Nijmegen:

the re-use of alterity and authenticity in Molenpoort.

Chair of Urban Architecture

Laura Piccinin

5039509

P5 Presentation

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I. Research and thematic
II. Urban position
III. Architectural proposal
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Laura Piccinin
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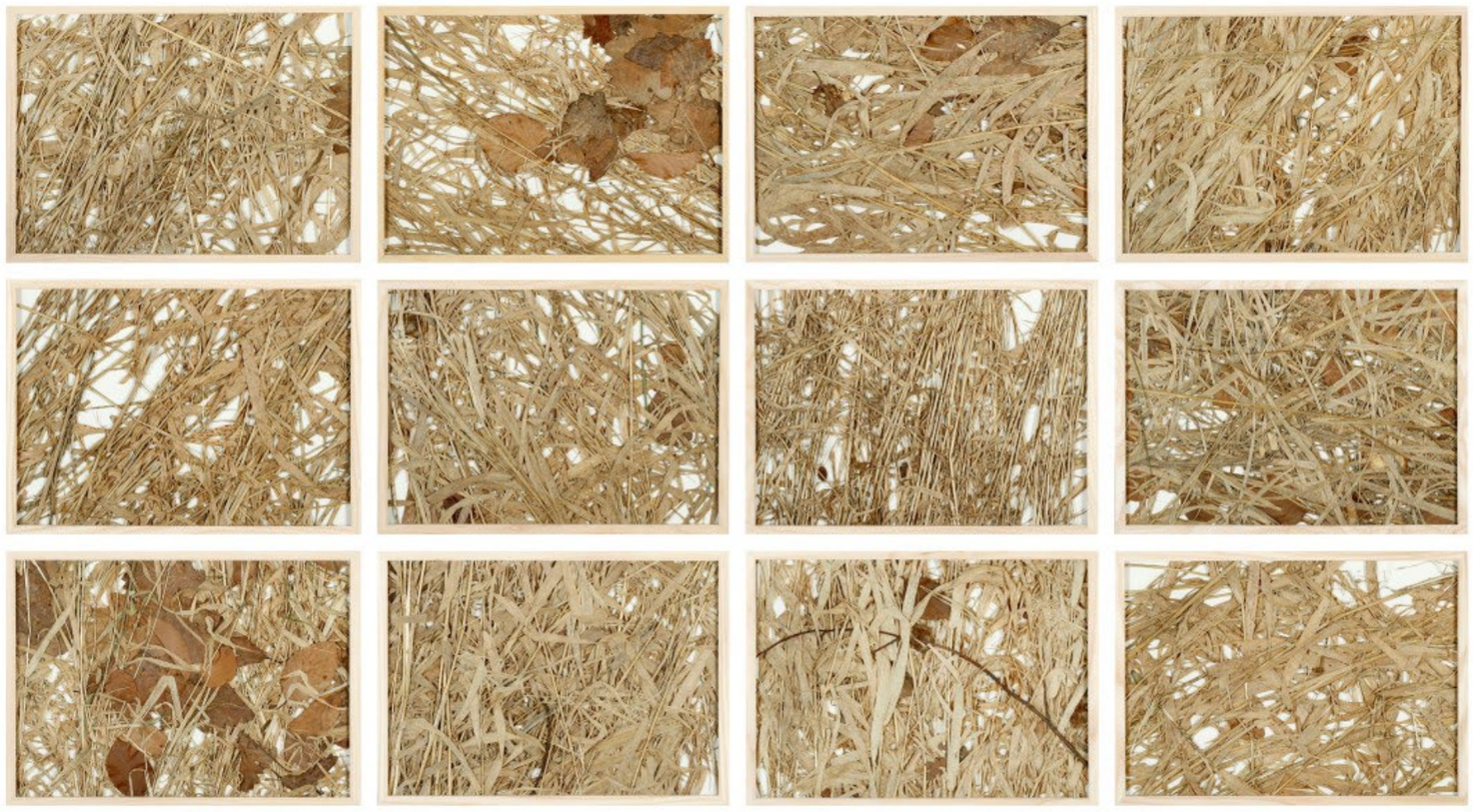
BRICOLAGE

Process

BRICOLAGE

Definition



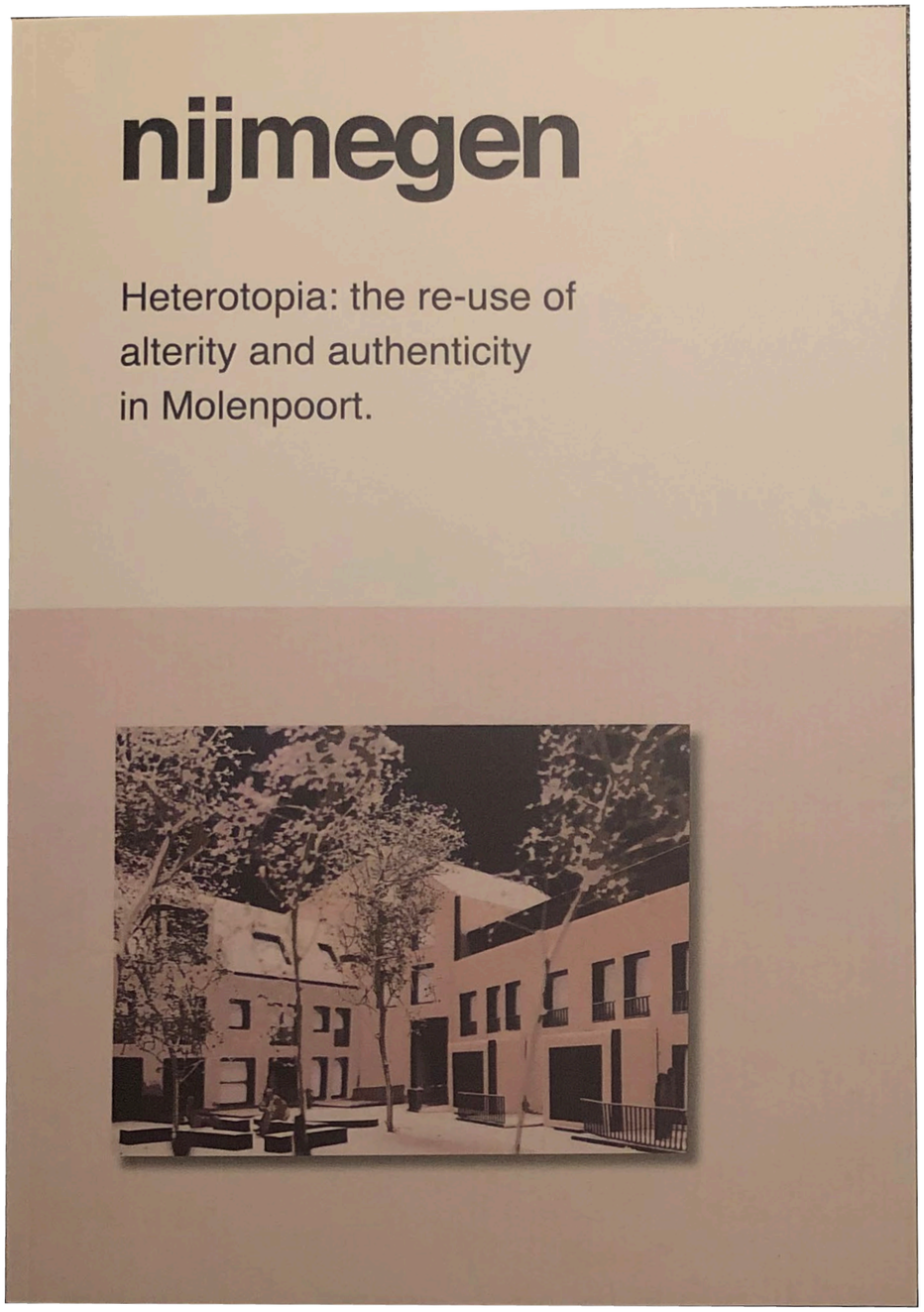
Herman de Vries, Mixed Media

grass between paper and glass, 2016.

