

SAFE AND SOUND

PROCESS BOOKLET

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Colophon
Delft University of Technology
MSc3 Dutch Housing Graduation
Studio 2020-2021
AR3AD110 Designing for Care

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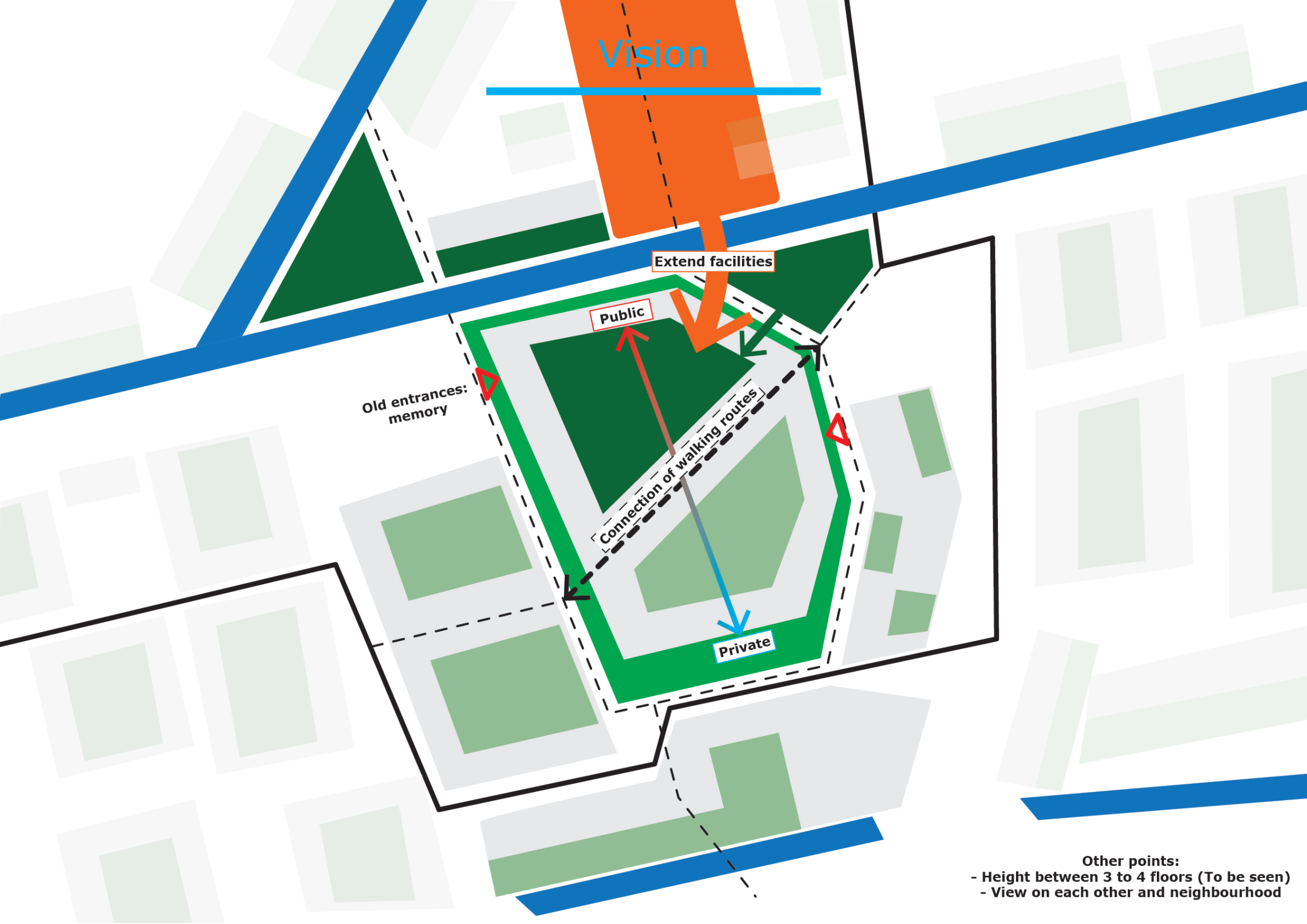
Supervisors
Birgit Jürgenhake - Architecture Marieke Berkers - Research Plan
Lex van Deudekom - Building Technology

WEEK 3.1

8 - 14 February

Most important feedback:

- The route of meeting spaces is promising
- What is the experience from different routes?
- Look at the dimensions/depths in sections: balconies, public path etc
- Why ‘mantelzorgers’? What do they need?
- Look at tv-series Thuis op Zuid
- Look into:
    - Parking
    - Routing
    - Housing typology
    - Fine-tuning Masterplan

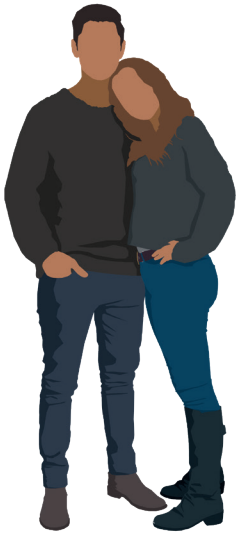


Other points:
- **Height between 3 to 4 floors (To be seen)**
- **View on each other and neighbourhood**

Masterplan



Residents



Starters

Characteristics
- Graduates without children
- Active life outside neighbourhood

Living environment
- Affordable apartment (40-60m²)
- Private kitchen, bedroom, bathroom and home-office/ second bedroom
- Possibility to move to single-family house
- Public facilities: restaurant, library, shops, sporting facilities



Informal caregivers

Characteristics
- Voluntarily helping family and friends
- Combined with profession

Living environment
- Apartment combined with elderly (40-80m²)
- Apartment for caregiver alone or with family: 2/3-room apartment
- Public facilities: restaurant, library, shops, sporting facilities, communal spaces





Empty nesters (55-65)

Characteristics
- Children moved out
- House is too large
- Active life outside neighbourhood

Living environment
- 2/3-room apartment (40-80m²)
- Public facilities: restaurant, library, shops, sporting facilities and meeting spaces for friends and family



Elderly (65+, with care)

Characteristics
- Somatic complaints
- Smaller social radius

Living environment
- Smaller apartment (30m²)
- Walkable facilities: lunch-room, library, communal garden, shops, medical facilities
- Own kitchen and balcony
- Meeting spaces inside

Elderly (65+, without care)

Characteristics
- Differences in need
- Life inside and outside the neighbourhood

Living environment
- Apartment (30-60m²)
- Walkable facilities: lunch-room, library, communal garden, shops, medical facilities
- Own kitchen and balcony
- Meeting spaces inside

Meeting spaces



Supermarket



Library



Lunch-room/Restaurant



Medical facility



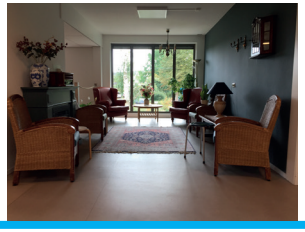
Playground



Communal vegetable garden



Lounge room: 50 people



Communal living room: 6 people



Multifunctional room: 15 people

Home



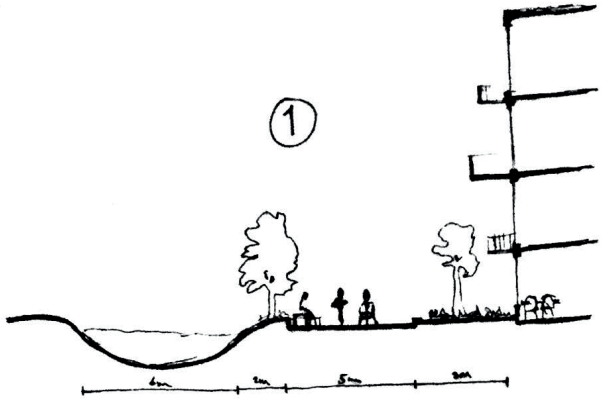
WEEK 3.2

15 - 21 February

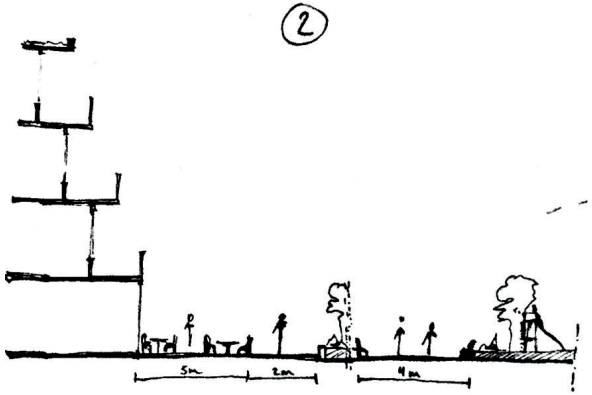
Most important feedback:

Building technology:
- Think about the sun orientation
- Analyse the infrastructure
- Take existing neighbourhood in relation with section
- Parking/residents ratio
- Draw the whole building
- South-Easter wind orientation: windtunnel
- Make more sketches

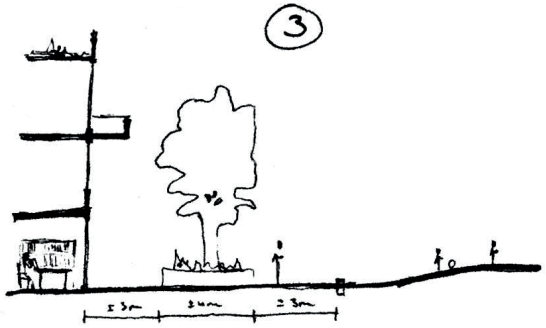
Architecture:
- Do elderly couples sleep together?
- Define private/public/parochial
- What is your living concept?
- Define atmospheres of the squares

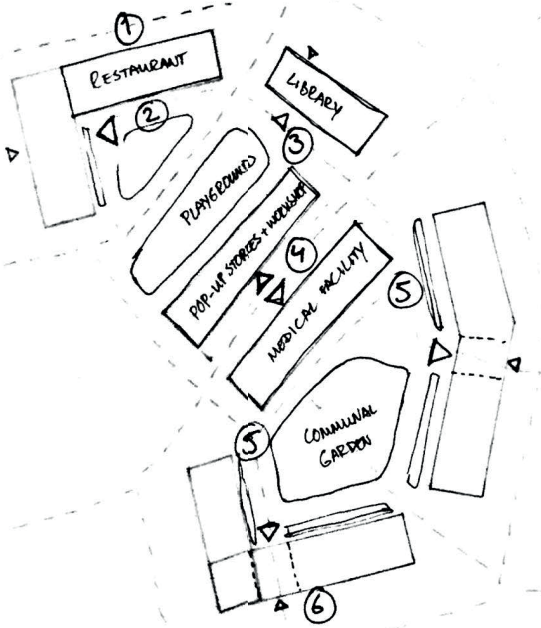


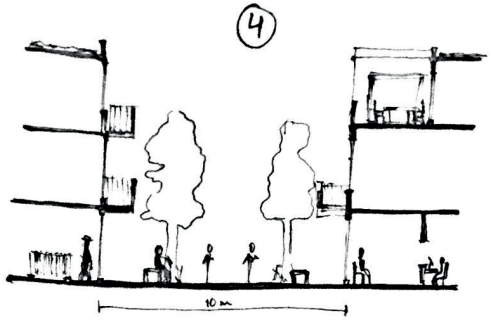
WALKING ROUTE NEXT TO THE WATER AND VIEW ON THE RESTAURANT



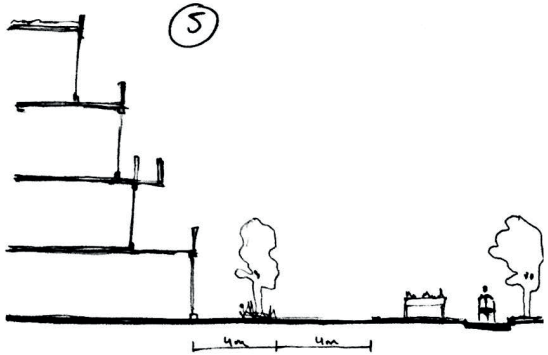
RESTAURANT WITH TERRACE, LOOKING OUT ON PUBLIC SQUARE WHERE PEOPLE CAN SIT IN THE GREENERY. PLAYGROUND IS ON THE OTHER SIDE: NOT TOO CLOSE TO RESTAURANT FOR NOISE, BUT NOT TOO FAR SO THEY CAN SEE THE CHILDREN.



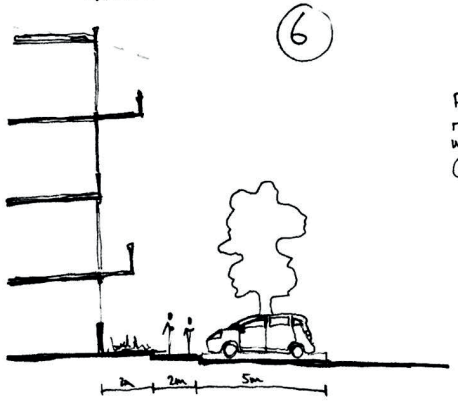




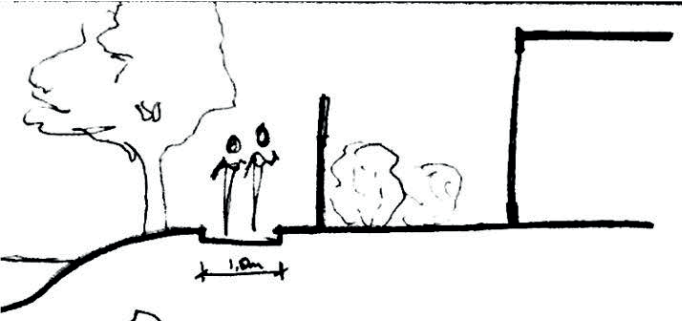
THE CENTRAL AXIS HAS A FEELING OF A SHOPPING STREET DIRECTED AT THE BUS STATION. ON THE ONE HAND THERE IS A MEDICAL FACILITY AND ON THE OTHER POP-UP STORES/ WORKSHOP SPACE/APARTMENTS.



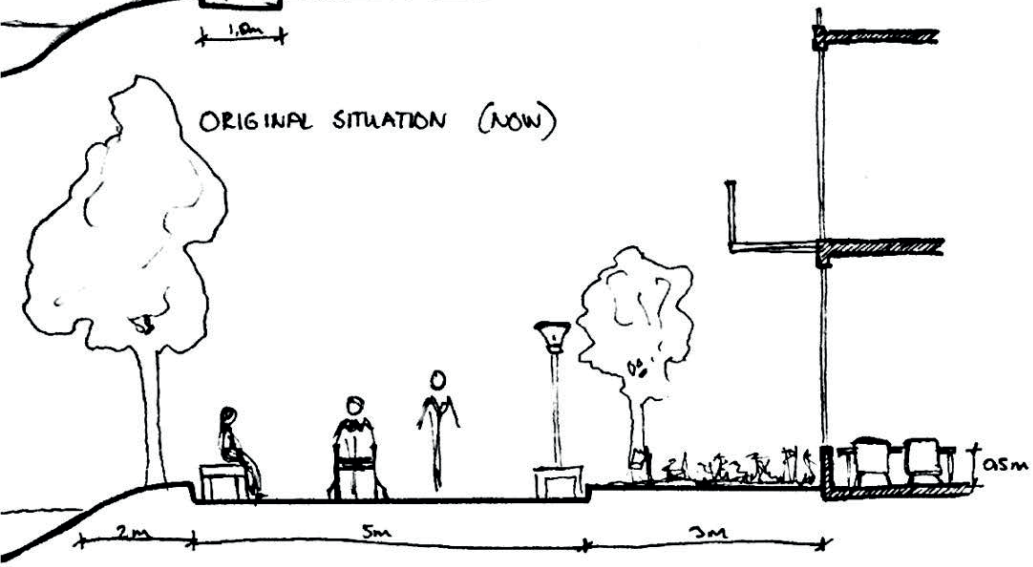
THE COMMUNAL GARDEN IS THE CENTER OF THE SECOND SQUARE THE ELDERLY CAN STROLL THROUGH THIS GARDEN AND HAVE HEIGHTENED PLANTERS SO THEY CAN WORK.
THE APARTMENTS ON THE GROUND FLOOR HAVE A SMALL PRIVATE GARDEN.



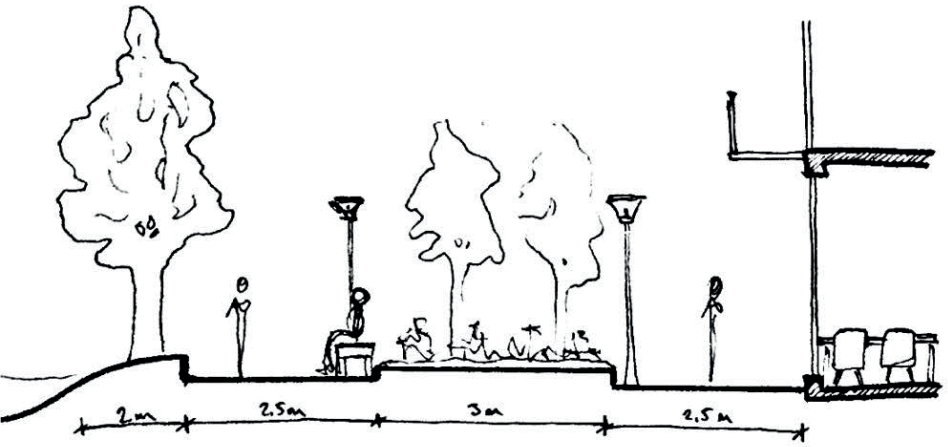
PARKING WILL BE ON THE EAST, SOUTH AND WEST.
(PROBABLY 45 TO 50 SPOTS)



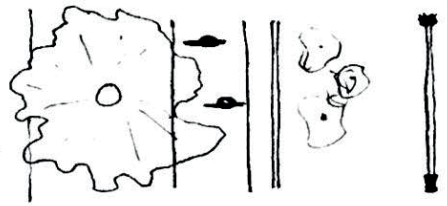
ORIGINAL SITUATION (NOW)

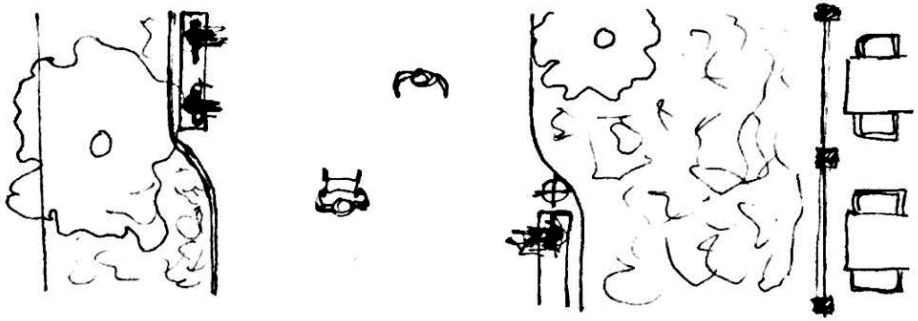


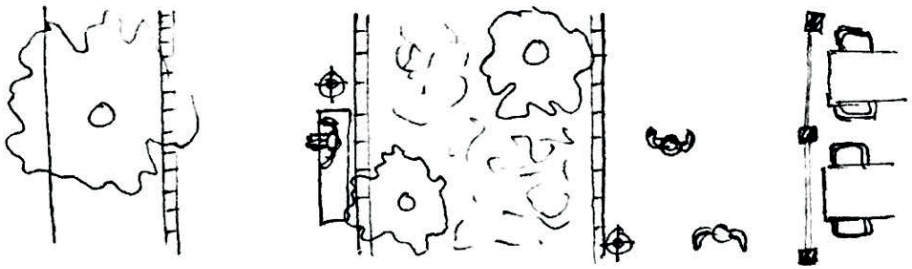
OPTION 1

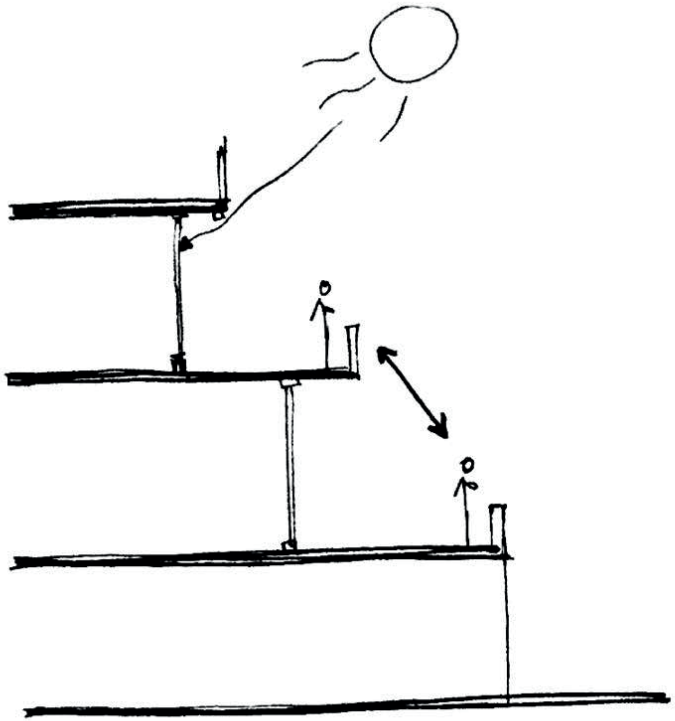


OPTION 2

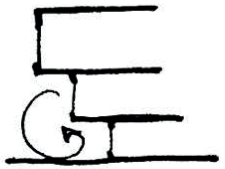






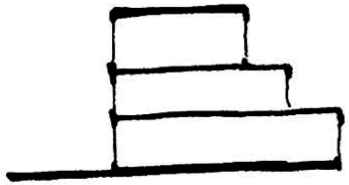


WHAT HAPPENS TO THE OTHER SIDE?

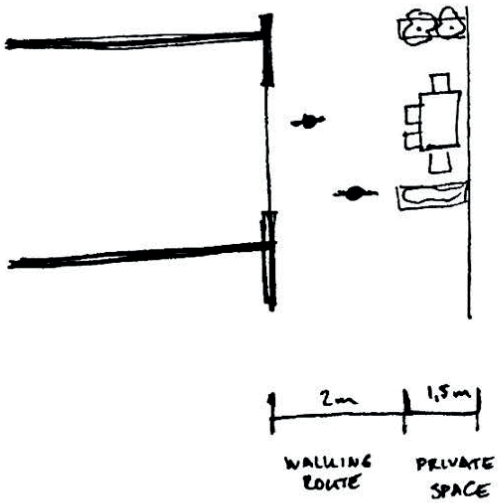


WHAT IS THIS SPACE?

OR



BUT THEN THE APPARTMENTS WILL BE DIFFERENT AND PROBABLY LESS MIXTURE OF AGES AND SIZES



INTERACTION ON DIFFERENT LEVELS OPTION 1

WEEK 3.3

22 - 28 February

Most important feedback:

Building technology:
- What happens to the rain?
- Sun orientation
- Fire escape routes on the gallery
- Not every building needs to have the same typology

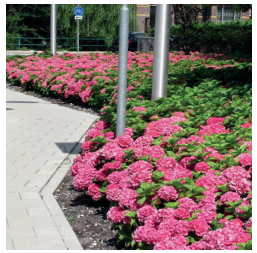
Architecture:
- Plants are interesting
- Atrium is an interesting building
- Look at Fuunen for transition zones
- Mix elderly or separation?
- Look at references:
    - Zurich, ADP
    - NPD Overvecht, Flux landscape architects

Plants for in the shadow

Blossoming plants

Parts of the design have important routes on the North side, so shadow side. The following plants are plants that blossom for a part of the year and give bright colours even in the shadows (Herwig, n.d.; Maarsen, n.d.; Vtwonen, 2021; Tuinplant.nl, n.d.; Groen van bij ons, n.d.).


Akelei
(Aquilegia 'Crimson Star')
May, June


Boerenhortensia
(Hydrangea macrophylla)
Summer


Japanse roos
(Camellia japonica)
Mar, Apr


Gebroken hartje
(Dicentra spectabilis)
Apr, May, Jun


Herfstanemoon
(Anemone hupehensis)
Sep, Oct


Kerstroos
(Helleborus niger)
Jan, Feb, Mar, Apr


Kruipend zenegroen
(Ajuga reptans)
Apr, May


Longkruid
(Pulmonaria longifolia)
Mar, Apr, May


Monnikskap
(Aconitum carmichaelii)
Sep, Oct


Ooievaarsbek
(Geranium pratense)
Jun, Jul


Rododendron
(Rhododendron)
May


Rode Zuurbes
(Berberis thunbergii)
Summer


Rotsheide
(Pieris japonica)
Apr, May


Sneeuwaster
(Aster divaricatus)
Aug, Sep, Oct


Spirea
(Astilbe chinensis)
Aug, Sep


Vingerhoedskruid
(Digitalis purpurea)
Jun, Jul

Plants for in the shadow

Winterplants

Parts of the design have important routes on the North side, so shadow side. First there should also be plants for in the winter and foliage plants. The foliage plants bring greenery into the garden (Herwig, n.d.; Maarsen, n.d.; Vtwonen, 2021; Tuinplant. nl, n.d.; Groen van bij ons, n.d.).



Blauw schapengras
(Festuca Glauca)
Jun, Jul



Dikkemanskruid
(Pachysandra terminalis)
Mar, Aprgoudaardbei



Goudaardbei
(Waldsteinia ternata)
Apr, May



Mansoor
(Asarum europaeum)
Apr, May



Pampasgras
(Cortaderia selloana)
Sept



Parelgras
(Melica ciliata)
May



Schildvaren
(Dryopteris affinis)



Schuimkaars
(Tiarella wherryi)
May, Jun, Jul, Aug, Sep



Zegge
(Carex morrowii)
Apr, May



Zwenkgras
(Festuca gautieri)
May

Foliage plants



Elfenbloem
(Epimedium grandiflorum)
Apr, May



Hartlelie
(Hosta sieboldiana)
Jun, Aug



Kaukasisch Vergeet-me-nietje
(Brunnera macrophylla)
Apr, May



Siberische edelweiss
(Anaphalis triplinervis)
Jul, Aug



Taxus
(Taxus Baccata)



Zennegroen
(Ajuga reptans)
May, June

Literature

Plants

Brunekreeft, I. (2015). *Tuin met minder onderhoud: volle voorjaarsborder!* Consulted on 19-02-2021, from https://www.brunekreeftelst.nl/tuin-met-minder-onderhoud-volle-voorjaarsborder/

Groen van bij ons (n.d.). *Schaduwplanten*. Consulted on 19-02-2021, from https://www.groenvanbijons.be/tuinplanten/terrasplanten/schaduwplanten

Herwig, M. (n.d.). *Natuurlijke wilde tuin - tips voor ontwerp en planten*. Consulted on 19-02-2021, from https://www.directplant.nl/tuintips/natuurlijke-wilde-tuin-tips-voor-ontwerp-en-planten/

Maarsen, S. (n.d.). *Een border maken met schaduwplanten.* Consulted on 19-02-2021, from https://inspiratie.intratuin.nl/maak-een-border-met-schaduwplanten/

Tuinplant.nl (n.d.). *Schaduwplanten*. Consulted on 19-02-2021, from https://www.tuinplant.nl/tuintips/informatie-tuinplanten/schaduwplanten

Vtwonen (2021). *16 Mooiste schaduwplanten.* Consulted on 19-02-2021, from https://www.vtwonen.nl/tuinieren/tuininspiratie/16-mooiste-schaduwplanten/

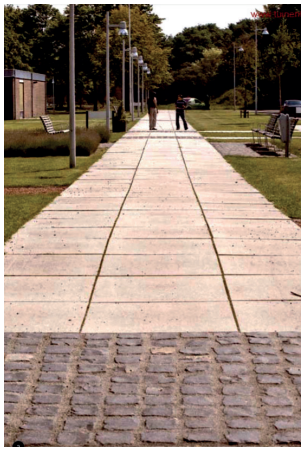
Design for elderly

Krijgsman, C.W. & Overbeek, K. (2011). *Kleurkeuze: Achtergronden kleurkeuze voor producten voor 50-plussers*. Consulted on 19-02-2021, from http://www.55plustoolbox.nl/toolbox_bestanden/2.3A_Kleurkeuze_achtergrondinfo_V1.0.pdf

Zarzycki, M. (2012). *Zelfstandiger door kleuren en contrasten.* Consulted on 19-02-2021, from https://www.innovatiekringdementie.nl/a-504/zelfstandiger-door-kleuren-en-contrasten#:~:text=Bij%20het%20ouder%20worden%2C%20wordt,blauw).



Pavement around the school



Visio het Loo
Veenenbos en Bosch



Crossroad



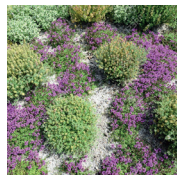
Concrete tiles
30x30



Concrete tiles
100x100



Cobblestones
with rought texture



Guiding greenery

Path on the North side

Plants

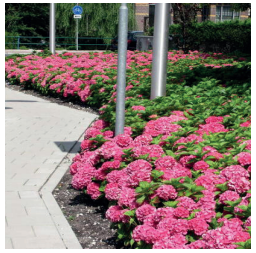
The path is on the North-side of the building with the restaurant, so the path will be blocked from the sunlight. The plants should be able to grow with less sunlight. Besides, the plants could guide the elderly who are visually impaired. People after 55 start to see colours with a longer wave length (red) better than colours with a shorter wave length (blue), so red, orange and yellow are better colours to guide the elderly (Zarzycki, 2012; Krijgsman & Overbeek, 2011).



