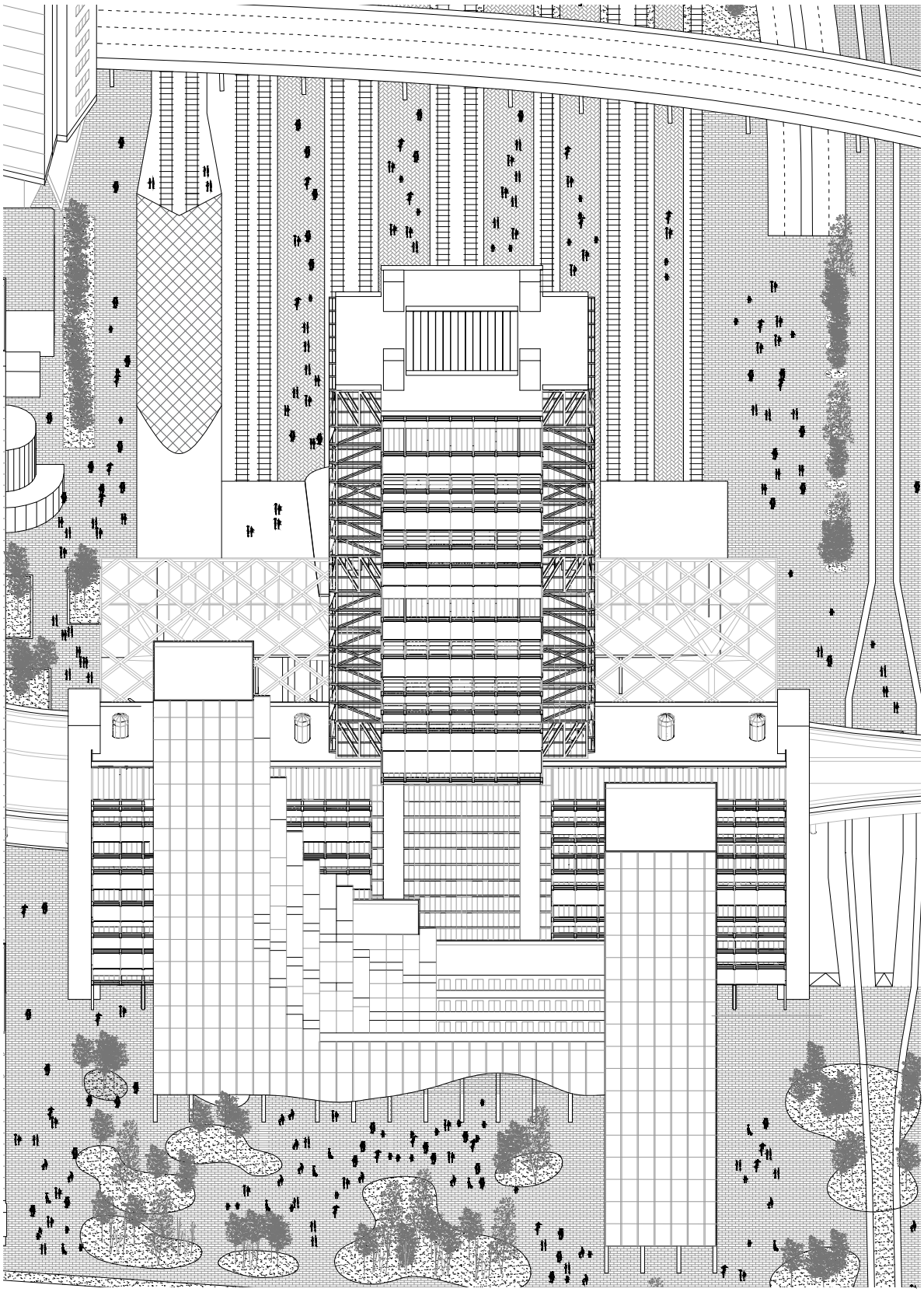
House of Knowledge

Educational systems and mirrored spaces

diploma

Tonko Bonković



Building is an exterior object created as a result of involuntary enclosure.
A house is a feeling of belonging giving the object meaning.
A public building is a ***house for all****.*

Delft University of Technology

Faculty of Architecture and the Built Environment

Public Building Graduation Studio

The Vertical Campus

AR3AP100

2023. / 2024.

author

Tonko Bonković

mentors

Paul Kuitenbrouwer
Piero Medici
Gosia Golabek

chair

Nathalie de Vries

P5 edition

20.06.2024.

Contents

Graduation plan

Name	[Tonko Bonković]
Student number	[5855756]

Studio

Name / Theme	[Public Building Graduation Studio “The Vertical Campus”]	
Main mentor	[Paul Kuitenbrouwer]	[Project Design (PD)]
Second mentor	[Piero Medici]	[Technical Building Design (TBD)]
Third mentor	[Gosia Golabek]	[Theory & Delineation (TD)]

Argumentation of choice of the studio:
[Decision to enroll to Public Building Graduation Studio was to further explore public space, its many complexities, and intricacies. I strongly believe our roll as architects is to provoke the notion of what public space (building) is and to further develop hybrid architecture as typology.]

Graduation project / Title of the graduation project:
[**House of knowledge - educational systems and mirrored spaces**]

Location: [Deen Haag / 52°04’53”N 4°19’25”E]

The posed problem:

Problem Statement
One can wonder if education, which takes place ex-cathedra in most cases today, is the only constant for thorough and appropriate learning, or if our educational system, which is based on the master-apprentice relationship (especially in architecture schools) is so outdated that artificial intelligence could completely replace teachers. The world is changing at such a rapid pace that it seems impossible to keep up with what is currently going on around us. However, our approach to education in recent years has not changed and has become stagnant. Education, like many large institutional systems, is notoriously resistant to change, but learning as a process is not. Readings in his book The University in Ruins argues that the wider social role of the University as an institution is now up for grabs. It is no longer clear what the place of the University is within society nor what the exact nature of that society is, and the changing institutional form of the University is something that intellectuals cannot afford to ignore. We can see that Universities are not acontextual and that they do not operate in a vacuum. As Readings states the University is becoming a different kind of institution, one that is no longer linked to the destiny of the nation-state by virtue of its role as producer, protector, and inculcator of an idea of national culture. Nowadays Educational Systems do not have a clear ideological position regarding how education is being conducted.

He concludes his opening chapter by defining a university as a transnational bureaucratic corporation, either tied to transnational instances of government such as the European Union or functioning independently, by analogy with a transnational corporation.

Architect Pier Vittorio Aureli in his brief for diploma 14 called Towards Edufactory states that …during the 1990s it became clear that education is a fundamental economic factor in advanced capitalism. As such it could no longer be sustained as a publicly funded educational system but was susceptible of being traded as a commodity. In short, he claims that universities are factories that produce subjectivity which is addressed to the precarious student-workers: socially mobile, able to cope with all sorts of unstable conditions, and ready to jump from one knowledge domain to the other according to opportunities. Universities had become if not self-referential machines, then machines for powering capitalism. As he claims knowledge is now a marketable commodity and the students are being encouraged to exploit their personal skills rather than what they might learn in a class. As described by Aureli students now acquire the skills necessary to produce in an unstable setting where choices are continuously limited by uncertain existence.

The field of education, characterized by its established institutional systems, exhibits a notorious resistance to change. The prevailing education model, deeply rooted in capitalist ideology, has transformed knowledge into a marketable commodity. In light of these complexities, there arises a pressing need to examine and address the changing dynamics of education and the societal role of the University and consequently its spaces.
Research questions:

Main:
[**How to design for educational system of the future and consequently its spaces that respond to the concept of** (**future**) **higher education**?]

Secondary:
What is the role of an architect in remaining education(al) (system)?
What is the future role of university and campus as its formal manifestation?

Method description
Since the Chair of Public Building is based on the method of Research by design and design by research, my approach to the problem at hand would be twofold. Firstly, it would be based on the practical analysis of the buildings, more specifically on their concepts and ideas. Secondly, literature would serve as a theoretical background primarily on educational systems but would then be juxtaposed with examples of buildings that serve those systems.
As mentioned in the prior chapters research is based around education and educational facilities and spaces. To understand what the future holds for education and what it should look like, the first part of the research will focus on the history of education and learning and how they correlate to the spaces in which they were held. Analysis through images and drawings would be done as a base for further research and design.

The second part would revolve around current educational theories and systems to predict future possibilities and, at some point, define my proposition for lifelong learning and education. That would then create the base for form studies, more specifically it would try to answer the question of what is the shape of future classrooms, workshops, meeting rooms, and auditoriums or if they are even needed in this new proposition for education (building).

Literature and general practical references

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https://www.e-flux.com/architecture/education/
https://architectureandeducation.org/

What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

In the broader framework of the studio, we are tasked with designing a hybrid building for higher education in the center of The Hague. The theme of the studio suggests that we are to predict the future of education, programmatically, and anticipate the future of The Hague's central area. Throughout the design process, the focus has been on how architecture (either through building design or building strategy can address the issues at hand, ranging from complex urban situations to the evolution of education. As a discipline, architecture should address (almost) all the questions posed by a particular area or program. The designed building can be viewed as a strategy rather than a form. It has a clear innovative structure aimed at being highly adaptable and flexible, addressing not only today's problems but also anticipating future challenges. In that way design is incline with The Chair of Public building agenda which is incorporating multiplicity as a design method. Meaning building must have elements and/or properties that make them less singular in function, more productive, more transformative, and resilient.

***What is the relevance of your graduation work in the larger social, professional, and scientific framework*?**

Urban context

When considering wider urban context of the project, more specifically, the Central station of The Hague, task becomes multilayered. Central station is one of the most frequently visited places in the city. Existing building (The slab or Stichthage) and new terminal design by Benthem Crouwel Architects has a central position and had been design and redesigned multiple times. Its position has a crucial roll that is not used to the full potential. Since my position throughout urban analysis was that the new university campus should have a central place in the society to emphasis the meaning on knowledge and education but also to make it extremely accessible the decision was to take the old building and reuse it or adapt it to the needs of the future university campus and expend it with the new addition (superstructure). In that way the new campus gets additional 30 000 m2 of space, reuses old existing building and becomes a unique space at the heart of the city becoming its landmark.

Architectural* (*spatial*) *concept

University campus consists of 2 parts, existing structure (The slab) and superstructure that levitates over it. Superstructure consists of 4 distinguished parts:

1. **CORES**; that are pillars on which the superstructure stands and main means of communication,
2. **GENERIC SPACES**: ones that are easily adaptable and can be segmented into smaller parts,
3. **SUBLIME SPACES**: ones that are defined by hybridity and publicness and need to create additional value, and
4. **ARCHIVE**; spaces in-between all of them serving either as physical archive of knowledge or extension of sublime spaces.

Spatial concept has a task to answer the proposed question of 'how to design for future educational system'. **The answer is an open architectural system that is formalized through structural system that can create different conditions for the unpredictable future.** The only thing we can predict is the notion of change, so the building needs to be able to adapt to the uncertainty of the future (educational) system.

Sustainability and materiality

As mentioned in prior reflections, Campus consists of 2 parts and one of those parts is the existing building. Adapting The slab can save big amounts of CO2 and material waste if considering that the building would at some point be demolished. Furthermore, the ongoing agenda at TU Delft is focus on developing sustainable structures and passive systems which is the crucial part of the Campus. Existing building introduces chimneys that allow for passive ventilation. Same system is designed in superstructure's facade but is more experimental, where ventilations shafts are a part of the building's glazing. Structure itself is primarily made of timber beams and columns where concrete and steel is used for cores and trusses that expect greater loads.

Relevance and innovation

The key idea od the vertical part of the campus or imposed superstructure is its loadbearing system that correlates with the spatial one. That is the innovative system of 4 cores connected by three rings of steel trusses making platforms for secondary structure made from timber. In this way my graduation proposal becomes relevant to the wider question of the use of timber in high rise buildings.

Ethical awareness

Ethics as a theme in this graduation thesis permeates every aspect of the design process and the built environment. By prioritizing socioeconomic equity, environmental sustainability, user well-being and safety, but also long-term impact, designed building not only serves its functional purpose but also should enrich the lives of those who will inhabit it and contribute positively to society and the city as a whole. This was done through constant checks on how construction can create spaces, that is, how space and construction work in creating a program.

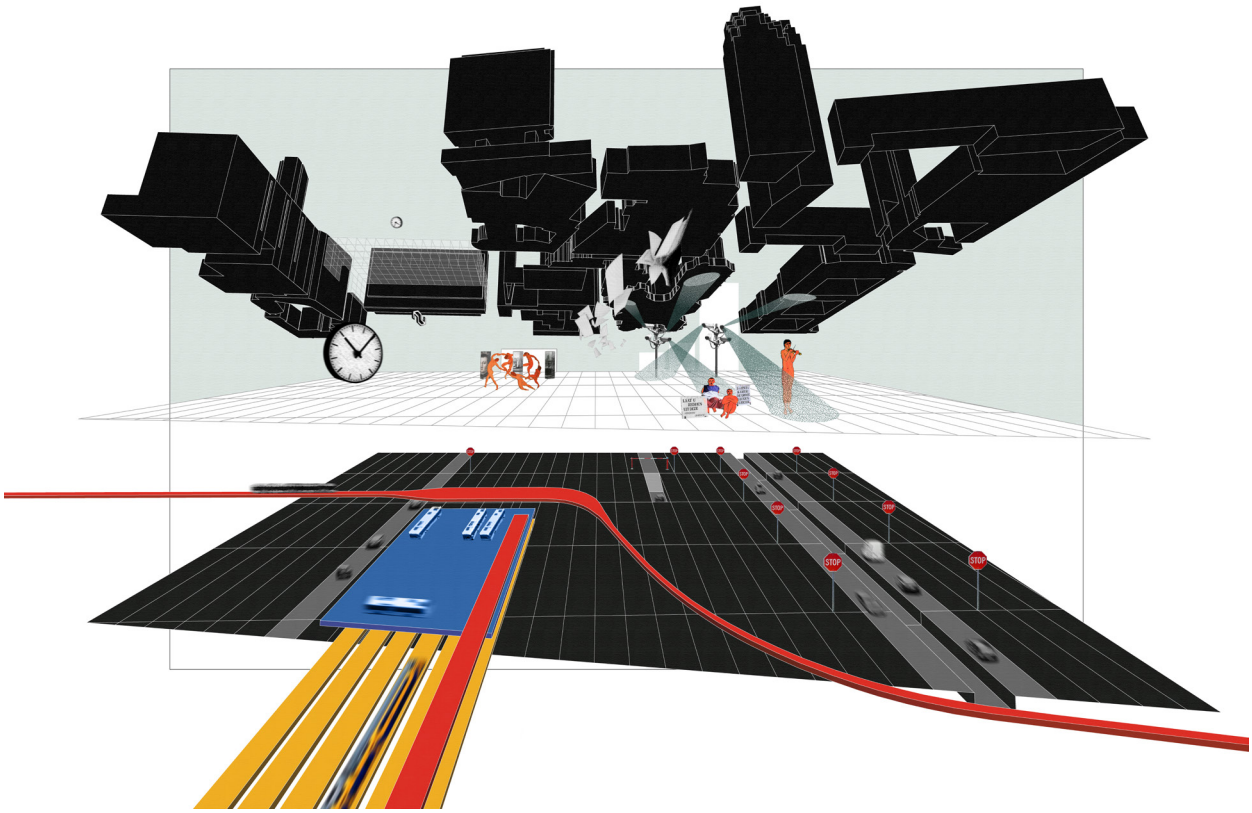
Process reflection

The whole process of creating a thesis is extremely complex. The idea was to go through all the stages of design: conception of an idea, urban analysis, literature review on the topic of education, creation of an urban strategy and finally to formalize everything that was previously learned. The formalization process itself, as the most interesting part of the design process, took place through the idea of structure as a strategy. The whole process after P2 was based on developing the system and structure as one thought with the aim of achieving a comprehensive solution.

Conclusion

Overall, the task was to design a hybrid building for higher education in the centre of The Hague. My focus was a building for future education or educational system and the notion that it must be resilient to change. Emphasizing adaptability and sustainability, project repurpose the existing building to minimize CO2 footprint and material waste. The spatial concept, characterized by defined cores, adaptable spaces, and hybrid areas, anticipates the evolving educational landscape. This hybrid model not only accommodates present needs but also prepares for future uncertainties, ensuring resilience and relevance. In essence, this project for new University campus not only envisions a progressive educational hub but also establishes a systematic framework for its continual evolution, making a statement that the future of architecture is **ADAPTABILITY**.

Capacity plan


STOP
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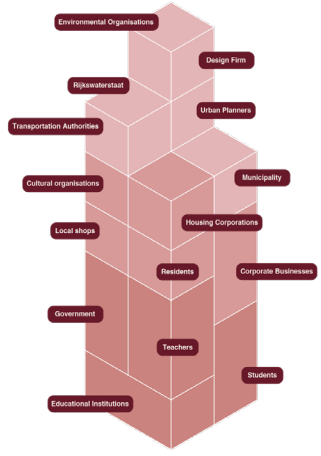
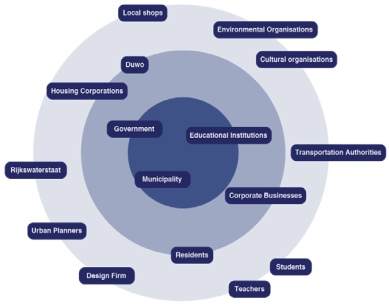
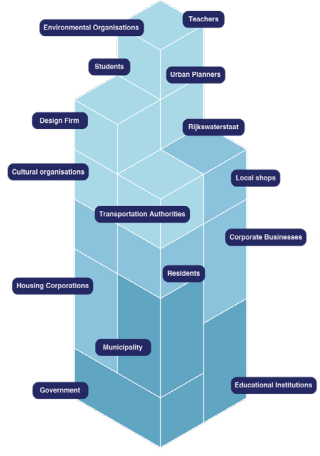
Power

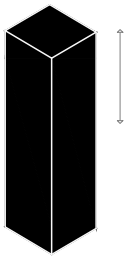
Use



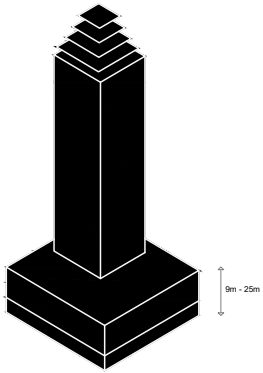
Finance



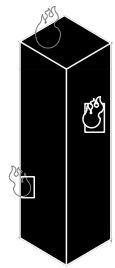




- 50 m
- surrounding high rise decides max hight

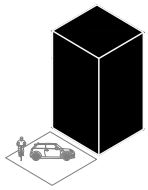


- CROWN
- TOWER
- URBAN LAYER
9m - 25m

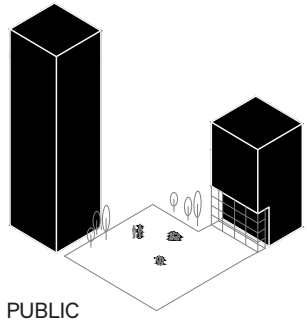


SAFETY
- adhere to the guide-lines of the Bouwbesluit

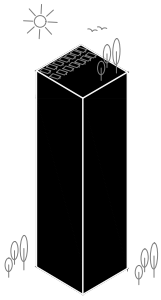
DWELLINGS
mixed use social housing, free market and middle class segment.



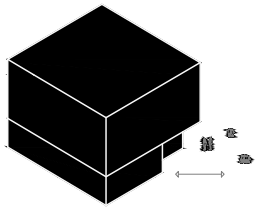
PARKING
solve parking in own property and prevent parking pressure on the street



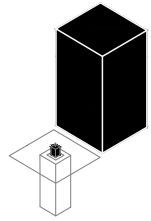
PUBLIC SPACE-
design, execution and management must be sustainable and og high quality



- outdoor spaces should be green

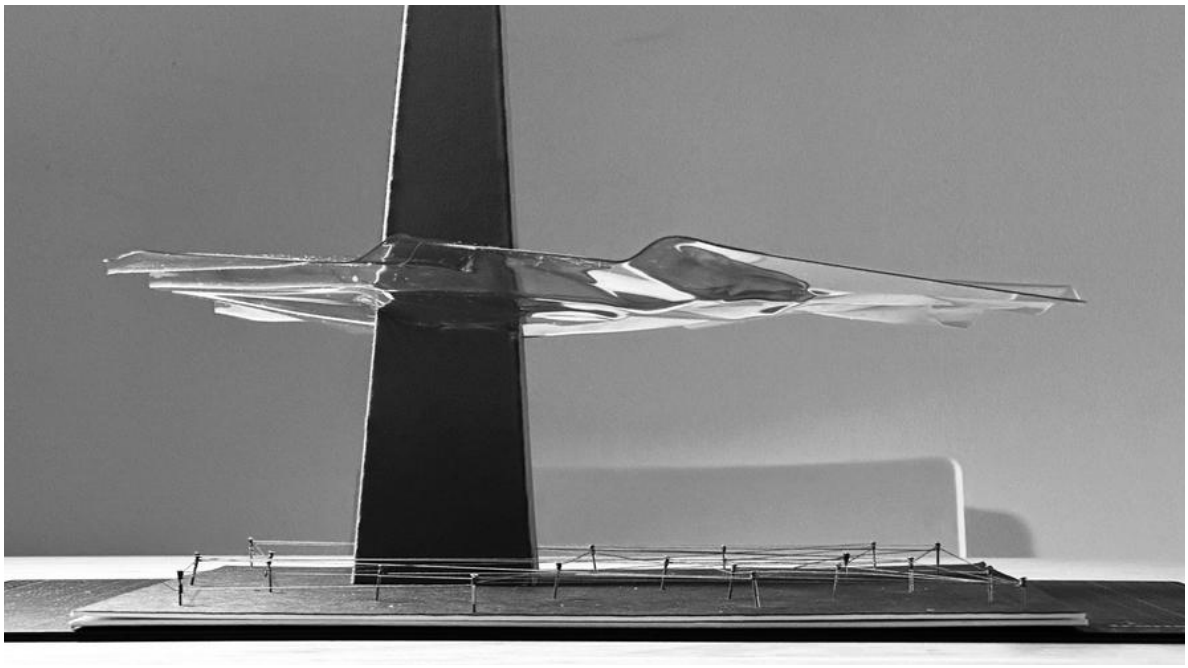


PLINTH
- interactive with street
- open an inviting

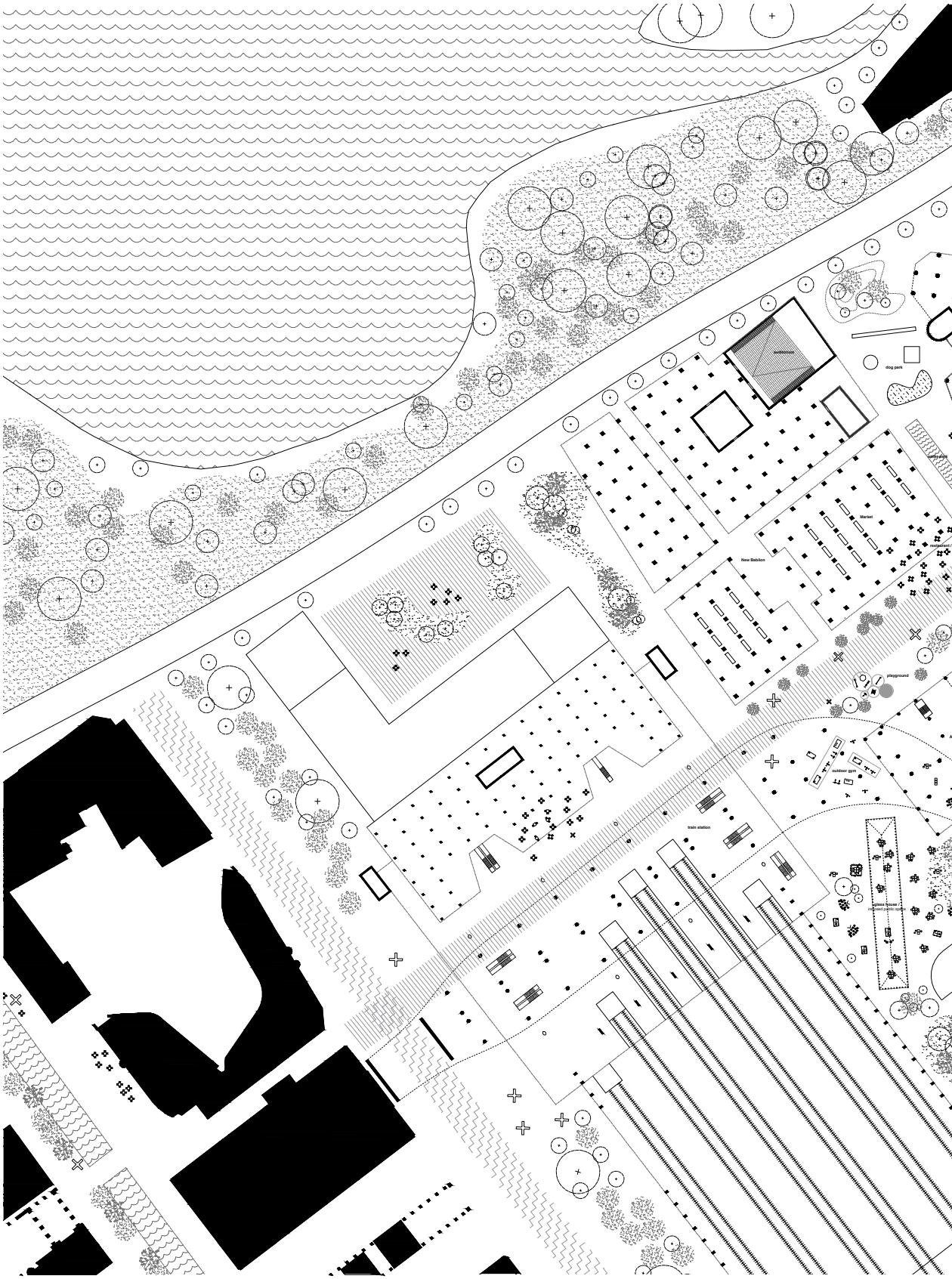


WASTE and STORAGE

Performative conceptual model

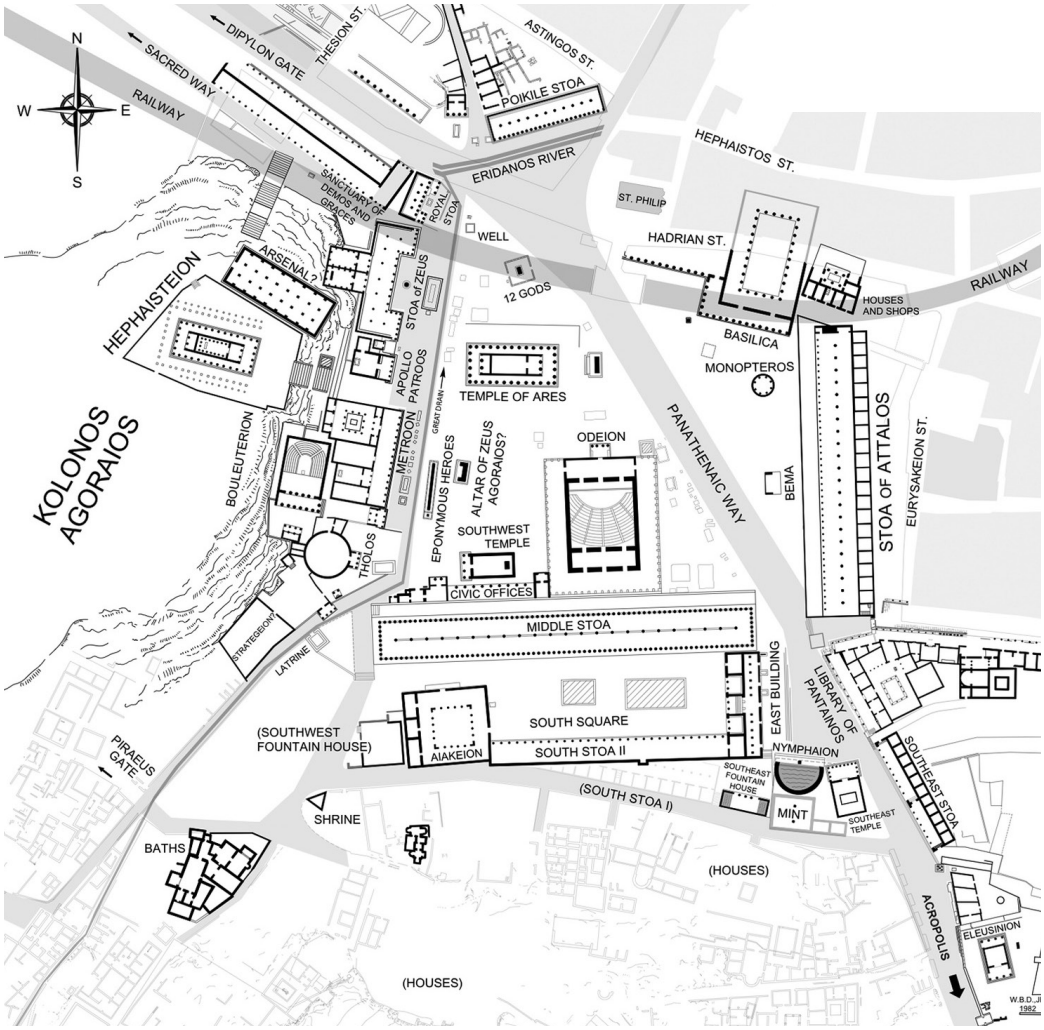


Plinth - Den Haag



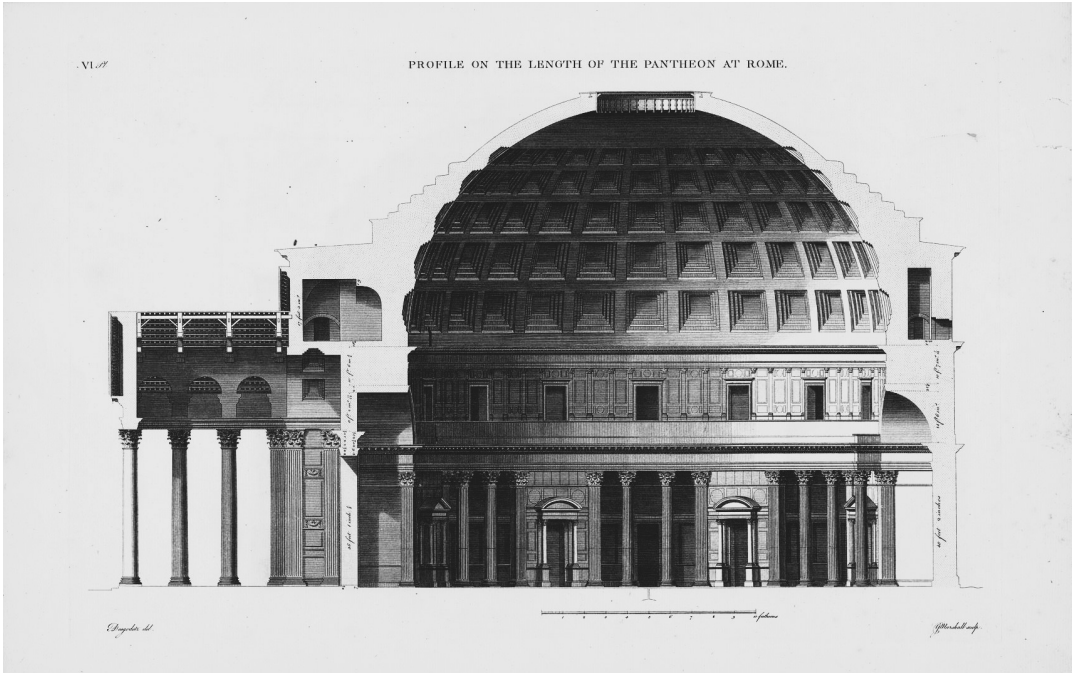

naturalized road
bridge / media wall
public forum
outdoor space
open air cinema
playground
skate park
recreation zone

