ACTIVE AMSTERDAM

THE CITY AS A HEALTHY LIVING ENVIRONMENT

Drawings - February 1st 2019
Josien Gankema - 4527275

Dutch Housing Graduation Studio spring 2018
Theo Kupers, Ferry Adema, Pierijn van der Putt
Charlotte van Wijk

THE BLUE STAIRS

HEALTHY LIVING IN ACTIVE AMSTERDAM

Definition of city families from the Research Report:
Parents work in the city centre and have a busy social life close to their homes. Family compositions are very diverse.

Large family
For example two parents and more than 3 children
or a composed family with children that come to stay in the weekends

Middle size family
For example two parents and one or two children
or one parent with two children

Small family
For example a single parent with one child or a couple

Target group city families

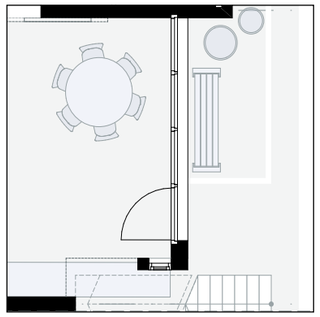
Take aways from the Research Report on how to design child friendly living environments and family friendly dwellings that encourage physical movement on a daily basis.

Child friendly living environment
Pedestrians first
Sheltered, accessible, multifunctional public space with relation to the dwellings

Fanily friendly dwelling
Storage space
Space for safe play inside and outside
Privacy for all family members
Space for working at home
Flexible and multifunctional use, changing with the families needs

Encouraging active lifestyles
Intensifying of daily movements in and around the house
Inside: Stairs as a space defining element which can double as space for storage, play or work
Outside: Active routing system to and from the dwellings.
Stairs and galleries double as place to meet and play.
Extra: add active program like swings and slides or an attractive goal at the end of a route

Dwelling design take aways

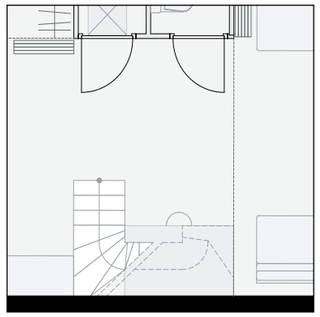


Collective outdoor space

The dwellings are connected to a inners street or gallery that is shared with their neighbours. All dwellings have a good view on these shared spaces which make them safe places for play an meeting.

Private outside space

Is an extension of the inside space
Can be well supervised from inside
Is a safe place for play
And a place for socializing and personalisation

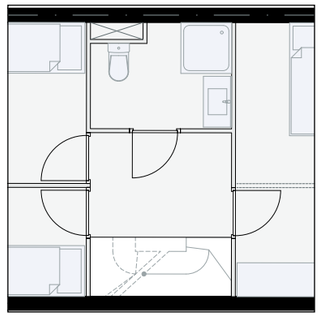


Stairs

The stairs inside are a space defining element in the living space and can have double functions. Stairs outside can double as a place to play or meet with good supervision.

Add double functions

Encorporate places for storage, work or play in the design. Use nooks, corners or spare space under stairs.

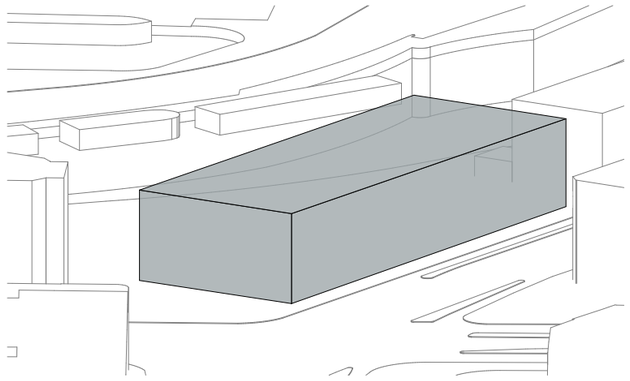


Flexible and multifunctional spaces

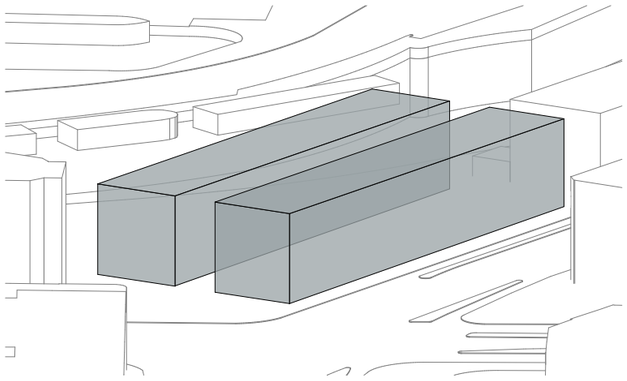
The possibility of closing off a part of the living space to be used seperatly and without disturb-ing

Change with the family

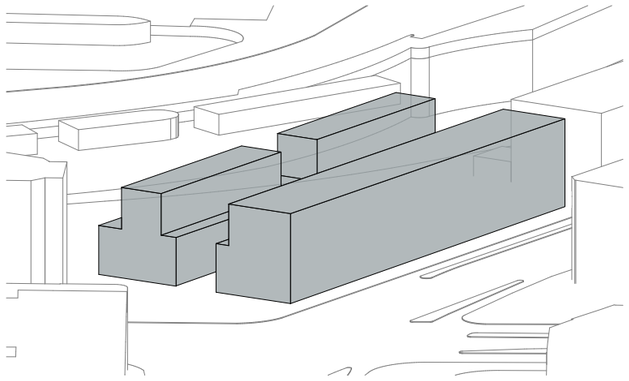
Large bedrooms can be changed into two small bedrooms or the other way around.



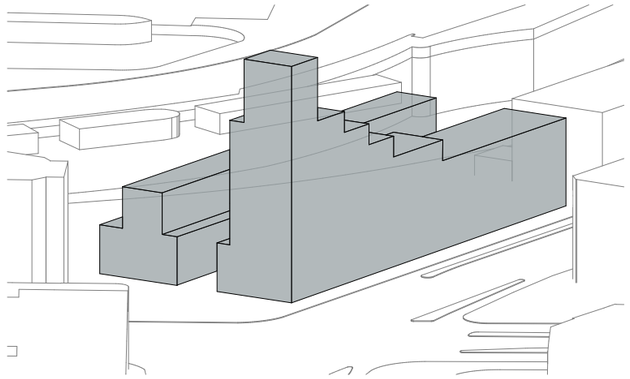
1. Volume: follow surrounding building lines



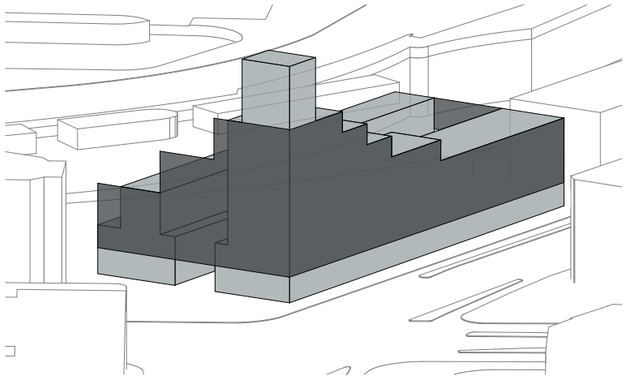
2. Access: pedestrian street



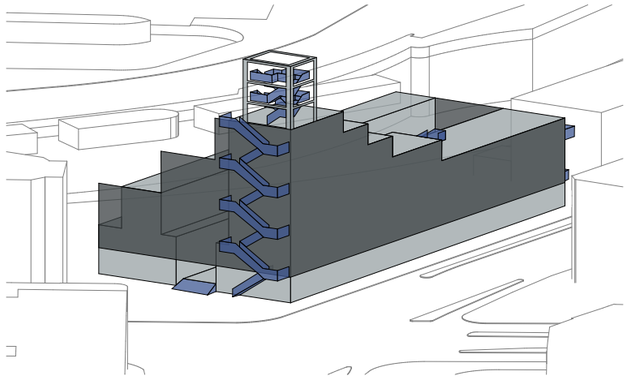
3. Outside spaces: contact and orientation