Parelgras
(Melica ciliata)
Aug-Sep-Oct



Pampasgras
(Cortaderia selloana)
All year



Boerenhortensia
(Hydrangea macrophylla)
Summer



Rode Zuurbes
(Berberis thunbergii)
Summer



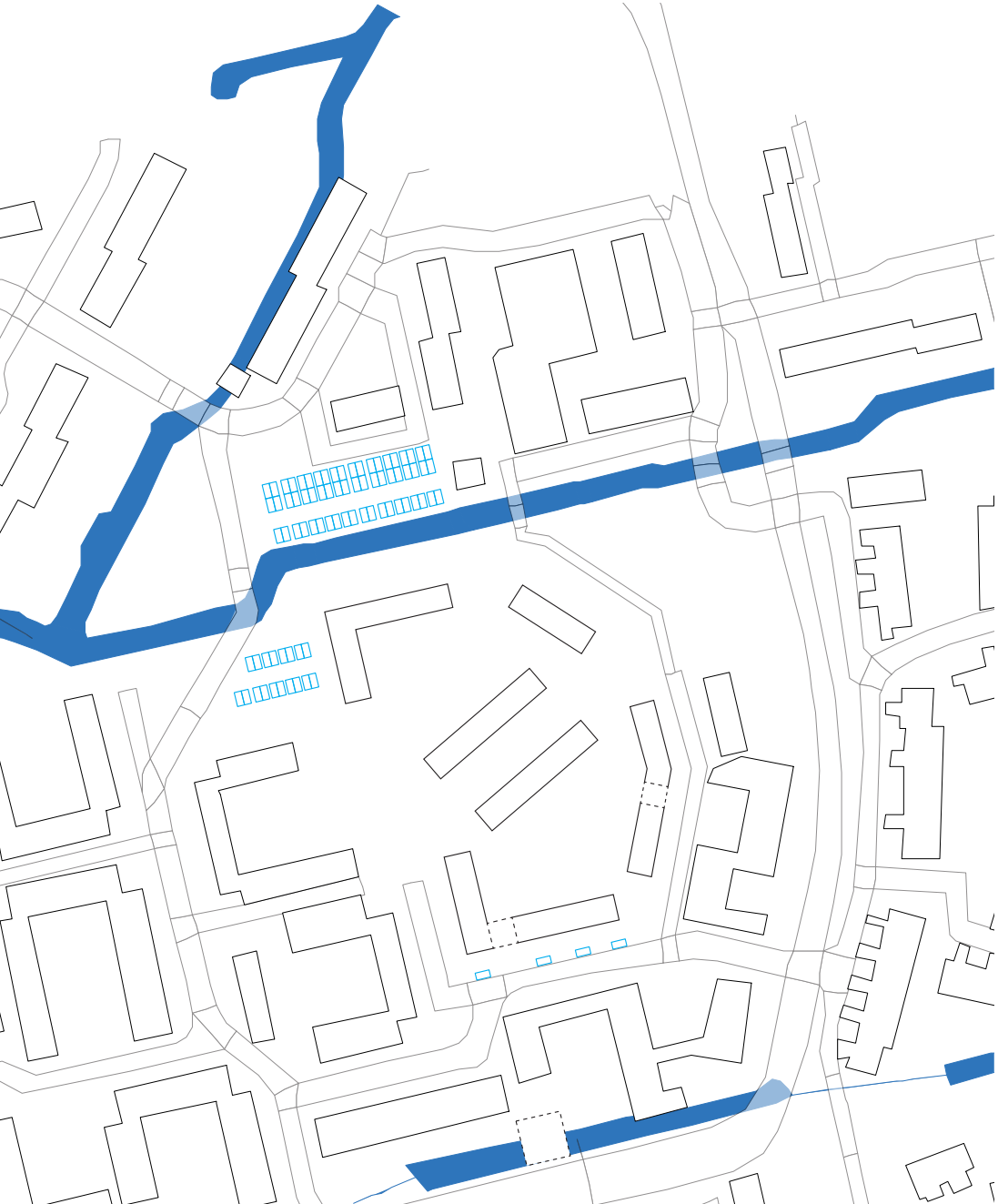
Hartlelie
(Hosta sieboldiana)
Jun, Aug



Siberische edelweiss
(Anaphalis triplinervis)
Jul, Aug



Parking







Parking in green, Berlin

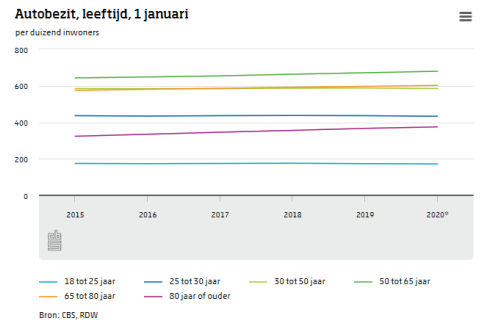
Car ownership has increased most among the over-80s in the past five years. At the beginning of 2015 they had 324 cars per thousand inhabitants, at the beginning of 2020 this will be 375 cars (CBS, 2020).

The parking will be on two central places, where the elderly can walk to or drive to with their scootmobile. They can park their scootmobile there and take their car.

For the weaker elderly, some parking spots will be placed on the south and west side, so they don't have to walk that far. These spots will be surrounded with nature.

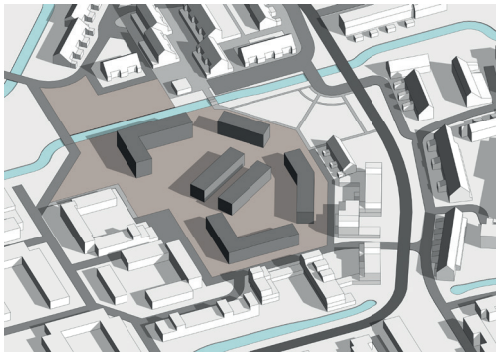


Grasklinker, Vijfhuizen
Hosper NL bv

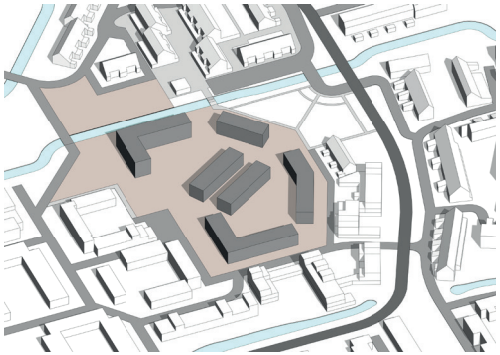


CBS (2020). Autopark groeit sterker dan bevolking. Consulted on 23-02-2021, from https://www.cbs.nl/nl-nl/nieuws/2020/10/autopark-groeit-sterker-dan-bevolking#:~:text=Meer%20dan%201%20auto%20per%202%20personen&text=Daarmee%20waren%20er%20in%20Nederland,auto's%20per%20duizend%20inwoners.

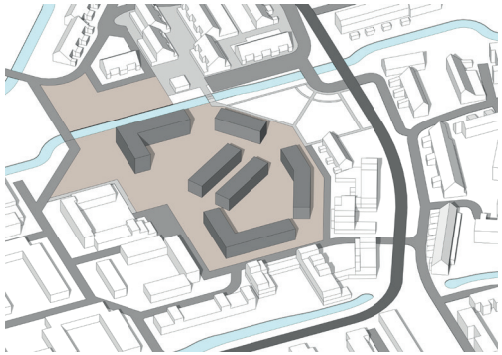
Sun studies



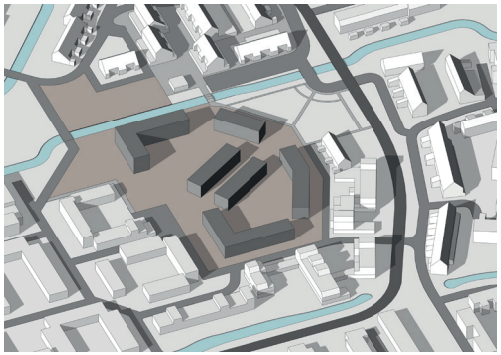
Situation 10m distance
10:00



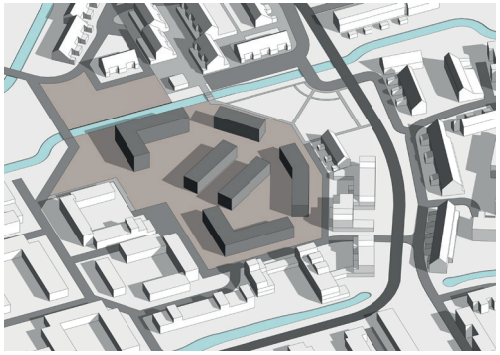
Situation 10m distance
12:00



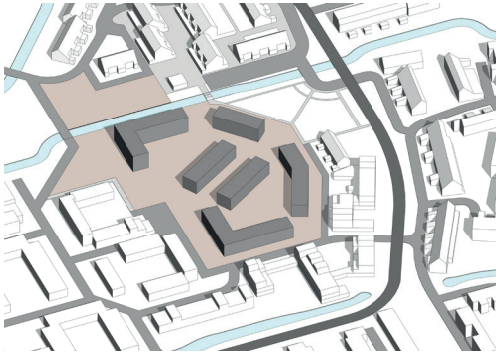
Situation 10m distance
14:00



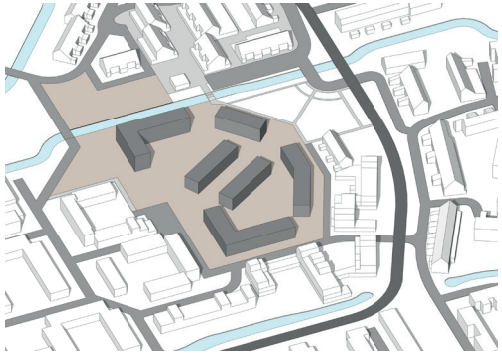
Situation 10m distance
16:00



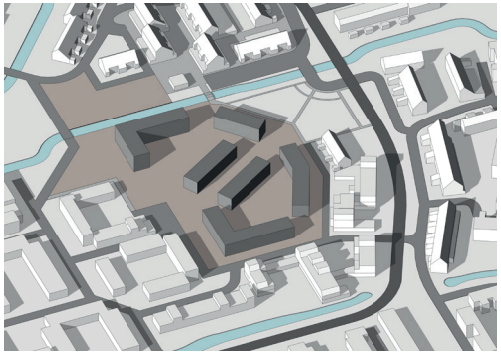
Situation 15m distance
10:00



Situation 15m distance
12:00

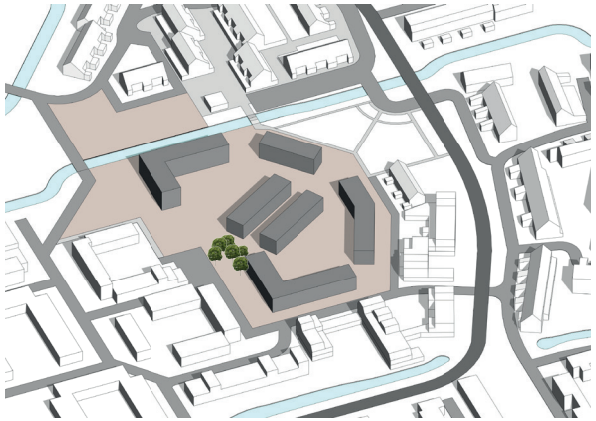


Situation 15m distance
14:00



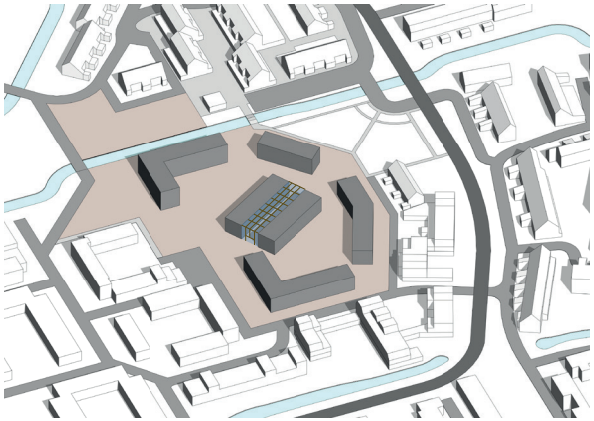
Situation 15m distance
16:00

Wind studies



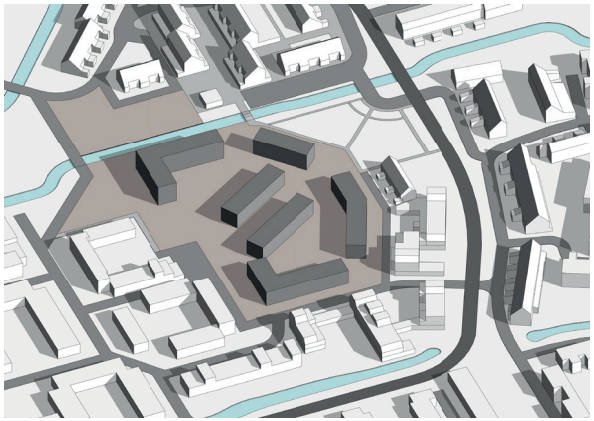
Placing tree

By making a small park on the SW-side, the trees will block the wind. However, the trees will also block the route, but maybe a path can be created in between.



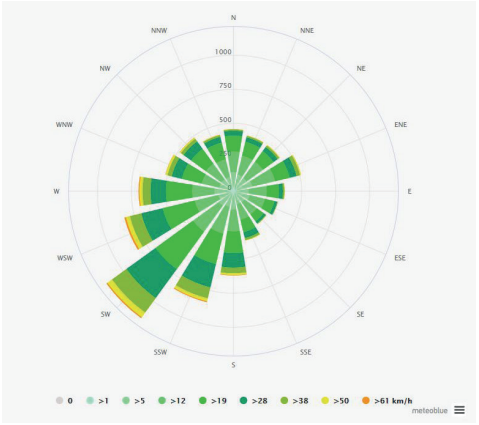
Atrium

The space between the two buildings can be closed off to create an atrium where people can stroll through. Can the heat be used?



Moving the buildings

The Southern building can be moved from the Northern building to stop the wind. The square on the West is now larger, so how do you design that?





Køge Culture House - Cobe

WEEK 3.4

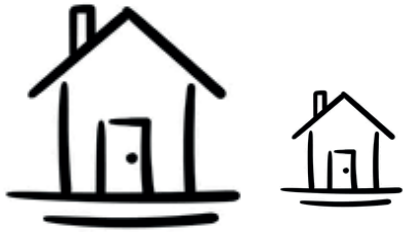
1 - 7 March

Most important feedback:

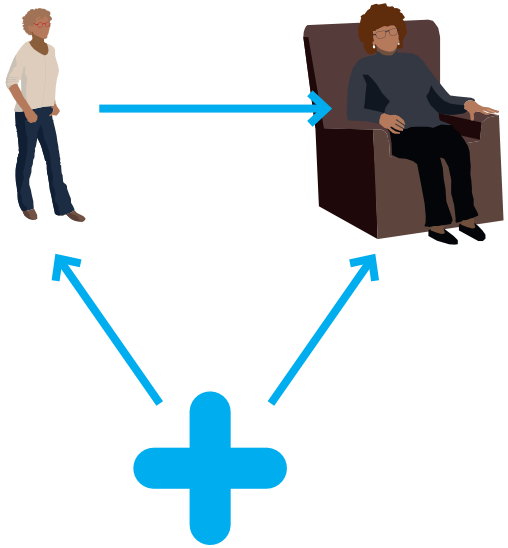
Building technology:
- Back to back housing is difficult with ventilation
- Make roof plans
- Sections need to be more clear
- Be more free with the atrium

Architecture:
- Mantelzorger hotel
- Look at reciprocity for every target group
- Der Wohngrund riss, Peter Faller
- Create criteria for the masterplan
- Building concept should be clear

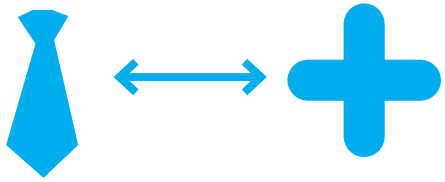
Informal care-givers



Informal care-givers want to be able to go to their own place nearby

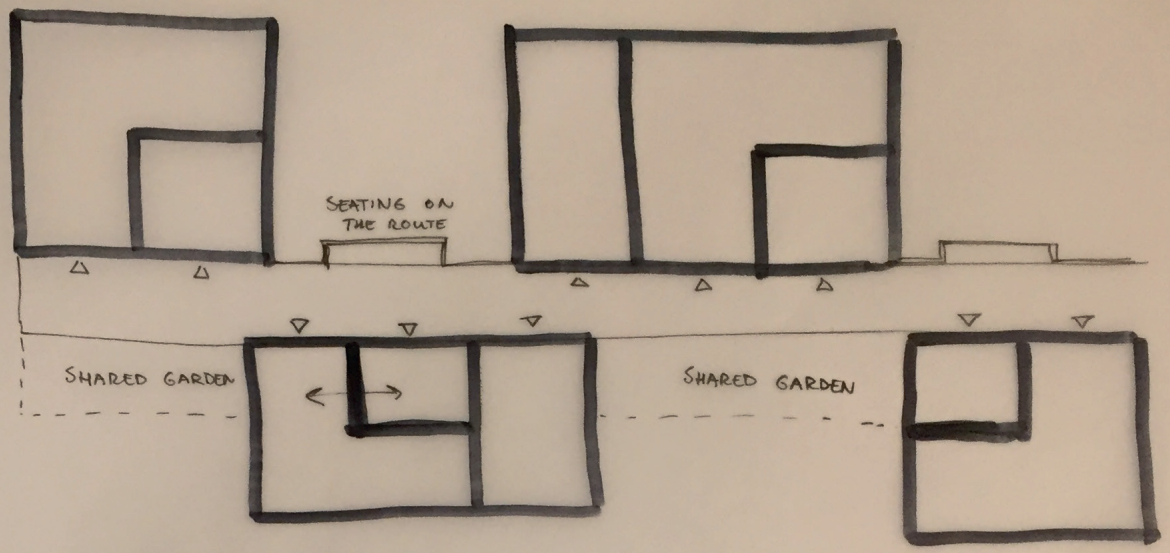


Informal care-givers want the help of others to take care of the other and they want to be able to talk to someone

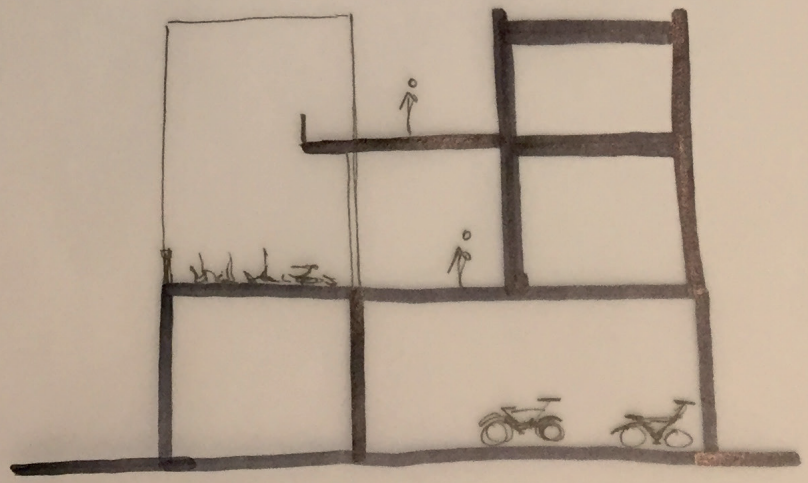


Informal care-givers want to be able to combine work with care

Movisie, n.d.; Movisie, 2018; Sant, 2020; Francke, 2020; Zilveren Kruis, n.d.; Vilans, 2015; Gruyter, 2020


SEATING ON THE ROUTE
SHARED GARDEN
SHARED GARDEN


N





WEEK 3.5

8 - 14 March

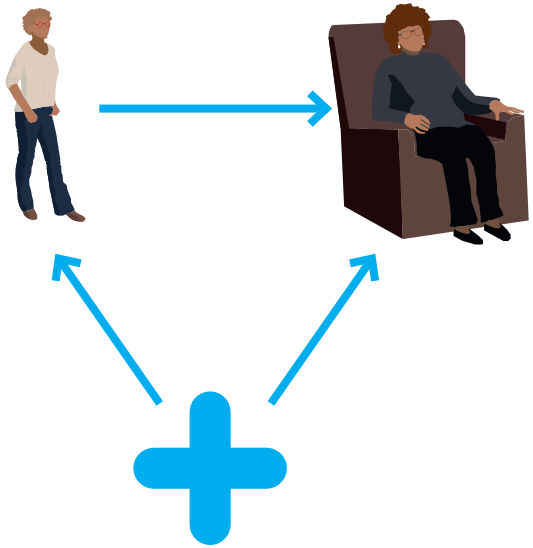
Most important feedback:

- Long term is more interesting for ground floor, because they take care of the surroundings
- Rethink the organisation of short-stay: are they spread out or in one place?
- Communal space is too large
- Escape route is also important for care-givers
- What does routing mean for privacy?
- Femke Feenstra
    - Care b&b

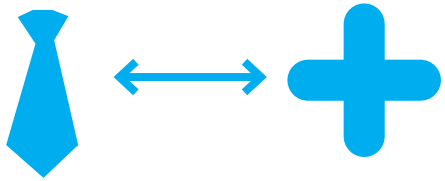
Informal care-givers



Informal care-givers want to be able to go to their own place nearby



Informal care-givers want the help of others to take care of the other and they want to be able to talk to someone



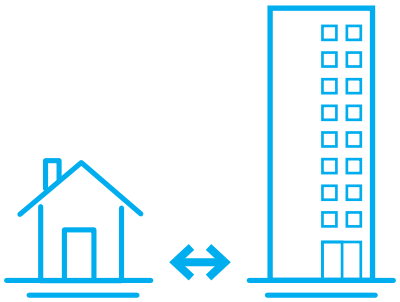
Informal care-givers want to be able to combine work with care

Movisie, n.d.; Movisie, 2018; Sant, 2020; Francke, 2020; Zilveren Kruis, n.d.; Vilans, 2015; Gruyter, 2020

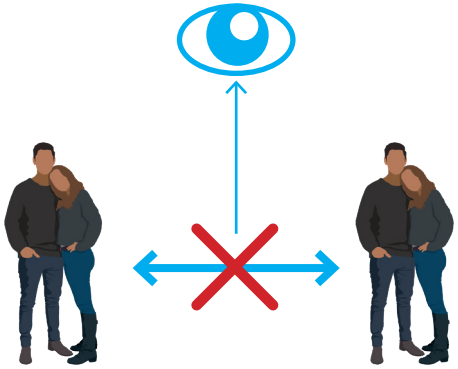
Starters



Starters rather have an owner-occupied home than a rental home. The type of houses they prefer are semi-detached houses for buying and apartments for renting. Starters don't have much financial capacity, so the houses should be affordable.



Starters are equally interested in living in a smaller town or in the city. It mostly depends on where they were born. Among all off the choices, the medium-sized cities is the most chosen option.



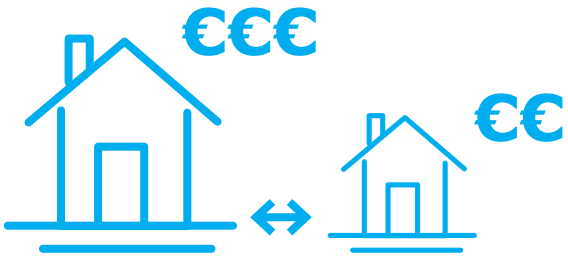
Starters are not willing to share their amenities. 75% of the respondents are done with sharing amenities. The biggest reason is having no privacy (66%), followed by the need to adapt to others (20%) and others are a burden to you (11%)

BPD, 2019; NOS, 2020; Gemeente Delft, 2016; Toetenel, 2020

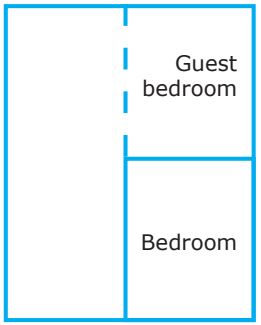
Empty-nesters



Empty-nesters are a diverse group: they are single or in a relationship of different ages (but are defined as having the age of 55+) and have different needs. It is the transition age of family to elderly and it is the age where they could think about moving to their last home.



Empty-nesters often live in houses that are too large for them. They often paid off their mortgage, so they have more financial capacity



Empty-nesters are not that willing to move, but what makes it appealing for them to move?
- Often they return to the city because of family and friends
- They prefer large, one-floor apartments
- They prefer to live in a larger apartment, because they need space for (grand)children as guests

Crutzen & Hagen, 2020; NOS, 2018; Van Rheenen, 2015;

Meeting spaces (outdoor)



Supermarket



Library



Lunch-room/Restaurant



Medical facility



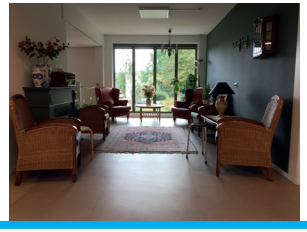
Playground



Communal vegetable garden



Lounge room: 50 people



Communal living room: 6 people

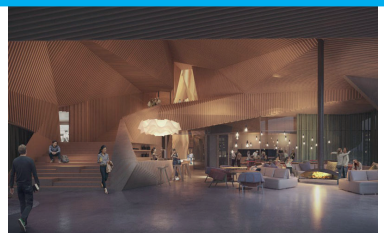


Multifunctional room: 15 people

Home



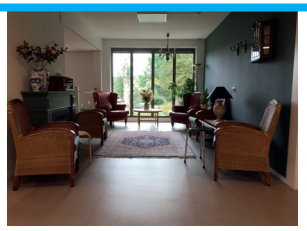
Meeting spaces (indoor)



Lounge room: 50 people



Multifunctional room: 15 people



Communal living room: 6 people



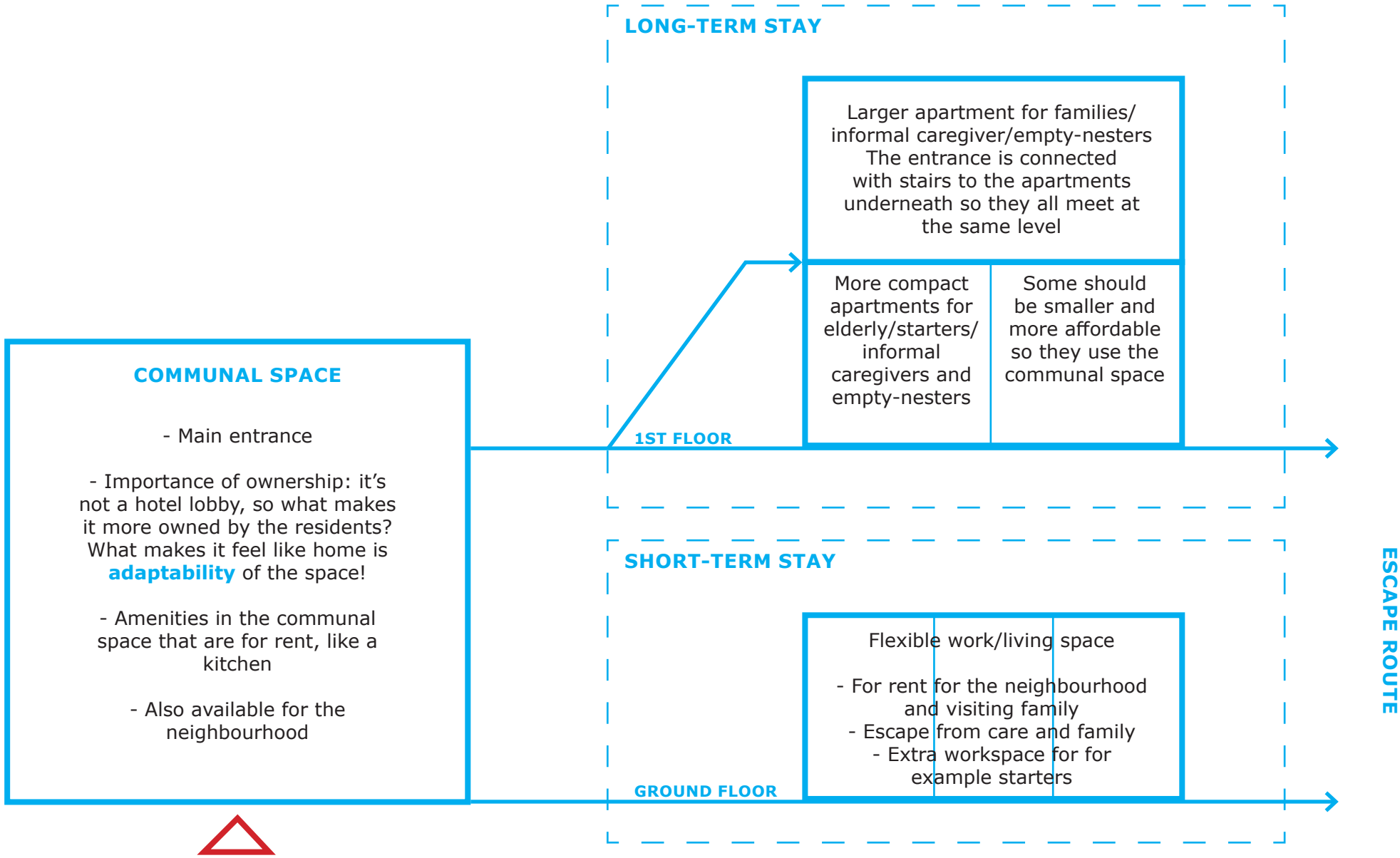
Public space

Home

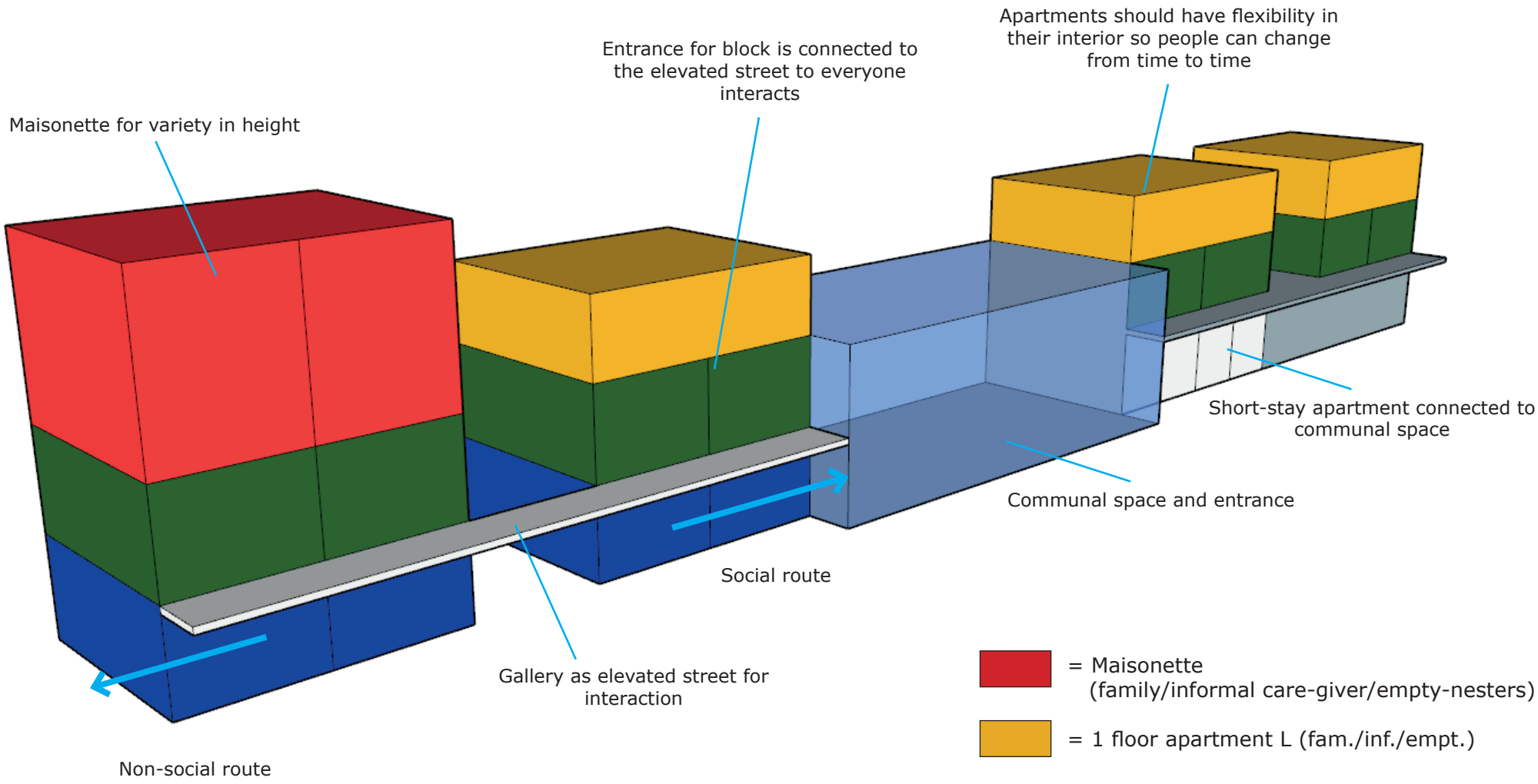


COMMUNAL ROUTE

ESCAPE ROUTE



De Architect, 2015; Mortice, 2016; SPX, 2021; Perdrix & Lesniak, 2021; Van der Ham, n.d.