References


N
W
E
S
SACRED WAY
DIPYLON GATE
THESION ST.
RAILWAY
ASTINGOS ST.
POIKILE STOA
ERIDANOS RIVER
HEPHAISTOS ST.
ST. PHILIP
SANCTUARY OF DEMOS AND GRACES
ROYAL STOA
WELL
HADRIAN ST.
RAILWAY
HOUSES AND SHOPS
ARSENAL?
HEPHAISTEION
STOA of ZEUS
12 GODS
BASILICA
MONOPTEROS
APOLLO PATROOS
TEMPLE OF ARES
GREAT DRAIN
KOLONOS AGORAIOS
BOULEUTERION
METROON
ODEION
PANATHENAIC WAY
STOA OF ATTALOS
EURYSAKEION ST.
BEMA
EPONYMOUS HEROES
ALTAR OF ZEUS AGORAIOS?
SOUTHWEST TEMPLE
THOLOS
CIVIC OFFICES
MIDDLE STOA
STRATEGEION?
LATRINE
EAST BUILDING
LIBRARY OF PANTAINOS
SOUTH SQUARE
(SOUTHWEST FOUNTAIN HOUSE)
AIAKEION
SOUTH STOA II
NYMPHAION
SOUTHEAST FOUNTAIN HOUSE
SOUTHEAST STOA
PIRAEUS GATE
(SOUTH STOA I)
MINT
SOUTHEAST TEMPLE
SHRINE
BATHS
(HOUSES)
ACROPOLIS
ELEUSINION
(HOUSES)
W.B.D.JI 1982

A covered meeting-place for a wide range of activities, it was also of signal architectural importance as an aid to the organization of spaces and groups in Hellenistic city centres.
...
This unusually sumptuous stoa, which was entirely reconstructed as a museum in the 1950, was built of marble and boasted aligned on the four cardinal points and the four intermediate points from which the eight winds were supposed to blow. Each side was carved with a sculptural relief personifying a different wind.

Watkin, A history of Western architecture



The span of its dome (43.2m) was unprecedented, that of St Peter's in Rome, over 1400 years later, being (42.5~1)... The perfectly balanced proportions of the interior are due to the fact that the inner diameter of the dome is exactly equalc the height of its oculus from the floor.

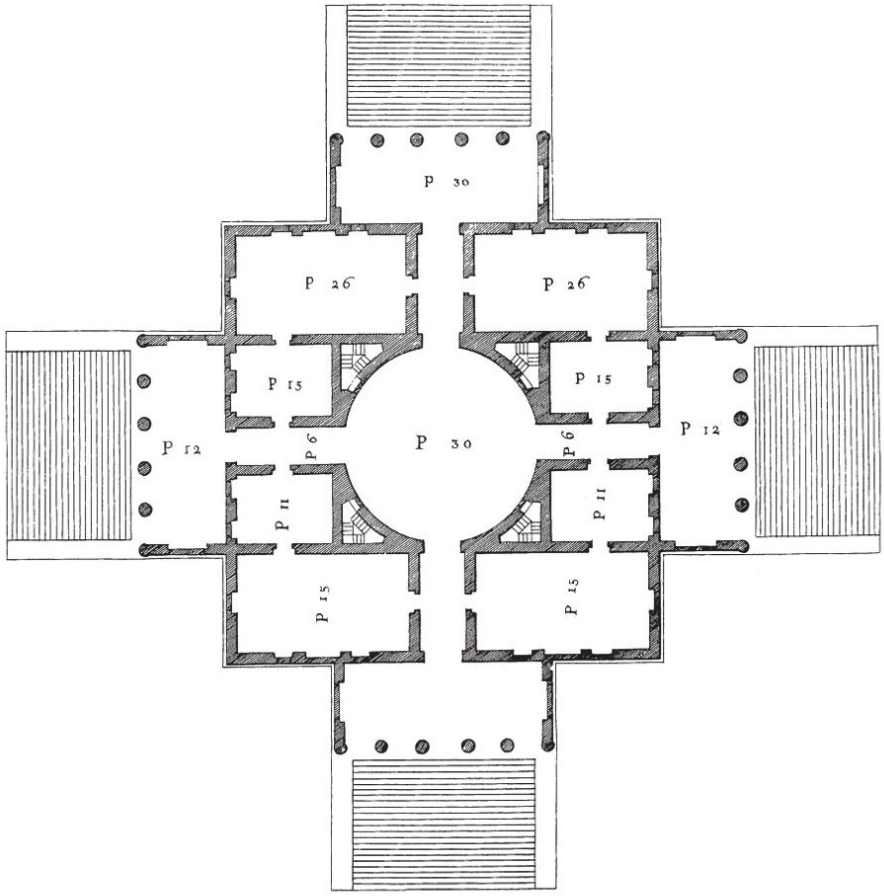
...

This captivating eye of light at the apex ,of the dome is the irresistible climax towards which the gaze of every, visitor is drawn. Wholly insulated from the noise and sight of the world, we have a seemingly miraculous contact through this luminous embrasure with the heavens above and with the gods who inhabit them.

...

The near perfection of this circular domed interior, utterly unlike anything previously seen on the face of the earth, seemed the symbol and the consequence of an immutable union between the gods, nature, man and the state...

Watkin, A history of Western architecture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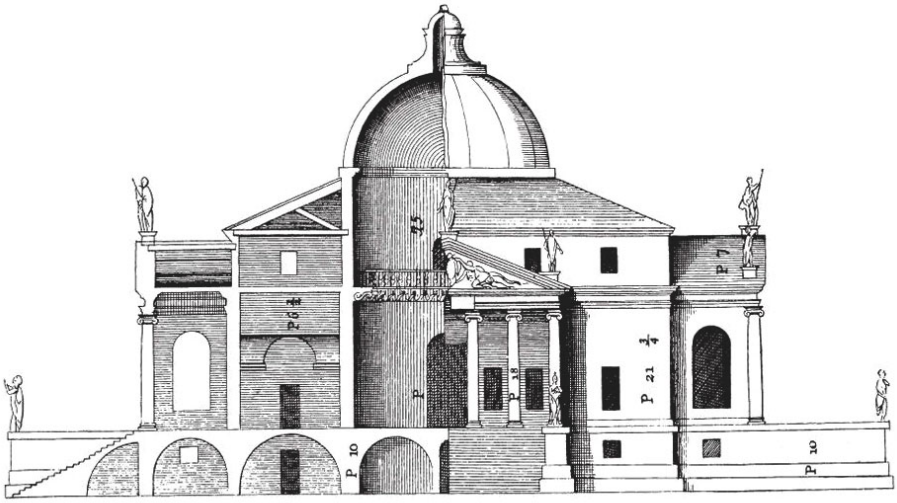
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SUBLIME

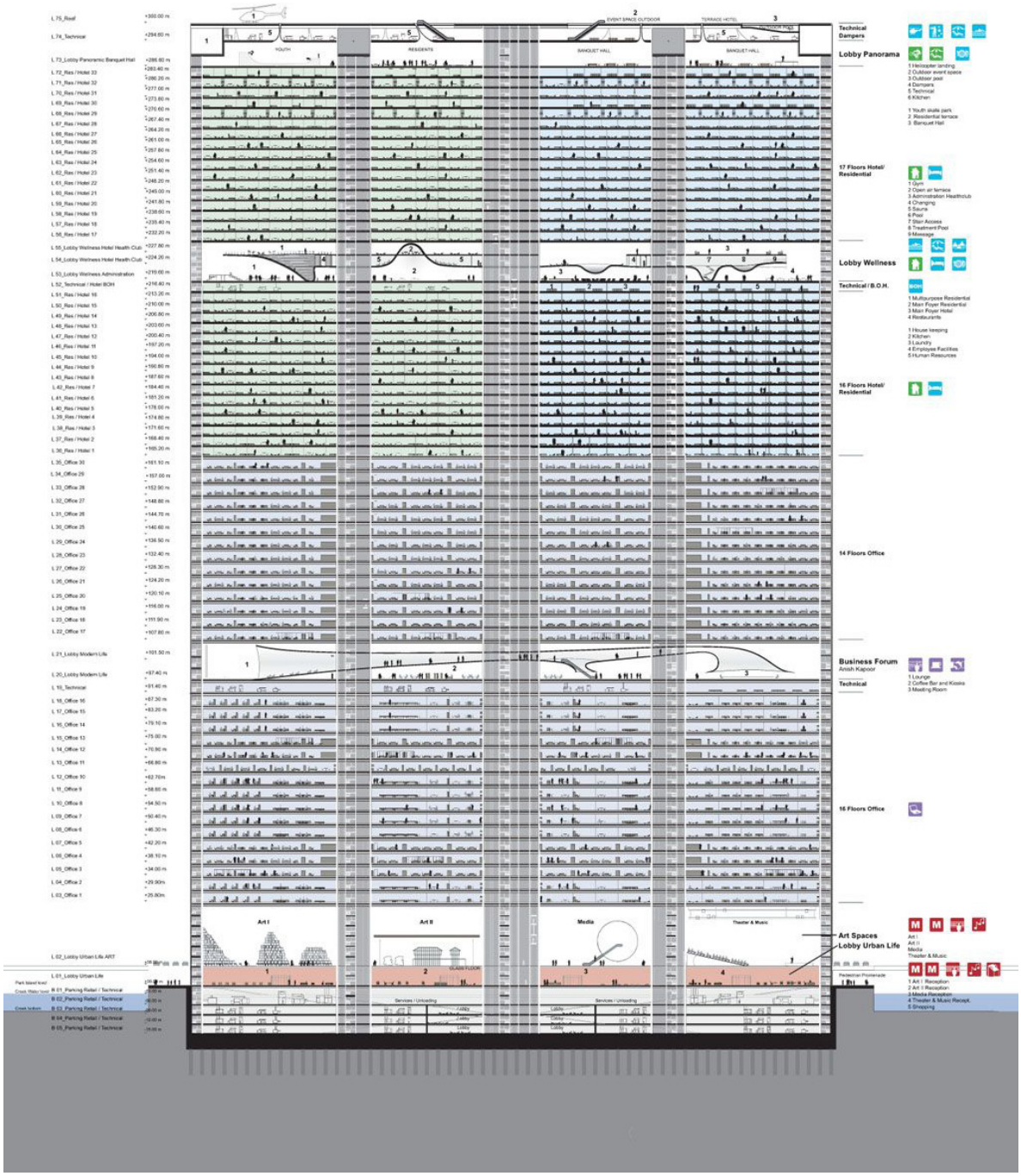
GENERIC

The ambition of this project is to end the current phase of architectural idolatry – the age of the icon – where obsession with individual genius far exceeds commitment to the collective effort that is needed to construct the city.

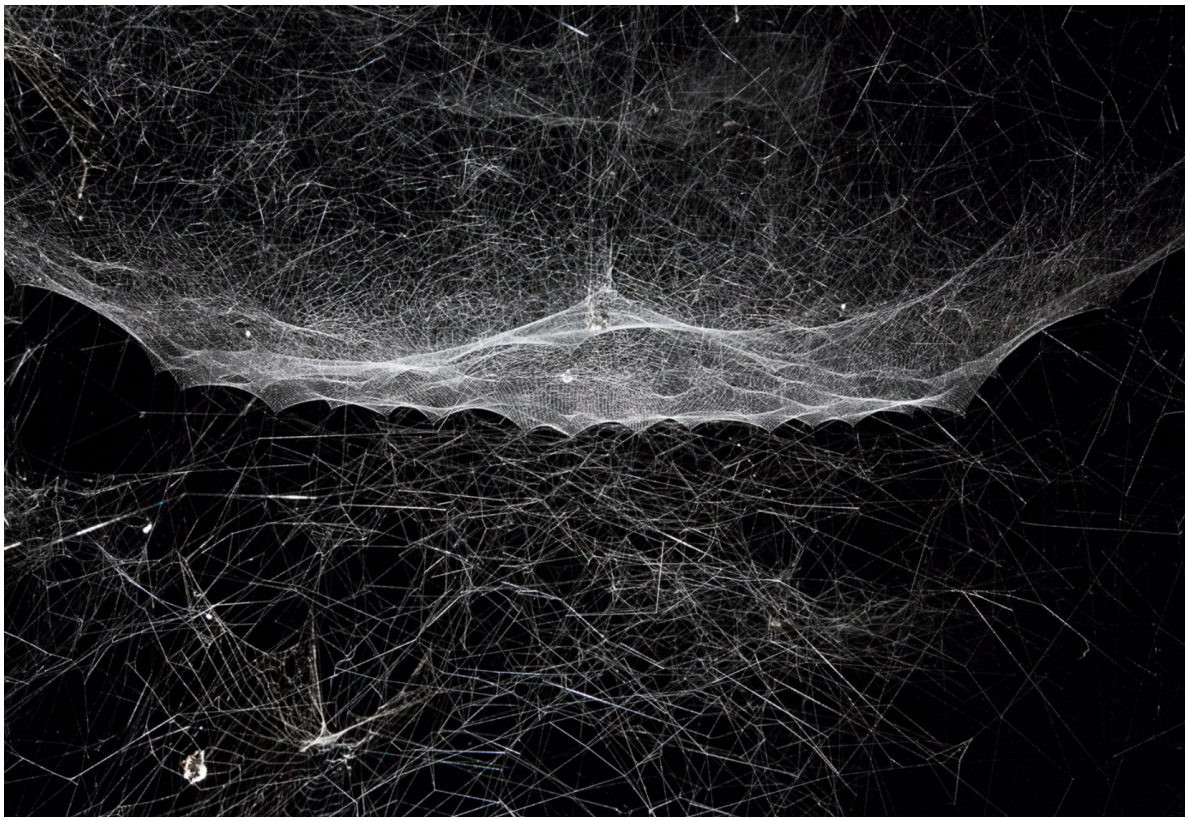
...

Instead of an architecture of form and image, we have created a reintegration of architecture and engineering, where intelligence is not invested in effect, but in a structural and conceptual logic that offers a new kind of performance and functionality.

OMA


Technical Dampers
Lobby Panorama
1 Helicopter landing
2 Outdoor event space
3 Outdoor pool
4 Dampers
5 Technical
6 Kitchen
1 Youth skate park
2 Residential terrace
3 Banquet Hall
57 Floors Hotel/ Residential
1 Gym
2 Open air terrace
3 Administration Healthclub
4 Changing
5 Sauna
6 Pool
7 Stair Access
8 Treatment Pool
9 Massage
Lobby Wellness
Technical / B.O.H.
1 Multipurpose Residential
2 Main Foyer Residential
3 Main Foyer Hotel
4 Restaurants
1 House keeping
2 Kitchen
3 Laundry
4 Employee Facilities
5 Human Resources
16 Floors Hotel/ Residential
14 Floors Office
Business Forum
Anish Kapoor
1 Lounge
2 Coffee Bar and Kiosks
3 Meeting Room
Technical
16 Floors Office
Art Spaces
Lobby Urban Life
Art I
Art II
Media
Theater & Music
1 Art I Reception
2 Art II Reception
3 Media Reception
4 Theater & Music Reception
5 Shopping

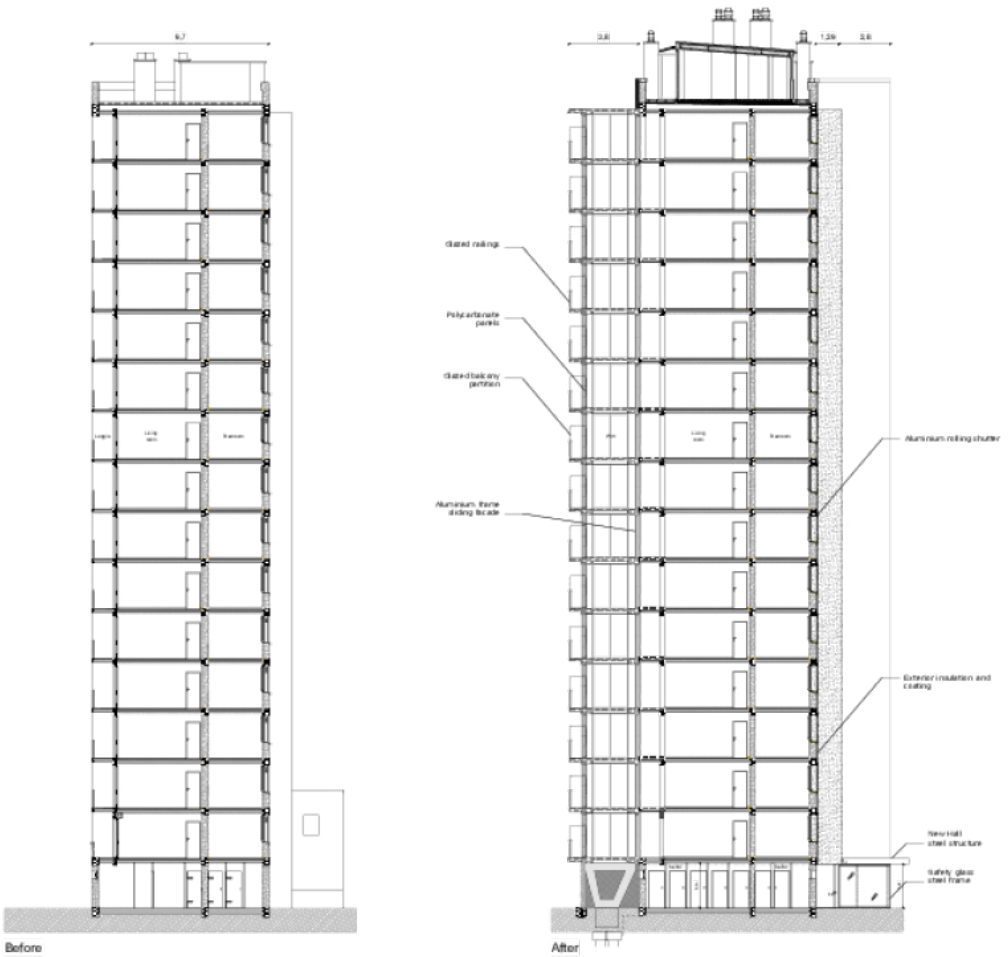
GENERIC

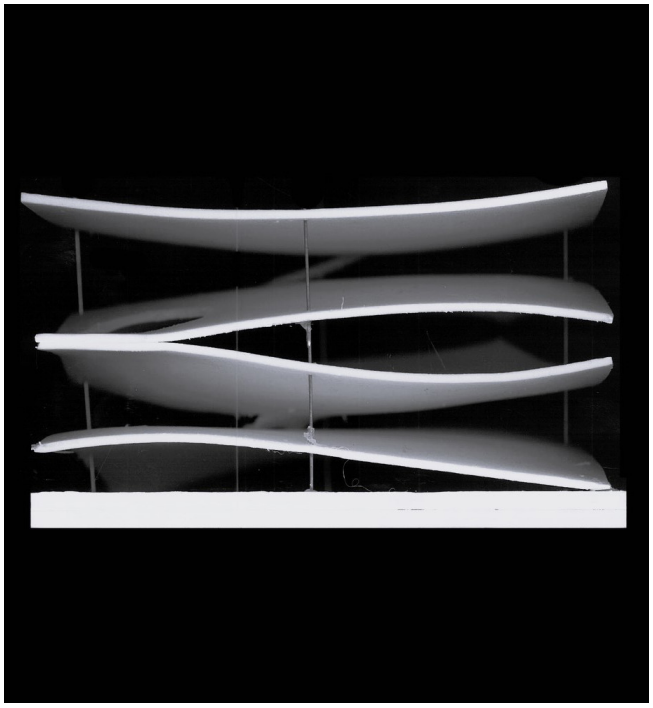


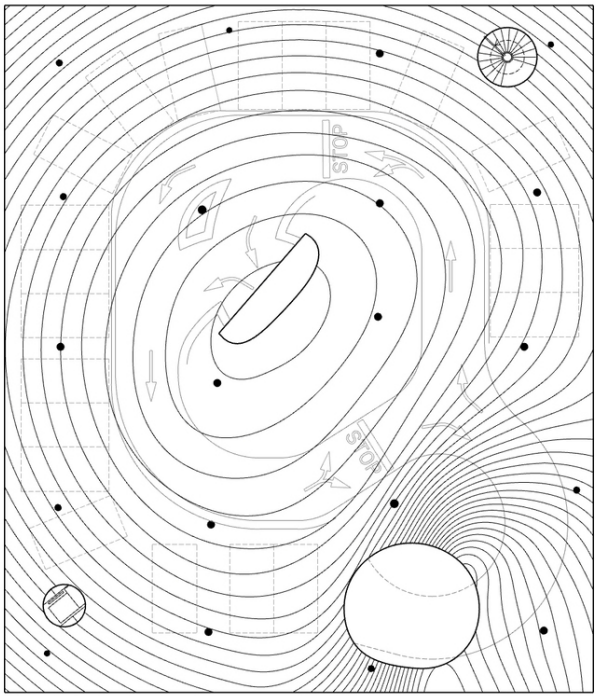
...As different spiders from different species weave in the same space, bridging the architectures of each other's webs, each one of them tells a story of hybrid relationships, entangling not only different arachnid webbed ecosystems, but also human and more-than-human worlds...

...from these encounters, emerges a space where multitudes observe themselves in the very act of becoming a community: a spatial condition of physical immersion in an environment where stories of co-existence between humans and other species materialize...

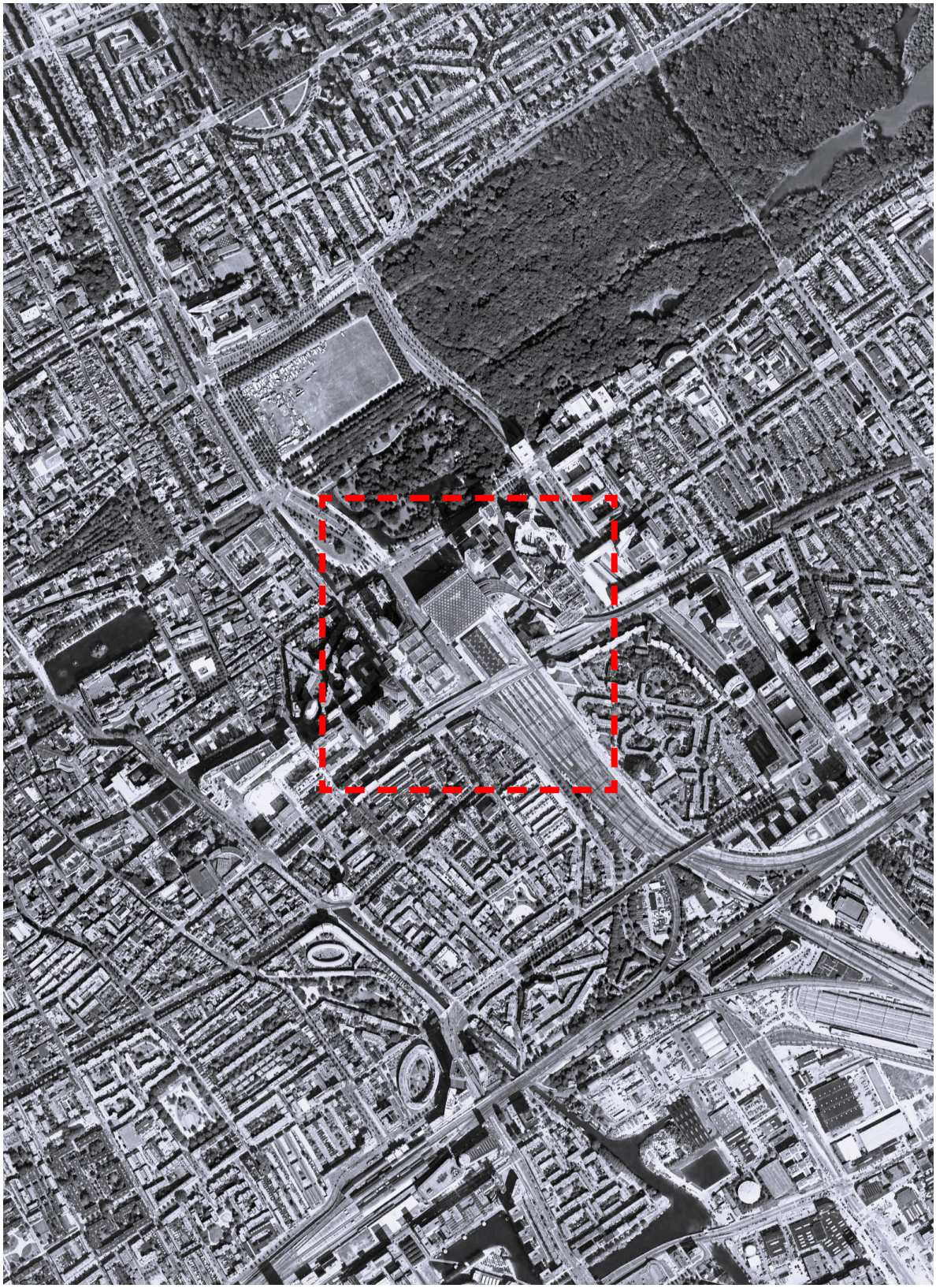
Tomas Saraceno

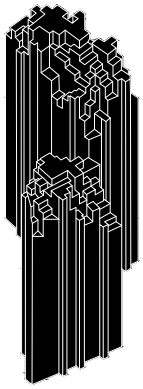

Glazed railings
Polycarbonate panels
Glazed balcony partition
Aluminium frame sliding facade
Aluminium rolling shutter
Exterior insulation and coating
New Hall steel structure
Safety glass steel frame
Before
After

