

**CoLab**  
Collaborative **Laboratory**



**2024**

**COMPLEX PROJECTS**  
**Bodies and Building Milan**  
**AR3CP100**

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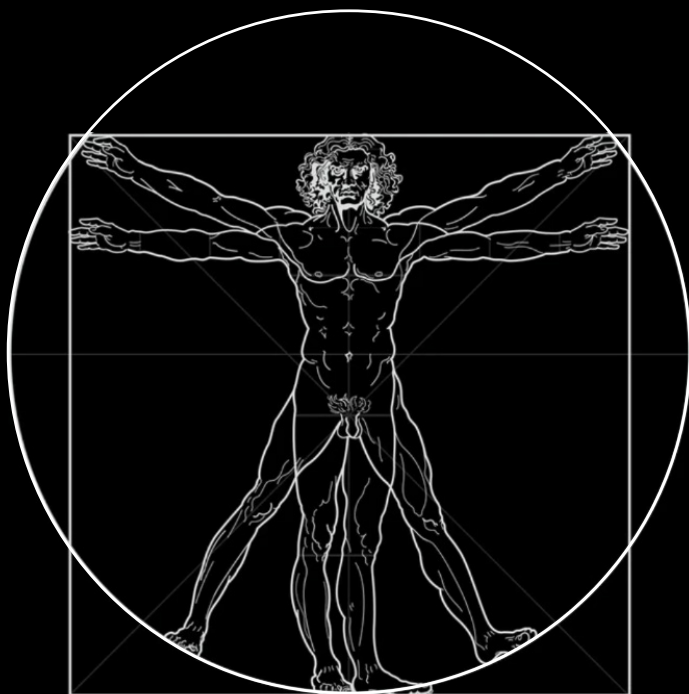
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**Bodies and Building Milan**  
Modern Public Library

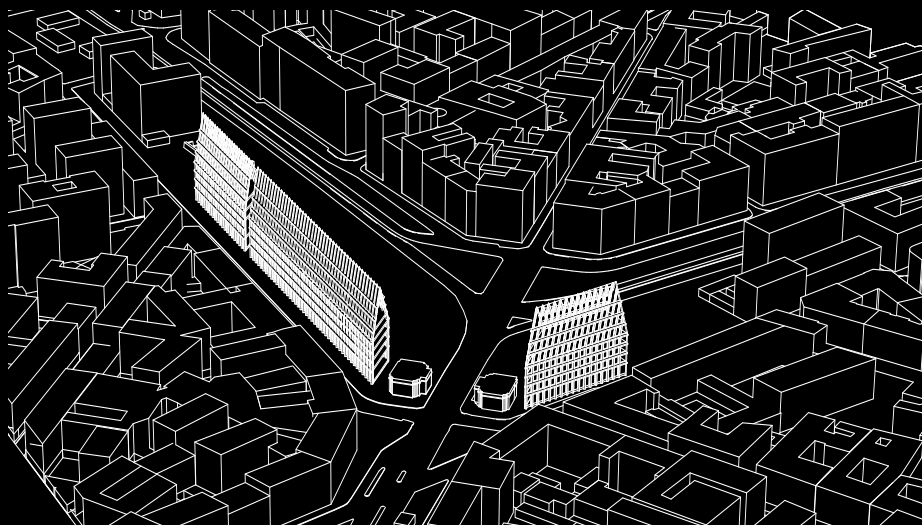


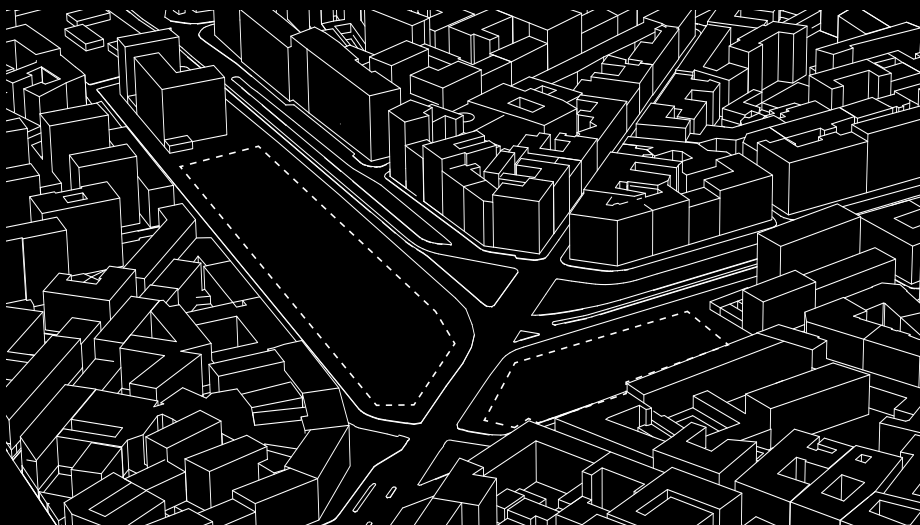
Complex Projects studio generates projects on the intersection of building typologies and broad themes with focus on specific urban contexts which adds an additional layer atop the theme. The deliberate juxtaposition of typology, lens and city not only enriches the studio's exploration of the theme, but ultimately helps define and specify the final design project.

This year, students are encouraged to explore the multifaceted cityscape of Milan, a global centre shaped by its historical role as Italy's economic and industries capital. Milan's urban transformations reflect its post-war reconstruction, industrial growth, and the influence of innovative sectors such as design and technology. Its development has been

been driven by economic shifts, ecological policies, and socio-economic factors unique to the city, including population changes, migration, urban regeneration, and the interplay between heritage preservation and modernisation.

The Bodies & Building studio navigates the city research through specific lenses.





The graduation project focuses on developing a design project based on an existing case study. Each student selects one of the eight buildings as a starting point. This case study forms the foundation for both the Research Plan and the Complex Project Studio.





**RESEARCH**

**01**







In recent decades, public libraries have found themselves in a difficult position. The library, known as a reference center for accessing knowledge through books and preserving cultural heritage, appears inadequate to maintain relevance in the contemporary digital age (Smith, 2019). Furthermore, libraries must continually meet the evolving needs of the communities they serve. Libraries are addressing this by integrating new technologies into the physical library, offering online information services, and expanding their offerings and their program (Foskett et al., 2024).

Despite these initiatives aimed at attracting larger audiences, civic engagement remains insufficient (Smith, 2019). Additionally, these recent advancements impose financial strain (Van Melik & Merry, 2021). Consequently, libraries must transform into social infrastructures that facilitate the convergence of diverse social spheres. Cigarini et al. (2021) envisions a communal meeting space that accommodates a wide range of interests and remains open to the entire community.

In recent years, there has been a proliferation of new libraries that position themselves as cultural centers. A cultural center serves as a platform that significantly contributes to the economic and social advancement of the cultural sectors (Flego & Tei, 2024). As “cultural hubs,” they bring communities together and facilitate access to, sharing, creation, and appreciation of cultural resources and materials (Summers & Buchanan, 2018). By establishing many ultimate destinations, visitors are offered the opportunity to extend their stay beyond their initial intentions (deMunnik-deJong architects, 2019).

The Fondazione Feltrinelli library in Milan has expanded its role as a library and now identifies itself as a research center. It promotes research and discussion on contemporary pressing issues, disseminating findings to the public through various initiatives, publications, exhibitions, and performances. They aim to enhance visitor engagement and overall quality of life (Il Gruppo Feltrinelli, 2020).

However, the ‘Porta Volta’ project includes not only the Research Center but also the National Museum of the Resistance and the Microsoft House Offices. All three organizations feature an emphasis on society in their programs and aim to engage a diverse array of target demographics. Consolidating the organizations and establishing connections among them can significantly enhance participation in the program by attracting a larger audience (Cigarini et al., 2021). Not only is cultural participation increased, but it significantly contributes to individual self-development by broadening knowledge across various domains and promoting overall health and well-being (McMenemy, 2009).

In addition to the library’s educational initiatives, the museum and the Microsoft House have also incorporated social interest into their programs. The museum exhibits historical material inherent to the period of liberation and the immediate post-war period. The debate about the history of Milan indirectly fosters an informed citizenry within the community, which is essential for national identity and the democratic republic (Museonazionale resistenza, 2024). Conversely, Microsoft emphasizes future-oriented initiatives, promoting public innovation and collaboration to enhance the benefits of digitalization for individuals and businesses. Enhancing the population’s understanding of emerging technologies positively impacts Milan’s future, thereby fostering economic and social advancement in Italy (Purassanta, 2018).

The three organizations are crucial for Milan’s identity and global standing. Consolidating all three of these entities into a single edifice enables them to provide more benefits to society. This building can be an example of how libraries can collaborate with other organizations.

## Problem statement

The three organizations will together form a culture house for the benefit of Milan and its community. Nonetheless, each institution operates autonomously and possesses its own programs. Unlike the Culture Center Rozet's Library in Arnhem, a public space that unites all institutions and welcomes visitors, the culture house boasts private areas that either charge for entry or are exclusive to invited guests. Integrating three distinct entities that operate independently yet will strengthen each other in the program aimed at fostering visitor engagement and expanding the audience requires a new approach.

The dual objectives of uniting these diverse organizations—enhancing visitor engagement and expanding audience reach—necessitate distinct measures that determine architectural decisions in the design. A society's social engagement takes place when debates emerge around various issues occurring within the building. Interaction within the community initiates a debate; transition areas between different spaces can stimulate these discussions (Peterson, 2023). Reaching a wider audience depends on the accessibility of a space and the curiosity that can arise in the visitors. The emotions experienced by a visitor stem from the physical transitions between the different spaces (Kenett et al., 2023). The topic of interest relates to the formation of these transitional zones and physical transitions within the culture house.

Diminishing participation  
(diverse urban population)



Social fragmentation  
and isolation



Lack of public space



Inequality in access to  
knowledge and culture



The primary objective of this research is to enhance the community engagement of the public library, the museum, and the Microsoft House through the design of a culture house. It is essential to examine the design of physical transitions and intermediate areas between different spaces. This brings us to the central question of this thesis: How can the transitions between spaces within a cultural center in Milan activate diverse communities?

The design brief that emerges from this research will delineate the crucial elements for the design of the cultural center. We will create the criteria based on the program, the client, and the location. We will segment the research question into several sub-questions across three categories: vision, relation, and community, to gain a deeper understanding.

The subquestions are formulated as follows: The overall **vision** of a cultural center will be analyzed. The organizations operate independently and have their own programs; however, they ultimately converge under a single entity. Furthermore, it is essential to consider, with all the current events in Milan and the potential inflow and outflow of organizations, what does the future of a cultural center entail?

Secondly, the **relation** between the spaces will be examined by initially analyzing how the organizations relate to each other. The individual programs can also be divided into public, semi-public, and private, whereas the interaction of the programs among themselves and their connection to other organizations are crucial for the sociability of a space. In this regard, we may inquire how these relationships are formed, but especially what kind of transitions exist between linked spaces?

Finally, the cultural center includes multiple entities aiming to engage a wide audience. To gain a clearer understanding of how a diverse **community** is stimulated to participate and how this relates to the physical space, the following question must be addressed: what target groups do they aim to engage, and with which spaces are they associated?







## Theoretical framework

The theoretical framework will contextualize the design research and offer an overview of the relevant existing literature for the study at hand. This literature relates to the subsequent subtopics: the vision of a cultural center, the substantive and architectural relationship between spaces and their functions, and the significance of the community.

### Vision

The vision of a cultural center includes the development of the library into a cultural hub to meet the evolving needs of the public. Consequently, it is essential for the library to adopt a distinct role within the community, offering a gathering space rich in opportunities and services. Lesneski and Bray analyze the collaboration among several organizations within the Missoula Public Library, which is reestablishing itself as a cultural center. The Missoula Public Library, awarded the 2022 IFLA/Systematic Public Library of the Year, is addressing the growing demands of contemporary libraries by forging partnerships and enhancing services to support community prosperity in the 21st century (Lesneski and Bray, 2023).

Additionally, Palmer examines how the growing demand for spaces that facilitate work, study, knowledge sharing, social interaction, and learning impacts the physical environments of libraries. Palmer suggests the frequent use of the Four Spaces model in the design of these spaces. The theory outlines four intersecting domains: inspiration space, learning space, meeting space, and performative space (Palmer, 2021). It is crucial for the space to possess sufficient flexibility to adapt to the inevitable changes that will take place (Gisolfi, 2015). Moreover, Milan hosts numerous spontaneous and uncoordinated events that emerge throughout Fashion and Design Weeks, among others. Conducting such activities in the library can foster unforeseen relationships and enhance its position within the city (Leveratto & Gotti, 2022). These sources offer guidance on a sustainable concept of the cultural center.

The second sub-question concerns the interaction of the program. The study of Askarizad and Safari on the function of semi-open spaces in public libraries demonstrates that areas partially enclosed by partitions within an open setting enhance sociability. Askarizad and Safari (2019) applied the Space Syntax methodology, which predicts human behavior and the social dimensions of architectural environments, in the case studies of Sunrise Mountain and Desert Broom Libraries. This methodology is advantageous for assessing the openness among different spaces, and the case studies may provide several insights into its implementation.

### Community

The concluding segment of the research emphasizes enhancing the engagement of a diverse community and its relationship with physical settings. Hapel views the library as a communal structure that strives to strike a balance between open areas and programmed spaces, with the open areas fulfilling multiple functions and providing opportunities for visitors to contribute. Ultimately, in a contemporary library, it is essential to emphasize the structure as a foundation for various degrees of human engagement. The previously mentioned Four Space Model also plays a role in this, as the four spaces—inspiration, learning, meeting, and performance—possess distinct objectives and establish a basis for user self-development and innovation. The model encompasses both physical and virtual spaces, providing a foundation for conversations (Hapel, 2020). This model can assist in delineating the various transition zones and their possible use.



Research into the relationships between different organizations and the transitions between their spaces, which should culminate in a successful cultural center, holds significant importance for both the district and the city. As part of the district's urban renewal, the culture house significantly contributes to the district's economic and social growth. Milan's regeneration project sets a new global benchmark for health and sustainability (COIMA, 2023).

Over the past two decades, a growing number of libraries have established themselves as cultural centers. These cultural centers encompass libraries that serve additional functions or integrate with other organizations within a single facility. This paper presents a study that could potentially serve as a model for future cultural centers.

## Research Methods

A comprehensive methodology is established to create a design brief for the culture house in Milan, serving as the foundation for the next phase of the design process. This chapter delves into the various research methods required to define the program, including an explanation of the clients and the location.

## Client

The research method used to define the client includes an analysis of the current institutions located in the 'Porta Volta' project. The identification of ambitions, aims, target demographics, and geographical context led to the determination that these existing clients are primarily appropriate for the culture house due to their social engagement, which fosters both individual development and the overall advancement of Milan.

However, a renewed vision of the program may facilitate the establishment of spaces for temporary clients. These spaces can accommodate a variety of activities, including showrooms, fashion or design week events, performances, and more. Research on past cultural events in the city will be conducted, including their various sites and associated clients, to gain a clearer understanding of these activities aligning with the culture house's mission.

## Program

Various methods are used to define the building's program. First, the initial analysis focuses on the original program of the three building types: library, museum, and Microsoft House. The suggested initiatives of these groups will also be analyzed to gain a clearer understanding of the social interest of their programs. The integration of these programs provides an initial framework for the comprehensive program of the cultural center. The relation among these programs will be clarified by addressing the sub-question about vision: 'What does the future of a cultural center entail?'

This question will be answered by studying literature on redefining a library as a culture house and studying five relevant case studies, including public libraries that have been provided with additional functions and public libraries that operate with other organizations within a single facility. Additionally, the current programs and activities of the cultural centers in Milan will be analyzed to understand how this cultural center might add more value to the city but also differentiate itself within the city. Case studies and Milan's culture centers will offer valuable insights into adapting specific areas for diverse purposes and accommodating diverse groups.

Subsequently, the interactions among the organizations and their spaces will be examined, focusing on the sub-question: 'How are relations formed between spaces, and what types of transitions exist between interconnected spaces?'. A catalog will be established documenting the numerous physical transitions and transition areas identified through the analysis of case studies. The collection of databases and the relational schemes can offer valuable insights for design decisions.

Lastly, the enhancement will focus on the key spaces, particularly the public shared spaces. The sub-question of 'community' pertains to these spaces: 'What target groups do they aim to engage, and with which spaces are they associated?' The question will be addressed through the analysis of case studies, library visits, and literature studies on the use of public spaces, especially the library, and different target groups.

## Site

To determine the site for the culture house, the following research methodologies will be applied: conducting analyses on the location itself through a site visit, a historical analysis, and studying the municipal ambitions. Given that the building already has a designated location in the city, the investigation will concentrate specifically on the plot itself.

The municipality of Milan has been actively developing the site's surrounding districts for several years, focusing on enhancing the area's greenery and fostering economic and social growth (Deerns, 2024). The design of the site will integrate the municipality's guidelines.

Furthermore, archaeological findings at the site, including remains of the Spanish walls, have been unearthed, which constitute cultural heritage and must be preserved in their existing condition. In order to gain a better understanding of the plot, research will be conducted through site visitation and historical analysis of the area.

# DESIGN BRIEF

02





## **The urban archive**

### **Knowledge-centered spaces**

focused on storing and accessing information



## **Livingroom of the city**

### **Community-oriented spaces**

fostering interaction, dialogue, and a sense of belonging



## Creative platform for the city

### Multifunctional cultural spaces

Enabling learning, making and programming

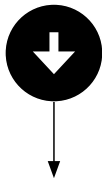
## Shared stage for collective creation

### Co-owned, adaptive space

Support shared creation, participatory culture, and community driven initiatives

# CONCLUSION

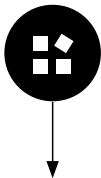
Diminishing participation  
(diverse urban population)



**Multifaceted program**

Programmatic expansion aimed at addressing the needs of diverse communities

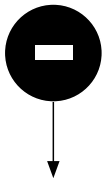
Social fragmentation and isolation



**Stimulate social interaction**

Transitional spaces activated as social gathering areas

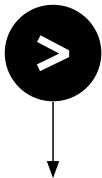
Lack of public space



**Local engagement**

Multifunctional spaces that invite personal use and interpretation

Inequality in access to knowledge and culture



**Accessible cultural participation**

Low threshold of functions, transparency and visibility



# CoLab

Collaborative Laboratory

## INITIATORS

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Comune di  
Milano



Gruppo  
Feltrinelli

## CLIENTS

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MINISTERO  
DELLA  
CULTURA



Microsoft

UniFor

**RED**  
Bistrot Libreria

## PARTNERSHIPS

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MILANO  
SCHOOL OF MANAGEMENT



BOOKCITY  
MILANO



UNIVERSITY OF MILAN  
BICOCCA



The client consists of different layers, firstly the building owner, his ambitions for the building determine which organizations are housed there. The stakeholders are the organizations concerned, they have specific wishes for their spaces. Finally the users of the building, these are the employees and the different communities that the stakeholders try to attract with their activities. They also have wishes related to the spaces in a modern library.

## Building owners

The Porta Volta headquarters comprises two building owners: the municipality owns the building housing the Museum of Resistance, while Finaval owns the two buildings that accommodate Microsoft House and the Fondazione Feltrinelli. Finaval Spa is a firm engaged in the real estate industry that directly develops and improves the assets of the Feltrinelli Family. The Feltrinelli Group thus retains ultimate authority over the building, as it oversees all initiatives associated with Fondazione Feltrinelli.

The Feltrinelli Group was established by Giangiacomo Feltrinelli and subsequently succeeded by his son Carlo following his demise. Carlo had a significant role in the establishment of the Fondazione Feltrinelli and, as the head of the Feltrinelli Group, will also participate in the new cultural house. Their projects and ambitions are expanding and are manifested in diverse cultural domains, including publishing, operating bookstores, managing a film channel, and producing a podcast. Conversely, they participate in educational institutions, including school activities that emphasize the promotion of reading, creativity, and technology use. They collaborate with Scuola Holden, the School of Writing, and provide various educational programs. Their objective is to enhance the quality of living while also increasing community participation. Consolidating many groups into a single facility ensures the achievement of several ambitions and enhances opportunities for the public.

In addition, the Microsoft House technological center challenges education in the field of innovation and the Museum of Resistance informs the public about the history of Italy and tries to stimulate a debate functional to building an aware citizenship, fundamental for the national identity and the democratic republic.

However, Microsoft House also provides space for Unifor, a firm specializing in the development and implementation of design offices and customized solutions for contemporary office interior design. A design agency does not align with the aspirations for a creative, educational, and innovative environment. A maker space, the FabLab, will be established instead. This public digital workshop encourages everyone to create independently utilizing various techniques, facilitating the exchange of concepts and ideas. This organization is already situated in multiple major cities and frequently collaborates with libraries.

A future proof design needs to be flexible in case of firms or institutions that move out of the facility and to accommodate new organizations, the spaces must be designed for ease of transition.

The ambitions of the Gruppo Feltrinelli are in line with the municipal vision to promote the quality of life, both by creating activities for communities and in the field of sustainability. Starting points that are in line with group lense 'materials' are therefore also the harvesting of materials locally, wood from the Lombardy region, but also urban mining of the old Feltrinelli building, such as windows and concrete. On a building scale, these materials can be refined and used for the interior, such as a terrazzo floor that refers to the old craftsmanship of the entrance halls in Milan. Finally, on a detailed scale, a demountable construction will be used to meet a future-proof building.



**1954**

foundend in Milan



*la*Feltrinelli



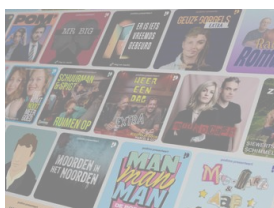
**Late 1950s**

First bookstore



**20**

Carlo F



**2013**

Television Channel



*Feltrinelli*  
Audio Podcast



**2013**

videos and audiopodcasts



**20**

collection c

uppo  
trinelli



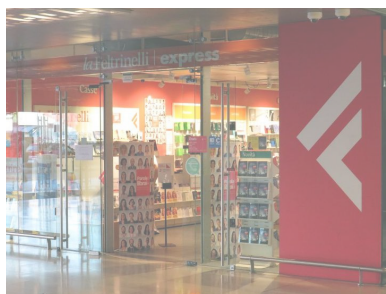
05

eltrinelli



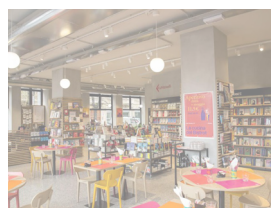
16

of Feltrinelli



2010

Bookstore at stations



2012

Bistrot



2016

Feltrinelli Real Cinema



2019

School of writing

## INITIATORS

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## CLIENTS

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## PARTNERSHIPS

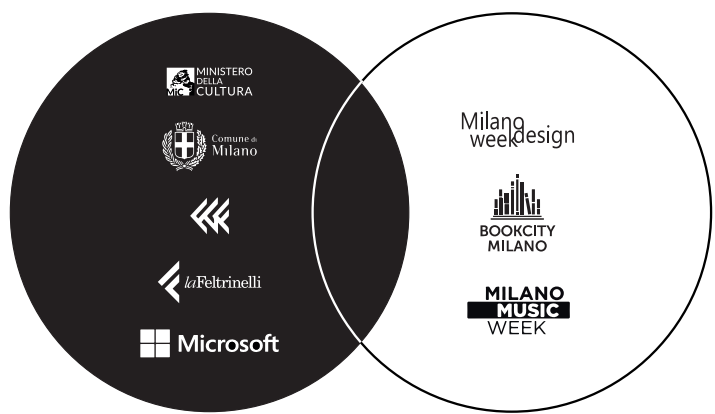
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The organizations in the cultural house, including the Museum of Resistance, the Fondazione Feltrinelli, the Microsoft House and the FabLab, have different requirements for their spaces, see figure 15. The organizations comprise ‘private’ areas, staff-only spaces, or those accessible solely by invitation, as well as those having a public orientation. Furthermore, they all possess additional spaces featuring a diverse array of programs, including talks and educational workshops, which can be ‘shared’ among the stakeholders.

It is essential for organizations to possess diverse and distinct places for these various operations. In addition to enclosed areas, sufficient public multifunctional spaces are necessary for communal gatherings and hosting cultural events by prospective collaborators, as illustrated in the figure 16. It is essential for both public-oriented places and ‘shared’ area to be easily accessible to the public.

The opening and closing times of the various organizations must also be considered. The public-oriented rooms, including the museum, technical center, and makerspace, will have different operating hours than the offices, reading room, archive, restaurant, and bookshop. Utilizing various entrances and access points, they will have no difficulties in this regard.





**Offices**  
**Documentation Center**  
 - Workstations for employees

**Offices**  
 - Available for rent  
 - Workstations

**Offices**  
 - Own entrance

**Reception**  
**Bookshop**  
 - Open for all  
**Exhibition Spaces**  
 - Exposable to sunlight  
 - Paid entrance

**Reception**  
 - In central hall  
**Readingroom**  
 - For 50 people  
 - Reservation only  
 - Quiet space  
**Archive**  
 - No direct sunlight  
 - Guided access only

**Technolgy Center**  
 - Quiet space  
 - Guided entrance  
**Experimental Hub**  
**Videoroom**  
 - Open for all  
 - Social space

**Workshop area**  
**Open access tools area**  
**Electronics area**  
 - Open for all  
 - Social space  
**Limited access tools area**  
 - Guided entrance

**Multifunctional space**  
 - Workshops/talks/screenings  
 - Host 10-50 people

**Event space**  
 - Workshops/talks  
 - Host 20 people  
**Multifunctional space**  
 - Screenings/Conferences  
 - Host 100-150 people  
**Bookstore & café**  
 - Own entrance

**Auditorium**  
 - Talks/screenings  
 - Host 80-100 people  
**Classroom**  
 - Smartboard  
 - 10-30 people

**Event space**  
 - Talks/screenings  
 - Host 10-30 people  
**Classroom**  
 - Smartboard  
 - 10-30 people



## Users

The users play an important role in the development of the modern library. Users significantly contribute to the evolution of contemporary libraries. The activities conducted within the building are closely aligned with the users' interests. Contemporary user interests extend beyond traditional book learning; library catalogs now encompass films, video games, and 3D printers. Additionally, these facilities offer entertainment, relaxation areas, and opportunities for skill development.

The contemporary library, functioning as a cultural center, encompasses the Fondazione Feltrinelli, Microsoft House, the Museum of Resistance, and FabLab, attracting diverse populations. Consolidating these diverse organizations inside a single center fosters enhanced chances for skill development, knowledge expansion, and experiential learning.

To create a 'third place', like the library, which promotes social cohesiveness by providing an accessible, informal, and safe space for community-building activities. In addition to cultural activities, should there be spaces that are related to study (work) spaces, as hybrid working will become a permanent feature in the future, and meeting spaces, that contributes to the quality in life in cities.

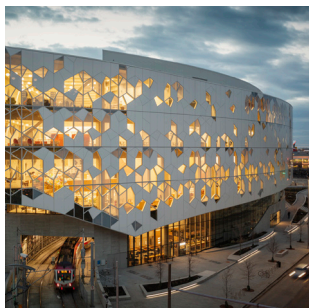
Considering the various communities, as seen in figure 18 the contemporary library and cultural house will provide quiet study zones, adaptable study spaces, lounge areas in a serene atmosphere, and accommodation possibilities within the entrance hall.

Moreover, it is essential for people to navigate the cultural centre effortlessly and to orient themselves easily.

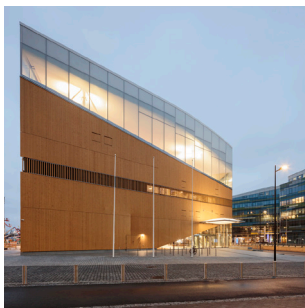
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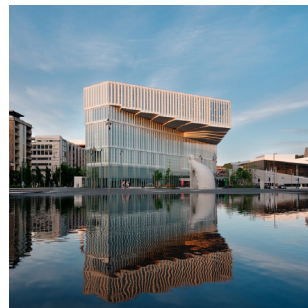
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Calgary Central Library  
Calgary, Canada  
2018



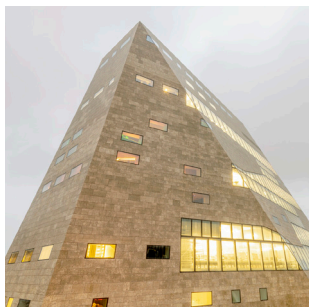
Oodi Central Library  
Helsingfors, Finland  
2018



Deichman Library  
Sentrum, Norway  
2020

## Libraries with Additional Program

### Multiple Organizations



Forum  
Groningen, NL  
2019



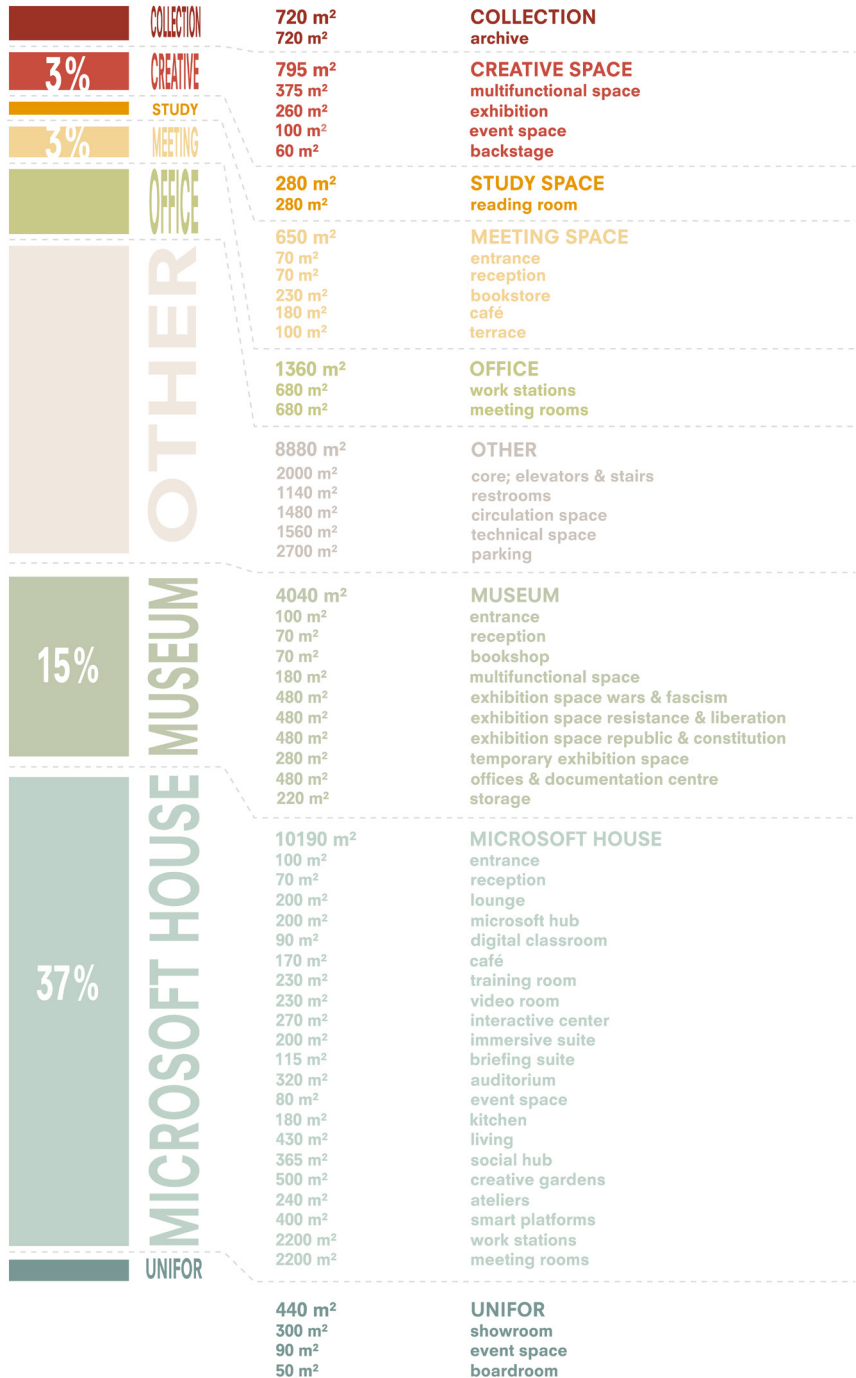
Culture House Eemhuis  
Amersfoort, NL  
2014



Cultural Center Rozet  
Arnhem, NL  
2013



## Gross Floor Area: 24,700 m<sup>2</sup>

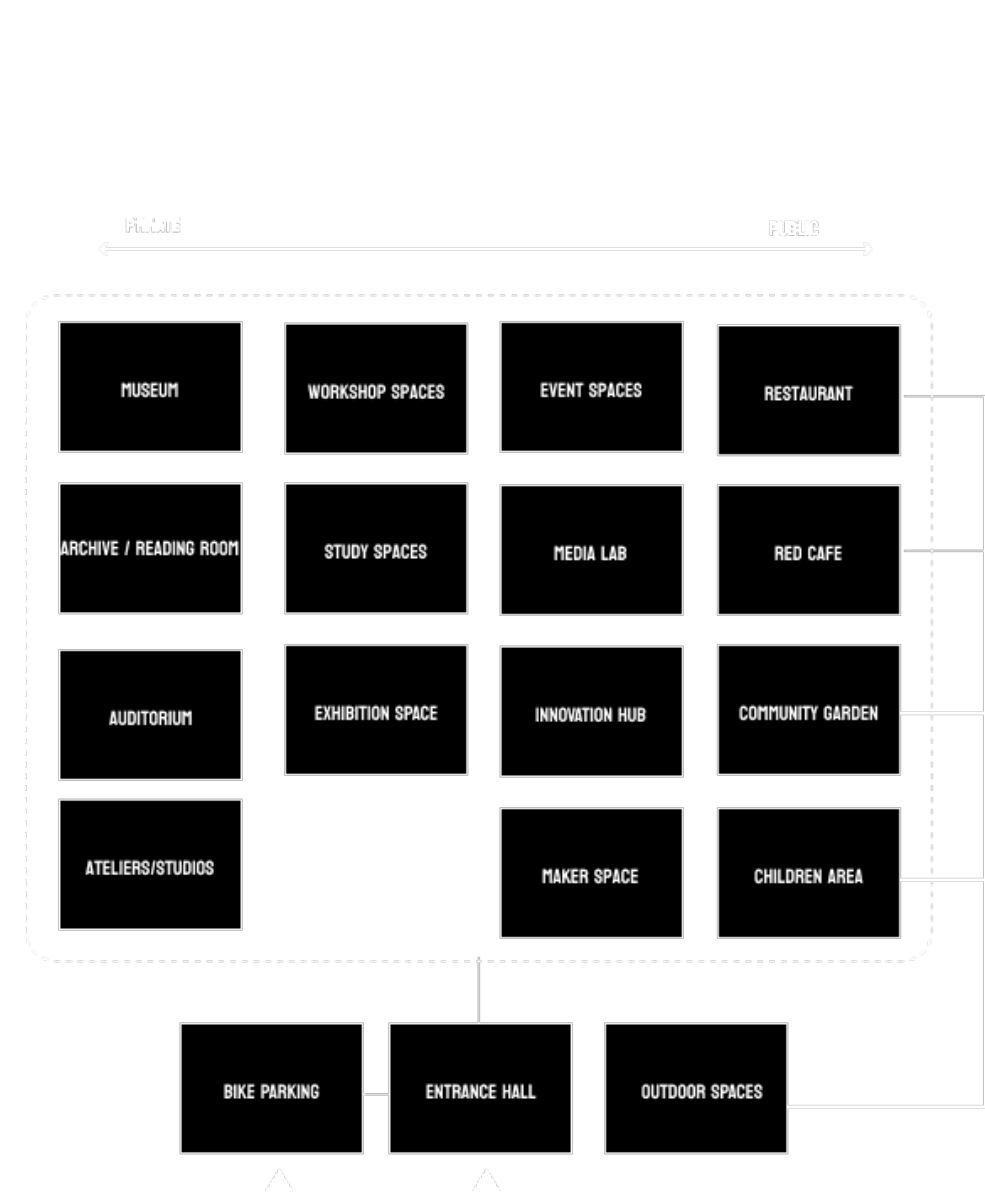


Program bars (detailed) - current situation

Gross Floor Area: 26,300 m<sup>2</sup>

|     |                 |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                       |                                                                                                                                                                                                                                |
|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | COLLECTION      | 720 m <sup>2</sup><br>720 m <sup>2</sup>                                                                                                                                                                                                                                                                                                | 2,7%<br>2,7%                                                                                                          | COLLECTION<br>archive                                                                                                                                                                                                          |
| 8%  | CREATIVE        | 2200 m <sup>2</sup><br>180 m <sup>2</sup><br>375 m <sup>2</sup><br>60 m <sup>2</sup><br>320 m <sup>2</sup><br>260 m <sup>2</sup><br>100 m <sup>2</sup><br>90 m <sup>2</sup><br>230 m <sup>2</sup><br>270 m <sup>2</sup><br>200 m <sup>2</sup><br>115 m <sup>2</sup>                                                                     | 8,4%<br>0,7%<br>1,4%<br>0,2%<br>1,2%<br>1,0%<br>0,4%<br>0,3%<br>0,9%<br>1,0%<br>0,8%<br>0,4%                          | CREATIVE SPACE<br>multifunctional space (s)<br>multifunctional space (m)<br>backstage<br>auditorium<br>exhibition<br>event space<br>digital classroom<br>video room<br>interactive center<br>immersive suite<br>briefing suite |
| 4%  | STUDY           |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                       |                                                                                                                                                                                                                                |
| 11% | MEETING         |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                       |                                                                                                                                                                                                                                |
|     | OFFICE          | 960 m <sup>2</sup><br>280 m <sup>2</sup><br>500 m <sup>2</sup><br>180 m <sup>2</sup>                                                                                                                                                                                                                                                    | 3,6%<br>1,1%<br>1,9%<br>0,7%                                                                                          | STUDY SPACE<br>reading room<br>study spaces<br>meeting rooms                                                                                                                                                                   |
|     | OTHER           | 2780 m <sup>2</sup><br>500 m <sup>2</sup><br>100 m <sup>2</sup><br>230 m <sup>2</sup><br>100 m <sup>2</sup><br>100 m <sup>2</sup><br>350 m <sup>2</sup><br>200 m <sup>2</sup><br>200 m <sup>2</sup><br>1000 m <sup>2</sup>                                                                                                              | 10,8%<br>1,9%<br>0,4%<br>0,9%<br>0,4%<br>0,4%<br>1,3%<br>0,8%<br>0,8%<br>3,8%                                         | MEETING SPACE<br>entrance culture house<br>reception feltrinelli<br>bookstore feltrinelli<br>reception museum<br>bookshop museum<br>café<br>terrace<br>microsoft hub<br>lounge / living room                                   |
|     |                 | 680 m <sup>2</sup><br>680 m <sup>2</sup>                                                                                                                                                                                                                                                                                                | 2,6%<br>2,6%                                                                                                          | OFFICE<br>work stations                                                                                                                                                                                                        |
| 9%  | MUSEUM          | 8880 m <sup>2</sup><br>2000 m <sup>2</sup><br>1140 m <sup>2</sup><br>1480 m <sup>2</sup><br>1560 m <sup>2</sup><br>2700 m <sup>2</sup>                                                                                                                                                                                                  | 33,7%<br>7,6%<br>4,3%<br>5,6%<br>5,9%<br>10,2%                                                                        | OTHER<br>core; elevators & stairs<br>restrooms<br>circulation space<br>technical space<br>parking                                                                                                                              |
|     |                 | 2420 m <sup>2</sup><br>480 m <sup>2</sup><br>480 m <sup>2</sup><br>480 m <sup>2</sup><br>280 m <sup>2</sup><br>480 m <sup>2</sup><br>220 m <sup>2</sup>                                                                                                                                                                                 | 9,2%<br>1,8%<br>1,8%<br>1,8%<br>1,1%<br>1,8%<br>0,8%                                                                  | MUSEUM<br>exhibition space wars & fascism<br>exhibition space resistance & liberation<br>exhibition space republic & constitution<br>temporary space<br>offices & documentation centre<br>storage                              |
| 28% | MICROSOFT HOUSE | 7265 m <sup>2</sup><br>100 m <sup>2</sup><br>70 m <sup>2</sup><br>200 m <sup>2</sup><br>170 m <sup>2</sup><br>230 m <sup>2</sup><br>80 m <sup>2</sup><br>180 m <sup>2</sup><br>430 m <sup>2</sup><br>365 m <sup>2</sup><br>500 m <sup>2</sup><br>240 m <sup>2</sup><br>400 m <sup>2</sup><br>2200 m <sup>2</sup><br>2200 m <sup>2</sup> | 27,6%<br>0,4%<br>0,3%<br>0,8%<br>0,7%<br>0,9%<br>0,3%<br>0,7%<br>1,6%<br>1,4%<br>1,5%<br>0,9%<br>1,5%<br>8,4%<br>8,4% | MICROSOFT HOUSE<br>entrance<br>reception<br>lounge<br>café<br>training room<br>event space<br>kitchen<br>living<br>social hub<br>creative gardens<br>ateliers<br>smart platforms<br>work stations<br>meeting rooms             |
|     | FAB LAB         | 440 m <sup>2</sup><br>440 m <sup>2</sup>                                                                                                                                                                                                                                                                                                | 1,7%<br>1,7%                                                                                                          | FAB LAB<br>makerspace                                                                                                                                                                                                          |

Program bars (detailed) - new situation



Relation scheme new situation

## Relation scheme

Contemporary libraries and those accommodating various organizations provide transitional zones that connect programs, create meeting areas in alternative places, or designate distinct environments. Consequently, these transitional spaces are associated with the collection, study space, meeting space or with a space with cultural activities. An example of this is an entrance hall including a staircase that serves as an event location, with the staircase utilized as a stage.