The smaller apartments are more compact and therefore more affordable. The residents can rent the communal space for different activities like having a party or neighbourhood activities. The short-stay apartments can be used as a escape room for informal care-givers or extra work-space for parents/starters

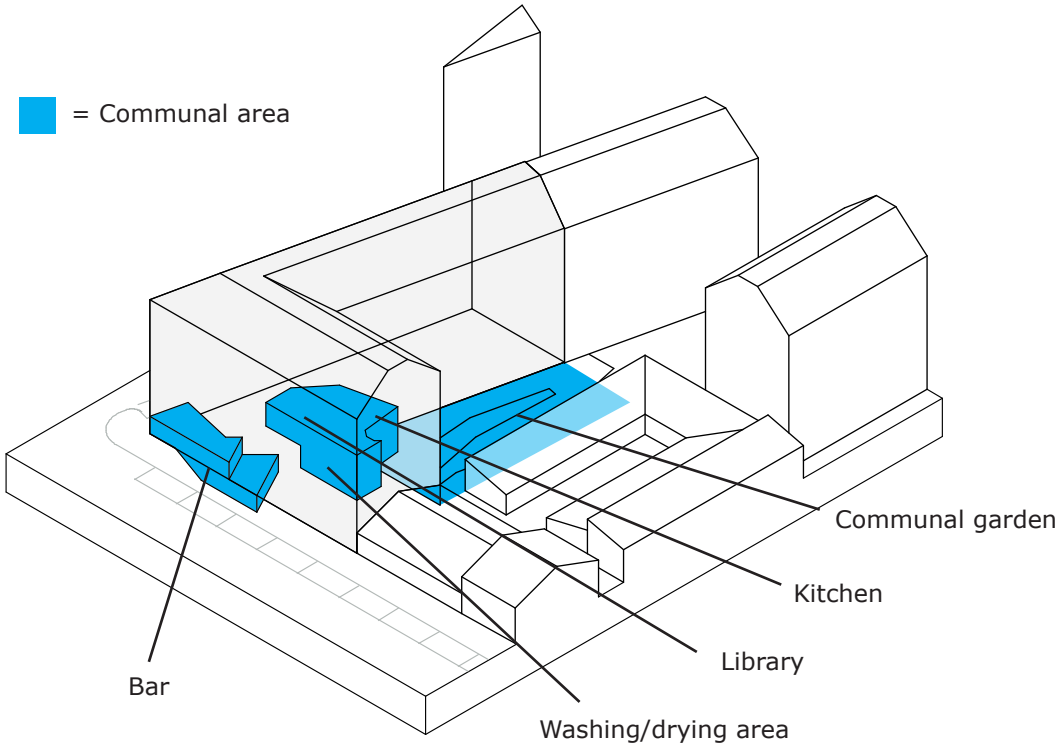
WEEK 3.6

15 - 21 March

Most important feedback:

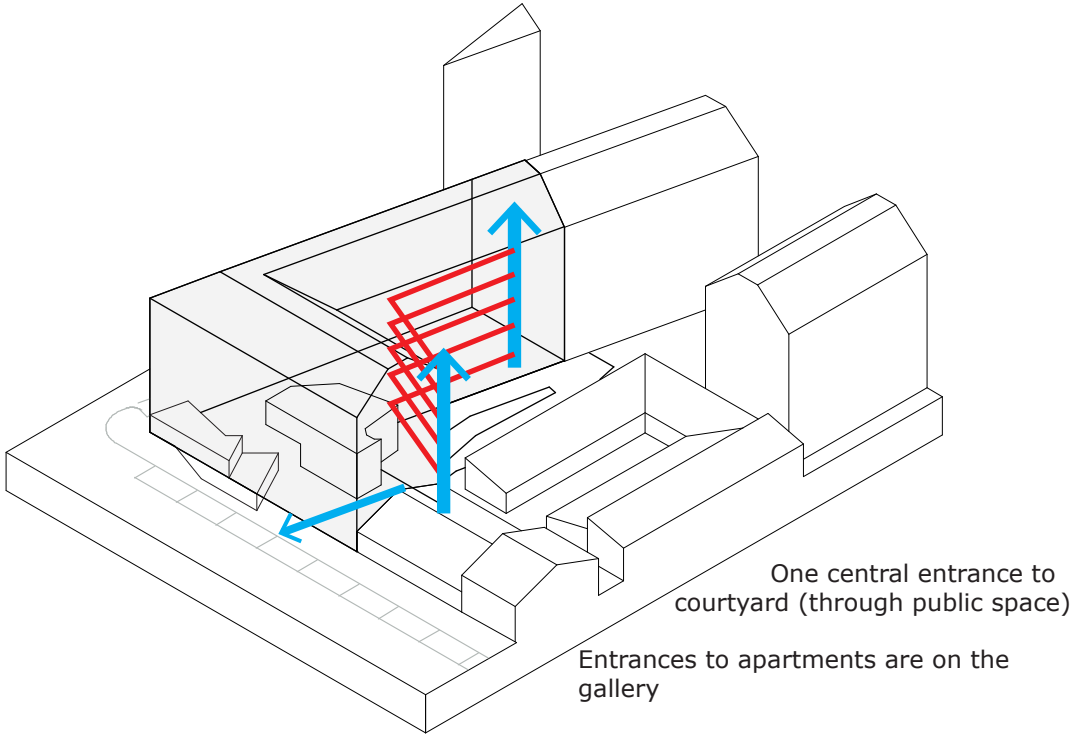
- Use sketching paper for escape route
- Look at the distance between the building and traffic
- Have fun with designing: do what you like if you can’t do anything
- Go to Tanthof to take photos of sneaky routes

MISS SARGFABRIK, VIENNA
BKK-3





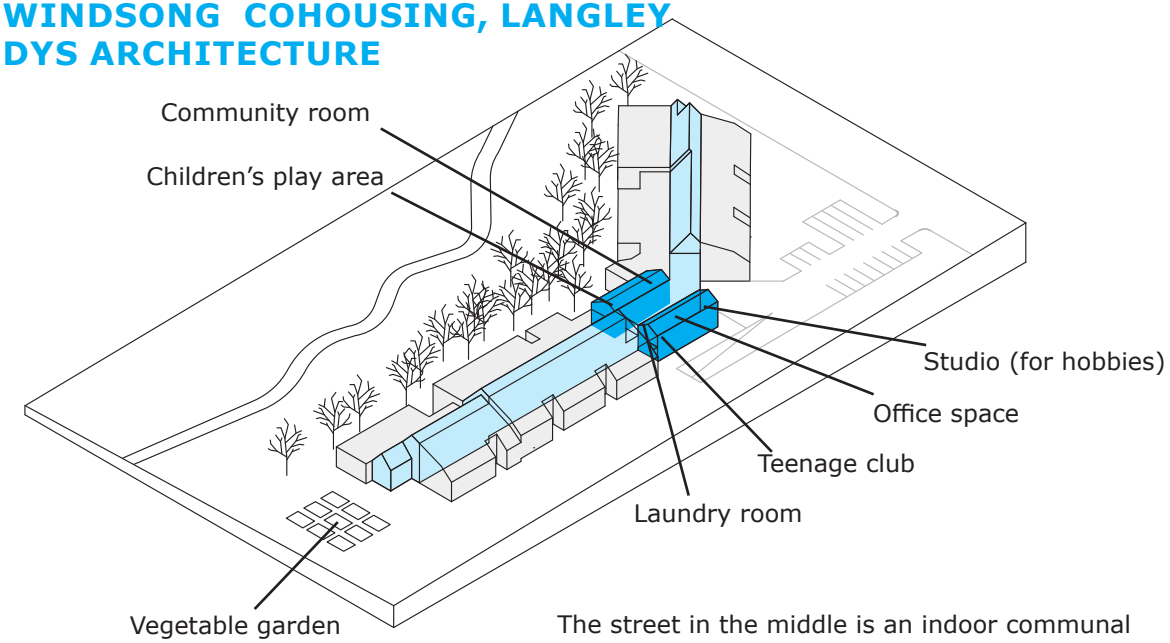
The building has a lot of ramps and height differences. Ground floor apartments are connected to the communal garden.



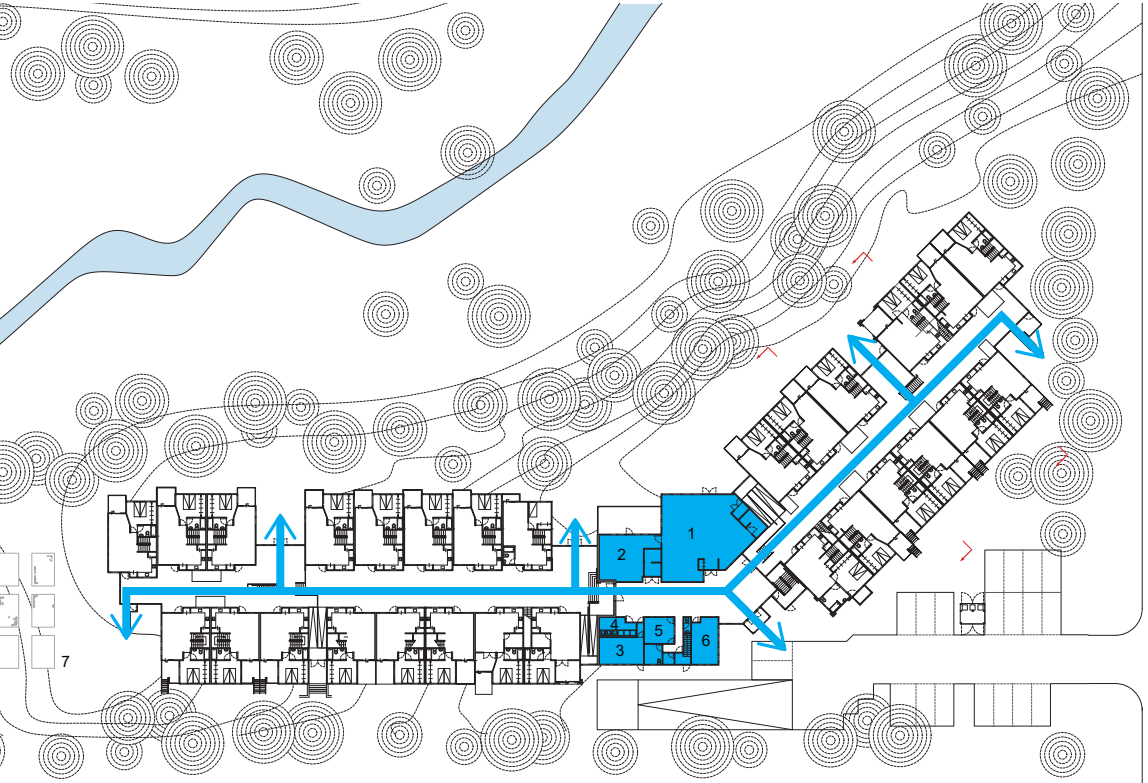


The entrances to the apartments are connected to the gallery. The residents place their furniture on the gallery to make it their own.

WINDSONG COHOUSING, LANGLEY
DYS ARCHITECTURE



The street in the middle is an indoor communal street where the entrances to the houses are. In the middle the meeting spaces are placed.



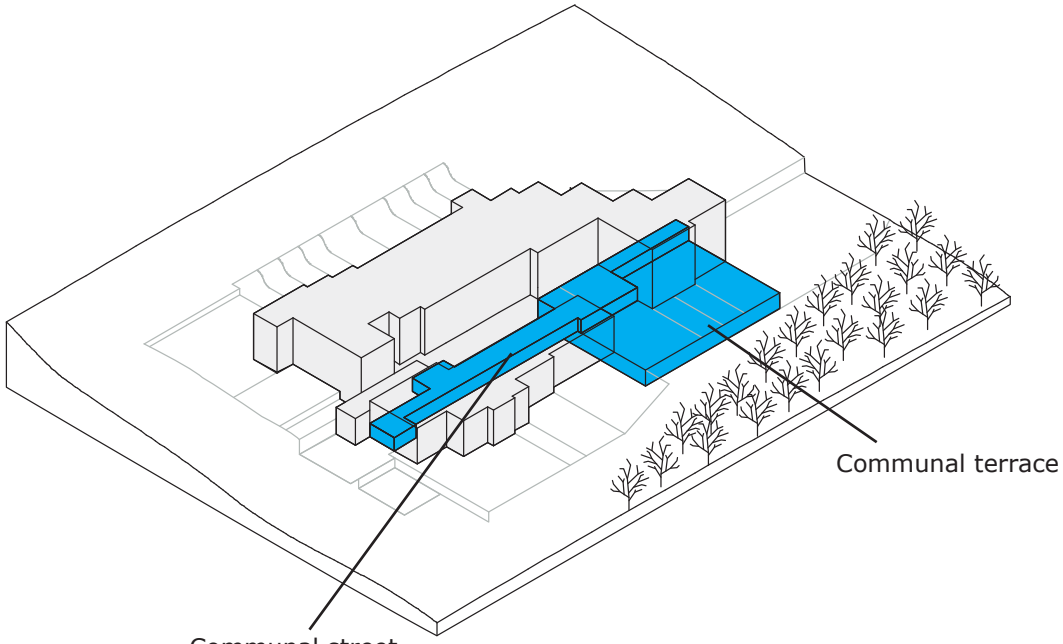


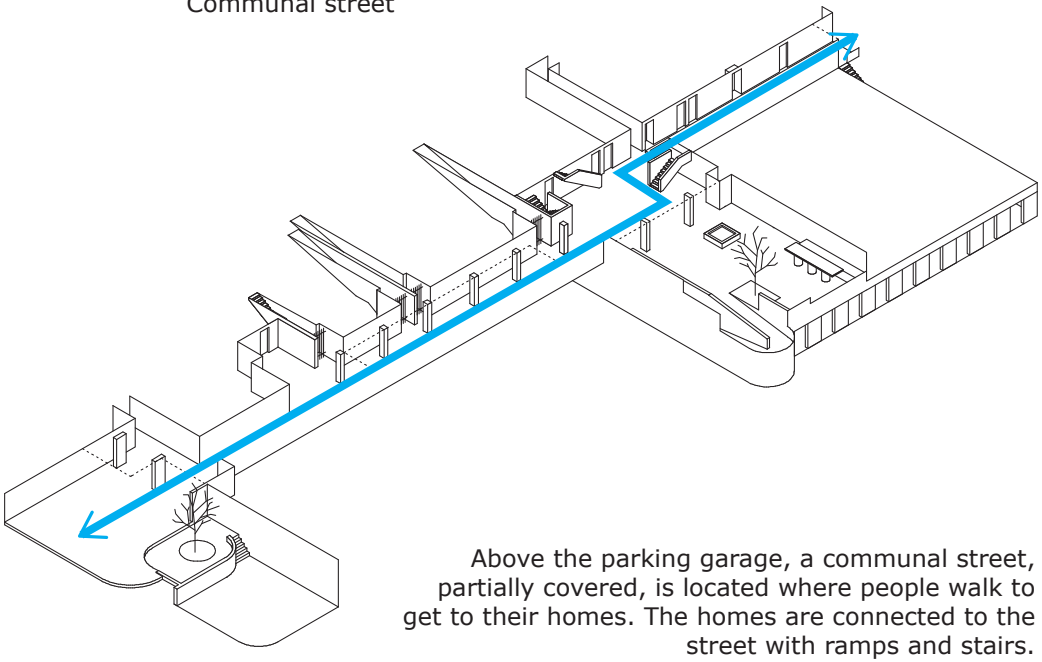
The communal indoor street



People make the street their own by placing furniture and plants

THALMATT 1, HERRENSCHWANDEN
ATELIER 5

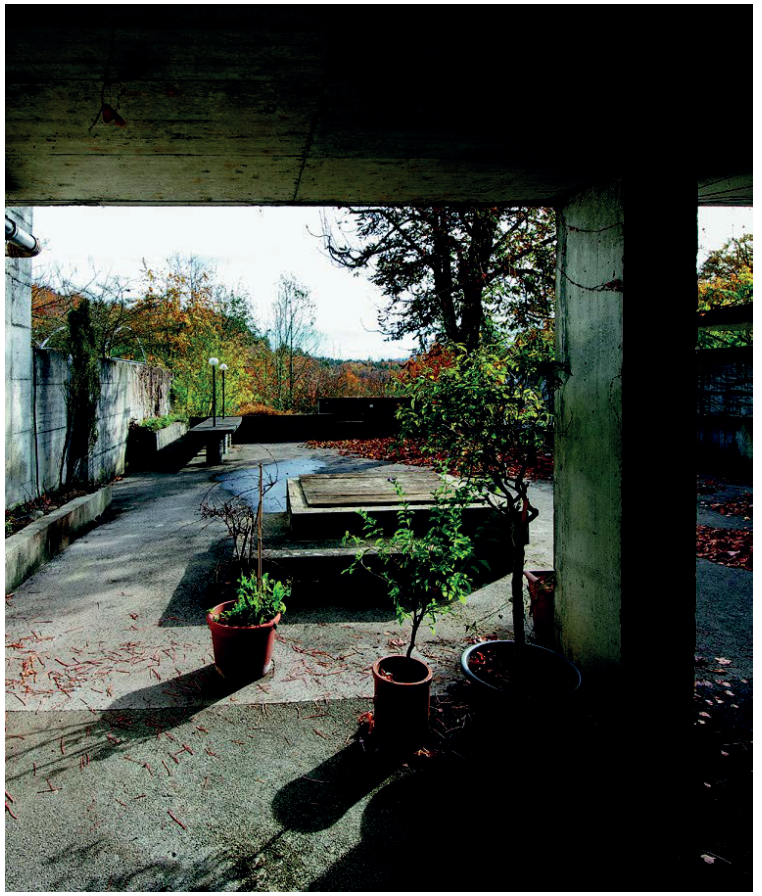




Above the parking garage, a communal street, partially covered, is located where people walk to get to their homes. The homes are connected to the street with ramps and stairs.

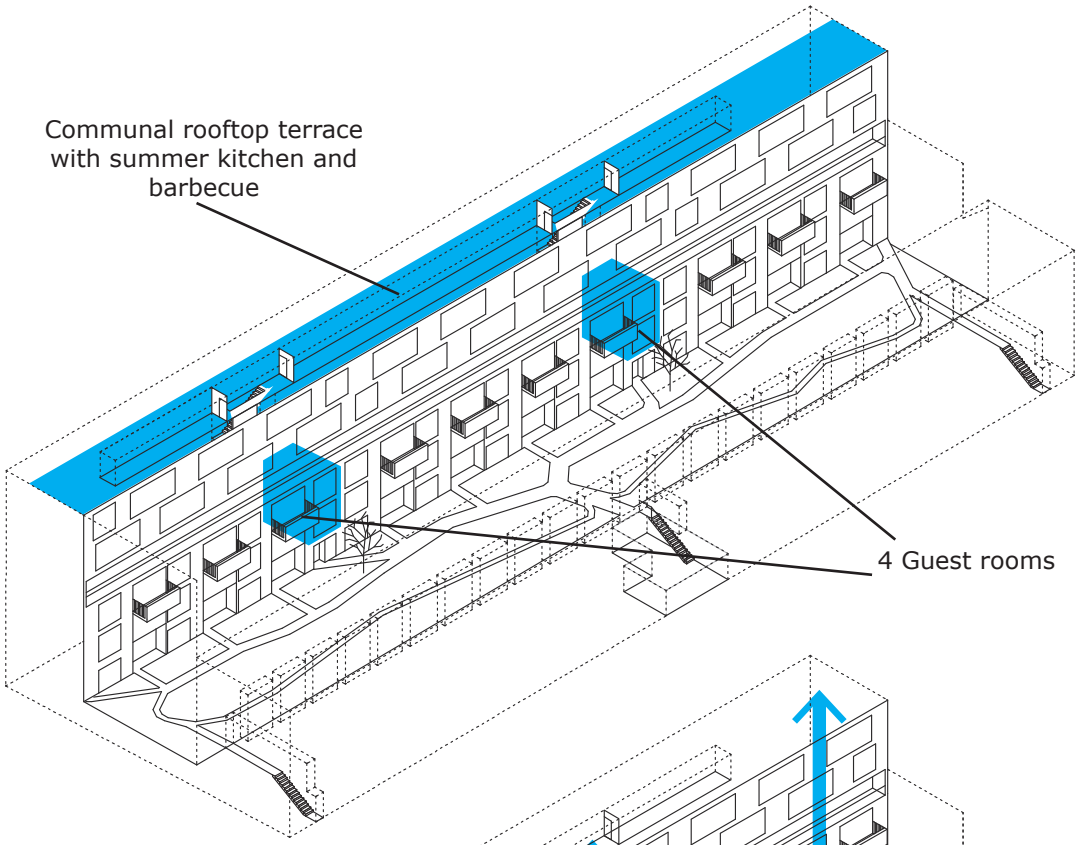


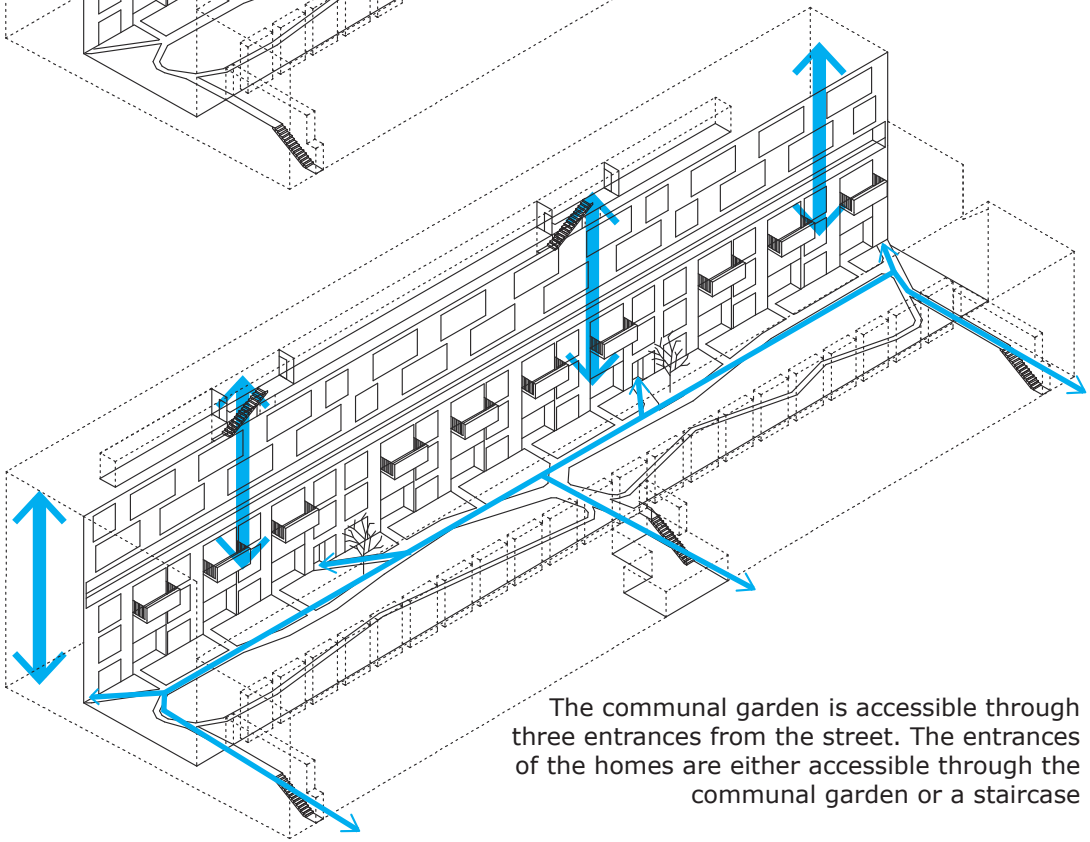
The communal street: less furniture than the other streets. Probably people won't sit there because there is no sun.



The communal terrace

ZELTERSTRASSE, BERLIN
ZANDERROTH ARCHITEKTEN





The communal garden is accessible through three entrances from the street. The entrances of the homes are either accessible through the communal garden or a staircase



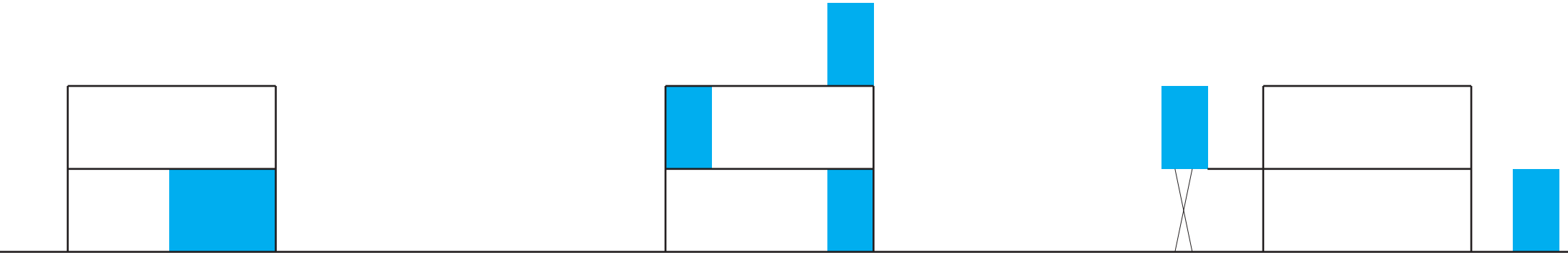
The rooftop of the larger building is accessible for the two buildings. In the summer, people can use the kitchen and barbecue.