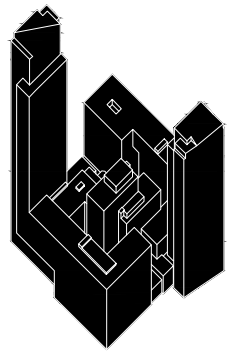


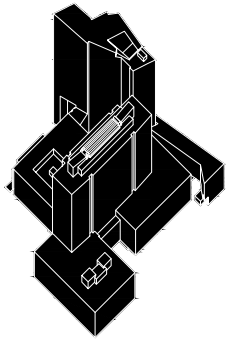

sop
sop

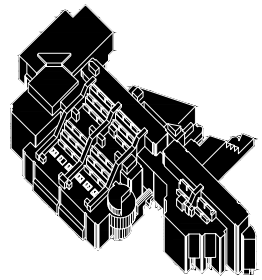
Context

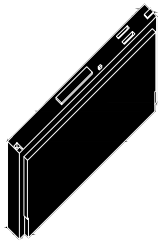


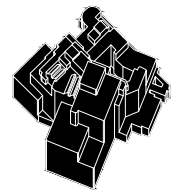


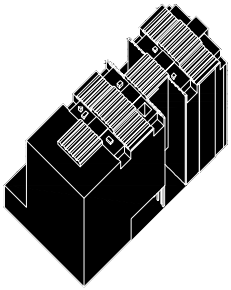


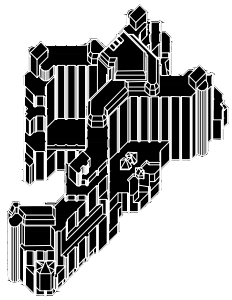


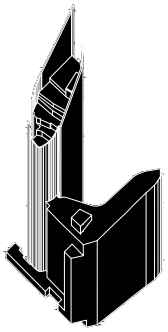


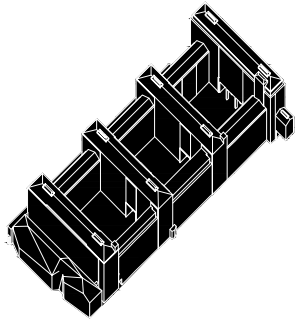


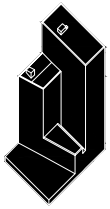


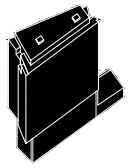












Stichthage / The Slab

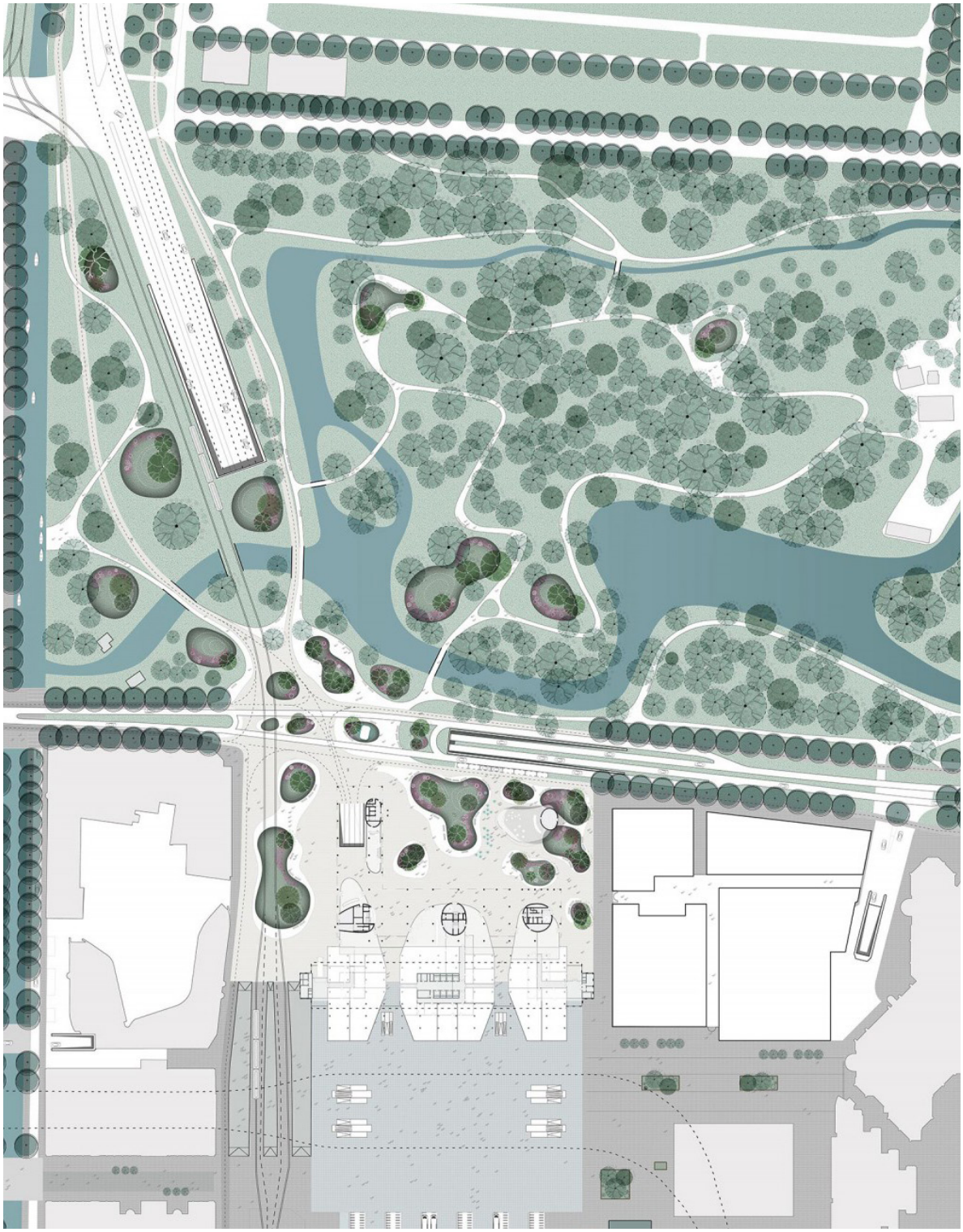
Koen van der Gaast and Hans Bak

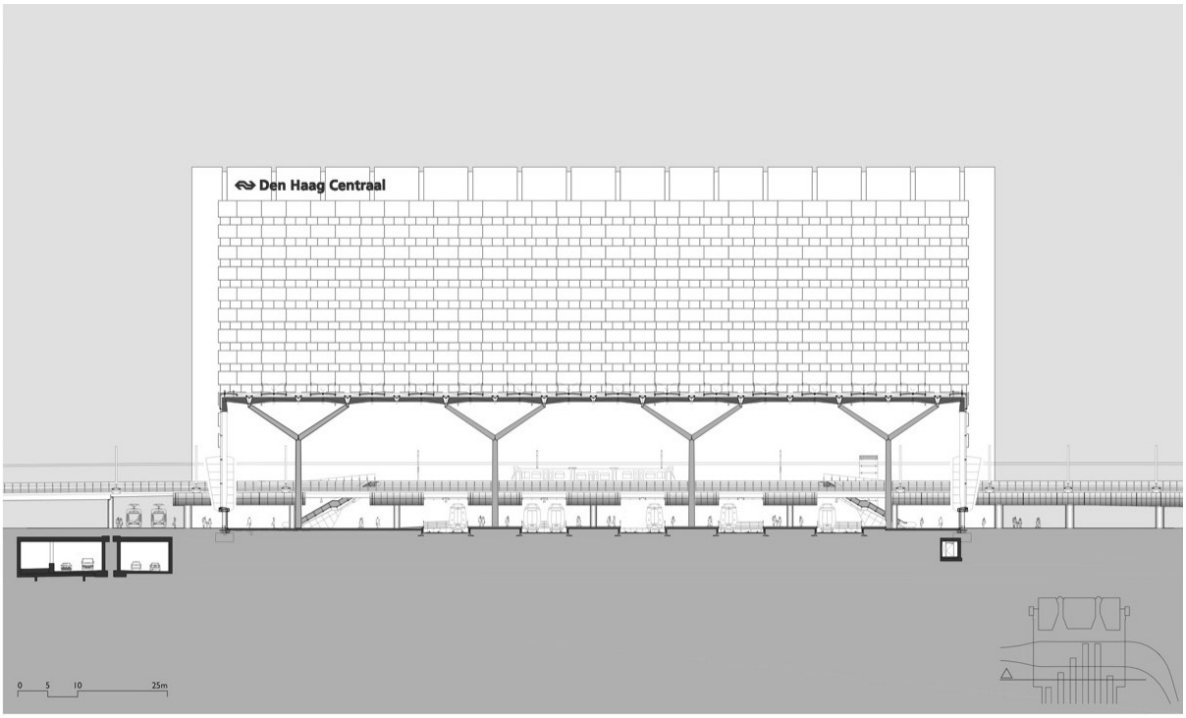
brutalism

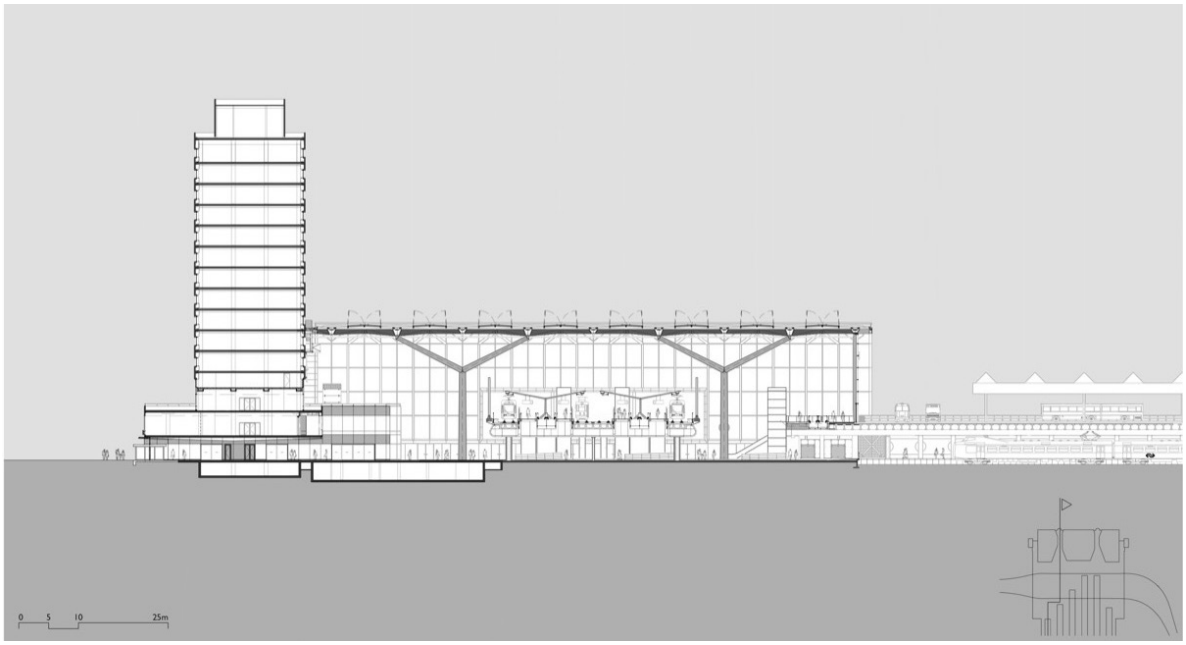
year: 1970-1975

h= 63 m

P= 30 000 m2




Den Haag Centraal
0 5 10 25m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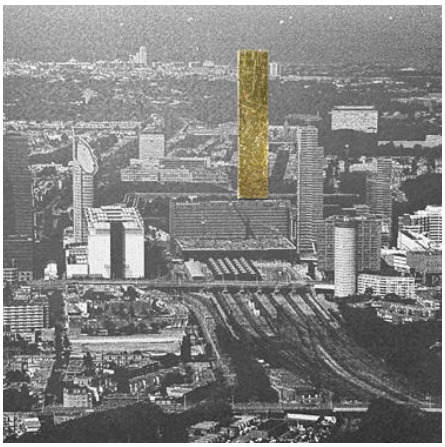
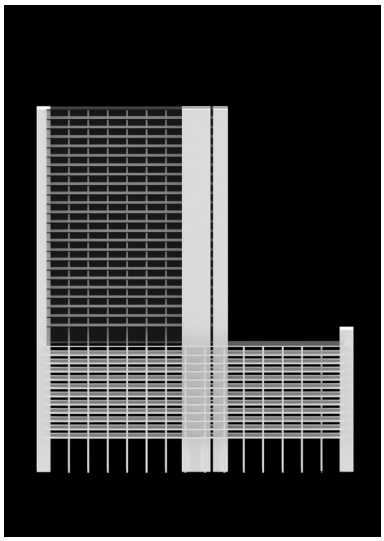
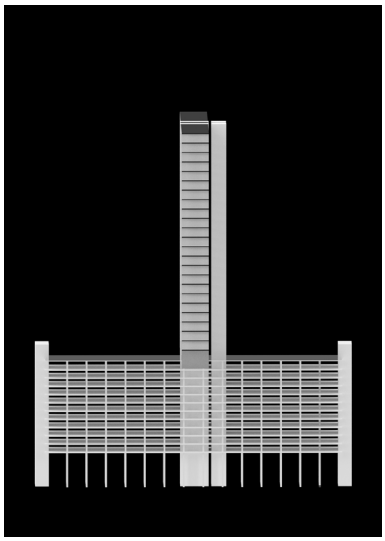
Design process

