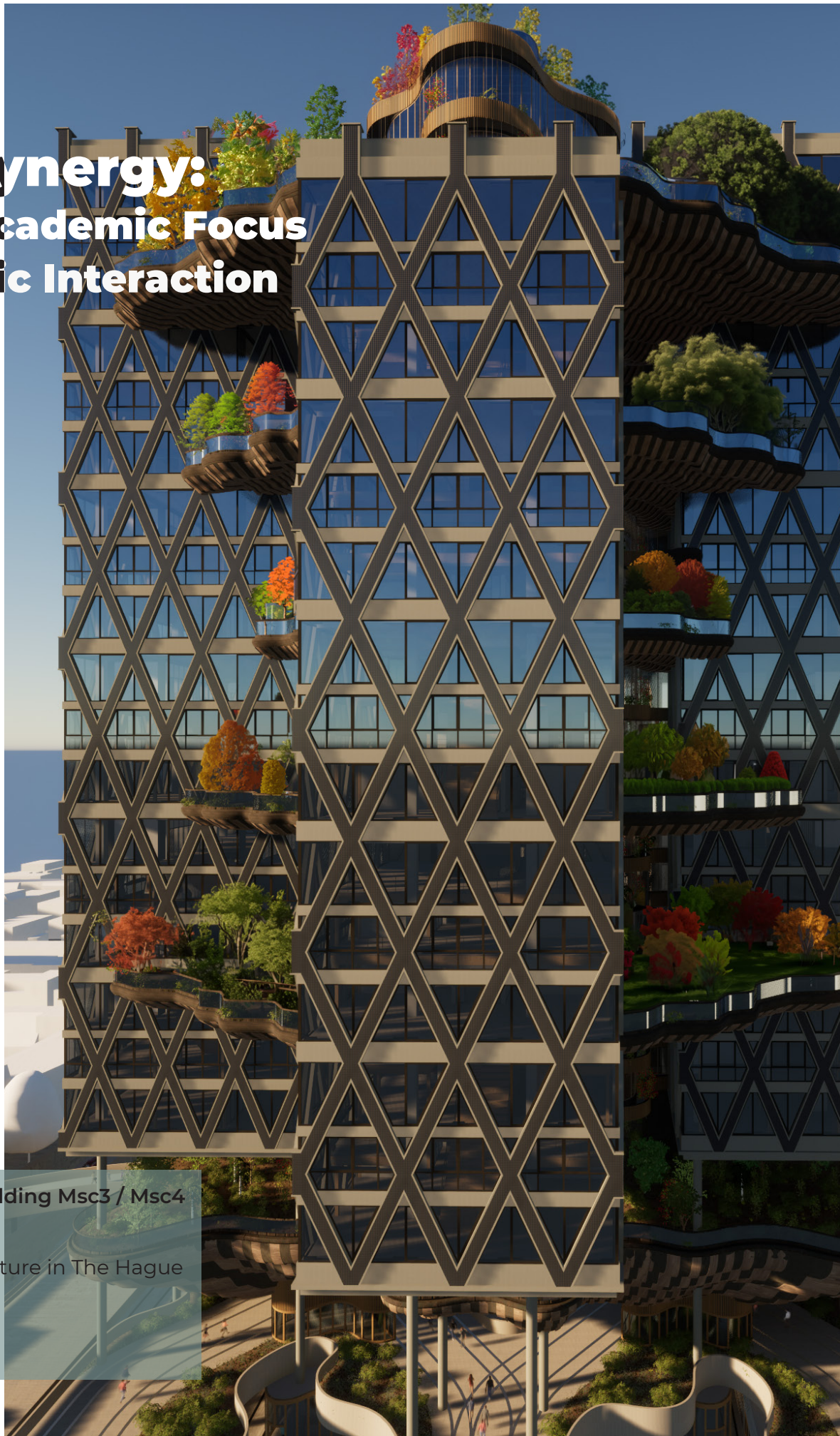
Graduation Report

Urban Synergy:
Merging Academic Focus and Organic Interaction



AR3AP100 Public Building Msc3 / Msc4

The Vertical Campus

A public hub of the future in The Hague

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04-07-2024

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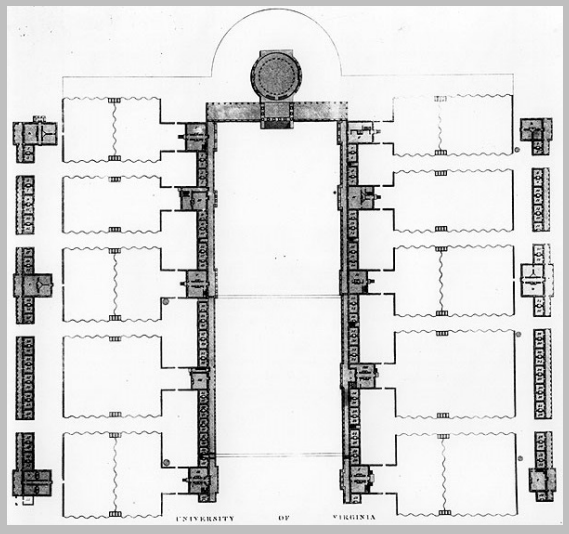
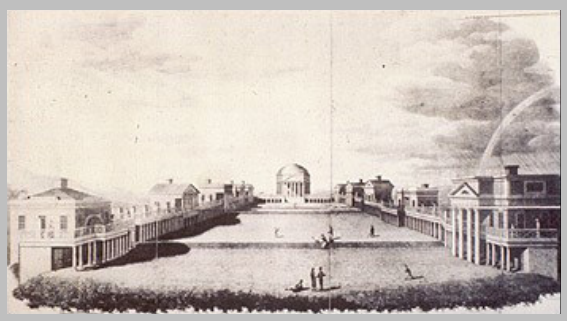
The traditional campus

"It is safer to have the whole people respectably enlightened than a few in a high state of science and the many in ignorance."

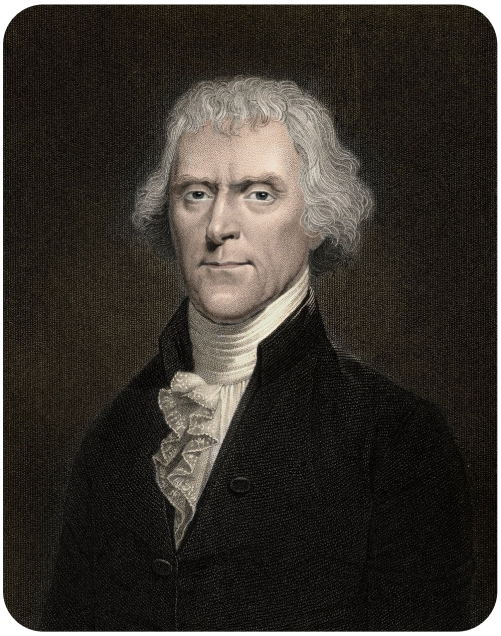
-- Thomas Jefferson

He imagined that an **"academical village"** clustered around a **tree-lined lawn** would provide an ideal setting in which to pursue higher education. The **focal point** of such a village would be a **Temple of Knowledge** that would house the university library.





University Virginia, Thomas Jefferson



Change

Digitalization of Education

With the digitalization of the world and the increased reliance on internet the educational system has drastically changed. **From** the university being the **central point** of knowledge, today **anyone can learn from anywhere in the world.**

The **TU Delft** is a great example of this. With a **online** student base of **over 3 million students**, while the student base **at the campus** itself is **around 25.000.**

Horizontal
campus

From a long stretching footprint of the campus

Vertical
campus

To a small footprint for the campus and stacking functions

Decentralized
learning

Designing for a new way of studying with smaller groups and online education

Cultural
hub

Implementing multiple functions to assist the campus and stimulate interaction

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	
Student number	4878841

Studio		
Name / Theme	Public building graduation studio 'the vertical campus'	
Main mentor	Ir. Henk Bultstra	Architecture
Second mentor	Ir. Ger Warries	Building Technology
Third mentor	Ir. Sien van Dam	TD
Argumentation of choice of the studio	The reason why I chose this graduation studio is due to my interest in exploring the different branches within architecture. Till now, I have been primarily focused on housing design since my interest lay there. But the public building side of architecture also intrigues me, so this is why I wanted to explore this side of architecture for my graduation studio. I would like to explore how architectural design influences the interplay between public, collective, and private spaces, and I want to delve into the spatial dynamics of these zones within the building.	

Graduation project	
Title of the graduation project	Dynamic mixed-use vertical campus
Goal	
Location:	Above the train tracks of The Hague Central Station
The posed problem,	Safety features are one of the multifaceted aspects of university campus design, focusing on adaptability, spatial dynamics, and safety in the sense of a communal feeling. However, this last aspect deteriorates on the public character. How can this be combated by designing for interaction?

research questions and	How can university campuses be designed to be adaptable or flexible in terms of converting spaces among public, collective, and private uses? In what ways is the architectural design of university campuses giving shape to the dynamics between public, collective, and private spaces? How is a communal experience established in public buildings, and what are the implications for public access and use? And how can university campuses be designed to focus on interaction, creating this communal sense of feeling?

design assignment in which these result.	The vertical campus in The Hague will be designed to the vision of designing for interaction, mixed-use and creating a hybrid flow of functions throughout. This will be achieved by implementing the specific findings of the research into how a building can be designed for interaction, and how different spaces can be dynamic and adaptable among the public, collective and private realm. The hybridity of the building is a product of the adaptability of the spaces the building facilitates. This ties into the research on how the architectural design shapes the dynamics within the building. By creating vertical connections both visually and in routing, the vertical campus can facilitate a fluid dynamic within the building, and also stimulating interaction amongst its users. Lastly the vertical campus deems to create a communal feeling that will positively benefit the user experience of the building, but this comes at a cost of the public character. This relation between public and collectiveness needs to be properly designed to facilitate both the visitor as the community within the building. Establishing different zones of public interplay and social interactions

[This should be formulated in such a way that the graduation project can answer these questions.
The definition of the problem has to be significant to a clearly defined area of research and design.]

Process

Method description

The approach to addressing this multifaceted problem is multidisciplinary and will utilize different research methods. This mixed-method research will be composed, combining literature studies with case studies analysis.
First the theoretical framework of the paper will be created by literature research. Here the realm of public space will be researched and what its impact is. Examples of research that will be utilized for this part of the research are (Madanipour,

2003), (Whyte, 1980) and (Marcuse, 2014). These literature pieces could provide the groundwork of what true public space is and with this information combined with the research of Hillier and Hanson (1984) on the social logic of space, conclusions could be made on how the different types of spaces should work within the building, and how to stimulate interaction between these spaces. This can then be tested based on the findings of Ching (1979) on his research into architecture, form, space, and order.

This theoretical knowledge gained from the literature research can then be tested based on practical examples. These practical examples serve as the case studies that will be utilized to assess the theoretical examples against. Several sorts of case studies will be utilized in this research, as mentioned earlier different kinds of case studies are interesting for different reasons.

Different types of stations and navigational routes will be taken as case studies to analyze how they implement wayfinding and control the flow of people. This is interesting for public building since these buildings deal with a great flow of people arriving and leaving the building. Therefore, Delft Central Station, HS2 Euston Station and De Weenatunnel will be taken as case studies.

Different types of hotels and appartements will be taken as case studies to analyze how they design spaces that intent to promote interactions between its users. This lesson can then be implemented in my design that aims to stimulate interaction between the users. Therefore, Marriott Marquis, Parkroyal Hotel and KJ Plein Powerhouse will be taken as case studies.

Different types of university campuses will be taken as case studies to analyze how they deal with public, collective and private spaces. Also, the security factor will be considered during this case study to see how open or how closed these university campuses are and where the interaction aspect show. Therefore, University of Cambridge, University of Oxford, Learning Hub University of Singapore and Roosevelt University vertical campus will be taken as case studies.

Lastly, different types of public buildings facilitating retail and offices will be analyses to see how they deal with the public flows and interactions within the buildings. These findings can then be implemented in the design for the vertical campus. Therefore, SOHO Tower, Galaxy SOHO, Atlassian Central, NEXT Delft, IBM Powehouse, Forum Groningen, Amare, Huis van de stad and Little Island will be taken as case studies.

The graduation studio uses a specific method known as Research-by-Design. Research-by-Design focuses on design work as a special form of research. It considers theory and practice, analysis, and imagination as inseparable and as a medium to help conceive and develop architectural ideation. Research is not only about preparation, description, and explanation, but also more importantly about projection and speculation. Research is therefore a form of design and design a form of research. The findings from the different case studies will be reflected towards the design, with the main take aways from the analysis influencing the design. But this implementation in the design might differ from the reference, finding the way how to implement these findings in the design in research in itself.

Literature and general practical references

The literature that will be utilized to gain the theoretical knowledge are the following articles:

Bodnár, J. (2015). Reclaiming public space. Urban Studies, 52(12), 2090–2104. https://doi.org/10.1177/0042098015583626

Ching, F. (1979). Architecture, form, space & order. http://ci.nii.ac.jp/ncid/BB18970529

Gehl, J. (2011). Cities for people. In Planning News (Vol. 37, Issue 4, p. 6). https://um.dk/da/~/media/Graekenland/Documents/News/Invitationer/Invitation%20to%20event%20Cities%20for%20People%20Thessaloniki%2028%20April%202013.pdf

Heerwagen, J. (2000). Green buildings, organizational success and occupant productivity. Building Research and Information, 28(5–6), 353–367. https://doi.org/10.1080/096132100418500

Hillier, B., & Hanson, J. (1984). The social logic of space. https://doi.org/10.1017/cbo9780511597237

Loftness, V., Hakkinen, P. J., Adan, O., & Nevalainen, A. (2007). Elements that contribute to healthy building design. Environmental Health Perspectives, 115(6), 965–970. https://doi.org/10.1289/ehp.8988

Madanipour, A. (2003). Public and private spaces of the city. In Routledge eBooks. https://doi.org/10.4324/9780203402856

Malmberg, L. (2017). Building design capability in the public sector: Expanding the horizons of development. https://doi.org/10.3384/diss.diva-134167

Marcuse, P. (2014). THE PARADOXES OF PUBLIC SPACE. Journal of Architecture and Urbanism, 38(1), 102–106. https://doi.org/10.3846/20297955.2014.891559

Mumford, L. (1970). The culture of cities. Mariner Books.

Nadel, B. A. (2004). Building Security: Handbook for Architectural planning and design. http://ci.nii.ac.jp/ncid/BA70307180

Whyte, W. H. (1980). The social life of small urban spaces. http://ci.nii.ac.jp/ncid/BA00601503

The case studies are utilized to analyze how is a communal feeling is created in public buildings, how to design for interaction, and what are the implications for public access and use are. Within this context different type of cases are analyzed to highlight the different approaches and evaluate both the pros and cons of such approaches.

Stations & navigation routes:
- Delft central station
- De Weenatunnel
- HS2 Euston Station

Hotel & appartment:
- Marriott Marquis
- Parkroyal Hotel
- KJ Plein Powerhouse

University campuses:
- University of Cambridge
- University of Oxford
- Learning hub, University of Singapore
- Roosevelt University – vertical campus

Retail and offices:
- SOHO Tower, Beijing
- Galaxy SOHO, Beijing
- Atlassian Central, Sydney
- NEXT Delft, Delft
- IBM Powerhouse
- Forum Groningen
- Amare
- Huis van de stad

Landscaping:
- Little Island, New York

Reflection

This research aims to get a better understanding of the different zones and their interplay specifically within a university campus design. This is of great importance for the design process of such a university building, especially with the changing needs of such a university building with decentralized learning.

The interplay of interaction within the building and public, collective, and private spaces harbors a way stronger relation to how the building is used in the present and the future. With a better understanding of this, the vision of mixed-use through the building and a hybrid flow of functions throughout can be achieved. This problem is also of great importance due to its direct impact on the functionality and usability of university campuses.

As urbanization accelerates and our societies evolve, the demand for adaptable and flexible public spaces is increasing. University campuses play a central role in our communities, serving as hubs for public knowledge and intellect, collective engagement, and individual privacy. The ability of these buildings to adapt to evolving needs and foster positive interactions is therefore crucial. Additionally, the sense of communal feeling of such spaces have become increasingly relevant in the face of a sense of belonging. Understanding how architectural design influences these aspects is vital for creating environments that enhance the use and accessibility of these buildings.

Time planning

Previous period of the P2 was to reflect on the learning from the group site analysis and formulate a design approach for the area as whole. With this information, the step to the personal ambitions and design goals could be made. And the start of the design process commenced, with the determination of location of the plot that could facilitate all the design ambitions formulated and envisioned by me.

This period till the P2 presentation was to formulate a design based on the individually formulated design goals and ambitions and work this design out till the point of the division of functions and typical floorplans. With us now being on the brink of a new period, the P3 timeframe will be utilized to further develop this design, but on a more advance and detailed scale.

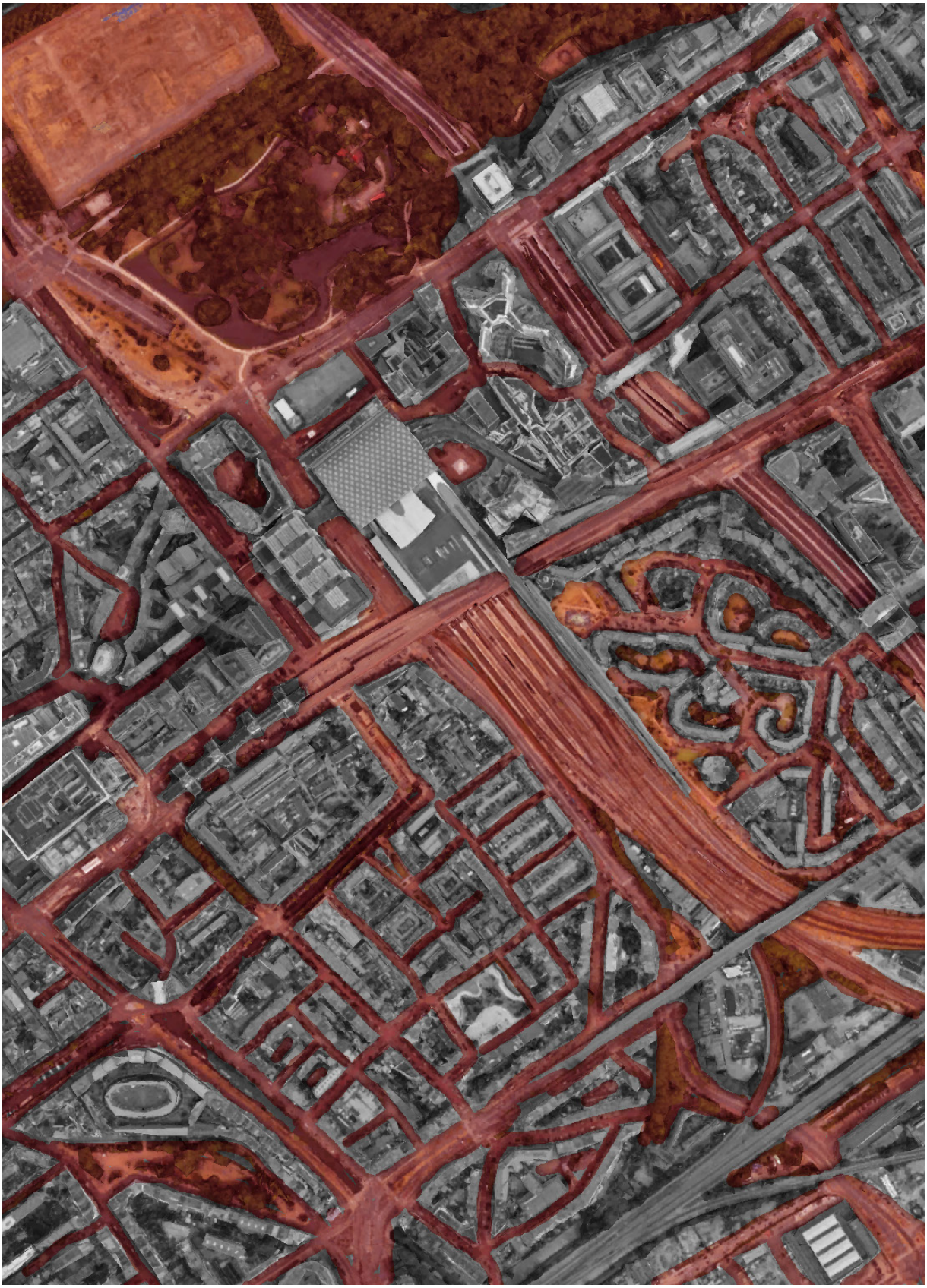
My design concepts and ambitions are now clearly developed and implemented in a design. During this P3 timeframe I want to dive deeper in the technicalities of my design with the building structure, the building climate systems and their sustainability impact and the façade design of the building.

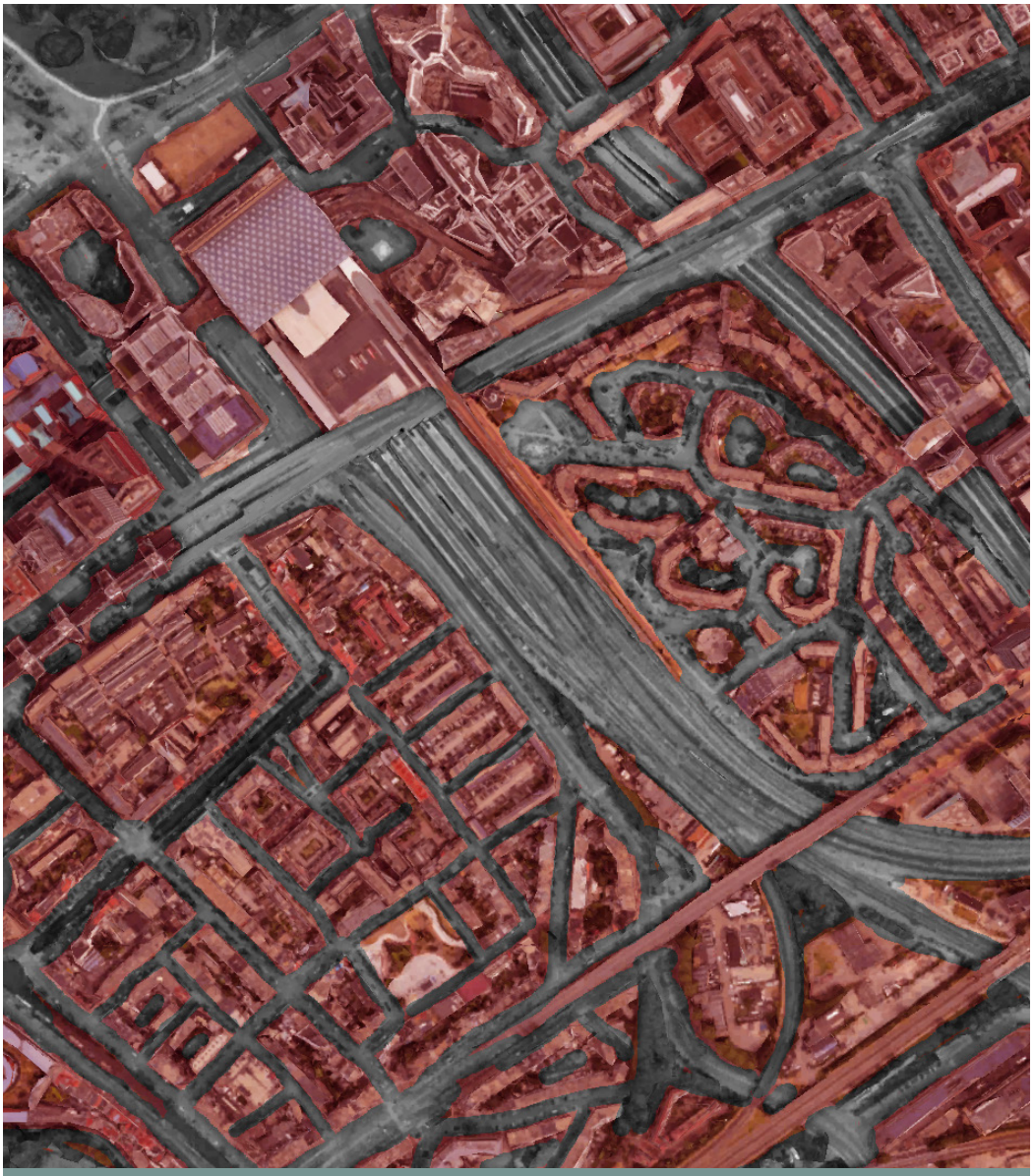
Sustainability lays at the core of my design projects as it aims to redesign and add value to a till now disregarded as useless space in the city center. This ambition to reclaim this specific area of the city center and reuse it to facilitate a public building is in itself a sustainable approach to the use of the land.

Graduation Plan

Zooming in on my design project the entire building structural system, the façade design in combination with the exoskeleton and the climatic design for the different building parts are very interwoven with each other and therefore demand a lot of attention to properly design and implement. All these aspects focus on implementing sustainability in the project each on their own way, for example in futureproofing the building, generating green energy, reducing material use, implementing a need driven climate system and increasing the biodiversity of the area. But to implement all these different sustainability aspects and properly interweave this on the detail scale is very time consuming and complex. This is what my P3 time schedule will entail with the focus on step by step developing these aspects of the building, making sure these elements will be properly implemented and complement each other in the final design.

P1

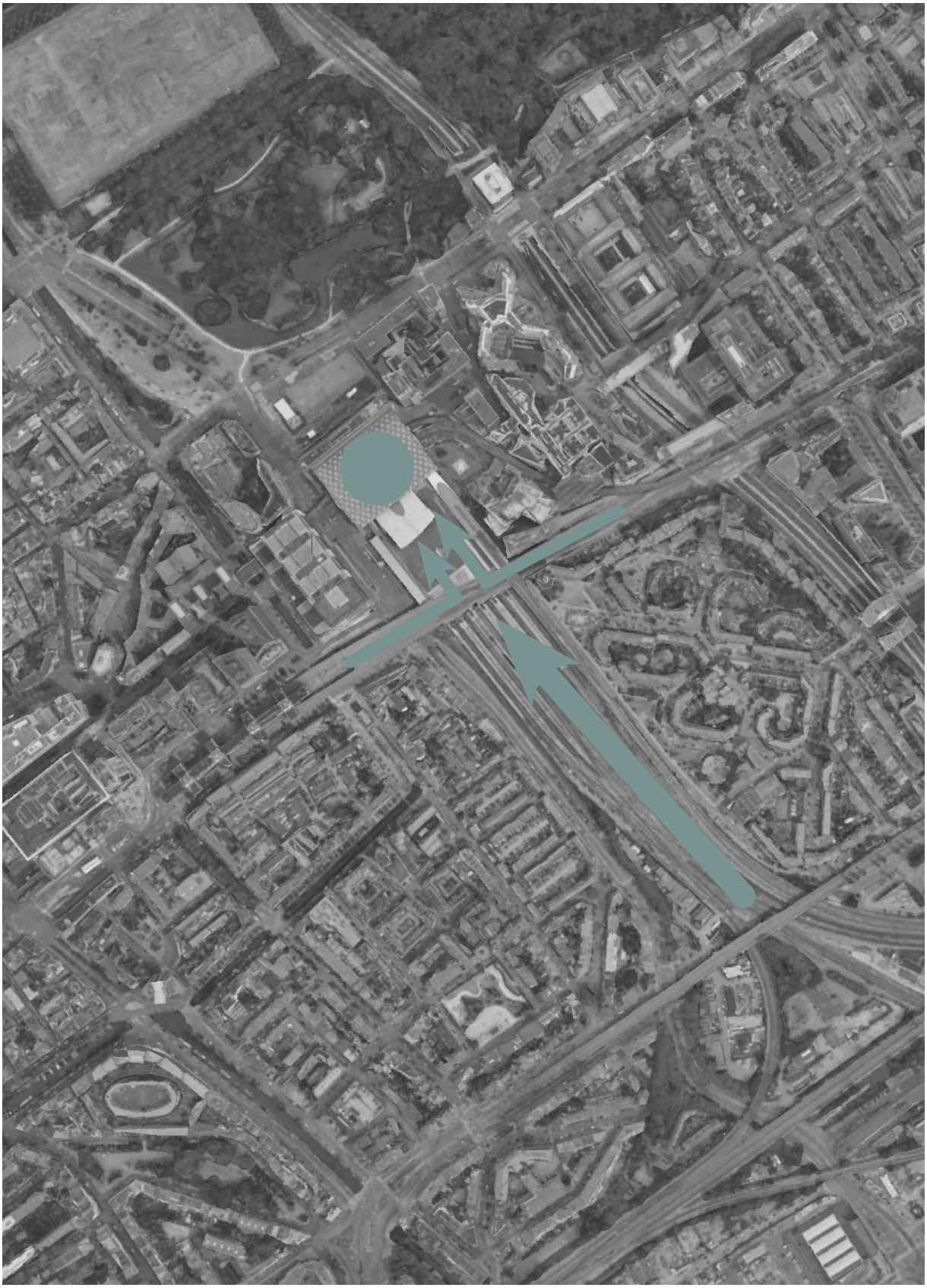


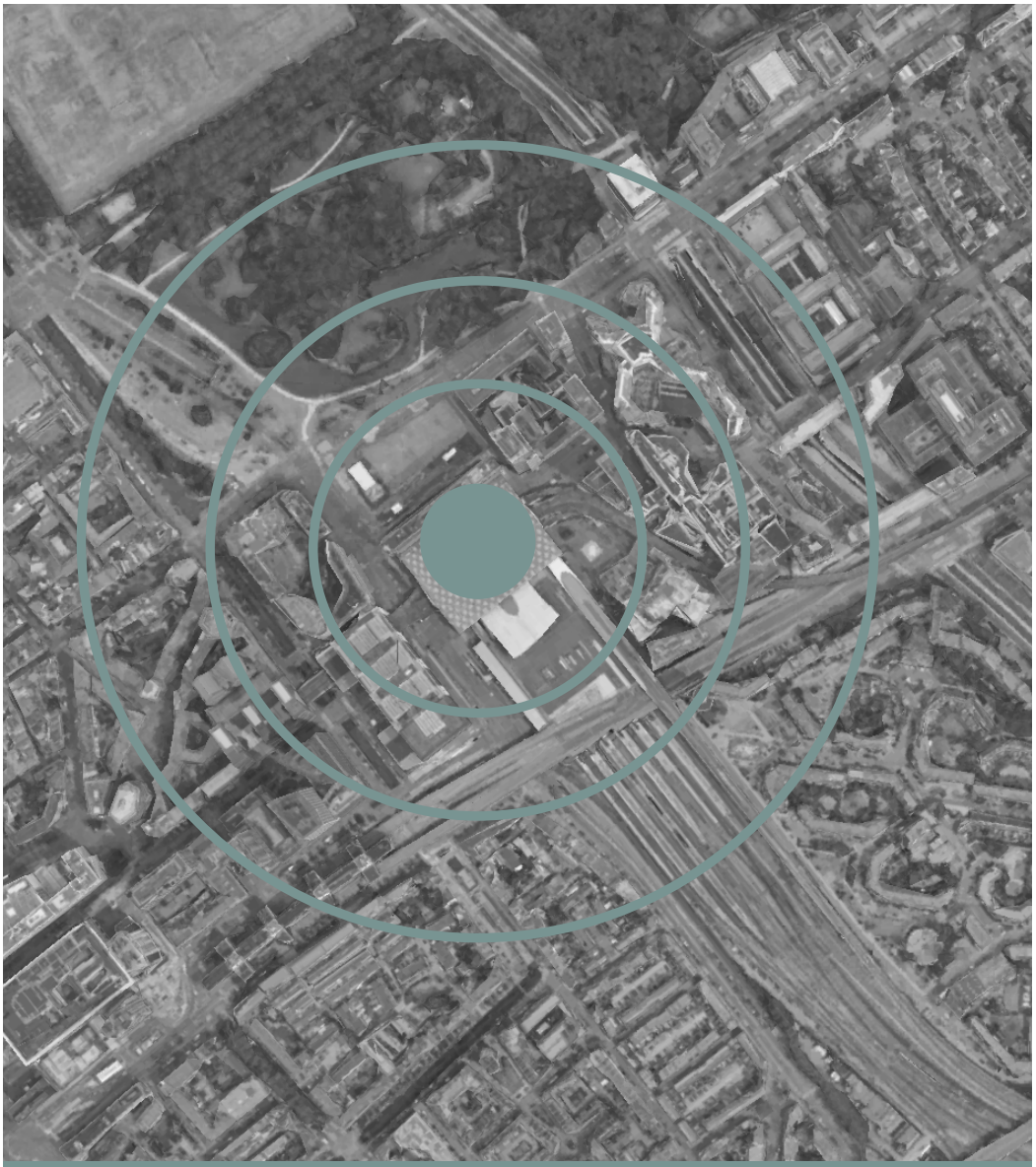


THE HAGUE

The areal context of the site is of great importance for the fruition of the set ambitions for this project. Therefore the location has to be picked very carefully.

Standing with these ambitions the people and the neighborhood have great influence.

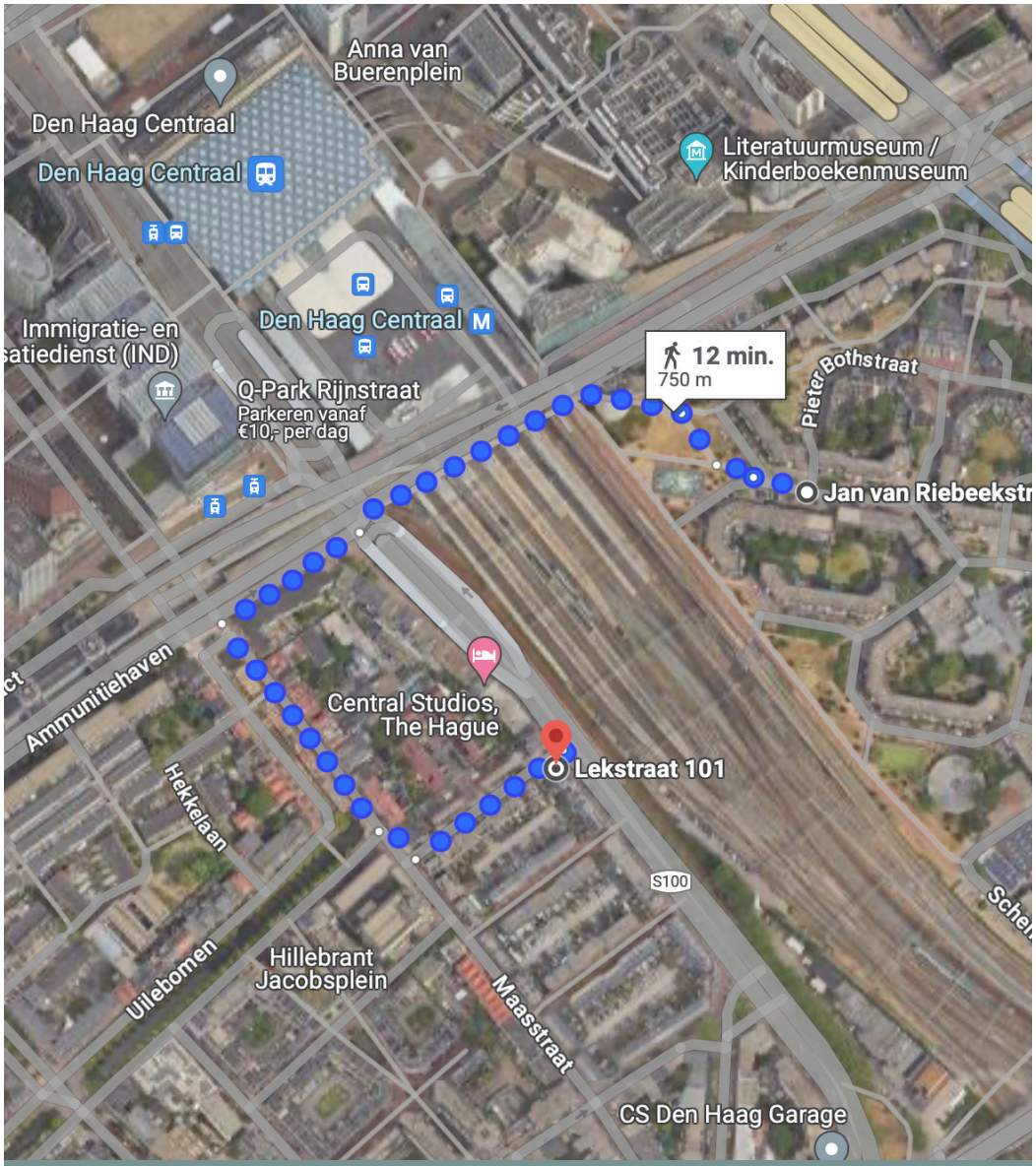




THE PEOPLE

When designing a public building it is of great importance how the people get to the building. So for a great public building the closer to the source where the people arrive the better.

The biggest arriving point of The Hague is of course The Hague Central station, as seen on the image the ease of access to a space is zoned from the central arriving point, the station.

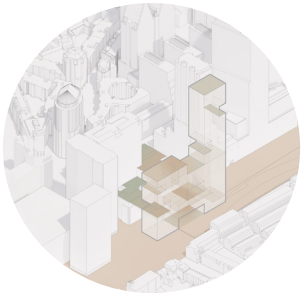


THE NEIGHBORHOOD

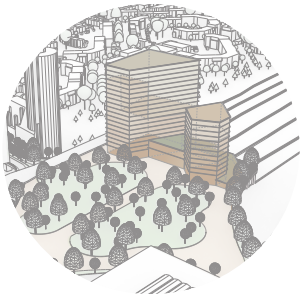
The other ambition was to create a better connection between the different neighborhoods in The Hague. To create a hub that connects the different areas and unites the neighborhoods.

As seen on the Google Maps image and the building analysis, the train tracks create a huge barrier between the neighborhoods on the left and right of the tracks.

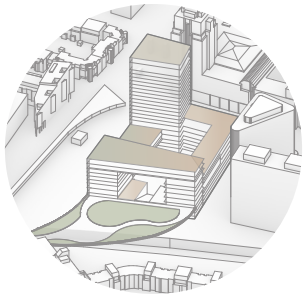
Area 1



Area 2

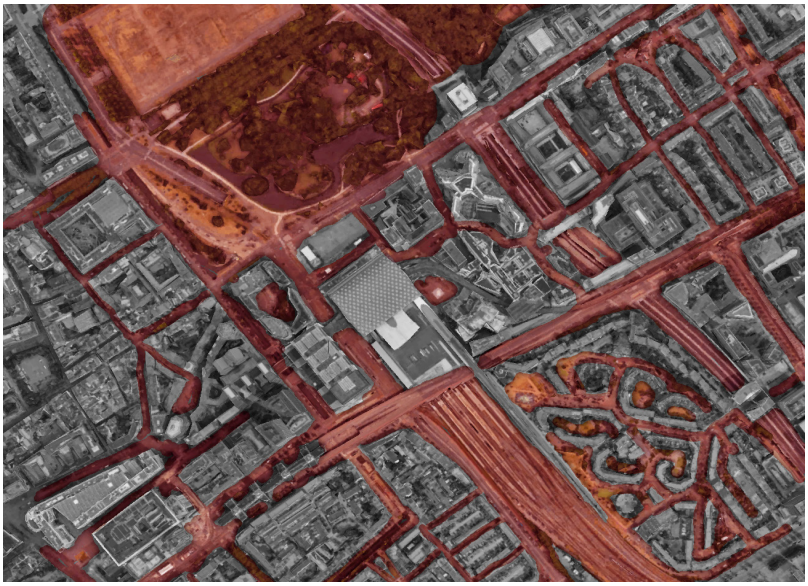


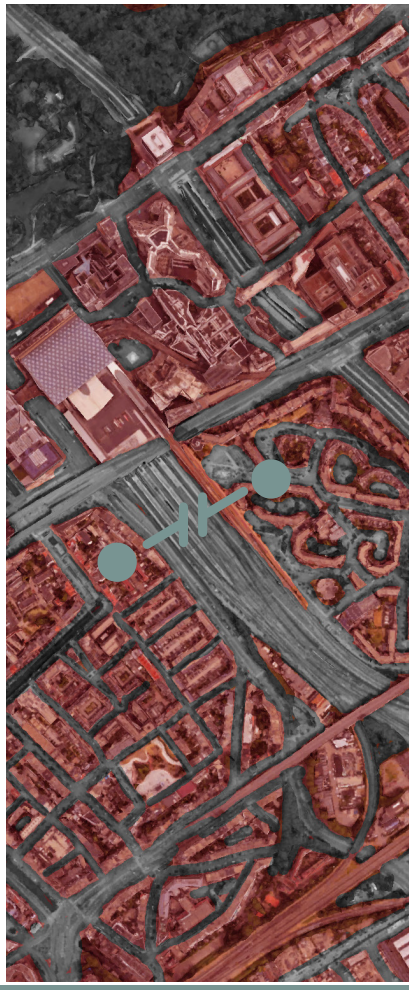
Area 3

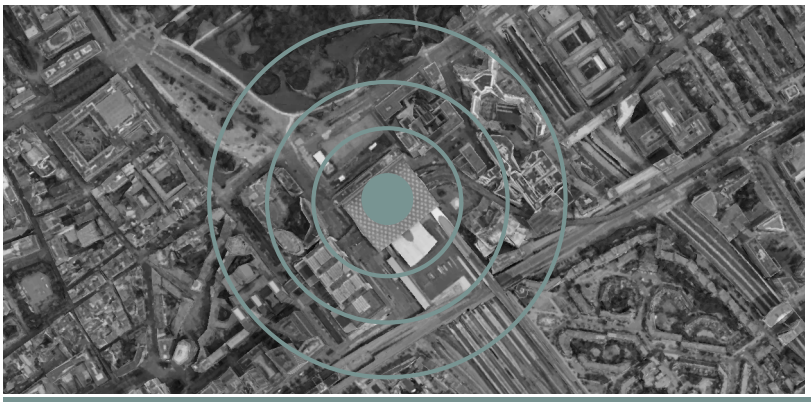


Plot options

With area 2 corresponding with my final choice for the design plot. Tho my aproach to developing the mass during the group stage was different.





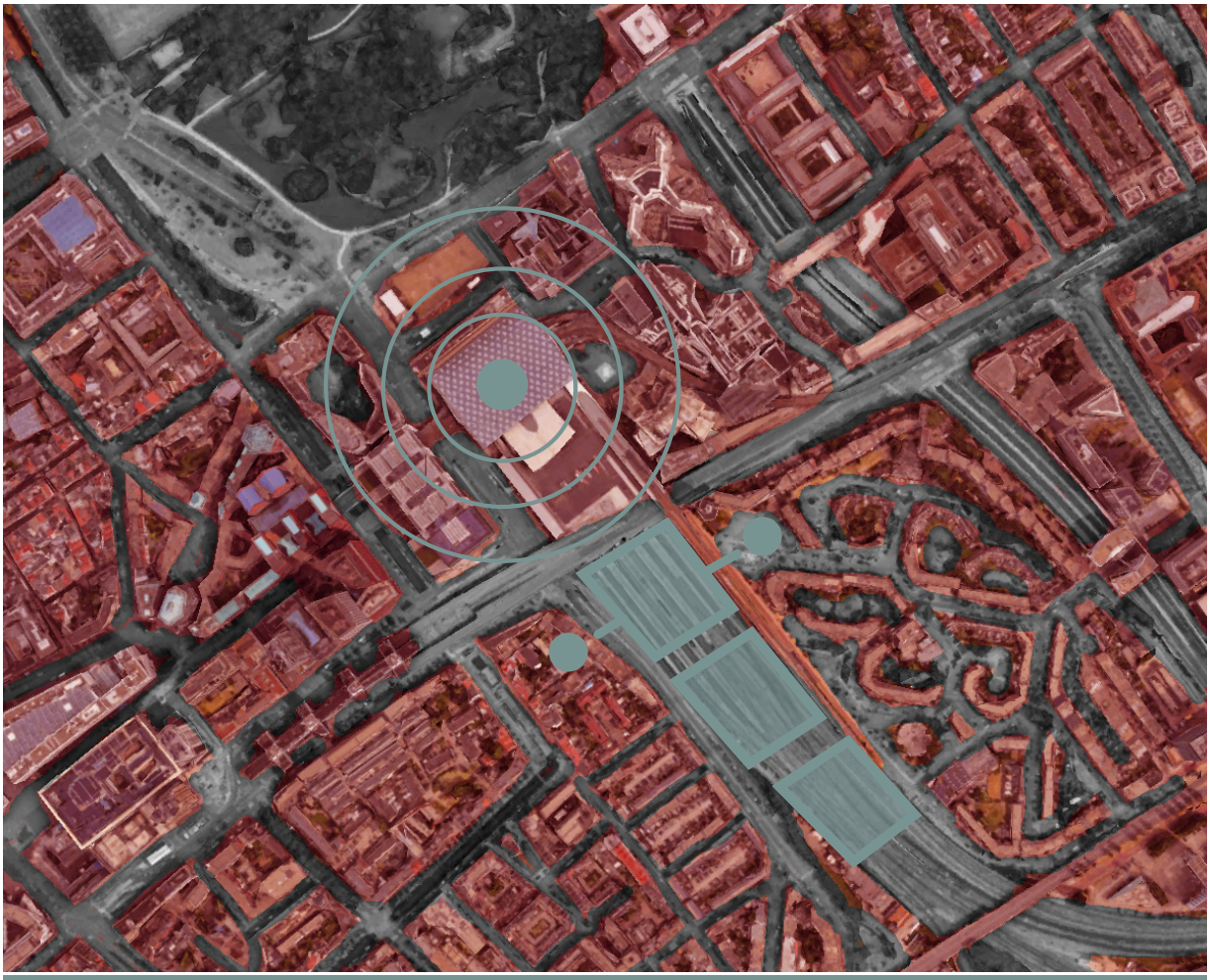


My Plot

ANALYZING THE AREA

With these different ambitions and qualities mapped out, the site for my plot becomes clear. When looking at the map of The Hague center, where there is still space left, you notice that these are the roads, train tracks and Het Haagse Bos. The last one can be counted out since I don't want to infringe on existing qualitative public space.

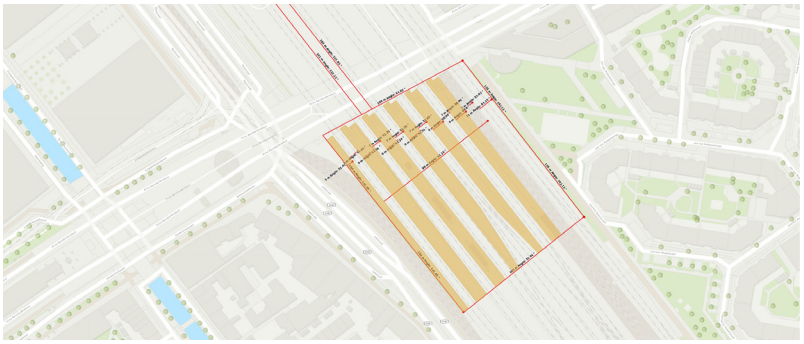
With the accessibility zones mapped out from The Hague Central Station and the barrier between the neighborhoods, all these ambitions point to a plot over the train tracks of The Hague as the ideal space for a cultural and meeting hub.

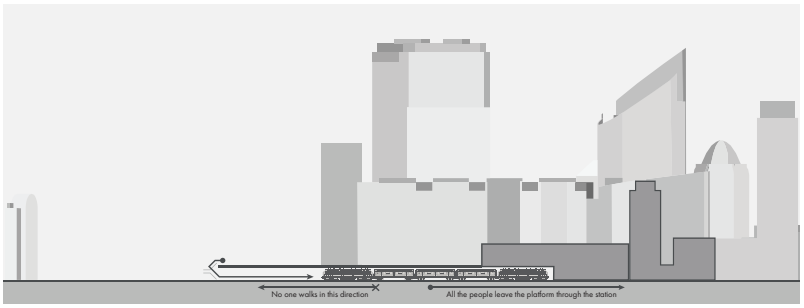


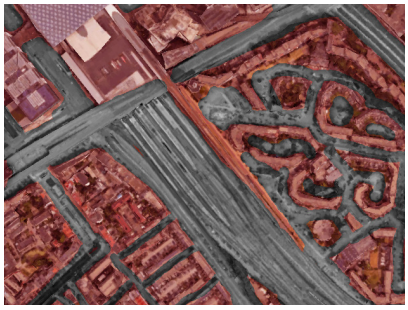
My Plot

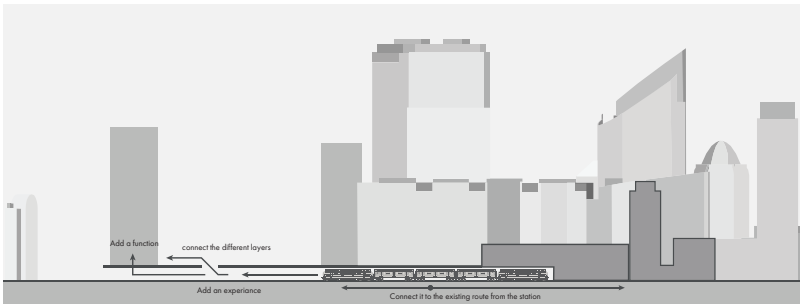
ARGUMENTATION

- This plot allows me to add qualitative public space to the city without infringing on existing qualitative public space.
- It enables me to create a blueprint for the new way of densifying cities with future projects over the train tracks in The Hague.
- It allows me to create a solution to the connectivity barrier that the train tracks pose for the neighborhoods on both sides, creating a more connected city.