The communal garden is the focus point of the two buildings. Children can play here and people can watch over. The apartments on the floor have a heightened patio to create a distinction between private and parochial

POSITION OF THE SHORT-TERM HOUSING

Short-term houses are small units that are for rent. Informal care-givers can stay there when others take over the care of the elderly, starters can use it as an extra office space, families can use it when visiting their (grand)parents and families can use it to get a calm space away from the kids when working at home.



Option 1: Central cluster

+ Close to communal lounge
+ Can be combined with storage spaces
+ Ground floor access with garden

- Less space for elderly who like to live on ground floor
- Centralized, so people can't choose where they want to escape to

Option 2: Spread in the buildings

+ More ground floor apartments available for elderly
+ Residents can choose different atmospheres
+ Multiple possibilities for interaction

- Storage will now be next to an apartment
- Further away from the communal area

Option 3: Spread outside the buildings

+ More ground floor apartments available for elderly
+ Feels like an island, so less close to home
+ Residents can choose different atmospheres

- Storage will now be next to an apartment
- Further away from the communal area
- Needs more space in the neighbourhood

Option 2 is the most probable, but it would be interesting to combine it with option 3

WEEK 3.7

22 - 28 March

Most important feedback:

Building Technology:
- Is it necessary to have the smaller communal space?
- Too much elevators
- Like the communal garden: can it be combined with the communal route?
- Thicker floor needed if you want trees
- Show foundation

Architecture:
- Pandemic design: also uses escape routes
- Create a ‘portiek’ where elderly can sit
- What is your concept?
- Flexible working spaces
- Use 3D models



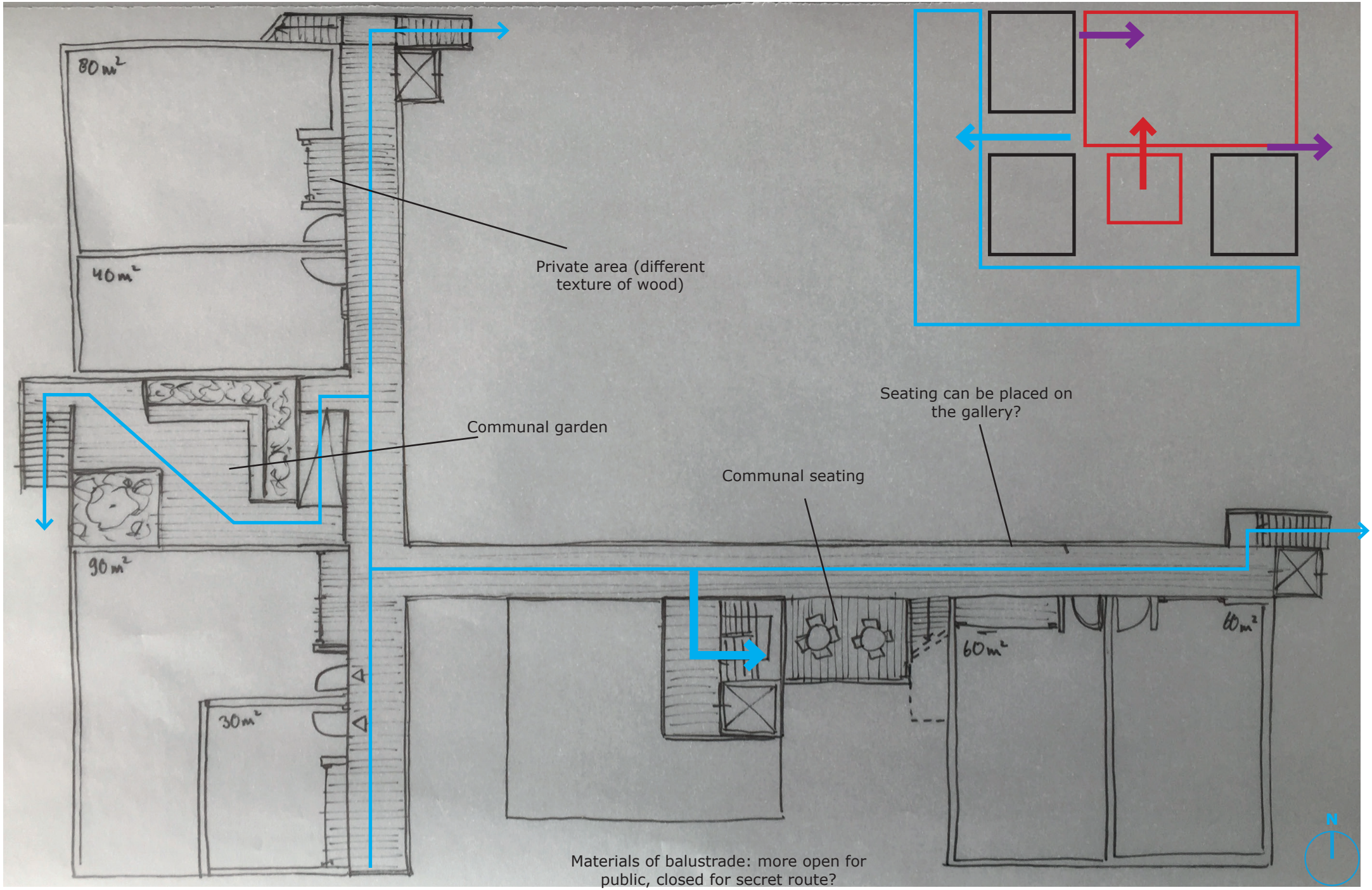


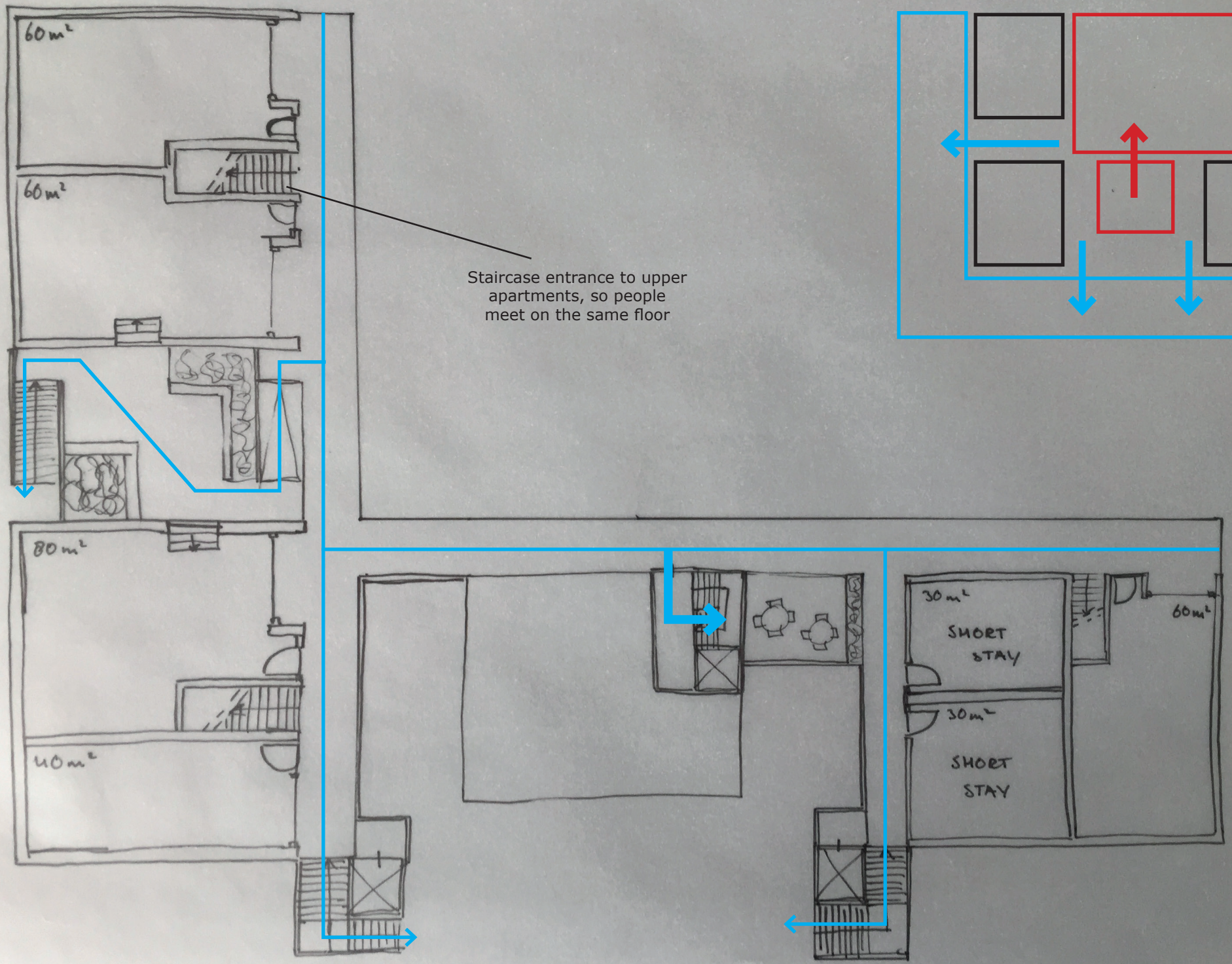



66-NT-PK

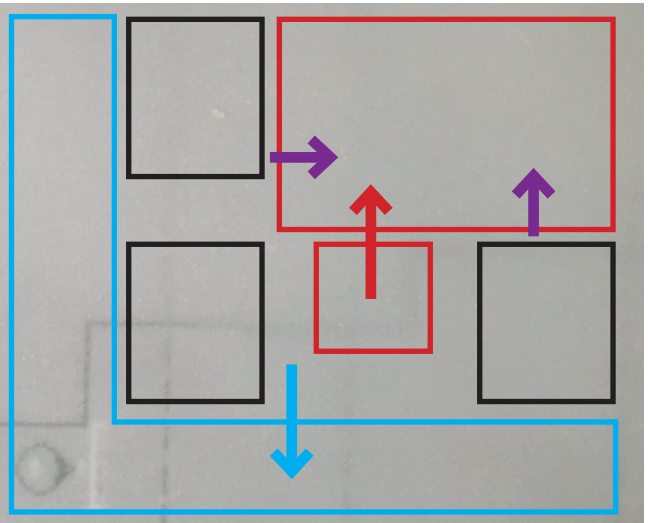




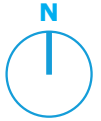

80 m²
40 m²
90 m²
30 m²
60 m²
60 m²
Private area (different texture of wood)
Communal garden
Communal seating
Seating can be placed on the gallery?
Materials of balustrade: more open for public, closed for secret route?
N

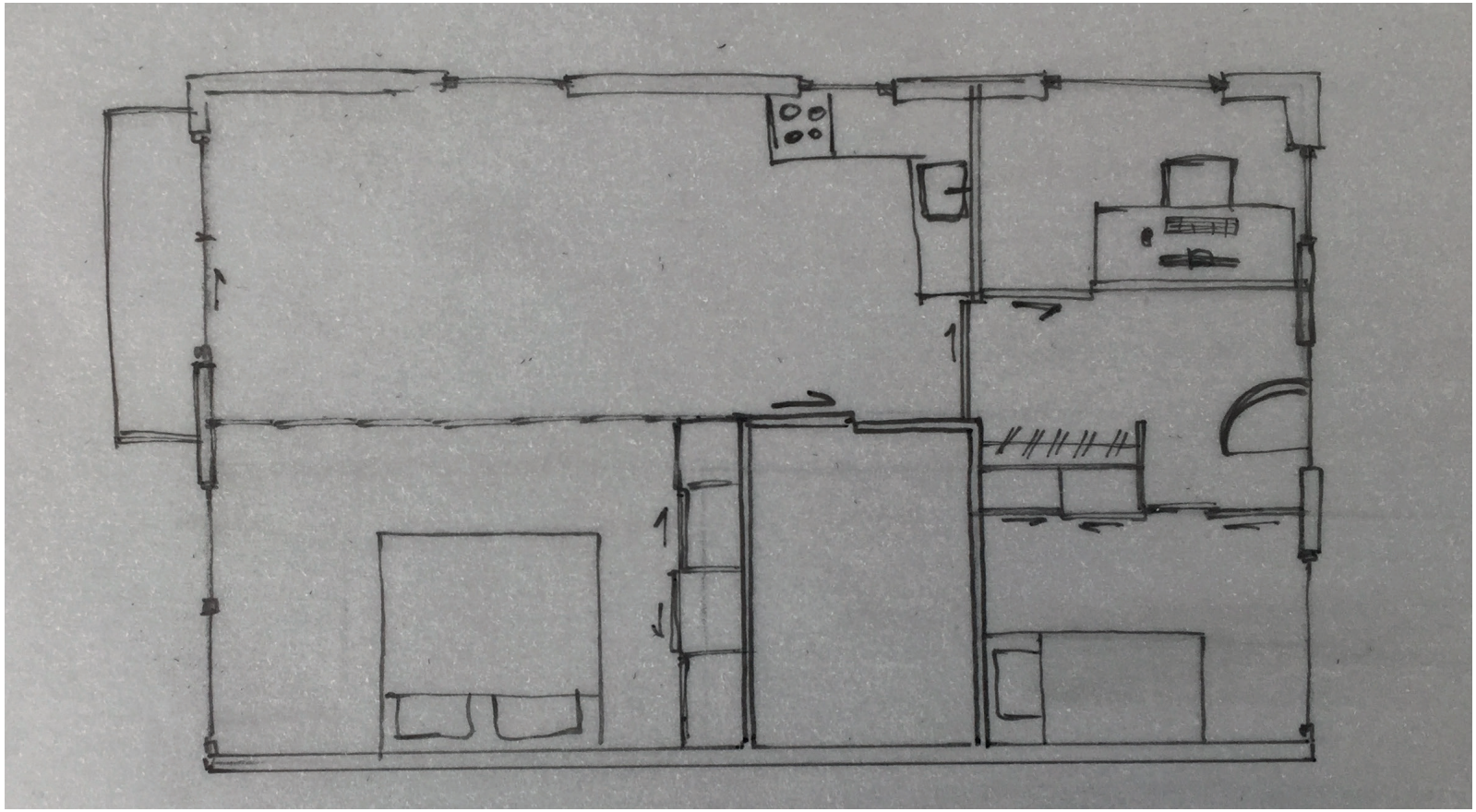

60m²
60m²
Staircase entrance to upper apartments, so people meet on the same floor
80m²
40m²
30m²
SHORT STAY
60m²
30m²
SHORT STAY
N





80 m²
60 m²
80 m²
40 m²
30m²
SHORT
STAY
90m²


N



N

WEEK 3.8

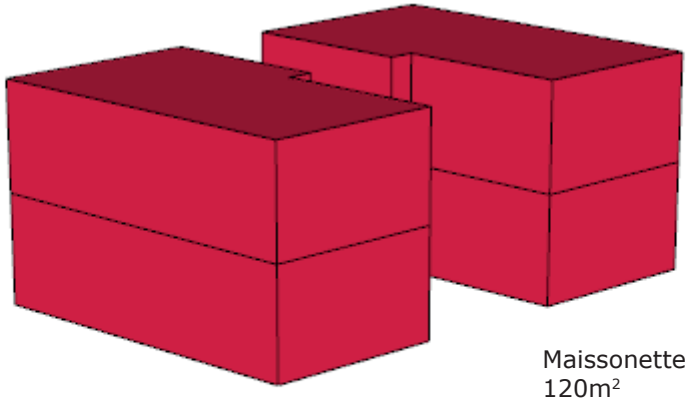
29 March - 4 April

Most important feedback:

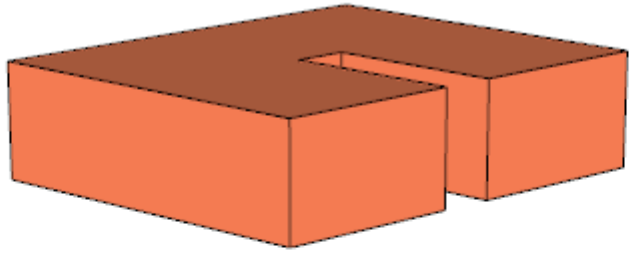
Building Technology:
- Look at drainage
- Why minimal bathrooms? Make it bigger and luxurious
- Become more precies

Architecture:
- Create a bigger stairwell for personalisation
- Make the living room wider
- Think about a second bedroom
- Flexible walls are better for eldery
- Look at meeting spaces literature

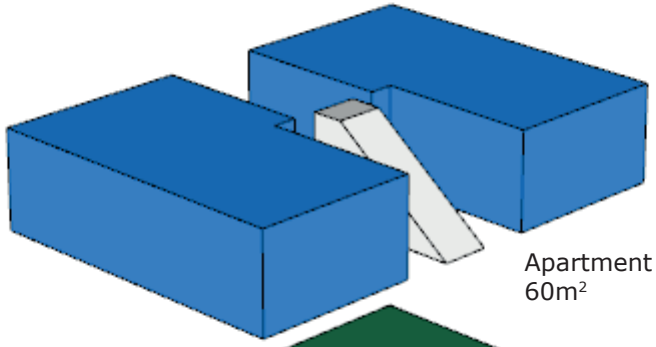
Types of houses



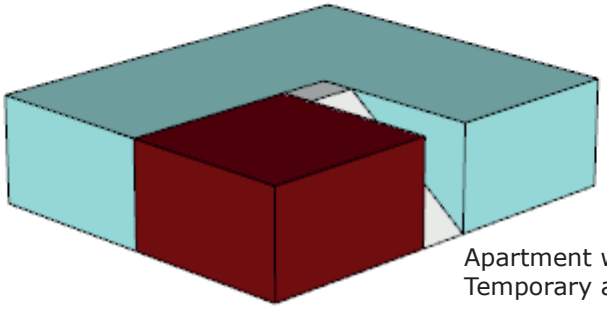
Maissonette
120m²



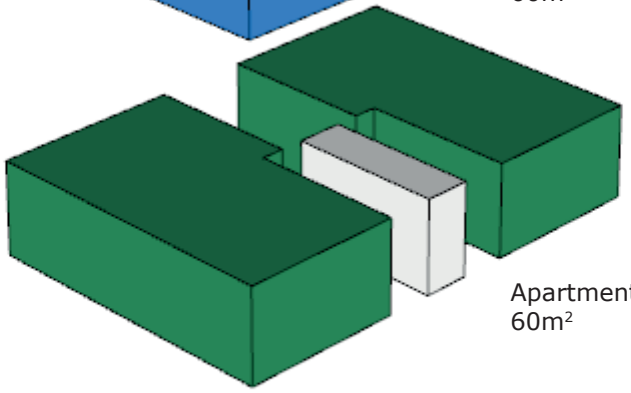
Apartment (with roof garden)
120m²



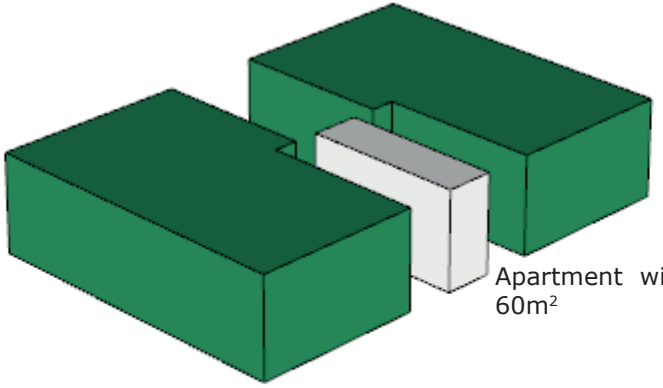
Apartment with balcony
60m²



Apartment with balcony 90m²
Temporary apartment 30m²

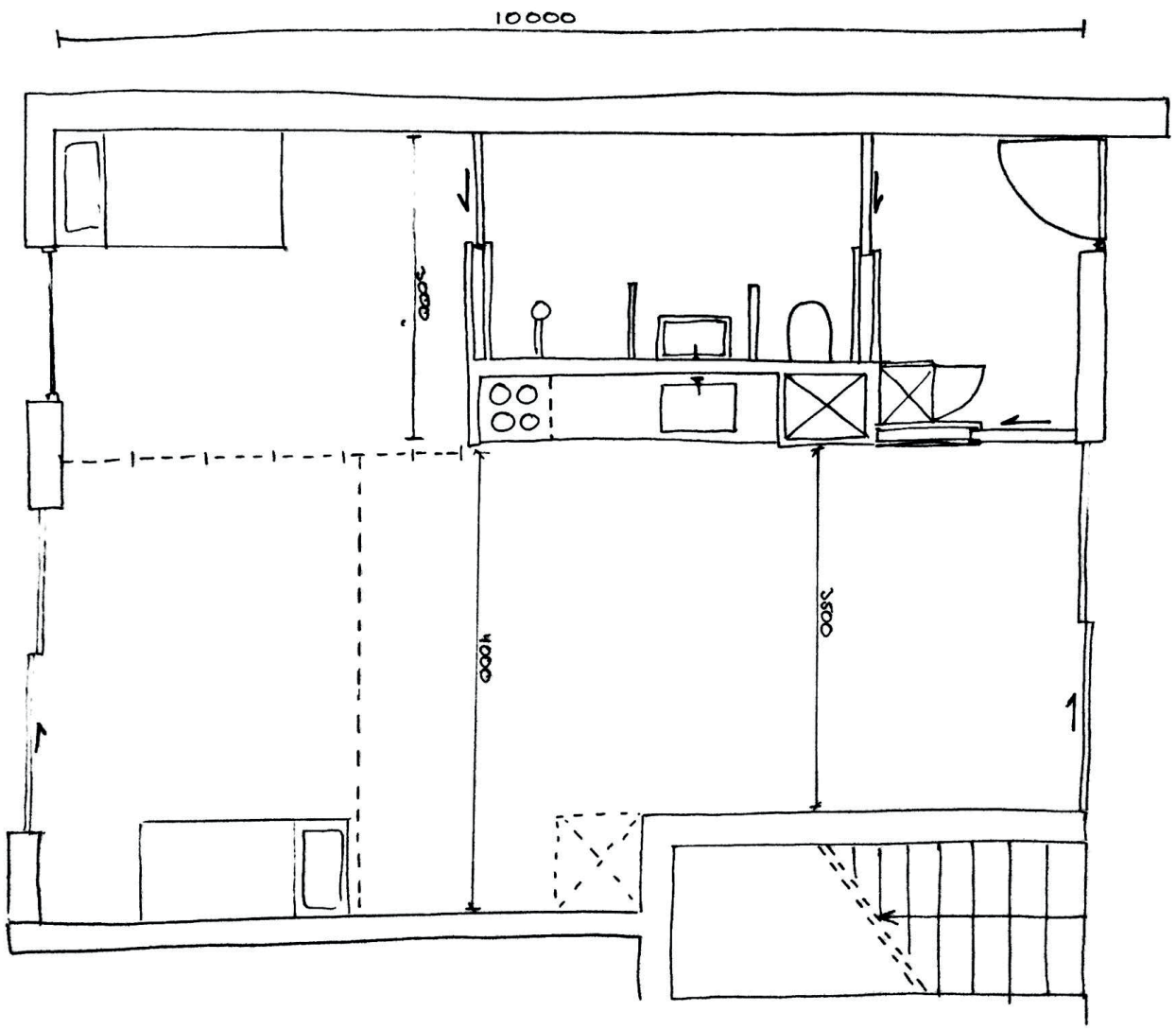


Apartment with garden
60m²



Apartment with garden
60m²

Apartment





WEEK 3.9

5 - 11 April

Most important feedback:

Femke Feenstra:
- Connect the public functions to the communal space
- Good floor plans
- Could the temporary care be integrated in the neighbourhood?
- Be more expressive

Gemeente Delft:
- Can the elderly choose the apartment size?
- Integration of greenery is nice
- Is it financially affordable?
- Does the mix of households work?
- Are the communal spaces going to be used?

Meeting space: Elevated communal garden



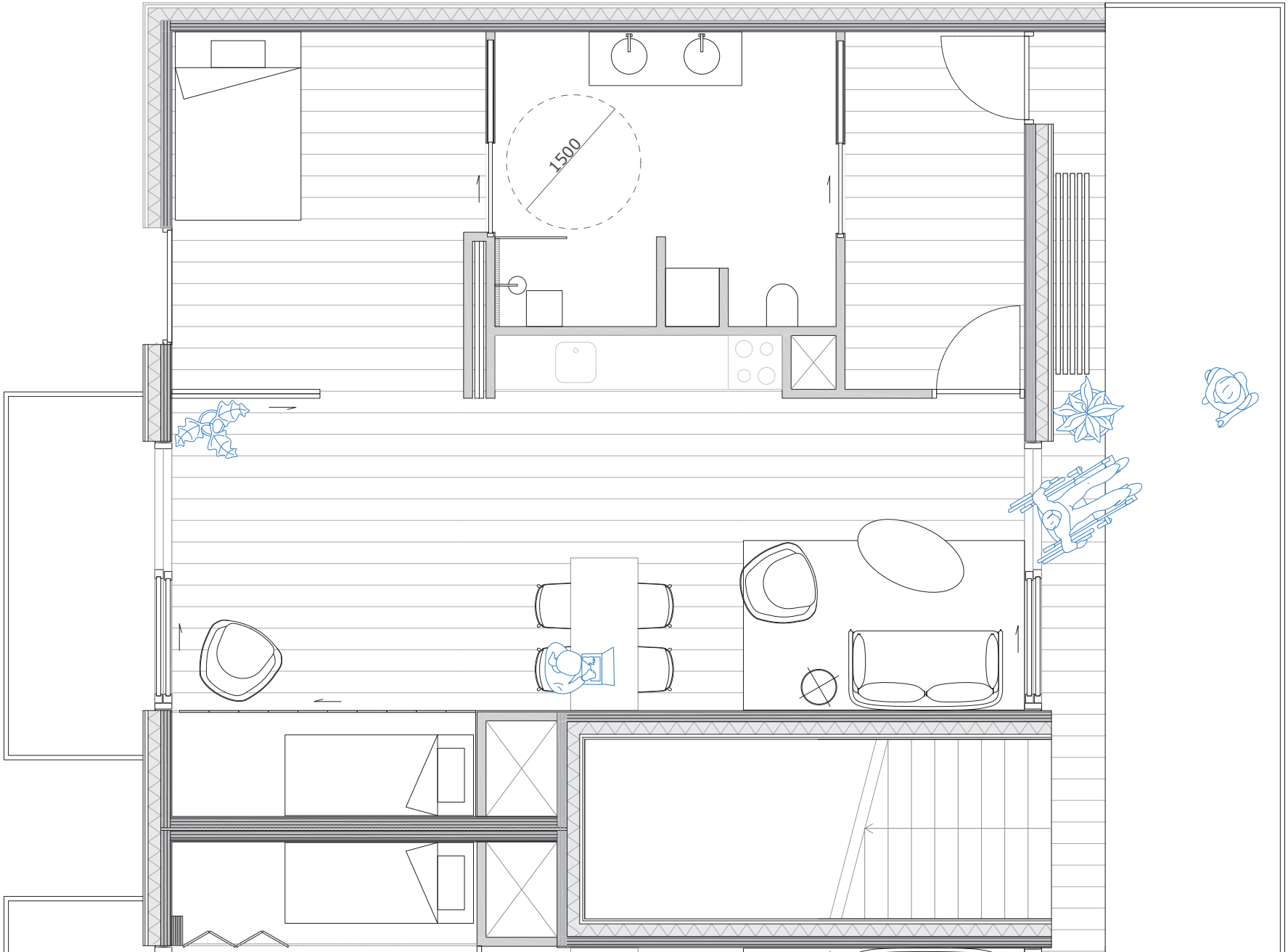
Meeting space: Stairs (olifantenpaadje)



