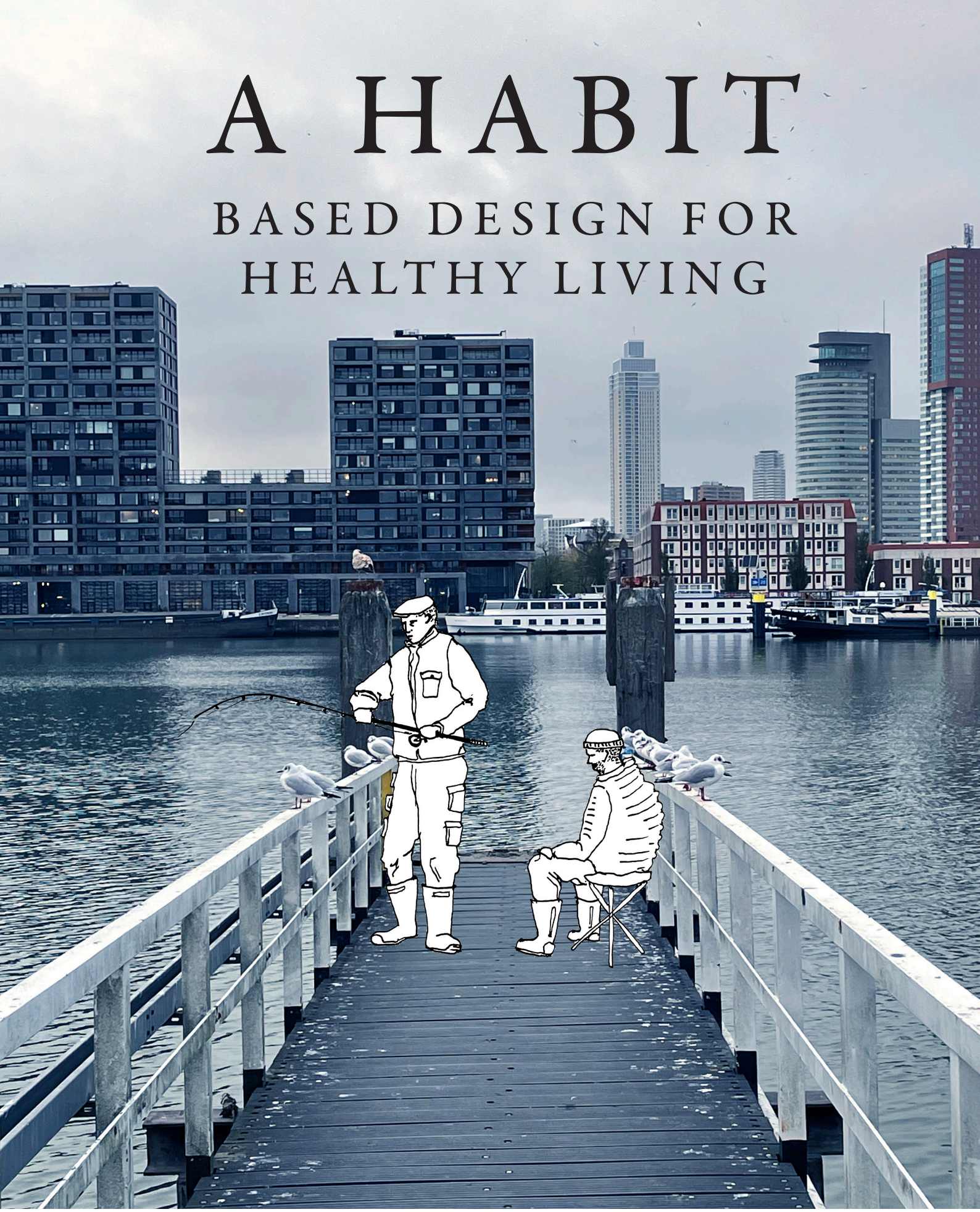
A HABIT

BASED DESIGN FOR HEALTHY LIVING



JAREMA KOZIELEWSKI

TU Delft, Faculty of Architecture

2025

MASTER THESIS

Jarema Kozielewski, 6050034

TU Delft, Faculty of Architecture and the Built Environment, Dwelling Department

AR3AD110 Dwelling Graduation Studio: Designing for Care in an Inclusive Environment 2024/2025

Birgit Jurgenhake, Kobe Macco, Birgitte Hansen, Leo Oorschot

20.01.2025

DESIGN

GUIDELINES

1.1. Address existing habitual behaviours in the program

Incorporate all existing habits prevalent in the neighbourhood in the program

1.2. Address noncommunicable diseases risk factors in the program

1.2.1. SOCIAL INTERACTIONS

Places to linger in the park

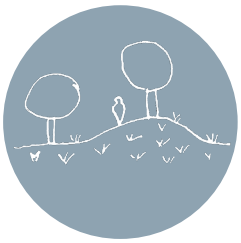
Places to linger In courtyards

Places to linger next to dwelling access

1.2.2. PHYSICAL ACTIVITY

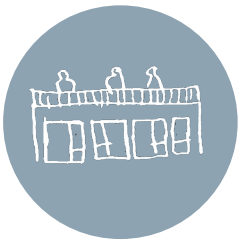
Stairs

Terrain Topography



Elevated viewpoints

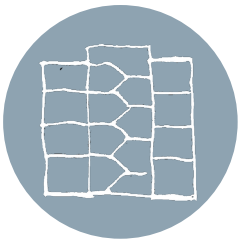
Accessible rooftops



Convenient bike storage

Destinations to walk to

Walk up buildings

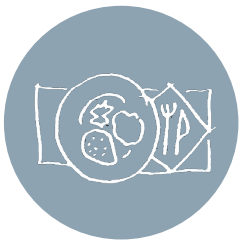


1.2.3. DIET

Communal gardens

Community kitchen

Gastronomic commercial Spaces

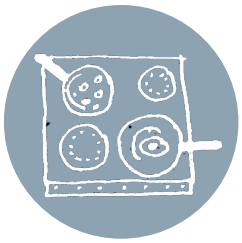


Market

Picnic tables

A rooftop greenhouse

Convenient apartments kitchens

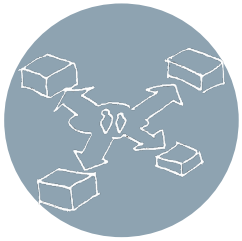


1.3. Ensuring participation

1.3.1. MULTI FUNCTIONALITY

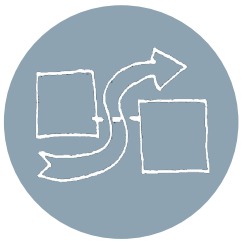
Mixing functions of rooms- living room, dining room, kitchen

Many functions accessible from each outside space



1.3.2. MIXING TRANSIT AND DESTINATION

Avoiding dead ends



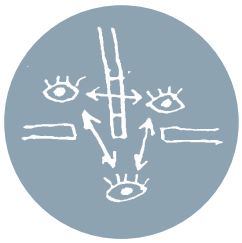
Open building fronts

Communal functions in access systems

Including transit roles in the park and courtyards

1.3.3. ACCESSIBILITY, VISIBILITY

Visual connections between rooms in dwellings

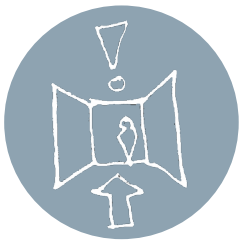


Visual connections between dwellings and public spaces

Public Functions put on display

Eliminating barriers – the dijk and street

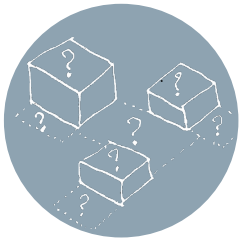
Ensuring clarity of access



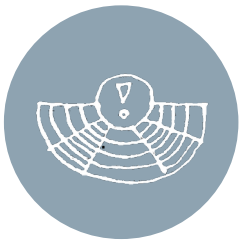
1.3.4. PROGRAMMING, SPONTANEOUS ACTIVITIES

Flexibility of use of rooms

Adaptable outside space, in front of buildings, courtyards, rooftops



Provide semi programmed space, podiums, amphitheatres, shades



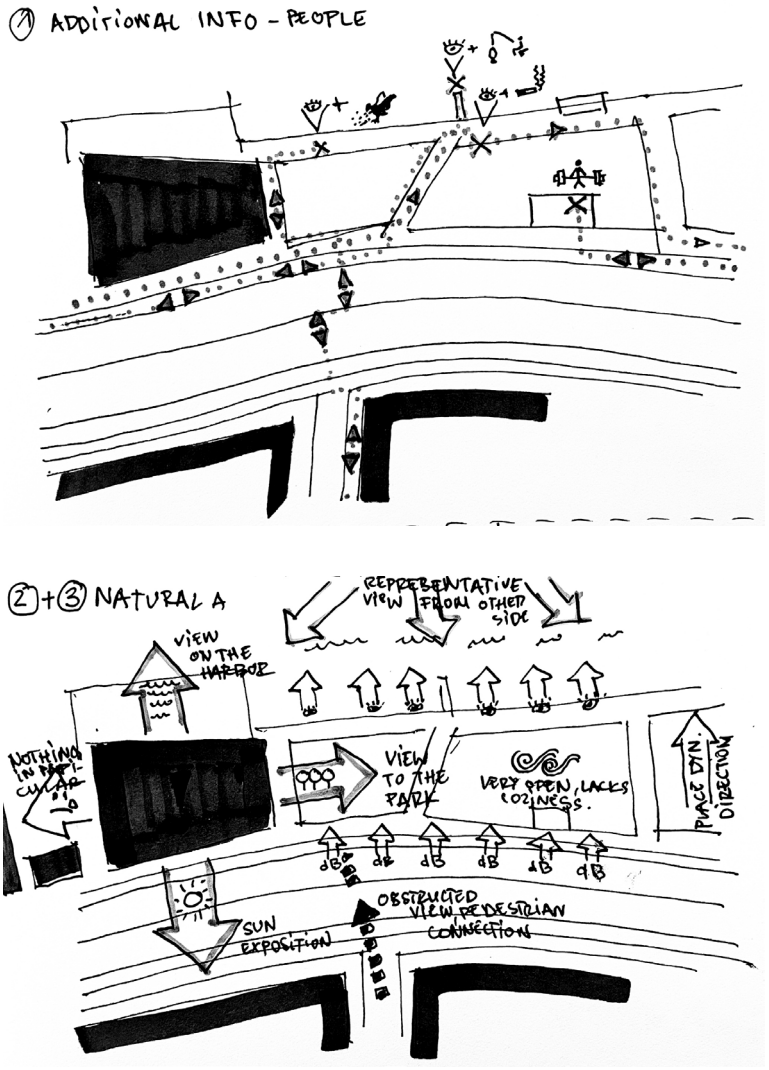
DESIGN

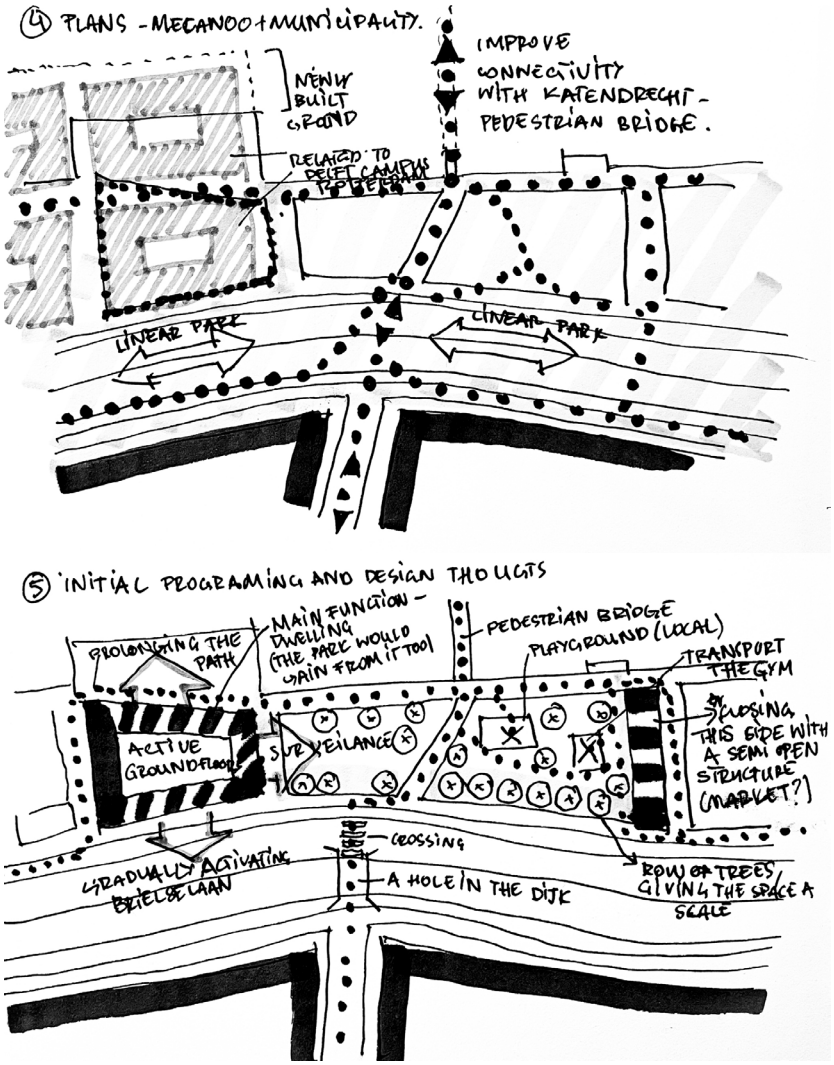
01. Site analysis and first massing ideas

- 07 January 2025

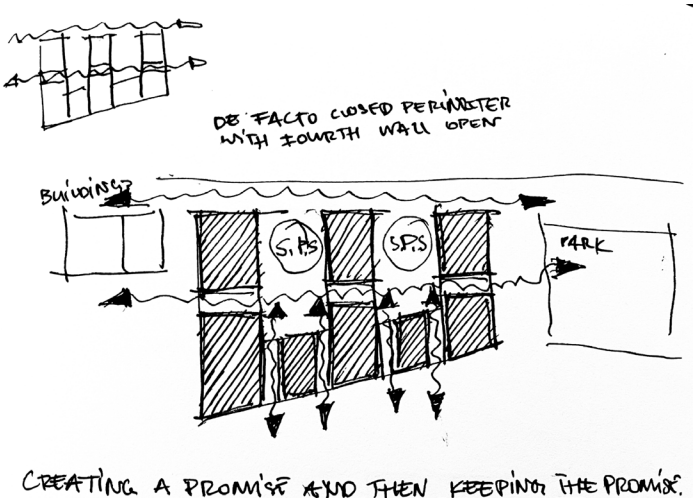
The project phase began with a site analysis that complemented the broader research on the neighbourhood and the literature review. The analysis focused on understanding how people might use the space, identifying the natural and architectural conditions shaping the plot, reviewing the municipality's plans for the area, and developing initial programming and design reflections. Key observations included the separation of the site from the rest of the neighbourhood by a major street, its clear orientation—with an attractive view and water on one side and a busy road on the other—and the existing habitual uses of the Balkon aan de Maashaven, which were previously described in the research booklet. Another important factor was the planned bridge to Katendrecht, designed by Mecanoo Architects.

The initial design ideas centered on reconnecting the plot to the surrounding neighbourhood by creating strong connections at the ground-floor level, envisioning the site as a

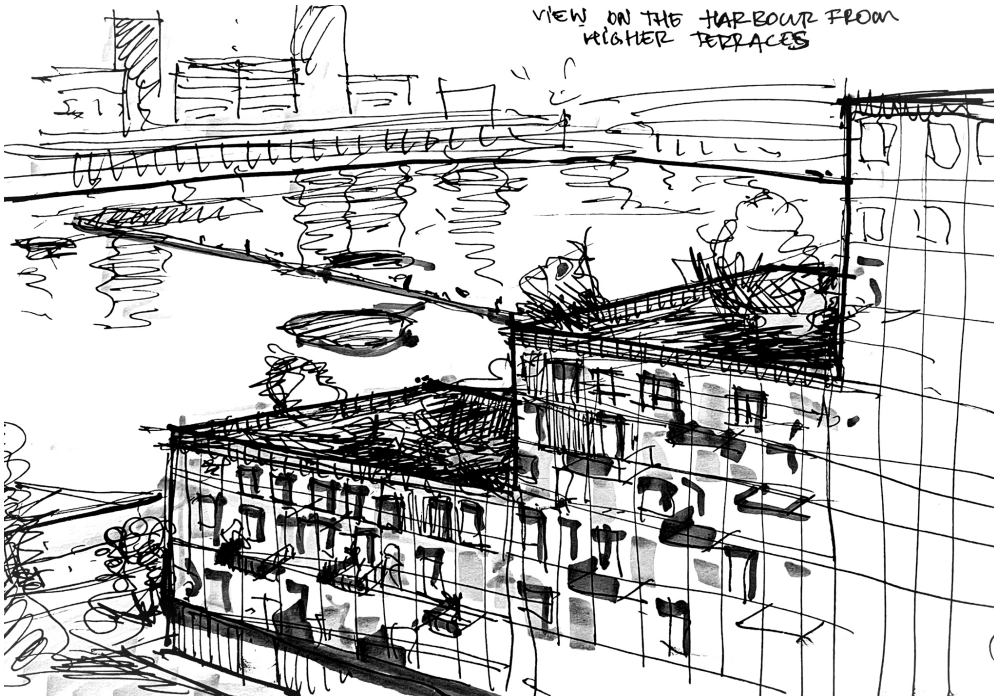




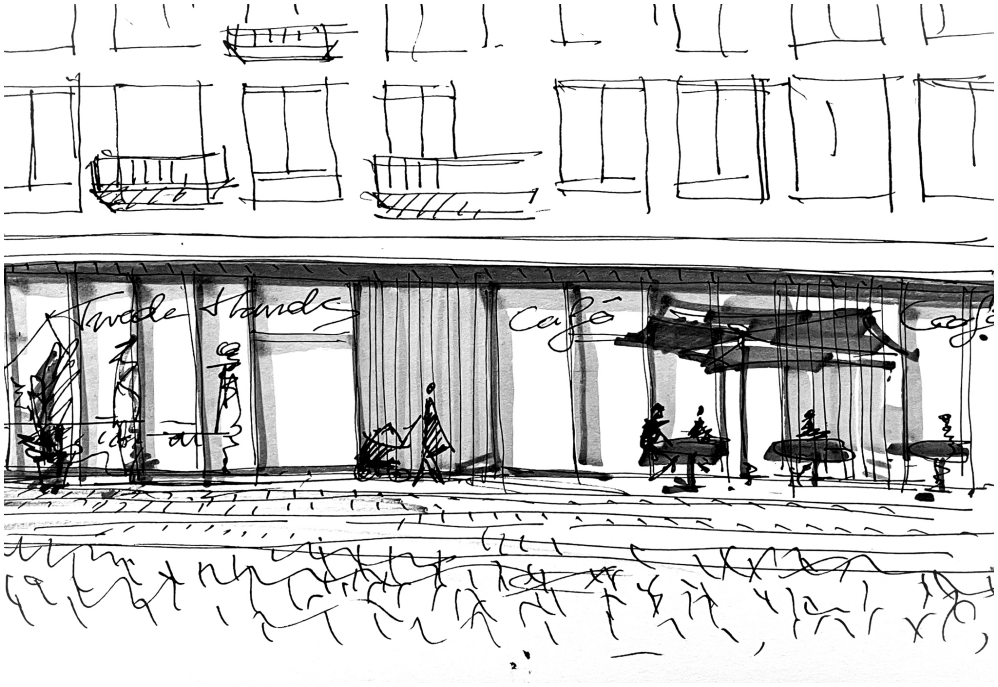
hub where residents from both sides of the harbor could meet, along with those living in the new development. The proposed typologies prioritized housing as the primary function, with public spaces on the ground floor. From a behavioral perspective, this approach aimed to encourage physical movement and social interaction by linking two neighborhoods while also offering programs that promote healthier eating habits.

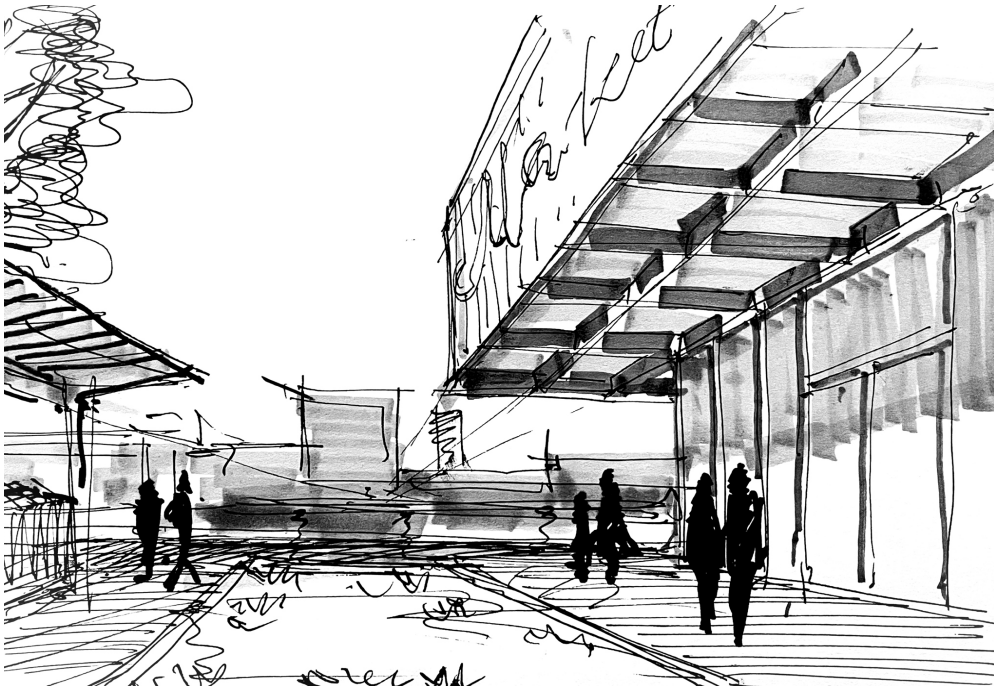


02. Atmospheric sketches - first impressions - 07 January 2025



The initial design impressions aimed to capture the kind of atmosphere that could be created at the ground-floor level. The proposed buildings featured a cascading form, sloping toward the water, and were arranged in a “comb-like” layout, with indentations facing the waterfront. The intention was to use the attractive view of the Maashaven as a pretext to encourage physical movement and social interaction. However, at this stage of the design, the buildings were relatively massive, which resulted in uninviting and poorly defined spaces between them.



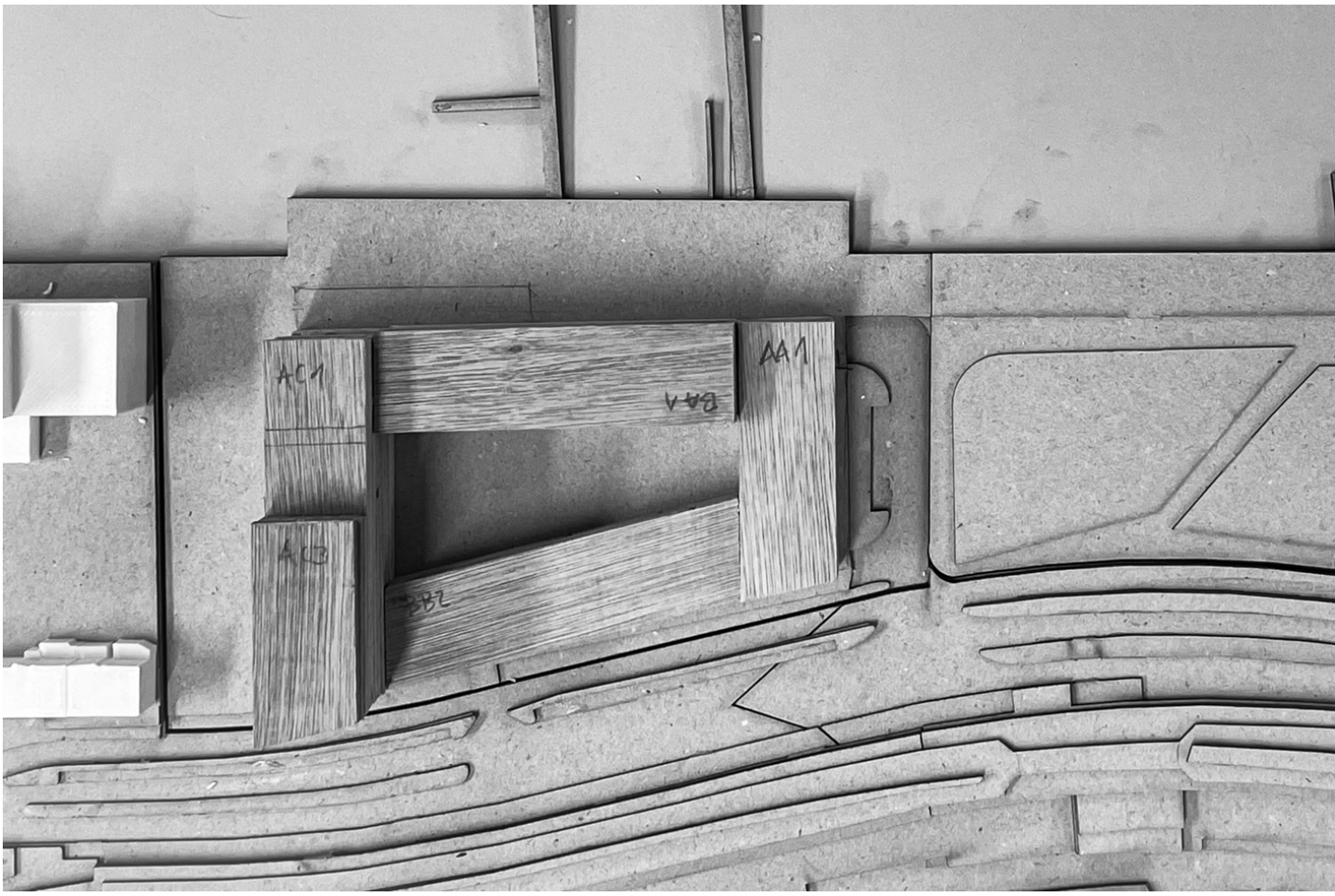


03. Massing - initial versions

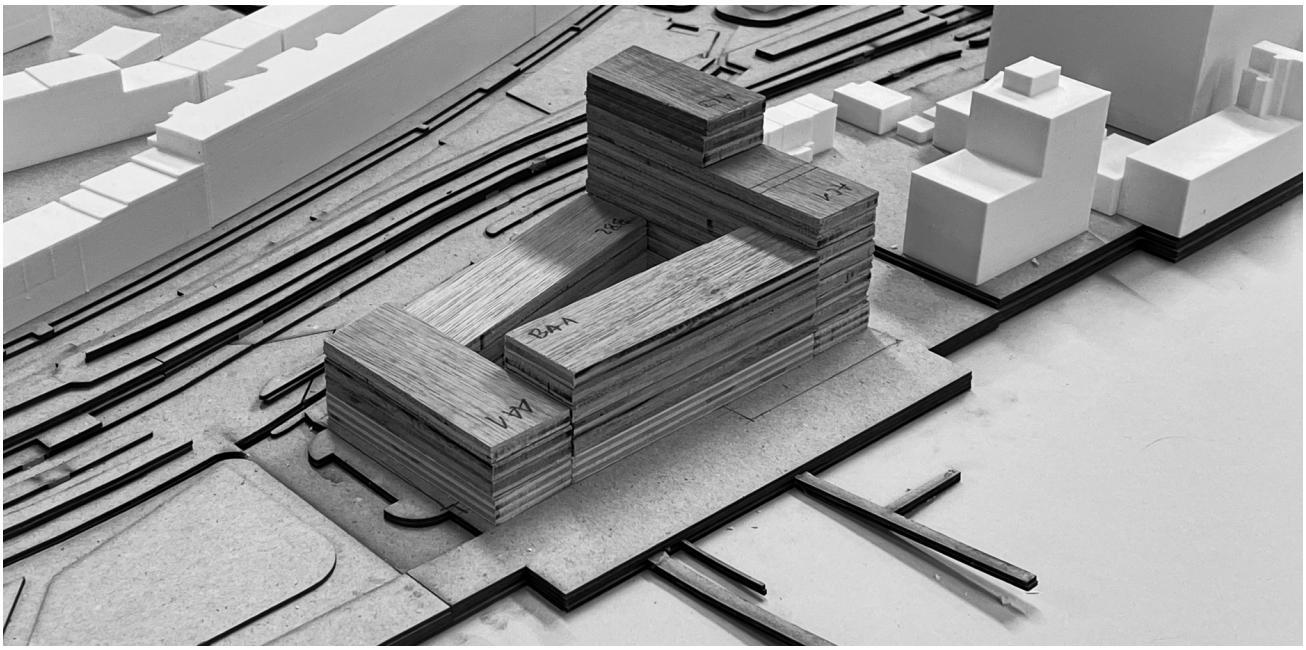
- 14 January 2025

South - East view.

Top view.



Version nr 1.



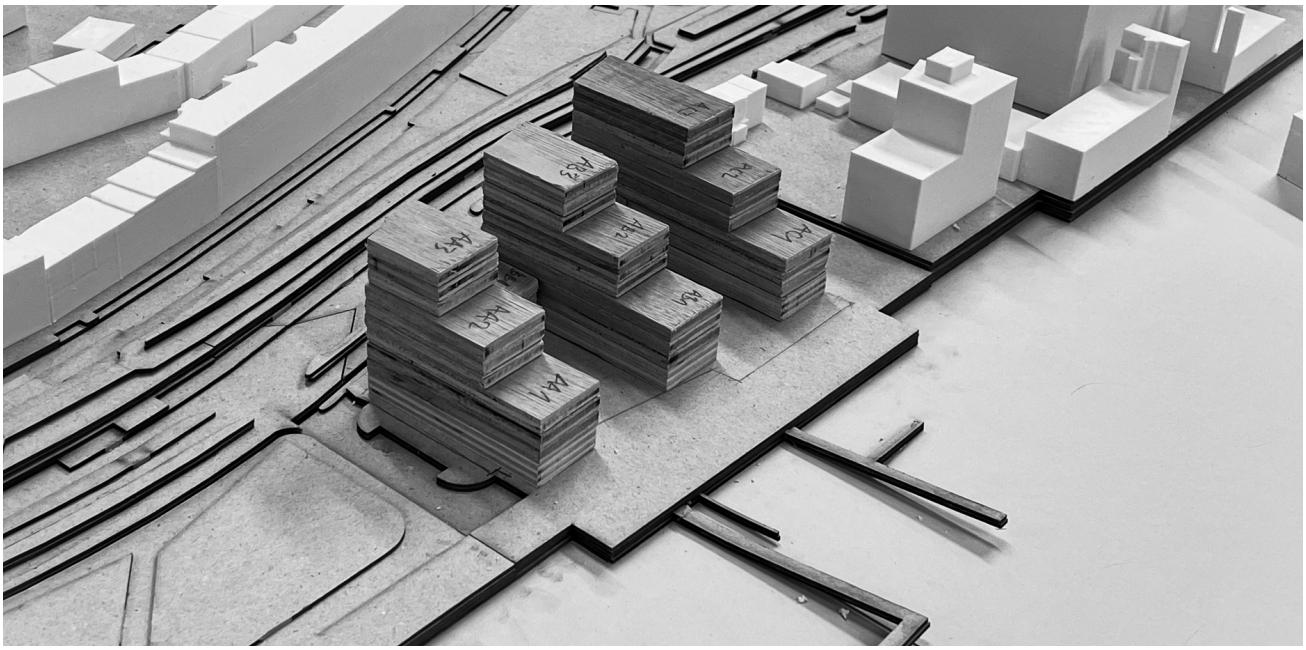
North - East view.

This version explored organizing the buildings in a perimeter block typology with a dominant tower element inclined toward the neighborhood. However, this approach was ultimately abandoned due to insufficient connections with the surrounding area, unequal dwelling attractiveness, and problems with access to sunlight.

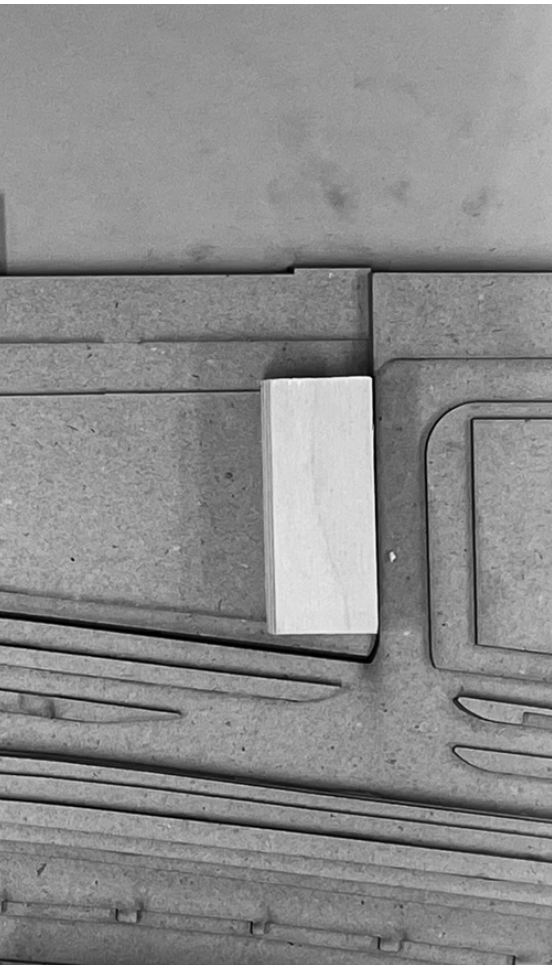
Version nr 2.

South - East view.

Top view.

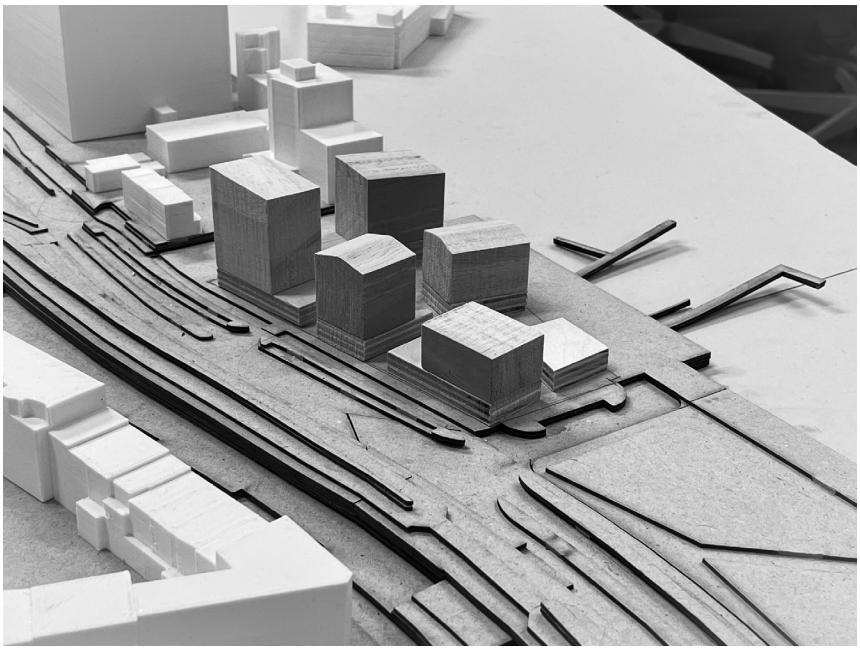


North - East view.



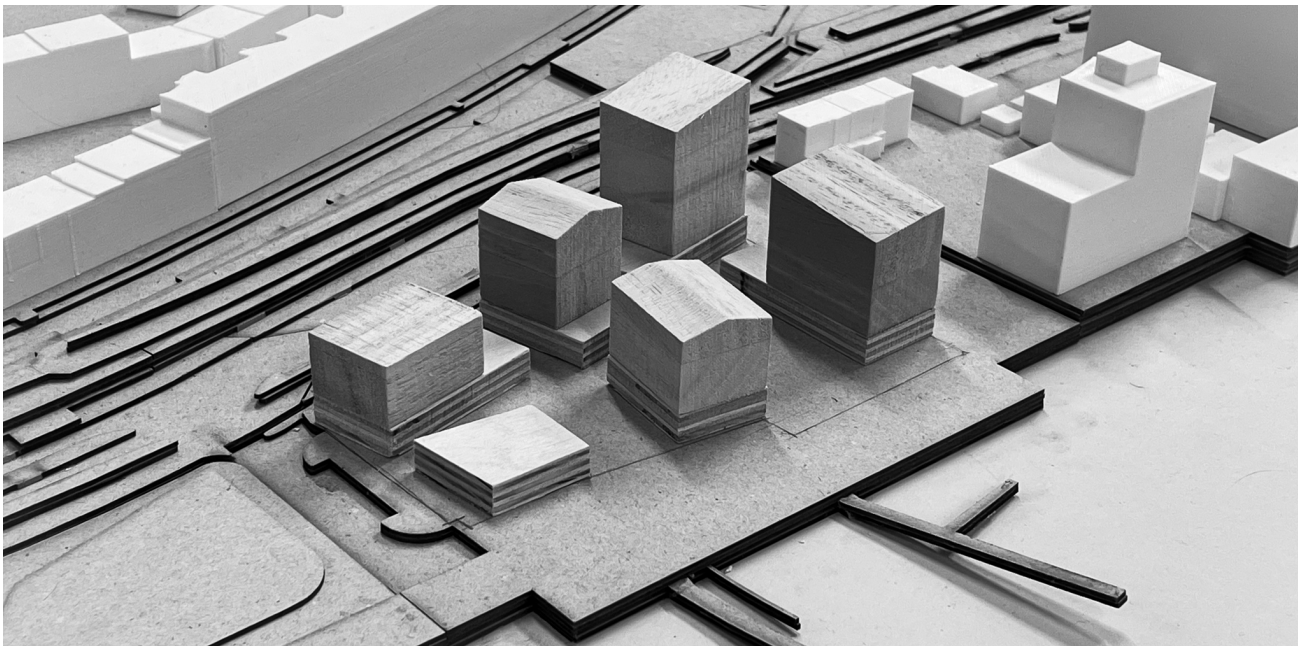
This iteration attempted to organize the buildings in a comb-like typology, inclined toward the water. It was discontinued due to a perceived lack of innovation—given the prevalence of similar forms in Rotterdam, Amsterdam, and the Netherlands more broadly—as well as the poor quality of the resulting in-between spaces.

Version nr 3.

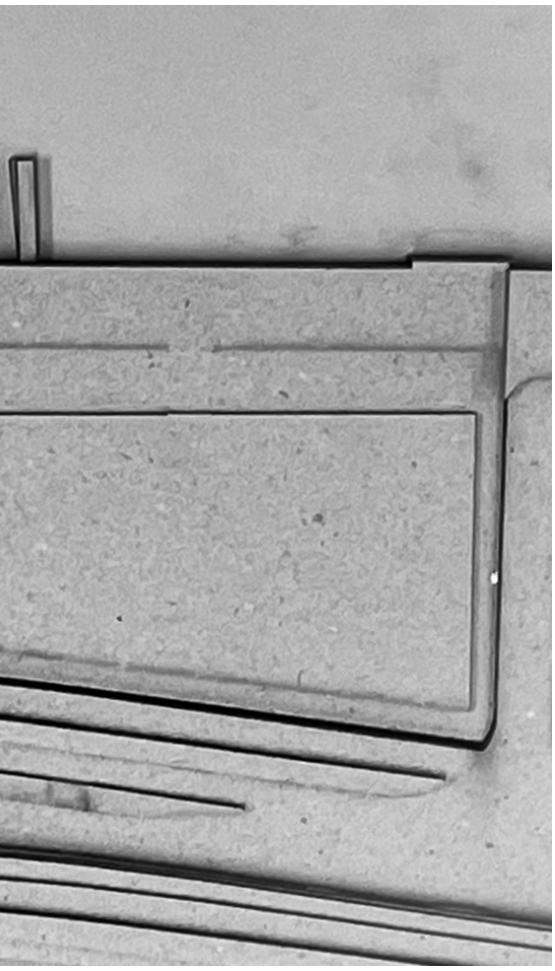


South - East view.

