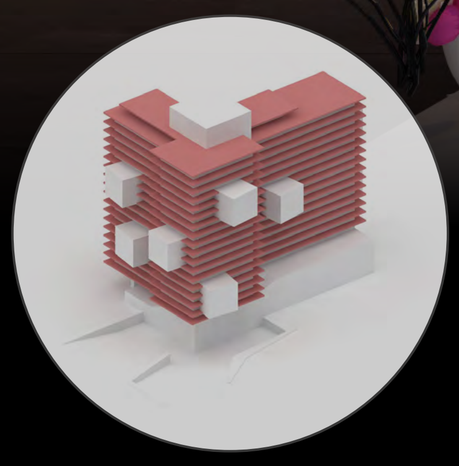
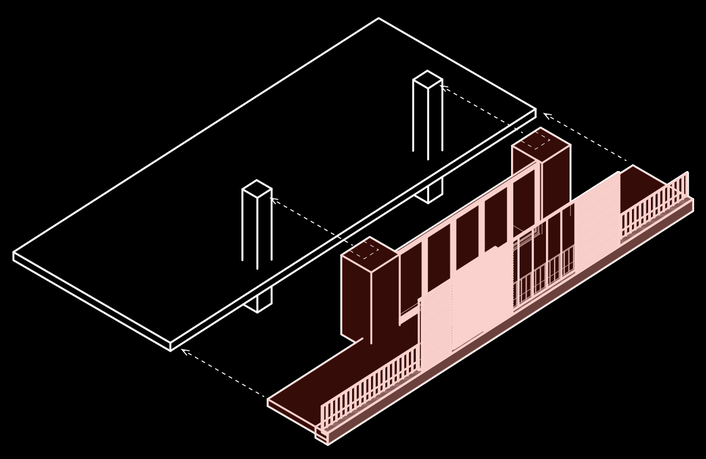
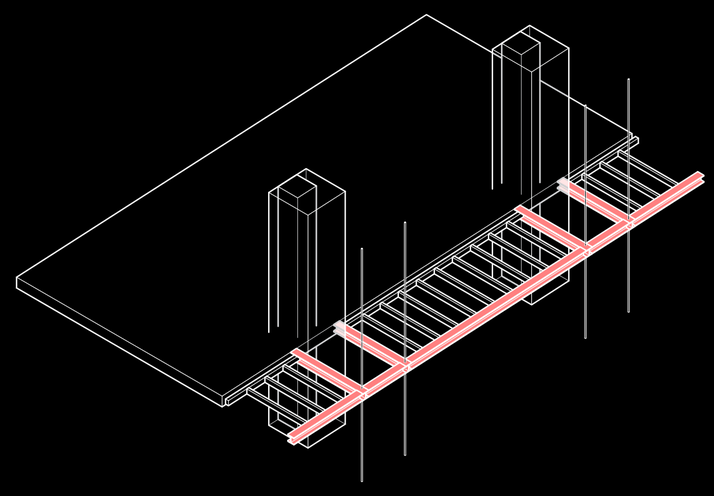


FLEXIBLE EXPANSION



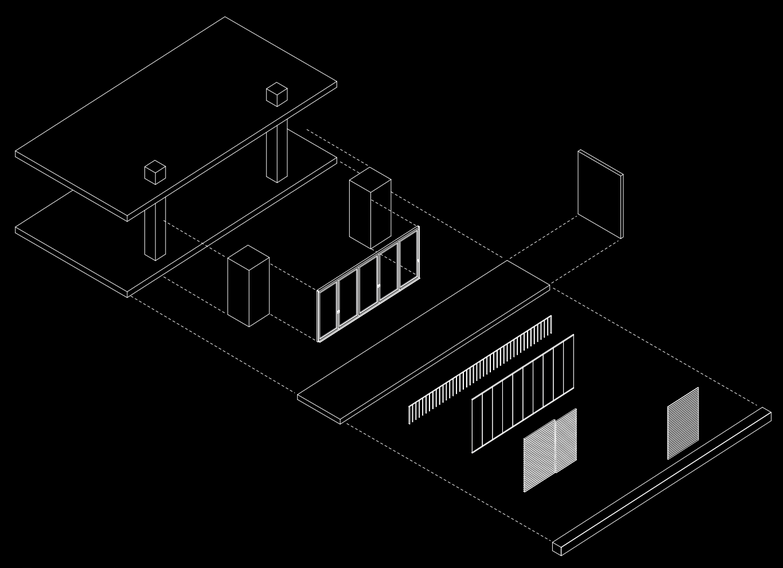
Addition to the existing structure

The flexible extension will add a new flexible cantilever to the building, without intervening with its structure.



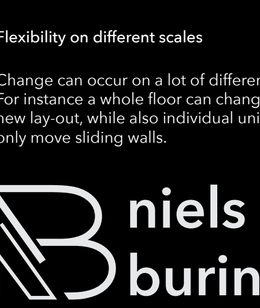
Construction

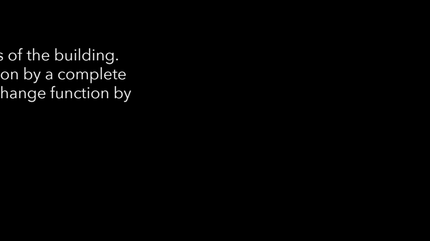
The expansion will be constructed out of steel for the structure and timber for the flexible infill. Steel cables hang the structure from the roof.

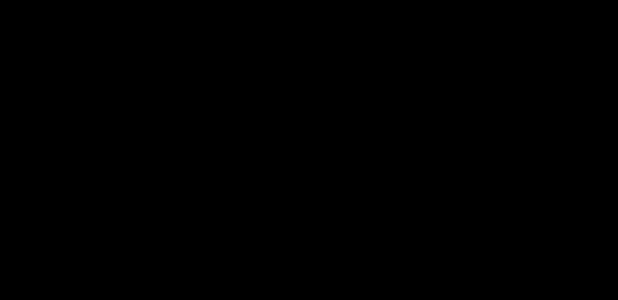


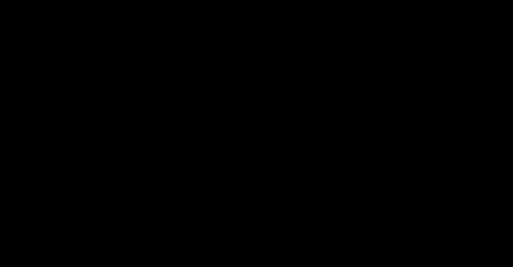
The layered facade

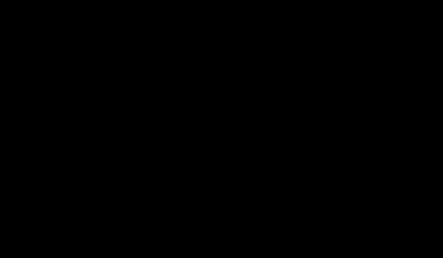
The facade is made out of different layers, all could be indepedently added or removed. Certain fixed zones in front of the vertical columns and along the horizontal floors will give the building its architectural values, in where the change is possible.











	BUILDING ZONE	BUILDING FLOOR	FLOOR WING	FLOOR UNIT
STRATEGY	SCALEABLE 5-30 YEARS	CONVERTIBLE 1-15 YEARS	REFITABLE 1-7 YEARS	FLEXIBLE/ADJUSTABLE HOURLY TO MONTHLY
MAIN ACTION	ADD OR REMOVE FLOOR FROM ZONE	CHANGE BUILDING FLOORS FUNCTION	CHANGE UNIT PERFORMANCE	CHANGE UNIT USE
AFFECT	ADD OR REMOVE FLOOR FROM ZONE	CHANGE FLOOR LAY-OUT	MAINTAIN/UPGRADE BUILDING SERVICES	(RE)PLACE OR (RE) MOVE INTERIOR WALLS

Flexibility on different scales

Change can occur on a lot of different scales of the building. For instance a whole floor can change function by a complete new lay-out, while also individual units can change function by only move sliding walls.