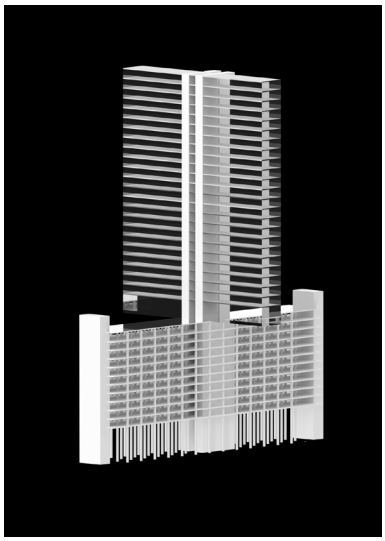





First massing attempts







Concept

Dubai Renaissance - OMA

Pantheon

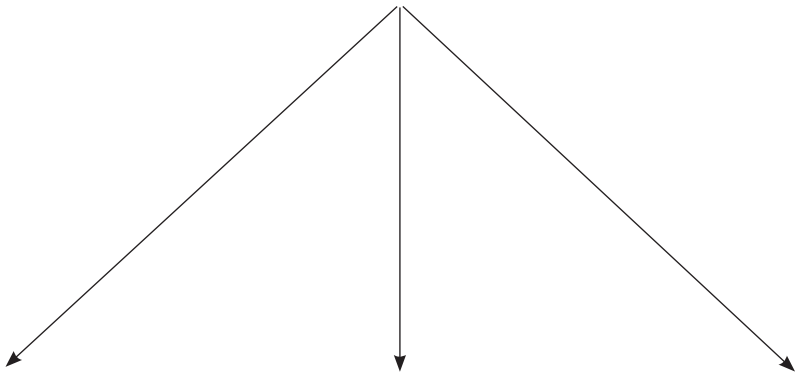
open / abstract / **generic**

x

closed / absolute / **sublime**

=

SYSTEM

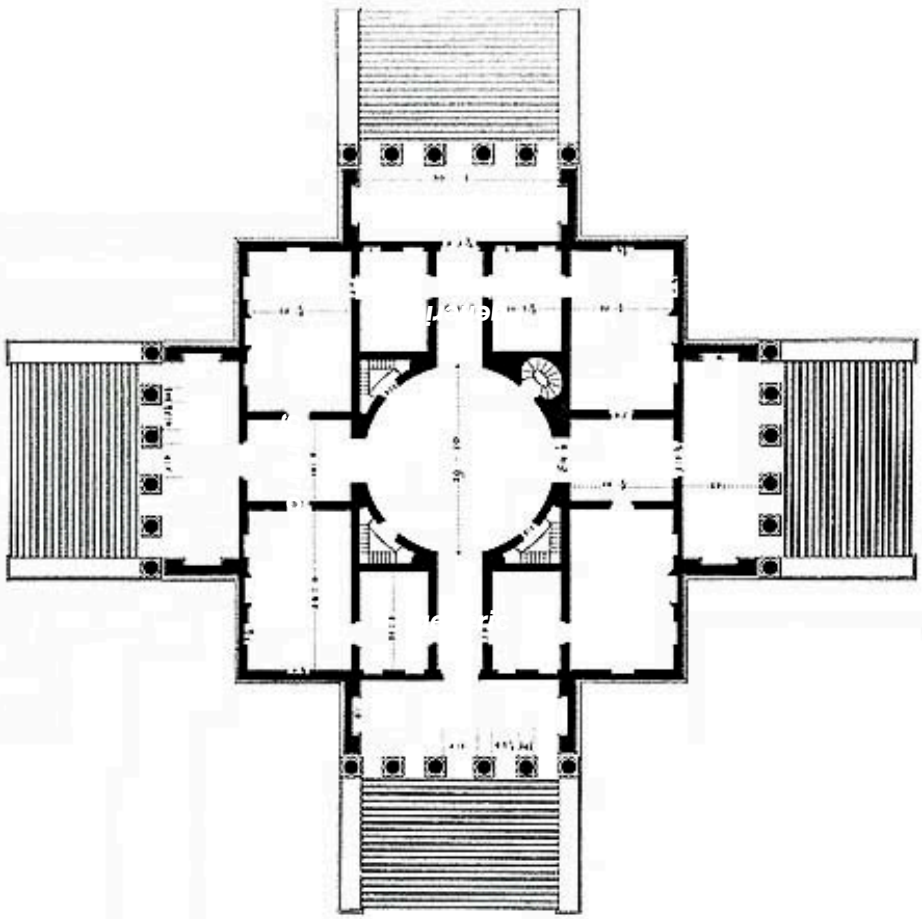


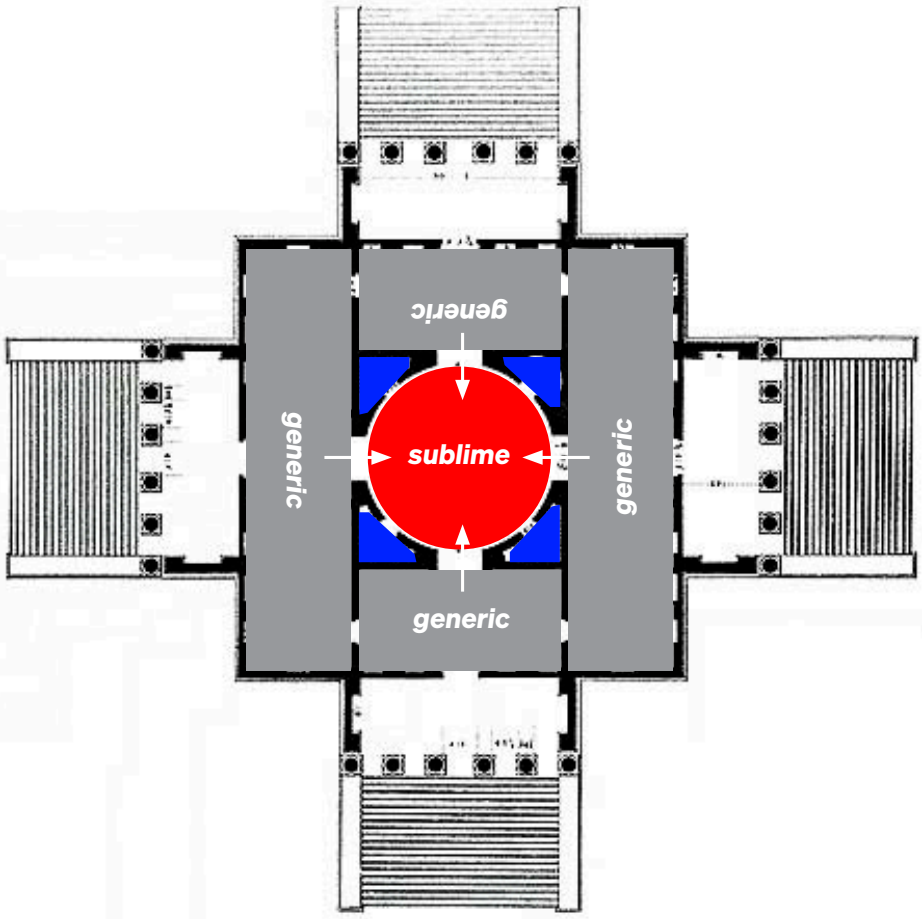
PROGRAM

1. Creating the knowledge

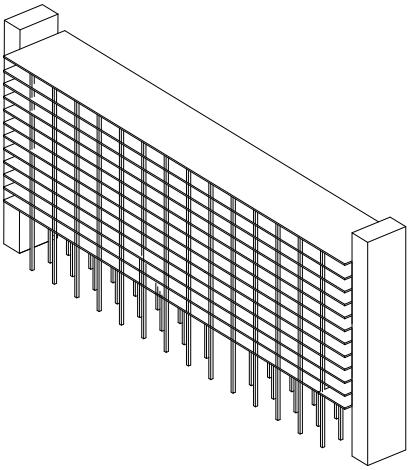
2. Archiving the knowledge

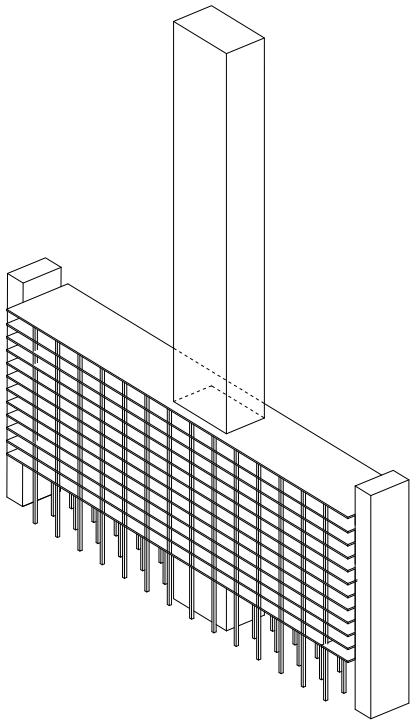
3. Transfer of knowledge

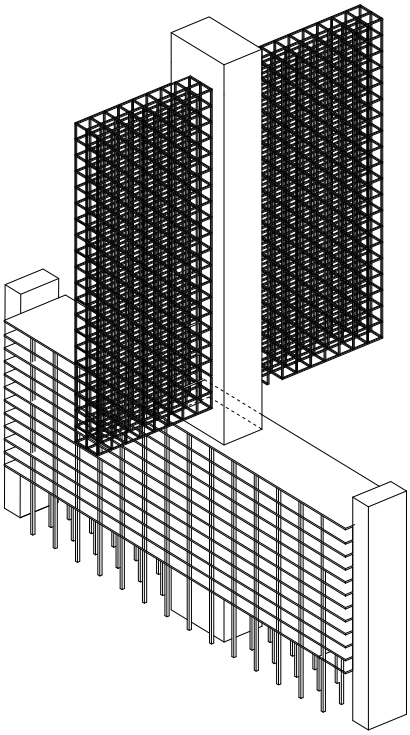


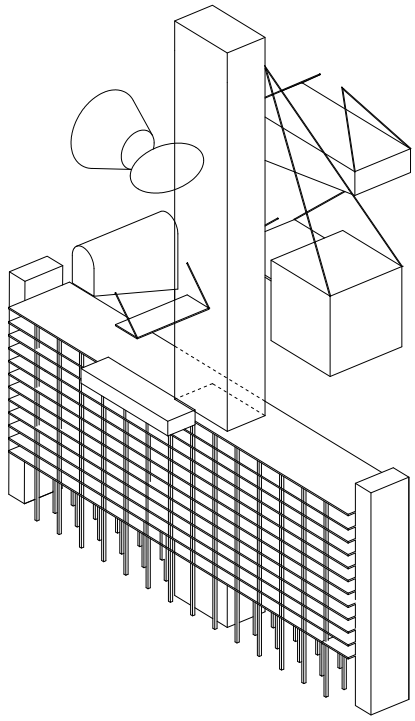


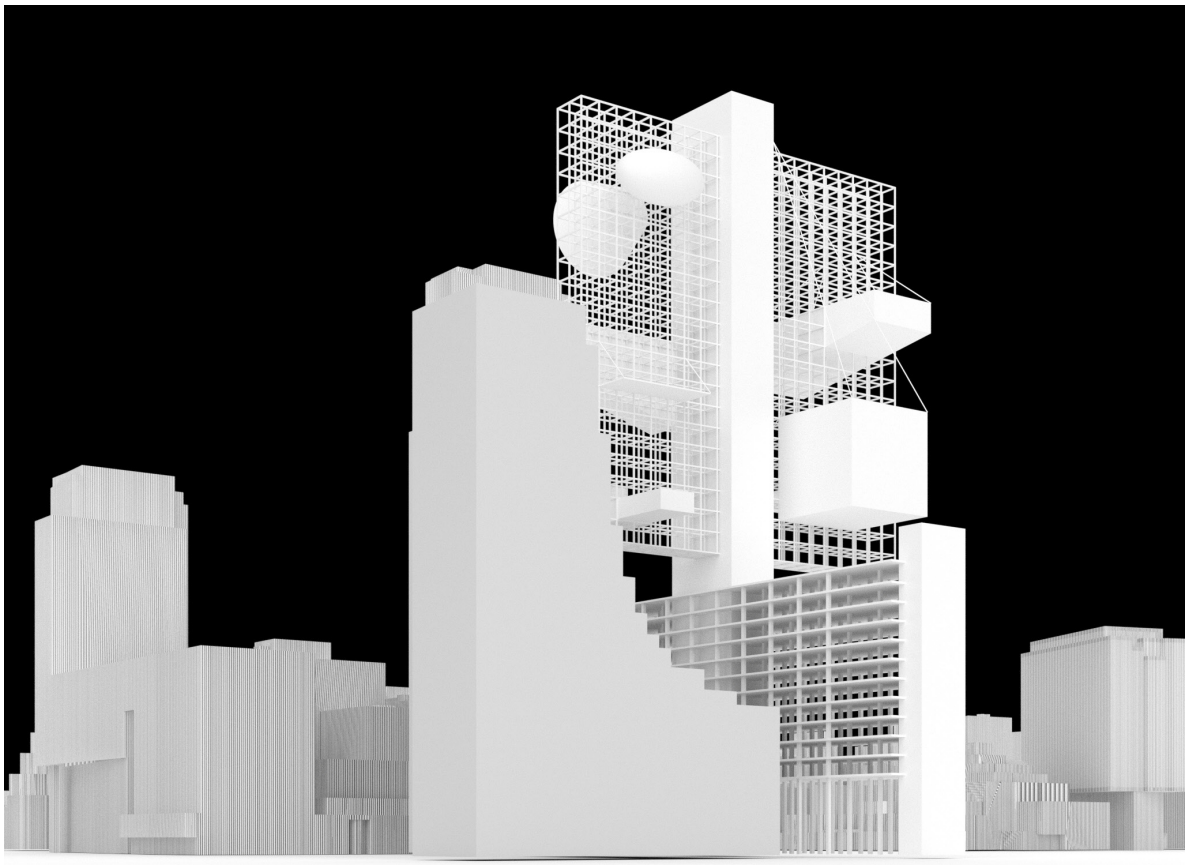
GENERIC x SUBLIME = **SYSTEM**





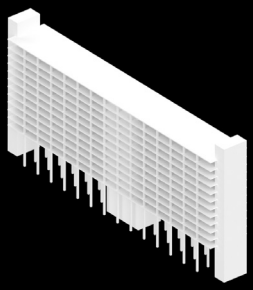




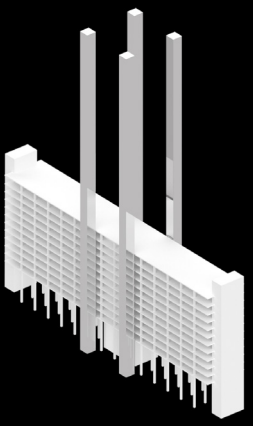


conclusion: load bearing structure not possible

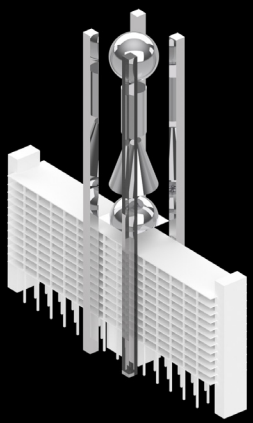
existing building



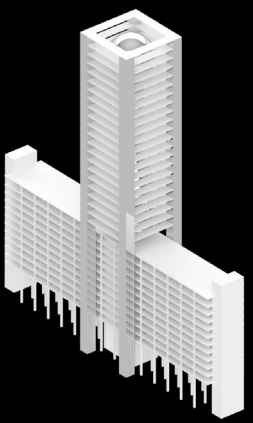
cores



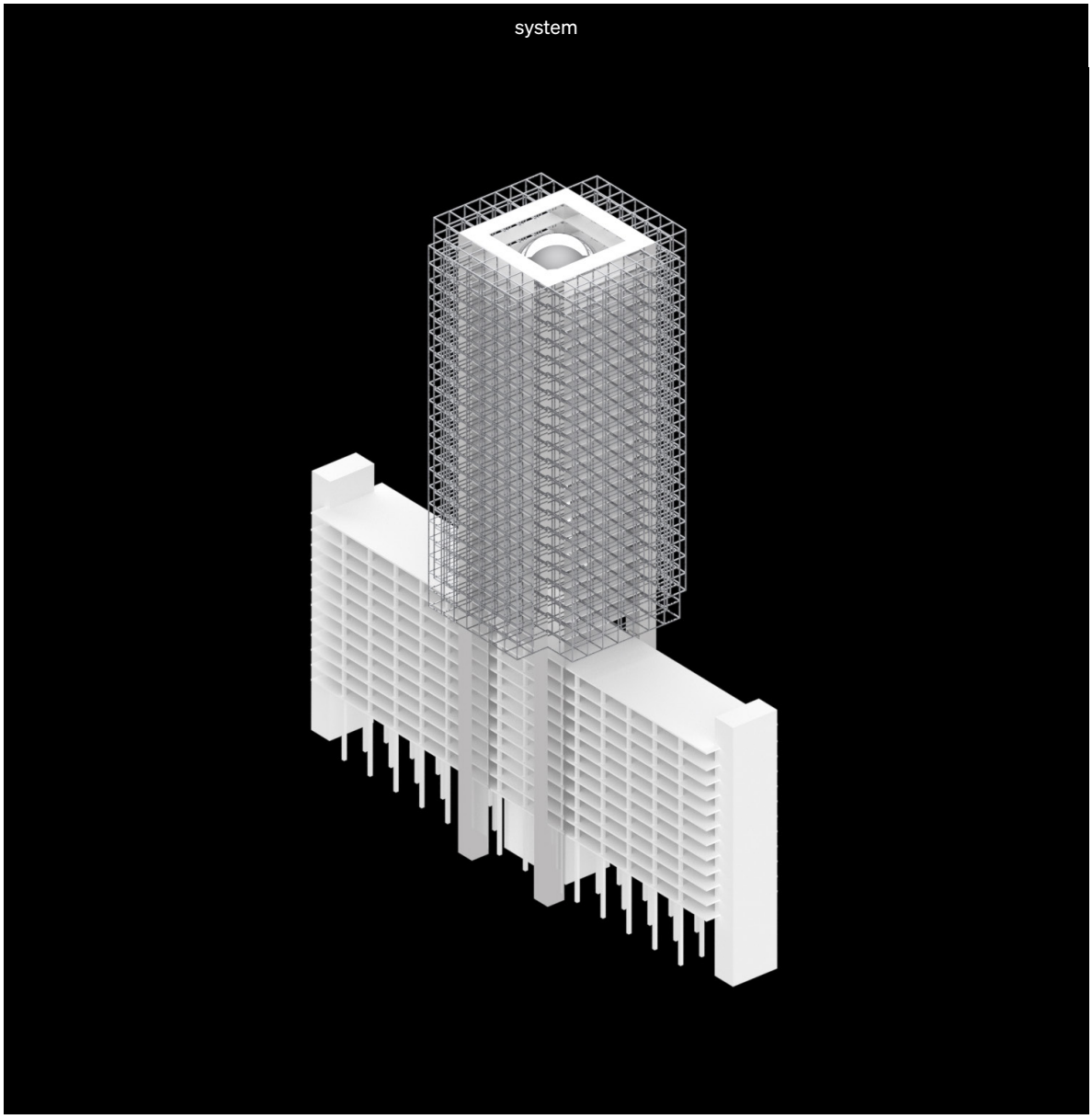
sublime

