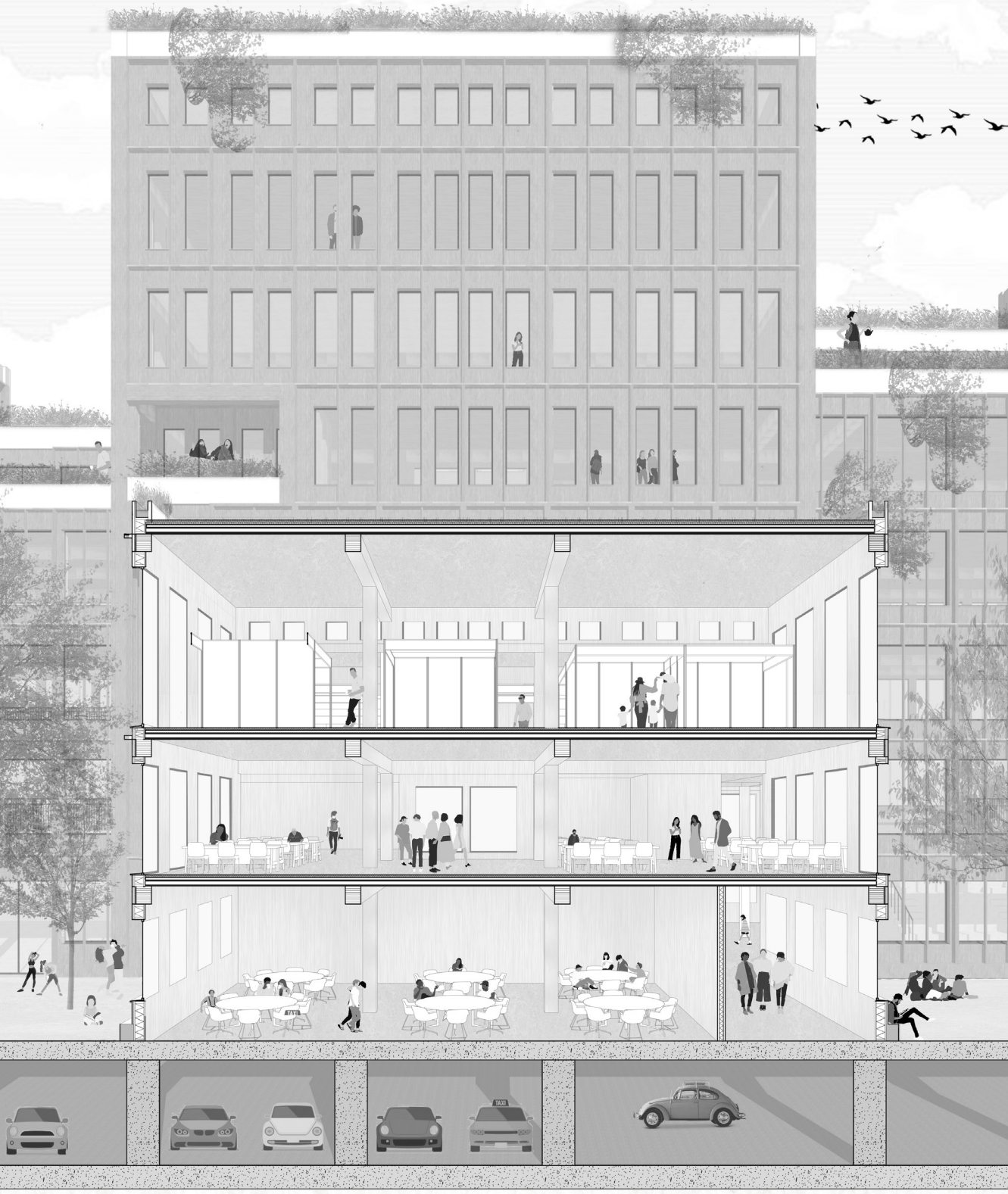
THE CONNECTING LIBRARY



Sam Haverhals

TU Delft

2025

COMPLEX PROJECTS
Bodies and Building Milan
AR3CP100

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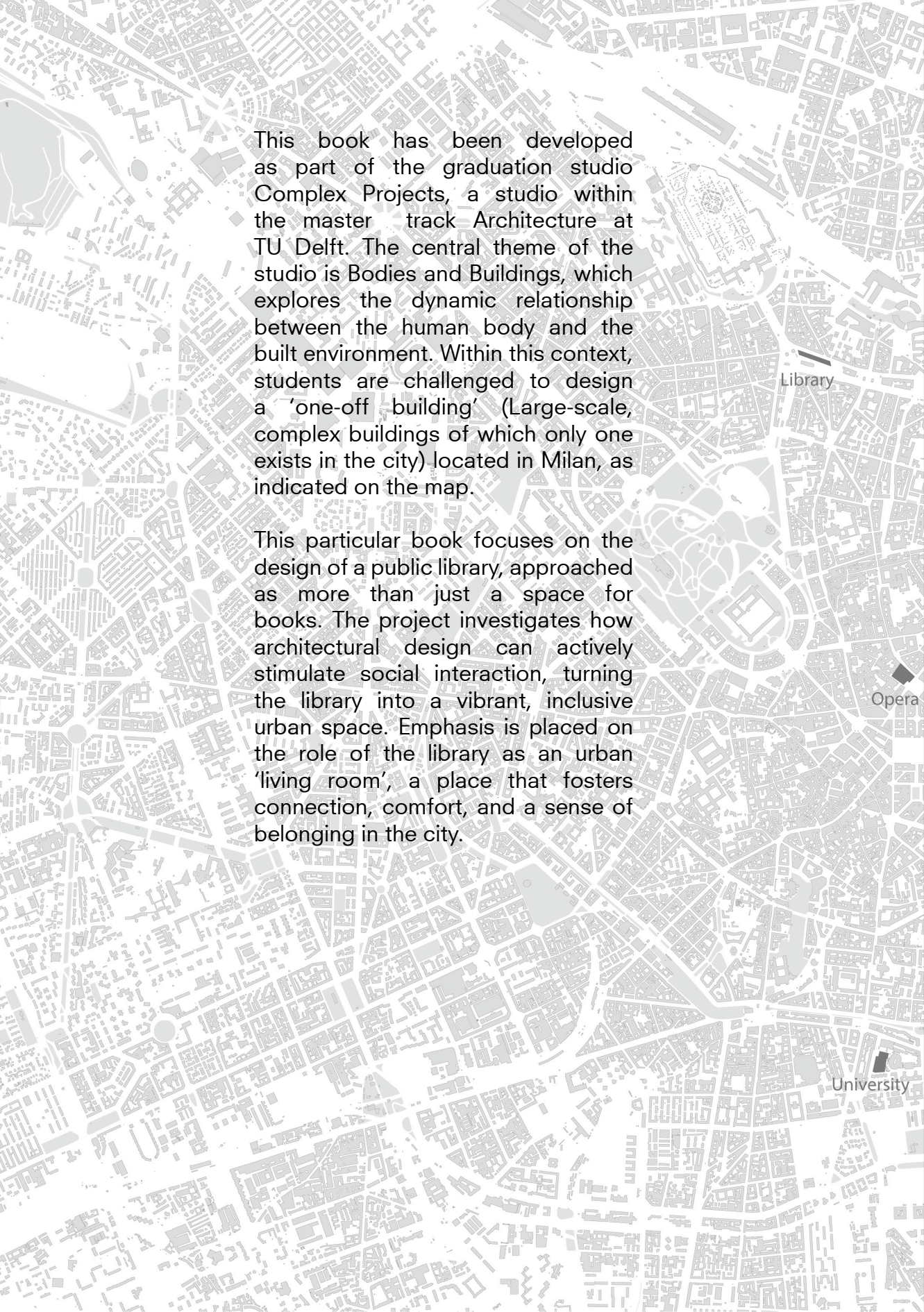
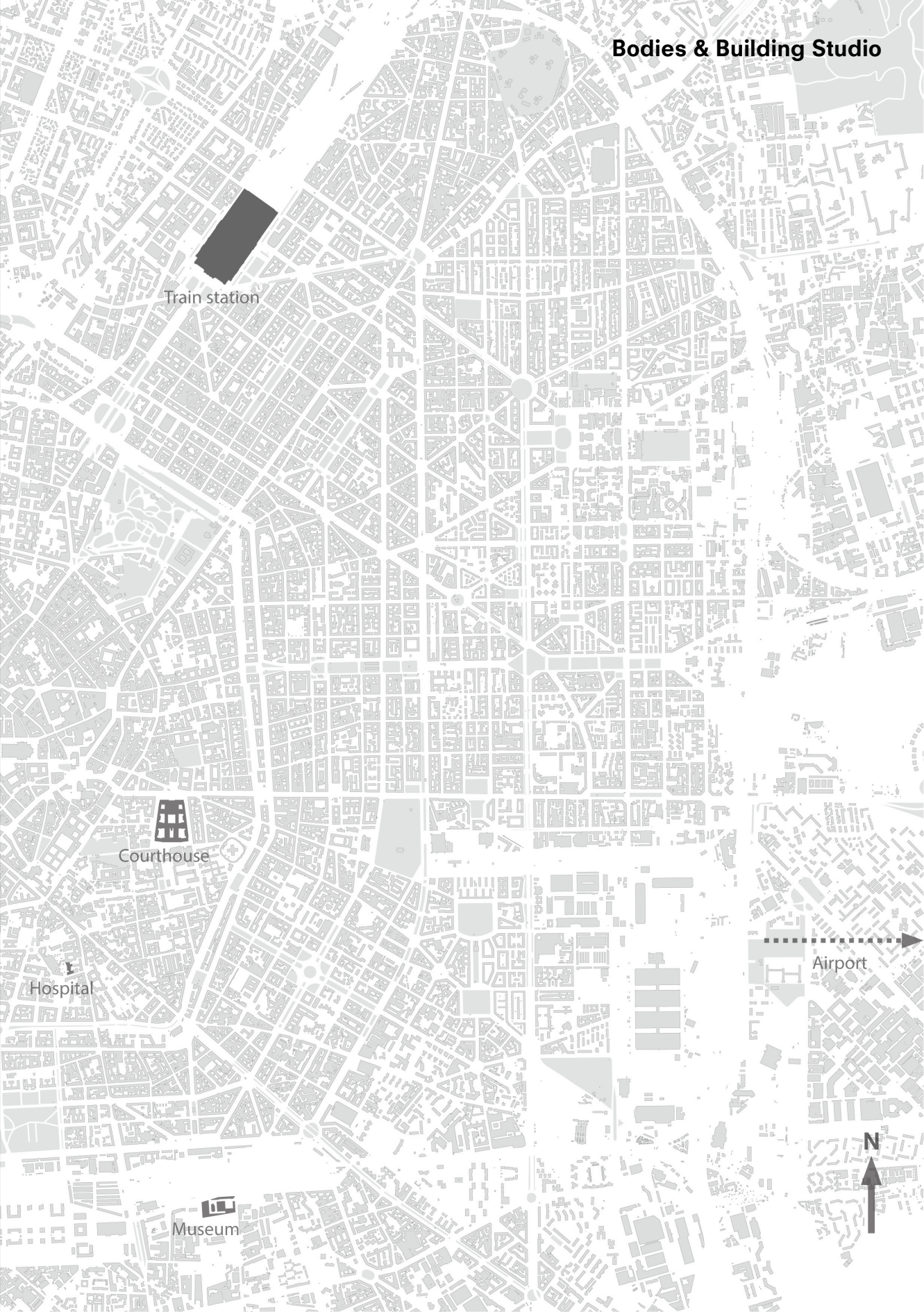
This book has been developed as part of the graduation studio Complex Projects, a studio within the master track Architecture at TU Delft. The central theme of the studio is Bodies and Buildings, which explores the dynamic relationship between the human body and the built environment. Within this context, students are challenged to design a 'one-off building' (Large-scale, complex buildings of which only one exists in the city) located in Milan, as indicated on the map.

This particular book focuses on the design of a public library, approached as more than just a space for books. The project investigates how architectural design can actively stimulate social interaction, turning the library into a vibrant, inclusive urban space. Emphasis is placed on the role of the library as an urban 'living room', a place that fosters connection, comfort, and a sense of belonging in the city.




Train station
Courthouse
Hospital
Museum
Airport
N

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RESEARCH

01

Introduction

Human well-being is built upon three essential pillars: mental health, physical health, and social health. Each pillar affects the quality of life, and when any one of these pillars is diminished, it reduces a person's well-being (Api, 2023). In Italy, strong social bonds form an important part of daily life. There is a **culture of togetherness**, with Italians frequently gathering in public spaces that foster social connections. Squares, cafés, and markets serve as key interaction points, which Italians utilize extensively. Additionally, Italians are known for their strong family ties, often coming together to share meals, for example (Zimmermann & Gordon, 2022). Due to this culture of togetherness, Italians often score high on social health measures. This is also evident in the OECD's How's Life? report from 2020, where Italy scores high in terms of social connectedness: 89% of Italians report having access to a strong support network (OECD Better Life Index, 2020).

Figure 1.1: Culture of togetherness
(Shutterstock, 2024)

Problem statement

However, in Milan, a shift can be observed in this culture of togetherness.

Individualism

As a major economic and cultural hub, Milan attracts a significant number of young adults, drawn by its universities and abundant career opportunities (figure 1.2). This trend has resulted in a growing population of young adults aged 18 to 44, many of whom struggle financially to purchase larger homes (Age Classes by Gender ITALY, n.d.). This often results in individuals living alone in small studios, contributing to a high rate of single-person households, 52%, well above the national average of 30% (Loneliness Among Adults Worldwide by Country 2021 | Statista, 2024).

Furthermore, many young newcomers to Milan are distanced from their families, which intensifies their focus on individual career advancement at the expense of community or family interactions. This career-driven lifestyle fosters a form of individualism that sharply contrasts with Italy's traditional culture of togetherness. Consequently, social interactions with family and friends, are significantly diminished in Milan (Loneliness Among Adults Worldwide by Country 2021 | Statista, 2024).

Figure 1.2: Milan is a magnet for young talent, with it's universities and diverse career opportunities.
OpenAI. (2024). Conceptual illustration of Milan's work culture. Generated by ChatGPT using DALL·E

Fragmentation

In addition to individualism, Milan experiences significant societal fragmentation. Approximately 20% of the city's population is comprised of migrants (figure 1.3), who often face challenges in integrating into the local community (Council, 2024). Barriers such as limited access to essential services, lack of social cohesion, language barriers, and insufficient support networks contribute to this issue. These struggles can lead migrants to isolate themselves or form insular groups, resulting in a fragmented society that hinders social connections between local residents and newcomers (Bini et al., 2019). This fragmentation not only isolates individuals but also undermines the community's overall social fabric, making it more challenging for diverse groups to engage and collaborate.

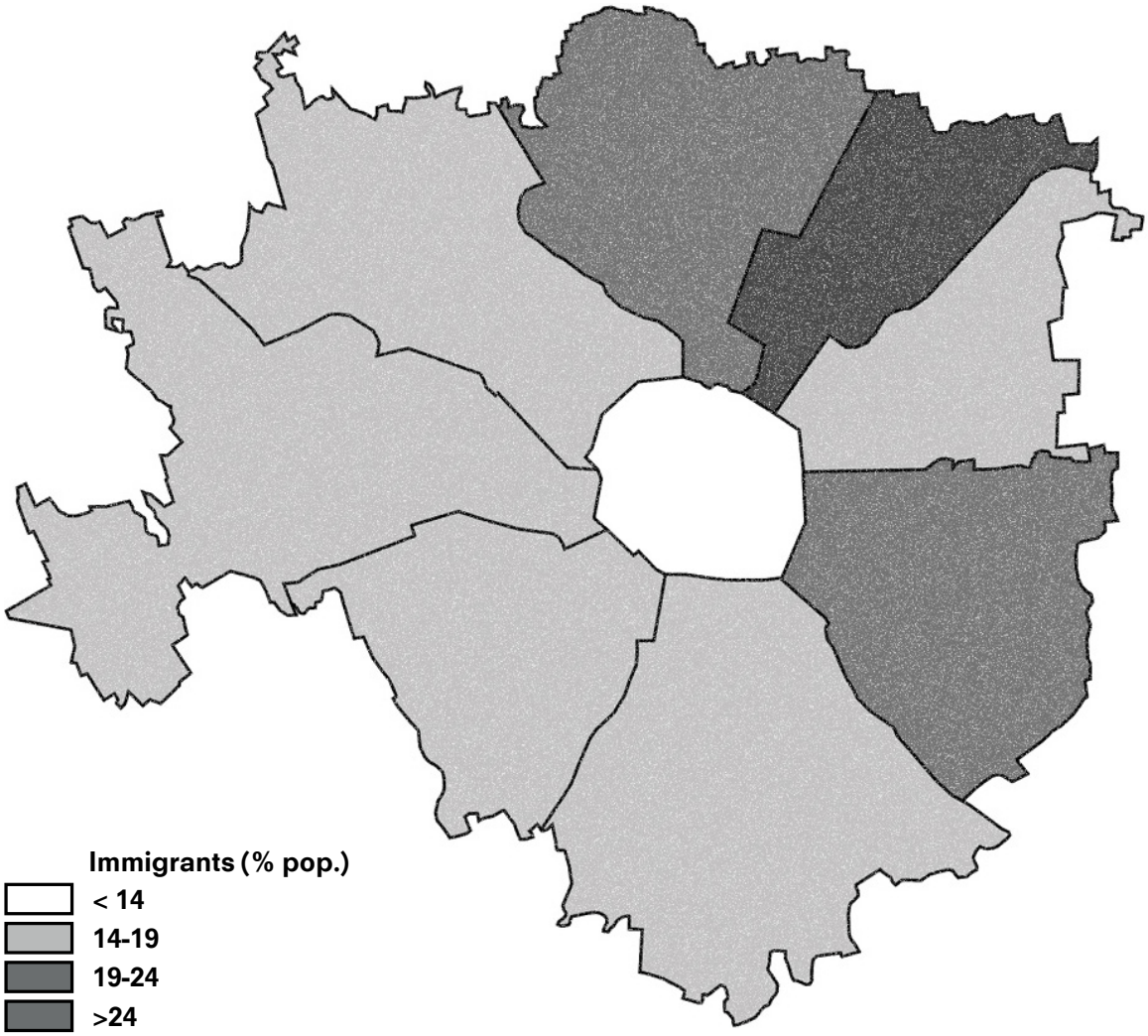


Figure 1.3: Percentage of immigrants in Milan.
(Bini et al., 2019)

Public Spaces

Finally, the city itself presents challenges for social connection among its residents. Milan lacks sufficient public spaces that encourage social interaction. About 52% of Milan's residents have inadequate access to public spaces within a 15-minute walk, significantly limiting opportunities for social engagement, see figure 1.4 (Systematica, 2020).

The public spaces that do exist often fail to promote social interaction among diverse population groups, posing a serious issue for urban cohesion. Various sources indicate that these spaces are either overcrowded or poorly designed for social interactions. For example, Gae Aulenti Square has been described as "one of the most contradictory and exclusive urban spaces that Milan has ever seen" (Galimberti & Osrini, 2017). This lack of inclusive design not only discourages engagement among different demographics, such as families, young professionals, and migrants, but also worsens the fragmentation observed within the city.

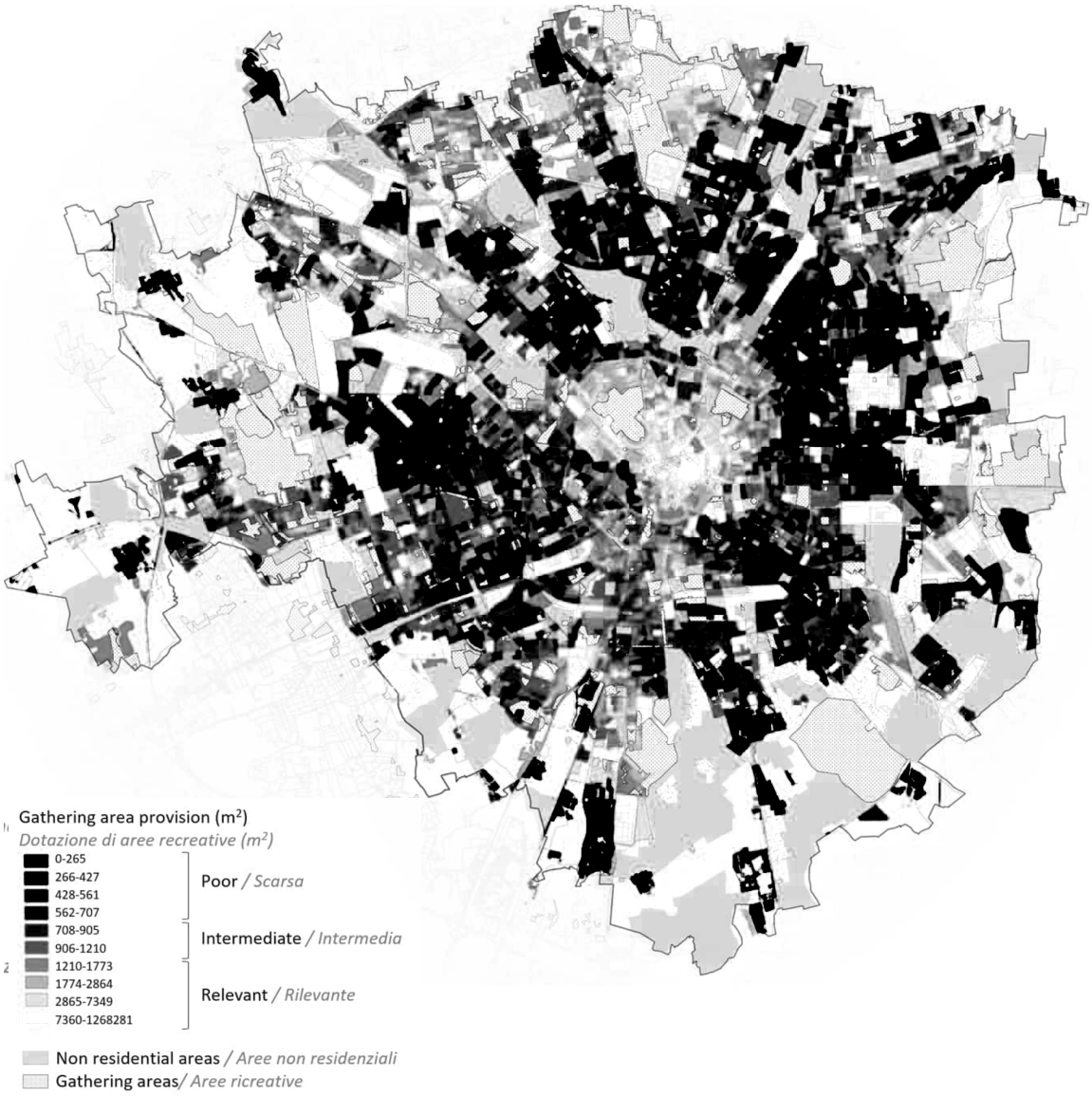


Figure 1.4: About 52% of Milan's residents have inadequate access to public spaces within a 15-minute walk.
(Systematica, 2020)

Consequences

These factors collectively contribute to decreased social interaction in Milan, weakening the social health pillar and diminishing overall well-being. As a result of these challenges, many residents reporting feelings of loneliness. Approximately 700,000 individuals report feelings of loneliness, accounting for 51% of the city's population, figure 1.5.

Notably, younger people are particularly affected, experiencing heightened levels of isolation and disconnection in this urban environment, figure 1.6 (Brennecke, 2023). Addressing these challenges is crucial for fostering a more connected and healthy community in Milan.

Figure 1.5: Around 51% of Milan's population experience loneliness.
(Shutterstock,2024)

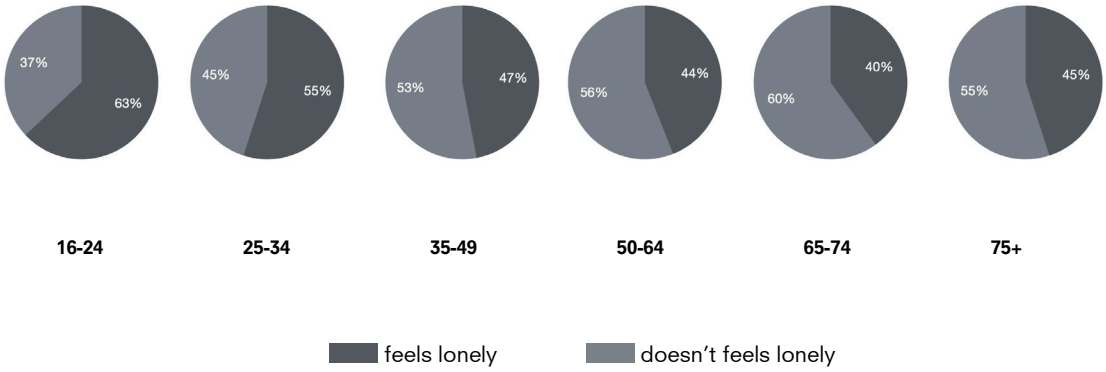


Figure 1.6: Younger people in Milan often report feelings of loneliness.
(Brennecke, 2023)

Research question

To enhance social interaction in Milan, this research will explore how the design of a public library can address these issues. The central research question is as follows:

How can the architectural design of a public library boost social interaction?

This central question will be addressed through the actual design of a library in Milan. The design process will explore this question by investigating the following sub-questions:

How can architecture make a library more accessible to everyone?

What architectural elements promote social interaction in libraries?

How can a library design contribute to the well-being and comfort of its users?

Ultimately, this research aims to transform the public library into Milan's 'living room'; a welcoming space that not only provides access to knowledge but also serves as a vibrant community hub, reinvigorating the traditional Italian culture of togetherness in the city, figure 1.7.

Figure 1.7: Library as an urban 'Living Room' for the city.
(Own illustration)

Framework

This section outlines the theoretical foundations of public libraries as essential community spaces. It explores their evolving role in the digital age, emphasizing their function as informal gathering places that promote accessibility and social connection.

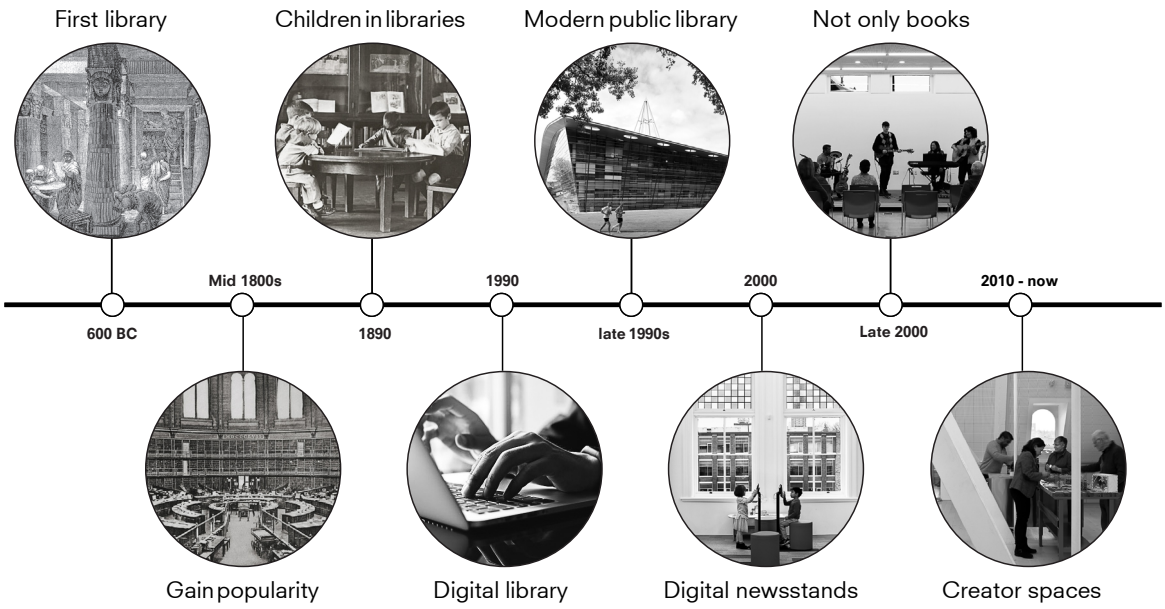
Public Library

"The public library is an organisation established, supported, and funded by the community... It provides access to knowledge, information, lifelong learning, and works of the imagination through a range of resources and services and is equally available to all members of the community" (Koontz, 2010).

The digital age has significantly reshaped the library's role. While print materials remain important, libraries have become dynamic centers for learning, innovation, and community engagement. They now offer digital resources, workshops, and technology, addressing the needs of a modern audience, (Isiaka, z.d.).

As such, the public library has become a vital communal space in urban life. By supporting research, education, and leisure, libraries foster informal encounters and strengthen social bonds, see figure1.8 (Koontz, 2010).

This shift directly supports the central research question: How can the architectural design of a public library boost social interaction?



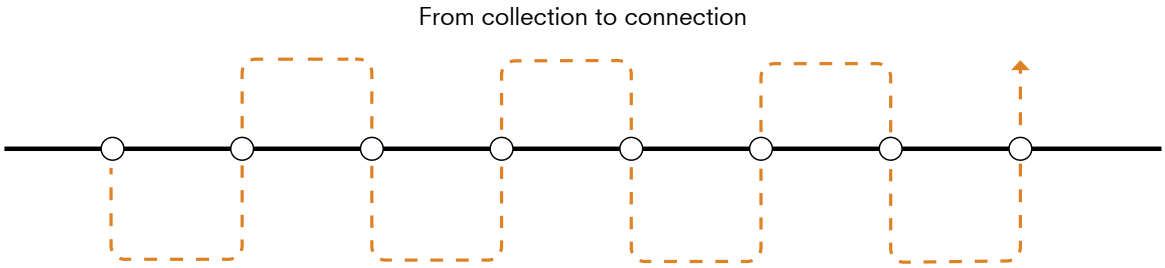


Figure 1.8: The evolution of libraries.
(Own illustration)

Urban 'Living Room'

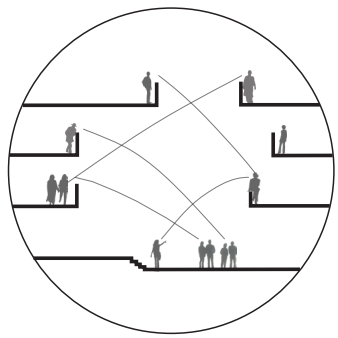
An urban 'Living Room' refers to public spaces within a city that serve as informal gathering areas for community interaction, much like a living room in a home. Ray Oldenburg's Third Place theory emphasizes the importance of such communal spaces in fostering social interactions and a sense of belonging outside of the home (first place) and workplace (second place). According to Oldenburg, third places are crucial for building community ties, allowing individuals from diverse backgrounds to come together in a welcoming environment (Oldenburg, 1999). This perspective informs our understanding of how public libraries can serve as vital third places within urban settings.

According to Oldenburg, third places are characterized by qualities such as openness, hospitality, and a strong sense of community. These characteristics are visualized in the mind map in Figure 1.9. From this, three central themes can be derived: accessibility and belonging, social connection, and comfort.

The sub-questions of this research, introduced in the previous section, are based on these three themes. Together, they form the basis for a design-oriented toolbox aimed at promoting social interaction in public buildings. This toolbox provides the foundation for the final design of the public library as the city's living room.

Air quality
Barrier free
Climate control
Wayfinding
Shared spaces
Creative hubs
Healthy spaces
Adaptable furniture
Flexibility
Cultural sensitivity
Group seating
Natural elements
Urban Living Room
Playfulness
Quiet zones
Inclusive facilities
Interactive technology
Local culture
Open to all
Gathering points
Biophilic design
Creative hubs
Sensory design
Social zones
Light and shade

Accessibility & Belonging



Social connection

Comfort

Figure 1.9: Mindmap and conclusions
(Own illustration)

Relevance

The relevance of this research can be understood in three dimensions: its importance for Milan, for the studio (Bodies & Building), and for the field of architecture.

Milan

The problem statement indicates that the culture of togetherness, which is so characteristic of Italy, is gradually diminishing in Milan. This research aims to strengthen this culture within the city. A library as the living room of the city can provide a potential solution.

Studio

This research is relevant to the theme of the Bodies & Building studio, as it explores human behavior in response to architecture. The aim is to encourage social interaction through architectural design, which is essential for the overall well-being of individuals.

Architecture

The research will result in a toolbox for stimulating social interaction through architecture. This toolbox will be used in the design of a library as the living room of the city. Additionally, it can also be applied to encourage social interaction and connection in other buildings. This makes it highly relevant to the field of architecture.

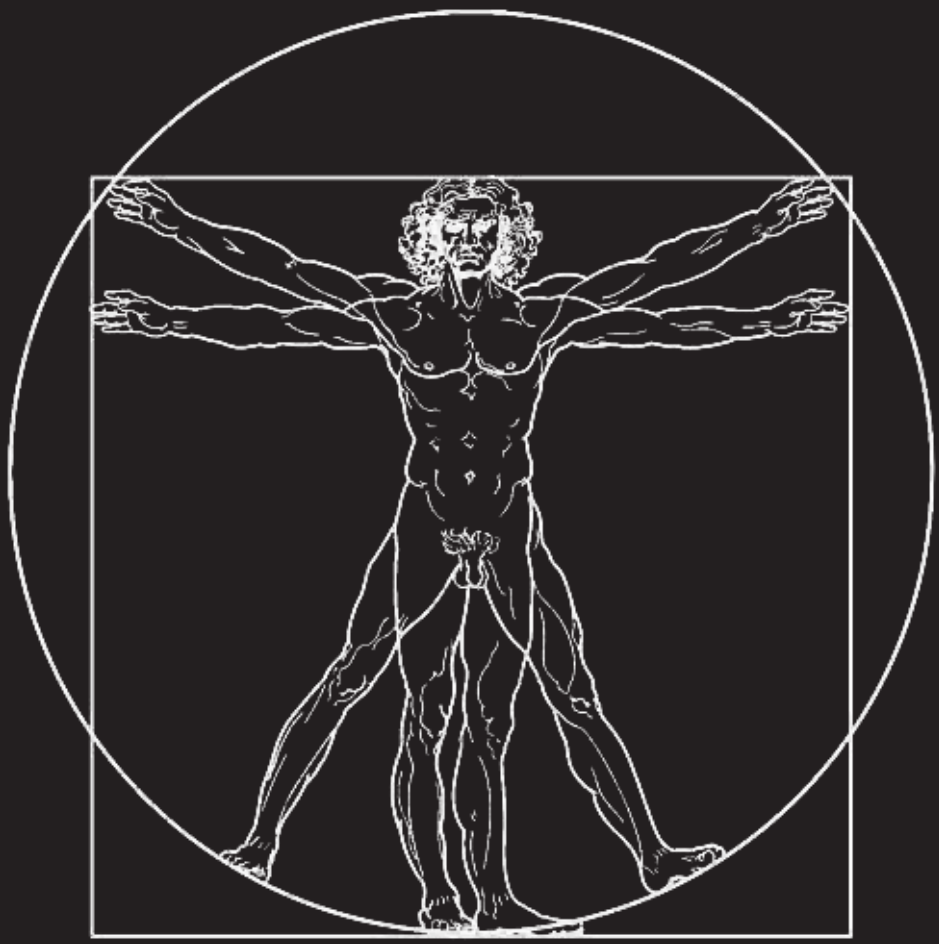


Figure 1.10: Fibonacci sequence human body
(Fibonacci, 2001)

Research methods

This research takes a comprehensive approach to exploring how the architectural design of a public library can enhance social interaction in Milan. Recognizing the importance of context, program, and user engagement, this study focuses on three core aspects: the site, the program, and the client. Specifically, it examines the Feltrinelli Library in Milan, designed by Herzog & de Meuron, as the new library will be located on the same site, serve the same clients, and retain much of the original program, figure 1.11. The current Feltrinelli complex is actually composed of three buildings: the library itself, Microsoft's headquarters, and a planned museum, figure 1.12. Although construction of the museum was delayed due to the discovery of remnants of the historic Spanish Wall on-site, a new design that preserves these findings is set for realization in 2025. Through this layered analysis, the research seeks to generate insights that will inform a cohesive design prioritizing accessibility, social connection, and user comfort.

Figure 1.11: Fondazion Feltrinelli
(Herzog & de Mduron, z.d.)

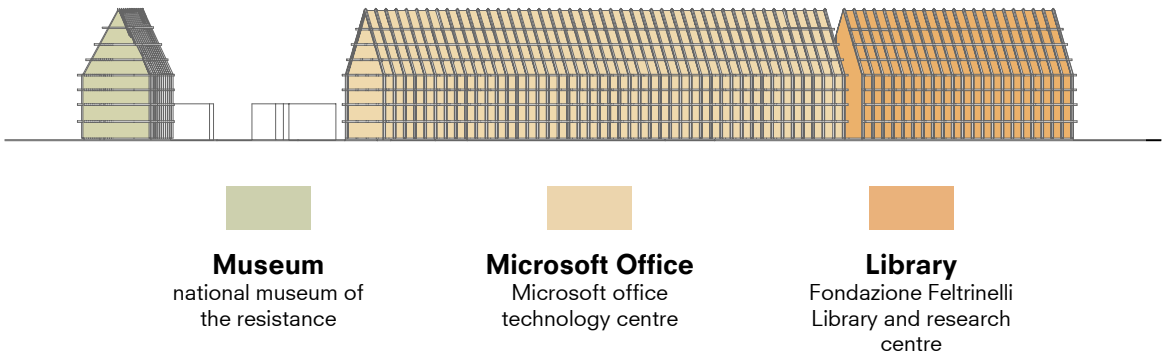


Figure 1.12: The three buildings of the feltrinelli complex
(own illustration)

Site

The Feltrinelli building's location in Milan offers a unique context that will shape the architectural and social objectives of the new design. Situated in a densely populated urban setting, surrounded by a mix of residential, commercial, and cultural buildings, the site is ideal for a public space that serves as a social hub. Observational studies and spatial analysis will be used to evaluate pedestrian flow, access points, and the characteristics of surrounding public spaces. Additionally, an on-site visit will provide further insights into the library's current situation in Milan. This approach aims to identify opportunities to enhance connectivity and accessibility, ensuring that the library becomes a well-integrated part of the community's daily life.

Program

The program analysis begins by examining the Feltrinelli building, focusing on the functions currently housed within the building, their spatial relationships, and how they are used. These functions are then mapped into a relational diagram to provide a clearer overview of the existing program, spatial adjacencies, and approximate size requirements. Additionally, case studies of the Forum Library in Groningen, the LocHal in Tilburg, and the Boekenberg in Spijkenisse will be conducted. This libraries serve as social "living rooms" of their respective cities, making them ideal references for program

and spatial organization. By studying these examples, valuable insights will be gained to inform the design of a well-functioning library.

The aim is to identify activities and facilities that encourage diverse user engagement, such as collaborative workspaces, cultural event areas, and informal gathering zones.

This process will also involve a literature review, notably including Ray Oldenburg's work on third places, which offers valuable insights into the characteristics of effective communal spaces. Additionally, the review will consider various architects who prioritize social interaction in their designs.

Client

The presence of three distinct buildings within the Feltrinelli complex, the library, Microsoft's headquarters, and a planned museum, introduces unique clients, each with different expectations. This research will thoroughly investigate the needs and goals of each client, analyzing how their distinct visions contribute to the concept of the "living room of the city."

To achieve this, internet research will be conducted on the clients to understand their current needs and priorities regarding modern library features.

Conclusion

The diagram in Figure 1.13 outlines the research process and distinguishes two main tracks. First, the current Feltrinelli building is analyzed in terms of location, clients, and program. This reveals how architectural choices respond to user needs and functions, and where improvements could be made in a new design.

Second, the main research question is explored through three sub-questions, aligned with the themes: Accessibility and Belonging, Social Connection, and Comfort. These are essential for creating a 'living room for the city', where public spaces encourage inclusivity and social interaction.

Together, the thematic research and building analysis inform a design-oriented toolbox with strategies to foster social interaction through architecture. This toolbox lays the foundation for reimagining the public library as Milan's new "living room": a vibrant space where Italy's culture of togetherness comes to life.

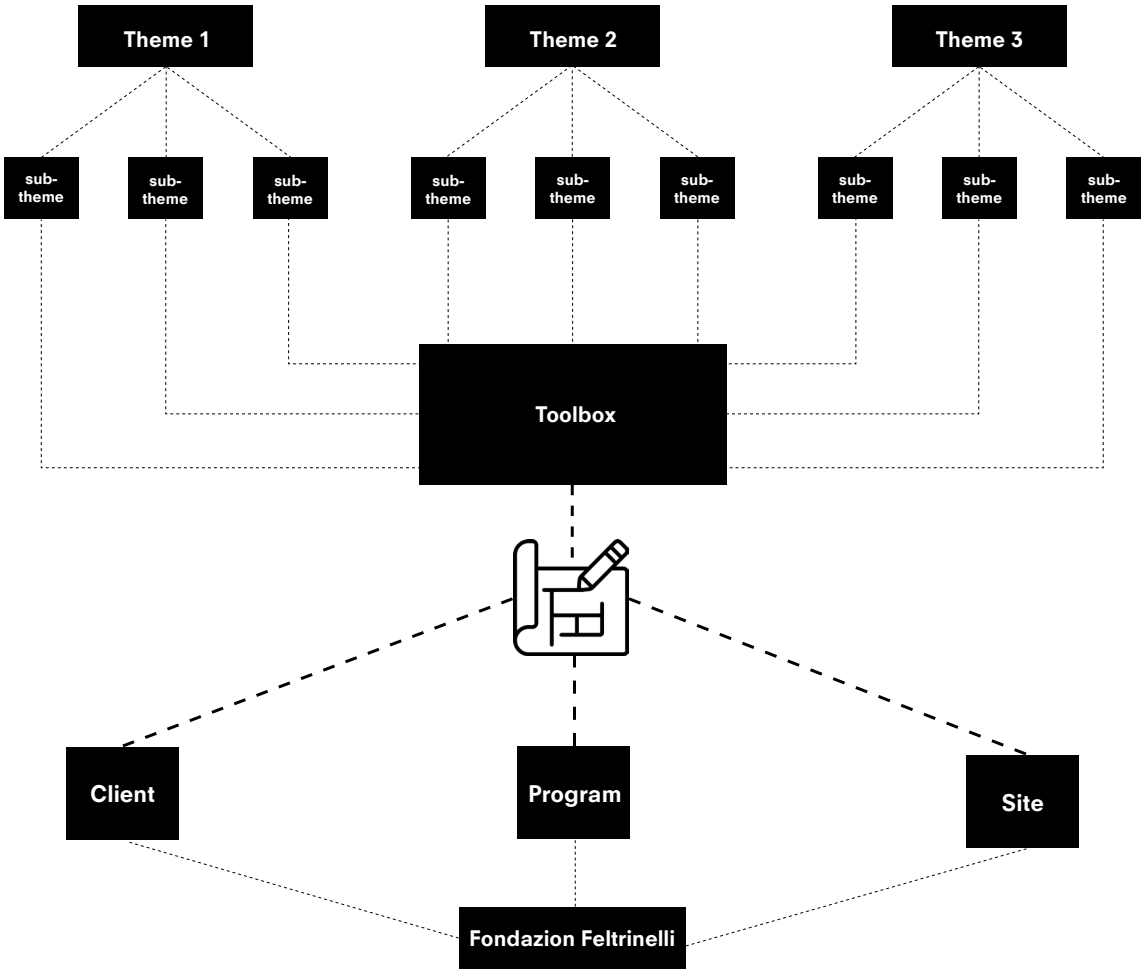


Figure 1.13: Diagram, from research to design
(own illustration)

DESIGN BRIEF

02

Introduction

This chapter elaborates on the design brief. The design brief is the outcome of an analysis that provides insights into urban parameters, site opportunities, potential massing, program mix, density, client requirements, and more.

