



SHIFT

Housing for the maker

Pelle Leijten 4478274
Tutors:
Theo Kupers
Ferry Adema
Pierijn van der Putt



KEILE as a deserted harbor area, with large remnants of idustry and pollution



But also a area full of new ideas and people
paving the wat for a vibrant community

THE AMATEUR LI EDELKOORT

The amateur is a newly emerging target audience, accelerated by the corona crisis. While stuck at home these people waken an interest in the act of making. Because they make stuff themselves, they also appreciate the craft and quality behind products.



THE AMATEUR
MAKERS OF QUALITY



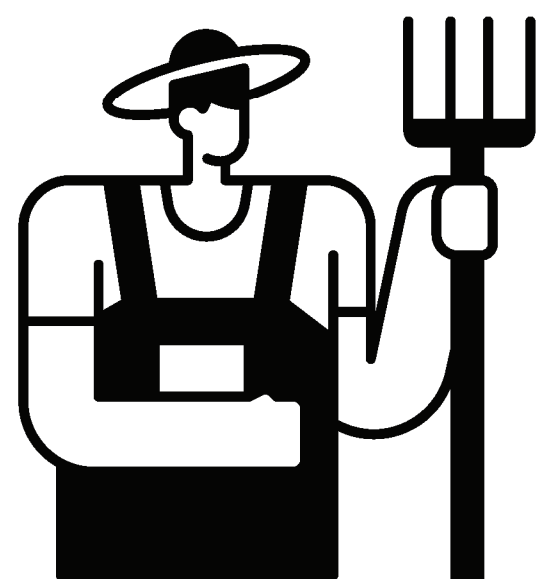
Start of corona,
suddenly the soon
to be amateur had
a lot of free time



The soon to be
amateur uses this
free time to explore
new passions



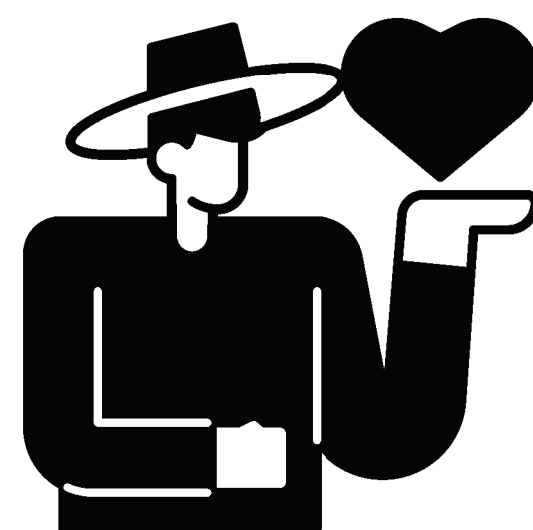
The soon to be
amateur starts its
transformation



The amateur is
born from his
passion



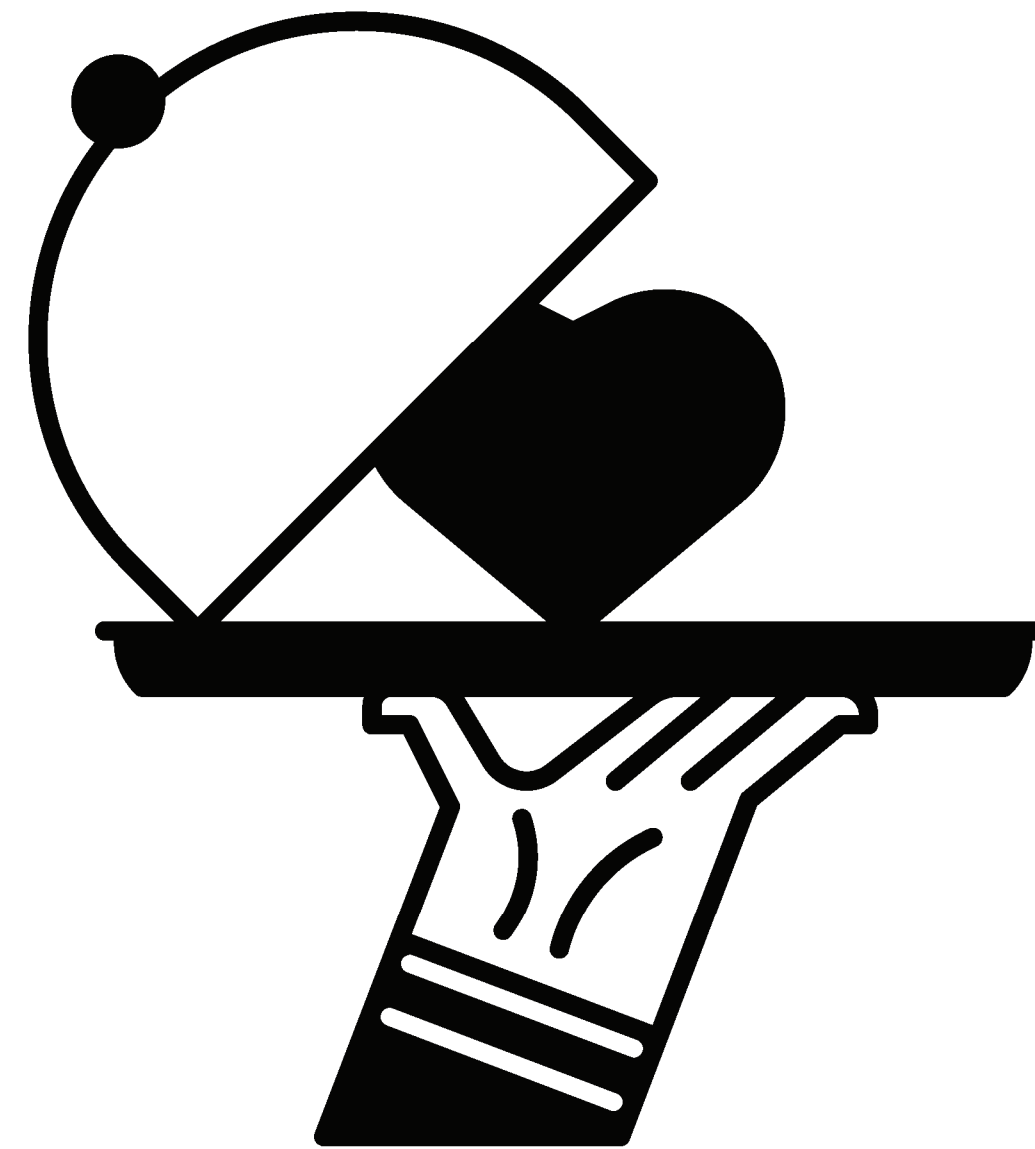
The amateur enjoys
the fruits of his
labors



The amateur
discovers a love
for quality and
personalisation in
his life



The amateur
translates these
notions beyond his
passions



How can I, as a
architect, best serve
the amateur?



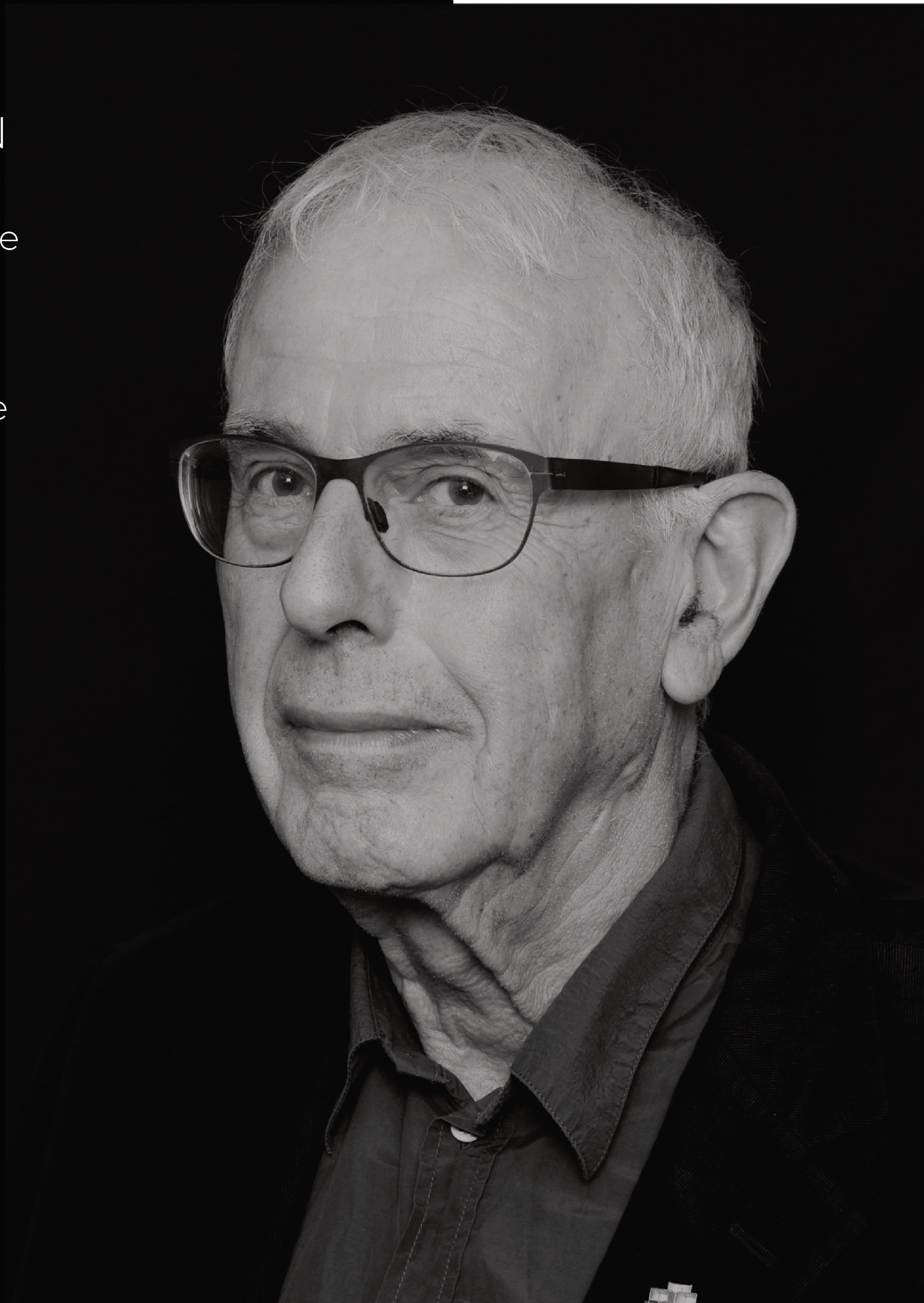
PERSONALISATION JOHN HABRAKEN

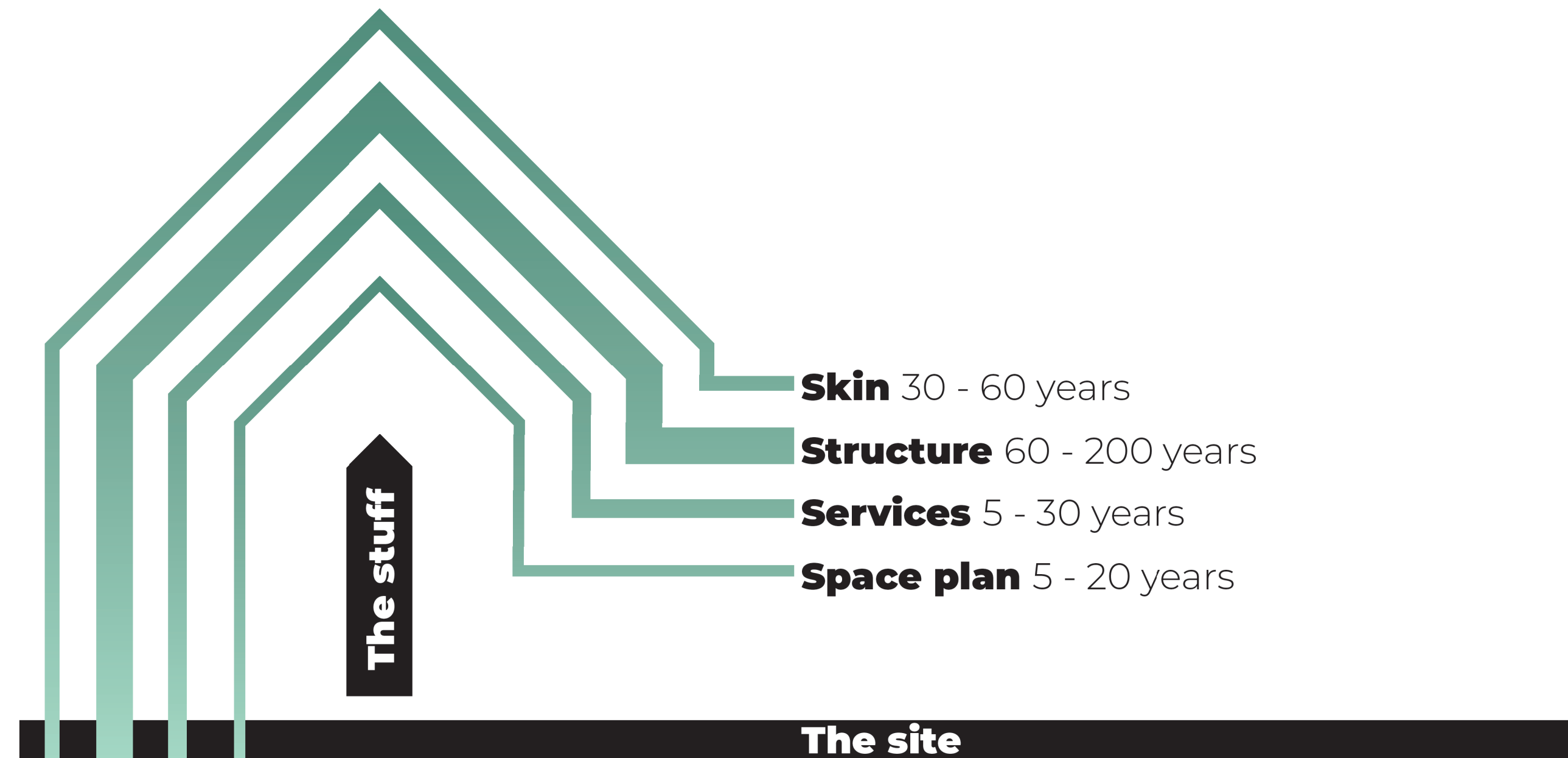
Giving the resident the ability to personalize their dwelling, and remove the architect from its absolute role of top-down designer.

FLEXIBILITY

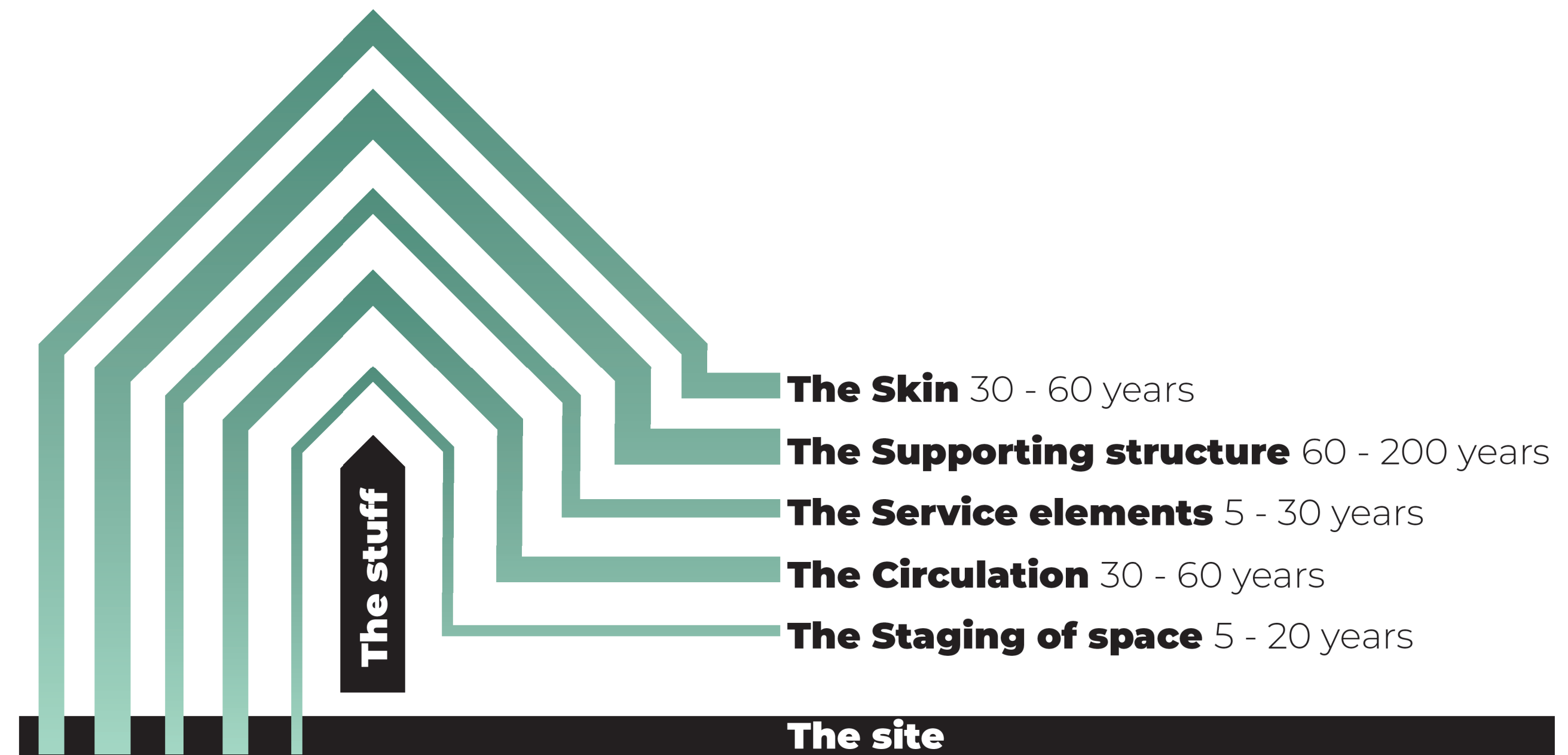
BERNARD LEUPEN

Five layers of flexibility
The supporting structure
The service elements
The circulation
The skin
The staging of the space





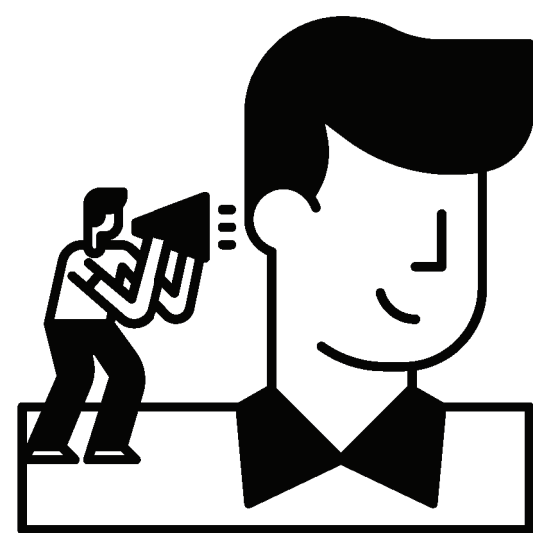
Brand diagram 6 elements to a building, each represented by a line. The thickness of each line represents the life span of the element.



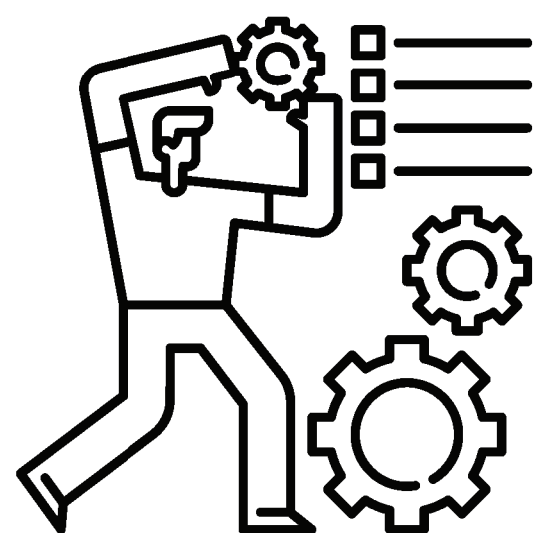
'brand' diagram with the layers as proposed by Leupen

PERSONALIZATION VS. FLEXIBILITY

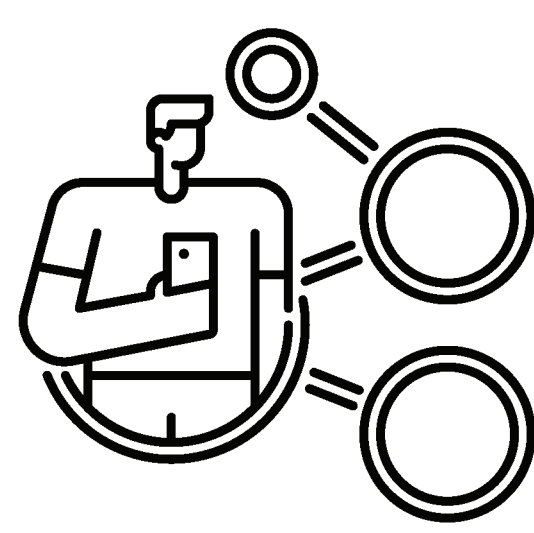
Personalization



The client has a
direct link to the
architect

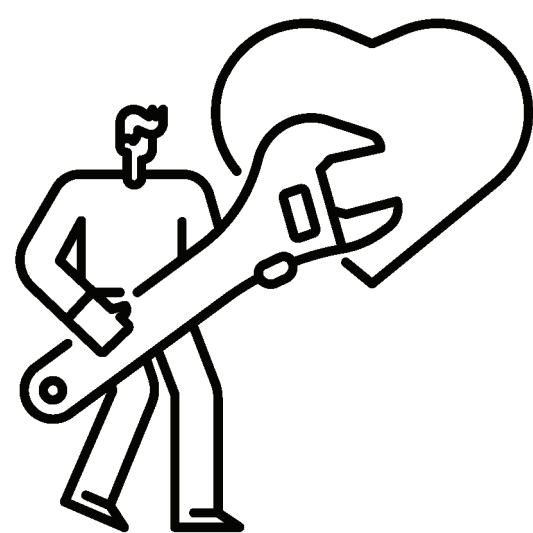


The client is able to
tweak their wishes
and demands

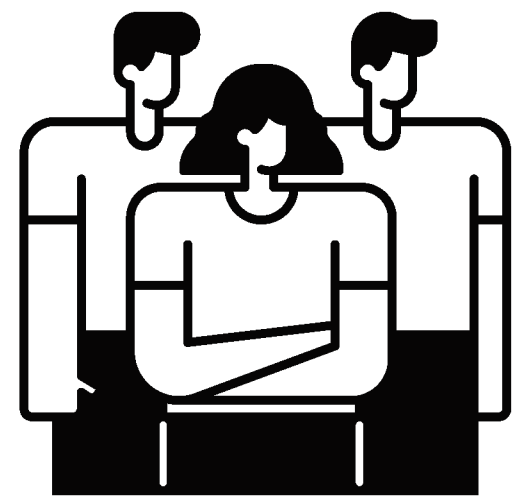


The apartment is
able to transform
when the wishes
change over time

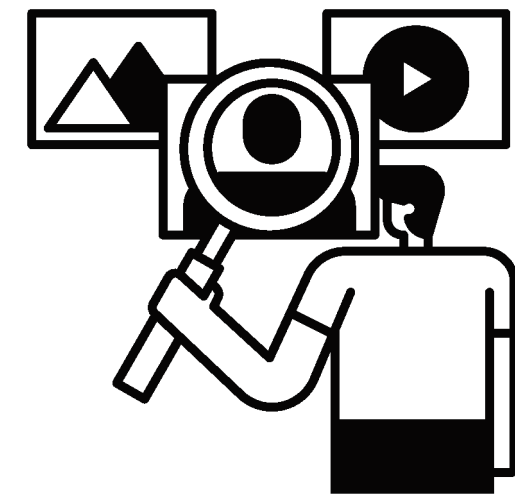
Flexibility



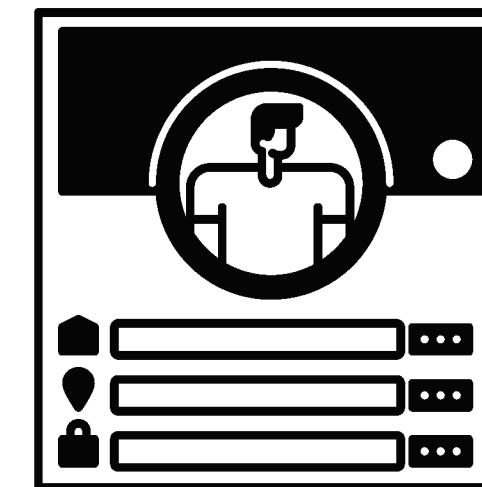
The client is able to
tweak their wishes
on demand



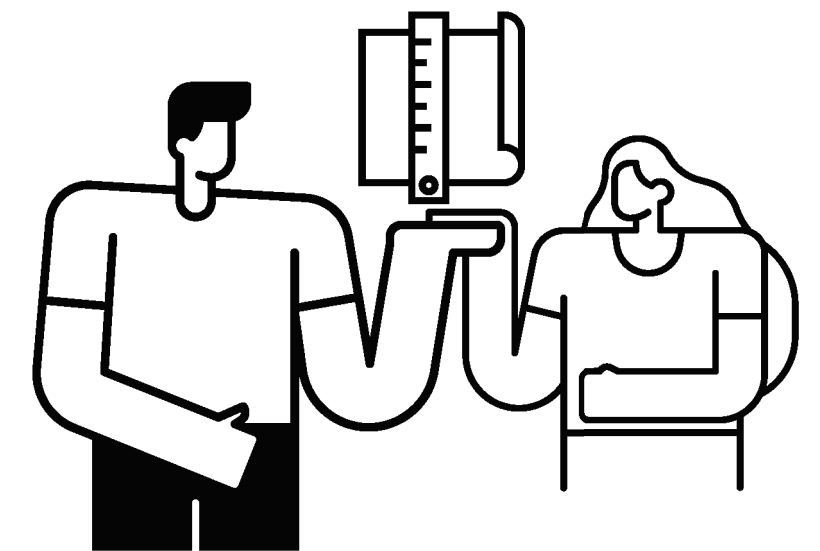
A diverse target group



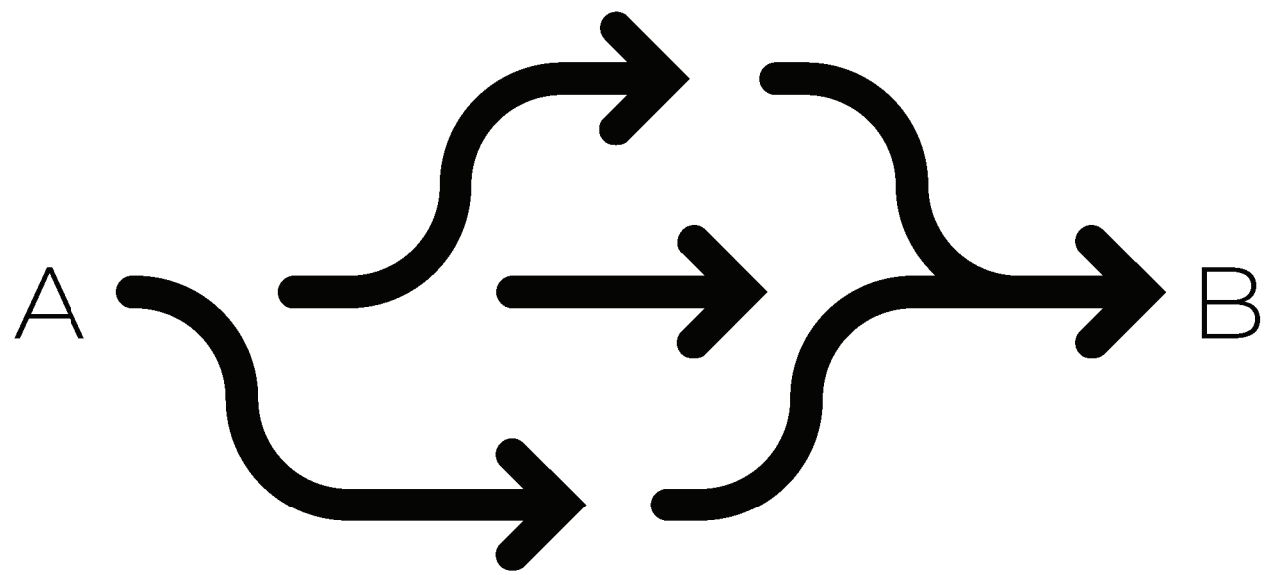
A architect
researches and
analyses the target
grup



The architect creates
a generic profile of
the target group

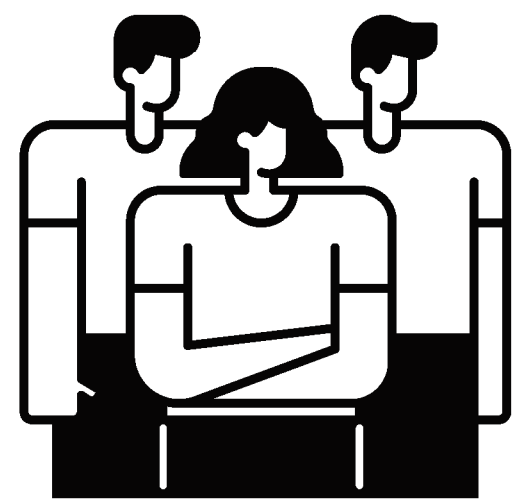


The architect
presents a
'mass-produced'
apartment plan
tailored to the target
group



My design process

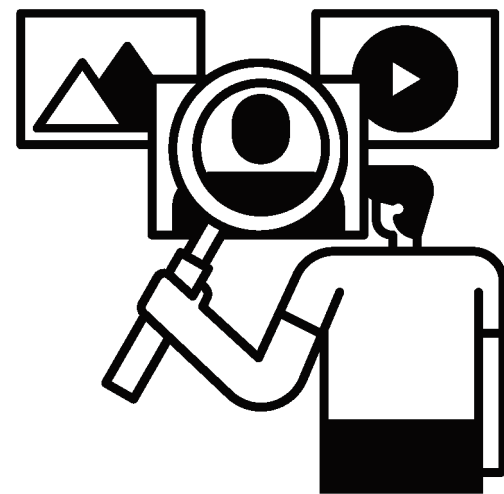
Together with the architect the resident comes up with a tailor made apartment



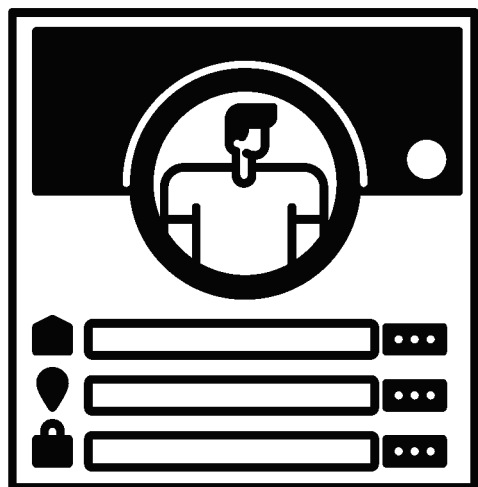
A diverse target group



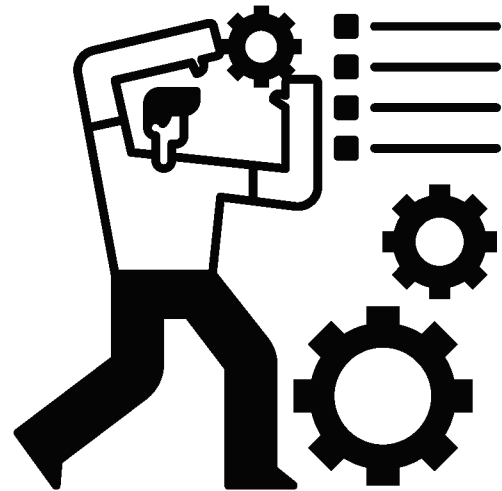
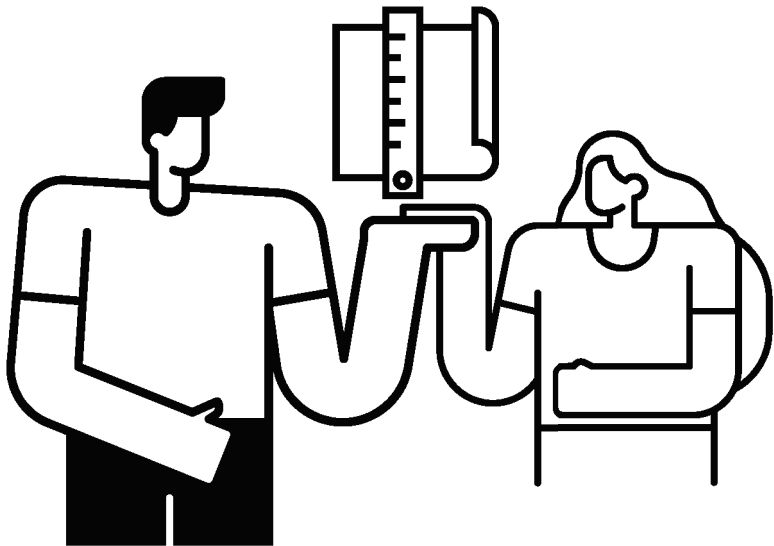
The architect gets to know the clients



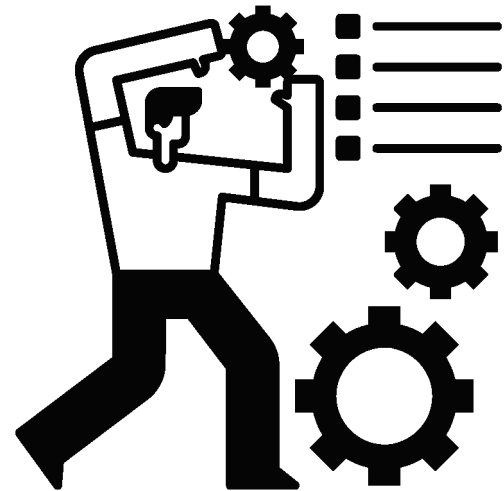
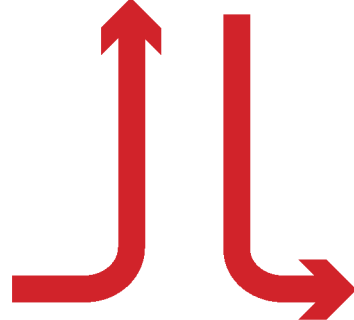
The architect comes up with a personalized profile



The architect presents a personalized plan to the client



The individual has insight into their profile and can make adjustments where needed



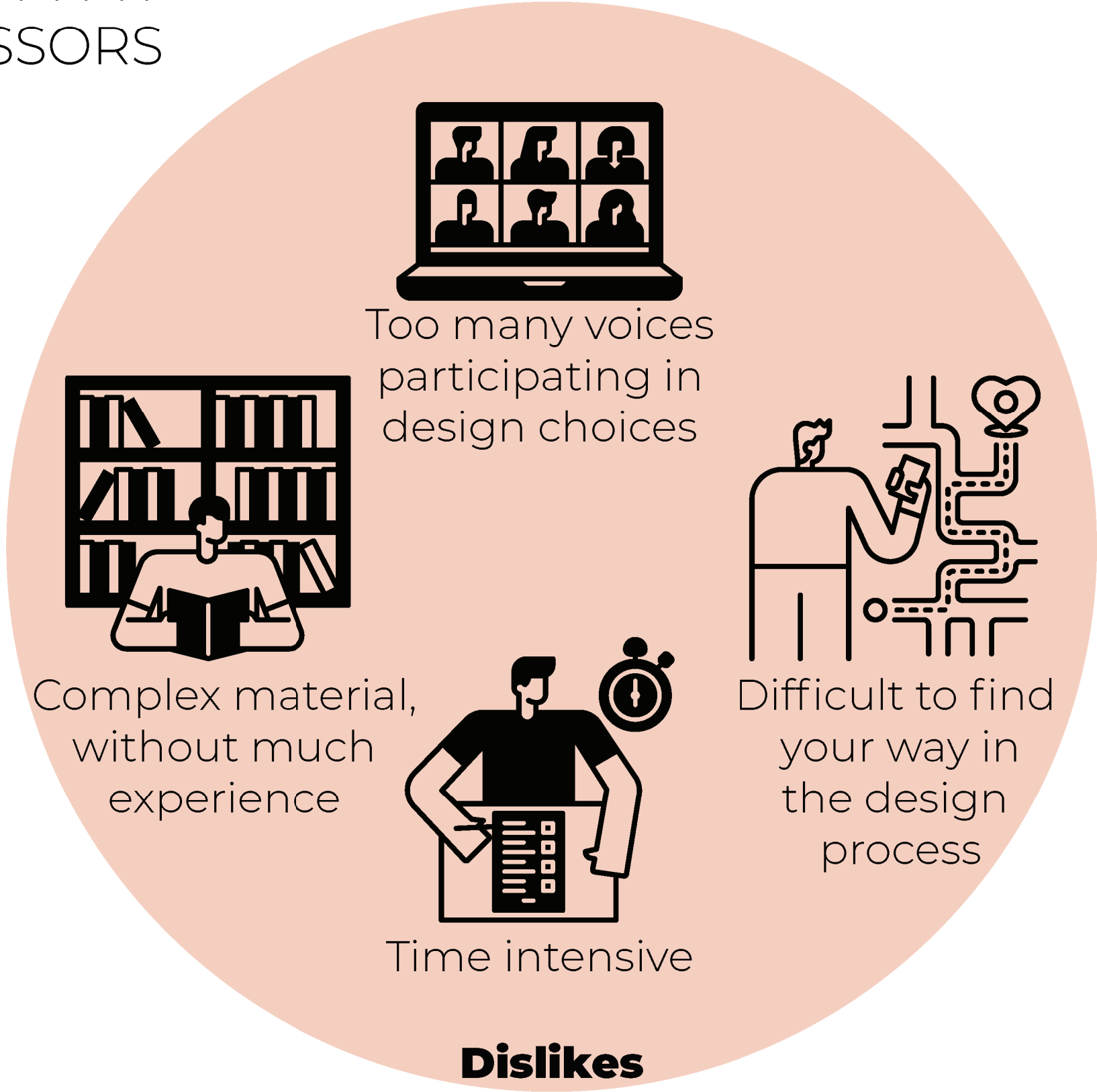
The individual has creative control in the design process of their dwelling



CASESTUDIES
LEARNING FROM MY
PREDECESSORS



CASESTUDIES
LEARNING FROM MY
PREDECESSORS



URBAN SETTING
ROTTERDAM



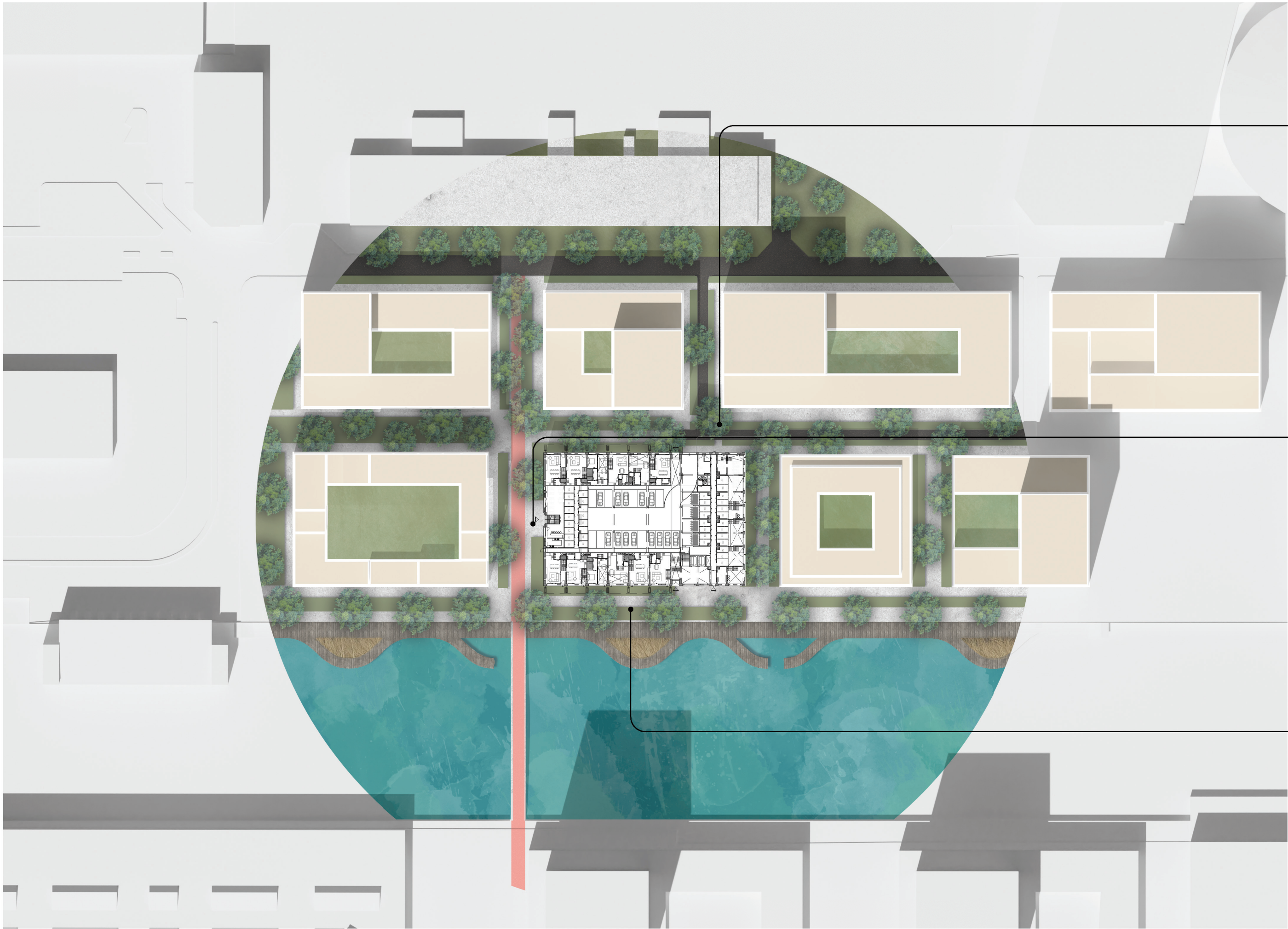
Shift is located on the border of Rotterdam with Schiedam
in the old harbor district.

