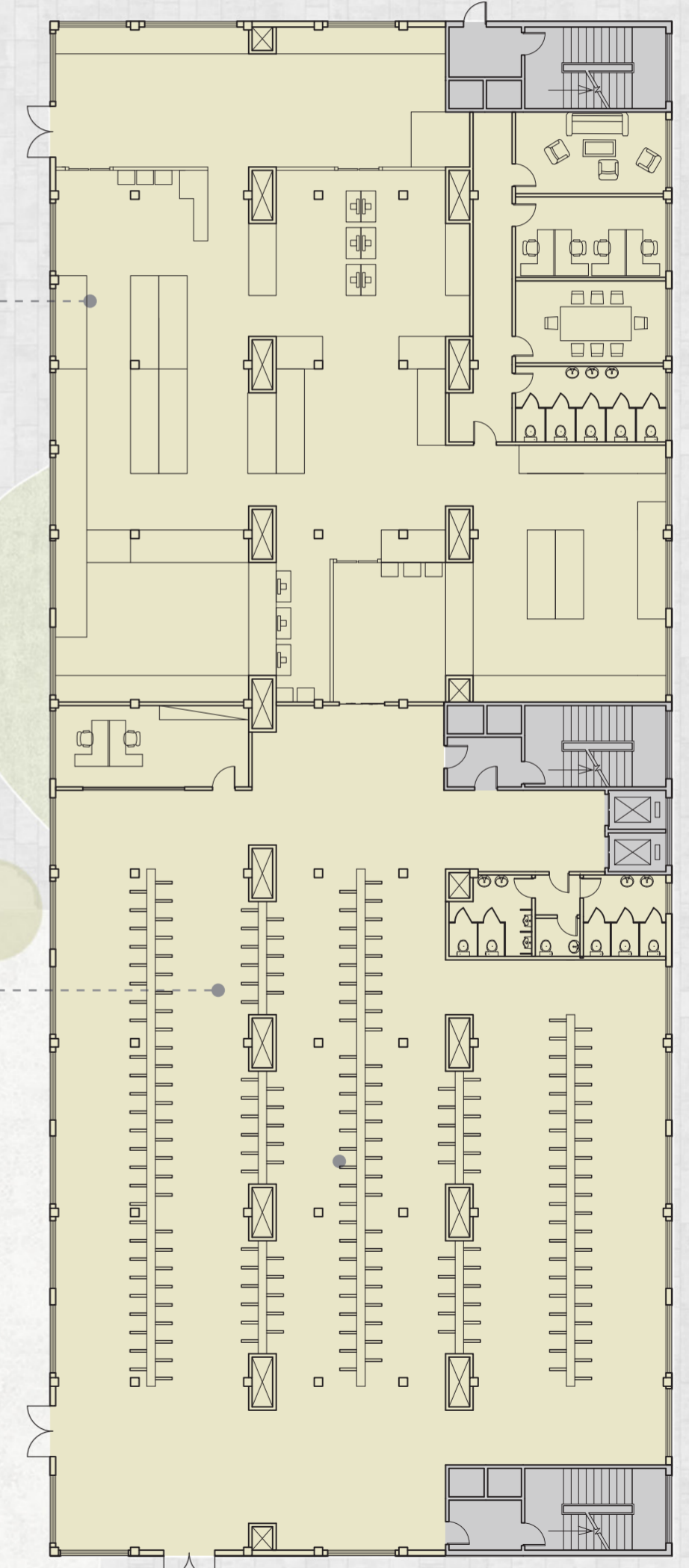
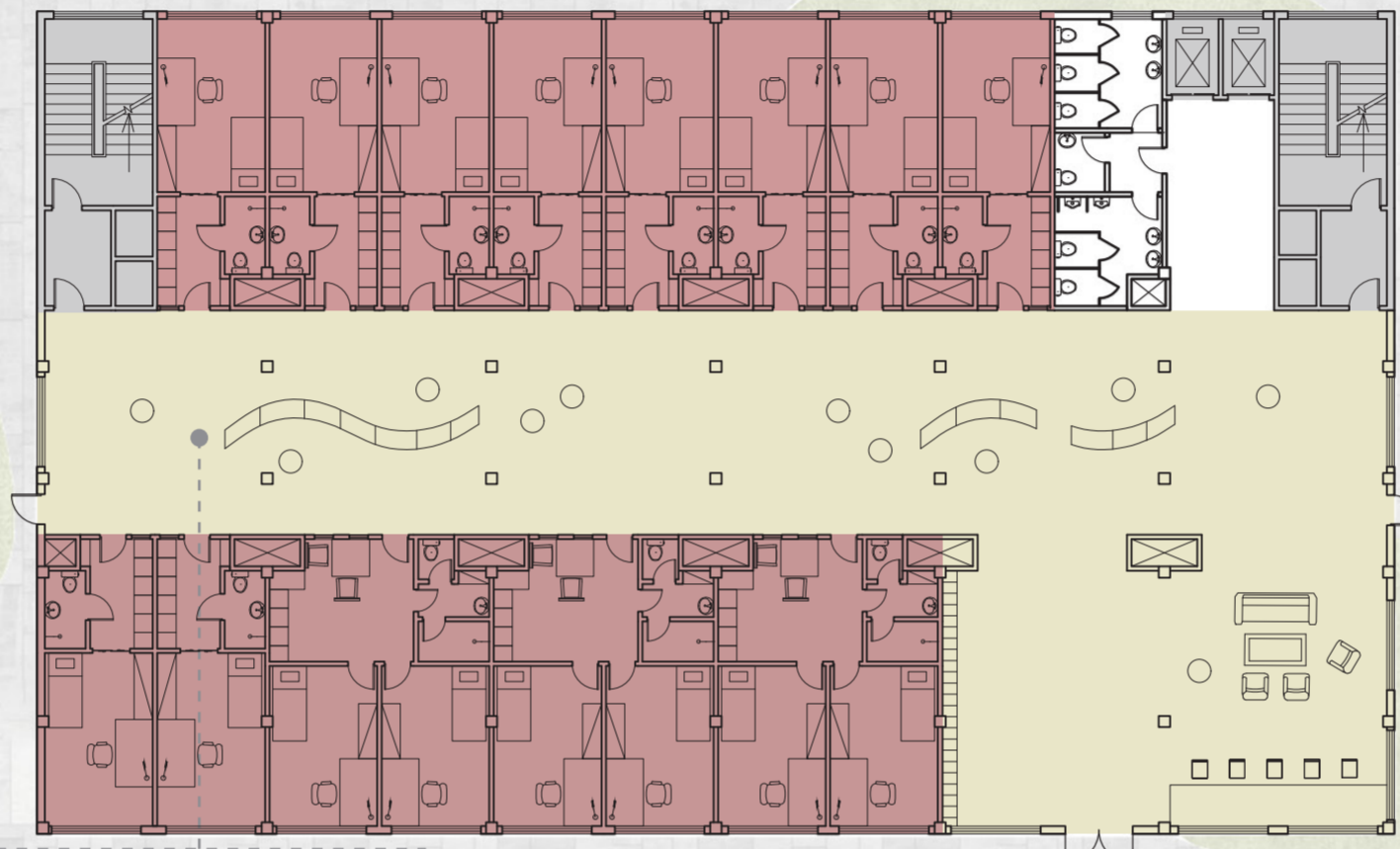
- Vertical walking path
- Common area
- Housing area
- Green space
- Circulation



