MSc 4 Public Building

COMMUNITY IN THE *MAKING*

Transforming a Vocational School Building in Bispebjerg into a Public Condenser



Hidde Bartstra

INTRODUCING BISPEBJERG

Bispebjerg, also known as Nordvest, is one of ten districts in Copenhagen. It is a working-class, multicultural and diverse district with a high concentration of social housing and a more community-oriented feel, which makes it distinct from the more affluent, central, and culturally trendy districts in Copenhagen.



Fig. 1: Copenhagen Map, 1:40000

- Buildings
- Bispebjerg
- Green
- Water
- Train

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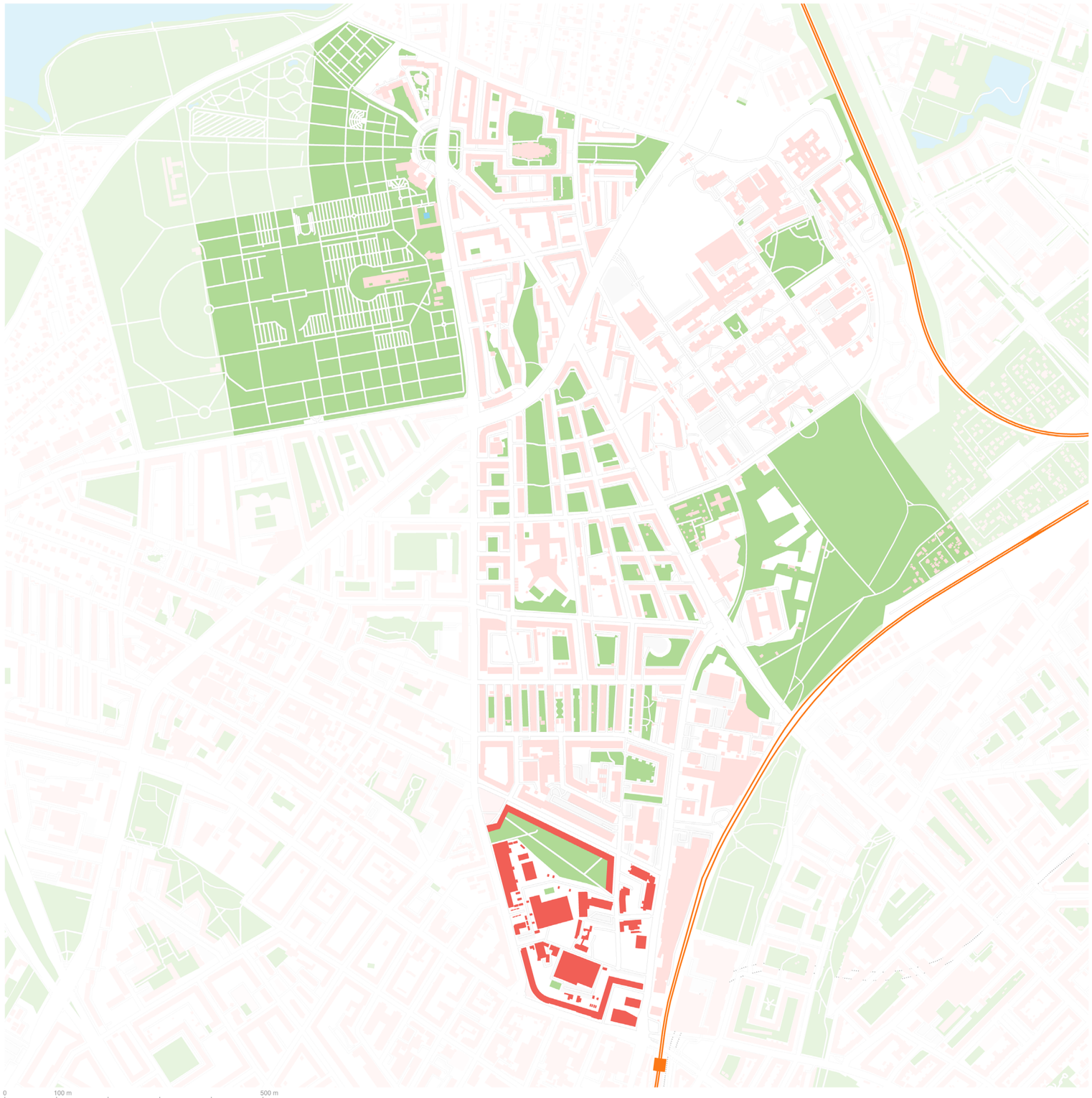
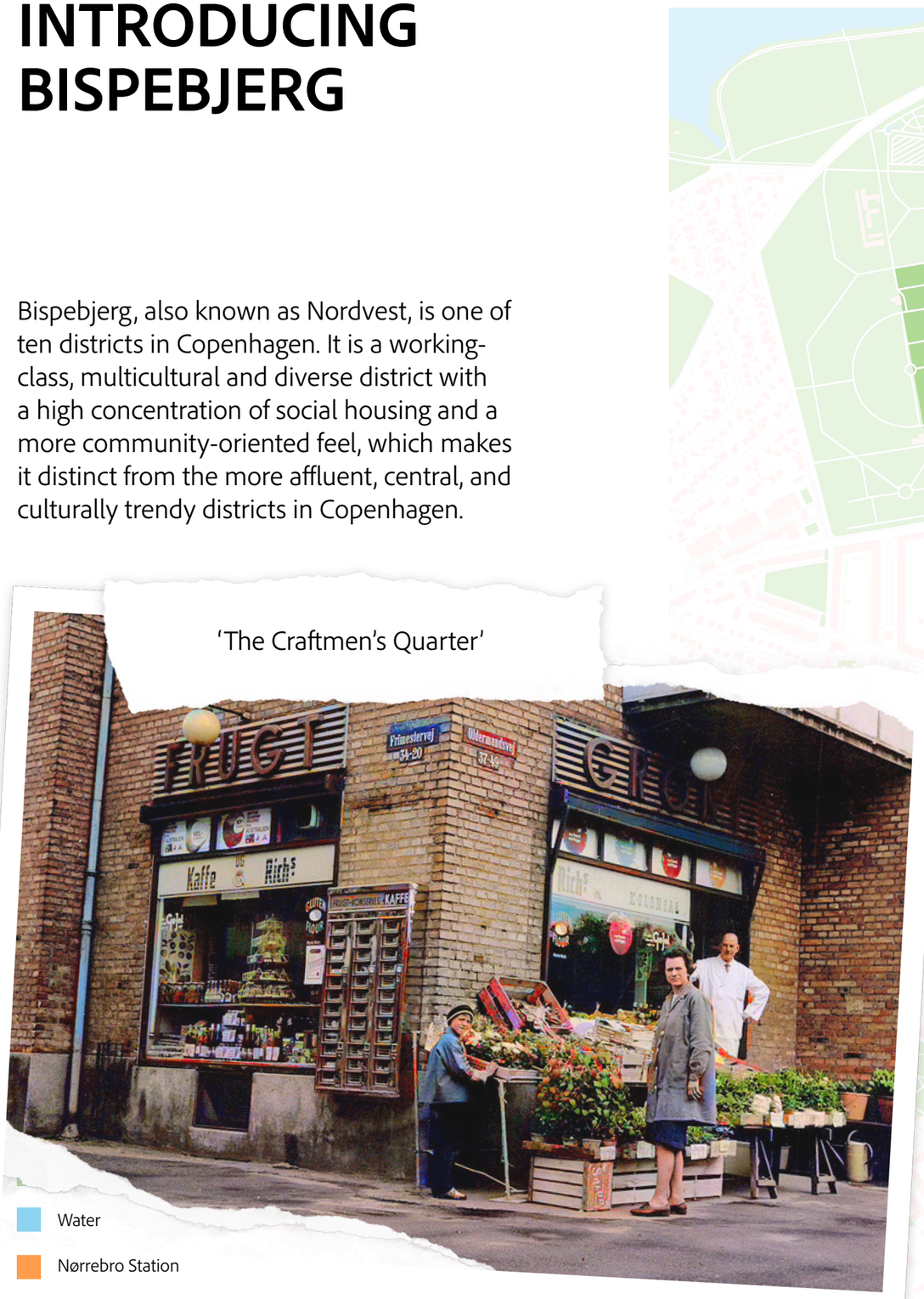


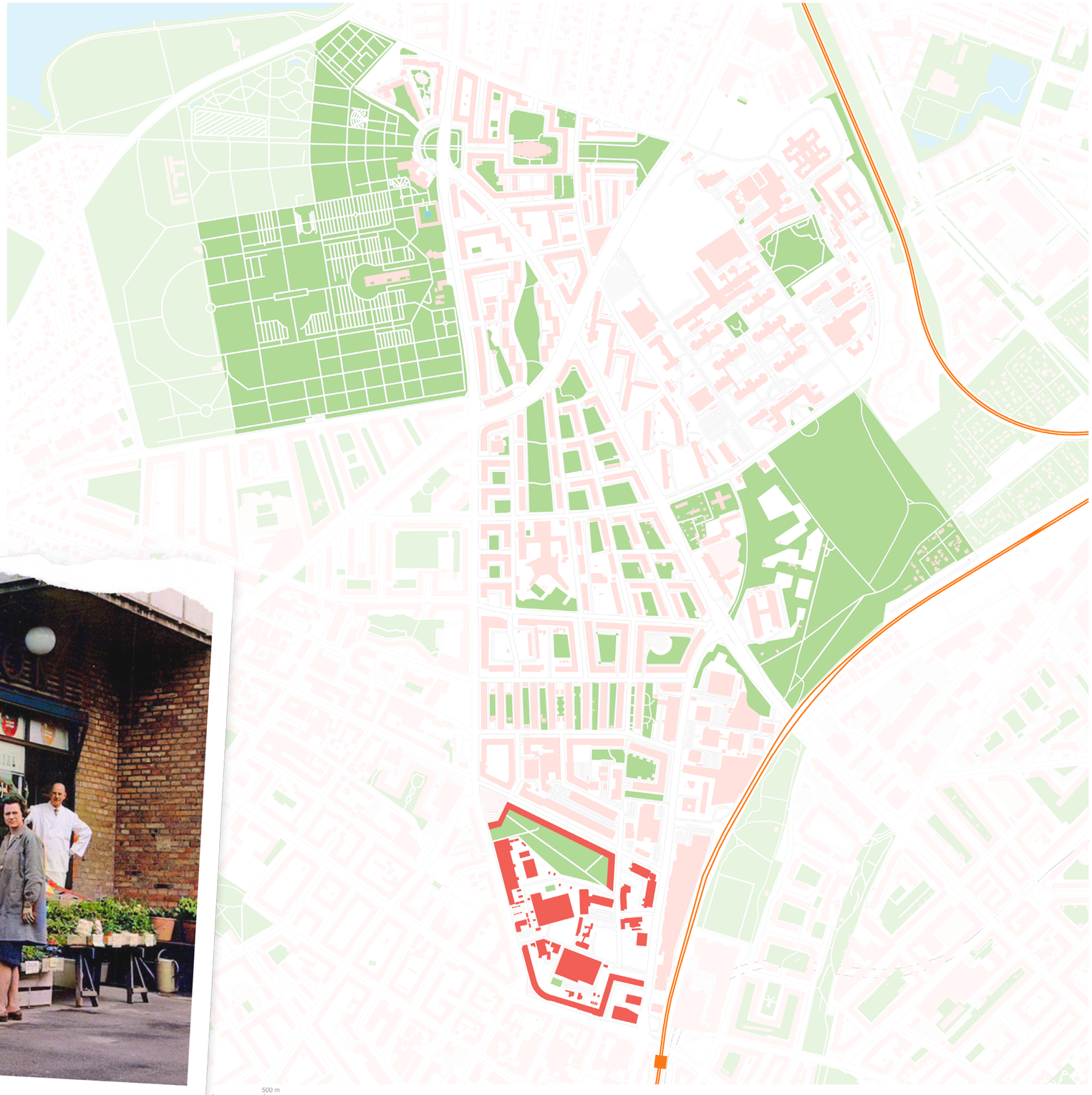
Fig. 2: Bispebjerg Map, 1:5000

- Buildings
- Site Area
- Green
- Water
- Nørrebro Station

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Demokrati Garage



Nørrebro Station

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SITE AREA

At the heart of the project site sits NEXT, a vocational school offering 18 diverse study programs across disciplines like carpentry, photography, masonry, theatre technique, and fitness education. With its focus on skilled trades, NEXT not only reflects Bispebjerg's heritage of craftsmanship but also has the potential to further shape the area's cultural identity as a hub for creativity and craft.



NEXT Vocational Upper Secondary School, Bispebjerg

SITE AREA

The NEXT campus currently consists of disconnected buildings and scattered sheds, closed off from the surrounding neighborhood. To the north lies Emaljehaven Park, a high-quality green space nestled within a mixed housing block. The site is set for significant development, creating greater connection with the surrounding neighborhood.