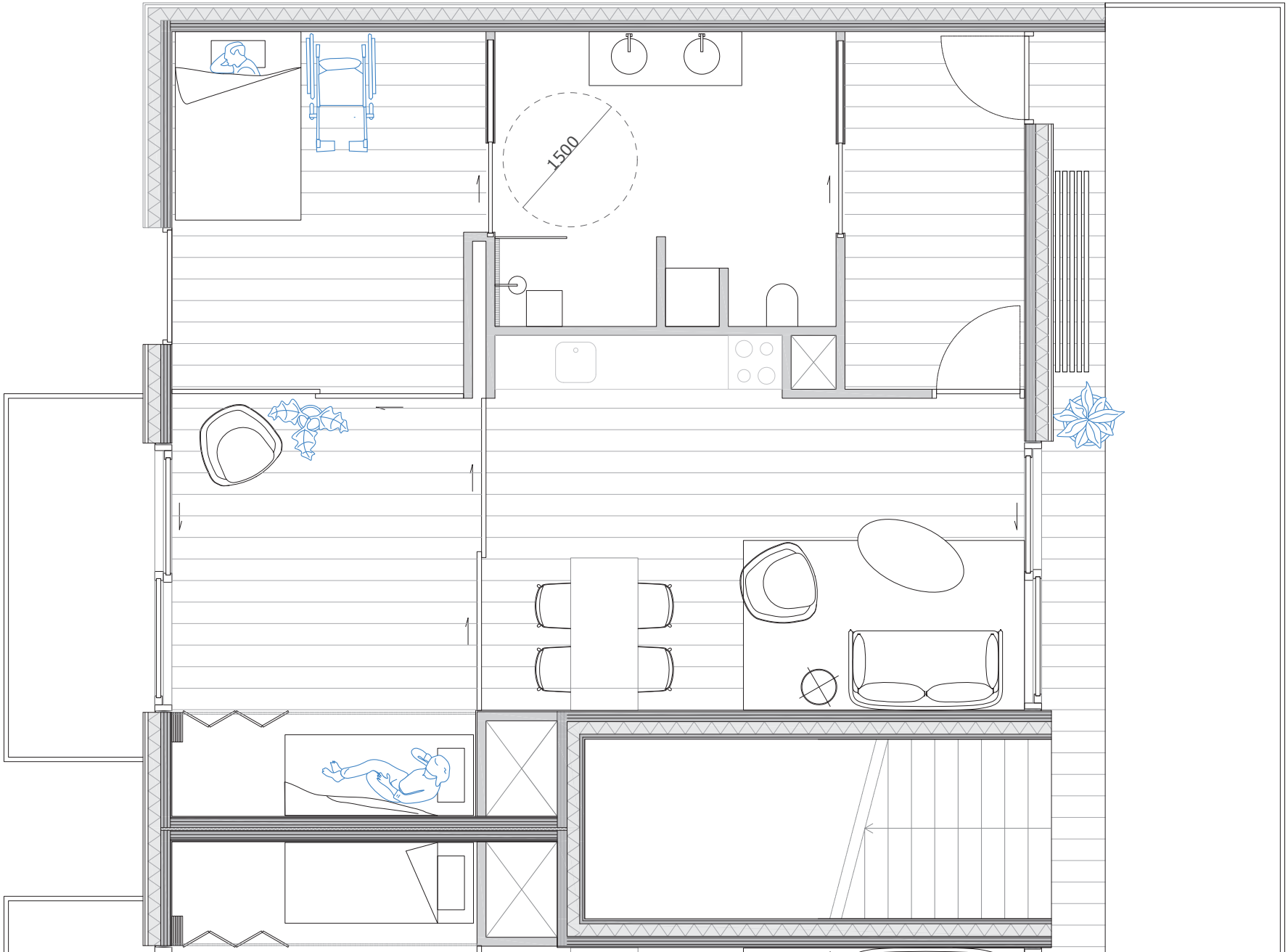
Meeting space: Entrance



Apartment (during the day)



Apartment (during the night)

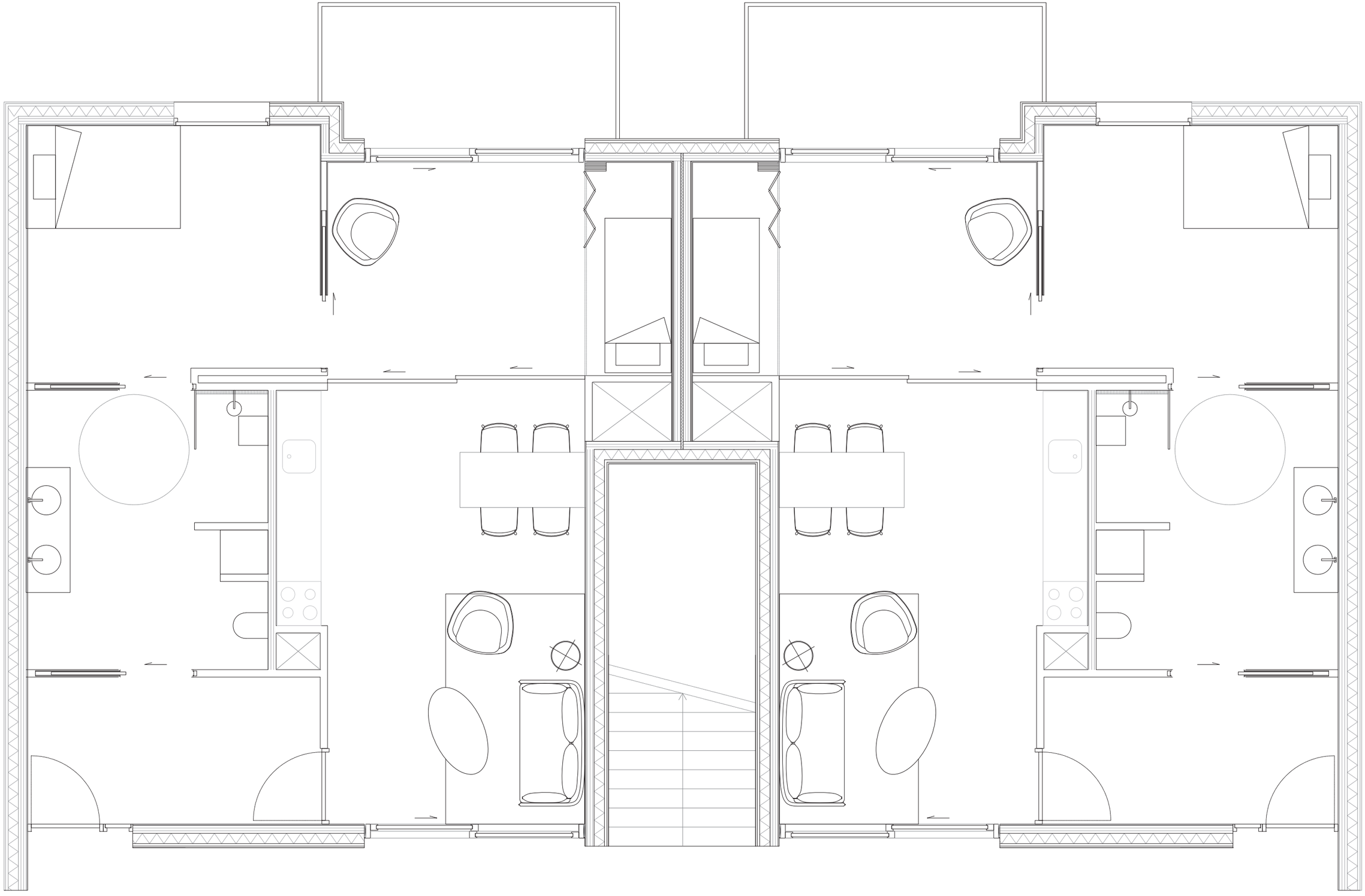


WEEK 3.10

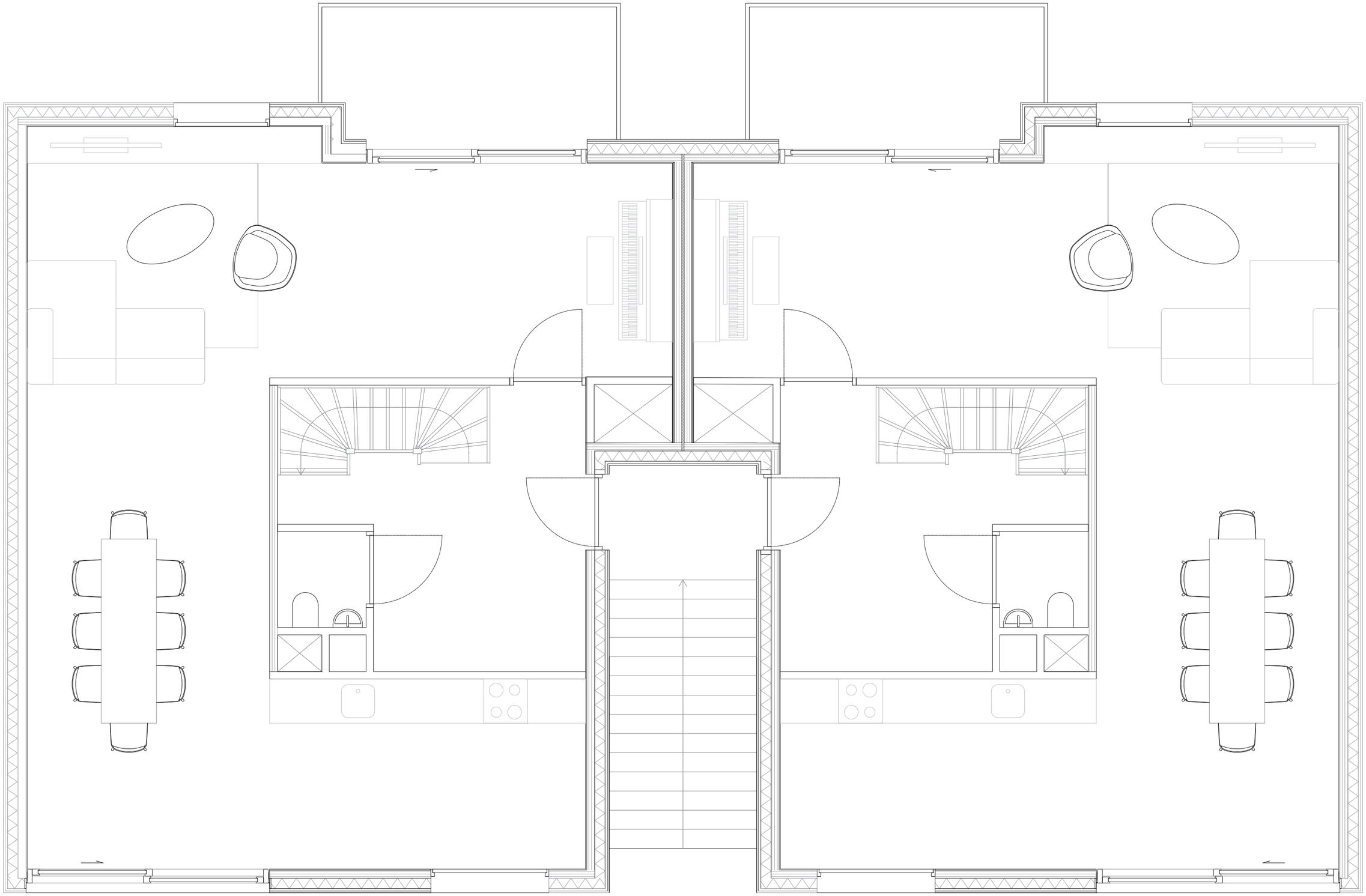
12 - 18 April

Most important feedback:

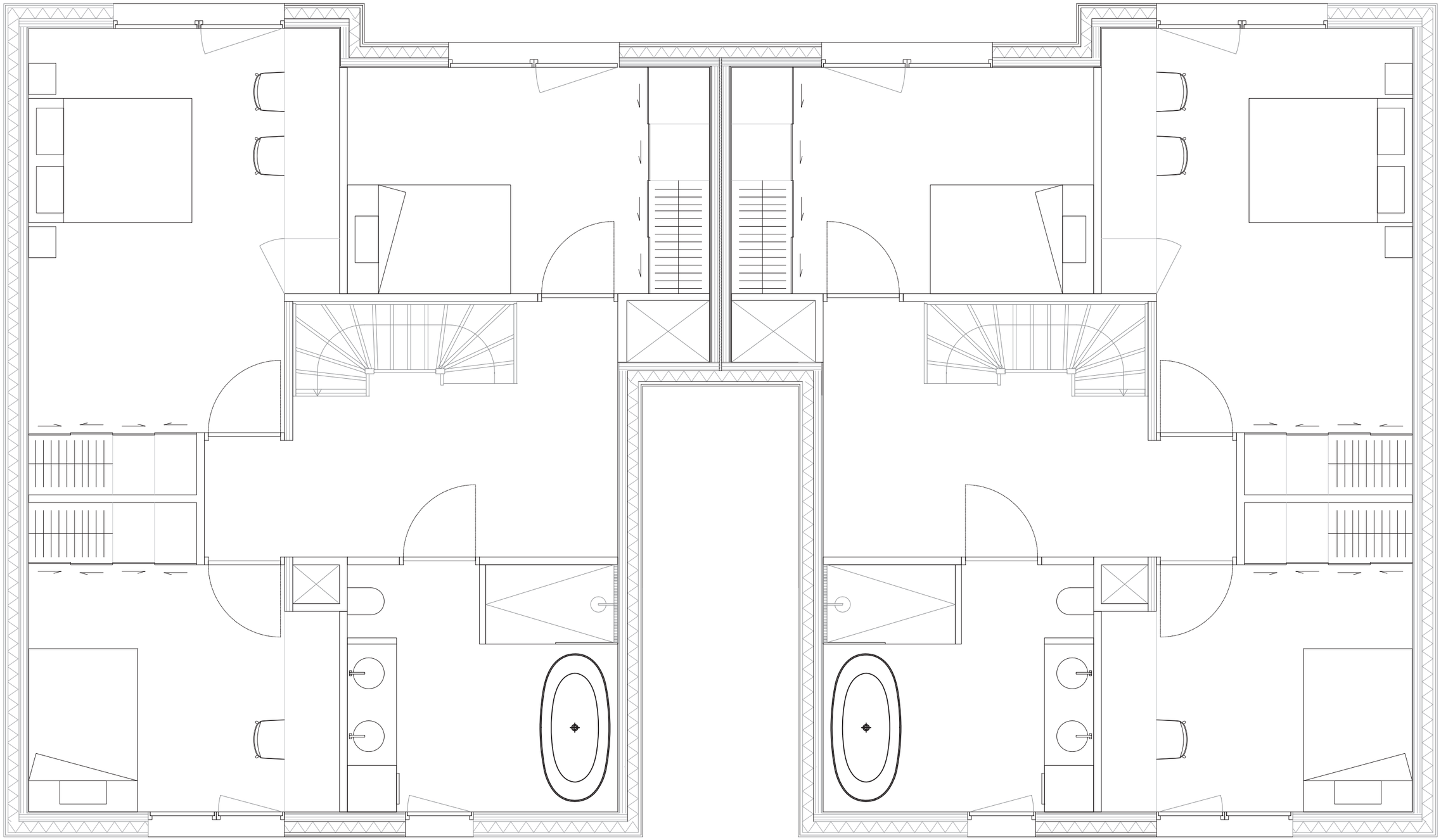
Building technology:
- Doorvalbeveiliging
- Different orientation concrete gallery
- Use the space underneath the stairs
- What are the dimensions of the inlet?
- Where is the drainage?
- Load bearing structure is not in line: use thicker floors



APARTMENT 73M²
1:50



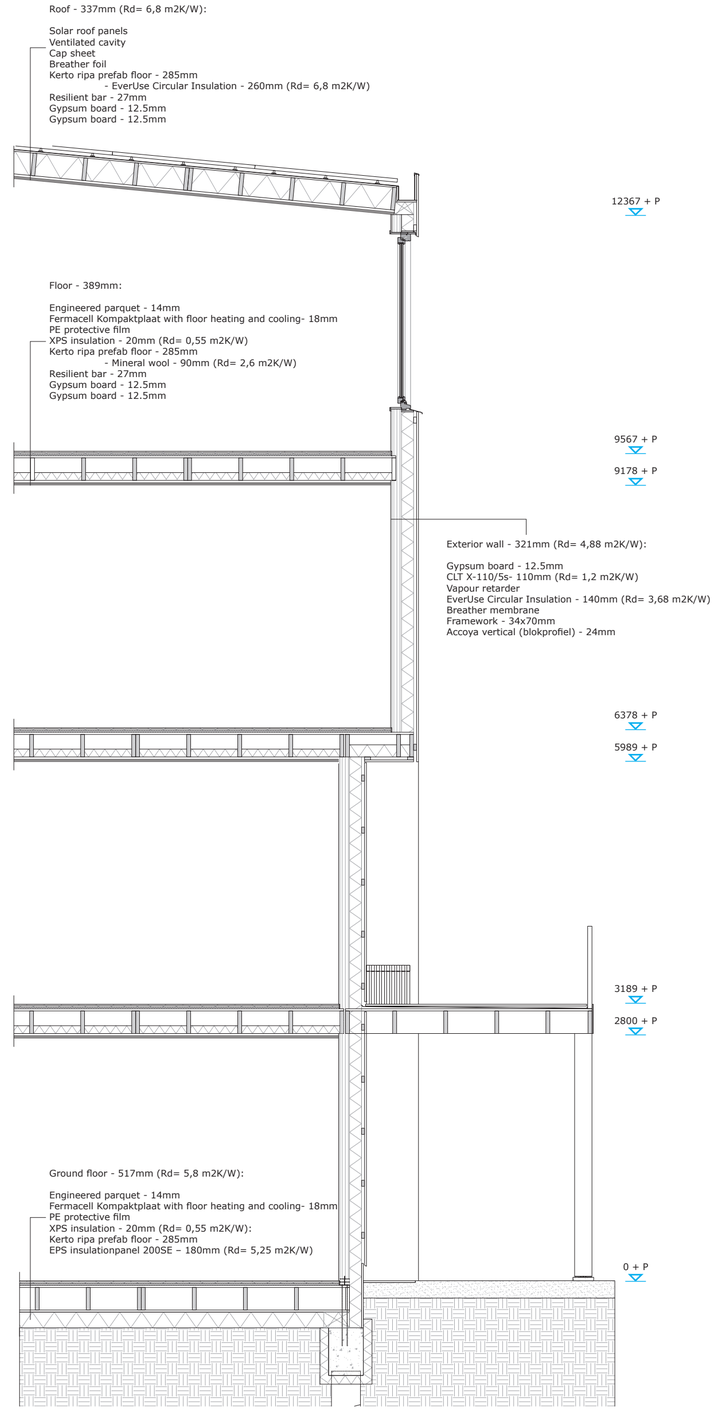
MAISSONETTE 1
146M²
1:50



MAISSONETTE 2
146M²
1:50



ELEVATION
1:50



SECTION
1:50

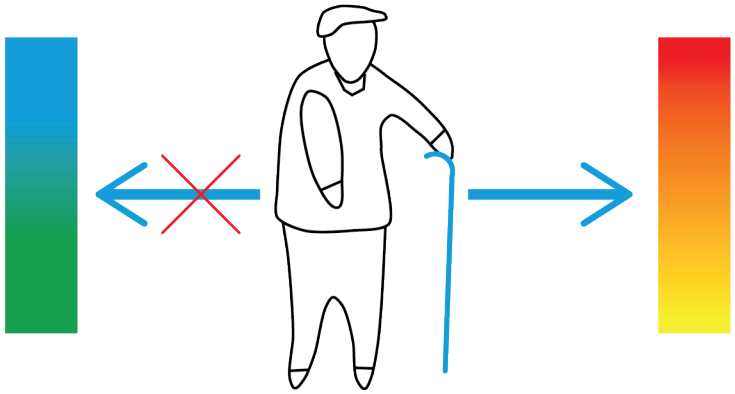
WEEK 4.1

19 - 25 April

Most important feedback (P3):

- Apartments are large and a lot of public space:
  not going to invest in it
- More possible in the transition zone
- Maybe use colours in the gallery
- Door to the living room should be in different direction

