


Lumina tower
shedding light on knowledge and ideas

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01 Theme

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04 Vision - Function

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01 Theme

STUDIO THEME

The ever growing cities

Studio question:

Creating the Vertical campus



Why should we build vertical?

The densification of the city

Developing new typologies

STUDIO ASSIGNMENT

Assignment = 30.000m2

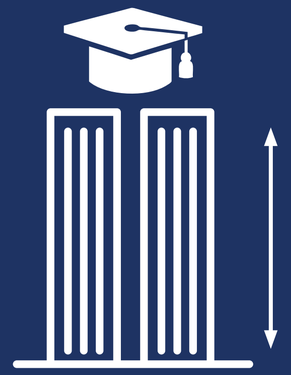
Footprint = 5.150m2



Functions

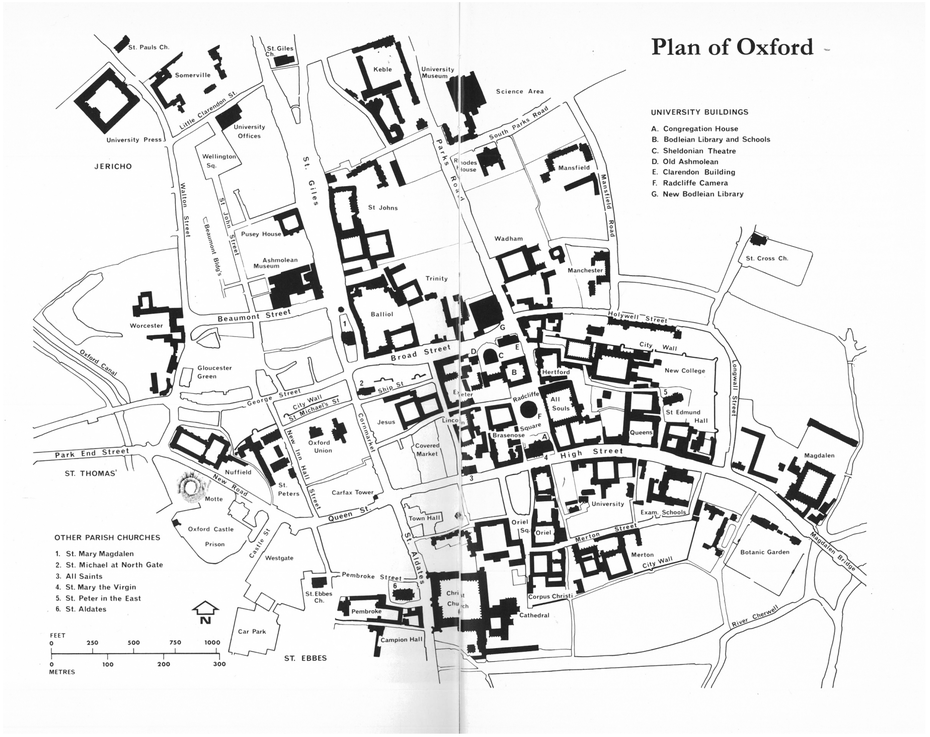


Horizontal campus



Vertical campus

TRADITIONAL CAMPUS - OXFORD

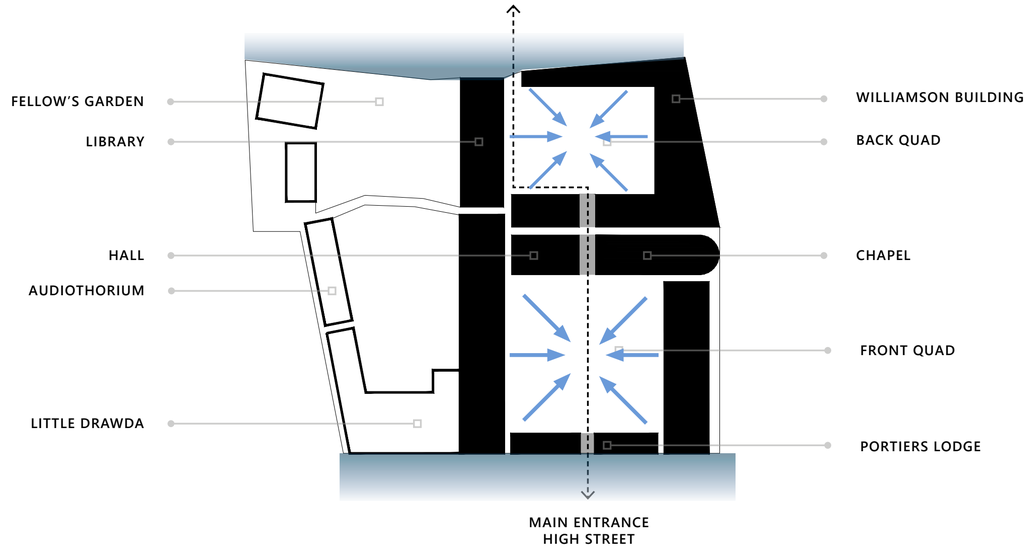


Spread out campus - footprint



APPROACH VIEW

Low rise structure



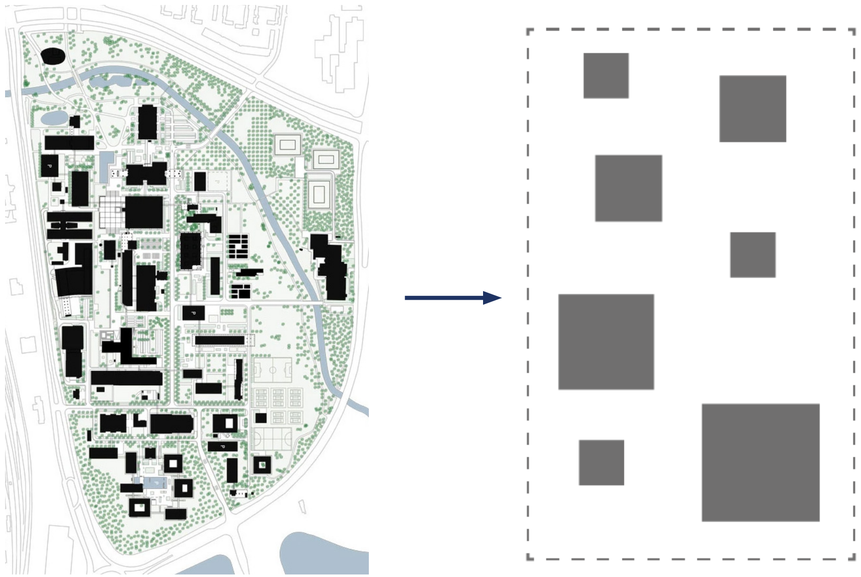
Orientated inwards to create private experience

WHAT DO WE DO ON A CAMPUS?

Studying - Research

Discussions - Creating - **Inbetween time**

Sports - **Private**



Spread out Masterplan

Abstract version



TU Eindhoven

WHAT DO WE DO IN THE CITY?

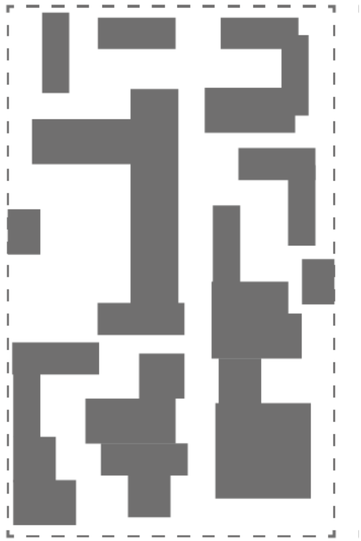
Sharing knowlegde - **gathering**

Discussions - **Leisure -** Economy

Sports - **Public**



Condensed Masterplan



Abstract version



The Hague center

02 Site

RANDSTAD

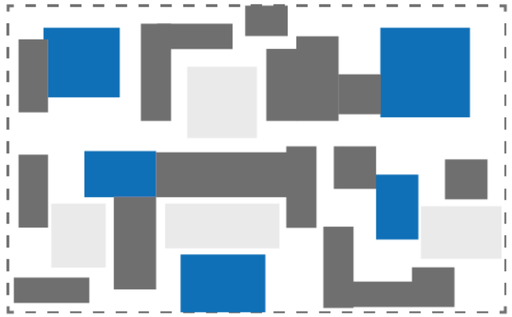


The Hague is political heart of the Netherlands

CAMPUS NETWORK

LEIDEN UNIVERSITY

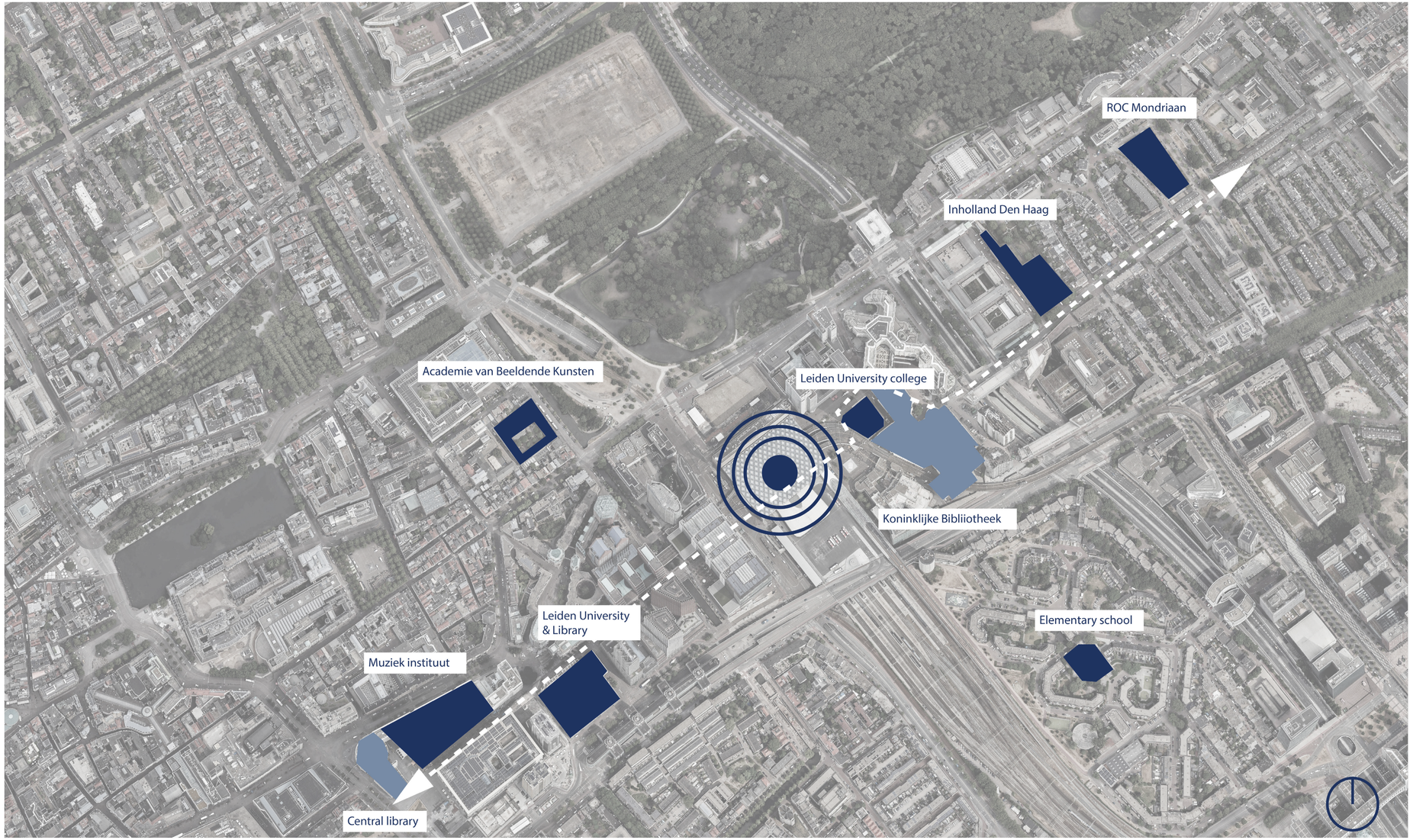
- 5 Faculties in The Hague - Spread out
- Individual islands implemented with the city and Single function
- Mixing students in the urban fabric
- Private acces - Institutional learning





Leiden University The Hague

CAMPUS NETWORK



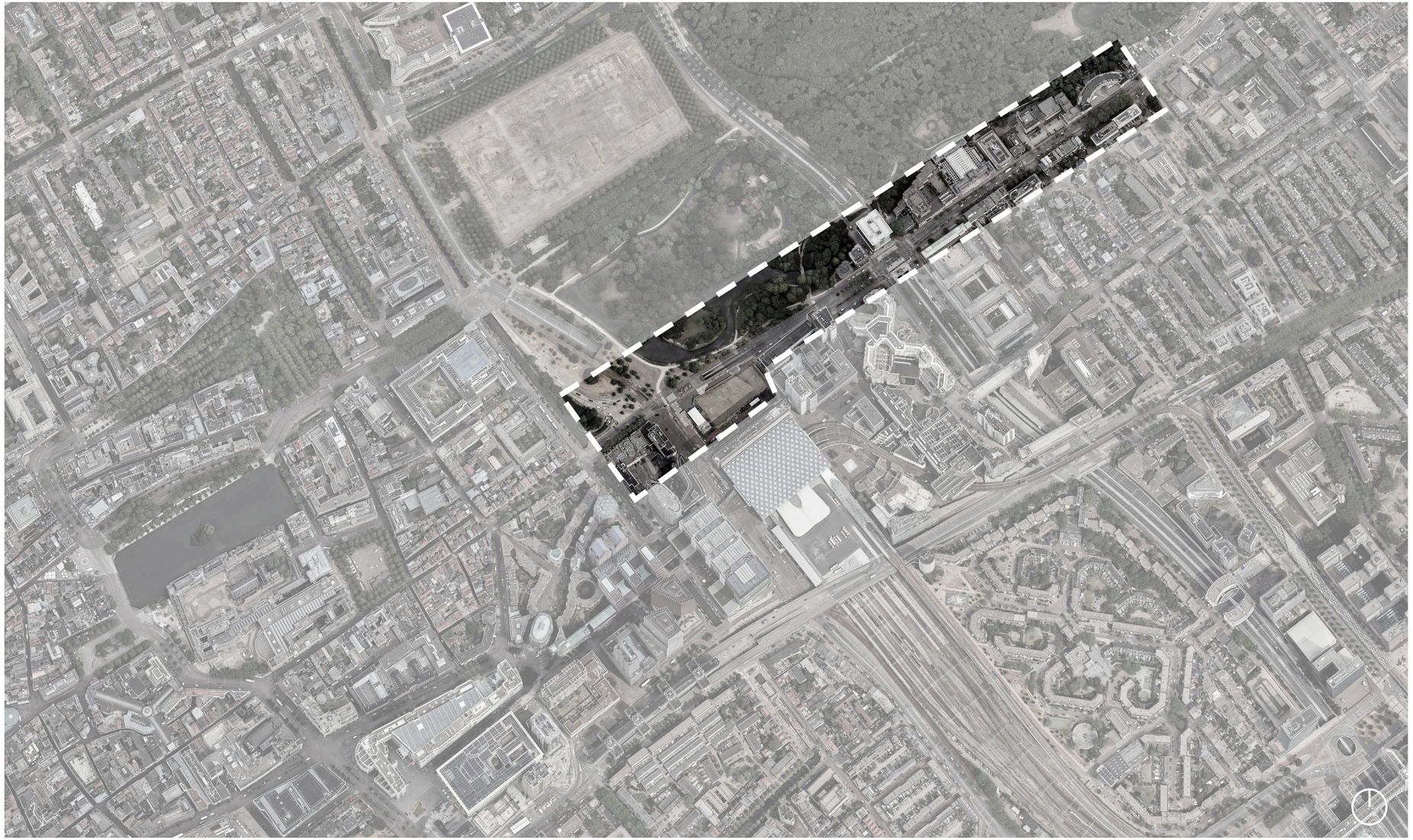
Connecting not only the campus network with the city but also with the Randstad

STUDIO AREA



Proximity of the station connecting the different areas

GREEN BORDER



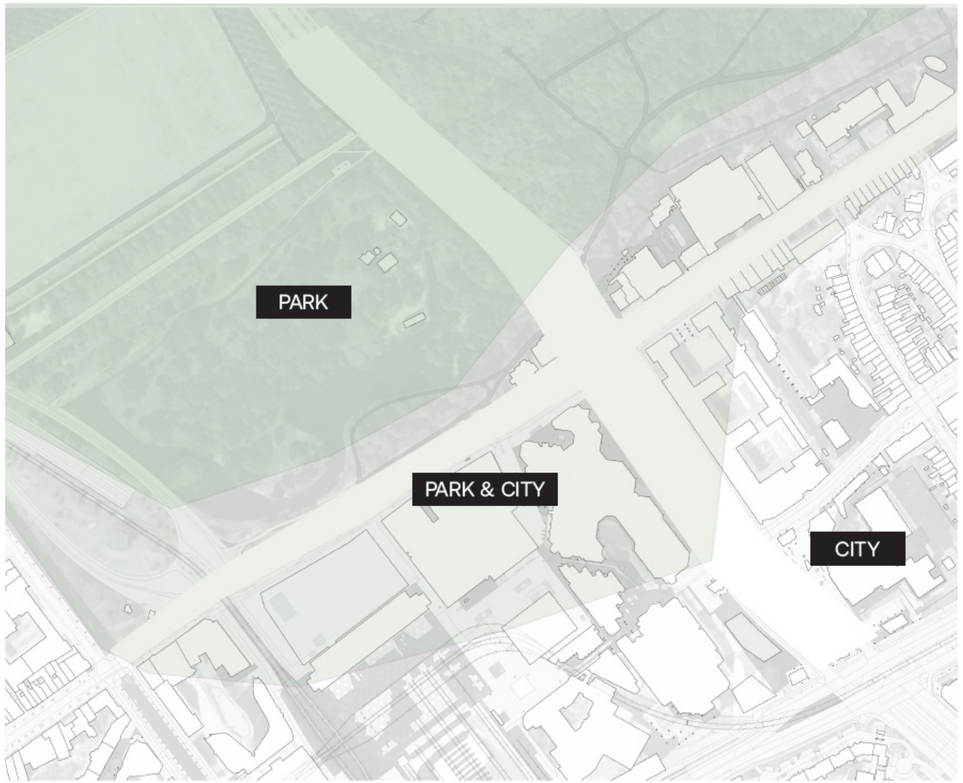
In between the park and the city

P1 CAPACITY PLAN



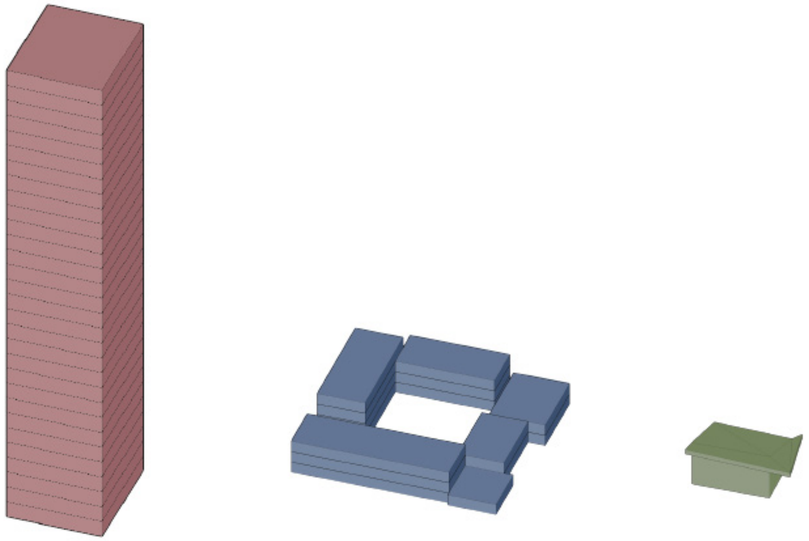
Distributing high-rise buildings to embed their function with the city fabric

