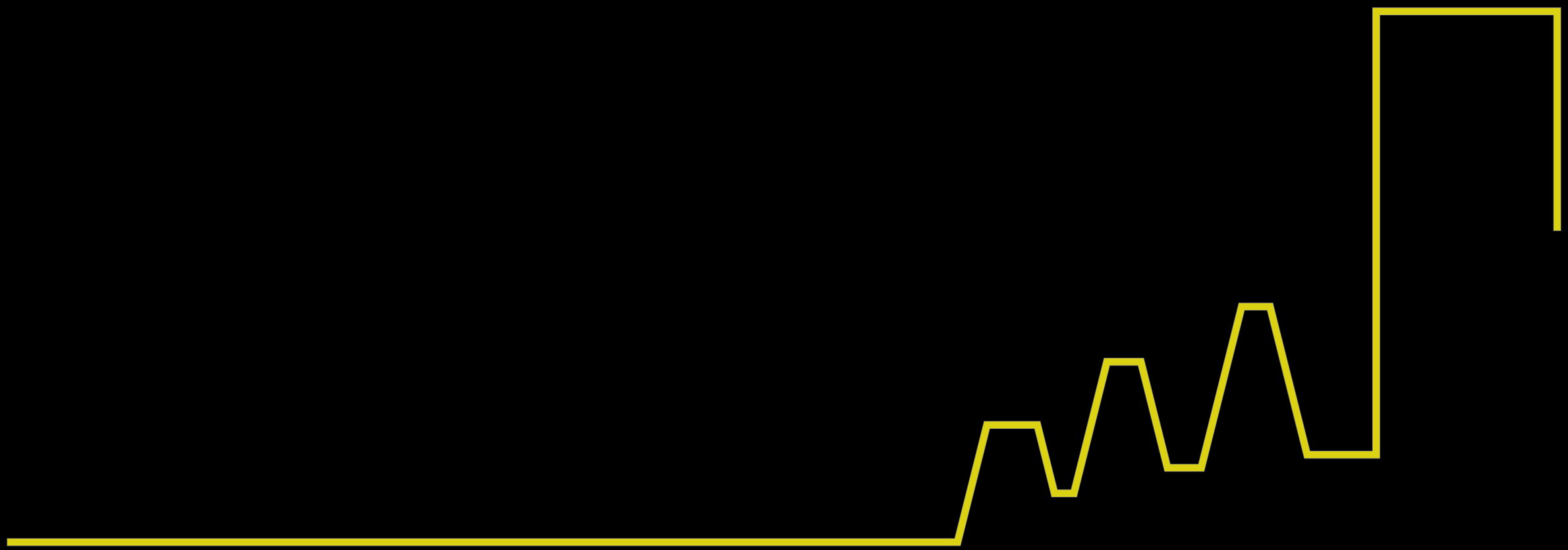
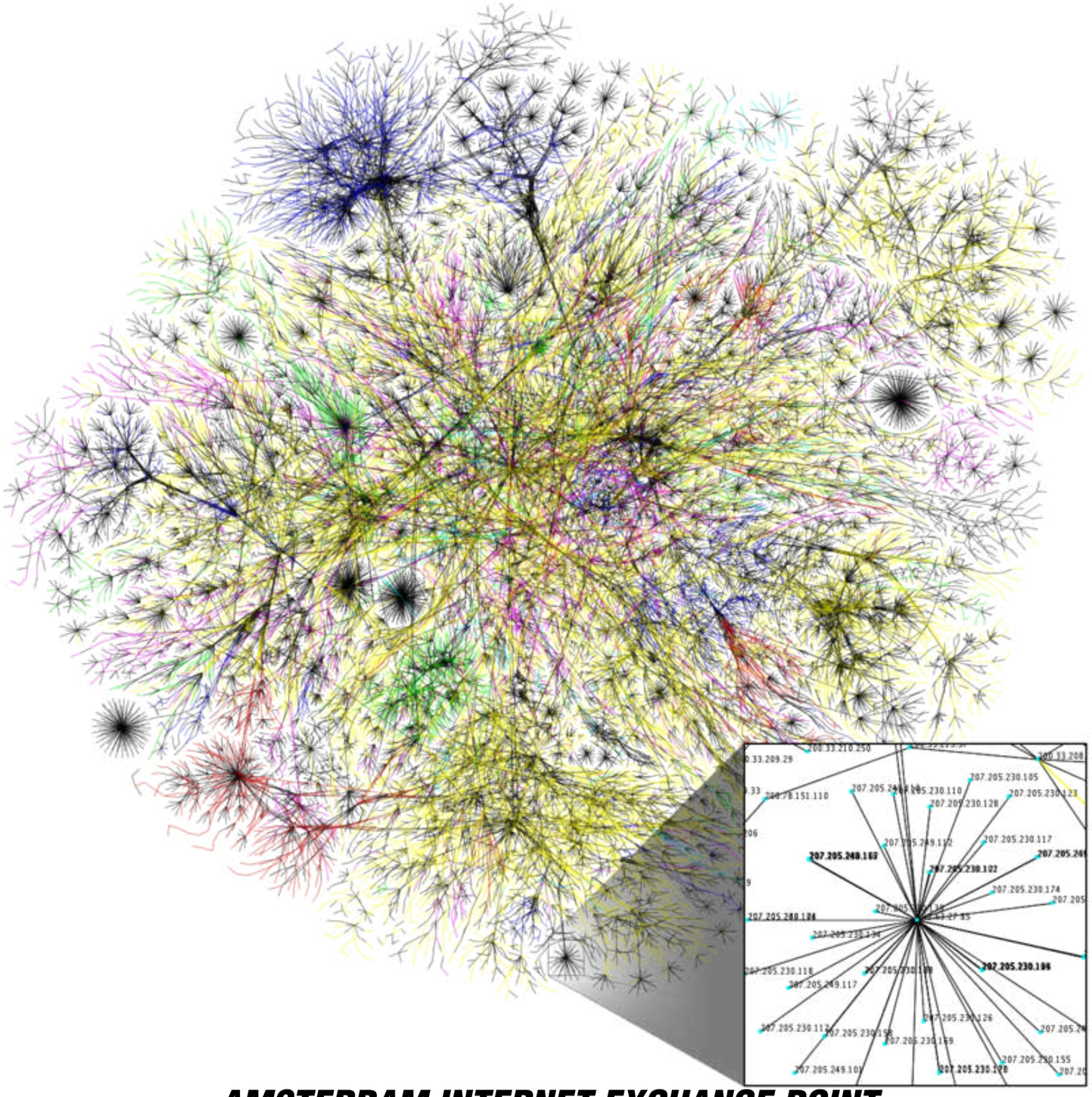
GOOGLE EUROPE CAMPUS

A WORKING-LIVING PERIMETER BLOCK INNOVATION DISTRICT





AMSTERDAM INTERNET EXCHANGE POINT

The largest in Europe, and one of the largest in the World.
IXPs are physical infrastructures, through what Internet providers exchange traffic with their subscribers.

Source: Wikipedia, Topic: IXP

Dutch Government economic agenda:
„Pieken in de Delta“

⇩

6 economic regions in the Netherlands with different focuses

⇩

Amsterdam region focus

⇩

⇨ Tourism
⇨ Life Science
⇨ Creative Industry
⇨ Innovative logistics and trade
⇨ Knowledge intense business services

PIEKEN IN DE DELTA

Special funding of the Creative Industry in the Amsterdam region

⇩

Special funding of the 4 main Creative Industry types in the Amsterdam region

⇩

⇨ Arts
⇨ Media and entertainment
⇨ Creative professional services

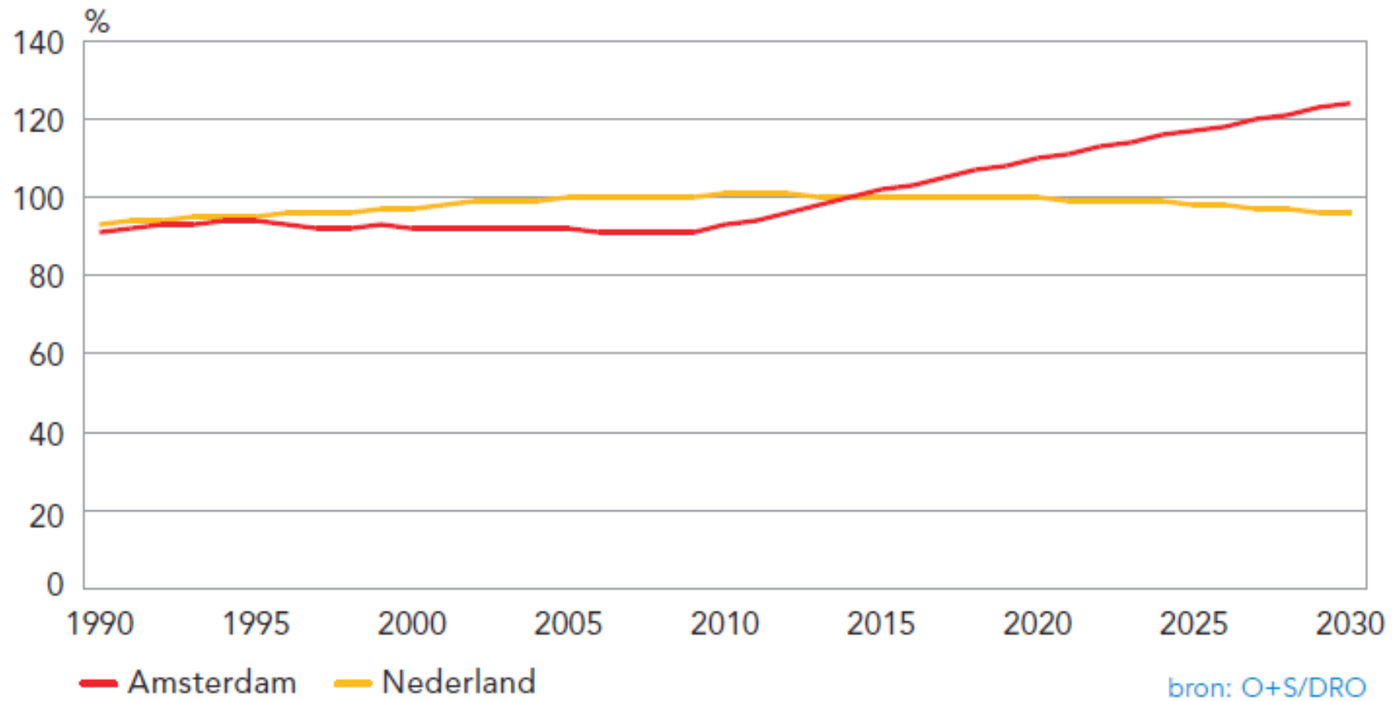
⇩

Main reasons

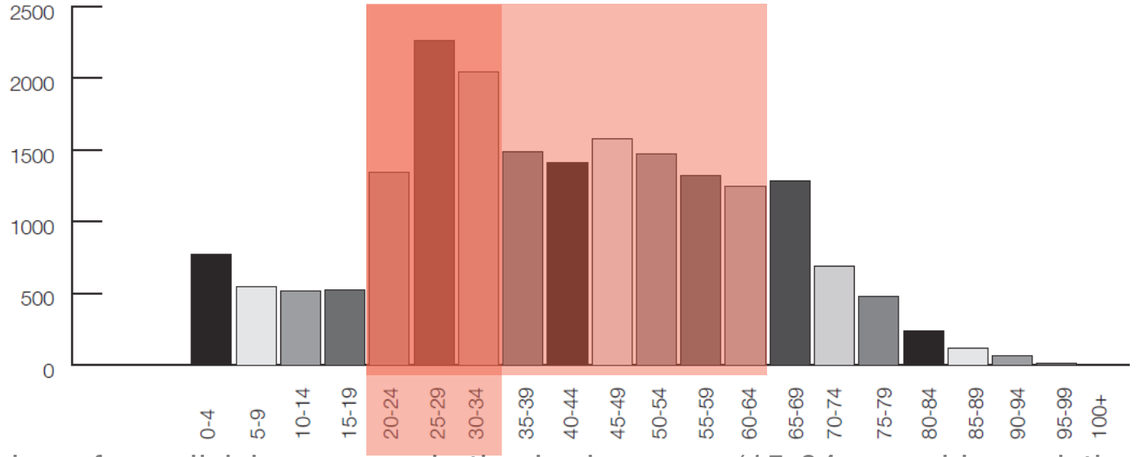
⇩

⇨ Bringing of information and activities to a single physical location
⇨ Increase of start-up and growth companies
⇨ Promotion of Creative Industries

CREATIVE CITIES AMSTERDAM AREA



Potential labour force in Amsterdam (15-64 year old population)
1990 - 2030



Labour force division per age in the Jordaan area (15-64 year old population)
2016

POTENTIAL LABOUR FORCE

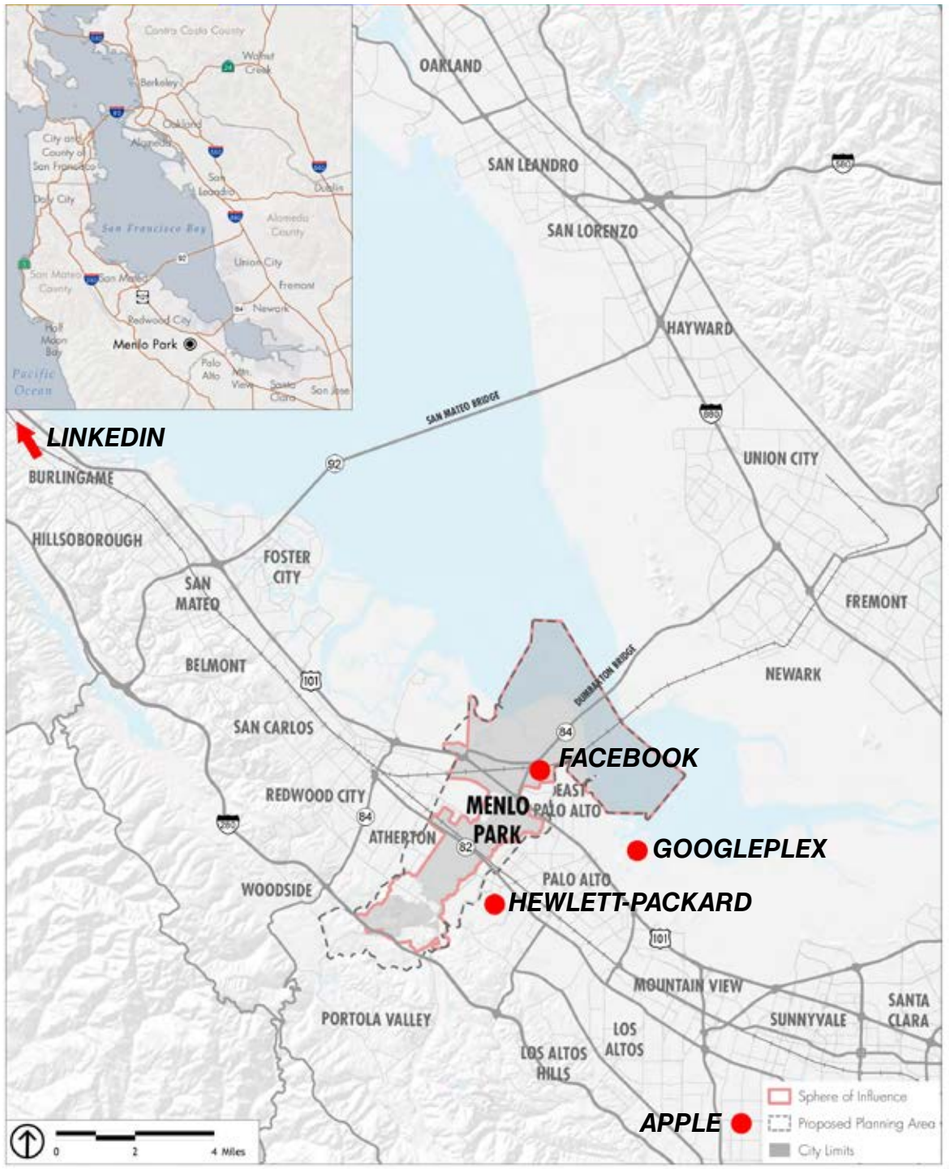
Source: Gemeente Amsterdam Fact sheet, Population prognoses

2. RESEARCH

1. THE CAMPUS AND THE CITY:
The design embodies a very high density of social, living and working functions, some of which will require restricted access to certain areas (e.g. corporate spaces). How can the design smoothen the tension caused by the existence of restricted areas within a mixed-use building blend in the accessible urban fabric of Amsterdam? How does this perimeter block development relate to the city around it?

2. THE DWELLINGS AND THE CAMPUS:
What accessibility and circulation solutions have the right performance for a Campus-housing complex?

3. THE PEOPLE AND THE DWELLINGS:
The program of the building is designed to accommodate a specific segment of society in the dwelling units. Once assessed their collective characteristics and needs, how can the design the create an environment where the inhabitants can find a good balance between working and living?



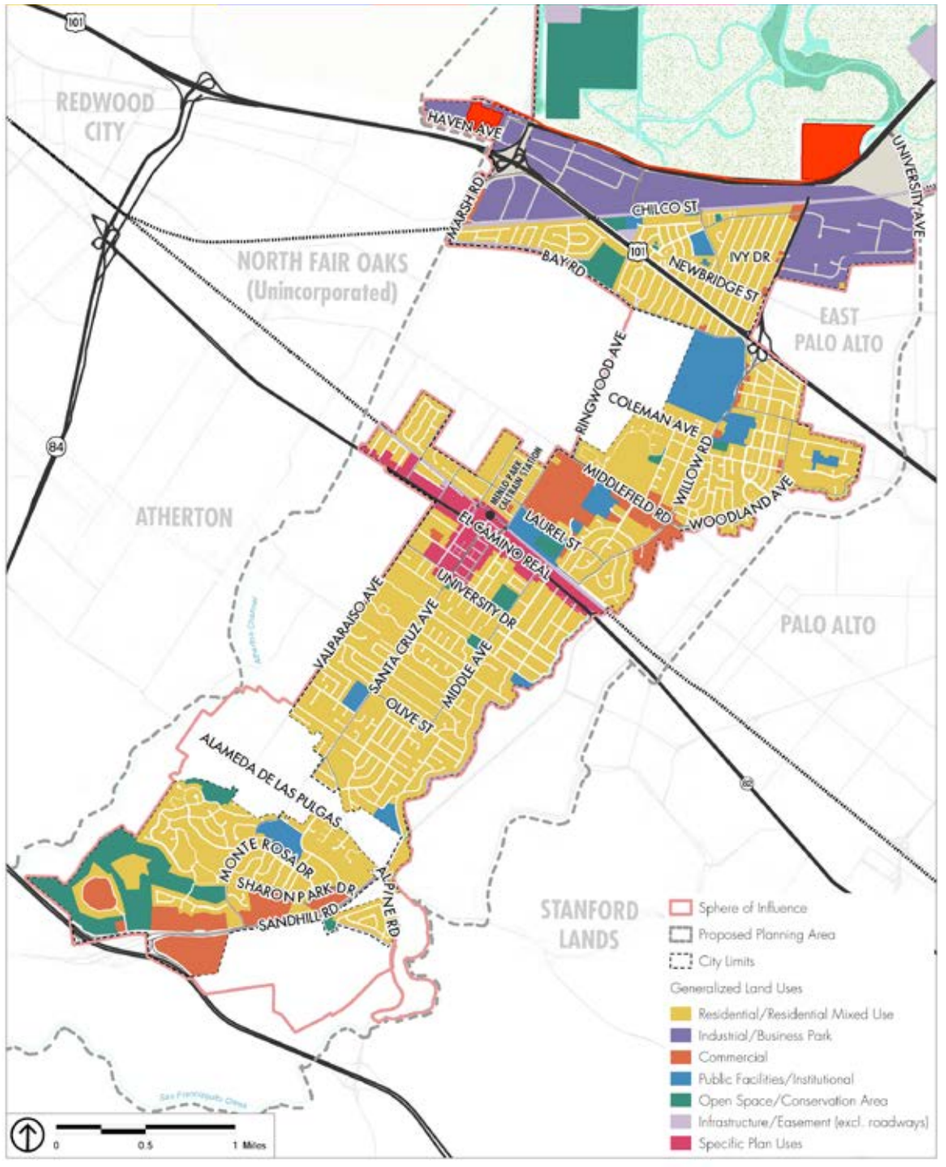
LINKEDIN

FACEBOOK

GOOGLEPLEX

HEWLETT-PACKARD

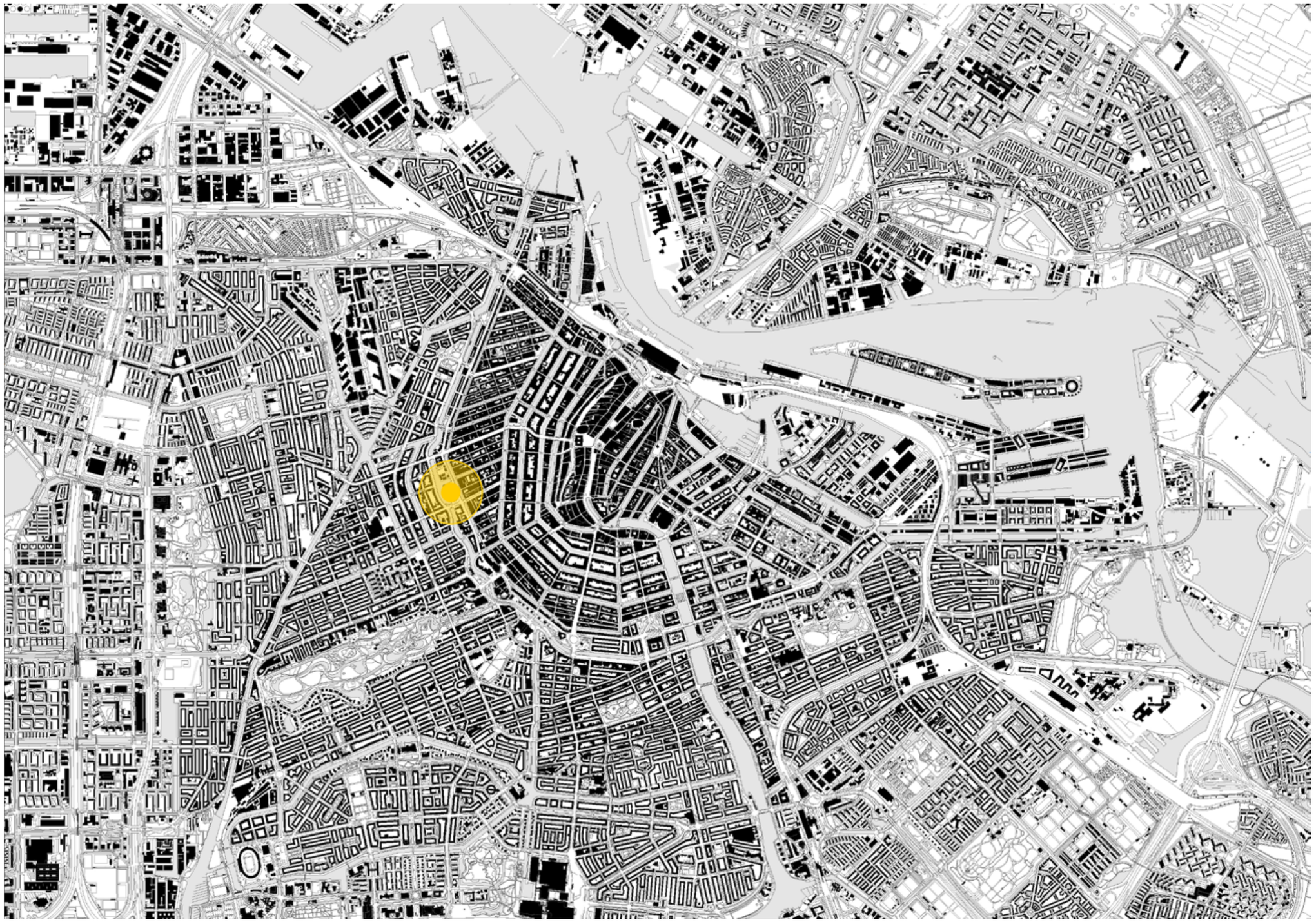
APPLE



MENLO PARK, CALIFORNIA, USA

The strict zoning laws of the San Francisco Bay Area force companies to develop their campuses at separate locations from their housing units; others don`t provide housing what causes a burden on the city and extreme-high rental fees.

Source: menlopark.org, City of Menlo Park Land Use, Existing conditions report



THE SITE

Apple Market, Amsterdam, Netherlands. Located at the meeting point of the Old and the New city of Amsterdam on a special green belt around the Historical city center. Now partially occupied by a parking lot, partially by an unused park.

Source: 123rf.com, Satellite map of Amsterdam

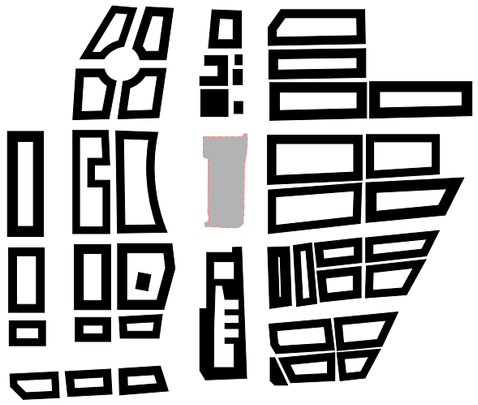
1. WHAT HAS TO BE ABSENT IN THE CAMPUS FOR INHABITANTS TO LEAVE PERIODICALLY?

2. WHAT HAS TO BE PRESENT IN THE CAMPUS IN ORDER TO BECOME AN ATTRACTIVE LOCATION FOR THE CITIZENS

SCATTERED OFFICE SPACES

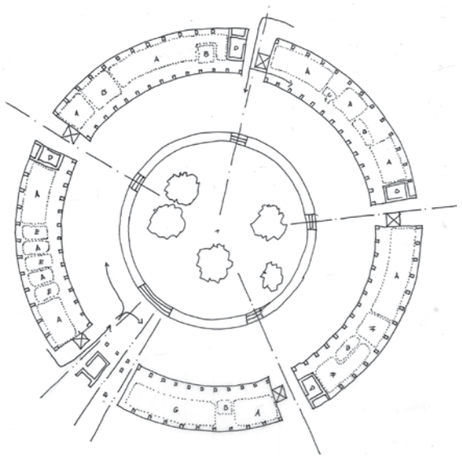
ABUNDANT SERVICES

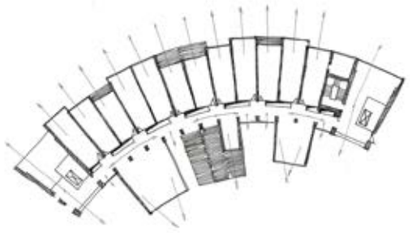
RICH VEGETATION, UNDERUTILIZED WATERFRONT

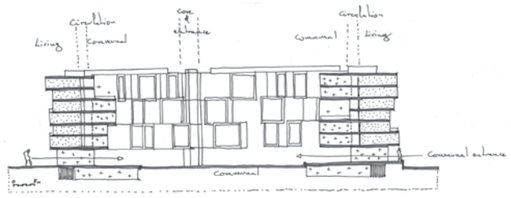


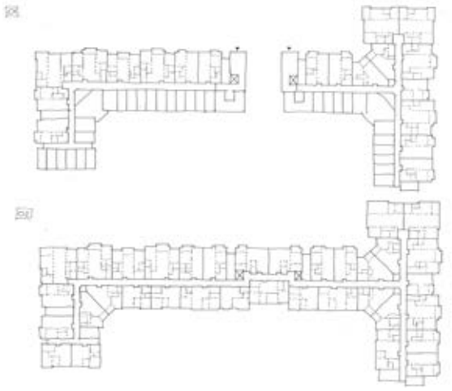
1. CAMPUS AND THE CITY

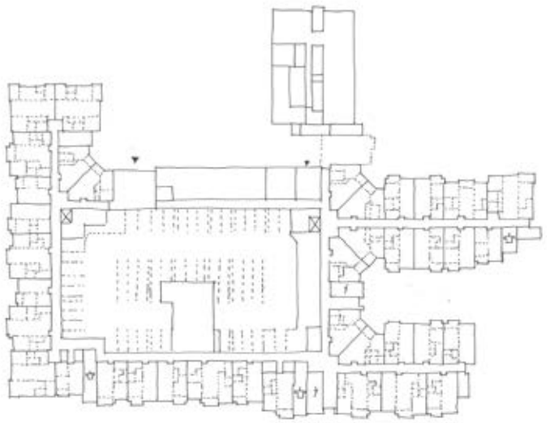
Programmatic, morphological and material research; whereas a result the traditional Amsterdam perimeter block typology was preserved and opened up for the public, the waterfront was redeveloped and certain urban infill elements were injected.

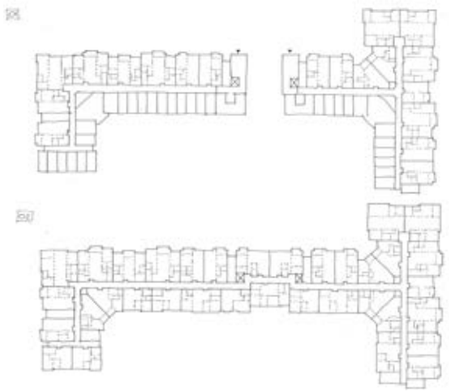


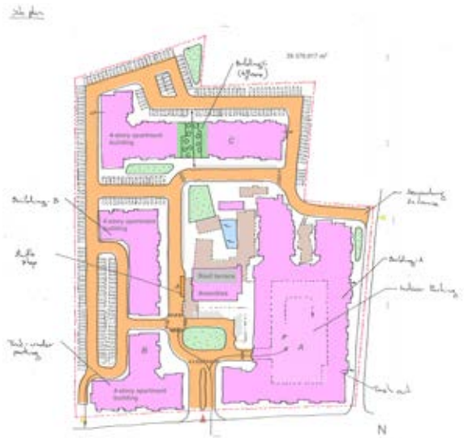


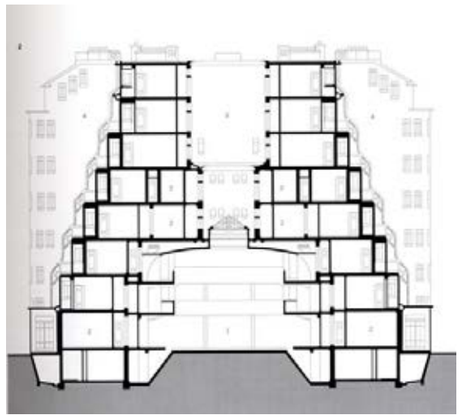












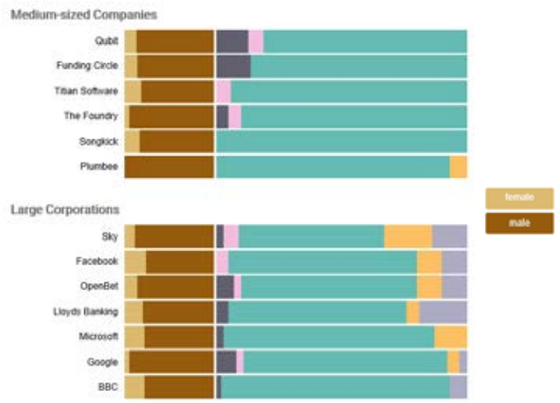
2. DWELLINGS AND THE CAMPUS

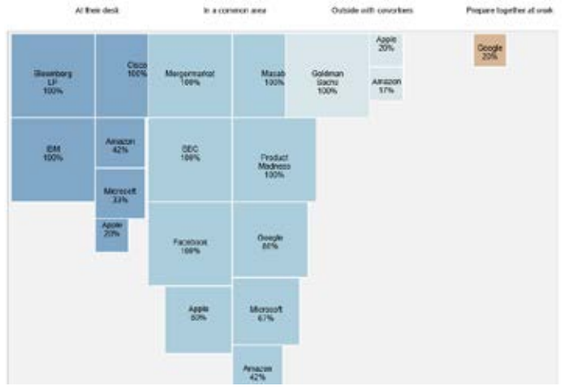
Overarching from the Medieval monasteries, through the Familistere, Rue Vavin apartments to the modern university campuses these Utopian communities have been to create a fostering environment for the privilidged.

Source: Wikipedia, Familistere

1. WHO IS A TECH COMPANY EMPLOYEE?

2. WHAT DOES A TECH COMPANY EMPLOYEE WANT?





1. Founders Larry Page and Sergey Brin highlighted the idea in their 2004 IPO letter: "We encourage our employees, in addition to their regular projects, to spend 20% of their time working on what they think will most benefit Google," they wrote. "This empowers them to be more creative and innovative. INCUBATOR FOR INNOVATIONS EVERYTHING IS DESIGNED TO EXPLORE THE BUILDING (to go on an expedition)
2. A key characteristic of the Google Campus that makes it so special is its playfulness and just overall fun feeling. The architects noted that Google "VALUED PLAY AS IMMENSELY IMPORTANT – allowing employees to treat the world as a massive ground for experimentation." CAMPUS AS A PLAYGROUND CONCEPT
3. Open up spaces and make them accessible so for anyone who lives in the area and not just googlers
4. Give something back to the world what it didn`t have before starting COMMUNITY FOCUSED, FUNCTION, FORM, BEAUTY
5. Sustainable living, sustainable transport

3. PEOPLE AND DWELLINGS

A Google employee. 29 years old on average, most probably male, single, works for the company on an average for 1.1 - 2.5 years. Highly social, likes sports.

Source: NY Times, Google releases employee data

⇨ *Working – living urban block as a deployable research / innovation district living Community*

⇨ *personal life – work connection*

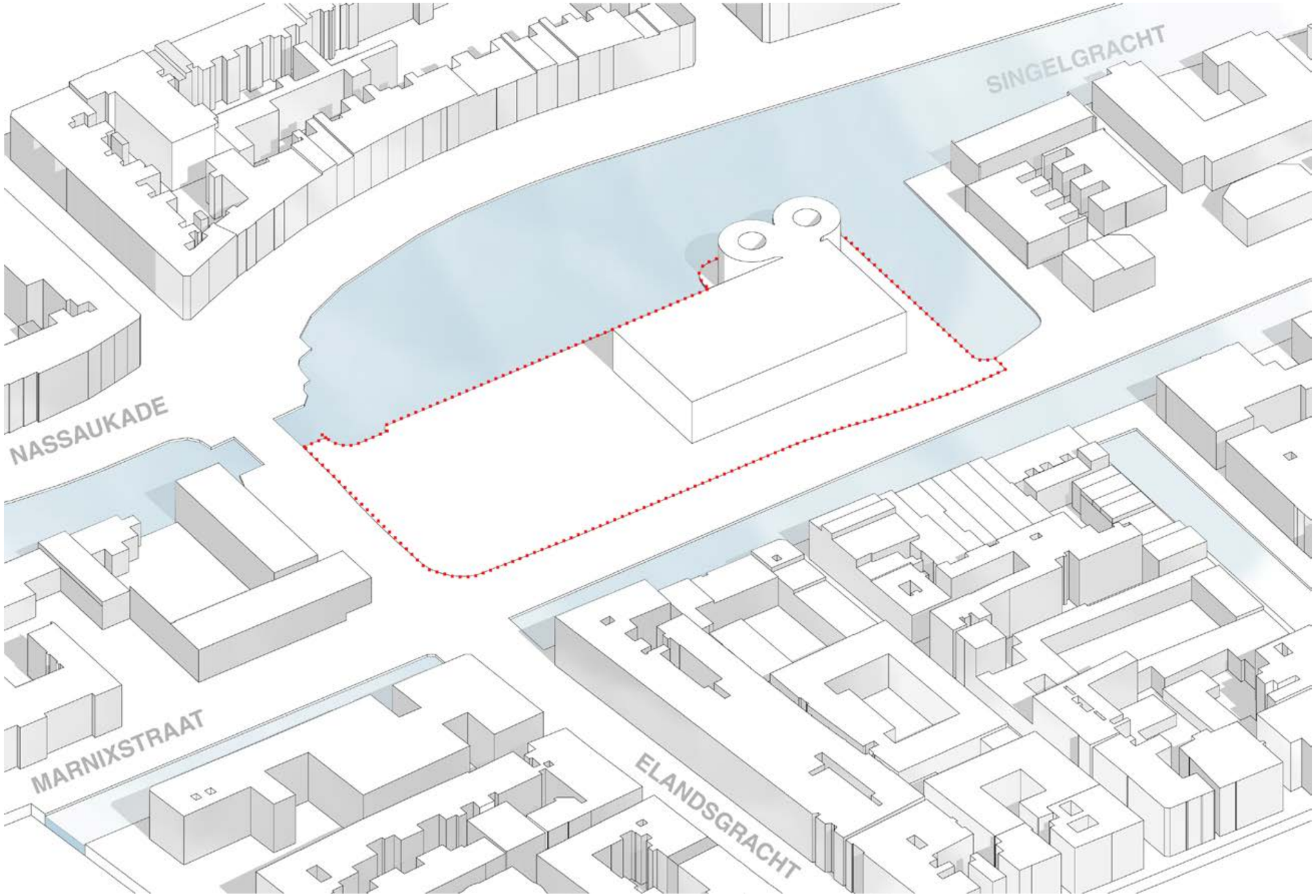
⇨ *Clear differentiation and organization of the target groups and their needs*

⇨ *Permeability and transparency – until a certain level – to meet the culture of the city*

TOOLBOX FOR DESIGN

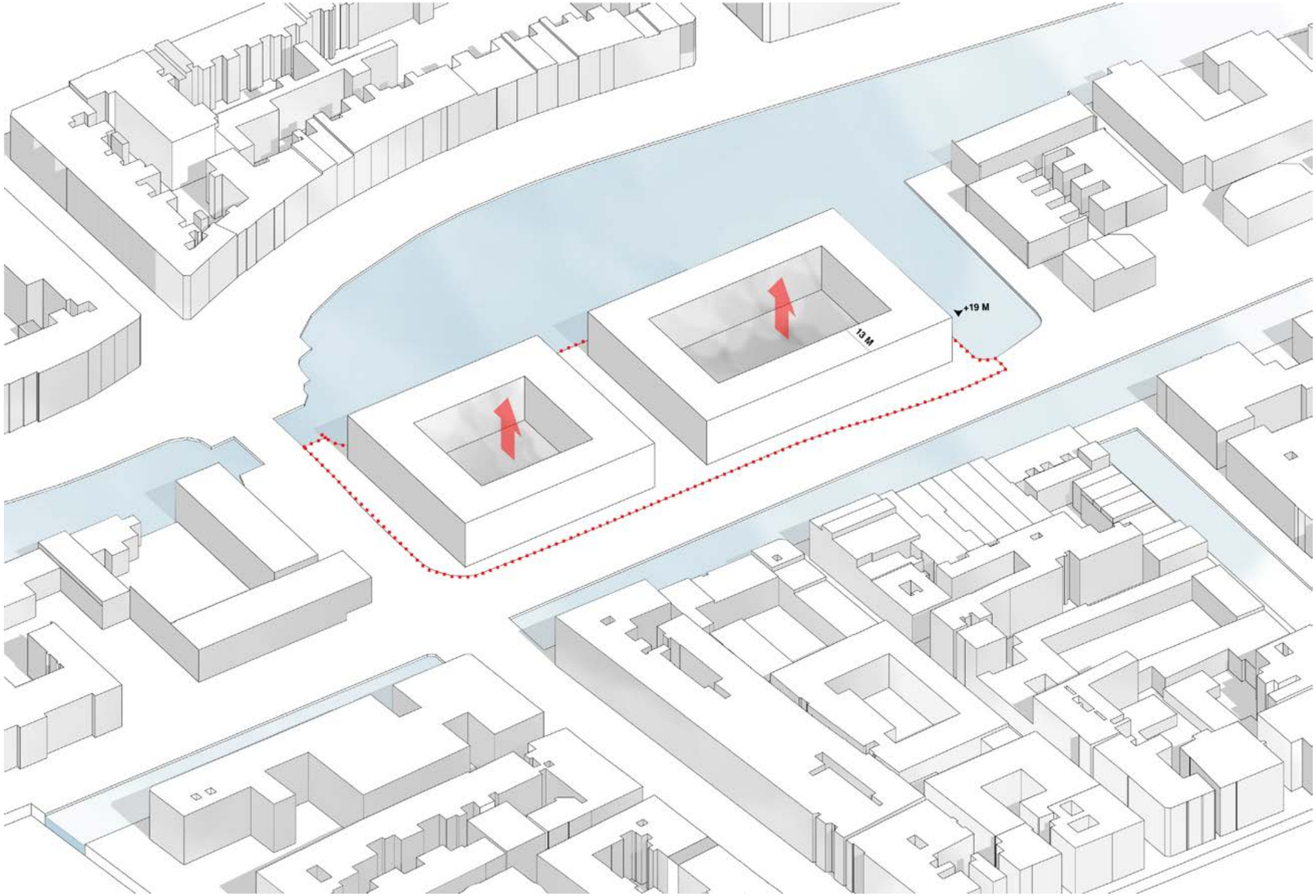
As a result of the research a new kind of innovation center was designed. The relatively small scale Perimeter Block Innovation District can be deployed to certain parts of the city, while being fragmented enough to prevent Corporate Takeovers.