Guiding route





Crossroad



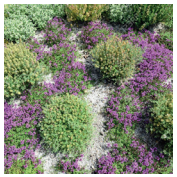
Concrete tiles 30x30



Concrete slabs with expansion joints

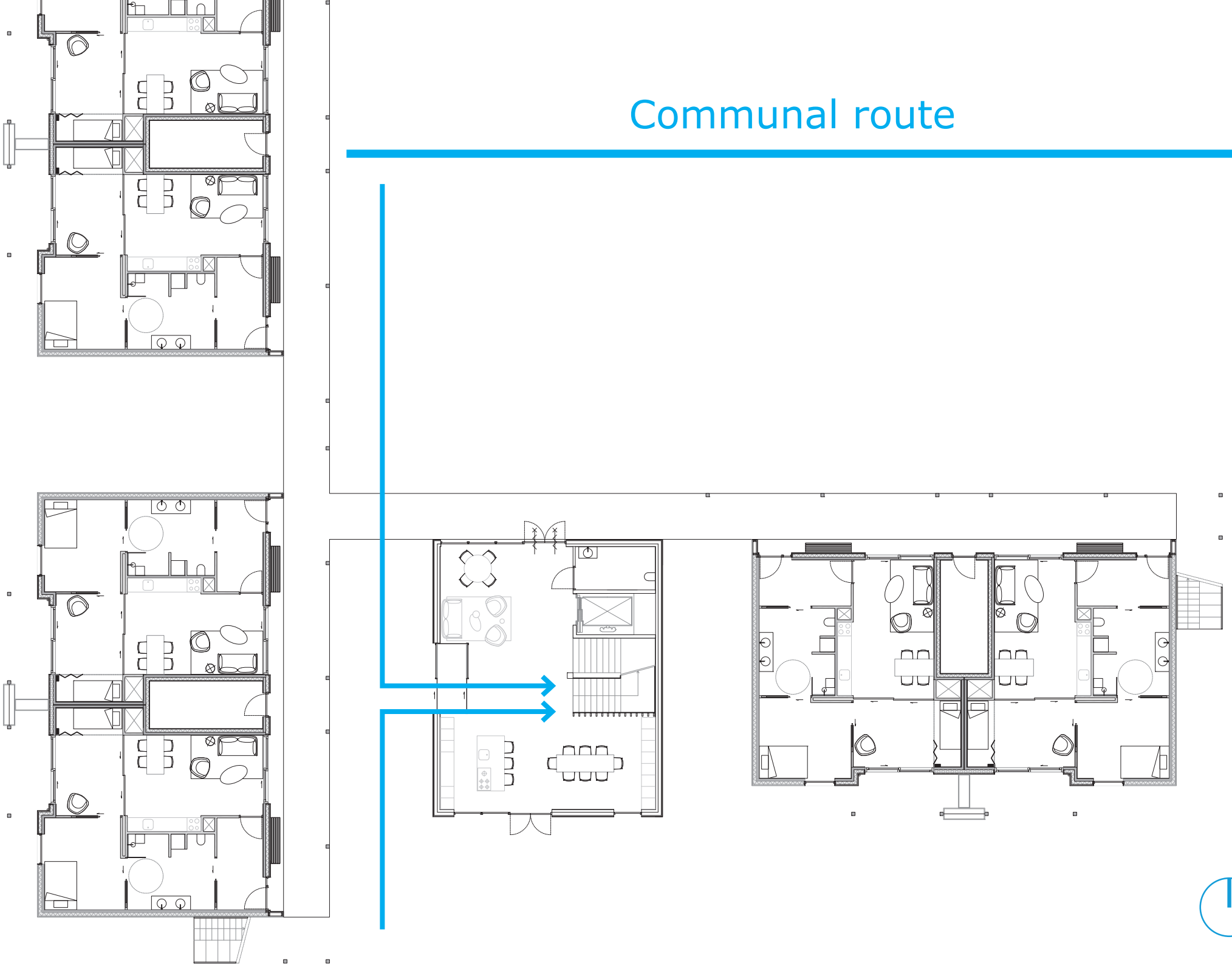


Cobblestones with rought texture

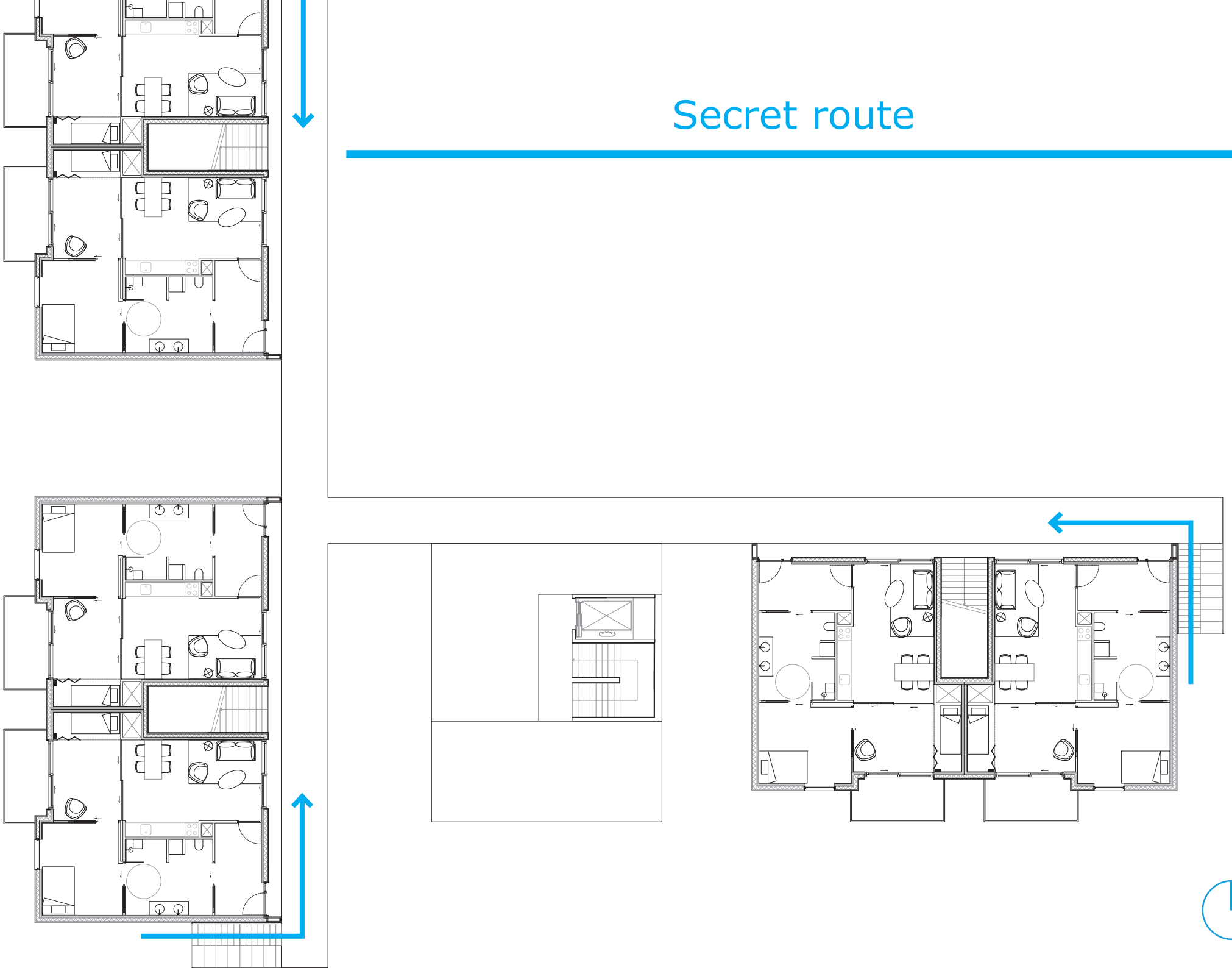


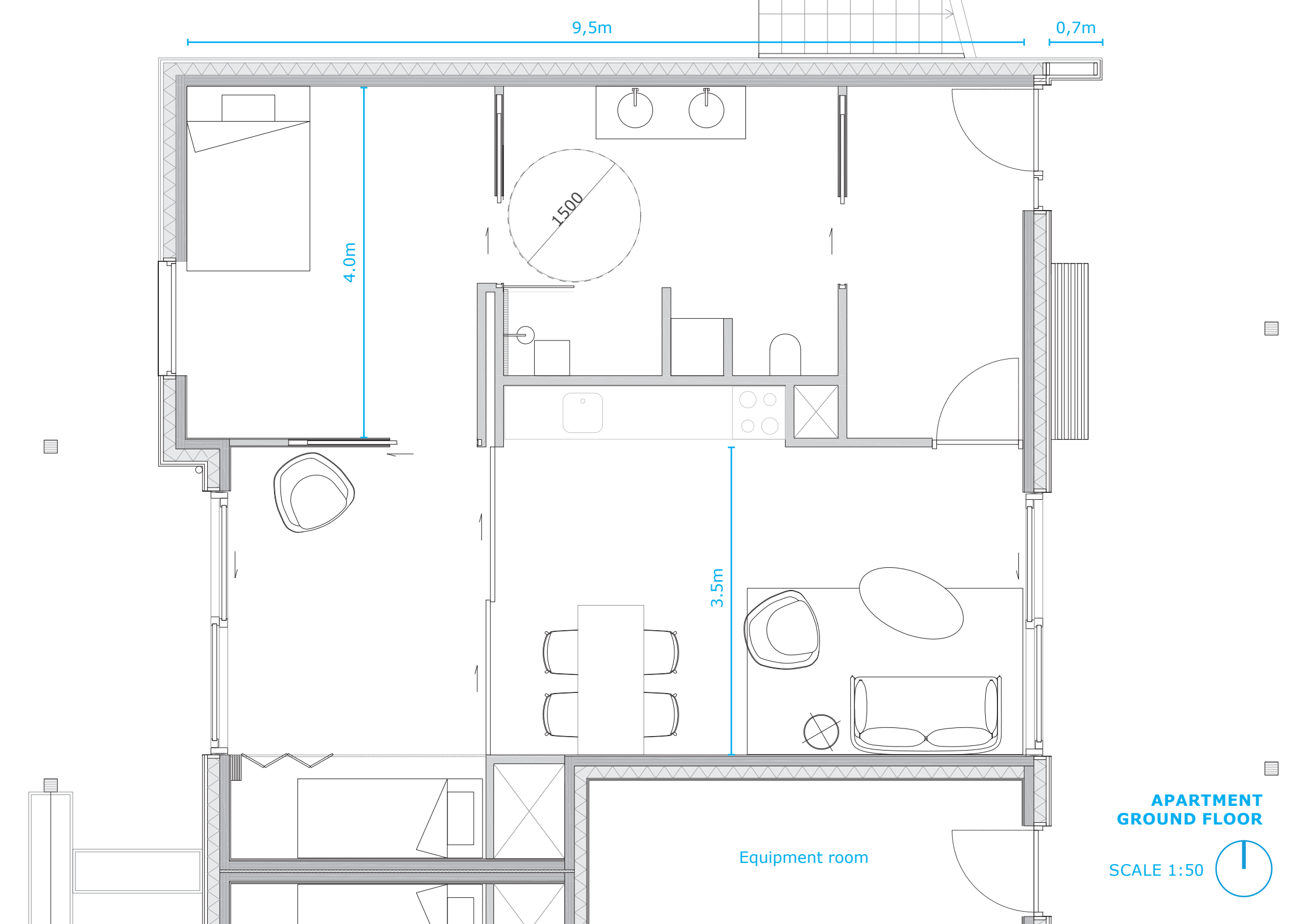
Guiding greenery

Communal route



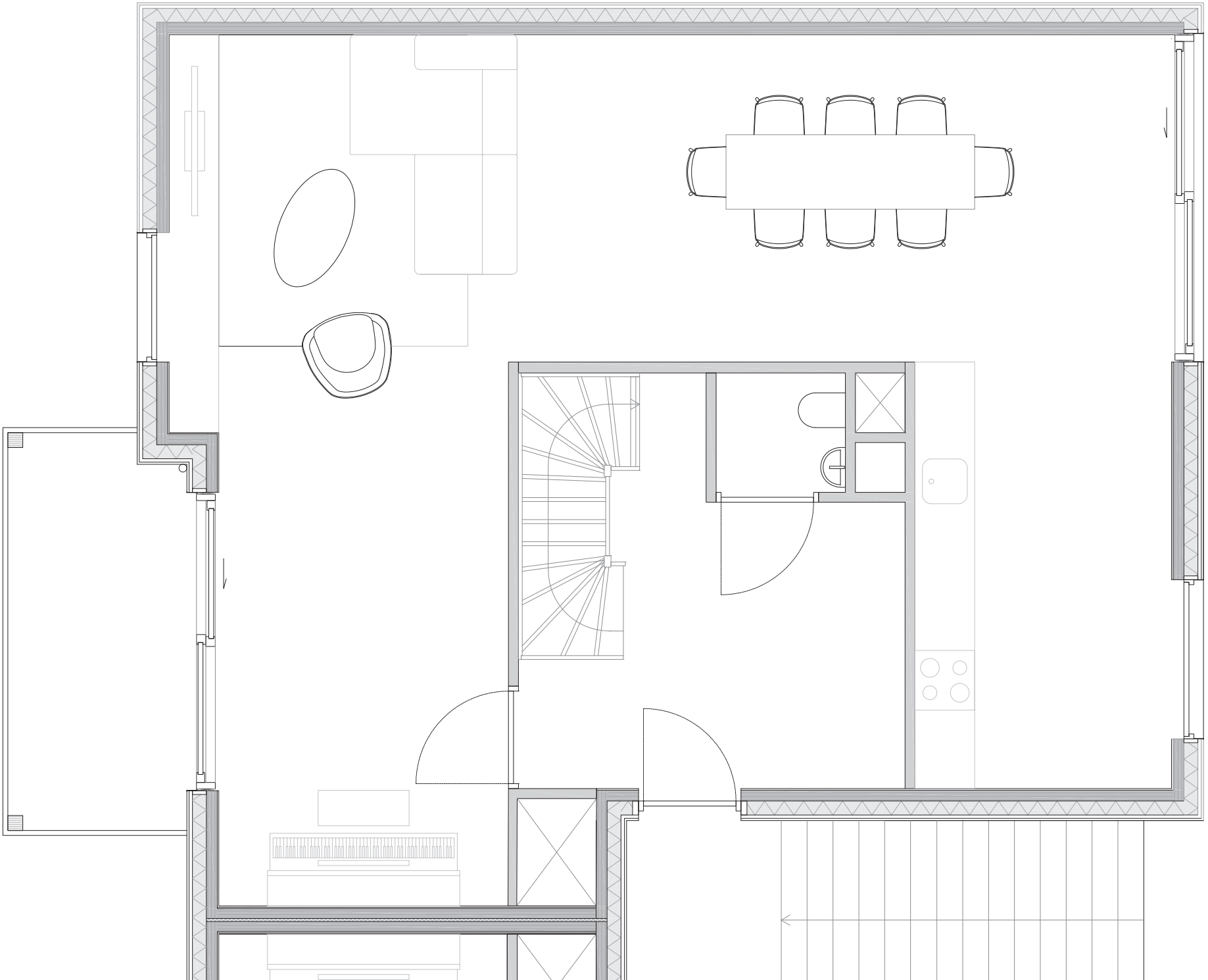
Secret route





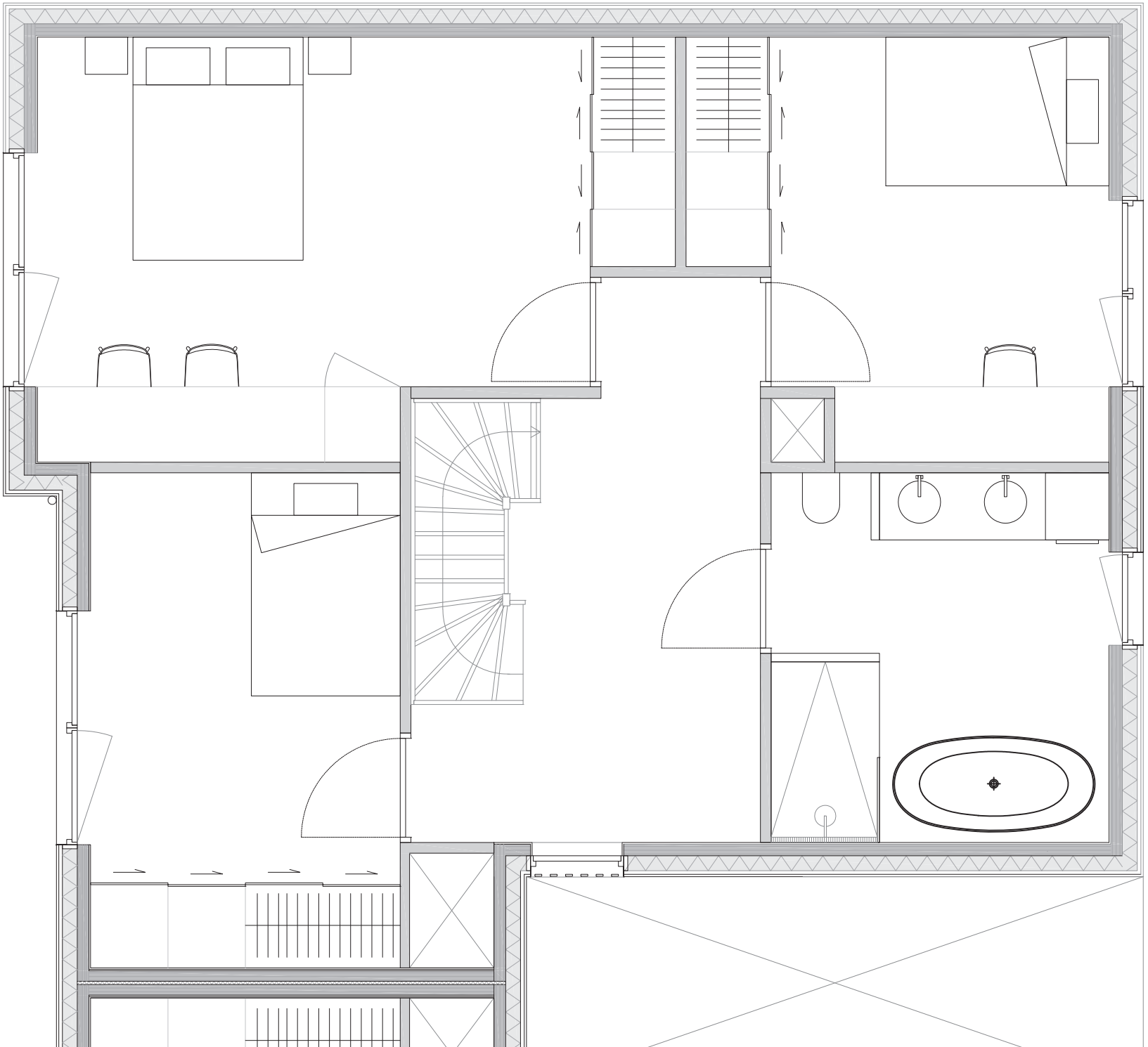
APARTMENT
GROUND FLOOR

SCALE 1:50



MAISSONETTE
3RD FLOOR

SCALE 1:50



MAISSONETTE
4TH FLOOR

SCALE 1:50

WEEK 4.3

3 - 9 May

Most important feedback:

Building technology:
- Connect foundation to columns
- Drainage?
- Look into the brick slips with Joline or Sophie

Architecture:
- Look into the brick slips:
    - Bricks are heavy, wood is light: is it weird to hide the wooden structure?
- Rudi Uytenhaak: heavy steel frames with bricks
- Concrete on wood?
- Which wood are you using?
- Does the short stay have different facade?



WEEK 4.4

10 - 16 May

Most important feedback:

Building technology:
- MV-boxes: where do you place these?
- Meterkast
- Foundation
- Short-stay apartment flip it

Architecture:
- Fill the atrium: otherwise just columns
- Ateliers/work space in atrium?
- Shading on south side
- Show the background in elevations
- Show whole facade

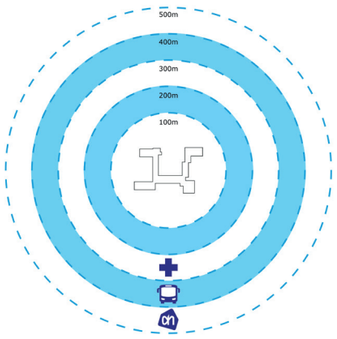
FINAL PRODUCTS

According to graduation manual

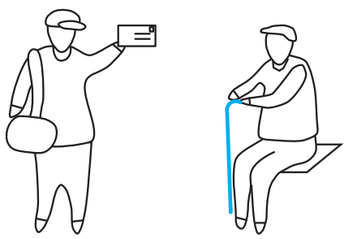
- Theoretic and thematic support of research and design
- Site 1:5000 / 1:1000
- Plan ground level 1:500
- Plans elevations, sections 1:200 / 1:100
- Part of the building, plan and drawings 1:50
- Façade fragment with hor. and vert. cross-section
- Details

DESIGN GUIDELINES

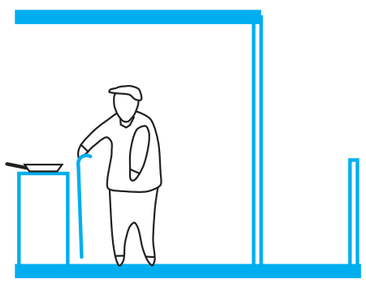
Fieldwork



Place the most important facilities within the 500m radius

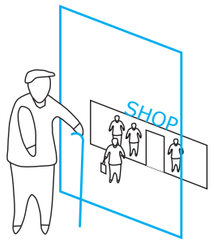


Create a communal entrance where elderly can interact with the neighbourhood

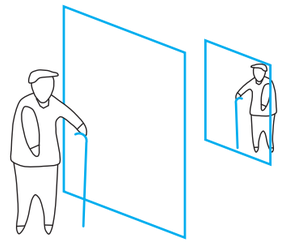


Give freedom to the elderly: freedom to cook and freedom to go outside

Social safety



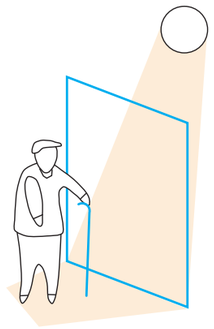
Views on activity



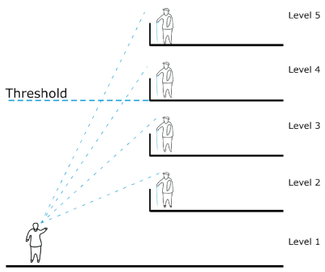
Views on each other



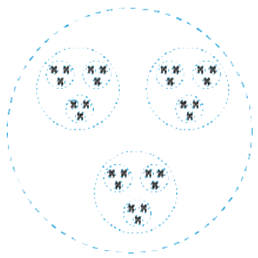
Views on greenery



Let the elderly adapt the amount of direct sunlight

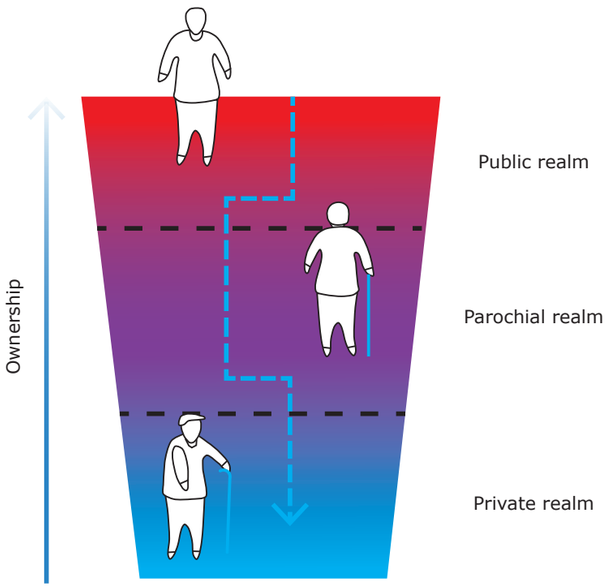


Buildings should be 3 or 4 stories high to optimize contact



Design communal spaces for the different group sizes

Individuality



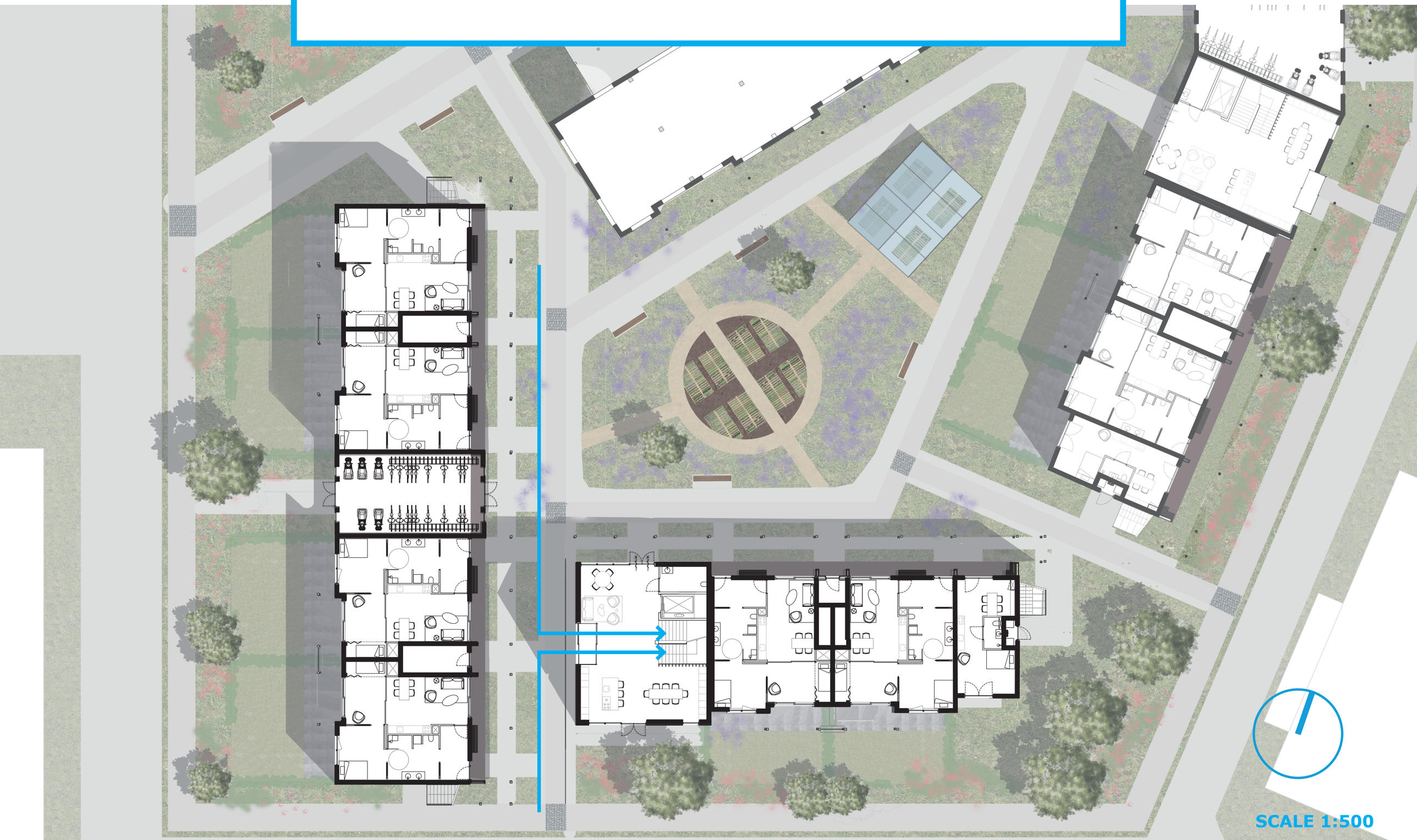
Create a route from public to private and design in-between-zones which residents can make their own