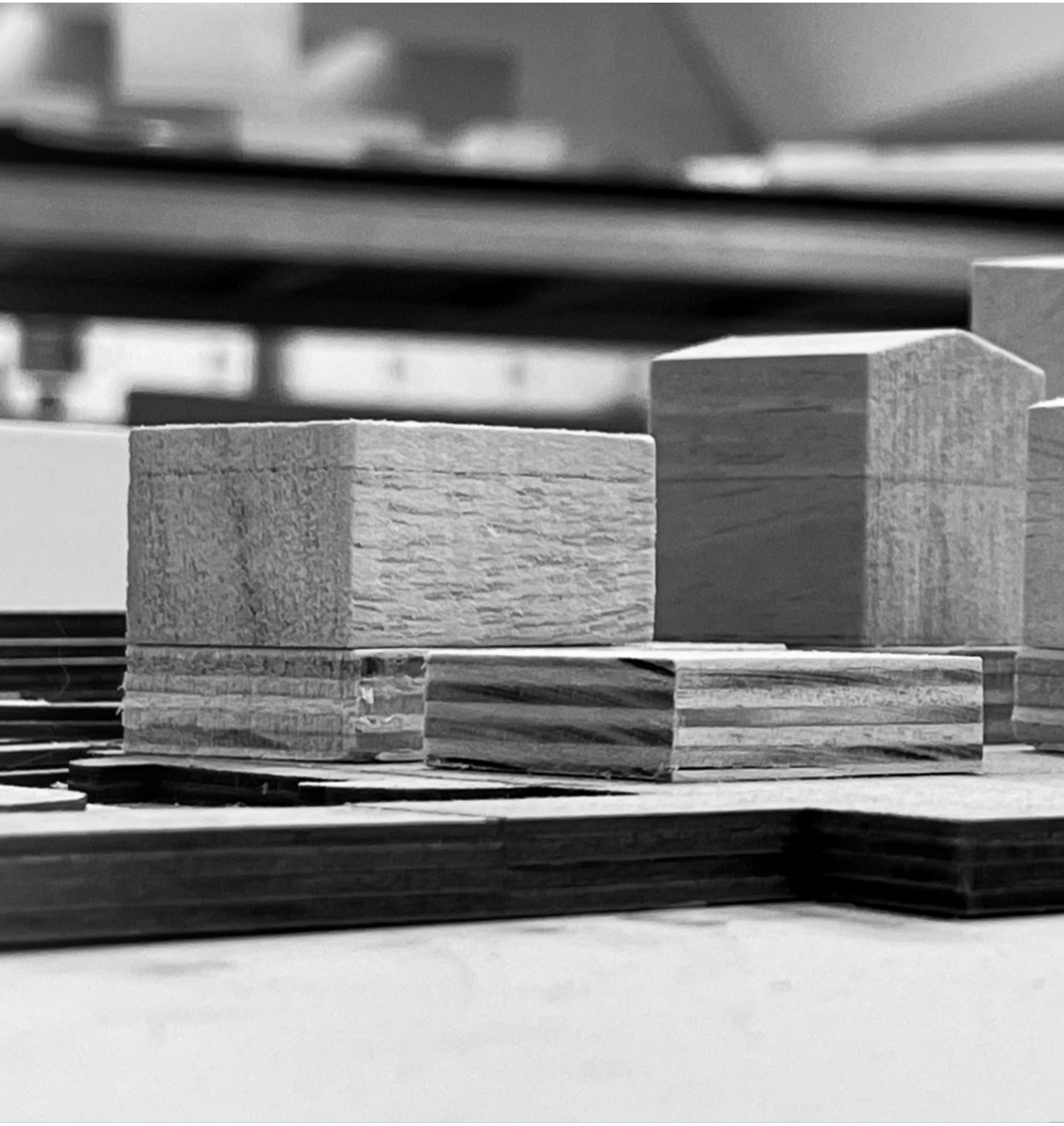
Top view.



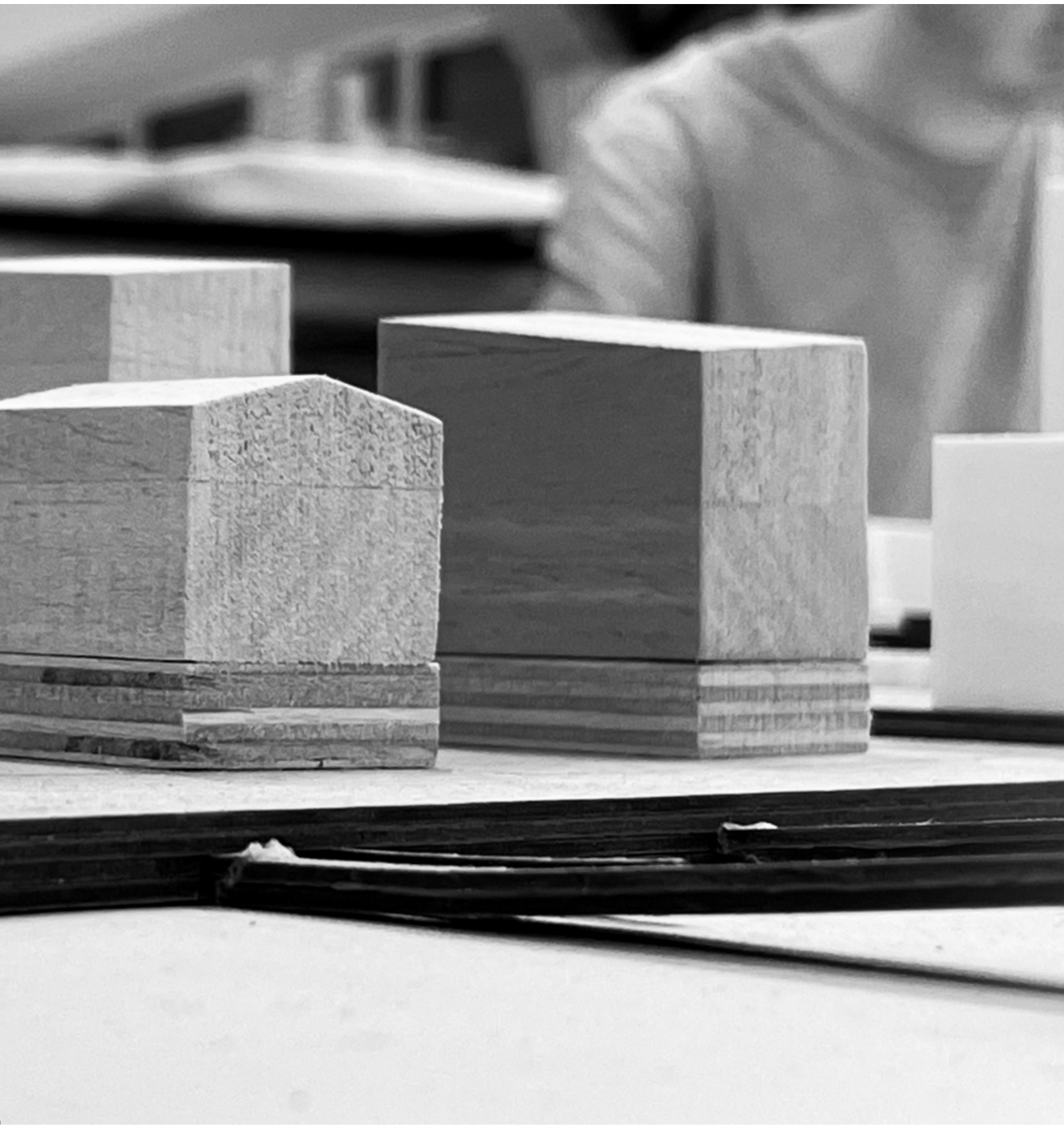
North - East view.



This version adopted a loose block typology, inclined toward both the water and the park. It offered opportunities for more engaging in-between spaces, stronger connections to the neighbourhood, and greater equity in the attractiveness of the dwellings. The buildings were designed to be permeable, avoiding dead ends and supporting journeys through the site, encouraging people to take advantage of programs related to diet, physical activity, and social interaction. This approach was ultimately carried forward in the project.

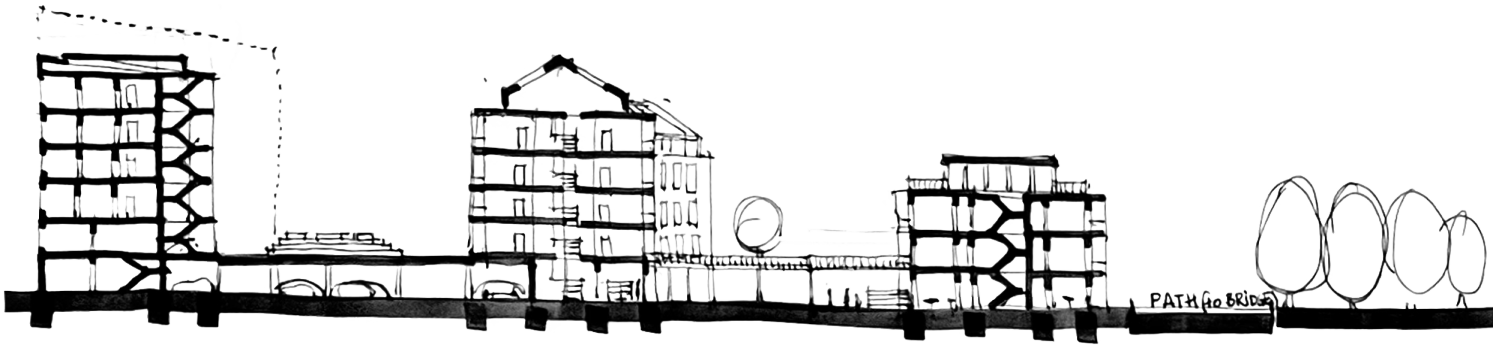


Version nr 3 - chosen to be further developped

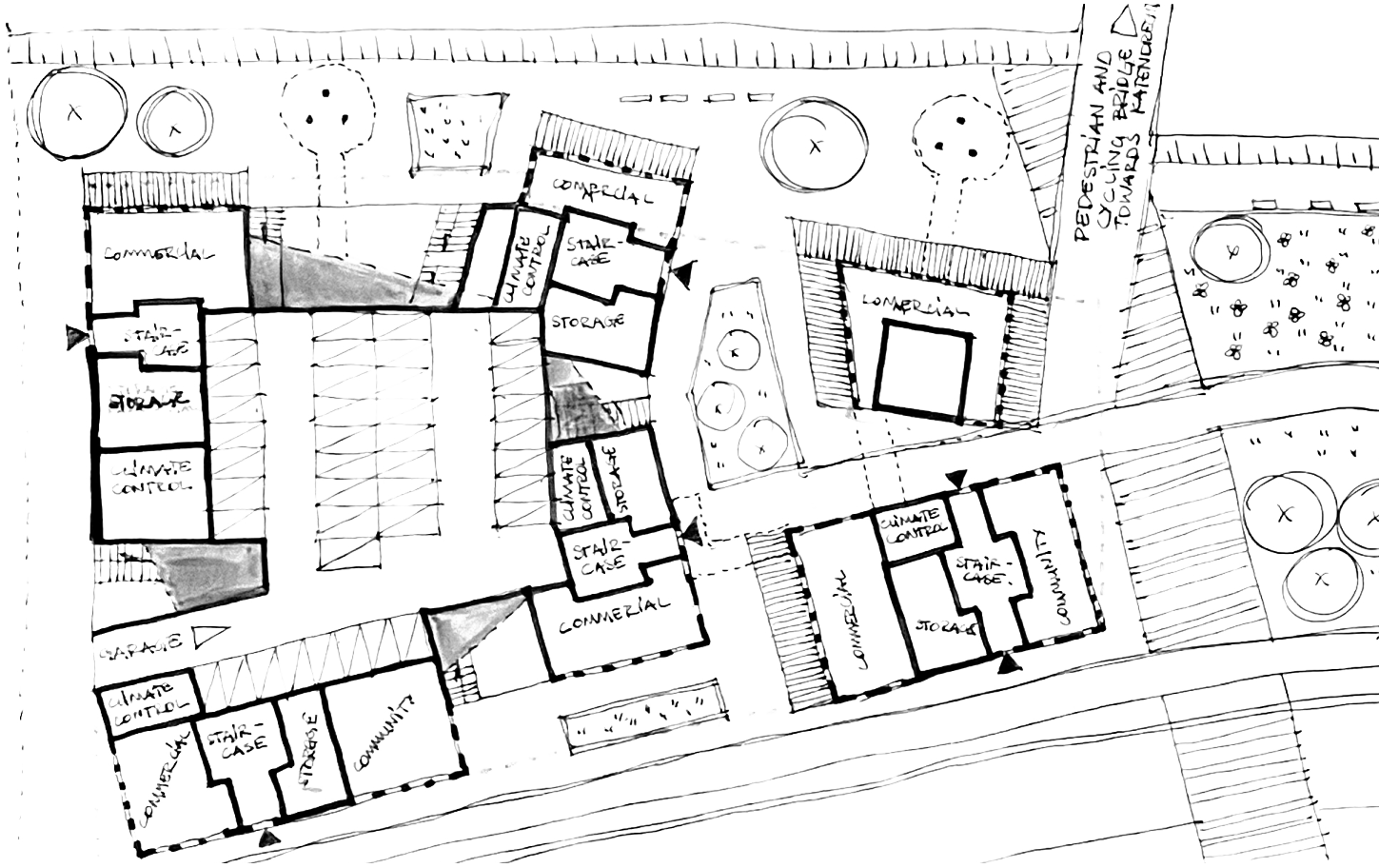


04. Initial plans and sections

- 29 January 2025

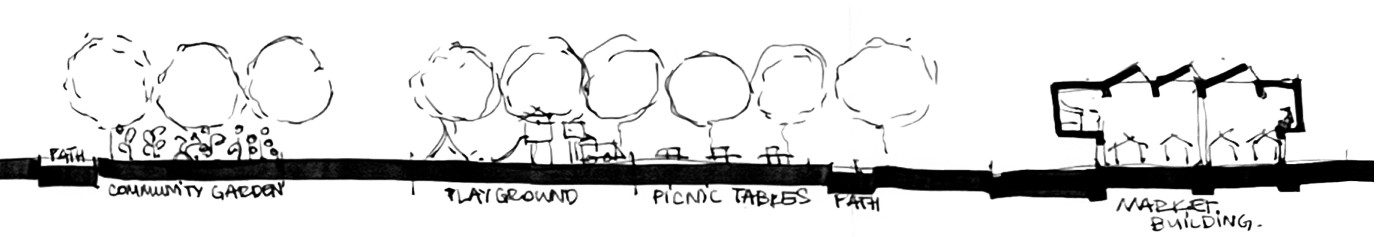


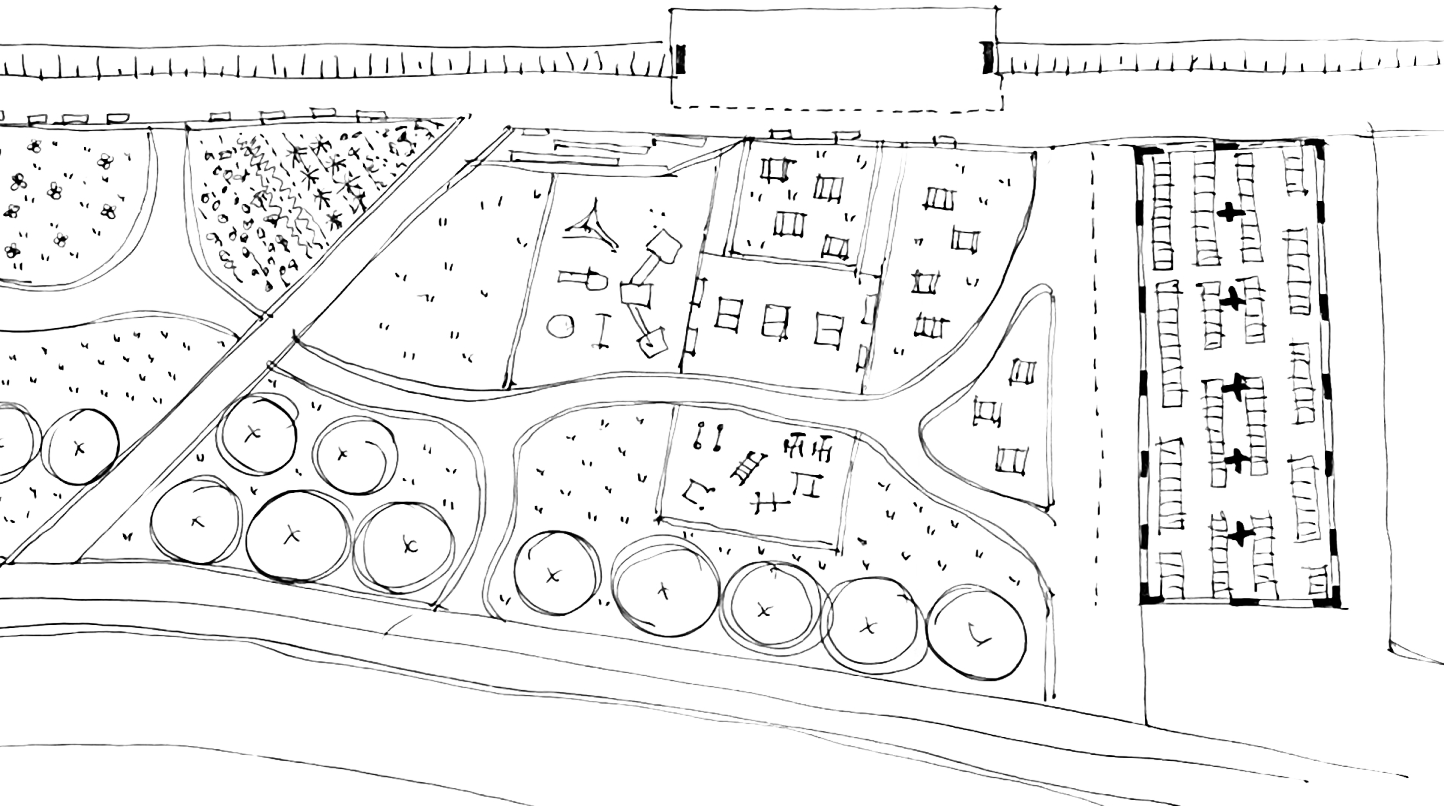
Long section



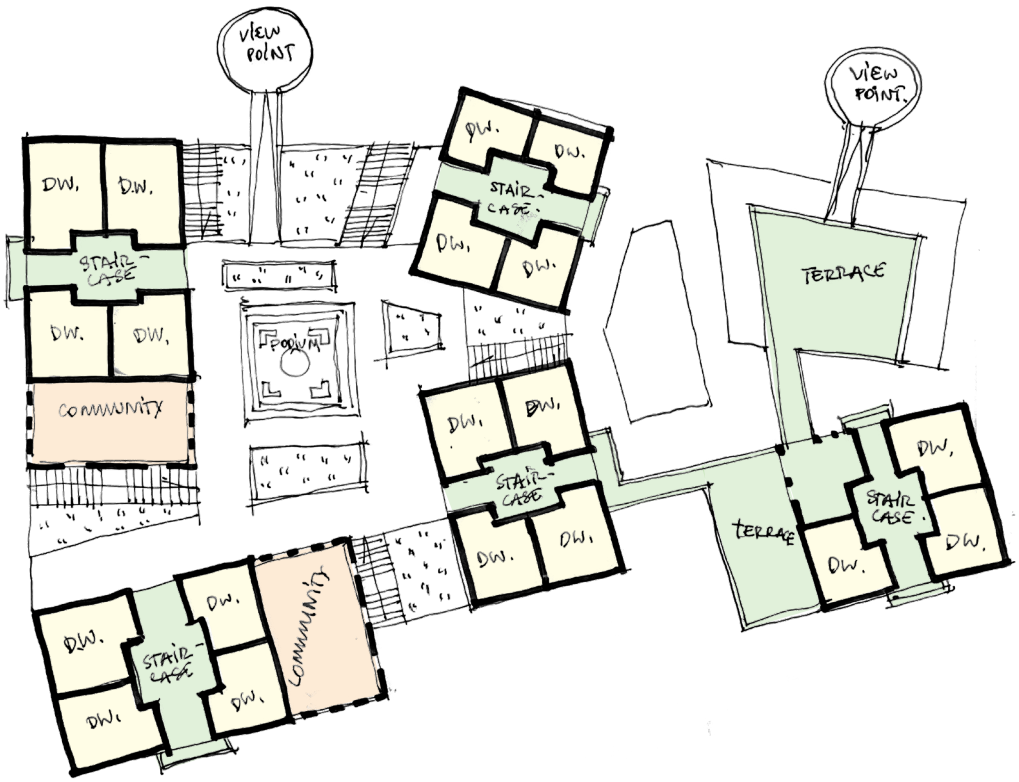
Ground floor with park and market

The initial attempts to translate the massing concept into plans focused on strengthening connections with the surrounding neighbourhood and the adjacent park. Although the design underwent significant changes later, the core idea remained consistent throughout the project: to create a housing ensemble that relates closely to the park while fostering interaction among residents of Tarwewijk, Katendrecht, and the new development.

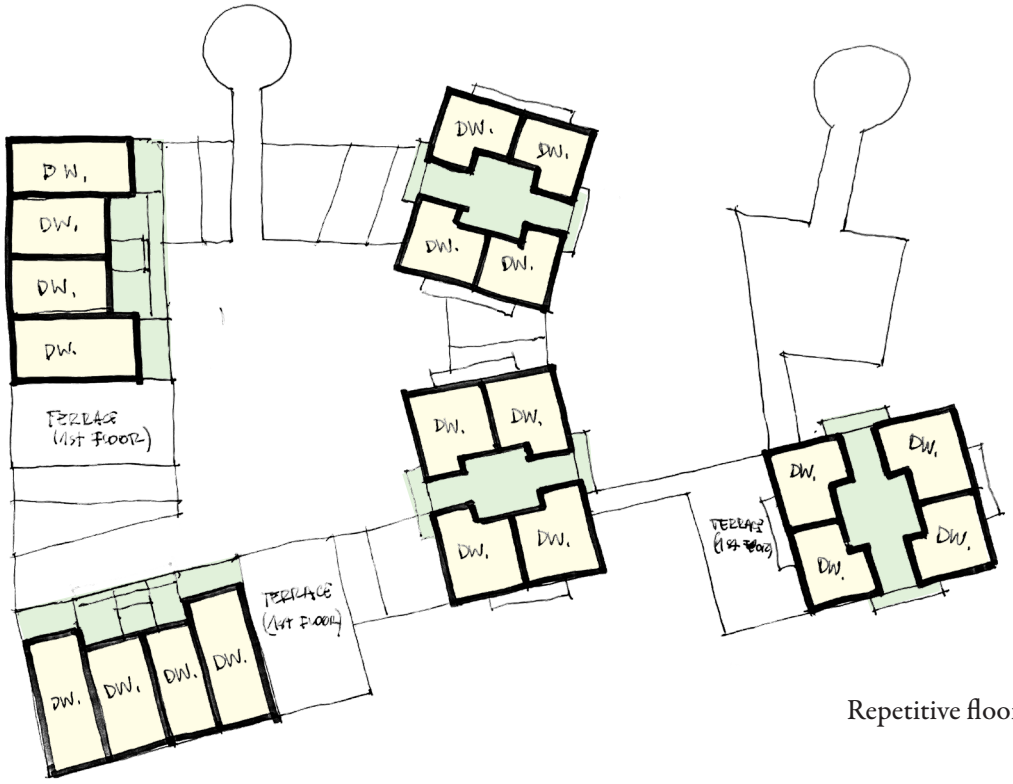




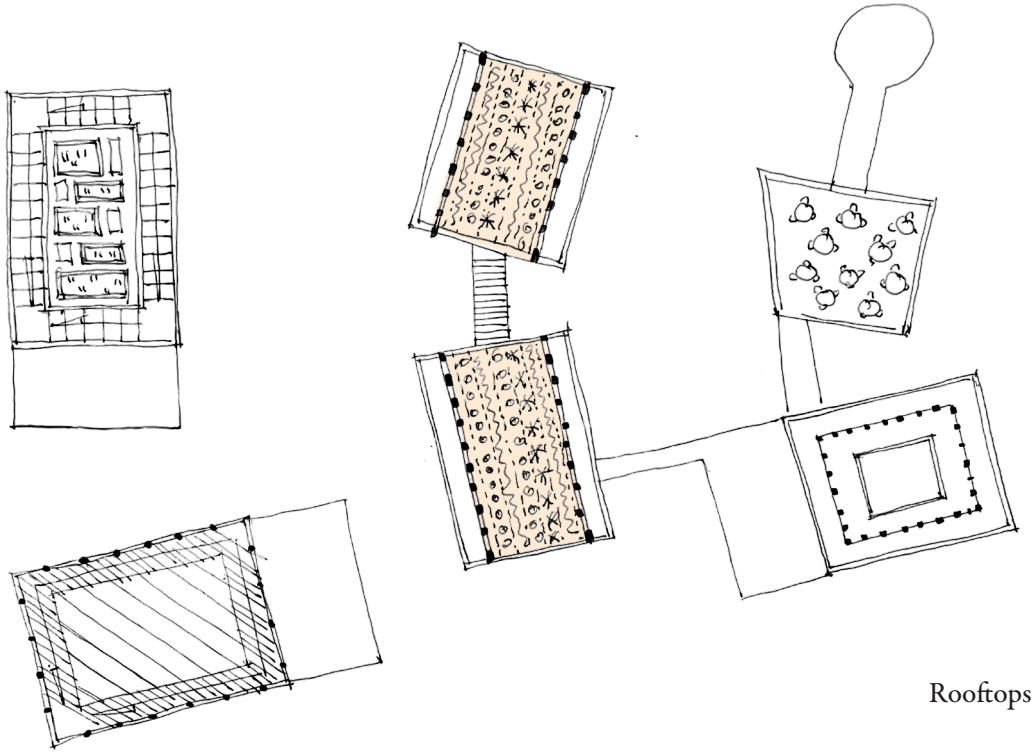
Ground floor



First floor



Repetitive floor



Rooftops

Legend

Circulation and communal spaces

Community spaces

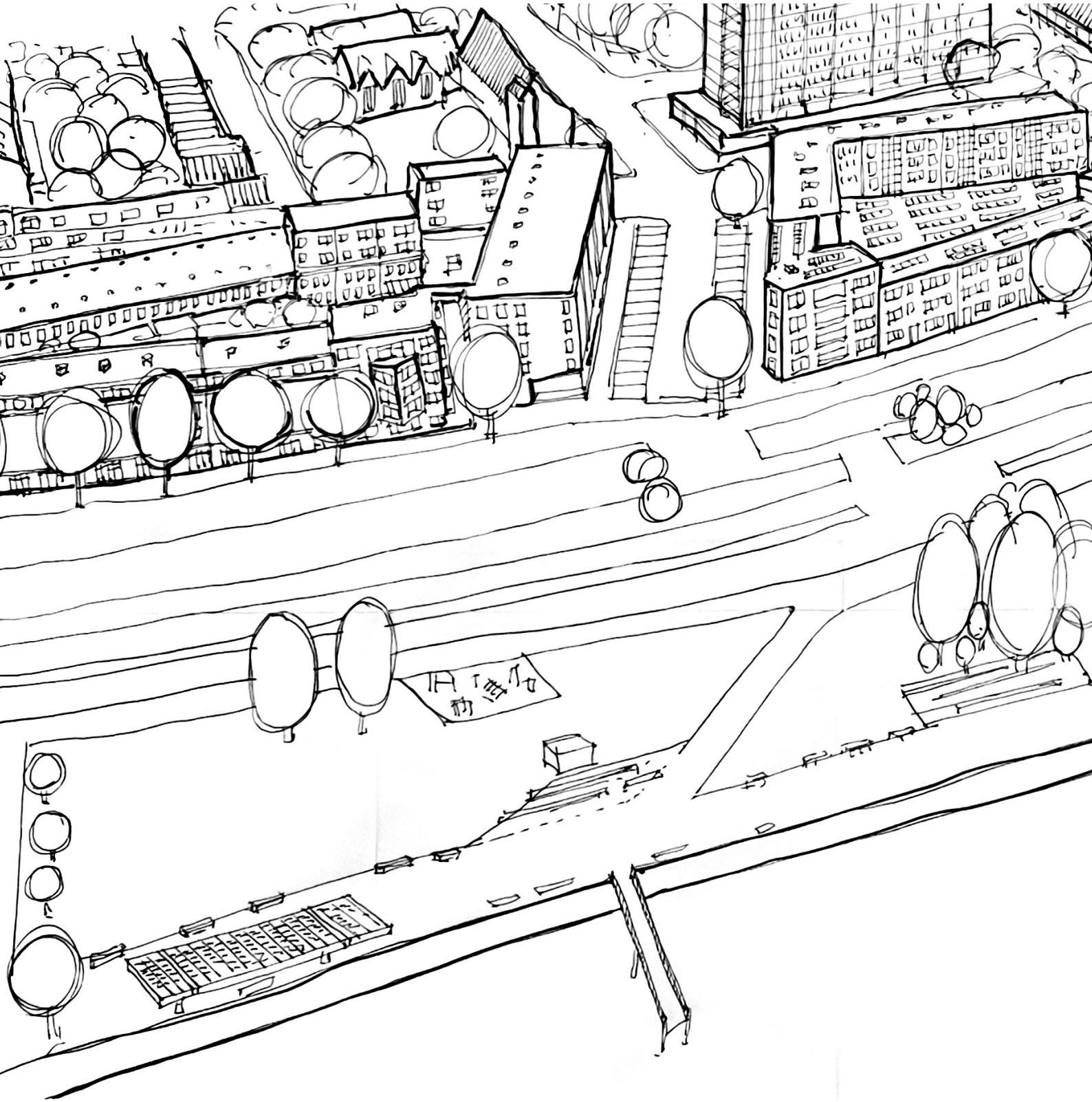
Commercial activities

Supporting functions

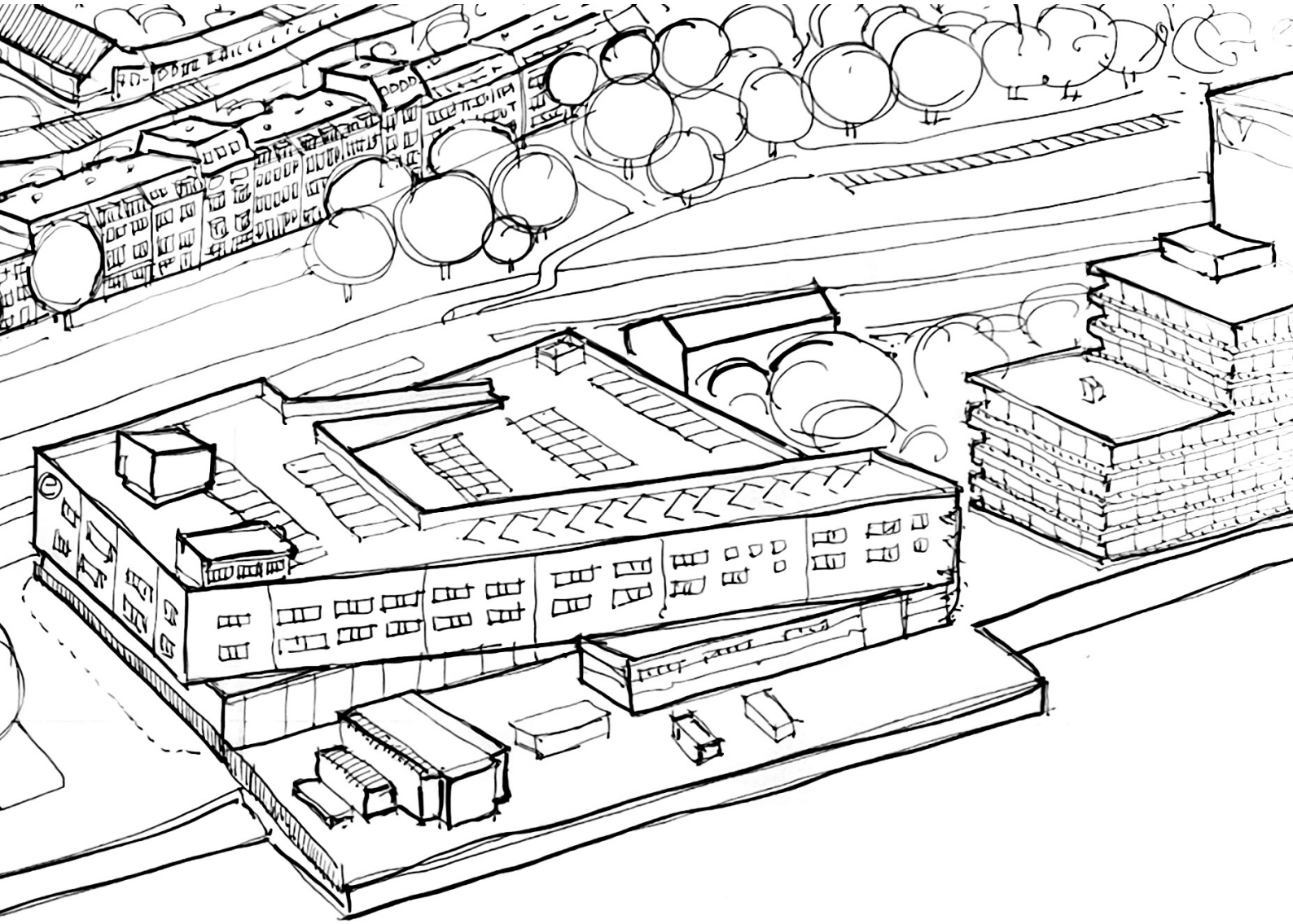
Dwellings

05. Manifesto

- 29 January 2025

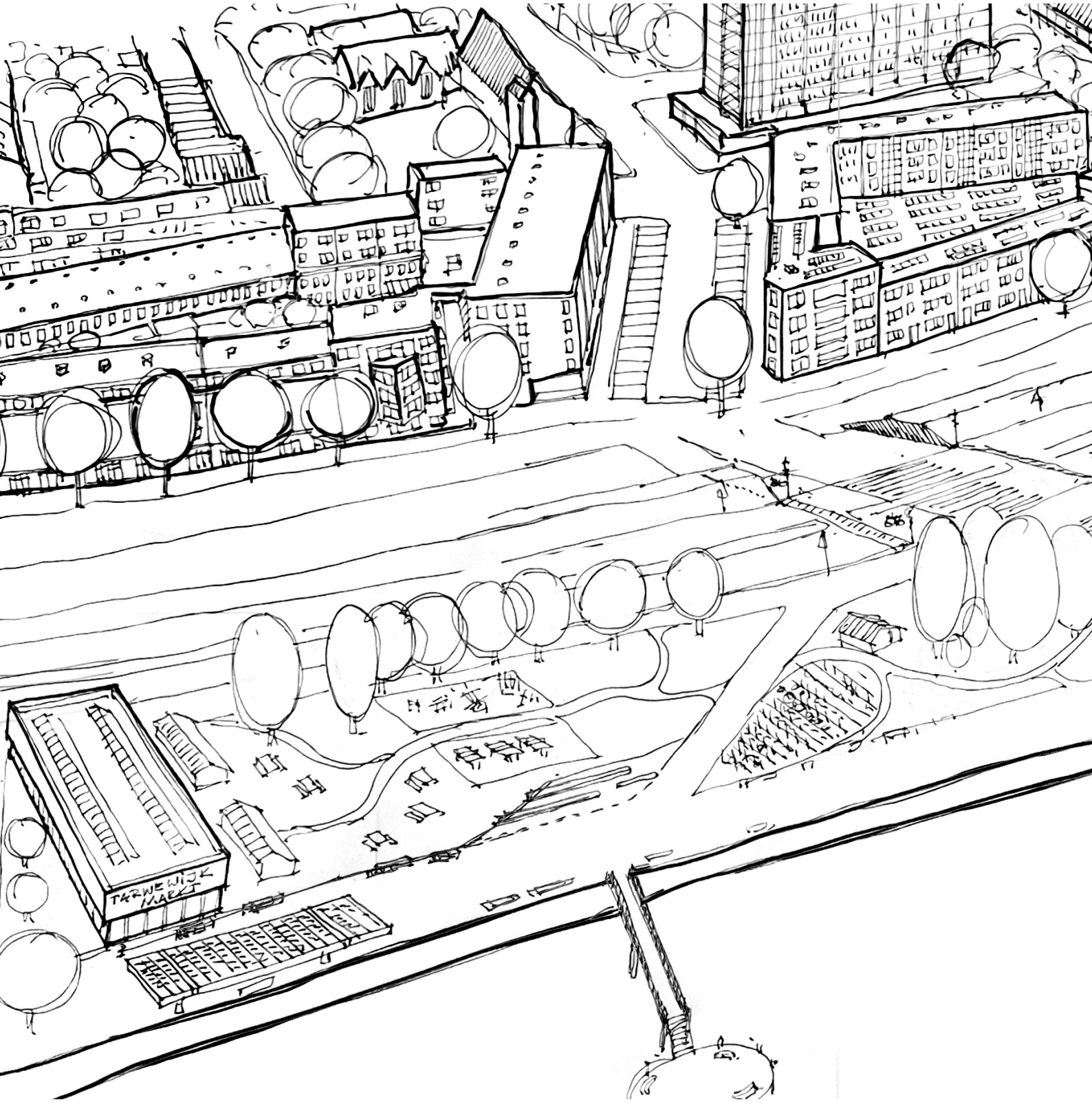


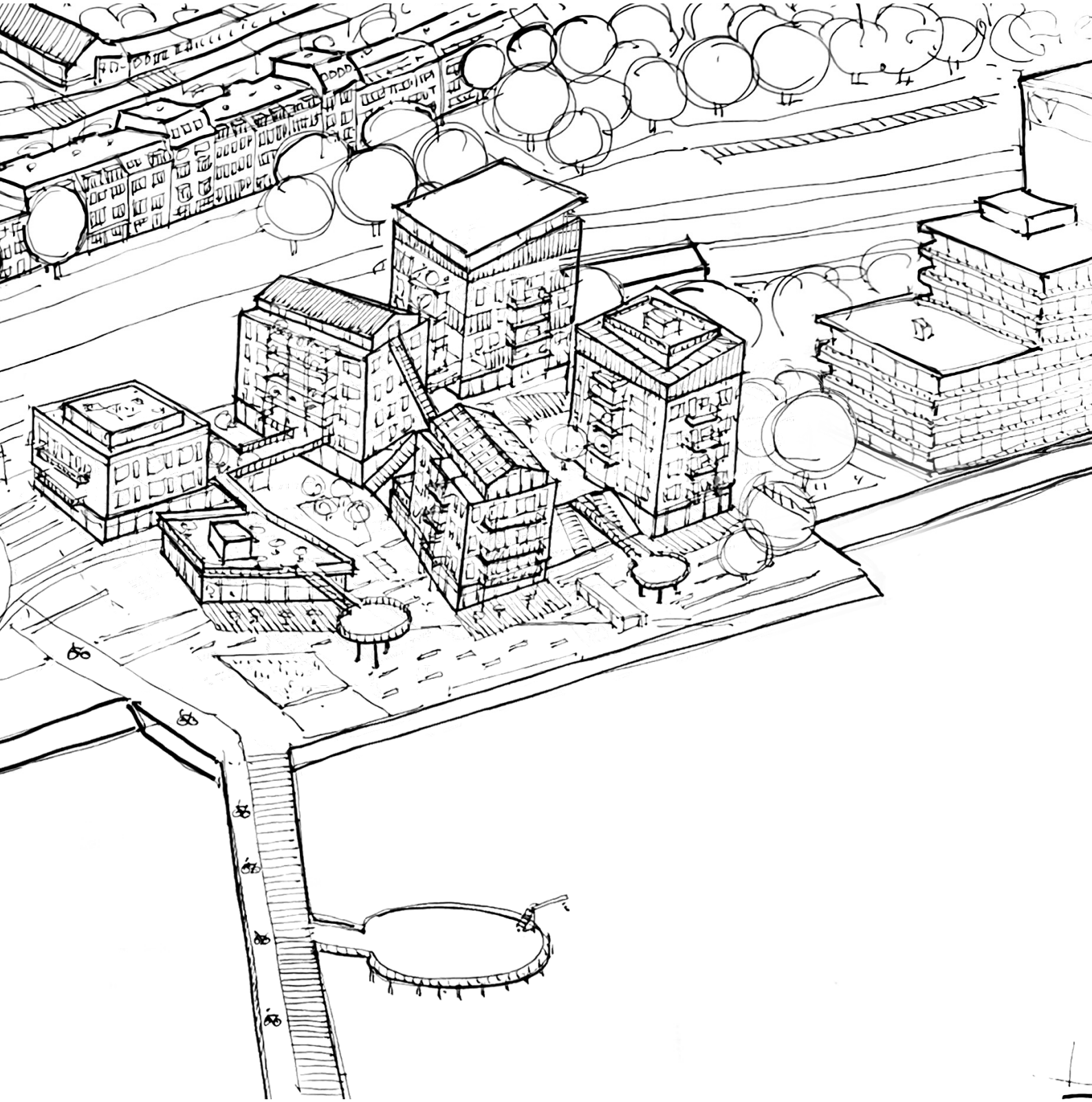
Current state.



As a summary of the preliminary phase of the project, I aimed to analyse and communicate the site's current condition: the plots are highly disconnected from the surrounding neighbourhood, enclosed, and the adjacent park remains an isolated entity, poorly integrated with its context. The accompanying drawing illustrates how this situation could improve if the proposed program, the park, and Tarwewijk were designed to function as a cohesive whole. Strengthening connections to the neighbourhood would make the park more accessible and attractive to residents by introducing new functions. The park would benefit from increased natural surveillance, while residents of the housing ensemble would gain an inviting destination for leisure and interaction. Additionally, introducing a market—identified during interviews as a missing function in the neighbourhood—would further enhance connectivity and encourage active use of the area.

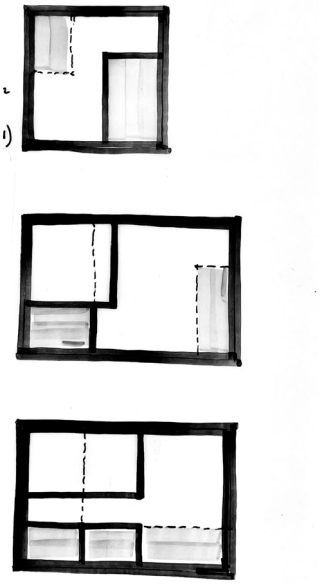
Proposed changes.