3. PROJECT PRINCIPLES



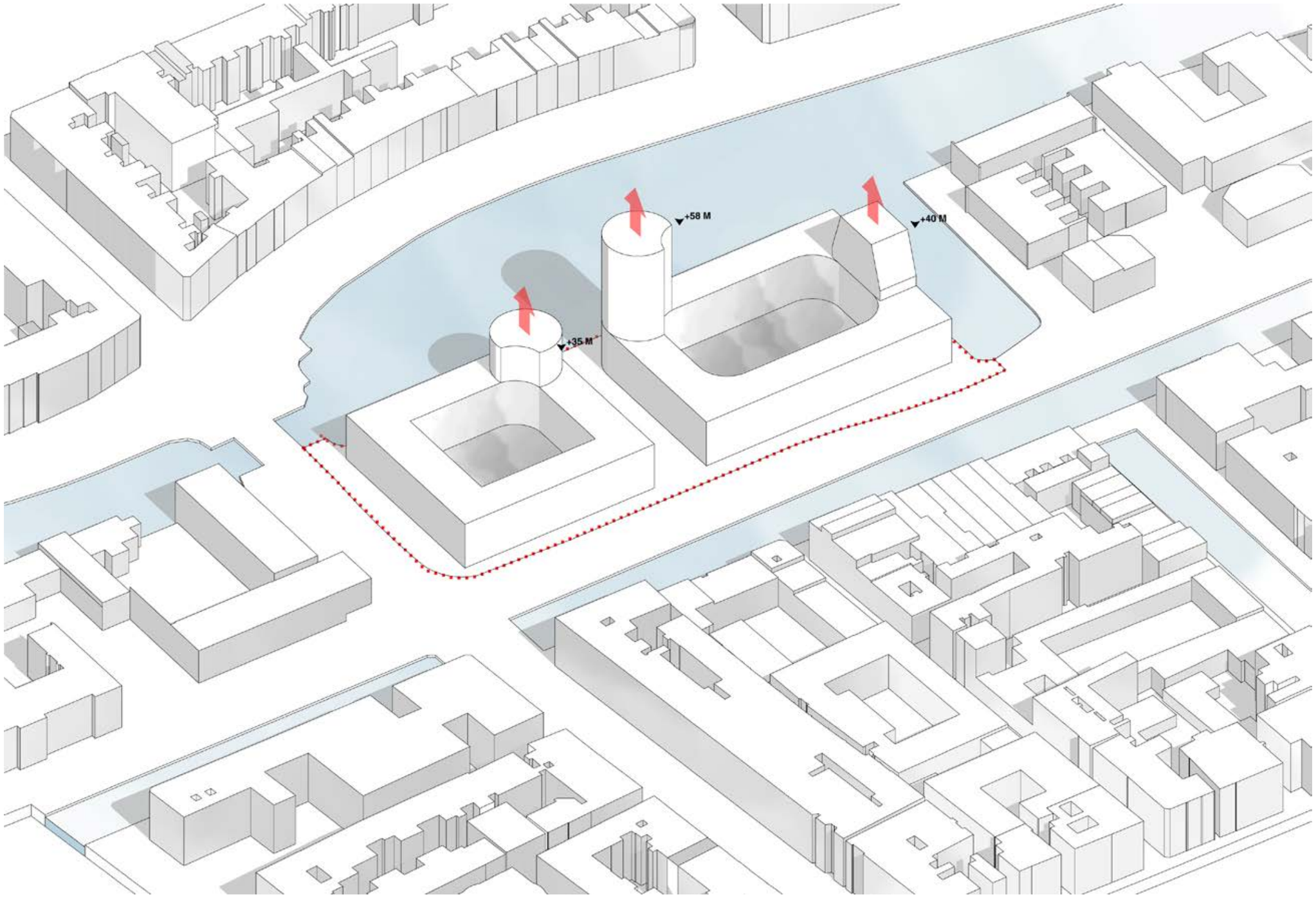
THE PLOT

Apple Market. Located where once the City Walls stood to then give place to the Gas factory and then to the current underutilized parking lot. The design envisions the demolition to give place to the financially more viable compound.



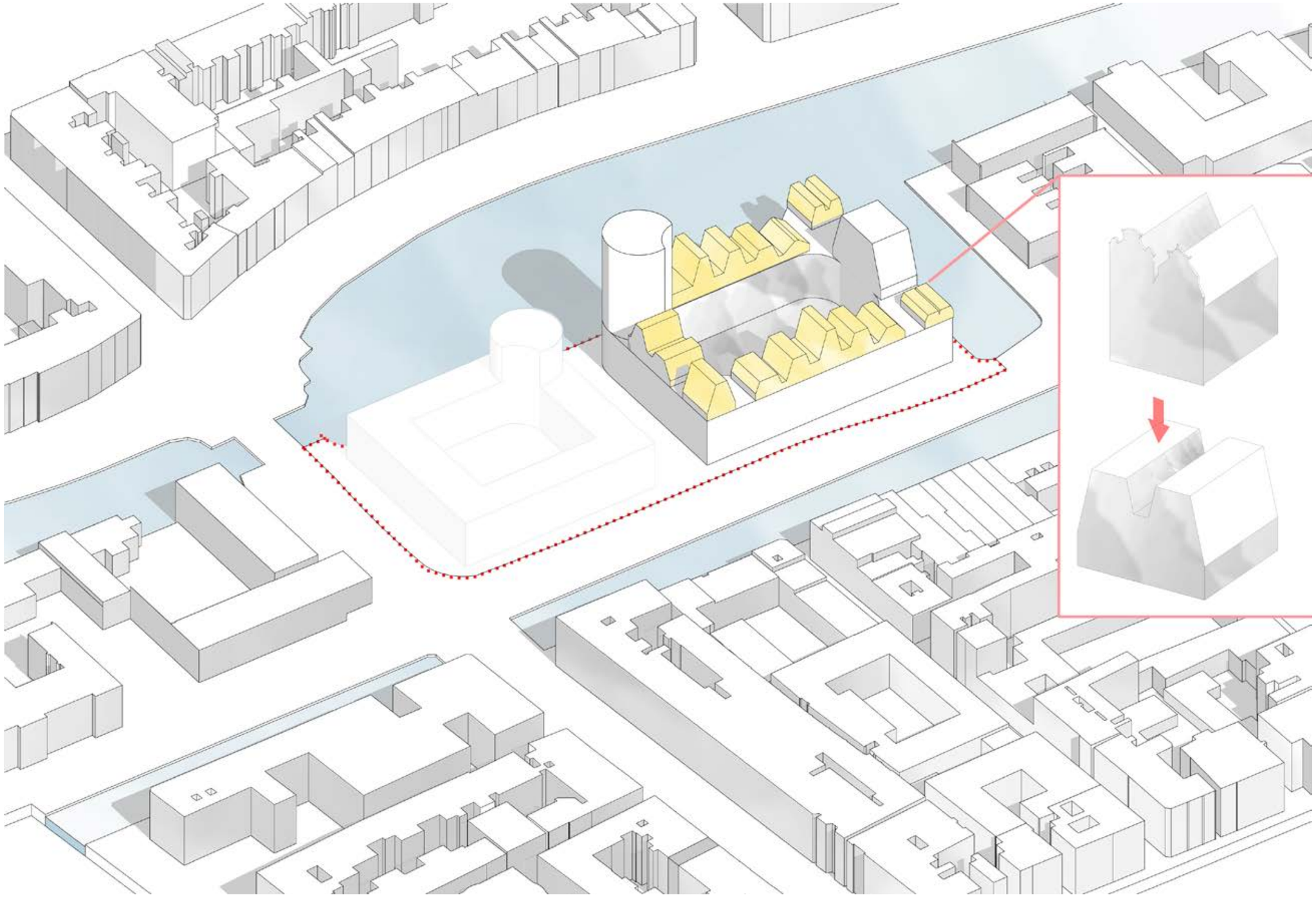
PERIMETER BLOCK EXTRUSION

Follows the traditional perimeter block typology of the city while keeps the urban fabric grid intact. The block is primarily extruded until the gutter line of the surrounding buildings.



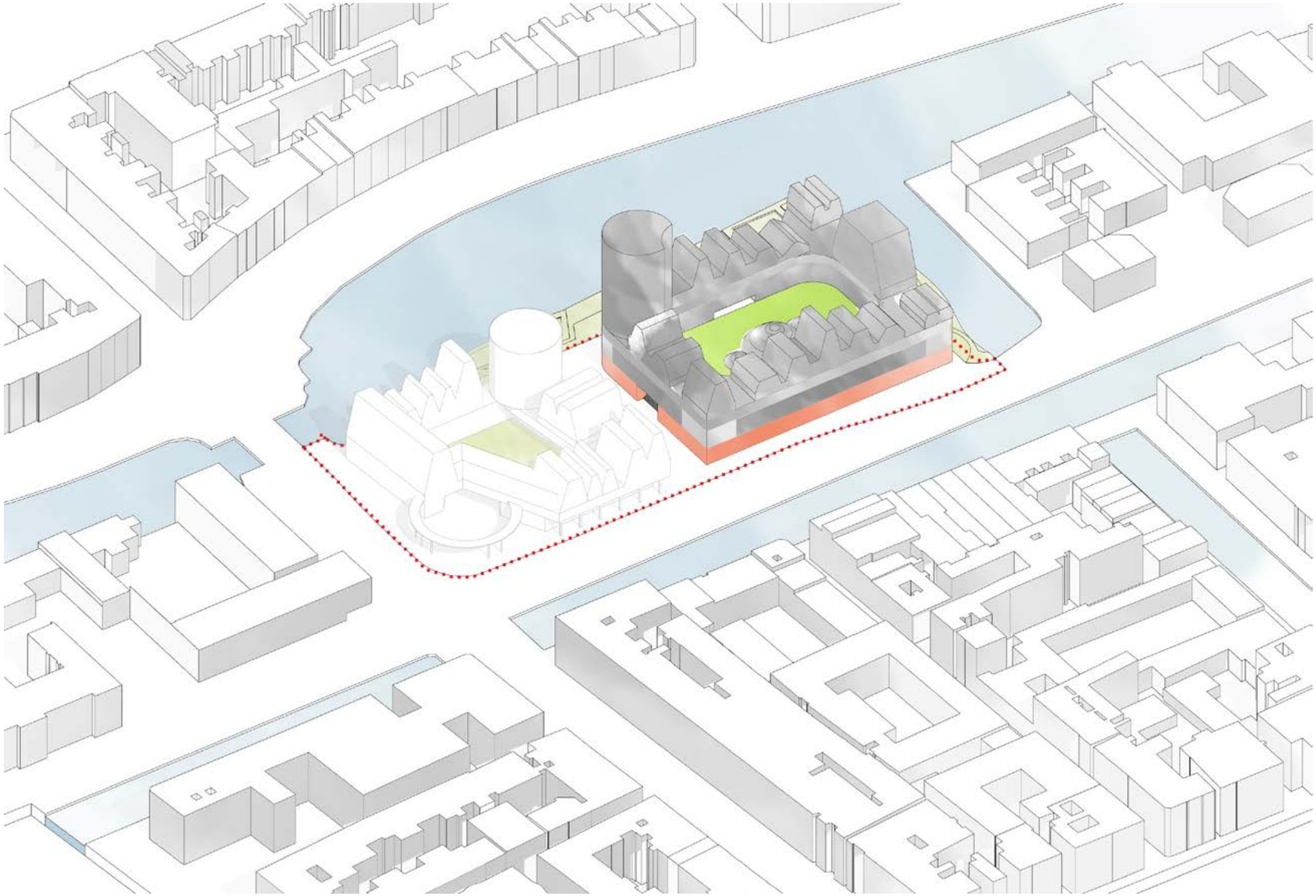
THE TOWERS

Higher urban blocks or solar towers. Possibilities to densify a city. The design combines the two, where the towers are located along the canal - not obstructing the historical cityscape and casting the least amount of shadows on the block.



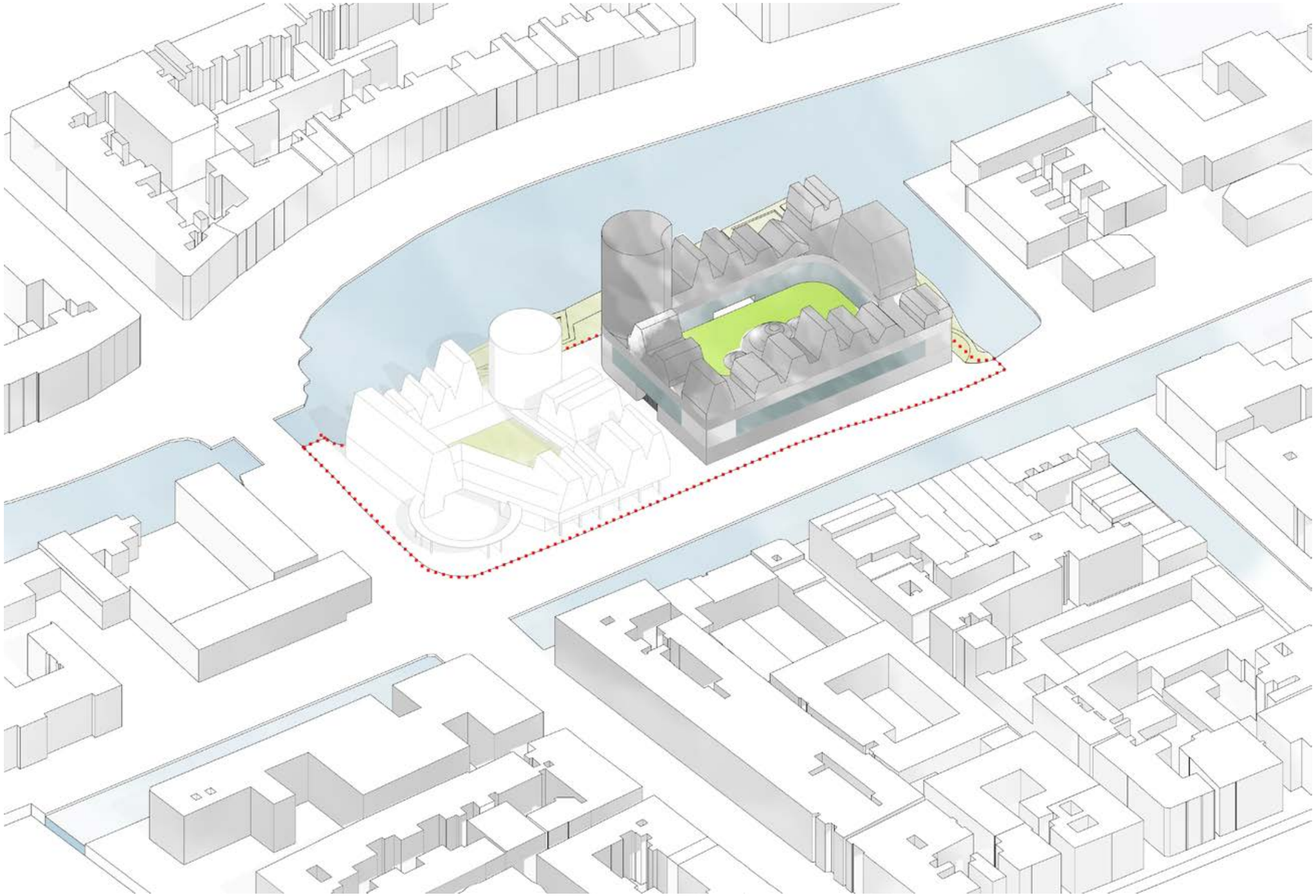
FROM TRADITION TO THE INDUSTRIAL SHED

Originated from the traditional Amsterdam canal houses, the morphology of the upper apartments brings the Industrial Shed - the place of production - in the Perimeter Block Innovation District.



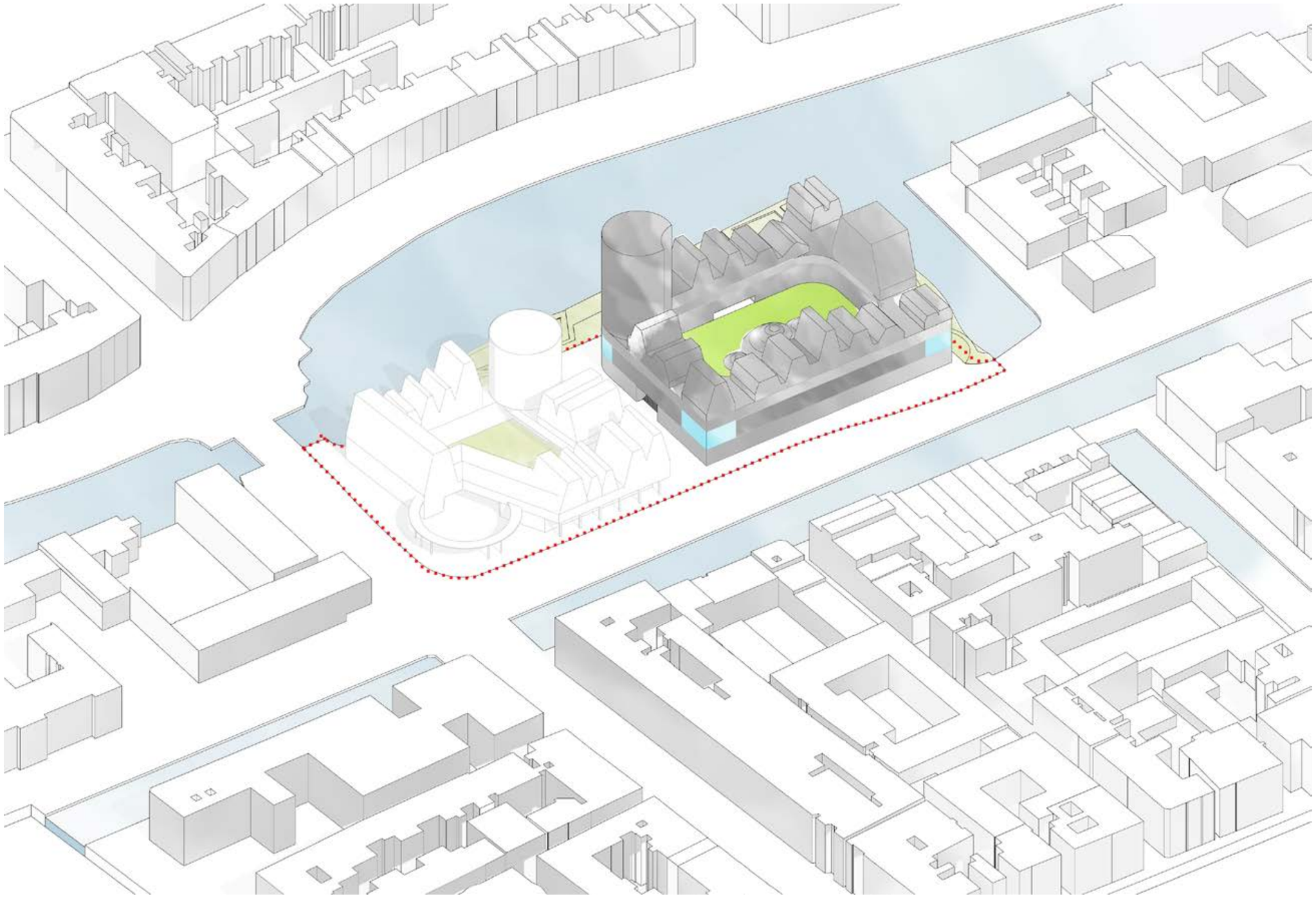
BUILDING PROGRAM: CAMPUS (GF - 1F)

The Campus is located on the Ground and First floors - an equal level with the city where the highest transparency can be achieved.



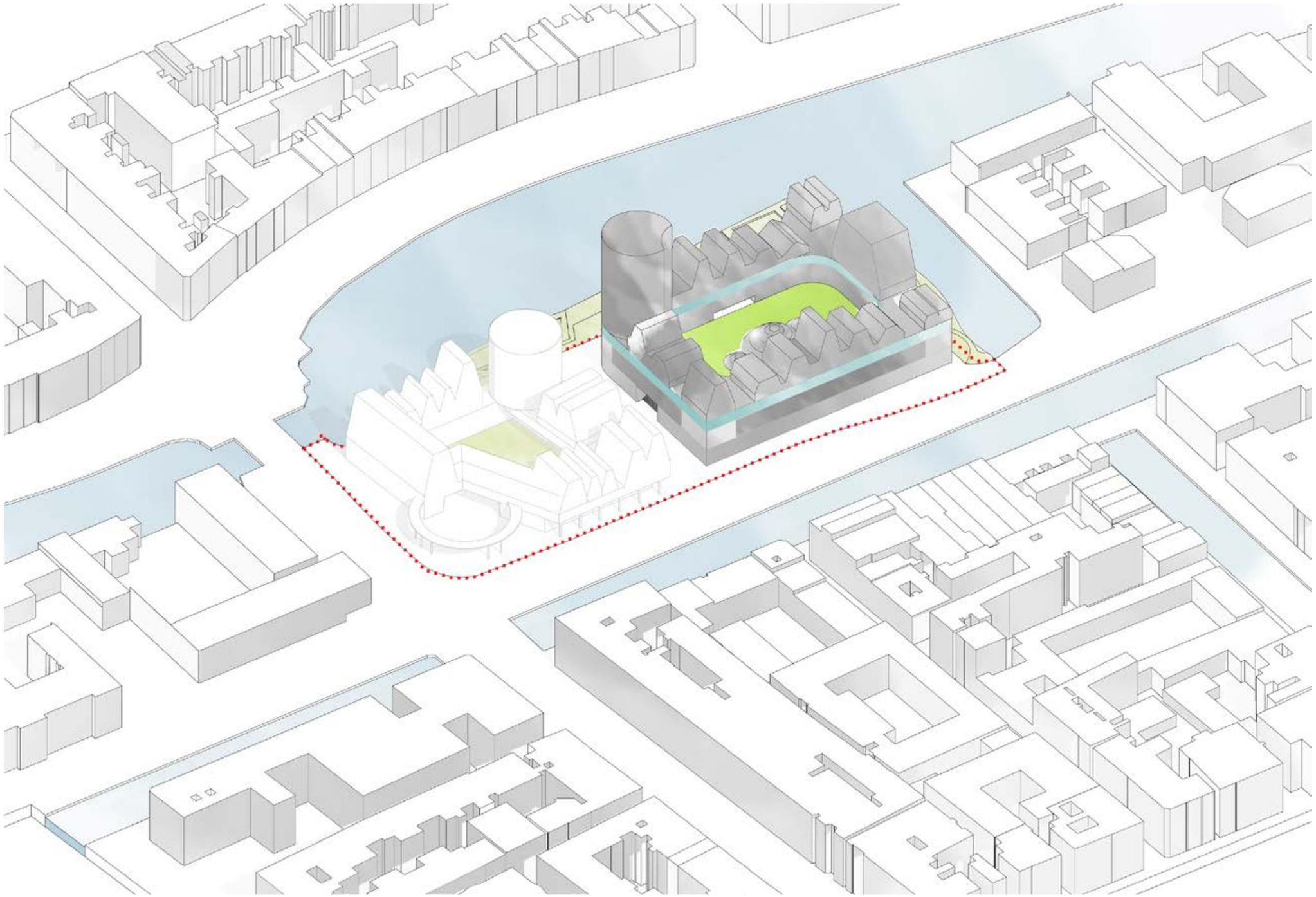
BUILDING PROGRAM: AFFORDABLE HOUSING (2F - 3F)

They are the backbone of the design serving the most people from the Campus. Being highly collective, act as the extension of the campus.



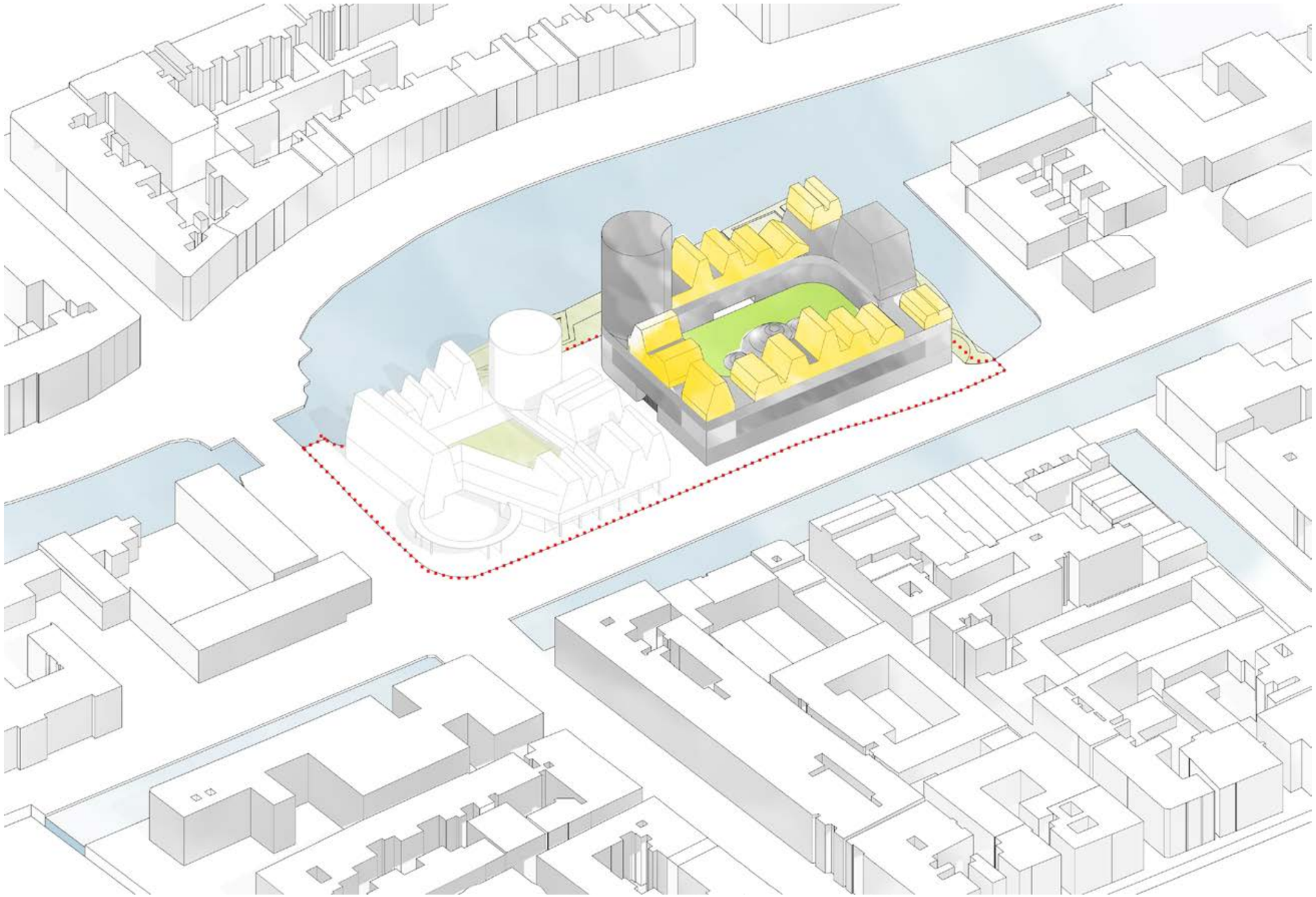
BUILDING PROGRAM: COMMUNAL (1F - 2F CORNERS)

The communal spaces of the Affordable housings are located in the corners. Their two-level space brings together the community from the perimeter block.



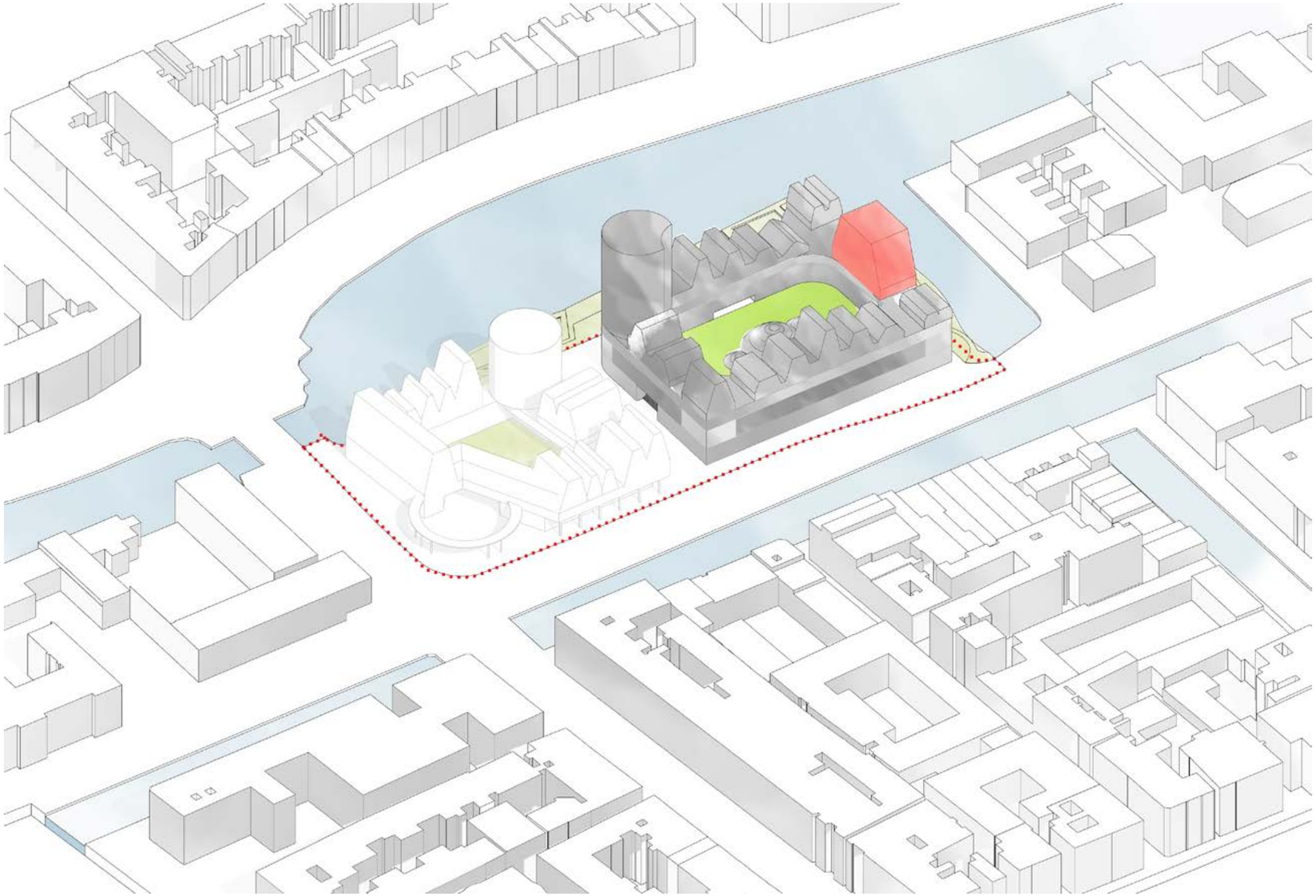
BUILDING PROGRAM: MEDIUM RANGE HOUSING (4F)

With double the size of the Affordable housing they provide space for small families. Their communal spaces are manifested as in-betweens on the 2.5m wide gallery walkways.



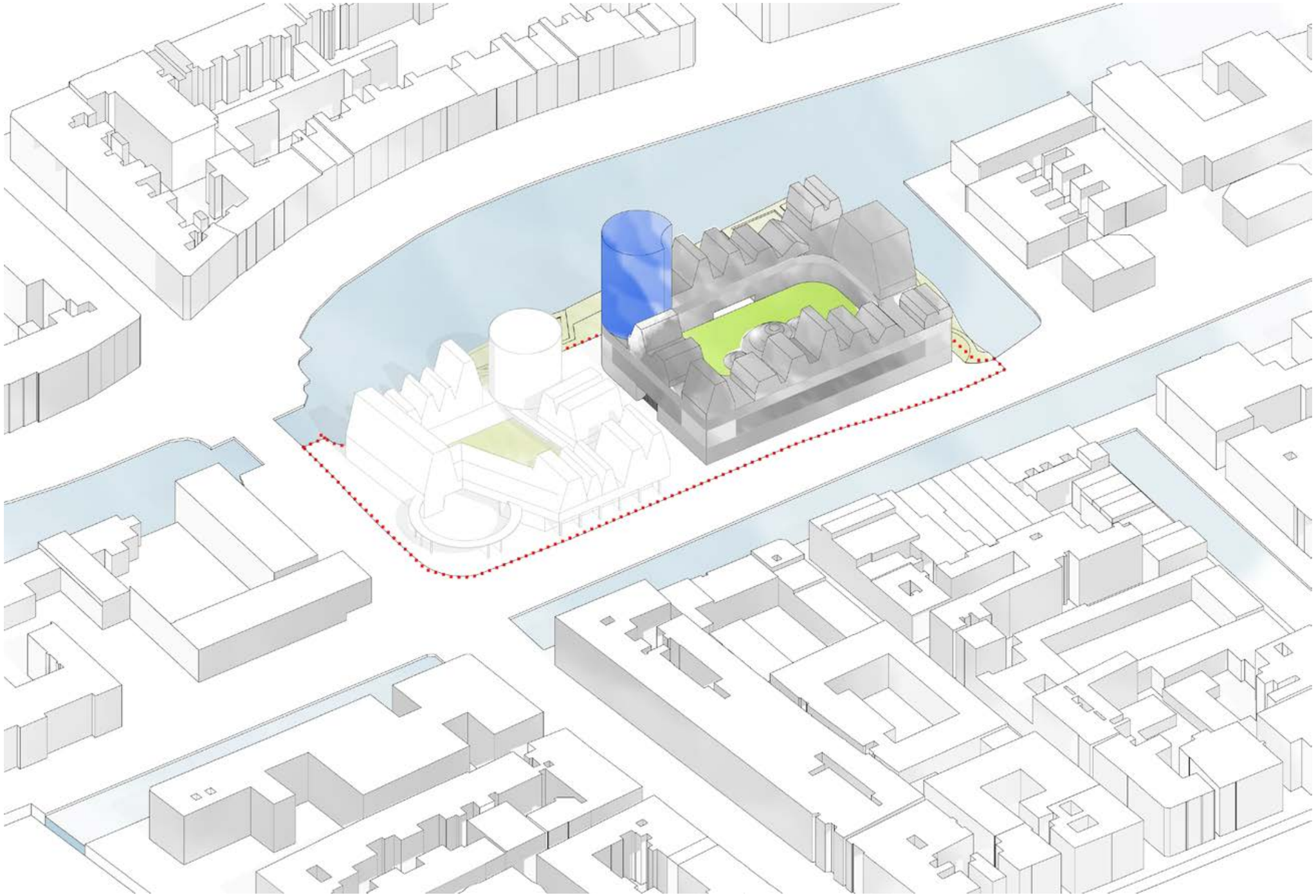
BUILDING PROGRAM: FAMILY (5F - 8F)

2-4 stories tall housing units with 3-4 bedrooms, they are on the top of the perimeter block. Their communal spaces were considered on the same levels.



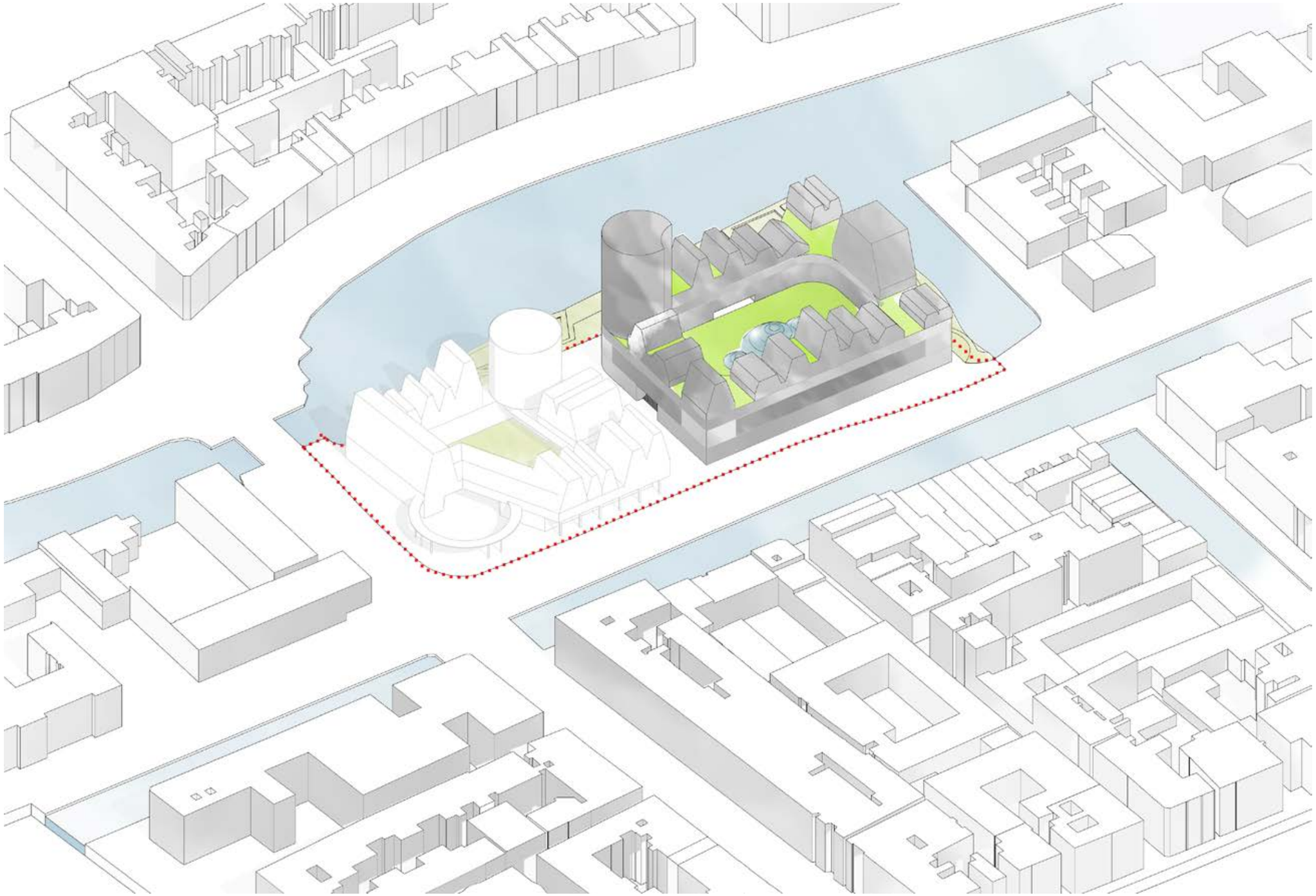
BUILDING PROGRAM: HOTEL (4F - 11F)

T-1. Short stay and long stay hotel rooms for the Campus employees from overseas;
the block is located in the calmest area of the plot.