URBAN SETTING
KEILE KWARTIER



As part of a new masterplan for the keile kwartier 24 new buildings are to be realized.

URBAN SETTING
GREEN SPACE



**Open green space
with room for traffic**



Dense green space



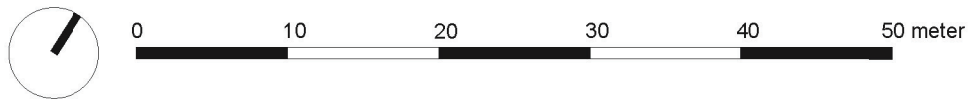
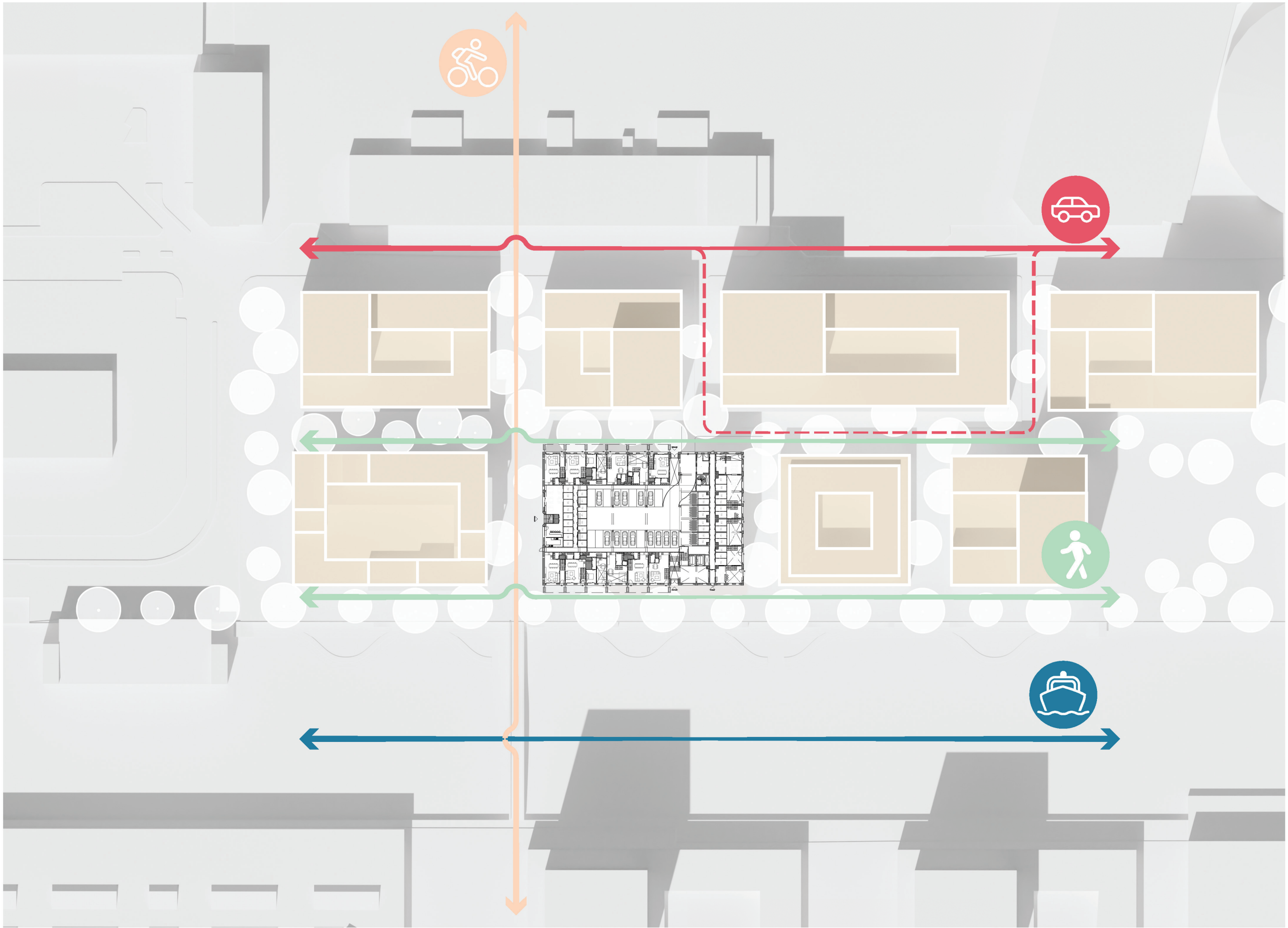
Accessible waterfront



Ground floor

The new Keilekwartier will be a diverse green area

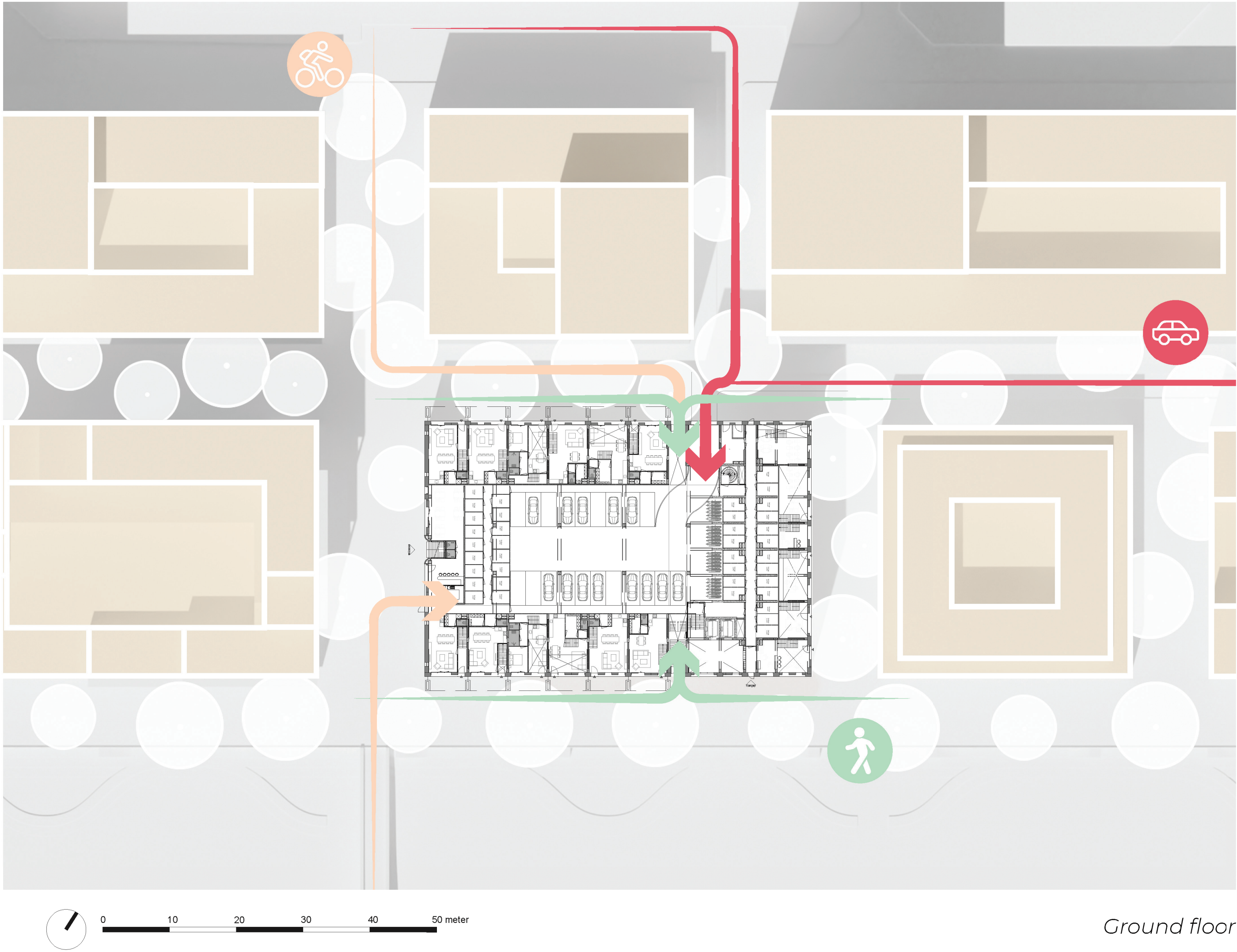
URBAN SETTING
CIRCULATION



Ground floor

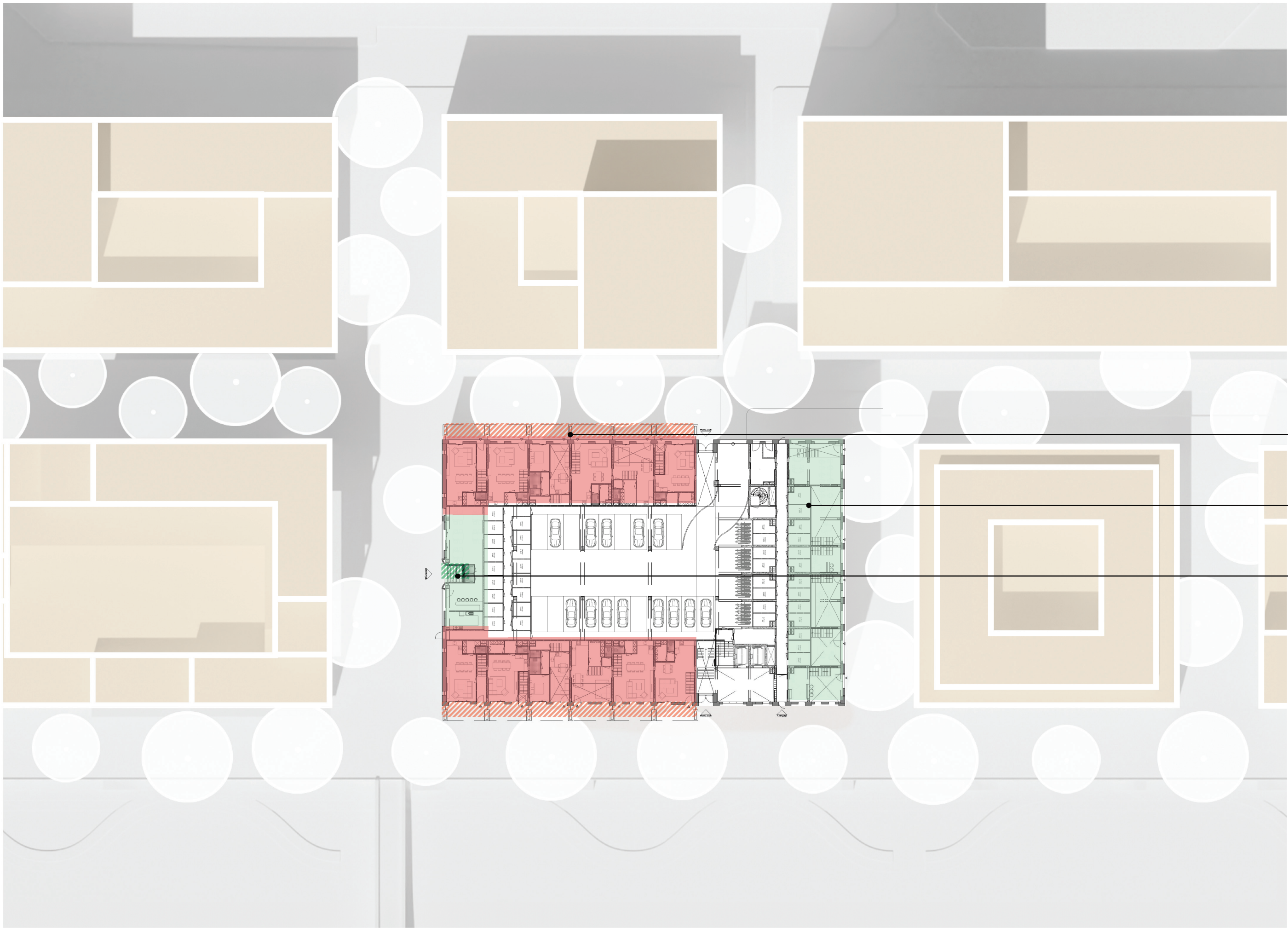
Most traffic moves from east to west through the area,
except for a bike line connecting north to south

URBAN SETTING
CIRCULATION



In order to connect to the different path ways three entrances to the building are created

URBAN SETTING
BORDERS



Private

Public

Collective

Ground floor

Around the dwellings on the ground floor pedestrains are kept at a distance by small facade gardens, while in the public areas people can walk much closer to the facade

URBAN SETTING
BORDERS



Private

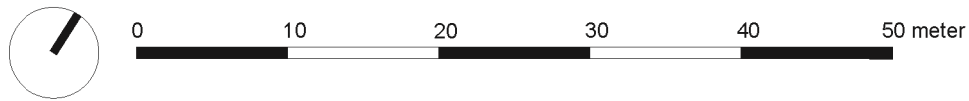
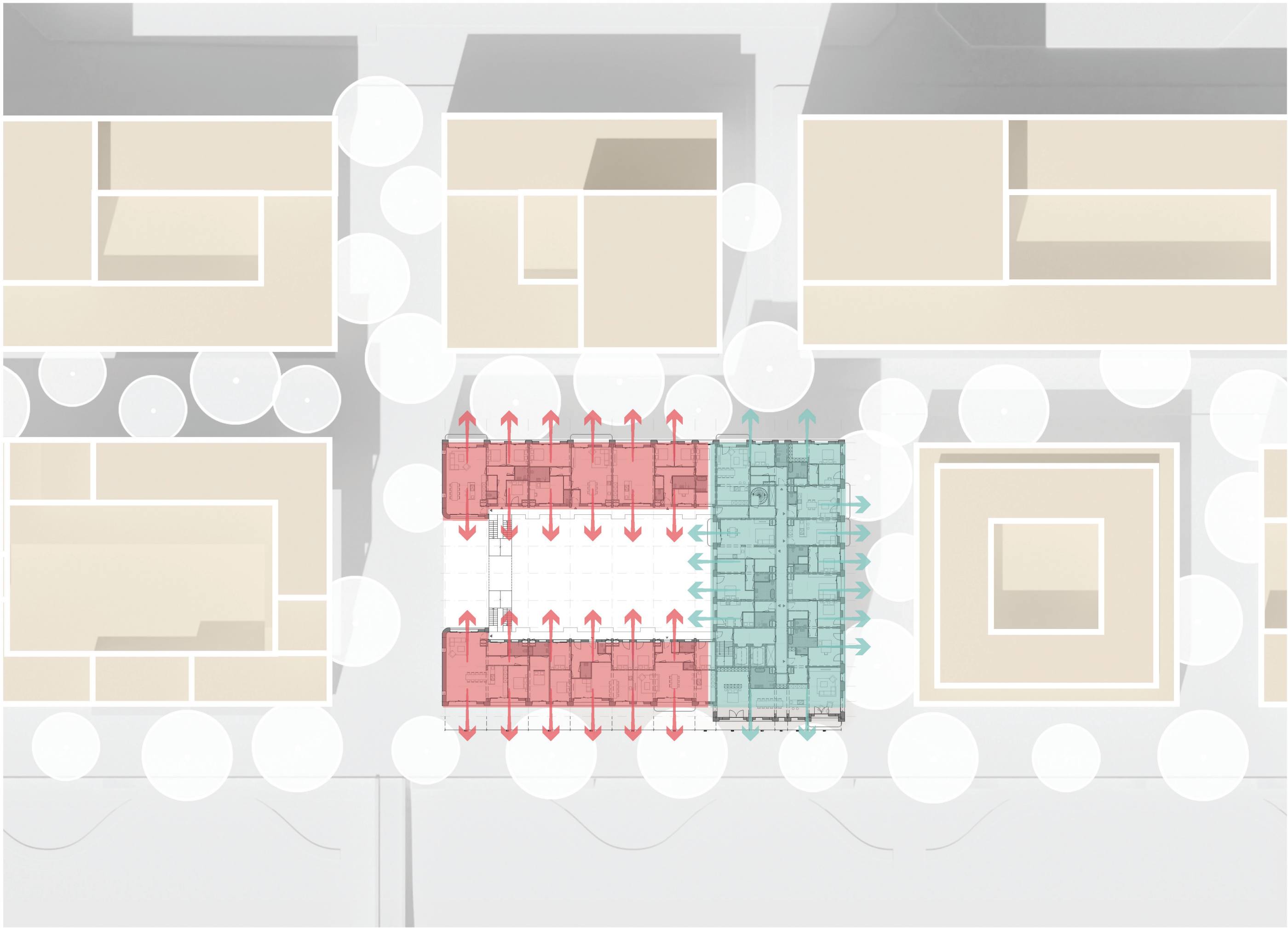
Collective

Public

First floor

On the first floor a public courtyard provides large outdoor space to all residents. Aswell as two collective apartments for when residents require more space

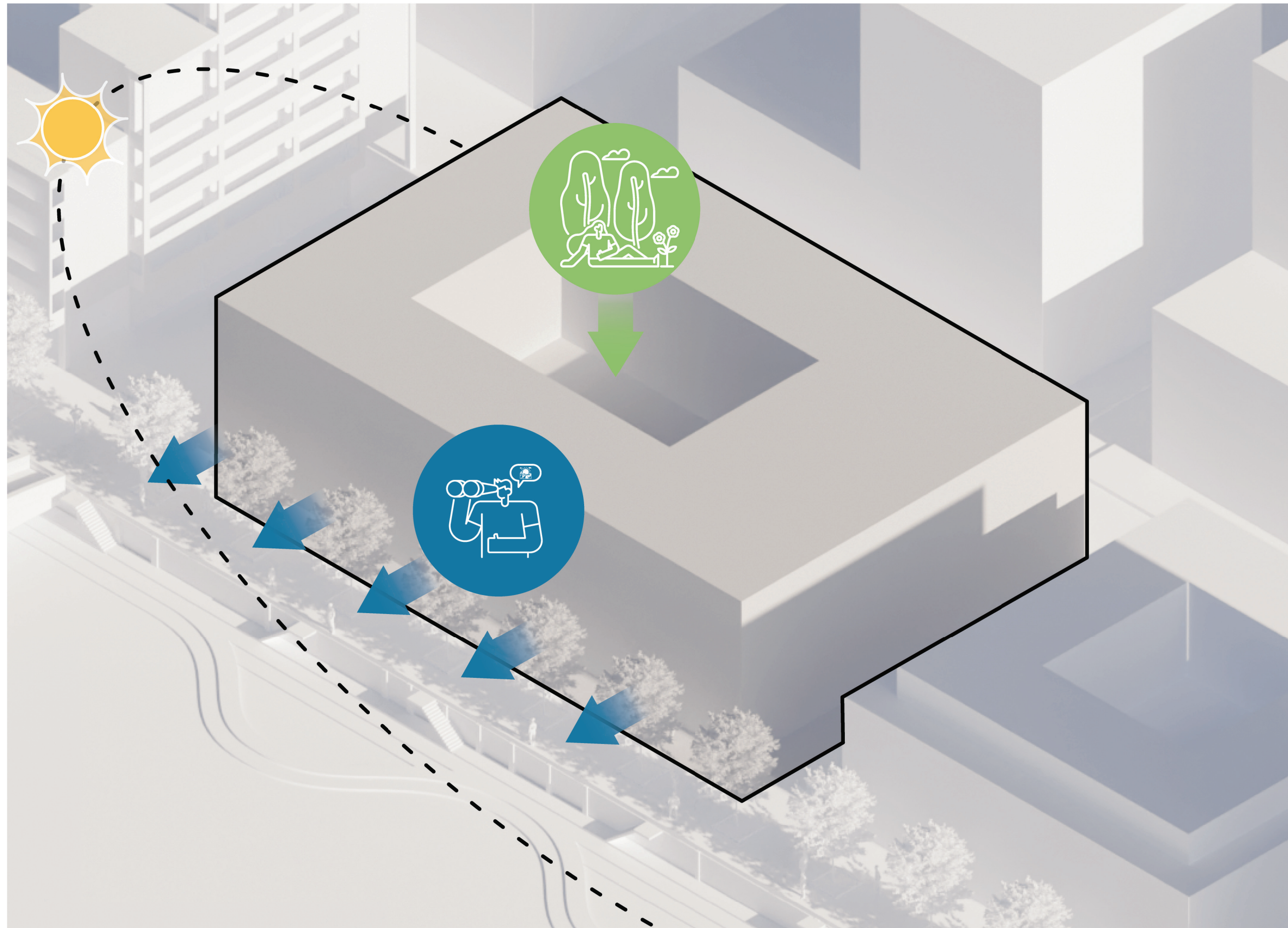
URBAN SETTING
ORIENTATIONS



Second floor

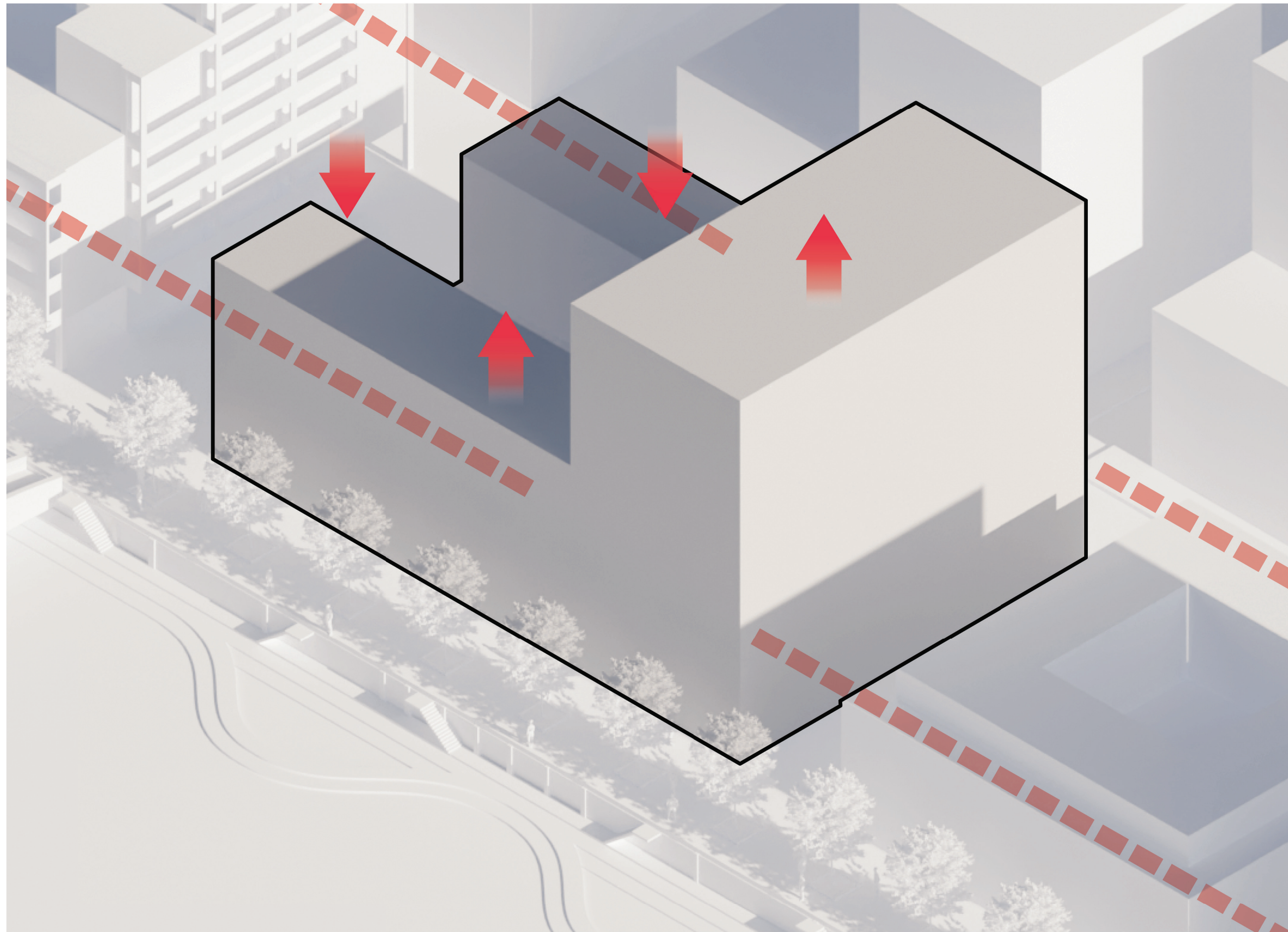
The U-shape of the building provides residents with
viewlines in all directions

MASSING MASTERPLAN



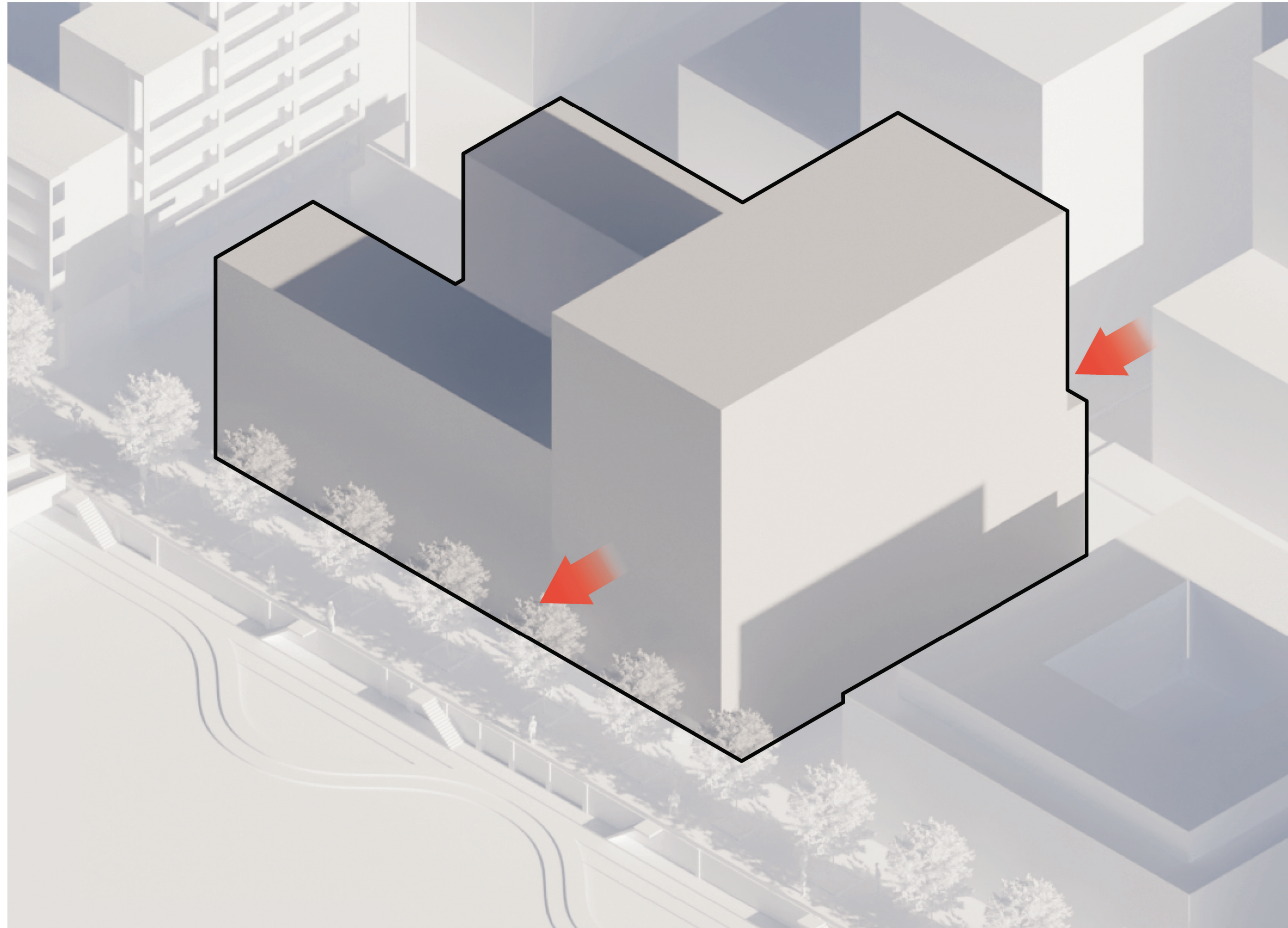
A closed building block, located on the waterfront in the Keilekwartier.

MASSING MASTERPLAN



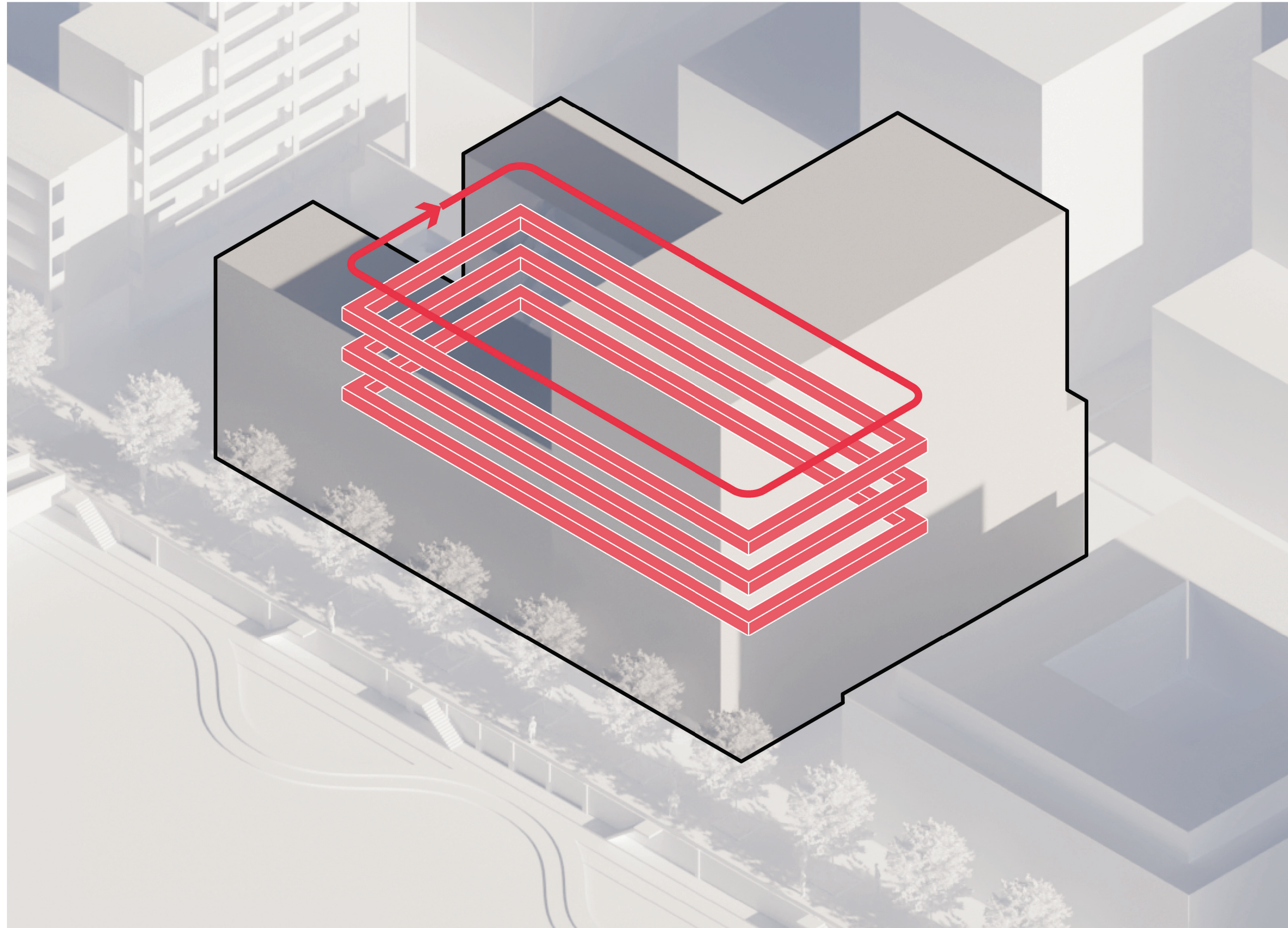
Adapt massing heights to surrounding building blocks,
add tower on the east side to densify

SHIFT
MASSING TOWARDS
WATER



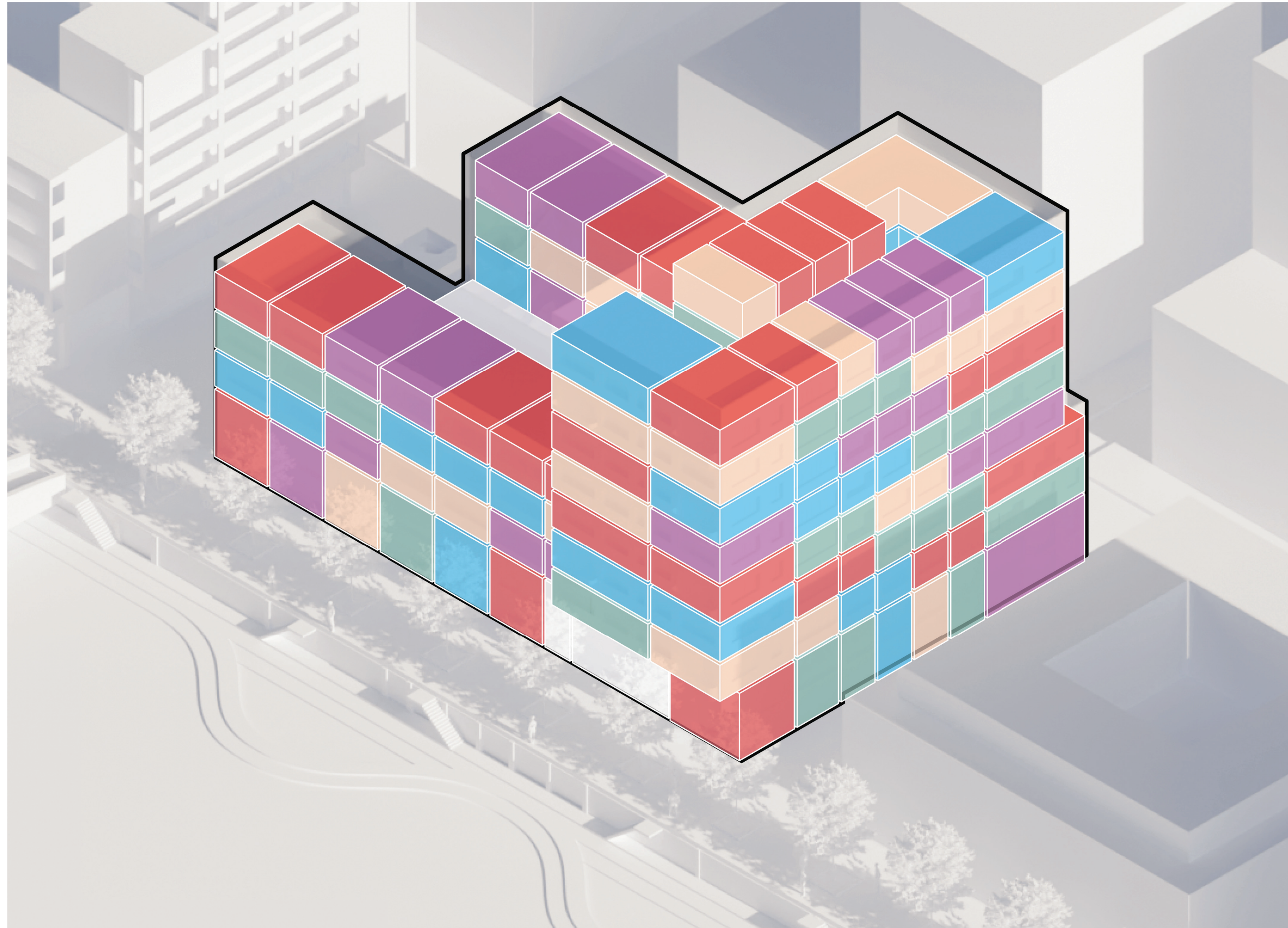
By shifting the tower towards the water the building
becomes more dynamic as a whole