P1 CAPACITY PLAN - TAKEAWAYS



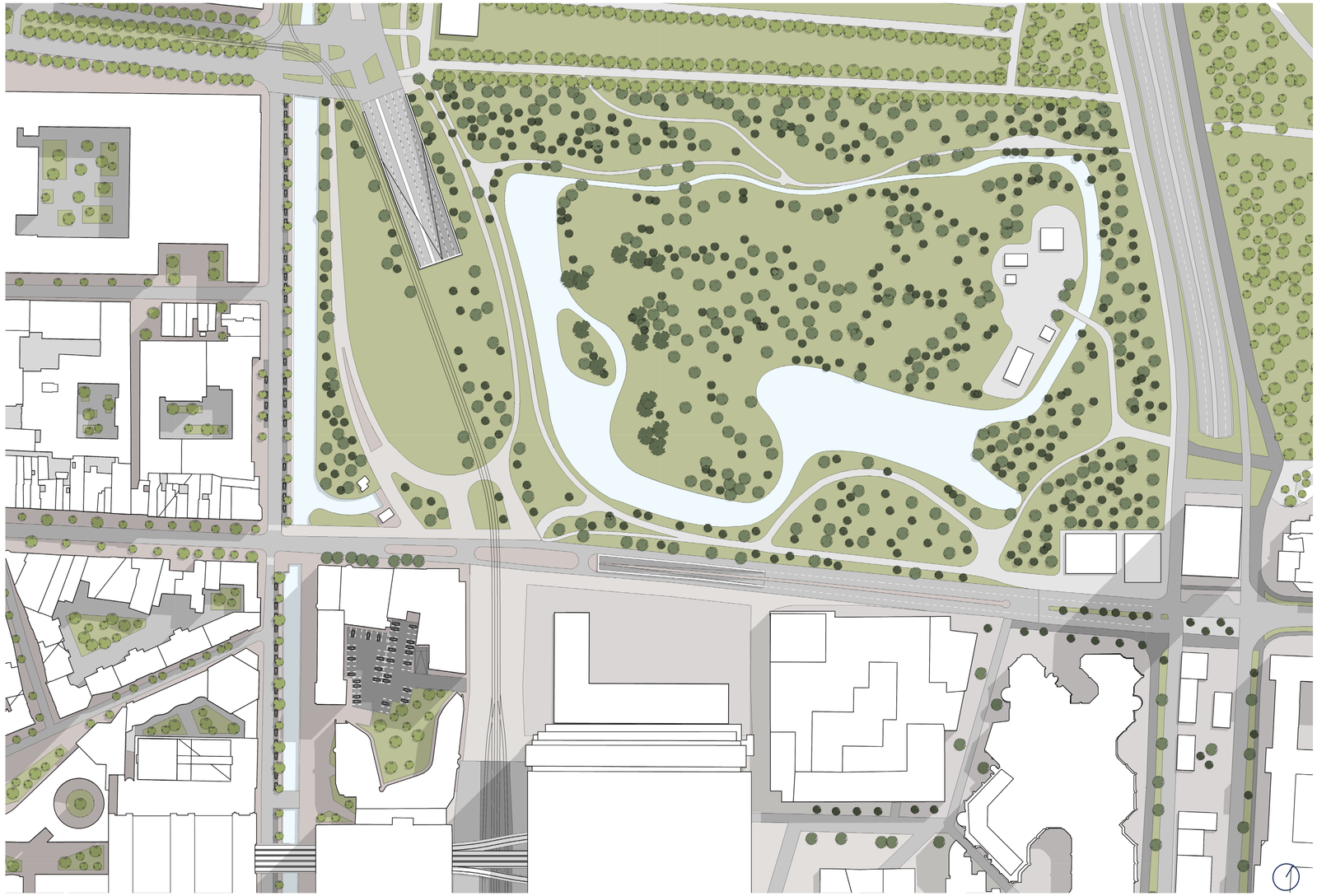
Extending the park into the city

+

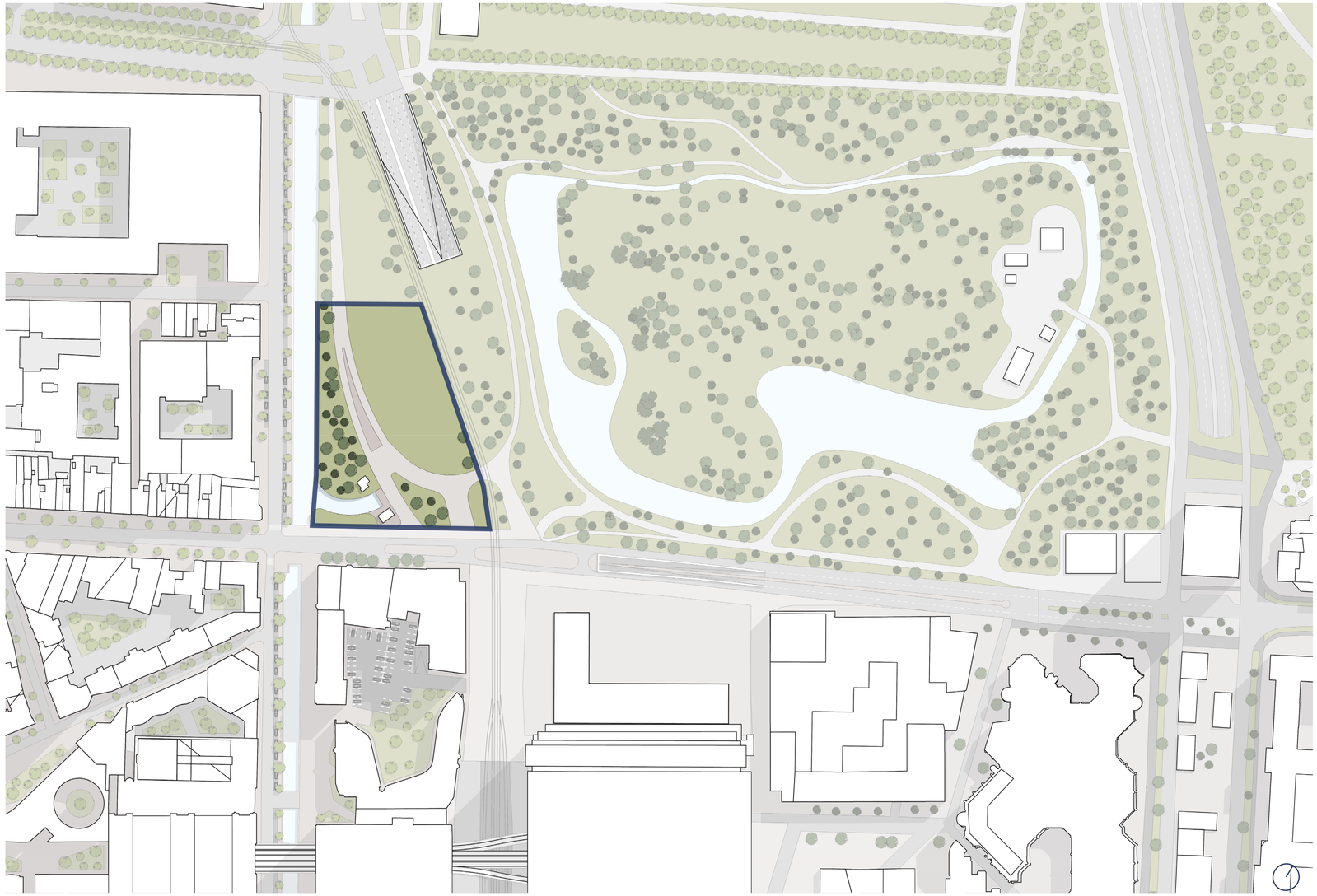


The mix of different scales

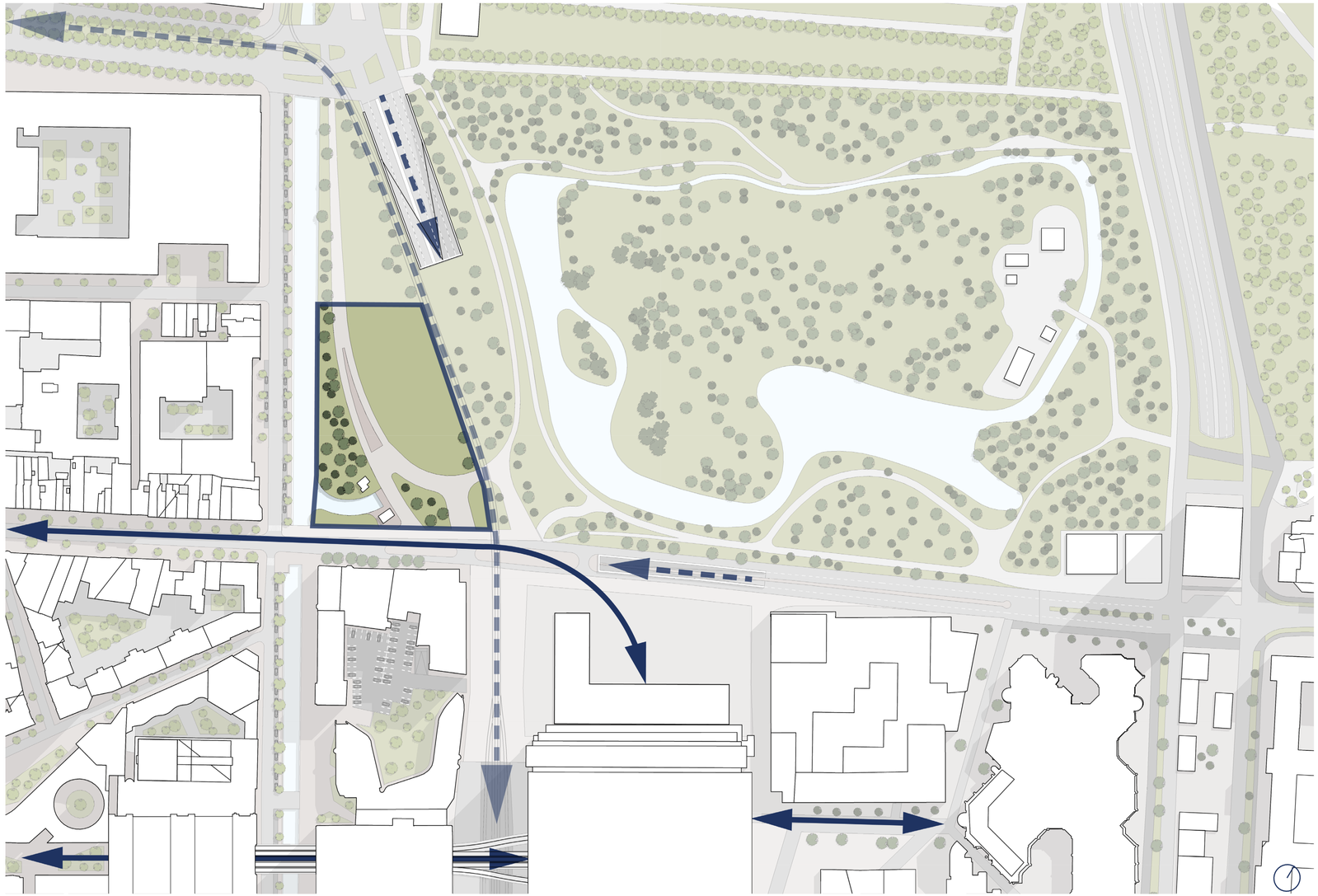
CURRENT SITUATION



BUILDING PLOT

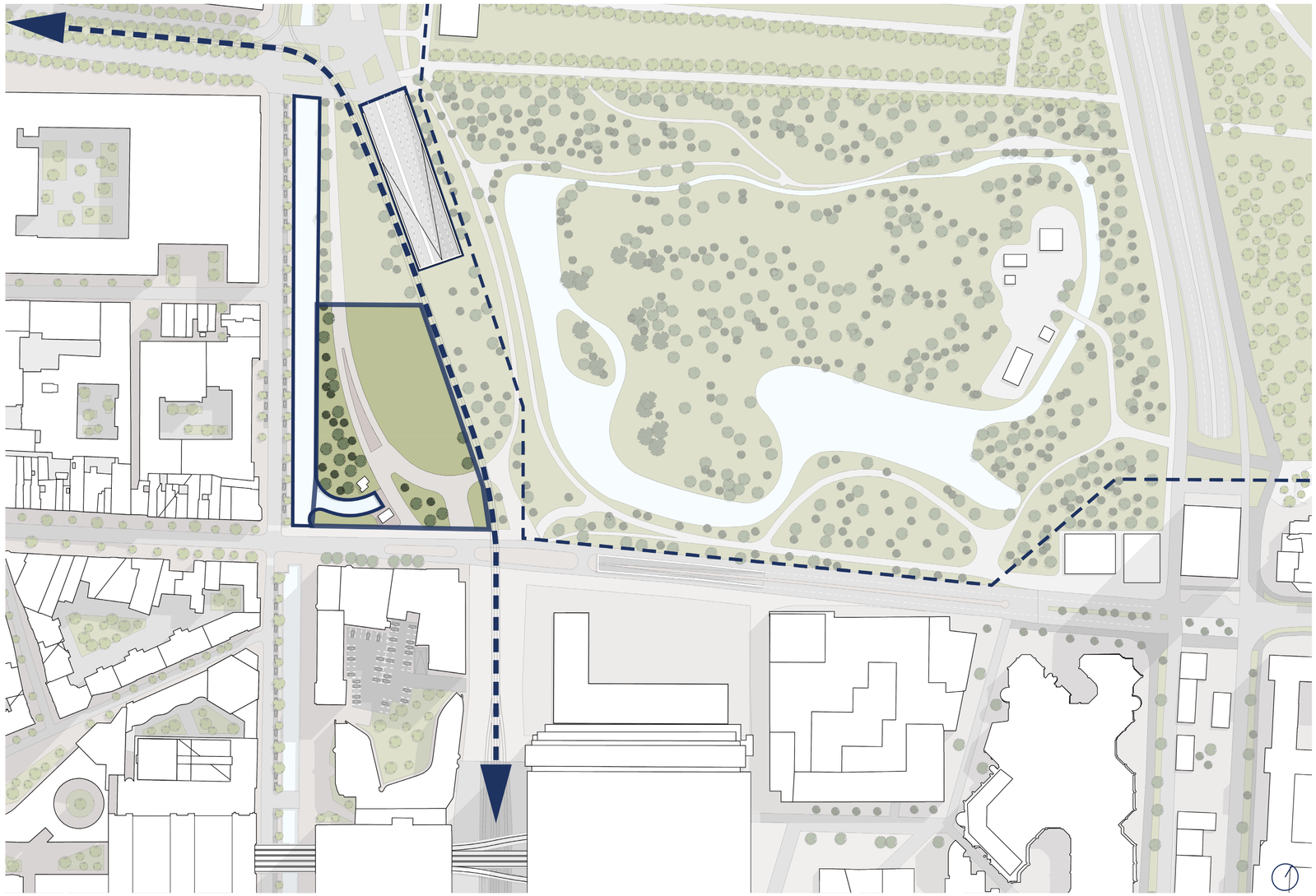


CURRENT MOVEMENT



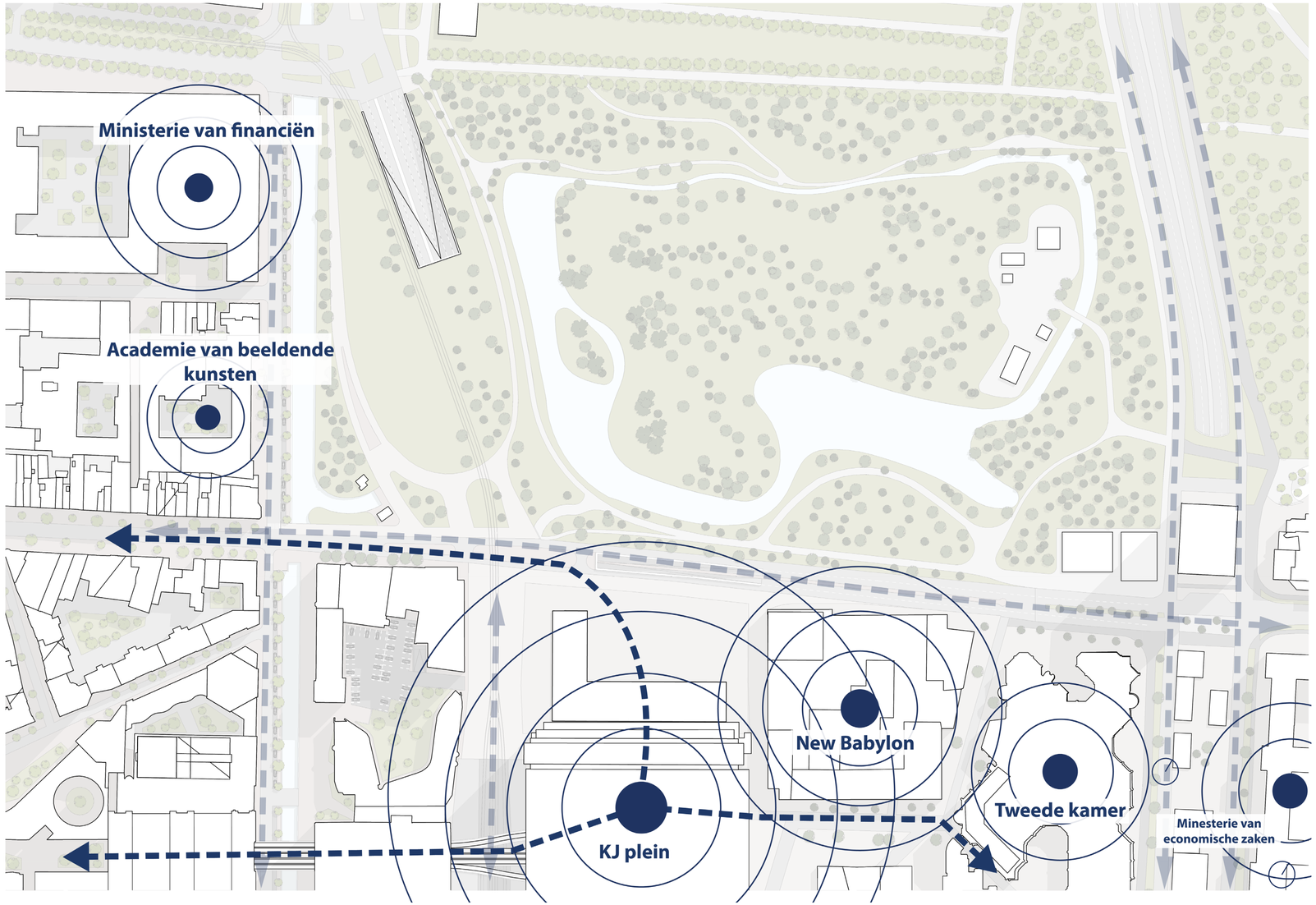
Pedestrian - tram - car

BOUNDARIES



Physical and historical

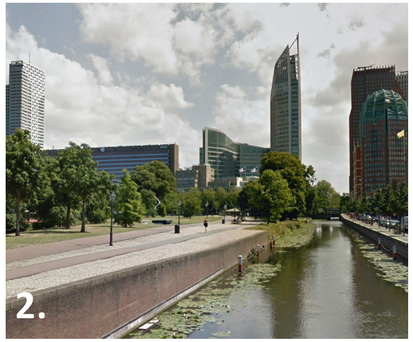
URBAN ANALYSIS



Impact buildings and routing

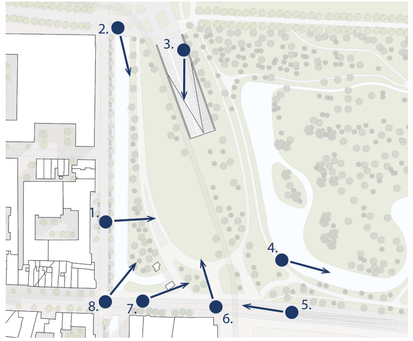
SIGHT LINES

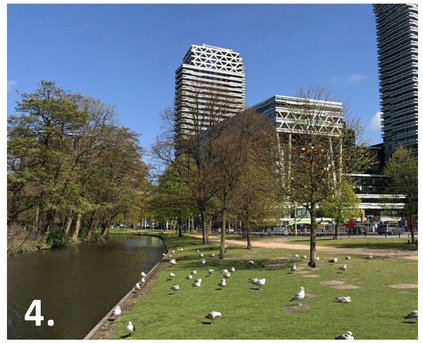


















03 Research

CURRENT SITUATION

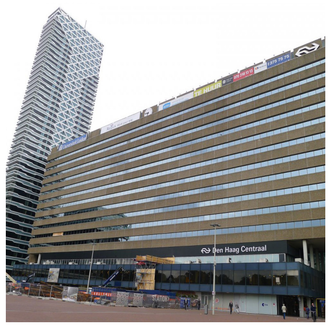


Individual islands - Height contrast

LANDMARKS THE HAGUE

Private & single function







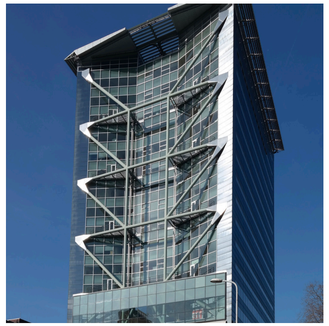


















DISTOPIA



Detachment of the public realm, self-referential buildings

DISTOPIA

MANIFESTO

“multiplicity as a property of buildings in order to make them less singular in function, more productive, more transformative and more resilient.” - Manifesto Public Building

URBAN

Buildings should not only reflect on themself, but should engage in the public realm of the city when looking into the urban scale.

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ARCHITECTURE

For the building scale it should offer more than housing its own function. It should offer undefined spaces for crowds and people to meet.

RESEARCH QUESTION

How does the Vertical campus contributes to and extends the public realm in the Hague?

SUB QUESTION

How can a public hybrid building introduce and combine public and instutionalized learning in an attempt to exchange knowledge?

PROJECT AMBITION

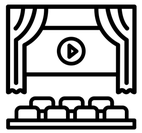
PUBLIC AND INSTITUTIONAL LEARNING

Solving the separation between **university campuses** and **public learning** in cities by creating a new typology of **campus** within the city. In this way, **mixing** public and institutionalized education, exchange of knowledge.

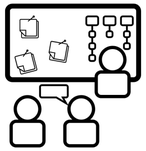
PUBLIC LEARNING METHODS



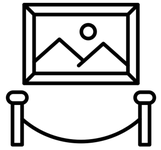
Library



Theater



Workshop



Museum

INSTITUTIONALIZED LEARNING

University



Library



Faculty



Elementary



Lecture



Sport



Research

INSTITUTIONALIZED LEARNING



Referring to the **structured and formalized** educational processes that occur within established institutions such as schools, colleges, universities, and professional training organizations.

PUBLIC LEARNING



Referring to **sharing knowledge** by activities and experiences accessible to the public. It emphasizes **informal** and cultural engagement by enhancing collective learning outside formal instutional settings.

RECAP

CITY

Public learning methods



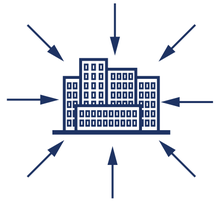
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CAMPUS

Institutionalised learning



Combining the traditional campus into the city



High density character

\+



Spread out character

Proposes a new vertical typology

VERTICAL CAMPUS (IN THE CITY)

Studying - Research - **Exploration**

Discussions - Creating - **Leisure**

Sports - **Shops - Gathering**

Multiple Public & Institutional functions





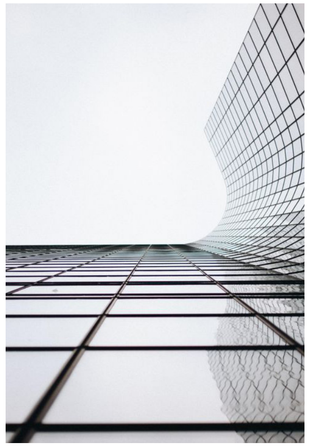
Lumina is Latin for “Lumen”, Meaning “**Light**”.
It symobolizes the **enlightenment** of knowledge. The shedding of light on knowledge and ideas linked to University, Research and Office.

04 Vision - Function

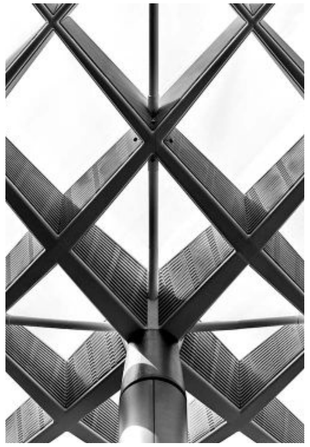
GUIDELINES



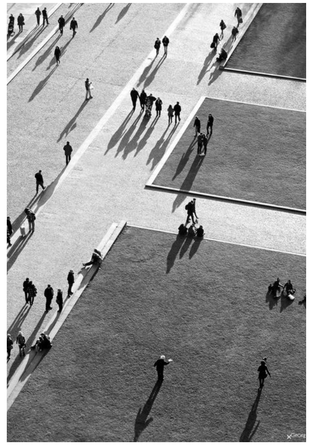
closed



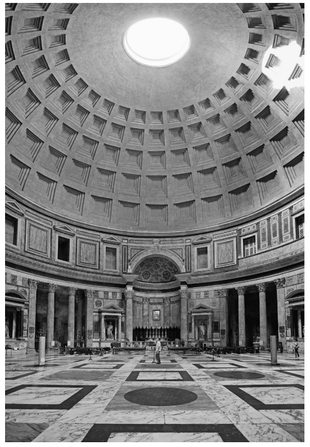
abstract



generic



open

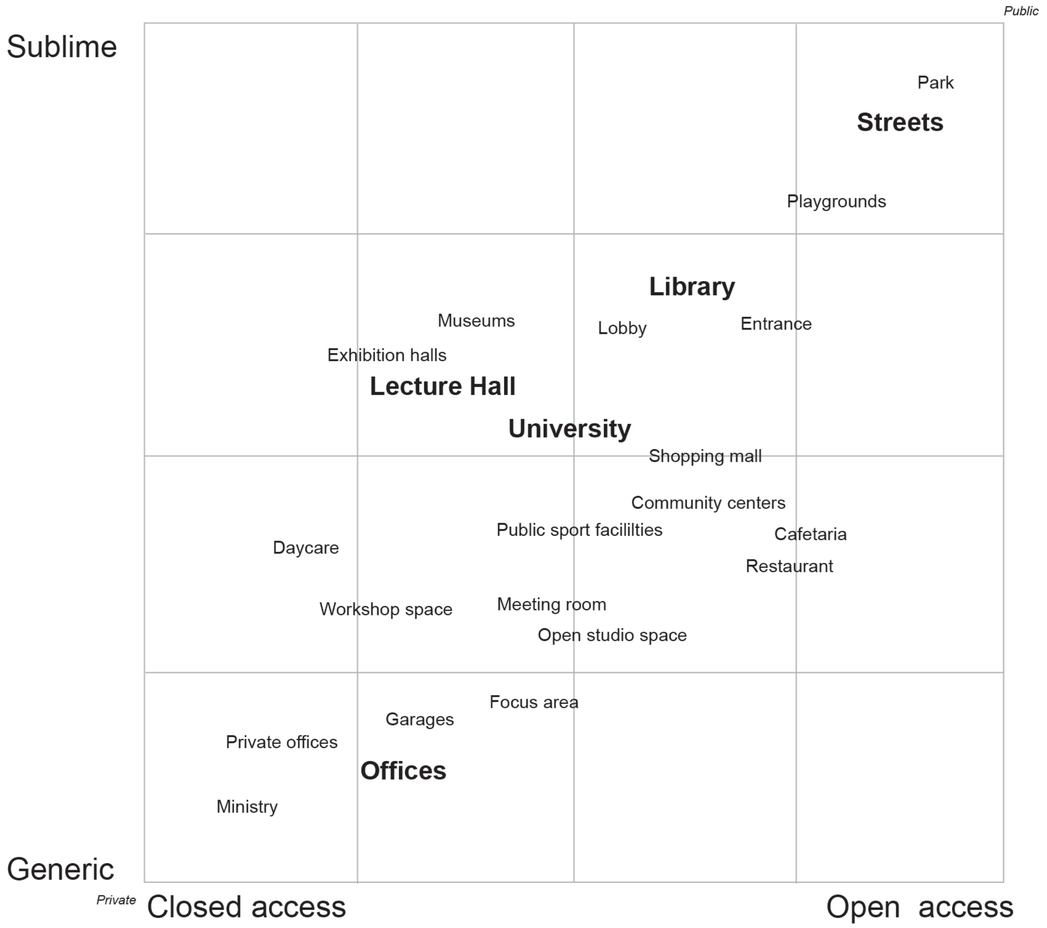


sublime

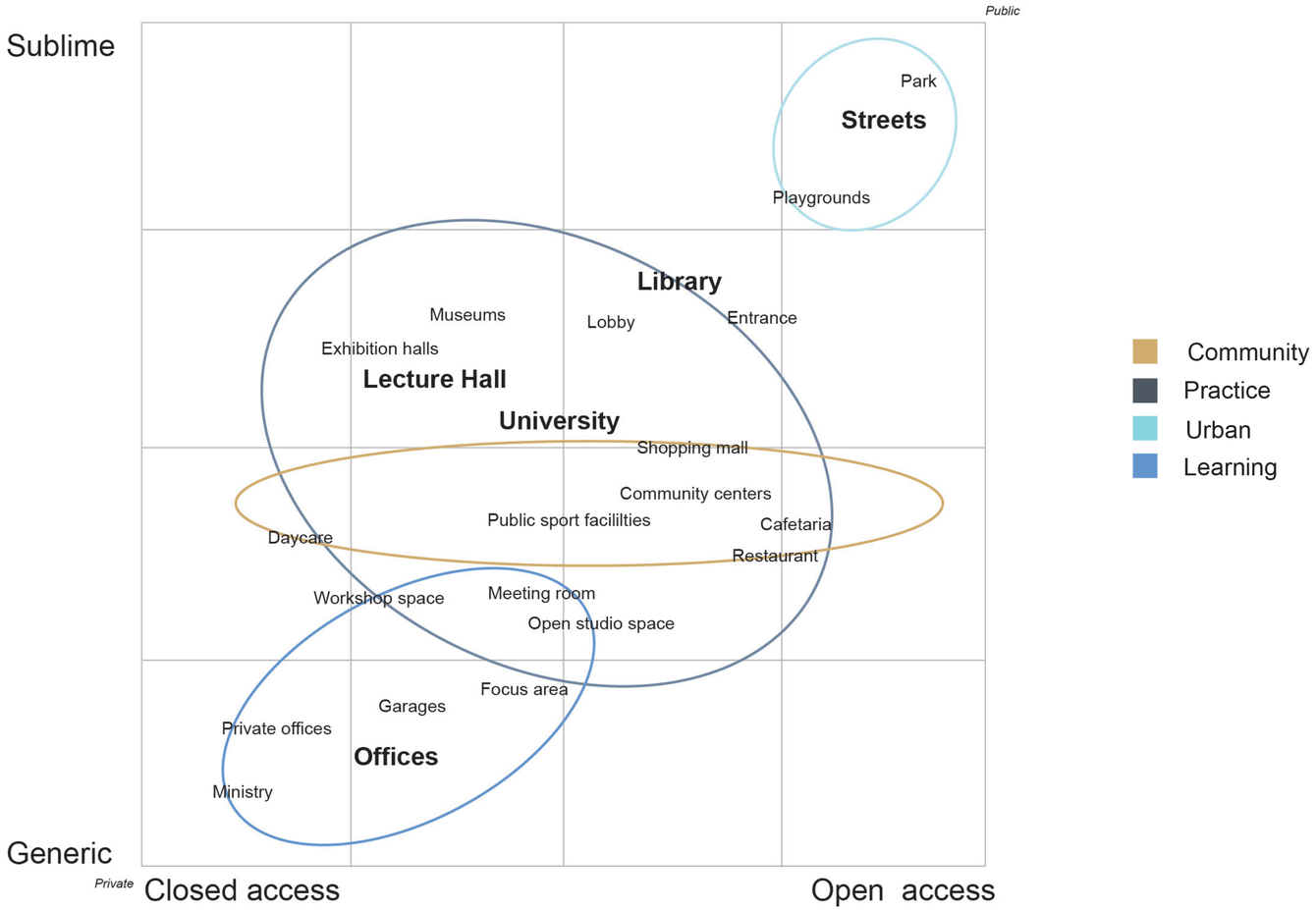


wander

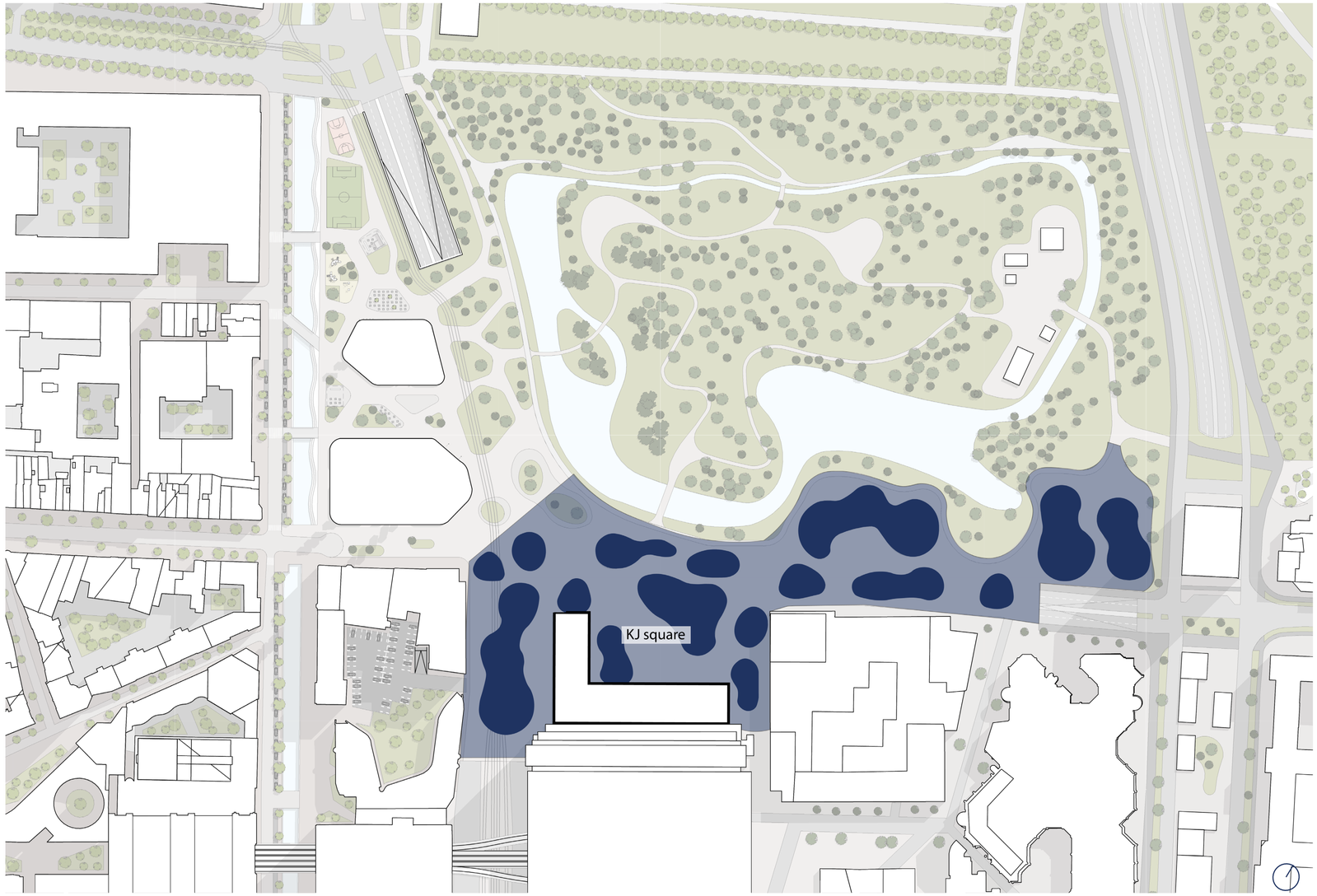
FUNCTIONS


Public
Sublime
Park
Streets
Playgrounds
Library
Museums
Lobby
Entrance
Exhibition halls
Lecture Hall
University
Shopping mall
Community centers
Public sport facililties
Cafetaria
Daycare
Restaurant
Workshop space
Meeting room
Open studio space
Focus area
Garages
Private offices
Offices
Ministry
Generic
Private
Closed access
Open access

CATEGORISE

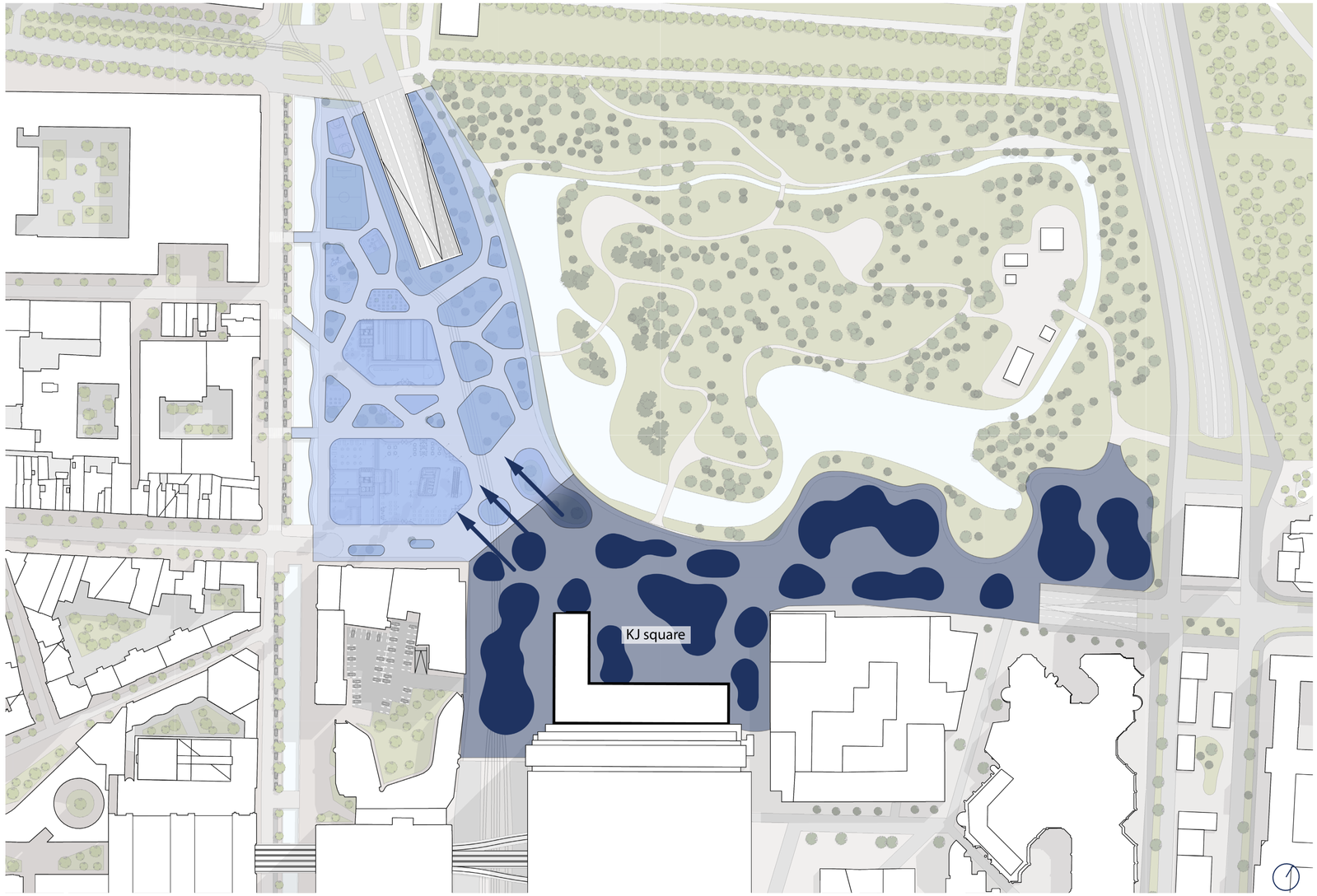

Public
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Garages
Private offices
Offices
Ministry
Generic
Private
Closed access
Open access
Community
Practice
Urban
Learning

MASTERPLAN POWERHOUSE



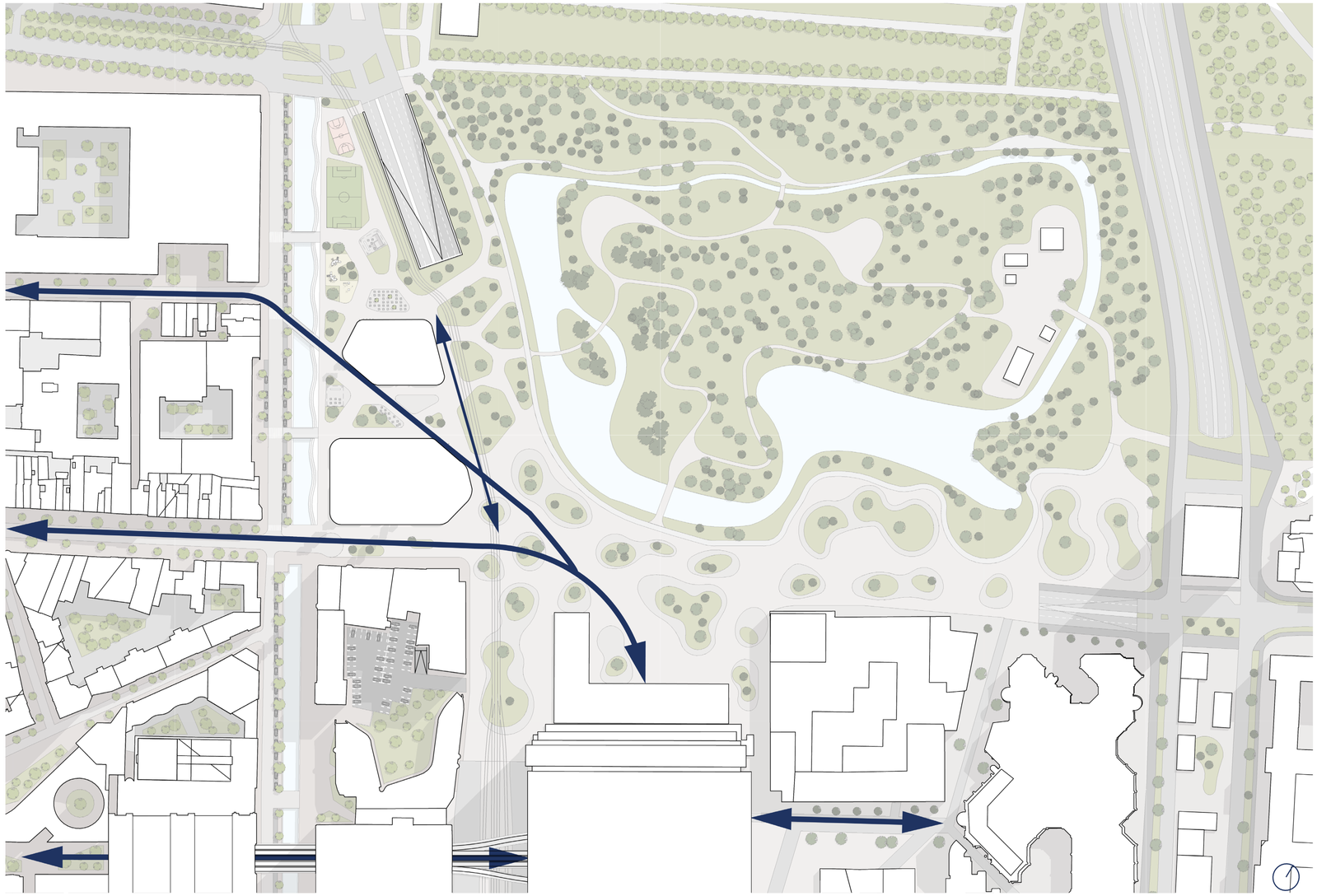
Current situation

EXTENDING MASTERPLAN



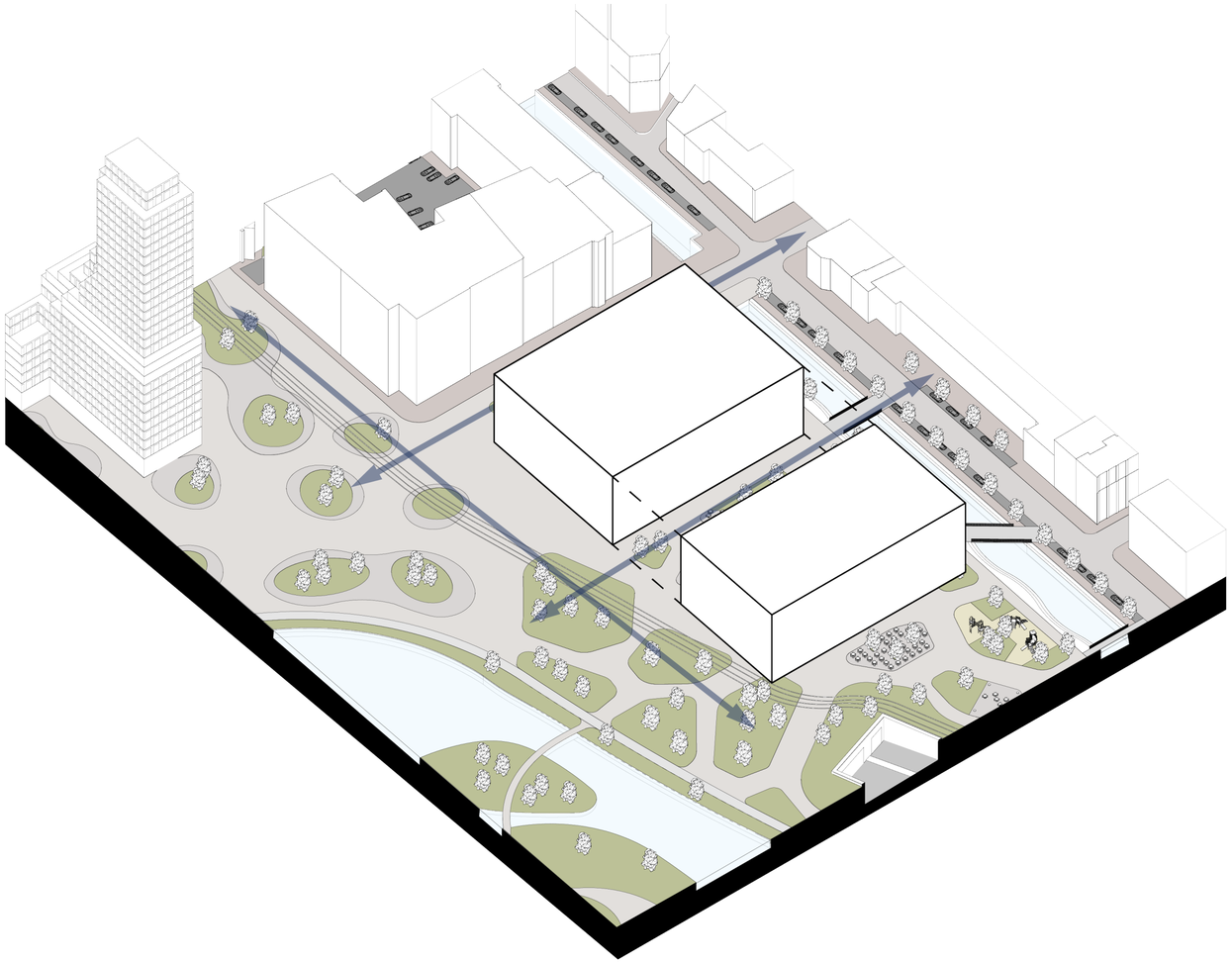
Extending the masterplan from Powerhouse, which is organic, to soft edges.