BRICOLAGE

Definition

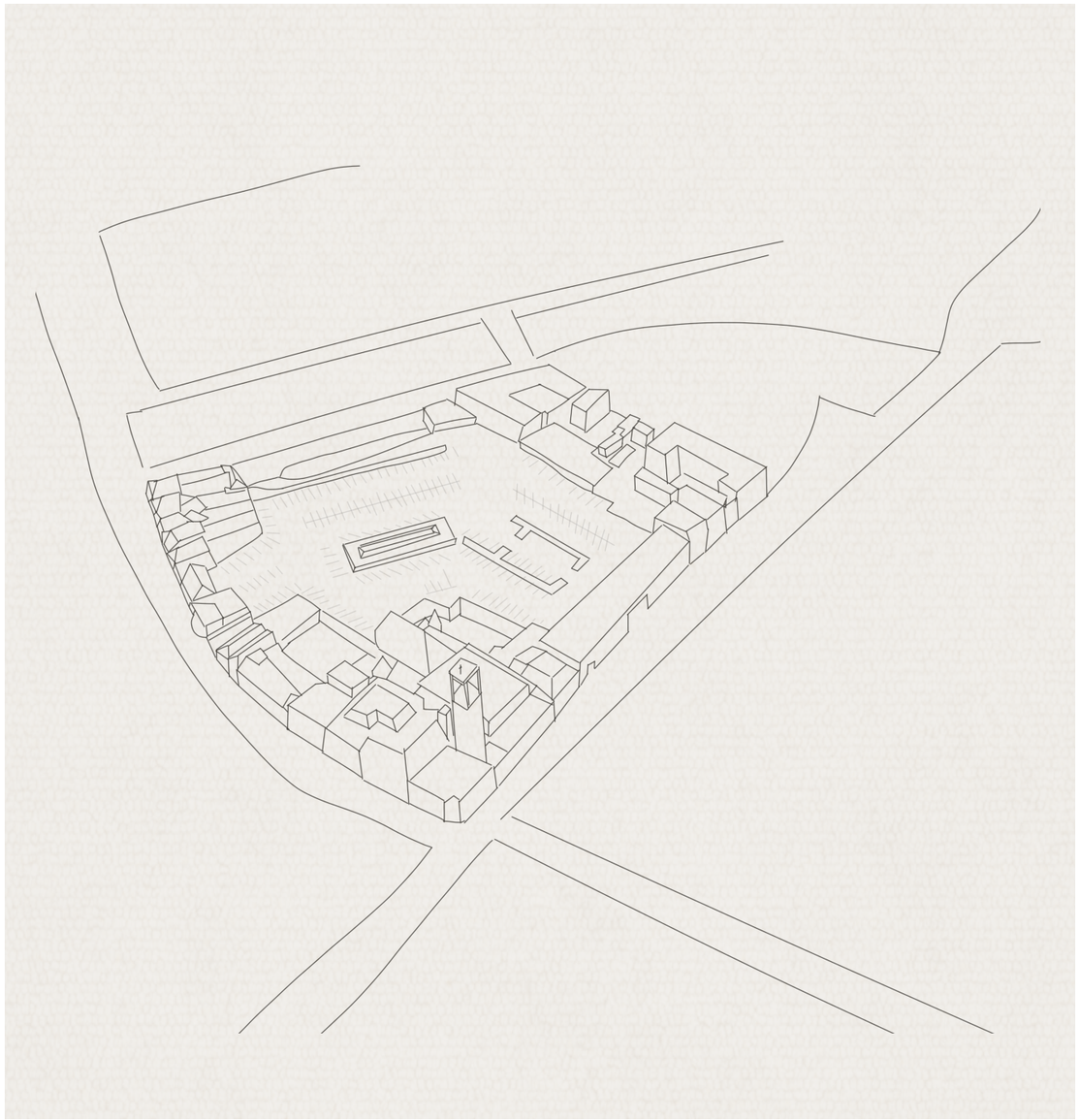
Aldo Rossi, *La cupola for Alessi*, 1988.


nijmegen
Heterotopia: the re-use of
alterity and authenticity
in Molenpoort.

a bricolage
layout

I. Research and thematic

Nijmegen (Noviomagum) map, Braun and Hogenberg as published in Civitates orbis terrarum, 1572.

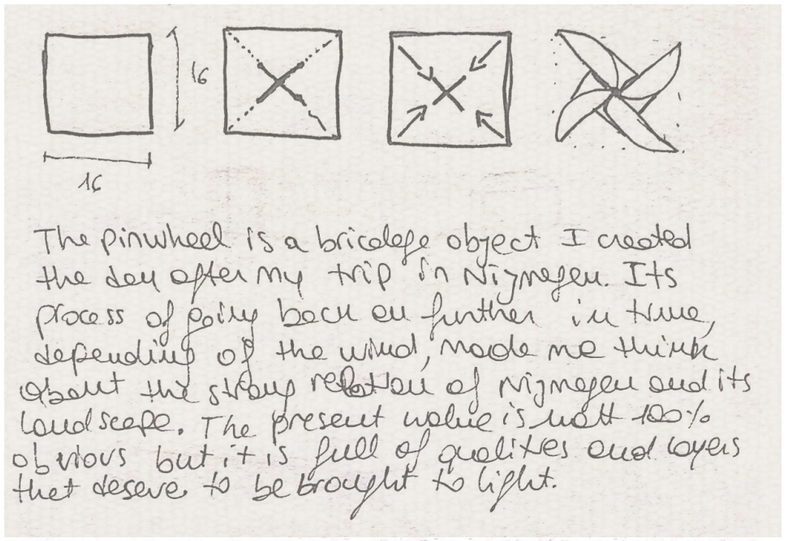


CITY

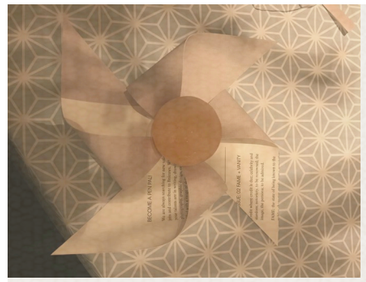
Morphology

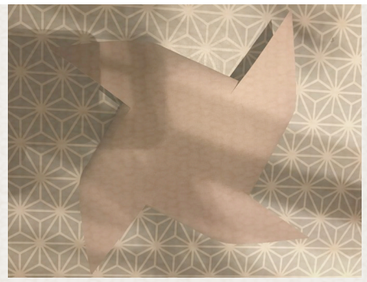
CITY

Impression



The pinwheel is a bricolage object I created the day after my trip in Nijmegen. Its process of going back on further in time, depending of the wind, made me think about the strong relation of Nijmegen and its landscape. The present value is not 100% obvious but it is full of qualities and layers that deserve to be brought to light.