Fig. 3: Site Map, 1:1500

A Administration
Guard and Security
Media Studies

B Canteen
Guidance

C Carpenter

D Electrician
Furniture Joiner
Delivery of Goods

E Painter
Masonry
Building Construction
Carpenter

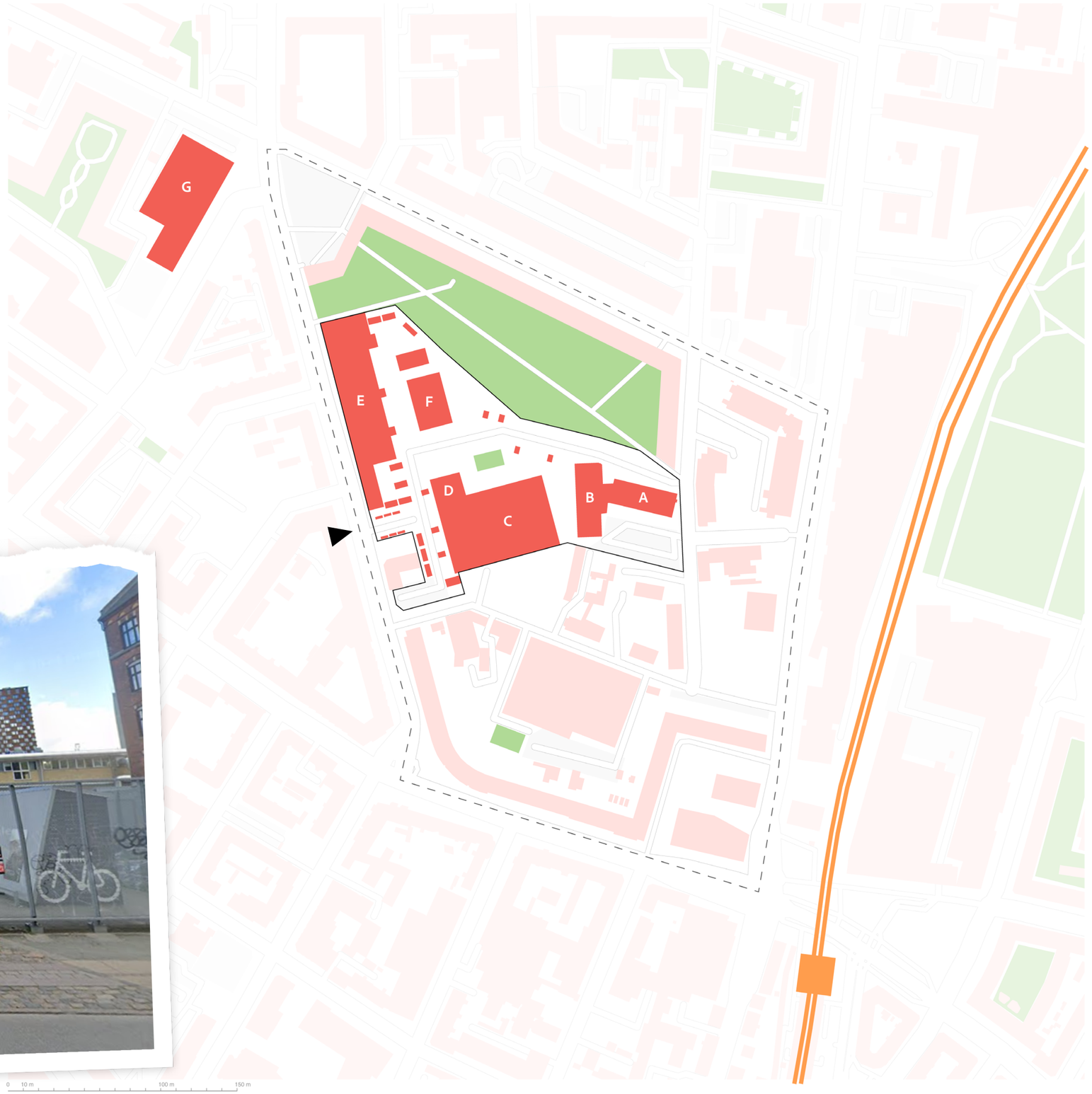
F Metal

G Health and Beauty Studies

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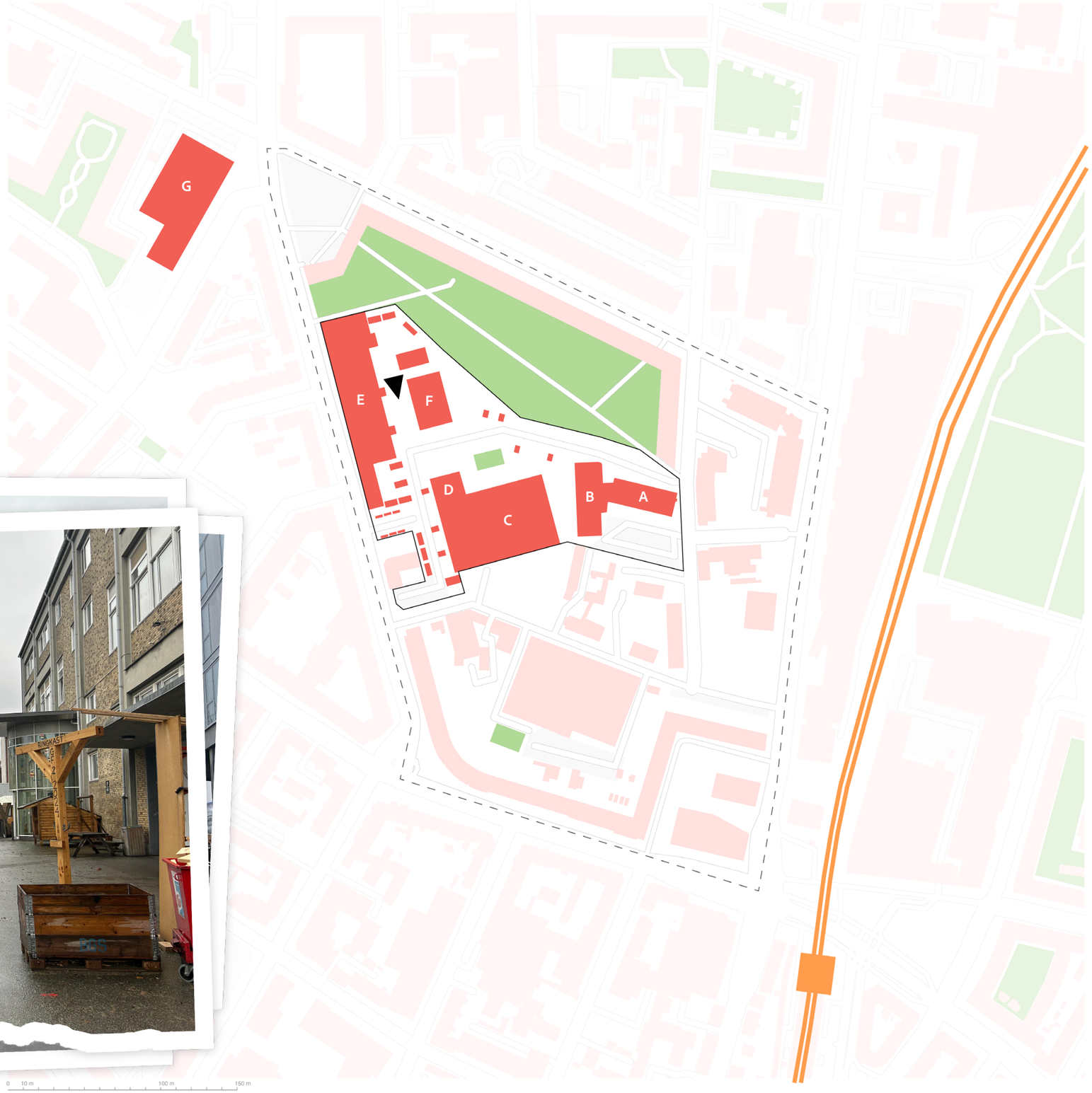




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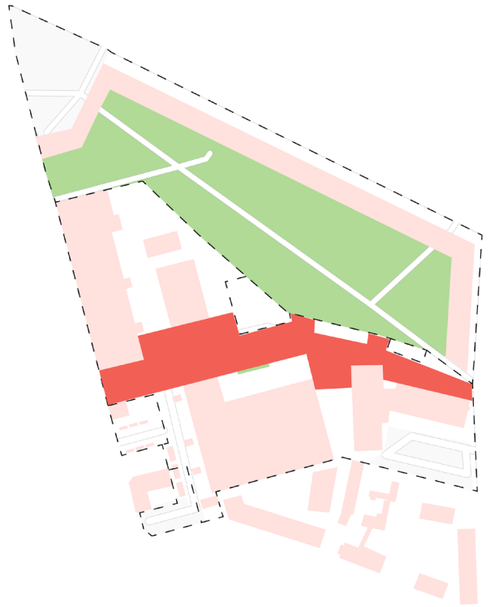


MUNICIPAL VISION PLAN



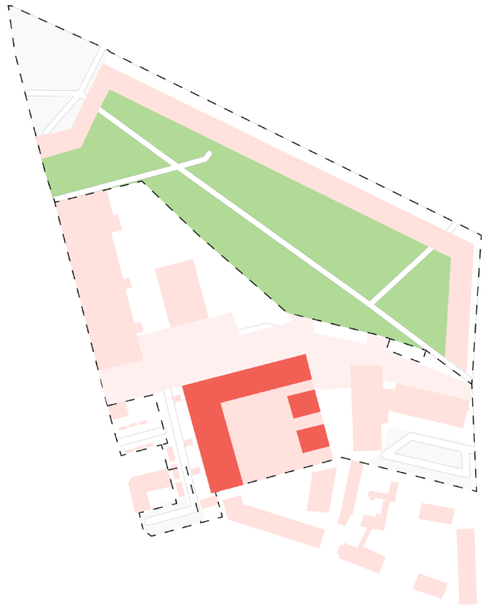
Current Situation

Disconnected buildings closed off from the rest of the neighbourhood, only accessible to staff and students during school hours.



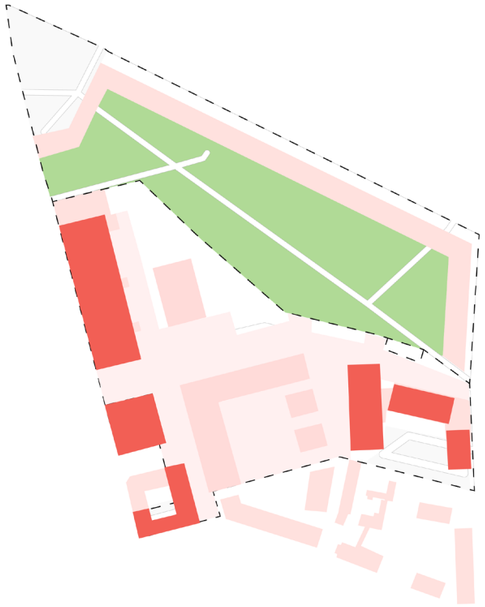
Klokkemagervej

ADEPT's vision plan reintroduces the historic Klokkemagervej as a pedestrian-friendly connection through the site, opening the campus up to the neighbourhood.



AP Møller Building

The planned AP Møller 'practice academy' will densify the centre of the campus, and serve as the heart of the school.

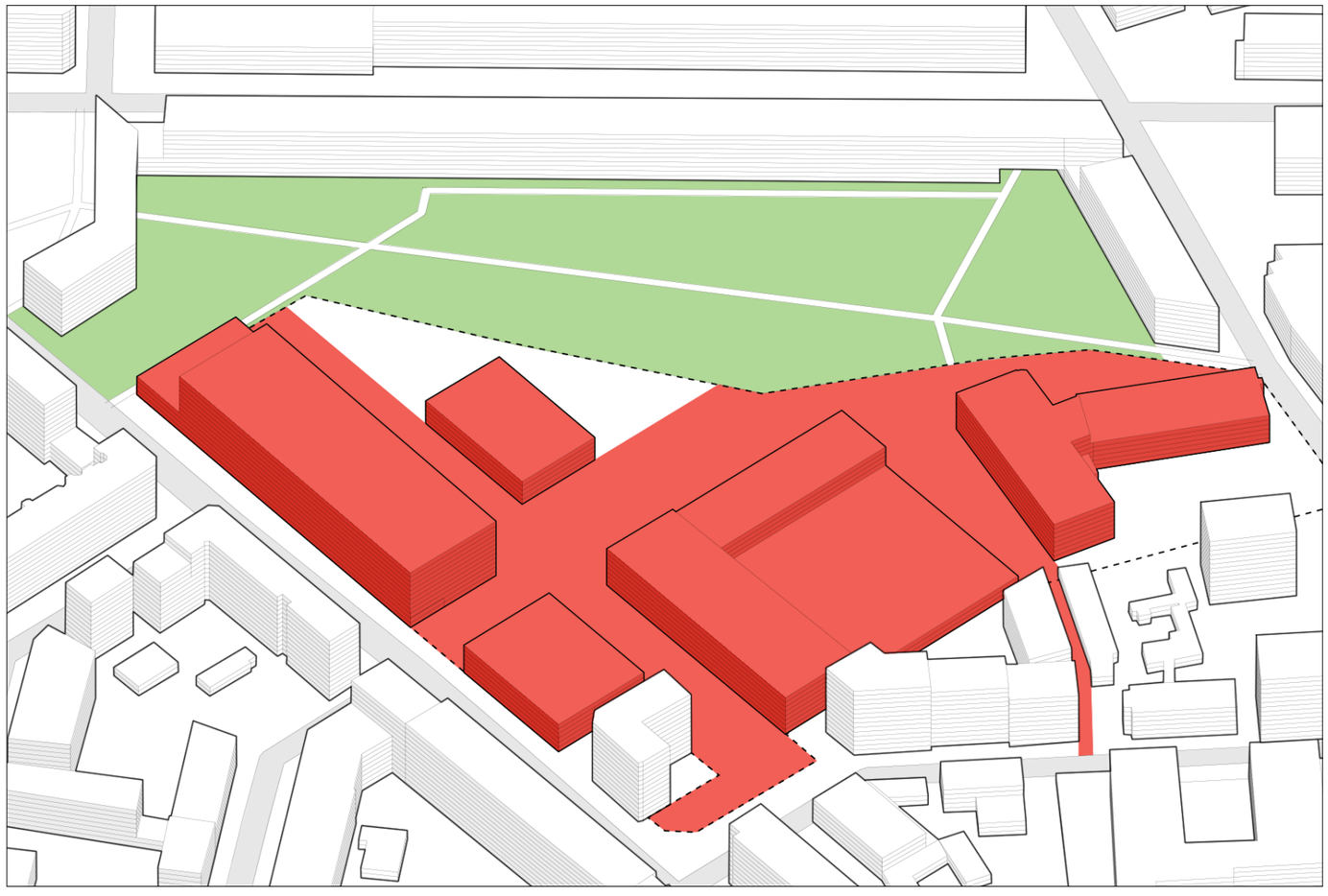


Densification Proposal

ADEPT's vision plan suggests adding vertical extensions to existing buildings to create student housing, retaining students in the neighborhood.

A NEW HEART

Opening up the campus shifts the dynamic in the neighbourhood. Students will now live in the area and the local community will have increased access to the vocational knowledge and facilities of the school. The question therefore becomes, who could these changes benefit the most, and how could a public building facilitate these shifting dynamics?



NEXT School After ADEPT Plan

How can the design of a public condenser facilitate stronger connections between educational institutions and the local community, enhancing access to knowledge?

Main Research Question

CHANGING ROLE OF EDUCATORS

Hugo Labate critiques the contemporary education system, highlighting how technological advancements are democratizing access to knowledge. He argues that educators should shift from being 'gatekeepers of knowledge' to 'facilitators of learning experiences.' Labate advocates dismantling rigid structures in formal education to promote more equitable access to learning.



East Entrance Gates, NEXT School

VOCATIONAL CHALLENGES

In Denmark, the share of 15-19-year-old students enrolled in vocational programs is one of the lowest among OECD countries, ranking 34/43 with a percentage of 19.3%. In Copenhagen, only 13% of students apply for vocational education. At the same time, a major shortage of skilled labour has been predicted.



NEXT Students at Work

“

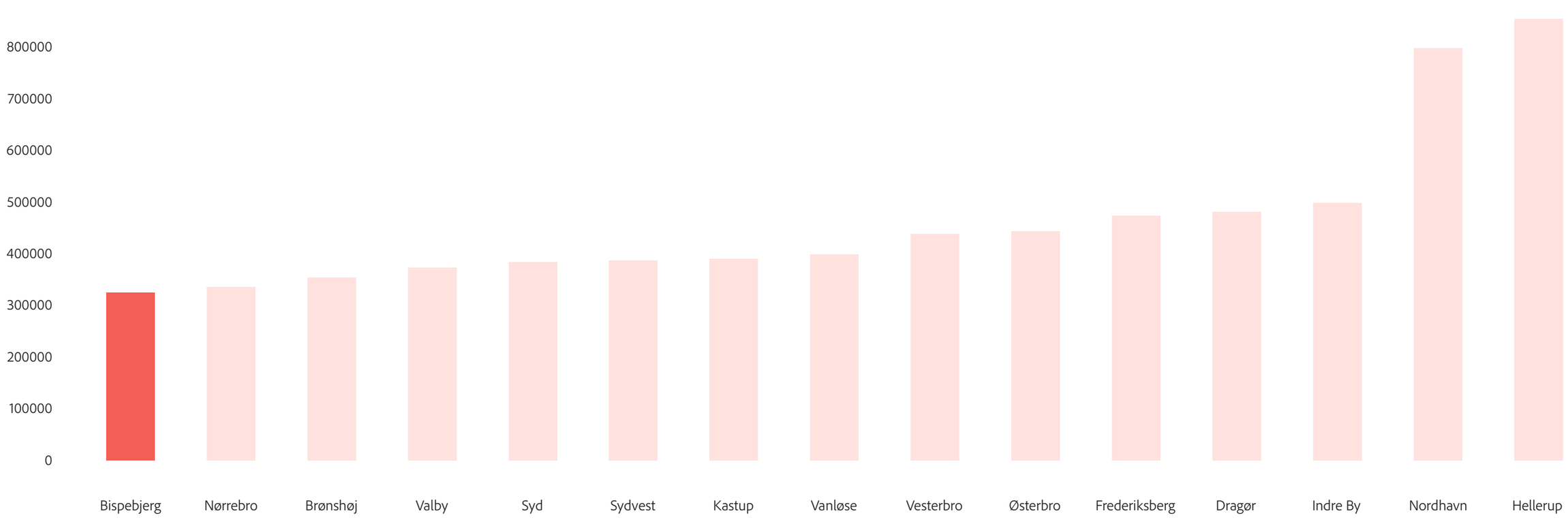
The Danish business community needs skilled, professionally trained employees. But unfortunately, far too few young people choose the promising vocational education programs.

Ane Mærsk Mc-Kinney Uggla, chairman of the A.P. Møller Foundation

CHALLENGES IN BISPEBJERG

Bispebjerg is facing socio-economic challenges, including relatively low-income and high-unemployment rates. As shown below in the average income graph, Bispebjerg ranks as the poorest area in Copenhagen.

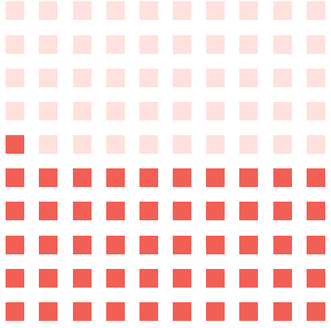
Figure 4: Average Annual Income (DKK) in Copenhagen Districts, 2022



YOUTH CHALLENGES

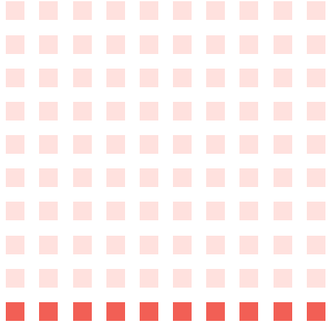
According to sociologist Aydin Soei in his Nordvest Youth Study of 2021, the socio-economic challenges in Bispebjerg "create conditions for increased youth crime and insecurity compared to an average residential area" (Soei, 2021, p. 13).