The design brief is structured into three components: client, program, and site. Each component is analysed in detail, leading to conclusions and ambitions that will directly inform the design phase.

Based on this design brief, the process of designing a new Feltrinelli building can begin, which will be addressed in the next chapters.

Figure 2.1 Fondazione Feltrinelli
(Fondazione Giangiacomo Feltrinelli, 2024)

Fondazion Feltrinelli

The current Feltrinelli building, located in the Porta Volta district of Milan, is being studied, figure 2.1. The building, designed by Herzog & de Meuron, was completed in 2016. This building is being analyzed as it serves as the starting point for the new design. The ultimate design task is the design of a new Feltrinelli building under the assumption that the current building was never constructed.

The project originated with an influential Italian publisher, Giangiacomo Feltrinelli (figure 2.2), who started collecting documents at an early age related to the history of ideas, particularly those connected to the development of international labor and socialist movements. Feltrinelli believed that "a country's level of civilization depends on what people read" (Fondazione Giangiacomo Feltrinelli, 2024). Driven by this conviction, he aimed to make his collection of literature accessible to the public (Fondazione Giangiacomo Feltrinelli, 2024).

To achieve this, he established Fondazione Feltrinelli, a space where his collection could be housed, read, studied, and discussed by all. But Fondazione Feltrinelli was just the beginning. Feltrinelli also grew into Italy's largest chain of bookstores, with over 100 locations. Fondazione Feltrinelli not only houses one of these bookstores but also provides spaces for workshops, activities, debates, and workspaces (Sonja, 2010).

Figure 2.2 Giangiacomo Feltrinelli
(Fondazione Giangiacomo Feltrinelli, 2024)

Current situation

Library

For the library, the clients are the Giangiacomo Feltrinelli Foundation and Gruppo Feltrinelli. Their primary focus is to house the Feltrinelli collection and provide space for events and public debates. The library's social mission is to promote research and discussion on today's most pressing challenges, enhance quality of life, and foster greater public participation (Fondazione Giangiacomo Feltrinelli, 2024).

By organizing various activities centered around these urgent contemporary issues, the library actively engages its target group, everyone. In doing so, it aims to inspire meaningful dialogue and increase community involvement, ultimately contributing to improving the overall quality of life.

The ambitions for the clients of the Library are explained in figure 2.3.

House the **feltrinelli collection**

Space for **events & public debates**

Focus

Promotes **research** & **debate** on most urgent **challenges of today**

Improve the quality of life and **participation**

Social interest

Everyone

Target group

Provide knowledge

Stimulate social interaction

Sustainability

Promotes participation

Accessibility

Figure 2.3: Summary library client
(own illustration)

Microsoft office

The Microsoft headquarters, located within the Feltrinelli complex, was established to provide a dynamic environment with seamless connectivity across Italy. The primary clients are Microsoft and Unifor, each bringing unique focuses to the building. Microsoft aims to foster innovation and collaboration with the public while serving as its Italian headquarters (Kwok, 2017). Unifor, as a temporary client, utilizes the space as an exhibition venue for their innovative office furniture designs (UniFor, z.d.).

The social mission of the Microsoft office is to help individuals and organizations better understand the future of technology and to contribute to Italy's economic and social growth. Reflecting this mission, the building is not solely dedicated to office spaces. Three floors are fully open to the public, offering a variety of functions, including a video room, training room, showroom, digital classroom, and technology center. These spaces actively encourage public engagement and amplify the building's social impact (Kwok, 2017). By combining technology, innovation, and accessibility, the Microsoft headquarters strengthens its connection to the community and supports its goal of driving positive change (Microsoft, 2018).

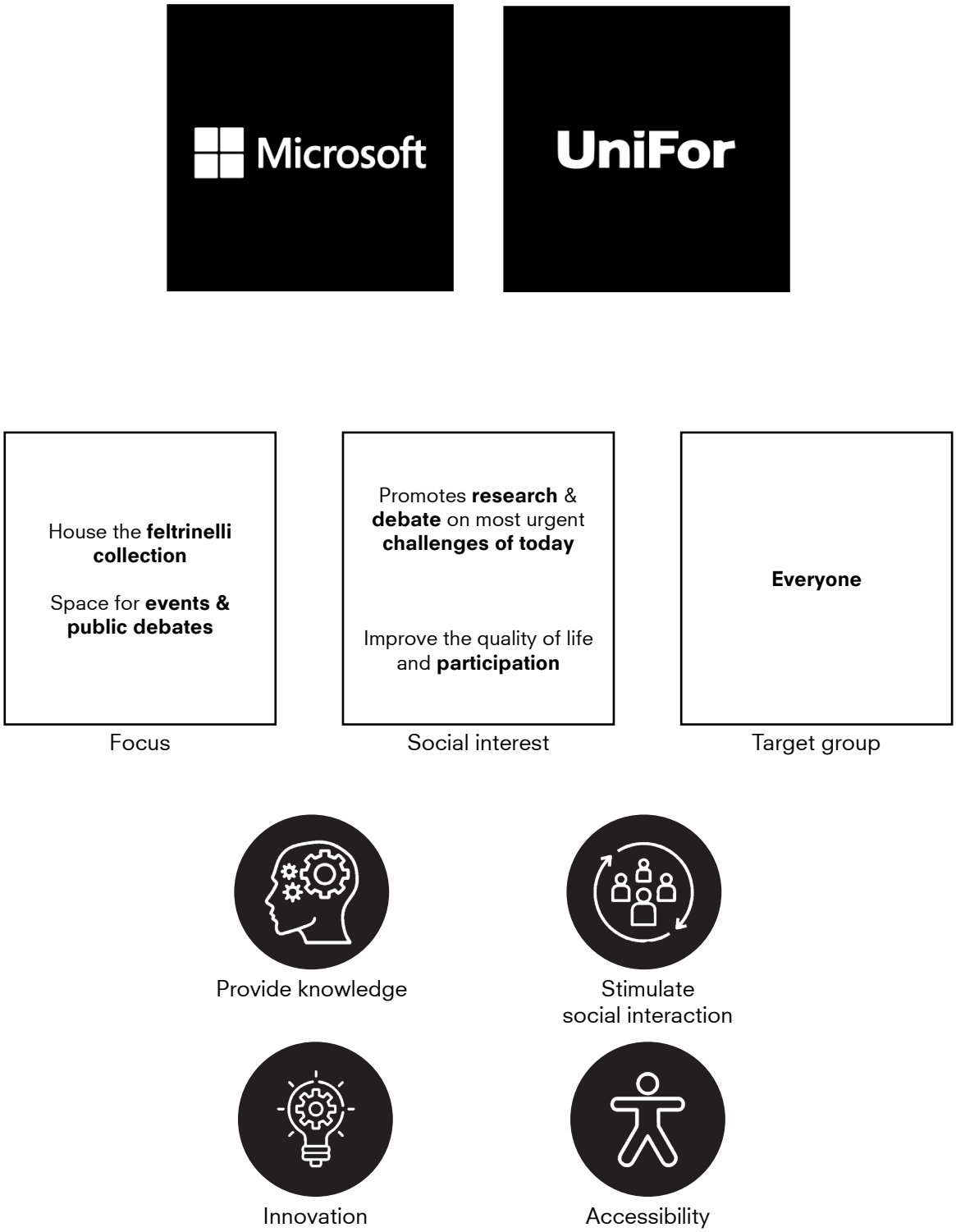


Figure 2.4: Summary Microsoft client
(own illustration)

Museum

The Museo Nazionale della Resistenza, dedicated to preserving and exhibiting the history of Italy's liberation and post-war periods, is a significant cultural project in Milan. Initially, the construction of the building was delayed when archaeological research revealed remnants of the old city walls at the proposed site. However, a new design by Herzog & de Meuron has been proposed, and construction is set to begin in May 2025. (Herzog & de Meuron, z.d.).

The primary clients for the museum are the Municipality of Milan (Comune di Milano) and the Ministry of Culture (Ministero della Cultura), with a focus on historical materials related to the period of liberation and the immediate post-war era.

The social interest of the museum is to stimulate debate, raise awareness among citizens, and foster a sense of national identity and democratic values. By engaging the public with its exhibitions, the museum aims to encourage reflection on the past and its relevance to the present.

The target group for the museum is everyone. It provides a platform for broad public engagement, helping to preserve the memory of Italy's history while fostering a deeper understanding of its national identity and democratic principles (Museo Nazionale della Resistenza, 2024).

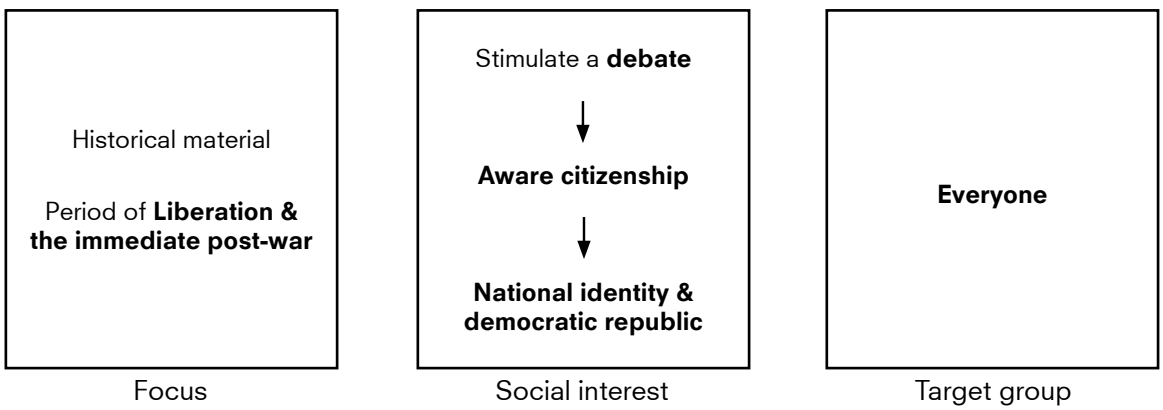


Figure 2.5: Summary Museum client
(own illustration)

Conclusion

The diagram in figure 2.6 serves as a summary of the various clients involved. Each client provides unique knowledge: Microsoft focuses on the future, the library addresses the present, and the museum preserves the past. Additionally, all three clients stimulate a debate on different subjects. The target group for all functions is: everyone.

The ambitions of the clients for the three different buildings are alos summarized in figure 2.6. These ambitions were formed through a literature review. As shown, many of the ambitions overlap. All of the clients provide knowledge, stimulate social interaction, and focus on accessibility, ensuring that the buildings are accessible to everyone.

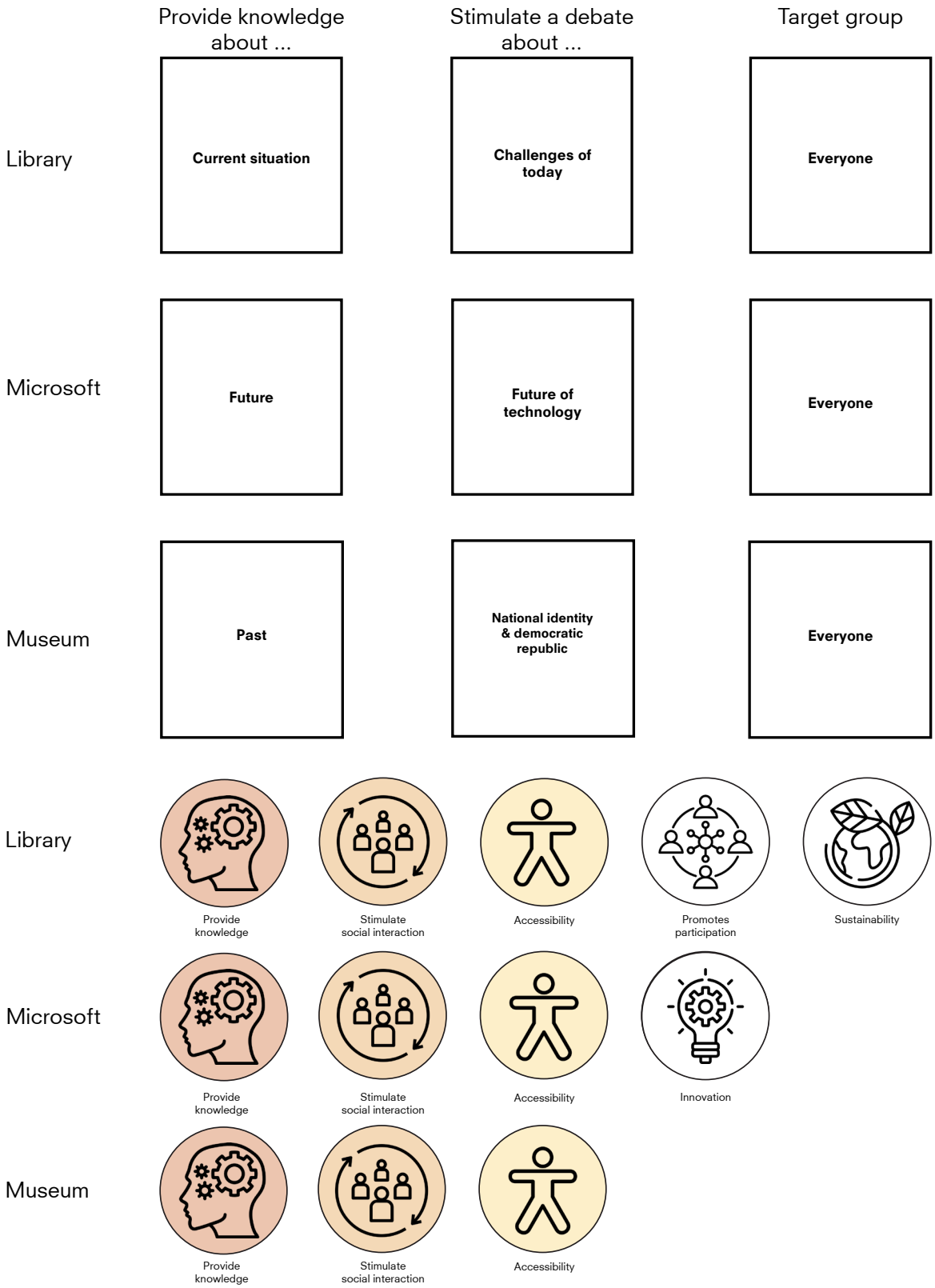


Figure 2.6: Conclusion client research
(own illustration)

New vision

The summary presented in the diagram and the related ambitions reflect the new vision of combining the three different functions, library, Microsoft headquarters, and museum, into a single building (figure 2.7). This integrated approach offers several advantages, as the three functions complement and enhance each other. By merging these distinct yet interconnected roles, the building becomes a dynamic space that fosters not only the exchange of knowledge but also greater public participation and social interaction. The synergy between the functions promotes a more engaging and inclusive environment, where the sharing of knowledge is encouraged, participation is elevated, and social connections are strengthened (figure 2.8). This holistic approach ensures that the building serves as a vibrant, multifunctional space accessible to all.

Figure 2.7: New vision
(own illustration)

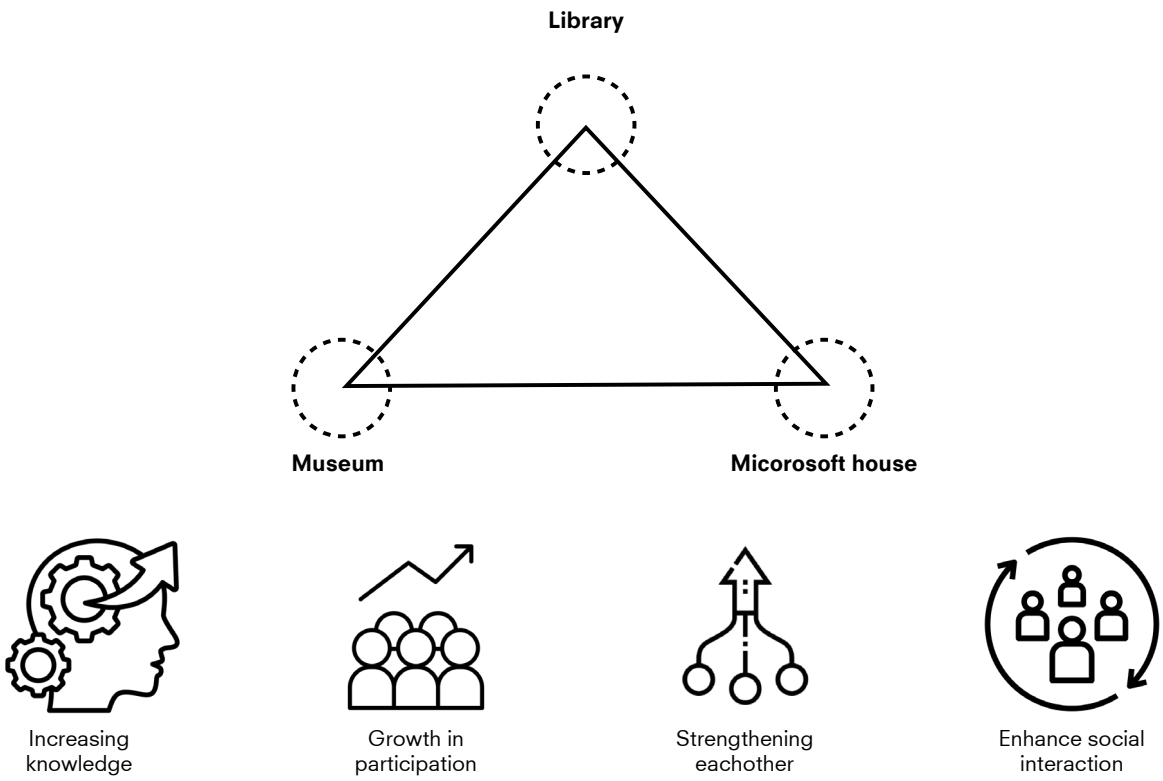


Figure 2.8: Combining the buildings have different advantages
(own illustration)

New client

To further enhance the “living room” concept, an additional client could be introduced: Princi (figure 2.9). Princi is a contemporary bakery and café renowned for its high-quality Italian pastries, coffee, and light meals. It creates a warm and inviting atmosphere for social gatherings, making people feel at home (Princi Italia, z.d.).

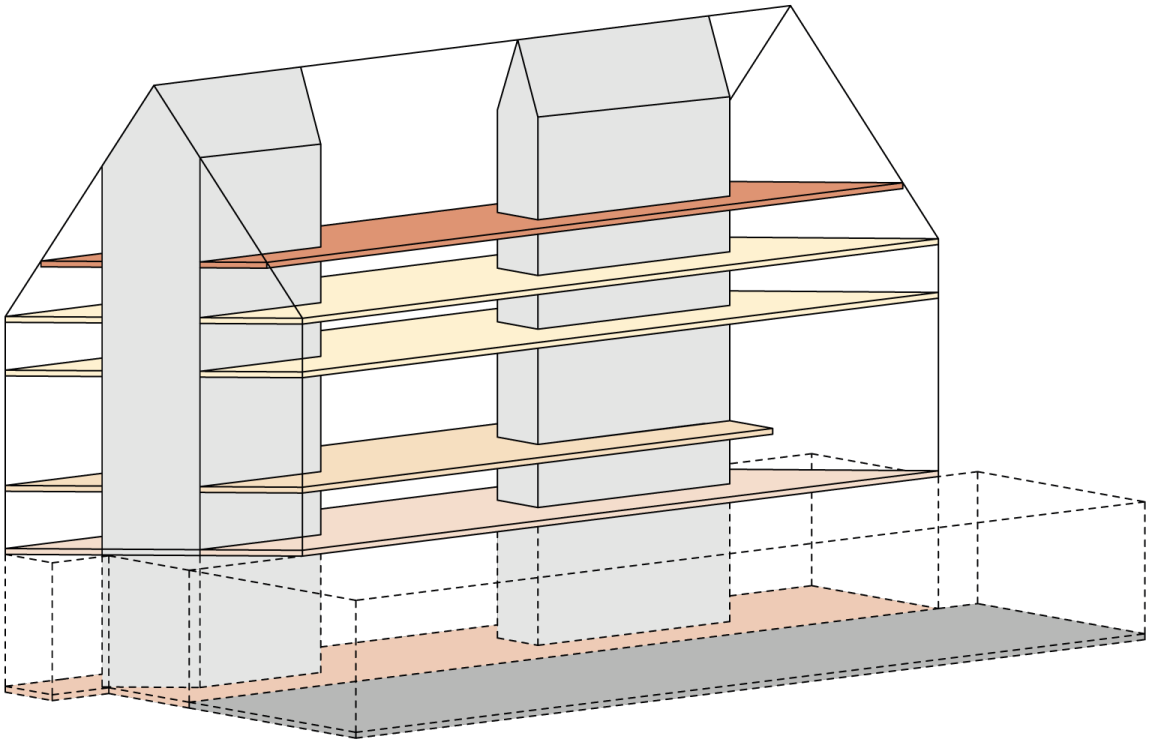
Adding Princi as a client to this central space would further strengthen the ambitions of the living room, reinforcing the focus on accessibility, social interaction, and community engagement.

Figure 2.9: Princi restaurant
(Princi Italia, z.d.)

Program

Library

The main entrance is located on the ground floor, accompanied by a bookstore and an adjoining restaurant. On the second floor, a multifunctional space is available. The floors above are designated for offices, which are not accessible to the public, while the top floor houses a reading room. Beneath the building, the archive, home to the Feltrinelli collection, is located, along with a parking garage (figure 2.10).



Parking garage

1250m^2
21%

Archive

770 m^2
13%

Cores

790 m^2
14%

Entrance, bookstore and cafe

770 m^2
13%

Multifunctional space

540 m^2
9%

Offices

1280 m^2
22%

Reading room

450 m^2
8%

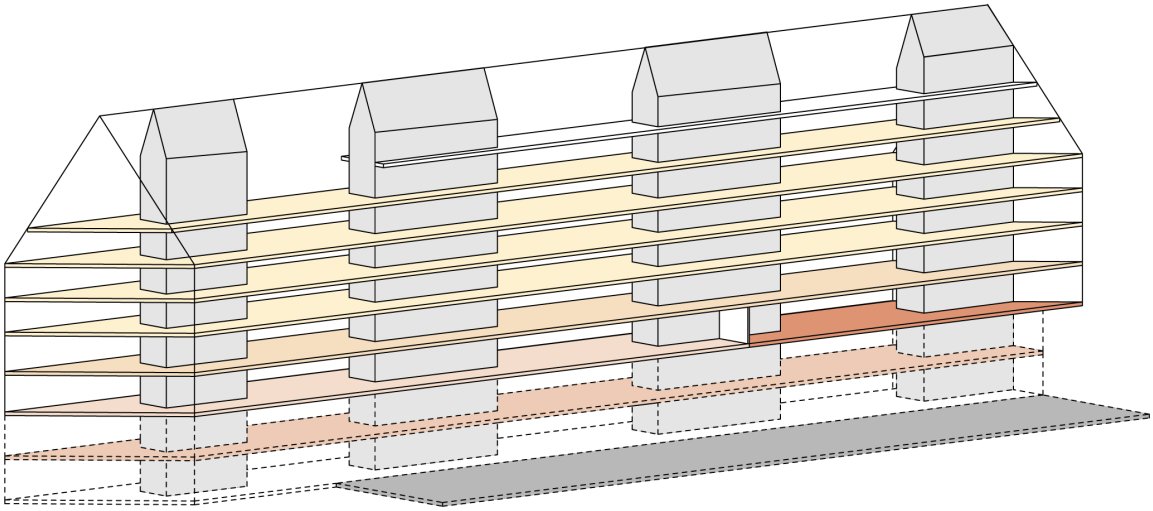
Figure 2.10: Program Library
(Own illustration)

Microsoft

The lower two floors and the -1 level of the Microsoft building are open to the public, featuring functions such as the Unifor showroom, digital classroom, video room, training room, and technology center.

The floors above are dedicated to office spaces for Microsoft and are not accessible to the public.

The top floor and the -2 level are used for technical installations, with the -2 level also housing a parking garage connected to the library (figure 2.11).



Parking garage

1745m²
11%

Storage & Technical installations

1875 m²
12%

Cores

2155 m²
14%

Video room training room

1425 m²
9,3%

Microsoft showroom digital class

945 m²
6%

Unifor showroom

500 m²
3%

Microsoft technology centre

1450 m²
9,7%

Offices

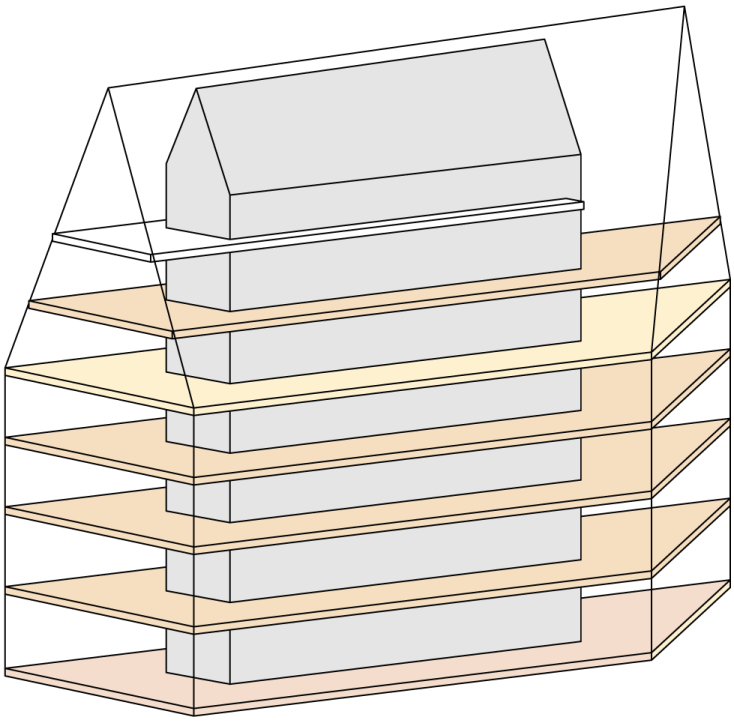
5315 m²
35%

Figure 2.11: Program Microsoft
(Own illustration)

Museum

In the museum, the ground floor features a bookstore alongside a multifunctional space.

The 1st, 2nd, 3rd, and 5th floors are designated as exhibition spaces, while the 4th floor is reserved for workspaces that are also accessible to the public. The top floor houses the technical installations (figure 2.12).



Core

880 m²
21%

Services
entrance,
bookstore,
multifunctional space

560 m²
13%

Exhibition space

2.075 m²
49%

Offices & documentation centre

560 m²
13%

Technical installations

140 m²
4%

Figure 2.12: Program Museum
(Own illustration)

Program bar

Figure 2.13 illustrates the current program of the Fondazione Feltrinelli building. What stands out is that the library occupies only a small portion of the total floor area, just 23%. In contrast, Microsoft takes up the largest share, accounting for 60.5% of the building. The remaining space is allocated to the museum.

The following pages delve into the benchmarking of the building's program. To visualize this comparison, the program has been represented spatially in Figure 2.14, where the different functions have been grouped into distinct categories. This diagram provides a clearer overview of how space is allocated among various uses and sets the stage for evaluating how this program compares with similar buildings.

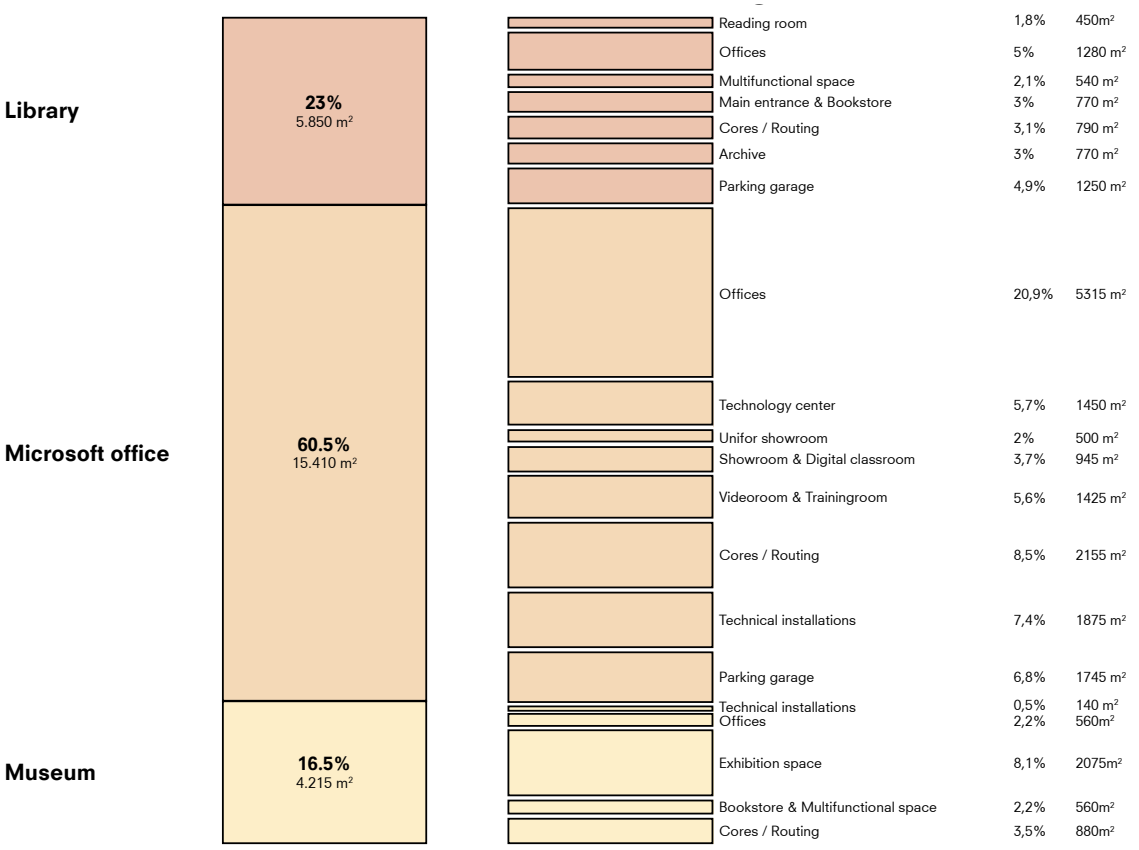


Figure 2.13: Current program
(Own illustration)

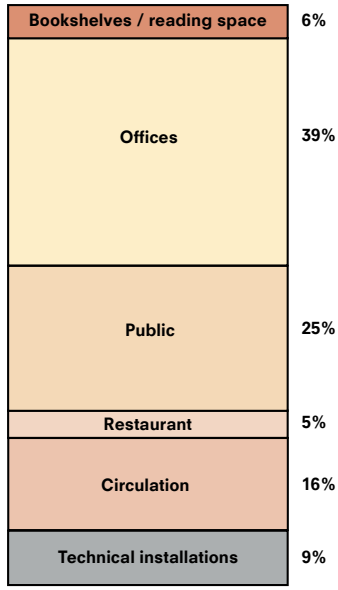


Figure 2.14: For comparability program shown as one building
(Own illustration)

Benchmark

To further analyze the program, the focus shifts to three Dutch public libraries, each with a significant emphasis on stimulating social interaction. These libraries were selected to represent a range of sizes, enabling a comprehensive comparison.

The first is the Forum building in Groningen, designed by NL Architects, with a total area of 17,000 m². The second is LocHal, located in Tilburg and designed by Civic, covering an area of 11,200 m². Lastly, the Boekenberg in Spijkenisse, designed by MVRDV, is considered, with a more modest area of 3,500 m² (figure 19) .

The results of the analysis are visualized in the program breakdown shown in figure 20. To make this analysis practical, an average has been calculated based on the percentage distribution of the various functions.

(Forum, z.d.)

Forum | Groningen
17.000 m²
NL Architects

(LocHal, z.d.)

LocHal | Tilburg
11.200 m²
CIVIC

(MVRDV, 2003)

Boekenberg | Spijkeniss
3.500 m²
MVRDV

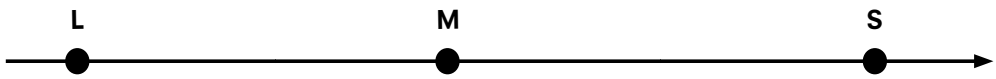
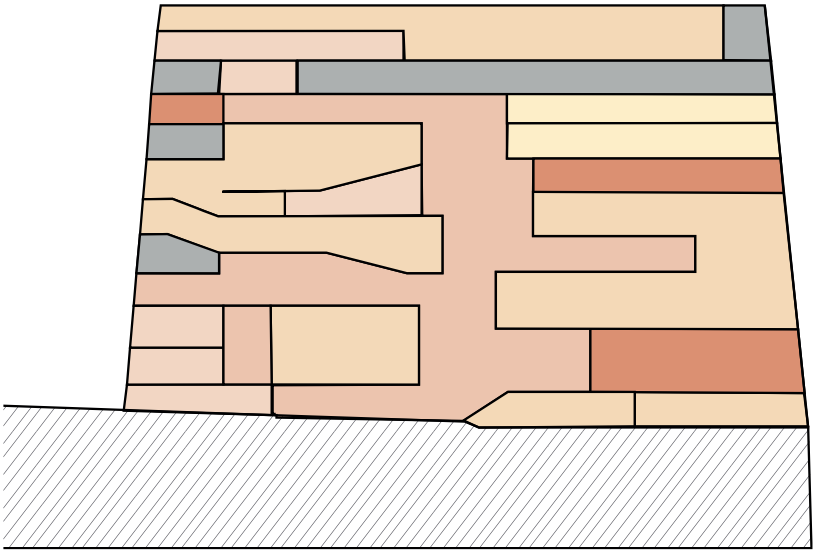


Figure 2.15: Chosen buildings for benchmark
(Own illustration)



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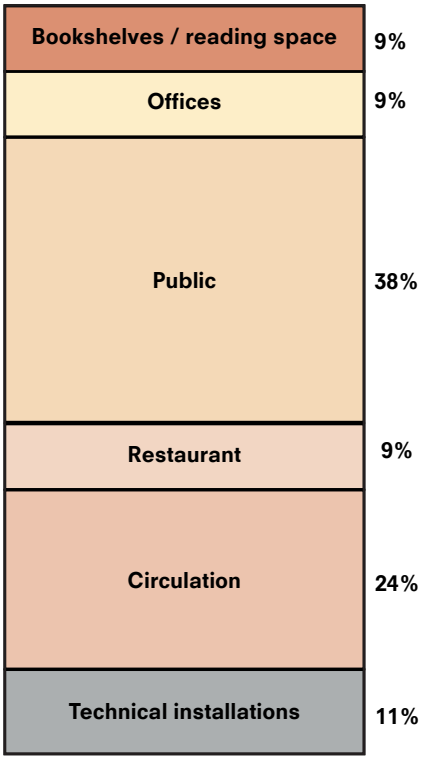
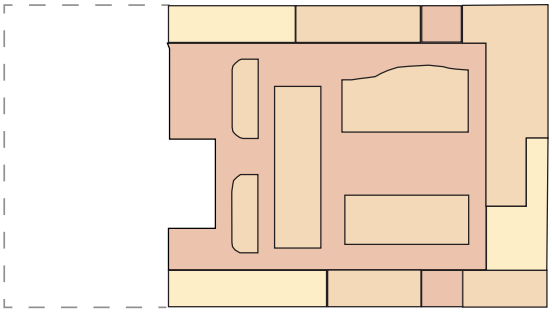
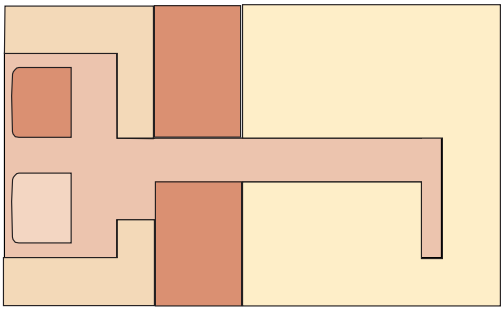


Figure 2.16: Program analysis Forum Groningen
(Own illustration)

Figure 2.17: Forum Groningen
(Forum, z.d.)



first floor



Ground floor

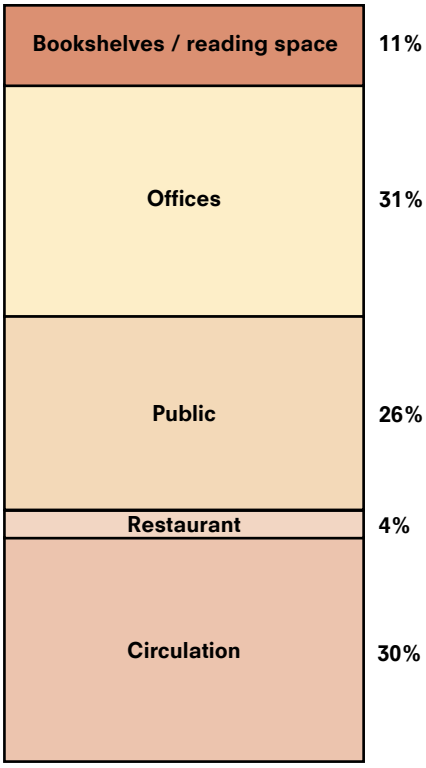
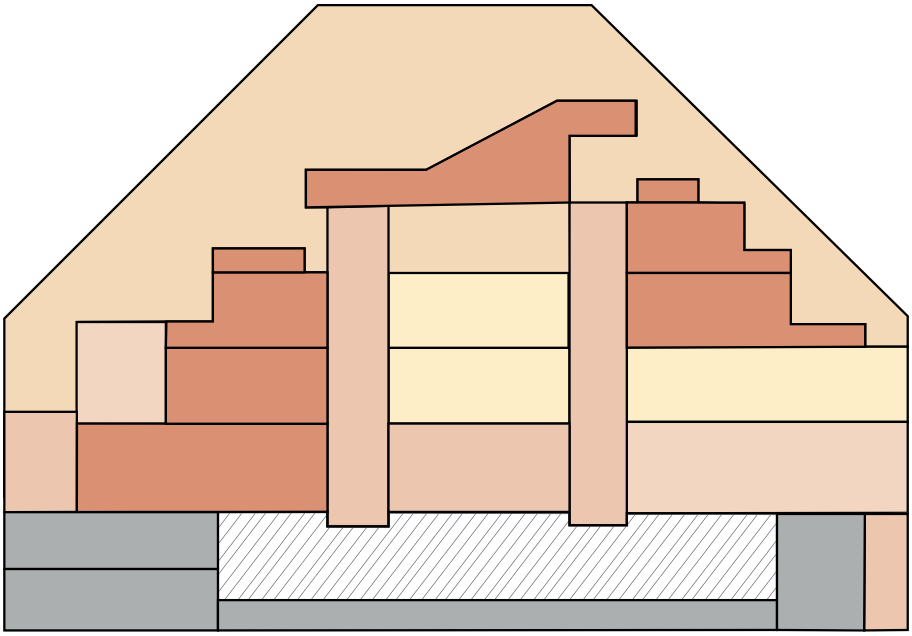


Figure 2.18: Program analysis LocHal Tilburg
(Own illustration)

Figure 2.19: LocHal tilburg
(LocHal, z.d.)