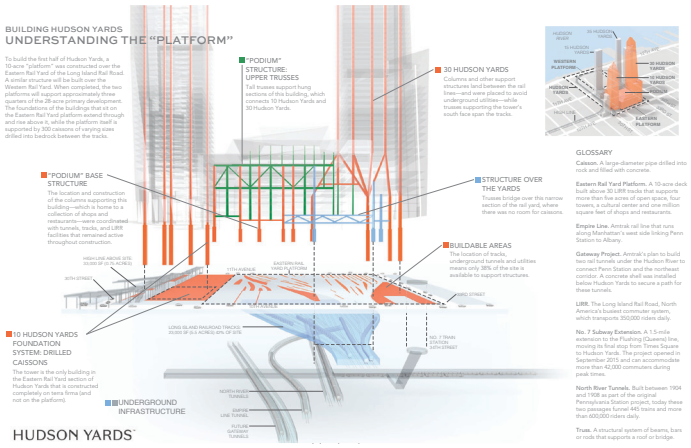


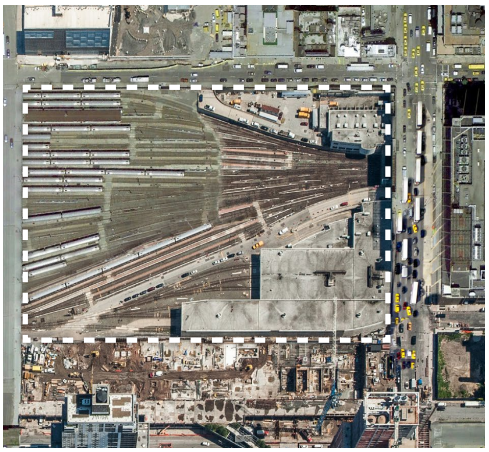


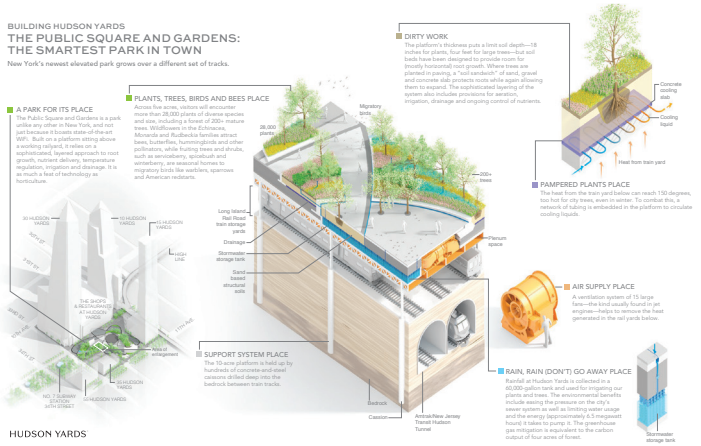
Constrains

WHAT ARE THE CHALLENGES?

- The main challenge is the structure of the building, constrained by the train tracks where no columns can be placed.
- The existing connections are all vertical along the line of the train tracks.
- Connecting the different levels poses a challenge, including access to the platforms, the flyover, and creating new horizontal connections.
- The metro line to the right of the plot and the car tunnel to the left also present significant constraints for the design.





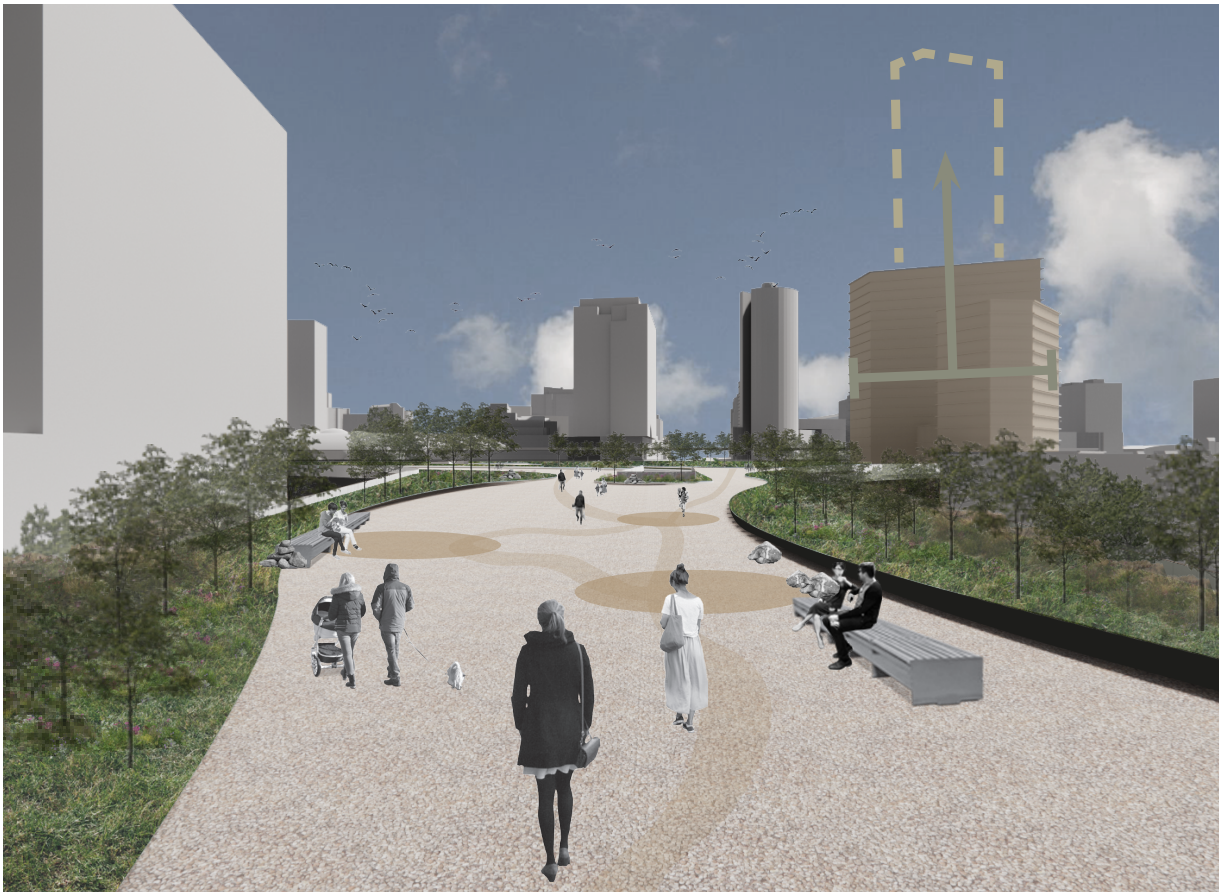


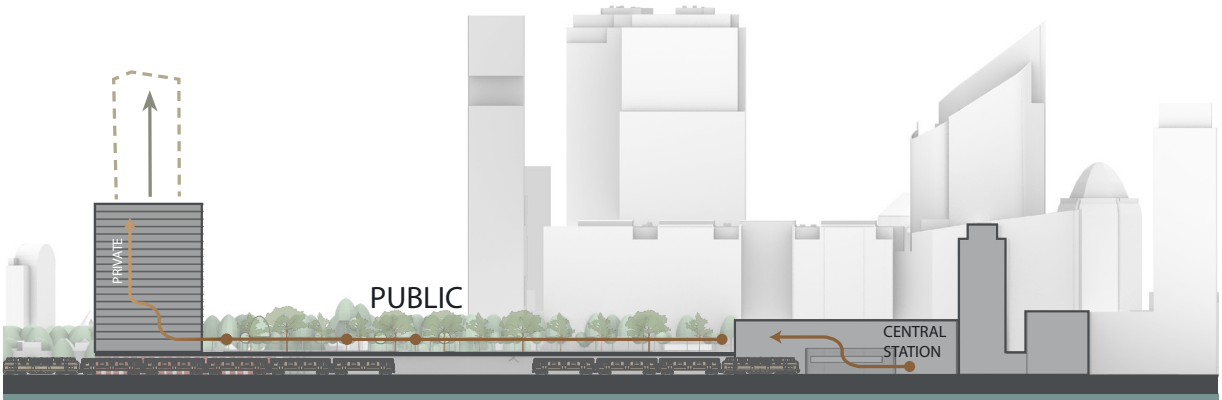
Research

IS IT EVEN POSSIBLE?

With my ambition for the plot clear, the next questions arose. To gather information about the challenges at hand, I analyzed Hudson Yards, as this project also addressed similar issues.

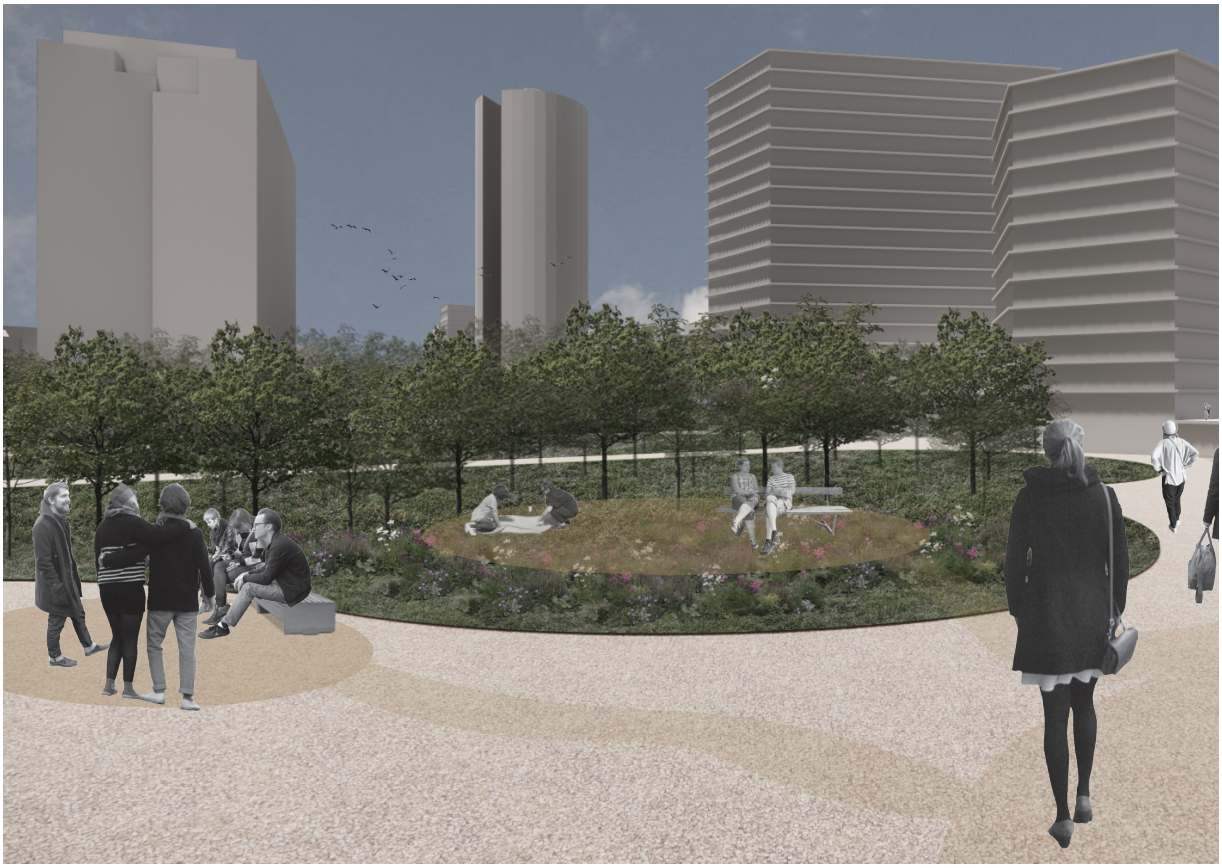
- Is this construction even possible?
- How did they deal with the construction of the buildings
- How did they connect the different levels?

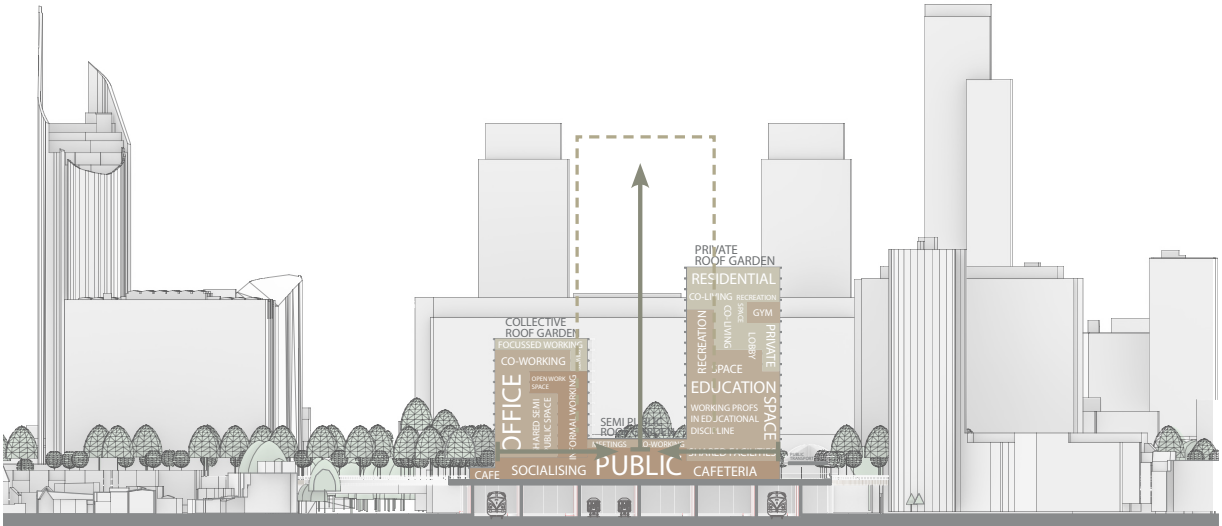




Plot context

The position of the plot within the city context is interesting. Since it is place along the ‘highrise line’ in The Hague center. That is the only zone that allows highrise in the center. So from the side profile you can see how the building is removed from this line, but from the front view it blinds within this skyline. In the view aproaching the mass of area 2 you can see how the building looks very cube like, this is not the aim. The aim is to create a vertical campus. So the shape needs to be adapted.





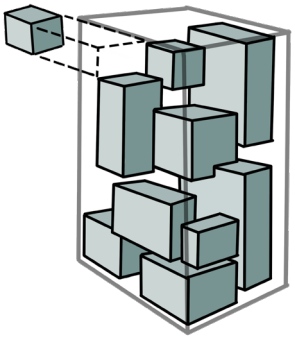
Plot context

From the front view of the city skyline, the building blends with this ‘high line’ of The Hague. And is therefore more in context with the surroundings. In the view aproaching the mass of area 2 you can see how the building looks very cube like, this is not the aim. The aim is to create a vertical campus. So the shape needs to be adapted.

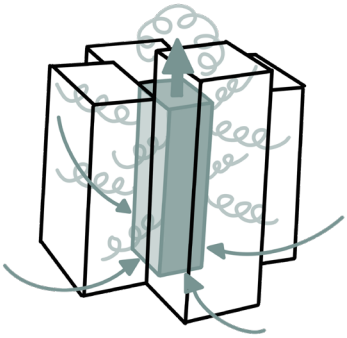
P2


PUBLIC
CENTRAL STATION

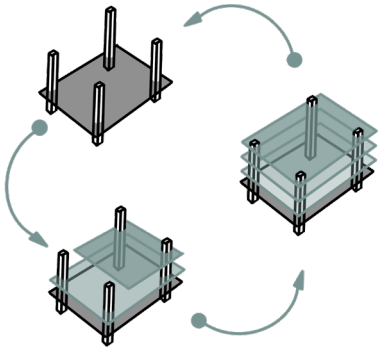
Design principles



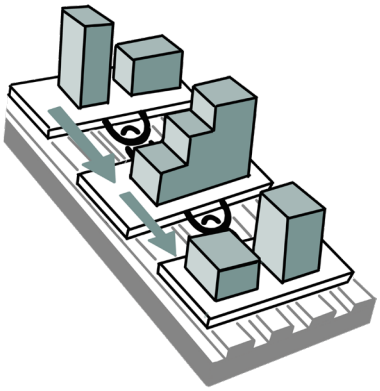
Interaction by diverse functions



Interaction by nature implementation



Interaction by flexibility



An expantion blue print

Interaction

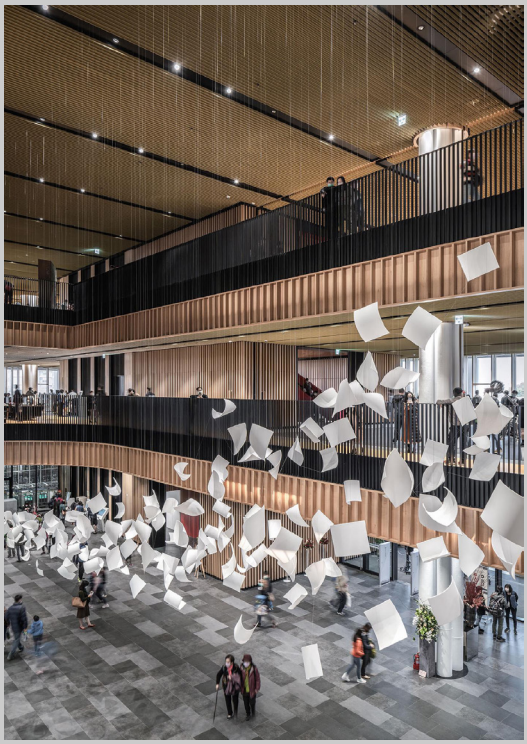
Based on this new approach for the usage of campuses, I formulated the main design ambition for the project to be the interaction between people using the campus.

"Designing for Social Interaction Means Emphasizing the Spaces In Between"

-- Henning Larsen

This interaction explained:

The cultural hub

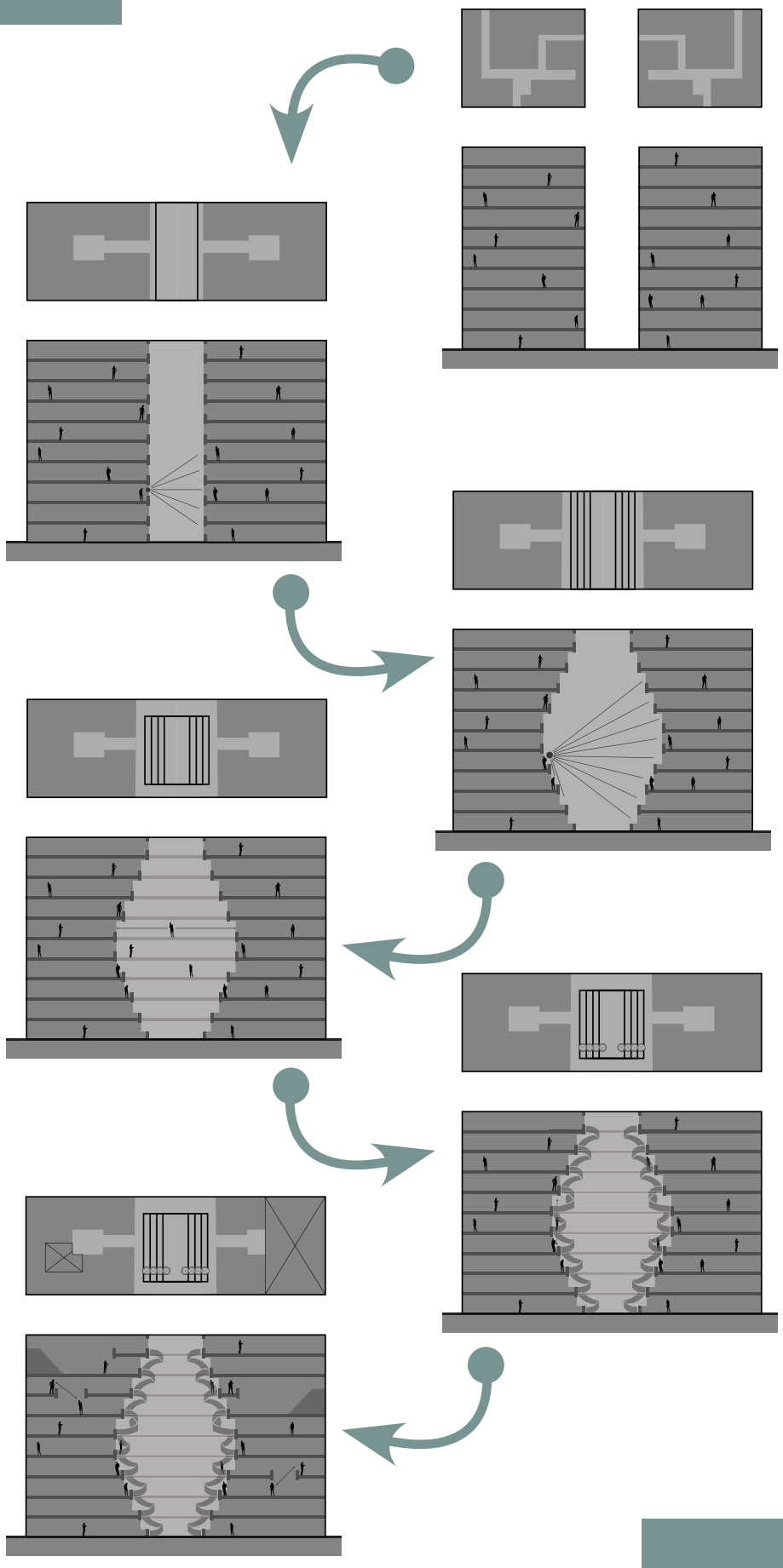


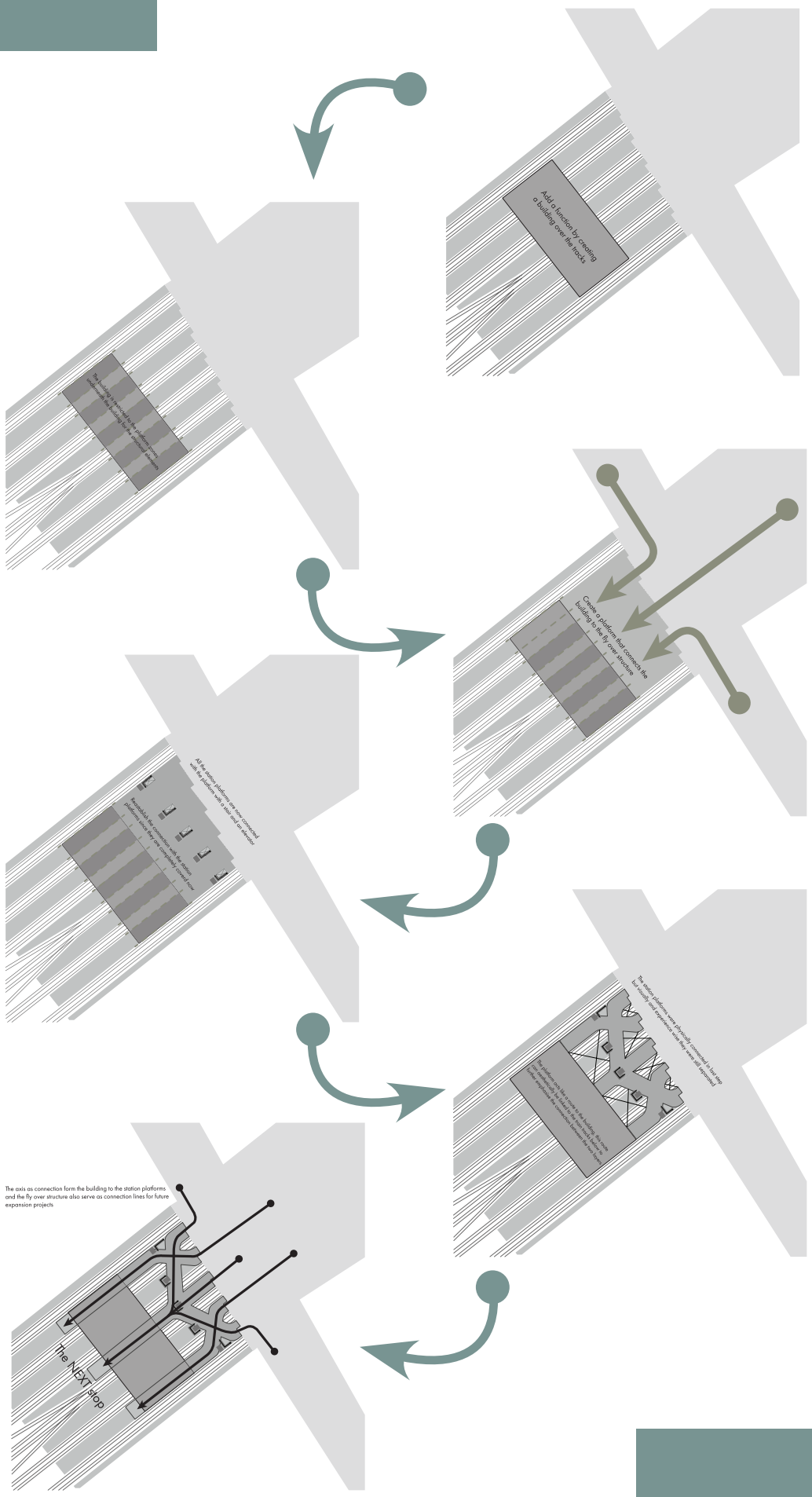
What is this cultural hub?

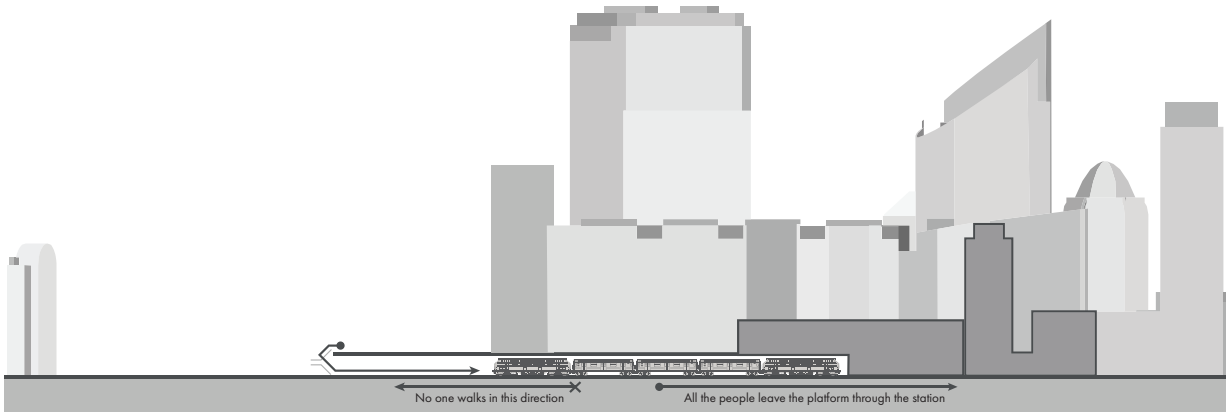
The hub functions as a meeting space for people and therefore connects the people. The hub also provides a connection to the neighborhood through the public nature of the building.

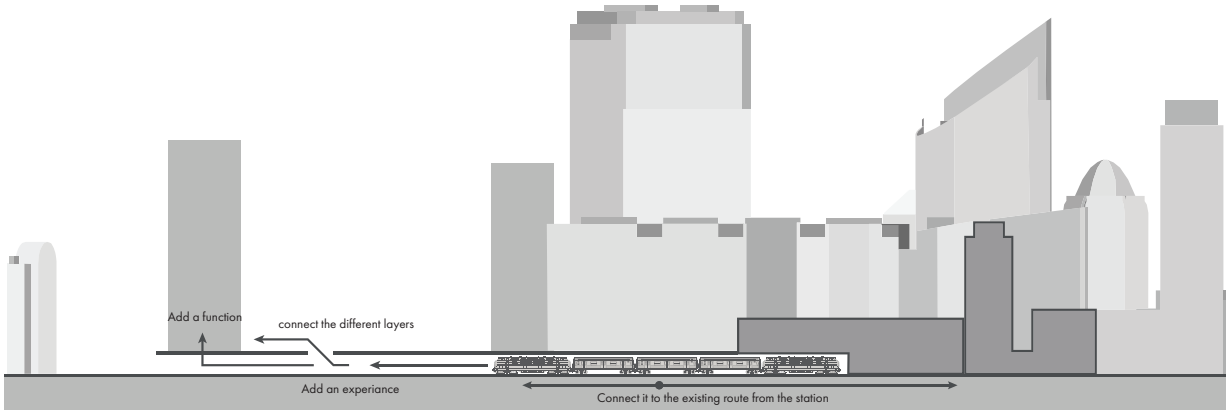
“A clustering of cultural venues, workspaces, educational functions and secondary attractions including food and retail”

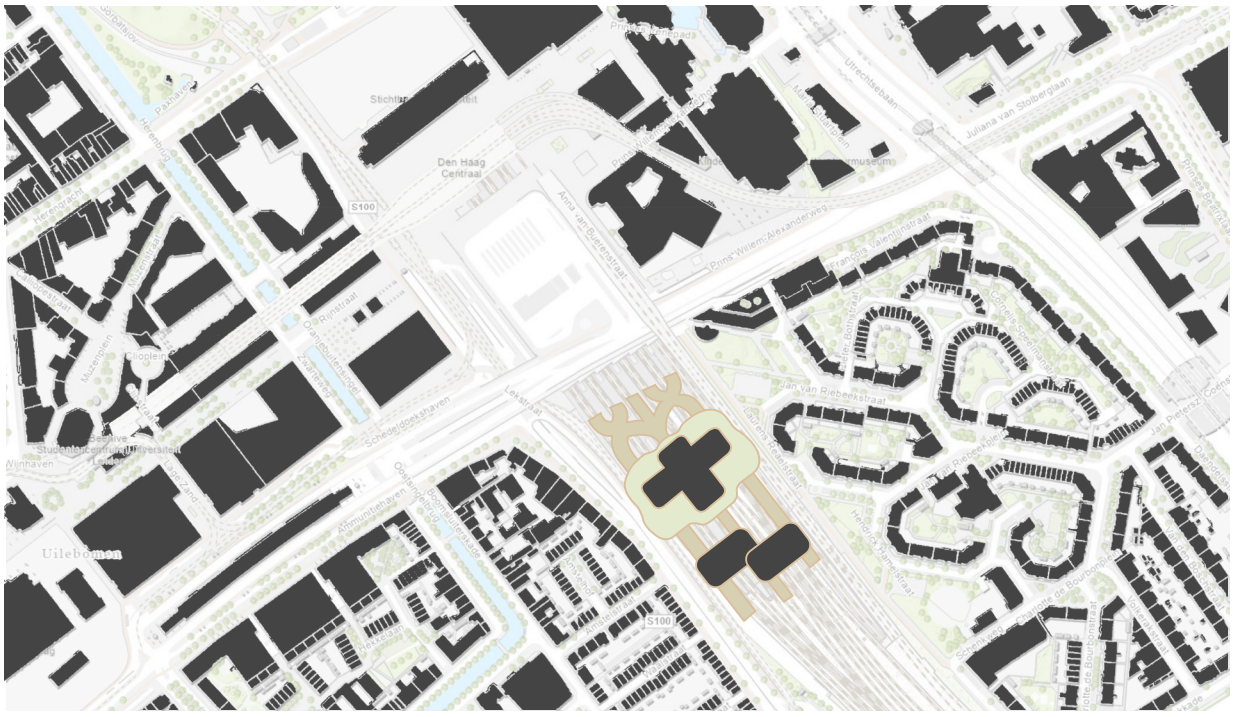
-- Bibli Insight_

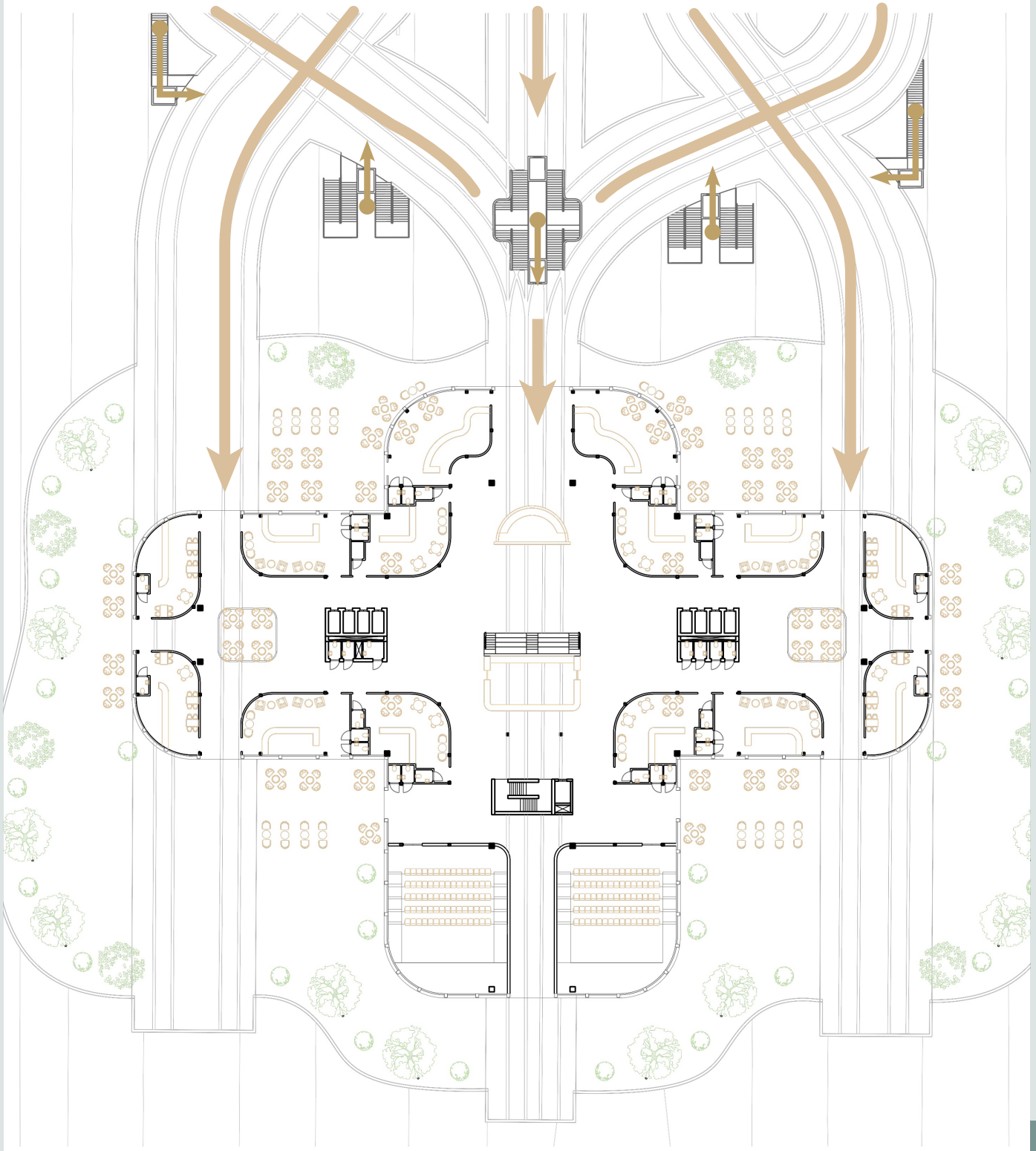


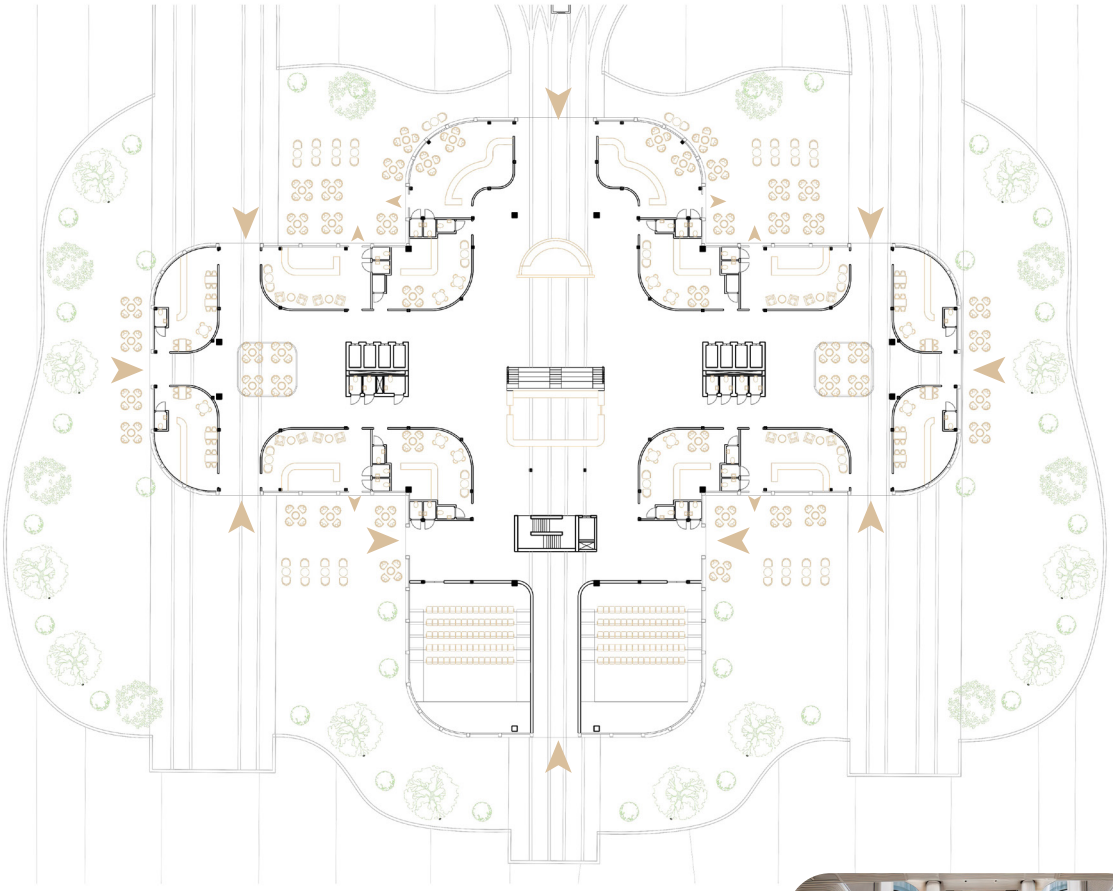

Add a function by creating a building over the tracks
Creating a platform that connects the building to the fly over structure
All the station platforms are now connected
with the platforms and to the fly over structure
Remarkable free connection with the station
platforms since they are completely covered now
The station platforms were physically connected to each other
but visually and experience wise they were still separated
The axis as connection form the building to the station platforms
and the fly over structure also serve as connection lines for future
expansion projects
The NEXT stop

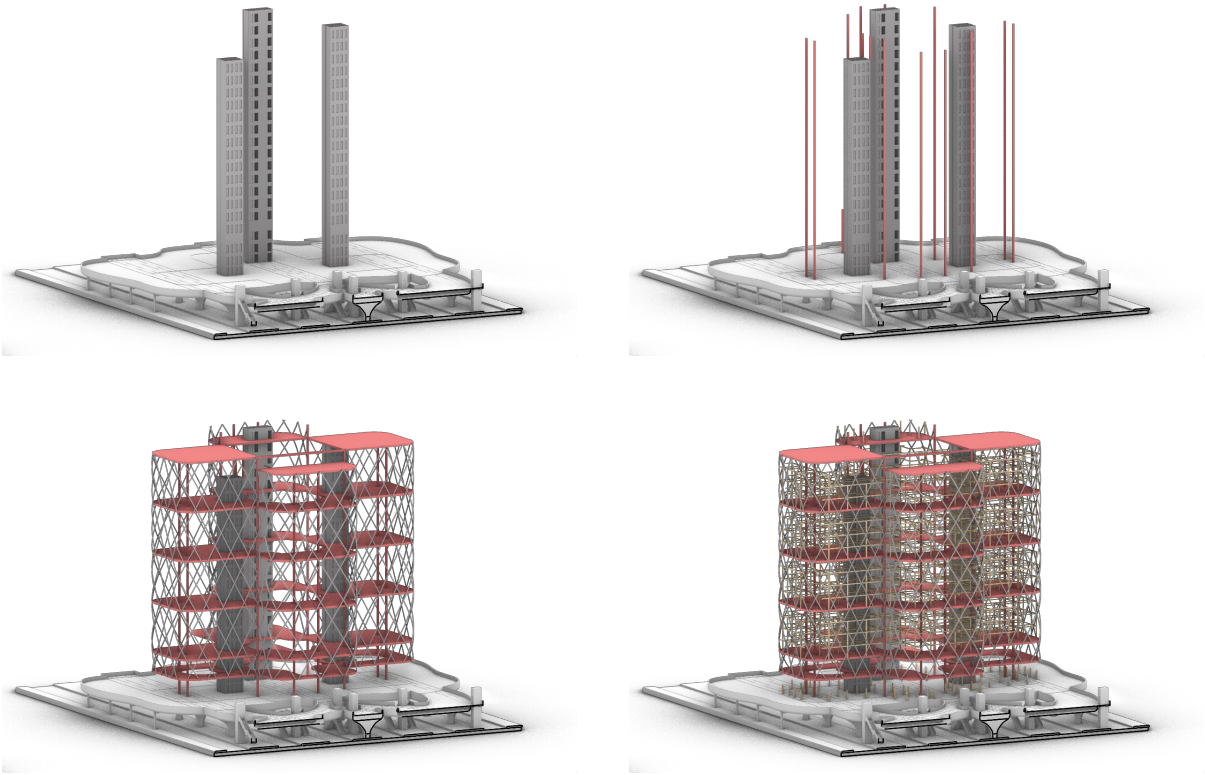

No one walks in this direction
All the people leave the platform through the station

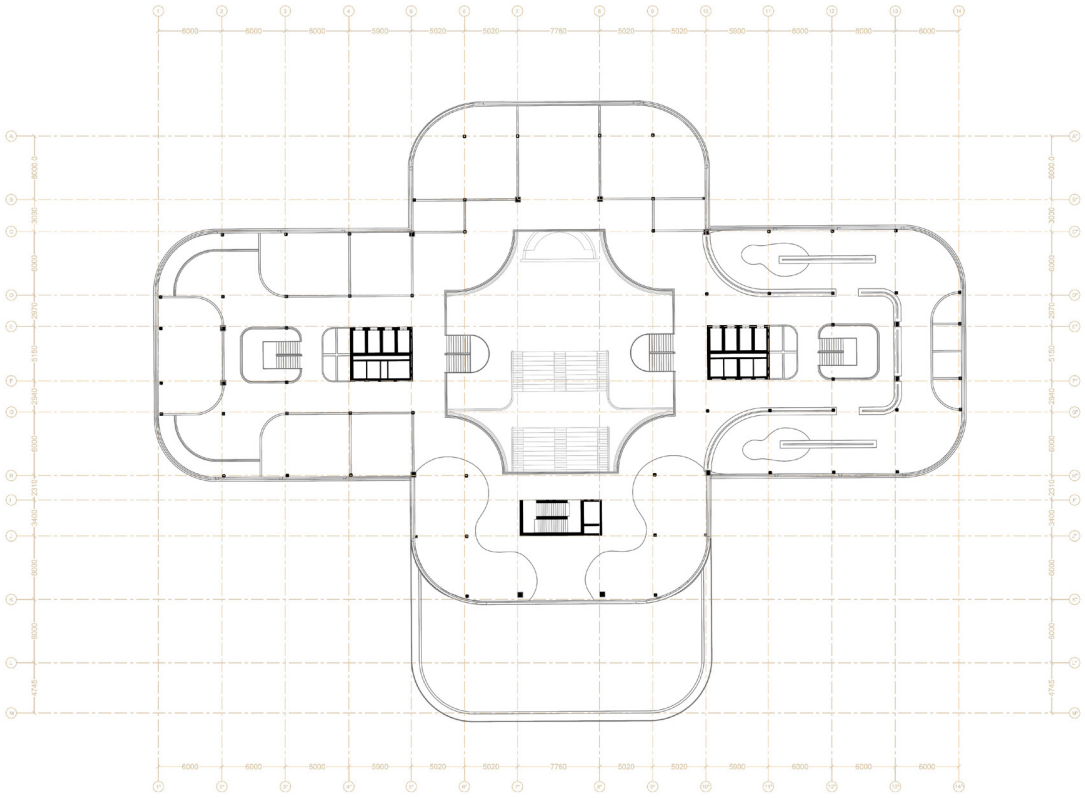

Add a function
connect the different layers
Add an experiance
Connect it to the existing route from the station


Den Haag Centraal
S100
Uilebomen

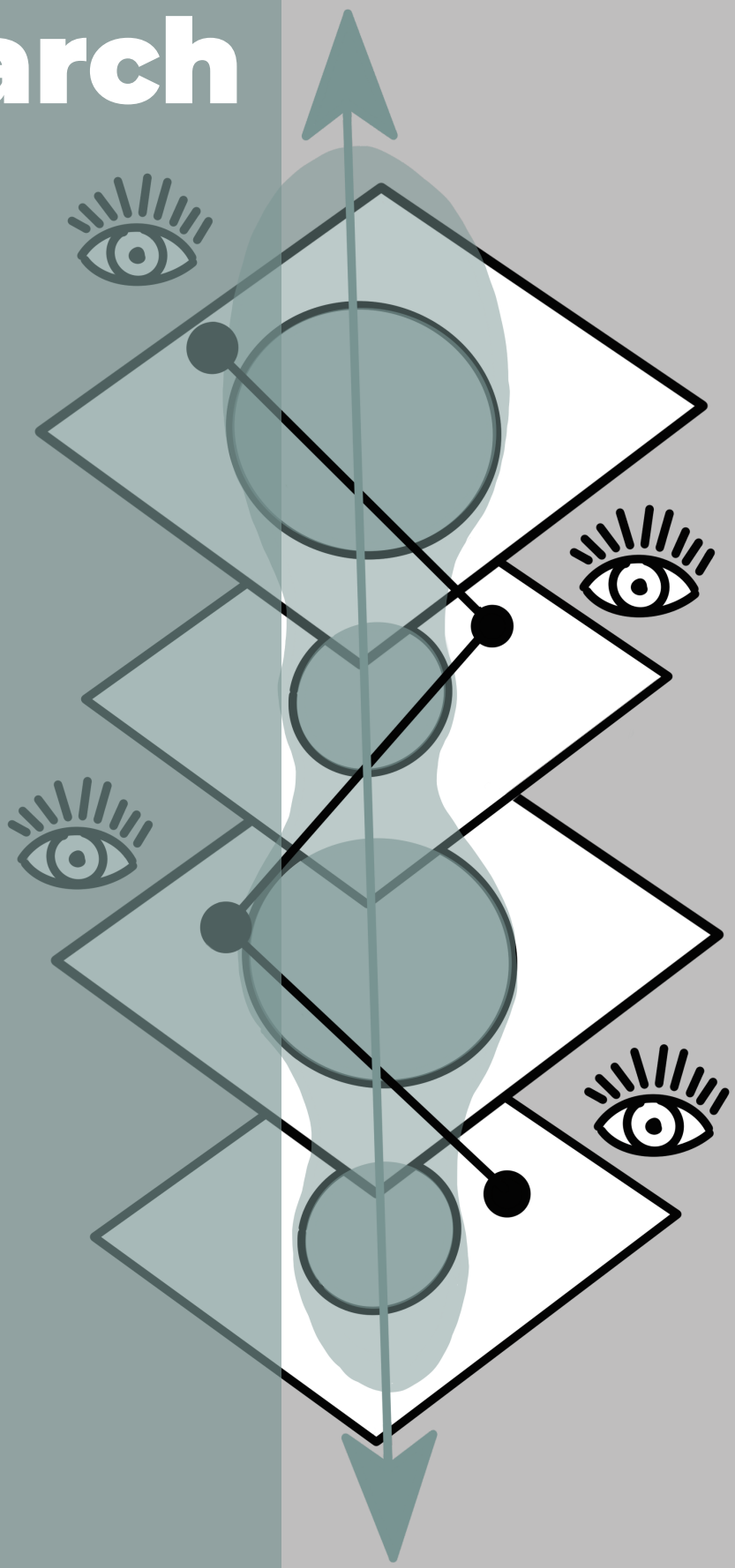








Research



Research

WHAT HAS BEEN RESEARCHED?

