

Manutencao Militar Complex, Lisbon
Discolosing the military city

BRIDGING THE BORDER

connecting MMC to its context across the border

P5 presentation, Jessie Dong
Tutors: Job Roos, Marieke Kuipers, Wido Quist
Heritage & Architecture

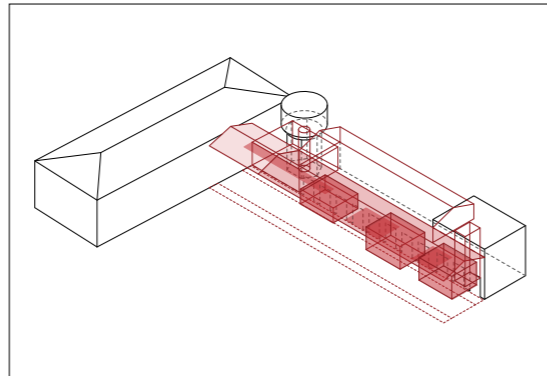
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- 1 Conclusion of research
Problem statement**



Urban scale

- 2 Strategy
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Concept**



Ensemble scale

- 3 Elaborated design**



Building scale

- 4 Reflection**



1

CONCLUSION OF RESEARCH

PROBLEM STATEMENT

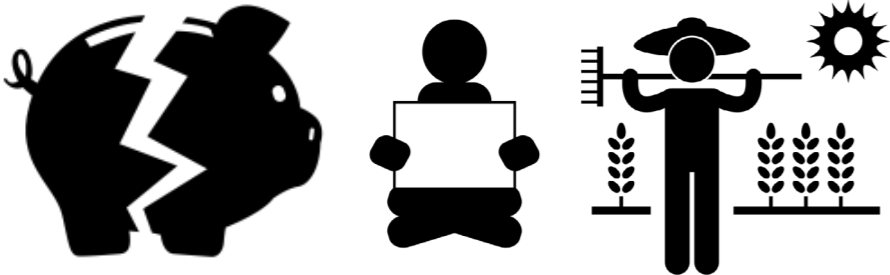
BORDER FRICTION

How to open up an enclosed industrial heritage to its context while respecting its introverted character?

CONTEXT

Requirement of economic alternative

Poverty, farming



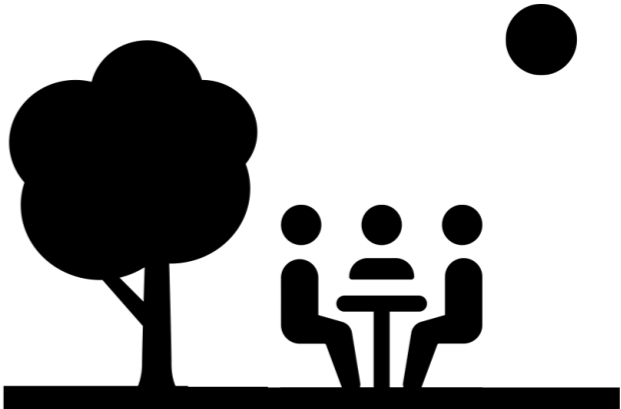
Lack of social interaction

Limited space for social activity



Deficiency of public space

no park or central square for events



MMC

Economic center of Beato

MMC is an industrial world hidden behind the border,
which totally differs from the narrative of neighborhood.

Buildings for industrial production are surrounded by the
border.



MMC

Bond of social cohesion

MMC is the everyday working place of its inhabitants, which offered jobs and welfare to the neighbors. It has friendly architectural expression on its border.

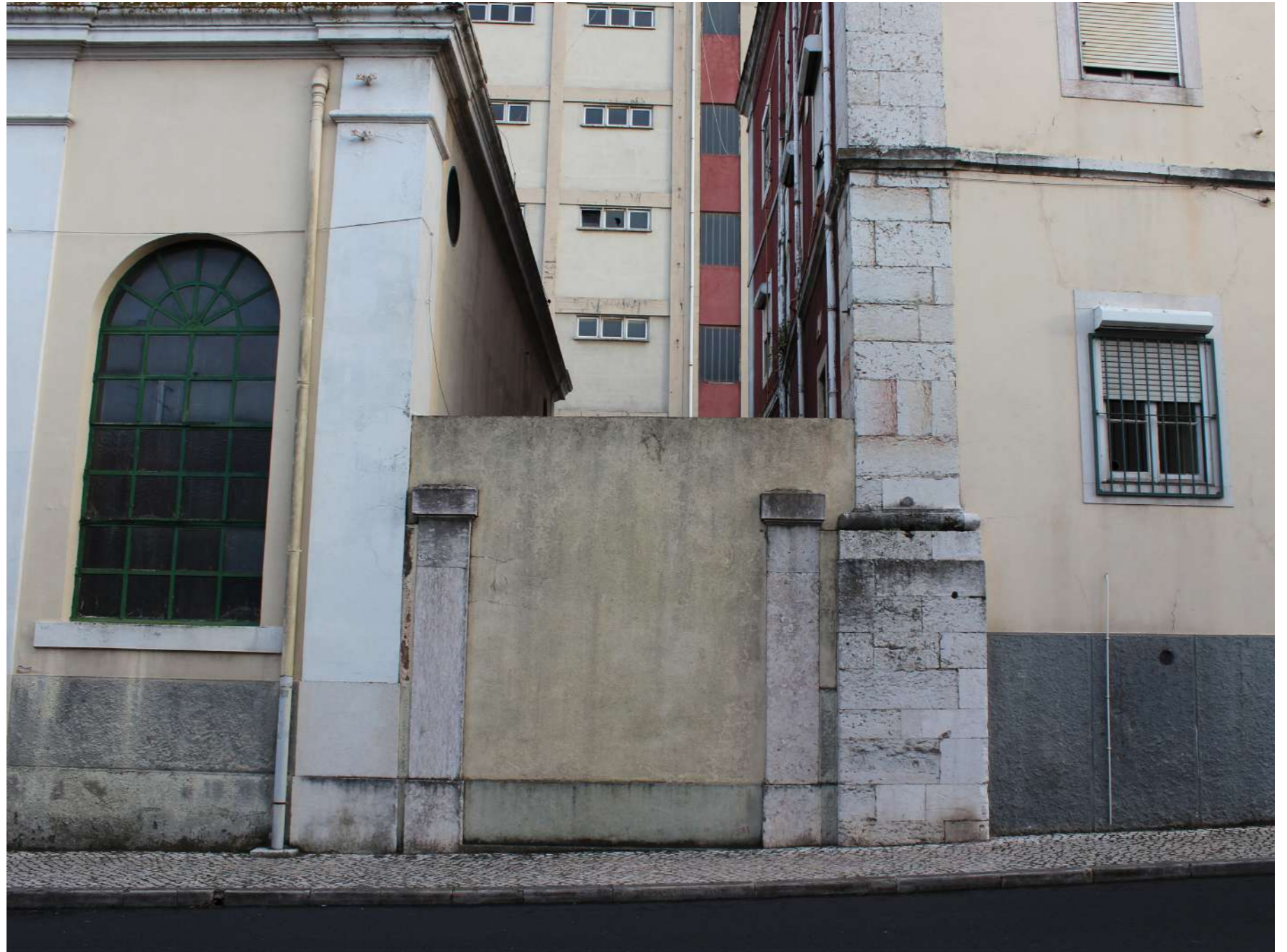


MMC

Introverted enclosure

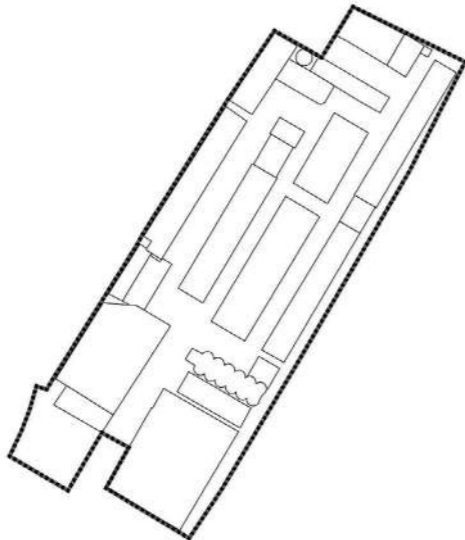
The continuous border of MMC marked its military industrial function in its history, which relates to the Portugal recent history.

The main component of border on the neighbors' street side is monumental architectural facade.

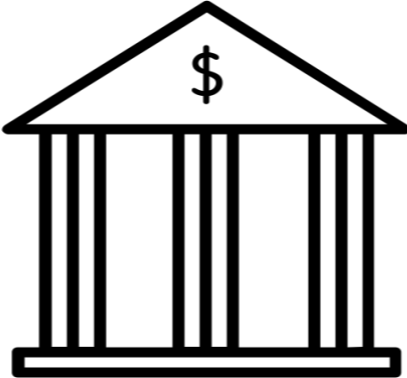


MMC CHARACTER

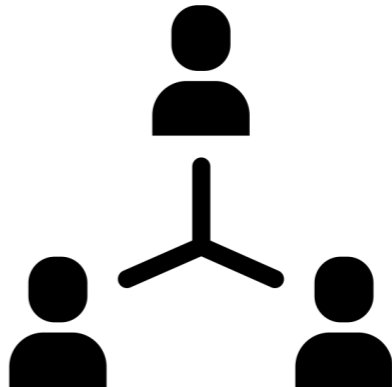
Introverted enclosure



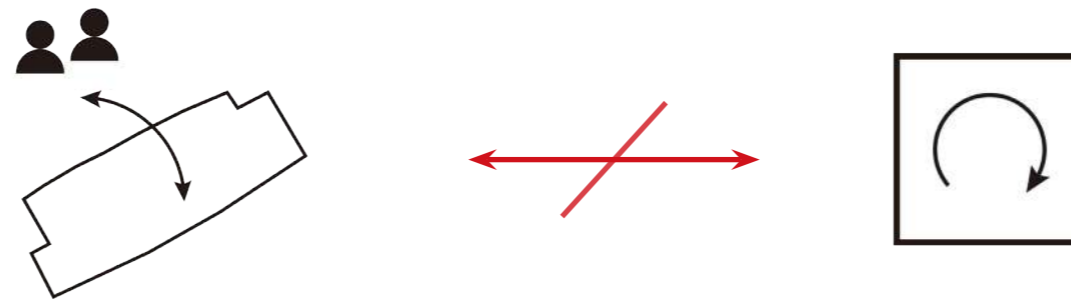
Economic center of Beato



Bond of social cohesion

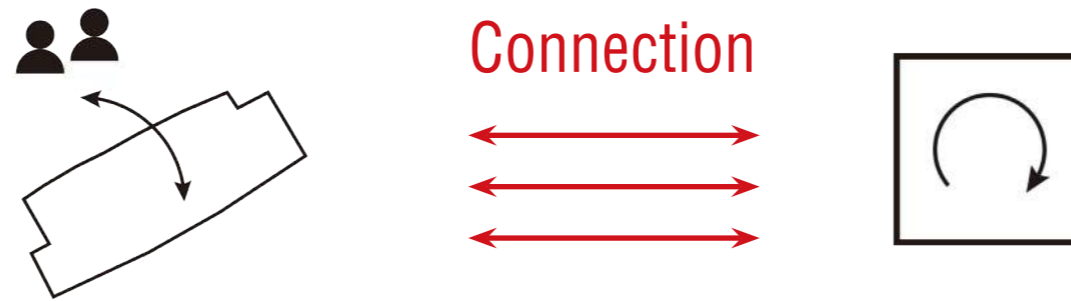


PROBLEM STATEMENT



Conflict between the **requirement of opening up** and the **introverted site spirit**

DESIGN PRINCIPLE



Connecting MMC to its context across its border from social, economic, spatial aspects

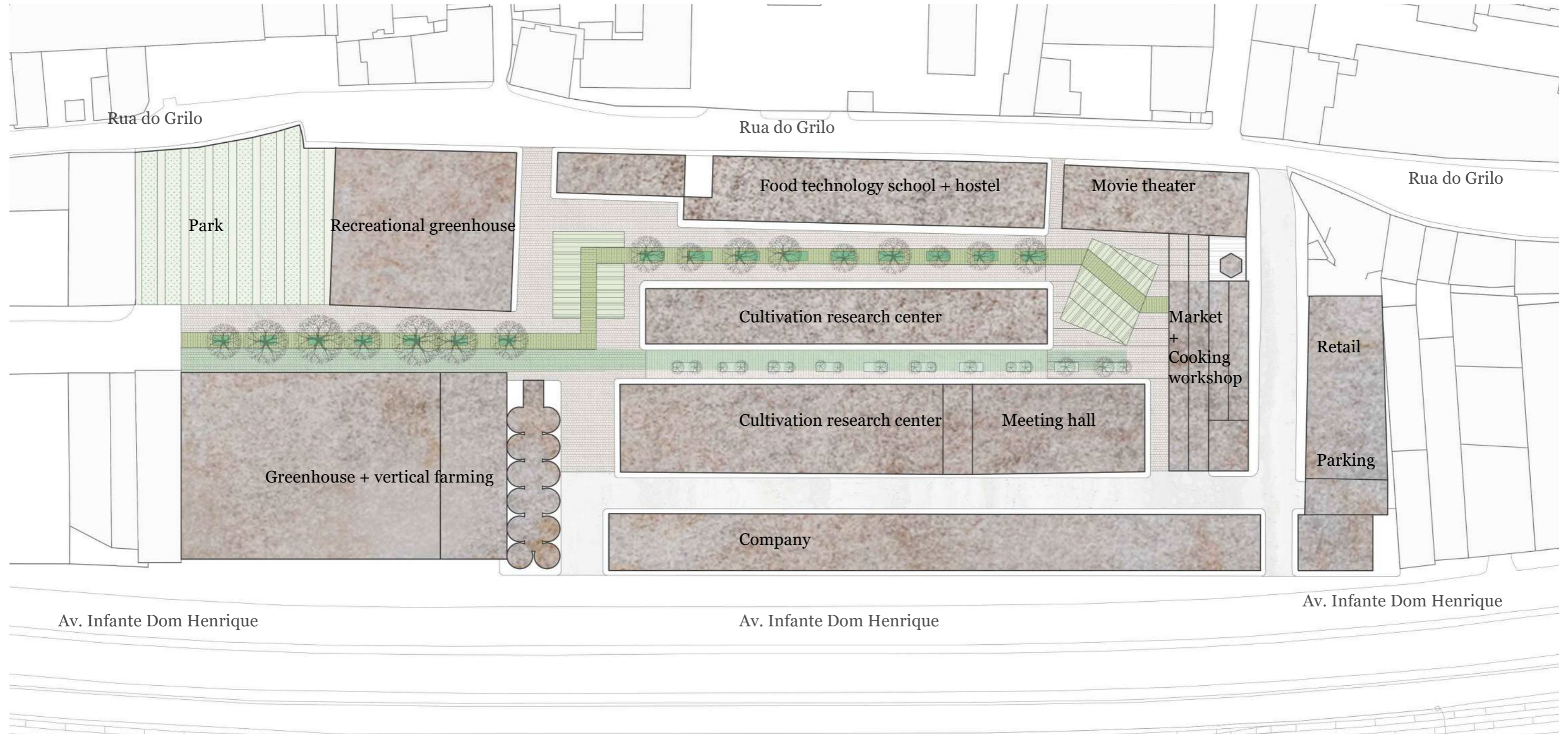
while

developing the introverted site spirit within its border.