URBAN AMBITION



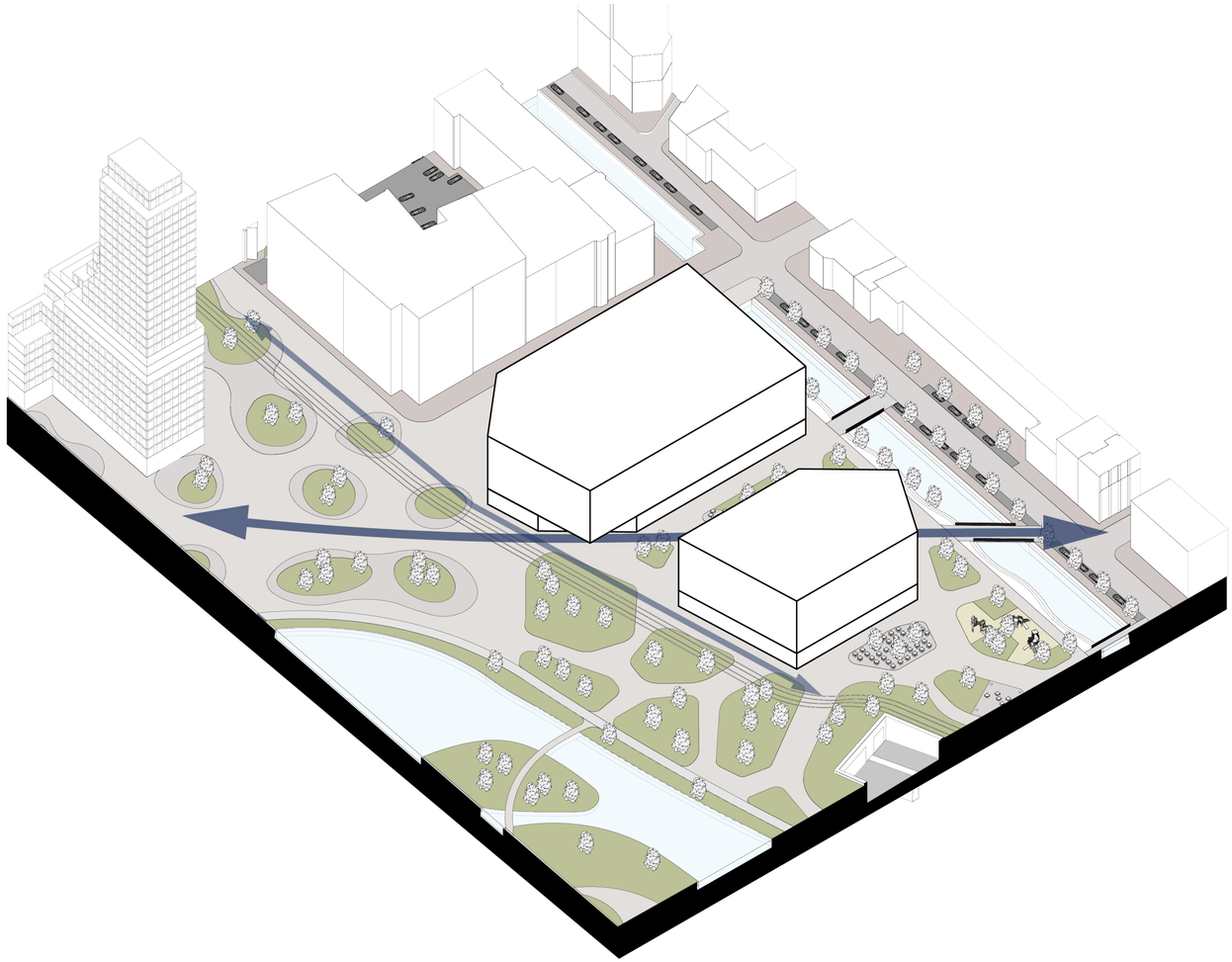
Extending campus network - Pedestrian area

CONCEPT



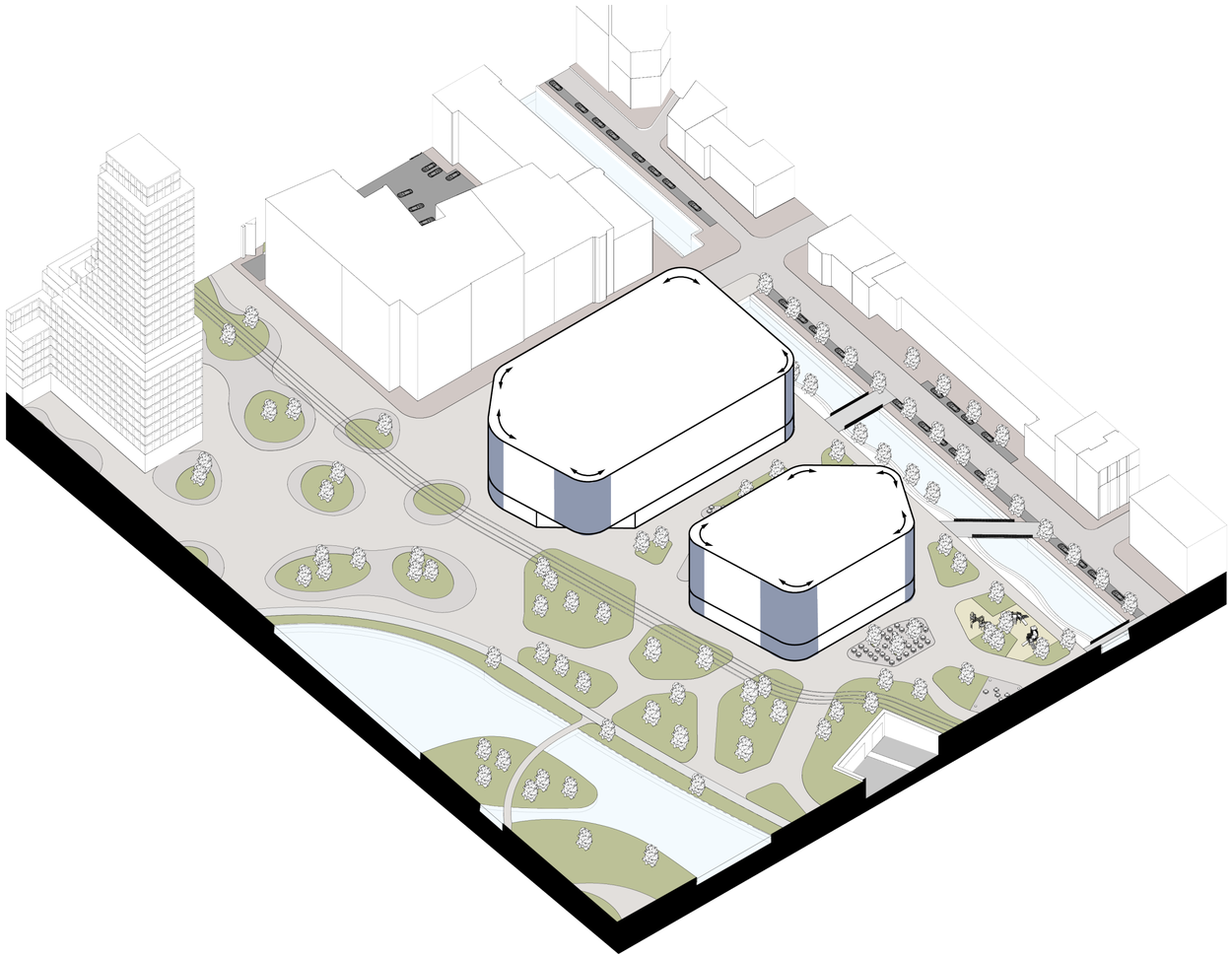
Extending the current streets. One building doesn’t stimulate movement, a cluster will

CONCEPT



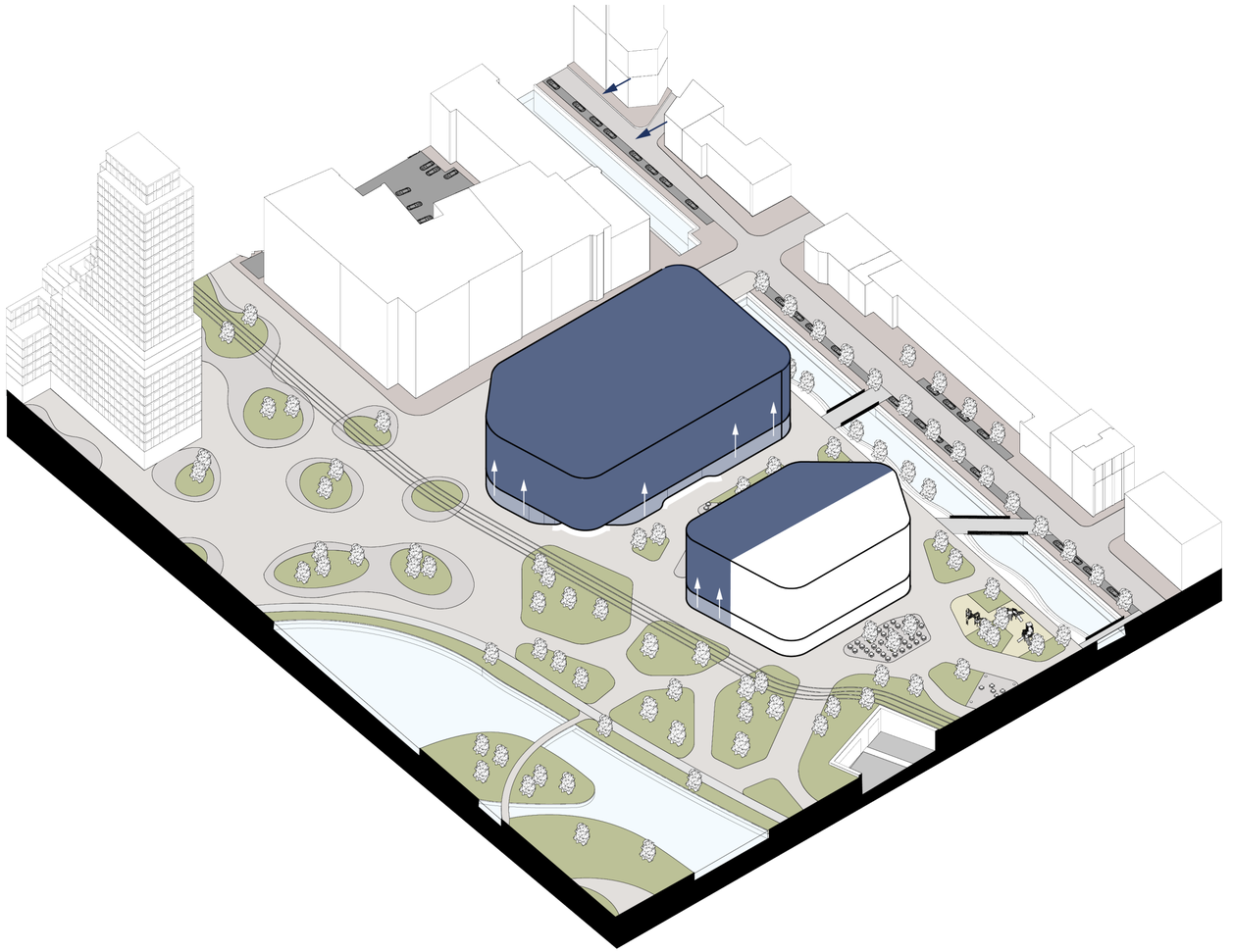
Creating a new connection between the city and the station,
guiding through the campus

CONCEPT



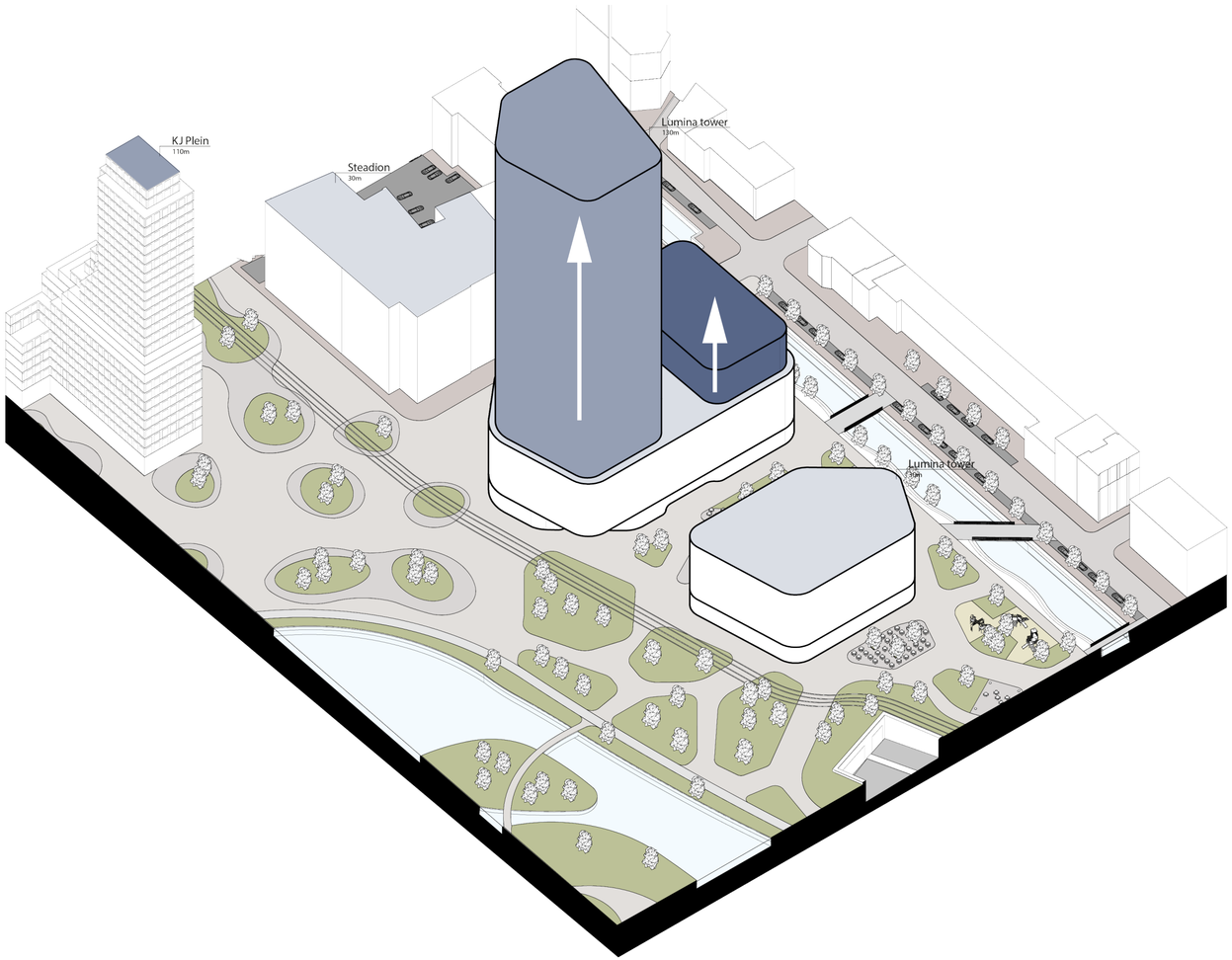
Curving the edge to create its own identity in the surrounding
and guide people to the city

CONCEPT



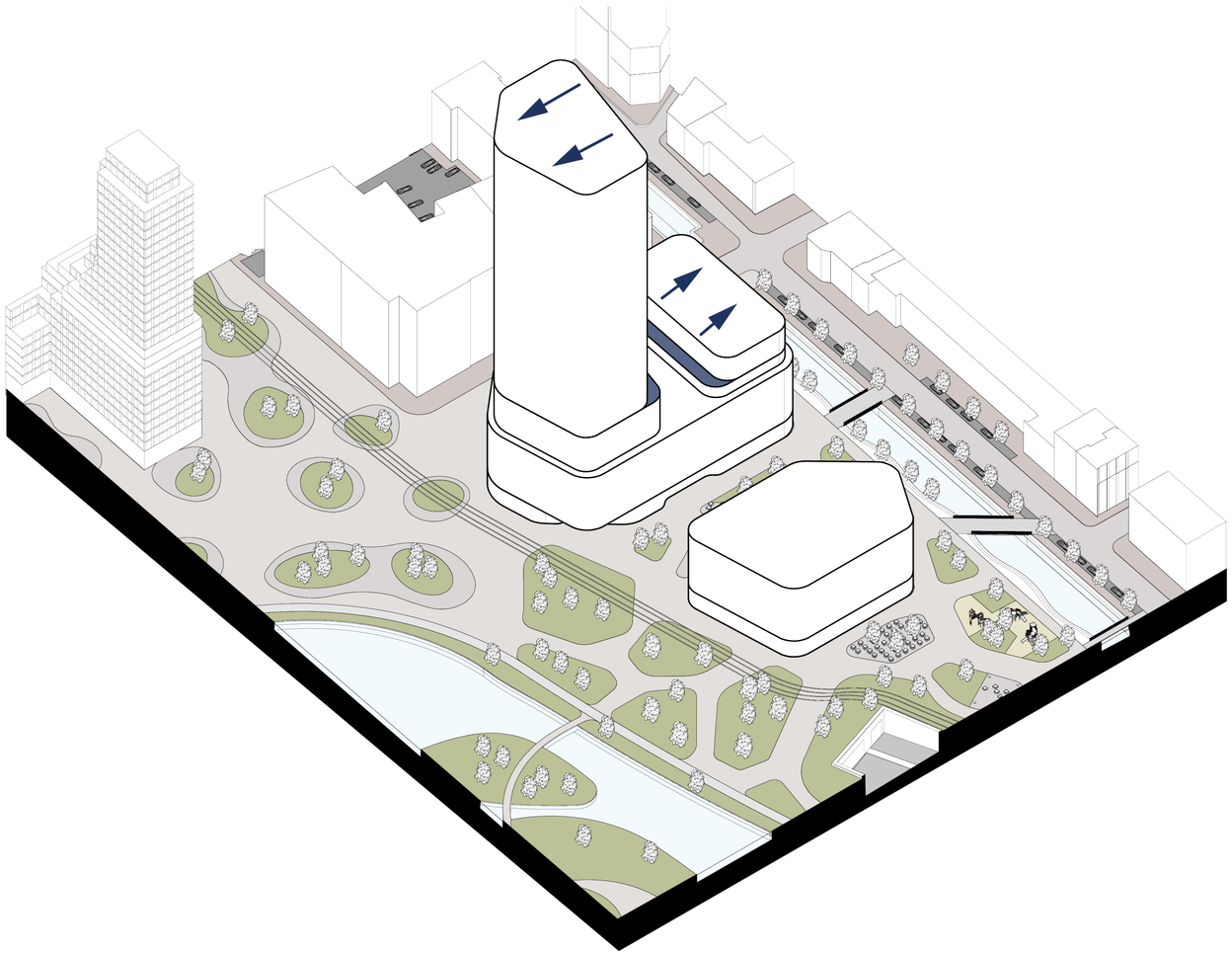
Elevated square and transparent ground floor
combined with setback entrances.

CONCEPT



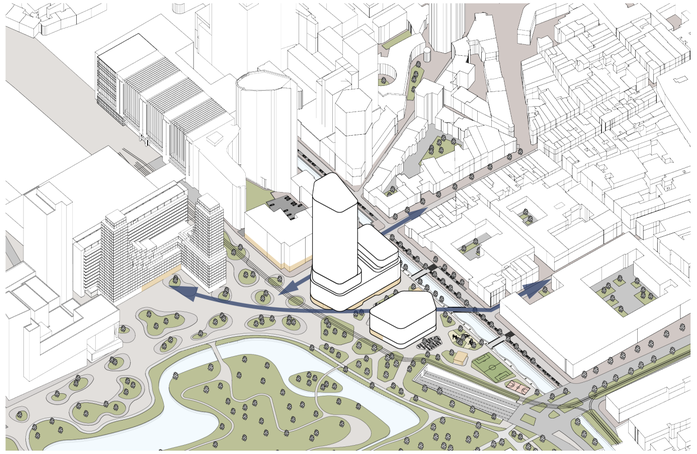
Extrude to fit in the urban fabric height