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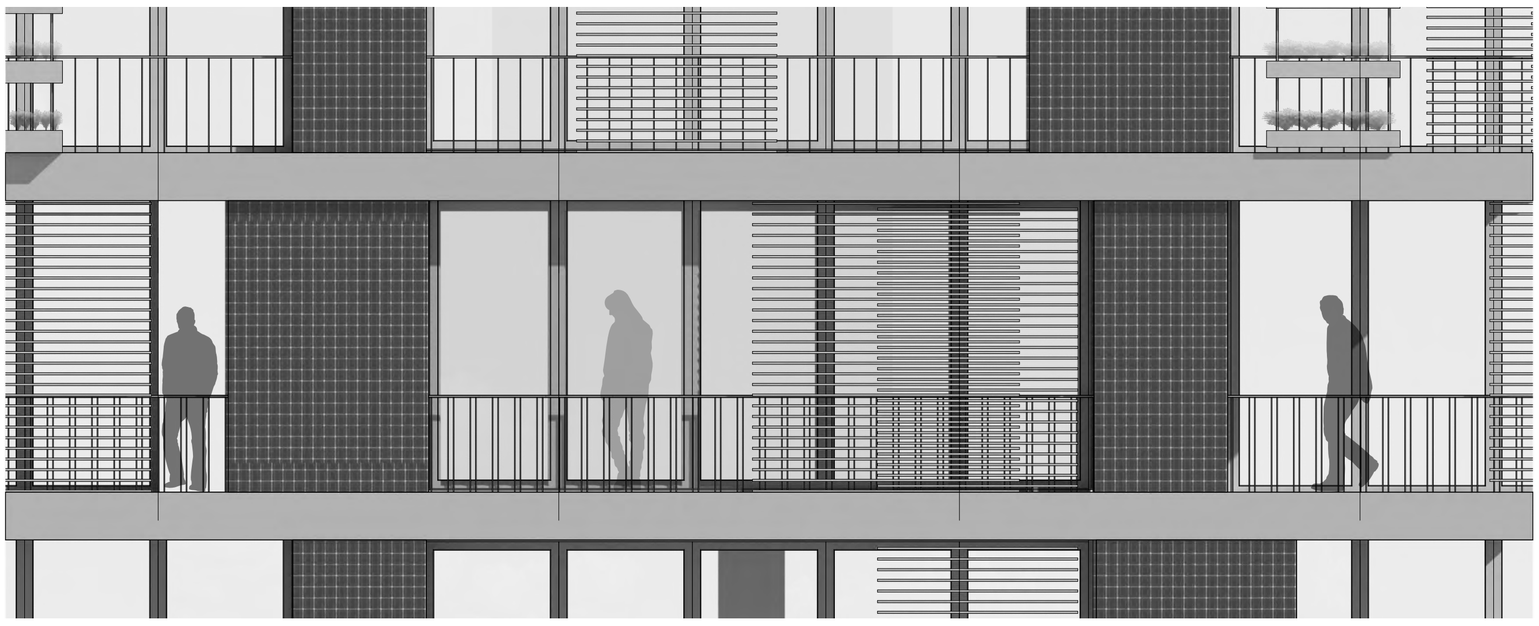
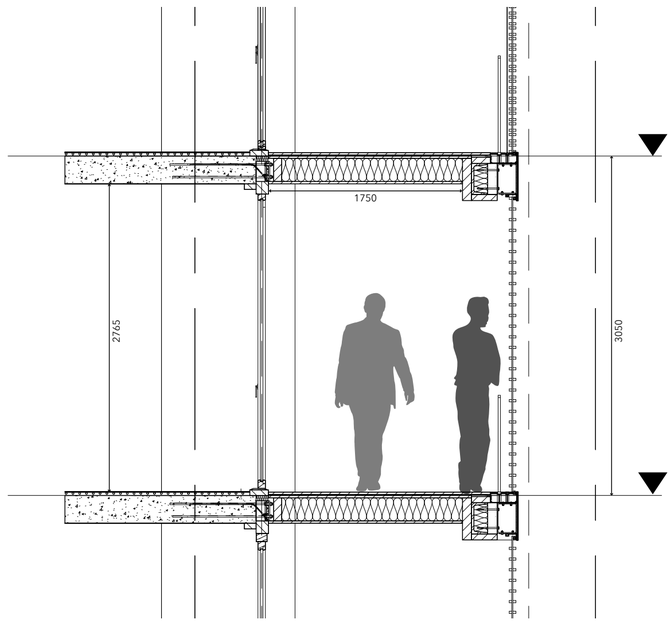
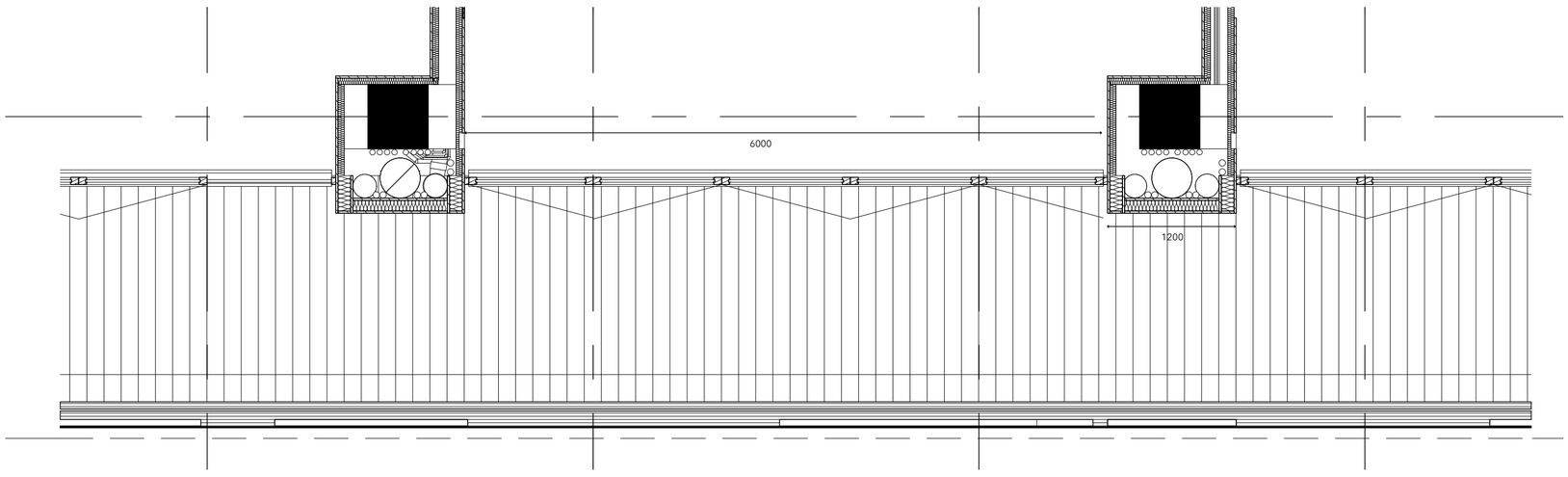
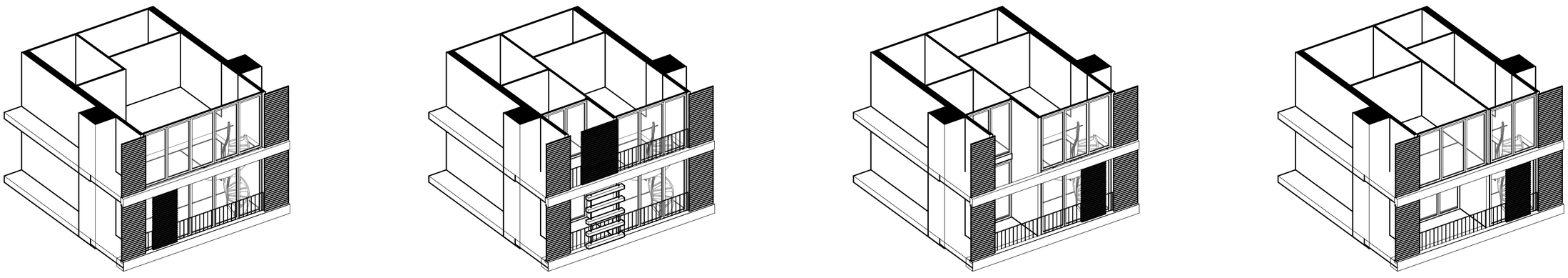


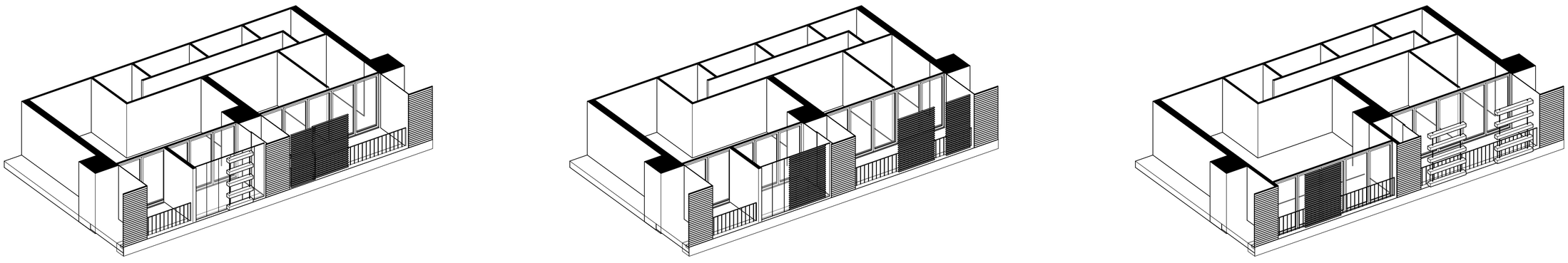


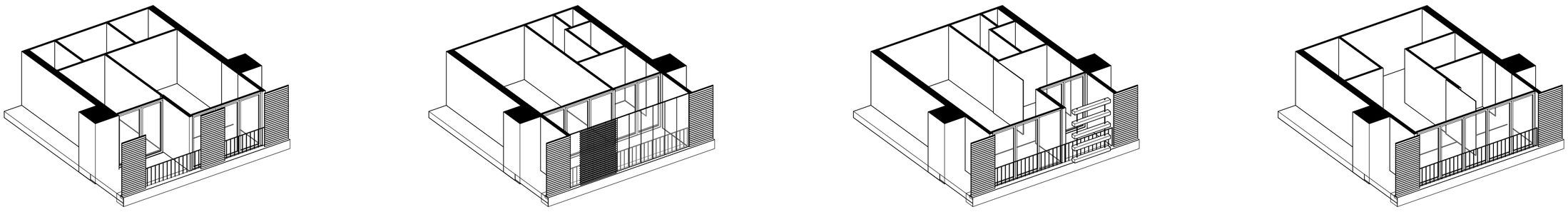


Facade fragment

The elevation clearly shows the vertical panels, in this case covered with PV, and the horizontal bands. The whole expansion is based on a 1200mm grid and therefore cantileveres 2400mm.