CIRCULATION



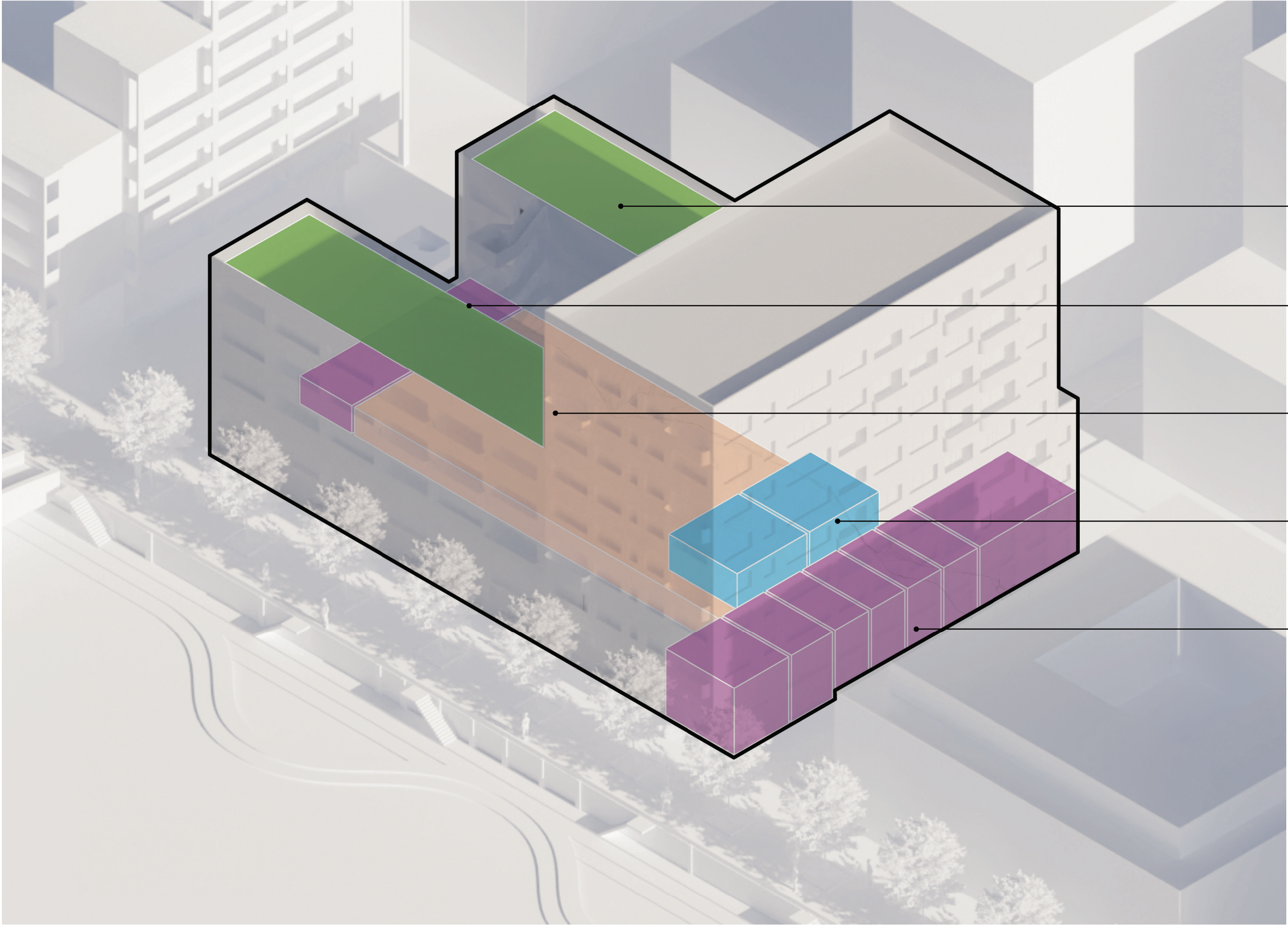
By connecting the two galleries, residents can move through the building more easily

PERSONALISATION



A flexible building system allows for many different configurations

SPACES
PUBLIC AND COLLECTIVE



Communal roof gardens

Commercial space

Parking & storage

***Communal livingrooms
+ guest rooms***

***Commercial spaces
& offices***

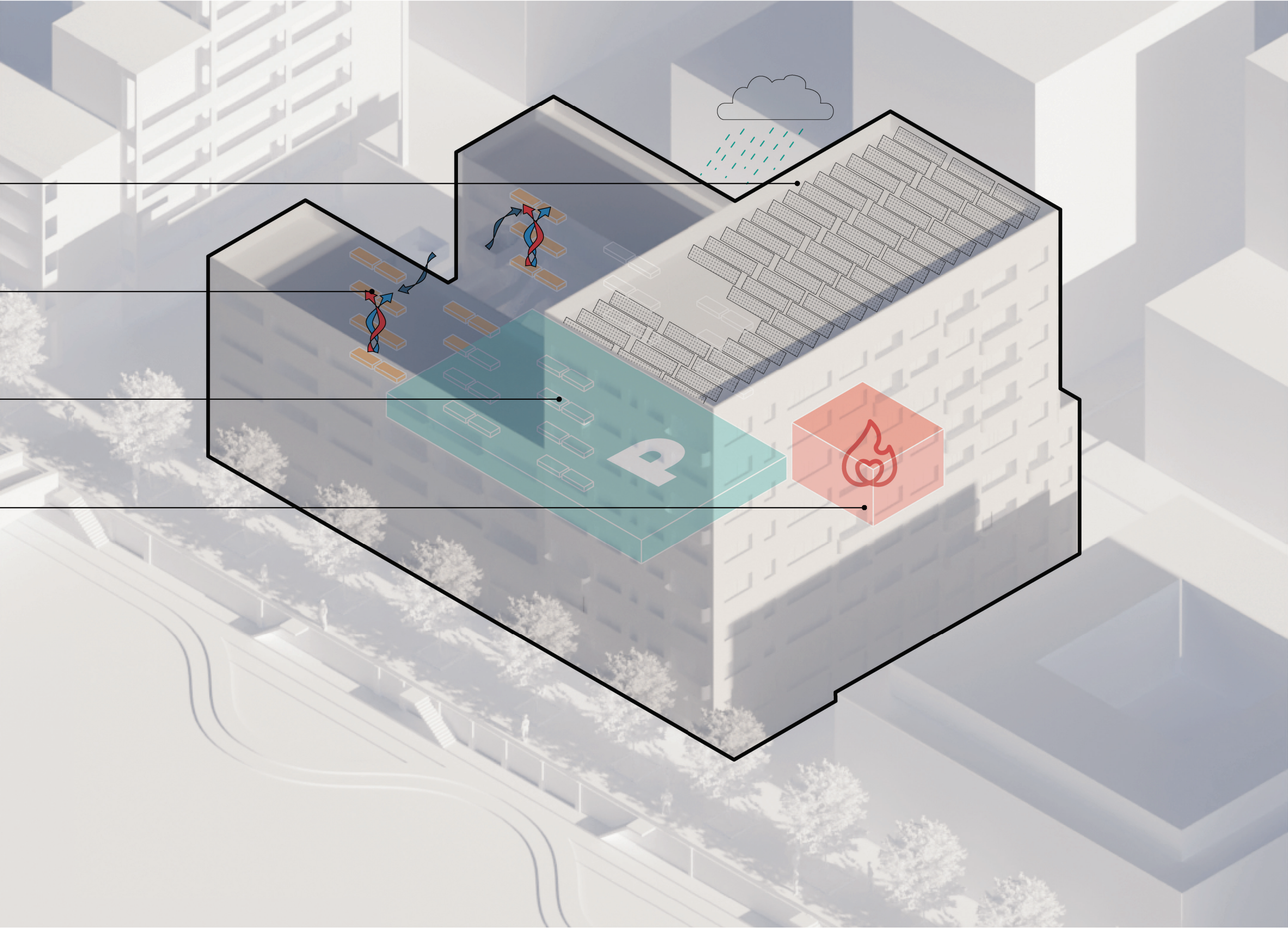
By giving residents many multifunctional spaces the building lifespan can be greatly expanded



The rooftop provides a green place to escape to for residents

SUSTAINABILITY

- Pv-Panels**
- Heat exchangers**
- Shared electric parking**
- Collective heating system**

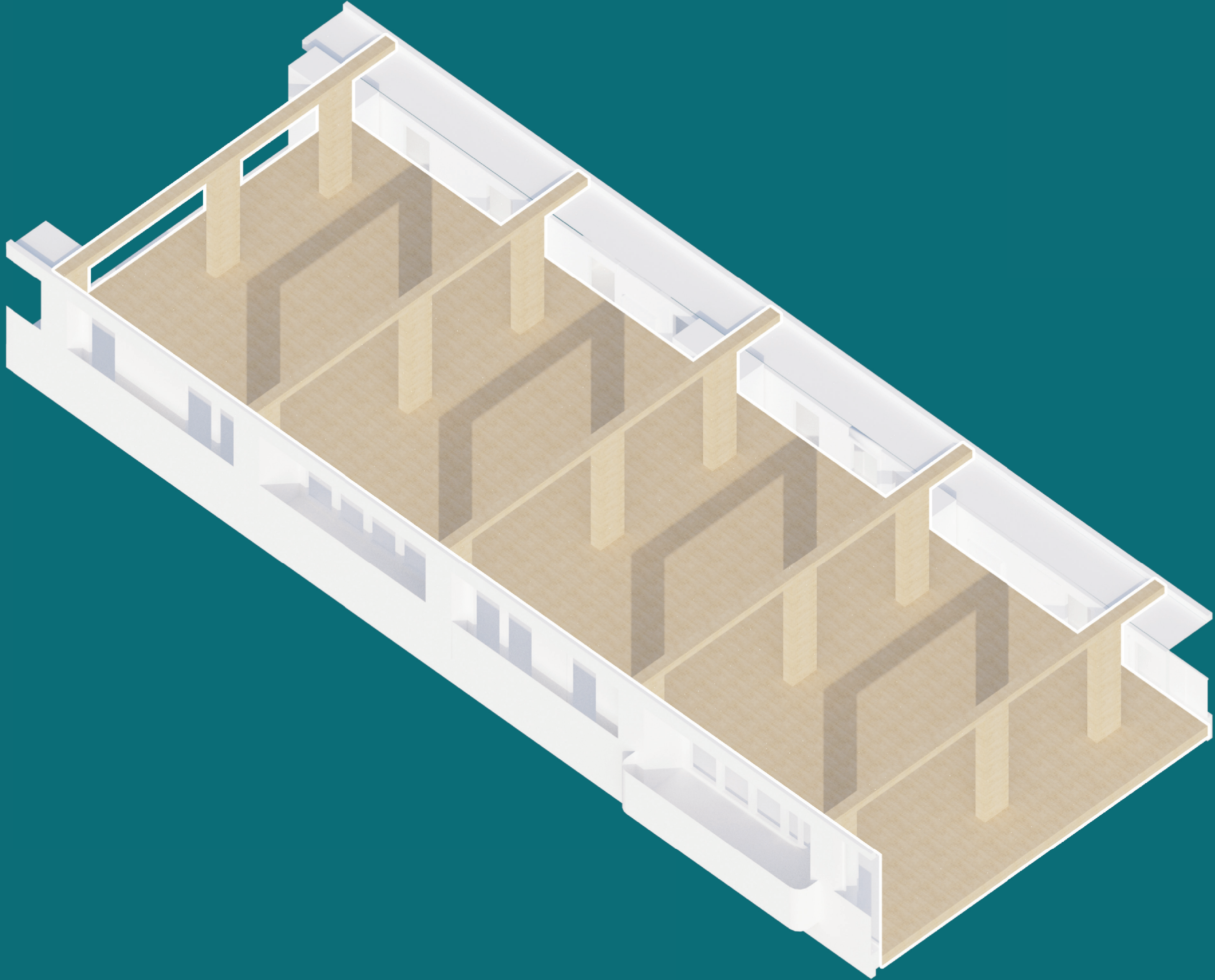


-  **Reachable installations.**
The installations are placed in such a way they are easily reached, replaced or repaired.
-  **Flexibility**
The floorplans are arranged to provide flexibility for the residents. This way any resident can feel at home.
-  **Natural ventilation**
Fresh air is constantly pumped into the apartments to create a healthy living environment.
-  **Shared electric cars**
Electric cars are parked below the public courtyard and can be used by all residents.
-  **Natural daylight**
Every apartment is outfitted with large open windows that provide lots of natural daylight.
-  **Outdoor sunscreens**
Sunscreens on the outside of the windows can be used to block out the sun on days that it is not desirable.
-  **Circularity**
Circularity is a important theme in SHIFT, many materials used in the fabrication are reclaimed.
-  **Demountable**
Large parts of the structure can be taken apart after the building has outlived its purpose.
-  **Capture rainwater**
Rain water is captured and reused within the building, lowering the amount of water used.
-  **Energy production**
Energy is produced on the roof of SHIFT through PVcells.
-  **Wooden structure**
The main construction material is wood, lowering the carbon emissions needed to produce the building.
-  **Recapture energy**
By reusing the hot air leaving the building, the total energy usage can be kept low.



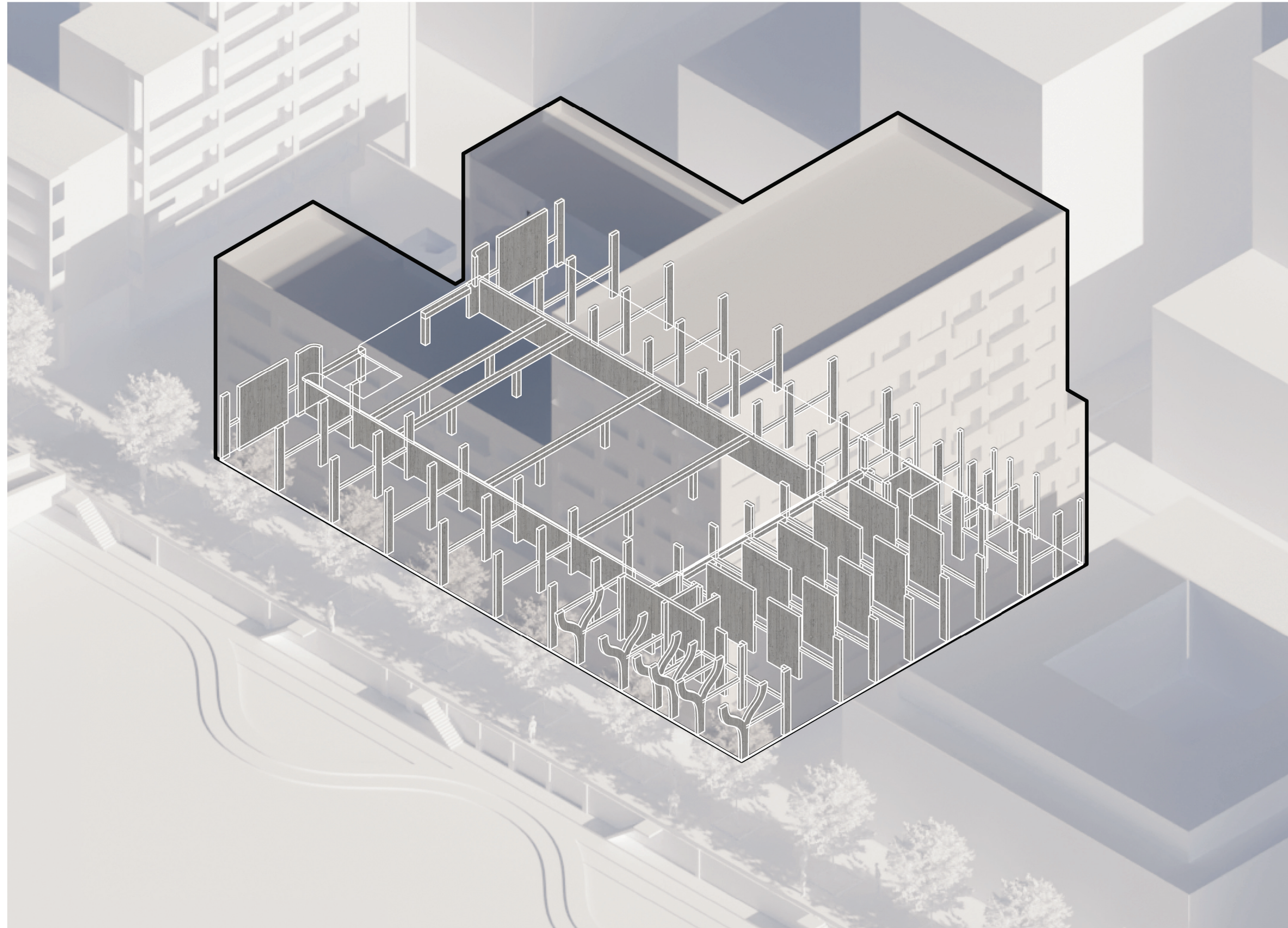
'brand' diagram with the layers as proposed by Leupen

Layer 1: The supporting structure



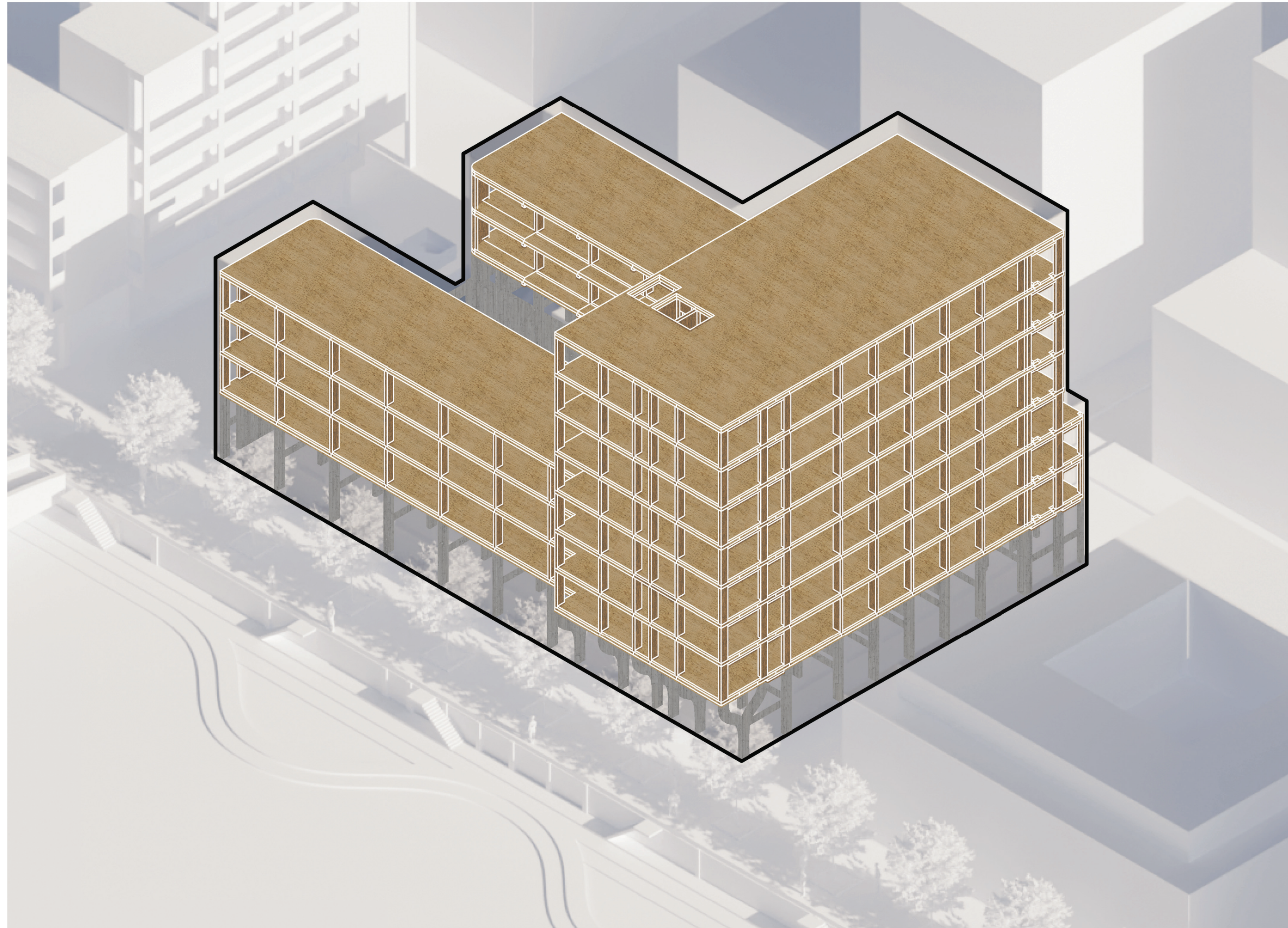
Layer 1: The supporting infrastructure

STRUCTURE CONCRETE BASE



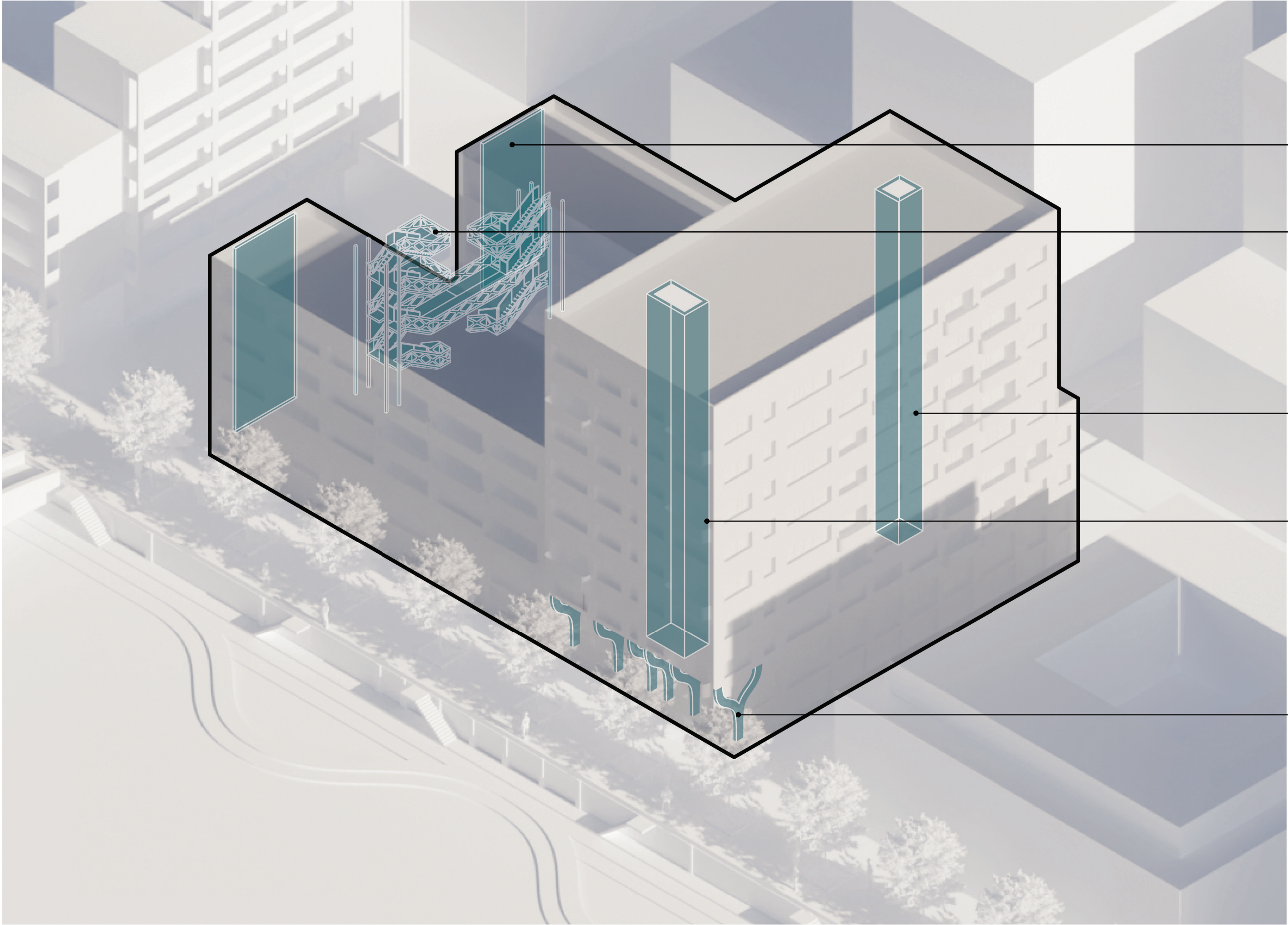
The structure on the ground floor is made of concrete providing stability and strength

STRUCTURE WOODEN TOPUP



CLT provides light and flexible structure on top of the concrete base

STRUCTURE
SPECIALS



***Closed backwalls for
stability***

***Seperate structure to
support the stairs***

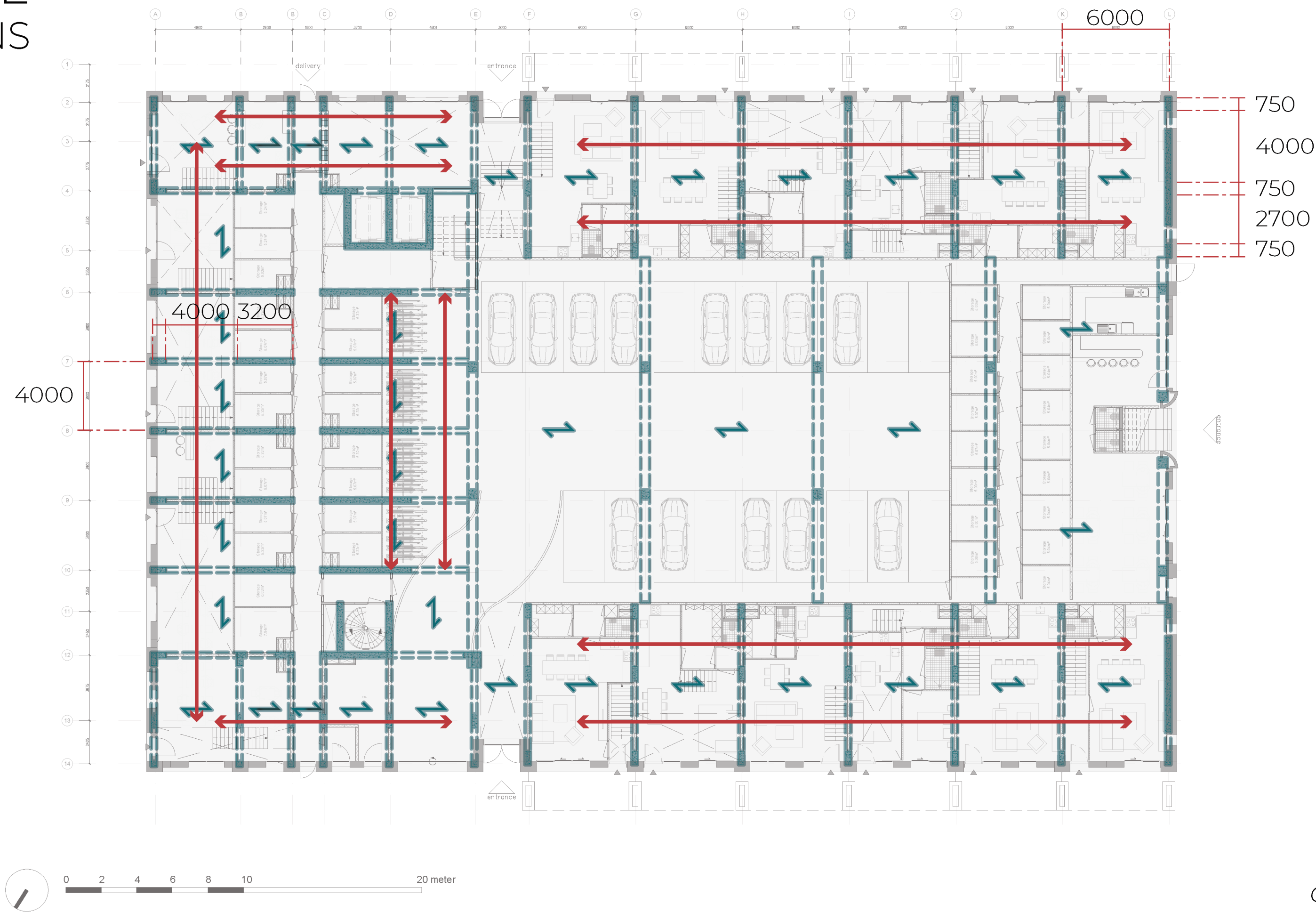
***Wooden core around
escape stairs***

***Wooden core around
circulation core***

***Concrete colomns
to facilitate 'shift'***

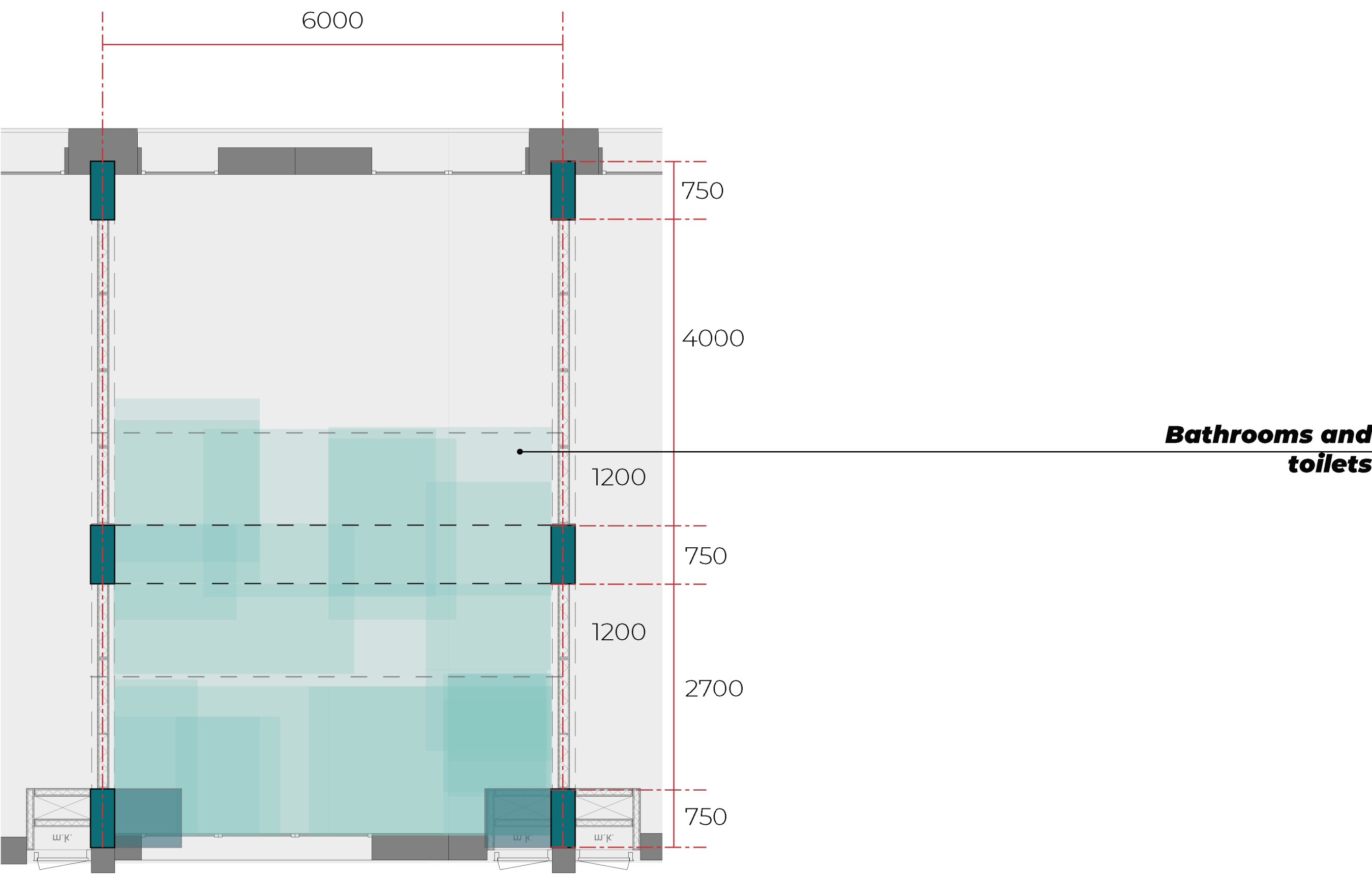
Additional elements provide stability and strenght to the building

STRUCTURE DIMENSIONS



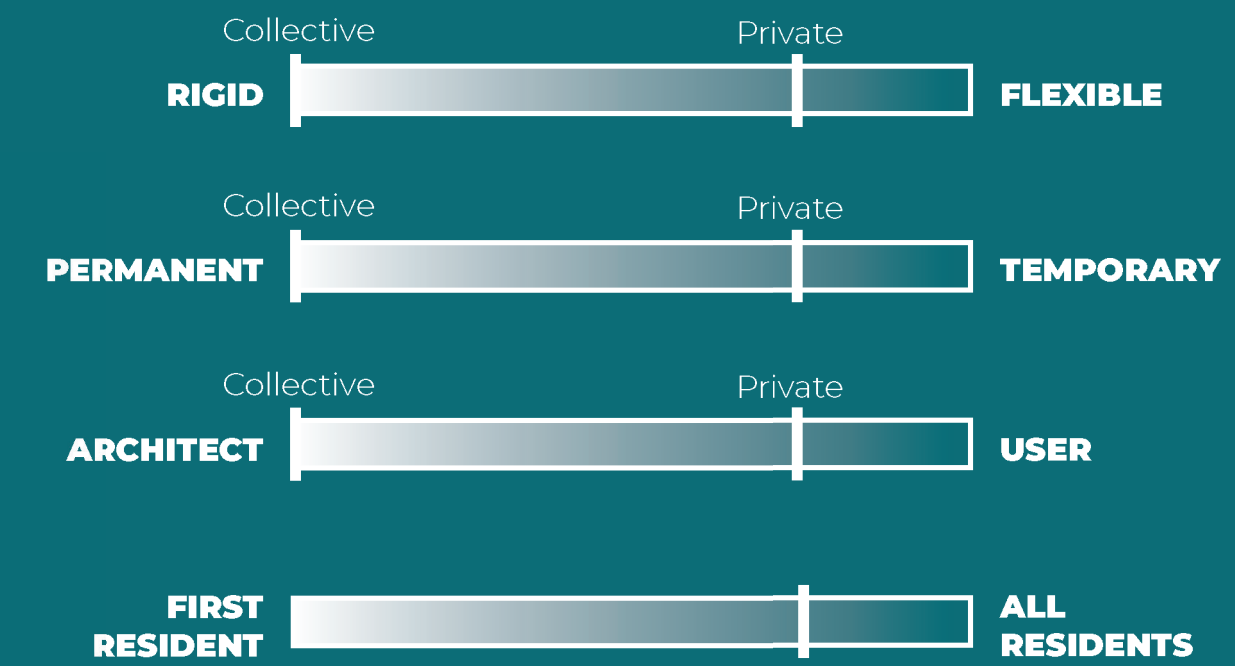
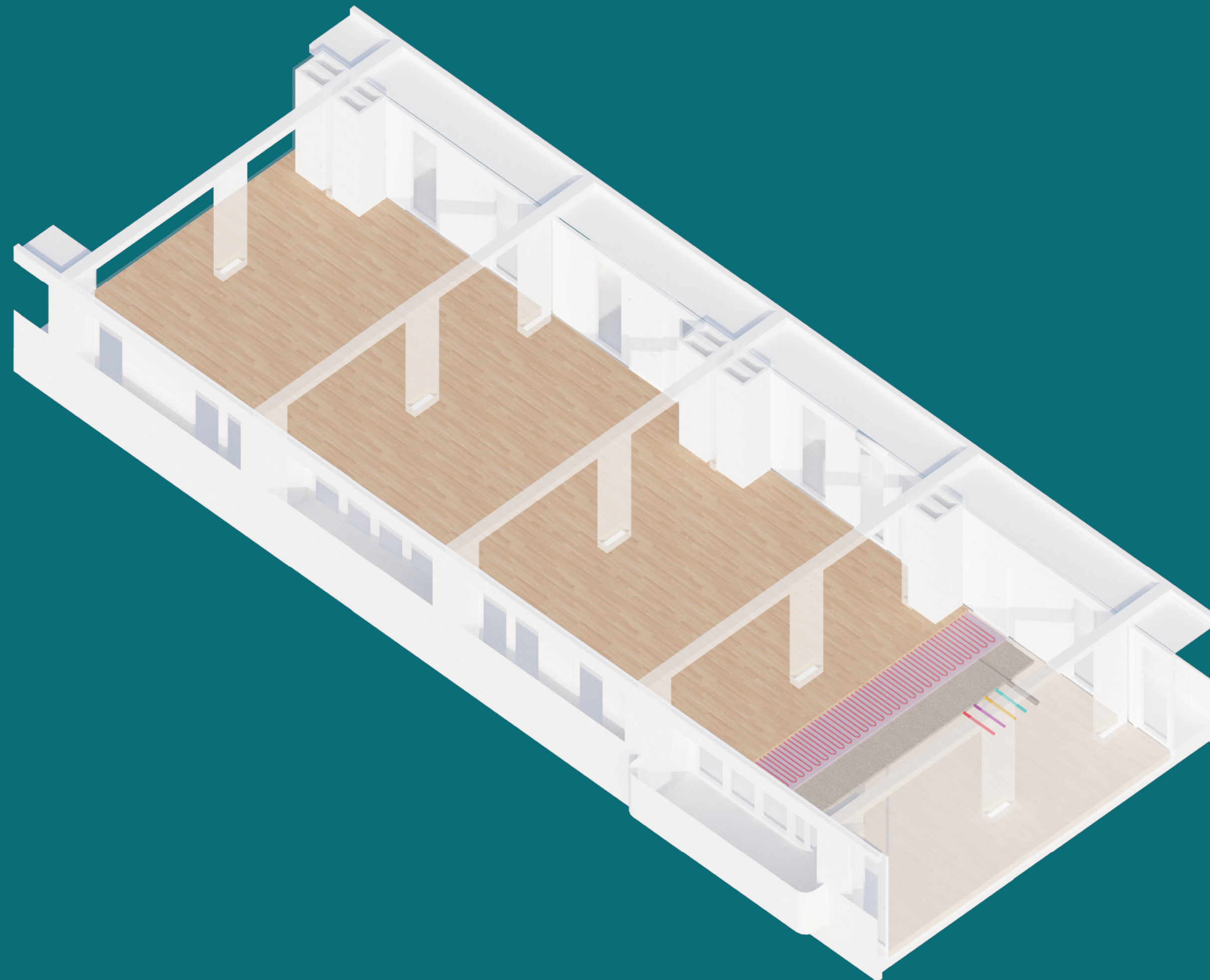
Ground floor