The independent programs of various organizations exhibit little contact, which is also absent among the organizations themselves. Consequently, there are scarcely any transitional areas. By bringing together the organizations and assigned specific areas for their diverse activities, a central transitional zone is established that connects all of the different functions as seen in the relation scheme in figure 26. This transitional zone functions as a common thread through the building.

The visual relation between enclosed spaces and the transitional area is crucial for engaging communities in various initiatives. The catalog presents an overview of possible physical transitions between spaces, dictated by the transparency of these transitions, which is influenced by the density, openness, or materiality of the division. Physical transitions may also occur through visual axes, established by variations in height or distances between certain spaces.

Furthermore, these visual relationships between the closed and central spaces make it easier for the visitor to find their way and orient themselves within the building. Later in the design process, these physical transitions will be further detailed.





COLLECTION



EVENT HALL



MAKERSPACE



MEDIA SPACES

# INNOVATION LEAP EXPERIMENT COLLABORATION





MUSEUM



RESEARCH

INNOVATION HUB

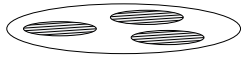
# LEARNING DEBATE COLLABORATE CREATION



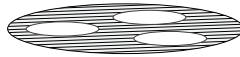
ART STUDIOS



COMMUNITY GARDENS



**INTEGRATING INTO SPACE**

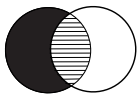


**ENCLOSURE OF SPACES**

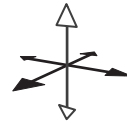


**CONNECTING SPACE**

Overview of transitional spaces



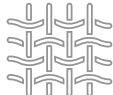
**TRANSPARENCY**



**VISUAL AXIS**



**DENSITY VS OPENNESS**



**MATERIALIZATION**



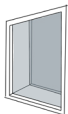
**LEVELS**



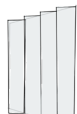
**DISTANCE**



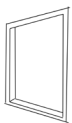
See-through divider



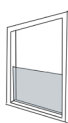
Exhibition window



Translucent window



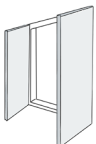
Openings in wall



Balustrade



See-through curtains



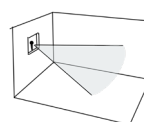
Dividers



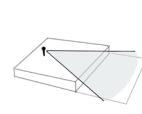
Partial separation



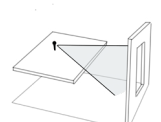
Three part facade division



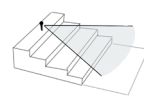
'Square' window



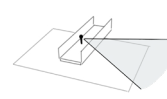
Platform



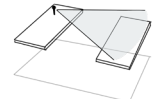
Void



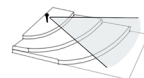
Stairs



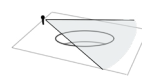
Elevated walkways



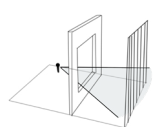
Void



Terraces



Lowered floor



Path

Overview of physical transitions

## Key space

In the architectural design of the the Cultural House, the core space, the so-called "transitional space", is of crucial importance. This space is designed to combine different functions and to form a dynamic meeting place for the community. The transitional space includes a generous entrance hall, study areas, a comfortable lounge, a multifunctional space and an exhibition area. By using inviting, homely elements, such as comfortable furniture and cozy seating areas, an atmosphere is created that welcomes people and encourages them to spend time here.

In order to realize such a place, specific design requirements were formulated that guide the architectural approach. These requirements can be divided into different categories.

### *Visual relation with the environment*

The design aims for a strong visual connection with the surrounding space. Large windows and transparency allow passers-by to see the interior, which promotes the interaction between the interior and exterior space.

### *Visual perception and comfort*

Warm colours and materials are used within the building to enhance the perception of warmth and comfort. Colour choices play an important role in promoting the thermal comfort of the visitors. Warm colours, combined with textured surfaces such as fabrics and rough materials (for example wood), contribute to a sense of security and comfort.

### *Natural elements*

Integration of natural elements is crucial. Light woods and large windows let natural light in, providing a relaxing ambiance. Filtered natural light and carefully selected interior materials enhance consumers' visual and physical experience.

### *Human scale*

Although the space is large and open, great care is taken to maintain the human scale. Large, open spaces are meaningfully divided and varied, so that the visitor does not feel overwhelmed. The use of repetition in certain architectural elements can also contribute to meeting the human scale.

The passageways are at least 1,5 meters wide, which ensures easy and accessible movement within the different sections of the transitional space.

### *Climate control*

The temperature in the building is kept between 16 and 20°C, while the humidity remains stable between 50 and 55%.





## SITE

The project is situated in the Porta Volta district, near the northern edge of Milan's city center, serving as a transitional area between the historical center and newly developing areas. It is situated in a residential area surrounded by various clusters, as shown in figure 33. Consequently, Porta Volta provides a traditional, tranquil neighborhood, strongly contrasting with the imposing buildings that prevail in the nearby district.

The clients of the cultural center seek an environment that aligns with their multi-activity programs; Porta Volta is an ideal site due to the diverse clusters in its region. The location is suitable to a remarkable structure that embodies both the area's rich history and its economic advancement, while also emphasizing the relevance of the clients of the project in Italy.

The project region is easily accessible by multiple transportation modes, see figure 36. It is easily accessible regionally, nationally and internationally, as the train network connects to various airports. The region may be accessed from multiple transport choices, making it beneficial for optimal wayfinding and orientation if the building is visible from these various perspectives.

The project site serves as a convergence point for multiple axes and provides a junction at the intersection of diverse urban structures. The axis from the west begins in a multicultural area featuring restaurants and retail. In the south, there is an axis that ends in the historic district of Porta Garibaldi and Brera. An axis originates from the east, extending through an area with many restaurants and shops, which continues to a newly developed business district with many amenities for the public.

In the architectural design of the the Cultural House, the core space, the so-called "transitional space", is of crucial importance. This space is designed to combine different functions and to form a dynamic meeting place for the community. The transitional space includes a generous entrance hall, study areas, a comfortable lounge, a multifunctional space and an exhibition area. By using inviting, homely elements, such as comfortable furniture and cozy seating areas, an atmosphere is created that welcomes people and encourages them to spend time here.





## 'Air and Climate Plan'

The Municipality of Milan is aiming for a 'Cooler Milan': a greener, cooler and more liveable city that adapts to climate change. For these ambitions they developed the 'Air and Climate Plan': in 2030 they want to strive for a Milan which will be a more sustainable and resilient city, with gentler mobility, fewer heat islands, better air quality and safer green spaces for the benefit of all. They want to improve air quality by reducing the number of cars on the road and by creating a more extensive, efficient metro network, with better distributed and integrated tram and bus lines. Stimulating slow mobility by creating new public spaces and pedestrian areas. Ultimately, by creating more green areas and natural surfaces that can absorb water and by planting more trees.

## Porta Nuova Project

In recent years, the Porta Nuova project in Milan has emerged as one of the most significant urban redevelopments in the historic center of a European city. The area is beneficial not only to the neighborhood but also to other regions and the entire city. This urban redevelopment has met the ambitions of the Municipality of Milan, and the outcomes indicate that this initiative is indeed successful.

In order to make the project part of the overall plan, it will be examined how the ambitions of the municipality are integrated into the existing part of the Porta Nova project and how the project site can connect to this.

### *Fuel vibrancy and attractiveness of the area*

By offering free cultural and educational events, such as the BAM (Biblioteca degli Albei di Milano) park, offering retail space and restaurants (figure 37) it contributes to the vibrancy and its ability to attract different types of users at different times of day.

The project can strive for an **active plinth** with public functions, such as shops, restaurants and additional amenities, to enhance street engagement and liveliness in the area and thereby improve the quality of life.

### *Promoting slow mobility*

To encourage slow mobility and to connect the areas, including reconnecting the Isola district with the city of Milan, pedestrian paths and bicycle paths have been included in the design.

The project site must incorporate both **pedestrian and bicycle paths** to connect with the Porta Nuova location. Additionally, with the future vision of reducing cars and improving air quality.

### *Creating a destination*

Public spaces have been established to enhance urban living quality, fostering social vibrancy and supporting cultural initiatives, thereby transforming Porta Nuova into a real "destination."

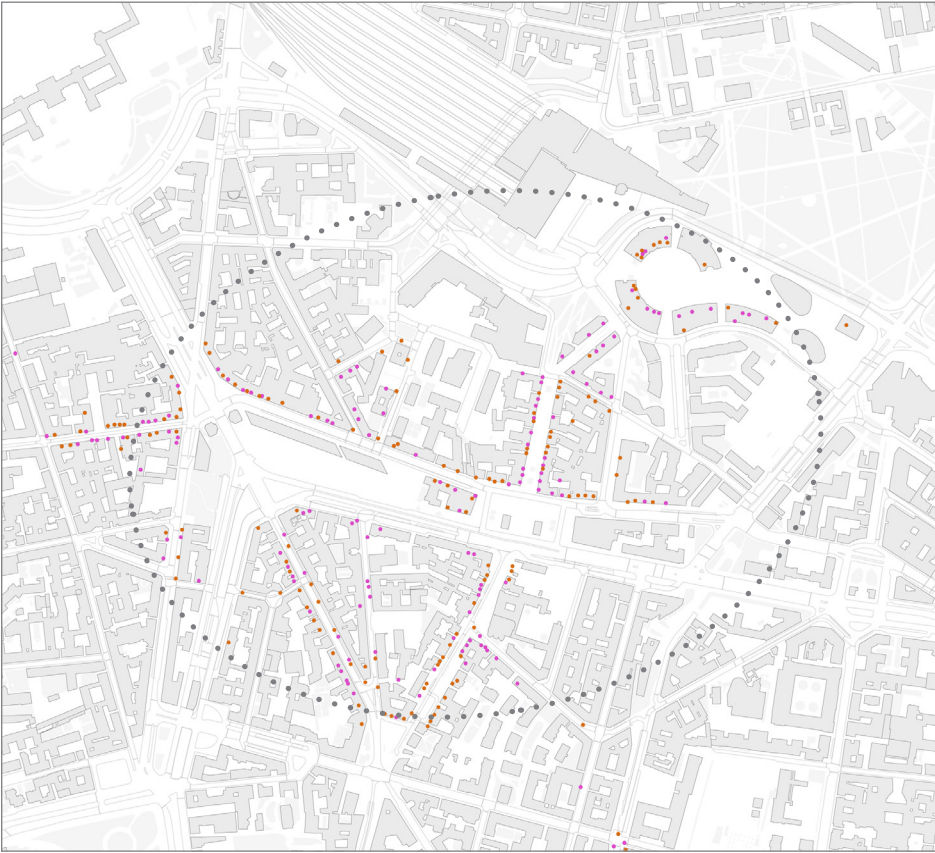
Due to the limitation of public spaces in Milan, the project site is ideally suited for the creation of new **public space** that can support the cultural center's program.

### *Including green areas*

The establishment of the BAM park and the development of other areas have enhanced the region's biodiversity, thereby improving air quality and mitigating the urban heat effect.

Incorporating additional green spaces and planting trees in the project site reconnects the areas through a **green infrastructure** and contributes to a 'Cooler Milan'.

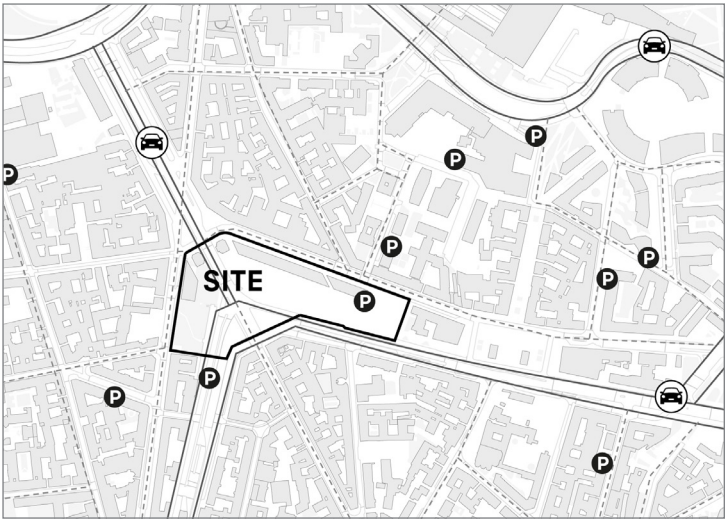




Shops and restaurants incorporated into the plinth

**LEGEND**

- Shops
- Restaurants

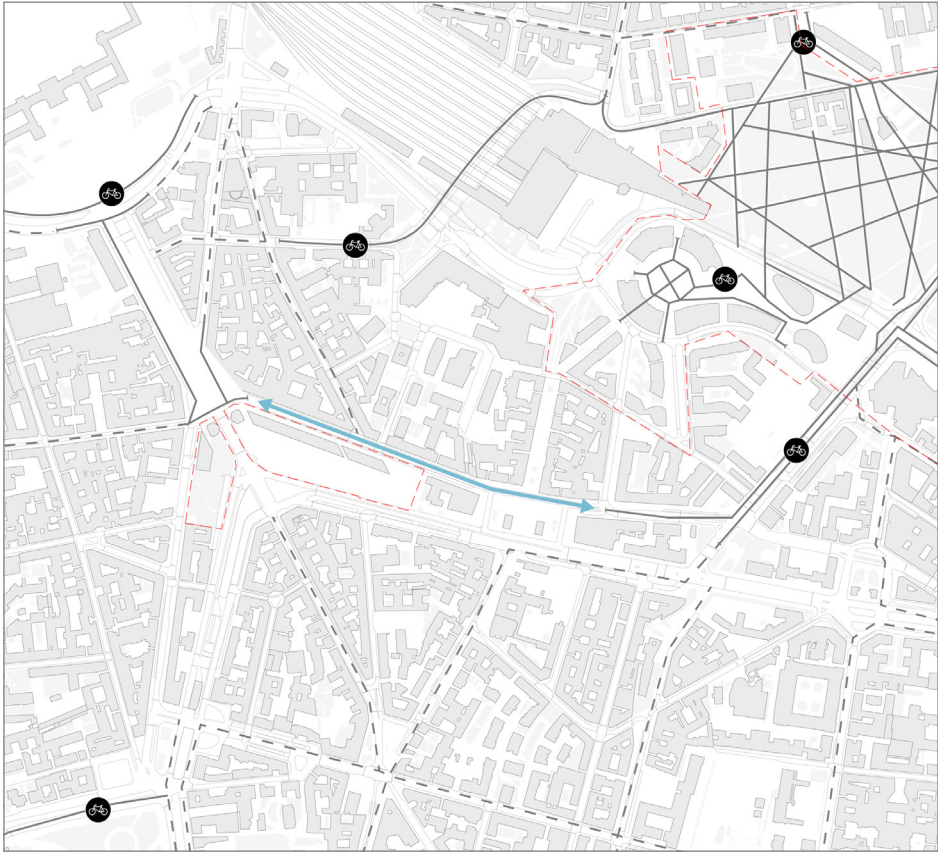


**LEGEND**

- Prominent roads
- Narrow roads
- P Parking

Part of urban route within different cultural clusters

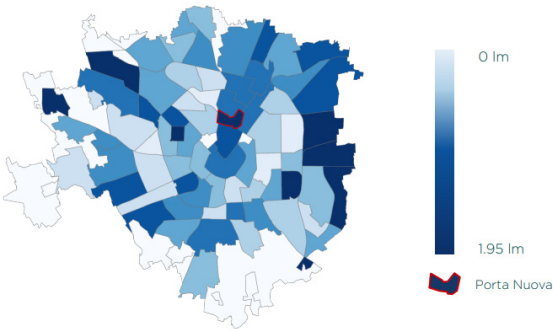




Bycycle paths in the neighbourhood

LEGEND

- Existing bicycle path
- - - Non existing bicycle path (safe enough for use)
- New bicycle path



Accessibility cycling (km of bicycle path per person)



Residential areas

**LEGEND**

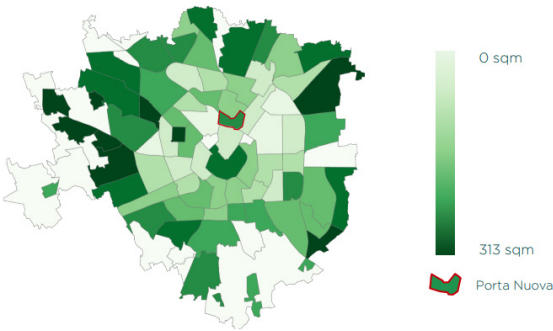
● **Residential**



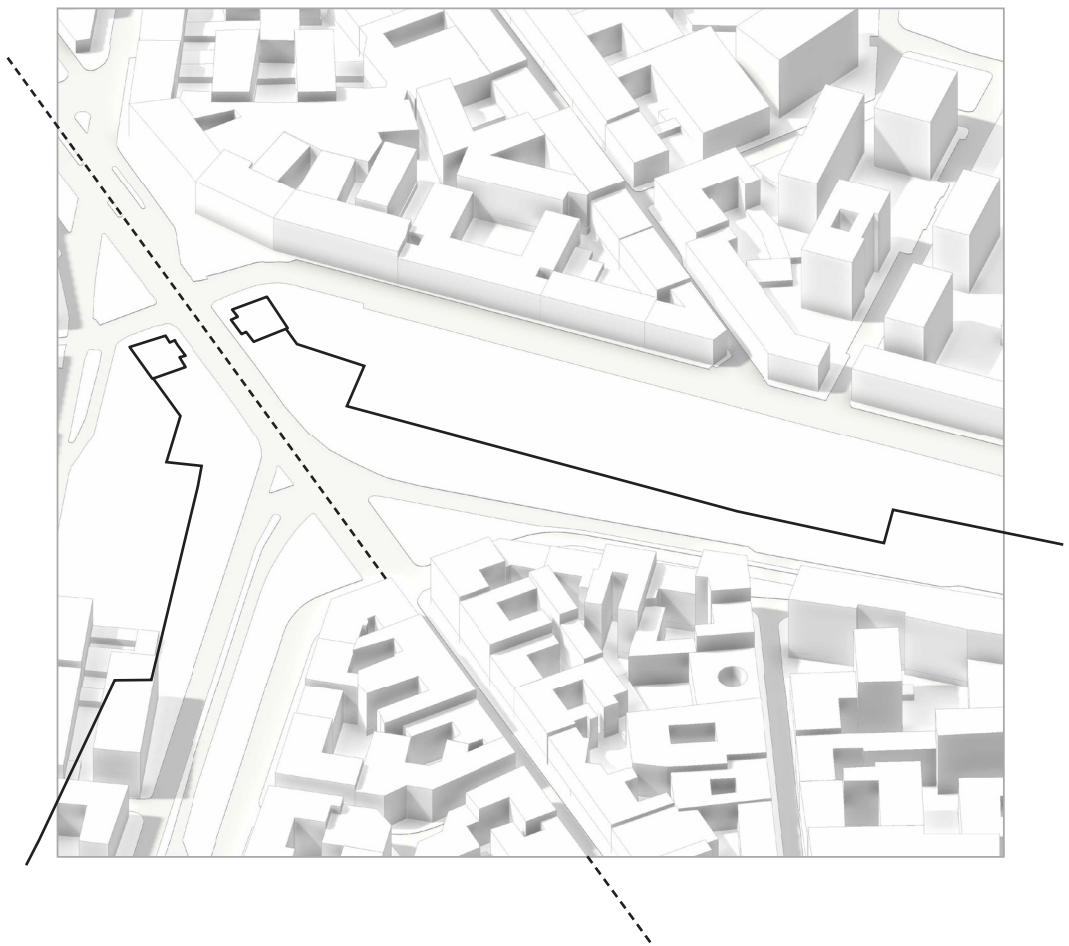
Green areas as part of the green infrastructure in the neighbourhood

LEGEND

● Green areas (public)



Biodiversity (sqm of green areas per person)



Site is located on the site of the old walls and contains a strong urban axis



## History

The urban layout of Porta Volta originated in the course of the Mura Spagnole, the historic 15th-century city walls that represented the final phase of a succession of fortifications. Following the bastion's opening in the late 19th century, Via Alessandro Volta established the foundation for the city's expansion outside the ancient walls, serving as a new, significant urban axis connecting the historical center with Cimitero Monumentale. Milan's sightlines are key to its urban planning, highlighting important points and routes.

Elevated walkways covered with vegetation were situated behind the bastions. During the Second World War, the area was destroyed and subsequently utilized as wasteland. Herzog & de Meuron's design prominently refers to the medieval walls and their green aesthetic within the urban plan.

The site features the Lea Garofalo Community Garden, which is bordered by an old fence that also refers to a part of Milan's historical history. A contribution to Lea Garofalo's passing and her story on the violence towards women and girls.

### *Preservation historical elements*

Historical elements from the Municipality of Milan must be treated with respect. This pertains to the remnants of the Spanish Wall, the Bastions, and the former border of the Community Garden.

### *Prominent reference to spatial planning*

Prominent reference to spatial planning

For the urban organization of the new project, the reference to the historical walls will be preserved and the prominent urban axis from the old historical center to Cimitero Monumentale will also be preserved.

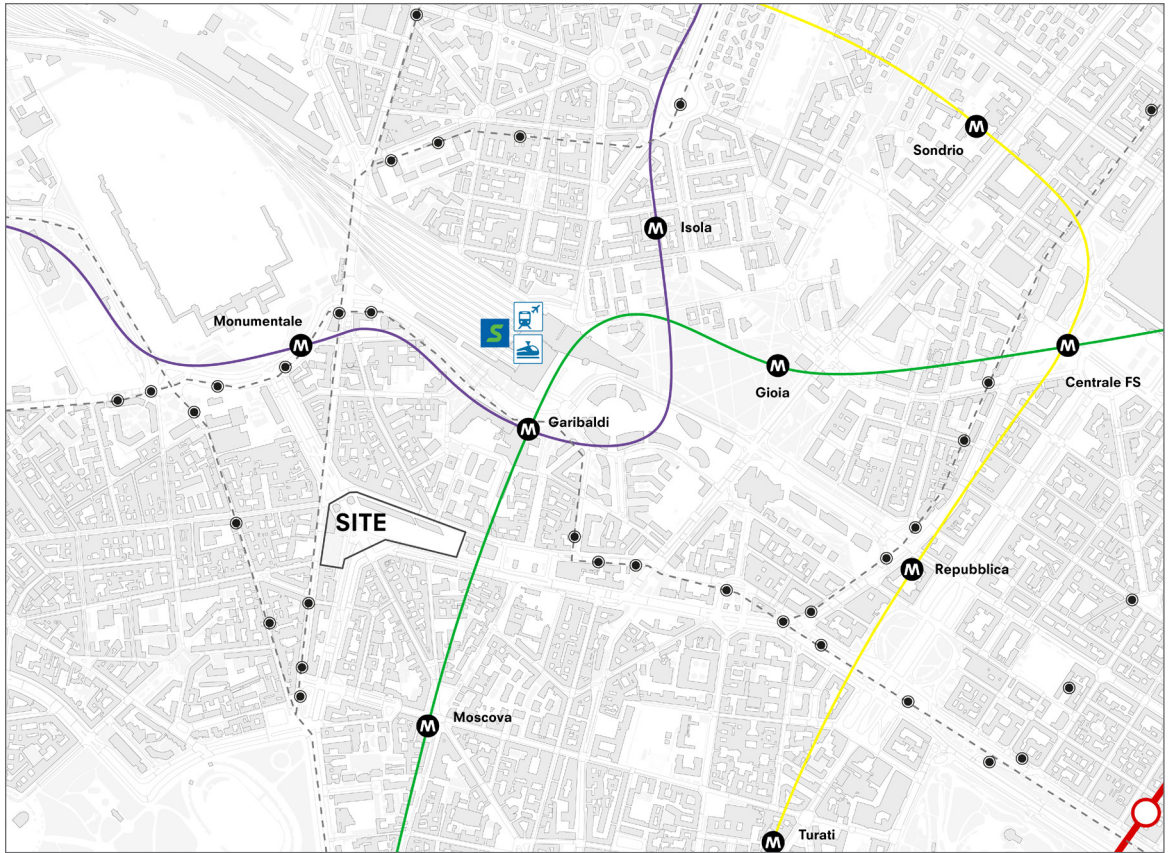
Green slopes - Lilavati Lalbhai Library (2017)

Elevated walkways - The Krook (2017)

Remains of Mura Spagnole

Gates of Porta Volta

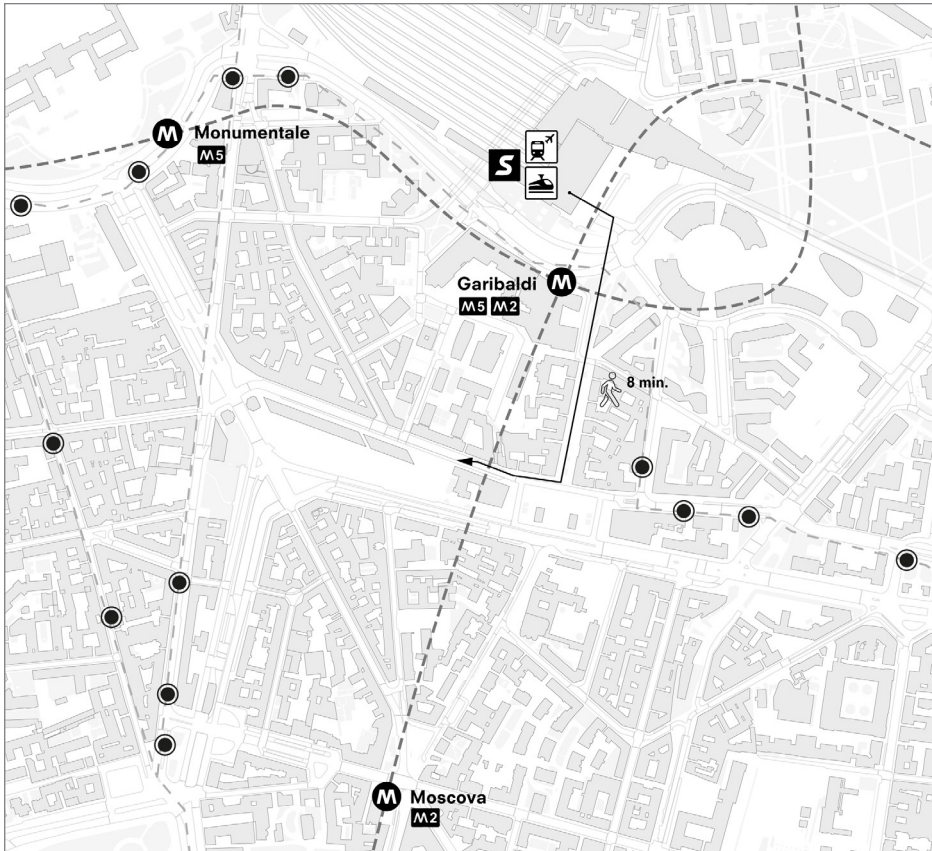




Possibilities for public transport in the area

## LEGEND

|  |                                                     |  |                                               |
|--|-----------------------------------------------------|--|-----------------------------------------------|
|  | Metro station                                       |  | Saronno-Milano Passante-Lodi                  |
|  | Tram stop                                           |  | Saronno-Milano Bovisa-MI<br>Cadorna           |
|  | Train service to airport                            |  | Camnago Lentate-Milano<br>Bovisa-MI Cadorna   |
|  | HighSpeed and Long<br>Distance trains               |  | Varese-Milano Passante-<br>Treviglio          |
|  | Suburban lines                                      |  | Novara-Milano Passante-<br>Treviglio          |
|  | Assago/P.za Abbiategrasso -<br>Cologno Nord/Gessate |  | Lecco-Molteni-MI P.Garibaldi                  |
|  | Comasina - San Donato                               |  | Lecco-Carnate-MI P.Garibaldi                  |
|  | Bignami - San Siro Stadio                           |  | Chiasso-Como S.Giovanni-MI<br>P.Garibaldi-Rho |
|  |                                                     |  | Melegnano-Milano Passante-<br>Cormano         |
|  |                                                     |  | Pavia-Milano Passante-<br>Garbagnate Milanese |



Walking distance public transport

### LEGEND

-  **Metro station**
-  **Tram stop**
-  **Train service to airport**
-  **HighSpeed and Long Distance trains**
-  **Suburban lines**