PRINCIPLE AND STRATEGY

Principle	Justification	Inspiration	Masterplan scale strategy
<p>Connecting MMC to its context from social, economic, spatial aspects</p>	<p>MMC was the social economic center of territory in its history. The current dilemmas of Beato are the result of its disconnection.</p>	<p>The previous producing part of MMC is of industrial scale. It locates next to the high speed road of the city on the Tagus river side.</p> <p>Monumental MMC is of intimate scale both interior and exterior, which faces with the neighborhood.</p>	<p>Economic alternative in industrial MMC(connection to city and territory);</p> <p>Social function in monumental MMC(connection to local community)</p>
<p>Developing its introverted site spirit within its border</p>	<p>The introverted enclosure of MMC represents the military industry function which relates to the recent Portugese history.</p>	<p>The border divided two distinct space narrative: the common space of community everyday life, the dysfunctional industrial production.</p> <p>The industrial MMC is hidden behind the border</p>	<p>Clarify the physical border of MMC;</p> <p>Enhance the distinction between outside and inside of MMC.</p>

MASTERPLAN



MASTERPLAN TRANSFORMATION

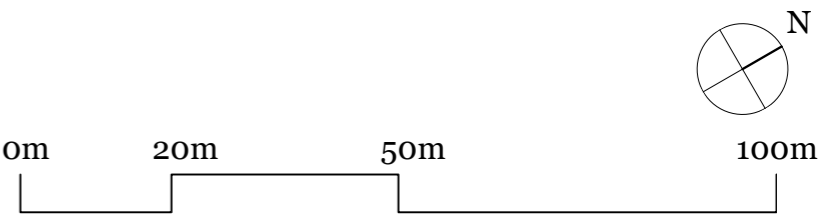
economic MMC



Av. Infante Dom Henrique

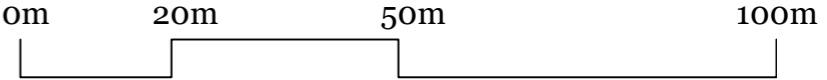
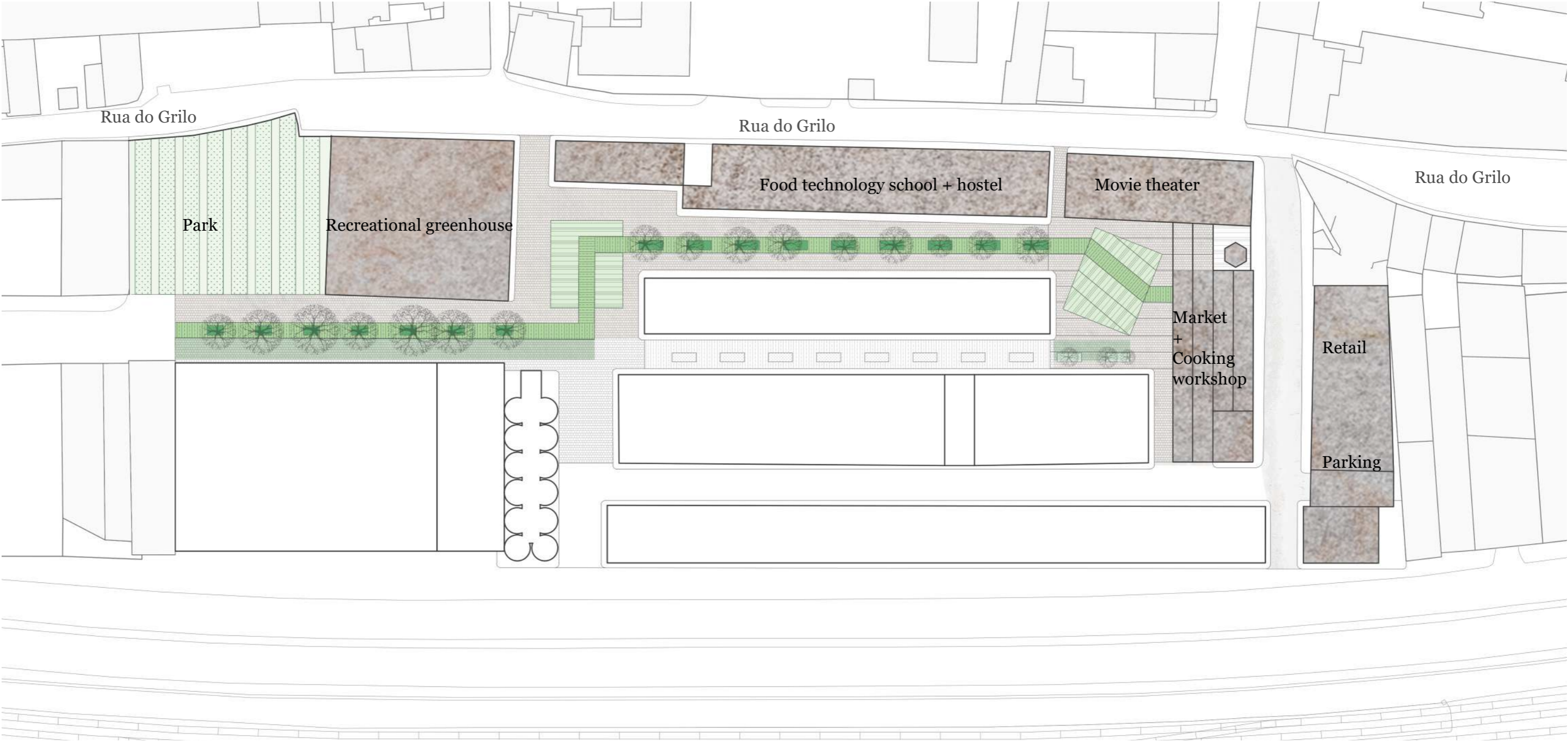
Av. Infante Dom Henrique

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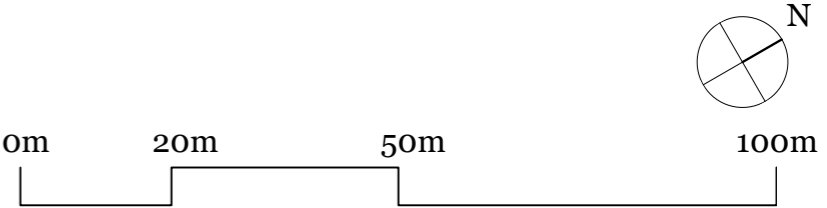
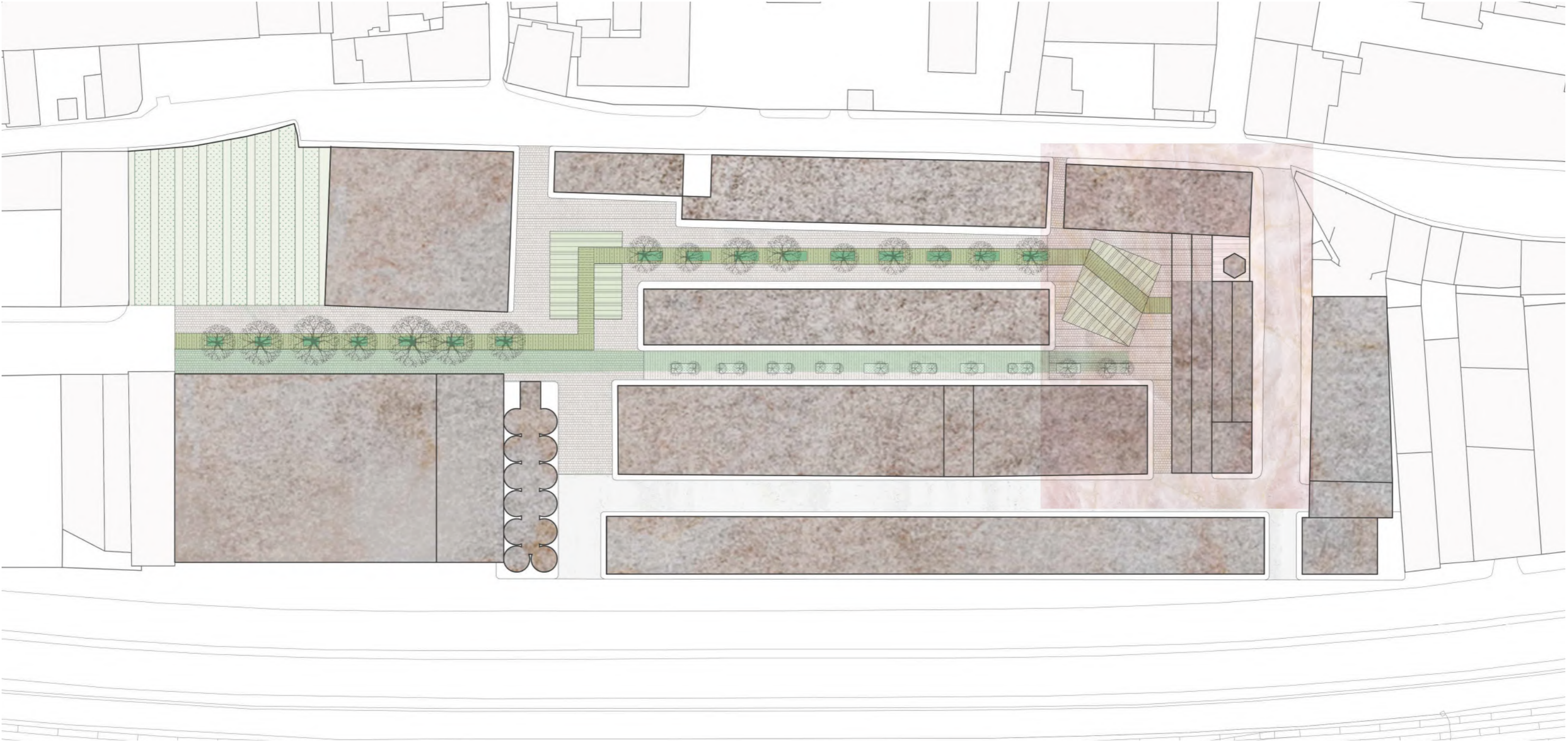
MASTERPLAN TRANSFORMATION

public mmc



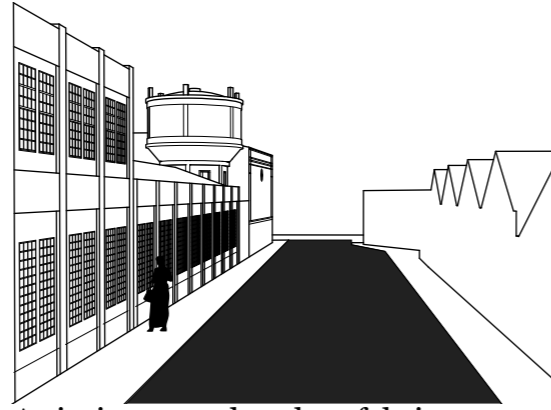
MASTERPLAN TRANSFORMATION

Task: Transforming entrance ensemble into a social intermediate zone that connecting local community and MMC from social and space scale while preserving the introverted character of site



QUALITY OF ENTRANCE ENSEMBLE

Urban interior



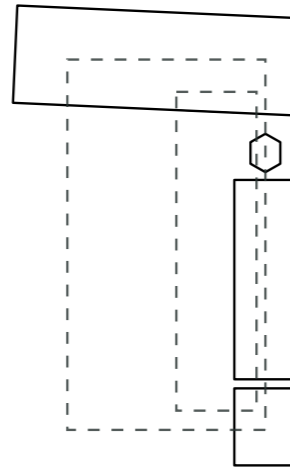
As intimate scale urban fabric



Workers' entrance since 1930



Collective place of the inhabitants



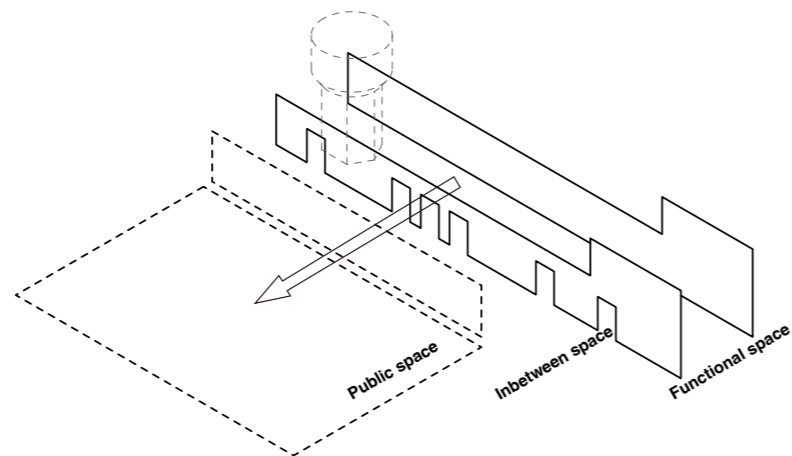
Collective development traces
Role in social life