Figure 5: Youth Crime and Disengagement (15-24) in Bispebjerg, 2021



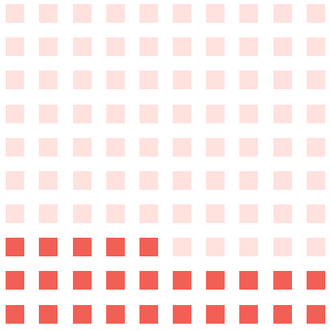
Home

51% of young residents spend the majority of their time at home



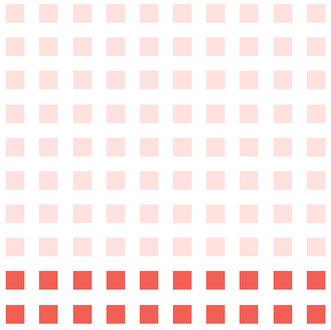
Street-Oriented Lifestyle

10% of young residents have so-called street-oriented lifestyles



Vandalism

25% of young residents have committed acts of vandalism



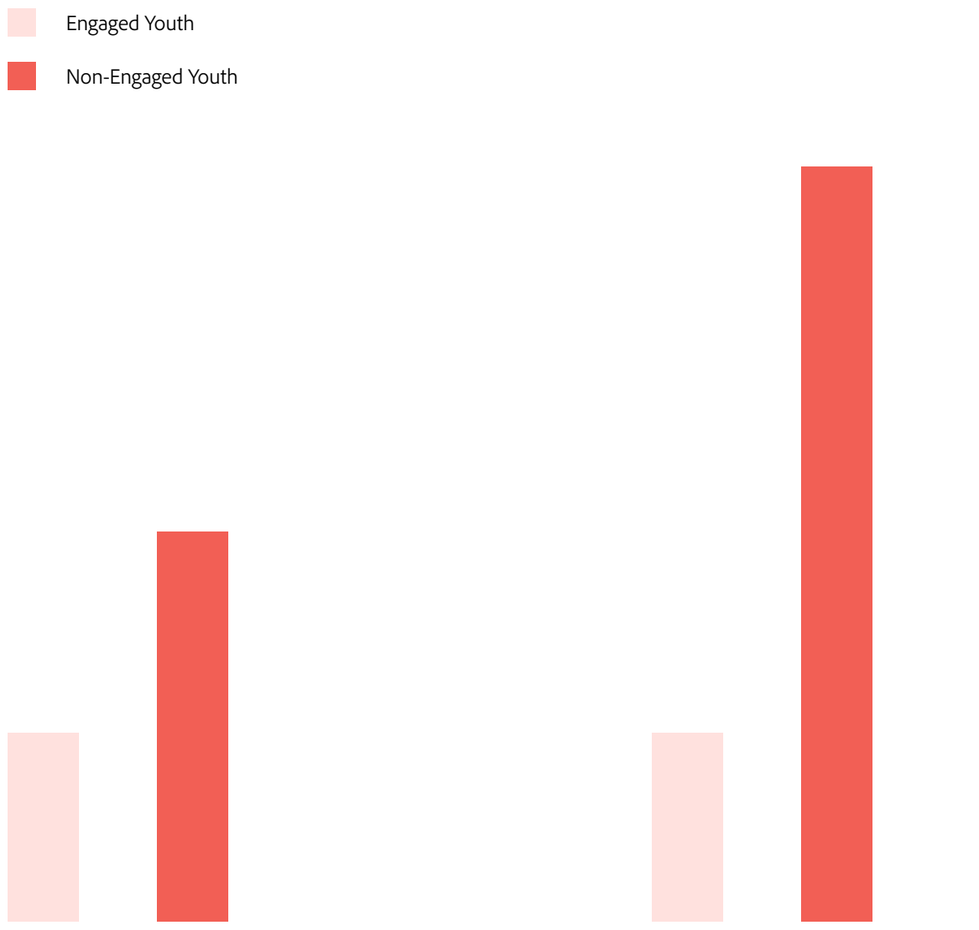
Physical Assault

20% of young residents have physically assaulted someone

YOUTH ENGAGEMENT

Lack of structured engagement through education, employment, or leisure correlates with higher crime rates among young people in Bispebjerg. Disengaged youth are four times more likely to commit repeated acts of violence. Data suggests that increasing access to educational and vocational programs could significantly enhance safety and well-being for Bispebjerg's young population.

Figure 6: Engaged vs. Non-Engaged Youth (15-24) in Bispebjerg, 2021



Shoplifting Correlation

Young residents that are not engaged in two or more arenas are twice as likely to commit shoplifting

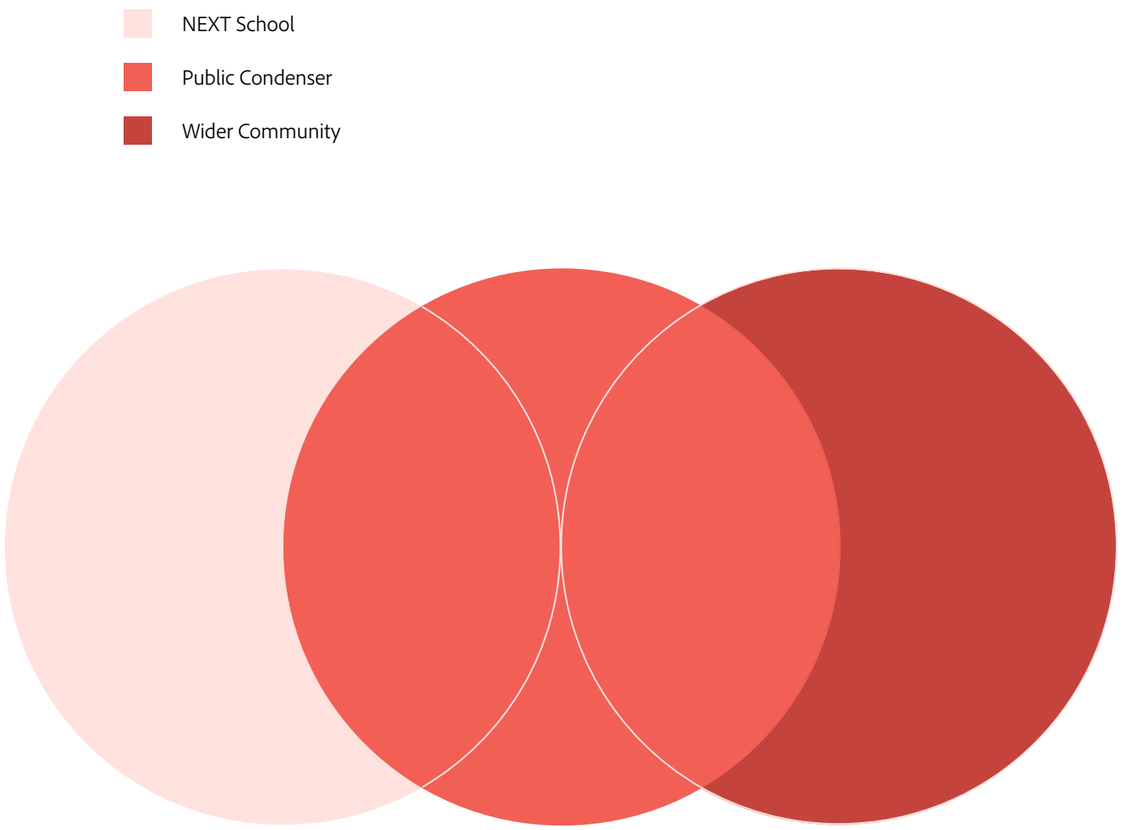
Violence Correlation

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STITCHING IT ALL TOGETHER

The opening of the campus site presents an opportunity to address these challenges and create a public condenser that is shared by the school and the wider community, providing structured engagement opportunities, promoting pathways into vocational education, and enhancing the cultural identity of Bispebjerg as a place of creativity and craft.

Figure 7: Project Aim, 'Building Bridges'



NEXT School

A place for student to work, applying their studies in the real world and integrating into the local community.

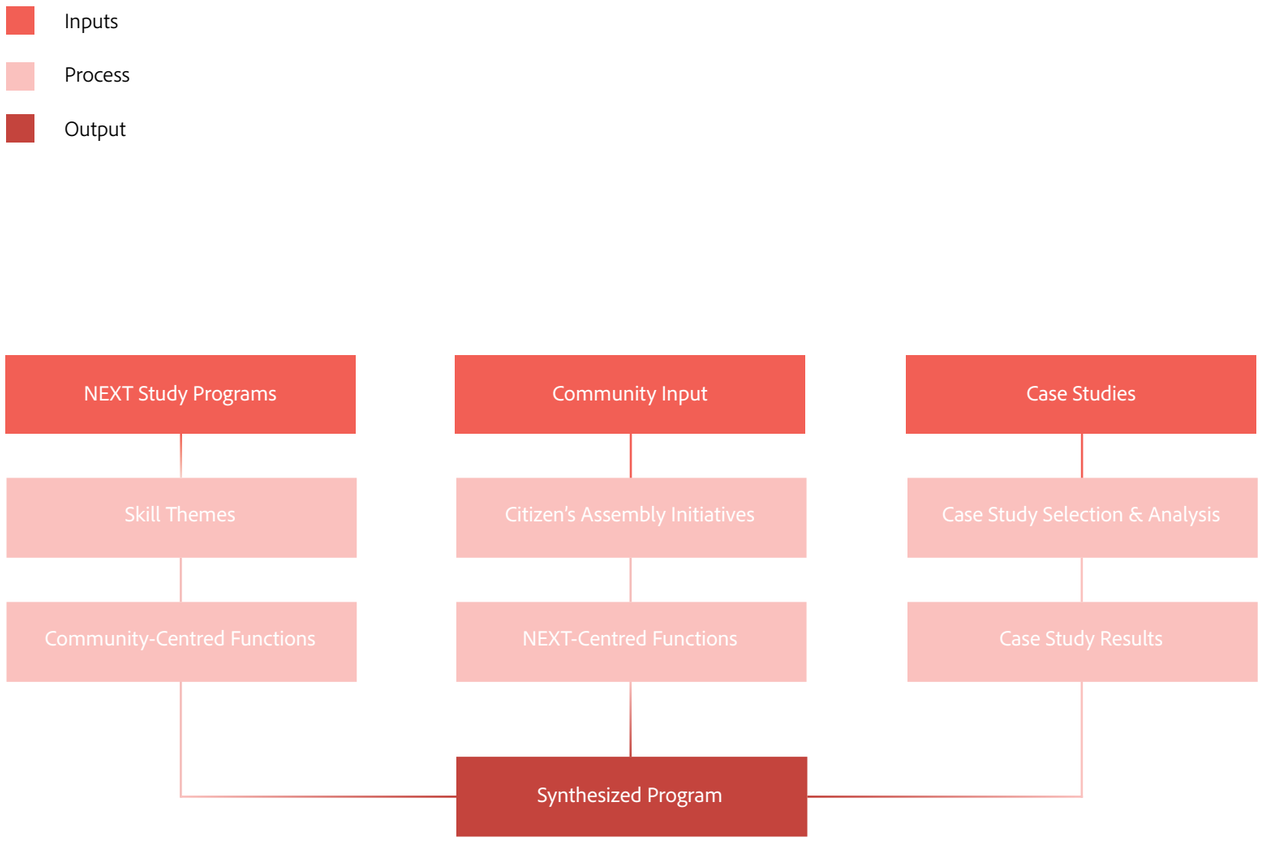
Wider Community

A place for the local community to learn, engaging in informal vocational education.

PROGRAM PROCESS

The program is a synthesis of diverse inputs, including the NEXT program, case study analysis, and youth input, and is designed to create a program that serves both students from the school as well as members of the local community.

Figure 8: Program Development Process



SYNTHESIZED PROGRAM

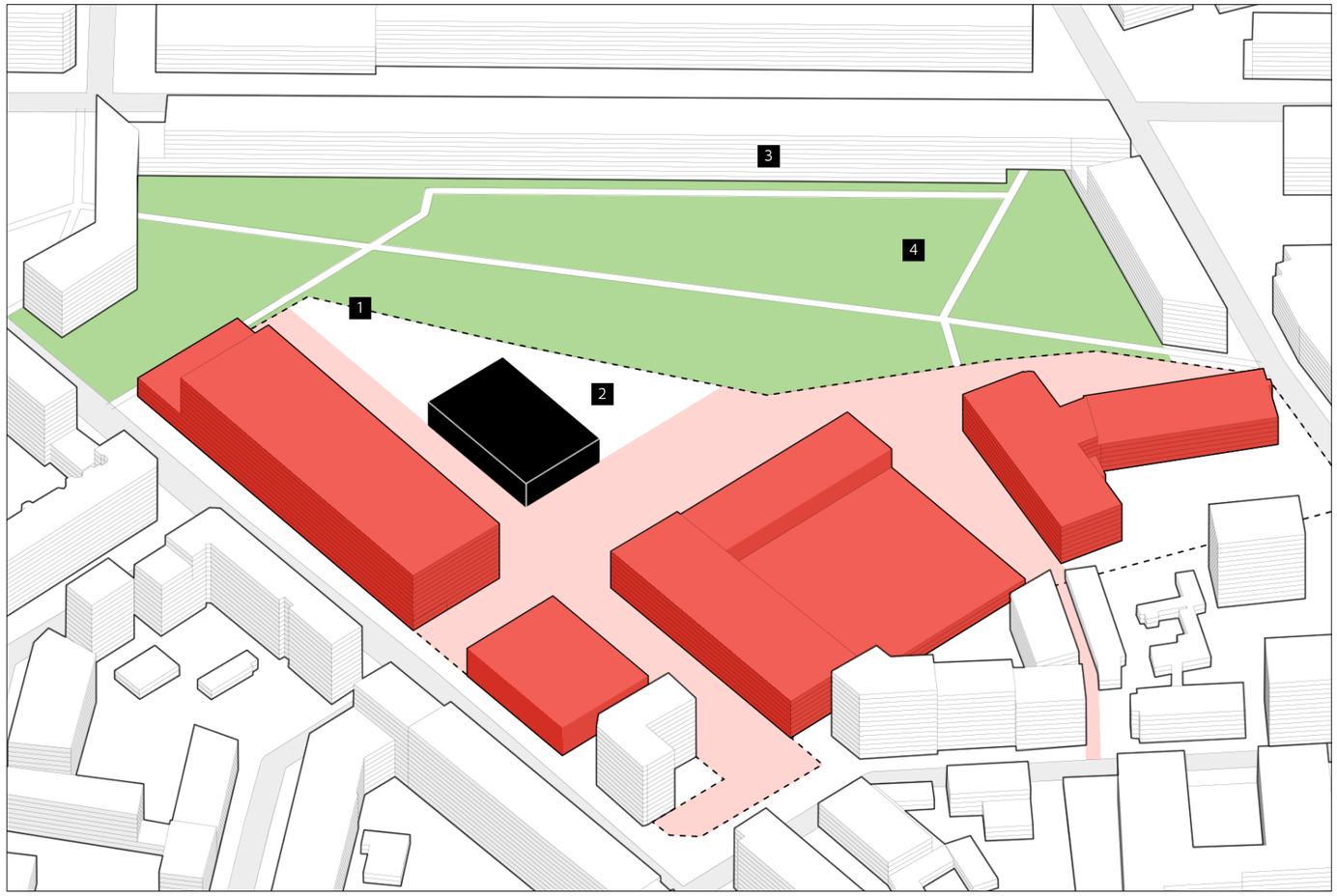
The elective program of the building is a result of merging the community input and case study results under the vocational themes of NEXT. Certain functions, such as a library and café, are already present in the area, but due to the insights gained from the youth input they have been included anyway.

Figure 9: Program Dimensions

Function	Area
Study Space	1.070 m^2
Café (Repair Café) and Kitchen	390 m^2
Library	250 m^2
Study Spaces	430 m^2
Workshop Space	1.050 m^2
Craft Workshop (Craft Studio)	550 m^2
Art Workshop (Atelier)	200 m^2
Technical Workshop (Makerspace)	300 m^2
Exhibition & Event Space	690 m^2
Event Space	260 m^2
Exhibition Space	430 m^2
Support Functions	490 m^2
Archive & Storage	330 m^2
Toilets	85 m^2
Mechanical and Utilities	75 m^2
Circulation (25–30% of Total Floor Area)	1.000 m^2
Total	**4.300 m^2**

SITE TAKEAWAYS

The site area presents a number of contextual factors which inform a few key design principles. First, increasing permeability by removing the border between the school and park. Second, attracting people into the center of the site area. Third, avoiding visual pollution. Fourth, maintaining high-quality green space.

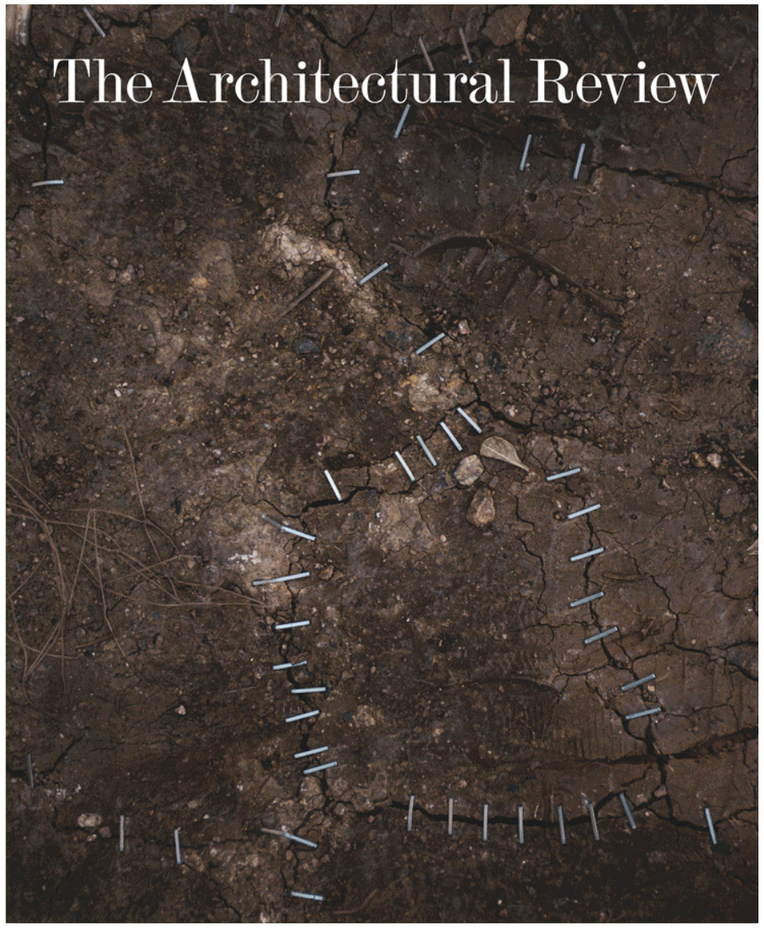


Site Area Design Principles

- Emaljehaven Park
- Klokkemagervej
- NEXT School
- NEXT Perimeter
- Building F

REUSE AS CRAFT

There is a growing architectural discourse that positions reuse as an act of craft and care, reflecting broader societal concerns. Increasingly, architects argue for a shift away from extraction and consumption toward stewardship and long-term engagement with buildings.