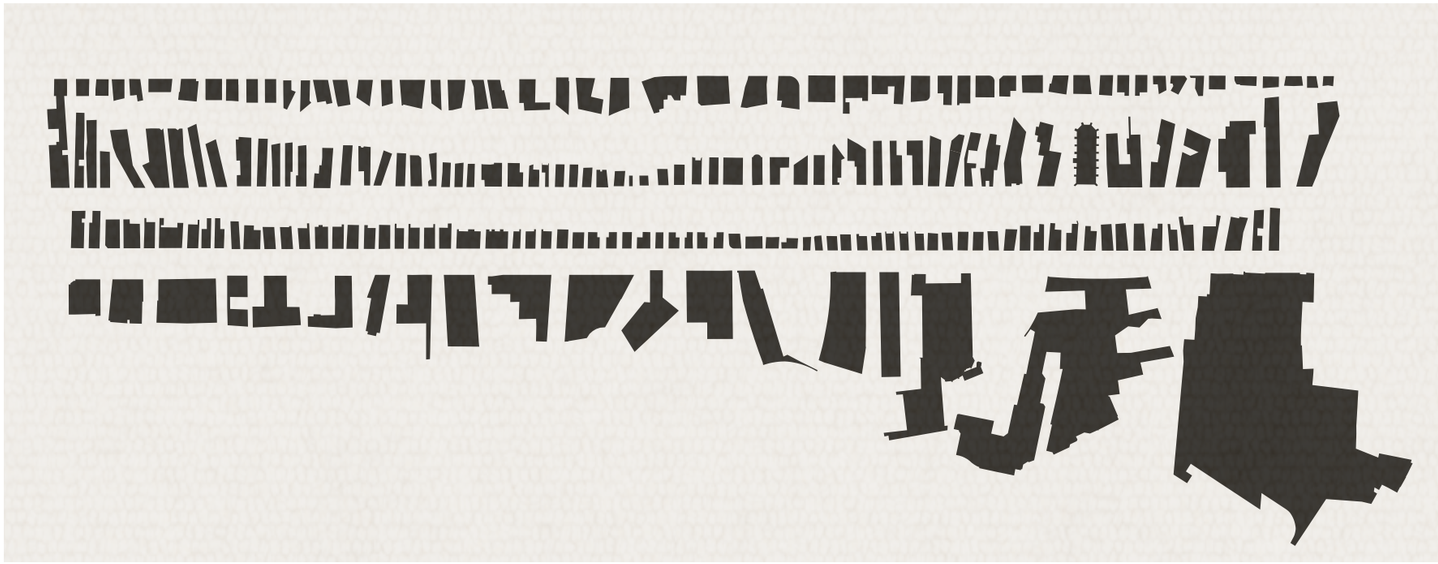


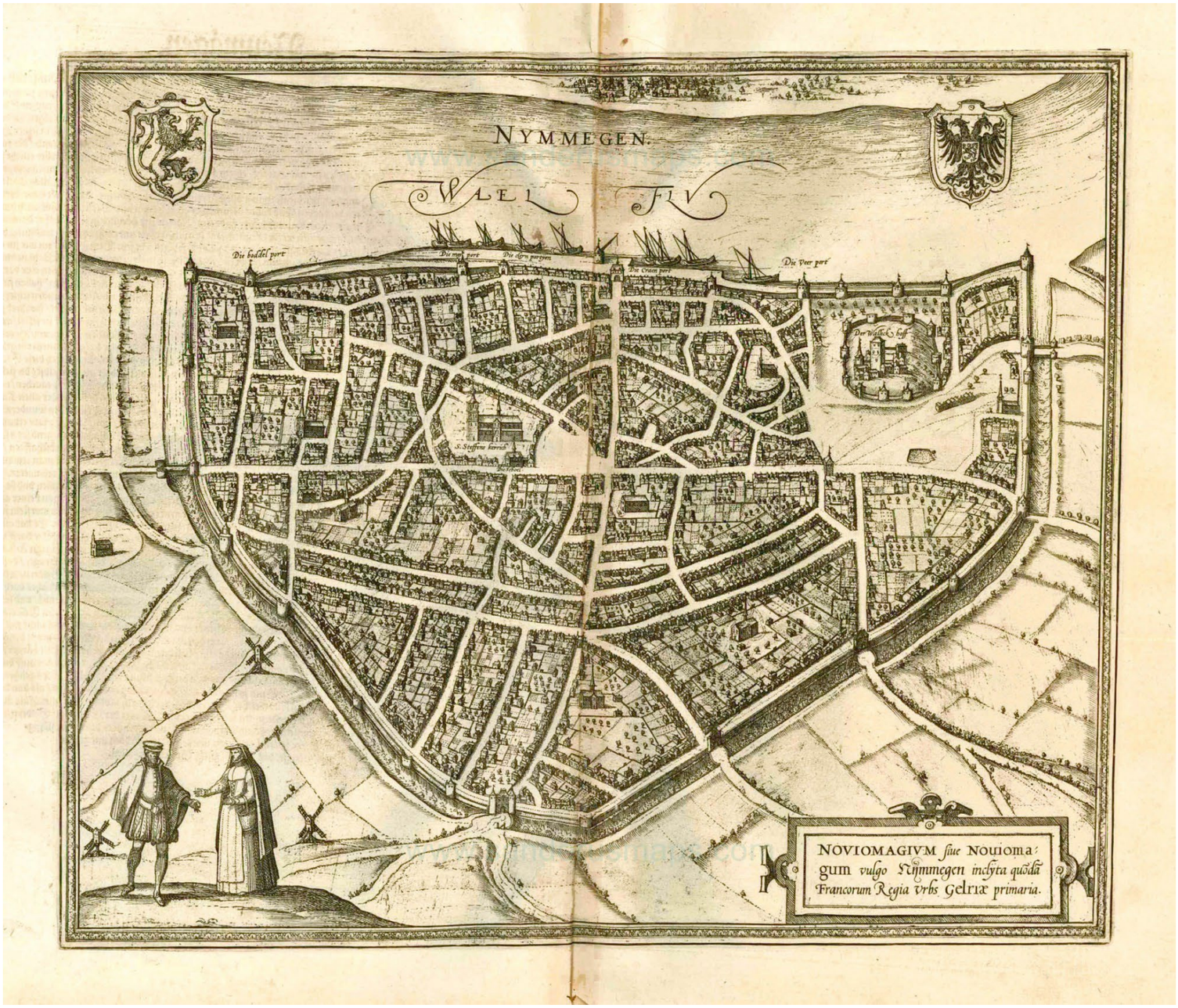
CITY

Symbols

CITY

Bricolage order

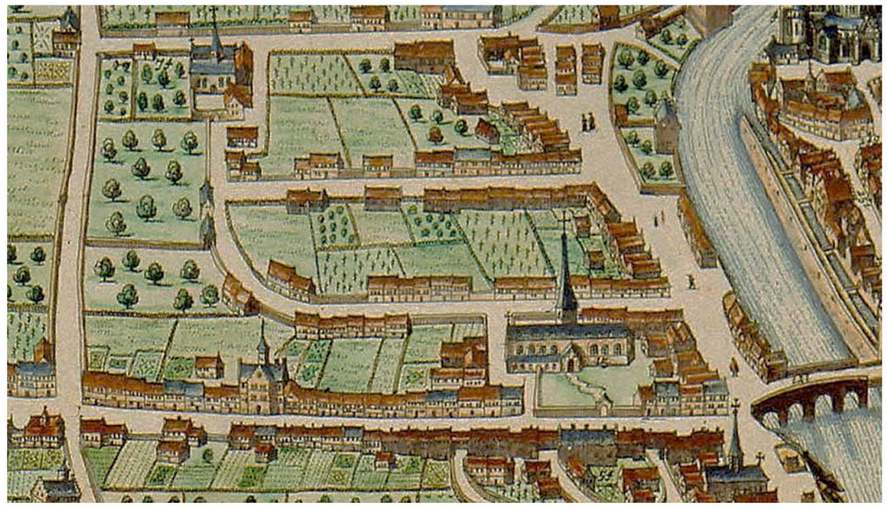


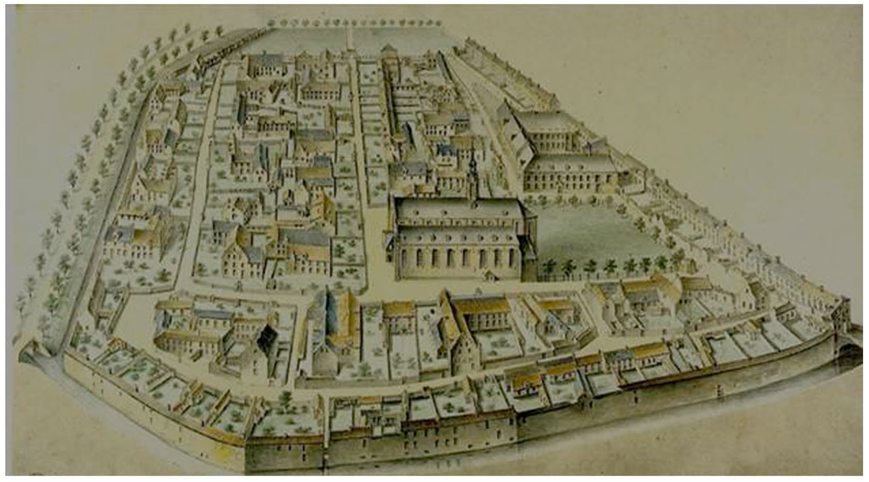


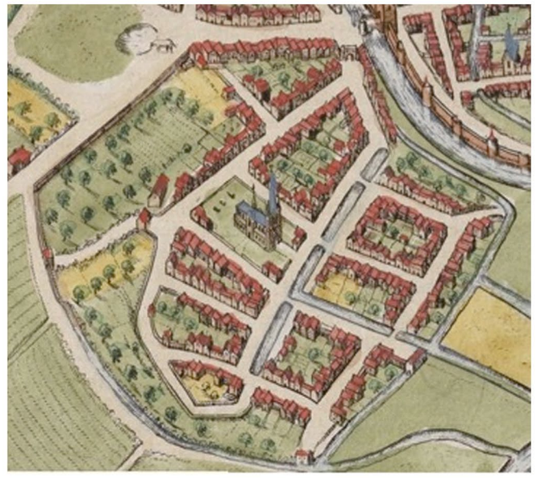
Bird’s-eye plan of Nijmegen by Braun and Hogenberg, 1582