**CONCEPT DESIGN**

**03**



CURRENT DESIGN PROBLEM

CLIENT



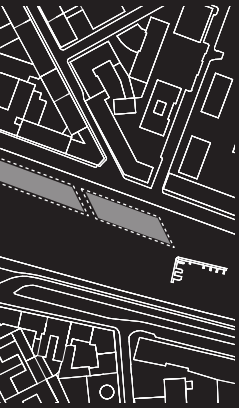
Prominently detached building

PROG



Isolated p

RAM

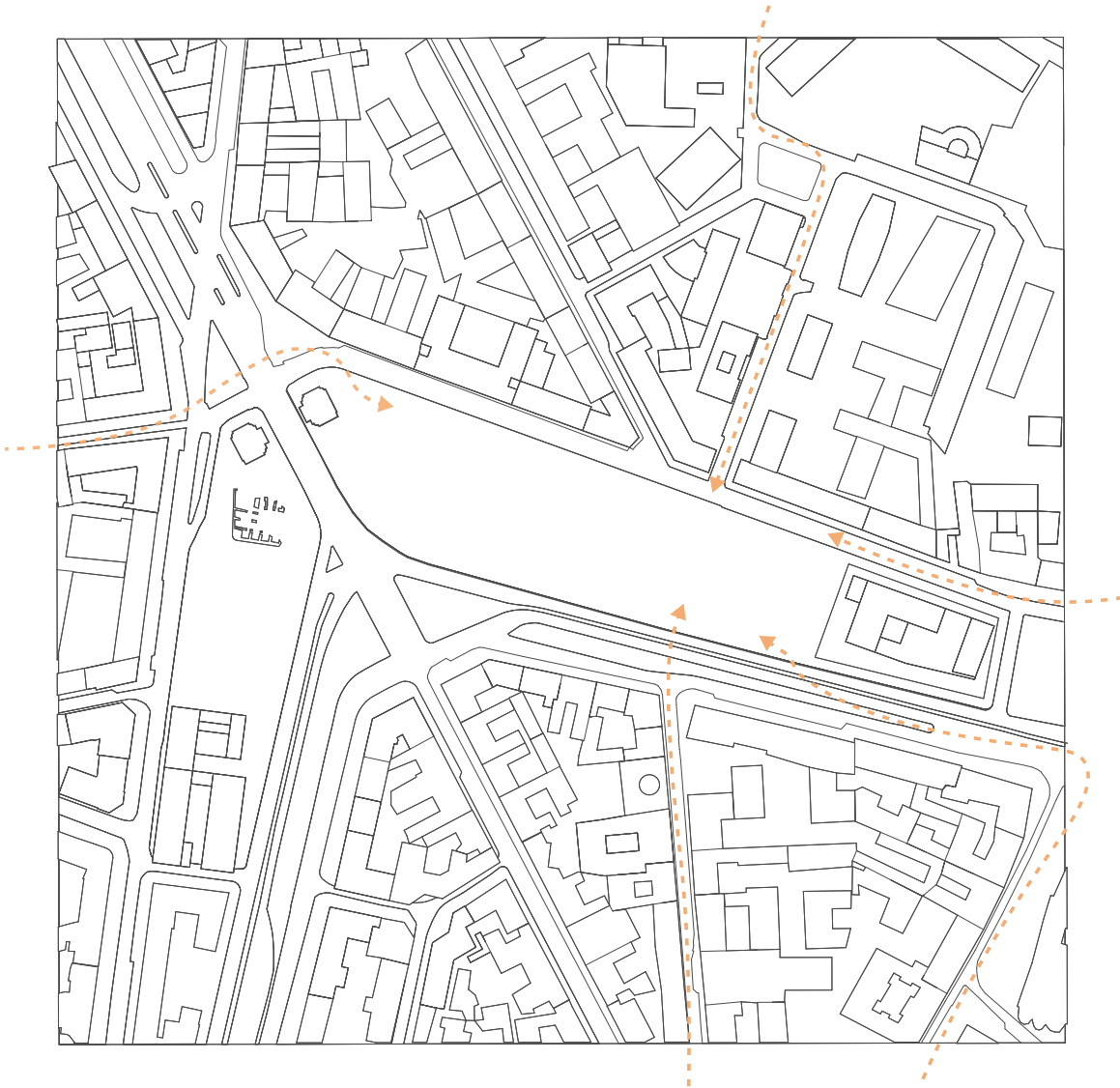


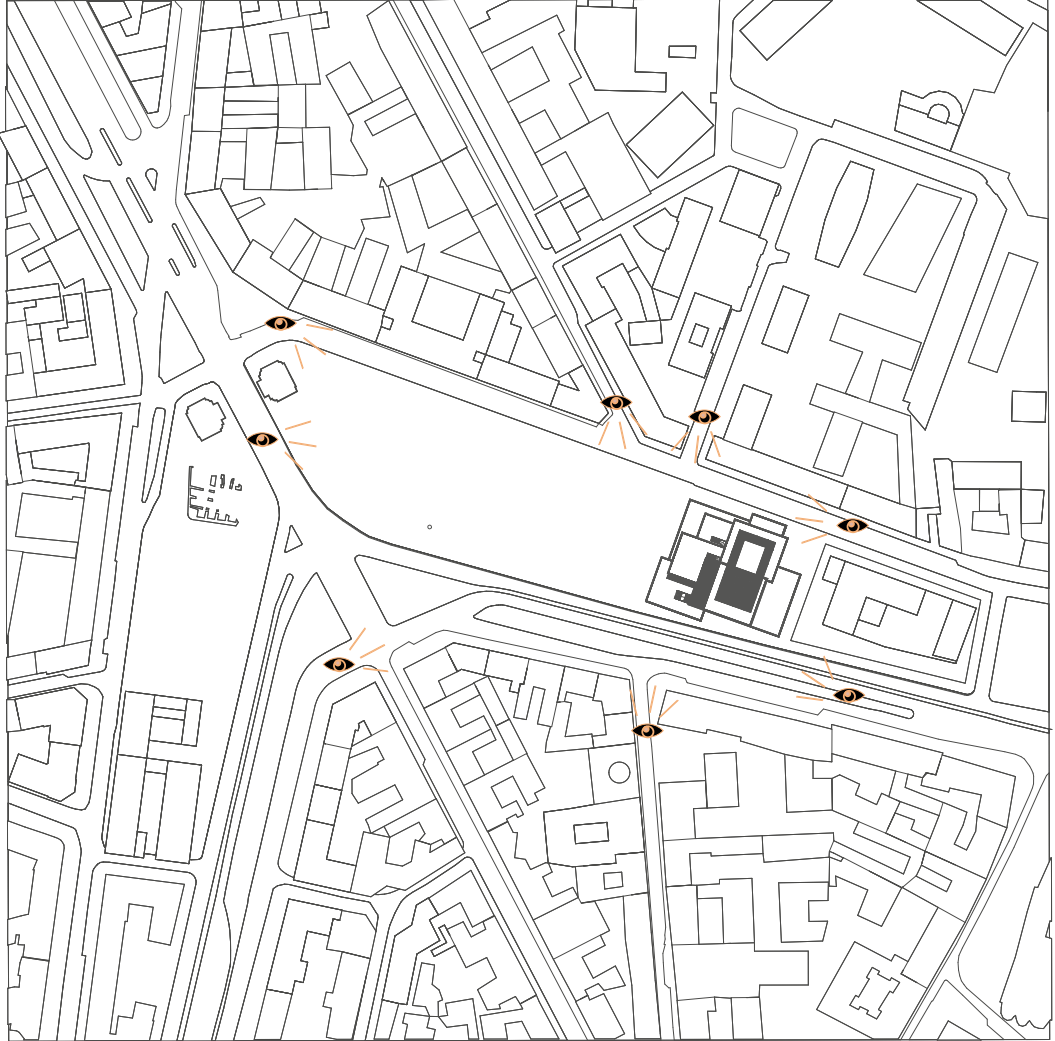
program

SITE



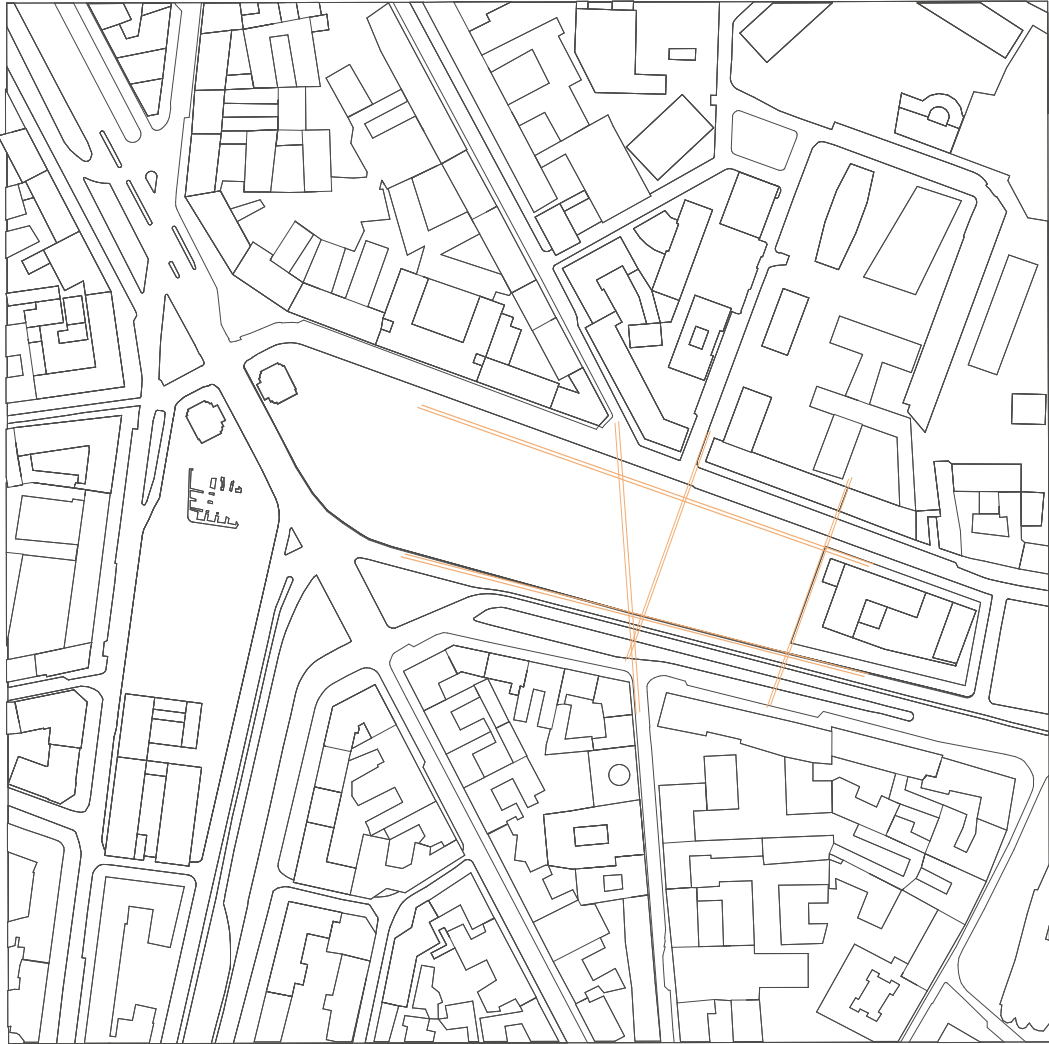
Urban division

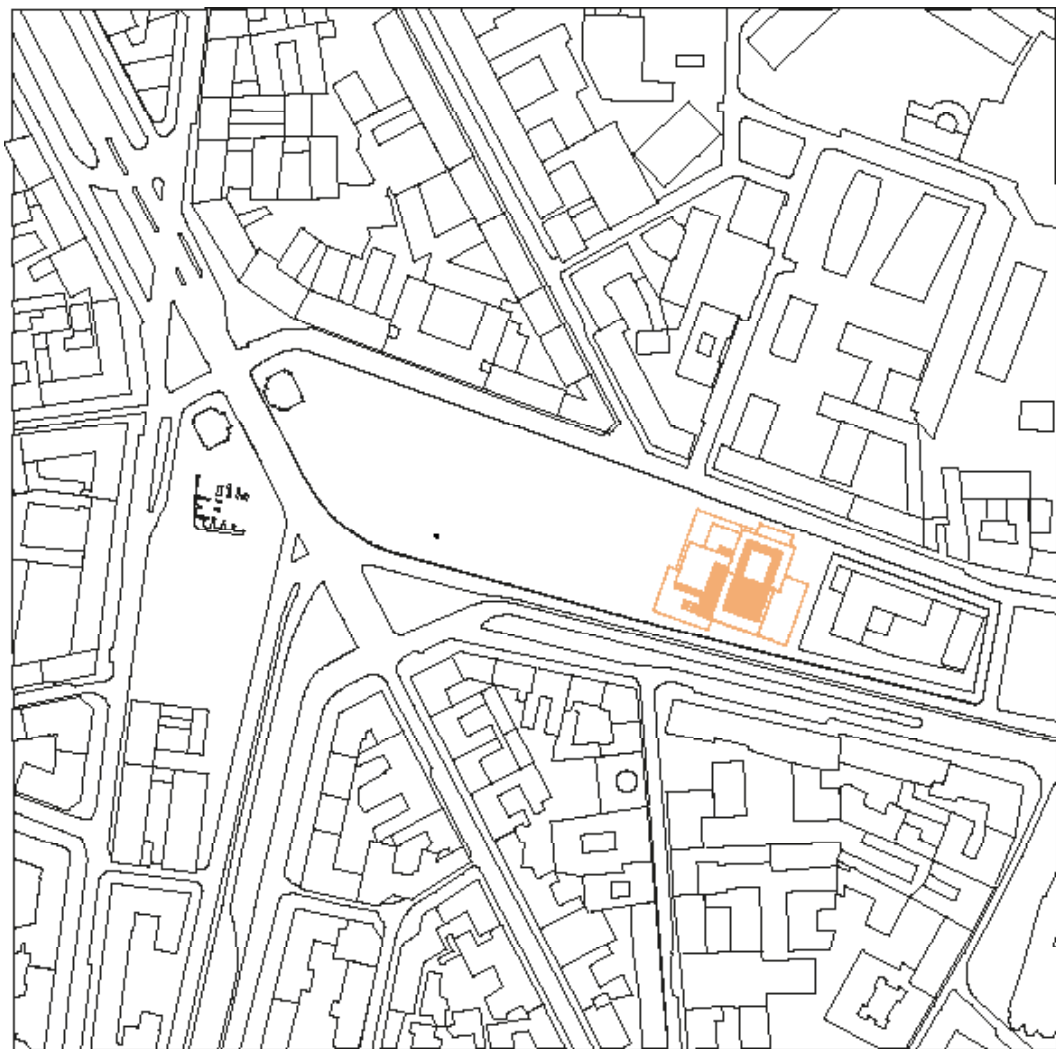




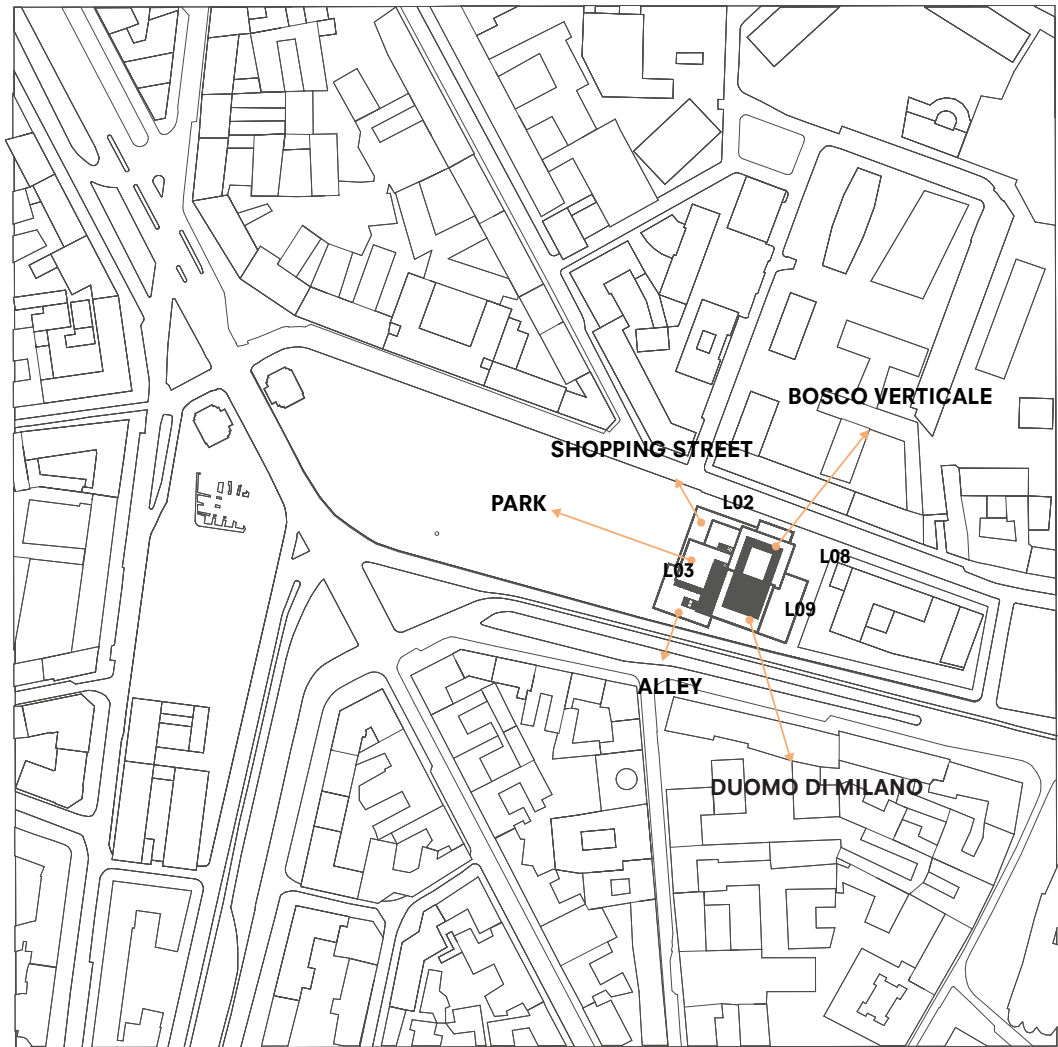


**CONTEXT URBAN CONFIGURATION  
& BUILDING VOLUME**

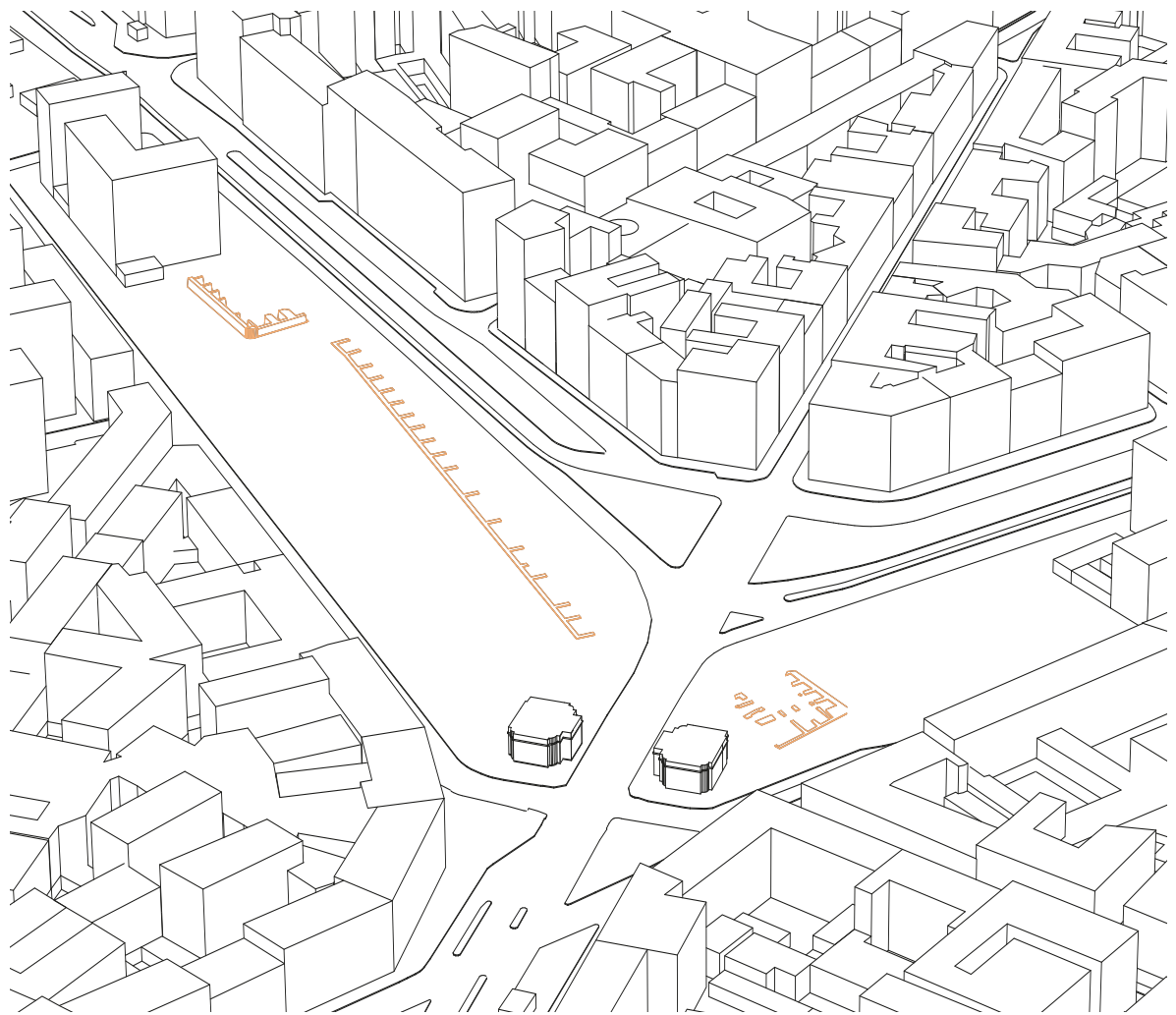


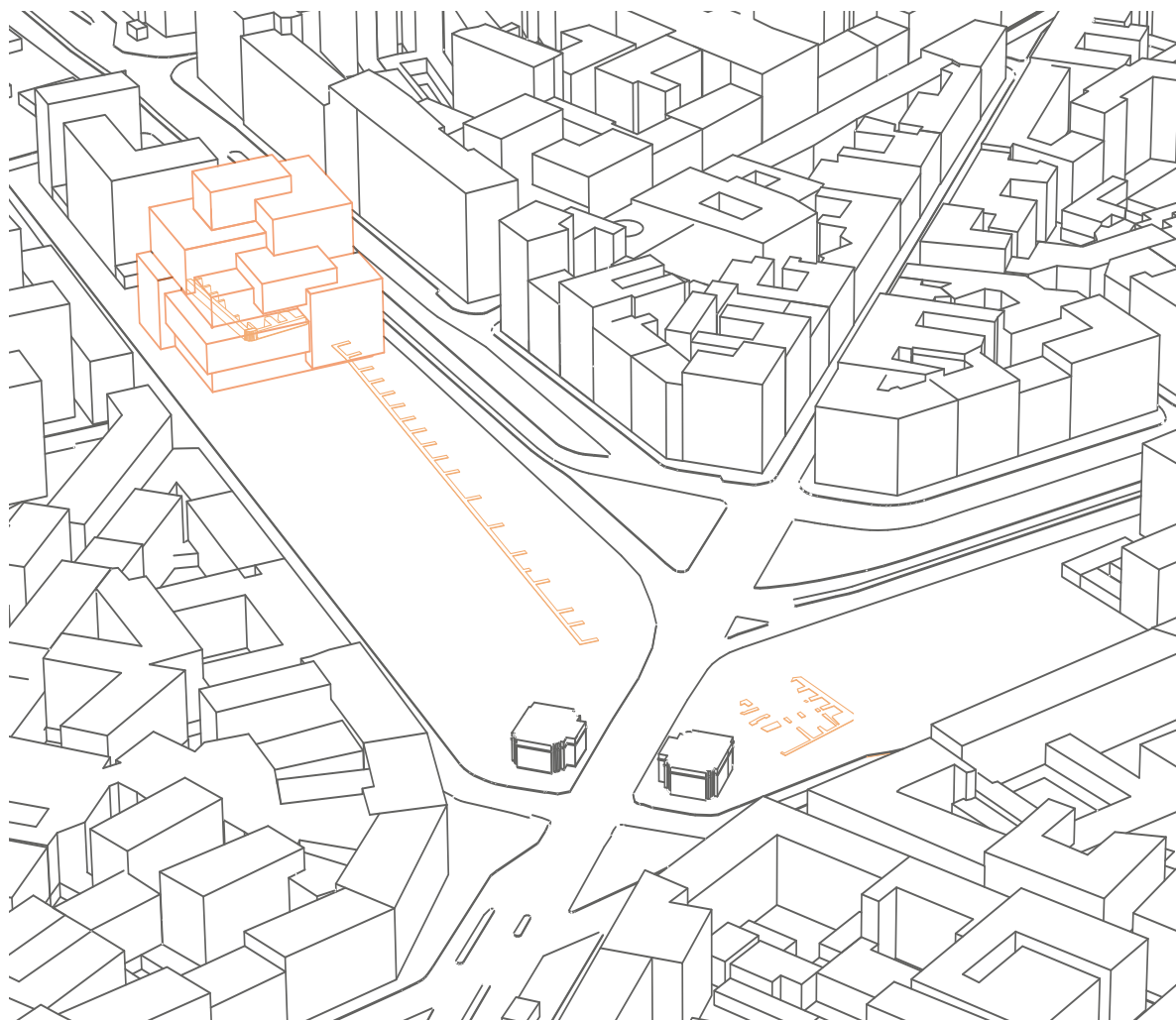


CONTEXT VIEW POINTS

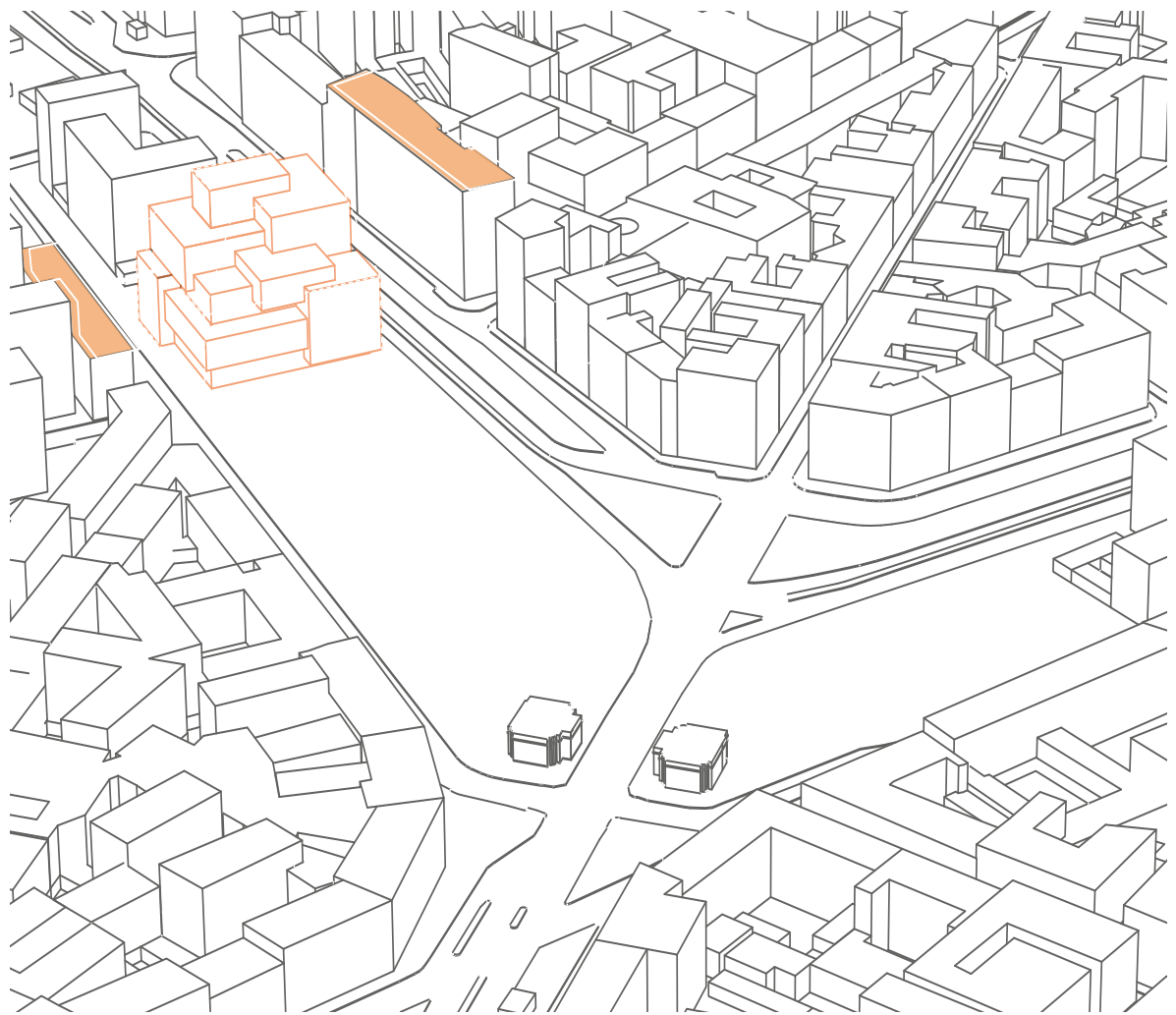


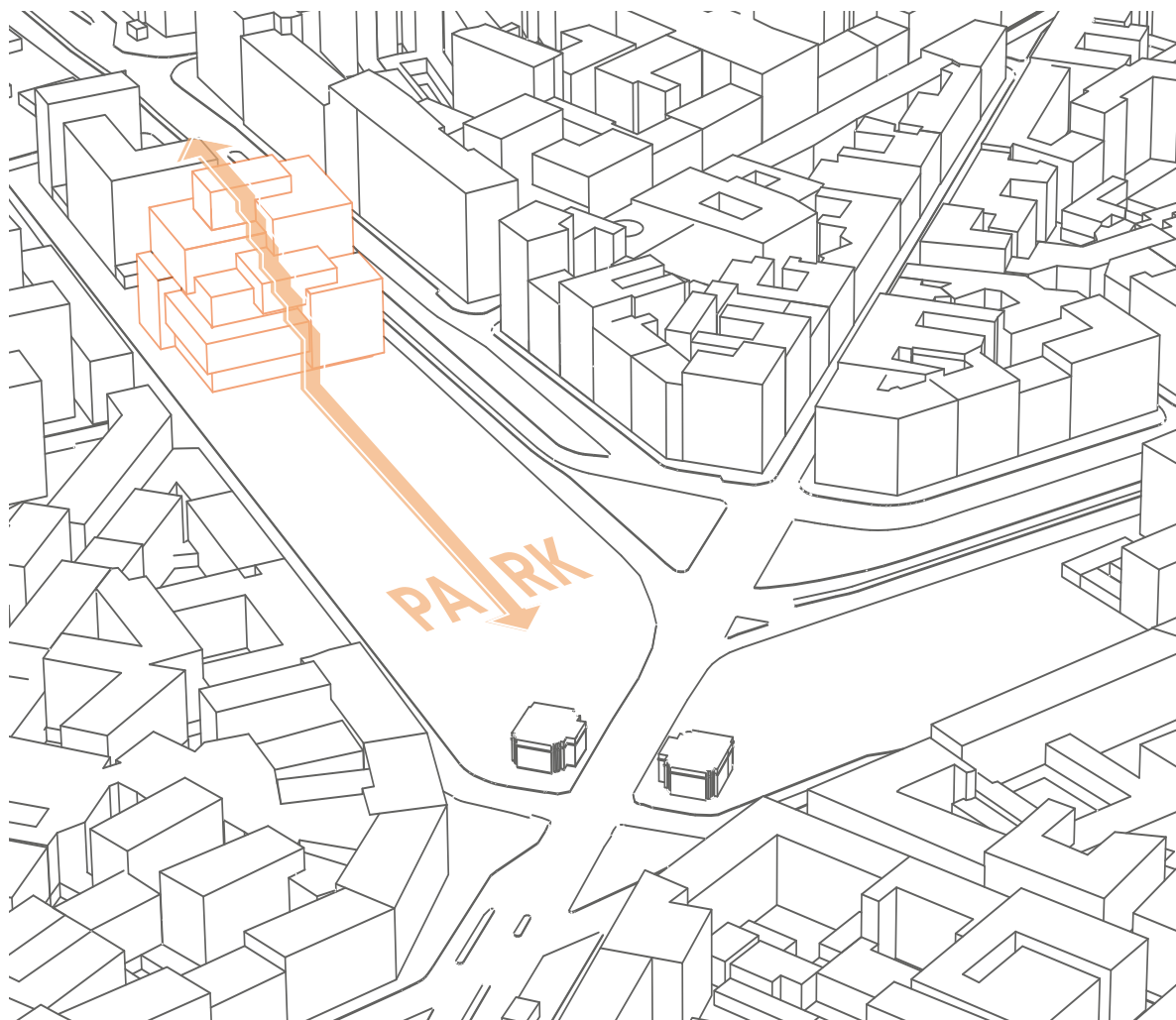


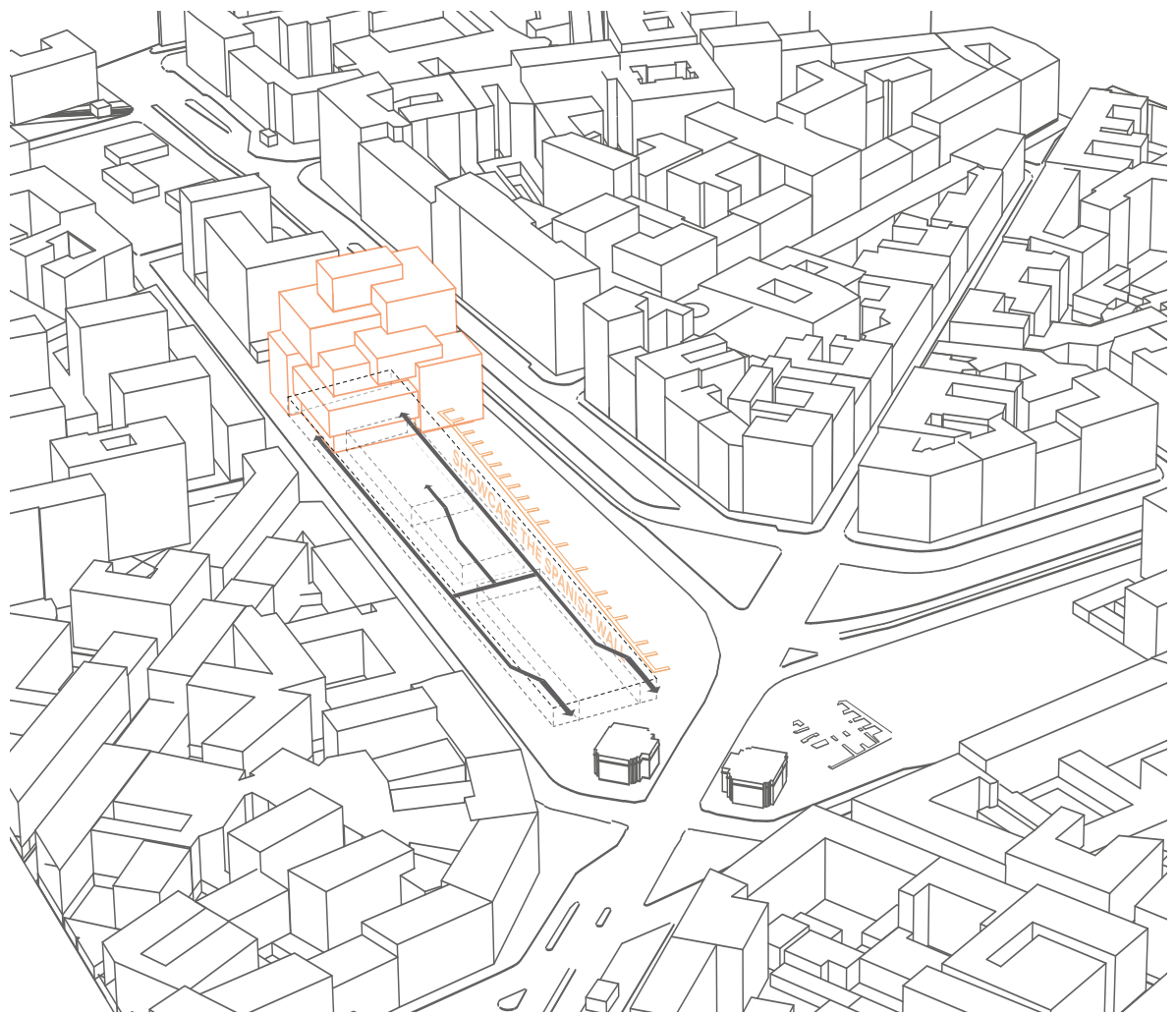




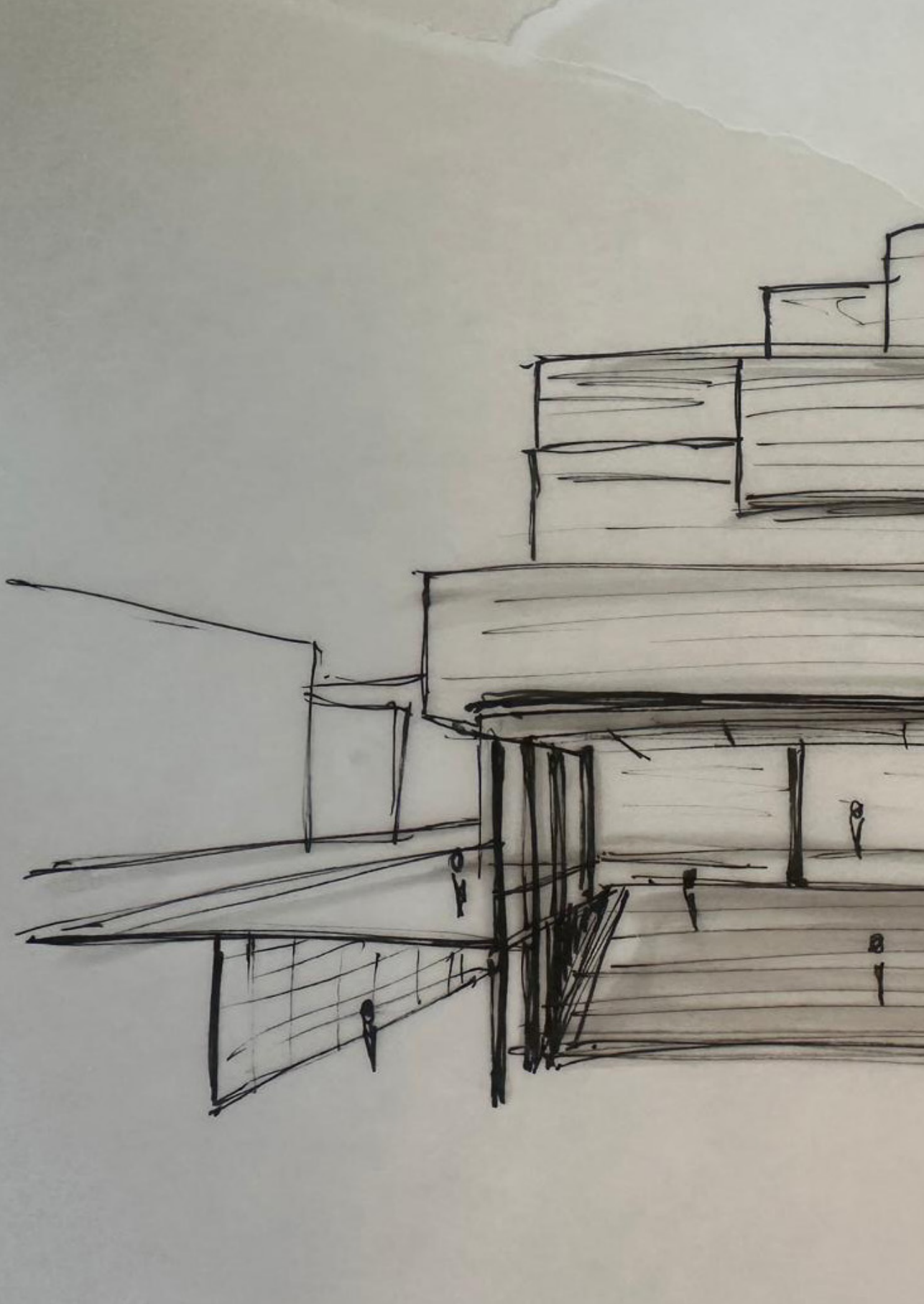


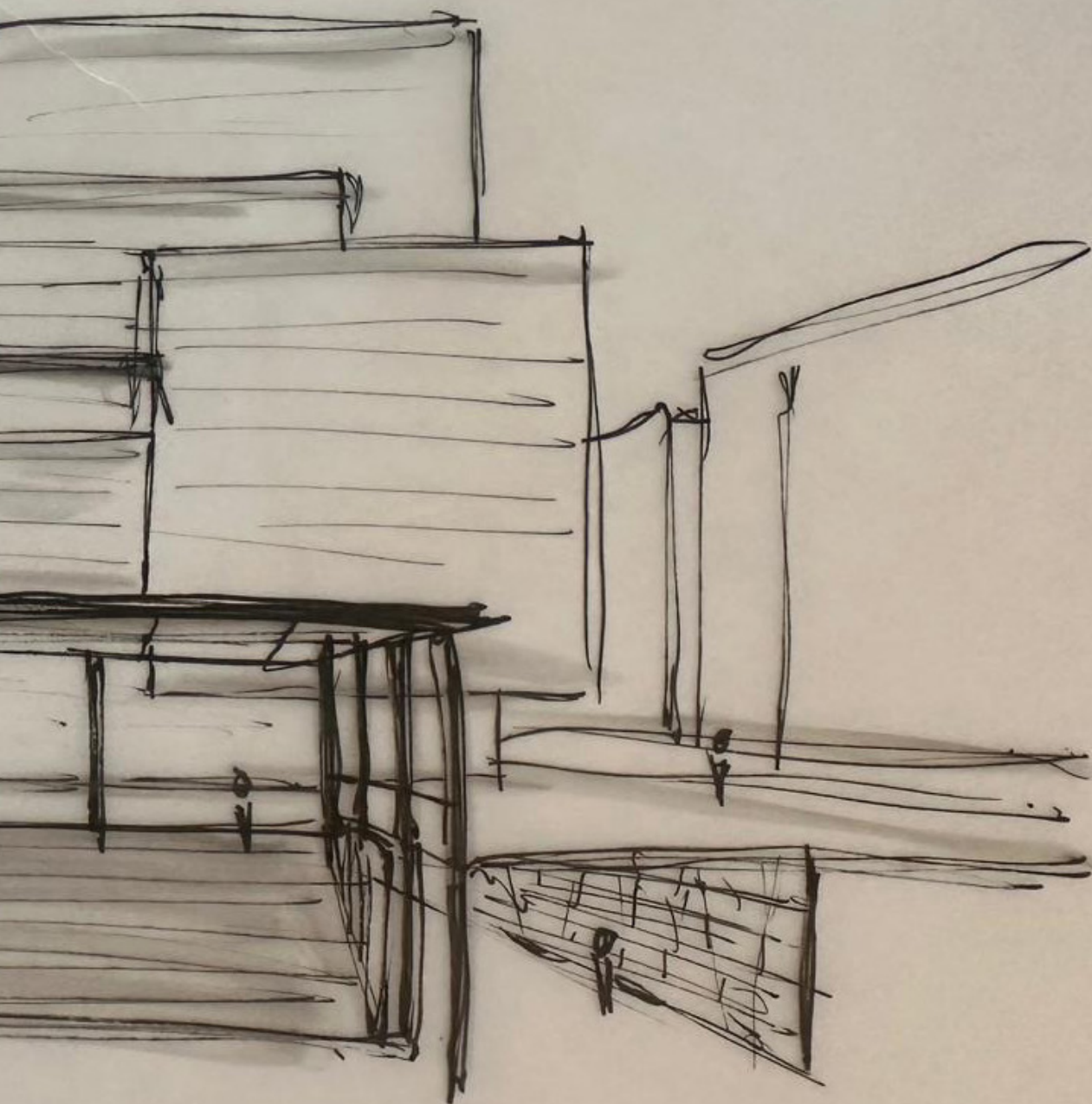




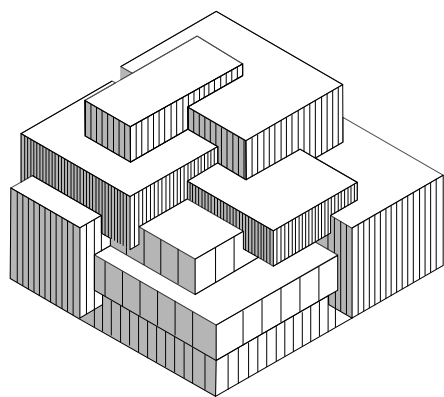






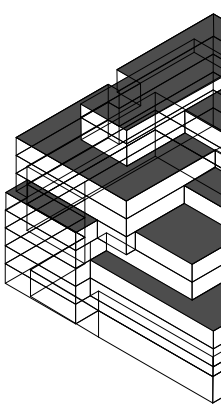


CONCLUSION



Transparant and inviting

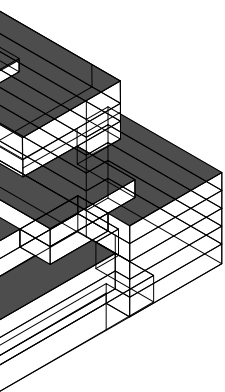
Compact and transparent design that makes room for green public space.



Open and lay

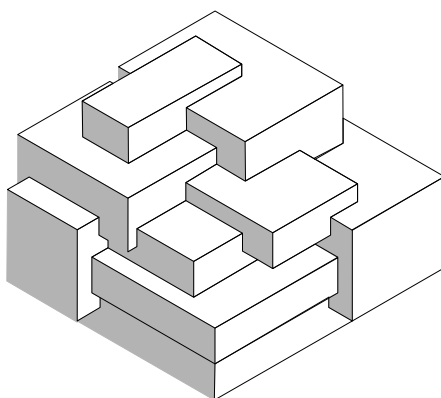
Layered app  
interaction an  
particip





### Layered program

Approach invites  
and encourages  
interaction.



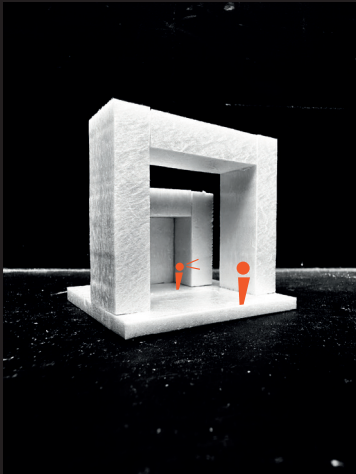
### Urban integration

Integrates into urban fabric by  
responding to the varying heights  
of its surroundings.