Building B

Building C

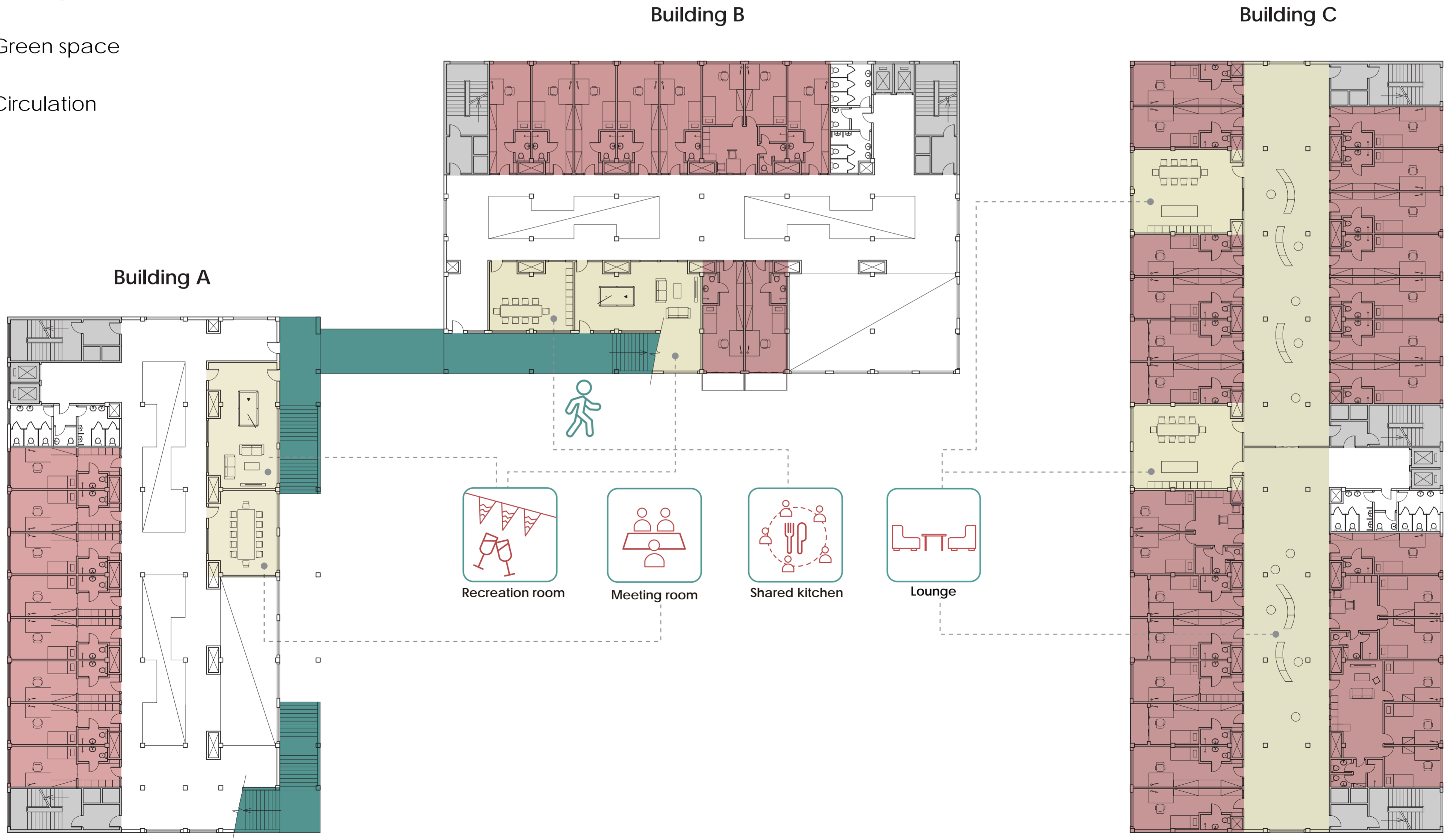
Building A



- Lounge
- Laundry cafe
- Courtyard
- Grocery shop
- Bicycle parking

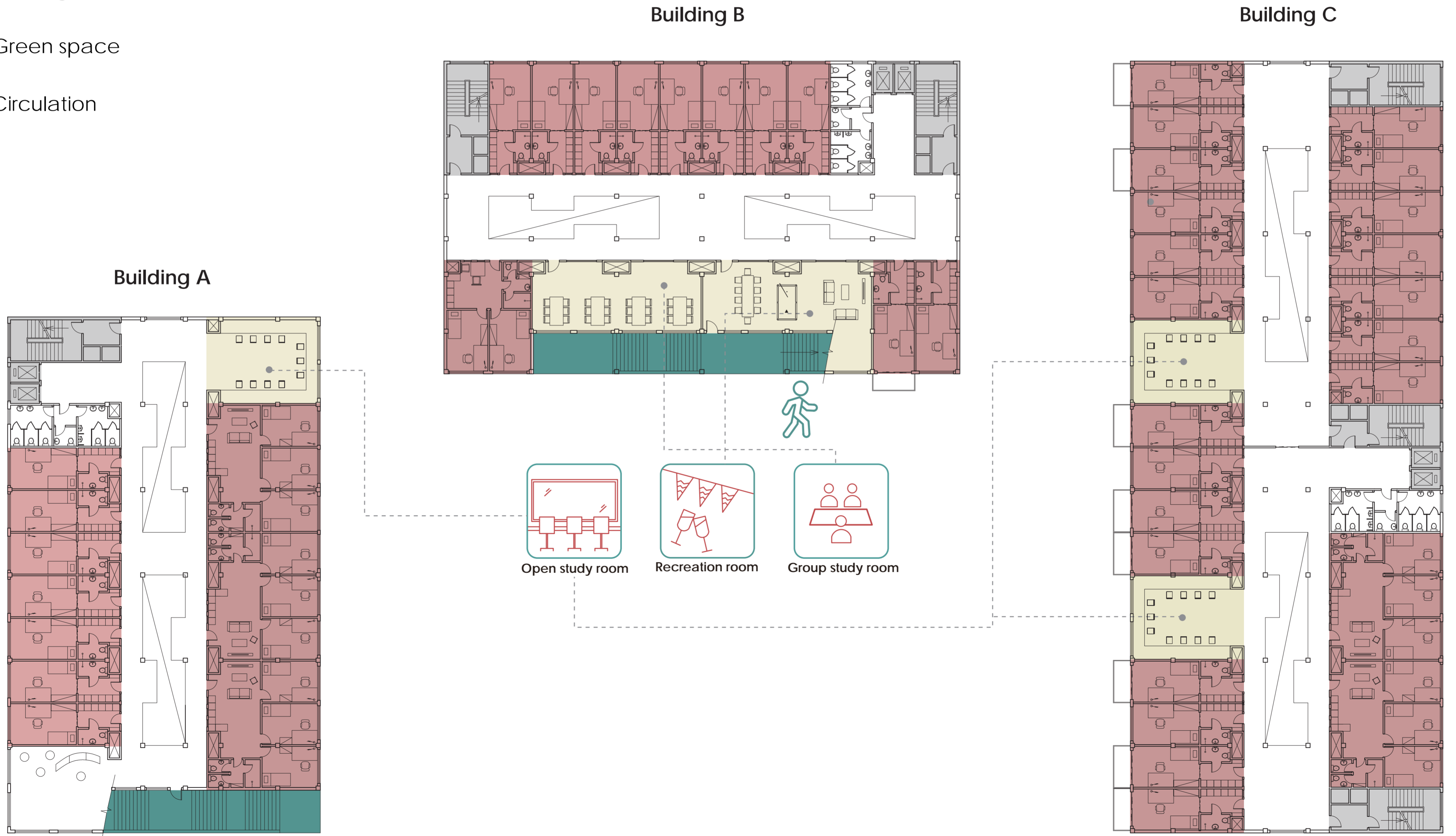
First floor plan 1:200

- Vertical walking path
- Common area
- Housing area
- Green space
- Circulation



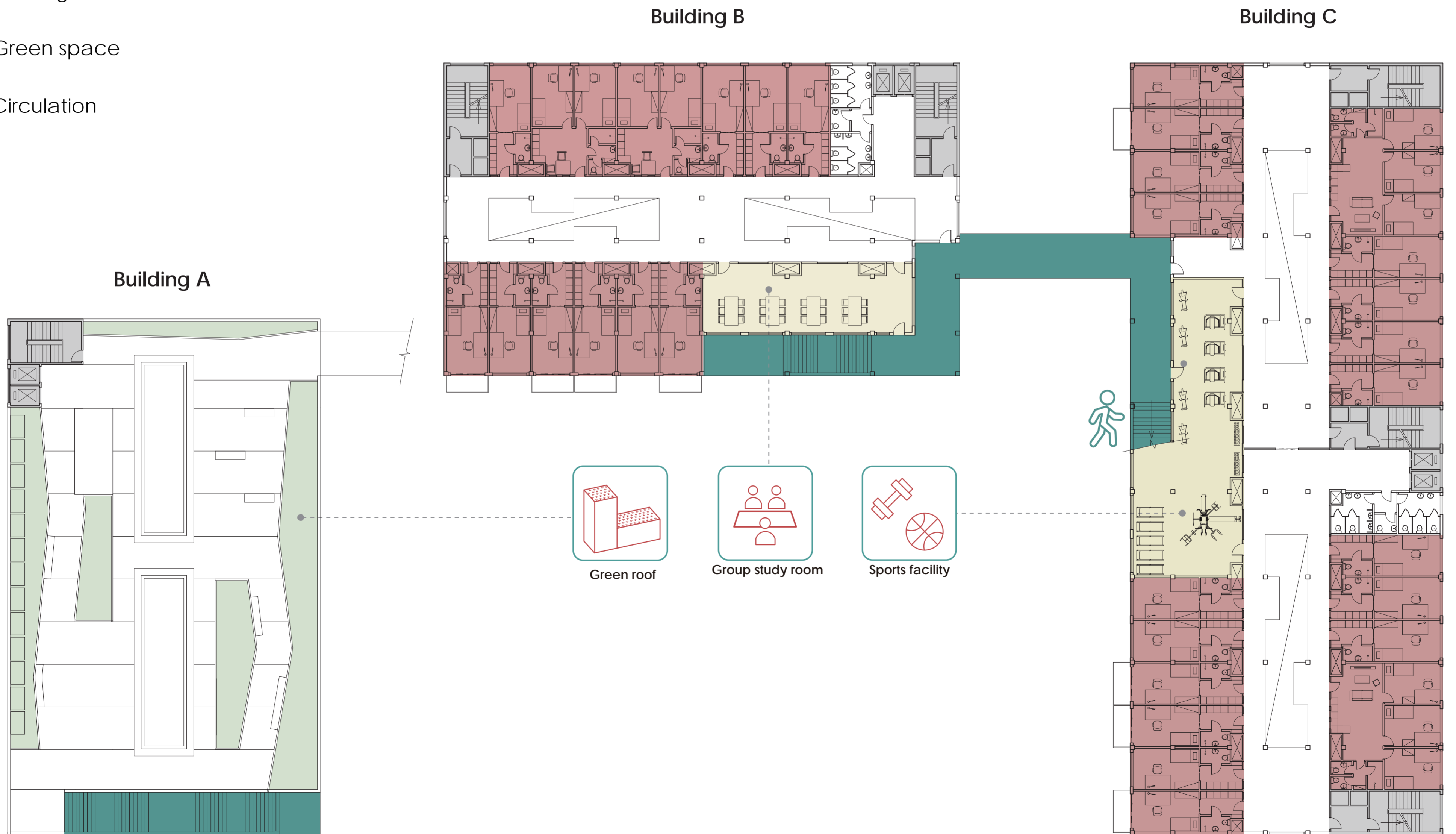
Second floor plan 1:200

- Vertical walking path
- Common area
- Housing area
- Green space
- Circulation



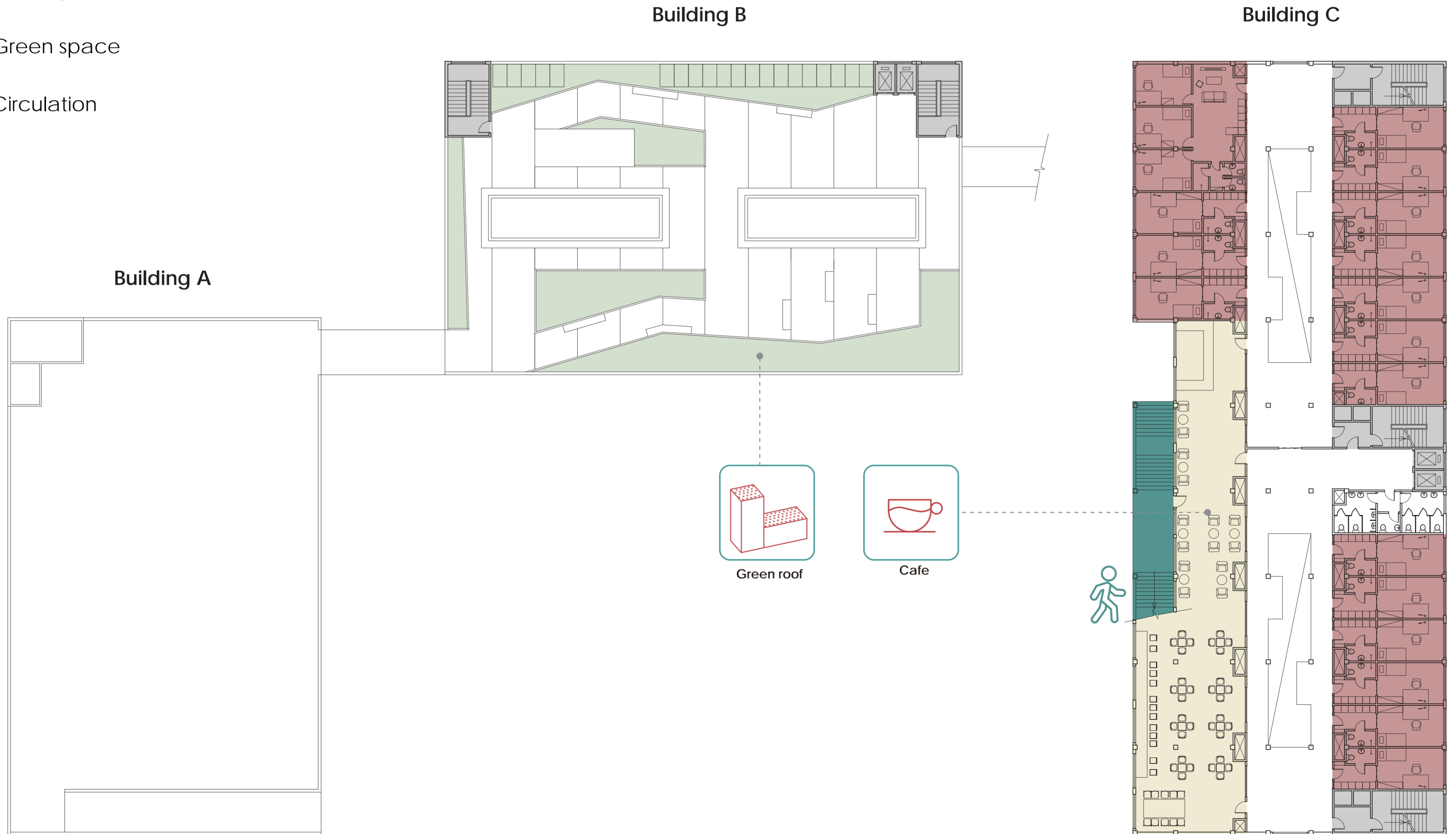
Third floor plan 1:200