CITY

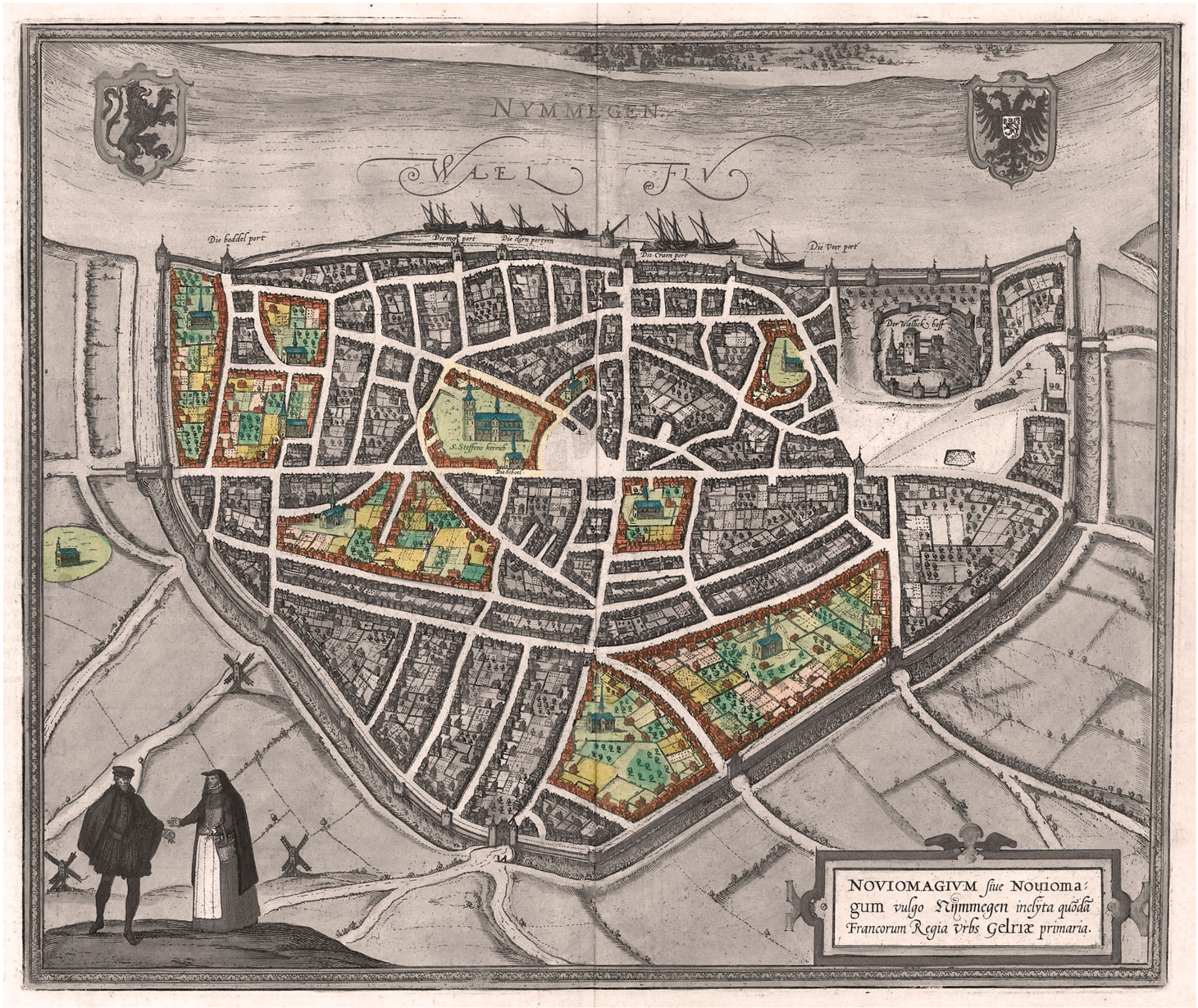
Beguinages



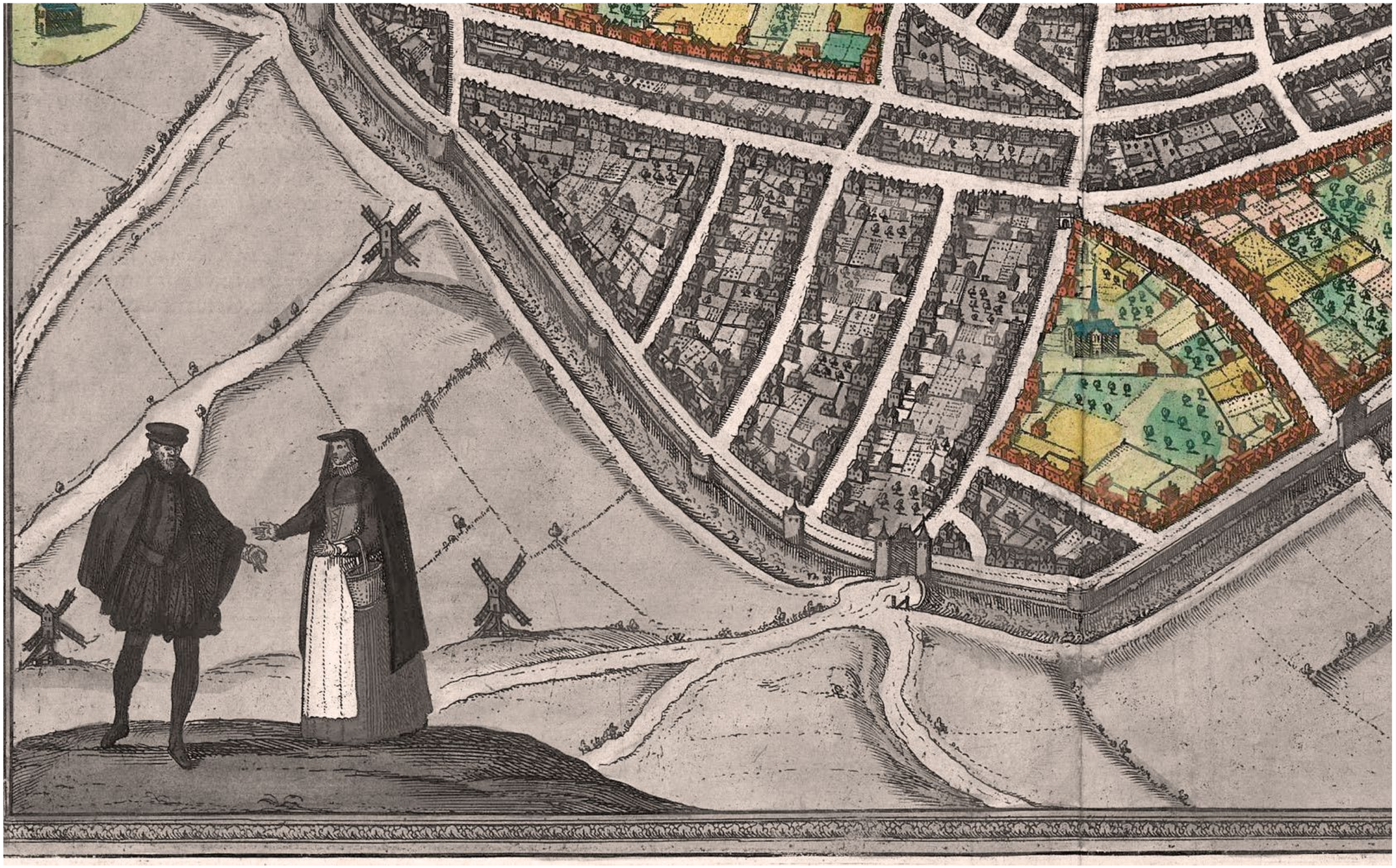