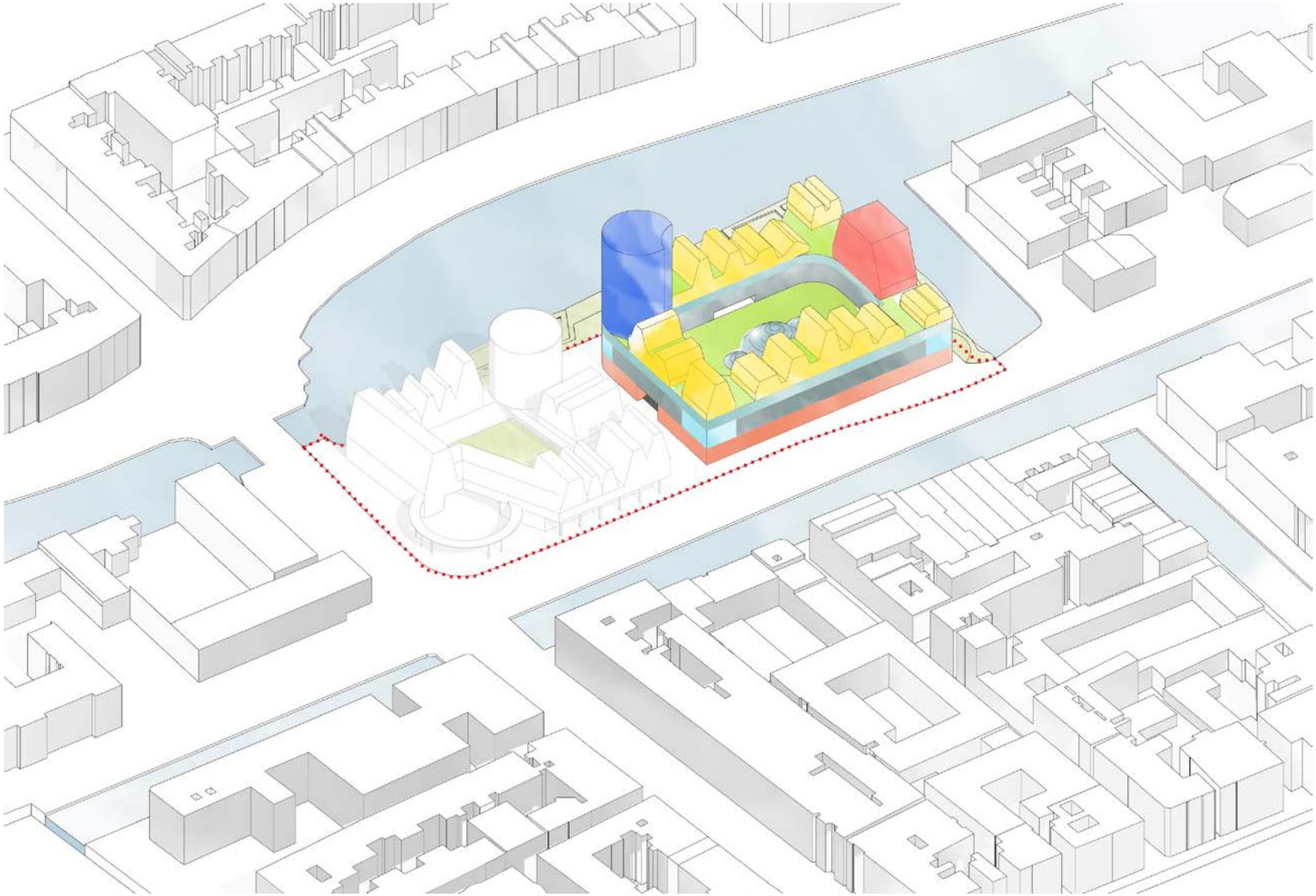
BUILDING PROGRAM: INVESTOR APARTMENTS (7F - 18F)

T-2. Investor Tower or the Domotica Laboratory is a highly flexible tower as the ever changing market fluctuations bring always new, highly social investors.



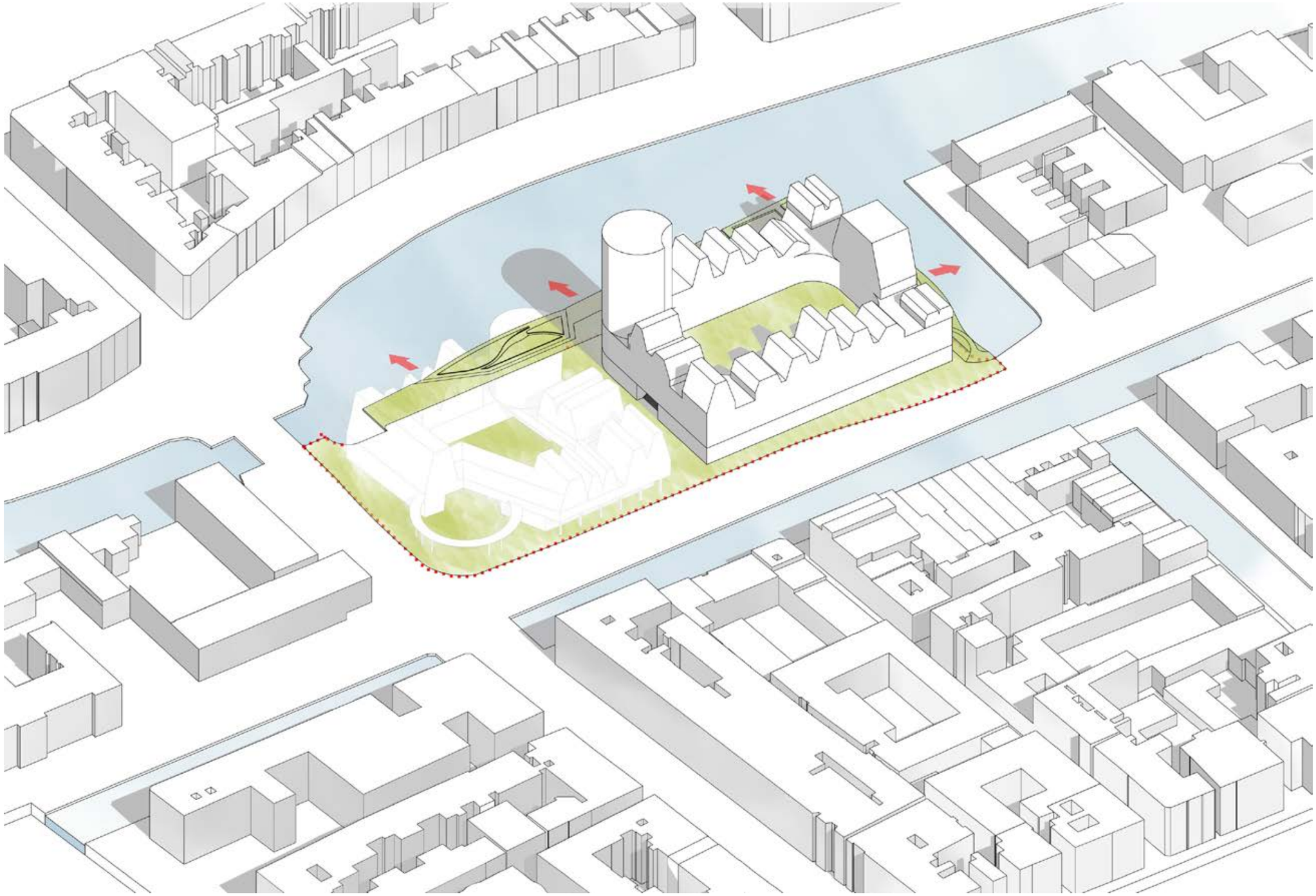
BUILDING PROGRAM: LEISURE COURTYARD

The catenary domes in the center provide a transparent but impermeable barrier for visitors to get an insight in the work of the Campus.



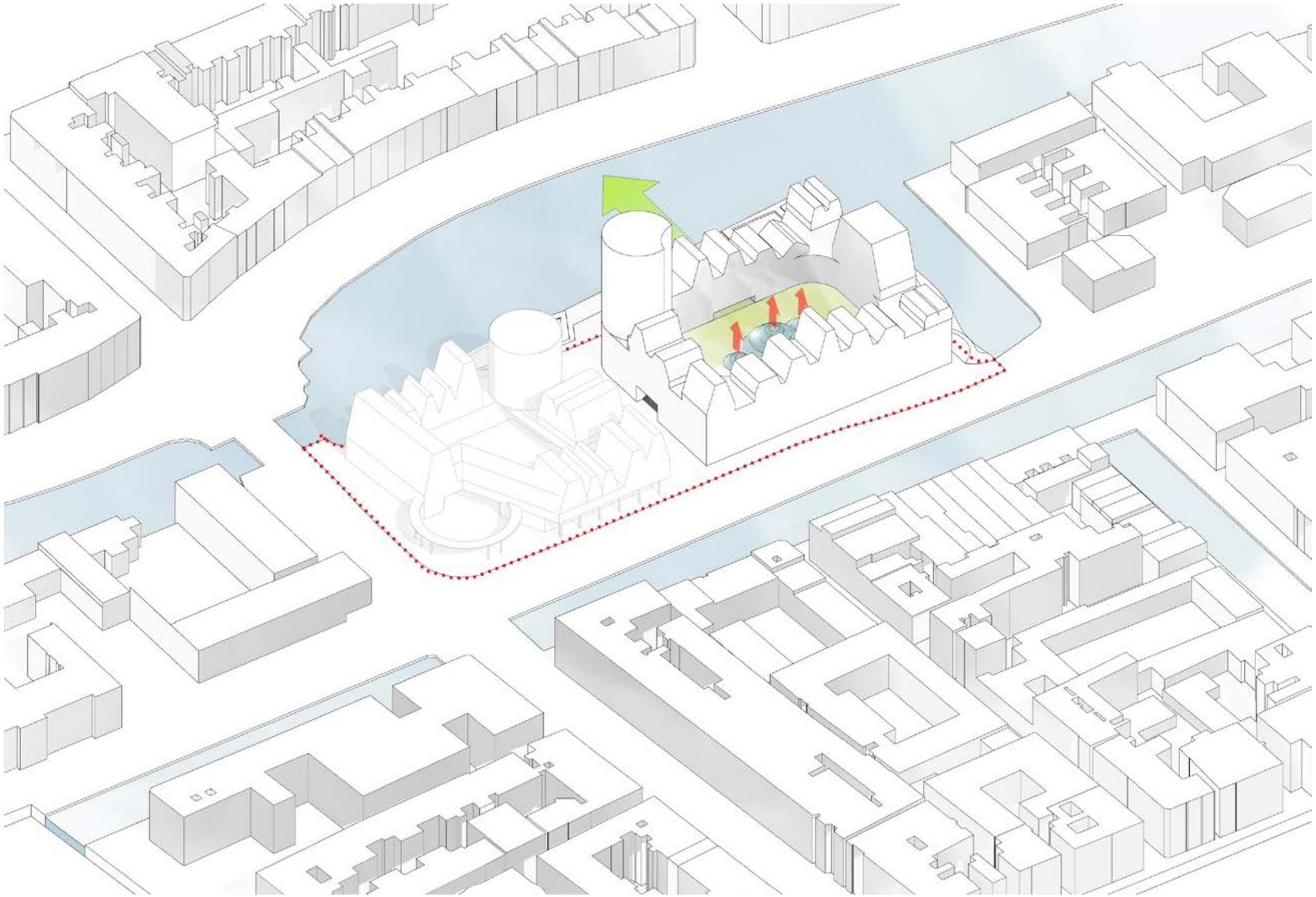
BUILDING PROGRAM ASSEMBLY

The functions and the morphology together create the Perimeter Block Innovation District.



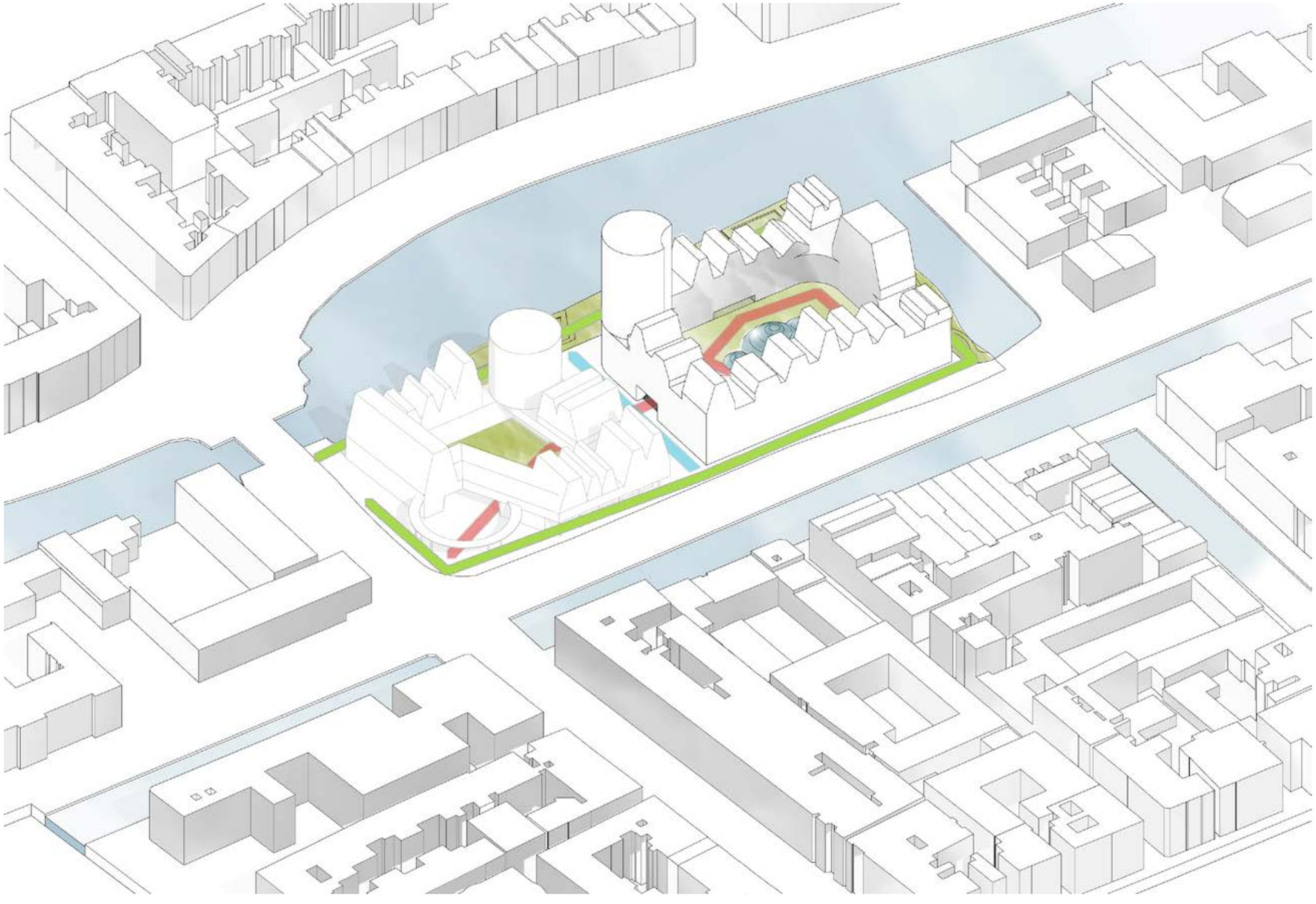
OPENING TO THE WATER

The waterfront revitalization is one of the key elements to inject the plot in the artery of the city.



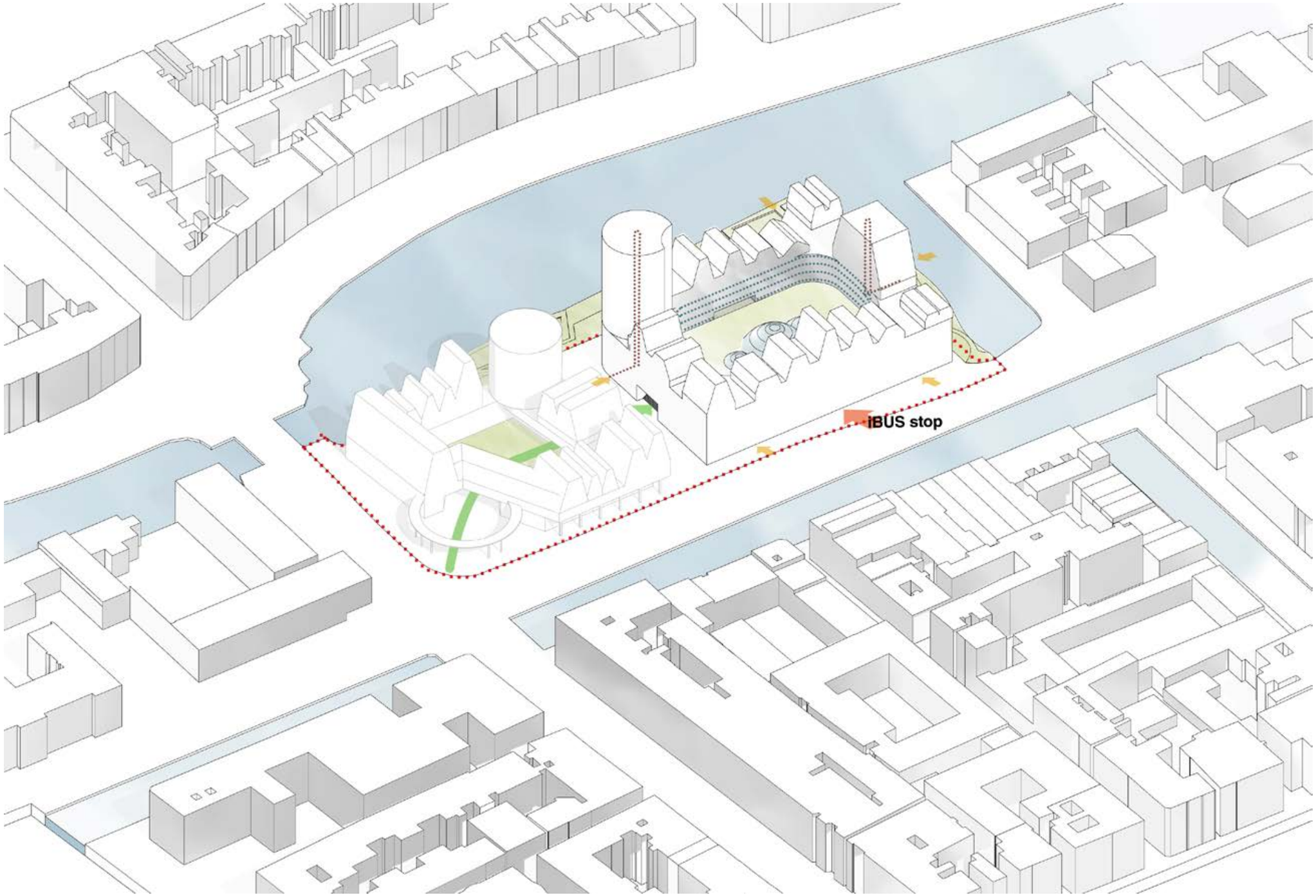
OPENING TO THE NEIGHBORHOOD

Design Dome, Greenhouse, Auditorium. The functions of the main attraction of the site - the catenary domes. Visitors are welcome in the courtyard during Campus working hours to avoid disturbing the tech workers.



PUBLIC PATHS

3 scenic public paths lead through the site with different functions:
Green: scenic route and jogging track;
Red: entertainment route; Blue: commercial route

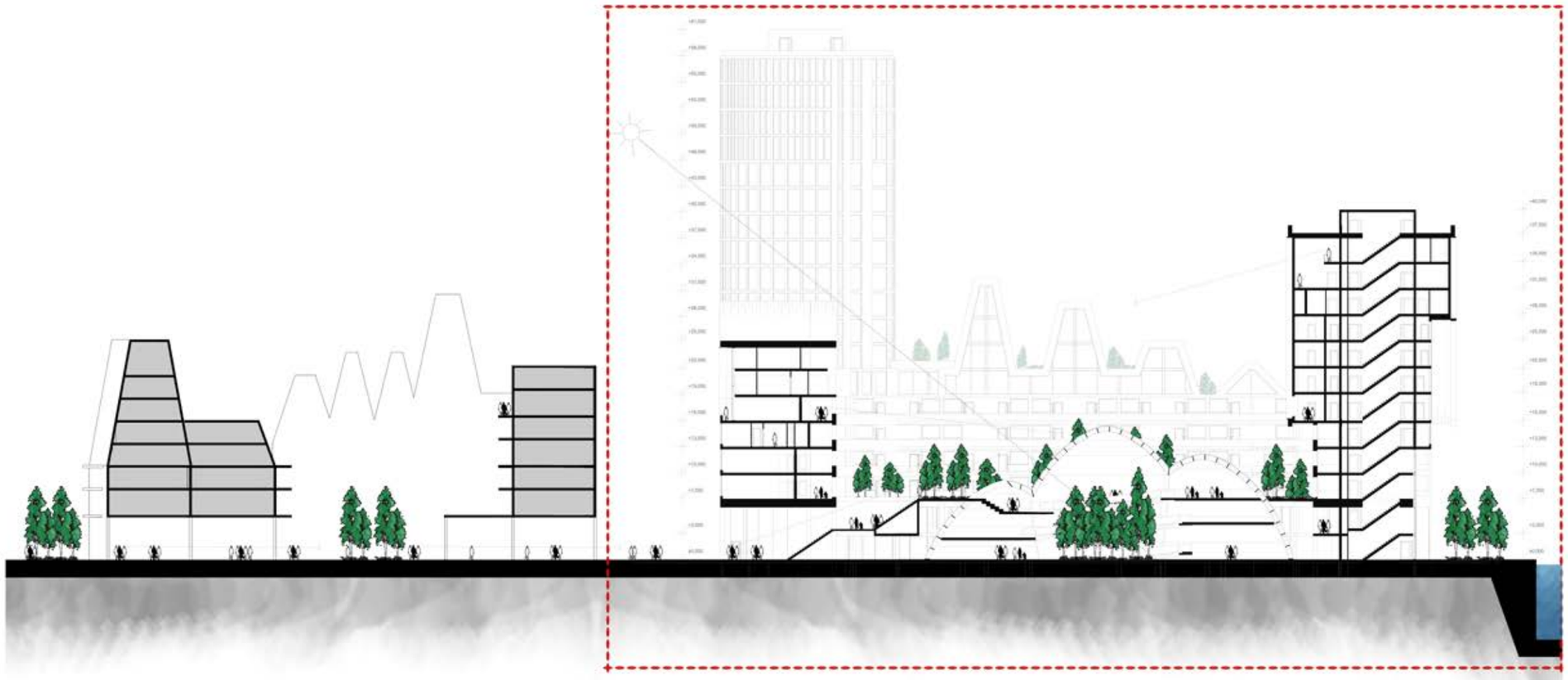


COMMUNAL PATH

With the demolition of the parking garage the site orientation changed by 90 degrees creating new entry points and paths. Primarily guided by the location of the iBus stop and the community gate, then continues in gallery walkways in the building.

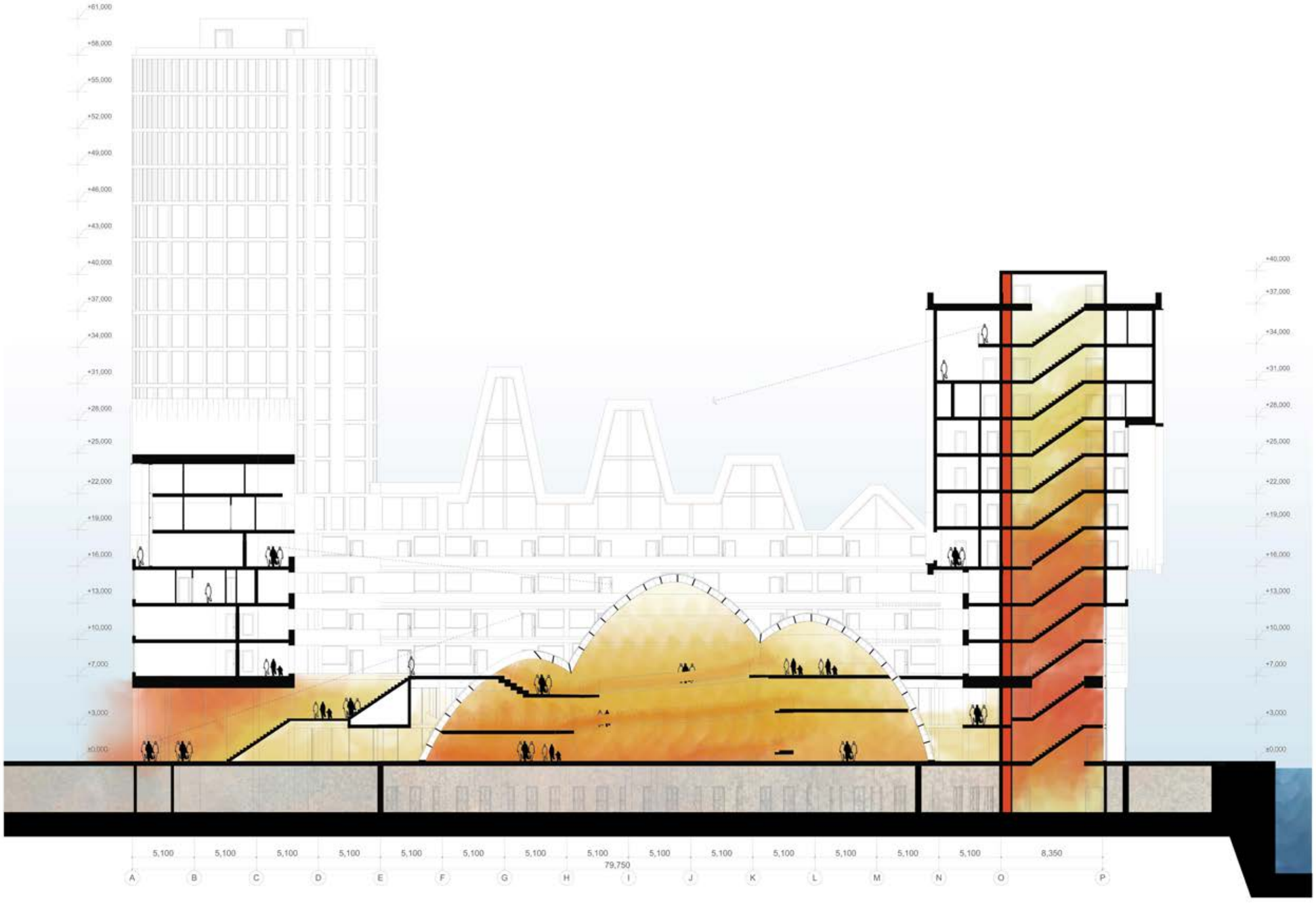

Google
Google

4. PROJECT EXPLANATION



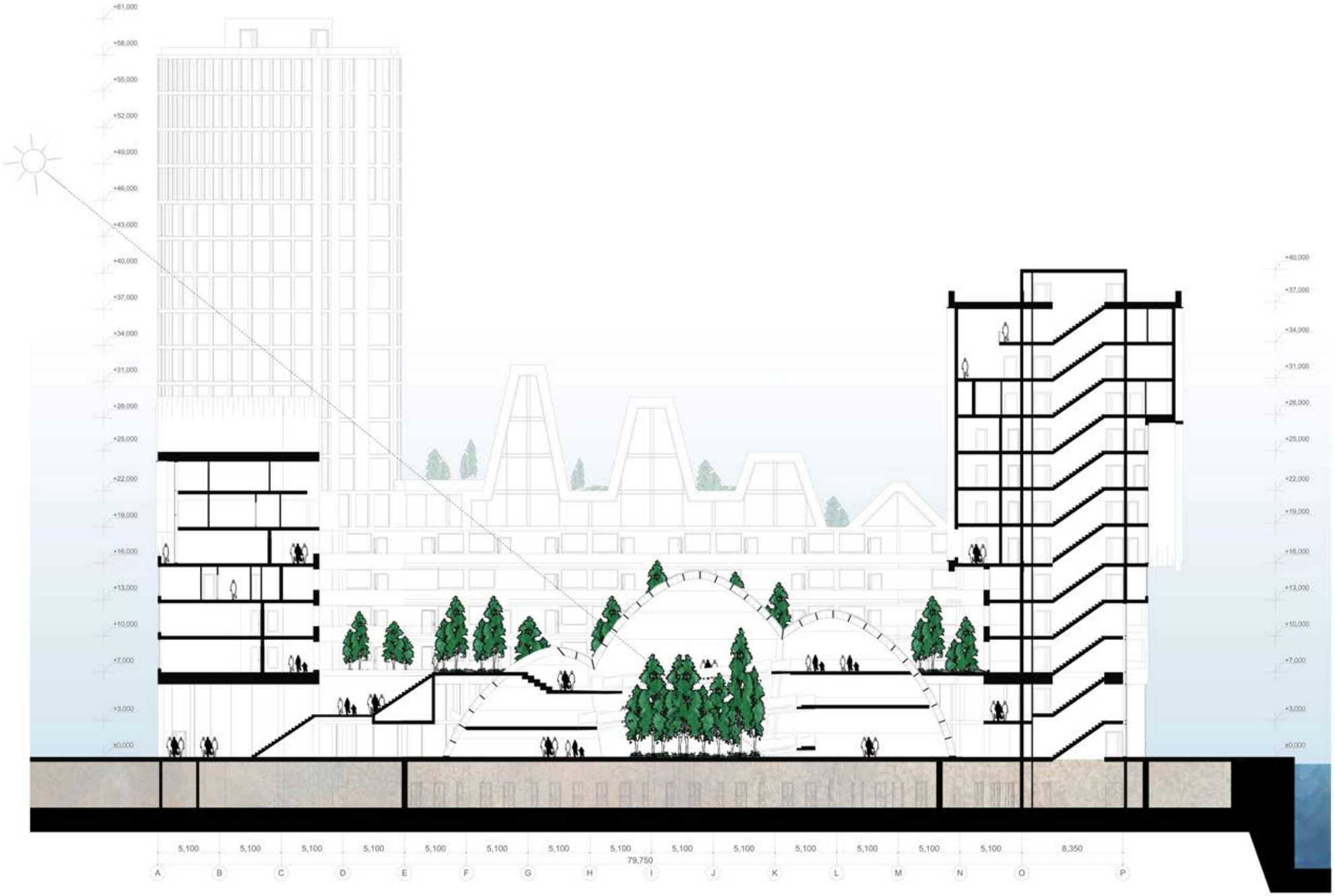
CONSTRUCTION PHASES

During the construction the site will be split into Phase 1 and Phase 2. The design process deals with Phase 1. Phase 2 will be built later, contains Urban Infill on the ground floor and dwelling units on upper floors.



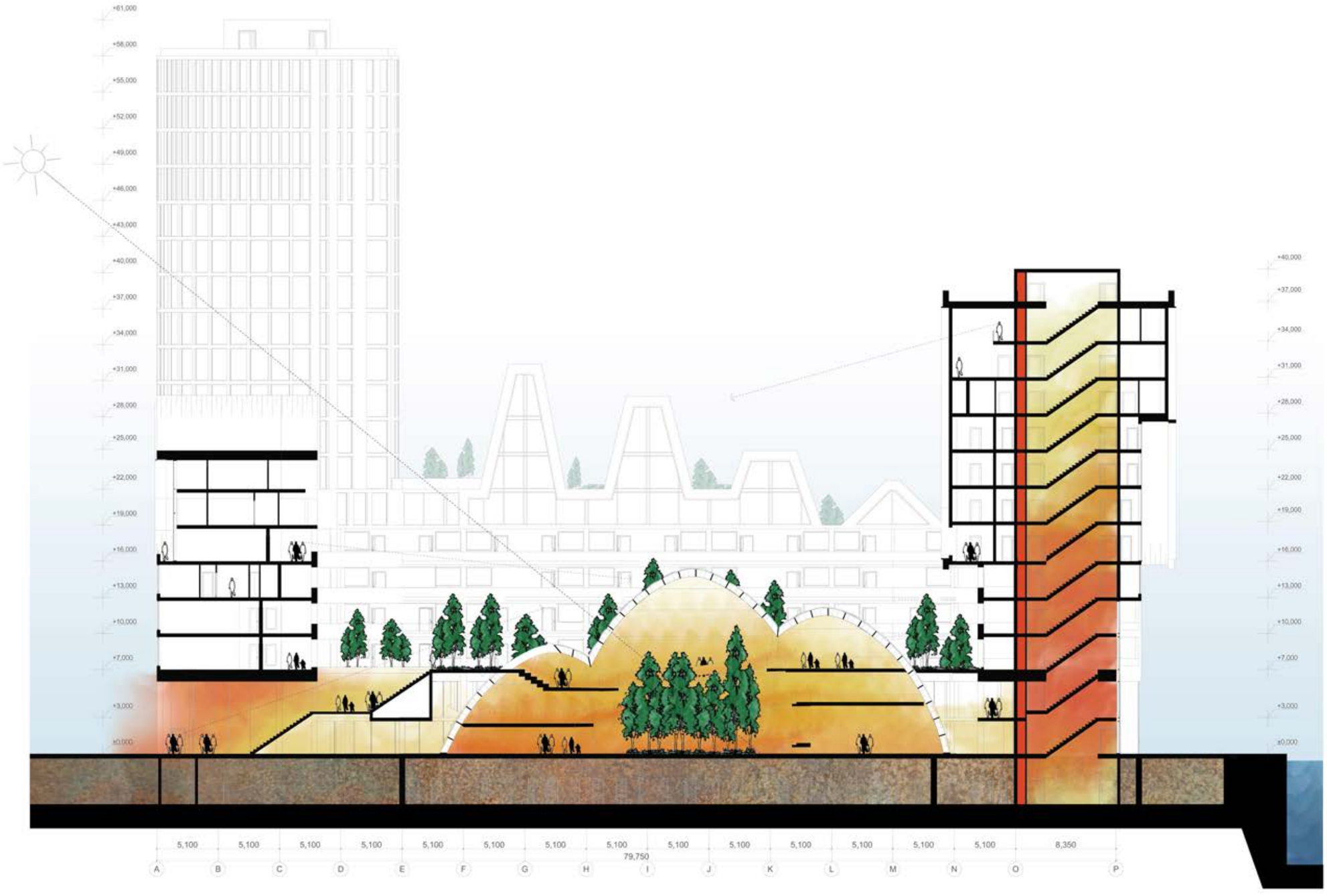
BLOCK CIRCULATION

The public entry point leads up to the elevated park from where the domes become accessible. After a descend one finds himself in the Design Dome museum - containing the inventions of the Company.



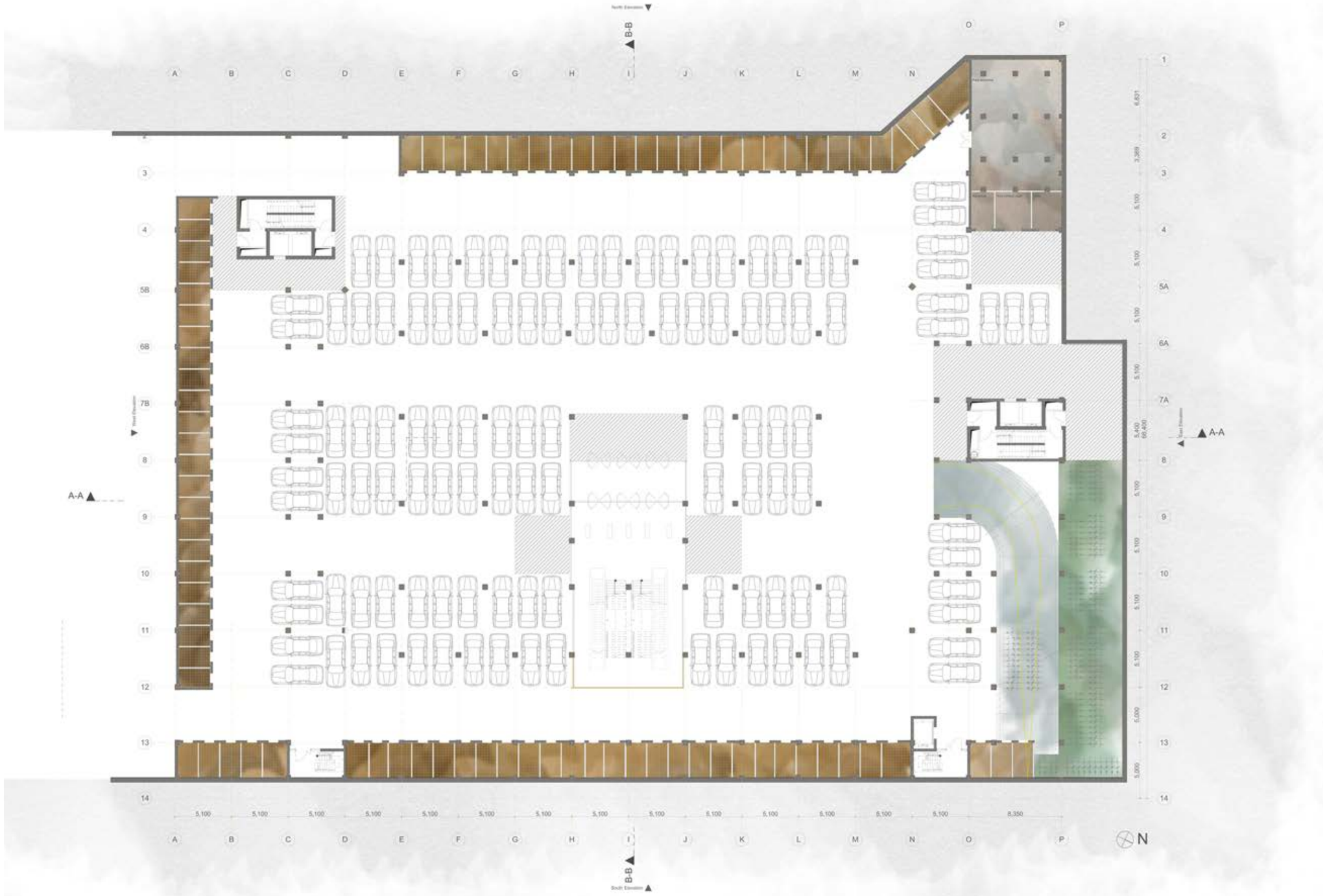
COURTYARD 1.1

Biophilia - the notion of seeking other forms of life of nature to perform better.
The courtyard serves as heavenly cloister garden where one would find peace and recreation.



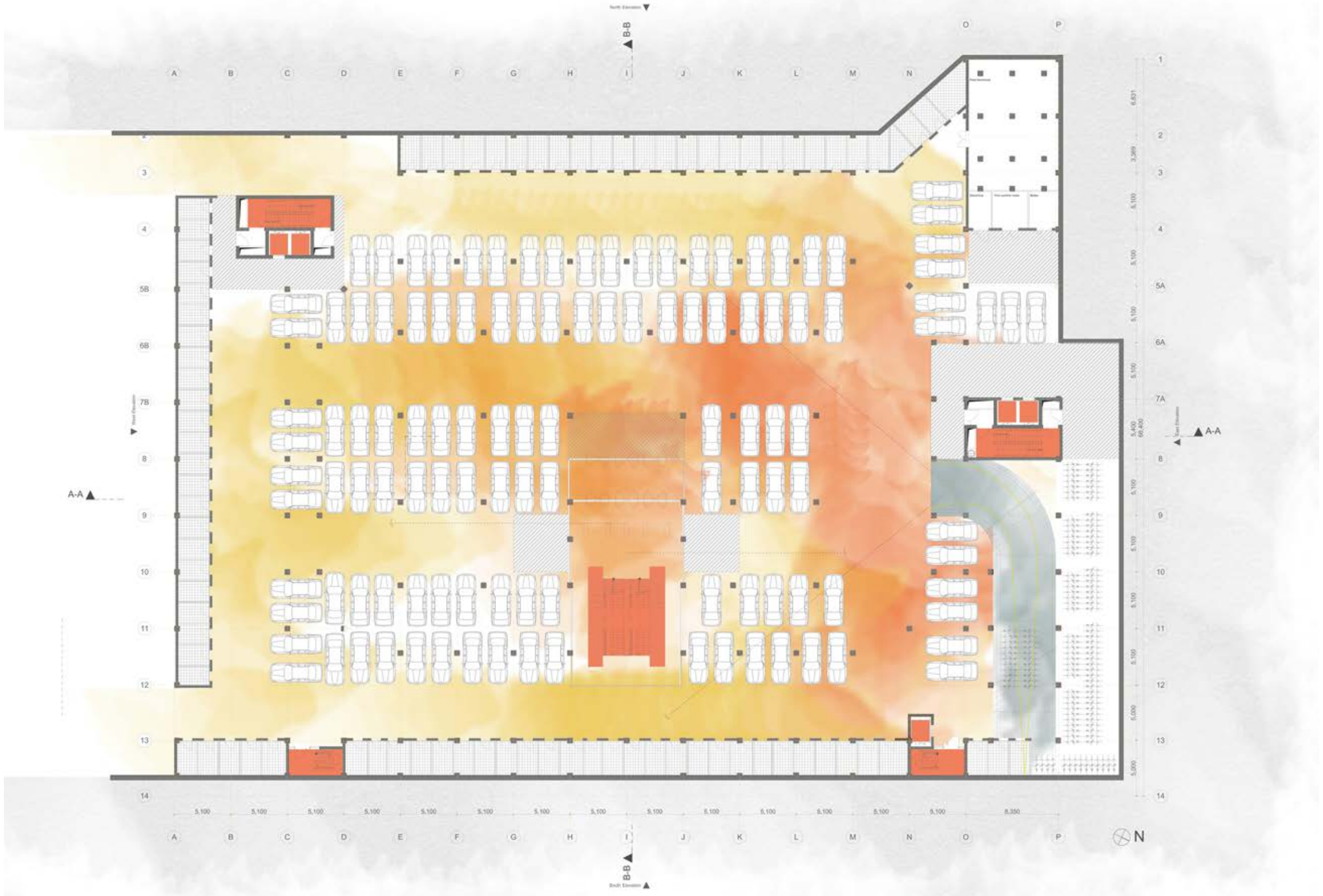
COURTYARD 1.2

The courtyard which is at the same time communal and public provides a sneak peek through the impermeable barrier of the glass of the domes into the Campus life. A notion of transparency towards the city.