4. Tower: height accent on crossing

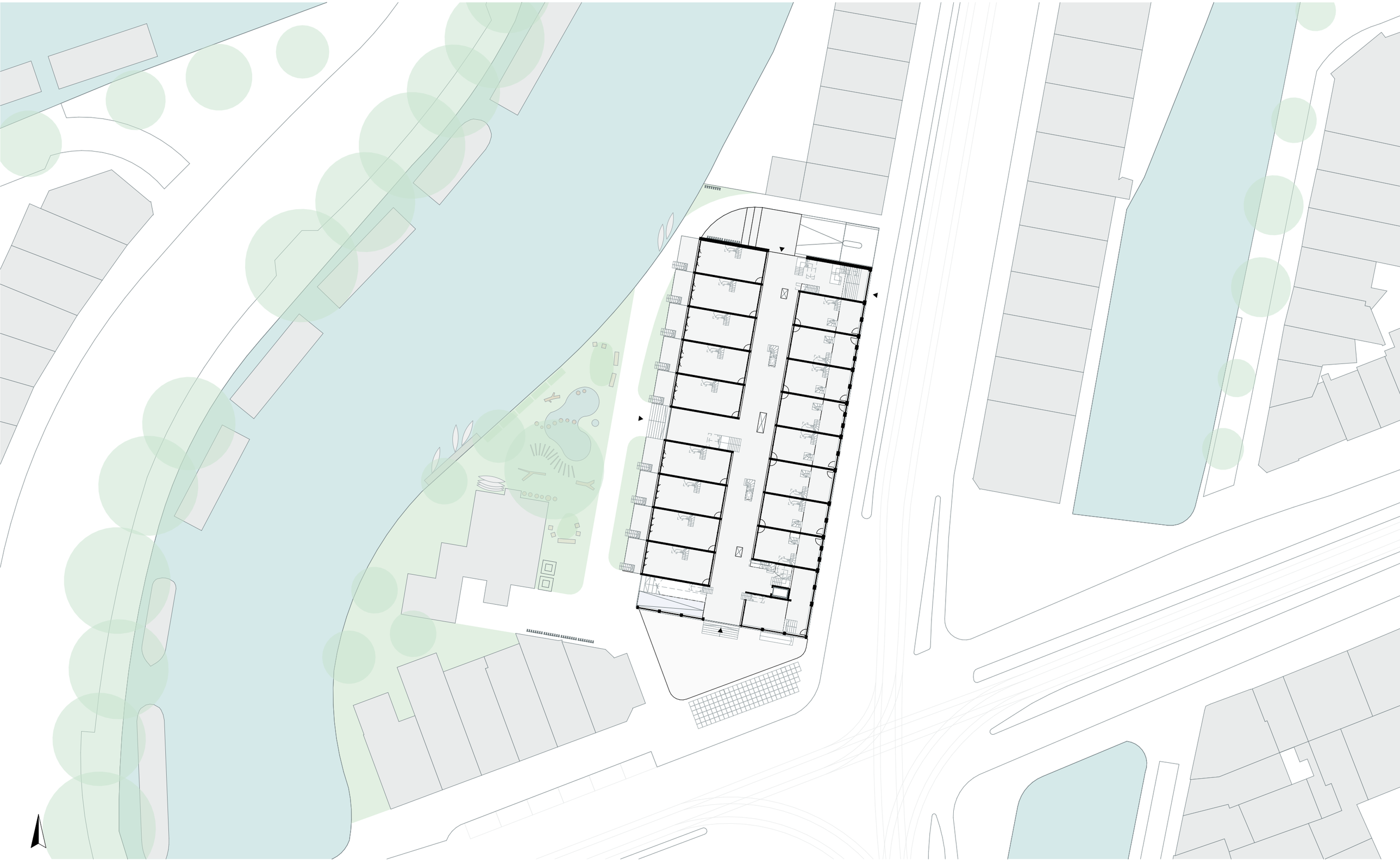


5. Wrap: protection from and reaction on context

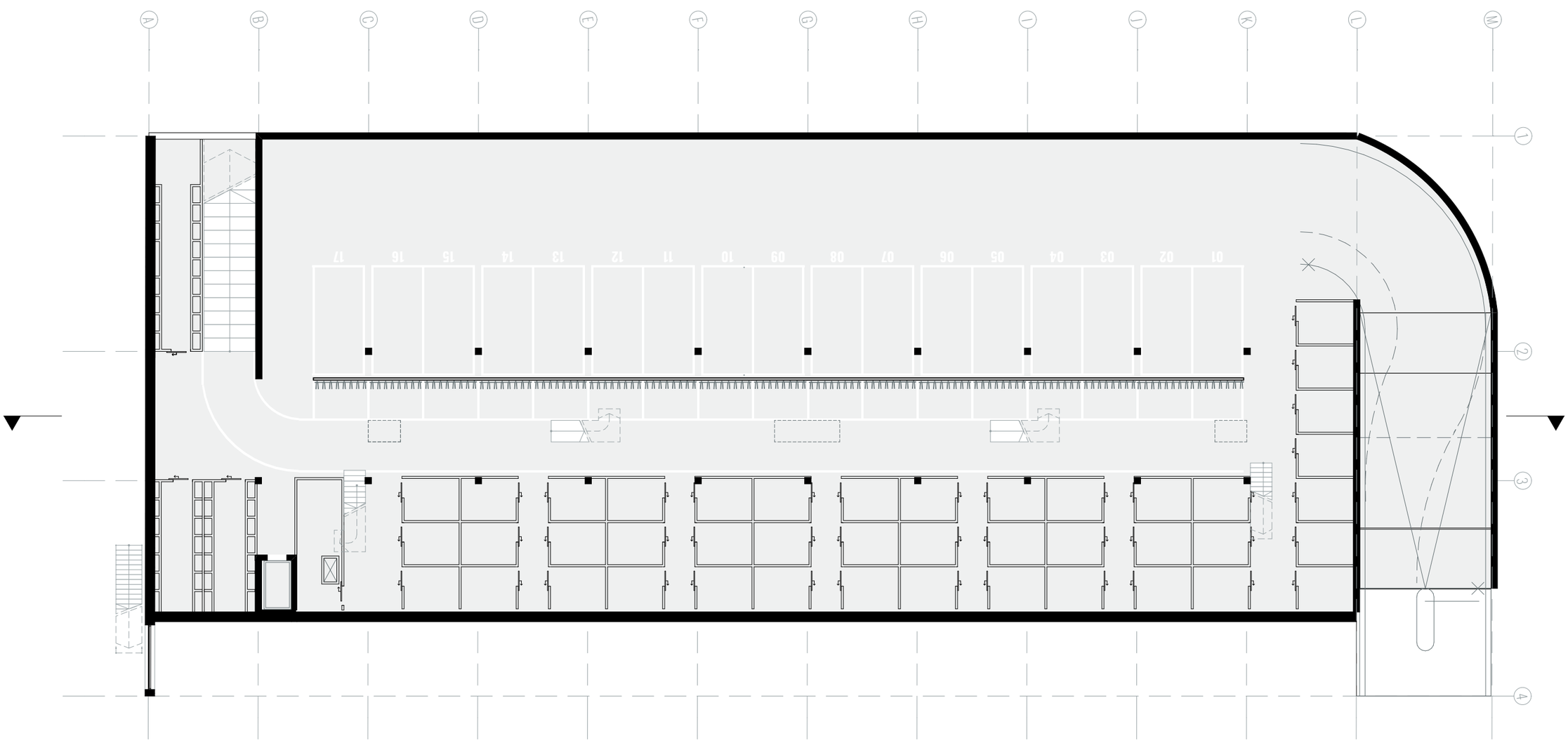


6. Stairs: active routing systems

Building volume concept

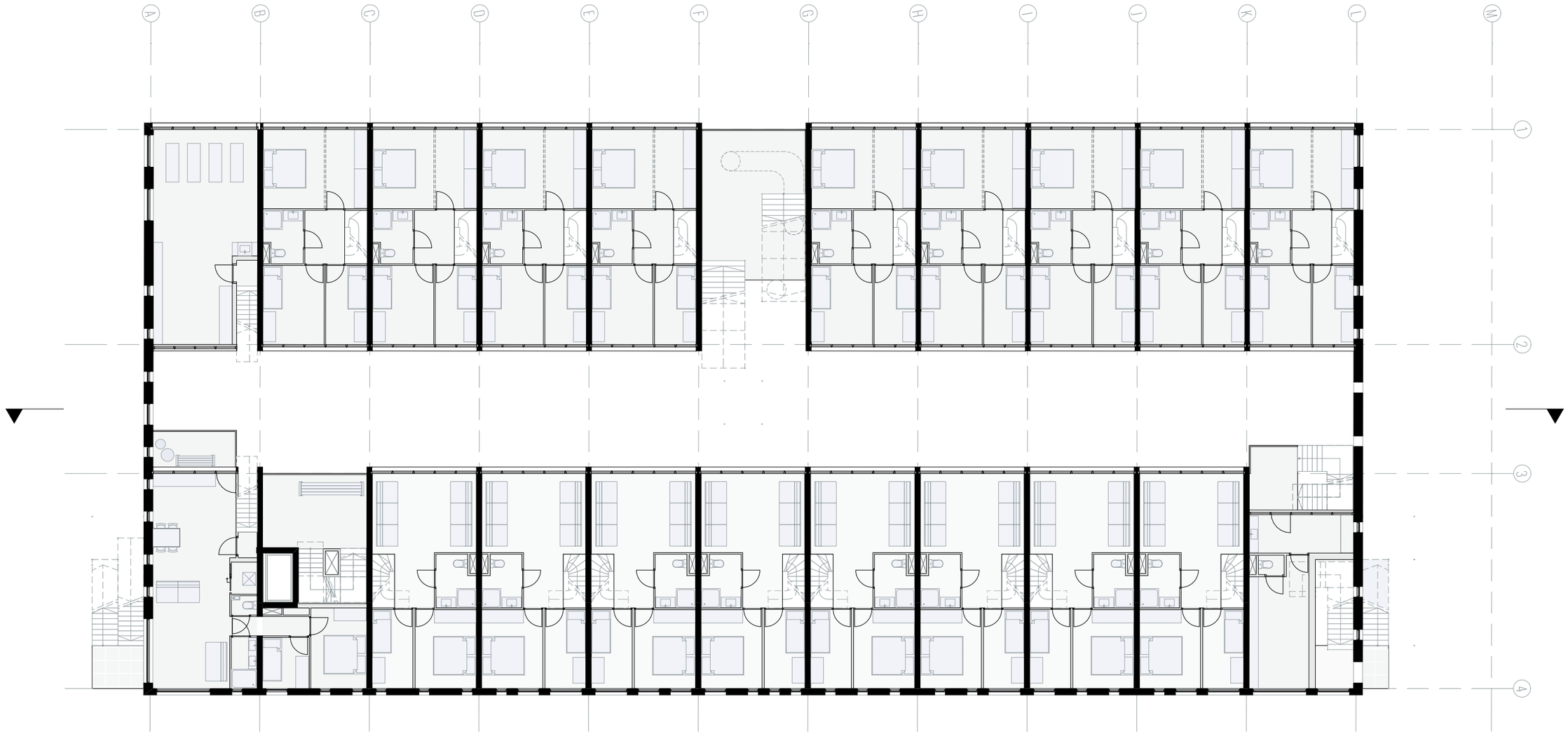


Site plan Marnixstraat 170 Amsterdam 1:500



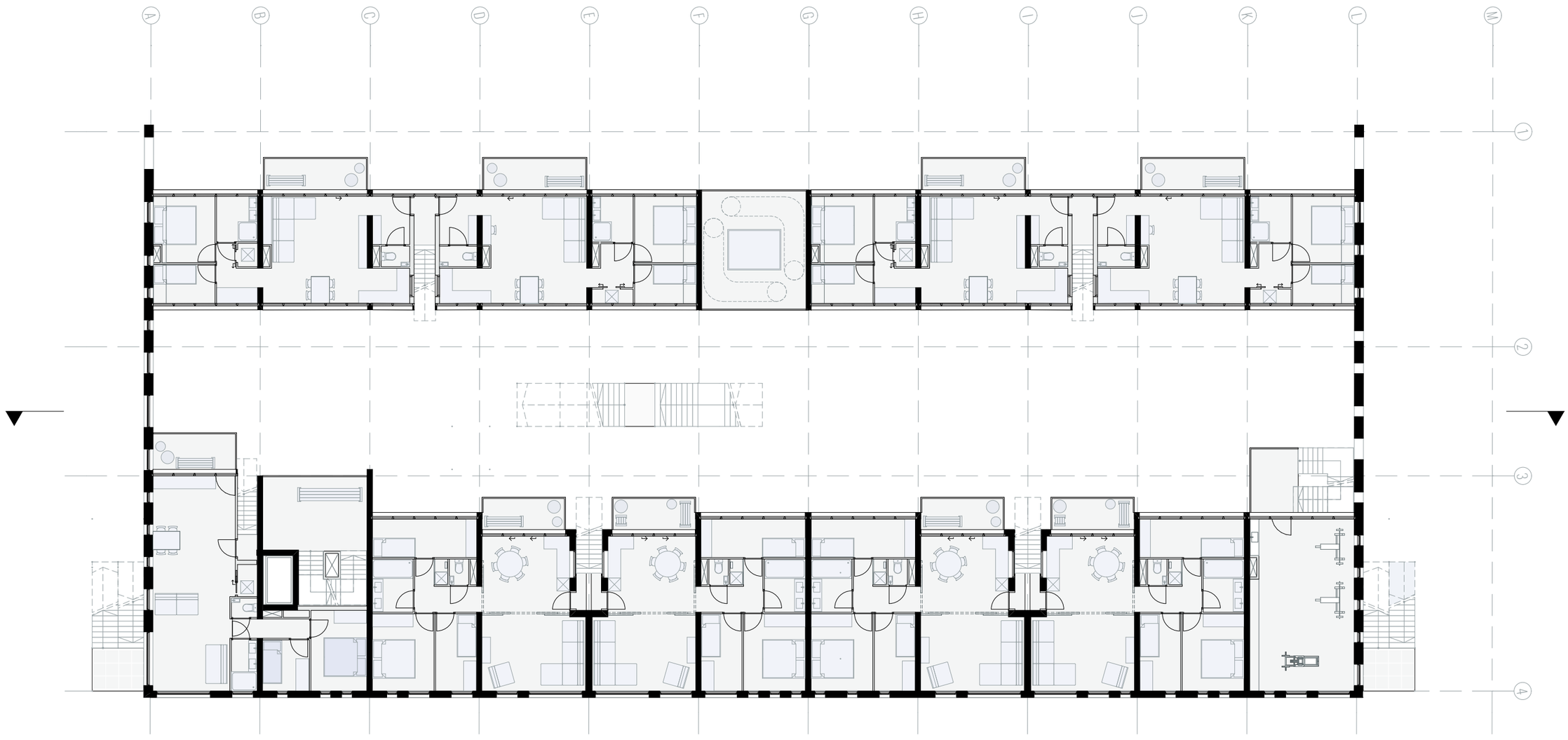
Floor plan -1 1:200

Floor plan 0 1:200

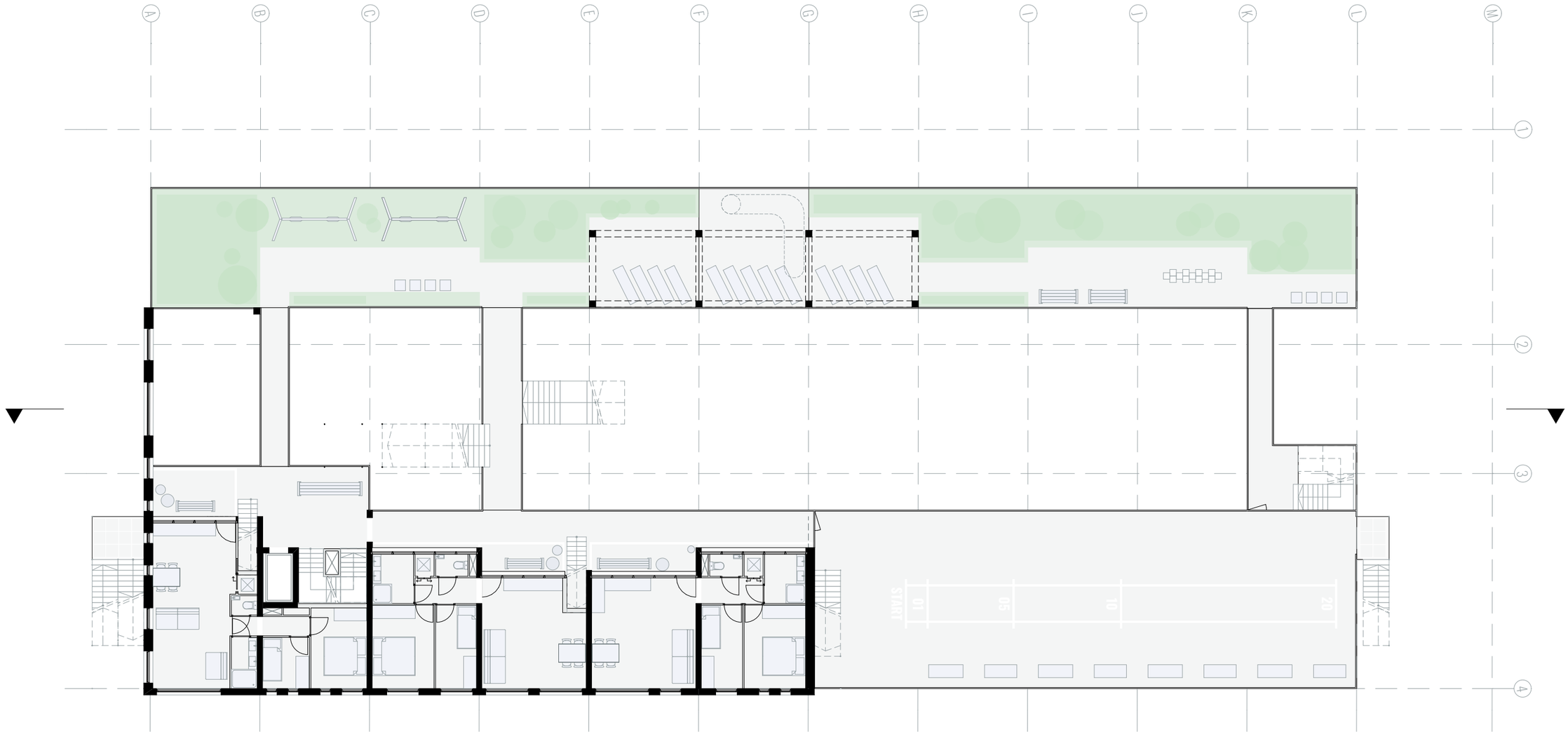


Floor plan +1 1:200

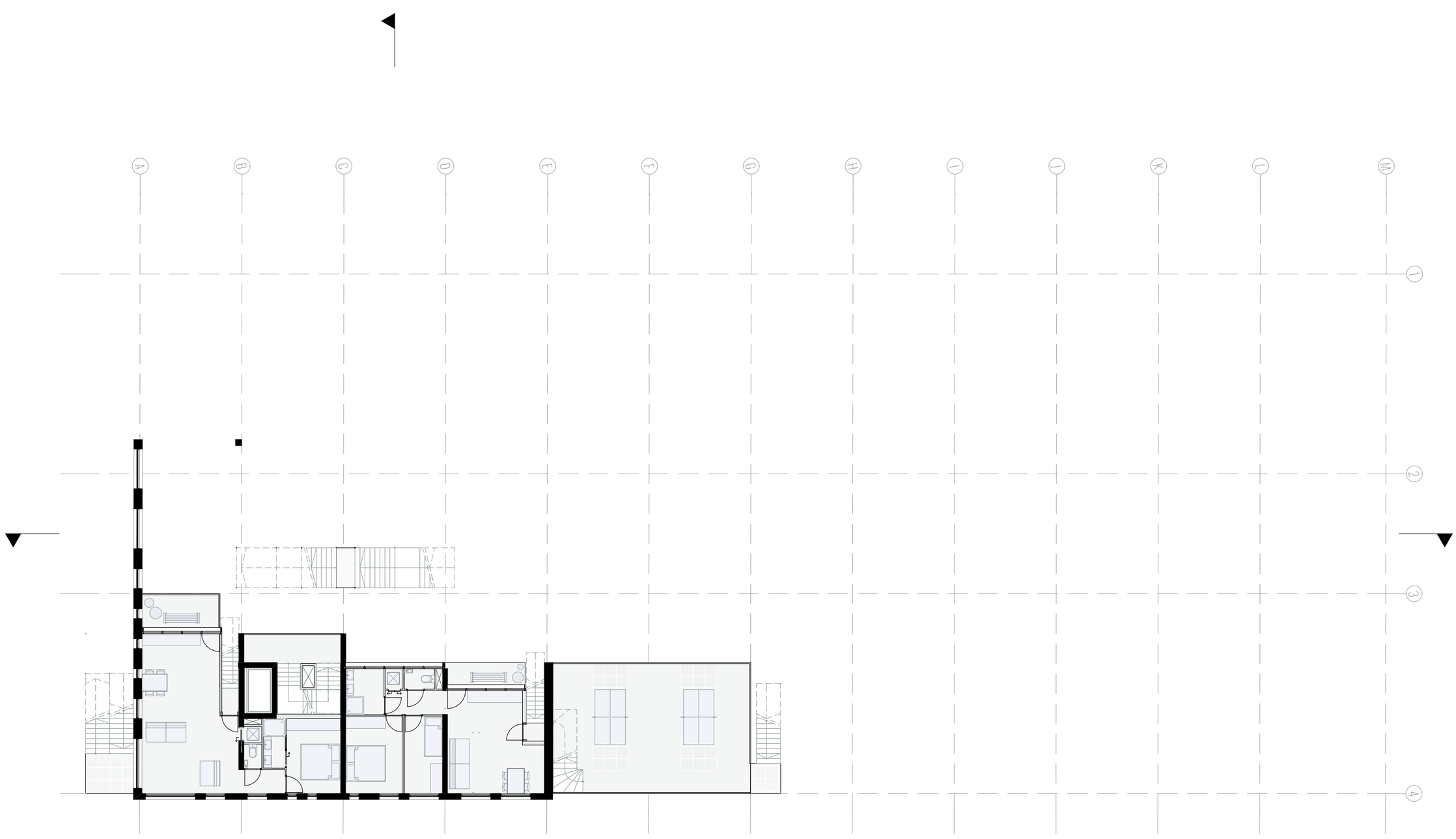
Floor plan +2 1:200



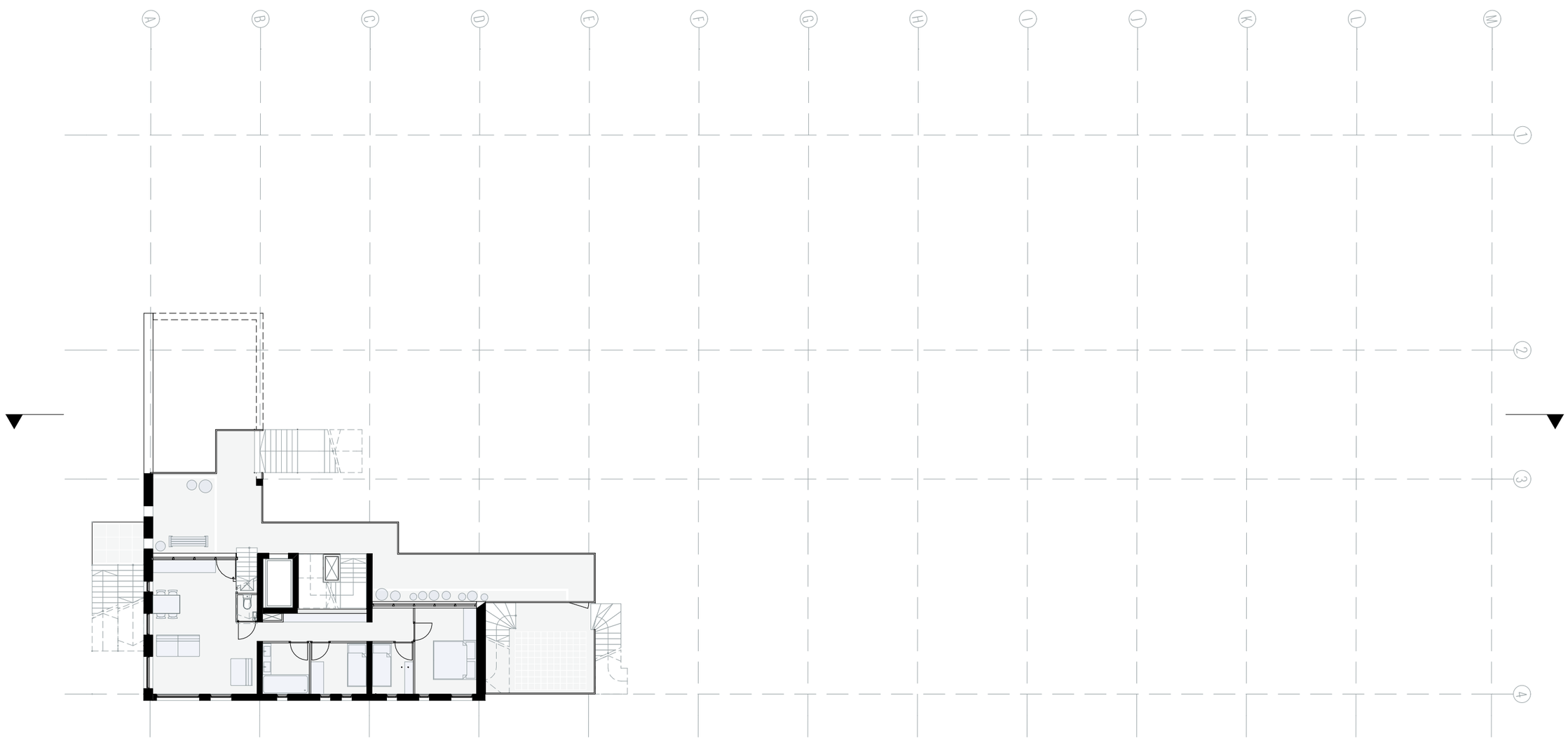
Floor plan +3 1:200



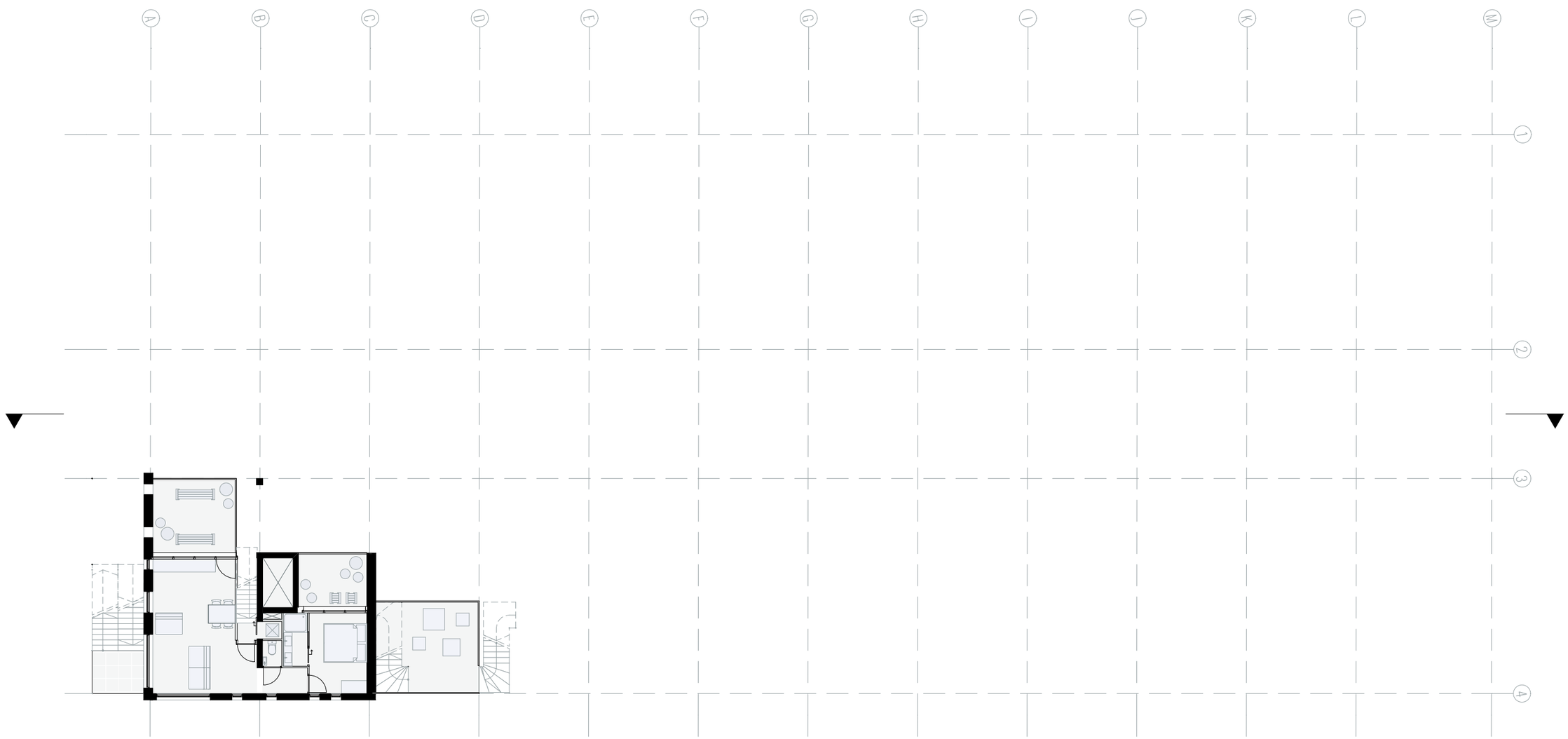
Floor plan +4 1:200



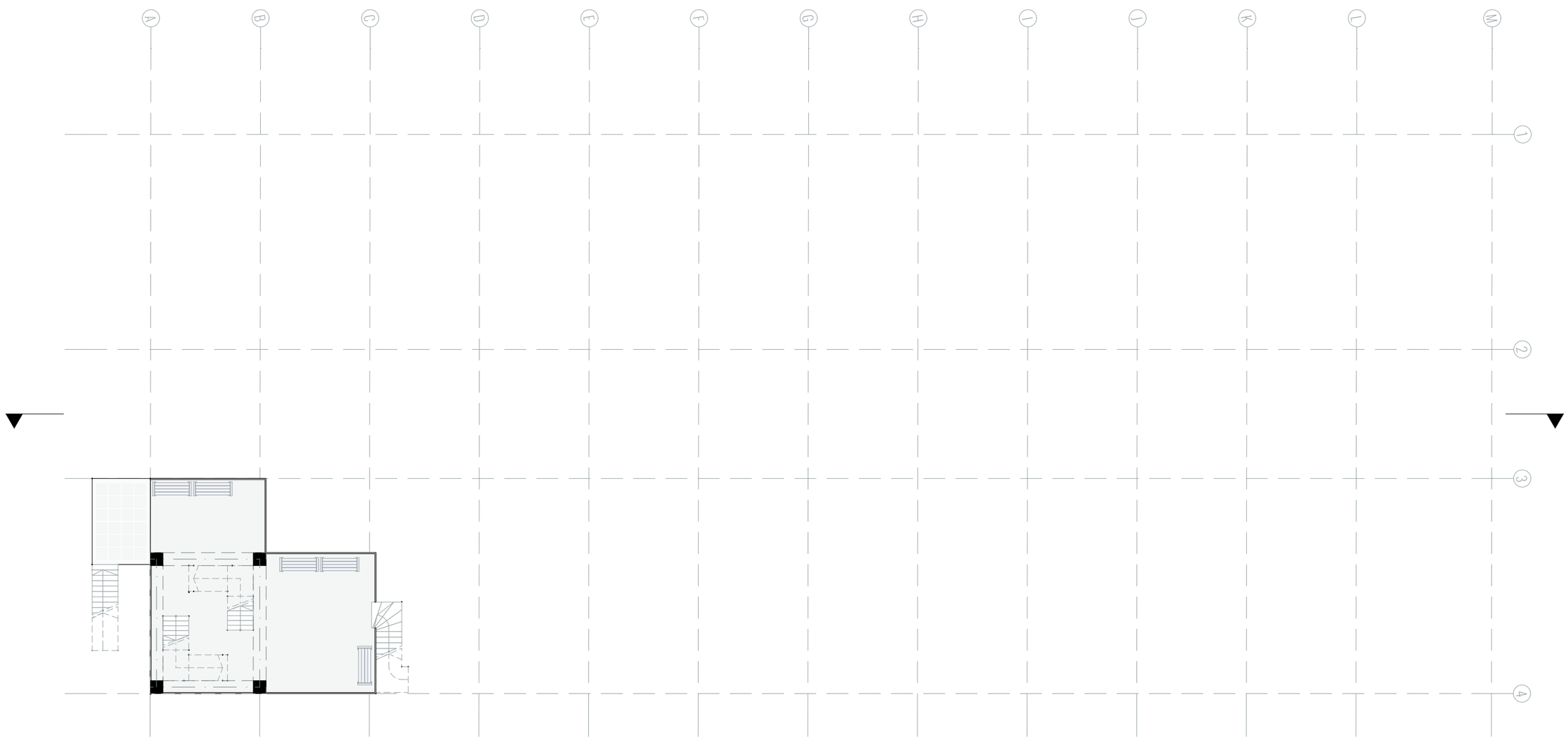
Floor plan +5 1:200



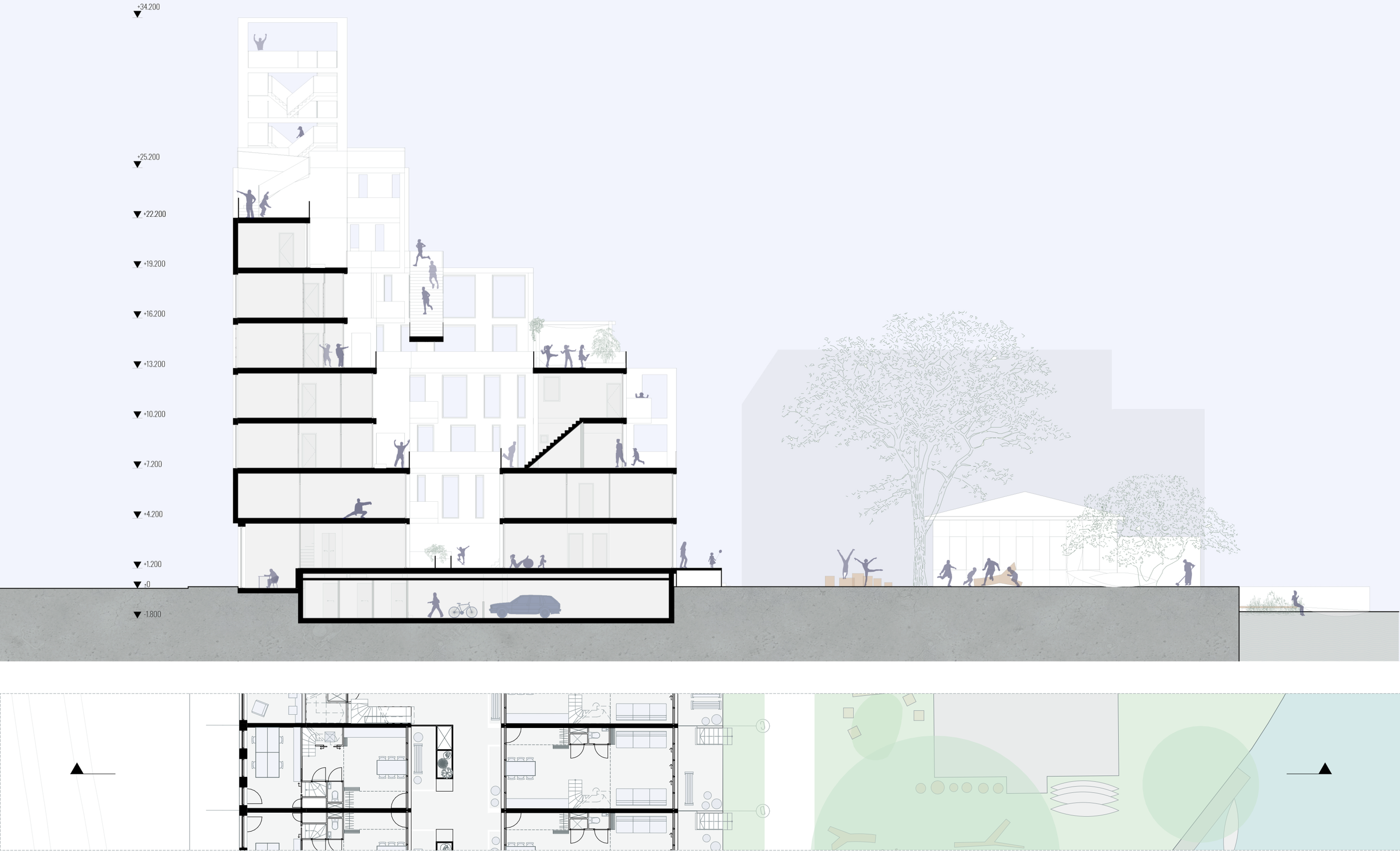
Floor plan +6 1:200



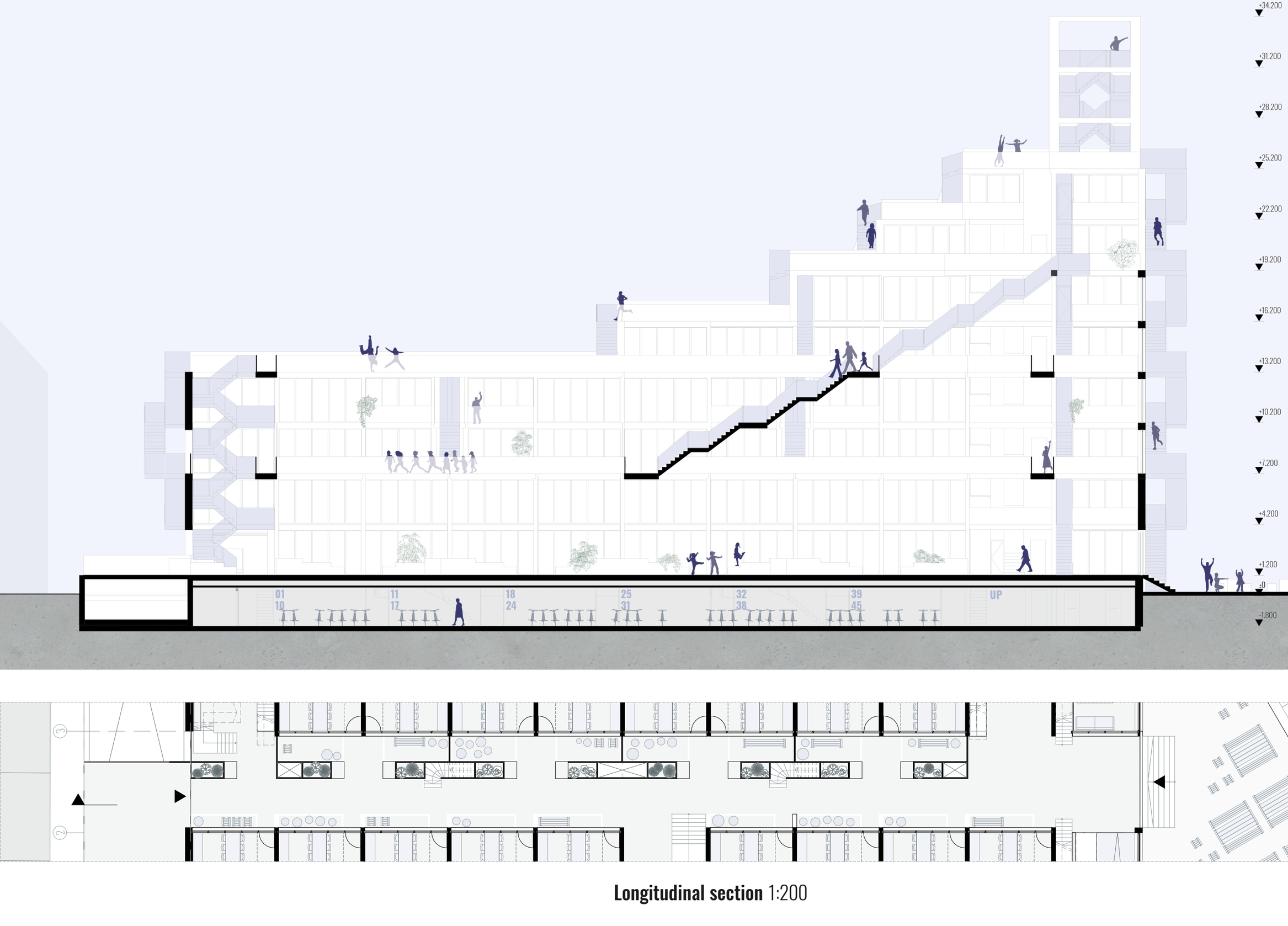
Floor plan +7 1:200



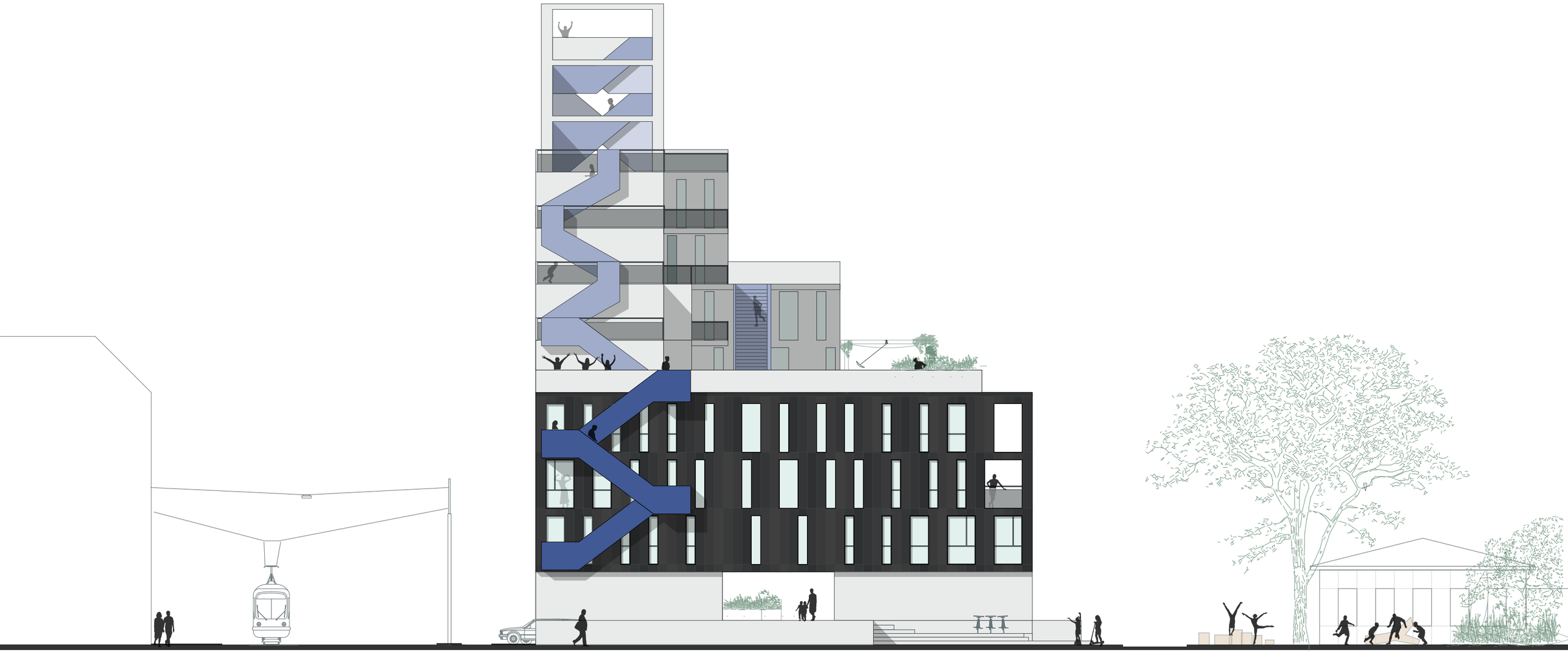
Floor plan +8 1:200



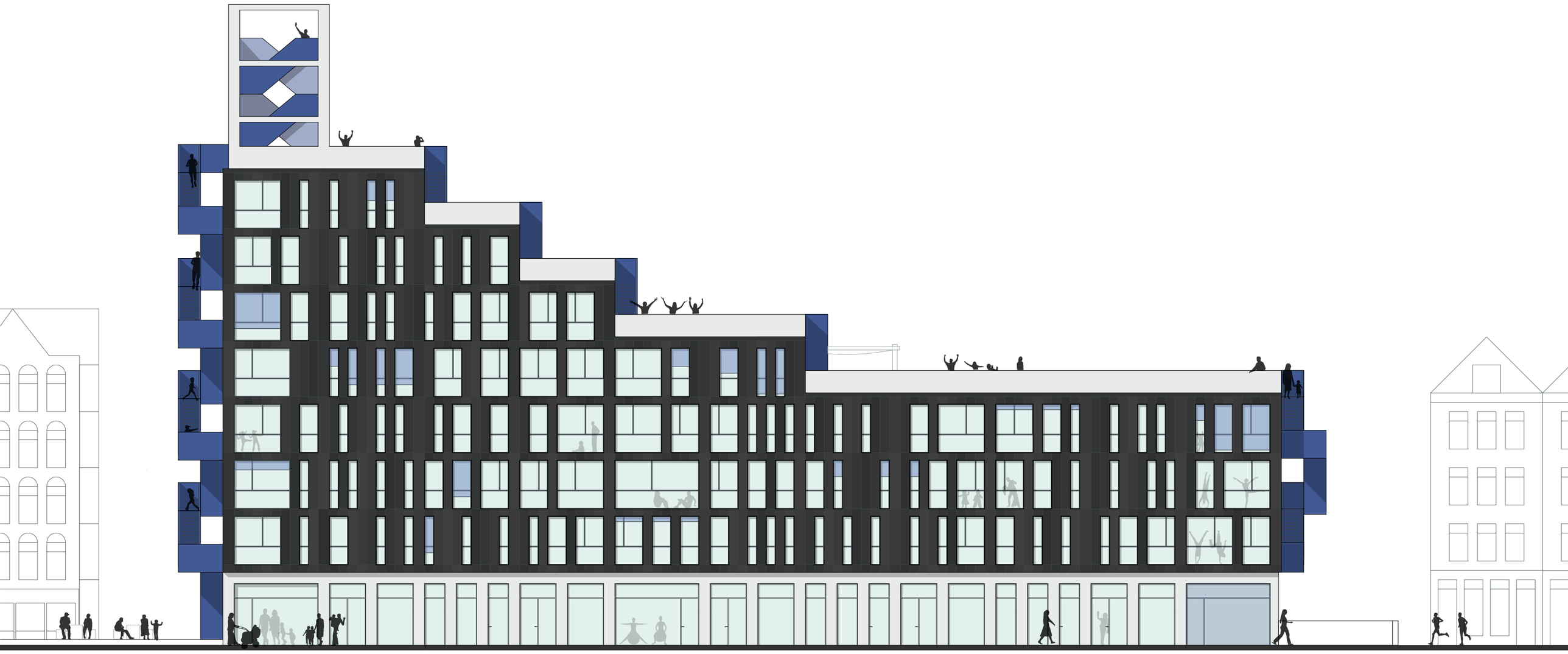
Cross section 1:200



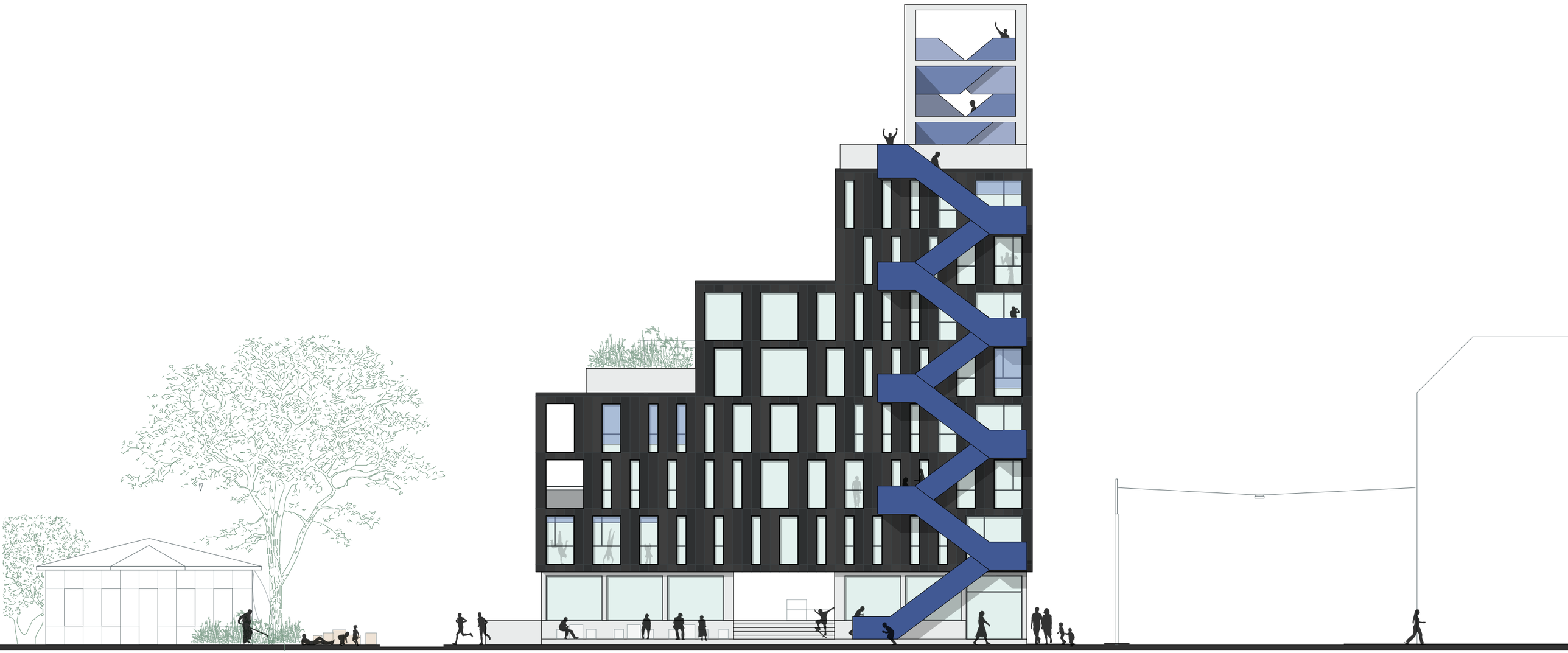
Longitudinal section 1:200



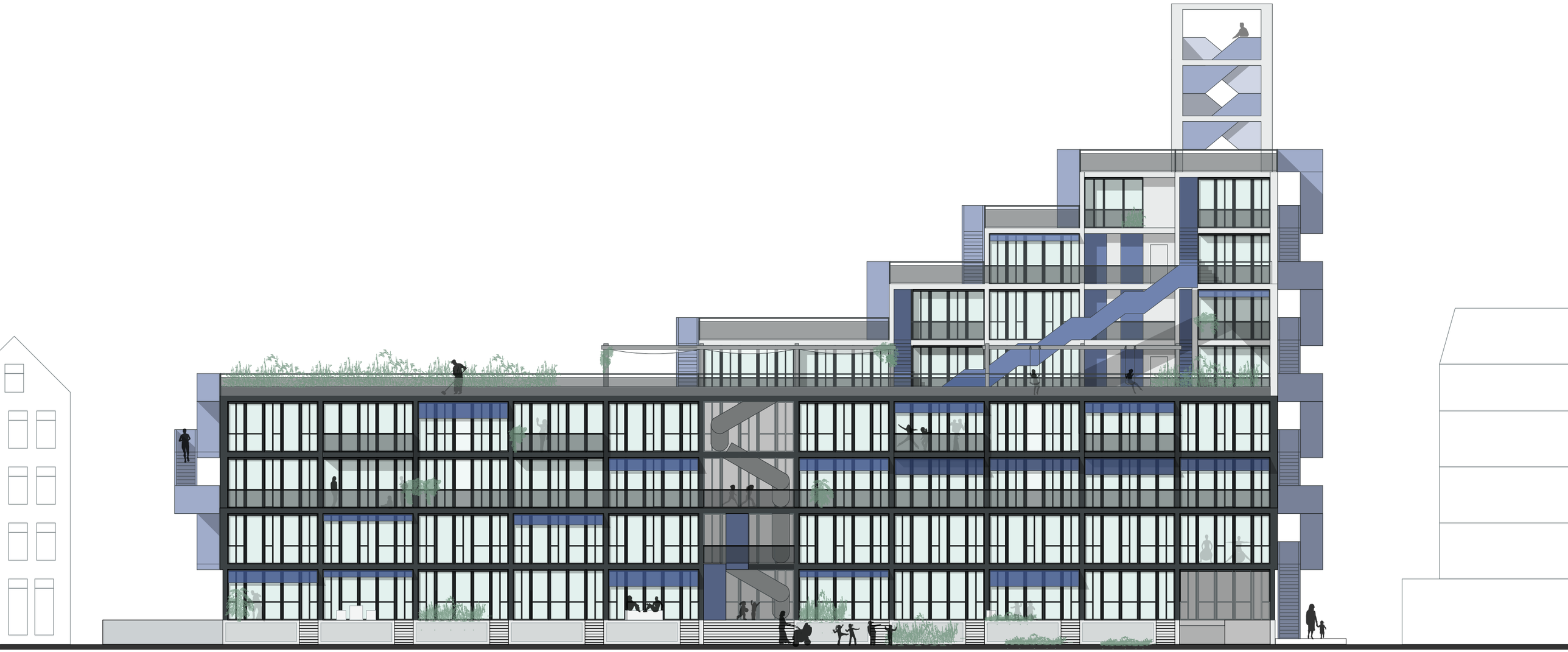
North façade 1:200



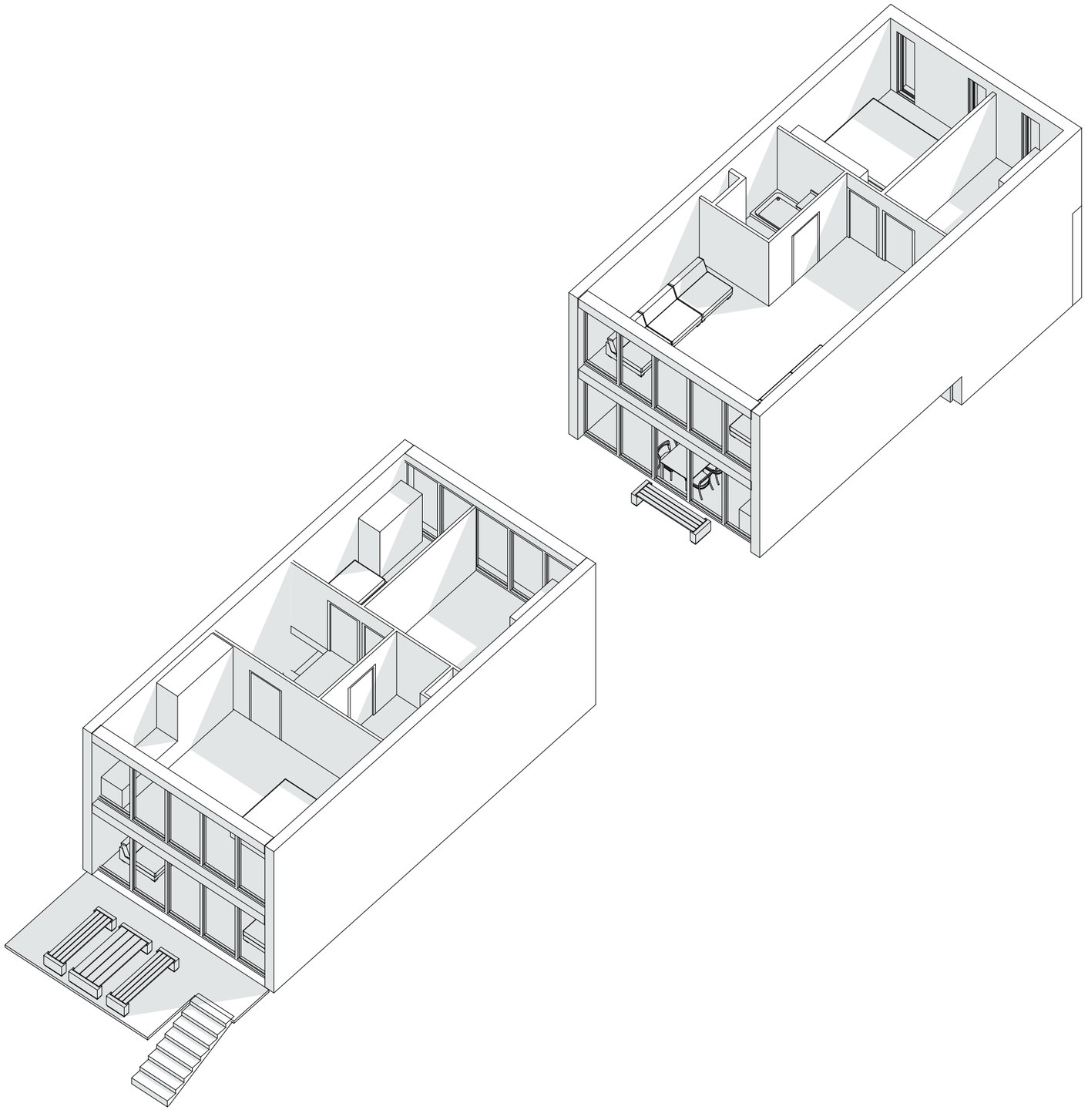
East façade 1:200



South façade 1:200

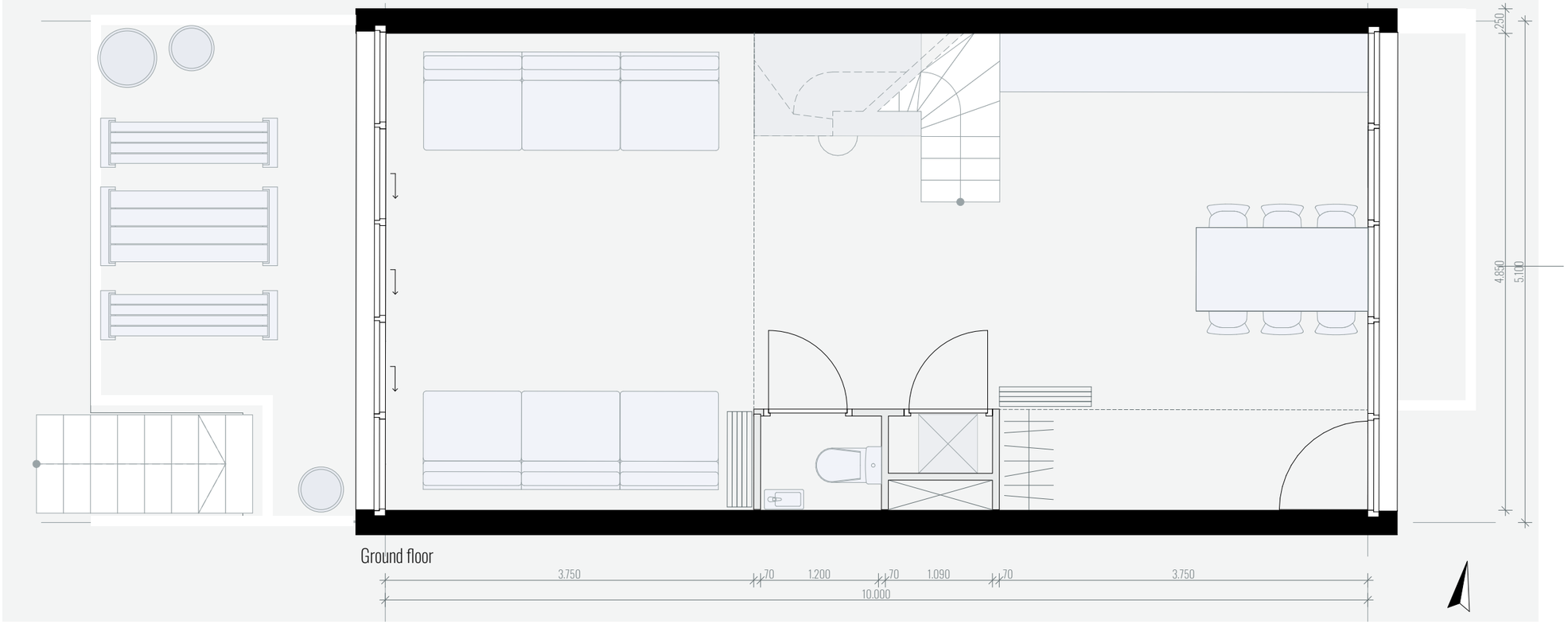


West façade 1:200