With all the information and constraints mapped out, I began my research into how to realize my ambitions. This research involved analyzing reference projects during my design process, based on the following principles:

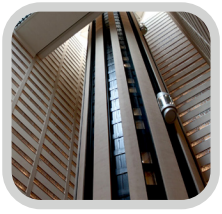
- How to design for and stimulate interaction?
- How to create interaction by flexibility in the design?
- How to create interaction by contrast?
- How to create interaction by connecting the different layers?

REFFERNCE PROJECTS et al.

Delft Centraal Station,

in Delft
Francine Houben
2013- 2016

MARRIOTT MARQUIS,

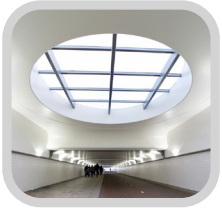


in New York
John Portman
1982- 1985

KJ Plein Powerhouse,

in Den Haag
Angelo Haemers
2024- 2027

DE WEENATUNNEL,

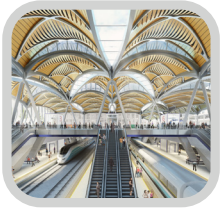


in Rotterdam
Maarten Struijs
2006- 2009

IBM Powerhouse,

in Amsterdam
Nanne de Ru
2023- ongoing

HS2 EUSTON STATION,



in London
Grimshaw Arch.
Concept

PARKROYAL HOTEL,

in Singapore
WOHA
2011- 2012

AMARE,

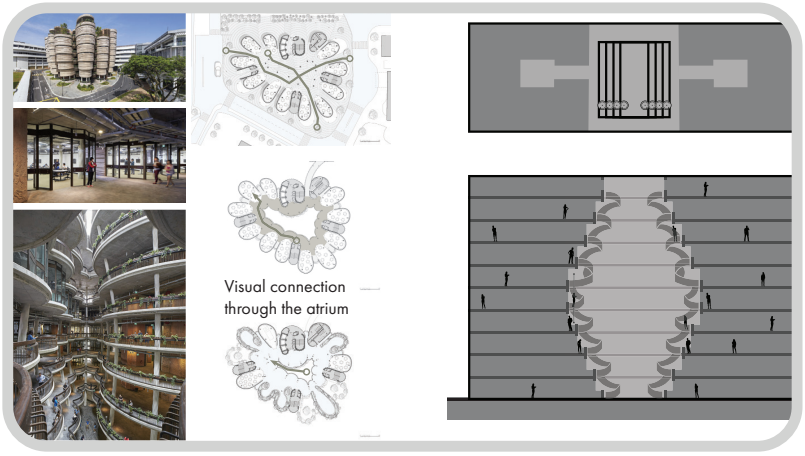
in Den Haag
Thomas Offerman
2017- 2021

FORUM GRONINGEN,

in Groningen
NL Architects
2011- 2019

HUIS VAN DE STAD,

in Gouda
Jos van Eldonk
2010- 2012

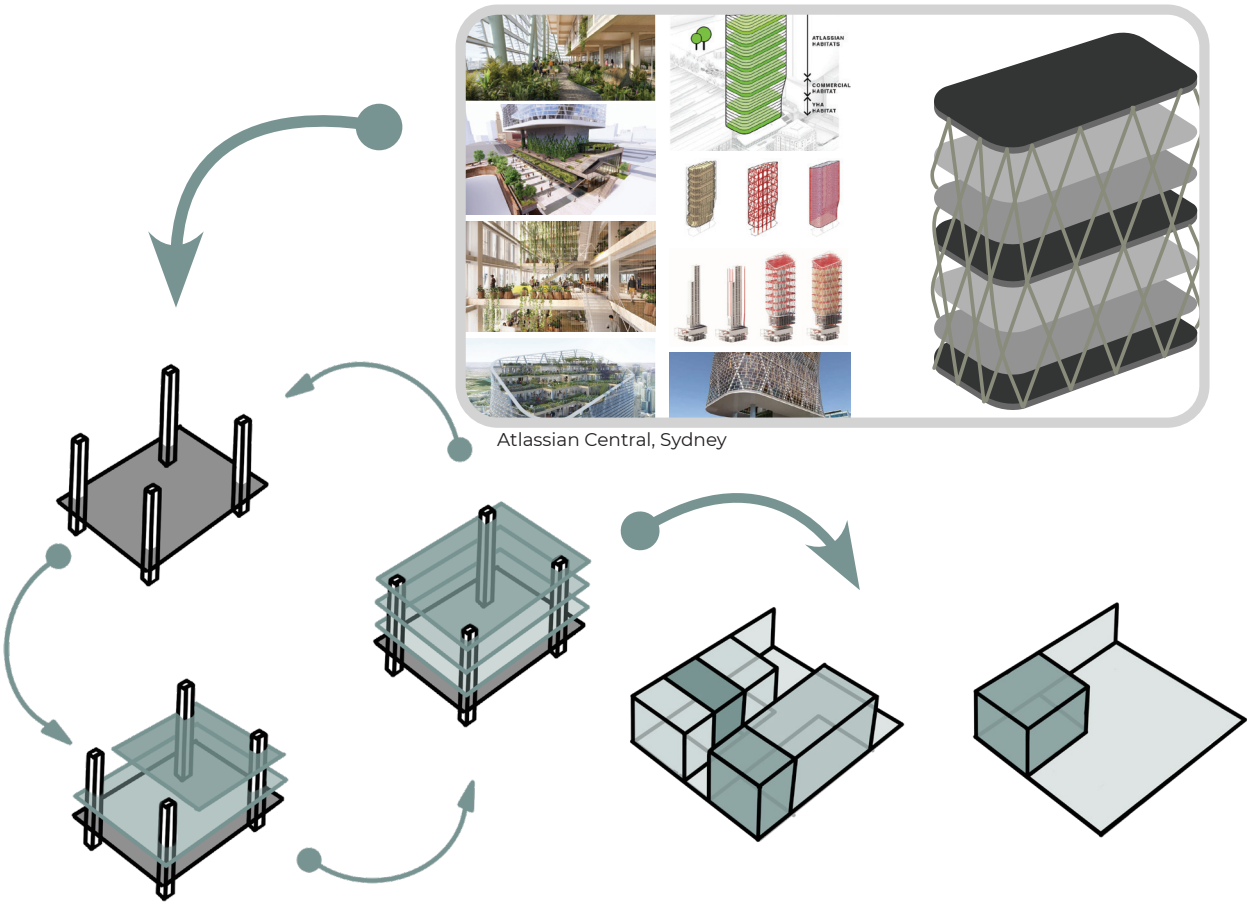


Learning Hub, Singapore

How to stimulate interaction?

The project The Learning Hub in Singapore stood out to me with how they simulated interaction in the design. The entire design was focused on creating this interaction. They achieved this by implementing:

- A central navigation system with all the functions around this system.
- Creating visual lines of sight with a curved atrium in the center.
- Diversely placing the different functions within the building.

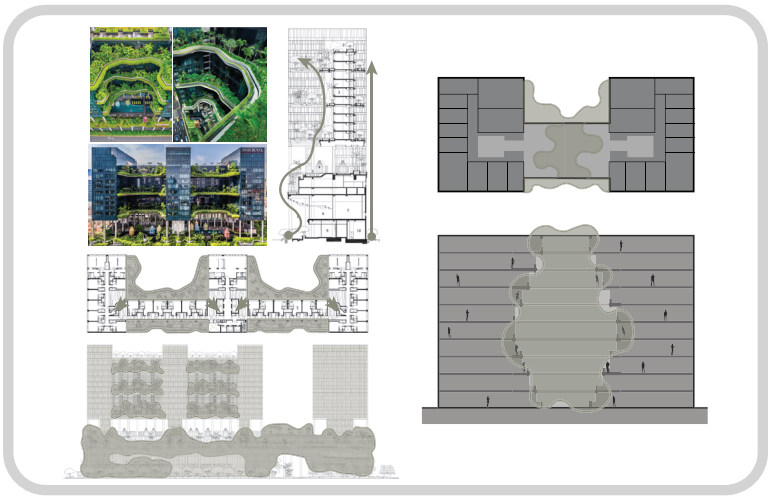


Atlassian Central, Sydney

How to create interaction by implementing flexiblity?

The project Atlassian Central in Sydney introduced me to a building structure system that offered extreme flexibility within the building. It allowed for the creation of large voids anywhere in the building and adaptation over time. This was achieved by implementing:

- A main steel load-bearing structure with steel floors.
- Implementing a wooden substructure between the steel floors.
- Implementing an exoskeleton for facade stability and thereby flexibility in the floorplans.

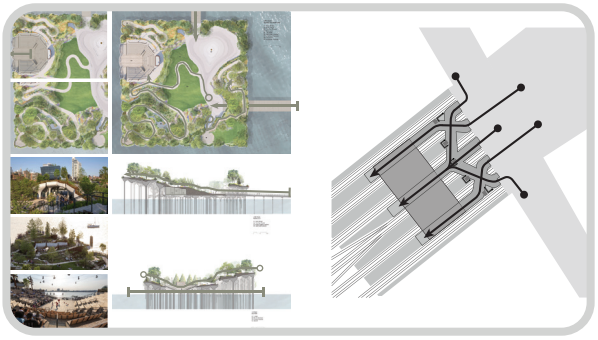


ParkRoyal Hotel, Singapore

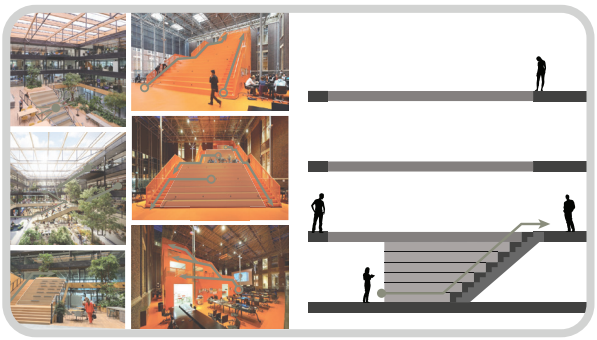
How to create interaction by contast?

The Royal Park Hotel project in Singapore visualized the ambition to create a contrast between focused work functions and communal interaction functions within the building. This laid the basis for implementing the contrast between organic nature and sleek architectural volumes. This was achieved by:

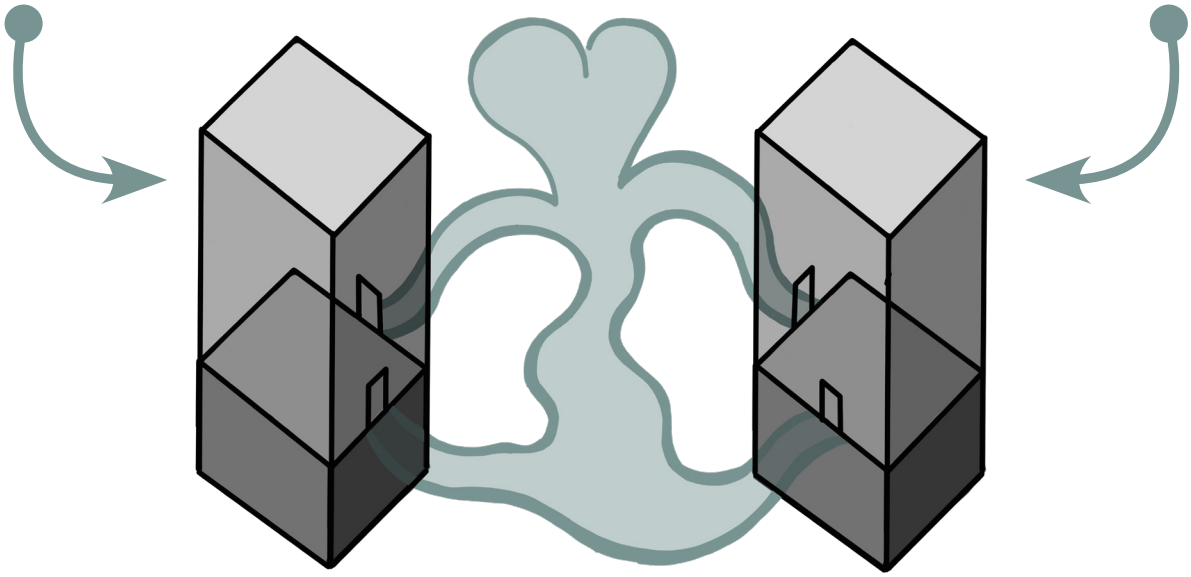
- Utilizing organic shapes for the greenery between the buildings.
- Using straight and rigid contours for the building volumes.
- Giving the greenery purpose by implementing walking routes through them.



Little Island park, New York



Next Delft, Delft



How to create interaction by connecting layers?

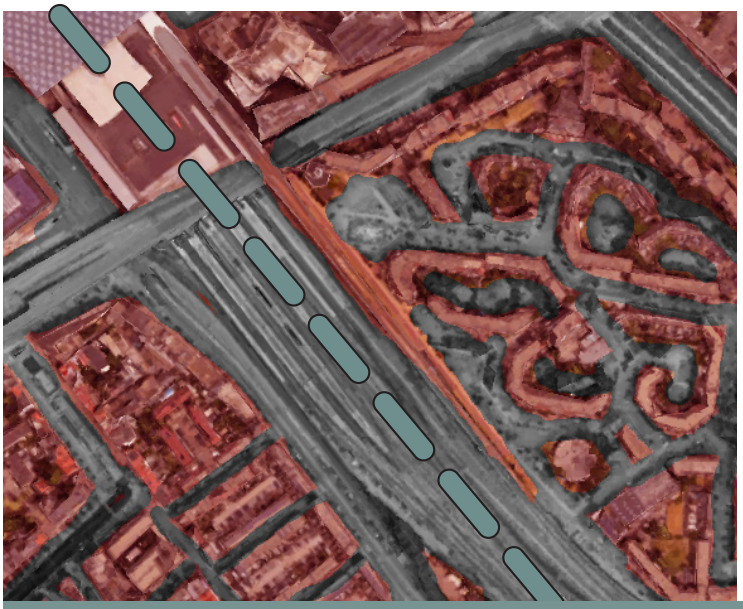
The projects Little Island park in New York and NEXT Delft in Delft exposed me to a way of connecting different levels. They elevated this navigational route to a place to stay and actively use. This was achieved by implementing:

- Adding functions along the navigational route.
- Implementing different lines of sight along the route.
- Weaving the navigational route among the different functions.

2 WORLDS

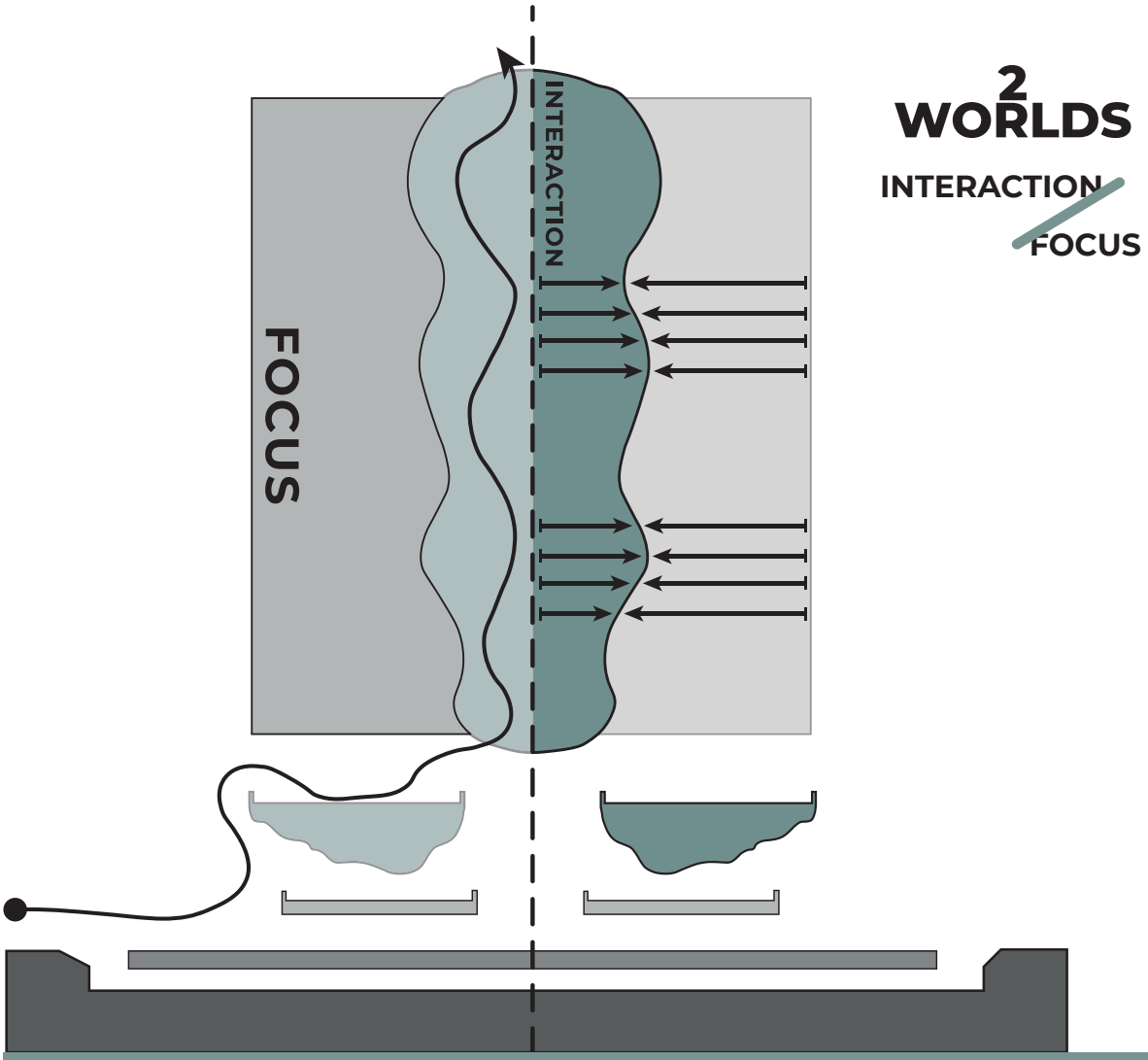
INTERACTION

FOCUS



What are the results?

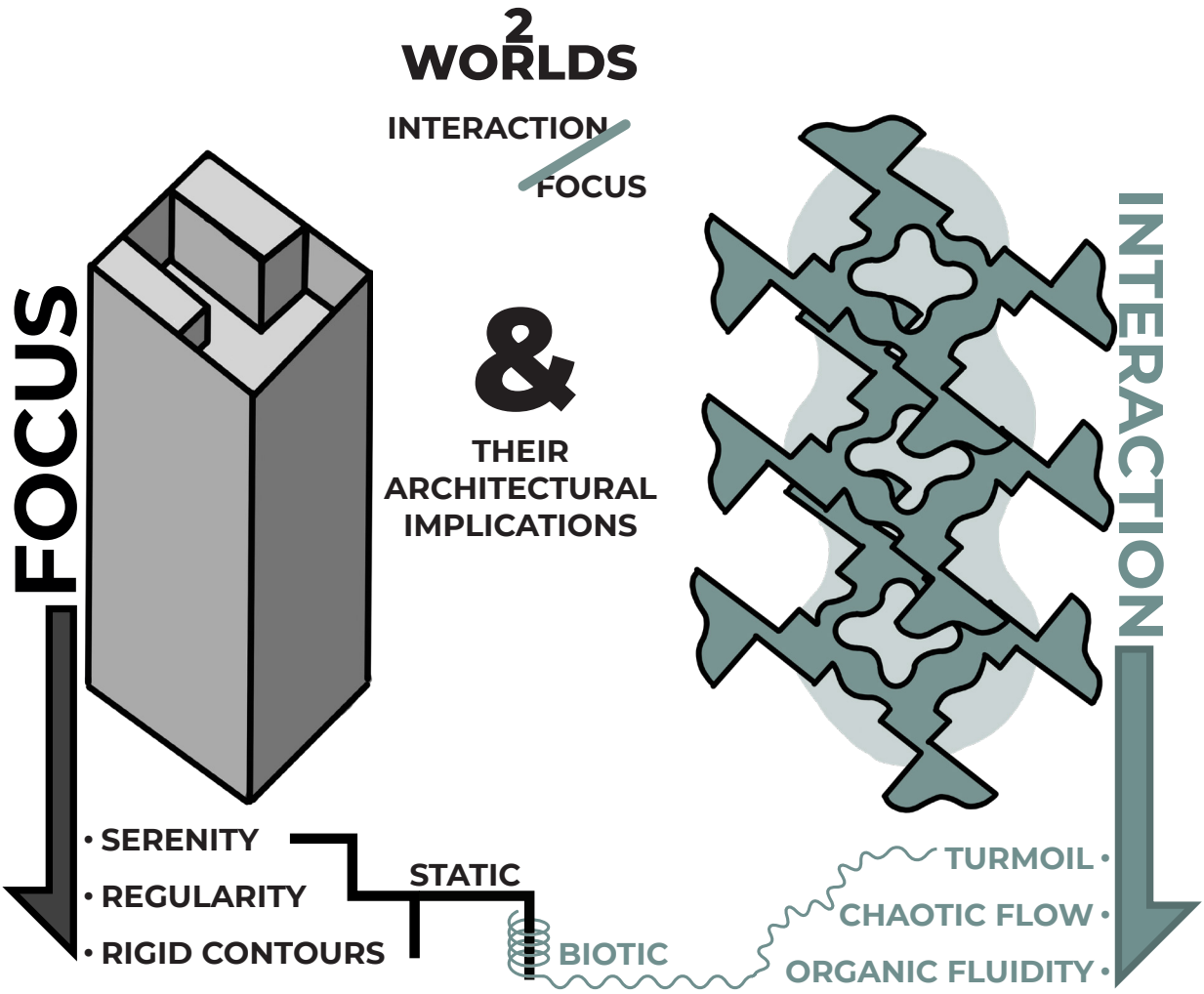
- The research into the plot revealed a very strong axis that resonated with me. This axis divides the two neighborhoods and acts symmetrically due to the train tracks. This is a concept I carried forward into the design.
- With the campus' function shifting towards more interaction due to digitalization, it creates a juxtaposition between two worlds: interaction and focus. I aim to express this collision of opposing worlds in the design.
- The interaction between different levels and their proper connection is crucial. Adding a park and tunnel layer to the existing infrastructure aims to facilitate a seamless flow between the train platforms, the flyover, and the building layer.



2 WORLDS
INTERACTION
FOCUS

Expressed in an architectural design prinicple diagram

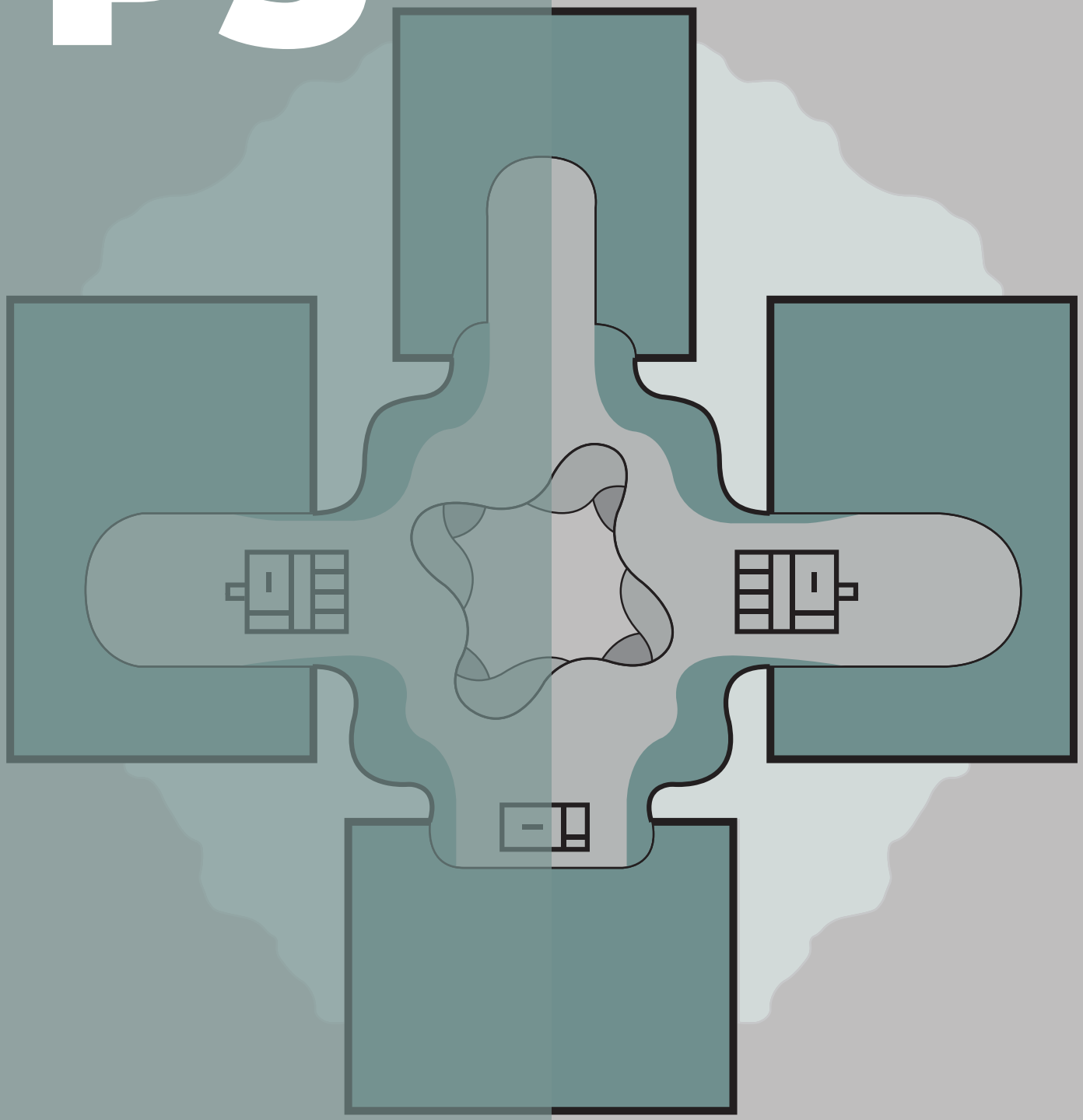
- Designing for interaction by connecting the different layers both visually and physically.
- Designing for interaction by incorporating nature into the building.
- Designing for interaction by integrating flexibility to accommodate a diverse range of functions within the building.
- Designing for interaction by introducing contrast in the architectural expression of the building.

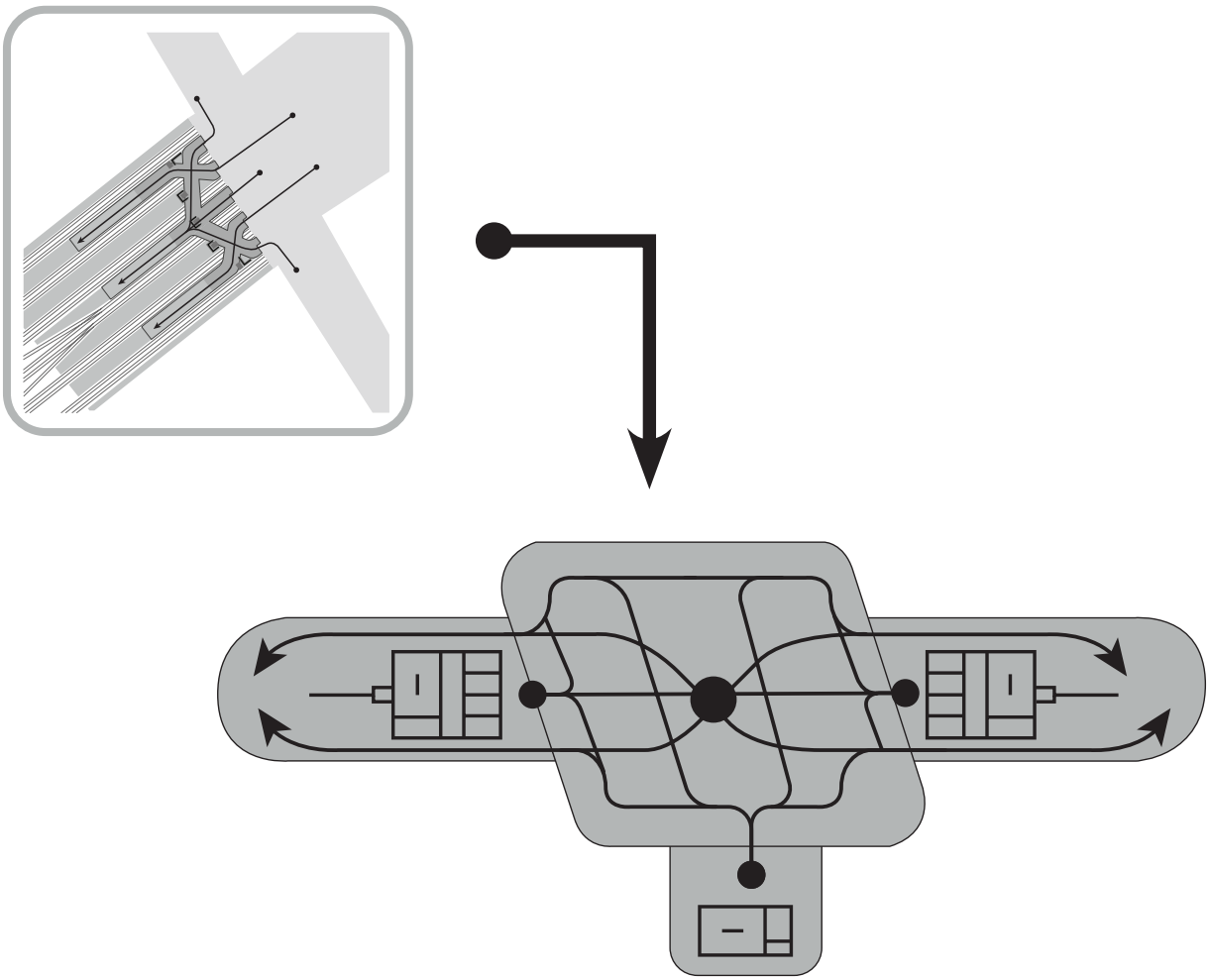


Architectural design language

- The juxtaposition between the two worlds of focus and interaction is expressed through distinct design languages.
- Focus is characterized by serenity and regularity, embodied in rigid contours and a sleek appearance.
- Interaction is portrayed through turmoil and chaotic flow, featuring organic fluidity and a biotic appearance.
- These two worlds converge at various intersection points, where biotic shapes grow around the static forms.

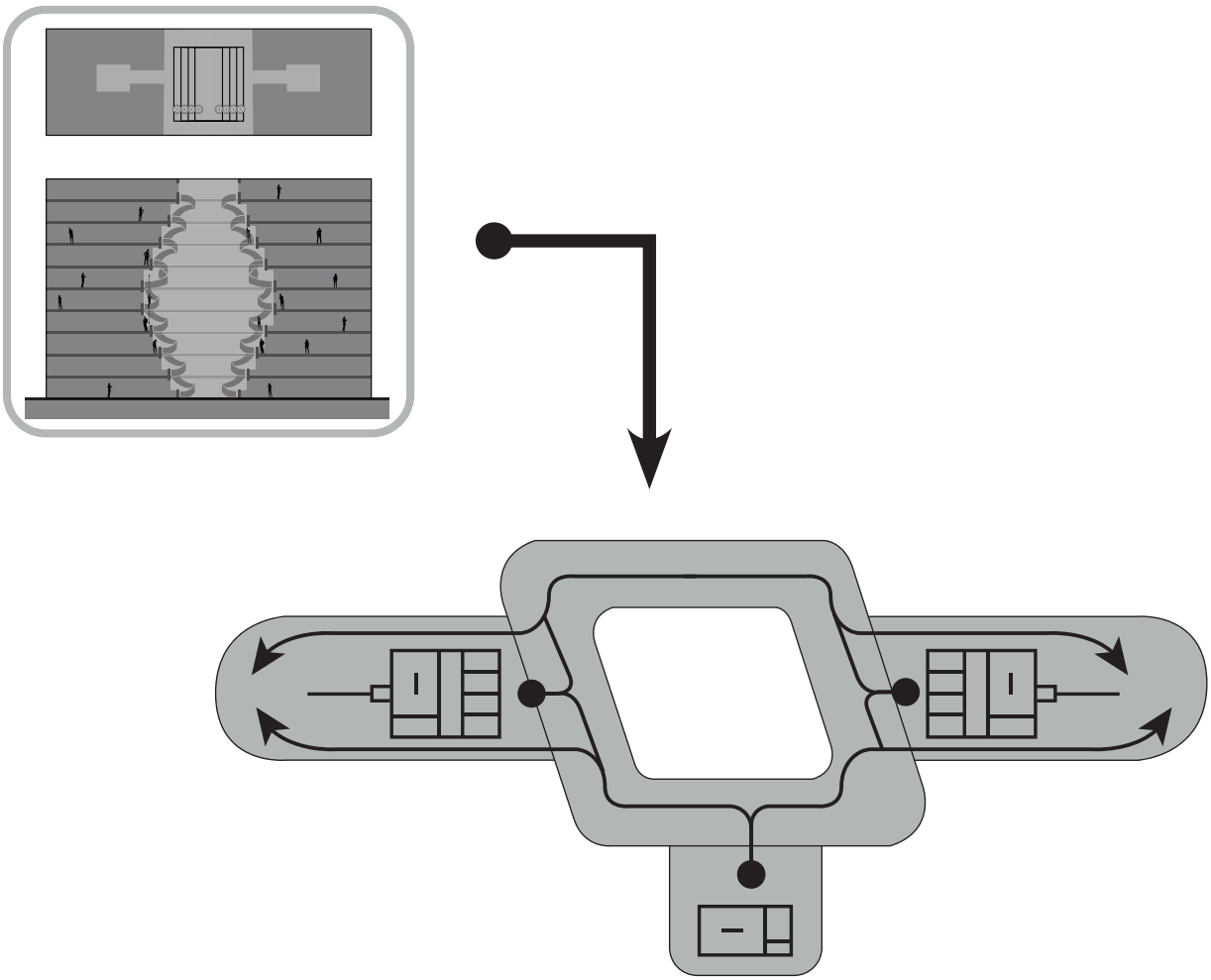
P3





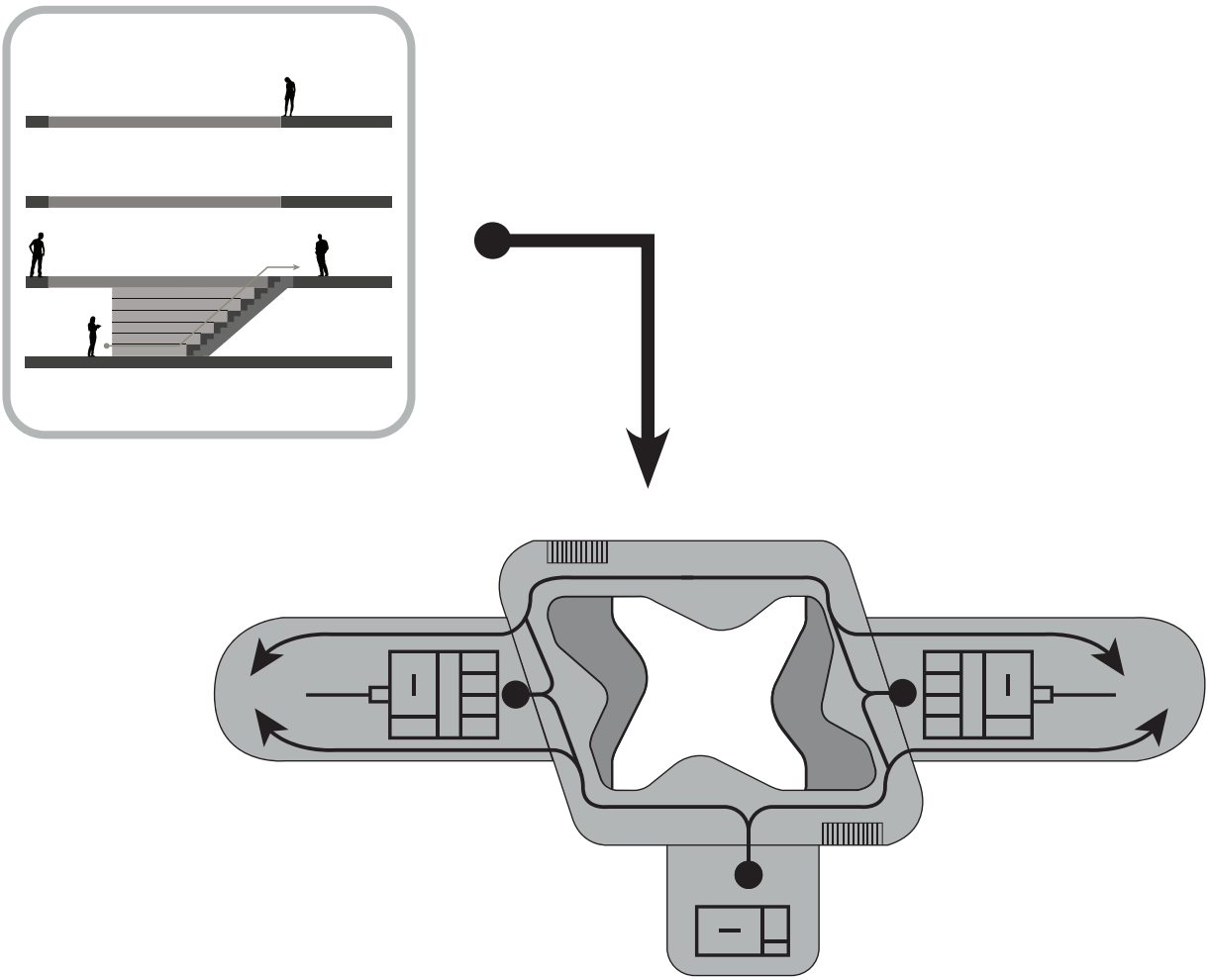
Connection horizontal

Based on the findings from the research and the design of the elevated park, the routing through the building was also of great importance and started with creating different walk routes.



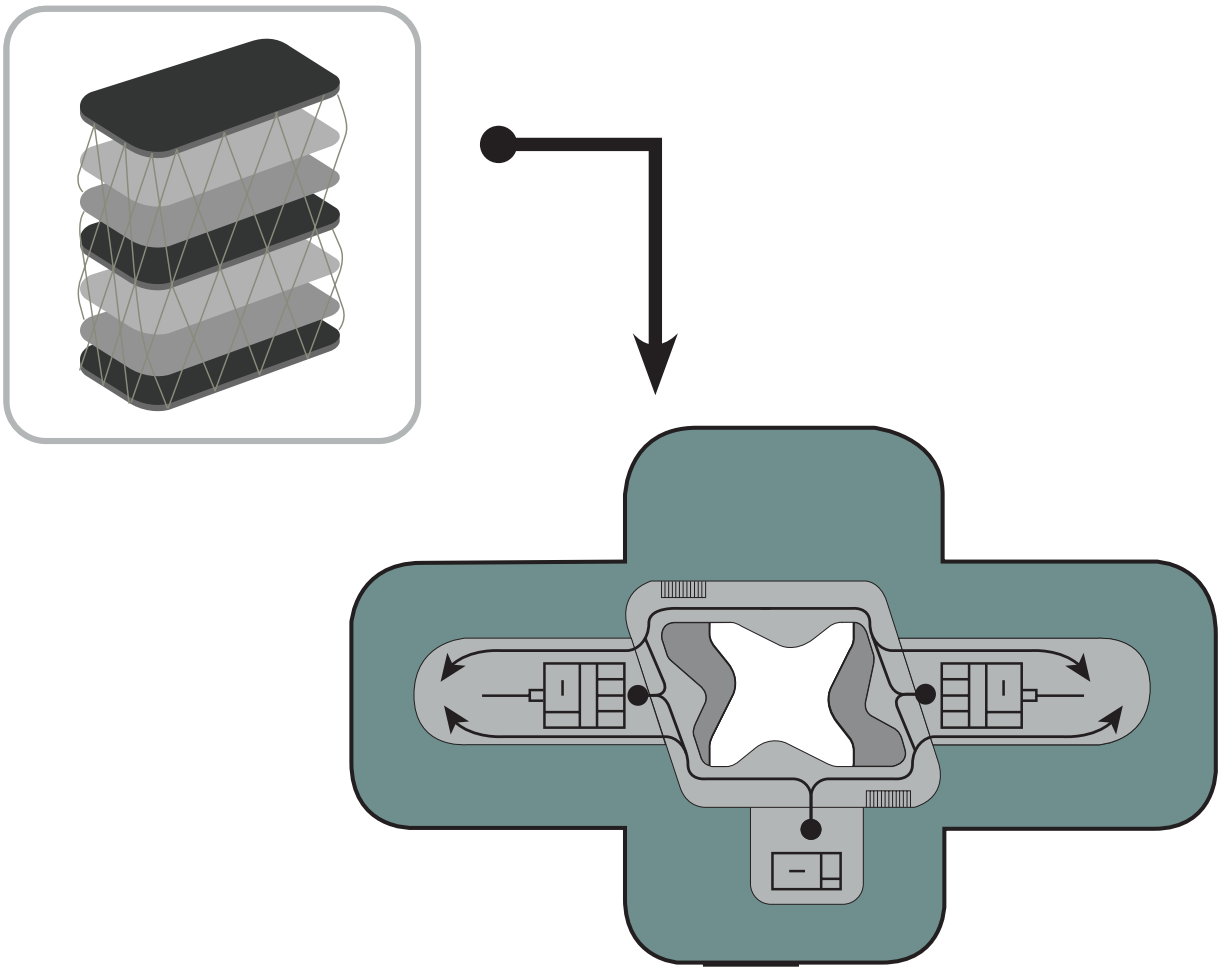
Connection vertical

Based on the research of connection and interaction the approach of connecting the different layers visually through a big atrium stood out to me. This allowed to create the link between the different layers and adds a function around the walk routes that I created.



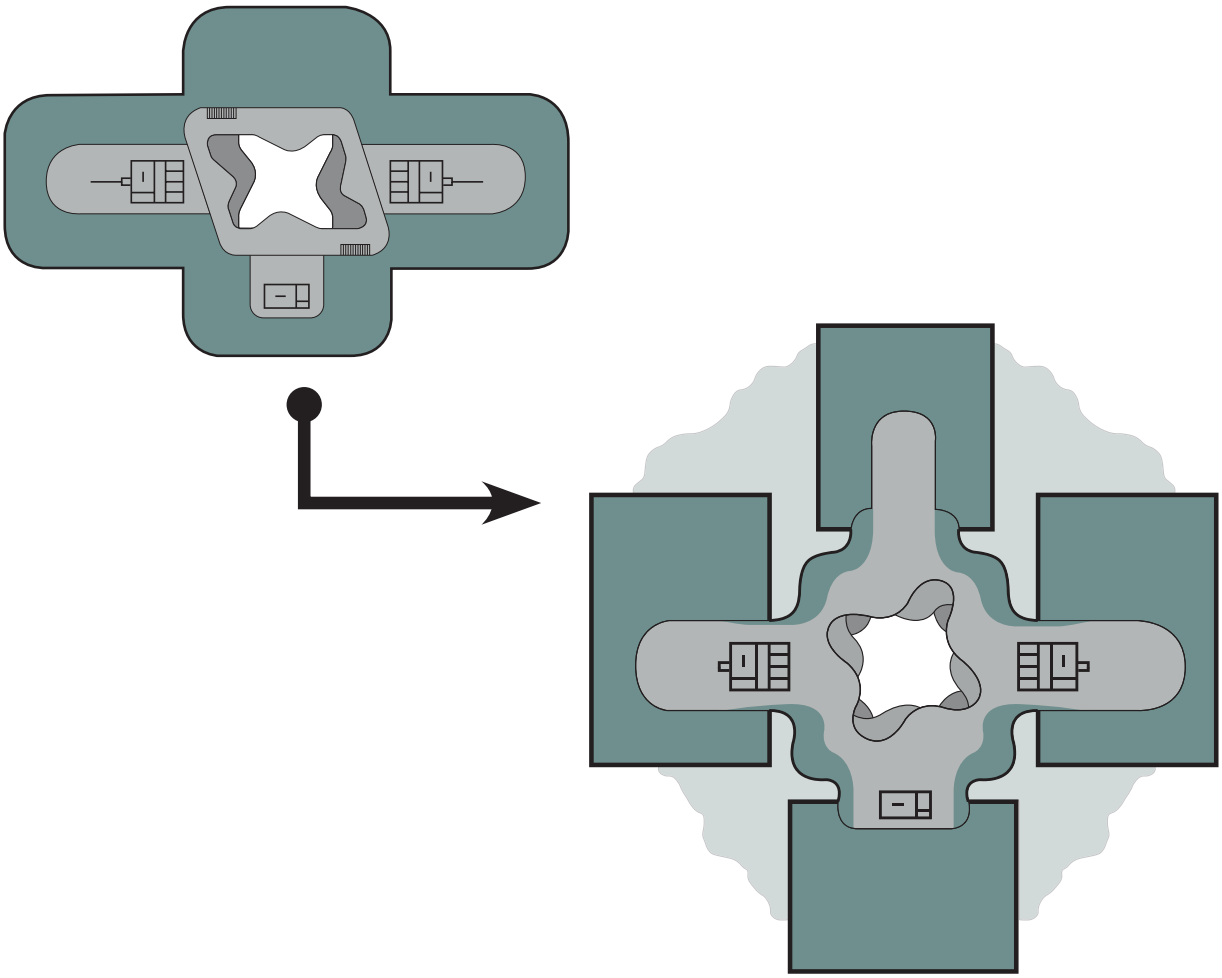
Creating interaction

Based on the research on how to create the interaction, the addition of functions and visual connections helped to emphasize the space in between. And this space in between is where the connections and interaction needs to be facilitated.



Creating flexibility

From the research into how to create flexibility in the floor plans an approach of utilizing steel floors with a wooden sub structure in between stood out since it created very open and flexible floor plans since the wooden structure could be very open on one layer and then very closed of on the other since the wood structure only carried 3 floors.