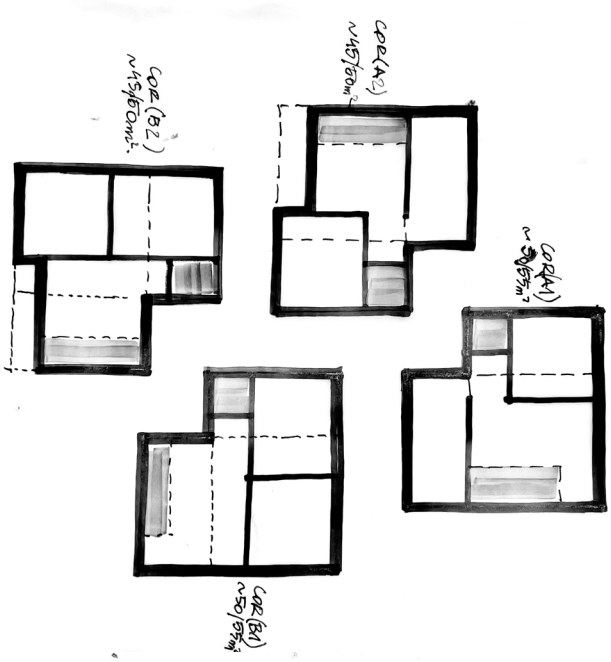


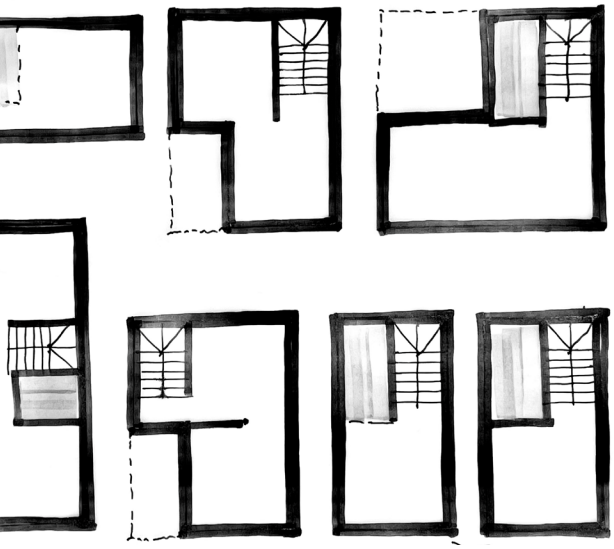


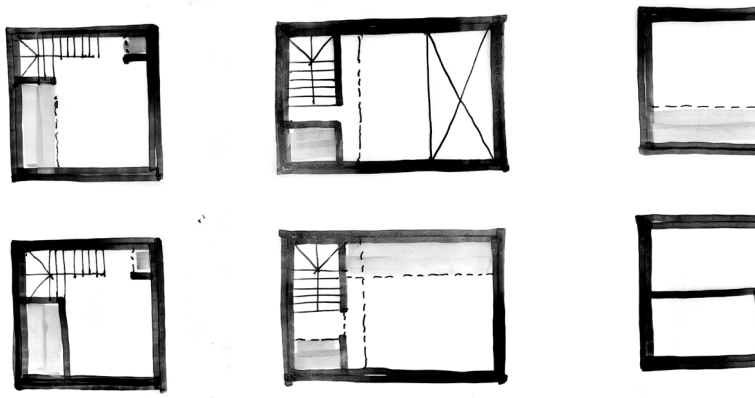
06. Floorplans - dwelling types, grid selection

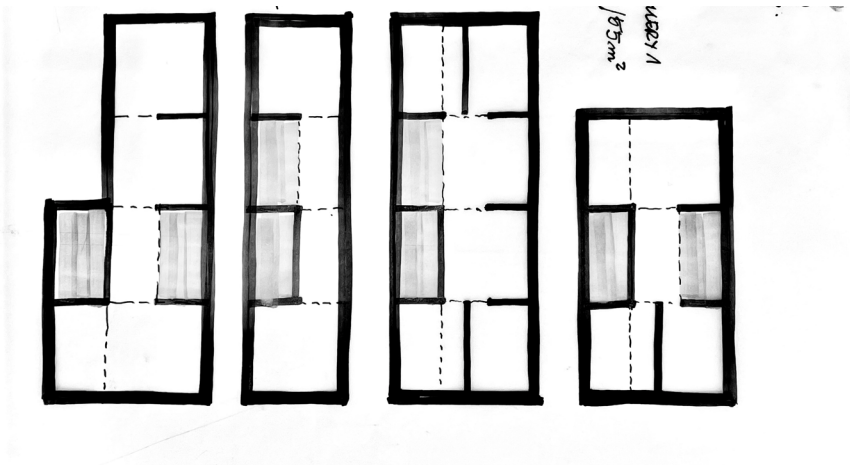
- 13 February 2025





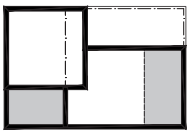
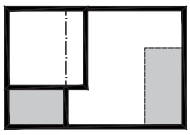
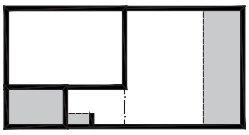
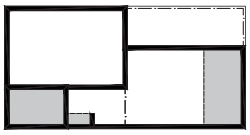
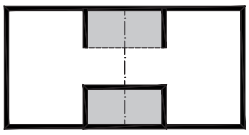
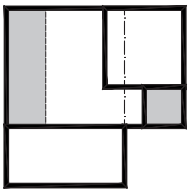
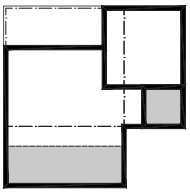
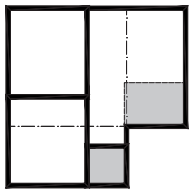
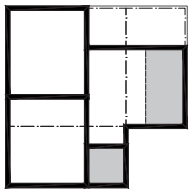
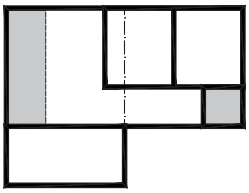
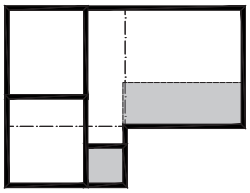




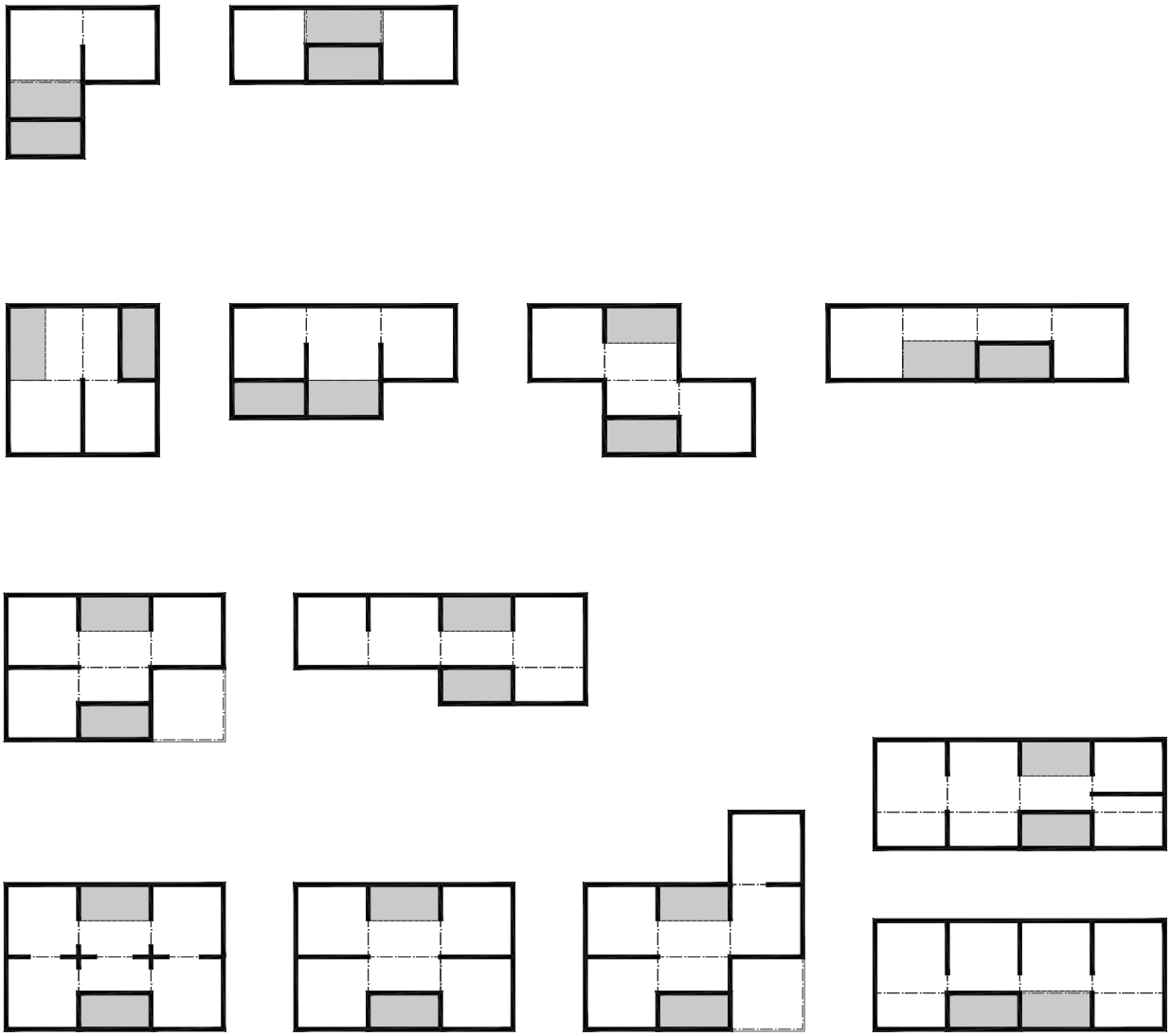


In the next phase, I focused on defining the structural and functional system that would underpin the design. I tested two grid dimensions—3.60 m and 5.40 m—to evaluate which offered more promising possibilities for dwelling layouts. Ultimately, I selected the 3.60 m grid, as it produced highly modular plans with greater flexibility of use. This approach aimed to allow residents to maintain their existing habits and routines within the new housing environment.

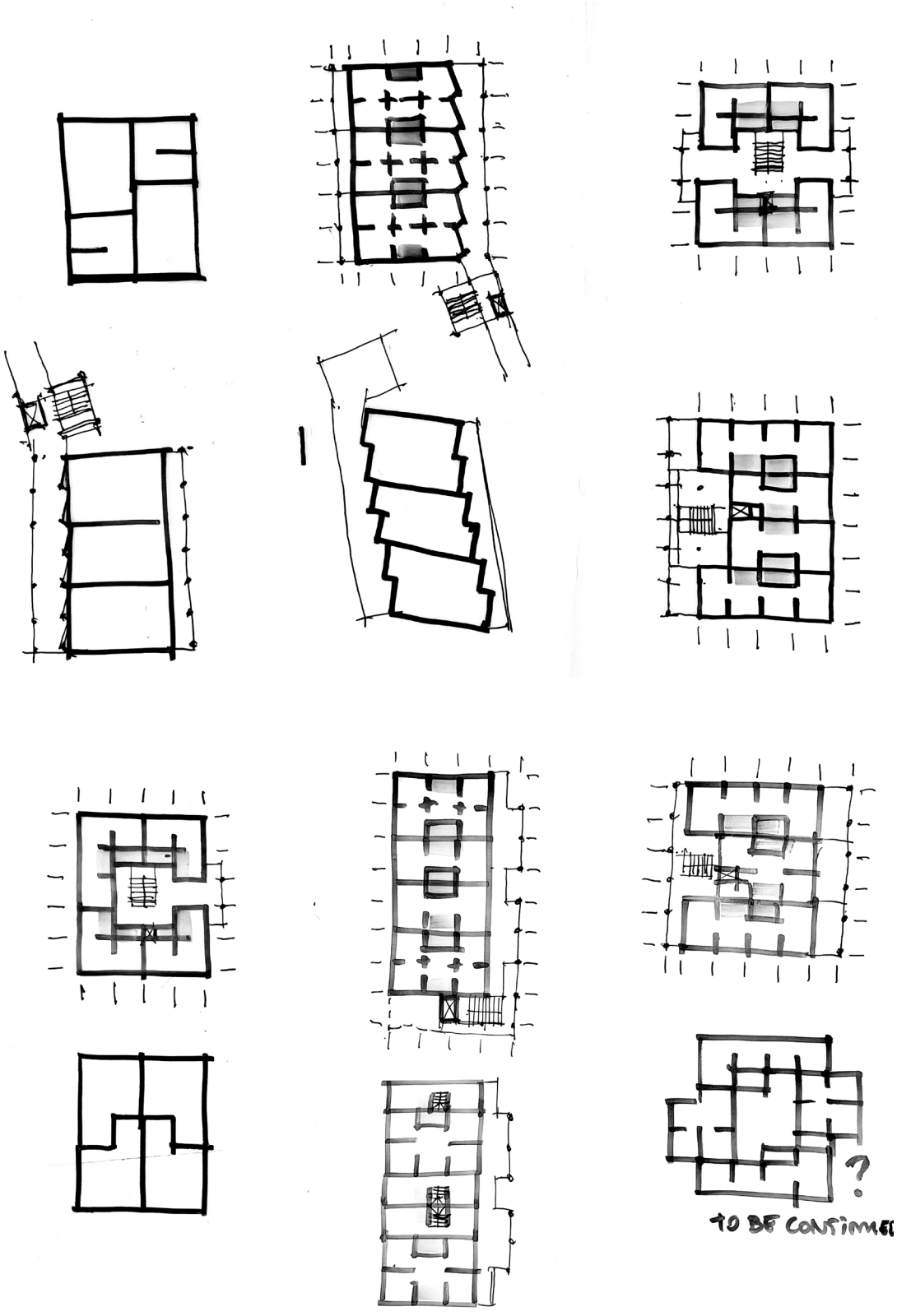
5,40 m x 5,40 m

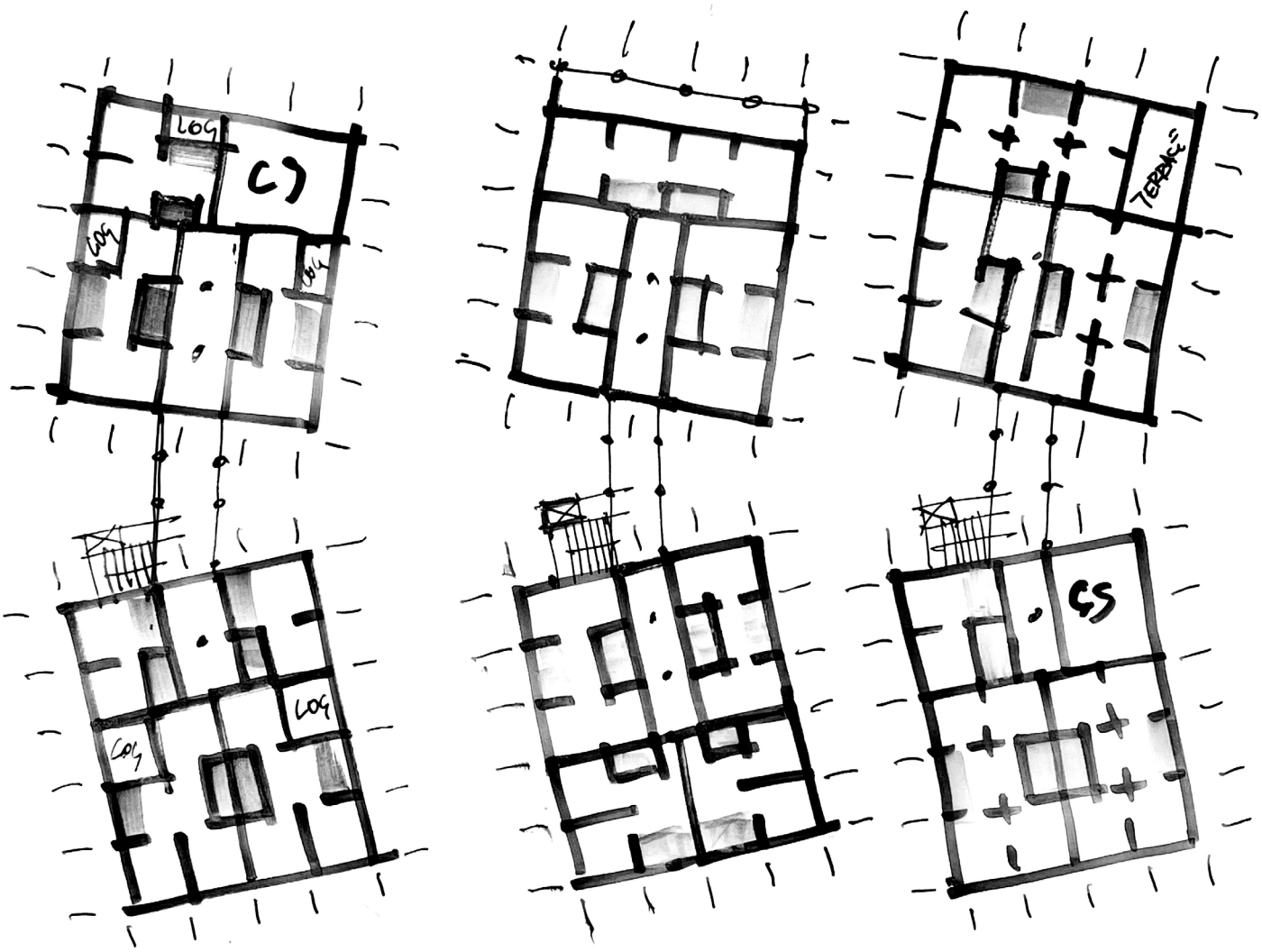












3,60 m x 3,60 m (developed further)

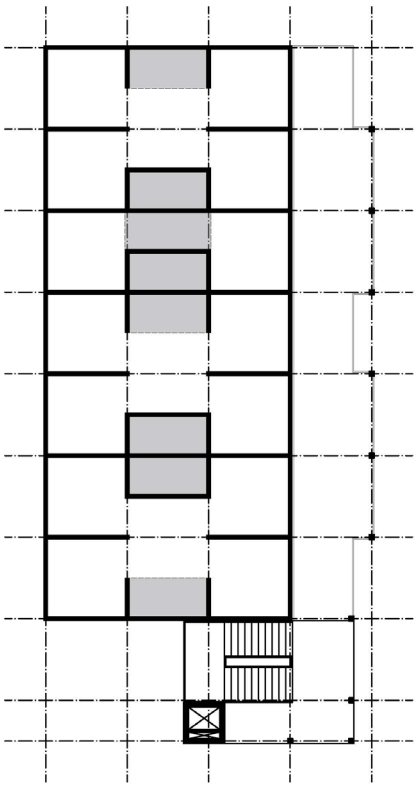


07. Floorplans - dwelling types configurations - 24 February 2025

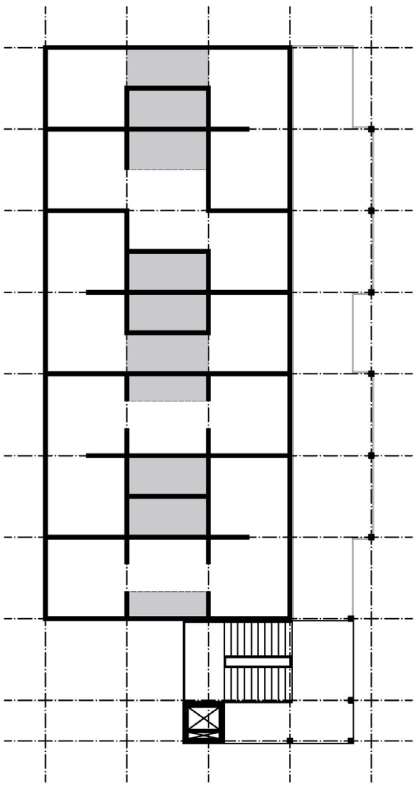




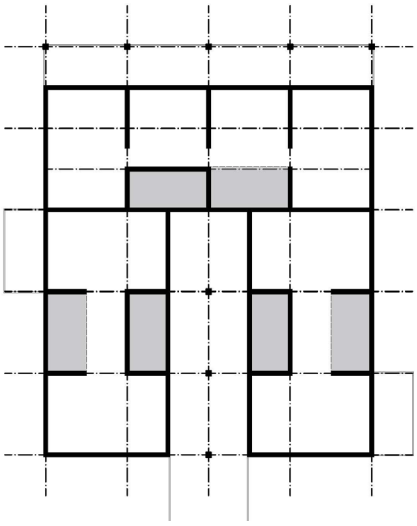
The floorplans resulting from this approach initially included three basic types: a building with central staircase access, a gallery building with a side-access, and a gallery building with a centrally located access. The first type was discontinued because it produced a monumental architectural language that was inconsistent with residential use. This design made the upper courtyard less inviting, thereby reducing the appeal and potential use of common spaces for social interaction.



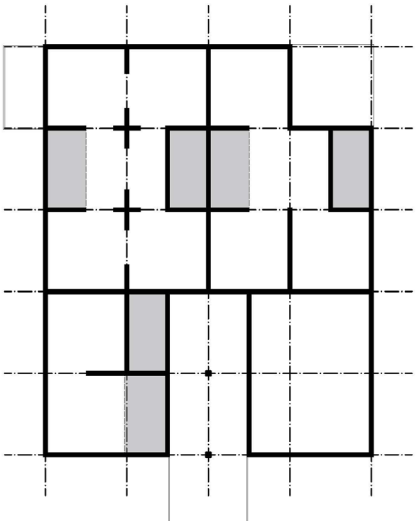
Gallery building, configuration 1.



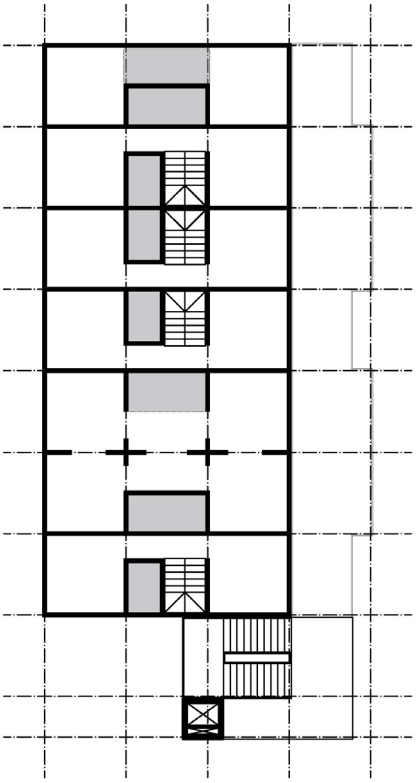
Gallery building, configuration 2.



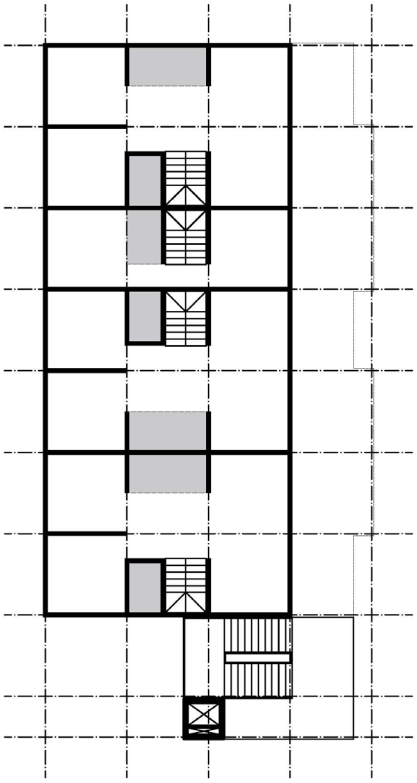
Central access building,
configuration 1.



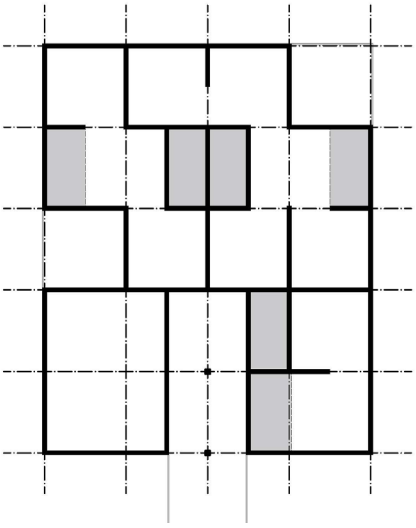
Central access building,
configuration 2.



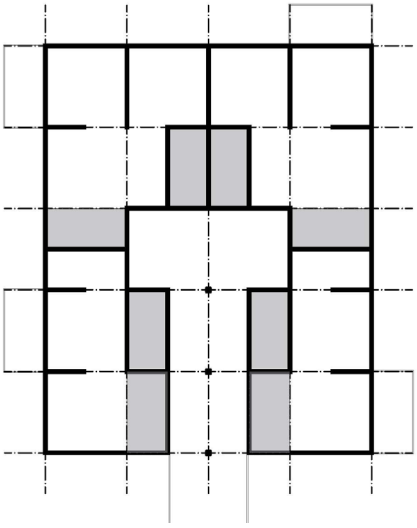
Gallery building, duplex apartments, lower floor.



Gallery building, duplex apartments, upper floor.



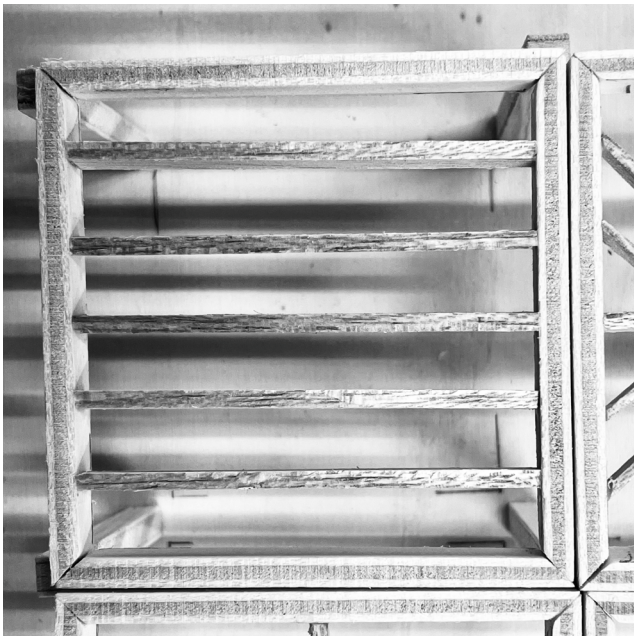
Central access building, configuration 3.

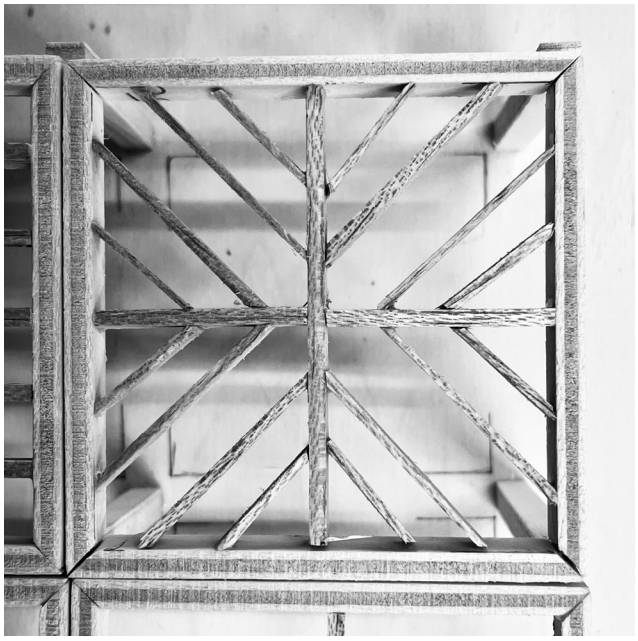


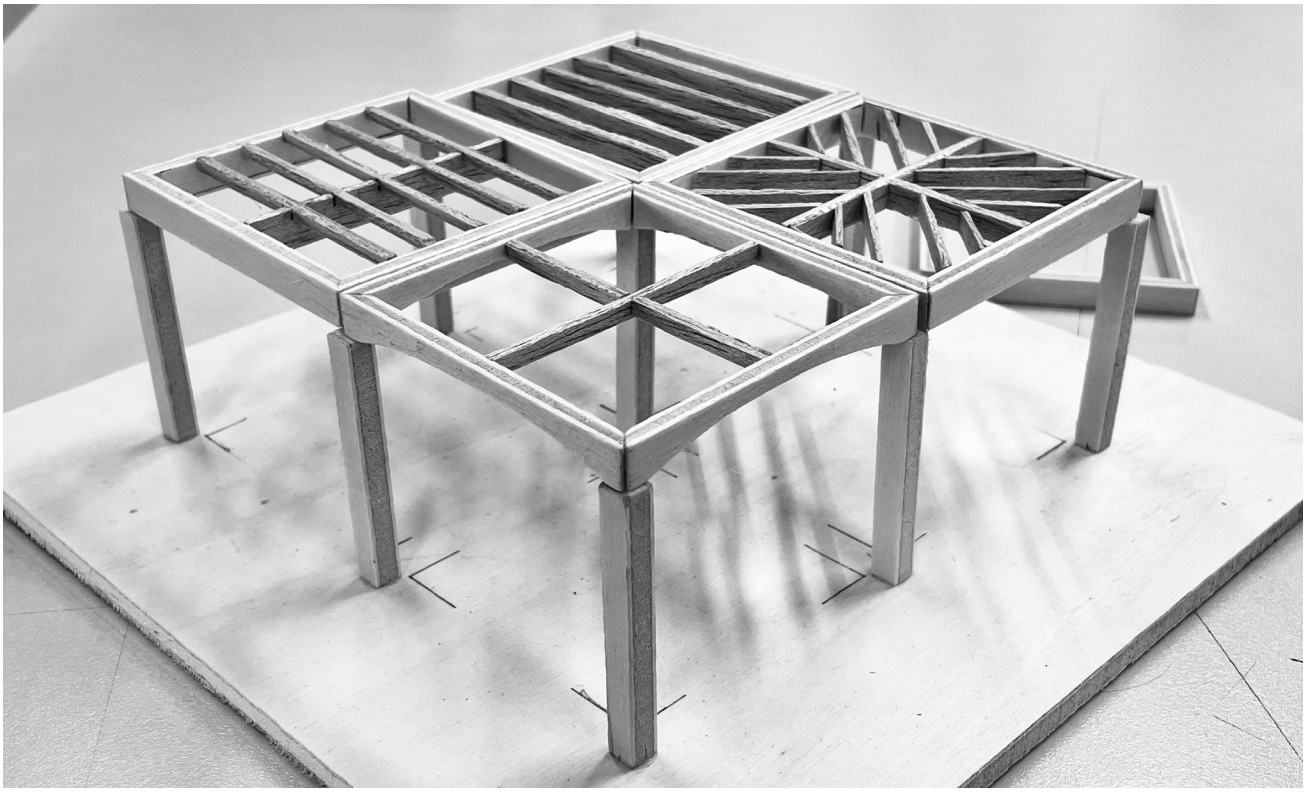
Central access building, configuration 4.

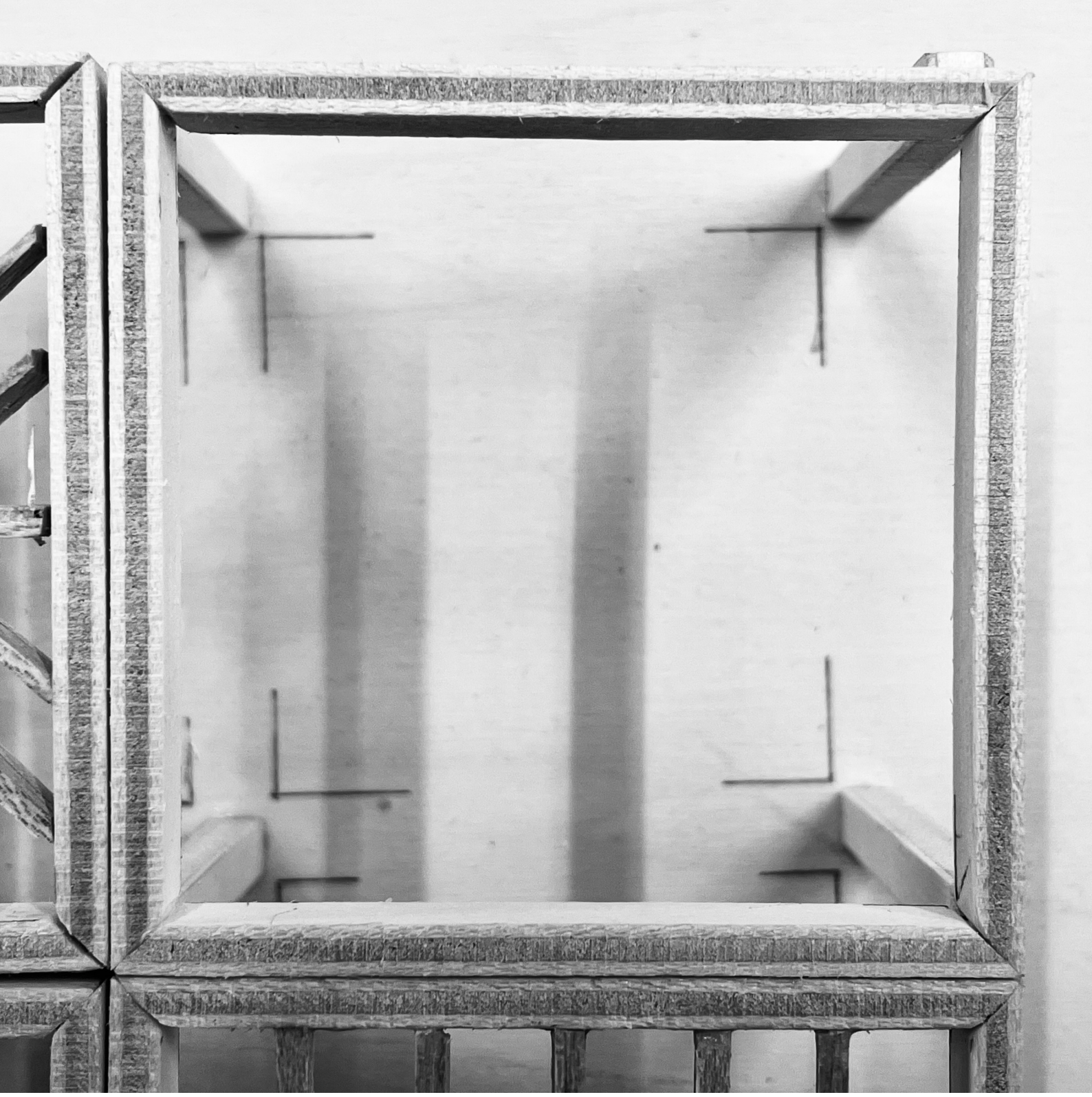
08. Structure - initial ideas

- 25 February 2025





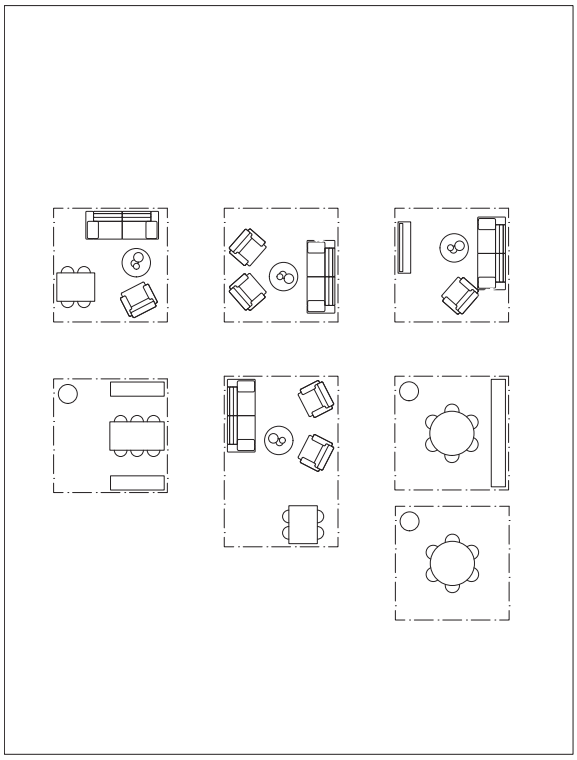


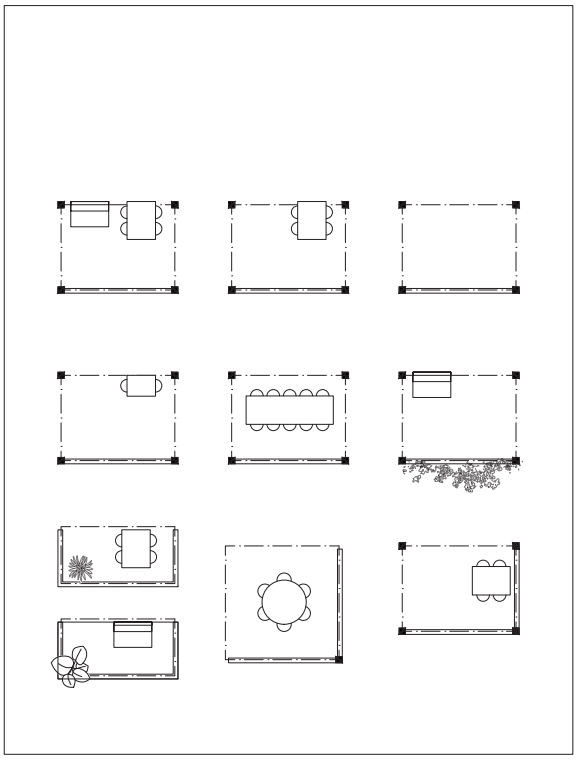


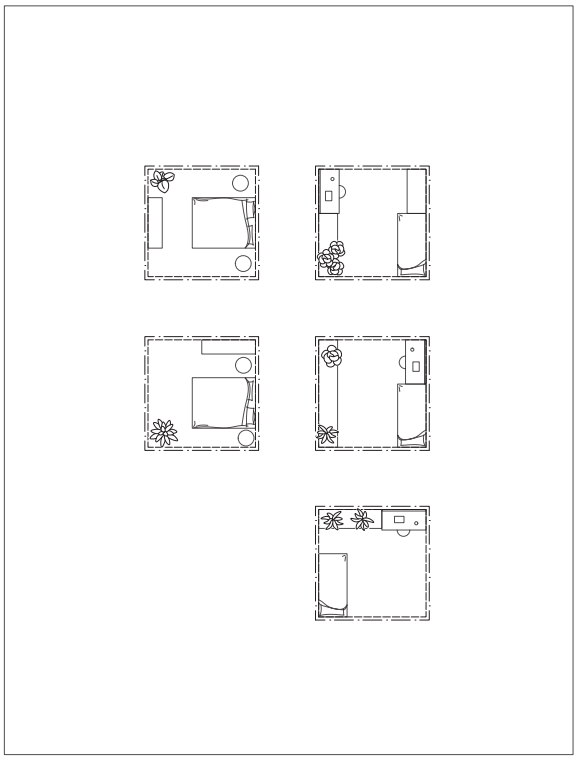
Given the highly modular structural grid imposed by the spatial arrangement of the dwellings—aligned with the chosen module sizes—the main structural decisions focused on whether the modules would be based on beams (one-dimensional), slabs (two-dimensional), or volumetric elements (three-dimensional). Another consideration was the type of substructure to be used. Ultimately, the decision was informed by the 1:50 scale model, where the simplest option was chosen: a combination of one- and two-dimensional elements—beams and columns for the frame, and prefabricated floors and non-bearing walls for spatial organization, without added substructure. This approach significantly enhances the project's sustainability by employing prefabricated, modular, flexible components made from bio-based materials that are demountable and easy to reuse.