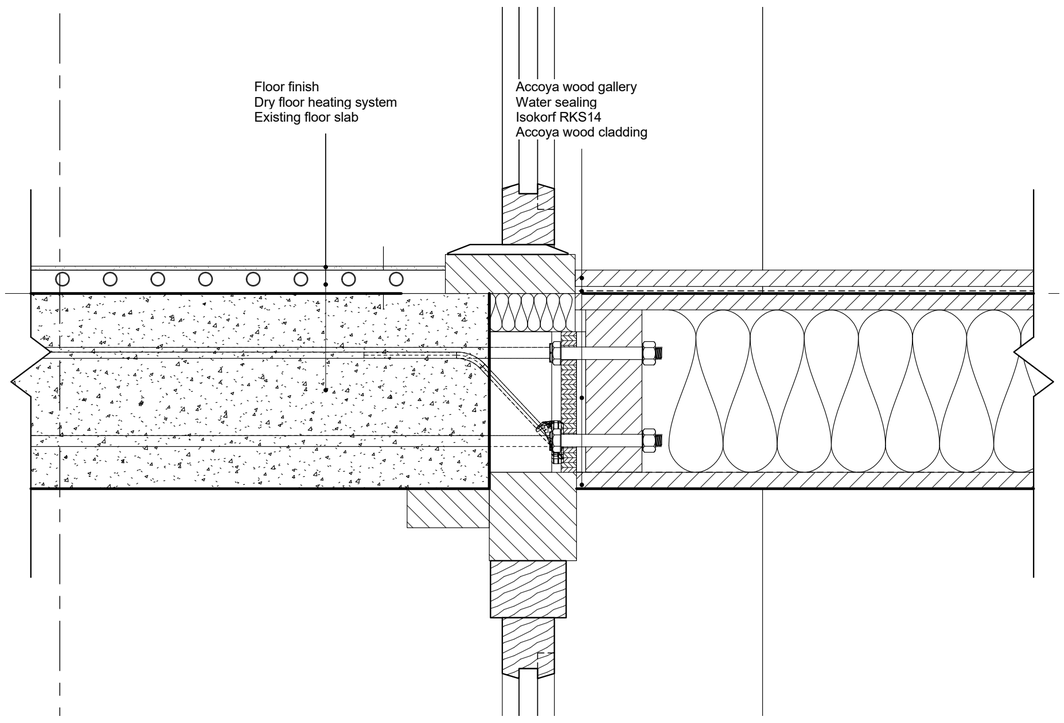






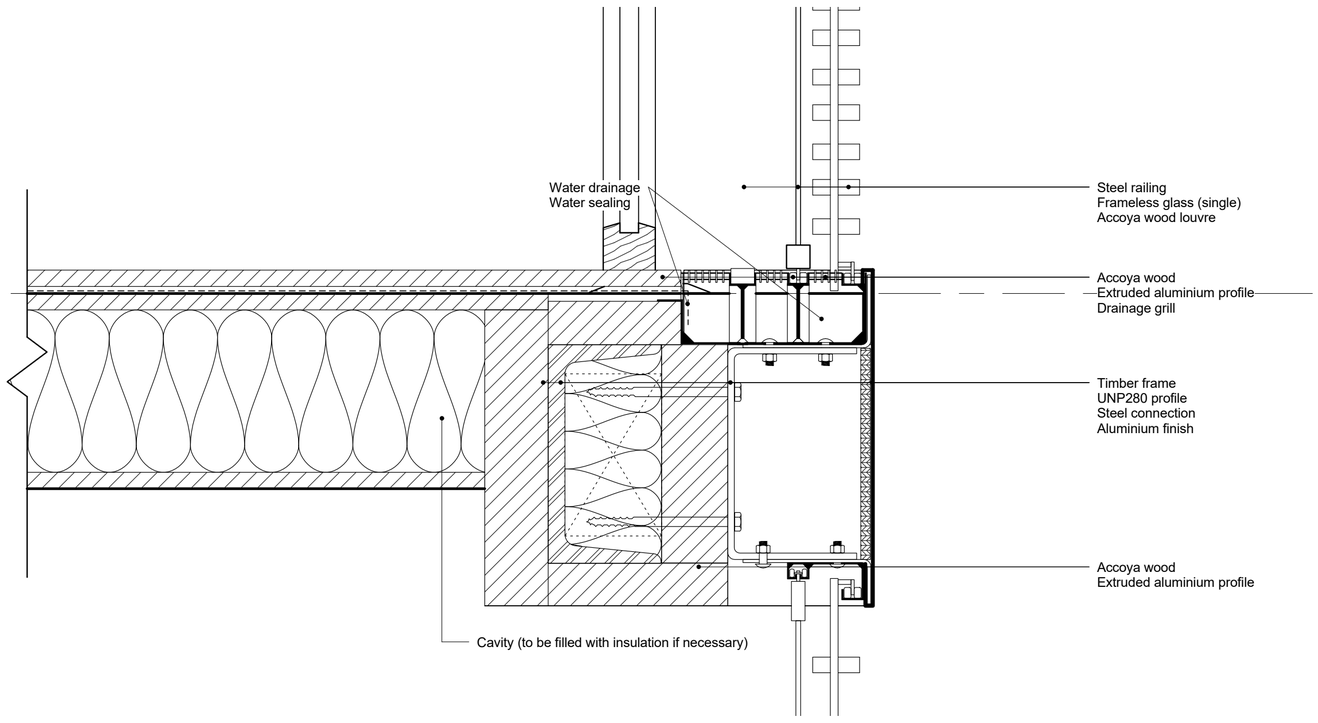
Facade and interior possibilities

Some different possibilities one could make with the flexible expansion and interior walls.



Flexible expansion detail existing - new 1:5

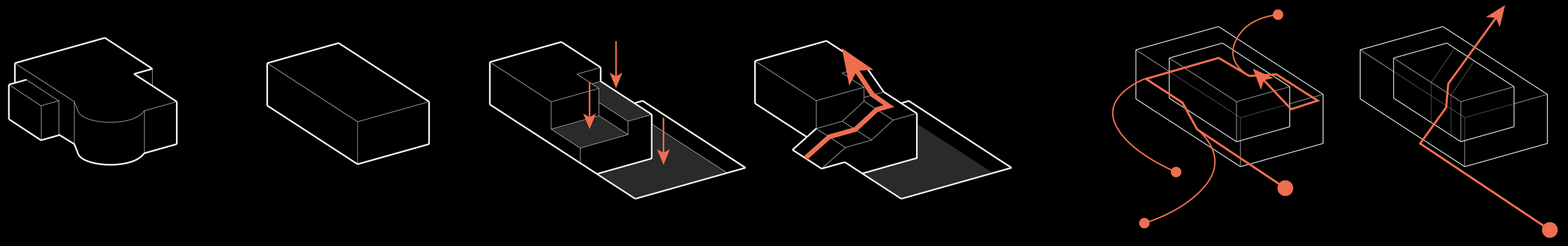
This detail shows the connection with the existing on the right.



Flexible expansion detail exterior 1:5

The horizontal bands will be hosting the multiple layers of the facade. It also shows that the thermal boundary can be extended all the way up to the railing.

HORIZONTAL CONNECTION



Existing mass

Create unified volume

Lower according to towers
Create lowered square to connect to metrostation

Create route to third level terrace

Horizontal connection concept

The concept for the horizontal connection is to create a unified mass, which is then adjusted to match the height of the towers above. At the entrance, the square is lowered to literally form an entrance to the building, while also connecting the context. Over the mass, a route leads up to the roof terrace on the third level.

Spiral route concept

The interior of the horizontal connection features a spiralling route that circles around a condensed mass of commercial space, to which on different levels of the building, the context is connected. An exception is made to connect the Beurs metrostation with the Binnenwegplein, by using a diagonal line.

Horizontal connection section

The section clearly shows the internal spiralling route that connects the different levels of the horizontal connection and also the lowered square to get to the level of the neighbouring metrostation Beurs.

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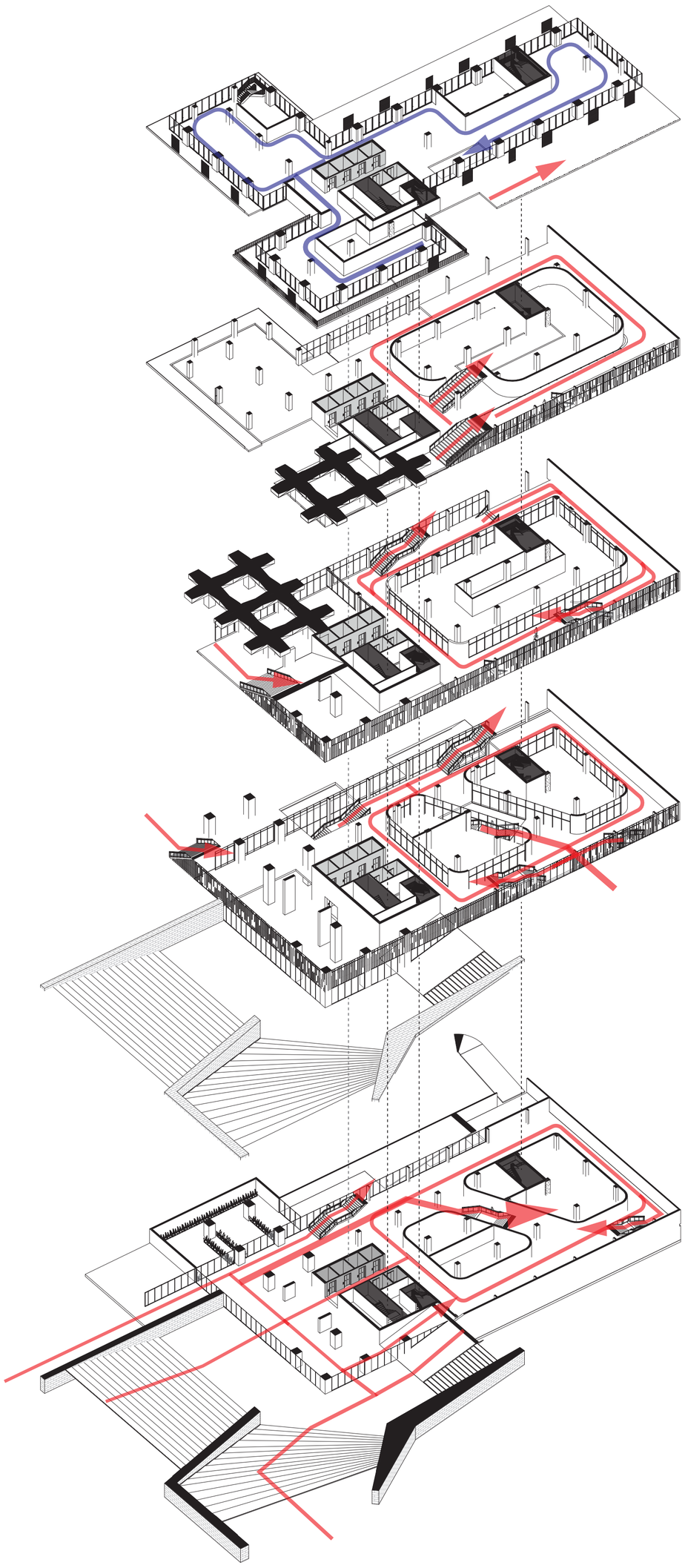


Third floor

Both routes end at the third floor: the exterior route on the terrace, and the interior route in the middle of the horeca square.