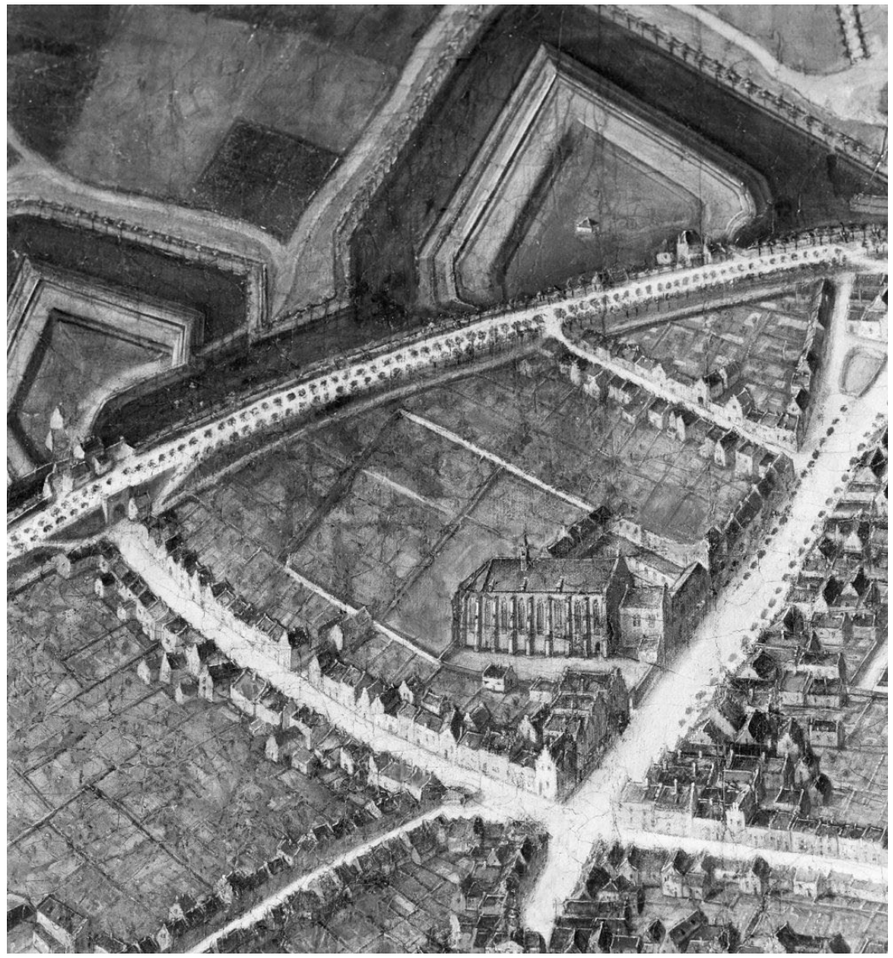
Collection of Beguinages urban configurations, Martínez-Millana, 2020,