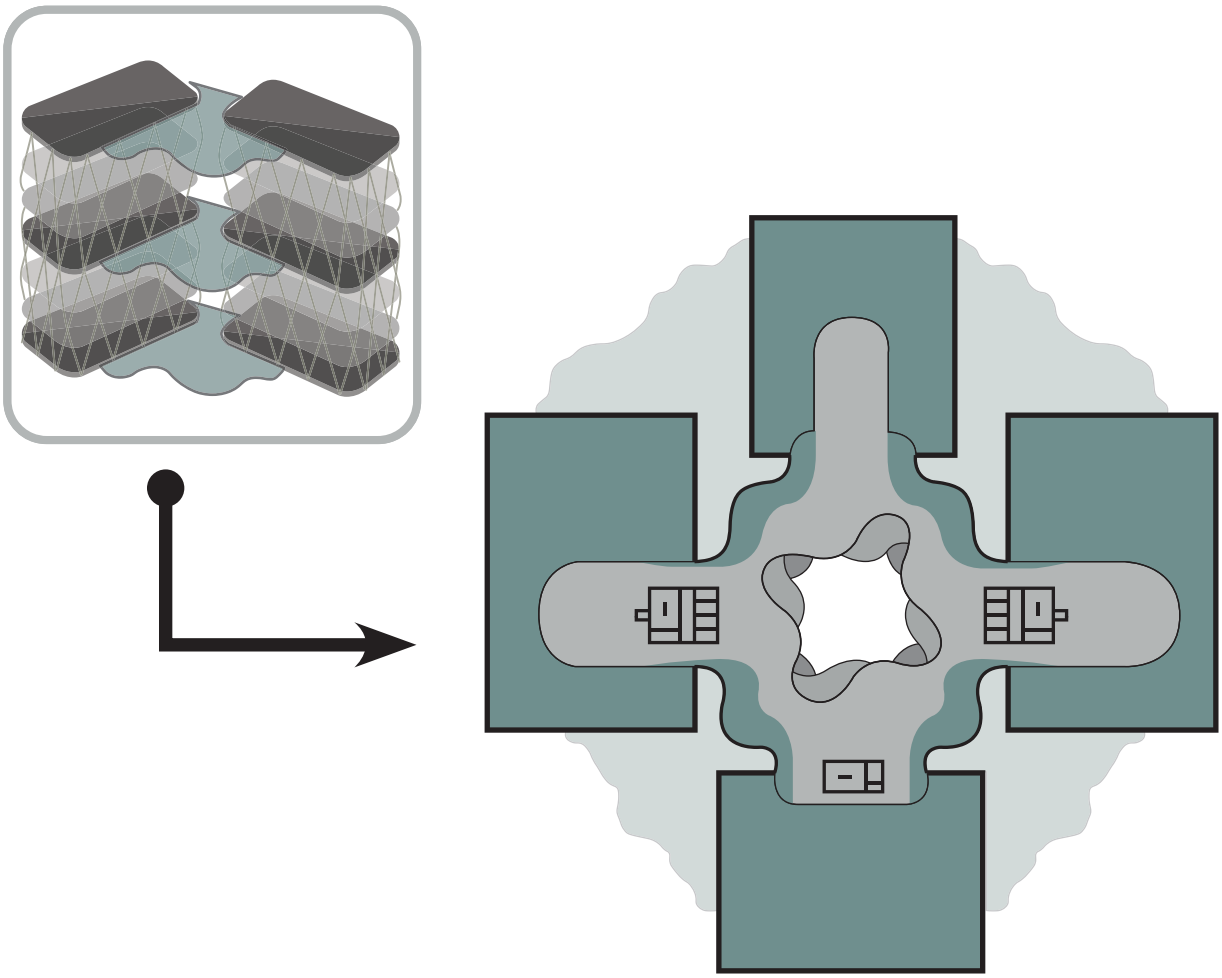


Design approach

My old approach was to try and create the organic atrium in the form factor that I already created. This caused a lot of problems where the shape of the atrium created unwanted and nonfunctional spaces for the rest of the building.

With this new approach I gave the organic atrium the space it needed to be shaped and formed in a way that it would function like intended. And after this form was created the desired function with their according measurements would be attached to this form factor.

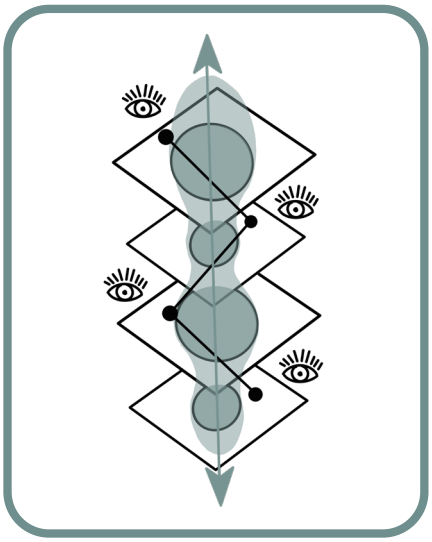
In this approach the clean vs organic balance emerged by creating clean corporate buildings suppressing the organic hart of the building.



Creating biodiversity

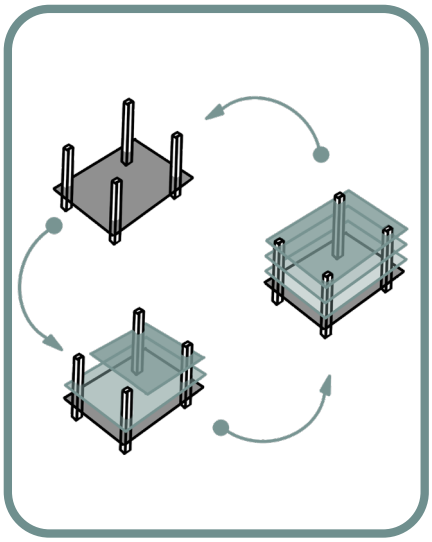
As mentioned before the corporate buildings and the organic heart of the building visualize the clash between the focused working and the interaction function of the campus. With this orgic heart facilitating the circulation functions and adding the interaction and in the corporate buildings focus and calm is achieved. With this organic heart breaking out of these corporate buildings with the green terraces that provide qualitative green space and add to the biodiversity.

The Design Staples



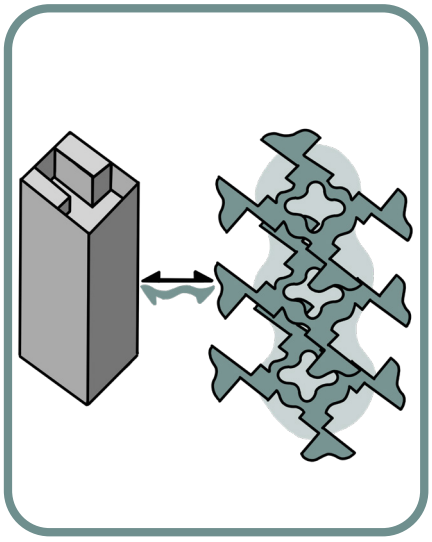
INTERACTION BY
CONNECTION

The basis



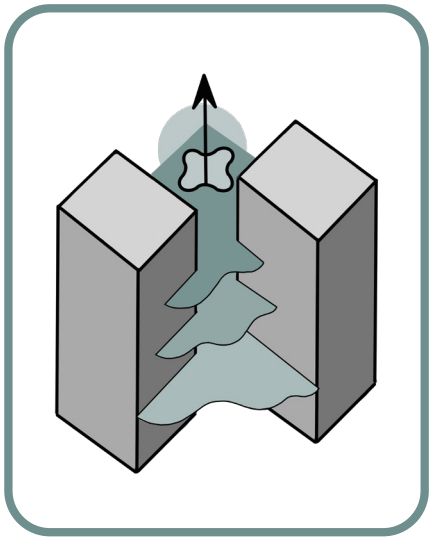
INTERACTION BY
FLEXIBILITY

The backbone



INTERACTION BY
CONTRAST

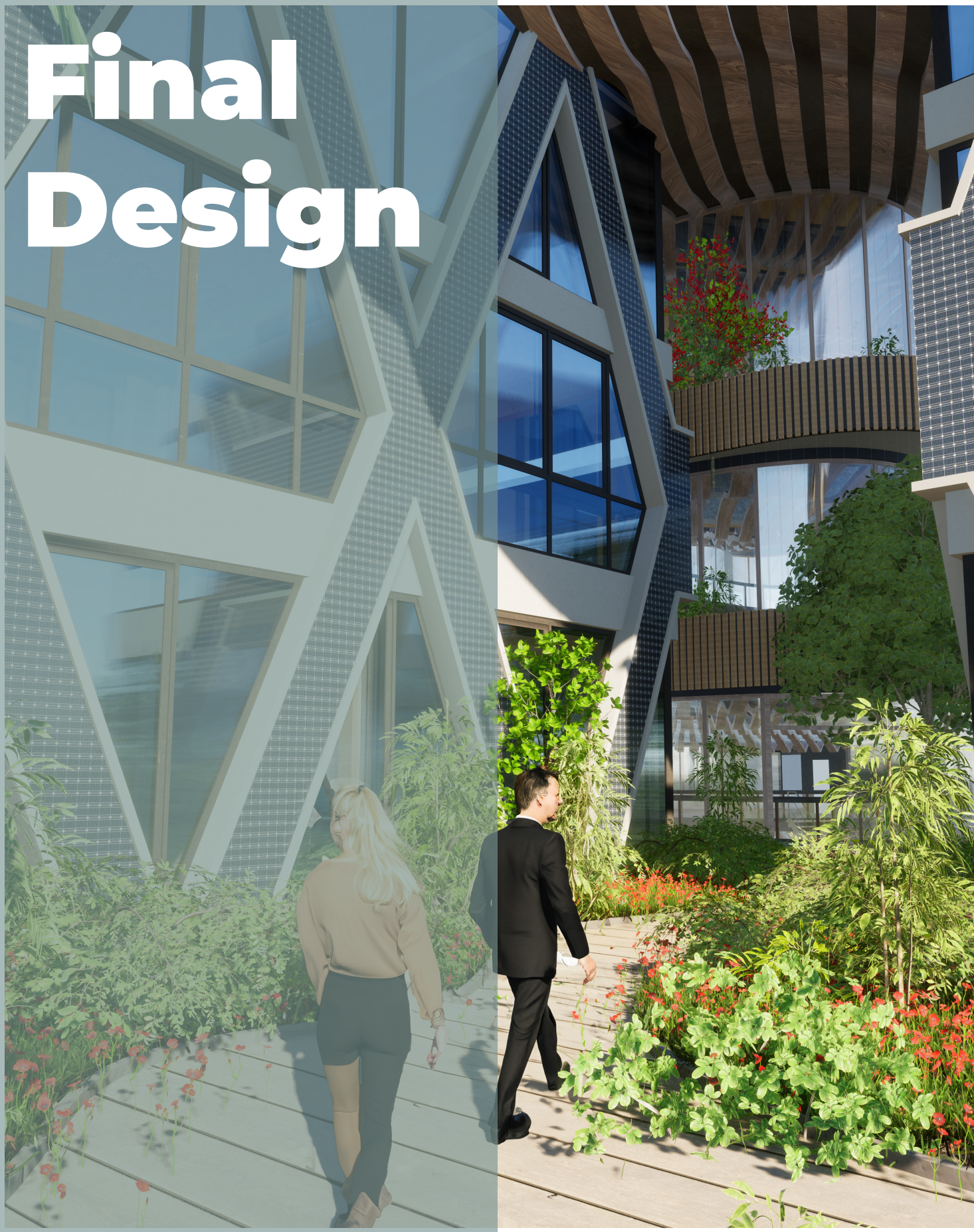
The concept

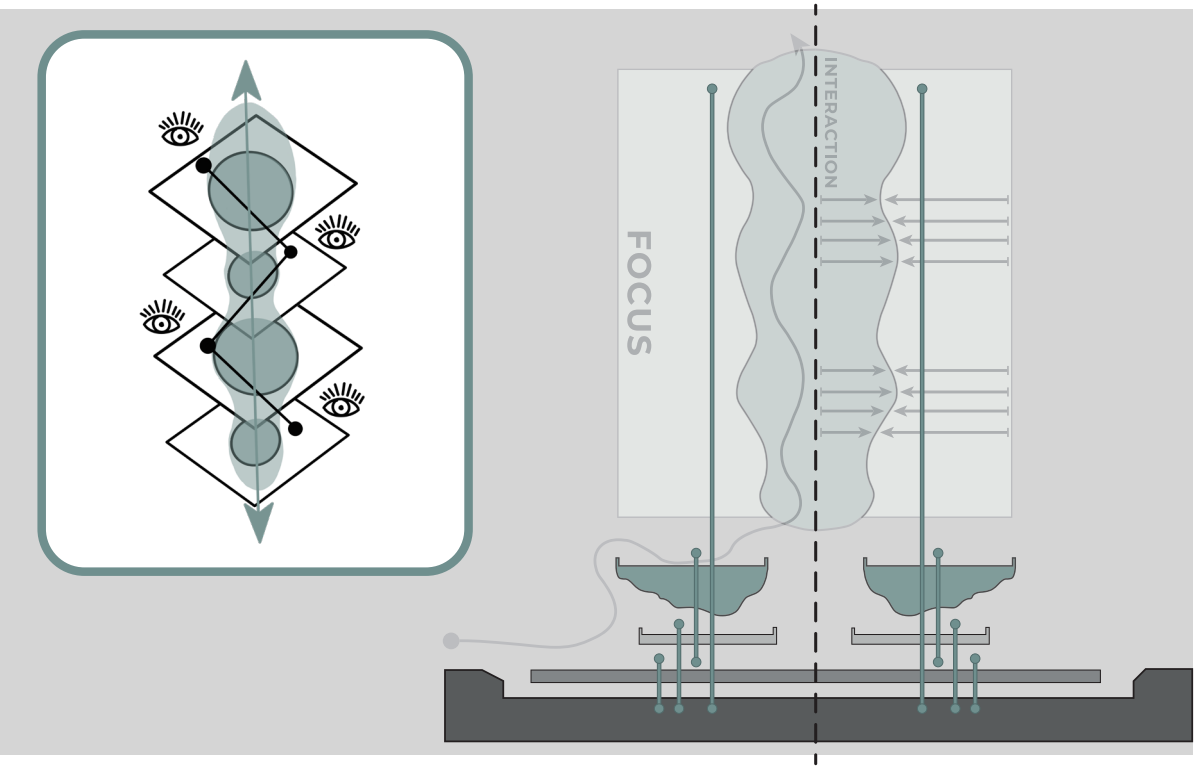


INTERACTION BY
NATURE

The experience

Final Design



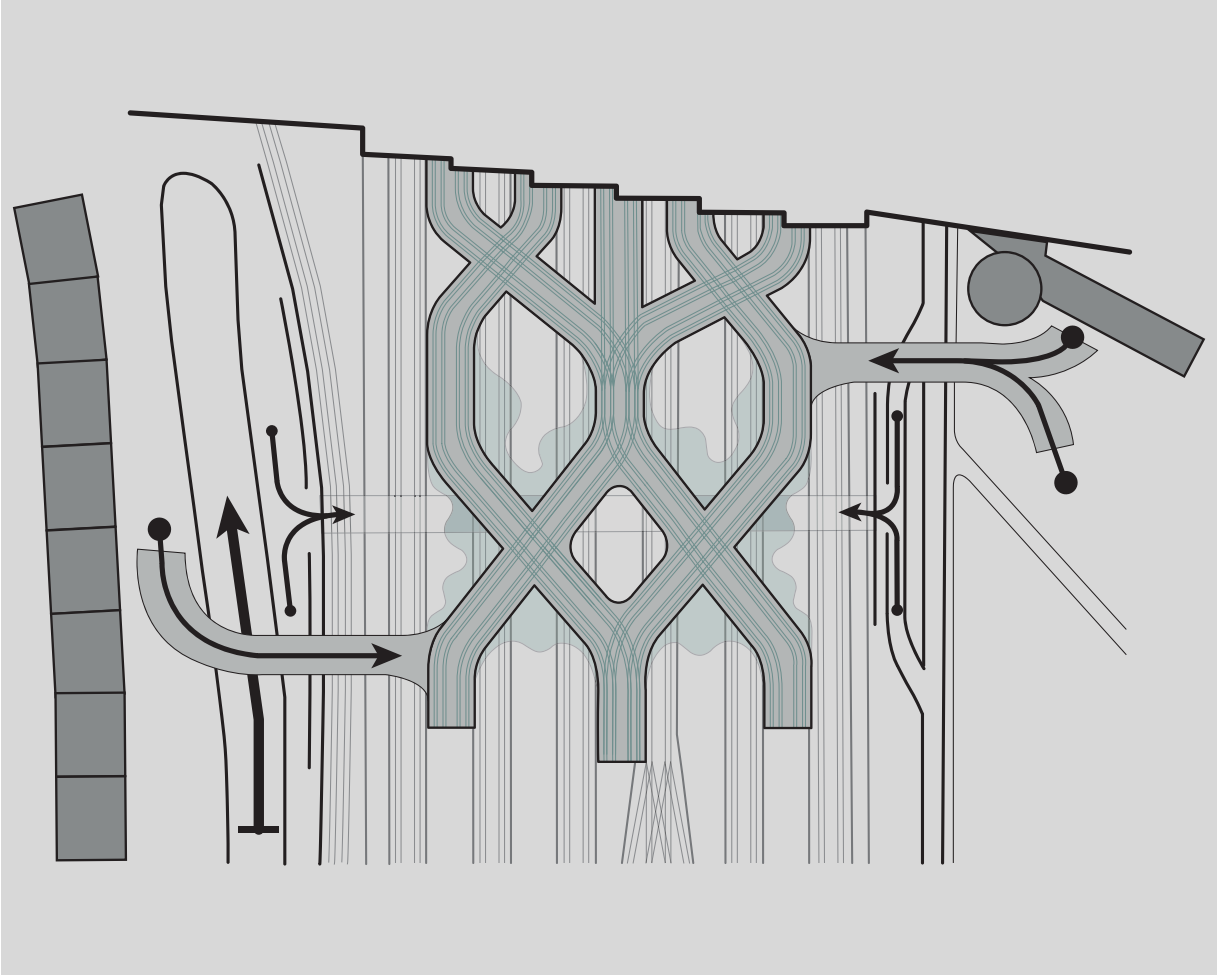


INTERACTION BY

CONNECTION

The basis

Connection lies at the basis of the design for how people interact with the building.

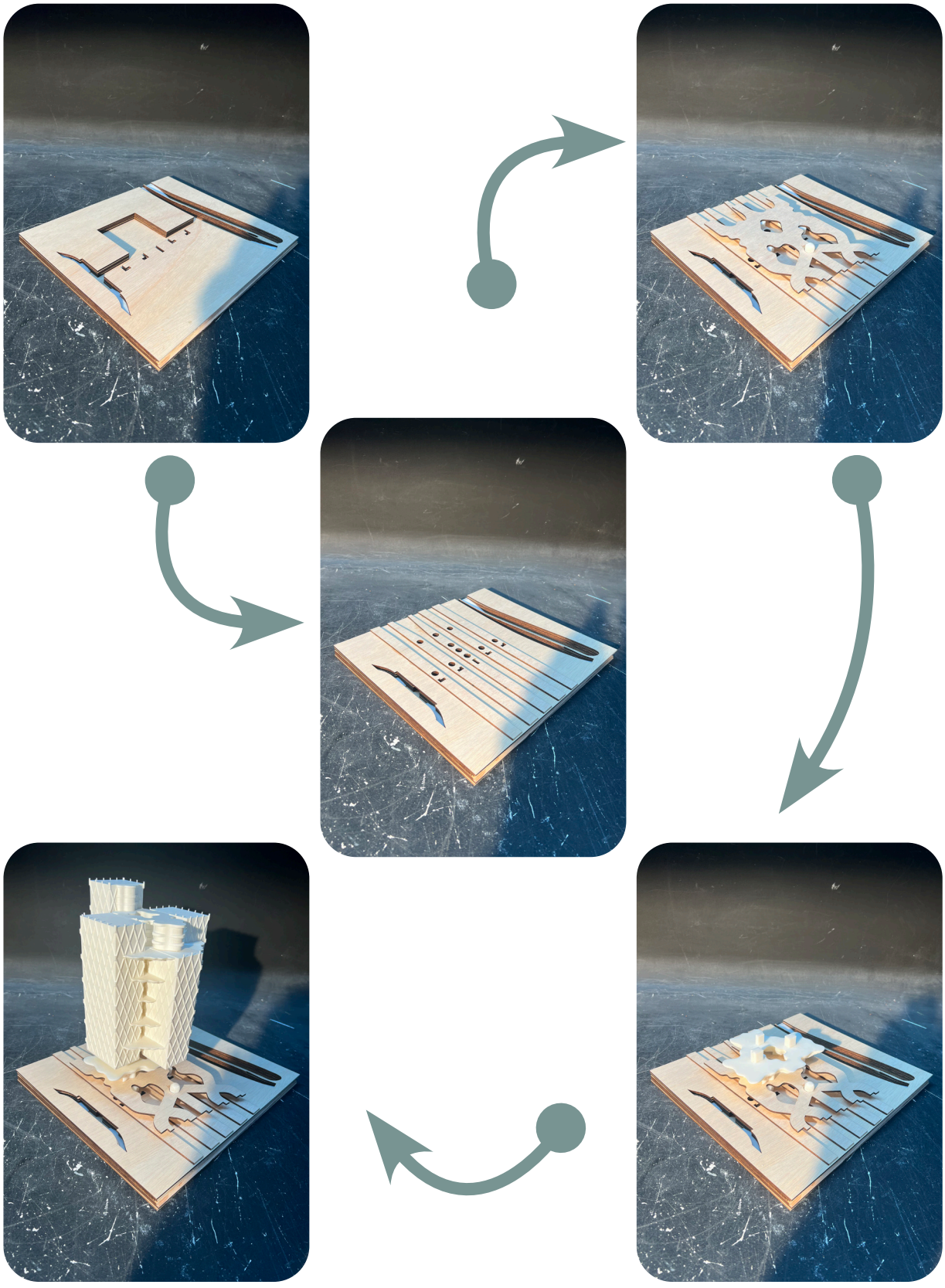


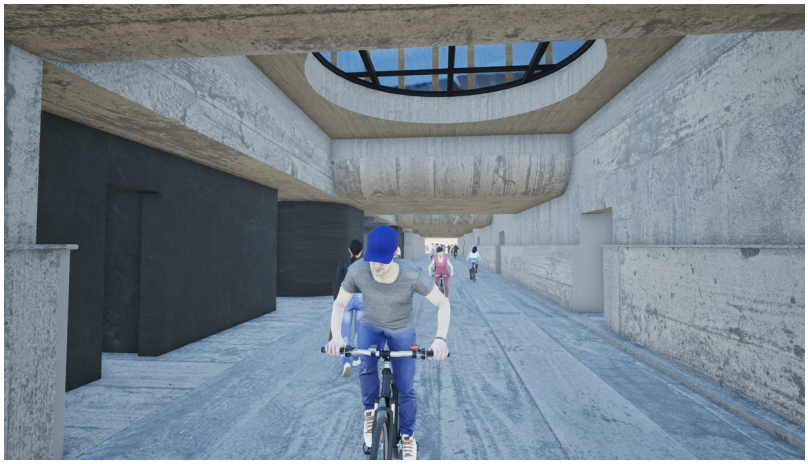
First Layer

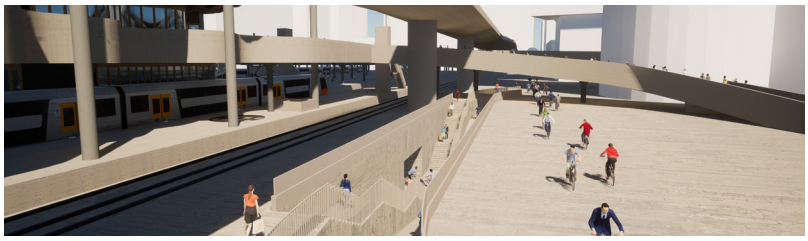
A new system

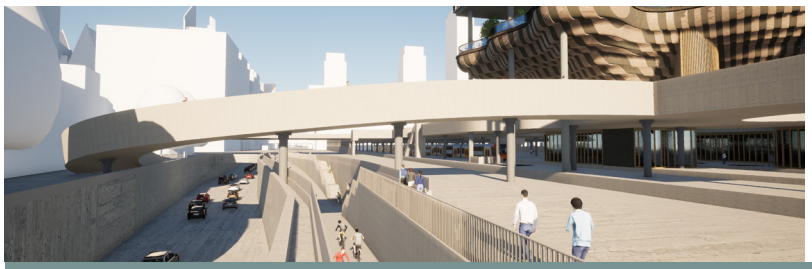
Based on the analysis of the area, the missing connection between the two neighborhoods on either side of the train tracks was identified. To address this barrier, the following actions have been taken:

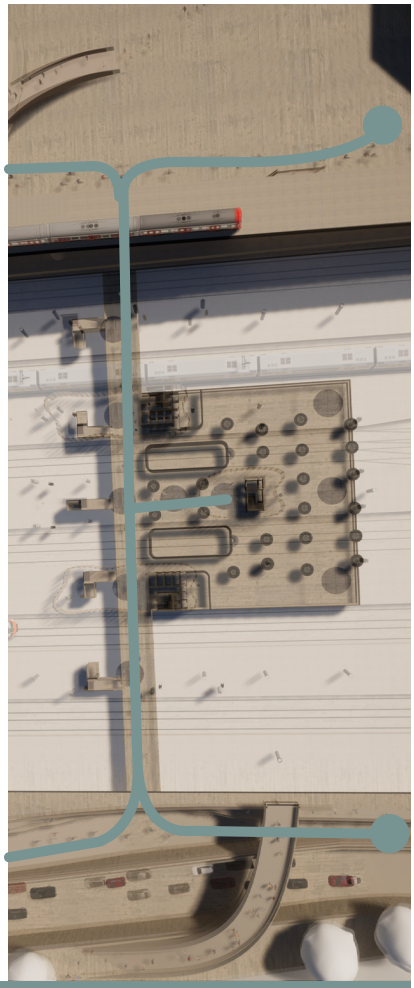
- Creating a tunnel underneath the plot and train tracks to establish a direct connection between the neighborhoods.
- Developing a public walkway over the train tracks, integrating functions and walk routes within the elevated park.











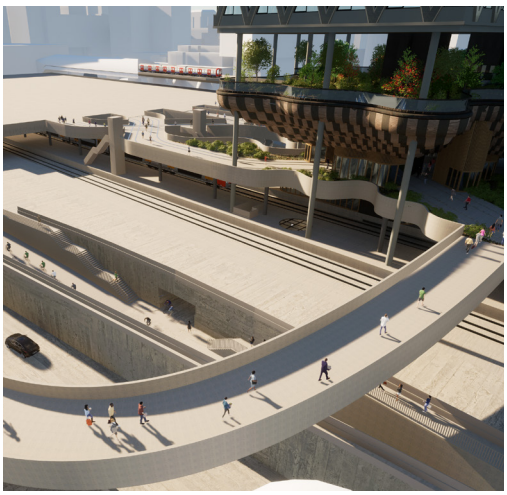
Connection

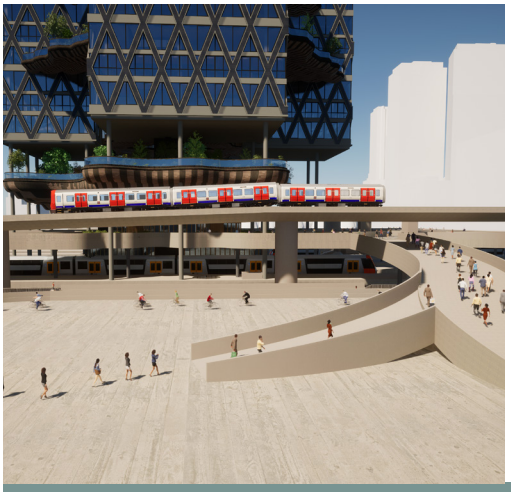
The connecting axis

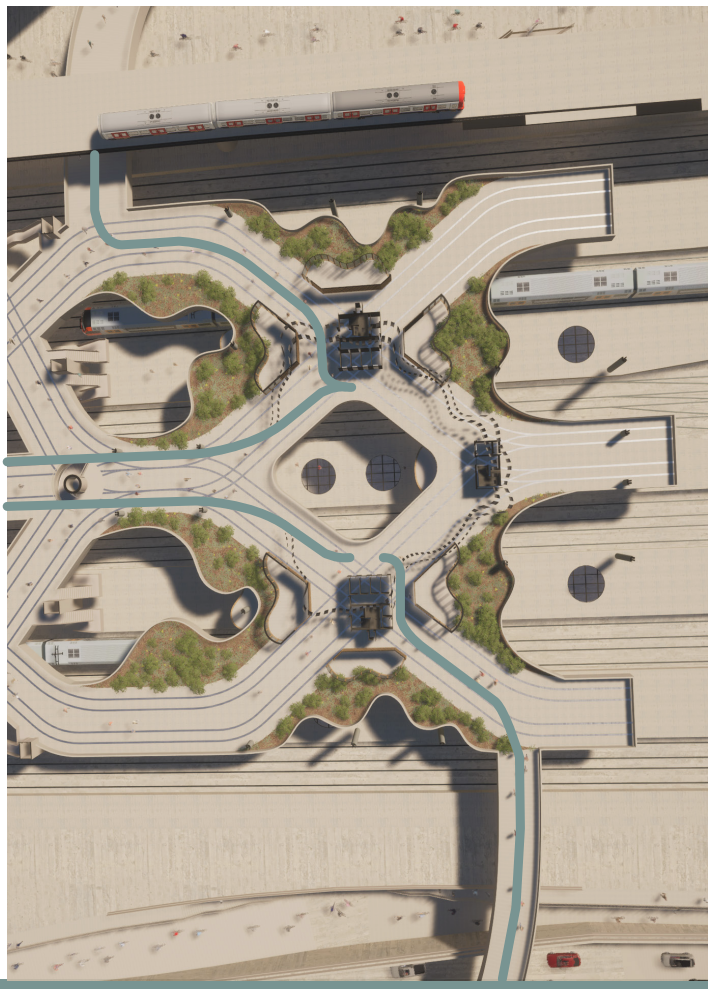
The tunnel is achieved by creating downwards sloping ramps on both the left and right sides of the train tracks, forming a bike path leading down to the tunnel level.

This tunnel runs underneath the project building and connects to the cores of the building for navigation.

Connected to this bike tunnel underneath the project building is an underground bike parking facility to facilitate bike storage for building users.







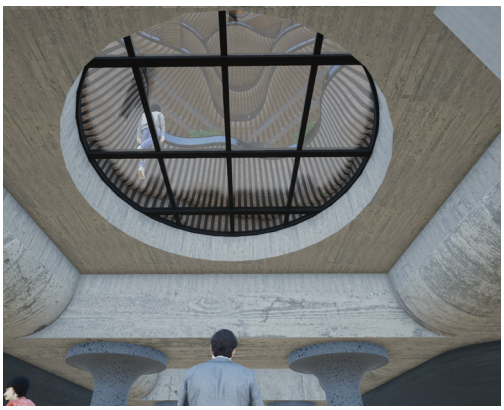
Connection

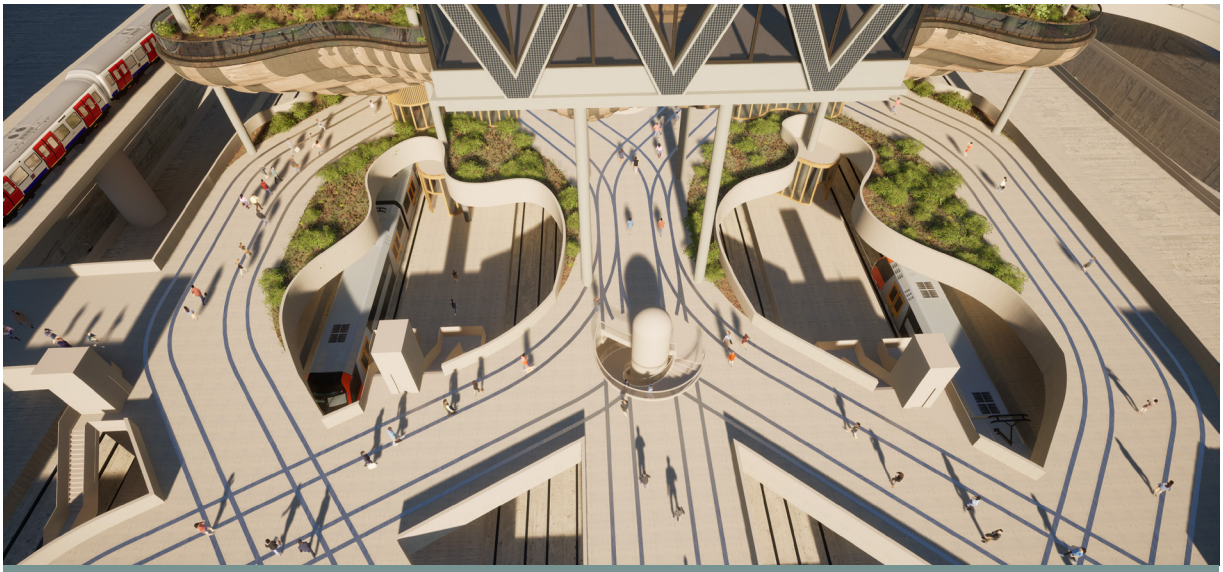
The connecting axis

The public walkway over the train tracks is created by extending the existing car tunnel to accommodate a walkable slope crossing the road and tram, reaching the elevated park. It fits underneath the existing metro line by hugging the circular flat.

This design creates walkways to destinations over the park, with the building situated at the center.

The building itself does not obstruct these walk routes, as it is elevated from the park, allowing for future expansions over the tracks without obstruction.





Visual connection

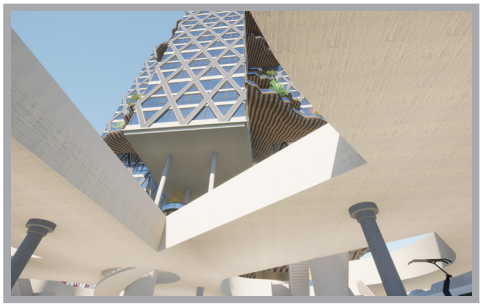
Connecting layers

Due to significant height differences between the various layers, physical connections struggle to link them coherently. To emphasize the connection of these layers, visual connections have been established between them.

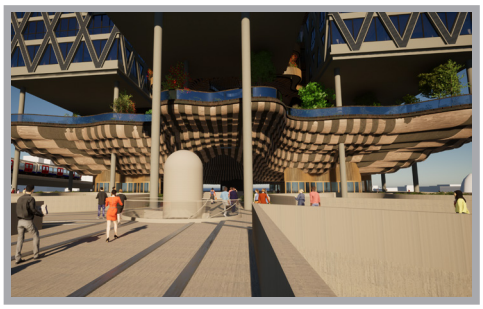
To enable these visual connections, the design of the elevated park had to be modified to create a central viewpoint linking the lowest layer, the underground tunnel, to the atrium of the building.

Connecting layers

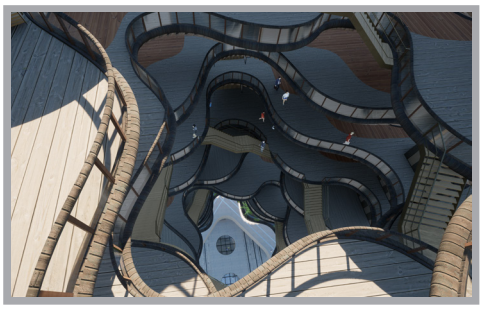
The Tunnel



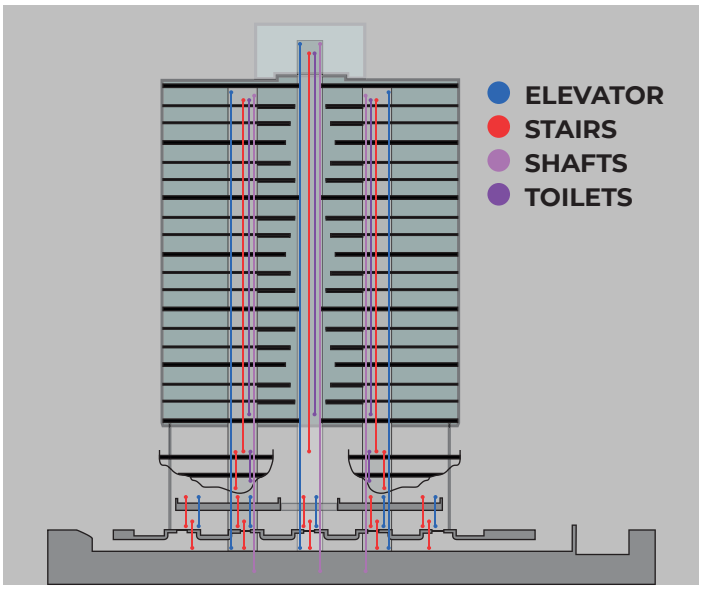
Train Platforms

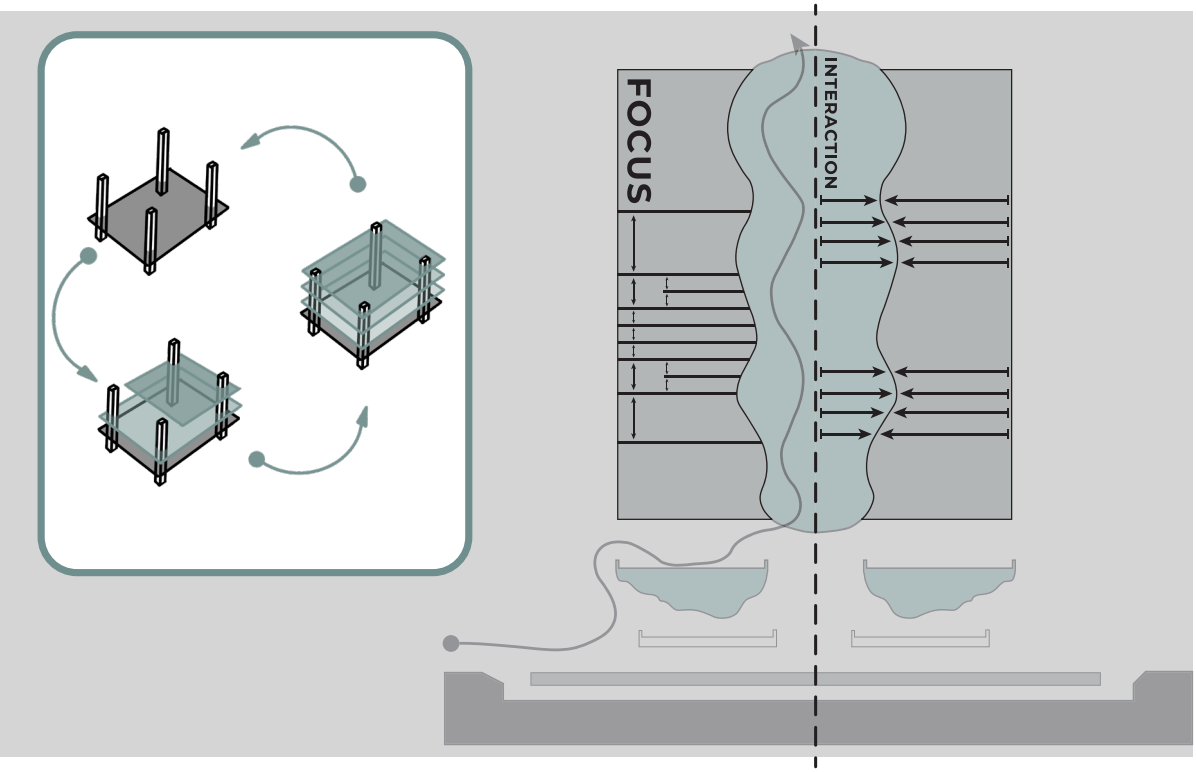


The elevated park



The Building



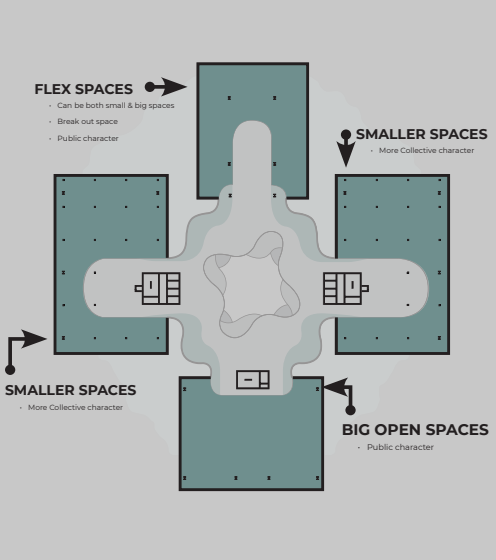


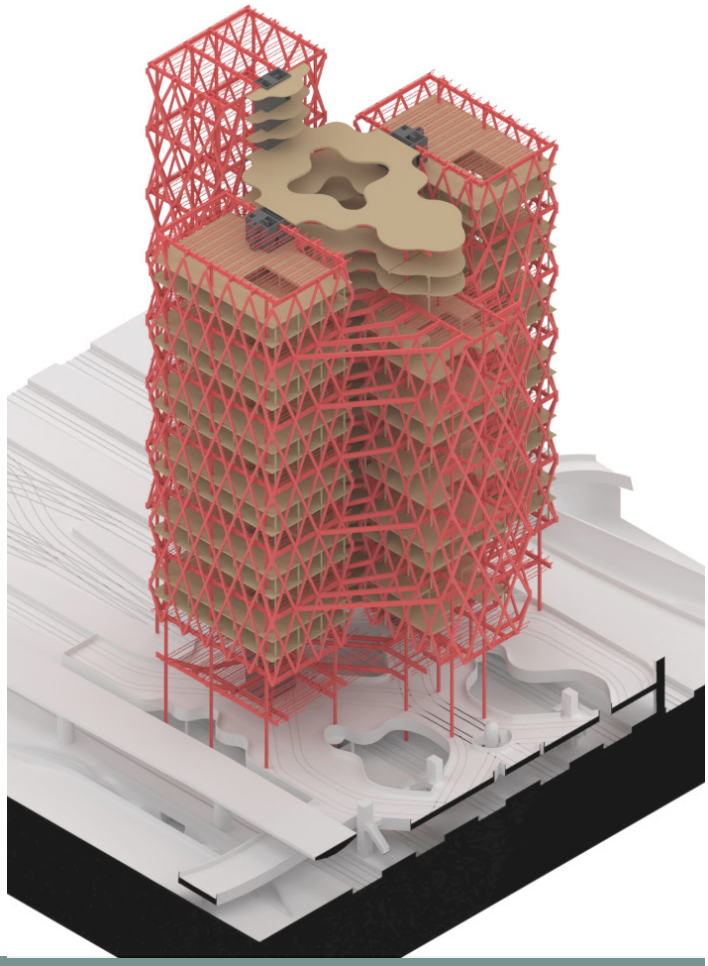
INTERACTION BY

FLEXIBILITY

The backbone

A flexible building accommodates a diverse set of functions that can evolve over time.





Building structure

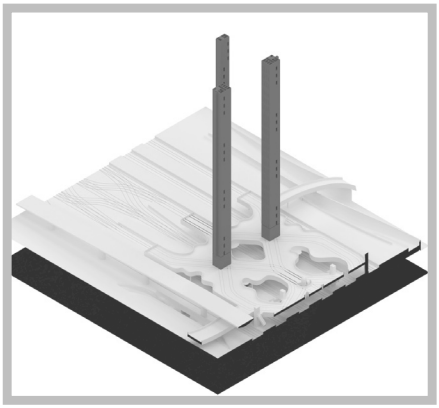
The backbone

The construction principle of the building is heavily influenced by the constraints of the train tracks. This, combined with the approach to create different space sizes within the building, led to a rigid steel pancake-style main load-bearing system.

This allowed for as few columns as possible reaching the ground level. Within this steel main load-bearing system, a secondary wood sub-load-bearing system is created to form smaller spaces.

Construction Principle

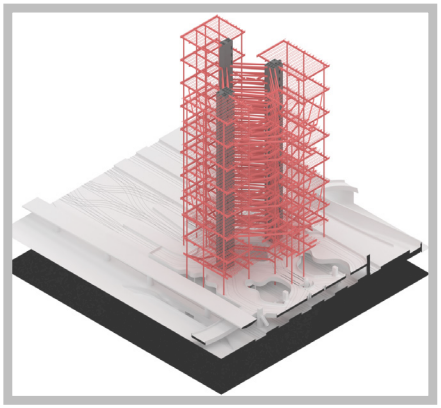
The construction principle of the building emphasizes creating flexibility while also implementing a sustainable and future-proof structure. These combined ambitions are represented in the following construction principles for the building.



CONCRETE

The basis

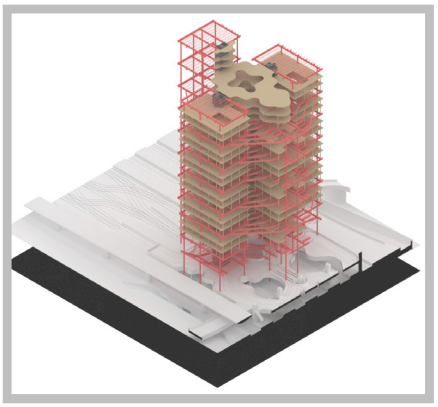
The concrete cores form the basis of the building, housing the elevators and ventilation shafts.



STEEL

Main load bearing

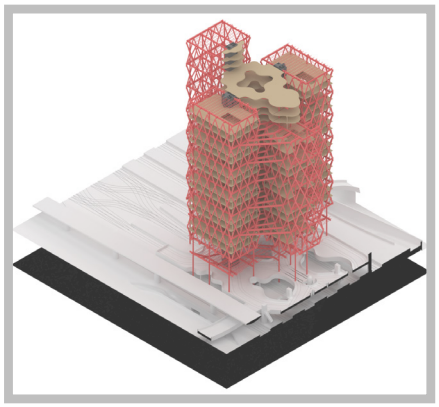
The steel structure serves as the main load-bearing system, requiring few columns.



WOOD

Sub structure

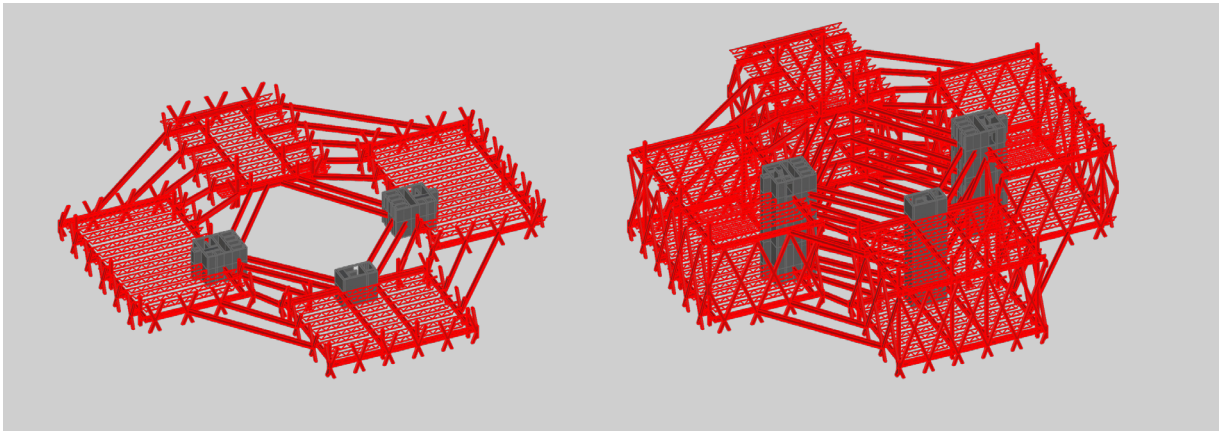
The wood structure divides the three-story high steel structure into subfloors and smaller rooms.

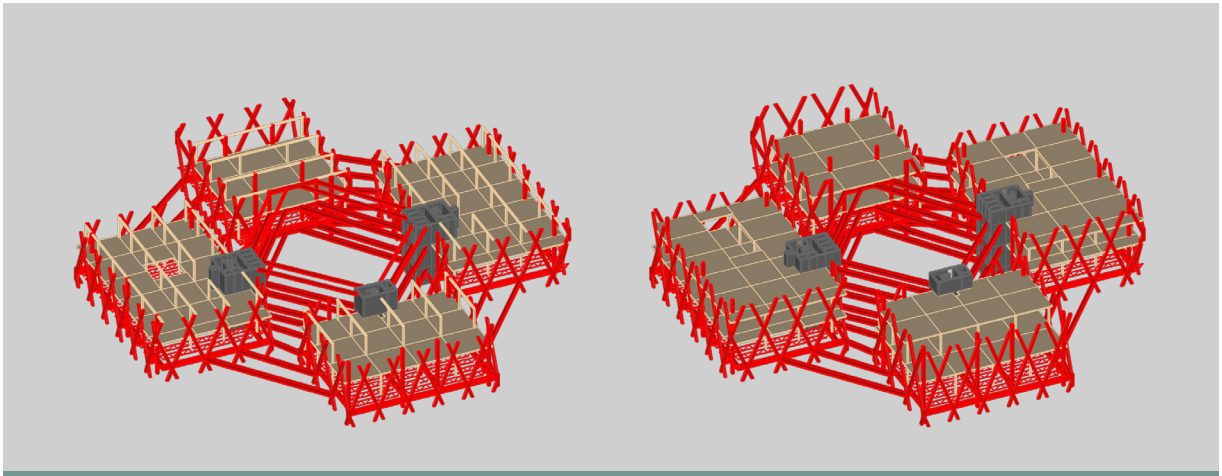


EXOSKELETON

Stability

The exoskeleton provides stability to the building by rigidly connecting the steel floors.