- Vertical walking path
- Common area
- Housing area
- Green space
- Circulation

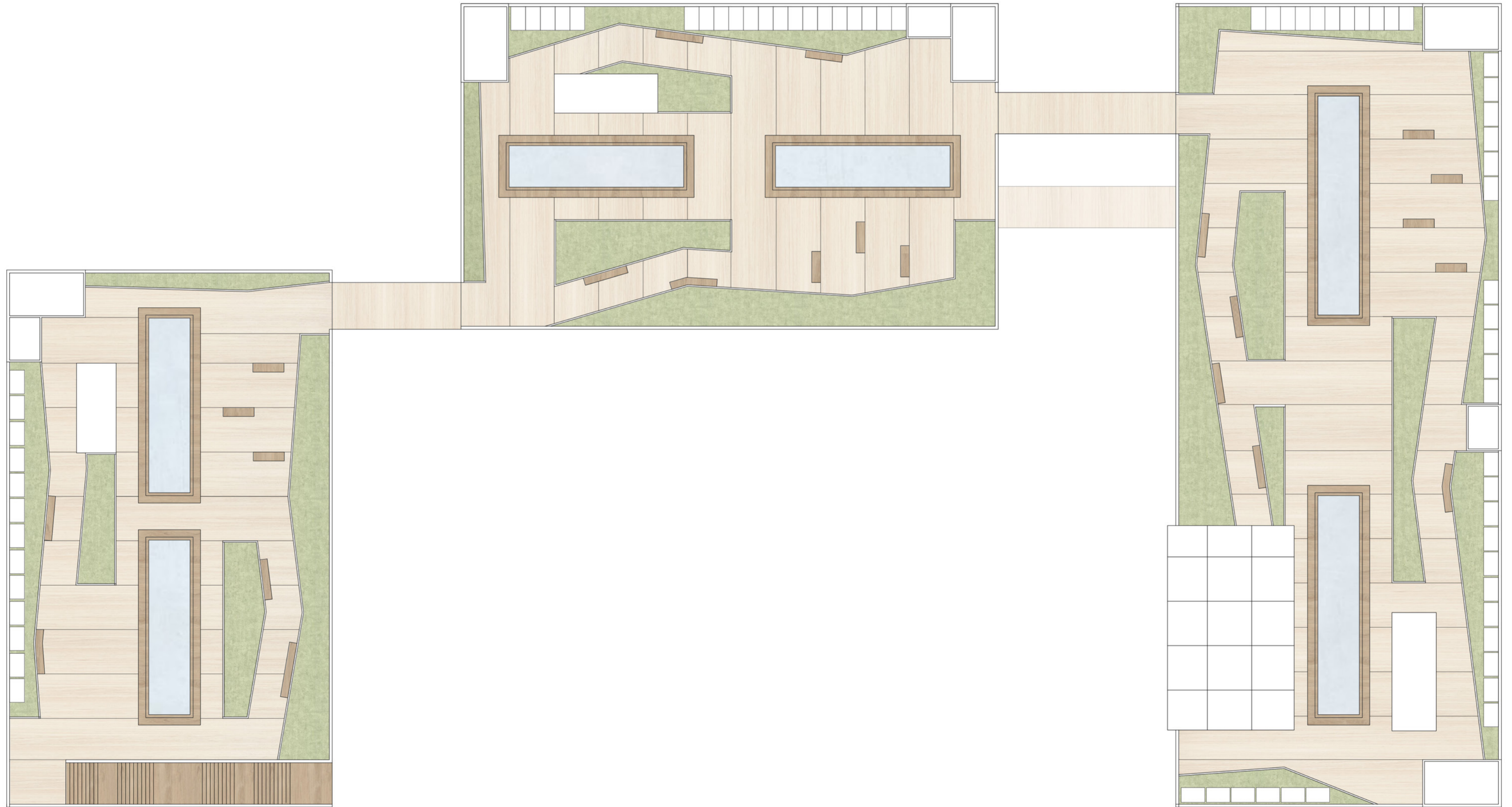


Fouth floor plan 1:200

- Vertical walking path
- Common area
- Housing area
- Green space
- Circulation



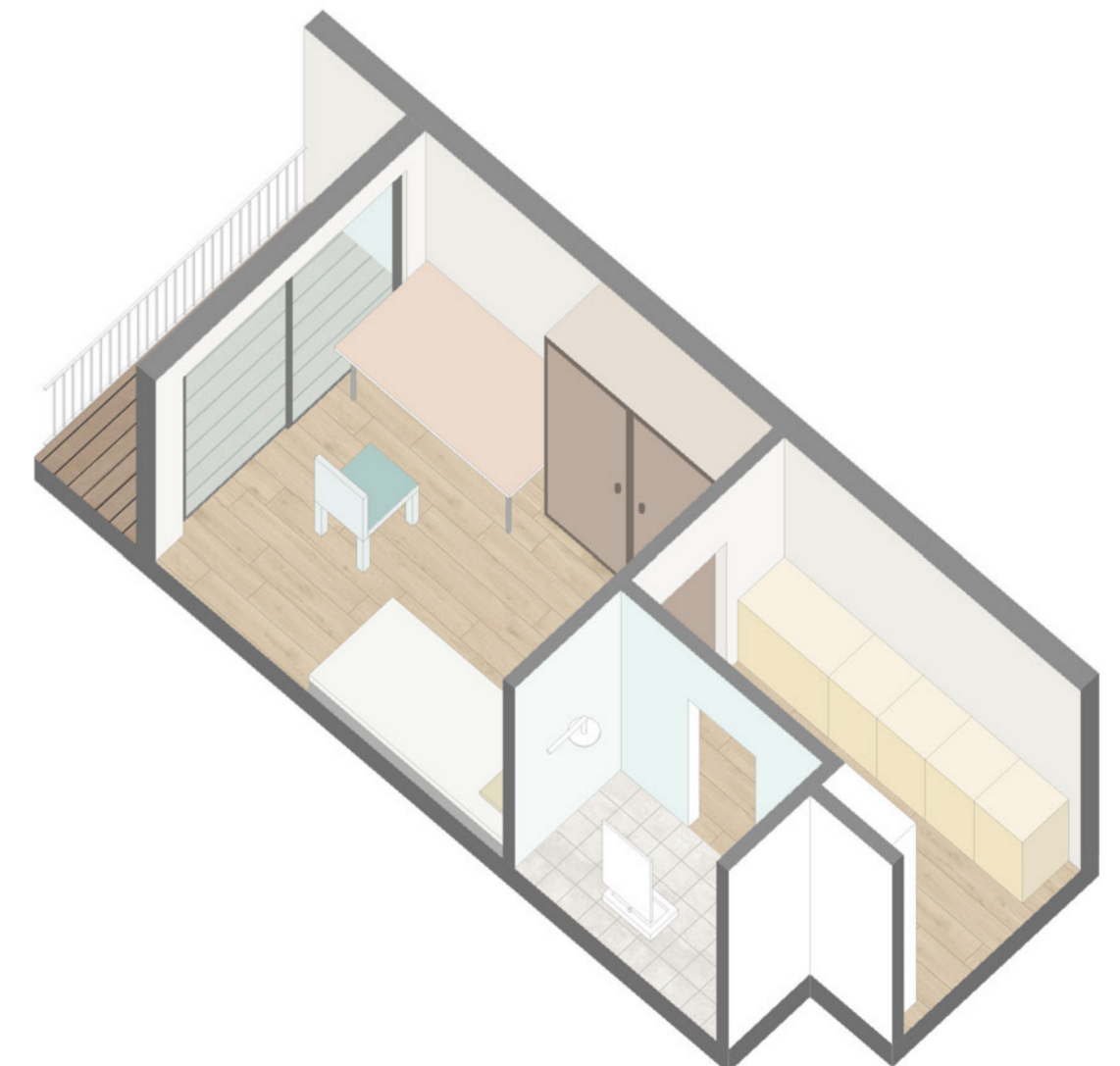
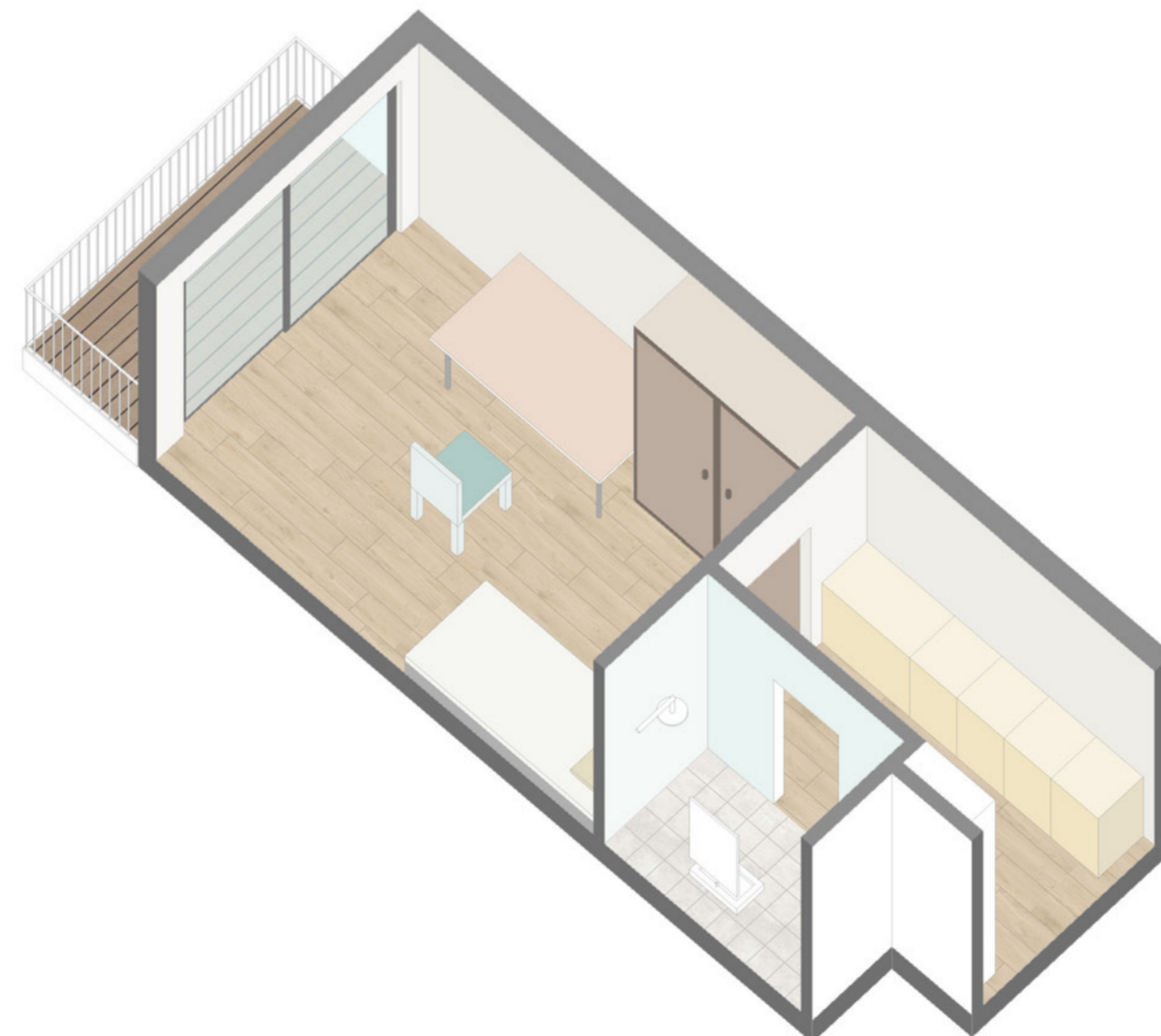
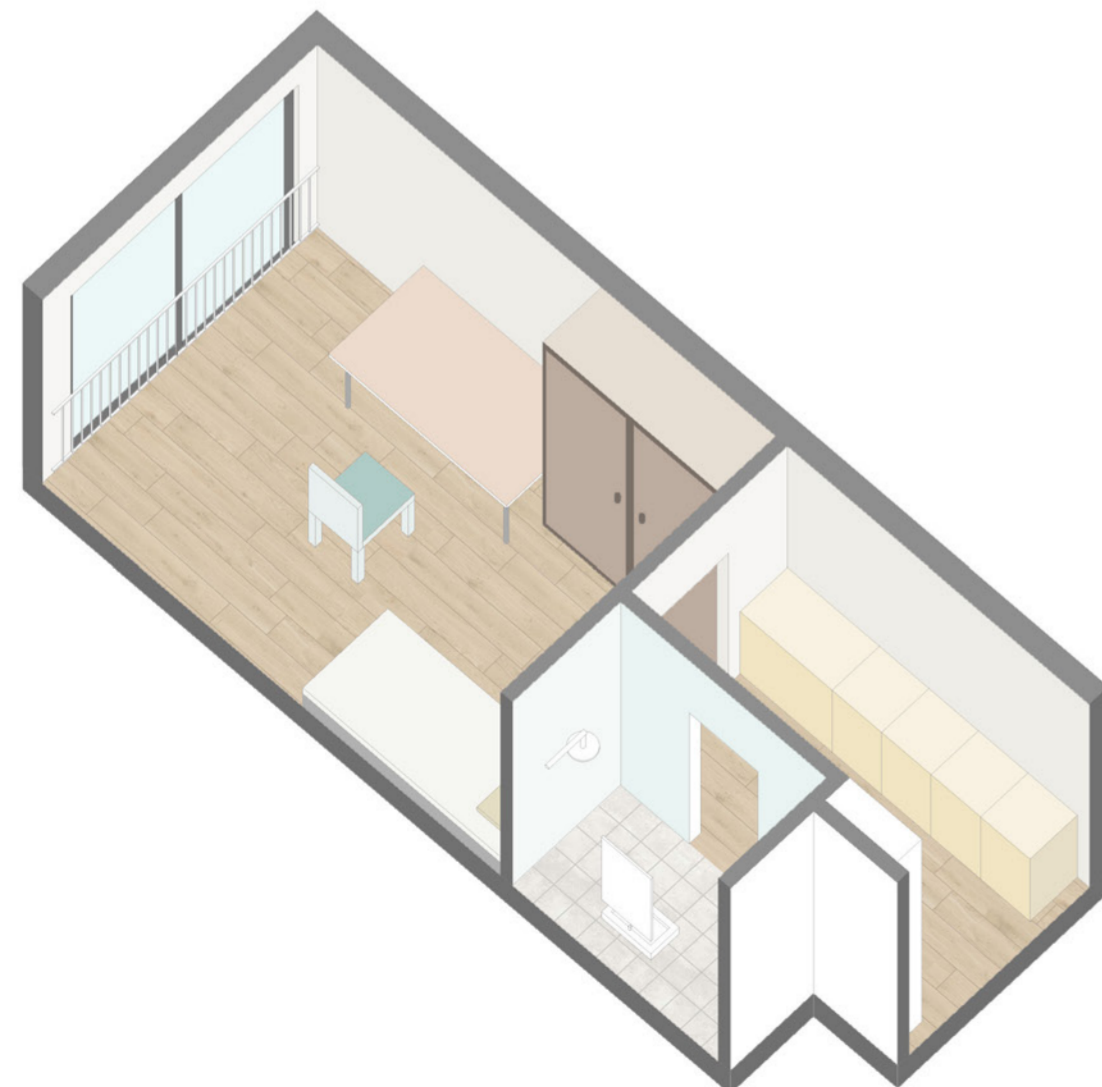
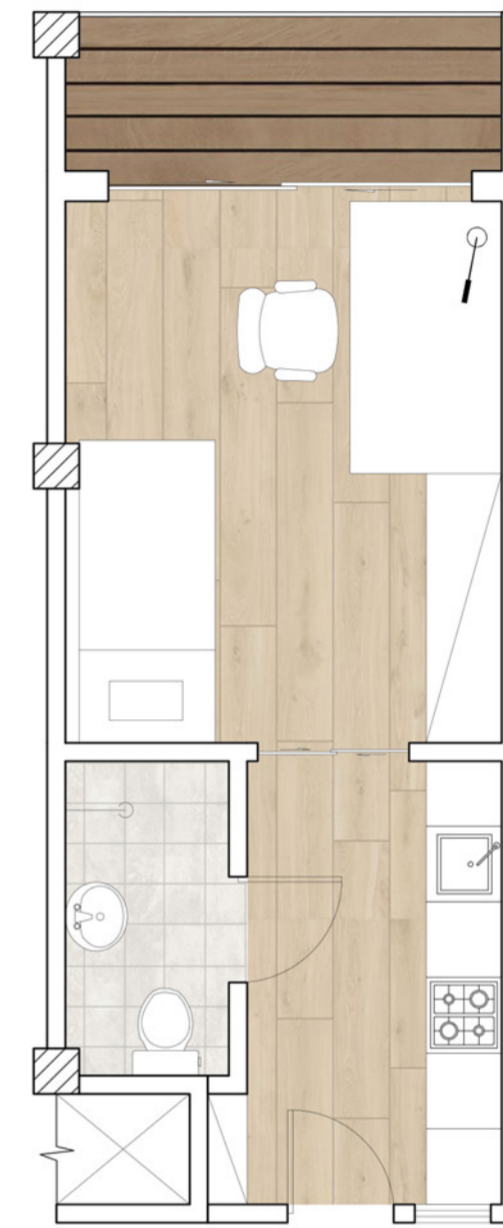
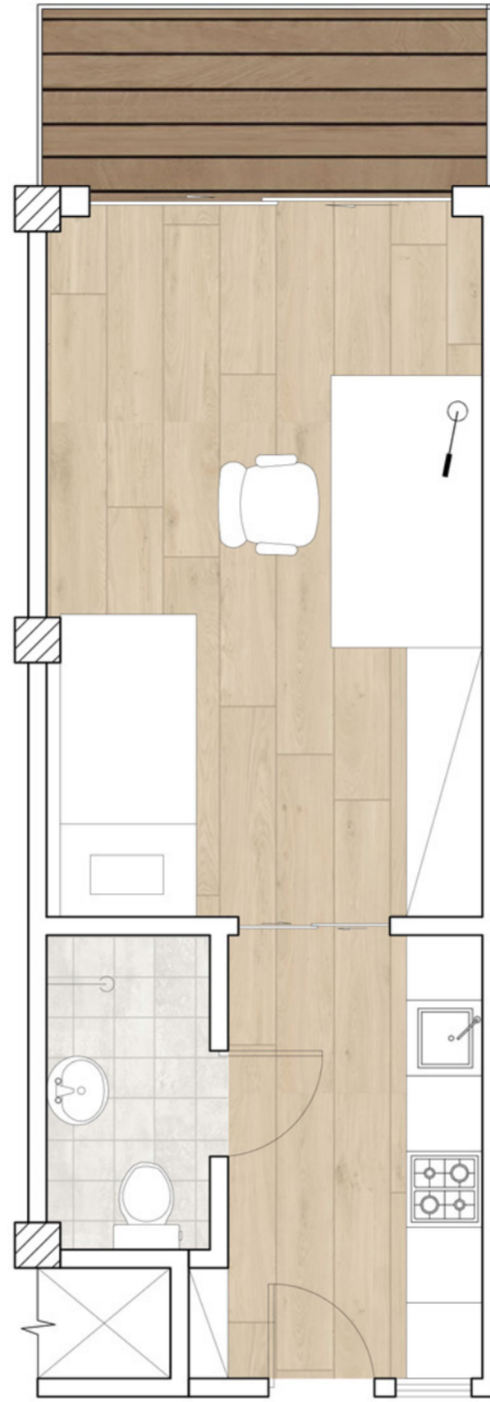
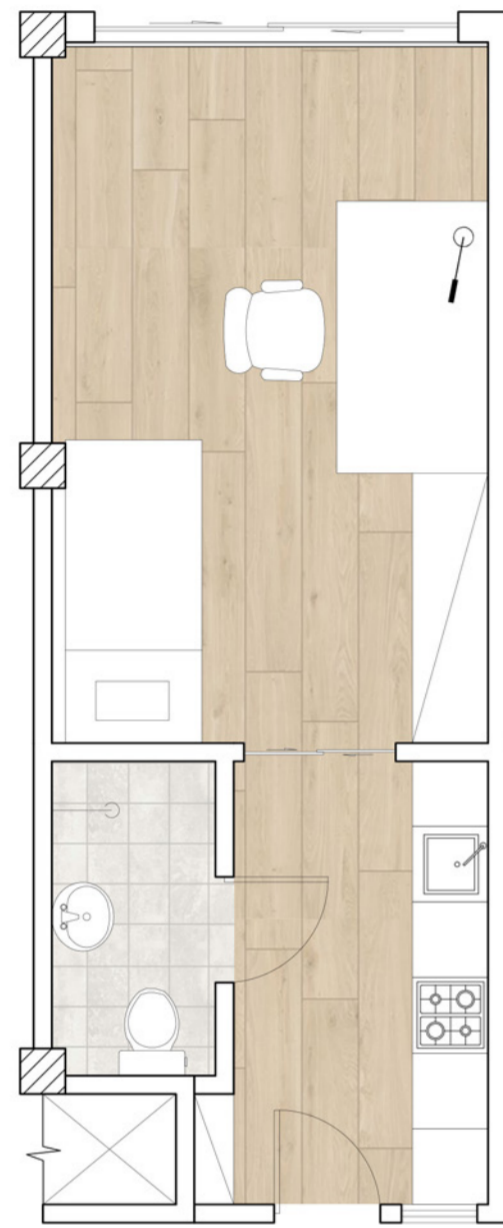
Rooftop floor plan 1:200