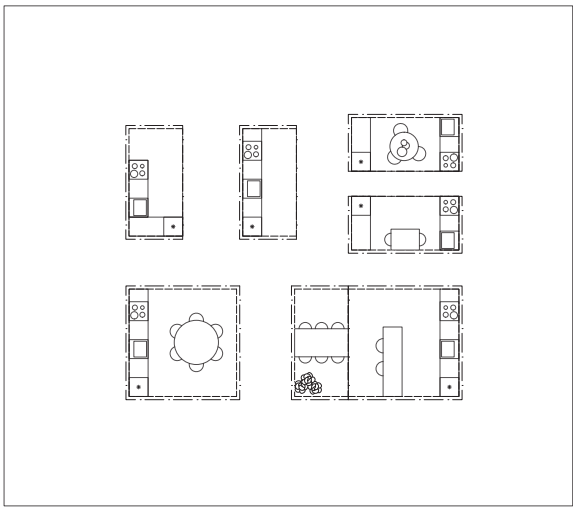
09. Scenarios

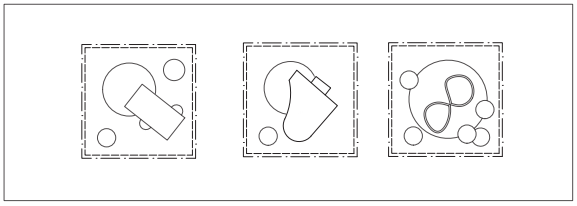
- 03 March 2025



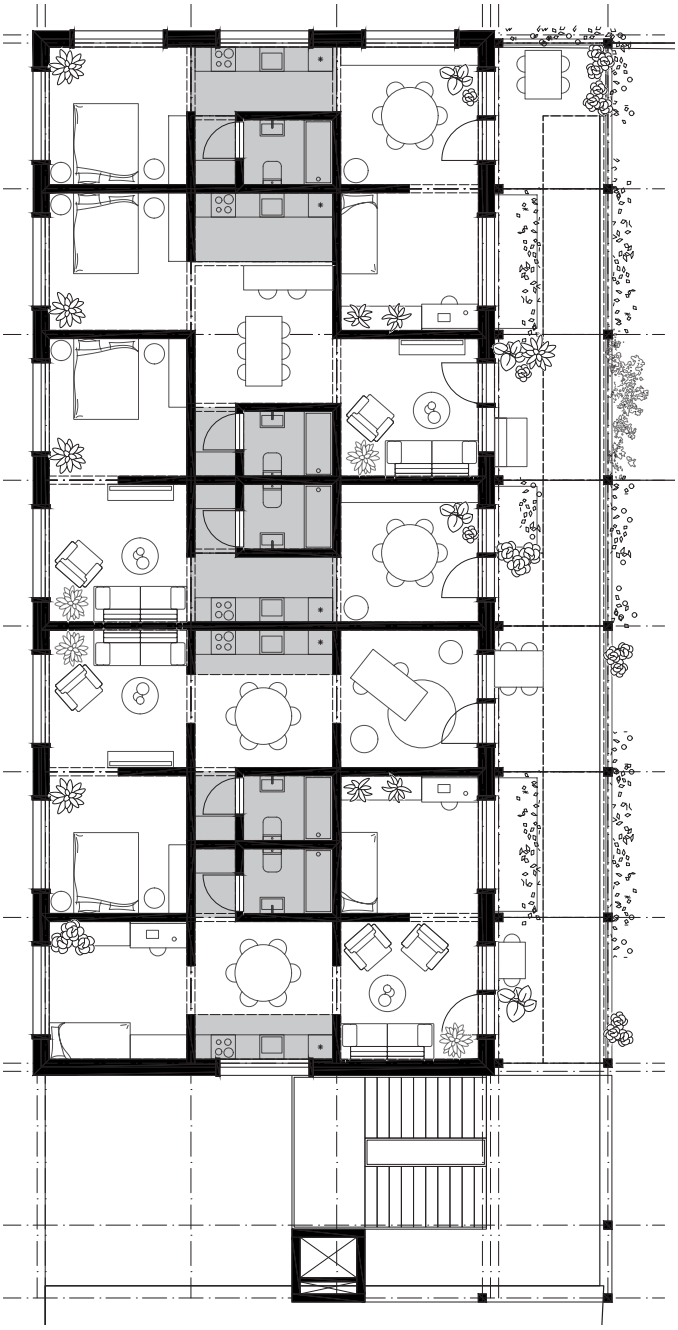






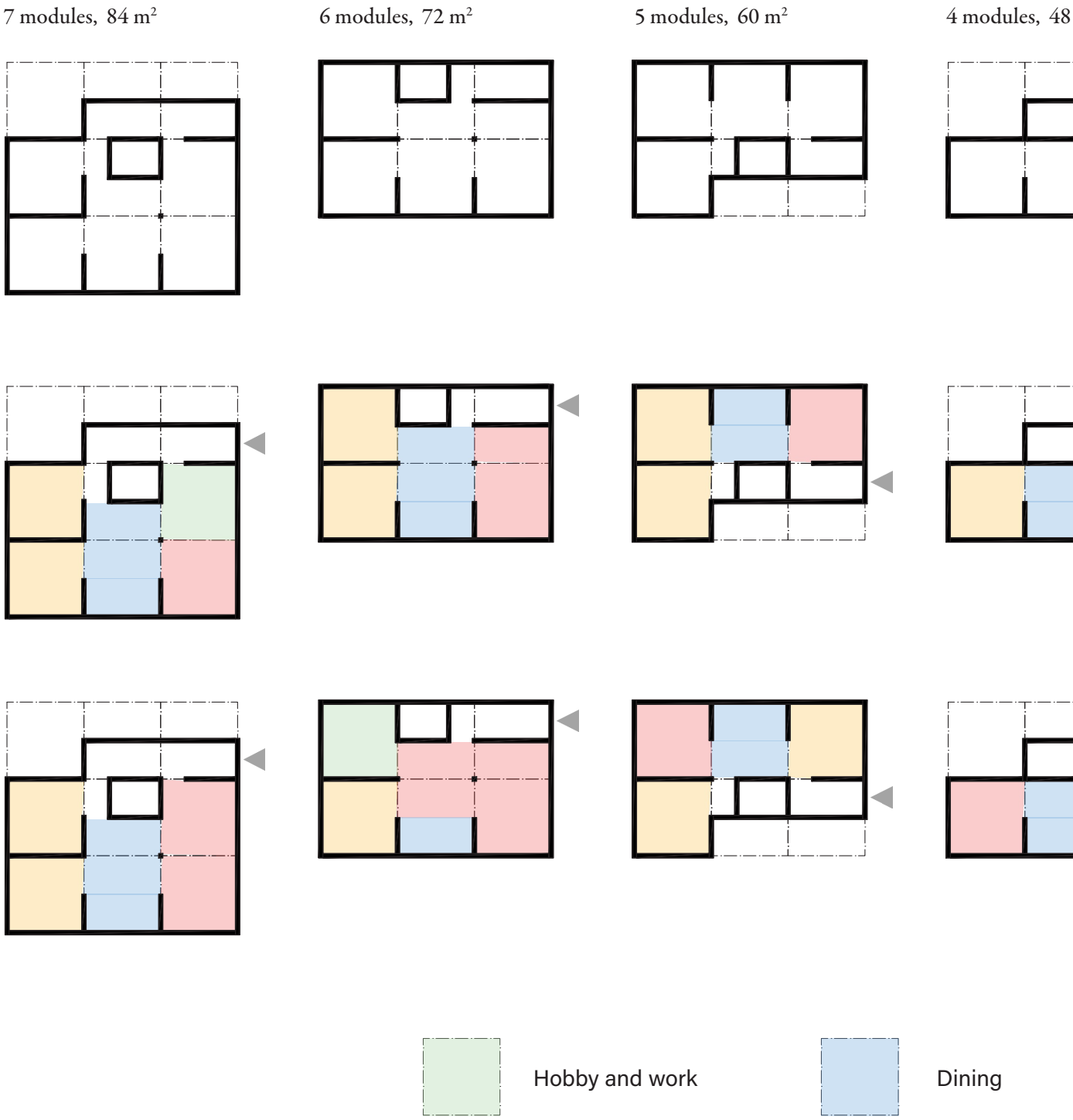


With a basic understanding of the dwelling types, structural system, and room sizes, I proceeded to test the design through various scenarios. The goal was to demonstrate the flexibility of the dwelling structure—showing how it could adapt to different cultural customs, physical conditions of the building (such as sun exposure), and individual resident preferences. These scenarios illustrate the spatial relationship between the dwellings and the habits they are intended to support. Preliminary floor plans confirmed that, while the overall concept was effective, certain dwellings—particularly in specific cases—required additional refinement.



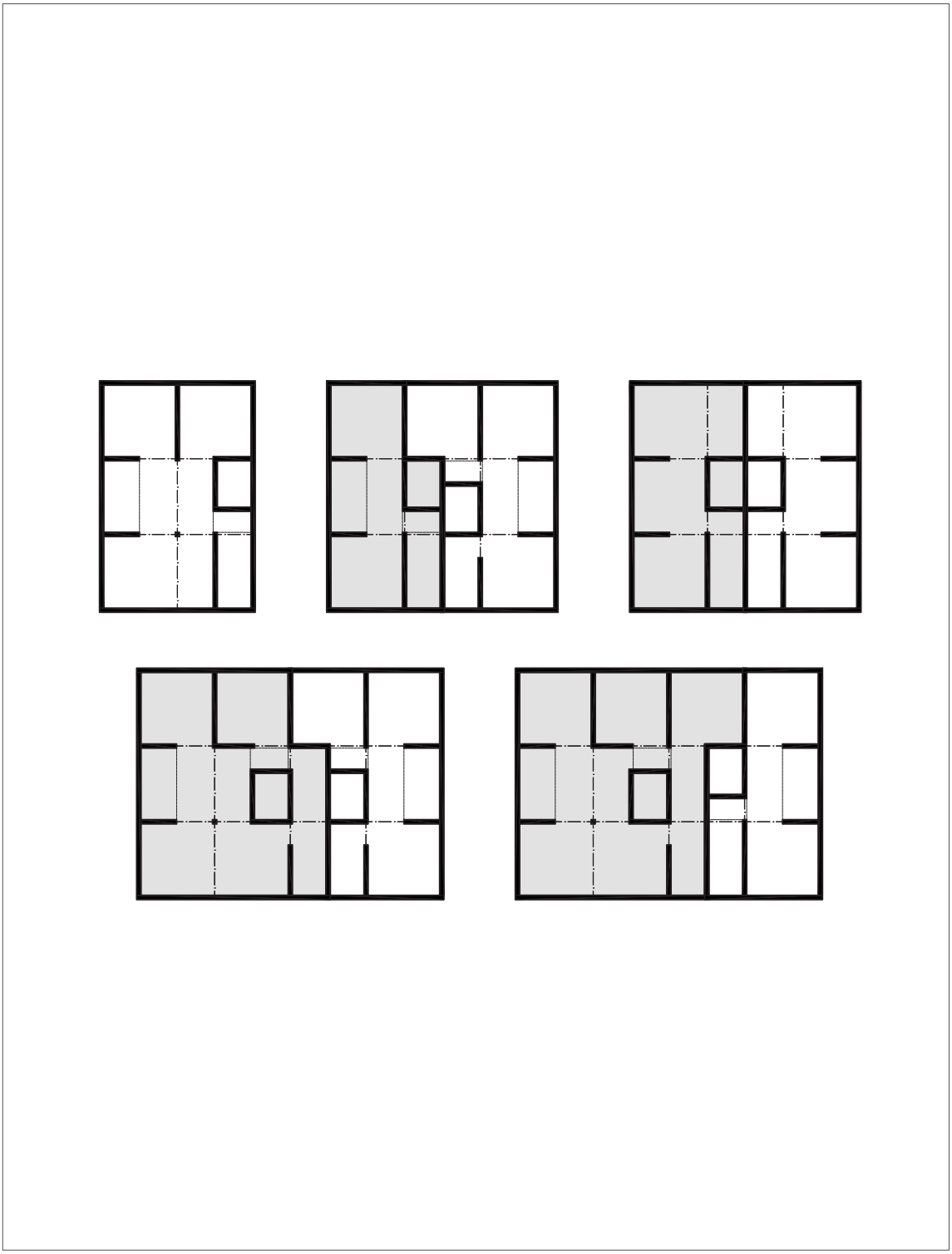
10. Floorplans - final dwelling types selection

- 4 March 2025



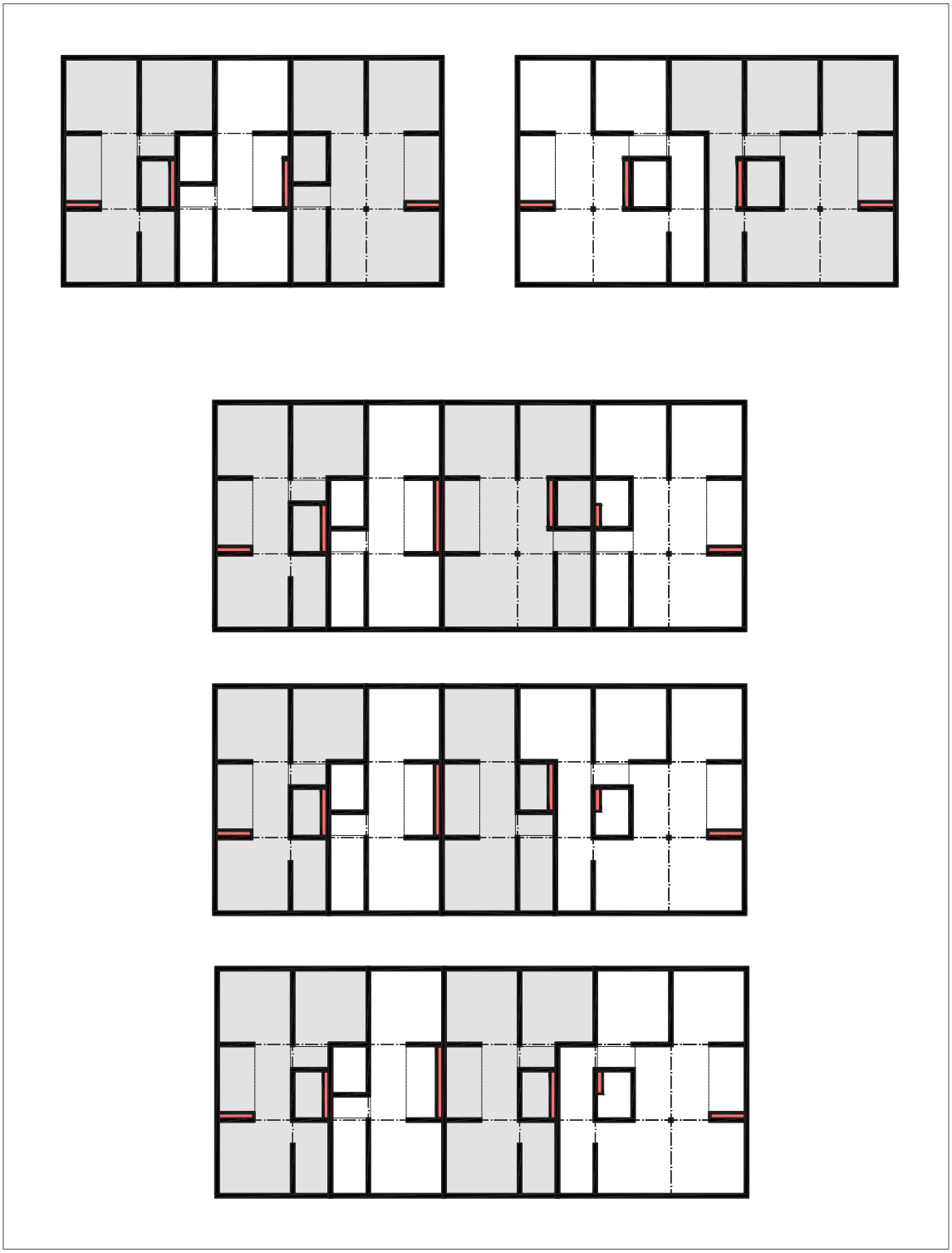
The final dwelling types, compared to earlier versions, place greater emphasis on factors such as sunlight exposure, entrance separation, and stackability and modularity. Their compatibility and flexibility with the scenario-based approach were further tested by arranging the same dwelling in multiple functional layouts, reflecting the diverse ways habitual users might adapt the space to their needs.

11. Floorplans - final dwelling types configurations - 5 March 2025



Clusters of apartments

The dwellings were organized into clusters and then integrated into complete floor plans. Each dwelling features a half-module serving as the entrance while also enabling better spatial arrangement within the cluster. The primary objective was to make the floor plan types interchangeable, which required aligning the shafts vertically across floors. Once this was accomplished, the precise arrangement of individual dwellings was left open for potential decisions in later project stages. This allows for more user-tailored solutions, including adaptations based on habits and preferences that could not be fully addressed at this stage.

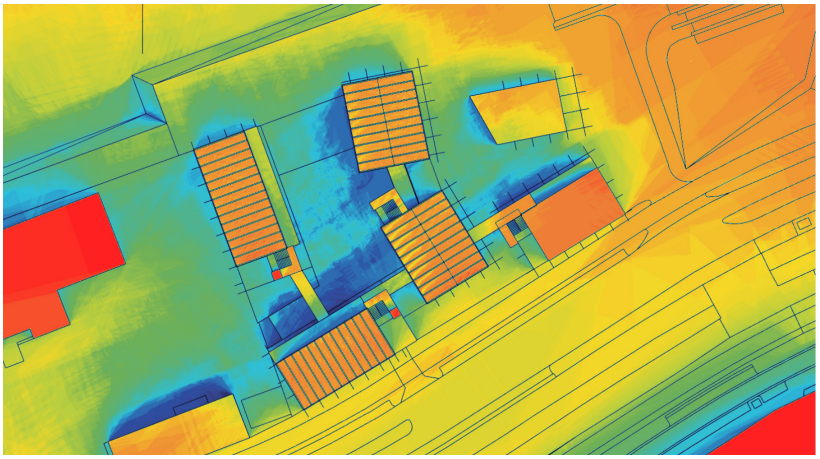


Floor arrangements

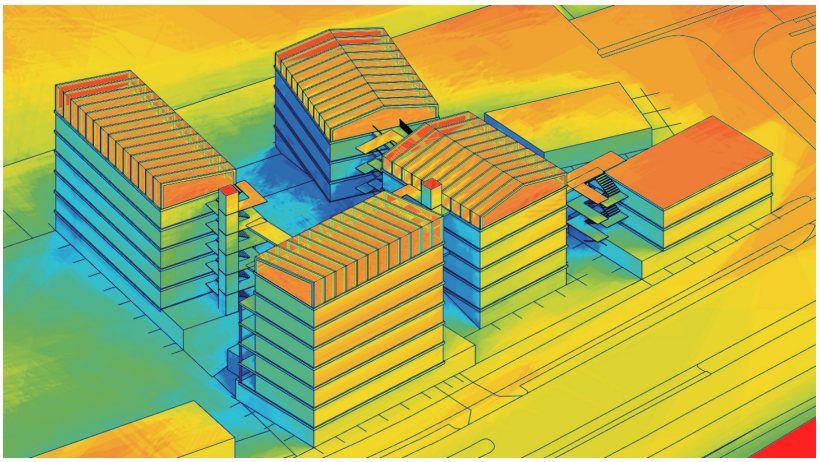
12. Sun analysis and massing refining

- 6 March 2025

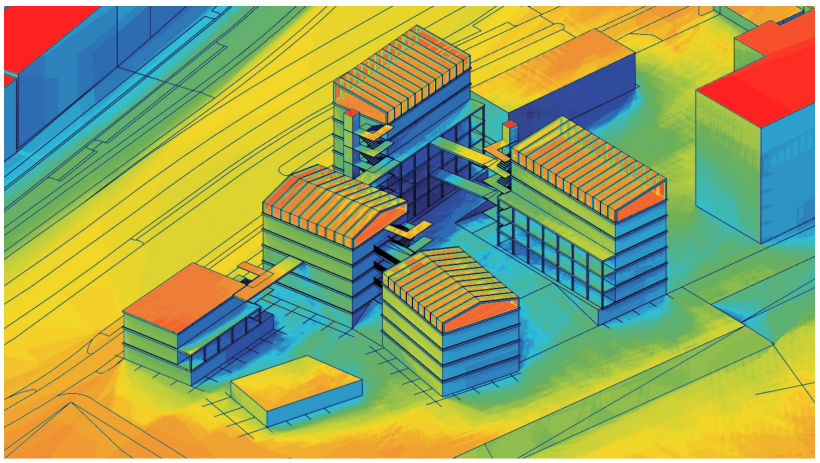
Version 1 (discontinued)



Top view



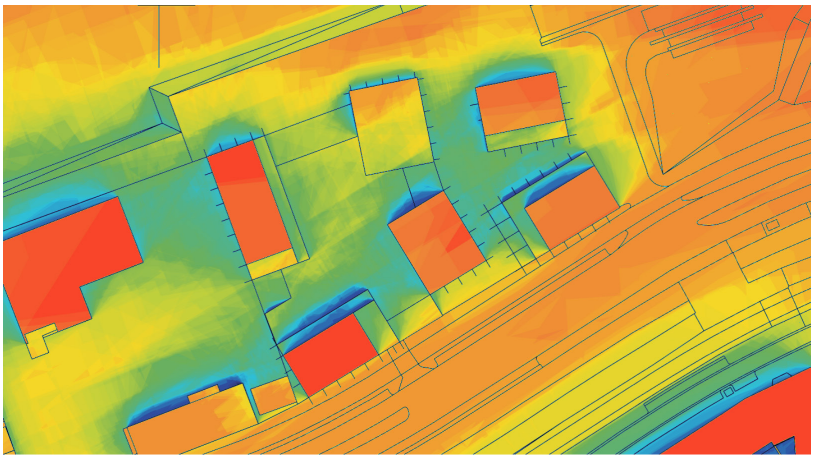
South - West view



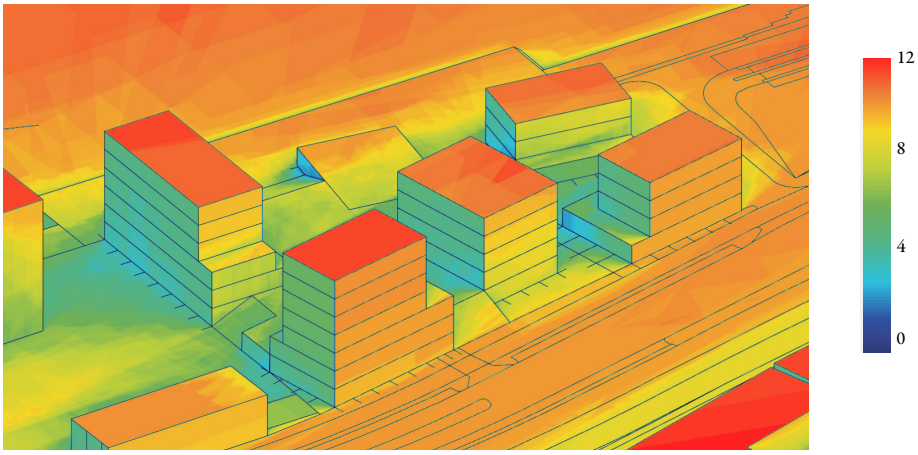
North - East view

With the floor plans and access systems established along key circulation routes, the next step involved refining the building masses based on sunlight exposure. Initially, there was a building positioned centrally, and a lower one in the northeastern corner. This massing evolved towards a more open central area, framed by more defined boundaries. This configuration enhances sunlight access to the central square, making it more inviting and usable throughout the year.

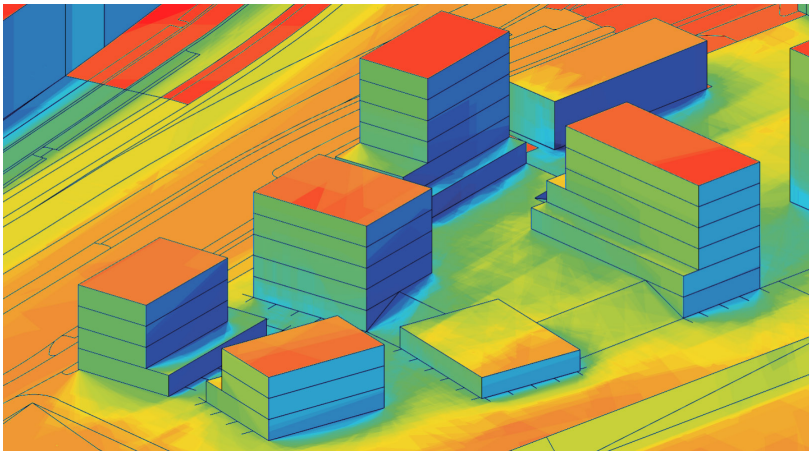
Version 5 (developped further)



Top view



South - West view



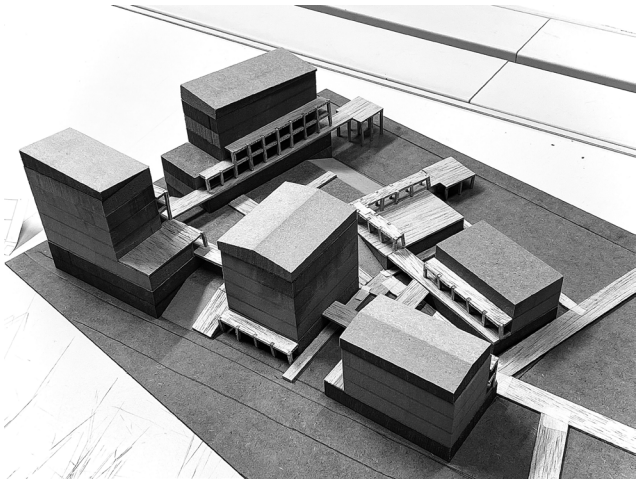
North - East view

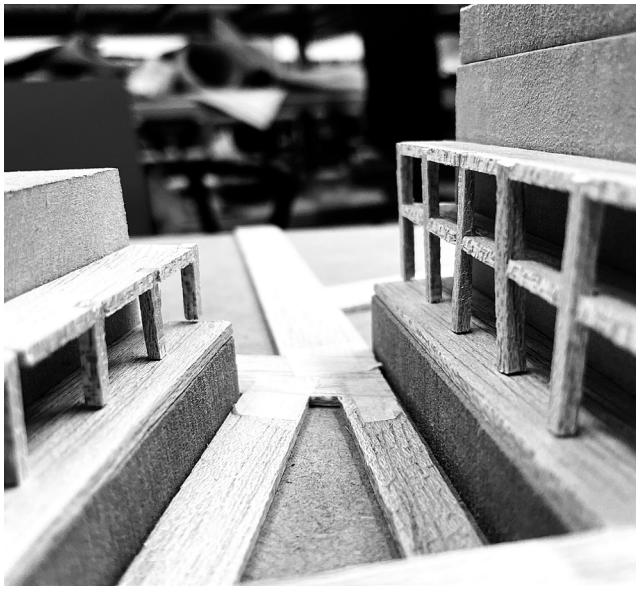
13. Mass and movement

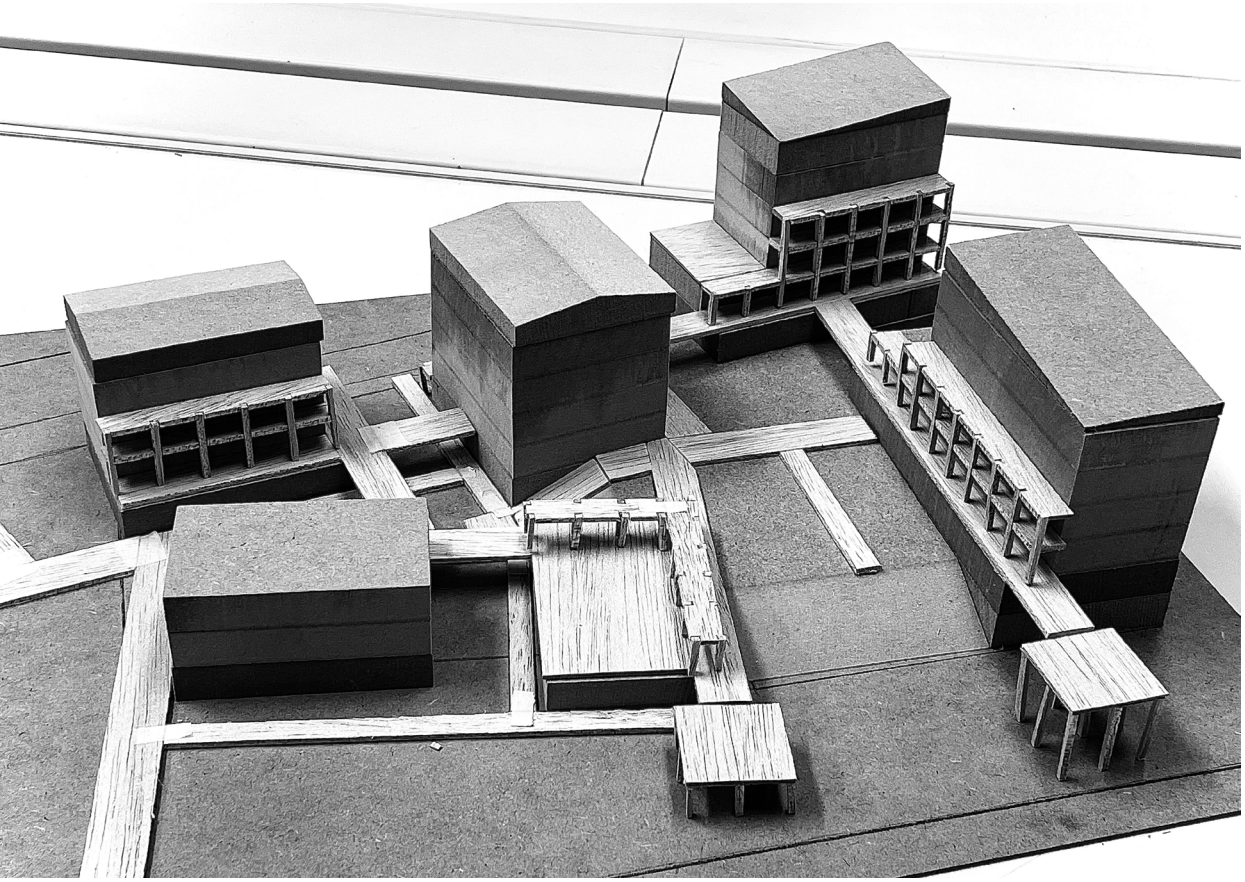
- 7 March 2025

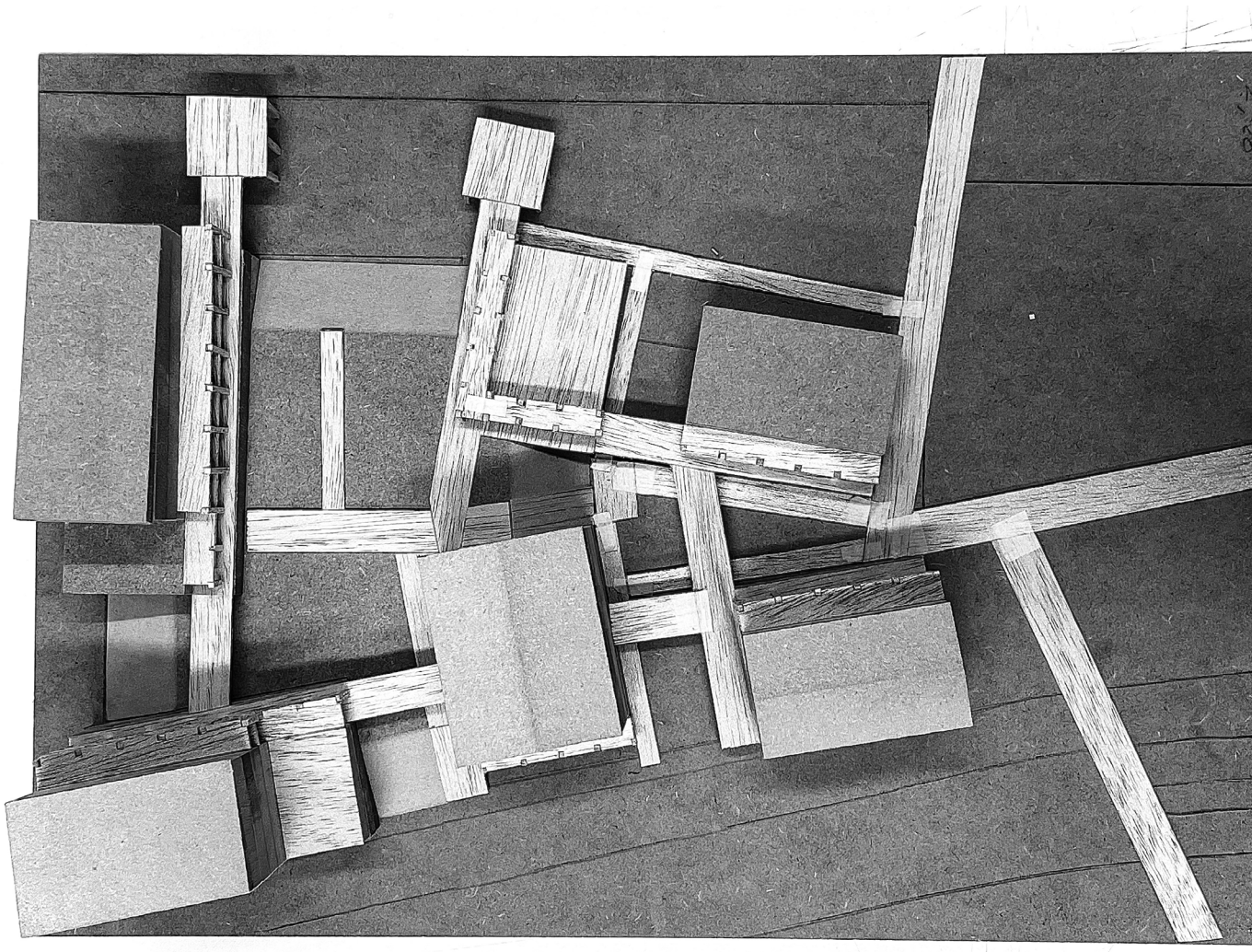
While the building masses primarily accommodate the project's programmatic functions—public spaces on the ground floor and adjacent to the upper square, with residential units above and two publicly accessible rooftops—the interstitial spaces are designed to facilitate movement. These pathways correspond directly to habitual behaviours they aim to support or enable: the buildings address social interaction and communal activities, while the connecting paths encourage physical movement. The overall system links the buildings to the park, the waterfront, and the neighbouring districts of Tarwewijk and Katendrecht, thereby fostering opportunities for social engagement.

Vertically, users are guided from the water level up to the ground floor, then to the upper square, and further to viewing platforms on the second floor. The design also includes elevated connections to Tarwewijk at both the ground and upper square levels. This primary circulation spine gradually branches into a network of galleries, creating seamless transitions between more private and public spaces and encouraging residents to fully engage with the adjacent urban environment.









14. Public functions plan

- 10 March 2025

The public functions are distributed across two floors. On the ground floor, the more accessible spaces are designed primarily for the residents of Tarwewijk, facilitating easy access from the neighbourhood. The first floor, adjacent to the upper square, serves mainly the residents of the housing ensemble but also includes public functions aimed at fostering social interaction between the two groups.

15. Facades

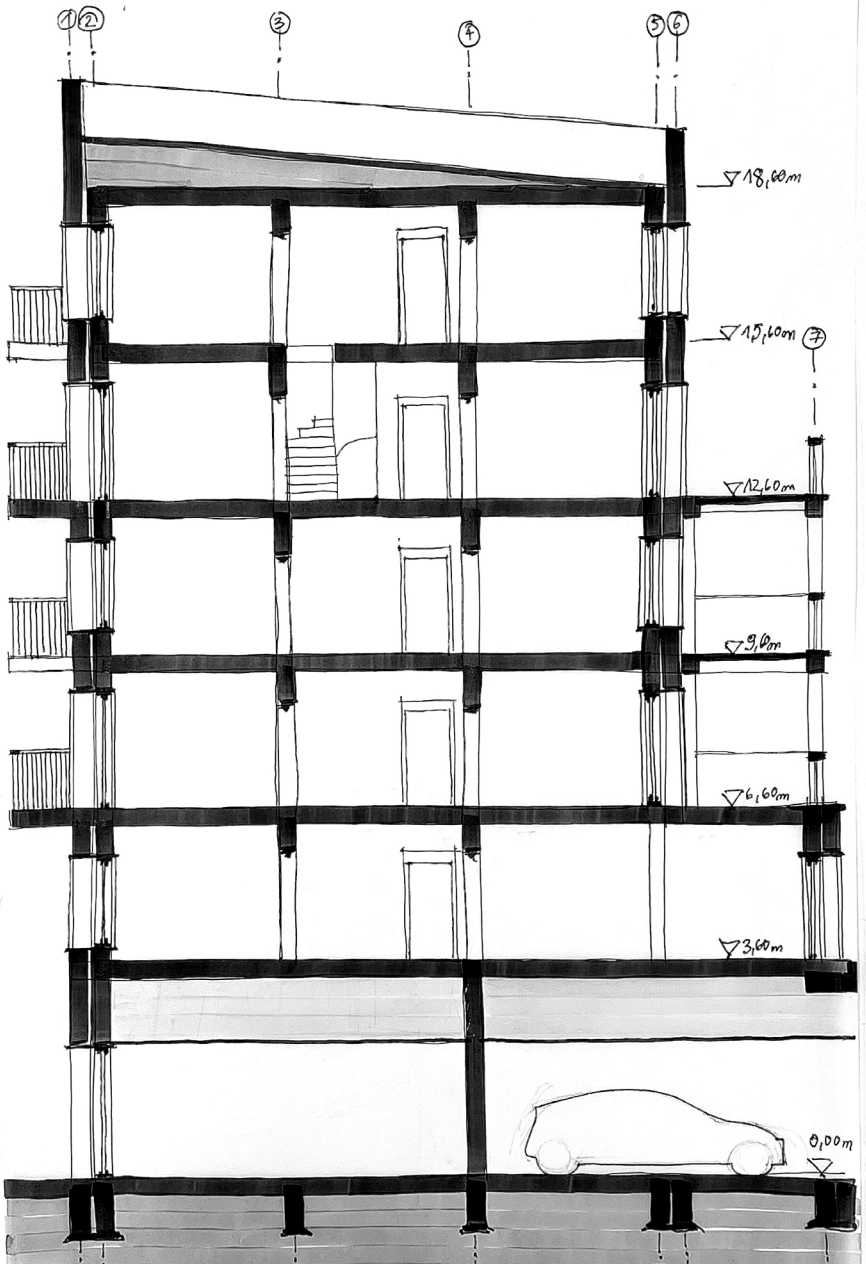
- 13 March 2025

In the vertical composition, the façades follow a basic principle of differentiation between the base, middle, and top sections of the building. This design provides clarity for users by signalling what to expect from each part—indicating which areas are inviting, which are more private, and which are publicly accessible. According to the literature, this clarity of perception is likely to encourage greater participation in public life.

16. Sections

- 13 March 2025

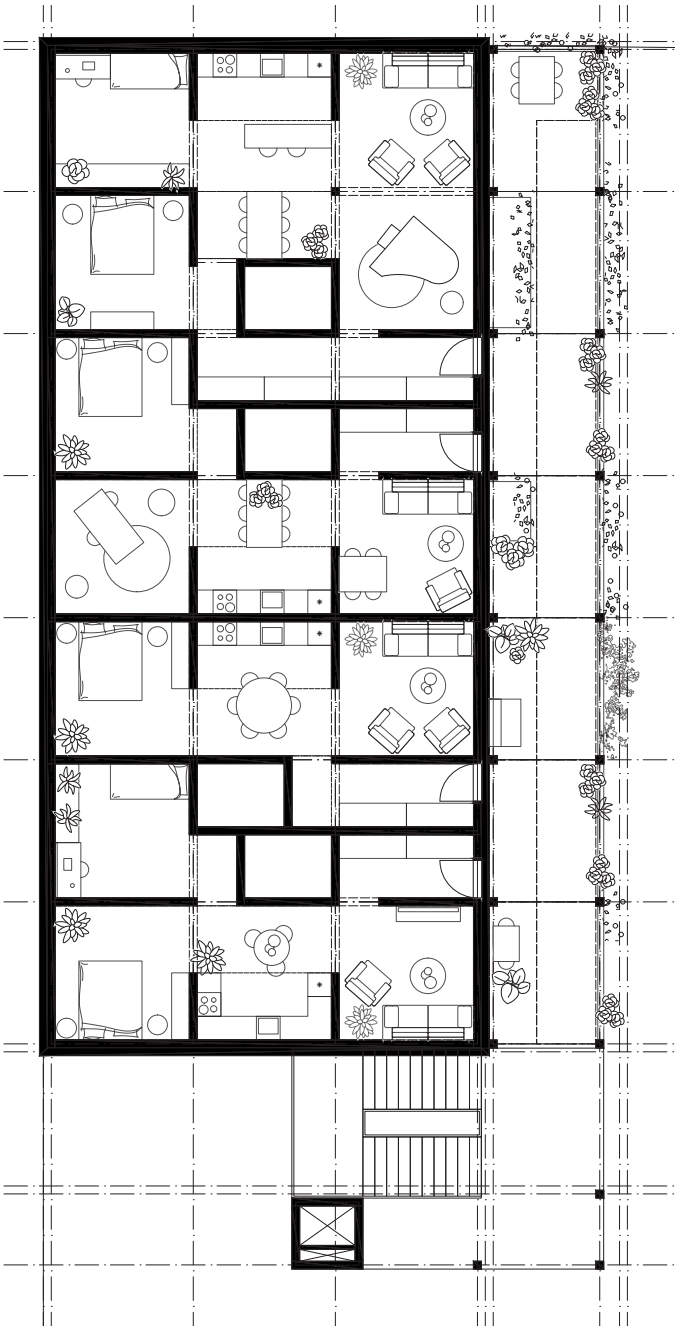
In developing the building sections, the primary focus was to establish visual connections between the dwellings and the public spaces situated between the buildings. The galleries serve as a solution to this challenge—they function as private extensions of the residences while allowing inhabitants to spend time in close proximity to the public areas.



17. Plans

- 17 March 2025

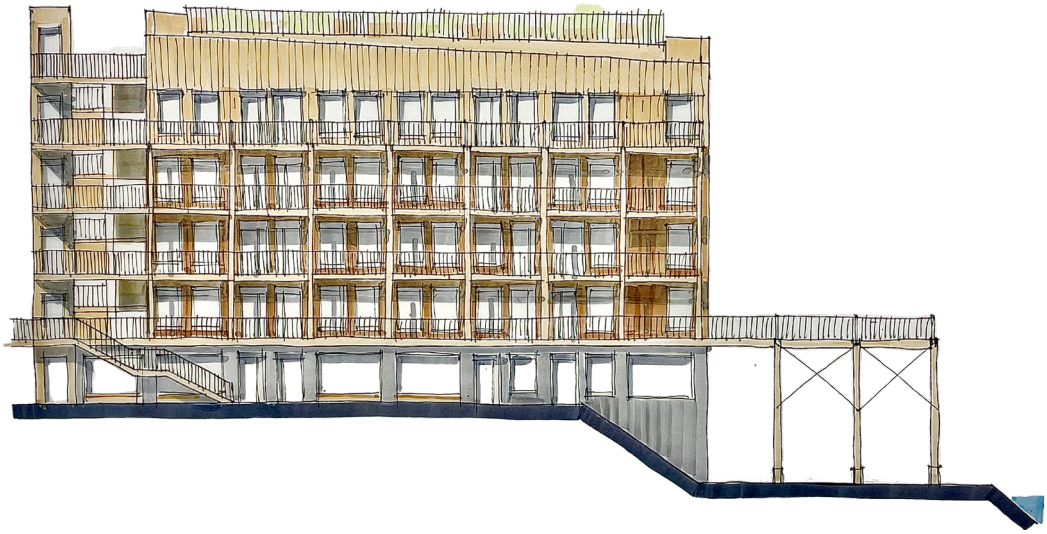
The following floor plan studies demonstrate that the final dwelling types, along with the incorporated scenarios in the galleries, have the potential to foster a strong connection between interior and exterior spaces. This displayed floor plan served as a reference model, with all subsequent designs developed following the same principles.