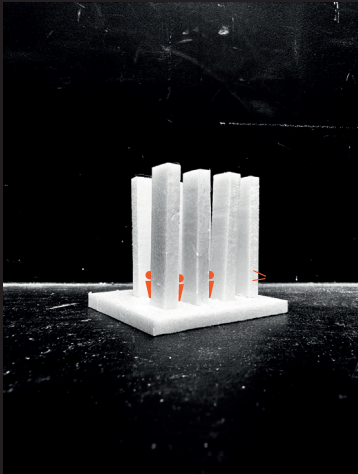
SPATIAL TRANSITIONS



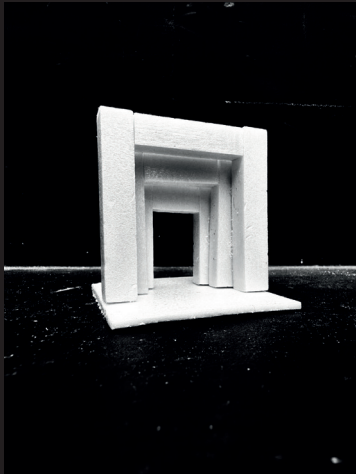
VISUAL MARKERS



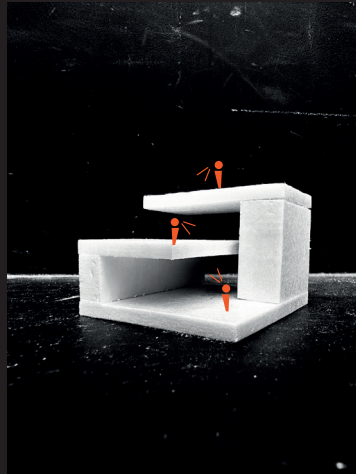
ILLUMINATION AS A GUIDE  
TO ENGAGEMENT



PULL OF SEMI-OPEN



**CONstriction AS A PRELUDE TO  
COLLECTIVE SPACE**



**ASCENDING ENCOUNTERS**

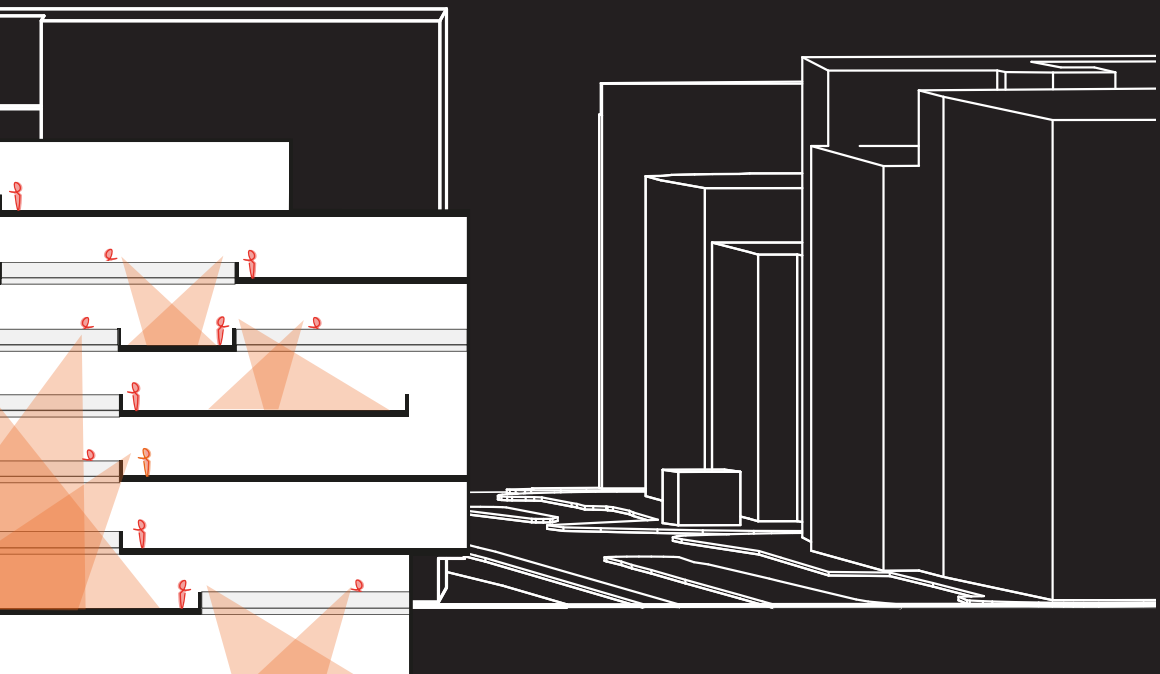
# SPATIAL TRANSITIONS



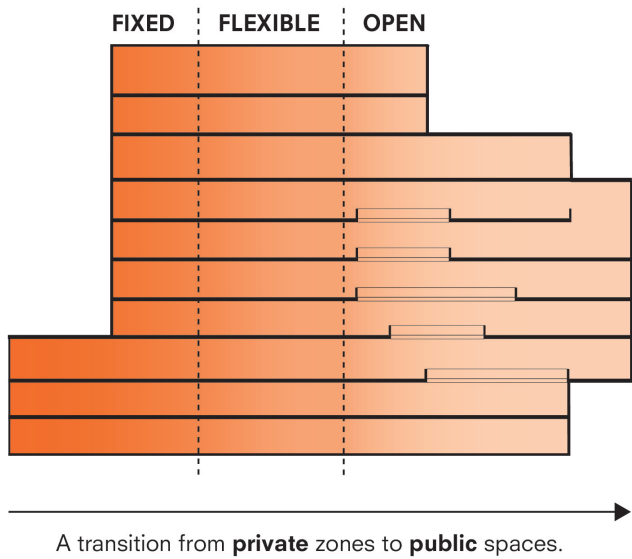
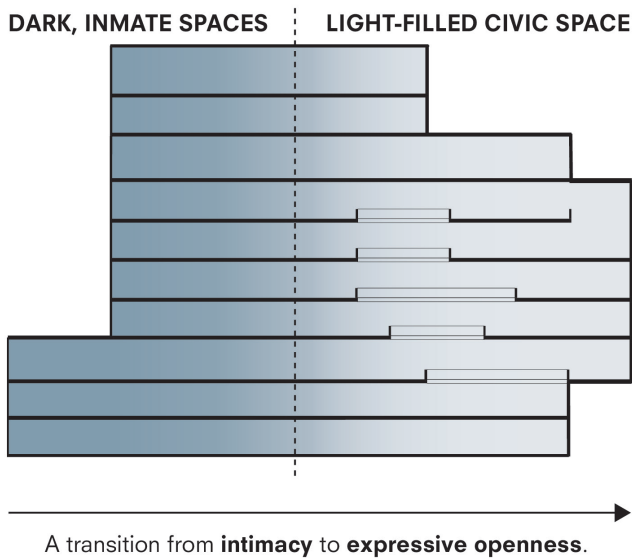
Central atrium that connects vertically

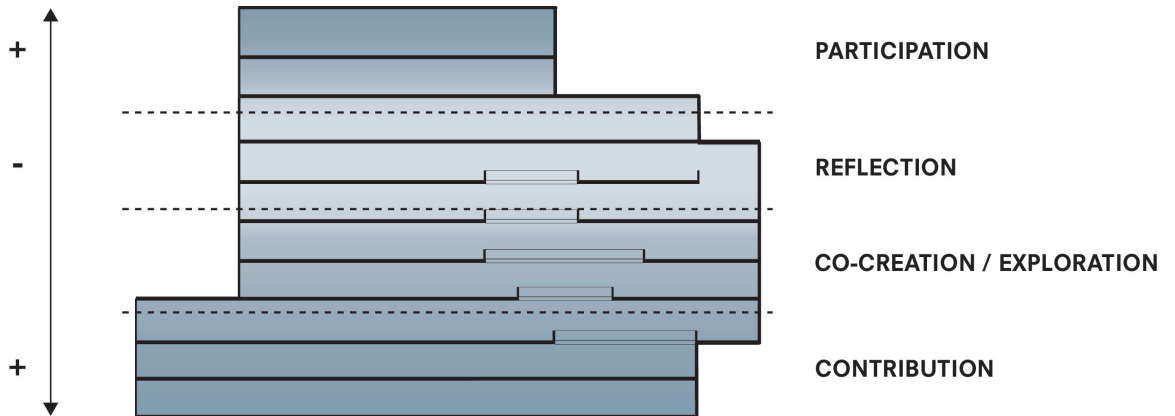
Long sight lines that provide orientation

Staggered floors create cantilevers and openings



# TRANSITION IN EXPERIENCE



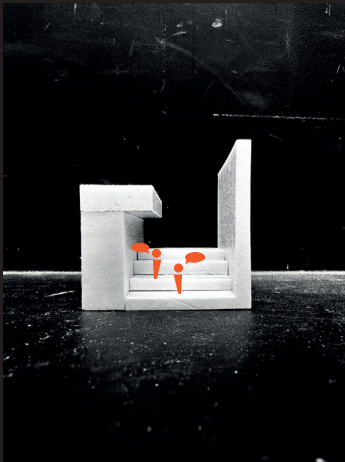


A transition from **individual awareness** to **shared expression**.



## SOCIAL INTERACTION

**Intermediate spaces** are just as  
important as **main spaces**



STEPS AS A SOCIAL ARENA

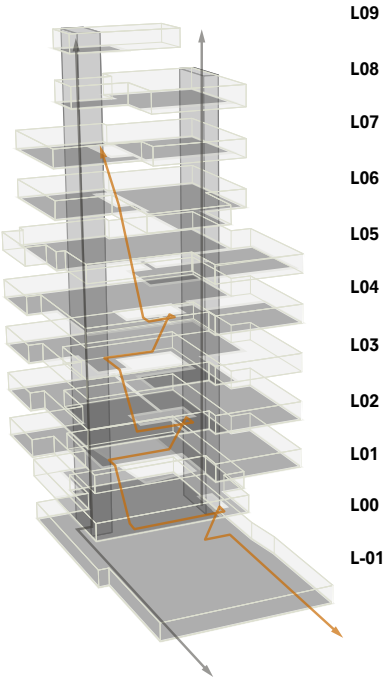


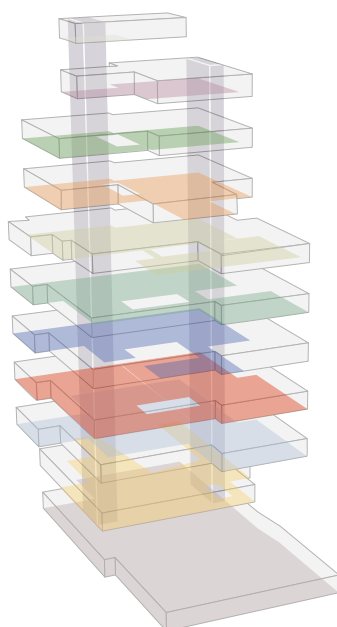
FLEXIBILITY AS A CATALYST FOR  
SOCIAL DYNAMICS



INTIMATE ALCOVES FOR  
INFORMAL ENCOUNTERS

CIRCULATION & PROGRAM





**VIEW DECK**  
ROOFTERRACE

**TASTE & BLOOM**  
RESTAURANT

**ECO LAB**  
GREENHOUSE

**WONDER LAB**  
CHILDREN AREA

**BOOK NOOK**  
ARCHIVE AND READING SPACE

**SMART CITY LAB**  
INNOVATION HUB

**CRAFT LAB**  
ART ZONE

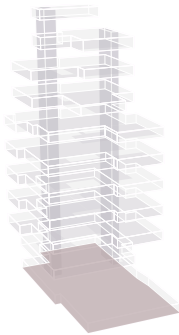
**FAB LAB**  
DIGITAL AND MAKERSPACE

**MUSEUM**  
EXHIBITION SPACE

**THE PORTAL**  
ENTRANCE

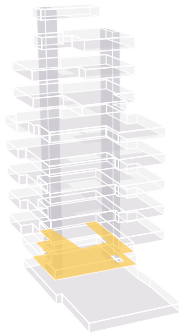
**FORTRESS LAB**  
STORY WALL AND EVENT SPACES

PROGRAM



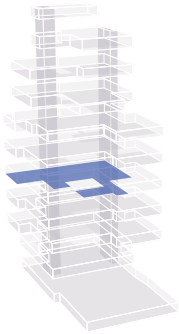
**FORTRESS LAB**  
STORY WALL AND EVENT SPACES

- Auditorium
- Foyer
- Story wall
- Large event space
- Public tribune
- Bike parking



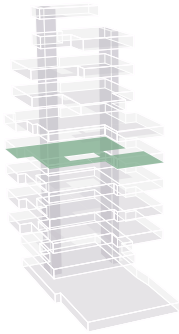
**THE PORTAL**  
ENTRANCE

- RED cafe
- Info desk
- Returning point
- Auditorium
- Exhibition space



**CRAFT LAB**  
ART ZONE

- Art studios
- Pottery studio
- Workshop spaces
- Ateliers
- Shared exhibition space
- Dance studio



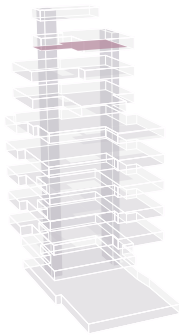
**SMART CITY LAB**  
INNOVATION HUB

- Collaboration Hub
- Brainstorm spaces
- Videocroom and VR
- Zen studios
- The Oasis
- Idea Lab



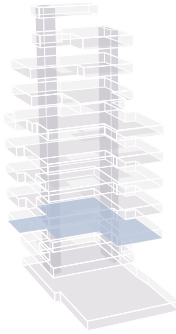
**ECO LAB**  
GREENHOUSE

- Workshop spaces
- Community gardens
- Offices Eco Lab
- Open kitchen
- Restaurant
- Community terrace



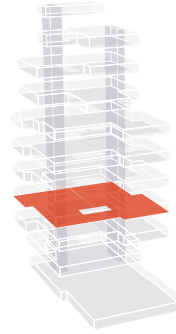
**FOOD LAB**  
RESTAURANT

- Flower garden
- Restaurant
- Restaurant terrace



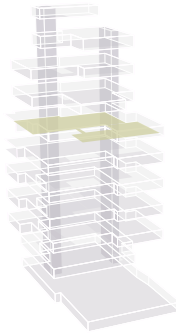
**MUSEUM**  
EXHIBITION SPACE

- Ticket desk
- Museum shop
- Exhibition spaces
- Multifunctional space



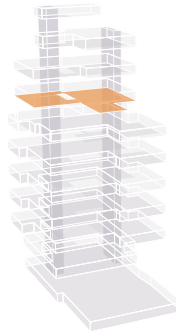
**FAB LAB**  
DIGITAL AND MAKERSPACE

- Makerspaces
- Workshop spaces
- The Nest
- Ateliers
- Digital Lab
- Performance space



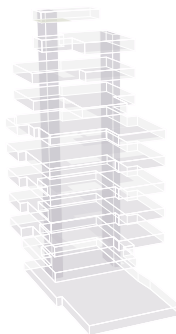
**BOOK NOOK**  
ARCHIVE AND READING SPACE

- Feltrinelli's archive
- Reading room
- The historian's alcove
- The Den
- Chechmate corner
- Book Nook



**WONDER LAB**  
CHILDREN AREA

- Children collection
- Small children
- Small greenhouse
- Workshop space kids
- Giardino Piccolo \*
- Playground



**VIEW DECK**  
ROOFTERRACE

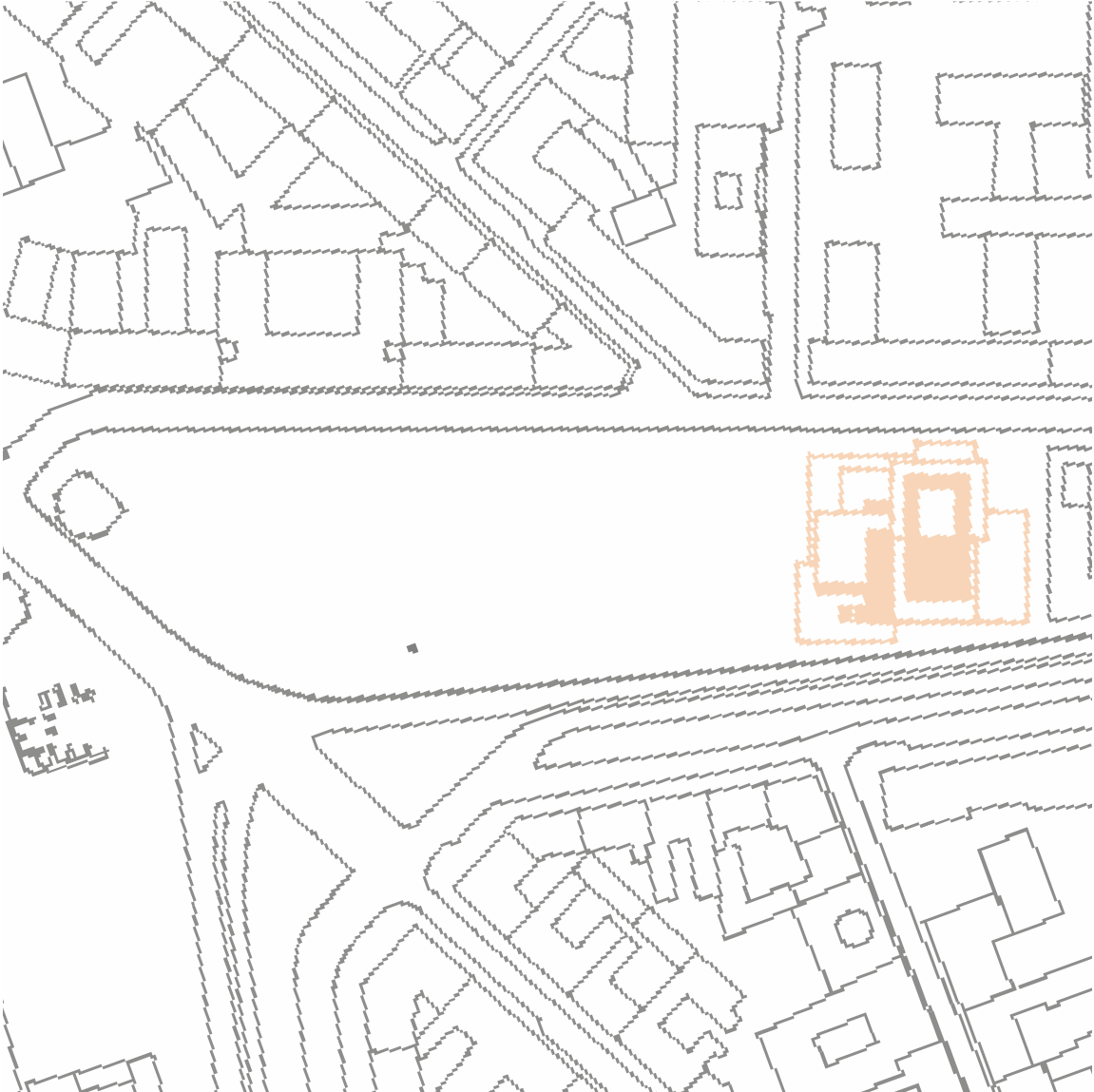
- Large roof terrace
- Viewpoint historical centre

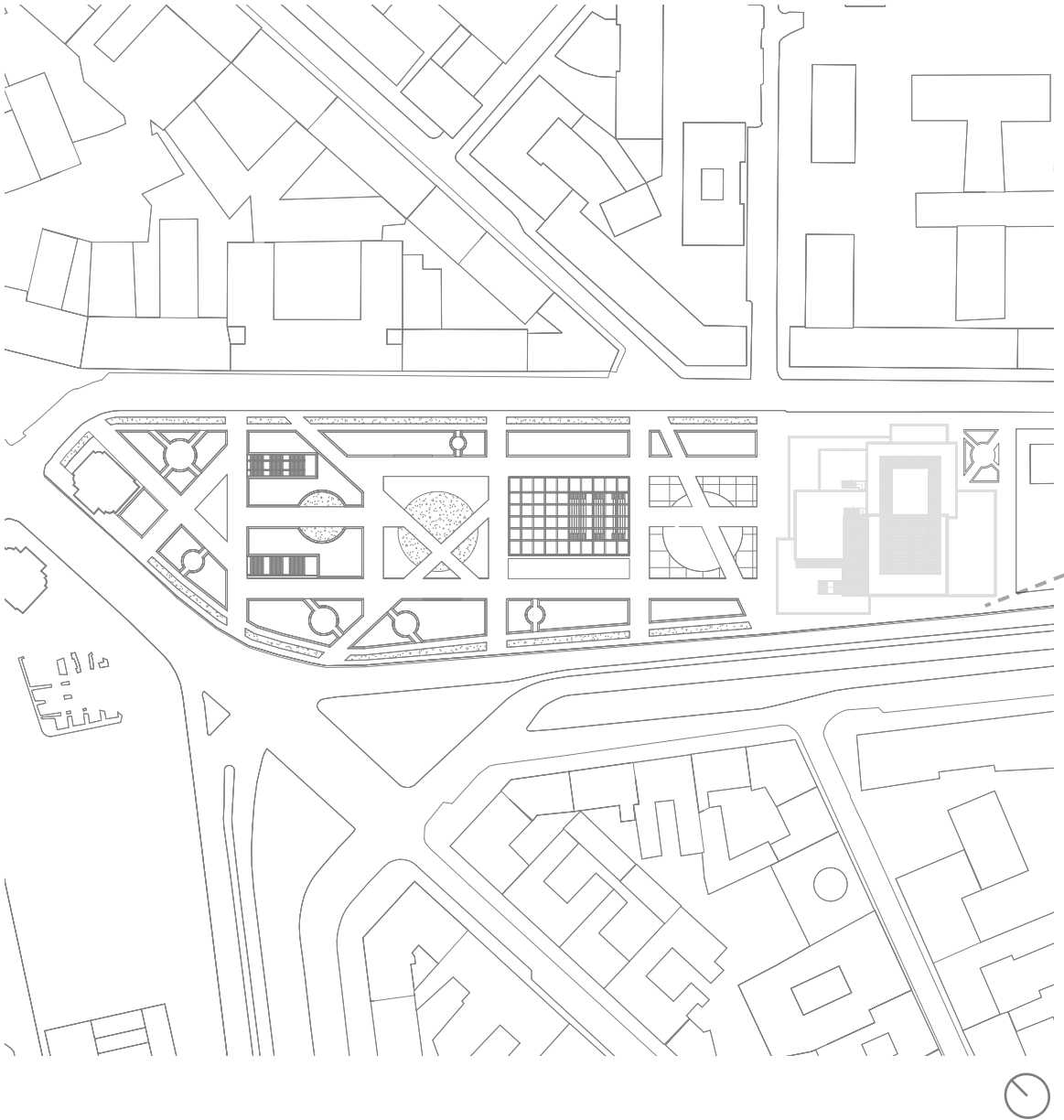
# BUILDING DESIGN

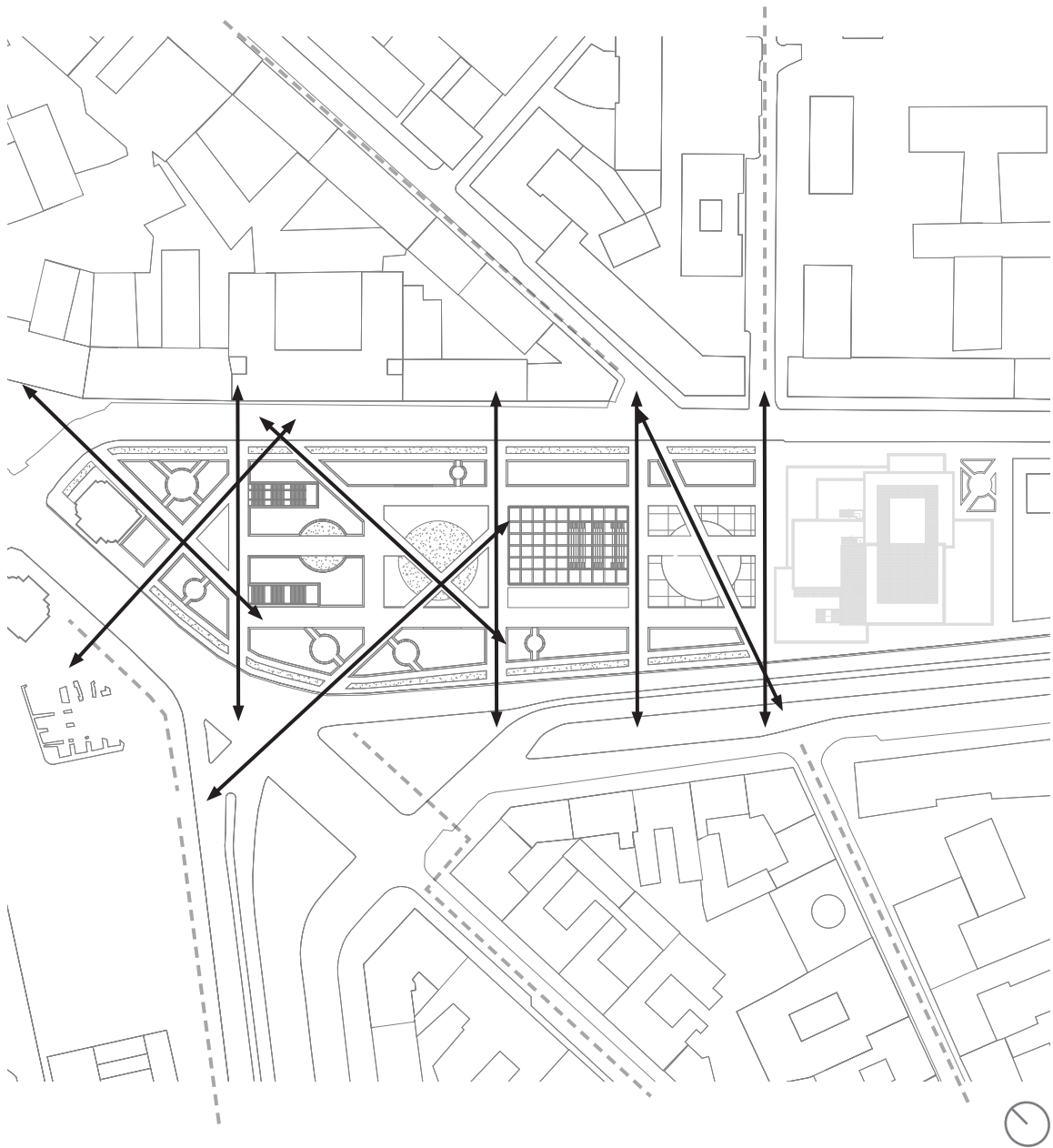
04

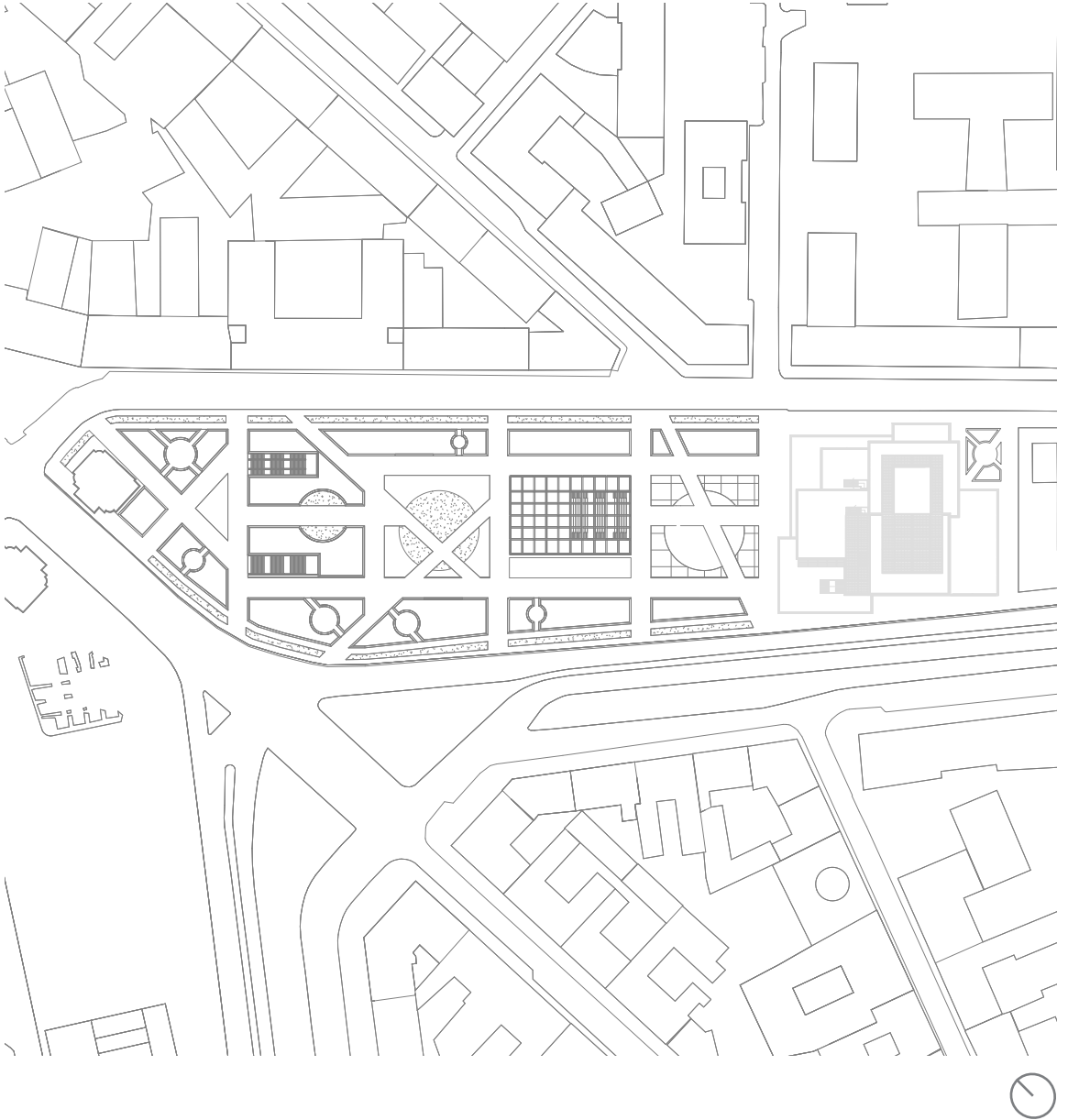




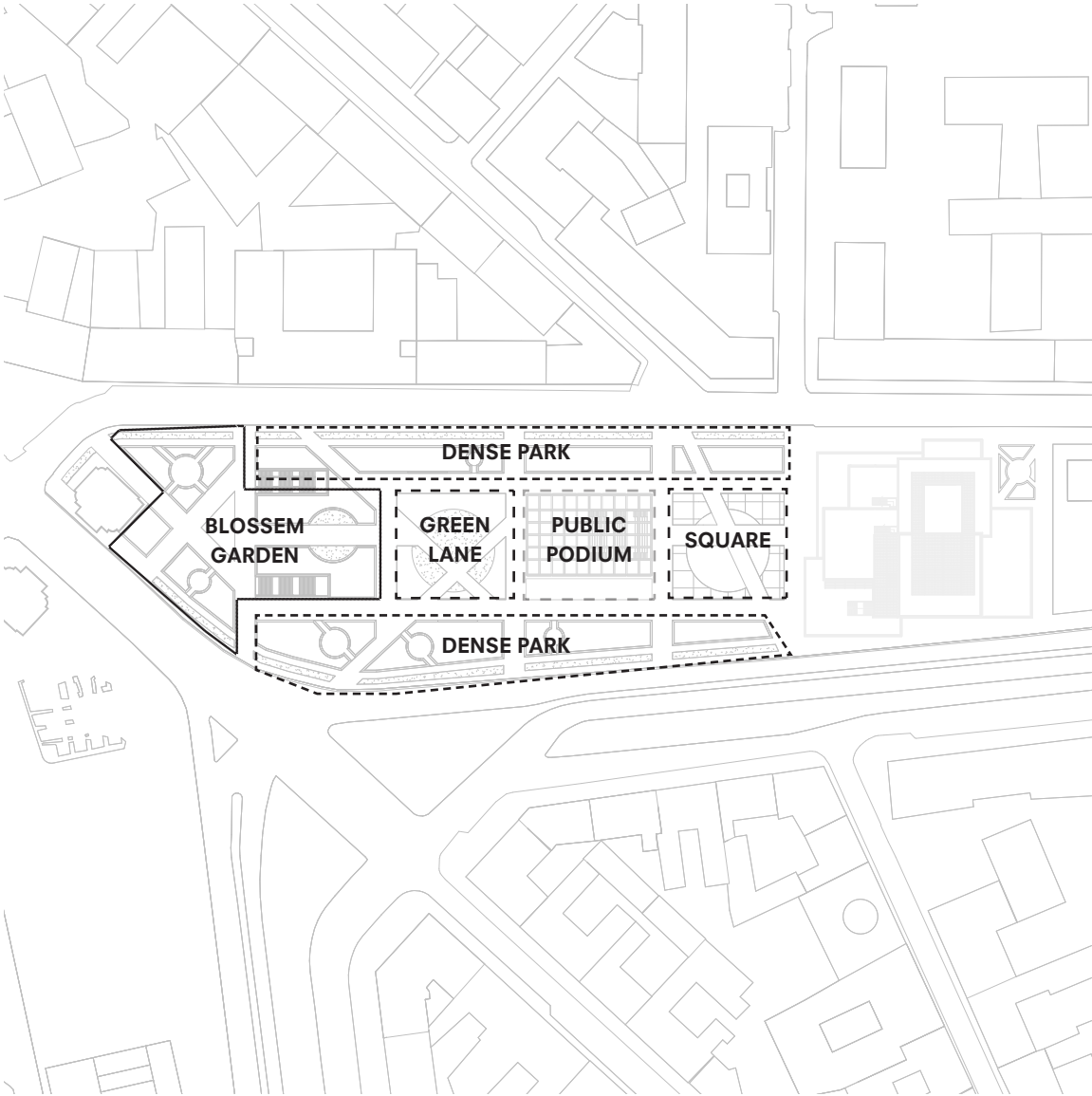


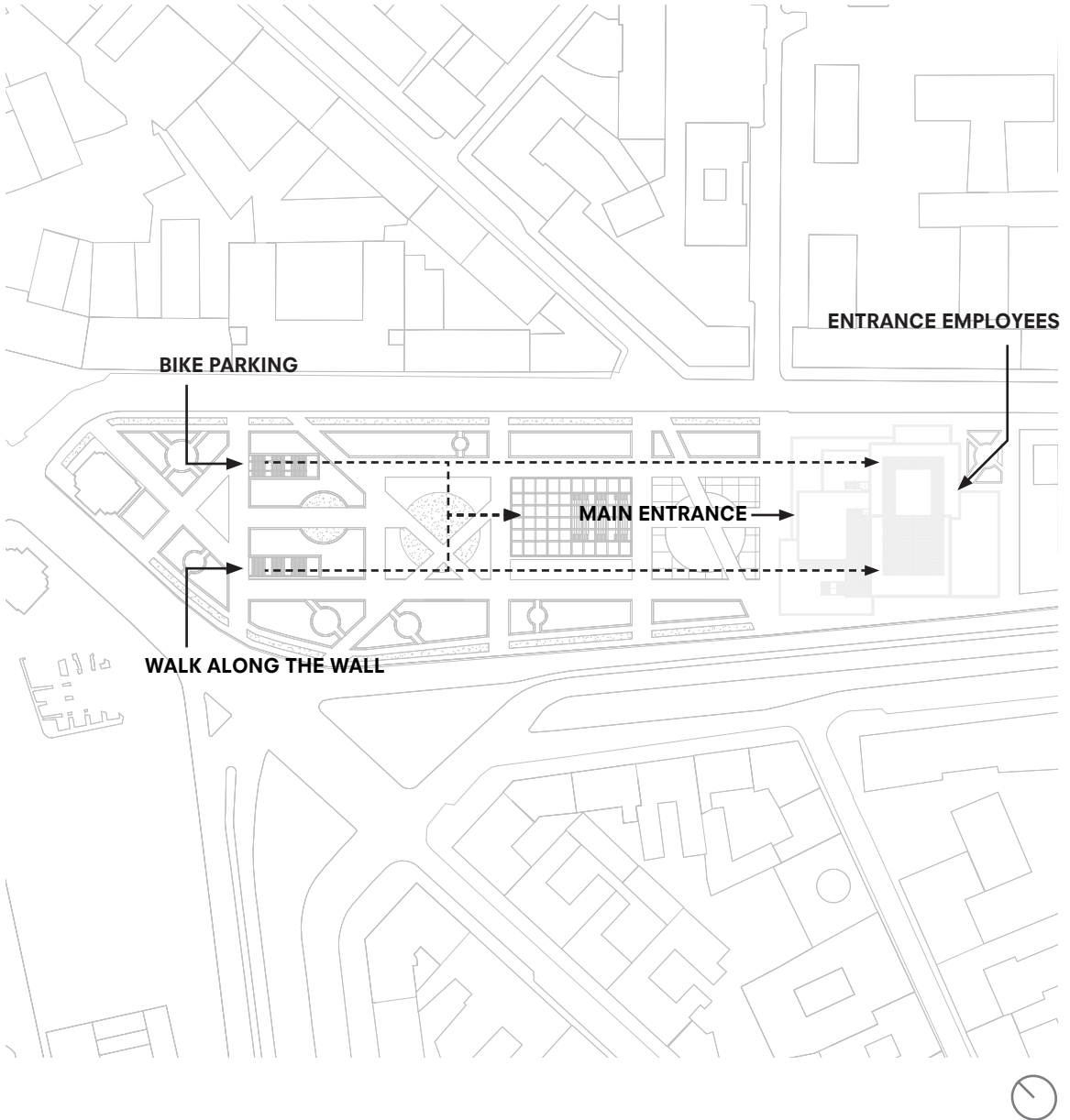






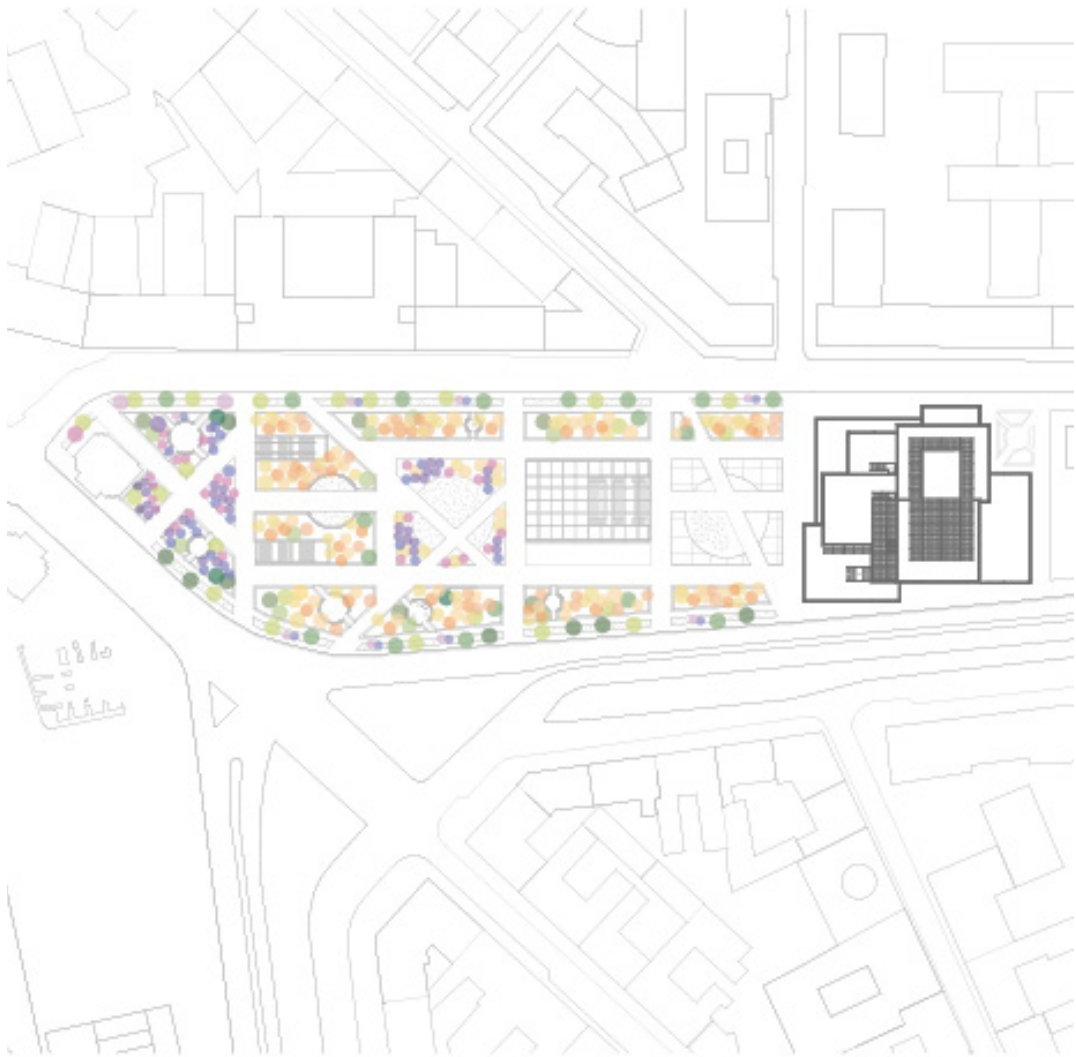
MATERIAL - BUILDING SCALE VEGETATION







**MATERIAL - BUILDING SCALE VEGETATION**





*Quercus robur*



*Platanus x hispanica*



*Crataegus monogyna*



*Salvia pratensis*



*Pennisetum*



*Fraxinus excelsior*



*Celtis australis*



*Ligustrum vulgare*



*Archillea millefolium*



*Molinia*



*Acer campestre*



*Viburnum tinus*



*Rhamnus alaternus*



*Centaurea jacea*



*Carex*



*Tilia cordata*



*Corylus avellana*



*Origanum vulgare*



*Stachys officinalis*

## Trees

**Air quality** Reduce noise and air pollution along roads

**Shade** Provide shade, wind buffering and cooling through evapotranspiration

**Structure** Define space and create visual boundaries between urban zones

## Shrubs & Bushes

**Biodiversity** Support biodiversity (nesting sites, pollinators)

**Air quality** Filter pollutants from traffic zones

**Privacy** Provide privacy and shelter from wind and dust

## Flower mixture & grasses

**Ecological value** Enhance urban biodiversity and reduce maintenance

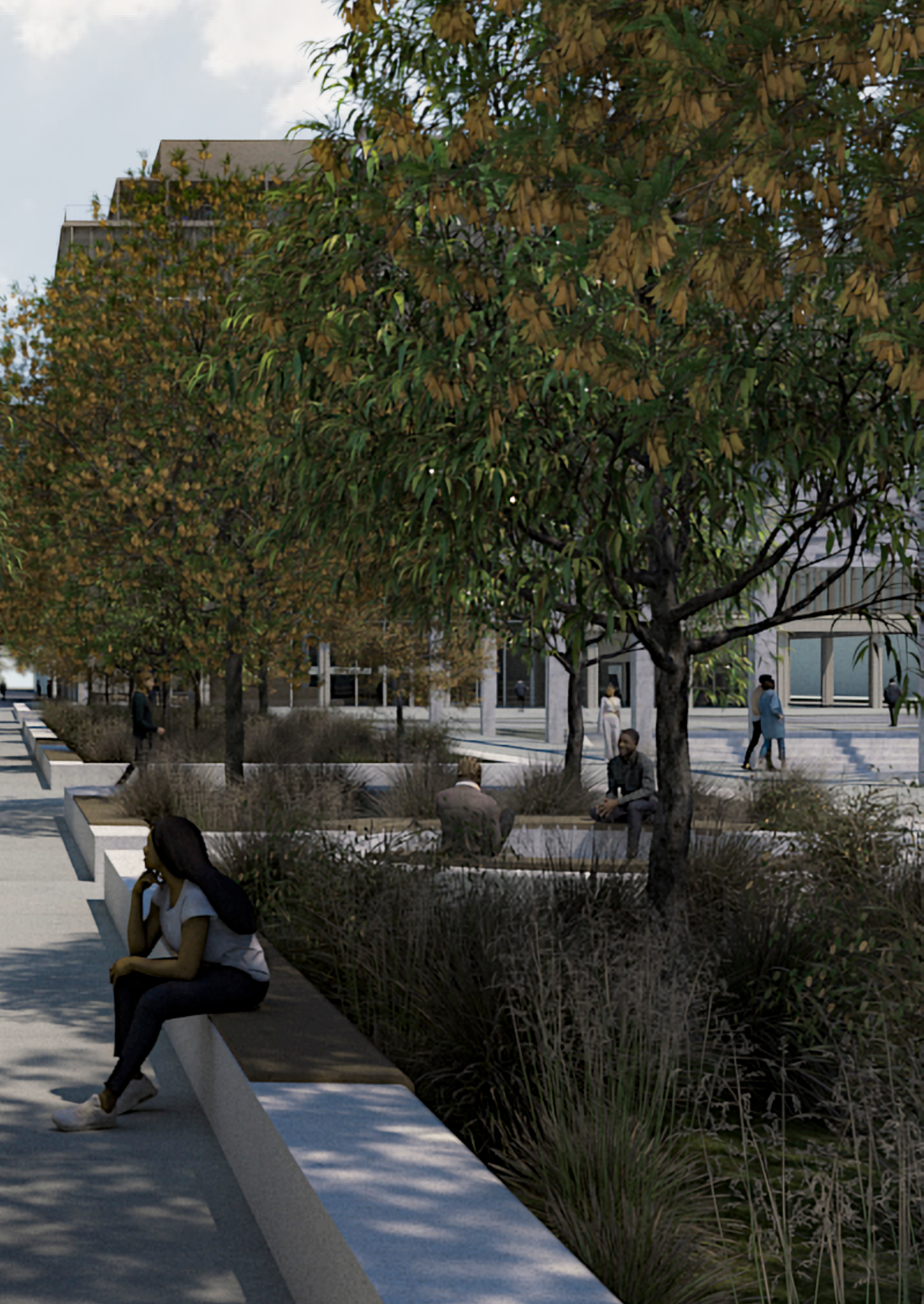
**Color** Provide seasonal color and habitat for insects