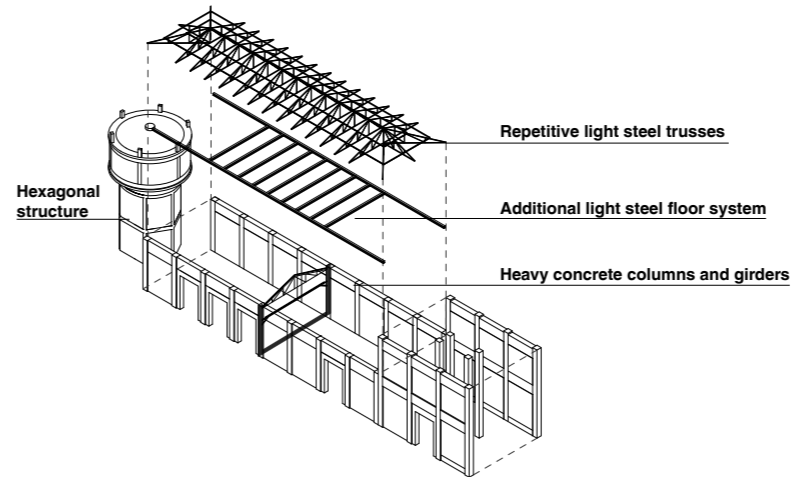
Embracing an inner square



Industrial history



Transitional layers marked its previous function
Function in MMC

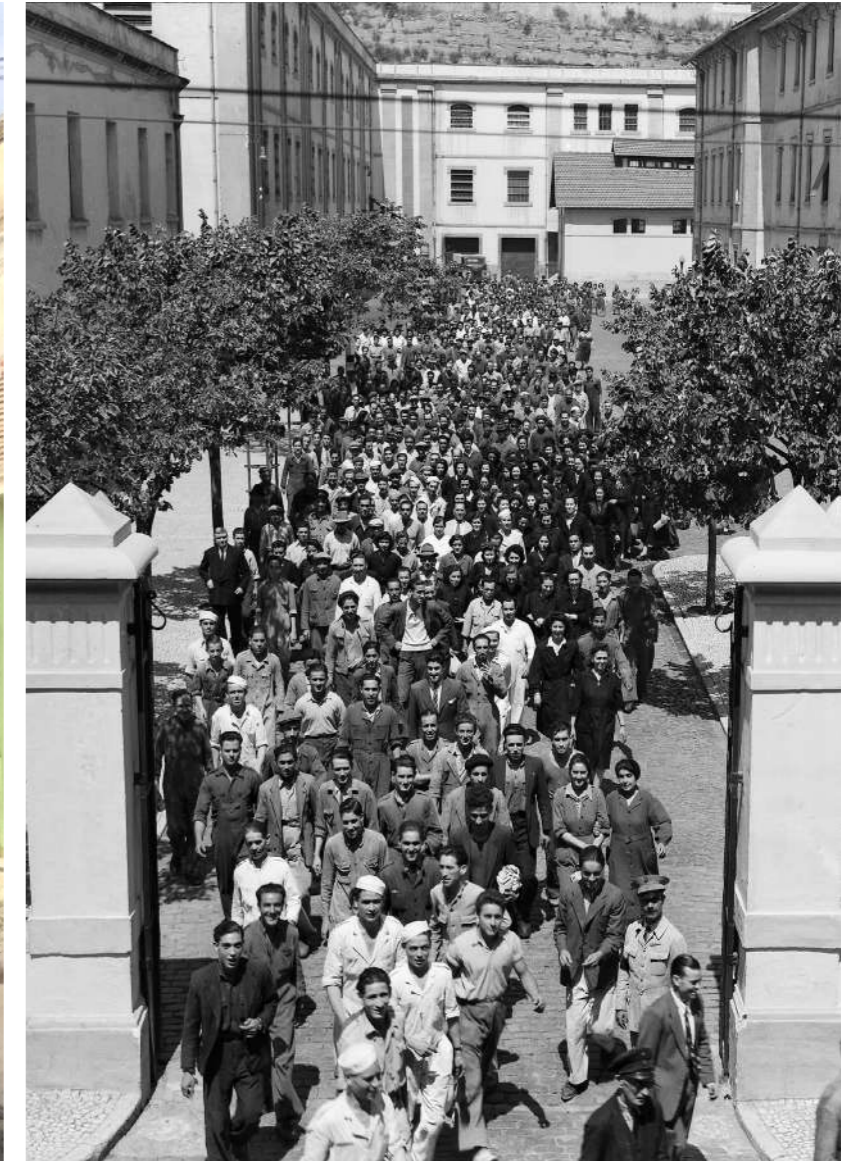


Industrial architecture language
General industrial history



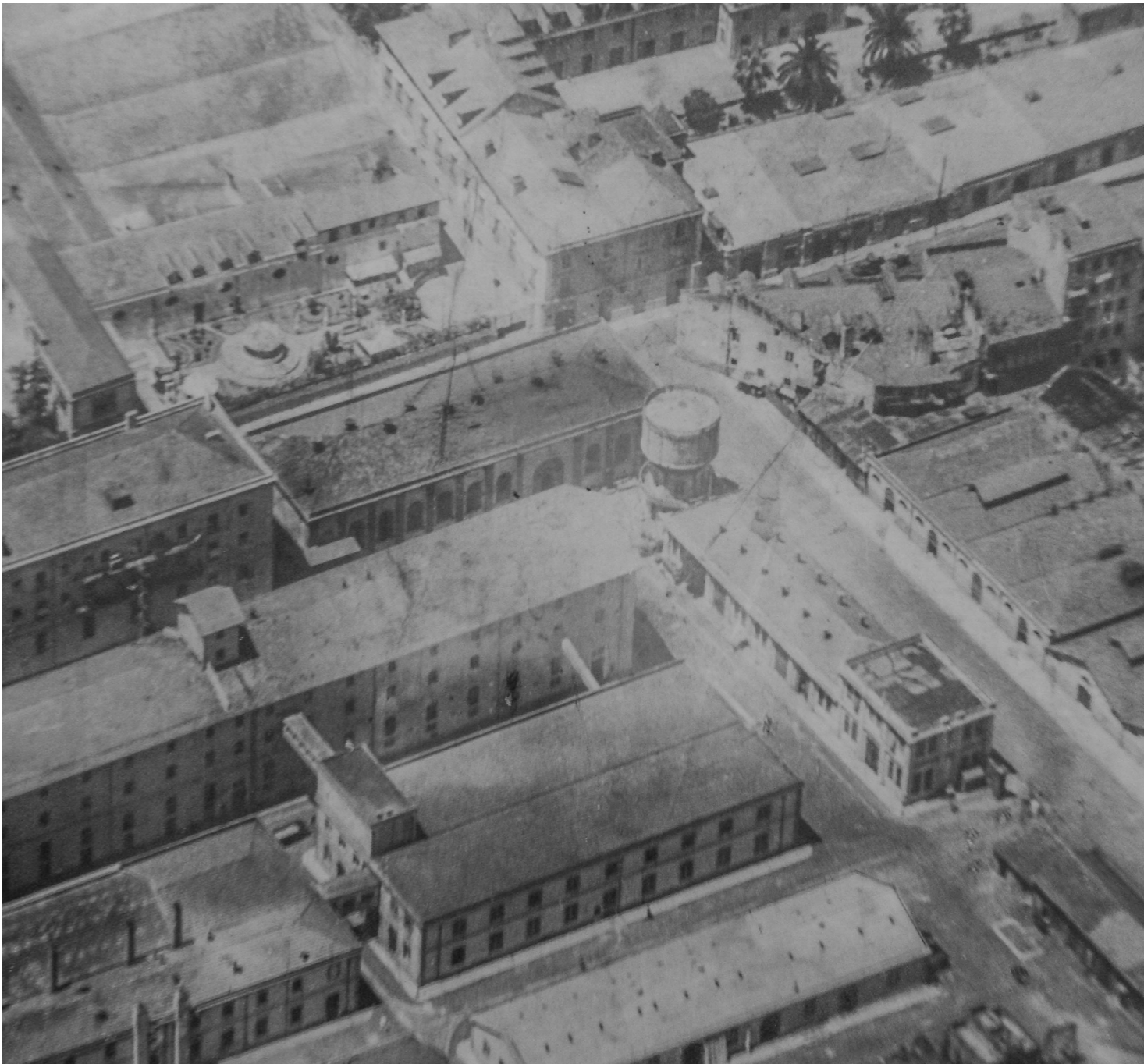
PLACE OF ENTRANCE ENSEMBLE

Urban interior



PLACE OF ENTRANCE ENSEMBLE

Collective place of local community



PLACE OF ENTRANCE ENSEMBLE

mobility function in its industrial history



PLACE OF ENTRANCE ENSEMBLE

Watertower-watchtower-backyard



TRANSFORMATION STRATEGY

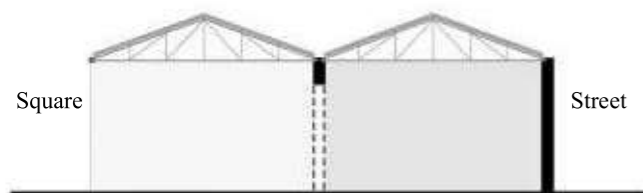
Principle	Justification	Masterplan	Inspiration	Ensemble scale strategy
<p>Connecting MMC to its context from social, economic, spatial aspects</p>	<p>MMC was the social economic center of territory in its history. The current dilemmas of Beato are the result of its disconnection.</p>	<p>Place economic alternative in industrial MMC(connection to city and territory);</p> <p>Position social function in monumental MMC(connection to local community).</p>	<p>The square of MMC is of potential to become the community living center</p> <p>The square in front of entrance ensemble formed as result of collective development.</p> <p>As the main part of the ensemble, the carworkshop has a quality of mobility.</p>	<p>Compose social activities' narrative from neighbor to MMC;</p> <p>Transform the entrance ensemble into a leisure center of local community.</p> <p>Disassemble the border to construct a spatial link between neighbor and MMC.</p>
<p>Conserving its introverted site spirit within its border</p>	<p>The introverted enclosure of MMC represents the military industry function which relates to the recent Portugese history.</p>	<p>Clarify the physical border of MMC;</p> <p>Leave narrow openings to connect MMC and its neighbors.</p>	<p>The ensemble is the meeting point of the industrial and monumental MMC. It faces two distinct worlds on two sides.</p> <p>The border on the entrance side is unclear, which blocks the neighbors' street, composes a shifting route.</p>	<p>Enhance the distinction between outside and inside of MMC;</p> <p>Double the volume of MMC to strengthen its border.</p>

2 CONCEPT

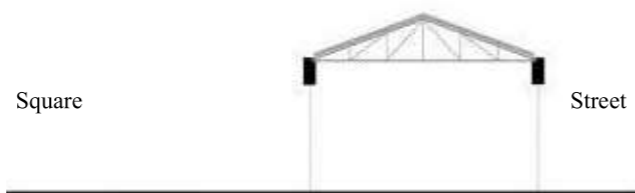
CONCEPT OF ENSEMBLE TRANSFORMATION



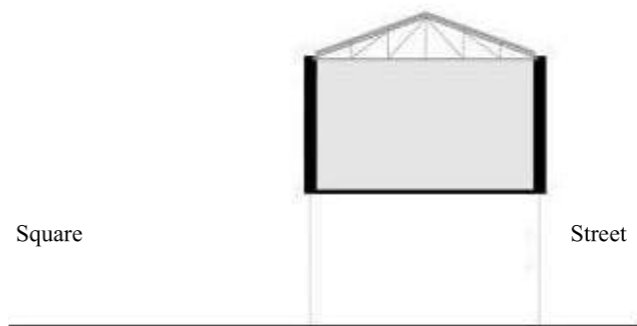
CONCEPT OF ENSEMBLE TRANSFORMATION



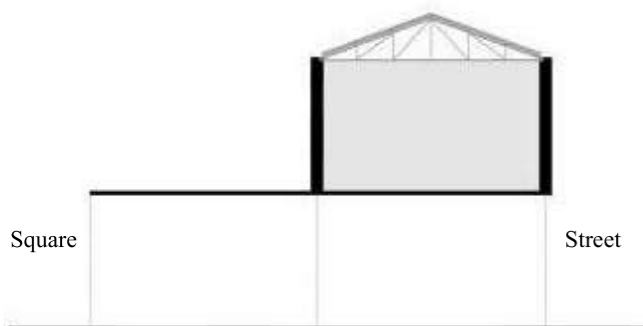
Step 1: The original space composition



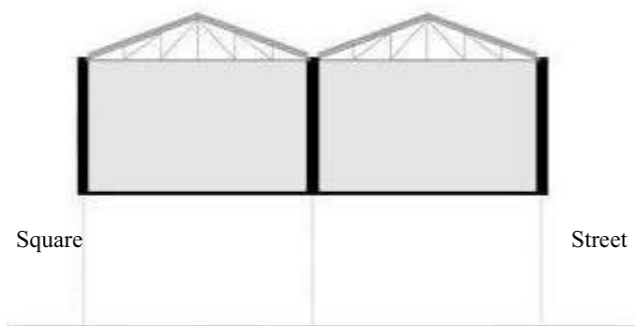
Step 2: Open up ground floor
The function of it is lost as result of opening



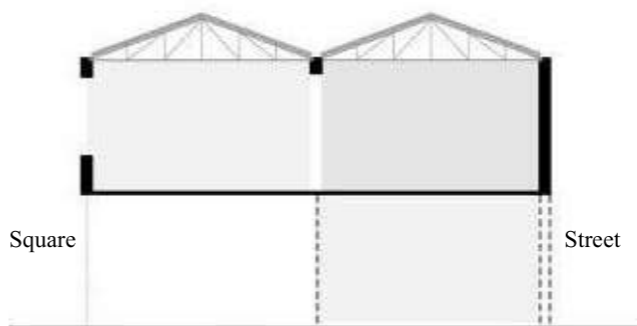
Step 3: Lift to first floor
Lacking of transitional layers on ground floor



Step 4: Add shelter on square side



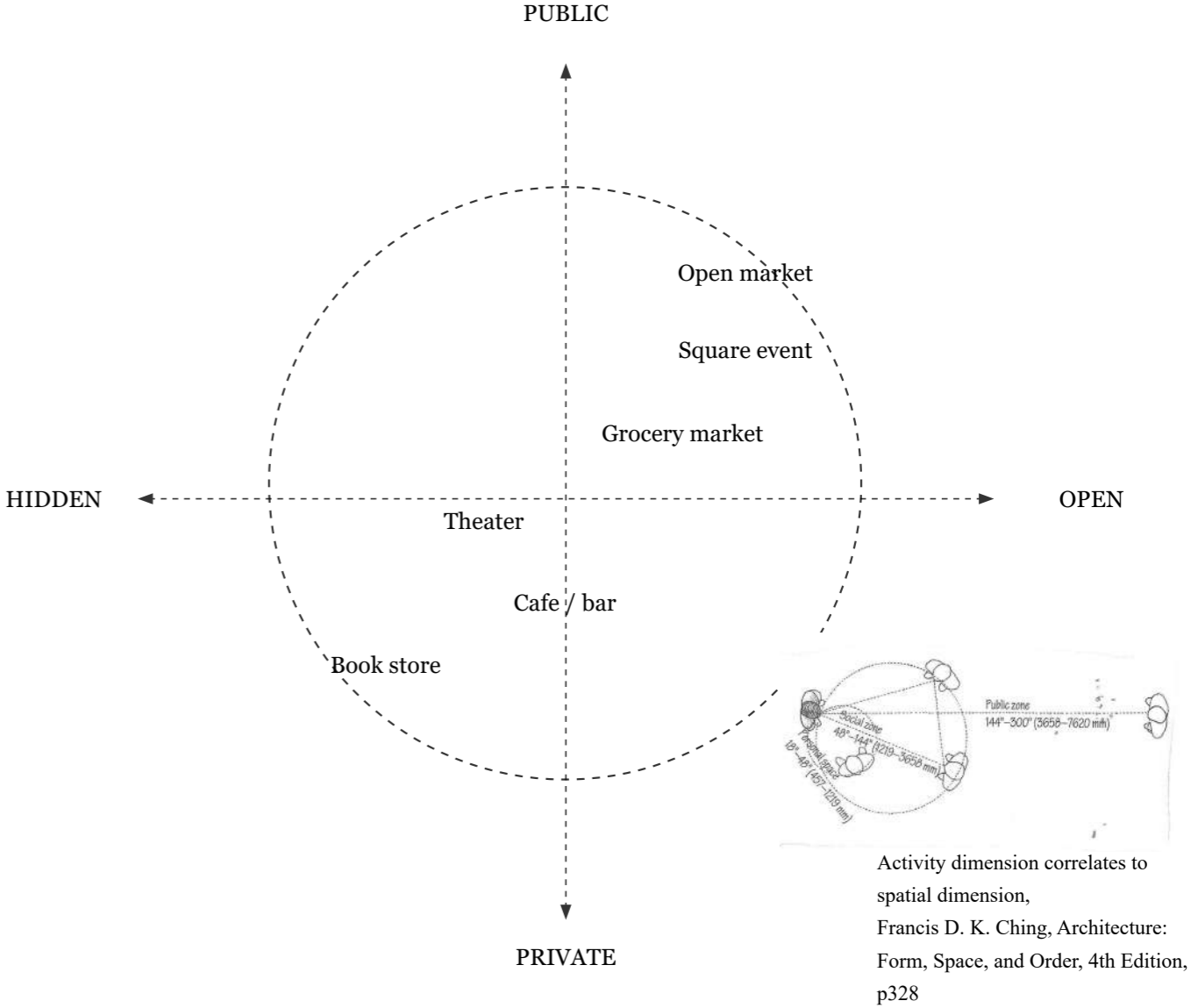
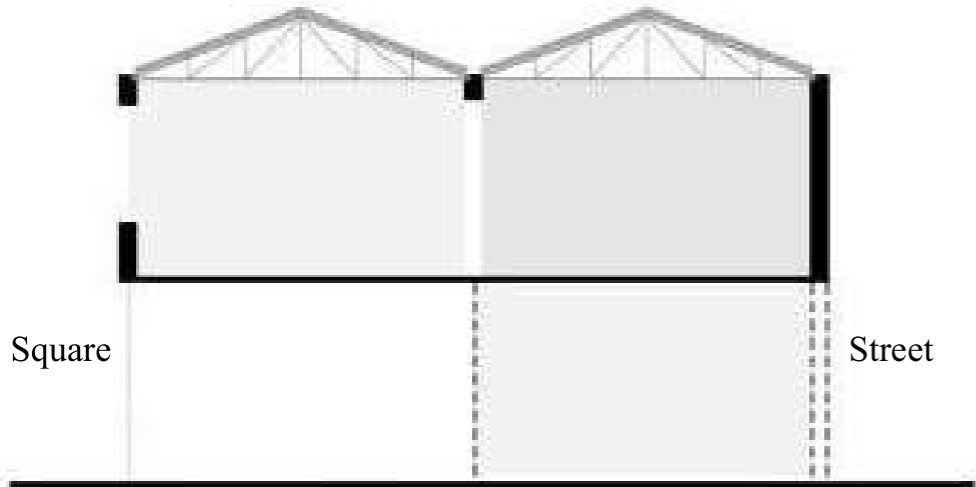
Step 5: Double the volume on first floor
Internal space lost continuity and the quality of space on ground floor disappears.