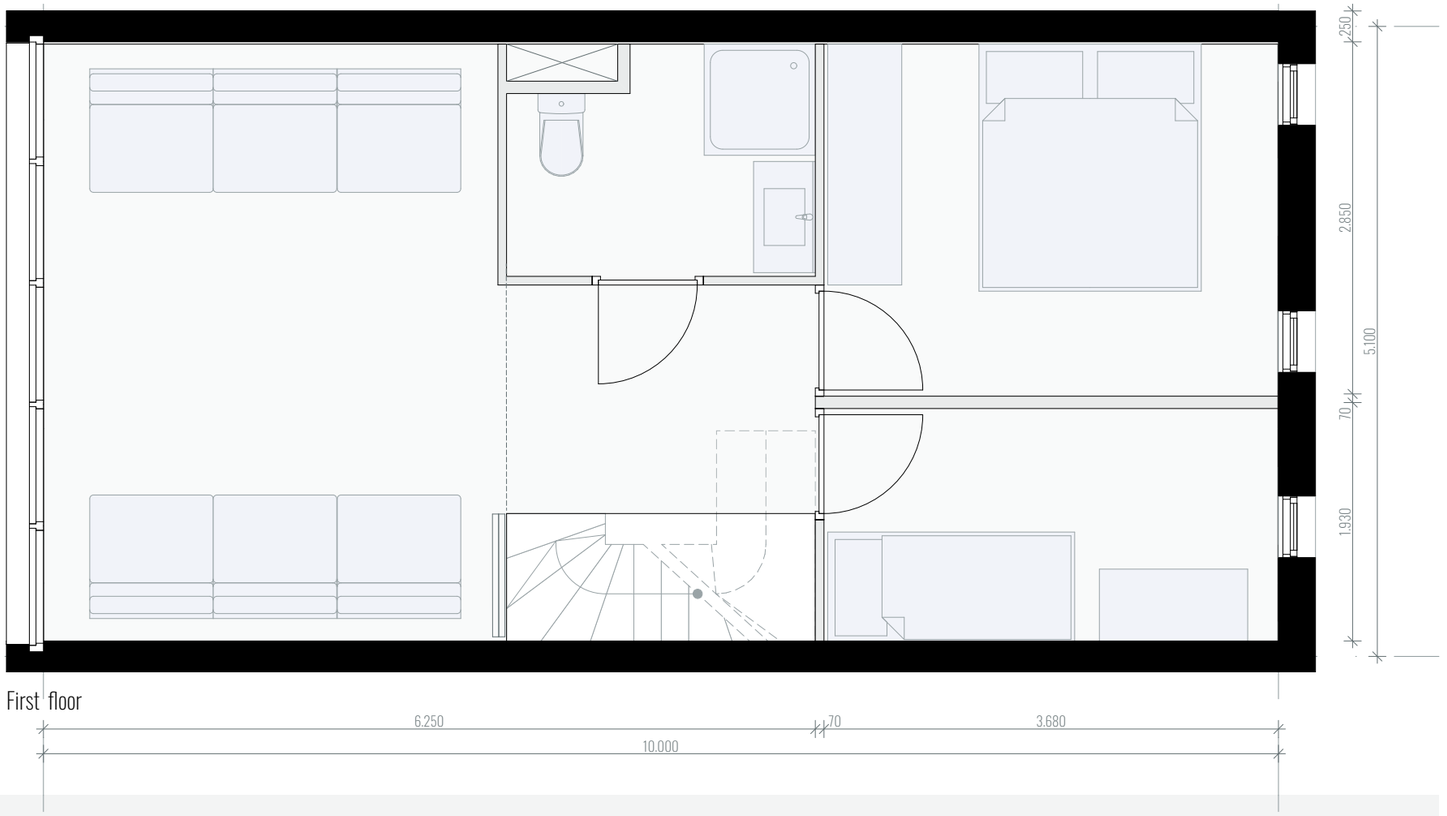
Dwelling design Maisonettes

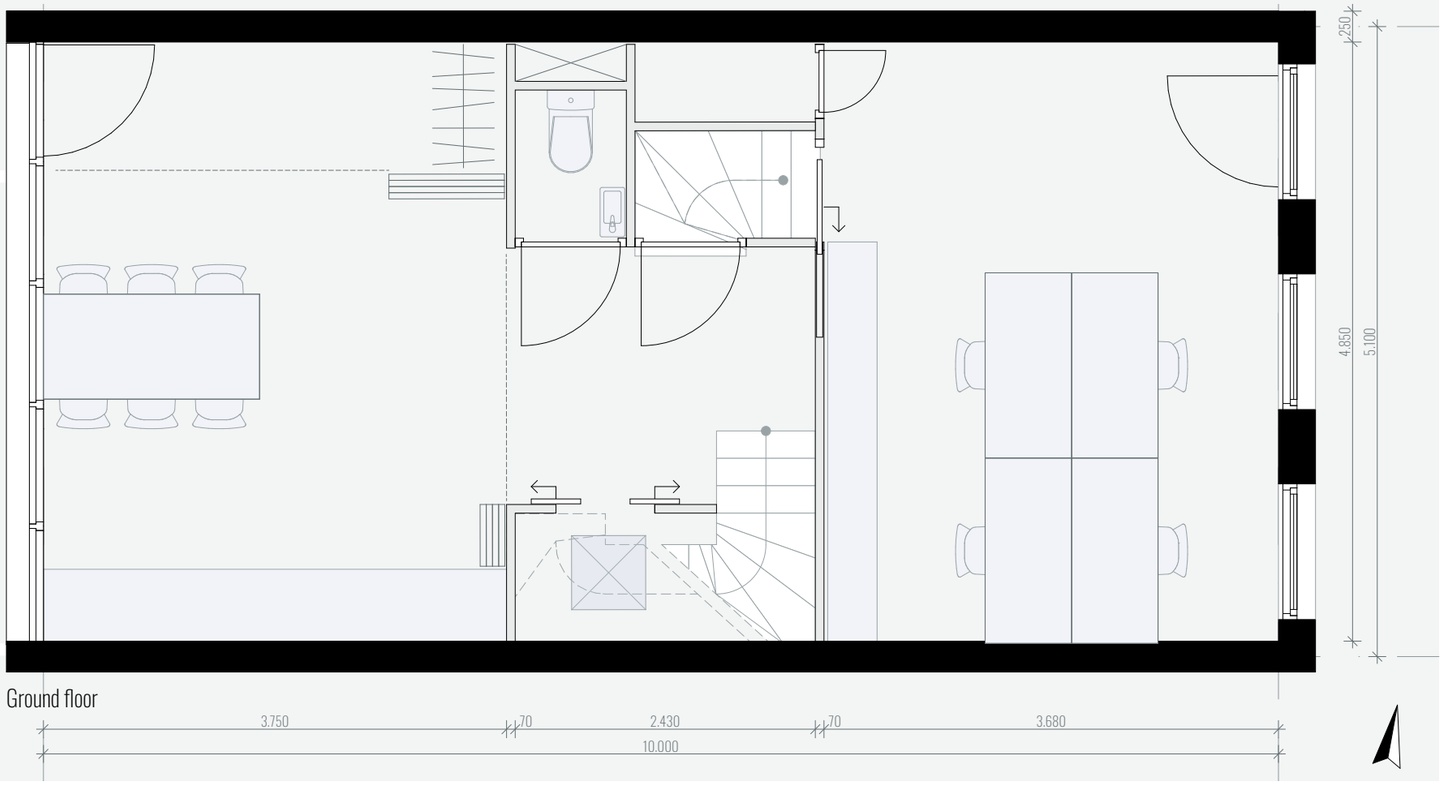
94 m2
large family
2-4 bedrooms



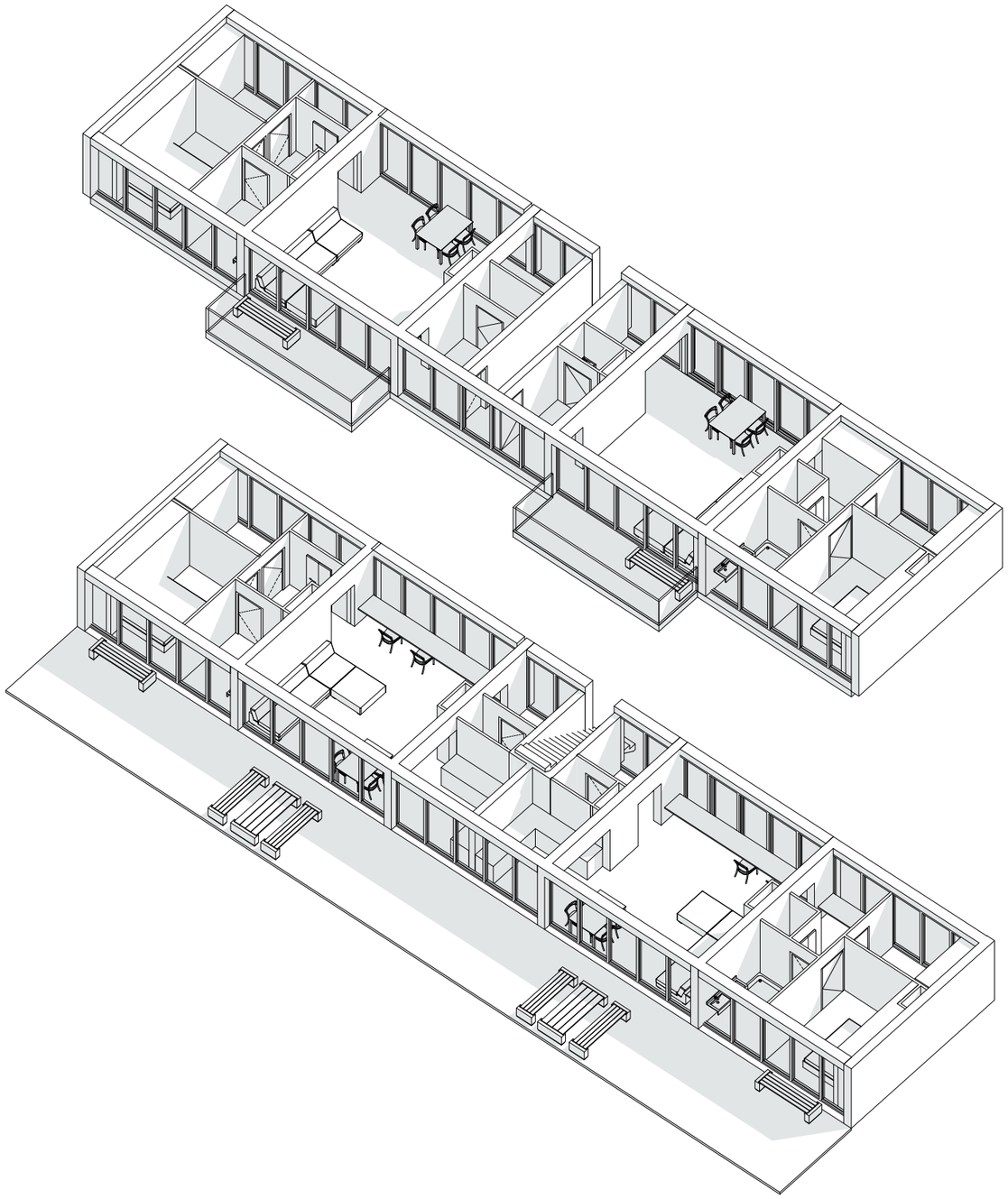
Maisonette waterside 1:50

94 m2
large family
2-4 bedrooms
or
middile size family
1-2 bedrooms + office



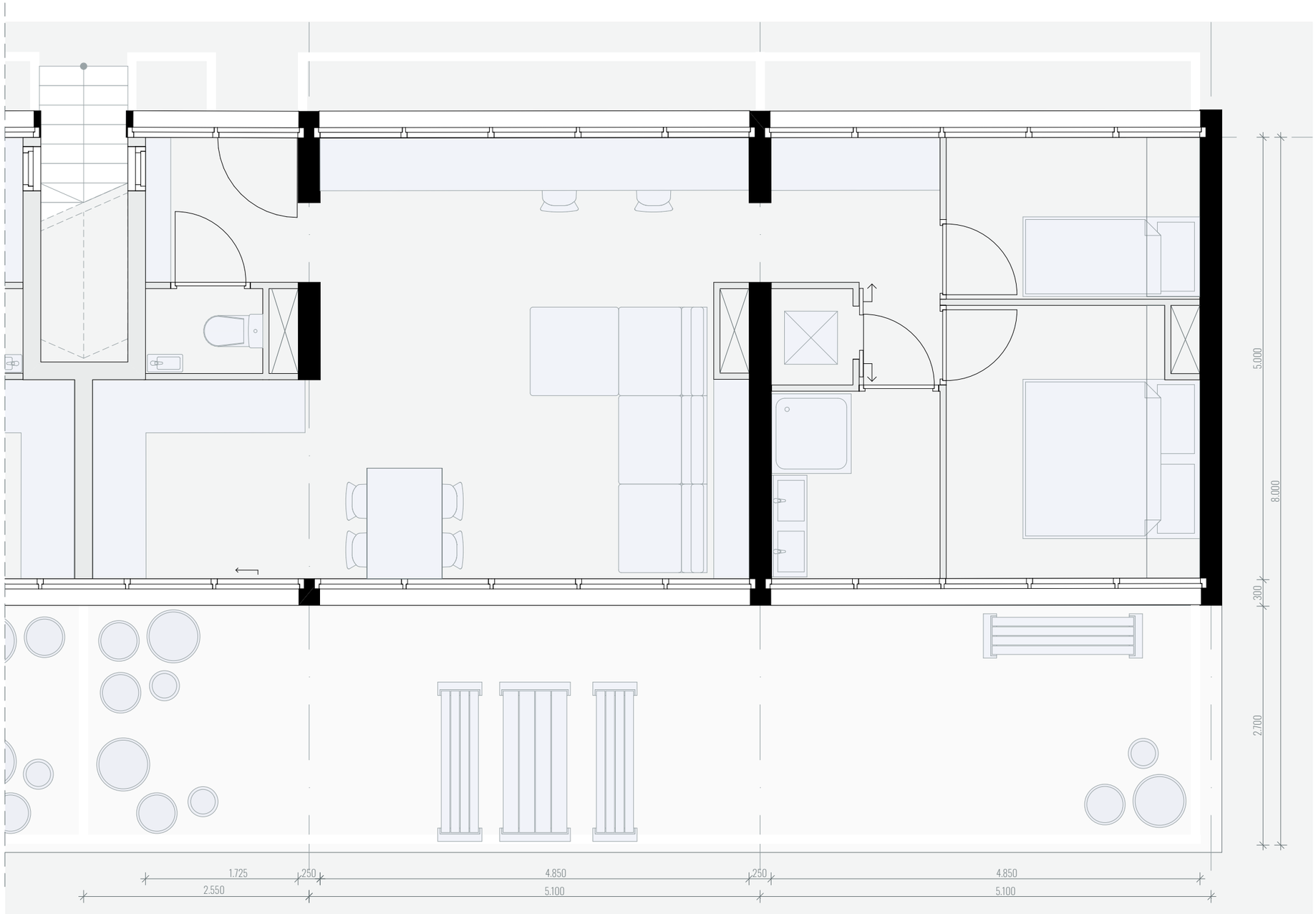


Maisonette streetside 1:50



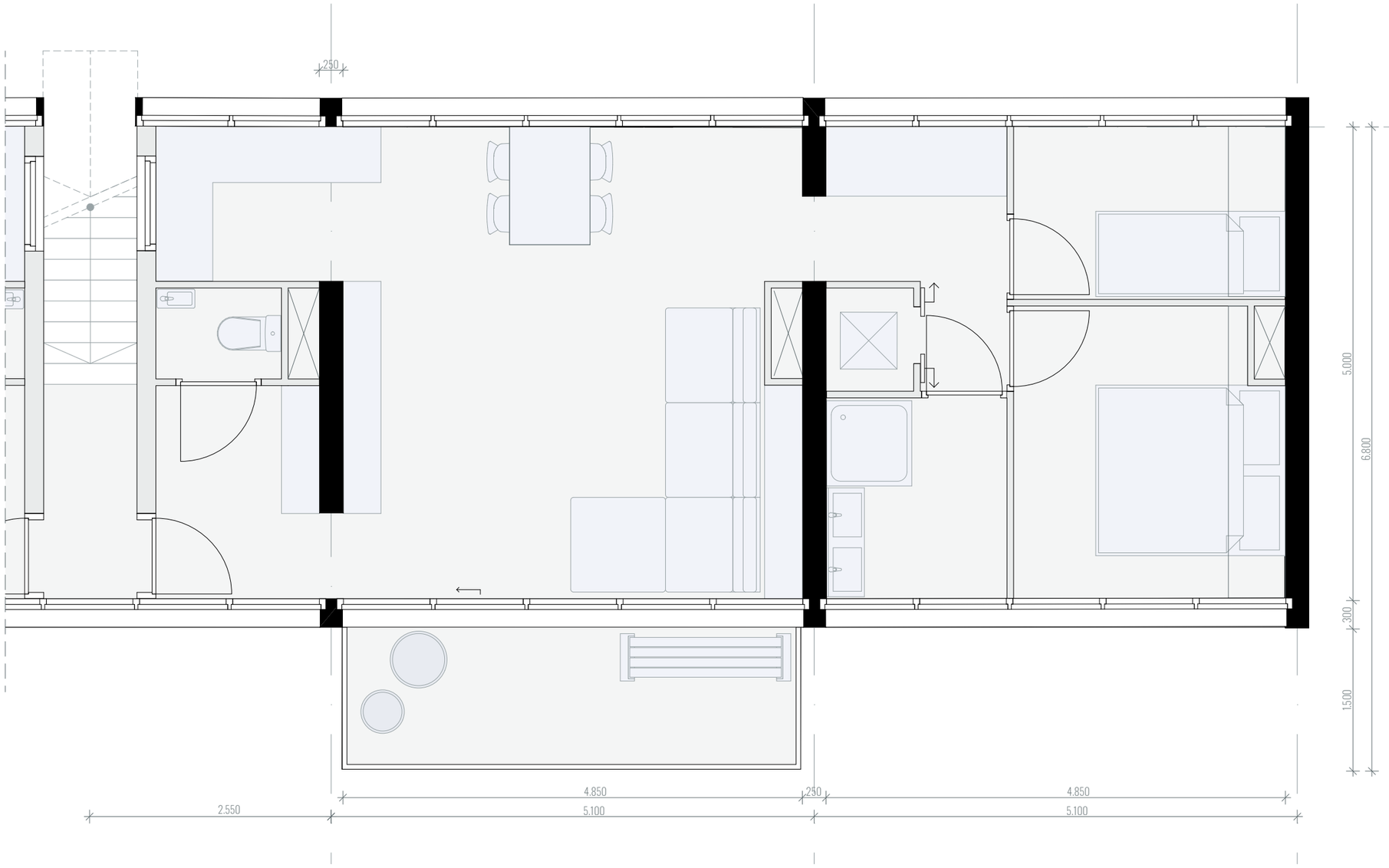
Dwelling design Apartments waterside

61 m2
small family
2 bedrooms

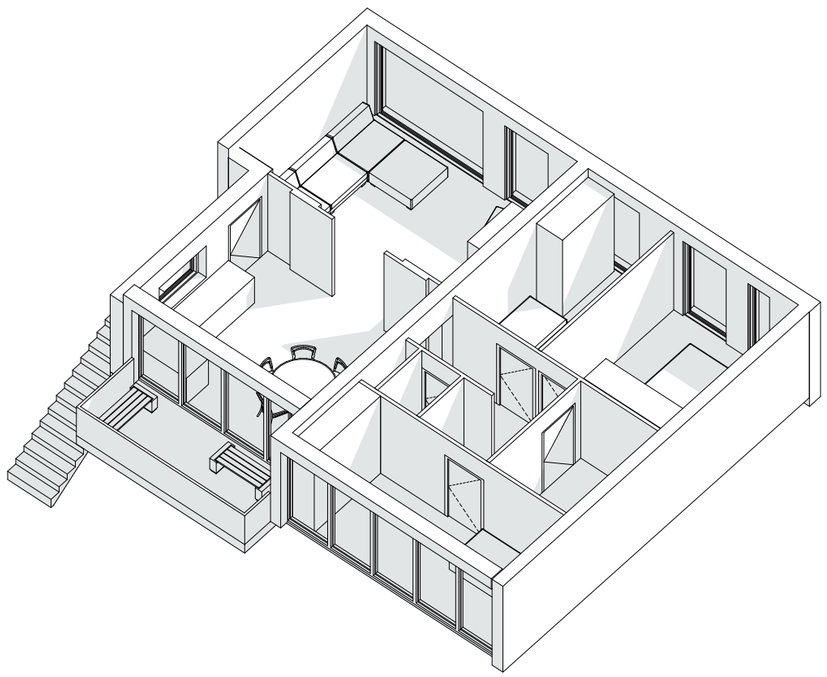


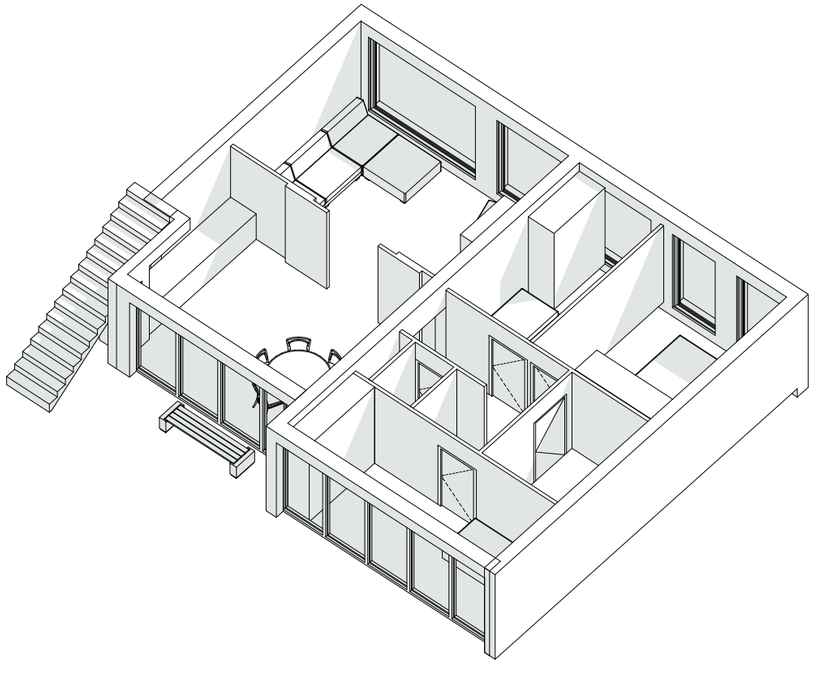
Apartment waterside 2nd floor 1:50

61 m2
small family
2 bedrooms



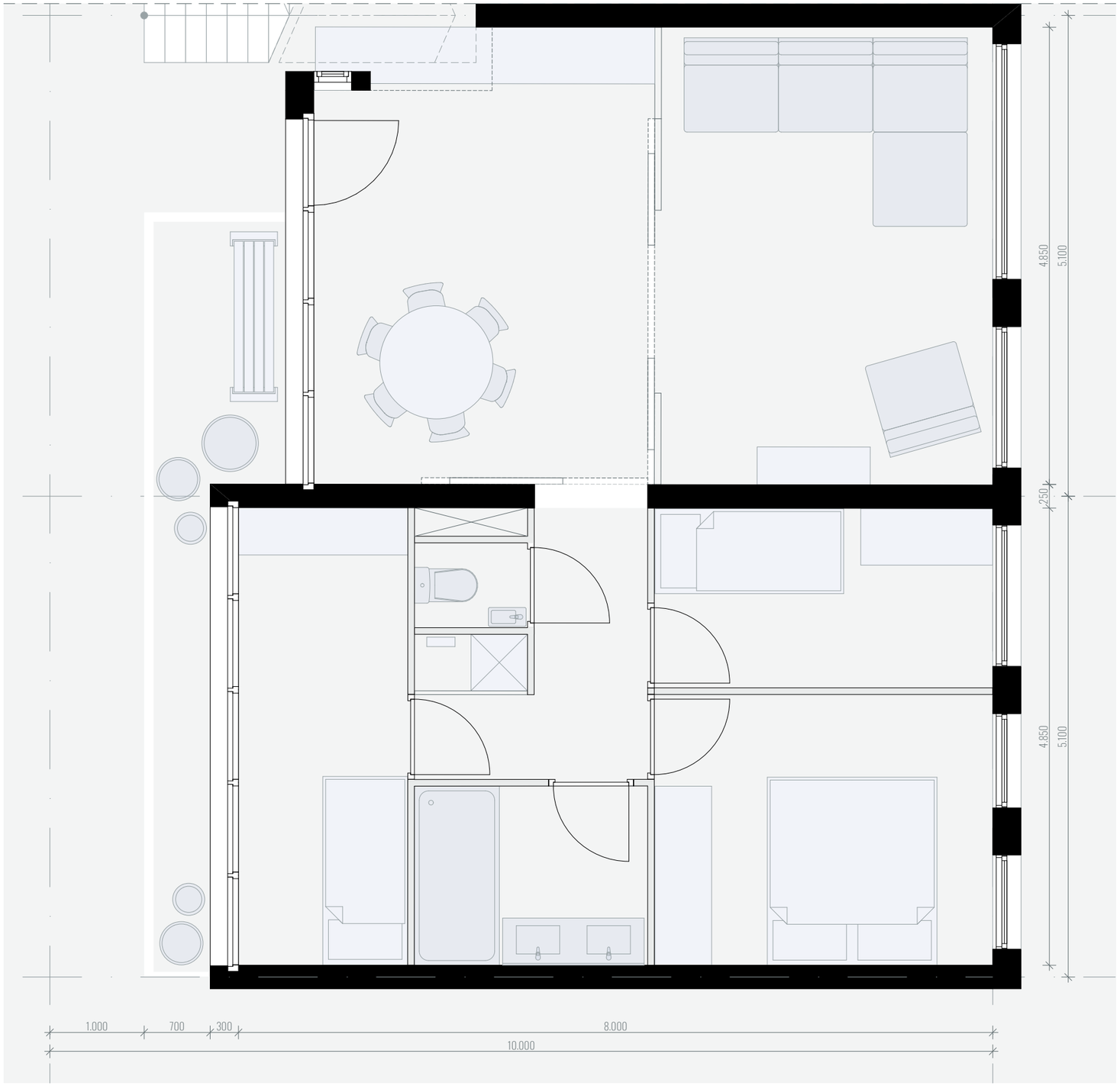
Apartment waterside 3rd floor 1:50





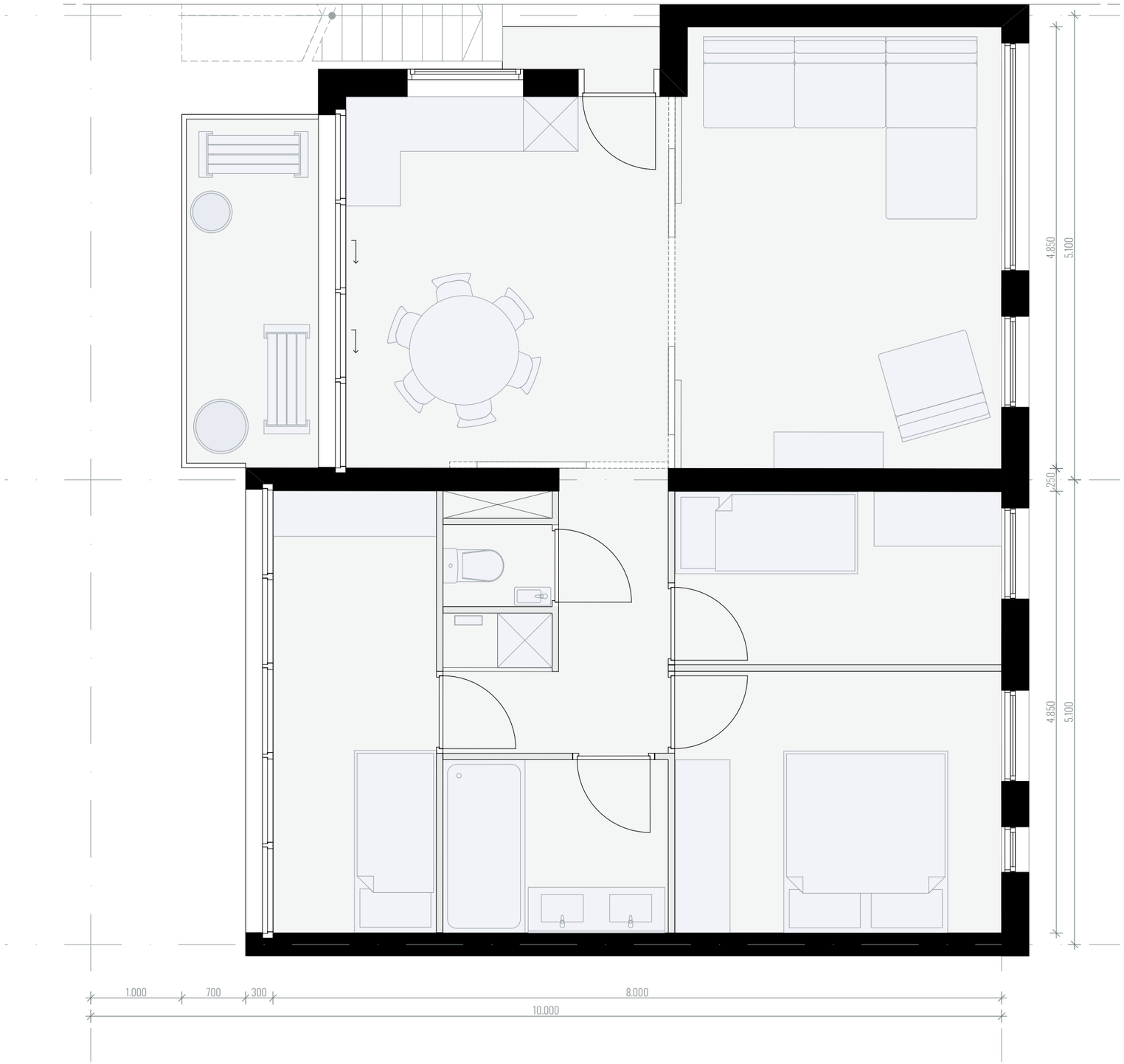
Dwelling design Apartments streetside

75 m2
middle size family
3 bedrooms

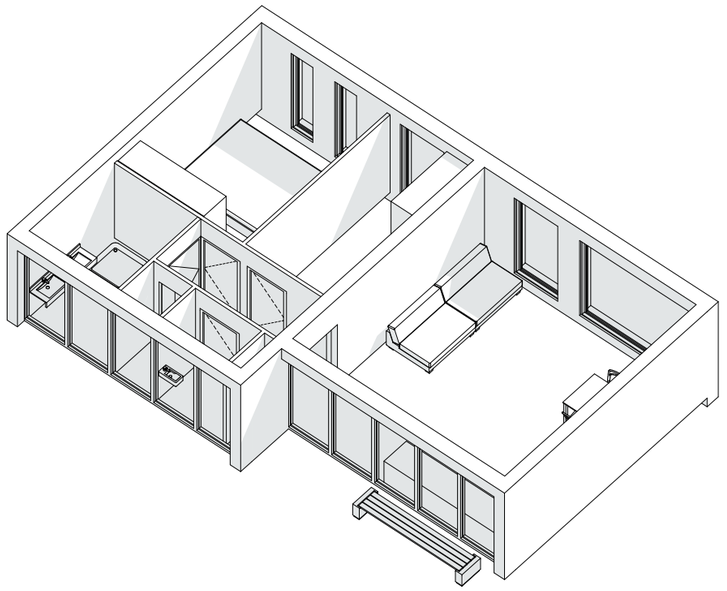


Apartment streetside 2nd floor 1:50

75 m2
middle size family
3 bedrooms

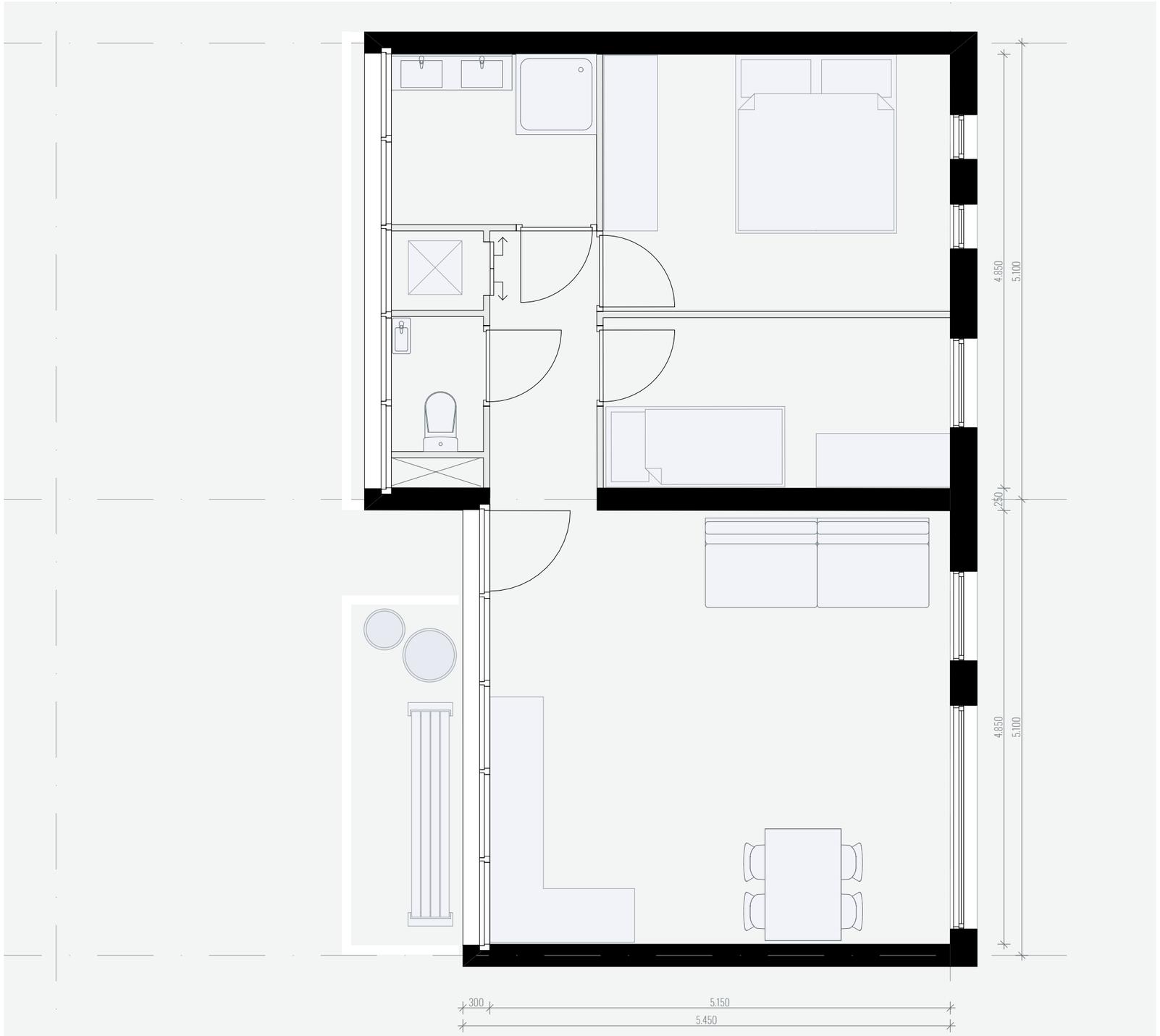


Apartment streetside 3rd floor 1:50

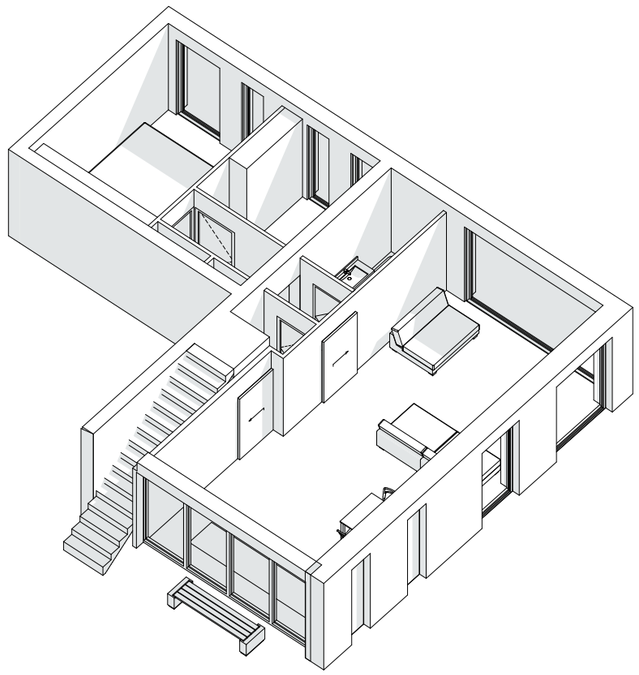


Dwelling design Apartments 4th floor

56 m2
small family
2 bedrooms

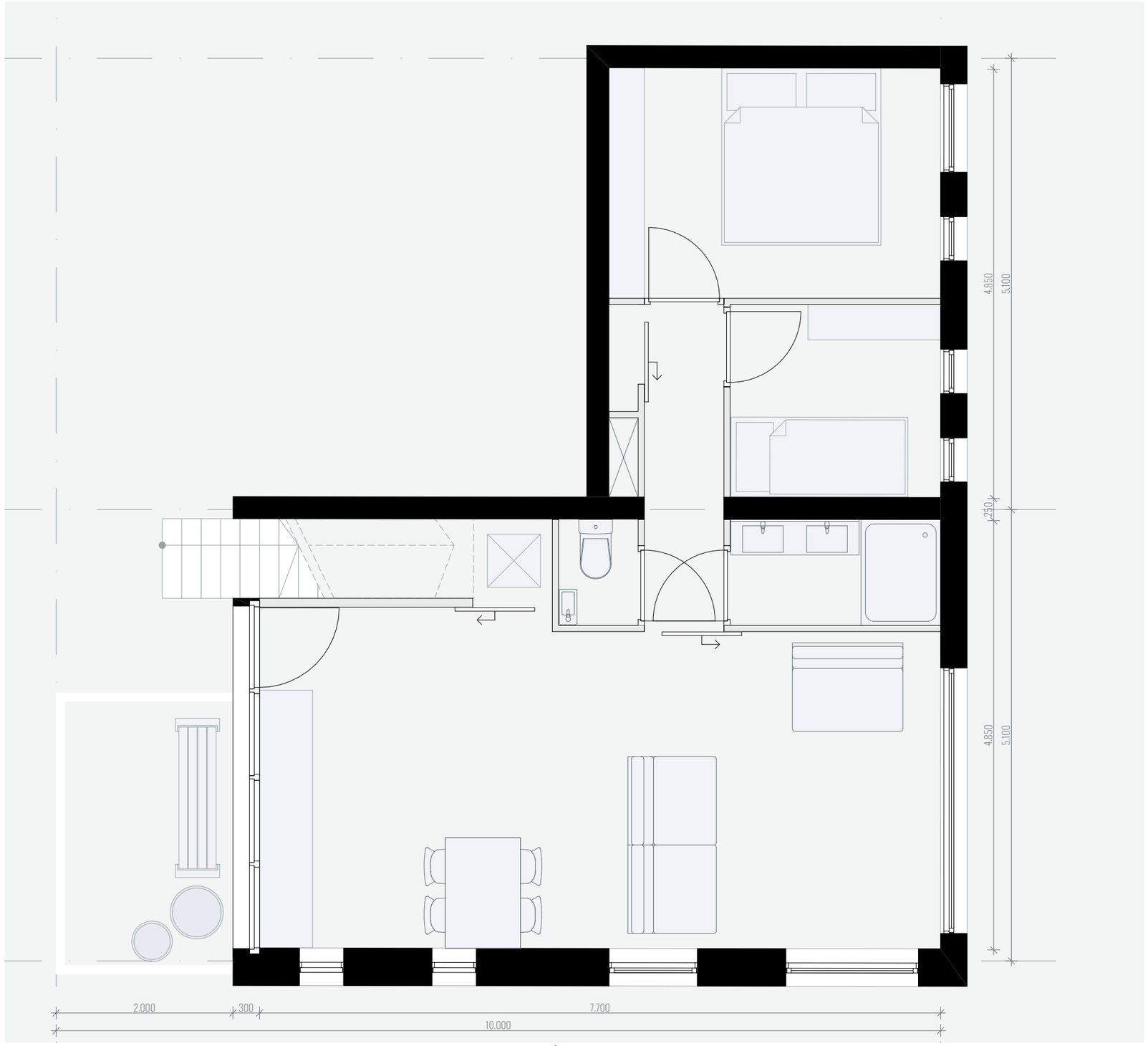


Apartment 4th floor 1:50



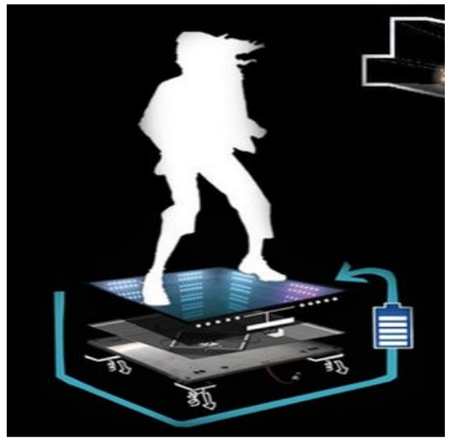
Dwelling design Corner apartments

45-70 m2