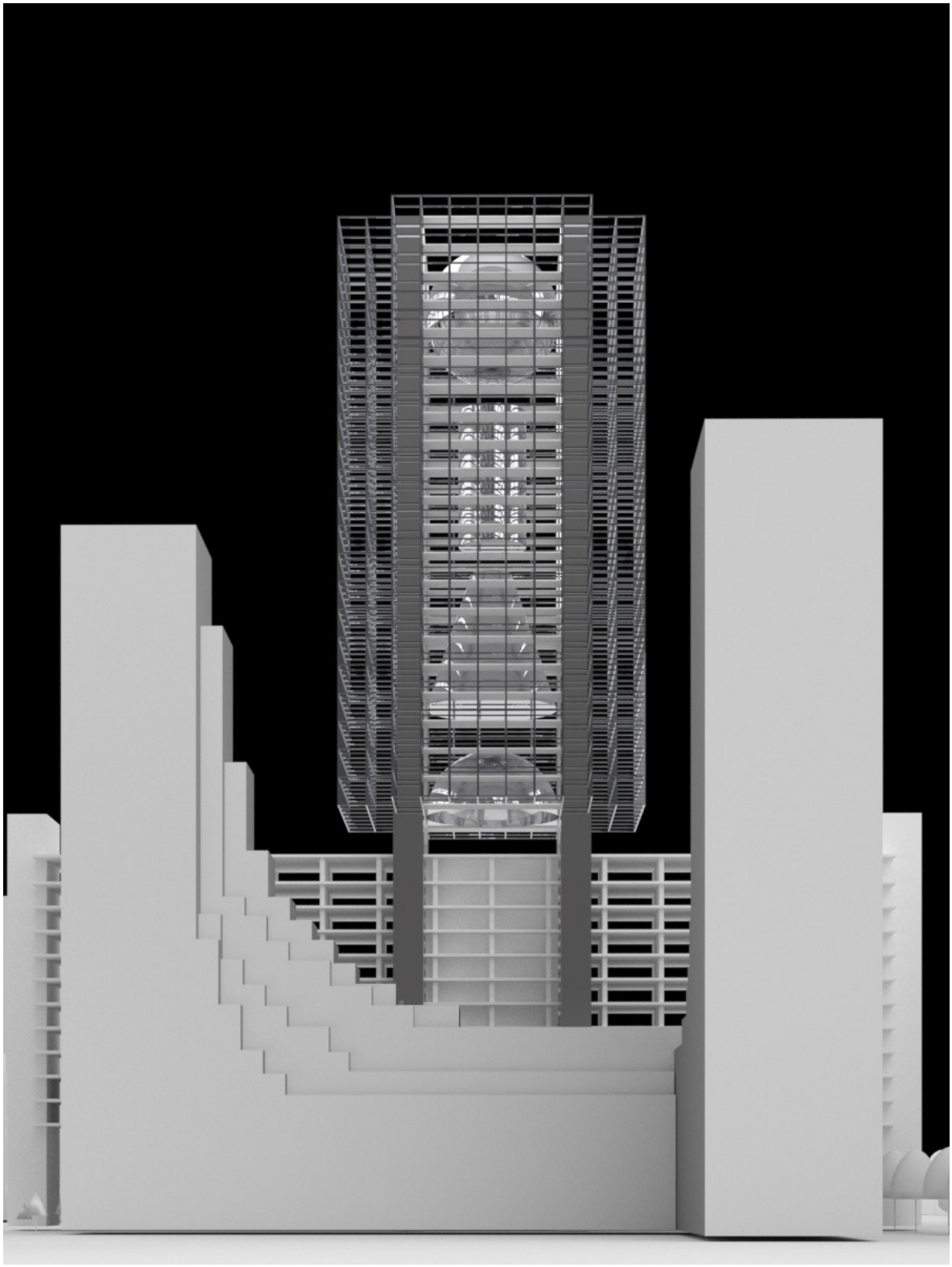


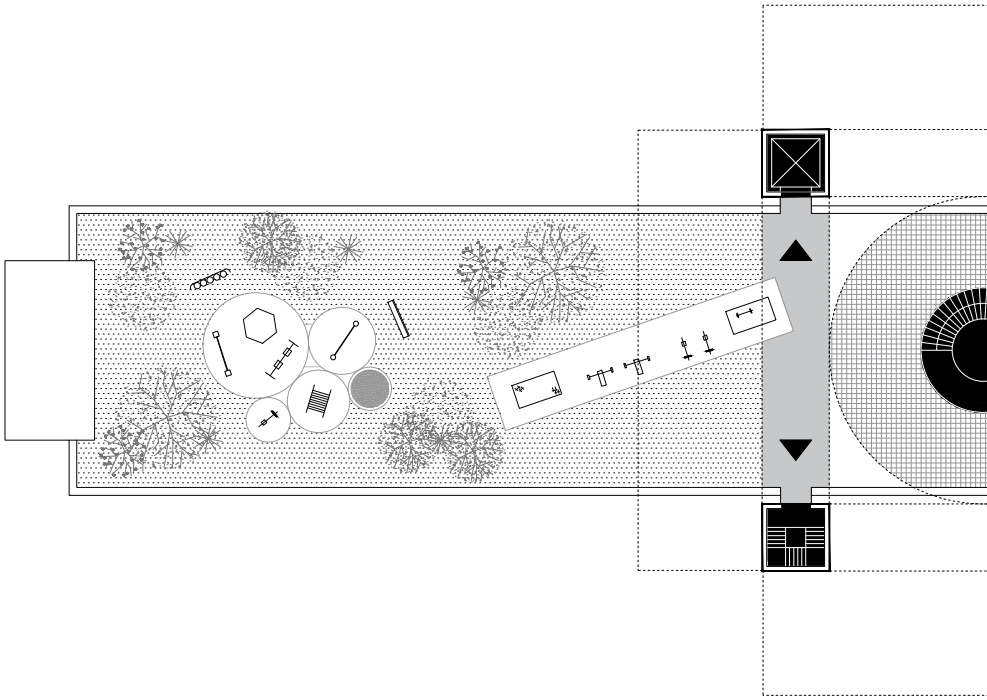
archive



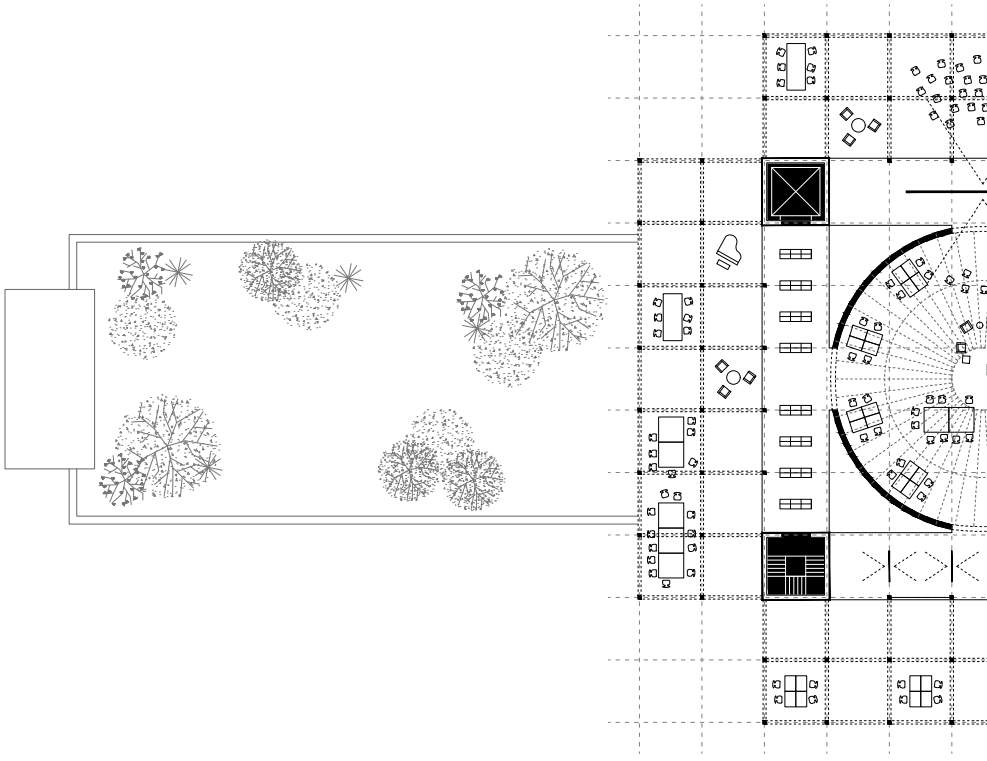
system



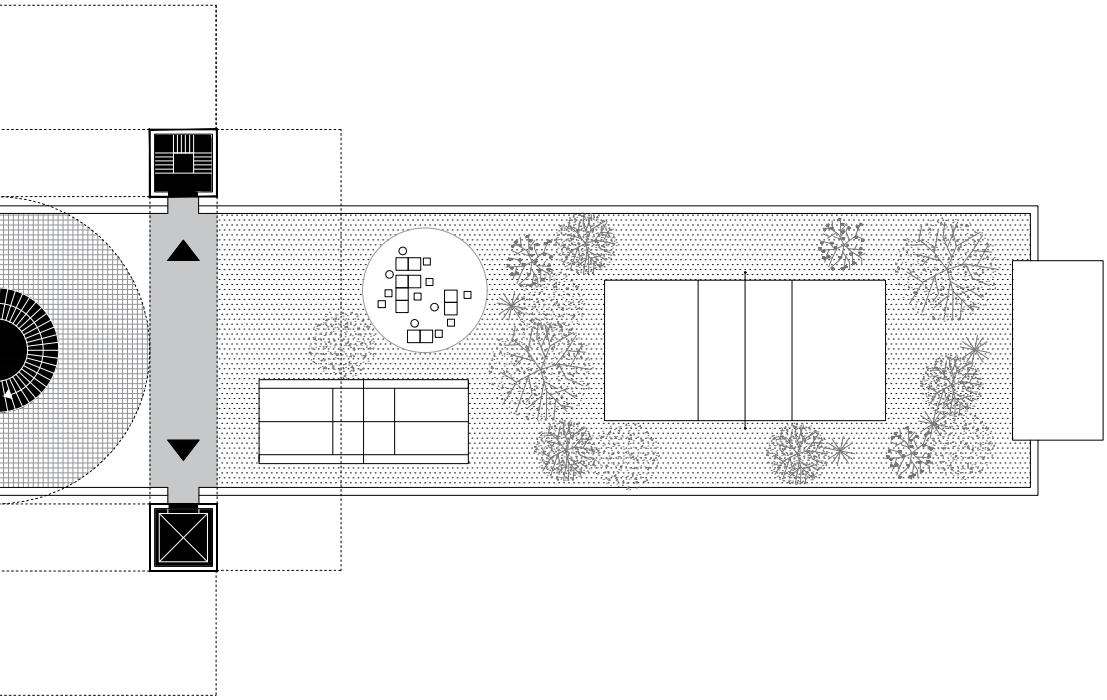


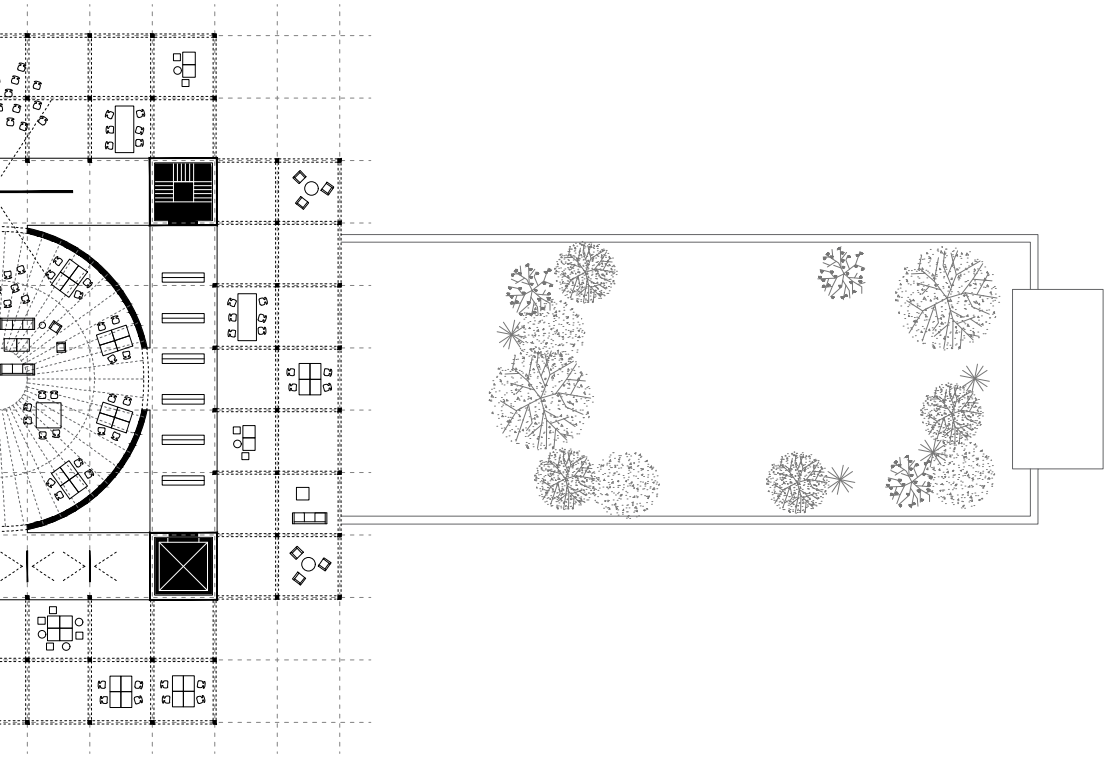


New ground

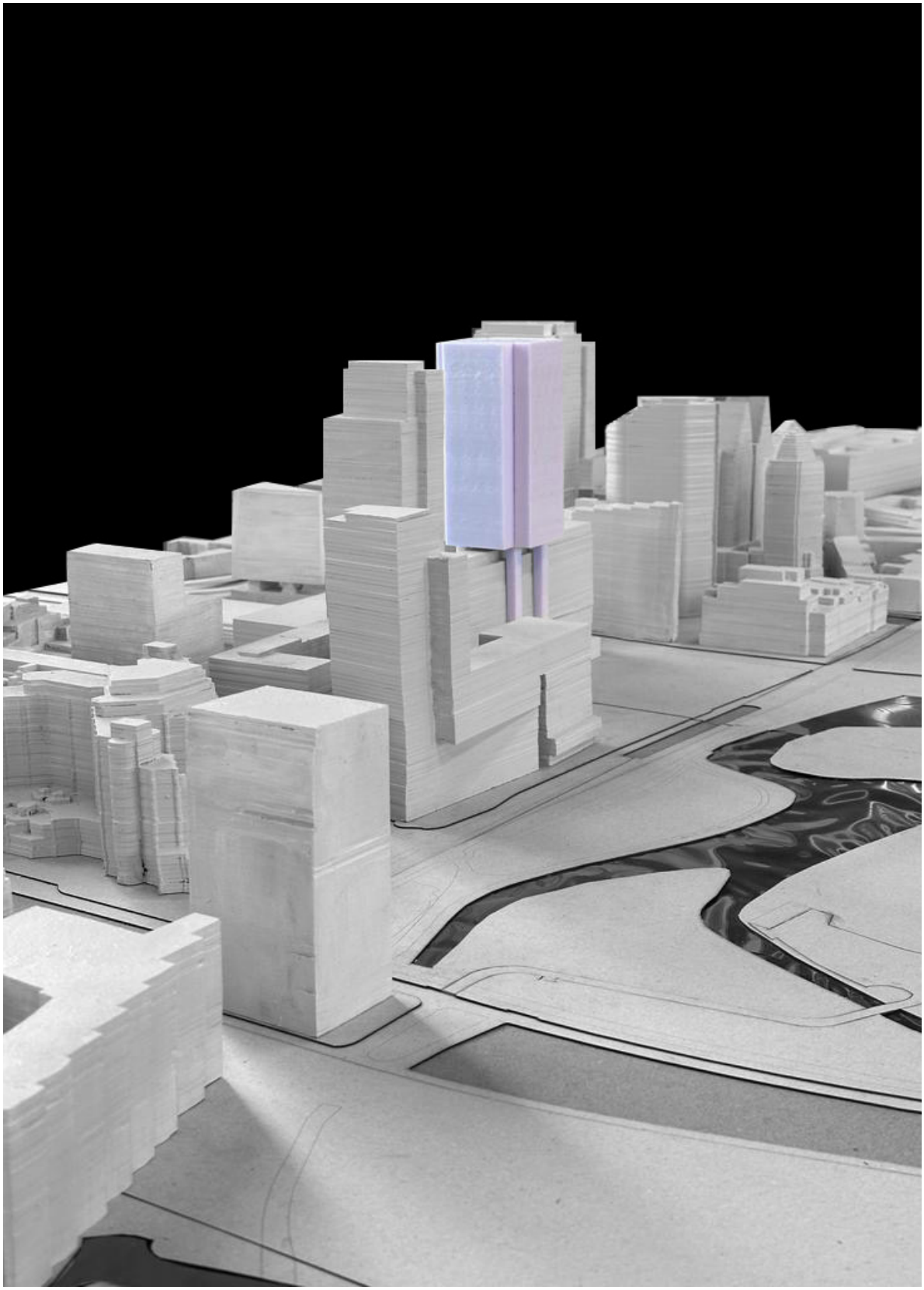


Superstructure

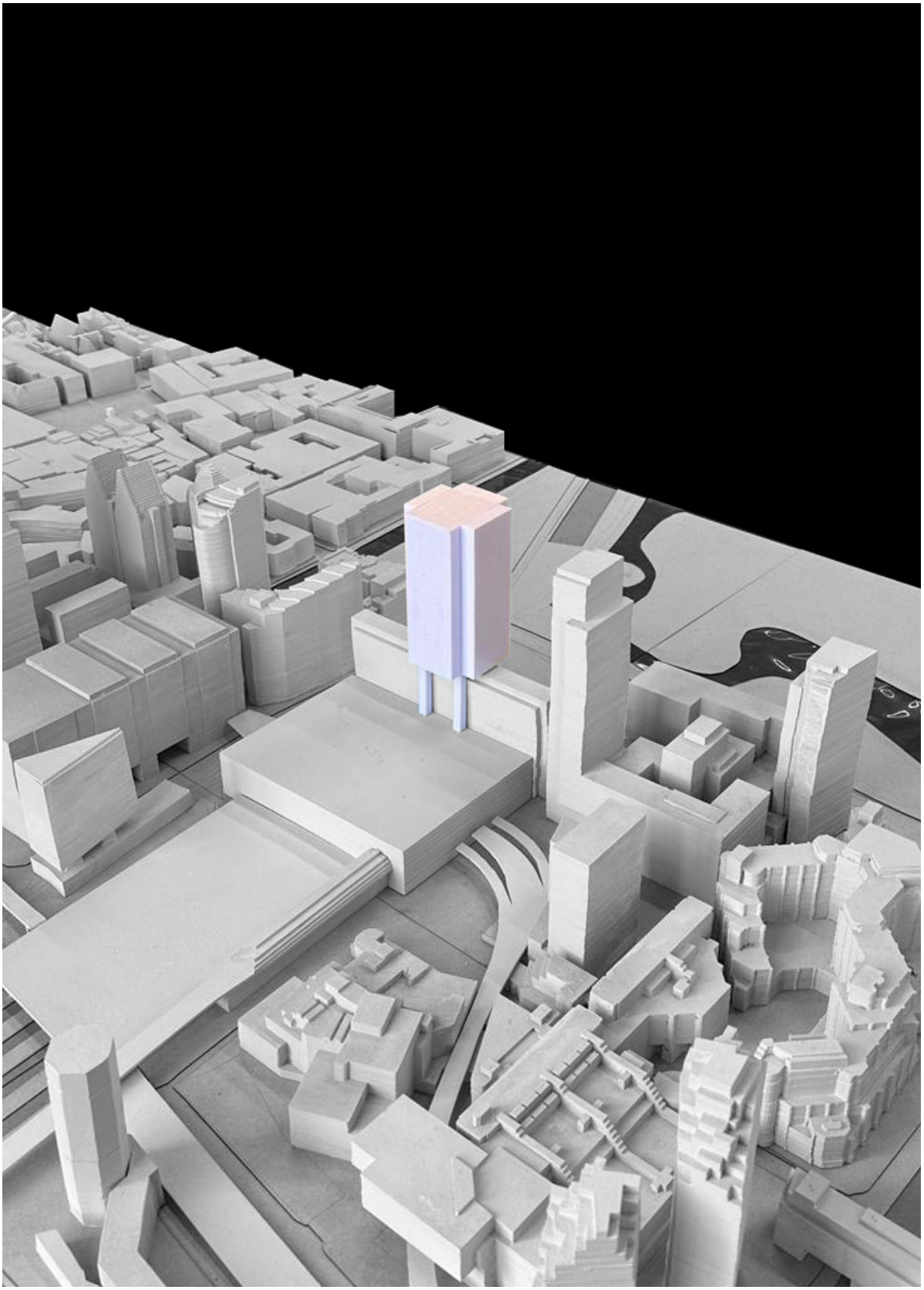




Mass model 1:500

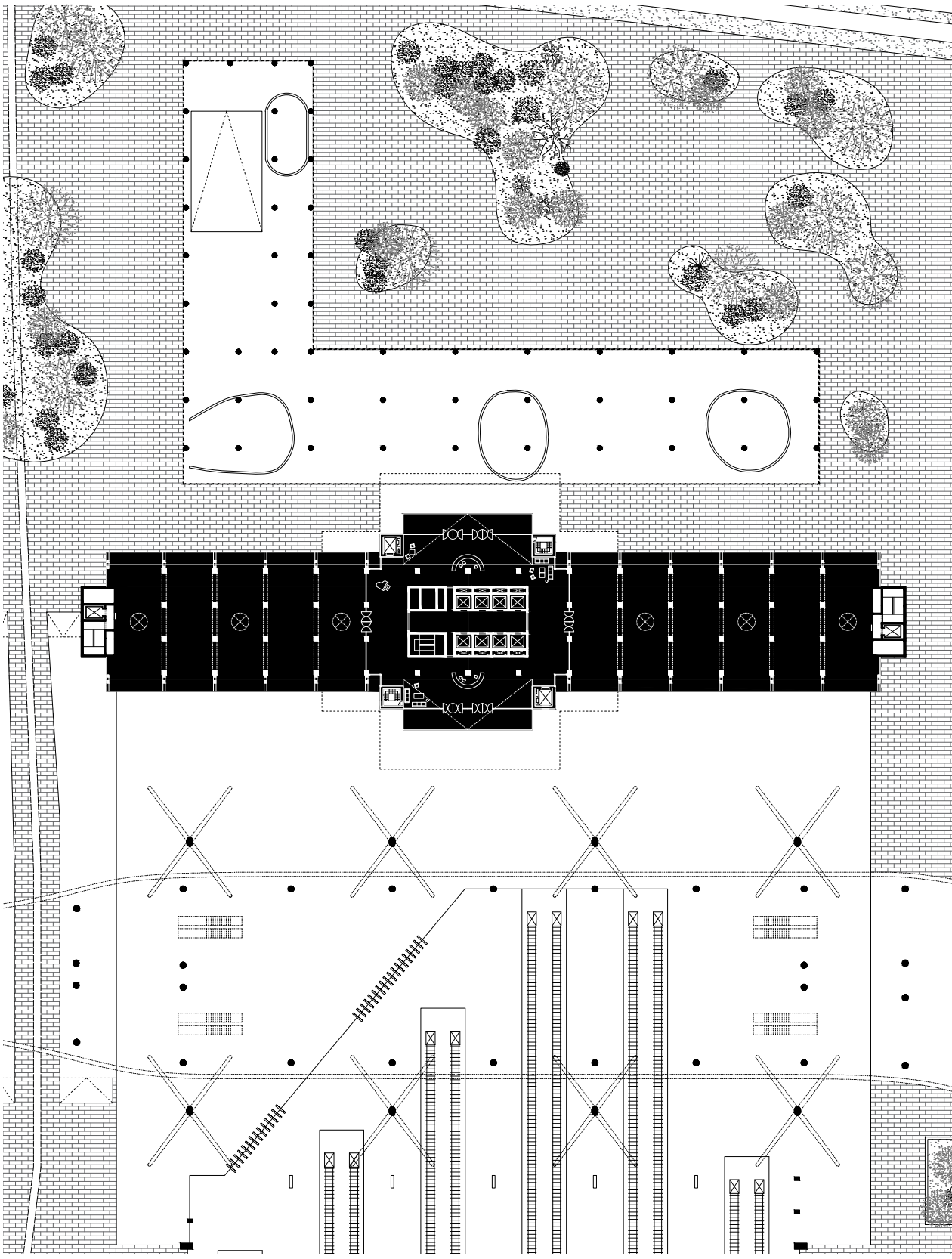


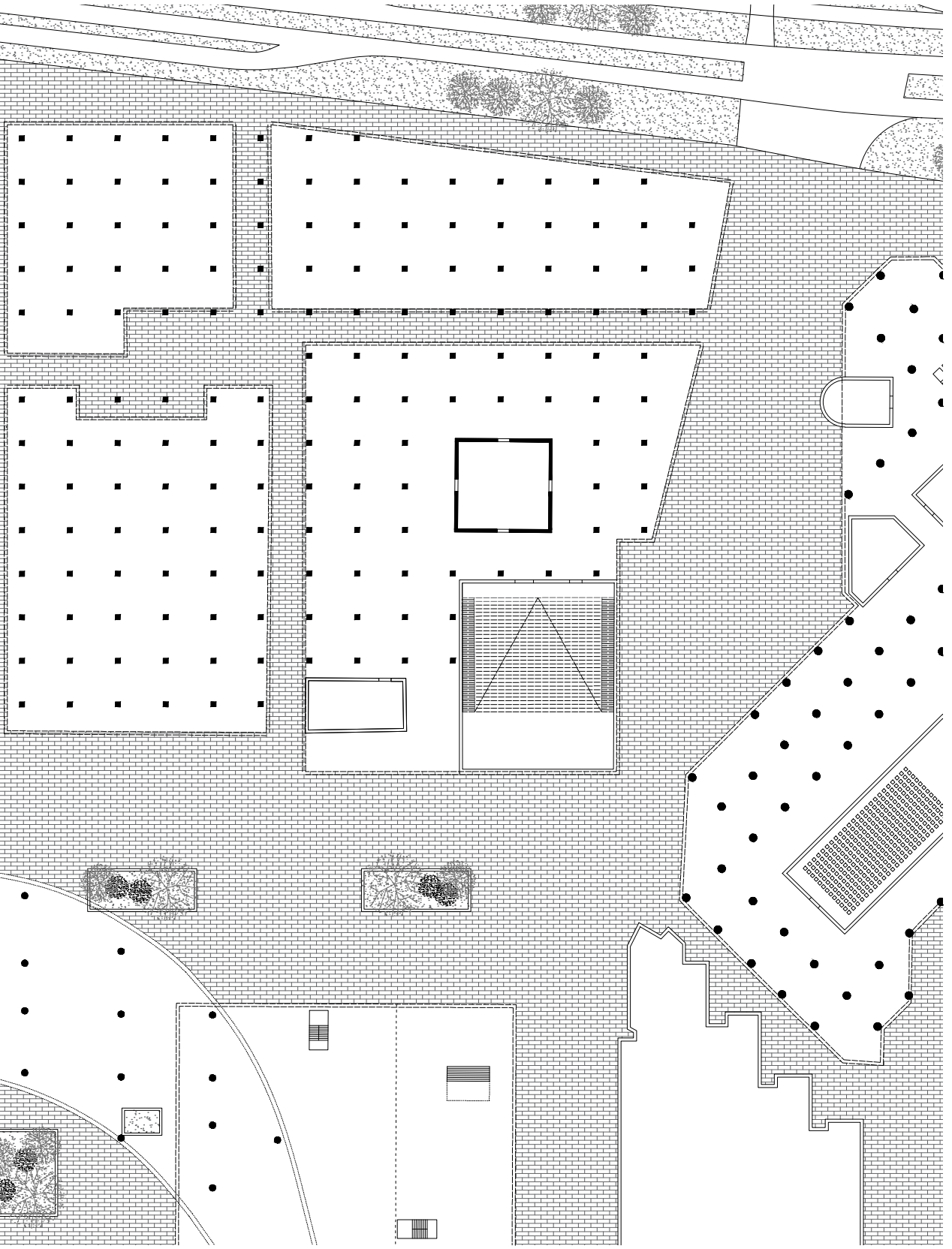
Mass model 1:500



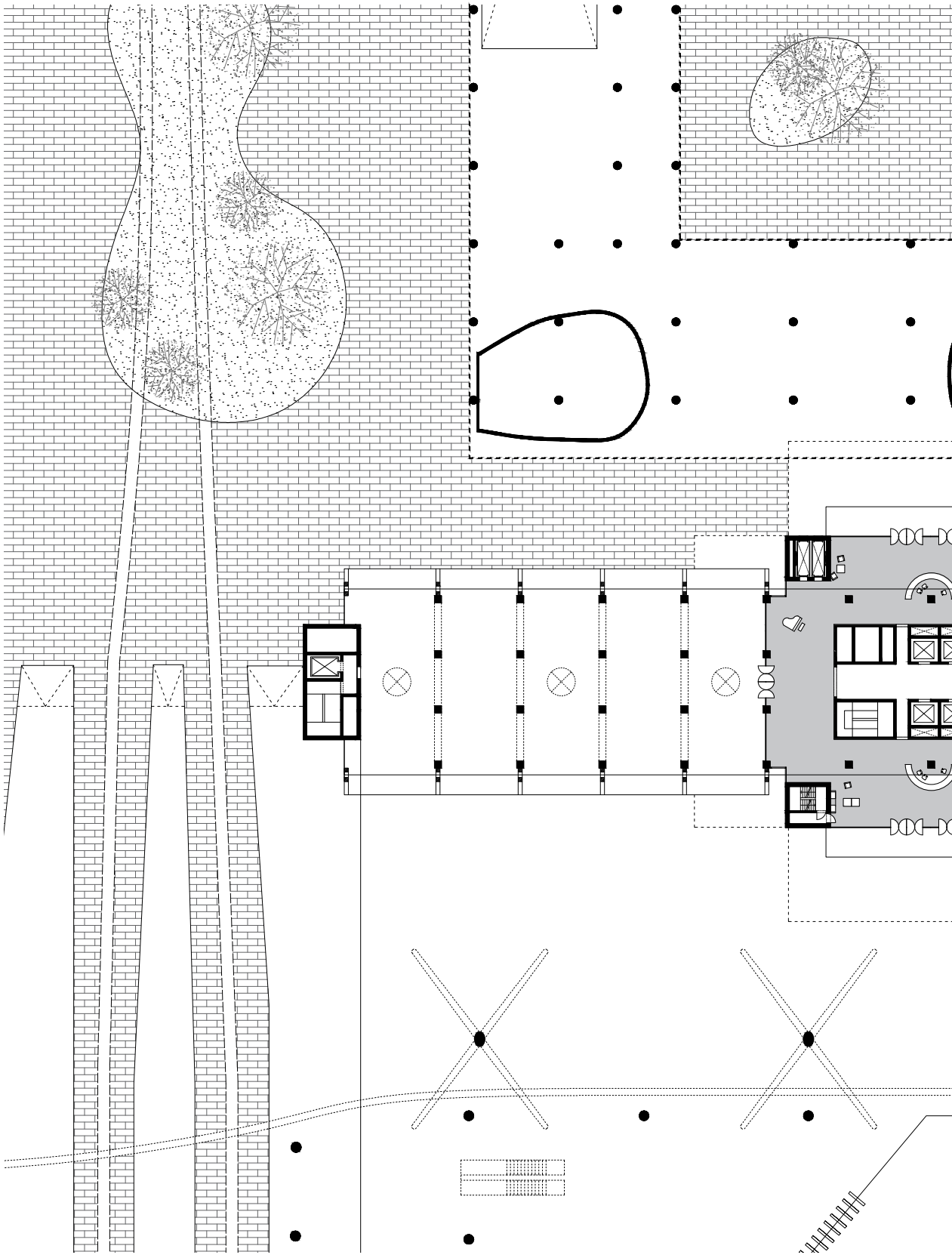
Final design

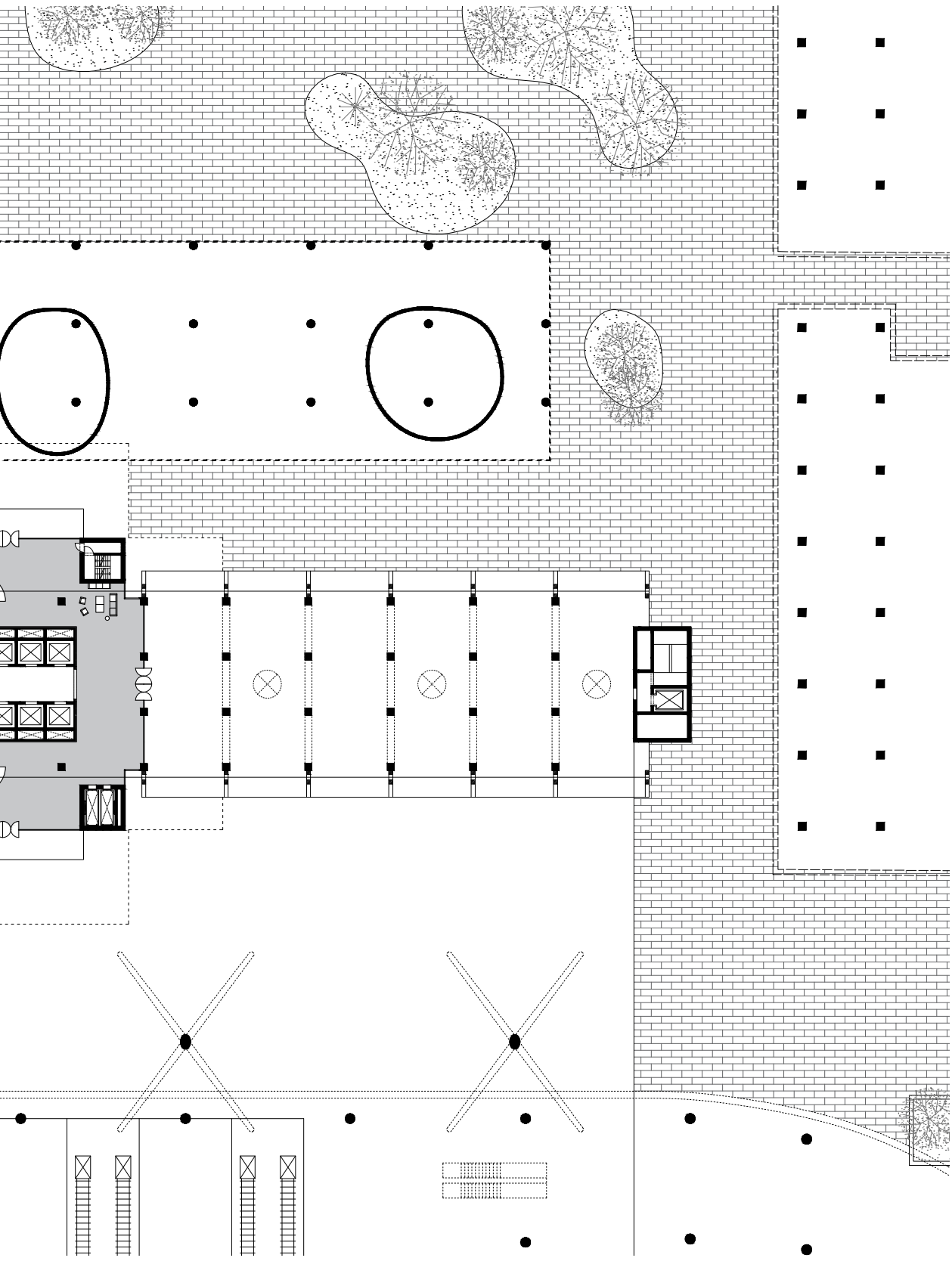
Ground floor

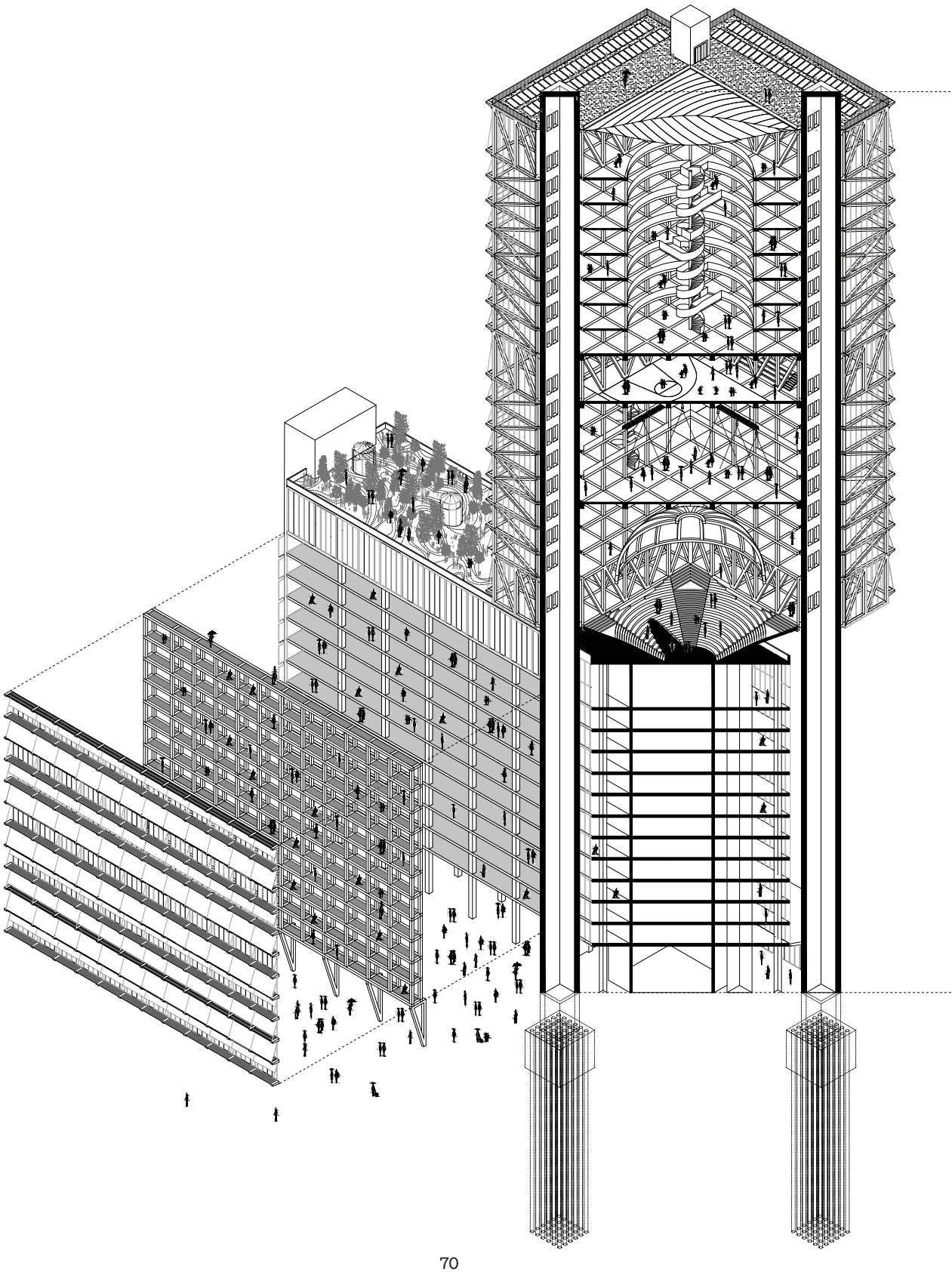


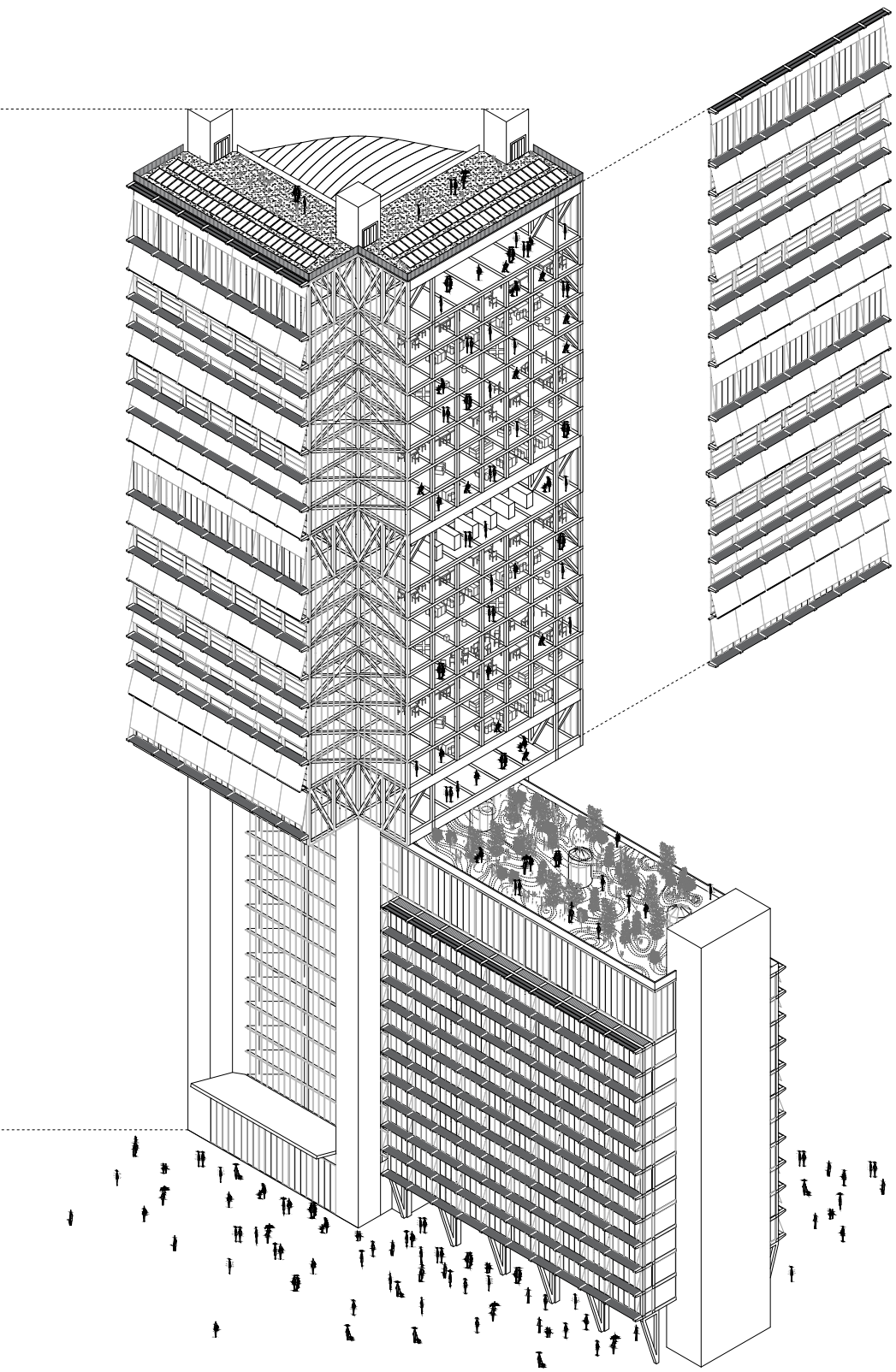


Entrance to campus

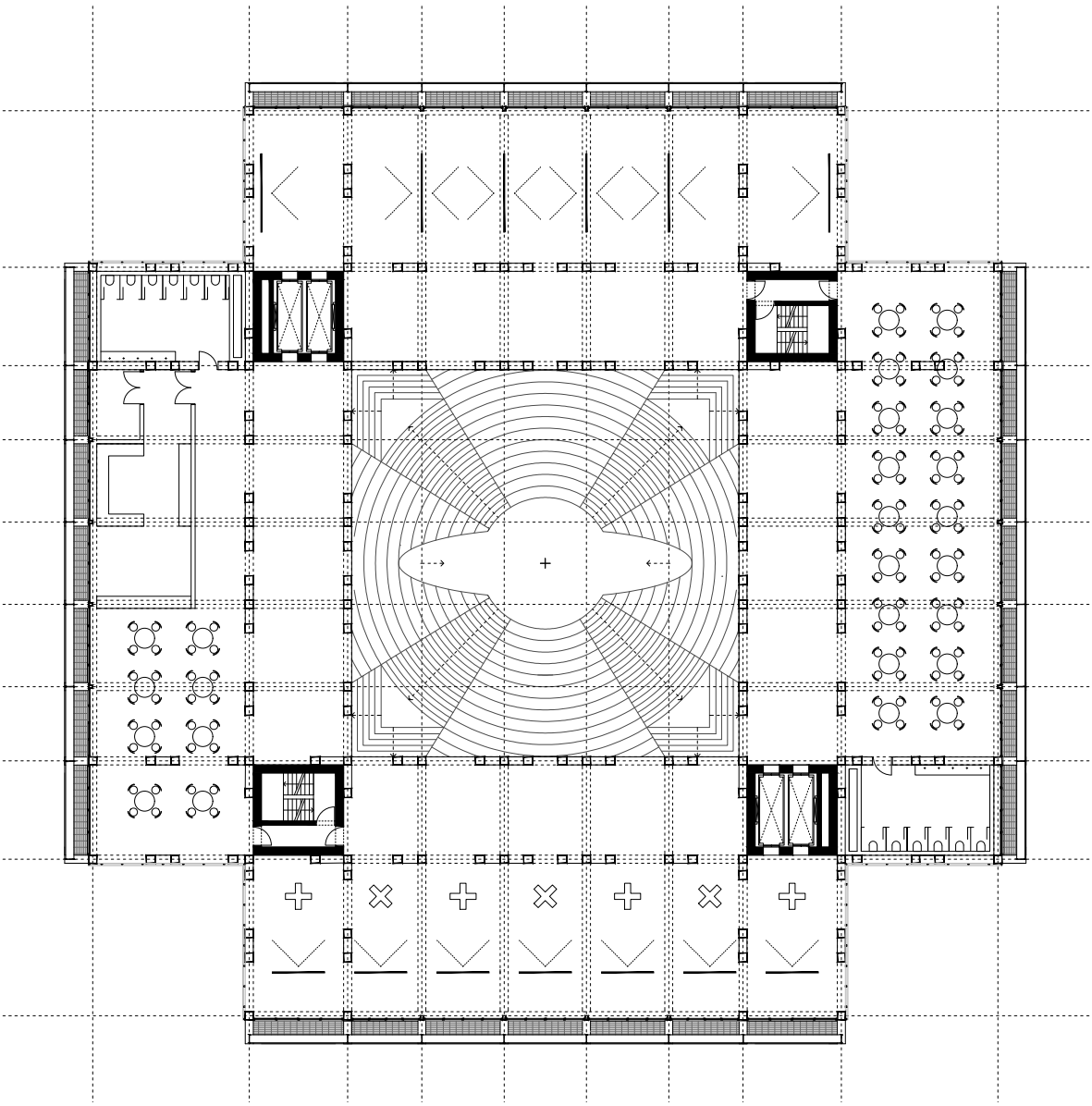






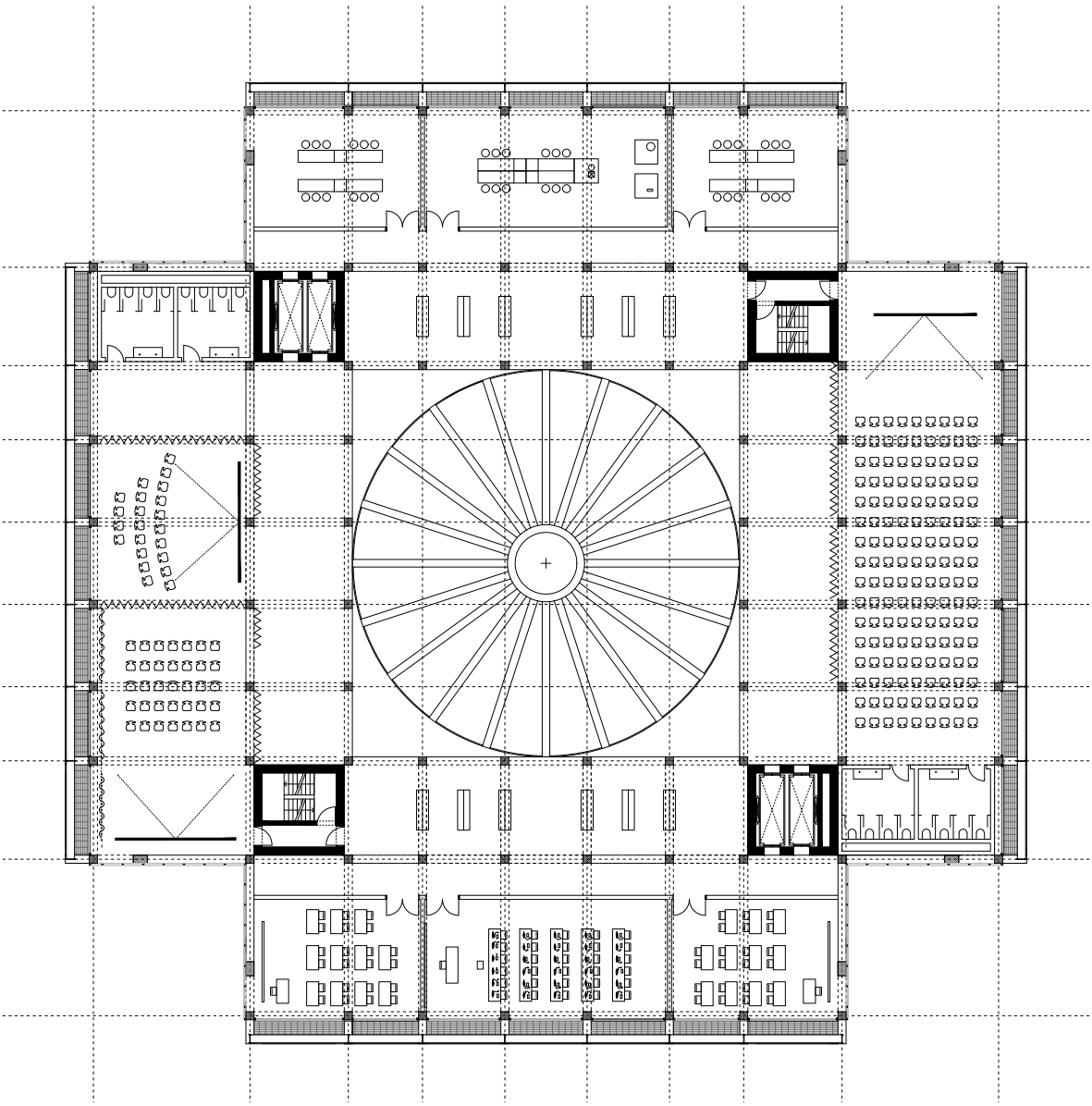


1st floor plan - exhibition + restaurant for students



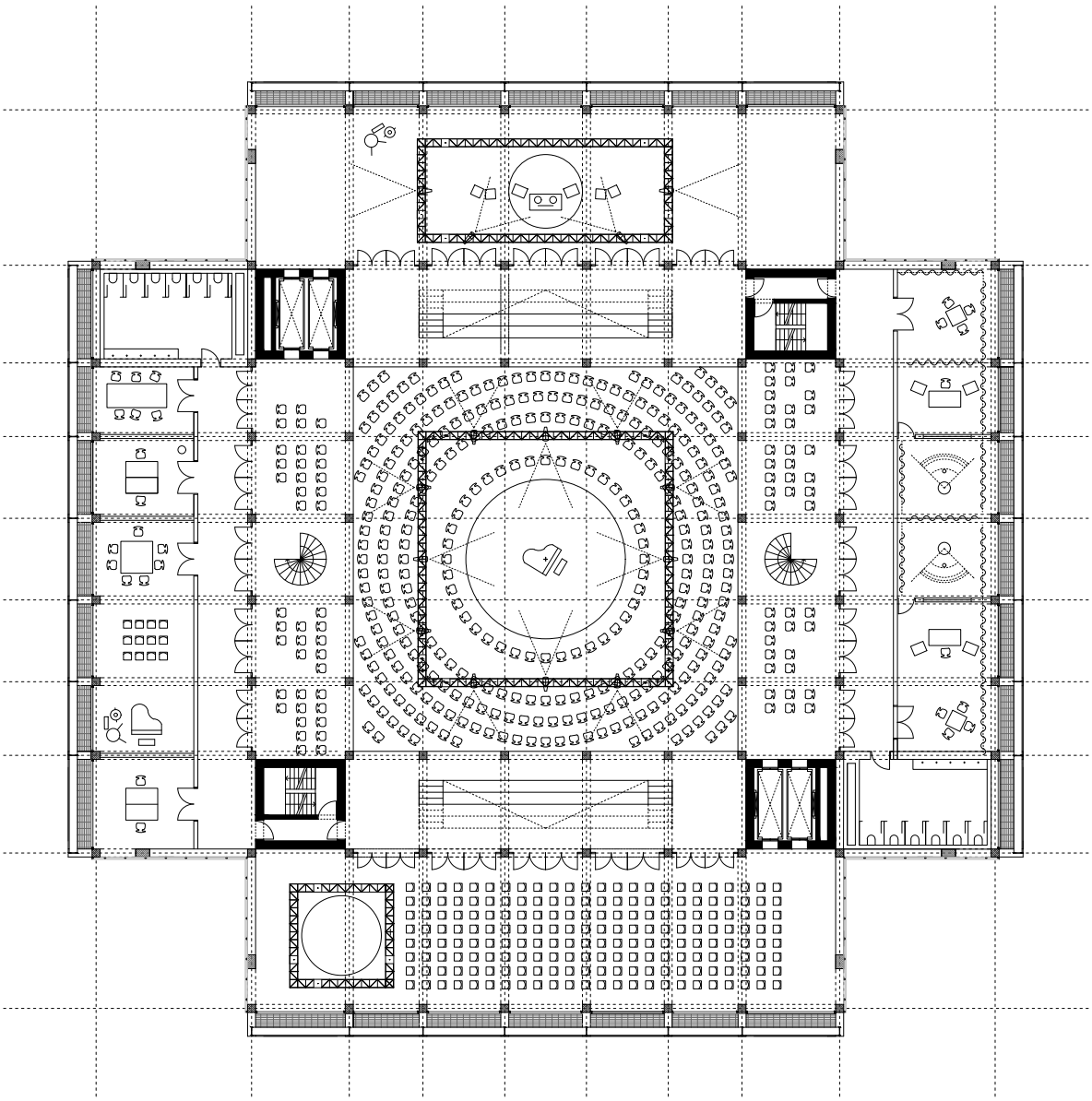
0 2 5 10

4th floor plan - education



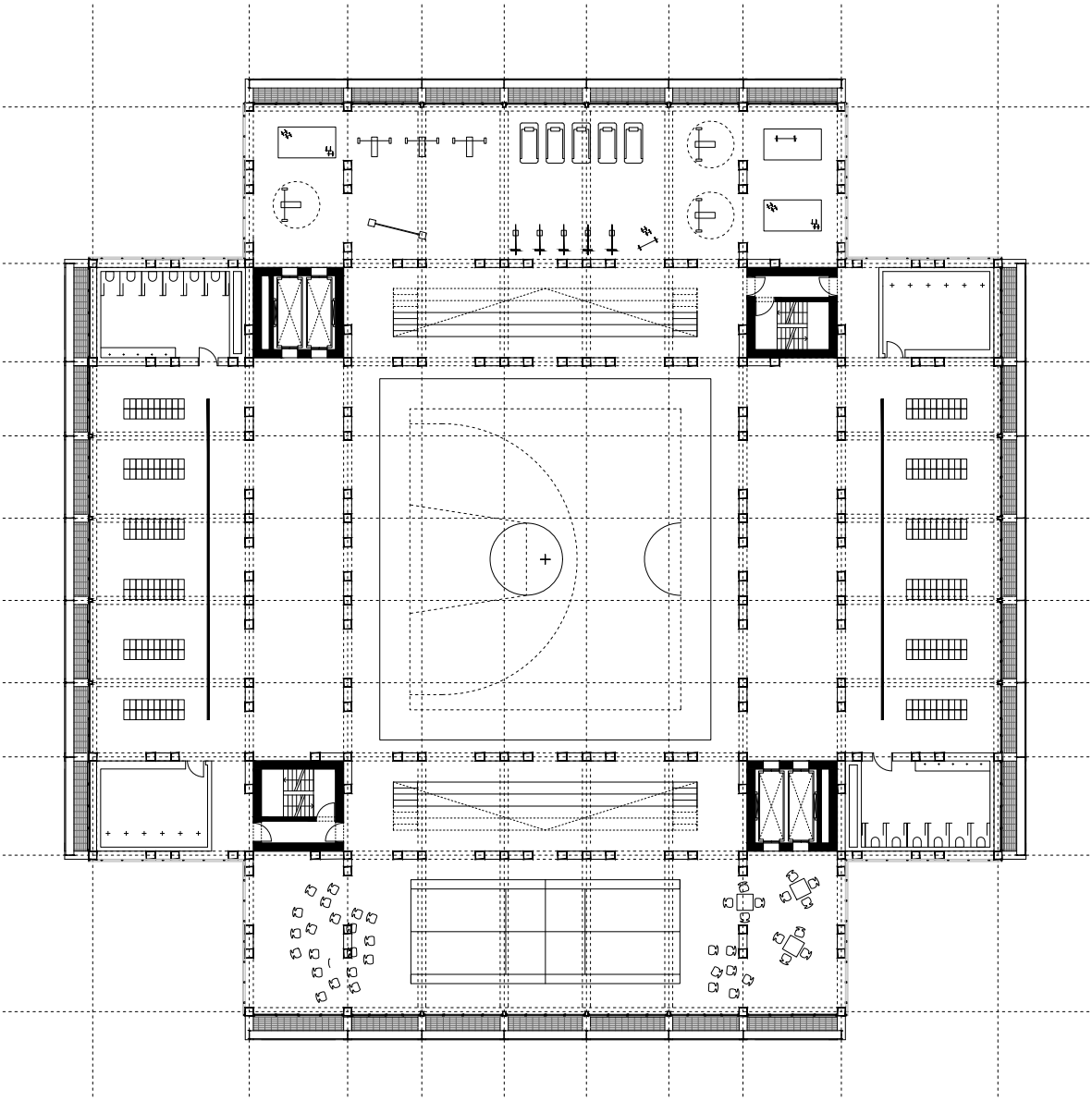