Step 6: Transition to square side

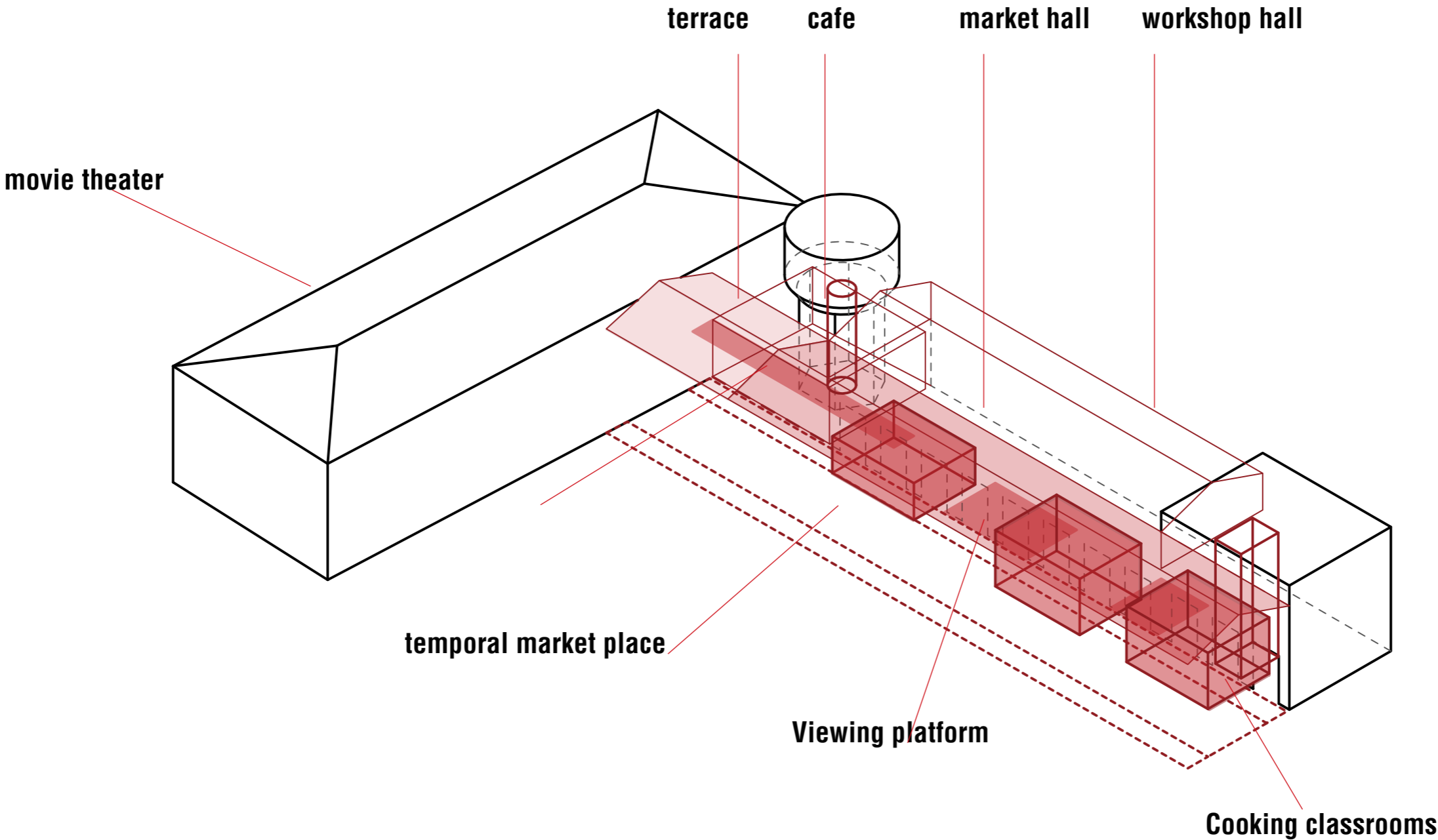
CONCEPT OF ENSEMBLE TRANSFORMATION

social activity connection
program selection



CONCEPT OF ENSEMBLE TRANSFORMATION

function



DESIGN APPROACH

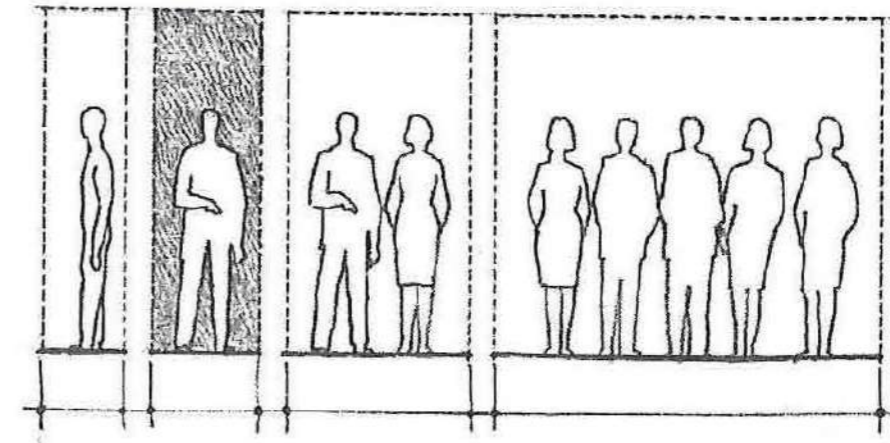
Principle: Bridging the border on social and spatial scale by enhancing the identity of a place.

Tools

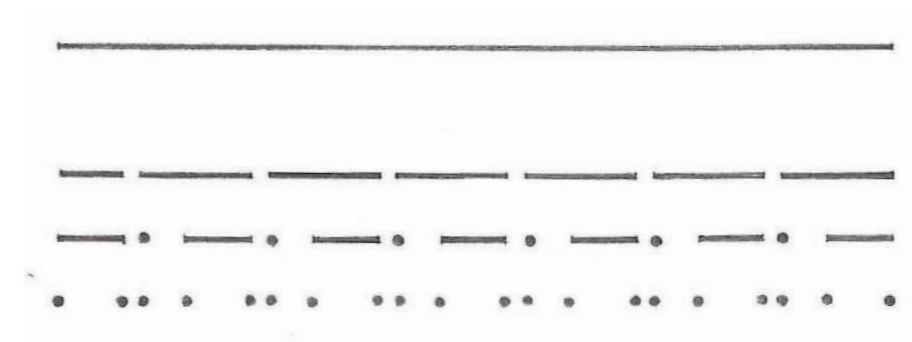
Connection: Bridging social activities from neighbor to MMC by organizing space sequence and physical elements.

Activity flow,
Space layers,
Vertical architectural elements,
Horizontal architectural elements,
Texture

Identity: Enhancing the distinction between existing components and intervention to strengthen the sense of border, while developing the character of individual buildings.



Activity dimension correlates to spatial dimension,
Francis D. K. Ching, Architecture: Form, Space, and Order, 4th Edition, p328

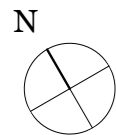
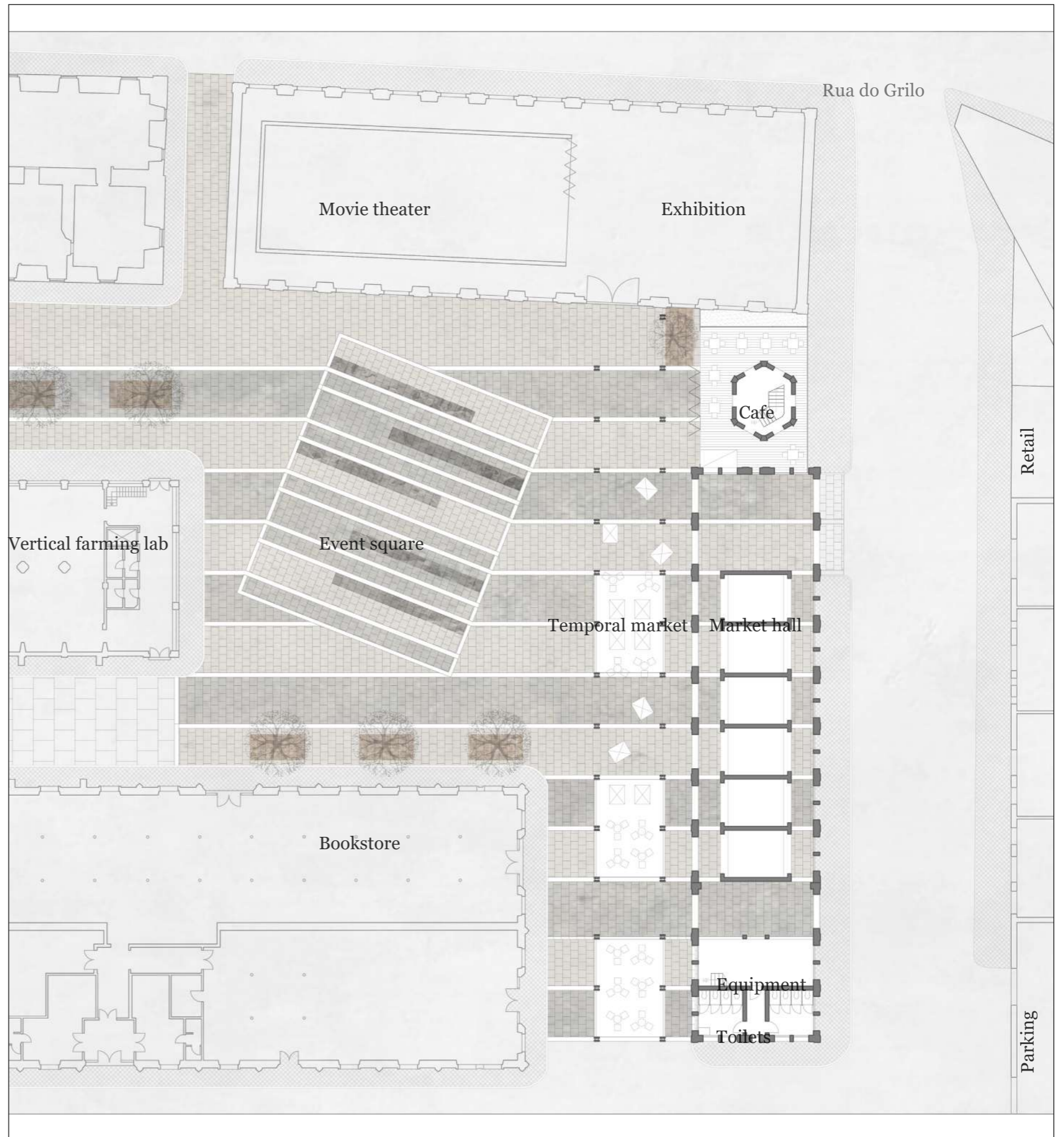


Sets of parallel vertical planes can be transformed to a wide variety of configurations, through which the spatial fields can be related to one another,
Francis D. K. Ching, Architecture: Form, Space, and Order, 4th Edition, p145

3 ELABORATED DESIGN

SQUARE

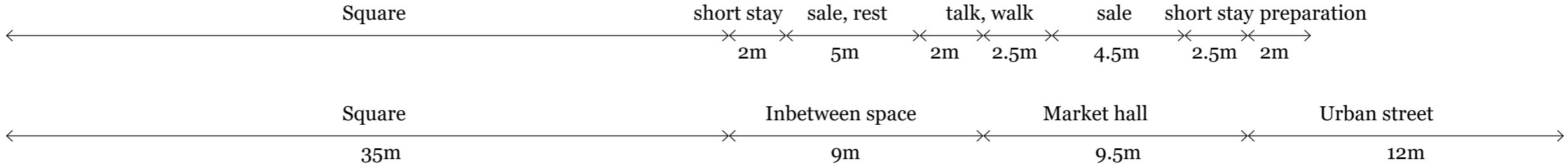
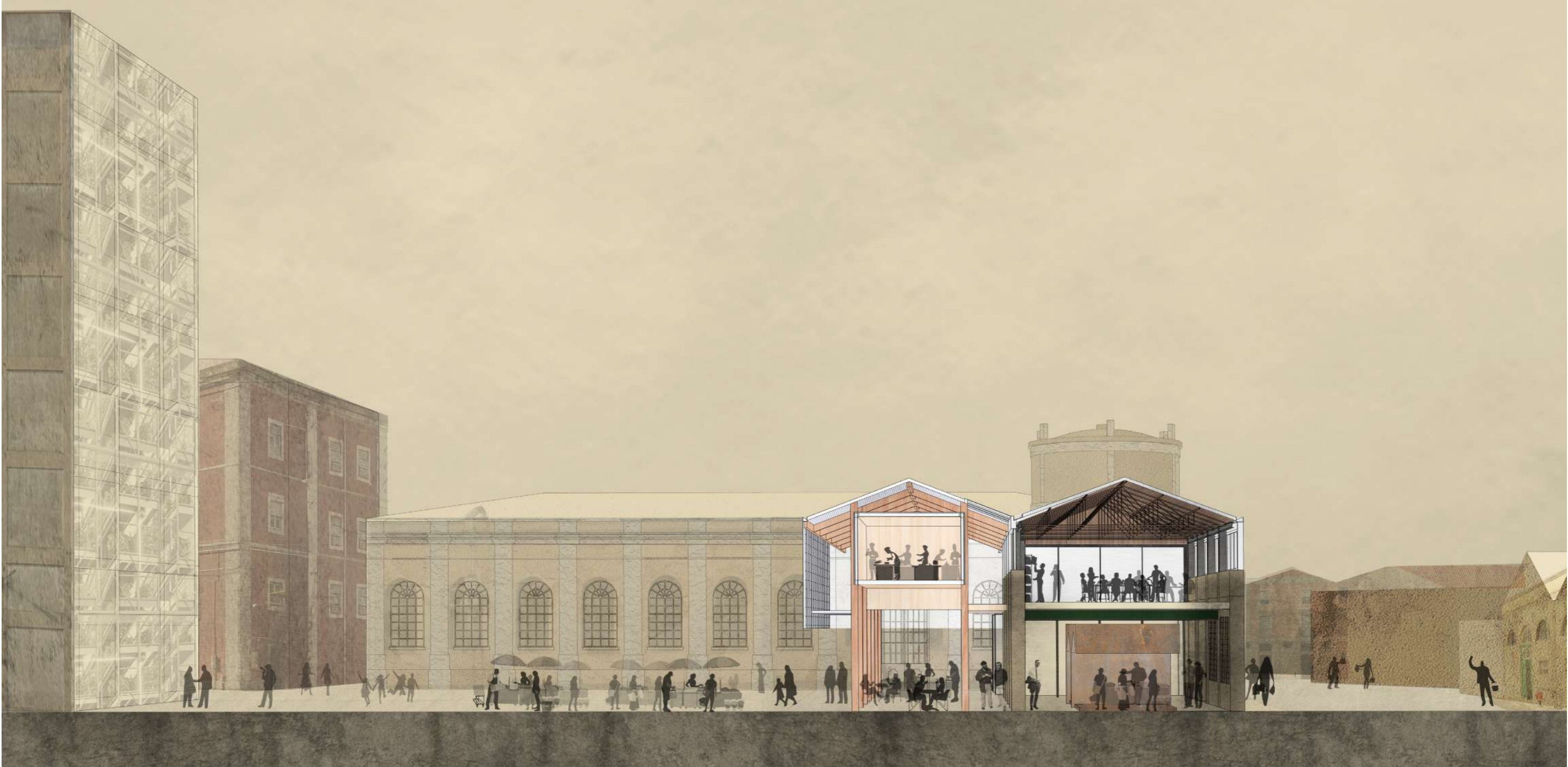
activities flow from street to square on ground floor