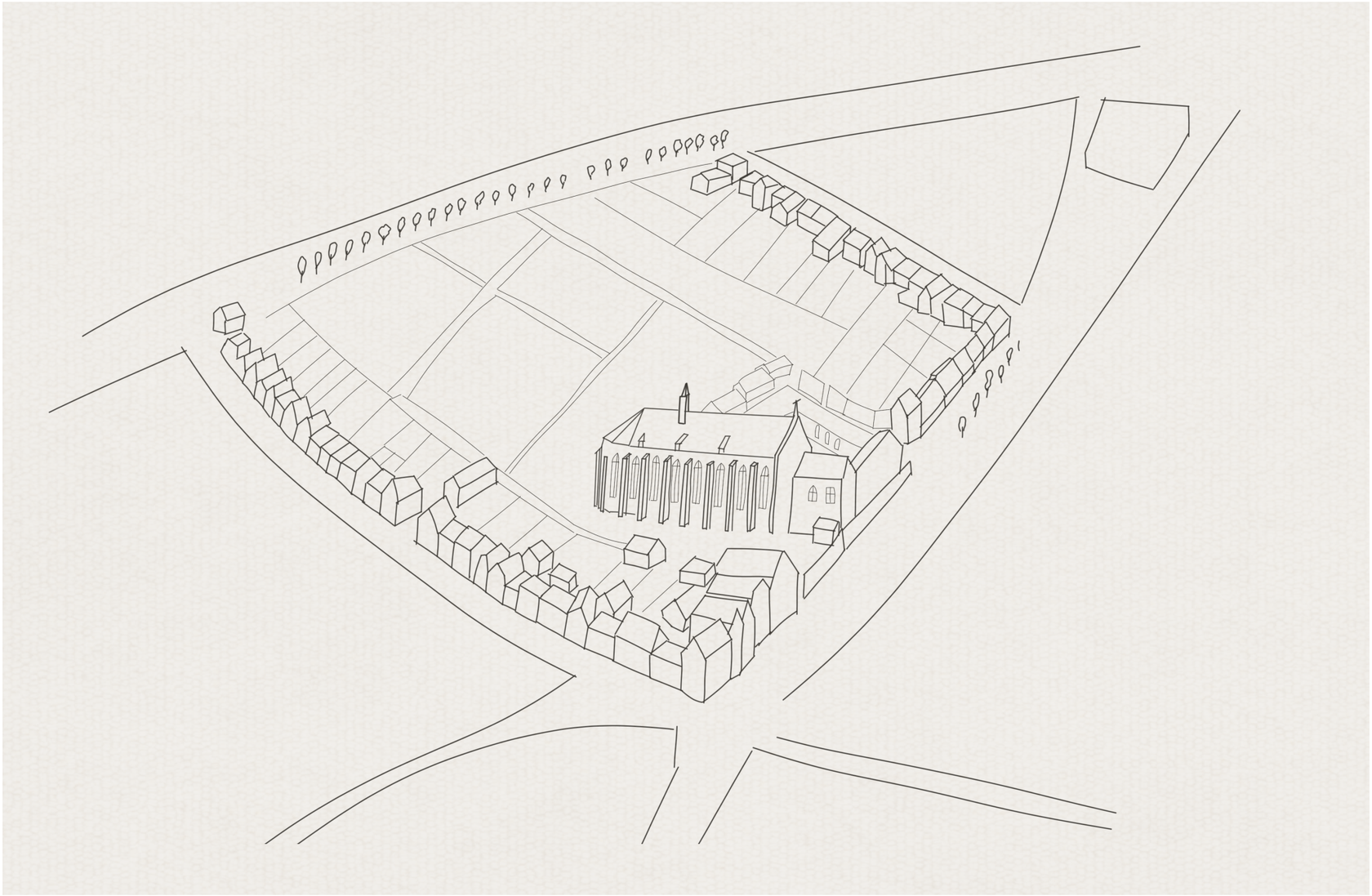
Highlighting churches in the bird's-eye plan of Nijmegen by Braun and Hogenberg, 1582

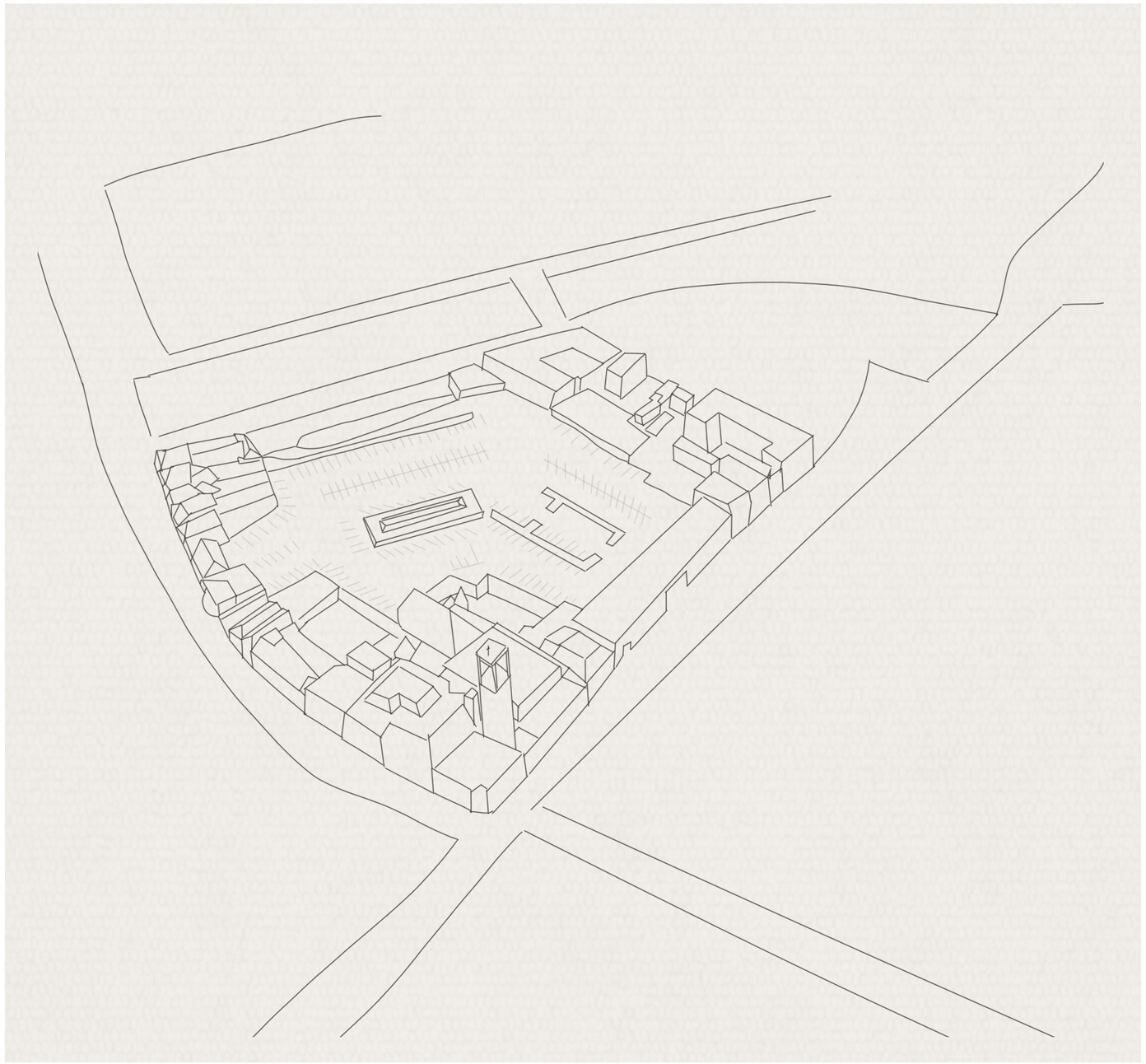


Zoom in bird’s-eye plan of Nijmegen by Braun and Hogenberg, 1582



Bird’s-eye view of Nijmegen, Hendrik Feltman , 1668-1669.