**Infiltration** Improve soil health and rainwater infiltration

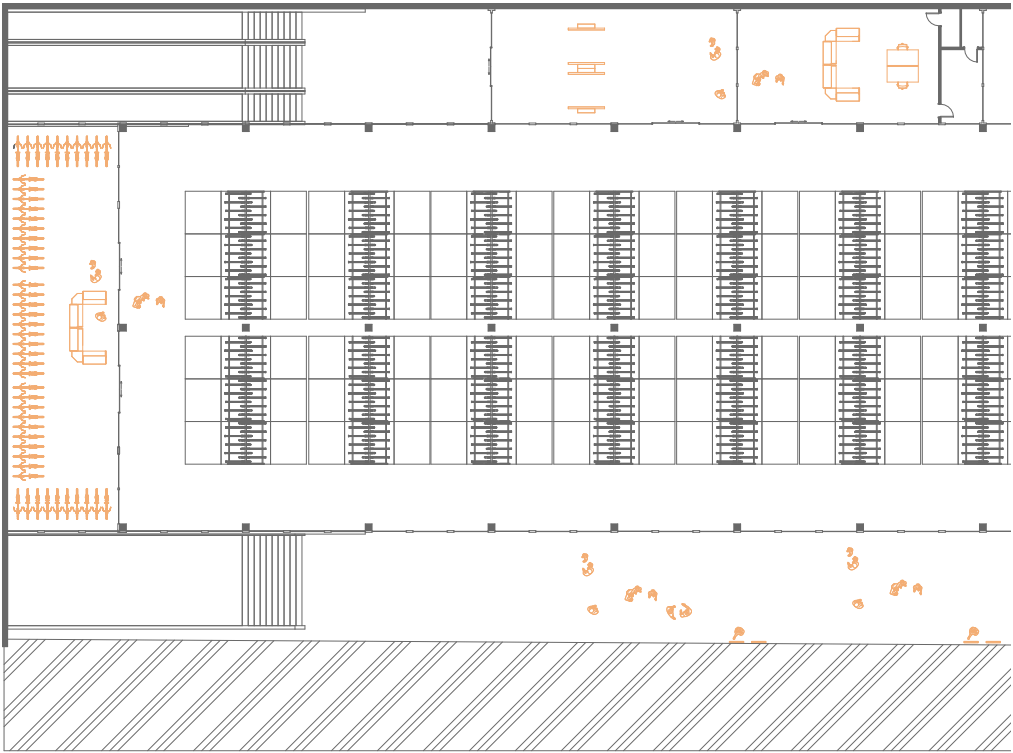


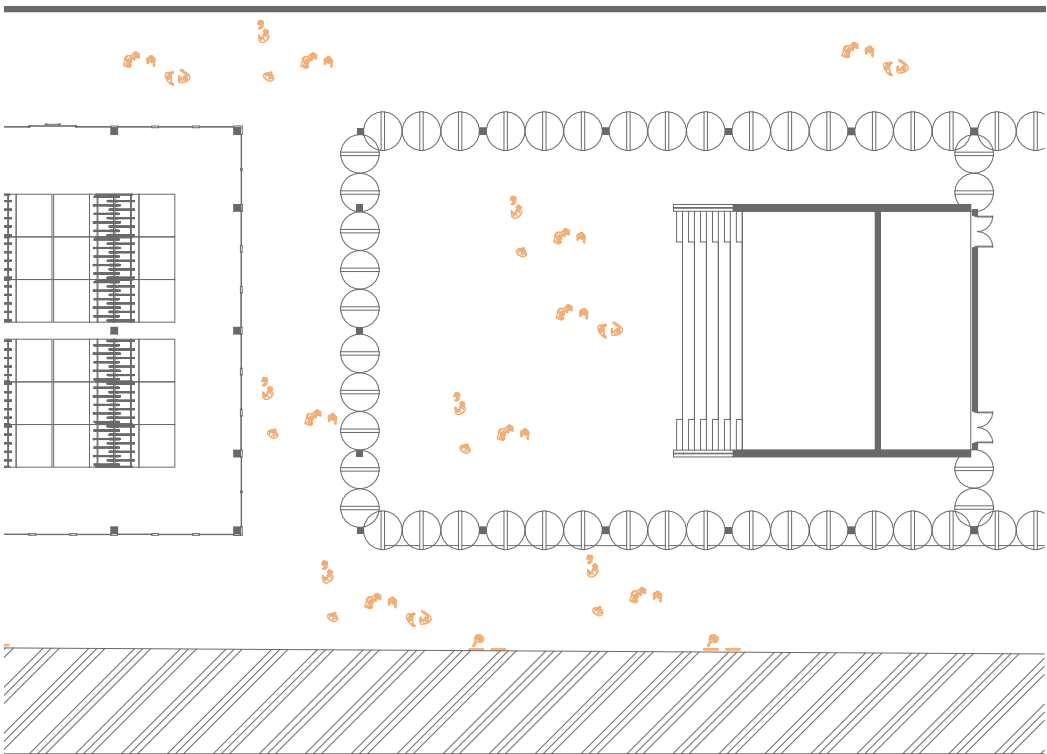






L -01 - FORTRESS LAB













## The History of Porta Volta & the Spanish Walls of Milan

The Porta Volta district stands as a vivid reminder of Milan's layered urban history. Once located at the city's northern edge, this gateway formed part of the Spanish Walls, a vast system of fortifications built in the 16th century when Milan was under Spanish rule. The walls, constructed between 1548 and 1562, replaced earlier medieval defenses and were designed both for protection and to symbolize Spanish control over the Lombard capital.



### 14th-15th century Medieval Walls

Porta Volta still sees one of the city's main gates, serving the west-bound traffic. In the 14th century, the medieval walls were reinforced by the Visconti rulers. The area from the 14th century onwards, designed by the architect Bramante, was transformed into a new district. The gate welcomed merchants, bankers, and goods.



### 1535 - Spanish Rule Begins

Following the fall of the Duchy of Milan to the Spanish, the city was placed under Spanish rule. The walls were reinforced and the city's layout was transformed.



### 1560-1562 Construction of the Spanish Walls

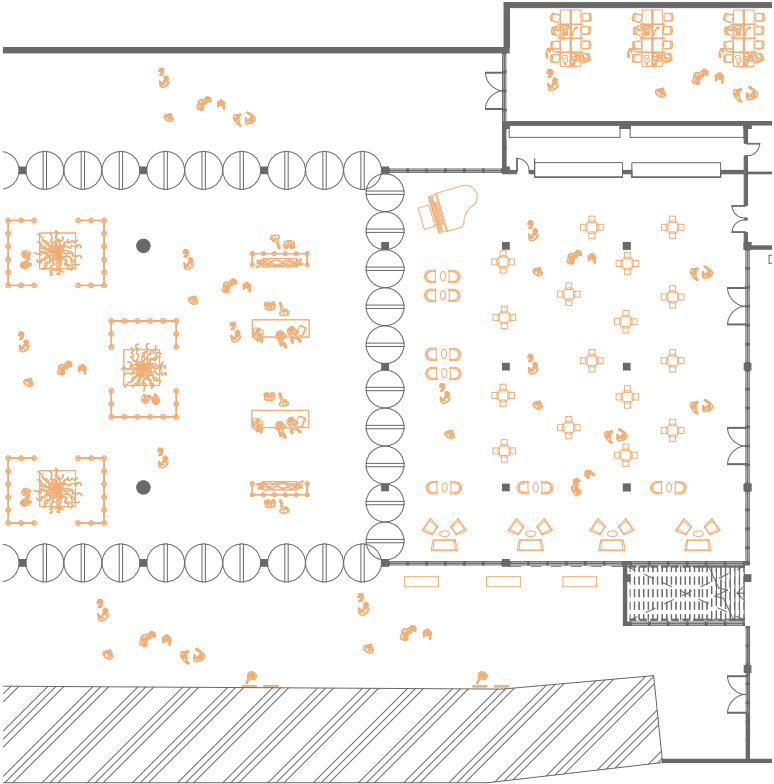
The construction of the Spanish Walls was a major project, designed by the architect Bramante. The walls were built between 1548 and 1562, replacing earlier medieval defenses.

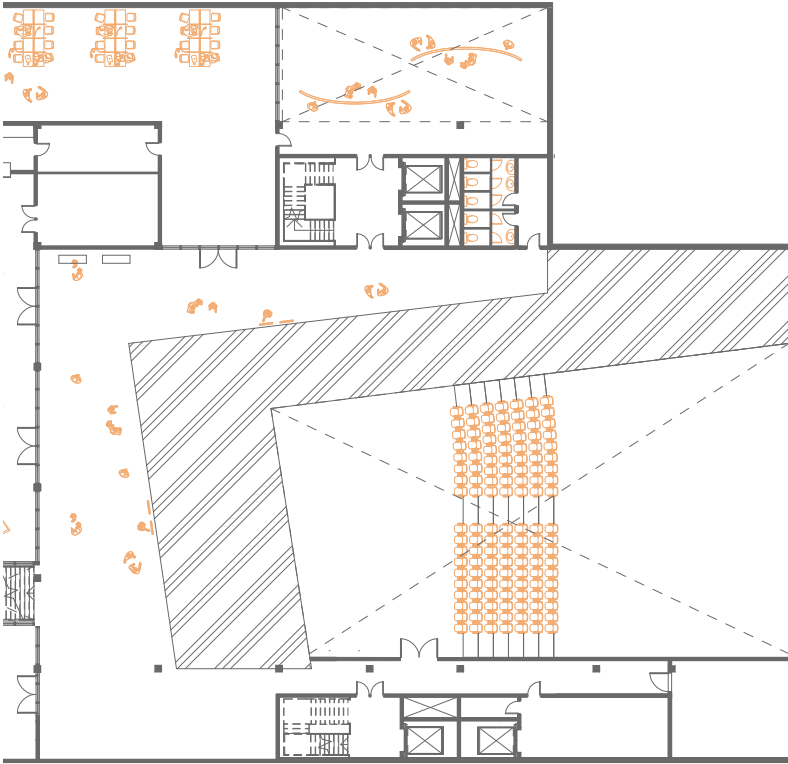


The walls were built between 1548 and 1562, replacing earlier medieval defenses. The walls were designed both for protection and to symbolize Spanish control over the Lombard capital.



L -01 - FORTRESS LAB







Fondazione  
Giangiacomo  
Feltrinelli

30.11

## Pensare un...

Dialogo, cura, diversità a...

NE PARLANO



**Chiara Giaccardi**  
Università Cattolica del Sa

**Mauro Magatti**  
Università Cattolica del Sa

**Pier Cesare Rivoltone**  
Alma Mater Studiorum,  
Università di Bologna

IN OCCASIONE DELLA PRESENTAZIONE  
DELLA MACCHINA CELIBI, MECCANOLOGIA

STAGIONE DELLE  
**SCELTE**

Viale Pasubio 5, Milano  
Ingresso libero

Pr  
su



10  
nano  
ai tempi dell'intelligenza artificiale

INTRODUZIONE  
**Massimiliano Tarantino**  
Direttore Fondazione G. Feltrinelli

cro Cuore  
ttella

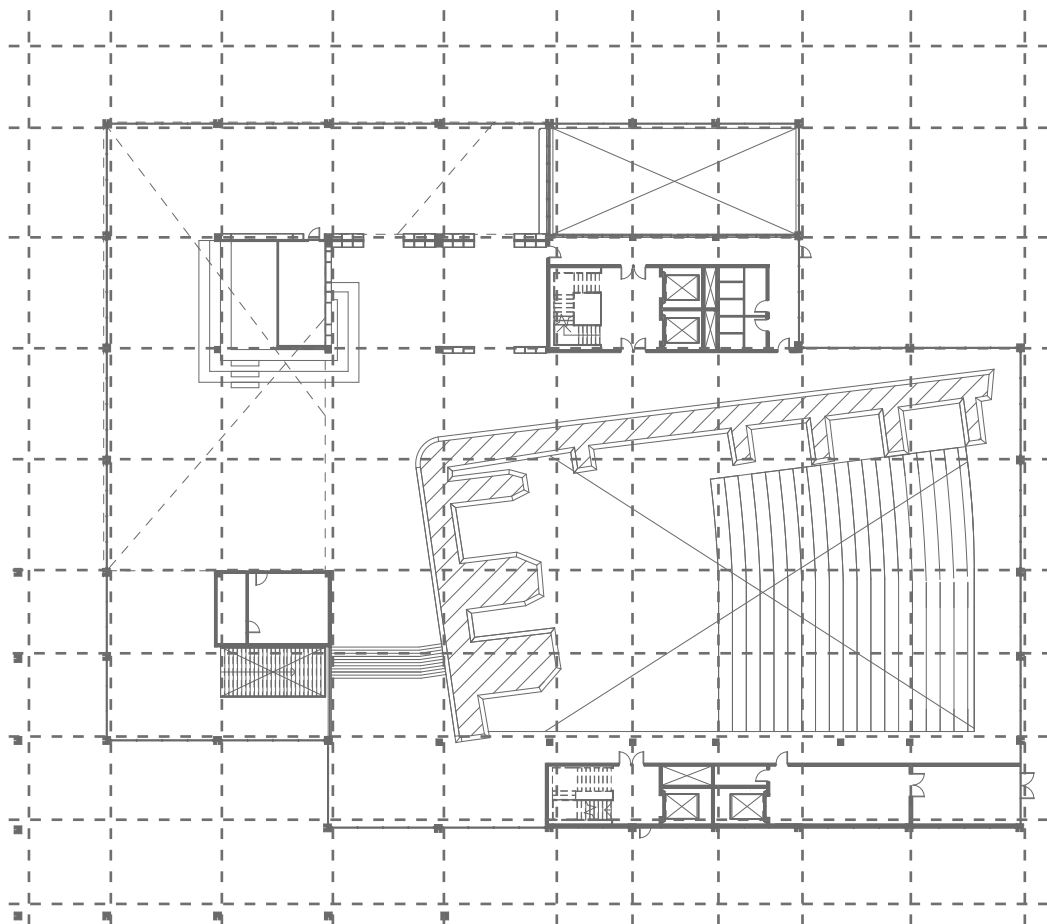
PUBBLICAZIONE DE  
*umanizzare l'umano e umanizzare il mondo?* (Il Mulino 2025)