0m 5m 10m 20m

Square

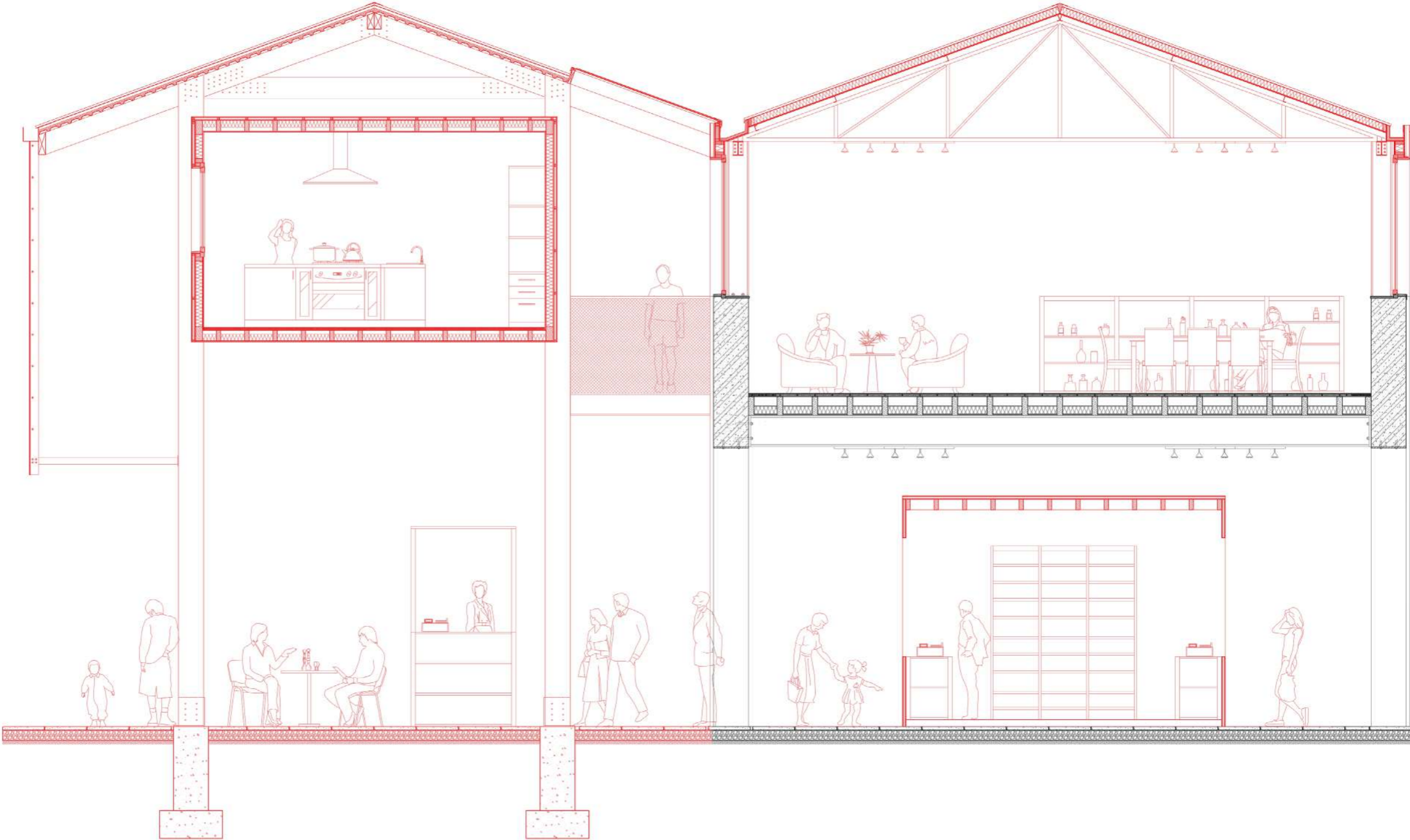
SQUARE



SQUARE

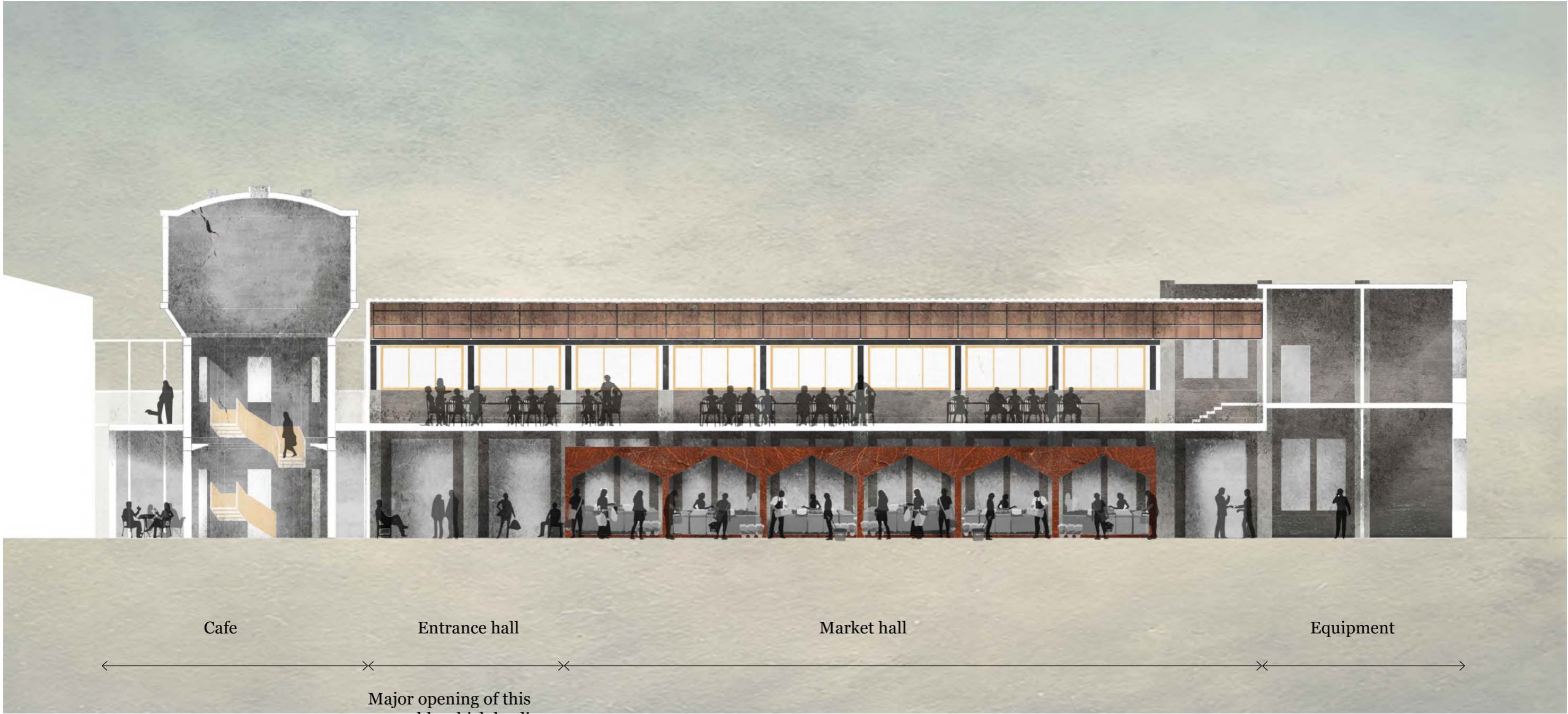


CROSS SECTION



EXISTING HALL-GROUND FLOOR

street side



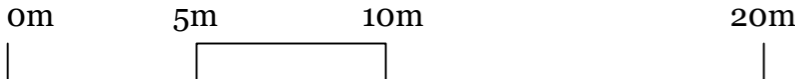
Cafe

Entrance hall

Market hall

Equipment

Major opening of this ensemble which leading to the square, distributing users' flow to the market and square.



SHELTER-GROUND FLOOR

activity and space organisation on ground floor

major passage
having a complete
facade view of existing
building, with a narrow
bacony

Cooking classroom 1
quiet atmosphere
sitting position,
salad or dessert
with full square view

passage 2
having a complete view
of ground floor facade,
with a broad platform
on top which originates
two scales of space
under one roof.

Cooking classroom 2
tall space
standing position,
vegetable or seafood
cuisine,
with passage view on
the side

passage 3
Locates
inbetween the
end of market
and equipment
part, with a
broad balcony
on top which
originates two
scales of space
under one roof.

Cooking classroom 3
tall space next to street,
standing position,
meat cuisine,
with street view on the side