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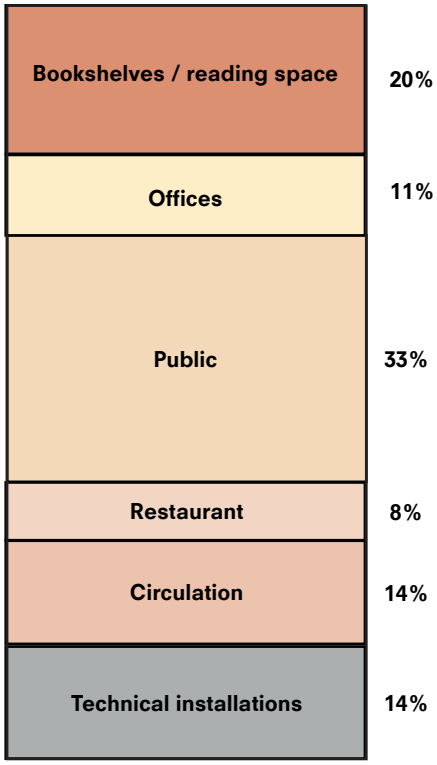
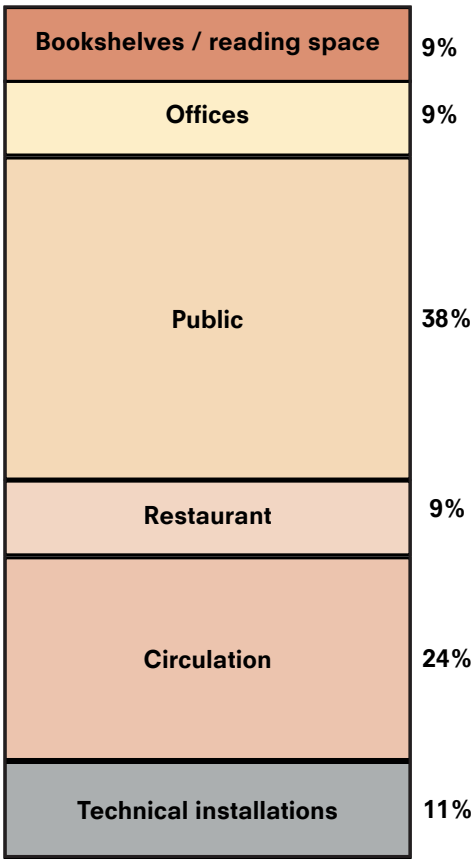
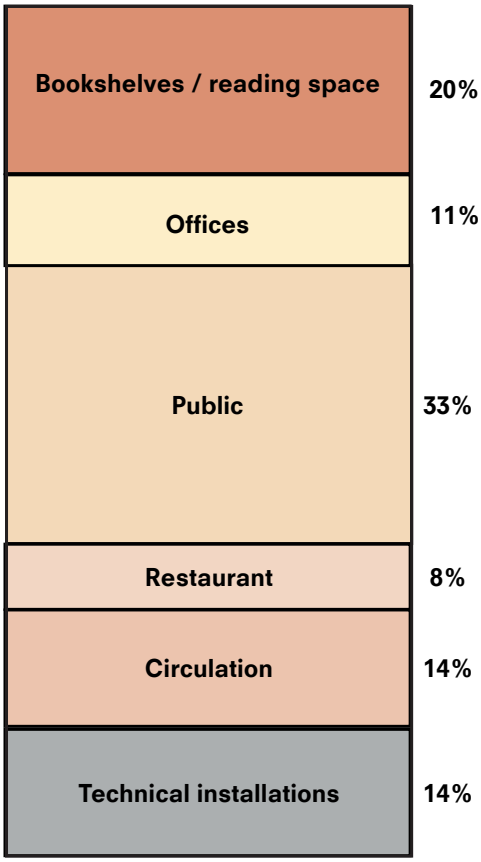


Figure 2.20: Program analysis Boekenberg Spijkenisse
(Own illustration)

Figure 2.21: Boekenberg Spijkenisse
(MVRDV, 2003)



Forum



Boekenberg

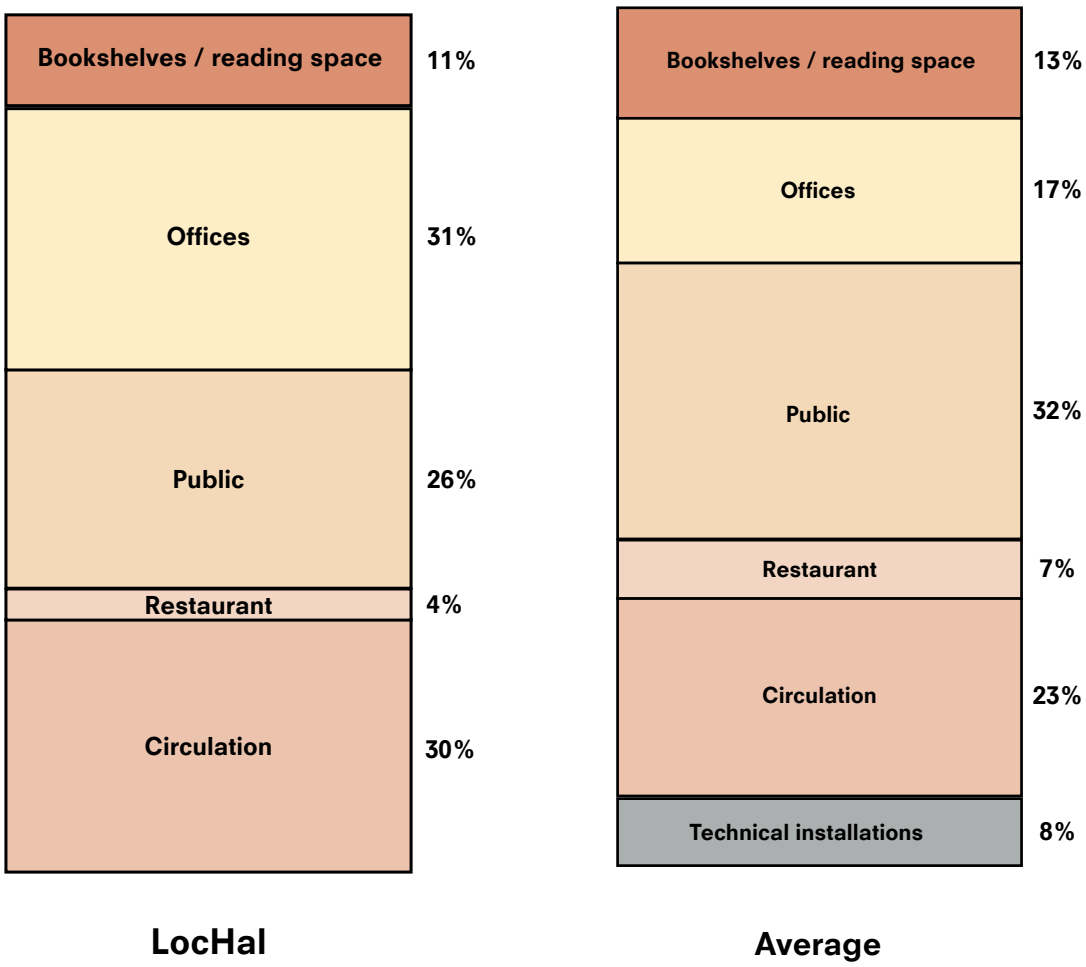


Figure 2.22: Benchmark
(Own illustration)

The average program breakdown from the case studies reveals that a larger proportion of space is allocated to bookshelves/reading spaces and circulation areas, while significantly less space is dedicated to offices. figure 23 illustrates how a new program breakdown is developed, incorporating insights from this analysis.

There are three major differences between the current program and the new one. These differences reflect a stronger emphasis on public accessibility, social interaction, and functional versatility, aligning more closely with the ambitions of the new design.

Bookshelves / reading spaces

One of the key differences in the new program breakdown is the approach to bookshelves and reading spaces. The ambition is to make these areas fully open to the public, with more workplaces to encourage collaboration and social interaction. A stronger visual and functional connection to the rest of the building ensures these spaces feel more integrated and inviting. This enhanced role requires allocating additional space, highlighting their importance in the new design.

Offices

The office spaces in the new program are designed to be more flexible and open to the public, unlike the current private office areas. By integrating

these spaces into the rest of the building, they can take up less room while allowing for more dynamic use. This flexibility, combined with greater public access and integration, encourages more social interaction and collaboration throughout the building.

Circulation space

The circulation space should be the key area for social interaction, going beyond simply moving people between floors. It must be integrated throughout the entire building, not just as a core, and serve multiple functions. The circulation space should become the heart of the building, a dynamic environment that fosters interaction, knowledge exchange, and a sense of community.

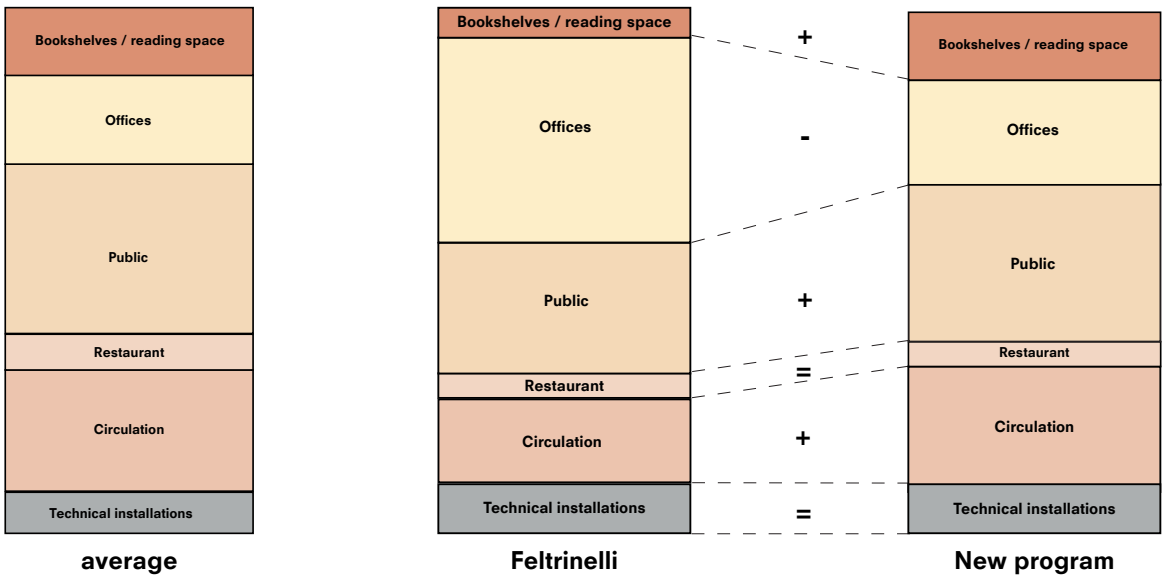


Figure 2.23: New program proposal
(Own illustration)

Health lens

Each group within the Complex Projects studio was assigned a specific lens, with the Health group focusing on how design can influence physical and mental well-being. The main question that arose within this group was:

"How can the design and planning of public spaces in Milan be optimized to enhance physical and mental health for its residents?"

This question was explored through four different scales: S (Human scale), M (Building scale), L (Neighbourhood scale), and XL (Urban scale). For each scale, a corresponding question was addressed:

S: What is a healthy space?
M: What is a healthy building?
L: What is a healthy neighbourhood?
XL: What is a healthy city?

The outcome of the research emphasized the importance of integrating public spaces at each scale. Each group member was tasked with incorporating these elements into their designs:
S: A patio
M: A public passage
L: A piazza
XL: Connection to the health belt

These elements are intended to foster healthier environments at every level, from individual spaces to the entire

city. This approach aligns with the overarching theme of connecting people.

Program proposal

The diagram in figure 2.24 visualizes the proposed new program for the design of the Feltrinelli complex. The implementations of the group research are also added in this diagram as outside spaces.

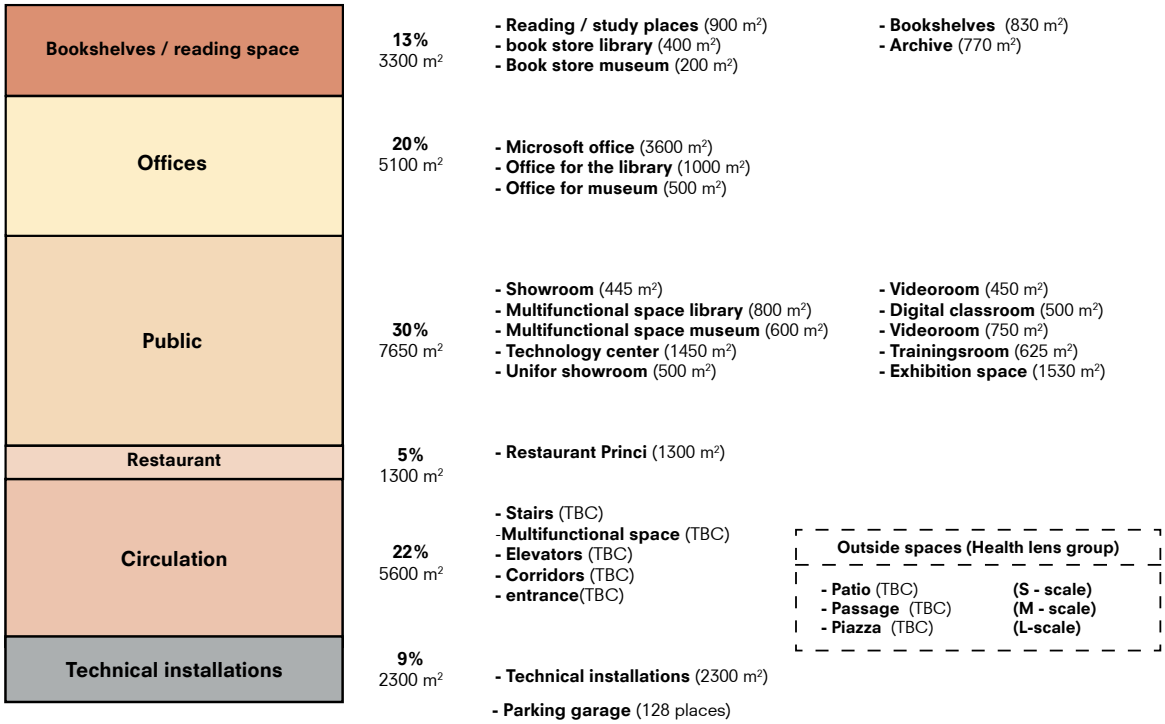


Figure 2.24: New program proposal
(Own illustration)

Relation diagram

Figure 2.25 shows the current relation diagram of the three different functions. As can be seen, all functions are directly connected to the circulation space, which in this case consists of cores.

Figure 2.26 presents the relation diagrams of the case studies. What is interesting about these diagrams is that the circulation space is much more than just a means of moving people between different areas. The circulation space serves as the key space in the libraries, with other functions integrated within it.

Figure 2.27 clearly highlights the difference between the case studies and the current Feltrinelli building, and proposes a new relation diagram for the new design of the Feltrinelli building. Integrating various functions within the circulation space enhances social interaction and fosters a more dynamic and engaging environment.

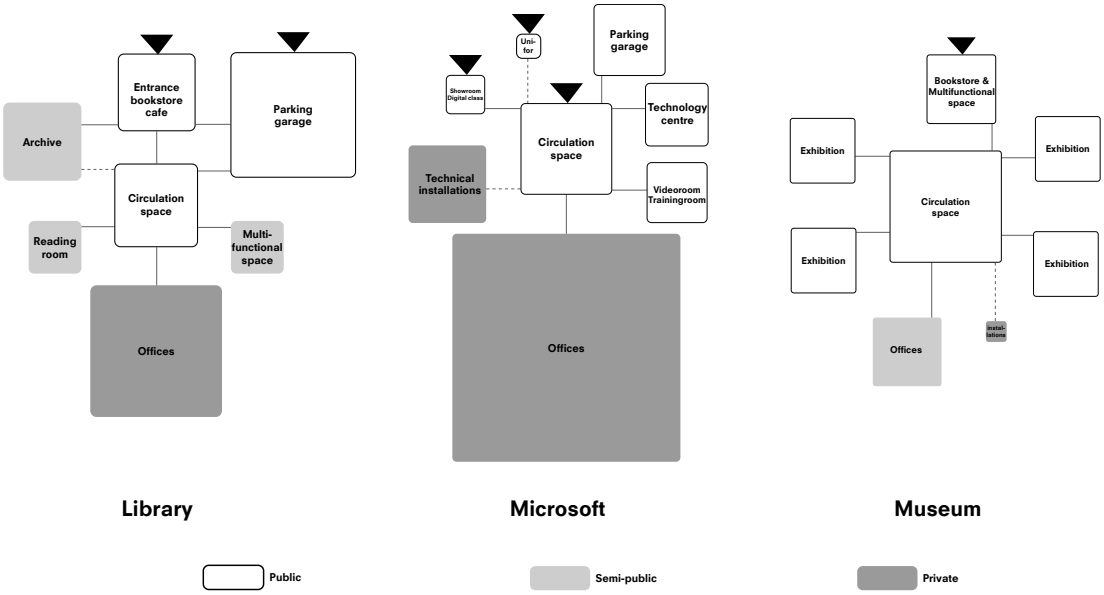


Figure 2.25: Current relation scheme
(Own illustration)

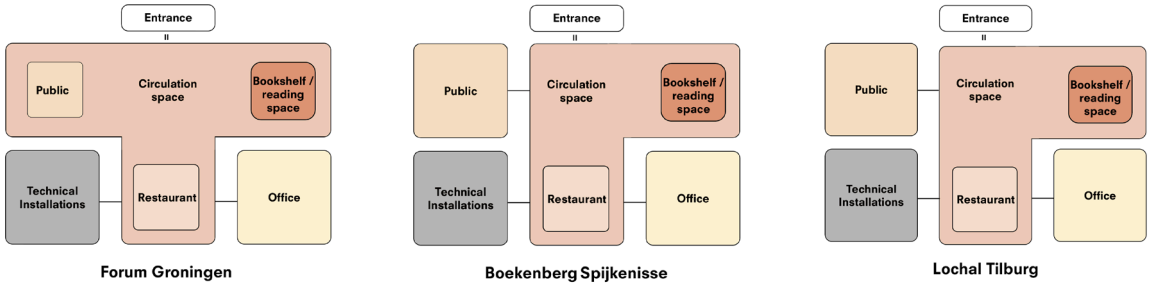


Figure 2.26: Benchmark relation diagram
(Own illustration)

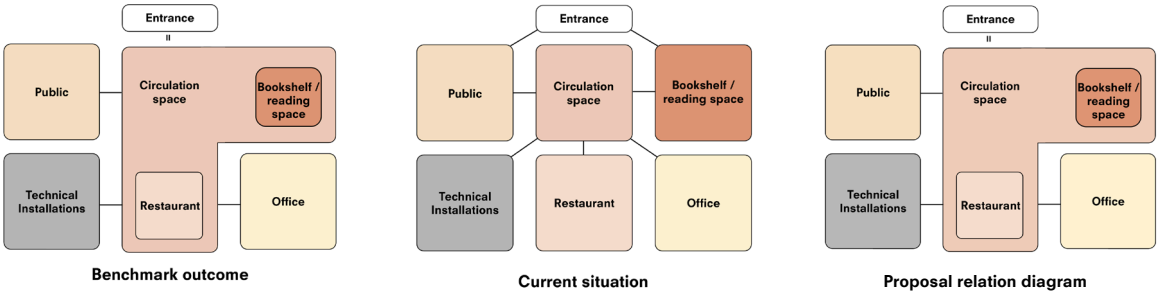


Figure 2.27: Creating the new relation scheme
(Own illustration)

Figure 2.28 presents a proposal for the new relation diagram of the Feltrinelli building, with a central circulation space at its core. This circulation area connects all functions within the building, creating a more flexible layout compared to the current, more rigid separation of spaces. The library, office spaces, and exhibition areas are now better integrated, ensuring clear connections while retaining their distinct identities.

The central space houses the library's reading rooms and bookshelves, encouraging social interaction and knowledge exchange. Office areas, such as the Microsoft offices, are still linked but remain less accessible to the public. Below the building, a parking garage is directly connected to the circulation space, while technical installations are also integrated nearby for easy access.

This design fosters greater connectivity between functions and creates a more inviting, dynamic environment that enhances social interaction and engagement across the building.

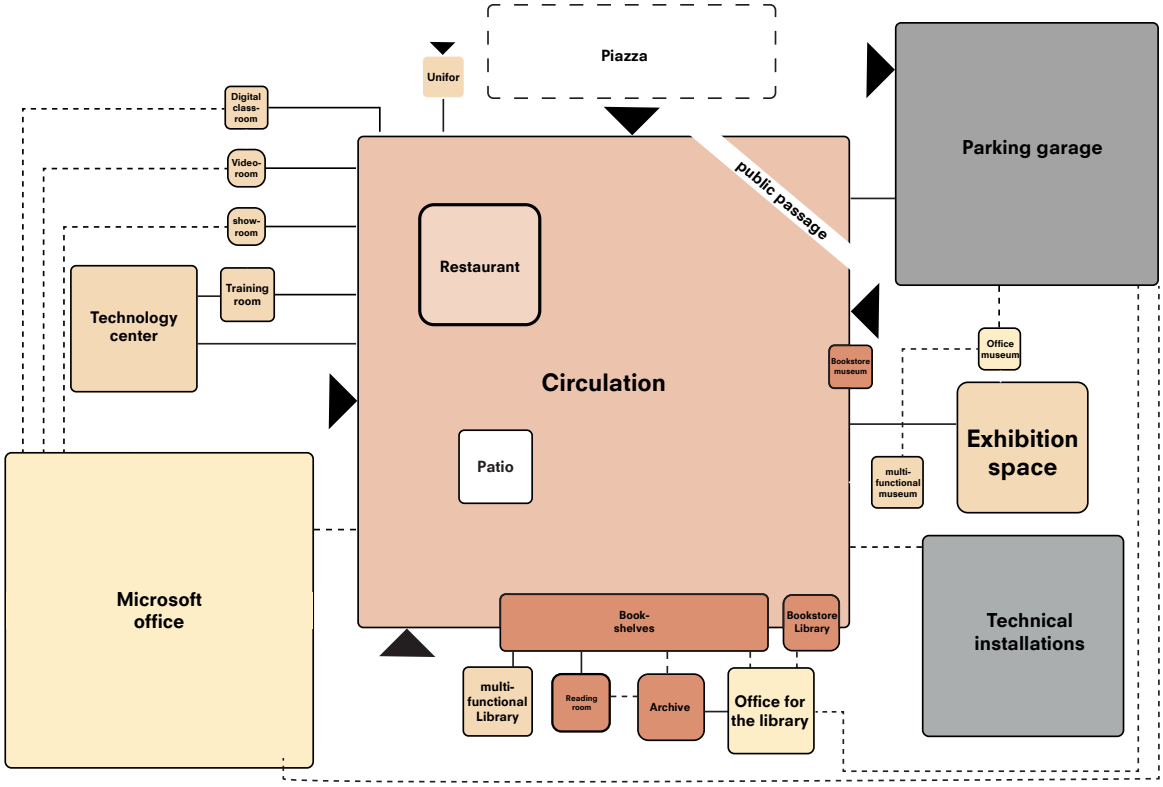


Figure 2.28: Proposal relation scheme
(Own illustration)

Key space

In the current building, the key spaces are as follows: the restaurant/ bookstore in the library, the showroom in the Microsoft office, and the multifunctional space in the museum. However, this is quite unconventional when compared to many other public libraries, as shown in figure 2.29. It is noteworthy that, in most public libraries, the circulation space is often designated as the key space. This space serves as the heart of the building, integrating a variety of functions, such as reading areas, meeting spots, and event spaces, all of which facilitate social interaction and knowledge exchange. By rethinking the circulation space as a dynamic, multifunctional area, it becomes the living room for the city.

The proposal for the new design focuses on the circulation space as the key space for social interaction. Figure 2.30 schematically illustrates what such a circulation space could look like. The idea is for this space to be centrally located within the building, connecting to various other rooms, making it accessible and inclusive for everyone. In the center of the building, a larger space can be created, housing functions such as a restaurant, activities, workshops, lectures, and other events. This multifunctional space enhances interaction among visitors and encourages knowledge exchange, contributing to the overall social cohesion within the building.

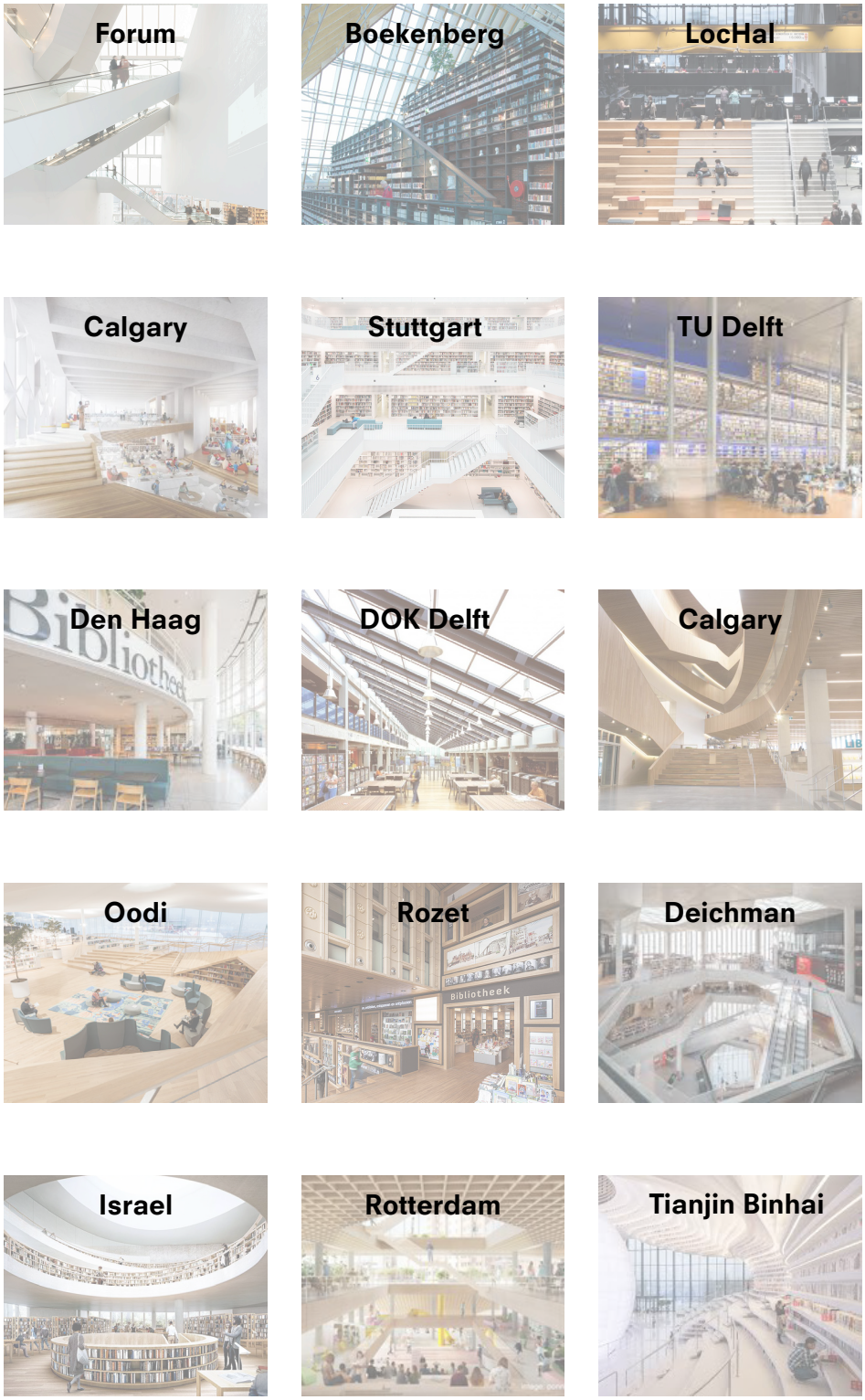


Figure 2.29: Libraries in the world
(Own illustration)

The circulation space is the foundation for creating the library as the living room of the city, fostering social interaction and community engagement. To achieve this, five key principles have been identified through a literature study.

Firstly, the circulation space should be open and accessible. Visual connections, clear wayfinding, a central atrium, and wide corridors are essential features. As shown in figure 2.31.1, combining central, intermediate, and intimate spaces fosters diverse opportunities for interaction. Intimate spaces, with a distance of 1.2m to 3.6m, align with Hall's (1966) theory that close proximity enhances meaningful connections.

Secondly, multifunctional meeting areas are essential. By integrating diverse seating arrangements (figure 2.31.2), the space supports work, rest, activity, and spontaneous encounters. Flexible seating, a café, small group spaces, and workstations can cater to varied needs and promote interaction (Gehl, 1971).

Comfort is another key component. Ample daylight, biophilic design, human-centered layouts, and outdoor views are critical. figure 2.31.3 highlights the factors that ensure comfort, such as natural lighting, airflow, nature integration, and sound quality, all of which promote well-being and social interaction.

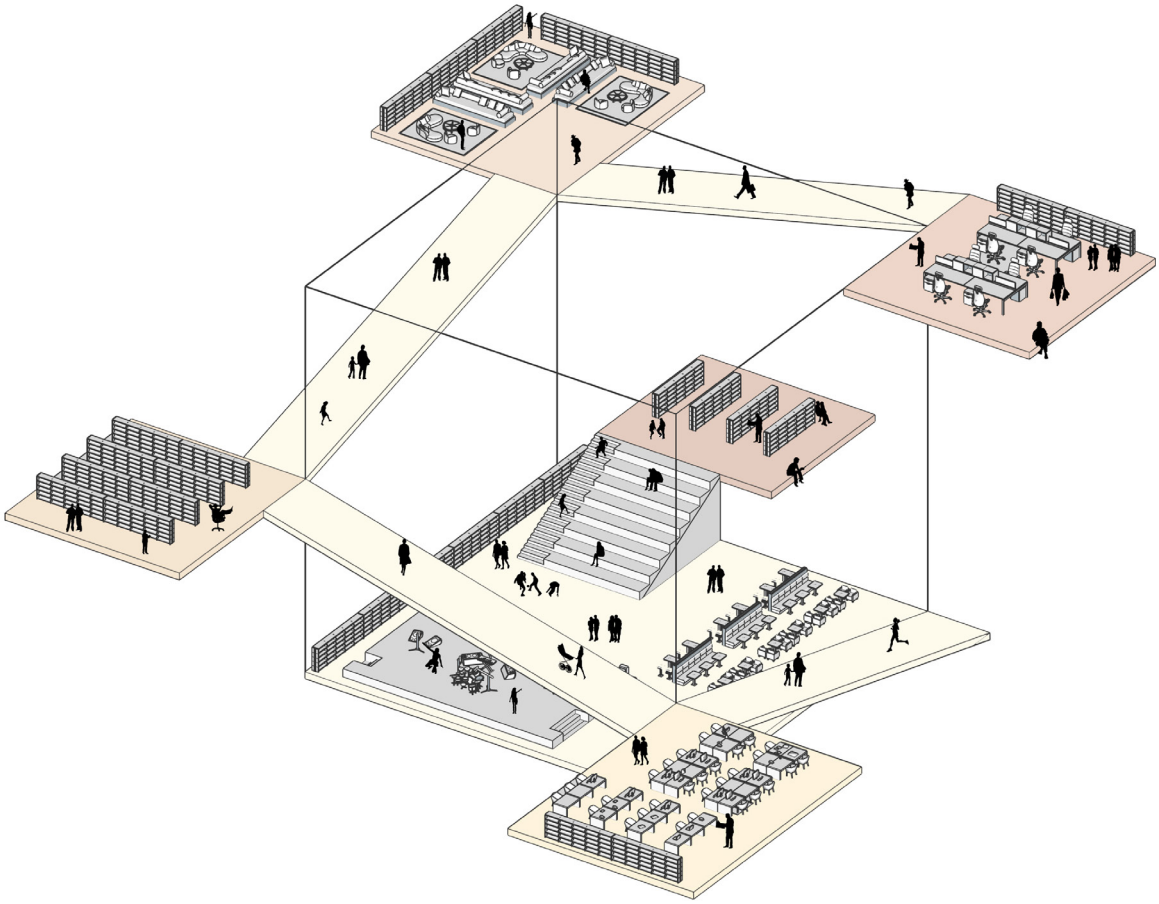


Figure 2.30: Circulation space concept
(Own illustration)

Inclusivity is vital. Spaces should address the needs of children, students, adults, and the elderly, ensuring the library is welcoming to all.

Finally, the space should stimulate activities and programs, with flexible areas for workshops, community events, and interactive workstations encouraging engagement and creativity.

By integrating these principles, the circulation space becomes a dynamic hub that supports interaction, inclusivity, and the library's role as the city's living room.

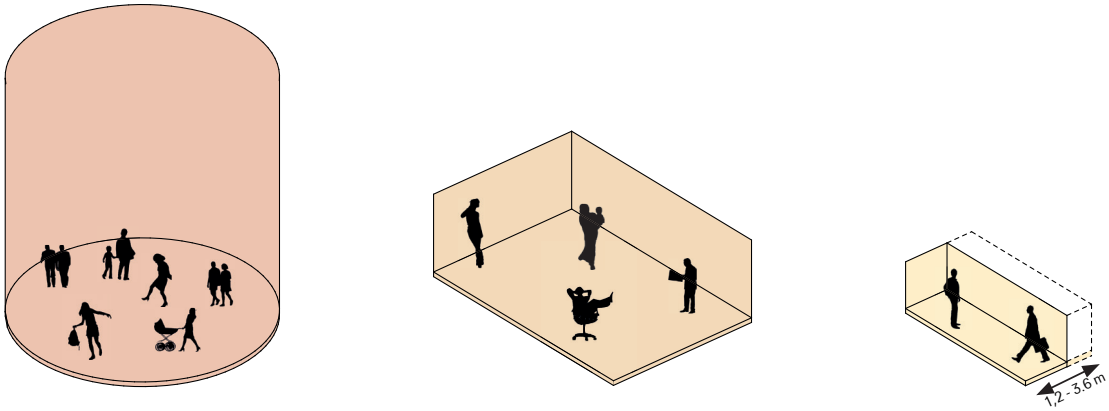


Figure 2.31.1: A combination of spaces of varying size
(Own illustration)

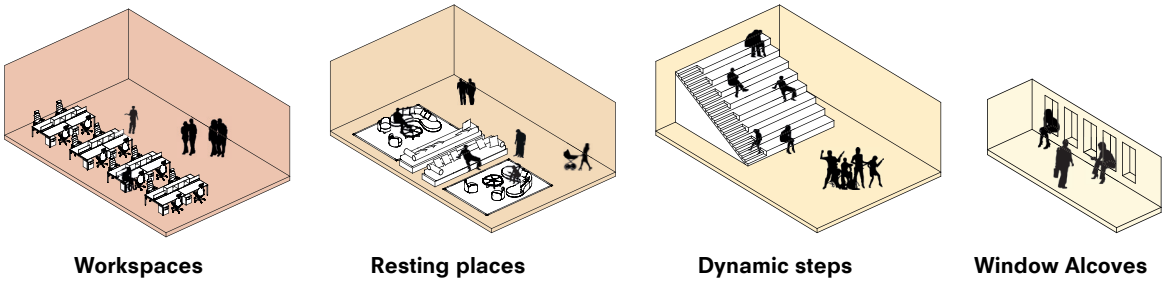


Figure 2.31.2: Diverse seating arrangements
(Own illustration)

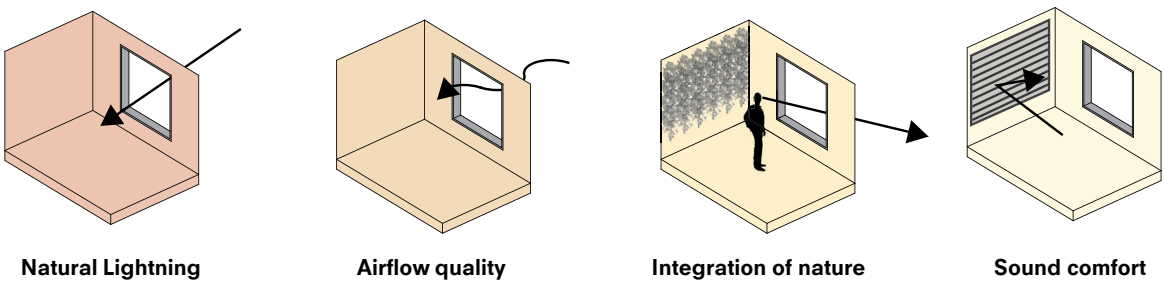


Figure 2.31.3: Factors that influence comfort
(Own illustration)

Figure 2.31: Design principles key space
(Own illustration)

Site

The site analysis was conducted through a combination of a site visit, literature review, and an analysis of various flows, including infrastructure, green spaces, and existing buildings. This comprehensive analysis provides essential guidelines for designing the new Feltrinelli building.

Current situation

The Feltrinelli complex is located in the Porta Volta district. figure 2.32 shows the historical development of three different city walls: the Mura Romane (49), the Mura Medievale (1156), and the Mura Spagnole (1556). The last wall is especially important for this site. The current building is designed as a linear volume parallel to the wall, as a reference to the old city walls (figure 2.33). Remnants of these historical walls can still be found on the site, as shown in figure 2.34.

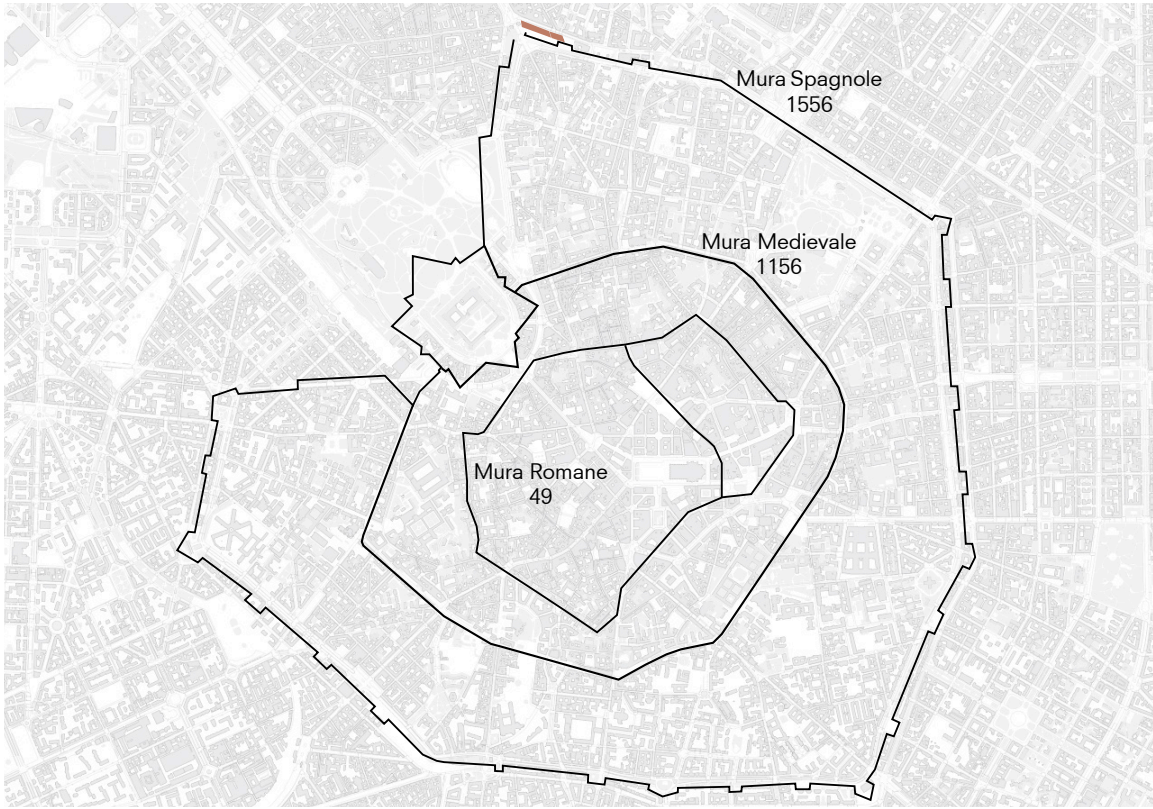


Figure 2.32: Old city walls
(Own illustration)

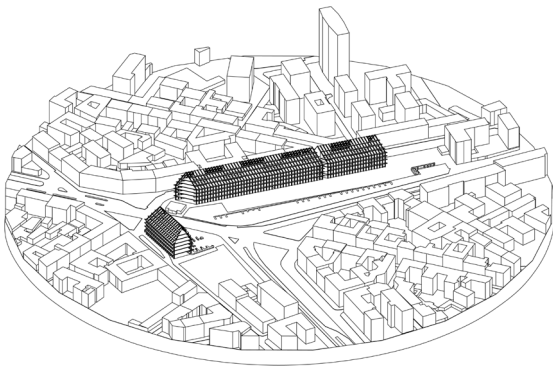


Figure 2.33: Current situation
(Own illustration)

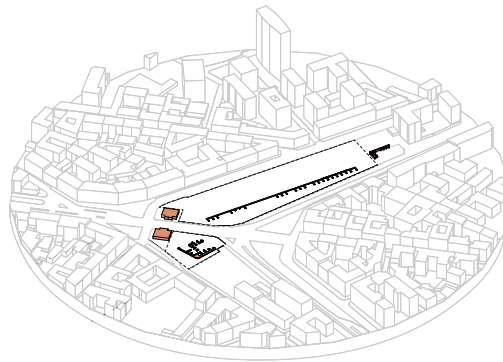


Figure 2.34: Remains of Spanish Walls
(Own illustration)

Porta Nuova

The Feltrinelli complex is part of the Porta Nuova project, one of Milan's four major urban regeneration initiatives, alongside "City Life," "Porta Genova," and "Porta Vittoria." The Porta Nuova project is an ambitious urban renewal effort aimed at connecting three districts through sustainable development and innovative energy solutions. Porta Nuova, located near the project site, presents opportunities for further integration.

Porta Nuova is a modern district of Milan, renowned for its iconic Bosco Verticale and a contemporary park that seamlessly blend innovation with urban design. Figure 2.35 illustrates that the plot of the Feltrinelli complex serves as a transitional zone, bridging the modern Porta Nuova district with Milan's historic city center.

Figure 2.35: Plot as transition zone
(Own illustration)

Infrastructure, mobility
and accesibility

Parallel to the Spanish wall runs one of Milan's main roads, the Circonvallazione Interna, figure 2.36. This busy road plays an important role in the city's traffic flow but also causes significant noise pollution. Figure 2.37 shows how close this road is to the plot, which brings both challenges and opportunities. While the noise from the road needs to be addressed in the design, it also provides excellent accessibility by car, supported by the parking garage beneath the current Feltrinelli building. This means the design must carefully balance these opposing factors.

The site is also very well connected by public transport, with easy access to trains, trams, and the metro. This makes it a key location in Milan, offering great potential as a hub for the local community.