STRUCTURE
DIMENSIONS

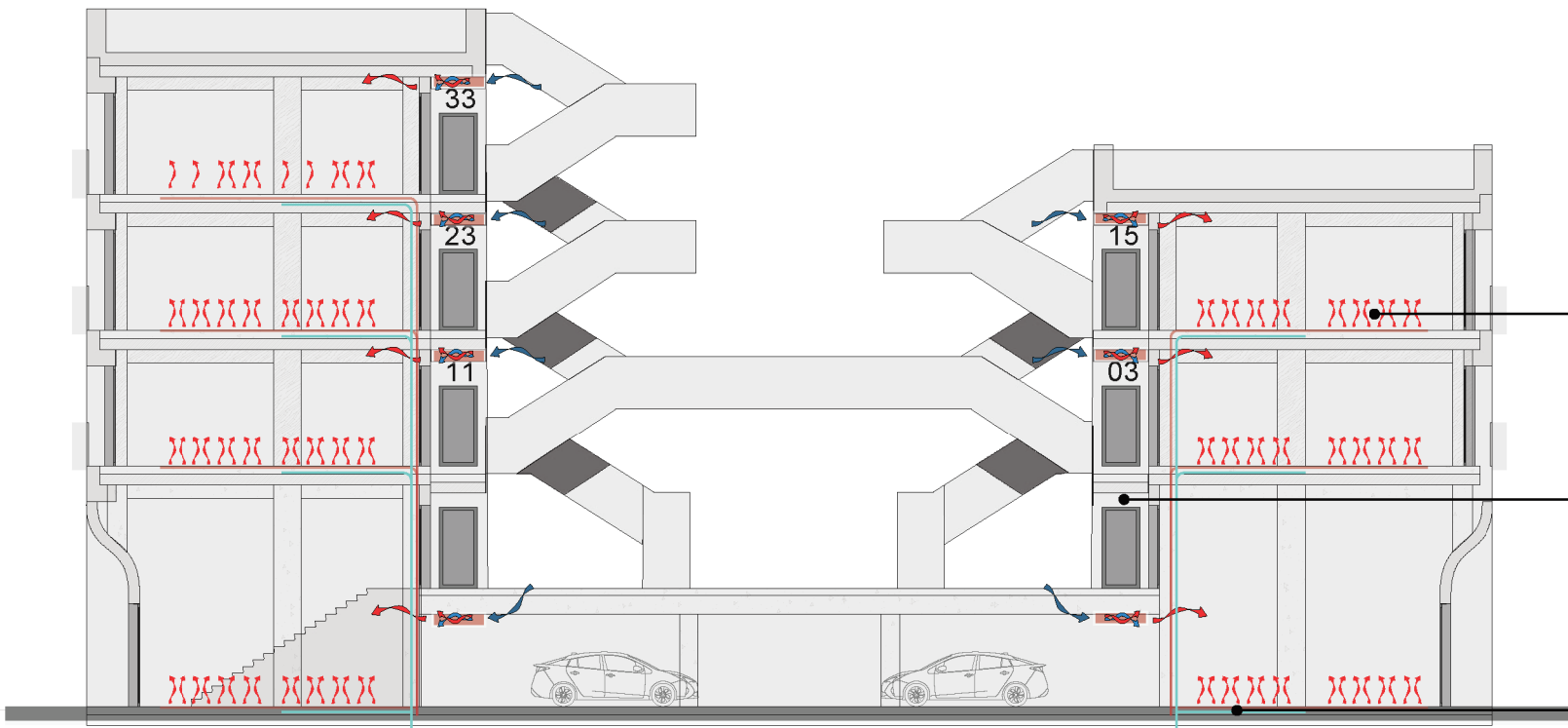
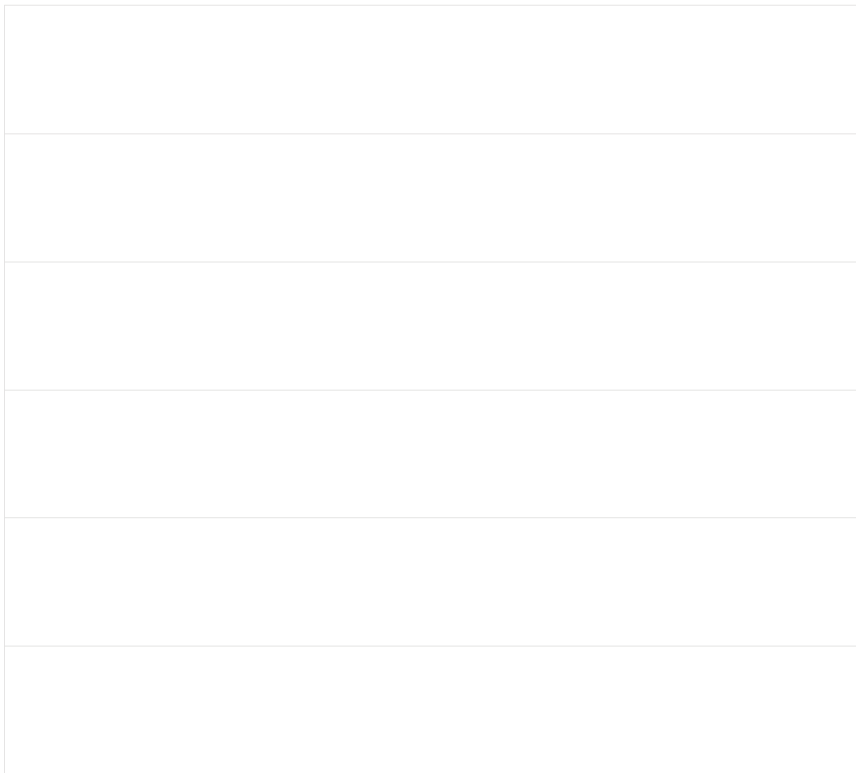


A study was performed to determine the optimal positions
in of the structural elements to allow residents freedom
when planning their apartment

LAYER 2: *THE SERVICE ELEMENTS*



SERVICE ELEMENTS SECTION



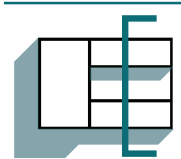
Heated floors

Heat recovery units

**Elevated floorsystem for easy
adjustments to plumbing**

0 2 4 6 8 10 20 meter

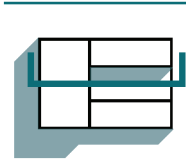
Section width



SERVICE ELEMENTS SECTION



Section length



SERVICE ELEMENTS COLLECTIVE SYSTEM

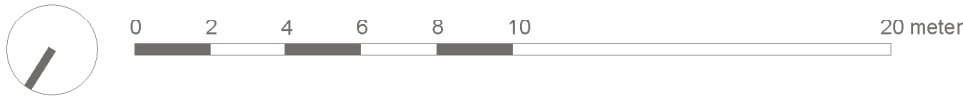
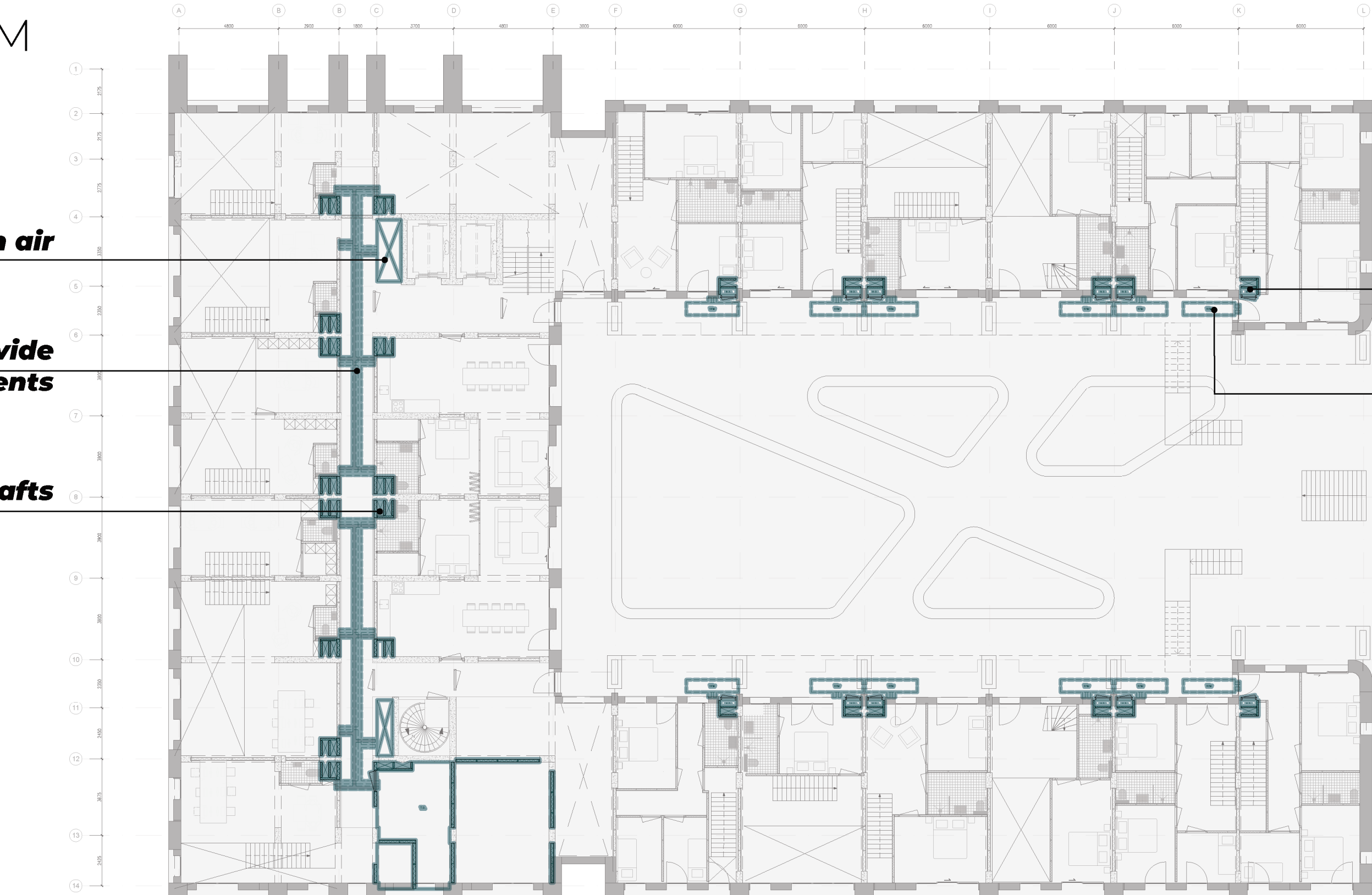
Shafts for fresh air

***Air ducts to provide
fresh air to apartments***

Shafts

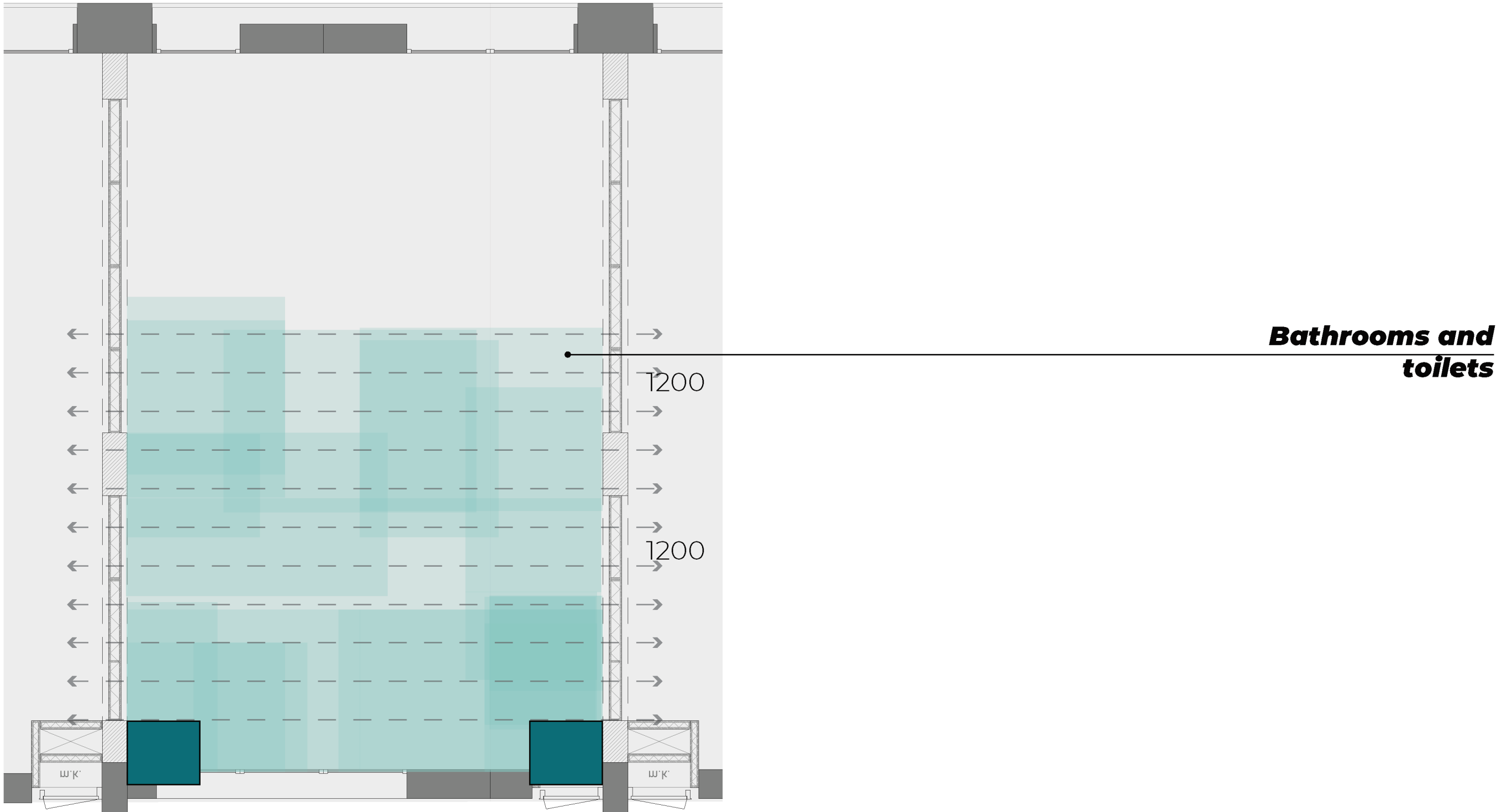
Shafts

Heat recovery units



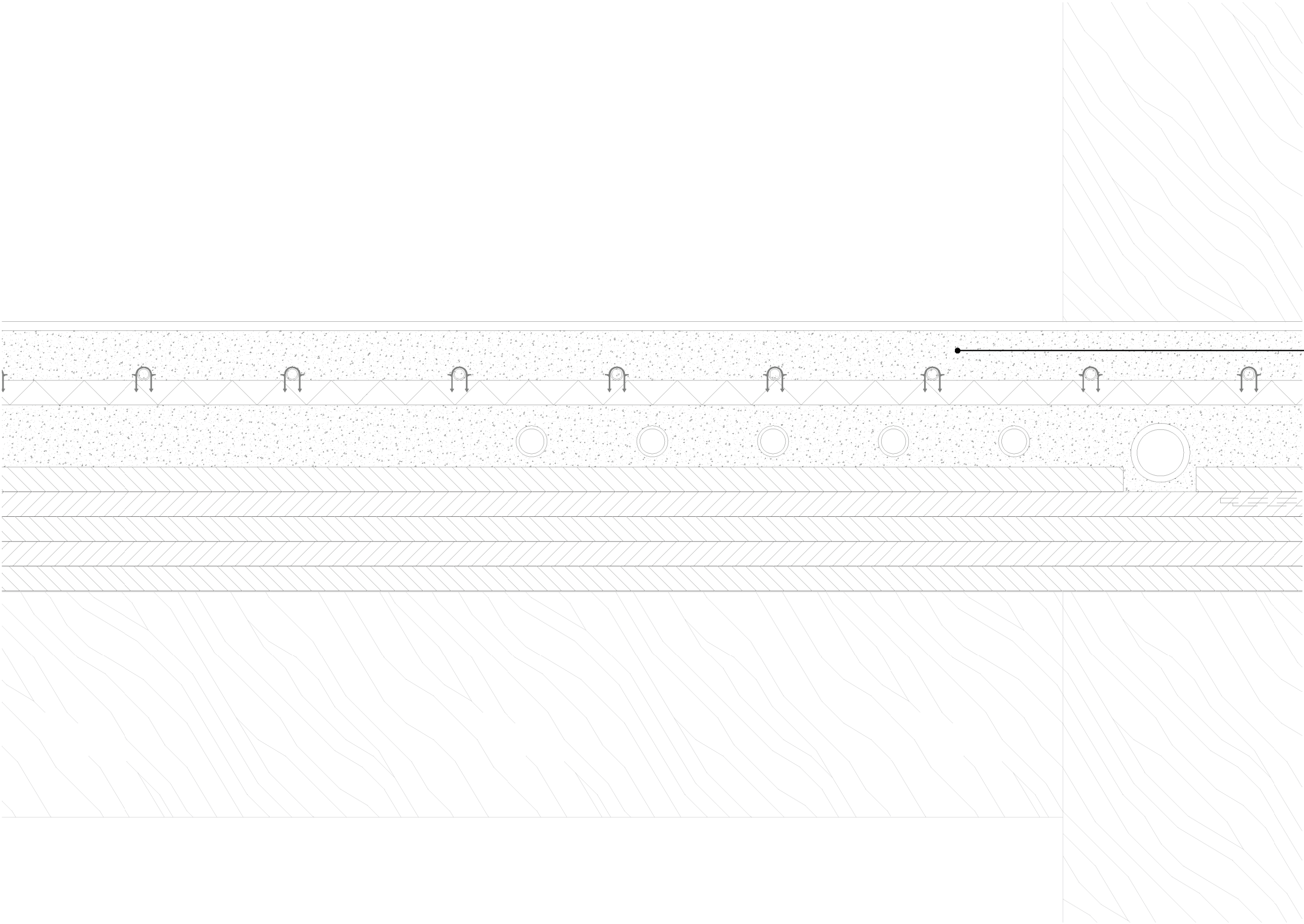
Ground floor

SERVICE ELEMENTS
PRIVATE SYSTEM



A study was performed to determine the optimal positions
in of the structural elements to allow residents freedom
when planning their apartment

SERVICE ELEMENTS
PRIVATE SYSTEM



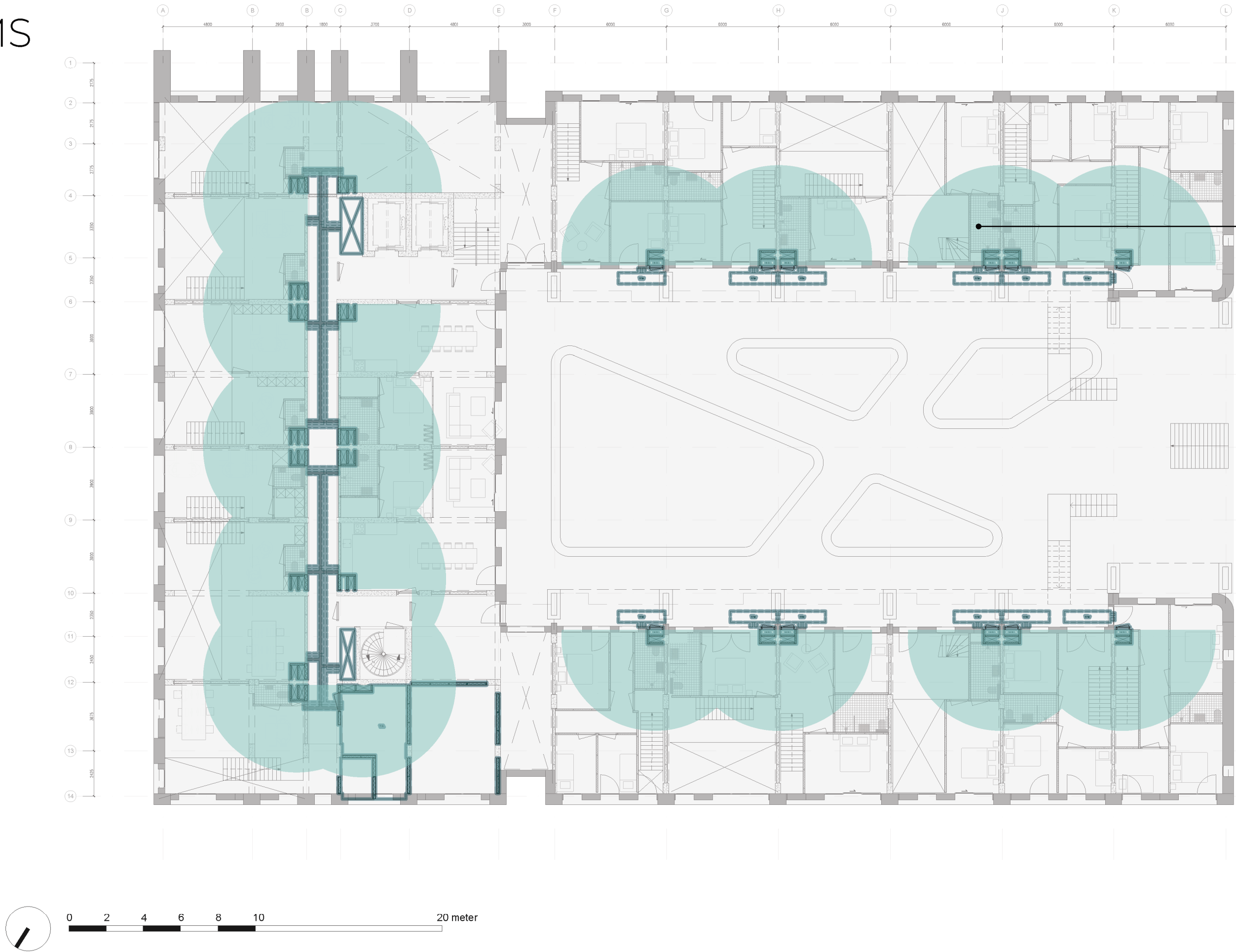
Flexible floorsystem

- top floor to be determined by resident
- 80mm vermiculite granules with integrated floor heating
- 40mm soundproofing insulation
- 100mm vermiculite granules for plumbing systems

0 100 200 300 400 500 mm

Floor buildup

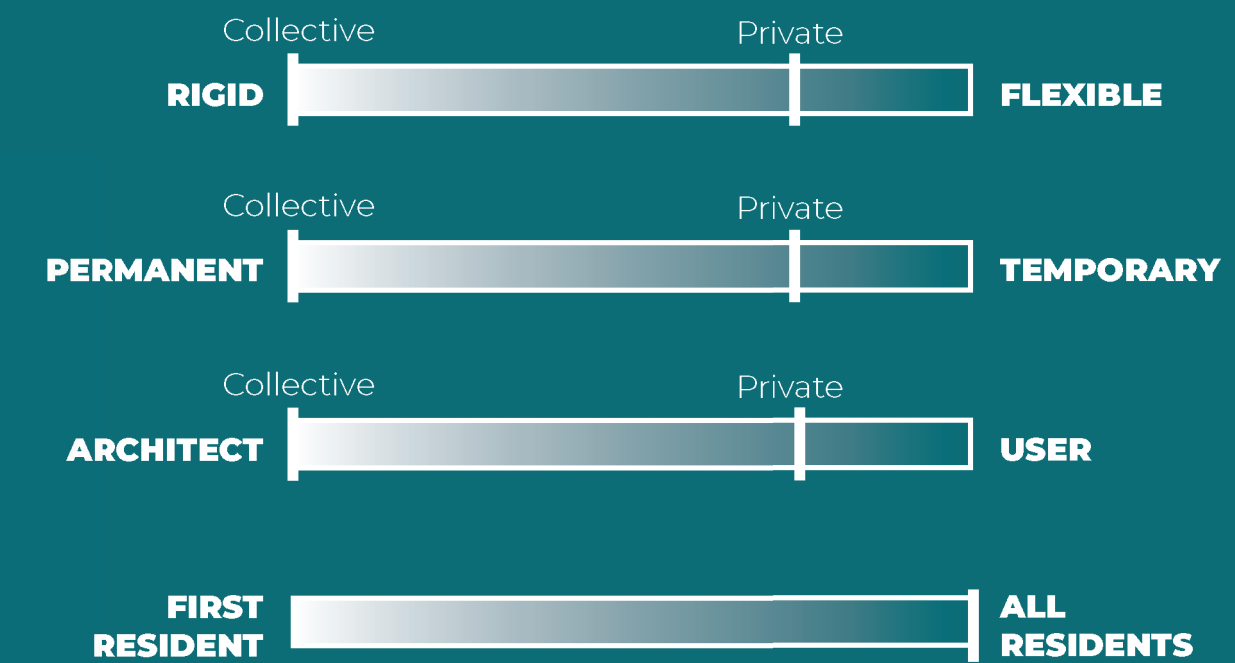
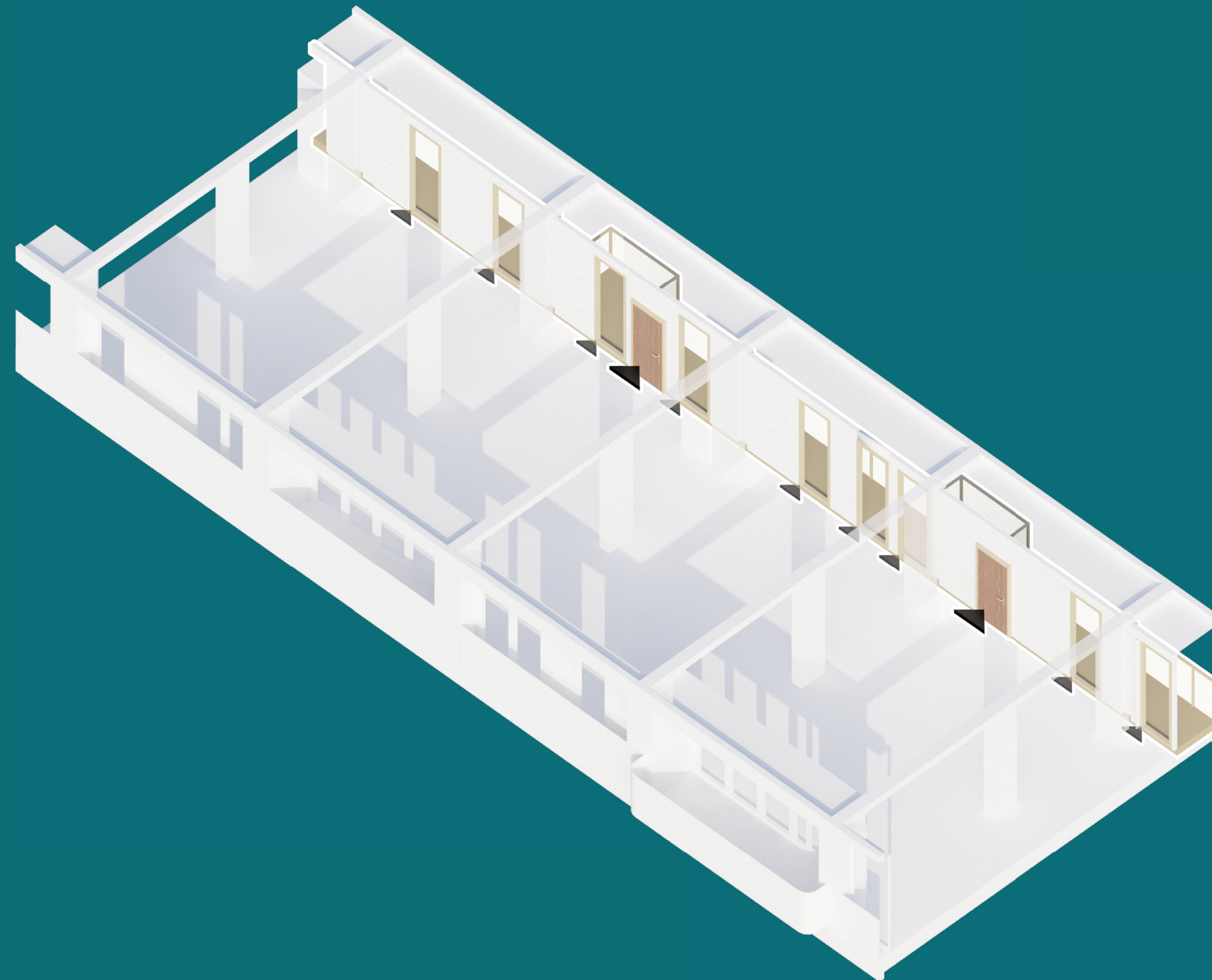
SERVICE ELEMENTS
COMBINED SYSTEMS



'Wetzone'

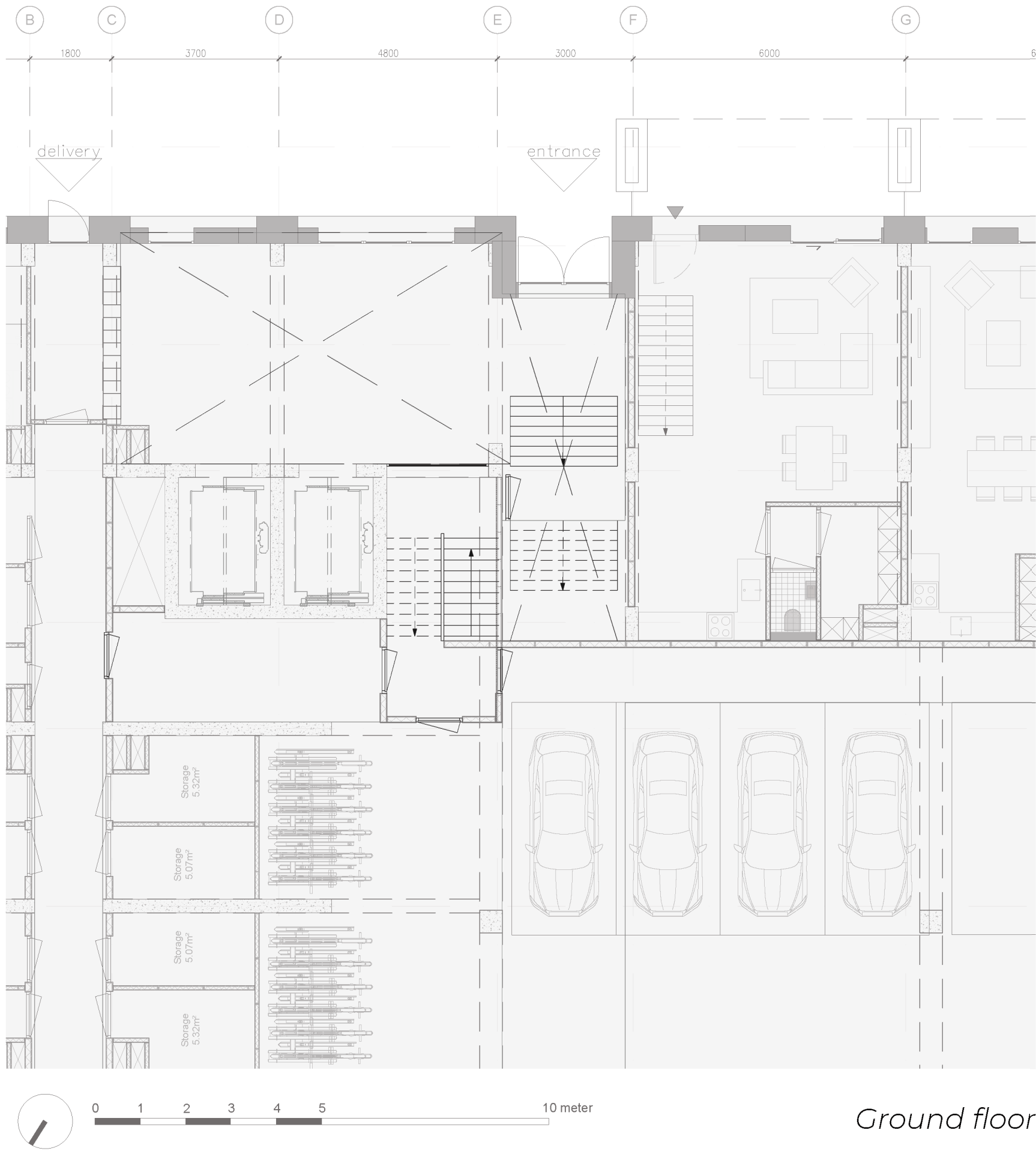
First floor

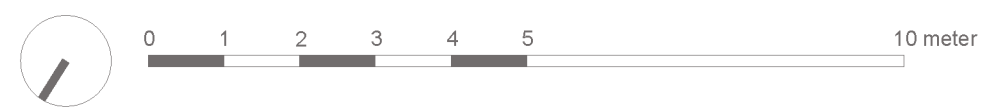
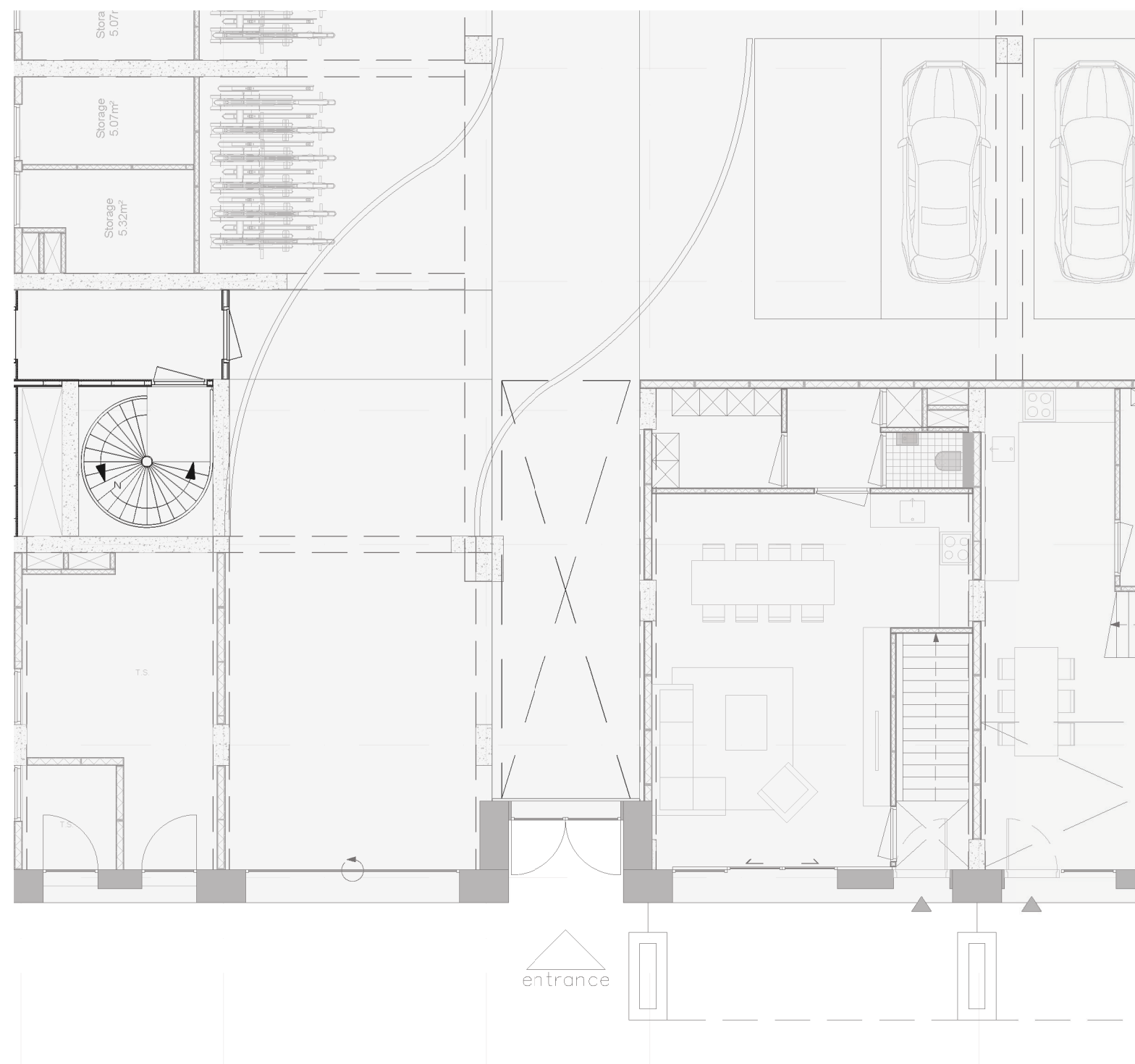
LAYER 3: THE CIRCULATION



MAIN ENTRANCE

The entrance connects the water front directly with the courtyard, while also giving all residents access to their dwellings.