CONCEPT

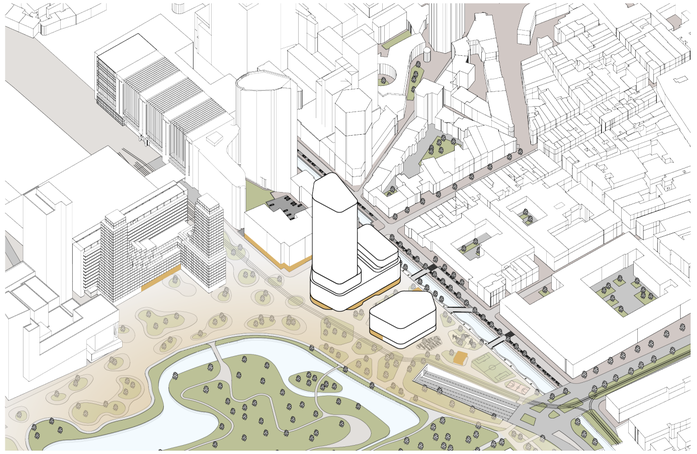


Setback to make the volume less solid

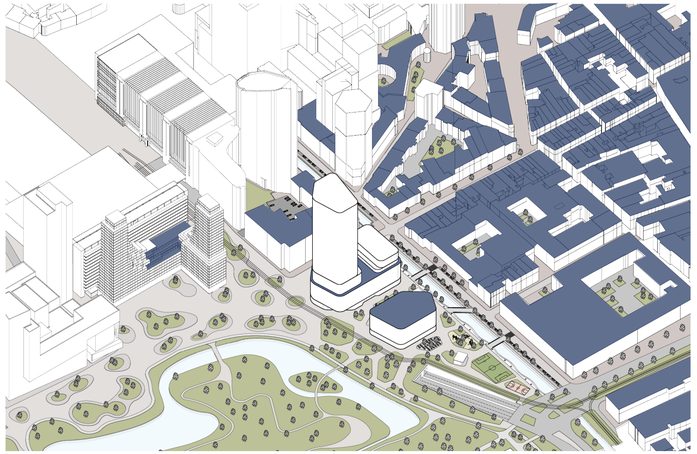
ANCHOR INTO THE URBAN FABRIC



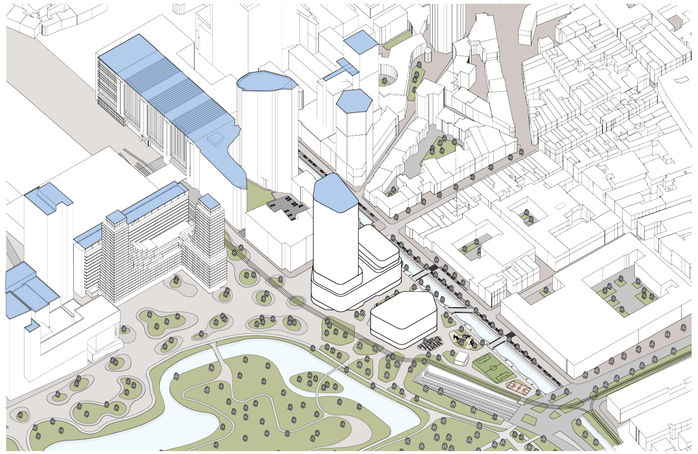
Flow station - campus and city



Creating a transition zone between park and city



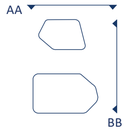
City height

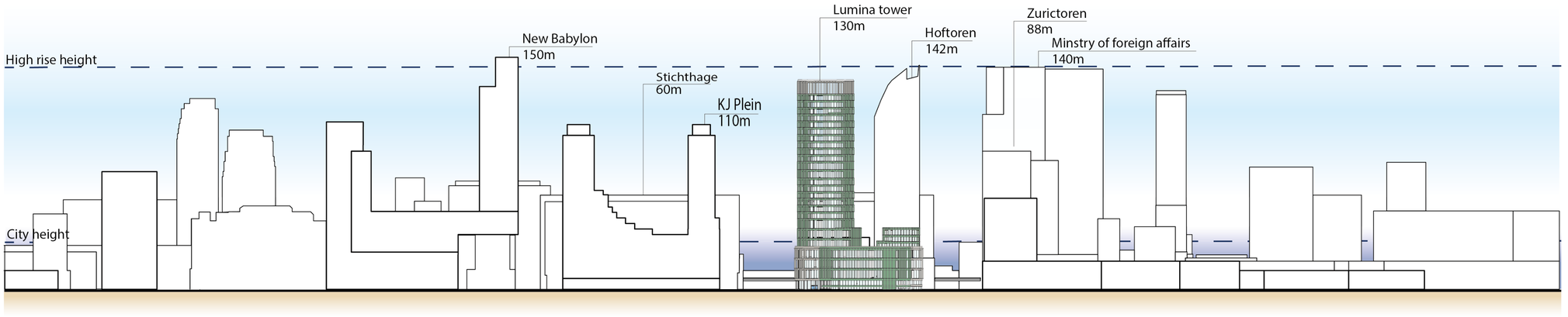


Station area height

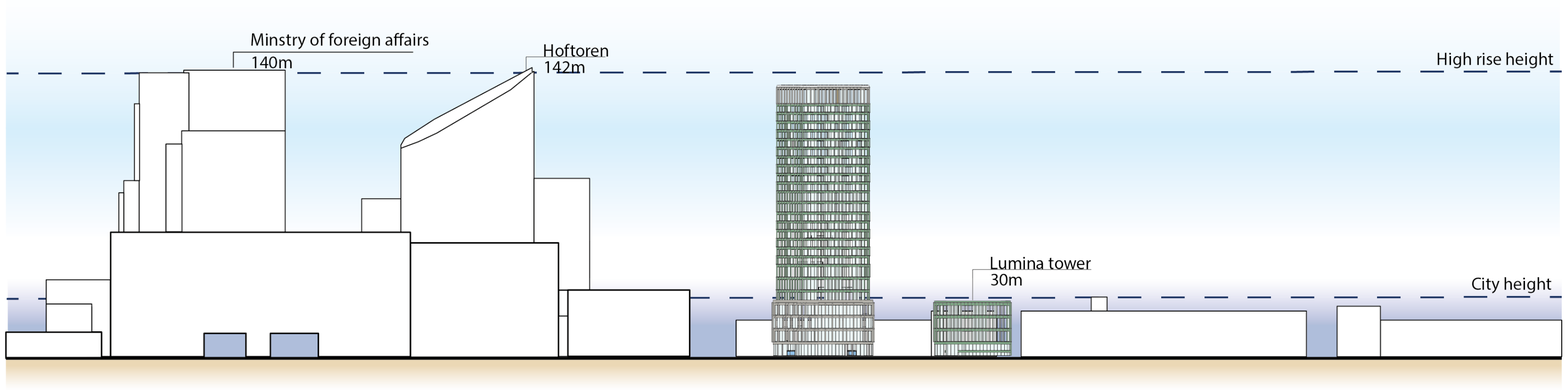
Matching the urban fabric

HEIGHT





AA



BB

Matching the urban fabric height

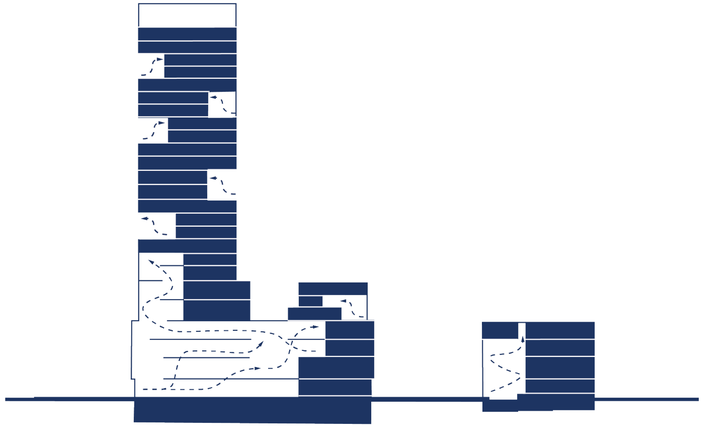
IMPLEMENTATION



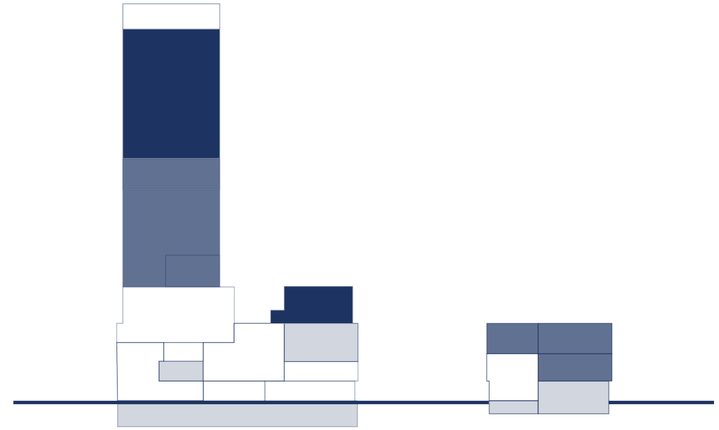
THE CONCEPT



Elevated plinth over 4 levels

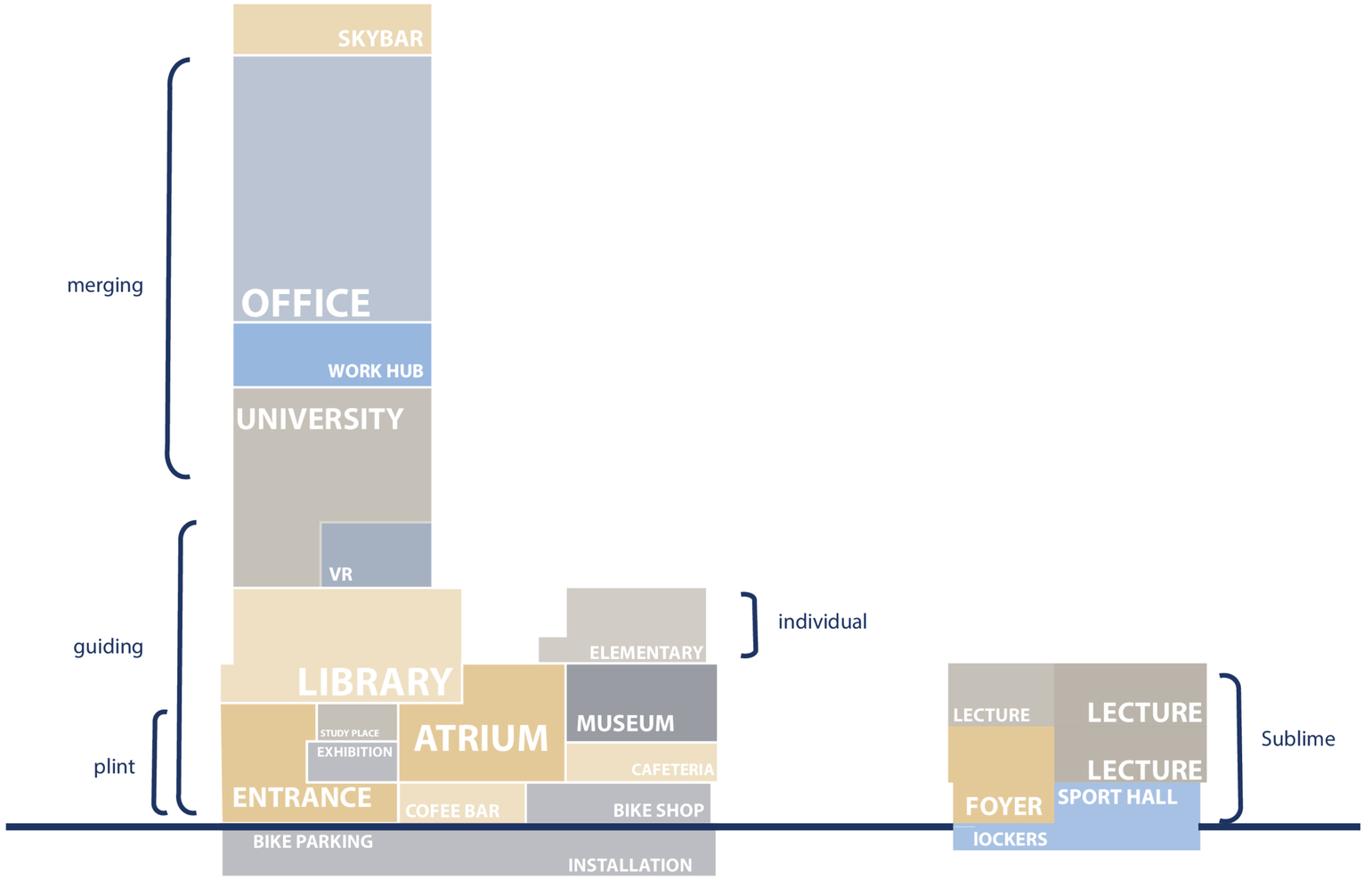


Wander inbetween voids



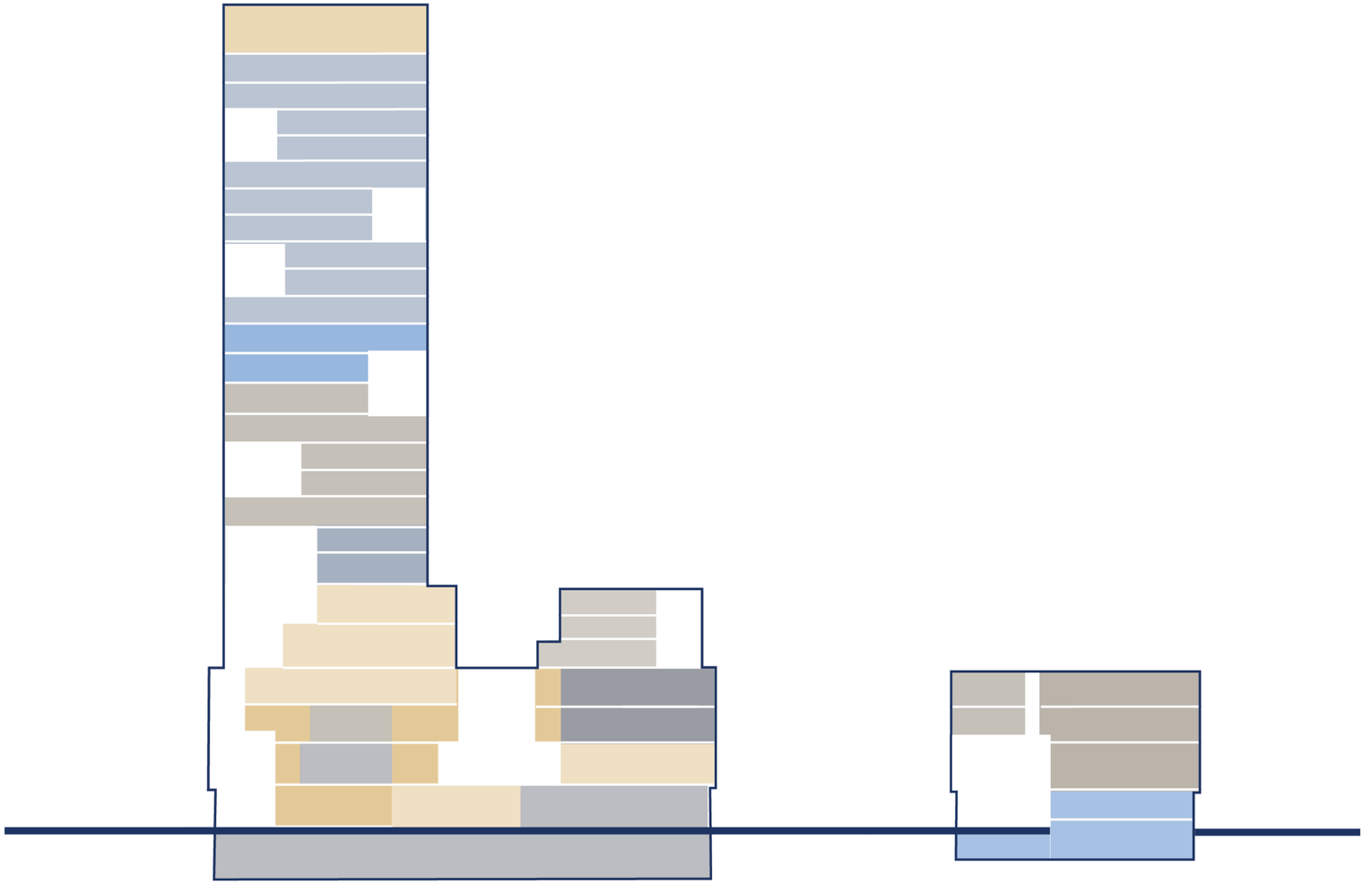
Public - Institutionalized

FUNCTIONS



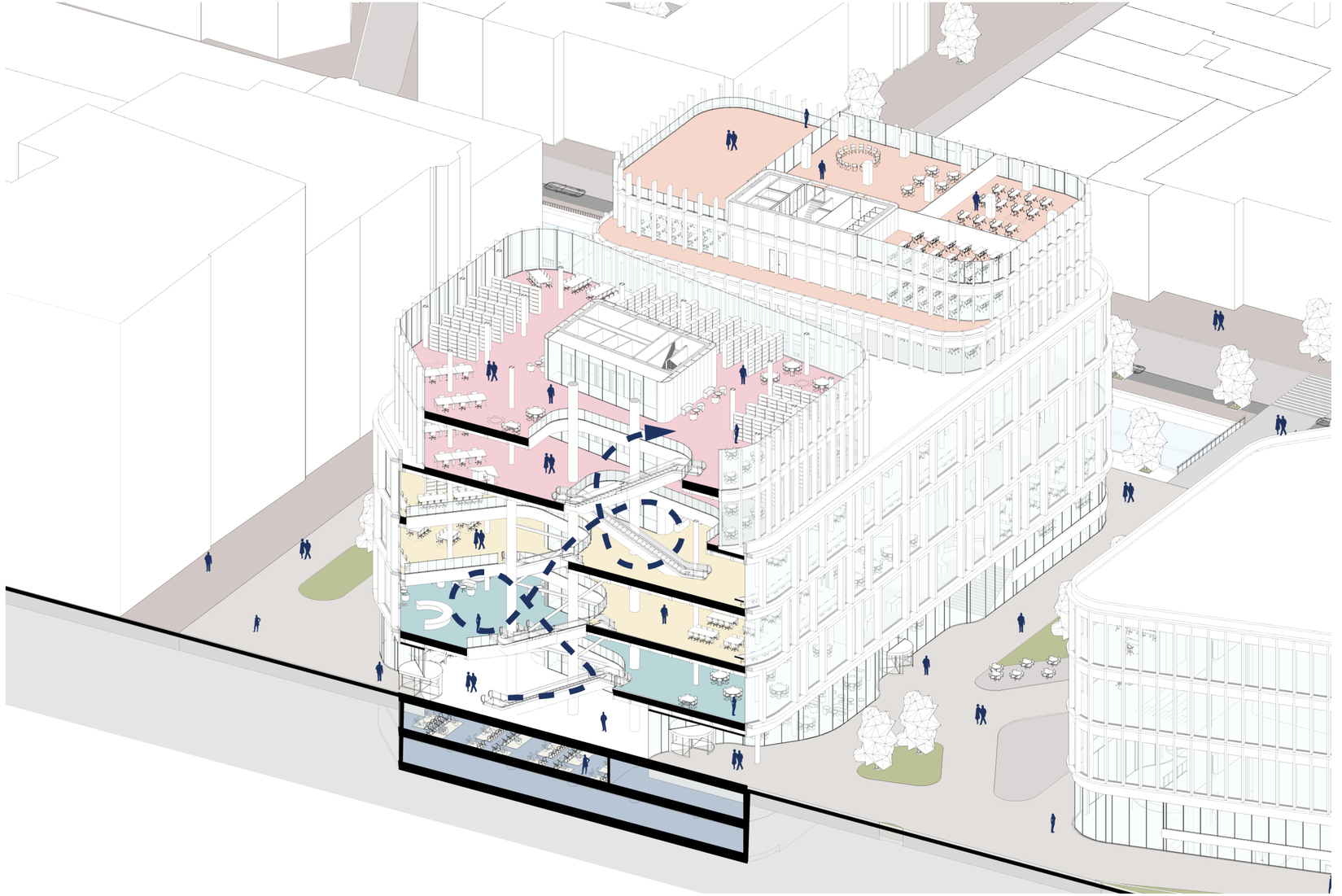
Clustering functions with the guidelines

VISTAS - VOIDS



Connecting functions by voids, showcasing functions and movement

VOIDS

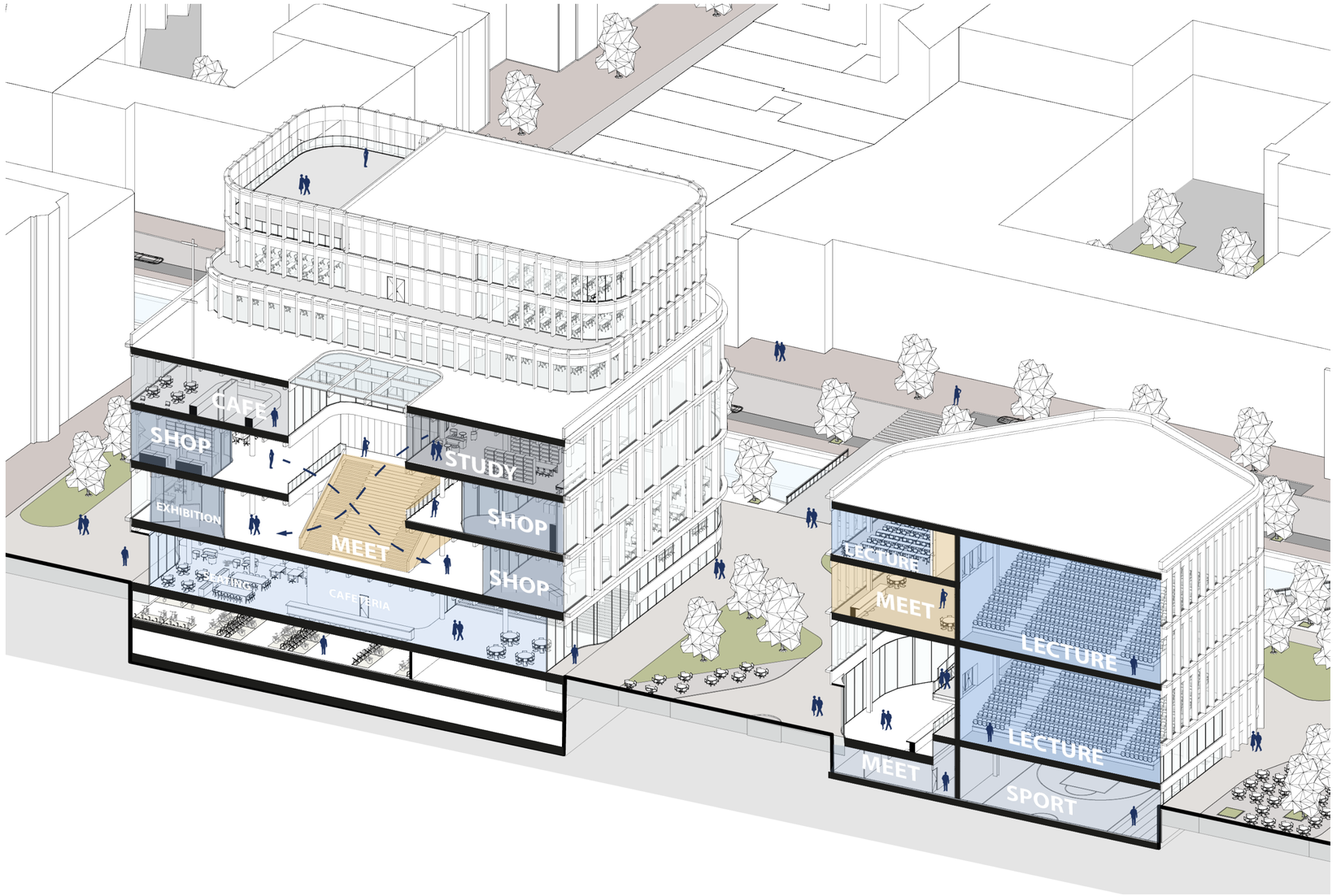


Changing vistas and view lines unfold as you navigate through the building.

FIRST FLOOR VOID



ATRIUM



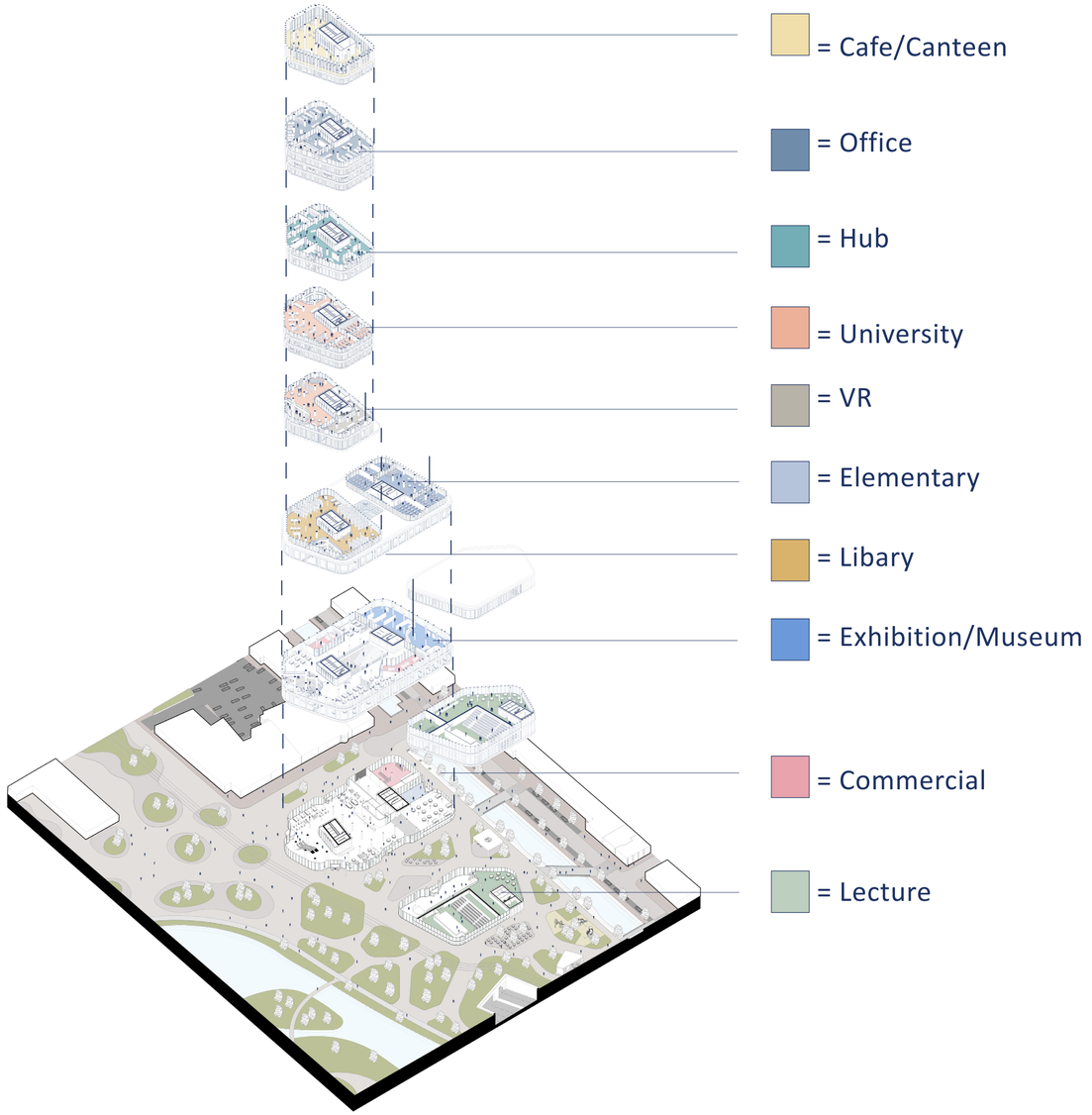
Cultural and institiutional learning

UNIVERSITY GATHERING HALL

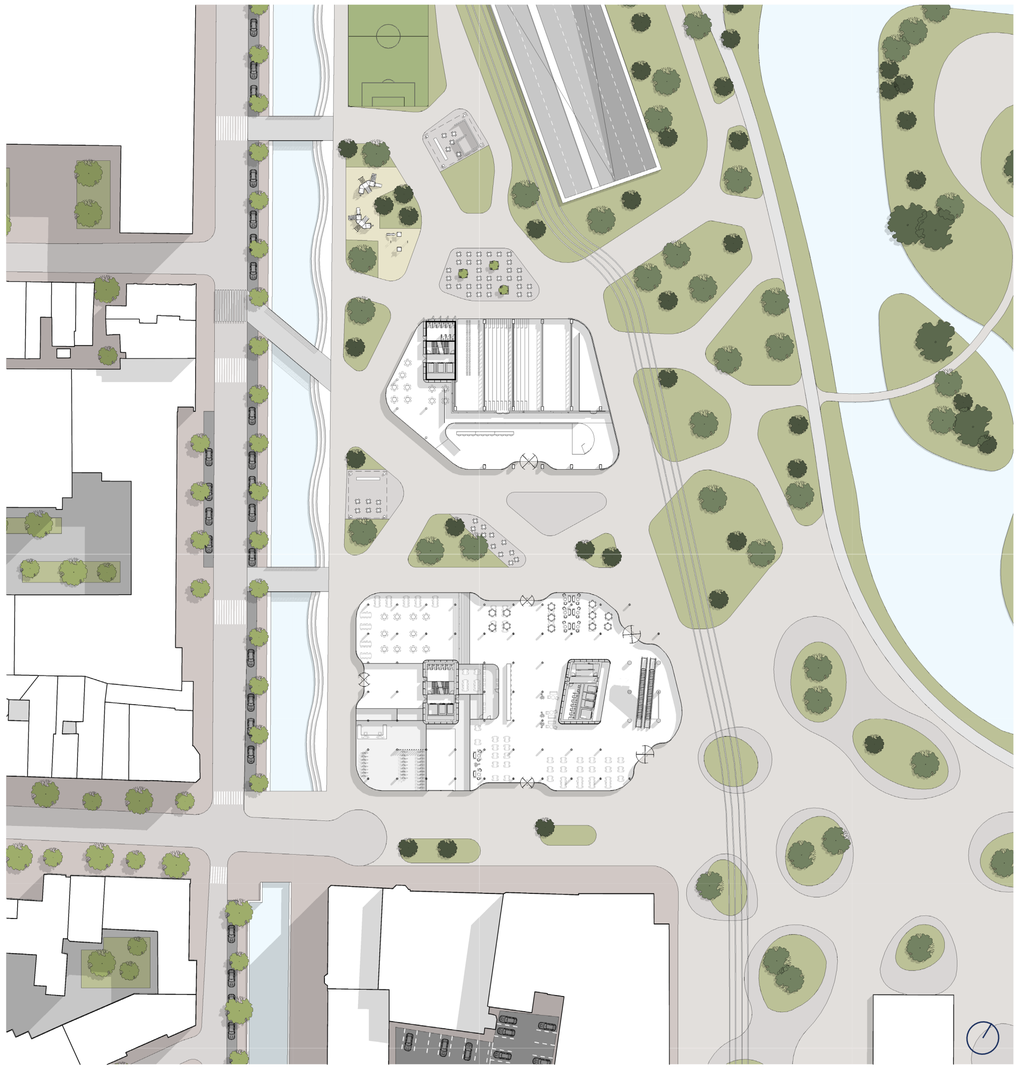


05 Architecture

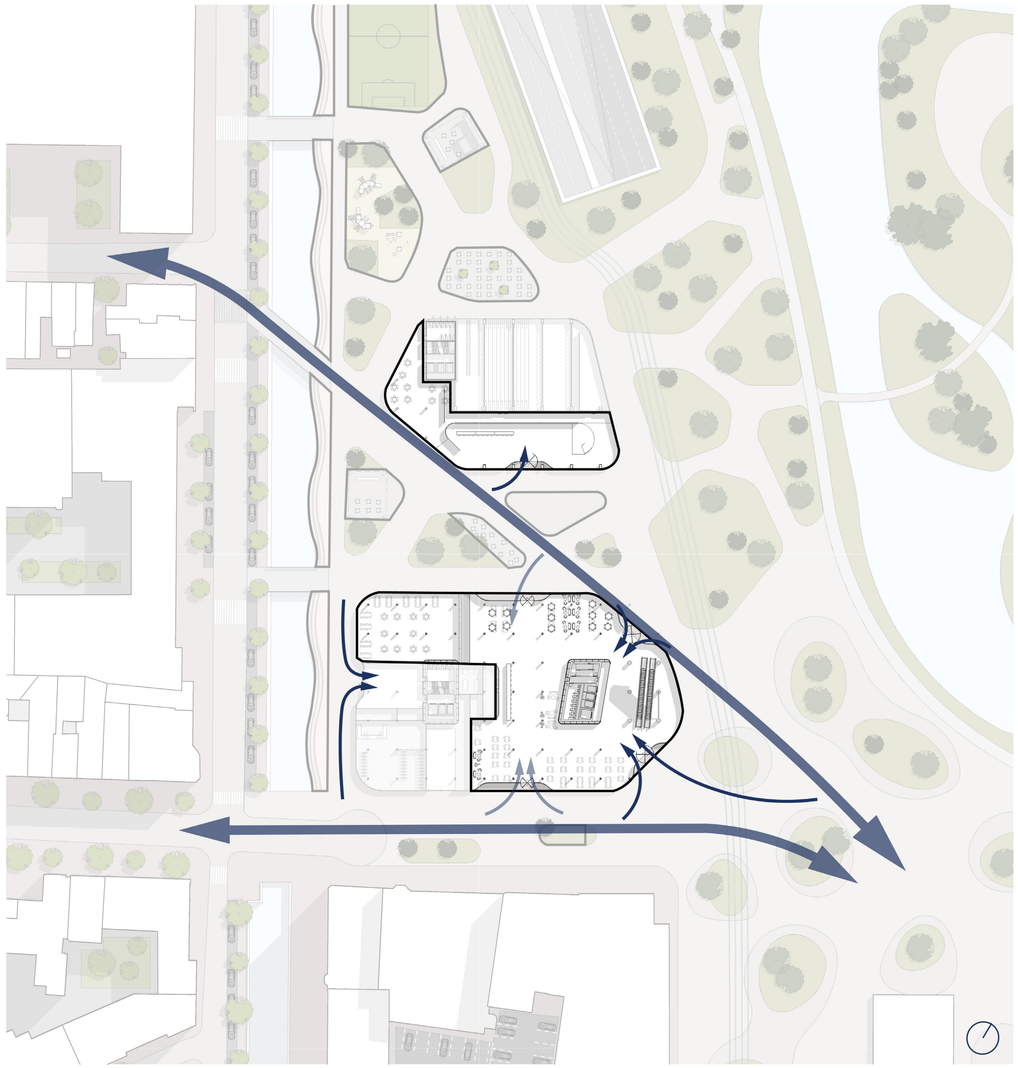
STACKING FLOWS



OUTDOOR SPACE



ENTRANCES



Guidance to the building by the new connection

SITE ACTIVITIES



Sport pavilion



Playground



Gathering



Waterfront





Soccer field



Terraces



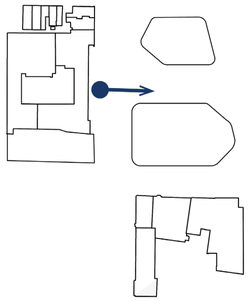
Water square



Public bike storage

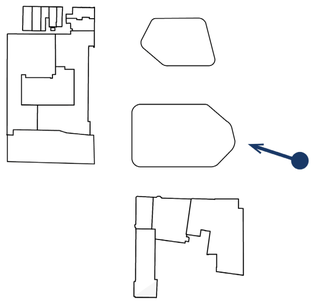
Different types of gathering

WATERFRONT



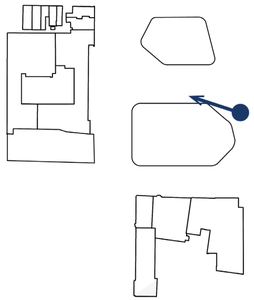


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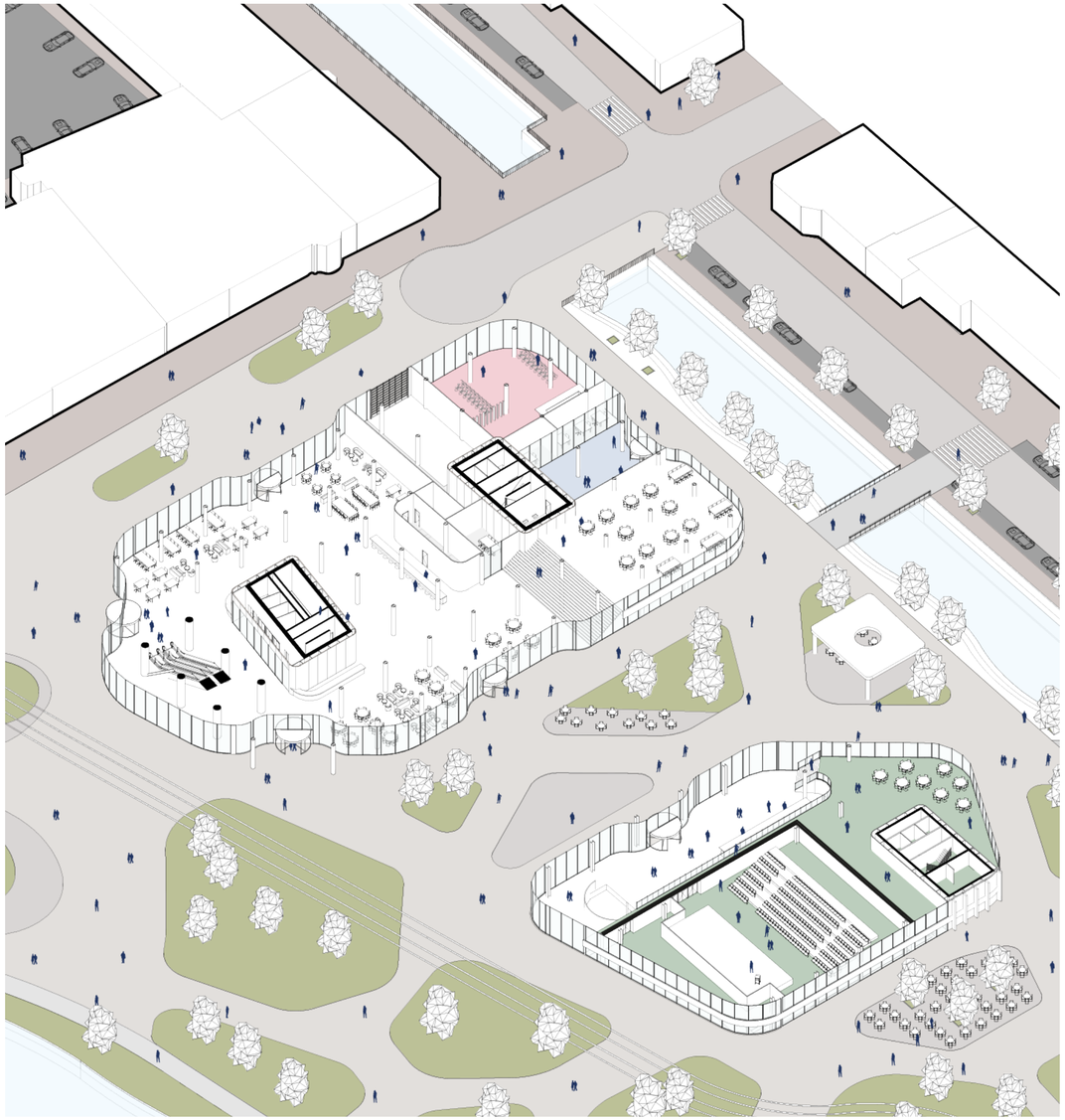


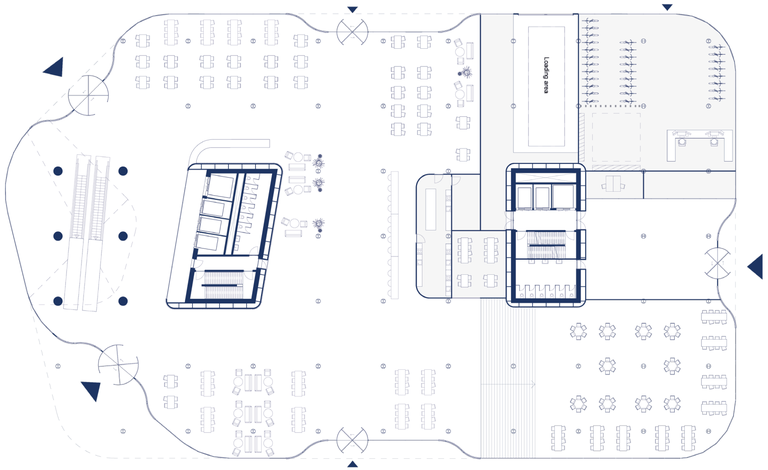
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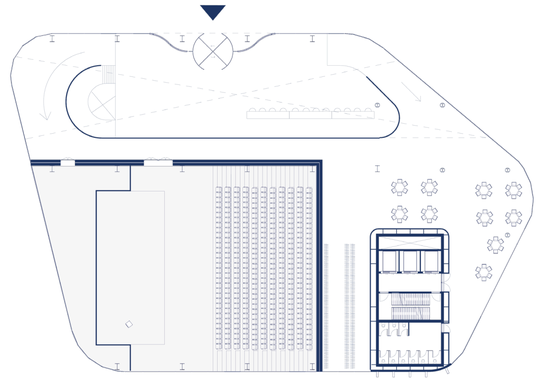