Second floor

The exterior route goes under the mushroom construction and the interior route lines up with the commercial space inside.

First floor

On the first floor, the spiralling route goes up the building, as well as the exterior route.

Ground floor

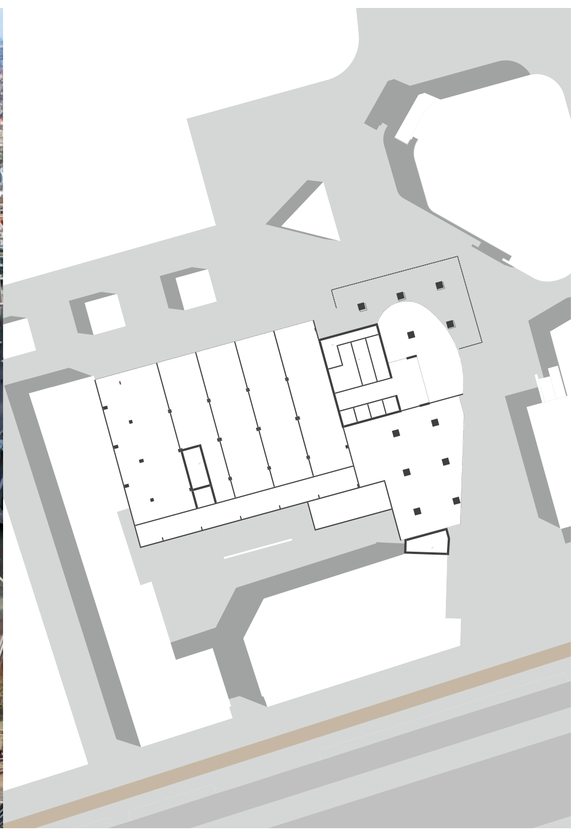
The ground floor connects the building to both the Binnenwegplein in the north, as well the Westblaakhof in the south. It also provides a route from the new Coolplein.

Basement level

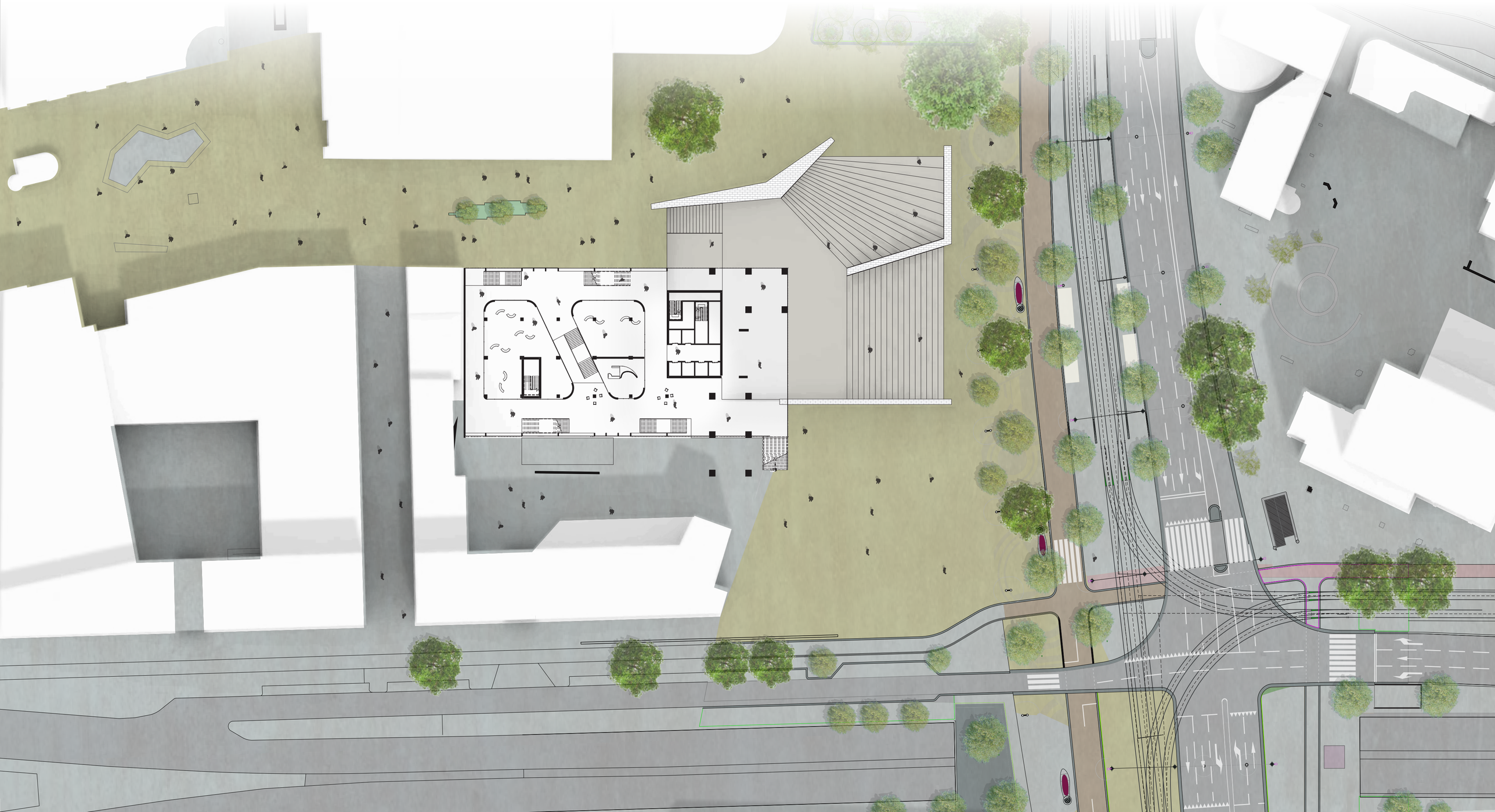
On basement level, the building connects to the existing metrostation of Beurs.