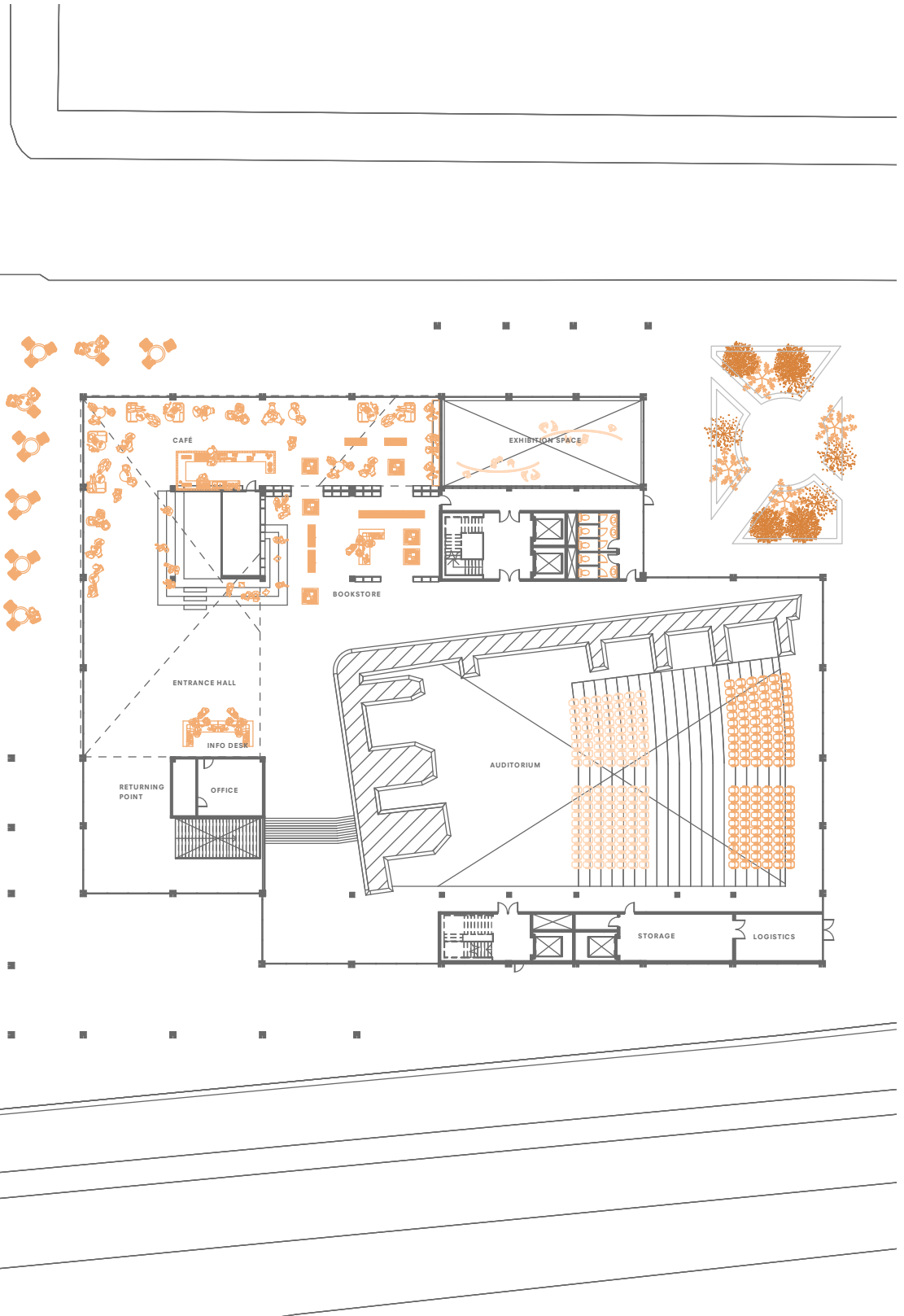
renotazione consigliata  
DICE.fm

fondazionefeltrinelli.it







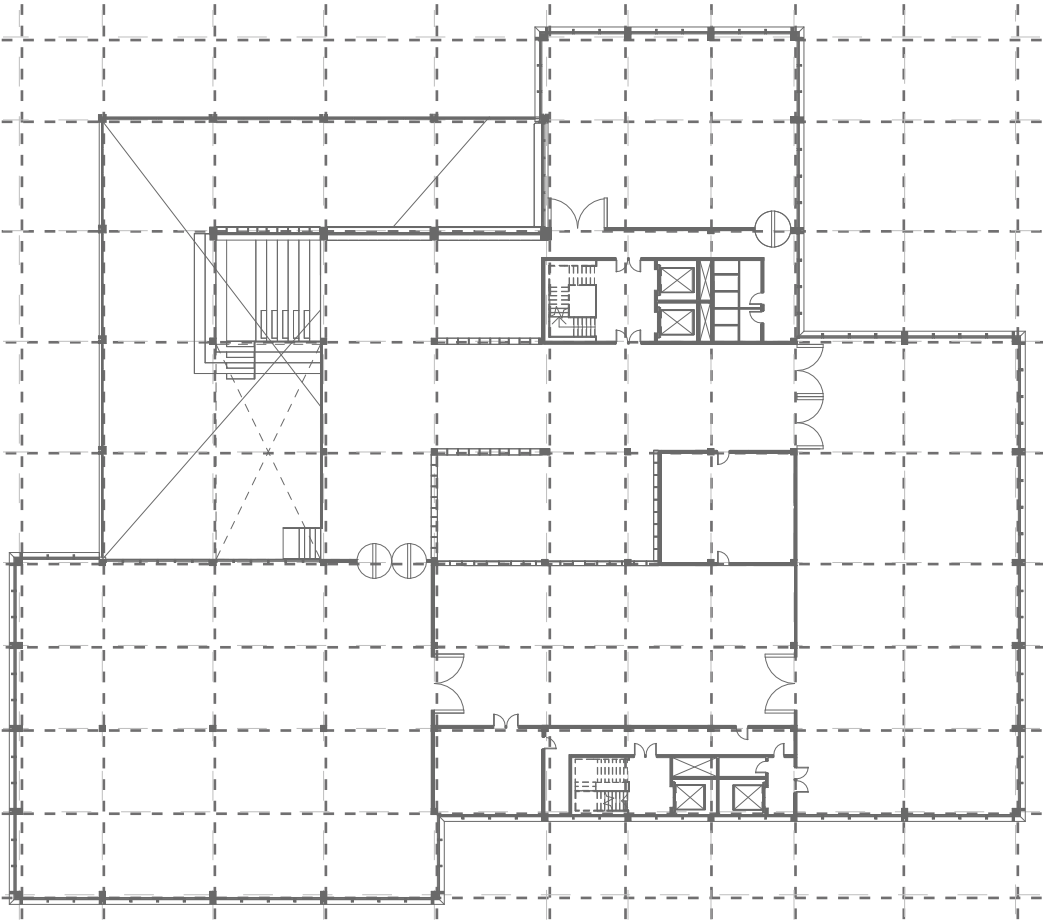


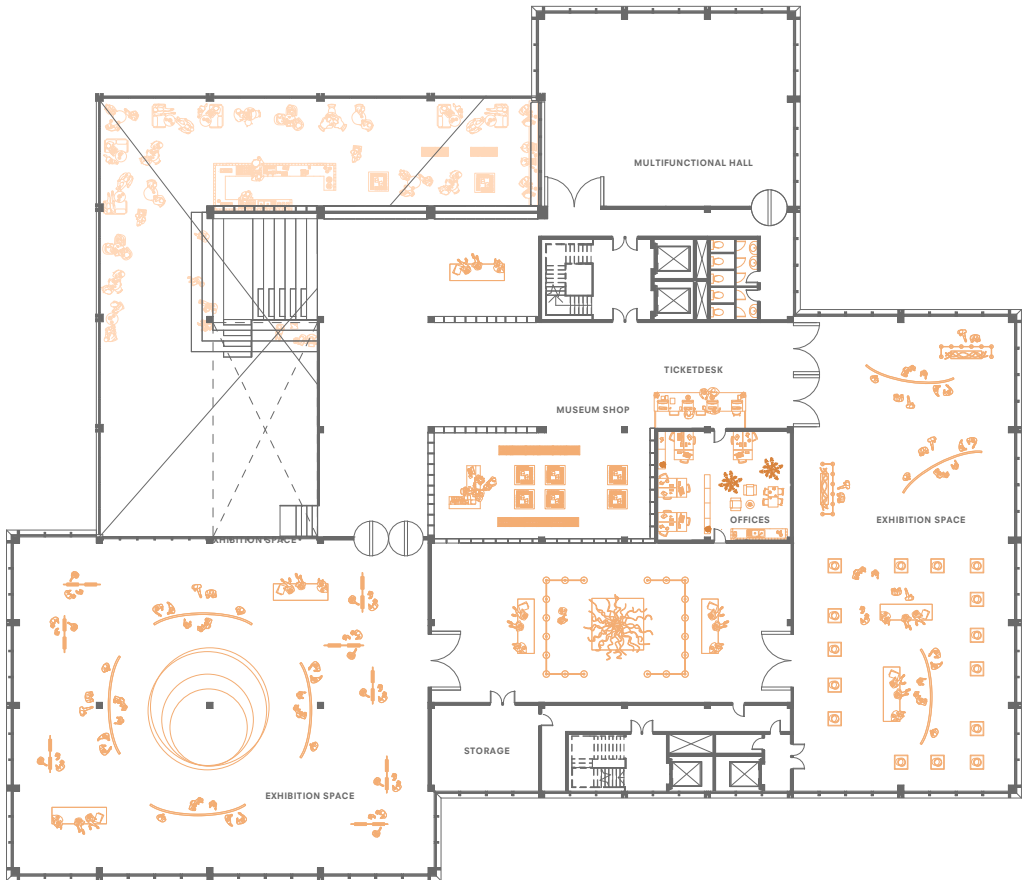




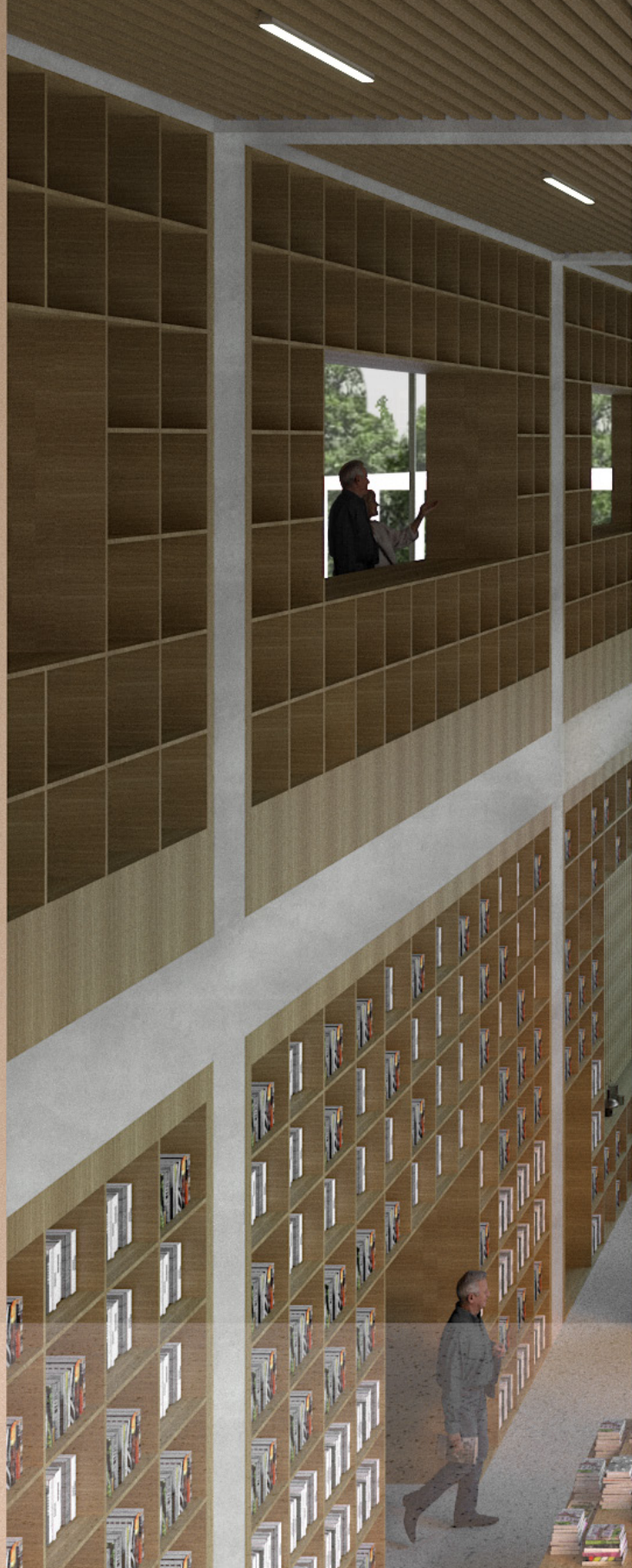




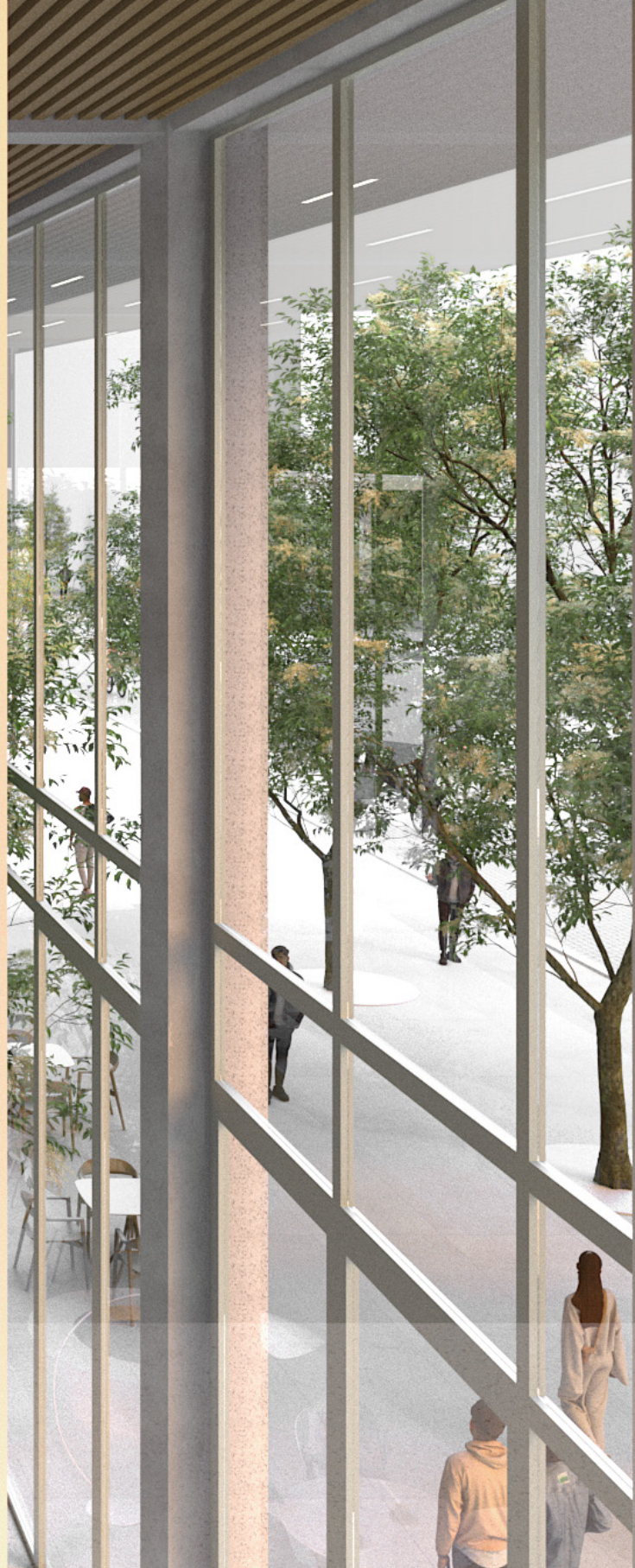




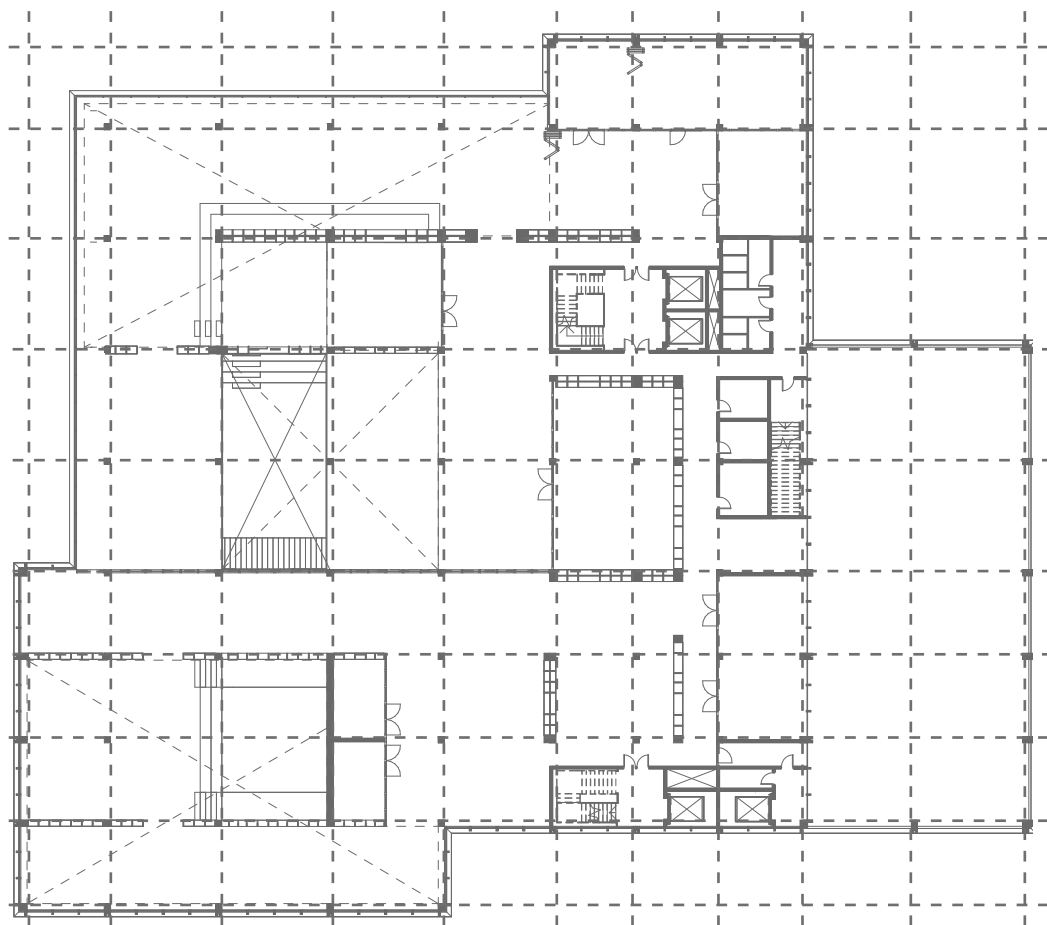


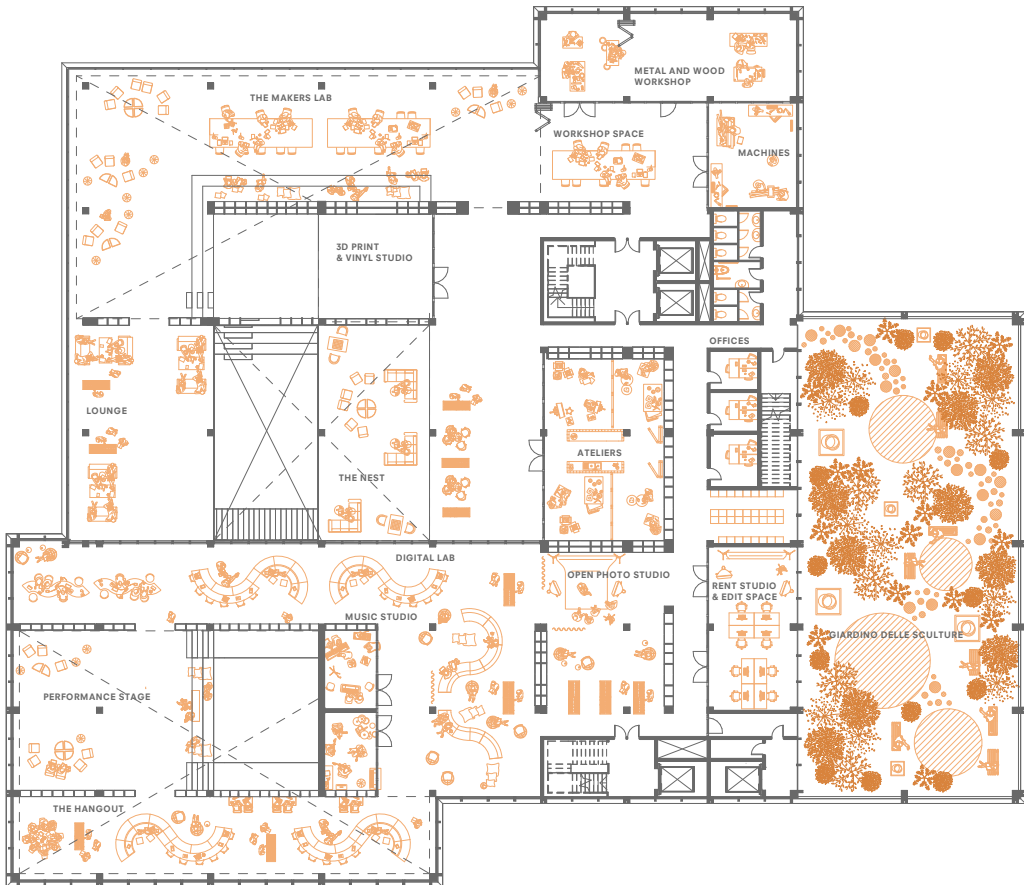














Makers Lab





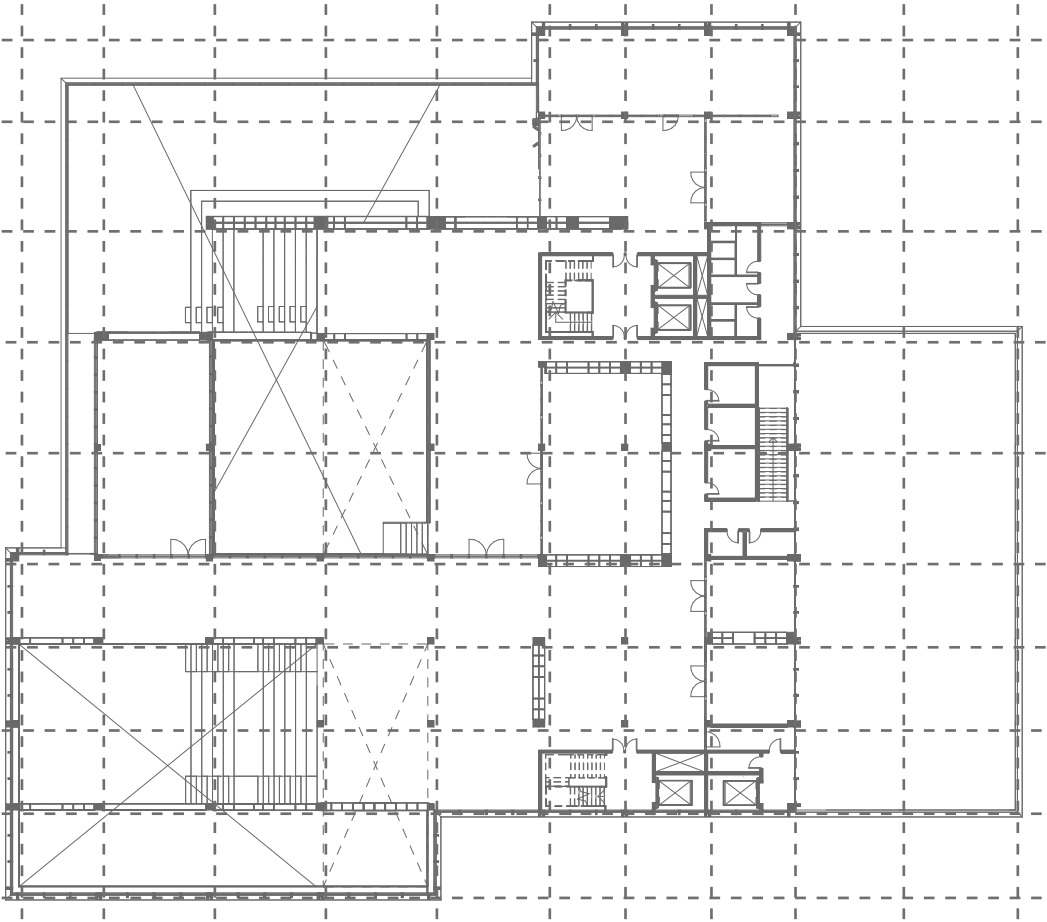


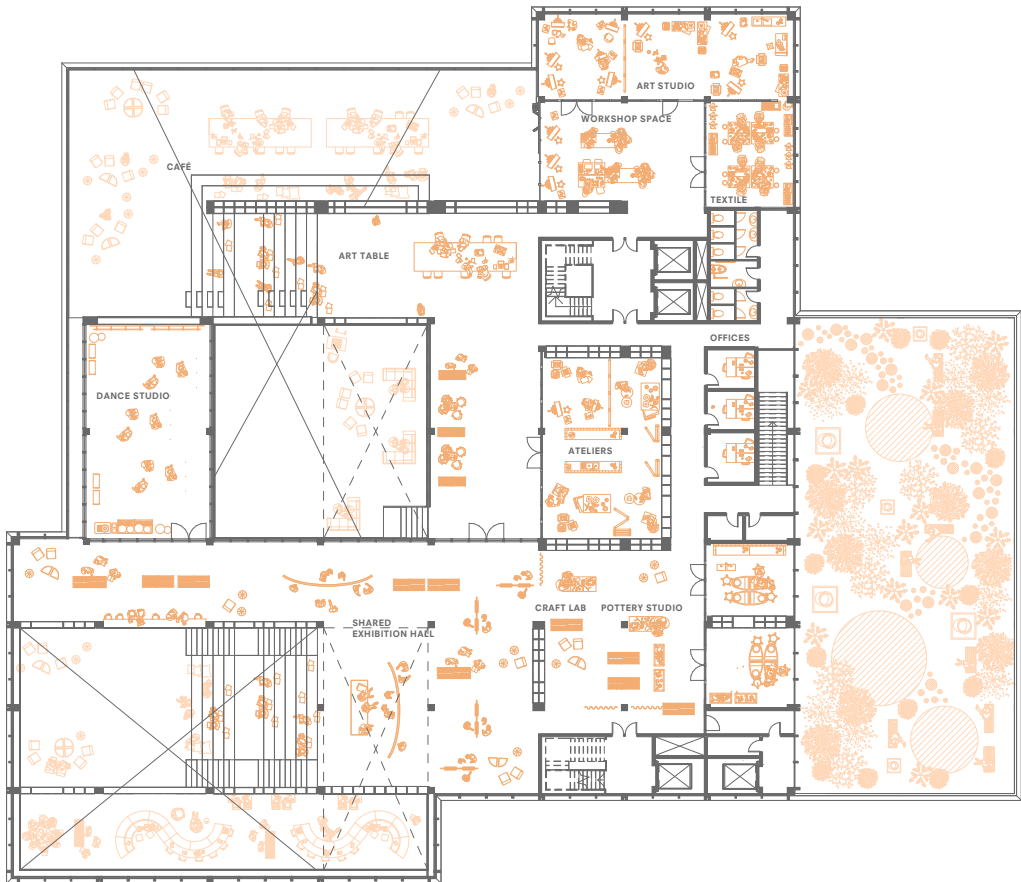












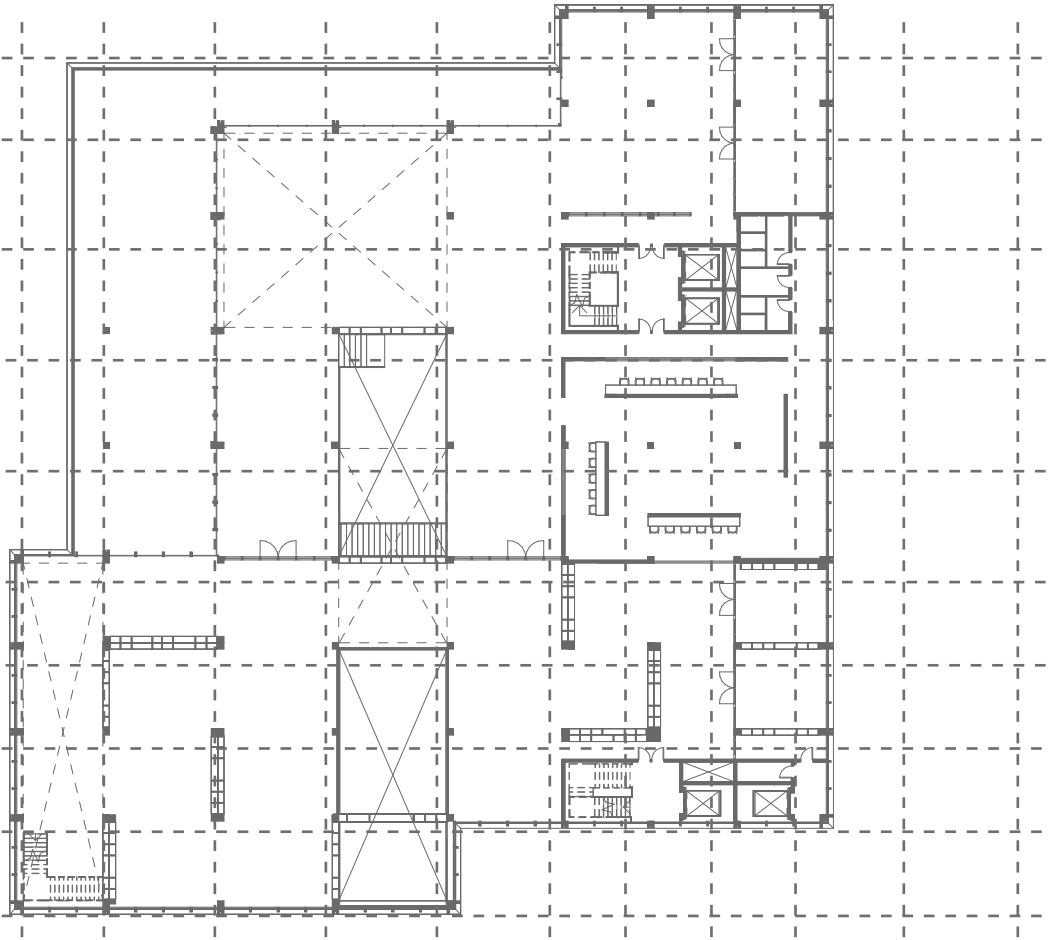


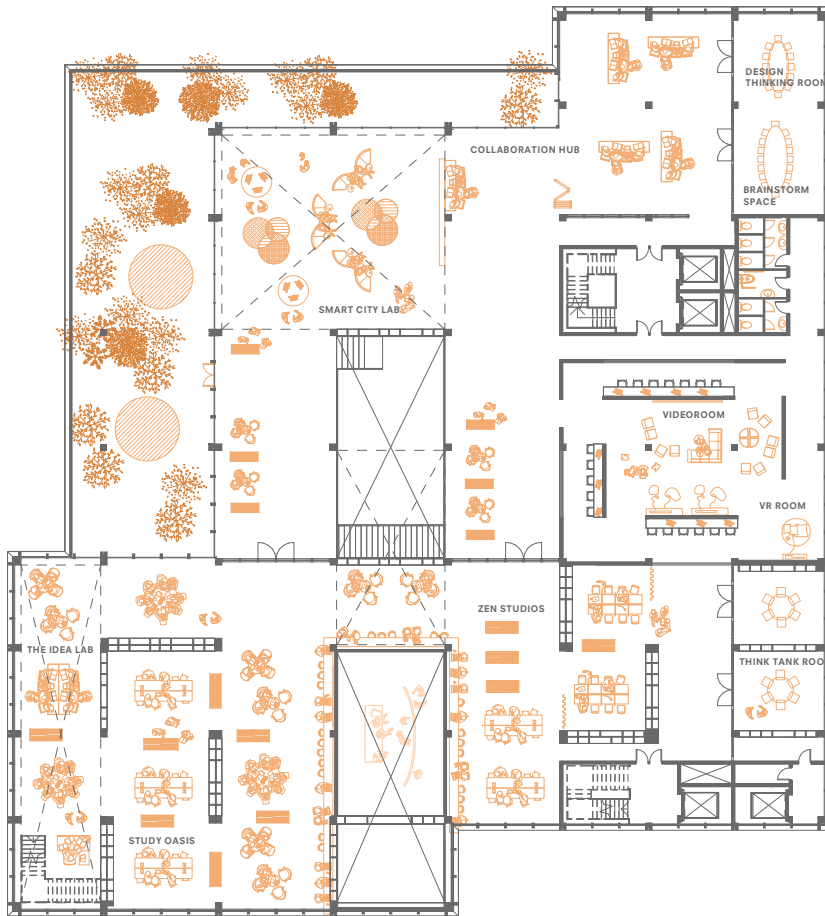










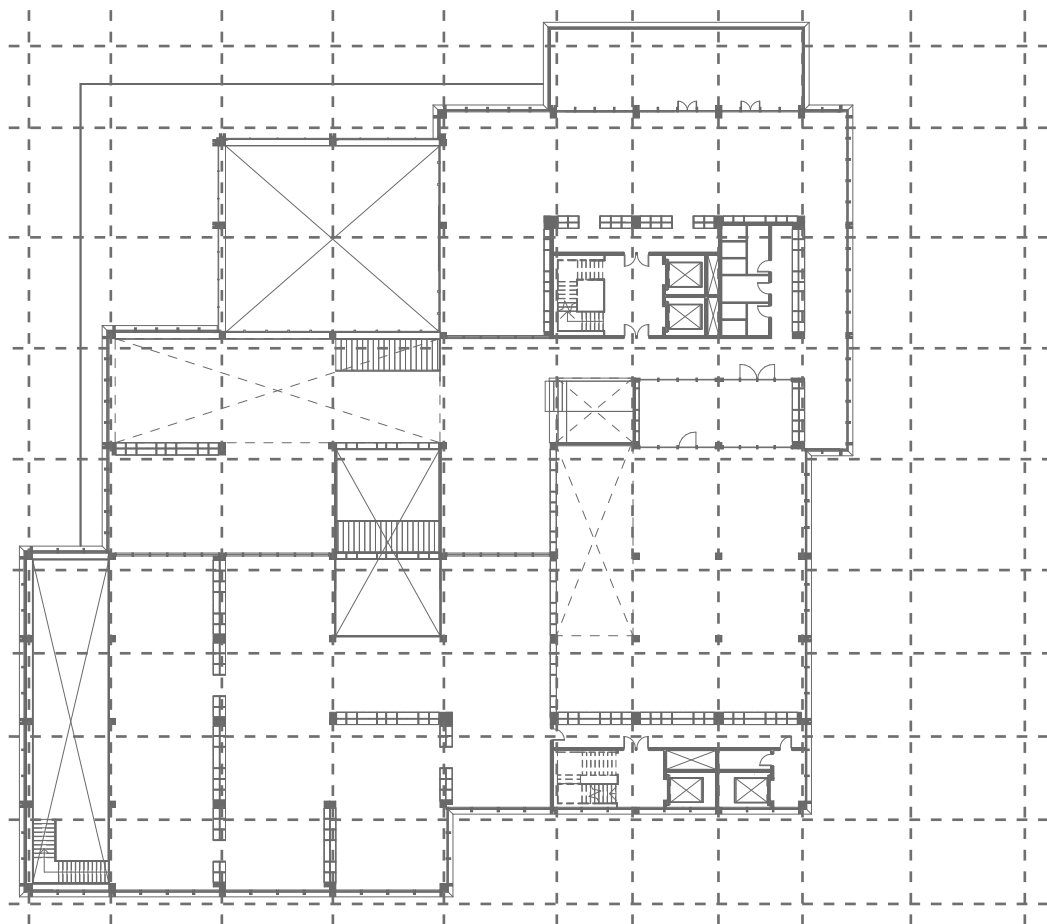


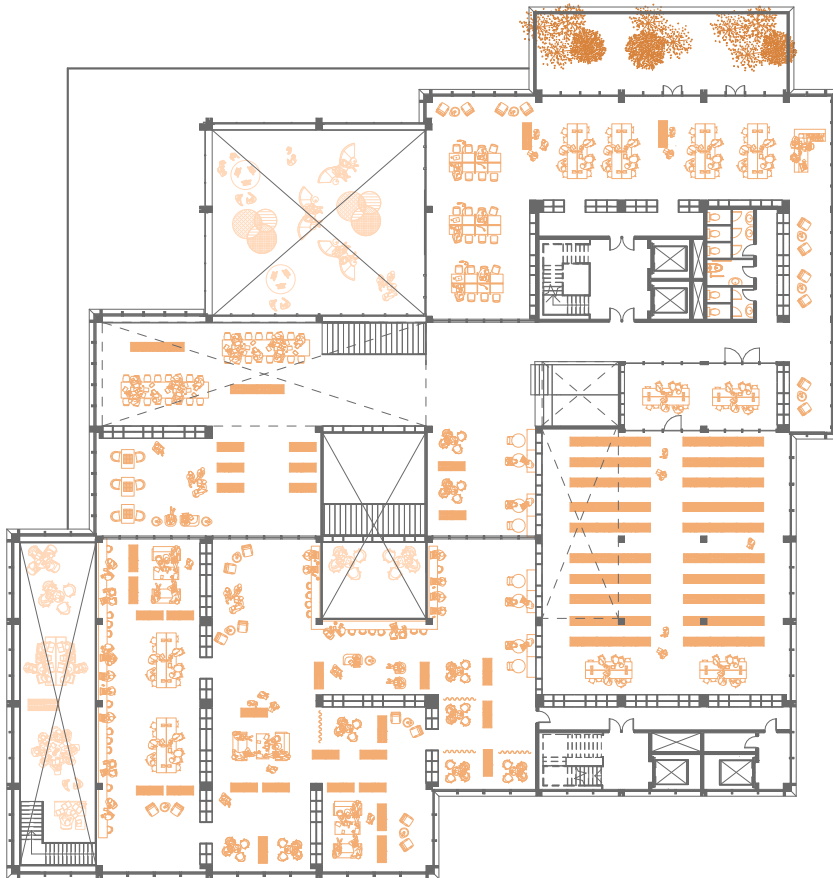


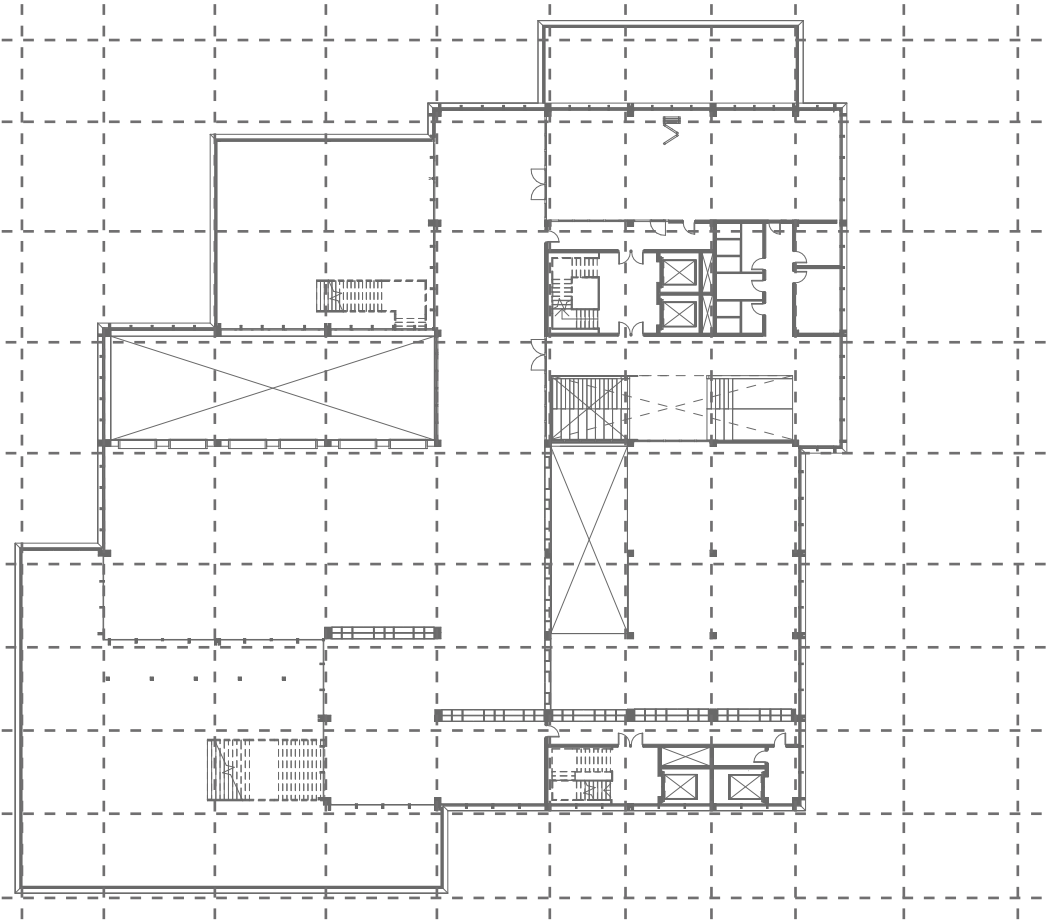






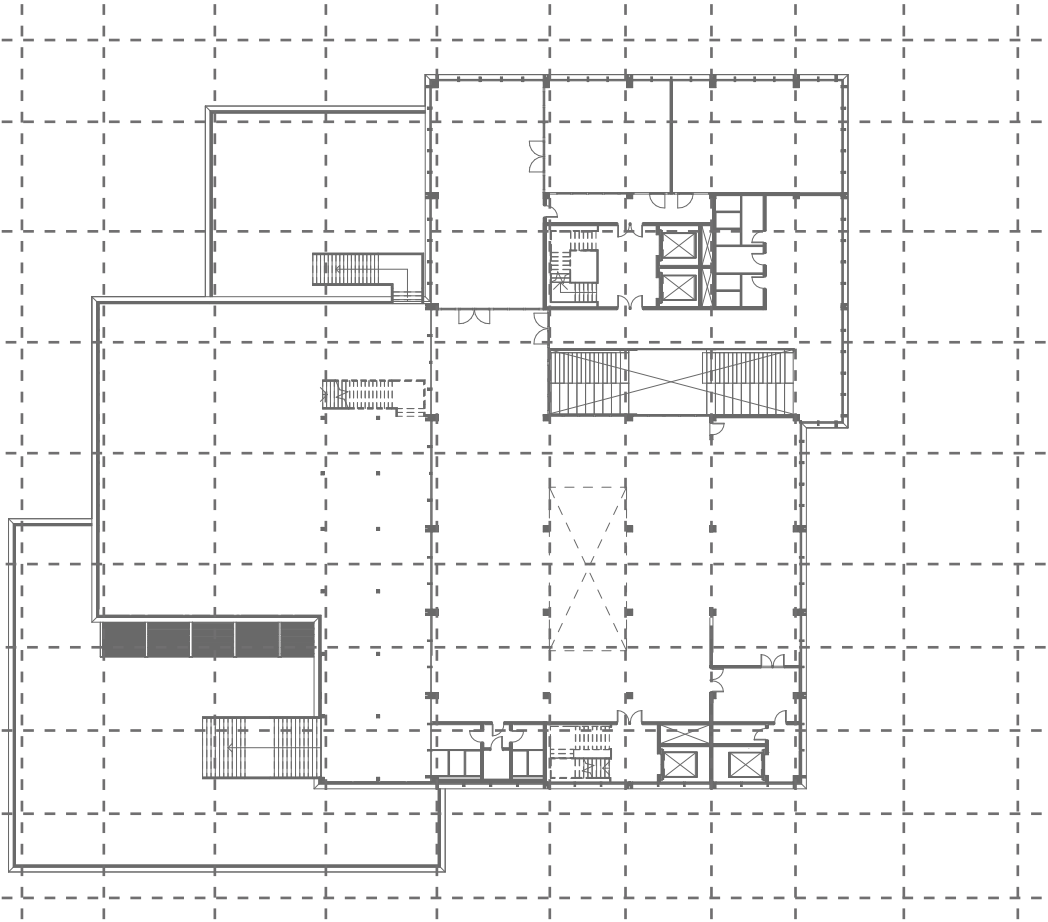




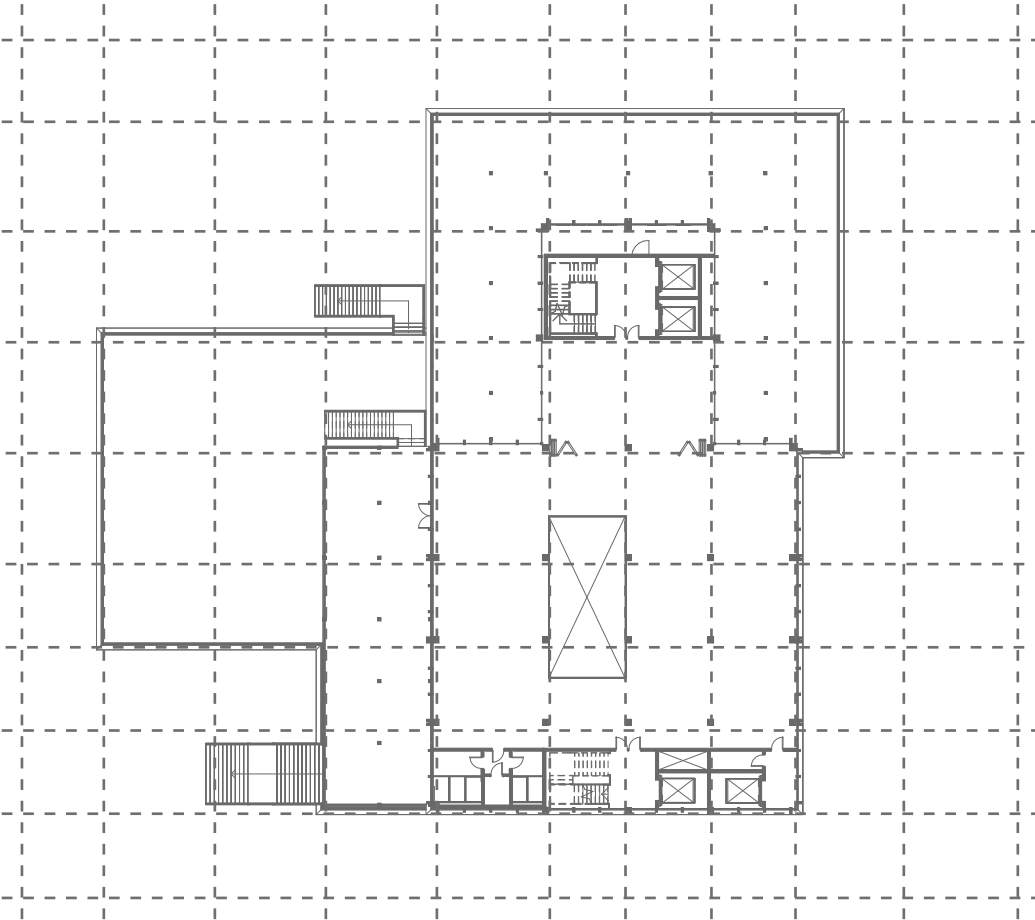














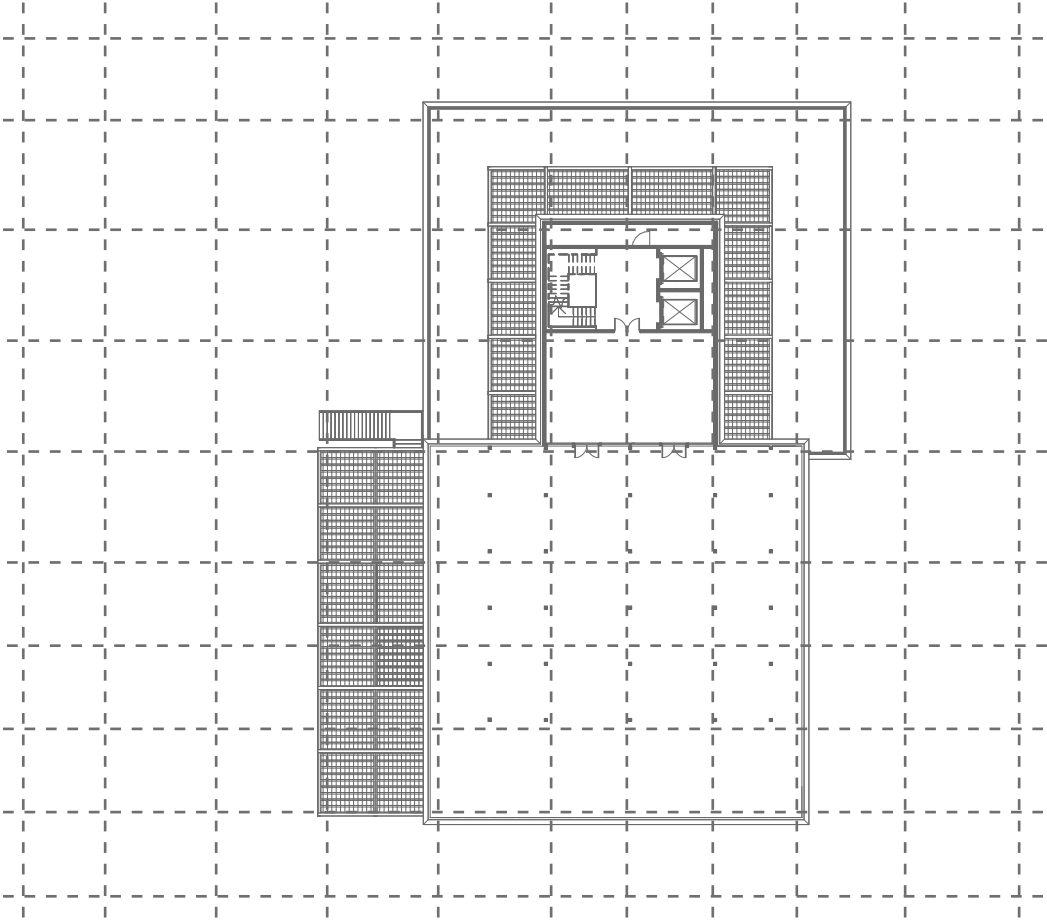








L 09 - VIEW DECK





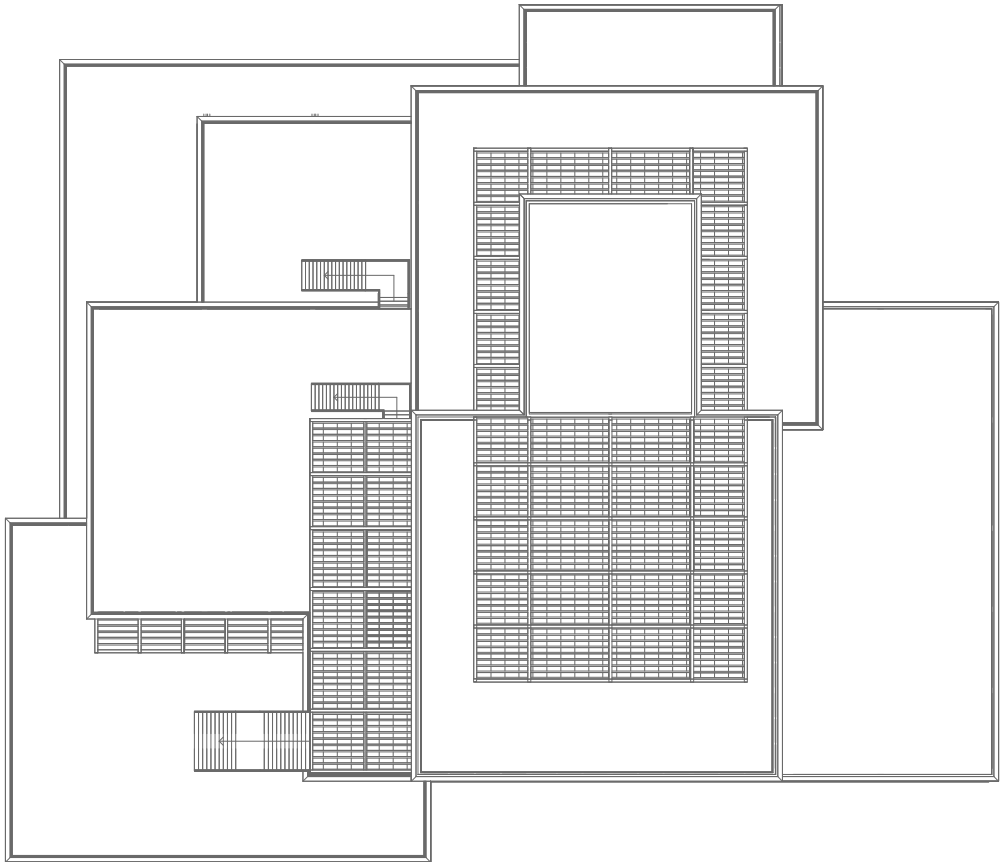






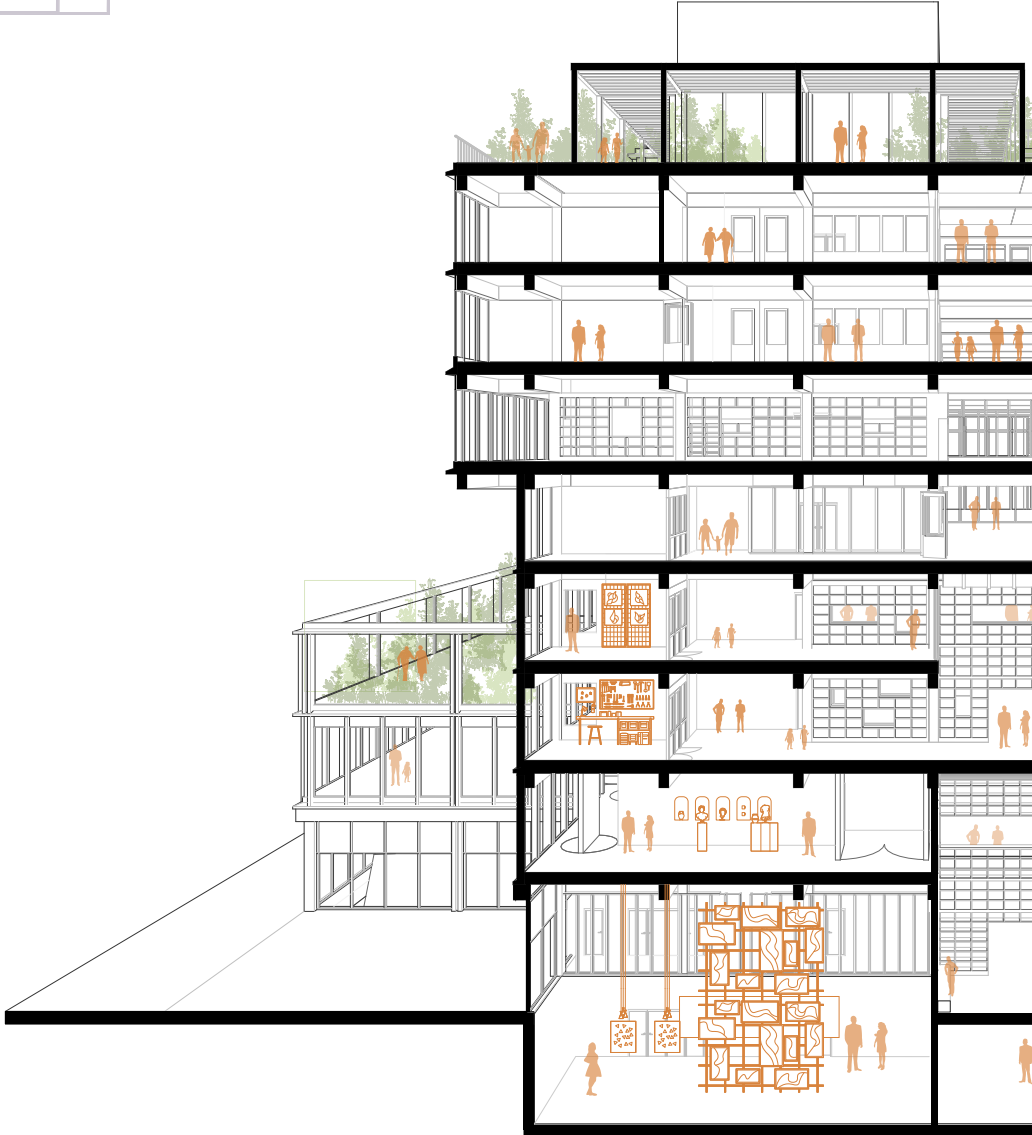
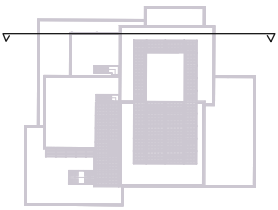