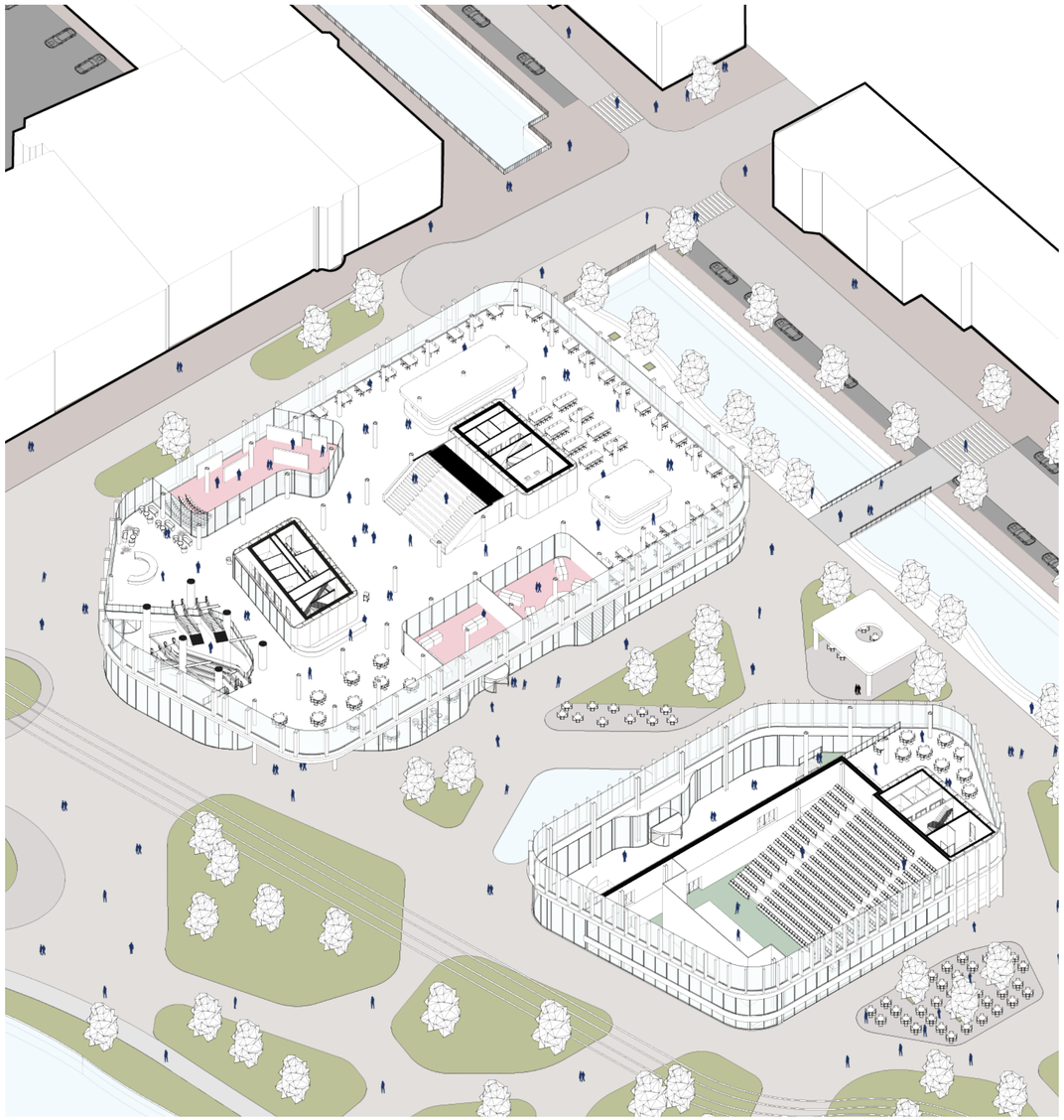
GROUND FLOOR - PLINTH

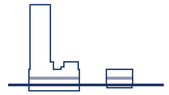


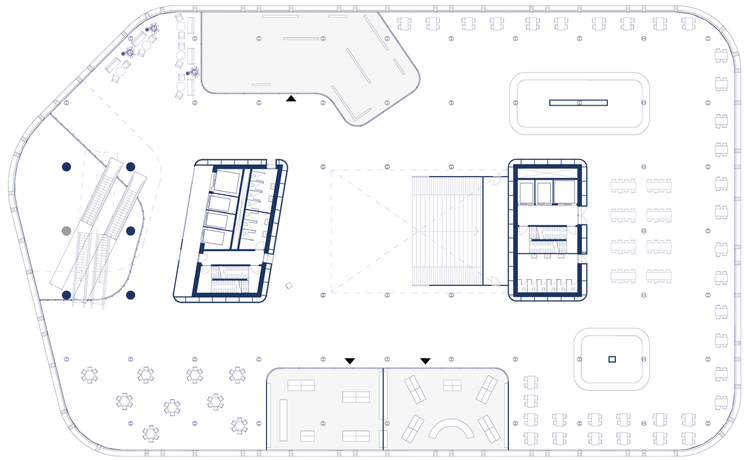


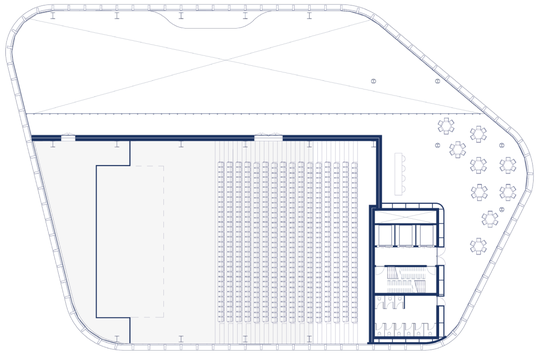


FIRST FLOOR - PLINTH

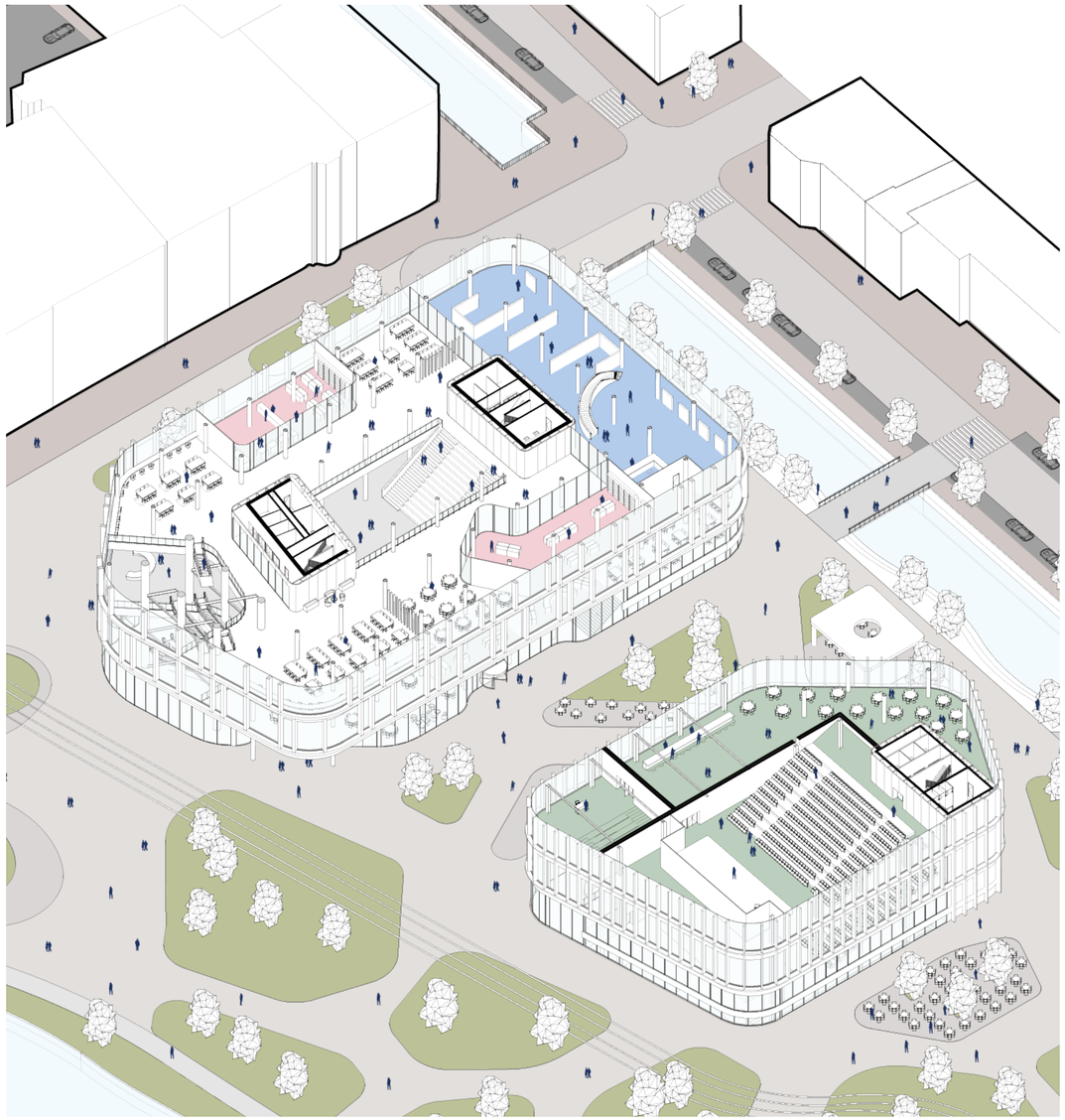


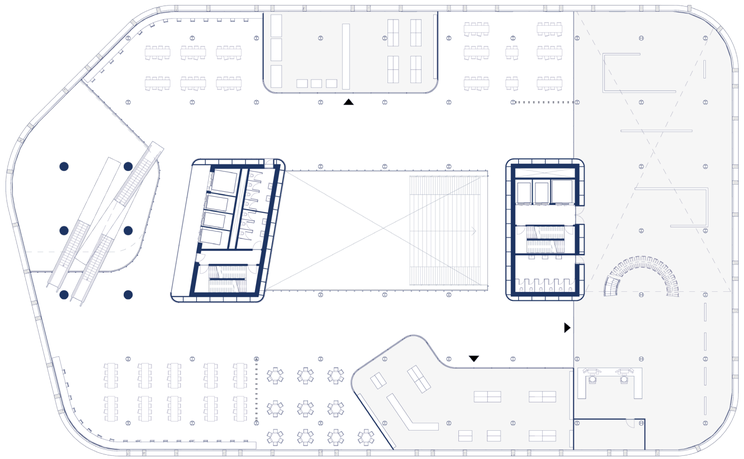


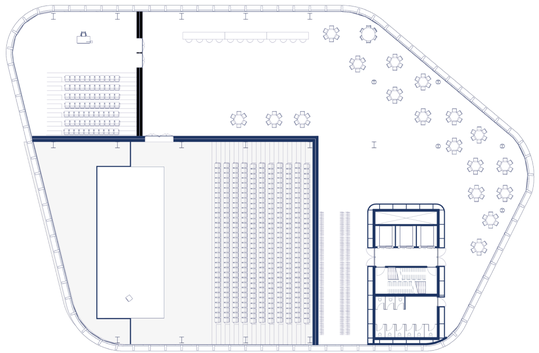




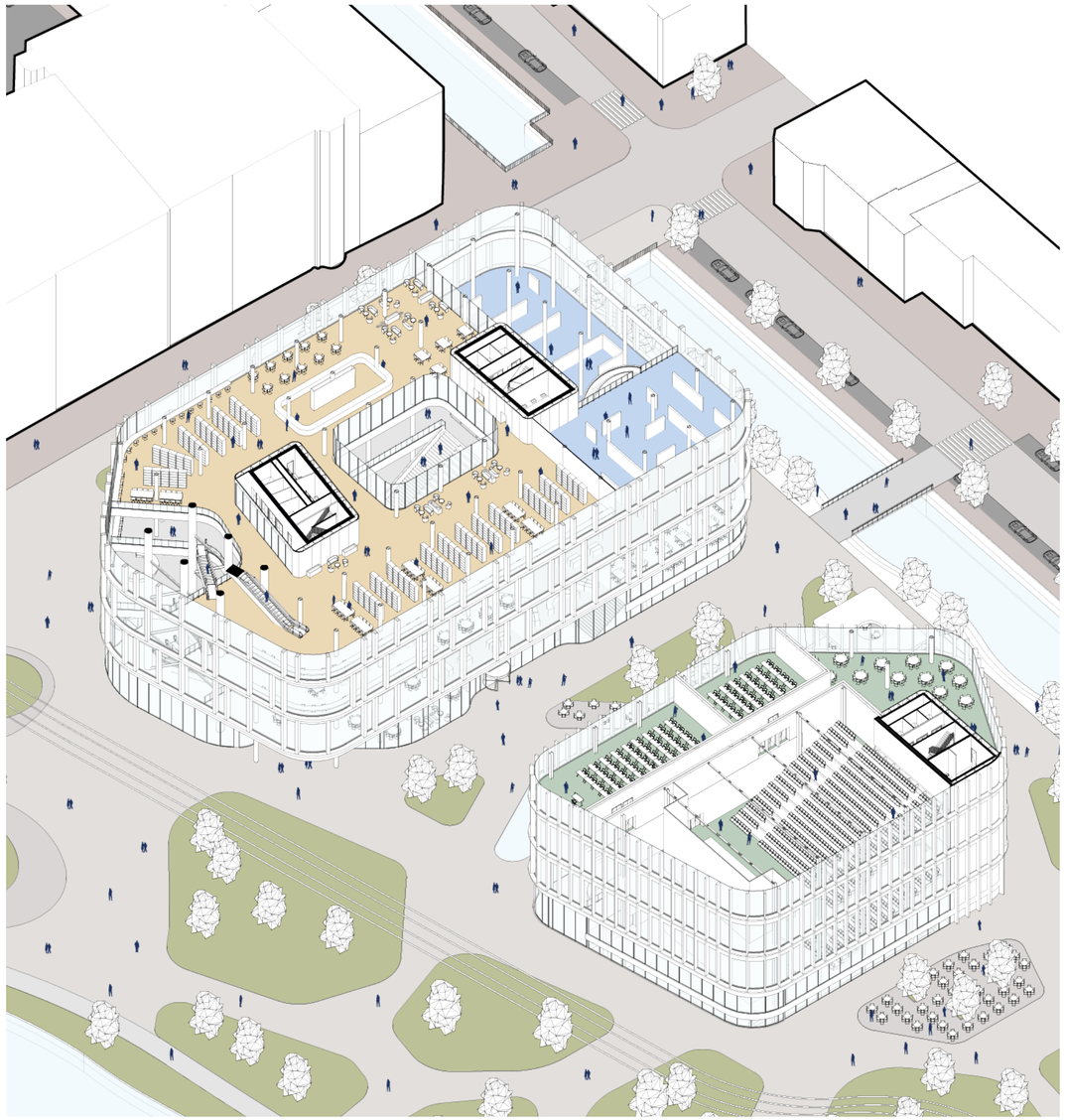
SECOND FLOOR - PLINTH

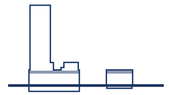


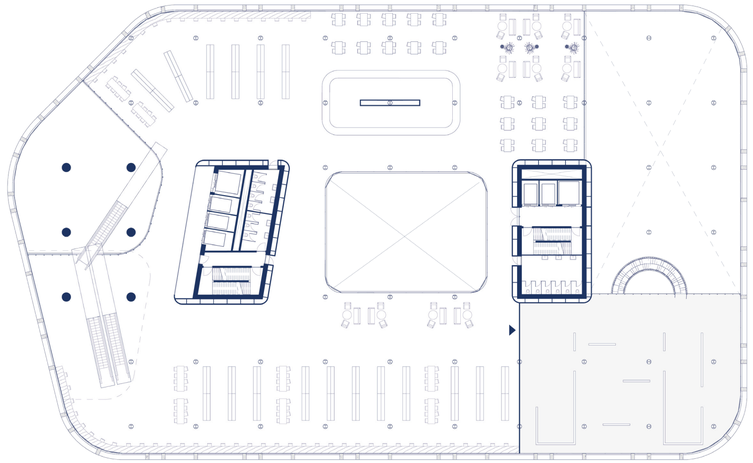


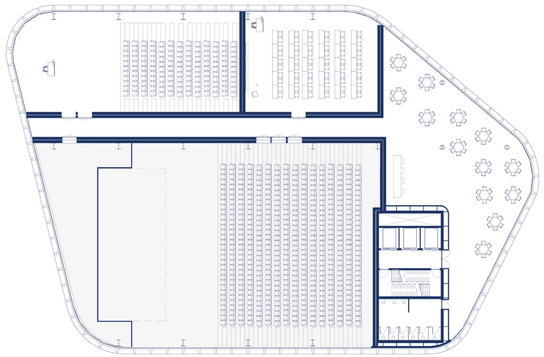


THIRD FLOOR - PLINTH

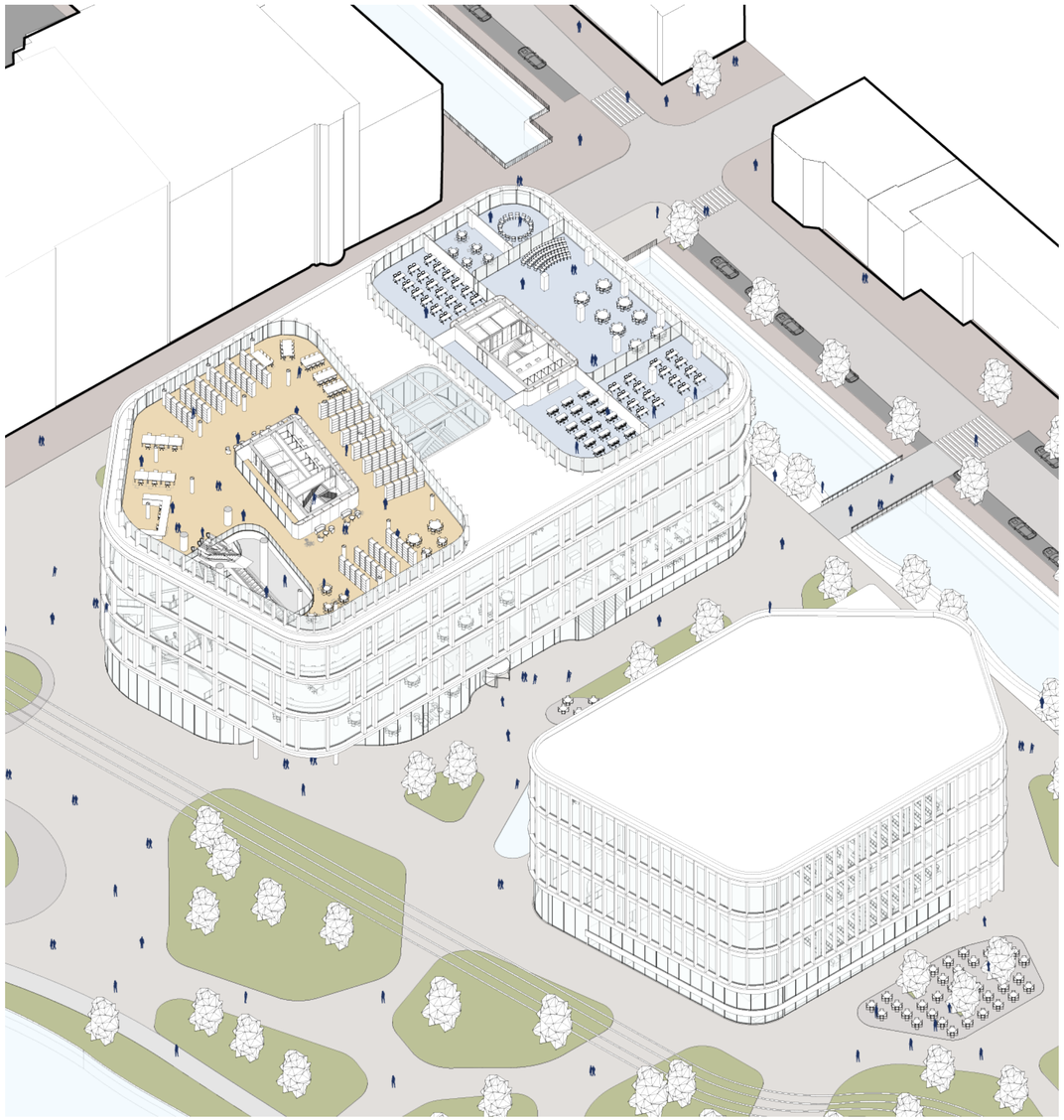


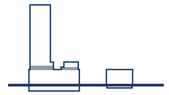


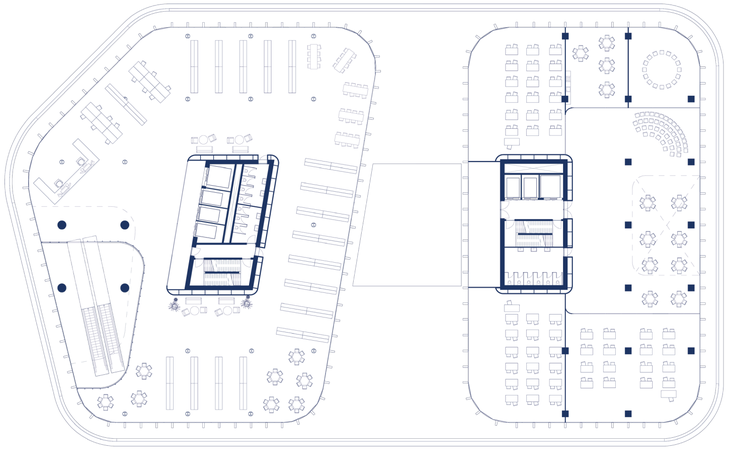




FOURTH FLOOR - LIBRARY

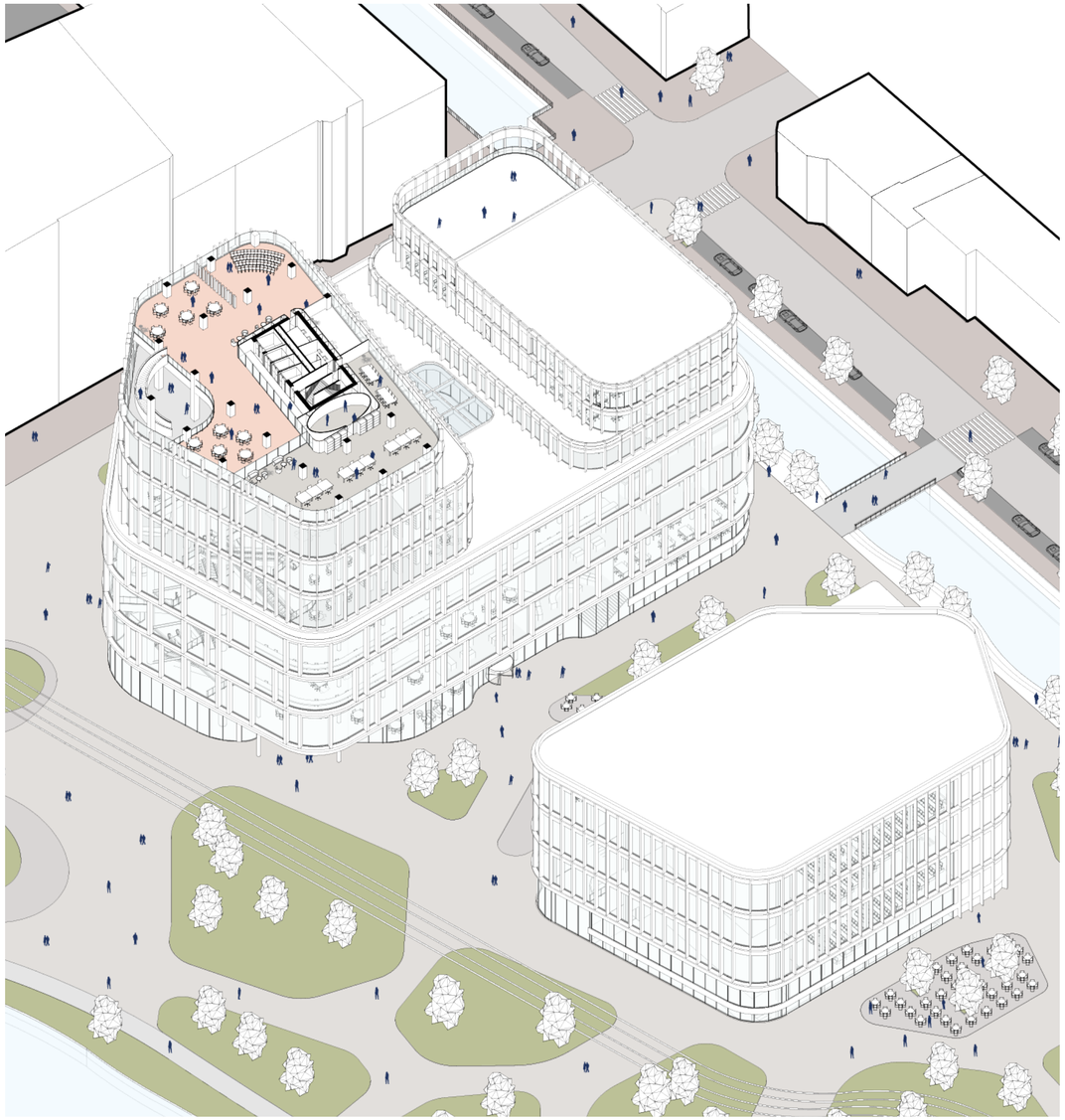


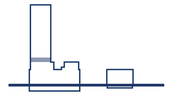


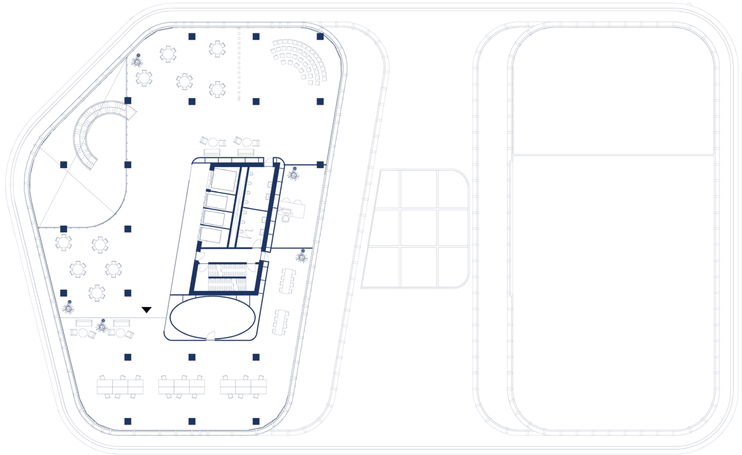




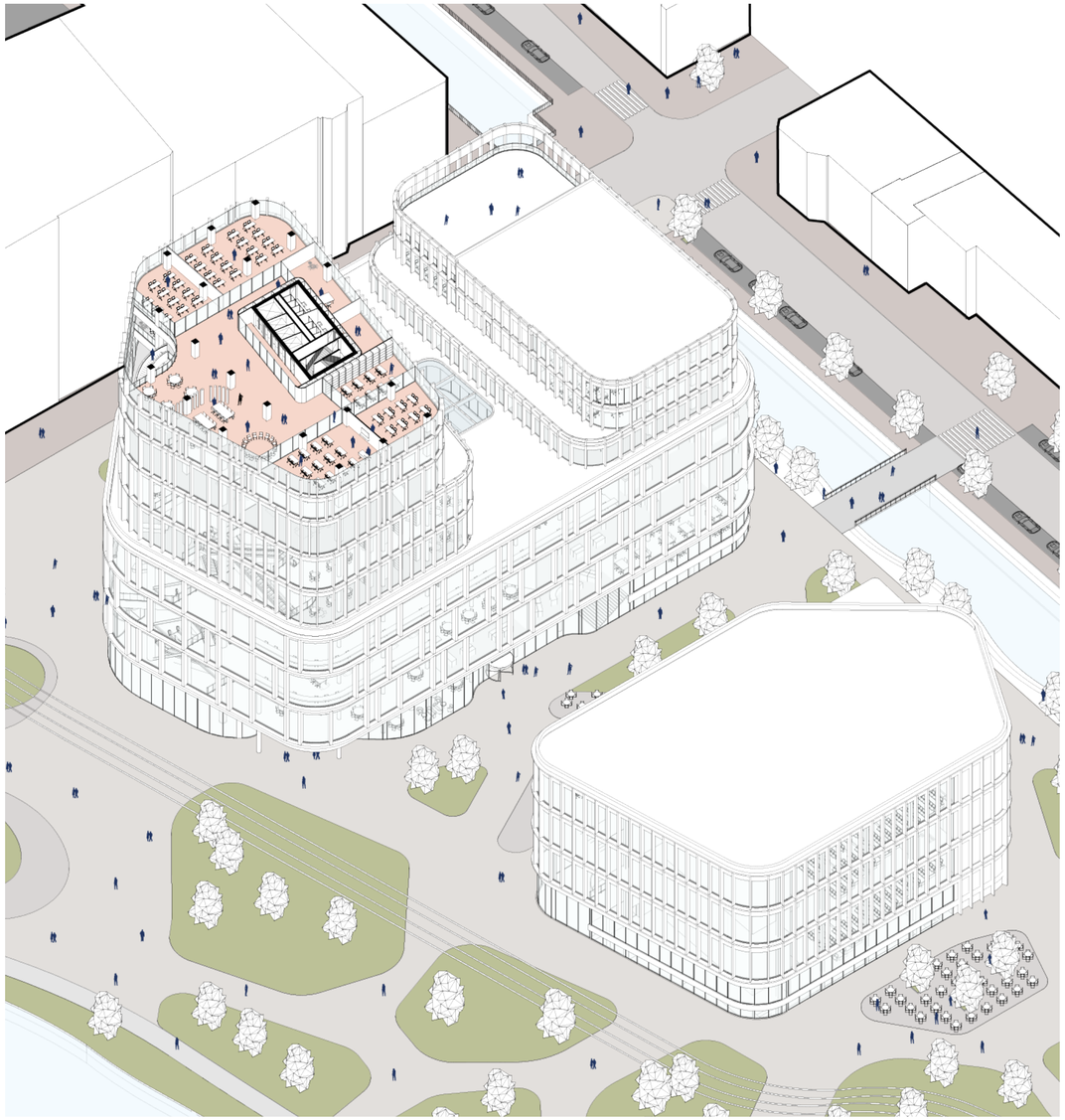
SEVENTH FLOOR - UNIVERSITY ENTRANCE

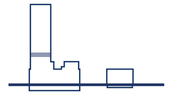


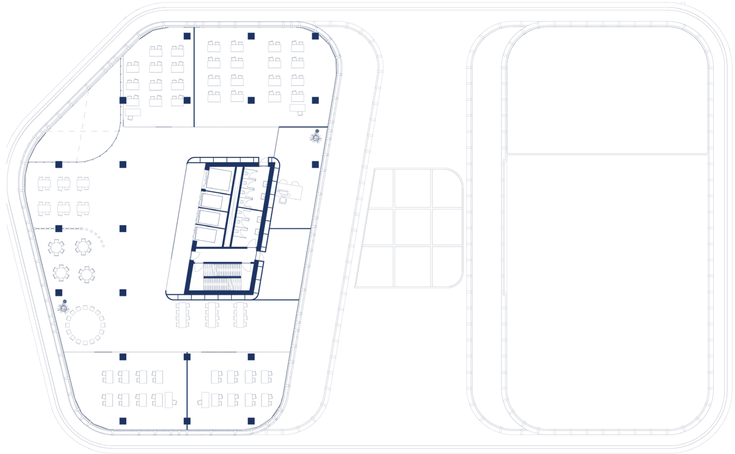




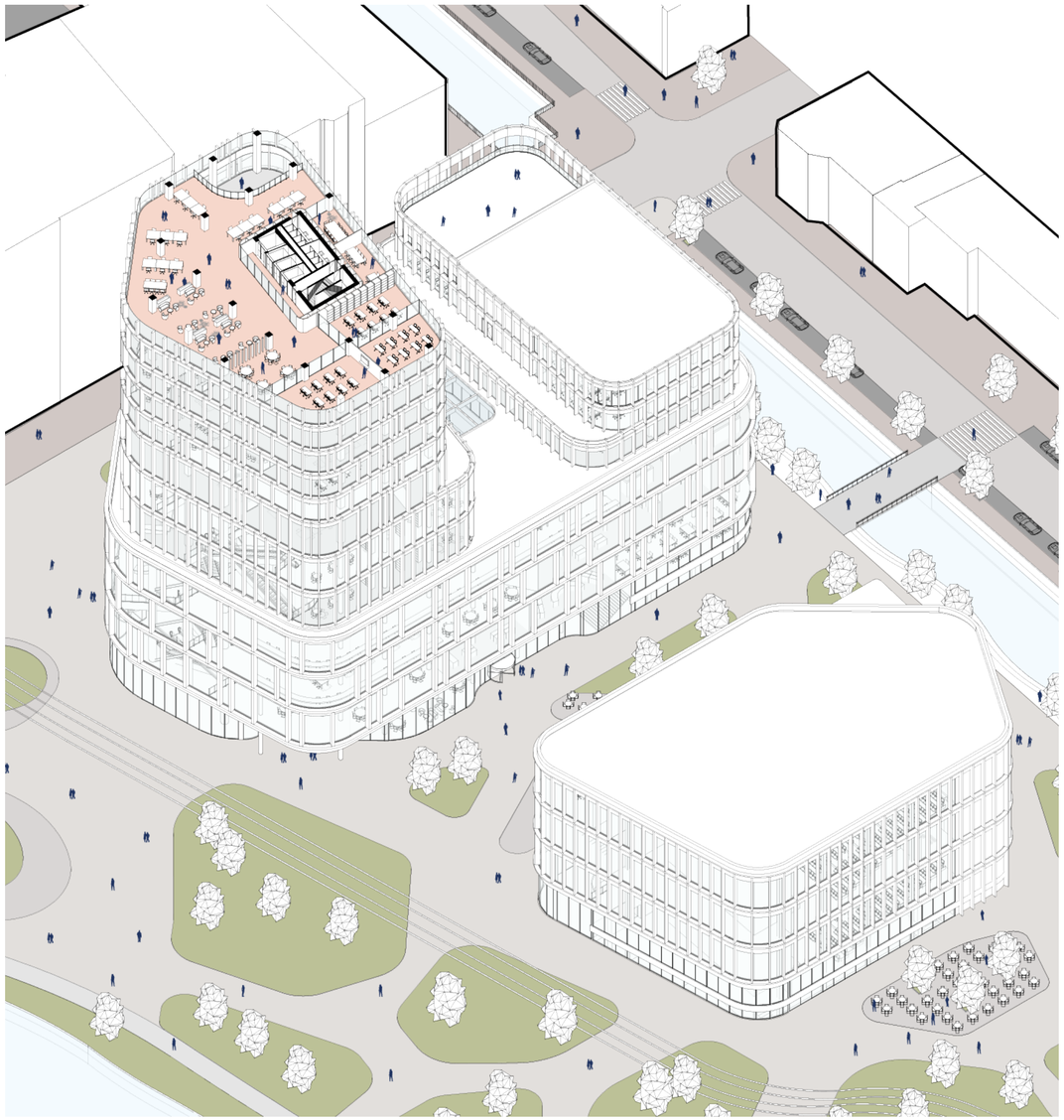
EIGHT FLOOR - UNIVERSITY

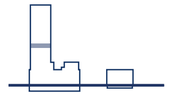


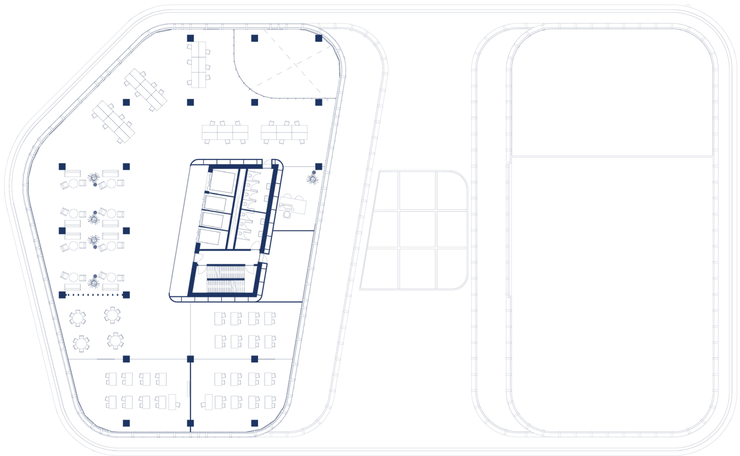