Ground floor

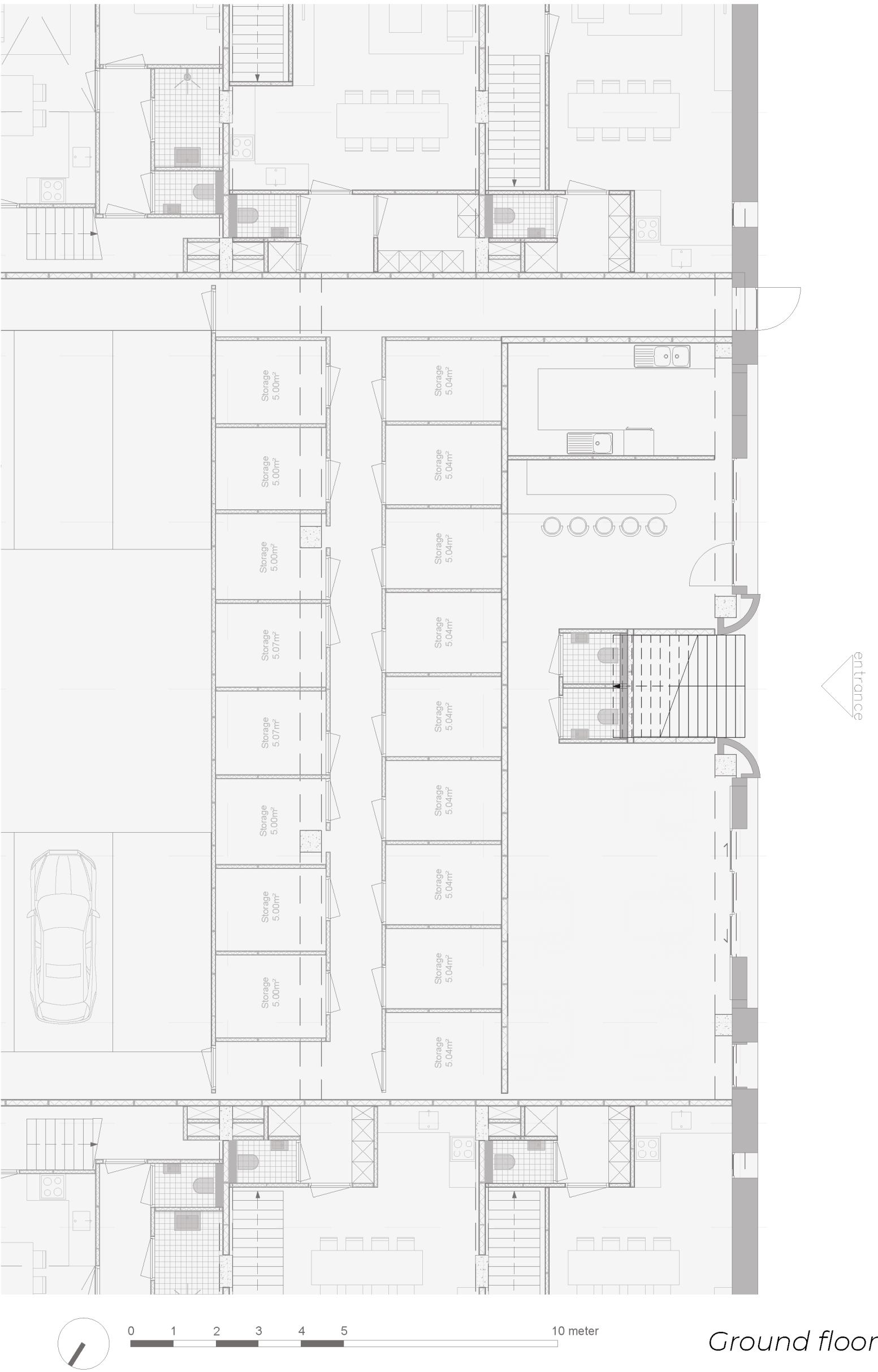


SECONDARY ENTRANCE

The secondary entrance gives direct access to the bike and car parking, and to the individual dwellings. The courtyard is not directly accessed from this entrance

STAIRS

The stairs connect the street and pedestrain life directly with the courtyard, this way people residing in the gallery apartments dont have to travel through the entire building to access their dwellings

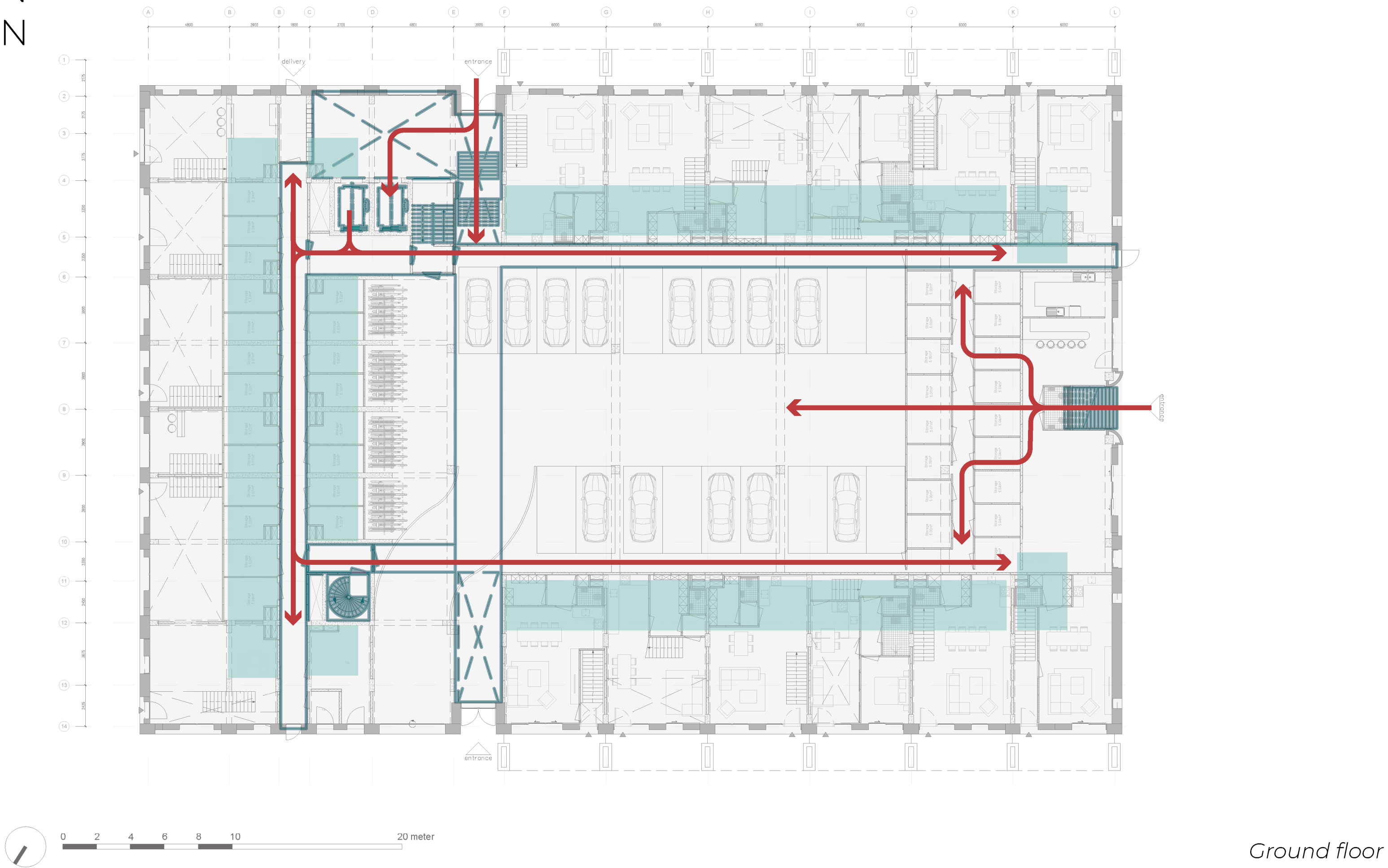


THE CIRCULATION
SECTION



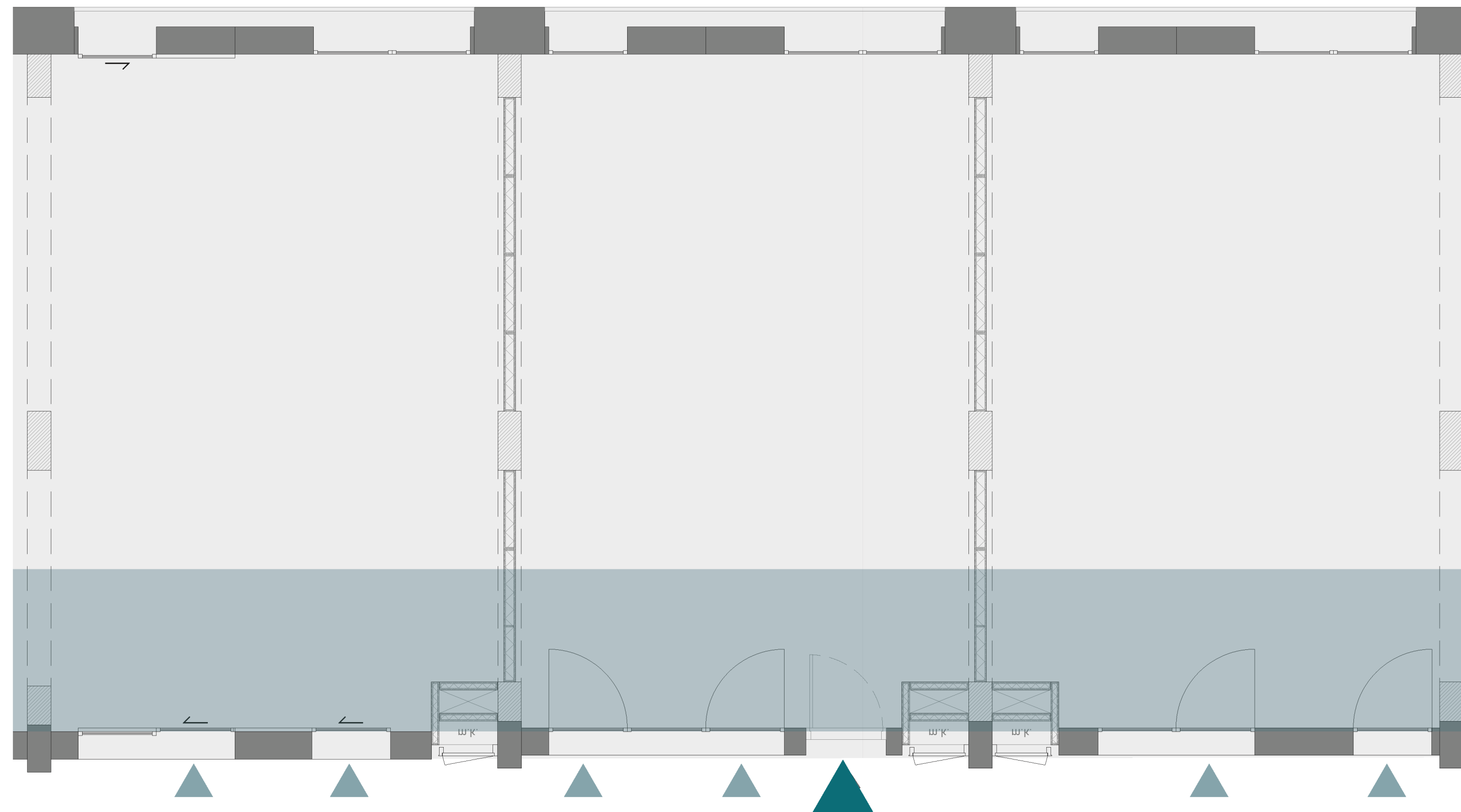
Together with the long corridors and the flexible facade system the first resident is able to decide where to place their front door.

THE CIRCULATION PLAN



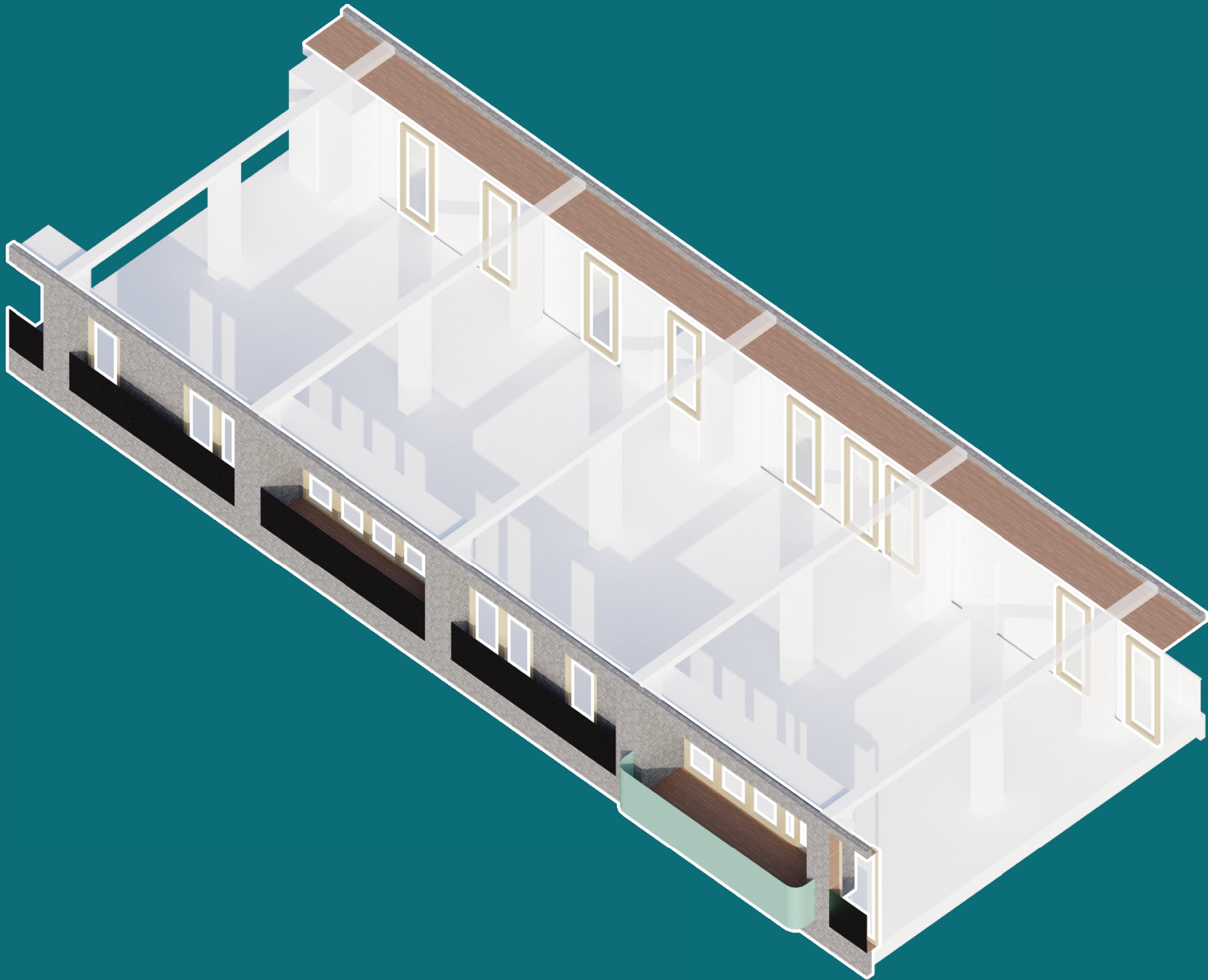
Together with the long corridors and the flexible facade system the first resident is able to decide where to place their front door.

THE CIRCULATION MULTIPLE ACCESPOINTS

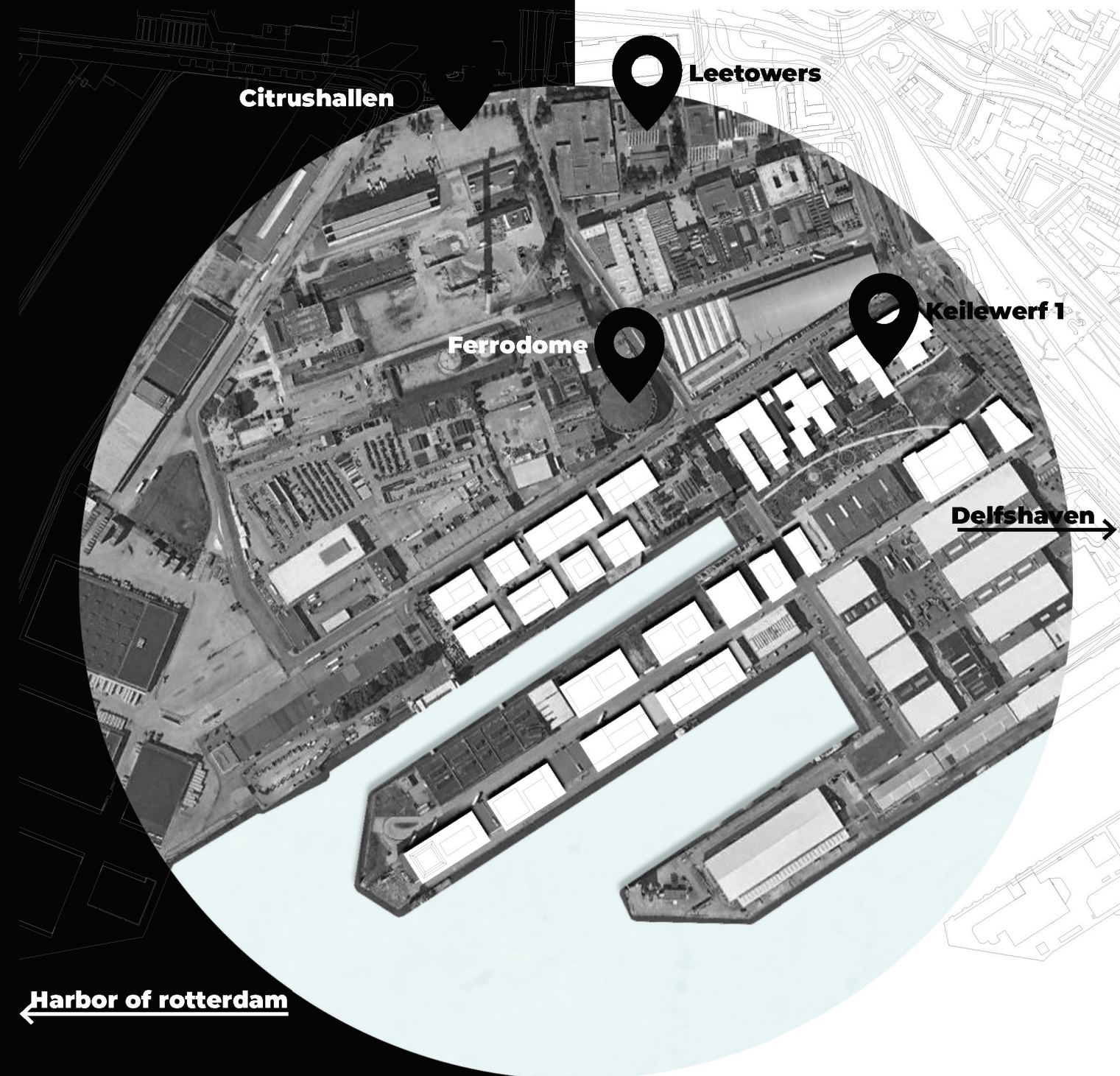


By having multiple access points towards the gallery other than their frontdoor residents have more freedom to include alternative functions in their dwelling

LAYER 4: THE SKIN



THE SKIN CONTEXT



Lee towers



In the keilewerf, the Leetowers currently dominate the skyline. The lee towers are defined by long orthogonally arranged lines. The three sister towers make use of a very sober two-tone color palette.

Ferrodome



Right next to the keilewerf is an old light blue Not far from the keilewerf you can find a small part of historic Rotterdam, stand out between its brick and steel sheets Delfshaven. The area of Delfshaven is characterized by its brown brick color palette.

Delfshaven



Citrushallen



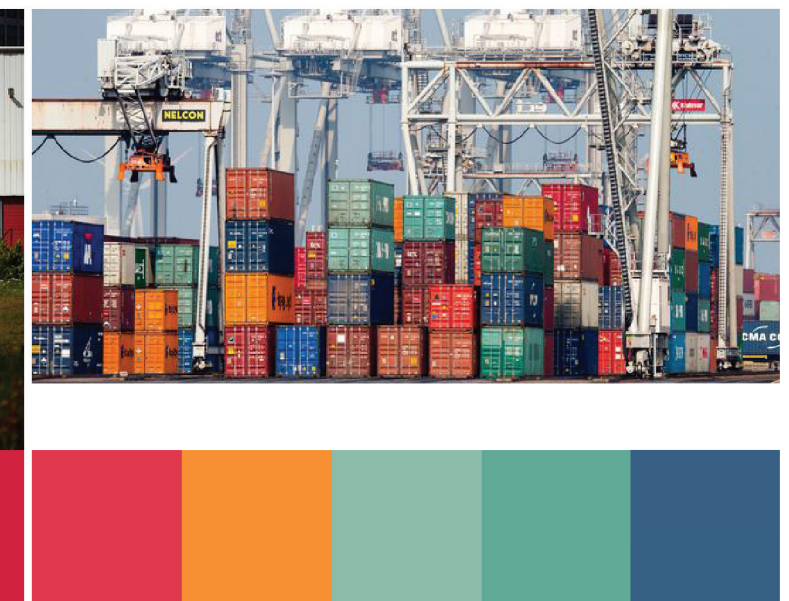
The citrushallen are a staple in the keilewerf area. From this location, all the fruits that arrived in the harbor were sold and distributed across Europe. The building uses a combination of brick and copper detailing.

Keilewerf 1



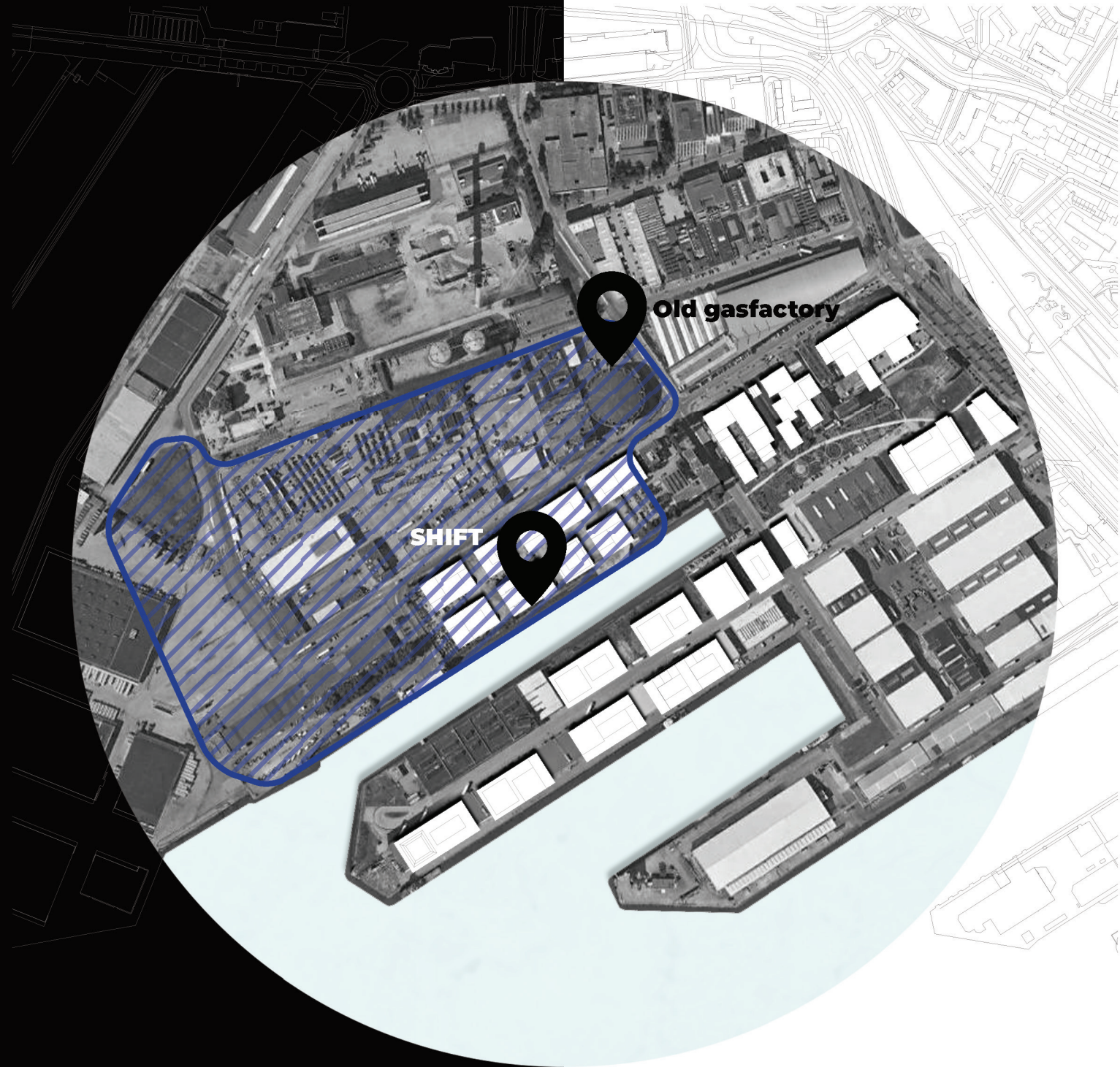
Keilewerf 1 is one of the first projects in the keilewerf to be converted from a harbor function to a new maker space. Due to its pioneering character, the building captures the ruggedness of the keilewerf perfectly. The building also adds a much-needed splash of color to the area.

Rotterdam Harbor

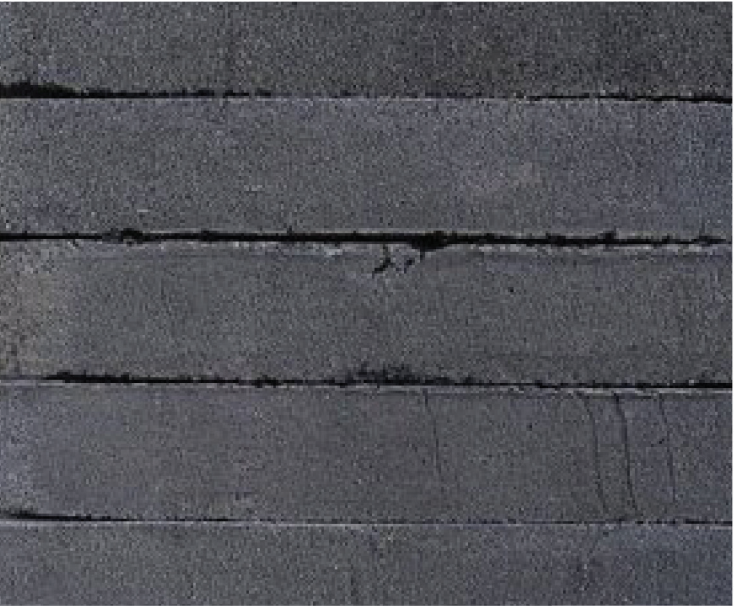


Much like any harbor in the world the harbor of Rotterdam is characterized by its widespread use of bright and colorful containers. constantly moving and being rearranged into new configurations.

THE SKIN SANITATION GROUNDS



Brick from sanition ground



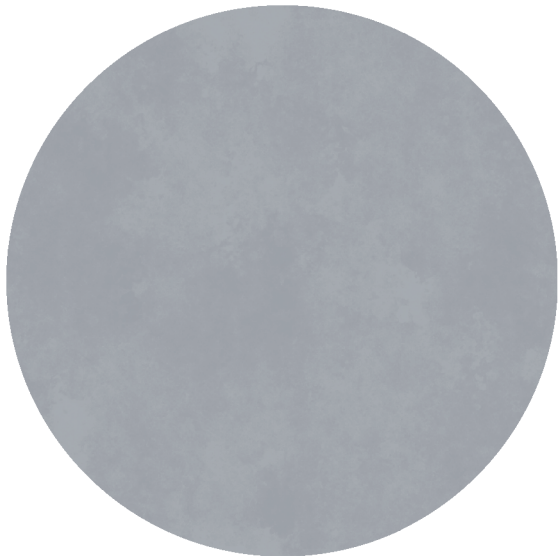
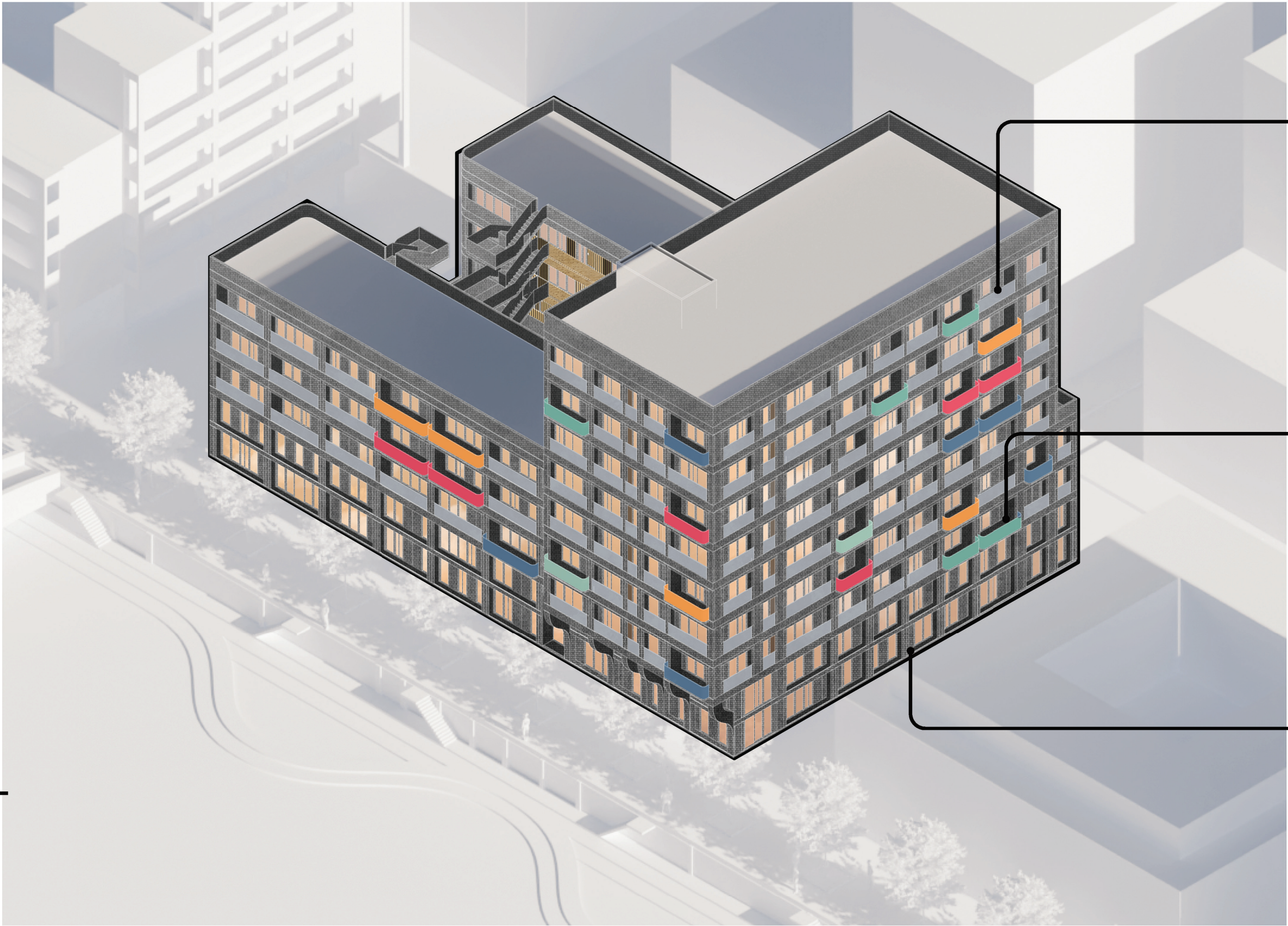
StoneCycling was conceived at the Design Academy in Eindhoven, The Netherlands. Then student, Tom van Soest focused on upcycling waste he found in vacant buildings awaiting demolition.

Tom began grinding, crushing, and mixing this waste in his homemade industrial blender and after many, many trials —and even more errors— he found a way to create new materials that were both resilient and appealing.

THE SKIN
EXTERNAL FACADE

Airy & light

Dark & grounded



Natural aluminium



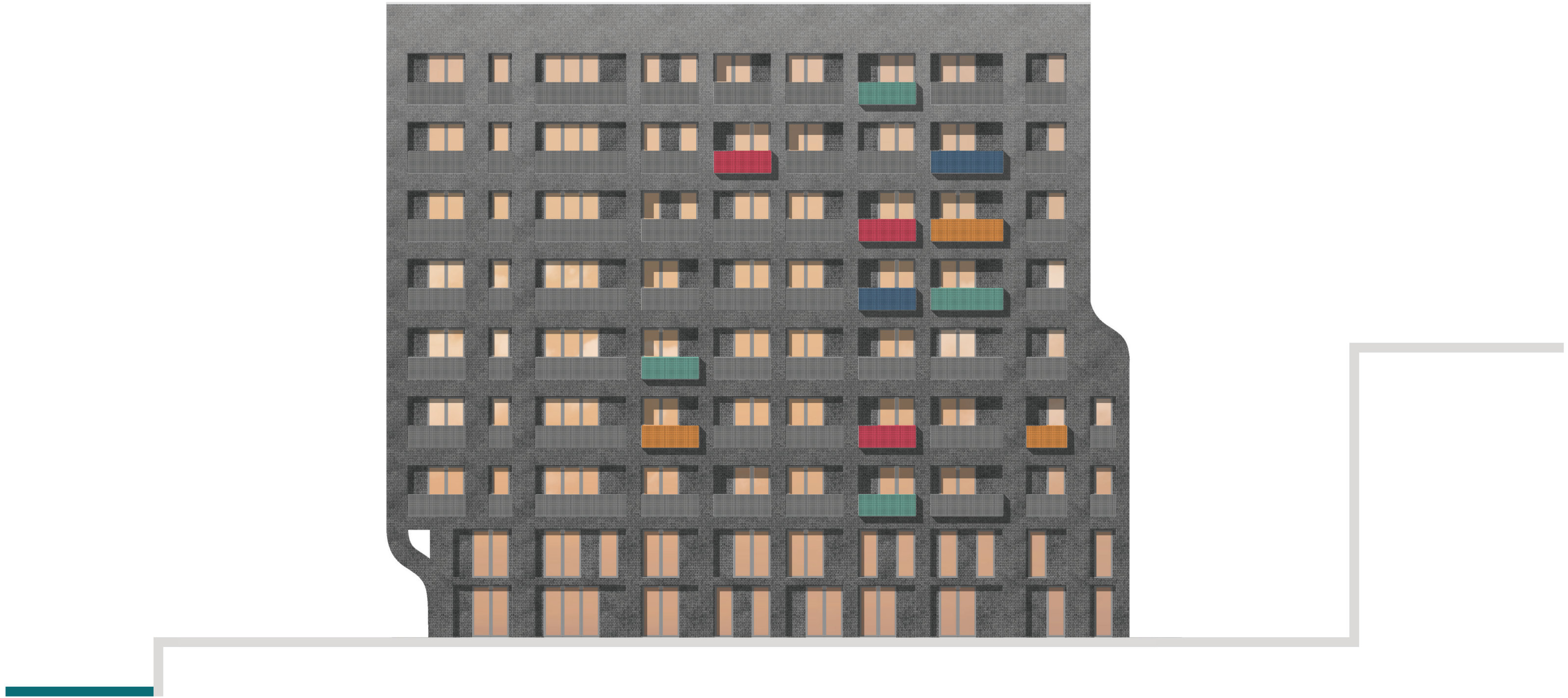
Coloured aluminium



Black brick from
sanitation grounds

The brick used is a reference to the historic and existing buildings in the Keiledistrict, while the dark color and colorful balconies make the building stand out in its surroundings

THE SKIN
EXTERNAL FACADE



0 2 4 6 8 10 20 meter

The brick used is a reference to the historic and existing buildings in the Keileidistrict, while the dark color and colorful balconies make the building stand out in its surroundings

THE SKIN EXTERNAL FACADE



The external facade facing the quiet street

THE SKIN INTERNAL FACADE



Profiled Wood



Golden aluminium

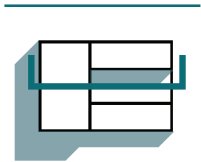
The courtyard has brighter, more inviting golden tones to contrast the dark exterior

THE SKIN
INTERNAL FACADE



0 2 4 6 8 10 20 meter

The courtyard has brighter, more inviting golden tones to contrast the dark exterior



Layer 4: The skin

THE SKIN INTERNAL FACADE



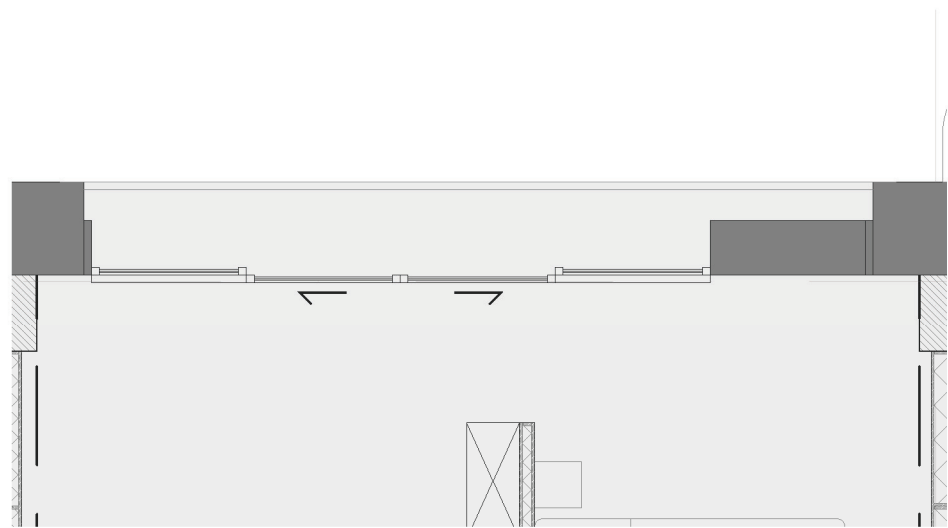
The courtyard has brighter, more inviting golden tones to contrast the dark exterior, as well as lush flower beds inviting residents to relax in the communal garden