small - middle size family
1-3 bedrooms



Corner apartment 1:50

Climate scheme



Sustainable dancefloor Studio Roosegaarde (with Energy Floors)
for Club Watt Rotterdam

Energy generation

The energy that the building demands can be generated in multiple ways
-PV panels are added to the rooftop terrace
- The rest of the roof is covered with a Energy Floor system which generates energy from movement. When people walk over the roof and stairs their movement activates the system and loads the batteries. This system can also be added to the sidewalks and the surface of the busy traffic crossroad next to project location. It then uses the vibration of the traffic that is here day and night to generate energy.

Energieplein Kerckebosch-Zeist, Energy footbal pitch (WURCK)

Energy floors have been applied in for example a sustainable dancefloor for Club Watt Rotterdam and in the Energieplein Kerckebosch-Zeist by WURCK. WURCK has designed energy footbal pitches that can charge phones.

Energyfloor and PV panel comparison

Maximum output of 1 m2 energy floor: 70 watt (this example uses Energy dancefloor tiles 70x70x20 cm, 35 watt)
Maximum output of 1 m2 PV panell: 127,5 watt
(this example uses a PV panel of 100x165 cm, 250 wp, in the Netherlands (factor 0,85))

The Energy floor can generate maximum half of compared to its surface in PV panels. For this result it needs to be walked or played on constantly. On the roof this will not be the case, but in the crossroad or tramrails it will.

Energieplein Kerckebosch-Zeist, WeWatt-bikes (WeWatt & WURCK)

Energy tiles are not the only way to generate energy from movement, the Energieplein Kerckebosch-Zeist, also applied WeWatt-bikes that give power to a wifi-hotspot on the square.

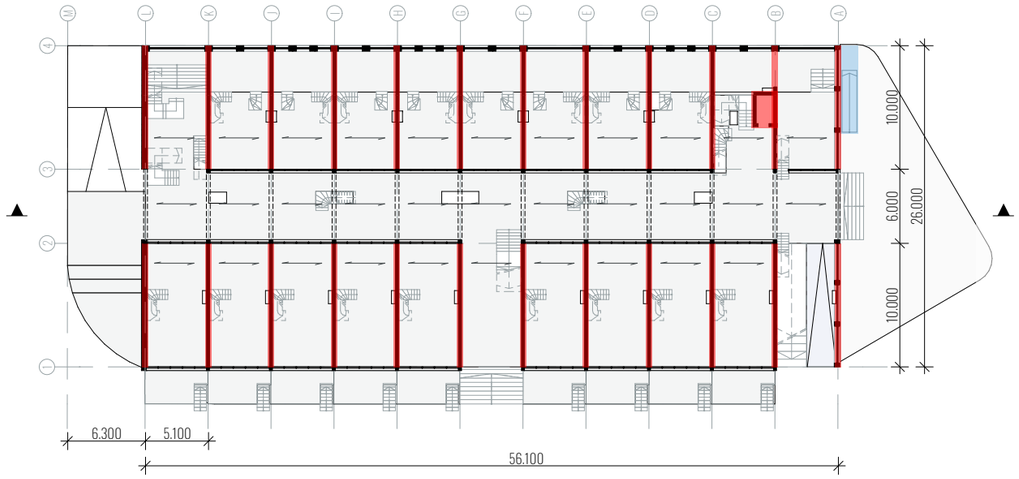
The generation of energy through movement can make the users aware of the positve effects of their work. If their efforts become visible or usable it can be a motivation to move more and be more healthy and generate energy at the same time.

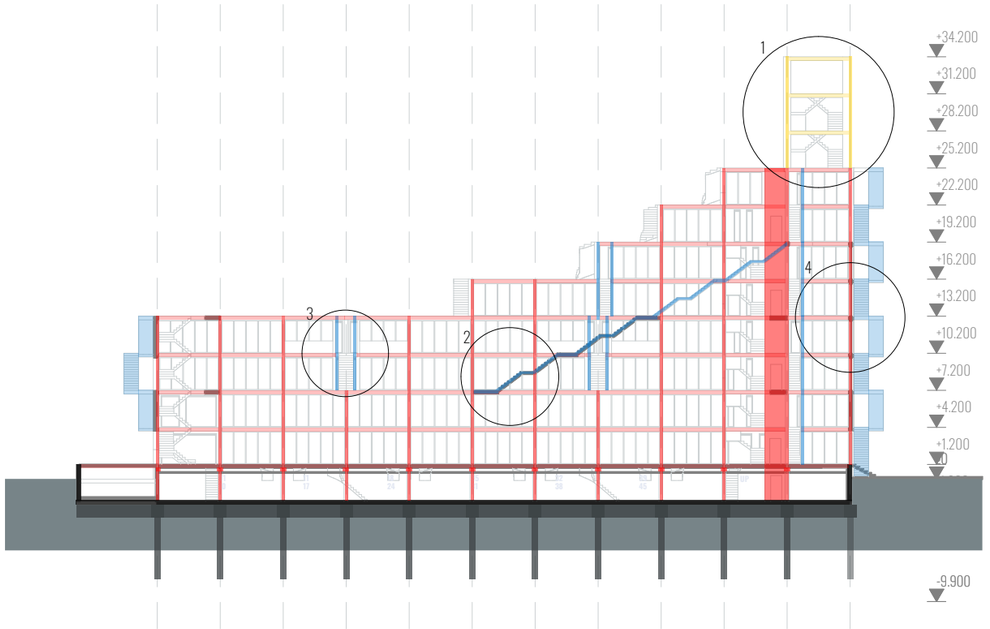
Nature playground Leiden (Designstudio van Ginneken)

Nature playground and water buffer combination

The playground on the waterside behind the building is a nature playground. The playground is for all ages. Tree trunks are placed for playing and sitting on and the water bassin is not only a place for play but doubles as a rainwater buffer.
The residents of the building can maintain and be physical active in the garden while the vegetation contributes to the biosdiversity of the site.