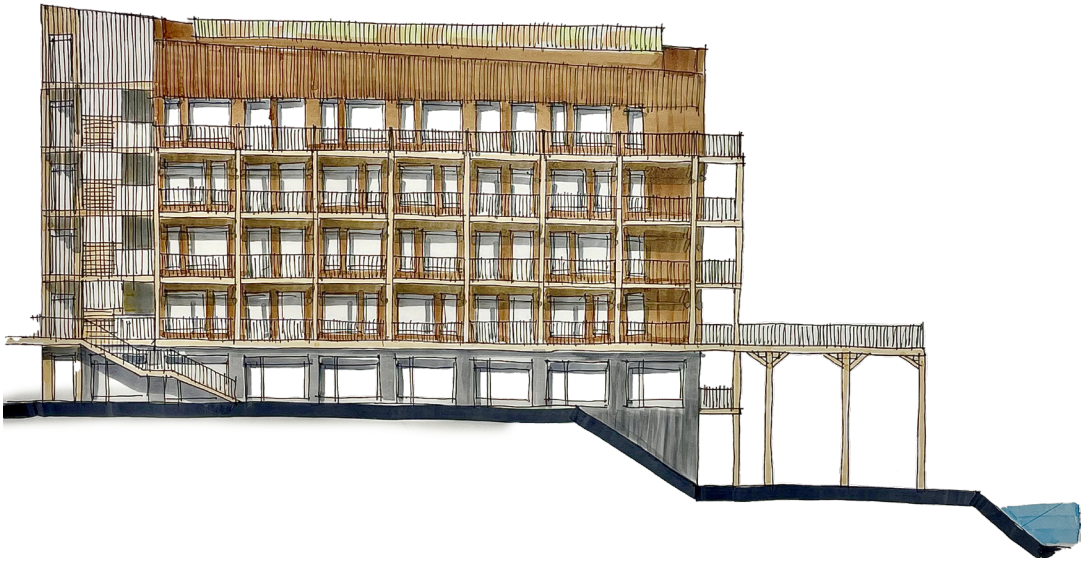


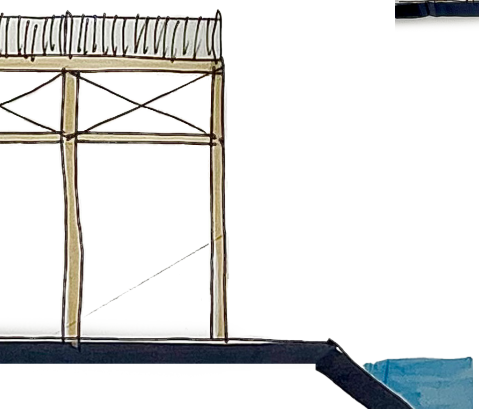
18. Facades

- 19 March 2025

The principles of the façade design, visible in the vertical compositions, were further developed in composing the building as an integrated whole. The largest building, used as a case study, exemplifies a complex set of factors that, when addressed, offer solutions applicable to the entire ensemble. These factors include the building's placement relative to the water and surrounding structures, the access system (whether open or semi-enclosed), the rhythm and style of the primary window types, the length of the galleries, the treatment of the building's ends (open, semi-open, or closed), the materials used on each floor, and the incorporation of balconies. Together, these elements shape the overall perception of the building from the user's perspective, influencing how legible and inviting its functions are, forming a cohesive architectural composition.







19. Climate

- 25 March 2025

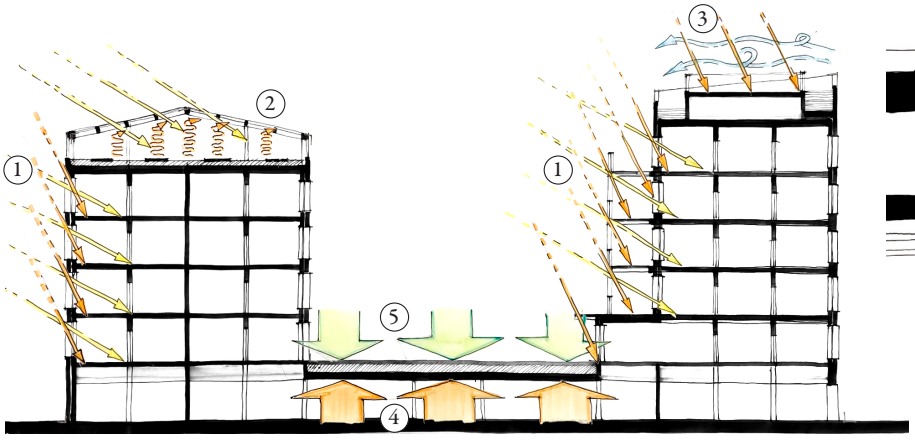
The climate within the building is regulated passively through several strategies. Sunlight analysis revealed a mix of fully exposed and shaded areas, ensuring that users can choose spaces that best suit their preferences. The galleries function as overhangs, moderating solar gain seasonally—blocking excessive sunlight in summer while permitting more in winter. The central square is elevated to maximize sun exposure, with additional cooling provided by integrated greenery that offers relief during hotter months. The brickwork used in the buildings also contributes thermal mass, helping to stabilize temperature fluctuations throughout the day.

The rooftop public spaces are designed in two types: uncovered areas that are most comfortable in summer, benefiting from breezes to mitigate heat, and covered areas that provide shelter and insulation during winter.

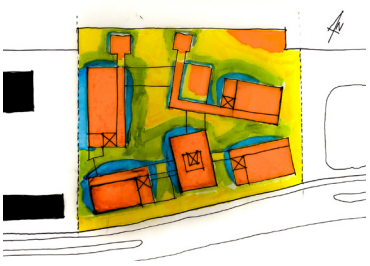
Water retention is addressed through a cascading system: since the building is organized across multiple accessible levels, rainwater can be retained and slowed before entering the nearby harbour, reducing runoff impact.

Wind comfort is also considered through the shaked grid organising the massing of the buildings, which disrupts prevailing wind paths. This design helps maintain slightly warmer conditions in between spaces during colder months, making them more usable year-round.

Beyond enhancing comfort and liveability, these strategies aim to reduce the building's overall CO_2 emissions. Further improvements include the use of water-source heat pumps that draw thermal energy from the Maashaven in winter, as well as apartment layouts that facilitate cross-ventilation, minimizing the need for active cooling in summer.

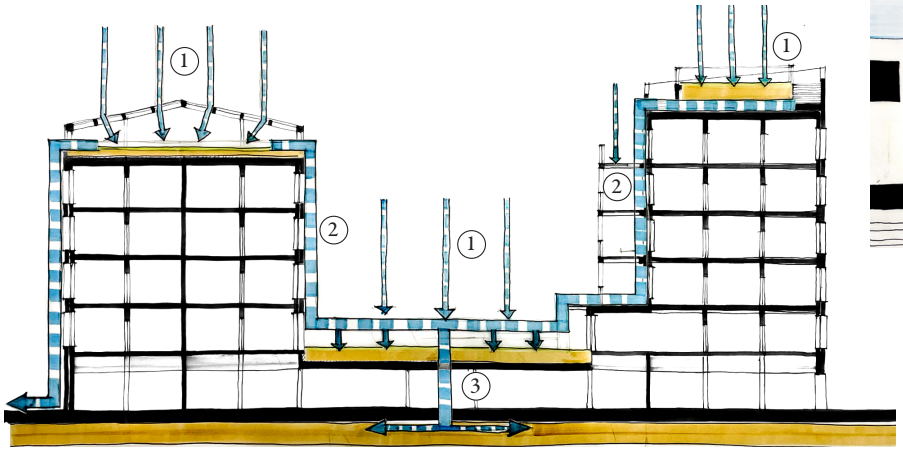


1 - Sun rays penetrating the galleries and apartments deeply in winter and shallow in the summer.
2 - The rooftop greenhouse as a pleasant place during winter due to sun heating. 3 - The external rooftop as a pleasant space in the summer due to wind cooling and sun heating balance. 4 - Semi-public square elevation making it more sunlit through the year.
5 - Balancing with cooling effect of vegetation in the summer.

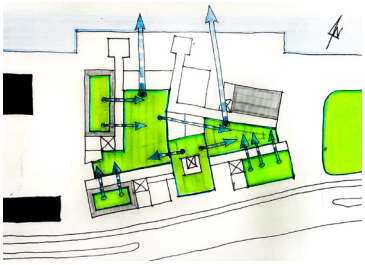


Urban scale sun exposure scheme

- <2,5 h of sun per day average
- <4,5 h of sun per day average
- <7 h of sun per day average
- >7 h of sun per day average

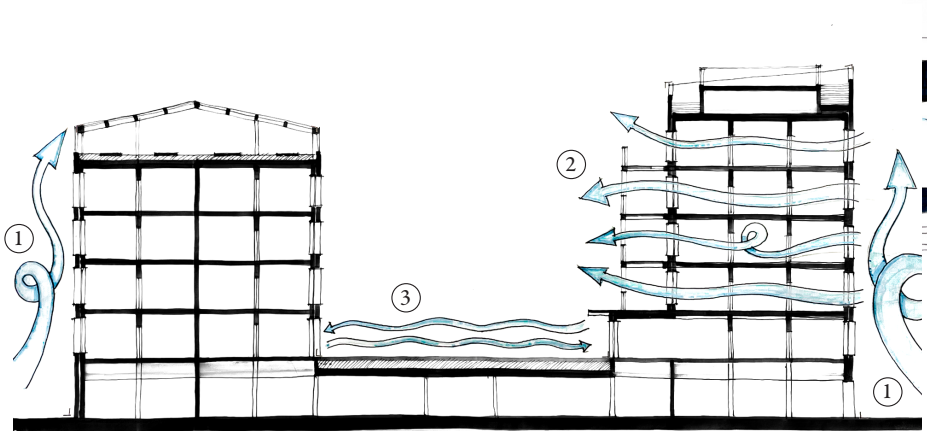


1 - Primary water collection and retention on rooftops. 2 - Overflow water transportation on lower levels of semi public spaces.
3 - Dissipation of overflow water into native soil.

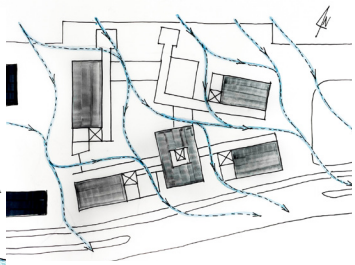


Urban scale water management scheme

- Maashaven
- Bioactive layers in the park and on the rooftops



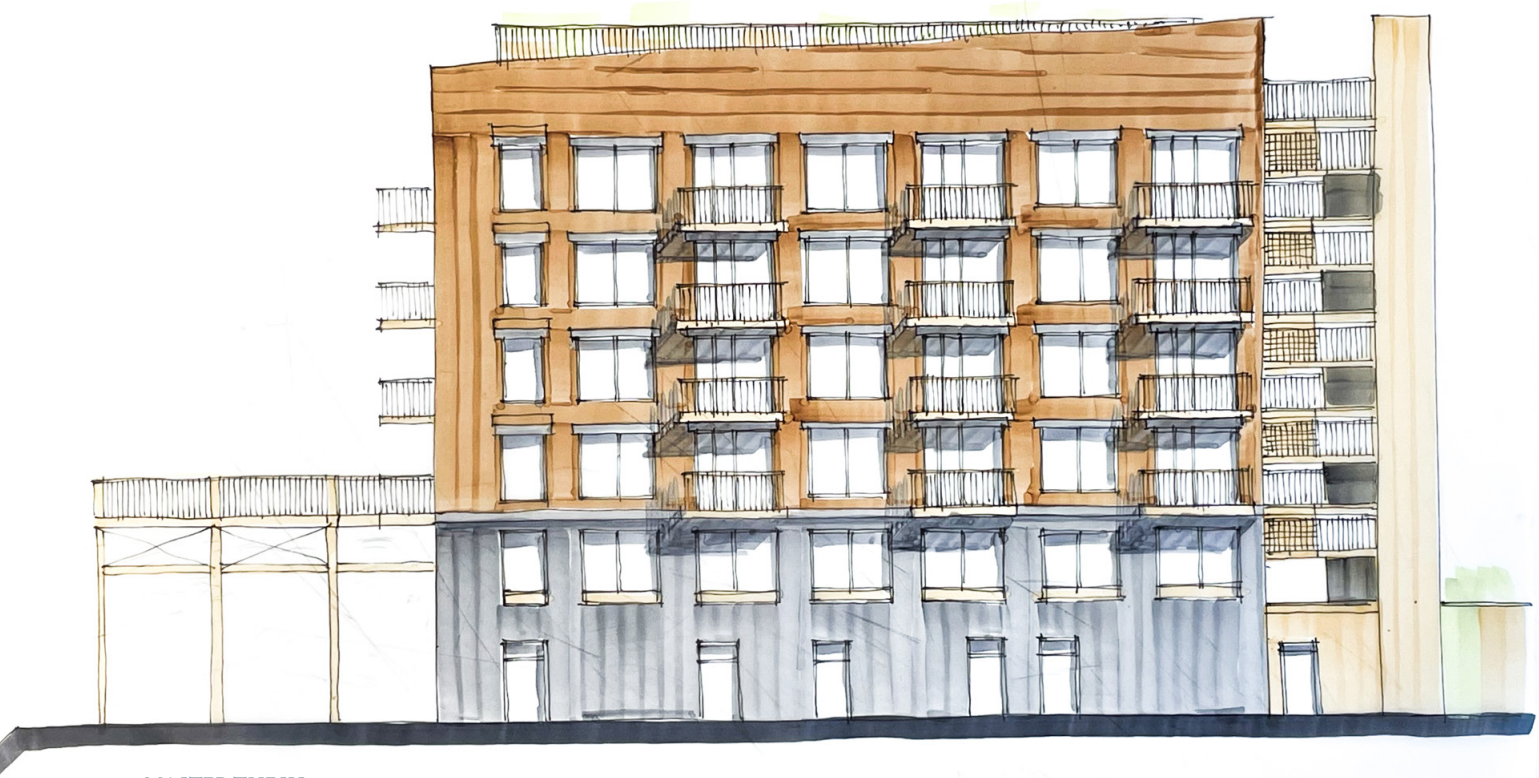
1 - Buidlings acting as a barrier breaking the wind. 2 - Airflow through apartments - corner or galleries. 3 - Semi-public square covered from main wind flows.

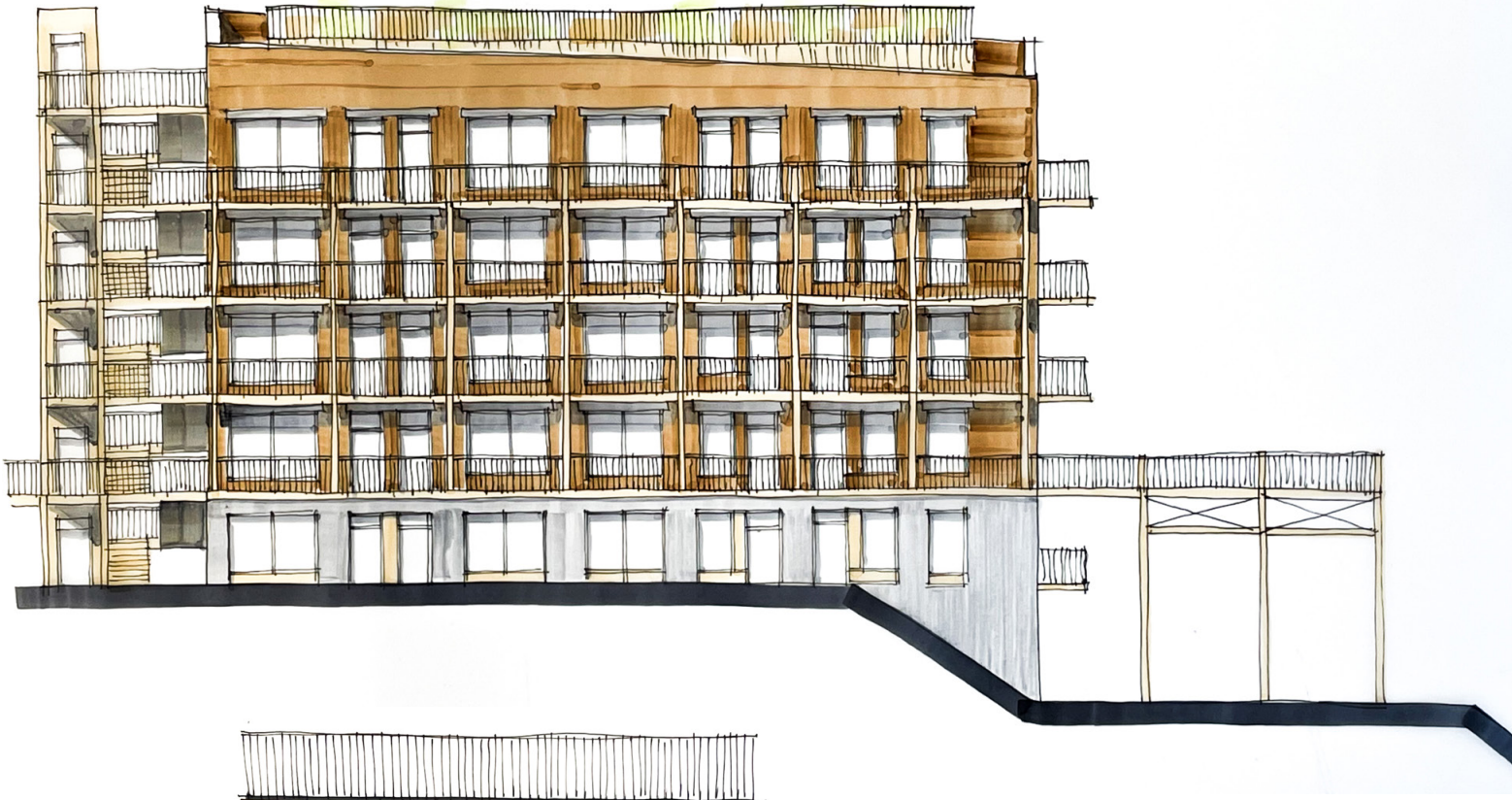


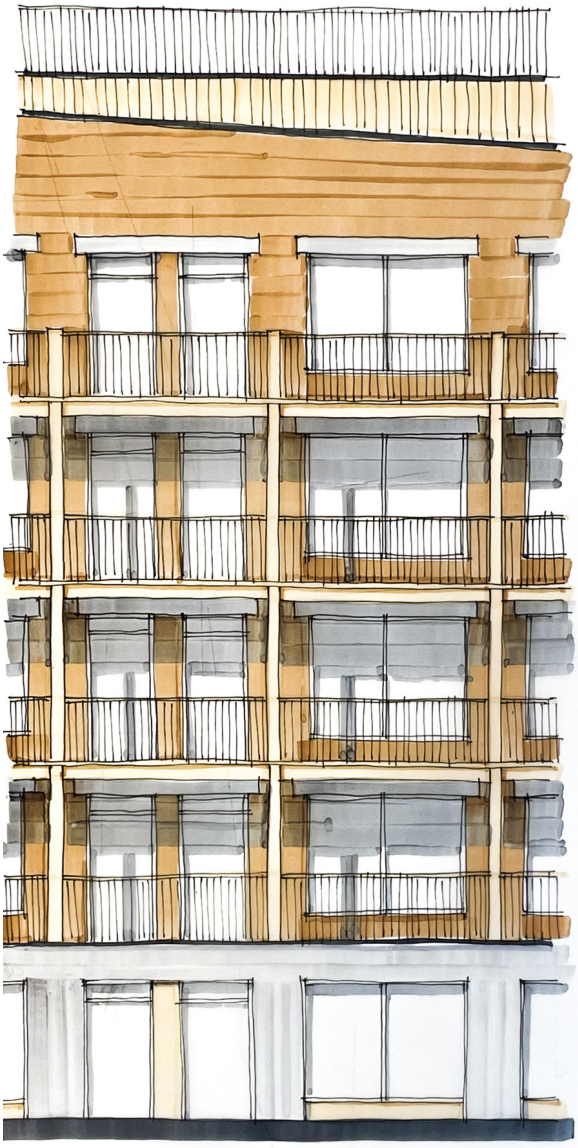
Urban scale wind and airflow scheme - The irregular grid created by the buidling, and variating inbetween spaces, permits the wind permeate the complex, while also breaking down it's speed.

20. Facades - almost final choice

- 28 March 2025





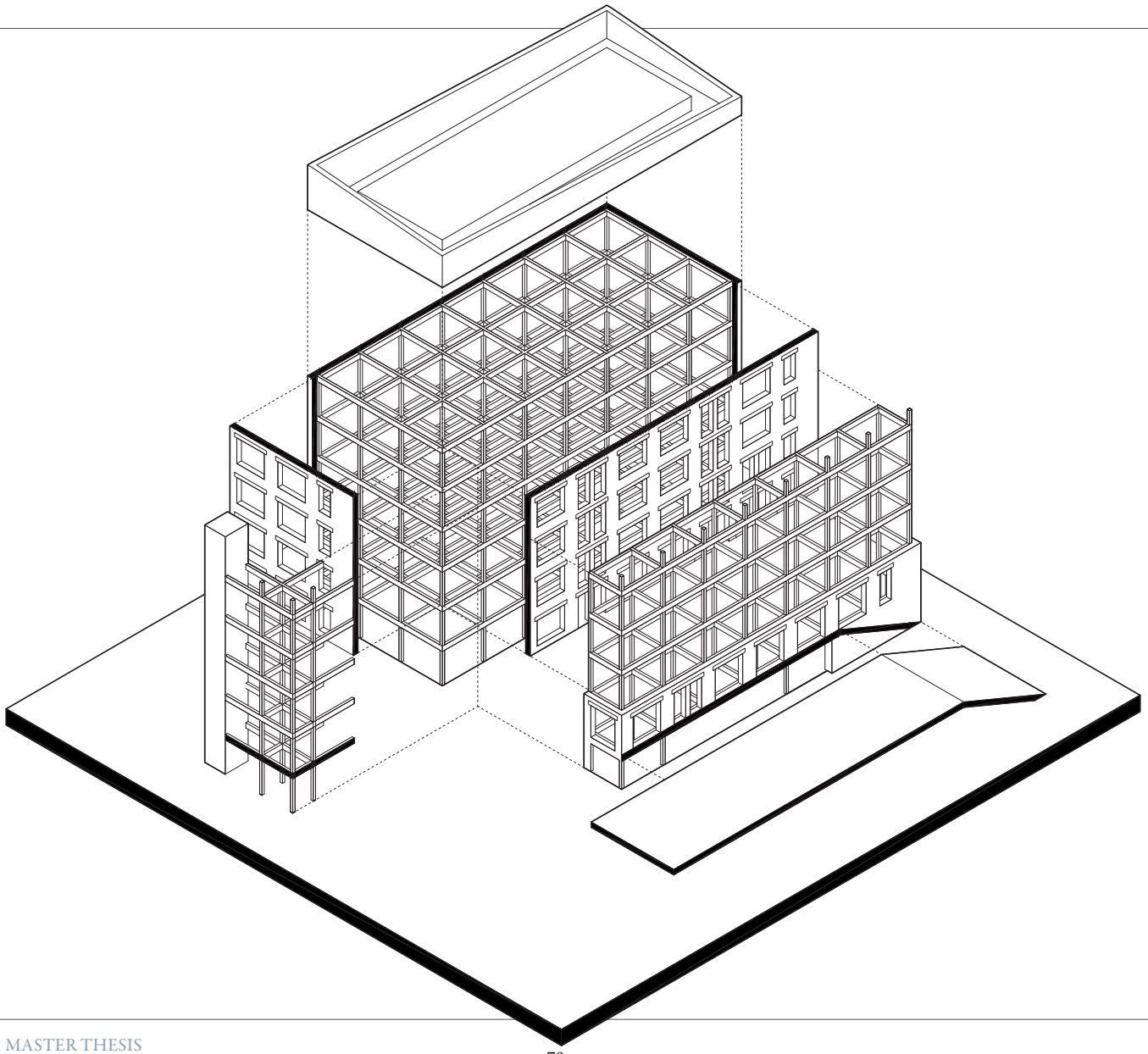


21. Structure

- 28 March 2025

The main structural concept for the building is its division into three fully independent systems. The first is the interior structure, organized on a 3.60 × 3.60 meter grid, where only the beams and columns are load-bearing. The second is the exterior wall—a 20 cm-thick, self-supporting solid brickwork façade. The third component comprises the galleries and access systems, with their own structural system of beams and columns.

Functionally, this approach offers residents a strong sense of connection to the rest of the ensemble while maintaining a clear, robust separation between private dwellings and shared spaces. From a sustainability perspective, this separation of "shearing layers" enables each system to be maintained or replaced independently. For example, the interior structure can be entirely renovated without altering the external façade, and vice versa. The only structural connection among the three systems is a steel tie rod placed once per module to ensure overall wind resistance.

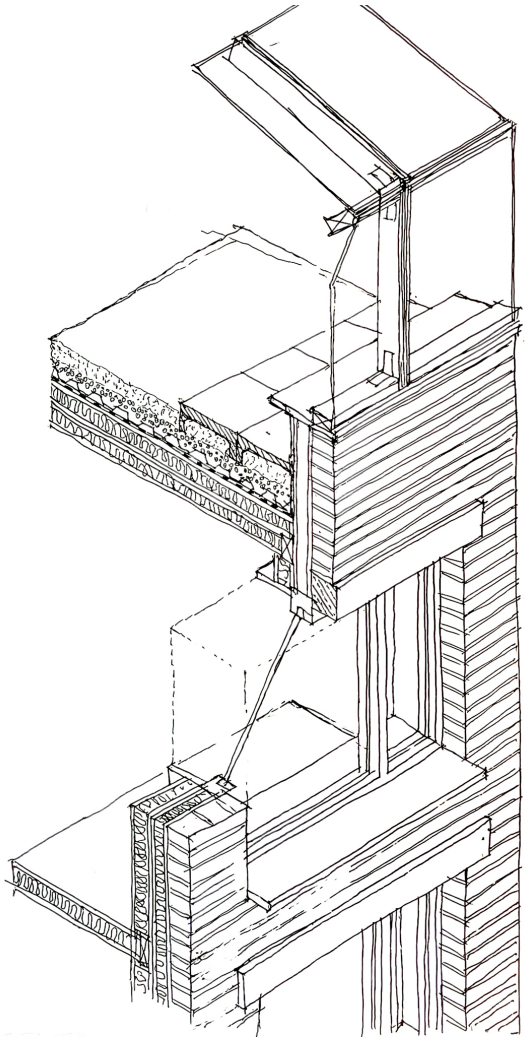


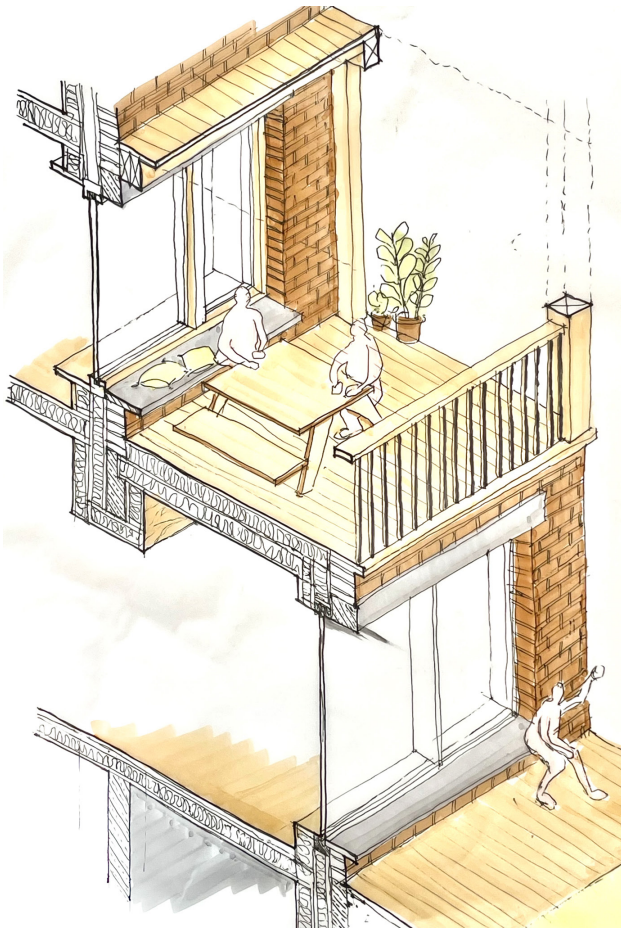
22. Structural sections

- 15 April 2025

For these three systems to work together cohesively, it was necessary first to address the so-called exceptional points—specifically, where the exterior wall meets the ground floor and where it connects to the rooftop greenhouse.

At the ground-floor level, this connection posed particular challenges. To resolve them, the design shifted from incorporating the space below the gallery directly into the building to supporting both the gallery and the load-bearing wall on an arcade structure. This change allowed for a clear structural solution while maintaining accessibility and visual permeability at street level.

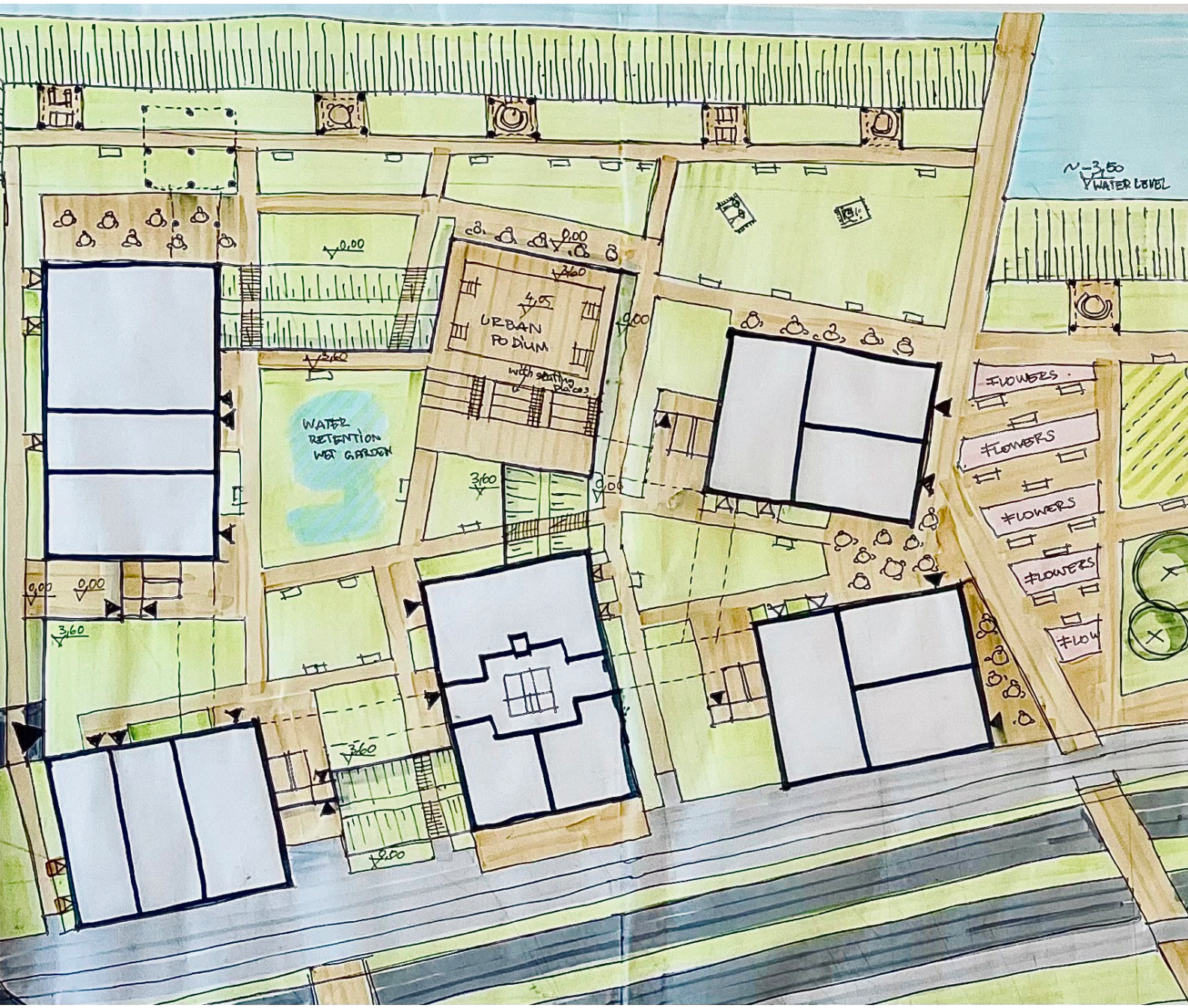




In contrast, the upper connection to the greenhouse at the rooftop was straightforward and did not introduce any significant design or structural complications.

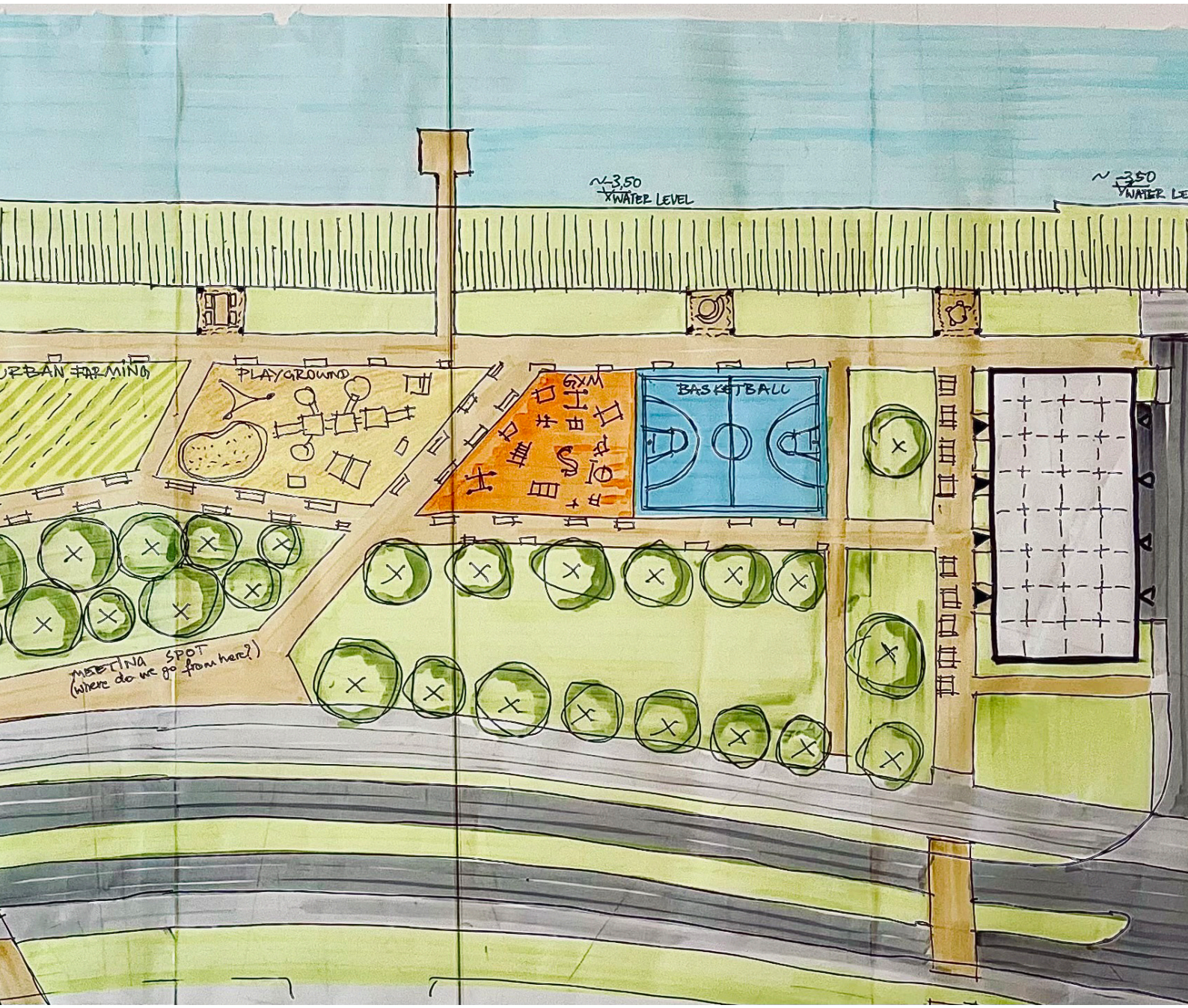
23. Park with urban connections

- 15 April 2025



Once the building was more or less fully designed, or at least had well-defined ideas for its main elements, I turned my attention back to how the ensemble would function as part of the larger city. To address this, I worked on refining the design intentions for the Balkon aan de Maashaven.

For example, while the pathways and circulation at that stage still required substantial further development, the park itself was initially over-programmed with specific uses. This was later revised by introducing a broad staircase along the slope that leads directly to the water. The park was deliberately simplified, transforming it into a space more oriented toward walking and movement rather than prescribing specific programmed activities. The social function of the space was thus transferred to the generous stairway, which acts as an inviting place for people to gather, sit, and interact along the waterfront.

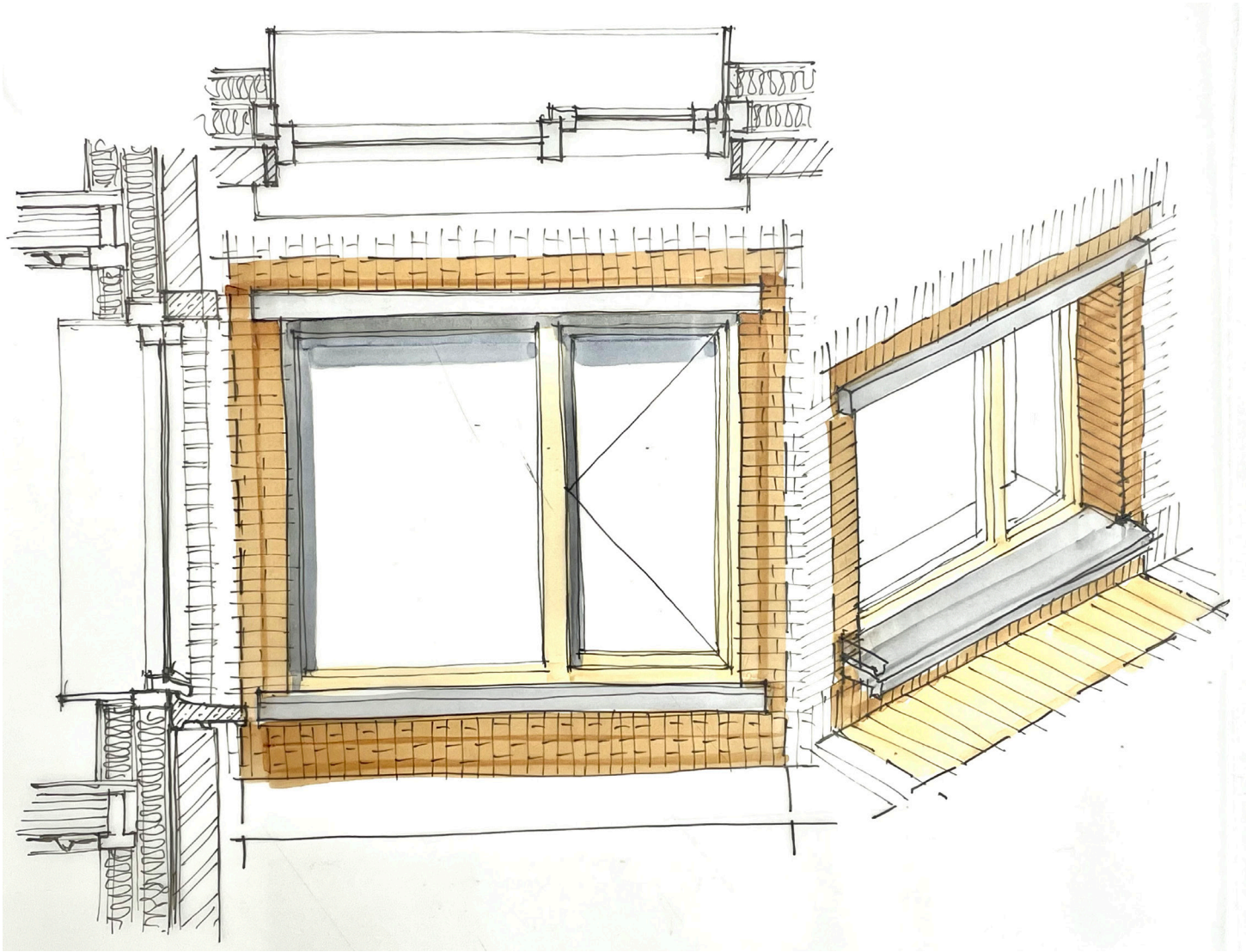


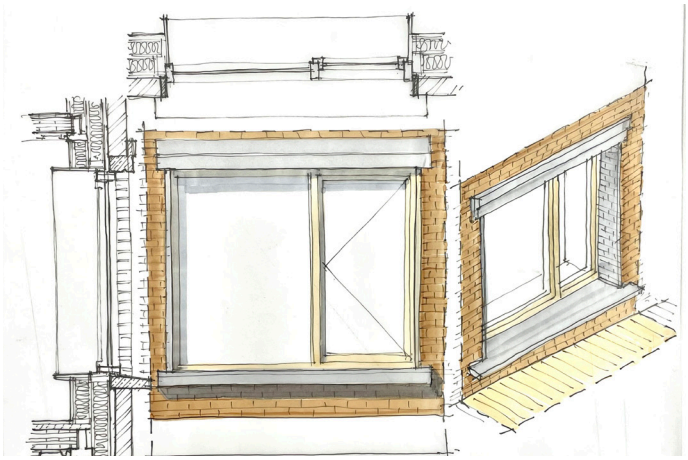
24. Windows

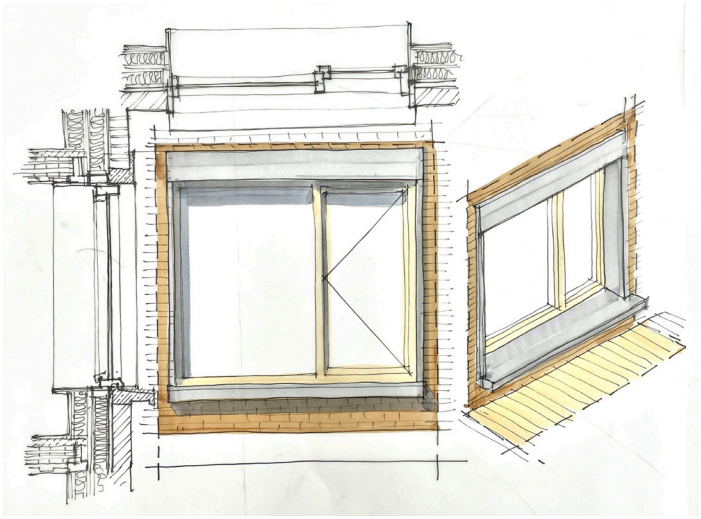
- 16 April 2025

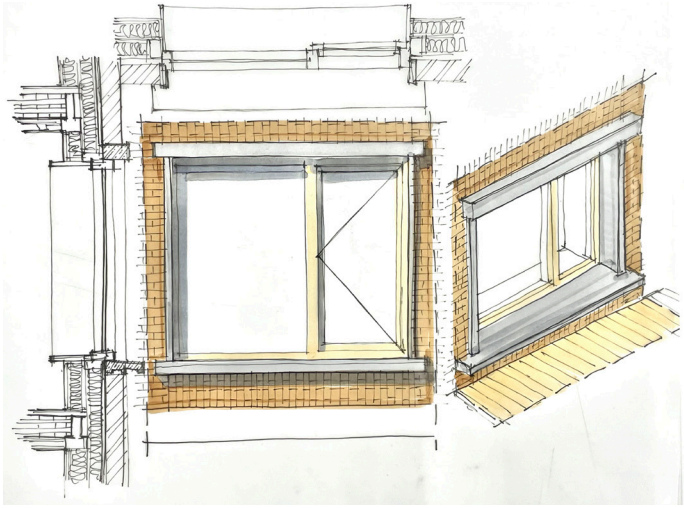
To further strengthen the connections between interior and exterior spaces, the window details were conceived as habit-based details. The sill is lowered to 45 cm and designed to be wide enough to allow residents to sit comfortably on either the interior or exterior side. For structural clarity and integrity, the supporting components are made of concrete, deliberately avoiding brick strips that would serve only an aesthetic purpose.