Housing typology

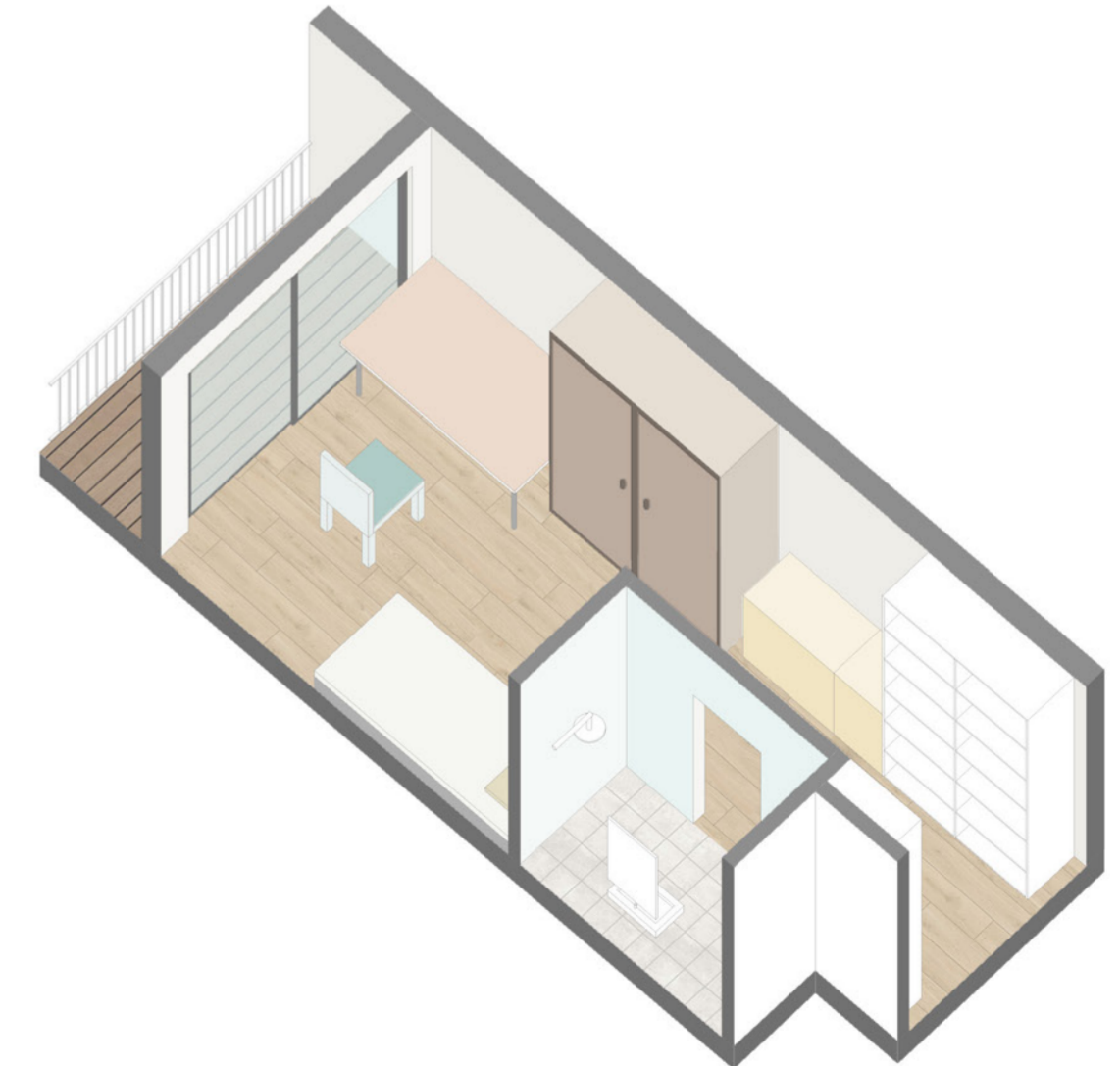
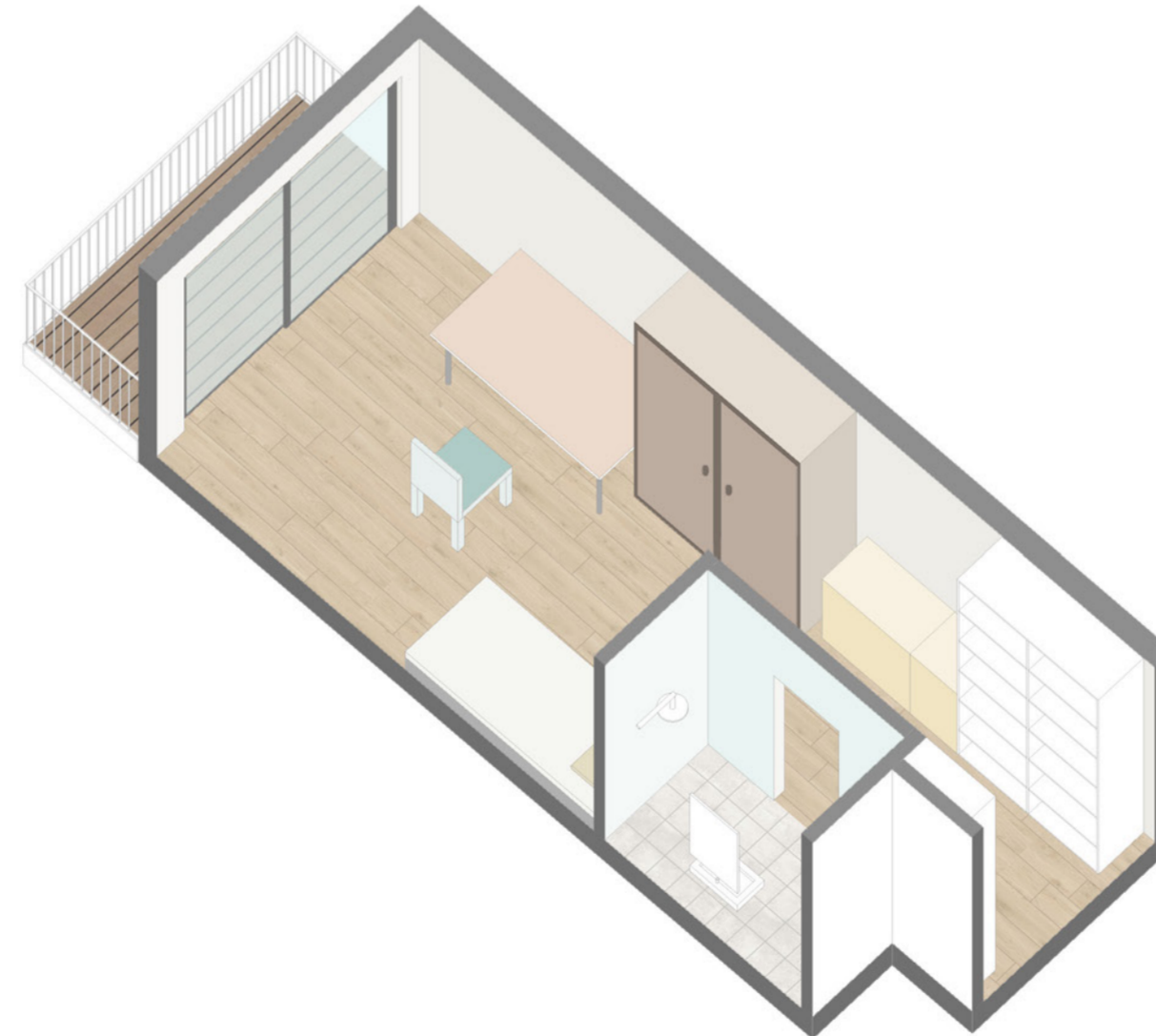
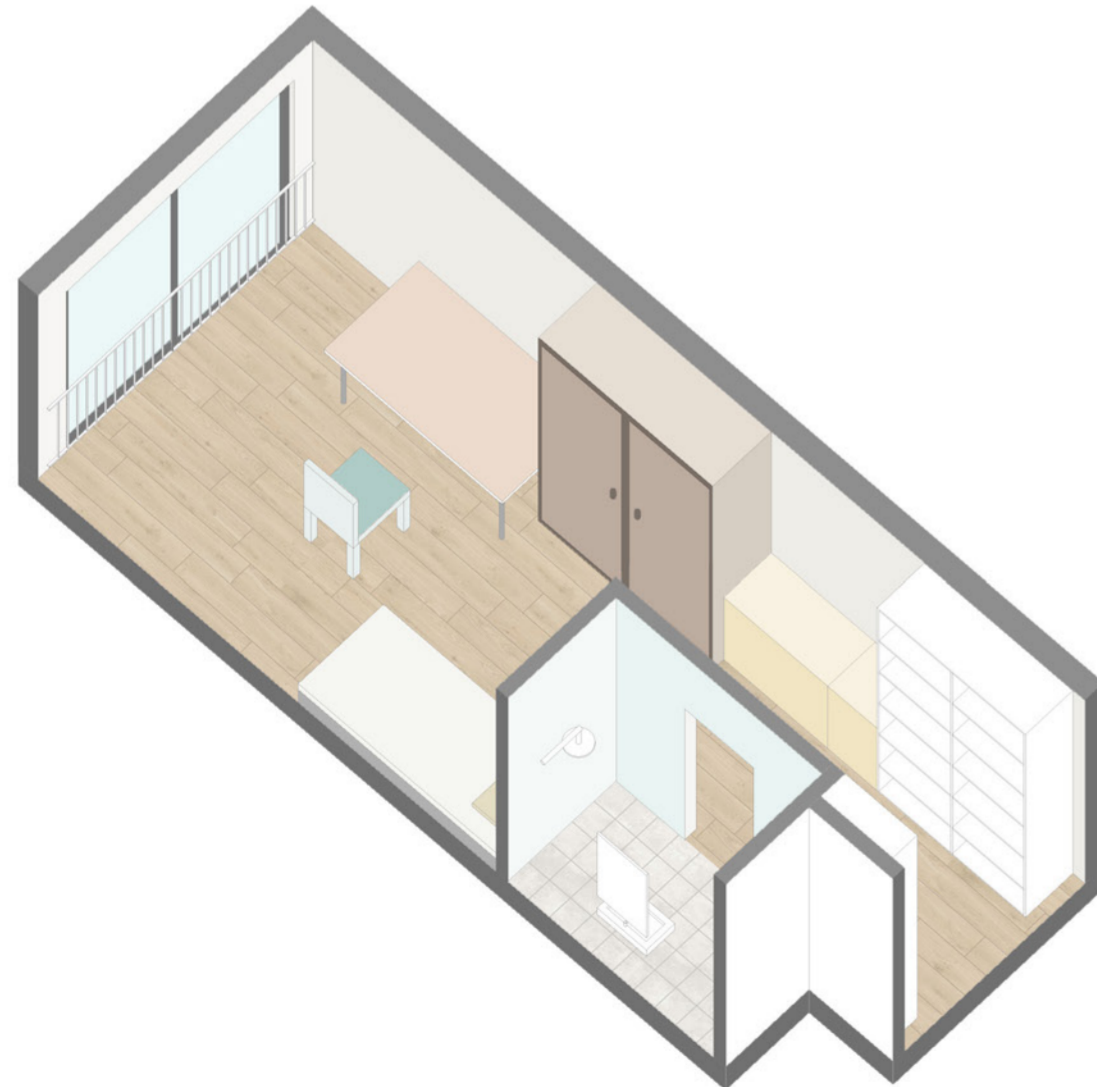
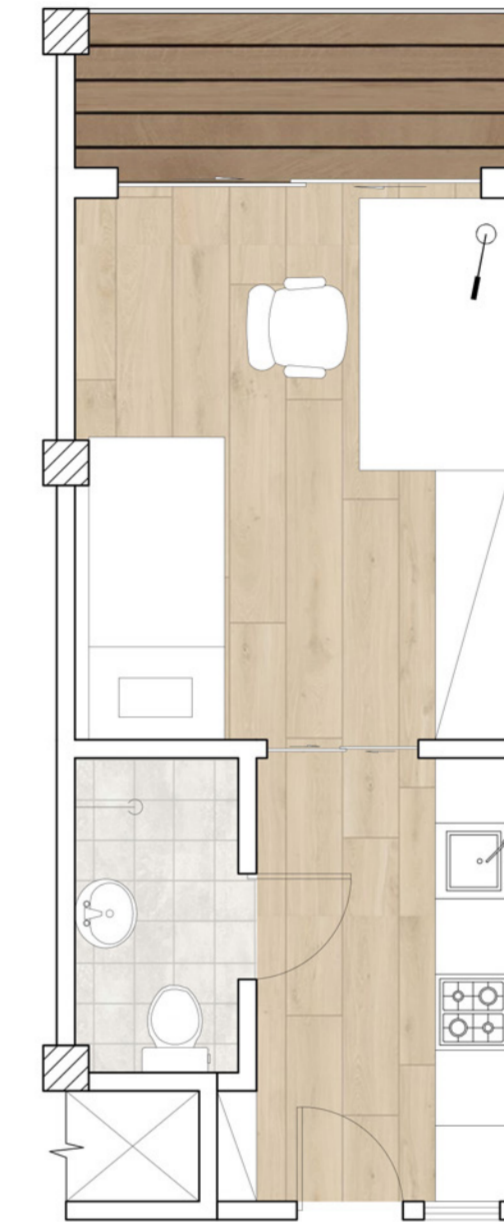
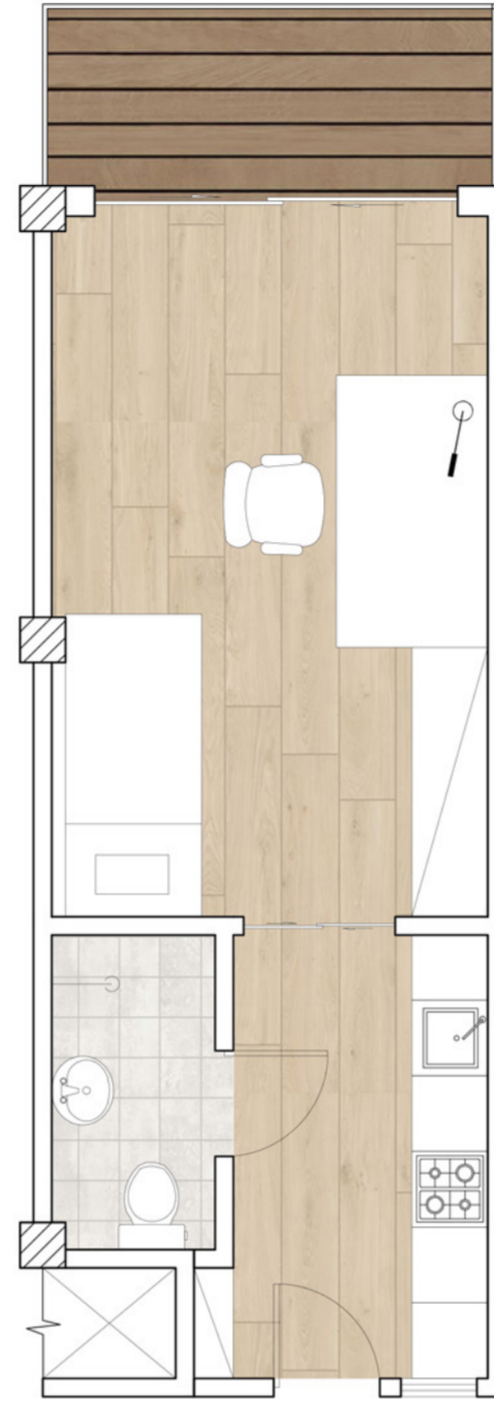
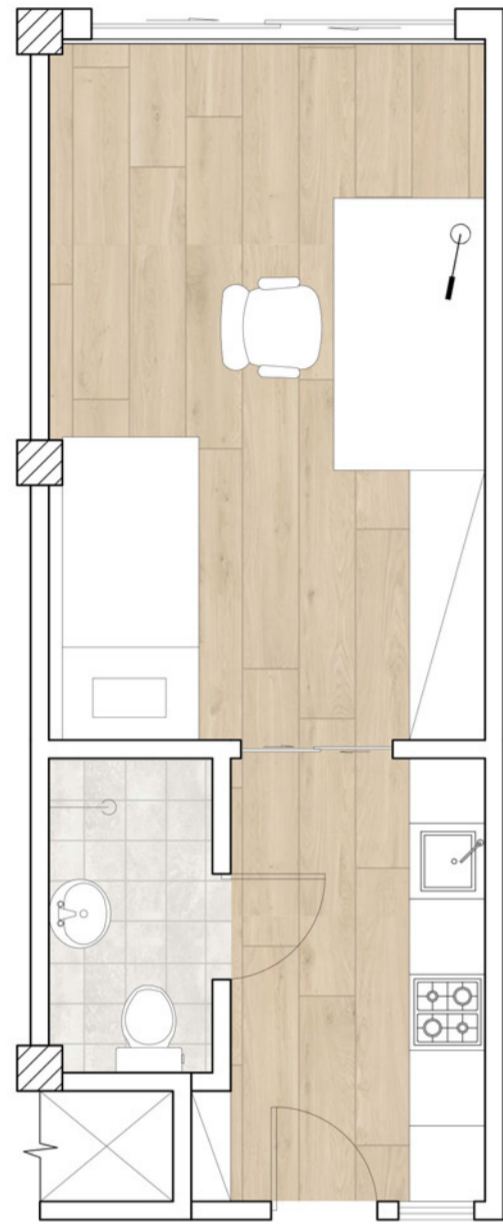