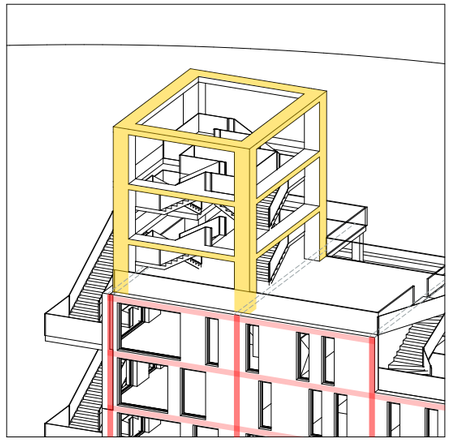
Climate systems





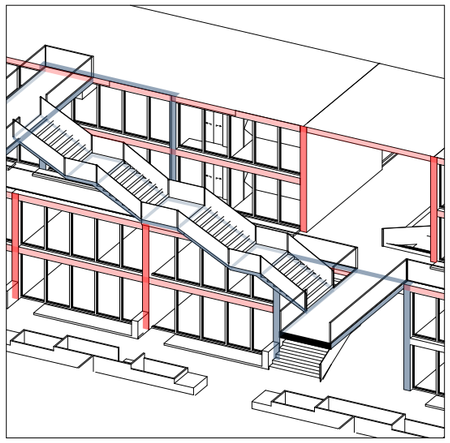
- Loadbearing prefab concrete structure
- Secundairy steel support structure
- Secundairy prefab concrete structure
- Trimmer to support floor slab

Construction scheme



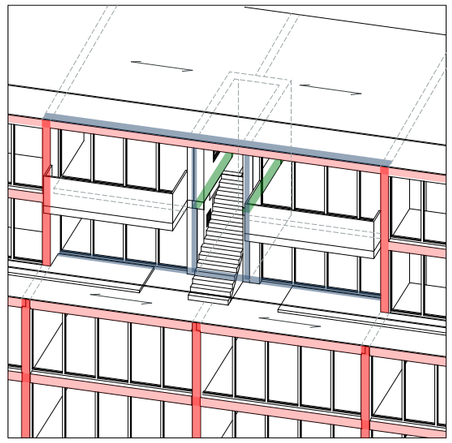
1. Look-out tower

Prefabricated concrete structure of colums and beams
Placed on top of structural grid and load bearing walls



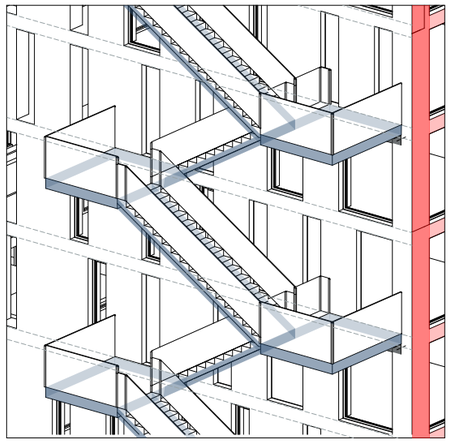
2. Central staircase

Self-supporting steel stairs
Every two floors a platform is connected to the load bearing concrete structure with a secondary steel construction



3. Porch entrances

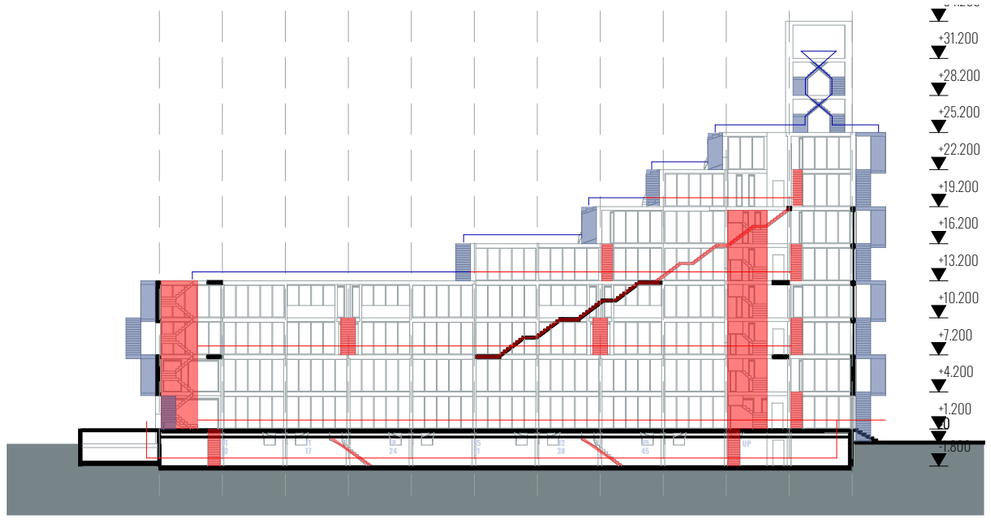
A secondary steel construction is added where the porch entrances intervene in the concrete load bearing structure
A trimmer supports the upper floor elements



4. Facade staircase

Self-supporting steel stairs
Every platform is connected to the load bearing concrete structure with a secondary steel construction

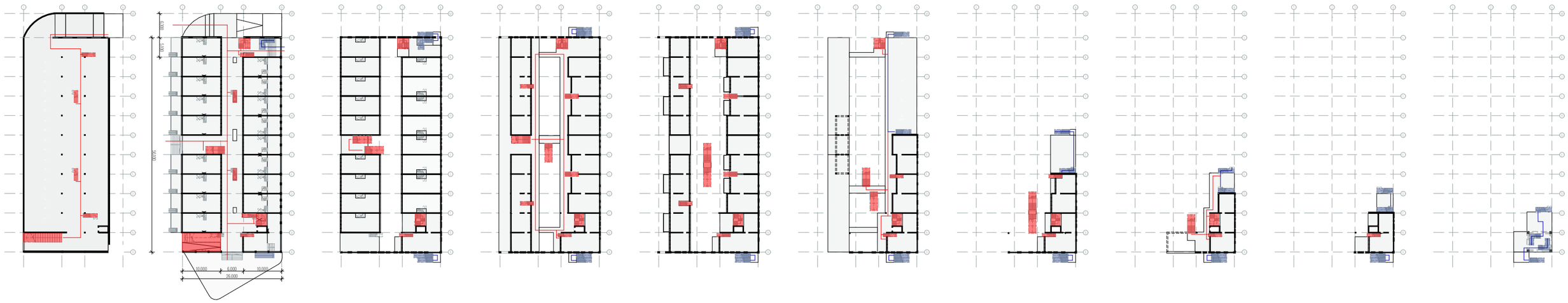
Construction exceptions



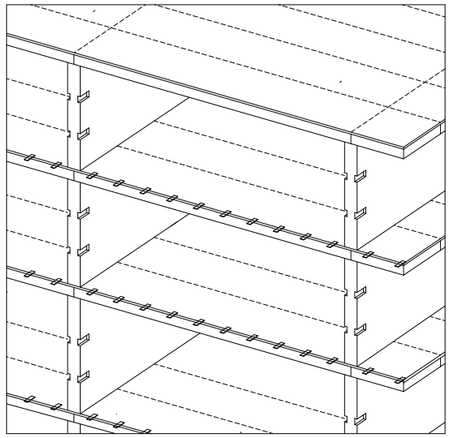
All fire escape routes are outside and residents can always escape two ways.

There are two staircases on both ends of the building. These two staircases can be reached from the ground floor and over the galleries of the second and fourth floor. The sixth floor has direct access to one staircase and can reach the second staircase using the public roof . The dwellings on the third, fifth and seventh floor are connected to the galleries by porche accesses.
Users of the public program on the roof can also escape two ways, in case of emergency they can also use the escape routes of the residents.

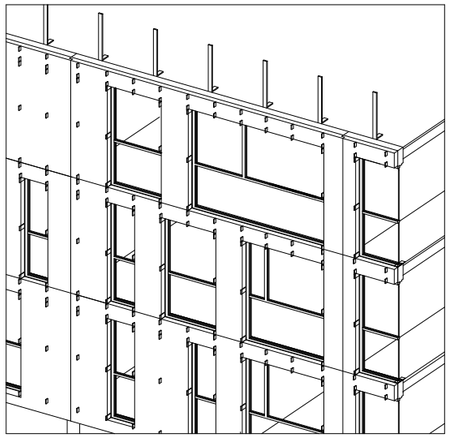
The parking garage in the basement is connected to the ground two staircases, but with different stairs so escaping residents from the upper floors do not end up in the basement. Two extra stairs connect the basement to the ground floor, close to the front doors. The two slopes also go directly outside.



Fire safety scheme



1. Primary load bearing structure
Prefab concrete floor elements + screed and prefab concrete walls
including steel anchors cutouts to prepare for prefab facade elements

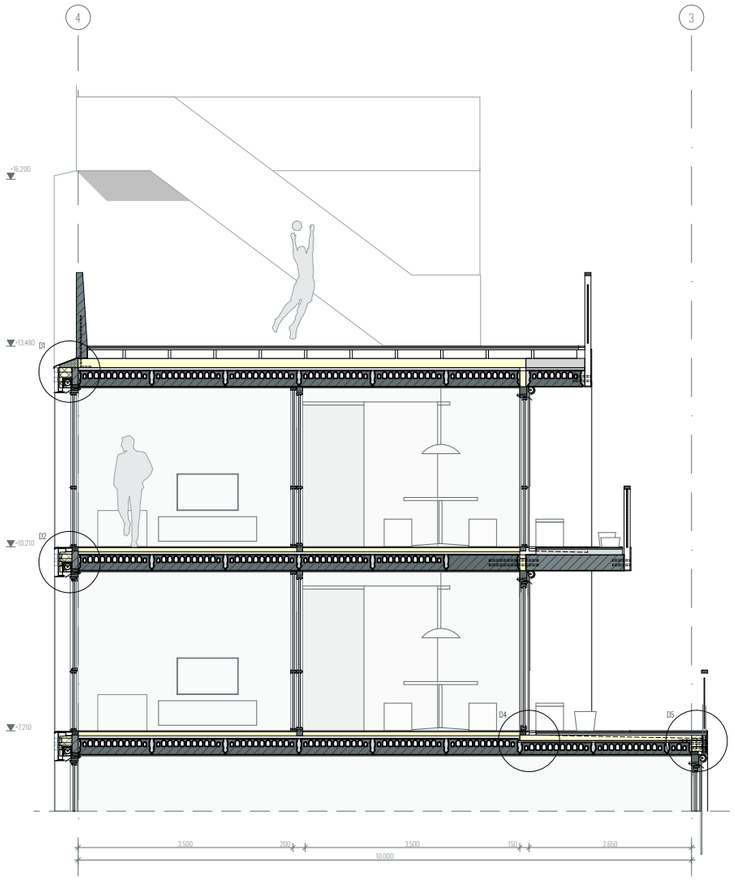


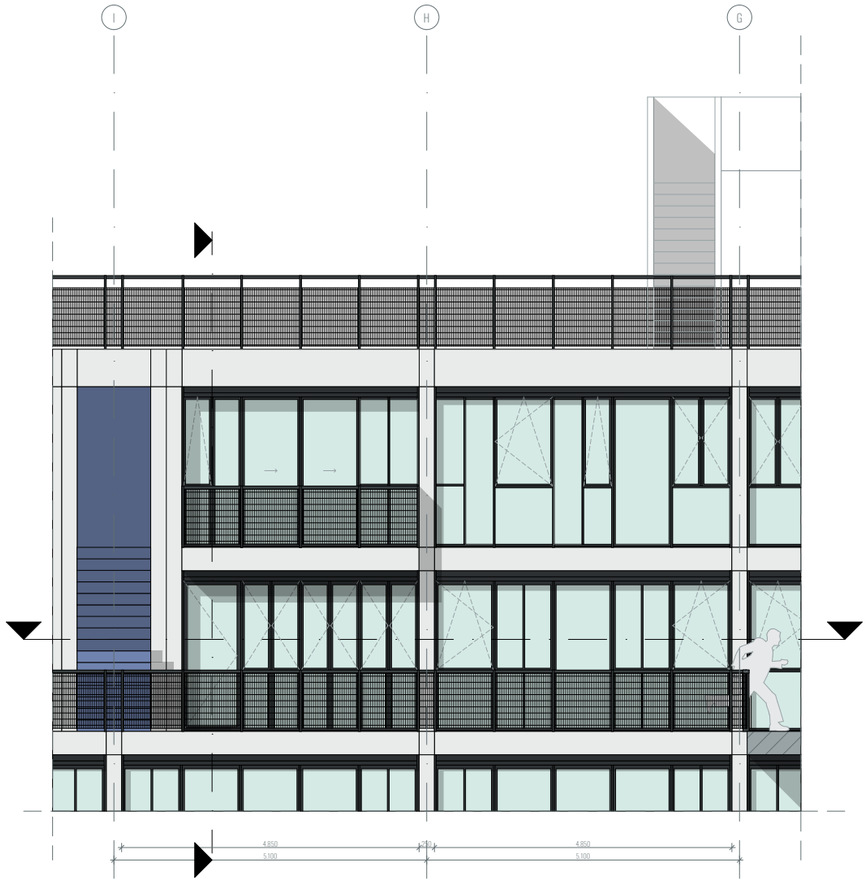
2. Facade elements
Prefabricated facade elements consisting out of concrete back construction, window frames including glass, insulation, aluminium substructure for facade cladding and steel anchors for balustrades

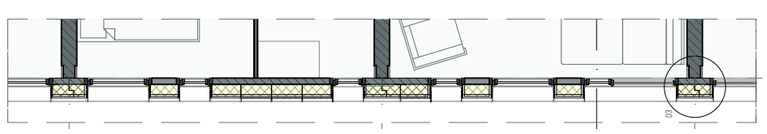
3. Facade cladding
On site installation of aluminium framework around windows, facade cladding, balustrades and aluminium eaves

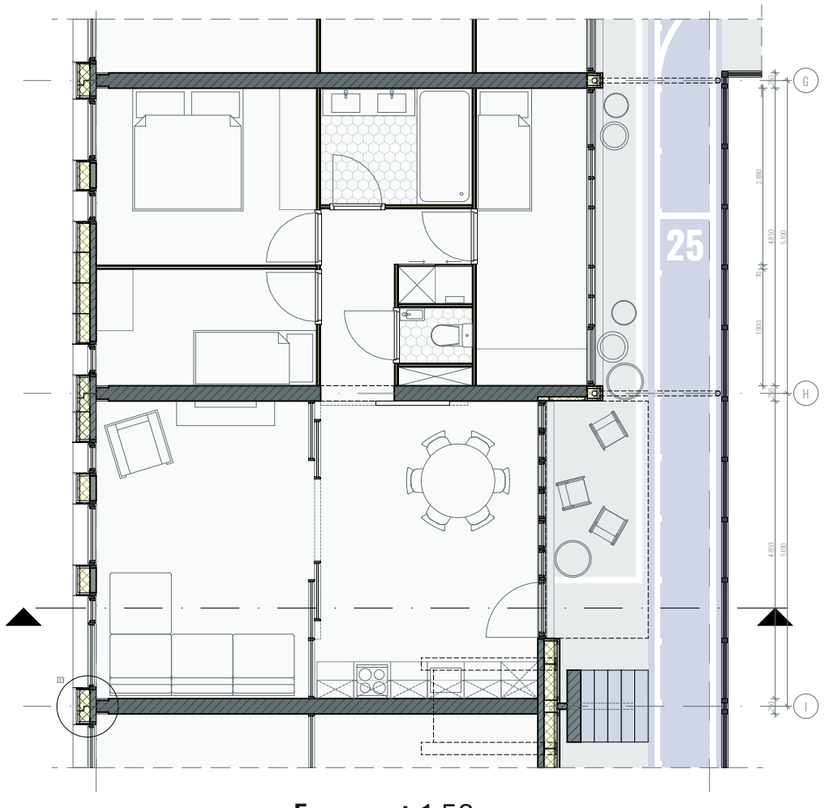
1.