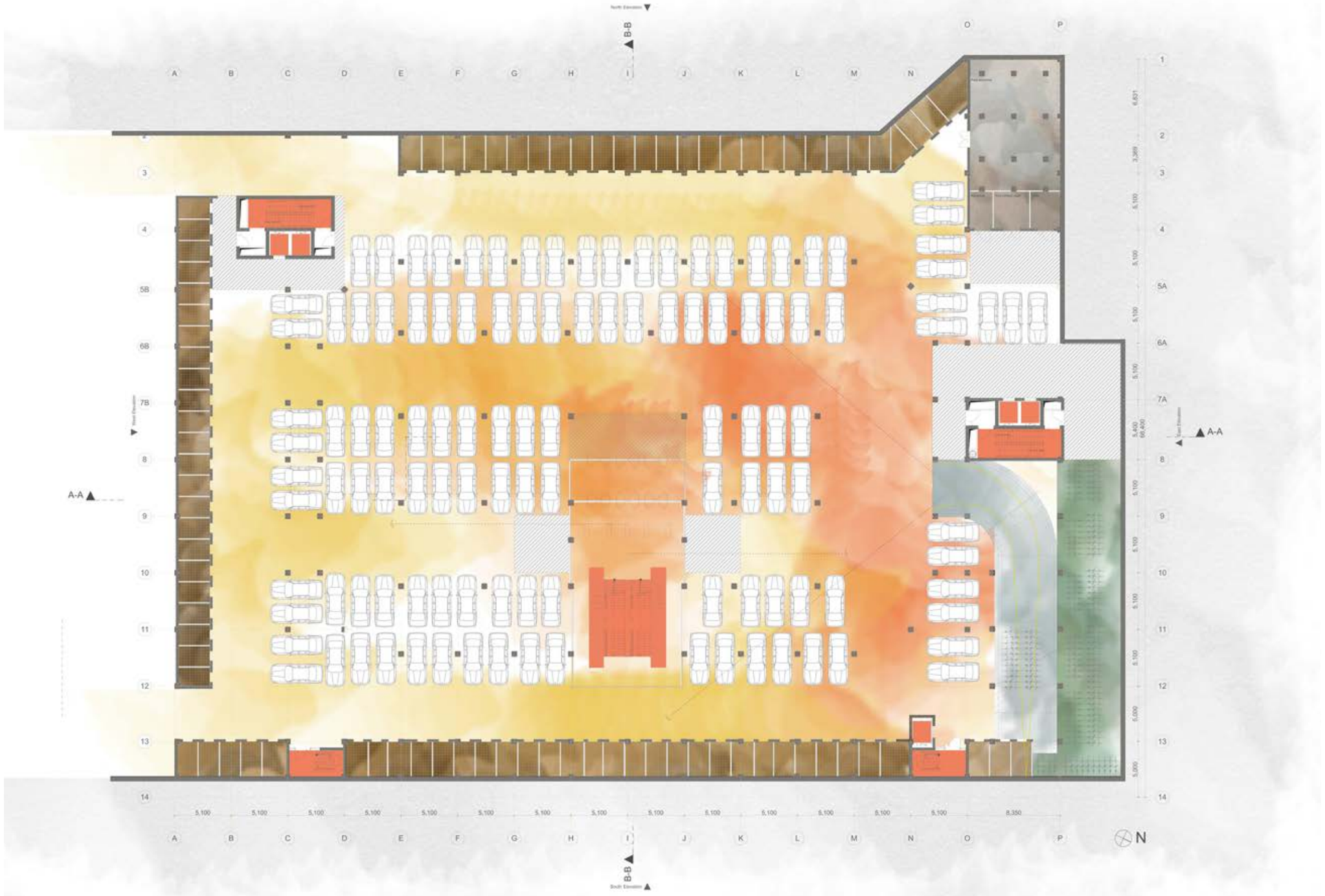
PARKING AND STORAGE

Located in the underground, provides storage rooms for all the apartments, parking space for 117 cars and 240 bicycles.



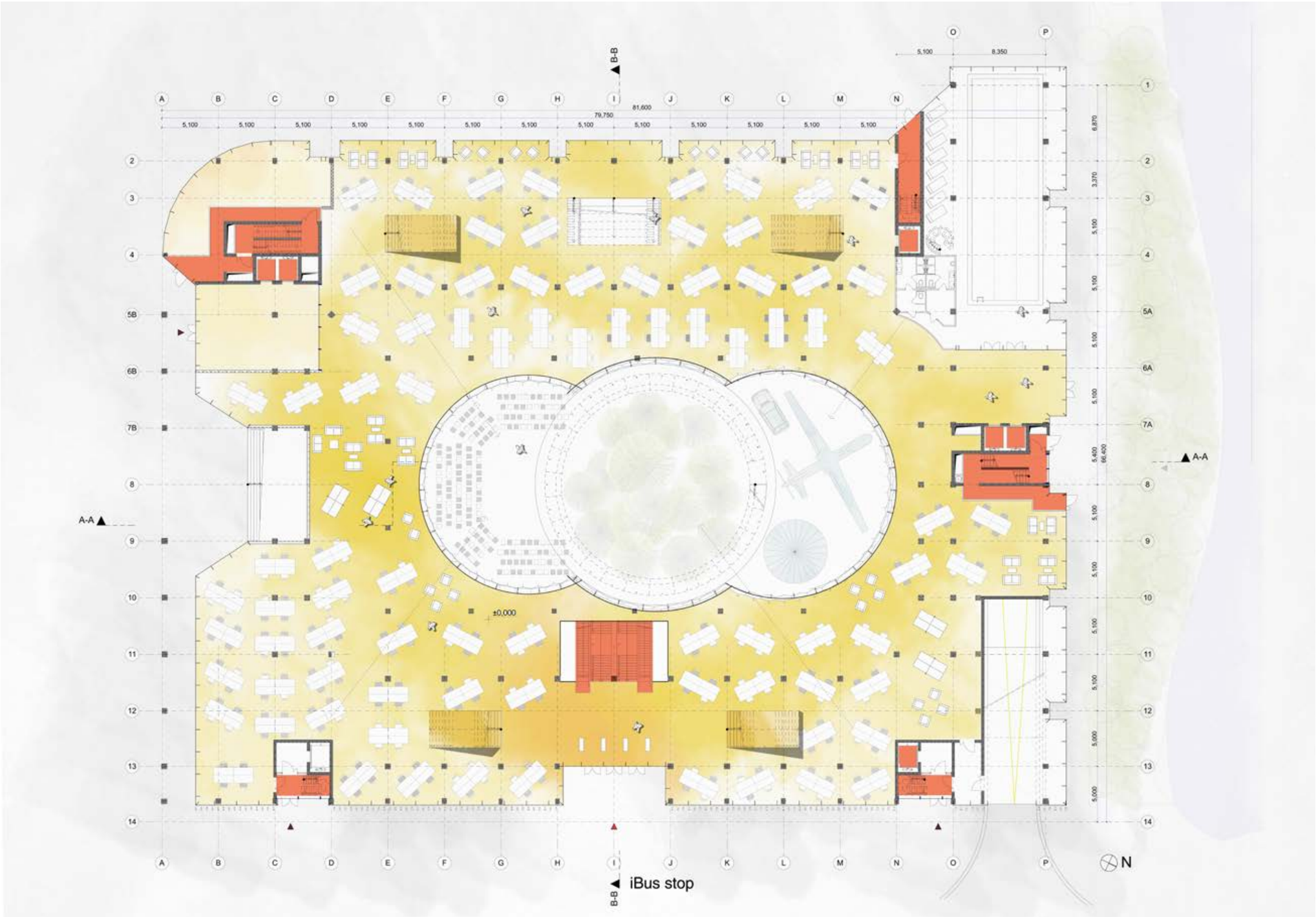
CIRCULATION AND ENTRY POINTS

Entered through a ramp by cars and cyclists, the garage is also one of the main entry points into the Campus. The large central staircases and escalators lead the employees to the main entrance of the Corporation.



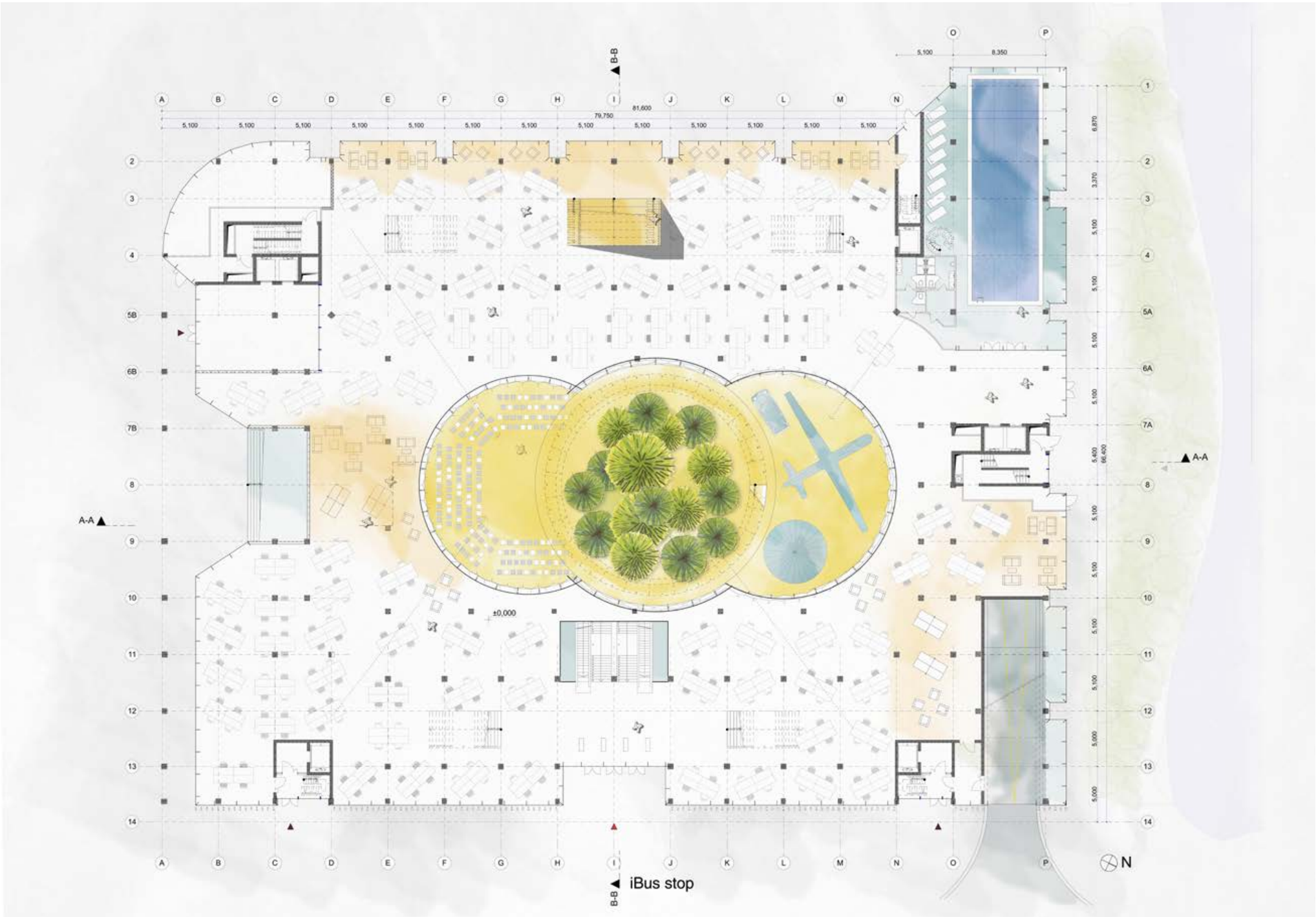
BASEMENT ASSEMBLY

The underground. Not only a parking lot and entry point but also the main host for ancillary spaces - machine rooms, fire control rooms, water tanks, pool machine room, generator rooms, etc.



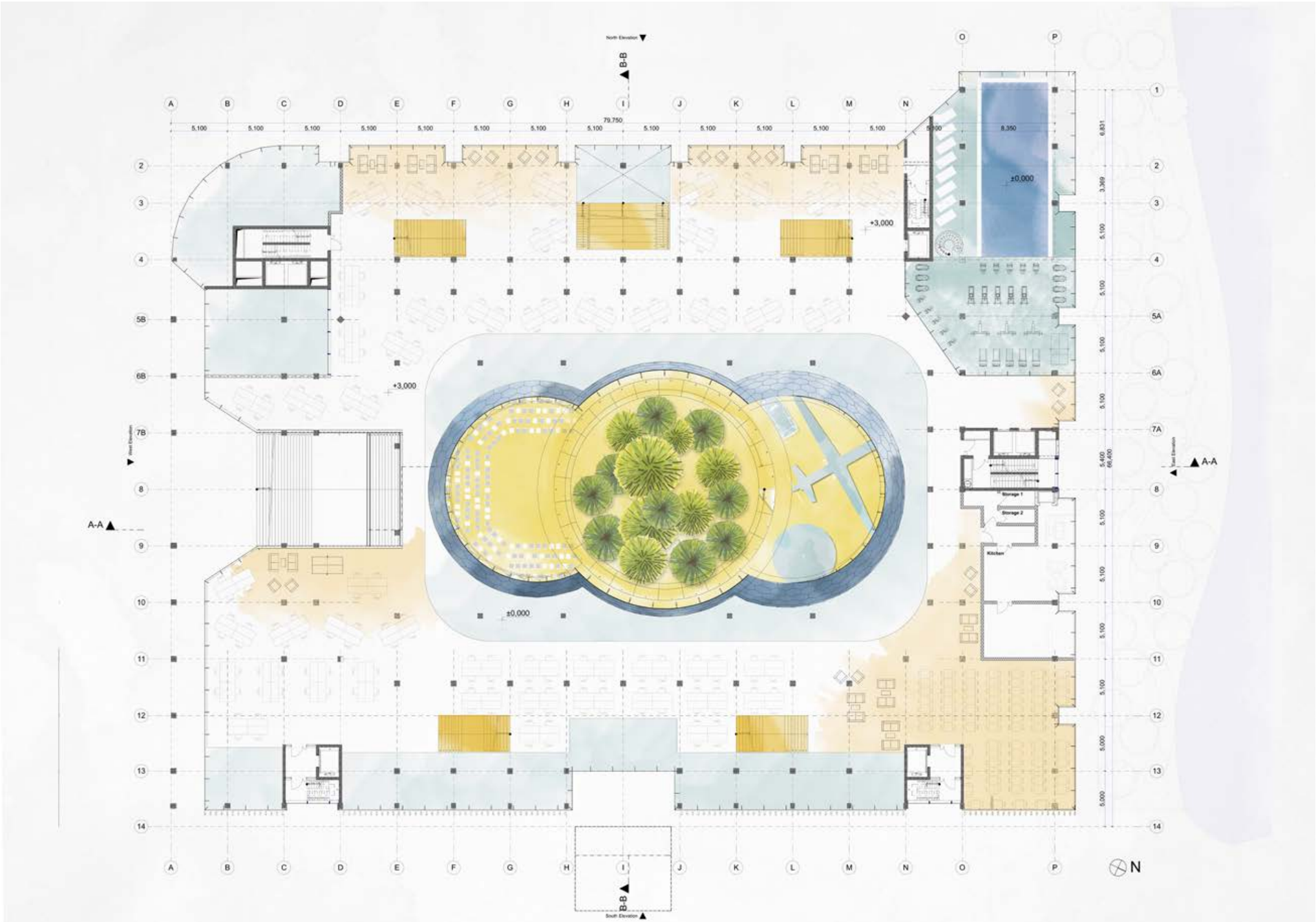
THE CAMPUS: WORKING

Entered via the main Entrance from the Marnixstraat where the iBus drops off the workers, or from one of the five building cores connecting the apartments, or from the garage. Provides 360 workstations on the ground level.



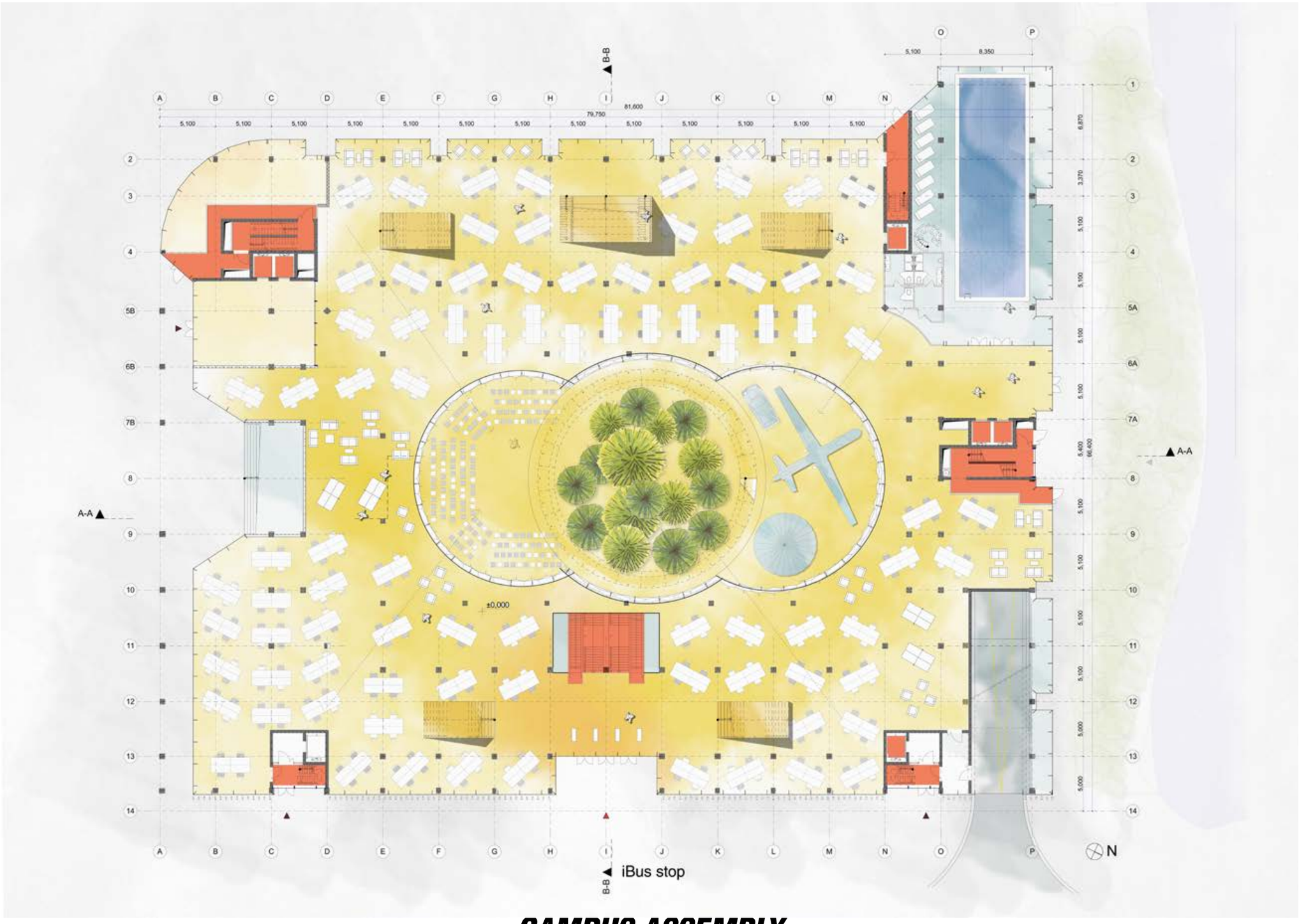
THE CAMPUS: LEISURE

Swimming pool, table tennis courts, auditoriums, relaxation corners, museum - a couple of the many leisure activity locations. Scattered all across the campus to bring employees together.



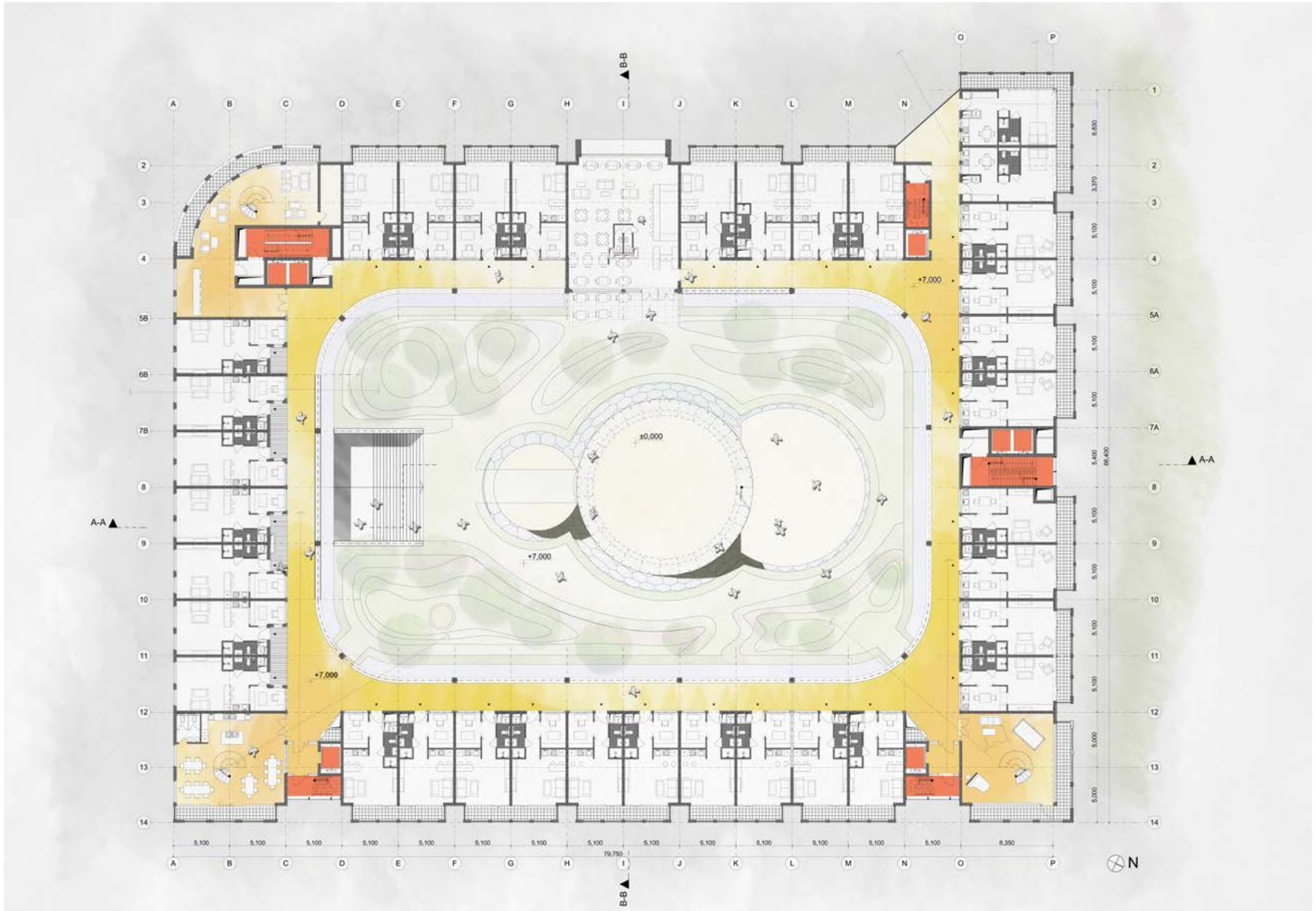
CAMPUS SECOND FLOOR COMMUNAL

In addition to the leisure activities of the floor below the first floor provides a gym, a canteen and relaxation corners. It also hosts the kitchen for the complex.



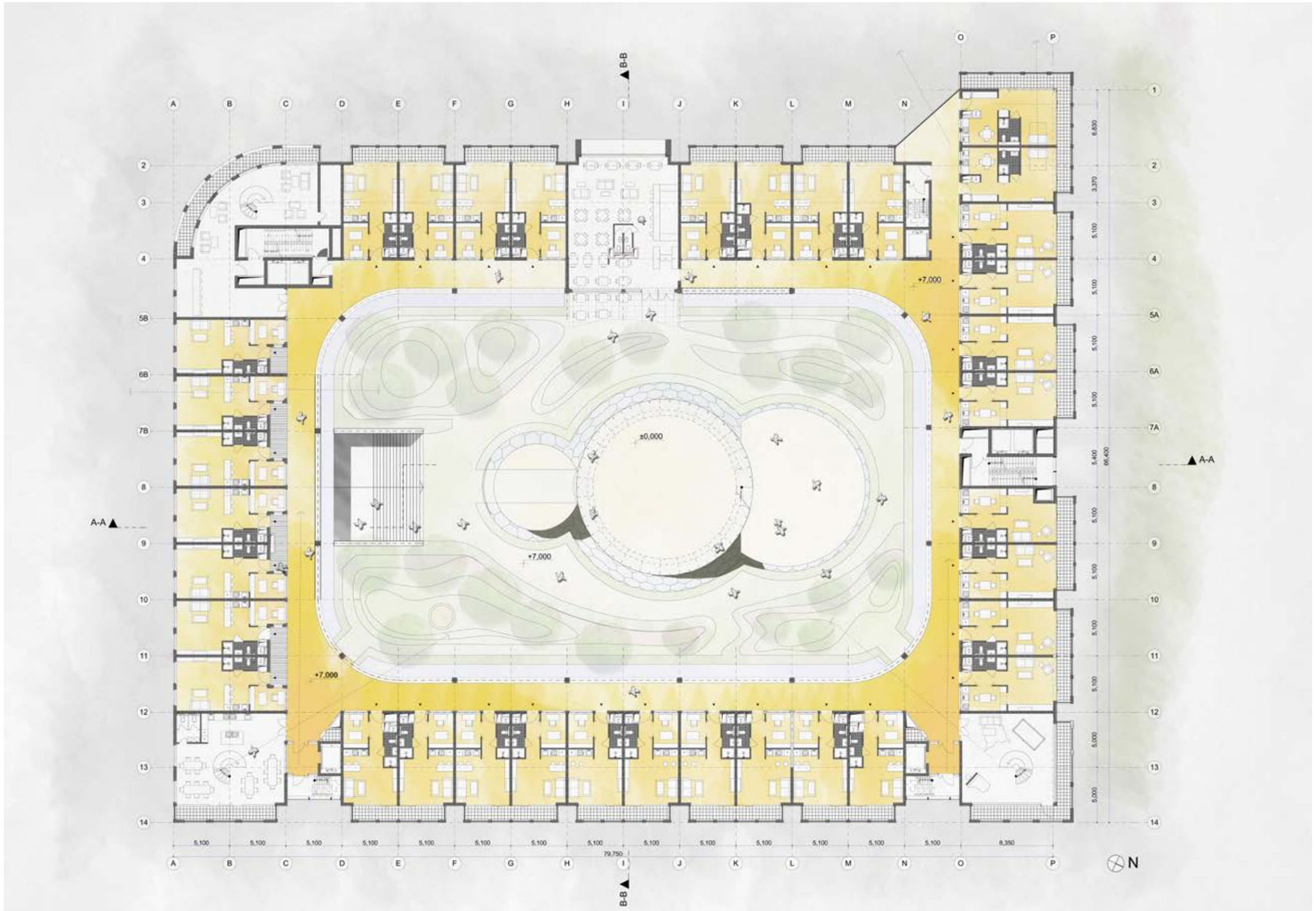
CAMPUS ASSEMBLY

On the two floors 650 people work in a stimulating environment flanked by greenery, waterfronts of by the continuous flow of people outside the building. The future proofness is reached through the flexible design of space and HVAC distribution.



CIRCULATION AND COMMUNAL SPACES

The gallery type circulation connects the five building cores, out of what four provides access to the Affordable housing floors. The galleries with their 2.5m widths ensure a spacious walkway to the three corner communal spaces.



AFFORDABLE HOUSING UNITS

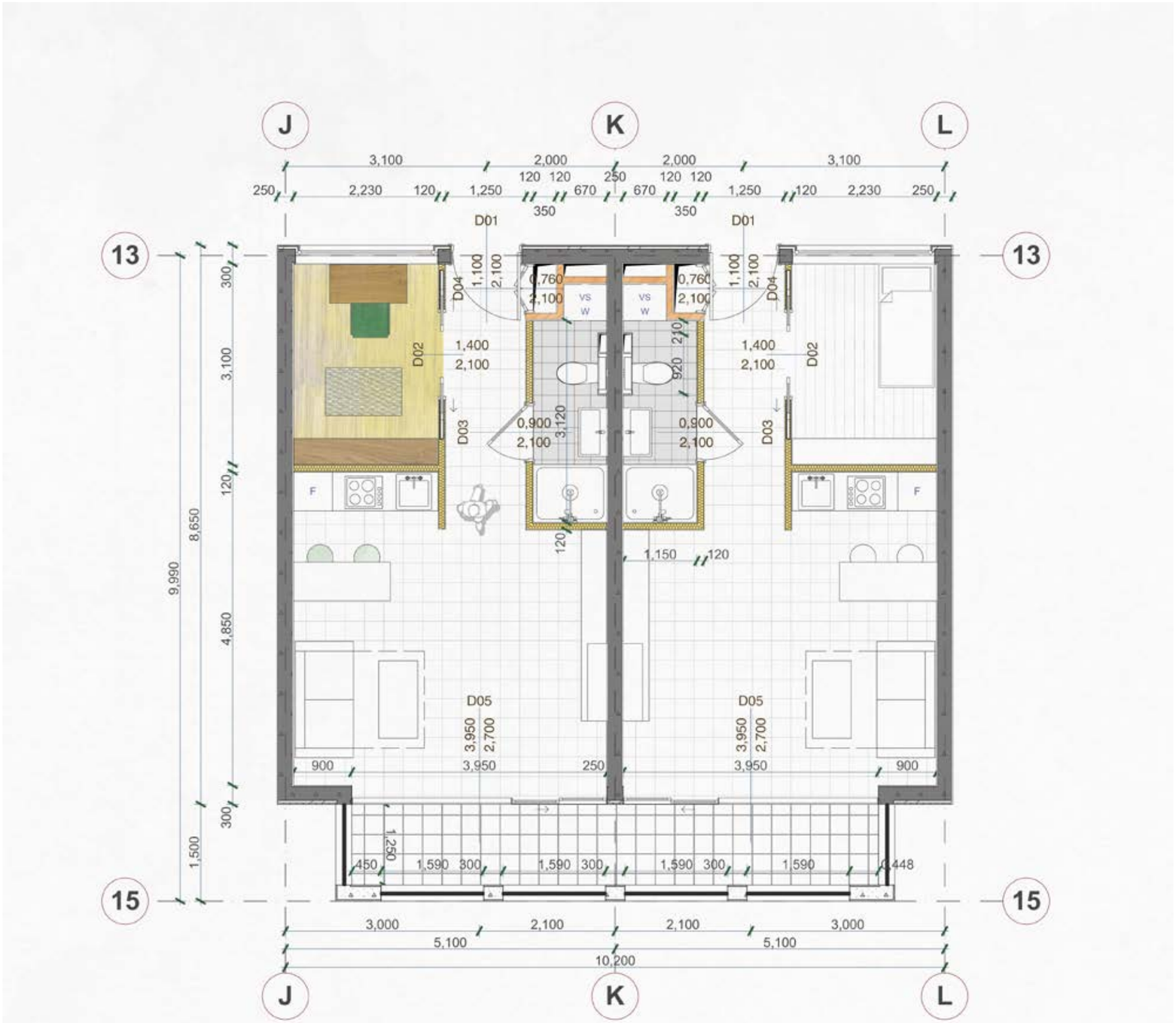
The 45 sqm units are distributed along the perimeter. On the corner facing the Singelgracht the two special apartments provide larger kitchens and dining areas - being farther from the communal kitchen - for small local gatherings.

AFFORDABLE ROOM ASSEMBLY

45 sqm in size, entered from the galleries and equipped with a balcony. These units are comprised of a living area combined with a bedroom and a micro kitchen - in case one would not use the communal kitchen. Cozy with a corporate atmosphere.

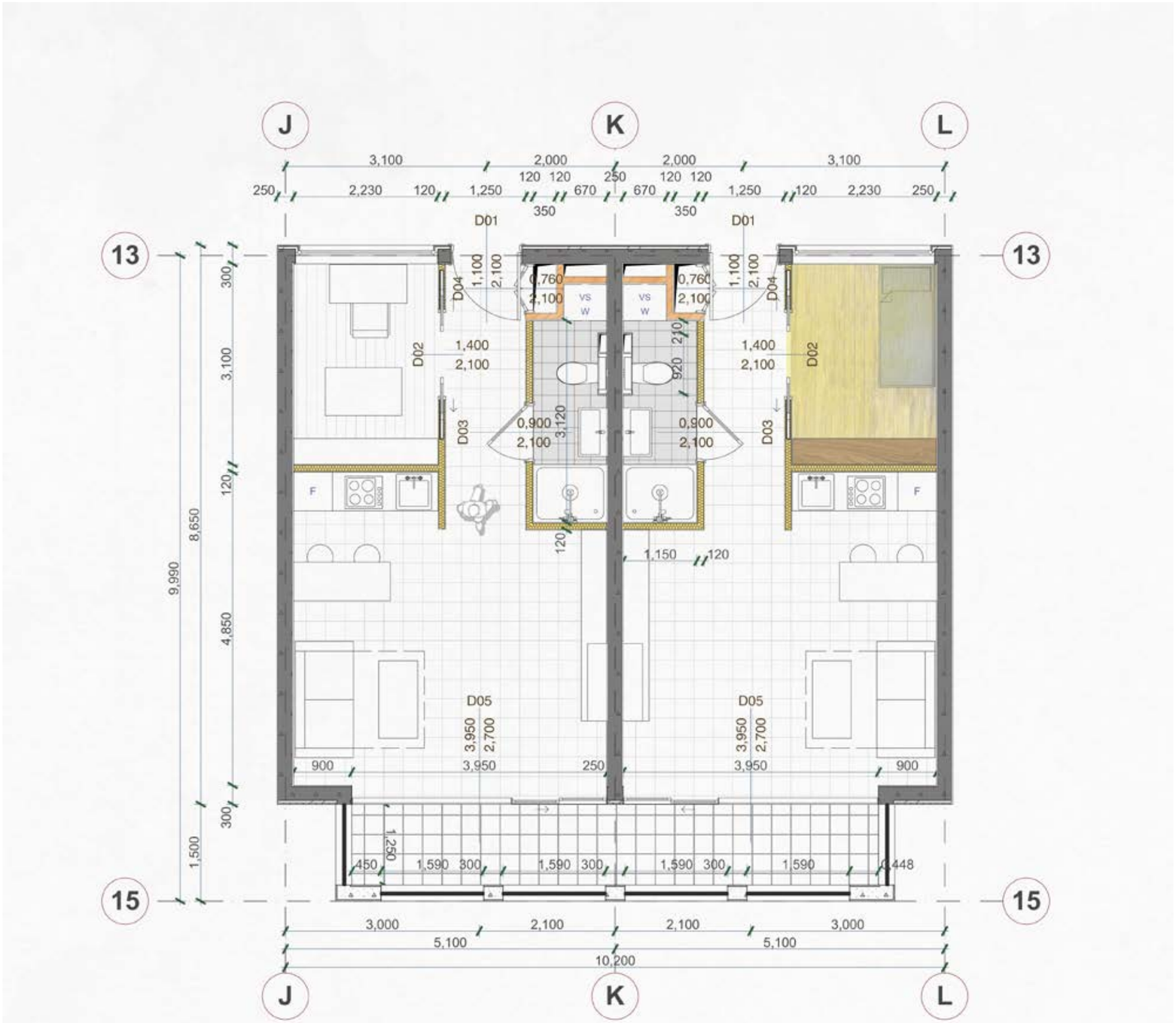
LIVING AREA WITH MICRO KITCHEN

As one enters finds himself on a small corridor leading to the living area, where a foldable bed serves for sleeping, walls are decorated in a colorful way and a bar table is provided for eating. The large windows provide plenty of daylight.



HOBBY ROOM OPTION

The Affordable units come in two options: in the first a hobby room is provided - in case there is a small gathering in the common area one would still find a quiet corner to talk and work.

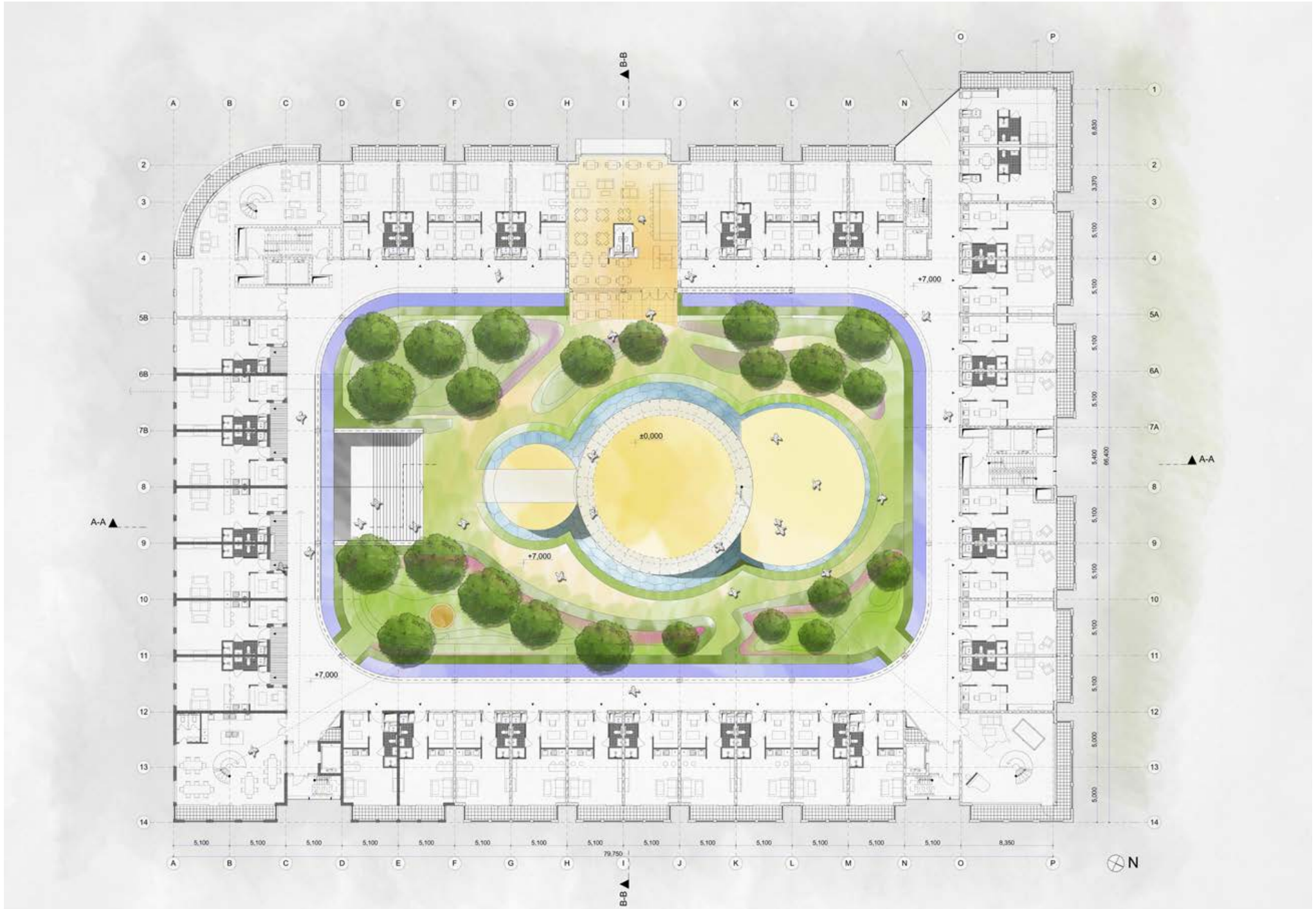


BEDROOM OPTION

In the (guest)bedroom option the living area is liberated from the sleeping function - it is much more for leisure, thus the apartment becomes more organized, more spacious.

AFFORDABLE ROOM IMPRESSION

Furnished with colorful items while using Google Doodles as wall art - the Corporate everyday penetrates into these housing units. The extensive use of wooden furniture and the micro kitchen take the room out of the dormitory-like atmosphere.