0 2 5 10

5th floor plan - theatre



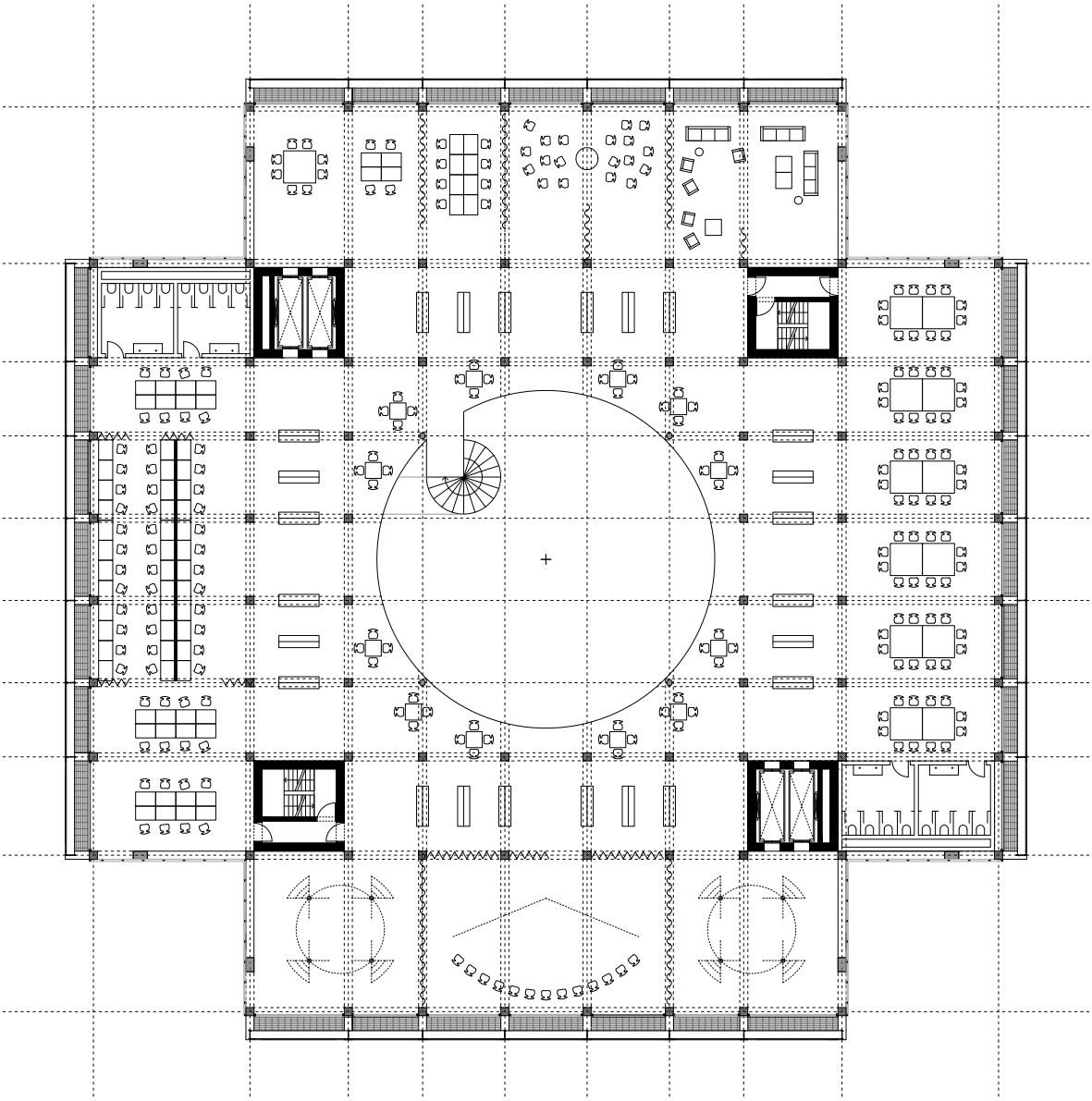
0 2 5 10

9th floor - sport



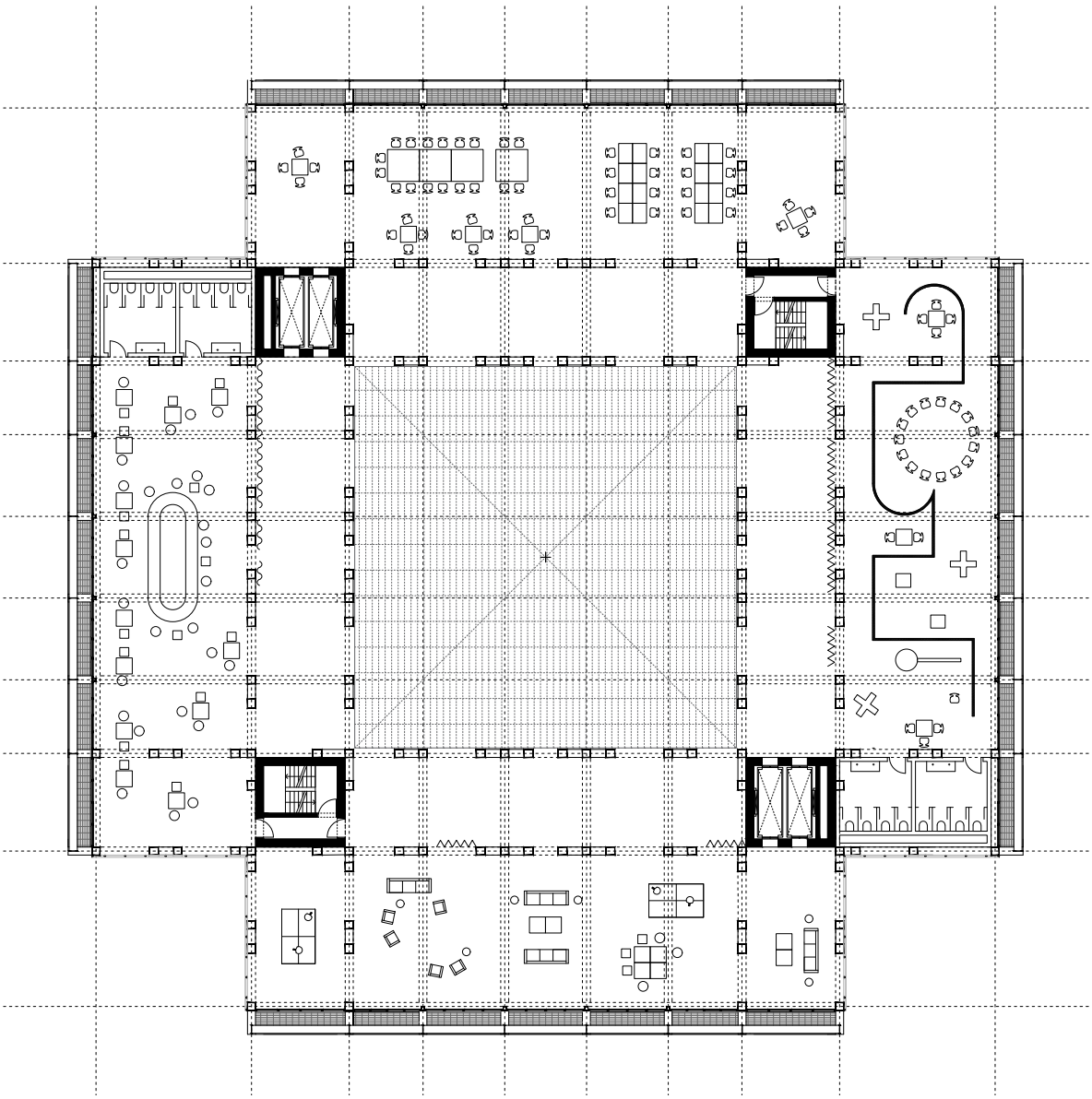
0 2 5 10

15th floor plan - library



0 2 5 10

17th floor plan - day care + bar + workshop



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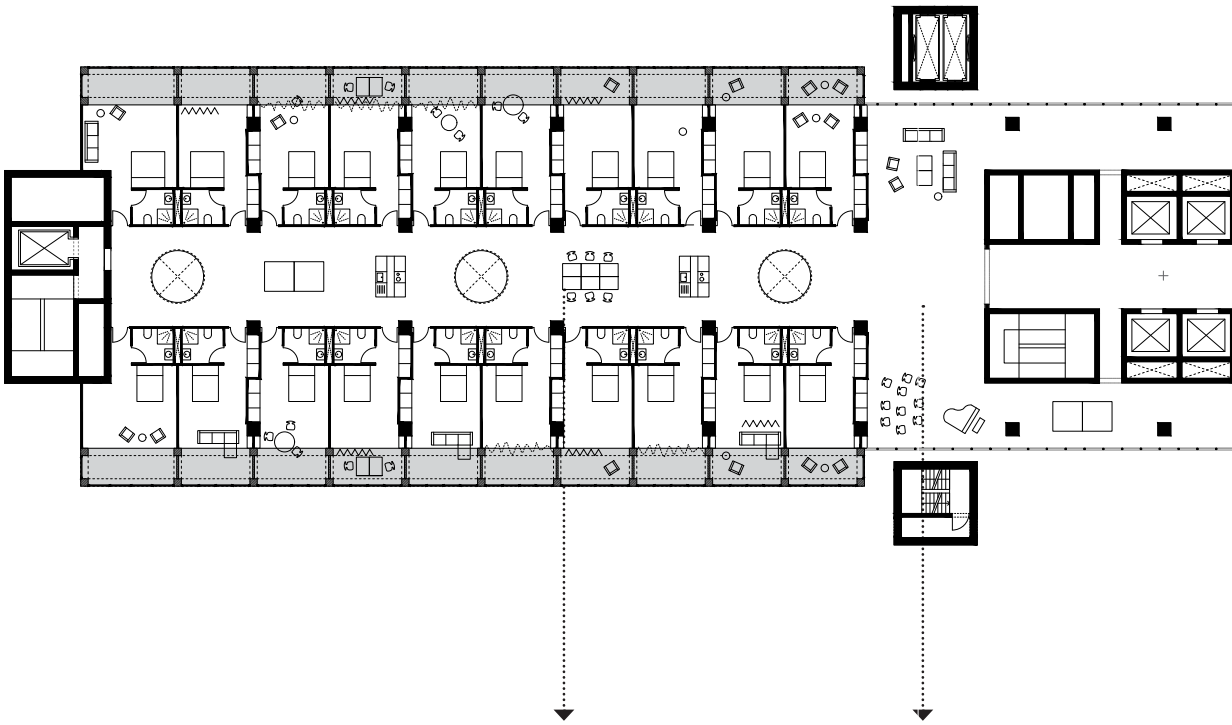

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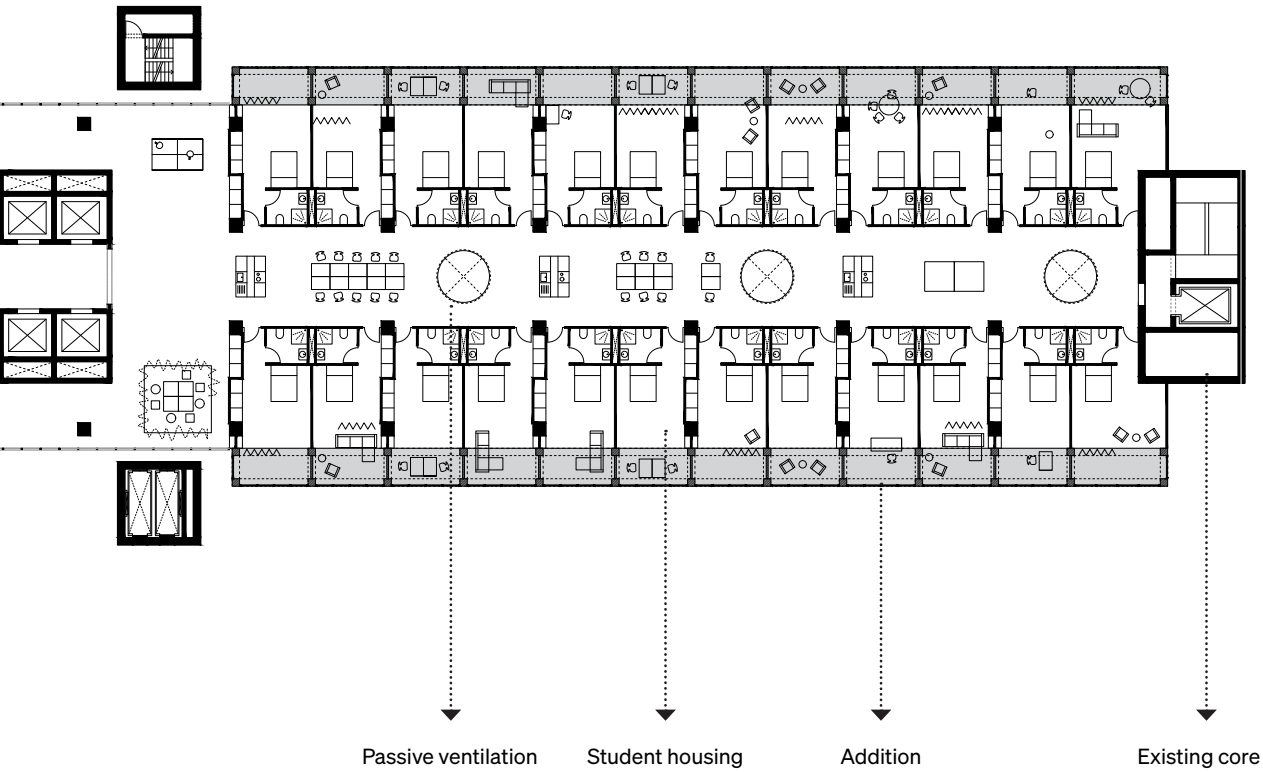
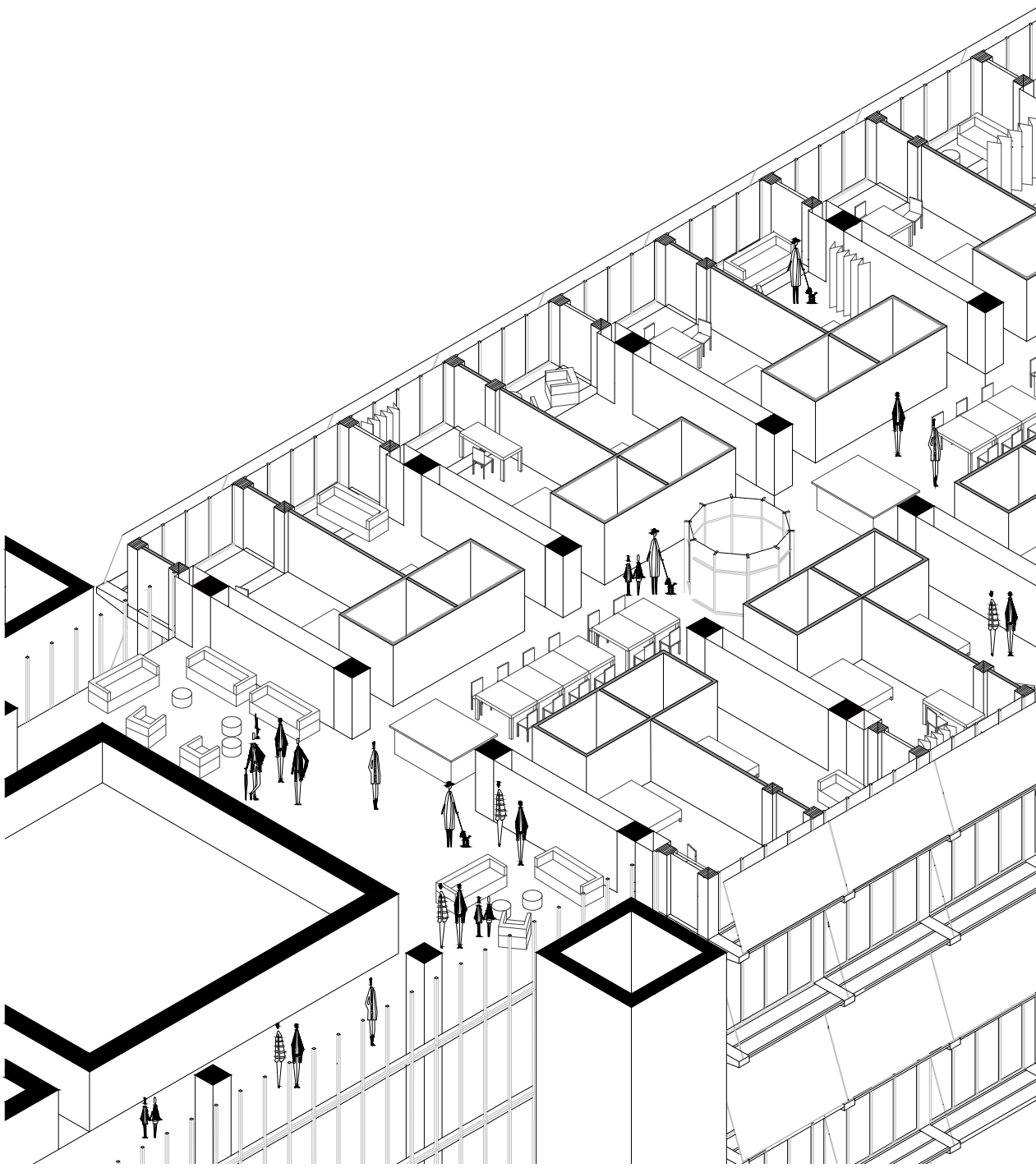
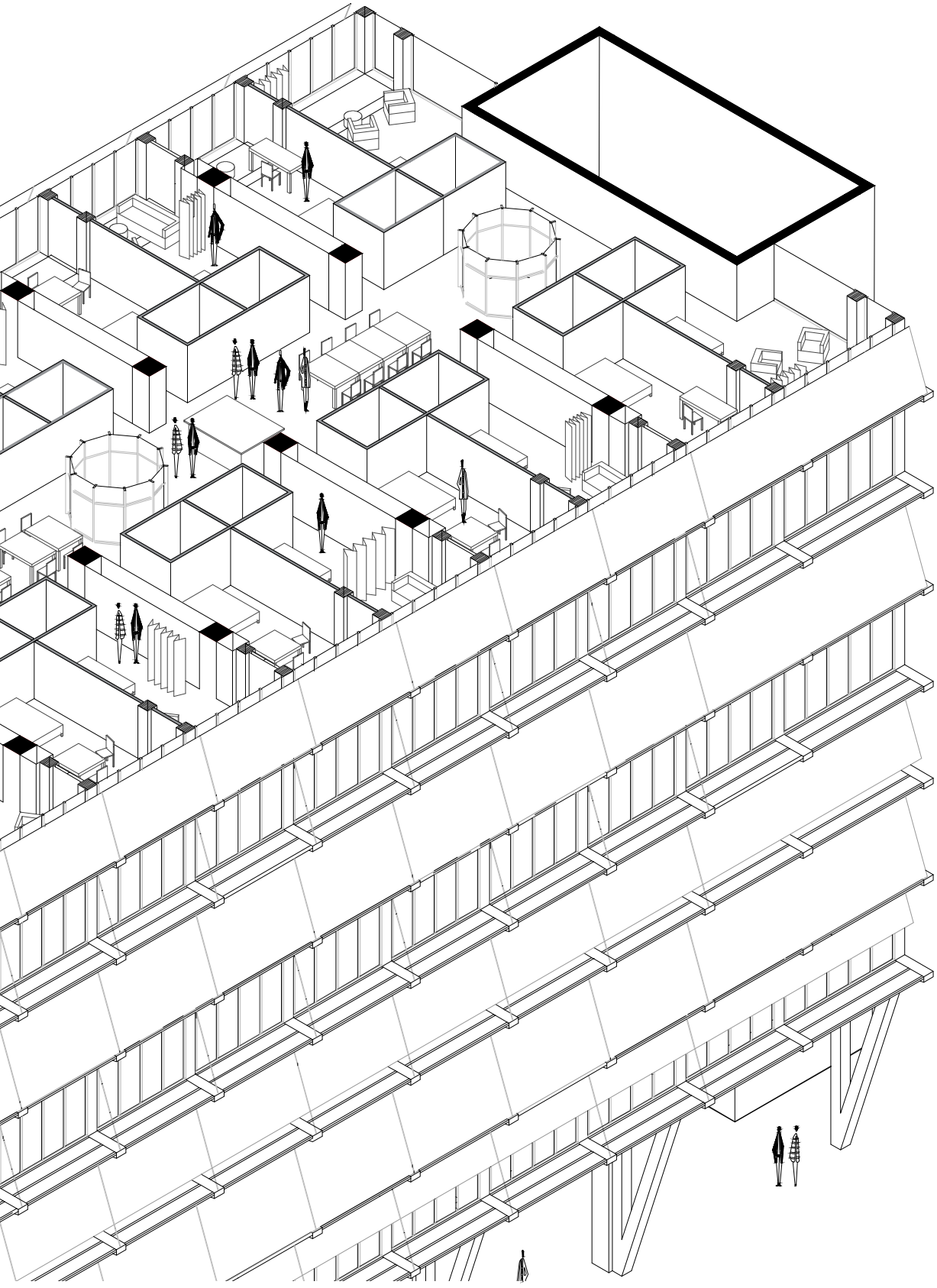
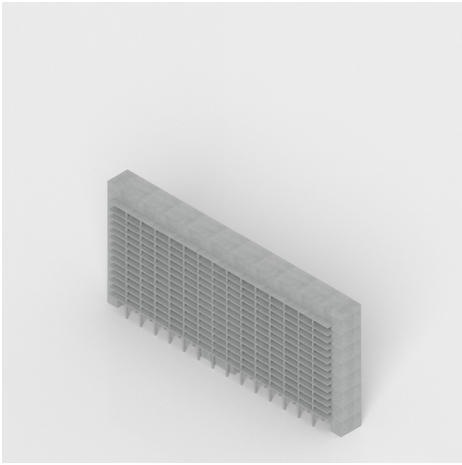

Passive ventilation
Student housing
Addition
Existing core

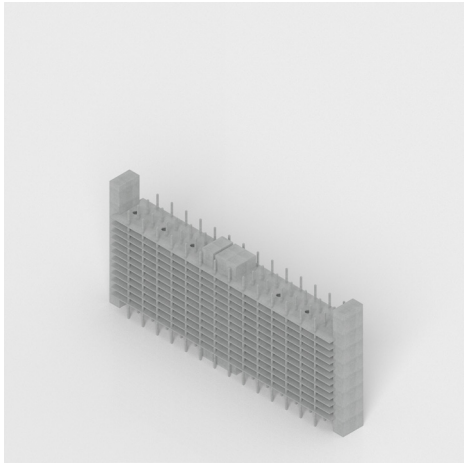
0 2 5 10



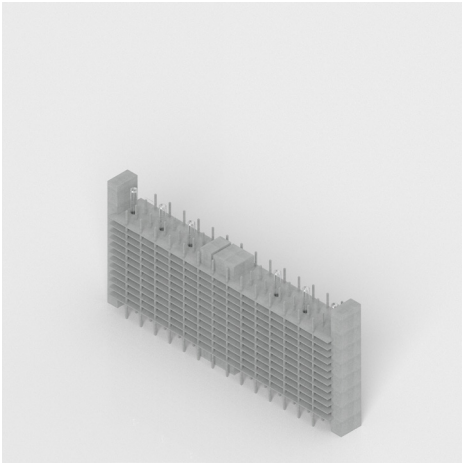




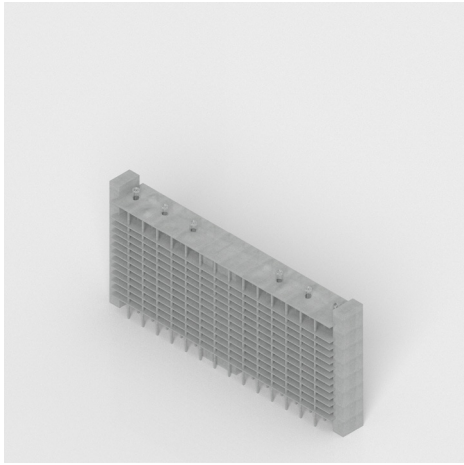
existing structure



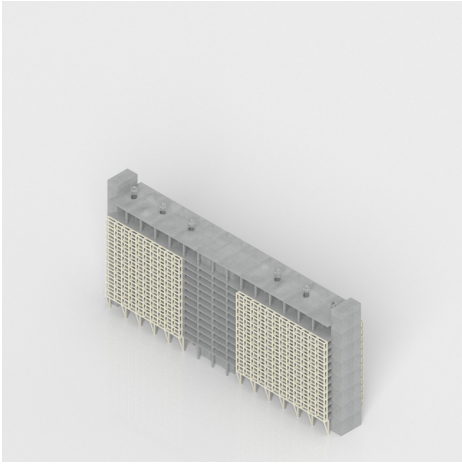
removal of two last floors + drilling holes



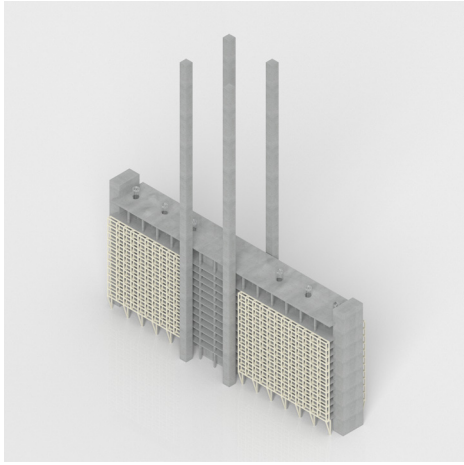
addition of passive ventilation - chimneys