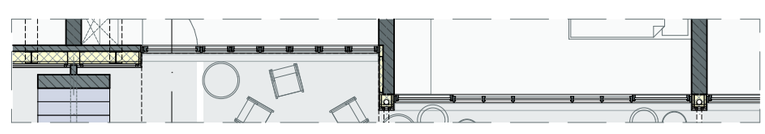
Façade assembly diagrams



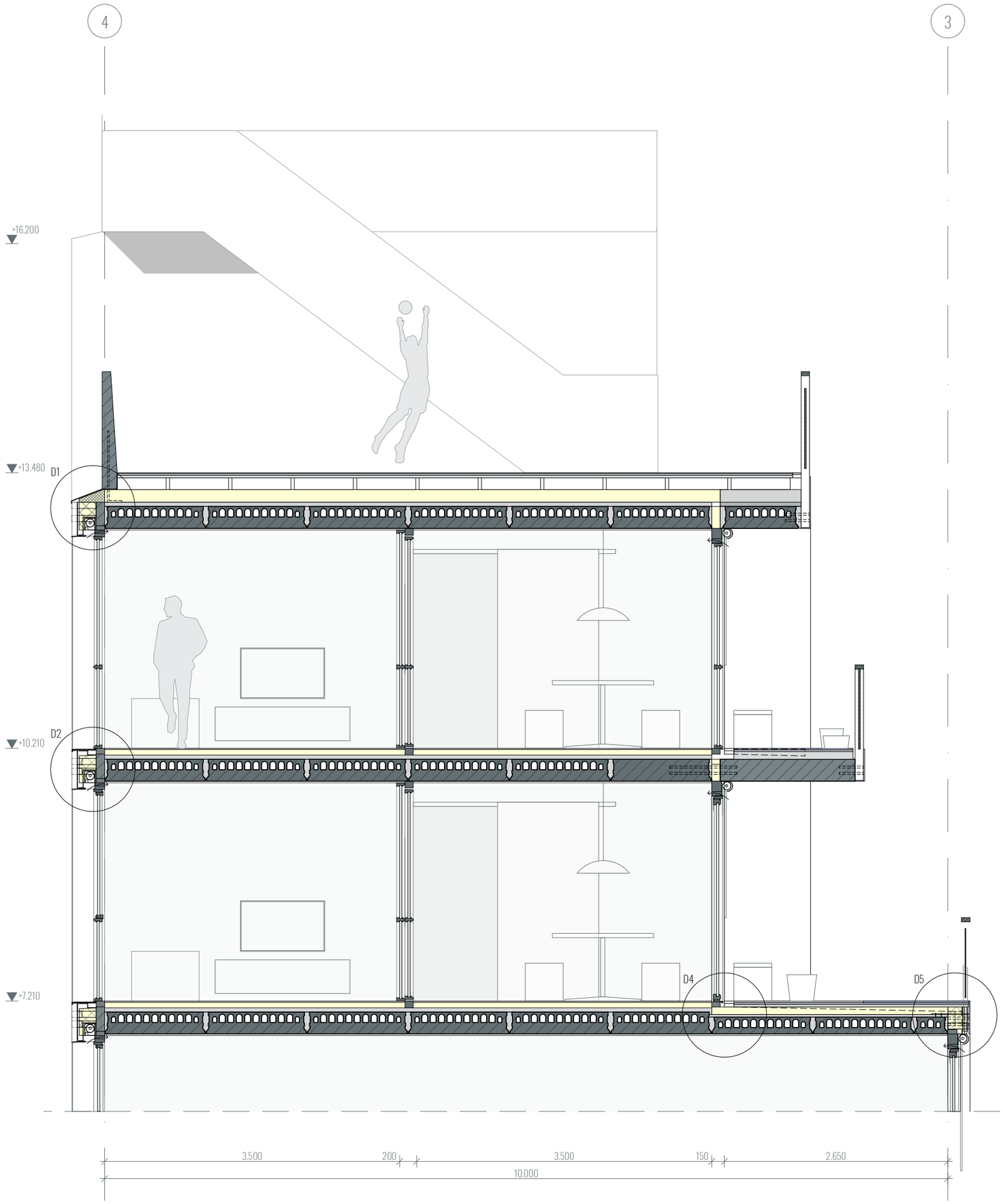




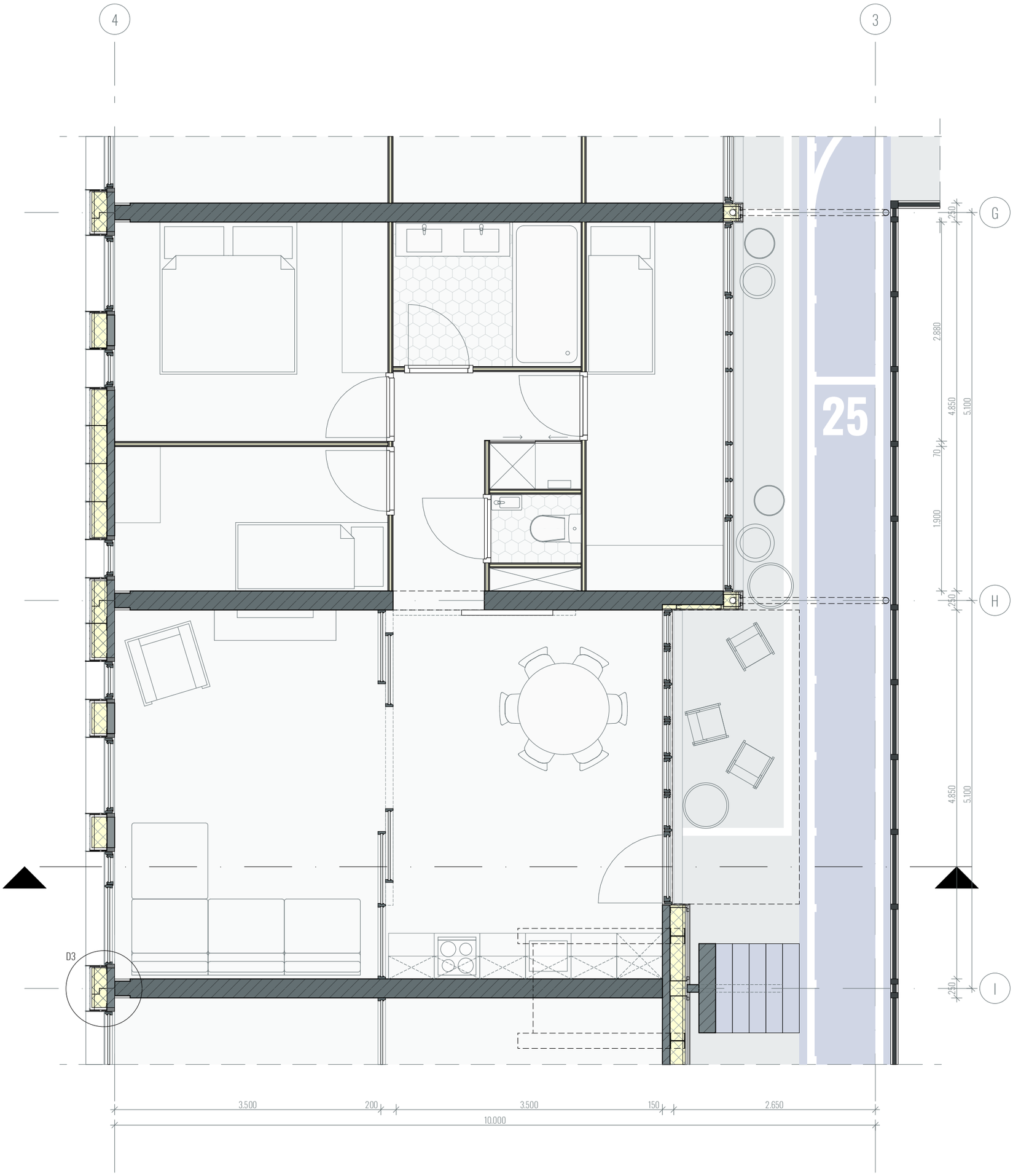




Fragment 1:50

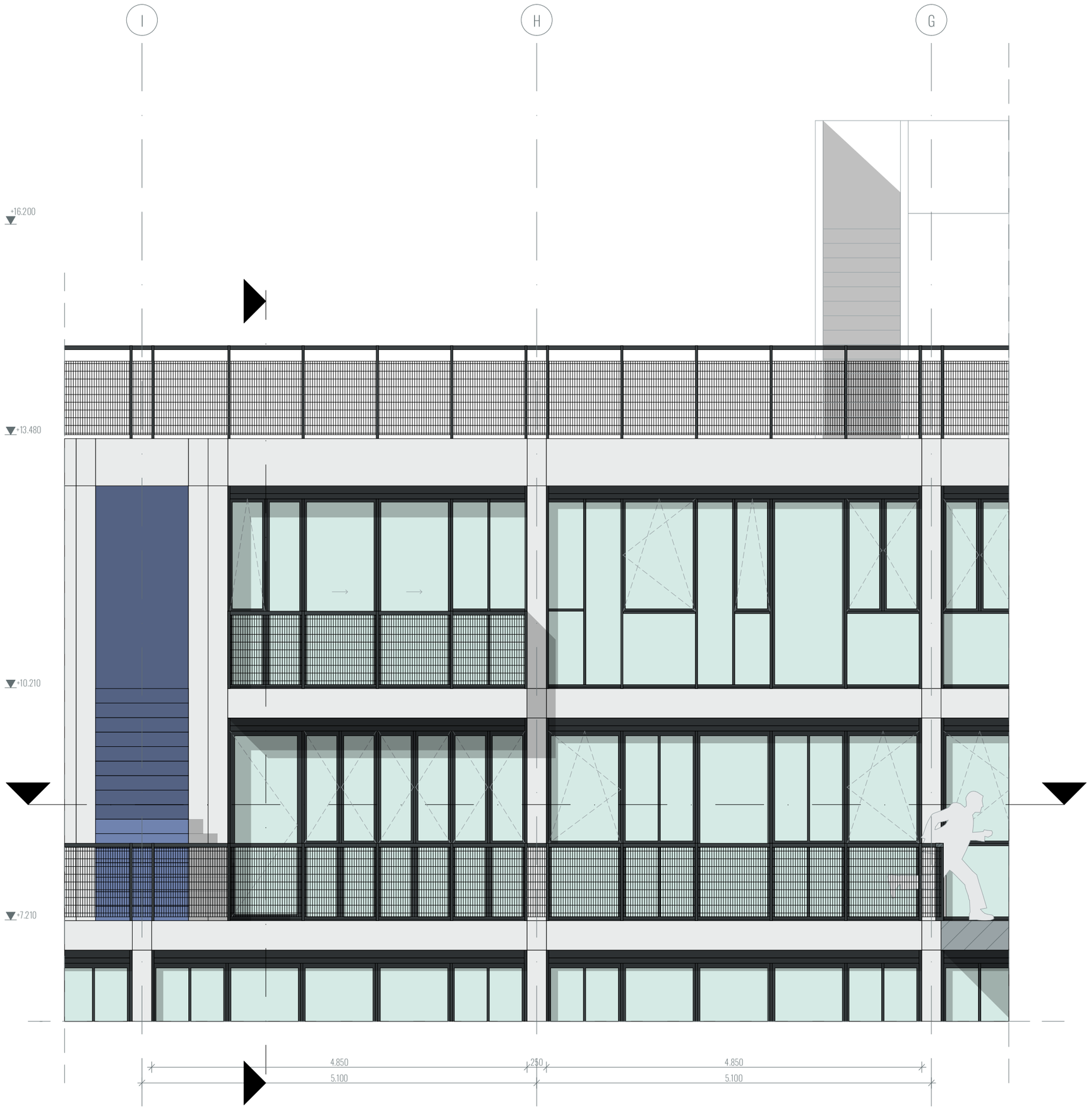


Fragment section 1:50



Fragment floor plan 1:50

Fragment street facade 1:50



Fragment inner facade 1:50

4

Roof
Topcoat colored EPDM Rubber granulate floor, non-skid
Basecoat recuperation rubber granulate
Primer (descending 16 mm/m)
Energy floor tiles (200 mm total height of system)
Insulation
Vapor barrier
Screed
VBI Apartementfloor 260
Ceiling finish

+13.480

Prefab concrete balustrade
Steel anchor fixed onto structural floor

Aluminium
Dark patina finish

Facade
Aluform aluminium facade cladding
Dark patina finish
Standing seam
Thermoclip ventilated substructure
Insulation
Vapour barrier
Prefabricated concrete slab

Aluminium framework
Dark patina finish
Aluminium substructure

DUCO Climatop 60 AK+
Self-regulating, pre-heated ventilation grill
High acoustic damping
Self-regulating

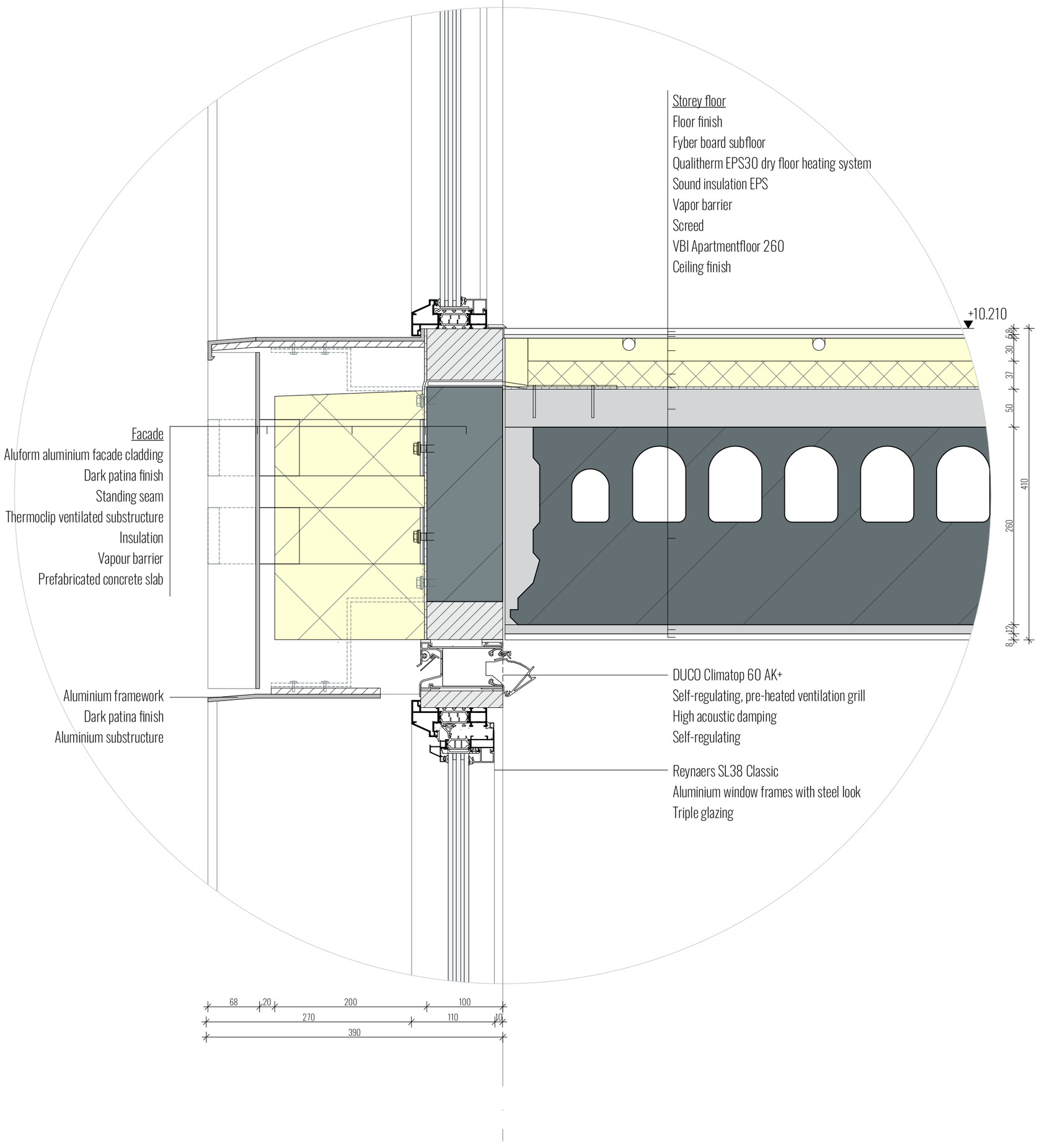
Reynaers SL38 Classic
Aluminium window frames with steel look
Triple glazing

10
20
30
140
150
680
50
260
802

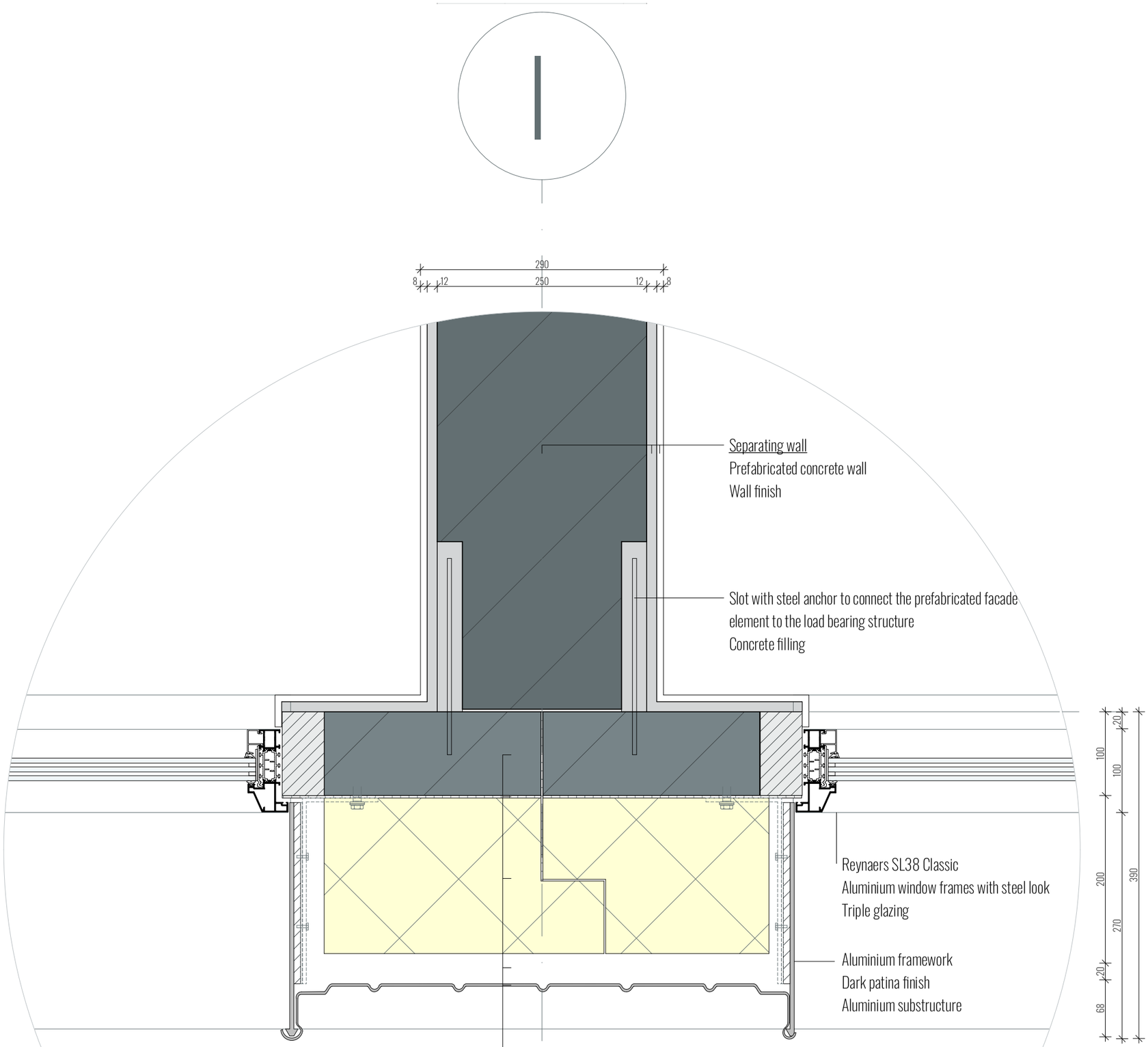
68
20
200
100
270
100
20
390

Detail 1 1:5

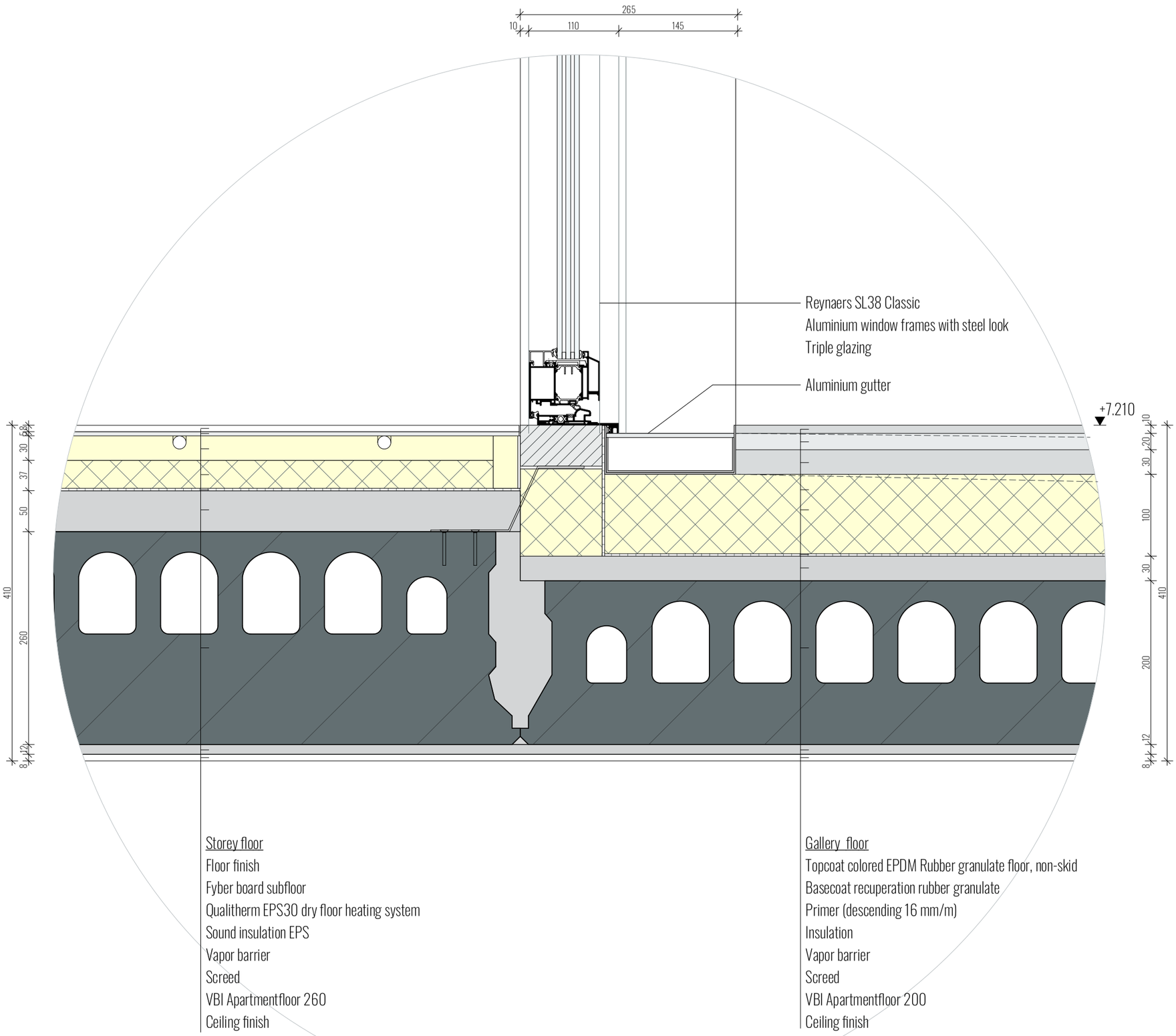
4


Storey floor
Floor finish
Fyber board subfloor
Qualitherm EPS30 dry floor heating system
Sound insulation EPS
Vapor barrier
Screed
VBI Apartmentfloor 260
Ceiling finish
+10.210
Facade
Aluform aluminium facade cladding
Dark patina finish
Standing seam
Thermoclip ventilated substructure
Insulation
Vapour barrier
Prefabricated concrete slab
Aluminium framework
Dark patina finish
Aluminium substructure
DUCO Climatop 60 AK+
Self-regulating, pre-heated ventilation grill
High acoustic damping
Self-regulating
Reynaers SL38 Classic
Aluminium window frames with steel look
Triple glazing
68
20
200
100
270
110
10
390
8
12
260
50
37
30
5
410

Detail 2 1:5


290
8
12
250
12
8
Separating wall
Prefabricated concrete wall
Wall finish
Slot with steel anchor to connect the prefabricated facade element to the load bearing structure
Concrete filling
Reynaers SL38 Classic
Aluminium window frames with steel look
Triple glazing
Aluminium framework
Dark patina finish
Aluminium substructure
Facade
Aluform aluminium facade cladding
Dark patina finish
Standing seam
Thermoclip ventilated substructure
Insulation
Vapour barrier
Prefabricated concrete slab
100
20
100
200
390
270
20
68

Detail 3 1:5



Storey floor
Floor finish
Fyber board subfloor
Qualitherm EPS30 dry floor heating system
Sound insulation EPS
Vapor barrier
Screed
VBI Apartmentfloor 260
Ceiling finish

Gallery floor
Topcoat colored EPDM Rubber granulate floor, non-skid
Basecoat recuperation rubber granulate
Primer (descending 16 mm/m)
Insulation
Vapor barrier
Screed
VBI Apartmentfloor 200
Ceiling finish

Detail 4 1:5

3

Gallery floor
Topcoat colored EPDM Rubber granulate floor, non-skid
Basecoat recuperation rubber granulate
Primer (descending 16 mm/m)
Insulation
Vapor barrier
Screed
VBI Apartmentfloor 200
Ceiling finish

Steel balustrade
Steel mesh infill 100x25 mm
All black powdercoating

+7.210

10
20
30
100
30
410
200
12
8

Steel anchor fixed onto structural floor

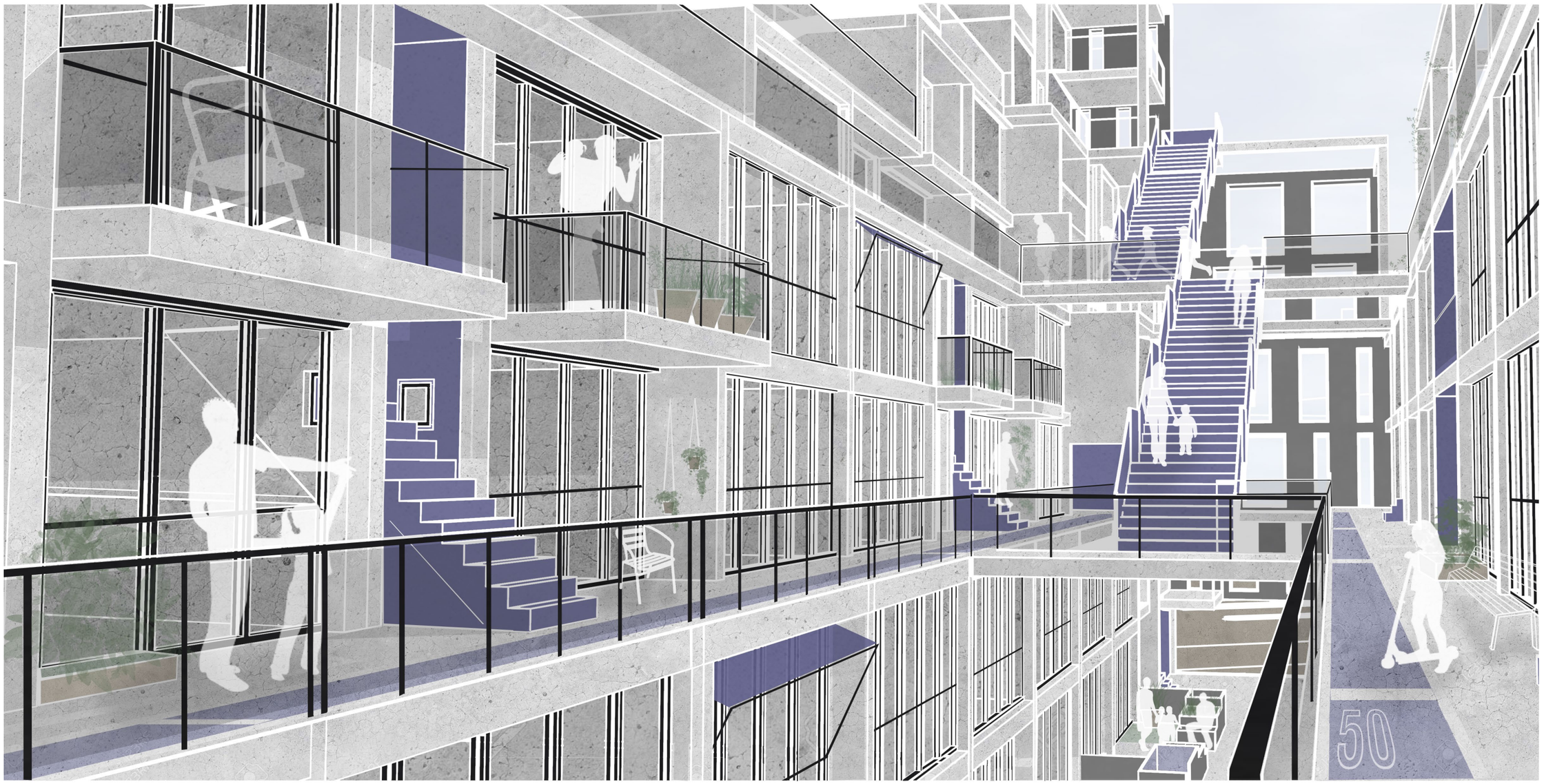
Facade
Glassfibre reinforced concrete facade cladding
Aluminium ventilated substructure
Insulation
Vapour barrier

DUCO Climatop 60 AK+
Self-regulating, pre-heated ventilation grill
High acoustic damping
Self-regulating