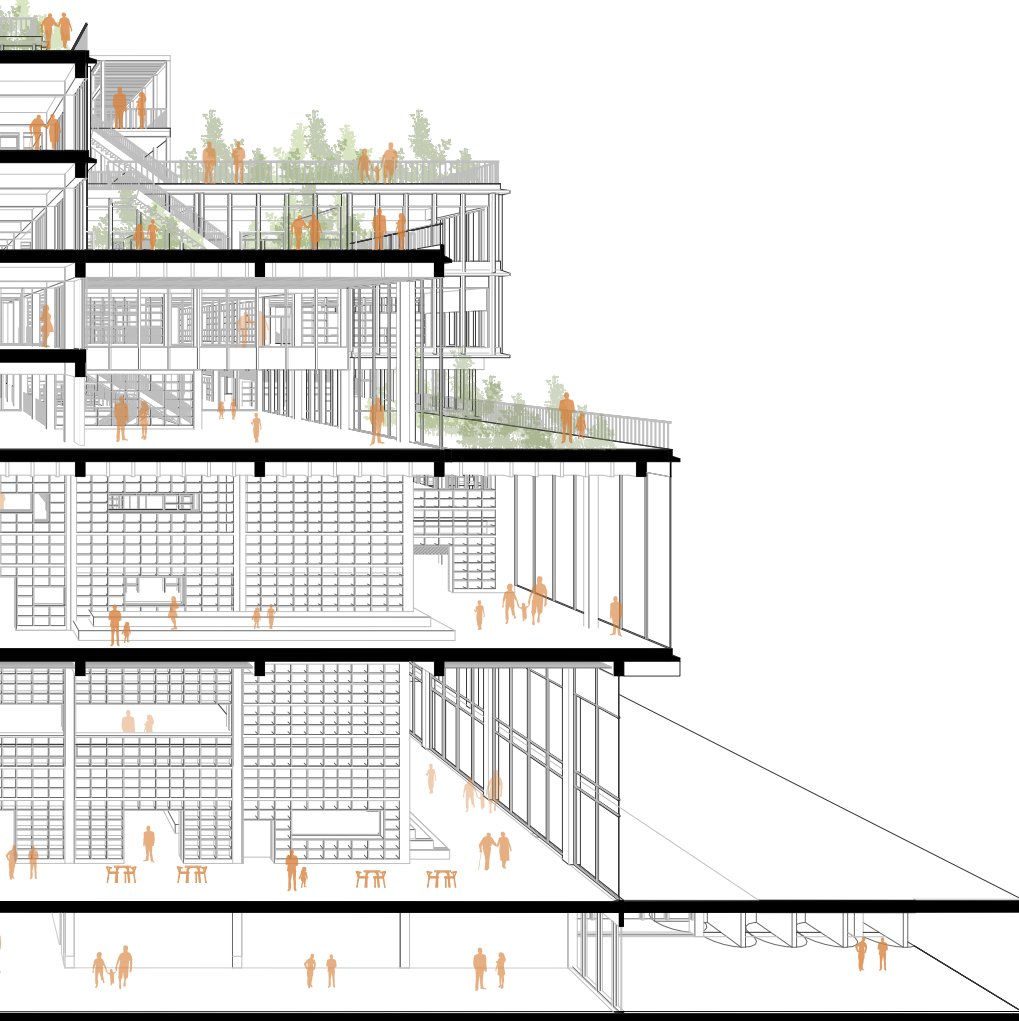
**ROOF**



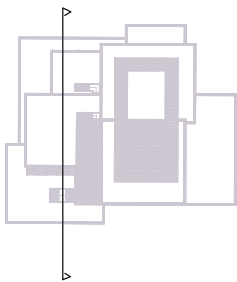


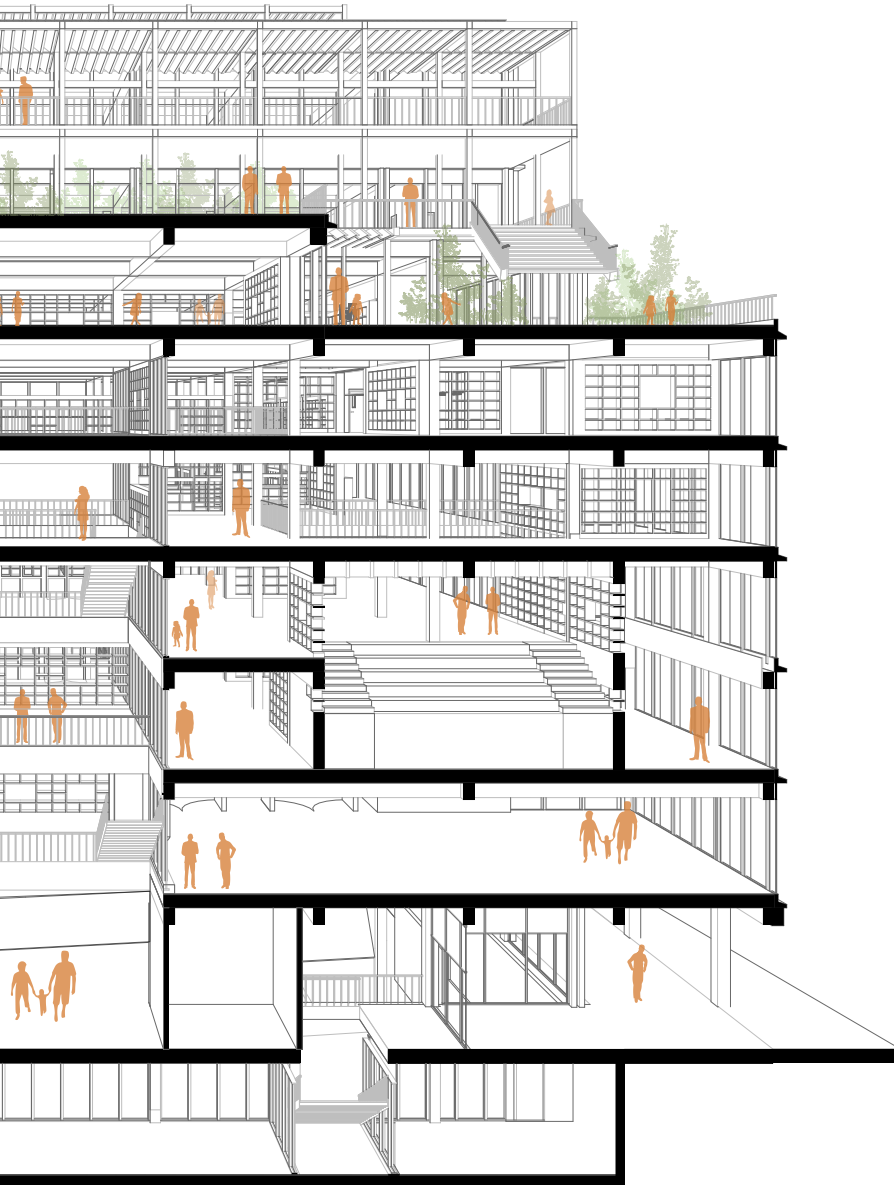
SECTION AA





SECTION BB







ELEVATION NORTH WEST





ELEVATION SOUTH EAST

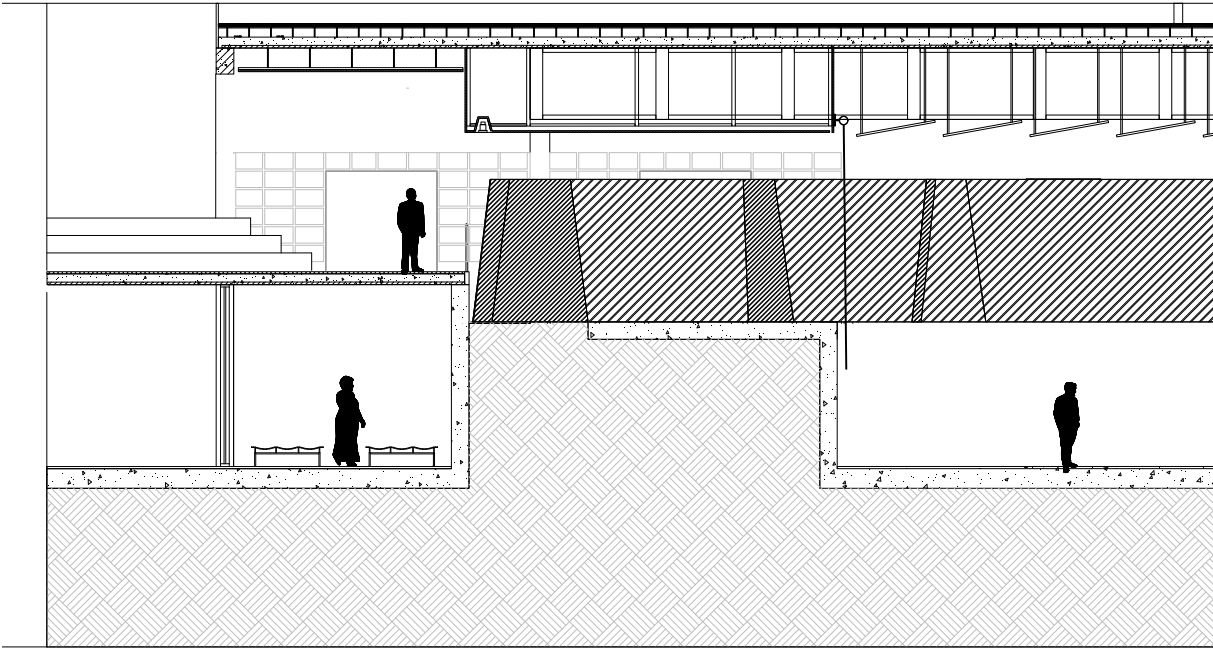


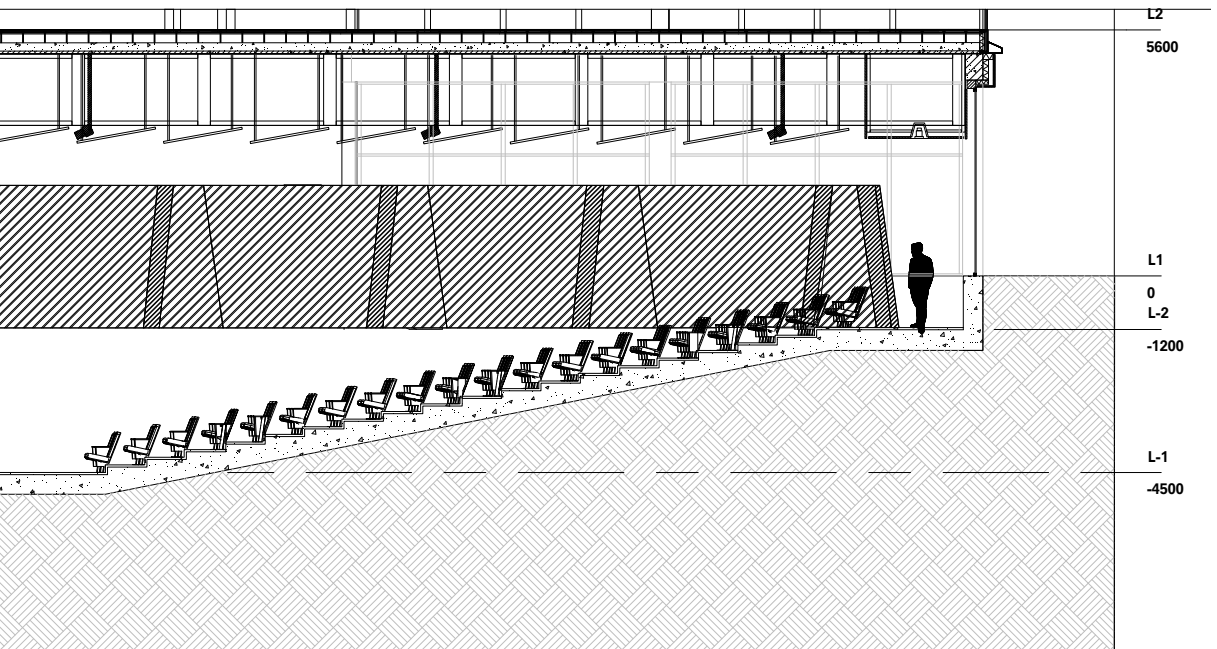






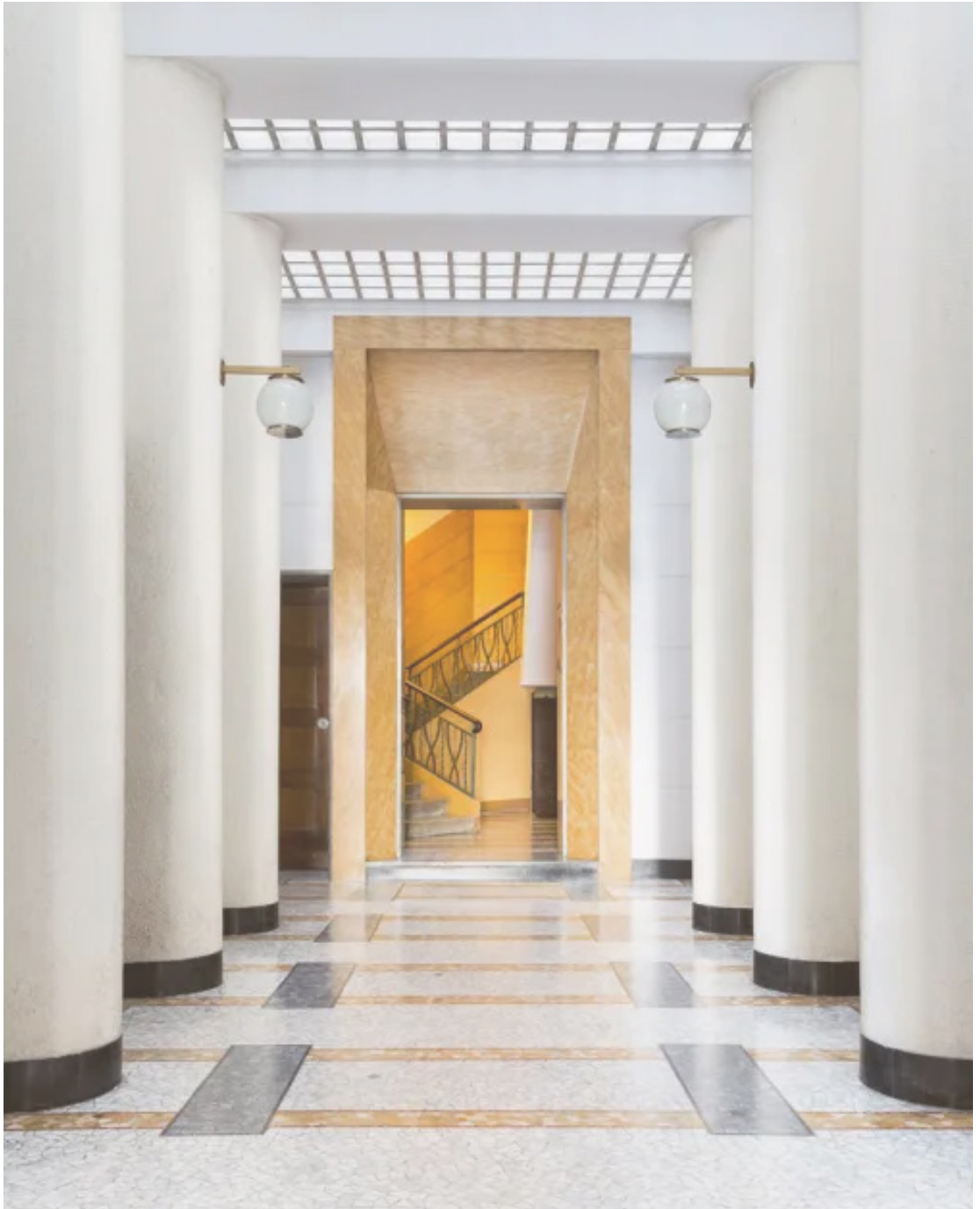
AUDITORIUM SECTION







**MILAN IS HISTORICALLY GREAT AT  
HARVESTING LOCAL RAW MATERIALS...**



...AND THE REFINING THEM  
TO A HIGH STANDARD





**& THE NEW MATERIAL IDENTITY OF MILAN  
ALSO INVOLVES...**





...MINIMIZING NEGATIVE IMPACTS ON  
THE ENVIRONMENT

## **LOCAL AND RECLAIMED MATERIALS**

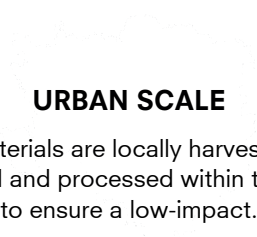
Promotes local resource use, reducing transportation emissions and boosting the regional economy. By this the city can be both eco-friendly and culturally grounded.

## **CELEBRATING LOCAL CRAFTSMANSHIP**

Integrating locally crafted elements will serve as symbols of Milan's fusion of heritage and modernity. A city that is both rooted in the past and forward-looking.

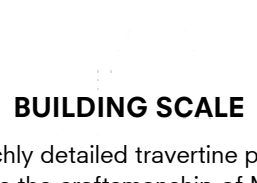
## **FUTURE-PROOF BUILDING**

Adaptable and sustainable projects will minimize the city's construction waste and allows buildings to evolve with future needs.



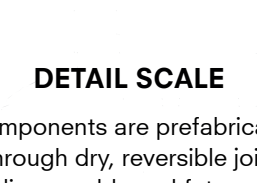
### **URBAN SCALE**

All materials are locally harvested or reclaimed and processed within the region to ensure a low-impact.



### **BUILDING SCALE**

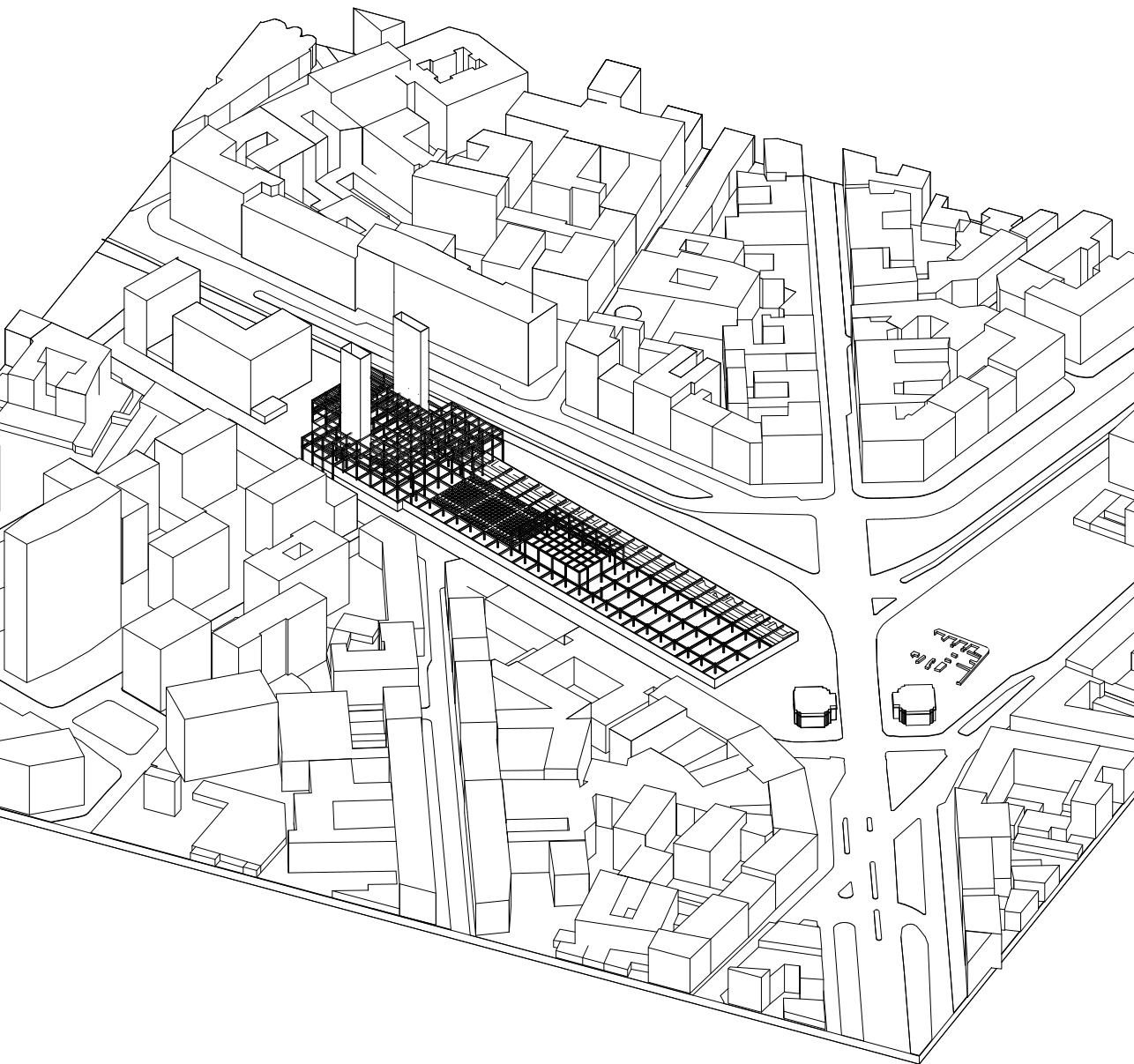
A richly detailed travertine plinth echoes the craftsmanship of Milan's grand entrance halls.

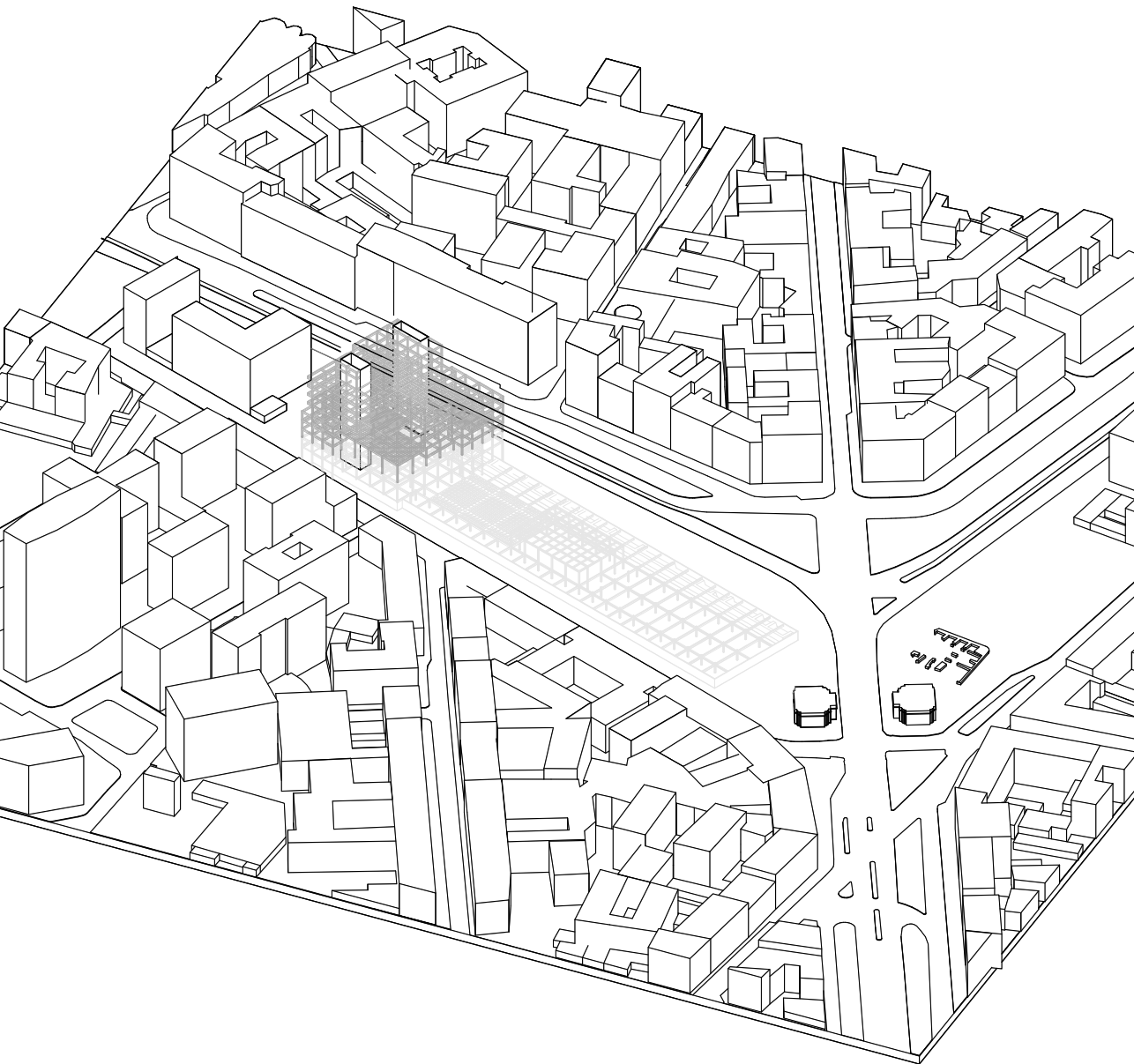


### **DETAIL SCALE**

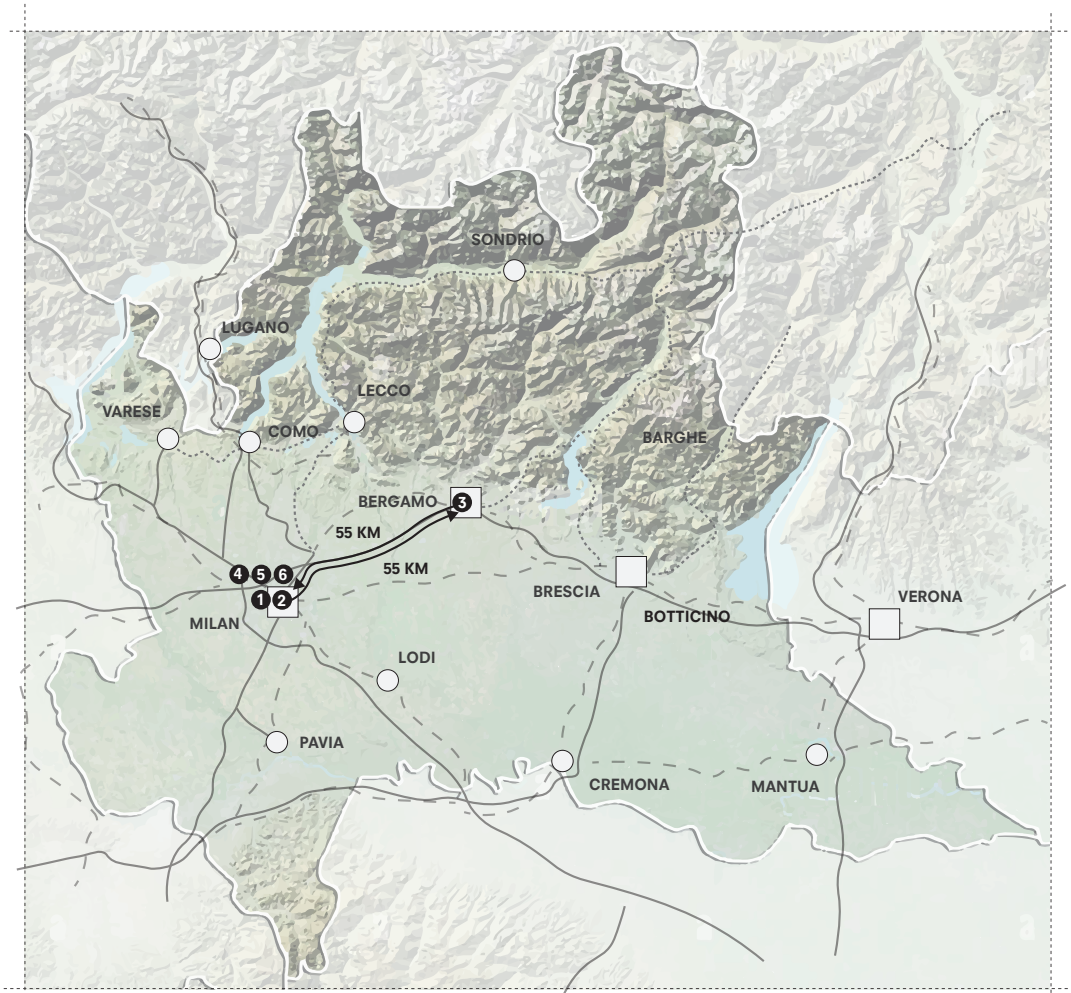
Most components are prefabricated and connected through dry, reversible joints, enabling easy disassembly and future reuse.







## MATERIAL - URBAN SCALE CONCRETE



| Phase                       | Possible location            | Transport - CO2/ton    |
|-----------------------------|------------------------------|------------------------|
| 1 - On site extraction      | Site (Porta Volta, Milan)    |                        |
| 2 - Crushing & sorting      | Vitali Impianti (Milan)      | Truck (15 km) - 1.0 kg |
| 3 - Preparation & blending  | Italcementi Center (Bergamo) | Truck (55 km) - 2.7 kg |
| 4 - Concrete batching       | Local batching plant (Milan) | Truck (50 km) - 2.5 kg |
| 5 - In-situ casting         | Site (Porta Volta, Milan)    | Truck (5 km) - 0.3 kg  |
| 6 - Residual recycling loop | Local recyclers (Milan)      |                        |



Reclaimed concrete

Low-carbon binder

Sustainable concrete structure

## Description

Concrete elements from the previous building are dismantled and sorted  
Crushing into recycled aggregate fractions and magnetic separation of steel

Production of low carbon binder (Limestone Calcined Clay Cement, LC<sup>3</sup>) and integration of recycled aggregates

Production of fresh concrete for new structural elements

Transporting new low-carbon concrete used for slabs, walls and cores, to the site

Waste slurry and leftover concrete recycled again

## Sustainable

**Circular resource:** using recycled concrete aggregate reduces waste and avoids new quarrying

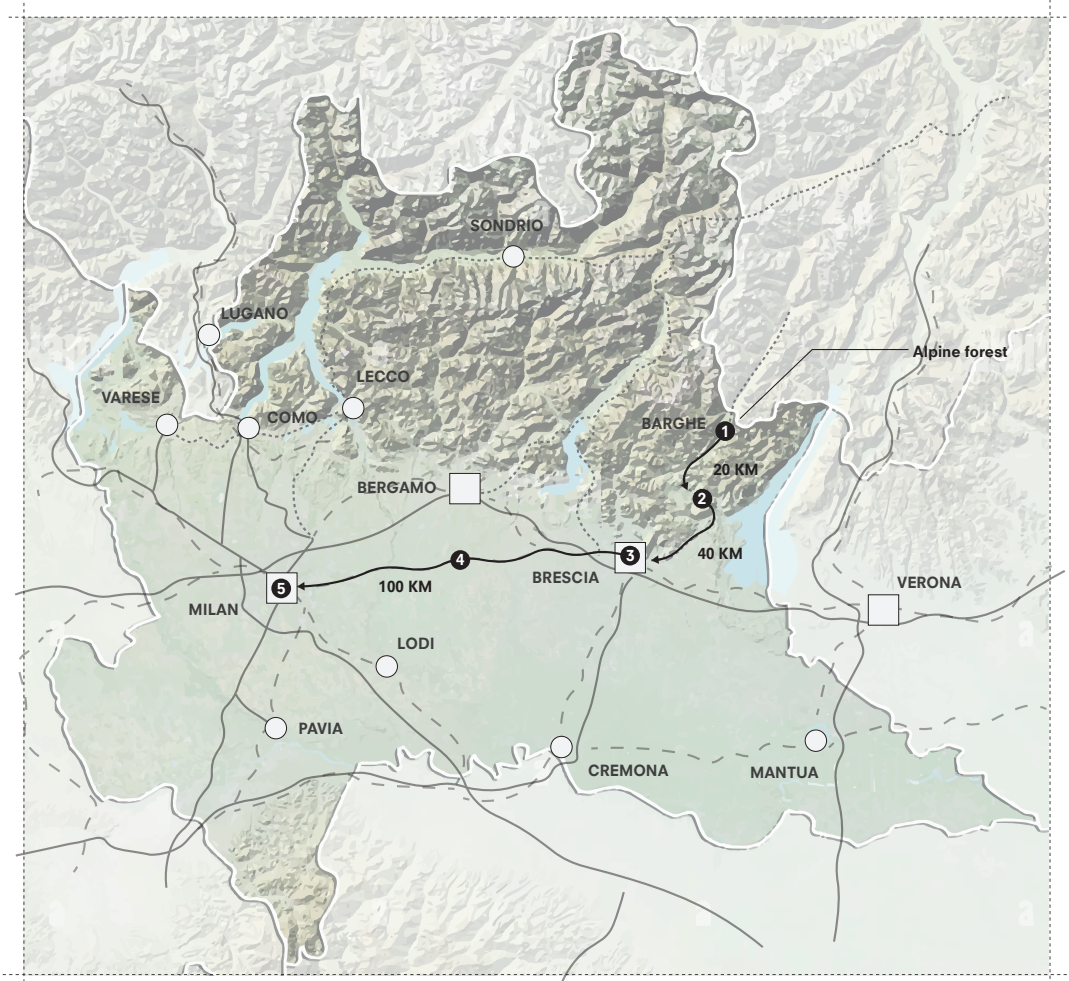
**Low-carbon binder:** LC3 emits 40-50% less CO<sub>2</sub>

**Local processing:** recycled aggregates and LC3 can both be produced within Lombardy

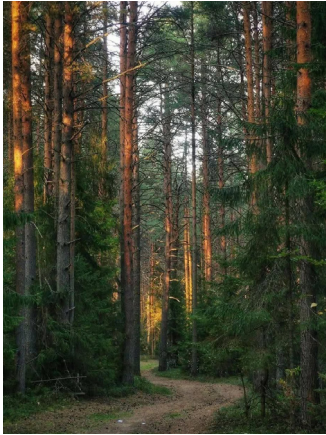
**Water reuse:** batching plants reuse process water and slurry



MATERIAL - URBAN SCALE **TIMBER**



| Phase                 | Possible location          | Transport - CO2/ton               |
|-----------------------|----------------------------|-----------------------------------|
| 1 - Forest extraction | Val Sabbia (Barghe)        |                                   |
| 2 - Sawmilling        | Segheria Gerra (Barghe)    | Truck (20 km) - 1.3 kg            |
| 3 - Prefabrication    | Gerra facilities (Brescia) | Truck (40 km) - 2.7 kg            |
| 4 - Transport         | Site (Porta Volta, Milan)  | Train and truck (110 km) - 2.7 kg |
| 5 - On-site assembly  | Site (Porta Volta, Milan)  |                                   |



Alpine spruce



Engineered timber



Load-bearing timber structure



## Description

Harvesting of Alpine spruce from managed forests in the Lombard Alps

Conversion of logs into structural dimensions

Processed timber turned into CLT (Cross-Laminated Timber) and Glulam beams and columns and surface treatment

CLT modules transported to the building site

Installation of timber structures on the building site

## Sustainable

**CO2 storage:** about 1 ton of CO2 is sequestered per m3 of wood

**Renewable resource:** forests in the Alpes are FSC certified

**Low embodied energy:** far lower than steel or concrete

**Bio-based by-products:** bark, chips, and sawdust reused for pellets or bioenergy

ELEVATION SOUTH WEST

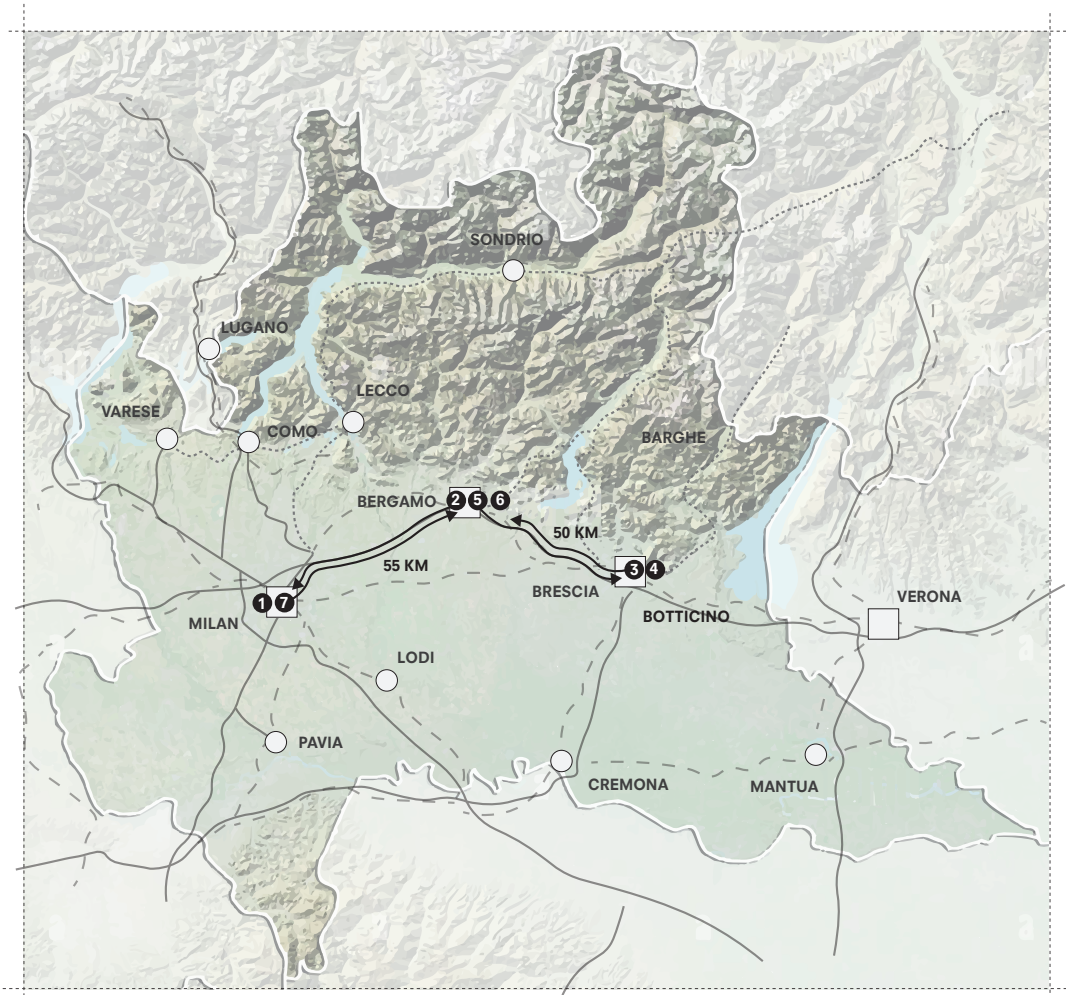




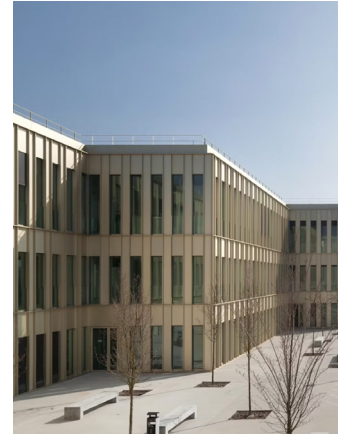




MATERIAL - URBAN SCALE ALUMINIUM



| Phase                    | Possible location             | Transport - CO2/ton    |
|--------------------------|-------------------------------|------------------------|
| 1 - Collection & sorting | CRF Rottami (Milan)           |                        |
| 2 - Melting & alloying   | Intals SpA Ambivere (Bergamo) | Truck (50 km) - 3.4 kg |
| 3 - Profile extrusion    | Metra SpA (Brescia)           | Truck (45 km) - 3.0 kg |
| 4 - Anodizing            | Metra SpA (Brescia)           |                        |
| 5 - CNC machining        | Façade fabricator (Bergoma)   |                        |
| 6 - Modular assembly     | Façade workspace (Bergoma)    | Truck (50 km) - 3.4 kg |
| 7 - Transport to site    | Site (Porta Volta, Milan)     | Truck (55 km) - 3.4 kg |



**Aluminium from  
renovation and  
demolition streams**

**Alloy selection  
and anodizing**

**Prefabricated modules  
for curtain wall**

#### Description

Old aluminium façades and window frames are dismantled and separated from glass, steel and plastics

Sorted scrap is melted and cast into new aluminum alloys

Billets are extruded into new profiles

Profiles are anodized for corrosion protection

Precision processing of profiles: cutting, drilling, milling and insert welding

Assembly of profiles, glass, insulation, and seals into prefabricated façade modules