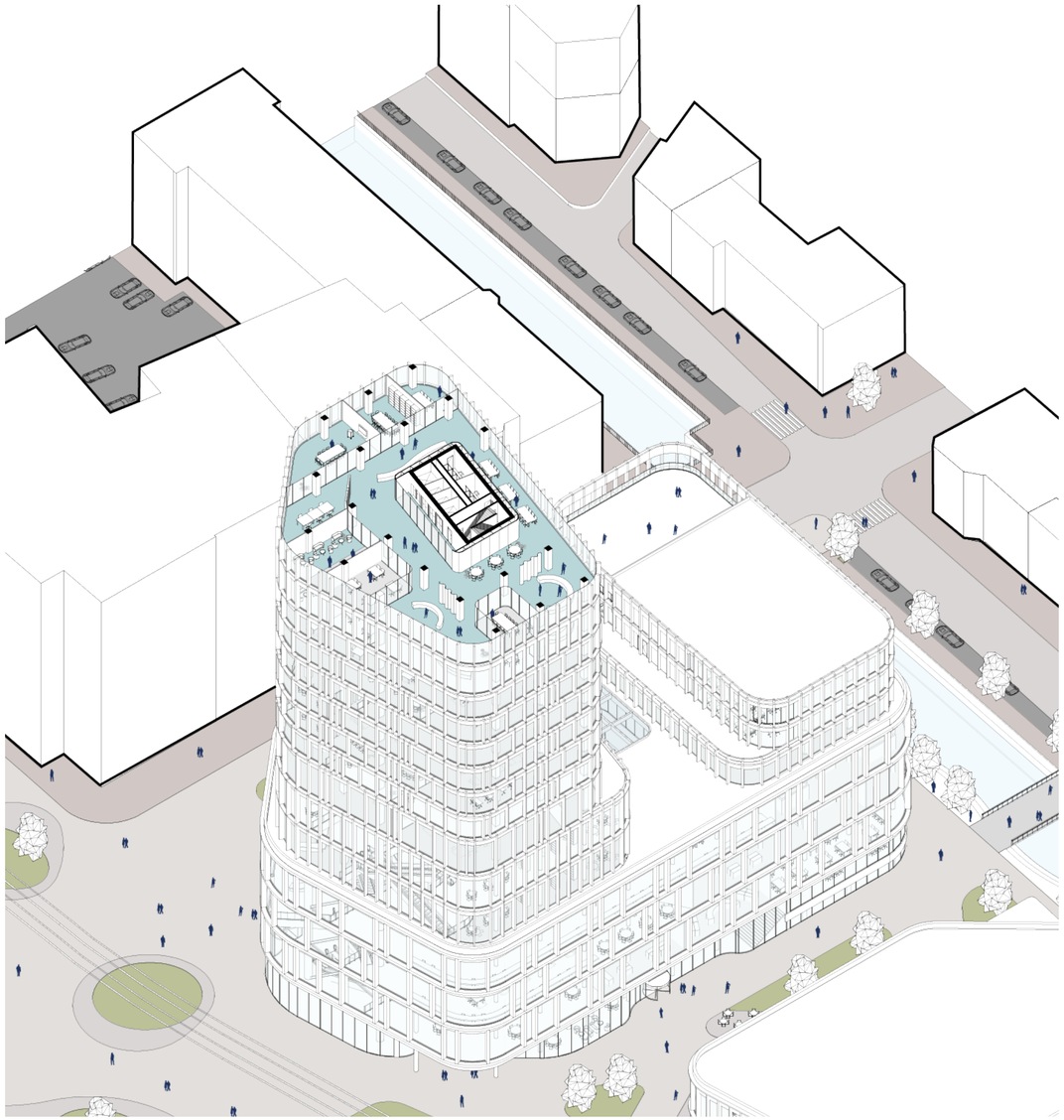
ELEVENTH FLOOR - UNIVERSITY

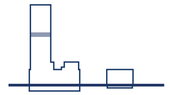


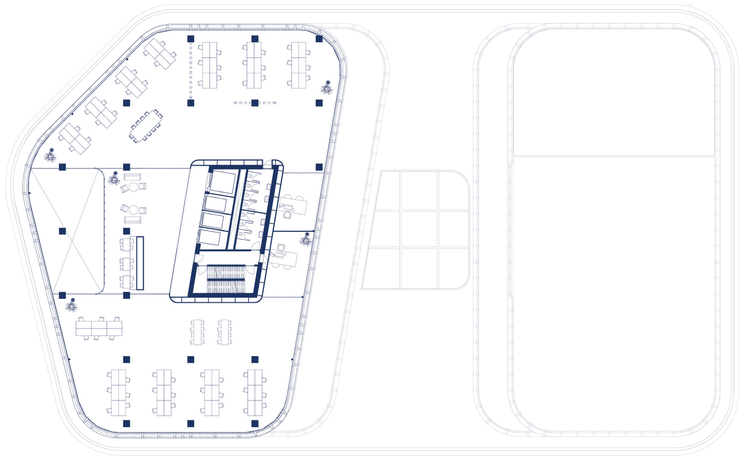




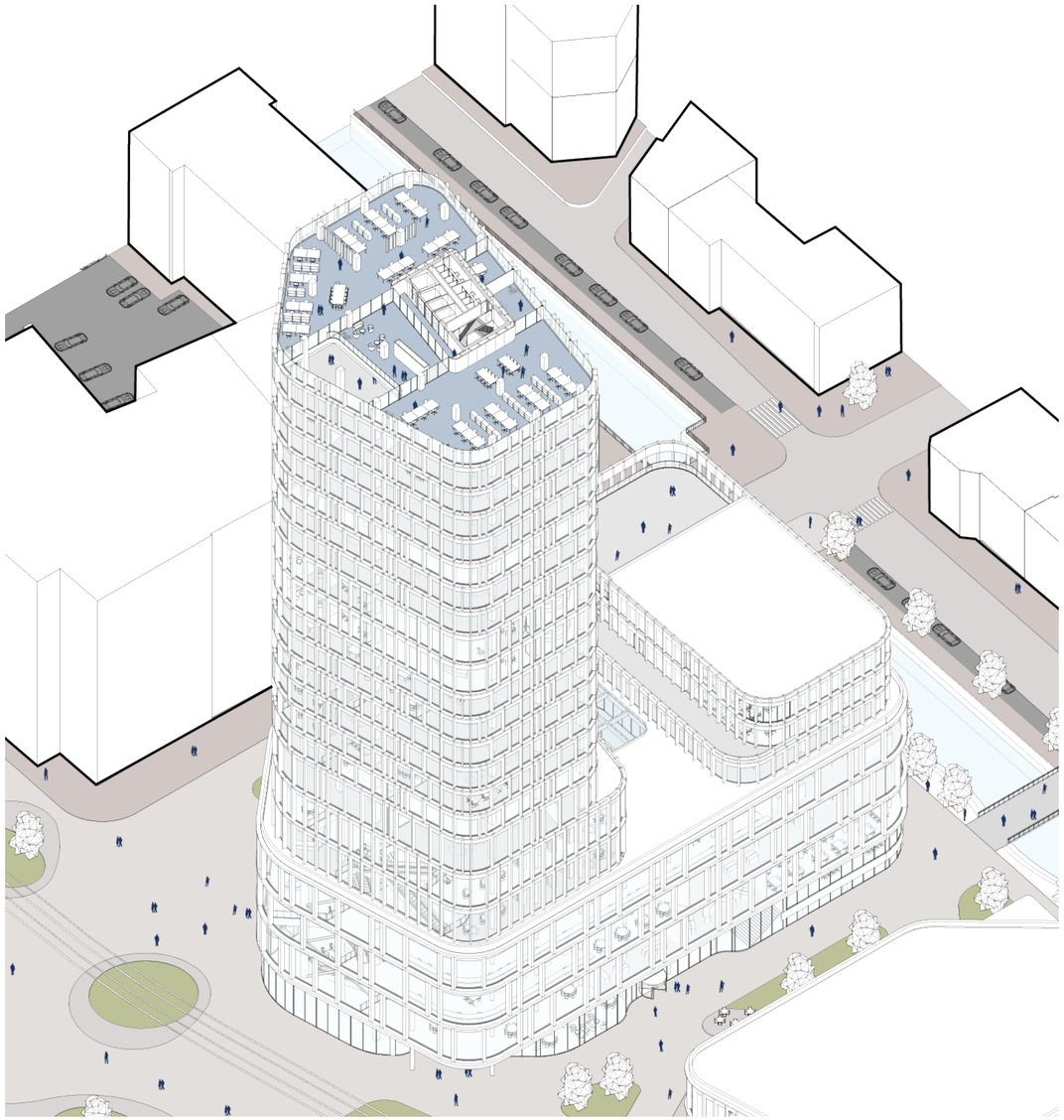
FOURTEENTH FLOOR - WORK HUB

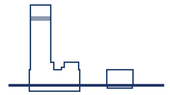


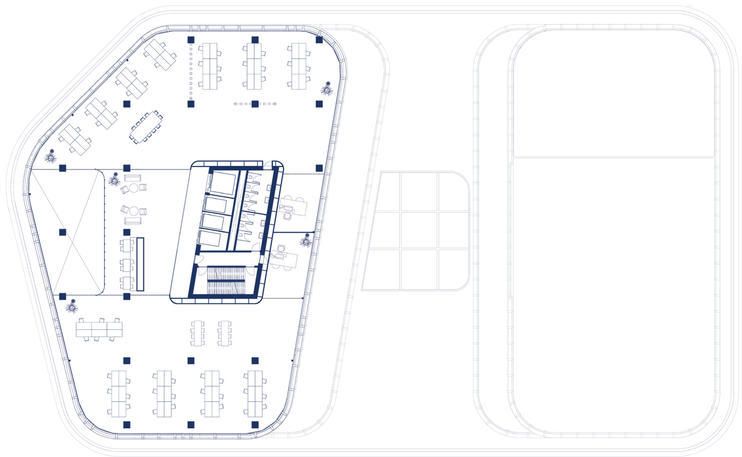




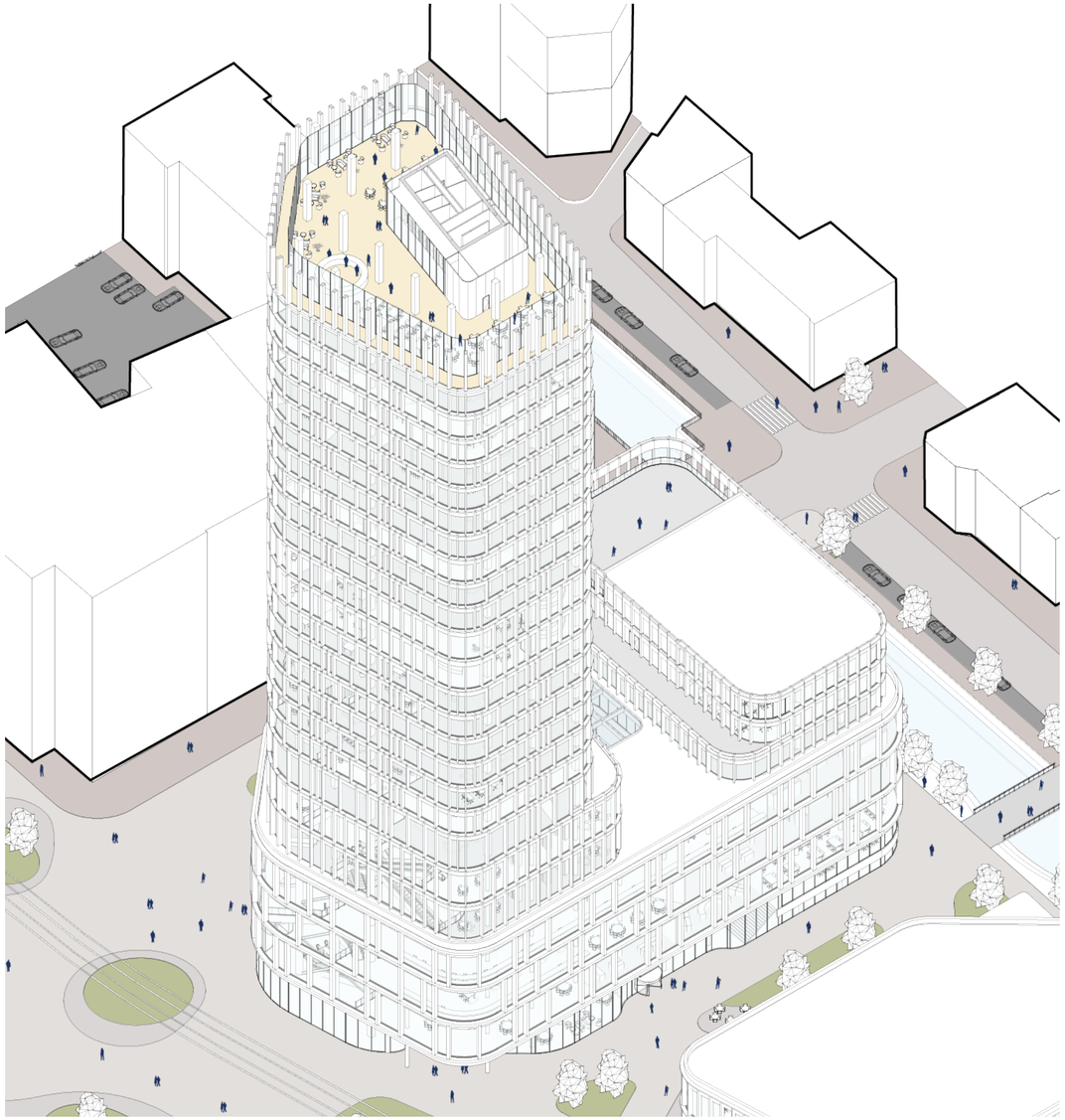
TWENTY SECOND FLOOR - OFFICE

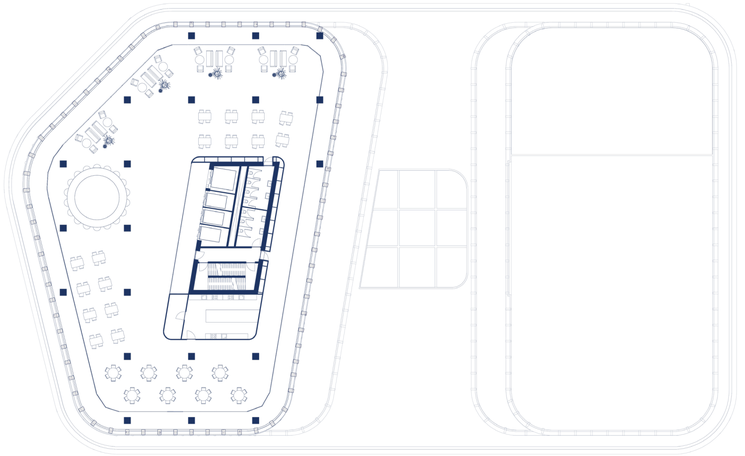






TWENTHY FIFTH FLOOR - SKYBAR



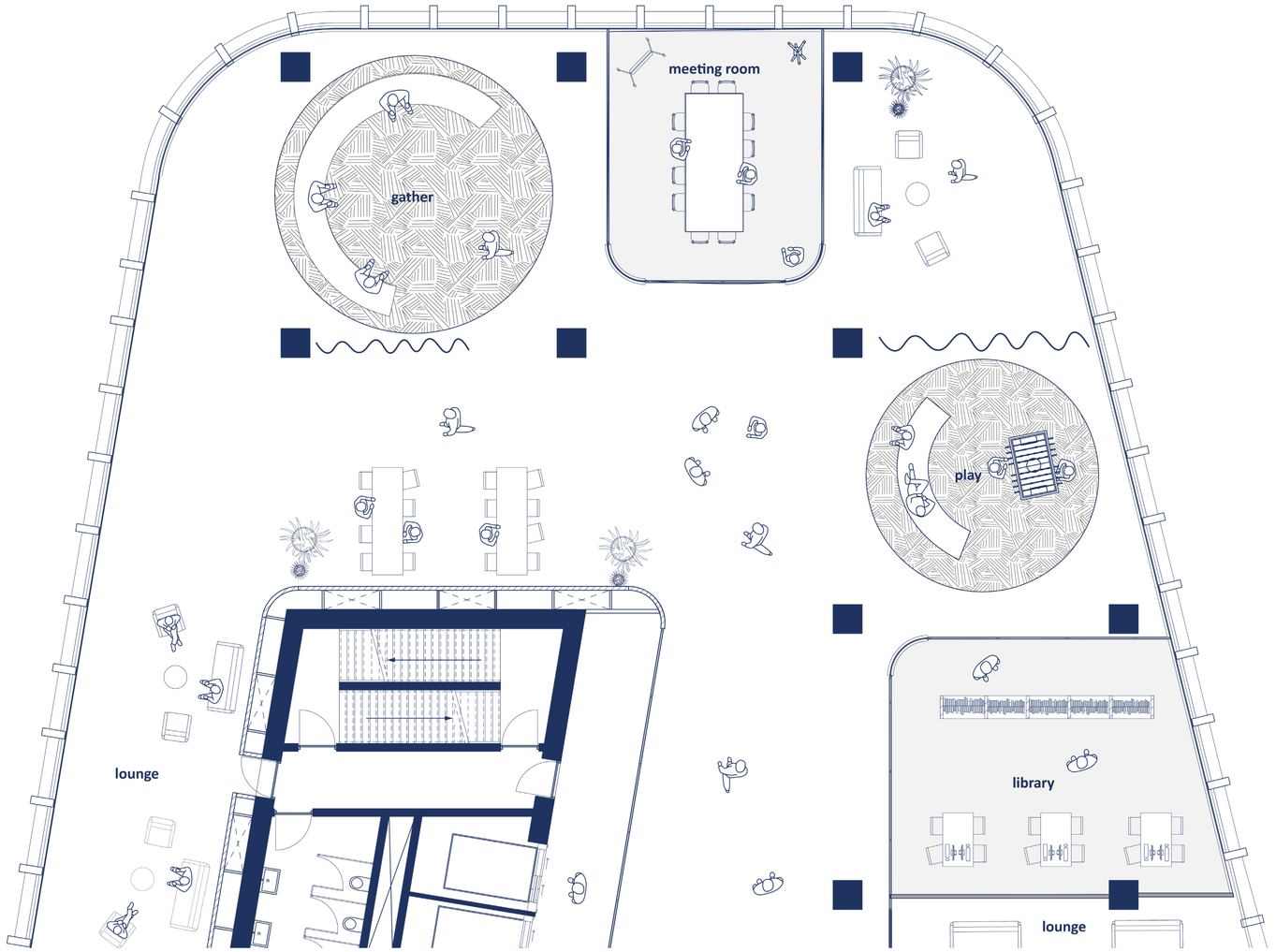


OVERVIEW



TYPICAL FLOORPLAN

Floor 14 - scale 1.50



The workhub on the fourtheenth floor. Formal and informal places meet for university and the offices.

UNIVERSITY ENTRANCE

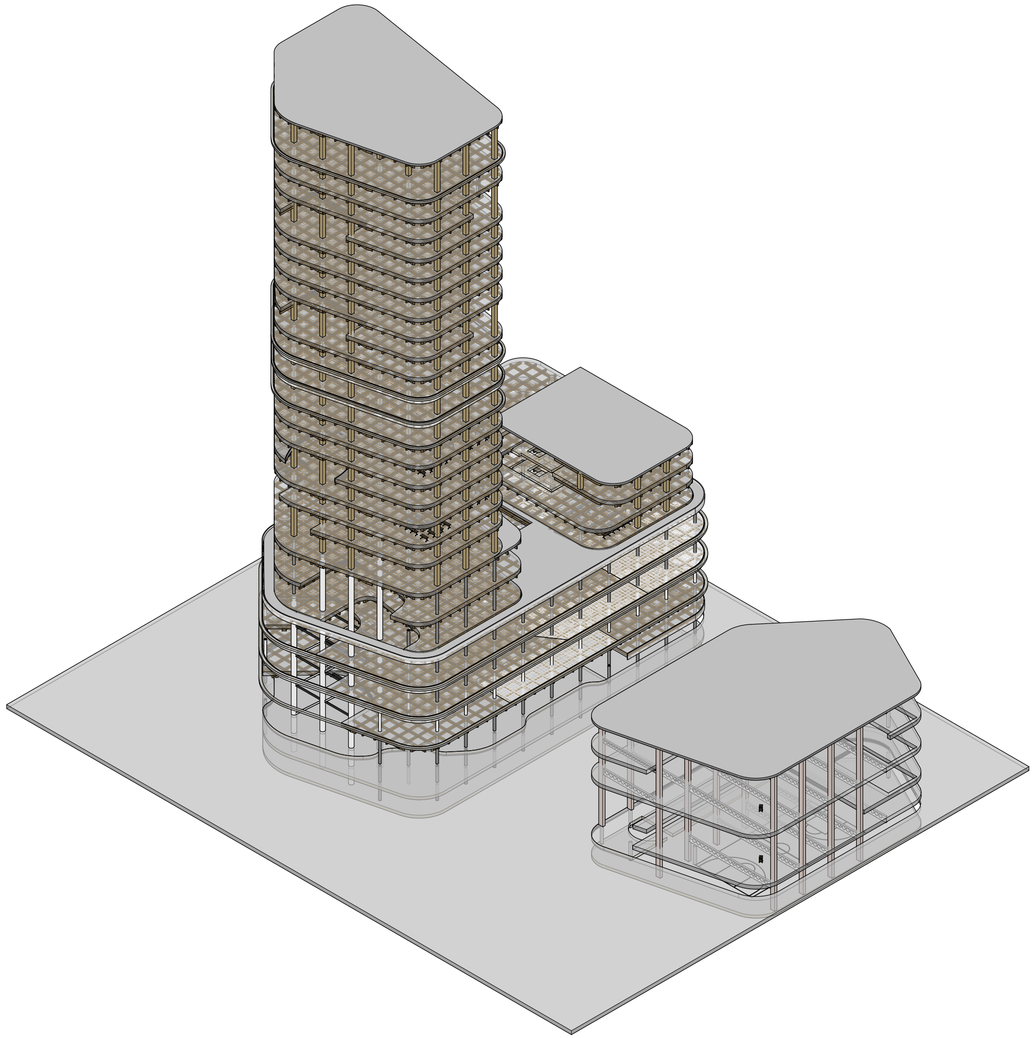


EXHIBITION - MUSEUM

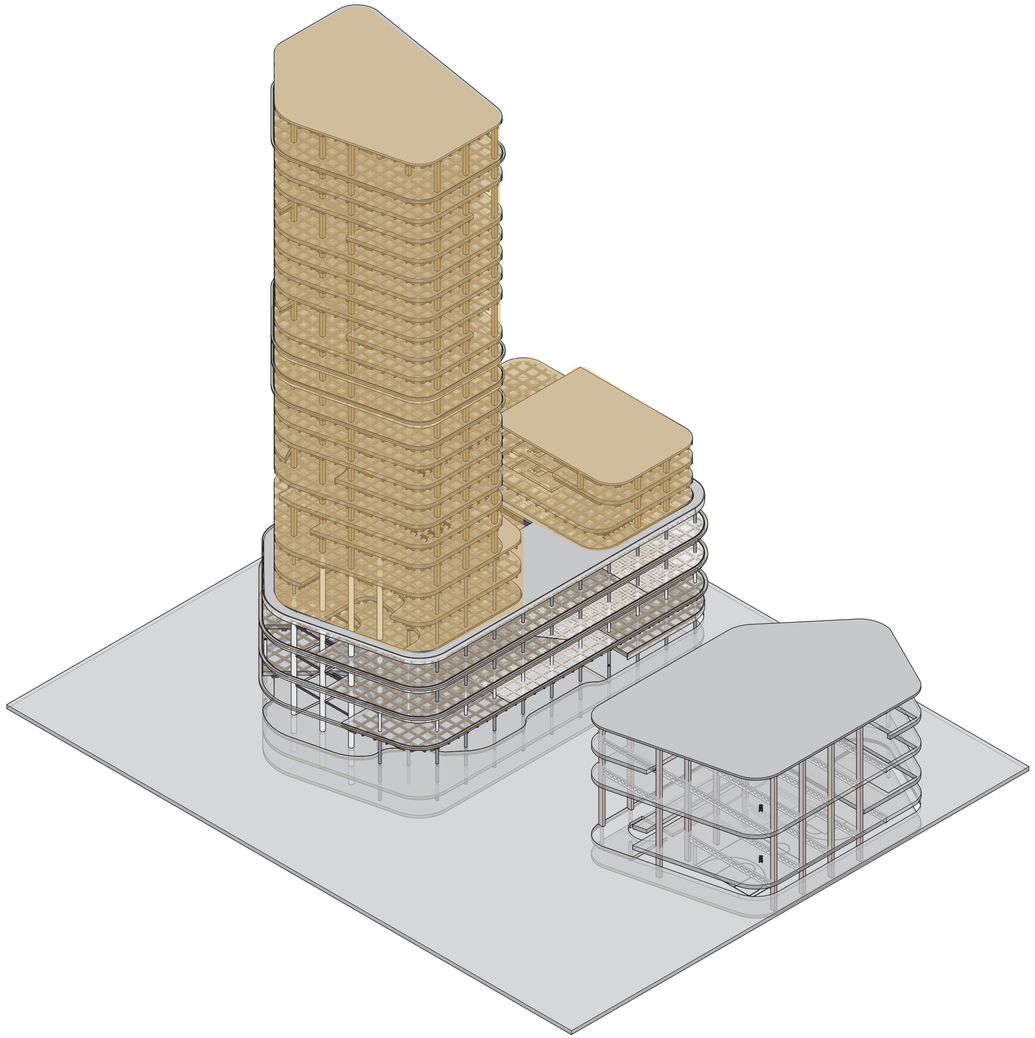


06 Technical

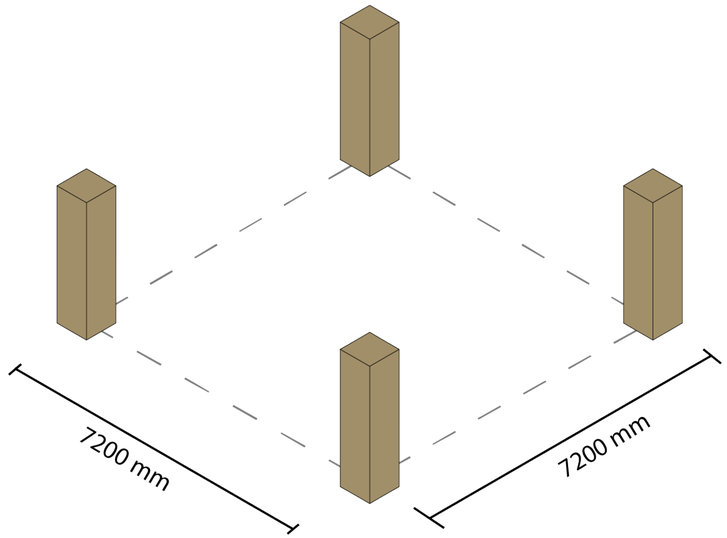
STRUCTURE



MAIN STRUCTURE

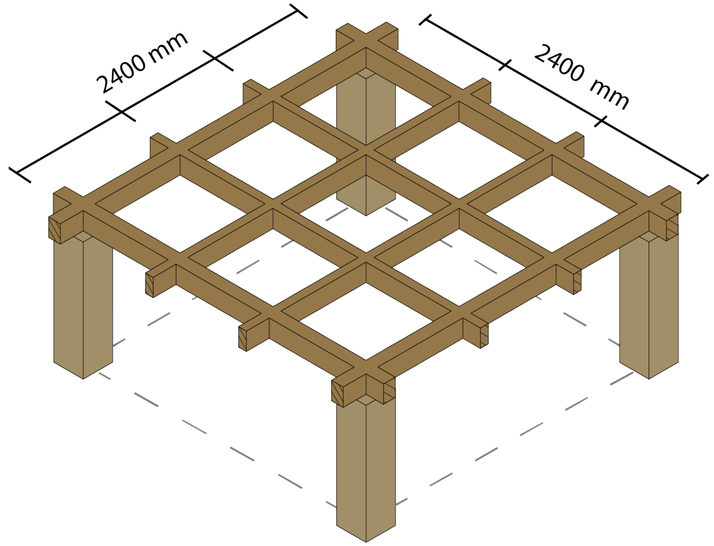


GRID



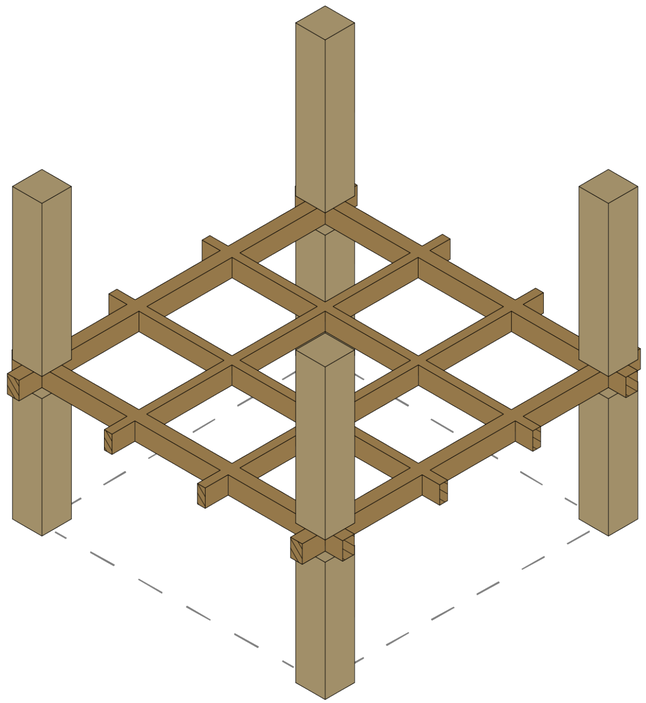
Larger grid than normal CLT structure 6000x6000

BEAMS



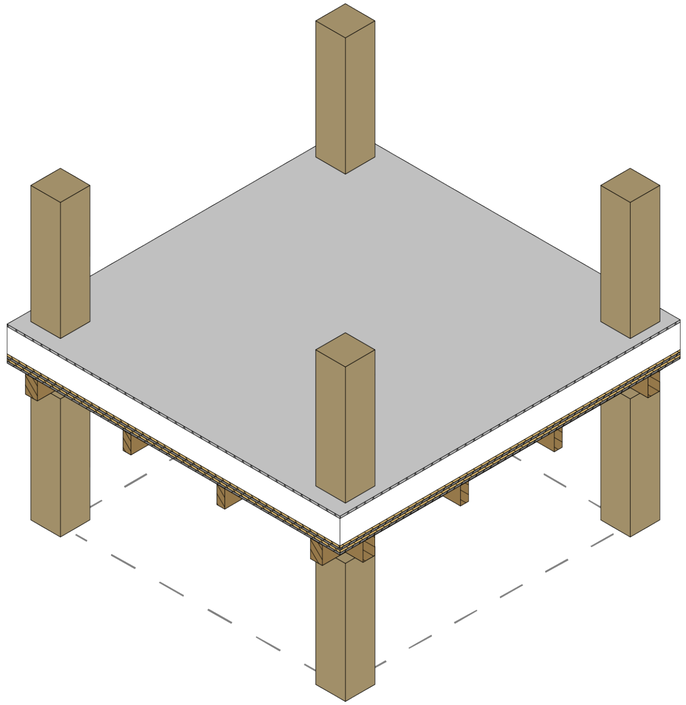
Waffle structure allows for overhang and voids, the beams create stiffnes.
Height is 450mm and 2400mm C-C span.