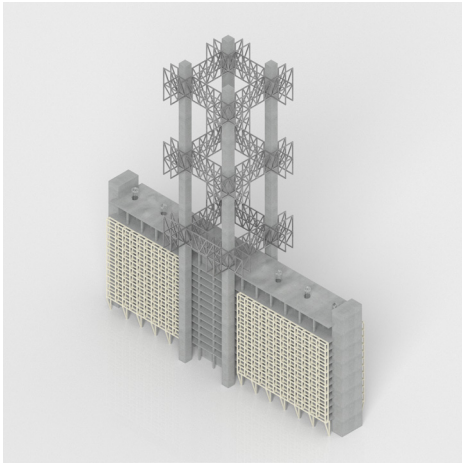
adding top floor - new ground



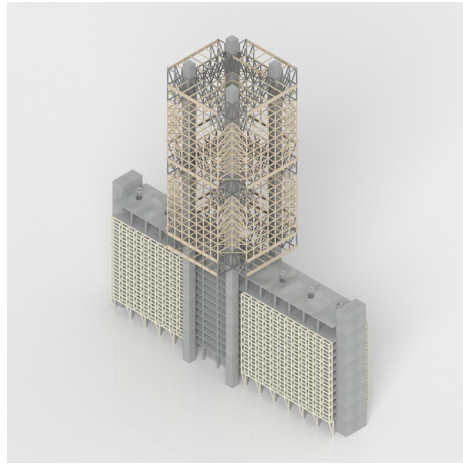
facade extension



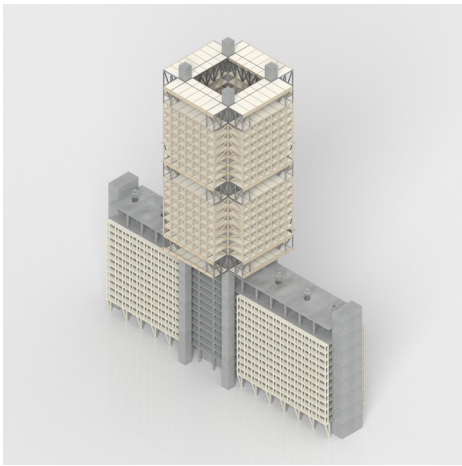
new cores for superstructure



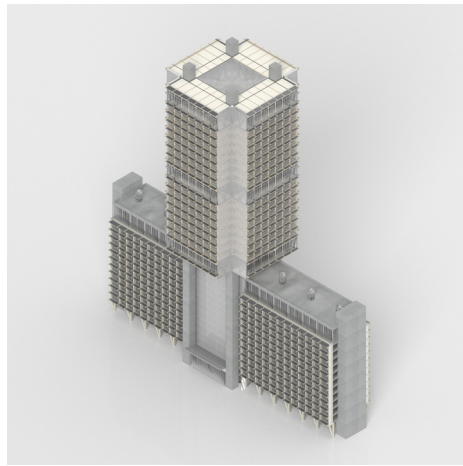
steel trusses



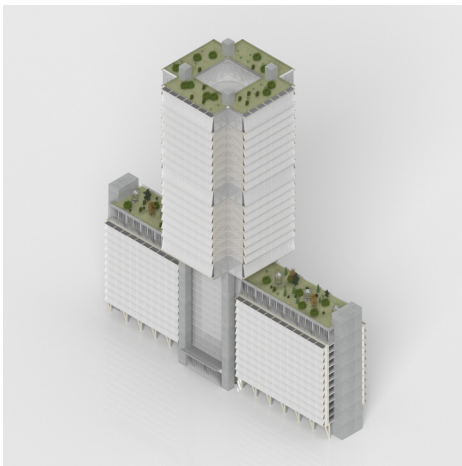
timber frame structure



timber flooring

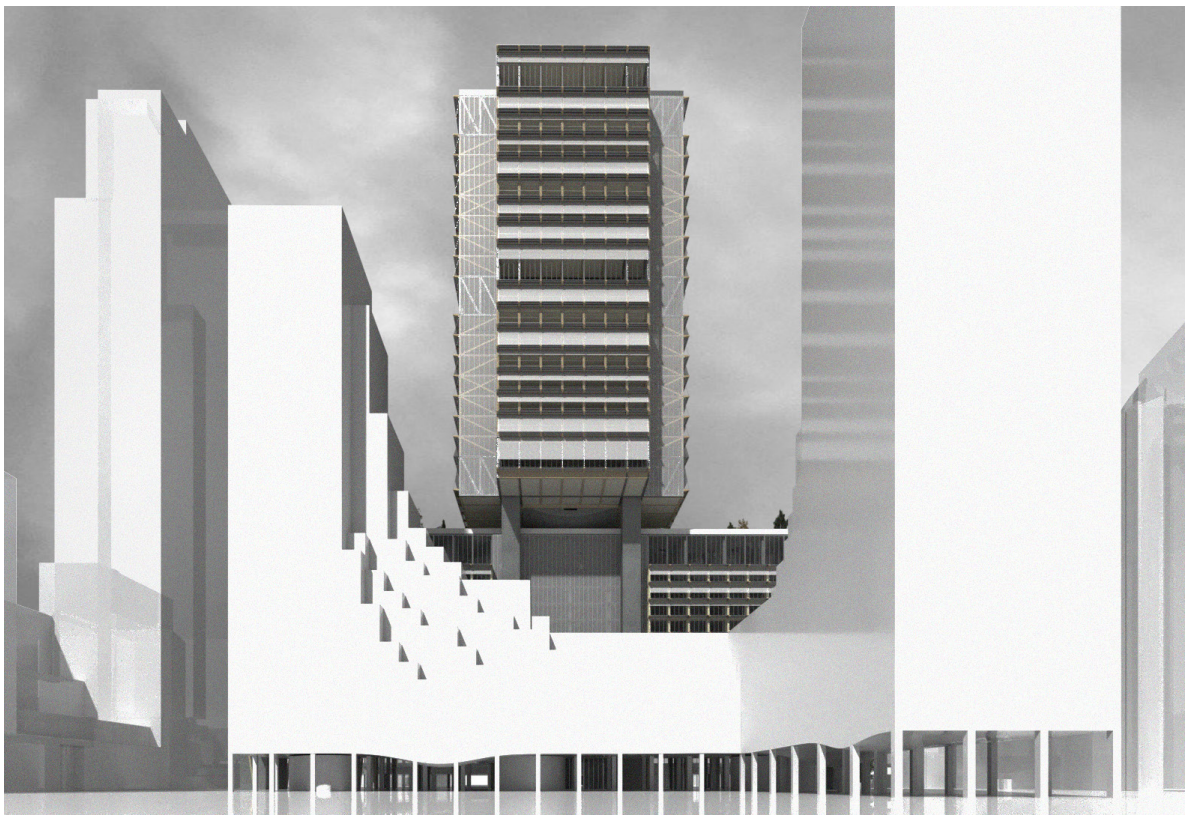


glass glazing

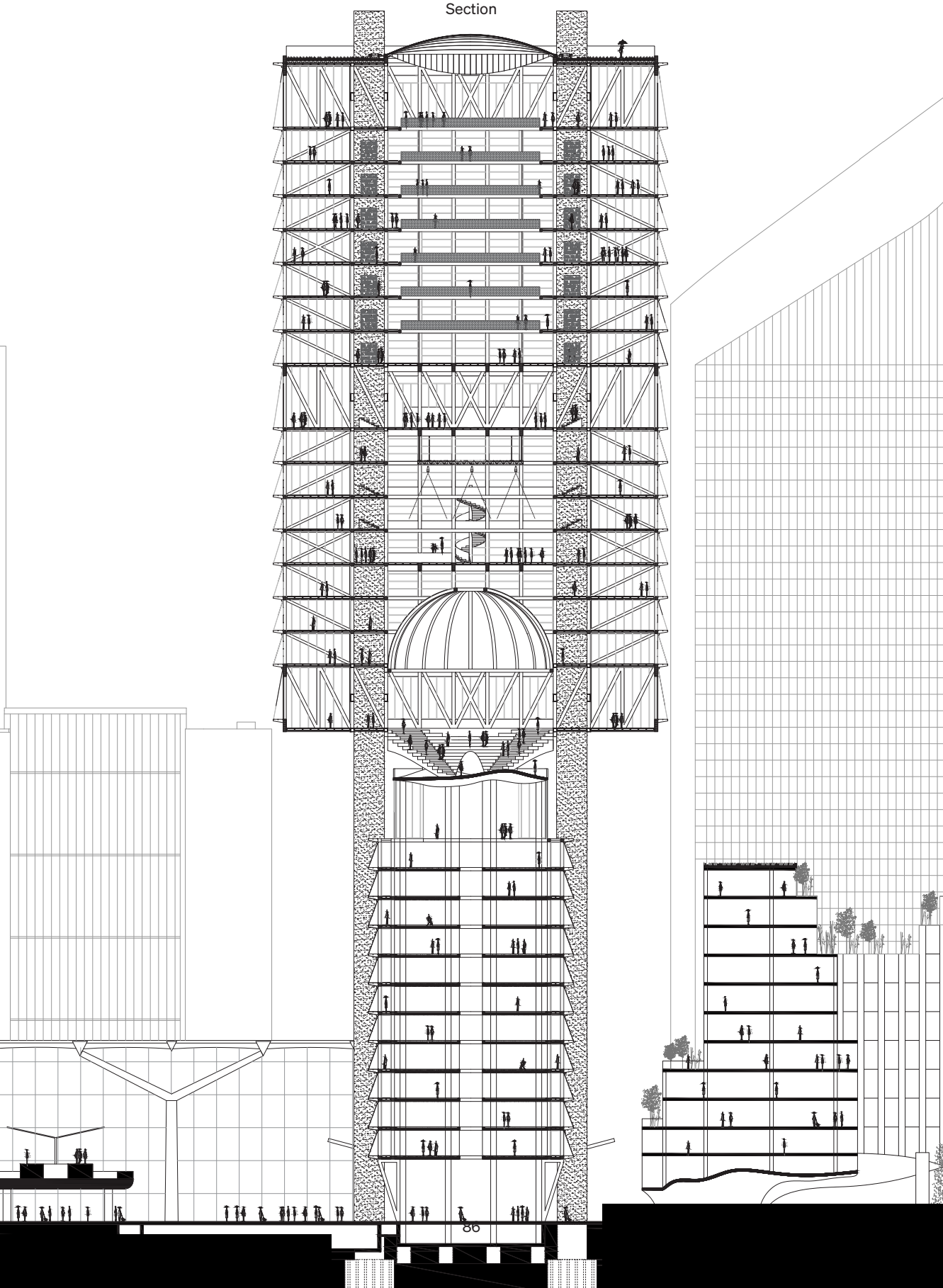


PTFE - sun protection

sun protection mobility



Section

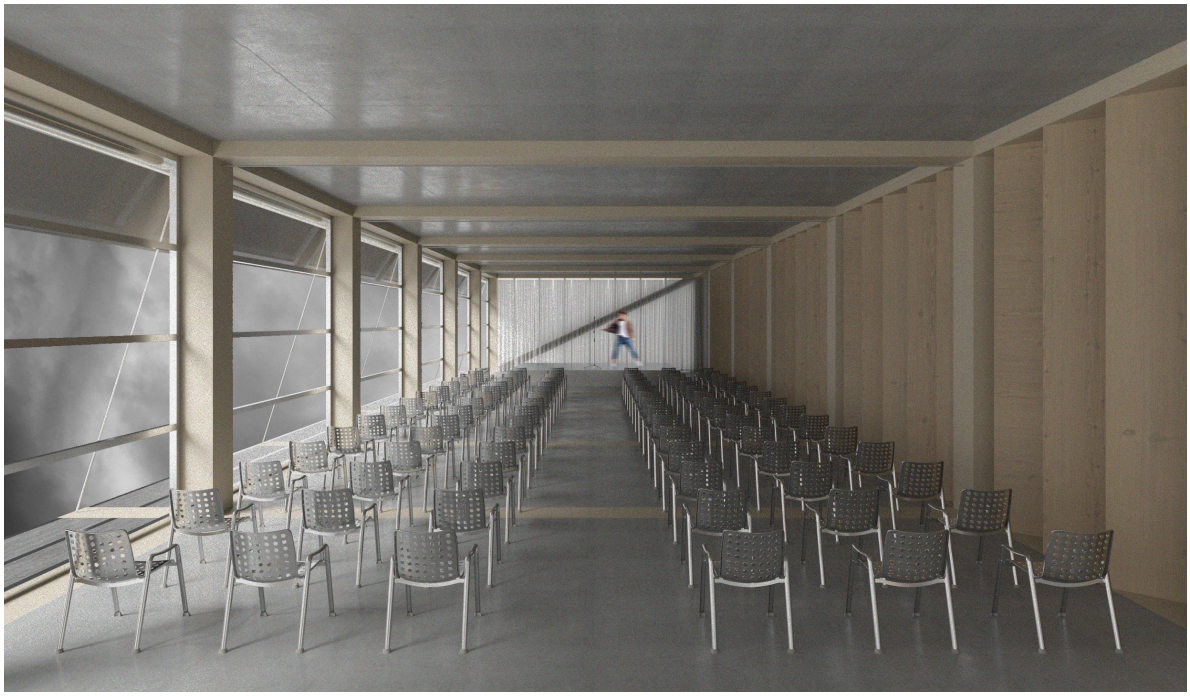


South elevation

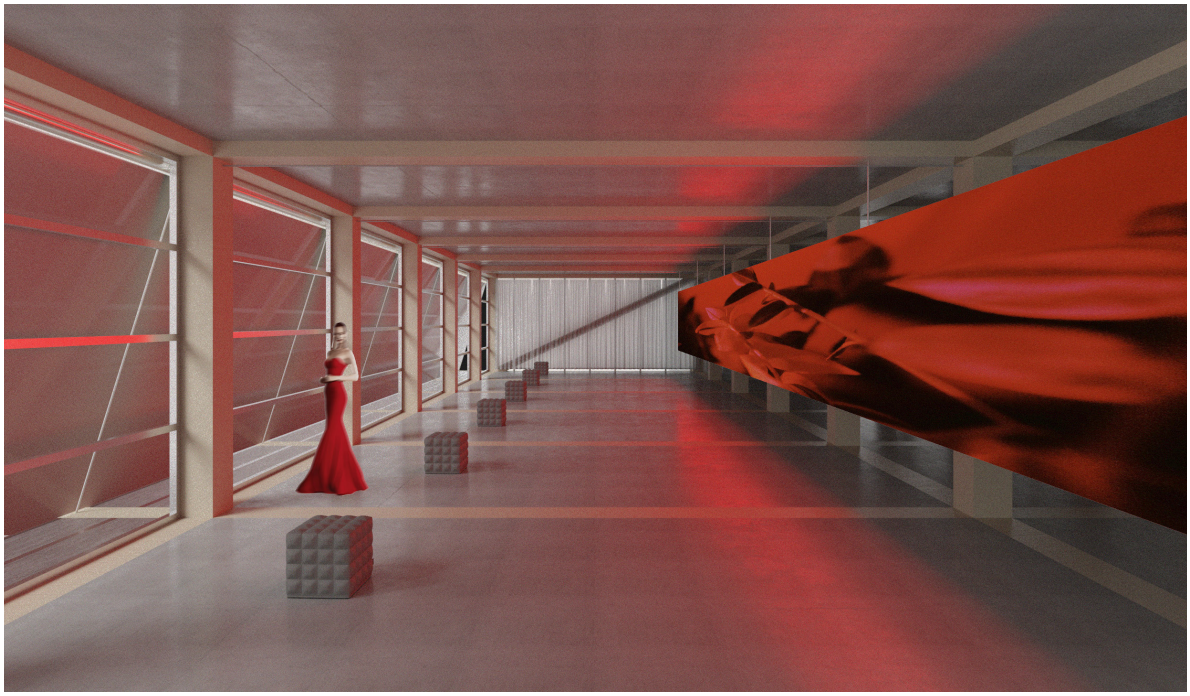
GENERIC

SUBLIME

Lecture hall

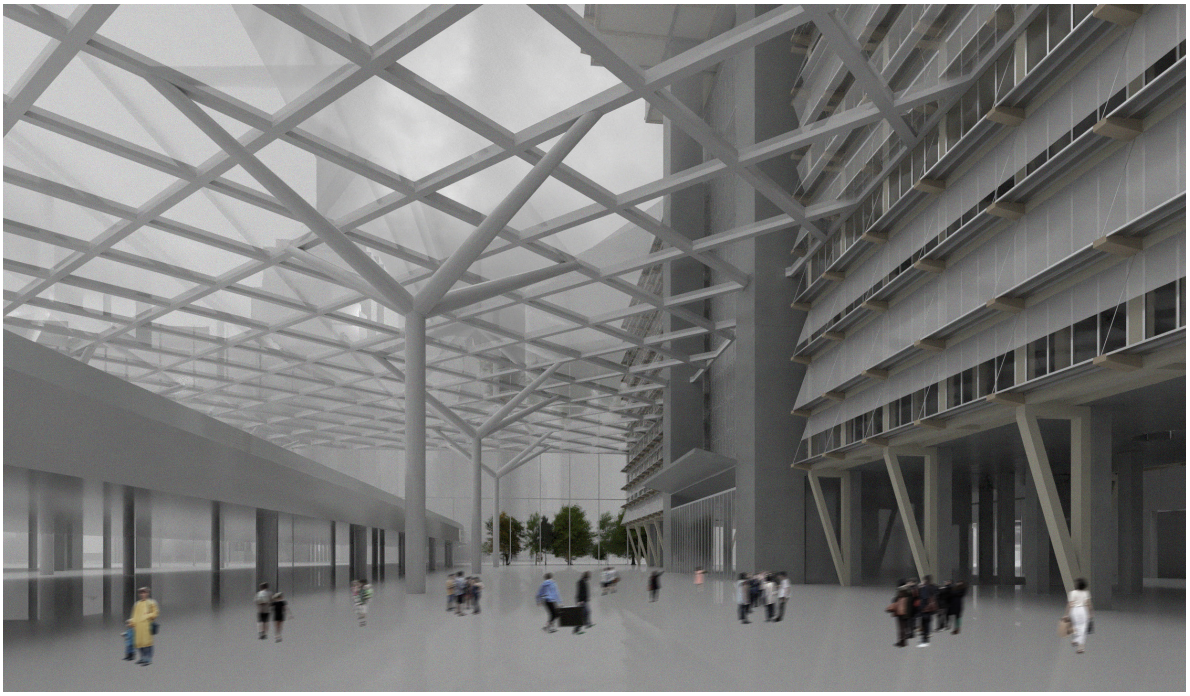


GENERIC



GENERIC

Entrance to Vertical campus from Central station



Performance and exhibition hall

R1 - Green curved roof

- Vegetation (kind depends on the depth)	20 - 120 cm
- PEHD drainage layer with aggregate	5 cm
- XPS thermal insulation filed with PUR foam in panel joints	15 cm
- Waterproofing (Elastomeric "Rubber" (EL))	1 cm
- Reinforced concrete (curved)	40 cm

R2 - Roof over timber extension of existing building

- Polished waterproof concrete	5 cm
- XPS thermal insulation	10 cm
- Waterproofing (Synthetic)	0.2 cm
- Prefabricated timber panel (floor structure)	20 cm
- Mineral wool between substructure of timber planks	8 cm
- Vapor barrier	-
- Ventilated cavity / substructure (timber planks)	2 cm
- Plywood panels	2 cm

F2 - Floor (existing building - concrete structure)

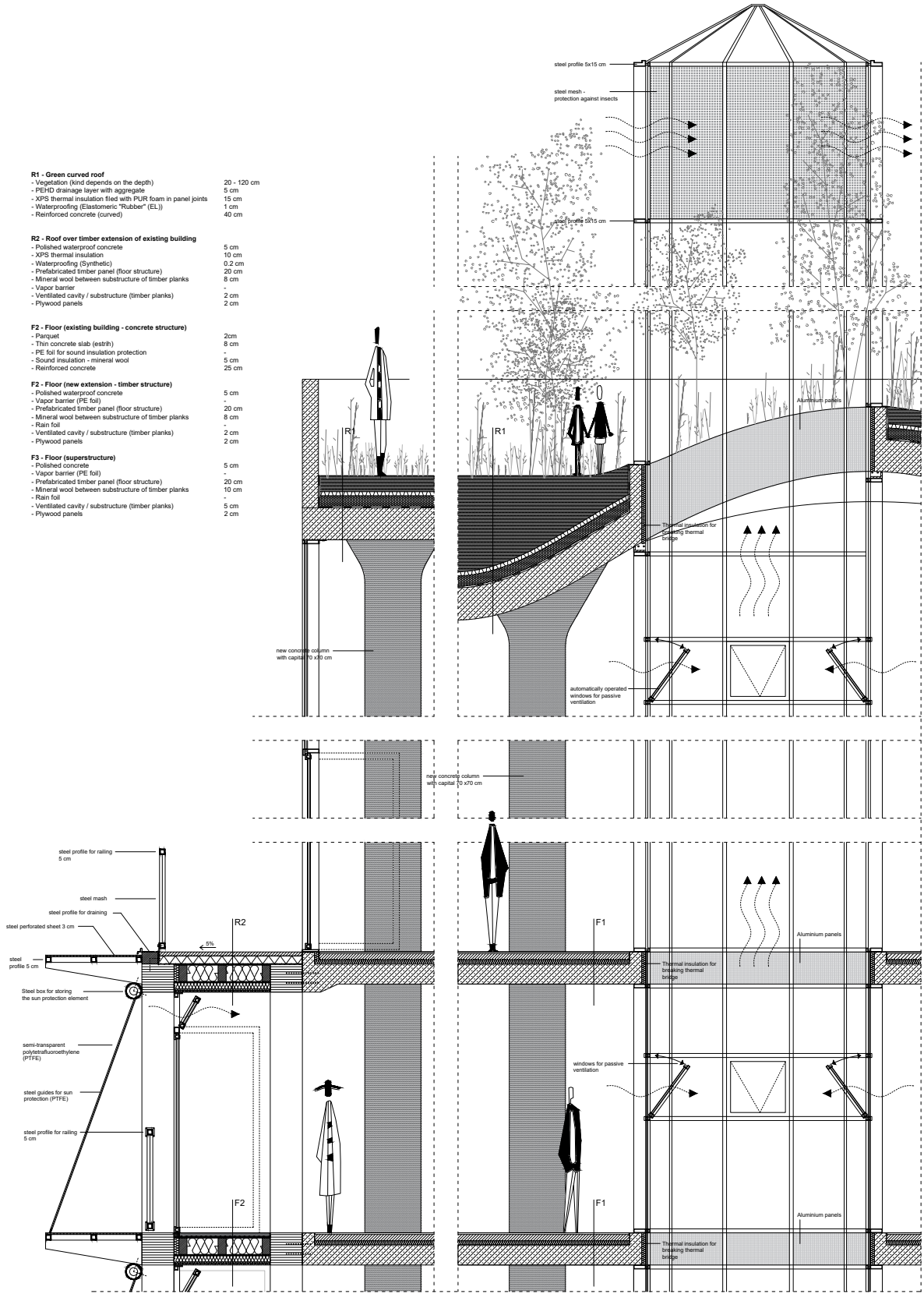
- Parquet	2cm
- Thin concrete slab (estrih)	8 cm
- PE foil for sound insulation protection	-
- Sound insulation - mineral wool	5 cm
- Reinforced concrete	25 cm

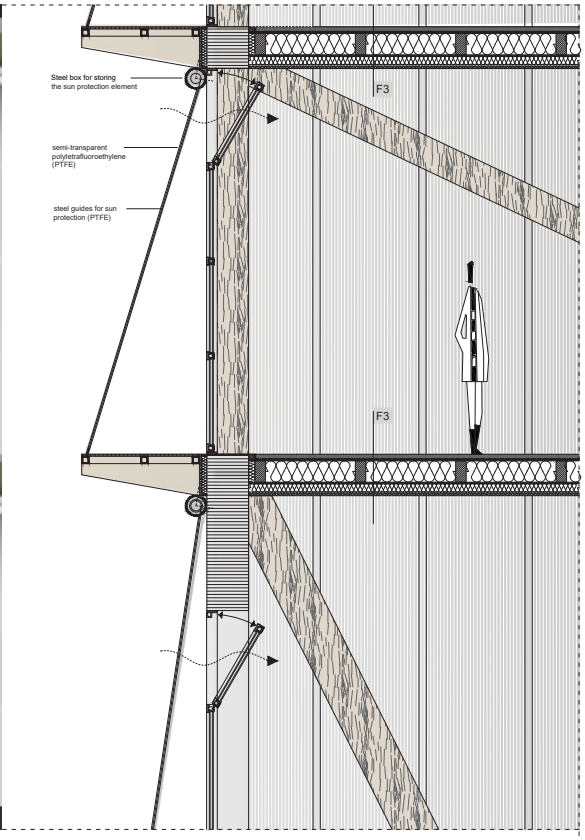
F2 - Floor (new extension - timber structure)

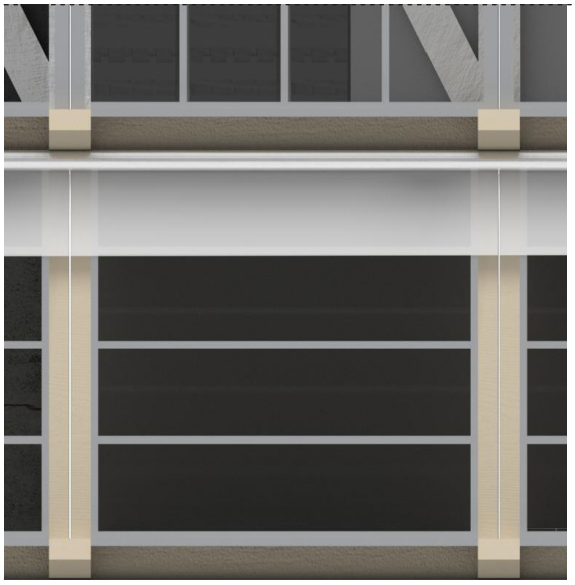
- Polished waterproof concrete	5 cm
- Vapor barrier (PE foil)	-
- Prefabricated timber panel (floor structure)	20 cm
- Mineral wool between substructure of timber planks	8 cm
- Rain foil	-
- Ventilated cavity / substructure (timber planks)	2 cm
- Plywood panels	2 cm

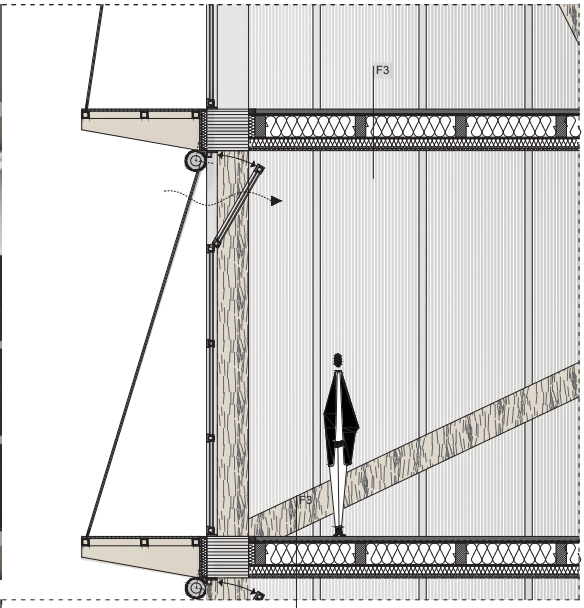
F3 - Floor (superstructure)

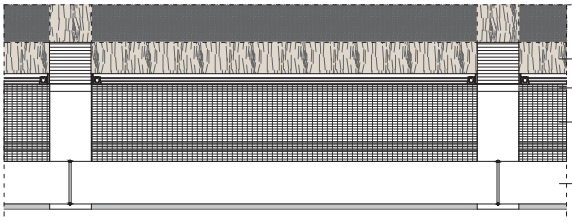
- Polished concrete	5 cm
- Vapor barrier (PE foil)	-
- Prefabricated timber panel (floor structure)	20 cm
- Mineral wool between substructure of timber planks	10 cm
- Rain foil	-
- Ventilated cavity / substructure (timber planks)	5 cm
- Plywood panels	2 cm





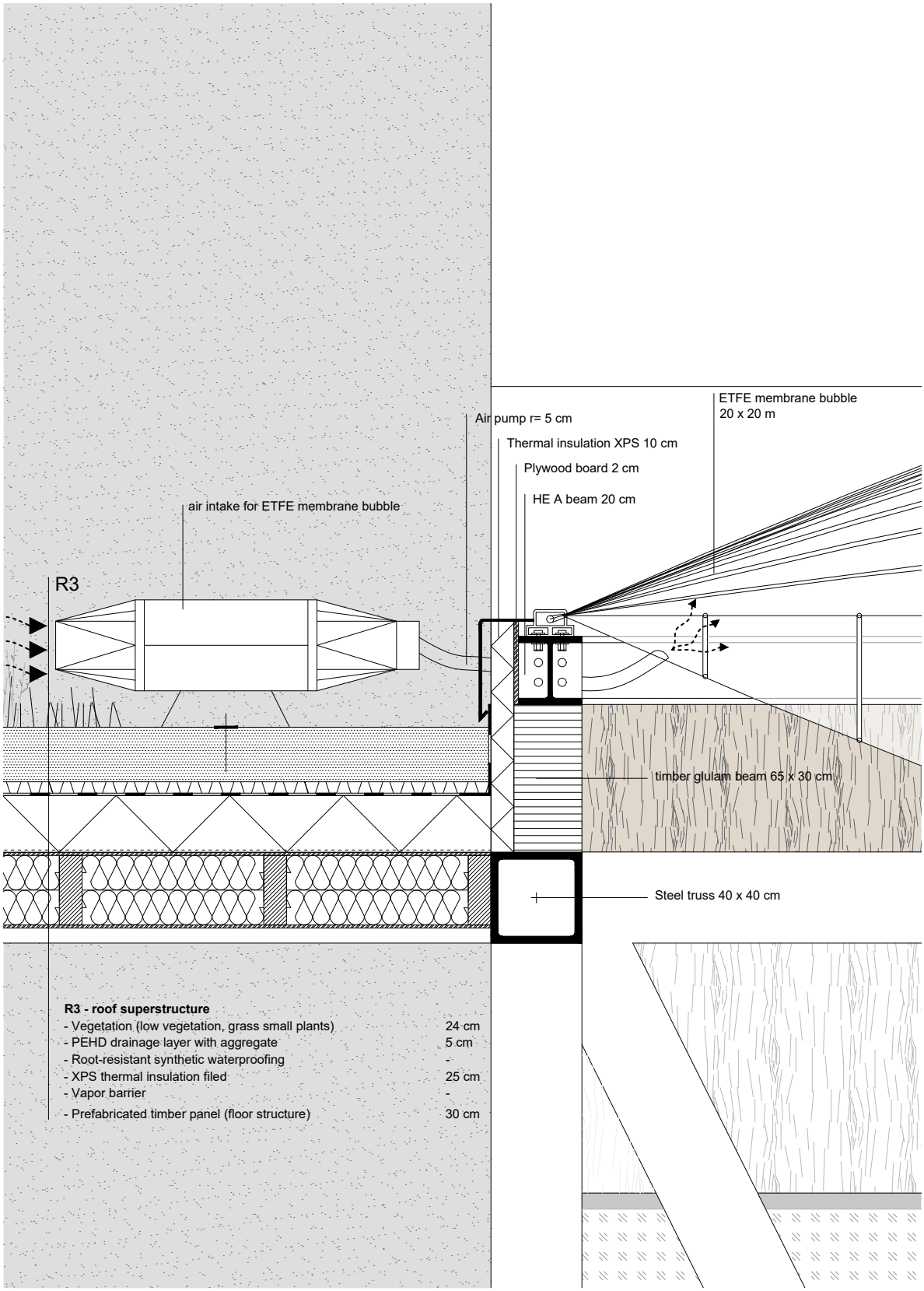






F3 - Floor (superstructure)