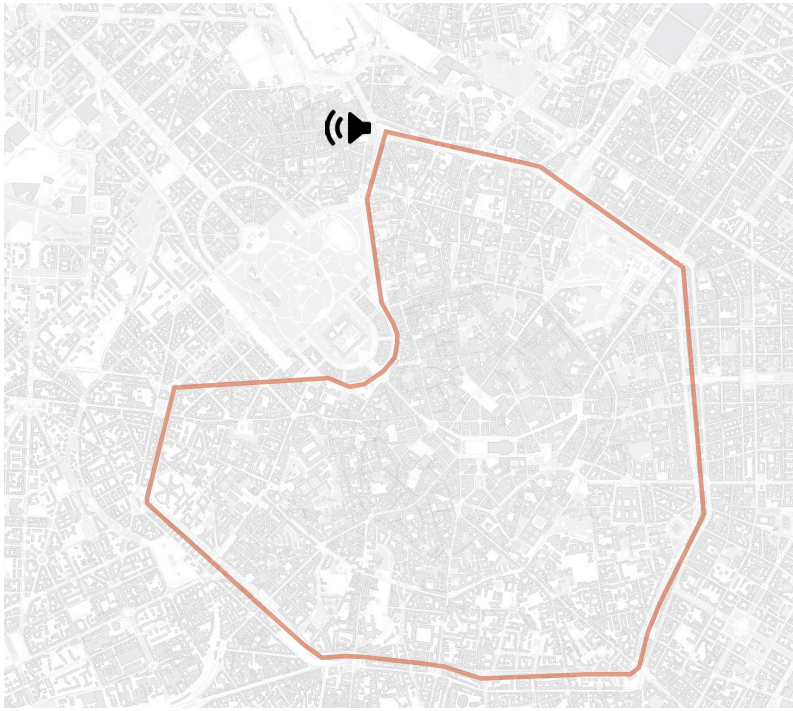


Figure 2.36: Circonvallazione Interna
(Own illustration)

Figure 2.37: Accessibility to plot
(Own illustration)

Figure 2.38 shows the road network around the plot. Two major and busy roads border the site: the Circonvallazione Interna and a main access road leading into the city. On the other side, a quieter road offers a more peaceful environment. This contrast creates a unique opportunity to design spaces that balance the energy of the busy roads with the calm of the quieter area, providing a mix of vibrant and relaxing spaces for different needs.

The analysis of the various flows is illustrated in figure 2.39, focusing on all routes leading to the building for pedestrians, cyclists, and motorists. As previously mentioned, the site is easily accessible by car from multiple directions, with parking available in the building's garages. Pedestrian access is also straightforward, with four different crossing points providing entry to the plot.

However, observations during the site visit revealed that the Circonvallazione Interna acts as a significant barrier due to its limited number of crossing points. This creates a challenge for connectivity and accessibility. The four existing crossings provide valuable insights into the potential locations for the entrance to the new design, highlighting the importance of strategically placing access points to ensure seamless integration with the surrounding urban fabric (figure 2.39).

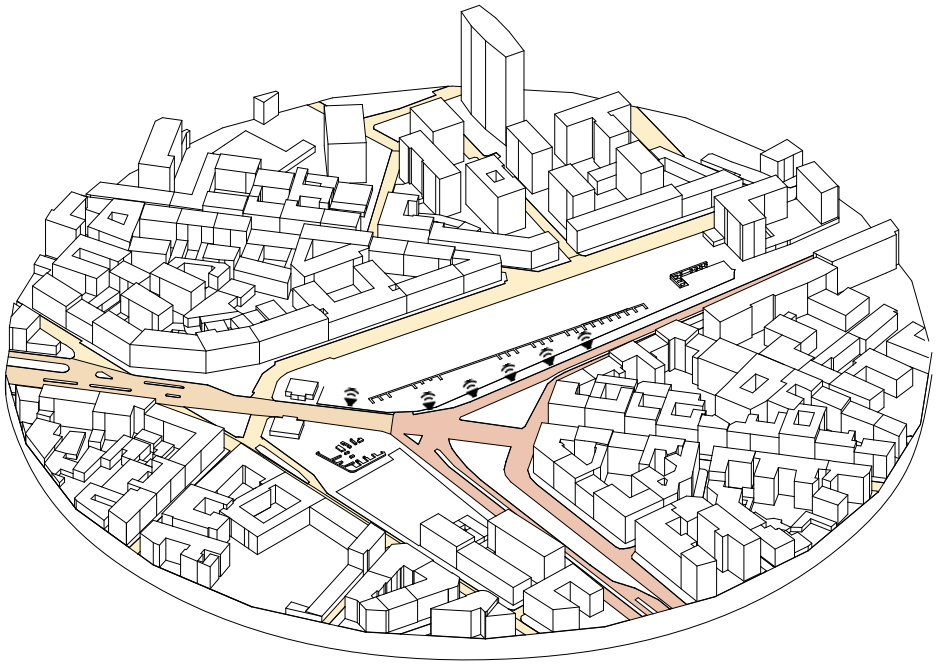


Figure 2.38: Infrastructure
(Own illustration)

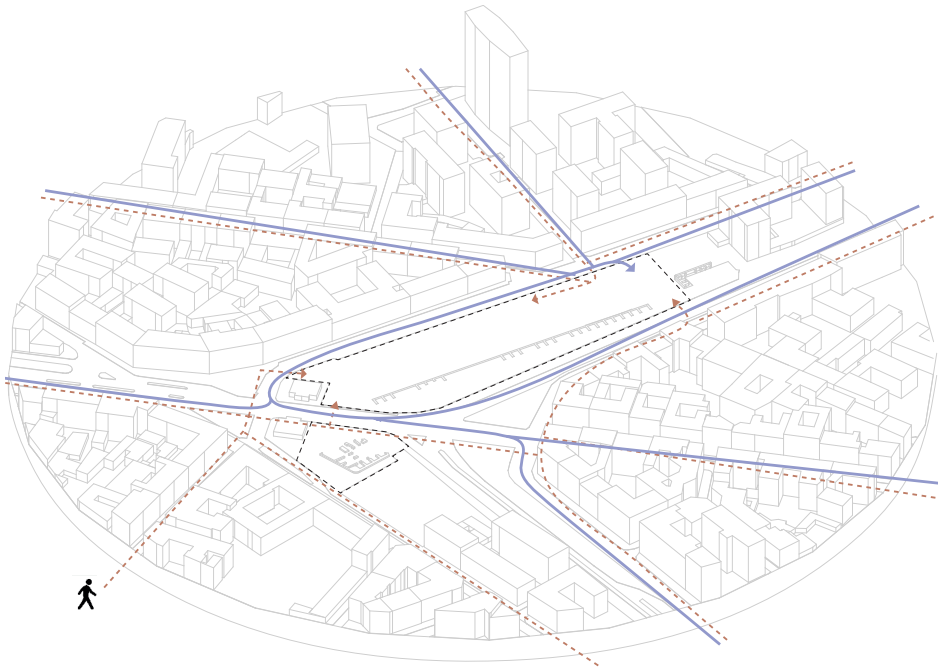


Figure 2.39: Flow of people
(Own illustration)

Green

The municipality of Milan has set an ambitious objective to connect all green parks across the city through a system of green boulevards. As illustrated in figure 2.40, this vision outlines the integration of these green spaces through carefully planned boulevards that will serve as both ecological corridors and urban green pathways. When zooming in on the specifics, as shown in figure 2.41, it becomes clear that the green connection linking "Parco Sempione," "BAM," and "Giardin Indro Montanelli" passes directly alongside the Feltrinelli buildings plot. This strategic location places the Feltrinelli complex in a key position to serve as an important node within this green network.

This connection aligns with the fourth implementation of the health group's strategy, as described: the "connection to the health belt." The green boulevard running alongside the plot is an integral part of this health initiative, promoting active mobility and enhancing opportunities for social interaction by encouraging people to walk, cycle, and engage with the building. By linking the Feltrinelli complex to the broader green network, the design can help foster a healthier, more connected urban environment.

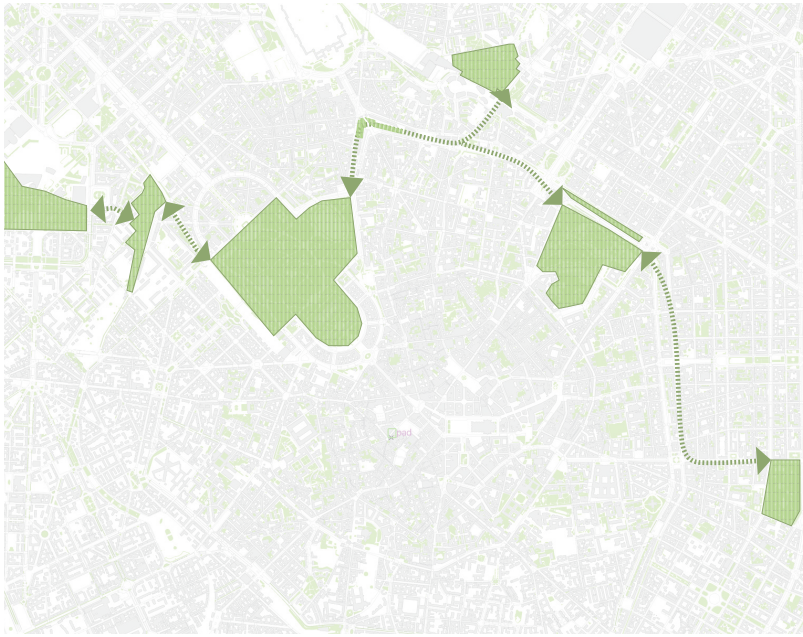


Figure 2.40: Municipality ambition green connection
(Own illustration)

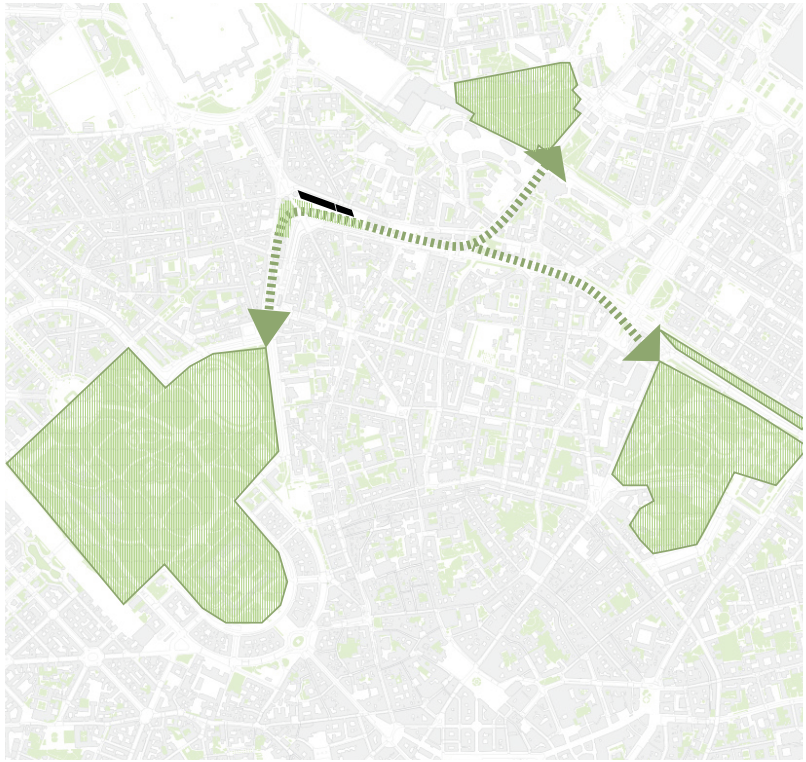


Figure 2.41: Municipality ambition green connection
(Own illustration)

The vision for this green connection was also considered by Herzog & de Meuron during the design phase, as seen in their conceptualization of the "green boulevard," which is depicted in figure 2.42.

Despite this well-intentioned design, a site visit revealed that the square and park in front of the Feltrinelli building remain underutilized. These outdoor spaces, although situated in a prime location, offer little to invite engagement or activity. The area features only a handful of benches and a grass field that dead-ends on one side, which limits its potential for use. The lack of amenities or activities that encourage social interaction results in a space that feels empty and uninviting (see figures 2.43 & 2.44). This underuse suggests that the design, while focusing on providing open space, might not effectively encourage the kind of active interaction and engagement that could make the space vibrant and welcoming.

A redesign of this space, with more inviting features such as dynamic seating arrangements, interactive elements, and better integration into the surrounding green network, could revitalize this area and make it a more attractive destination for social interaction, community activities, and public life.

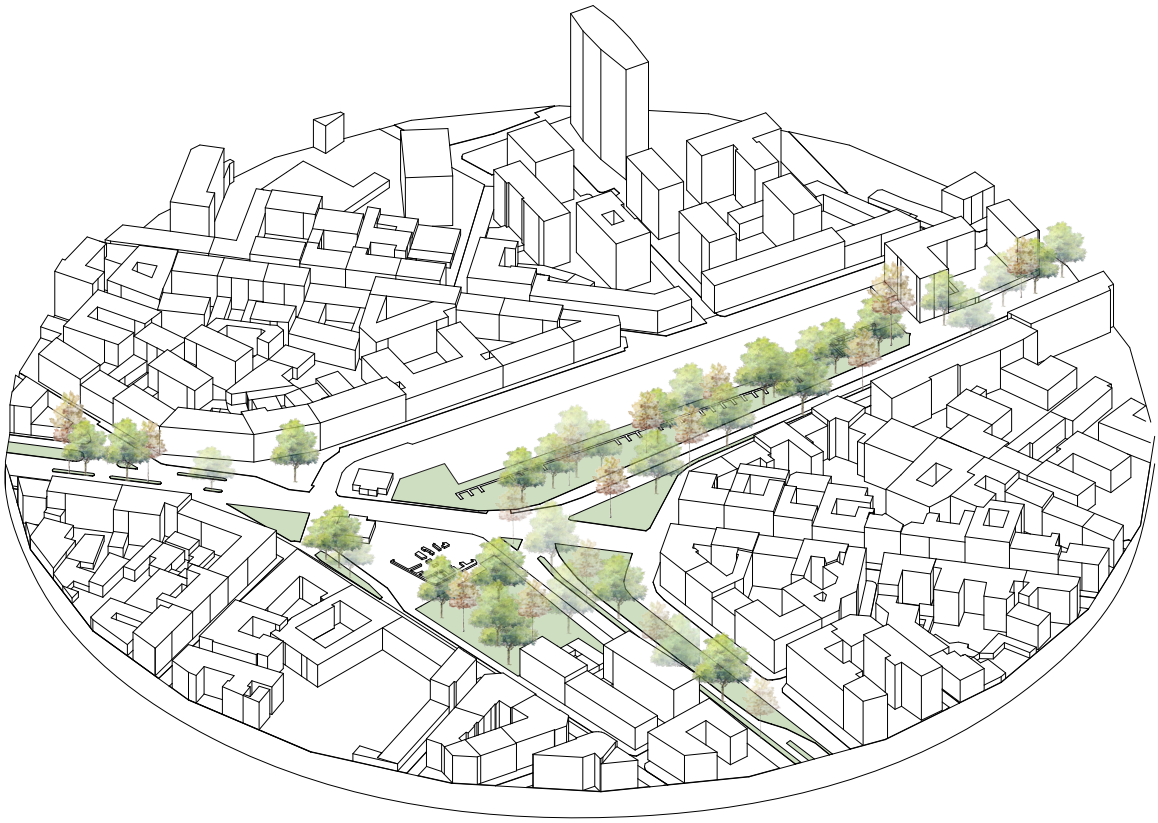


Figure 2.42: current situation
(Own illustration)

Figure 2.43: current situation
(Own picture)

Figure 2.44: current situation
(Own picture)

Existing buildings & sightlines

The height of the surrounding buildings is illustrated in figure 2.45, showing that the immediate surroundings of the plot feature buildings that are approximately 15 meters high.

An analysis has also been conducted regarding the sightlines from and towards the plot. When viewed from the plot, three key sightlines are notable: one towards the Tombe di Manzoni, another towards Porta Garibaldi, and one leading to Parco Sempione (figure 2.46).

Sightlines towards the plot have been mapped using photos taken during the site visit (figure 2.47). These photos reveal that the building is highly visible from a variety of angles, making it a prominent feature in the surrounding urban landscape. This visibility underscores the importance of integrating the design of the new building in a way that respects and enhances these sightlines while also considering the visual impact of the building on its surroundings.

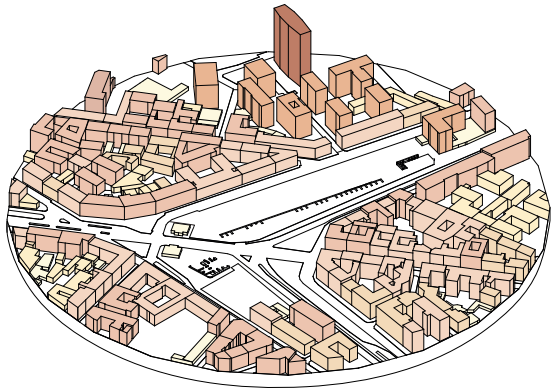


Figure 2.45: Surrounding buildings
(Own illustration)

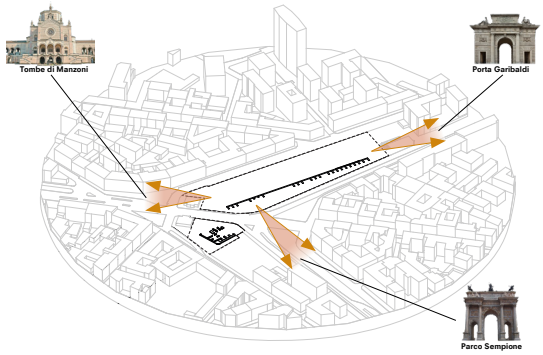


Figure 2.46: Sightlines from plot
(Own illustration)

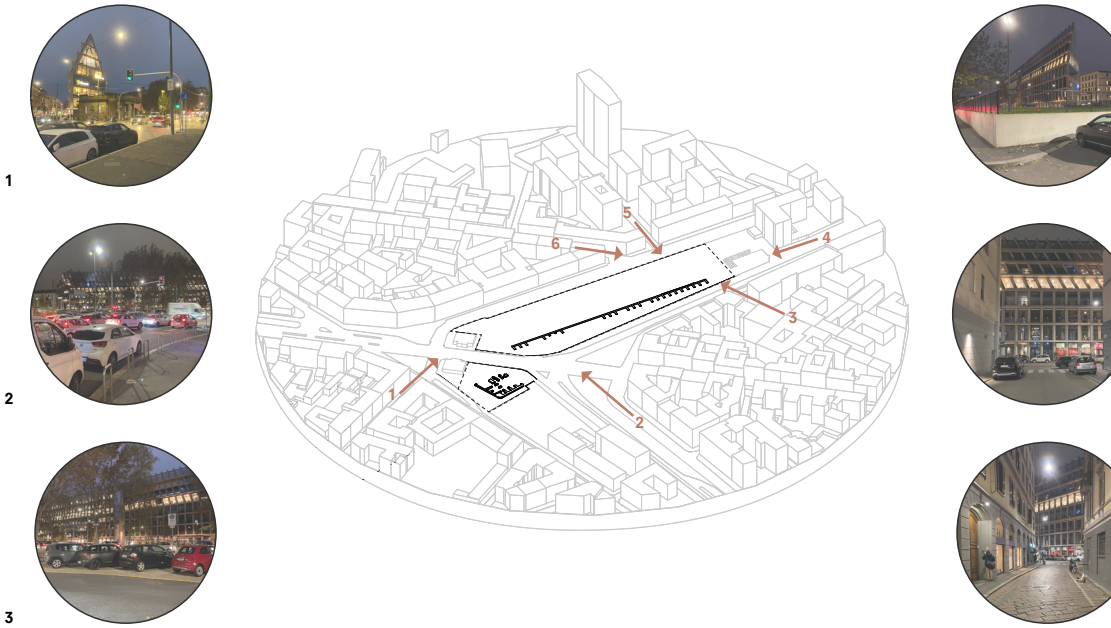


Figure 2.47: Sightlines to plot
(Own illustration)

Conclusion

The analysis of the site has led to the identification of six key ambitions for the design of the Feltrinelli complex (figure 2.48).

First, the building must function as a transition zone. It should create a seamless flow between the old and new, respecting the heritage of the site while embracing contemporary urban development.

Second, given the building's prominent visibility from various angles, it must serve as a landmark for the surrounding area. Its design should ensure that it stands out as a key feature in the urban landscape, contributing to the identity of the district.

Third, the site's archaeological significance, particularly the remains of the Spanish wall, must be respected. The building should incorporate these remnants into its design, possibly using them as an exhibition feature in the museum, providing visitors with a tangible connection to the site's history.

Fourth, the green boulevard concept, aimed at connecting green spaces across the city, is crucial. The building should integrate with this vision, fostering social interaction by promoting pedestrian movement and providing access to the surrounding parks.

Fifth, the building must serve as a sound barrier, mitigating the noise pollution from the busy nearby roads. Its design should incorporate elements that reduce noise, enhancing the comfort of the space for both visitors and occupants.

Finally, accessibility is key. The building should be easily accessible from all directions, ensuring that it serves the public efficiently and inclusively, with clear connections to public transport, pedestrian routes, and other urban amenities.

These ambitions collectively shape the vision for a building that not only responds to its immediate context but also contributes to the broader urban fabric of Milan. Figure 50 illustrates these ambitions within the context of the site

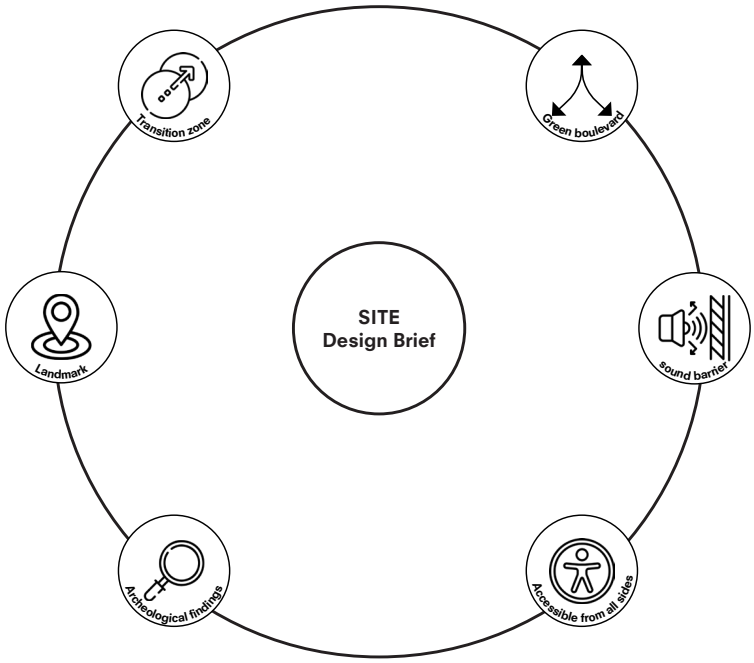
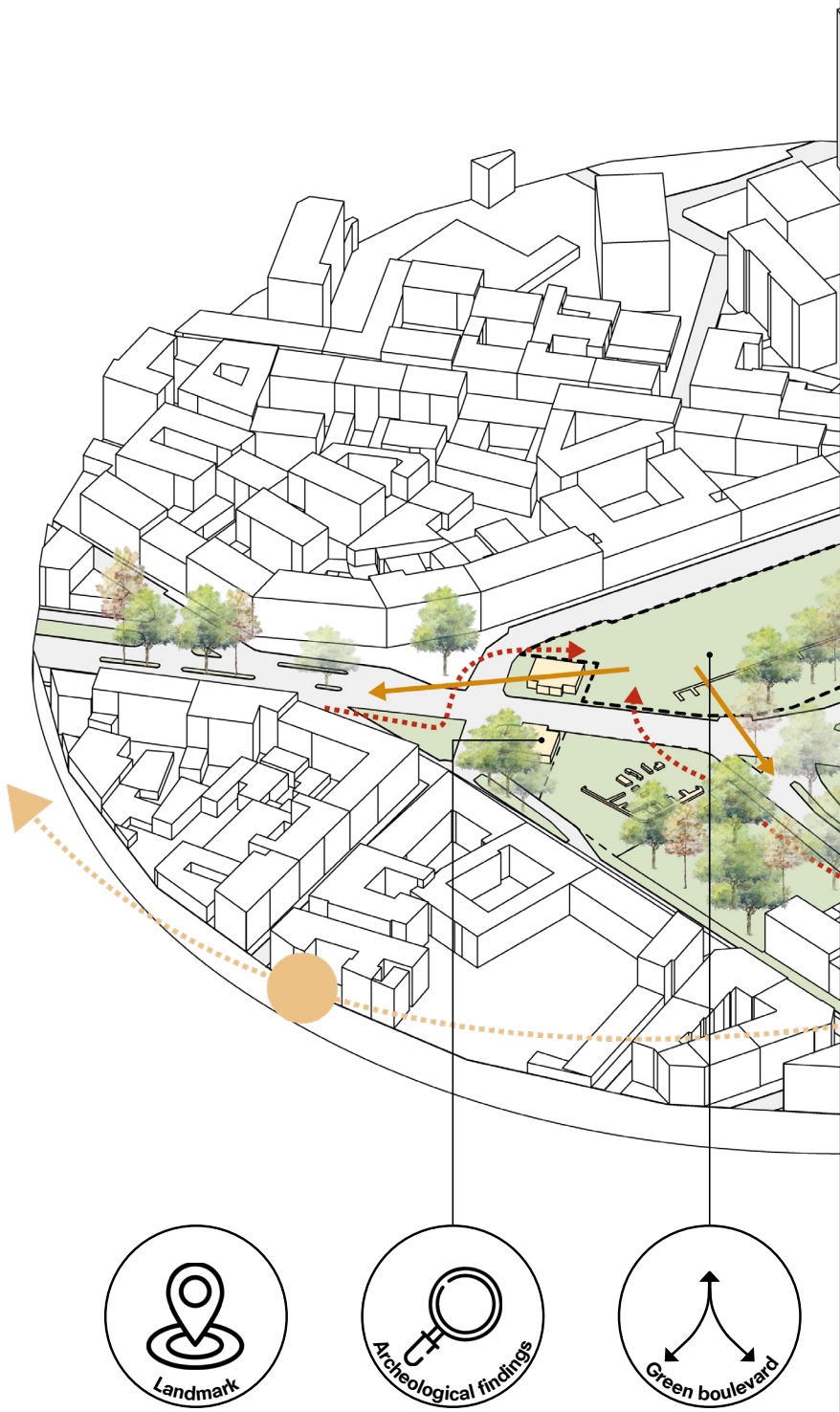


Figure 2.48: Site conclusion
(Own illustration)


Landmark
Archeological findings
Green boulevard

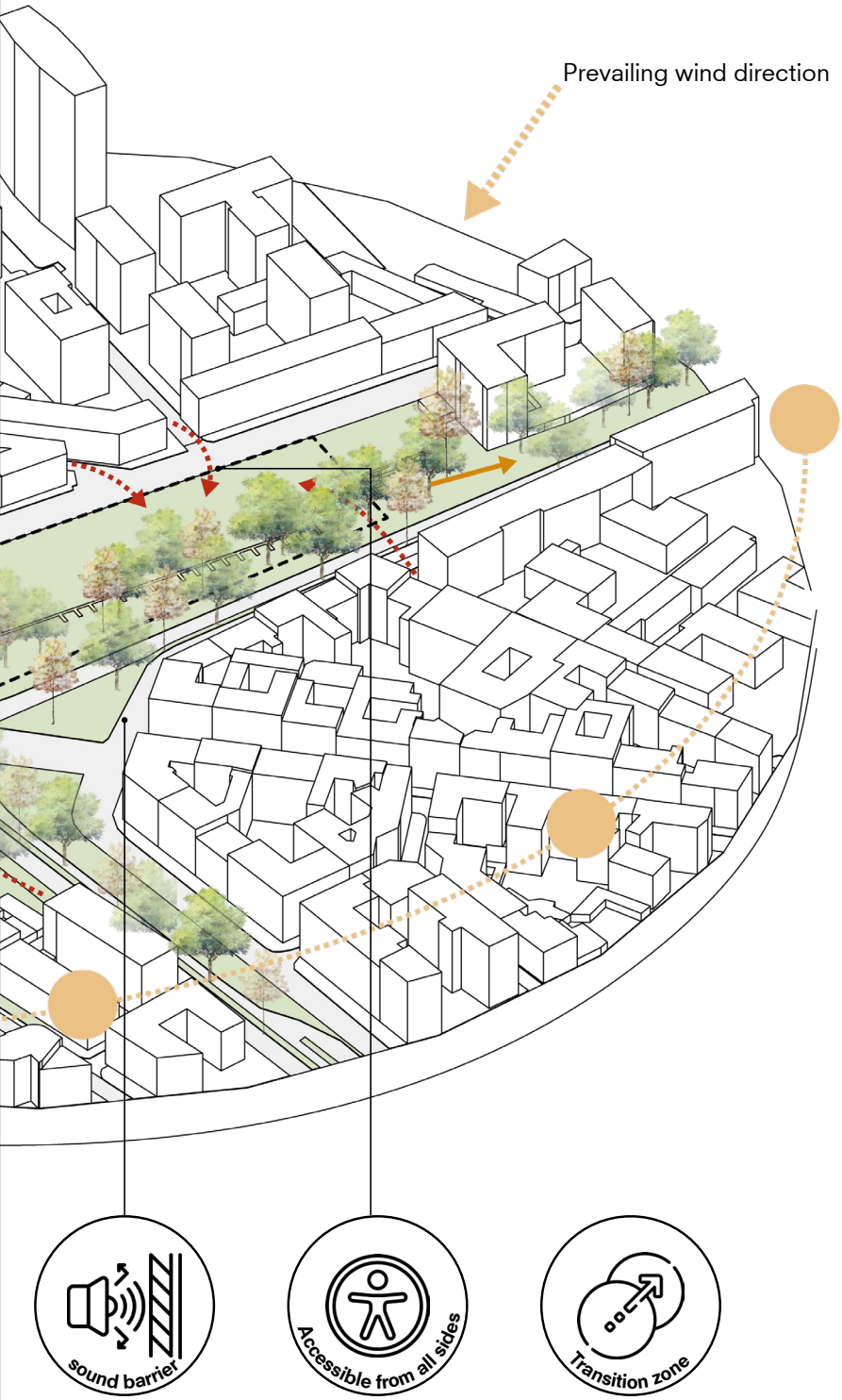


Figure 2.49: Site conclusion
(Own illustration)

VOLUME STUDY

03

Volume study

This chapter delves into the initial steps toward the design process.

A volume study has been carried out on the site to explore possibilities for a new Feltrinelli building. This study is guided by the graduation project's central theme as well as the design brief outlined in the previous chapter.

Throughout the process, various massing options are tested and evaluated using a criteria system, as shown in Figure 3.1 This table summarizes the key conclusions derived from the design brief, serving as a framework for assessing the spatial configurations. It allows for a structured analysis of how well each volume responds to the project's ambitions in terms of function, identity, and public value.

Site	Accessibility Green boulevard concept Sound barrier Landmark Archeological findings Building as transition	_____ _____ _____ _____ _____ _____
Program	Connection of functions Creates a routing Creates interaction spaces	_____ _____ _____
Client	Inviting Sustainable Feels as one building	_____ _____ _____

Figure 3.1: Criteria grading system
(Own illustration)

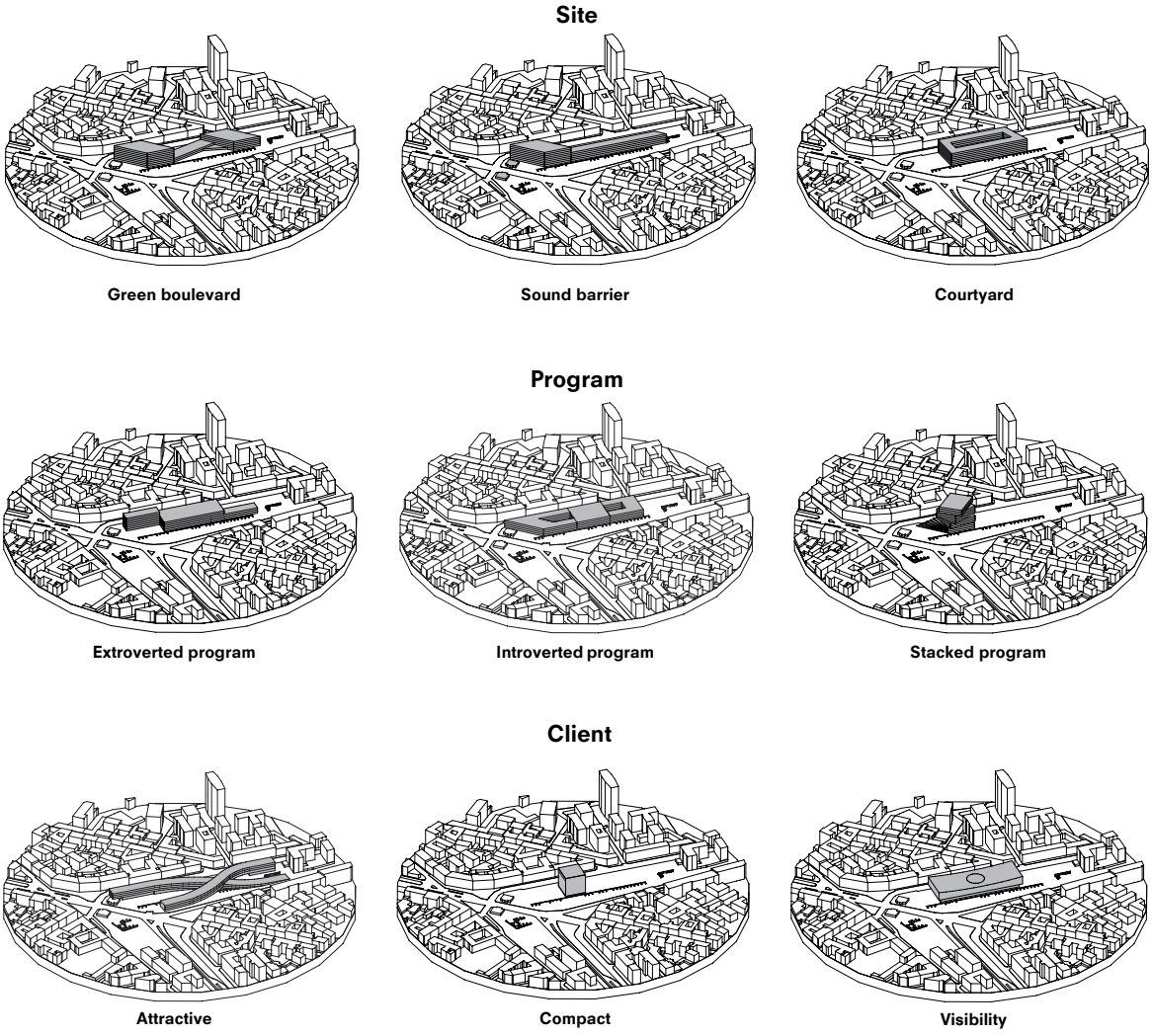


Figure 3.2: 3x3 volume study assignment
(Own illustration)

Site

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x x
	Sound barrier	x x x x
	Landmark	x x x x
	Archeological findings	x x x x
	Building as transition	x x x x
Program	Connection of functions	x x x
	Creates a routing	x x x x x
	Creates interaction spaces	x x x x
Client	Inviting	x x x x
	Sustainable	x x x
	Feels as one building	x x x x

Green boulevard

Site	Accessibility	x x x x
	Green boulevard concept	x x x
	Sound barrier	x x x x x
	Landmark	x x x
	Archeological findings	x x x x
	Building as transition	x x
Program	Connection of functions	x x x
	Creates a routing	x x
	Creates interaction spaces	x x x x
Client	Inviting	x x x
	Sustainable	x x
	Feels as one building	x x x

Sound barrier

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x
	Sound barrier	x x x x x
	Landmark	x
	Archeological findings	x x x
	Building as transition	x x x
Program	Connection of functions	x x
	Creates a routing	x x x
	Creates interaction spaces	x x x x x
Client	Inviting	x x
	Sustainable	x x
	Feels as one building	x x x x

Courtyard

Program

Site	Accessibility	x x x x
	Green boulevard concept	x x x
	Sound barrier	x x x
	Landmark	x x x
	Archeological findings	x x x x
	Building as transition	x x x
Program	Connection of functions	x x x x
	Creates a routing	x x x
	Creates interaction spaces	x x x
Client	Inviting	x x x
	Sustainable	x x
	Feels as one building	x x x x

Extroverted program

Site	Accessibility	x x x x
	Green boulevard concept	x x x
	Sound barrier	x x x x x
	Landmark	x x
	Archeological findings	x x x x
	Building as transition	x x
Program	Connection of functions	x x x x x
	Creates a routing	x x x x
	Creates interaction spaces	x x x x
Client	Inviting	x x
	Sustainable	x x x
	Feels as one building	x x x x x

Introverted program

Site	Accessibility	x x x x
	Green boulevard concept	x x x
	Sound barrier	x
	Landmark	x x x x x
	Archeological findings	x x x x
	Building as transition	x
Program	Connection of functions	x x x x
	Creates a routing	x x x
	Creates interaction spaces	x x x x
Client	Inviting	x x x x x
	Sustainable	x x x x
	Feels as one building	x x x x x

Stacked program

Client

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x x
	Sound barrier	x x x x x
	Landmark	x x x x x
	Archeological findings	x x x
	Building as transition	x x x x
Program	Connection of functions	x x x
	Creates a routing	x x x x x
	Creates interaction spaces	x x x x x
Client	Inviting	x x x x
	Sustainable	x x
	Feels as one building	x x x x x

Attractive

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x x
	Sound barrier	x x
	Landmark	x x x x x
	Archeological findings	x x x x x
	Building as transition	x x
Program	Connection of functions	x x x x x
	Creates a routing	x x
	Creates interaction spaces	x x x
Client	Inviting	x x x x
	Sustainable	x x x x x
	Feels as one building	x x x x x

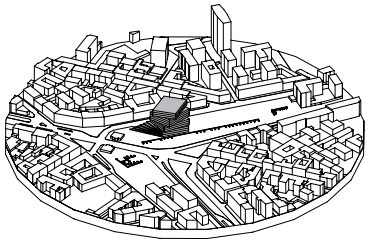
Compact

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x
	Sound barrier	x x x x
	Landmark	x x x x
	Archeological findings	x x x x
	Building as transition	x x x x
Program	Connection of functions	x x x x
	Creates a routing	x x x x
	Creates interaction spaces	x x x x x
Client	Inviting	x x x x x
	Sustainable	x x x x
	Feels as one building	x x x x x

Visibility

Figure 3.3: 3x3 volume study graded

(Own illustration)



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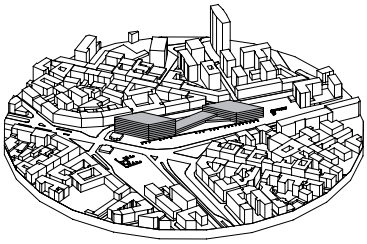

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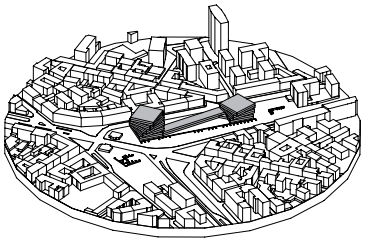
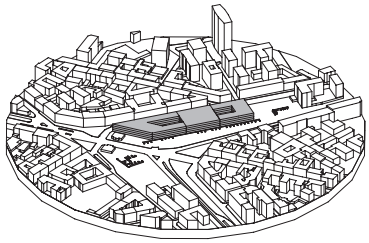


Landmark/green boulevard

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x x
	Sound barrier	x x x x
	Landmark	x x x x x
	Archeological findings	x x x x x
	Building as transition	x x x x x
Program	Connection of functions	x
	Creates a routing	x x x x x
	Creates interaction spaces	x x x x
Client	Inviting	x x x x x
	Sustainable	x x x
	Feels as one building	x x x



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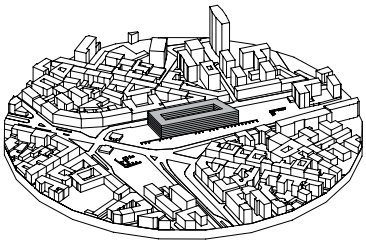

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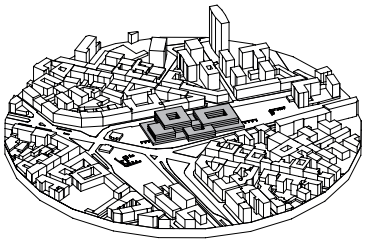
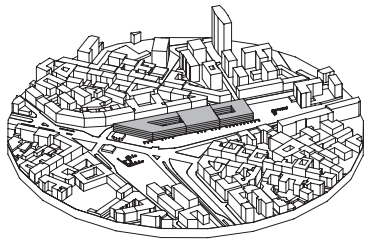


Program around courtyards

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x x
	Sound barrier	x x x x x
	Landmark	x x x x
	Archeological findings	x x
	Building as transition	x x x
Program	Connection of functions	x x x x x
	Creates a routing	x x x x x
	Creates interaction spaces	x x x x x
Client	Inviting	x x x x
	Sustainable	x x x x
	Feels as one building	x x x x x



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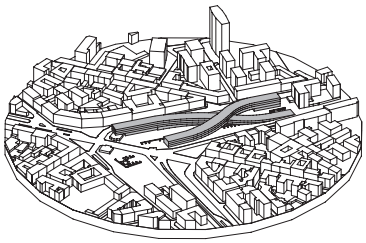

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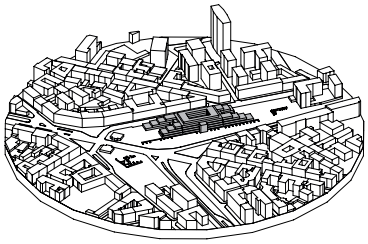


Green hill

Site	Accessibility	x x x x x
	Green boulevard concept	x x x x
	Sound barrier	x x x x x
	Landmark	x x x x
	Archeological findings	x x x x x
	Building as transition	x x x x
Program	Connection of functions	x x x x
	Creates a routing	x x x x
	Creates interaction spaces	x x x x
Client	Inviting	x x x x
	Sustainable	x x x
	Feels as one building	x x x x x

Figure 3.4. Combinations

(Own illustration)

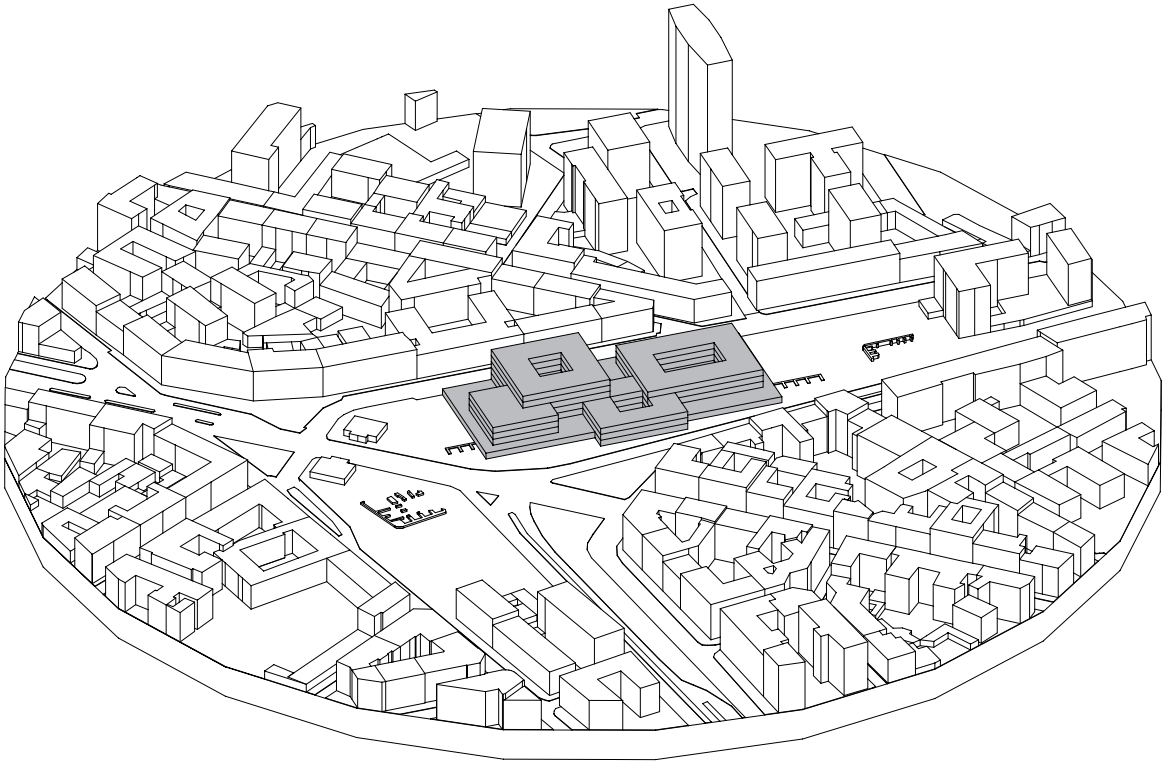


Figure 3.5. Chosen volume to develop more (program around courtyards)
(Own illustration)

CONCEPT

04

Concept

Courtyards bring valuable environmental benefits to dense urban buildings. They improve daylight access, support natural ventilation, act as sound barriers, and help with water retention. These features reduce energy use, improve comfort, and create healthier indoor environments. Beyond their climate function, courtyards also offer spatial and social value (figure 4.1).