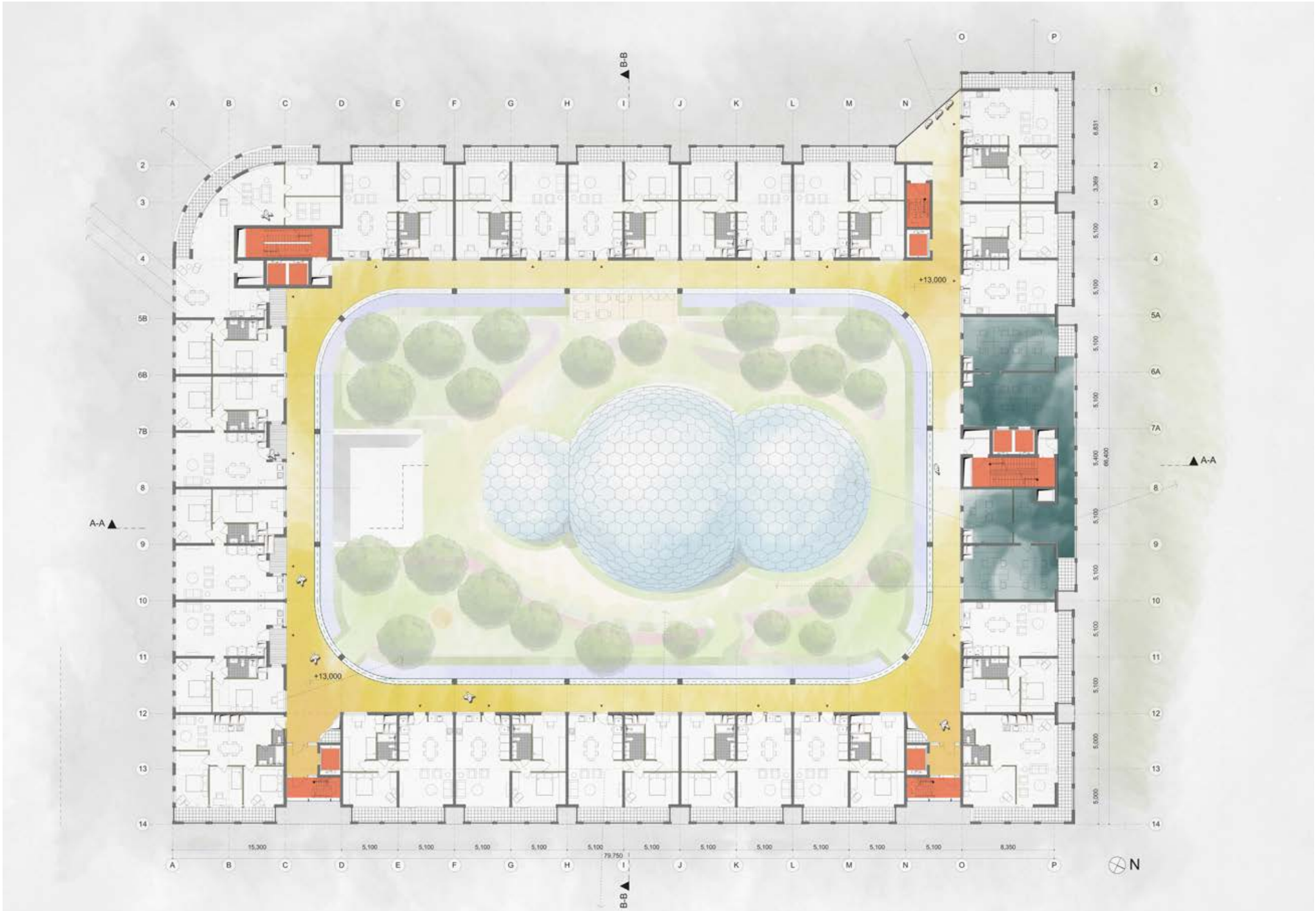


THE COURTYARD: COMMUNAL AND PUBLIC

Entered via the public staircase to unveil the gem of the Campus - the three domes - where one might descend into the Corporate world. The cafe in the East wing provides a view on the Singelgracht.

2ND FLOOR ASSEMBLY

The communal is separated from the public by 1.2m wide glass skylights that also provide light for the Campus. The garden communal spaces are connected with the building communal spaces. 33 standard and 2 corner apartments.



MID-RANGE HOUSING: CIRCULATION AND OFFICES

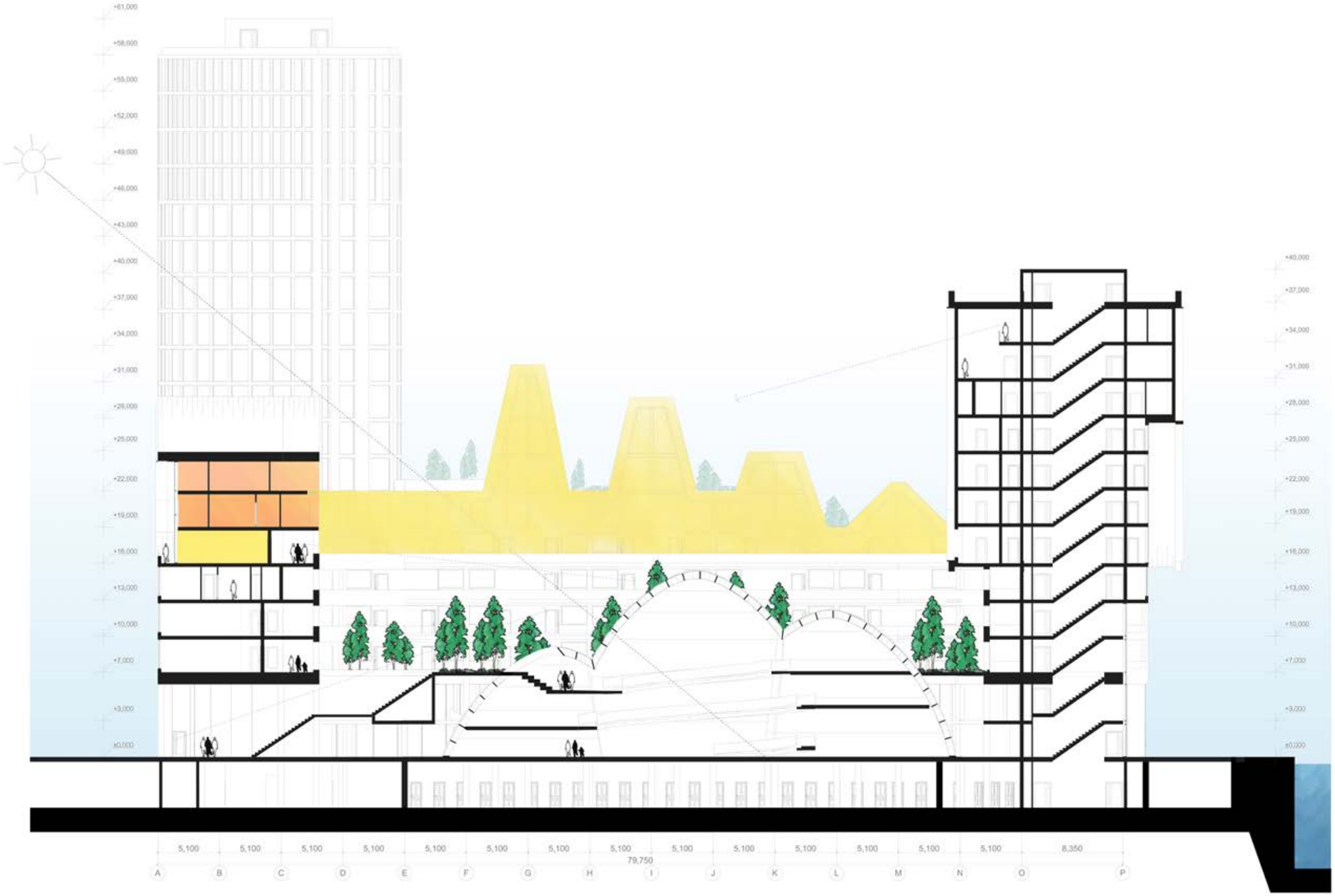
Just as on the Affordable floors - the gallery type circulation provides access to the apartments. The hotel offices are located in the North wing. These offices have no access to the gallery ensuring the inhabitant privacy.

MID-RANGE HOUSING UNITS

The apartments provide separate living and sleeping areas. Floor area: 90 sqm. The balconies are doubled, a master bedroom and single bedroom are hosted.

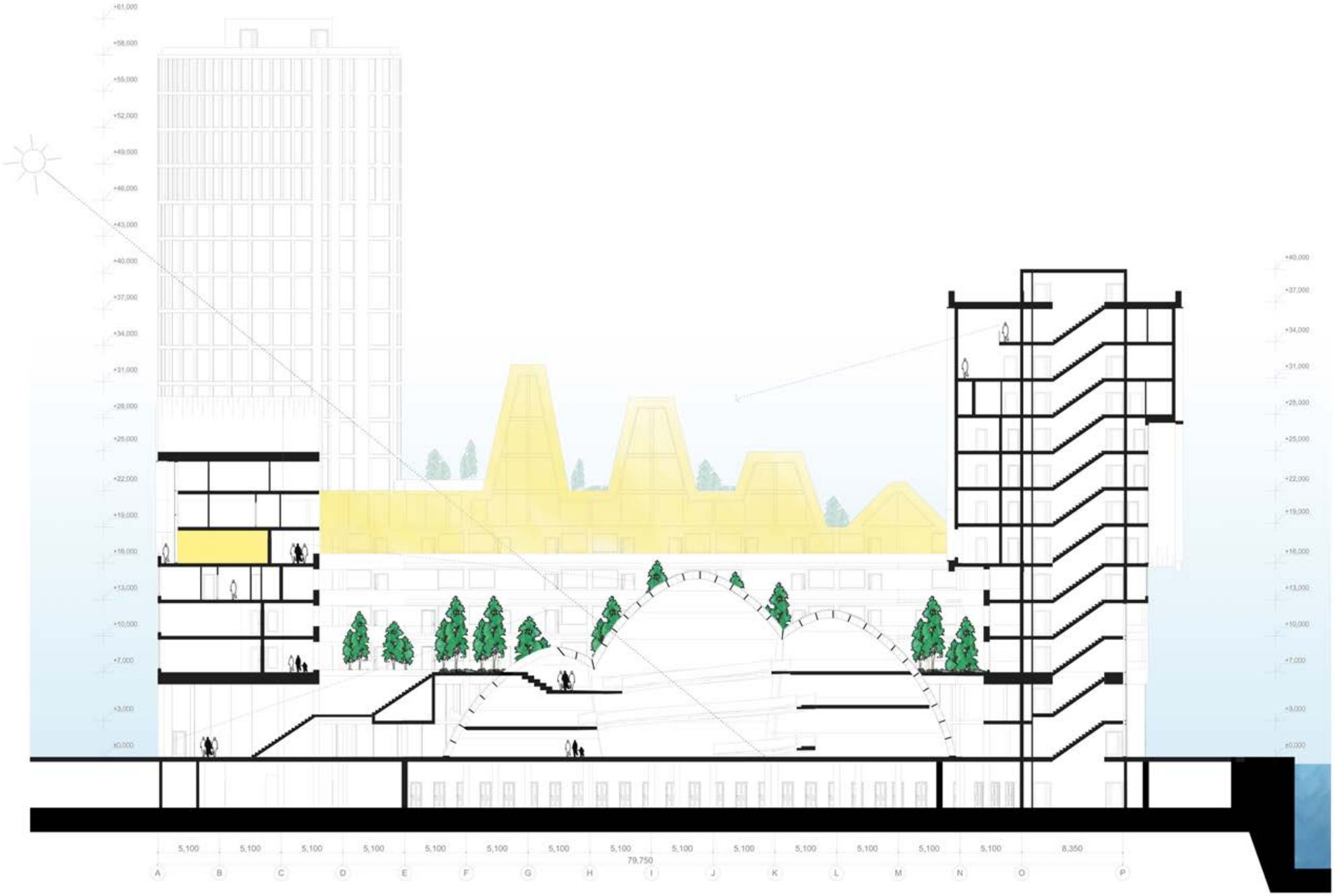
4TH FLOOR ASSEMBLY

The 19 Mid range apartments are located between the cores. They provide housing for the smaller families and with their two sided orientation provides views on the courtyard and on the streets.



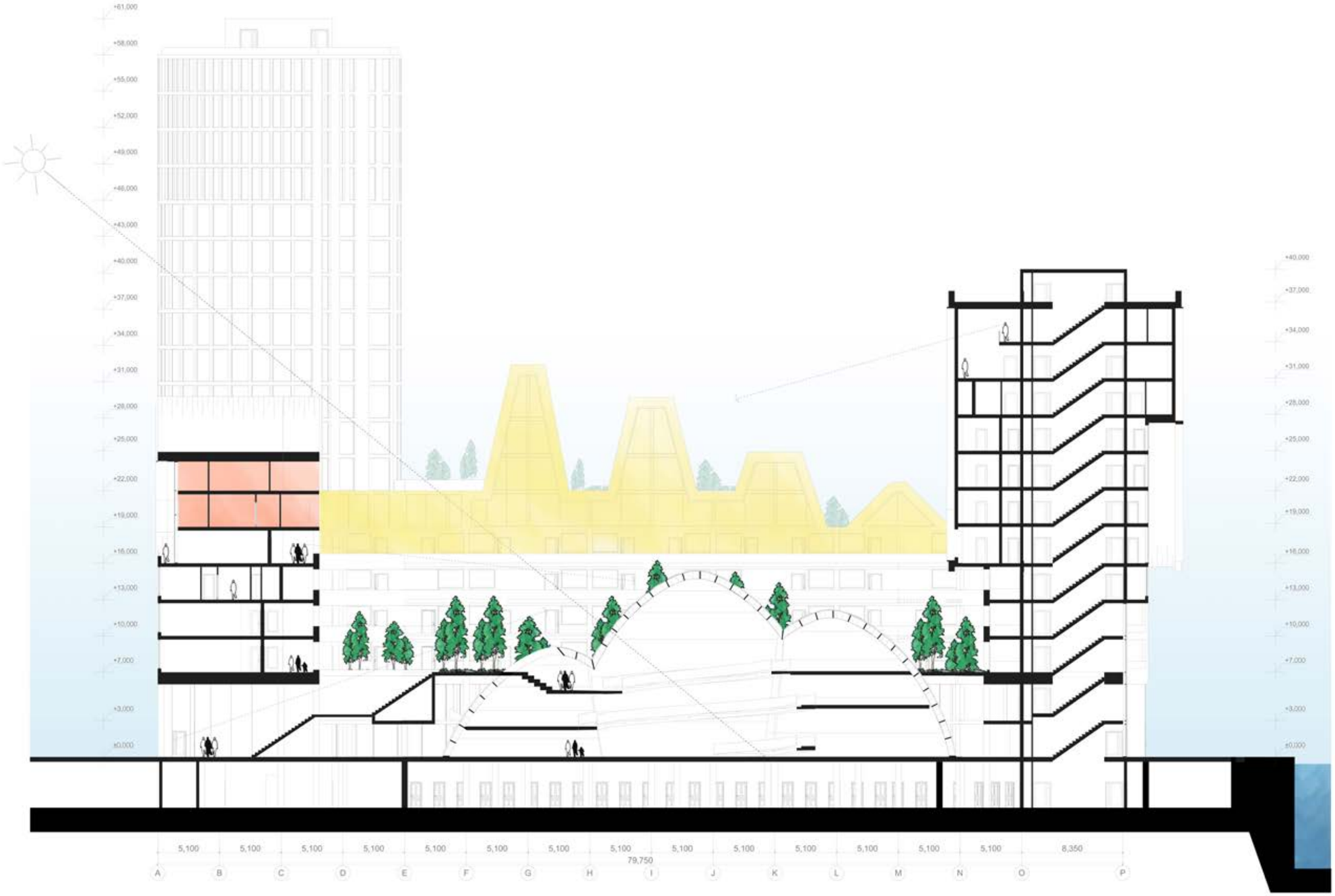
FAMILY HOUSING: APARTMENTS SECTION

In the Industrial Shed morphology on the top floors the family apartments are hosted. Their vertical startification creates a clear division of program. The 13 Industrial Sheds host 26 family apartments.



FAMILY HOUSING: LIVING AREA

On the lower floor of the apartments the kitchen and the living area are placed providing a double-sided orientation.



FAMILY HOUSING: SLEEPING AREA

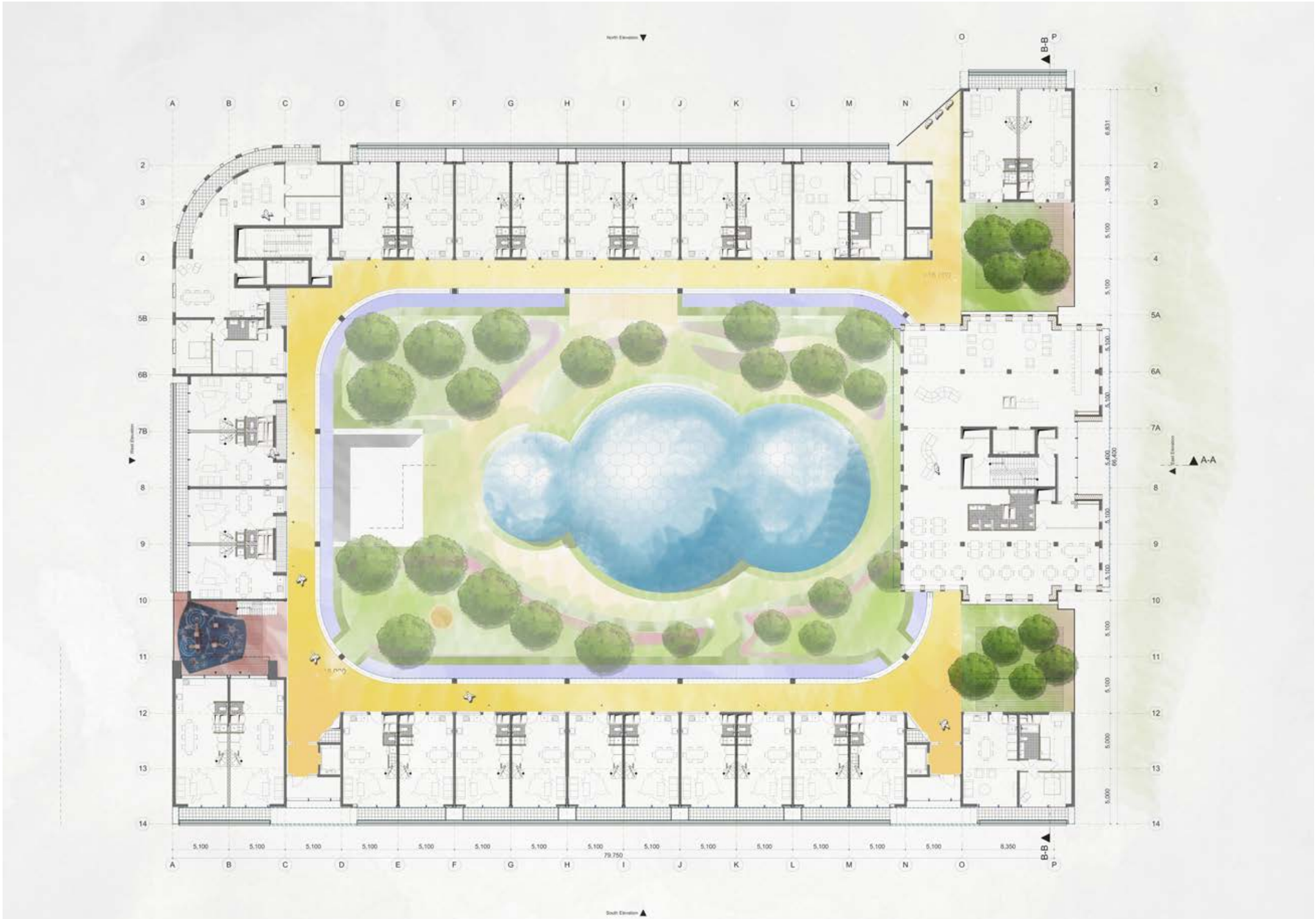
On the upper floors the sleeping and leisure areas are placed. The units thus range between 105 sqm and 190 sqm.

FAMILY HOUSING: CIRCULATION AND APARTMENTS

Same in floor shape as the affordable units, but triple in their floor size the apartments provide spacious living areas and multiple bedrooms.

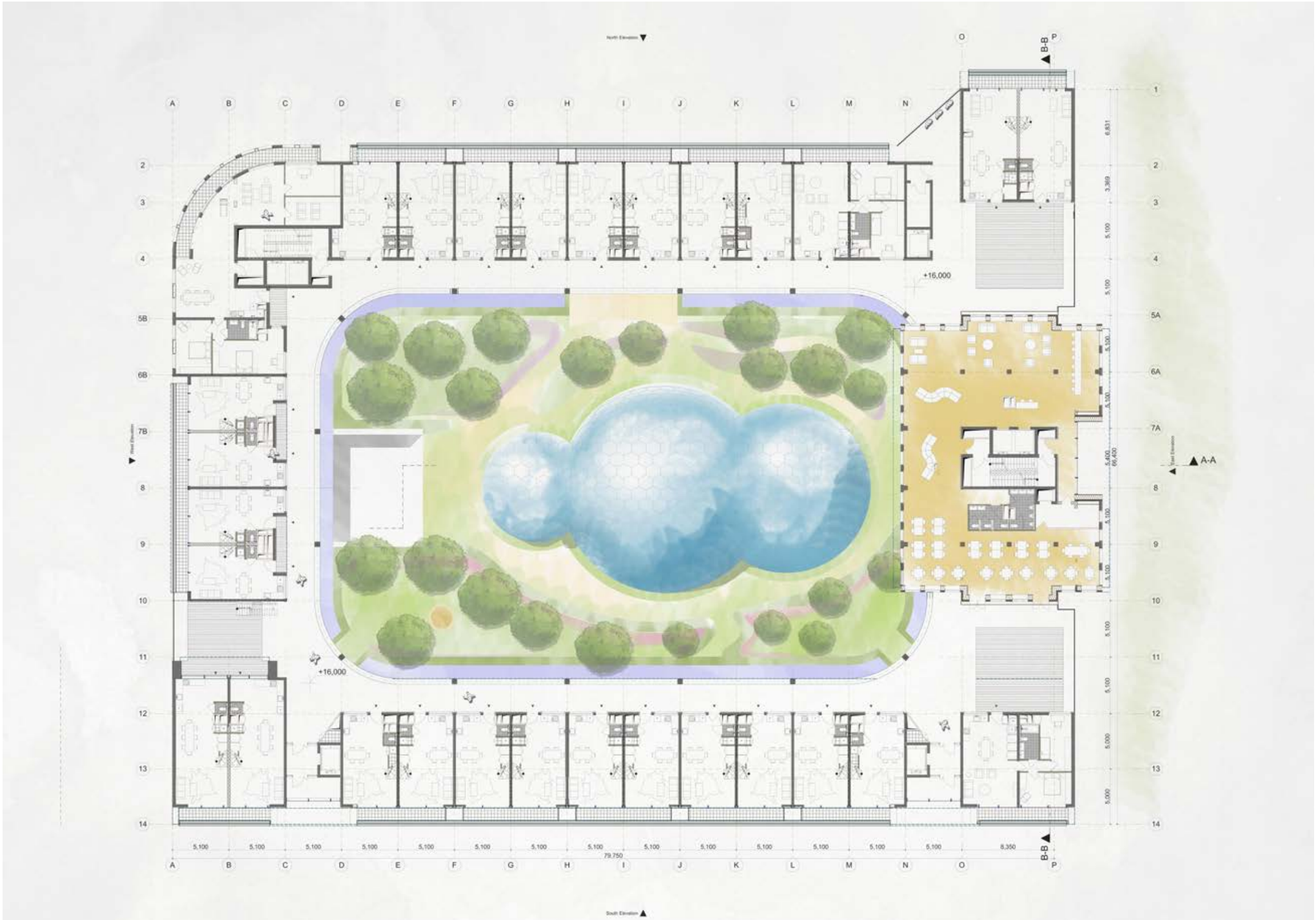
FAMILY HOUSING IMPRESSION

The 26 family housing units provide - with the use of the same furniture as the affordable rooms - a higher level of peronalization for the families and transfer the Corporate Atmosphere less, giving a different identity.



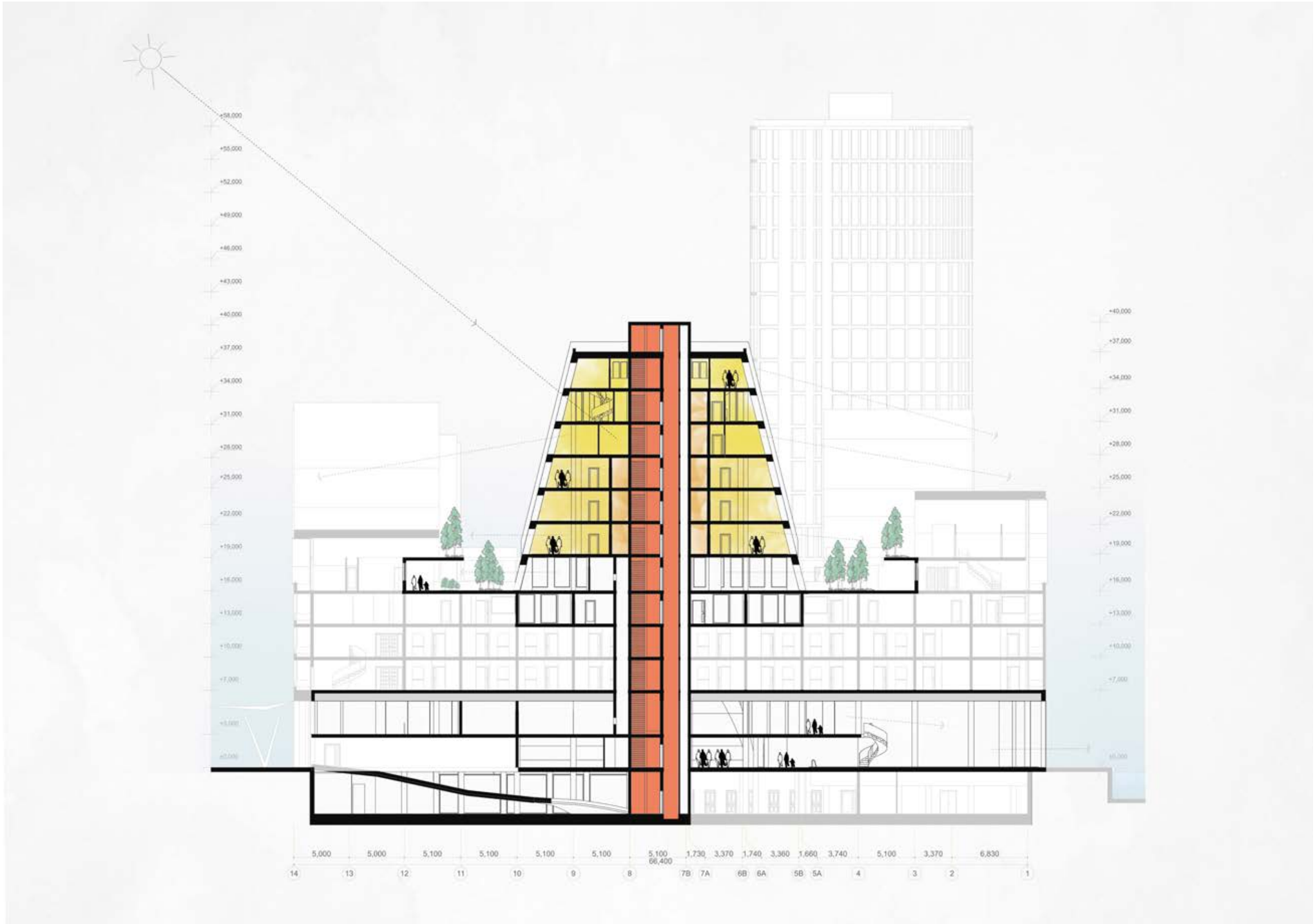
FAMILY HOUSING: COMMUNAL SPACES

Designed for children these areas host small playgrounds and gardens, the three communal areas reflect on the central courtyard. Their location ensure visual surveillance from the apartments while creating a separate world in the compound.



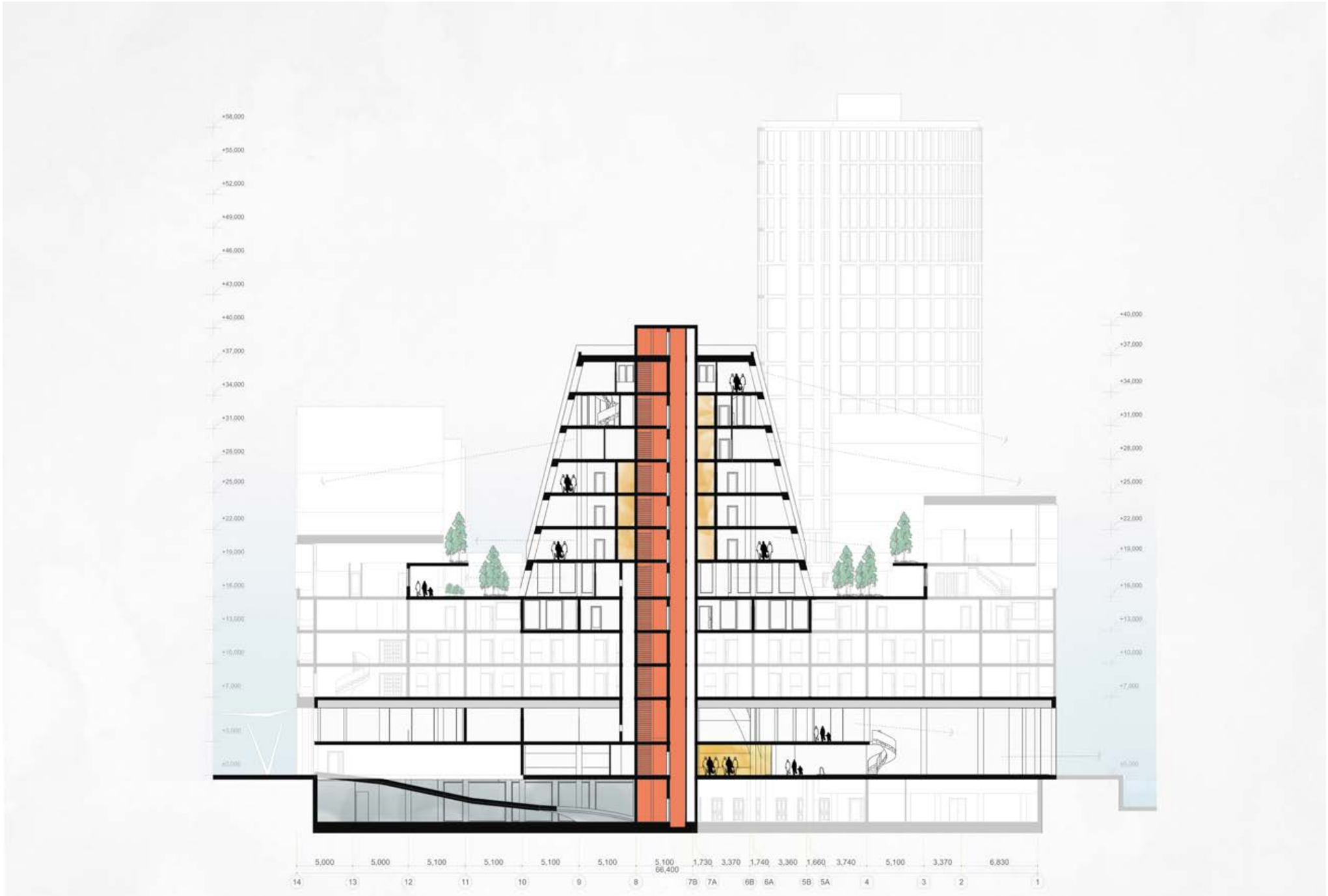
HOTEL RESTAURANT

Located on the first floor of the family housing units it serves as the main catering space for the hotel. It has doors opening to the communal outdoor spaces to bring life in.



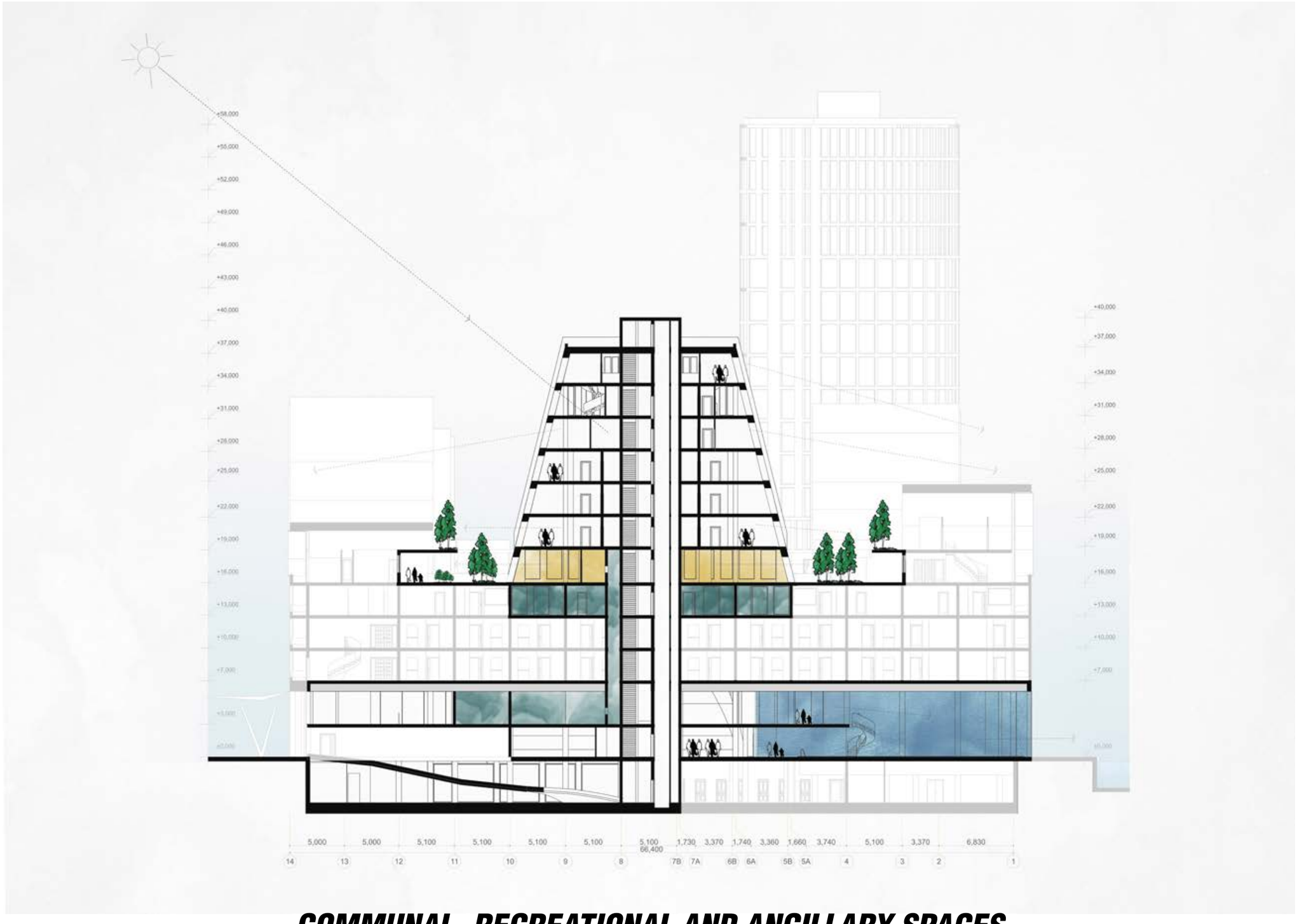
THE HOTEL: SHORT,- AND LONG STAY

Located in the T-2 tower the hotel accommodates the guests of the campus from overseas. Based on the duration, family size and position in the company the guests stay in the short stay rooms (lower part) or in the long stay rooms (upper part).



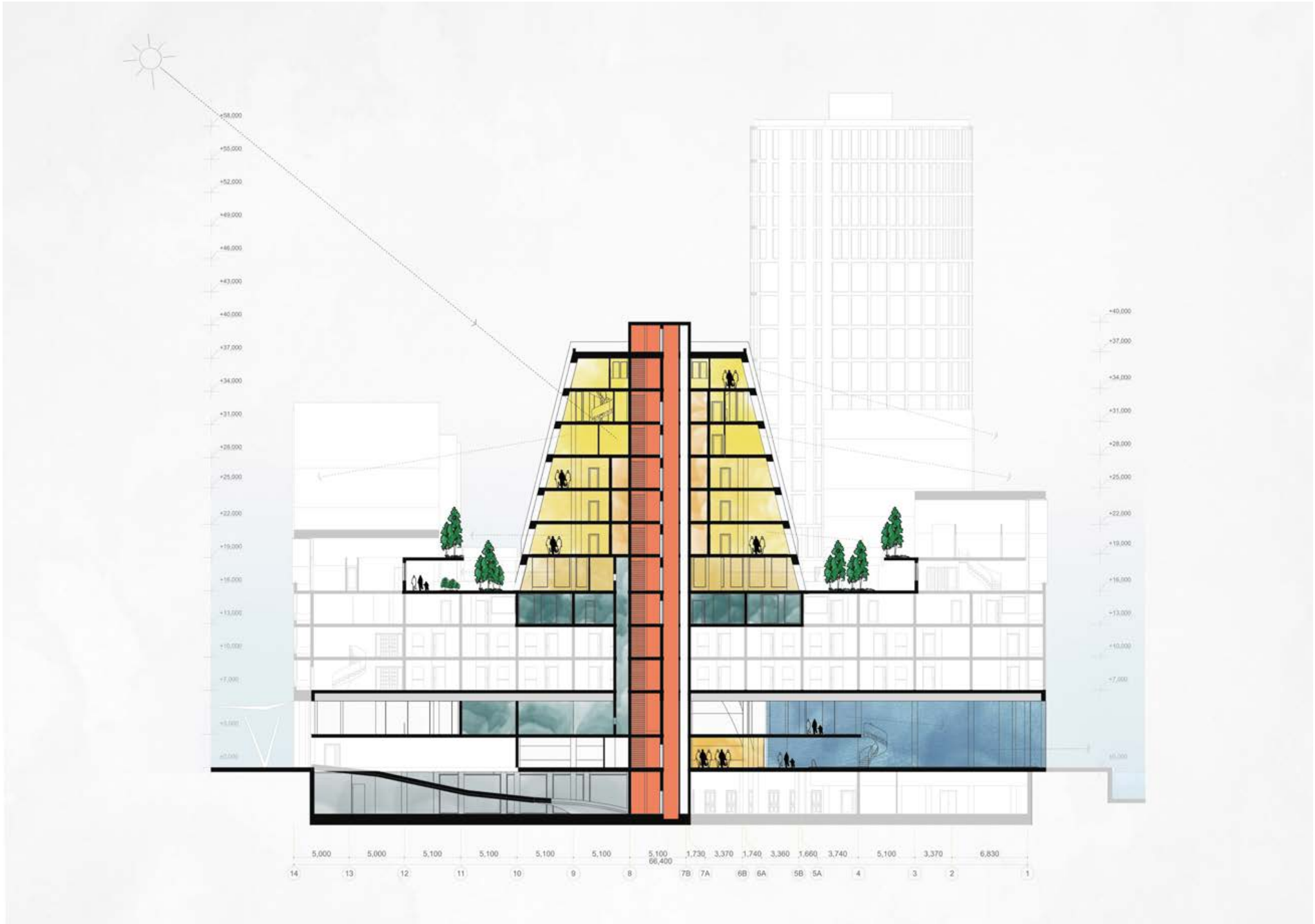
THE HOTEL: CIRCULATION

Accessed from the North wing and reached via elevators. The corridors on the floors provide a corridor circular around the building core.



COMMUNAL, RECREATIONAL AND ANCILLARY SPACES

The hotel restaurant is located on the lowest floor of the tower, while the pool - accessible for hotel guests also - on the ground floor of the Campus. The restaurant is supplied from the campus kitchen via food elevators.