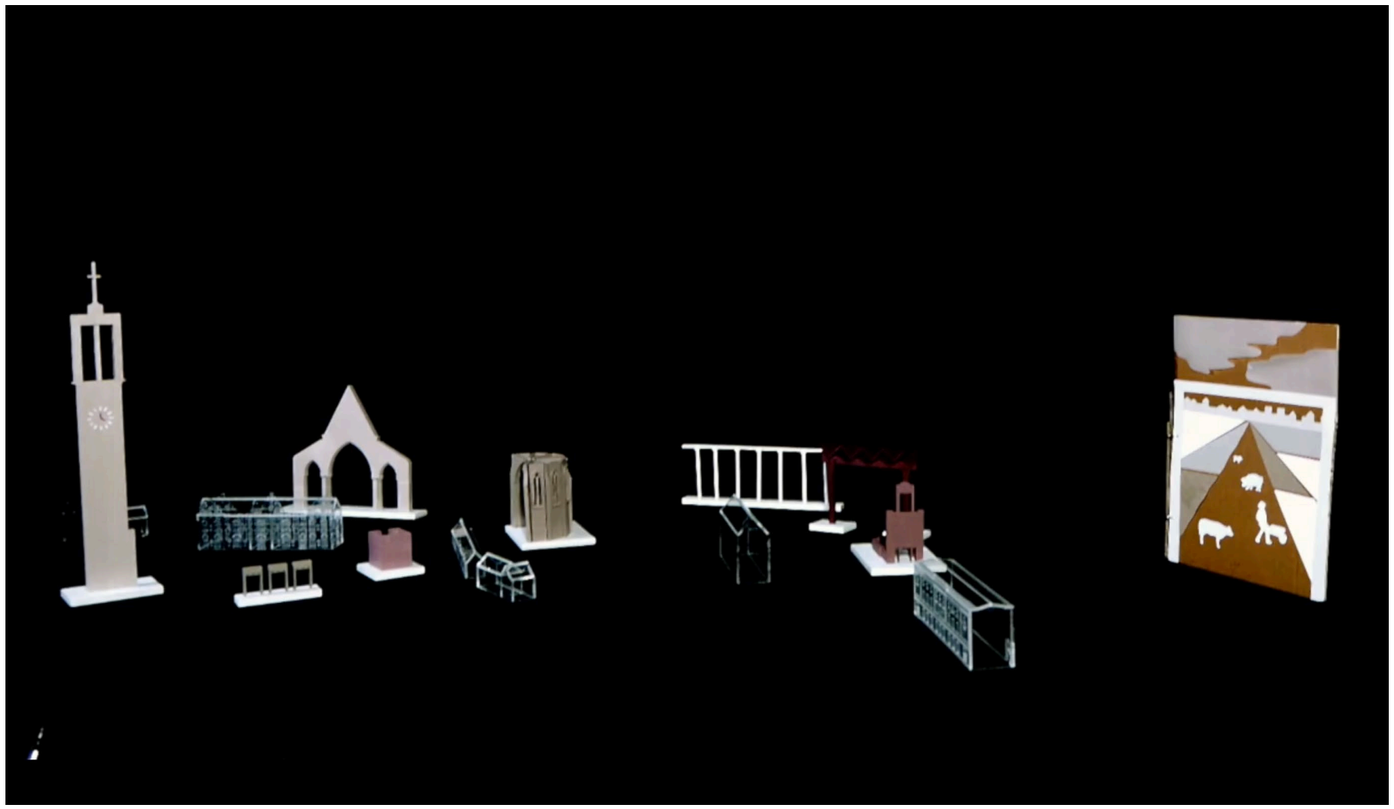




MOLENPOORT
P
Molenpoort

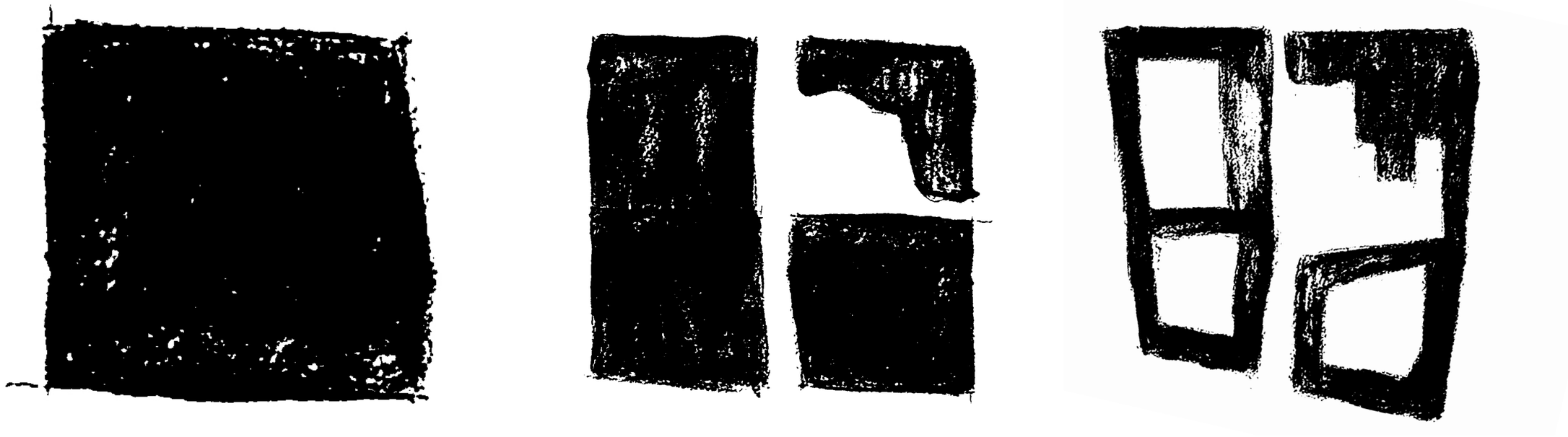
FACK
GENTRIFICATSIE

What time is this place? Talking buildings. 2020.



What time is this place? Talking buildings. 2020.

Jorge Oteiza, *Caja vacía,* 1958.



Laura Piccinin, *The meaning of emptiness,* 2021.