MASTERPLAN



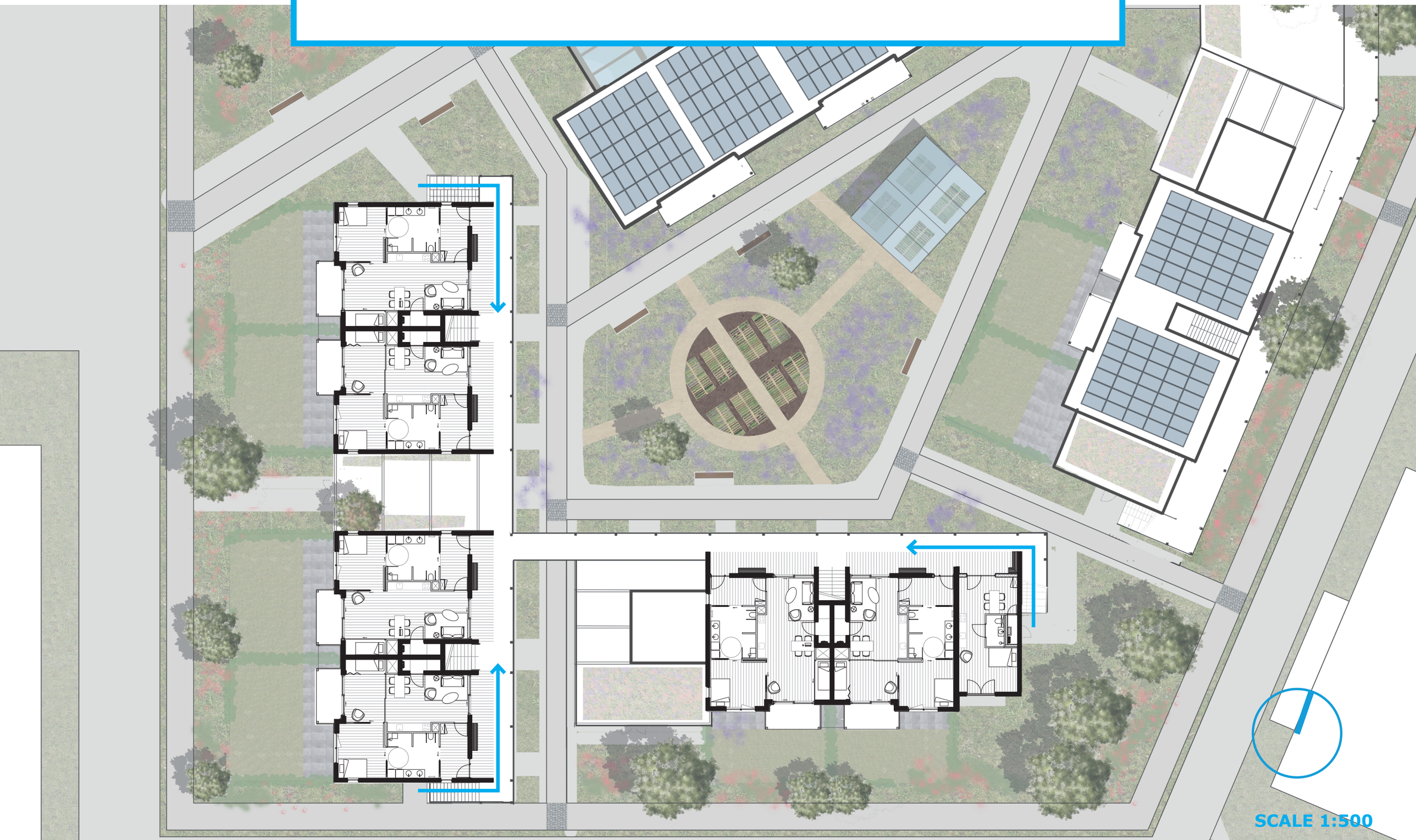
SCALE 1:1000

COMMUNAL ROUTE



SCALE 1:500

SECRET ROUTE



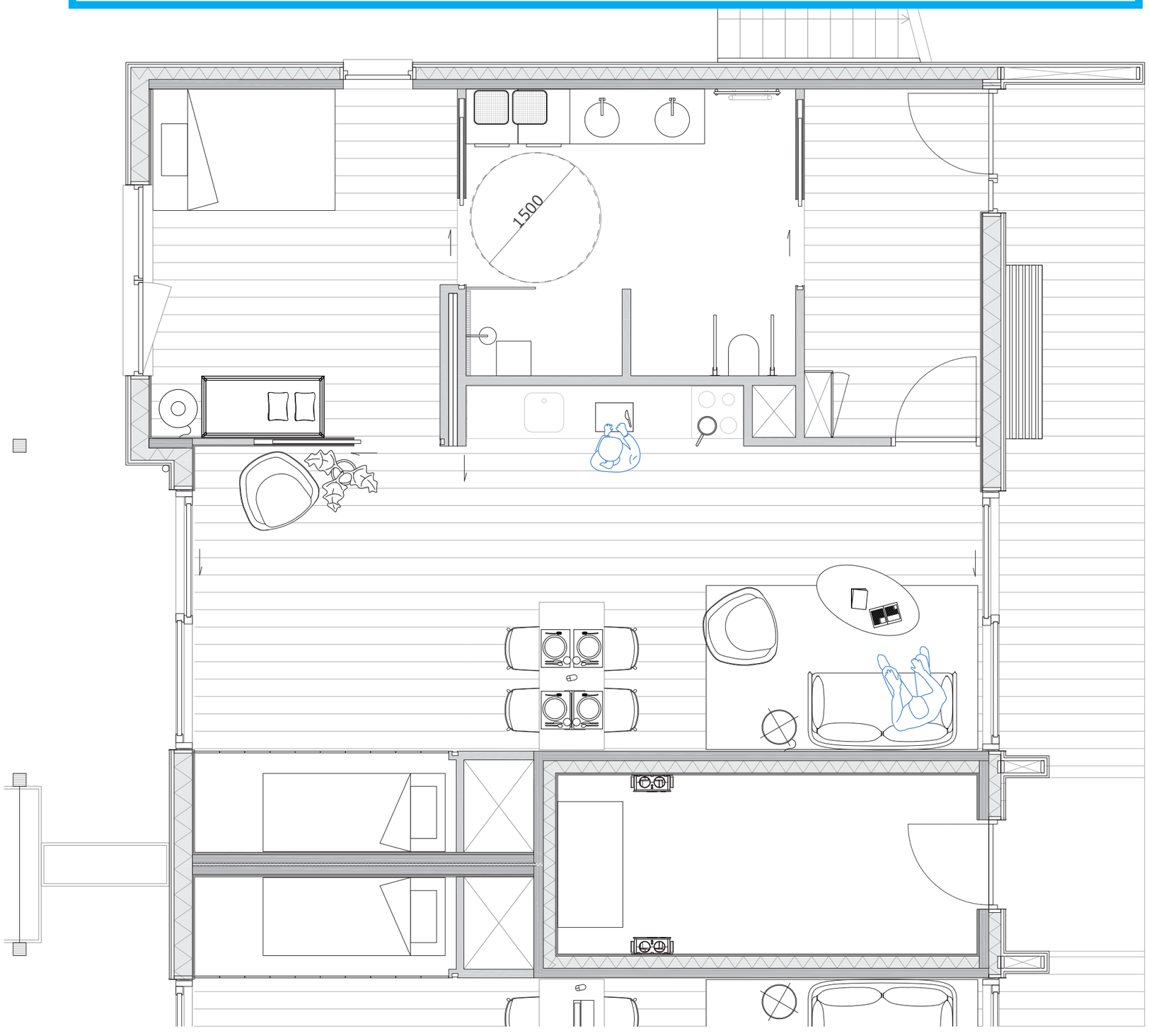
SECTION NEIGHBOURHOOD





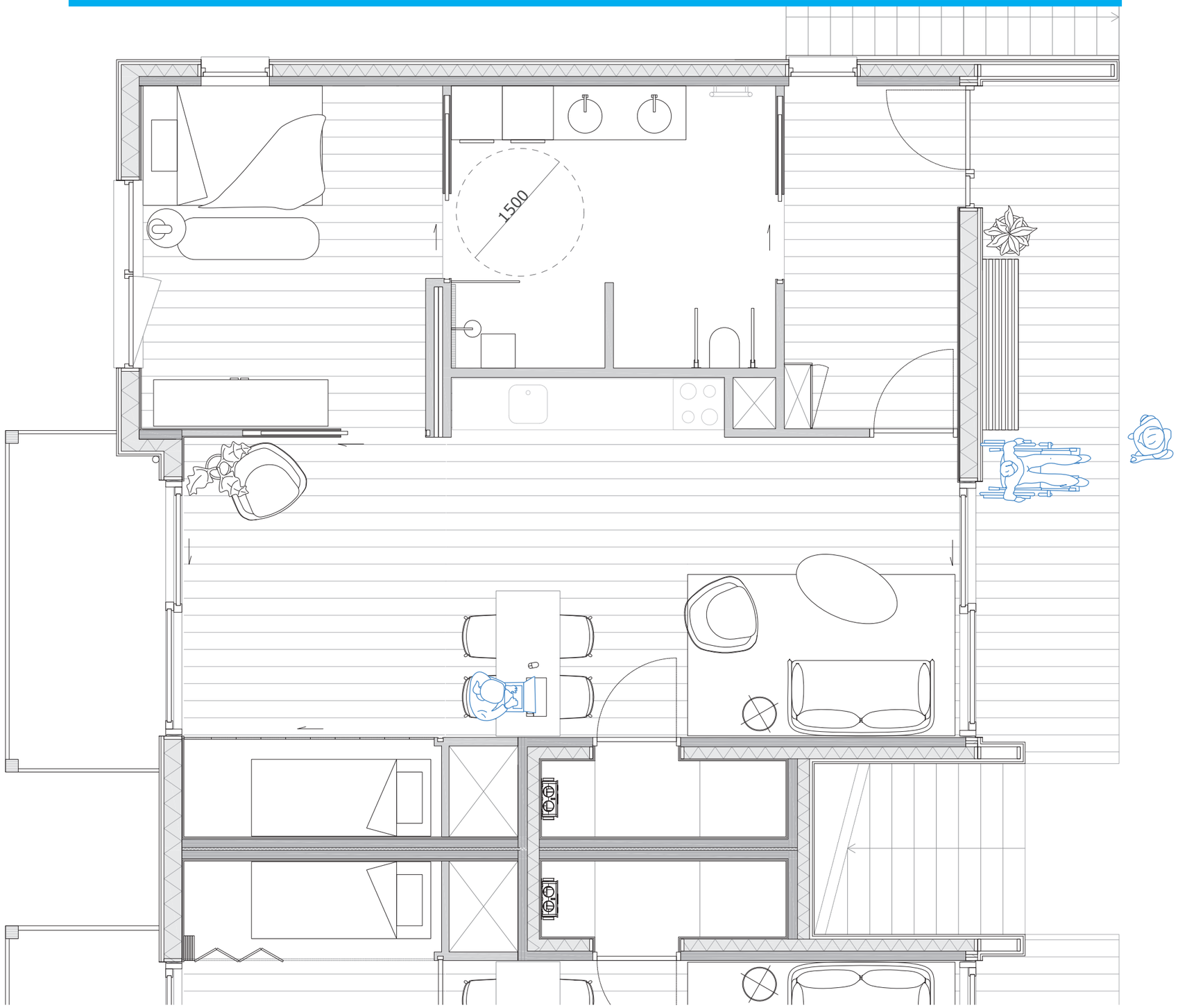
SCALE 1:500

GROUND FLOOR



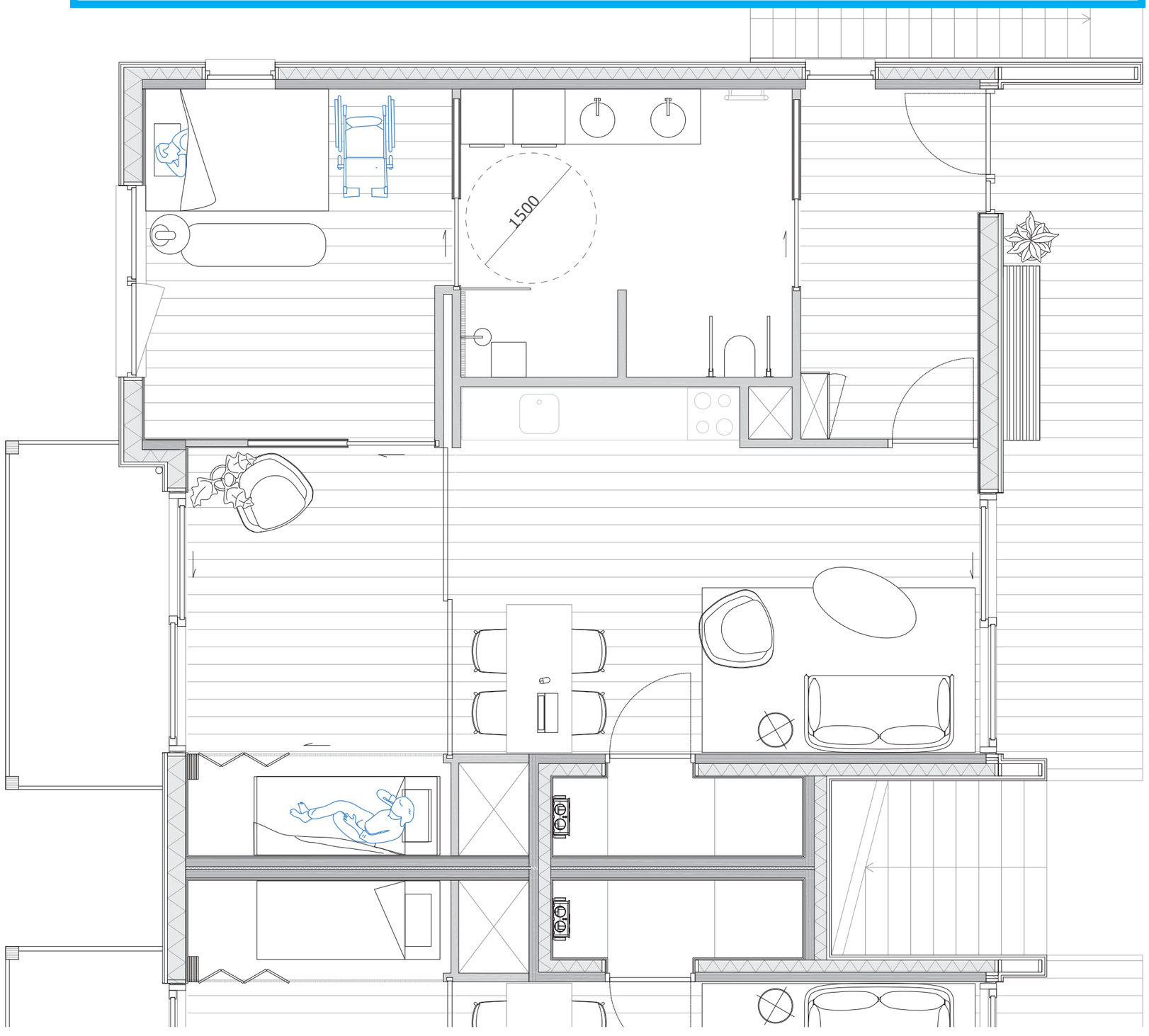
SCALE 1:50

1ST FLOOR: DAY TIME



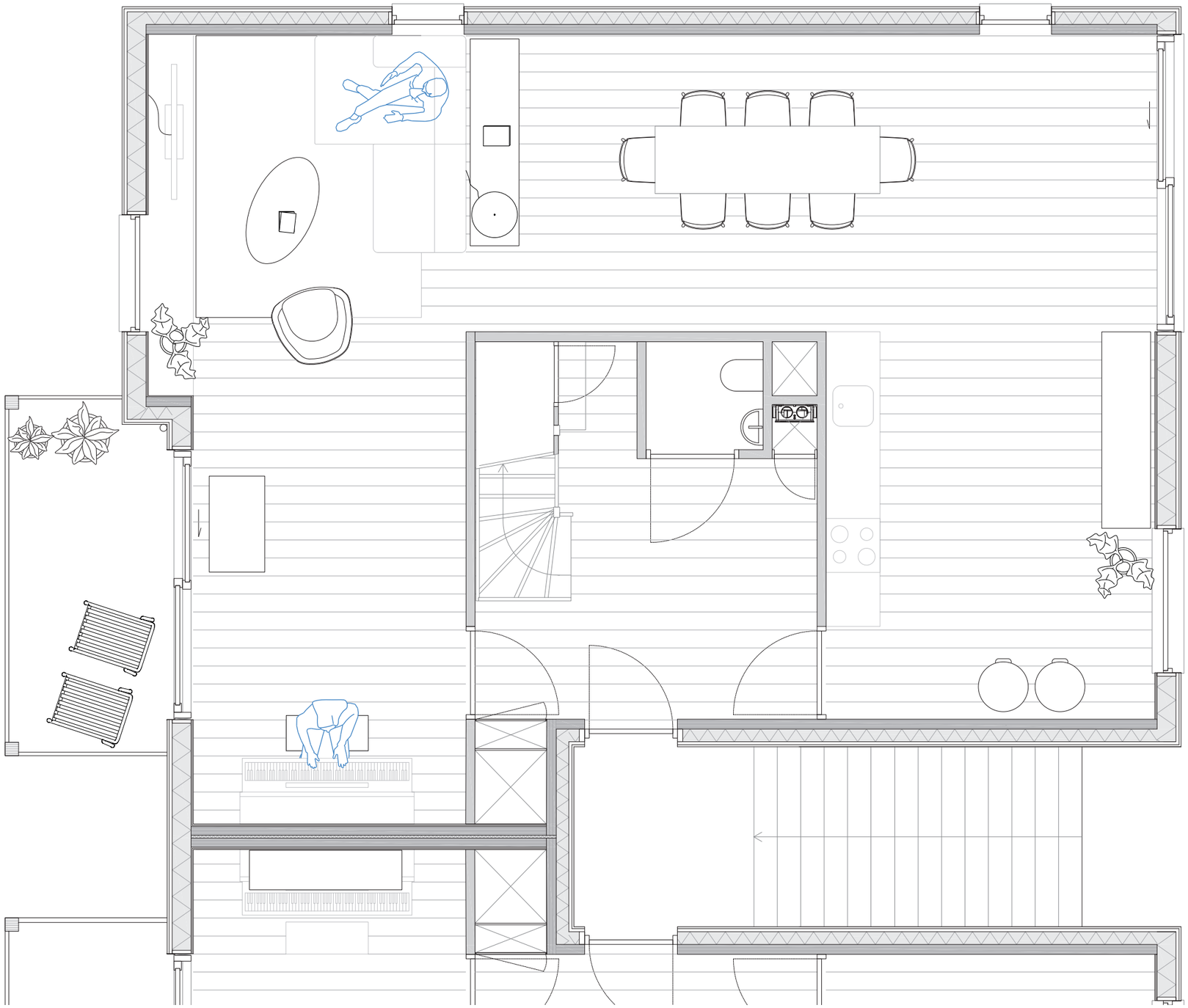
SCALE 1:50

1ST FLOOR: NIGHT TIME



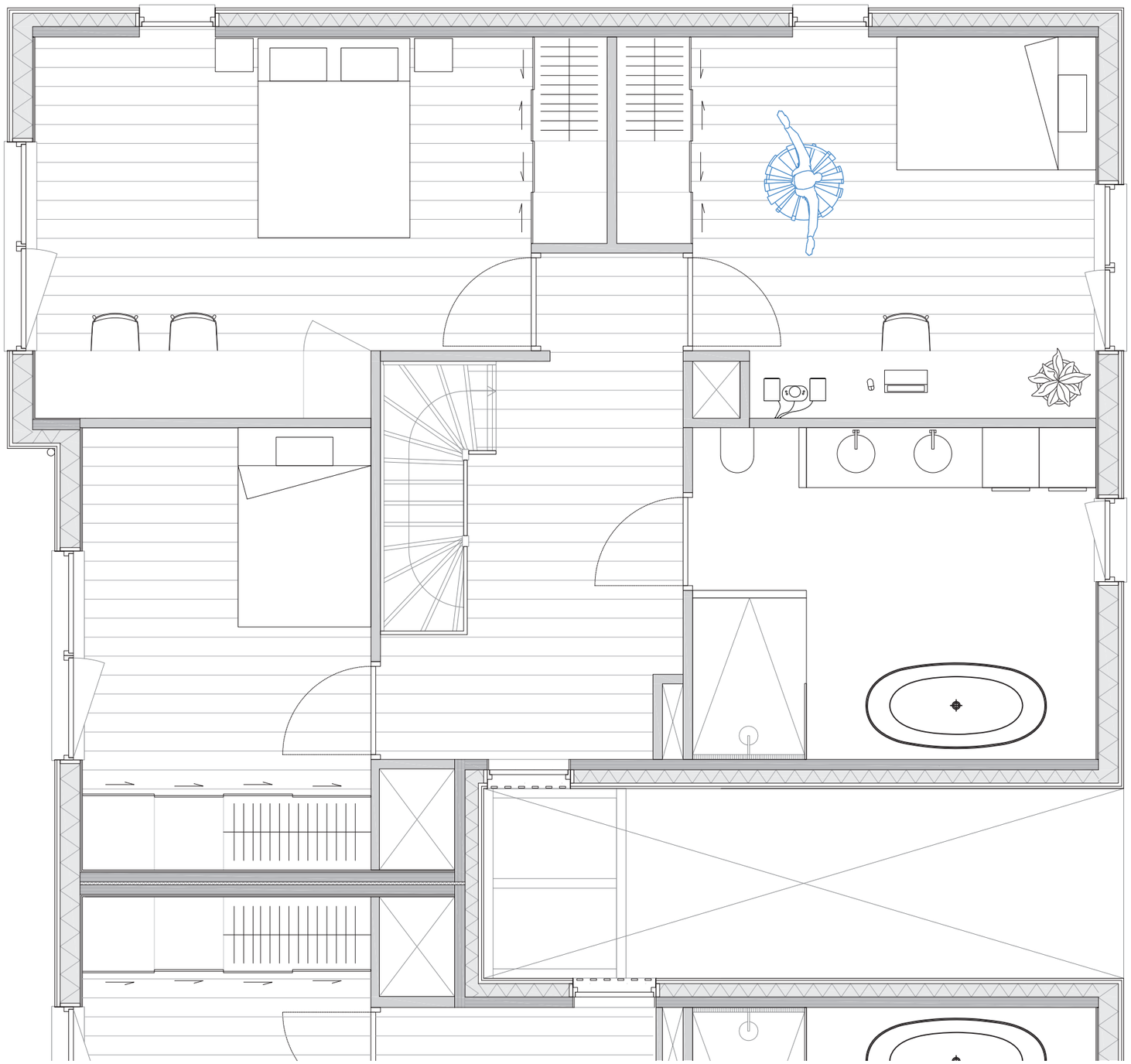
SCALE 1:50

2ND FLOOR: MAISONNETTE



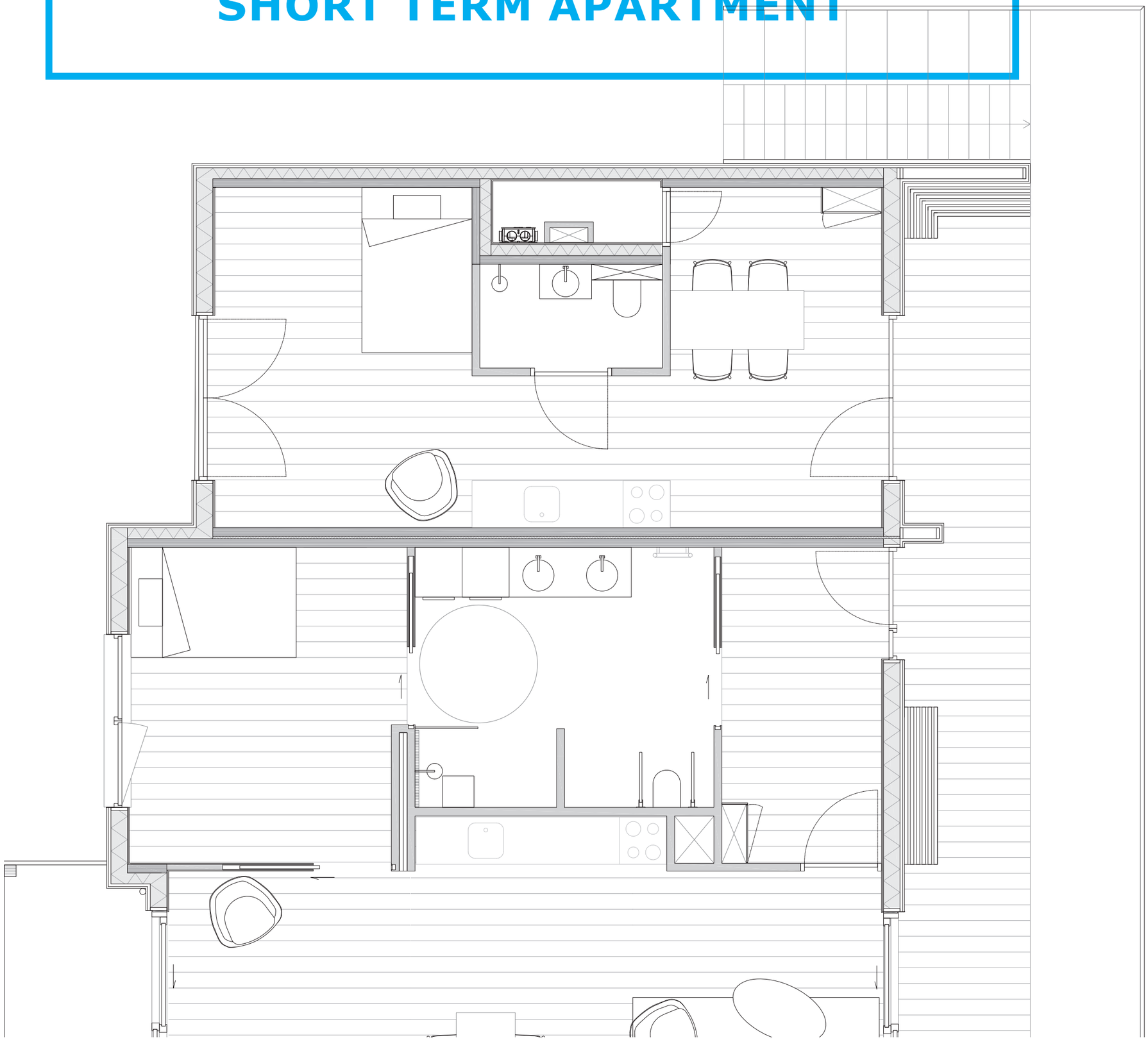
SCALE 1:50

3RD FLOOR: MAISONNETTE



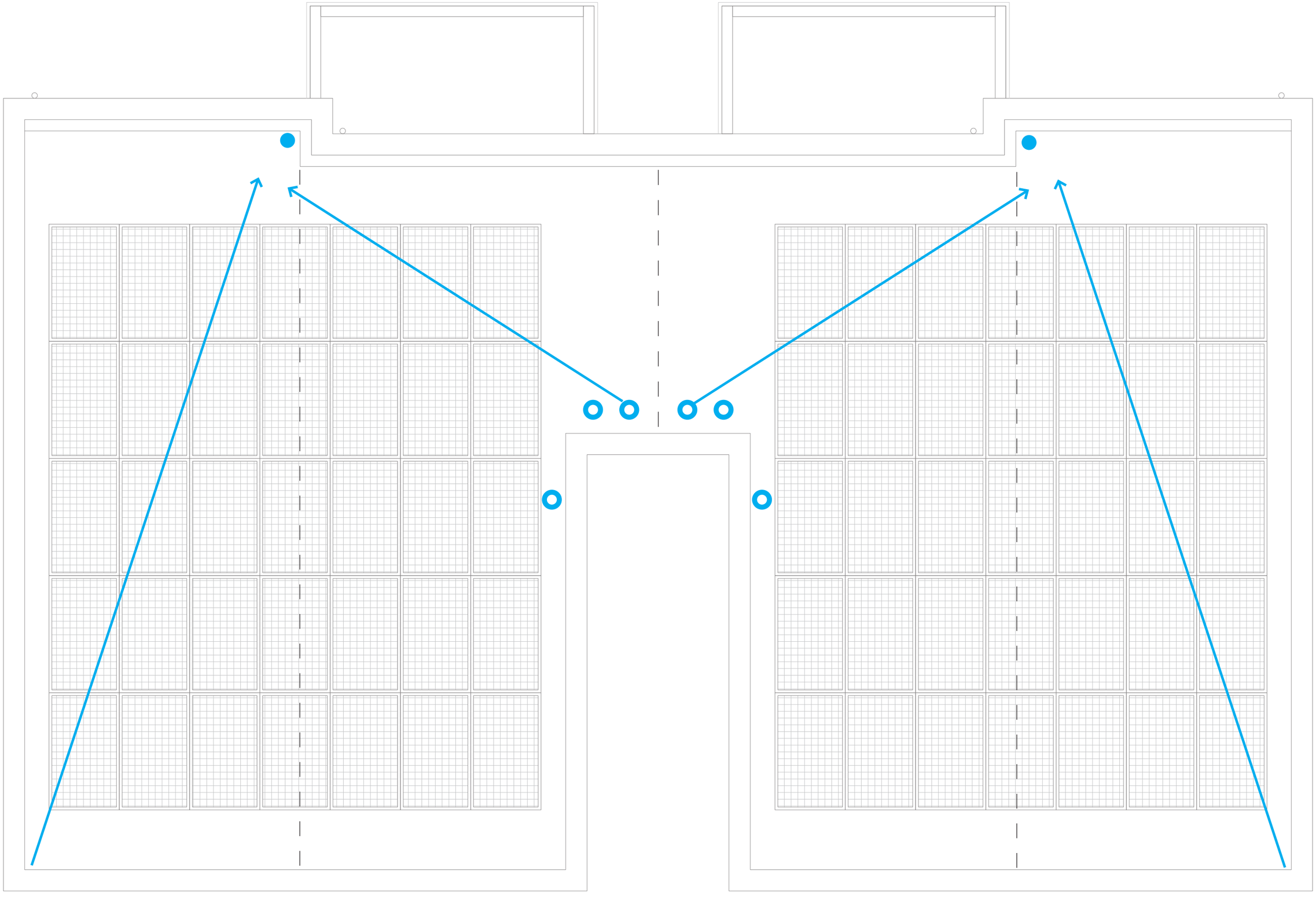
SCALE 1:50

SHORT TERM APARTMENT



SCALE 1:50

ROOFPLAN



Roof - 457mm (Rd= 6,8 m²K/W):

Solar roof panels
Ventilated cavity
EPDM seal
Breather membrane
Kerto ripa prefab floor - 405mm
- EverUse Circular Insulation - 260mm (Rd= 6,8 m²K/W)
Vapour barrier
Resilient bar - 27mm
Gypsum board - 12.5mm
Gypsum board - 12.5mm

Floor - 586mm:

Engineered parquet - 14mm
Screed with floor heating - 70mm
PE protective film
XPS insulation - 20mm (Rd= 0,55 m²K/W)
Gypsum board - 12.5mm
Gypsum board - 12.5mm
Kerto ripa prefab floor - 405mm
- Mineral wool - 90mm (Rd= 2,6 m²K/W)
Resilient bar - 27mm
Gypsum board - 12.5mm
Gypsum board - 12.5mm

Exterior wall - 302mm (Rd= 5,5 m²K/W):

Accoya wood panels - 21mm
Framework (cavity) - 46 mm
- Horizontal 28 x 48
- Vertcial 18 x 45
Breather membrane
Timber frame structure
- EverUse Circular Insulation - 210mm (Rd= 5,5 m²K/W)
Vapour barrier
Gypsum board - 12.5mm
Gypsum board - 12.5mm

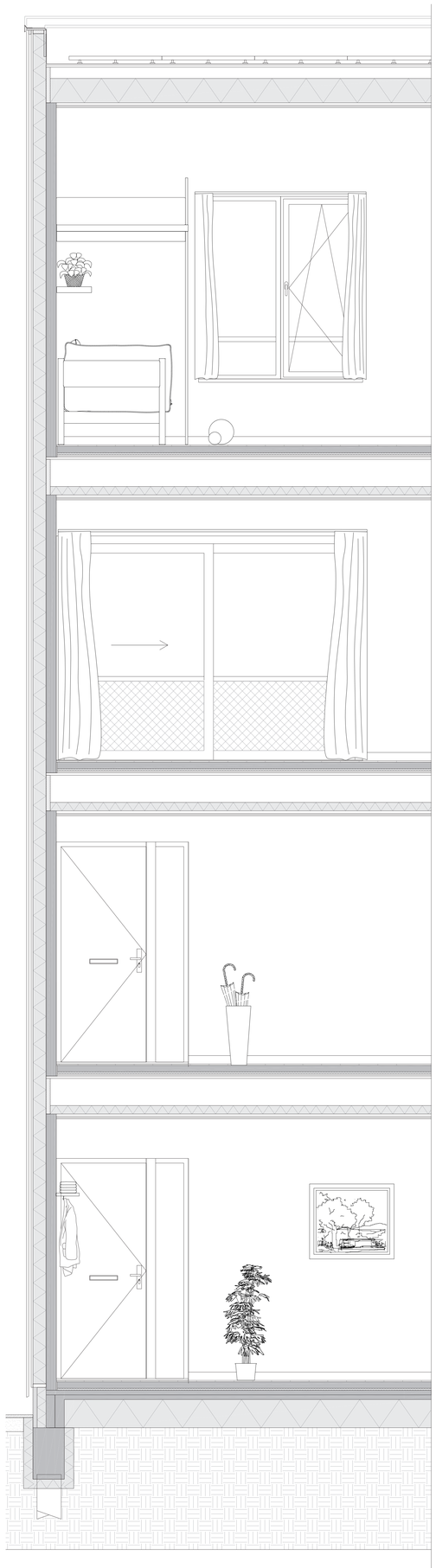
Ground floor - 504mm (Rd= 4,25 m²K/W):

Engineered parquet - 14mm
Screed with floor heating - 70mm
PE protective film
XPS insulation - 20mm (Rd= 0,55 m²K/W)
Compressive layer - 50mm
Dycor ribbed concret floor - 350mm
- EPS insulationpanel 200SE – 300mm (Rd= 3,7 m²K/W)

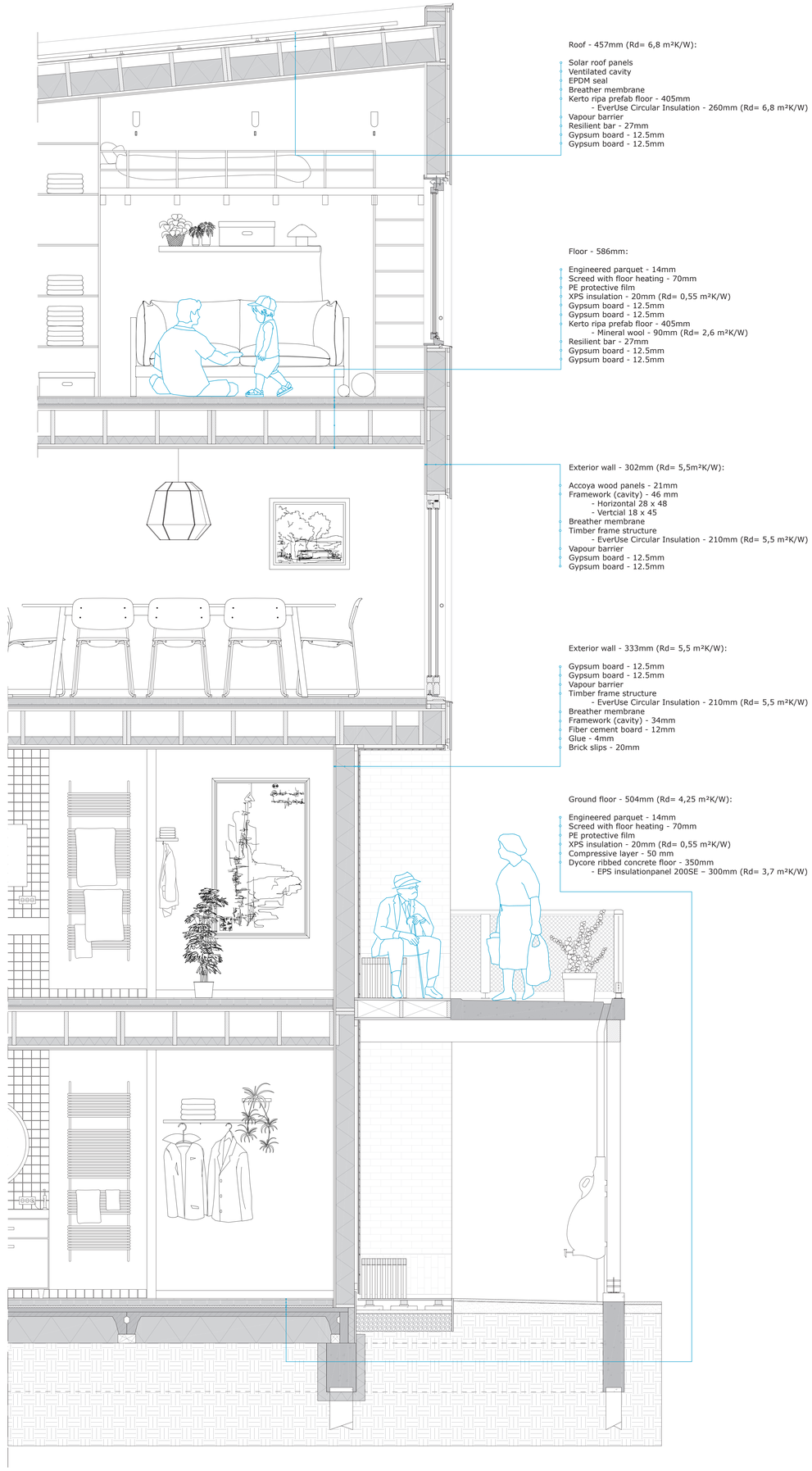
14415 + P
13958 + P
10158 + P
9572 + P
6772 + P
6186 + P
3386 + P
2800 + P
0 + P

VERTICAL SECTION
1:20

FACADE FRAGMENT
1:20







Roof - 457mm (Rd= 6,8 m²K/W):

- Solar roof panels
- Ventilated cavity
- EPDM seal
- Breather membrane
- Kerto ripa prefab floor - 405mm
  - EverUse Circular Insulation - 260mm (Rd= 6,8 m²K/W)
- Vapour barrier
- Resilient bar - 27mm
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm

Floor - 586mm:

- Engineered parquet - 14mm
- Screed with floor heating - 70mm
- PE protective film
- XPS insulation - 20mm (Rd= 0,55 m²K/W)
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm
- Kerto ripa prefab floor - 405mm
  - Mineral wool - 90mm (Rd= 2,6 m²K/W)
- Resilient bar - 27mm
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm

Exterior wall - 302mm (Rd= 5,5m²K/W):

- Accoya wood panels - 21mm
- Framework (cavity) - 46 mm
  - Horizontal 28 x 48
  - Vertcial 18 x 45
- Breather membrane
- Timber frame structure
  - EverUse Circular Insulation - 210mm (Rd= 5,5 m²K/W)
- Vapour barrier
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm

Exterior wall - 333mm (Rd= 5,5 m²K/W):

- Gypsum board - 12.5mm
- Gypsum board - 12.5mm
- Vapour barrier
- Timber frame structure
  - EverUse Circular Insulation - 210mm (Rd= 5,5 m²K/W)
- Breather membrane
- Framework (cavity) - 34mm
- Fiber cement board - 12mm
- Glue - 4mm
- Brick slips - 20mm

Ground floor - 504mm (Rd= 4,25 m²K/W):

- Engineered parquet - 14mm
- Screed with floor heating - 70mm
- PE protective film
- XPS insulation - 20mm (Rd= 0,55 m²K/W)
- Compressive layer - 50 mm
- Dycore ribbed concrete floor - 350mm
  - EPS insulationpanel 200SE – 300mm (Rd= 3,7 m²K/W)