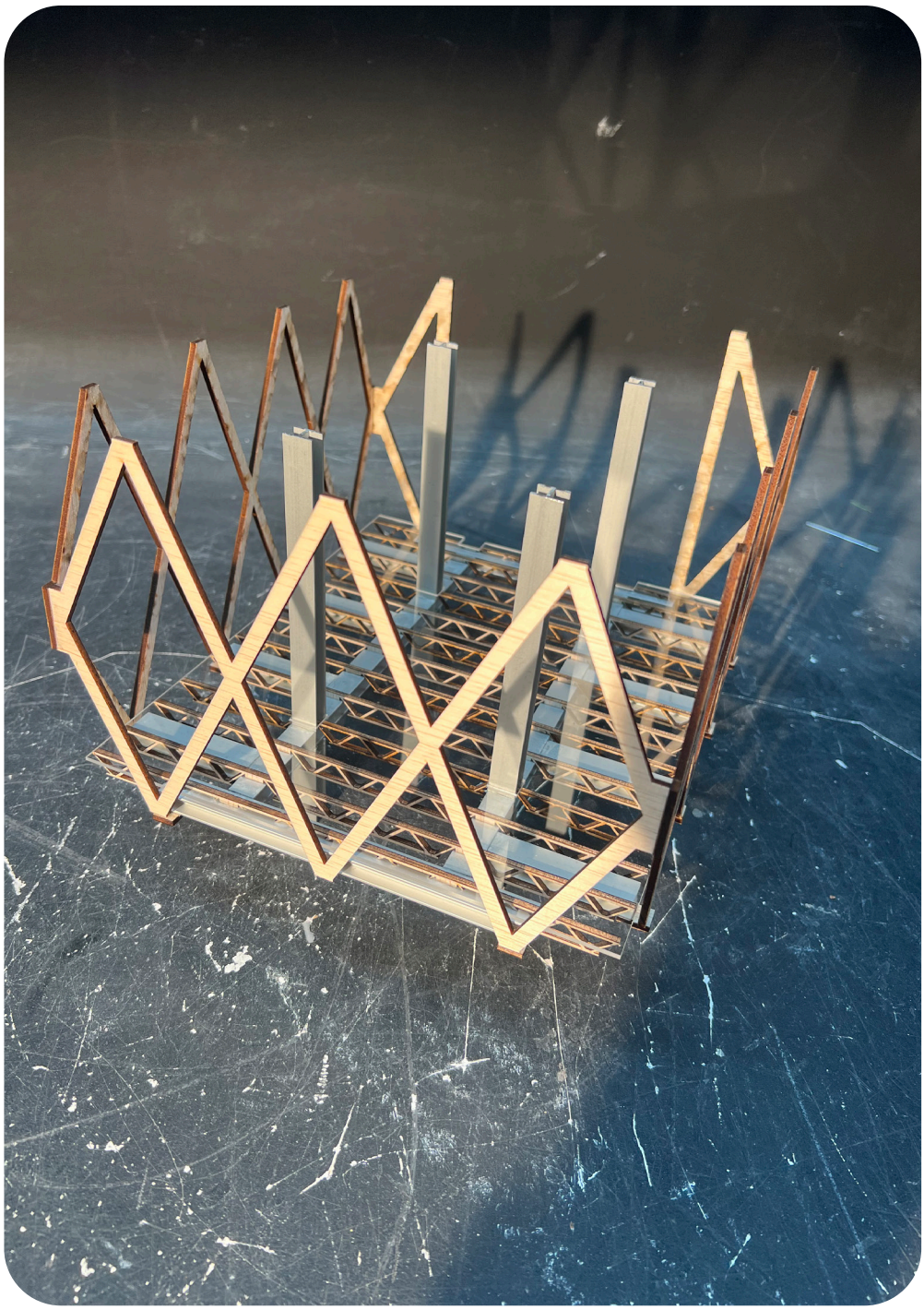


The steel structure

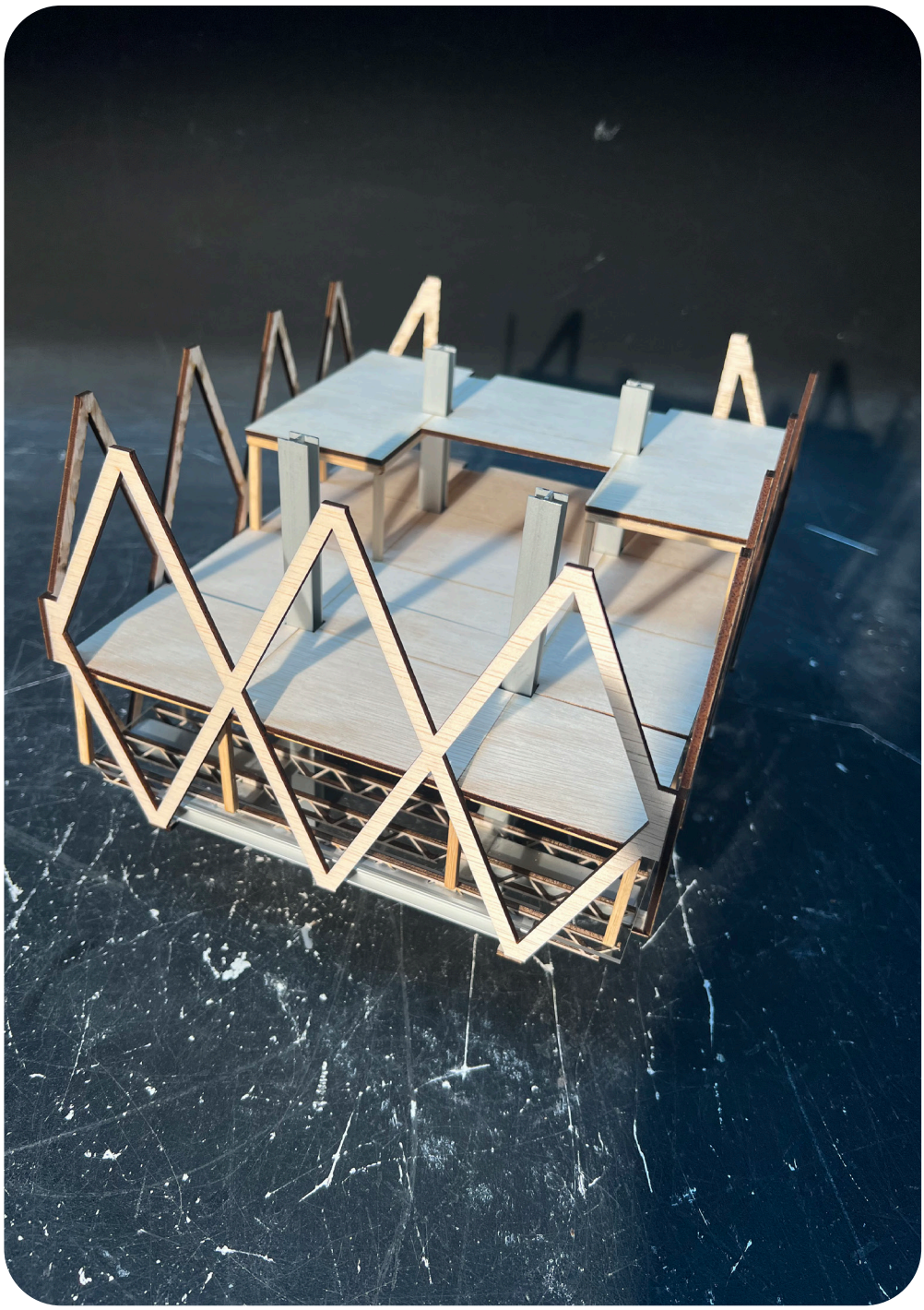
The spans of the steel structure are visible here, showing how the exoskeleton connects back to the main steel load-bearing structure.

The wood structure

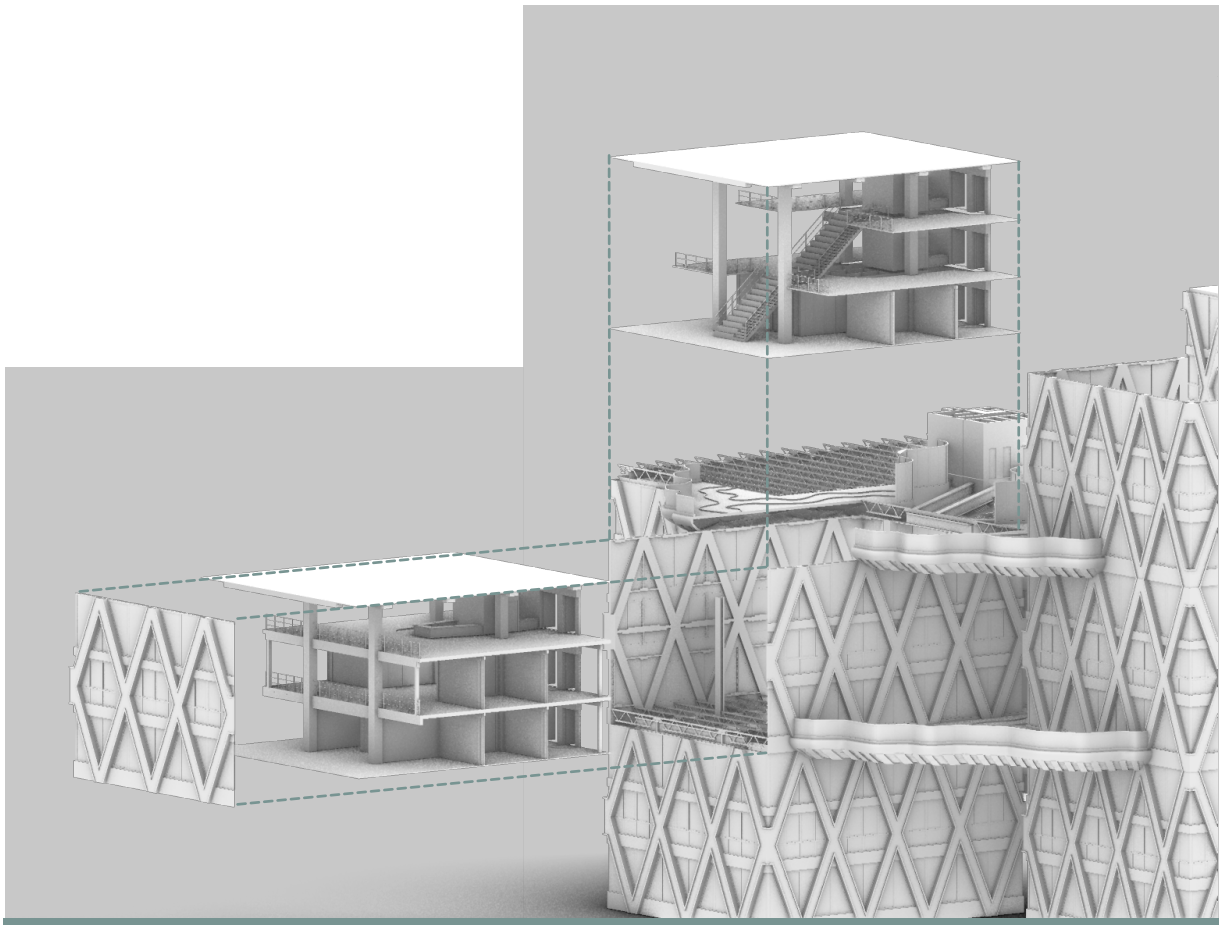
The spans of the wood structure are visible here, illustrating how it can create openness to facilitate connections between layers and vary at higher levels.



THE STEEL STRUCTURE



THE WOOD STRUCTURE



Flexibility in future use

A demountable nature

The facade elements of the building are prefabricated demountable elements. This, in combination with the wood substructure built between the steel main load-bearing structure, allows for a complete functional change by removing the existing facade and wood structure and replacing it with new infill to suit the desired function.

Sustainability

REDUCING
40.0 %

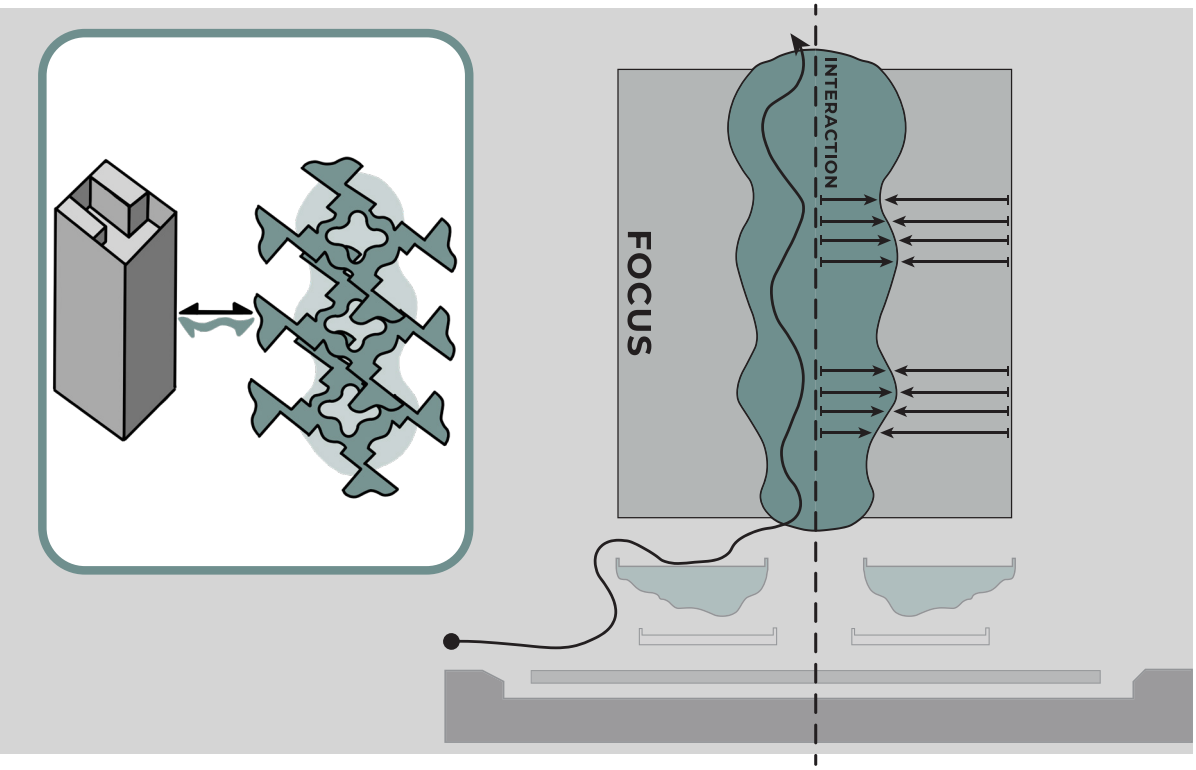
SAVING
5.0k TONS

EMBODIED $C0_2$

In construction compared to conventional building projects.

CO_2 PRODUCTION

With this also being reabsorpable C02 by replanting the wood mass used for the building in new trees.



INTERACTION BY

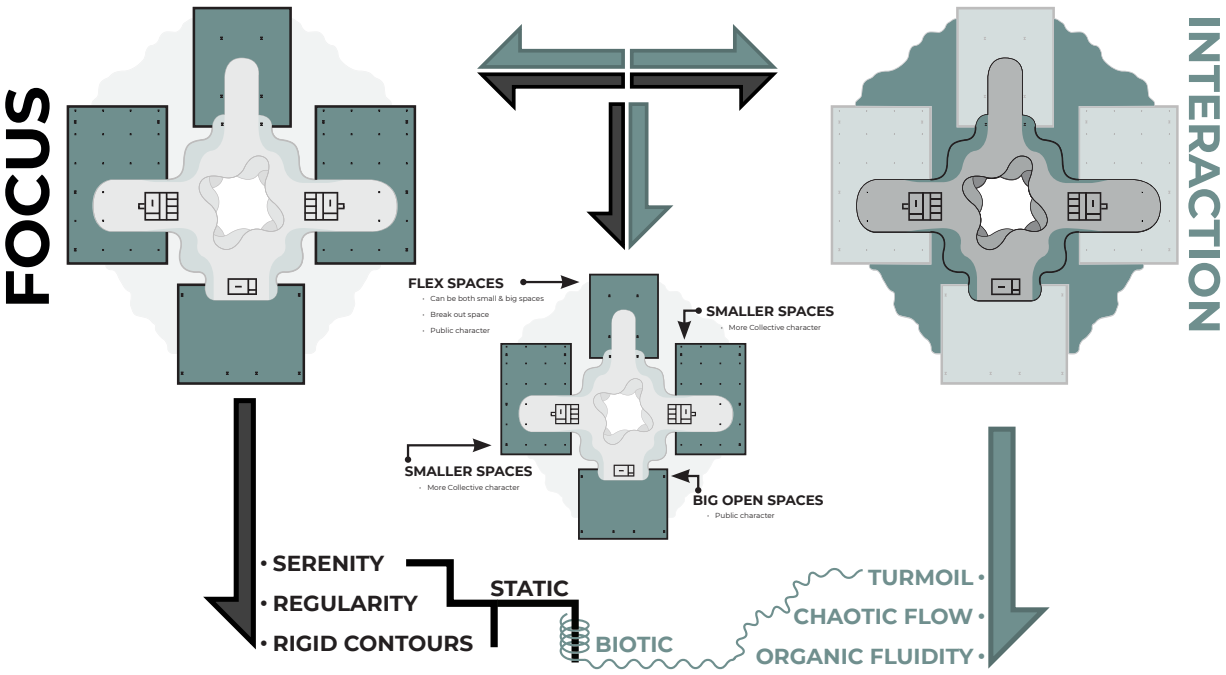
CONTRAST

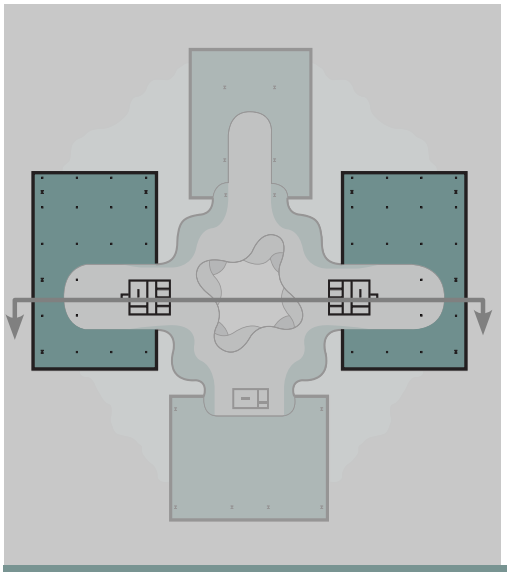
The concept

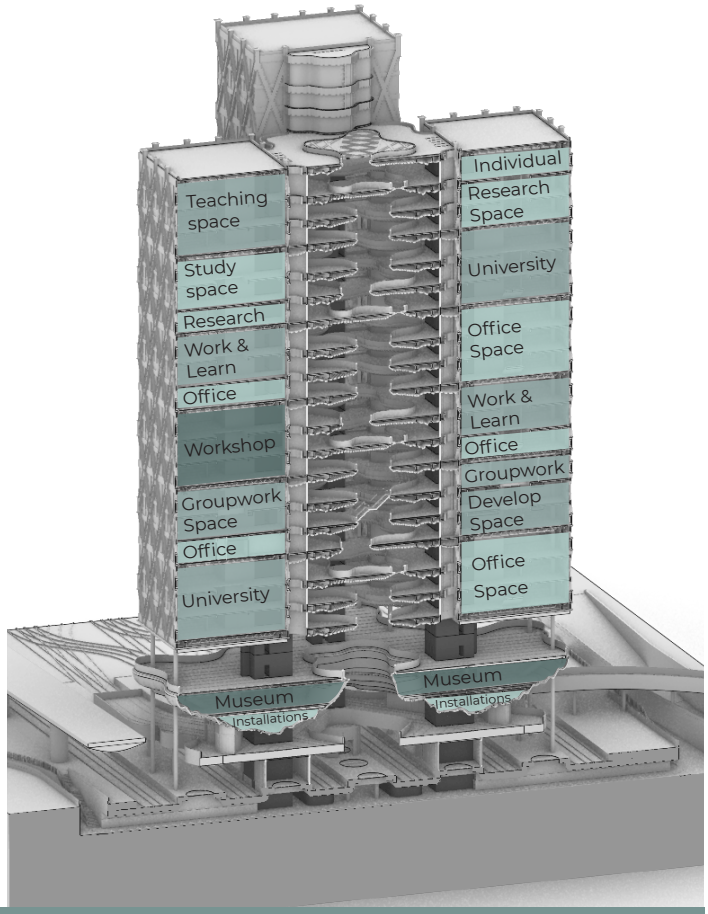
The contrasting architectural language visualizes the different functions to enhance the user experience.

Contrast

What is the architectural language focus on the one hand and interaction on the other?





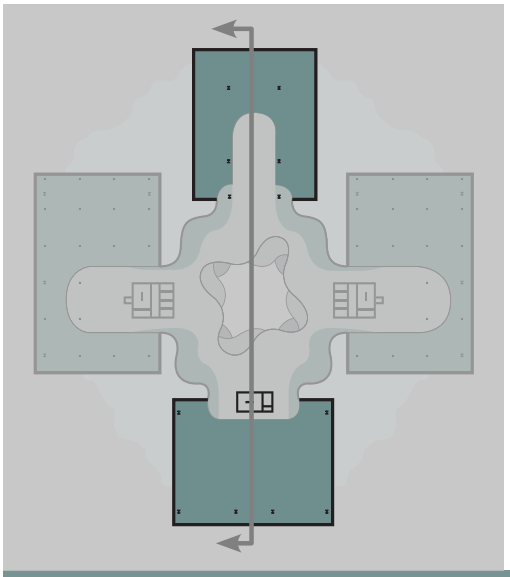


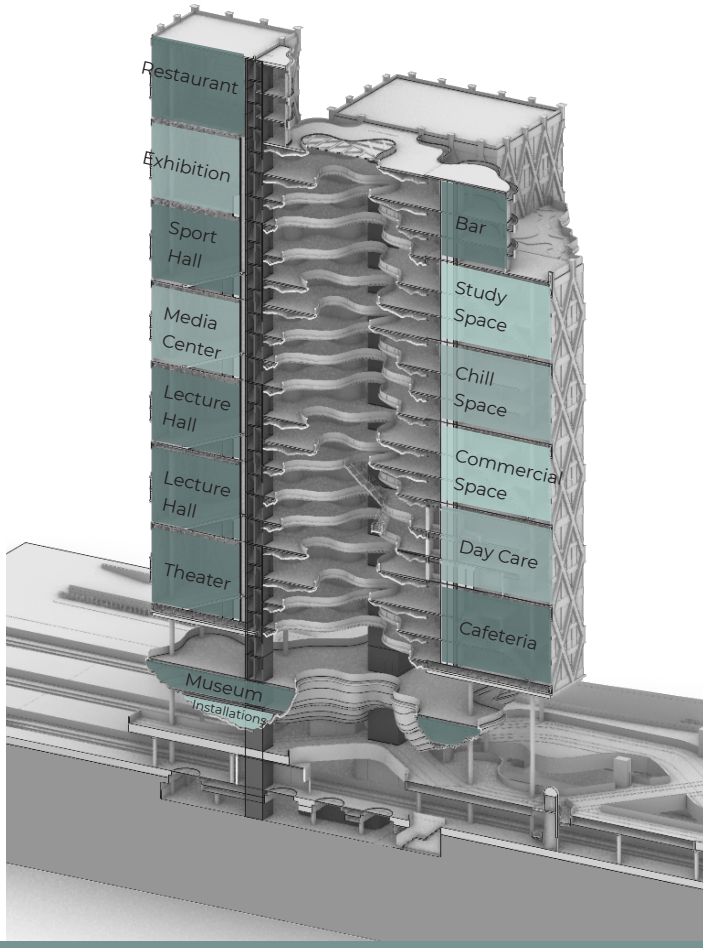
Functional layout

Programmatic placement

As seen on the diagram on the side, the building is divided into different sub-zones. The functions placed in the zones left and right of the atrium are more collective in nature, including:

- Office spaces
- Study spaces
- Group work spaces
- Individual spaces
- Teaching spaces
- Work & Learn spaces
- Research spaces
- Workshop spaces



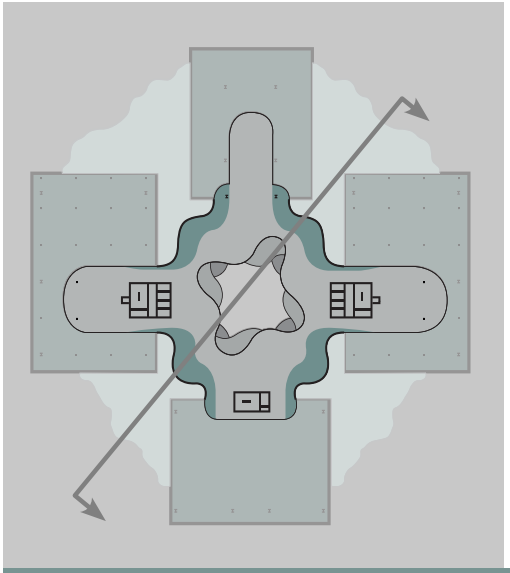


Functional layout

Programmatic placement

As seen on the diagram on the side, the building is divided into different sub-zones. The functions placed behind and in front of the atrium are of a more public character, including:

- Lecture halls
- Theatre halls
- Sport hall
- Expo areas
- Media Center and Library
- Open workspaces / chill area
- Bar & Cafeteria
- Commercial spaces



Atrium function

A place to stay

The atrium is the heart of the design, where the main design principle of interaction comes to fruition. To successfully achieve this, the space needs to be an area not just to pass through but also to stay. This is accomplished by adding functions:

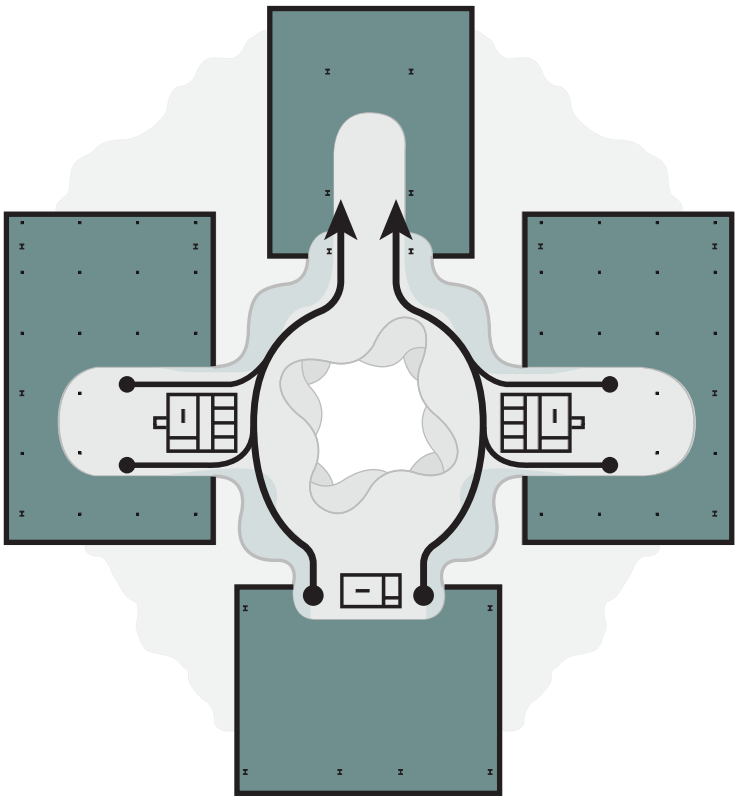
- Coffee corner
- Book corner
- Open work spaces
- Entrance to the terraces with a bar
- Sit spaces
- Call booths
- Small expo areas

Flow

Functions create the Flow

These different zones for functions and uses in the building create a flow centered around the atrium. This is where I aim to foster interaction.

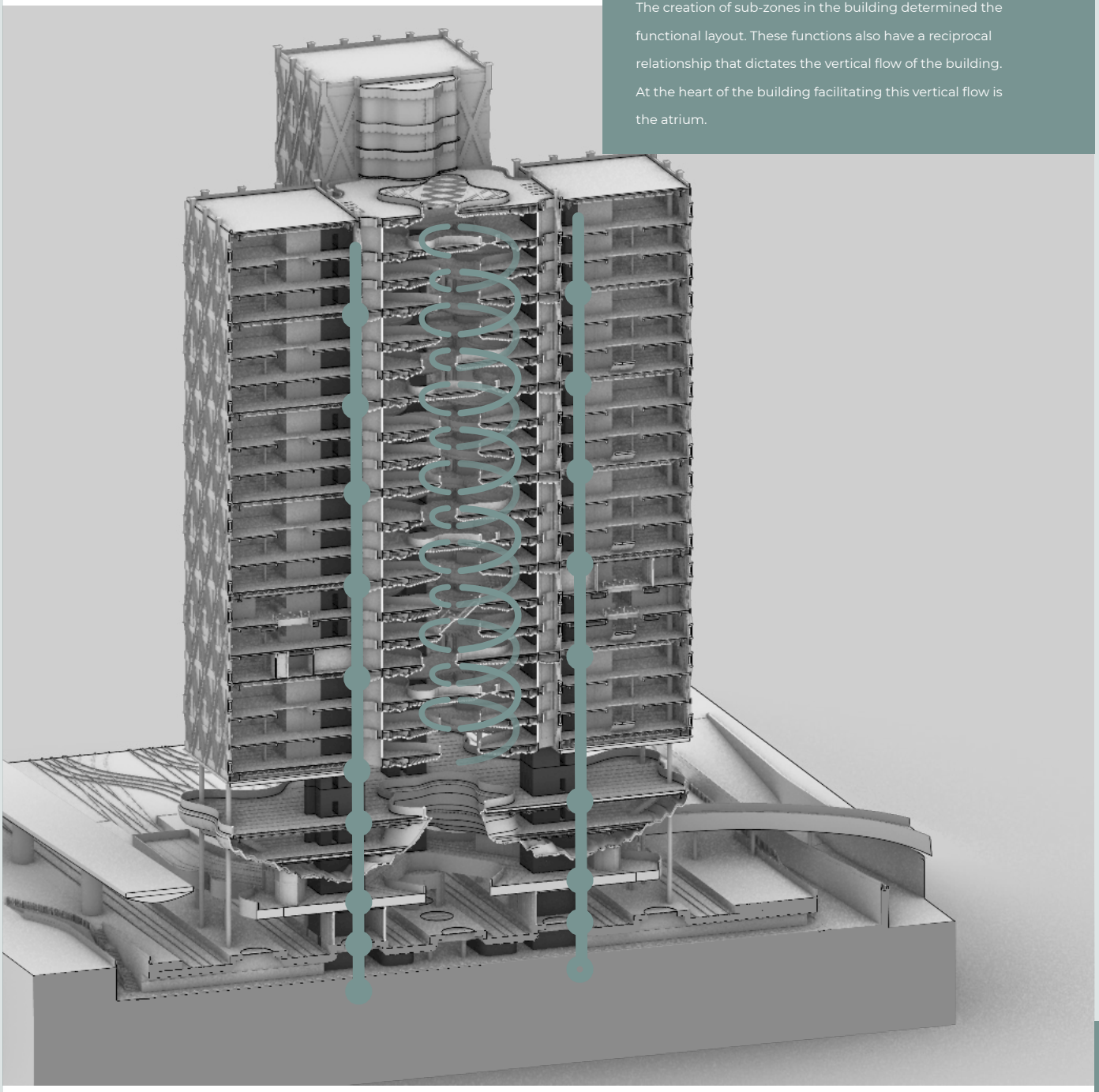
The size of the openings linked to the atrium determines whether the functions behind them are more public or collective in nature.



The Spatial Organization

VERTICAL FLOW

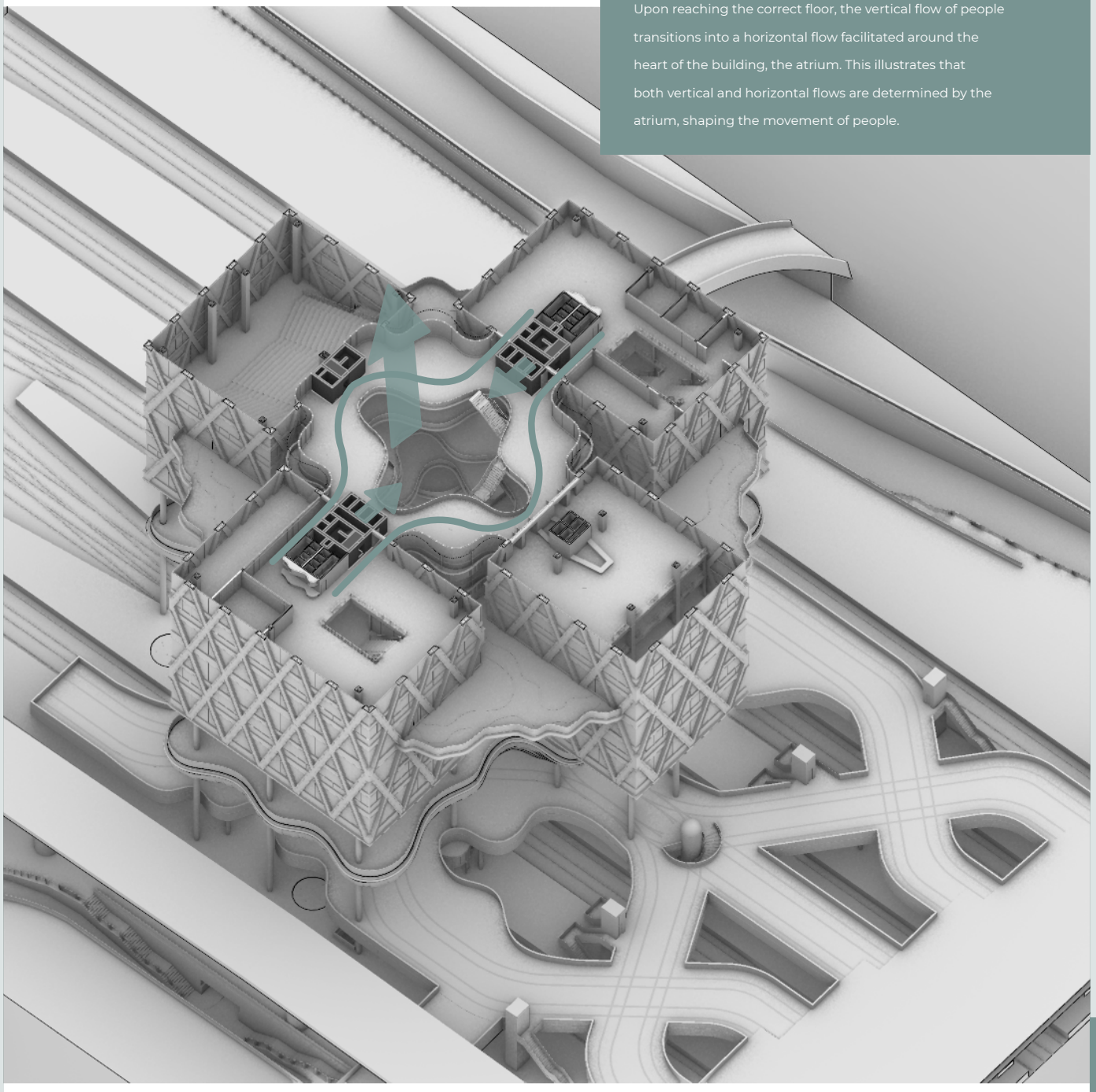
The creation of sub-zones in the building determined the functional layout. These functions also have a reciprocal relationship that dictates the vertical flow of the building. At the heart of the building facilitating this vertical flow is the atrium.

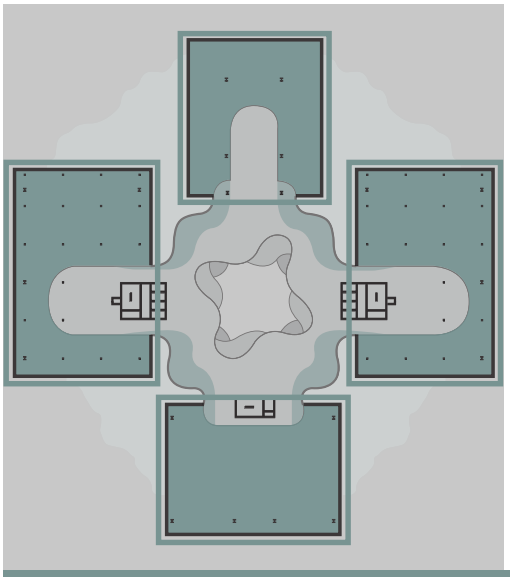


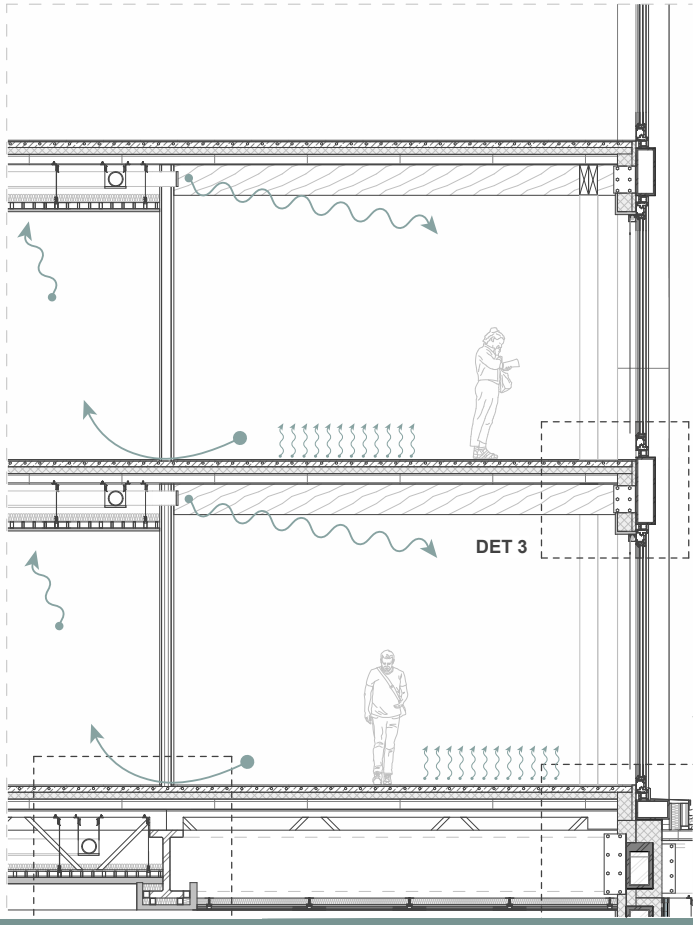
The Spatial Organization

HORIZONTAL FLOW

Upon reaching the correct floor, the vertical flow of people transitions into a horizontal flow facilitated around the heart of the building, the atrium. This illustrates that both vertical and horizontal flows are determined by the atrium, shaping the movement of people.





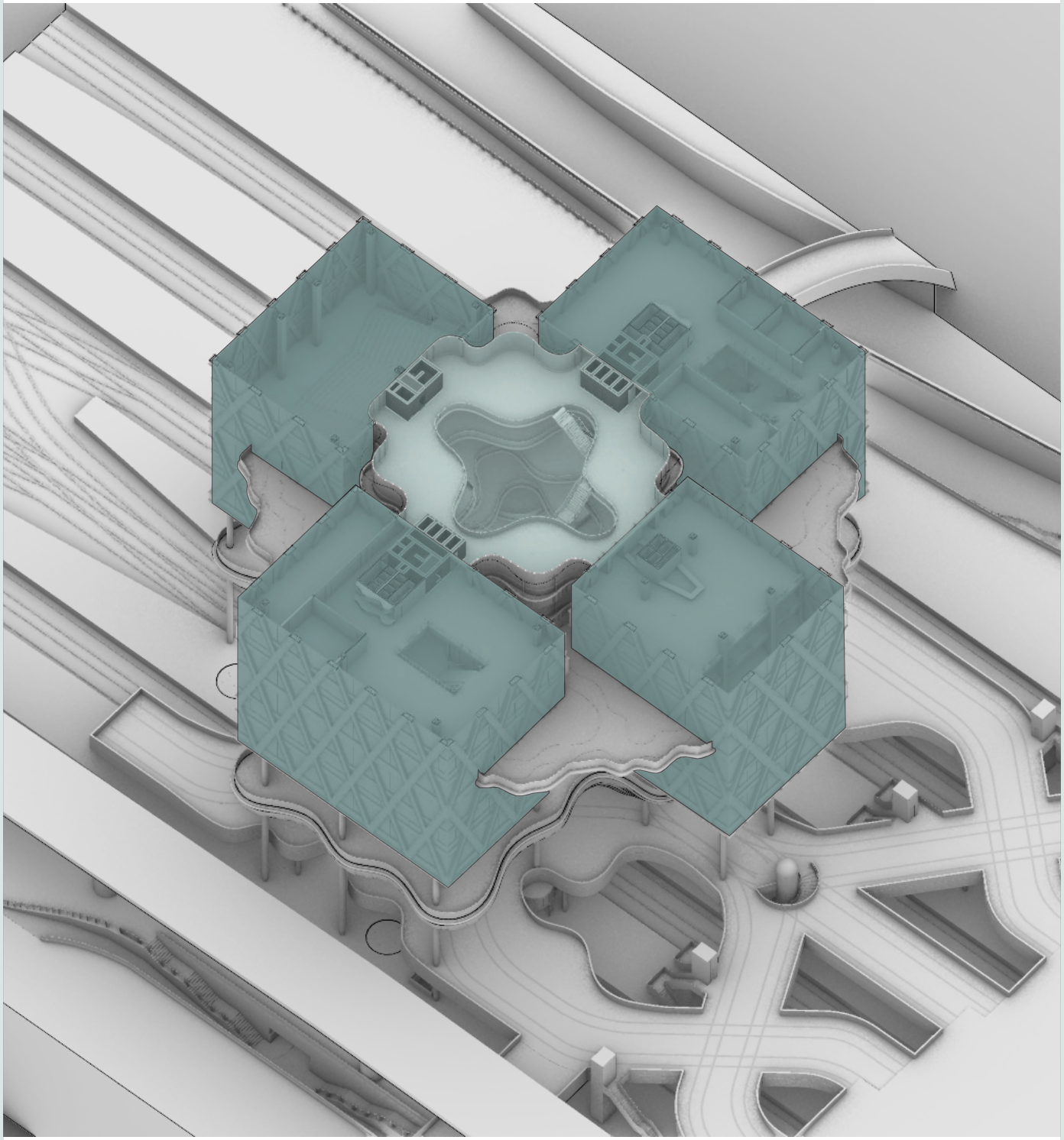


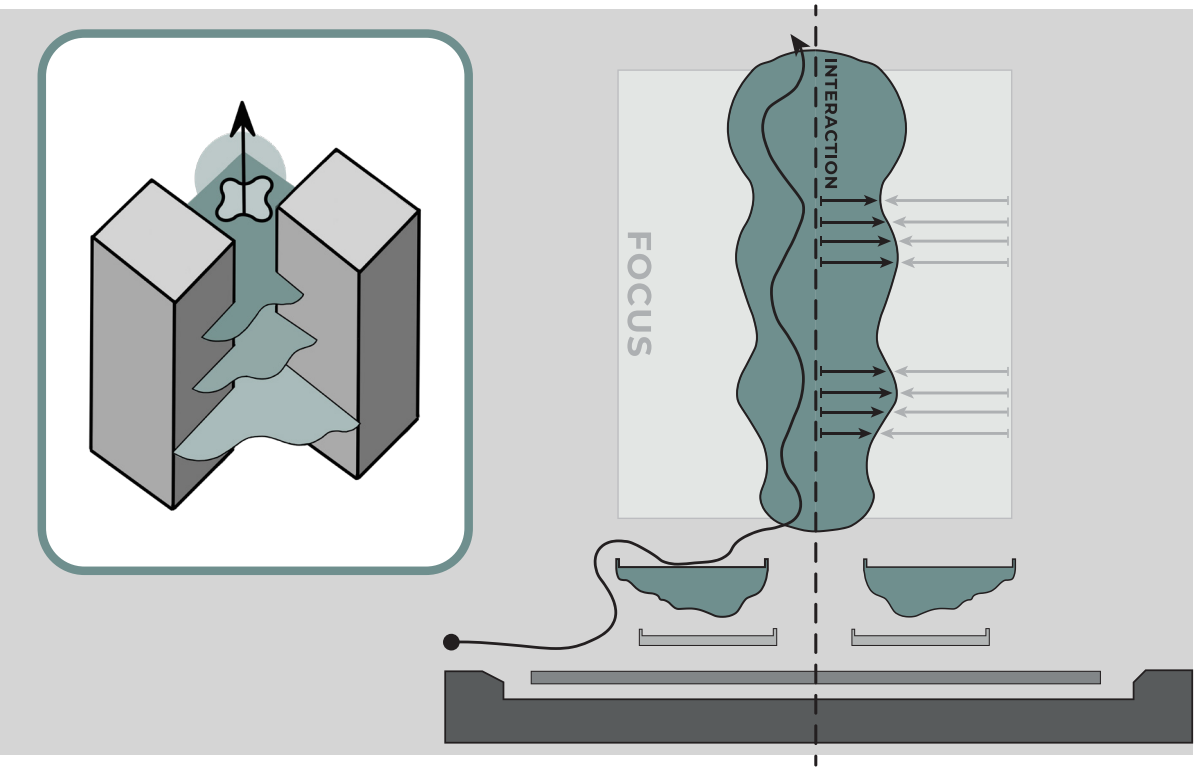
Climatic system

A need driven system

The division of the building into 5 sub-zones is a sustainable intervention that allows each zone to be climatically driven based on its specific needs. This provides sustainable advantages as certain sub-zones do not require active cooling when they are, for example, on the shaded side of the building. This prevents unnecessary cooling or heating of the different sub-zones.