1 "Repair is an act of resistance to throwaway culture" *The Architectural Review*, 'Repair' Issue, 2024

2 "The order of the day is to nurture what already exists and to treat it with care" *ARCH+*, 'The Great Repair' Issue, 2022

ADAPTIVE REUSE

Adaptive reuse refers to the repurposong of an existing building to meet new needs, while preserving key architectural features. The existing workshop is an honest, unpolished reflection of the NEXT school. In line with the larger architectural debate, and the theme of craft, this structure will not be demolished but reused and integrated into the new public condenser.



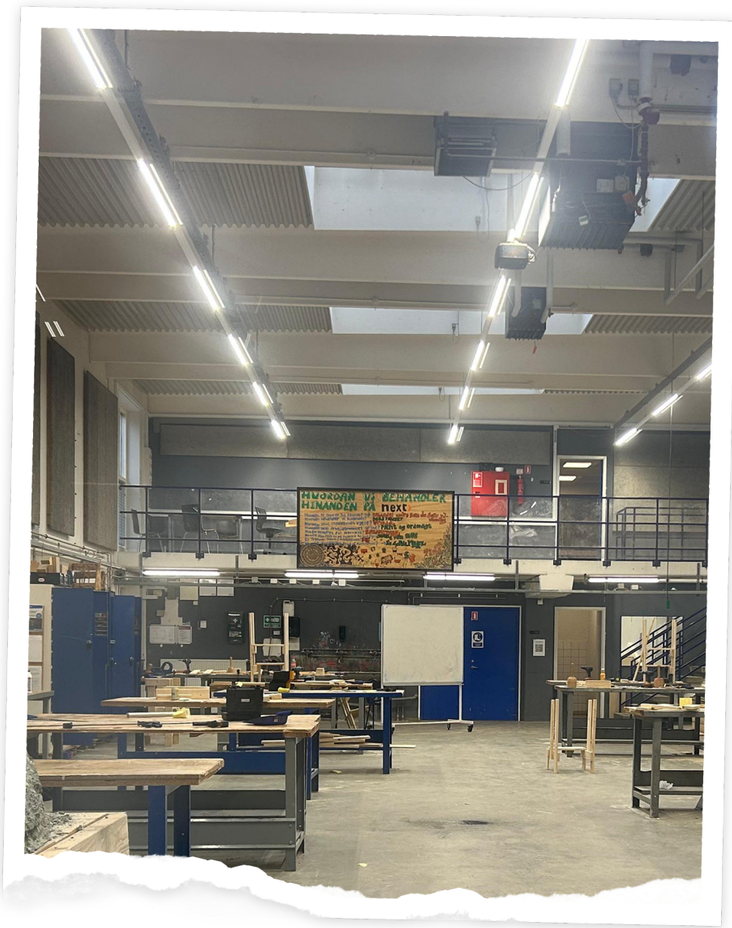
NEXT Campus, Building F

CONSTRUCTION ASSUMPTIONS



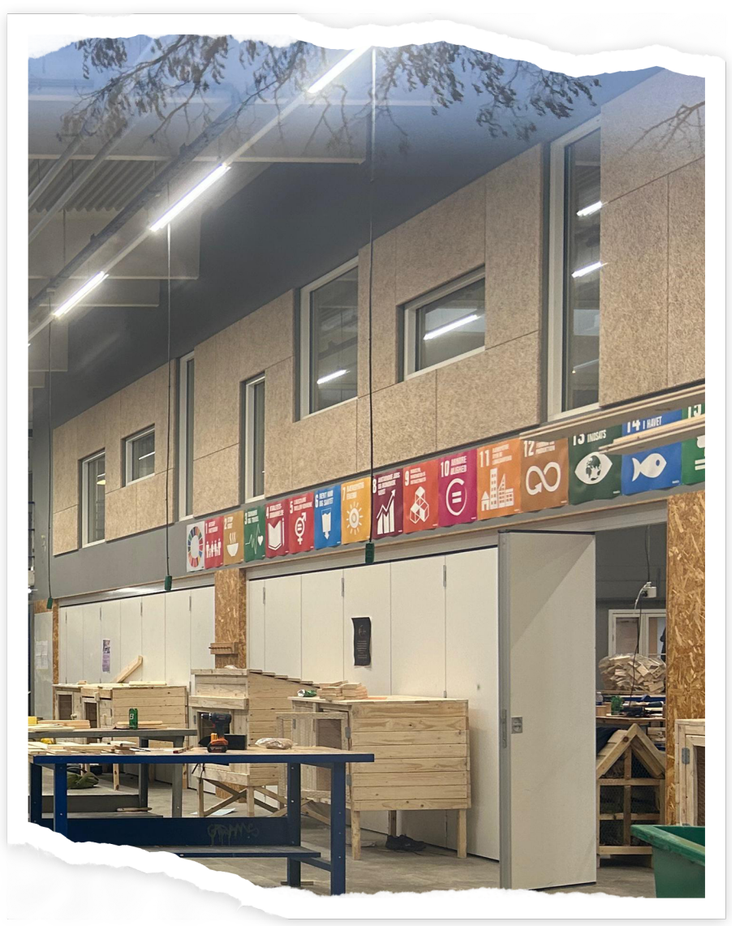
1 Load-bearing structure

Following the construction method confirmed to be used in the basement level, namely load-bearing reinforced concrete walls supporting the roof system.



2 Roof system

Roof beams span the entire width of the building, and have the visual characteristics of precast concrete TT slabs which are commonly used in similar industrial projects to span large distances.



3 Partition walls

The roof system removes the need for additional interior load-bearing walls or columns. The existing interior walls in the workshop hall are therefore assumed to be non-load-bearing and redundant.

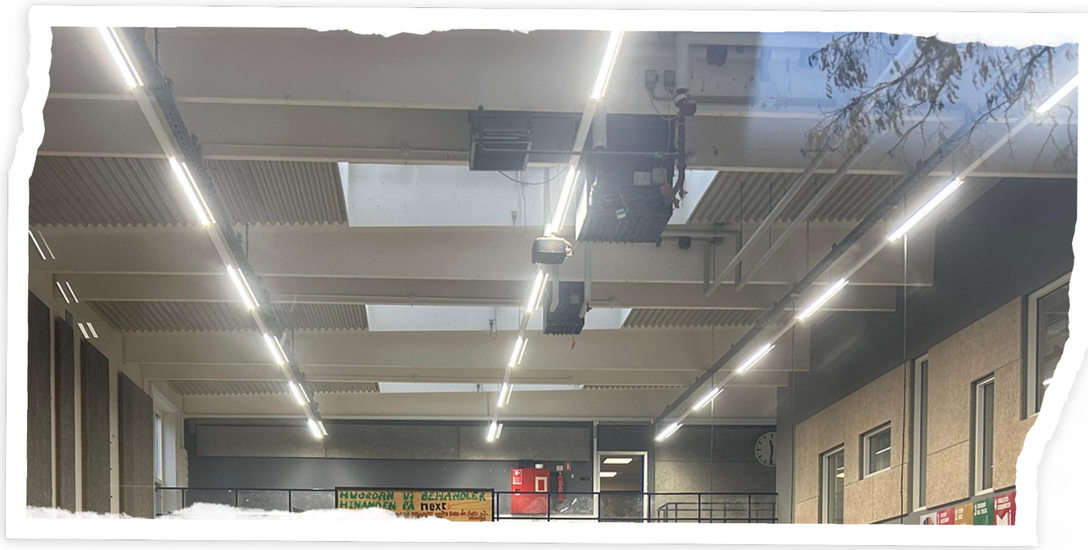
REUSE TAKEAWAYS



1 Honor Existing Character



2 Strengthen Connection with Surroundings



3 Horizontal Extension



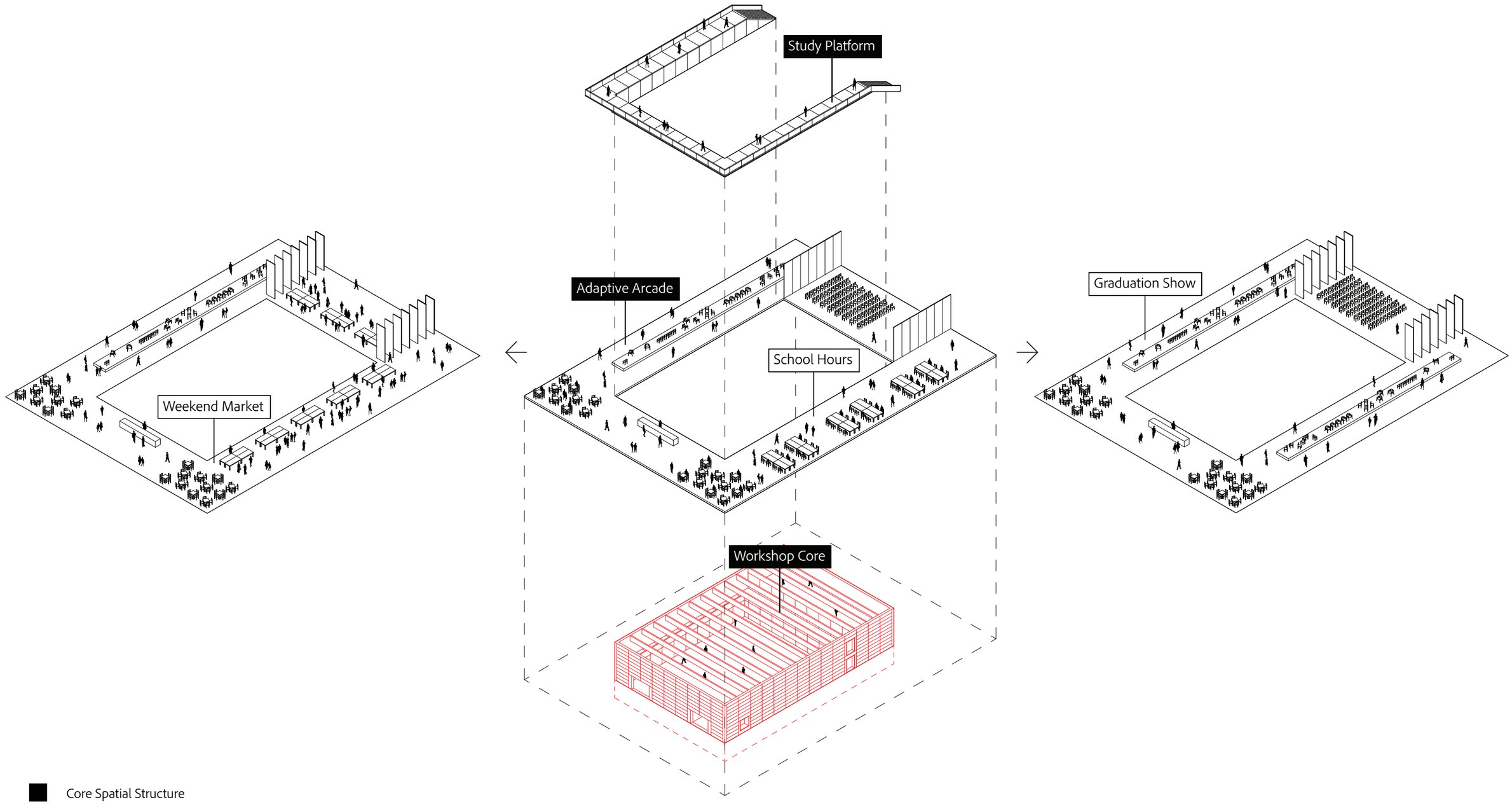
4 Open Up Interior

Constructing a community around craft.