EXISTING HALL-NEW SHELTER

layers of space on ground floor



Translucent facade

Walking, talking and short stay



New timber structure

Temporal market place, rest zone



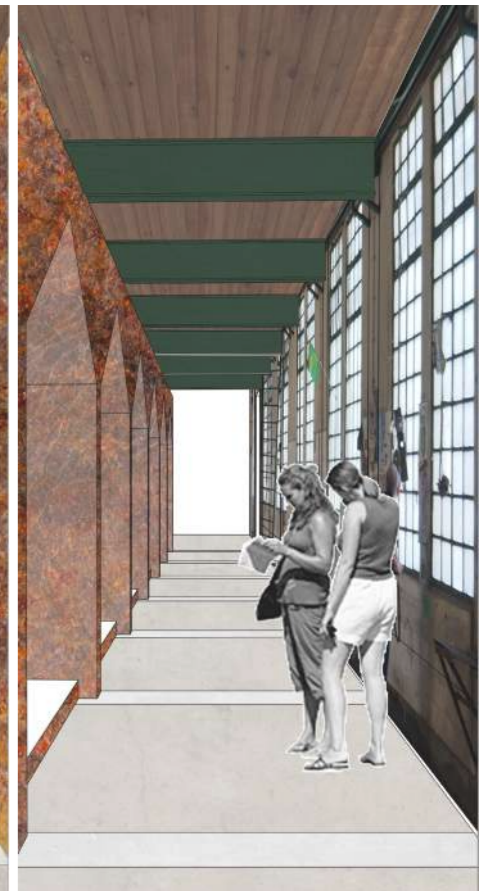
New timber structure

Walking, talking and short stay



Existing wall

Saling and shopping



Market box

Walking, talking

Existing wall

EXISTING HALL-NEW SHELTER

from new market place to square



FIRST FLOOR

Building 08, car workshop, industrial hall



FIRST FLOOR

Building 08, platform

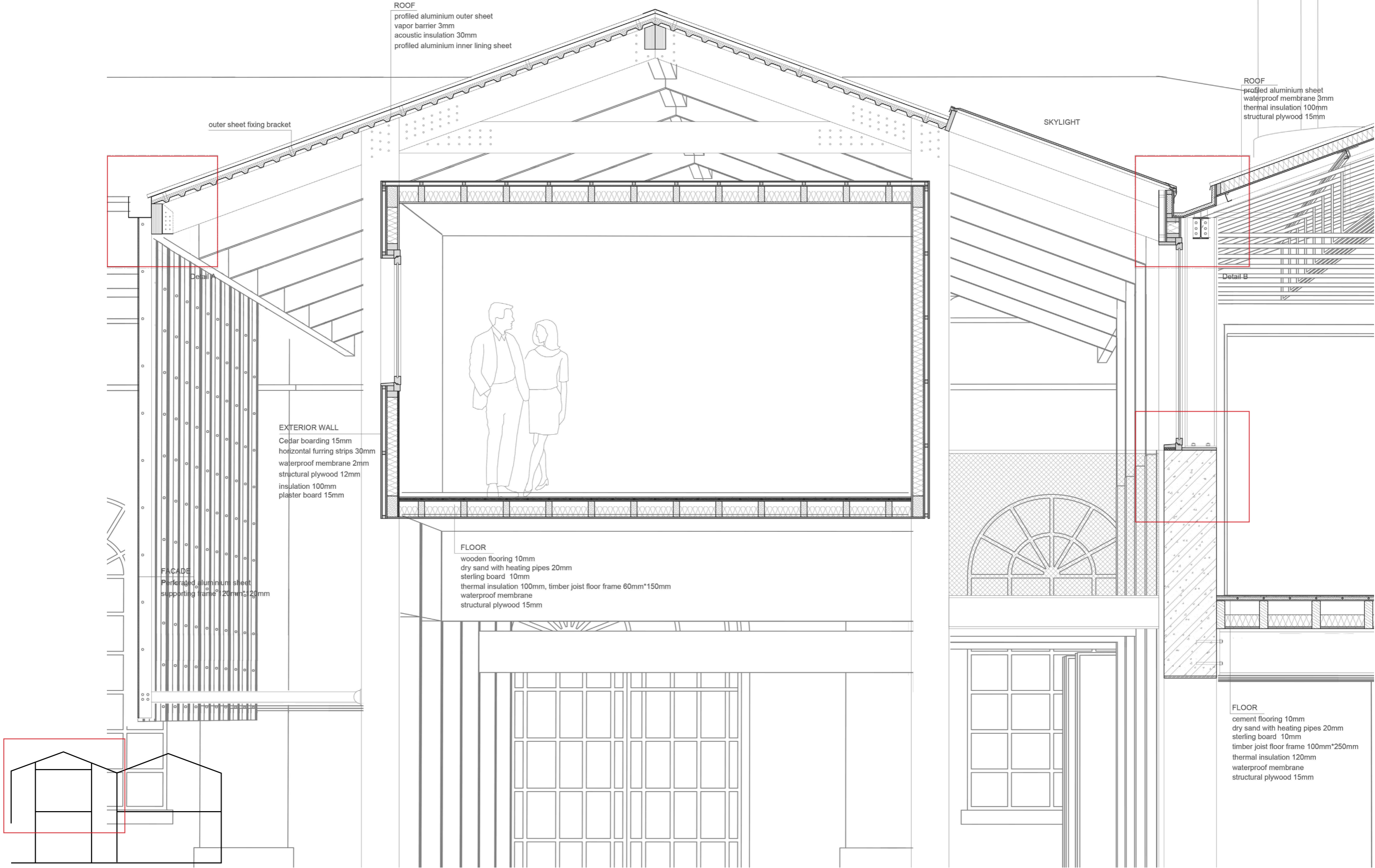


FIRST FLOOR

Building 08, cooking classroom

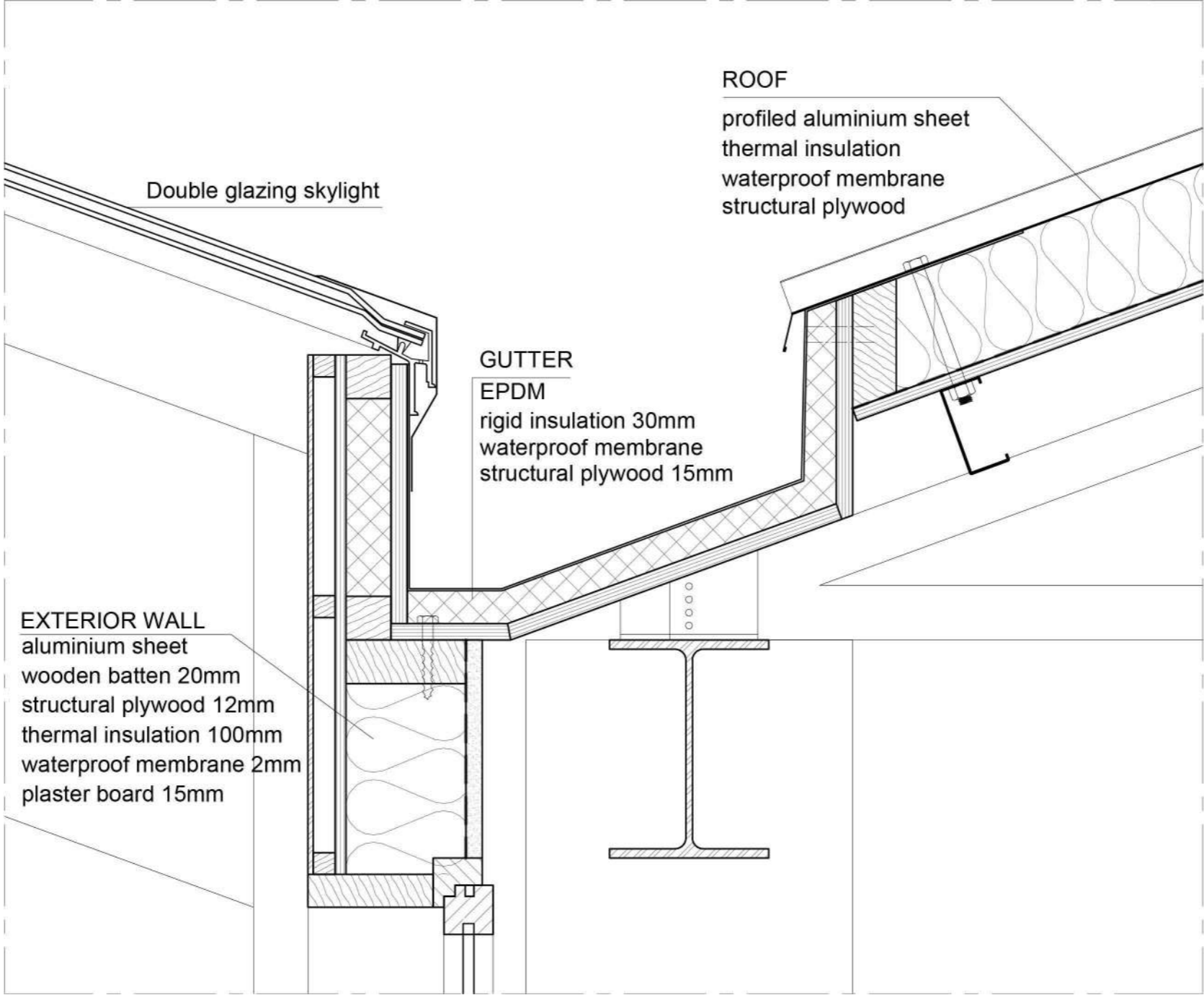


Cross section through new shelter 1:20



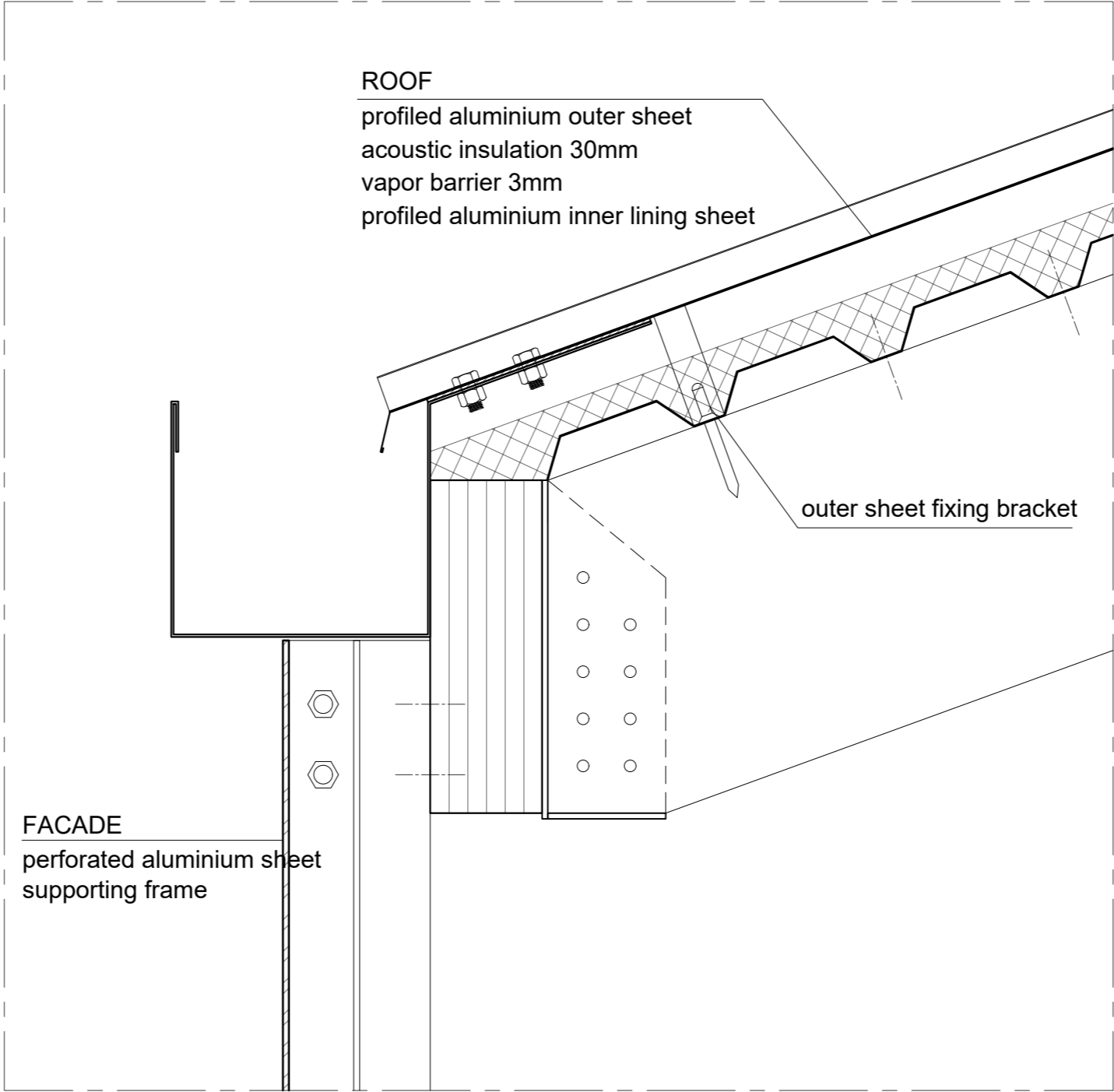
CONSTRUCTION DETAILS

Construction detail of gutter between new and old, 1:5



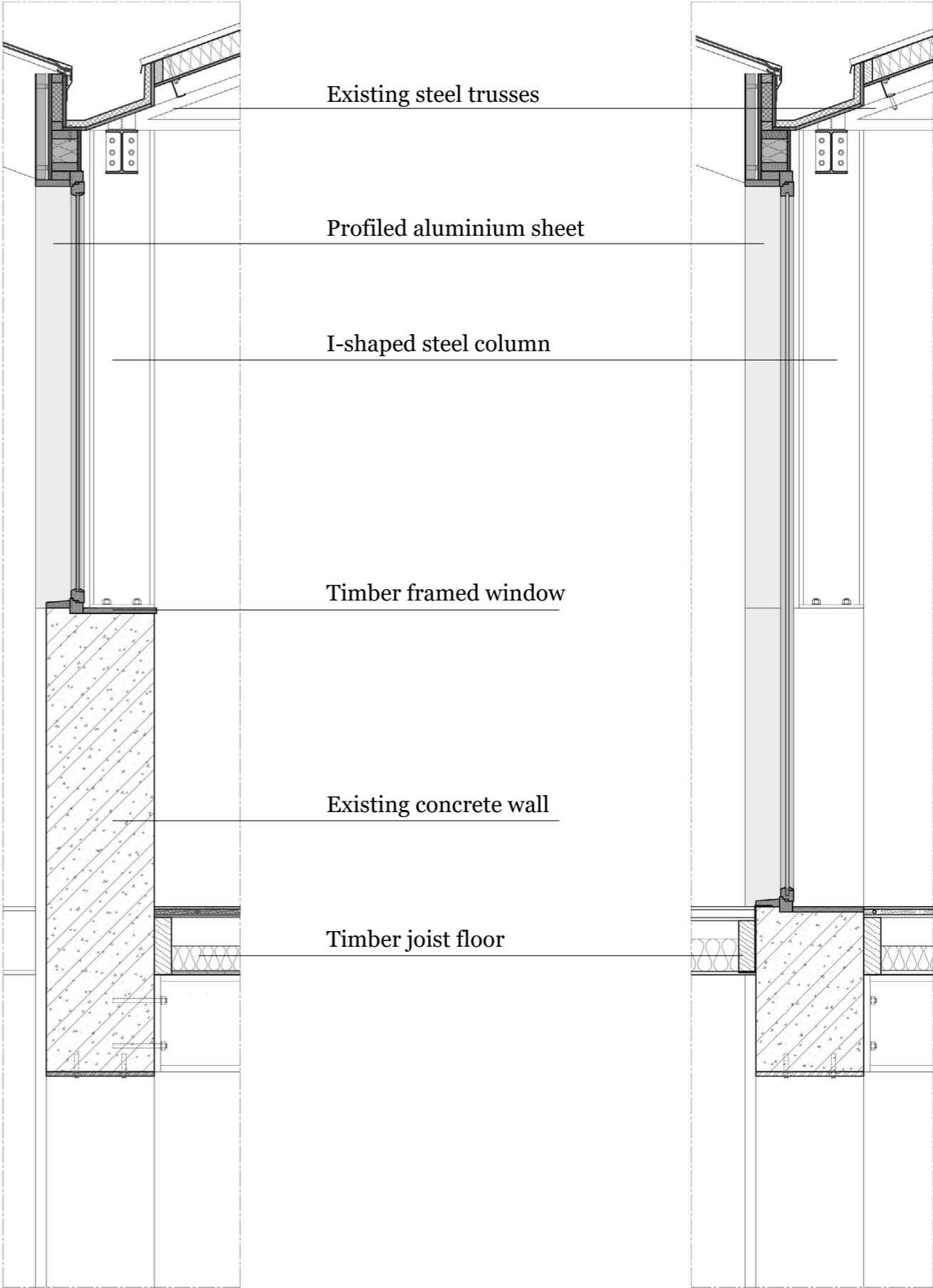
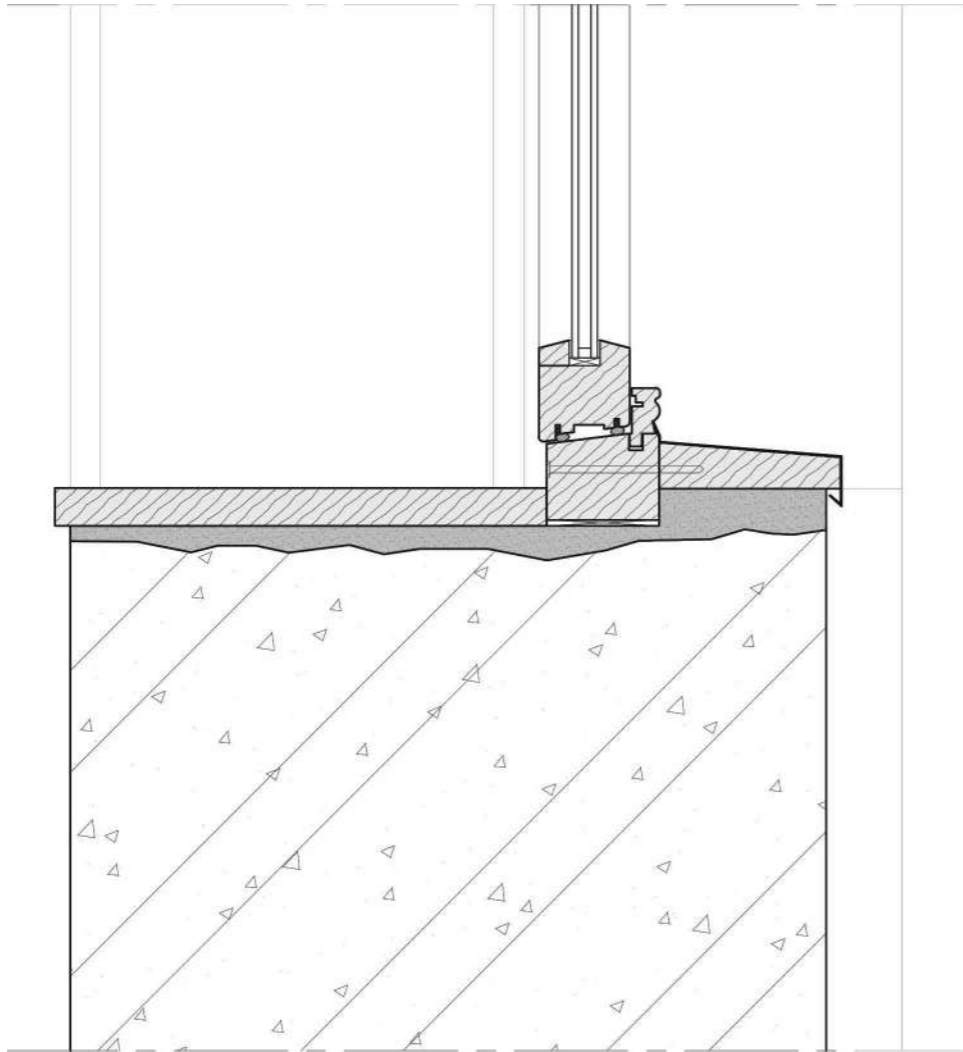
CONSTRUCTION DETAILS

Construction detail of gutter on new facade, 1:5



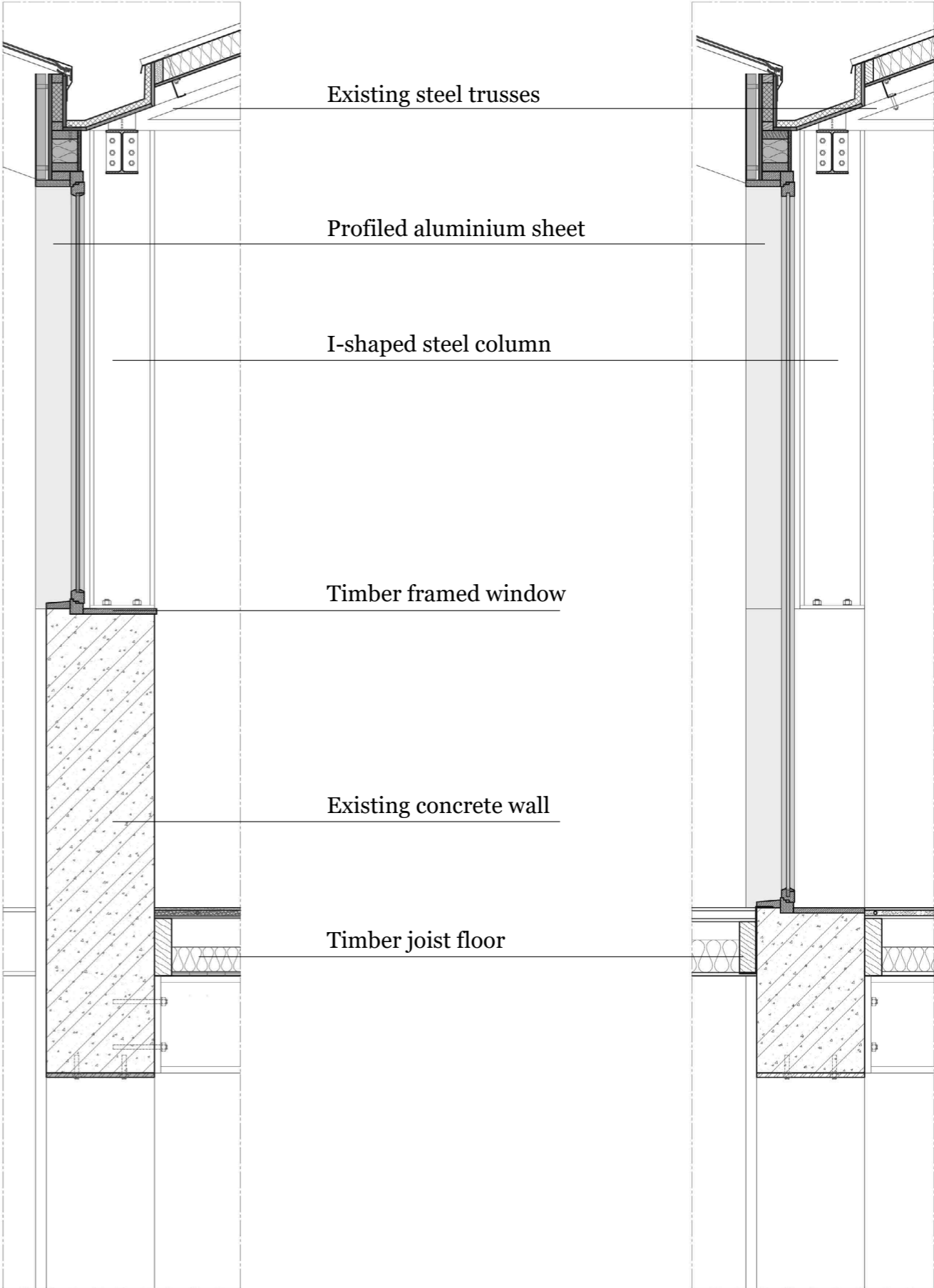
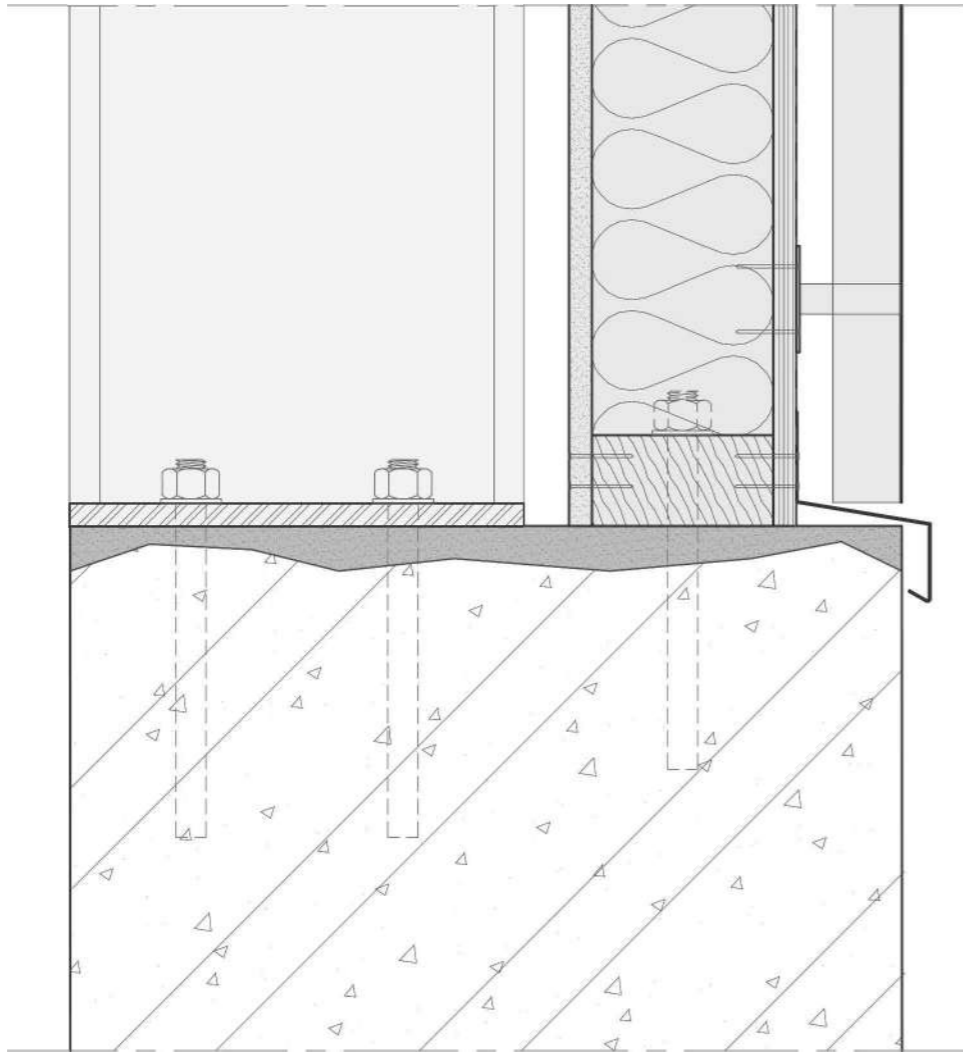
CONSTRUCTION DETAILS