Final Design





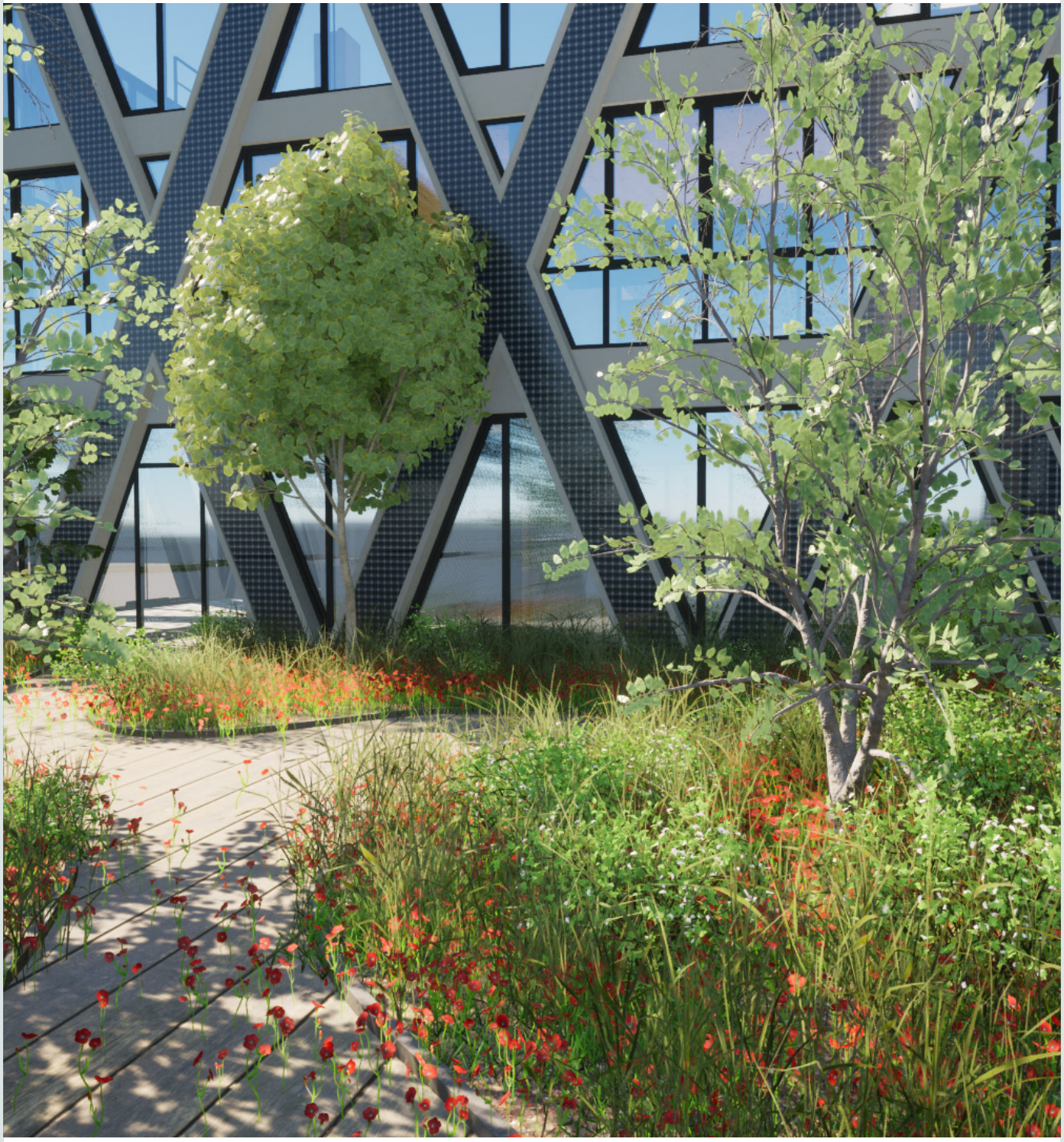
INTERACTION BY

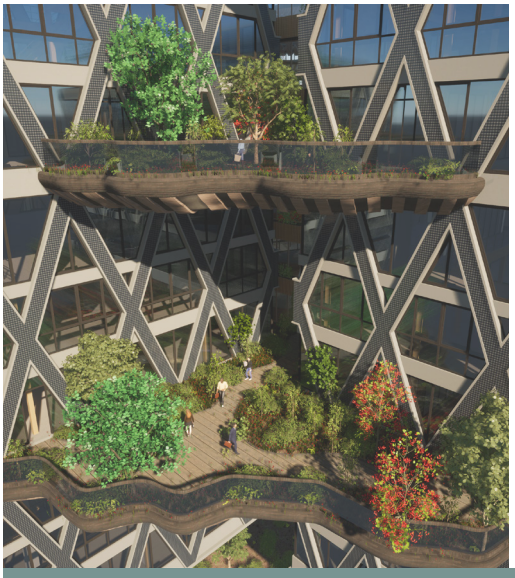
NATURE

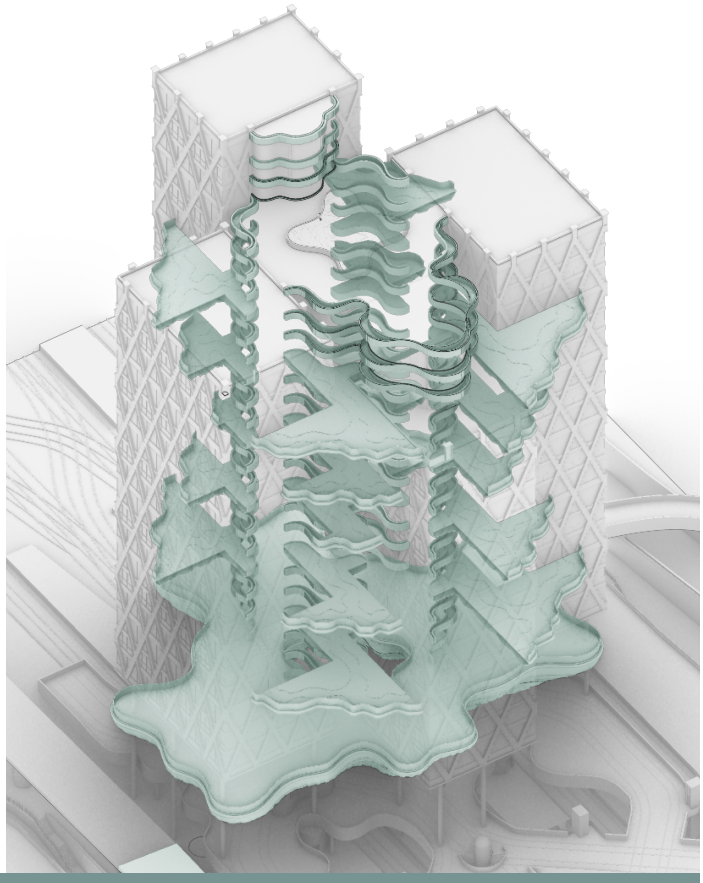
The experiance

Incorporating nature benefits all users and counters the urbanization process.

Final Design







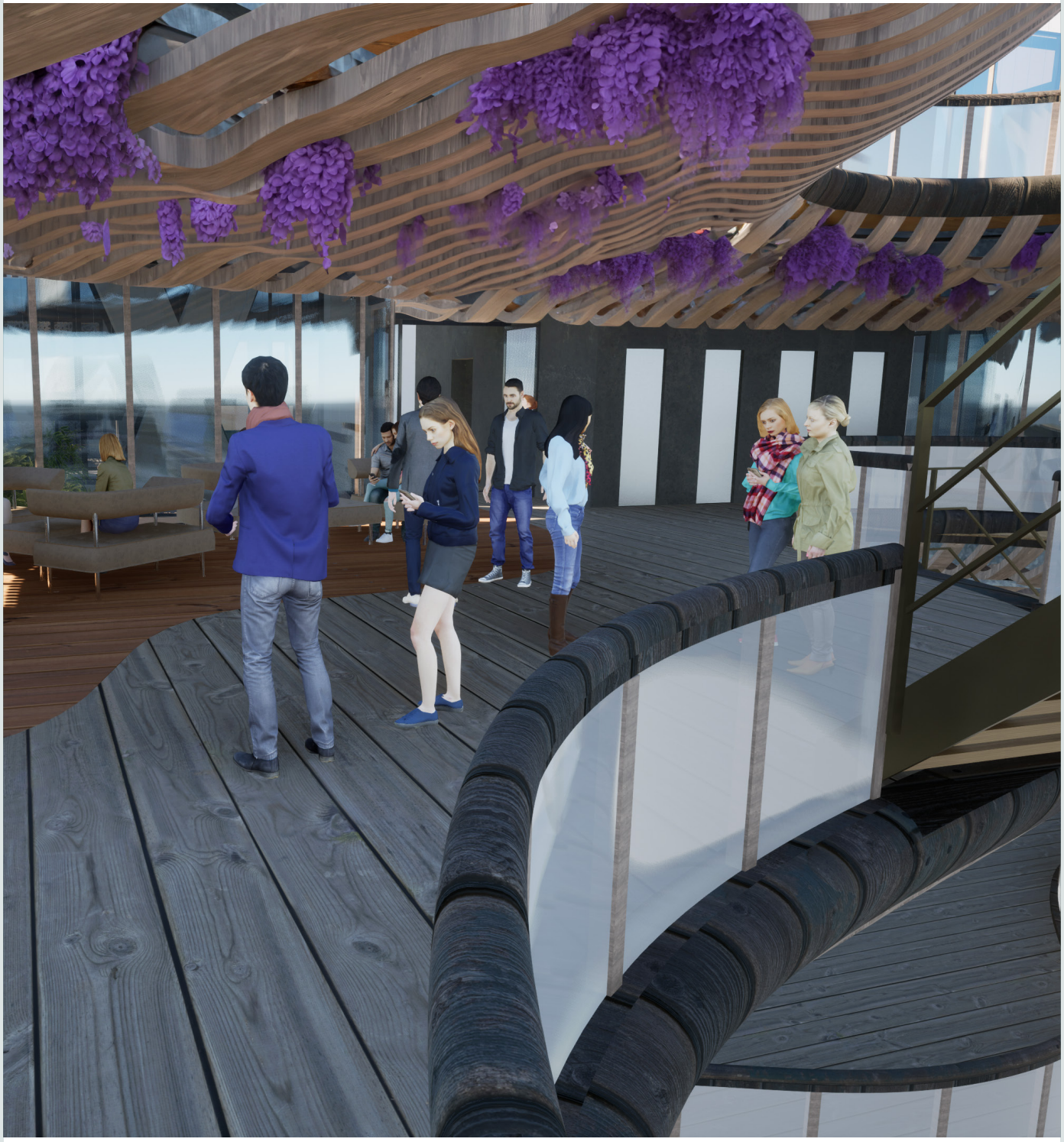
The 3 min. nature connection

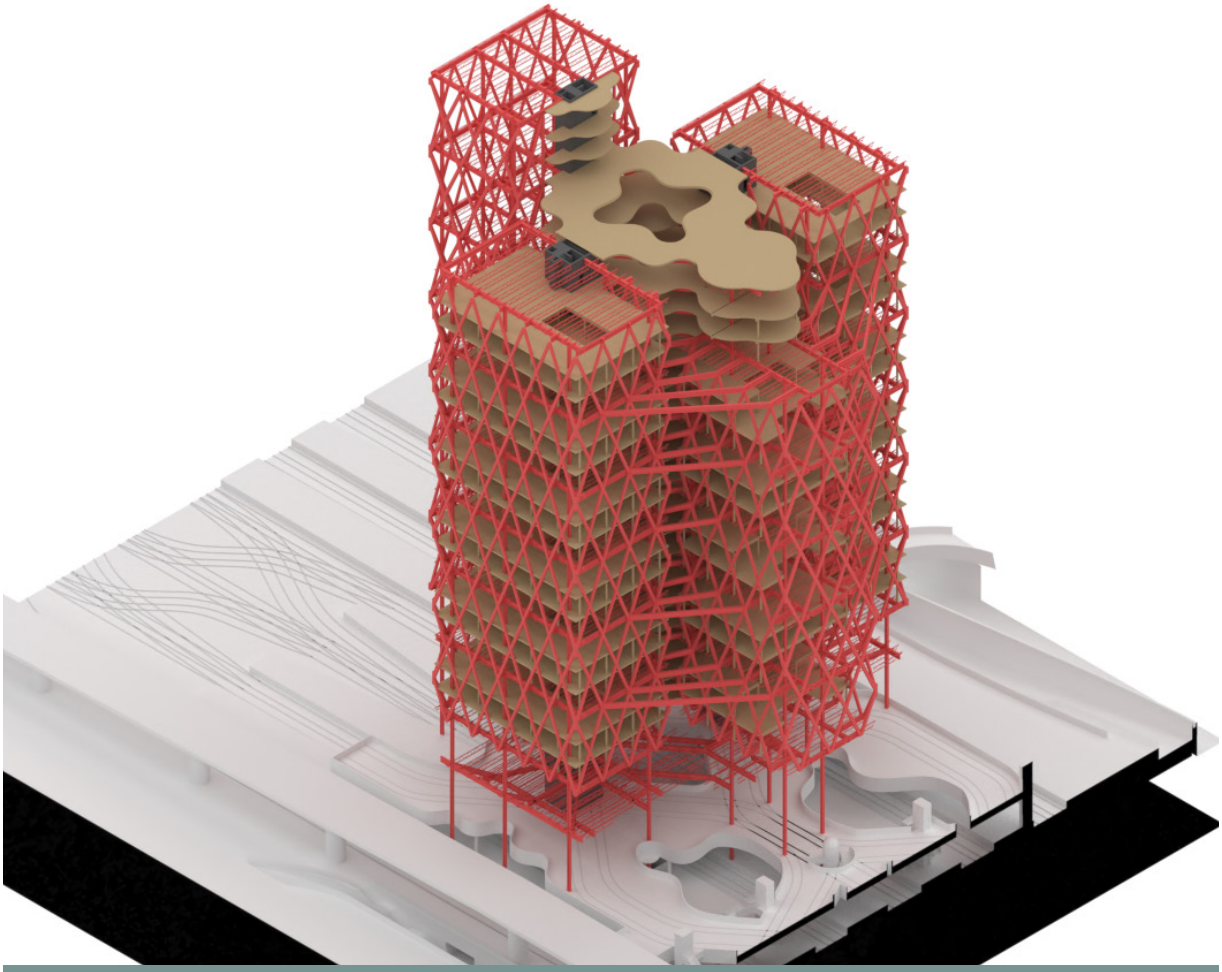
Adding to the biodiversty

The building facilitates a diverse mix of biodiversity covering a large area. This enhances the city's green quality and provides health benefits to the building's users. This addition is a staggering:

ADDING
7.9k m²
QUALITATIVE GREEN
over the entirety of the building.

TOTALING
3.15 x
THE FOOTPRINT
off the building.

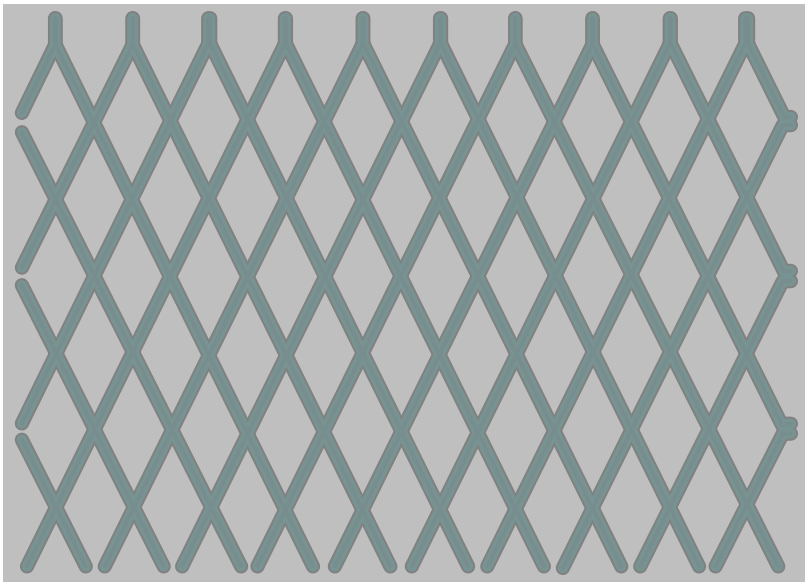


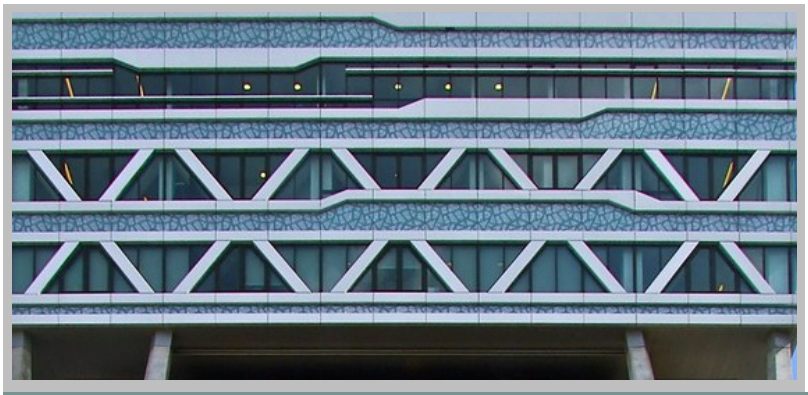


The structural impact

Action & consequences

The choice of construction principle has tangible and visible consequences for the facade of the building. The exoskeleton of the building projects a grid onto the surface, significantly influencing the look and feel of the facade. This aesthetic choice contributes to the juxtaposition of focus and organic expression of the building's facade.



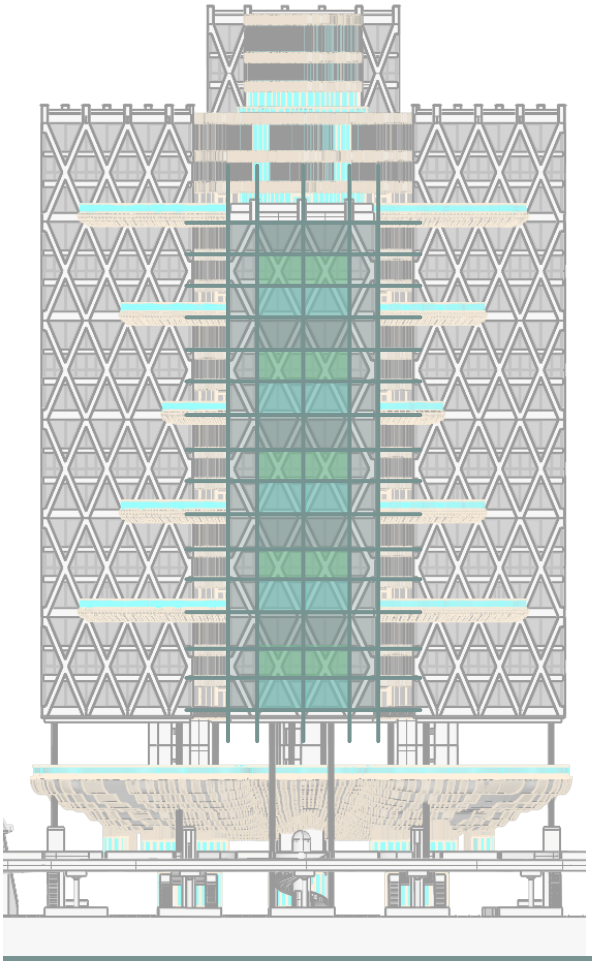


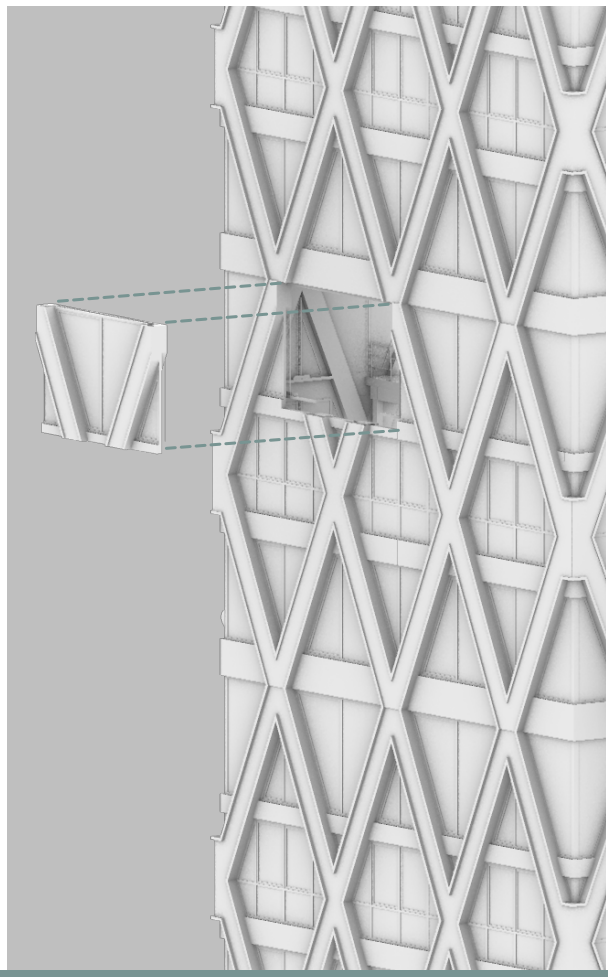
Facade

From grid to design

The exoskeleton structure, creating a grid that dictates the facade design, largely predetermined a significant portion of its appearance. However, leveraging this grid as a backbone, the facade could still be designed to offer diverse looks and feels.

The vision was to emphasize the juxtaposition of focus and organic expression in the rigid facade that holds back the embodied organic nature and heart of the building. With this in mind, the relationship to the existing context was considered, particularly noting the New Babylon building, which also features a grid in its facade design.

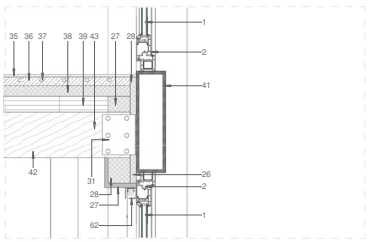




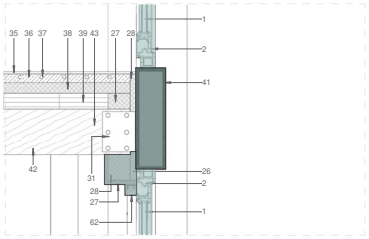
Just in time

Time is money

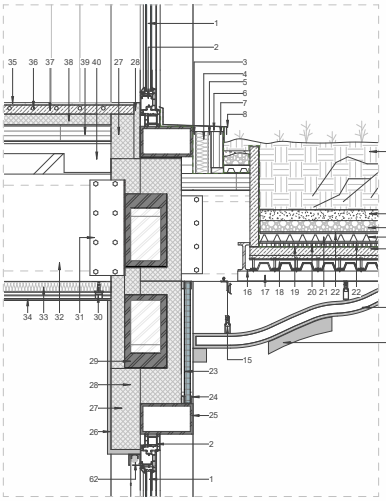
In projects like these, especially in a busy city center, construction is under immense time pressure due to financial constraints and minimizing disruptions. My project is designed to reduce both construction time and disruption to the city and its residents by implementing prefabricated facade components. These components are transported just in time to the construction site using the train tracks located underneath.



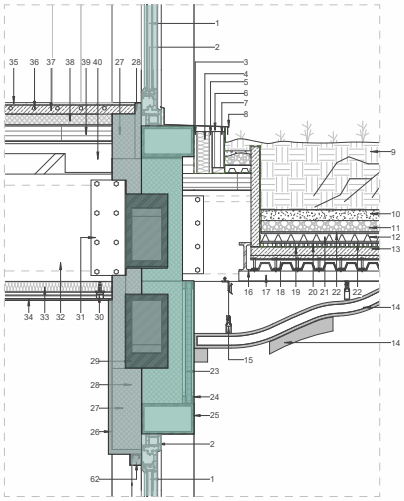
DET 3_ 1:20



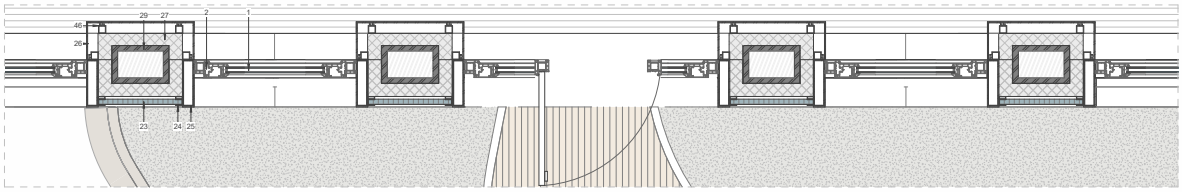
DET 3_ 1:20



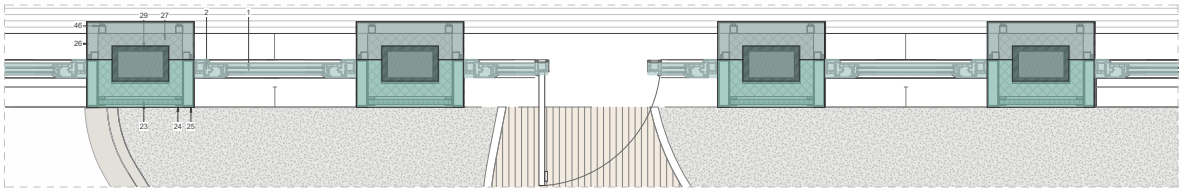
DET 1_ 1:20



DET 1_ 1:20



DETAIL PLAN 1:20



DETAIL PLAN 1:20

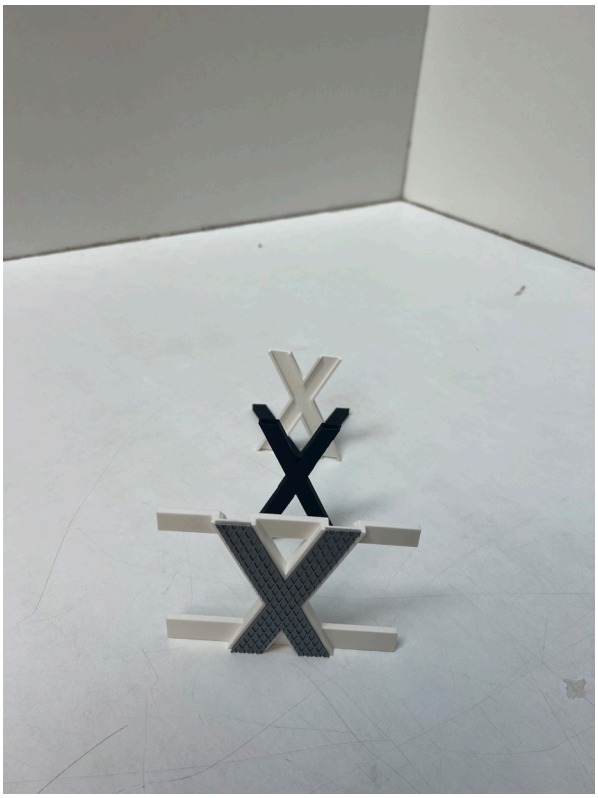
Details

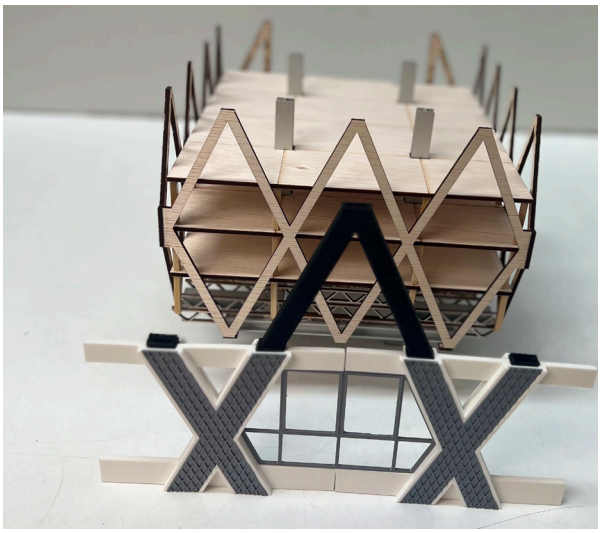
On a detail scale

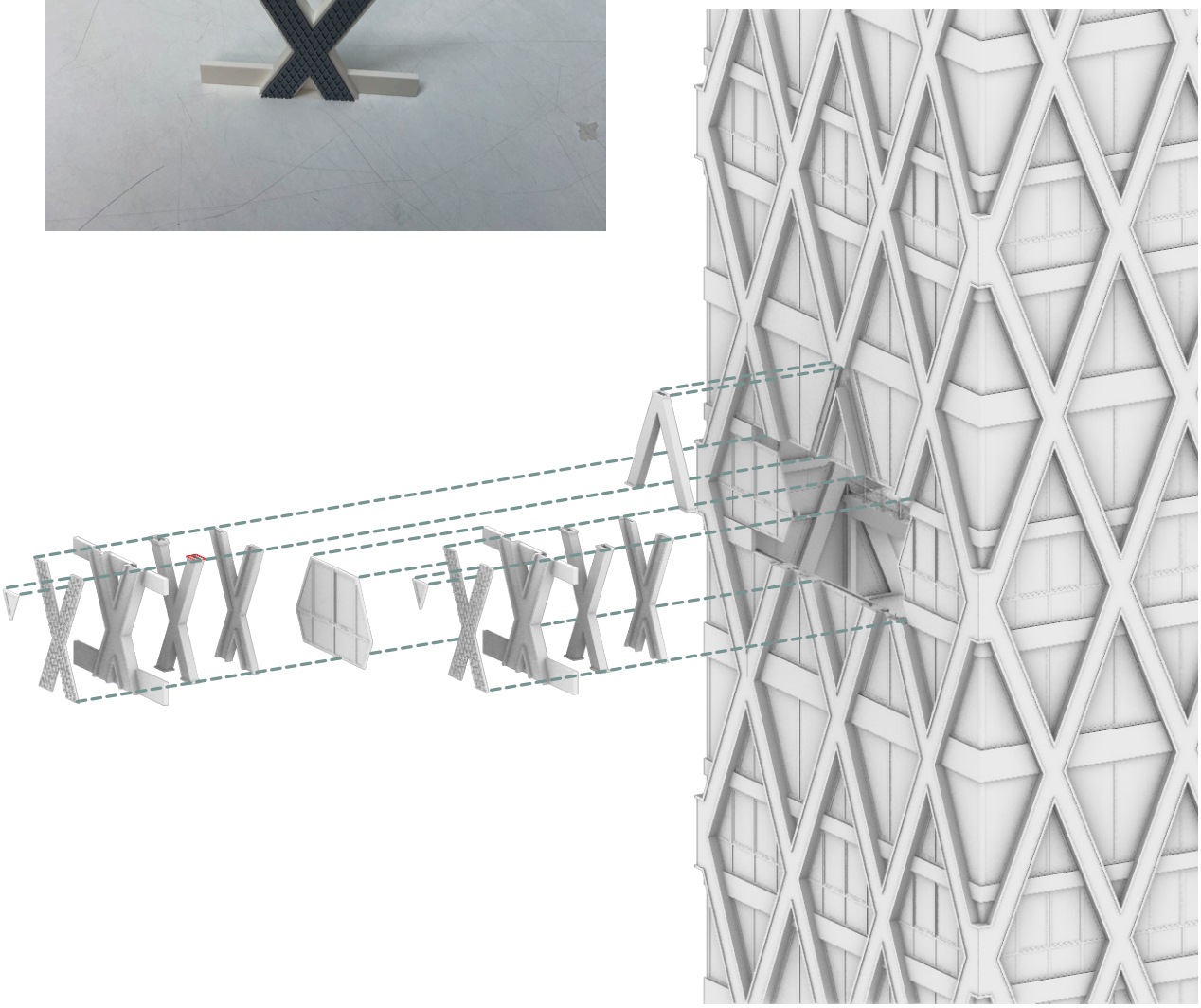
The demountable nature of the facade is achieved by creating various prefab elements that connect together to form the facade modules.

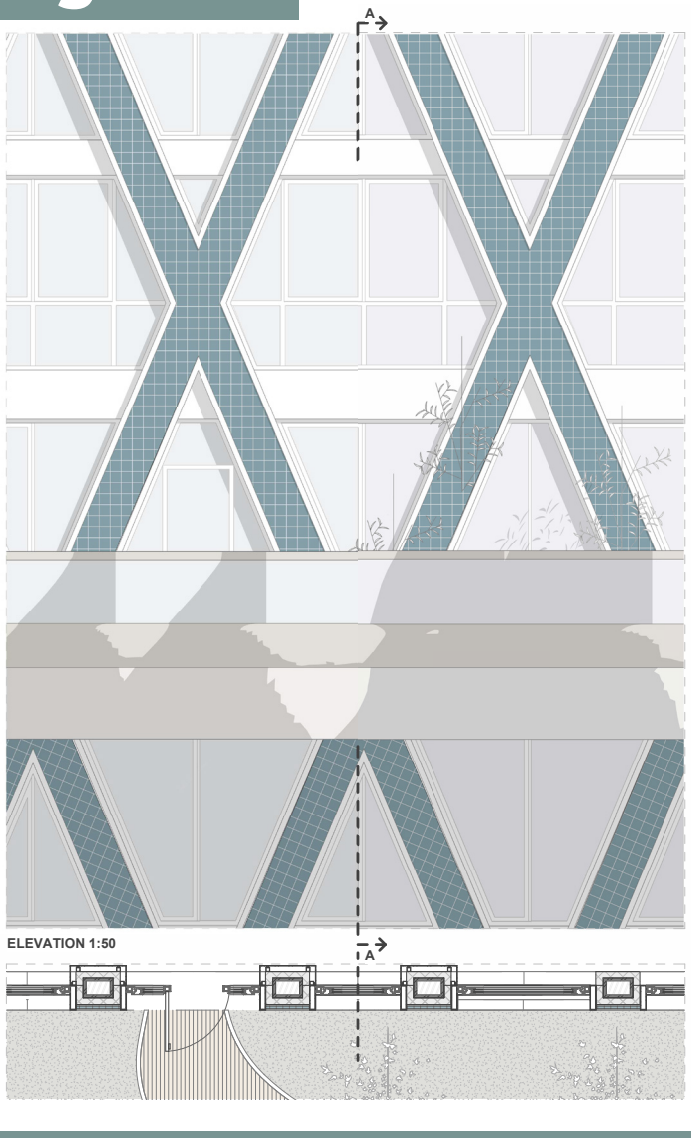
This is illustrated in the architectural details on the side, where the different prefab elements are highlighted. These include:

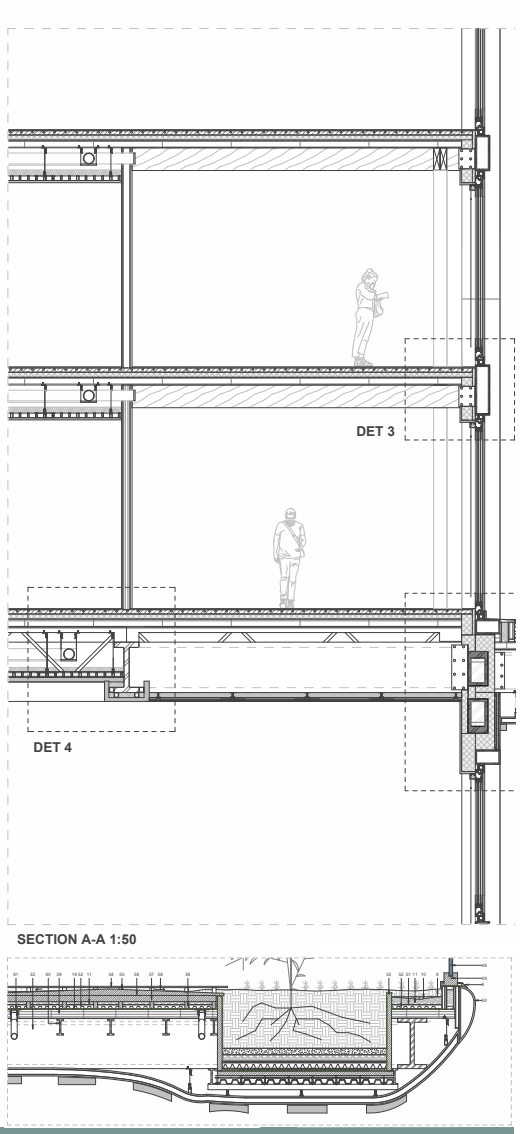
- Structural elements.
- Window elements.
- Front facade cladding elements.
- Back facade cladding elements.











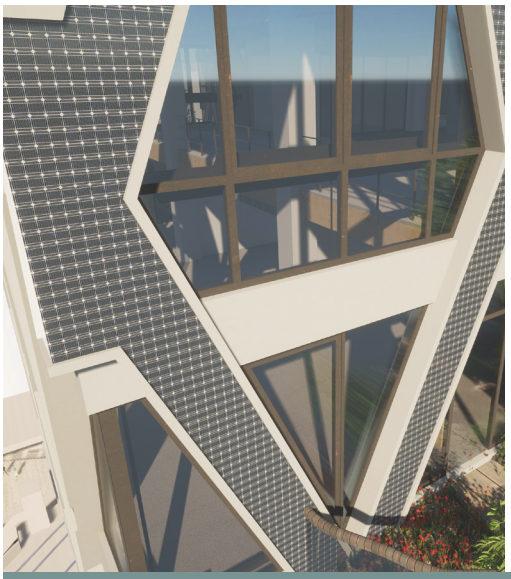
Elevation

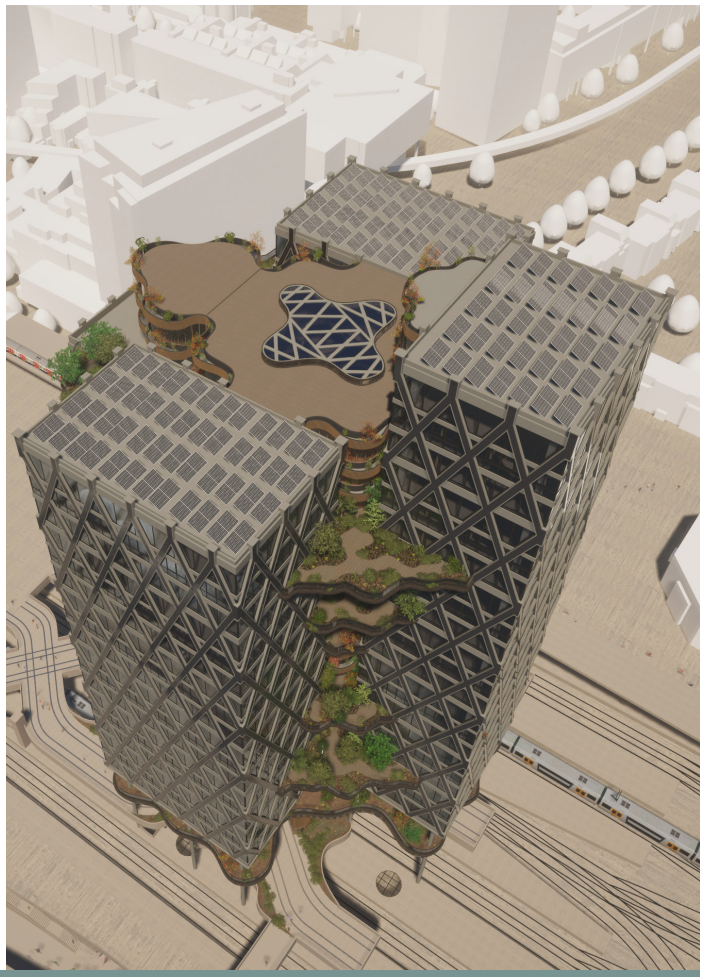
On a detail scale

This results in the following elevation, showcasing the integration of sustainable features such as PV panels at the detailed level.

The details demonstrate how the various windows and solar heat prevention measures are user-operable, allowing users to control both airflow and solar heat gain according to their preferences.

Furthermore, this detail explains the water retention and drainage system, illustrating how water collected from the roof is guided through the plants integrated into the facade.





Renewable energy

Generating green energy

The building features a large area of PV panels on its surfaces and facades, generating green renewable energy to meet the building's energy consumption needs.

ADDING

8.2k m²

PV-PANEL AREA

over the entirety of the building.

TOTALING

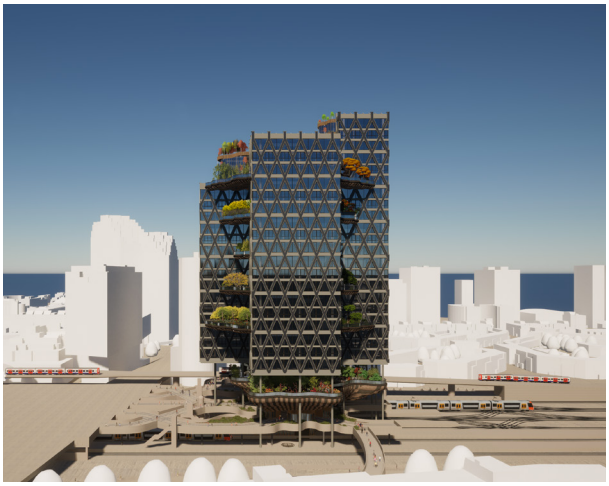
3.20 x

THE FOOTPRINT

off the building.

ELEVATION N

ELEVATION E



ELEVATION S

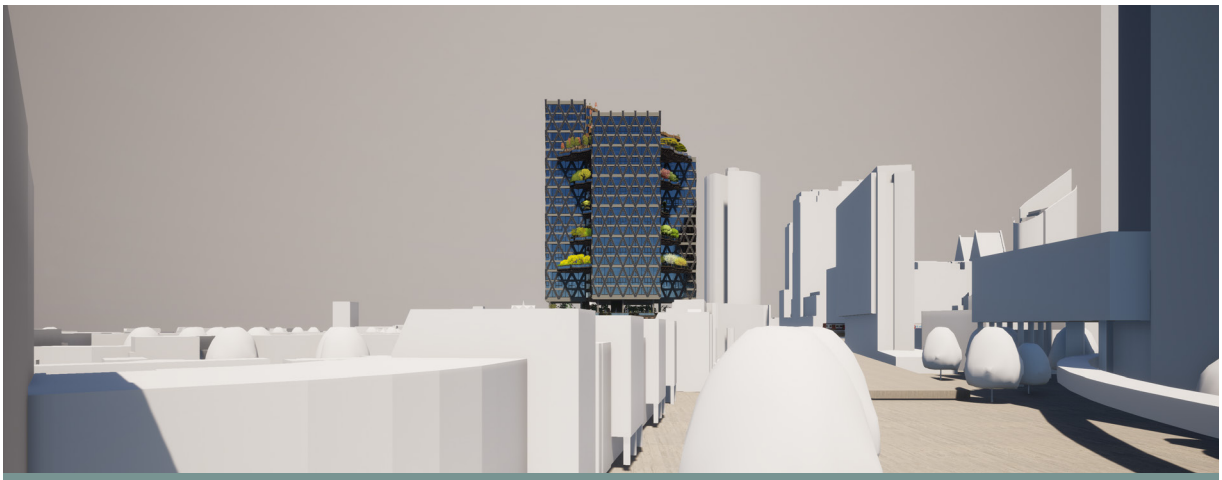
ELEVATION W

Facade

Static & biotic

The facades of the building reflect the exoskeleton that determined its form factor, emphasizing the grid pattern. This construction principle is highlighted in the facade views to remind users of the building's structural concept. Rather than conventional windows, these elements echo the building's architectural principle.

This static facade is 'holding back' the biotic hart of the building sort of suppressing it but not managing to at some point where the organic terraces break out.



In the urban context

The project is somewhat exceptional yet also blends into its surrounding context. This is attributed to The Hague's 'high line', where a series of skyscrapers each feature their own distinct design and style. From a frontal view, the building harmonizes with this unique skyline despite its distinct design.

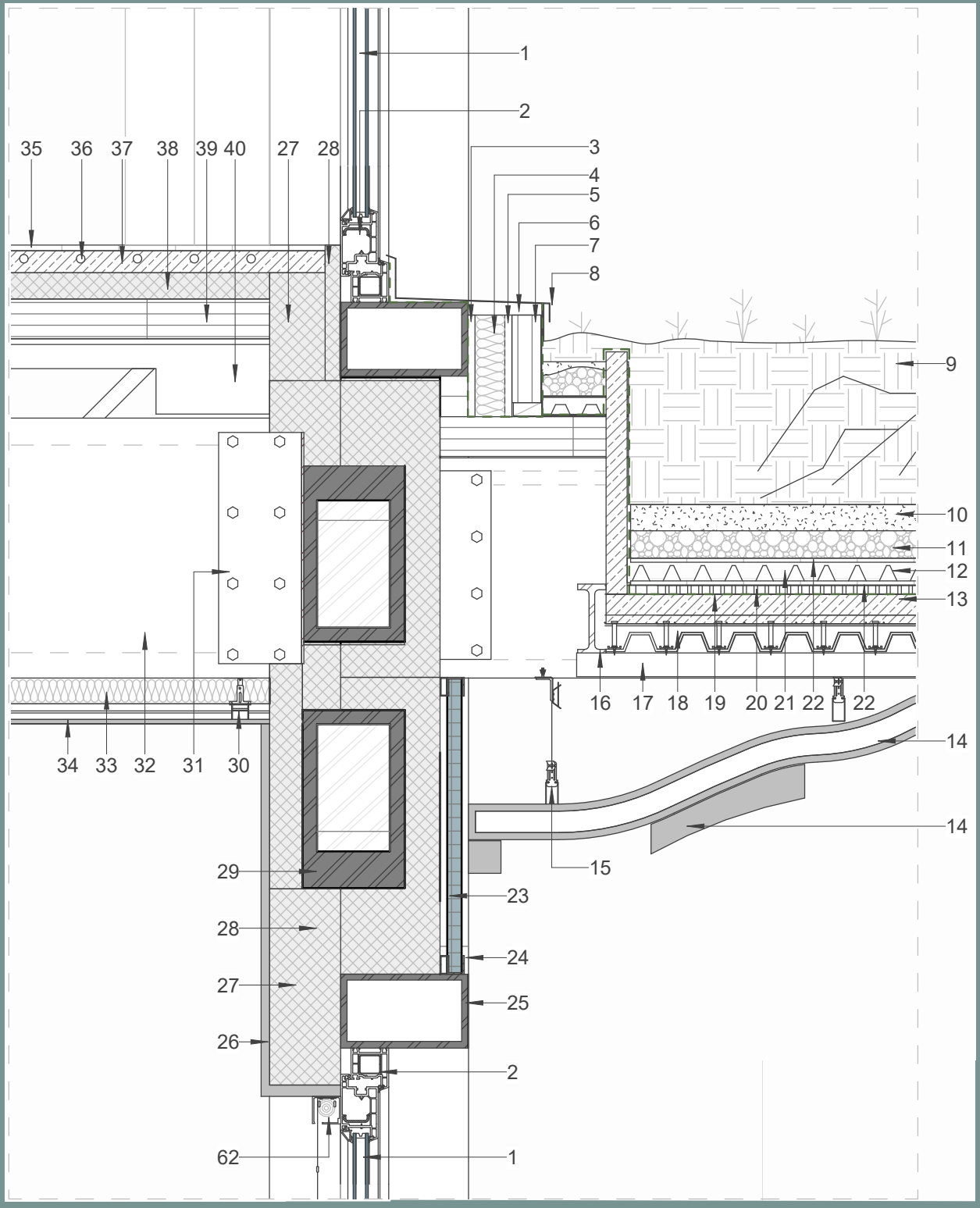
Blend vs the exception

However, when viewed from the side, the building stands apart from the 'high line' and exists within a lower surrounding context. Here, its unique design makes it an exceptional standout.