CONNECTION



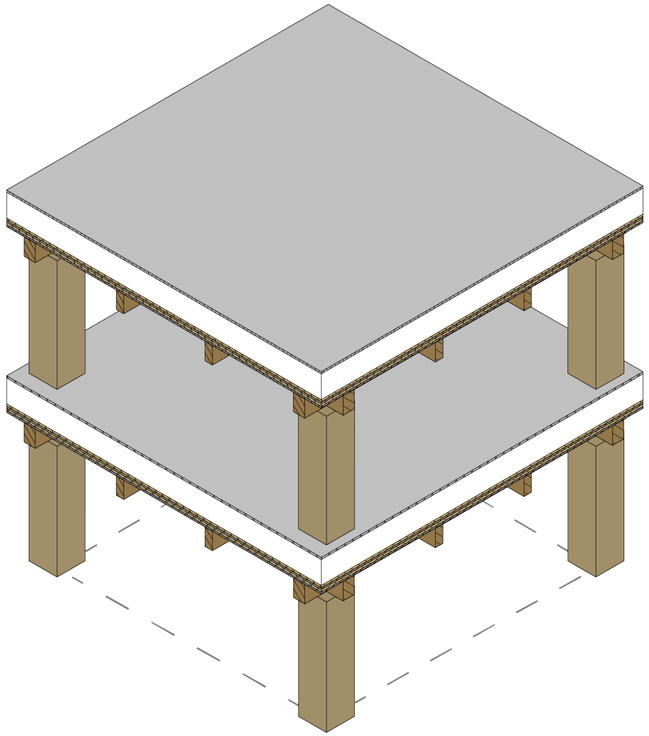
Stacking the columns on top of the beams by the use of steel plate
with tubes sliding over each other to create a stiff connection.

FLOORING



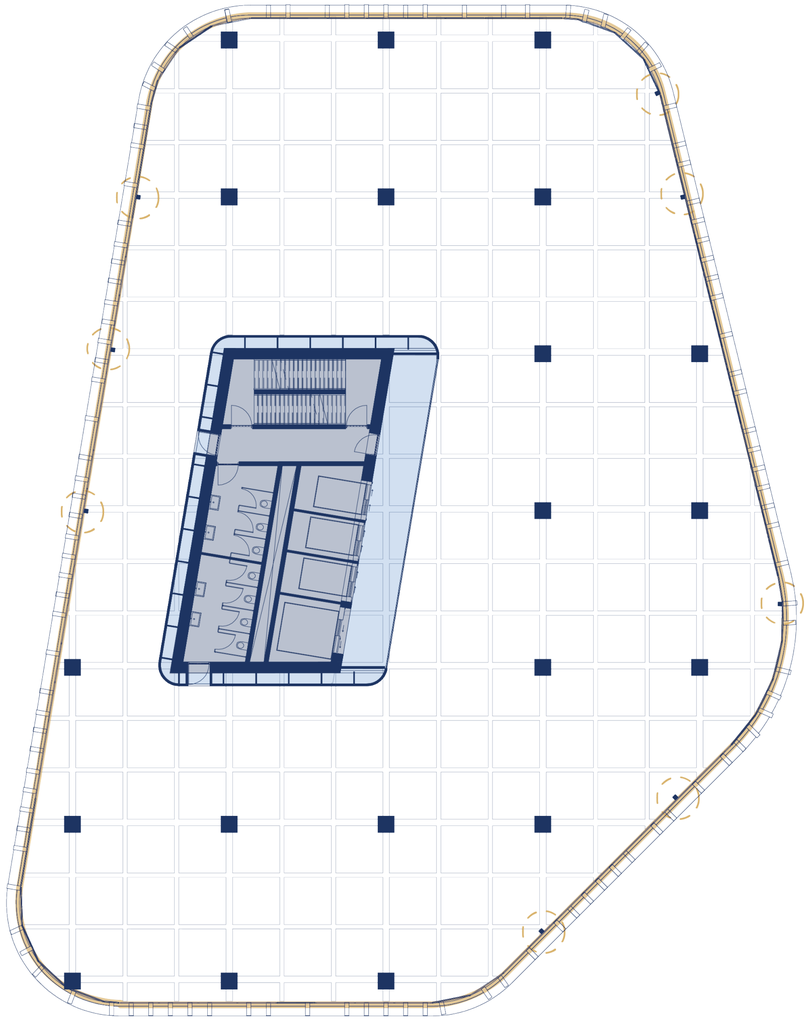
CLT floor of 200mm thick with a floating floor for ventilation and installation.

STACKING



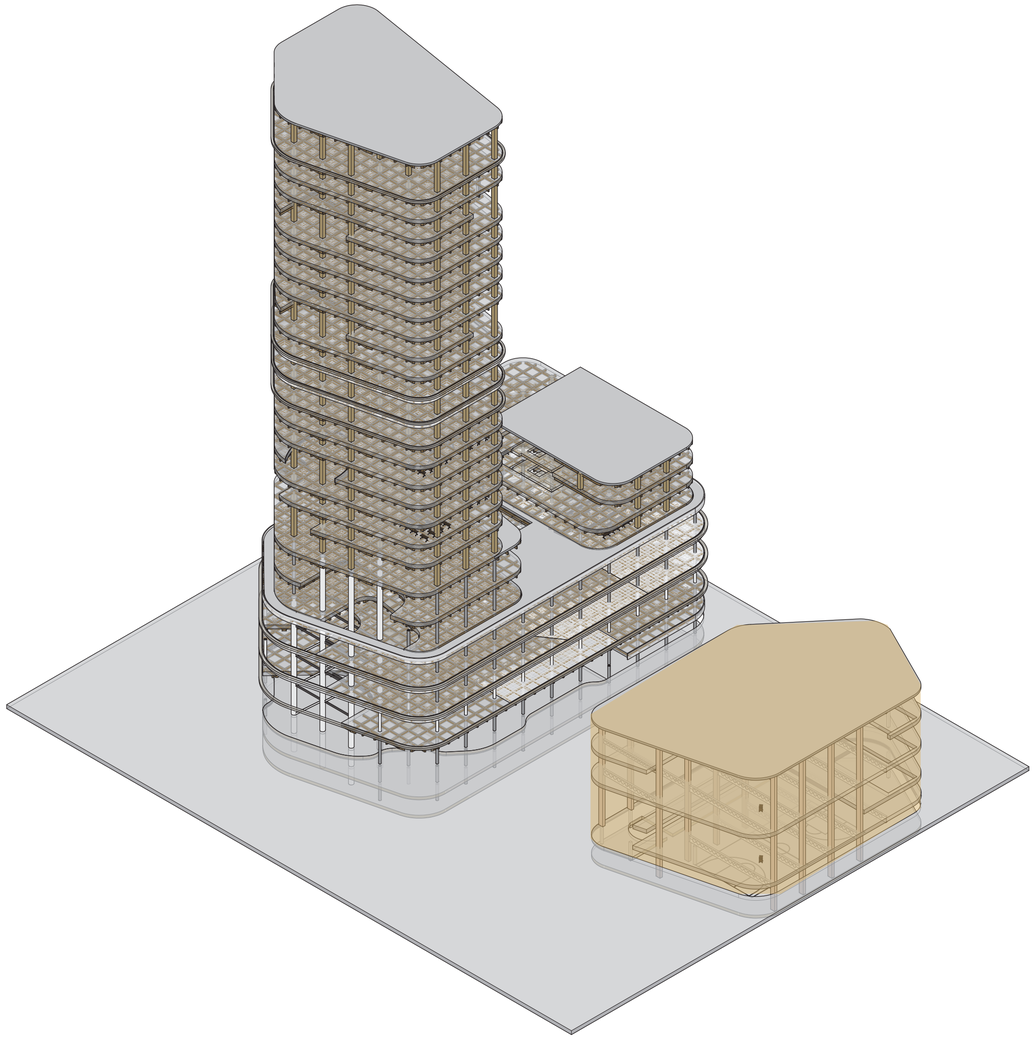
Repeating this proces for the towers of the building.

TYPICAL STRUCTURAL FLOORPAN

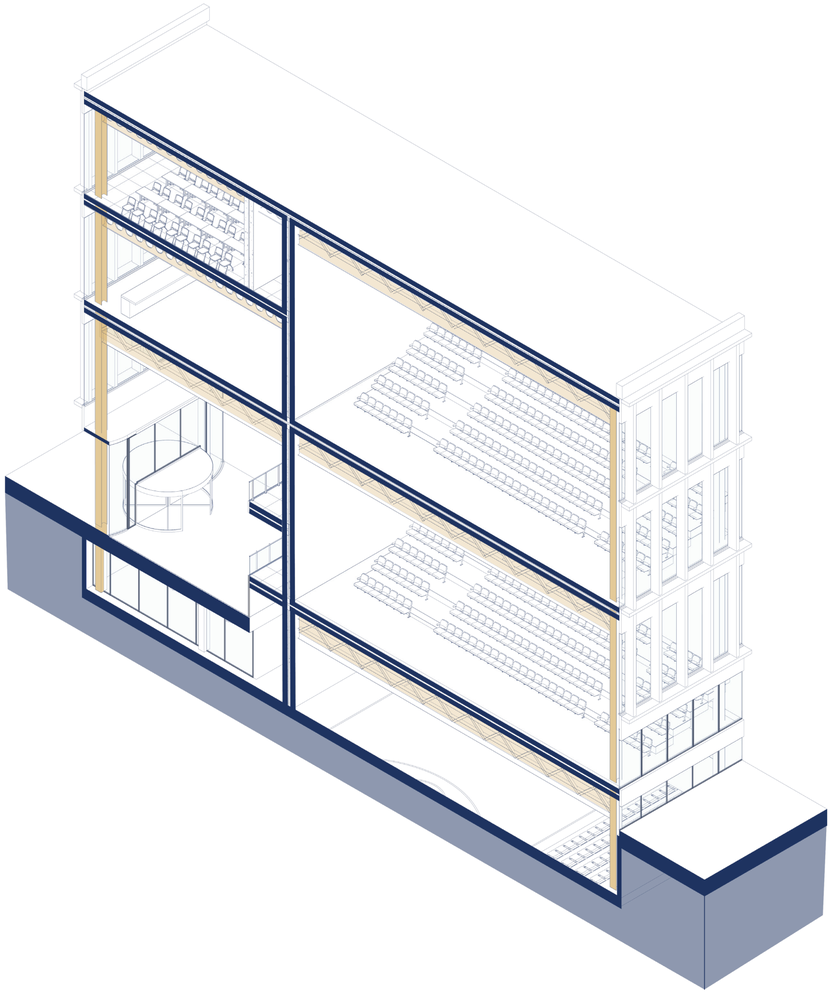


The overhang of the floor is supported by an steel edgebeam and also by several square steel colums around the facade.

SECOND STRUCTURE

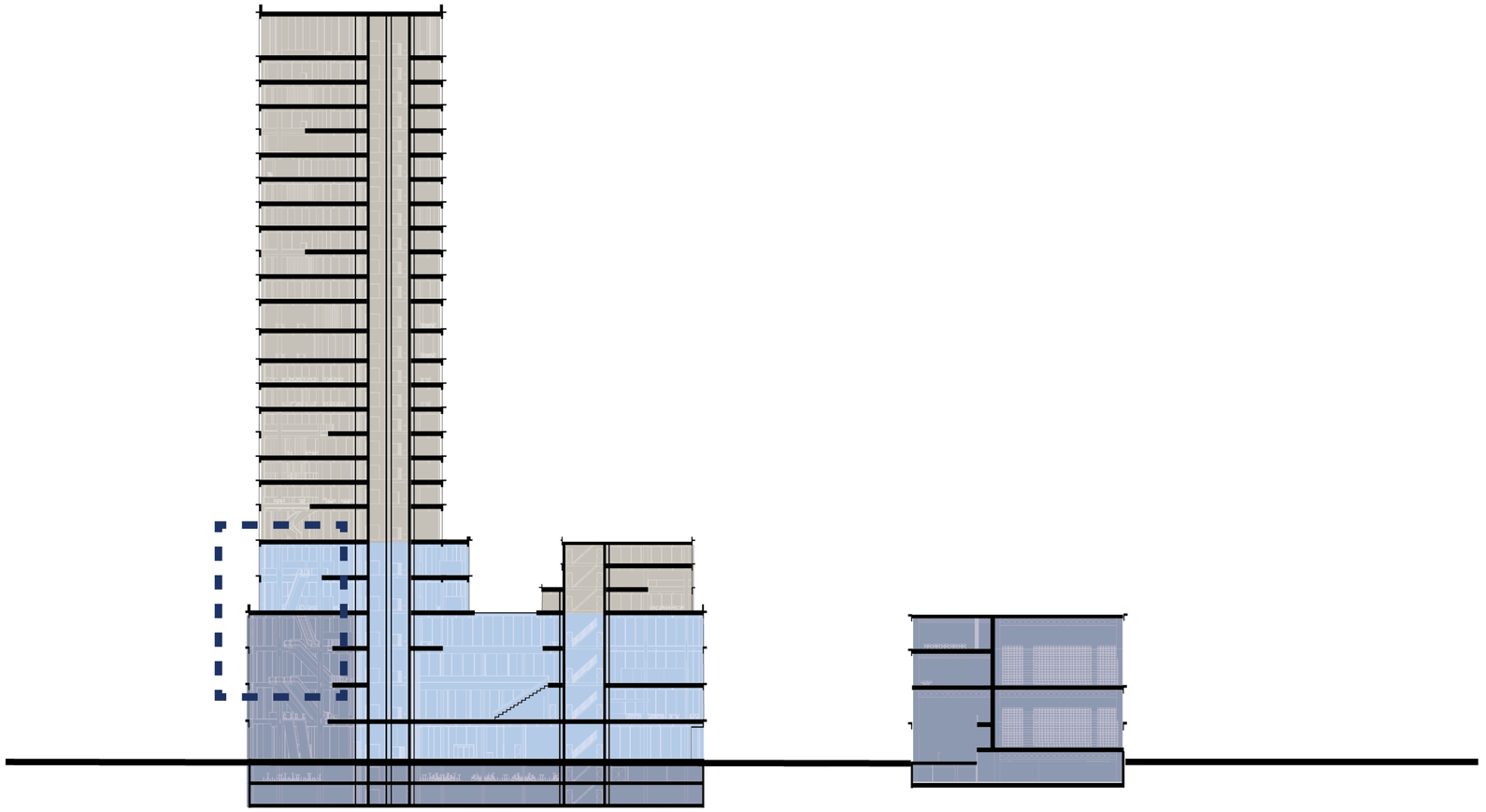


BOX IN BOX



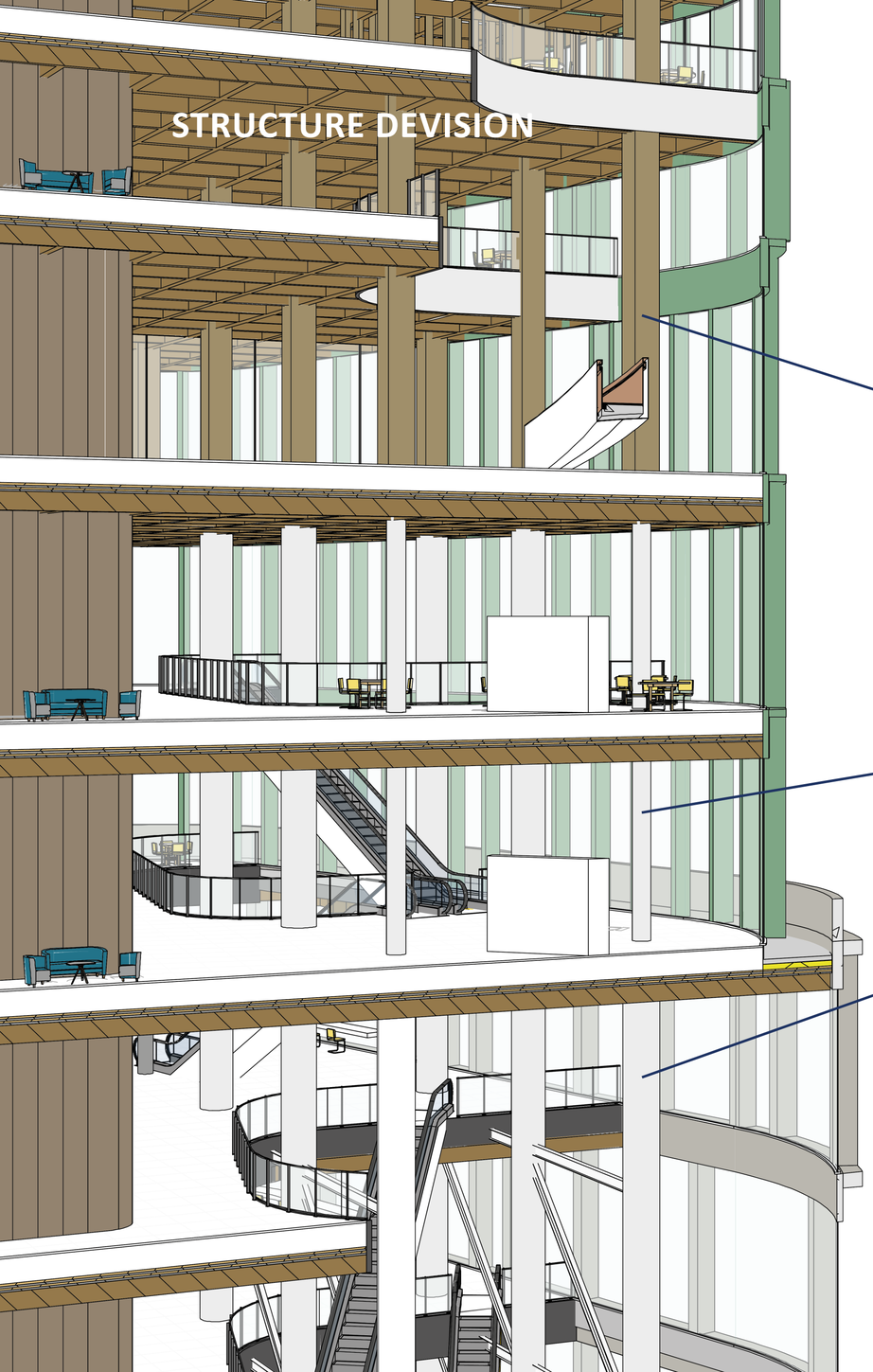
A box in box design that is supported by trusses

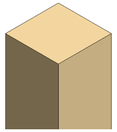
DIVISION MATERIALS



CLT - Steel - Concrete

STRUCTURE DEVISION

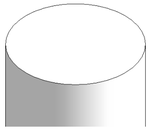




CLT structure:
- 750 x750 mm
- towers only

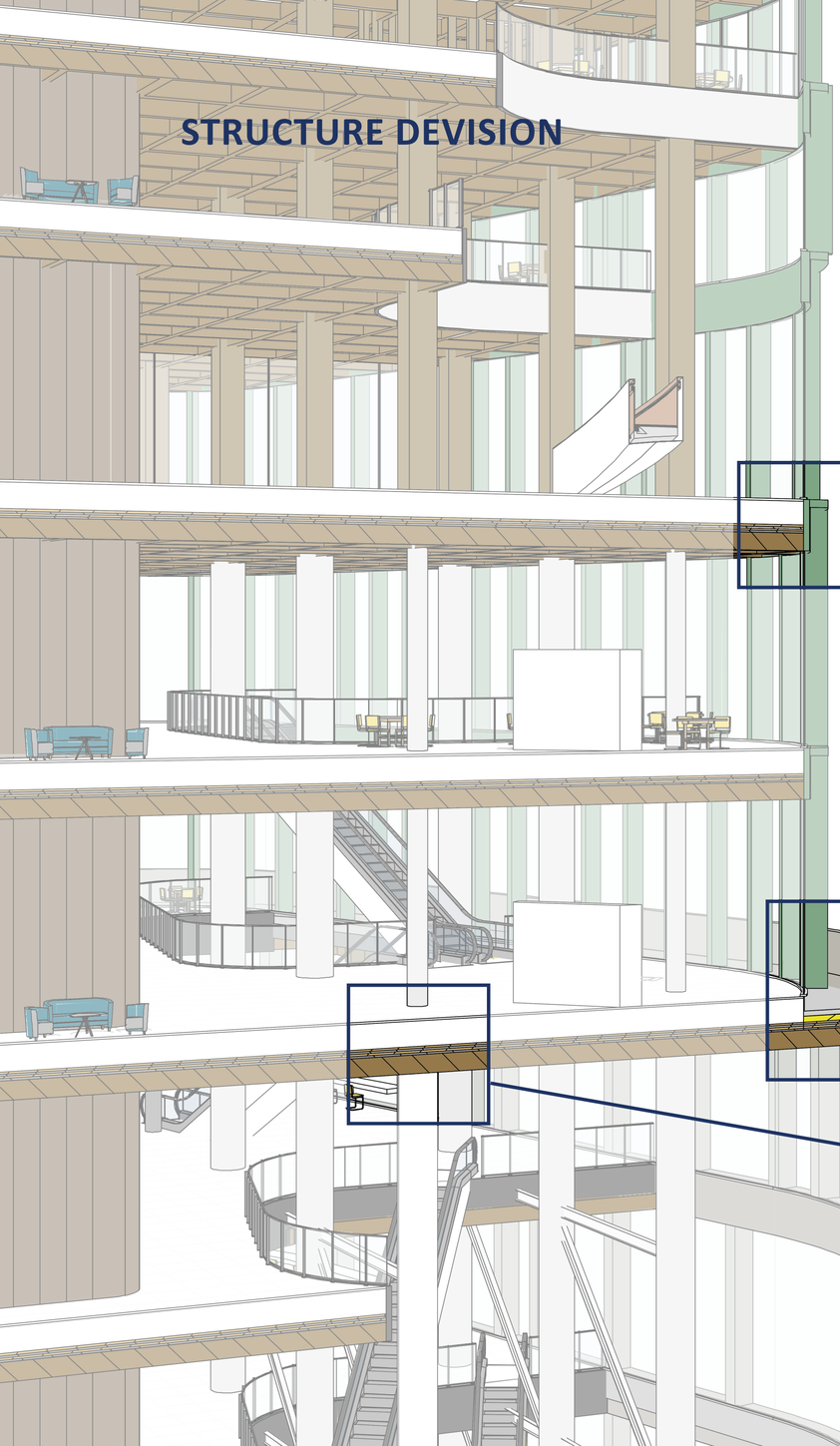


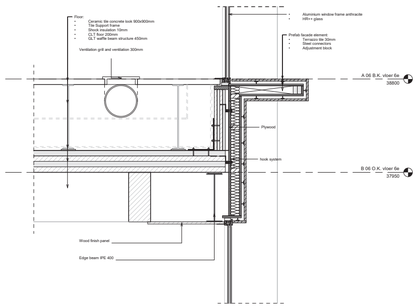
Steel structure:
- HEA300 + Round cast
- Plinth, up to 4th floor

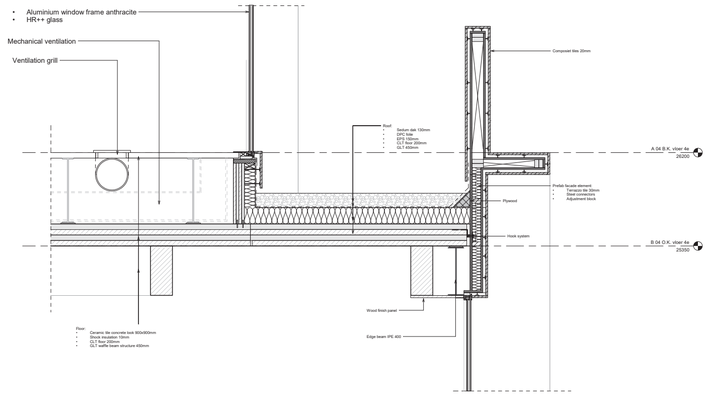


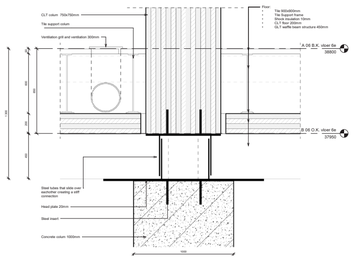
Concrete structure:
- 1000 mm
- 6 Entrance colums