THE SKIN
PERSONAL CHOICE

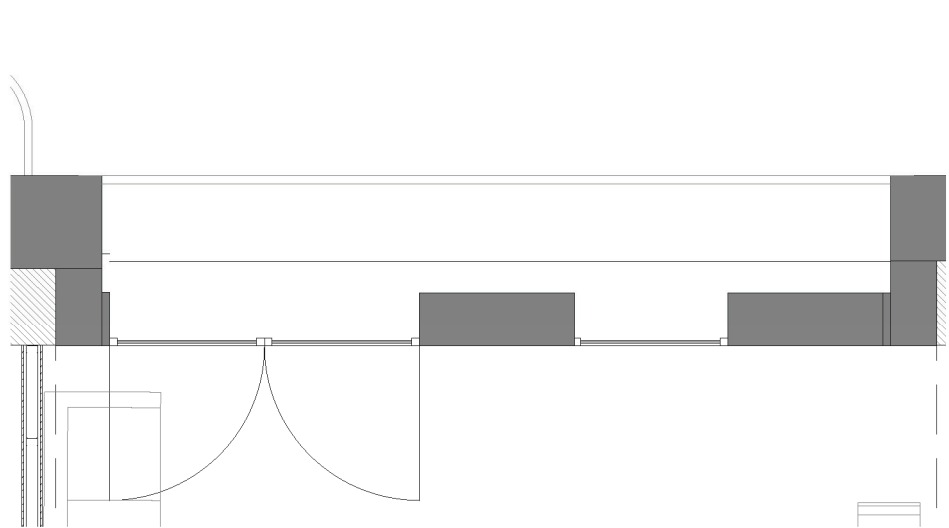


Piers in the masonry
Variable zone (dependant on total width)
Closed facade element 1meter wide (chosen by client)
Open facade element 1meter wide (chosen by client)

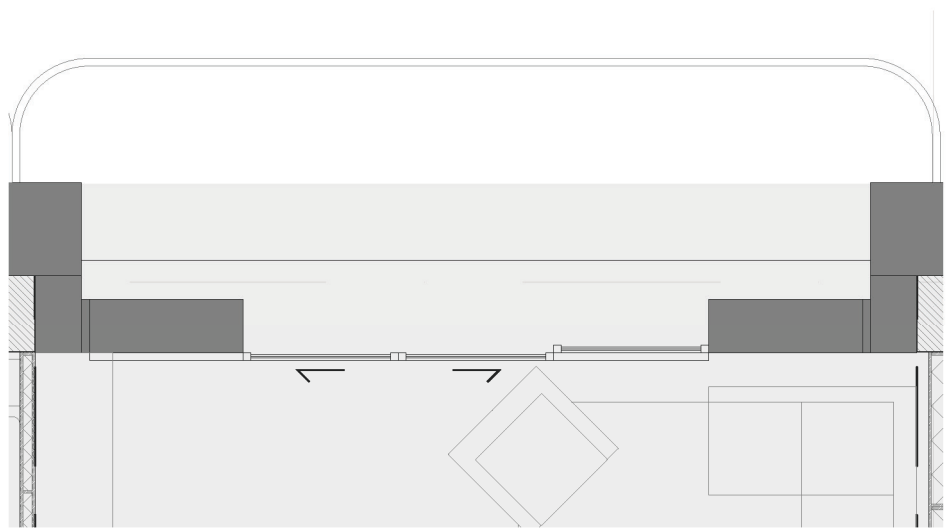
THE SKIN
PERSONAL CHOICE



Normal window

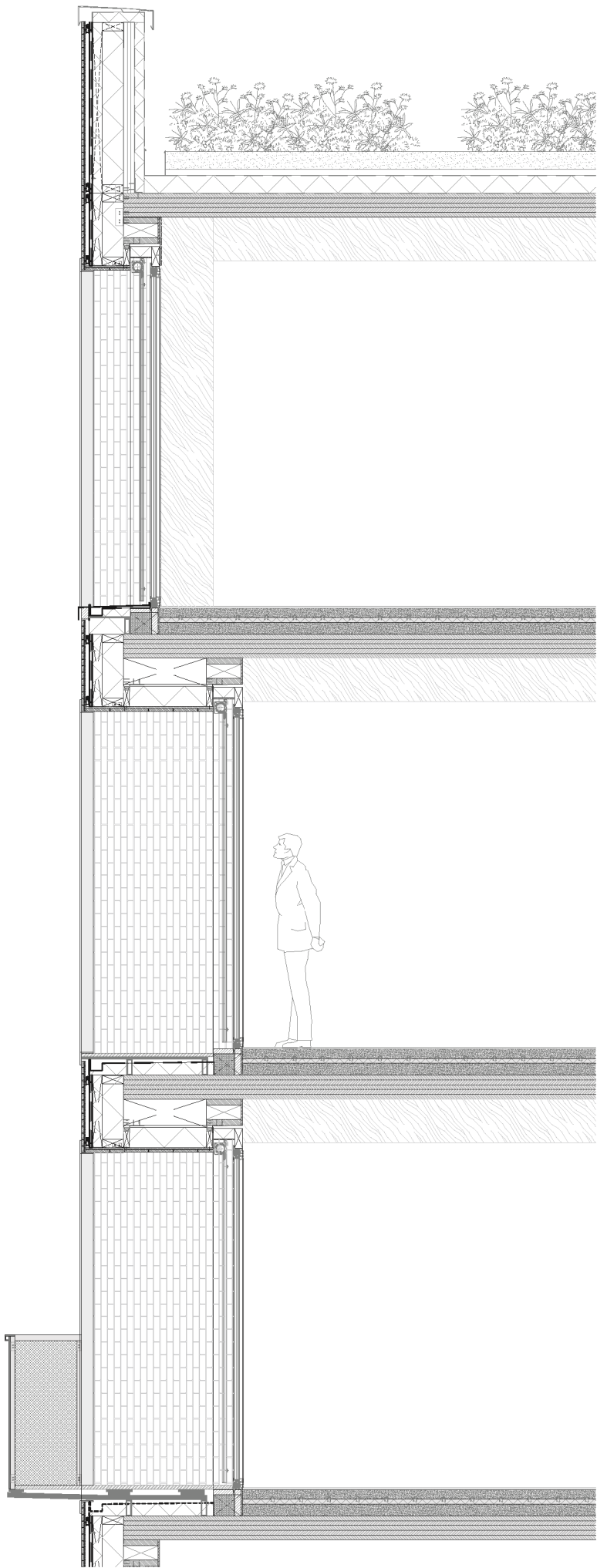
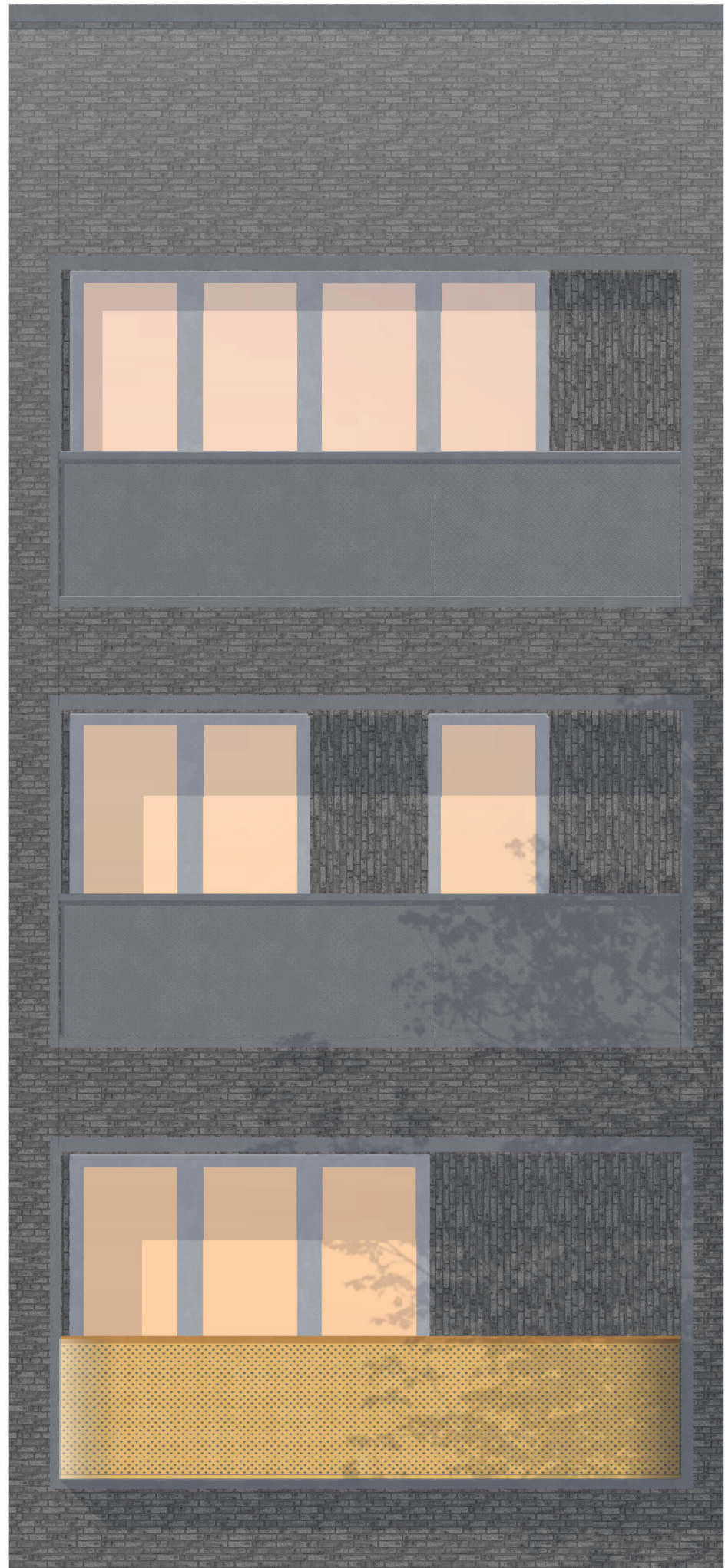
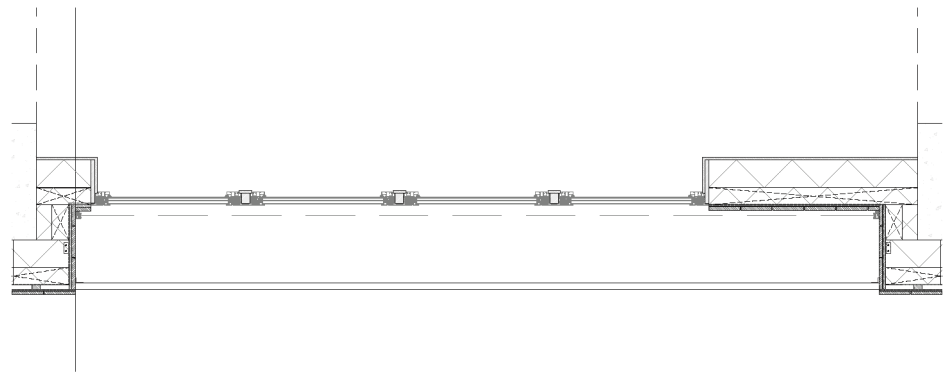


Loggia

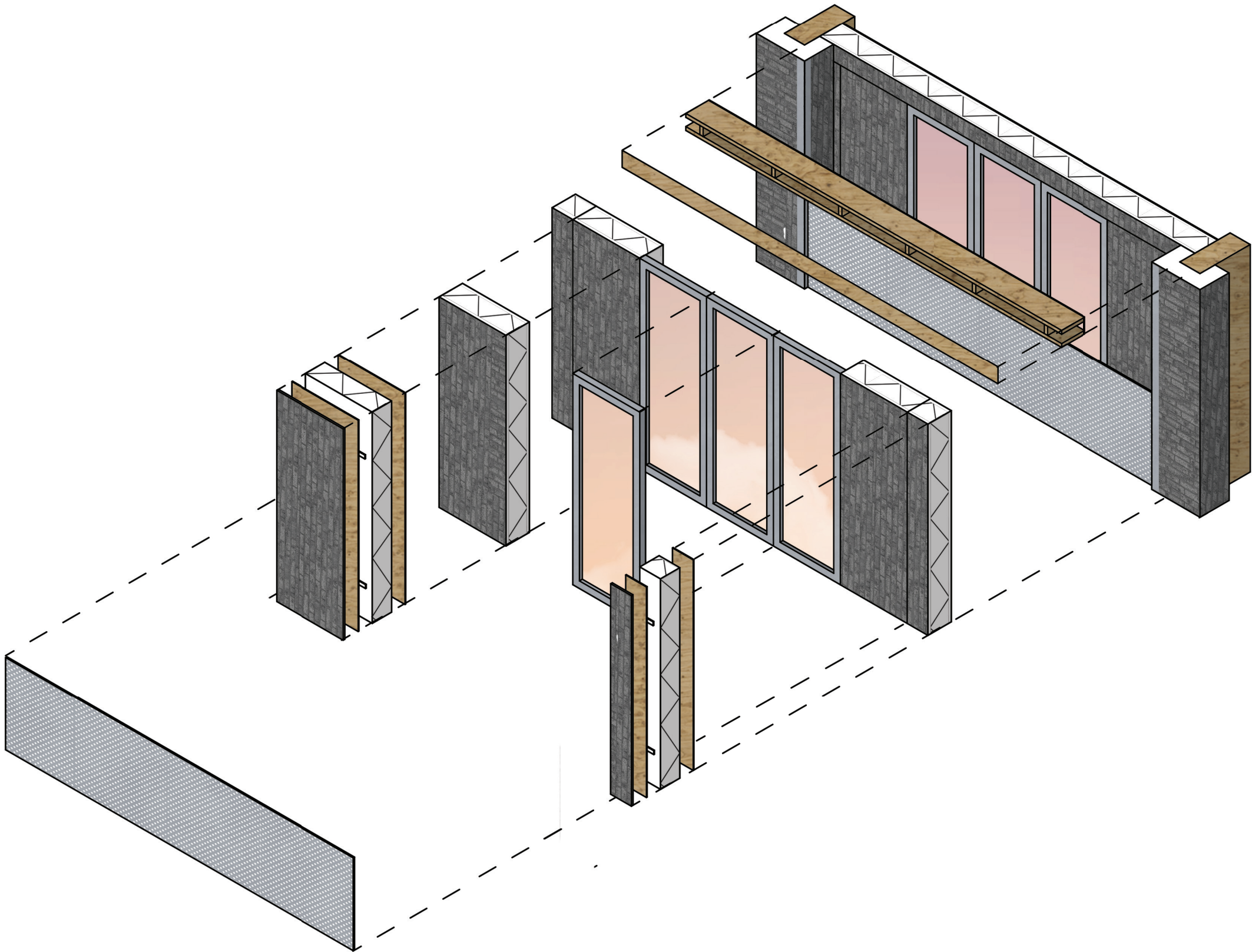


Balcony

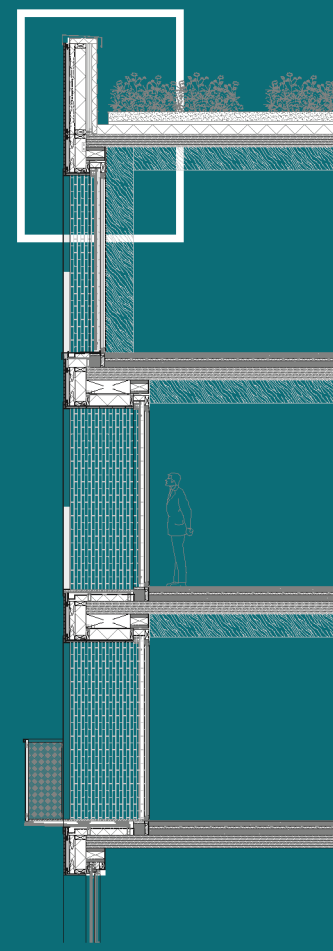
THE SKIN
DETAILING



THE SKIN
DETAILING



THE SKIN DETAILING



Facade system

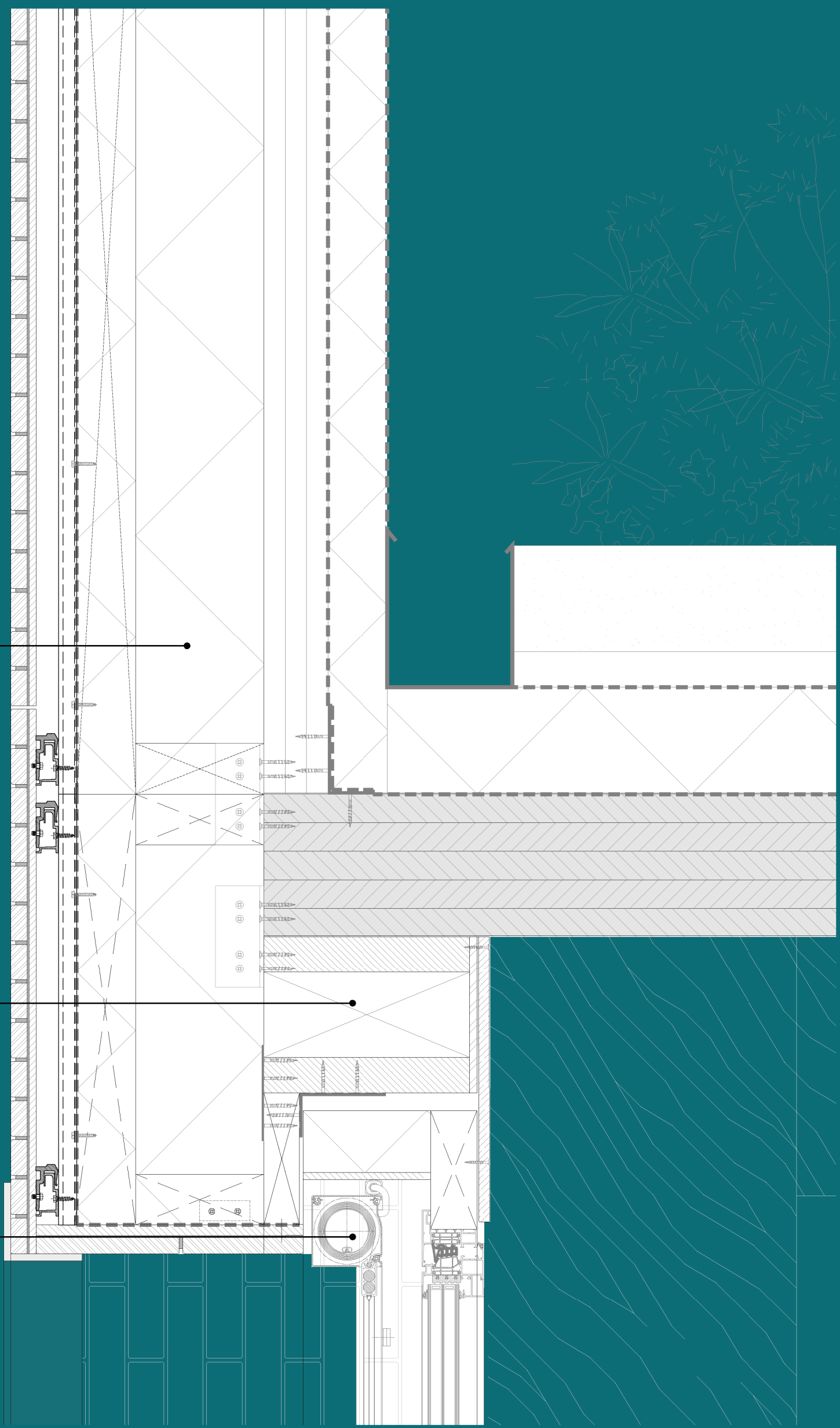
Stone cycling Waste based strips
Trespa TS210 aluminium profile
Isovlas pn 180
Isovlas pn 90

Adjustable guiding element

220mm spruce wood
10mm plasterboard

Window system

97mm Reynaers Masterline 8
Schellekens sun protection



0 100 200 300 400 500 mm

THE SKIN DETAILING

Balcony fence

Straight aluminium fence

Facade system

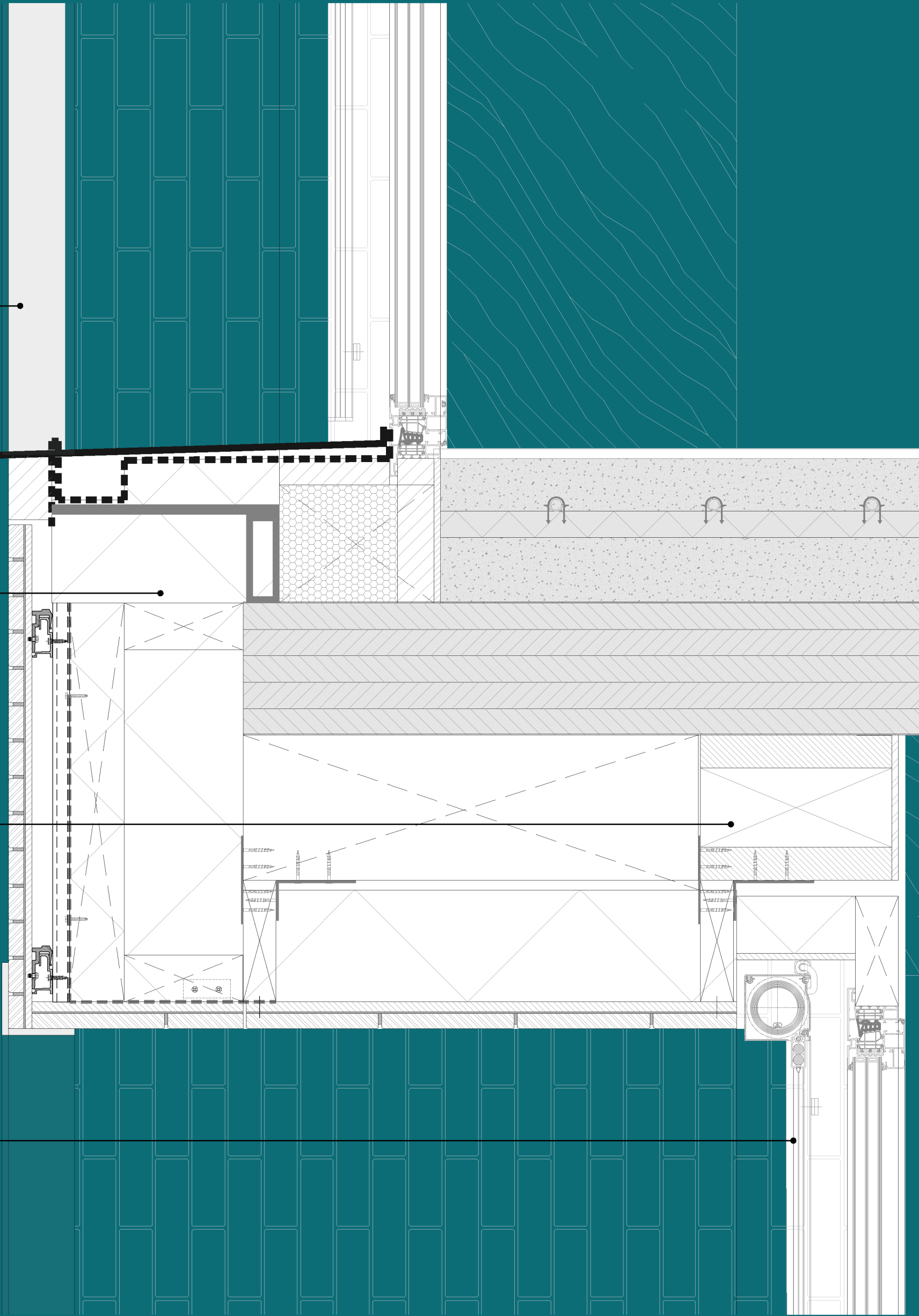
Stone cycling Waste based strips
Trespa TS210 aluminium profile
Isovlas pn 180
Isovlas pn 90

Adjustable guiding element

220mm spruce wood
10mm plasterboard

Window system

97mm Reynaers Masterline 8
Schellekens sun protection



0 100 200 300 400 500 mm

THE SKIN DETAILING

Balcony fence

Straight aluminium fence

Steel loggia structure

Facade system

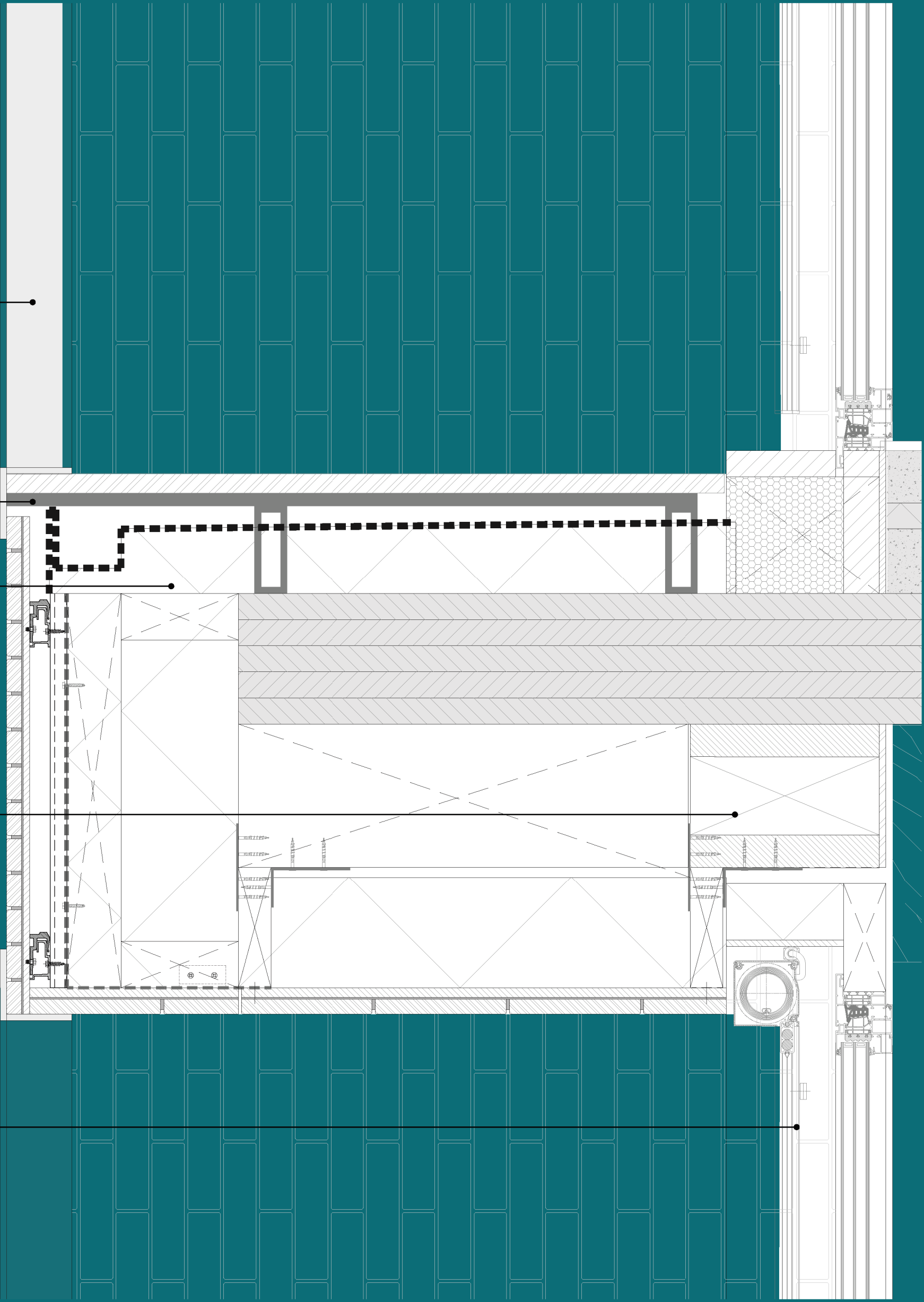
Stone cycling Waste based strips
Trespa TS210 aluminium profile
Isovlas pn 180
Isovlas pn 90

Adjustable guiding element

220mm spruce wood
10mm plasterboard

Window system

97mm Reynaers Masterline 8
Schellekens sun protection



0 100 200 300 400 500 mm

THE SKIN DETAILING

Balcony fence

Curved perforated aluminium
fence

Steel balcony structure

Facade system

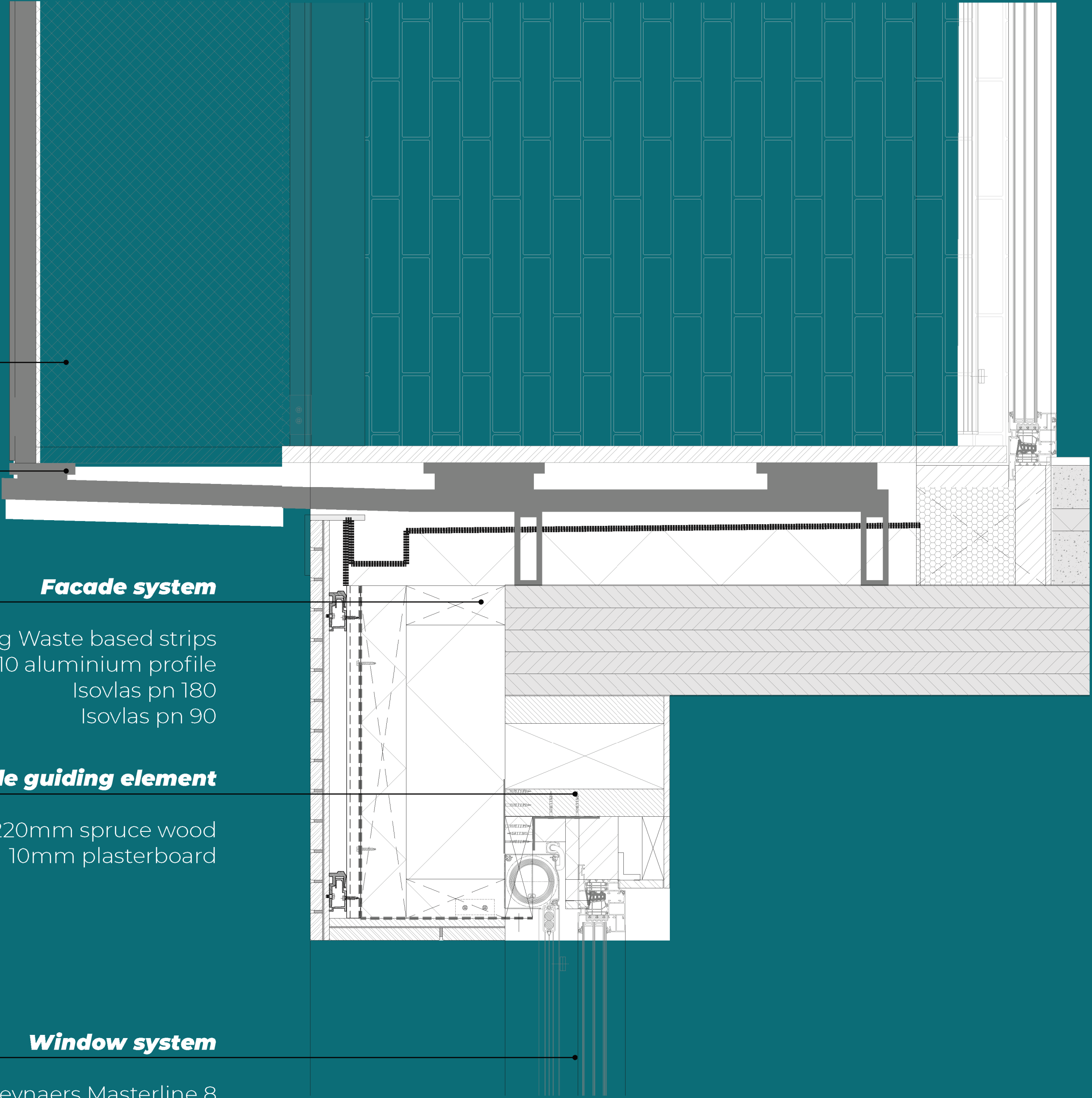
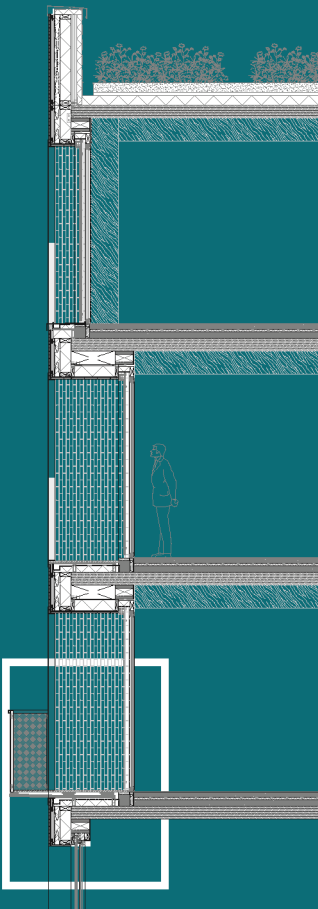
Stone cycling Waste based strips
Trespa TS210 aluminium profile
Isovlas pn 180
Isovlas pn 90

Adjustable guiding element

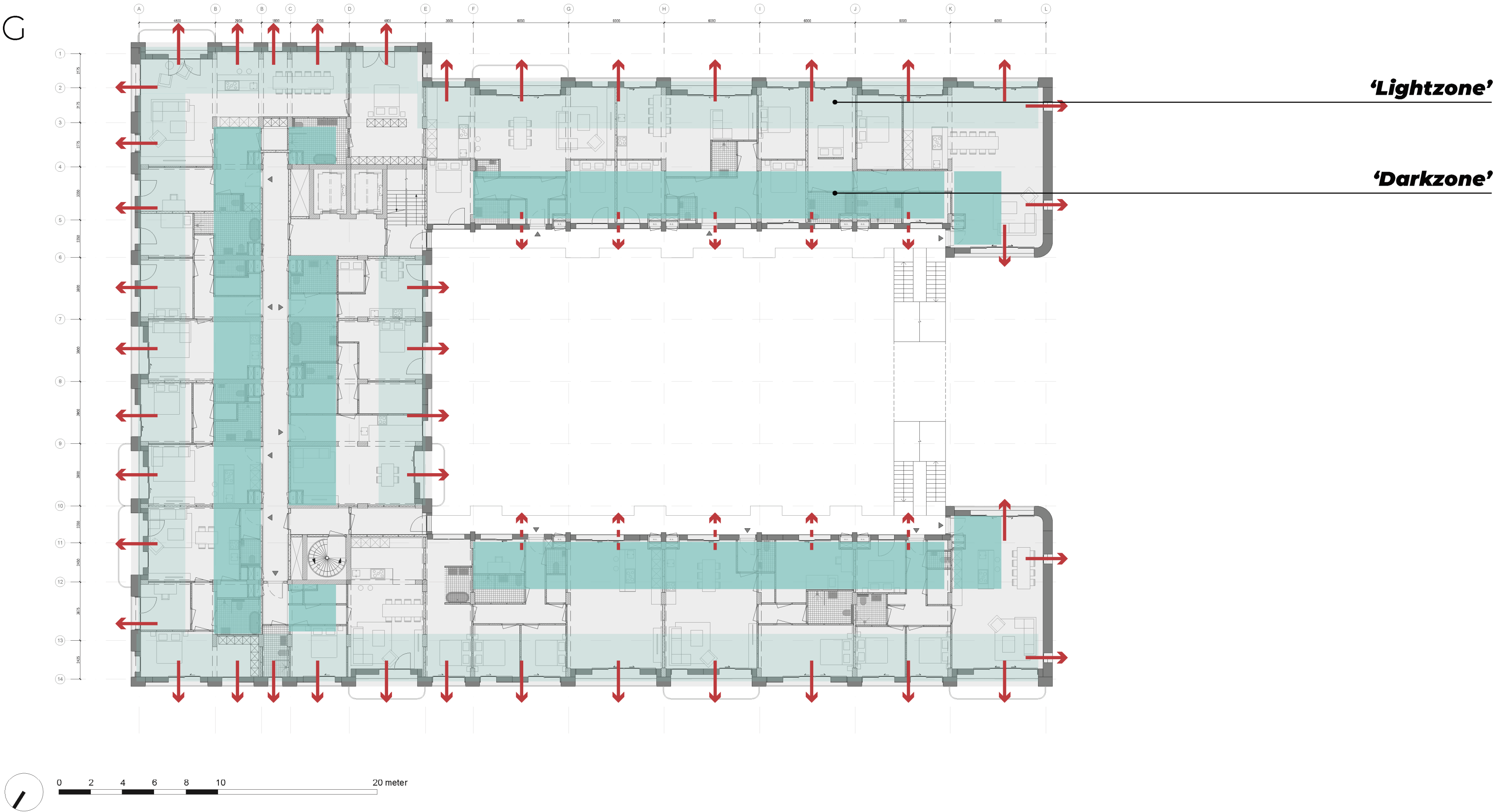
220mm spruce wood
10mm plasterboard

Window system

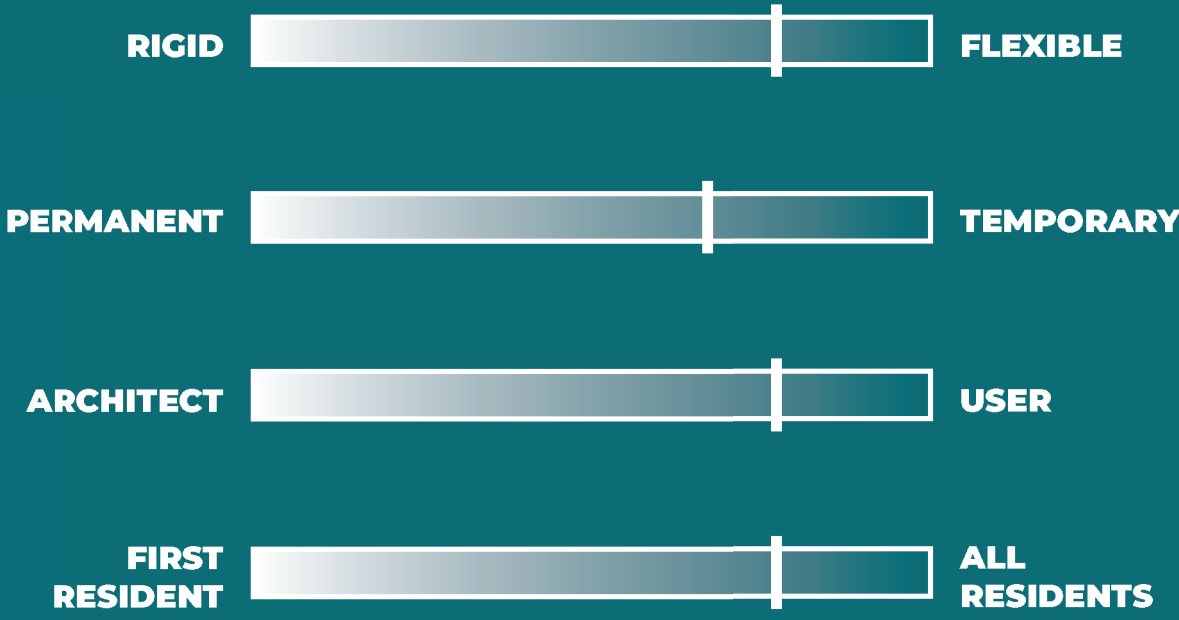
97mm Reynaers Masterline 8
Schellekens sun protection