In a busy city like Milan, courtyards offer a peaceful escape from the urban rush. They create calm, sheltered areas where people can meet, reflect, or share knowledge. As such, they become more than functional voids, they support social interaction and a sense of belonging within the city.

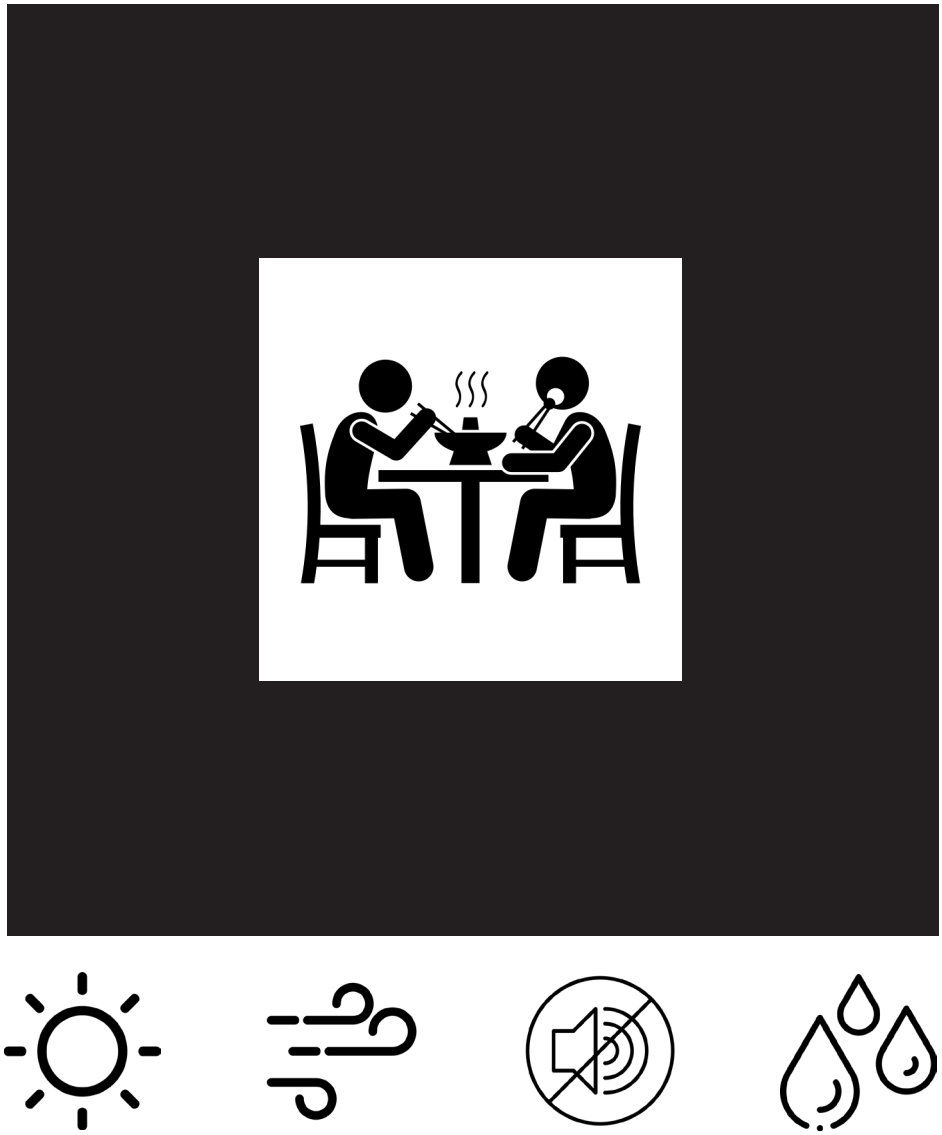


Figure 4.1 Courtyard advantages
(Own illustration)

Figure 4.2 illustrates the eight key steps that shaped the final building form. The process begins with the introduction of a 2.7m x 2.7m grid (Step 1), chosen for its suitability for both parking and office functions. This grid is then applied to the site (Step 2). Step 3 acknowledges the presence of the remains of the Spanish walls, which are still partially visible on the plot and inform the layout.

Next, courtyards and patios are inserted within the grid (Step 4), establishing spatial rhythm and daylight access. The volume begins to close off towards the street (Step 5), creating a clear urban edge, while it opens up towards the piazza (Step 6) to encourage social interaction. Step 7 further opens the form towards the adjacent park, enhancing the relationship with nature. Finally, additional program is added along the green boulevard side (Step 8), activating this edge and enhancing the public character of the building.

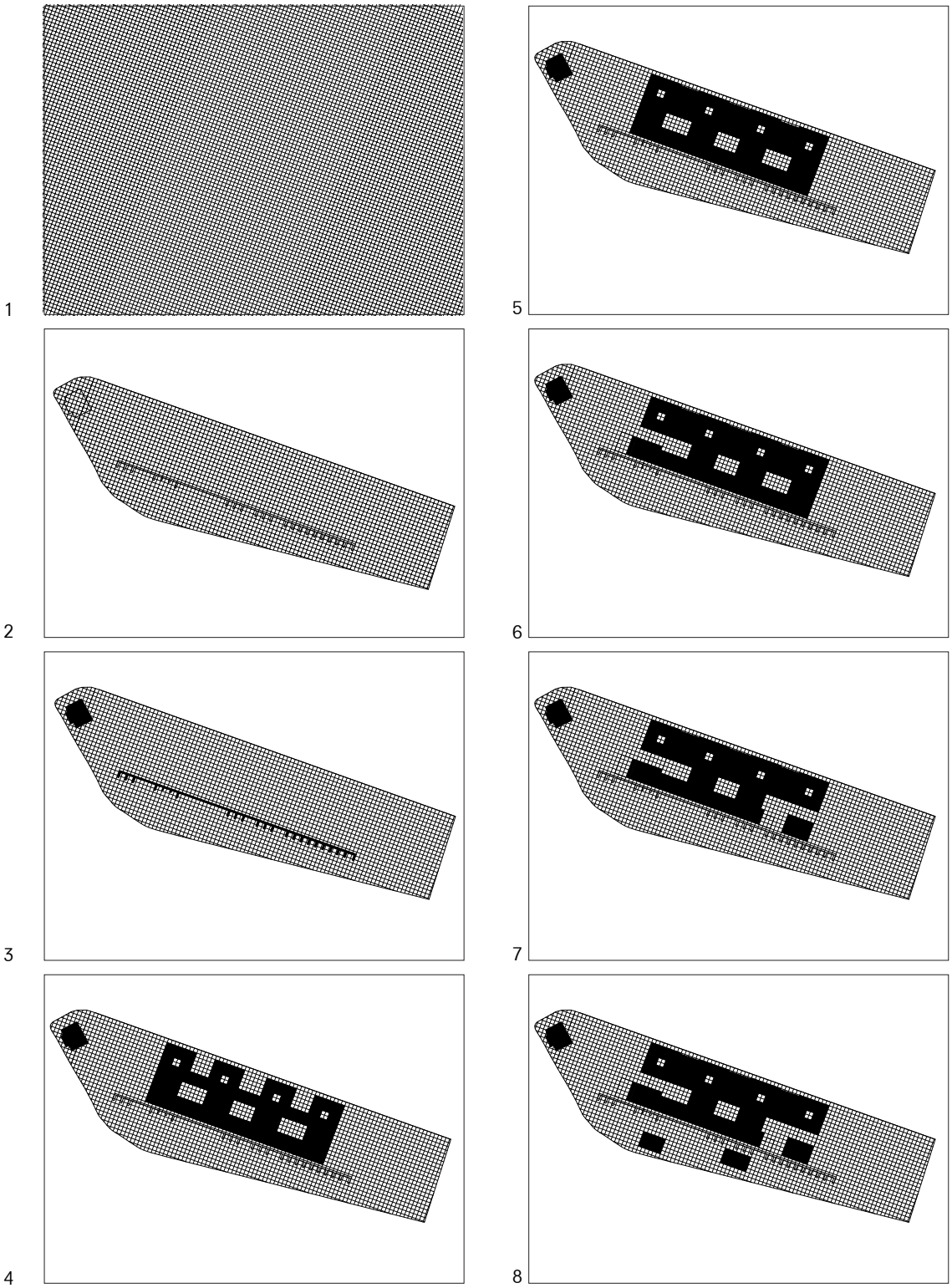
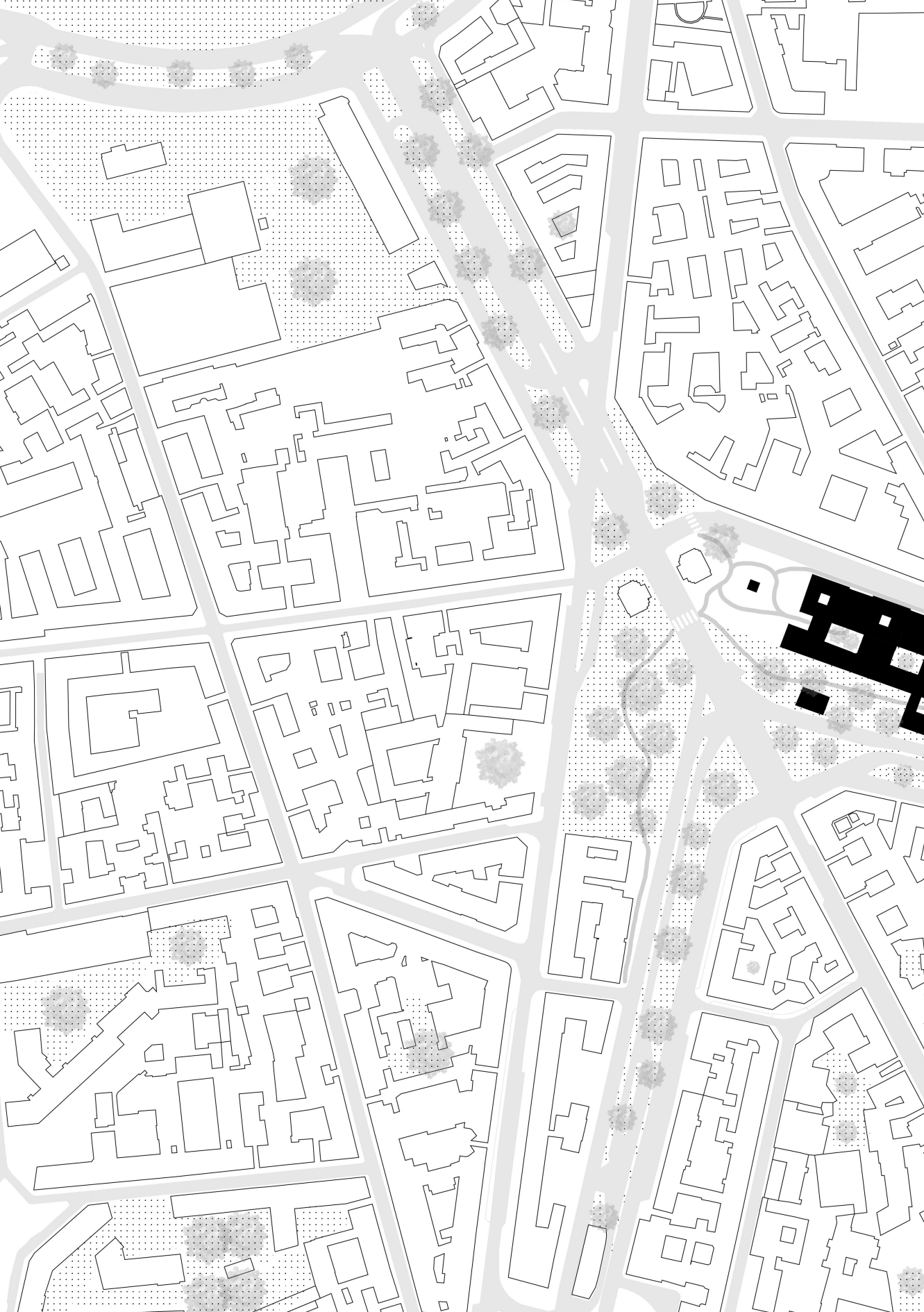


Figure 4.2 Shape of the building

(Own illustration)



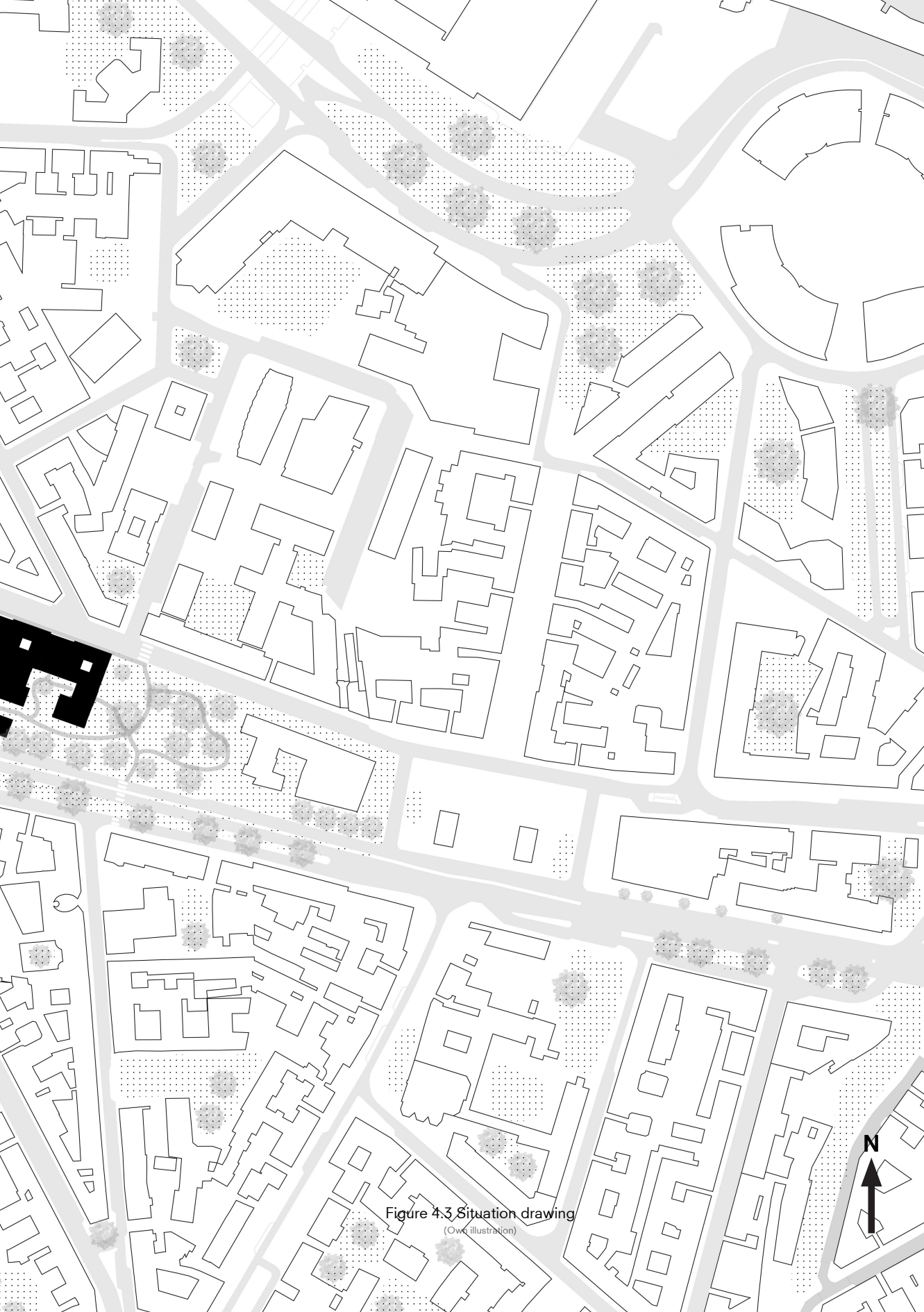


Figure 4.3 Situation drawing
(Own illustration)

Site

The building is strategically placed at the center of the plot. While centrally located, it aligns with the surrounding urban fabric, respecting the lines of adjacent buildings. This alignment strengthens the architectural continuity of the area and enhances important sightlines across the site.

Placing the building in the middle of the plot also allows for the creation of distinct public spaces around it, each responding to its specific urban context. On the west side, a piazza emerges, a vibrant public square that encourages gathering and social exchange, figure 4.4. To the east, a community park is formed, offering a quieter, more relaxed atmosphere for reflection and leisure, figure 4.5. On the south side, the building opens onto the Green Boulevard, a linear park that connects Milan's larger green network. Here, the building actively engages with the boulevard, offering opportunities for direct interaction and access, especially through creative functions like the makerspaces, figure 4.6.

This positioning creates a dynamic interplay between built form and open space, reinforcing the building's role as an urban 'living room' embedded within the city's fabric.

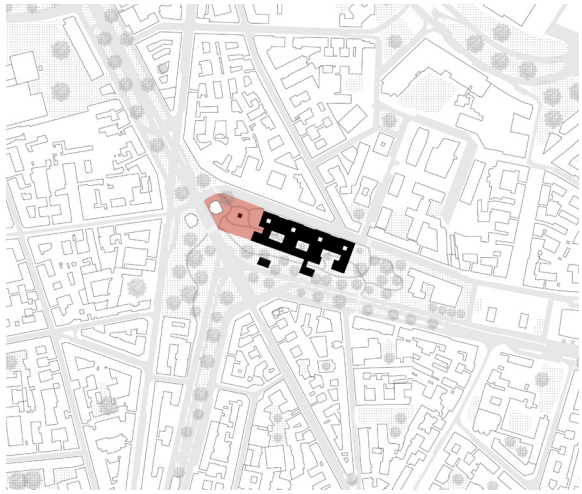


Figure 4.4 Piazza on west-side

(Own illustration)

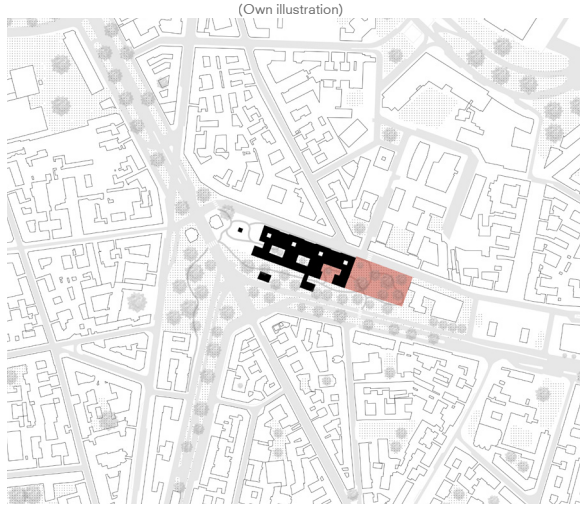


Figure 4.5 Park on east-side

(Own illustration)

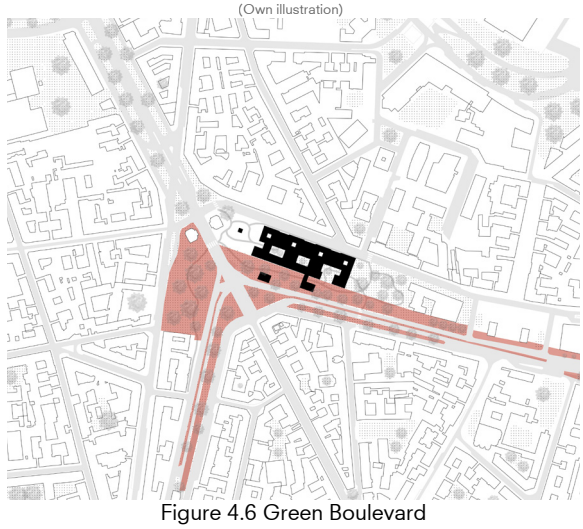


Figure 4.6 Green Boulevard

(Own illustration)

The three distinct public spaces surrounding the building, the piazza, the community park, and the green boulevard, are not isolated. Instead, they are interconnected through a public passage: the main circulation route that runs through the heart of the building, figure 4.7.

This public passage functions as an inner street, linking the major public functions across the building. It not only physically connects the piazza on the west with the green boulevard on the south and the community park on the east, but also weaves together a network of courtyards and patios embedded within the building's mass. These internal open spaces,designed for daylight, ventilation, and social interaction, are activated and made accessible through this central route.

Together, the public passage and the surrounding open spaces create a dynamic and porous spatial system. They transform the building into a true urban 'living room', where movement, encounter, and exchange can take place throughout the day. This interconnectedness allows the building to serve not only its users but also the wider community, becoming a community anchor that strengthens social ties within the city, figure 4.8.

Figure 4.7 Public passage
(Own illustration)

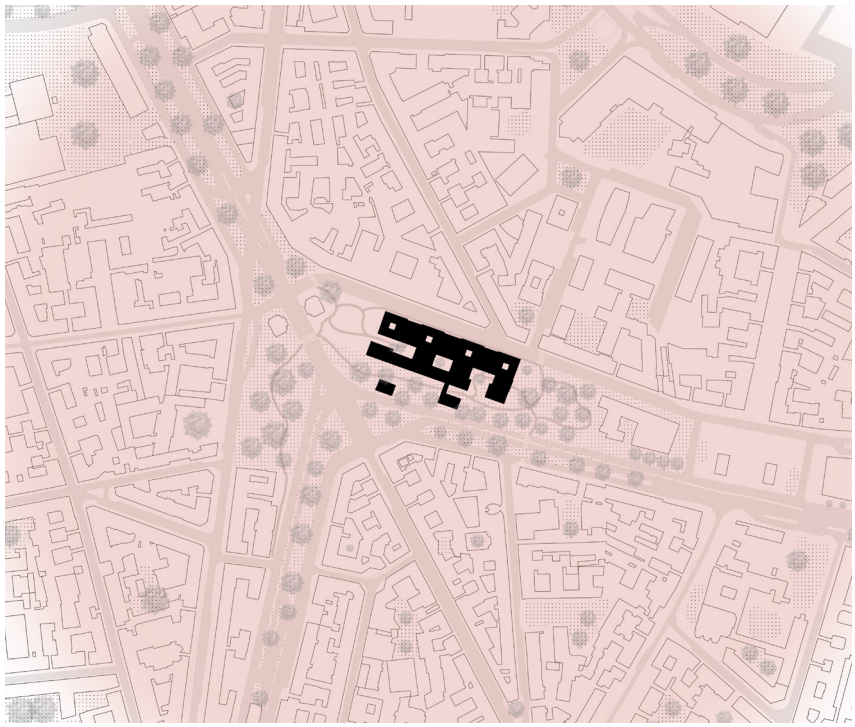


Figure 4.8 Community anchor
(Own illustration)


N


FONDAZIONE FELTRINELLI

Health lens

This project integrates health as a guiding principle across multiple spatial scales, embedding well-being into the very fabric of the building and its urban context.

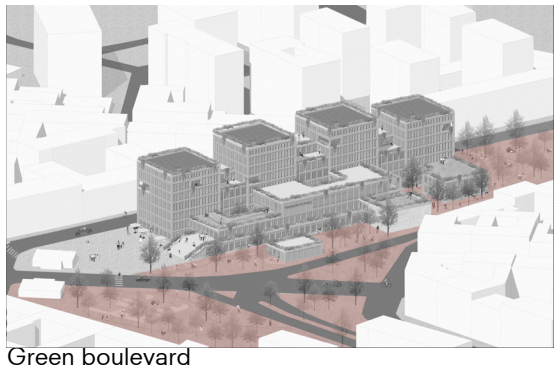
On the urban scale, the design strengthens Milan's green infrastructure by connecting existing parks through the extension of the Green Boulevard. A new public park is added to this network.

On the neighborhood scale, the building contributes to social and environmental well-being by introducing a piazza, rooftop terraces, and generous green areas.

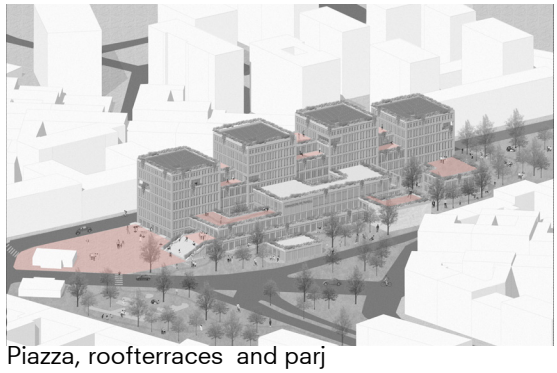
On the building scale, a public passage acts as the main spine of the project. This central route not only connects key public functions within the building, but also facilitates spontaneous encounters and promotes social interaction, encouraging users to stay and engage with their environment.

On the human scale, courtyards and patios are implemented to create calm, naturally lit, and well-ventilated interior spaces.

By embedding health-conscious strategies on all levels, from the city to the individual, the building contributes to a more resilient, inclusive, and socially connected urban environment.



Green boulevard



Piazza, roofterraces and parj

Public passage

Courtyards & patio's

Figure 4.12 Health lens implementations

(Own illustration)

DESIGN IMPLEMENTATIONS

05

Building sides

The internal program of the building has been carefully organized in response to the surrounding urban conditions, ensuring that each side of the structure interacts meaningfully with its context.

On the piazza side, the most public and accessible functions are located, such as the entrance hall, café, and event spaces. This orientation reinforces the role of the piazza as a welcoming urban 'living room' and encourages spontaneous social interaction.

The city street side is characterized by a more formal and structured atmosphere. Here, the offices and administrative spaces are placed, aligning with the street's representative function and offering a clear address for professional use.

Towards the park, the program becomes quieter and more reflective, with spaces such as silent reading areas and calm workspaces. These functions benefit from the greenery and offer users a sense of retreat and concentration within the urban environment.

On the side facing the green boulevard, the building hosts the most active and creative spaces, including makerspaces and workshops. These are designed to directly connect with the outdoors, creating a vibrant interface between the interior and the new public green zone.

This functional zoning not only enhances the usability and clarity of the building but also strengthens its integration with the urban fabric—turning it into a responsive and dynamic place for all.

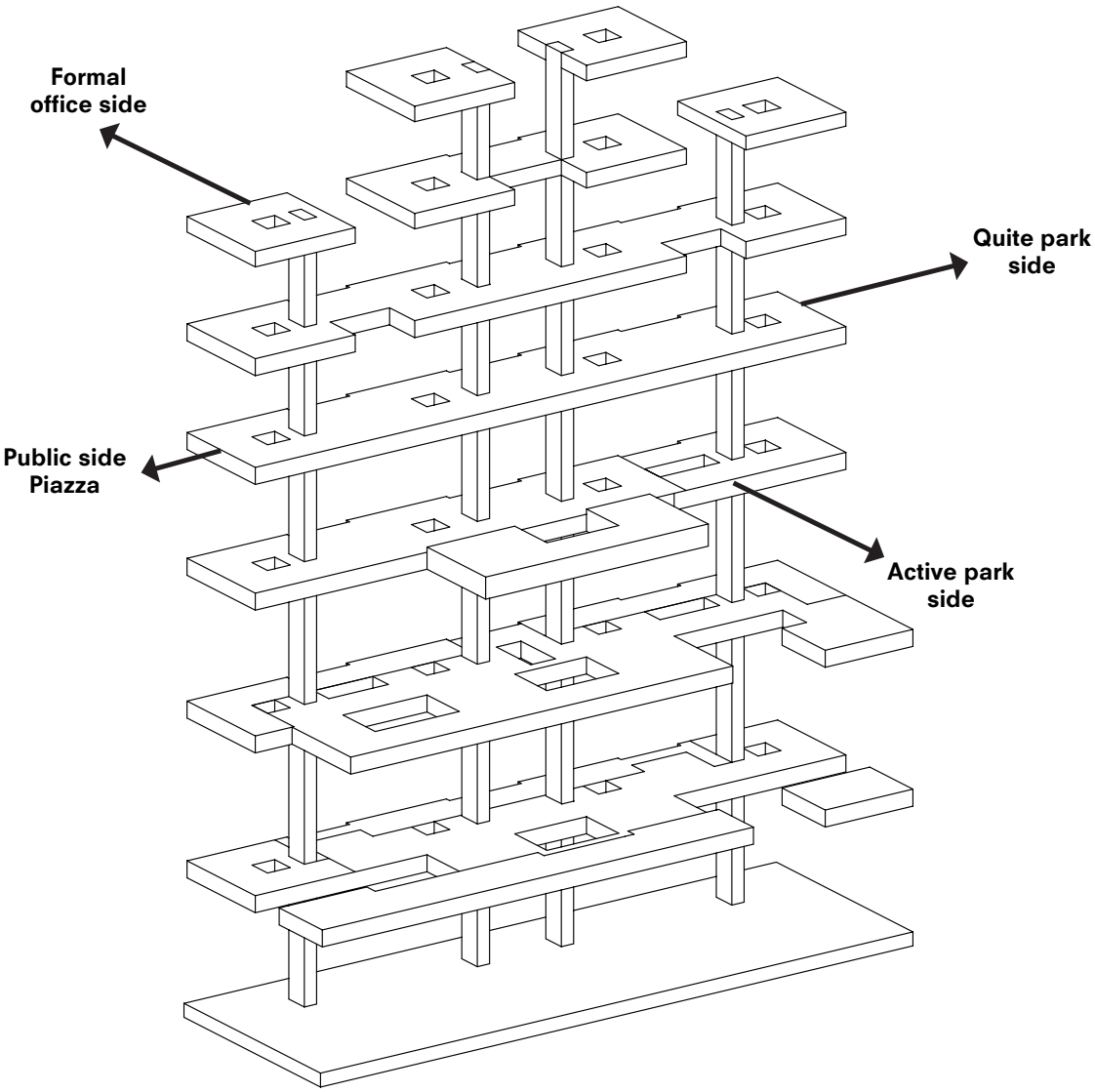
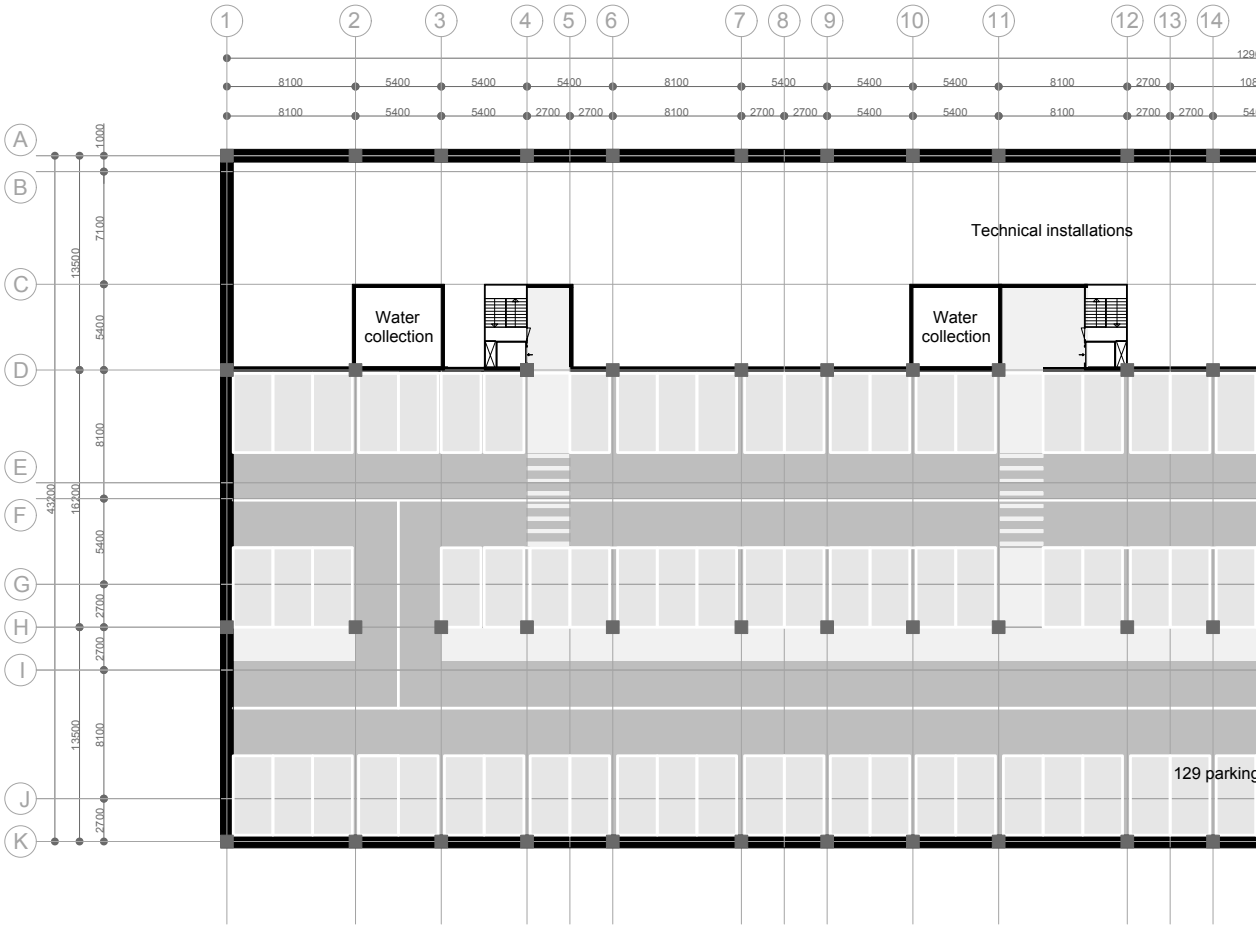


Figure 5.1 Building with different sides
(Own illustration)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Technical installations
Water collection
Water collection
129 parking

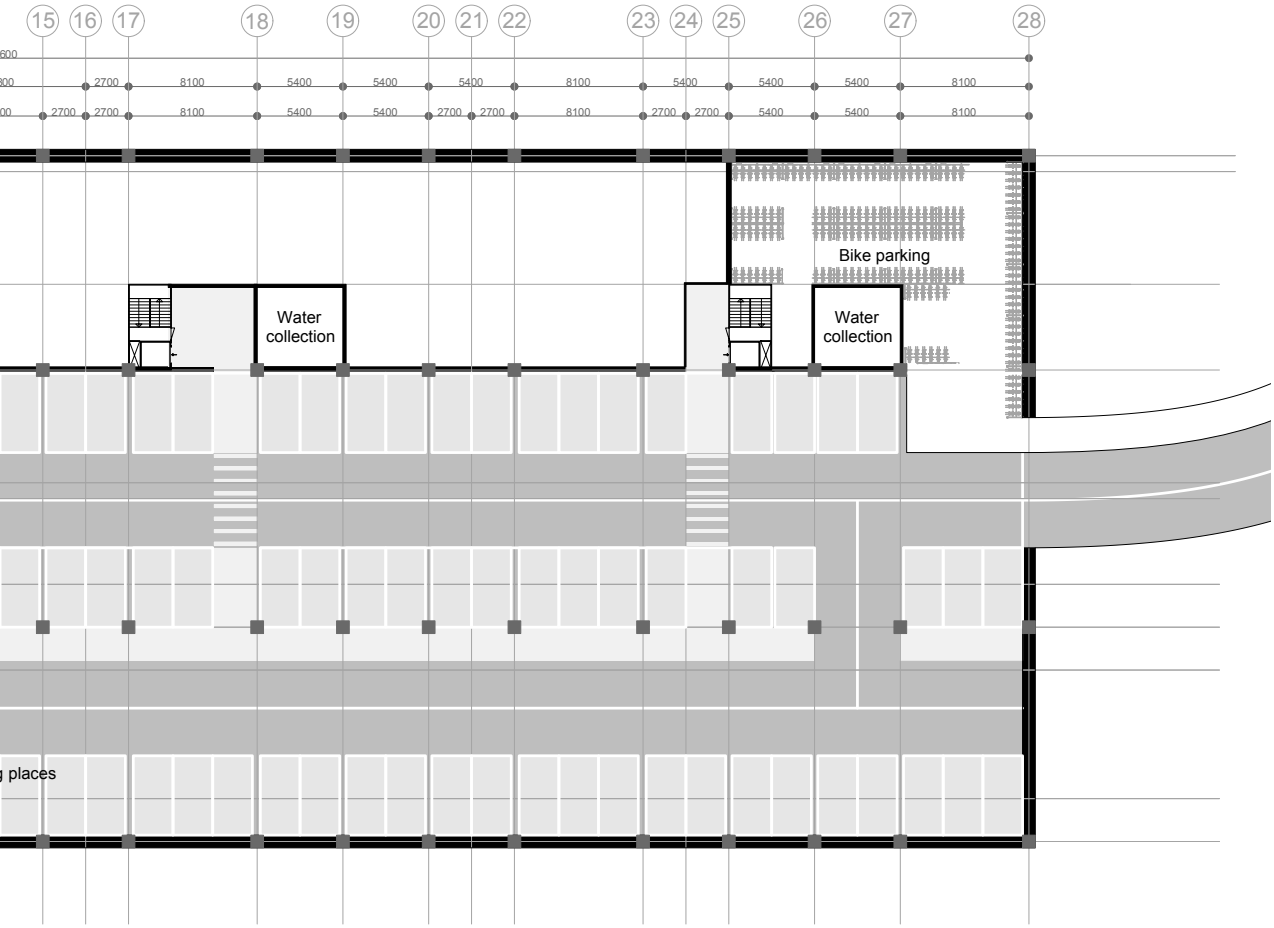


Figure 5.2 Parking garage (-1 level)
(Own illustration)