STRUCTURE DEVISION

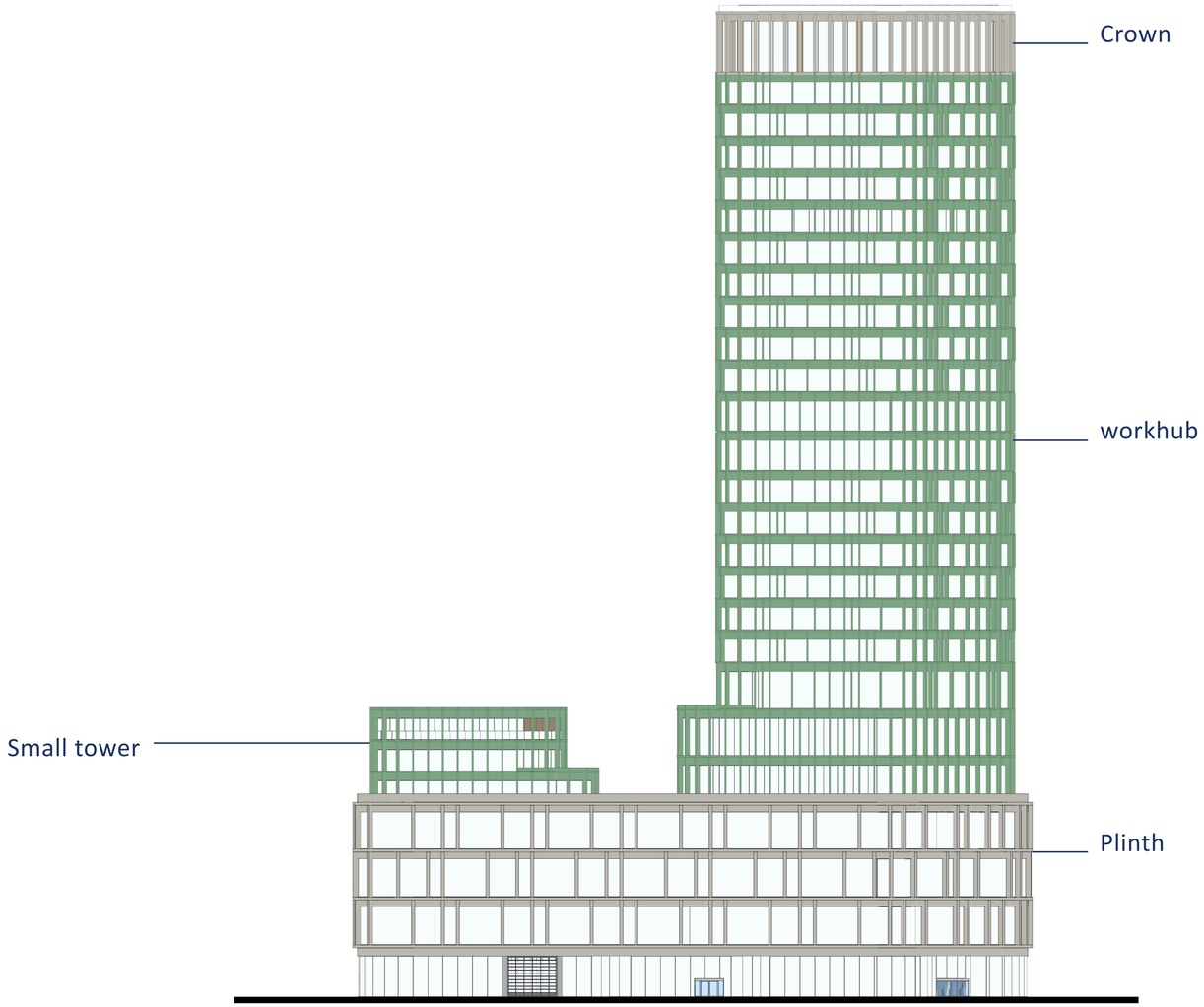




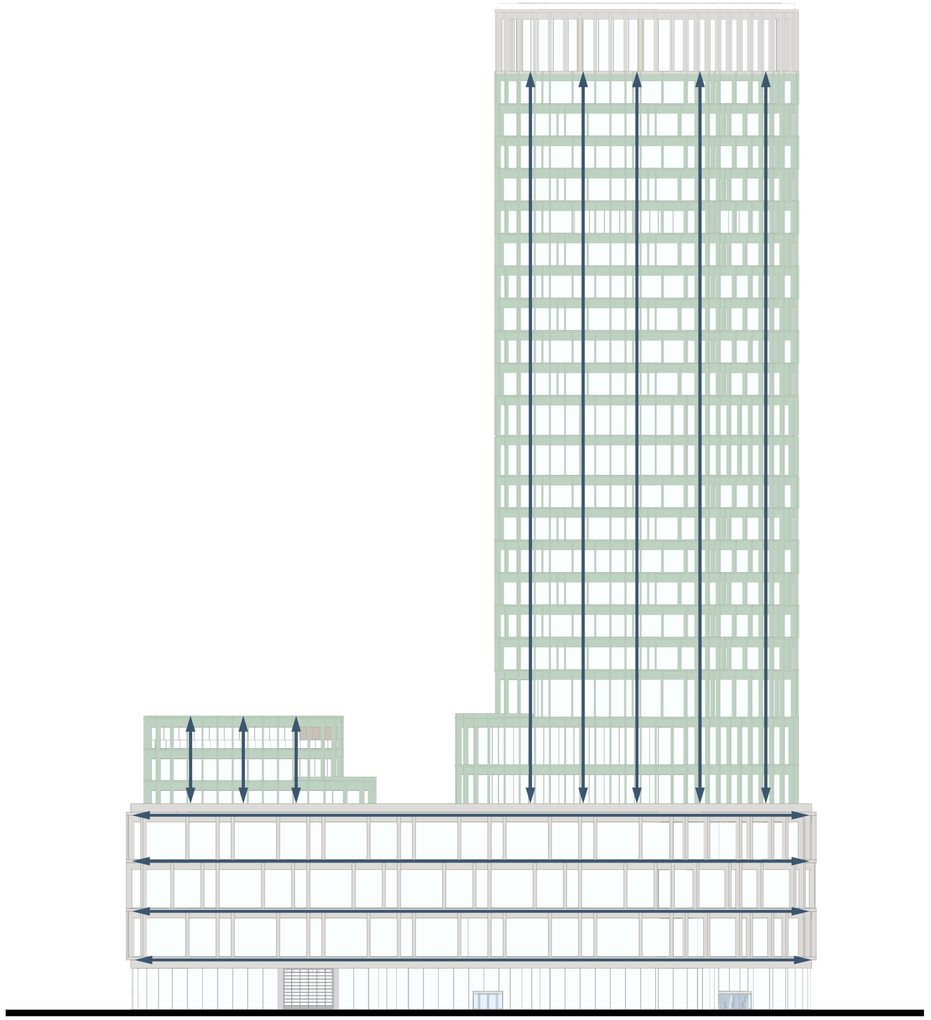




FACADE

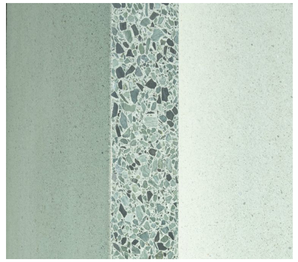


FACADE

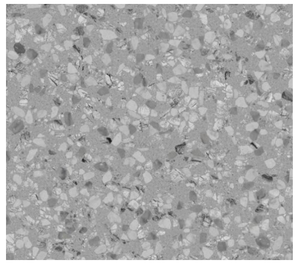


Horizontal orientation combined with vertical

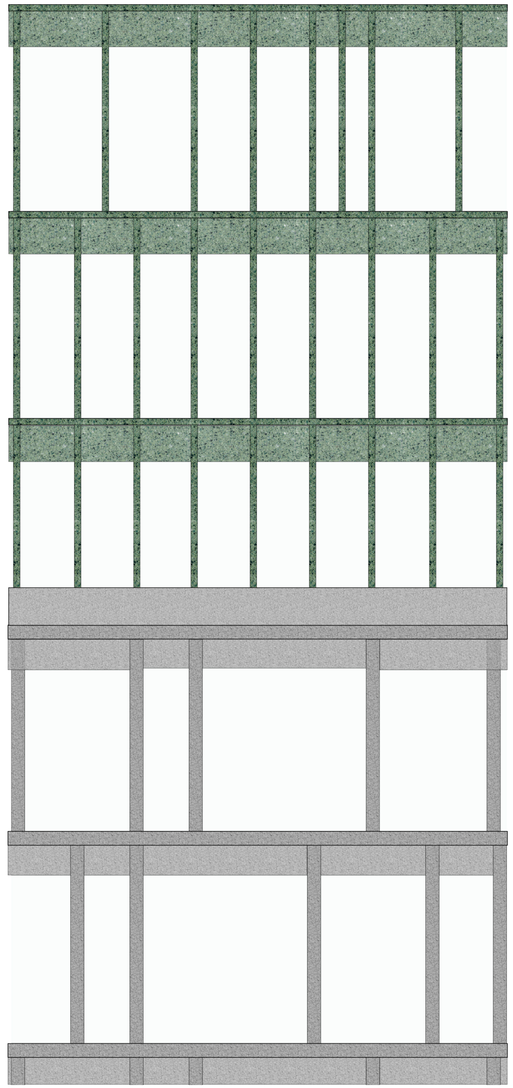
MATERIAL



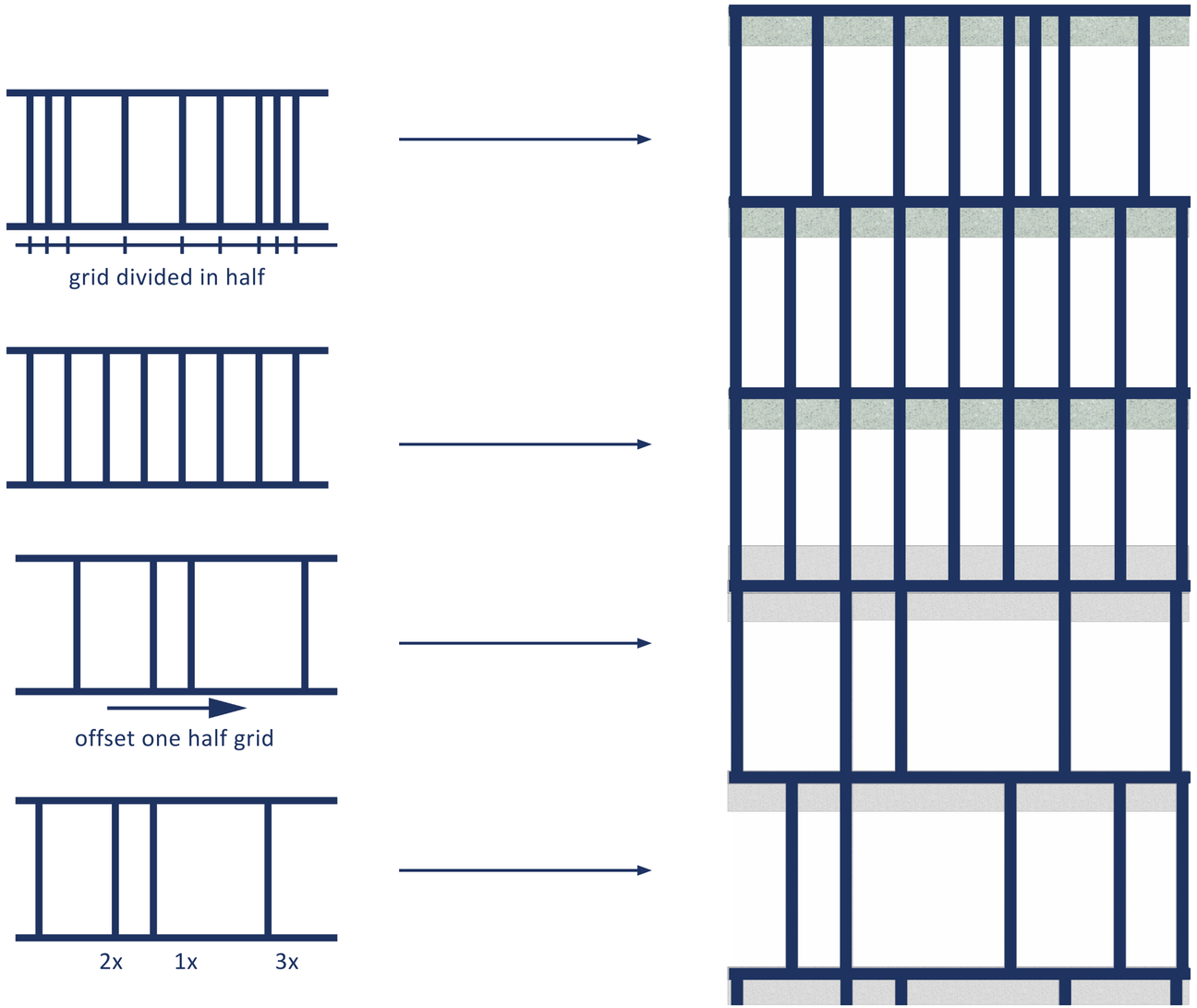
Terrazzo composiet



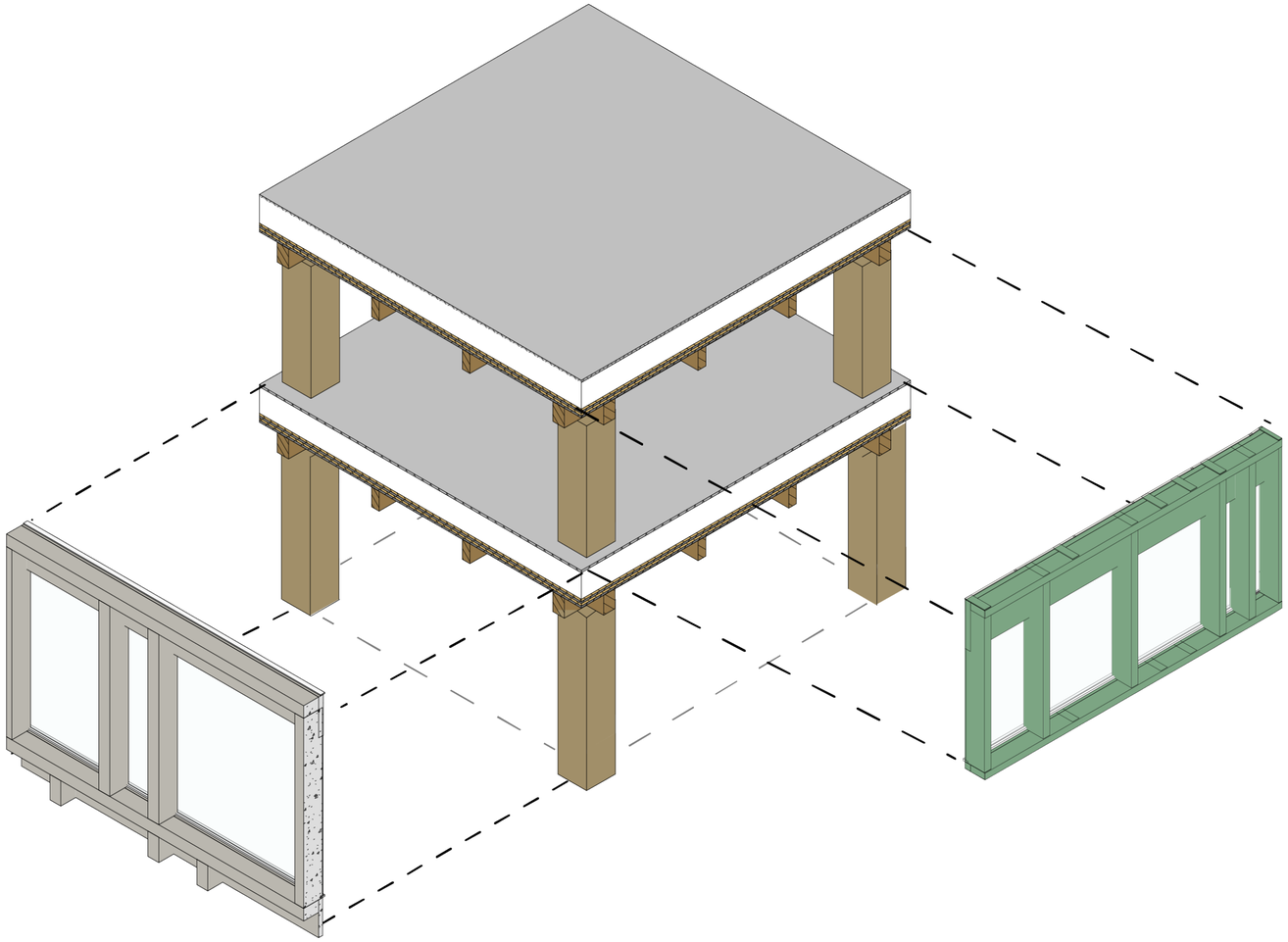
Oscuro terrazzo



FACADE RHYTHM

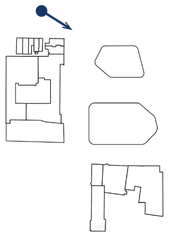


PREFAB FACADE



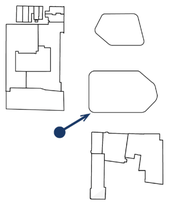
Changing rhythm and different profile thicknesses

THE FLOW



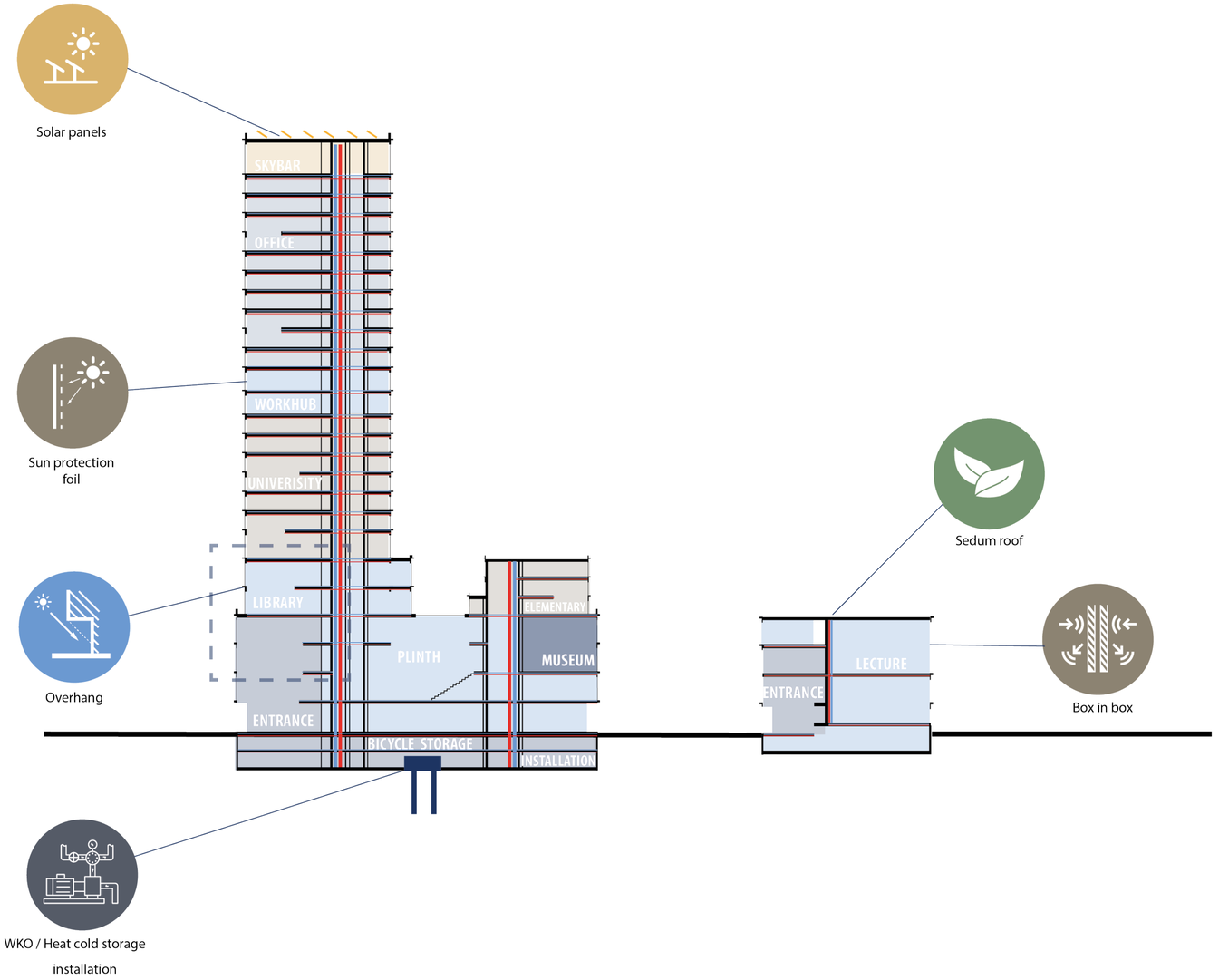


CITY VIEW



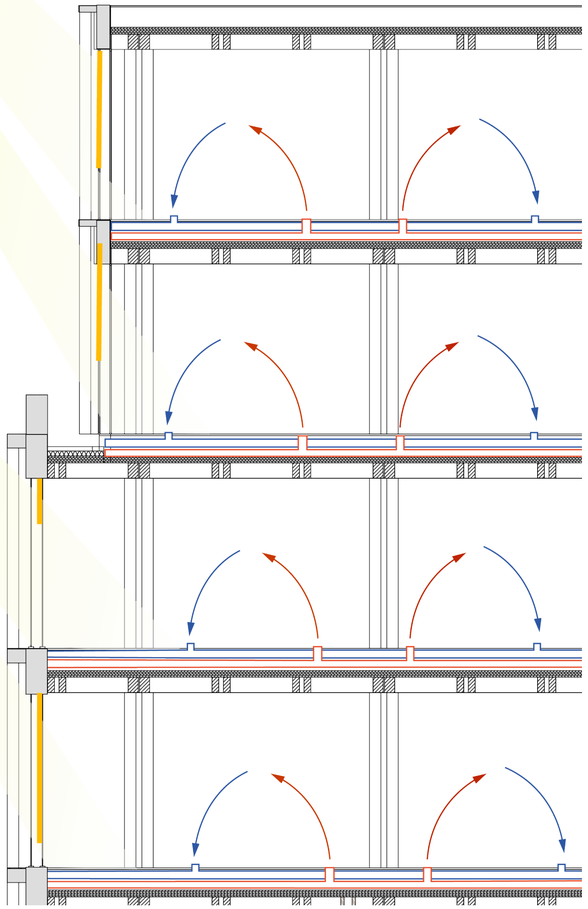


CLIMATE CONCEPT

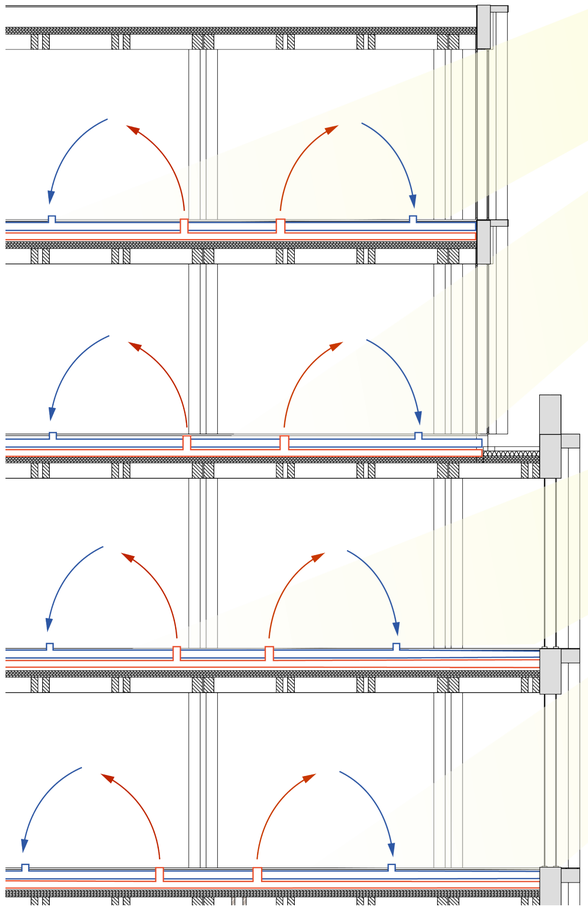


Decentralised ventilation - requirements vary per functions

CLIMATE SECTION



summer - overhang/shades/foil

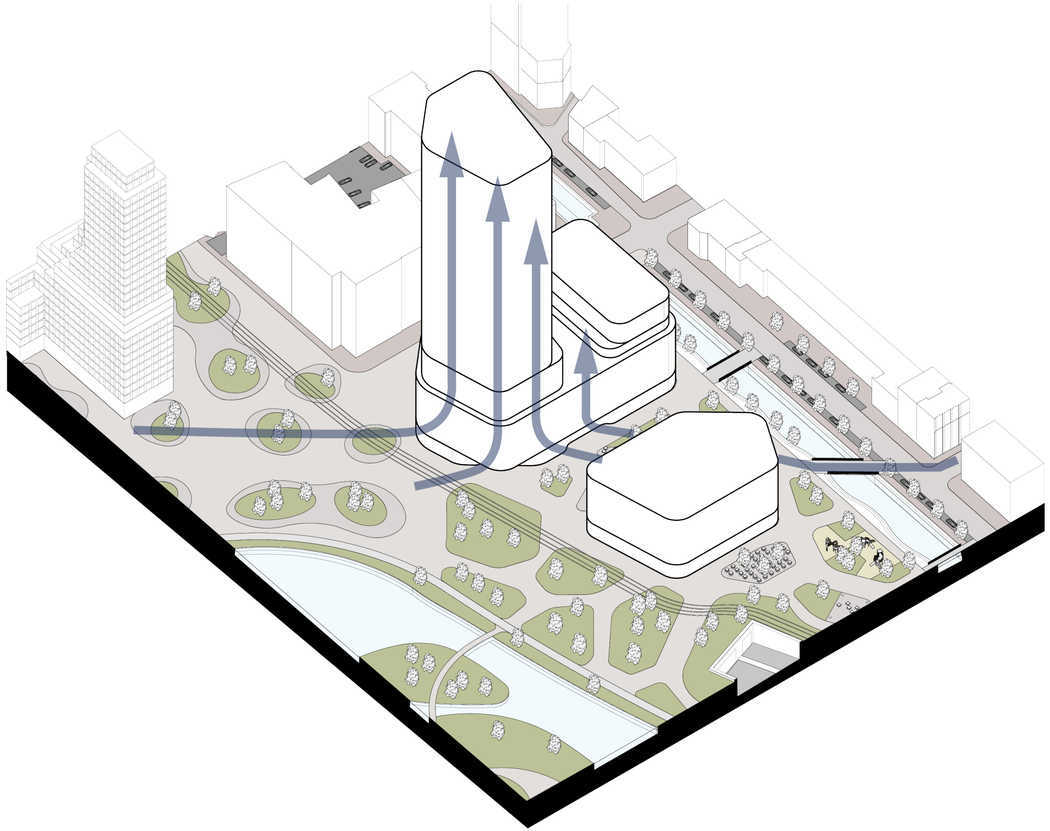


winter

RECAP

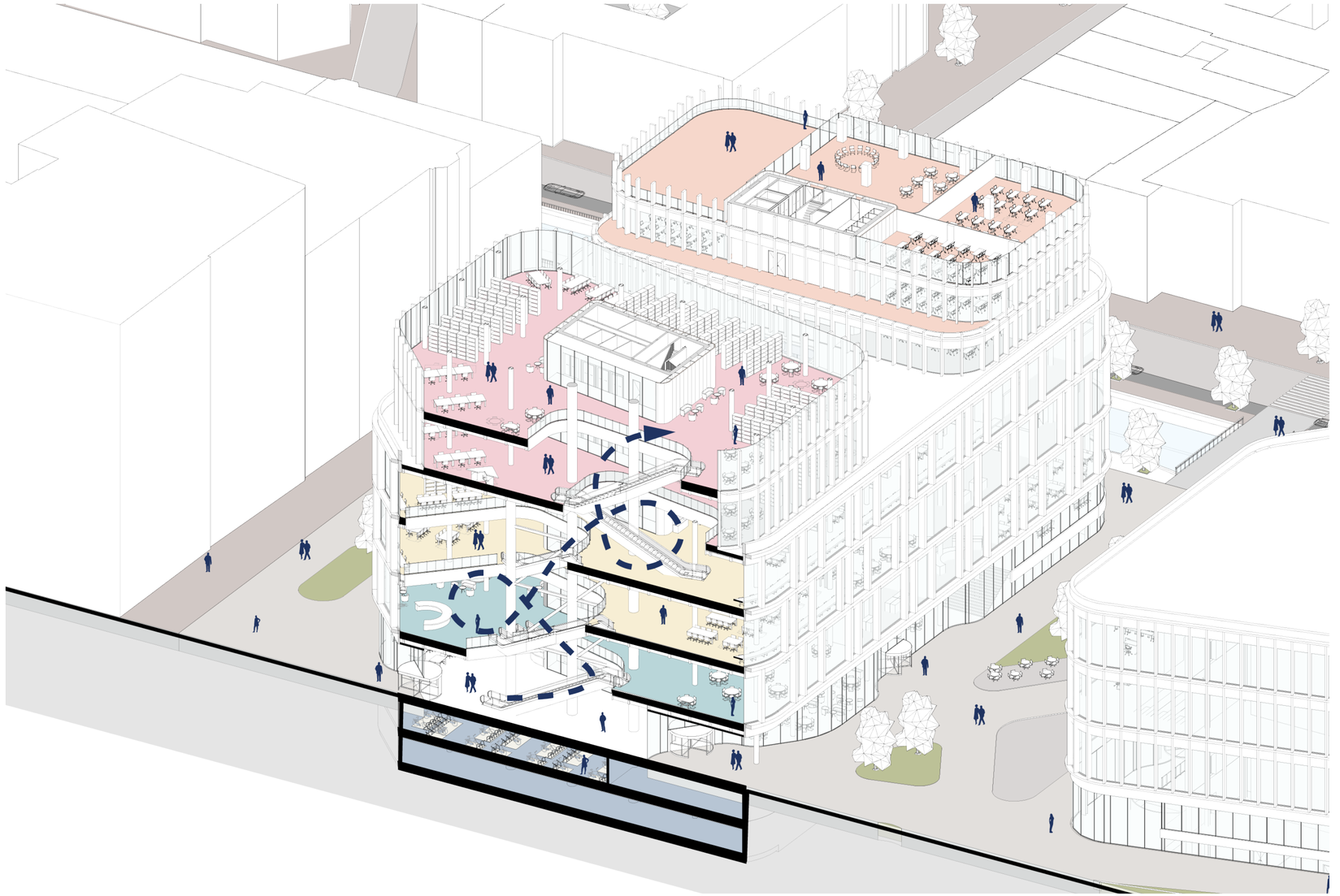
How does the Vertical campus contributes to and extends the public realm in the Hague?

HYBRIDITY



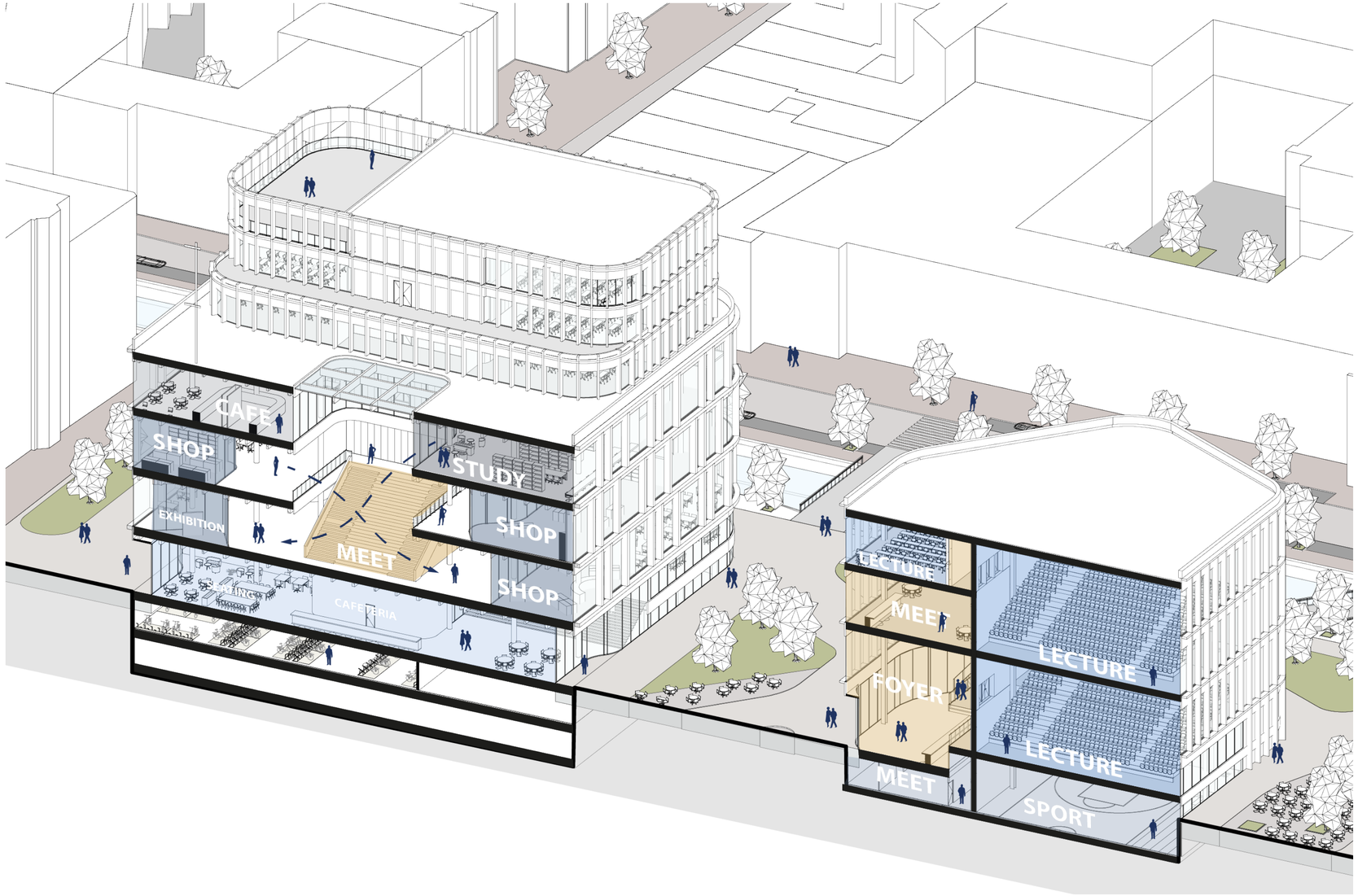
Extending the campus network of The Hague and Randstad form the horizontal public realm to the vertical campus

MULTIPLICITY



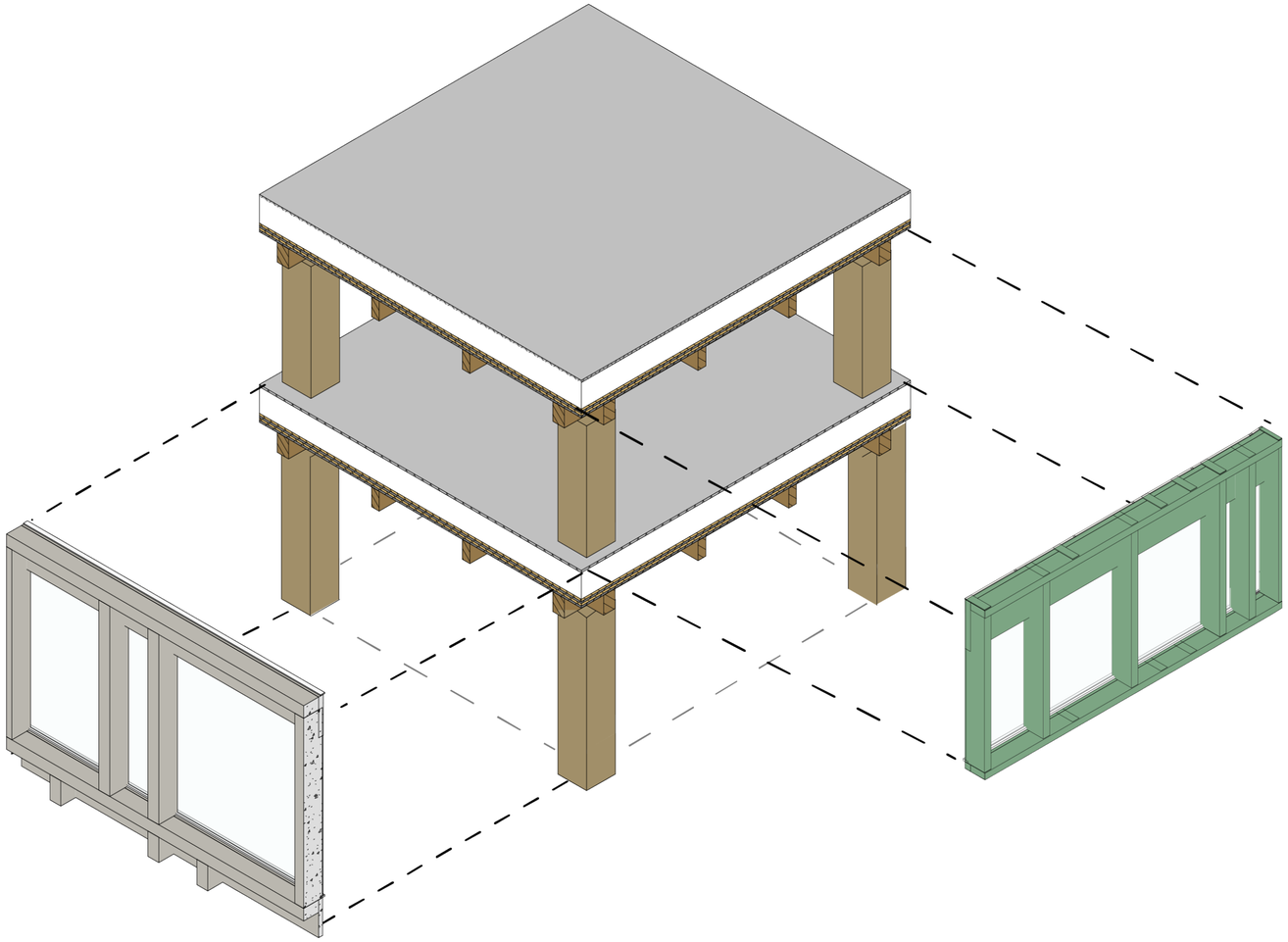
Creating undifined spaces that serves more than only as movement spaces
combined with their actual function. The voids and views stimulate curiosity.

LIFELONG LEARNING



Wander and meet as a visitor in the atrium where institutionalized functions, display and share their knowledge in the open plinth without any boandaries

SUSTAINABILITY



Prefabicated facade elements combined with a flexible ventilation system.
Achieved by the use of an elevated floor and waffle beam structure



Lumina tower

shedding light on knowledge and ideas

July 5 2024 Luca Laponder P5
AR3AP100 Fall Semester 2023-2024