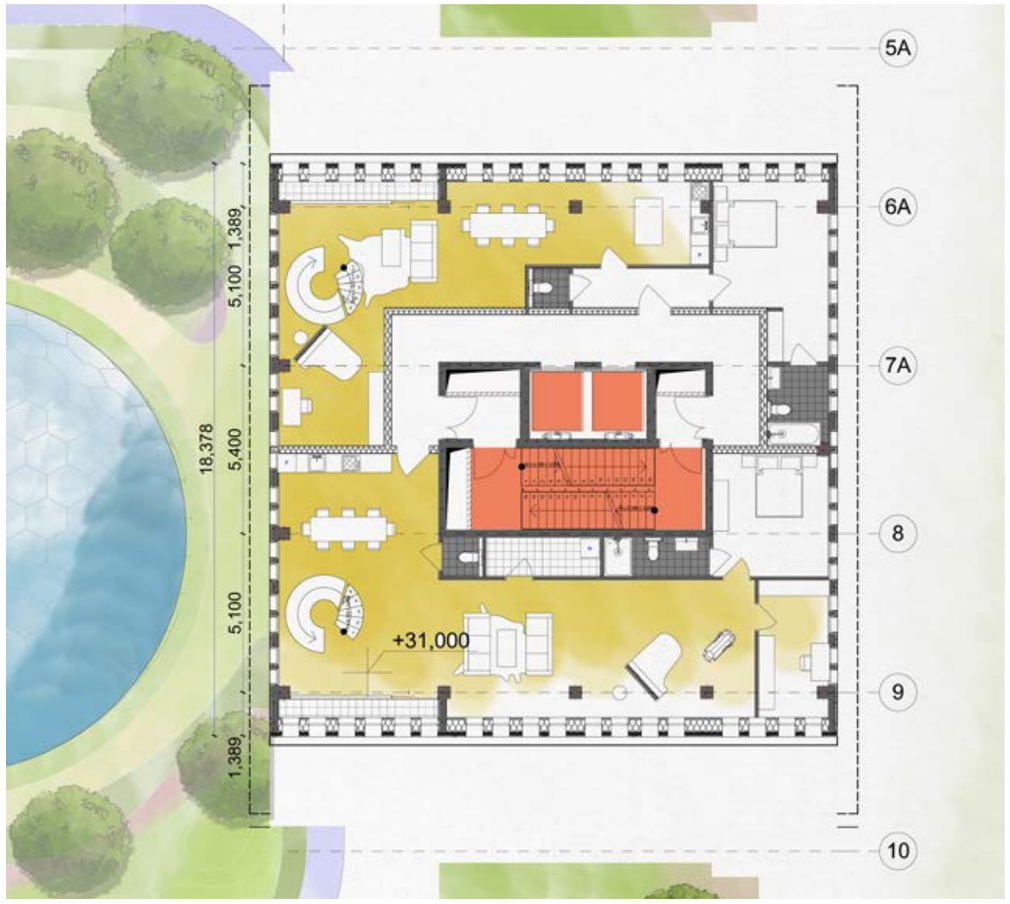


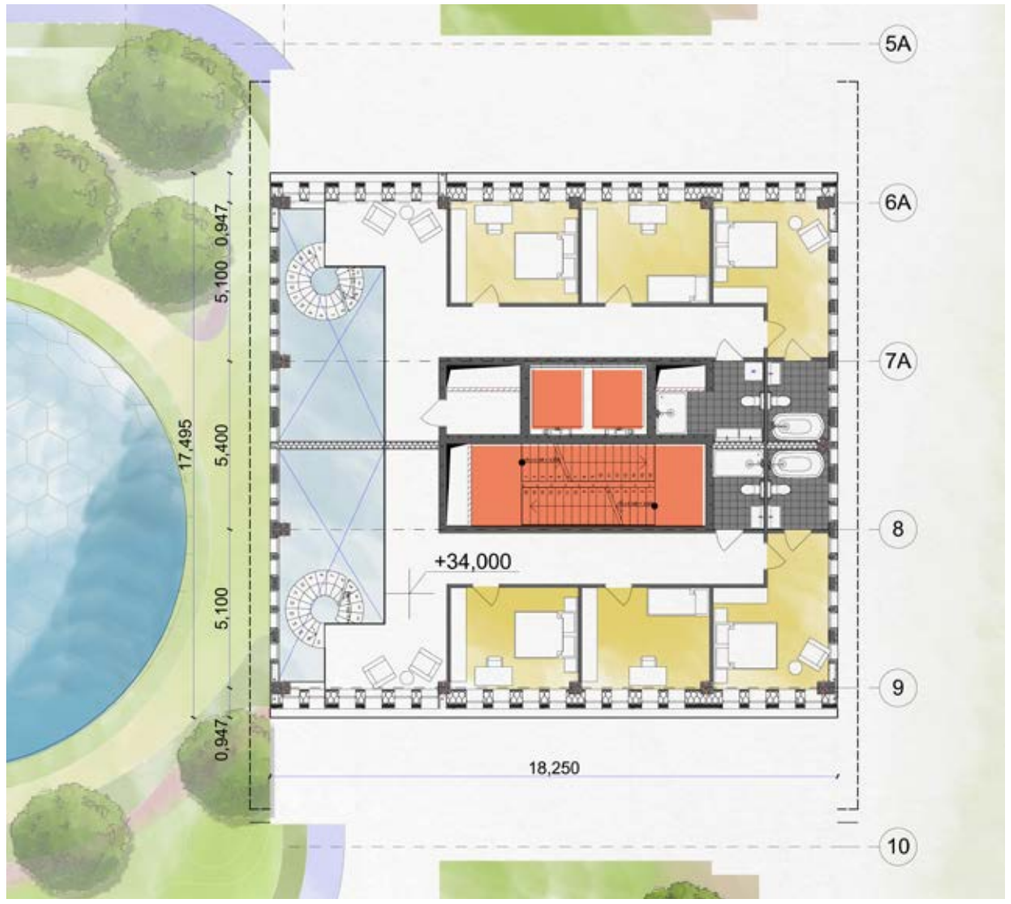
HOTEL ASSEMBLY

The 27 short stay rooms have 15 standard rooms and 12 suites. On the upper floors 3 medium size apartments and 2 large - two floor - apartments are located.

SHORT STAY HOTEL

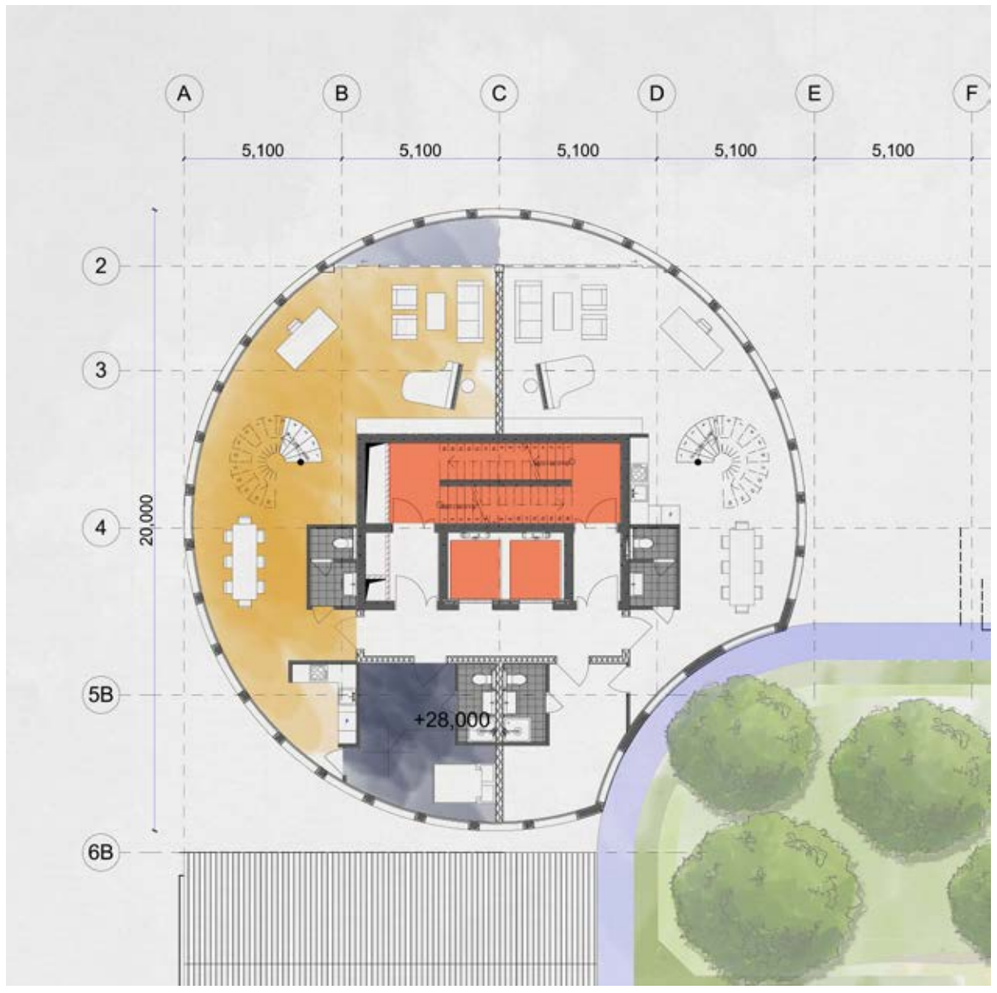
5 standard rooms and 4 suite rooms on each floor create the short stay hotel on three floors. The standard rooms are 20 sqm, while the suite rooms range from 22 to 33 sqm.

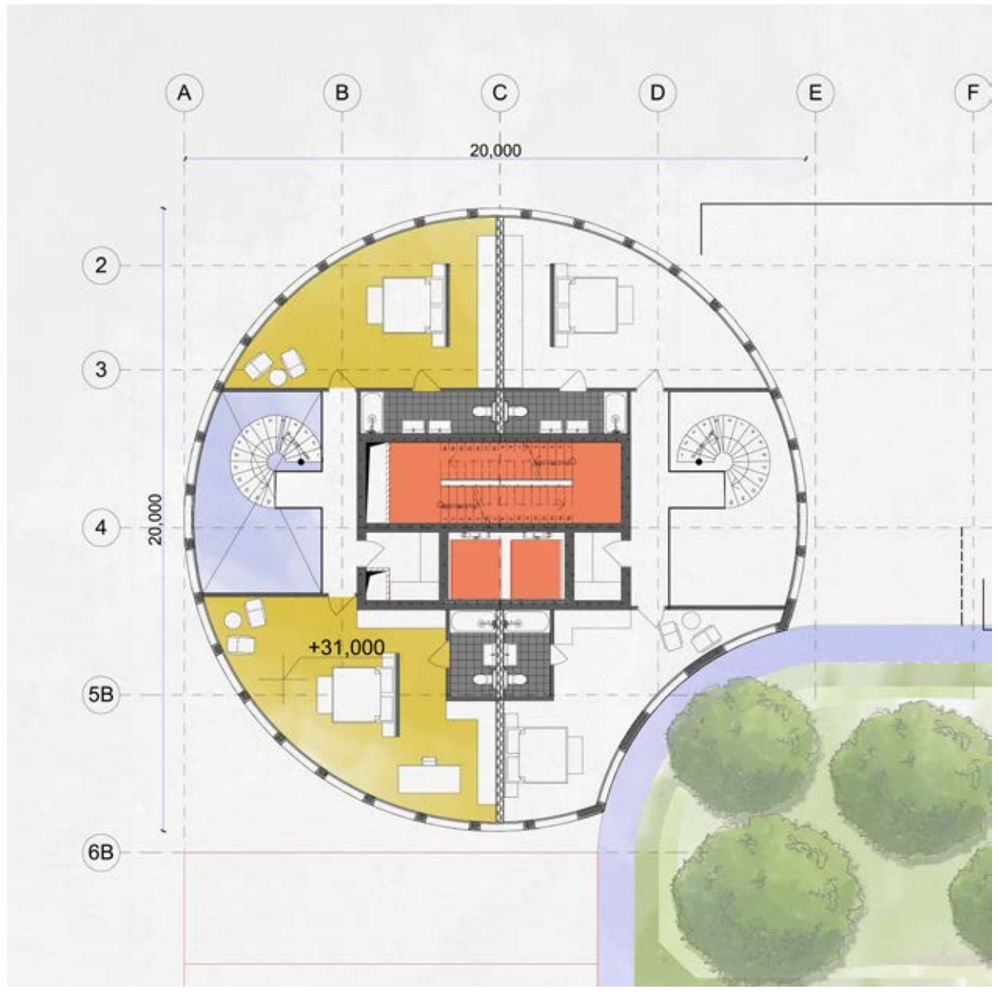




LONG STAY HOTEL

The two-floor large apartments of the long stay hotel provide large living areas, kitchen, a guest bedroom with bathroom and several bedrooms on the upper floor. They are meant for hosting public events occasionally as well.





INVESTOR APARTMENTS

Meant for the executive staff, the ever changing Domotica Laboratory apartments host butler rooms, large dining halls and living rooms and spacious bedrooms on the upper floor. The apartments can be unified among each other.

5. WHAT THE PROJECT GIVES TO THE CITY

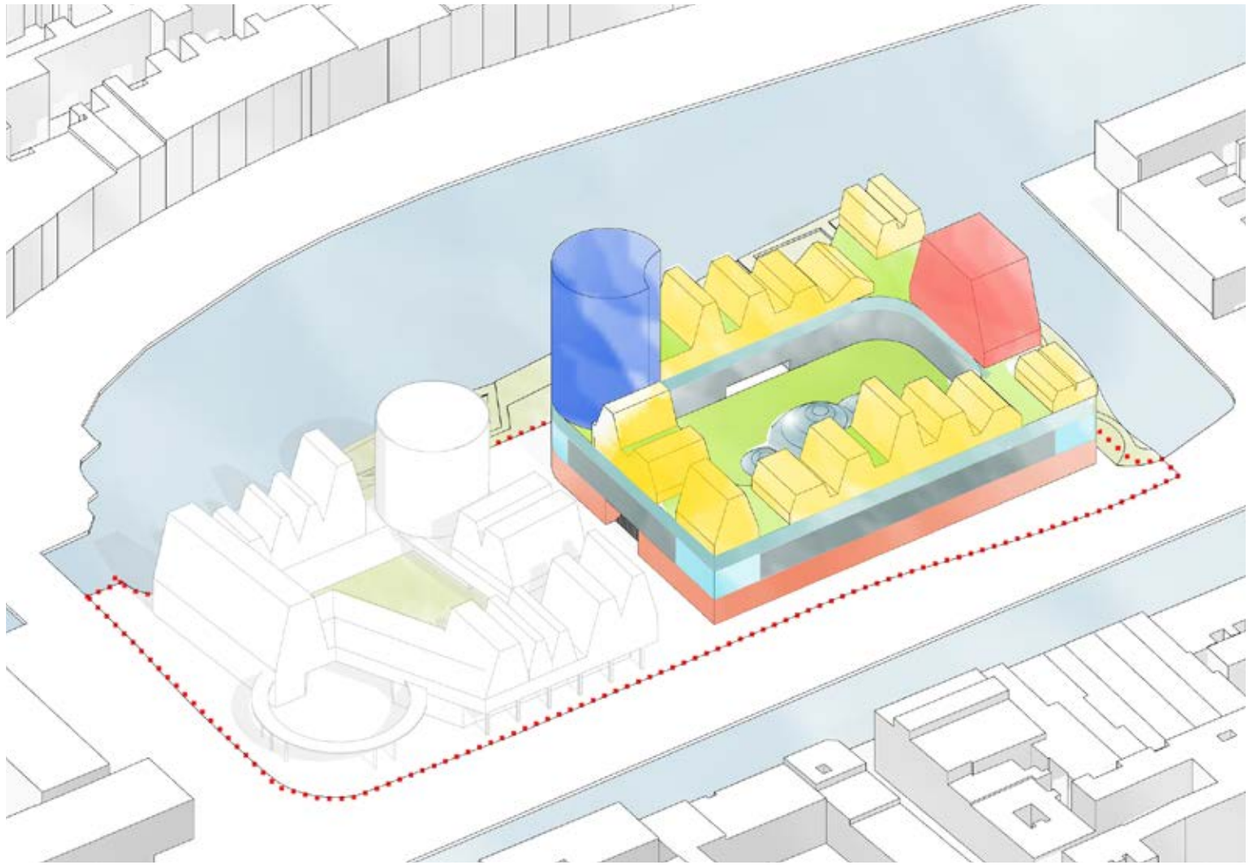
MASTER PLAN

The extensive waterfront reuse and extension provides 4000 extra sqm for the public. The courtyard and the shopping alley invite citizens for a relaxing afternoon while visiting the Campus.

THE NEW FORM OF PUBLIC SPACE

The elevated courtyard, the harbour for rowboats and the public outdoor swimming pool create a green retreat in the city for Campus workers and citizens.

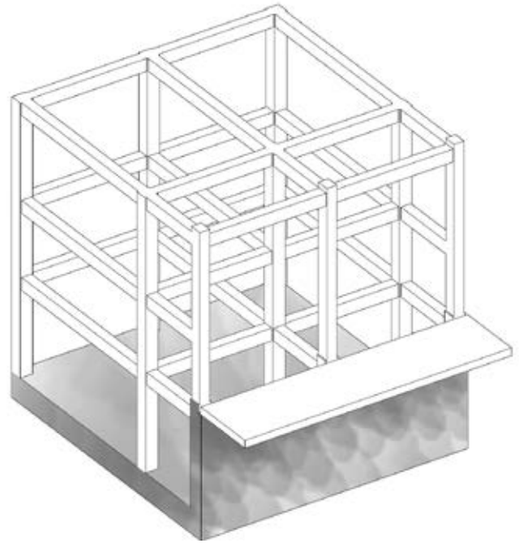
6. BUILDING PROGRAM



- *12.800 M² OF DWELLING SPACE FOR 350 PEOPLE*
- *5600 M2 OF OFFICES FOR 630 PEOPLE*
- *5200 M² OUTDOOR AND RECREATIONAL SPACE*
- *16000 M³ CATENARY DOMES*
- *197 APARTMENTS for 360 PEOPLE*
- *117 PARKING SPOTS*
- *240 BICYCLE PARKINGS*

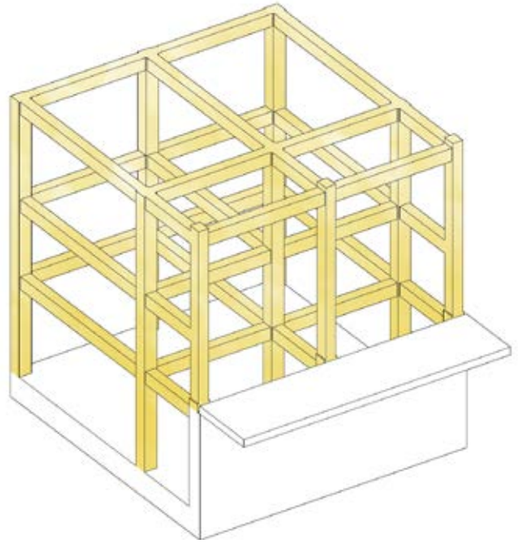
THE FINAL PROGRAM OF THE BUILDING

7. CONSTRUCTION TECHNOLOGY



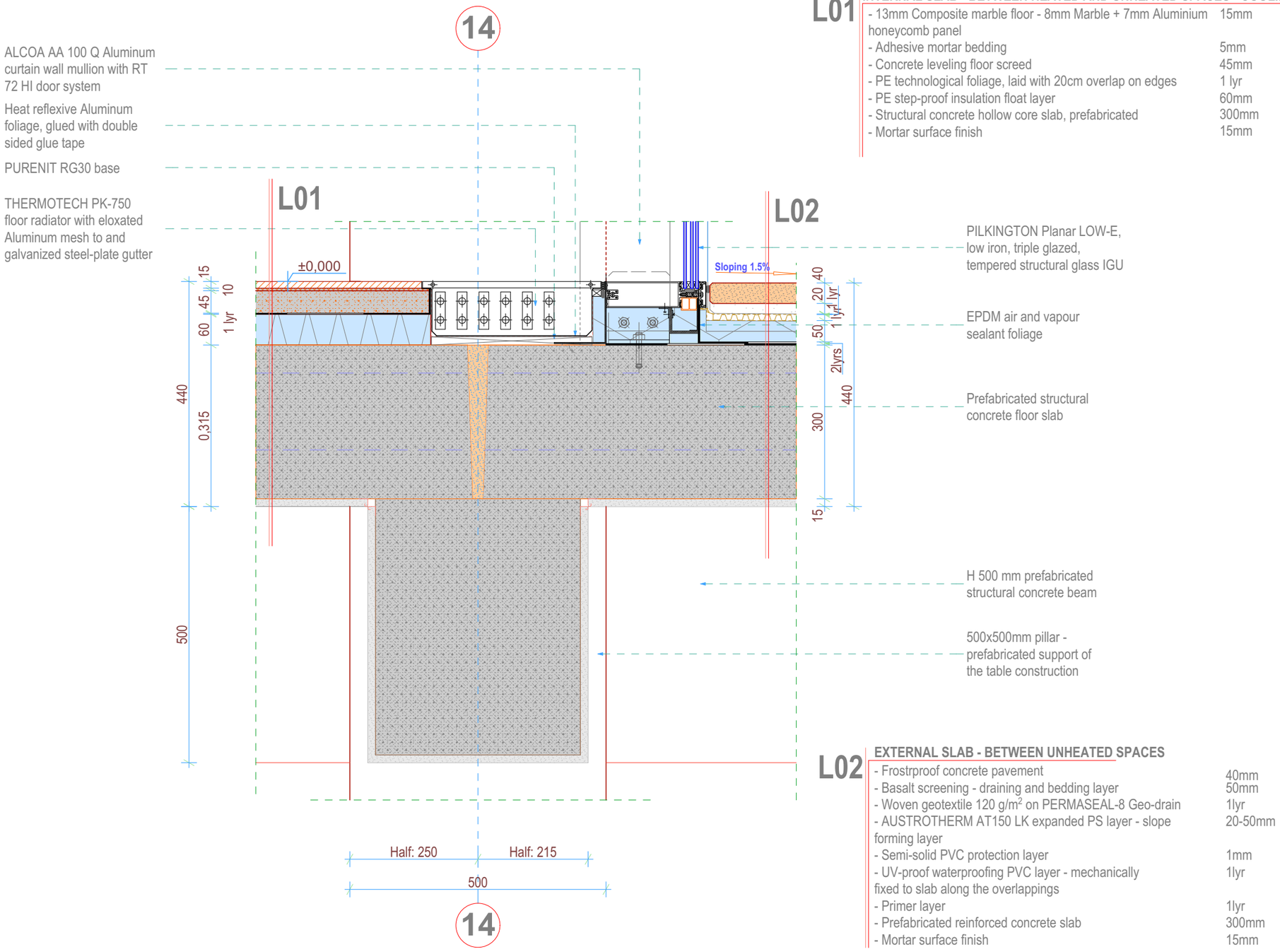
BUILDING ASSEMBLY

The site cast foundation slab is erected on the prefab girders of the foundation piles.



BUILDING ASSEMBLY

The prefabricated elements of the frame structure are transported to the site and placed. The garage floor to floor height is 4.2 m, the ground floor is 3 m and the first floor is 4 m high.



L01 INTERNAL SLAB - BETWEEN HEATED AND UNHEATED SPACES - COOLING FROM BELOW

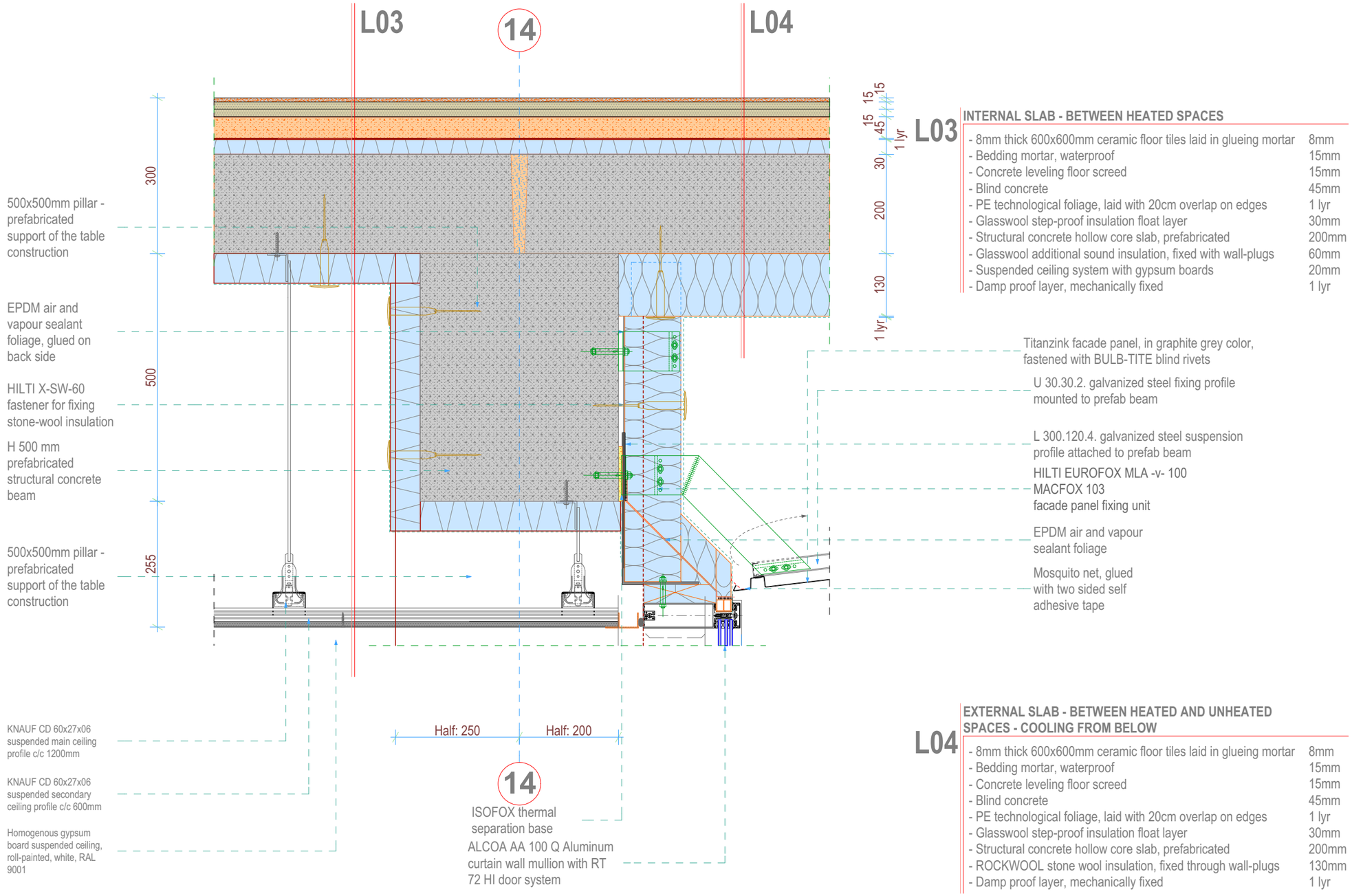
- 13mm Composite marble floor - 8mm Marble + 7mm Aluminium honeycomb panel	15mm
- Adhesive mortar bedding	5mm
- Concrete leveling floor screed	45mm
- PE technological foliage, laid with 20cm overlap on edges	1 lyr
- PE step-proof insulation float layer	60mm
- Structural concrete hollow core slab, prefabricated	300mm
- Mortar surface finish	15mm

L02 EXTERNAL SLAB - BETWEEN UNHEATED SPACES

- Frostrproof concrete pavement	40mm
- Basalt screening - draining and bedding layer	50mm
- Woven geotextile 120 g/m^2 on PERMASEAL-8 Geo-drain	1lyr
- AUSTROTHERM AT150 LK expanded PS layer - slope forming layer	20-50mm
- Semi-solid PVC protection layer	1mm
- UV-proof waterproofing PVC layer - mechanically fixed to slab along the overlappings	1lyr
- Primer layer	1lyr
- Prefabricated reinforced concrete slab	300mm
- Mortar surface finish	15mm

DETAIL 1

Once the prefabricated elements are placed by tower cranes the glazing and the float layers can be placed.



L03 INTERNAL SLAB - BETWEEN HEATED SPACES

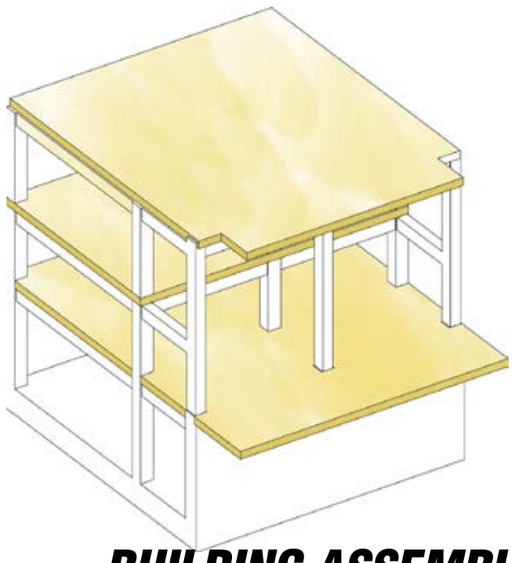
- 8mm thick 600x600mm ceramic floor tiles laid in glueing mortar	8mm
- Bedding mortar, waterproof	15mm
- Concrete leveling floor screed	15mm
- Blind concrete	45mm
- PE technological foliage, laid with 20cm overlap on edges	1 lyr
- Glasswool step-proof insulation float layer	30mm
- Structural concrete hollow core slab, prefabricated	200mm
- Glasswool additional sound insulation, fixed with wall-plugs	60mm
- Suspended ceiling system with gypsum boards	20mm
- Damp proof layer, mechanically fixed	1 lyr

L04 EXTERNAL SLAB - BETWEEN HEATED AND UNHEATED SPACES - COOLING FROM BELOW

- 8mm thick 600x600mm ceramic floor tiles laid in glueing mortar	8mm
- Bedding mortar, waterproof	15mm
- Concrete leveling floor screed	15mm
- Blind concrete	45mm
- PE technological foliage, laid with 20cm overlap on edges	1 lyr
- Glasswool step-proof insulation float layer	30mm
- Structural concrete hollow core slab, prefabricated	200mm
- ROCKWOOL stone wool insulation, fixed through wall-plugs	130mm
- Damp proof layer, mechanically fixed	1 lyr

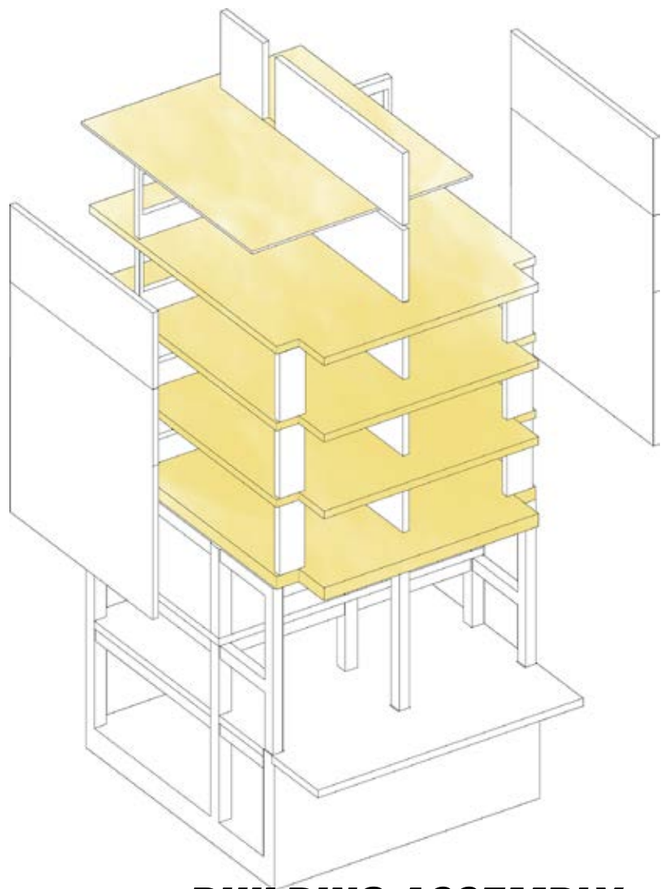
DETAIL 2

Extra sound and heat insulation are mounted with wall plugs on the ceiling of the Campus to prevent noise spread to the apartments and thermal breaks thus condensation in the structure.



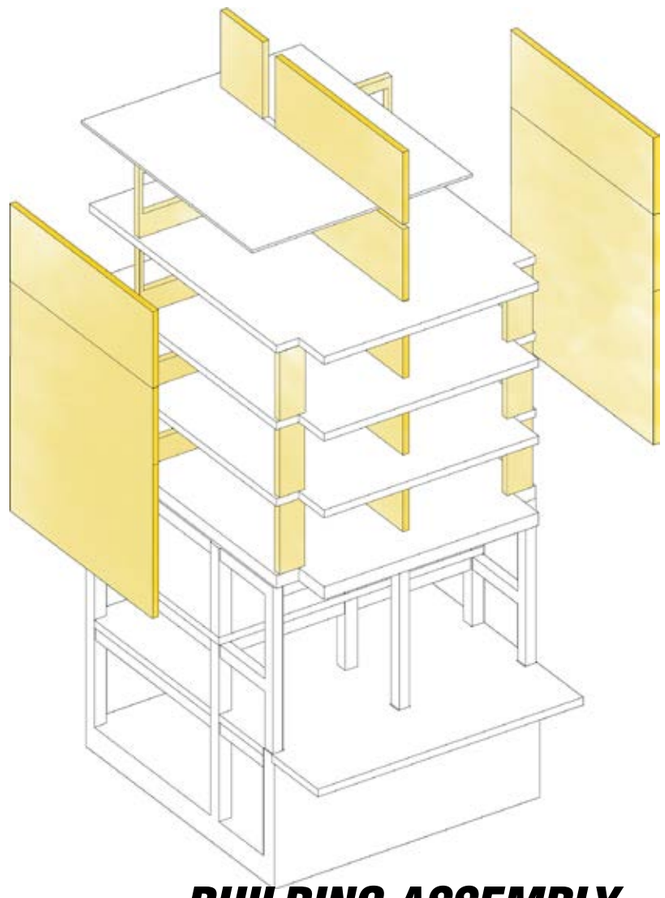
BUILDING ASSEMBLY

Tower cranes place the prefabricated floor slabs of the Campus.



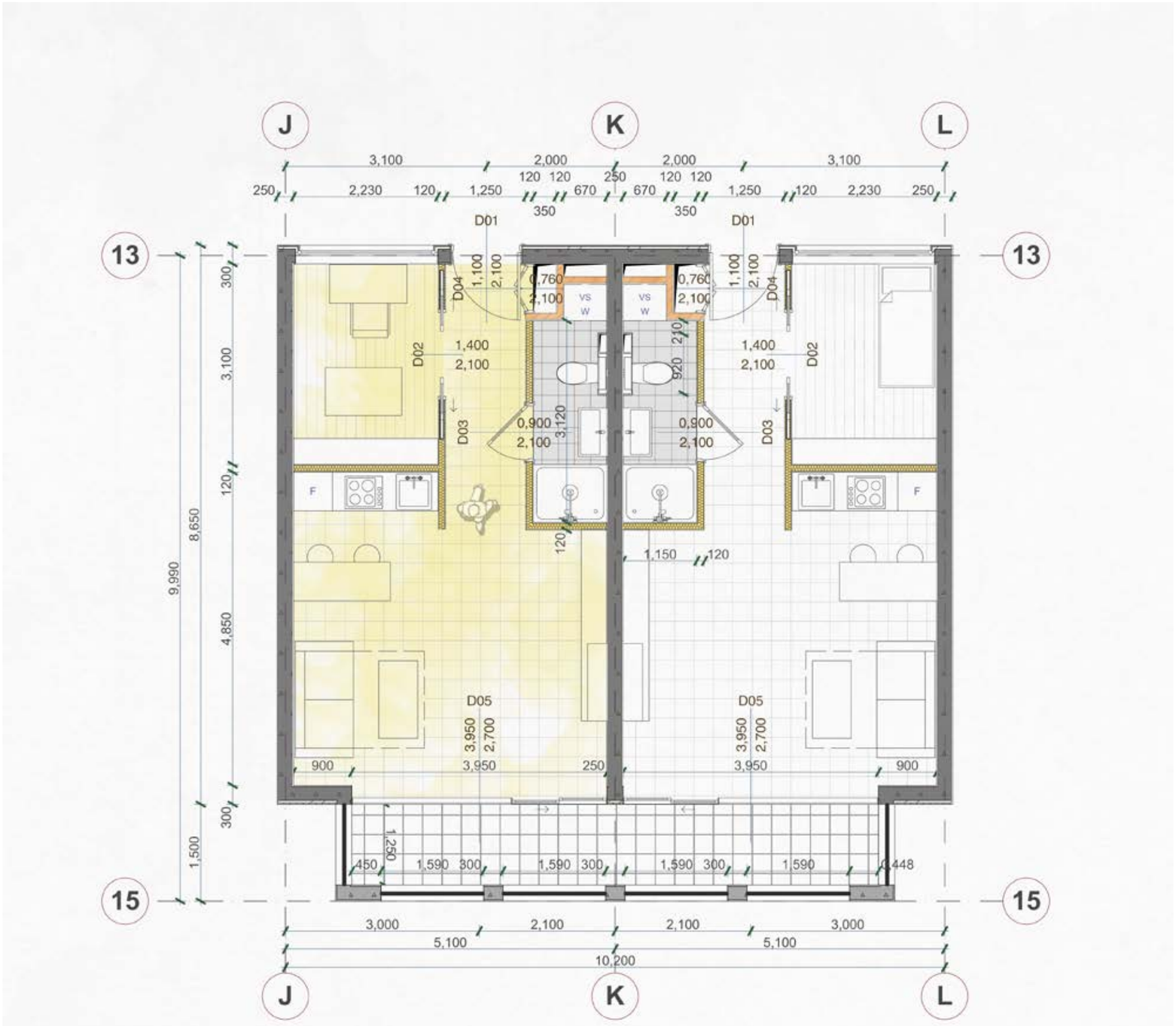
BUILDING ASSEMBLY

The floors and walls of the Affordable housing are modular, prefabricated, self-bearing lattice plate floors that are erected with cranes.



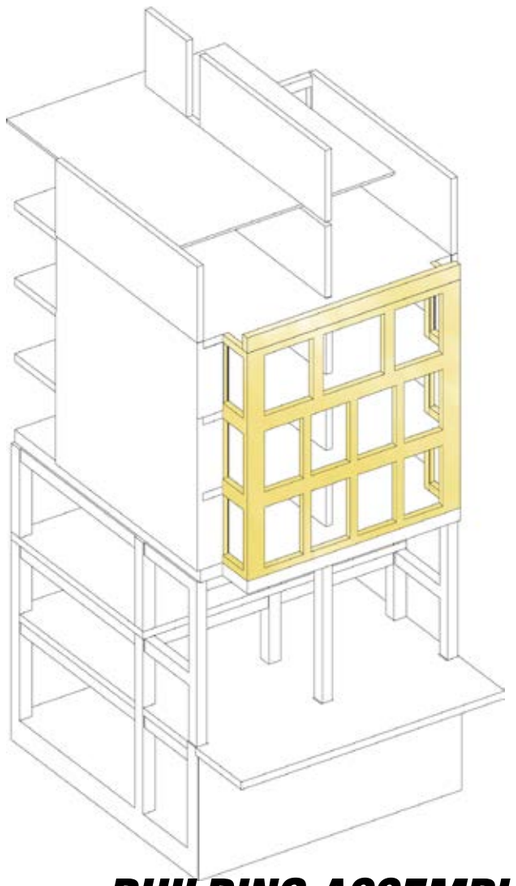
BUILDING ASSEMBLY

The 250mm walls provide support for the upper floor and the roof structure and also act as shear walls for lateral support.



TYPICAL HOUSING UNIT ASSEMBLY

The shear walls are prefabricated, the shaft walls are brick works while the remaing walls - to achieve maximum flexibility - are plasterboard walls made on site.



BUILDING ASSEMBLY

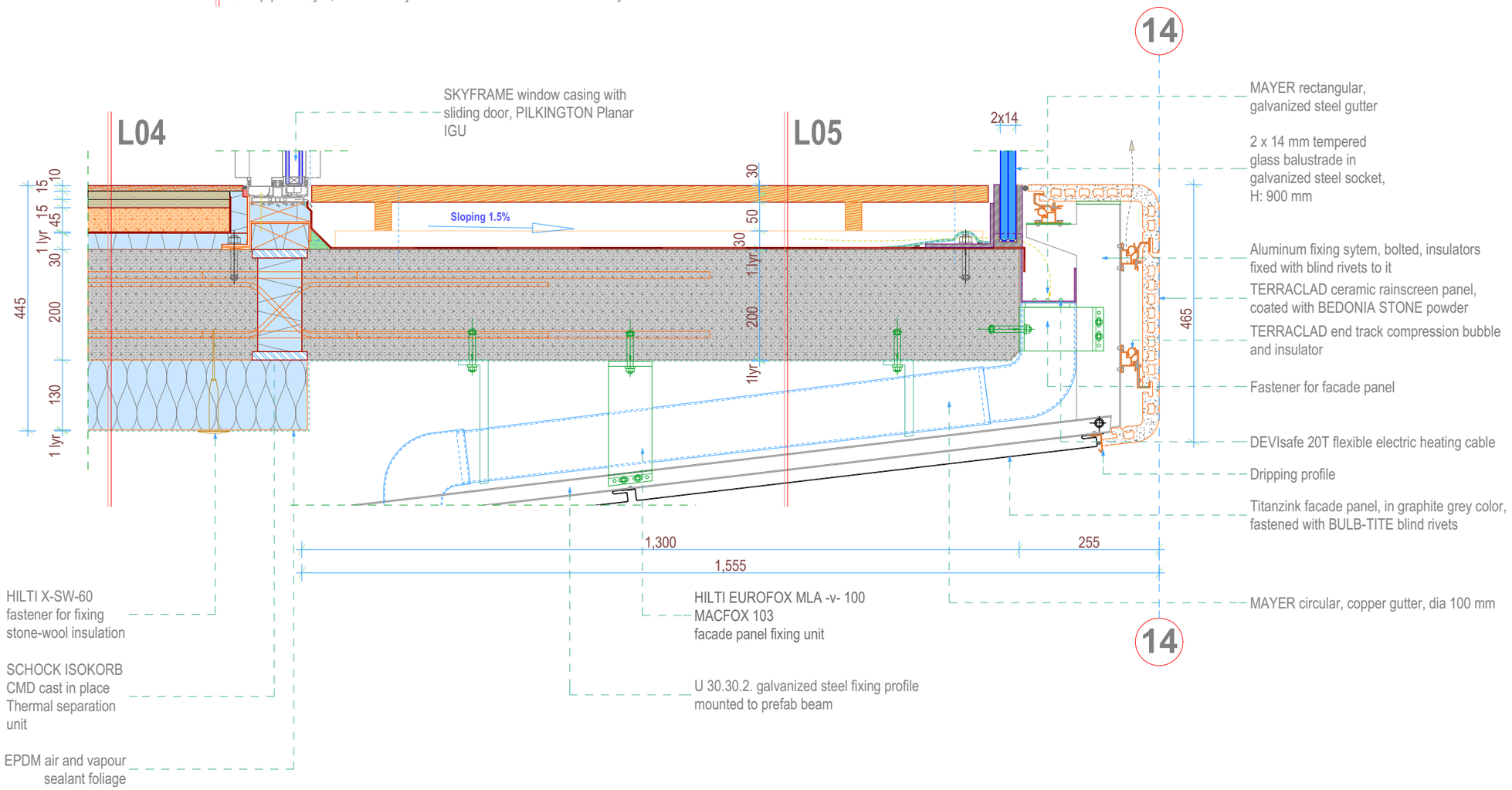
The facade units are placed on site by cranes. Their division corresponds with the apartment division so balconies can be split among dwellers.