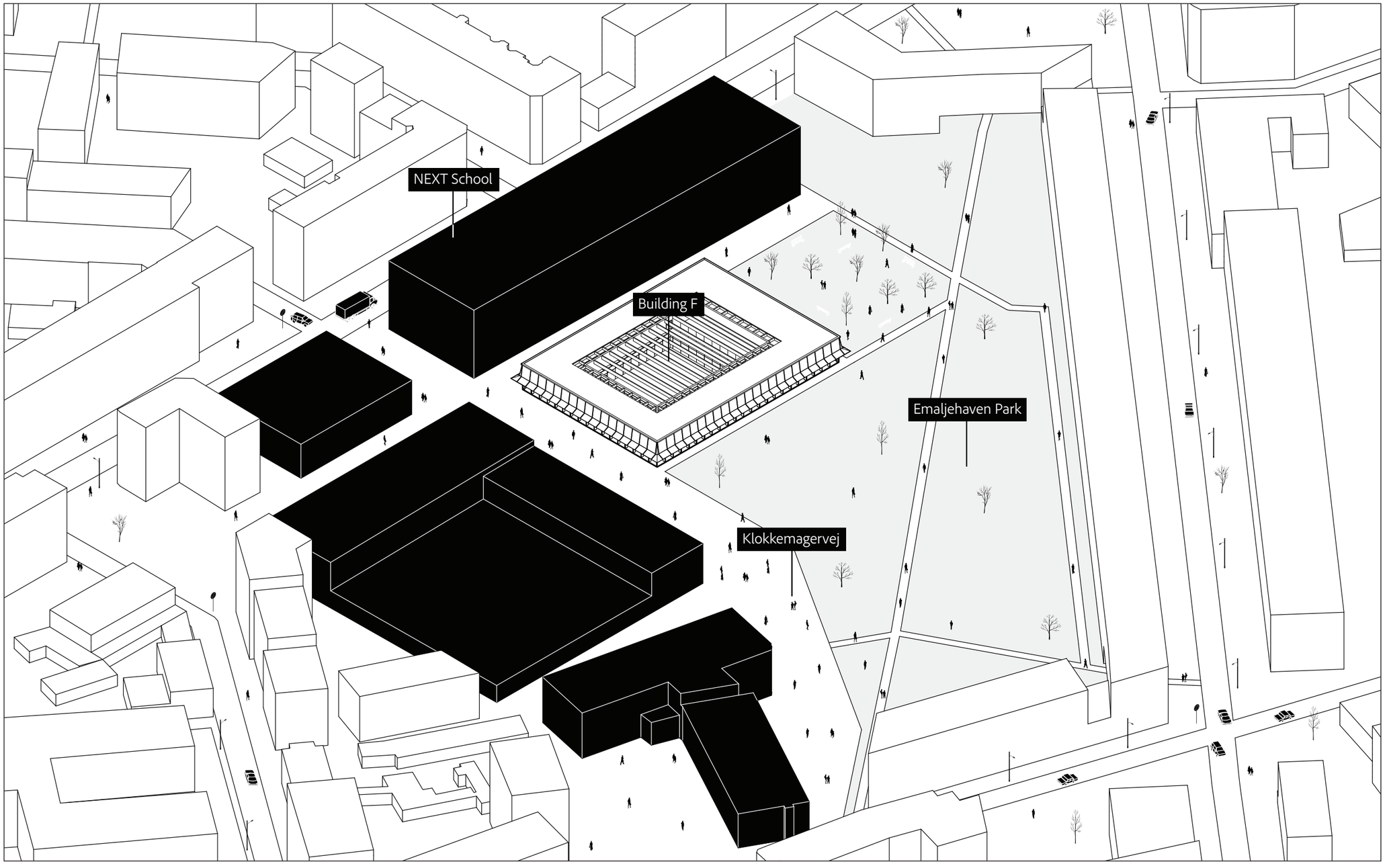
Guiding Theme

Spatial Concept

CONDENSING CRAFT



URBAN DIAGRAM

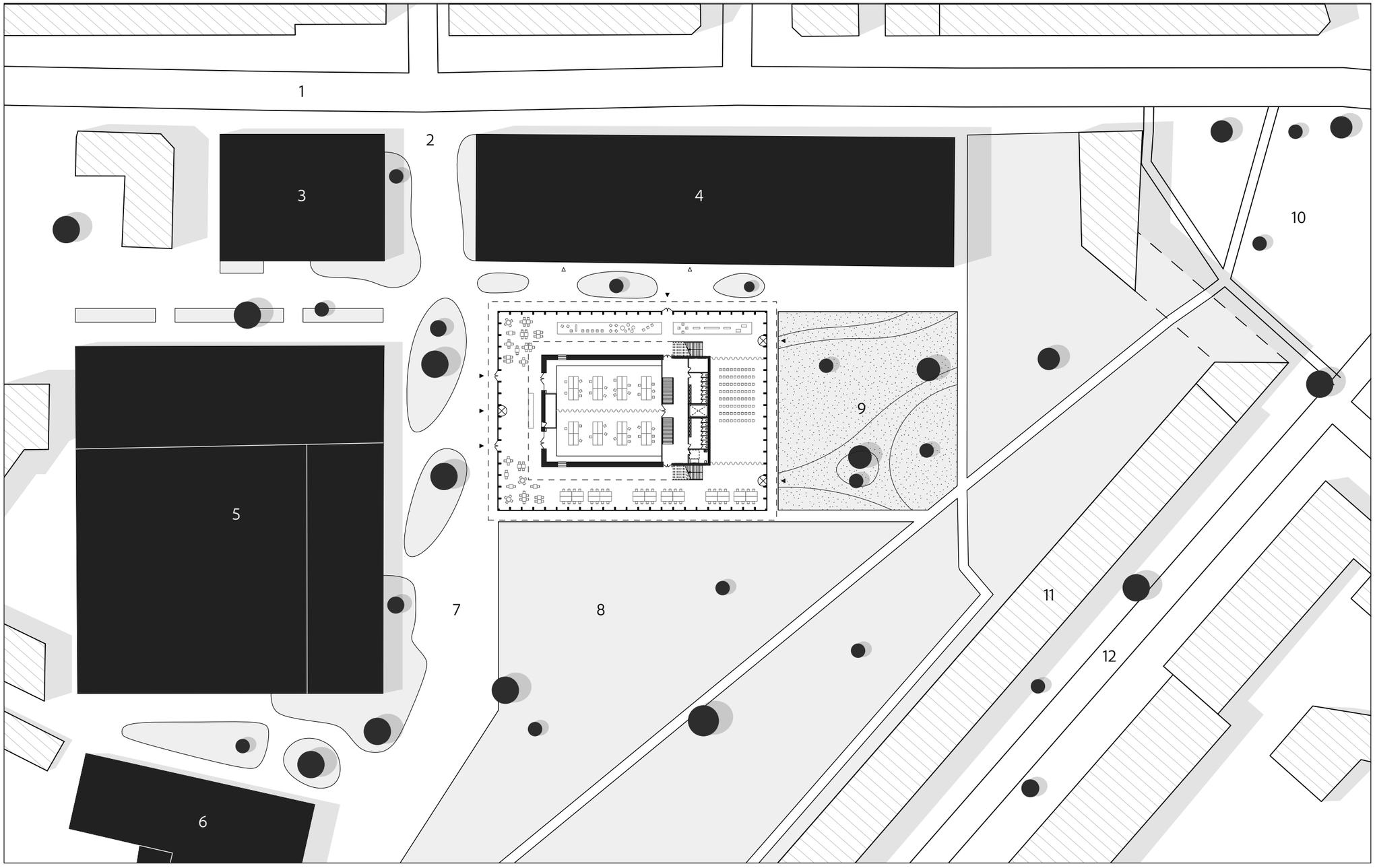


Impression

KLOKKEMAGERVEJ APPROACH



URBAN PLAN



1 Frederiksborgvej

2 Open West Entrance

3 Material Storage

4 Classrooms & Student Housing

5 Practice Academy

6 Classrooms and Canteen

7 Klokkemagervej

8 Emaljehaven Park

9 Craft Garden

10 Emaljehaven Square

11 Emaljehaven Mixed Housing

12 Rentemestervej

NEXT School

Green Space

Buildings

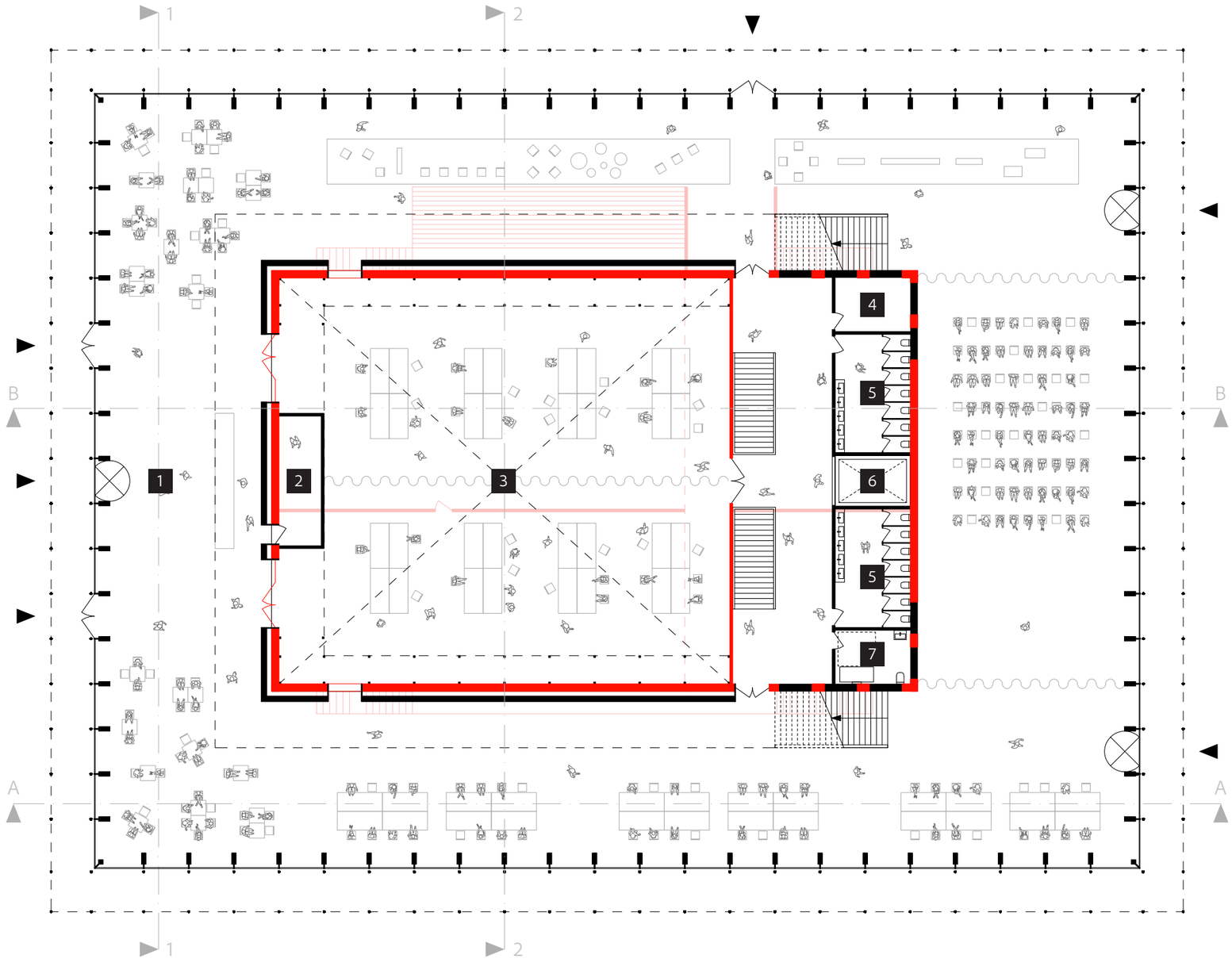
Impression

WEST FACADE



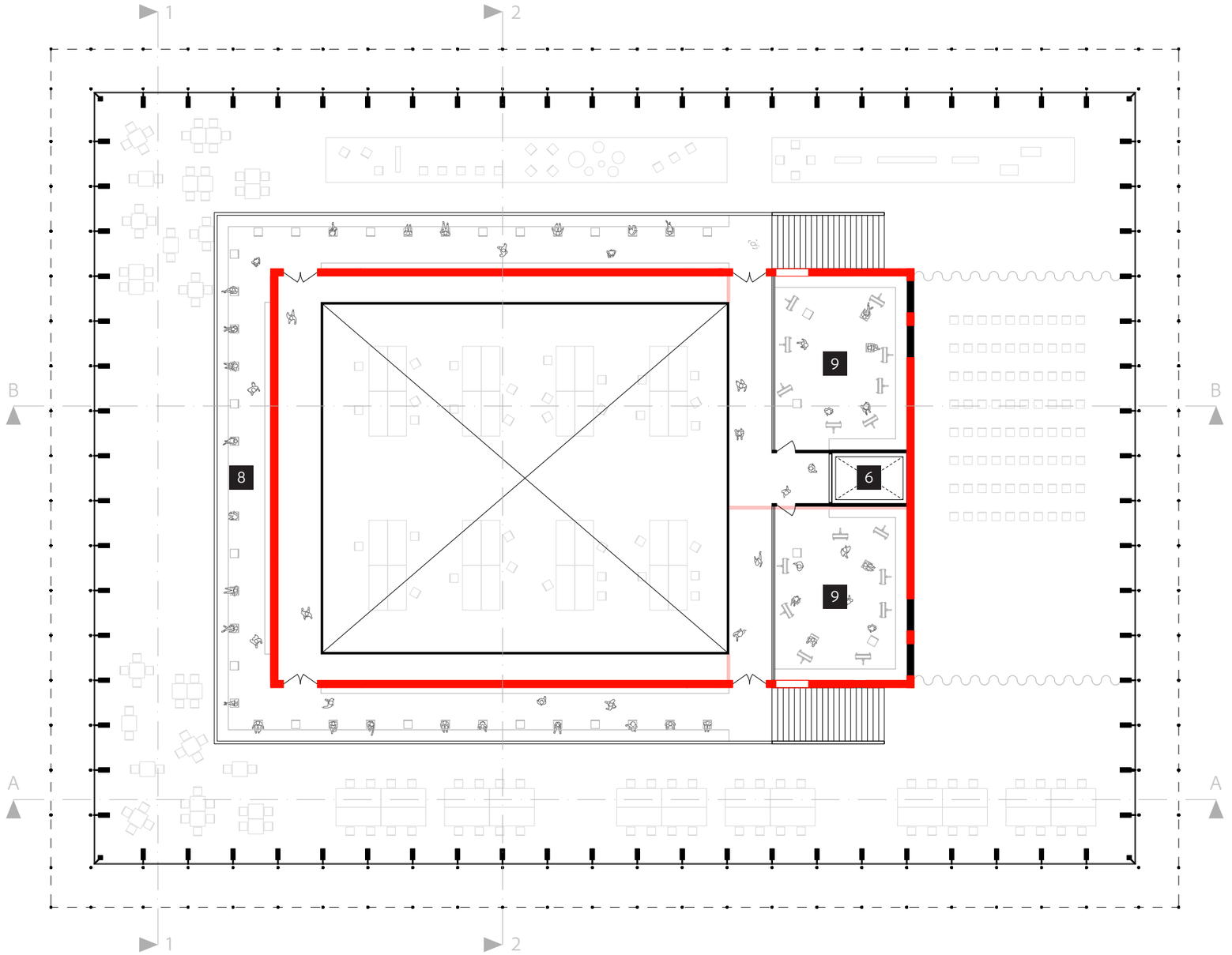
GROUND FLOOR

1 Adaptive Arcade
2 Café Storage
3 Craft Workshop
4 Utility Room
5 Toilet
6 Freight Elevator
7 Changing Places Toilet
8 Study Platform
9 Art Workshop
10 Storage & Archive
11 Technical Workshop
12 Technical Space



FIRST FLOOR

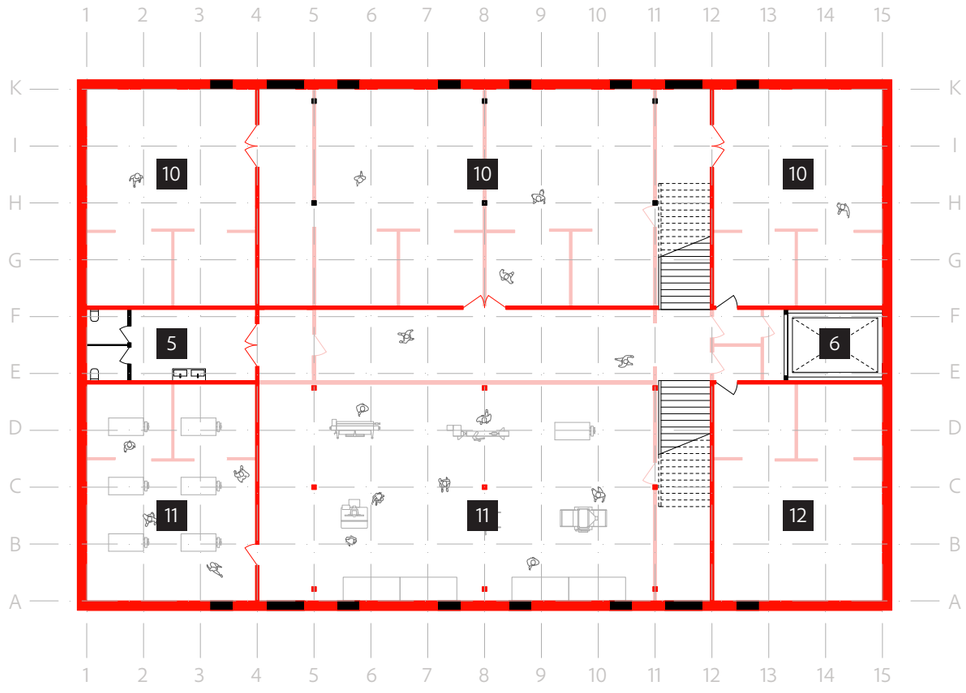
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Preserved
Removed
Added

BASEMENT FLOOR

1 Adaptive Arcade
2 Café Storage
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4 Utility Room
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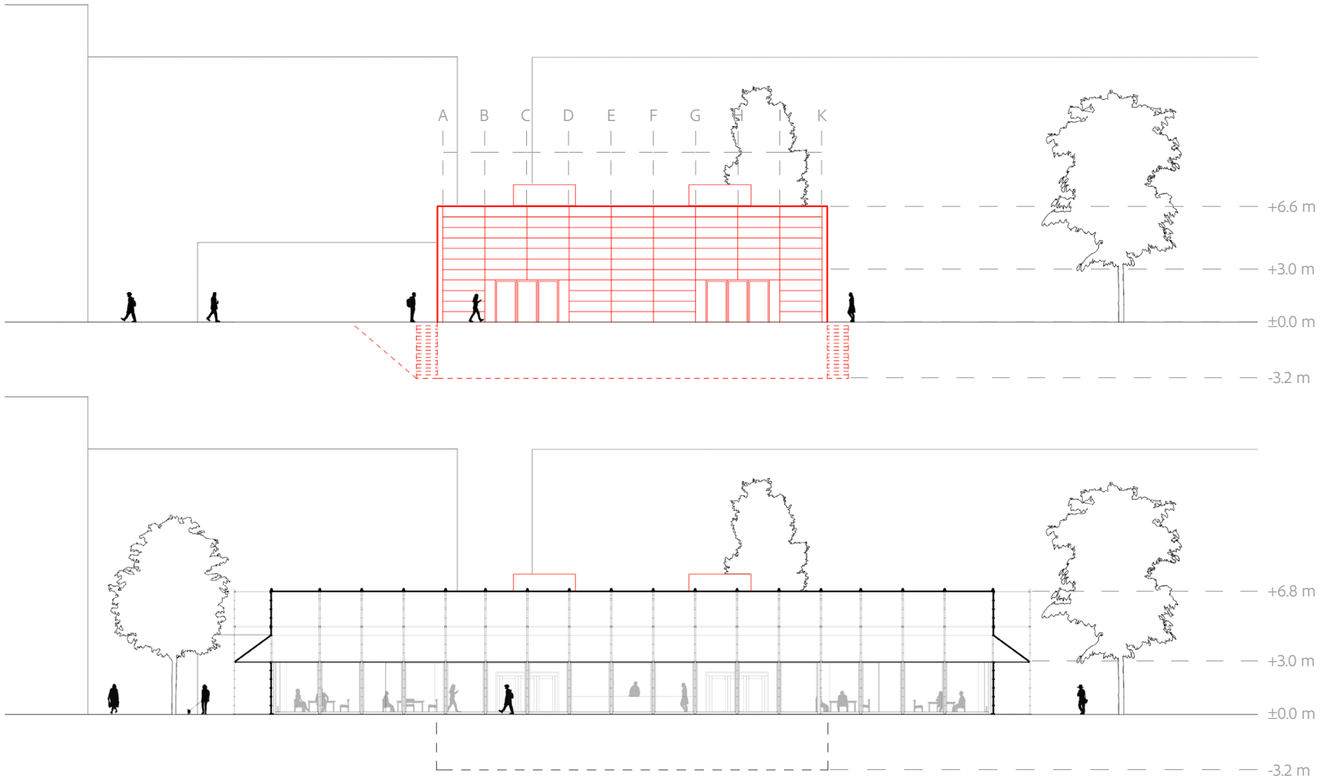