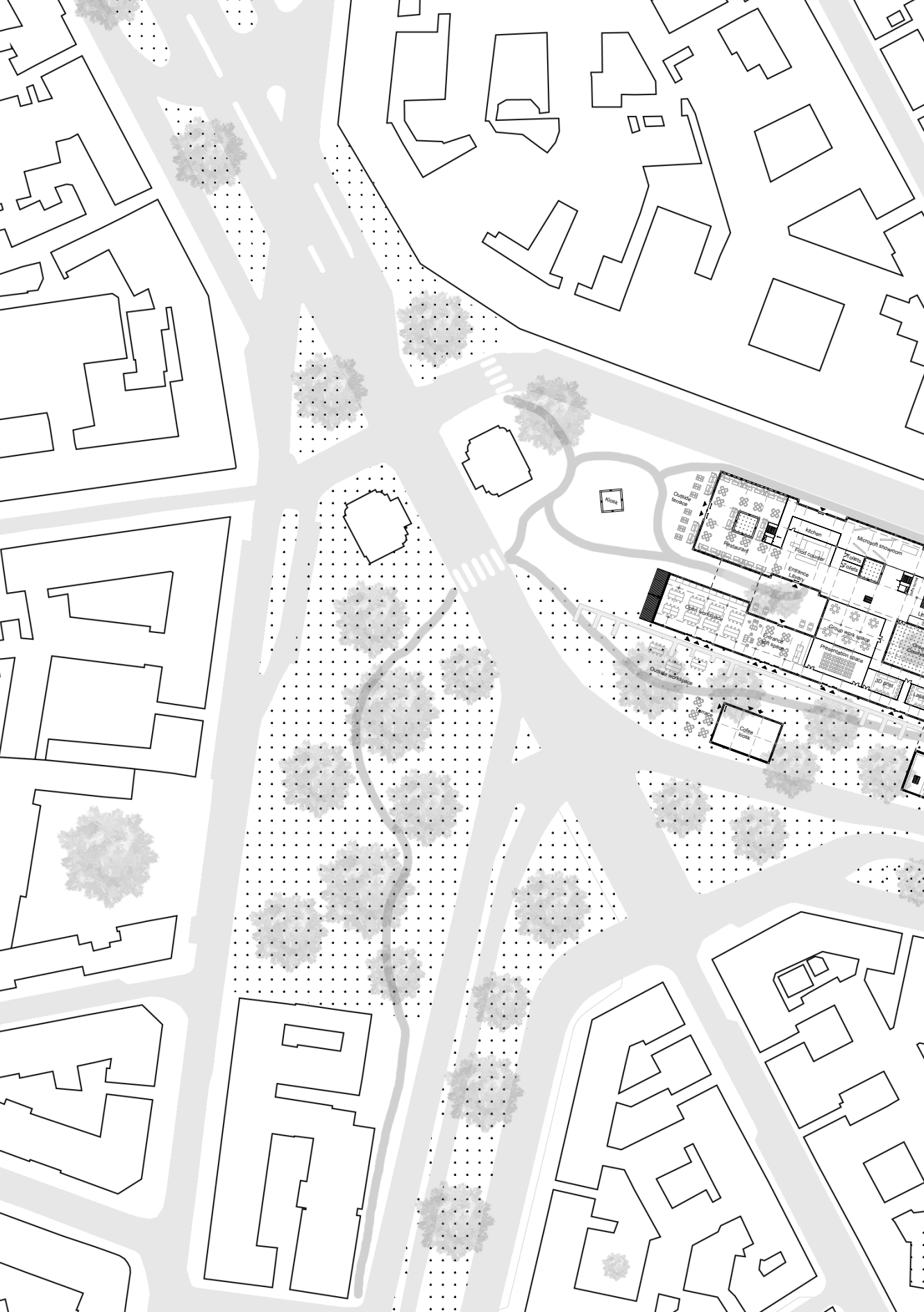
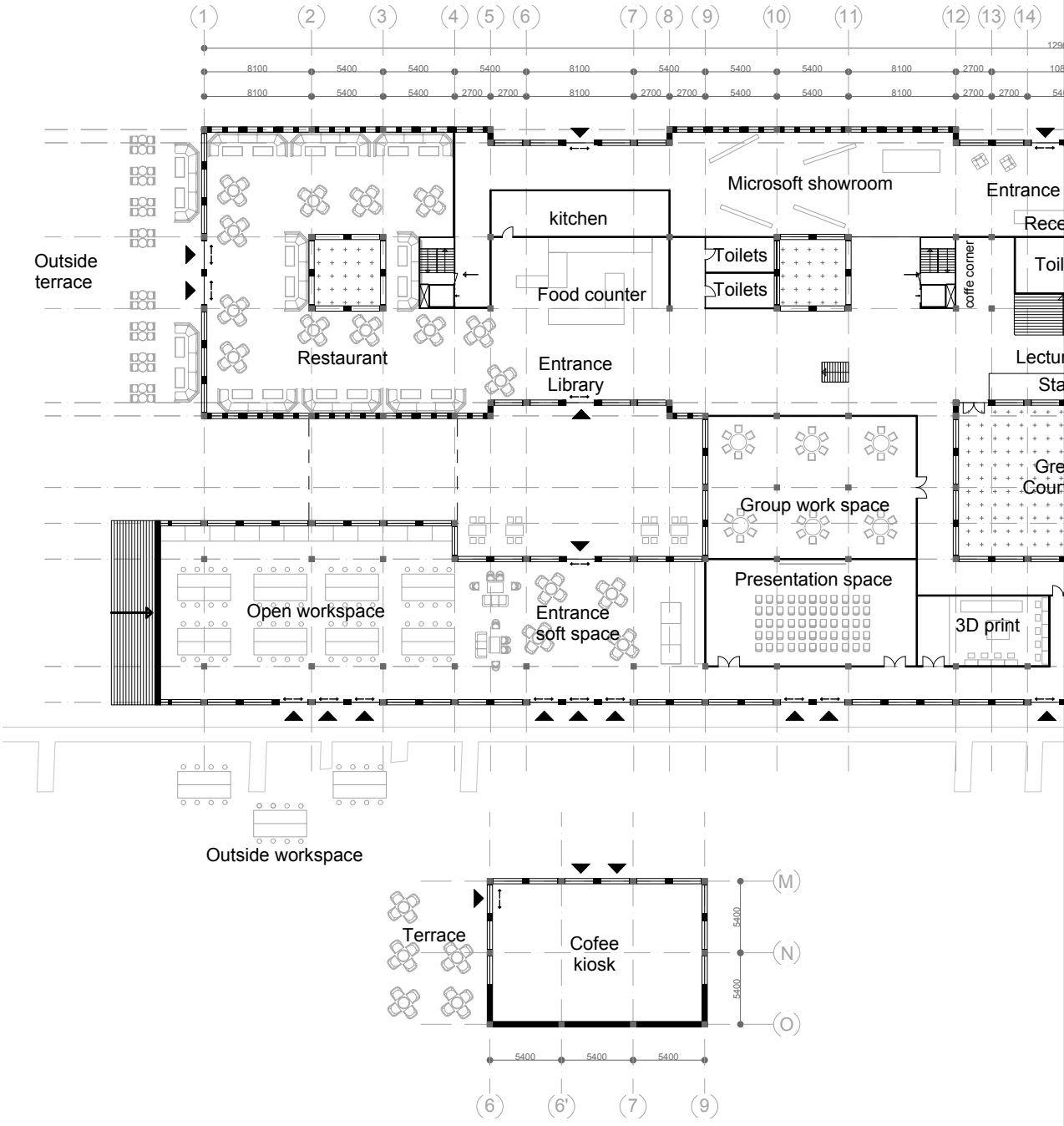

Kiosk
Outside terrace
Restaurant
Kitchen
Food counter
Entrance Lobby
Toilets
Toilets
Microcycle showroom
Open workspace
Open space
Entrance
Group work space
Presentation space
3D print
Outside workspace
Terrace
Cafes Kiosk

Figure 5.3 Urban implementation (groundfloor)
(Own illustration)


Outside terrace
Restaurant
kitchen
Food counter
Microsoft showroom
Toilets
Toilets
coffe corner
Entrance
Entrance Library
Group work space
Presentation space
3D print
Open workspace
Entrance soft space
Outside workspace
Terrace
Cofee kiosk

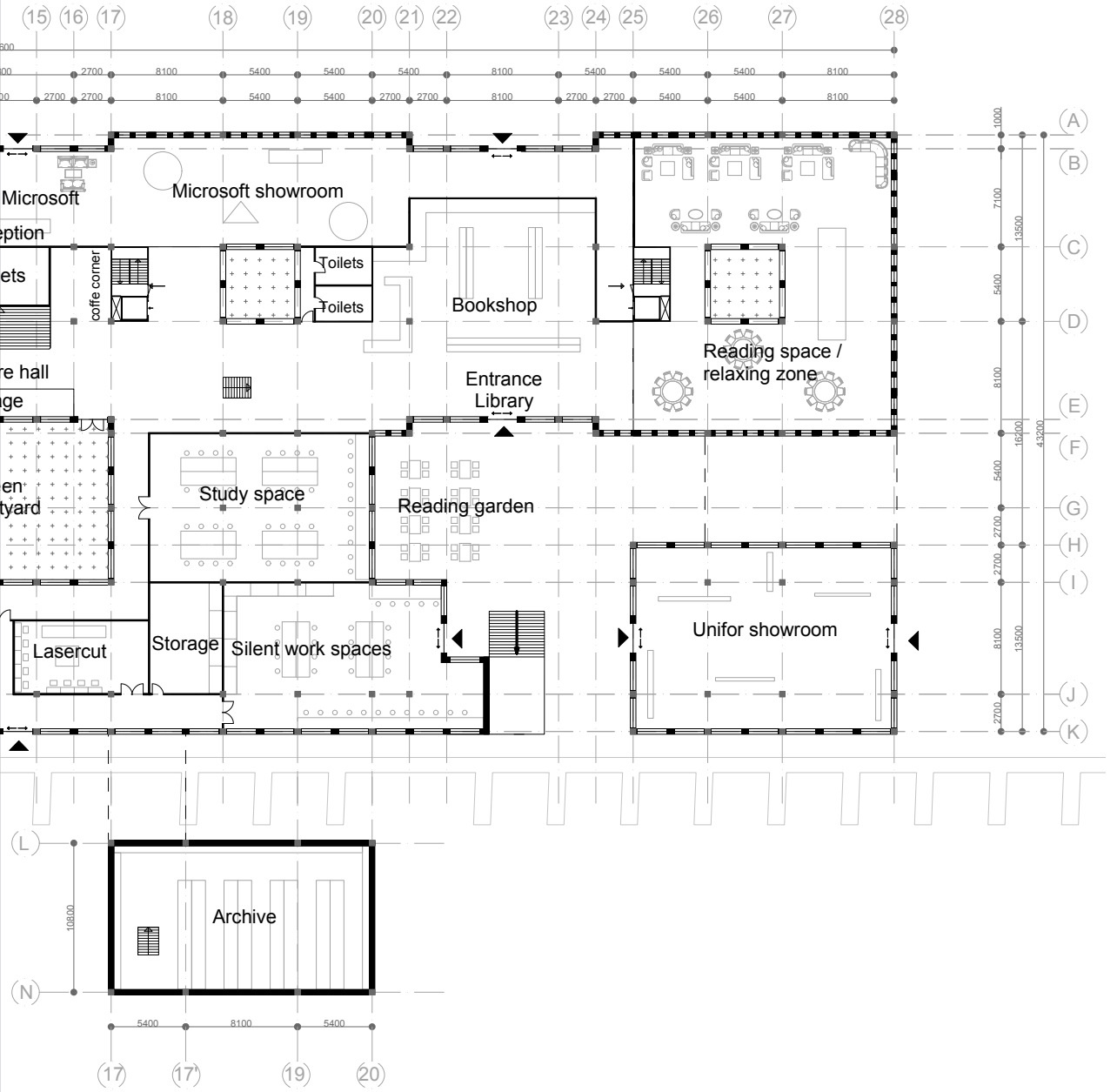
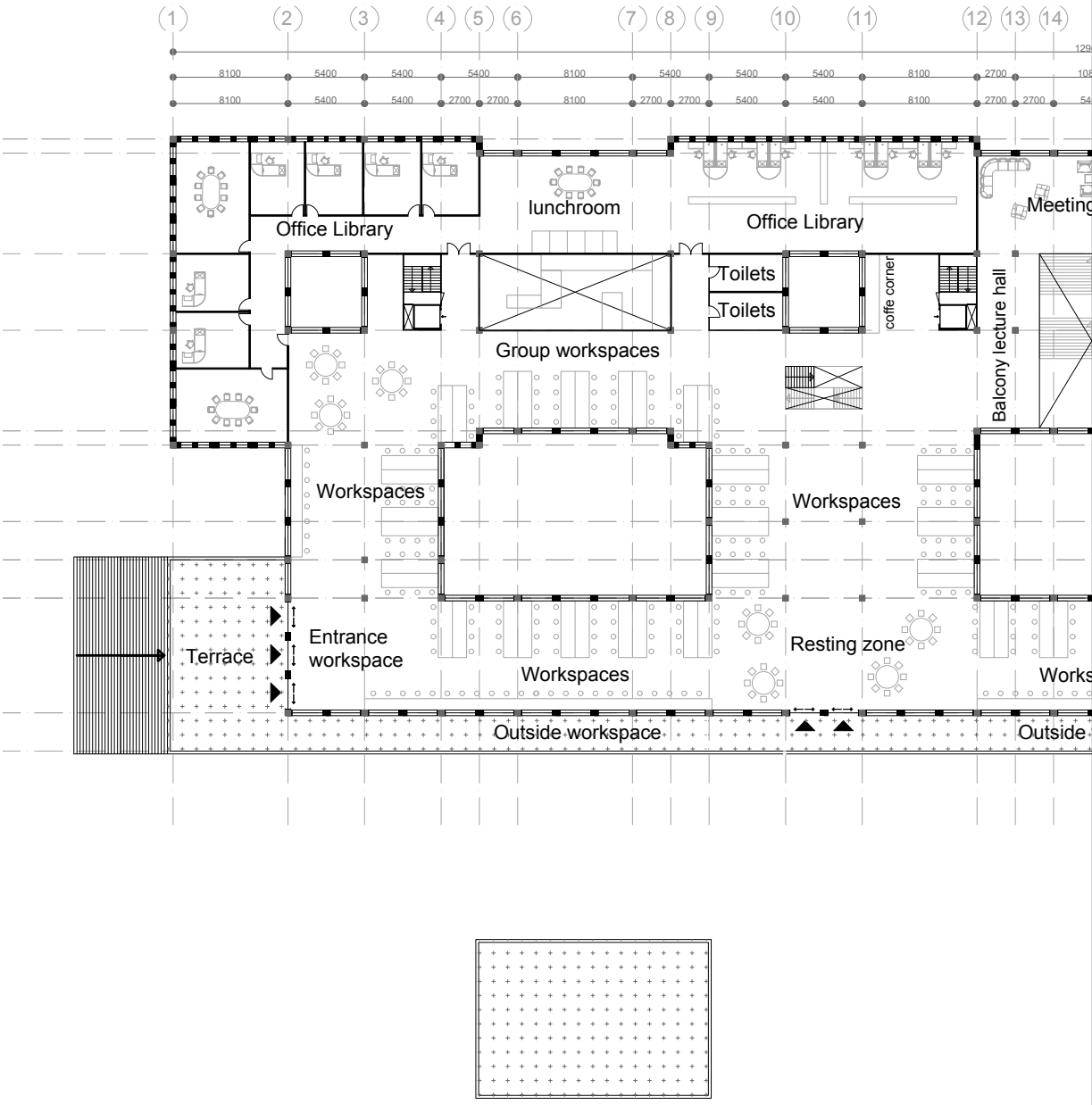


Figure 5.4 Groundfloor
(Own illustration)


Microsoft showroom
Entrance Microsoft
Reception
Microsoft showroom
kitchen
Toilets
Toilets
Toilets
Toilets
Toilets
coffe corner
coffe corner
Outside terrace
Food counter
Bookshop
Restaurant
Entrance Library
Lecture hall
Stage
Entrance Library
Reading space / relaxing zone
Green Courtyard
Study space
Reading garden
Group work space
Open workspace
Entrance soft space
Presentation space
3D print
Lasercut
Storage
Silent work spaces
Unifor showroom
Outside workspace
Archive
Terrace
Cofee kiosk


Outside terrace
Restaurant
kitchen
Food counter
Microsoft showroom
Toilets
Toilets
Entrance Microsoft
Reception
Toilets
Lecture hall
Stage
Microsoft showroom
Toilets
Toilets
Bookshop
Reading space / relaxing zone
Entrance Library
Entrance Library
Group work space
Green Courtyard
Study space
Reading garden
Open workspace
Entrance soft space
Presentation space
3D print
Lasercut
Storage
Silent work spaces
Unifor showroom
Outside workspace
Terrace
Cofee kiosk
Archive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Office Library
lunchroom
Office Library
Meeting
Toilets
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coffe corner
Balcony lecture hall
Group workspaces
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Resting zone
Workspaces
Outside workspace
Outside

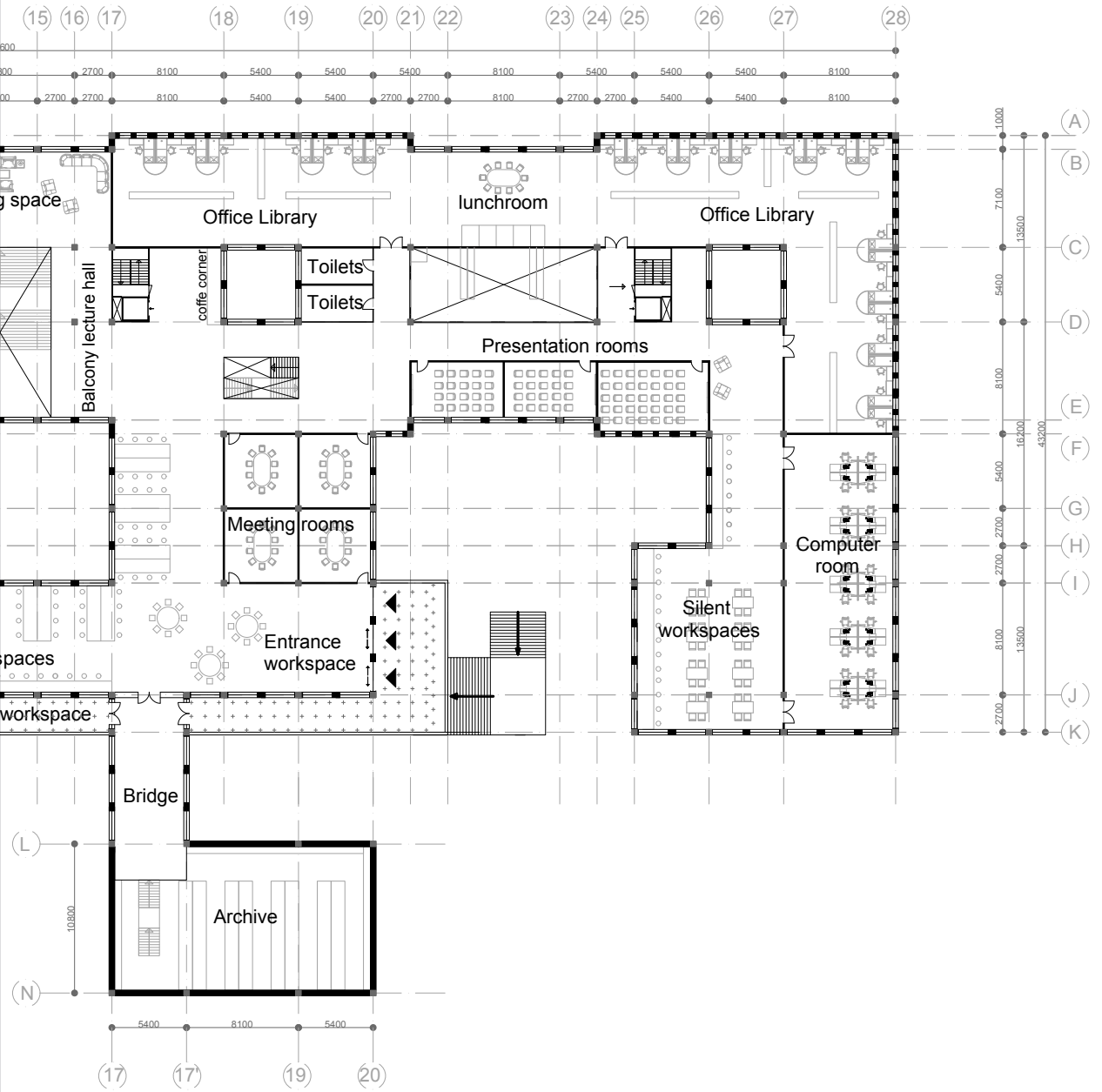
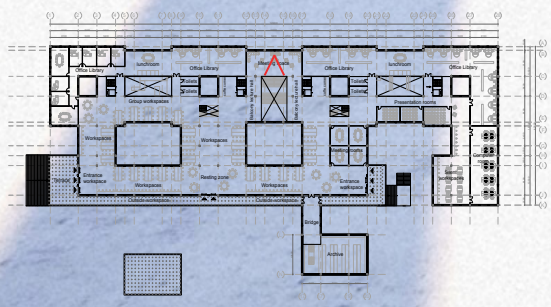
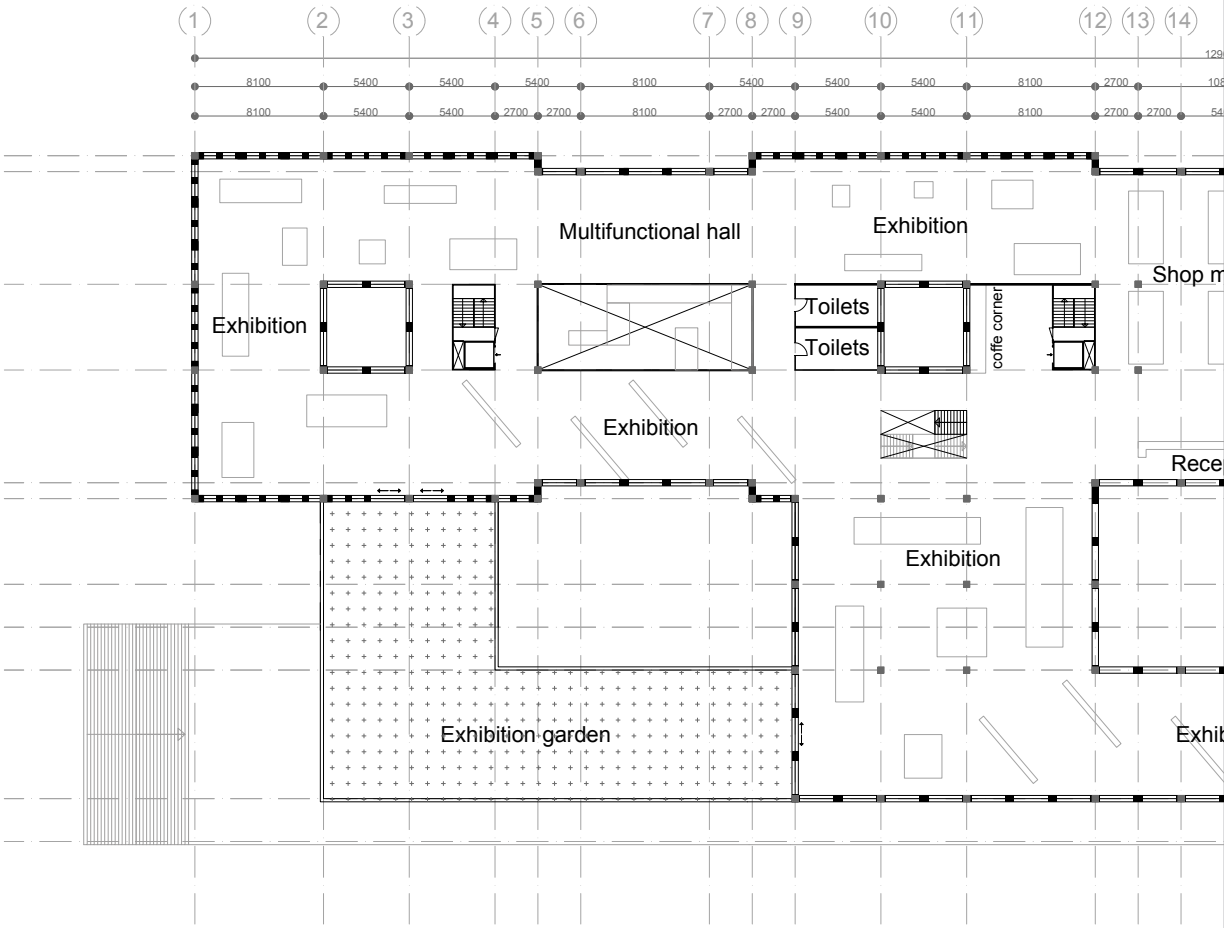


Figure 5.7 First floor
(Own illustration)


Office Library
lunchroom
Group workspace
Workspaces
Entrance workspace
Reading zone
Outdoor workspace
Bridge
Archive


Office Library
lunchroom
Office Library
Meeting space
Office Library
lunchroom
Office Library
Toilets
Toilets
coffe corner
Balcony lecture hall
Balcony lecture hall
coffe corner
Toilets
Toilets
Group workspaces
Presentation rooms
Workspaces
Workspaces
Meeting rooms
Computer room
Terrace
Entrance workspace
Workspaces
Resting zone
Workspaces
Entrance workspace
Silent workspaces
Outside workspace
Outside workspace
Bridge
Archive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Multifunctional hall
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Toilets
Toilets
coffe corner
Exhibition
Exhibition
Exhibition garden

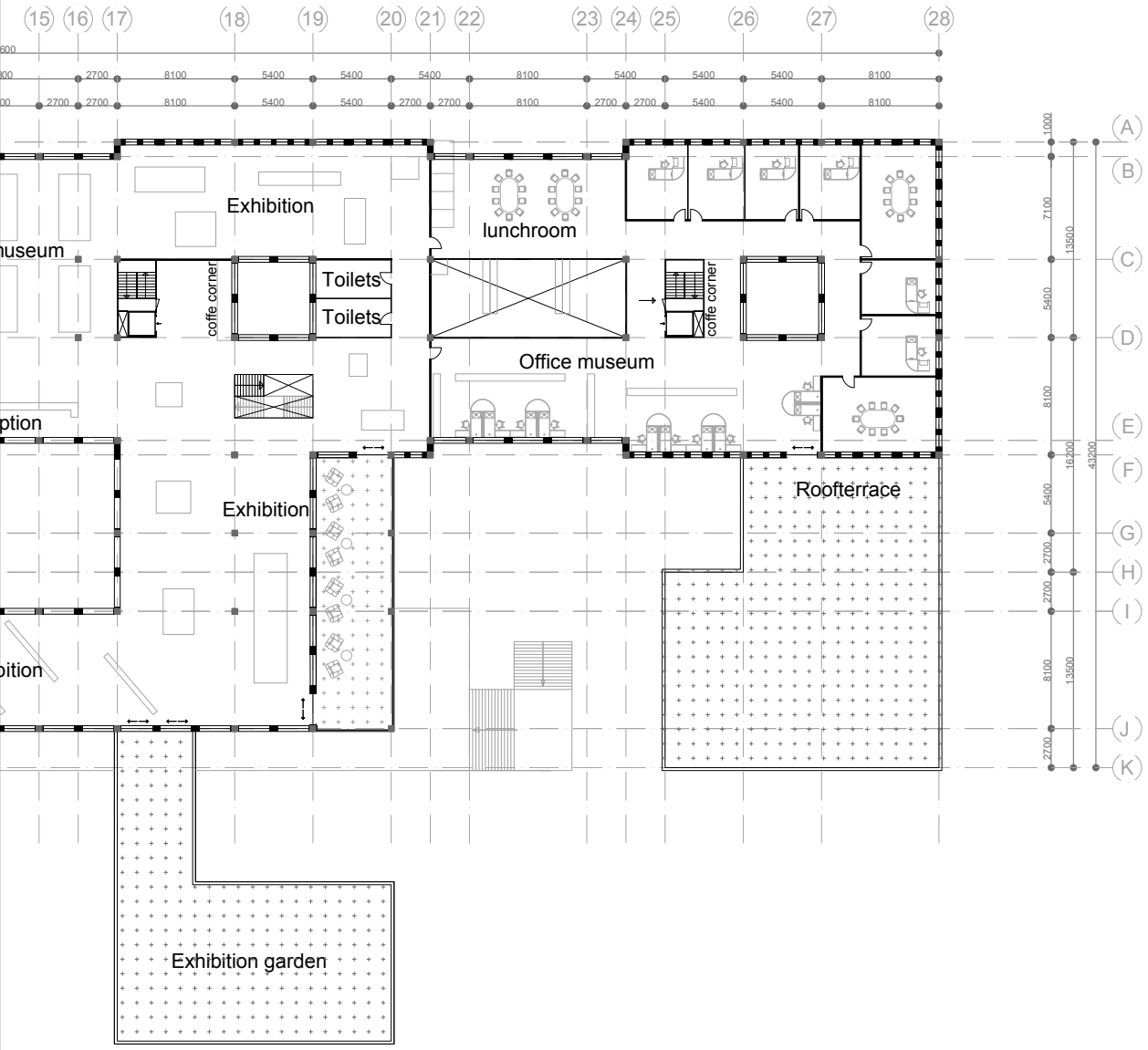
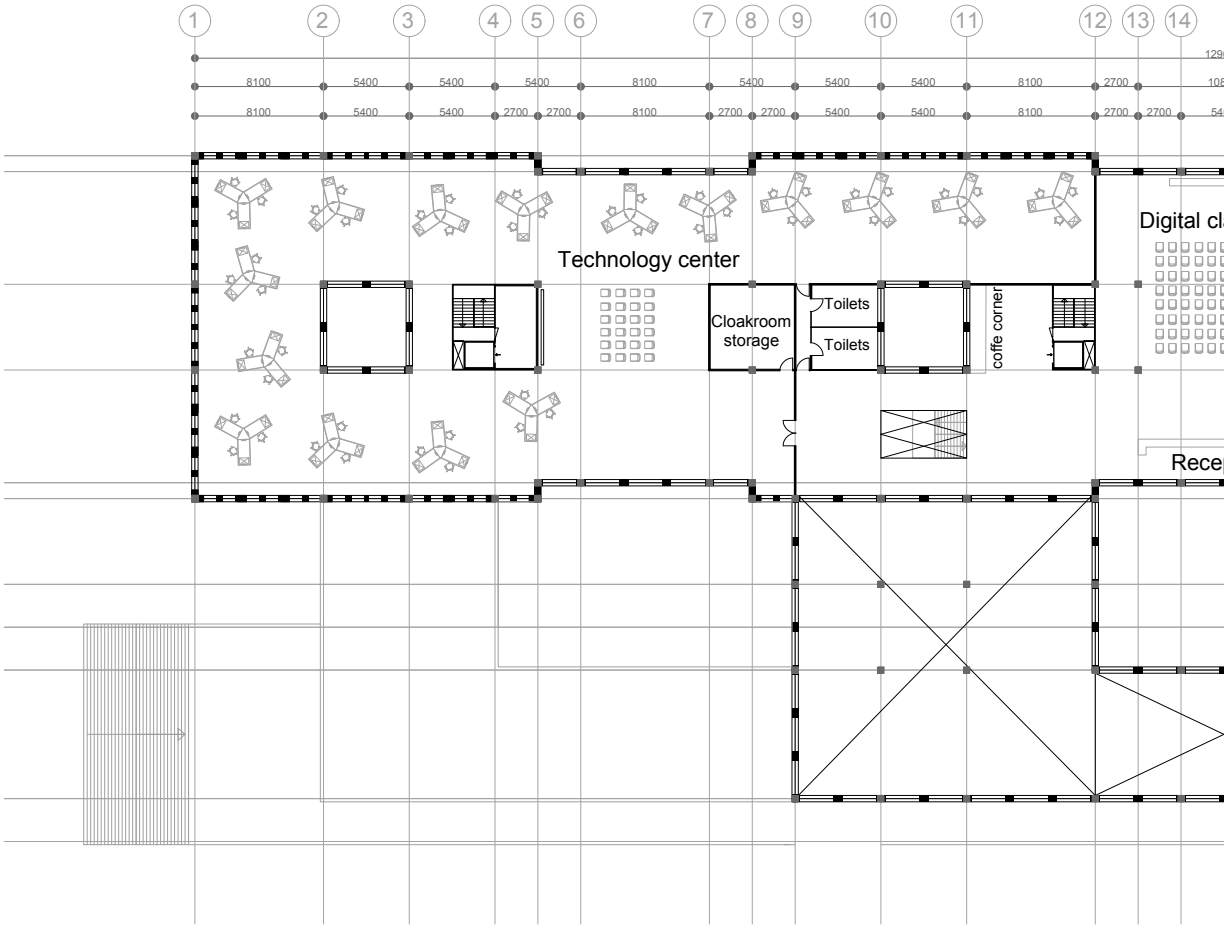


Figure 5.10 Second floor
(Own illustration)


Multifunctional hall
Exhibition
Shop museum
Exhibition
lunchroom
Exhibition
Toilets
Toilets
coffe corner
coffe corner
Toilets
Toilets
coffe corner
Office museum
Exhibition
Reception
Exhibition
Exhibition
Roofterrace
Exhibition garden
Exhibition
Exhibition garden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Technology center
Cloakroom storage
Toilets
Toilets
coffe corner
Digital cl
Recep

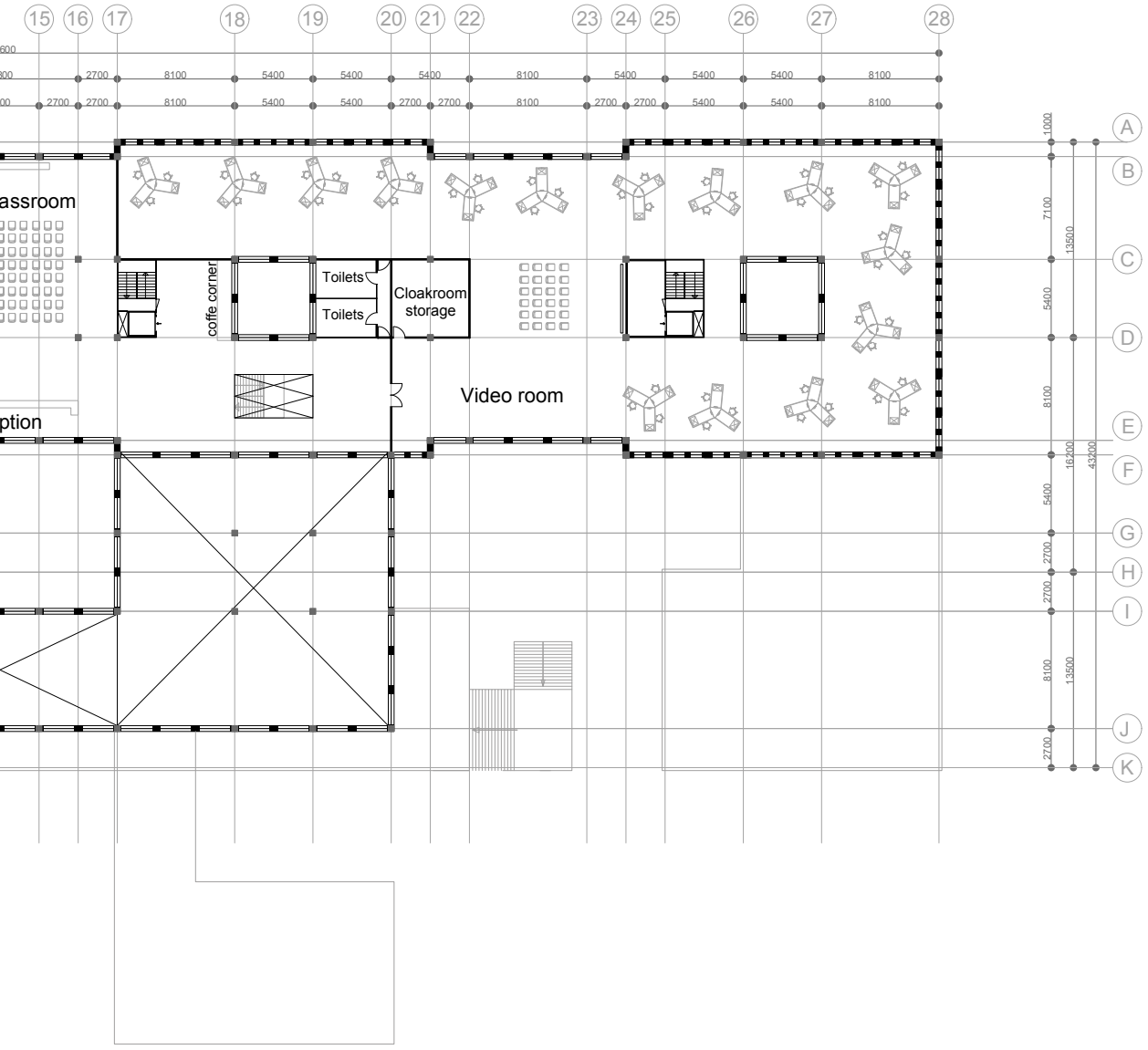
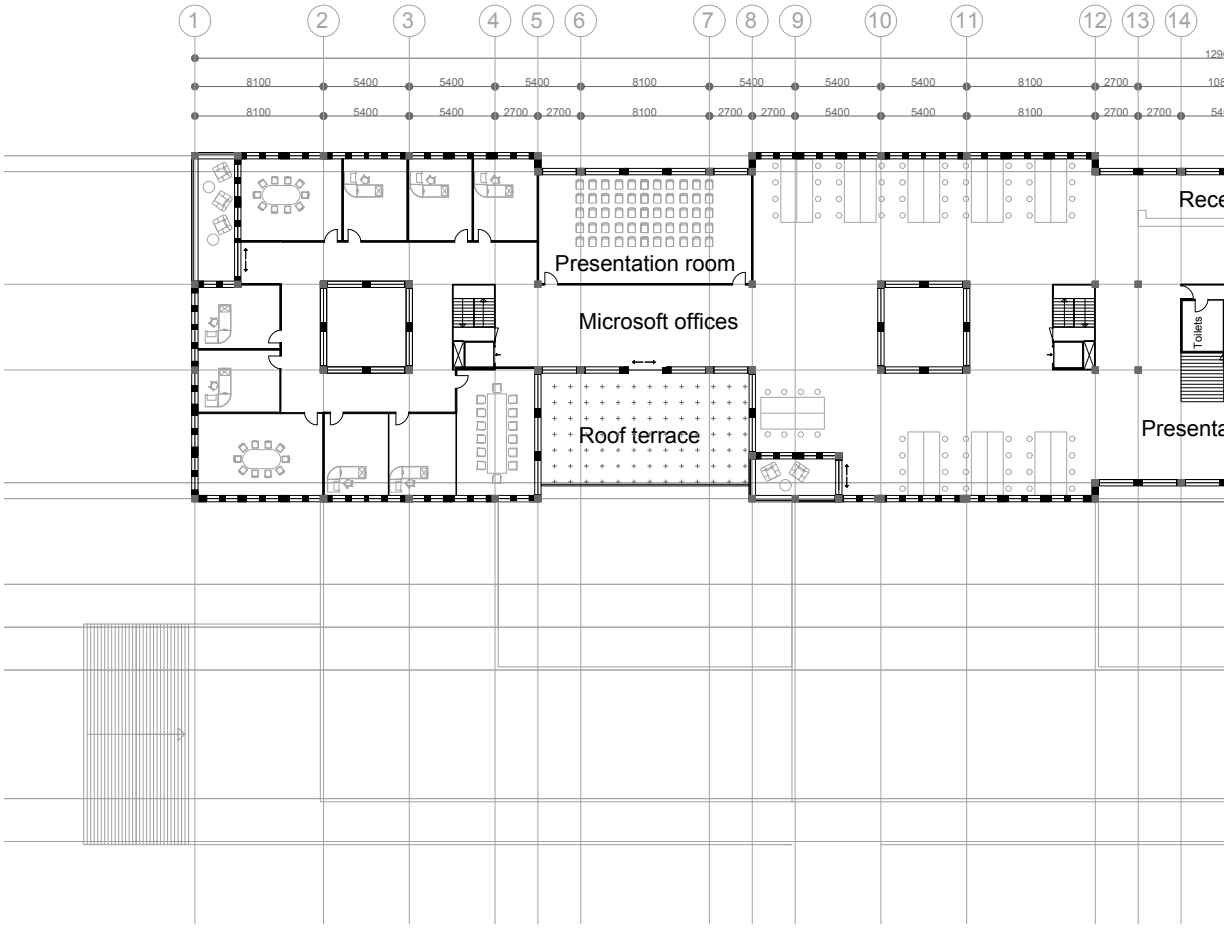