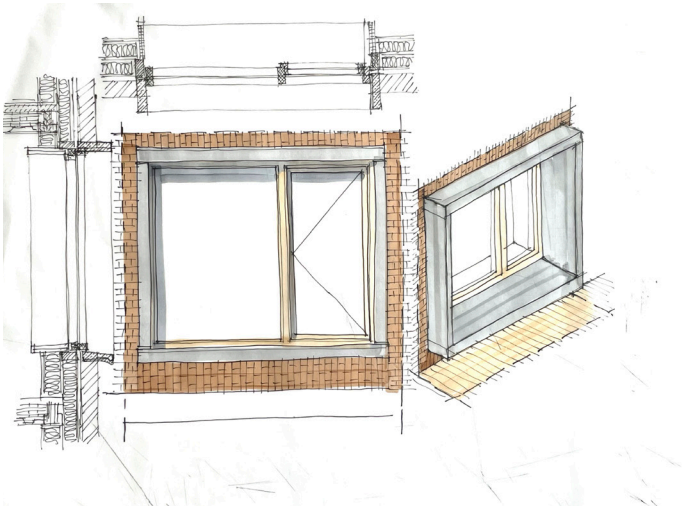
The basic window design was developed and tested in six variations, since it is the most frequently used element in the project (with approximately 300 instances overall). Other windows and doors were then designed following the same principles established in this primary detail.





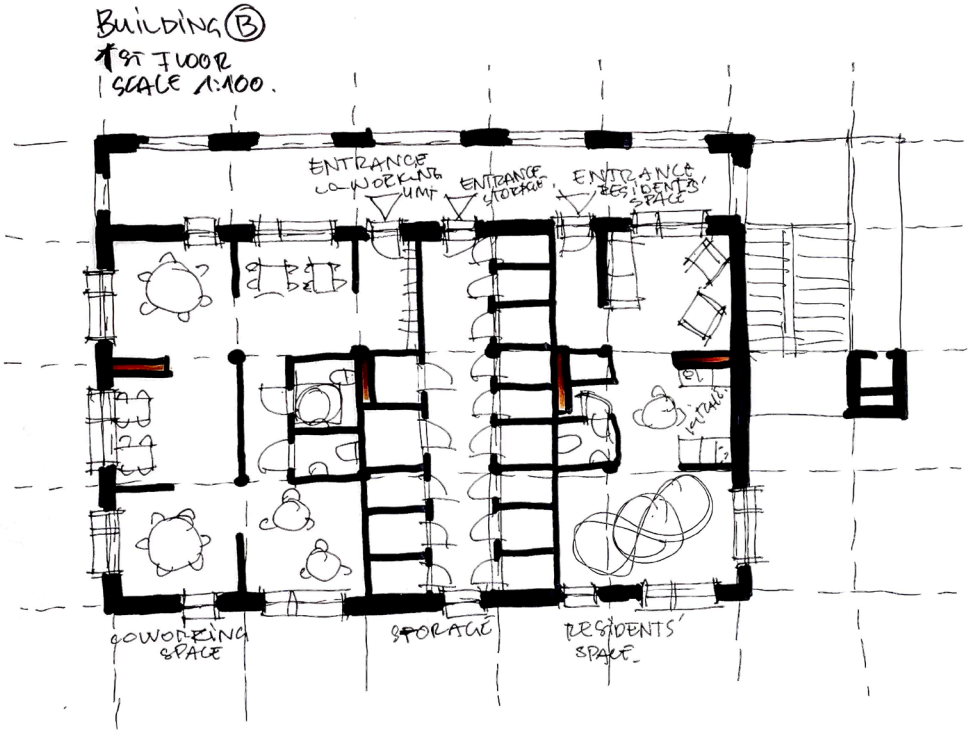


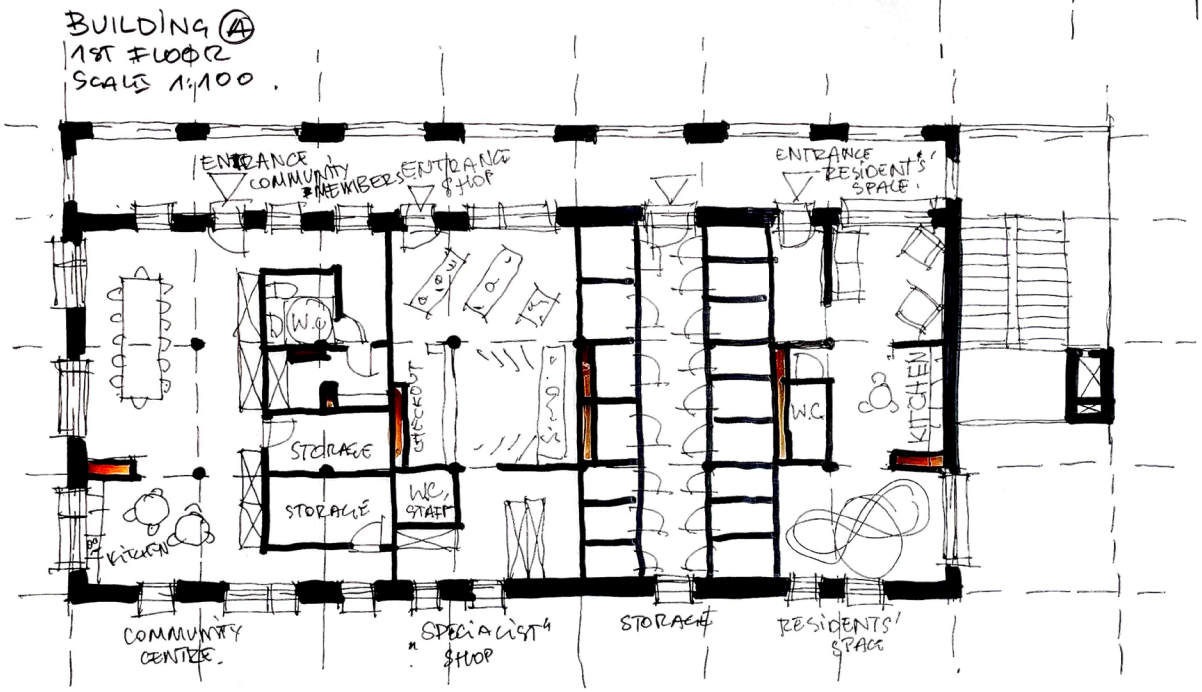




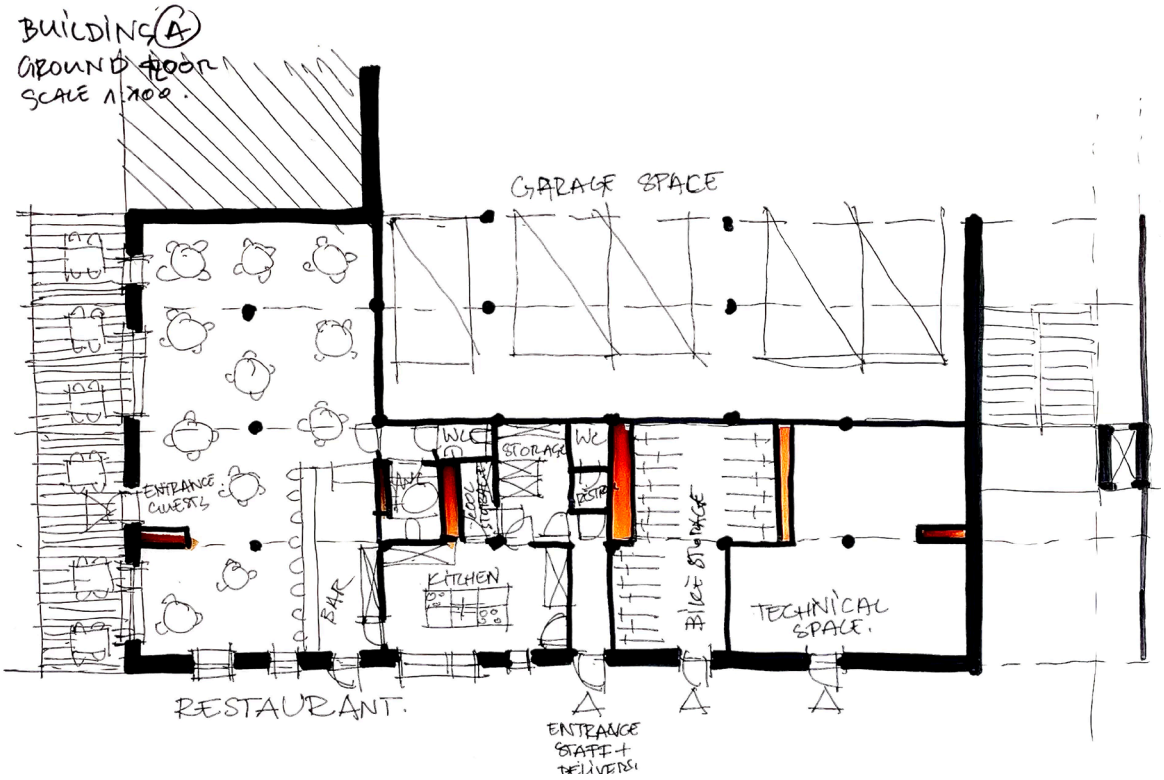
25. Communal and commercial spaces

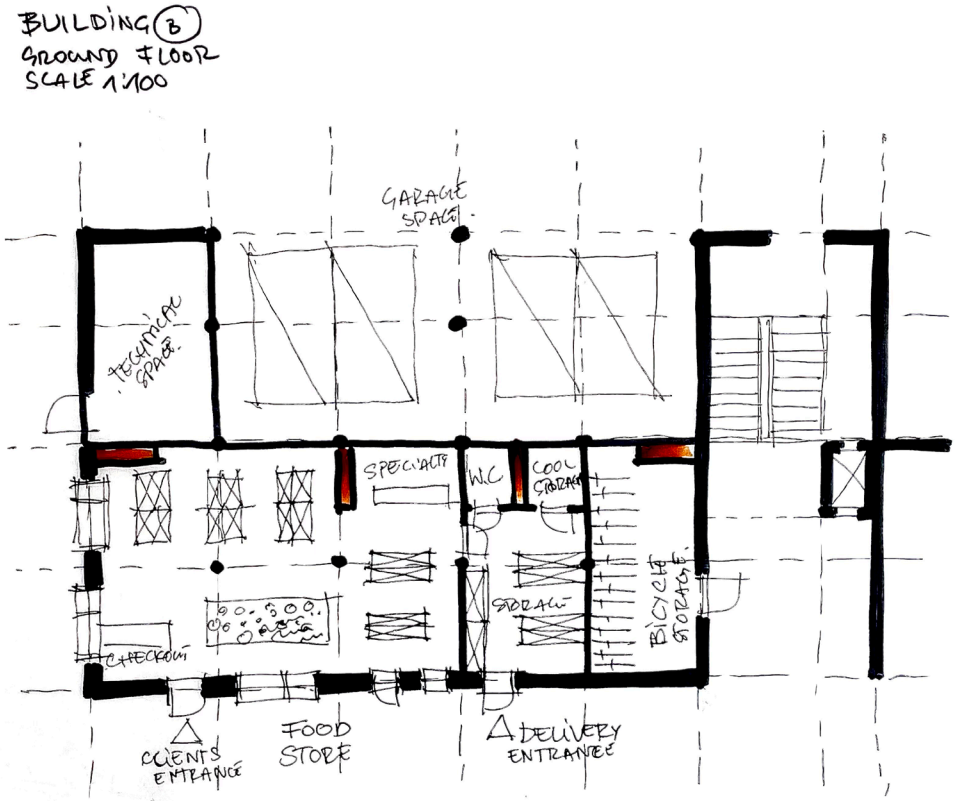
- 22 April 2025

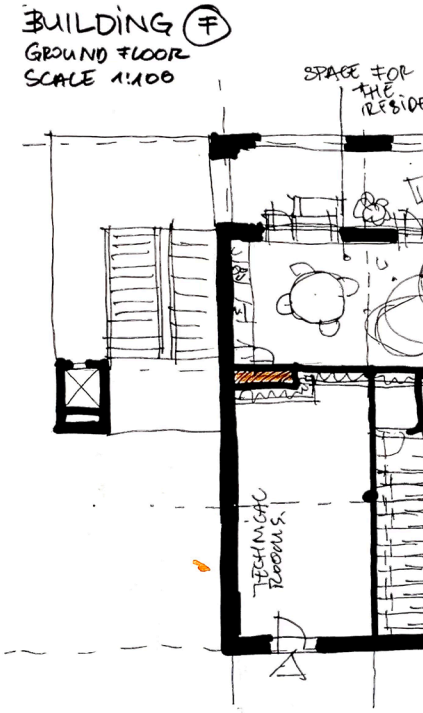





BUILDING C
GROUND FLOOR
SCALE 1:100.
GROCERY STORE.
CHECKPOINT
SPECIALTY
W.C
RESTR.
STORAGE
COOL STORAGE
STORAGE SPACE FOR URBAN FARMING (PARK AND GREENHOUSE (R.TOP))
PARKING/ GARAGE SPACE.
GUESTS
BAR
COOL STORAGE
KITCHEN
DRY STORAGE
RESTAURANT.
MAIN ENTRANCE
PERSONNEL AND DELIVERIES
BUILDING E
GROUND FLOOR
SCALE 1:100
DELIVERIES AND PERSONEL
STORAGE AND BIKE PARK
COOL STORAGE
KITCHEN
STORAGE
CHANGE ROOMS PERSONEL
BAR
CLIENTS
SPACE FOR THE RESIDENTS
RESTAURANT.


BUILDING (A)
GROUND FLOOR
SCALE 1:100
GARAGE SPACE
WC
STORAGE
WC
ENTRANCE GUESTS
BAR
KITCHEN
TECHNICAL SPACE
RESTAURANT
ENTRANCE STAFF + DELIVERS


BUILDING (B)
GROUND FLOOR
SCALE 1:100
GARAGE SPACE
TECHNICAL SPACE
SPECIALTY
W.C
COOL STORAGE
BICYCLE STORAGE
STORAGE
CHECKOUT
CLIENTS ENTRANCE
FOOD STORE
DELIVERY ENTRANCE

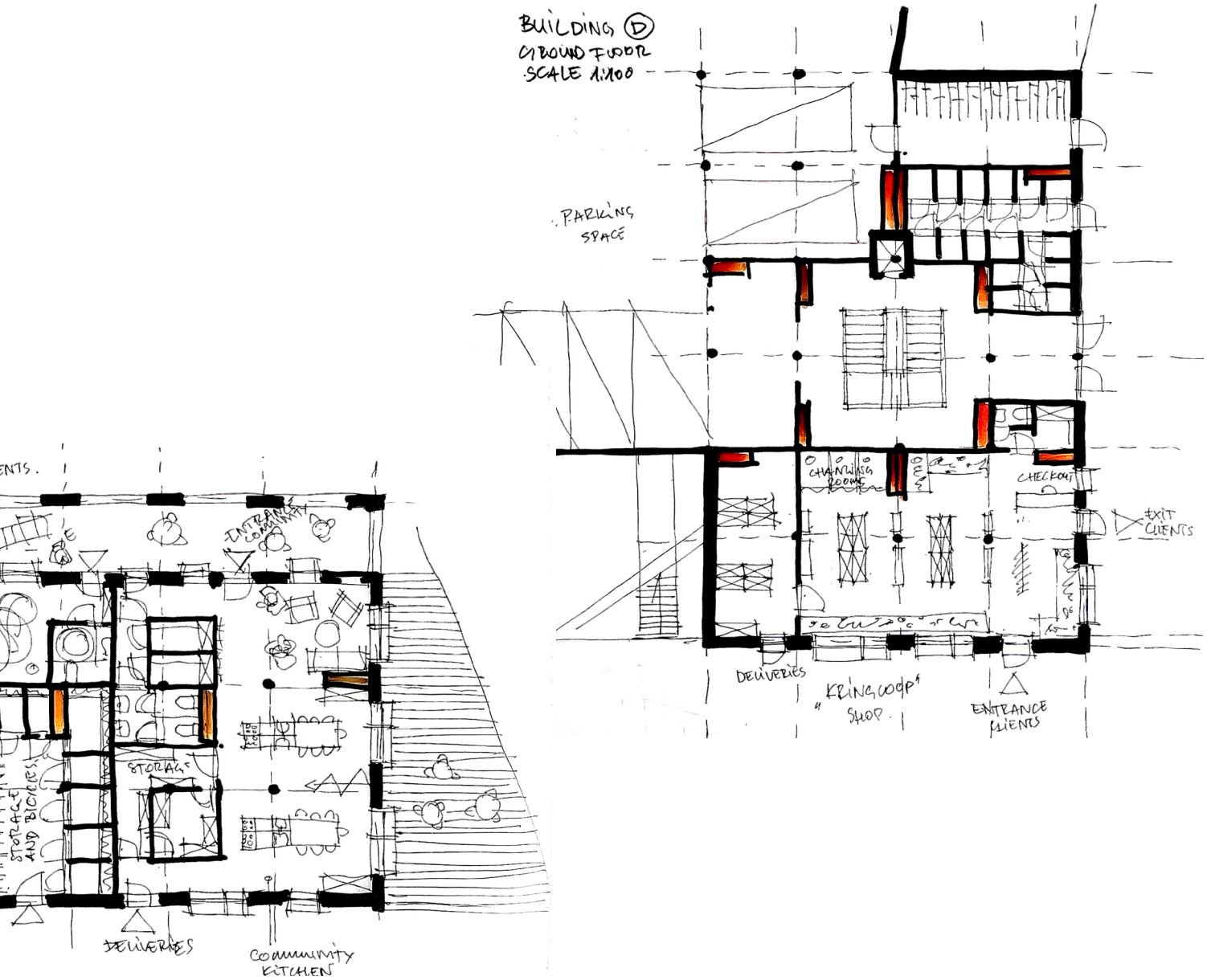

BUILDING (F)
GROUND FLOOR
SCALE 1:100
SPACE FOR THE RESIDE
TECHNICAL ROOMS

To ensure the project is fully integrated into the city—and, most importantly, into Tarwewijk—a carefully considered set of communal and commercial spaces has been proposed.

From a habit-based perspective, the program is organized into two primary categories: spaces related to diet, and those supporting social interaction. The diet-related facilities include restaurants and public kitchens, while spaces for socializing encompass community meeting rooms, coworking areas, and dedicated common spaces for residents within each building.

From the user-group perspective, the spaces are classified into three types: commercial spaces, primarily located on the ground floor, intended for residents of the ensemble as well as visitors from Tarwewijk and Katendrecht; communal spaces, designed specifically to address needs expressed by current Tarwewijk residents during the research phase; and residential spaces, which serve as extensions of the private dwelling units themselves.

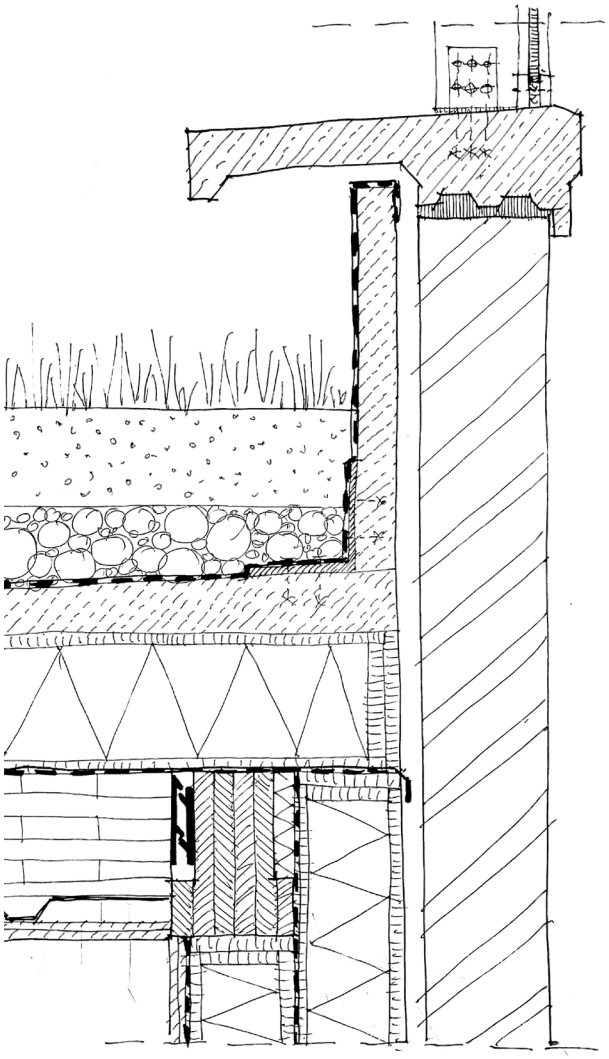
These functions are supported by technical facilities that enable climate control within the buildings, as well as storage areas and bicycle parking for residents.

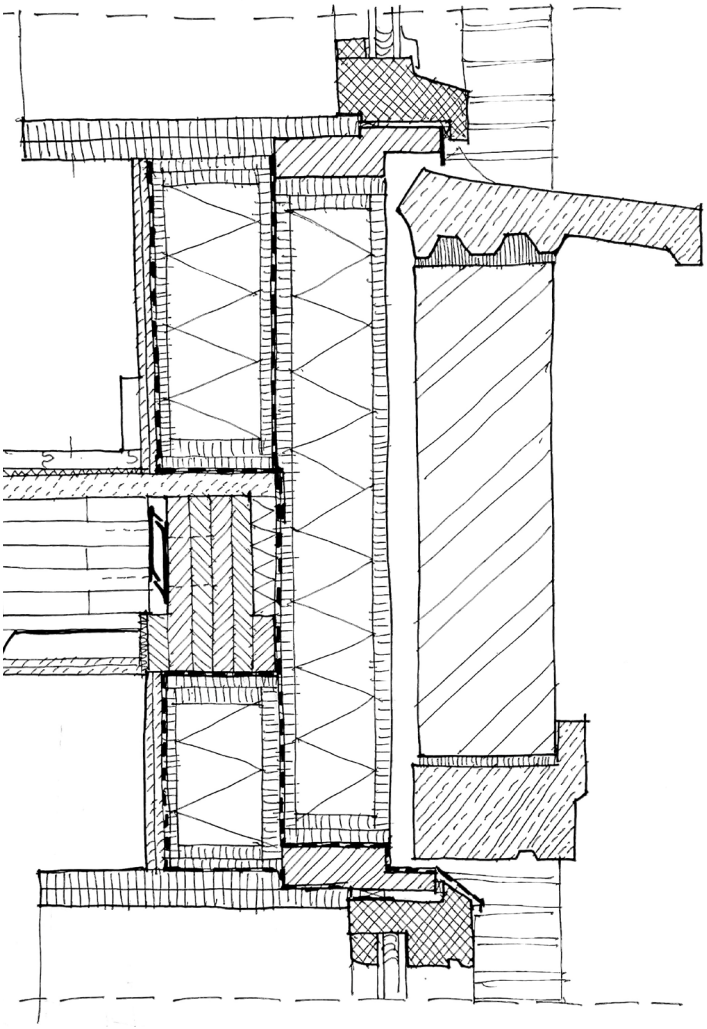


26. Details - initial versions

- 22 April 2025

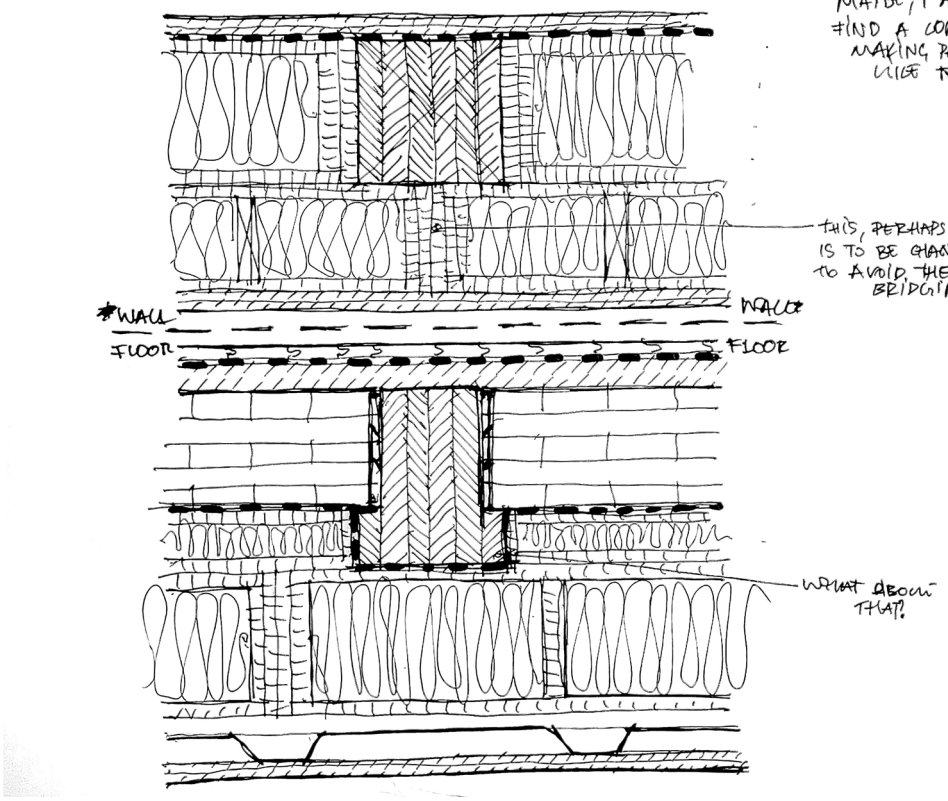
As described previously, the building consists of three fully independent systems that nonetheless need to function as a cohesive whole. The basic window detail is designed to serve as an informal seating area, encouraging spontaneous social interactions. To achieve this, a set of standardized, commercially available components is complemented by custom-designed, prefabricated elements that support the outer structure.



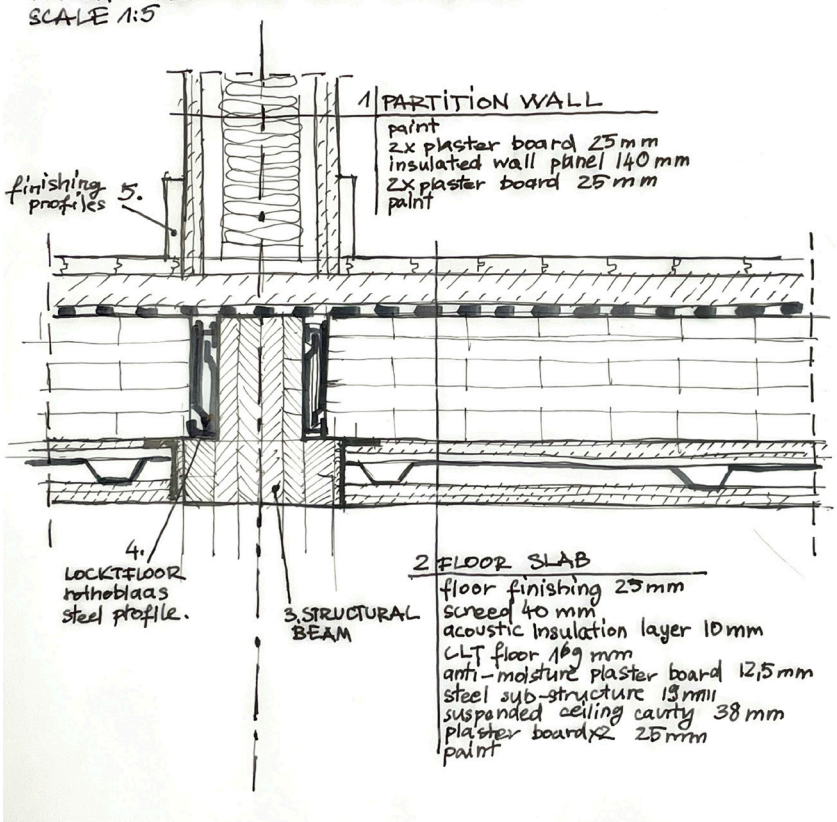


The architectural language of these elements requires careful coherence—a quality not fully evident at this design stage but more clearly expressed in the final version.

DETAIL – INTERNAL WALL
WITH INSULATION + FLOOR
WITH ADDED INSULATION
SCALE 1:5.

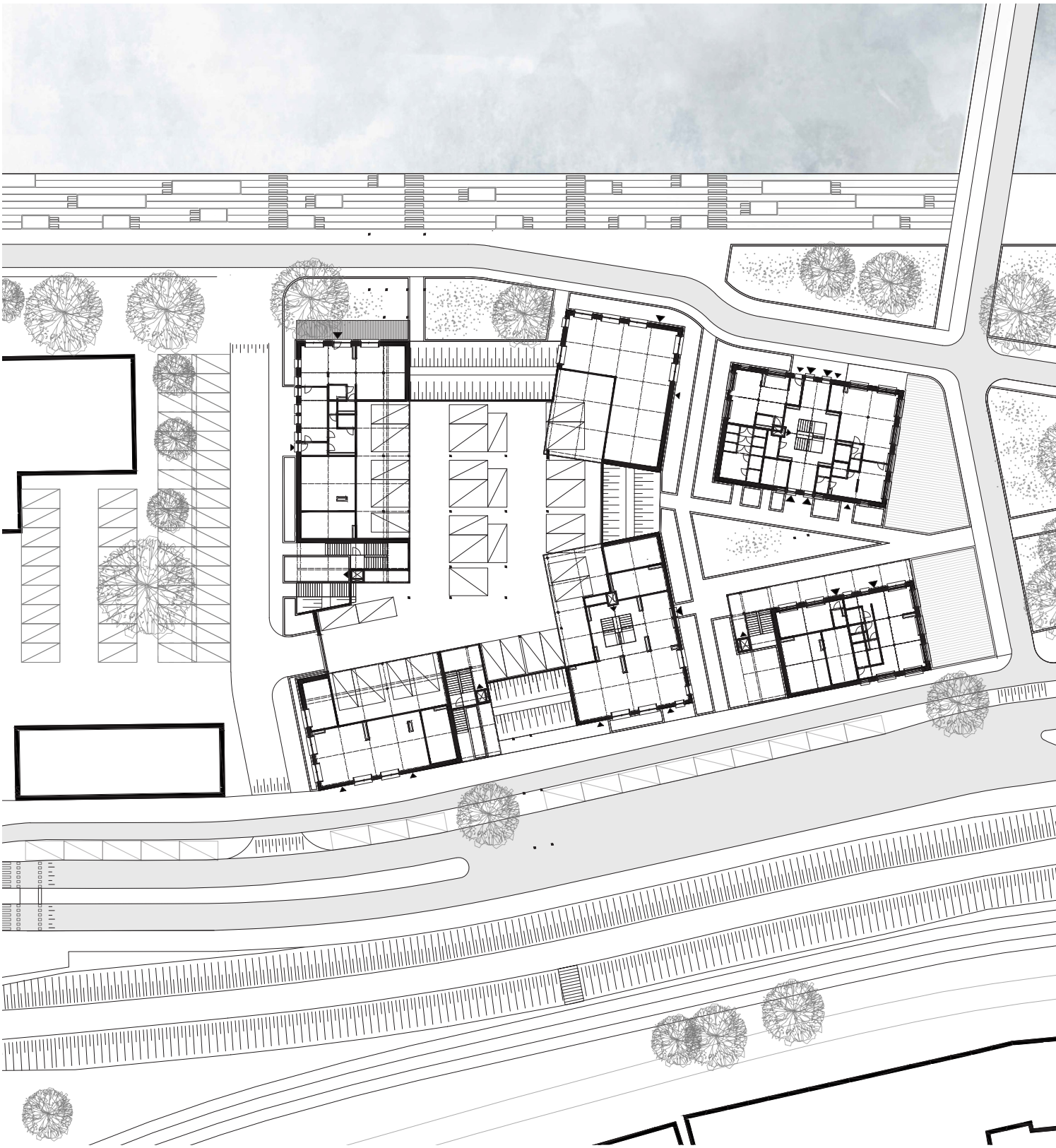


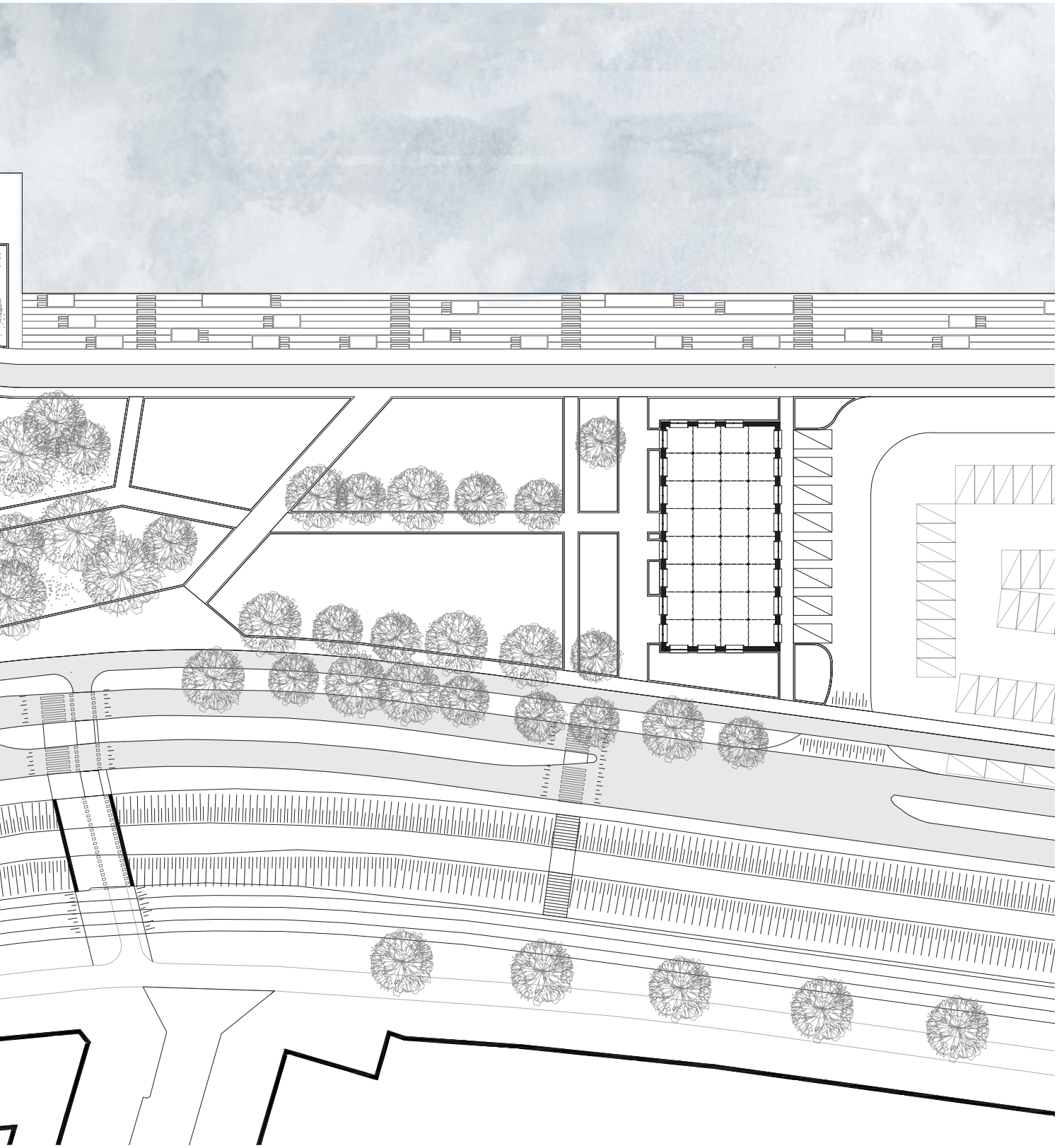
TYPICAL FLOOR AND WALL CONNECTION
SCALE 1:5