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Elevations & Sections

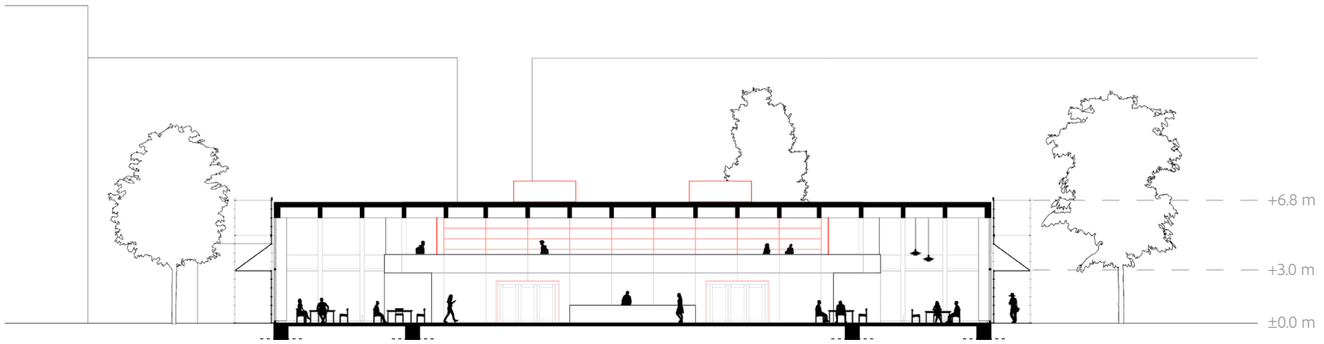
TRANSVERSE DRAWINGS

South Elevation, Existing

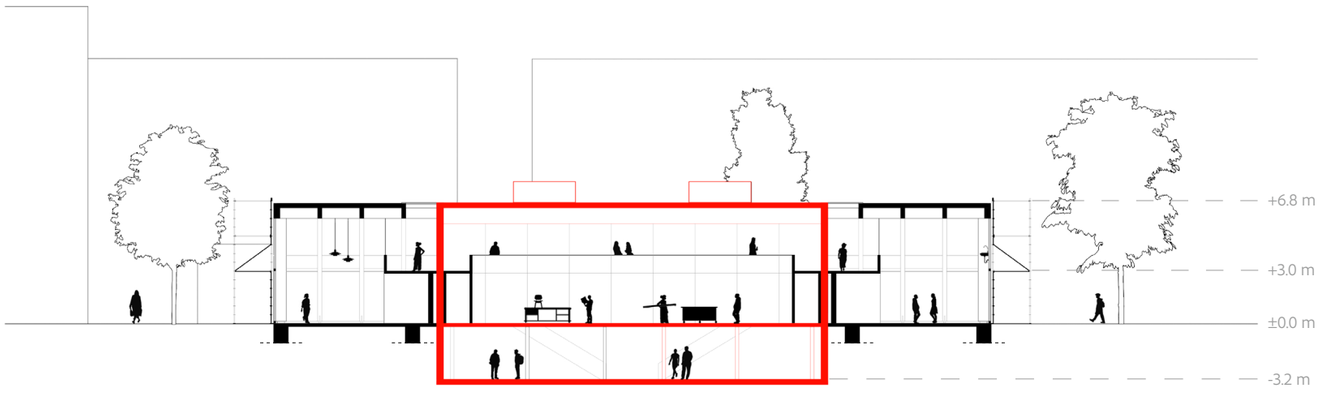


South Elevation, Proposal

Section 1-1



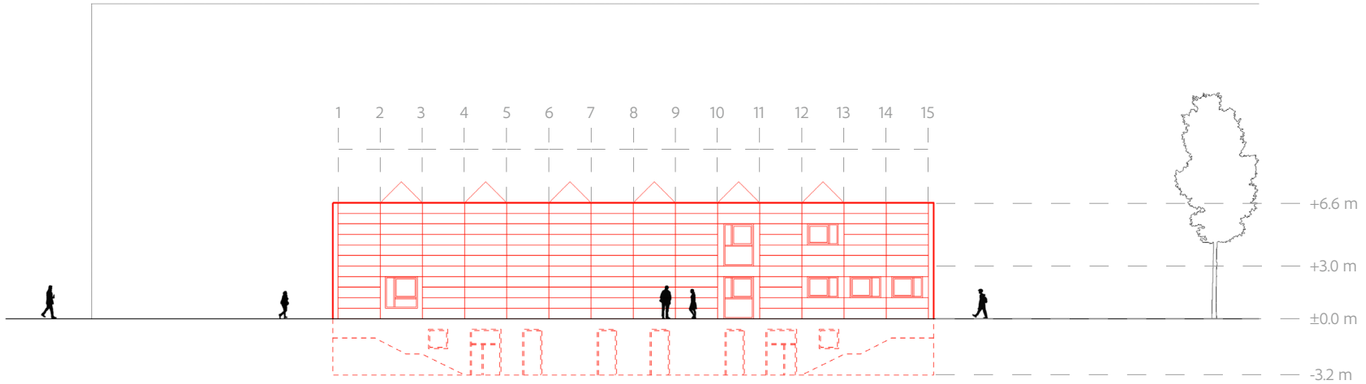
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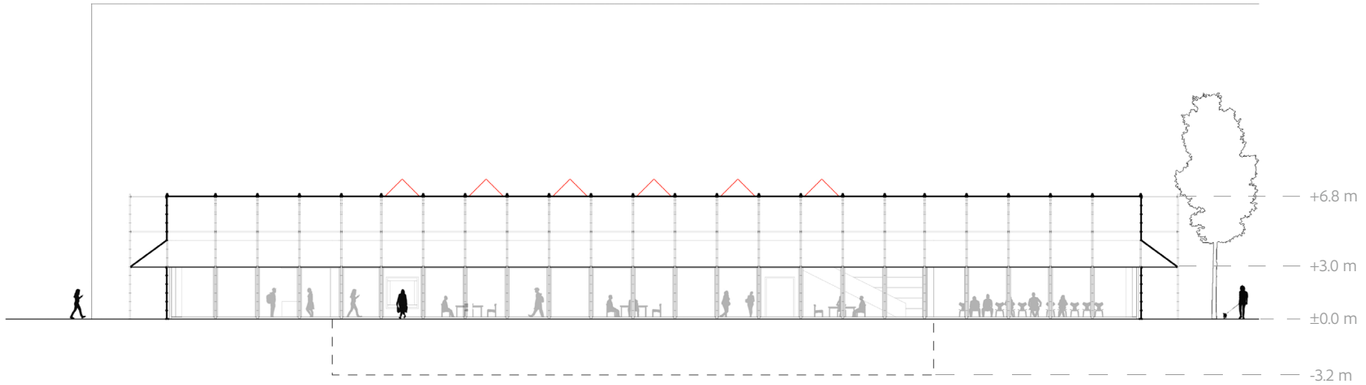
Elevations & Sections