Type A: 105
Individual studio with kitchen

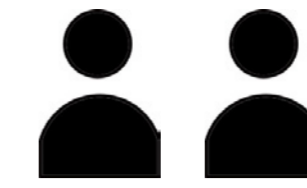


Housing typology

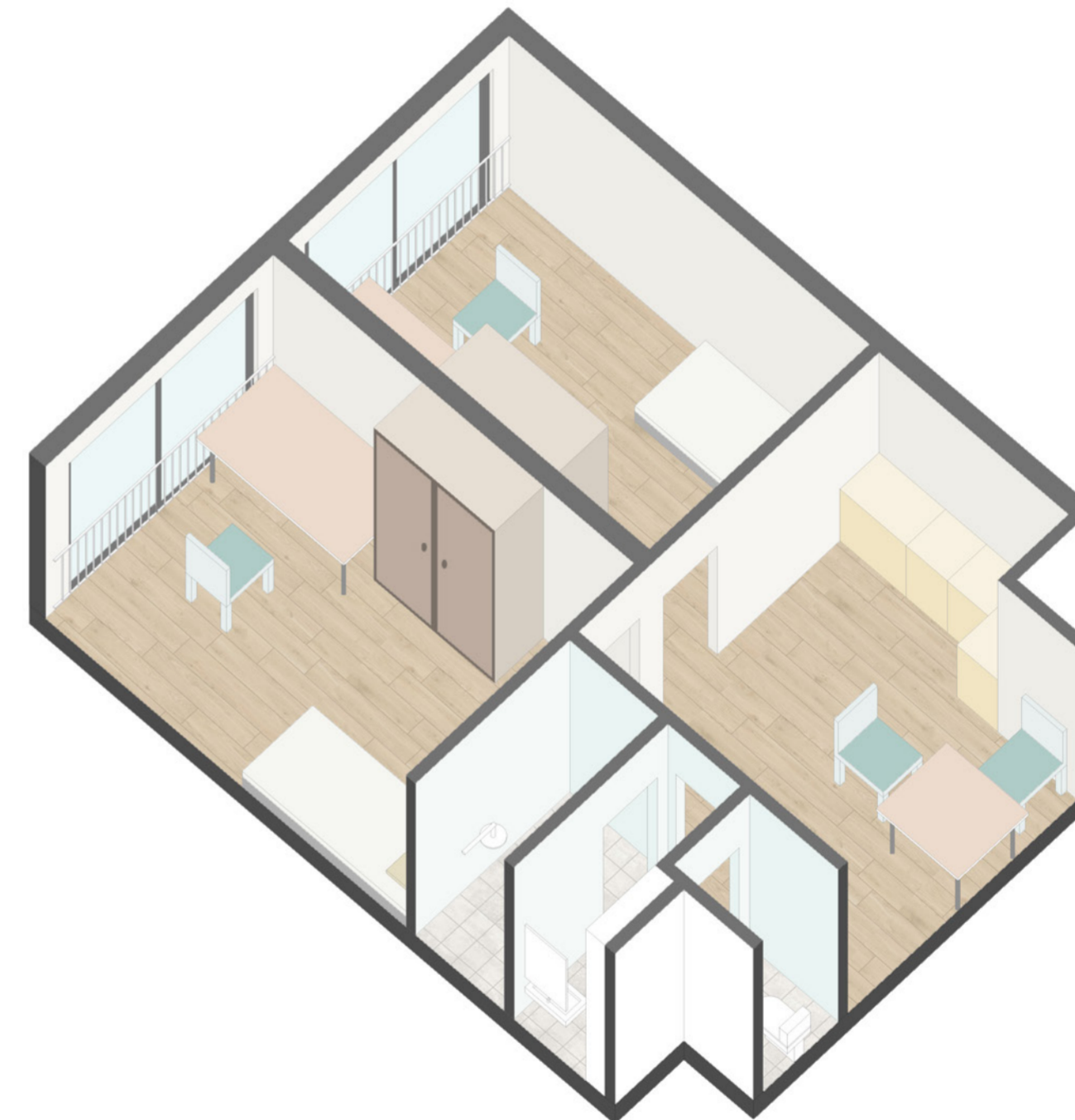
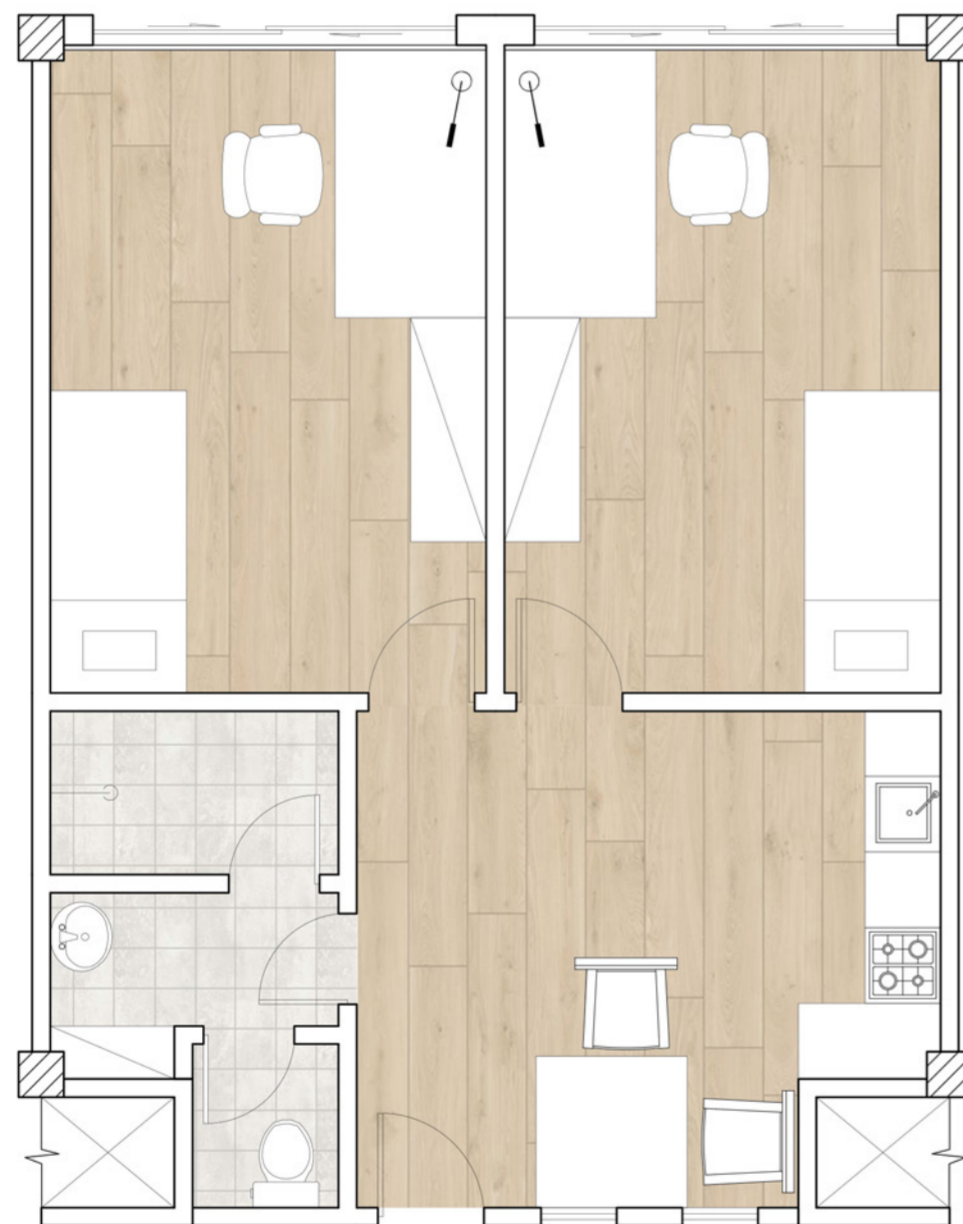
 Type B: 27
Individual studio without kitchen