Final Design

Design Appendix

Detail 1 1:20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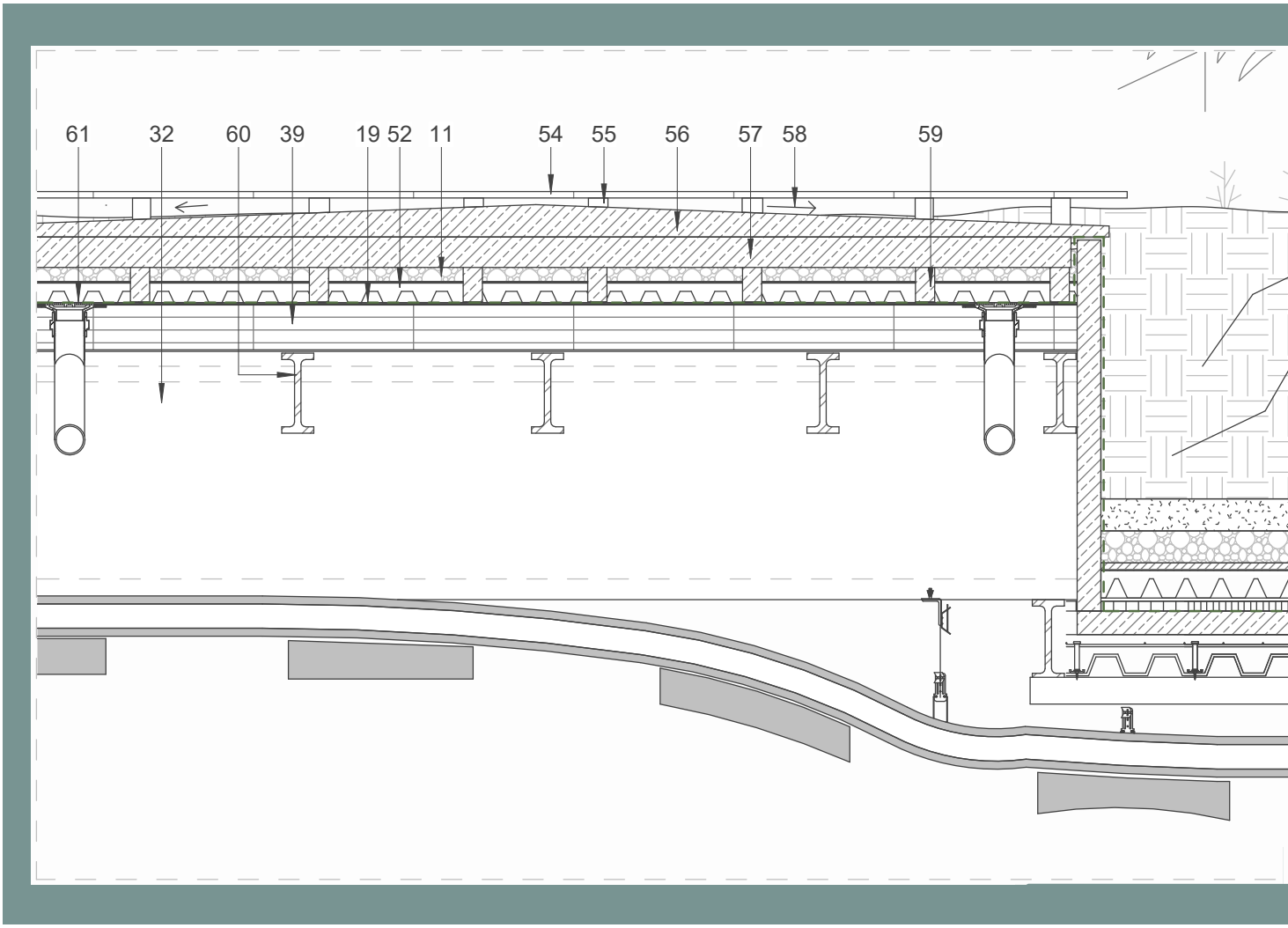
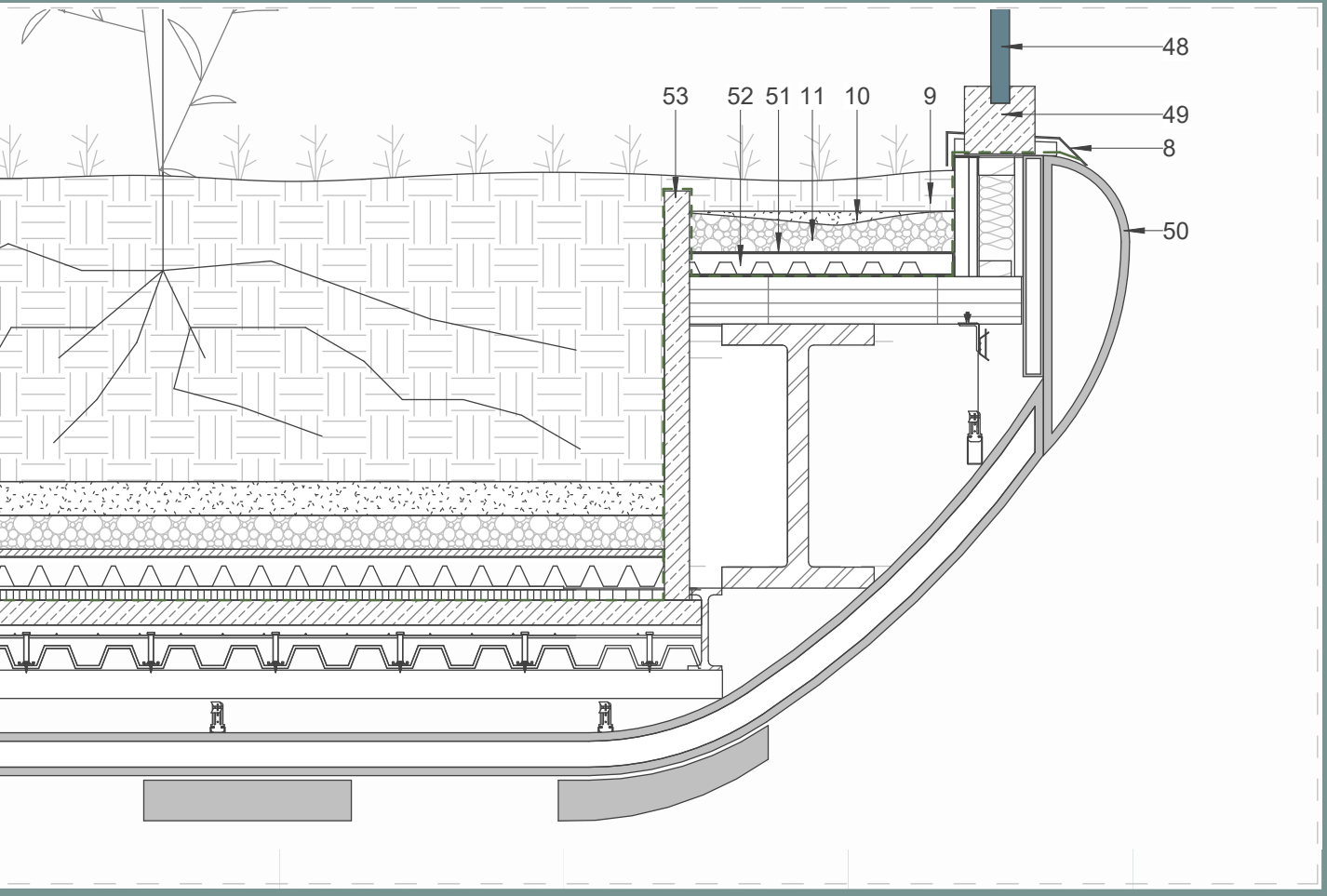
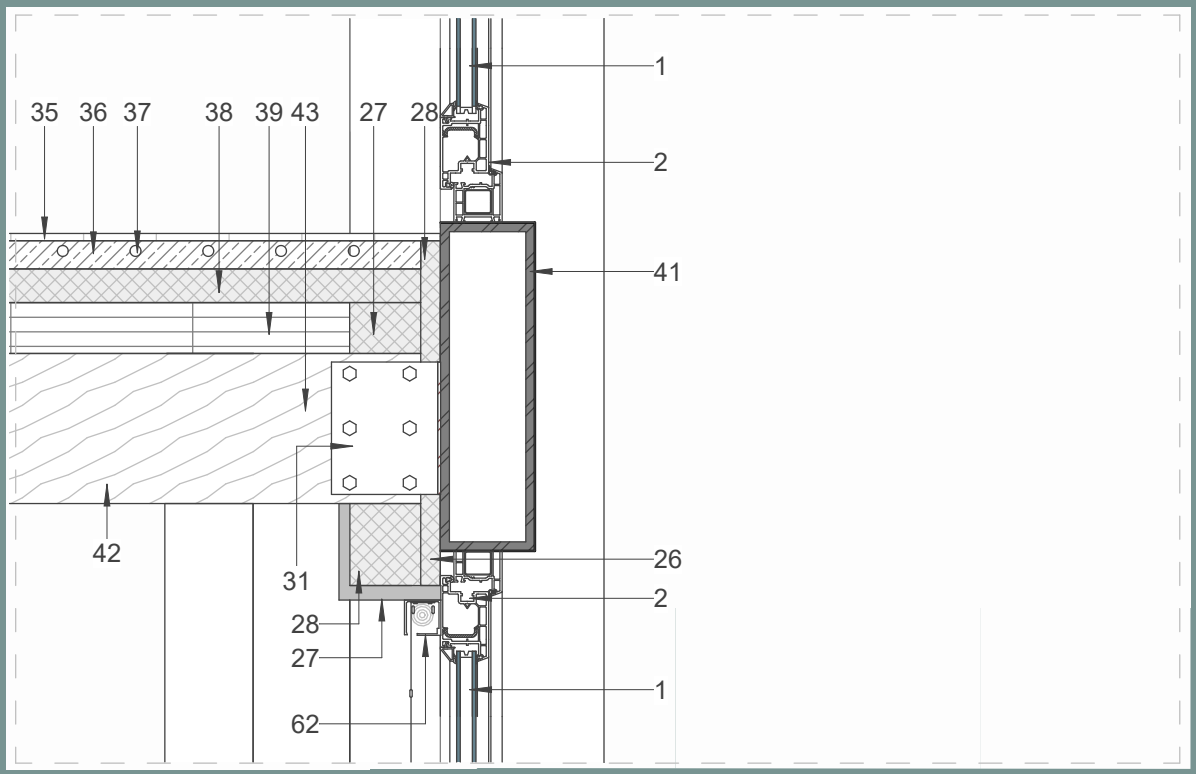
Design Appendix



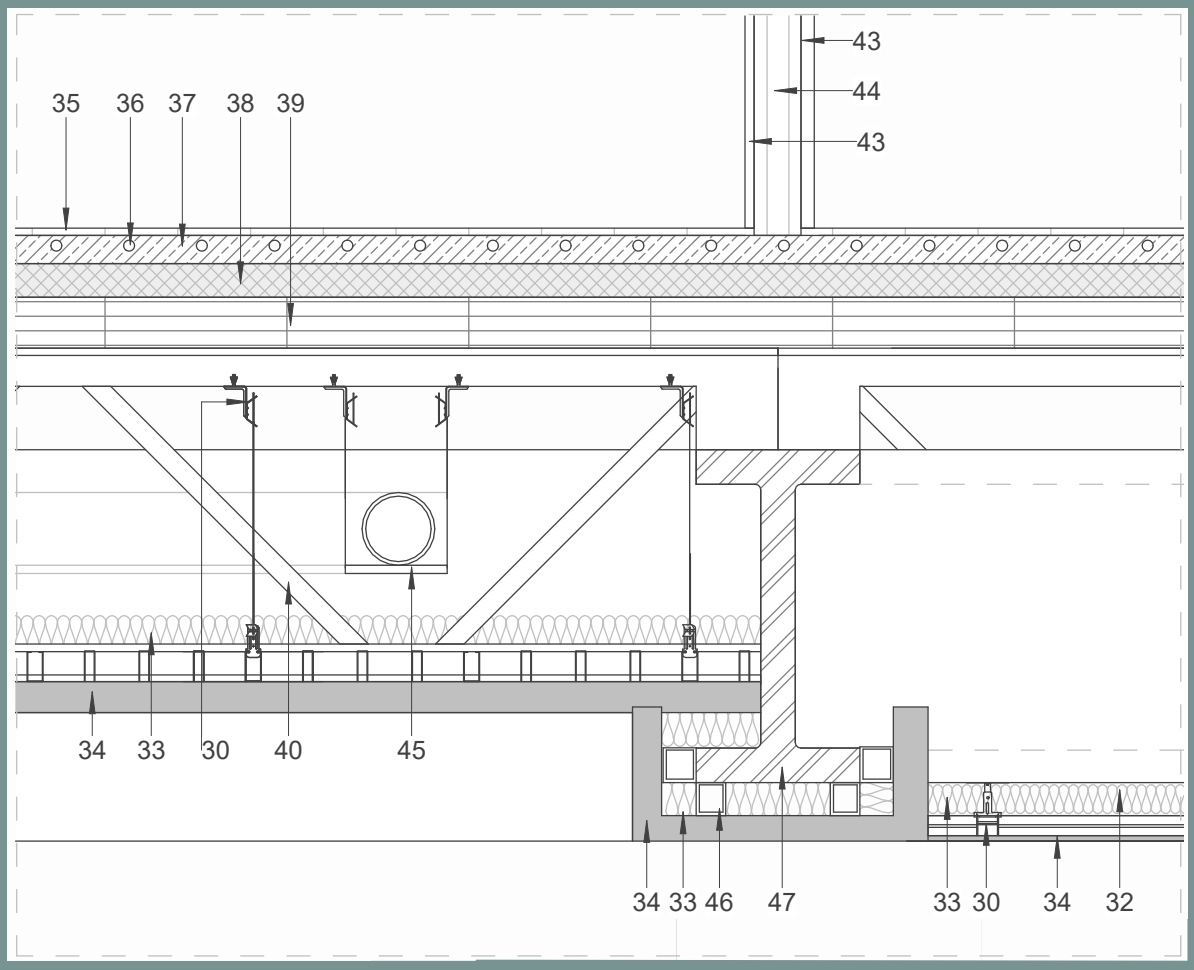
Detail 2 1:20

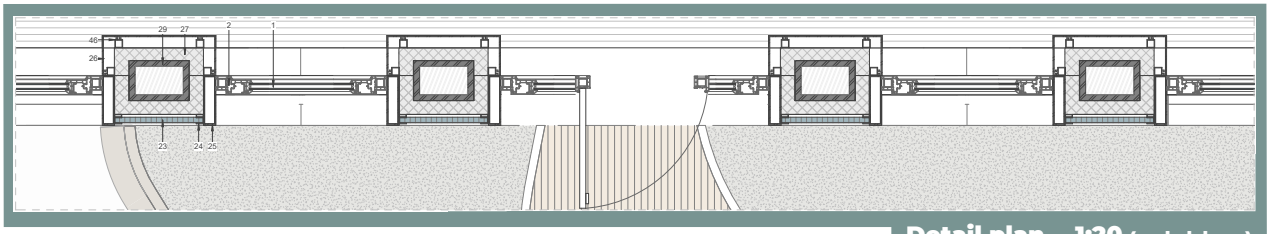


Detail 3 1:20



Detail 4 1:20

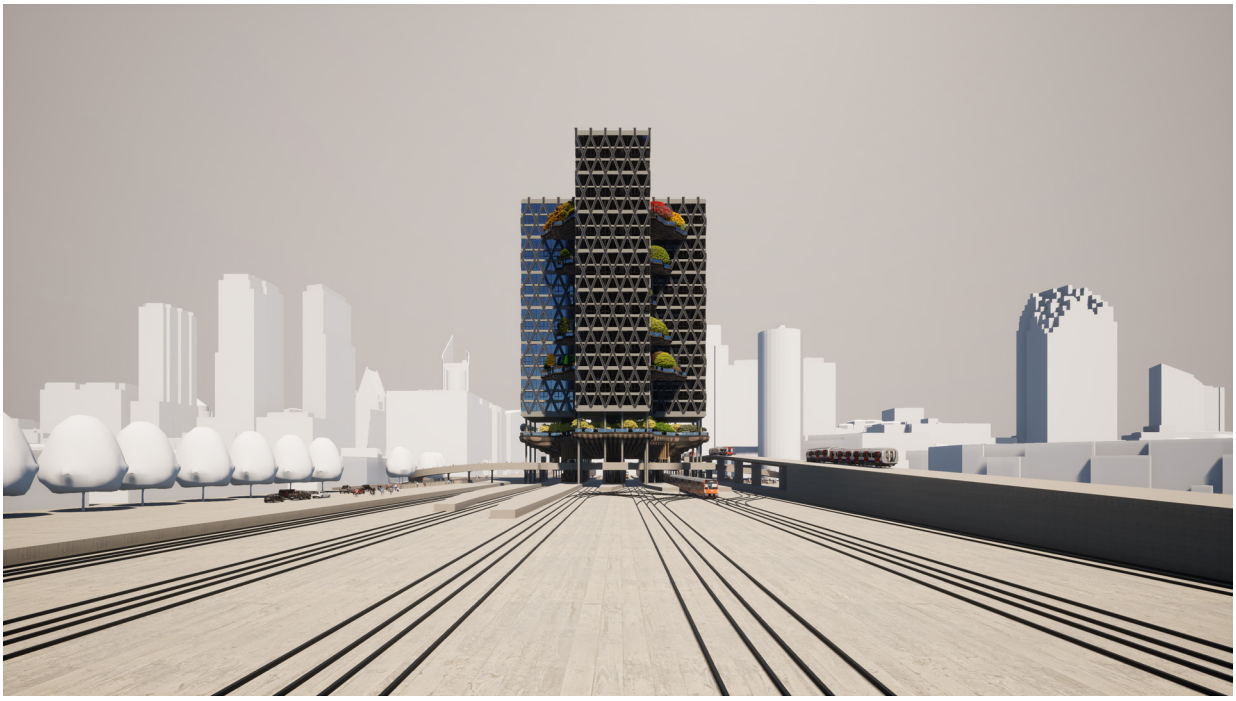


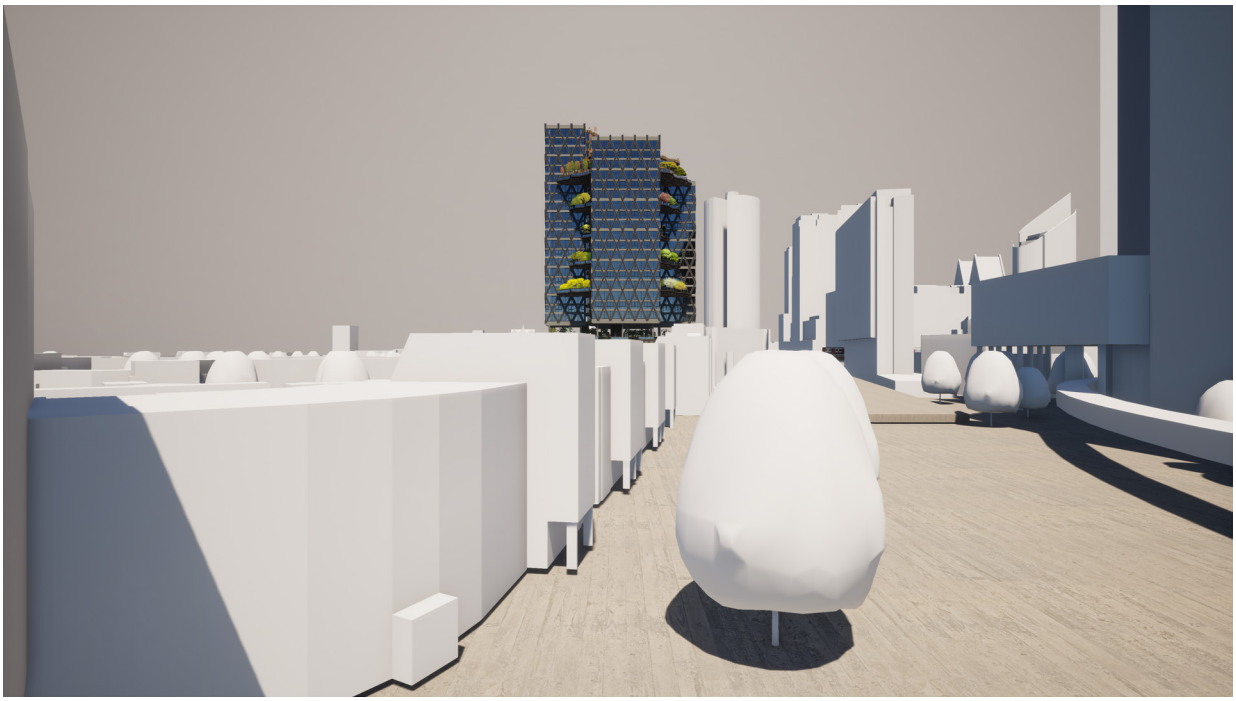


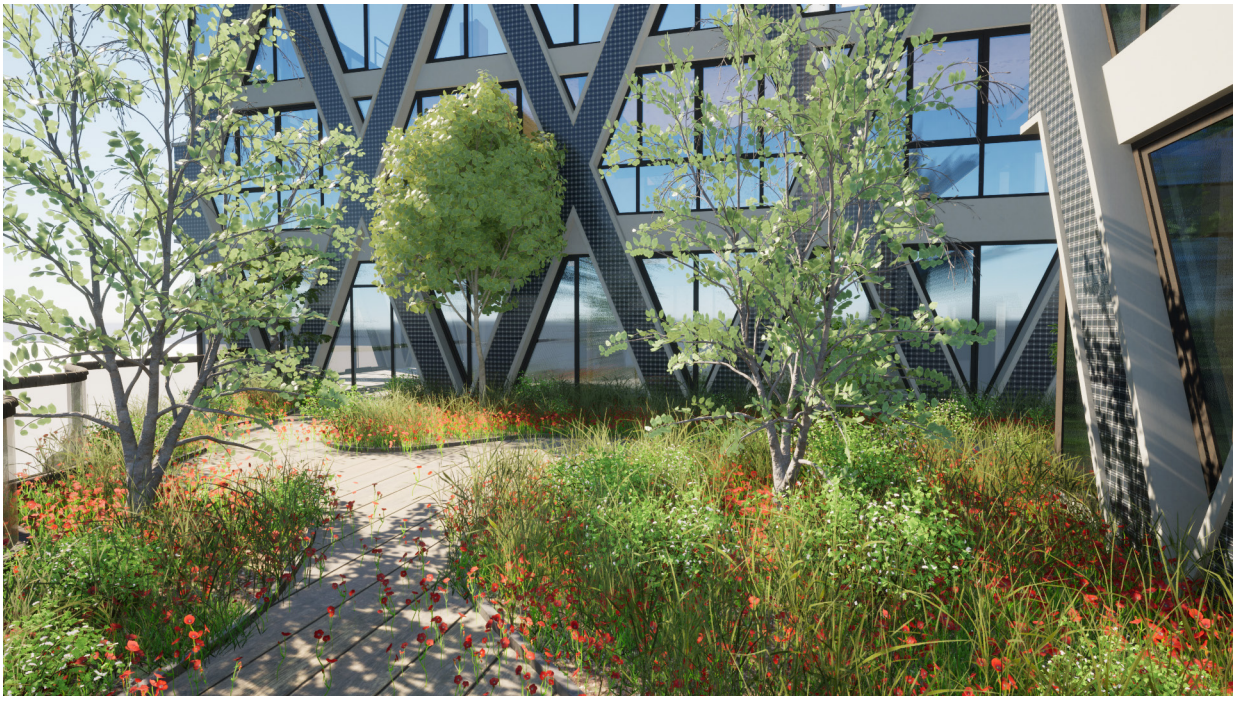
Detail plan 1:20 (scaled down)

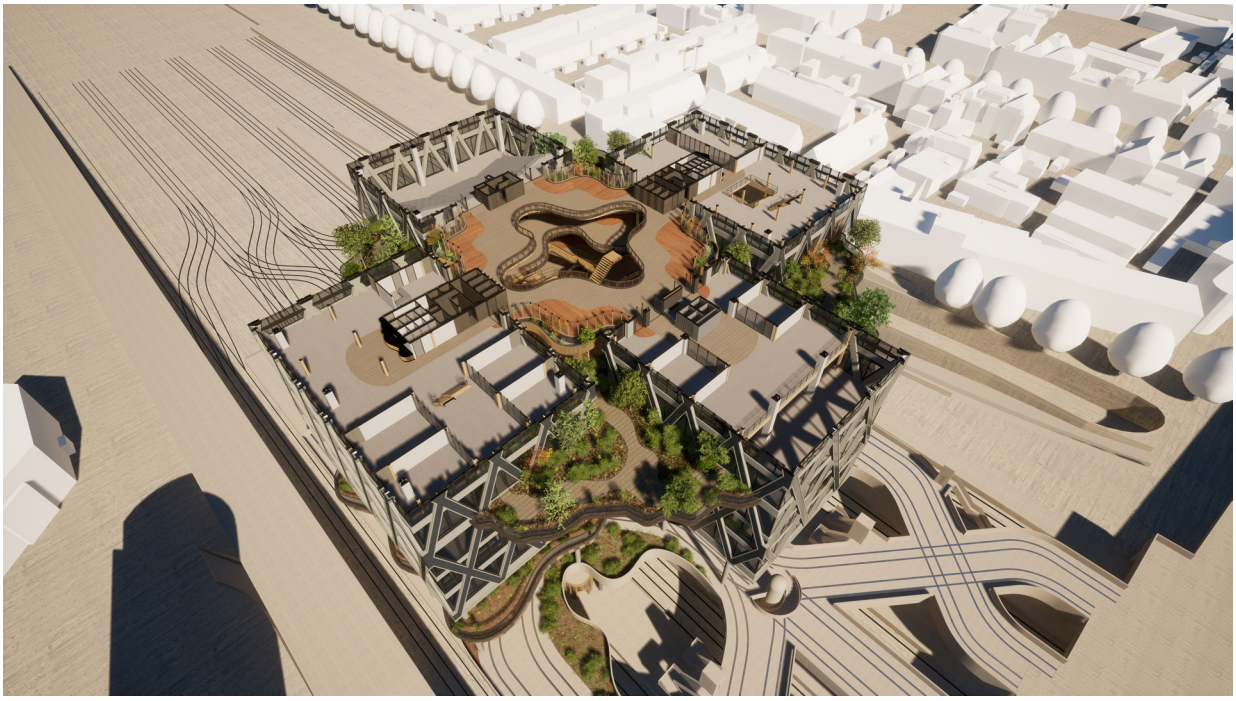
Legend

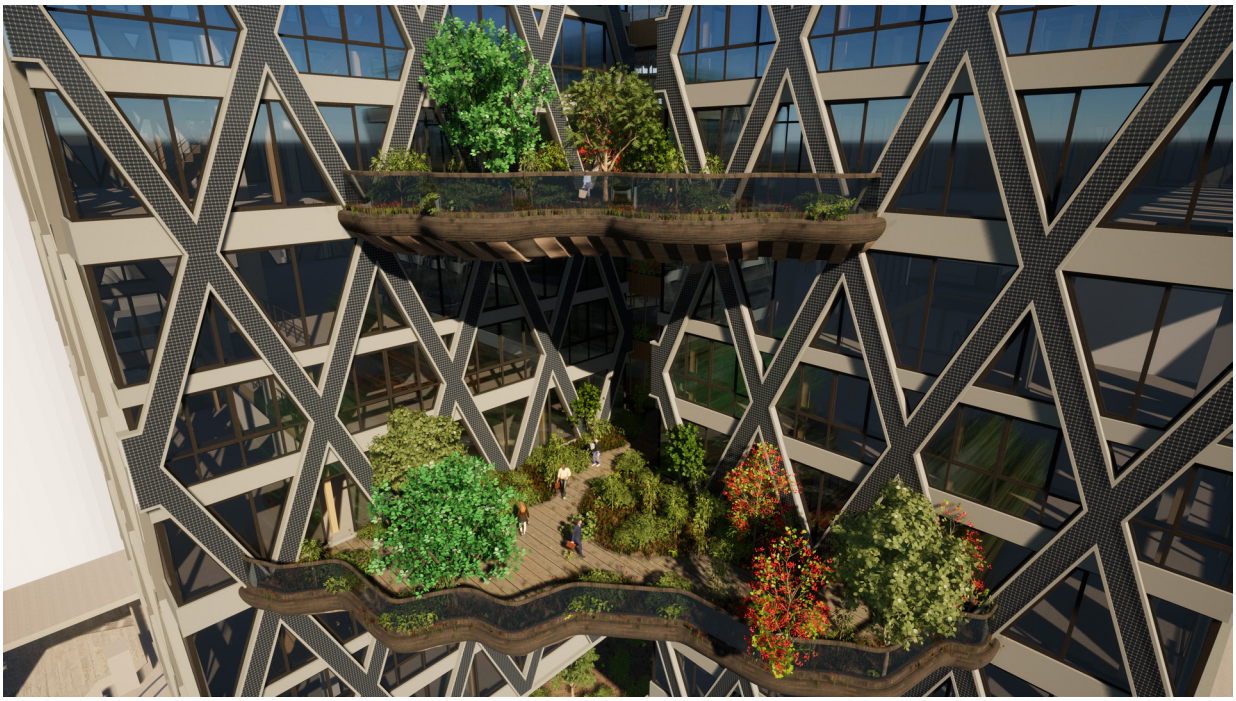
1. Fixed double glazing
2. Mullion
3. Sheeting plywood
4. Insulation
5. Sheeting plywood
6. 2x6 Stud Top Track
7. Sheeting plywood
8. Gutter
9. Natural ground
10. Sand
11. Gravel
12. Expanded polystyrene
13. Concrete
14. Aluminium cladding panels
15. Panel support structure
16. Planter support beam (anchored to main beam)
17. Planter support beam
18. Trapezoidal corrugated steel sheet
19. Membrane filter layer
20. Water proofing membrane
21. Water
22. Optigrün suction and capillary
23. Solar panels
24. Aluminium profiles for panel support
25. Steel profile, window support
26. Aluminium cladding panels
27. Thermal break
28. Rigid insulation
29. Steel main facade structure
30. Ceiling structure
31. Steel plate, anchor bolts
32. Steel main beam, HEA profile
33. Insulation
34. Gypsum board
35. Floor finish carpet
36. Heating pipe
37. Farmacell studded plate
38. Rigid insulation
39. CLT panels
40. Structural steel truss
41. Steel profile, facade structure
42. Wooden beam
43. Wall finishing
44. CLT panel wall structure
45. Ventilation ducts
46. Support aluminium panels
47. Steel main beam, HEA profile
48. Glass handrail
49. Steel profile, handrail support
50. Aluminium cladding panels
51. Membrane filter layer
52. Expanded polystyrene
53. Concrete wall
54. Wooden floor, 10 mm spacing
55. Adjustable pedestals
56. Mortar for slope
57. Concrete
58. Slope
59. Adjustable pedestals concrete
60. Steel beam HEA profile (anchored to main beam)
61. Drainage channel
62. Electric solar heat prevention