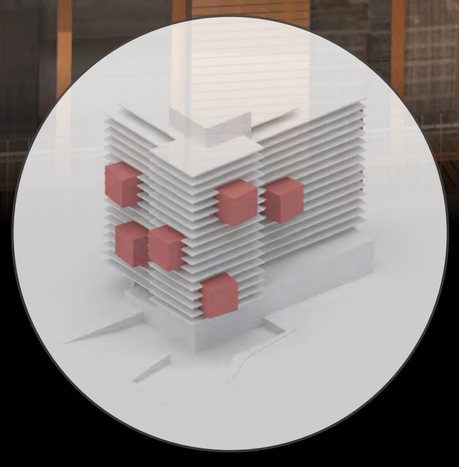
The proposed situation 1:500 ↓

The new Coolplein

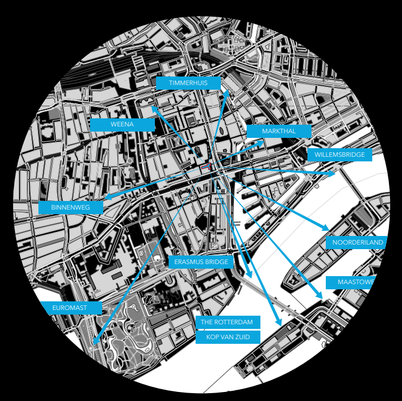


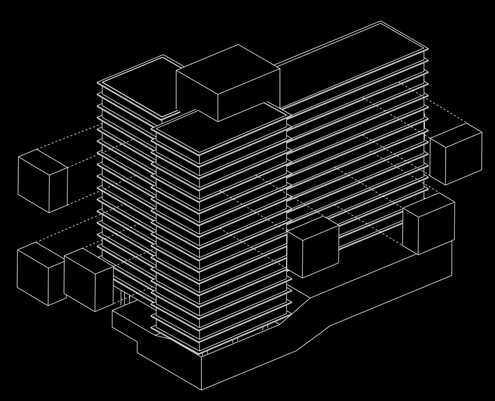
The existing situation

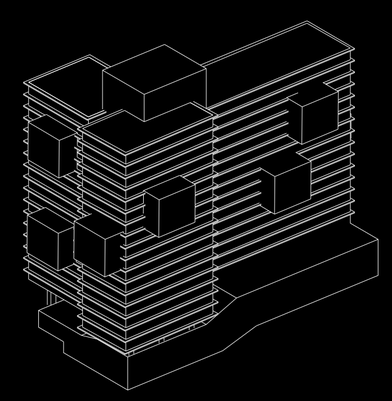


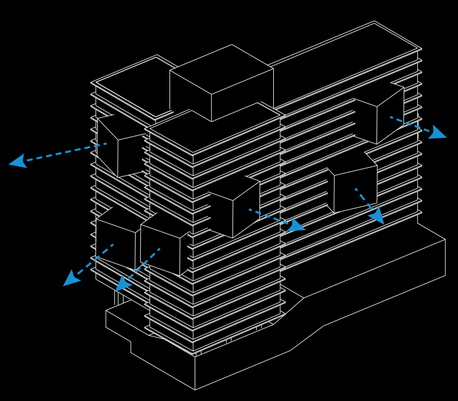


POCKETS





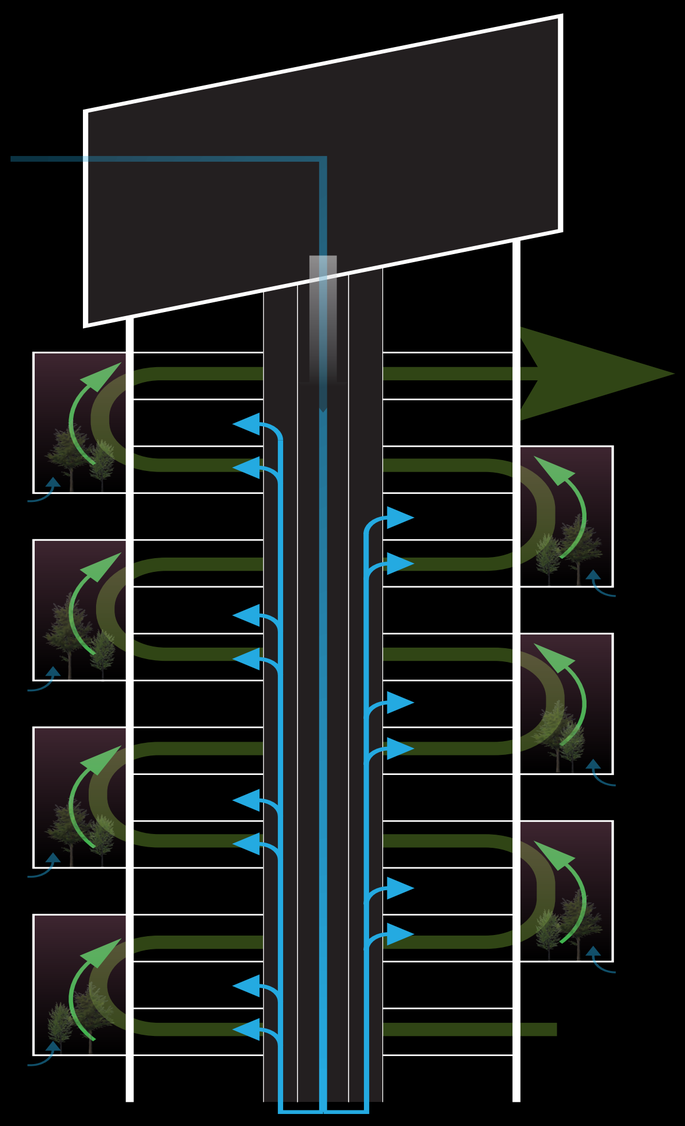




Isovist study of the building in its context

The resulting viewing lines from the building

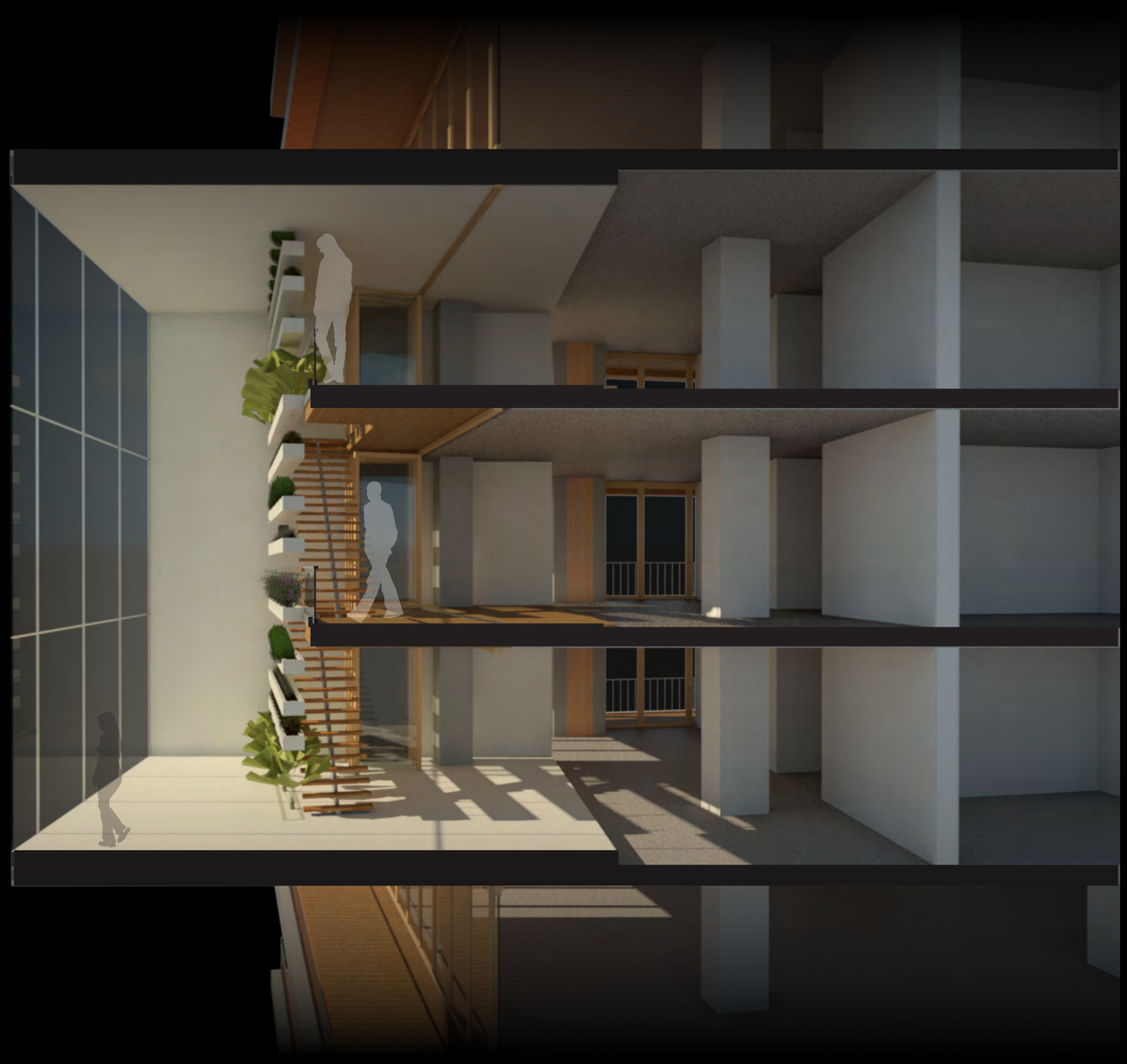
This study shows the different views one has from the building. This has been done on every single story in the building, resulting in the viewing lines that the building has to offer



Pockets are placed to connect different floors to each other

Rotation to focus on different parts of Rotterdam

The pockets are placed on different levels in the building, according to what can be seen from this height. They are slightly rotated to face a particulair highlight of Rotterdam and in this way ‘framing‘ the view towards it. This works both ways: there is a visual connection to the highlight, but when located at the highlight, one could also see the building’s watching eyes.



Lungs of the building

The roof forest, along with the pockets, form the lungs of the building. Air is pre-cooled or pre-heated by the forest on the roof, and is also filtered by its green. A climate cascade further heats or cools the air and the existing shafts of the building distribute it to every floor, where it enters the spiral that goes up into the pockets, further cleaning the air before delivering it to the units.

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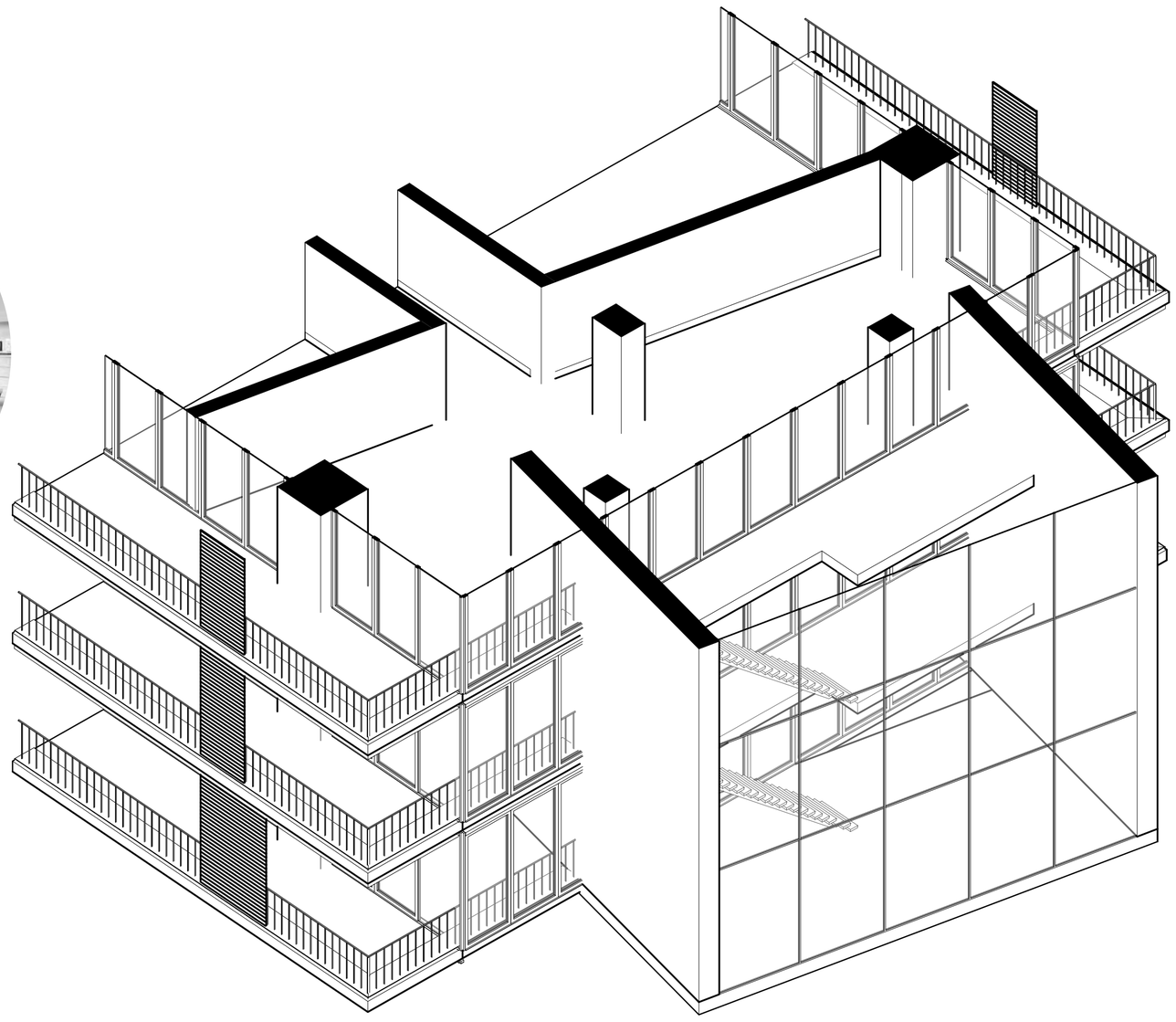
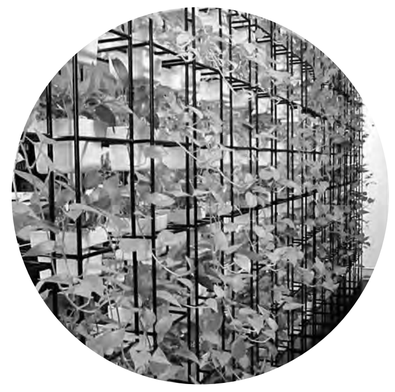
Meeting place

The pockets connect different floors and therefore also ifferent functions with each other. They act as meeting places between different people during the day: for lunch, a break or even dinner.