L04 EXTERNAL SLAB - BETWEEN HEATED AND UNHEATED SPACES - COOLING FROM BELOW

- 8mm thick 600x600mm ceramic floor tiles laid in glueing mortar	8mm
- Bedding mortar, waterproof	15mm
- Concrete leveling floor screed	15mm
- Blind concrete	45mm
- PE technological foliage, laid with 20cm overlap on edges	1 lyr
- Glasswool step-proof insulation float layer	30mm
- Structural concrete hollow core slab, prefabricated	200mm
- ROCKWOOL stone wool insulation, fixed through wall-plugs	130mm
- Damp proof layer, mechanically fixed	1 lyr

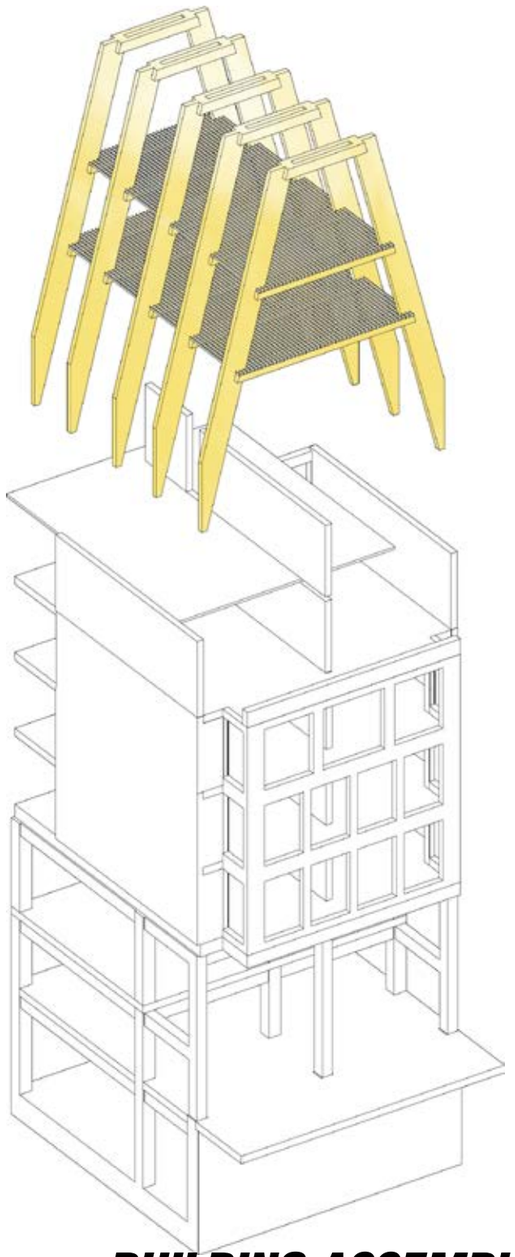
L05 EXTERNAL SLAB - BETWEEN UNHEATED SPACES

- 200 x 30 mm oak floorboards, lacueur finished, polished matte	30mm
- 50 x 30 mm fir batten for oakboard fixing	50mm
- 30 x 30 mm hollow Aluminum profile counterbatten	30mm
- Waterproofing layer, mechanically fixed	1 lyr
- PE technological foliage, laid with 20cm overlap on edges	1 lyr
- Structural concrete slab	200mm
- ROCKWOOL stone wool insulation, fixed through wall-plugs	130mm
- waterproofing layer, mechanically fixed	1 lyr



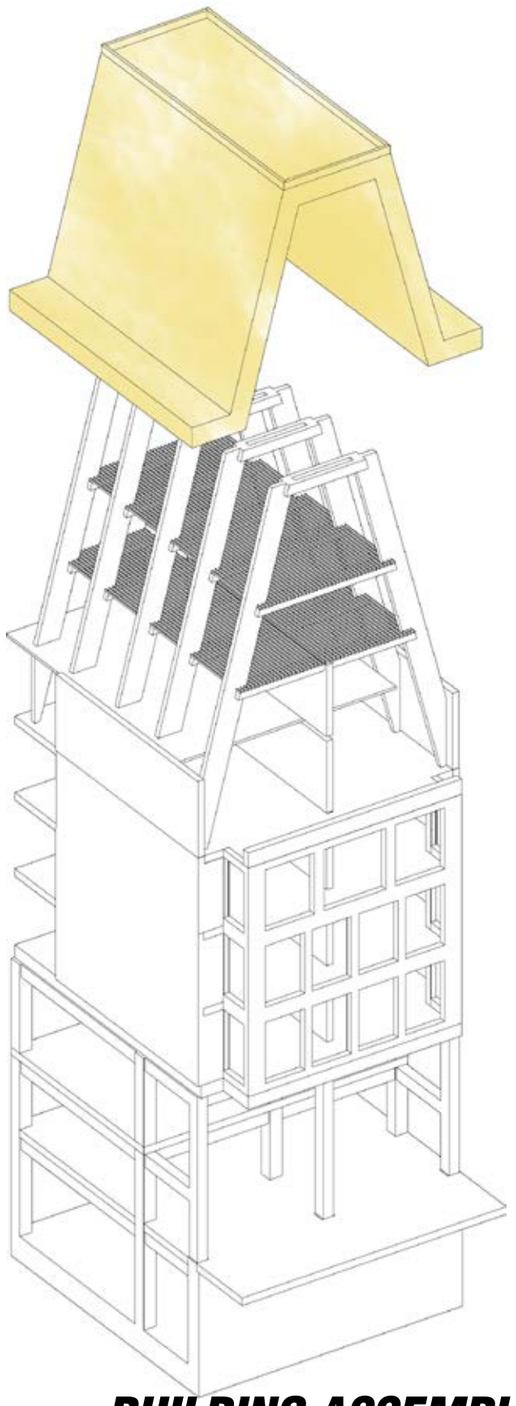
DETAIL 3

Once the prefab panels are erected the balconies are site cast through ISOKORB thermal breaks. The glazing, flooring and wall cladding are then consecutively erected to ease future repair works.



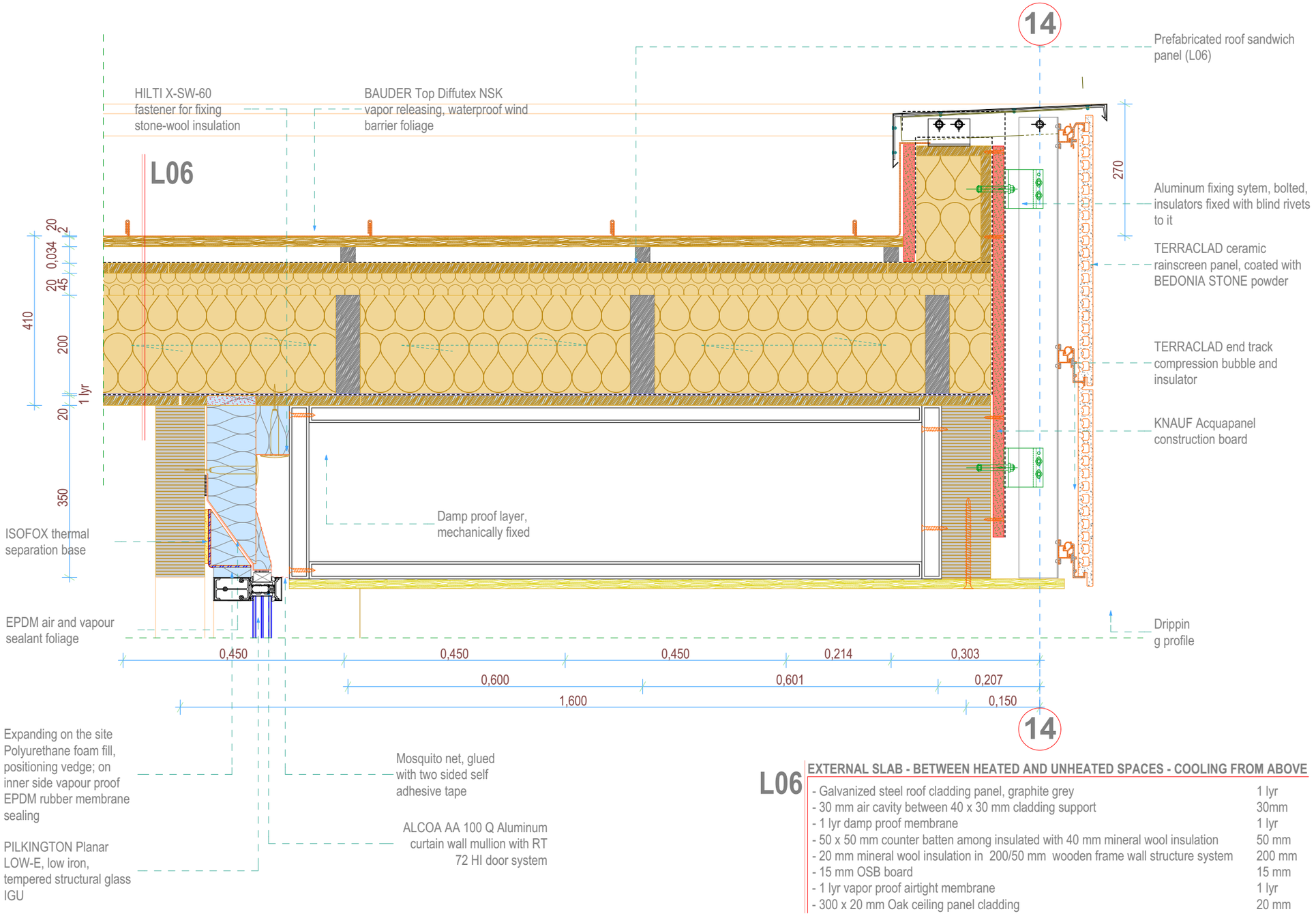
BUILDING ASSEMBLY

The lightweight, prefabricated, slanted timber pillars are supported by the shear walls of lower floors. They hold the timber battened floor slabs.



BUILDING ASSEMBLY

The 650mm thick prefabricated roof panels hide the structure from the outside and are placed with tower cranes.

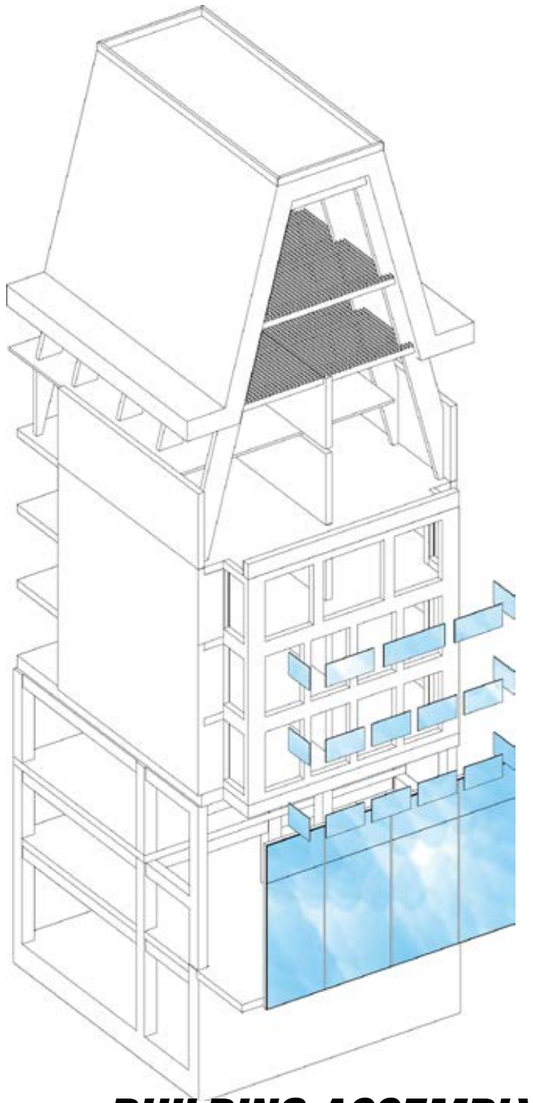


L06 EXTERNAL SLAB - BETWEEN HEATED AND UNHEATED SPACES - COOLING FROM ABOVE

- Galvanized steel roof cladding panel, graphite grey	1 lyr
- 30 mm air cavity between 40 x 30 mm cladding support	30mm
- 1 lyr damp proof membrane	1 lyr
- 50 x 50 mm counter batten among insulated with 40 mm mineral wool insulation	50 mm
- 20 mm mineral wool insulation in 200/50 mm wooden frame wall structure system	200 mm
- 15 mm OSB board	15 mm
- 1 lyr vapor proof airtight membrane	1 lyr
- 300 x 20 mm Oak ceiling panel cladding	20 mm

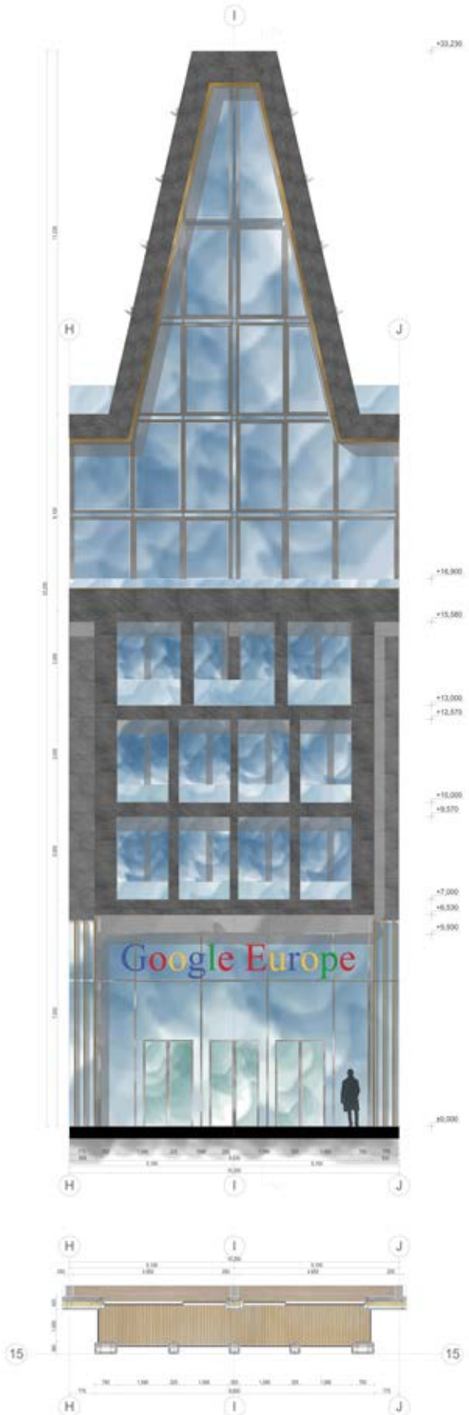
DETAIL 4

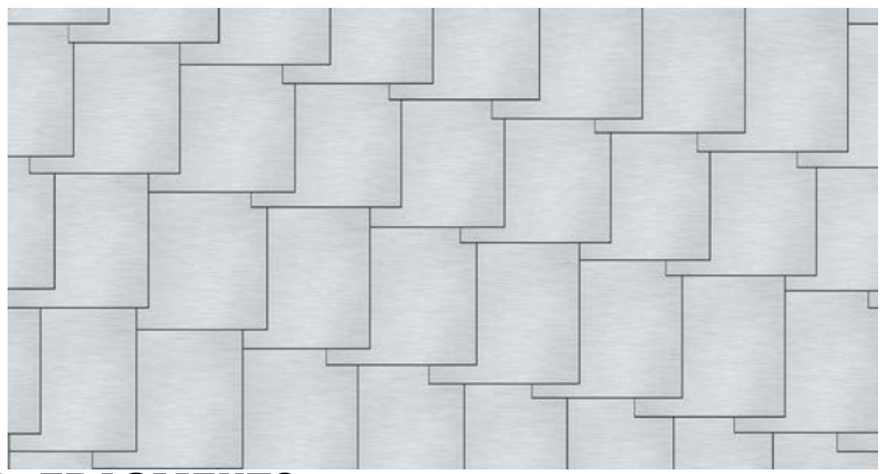
On top of the slanted and horizontal timber pillars come the sandwich panelled roof slabs. Their facade part is clad with Bedonia stone coated ceramic rainscreen panels. The panels create a connection with the lower parts of the building.



BUILDING ASSEMBLY

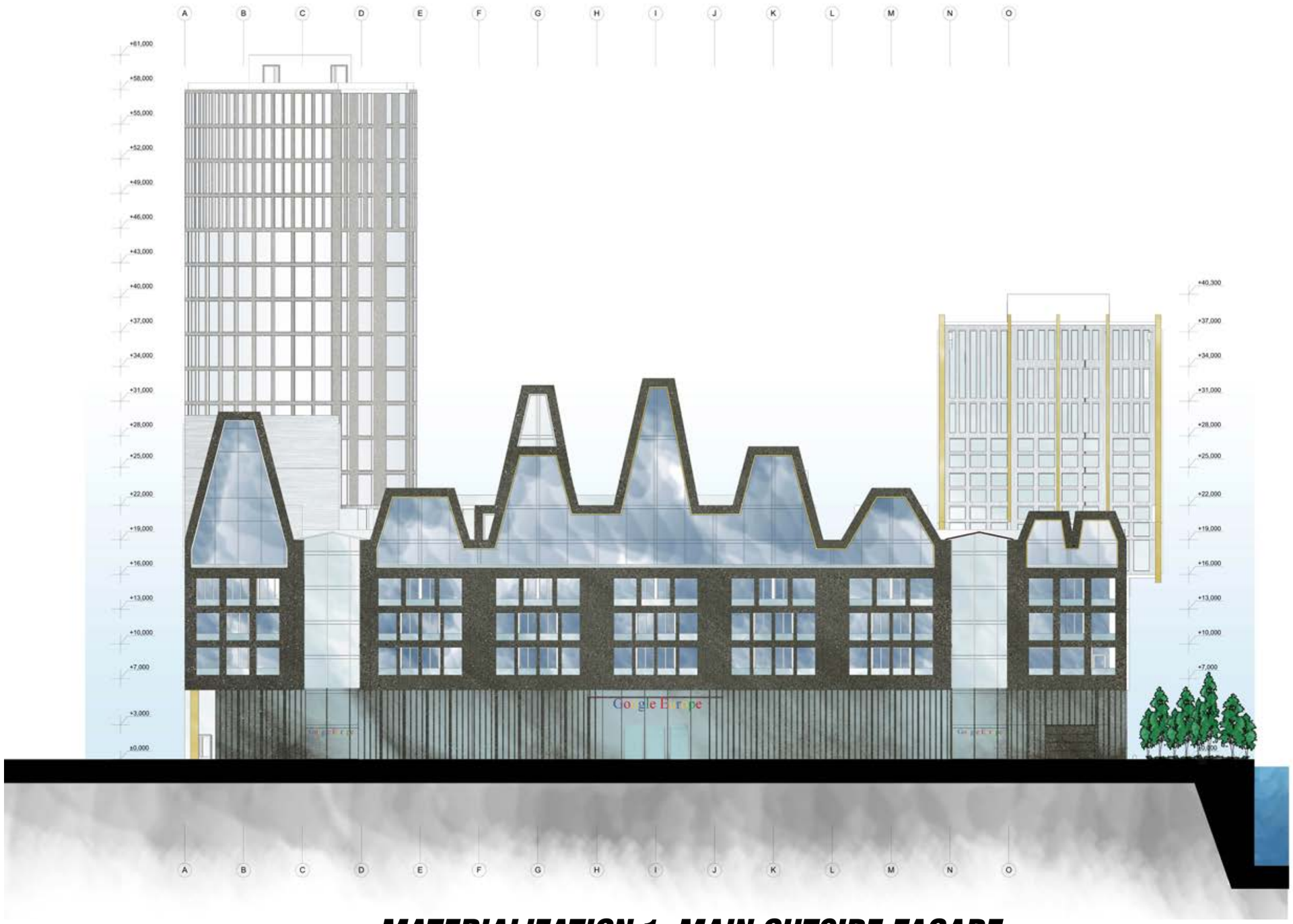
While the construction is going on the insulated glazing units and the glass balustrades are mounted. These triple glazings minimize heat loss in the Campus and the apartments, thus contribute to the sustainability of the compound.





MATERIALIZATION 2: FRAGMENTS

The different functions of the building are emphasized through the facades but a visual connection of the separate elements is maintained by the materialization.

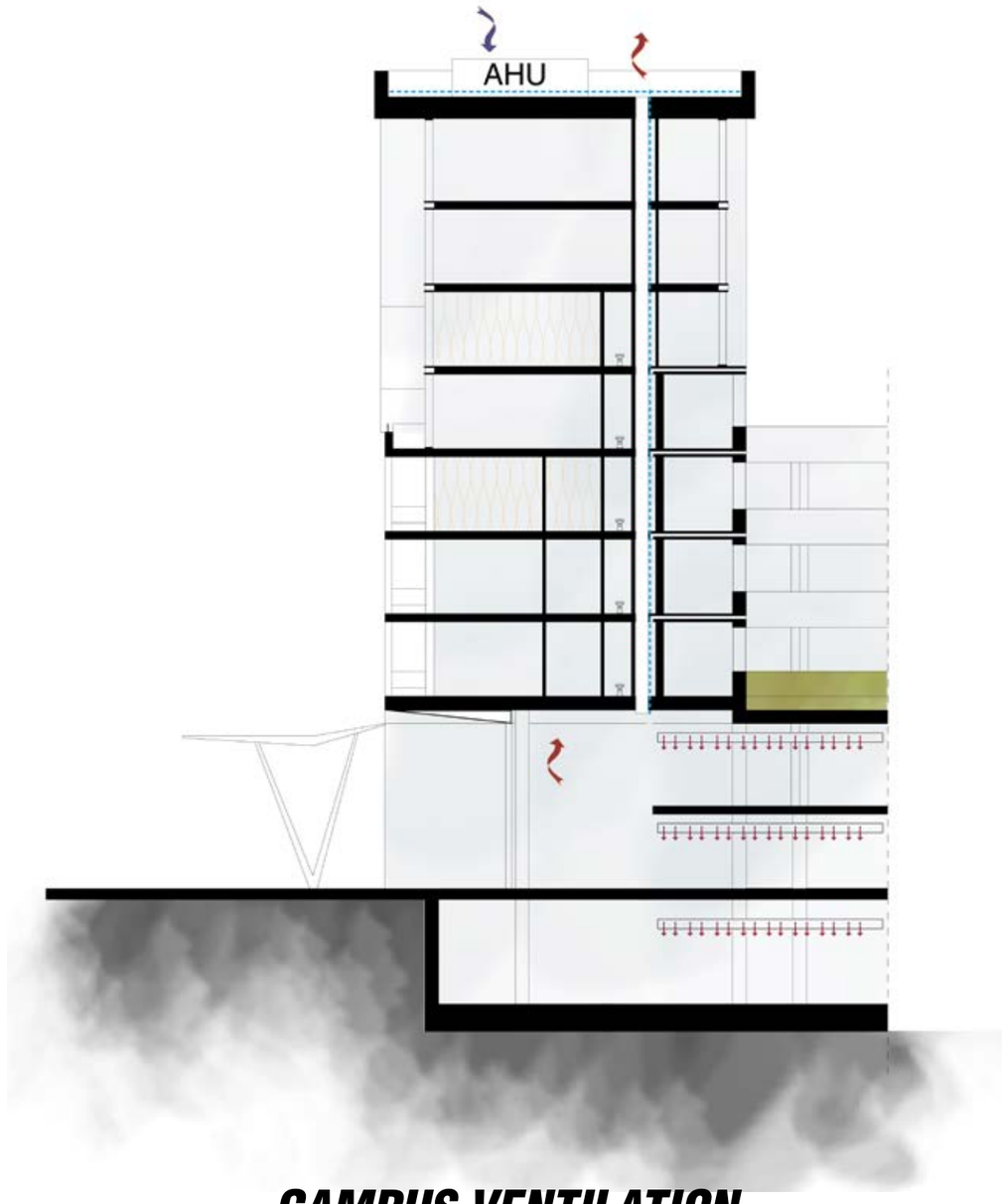


MATERIALIZATION 1: MAIN OUTSIDE FACADE

The ceramic rainscreen panels contribute to the local traditions of using kiln fired clay as a face material. Being coated with a gray stone tint gives the building a corporate identity and elegance.

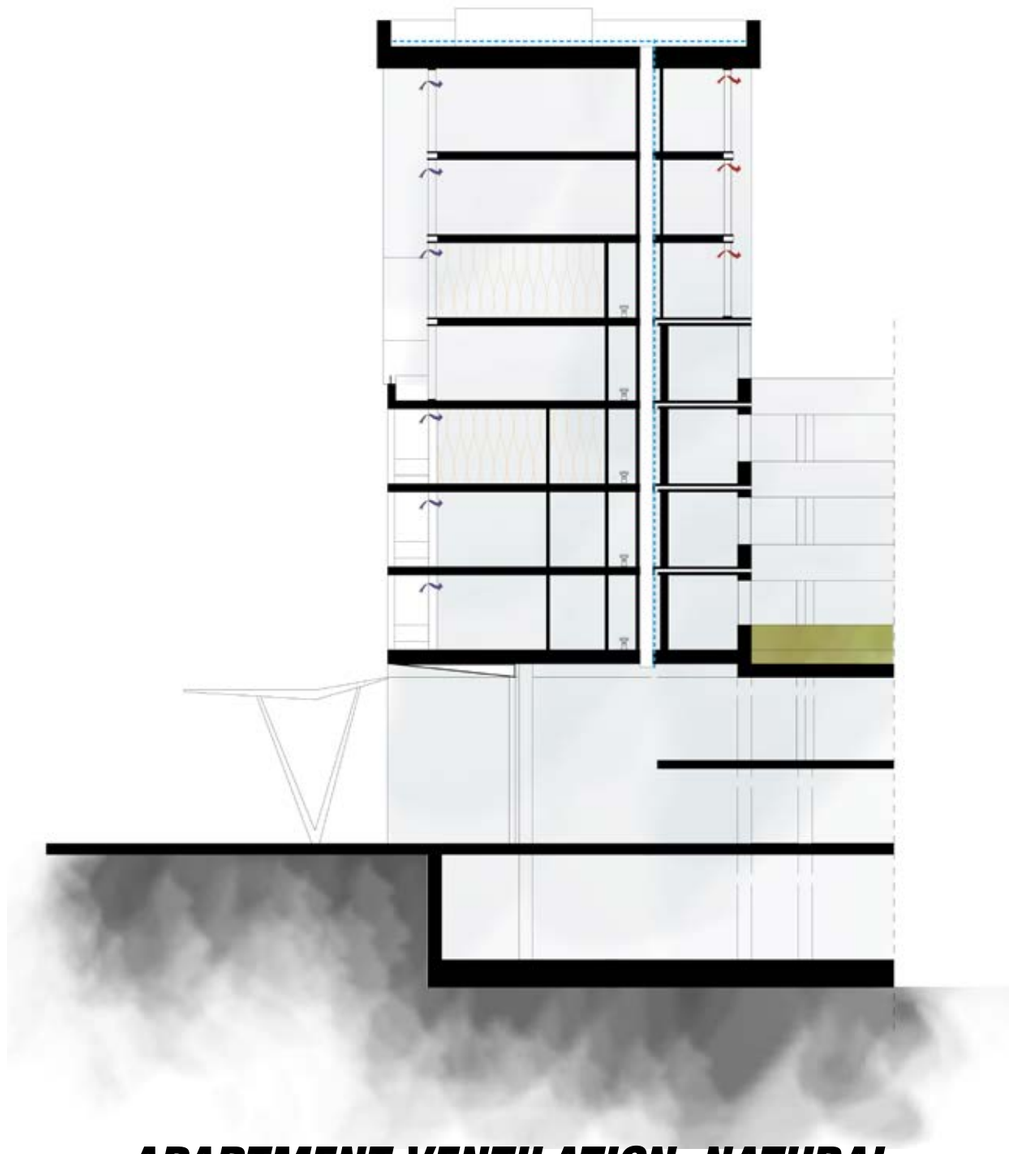
RAINWATER COLLECTION

The 9000 sqm roof collects annually 754000 L of rainwater. For the 197 apartments of the compound with a daily toilet tank use of 71.2 L, this ensures water for almost 2 months each year.



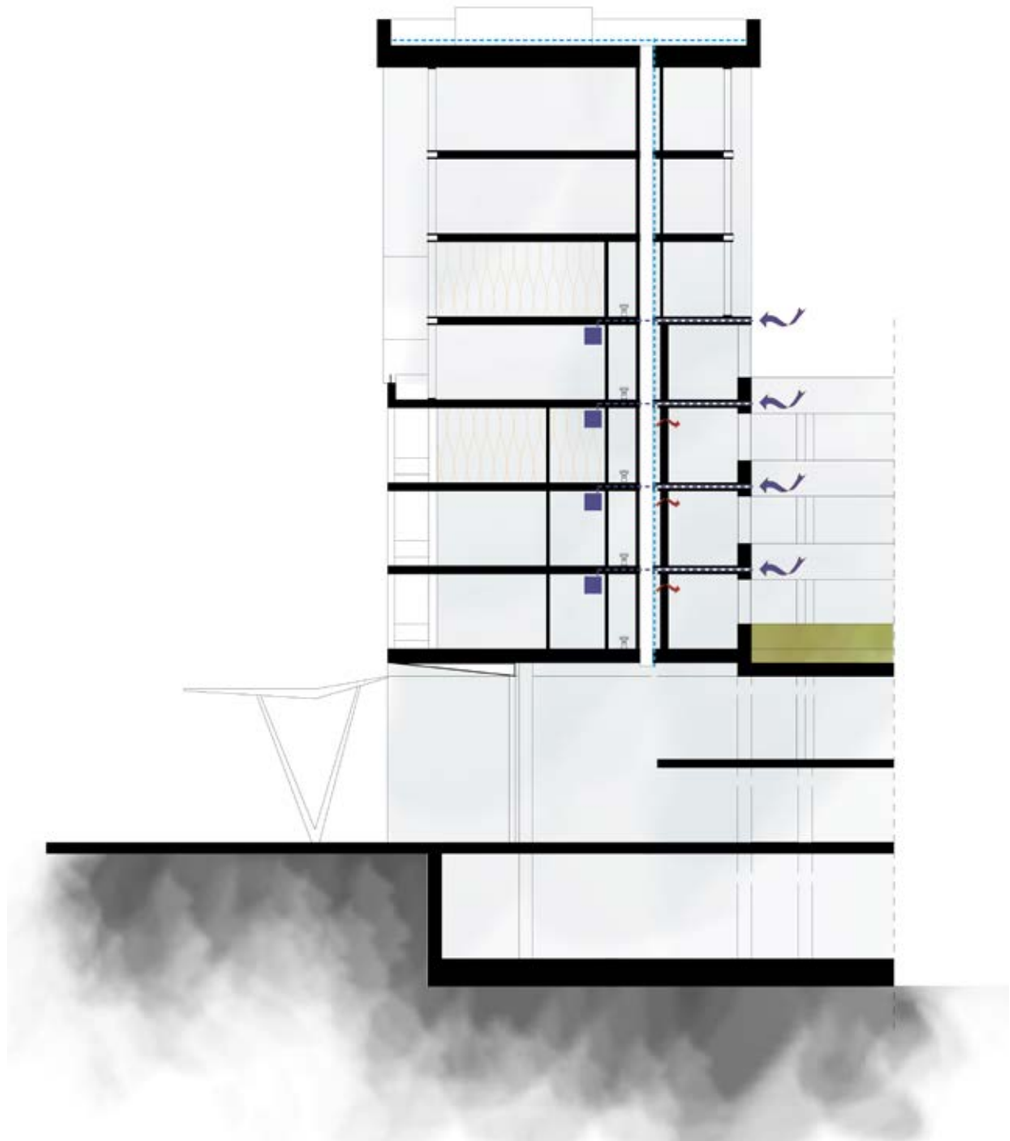
CAMPUS VENTILATION

The Campus requires 136882 m^3 of fresh air per hour. The four air handling units placed on four different roofs providing a maximum of 44000 m^3 of air per hour ensure this amount for the wellbeing of the workers.



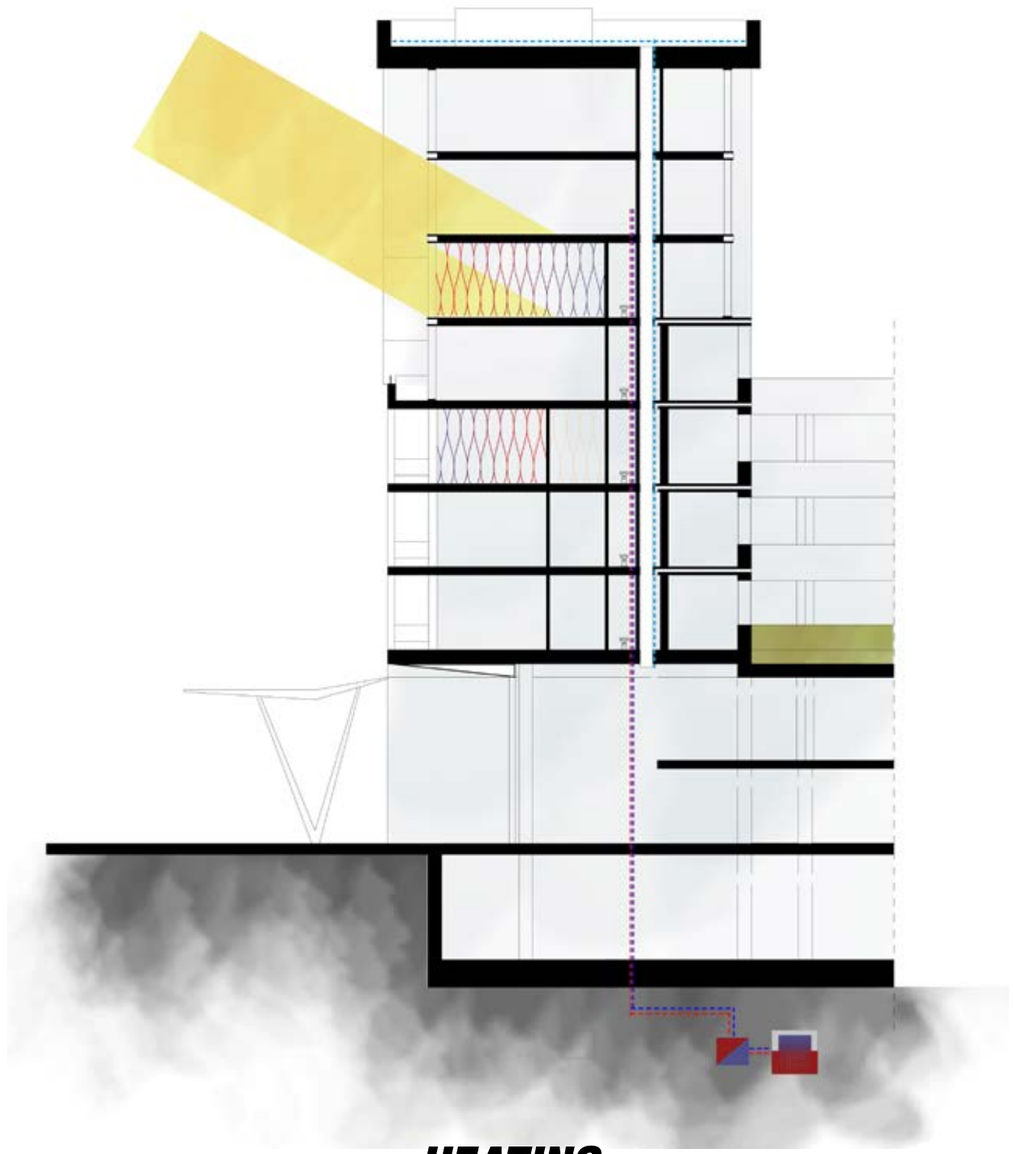
APARTMENT VENTILATION: NATURAL

The openable windows of the apartments provide natural ventilation for the dwelling units.



APARTMENT VENTILATION: MECHANICAL

The domestic ventilation systems equipped with flat plate heat exchanger, are placed in each apartment. They collect air from the courtyard facade.



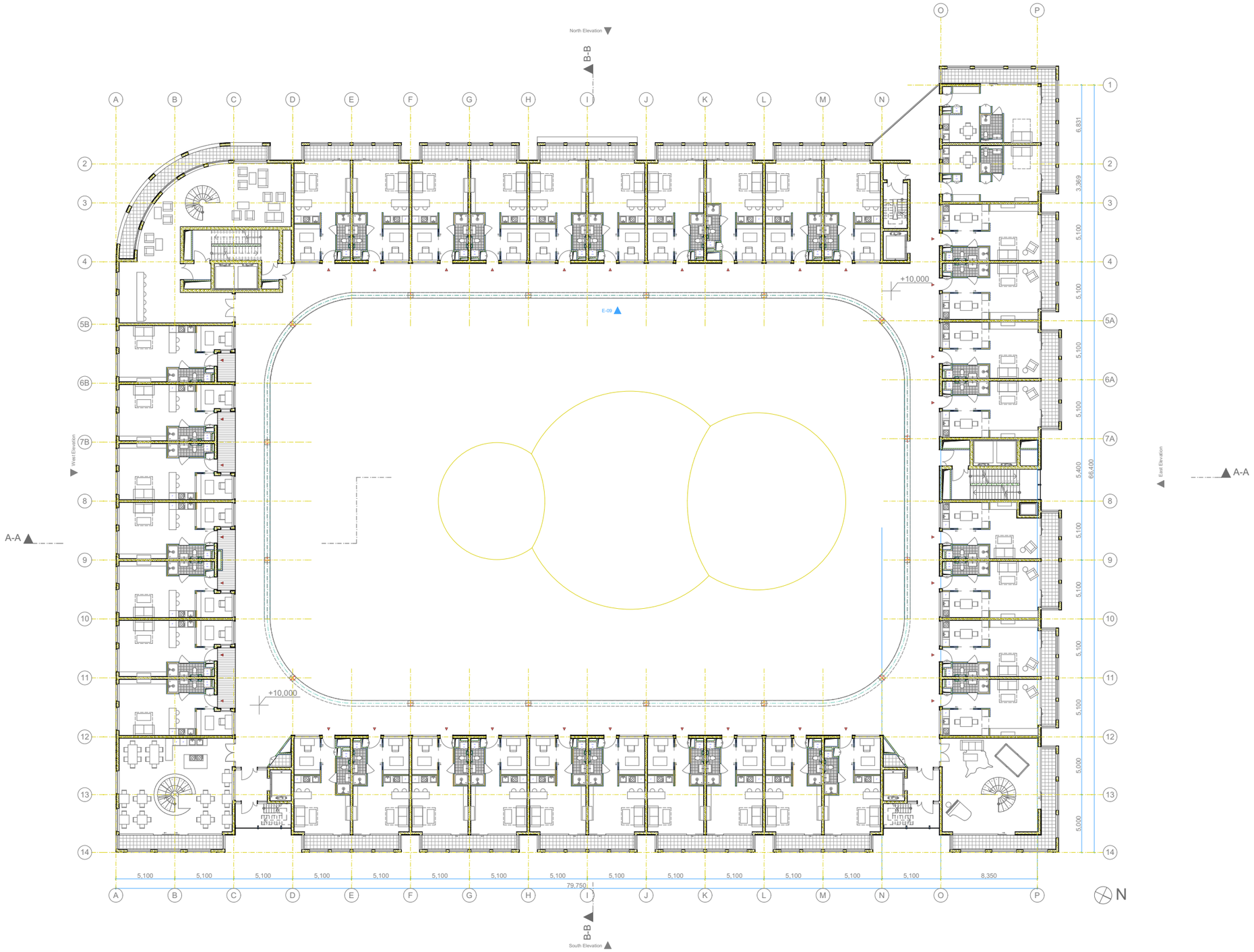
HEATING

The surface heating gives a higher comfort level for the inhabitants as conventional radiators would. The heat pumps in the basement contribute to their work while maintaining the sustainability of the building.

CANALIZATION

The shafts from the dwelling units to the basement host the ductwork of the building. They are accessible for maintenance from each apartment.