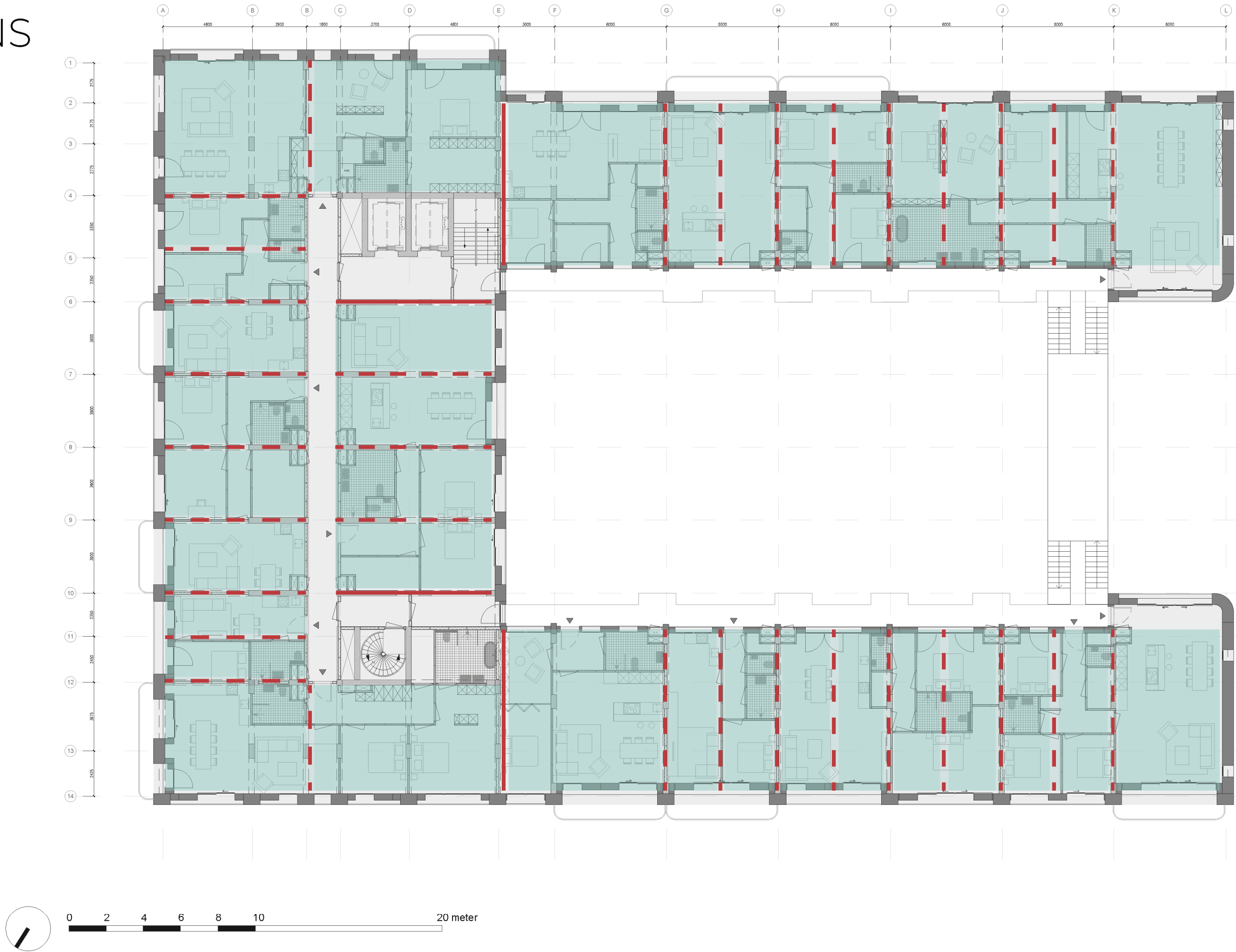
THE SKIN
DETAILING



LAYER 5: THE STAGING OF SPACE



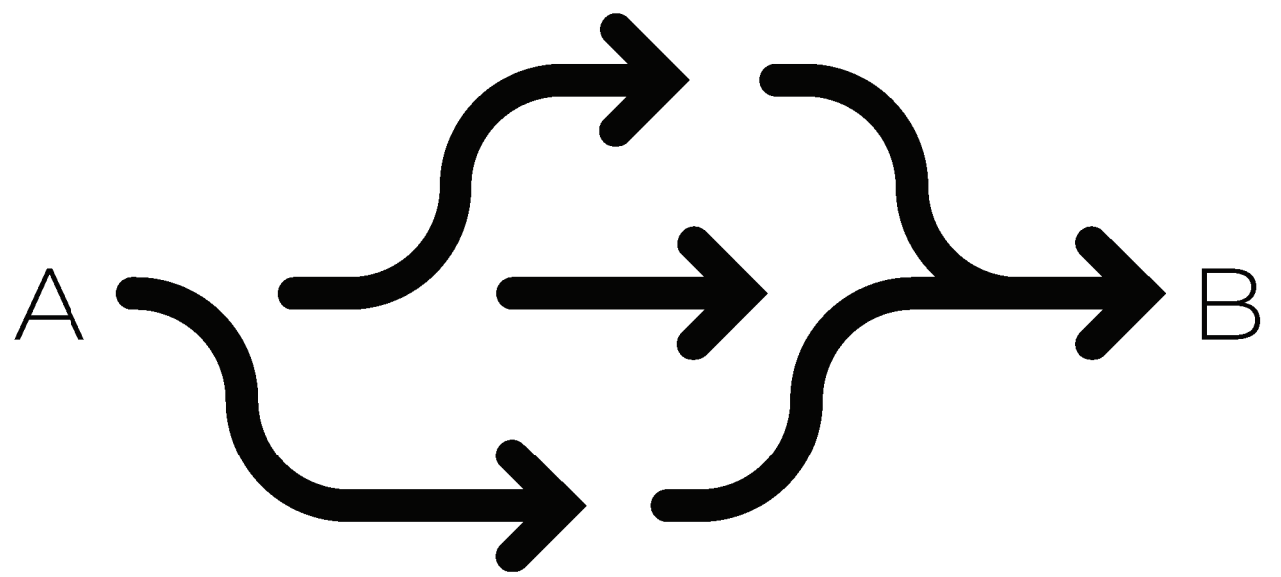
SPACE
DIVISIONS



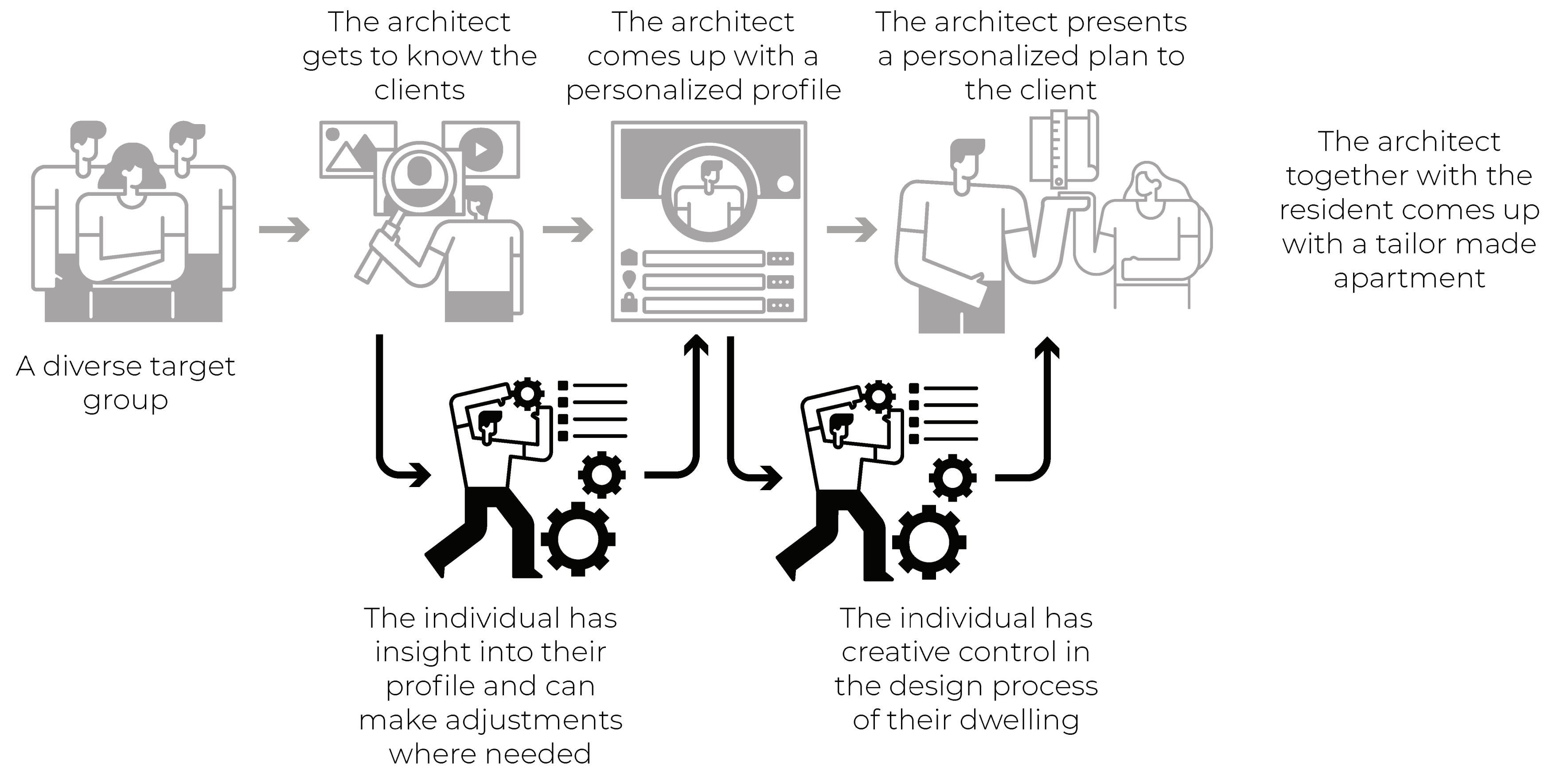
SPACE [BOX]²



[box]2 is a prefab modular wall system. Easy to integrate into a design using the digital library of walls, roofs and facades. Computer-controlled produced with an accuracy of 0.1mm.

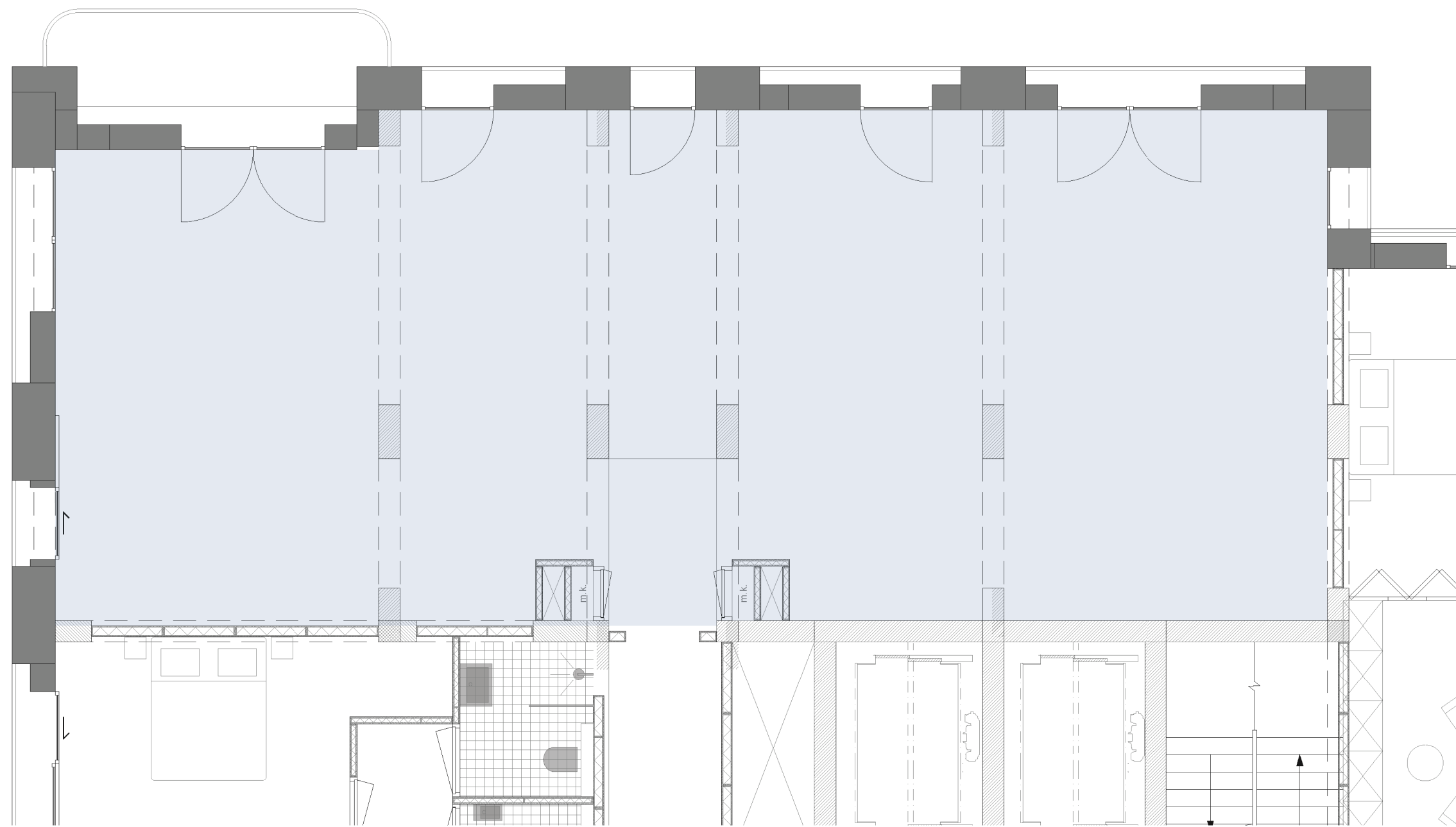


My design process



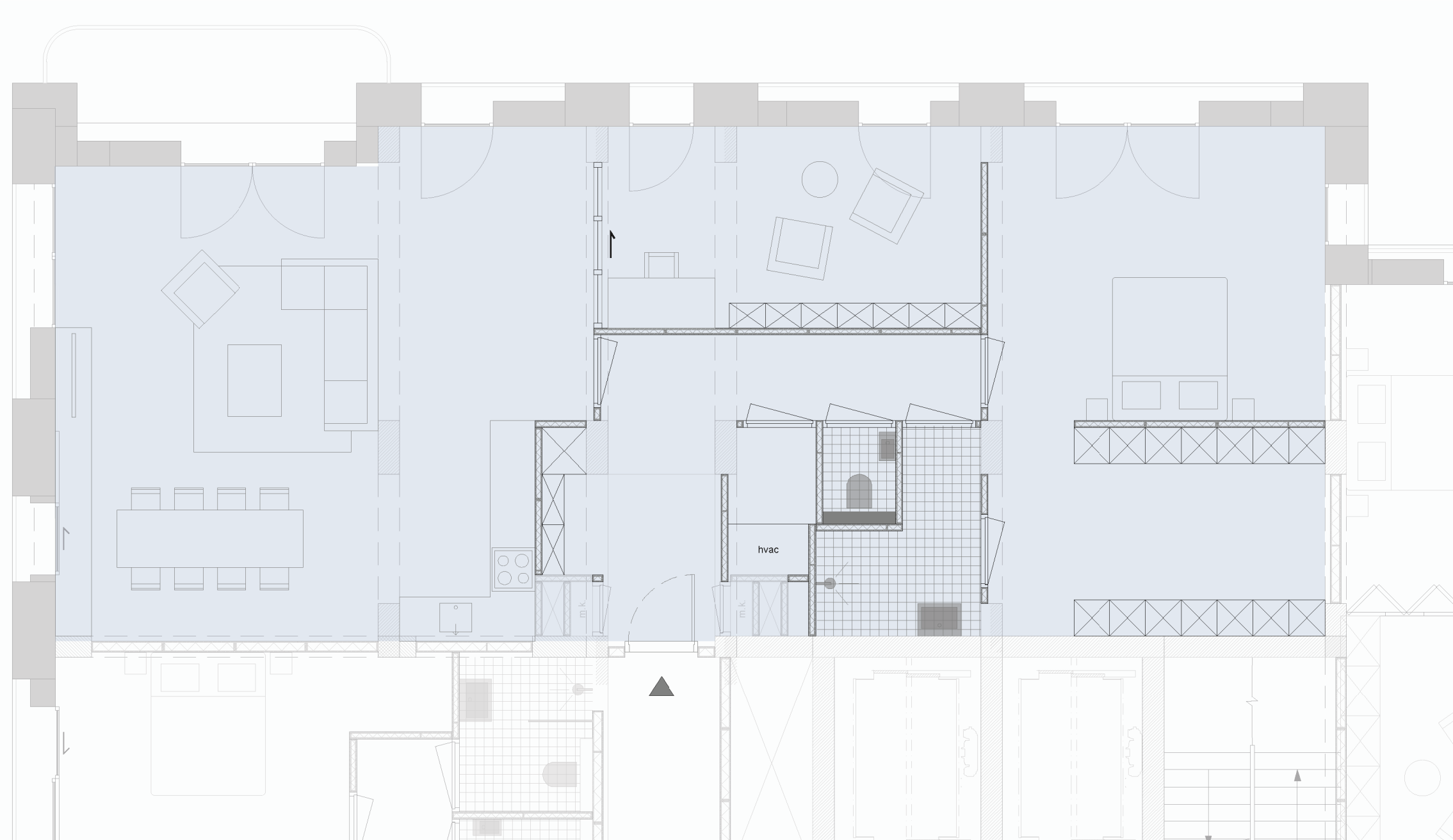


SPACE STAGE 01



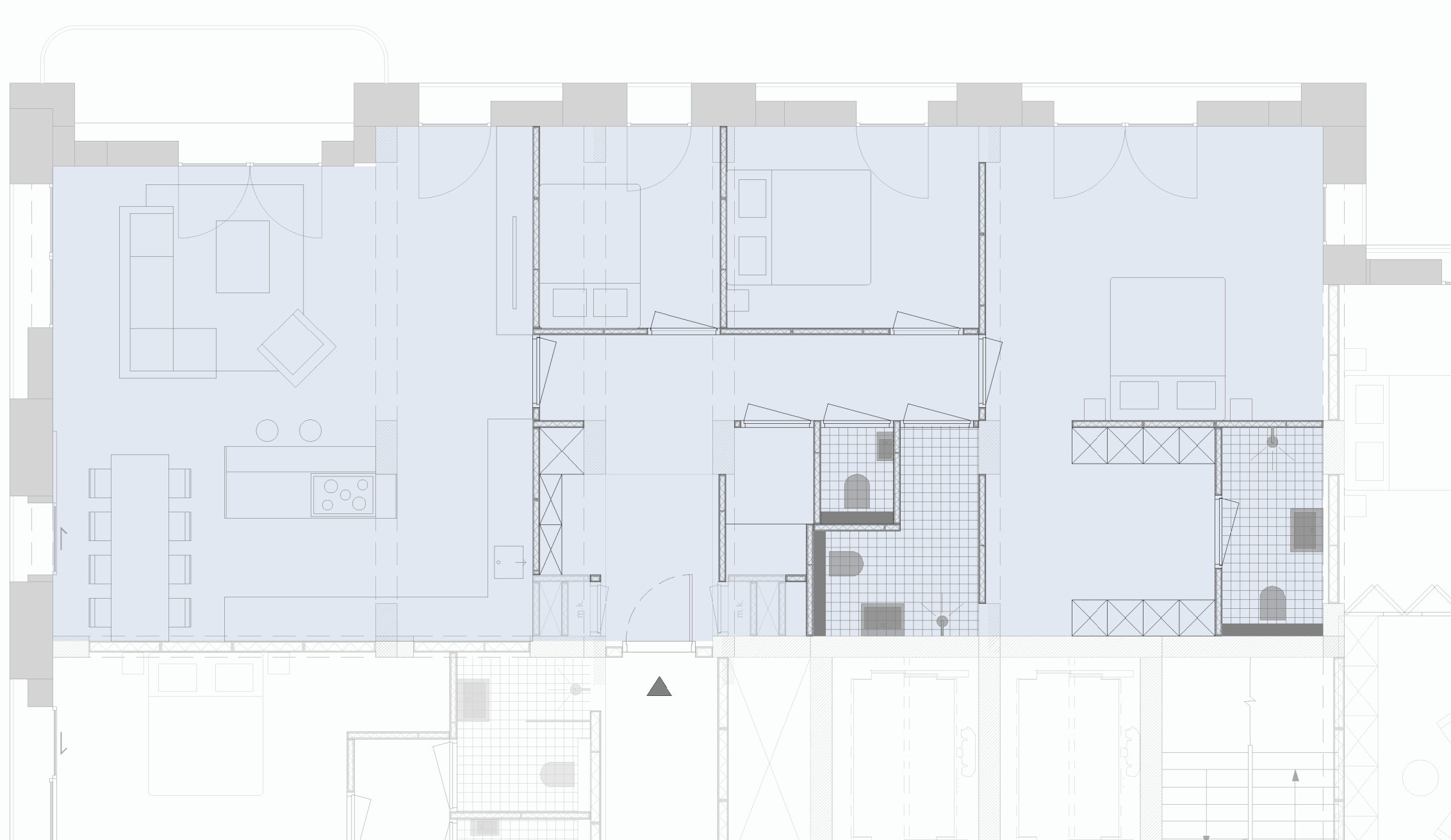
Residents buy a empty casco apartment, together with the architect they decide on their facade layout and the initial grid for their systems.

SPACE STAGE 02



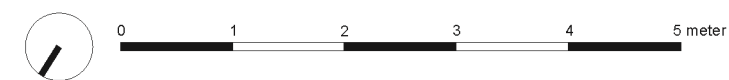
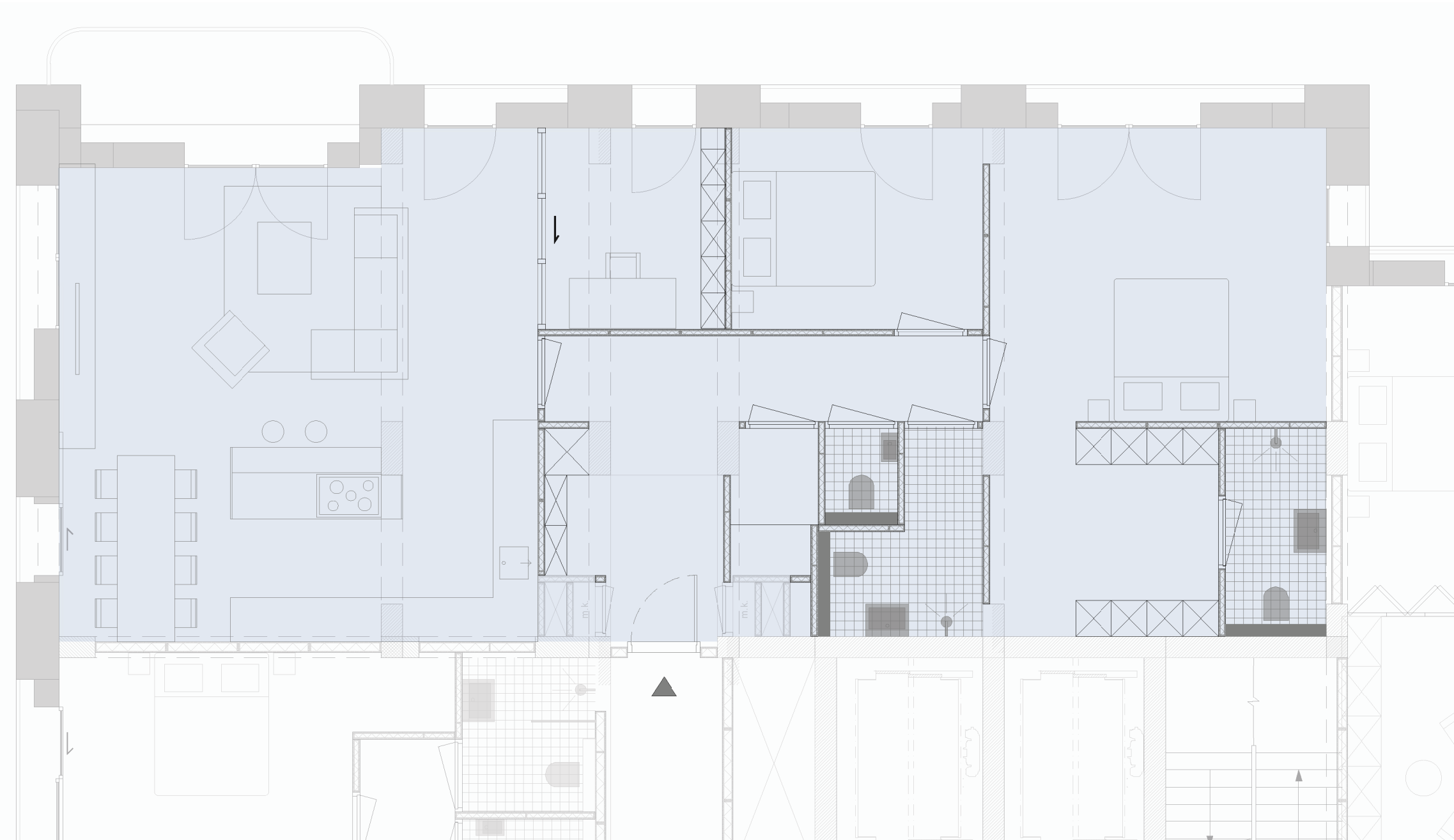
The resident can design their apartment either alone, with the building architect or through a third party completely according to their personal wishes.

SPACE STAGE 03



After several years the resident is able to completely adjust their apartment to their new needs. For example when the family suddenly becomes a bit bigger.

SPACE STAGE 04



And the resident can change their minds about their needs however often they want.



In the end all residents of SHIFT can live in their personal
piece of paradise.



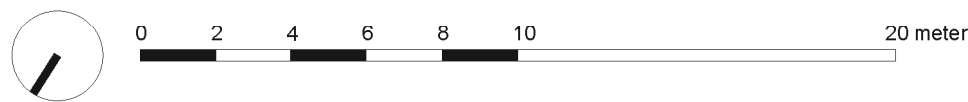
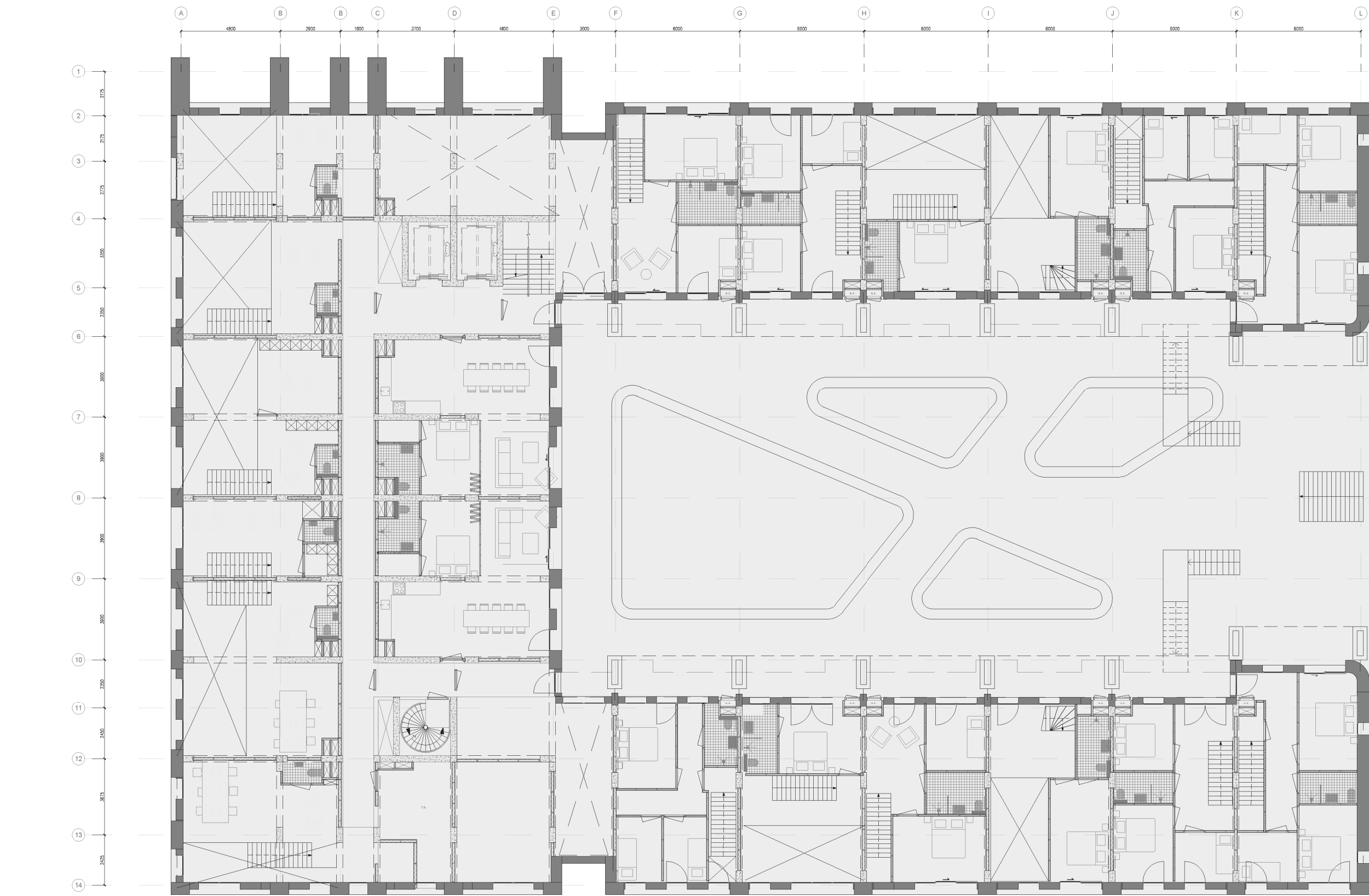
SHIFT

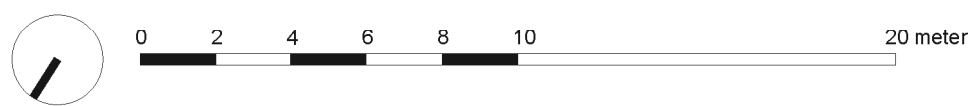
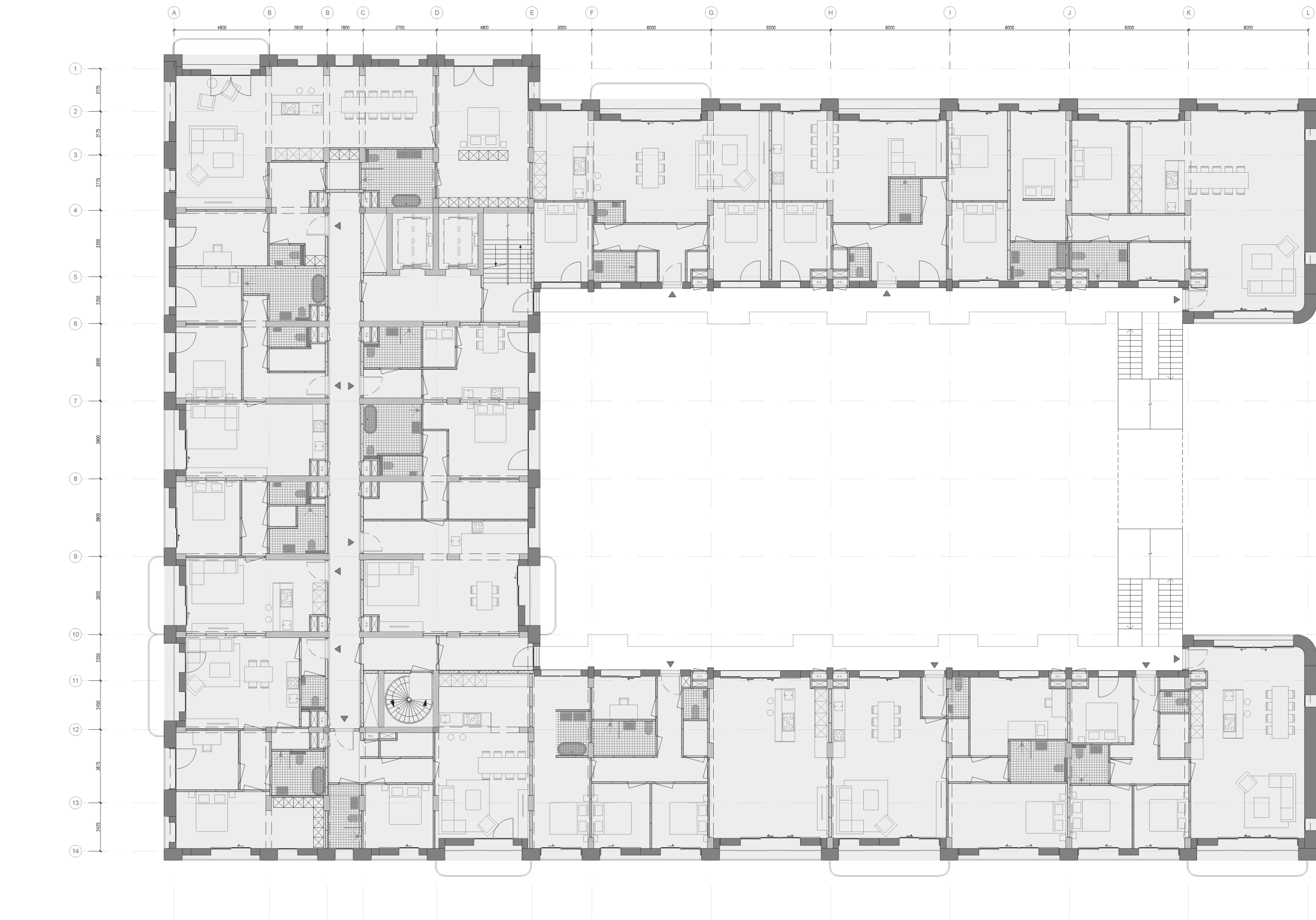
Housing for the maker

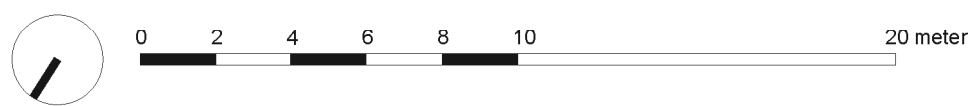
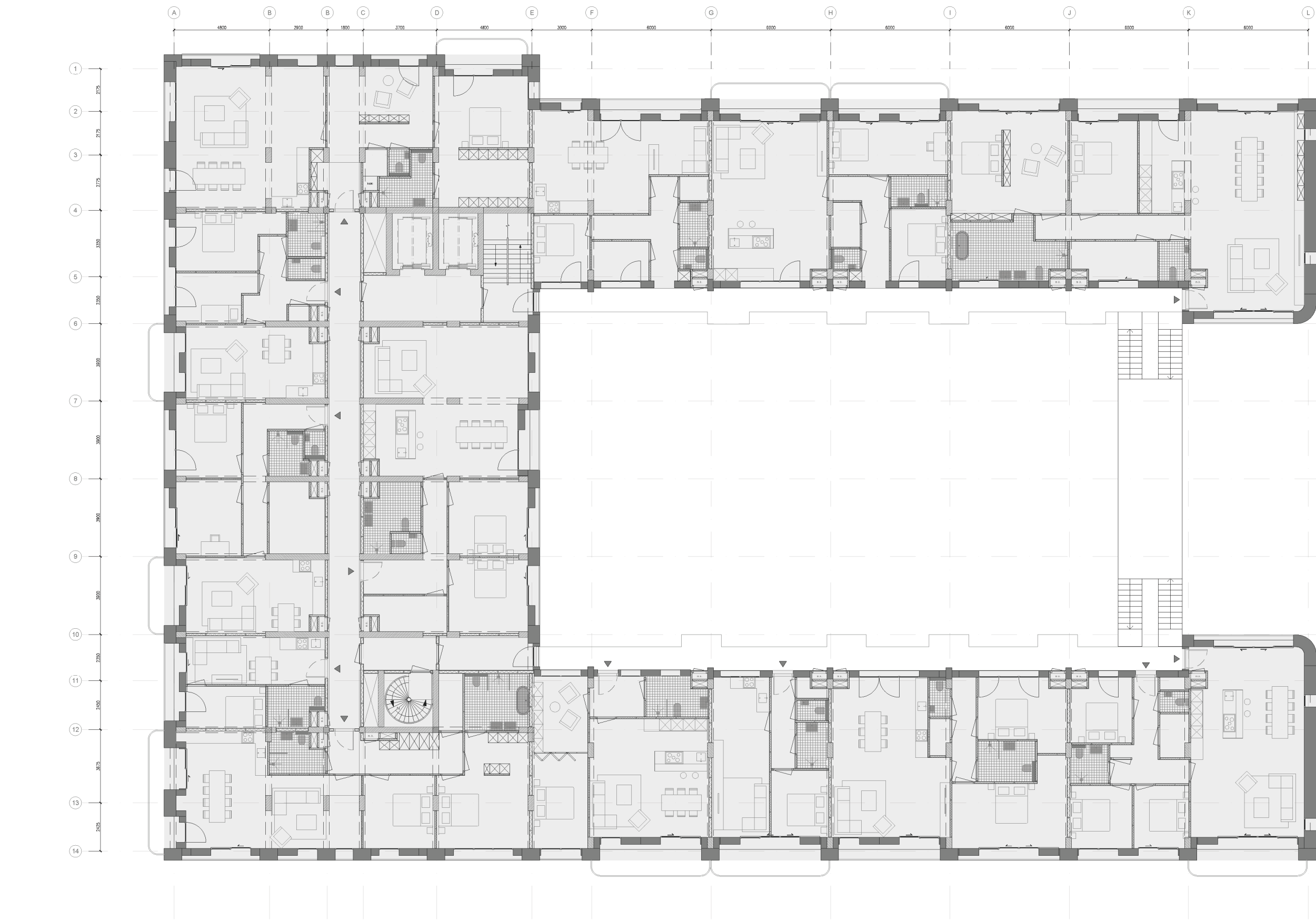
Pelle Leijten 4478274
Tutors:
Theo Kupers
Ferry Adema
Pierijn van der Putt