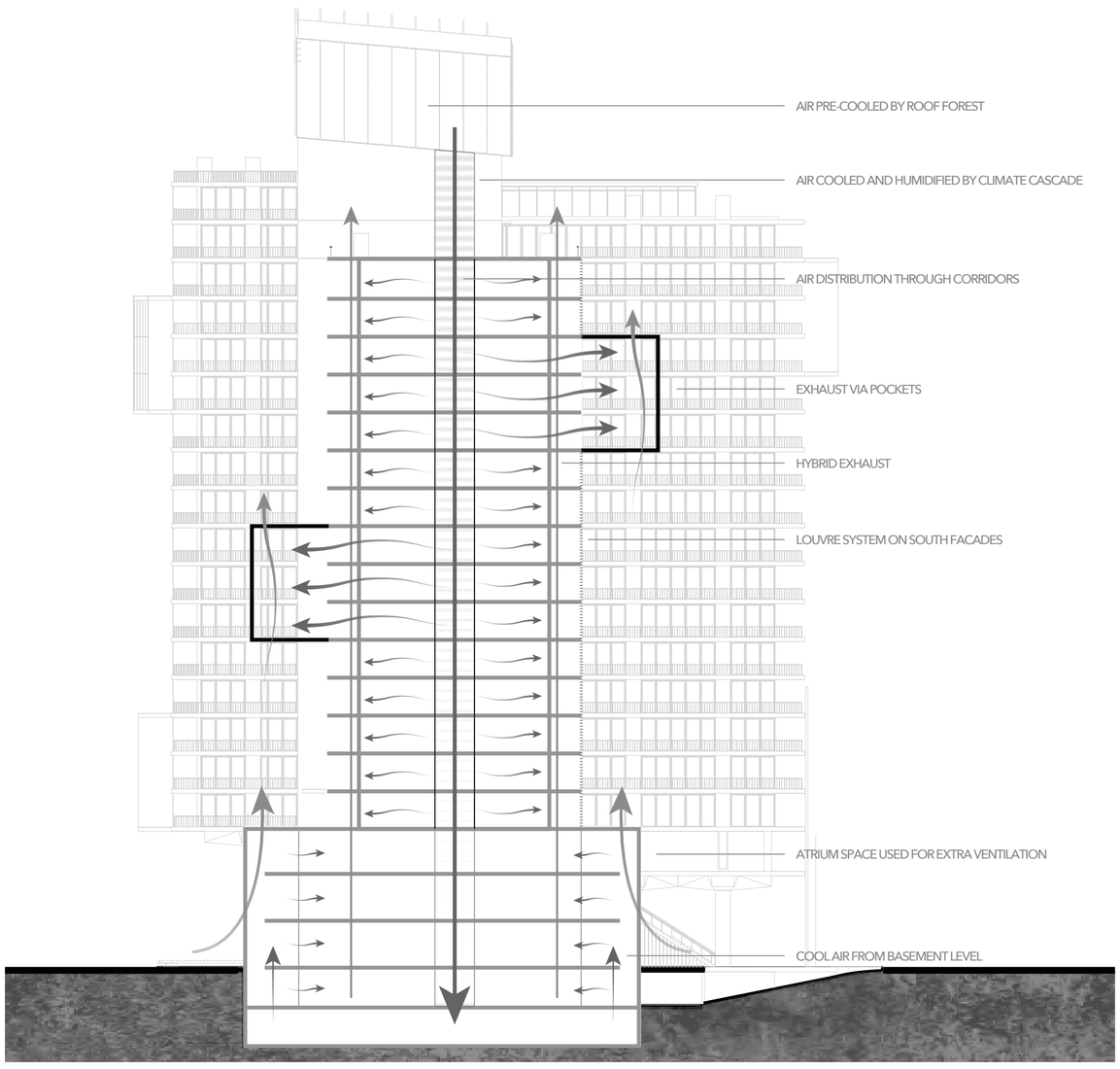
Different characters

All the pockets have their own character. For instance, the pocket connecting the offices with leisure will feature elements that combine both worlds, such as a sporty lounge area



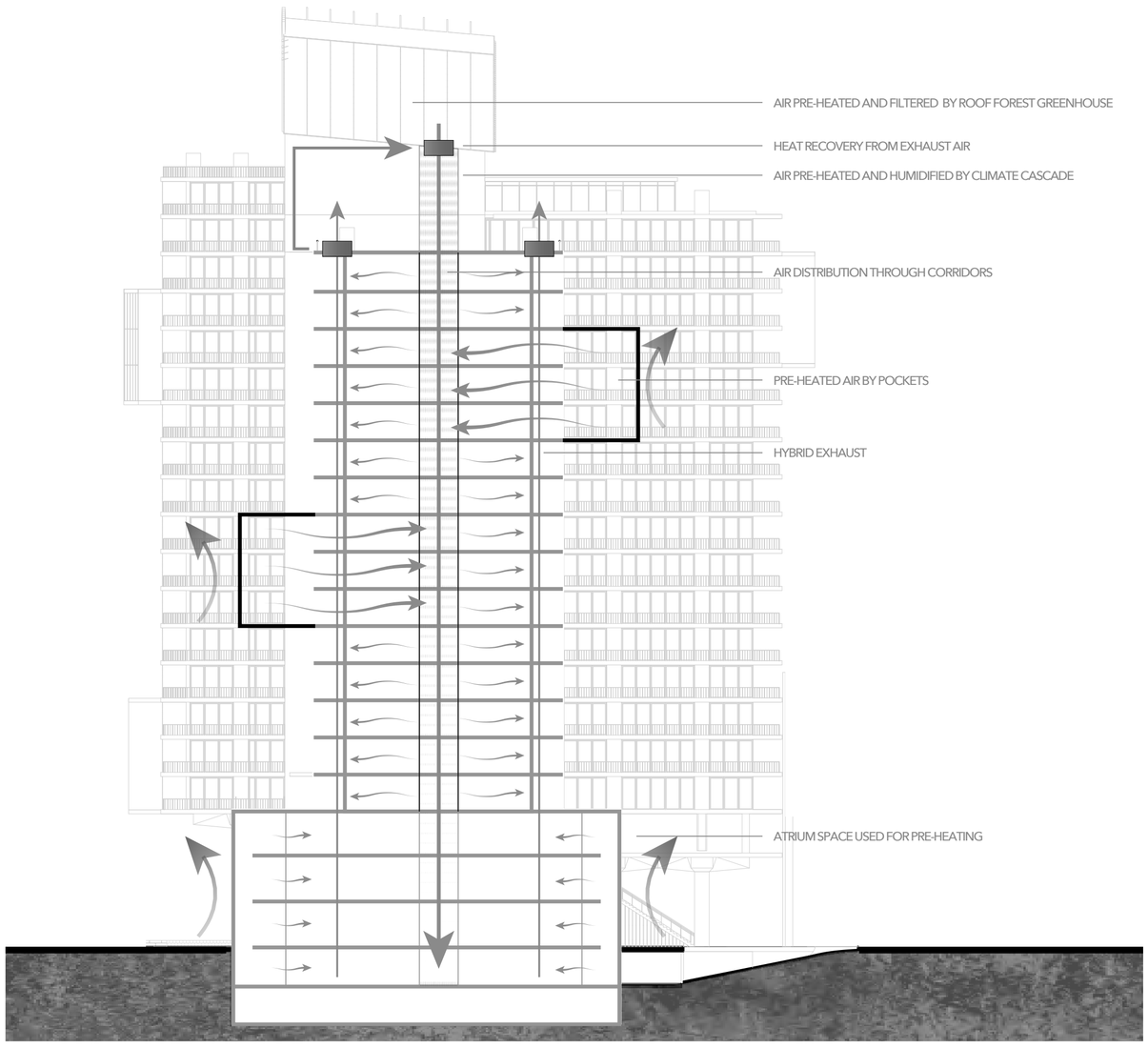
Vertical green

Since the pockets act like the lungs of the building, green will be used to filter the air and provide a pleasant place to hang around. It will also be used for vertical farming, where for instance offices can grow their own lunch, or schools can teach about food