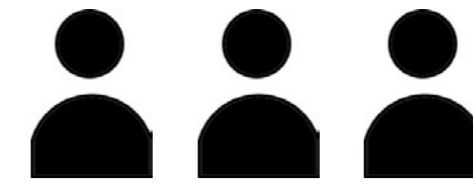
Housing typology



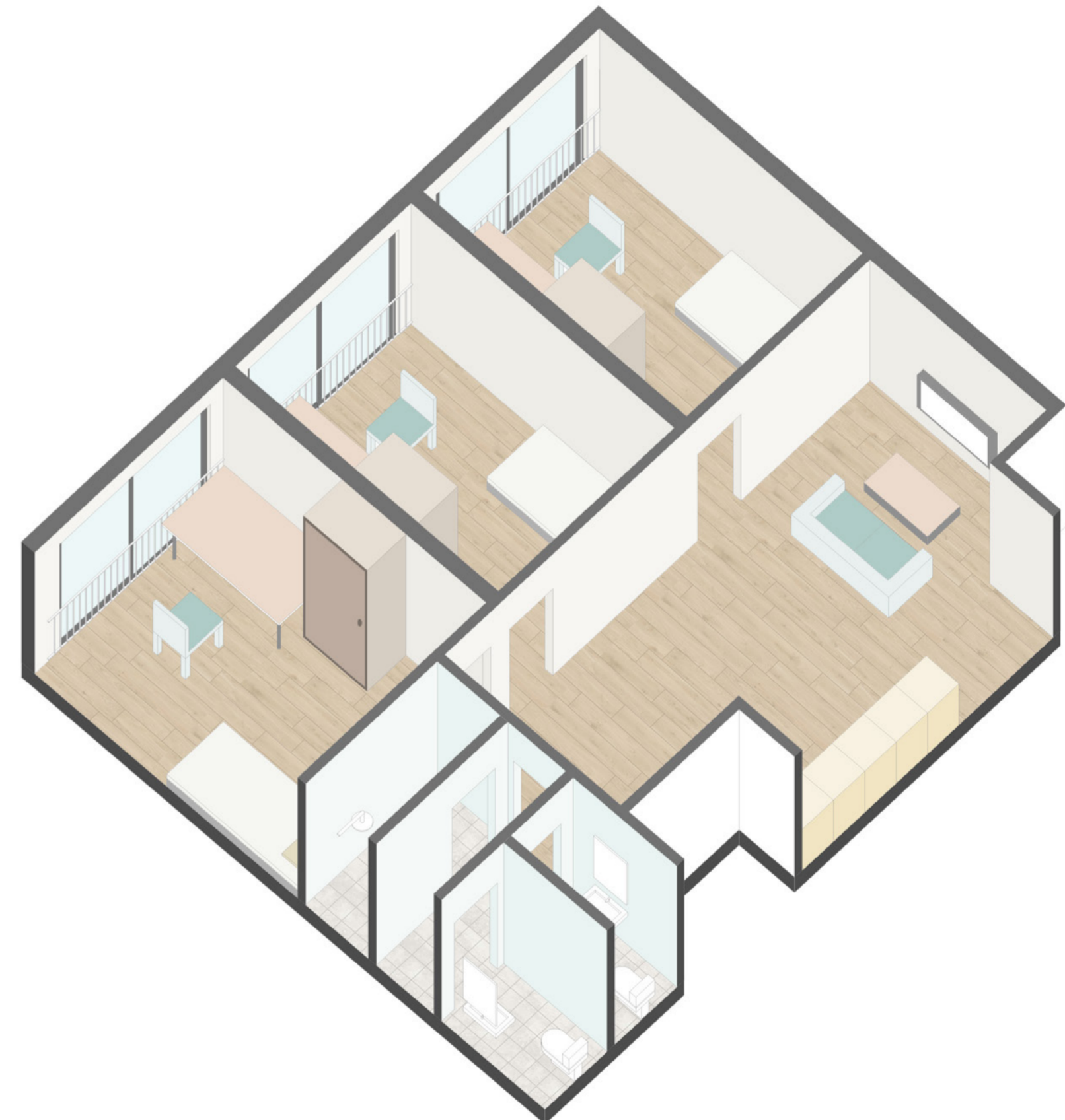
Type C: 9
2 bedrooms



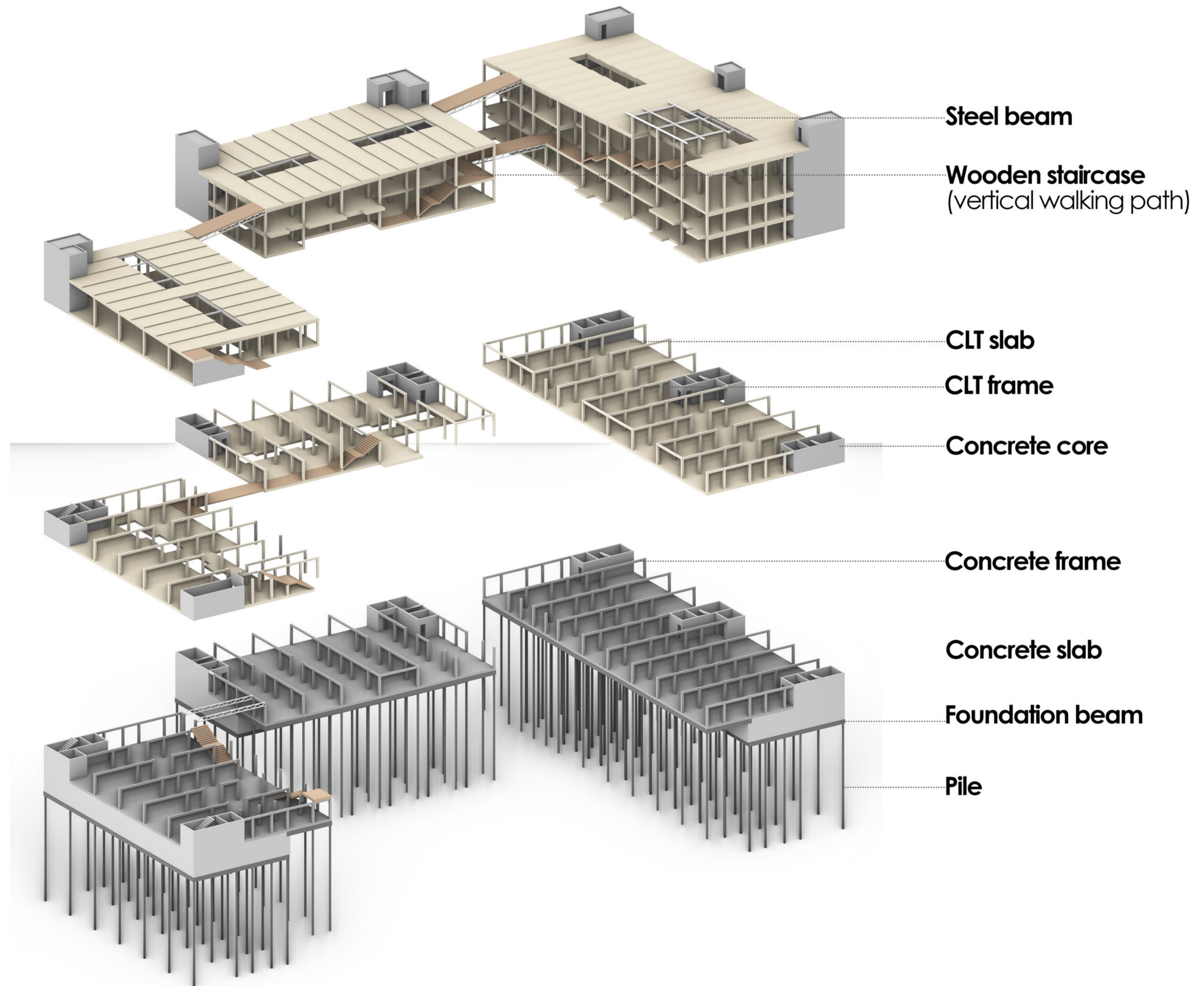
Housing typology



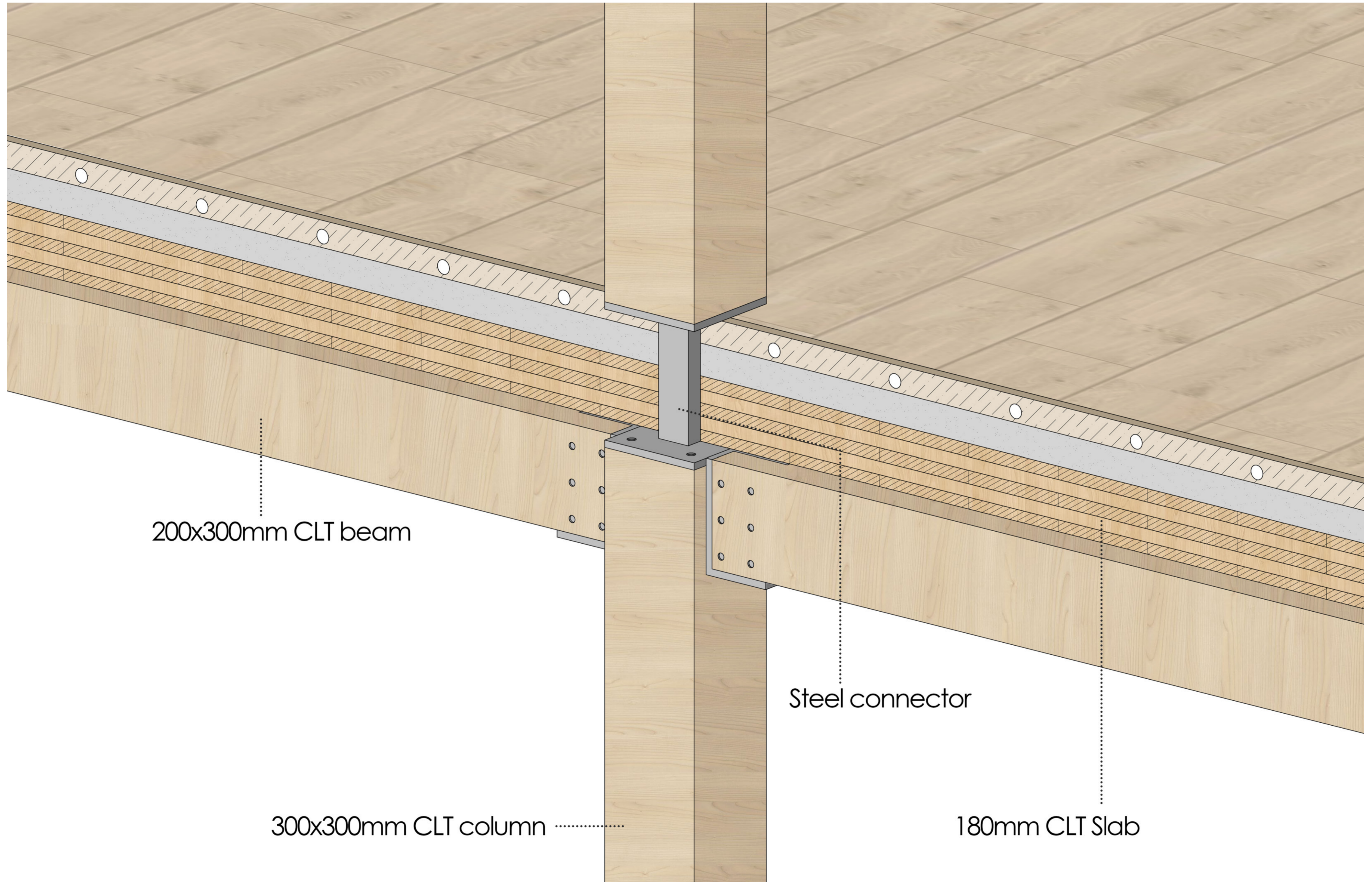
Type C: 9
3 bedrooms



Structure



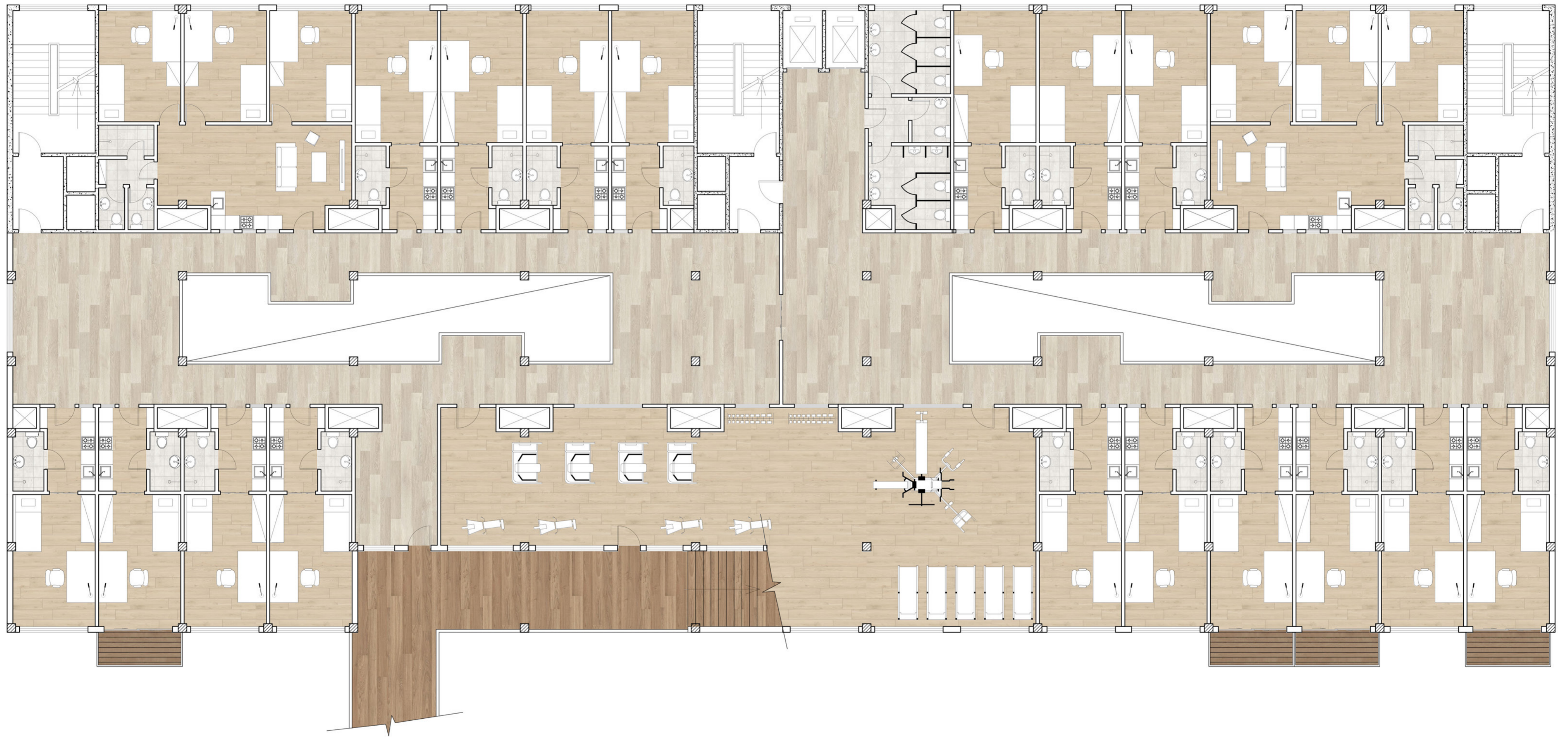
Structure



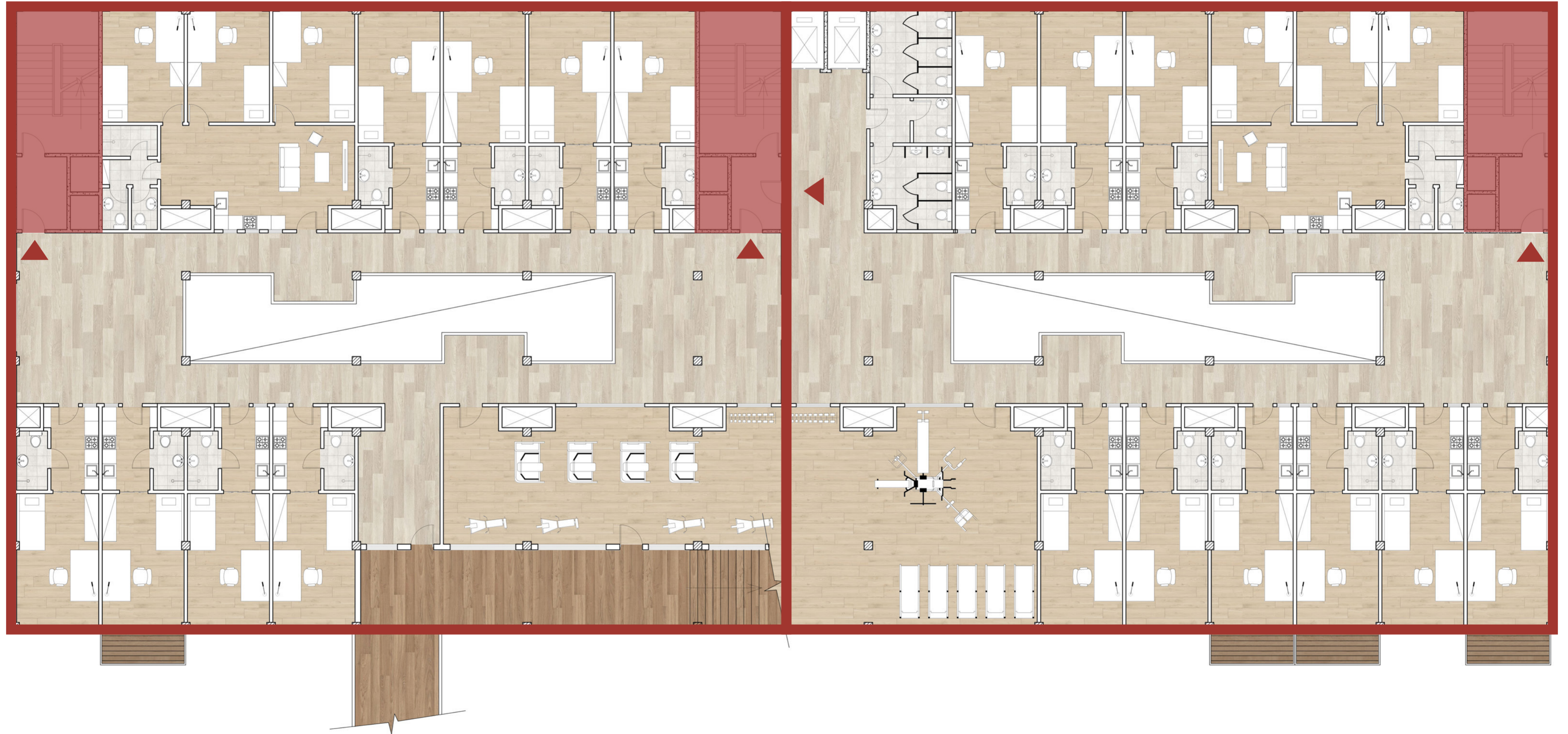
Building C