8. ADDITIONAL DRAWINGS


North Elevation
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West Elevation
East Elevation
South Elevation
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+10,000
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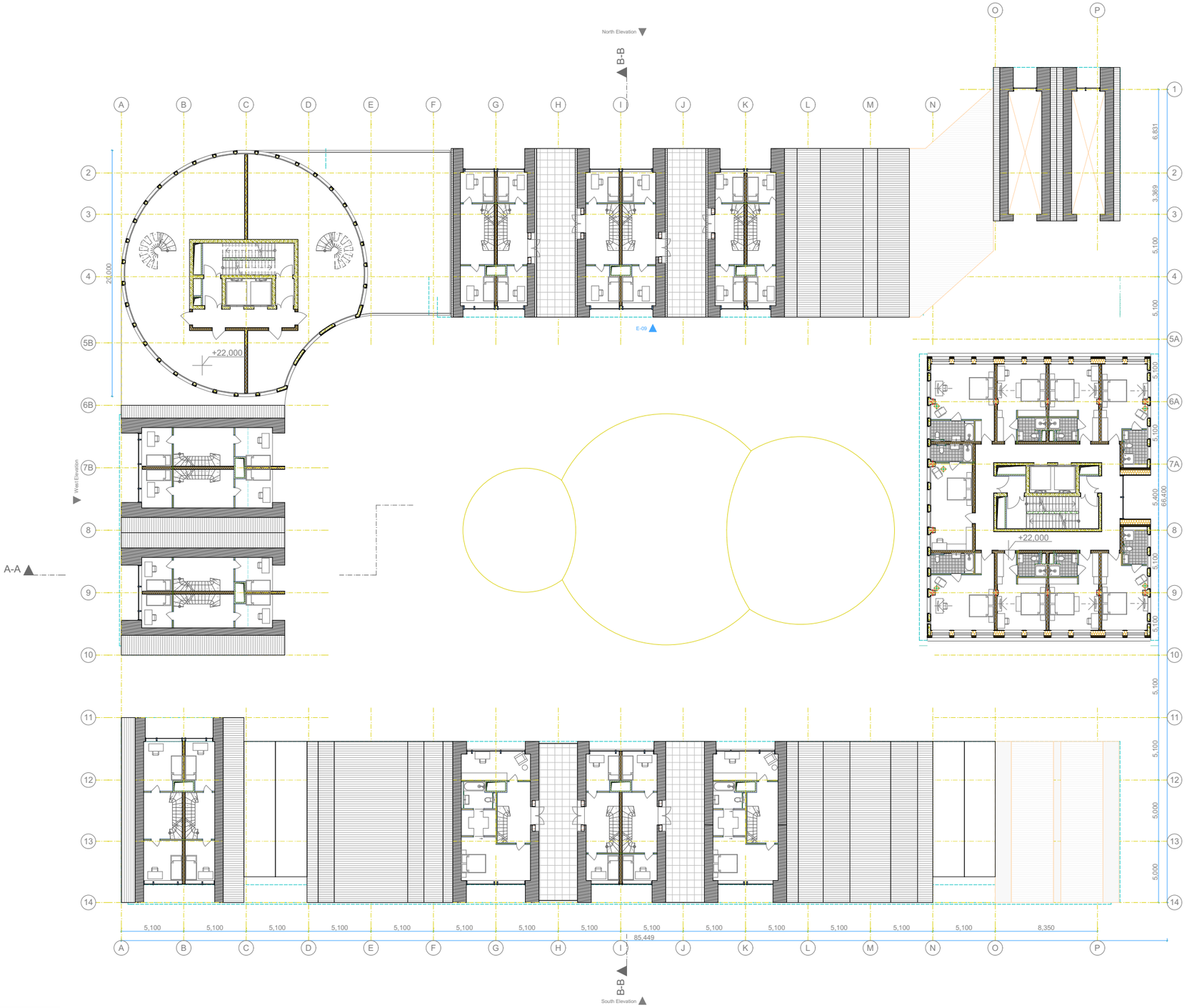

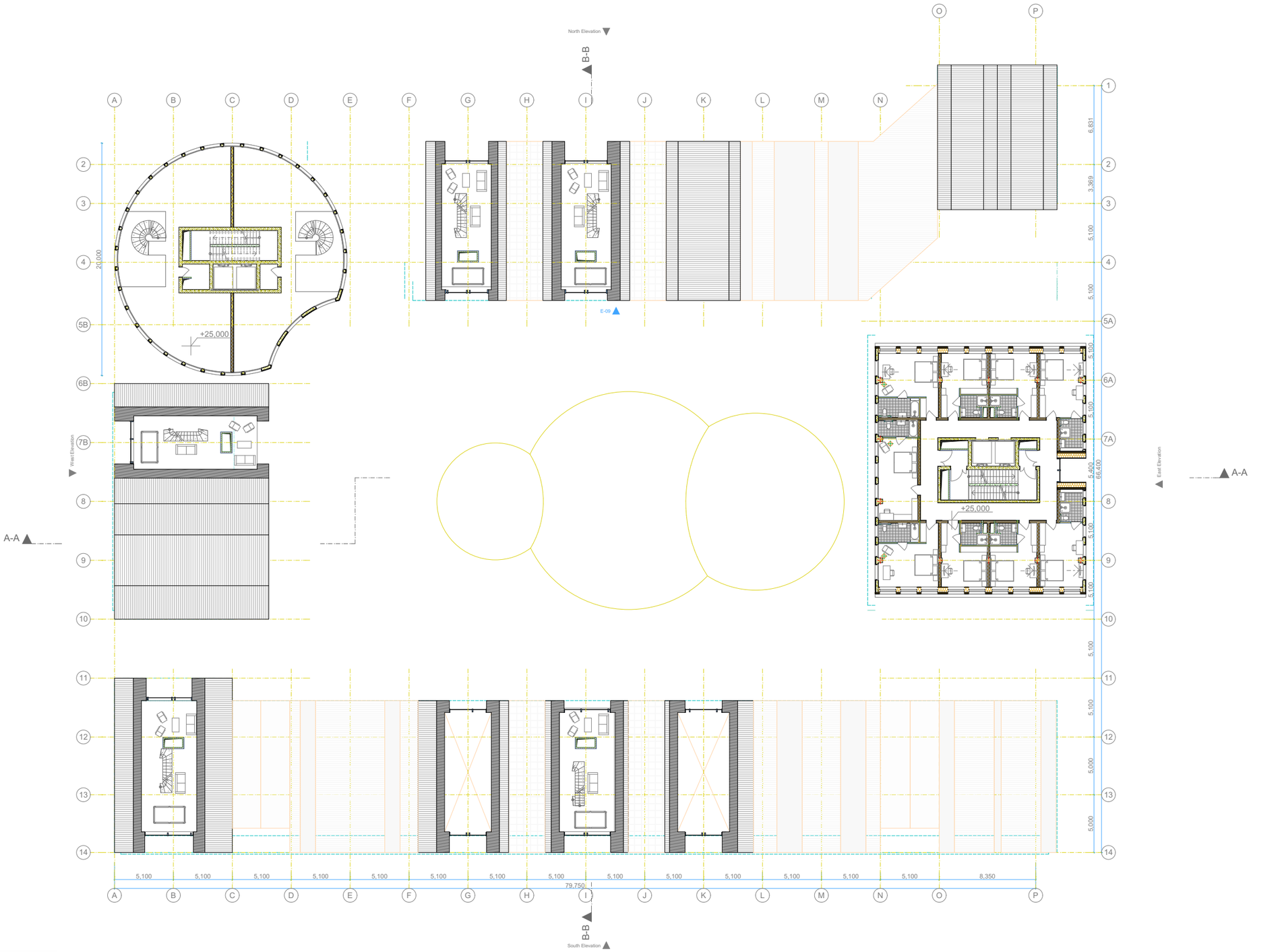

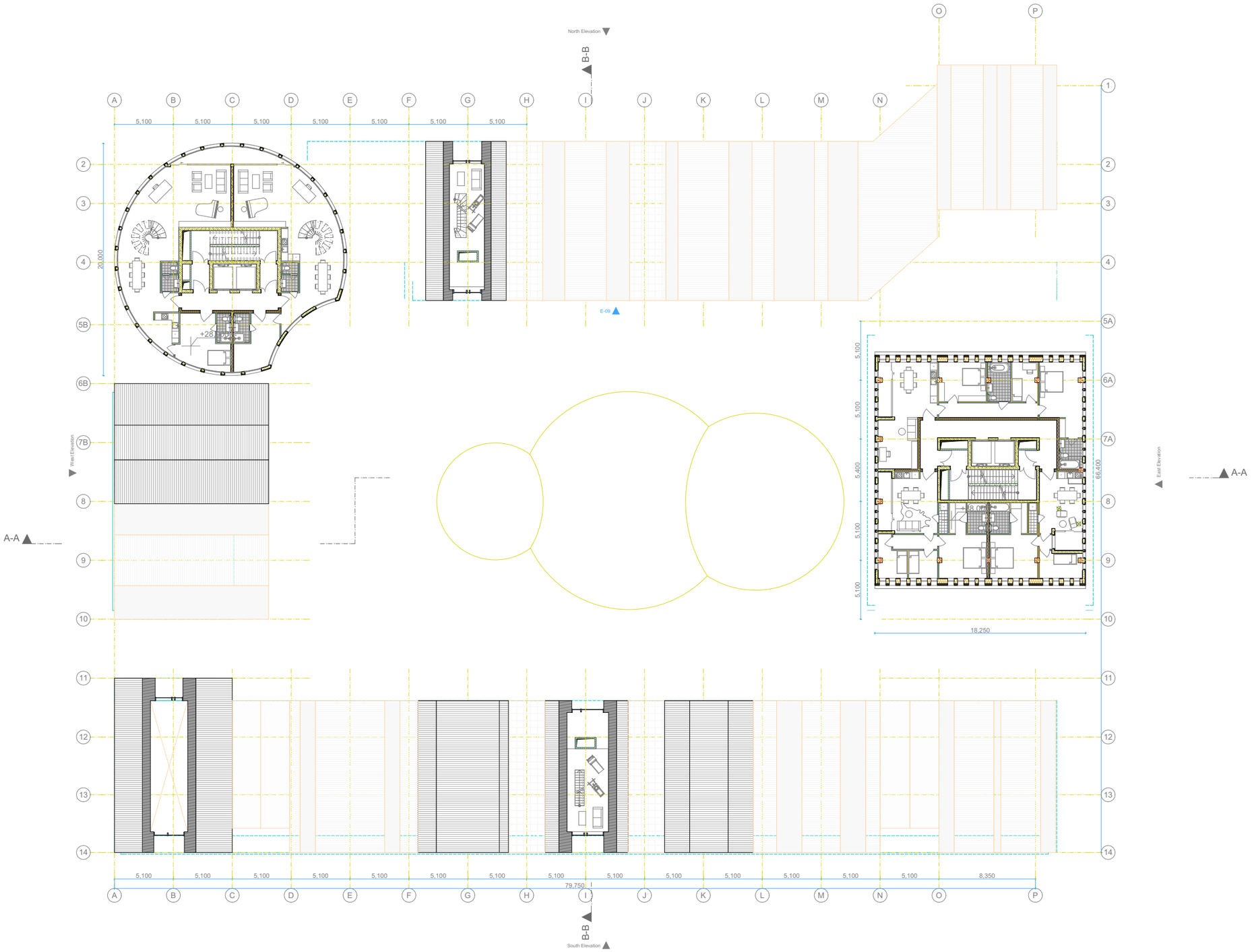

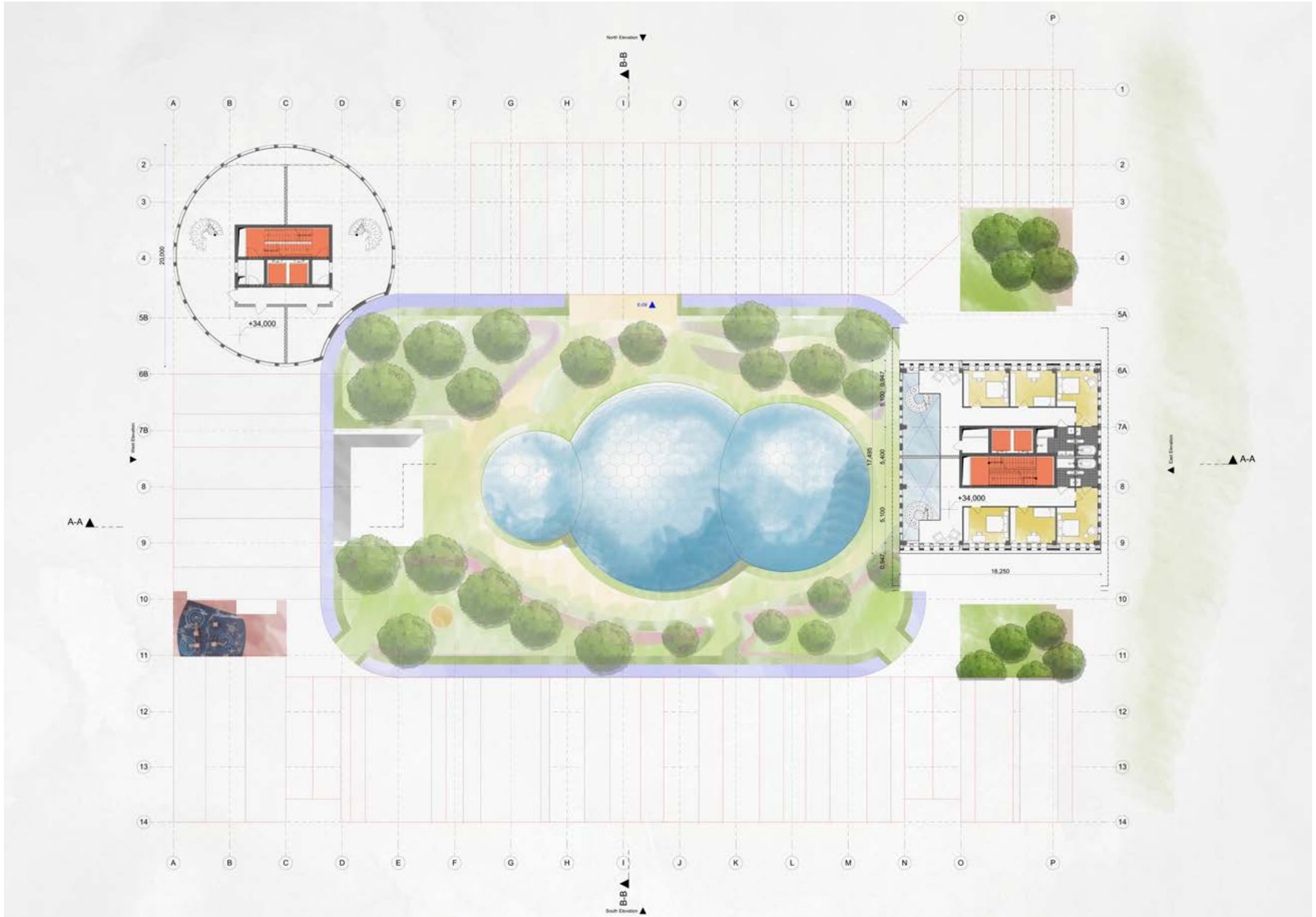
North Elevation
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7B
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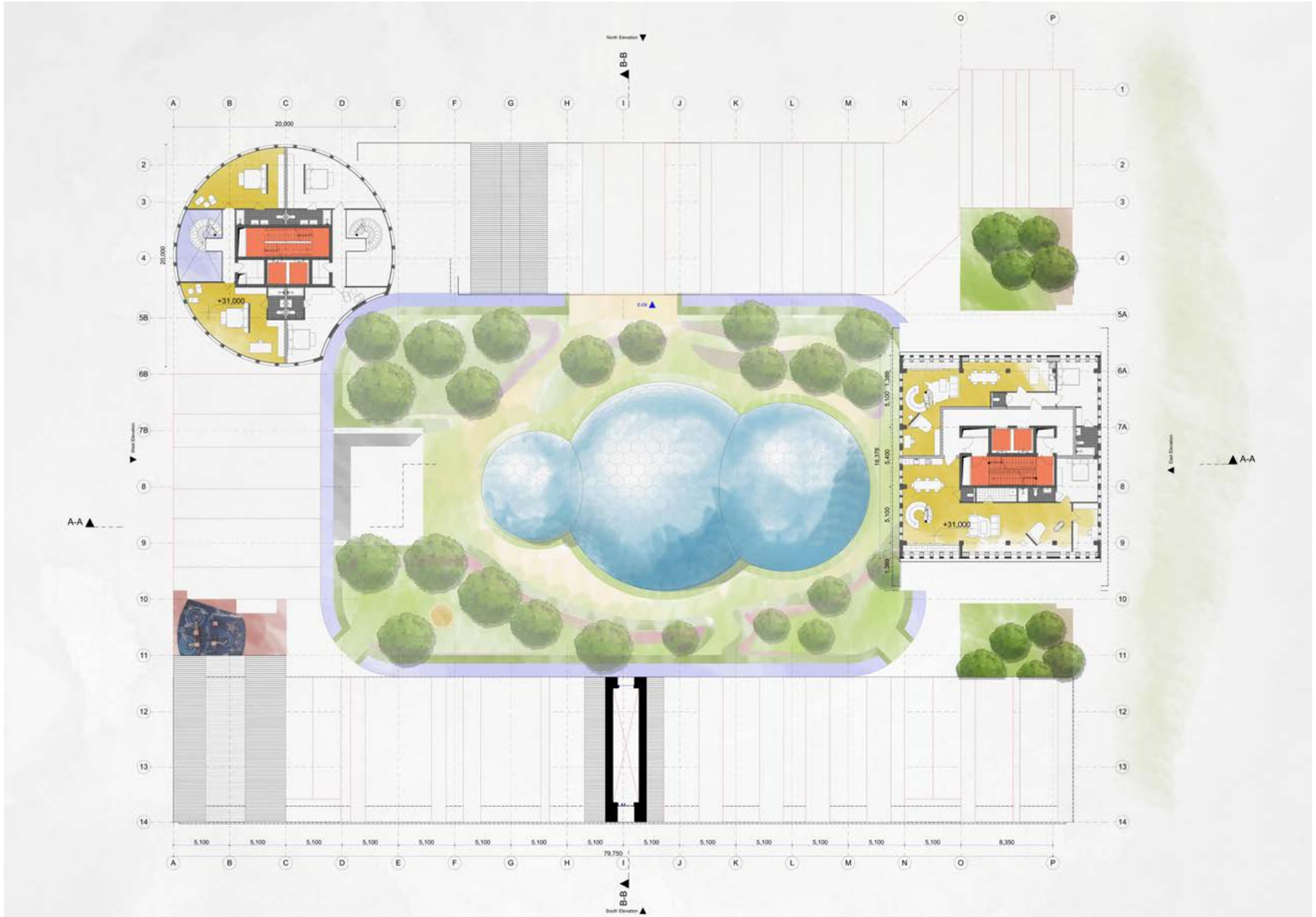
5,100
847
+34,000
18,250
A-A
East Elevation
A-A
West Elevation
B-B
South Elevation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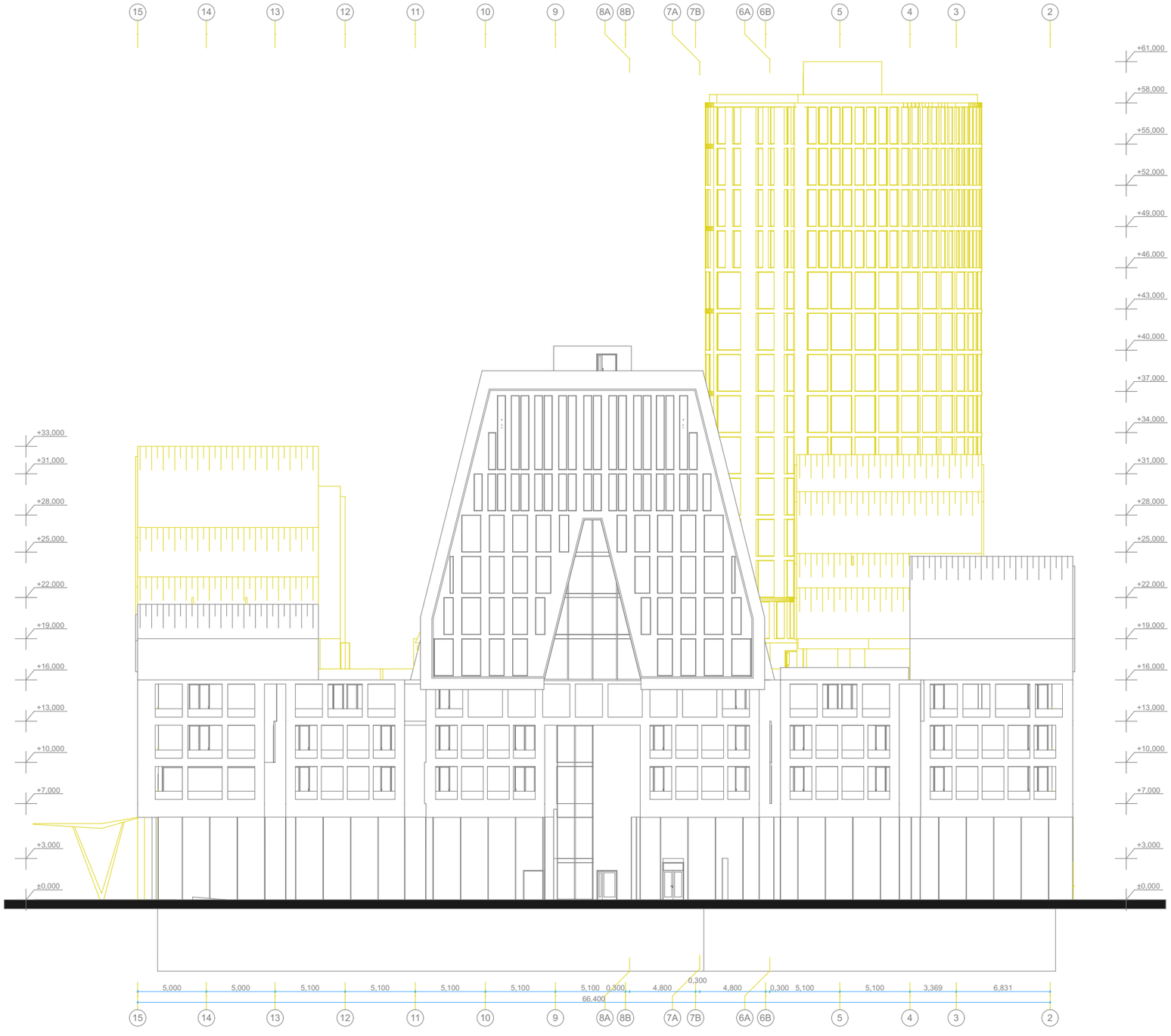
79,750
South Elevation
West Elevation
East Elevation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7B
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6B
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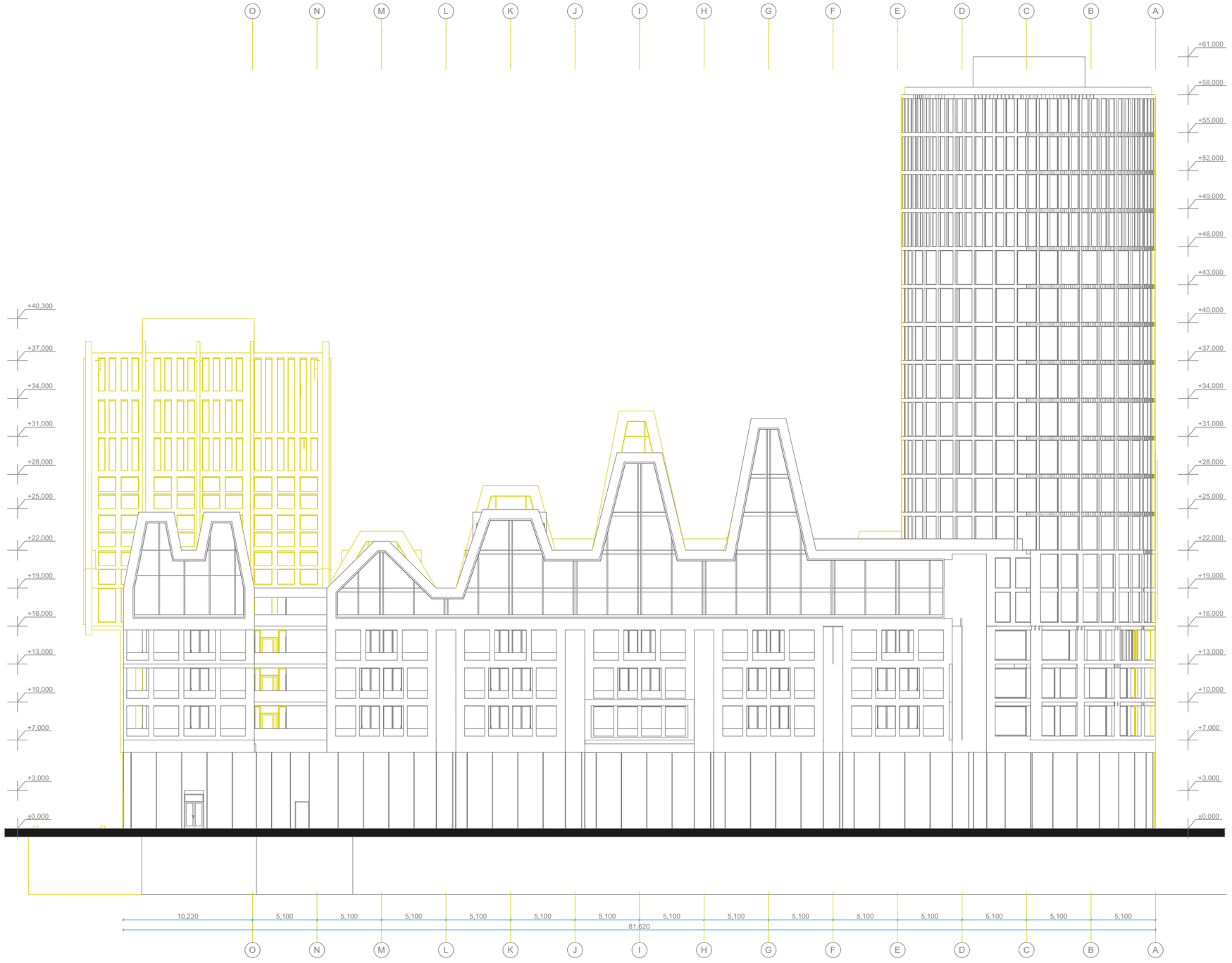
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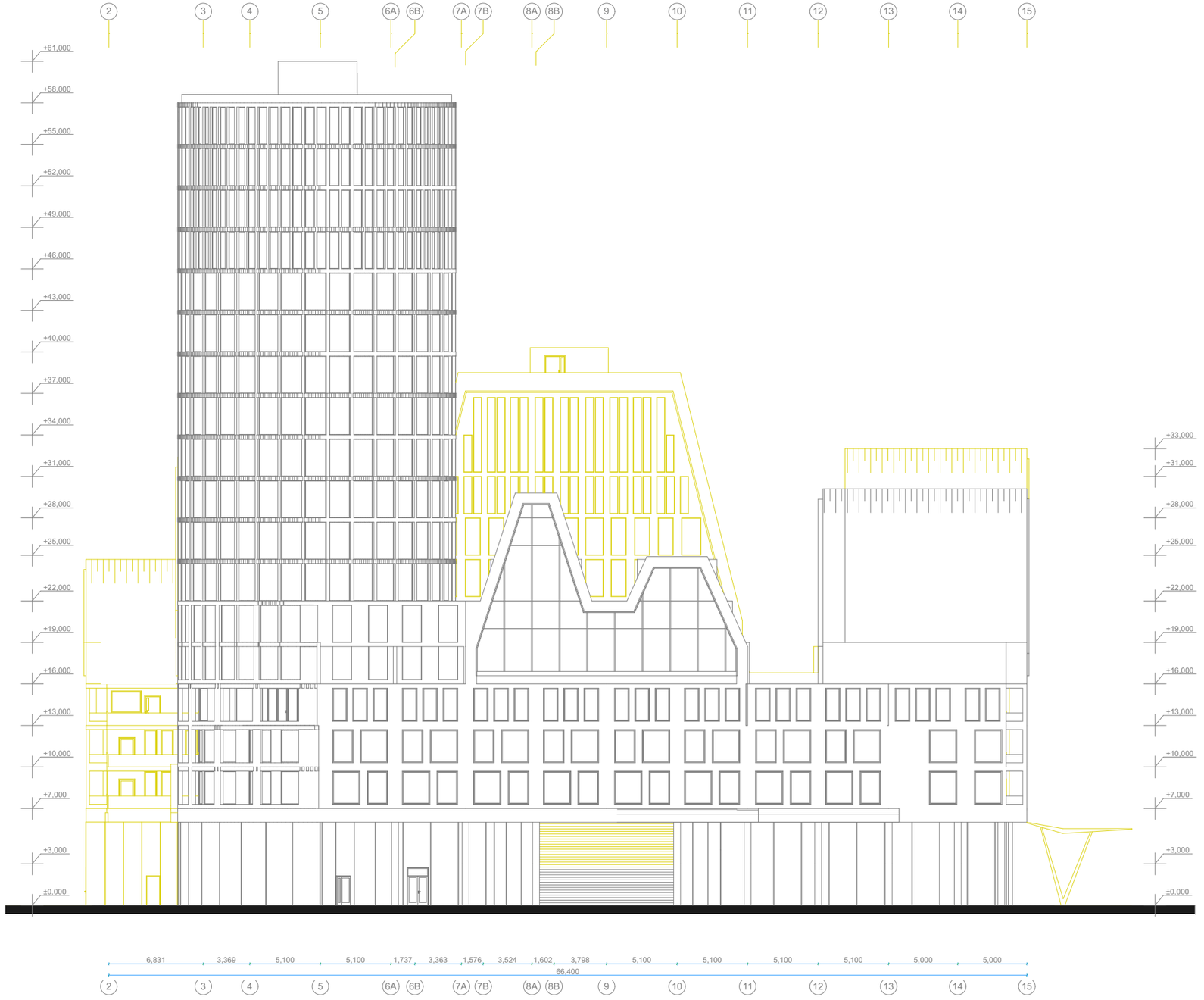
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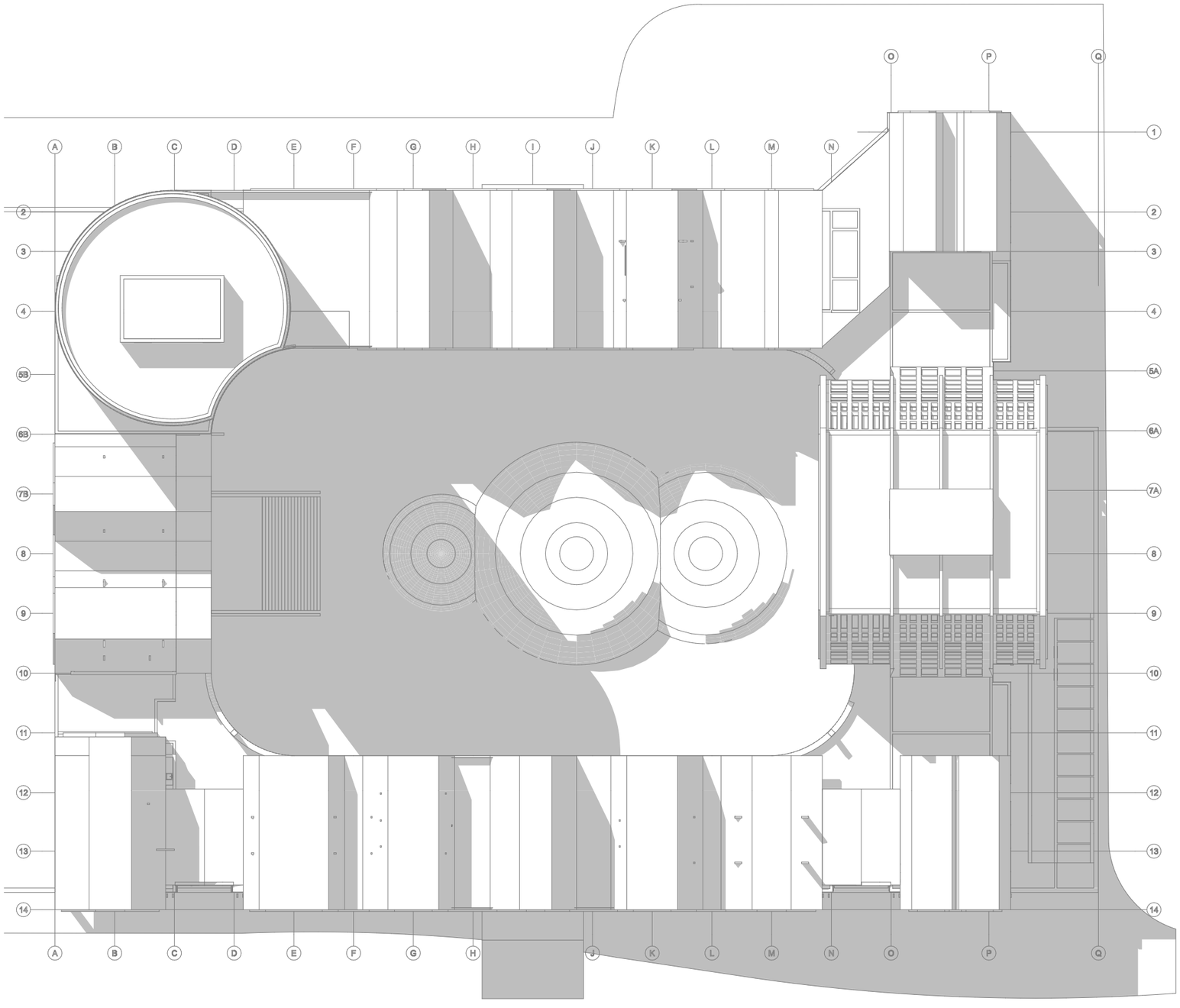
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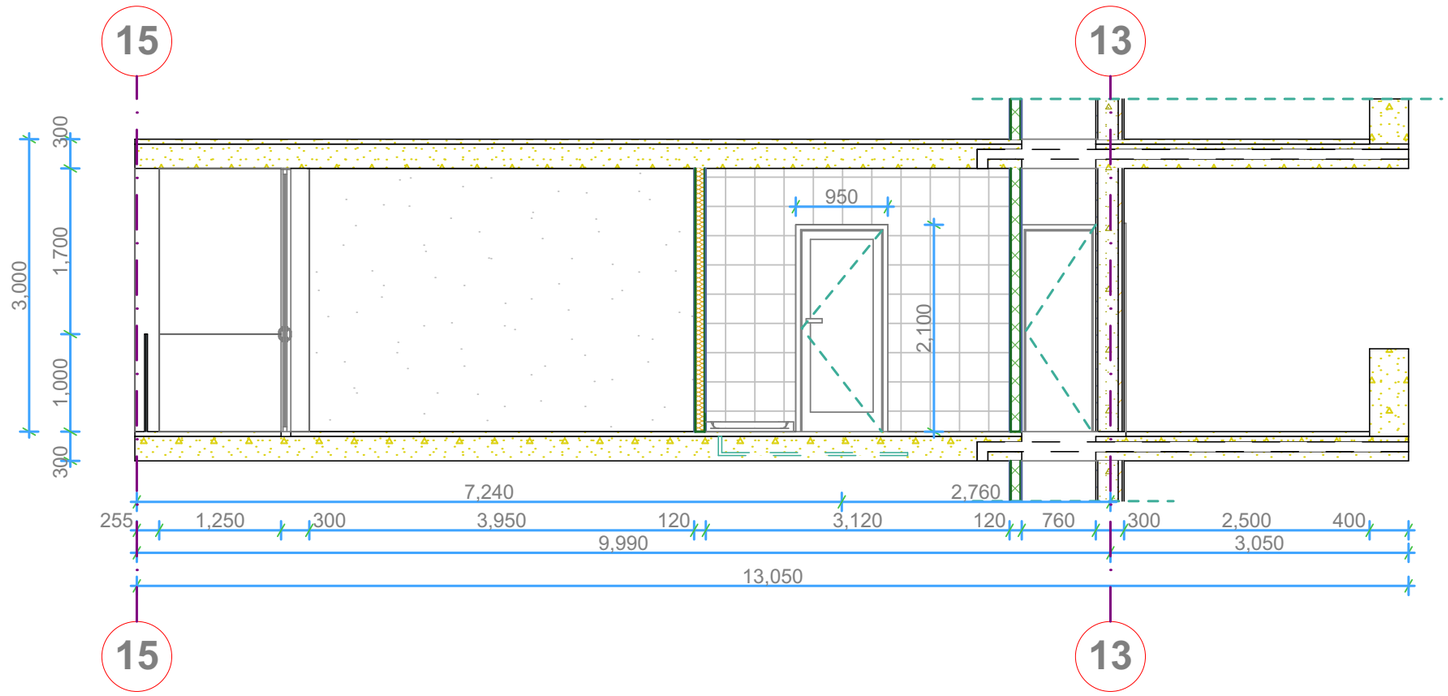
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120
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120
760
300
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400
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13,050
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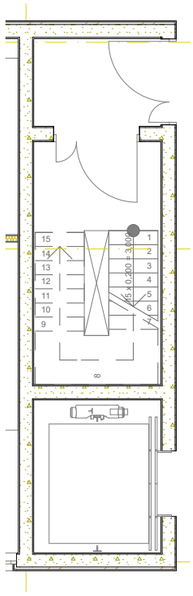
13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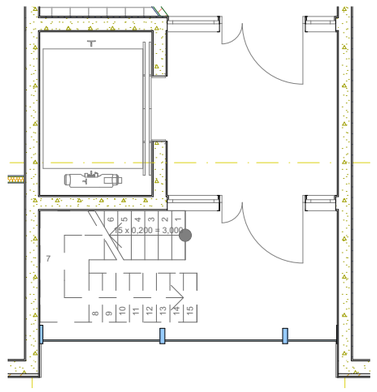
15 x 0.200 = 3.000


15 x 0.200 = 3.000
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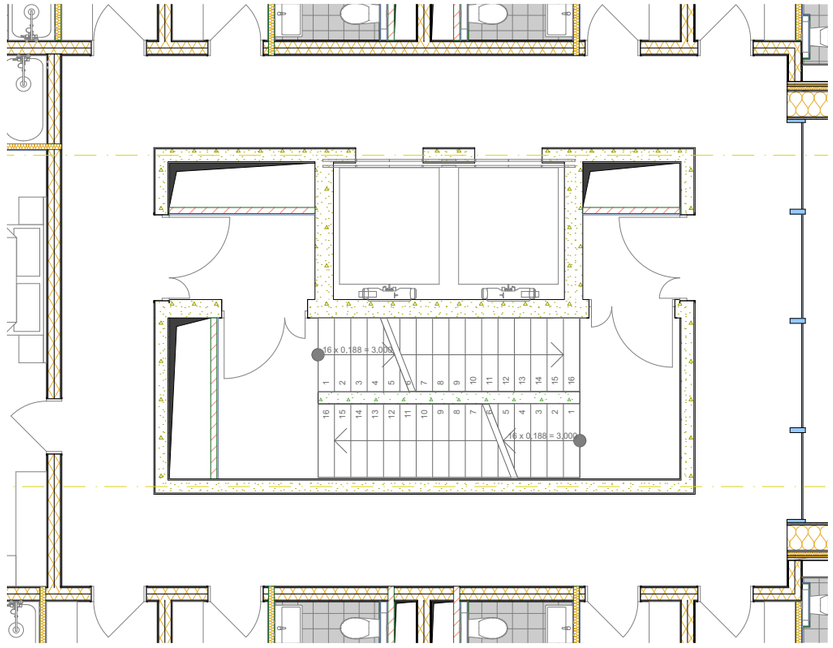
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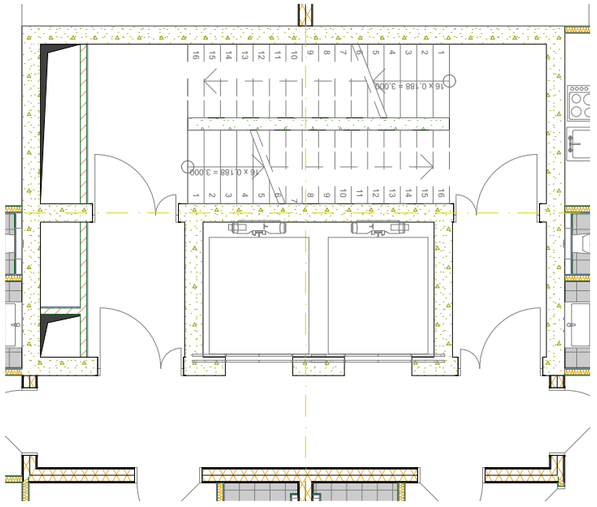
16 x 0.188 = 3.008


16 x 0.188 = 3.008
16 x 0.188 = 3.008