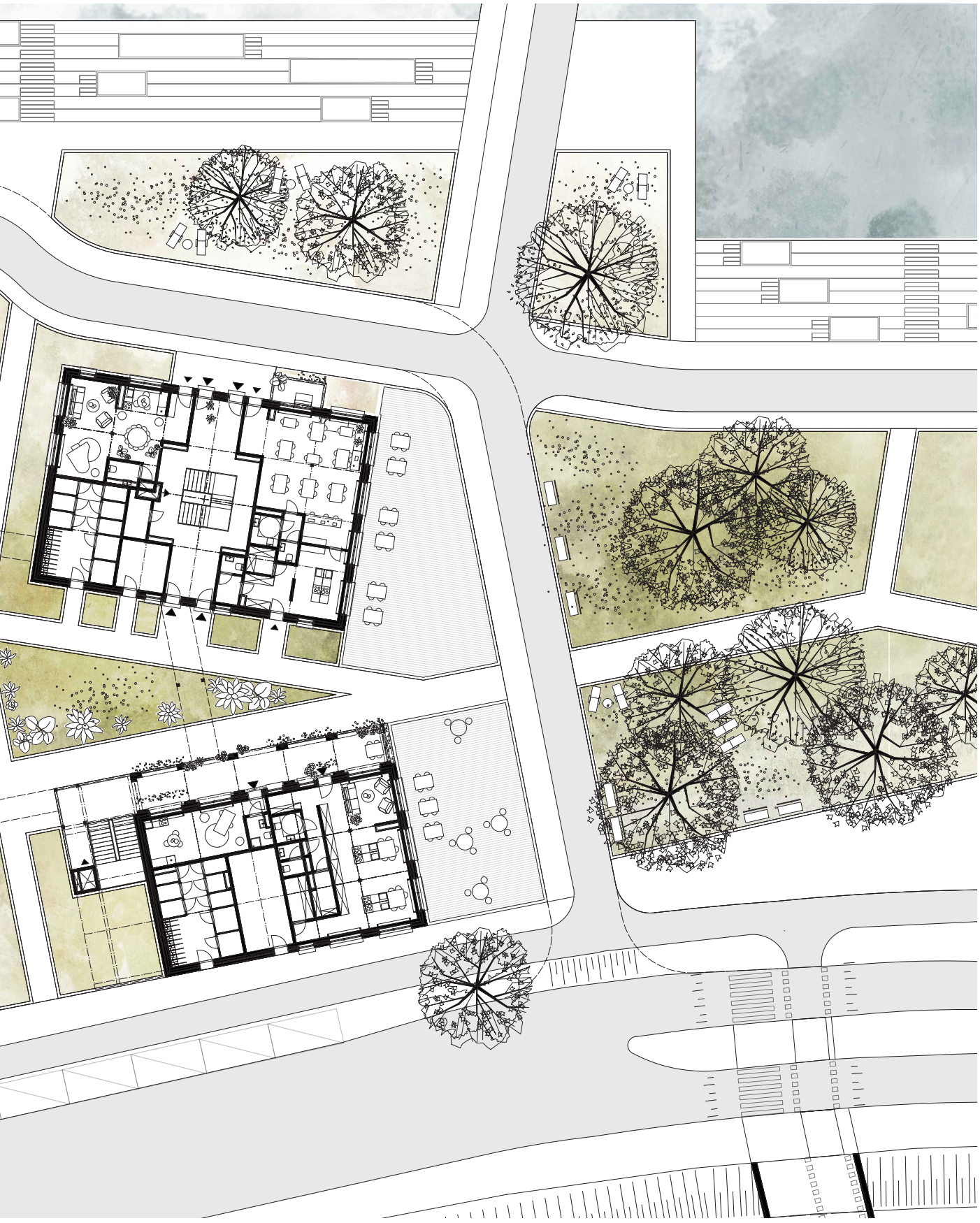
PROJECT

01. Urban connections

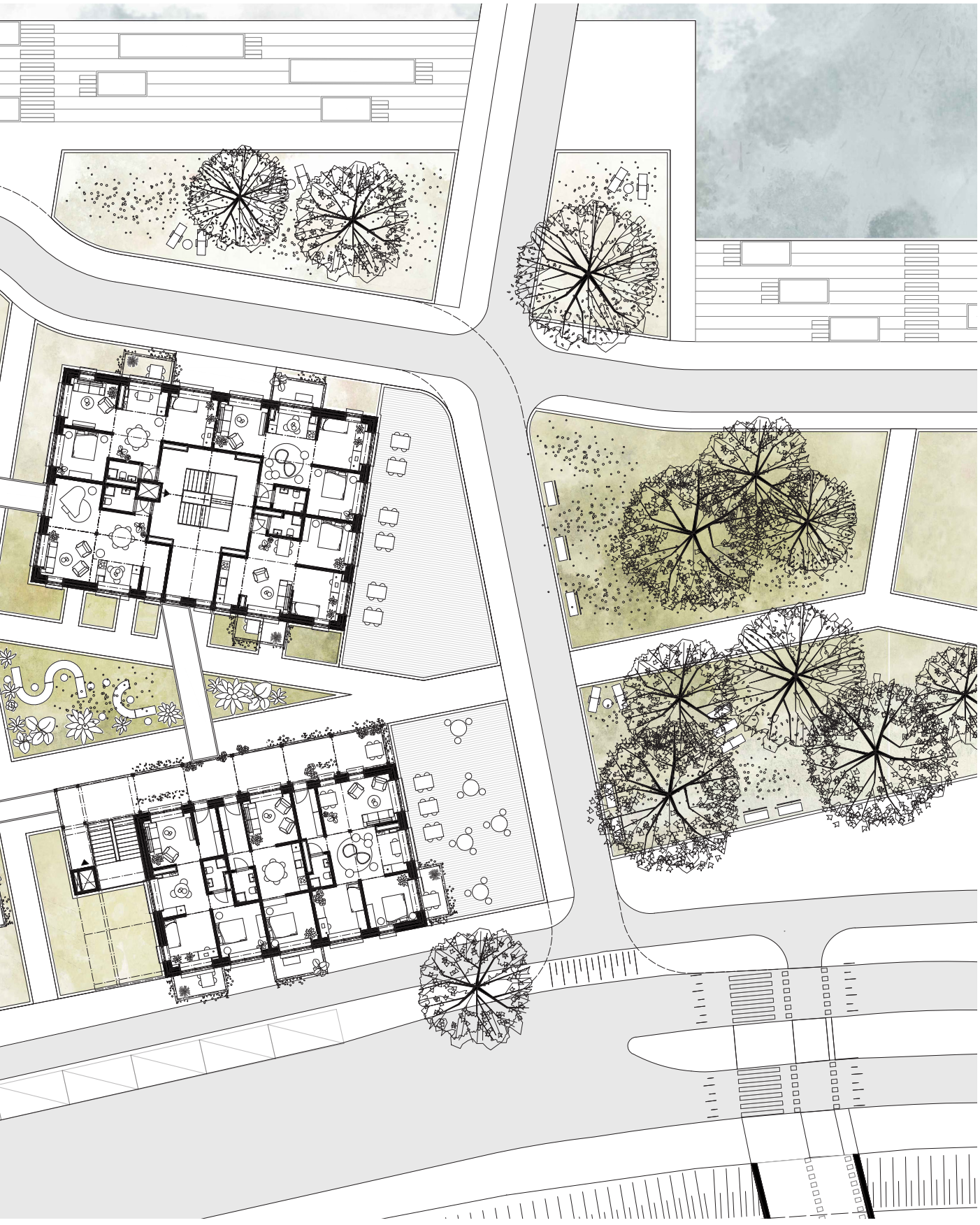




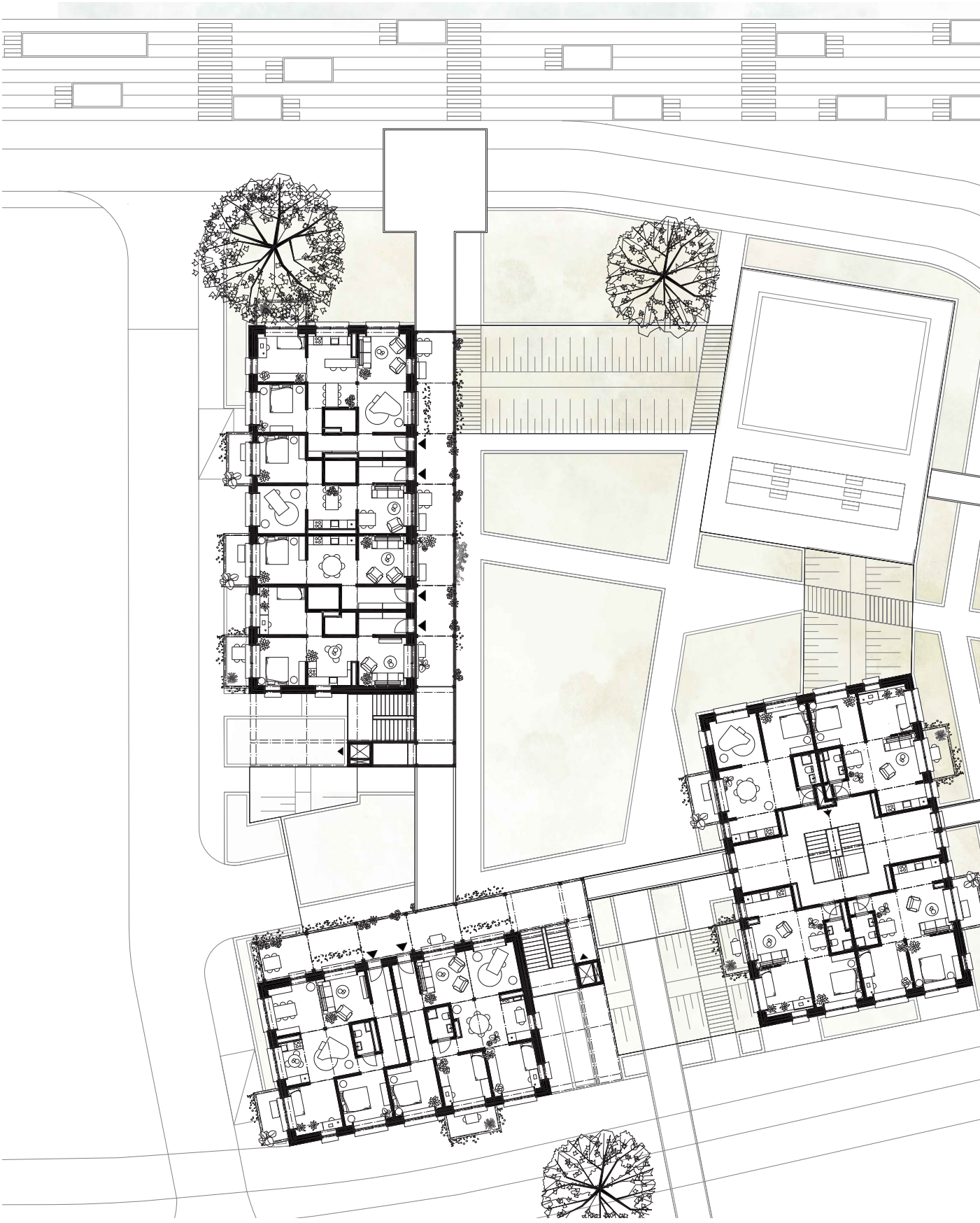
02. Ground floor plan

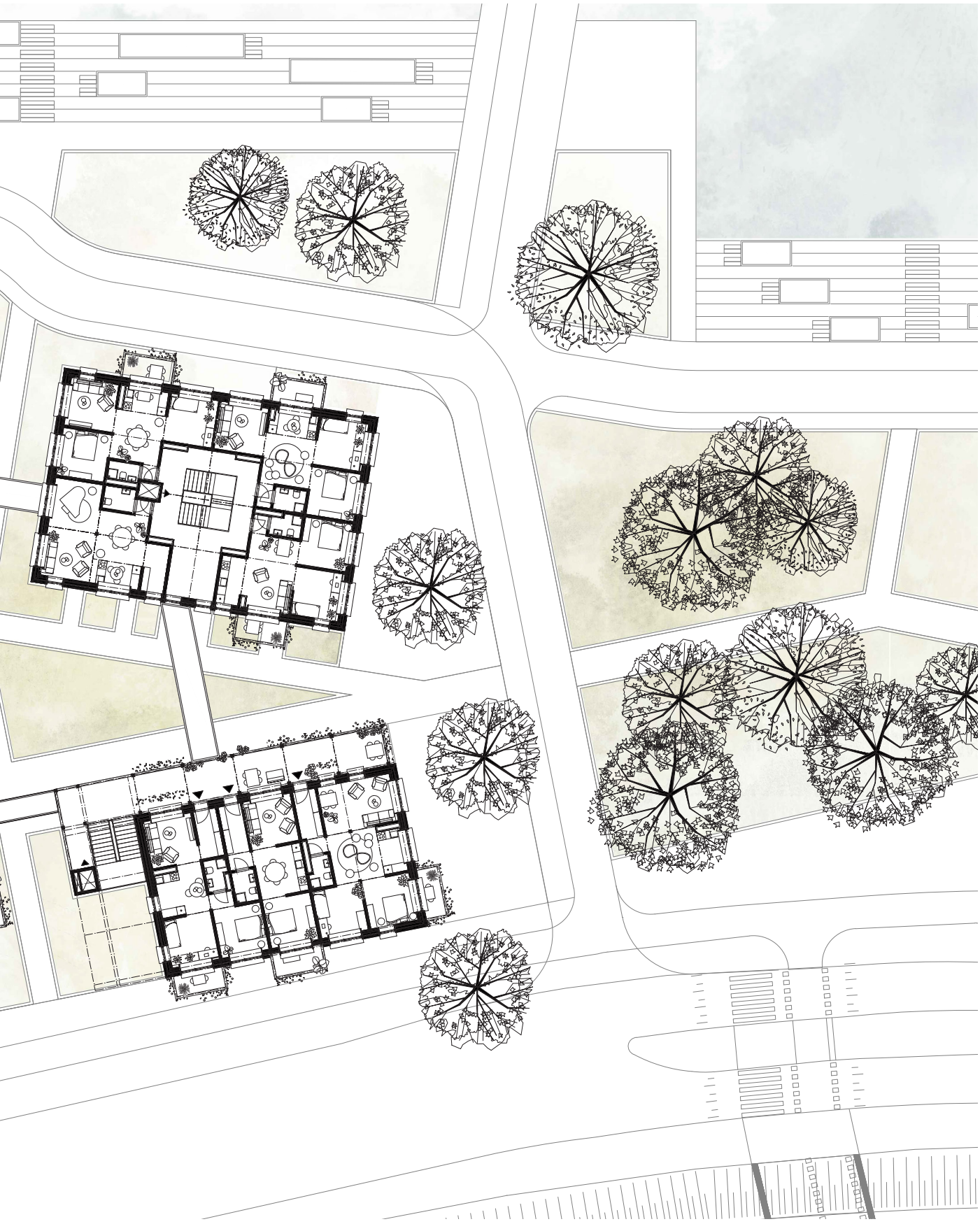


03. First floor plan



04. Second floor plan

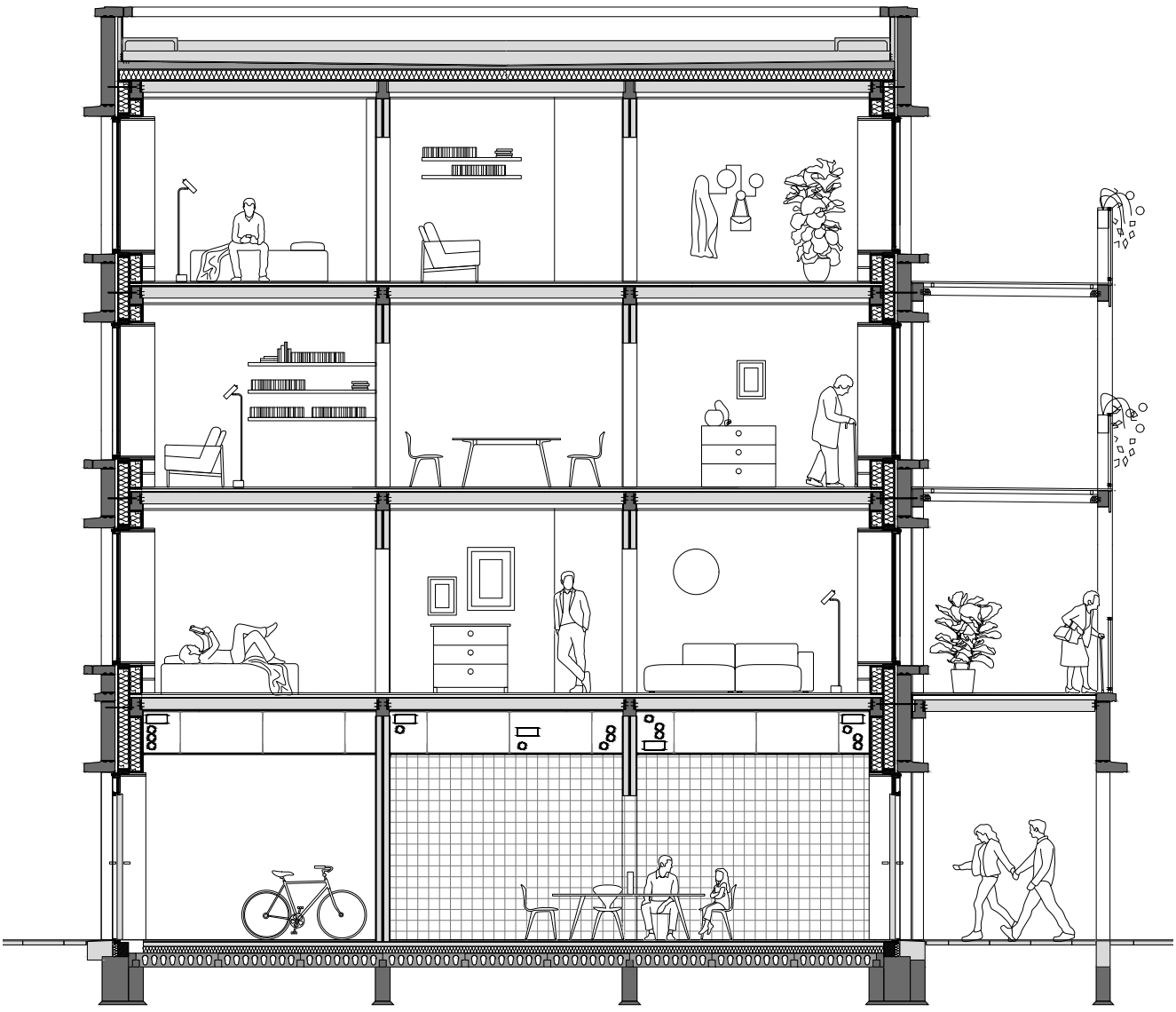


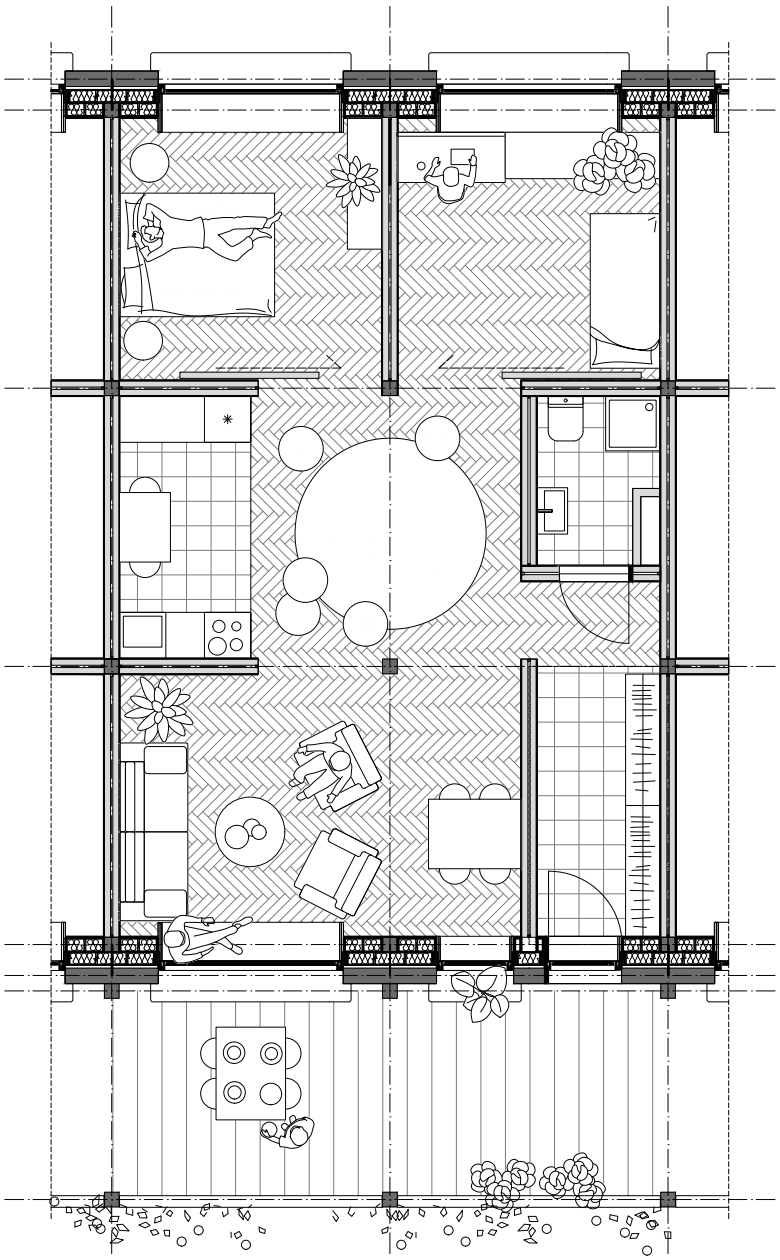


05. Section S-N

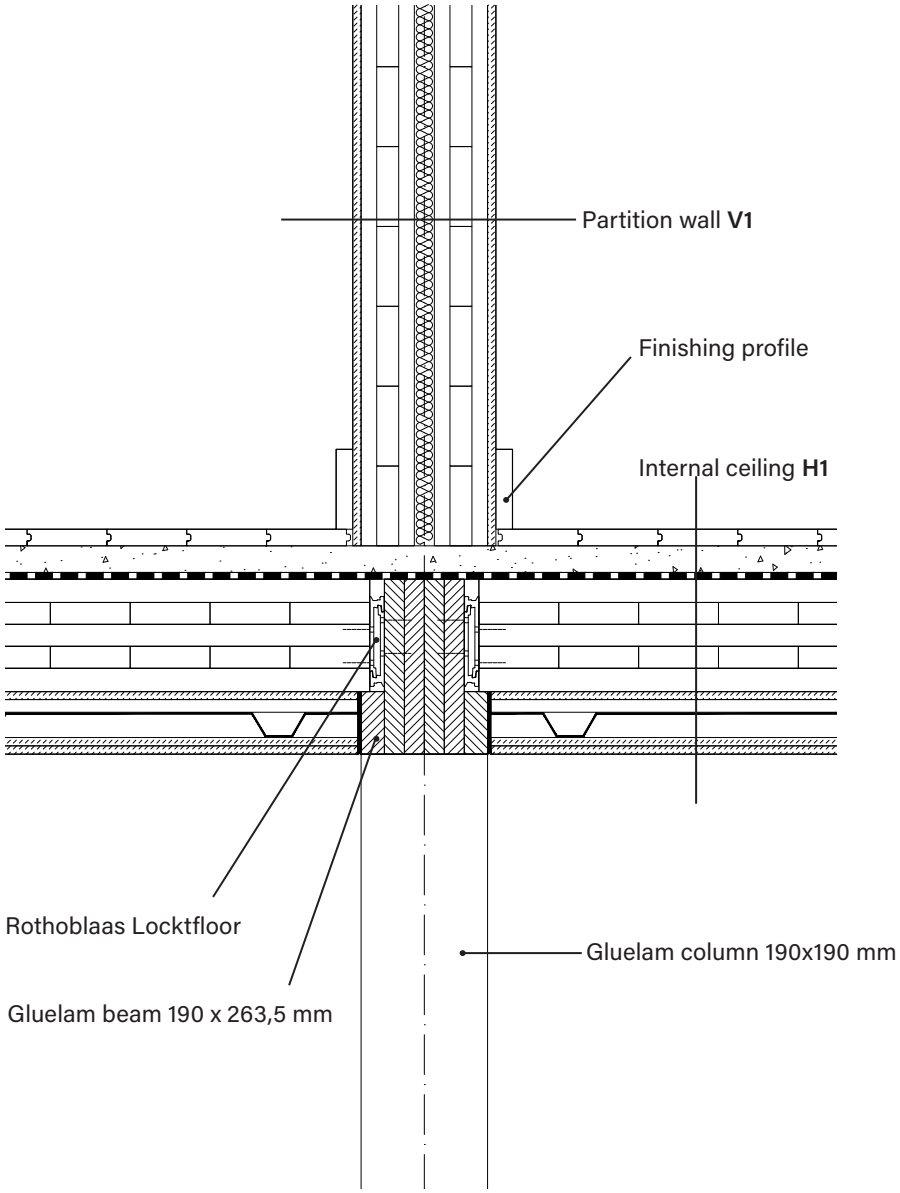
06. South elevation

07. Fragment - dwelling and section





08. Typical connection



Typical wall and floor connection,
scale 1:5

INTERNAL CEILING H1

Finishing - wooden floor 25 mm
Screed 40 mm
Sound insulation 10 mm
CLT panel 169 mm
Anti-humidity plaster board 12,5 mm
Ceiling substructure 19 mm
Technical void 38 mm
2x plaster board 12,5 mm
Finishing paint

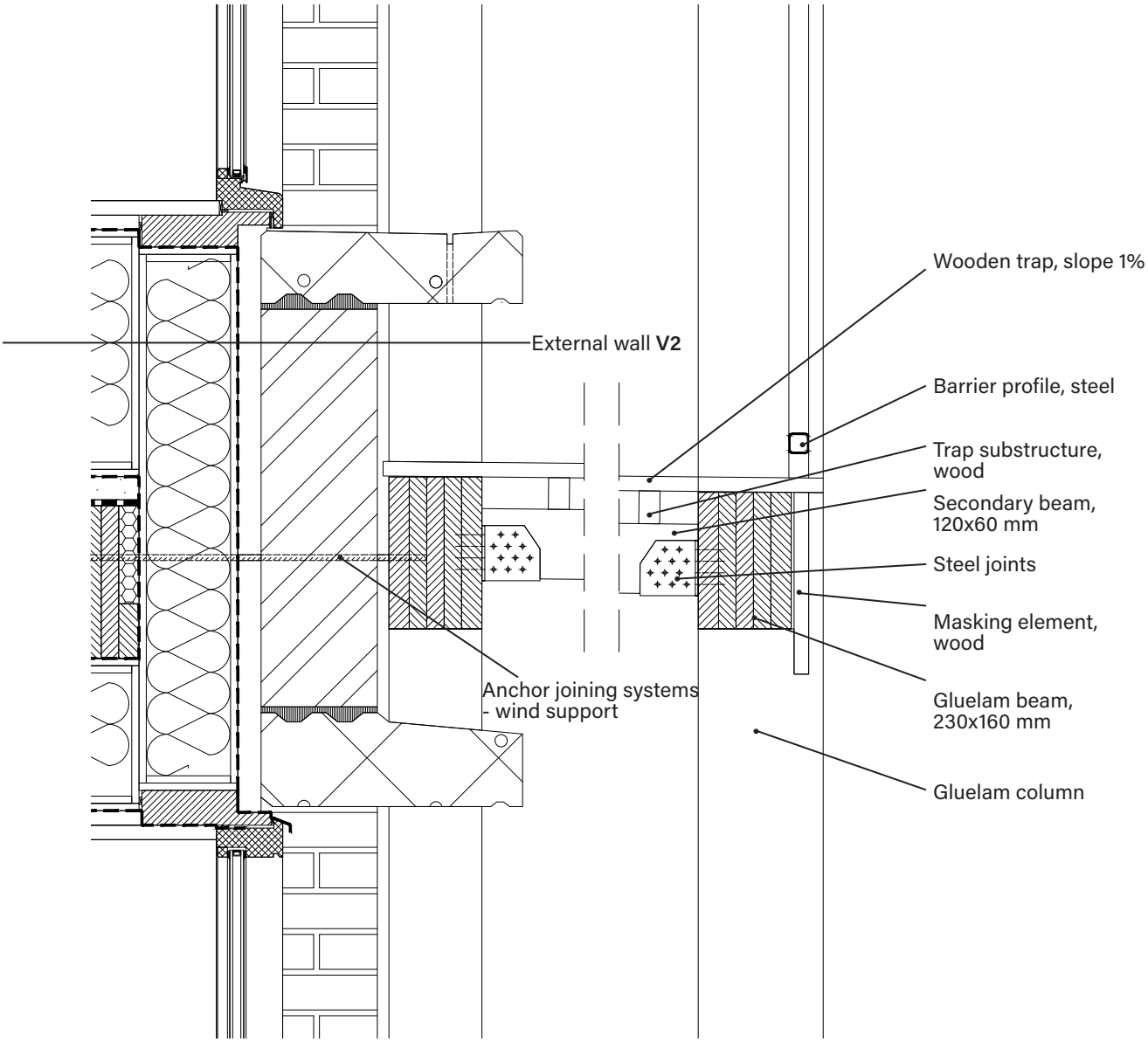
PARTITION WALL V1

Sound insulation - 56 dB
Fireproof REI 60
Finishing paint
Plaster board 12,5 mm
CLT panel 80 mm
Insulation 30 mm
CLT panel 80 mm
Plaster board 12,5 mm
Finishing paint

09. Galleries - detail

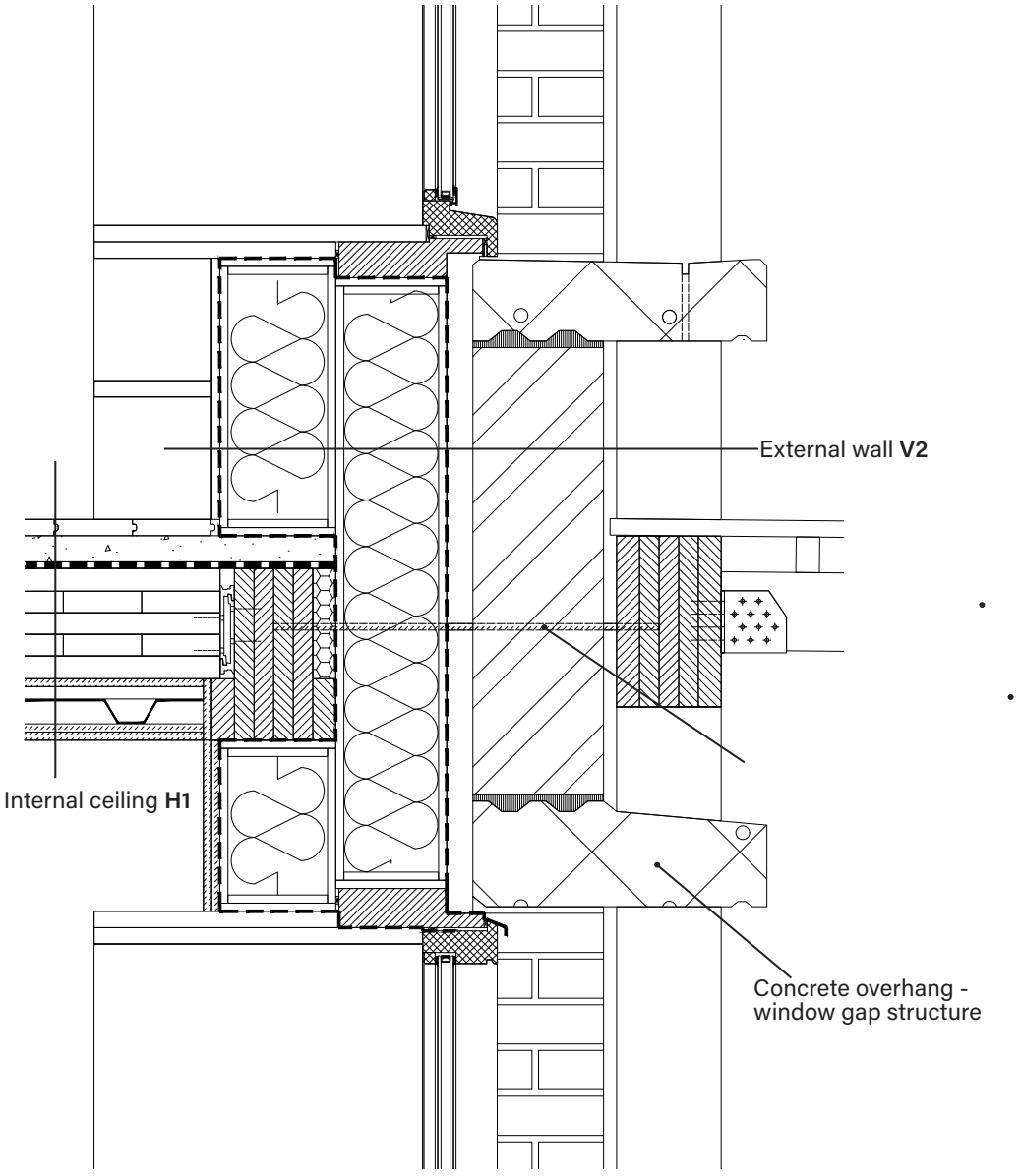
EXTERNAL WALL V2

According to connection between structural systems, see slide nr 33.



Connection with external gallery, vertical section scale 1:5

10. Connection between systems



Connection between structural systems, vertical section scale 1:5

PARTITION WALL V1

According to typical floor and wall connection, see slide nr 32.

INTERNAL CEILING H1

According to typical floor and wall connection, see slide nr 32.

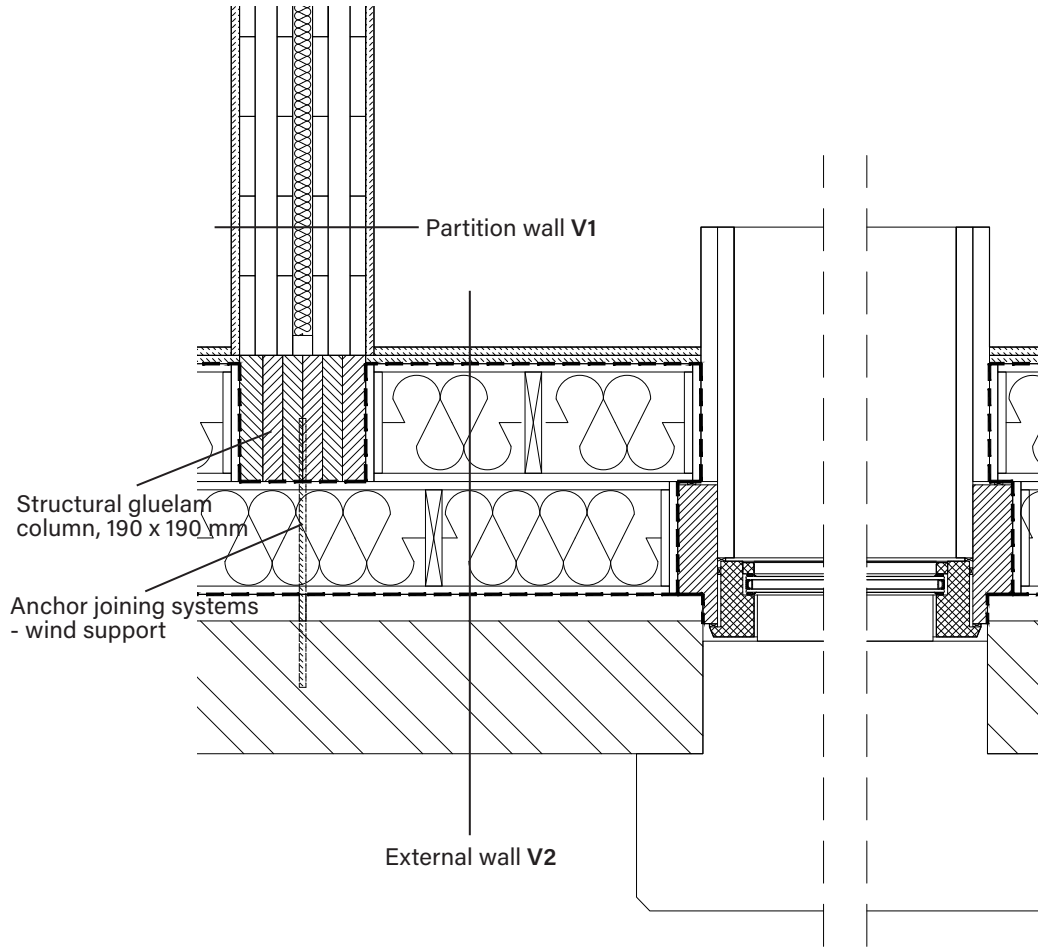
EXTERNAL WALL V2

Internal finishing paint
2x plaster board 12,5 mm
vapor barrier

internal insulation wall panel
OSB board 12,5 mm
insulation 152,5 mm
OSB board 12,5 mm

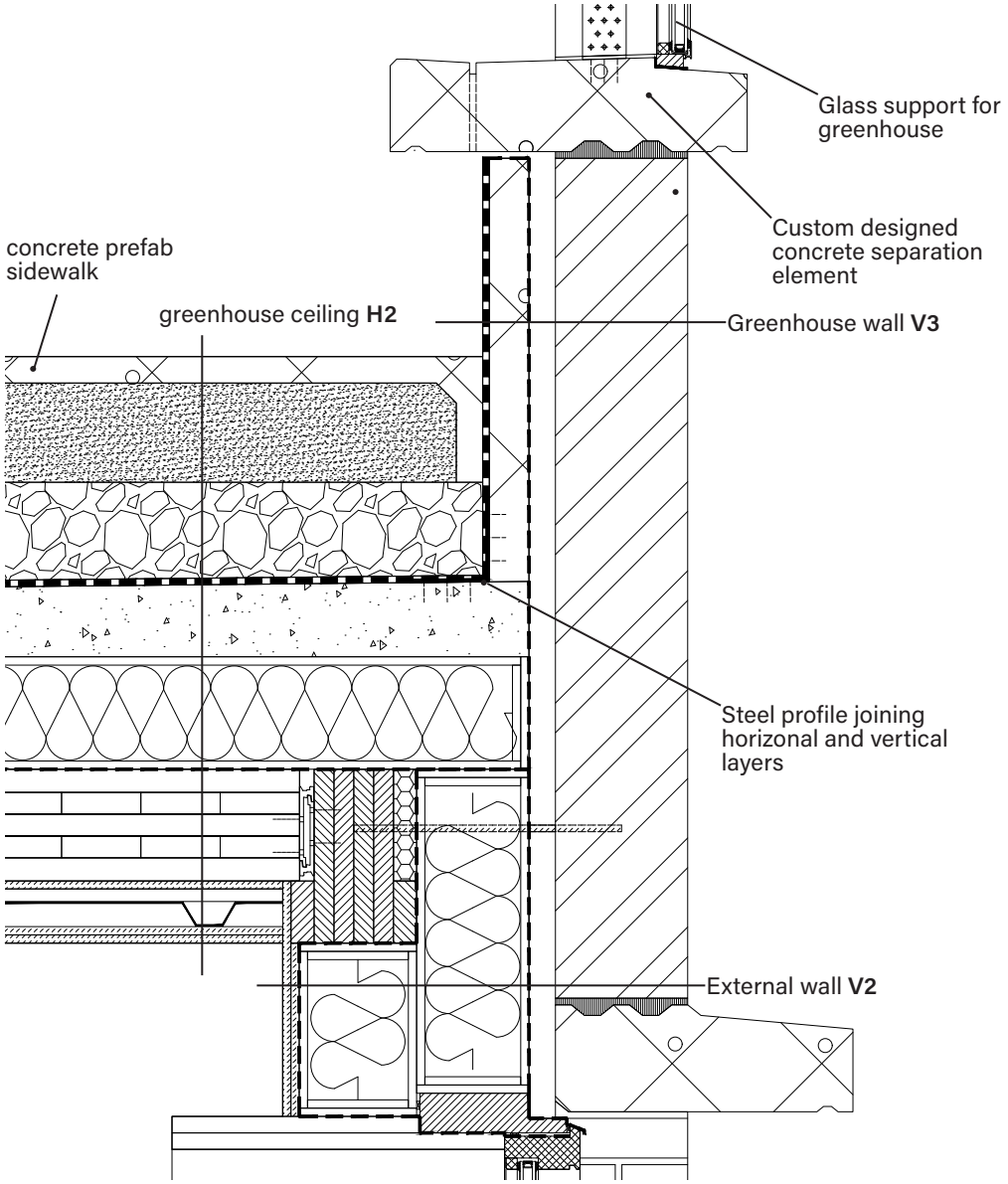
external insulation wall panel
OSB board 12,5 mm
insulation 145 mm
OSB board 12,5 mm

water barrier
ventilation void 40 mm
structural brickwork 200 mm



Connection between structural systems, horizontal section scale 1:5

11. Rooftop - connection detail



Connection with greenhouse on public rooftop, vertical section scale 1:5

EXTERNAL WALL V2

According to connection between structural systems, see slide nr 33.

GREENHOUSE WALL V3

water barrier
concrete substructure 60 mm
water barrier
ventilation void 40 mm
structural brickwork 200 mm

GREENHOUSE CEILING H2

bioactive layer 150 mm
drainage layer 150 mm
water barrier
leveling screed 60/114 mm
insulated floor panel
- OSB board 12,5 mm
- thermal insulation
- OSB board 12,5 mm

CLT panel 169 mm
anti-humidity plaster board 12,5 mm
suspended ceiling substructure 19 mm
technical void 600 mm
2x plaster board 12,5 mm

EXTERNAL WALL V2

According to connection between structural systems, see slide nr 33.