Figure 5.13 Third floor
(Own illustration)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Presentation room
Microsoft offices
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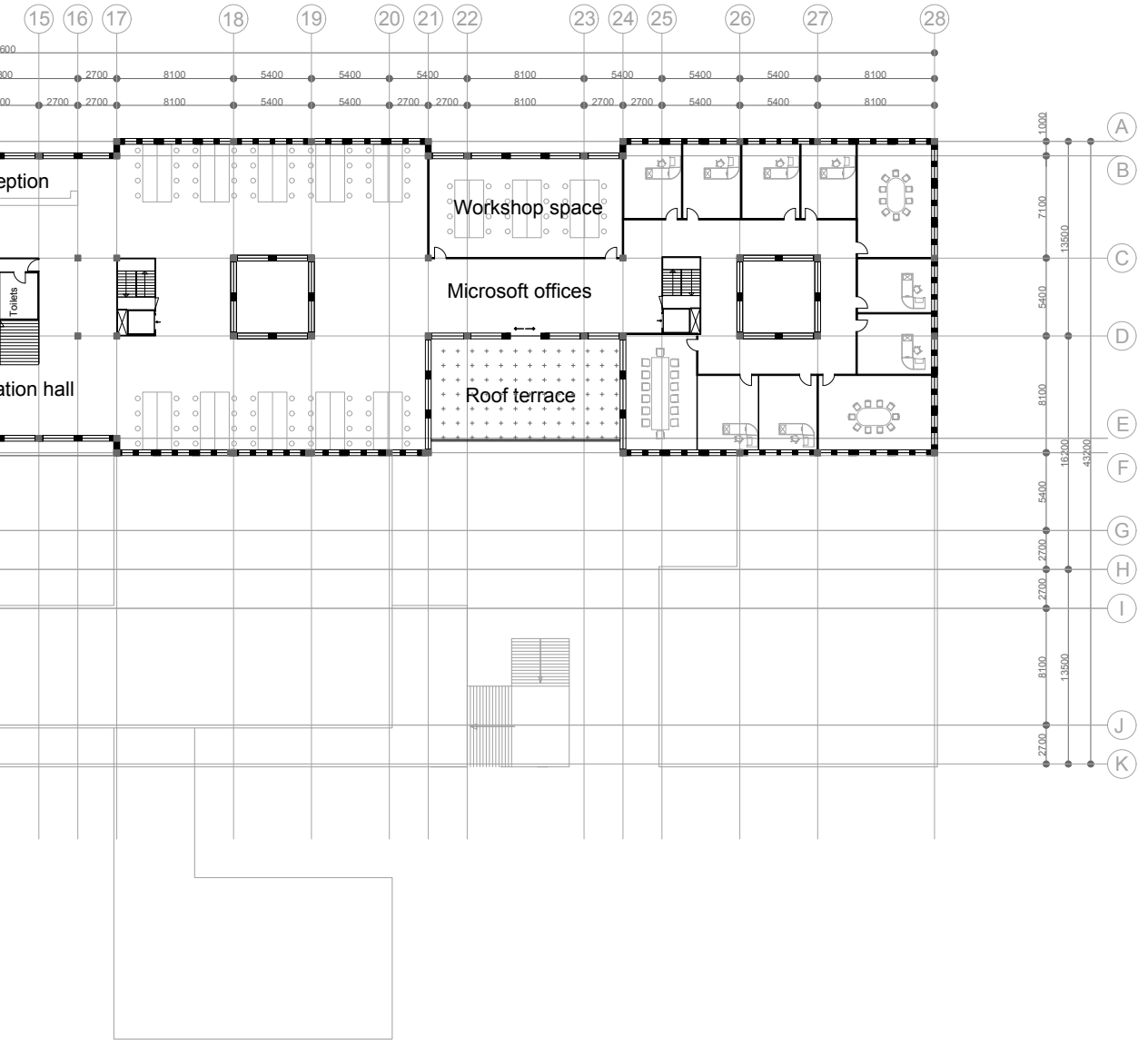
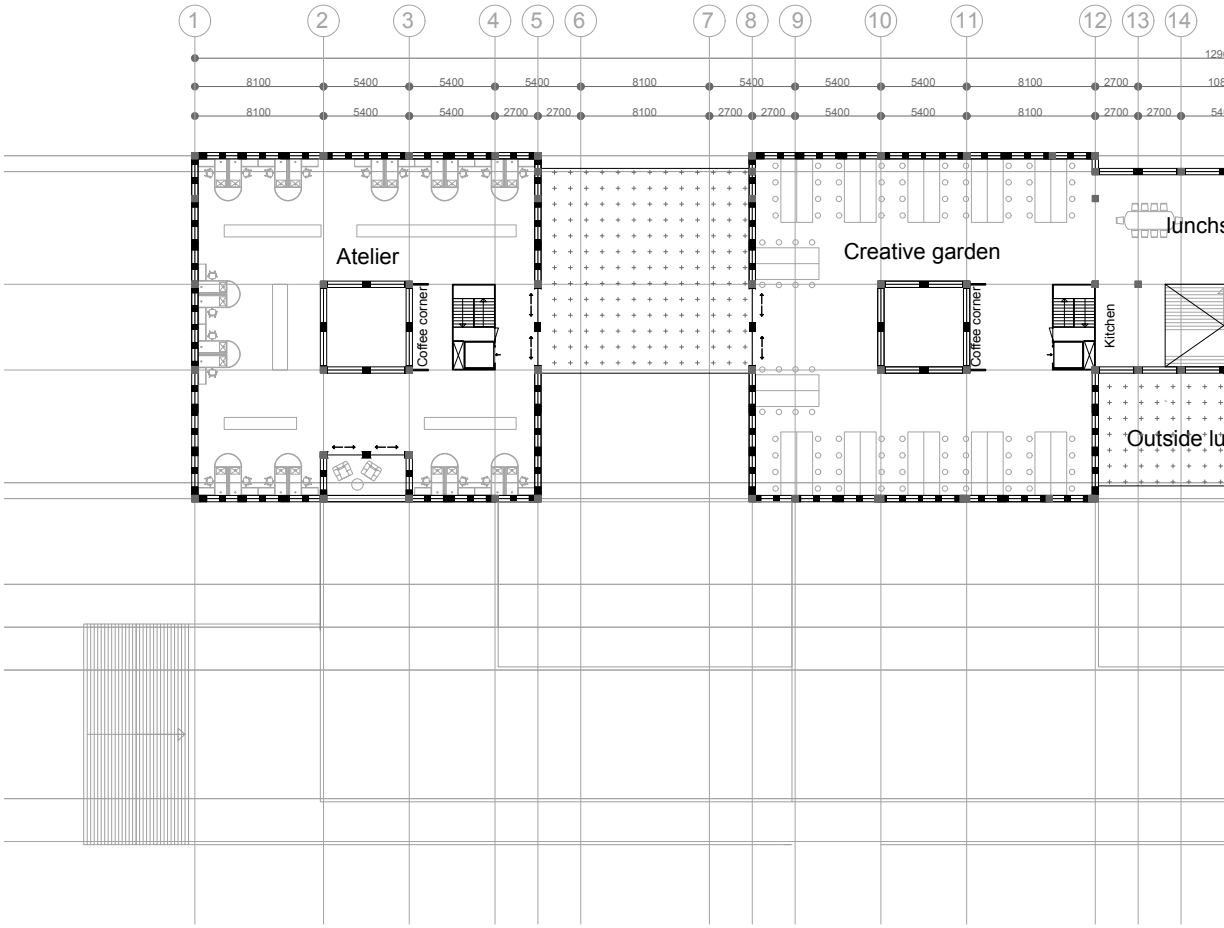


Figure 5.14 Fourth floor
(Own illustration)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Atelier
Coffee corner
Creative garden
Coffee corner
Kitchen
lunchs
Outside lu

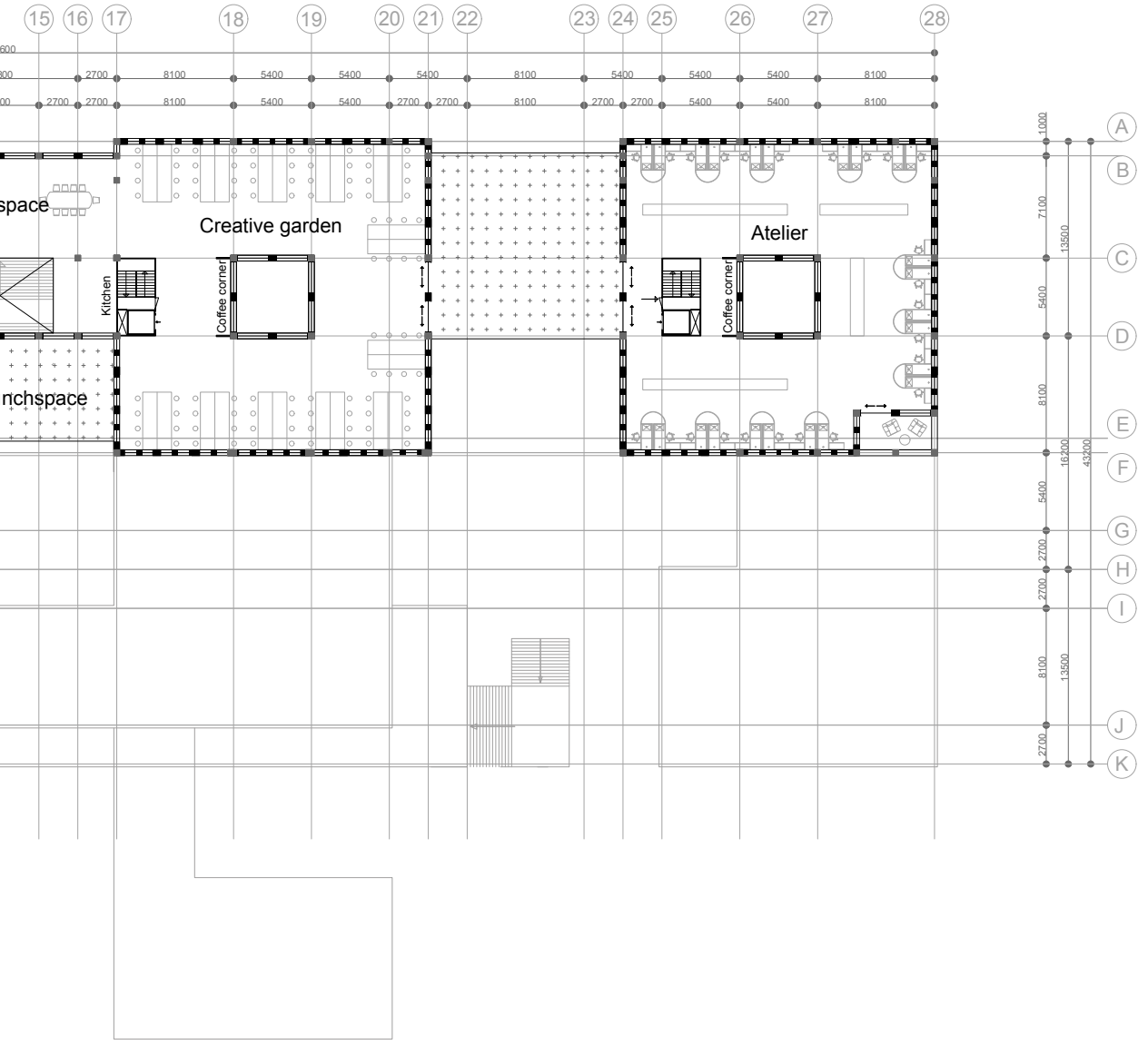
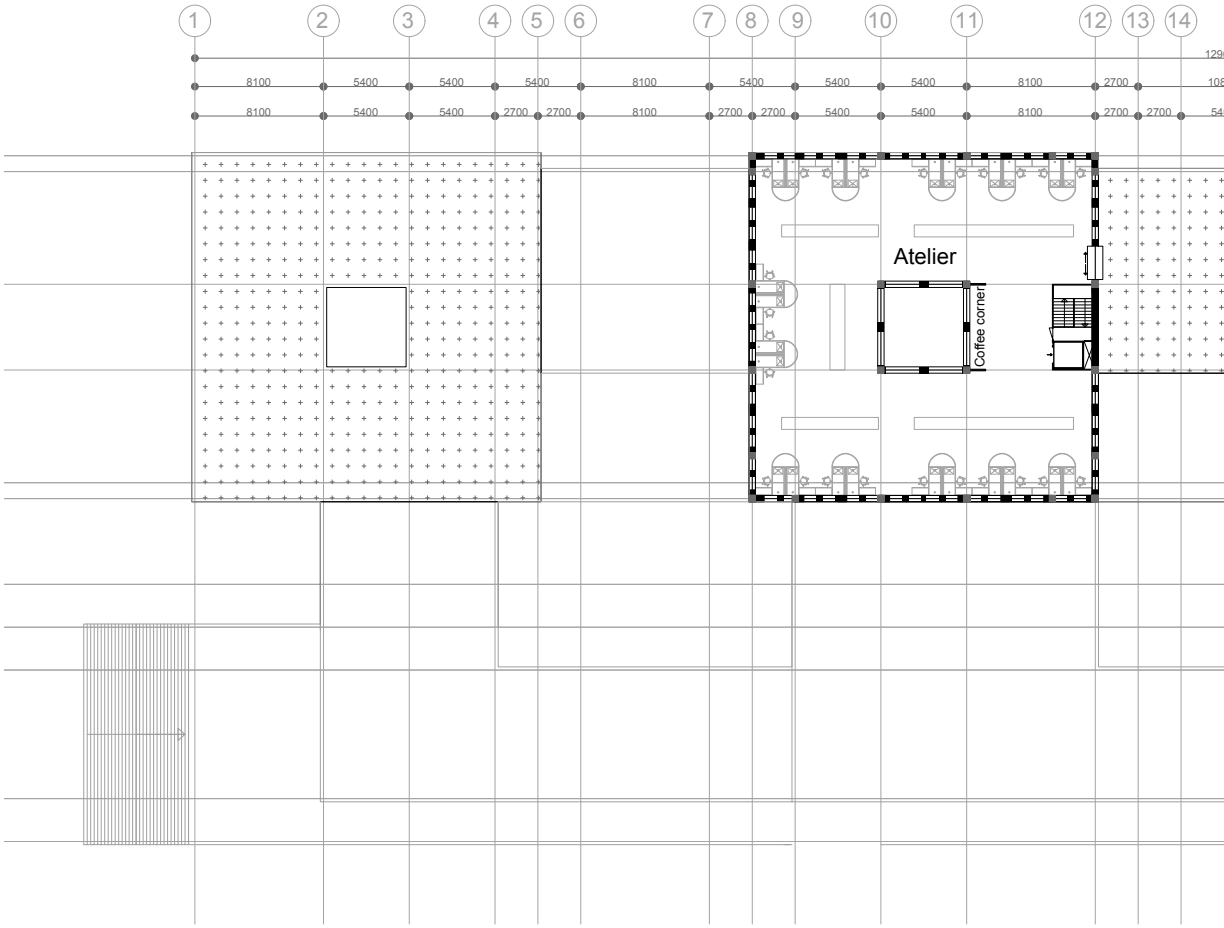


Figure 5.15 Fifth floor
(Own illustration)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Atelier
Coffee corner

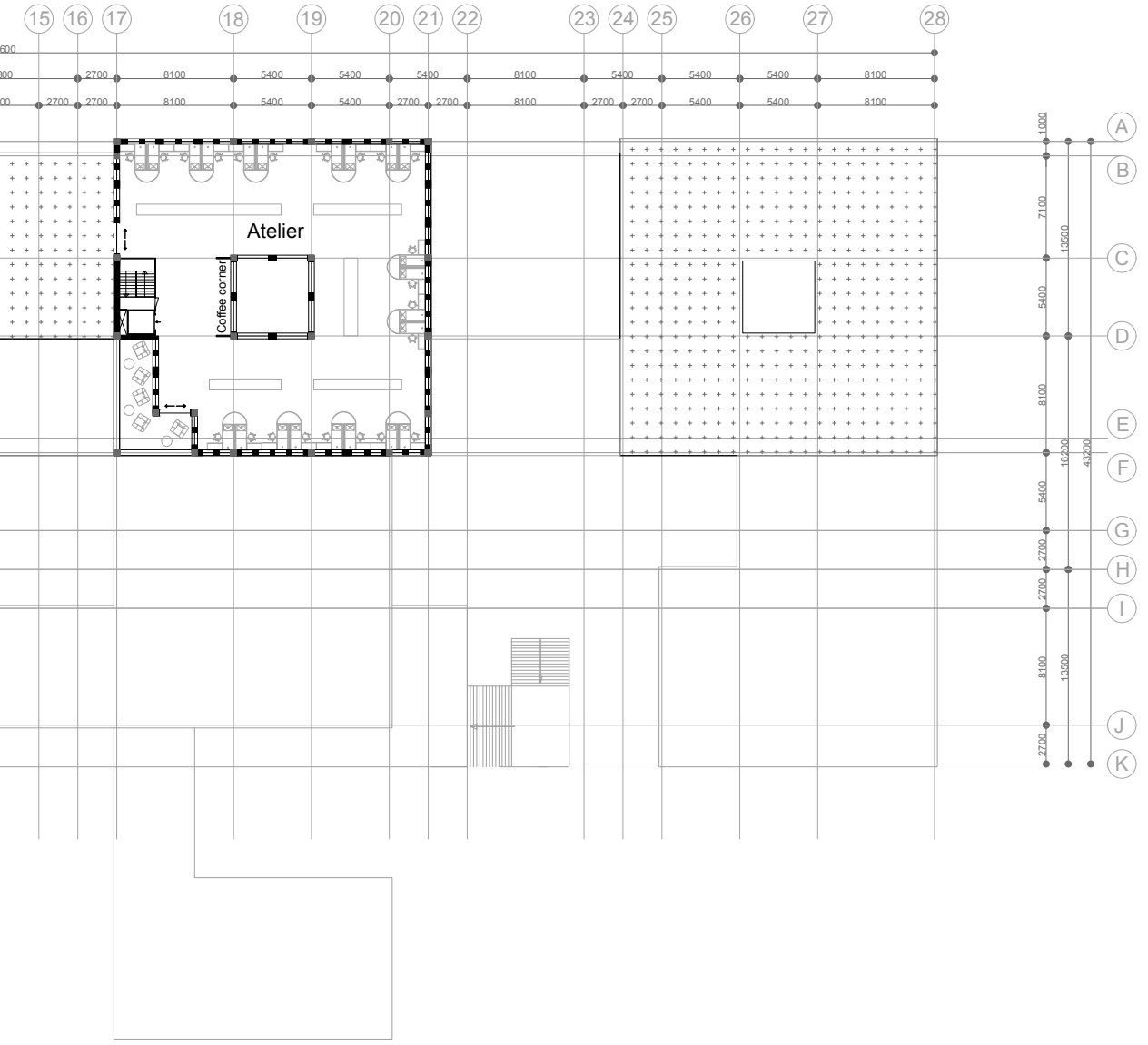
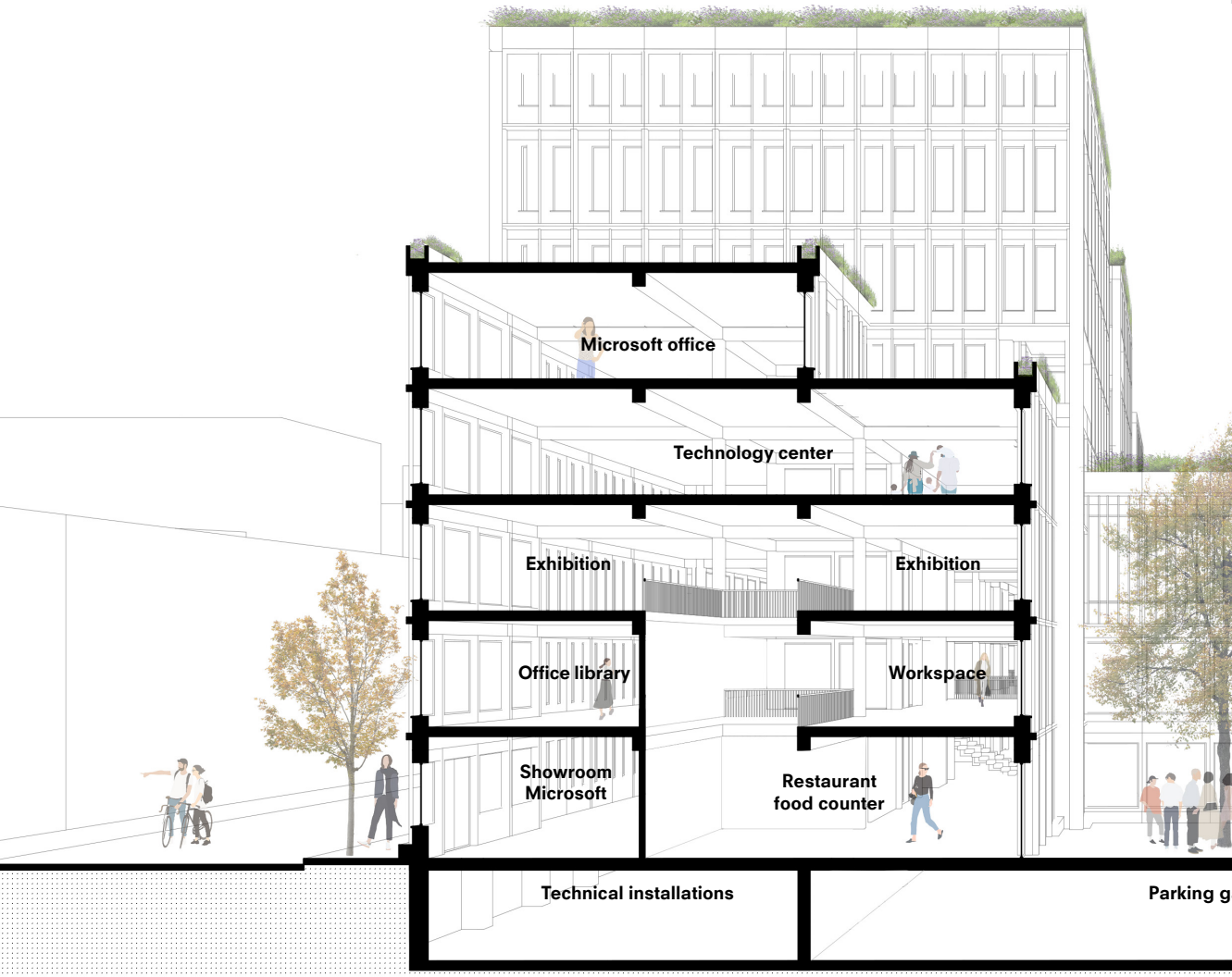
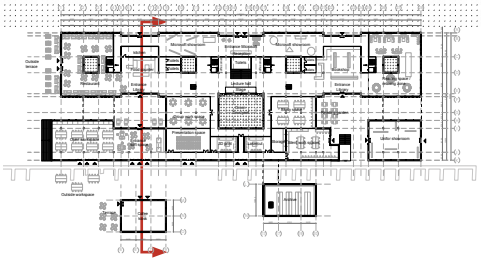


Figure 5.16 Sixth floor
(Own illustration)


Microsoft office
Technology center
Exhibition
Exhibition
Office library
Workspace
Showroom
Microsoft
Restaurant
food counter
Technical installations
Parking g



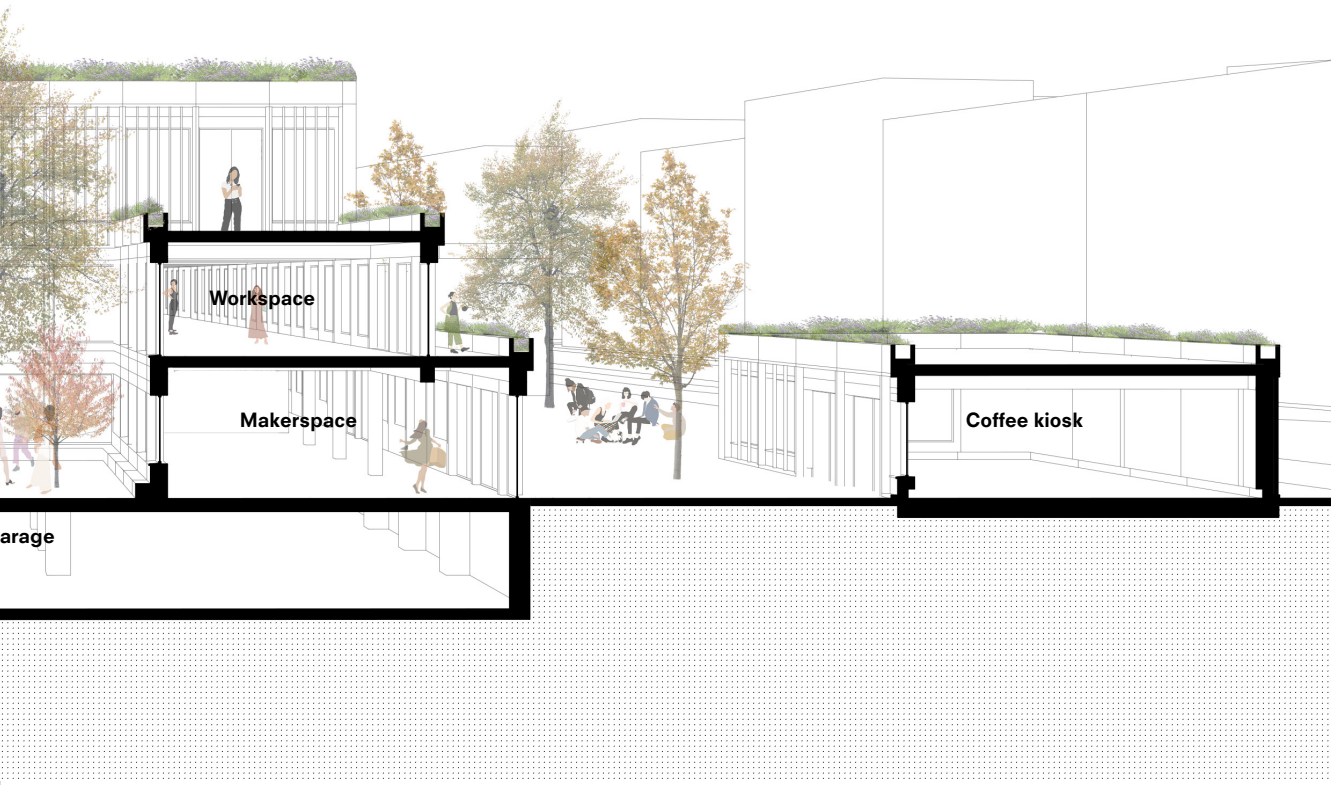
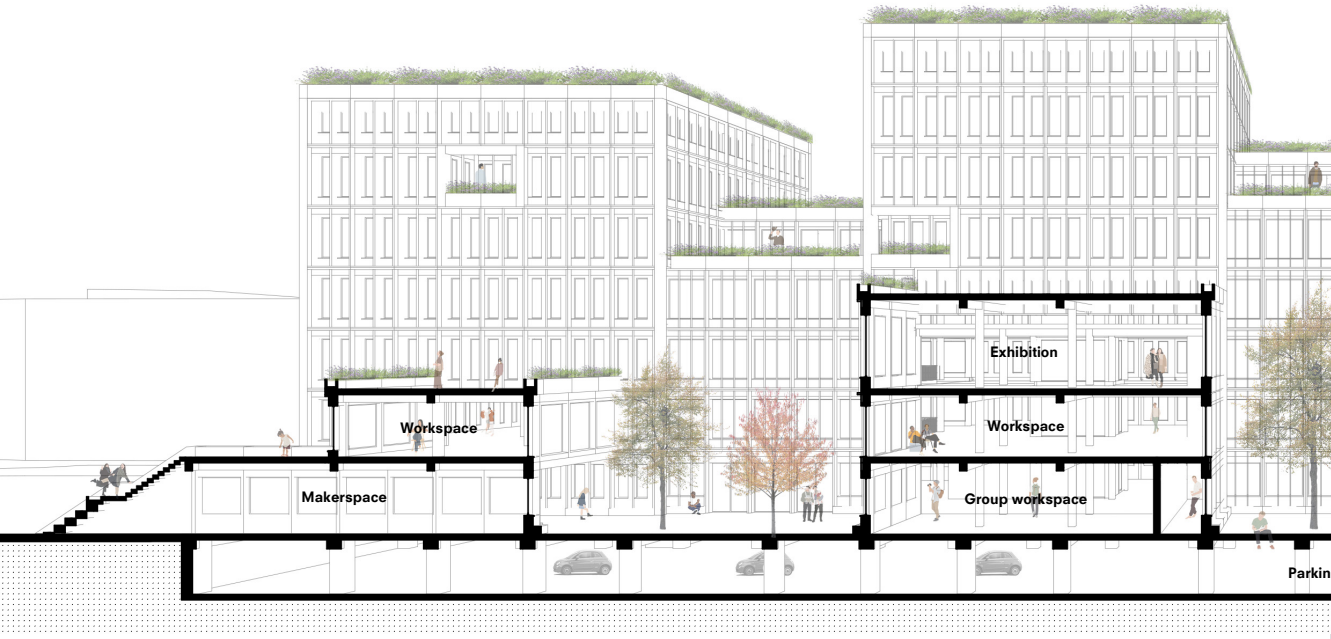
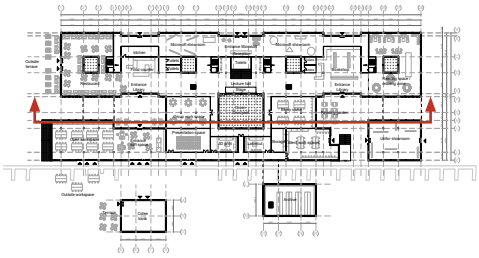


Figure 5.17 Short section
(Own illustration)


Exhibition
Workspace
Workspace
Makerspace
Group workspace
Parkin



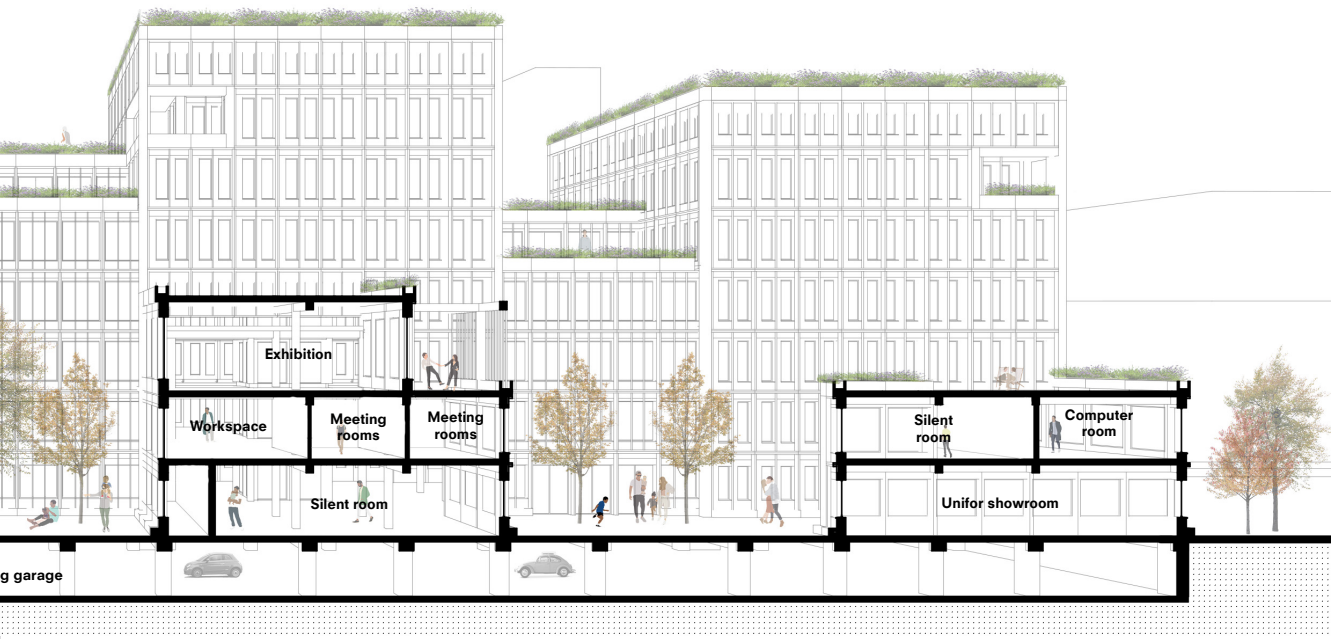


Figure 5.18 Long section
(Own illustration)

Figure 5.19 Interior fragment
(Own illustration)

Climate

The building utilizes a sustainable and efficient climate control system based on a ground heat exchanger. During winter, this system extracts thermal energy from the ground and delivers it to a heat pump equipped with heat recovery. The heat pump is powered by PVT panels installed on the roof, which generate both electricity and thermal energy.

The generated heat is then distributed through underfloor heating, which is applied specifically in the office areas. This choice enhances thermal comfort while maintaining spatial flexibility for the employees. For the remaining program, the heat is transferred to the air handling unit (AHU), which converts it into warm air to efficiently heat the rest of the building.

In summer, the system operates in the reverse mode to provide cooling. The same underfloor system and air distribution channels are used to cool the spaces, ensuring year-round thermal comfort with minimal environmental impact.

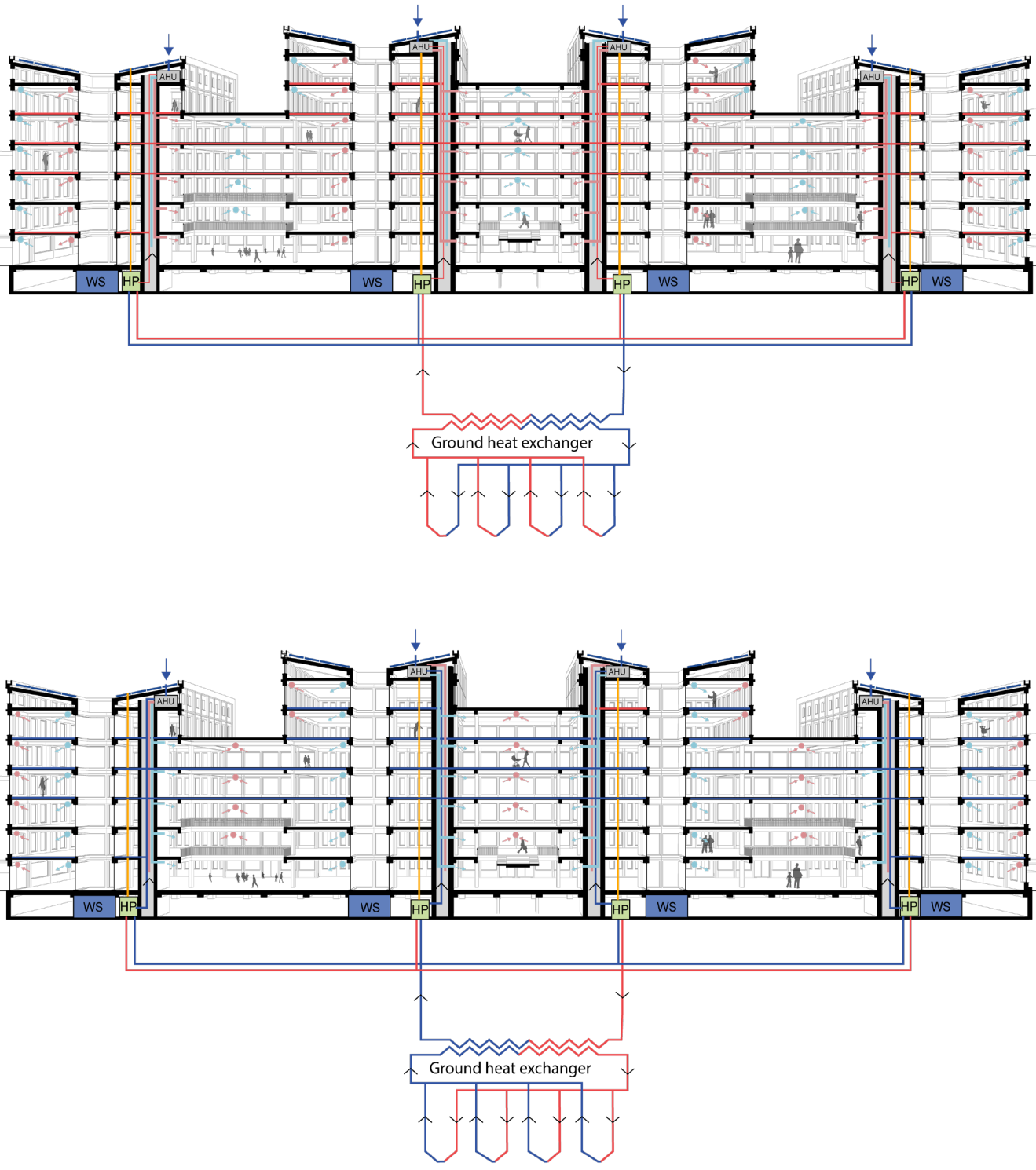


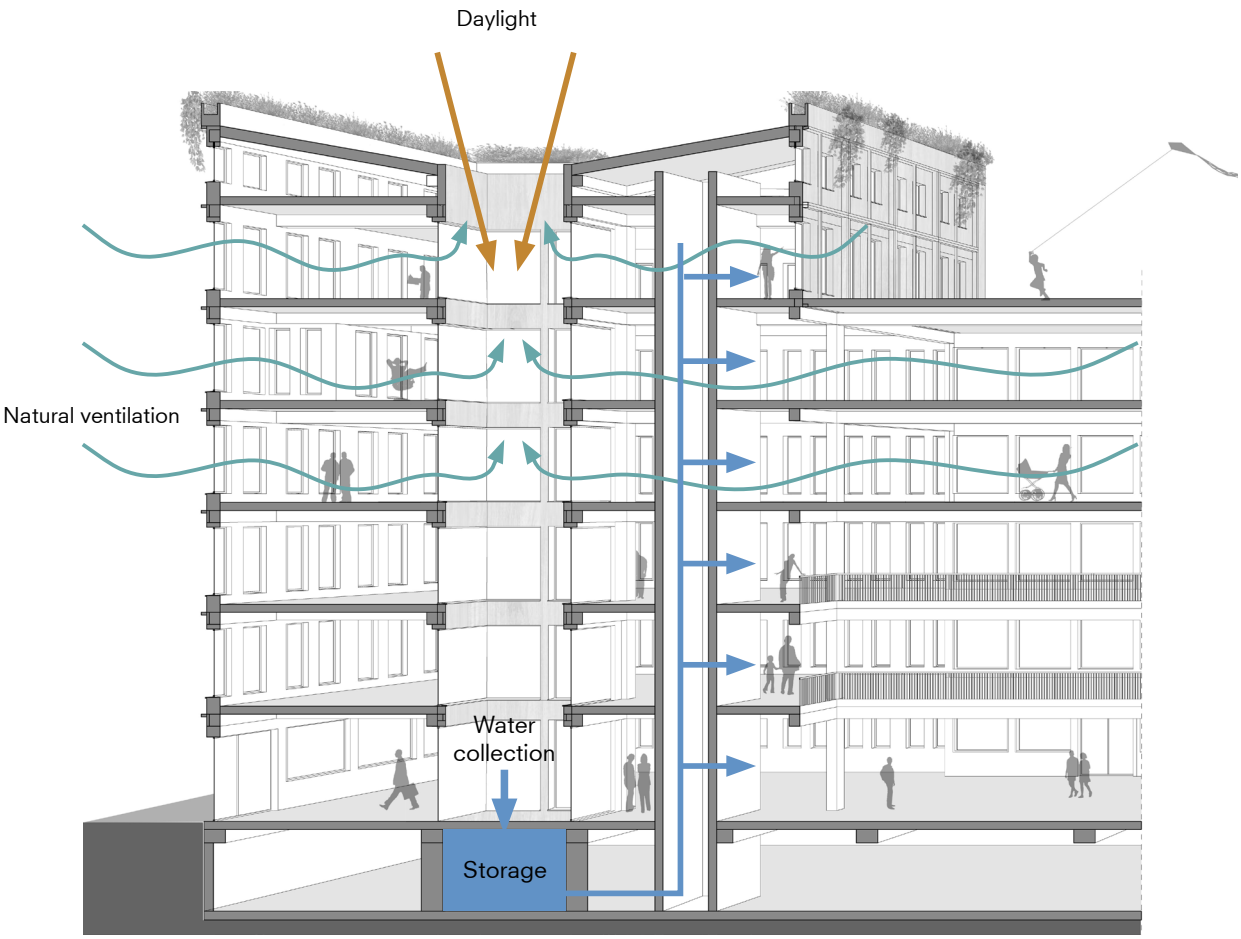
Figure 5.20 Climate sections
(Own illustration)

Impluvium

When zooming in on the section of the building, we see that impluvia are integrated into the design. An impluvium, originally found in Roman houses, is an open structure in the roof that allows rainwater to enter and be collected for reuse. In this project, the collected water is reused within the building, primarily for flushing toilets.

Beyond water collection, the impluvia serve multiple functions. They enable natural ventilation by allowing fresh air to flow through the vertical voids. They also act as daylight inlets, bringing natural light deep into the interior spaces and enhancing the quality of the indoor environment, figure 5.21.

The four impluvia implemented in the building are estimated to collect nearly 3 million liters of water annually, which is sufficient to meet the flushing needs of approximately 500 visitors per day, assuming two toilet visits per person.



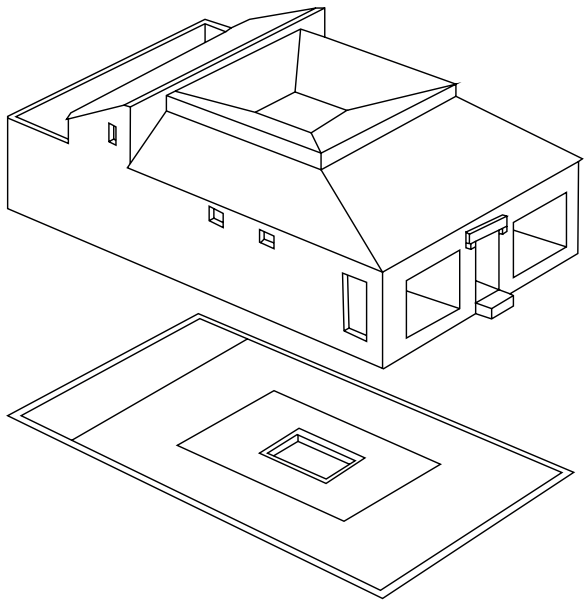


Figure 5.21 Impluvium
(Own illustration)

Construction

The building is constructed entirely in timber, based on a 2.7m x 2.7m grid. The only exception is the concrete cores, which provide structural stability and house the vertical circulation and services.

In the tower volumes, which accommodate the office functions, column-free spaces are essential to allow for flexible layouts. Here, clear spans of 8.1 meters are achieved to support this flexibility, see figure 5.22 in red.

The connecting volumes between the towers require slightly larger spans, as they host more spacious public functions. In these zones, occasional columns are acceptable within the rooms to support the structure while maintaining spatial quality, in orange.

Lastly, the lower section of the building allows for regular column placement, as these spaces are less dependent on open-plan flexibility. The maximum span in this part of the building is also 8.1 meters, in light grey.