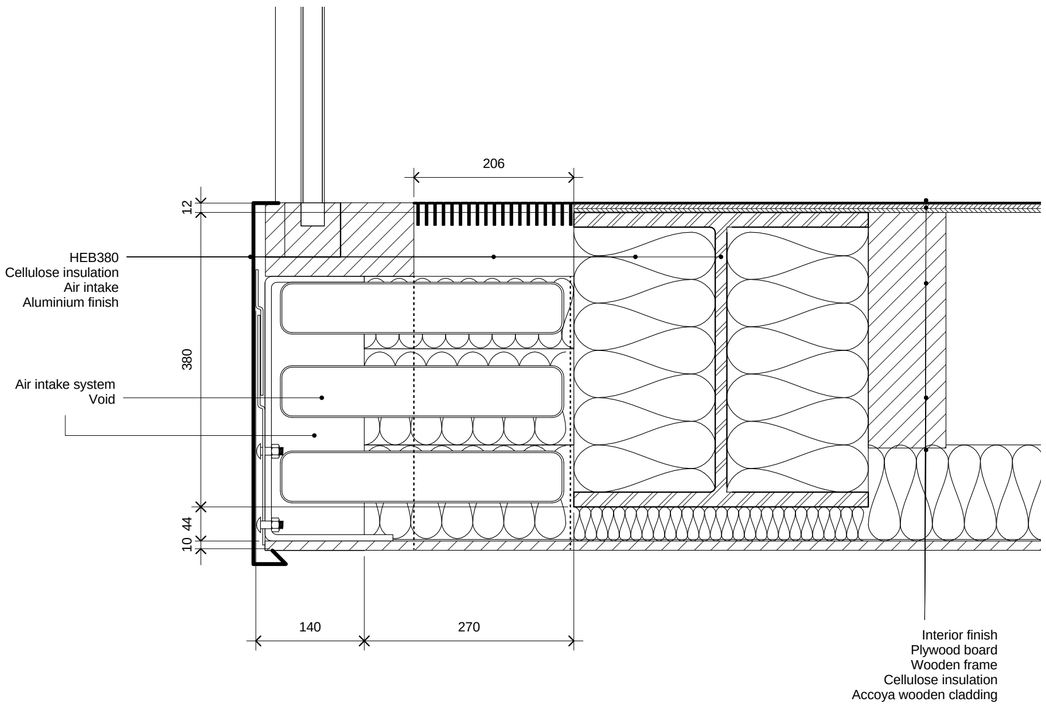
Climate concept summer

In summer, air enters the building through the roof forest, where it gets pre-cooled by the forest itself, before getting conditioned by the climate cascade. Air is distributed through the rest of the building by the existing shafts and corridors. Also the basement is used to cool the first floors. The pockets and horizontal connection are used to extract hot air from the building, and during the night it is used for night-ventilation.



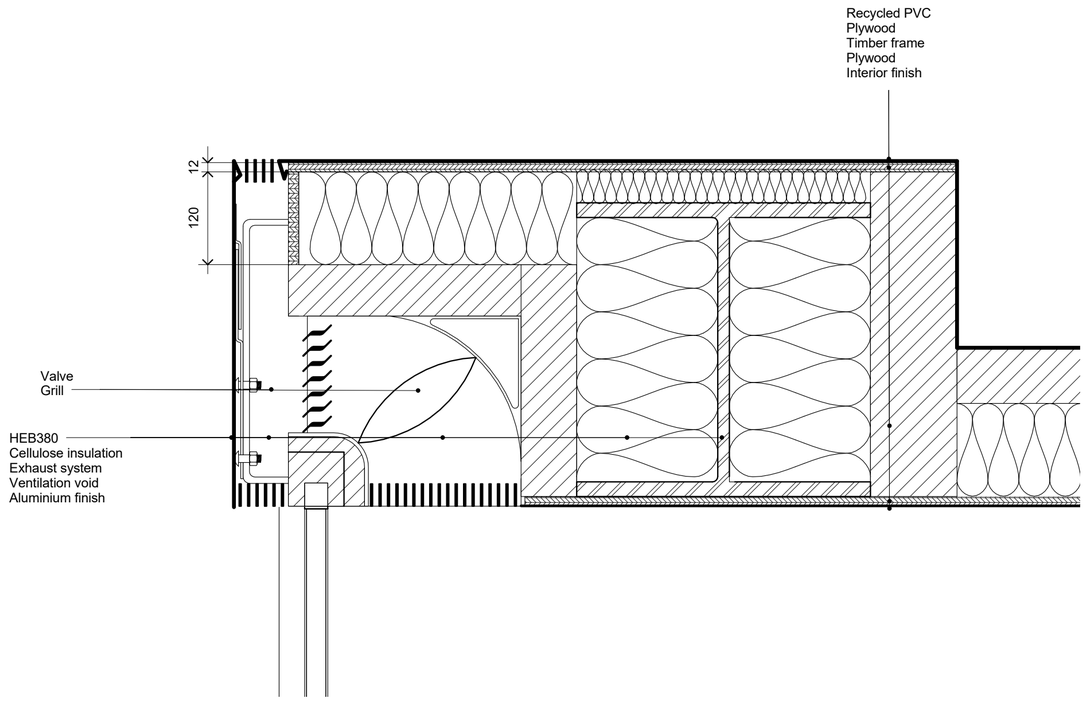
Climate concept winter

In winter, air enters the building through the roof forest, where it gets pre-heated by the greenhouse, before getting conditioned by the climate cascade. Air is distributed through the rest of the building by the existing shafts and corridors. The pockets and horizontal connection are used as an extra layer of ventilation and depending on the orientation, weather situation and time of day, the pockets are used to further warm the air. Heat is recovered from the extracted air and is used for the climate cascade.



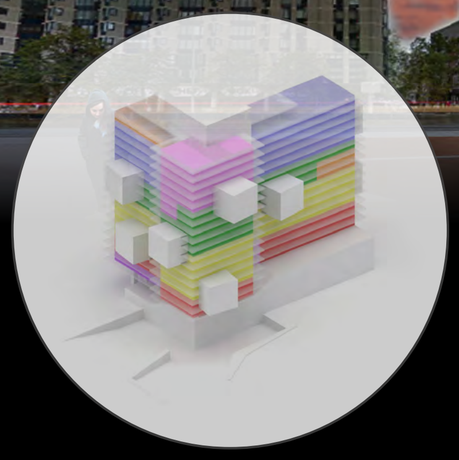
Pocket detail floor 1:5

Air enters the pocket through a zig-zag like channel, which slowly heats the air as it goes in in winter. In summer, there is a bypass to let as much air in as possible.

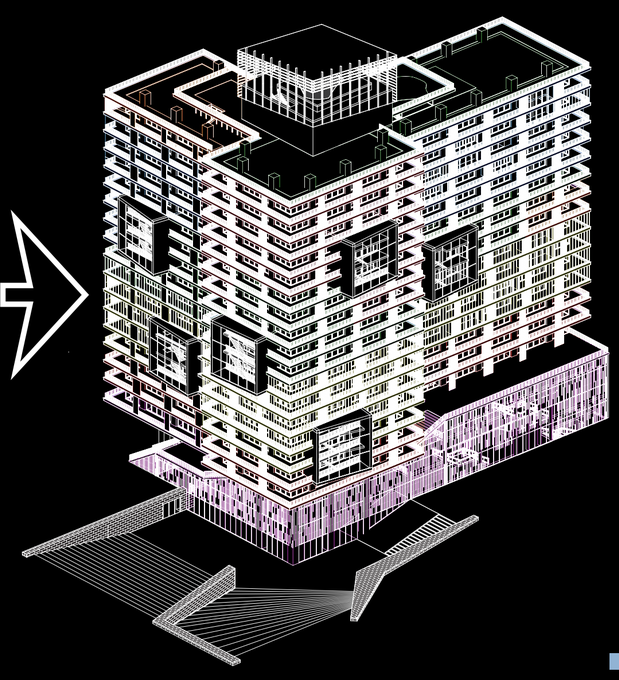


Pocket detail roof 1:5

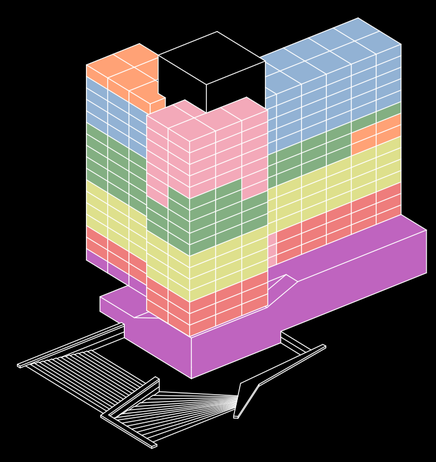
For the exhaust of the air, the pocket makes use of the venturi-effect to further ‘pull’ the air from the pocket.



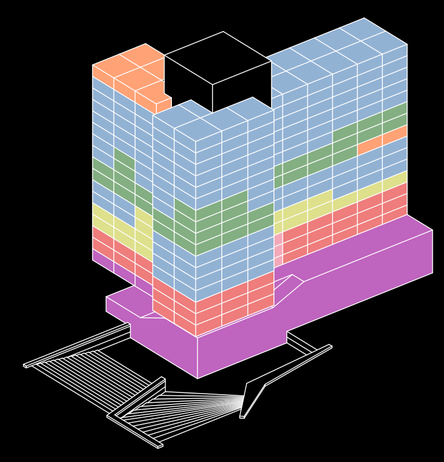
VERTICAL CITY



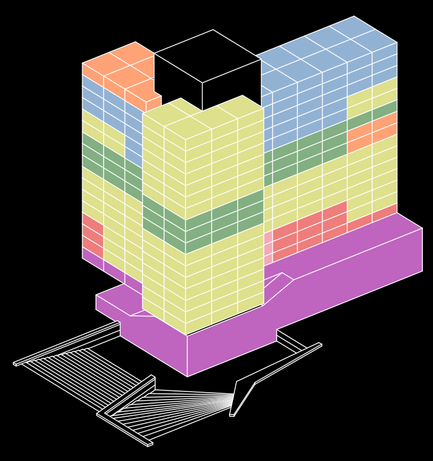
RESIDENTIAL
HOTEL
LEISURE
OFFICES
HORECA
CULTURE
COMMERCIAL



Proposed program

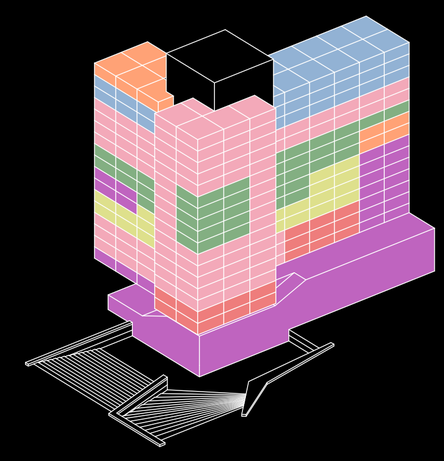


Stronger market for housing



Stronger market for offices

With the pixel approach, the building can easily change the functions of its pixels, therefore providing flexibility and can adapt to future needs.