LONGITUDINAL DRAWINGS

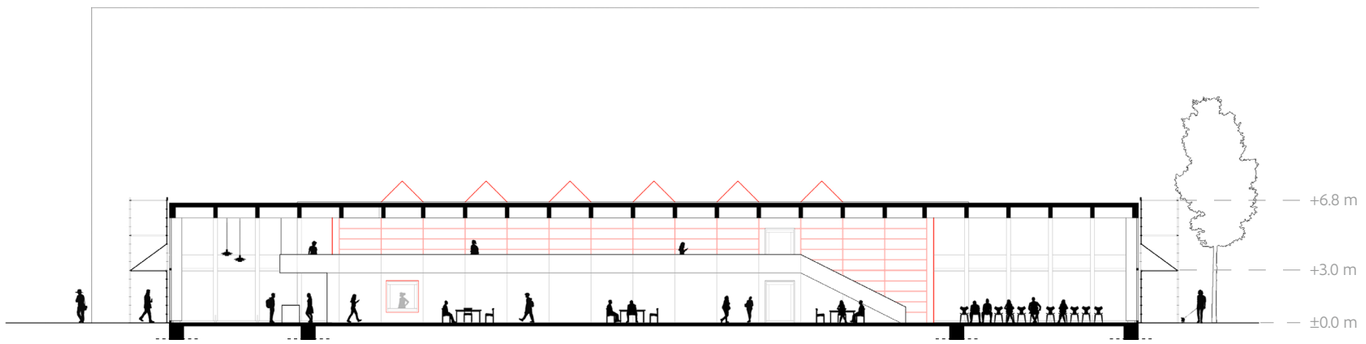
East Elevation, Existing



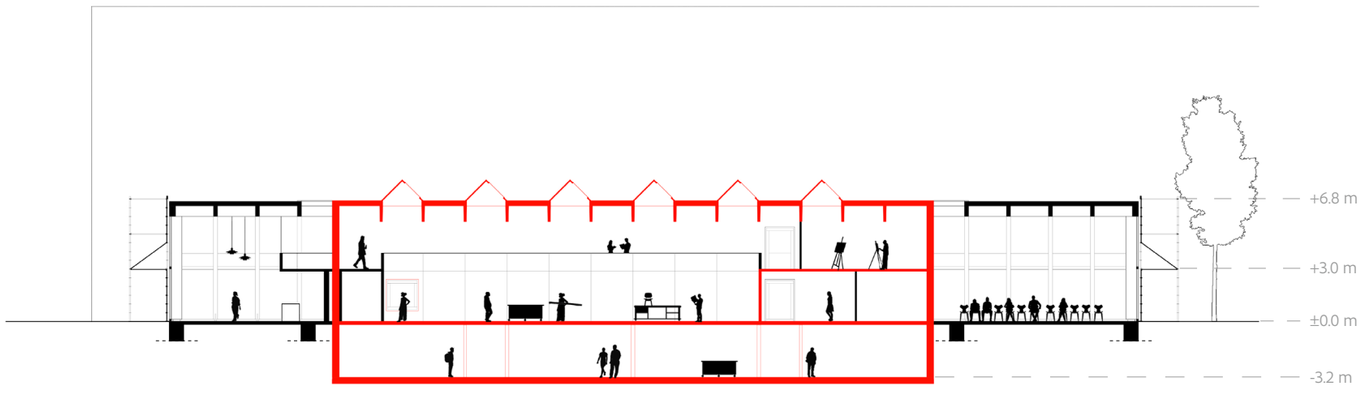
East Elevation, Proposal



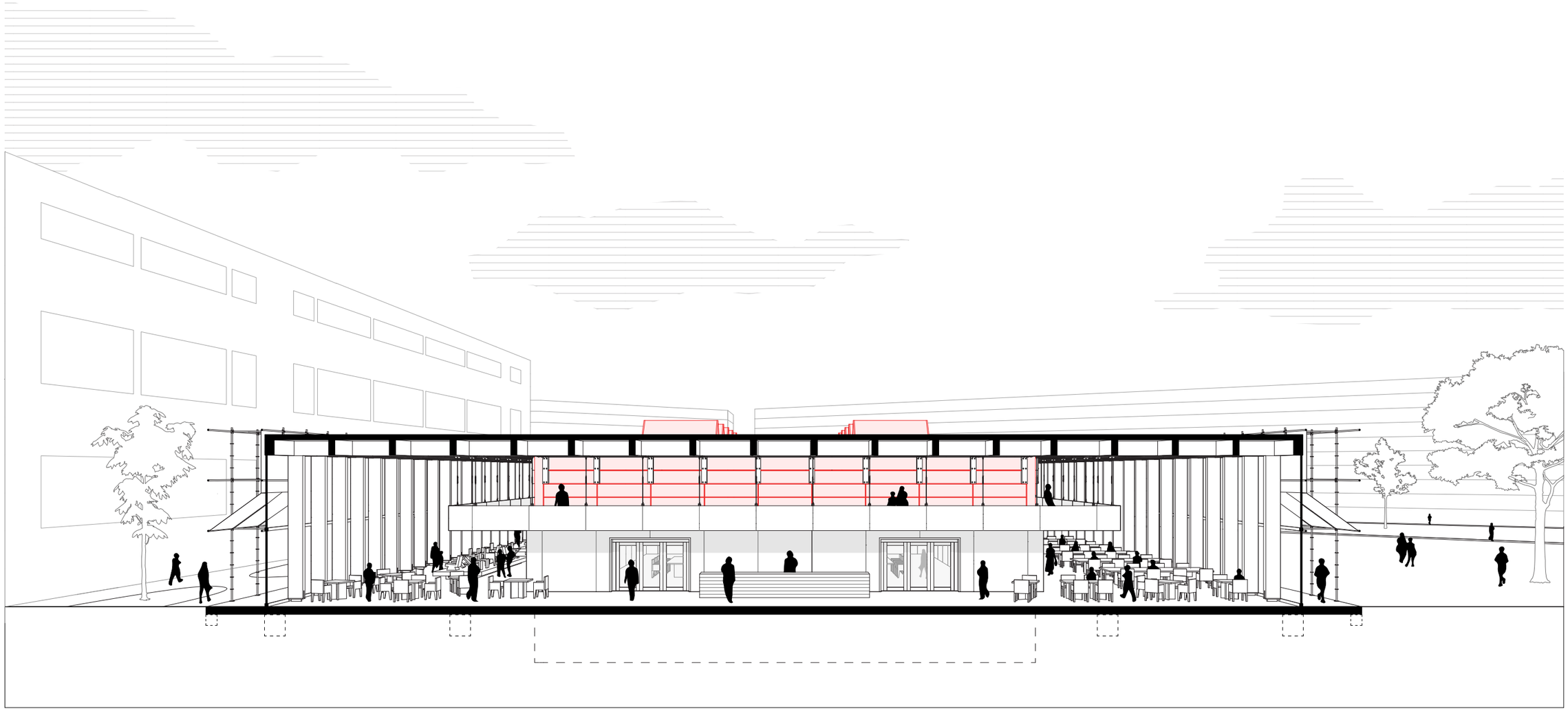
Section A-A



Section B-B



PERSPECTIVE SECTION



Section 1-1

Impression

SOUTH ENTRANCE



Impression

WORKSHOP SPACE

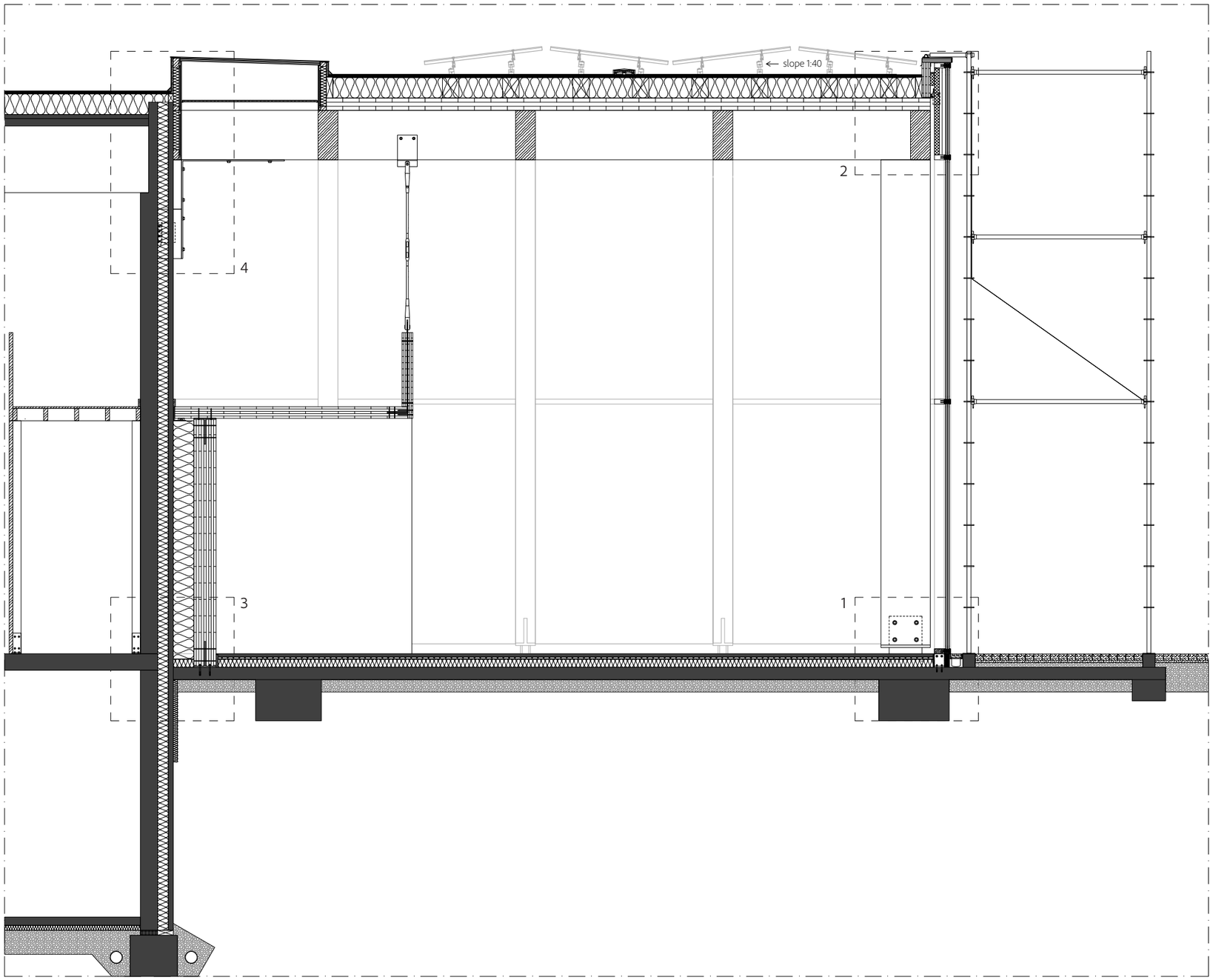


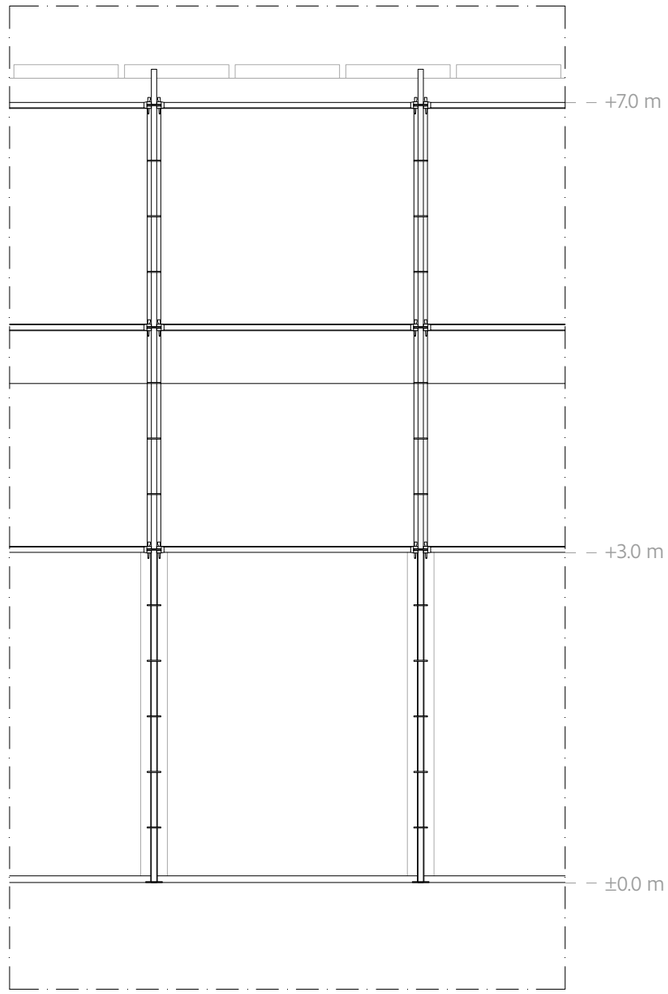
Impression

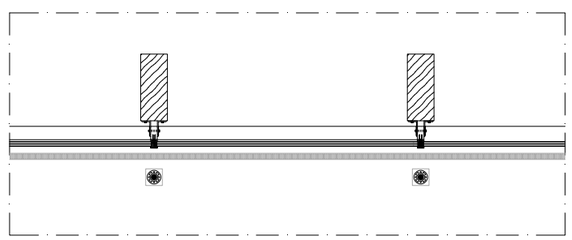
ADAPTIVE ARCADE



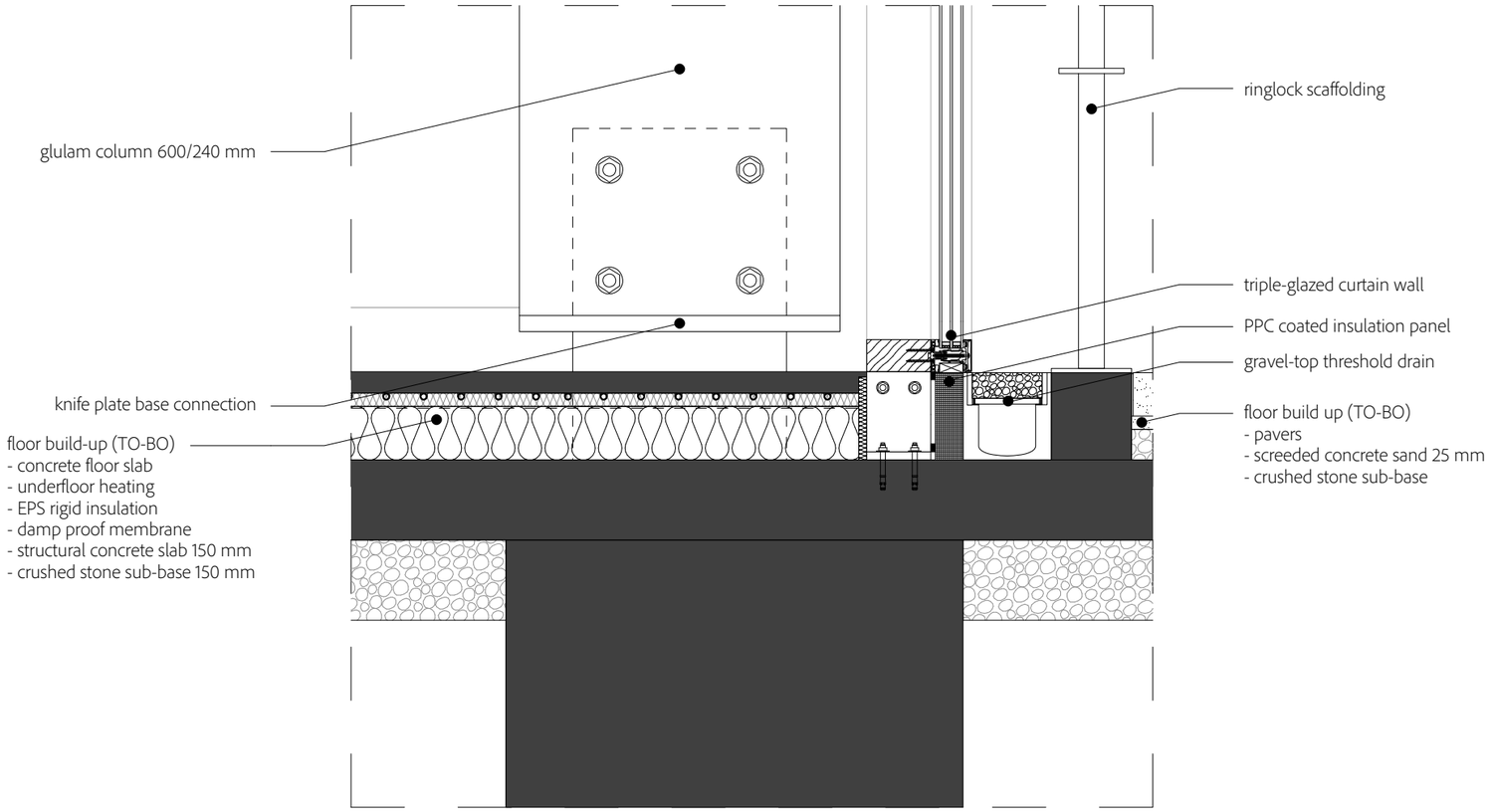
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DRAWING



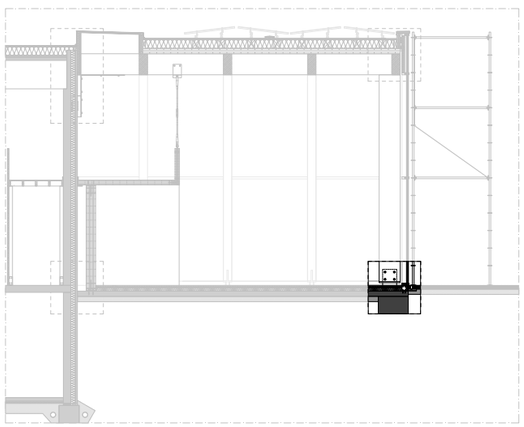




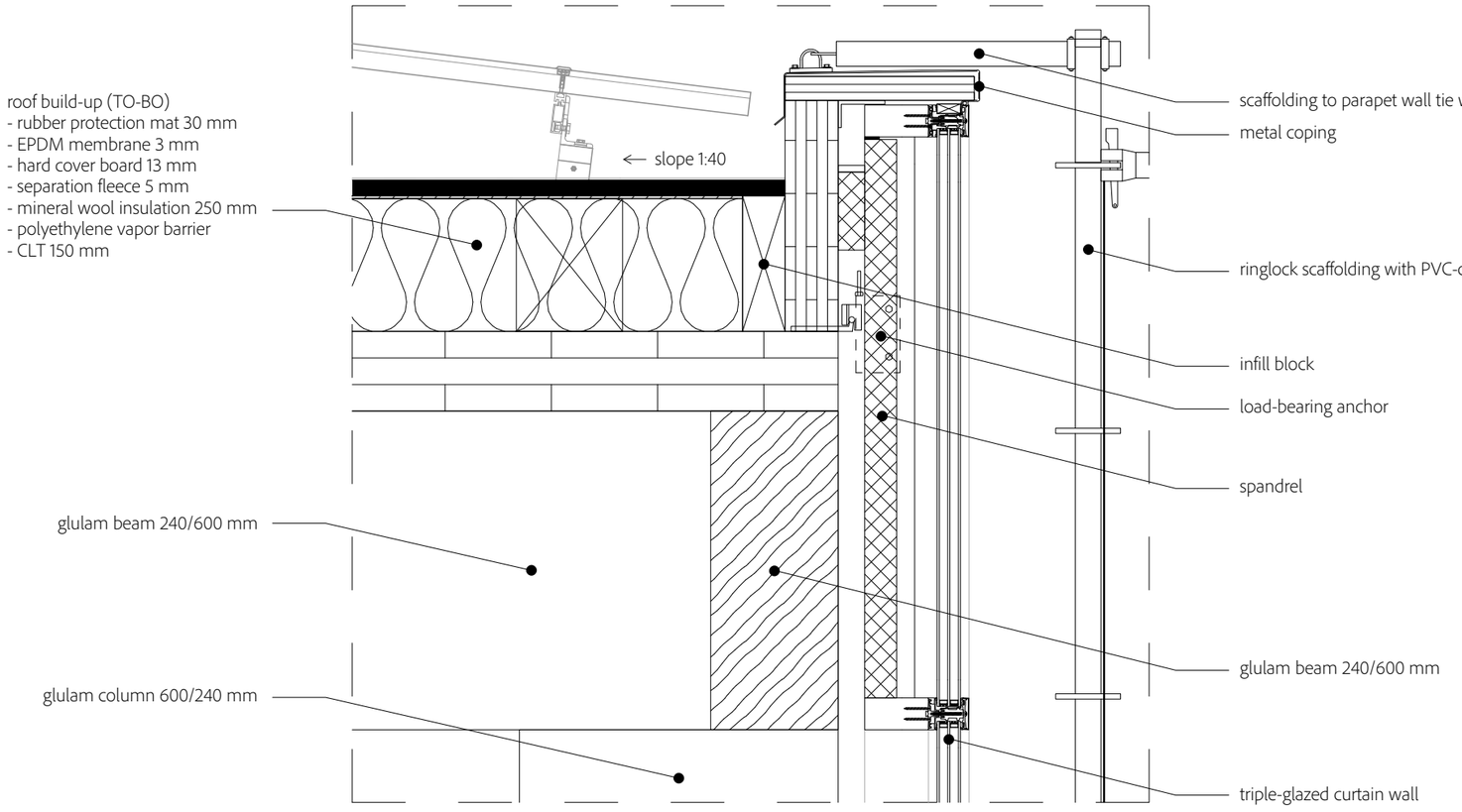
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DRAWINGS



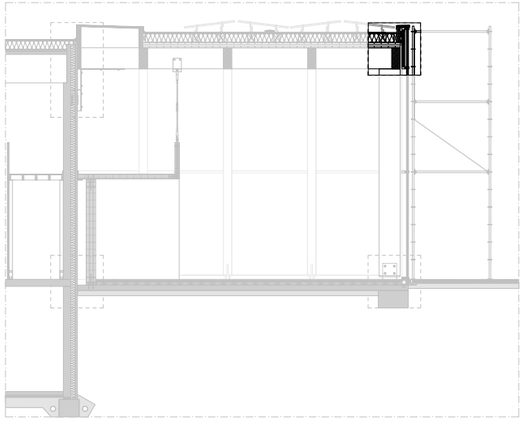
Detail 1



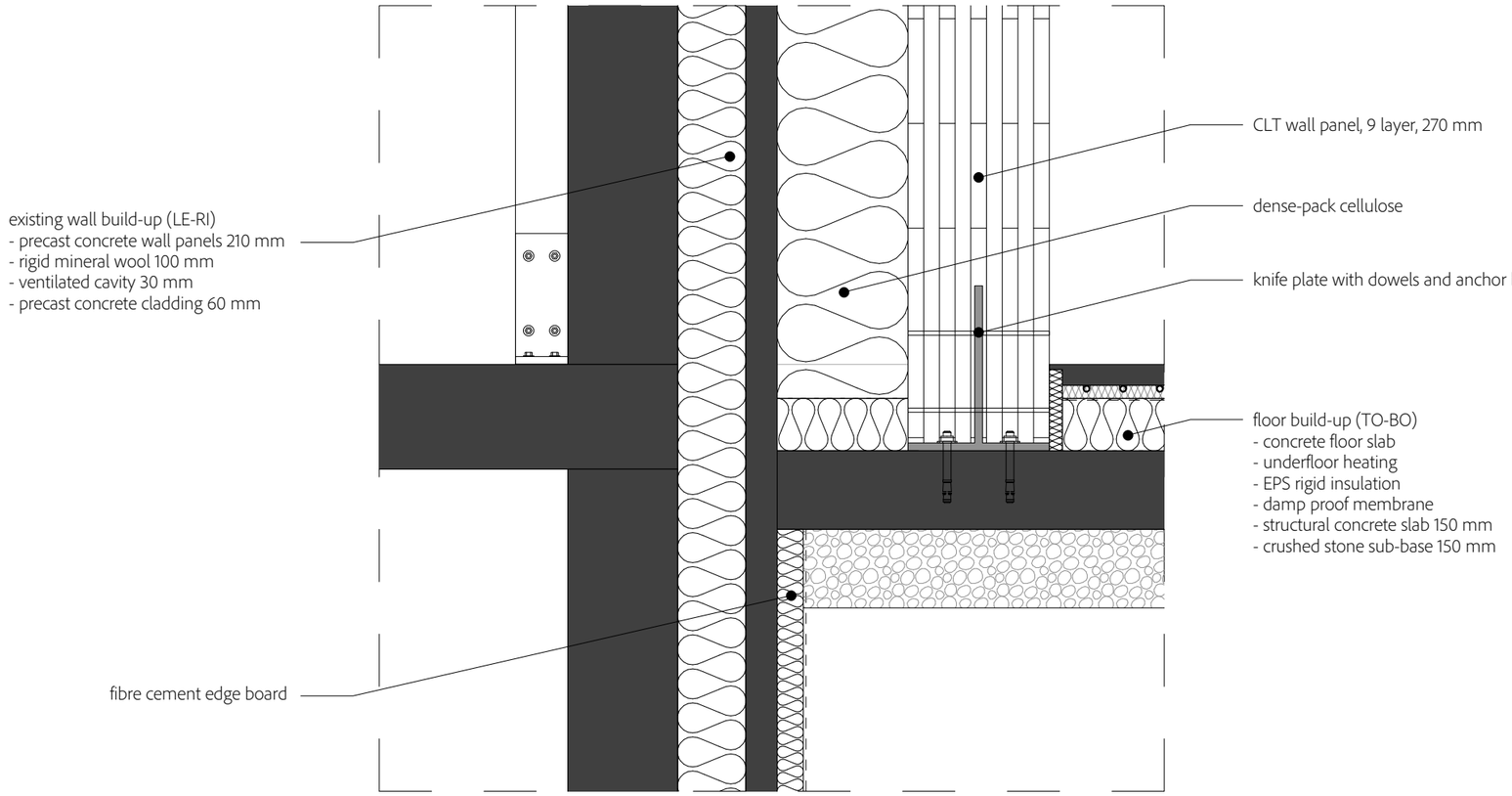
1:5
DRAWINGS



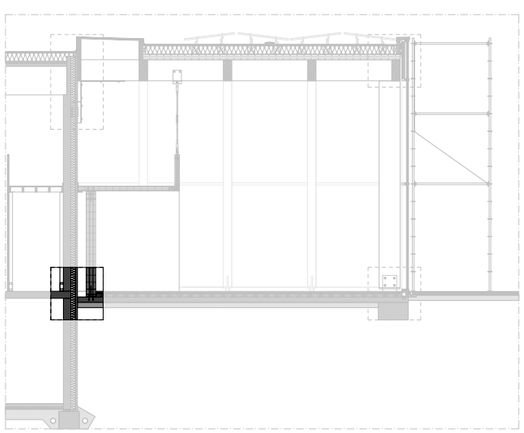
Detail 2



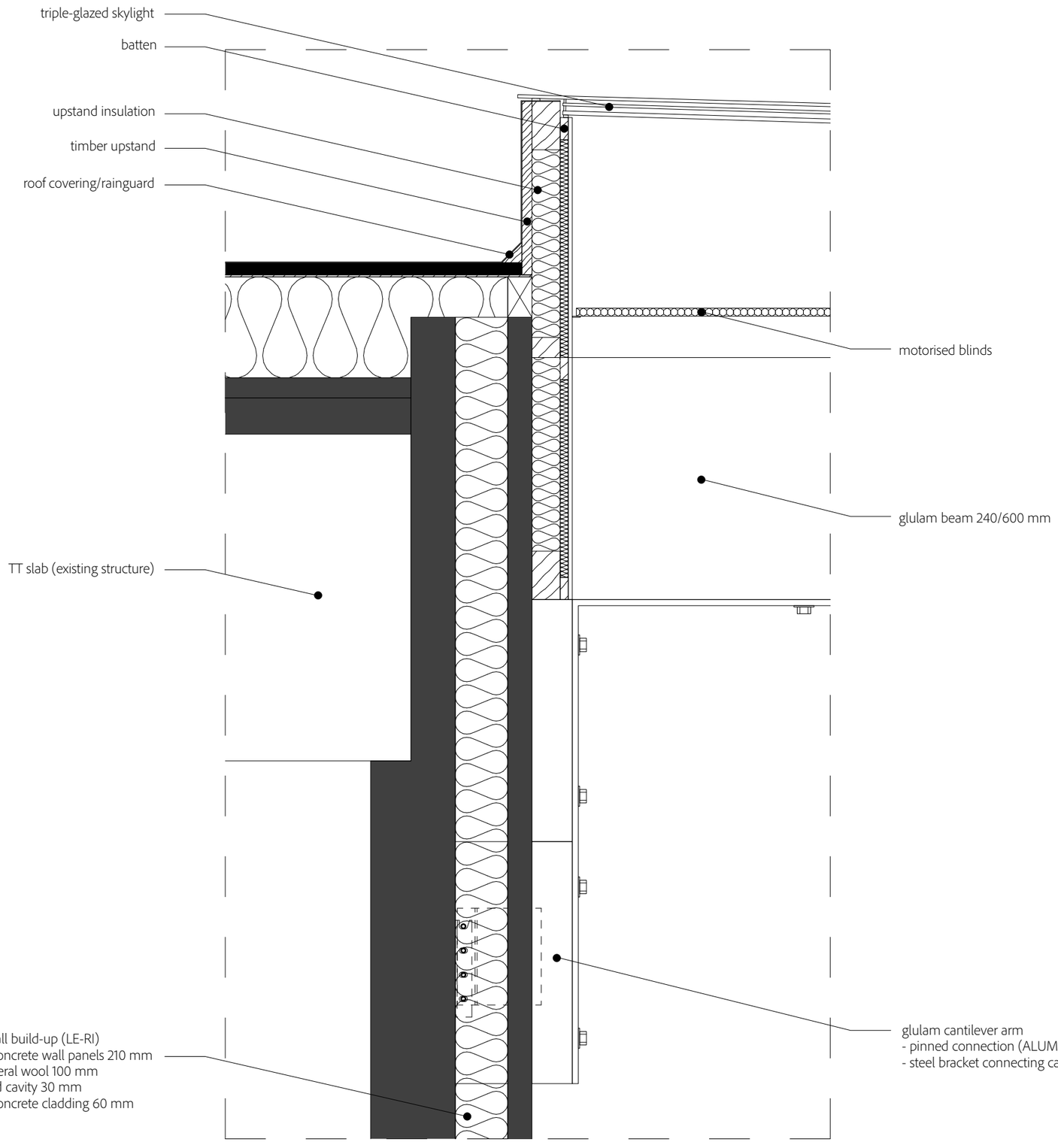
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DRAWINGS