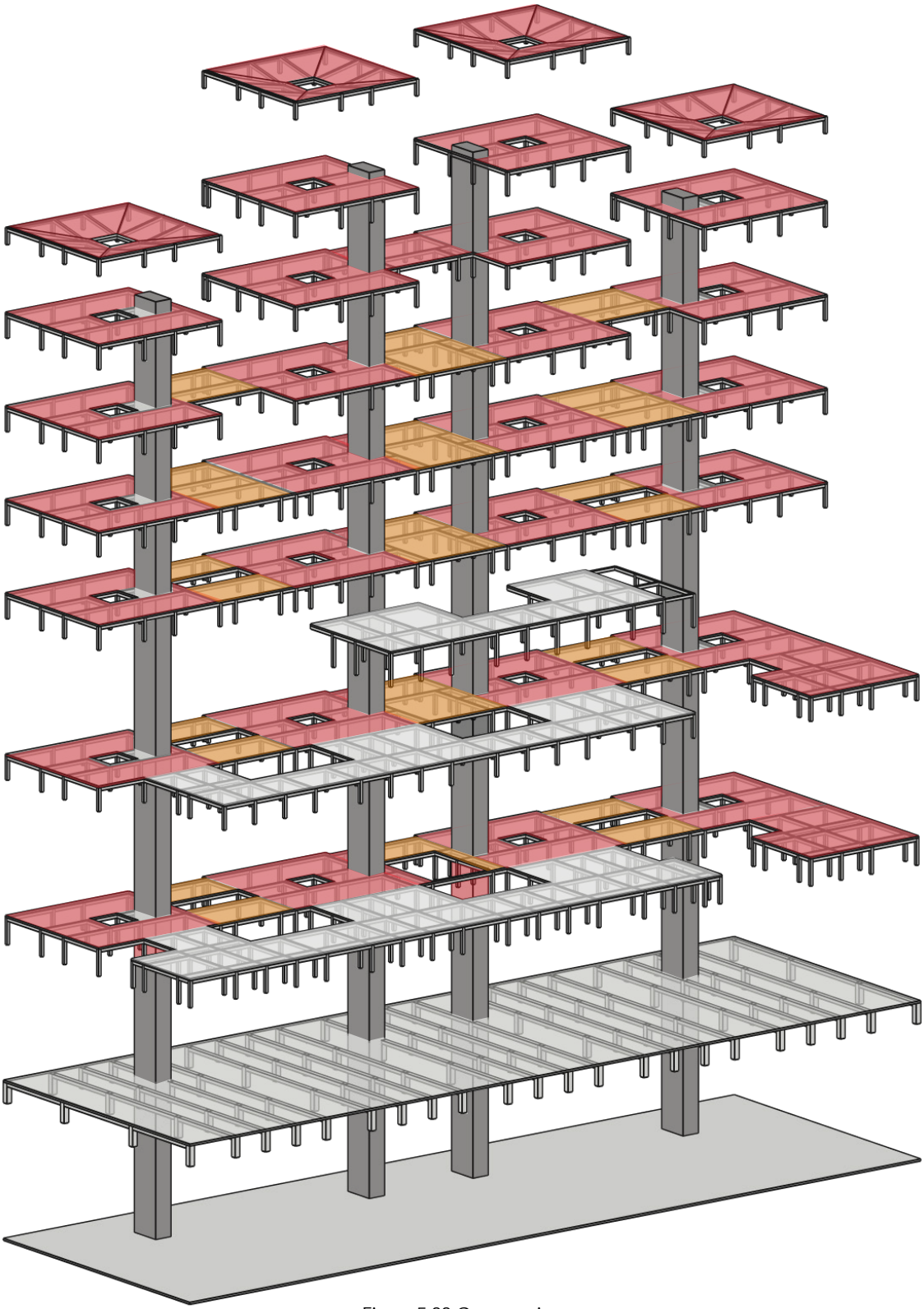


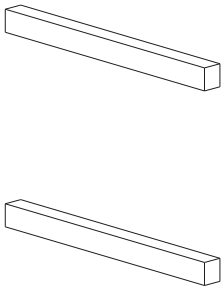
Figure 5.22 Construction
(Own illustration)

Facade

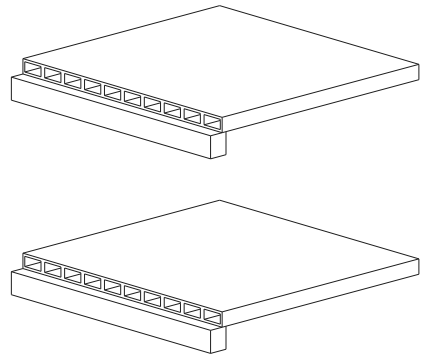
The building makes use of prefabricated facade panels, which offer several advantages. Prefabrication reduces construction time significantly and minimizes material waste during production. Moreover, the panels are easy to replace or repair when necessary, contributing to long-term maintainability.

The construction sequence is as follows:

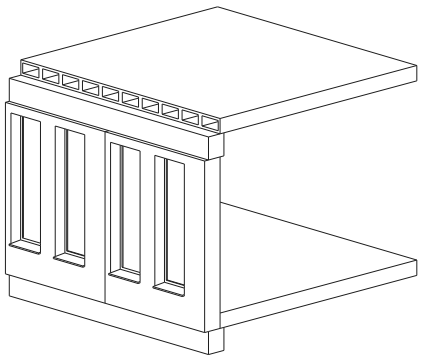
First, the primary timber structure is erected. Next, the floor slabs are installed. Then, the prefabricated facade panels are mounted. Thermal brackets are added in front of the beams and columns to reduce thermal bridging. Finally, prefabricated vertical fins are attached, which function as solar shading elements, improving indoor comfort and energy performance, see figure 5.23.



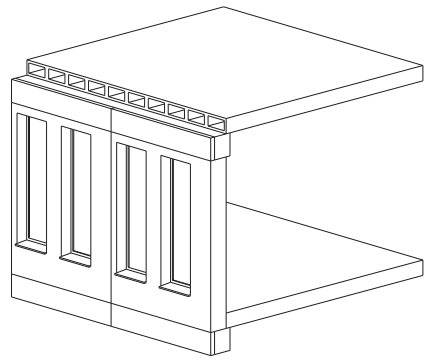
1. Construction



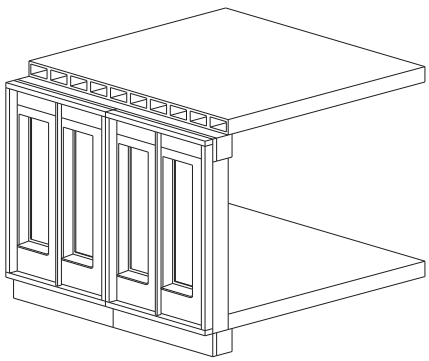
2. Floors



3. Prefabricated facade panels

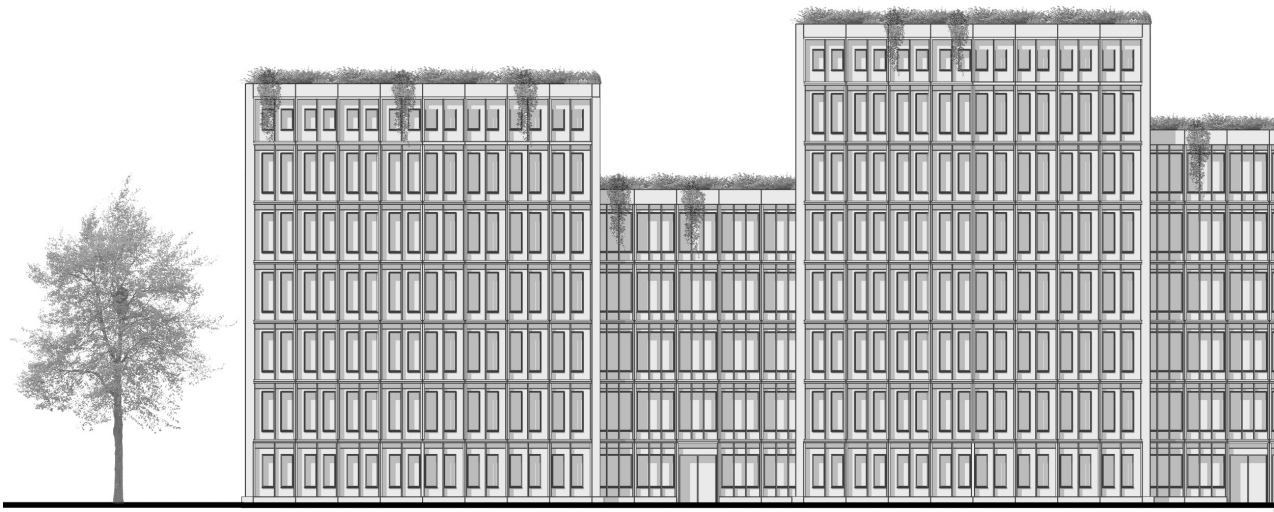


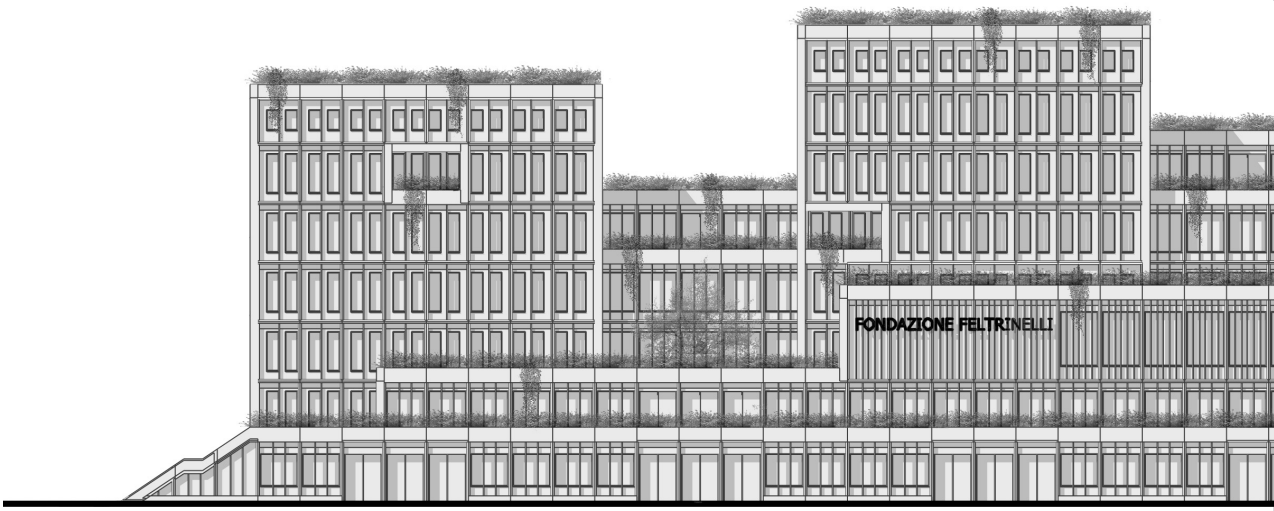
4. Thermal brackets



5. Prefabricated vertical fins

Figure 5.23 Facade system
(Own illustration)

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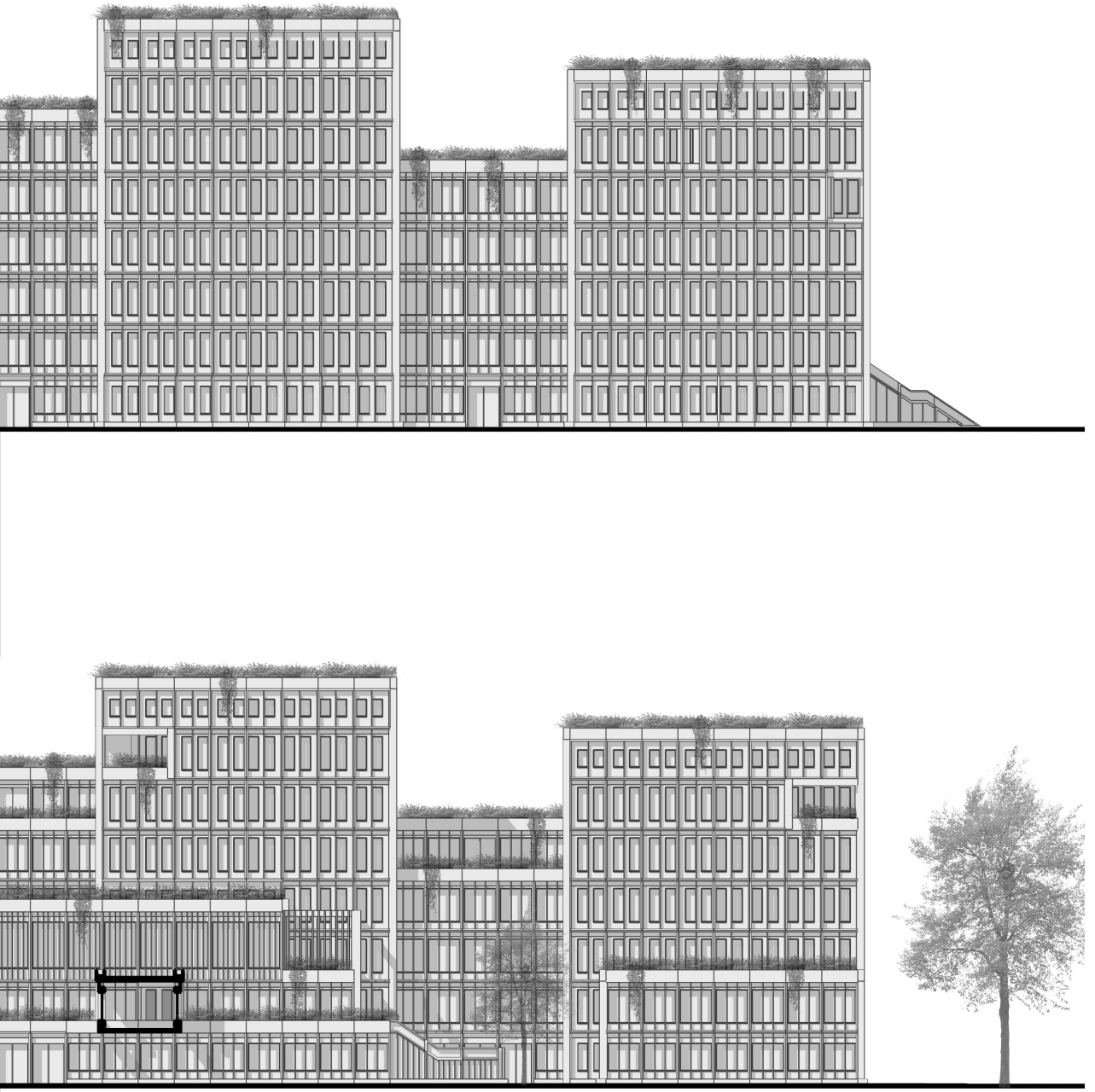


Figure 5.24 Elevations
(Own illustration)

Figure 5.26 Facade fragment
(Own illustration)

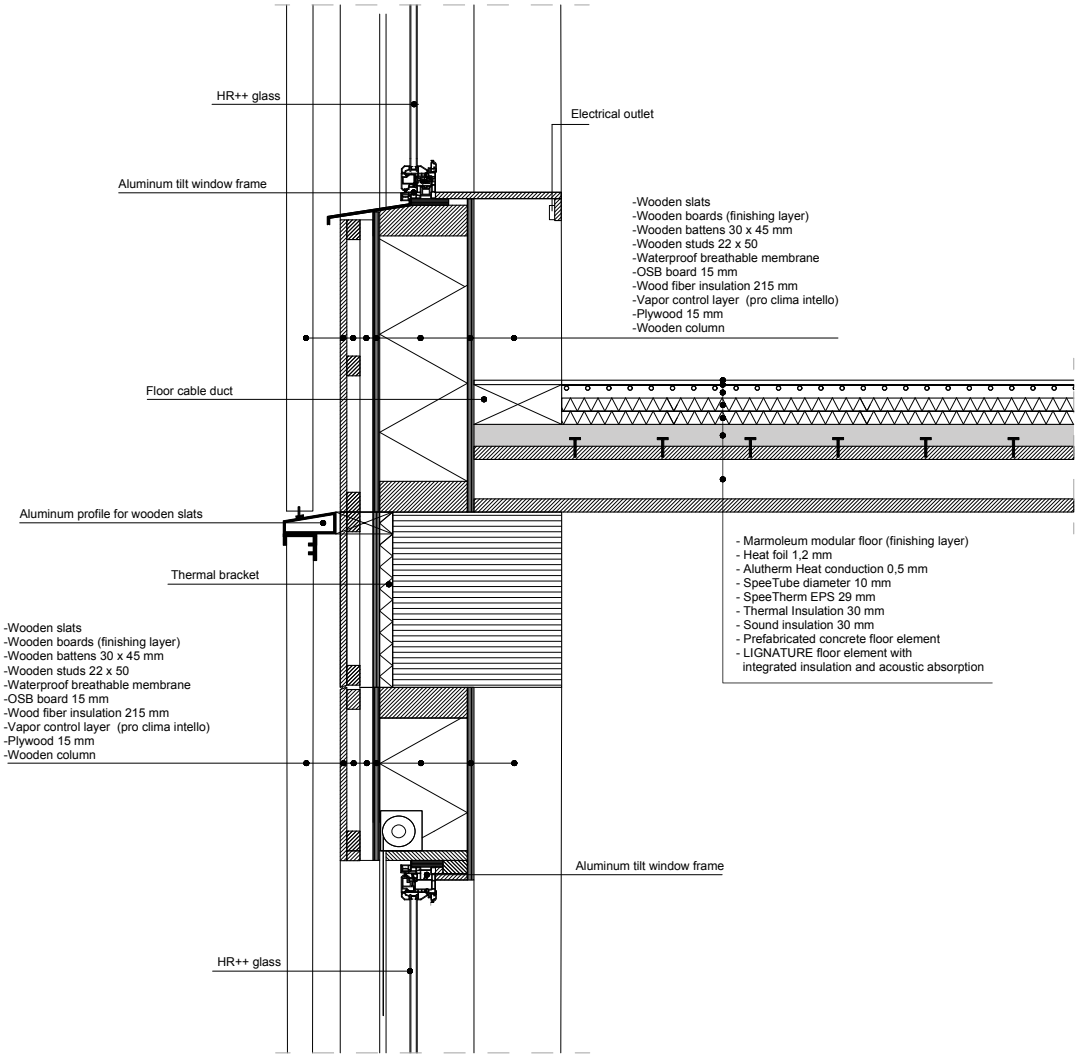


Figure 5.27 Detail 1

(Own illustration)

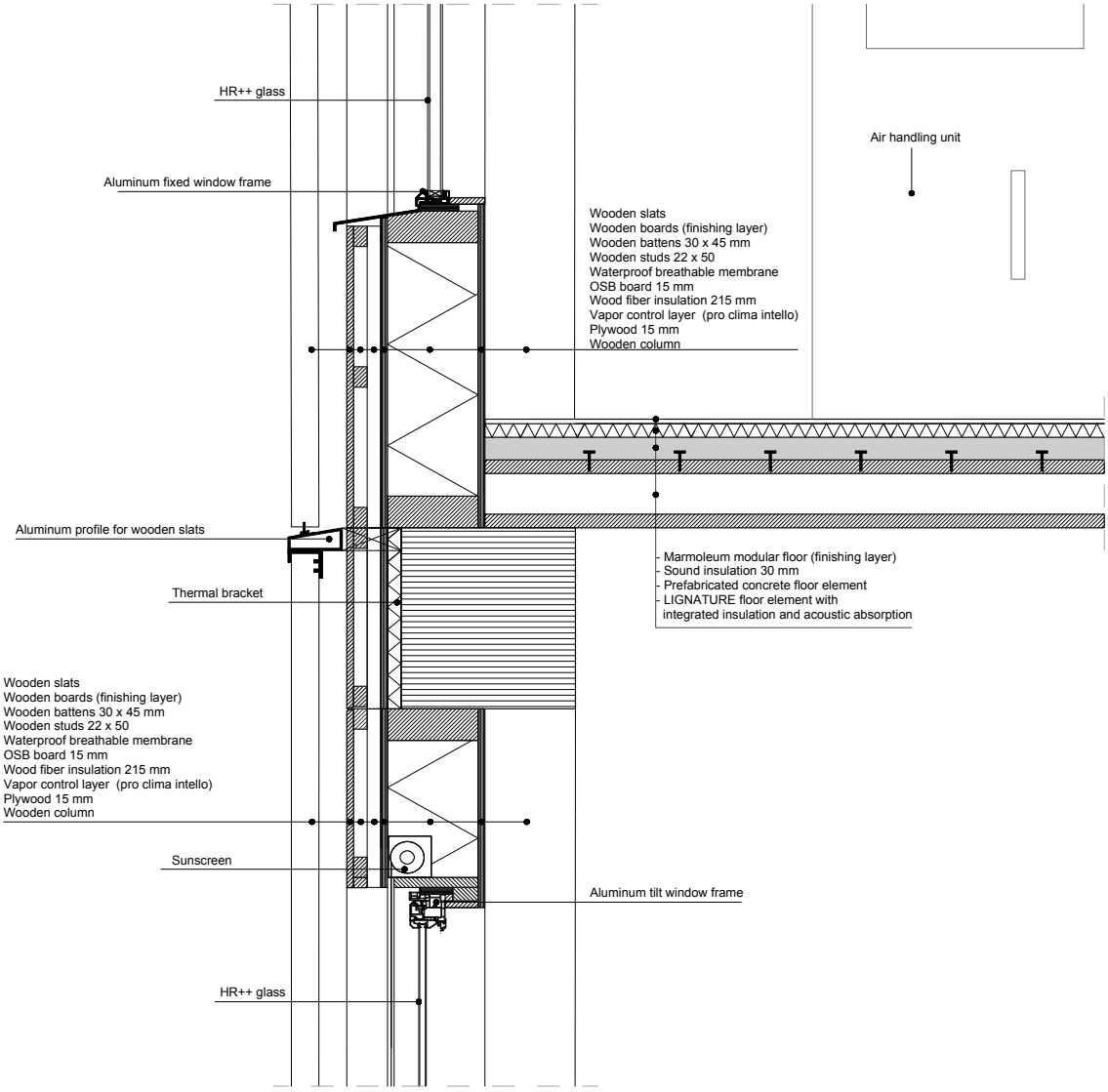


Figure 5.28 Detail 2

(Own illustration)

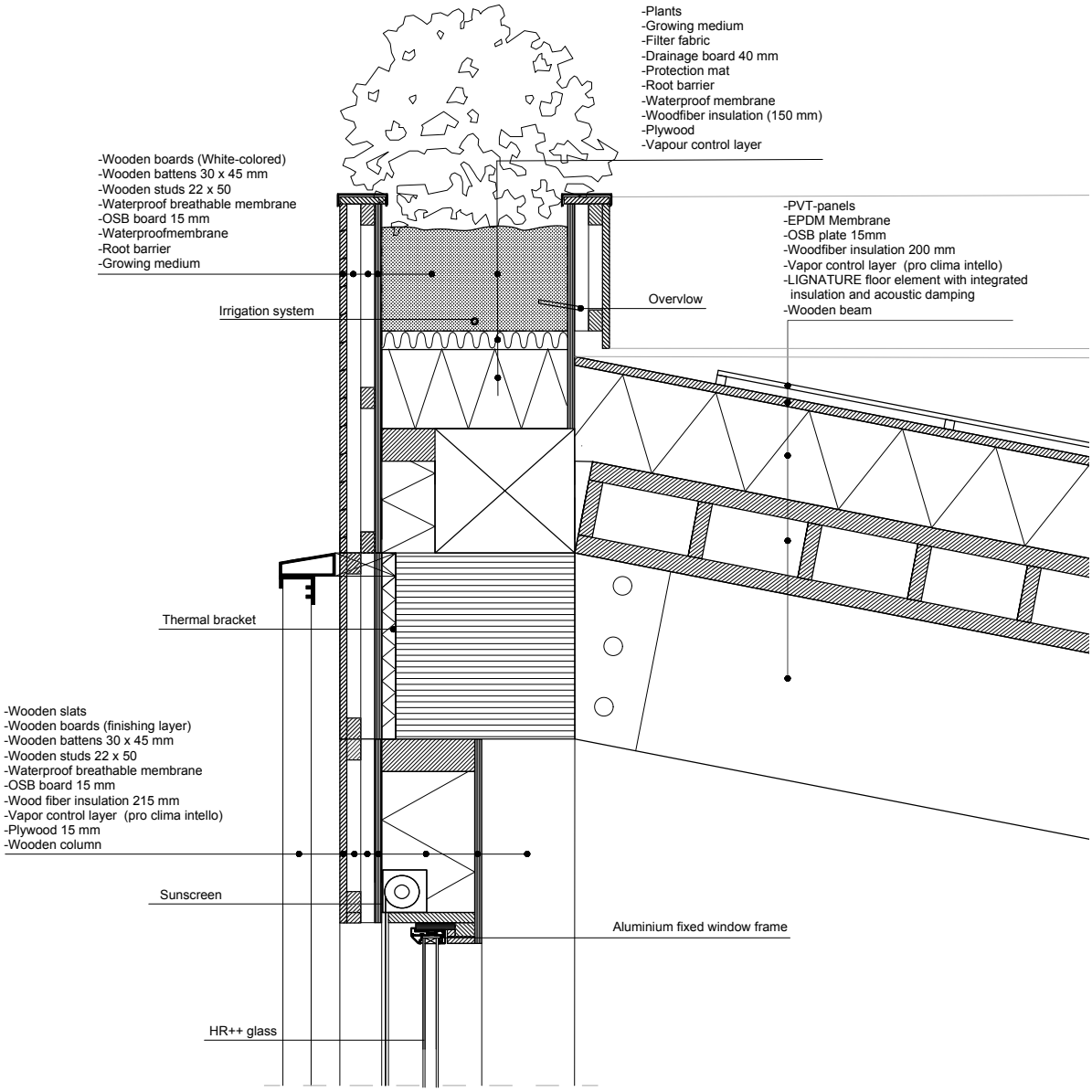


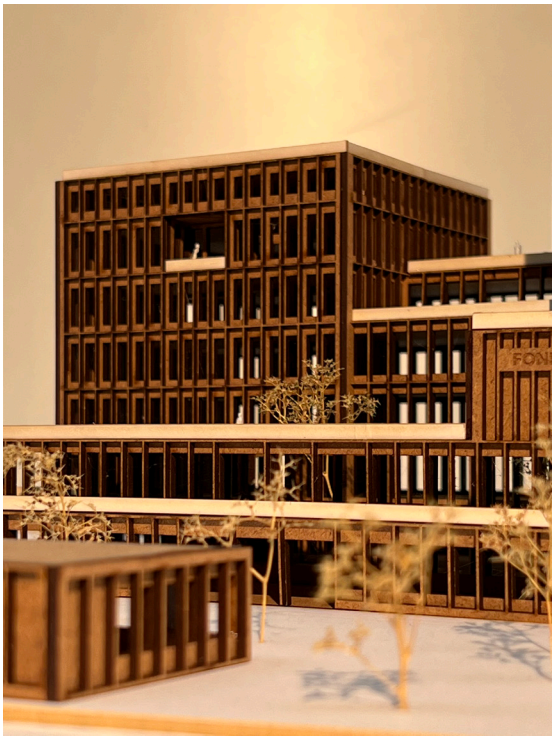
Figure 5.29 Detail 3

(Own illustration)

MODELS

06

01 Models

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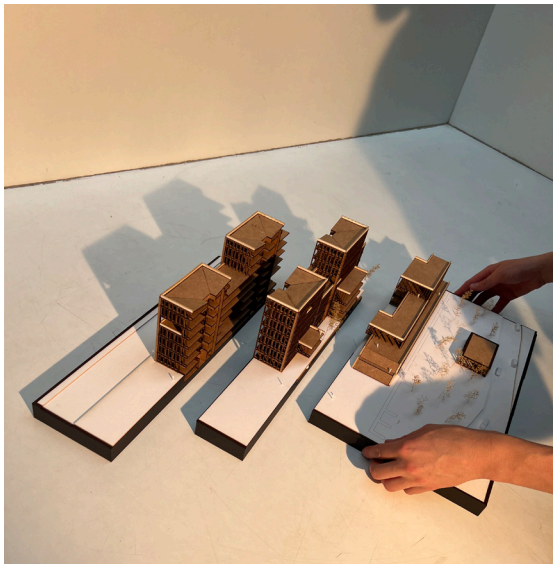

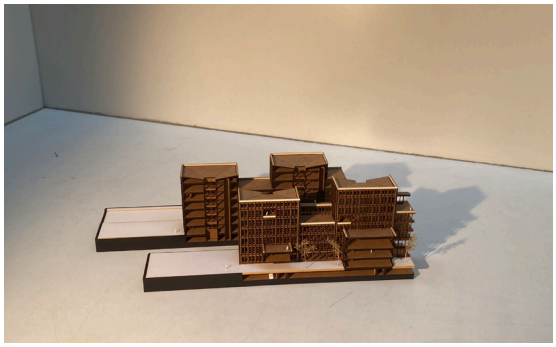

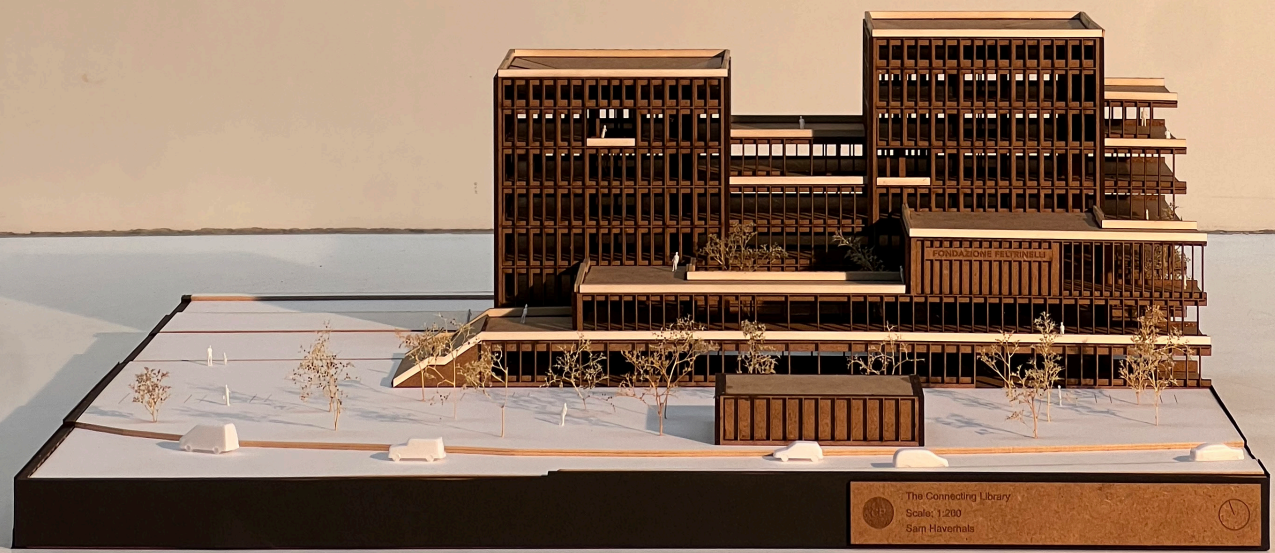
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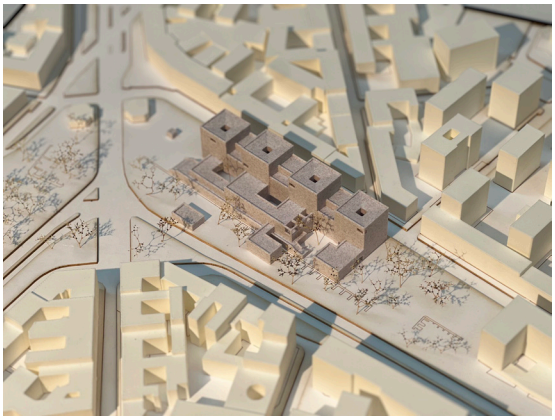

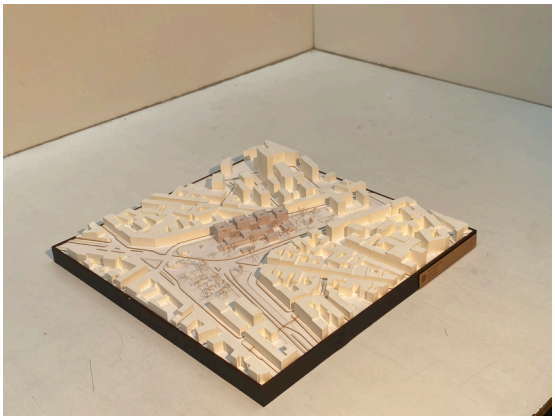

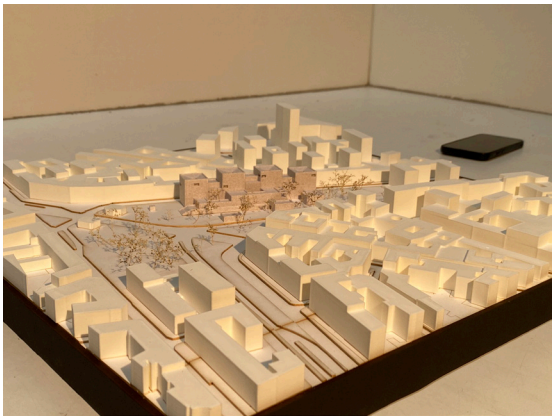

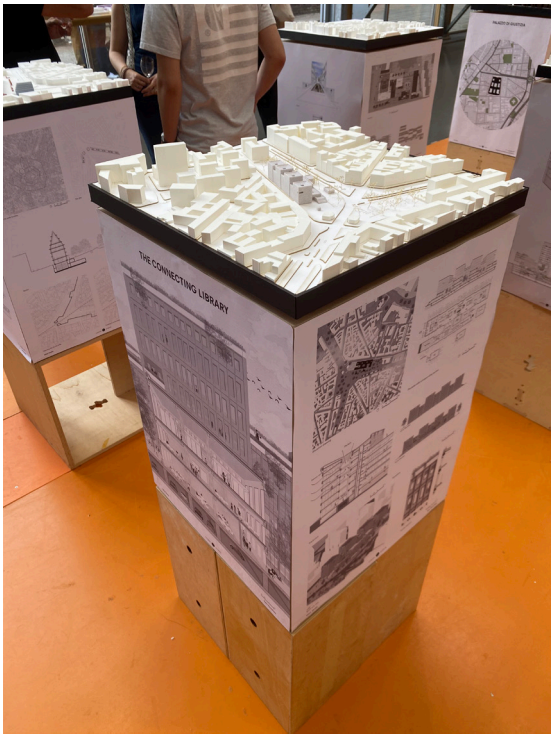
THE CONNECTING LIBRARY


THE CONNECTING LIBRARY


MILAN

CONCLUSION

07

01 Conclusion

Conclusion

Within the Complex Projects studio, the public library was approached as a tool to address urban societal challenges. The assignment was to design a new library in Milan.

In this city, social cohesion is under pressure. The typically Italian culture of togetherness and spontaneous interaction is fading in Milan's fast-growing and fragmented urban environment, leading to increasing loneliness and segregation. With the design of The Connecting Library, the aim was to actively counter this trend and answer the central question: How can the architectural design of a public library boost social interaction?

The building connects people on multiple spatial scales. On the XL scale, it is linked to the Health Belt , a green zone that connects Milan's parks, offering healthy, accessible routes with opportunities for social encounters along the way. On the L scale, various public outdoor spaces emerge around the building, such as a piazza, a community park, and an active park, each tailored to different users and occasions.

Within the building (M scale), strategically placed courtyards not only improve the indoor climate, but also create calmer zones for more intimate social interaction. Rooftop terraces further enhance opportunities for meeting and relaxing.

Finally, on the S scale, the design

emphasizes visual connections between spaces and across floors, encouraging movement and interaction. The thoughtful placement of functions creates zones with varying levels of intensity, from lively public areas to quieter corners, offering space for a wide range of users and activities.

The Connecting Library is not just a place of knowledge, but a social foundation for a healthier, more connected city

The **“living room”** of Milan.

REFLECTION

08

01 Reflection

Introduction

This graduation project explores the reimagining of the public library as an 'urban living room' within the context of Milan. The library is designed to foster social interaction, making it an accessible space for a wide variety of users. This ambition draws upon Italy's strong tradition of communal life and collective use of public space, which, in Milan, is challenged by issues such as migration, loneliness, and the limited availability of inclusive public facilities.

The project aims to restore this culture of togetherness by encouraging social interaction through the design of The Connecting Library. Located at the intersection of the modern Porta Nuova district and the historic city center, this site represents a space where the future of urban living can be redefined through the library's design.

How did your research influence your design?

The research question How can the architectural design of a public library boost social interaction? guided the entire design process, shaping decisions across urban, architectural, and detailed scales.

- Urban Scale: The library is centrally located on the site to activate both edges of the plot: a lively piazza on one side and a tranquil park on the other. This positioning encourages diverse public interactions, from larger social gatherings to more intimate moments in smaller courtyards.

- Architectural Scale: Spatial zoning was key. Active functions like group workspaces and maker zones face the piazza, while quieter spaces like reading rooms are oriented towards the park, creating an environment where users can choose between interaction or solitude. The inclusion of courtyards provides calming green spaces, reinforcing the library's welcoming and social nature.

-Detail Level: Comfort is prioritized with natural ventilation and acoustic comfort achieved through thoughtful materials like sound-absorbing ceilings. These considerations promote the library's function as a 'living room' by ensuring the space is not only visually welcoming but physically comfortable.

The design choices were informed by research that underscored the importance of architecture in facilitating social encounters, community-building, and well-being.

Relationship Graduation Topic and Studio Topic

This project aligns closely with the Bodies & Buildings studio's exploration of architecture's impact on human behavior and well-being. The reimagined library as an 'urban living room' encourages interactions and community engagement, bridging the gap between modern architectural design and human experience.

The studio's focus on the body, experience, and social use of space resonates strongly with this project, particularly as it seeks to address the growing fragmentation of urban spaces. The library becomes more than just a repository of books; it transforms into a communal hub that fosters a greater sense of connection in Milan's urban fabric.

What is your research method and approach in relation to the graduation studio?

The research method provided a clear framework for the design process, starting with a thorough site, program and client analysis and establishing clear objectives for the building. The 3x3 volume studies early in the process helped to explore spatial relationships and the building's form, while the literature review provided insights into the link between architecture and social interaction.

By focusing on the research question, How can the architectural design of a public library boost social interaction? each design decision was tested against this lens, ensuring

all elements of the design supported the objective of promoting social engagement. The research method ensured that the design process was both focused and efficient, establishing a solid foundation that directly informed the final design.

How do you assess the academic and societal value, scope, and implications of your graduation project, including ethical aspects?

Academically, this project offers valuable insights into the role of architecture in fostering social interaction. The toolbox developed through this project can inform future public space designs, offering a framework for architects to create spaces that encourage inclusivity and connection. This has broad implications, particularly in urban environments where public spaces can significantly impact the community's social cohesion.

Societally, this project addresses critical urban challenges like loneliness and migration. By conceptualizing the library as an 'urban living room,' it responds to the need for spaces that bring diverse groups together, contributing to the social fabric of Milan and similar cities facing comparable issues. The emphasis on inclusivity, accessibility, and well-being makes this project both socially relevant and ethically responsible, creating spaces that nurture human connection.

Ethical Issues and Dilemmas

A key ethical dilemma in this project arose from the design of the building's façade, which initially had a monumental form that clashed with the goal of creating an accessible and socially welcoming space. While the monumental design might have enhanced the building's visual presence, it conflicted with the core research question of fostering social interaction and inclusivity.

Time constraints played a role in limiting the extent to which these concerns could be fully addressed. Despite these limitations, efforts were made to modify the façade and create a more inviting and socially accessible building. This dilemma reflects the ethical responsibility of architects to balance aesthetic ambitions with the functional needs of a space designed for human interaction and inclusivity. The challenge lies in prioritizing architectural beauty without compromising the design's primary goal: creating a space that serves the community in a socially meaningful way.

How do you reflect on your own work approach?

My approach to design is pragmatic, preferring to work from a core principle that keeps the process structured and controlled. This method helps me stay focused and ensures I meet deadlines without compromising on quality. However, it sometimes limits my ability to think outside the box or explore multiple design variants for a single aspect. As a result, I may not always extract the fullest potential from a design. While this controlled approach is beneficial for time management, it sometimes prevents me from pushing creative boundaries and fully exploring alternative possibilities.

How did feedback from others contribute to your design process?

The regular feedback sessions with my professors played a crucial role in shaping my design. They were instrumental in guiding me away from certain ideas, such as the building's initial monumental form, which didn't align with the project's goals. I worked hard to soften this aspect to create a more inviting space. I also gained valuable insights into technical drawing and presentation techniques through these interactions, which significantly improved my design communication.

Furthermore, collaborating with my groupmates provided me with different perspectives, which enriched my work. I could always ask for input, which helped refine my ideas and broaden my approach. In turn, I tried to contribute to my groupmates projects as well.

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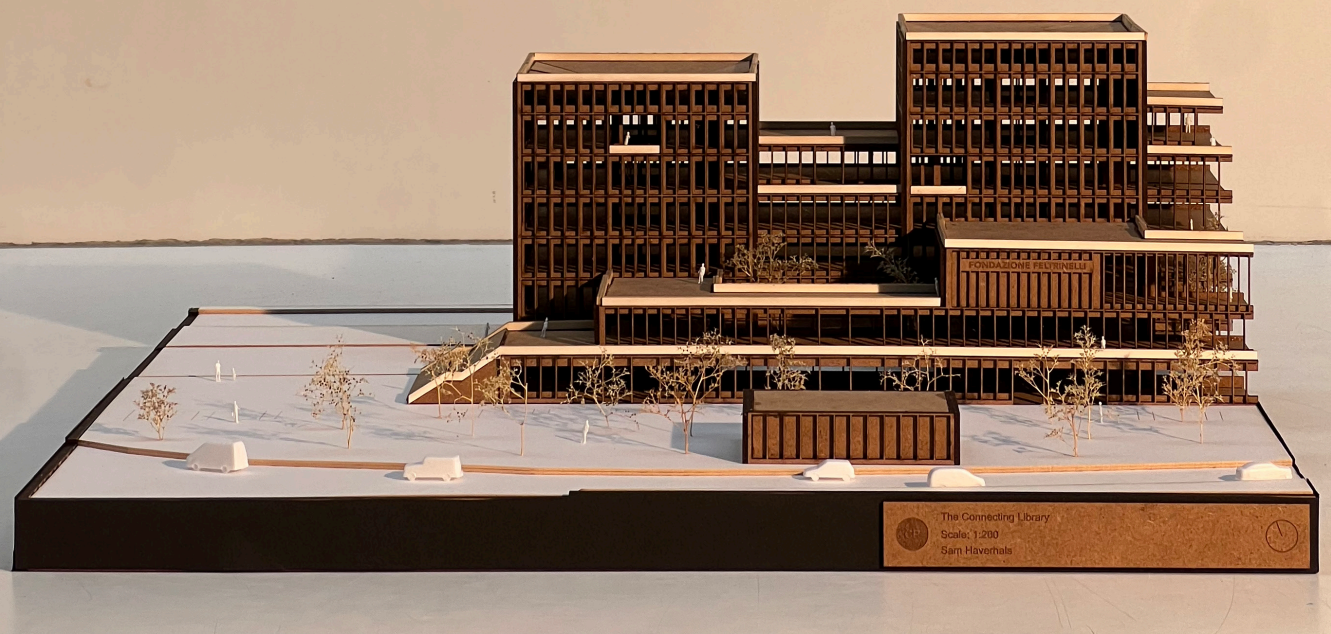
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