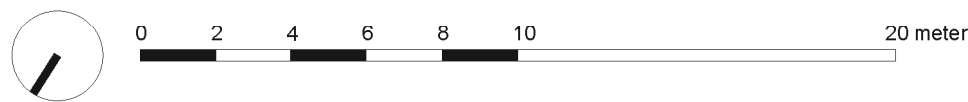
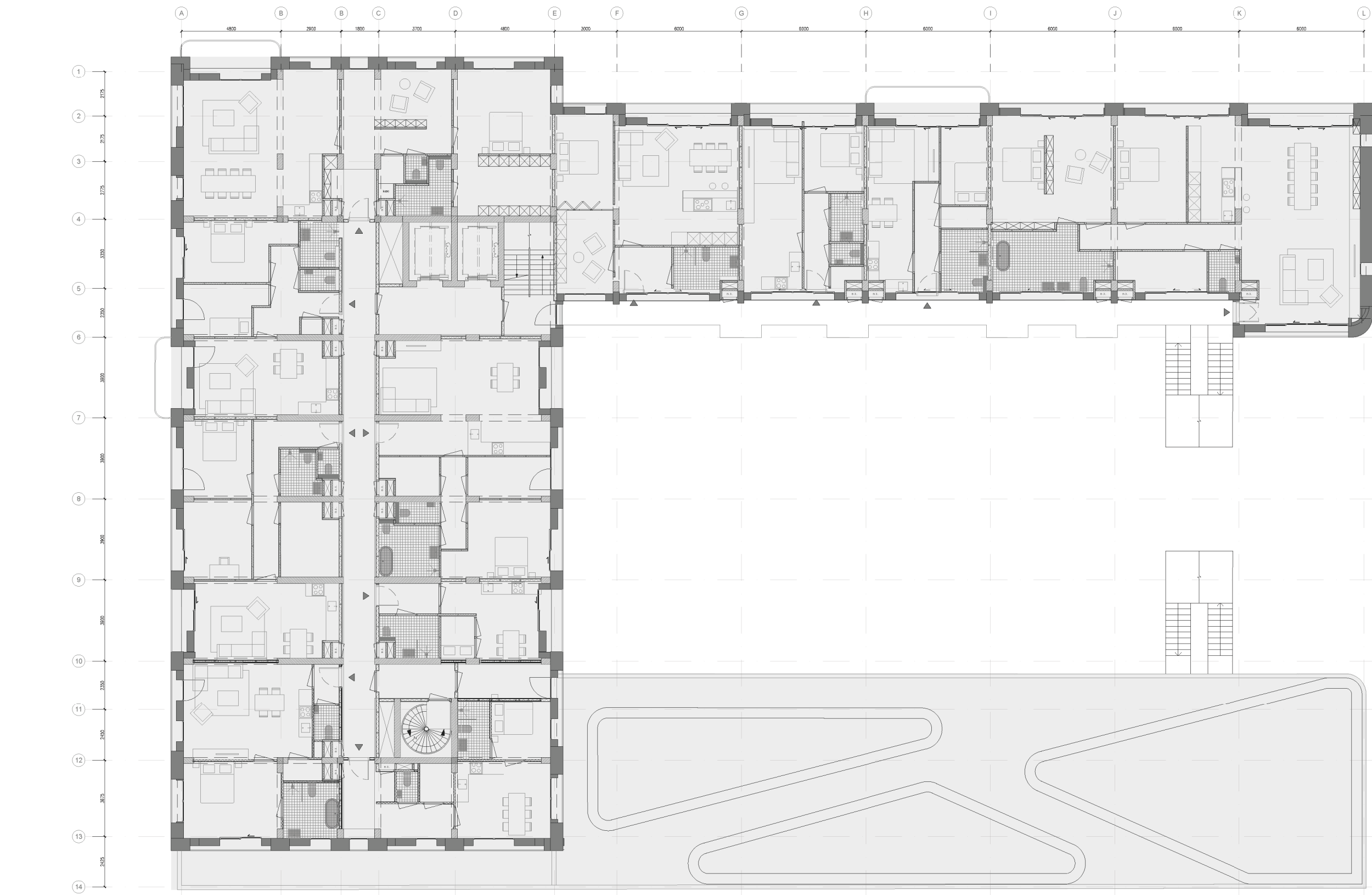


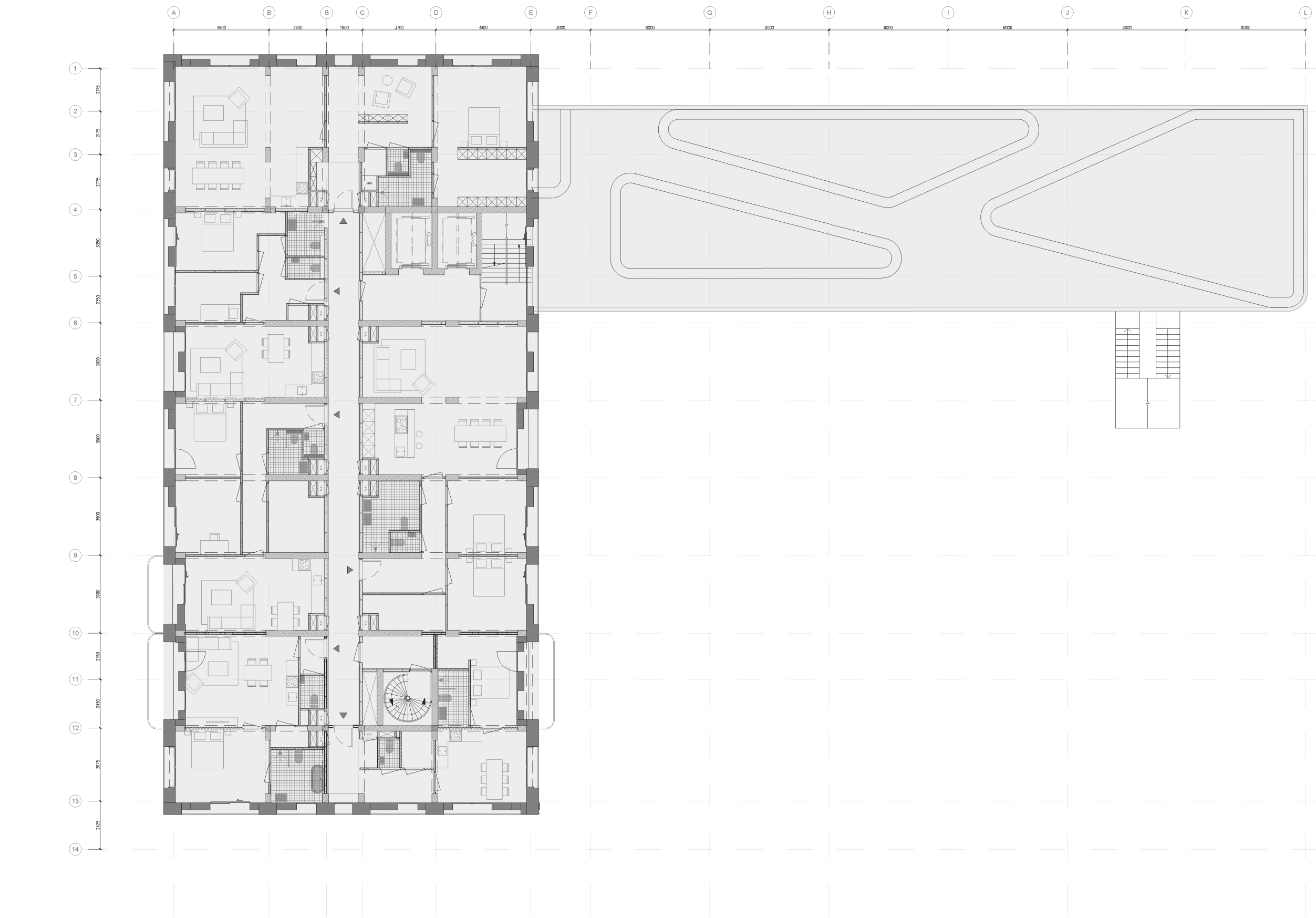


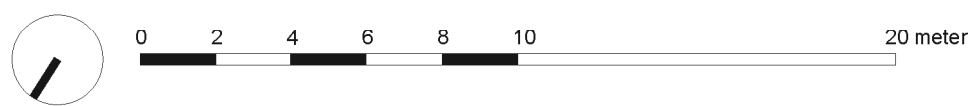
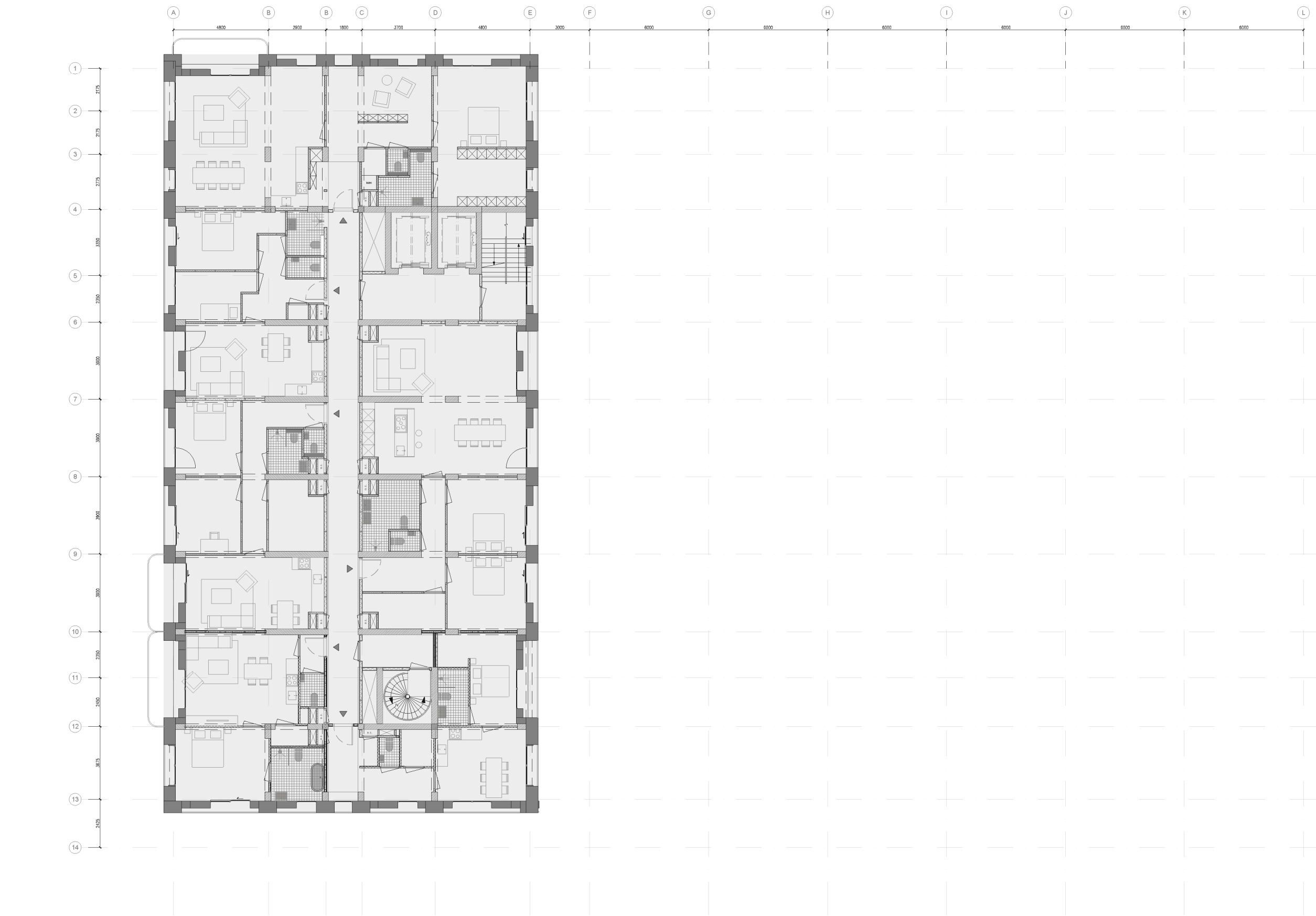


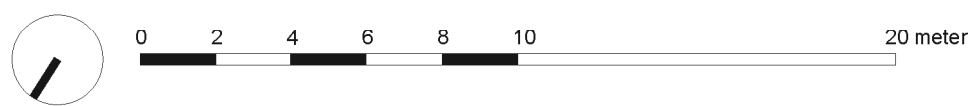
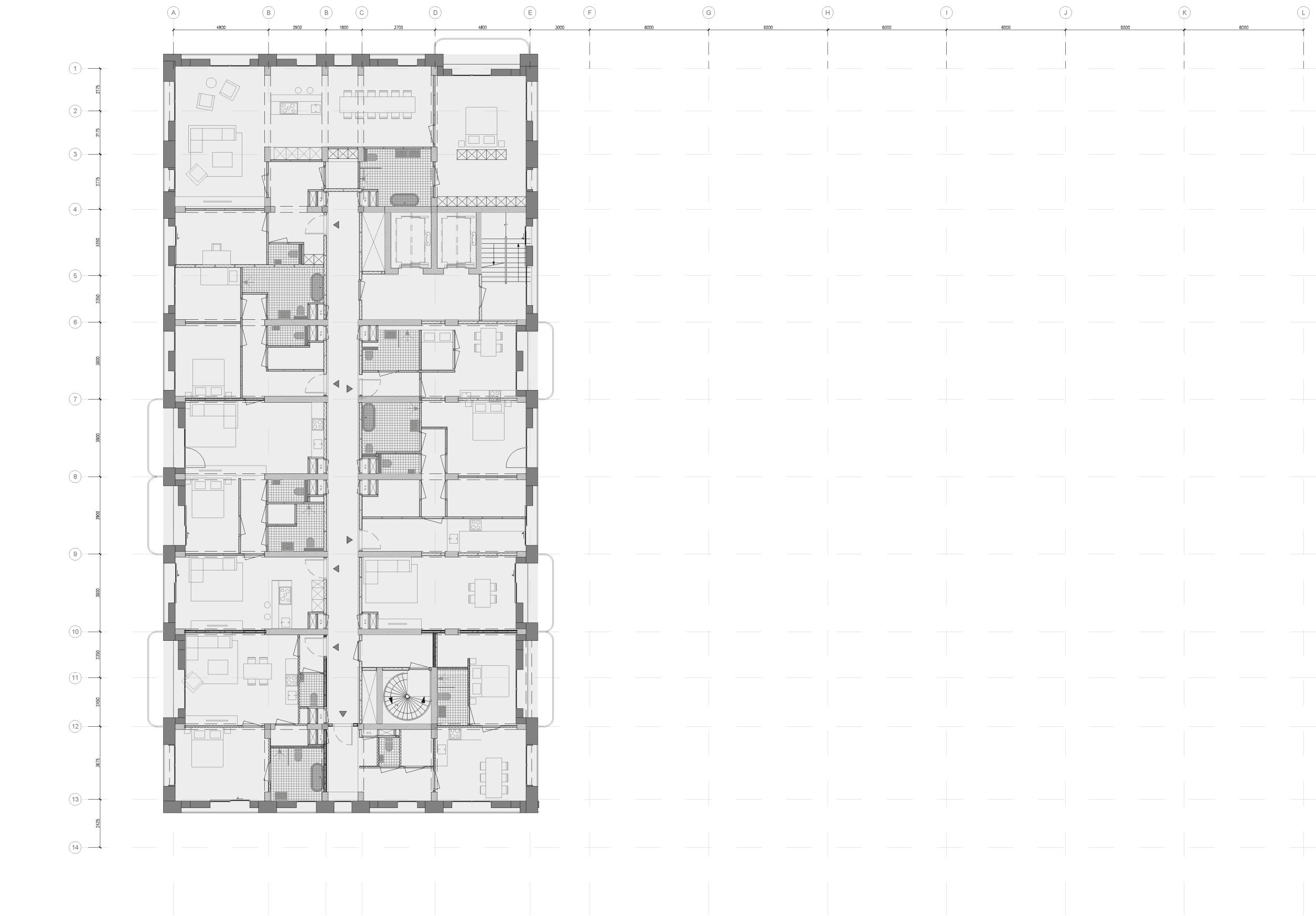


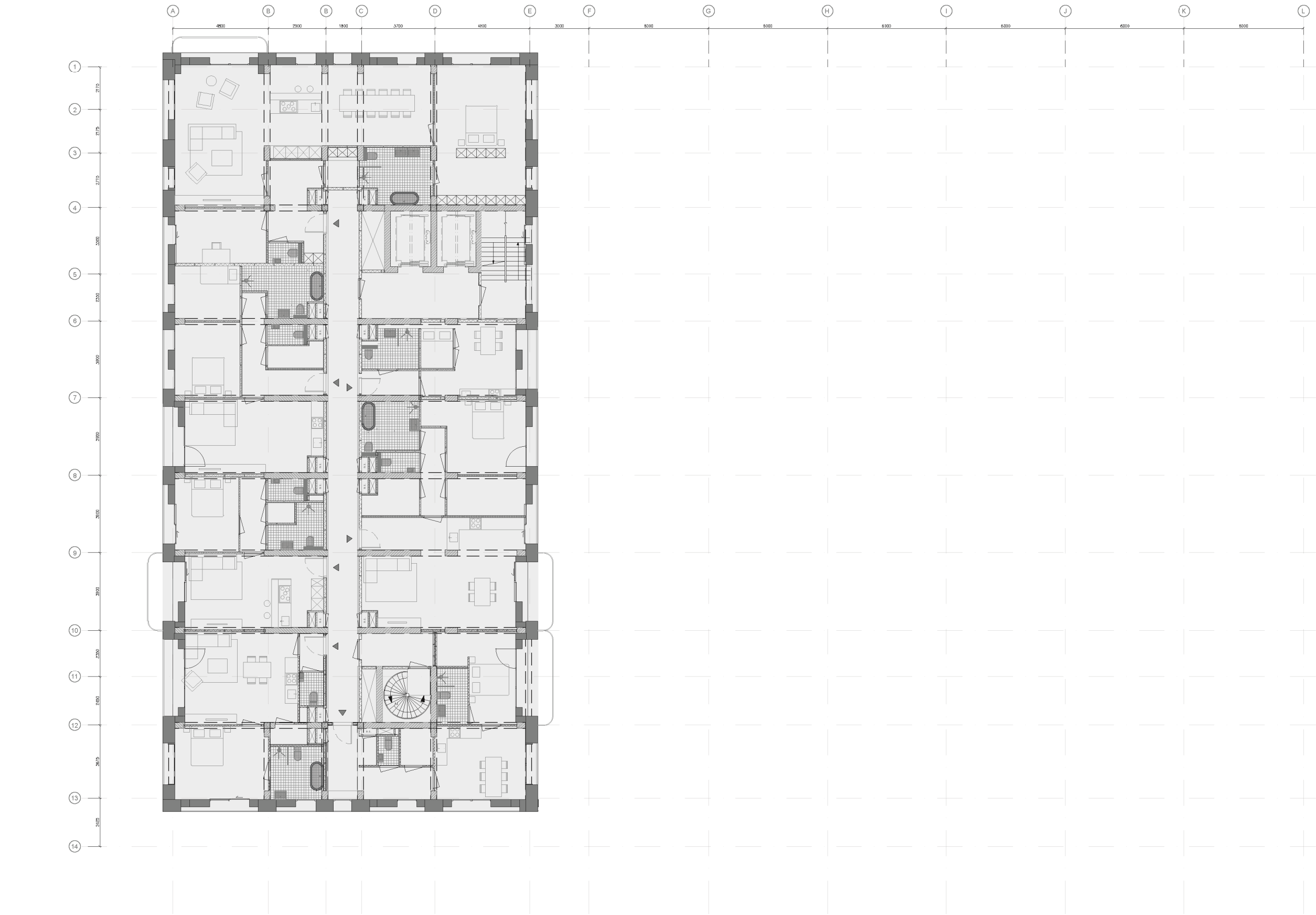






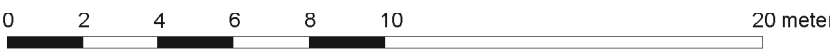
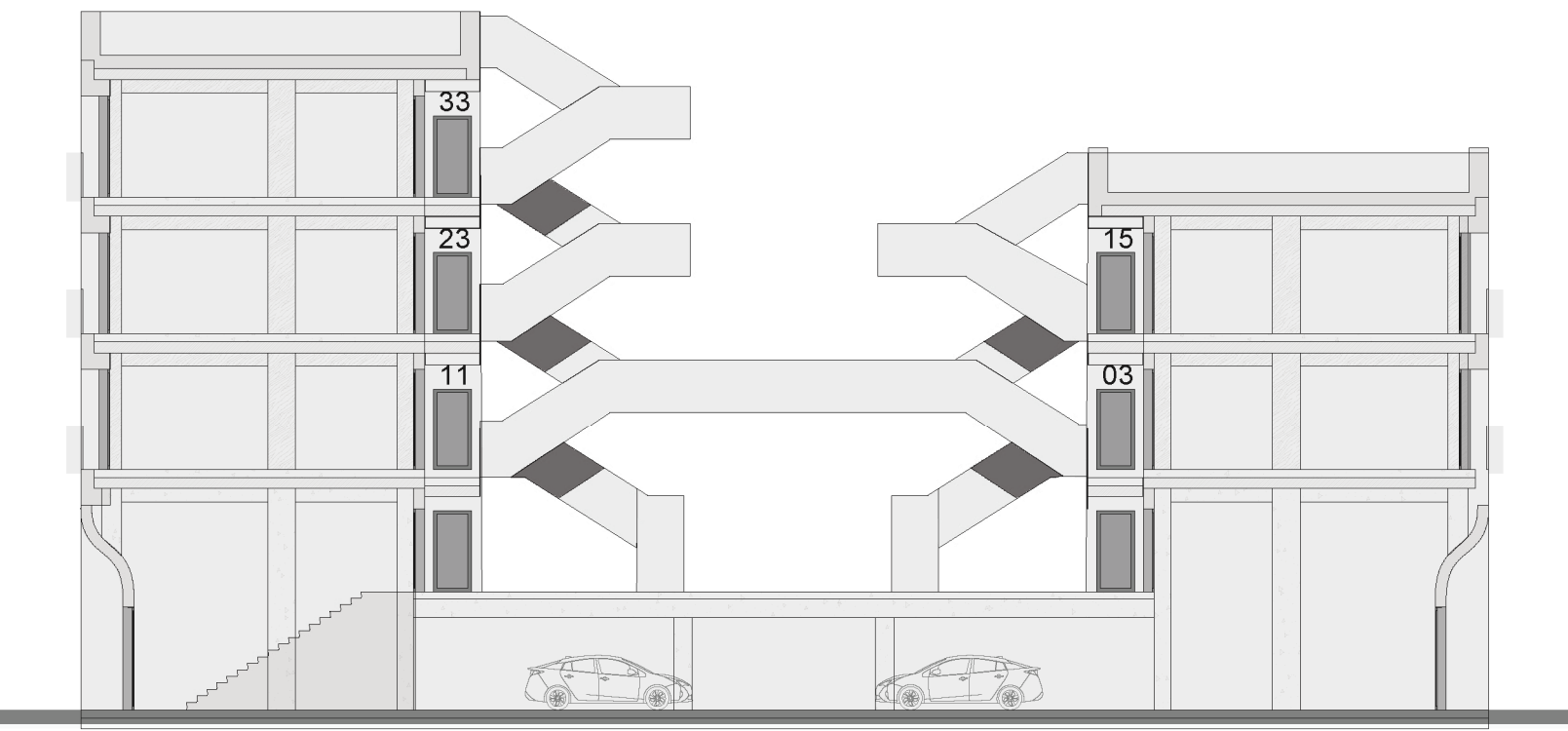


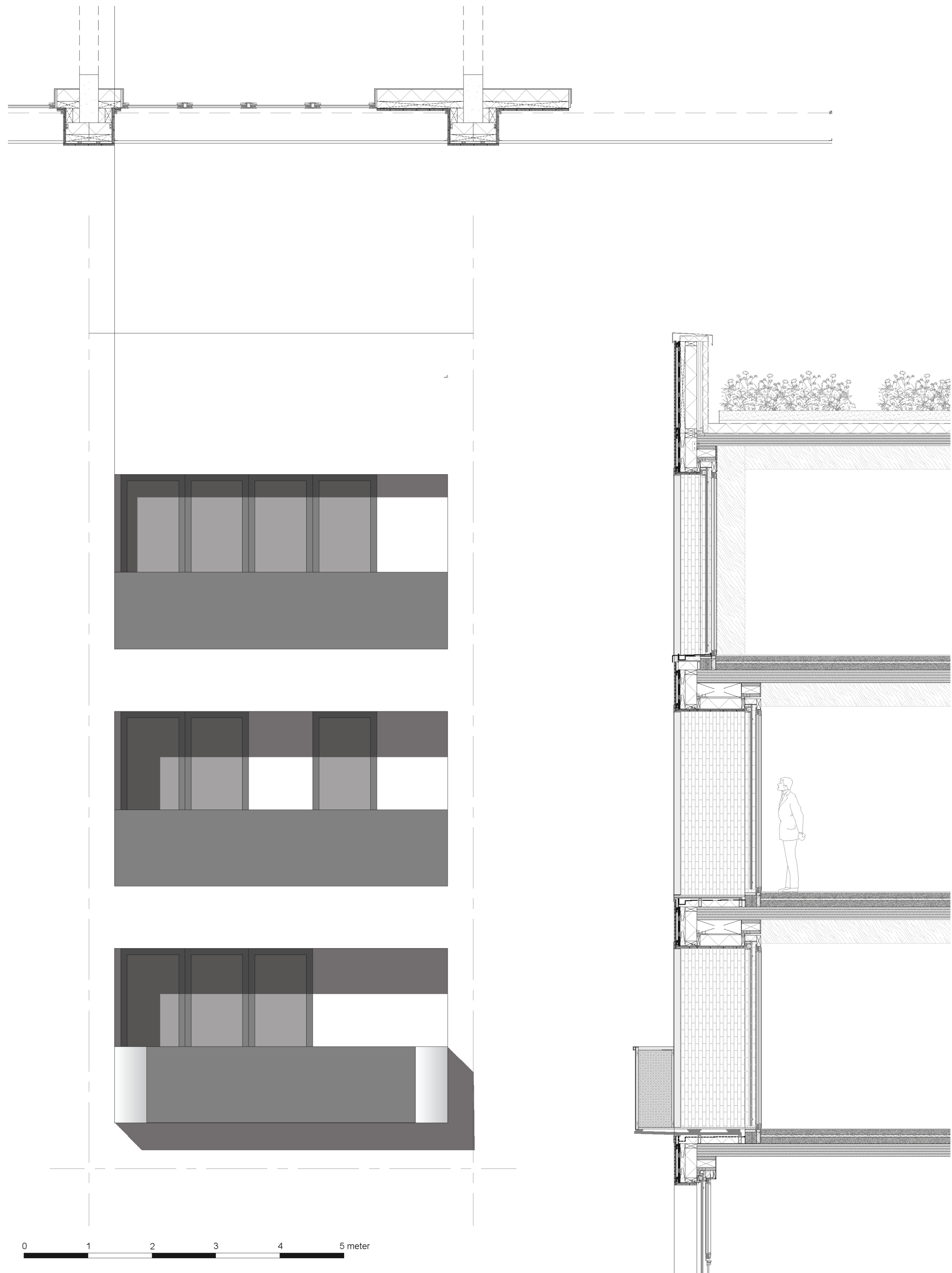


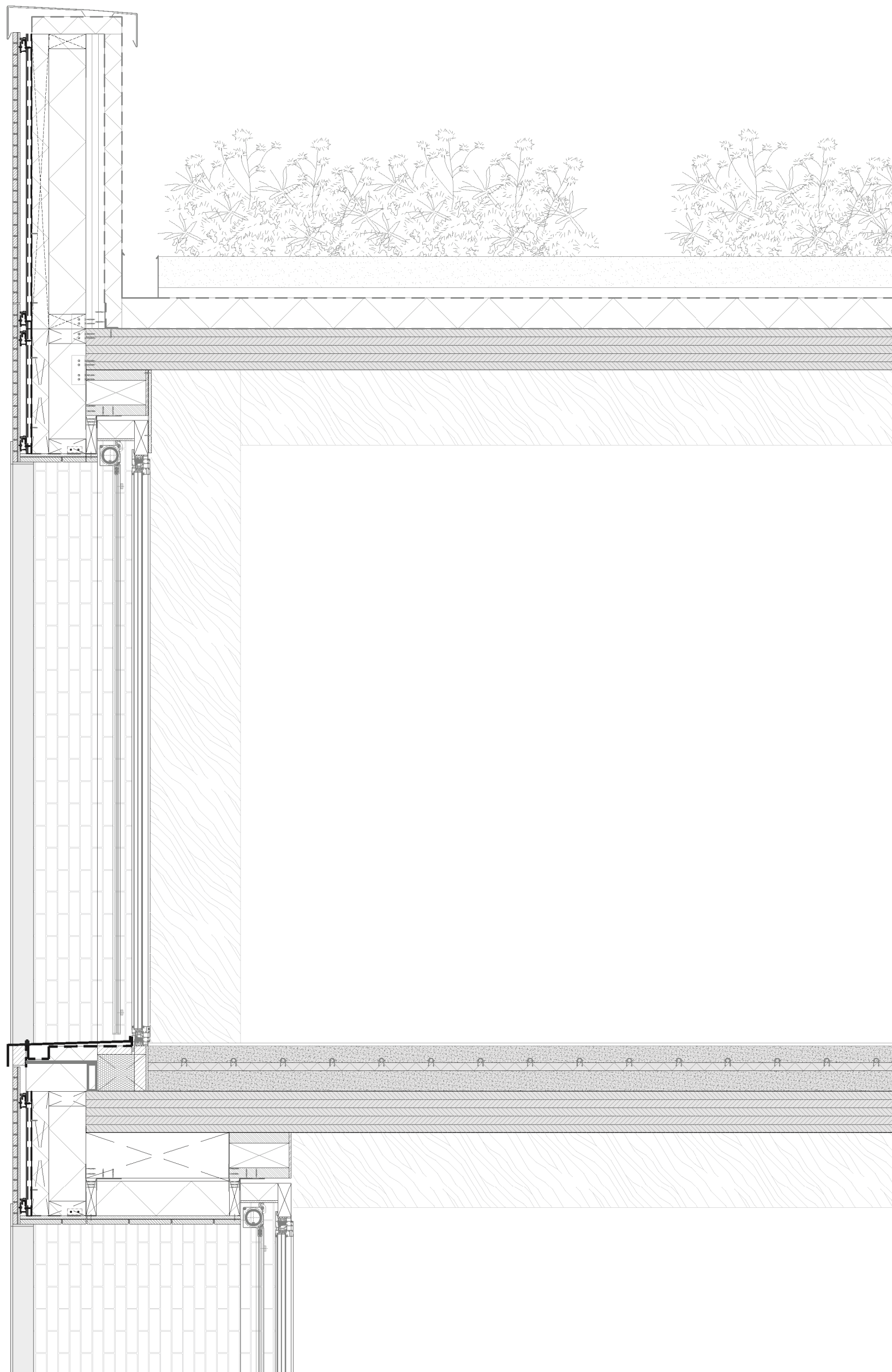


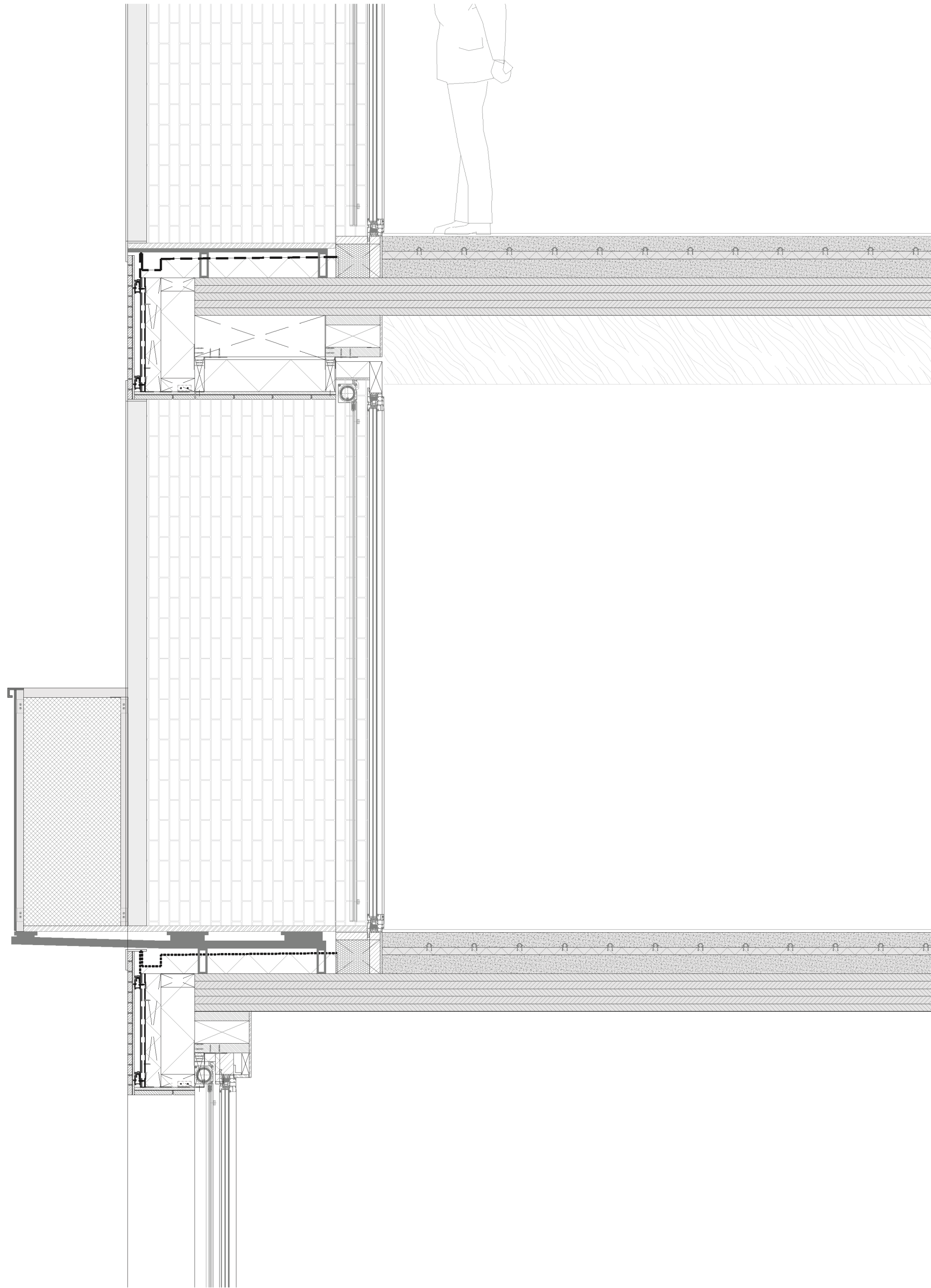


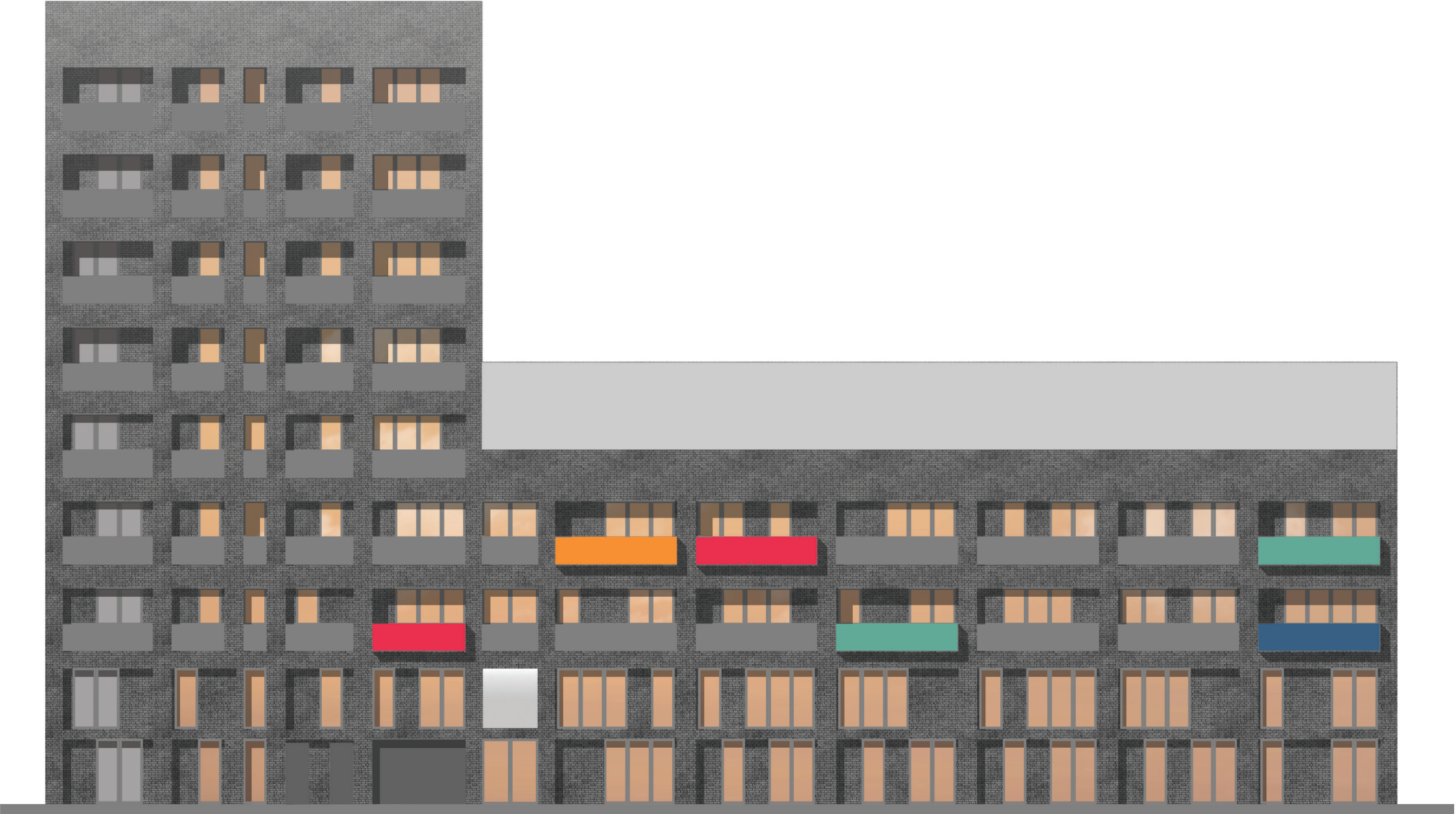
0 2 4 6 8 10 20 meter











0 2 4 6 8 10 20 meter

SHIFT



Plans
Groundfloor

Drawingset

SHIFT 97



0 2 4 6 8 10 20 meter

SHIFT



Plans
Groundfloor

Drawingset

SHIFT 98



0 2 4 6 8 10 20 meter



Plans
Groundfloor



0 2 4 6 8 10 20 meter

SHIFT



Plans
Groundfloor

Drawingset

SHIFT 100