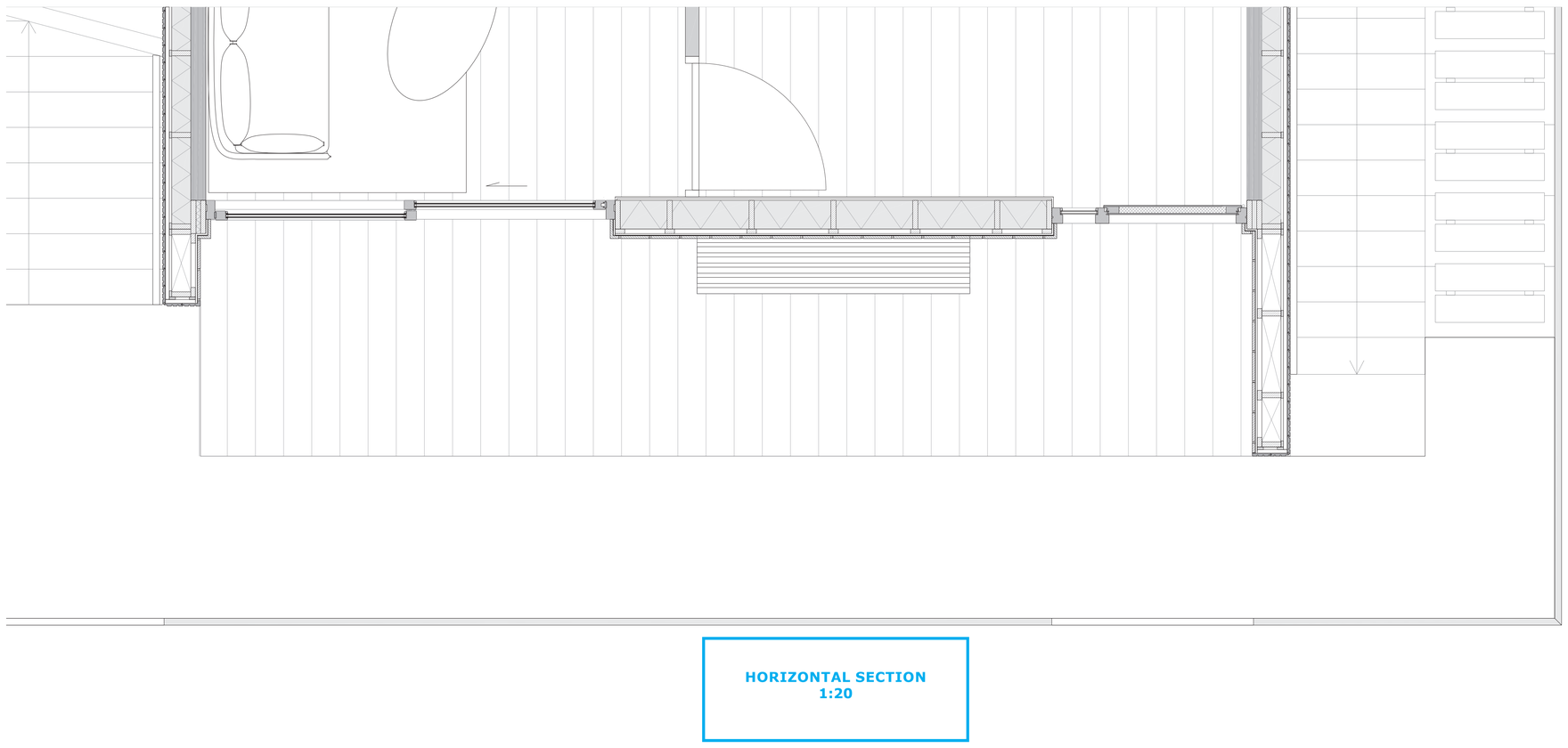
ELEVATION INSIDE
1:20

FACADE FRAGMENT
1:20

VERTICAL SECTION
1:20



FACADE FRAGMENT
1:20



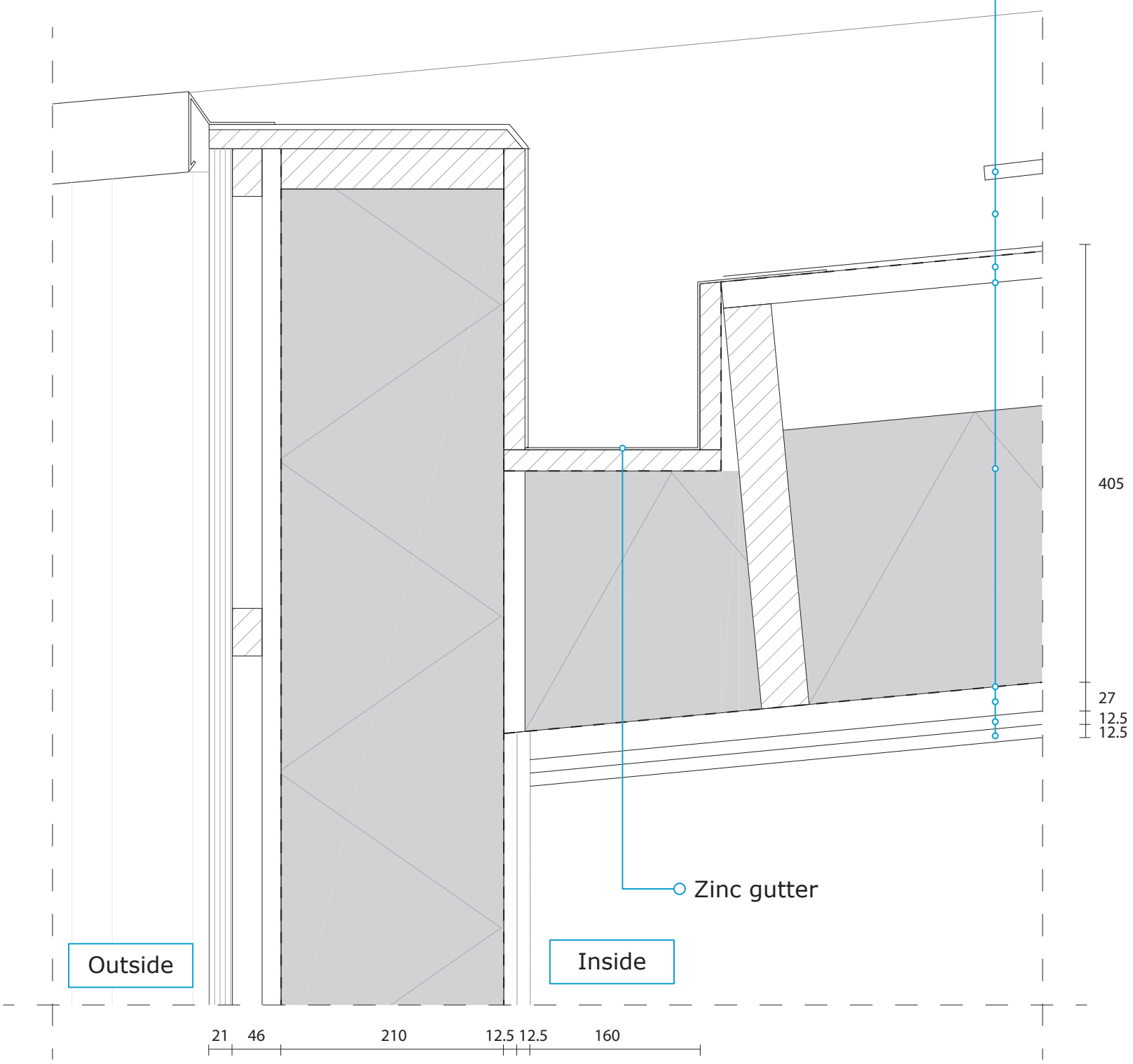
HORIZONTAL SECTION
1:20

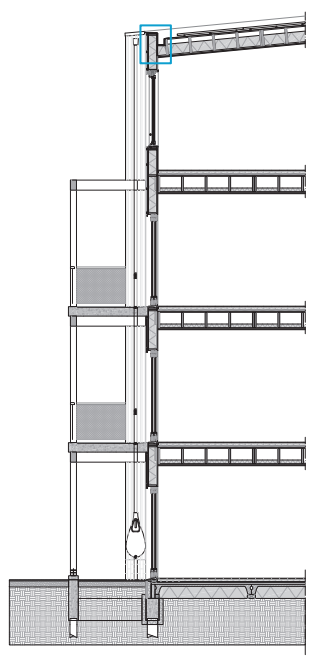
DETAIL 1

CONNECTION OF THE ROOF AND FACADE

Roof - 457mm (Rd= 6,8 m²K/W):

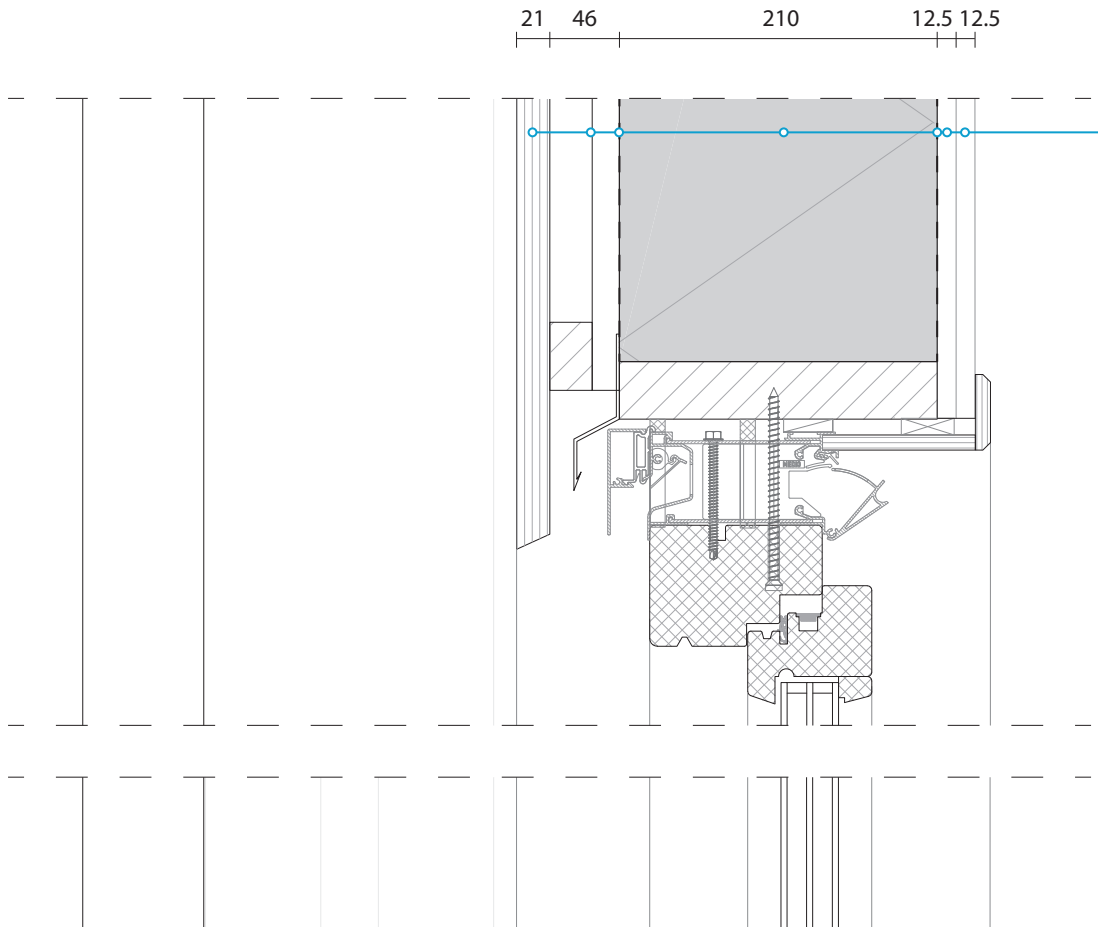
- Solar roof panels
- Ventilated cavity
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- Breather membrane
- Kerto ripa prefab floor - 405mm
  - EverUse Circular Insulation - 260mm (Rd= 6,8 m²K/W)
- Vapour barrier
- Resilient bar - 27mm
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm





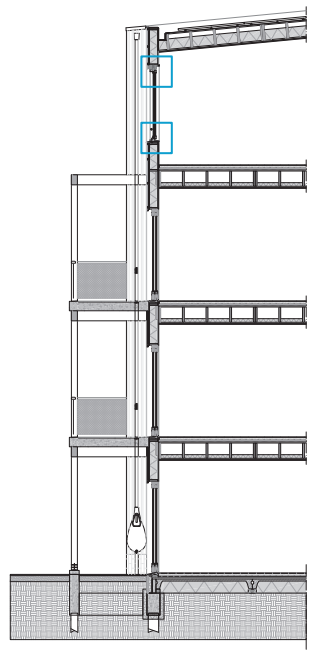
DETAIL 2 + 3

CONNECTION OF THE WINDOW AND FACADE



Exterior wall - 302mm (Rd= 5,5 m²K/W):

Accoya wood panels - 21mm
Framework (cavity) - 46 mm
- Horizontal 28 x 48
- Vertcial 18 x 45
Breather membrane
Timber frame structure
- EverUse Circular Insulation - 210mm (Rd= 5,5 m²K/W)
Vapour barrier
Gypsum board - 12.5mm
Gypsum board - 12.5mm

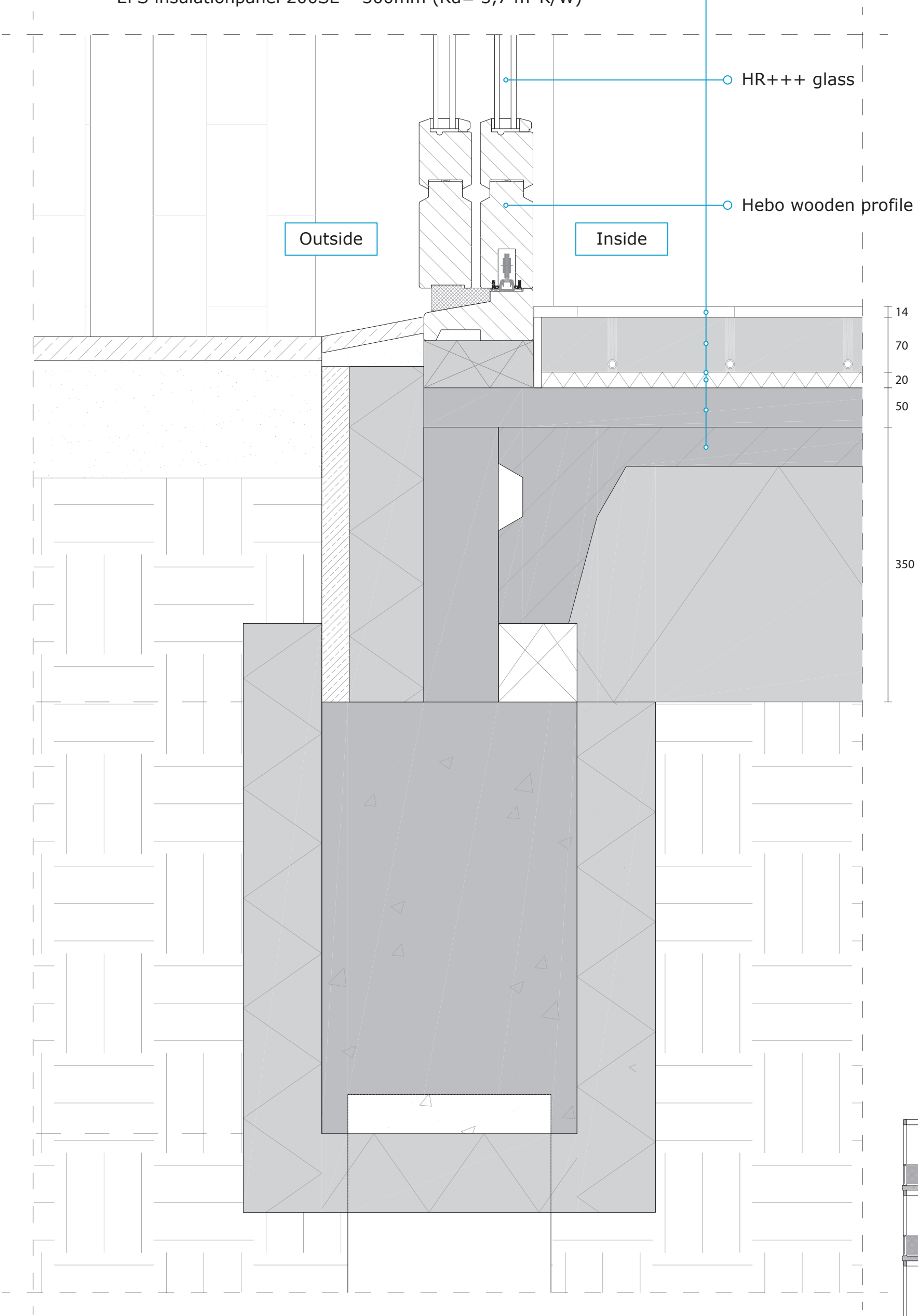


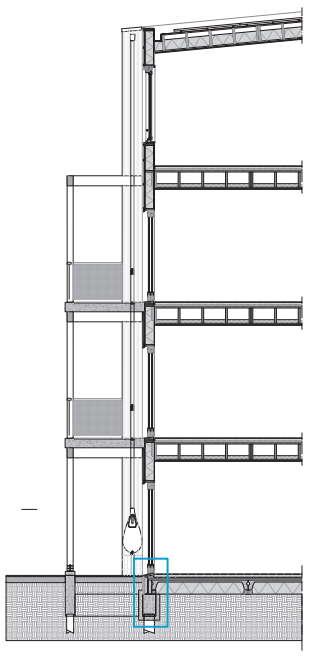
DETAIL 4

CONNECTION OF THE WINDOW, FLOOR AND FOUNDATION

Ground floor - 504mm (Rd= 4,25 m²K/W):

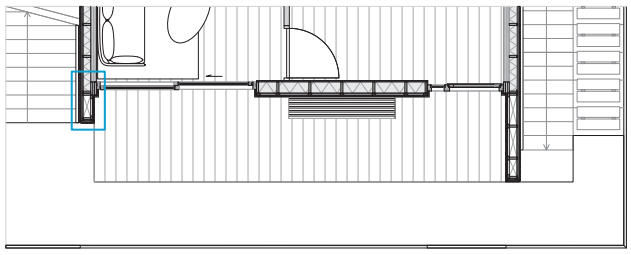
- Engineered parquet - 14mm
- Screed with floor heating - 70mm
- PE protective film
- XPS insulation - 20mm (Rd= 0,55 m²K/W)
- Compressive layer - 50 mm
- Dycore ribbed concrete floor - 350mm
  - EPS insulationpanel 200SE – 300mm (Rd= 3,7 m²K/W)

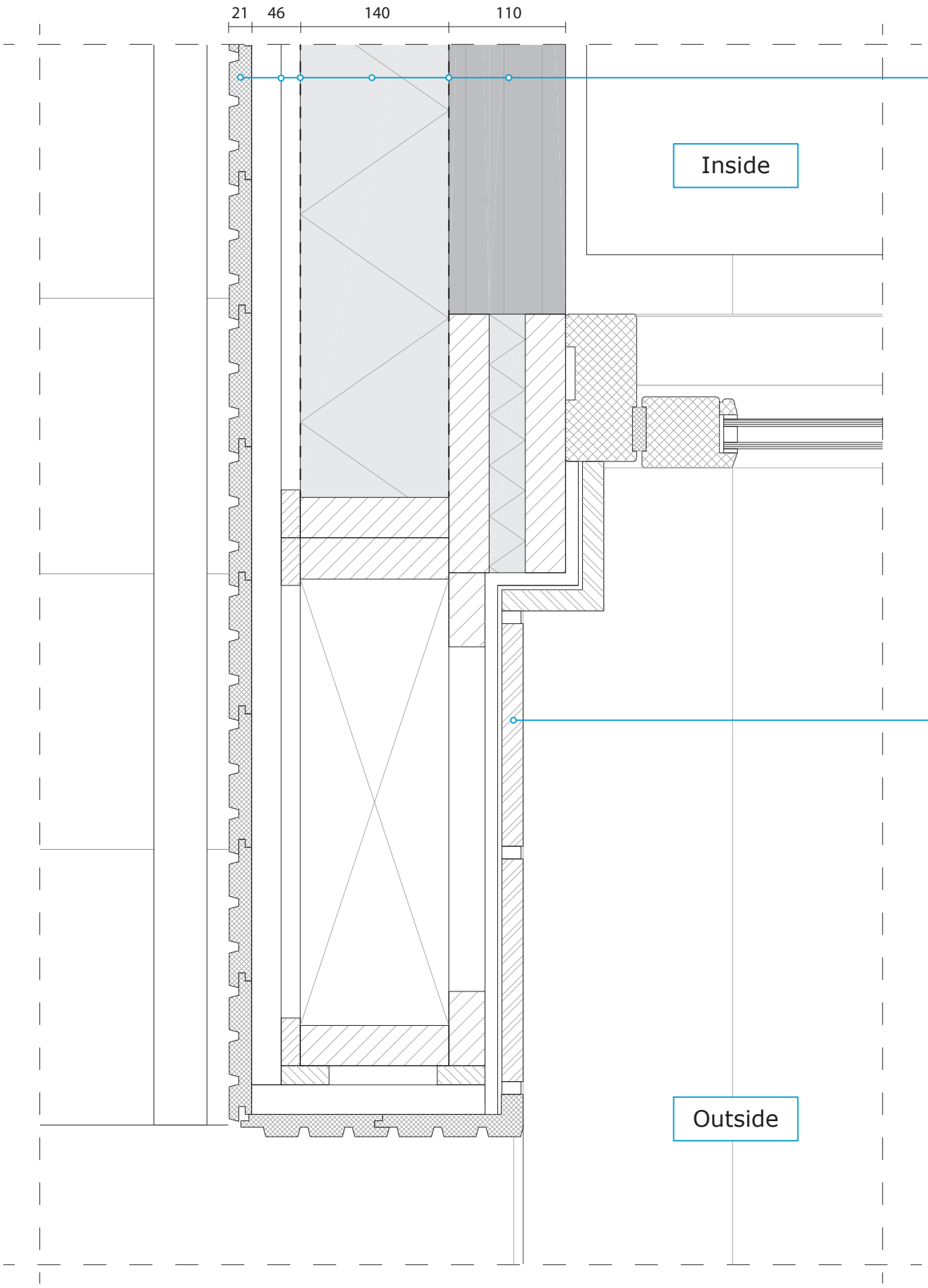




DETAIL 5

HORIZONTAL CONNECTION OF THE FACADE AND SLIDING DOORS





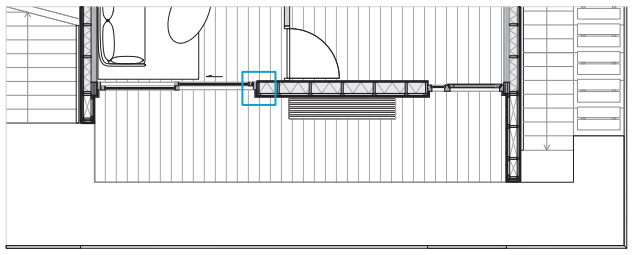
Exterior wall CLT - 317mm
(Rd= 4,7 m²K/W):

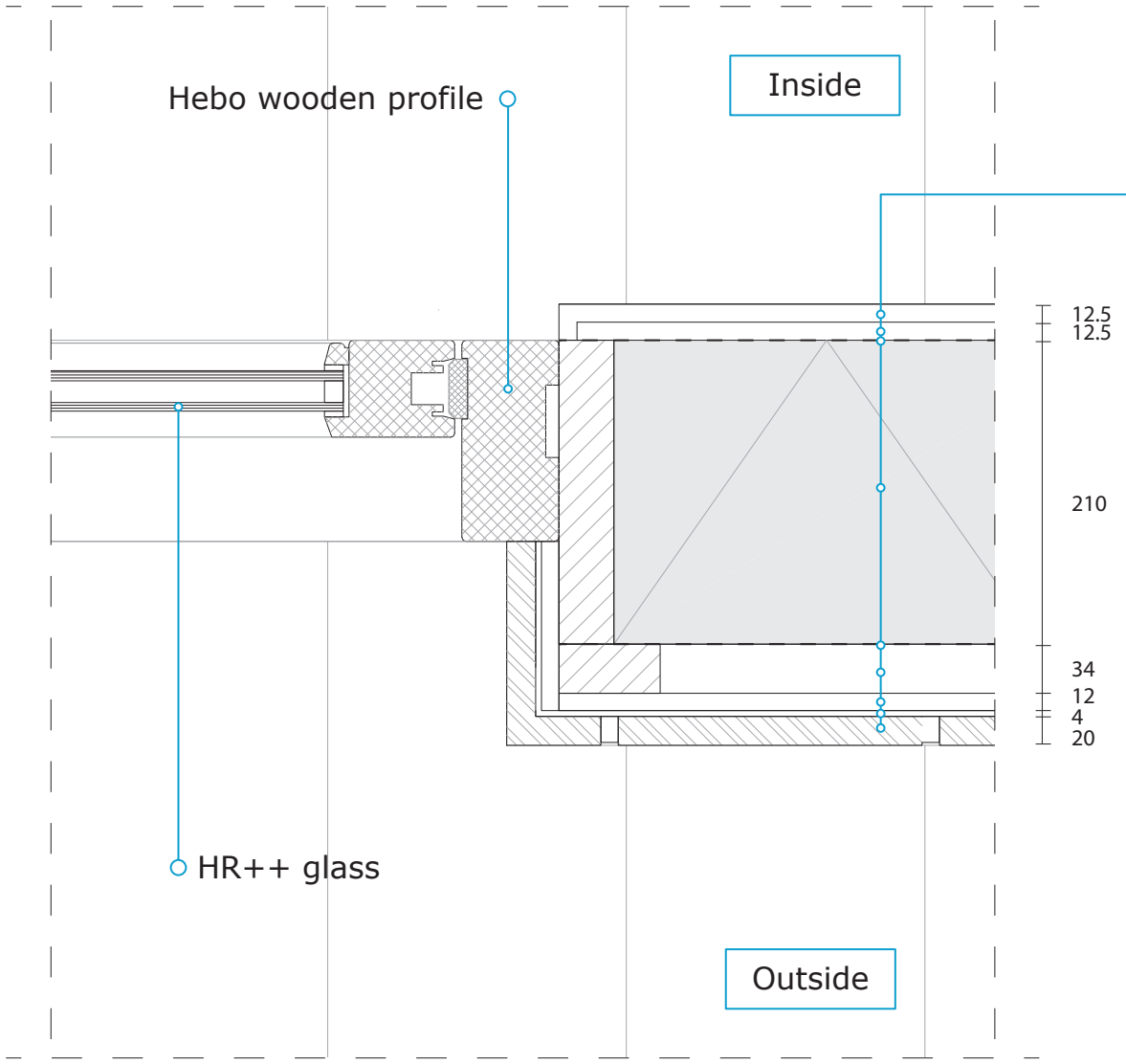
Accoya wood panels - 21mm
Framework (cavity) - 46 mm
- Horizontal 28 x 48
- Vertcial 18 x 45
Breather membrane
Timber frame structure
- EverUse Circular Insulation - 140mm (Rd= 3,5 m²K/W)
Vapour barrier
CLT wall - 110mm (Rd = 1,2 m²K/W)

Glazed tiles/glazes brick strips

DETAIL 6

HORIZONTAL CONNECTION OF THE FACADE AND SLIDING DOORS



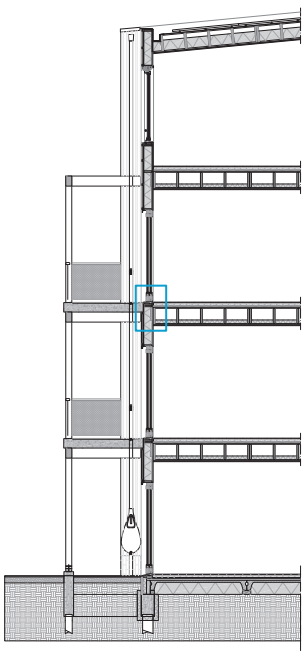


Exterior wall - 333mm (Rd= 5,5 m²K/W):

- Gypsum board - 12.5mm
- Gypsum board - 12.5mm
- Vapour barrier
- Timber frame structure
  - EverUse Circular Insulation - 210mm (Rd= 5,5 m²K/W)
- Breather membrane
- Framework (cavity) - 34mm
- Fiber cement board - 12mm
- Glue - 4mm
- Glazed brick slips - 20mm

DETAIL 7

CONNECTION OF THE FACADE, BALCONY AND SLIDING DOORS



Floor - 586mm:

- Engineered parquet - 14mm
- Screed with floor heating - 70mm
- PE protective film
- XPS insulation - 20mm (Rd= 0,55 m²K/W)
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm
- Kerto ripa prefab floor - 405mm
  - Mineral wool - 90mm (Rd= 2,6 m²K/W)
- Resilient bar - 27mm
- Gypsum board - 12.5mm
- Gypsum board - 12.5mm

Outside

Inside

HR+++ glass

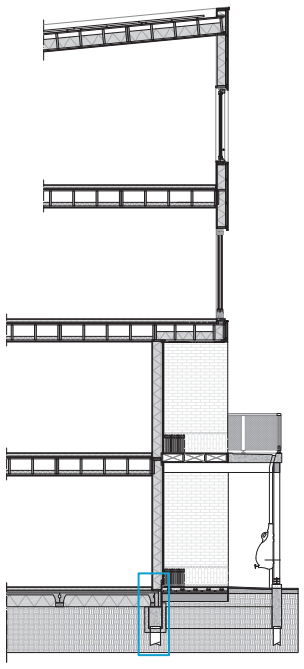
Hebo wooden profile

14
70
20
12.5
12.5
405
27
12.5
12.5

21 46 210 12.5 12.5

DETAIL 8

CONNECTION OF THE FACADE AND FOUNDATION



Ground floor - 504mm (Rd= 4,25 m²K/W):

- Engineered parquet - 14mm
- Screed with floor heating - 70mm
- PE protective film
- XPS insulation - 20mm (Rd= 0,55 m²K/W)
- Compressive layer - 50 mm
- Dycore ribbed concrete floor - 350mm
  - EPS insulationpanel 200SE – 300mm (Rd= 3,7 m²K/W)