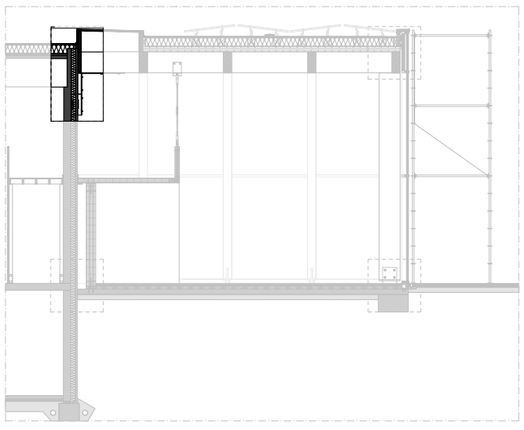
Detail 3



1:5 DRAWINGS



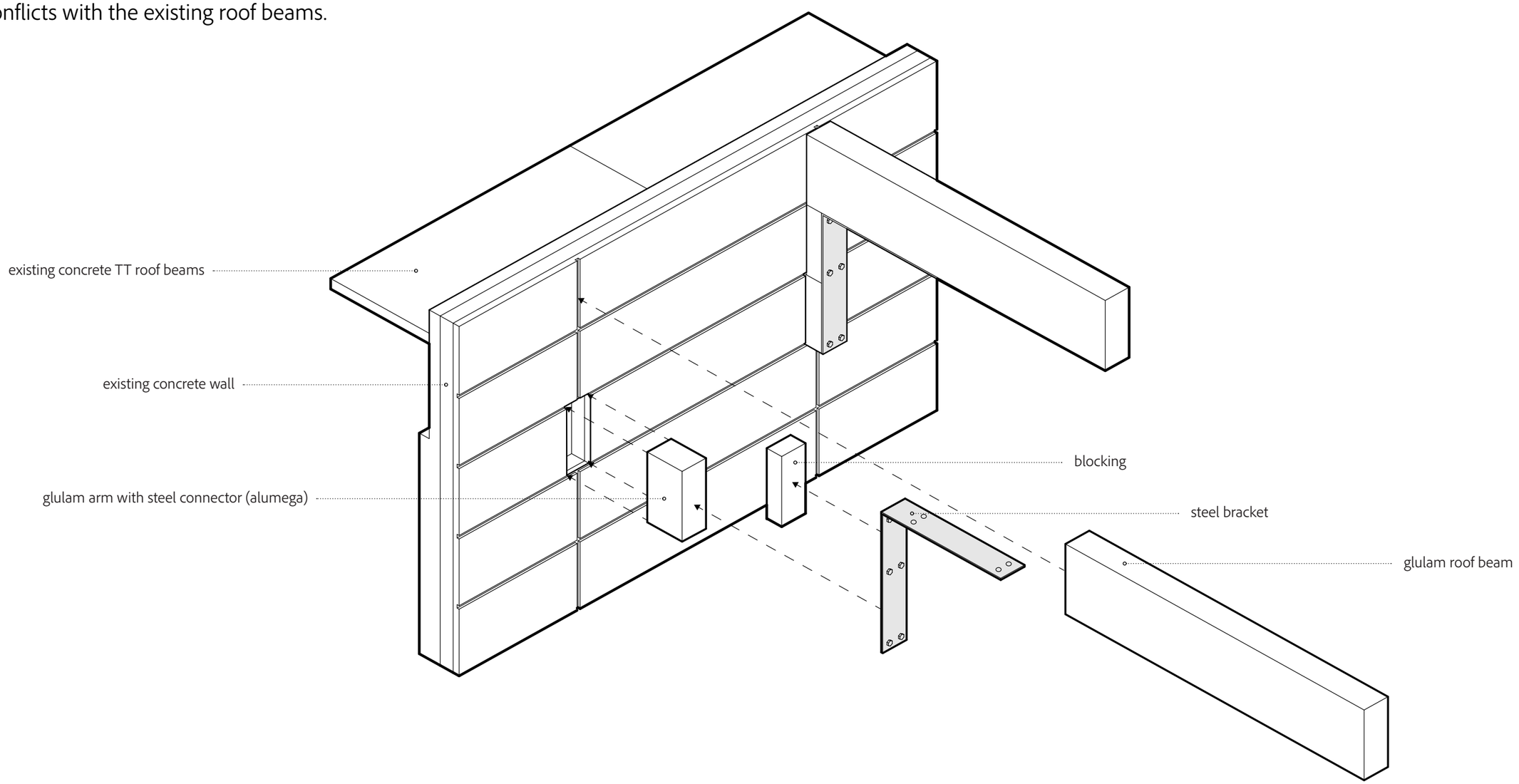
Detail 4



Construction Diagram

ROOF BEAM CONNECTION

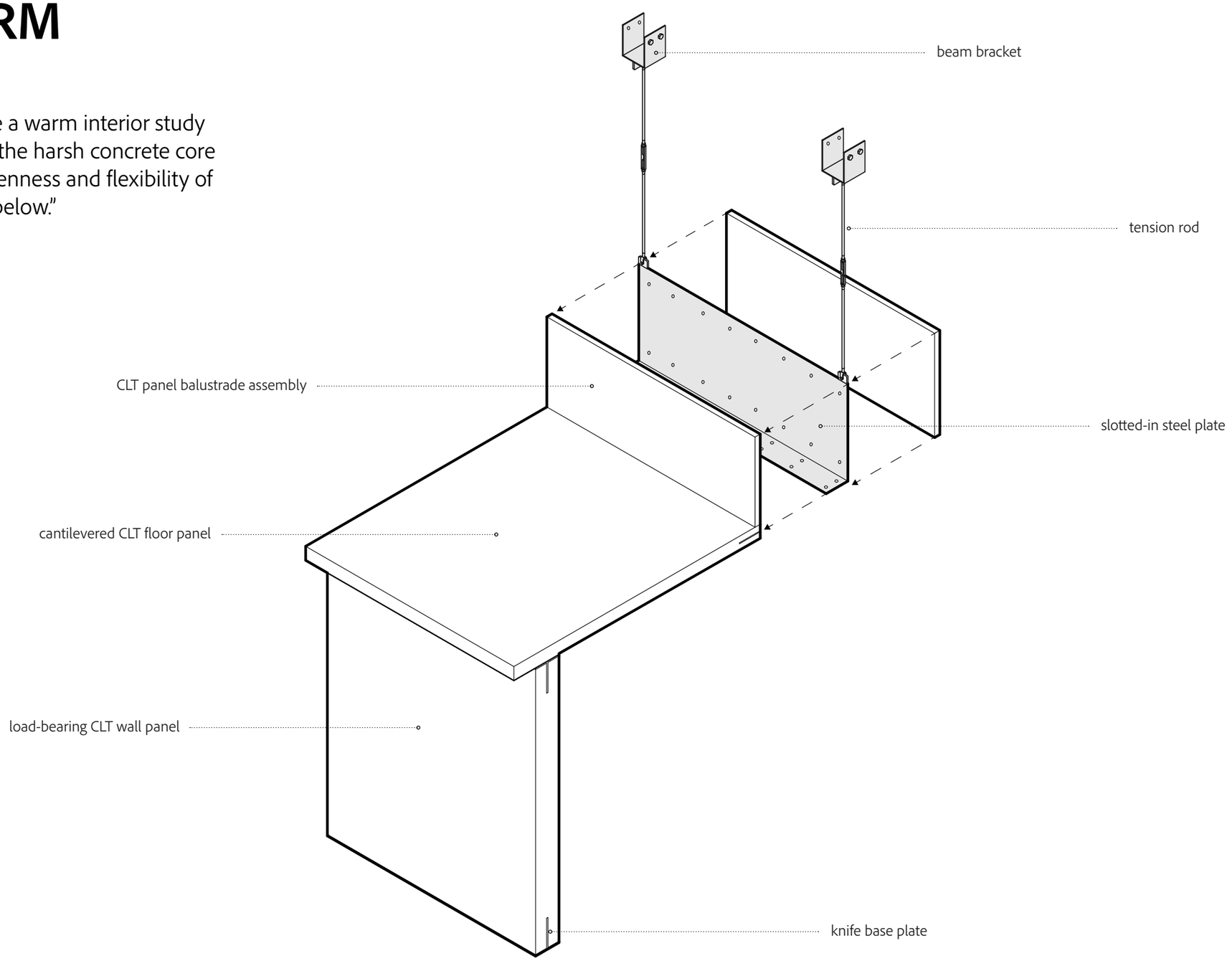
The challenge was to connect the new structure to the existing, while achieving adequate headroom on the first floor and avoiding conflicts with the existing roof beams.



Construction Diagram

SEMI-CANTILEVERED PLATFORM

The aim was to create a warm interior study platform that softens the harsh concrete core and preserves the openness and flexibility of the adaptable space below."



Impression

ADAPTIVE ARCADE



Impression

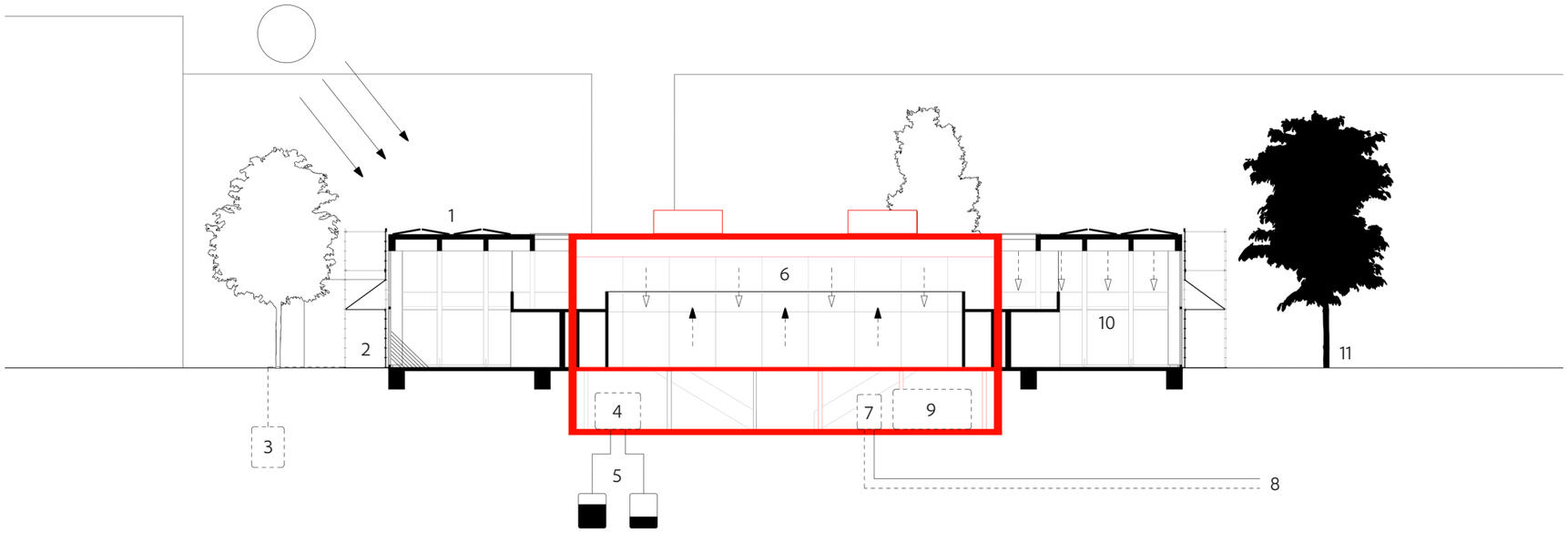
STUDY PLATFORM



CLIMATE DIAGRAMS

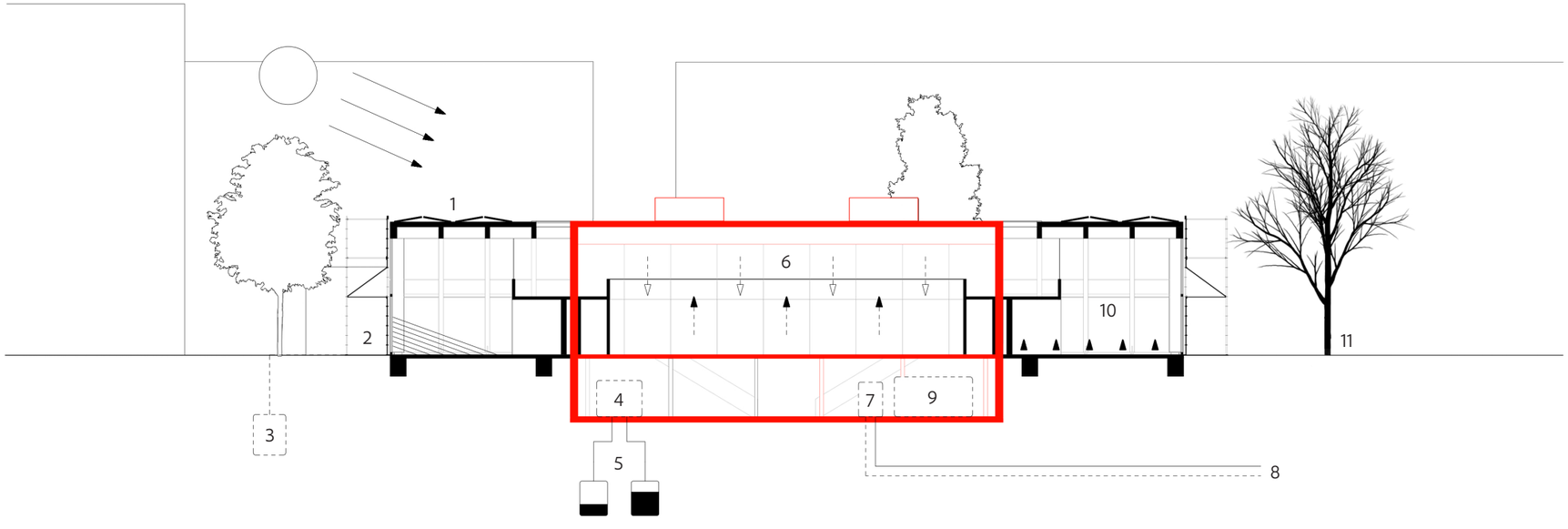
Summer Diagram

1 Energy Production: Solar Panels (East-West)
2 Daylighting/Shading: Passive Shading Strategy
3 Water Management: Rainwater Harvesting & Reuse
4 Ground Source Heat Pump
5 Seasonal Ground Storage
6 Mechanival Ventilation (MVHR)
7 Heat Exchanger
8 District Heating
9 Air Handling Unit
10 Active Cooling via AHU (Heat Pump)
11 Green Space Expansion (UHI, Shading)



Winter Diagram

1 Energy Production: Solar Panels (East-West)
2 Daylighting/Shading: Passive Shading Strategy
3 Water Management: Rainwater Harvesting & Reuse
4 Ground Source Heat Pump
5 Seasonal Ground Storage
6 Mechanival Ventilation (MVHR)
7 Heat Exchanger
8 District Heating
9 Air Handling Unit
10 Underfloor Heating and Air Heating via AHU
11 Green Space Expansion (UHI, Shading)



COMMUNITY IN THE *MAKING*

Transforming a Vocational School Building in Bispebjerg into a Public Condenser