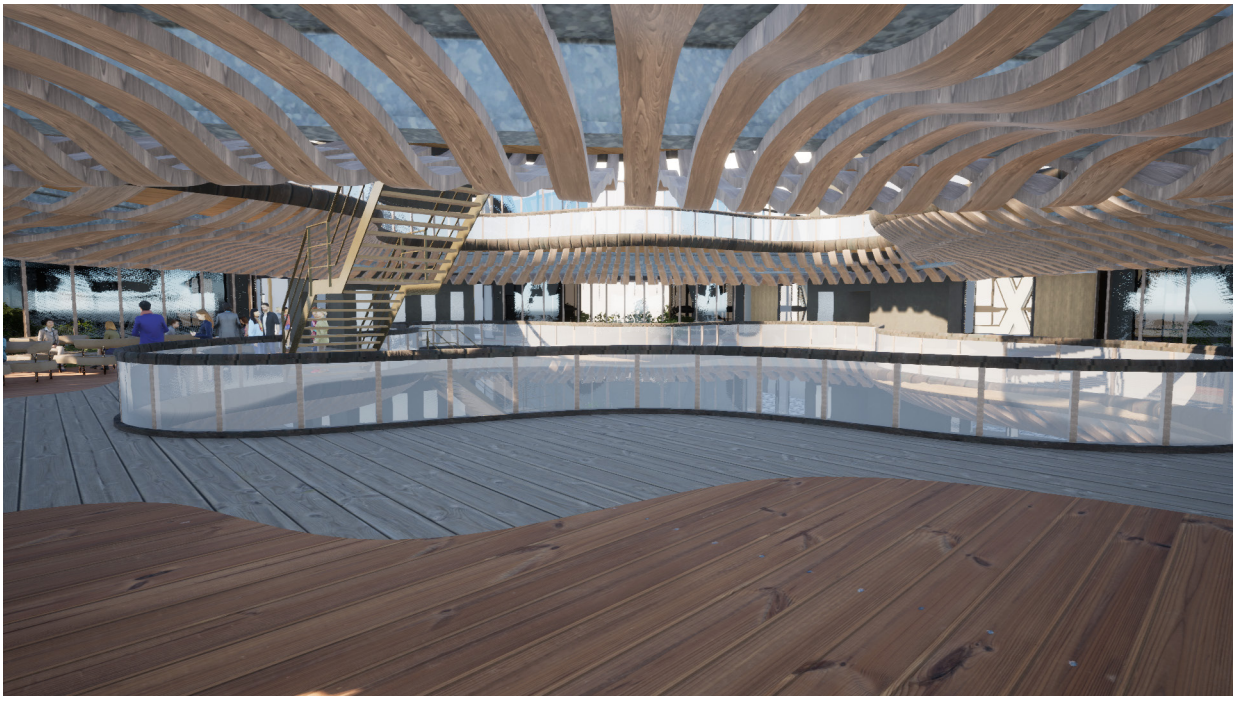


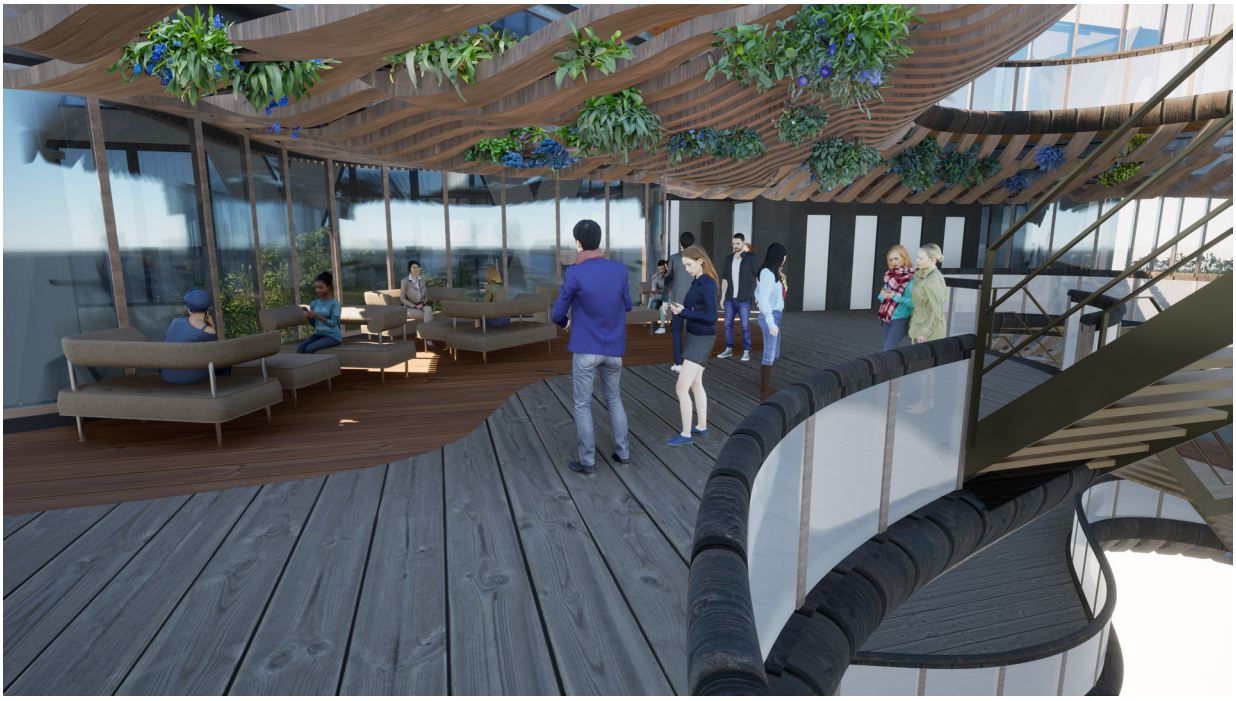


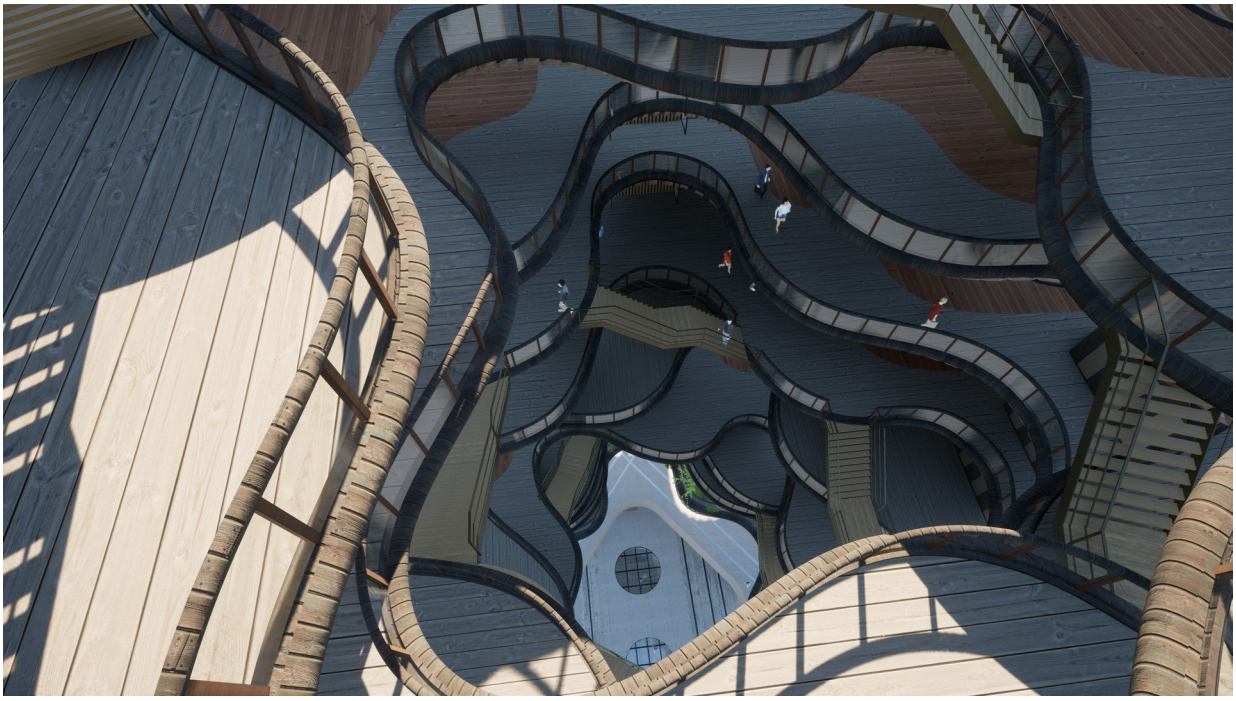


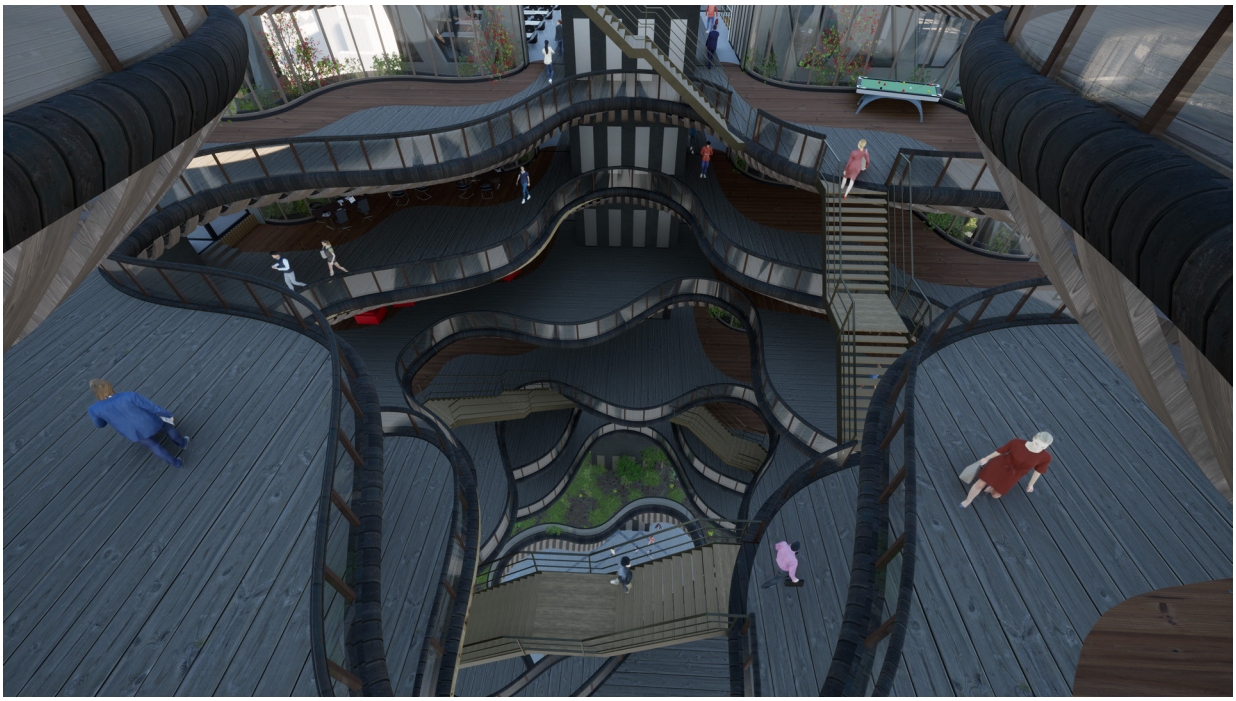


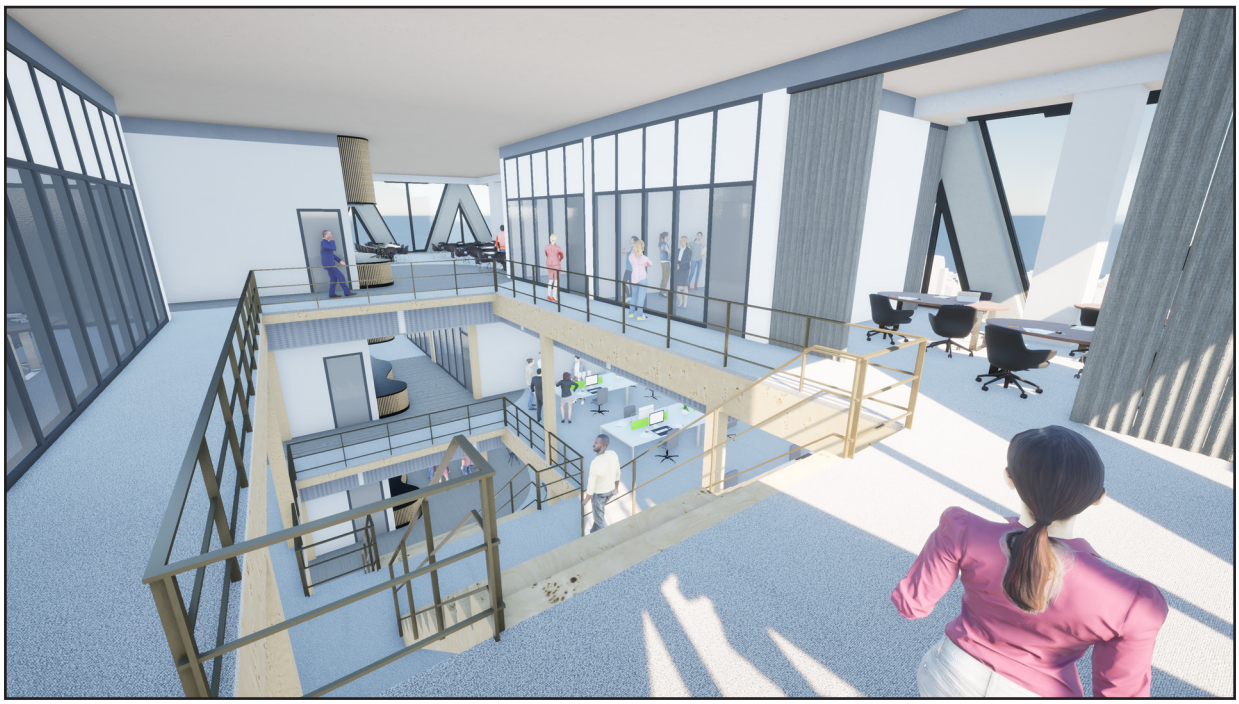


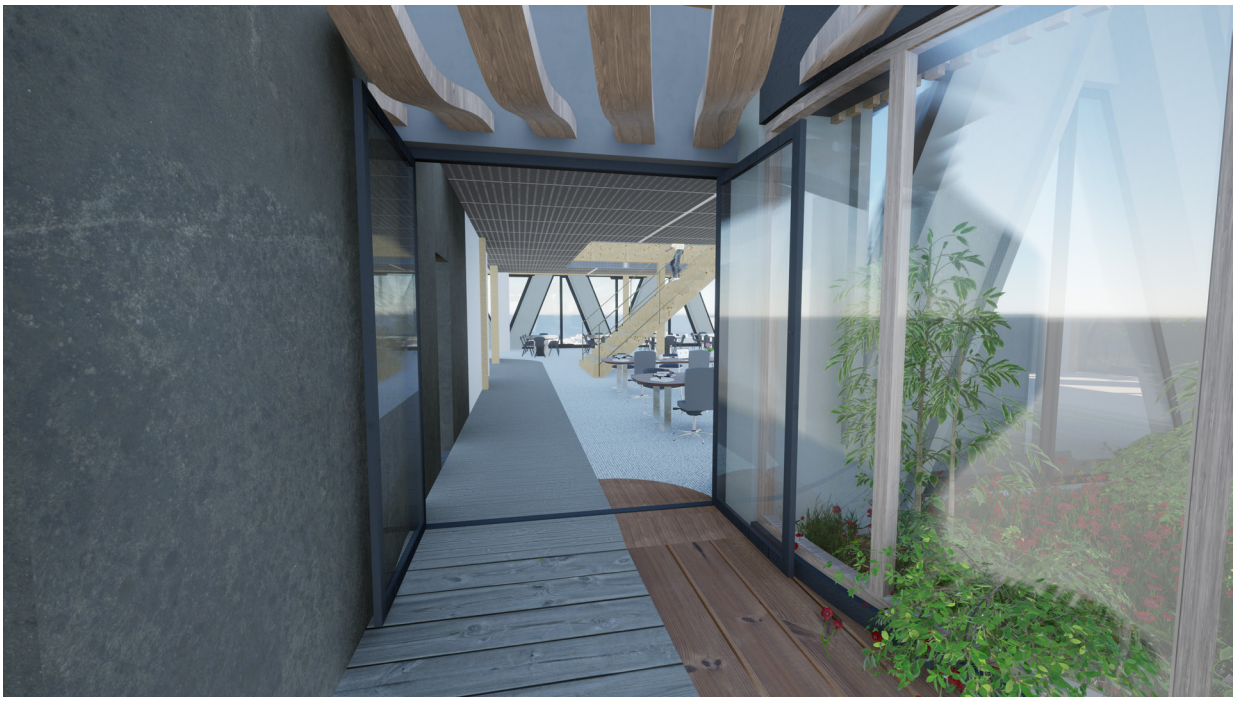


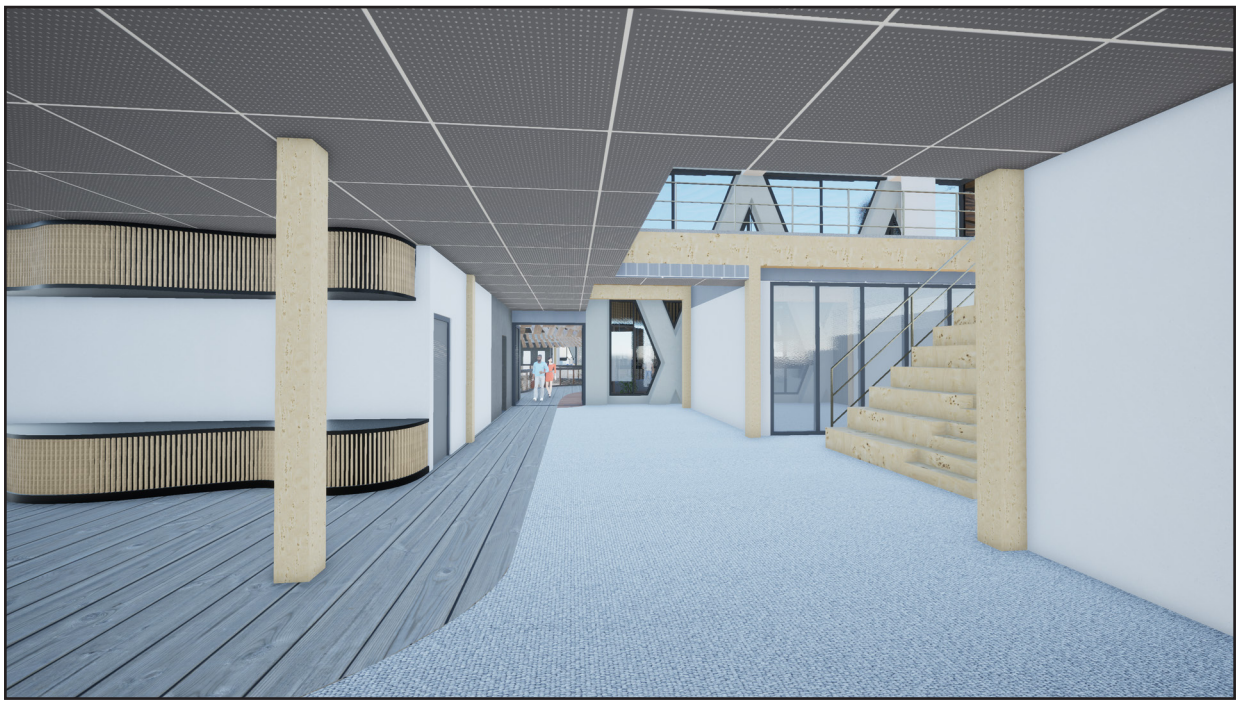


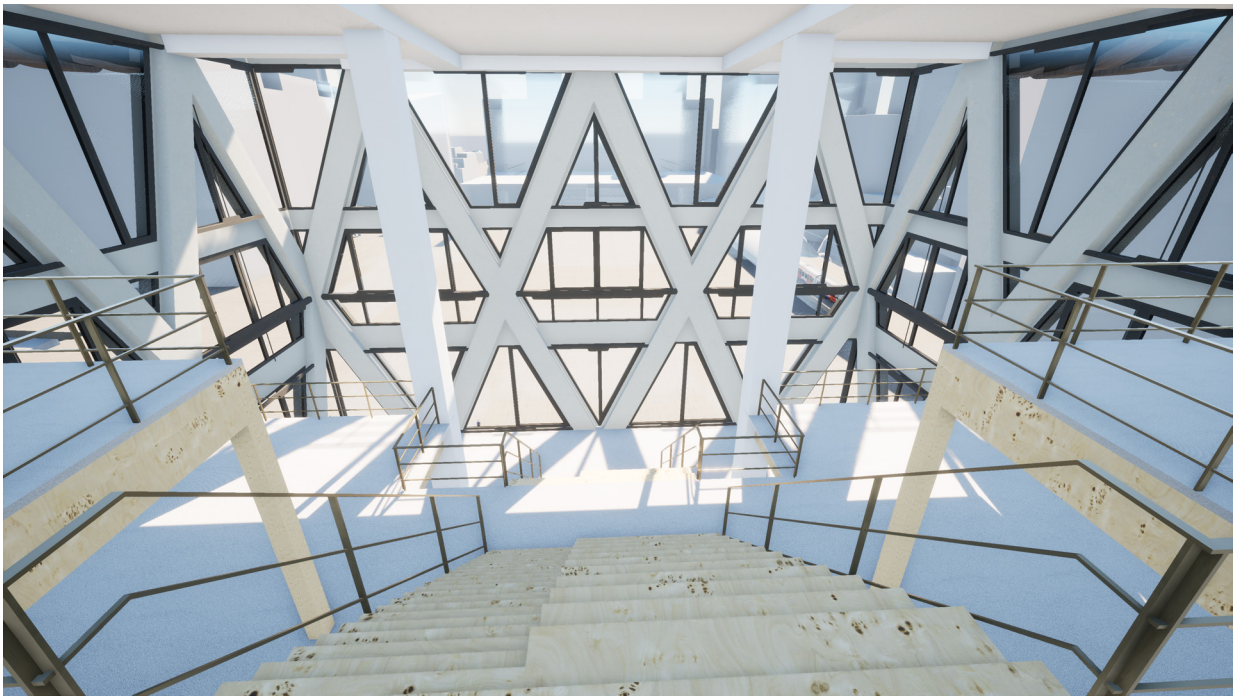


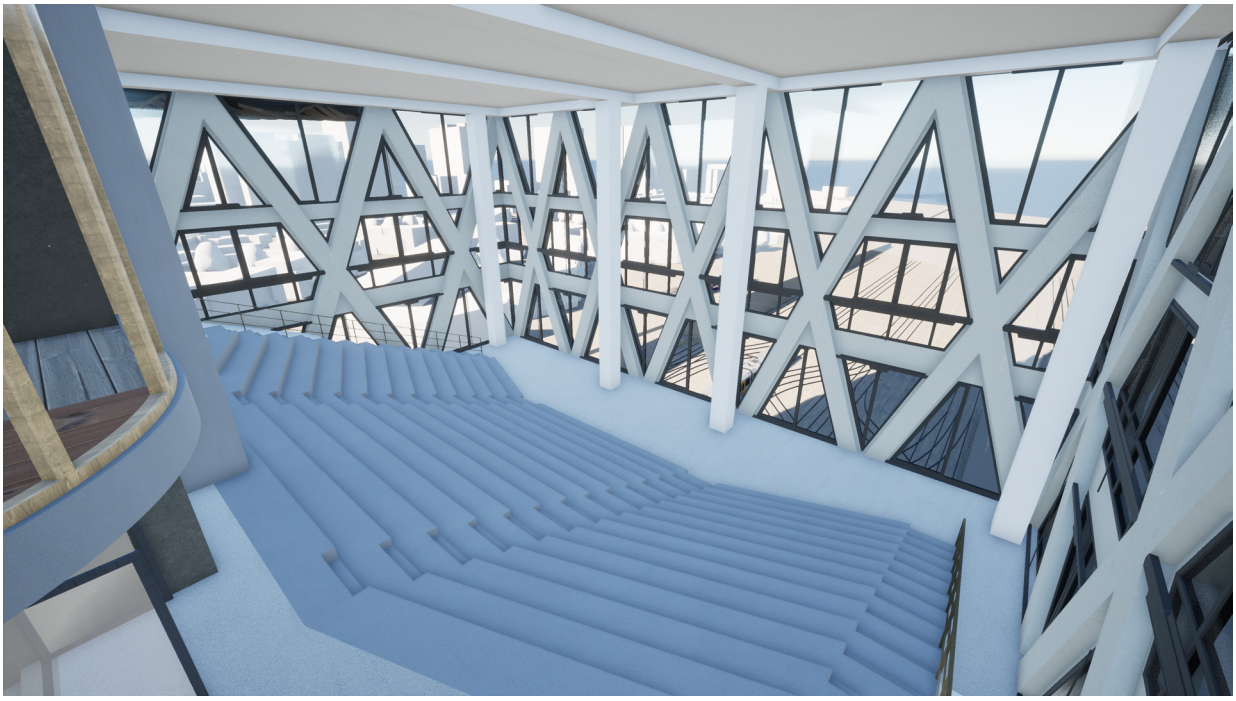


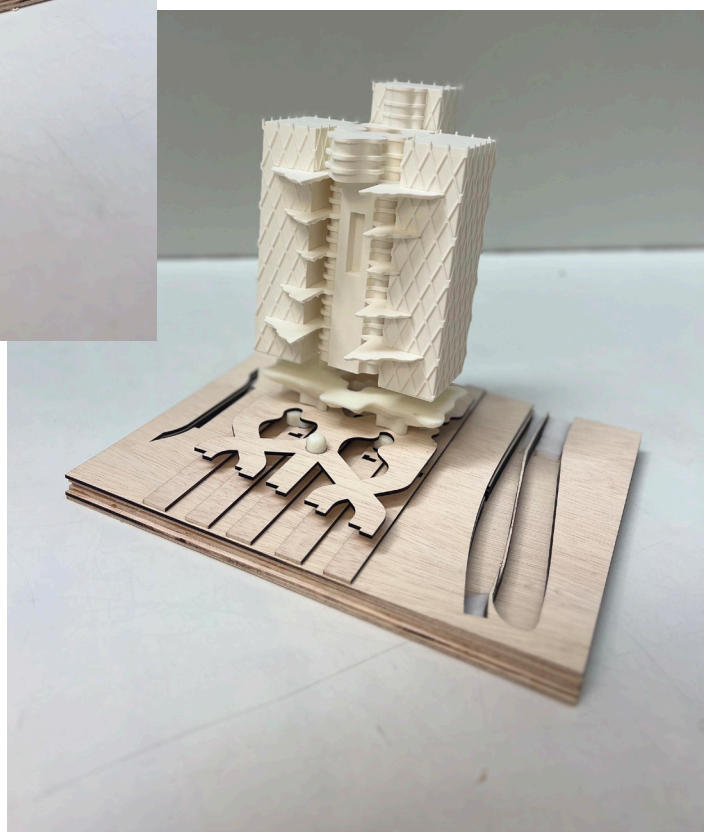


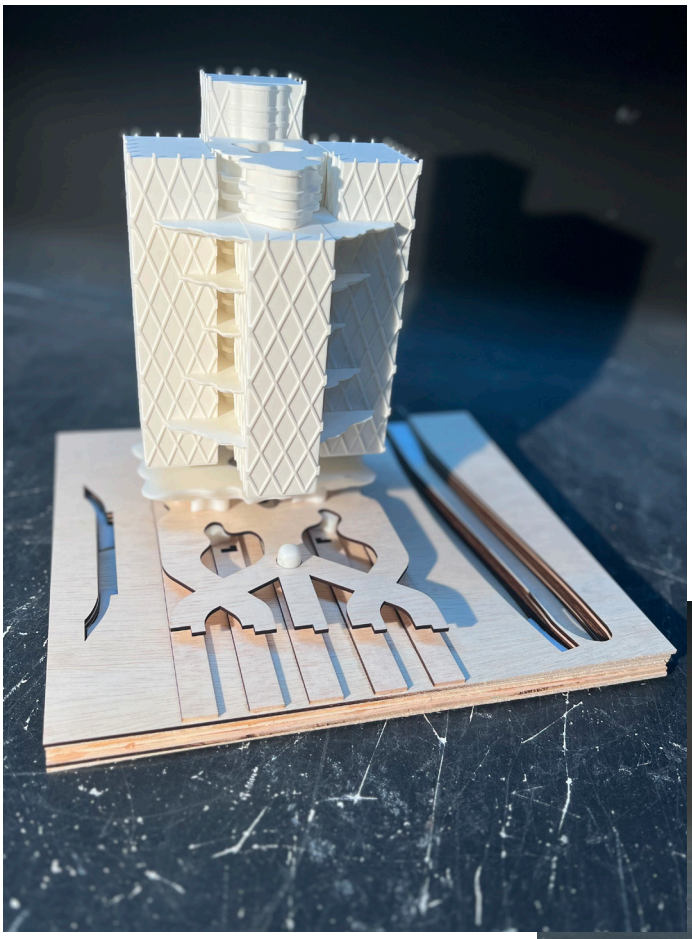


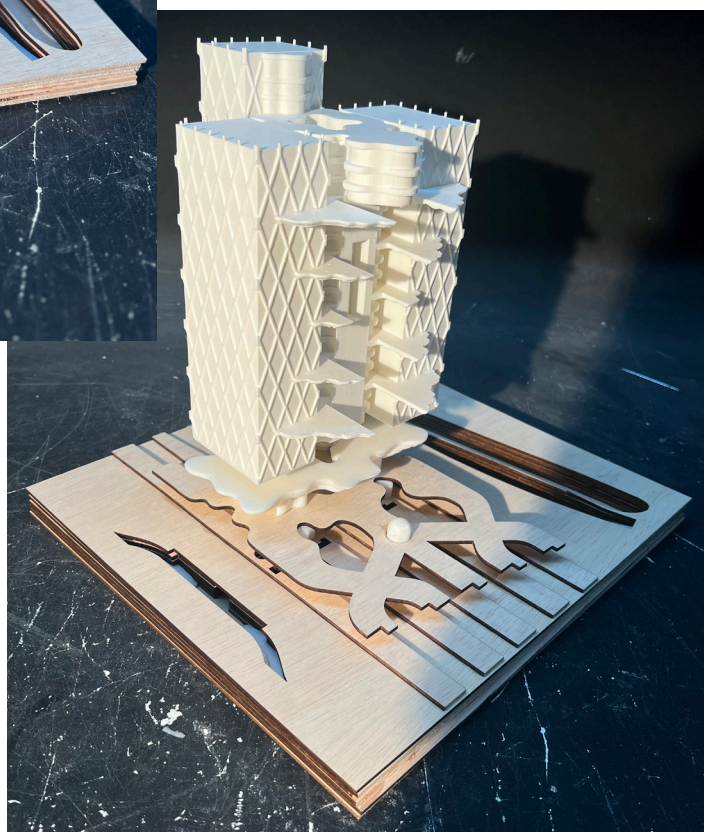


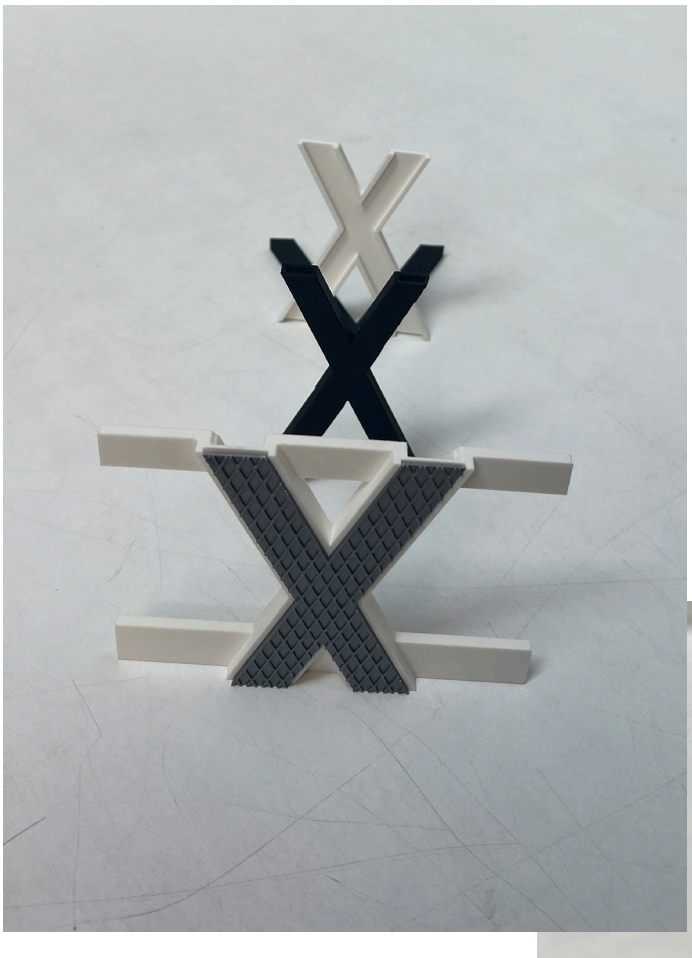


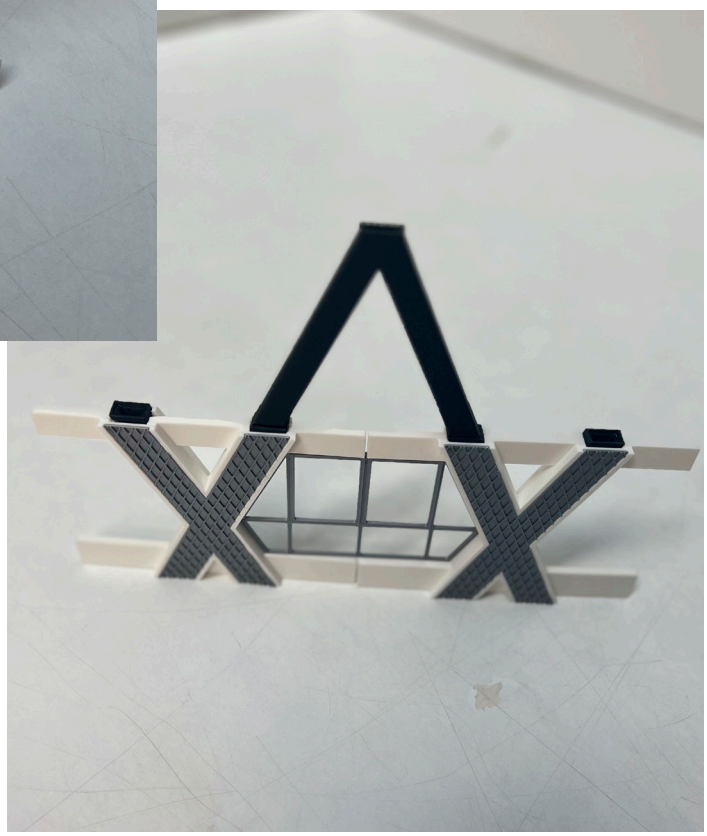


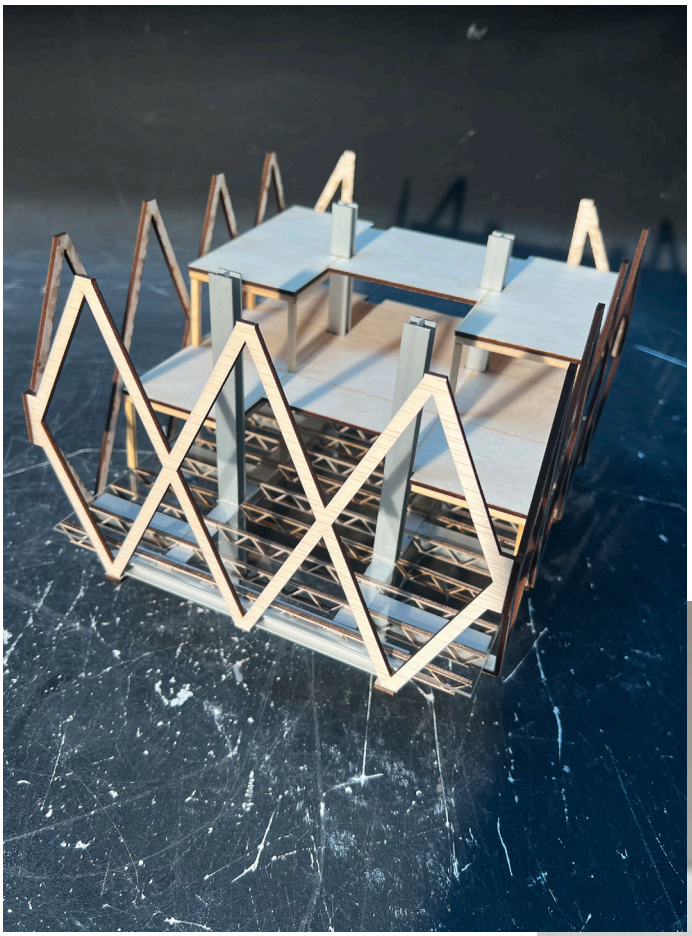


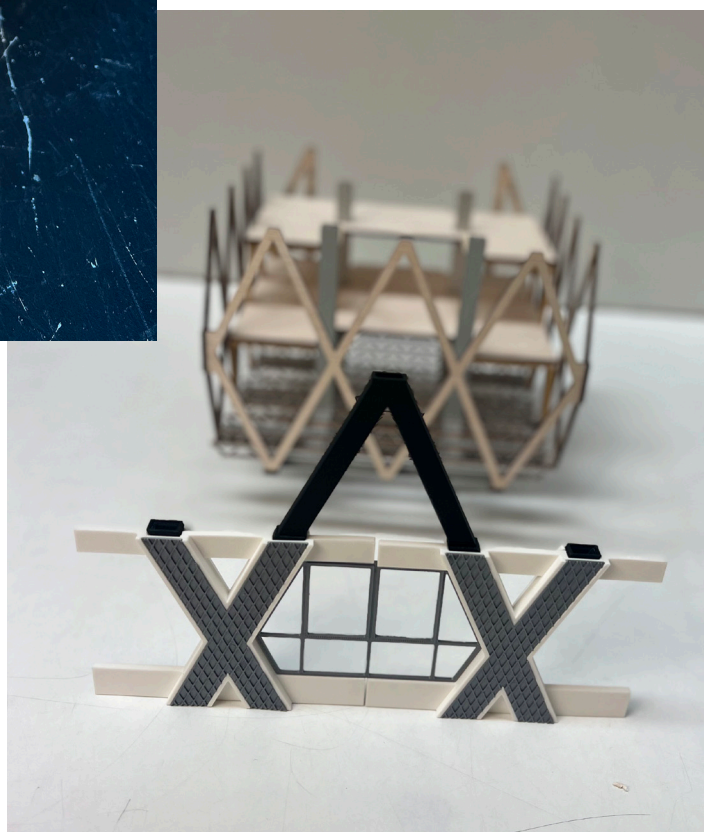










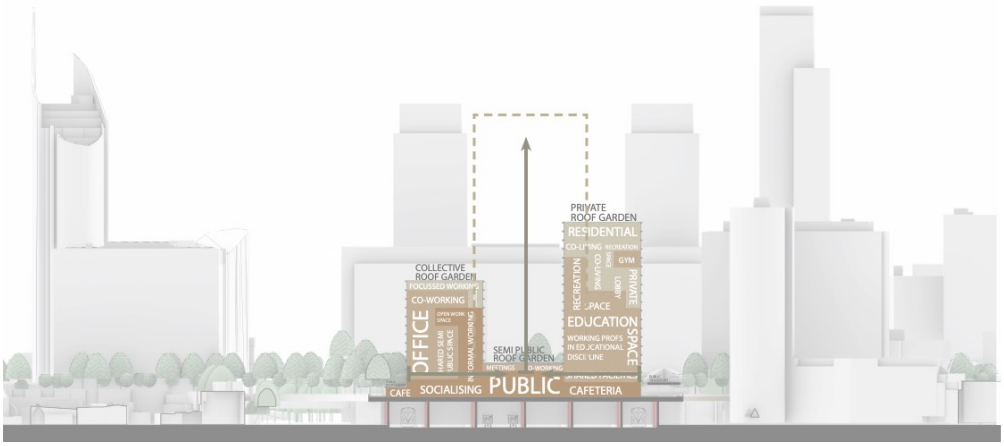


Final Reflection

Reflecting on the year long process of the MsC 3/ MsC 4 master course Public Building.

During the start of this course with the areal research of The Hague center it was a bit hard for me to find it very interesting. This was due to fact that I myself live in The Hague and I thought that I already knew everything about the center since I am there a lot. So, this was a bit of a barrier for me at the start of the course, but once we really started to look deeper than the standard layout and observable things, I started to realize that there were actually things that I didn't know or always had perceived in a different way. This made it actually quite fun to learn things about a very specific site that I thought I already knew but actually I could still learn a lot about. So, this P1 time opened my eyes to look at what I already knew in a different way to learn new things.

With this new found information about the site I landed on a design plot for my project that I first perceived as a lost and nonfunctional space. This really intrigued me into looking at this area in a whole different way. From the start it was clear to me that I wanted to create a design that connected the people, the neighborhood and pushed the users to connect and interact with one another. And with this research into the site, I realized that this design plot had the potential to facilitate these ambitions with the proper design interventions.



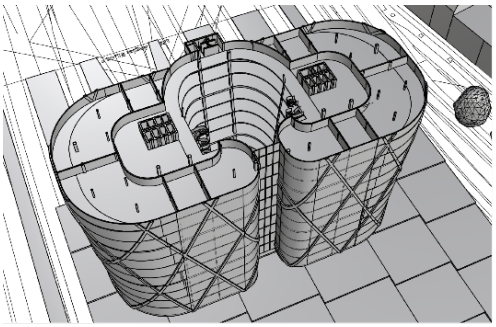
With this the design process started. As mentioned above I had a clear view of the ambitions that I wanted to express in my design, but I really struggled with giving these design ambitions shape. The first few weeks for me where not that productive since I struggled with myself on setting the first design steps and I was really not too sure on how to do it. But after I while I thought let's just try some things, so I did, I started in creating the connection axis on a raised floor level over the train tracks connected to the fly over. In this manner I connected the new 'ground floor' of the building with the axis I drew to the central station. This was my first attempt into creating axis in the plot and finding the things I wanted to connect to. It was not a shock that this first attempt was very limited and only focused on creating a space for my plot above the train tracks and a single axis that would connect the plot.

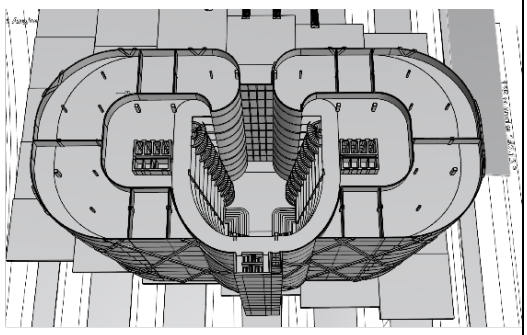
With this first step out of the way I realized that the approach that I took was way too simplistic. The plot consisted of all these different layers, the train tracks, the train platforms, the fly over level and the neighborhoods on the side. But my first attempt only acknowledged 1 of all these levels being the fly over. Creating a solid new 'ground floor' above the train tracks was not the correct approach. So, it was back to the drawing board for me. I needed to find a new way to create something above the train tracks that would at the same time connect all the different levels.

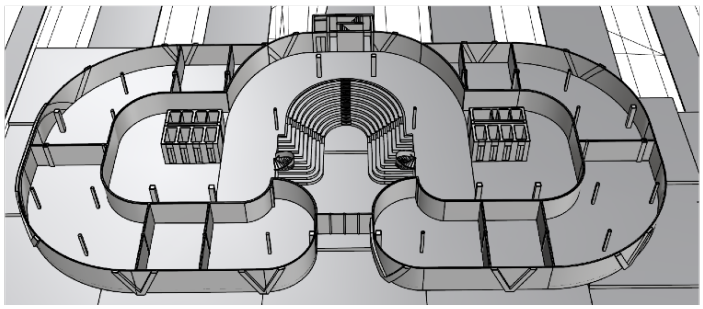
Here I really started to look into and study reference projects for my research part. I wanted to research how a design or a landscape intervention could facilitate the connection between different layers. For me The Little Island from Thomas Heatherwick was a very important reference that I studied to understand how a pathway like park could facilitate the connection from both different layers but also the connection with the people to add functional space. With this research really influencing me I came up with a new design to creating the connecting factor between the layers of the train platforms and the connection with the flyover level. This came to a park design with different rising points and visual connections to connect the different layers. This was a good breakthrough for me in the steps of creating the different levels of my design facilitating the connection between people and the neighborhood in my design. With this new approach for the first level I started with the design for the ambitions I wanted to realize in the building itself.

For the design of the building, it was very important to me to facilitate the connection between people and the functions within the building and connecting the people with each other by stimulating interactions. For this I had two things in mind how I wanted to do this. First was by creating a flexible design so the functions of the building could be open to change and facilitate either very open and public functions but be able to transform in a more collective setting if needed. This would in my mind create a very community like feeling in the building to be able to go from very public to more collective thus creating a better connection between the people. And on the other hand, I really wanted the design of the building to facilitate spaces where people would be forced to connect with each other. By creating public walk routes through the building or open and connected spaces so people would always see each other and this way connect instead of creating very anonymous spaces in the building.

With these ambitions I started to analyze other reference projects to see how you could implement such interactive design interventions. For me the building I work at Next Delft, but also Atlassian Central in Sydney and The learning Hub in Singapore really stood out in the way they dealt with these ambitions I had. Creating navigational routes with interaction and seating spaces on the stairs like in Next delft, the flexibility that is created in the Atlassian Central building by implementing a new kind of structural principle and the way communal walk routes are designed in the Learning Hub building with visual lines of sight also connecting the people, really opened my eyes on how I wanted to implement such things in my design. Like I mentioned earlier, before I researched these ambitions that I had, I really struggled to give them shape but after this research I had a great starting point to give the building shape to facilitate these things that where important to me. With this research done I designed a new building completely scrapping what I had before and focusing on creating these interactable stairs, a communal walk route in the building and creating these visual lines of sight in my building with a bit atrium at the heart of the collective walk route.



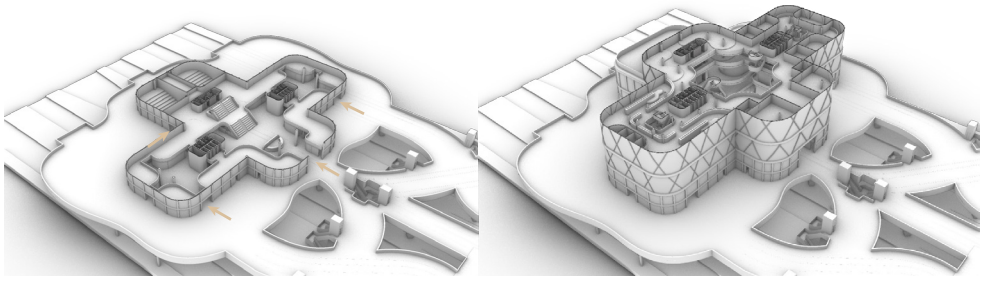




With this design I came to the pin up before the P2 presentation, but during the presentation to the tutors I realized that the vision I had was not really coming across like I had hoped, and I received very valuable feedback. The main thing was that I wanted to create very flexible floorplans but with my approach I did the opposite constraining them a lot, also the connection from the different layers at the park level was not very prominent. The slab I created did have rising points from the train platforms but was far from inviting to go up or down. And the atrium that I created lacked a function except navigational routes. But this meant that I had to pretty much scrap the design again and create a new design in a very short time frame to P2.

So, these weeks leading up to P2 where very stressful for me since I had to do a lot in a short time but with the good feedback from the tutors, new reference projects that I

analyzed like Forum Groningen, KJ plein Powerhouse and Amare I managed to create a new design that better connected to my ambitions and facilitated better connections on the different layers of the building but also on the navigations levels that already existed.

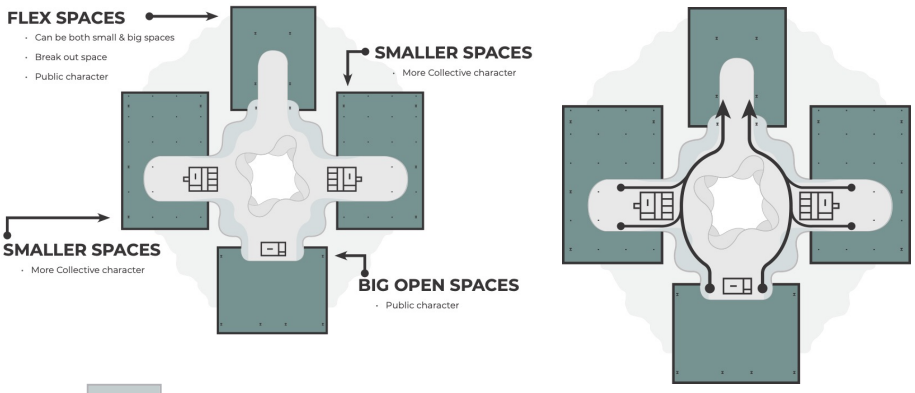


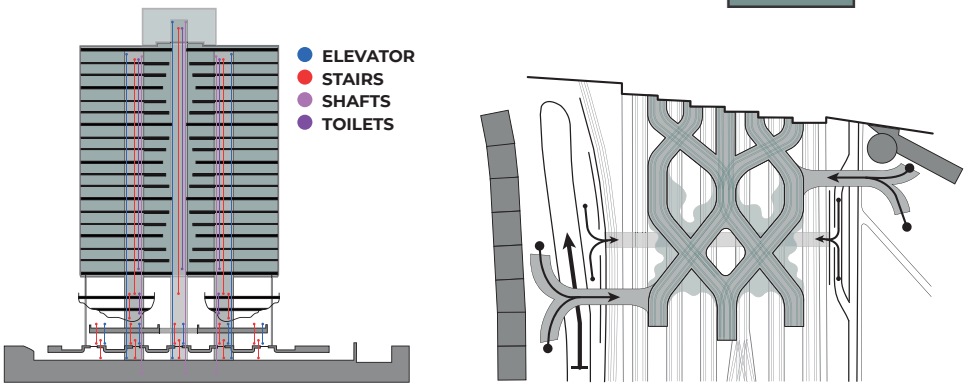
This design created a better flow from all the different navigational levels by implementing cores that connected all the layers, visual lines of sight with big voids in the park reducing the darkened effect of the park on the train platforms below and a new central collective routing around the atrium and having more functional spaces connected to this collective walk route around the atrium and then flowing into more private parts of the building the further away from the atrium. This design that I presented at P2 was a huge improvement from the design that I had during the pin up and it was very nice to hear that from the tutors during my P2 presentation.

But nonetheless there were still some points where my ambitions where not coming to full fruiting in the current design. The main feedback I received that day was that the organic interactive walk route around my atrium that I created was being limited by the design formfactor that I had already set out in a shape. This organic interaction heaven had to be cramped into the shape I designed and this caused design problems around the edges of this atrium. I had to let the design ambition of the interacting atrium dictate the shape not the other way around. The other points being that yes, I did create a better connection in the axis following the train tracks by connecting the park, the train platforms and the building on top, but the connection perpendicular to this train track axis was still nonexistent. Therefor not fulfilling my ambition to connect the neighborhoods on the sides of the train track. Lastly by placing my building on the park that I created, the building itself formed a barrier for people to flow over this raised park that I envisioned as an axis for future expansions over the train tracks.

With this very valuable feedback from my P2 presentation I had a lot of new work to do to really bring all of my design ambitions to full fruition in my design. So, I turned back to research to look into creating new navigational connections through the analysis of Delft Central Station, HS2 Euston Station and De Weenatunnel. These projects thought me how I needed to create these flows and add functions to these navigational routes to stimulate their use. The analysis of the Marriott Marquis hotel, IBM Powerhouse and Parkroyal Hotel thought me on how I wanted to properly implement the organic atrium function in the building and add functions to this routing and let the shape of this atrium be dictated by the function I wanted it to fulfill. And the analysis van Huis van de Stad on how a grid like pattern could influence the appearance of the façade and how this related to the functions behind the façade.

This final part of the research really influenced me to take the needed design steps to bring my ambitions to full fruition. With this I created new navigational flows to connect the two neighborhoods by implementing a bike tunnel underneath the project, adding function to that tunnel with a bike storage space, connecting the different layers of the project with visual connections. Adding a over ground walkable ramp to the raised park connecting the neighborhoods, adding flows and functions to the raised park to stimulate its use. Raising the building as a whole to lift the barrier of the building on top of the park and connecting the building with visual connections this way by making the center of the building on top of the bike storage and in the middle of the navigational flows over the park this way connecting all the different layers both physically and visually. With this new connection in the center the building center took the needed space to fully express the design ambitions it needed to fulfill. By letting this organic heart of the building be shaped like it needed and adding the functions to the side of this hart the whole building started to work like I intended it to by providing different kinds of functions in the different parts of the building that were constructed in a way to fit those kinds of spaces with other construction spans. Creating two buildings for smaller spaces and functions, one building at the back for big open spans and a building in the front with flexible spaces ranging from big and open to smaller spaces.





This final design form that I landed on after fully scrapping my design 3 times truly feels like the full embodiment of my design ambitions at their full potential. But reaching this point was only possible by making these previous designs to learn from them what worked and what did not. This was the embodiment of my research through design

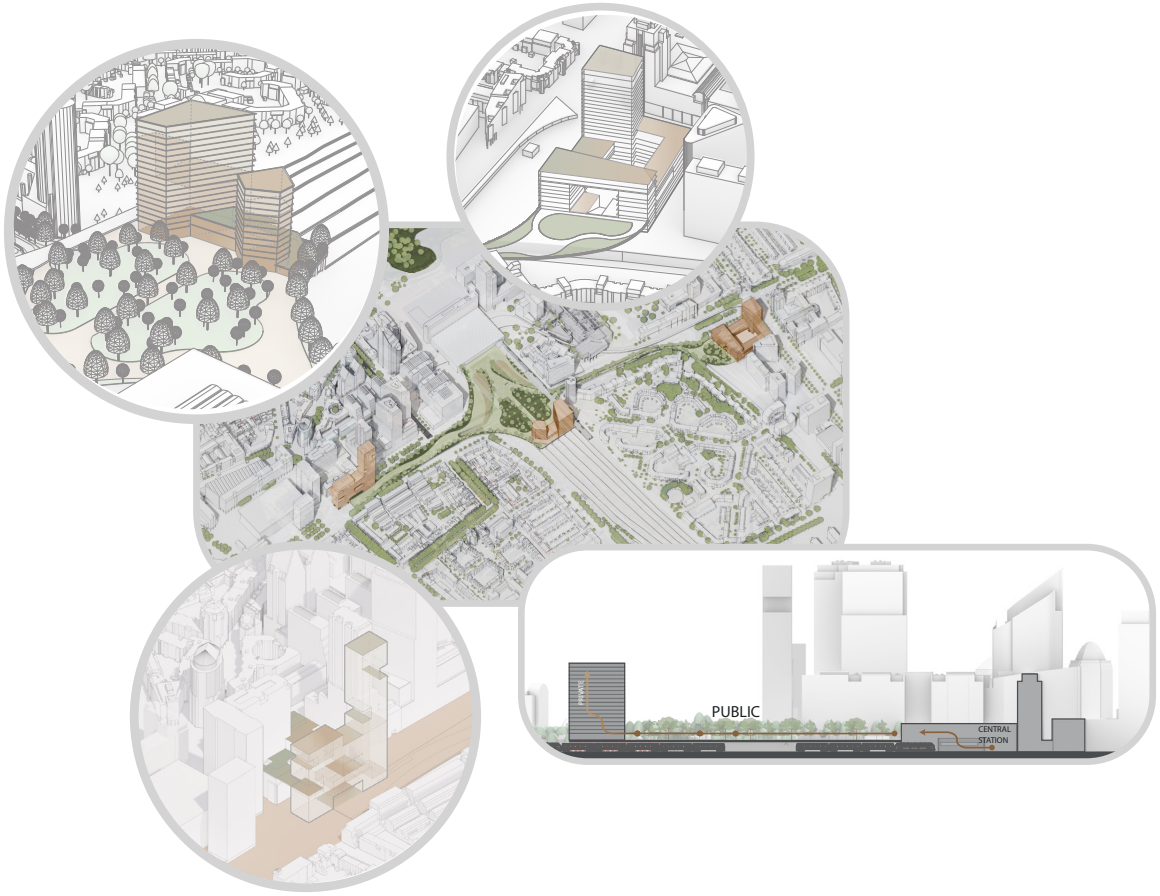
process of this graduation process. And this was only possible by truly evaluating on the feedback that I received each time from my tutors, the research into the different reference projects that I utilized during my design process and reflecting on the mistakes that I made along the way.

With this main overall reflection done on the process I go into the reflection questions:

- What is the relation between your graduation project topic, your master track (A, U, BT, LA,MBE), and your master programme (MSc AUBS)?
    - The master architecture Public building program focuses on the topic of designing a future-proof multiplicity concept for education and the public building that facilitates this function. The aim is to introduce multiplicity at the core of the building to assist the educational functions and the function of the building as a whole, adding value to the environment they are build in. So, the relation by graduation project topic being "Safety features are one of the multifaceted aspects of university campus design, focusing on adaptability, spatial dynamics, and safety in the sense of a communal feeling. However, this last aspect deteriorates on the public character. How can this be combated by designing for interaction?" and my master track and programme is the approach to add a diverse sense of functions that assist one another in their spatial dynamics, design these functions in an adaptable way so they can be converted from public to more collective or house a whole different function if needed, future-proofing the building in that sense and designing for interaction to add this wanted value to the environment they are built in.
- How did your research influence your design/recommendations and how did the design/recommendations influence your research?
    - As mentioned in the overall reflection research played a very big and important role for me in the design process. Doing the research let me in to taking the needed steps in my design to bring my design ambitions to fruition. Because without the research into reference projects I was very stuck in making my design decisions. The recommendations from my design tutors where also of great importance for me, Henk Bultstra (Design mentor) challenged me each and every time to look at the things that I had done and researched in a different way. This let to me changing a lot of the things that I did, but most importantly gave me a better understanding of the impact of the things that I did and if they actually had the impact that I intended. My Theory & Delineation mentor Sien van Dam helped me in forming the questions and the ambitions that I really wanted to incorporate in the design and therefor helped me lay the foundation of the entire design process as a whole, which was of extreme importance to be able to create such a design project. My Technical Building Design mentor Ger Warries helped and guided me into making the correct technical design decisions to be able to facilitate the design ambitions that I formulated for the project as a whole. This was of great importance for me since these ambitions where of great impact in technical aspects of the building and these then had great impact on the design as a whole again.

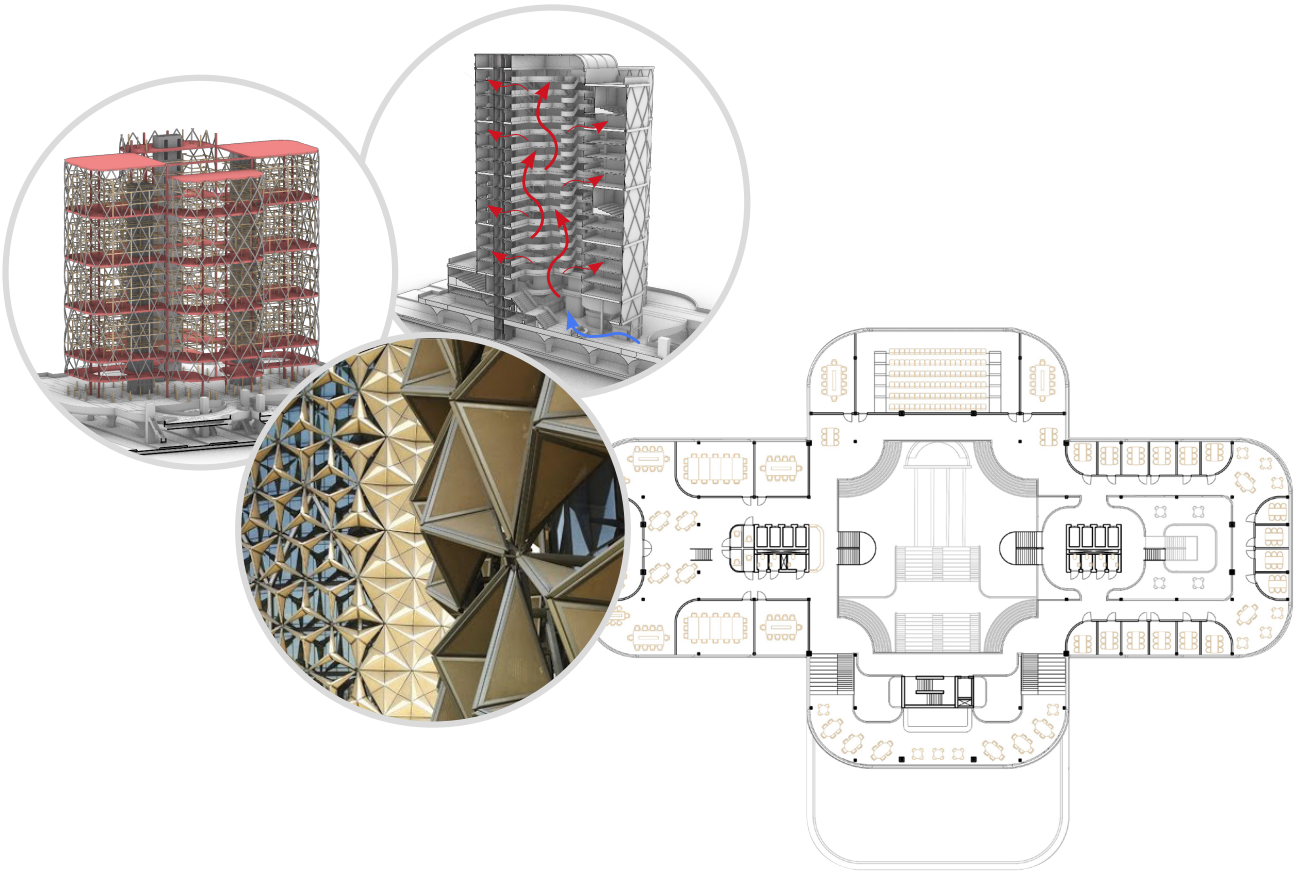
- How do you assess the value of your way of working (your approach, your used methods, used methodology)?
    - The way I have worked this graduation program has given me tremendous value. And is something that I will take with me for the rest of my life. It really changed the way I worked on large scale project both project and educational wise but also on a personal level and experience. Starting on the educational part of value of the way I worked. Before this graduation process, I always started designing by just doing something that first came to mind work that out and see how it works along the way. This was also the way I first approached the design of this project, but as you can read in my overall reflection this gave me a lot of problems and got me really stuck in the design process. With the guidance of my tutors and the theory aspect of this graduation course I was introduced to a for me new way of using research to your advantage whilst designing. And this was a big eyeopener for me since I didn't keep beating my head against a rock trying to come up with a design on my own and then testing of it would work, but the research really guided me into understanding the implications that different design choices had then translating these things to fit my context and ambitions. So, this was a big value for me to realize and implement in my way of working.
    - On the personal level this graduation process also had a big impact, as my tutors and student counselor are aware of during this year there were some very big changes in my personal life that really impacted me and my ability to study. To help me with this I sought professional help which was a very big step for me since I never talked about it or let people know how I was really feeling. So, this professional help really did wonders for me with dealing with it all, guiding me in my graduation process, distancing myself from the situation to focus on the things that I needed to do and facilitate a great working environment at the office of the company that I work for to work on my graduation process (being allowed to work in the office building 24/7 on my own). So, this graduation process has had massive personal impact for me and is something I will take with me for the rest of my life.
- How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?
    - The design ambitions that I formulated focused on adding value to both the academic and societal aspect of the building. So, in my eyes the graduation projects core is about adding this value in creating a connecting factor both in and around the project. Creating the interaction and lifting the barrier of the train tracks connecting the neighborhoods stimulates the inclusivity of the project it invites everyone to be part of the building with the added public functions throughout the building. The adaptability of the building pushes the envelope of lifelong learning by being able to change over time and constantly add new and interesting functions to the building stimulating the neighborhood, the city and the community the project is part of for constant growth and exploration.

- How do you assess the value of the transferability of your project results?
    - One of my design ambitions was to create a blue print for the new way of building and densification in the city center by creating a way that does not infringe on existing qualitive public space and adds value to the environment without taking any. This ambition was realized by creating a new value above an existing navigational axis that exists in every big city and still has potential. Being the train tracks, every big city has them and the space above is rarely utilized. My project created this blue print on how this space above the train tracks could be utilized to add qualitive functions to the city center and therefore could very well be transferred to other cities to utilize this space.



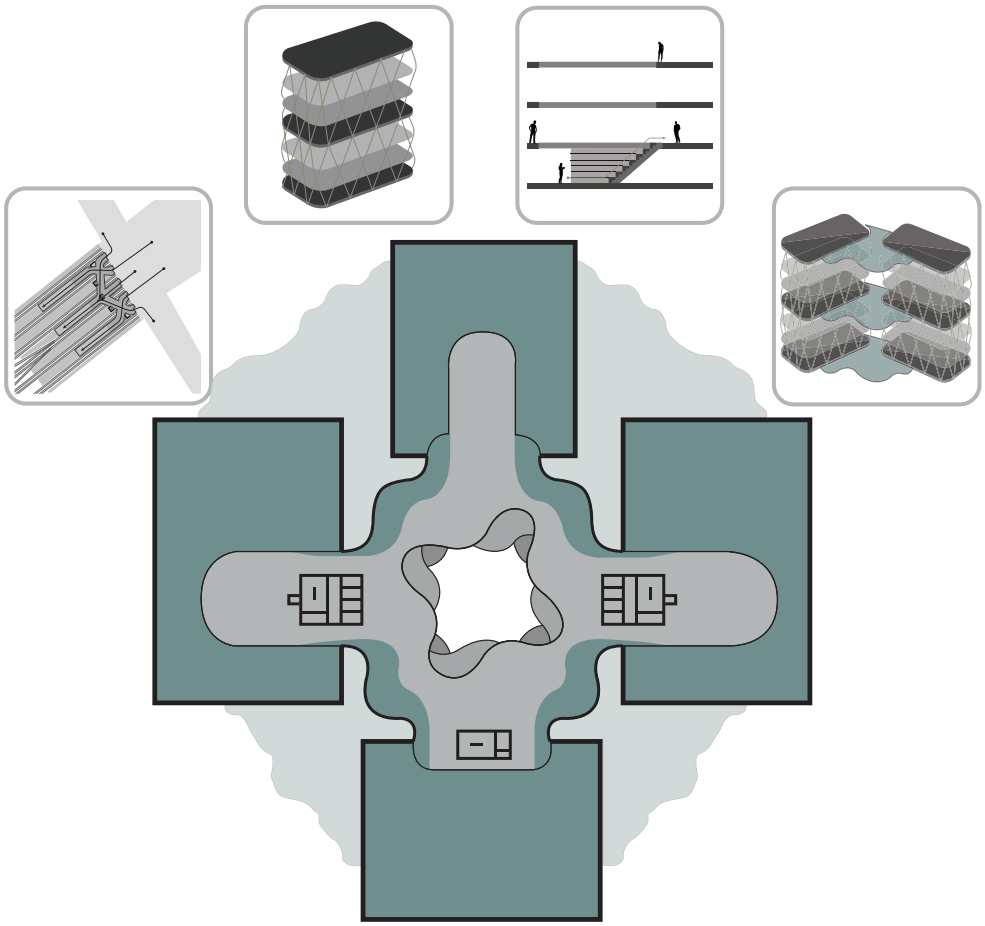
P1

P1 was the start and introduction to the site and the site analysis made me look different to that I already knew and formed my ambitions fo the design.



P2

P2 pushed me from being stuck in the design to implement research to make progress in my design process, even though that my design would be completely changed after the research through design lessons were very valuable



P3

Through even more research my approach to building changed for a final time to get to the design that best captured al my ambitions and would be able to bring them to full fruition.

END

THANK YOU!

Urban Synergy:
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