Construction detail of gutter on new facade, 1:5



CONSTRUCTION DETAILS

Construction detail of gutter on new facade, 1:5



MATERIALISATION

new translucent facade on square side

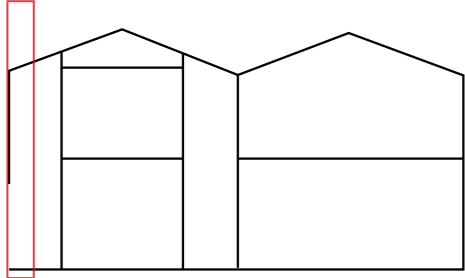
Perforated aluminium sheet
translucent facade on square side

Cedar box
cooking classroom

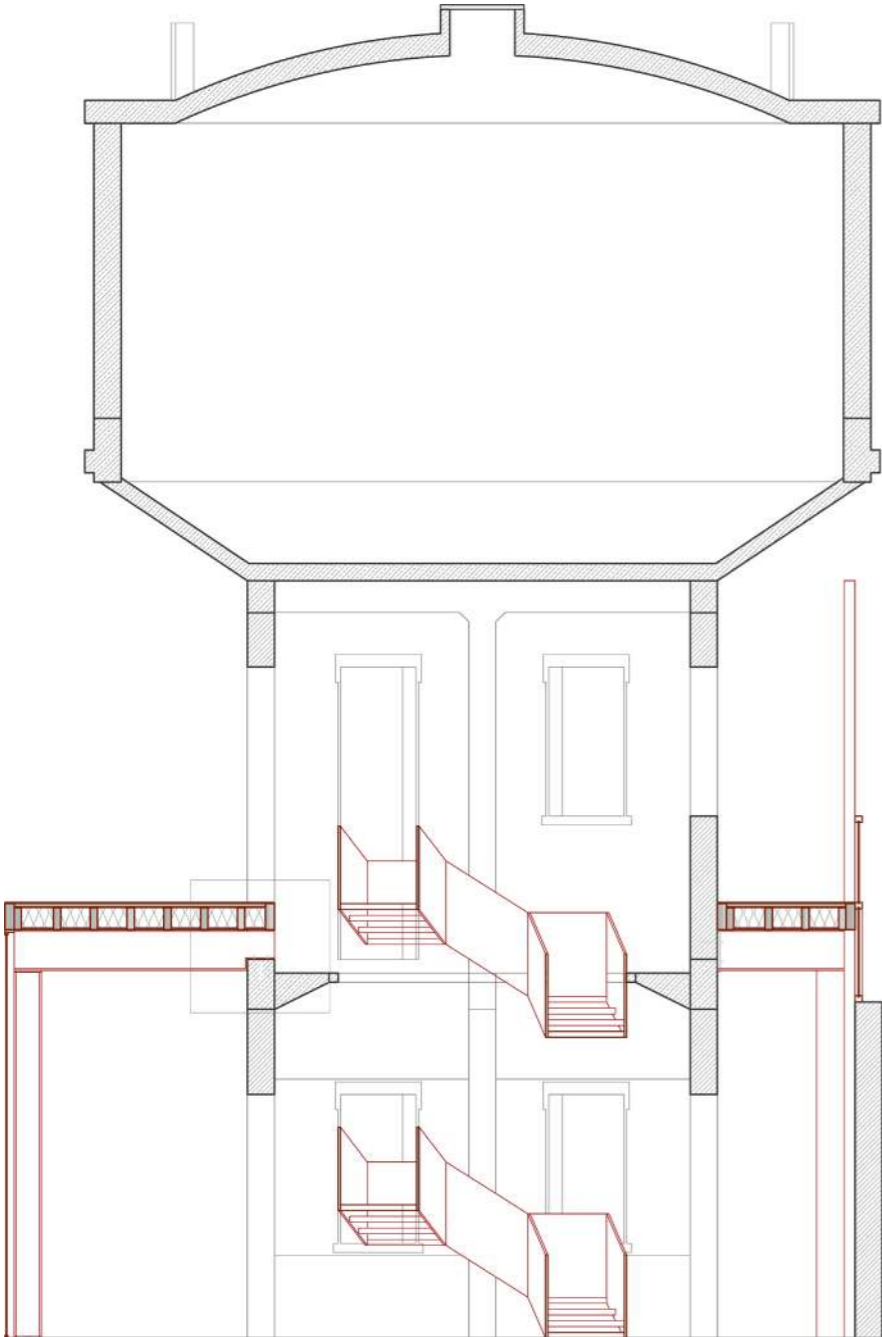
Laminated timber frame
twin column

Concrete
existing inbetween facade of car workshop
Weathering steel box
container of market stores