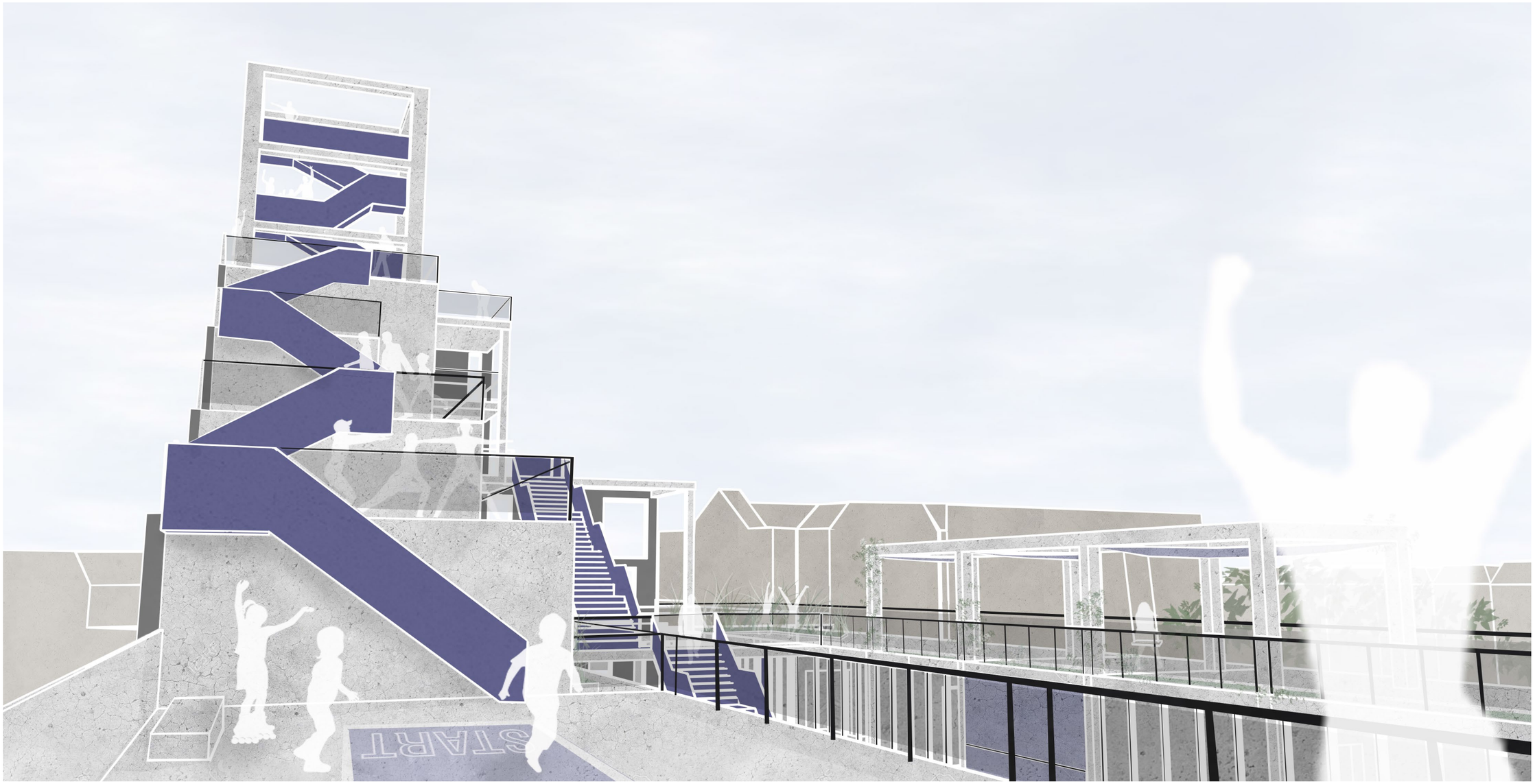
Reynaers SL38 Classic
Aluminium window frames with steel look
Triple glazing

200
50
13
10
110
145
265

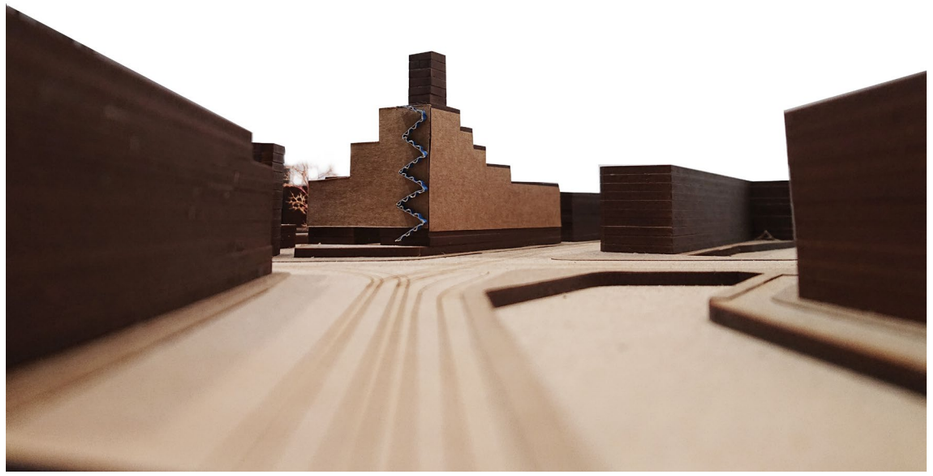
Detail 5 1:5

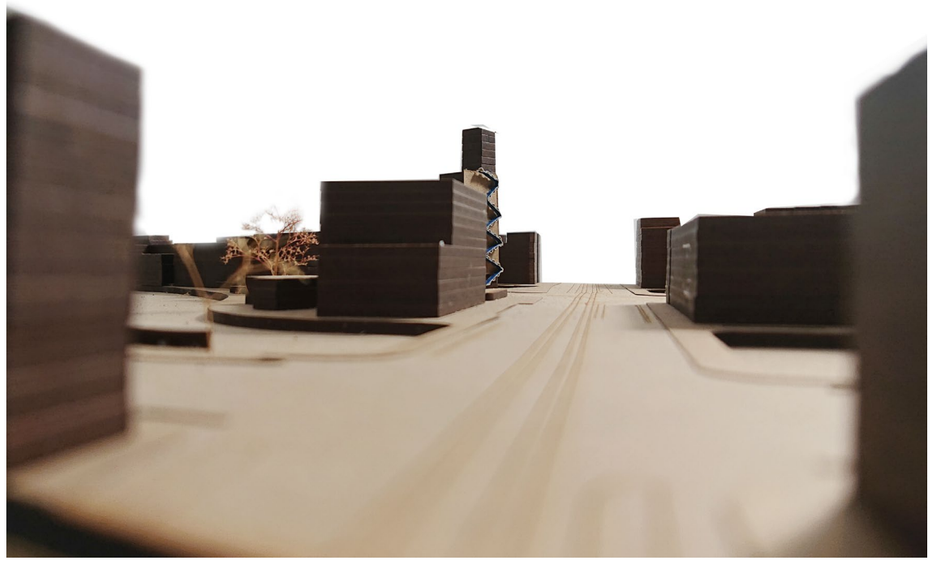


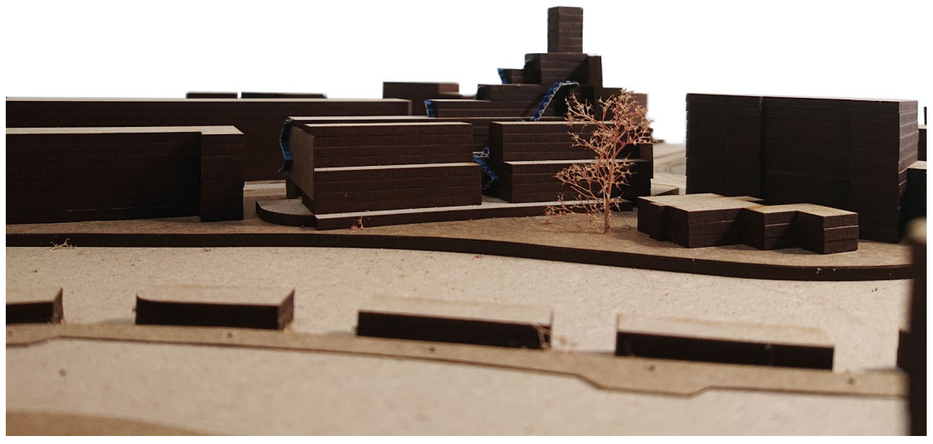
Impression inner street



Impression rooftop



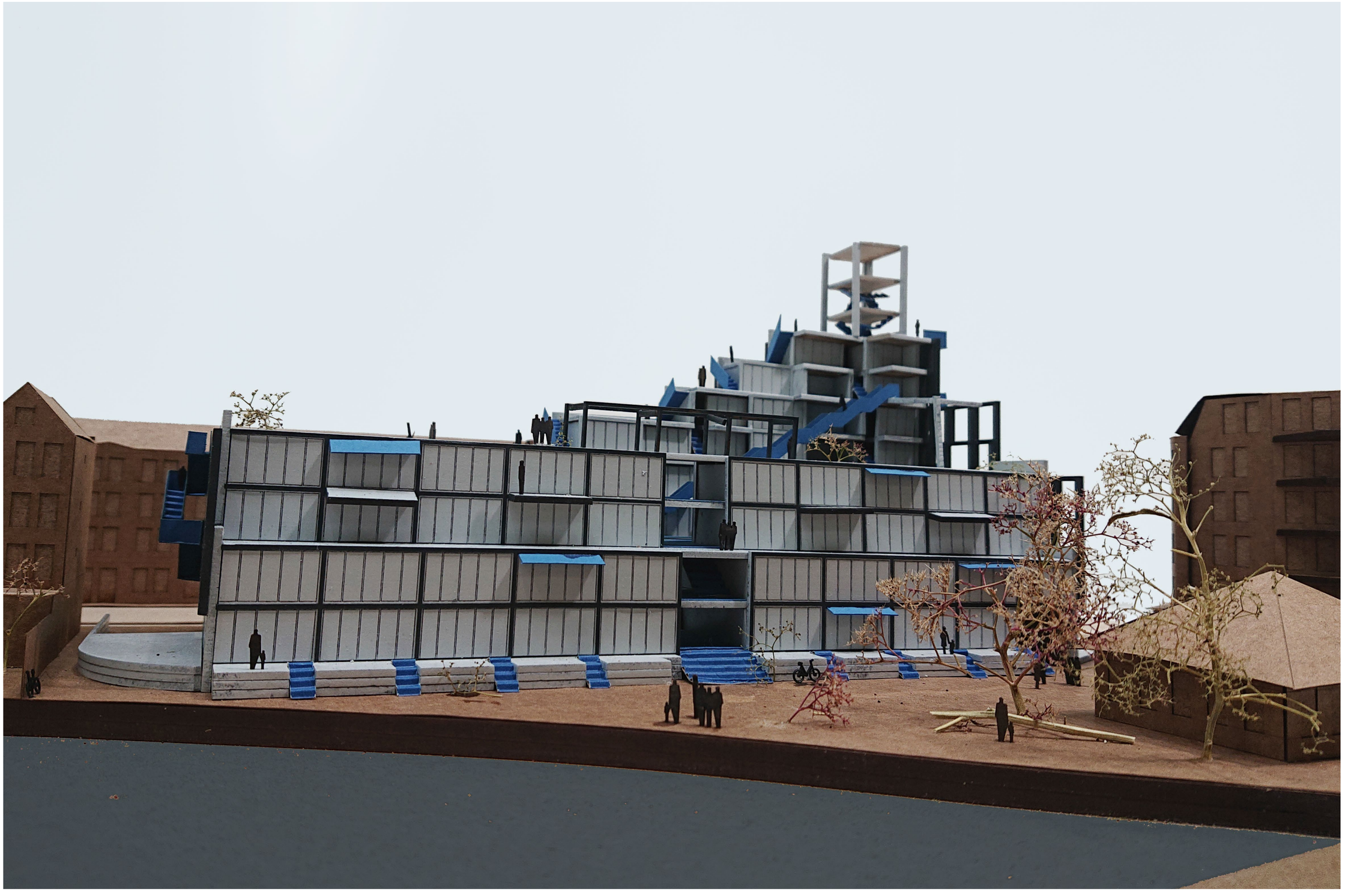




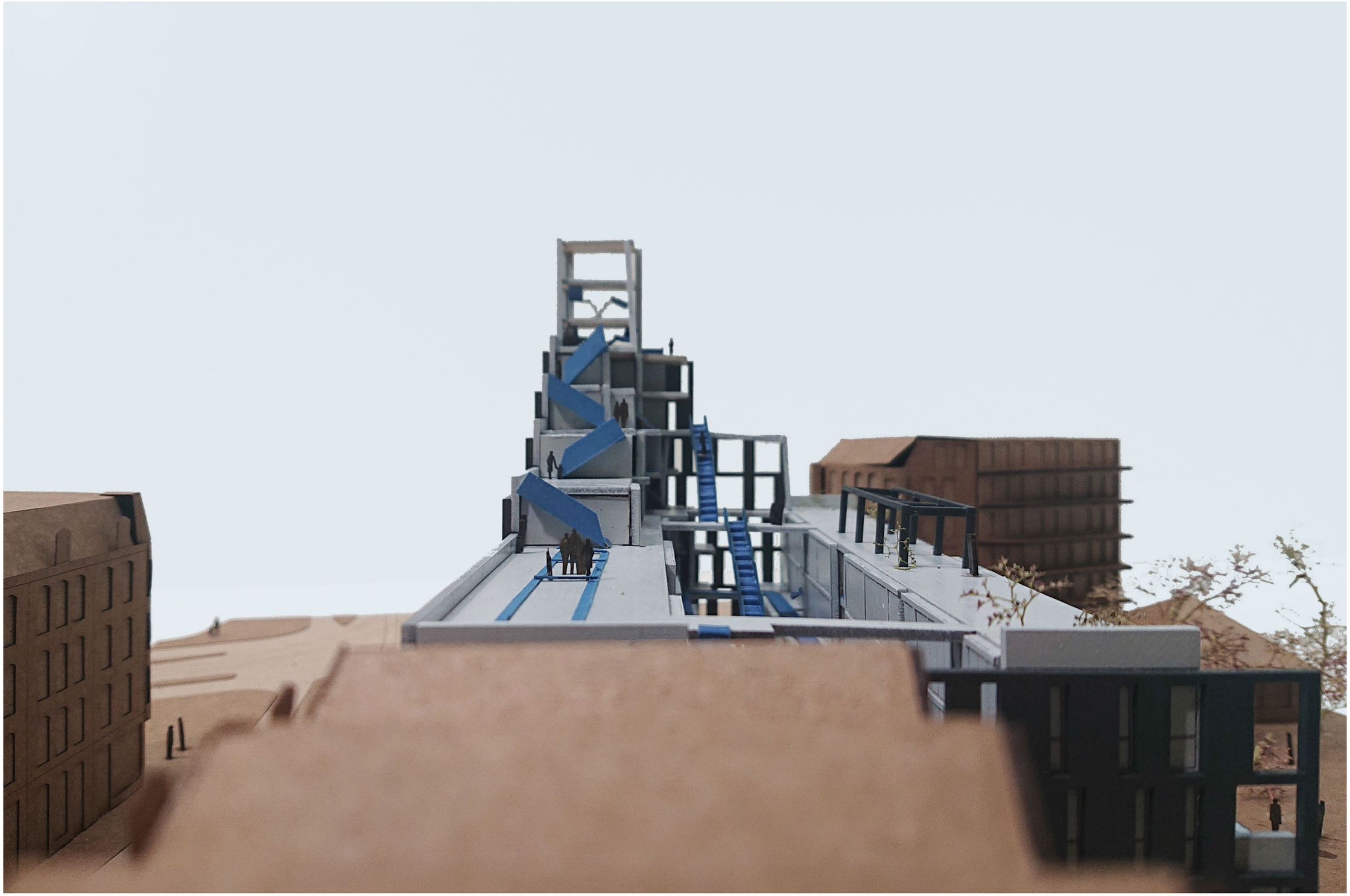
Urban model building volume

Building model seen from the south

Building model seen from the north



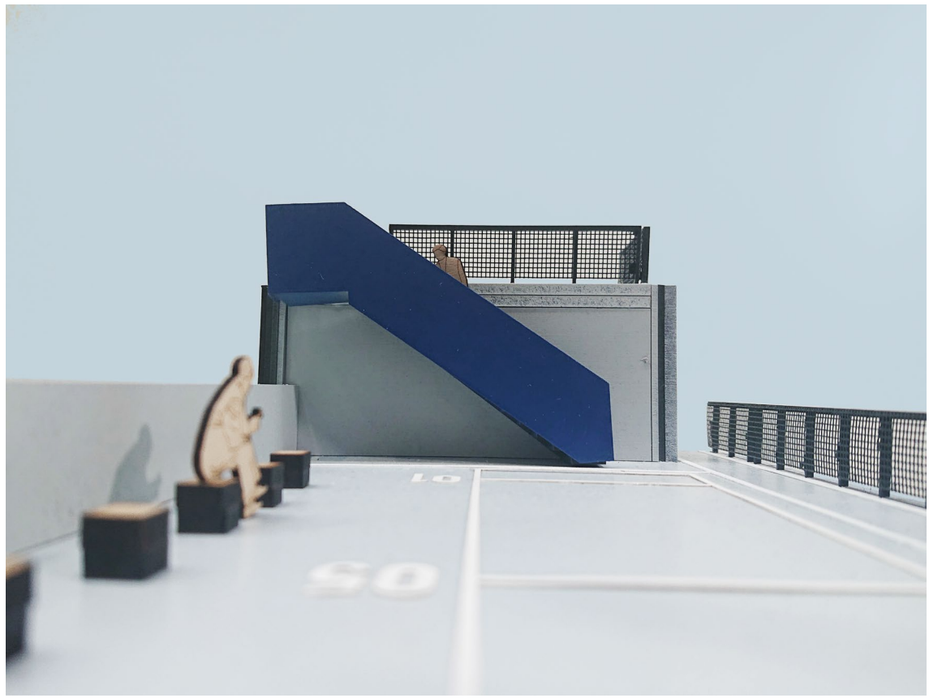
Building model seen from the west



Building model roofscape

Roof garden

Bicycle parking

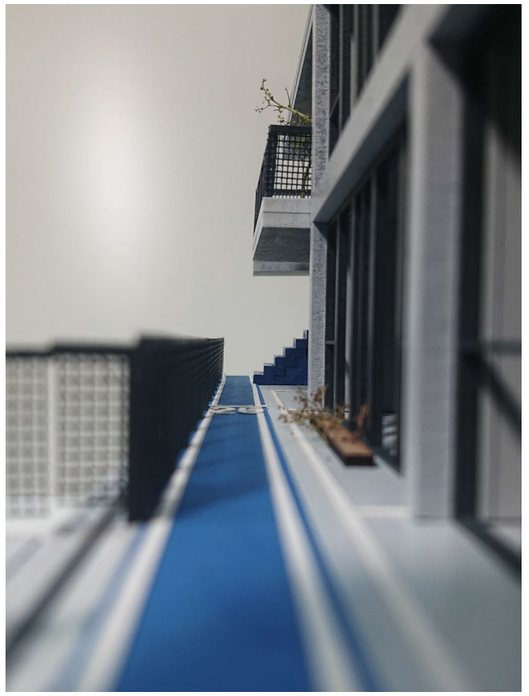


Public active route

Fragment details

Apartment interior

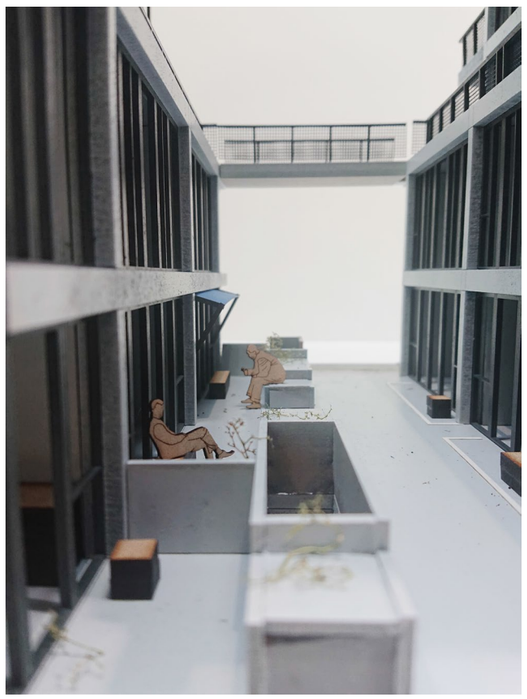
Apartment access



Gallery

Fragment model details

Back gardens

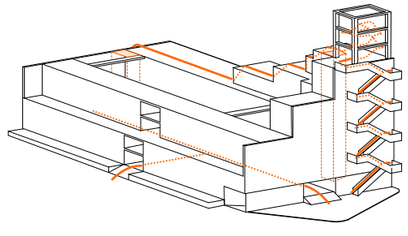


Inner street

Maisonette

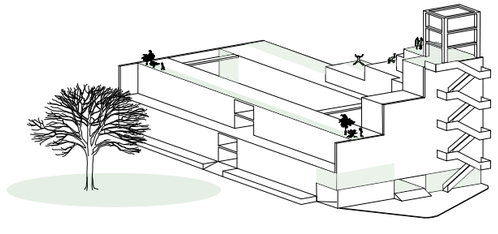
Fragment model details

Routing



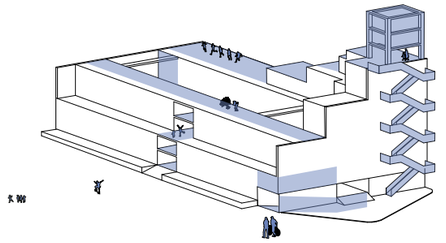
- A linear route leads over the building
- The route includes stairs and leads up the building
- The route leads over the roof of the building
- A second route leads through the centre of the building

Goals



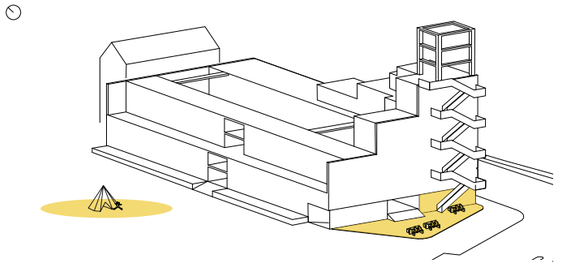
- Facilities for play are included in the design
- On the corner a smoothiebar is situated
- The plinth of the building includes multiple entrances and takes over the scale of the surroundings
- On top of the building is a viewing tower
- Multiple public and collective outdoor spaces are added on the roof and inner street
- Collective spaces are located on both ends of the building
- There is a green garden at the back and a green roof terrace

Active program



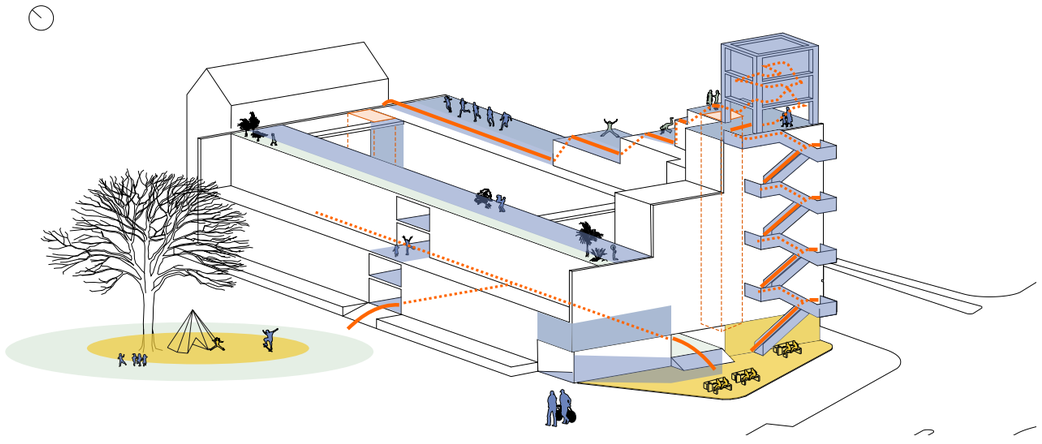
- Bike storage is located in the basement
- Places for play in the back garden, on the galleries and on the roof
- Cars can be parked in the basement
- The back garden and roof garden provide possibilities for gardening
- Fitness spaces and a rest space are added to the design
- On the roof active program, like bootcamp obstacles, is added

Building & Context

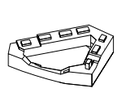
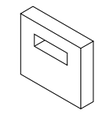
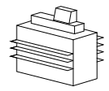


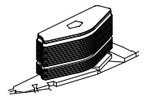
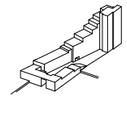
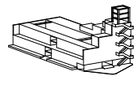
- The building is on a crossing with many public transport stops
- The stairs and view tower are added and accentuated to activate passersby
- The terraces and gardens are oriented towards the sun
- The building volume reacts in shape and height on the surrounding buildings

Plan analysis reflection



Routing | Goals | Active program | Building & Context

Plan analysis reflection