Prefabricated modules transported by truck to Porta Volta

#### Sustainable

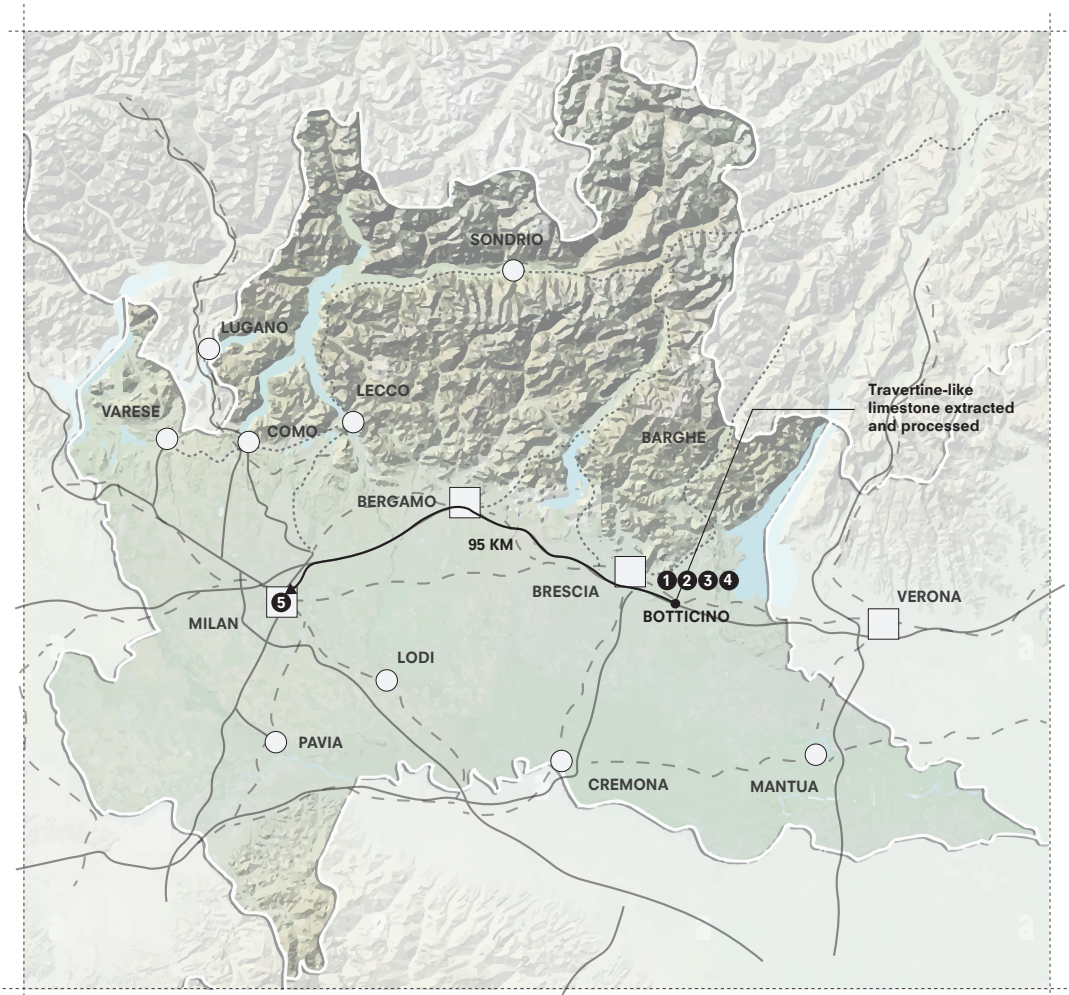
**Infinitely recyclable:** recycling uses 95% less energy than primary production

**Material quality maintained:** no degradation with repeated recycling

**Regional circular chain:** collection, melting, extrusion and assembly all in Lombardy

**Lightweight:** reduces transport and installation energy

MATERIAL - URBAN SCALE TRAVERTINE



| Phase                      | Possible location                  | Transport - CO2/ton     |
|----------------------------|------------------------------------|-------------------------|
| 1 - Extraction             | Lazzarini Marmi Nuvolera (Brescia) |                         |
| 2 - Cutting & callibration | Marmi Corradini Rezzato (Brescia)  | Truck (10 km) - 0.7 kg  |
| 3 - Finishing & selection  | Marmi Rezzato Srl (Brescia)        | Truck (10 km) - 1.0 kg  |
| 4 - Prefabrication         | Marmi Corradini Rezzato (Brescia)  | Truck (10 km) - 0.7 kg  |
| 5 - Transport to site      | Site (Porta Volta, Milan)          | Truck (100 km) - 7.0 kg |



**Local extracted  
limestone with travertine  
chaacteristics**

**Sawing and  
polishing surface**

**Travertine-like limestone  
panels for façade**

#### Description

Porous limestone similar to travertine is extracted from the classic Botticino quarries in the province of Brescia

Rough blocks are cut into slabs and resin impregnated to stabilize porosity  
Polishing of surfaces

Precision sawing to project specifications and integration of anchoring systems

Materials are transported from Brescia-area factories to construction site

#### Sustainable

**Locally quarried:** avoids long-distance import from Turkey or Asia

**Long lifespan and reusability:** natural stone can last over 100 years and be repolished or re-cut

**Minimal processing:** only cutting and polishing, few chemical treatments

**Cultural heritage:** supports traditional stonecraft and identity of the Botticino Stone District



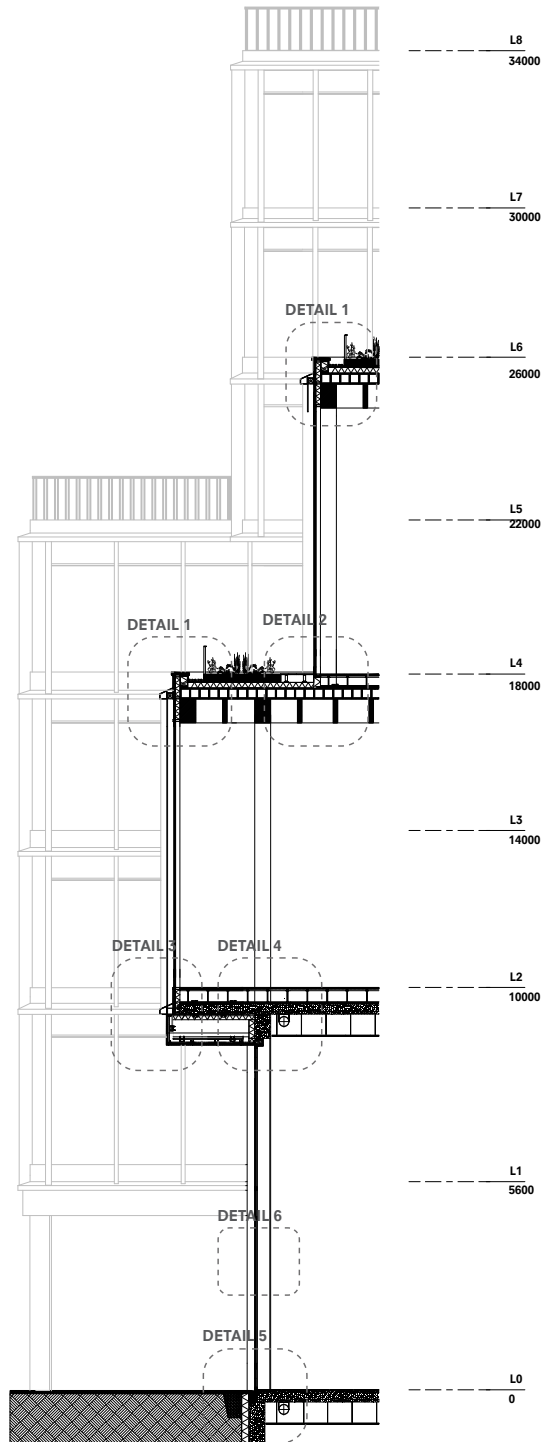
ELEVATION NORTH EAST





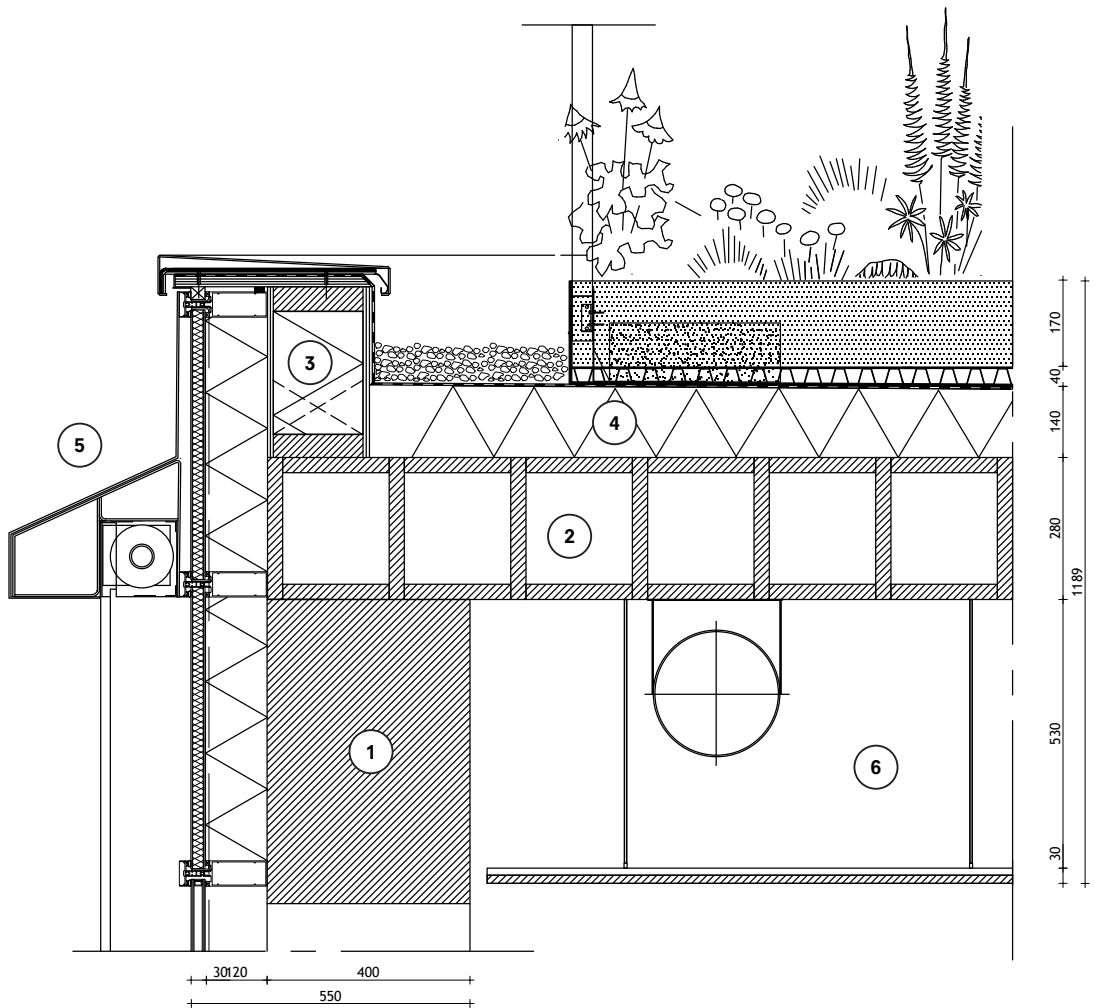
FACADE FRAGMENT



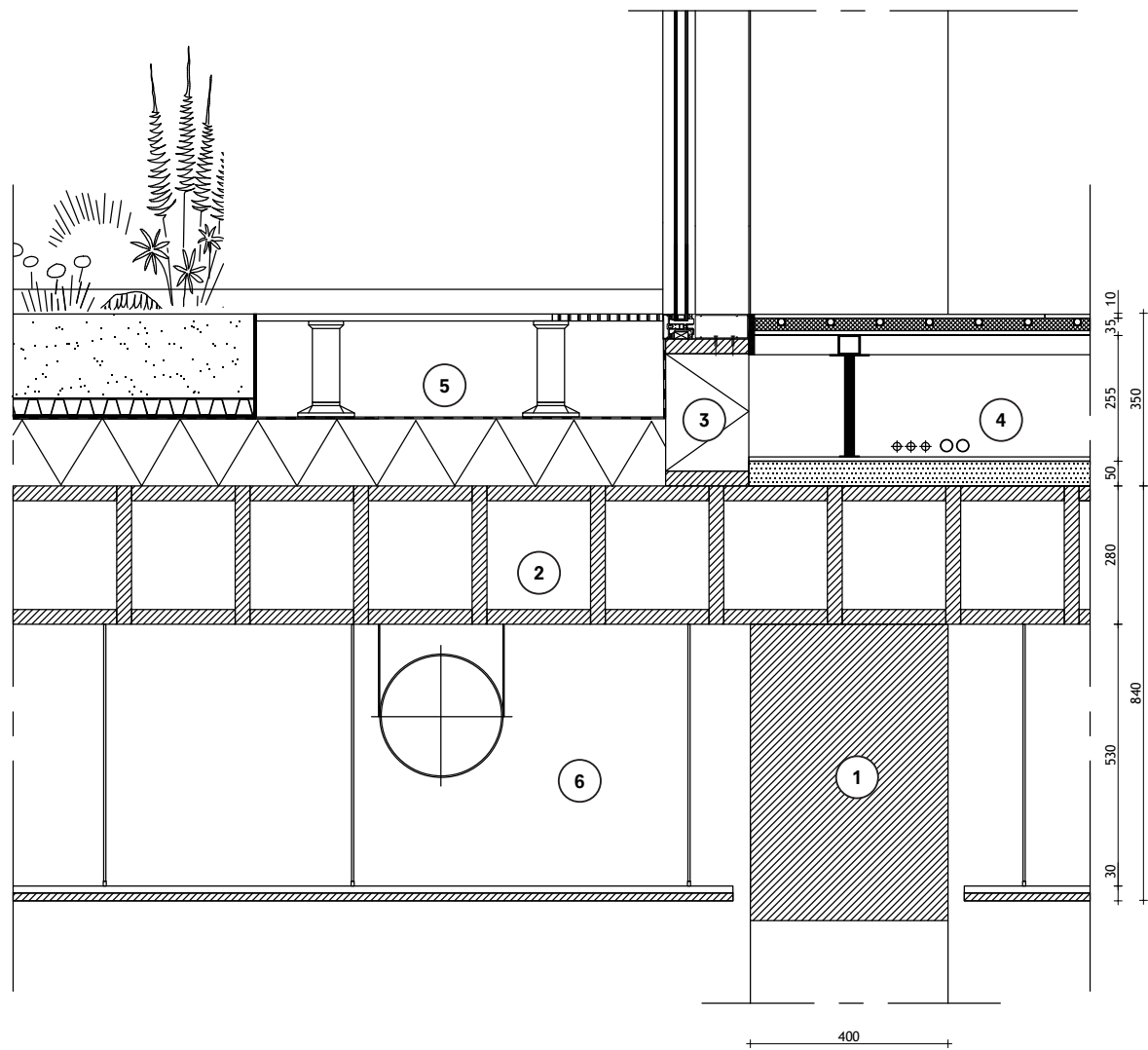




## DETAIL 1

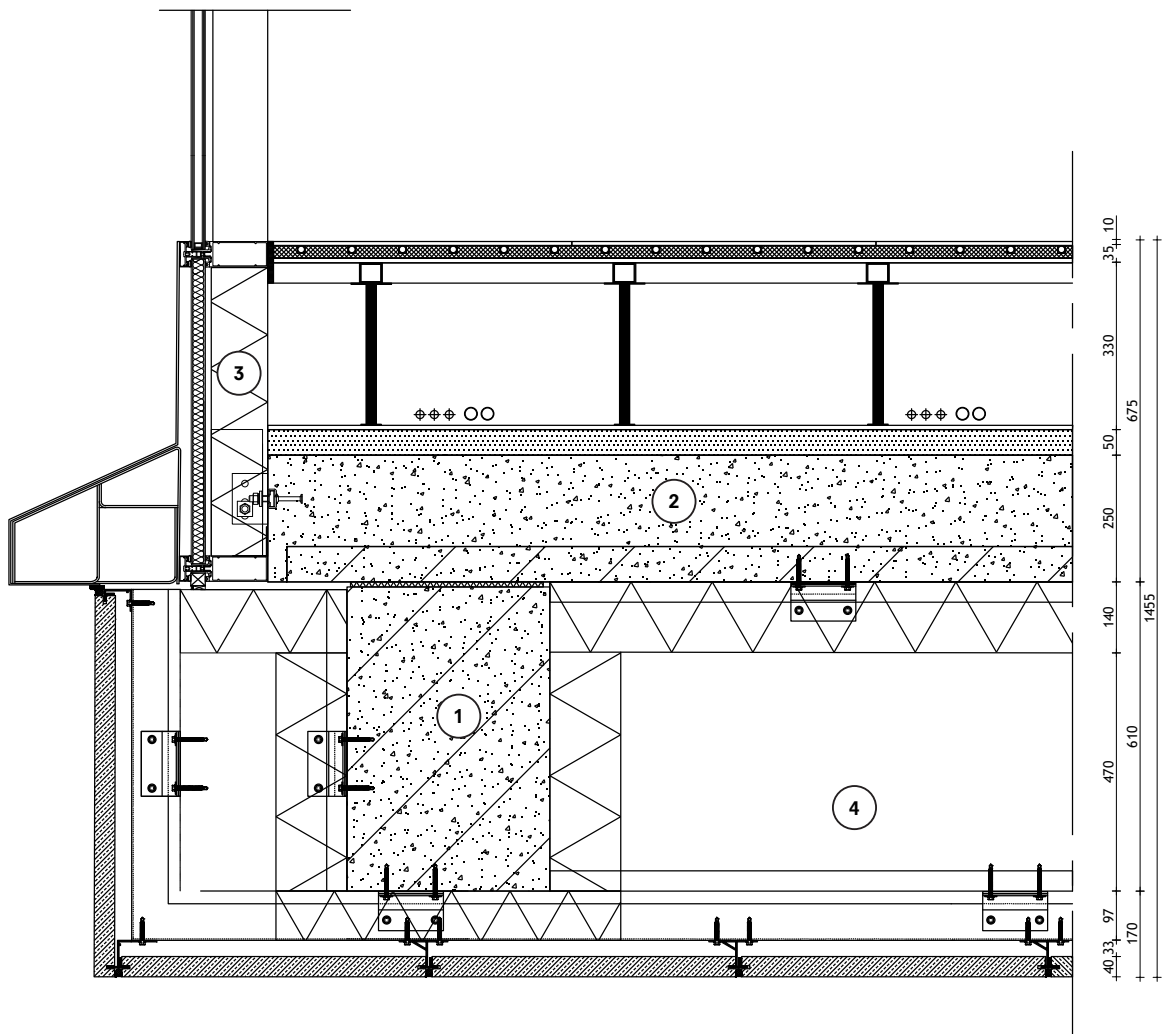


1. Timber construction beam 400x600 mm
2. Lignatur surface floor 280 mm
3. HSB-element for roof upstand, aluminium wall covering
4. Ballast layer, vegetation, railing, substrate 170 mm, filter layer, drainage layer, waterproof mechanical protection layer 3 mm, mineral wool insulation 240 mm, vapour barrier layer 3 mm
5. Aluminium curtain wall, with outside shading screens
6. Suspended ceiling, wooden slats, and space for installations

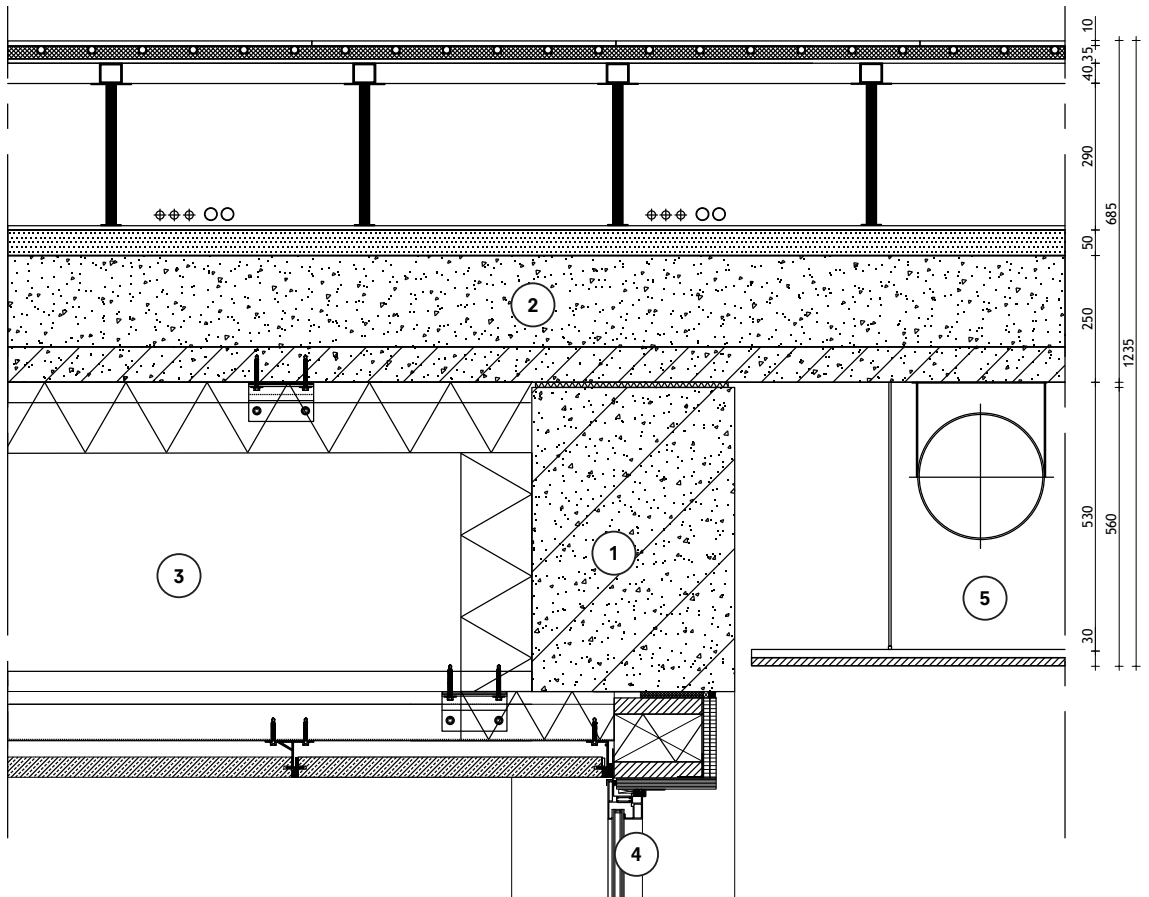


- 1. Timber construction beam 400x600 mm
- 2. Lignatur surface floor 280 mm
- 3. HSB-element, aluminium curtain wall
- 4. Raised acces floor; marmoleum floor panels 600x600 mm (concrete look), underfloor heating screed 60 mm , stringers (steel profiles), adjustable pedestals (steel columns), rubber acoustic pad, load-bearing leveling layer 50 mm
- 5. Concrete tiles, tile supporters, threshold drain, waterproof mechanical protection layer 3 mm, mineral wool insulation 240 mm, vapour barrier layer 3 mm
- 6. Suspended ceiling, wooden slats, and space for installations

## DETAIL 3



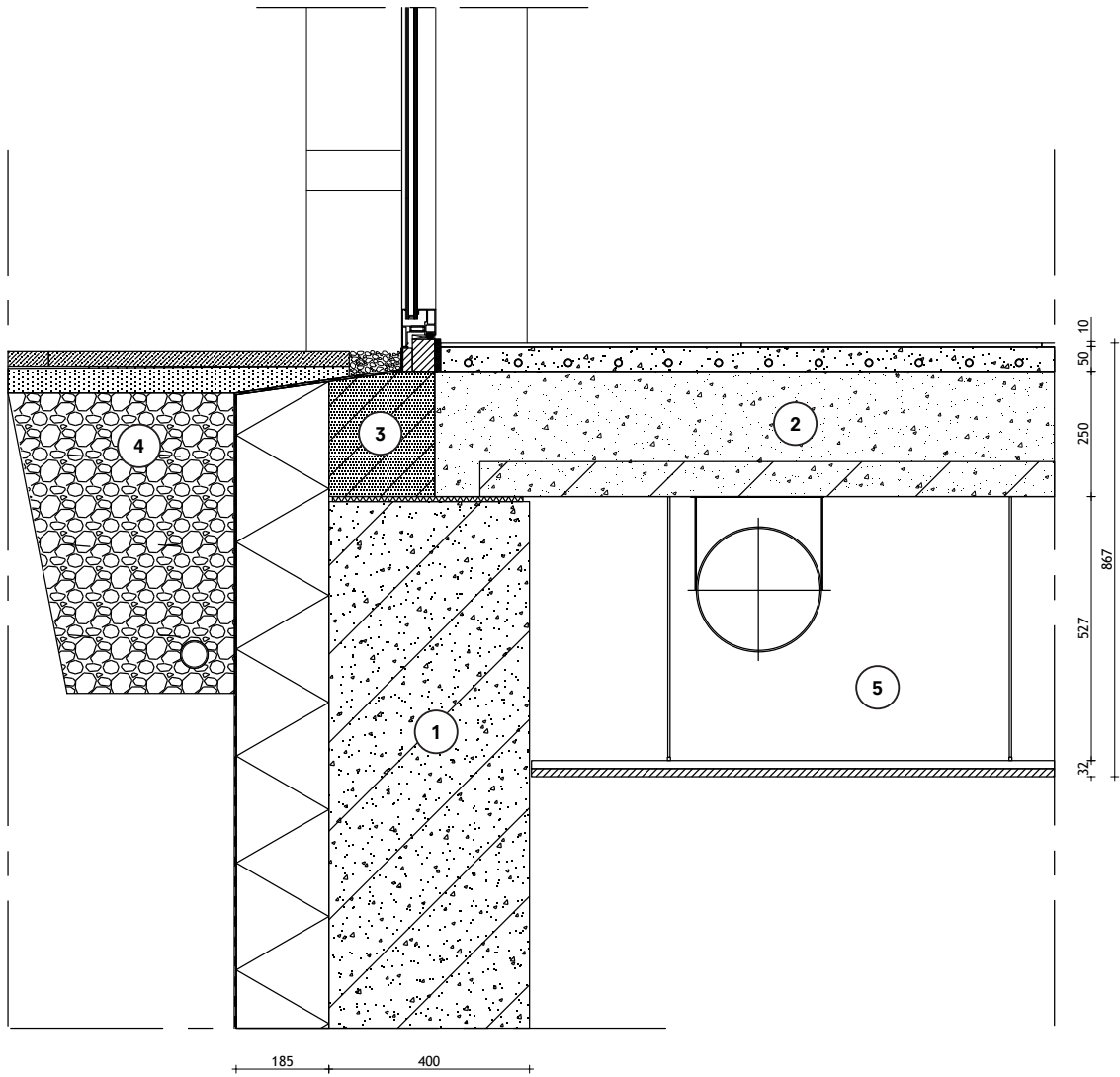
1. Concrete construction beam 400x600 mm
2. Raised access floor; marmoleum floor panels 600x600 mm (concrete look), underfloor heating screed 60 mm, stringers (steel profiles), adjustable pedestals (steel columns), rubber acoustic pad, load-bearing leveling layer 50 mm, wide slab floor 250 mm
3. Aluminium curtain wall with anodised aluminium sandwich panels and cover
4. Travertine panel 40 mm, agraffe anchors, T aluminium rails, adjustable brackets, ventilated cavity with thermal insulation 130 mm, weather-resistive barrier, secondary steel frame (cold-formed C-studs), mineral wool insulation 140 mm



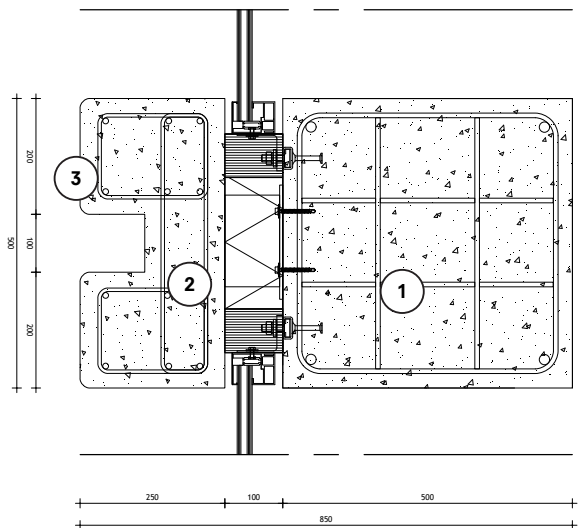
1. Concrete construction beam 400x600 mm
2. Raised access floor; marmoleum floor panels 600x600 mm (concrete look), underfloor heating screed 60 mm, stringers (steel profiles), adjustable pedestals (steel columns), rubber acoustic pad, load-bearing leveling layer 50 mm, wide slab floor 250 mm
3. Travertine panel 40 mm, agraffe anchors, T aluminium rails, adjustable brackets, ventilated cavity, weather-resistive barrier, secondary steel frame (cold-formed C-studs), mineral wool insulation 140 mm
4. HSB element with aluminium window wall system installed between structural concrete columns finished with travertine panels
5. Suspended ceiling, wooden slats, and space for installations



# DETAIL 5

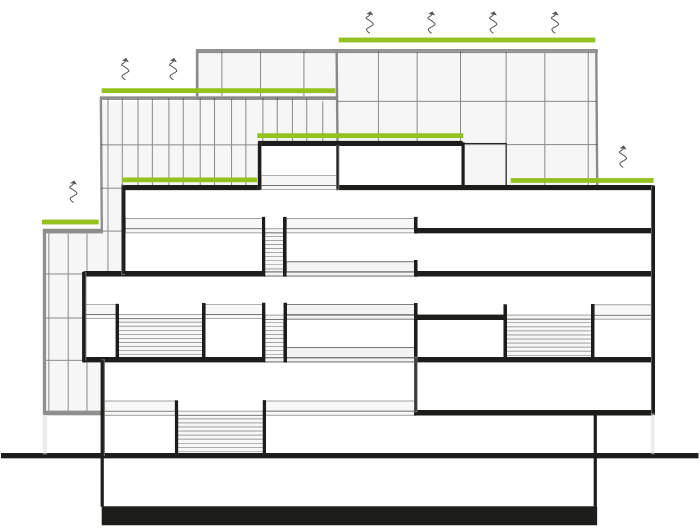


- 1. Concrete structure 400 mm
- 2. Marmoleum floor panels 600x600 mm (concrete look), floor screed with heating 50 mm, wide slab floor 250 mm
- 3. Aluminium window wall system installed between structural concrete columns finished with travertine panels, water-resistance layer, thermal insulation blocks at wall base, thermal insulation 185 mm (mineral wool)
- 4. Stone tiles 40 mm, compacted sand bed, drainage layer, water-permeable gravel, backfill soil
- 5. Suspended ceiling, wooden slats, and space for installations



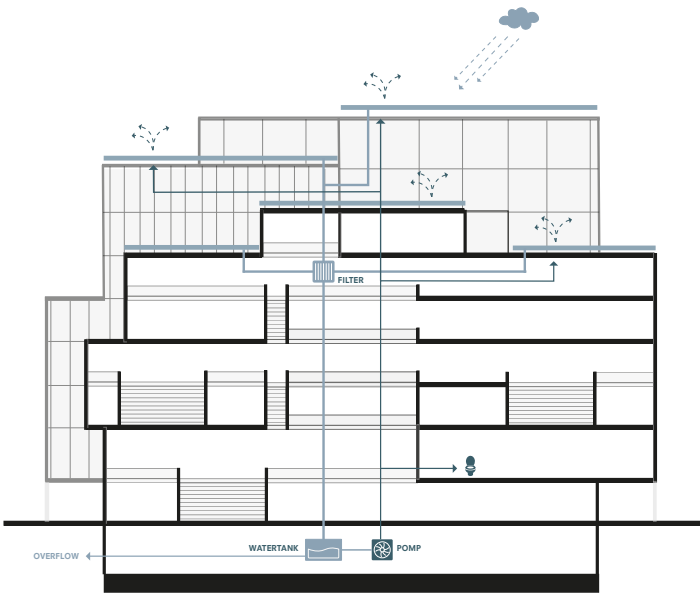
- 1. Load-bearing structure, reinforced concrete structure 400 mm
- 2. Aluminium window frames, mineral wool (80kg/m<sup>3</sup>) 100 mm, Vacuum Insulation Panels (VIP) 100 mm, water-resistance layer
- 3. A prefabricated reinforced concrete element 250 mm with a travertine aggregate surface finish 4 mm, treated with a hydrophobic coating to provide water repellency and protection against soiling and discoloration

# CLIMATE SCHEMES



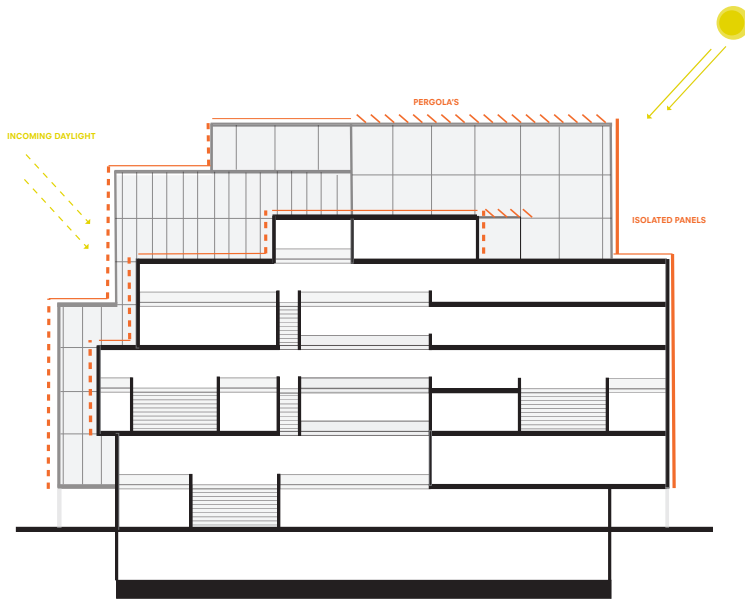
## GREEN ROOFS

Vegetated roofs that provide thermal insulation, stormwater management and urban cooling



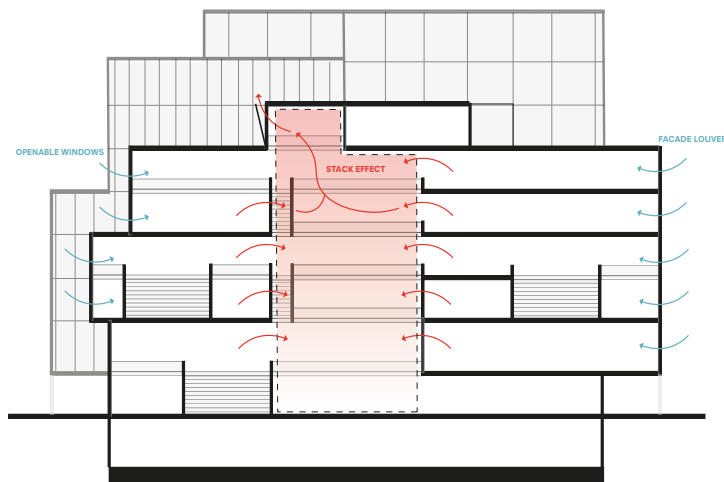
## RAINWATER HARVESTING

Collection and storage of rainwater from roofs for reuse in toilets and irrigation



## BUILDING ENVELOPE

Highly insulated facades with optimized glazing and shading systems to minimize heating and cooling

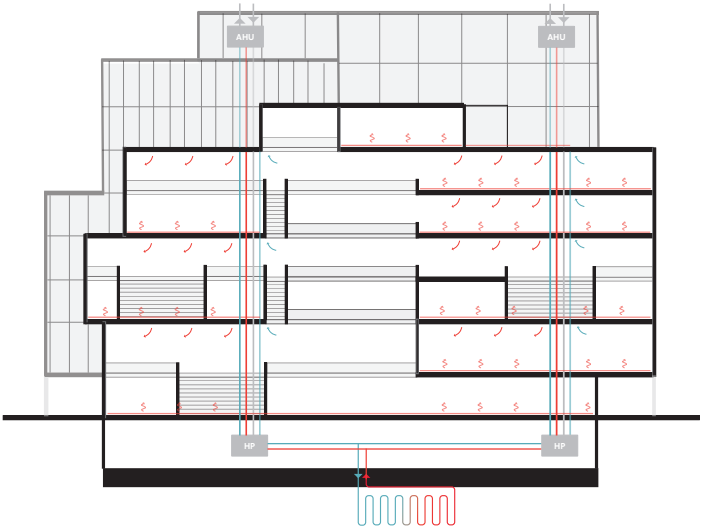


## HYBRID VENTILATION

The atrium generates a stack-effect pressure that drives natural ventilation

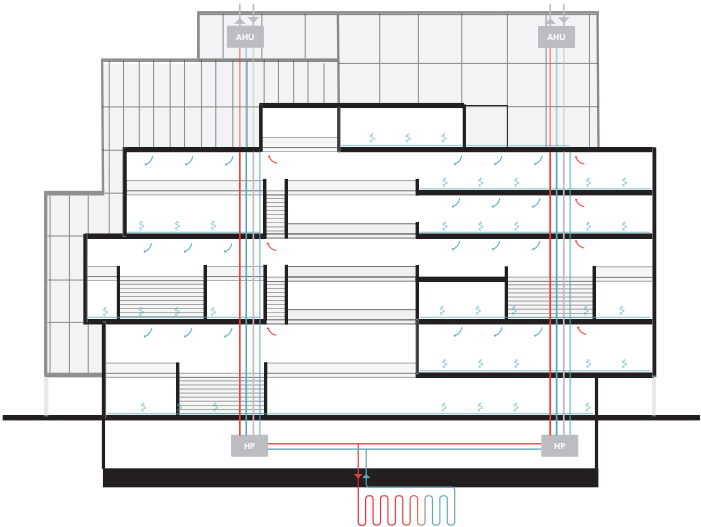


CLIMATE SCHEMES



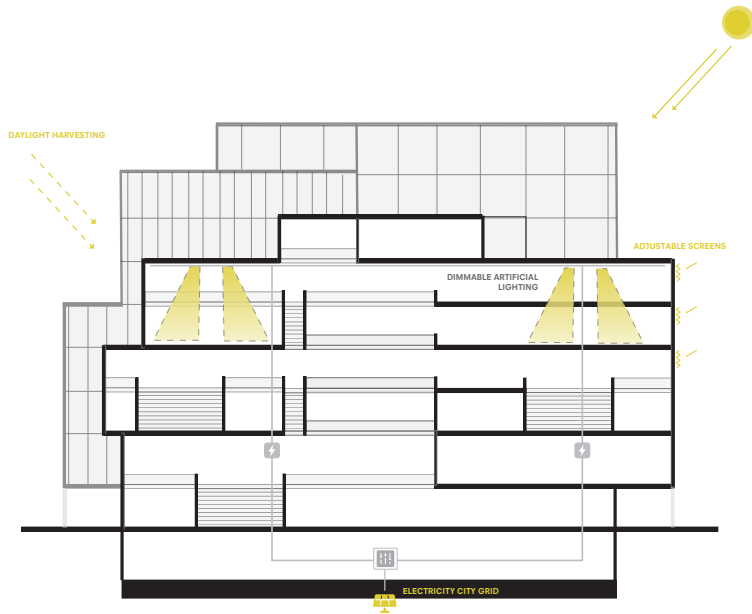
HEATING

Heating in the winter trough the building  
and mechanical ventilation



COOLING

Cooling in the summer trough the building  
and mechanical ventilation



## ENERGY GENERATION

An adaptive lighting system reduces energy use; the remaining demand is supplied by green electricity from the city grid and pv panels pergola

# CONCLUSION

# 05







The Collaborative Library is a civic space for everyone, a place where individual growth contributes to collective well-being. This development is never solitary; it unfolds with and through others, by collaborating, learning from one another, and being seen.

Architecturally, this idea is expressed through visibility: open sightlines, layered spatial connections, and the transparent character of the building. The exposure of creative work further enhances this openness, allowing users to see and be inspired by the work of others.

In this way, the design encourages communities to actively participate and engage with the Collaborative Library as a shared space of learning, creation, and belonging.

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