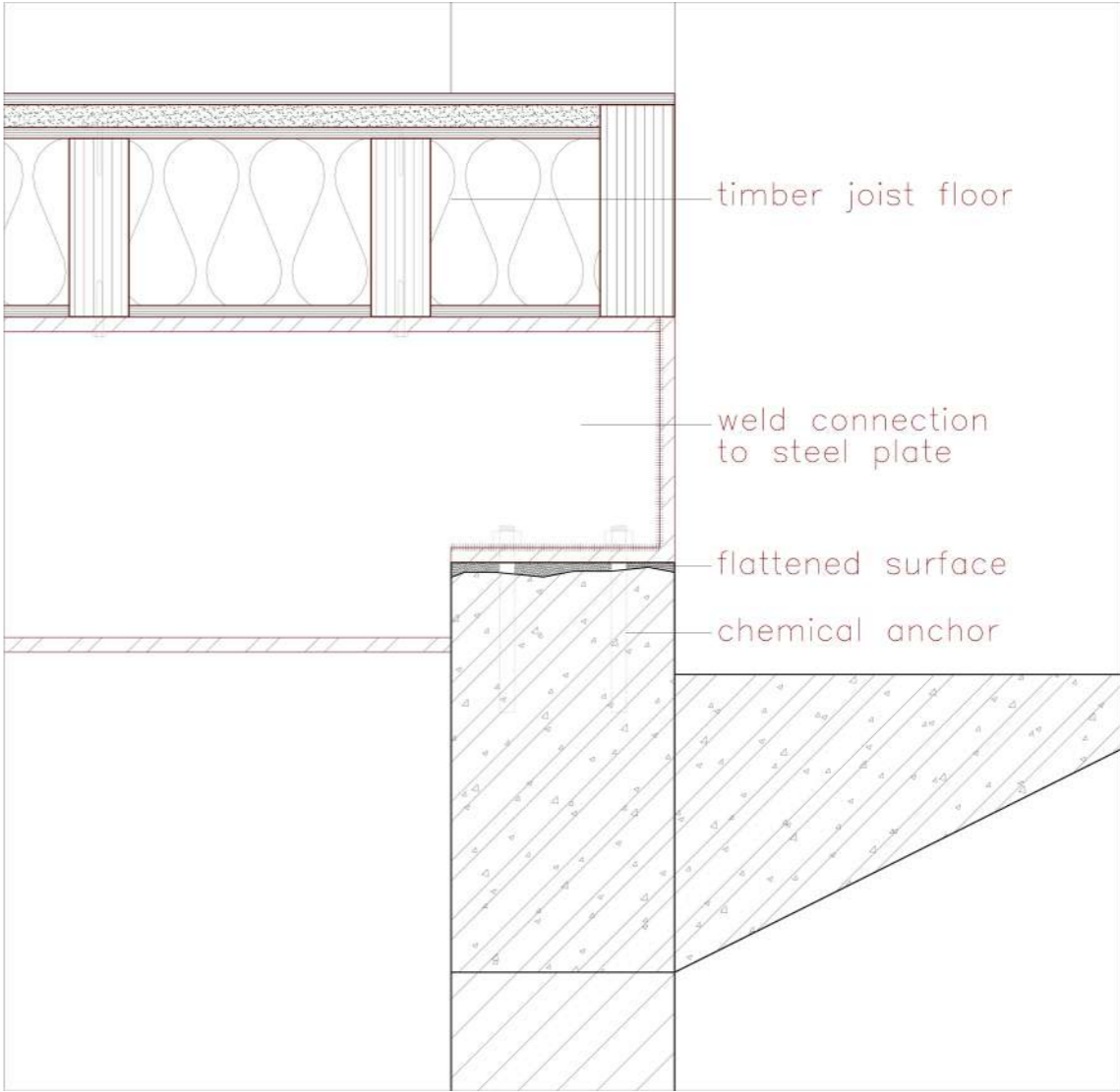
Lime paint
existing wall on street side



WATERTOWER



cross section of watertower, 1to100



1:5 Detail - new steel structure connecting to existing concrete structure

CHARACTER OF EXISTING

Building 07, watertower
from inner public street to watertower



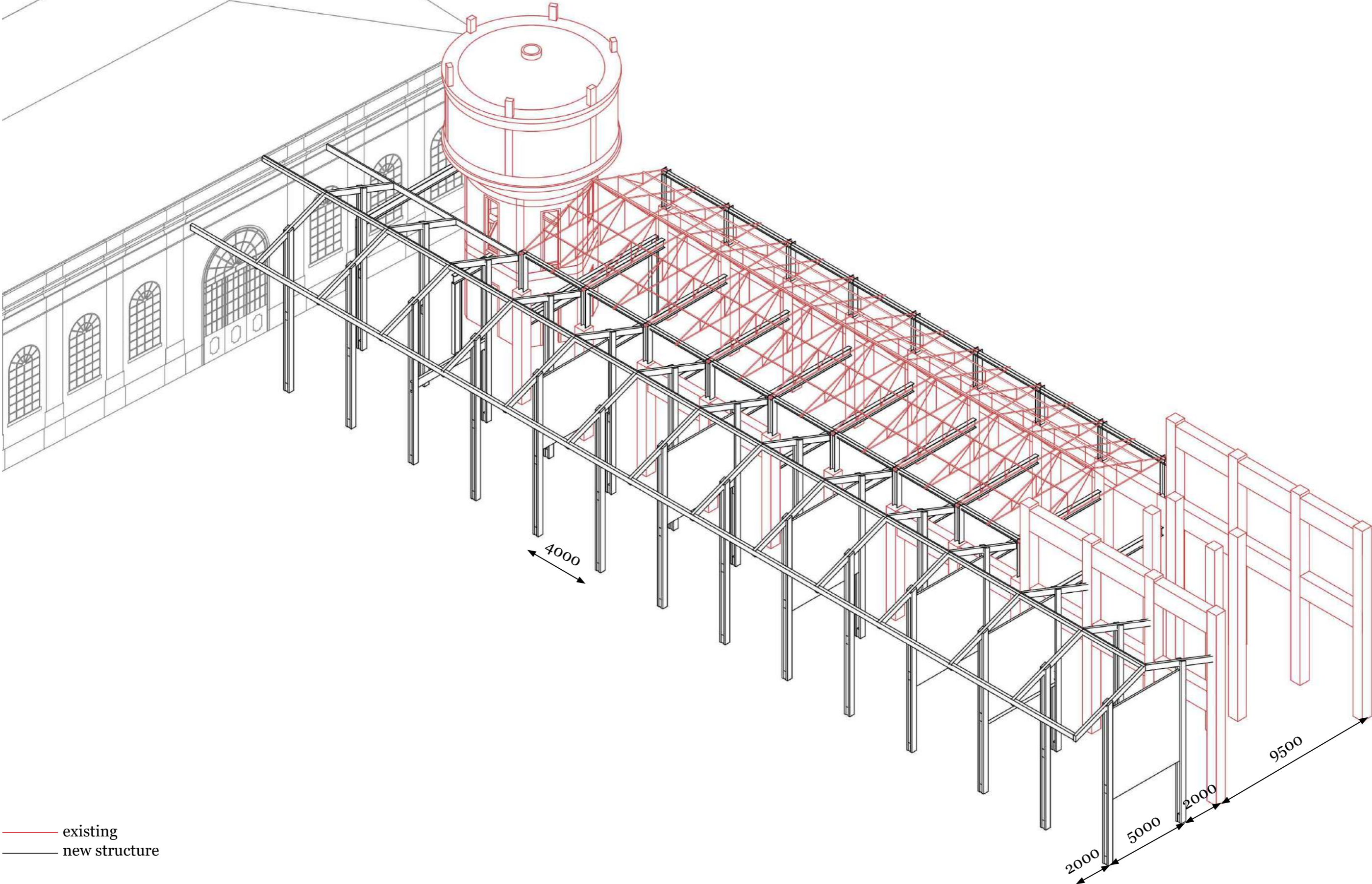
CHARACTER OF EXISTING

Building 07, watertower
from watertower to the street in front



STRUCTURAL SCHEME

Structural scheme



AXON

Skylight

Profiled aluminium roof

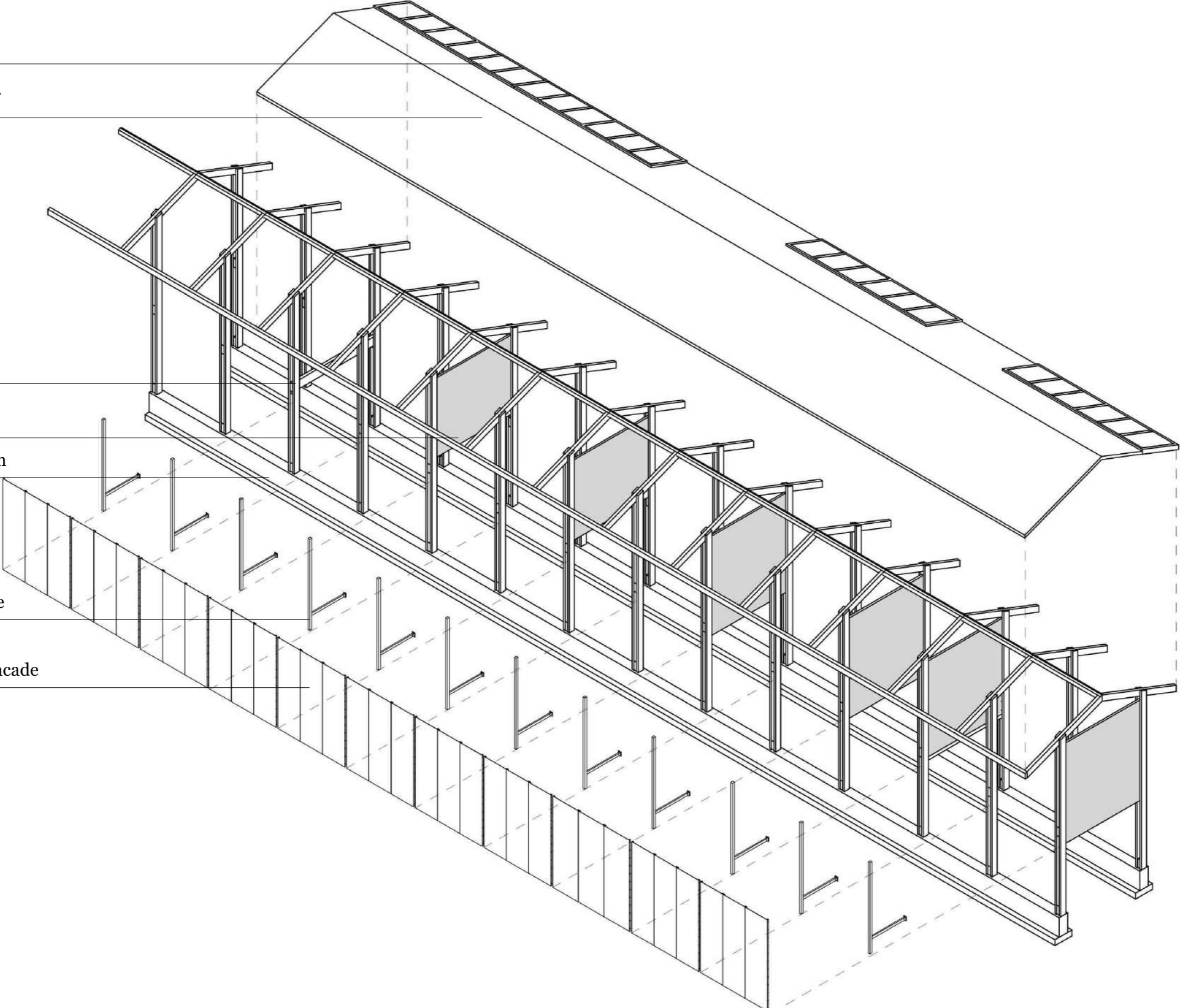
Laminated timber beam

Timber stud shear wall

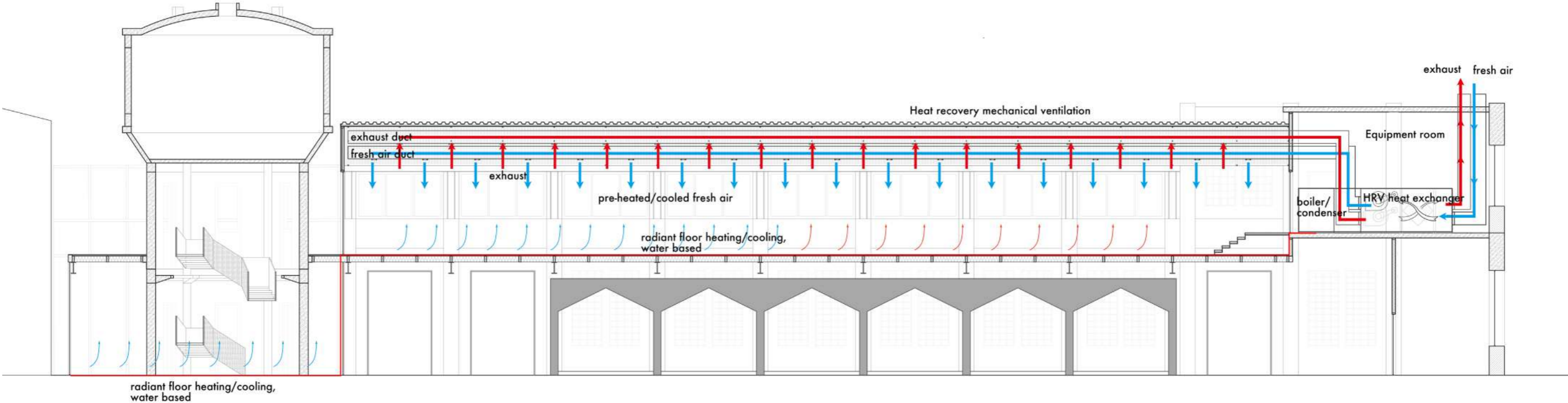
Concrete slab foundation

Aluminium facade frame

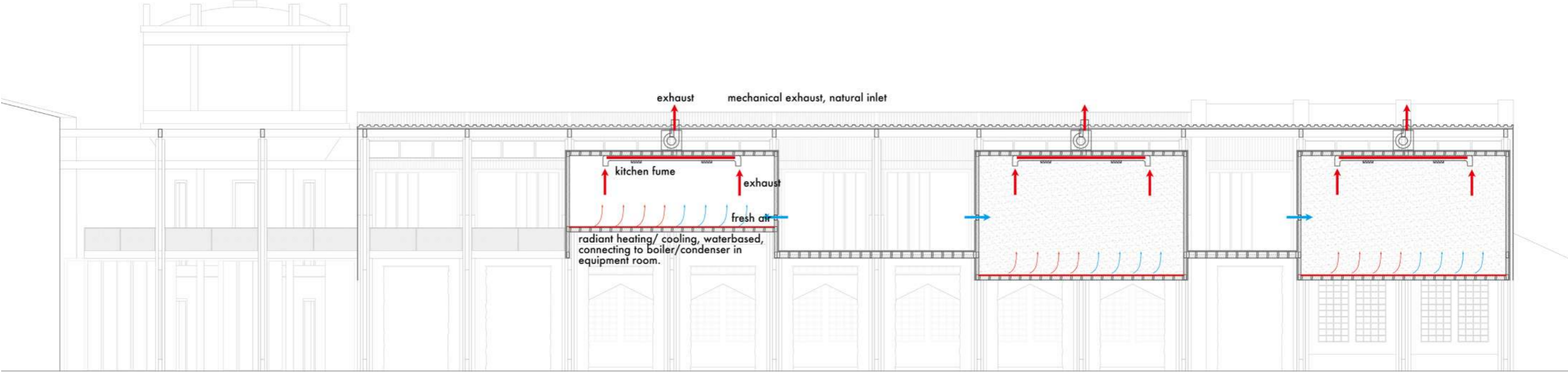
Perforated aluminium facade



CLIMATE SCHEME



Street side climate scheme

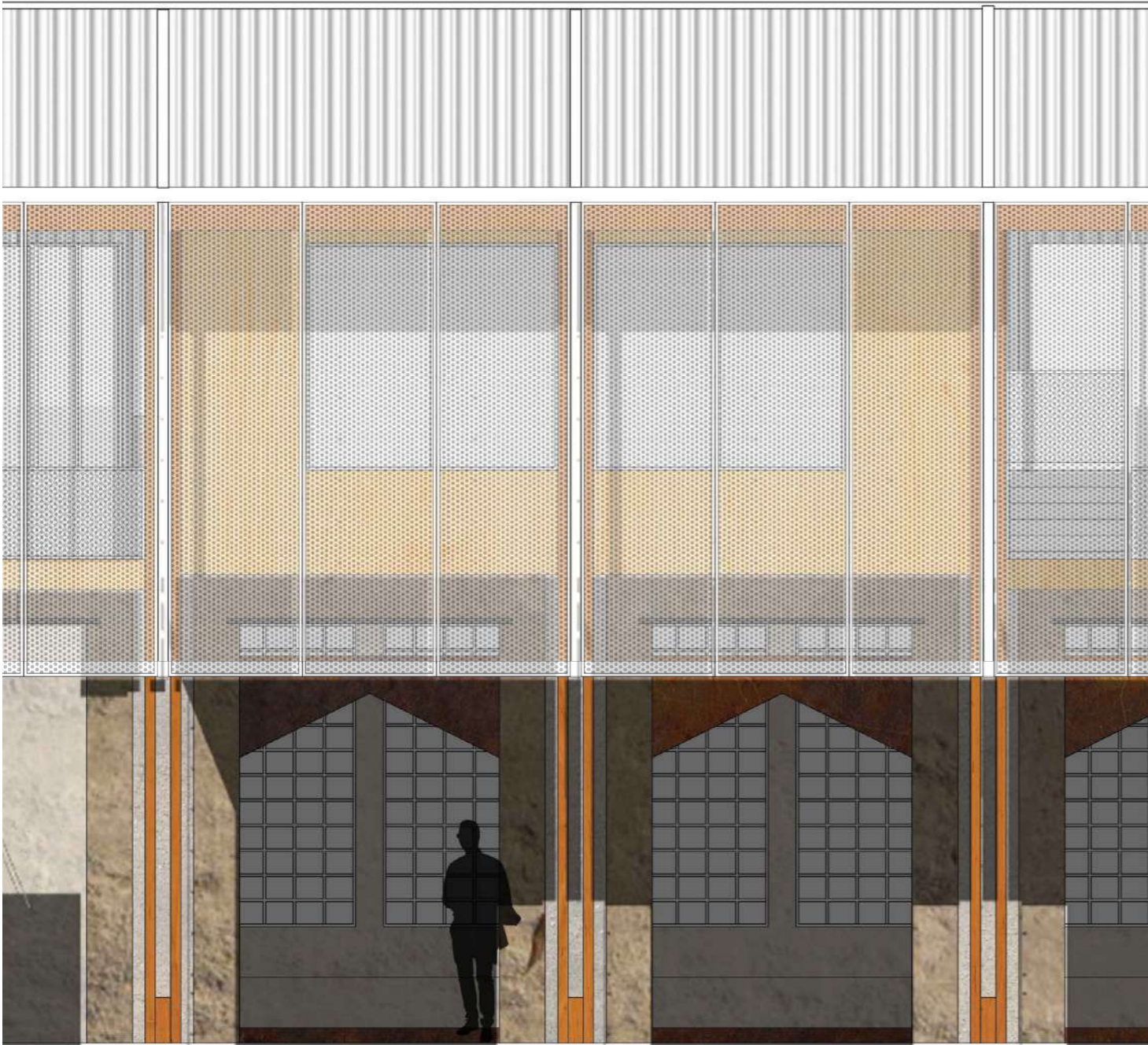


Square side climate scheme

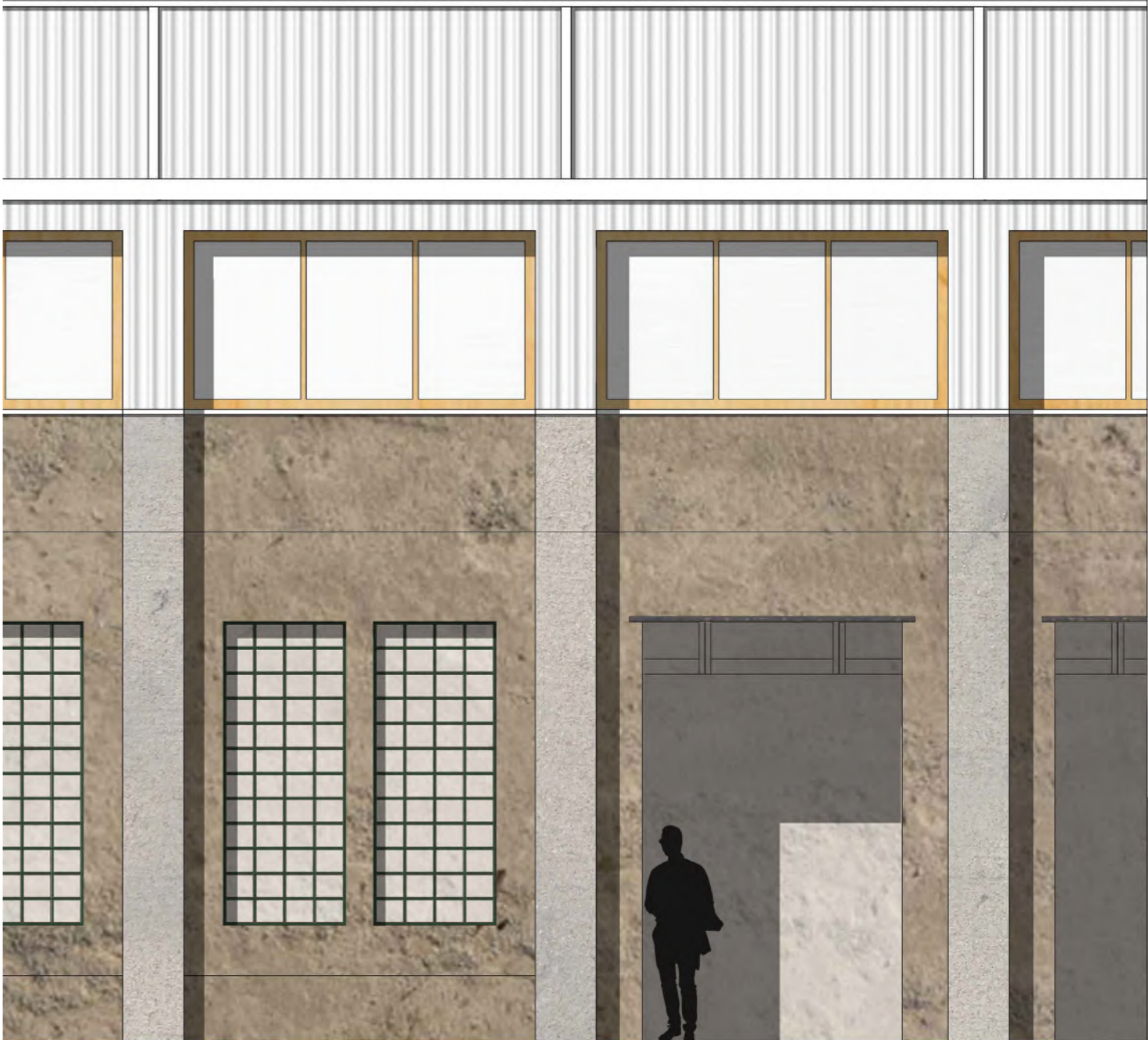
4

REFLECTION

INDUSTRIAL EXTERIOR



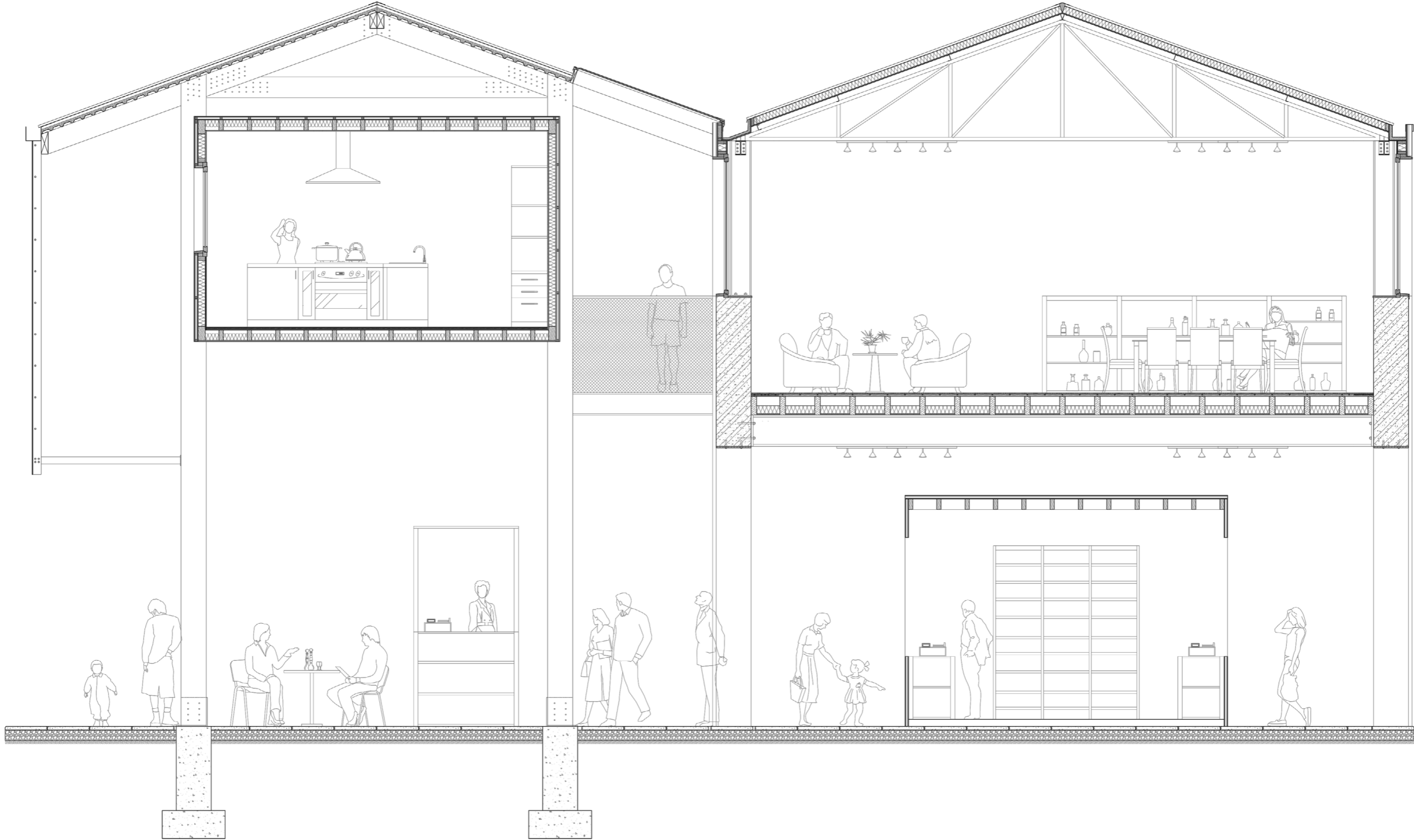
square side - translucent layering open to square



street side - doubled enclosed border

CHARACTER OF NEW

collective gallery of market place, rest zone, cooking classrooms and viewing platforms



LIVING CENTER BONDING MMC AND NEIGHBOR