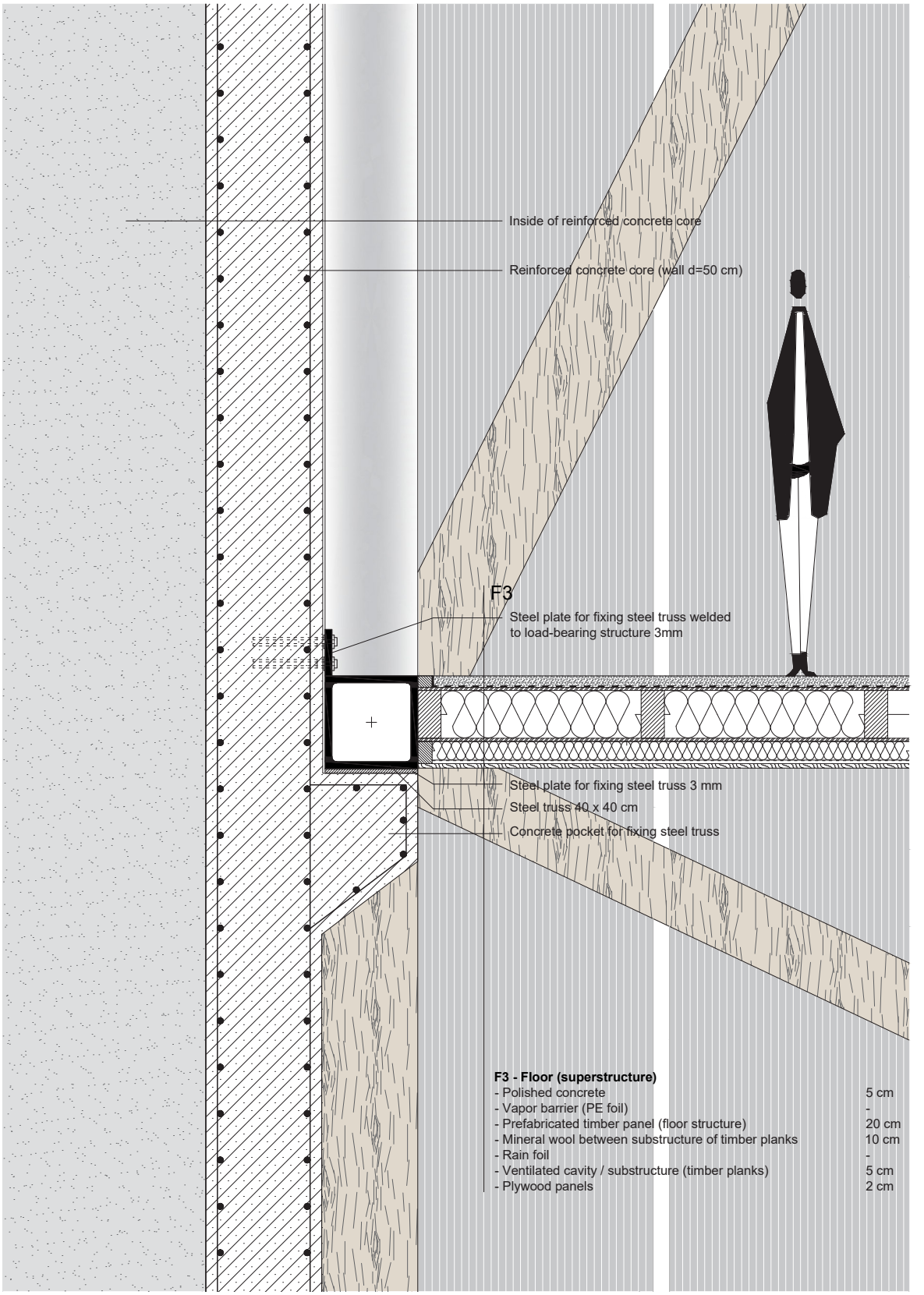
- Polished concrete	5 cm
- Vapor barrier (PE foil)	-
- Prefabricated timber panel (floor structure)	20 cm
- Mineral wool between substructure of timber planks	10 cm
- Rain foil	-
- Ventilated cavity / substructure (timber planks)	5 cm
- Plywood panels	2 cm



R3 - roof superstructure

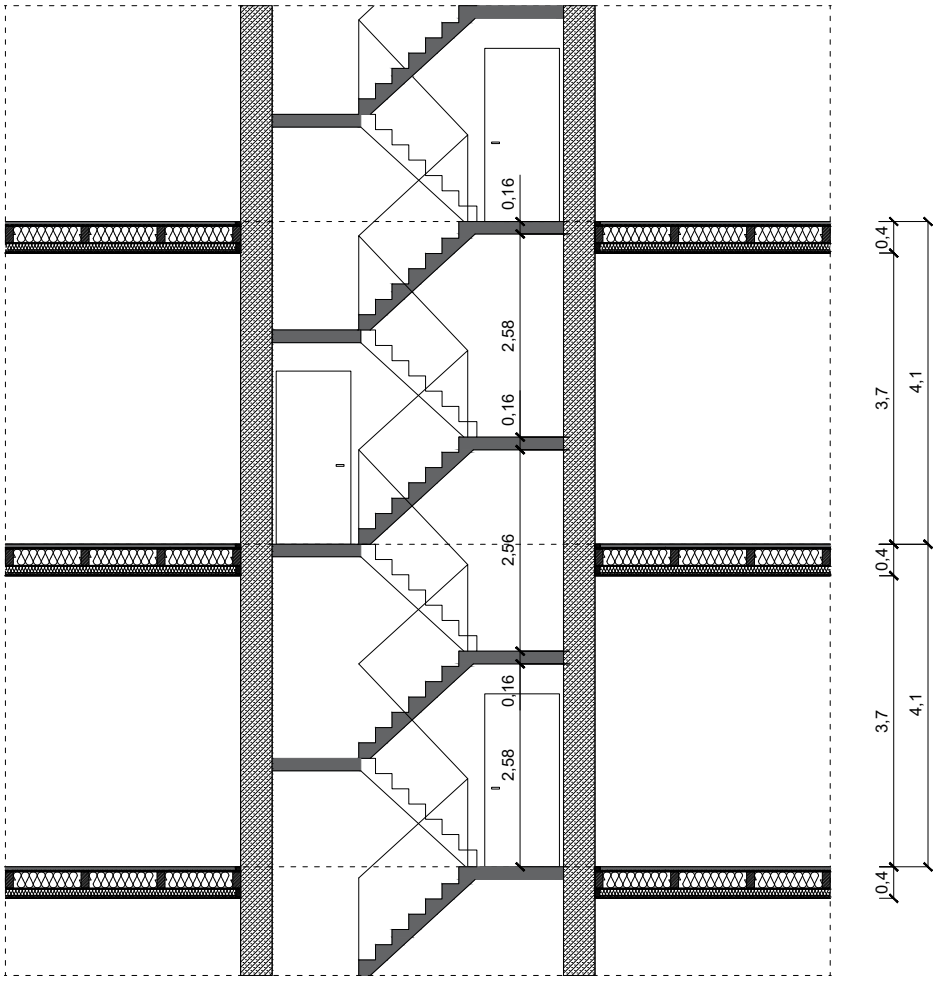
- Vegetation (low vegetation, grass small plants)	24 cm
- PEHD drainage layer with aggregate	5 cm
- Root-resistant synthetic waterproofing	-
- XPS thermal insulation filed	25 cm
- Vapor barrier	-
- Prefabricated timber panel (floor structure)	30 cm

Detail - core and truss connection (superstructure)



F3 - Floor (superstructure)

- Polished concrete	5 cm
- Vapor barrier (PE foil)	-
- Prefabricated timber panel (floor structure)	20 cm
- Mineral wool between substructure of timber planks	10 cm
- Rain foil	-
- Ventilated cavity / substructure (timber planks)	5 cm
- Plywood panels	2 cm


0,16
2,58
0,16
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2,58
0,4
3,7
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0,4
3,7
4,1
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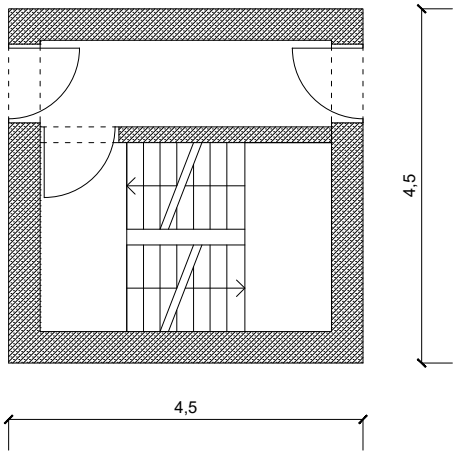
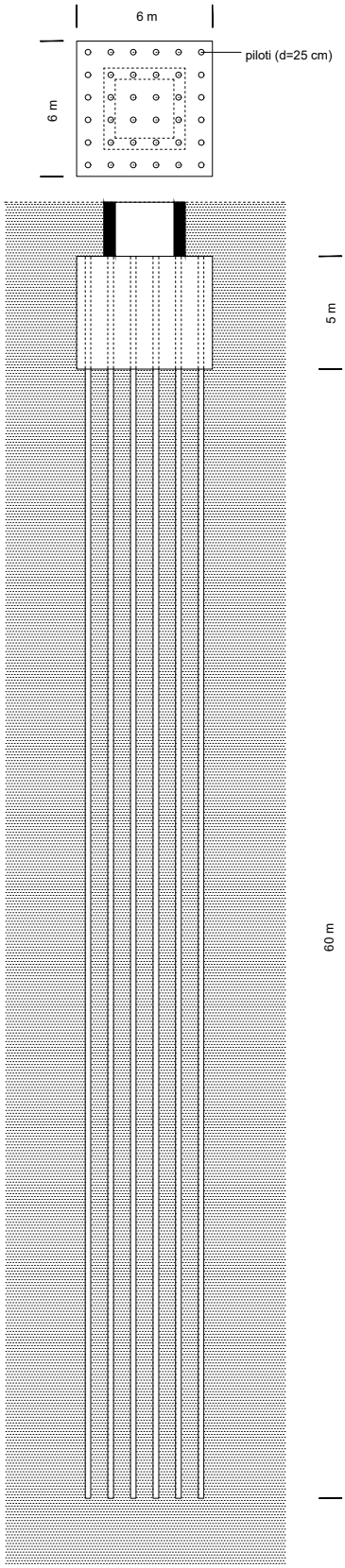
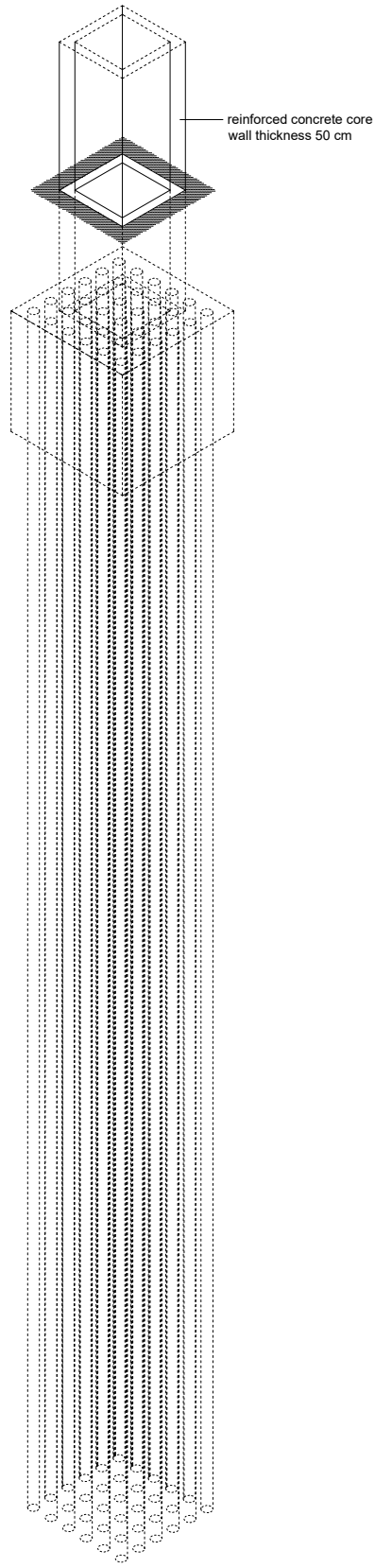
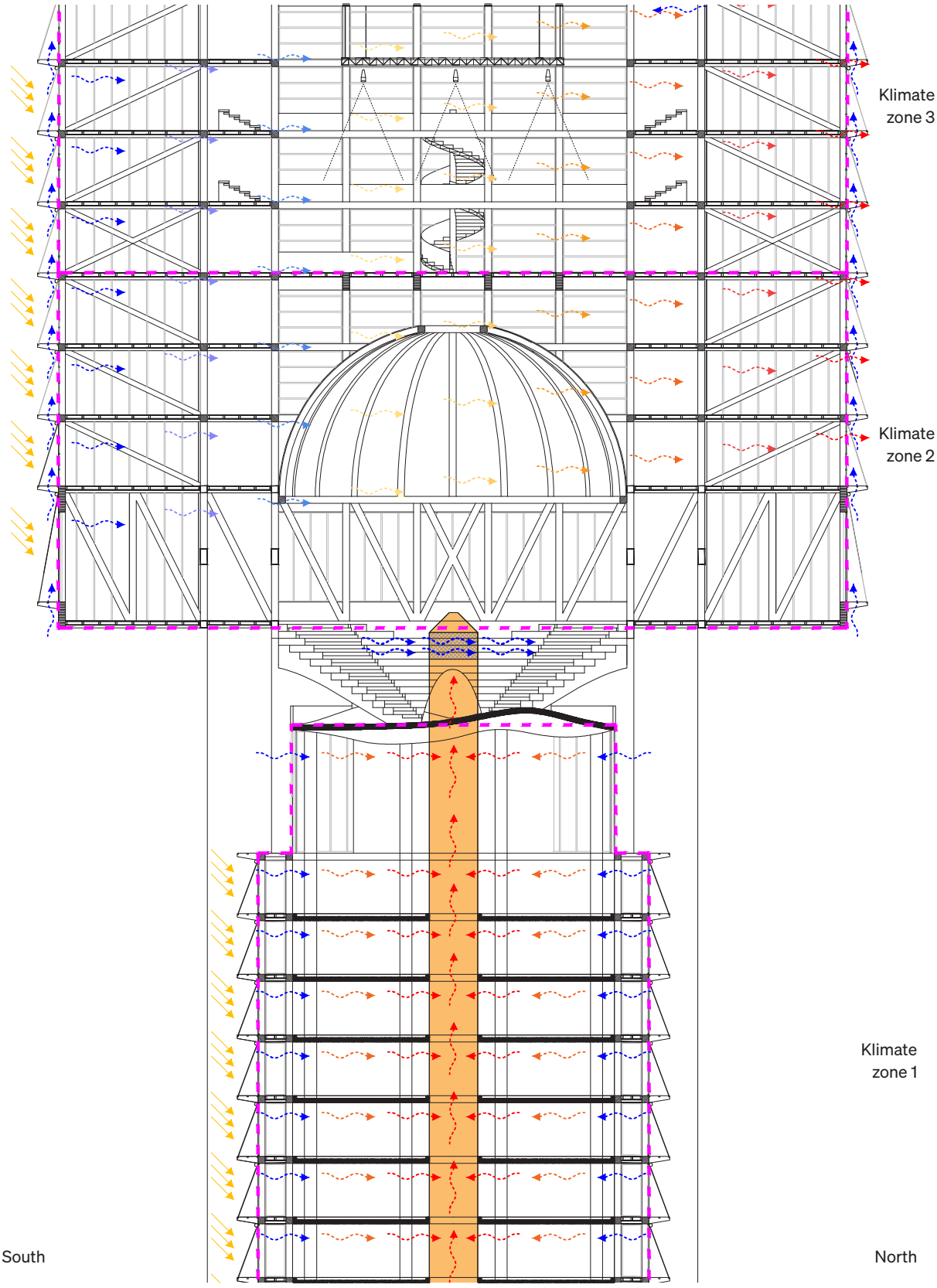

4,5
4,5

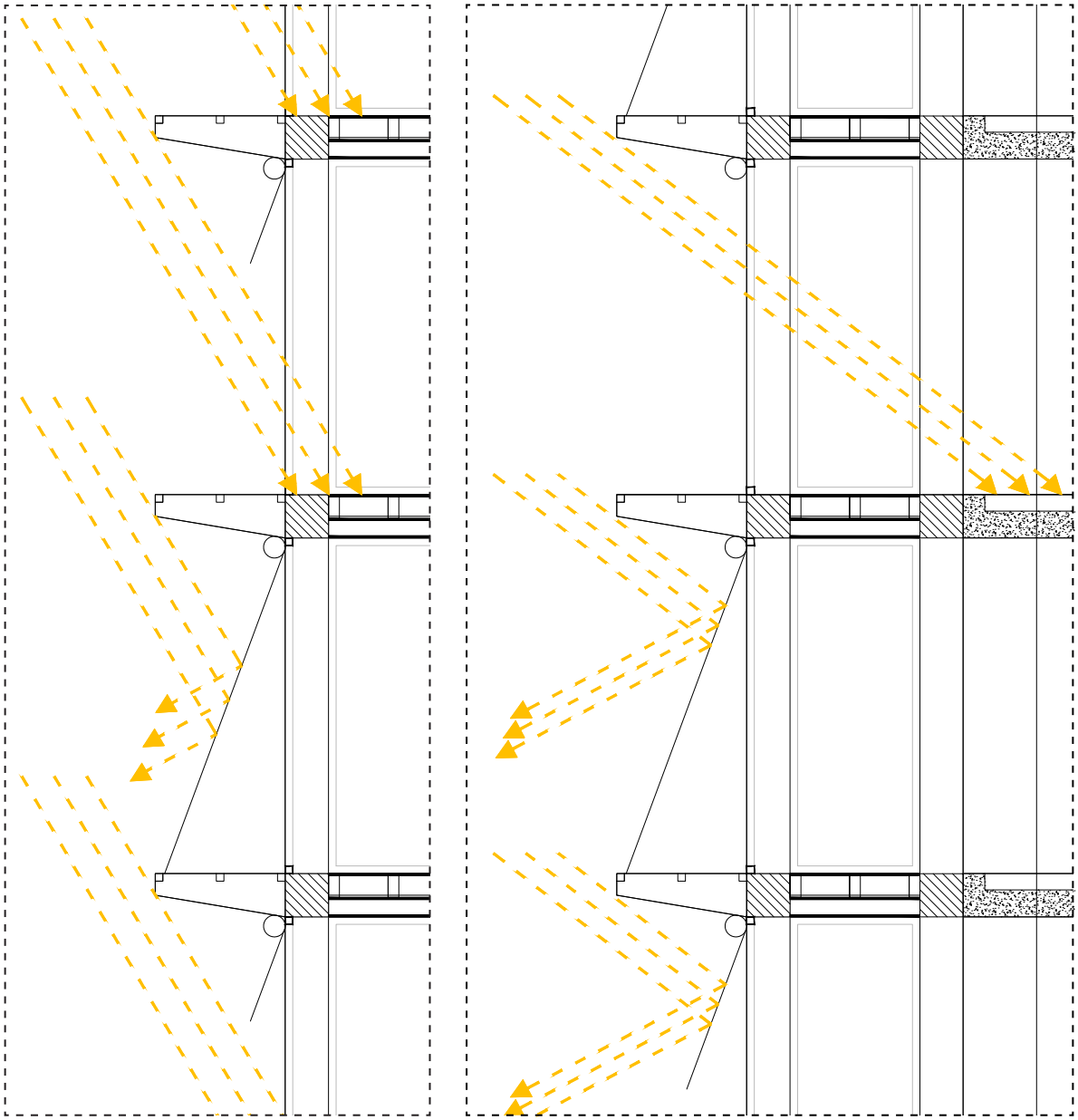
Foundation scheme





Climate diagram - passive ventilation system





Summer

Winter

House of Knowledge

educational systems and mirrored spaces

Rotterdam, 13.05.2024.

Starting the studio in September of 2023. we were given clear instructions that we are to design urban capacity plan for P1 for the center of The Hague. The groupwork resulted in a capacity plan that utilizes the ground floor as a plinth. It had an aim of connecting all ground floors in one porous plane with the purpose of activating the existing buildings and making it a coherent whole. During that process it became clear to me that the most interesting part of the site was the Central station. After P1 we needed to choose the site, we were to build on, and based on urban analysis, and analysis of existing buildings, I chose The Slab as my interest. The argumentation was clear, it was the most generic building out of them, structurally and programmatically. Its structure can easily adapt to the future campus needs but more importantly it supports my research that claimed that ***it is no longer clear what the place of the University is within society nor what the exact nature of that society is.*** Meaning the future building has a bigger role, not only to solve its internal programmatic problems, but also can facilitate change in how we perceive education and knowledge in general.

Research conducted in the period up to P2 was based on literature about education and educational systems. Parallel to that I began to research more conceptual and provocative designs for education like Free University Berlin Candilis-Josic-Woods, or Cedric Prices Potteries Thinkbelt that gave me an insight how to approach designing for a educational system that does not exist or will need to change soon. That is the time secondary research question came: What is the role of an architect in remaining educational system. Answer to this question I needed to explore through my design process. Right before P2 presentation new literature came into the equation, one from an architect I admired throughout my architectural education, and that is Pier Vittorio Aureli. He wrote a short introduction to his studio called Towards Edufactory that confirmed my prior findings about the current role of universities. Aureli writes that Universities had become if not self-referential machines, then machines for powering capitalism. He also claims ***knowledge is now a marketable commodity***. That sentence stayed with me throughout this whole process. At the P2 presentation there was a clear programmatic conception on how I imagine university should be solved or more precisely what university campus needs to do, and that is create, archive, and transfer the knowledge. Feedback after the presentation was mostly based on structure and formal approach to designing. The external examiner pointed out that my research question needs to be adjusted toward a more architectural question. The Main research question then changed from How to design educational system to ***How to design for educational system of the future*** making my future design a possible answer to it.

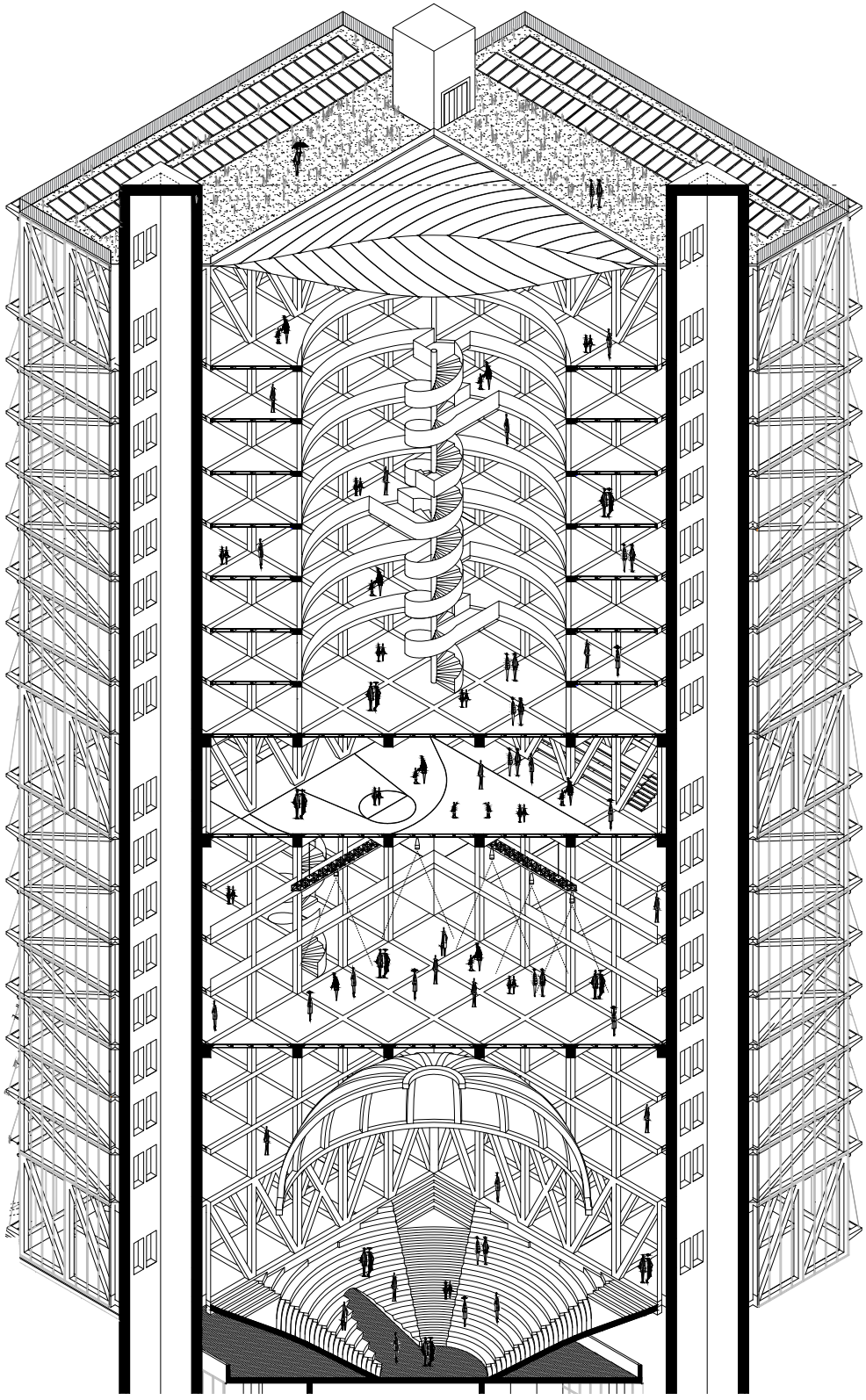
The period between P2 and P3 was dedicated to the design of the loadbearing structure. I needed to come up with solutions on how the proposed building system can stand. This was the time I realized the structure is the

key for the program as well. If done correctly it can enable the building to adapt to the future needs of the campus and in doing so - that could be the possible answer to my question on, how can we design for future having in mind my recent finding through design I started to test options for the structure resulting in combination of concrete cores, steel trusses and timber columns and beams that can support my programmatic vision of university (create, archive, transfer).
Feedback on P3 was based on some parts of the building that I did not yet have time to tackle. The ground floor and the entrance were mostly undeveloped as well as the facade. The focus now was to develop passive ventilation, sun protection, and to further think about materiality of the future campus. The main question was how materiality can reflect my idea of the future campus as a beacon of knowledge in the center of the Hague. Resolution came in a form of a sun protection element that is made from polytetrafluoroethylene (PTFE) that has lantern-like properties that make the outer appearance of future building iconic, boldly representing education as an important part of the city.

When reflecting on posed research question on ***How to design for educational system of the future and consequently its spaces that respond to the concept of*** (***future***) ***higher education*** answers are complex. It is hard to predict what the future holds for education, but one thing is certain, Universities or more specifically the knowledge is losing its grip on society. We are bombarded with information that we do not know how to filter, and that is the main issue future generations will face. The answer to proposed question is to design a building that gives a systematic framework for the future educational system. That systematic framework is formalized through the loadbearing structure and clear aims I believe university should do (create, archive, transfer the knowledge). Furthermore, positioning the university within the city has a symbolic role as well. As churches and town halls were always placed in the center of (European) cities as public buildings par excellence. I believe higher Education also deserves a similar spot. Not only as a physical position within a city but also ideological within society.

Reflecting on my design ambitions, we were tasked with designing vertically, which I have never done before and consider architecturally hard to innovate. Throughout my design process I refused to reference high-tech solutions using a lot of steel and concrete to make a flashy building but resorted to systems I can grasp and understand that are also more low-tech. Final talk with the structural engineer confirmed my proposal was provocative but also possible to execute.

Overall, throughout the making of this graduation thesis I grappled with the intricate relationship between architecture, education, and society. From the initial urban planning stage to the final design, I had to navigate the complexities of creating spaces that not only accommodate but also symbolize the shifting nature of education. Exploration of architectural responses to the changing role of universities, coupled with commitment to innovative yet practical solutions, underscores understanding of the architect's pivotal role in shaping not just physical environments, but also societal ideologies. Through the design process I envisioned the university as a beacon of knowledge, strategically positioned to reflect its central importance within the fabric of society.



At the conclusion of this thesis, I would like to extend my heartfelt gratitude to all those whose contributions made this project possible. First and foremost, I express my deepest appreciation to my mentors, Paul, Piero, and Gosia, for guiding me through the research, drawing, and redrawing of this thesis over the past ten months. I have learned immensely from you, and I am particularly grateful for the freedom you granted me to navigate my own path while providing essential guidance and support.

I also wish to thank Maarten Meijs, the delegate of the Board of examiners, for investing his time and offering insightful and valuable feedback.

Additionally, I am grateful to Nathalie de Vries for the enlightening conversations that helped shift my perspective on my design work.

Lastly, I would like to express my deepest gratitude to my parents, family, and friends for their unwavering love, support, and encouragement throughout my whole education.

This journey would not have been possible without you.


HoK