EXTERNAL WALL V4

Internal finishing paint
2x plaster board 12,5 mm
vapor barrier
internal insulation wall panel
- OSB board 12,5 mm
- insulation 152,5 mm
- OSB board 12,5 mm

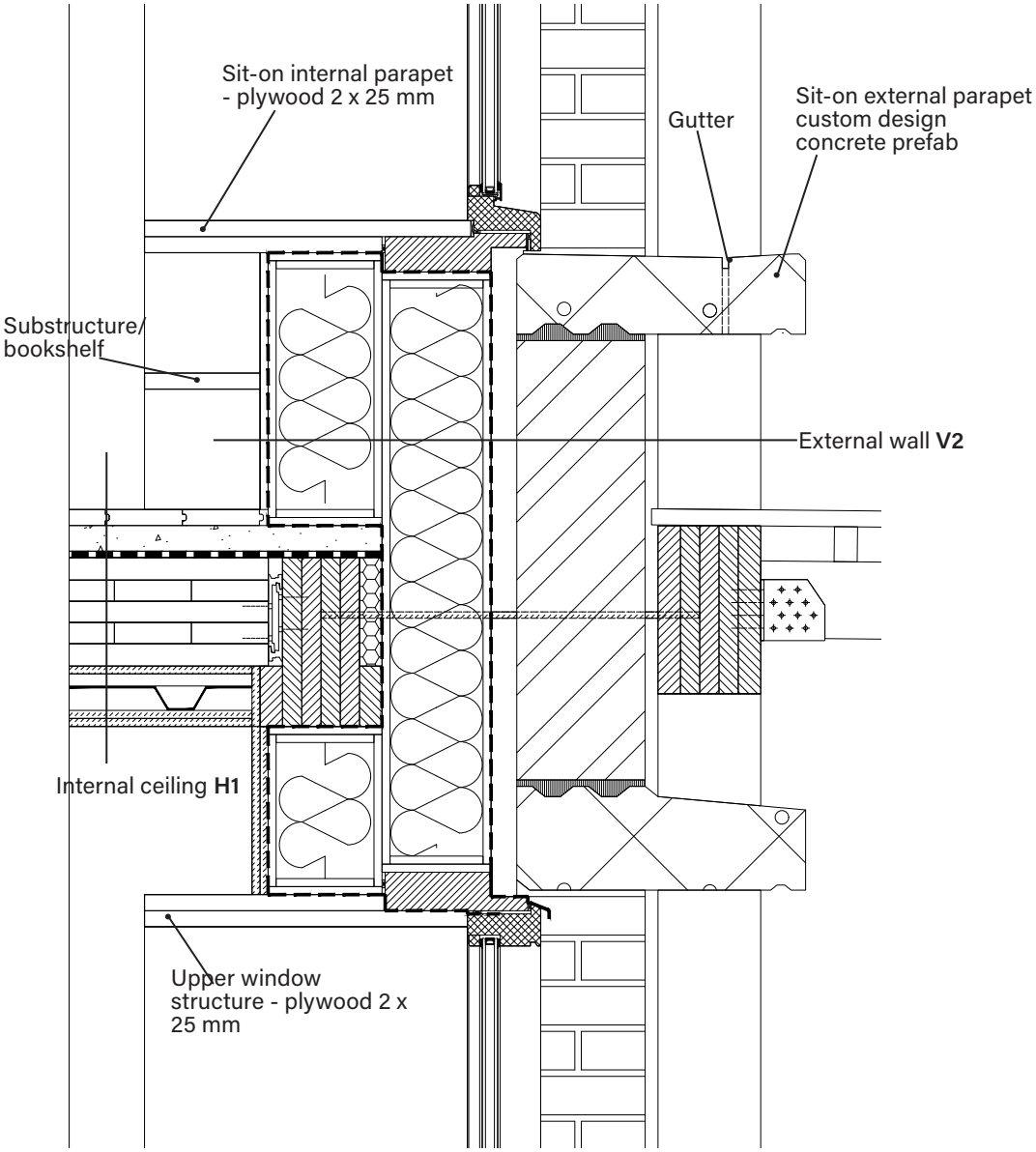
external insulation wall panel
- OSB board 12,5 mm
- insulation 145 mm
- OSB board 12,5 mm

water barrier
ventilation void 40 mm
structural concrete 200 mm

INTERNAL CEILING H3

Finishing - wooden floor 25 mm
Screed 40 mm
Sound insulation 10 mm
CLT panel 169 mm
Anti-humidity plaster board 12,5 mm
Suspended ceiling substructure 19 mm
Technical void 600 mm
2x plaster board 12,5 mm

12. Sit-on window - detail



INTERNAL CEILING H1

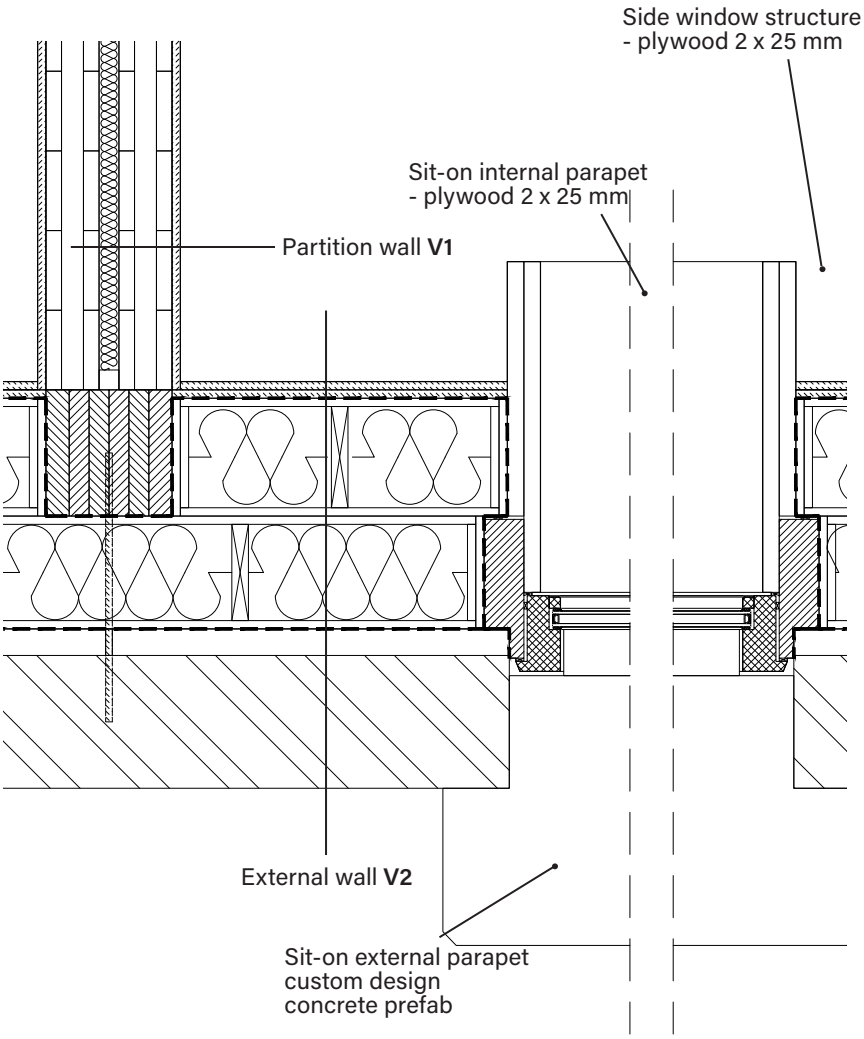
According to typical floor and wall connection, see slide nr 32.

PARTITION WALL V1

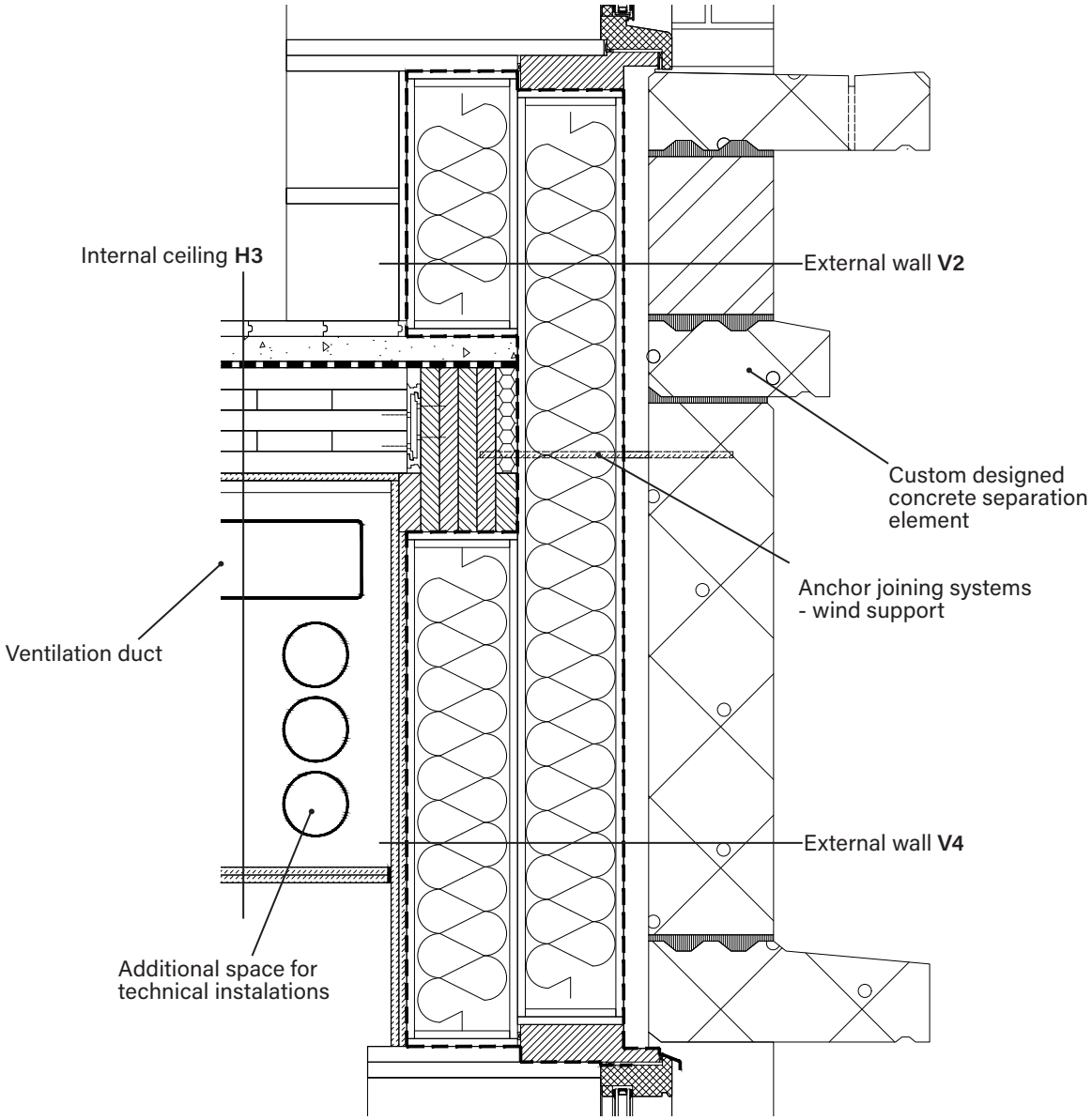
According to typical floor and wall connection, see slide nr 32.

EXTERNAL WALL V2

According to connection between structural systems, see slide nr 33.

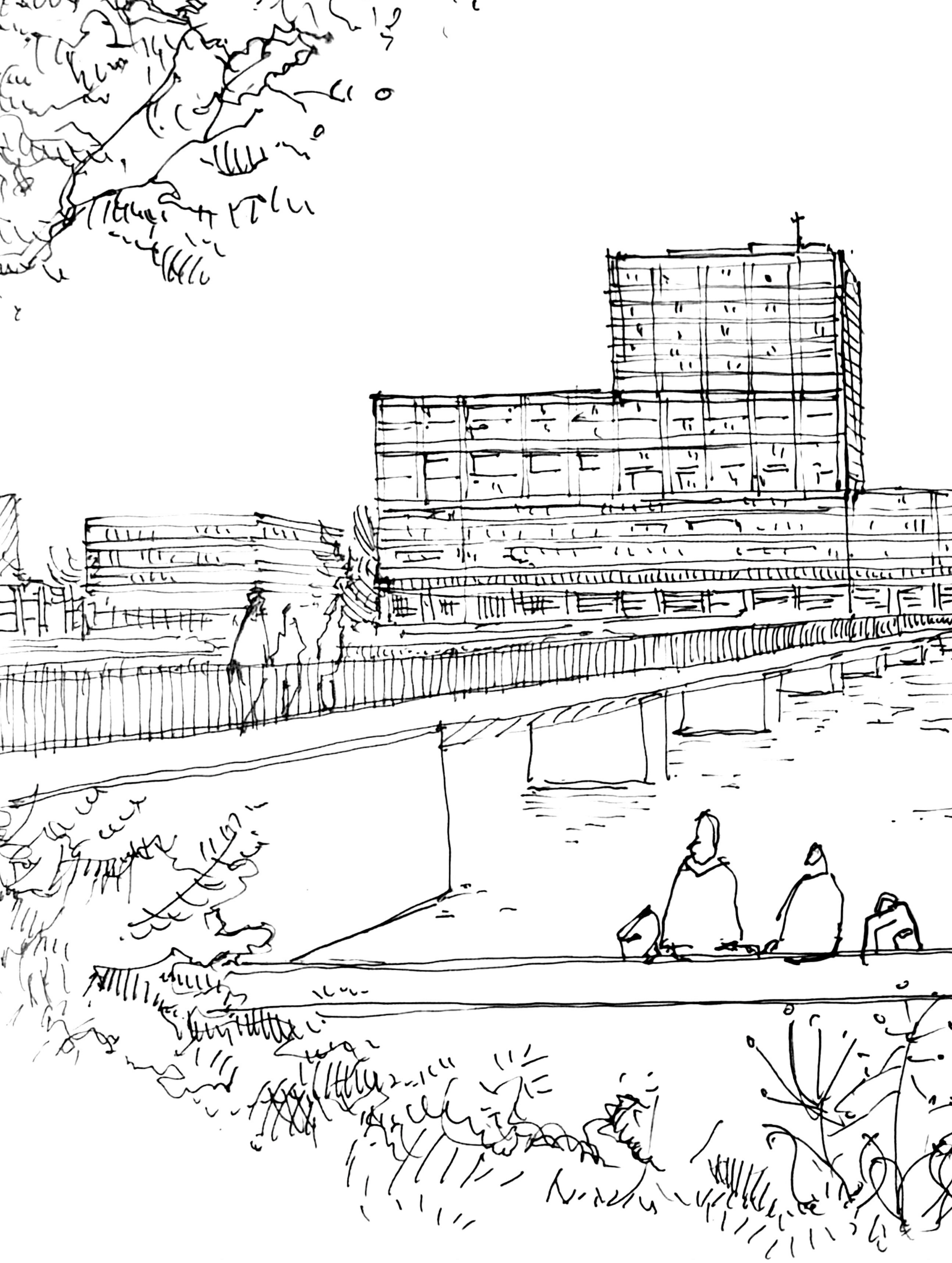


13. Detail - material change



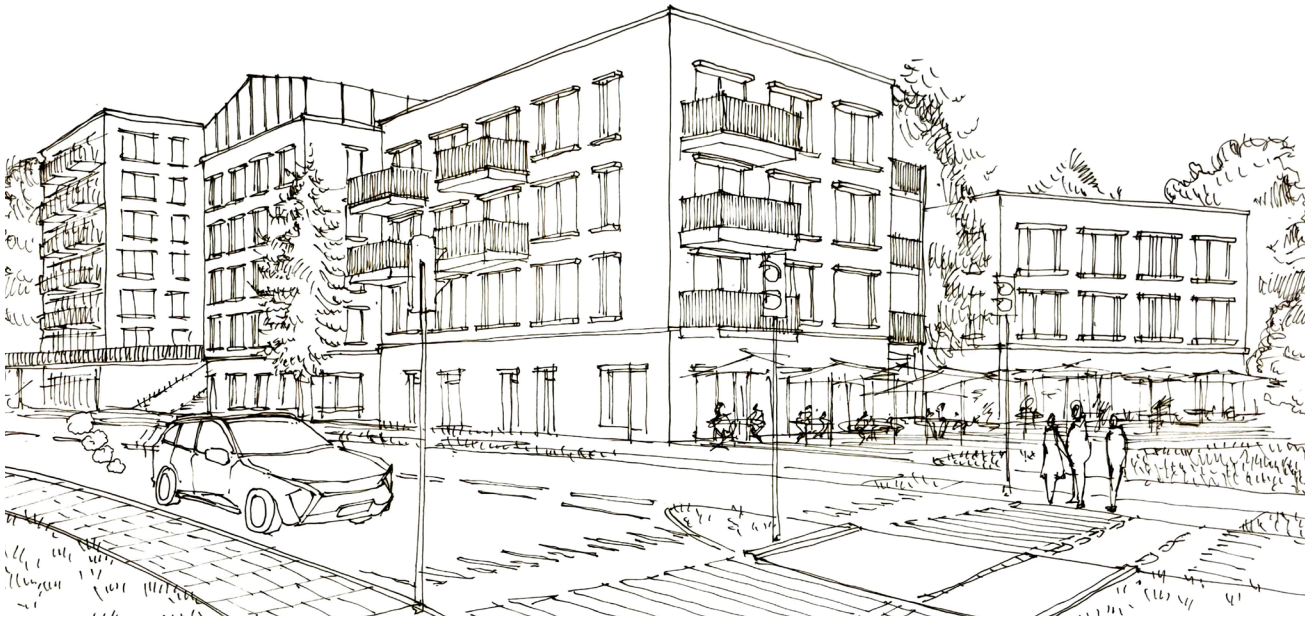
External material change - public/private transition, vertical section scale 1:5

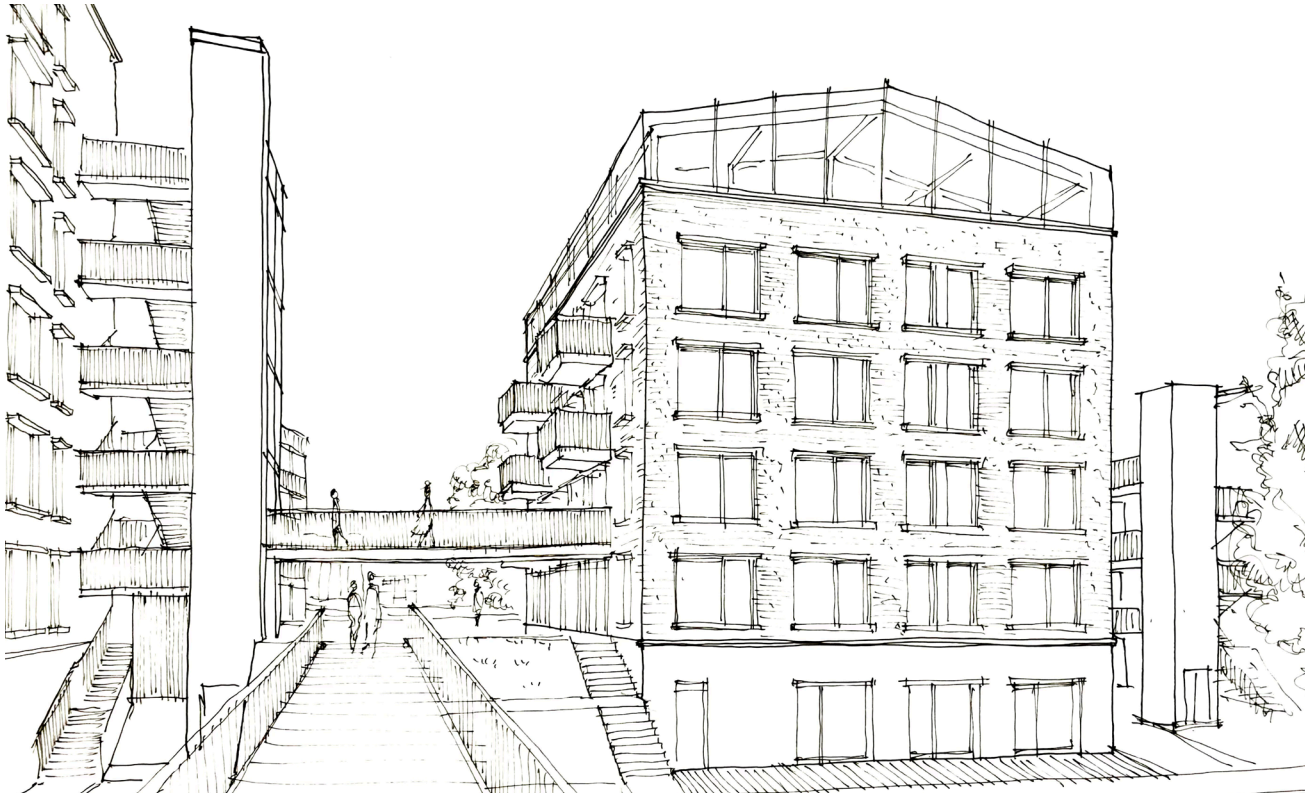
14. 3D detail render

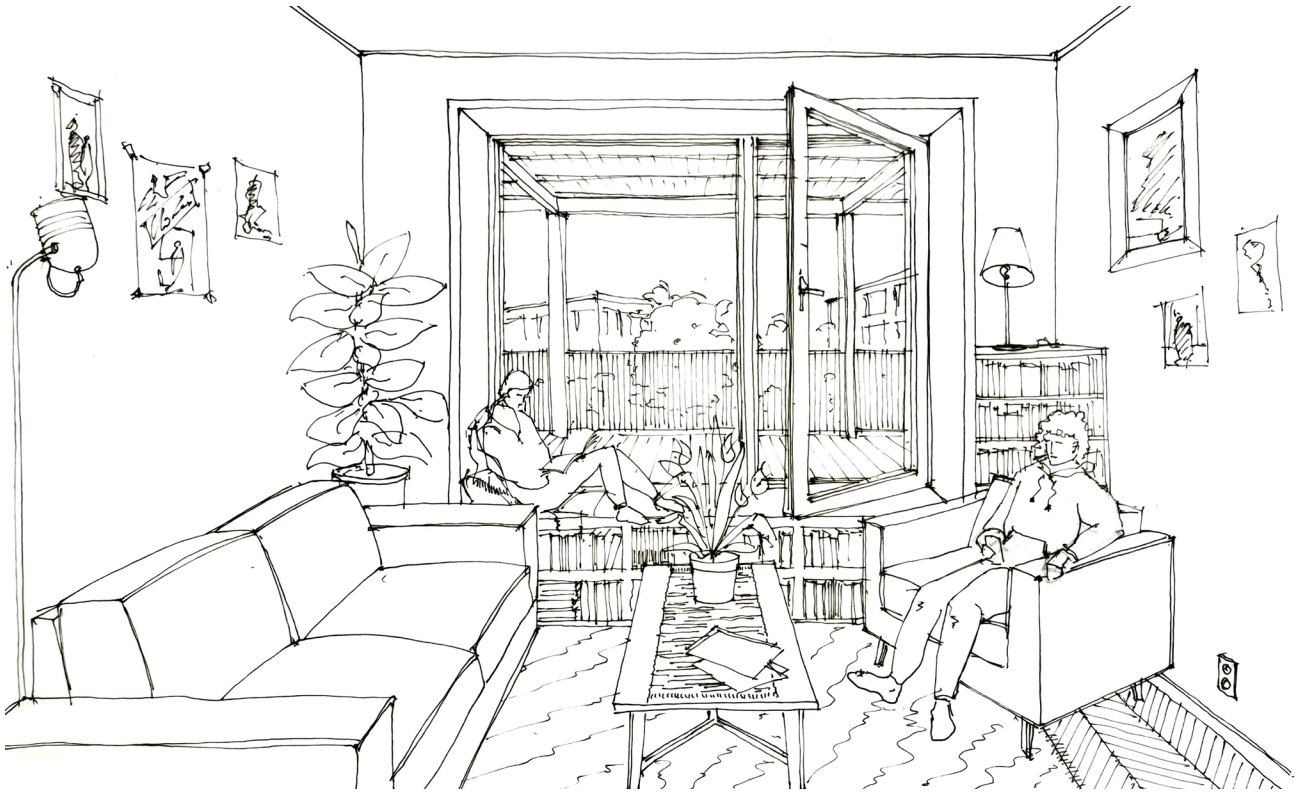


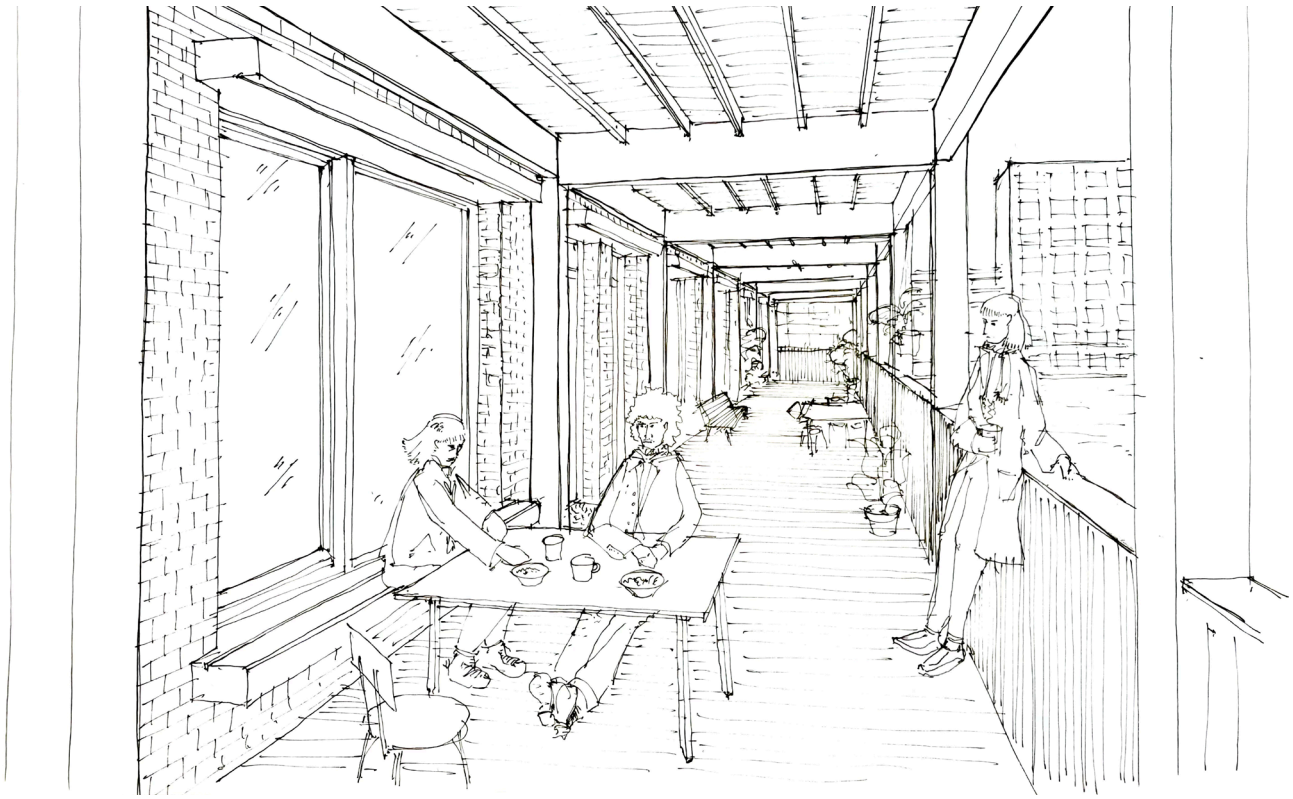

MAASHAVEN

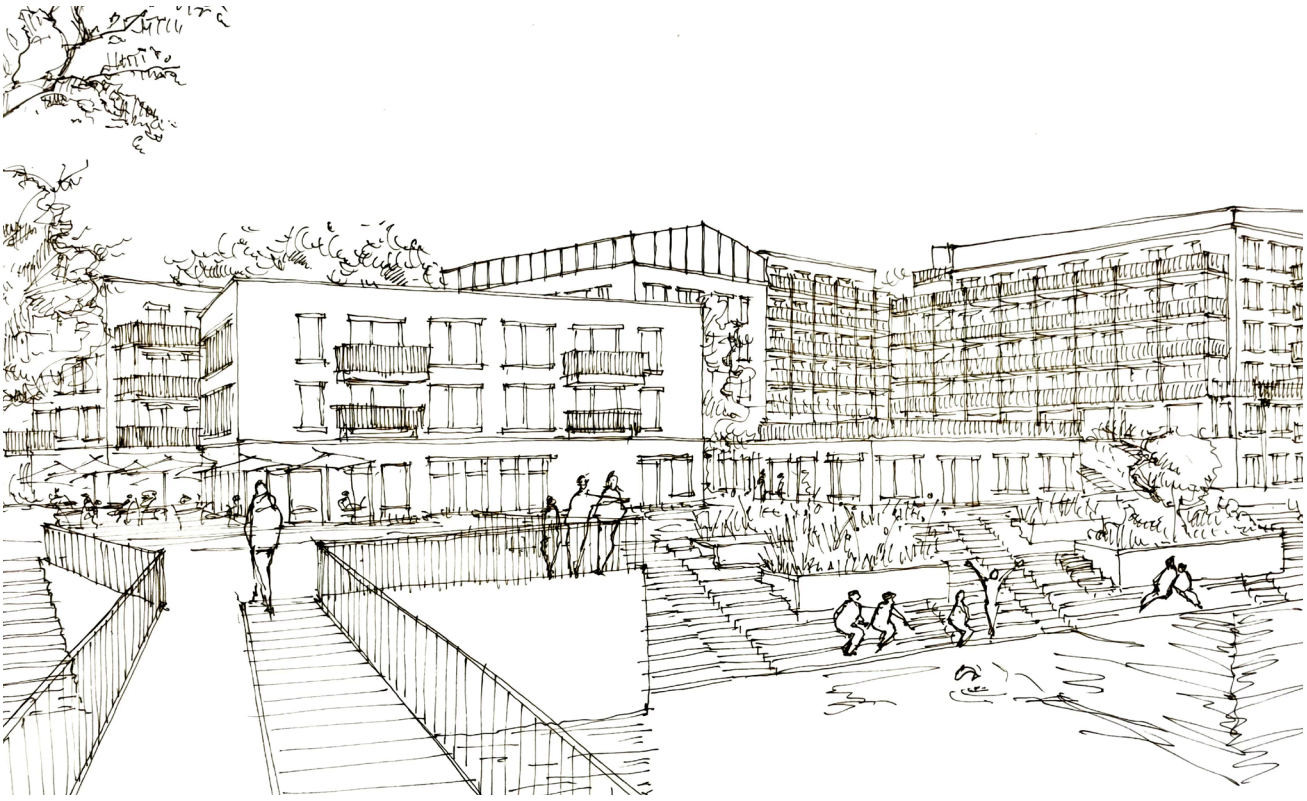
15. Atmospheric sketches

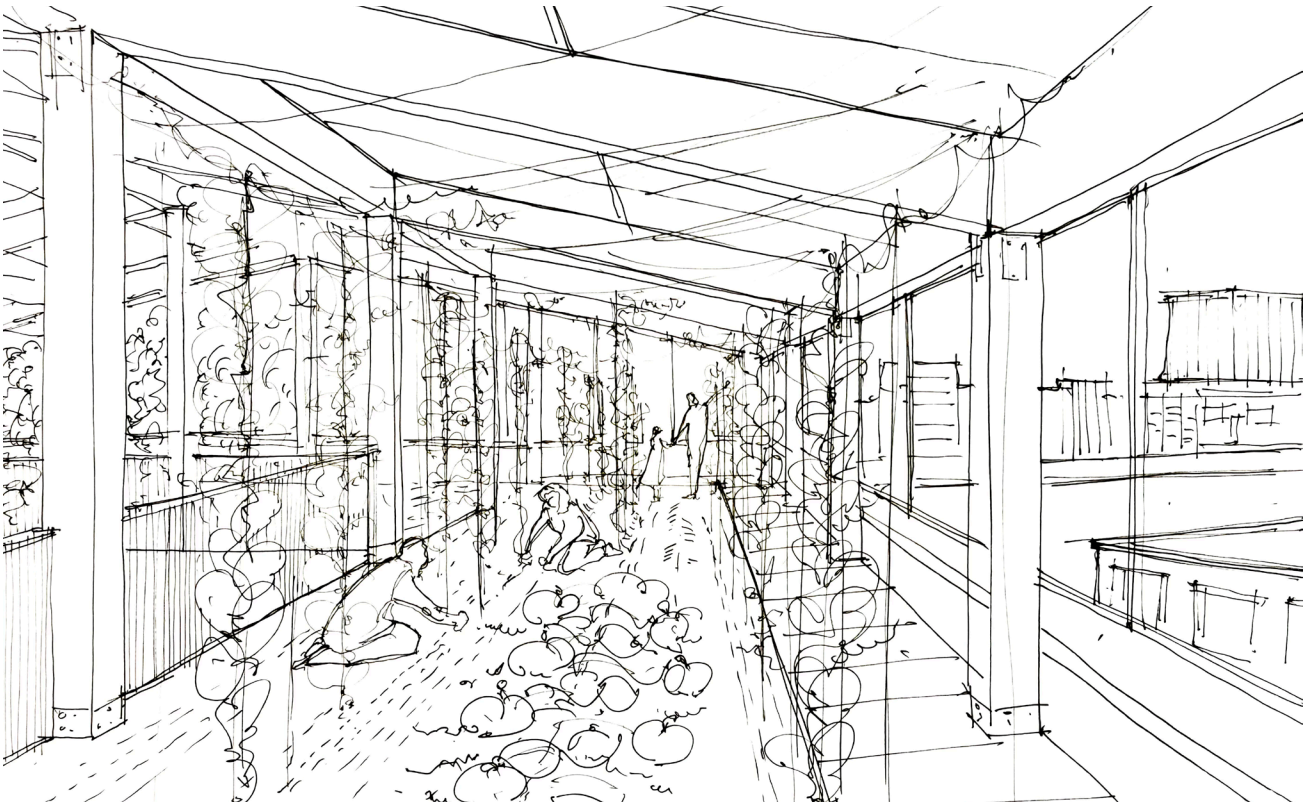


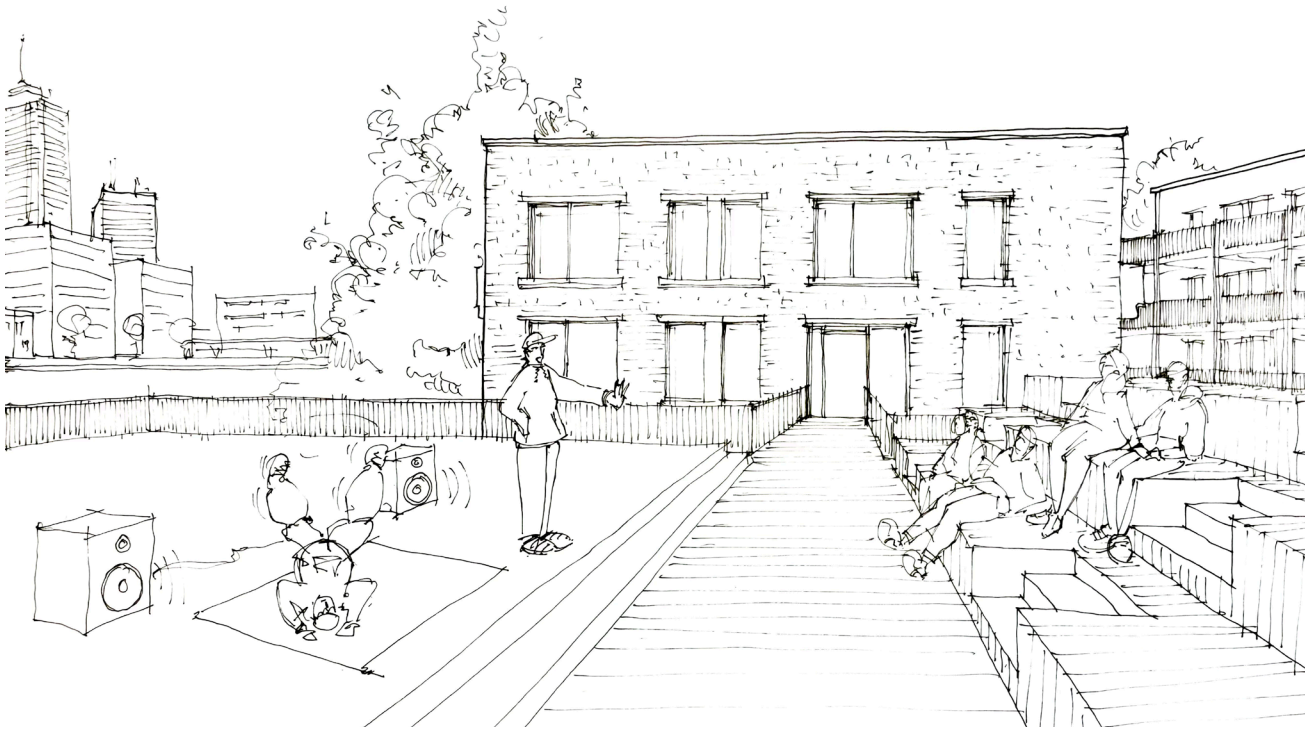










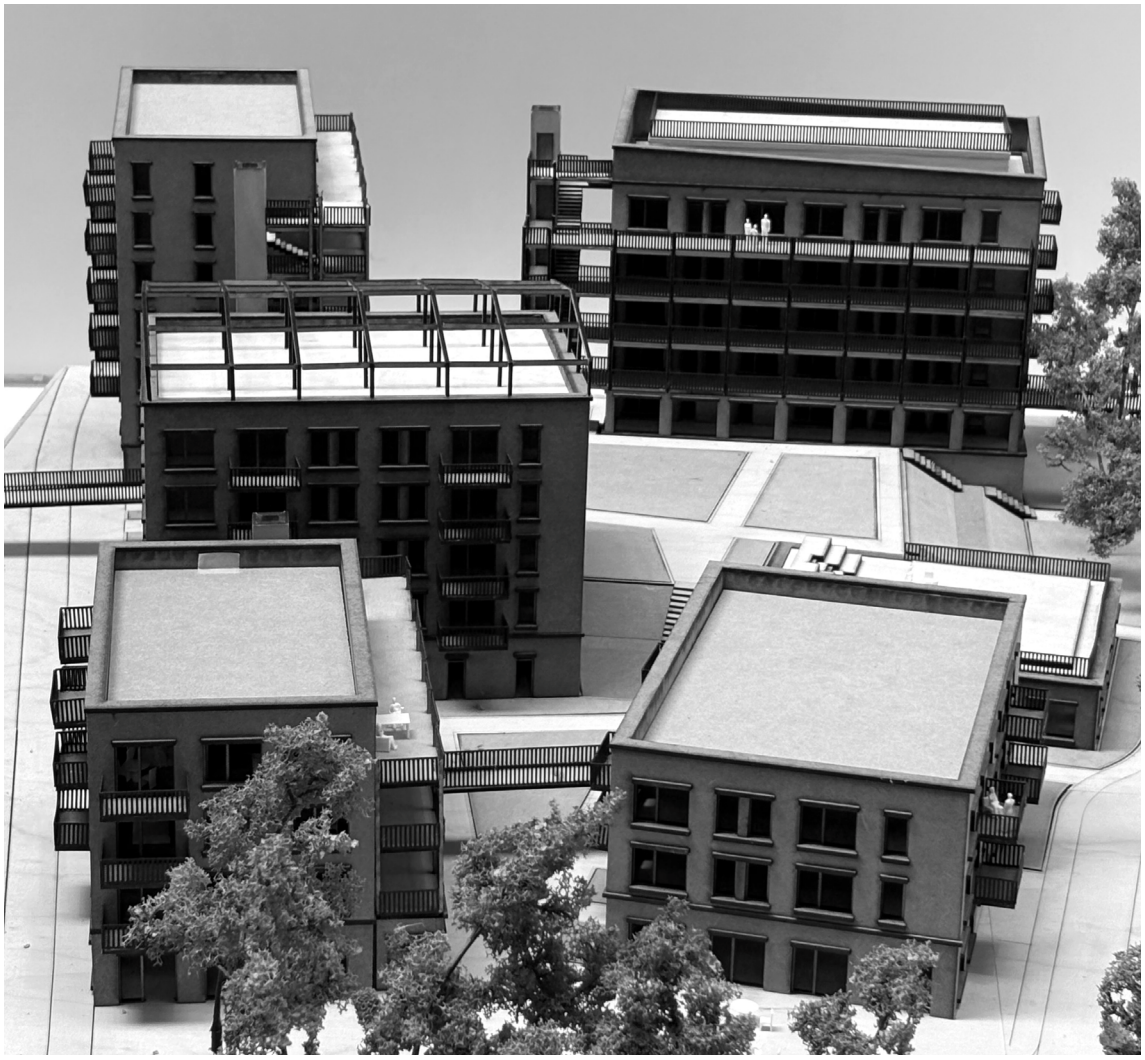


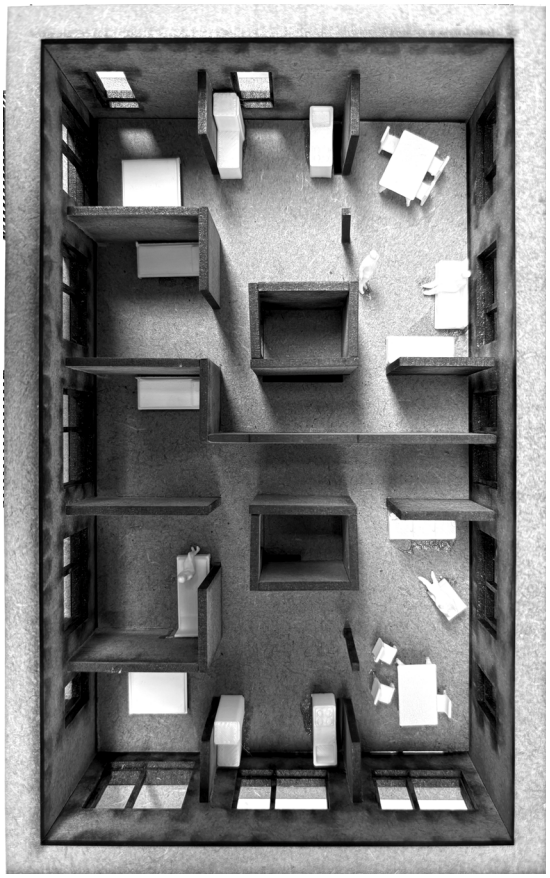

Markt-Maasha

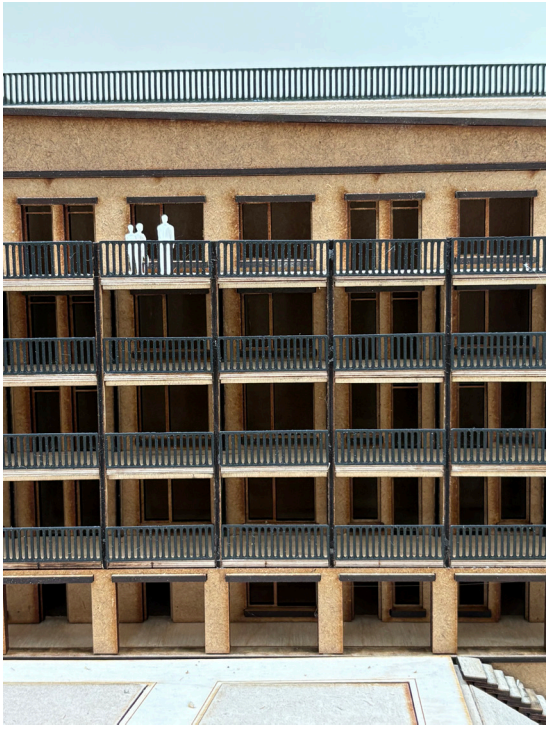
16. Visuals

MASTER THESIS
Jarema Kozakowski

17. Model photos







JAREMA KOZIELEWSKI
TU Delft, Faculty of Architecture
2025