Building C floor plan 1:100



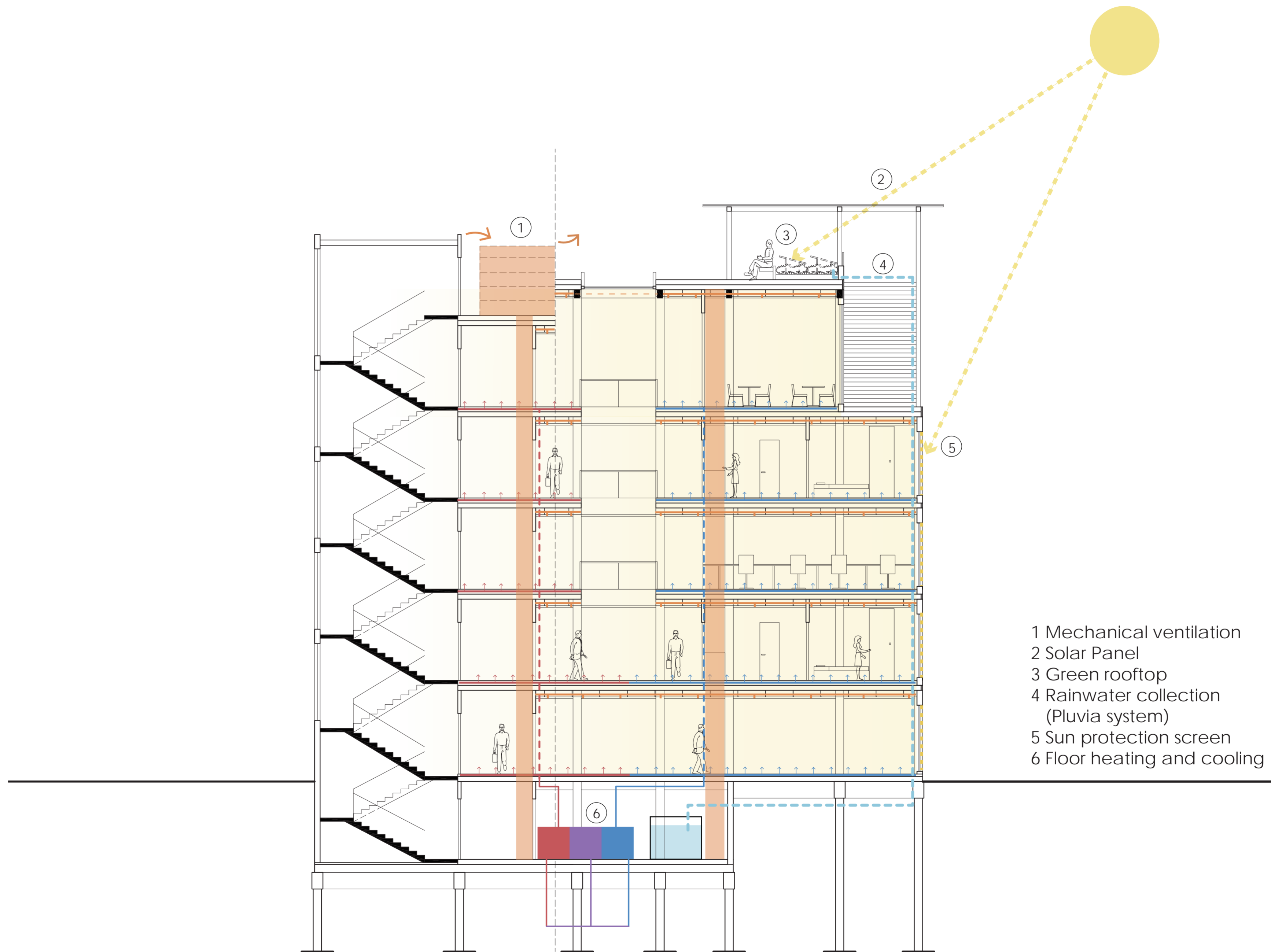
Building C fire compartment



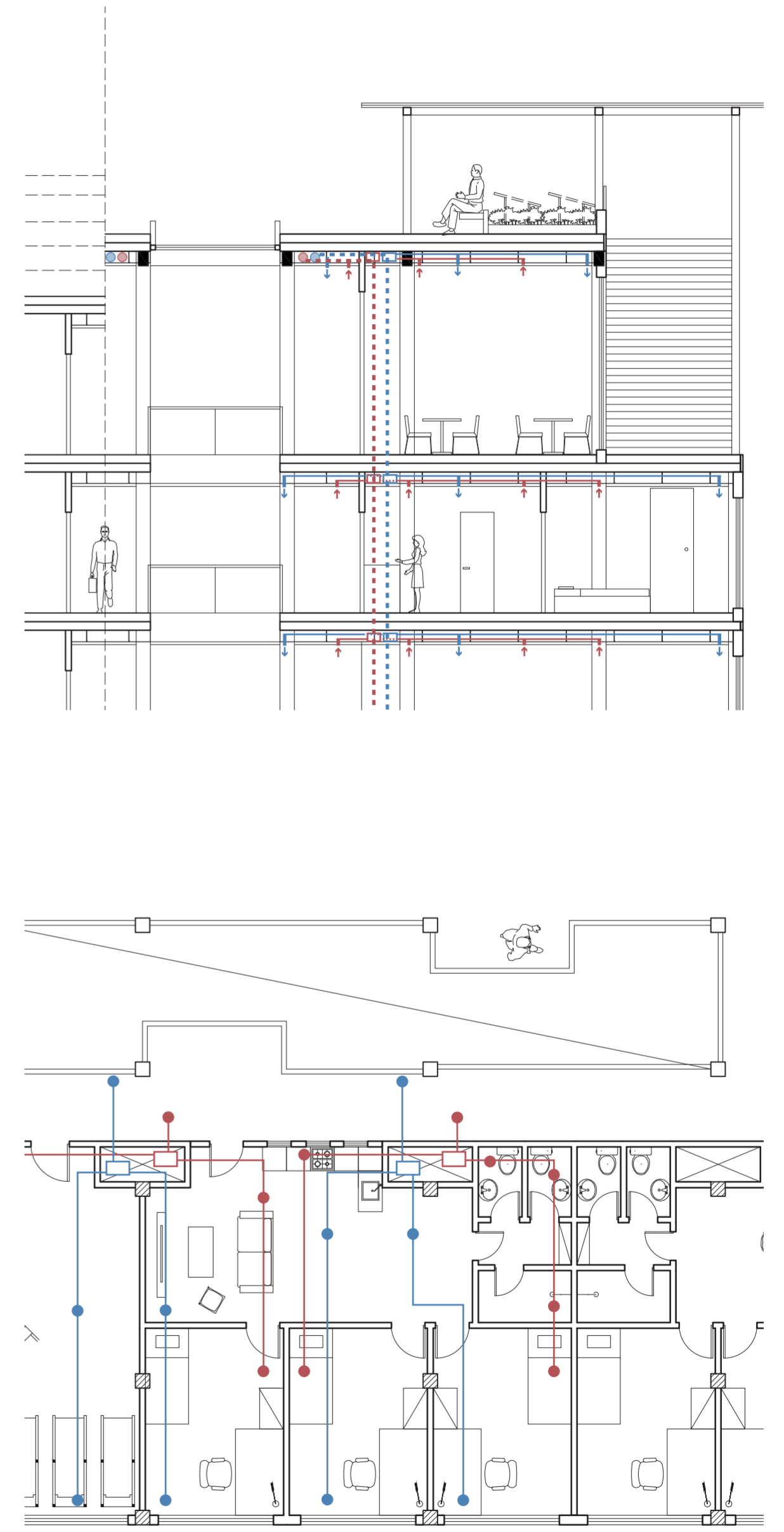
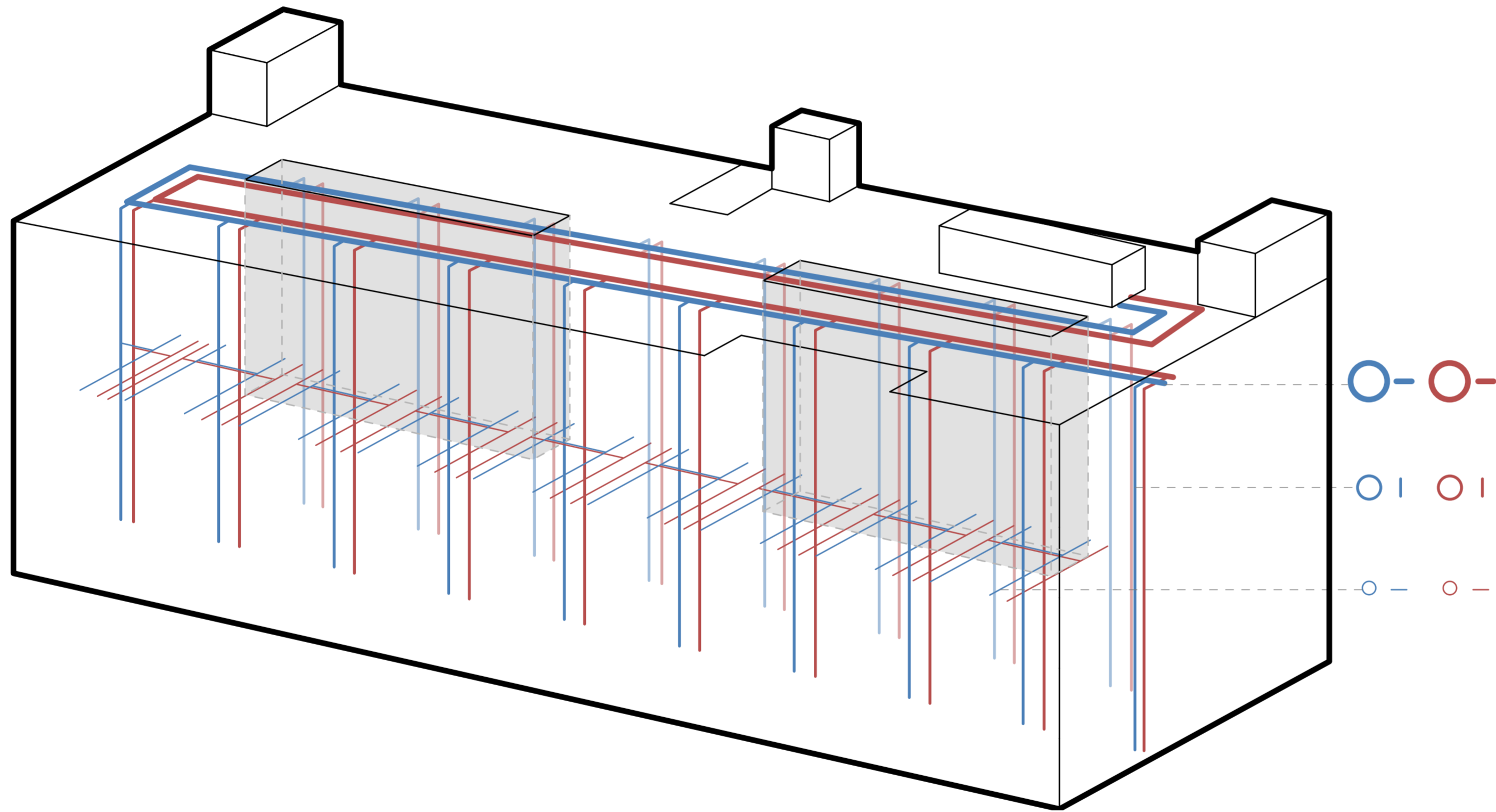
Arium and corridor



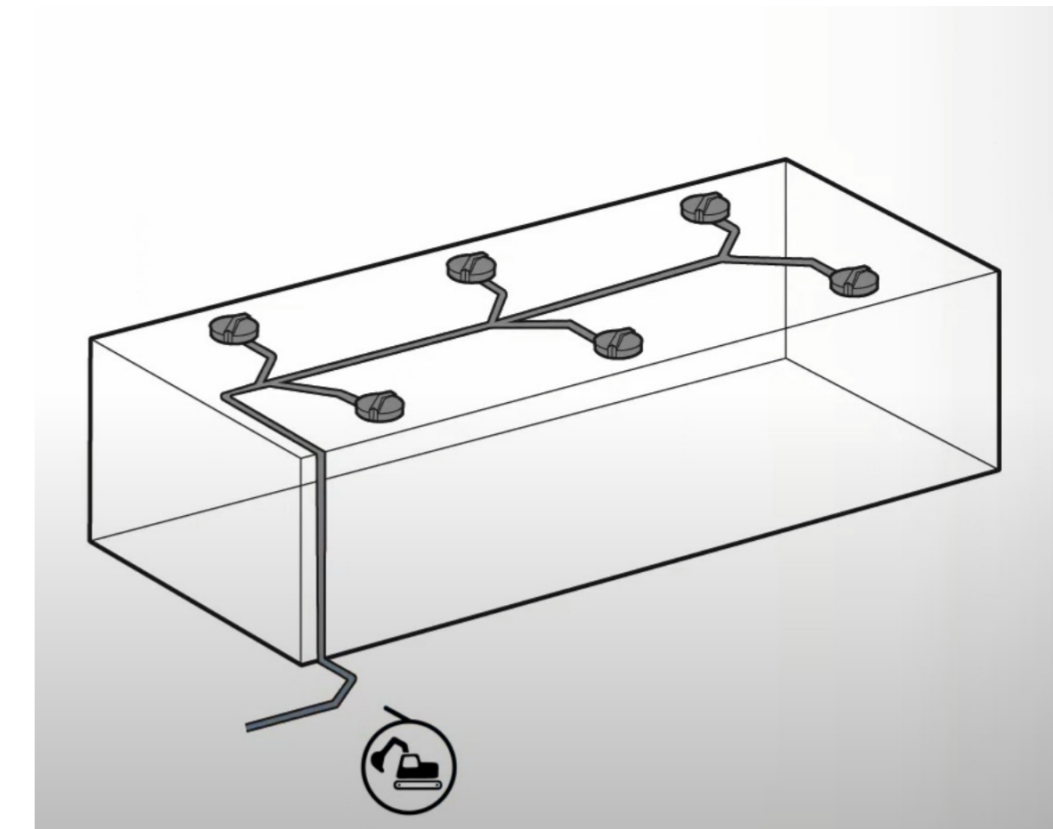
Climate design



Mechanical ventilation

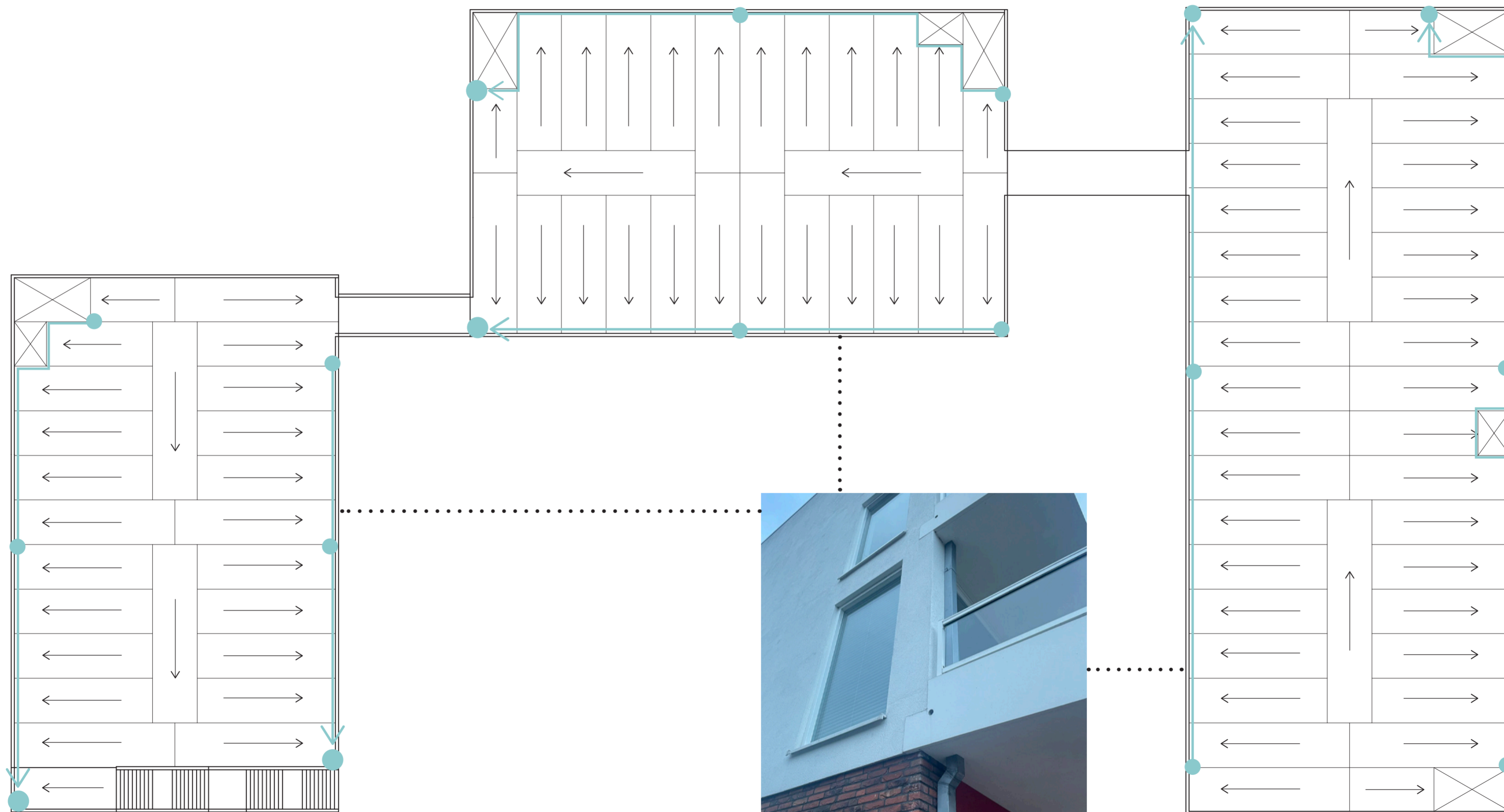


Rainwater collection



Pluvia system

(<https://www.youtube.com/watch?v=H5gepJ5Ld5Q>)



Pipes on the facade (photo by author)

Entrance



Outside facade



Courtyard



Studio with inside balcony



Studio with outside balcony



Shared type (3ppl)



Laundry bar



Open study room



Cafe



Vertical walking path



Vertical walking path



Vertical walking path



Vertical walking path



Vertical walking path



Green rooftop



Thanks for watching!