Stronger market for commercial and hotel program

Vertical city concept

The concept of the vertical city uses the surroundings of the building in Rotterdam as inspiration for the program. Different zones such the lijnbaan, withe de with and het park are translated into the new Coolse Poort building as commercial, horeca and leisure zones. The vertical city will have everything that one finds in a regular, horizontal city.

Impression of the entrance

Impression of the rooftop garden

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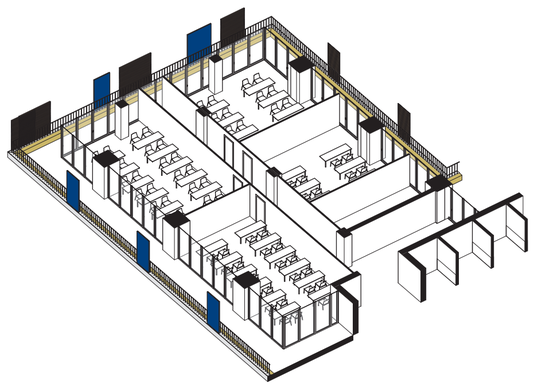
Rooftop forest

On top of the central core, a greenhouse forest acts as the main air intake for the building. In summer, the greenhouse can be opened to let air run through, while in winter the greenhouse effect warms the air.

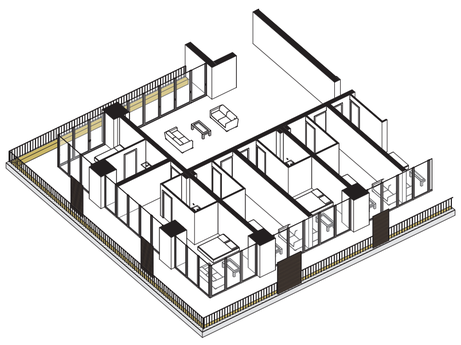
Rooftop gardens

The roof hosts three different kinds of gardens. The first one is similar to a neighbourhood playground and is also used by the school. In the weekends the whole floor acts as a community centre. The second rooftop is dedicated to farming and is the shared garden of the dwellings. The last roof has a lounge area and offers the best views over Rotterdam.



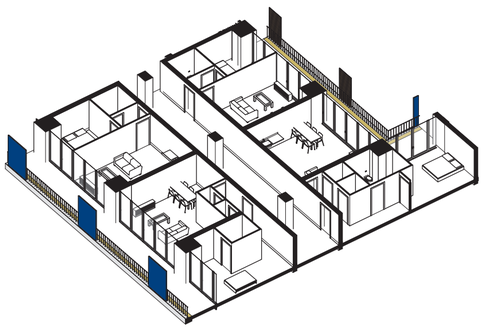
School

On the 18th floor there is an elementary school, which uses the roof garden as playground.



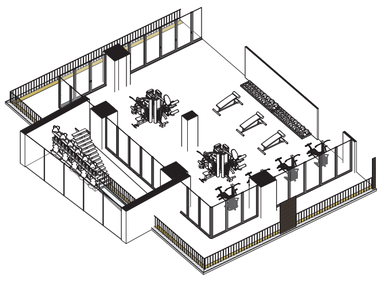
Hotel

At the top floors on the north-east part of the building, hotel rooms offer magnificent views over the Rotterdam skyline.



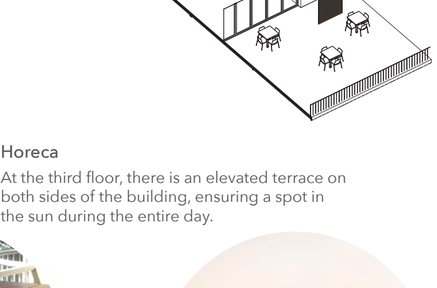
Residences

In the top floors, dwellings are located in such a way that they have at least 2 hours of sun every day.



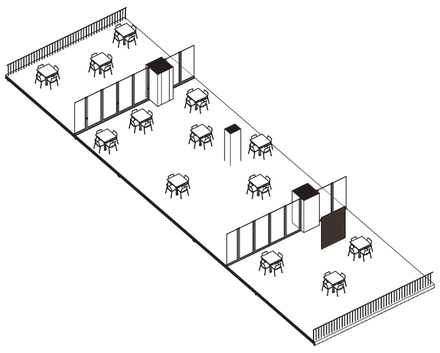
Gym

The building also features a gym, that stretches over multiple floors, connected by a pocket



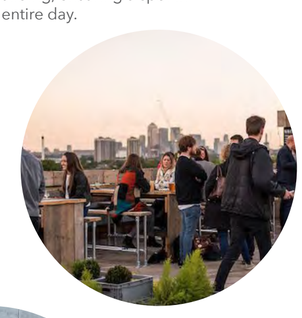
Park route

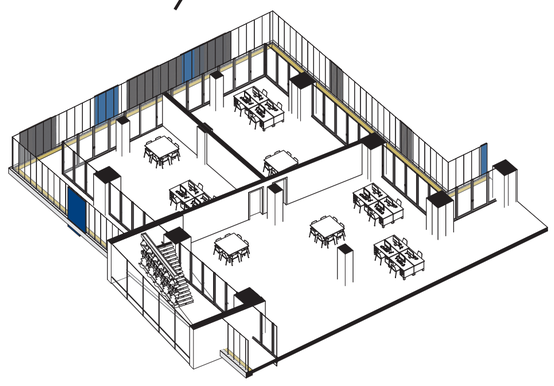
Around the leisure floors in the building, a green route featuring plants and trees goes up and under the cantilevered spaces.

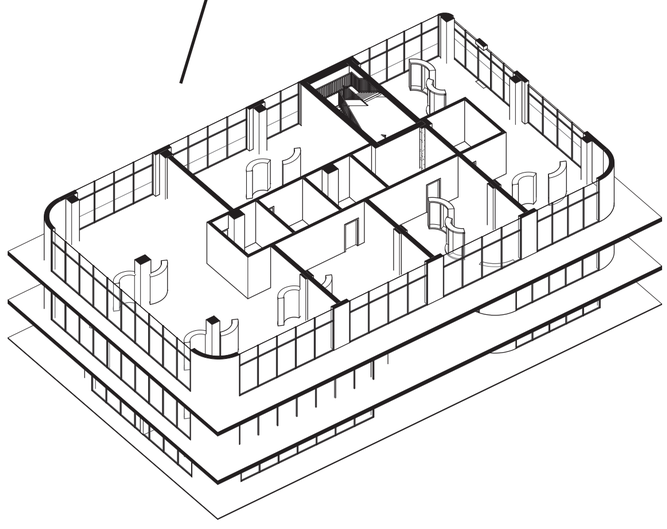


Horeca

At the third floor, there is an elevated terrace on both sides of the building, ensuring a spot in the sun during the entire day.





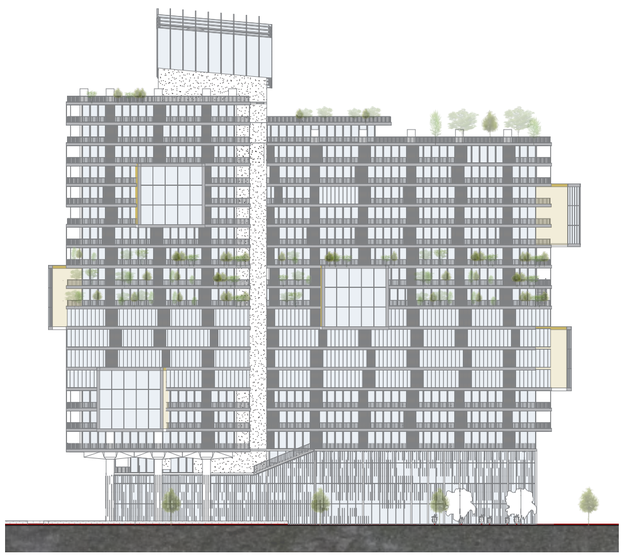


Offices

On the lower floors, there are offices in many forms. From closed units to open floors, where anyone could just plug in their computers and work.

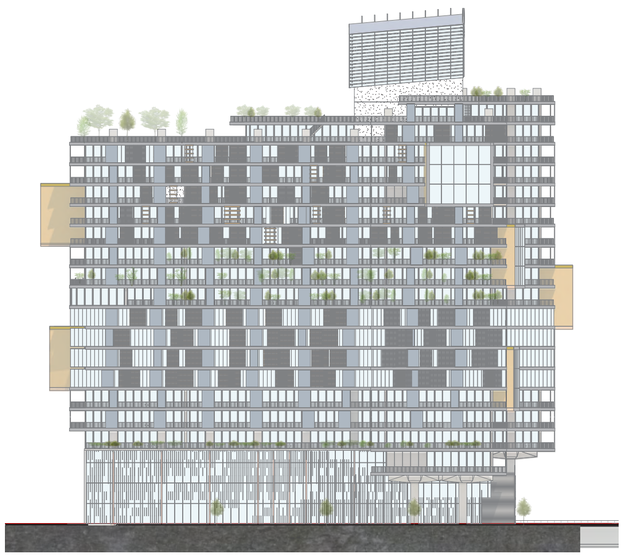
Commercial

From basement level, commercial space is located within the spiralling route, which ends on the third floor terrace.



North facade

East facade



South facade

West facade