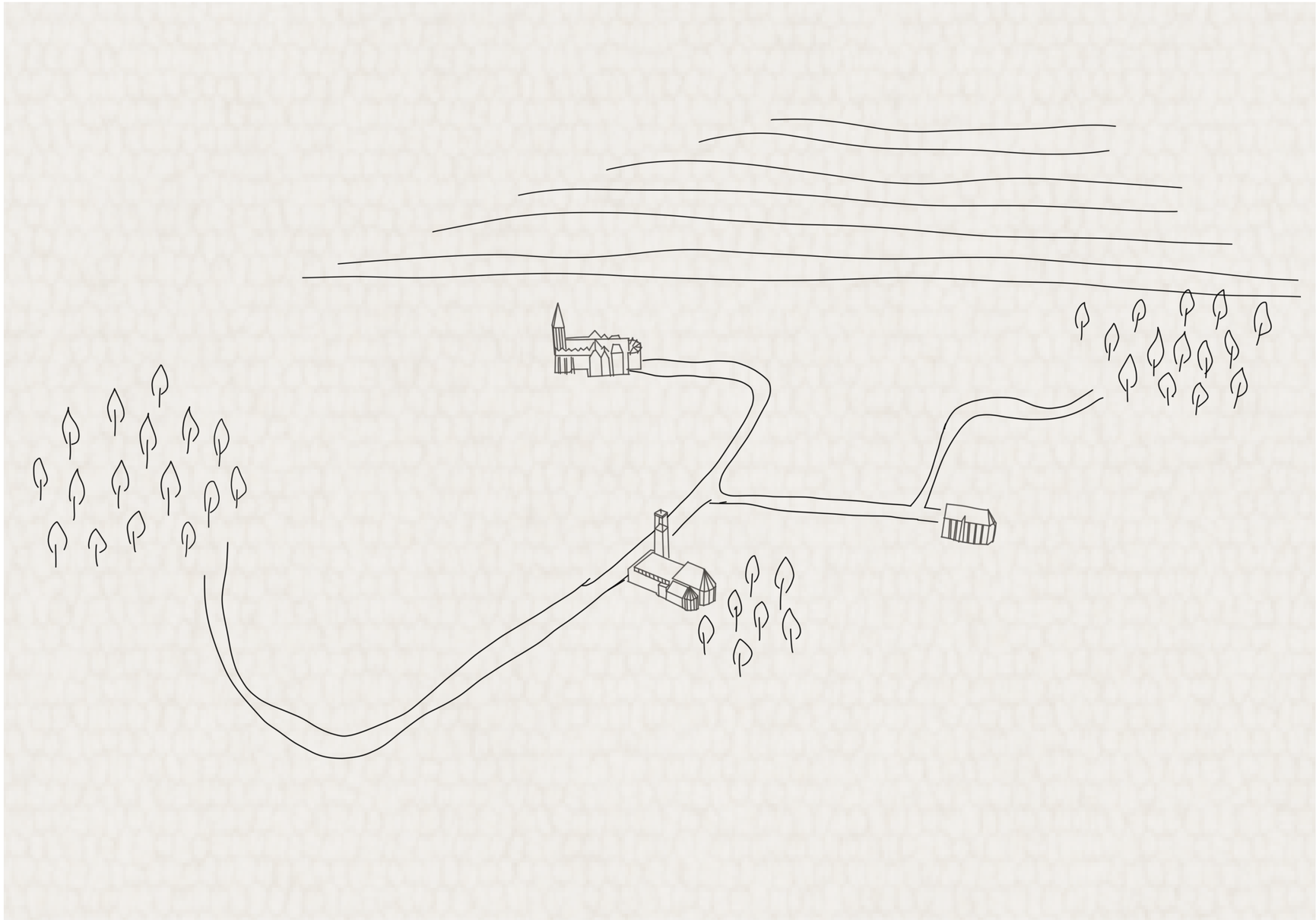
II. Urban position

URBAN

New dialogues

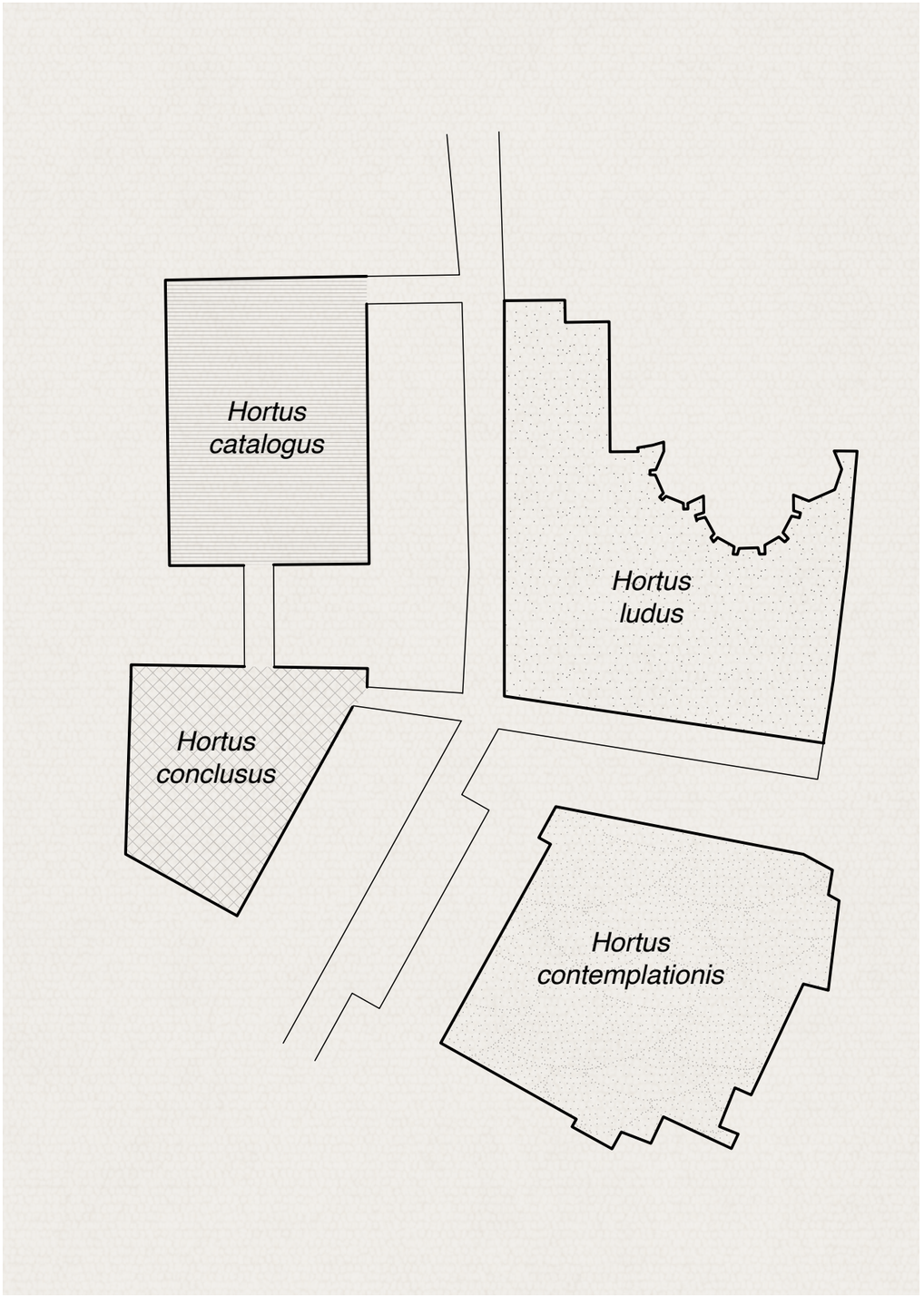
URBAN

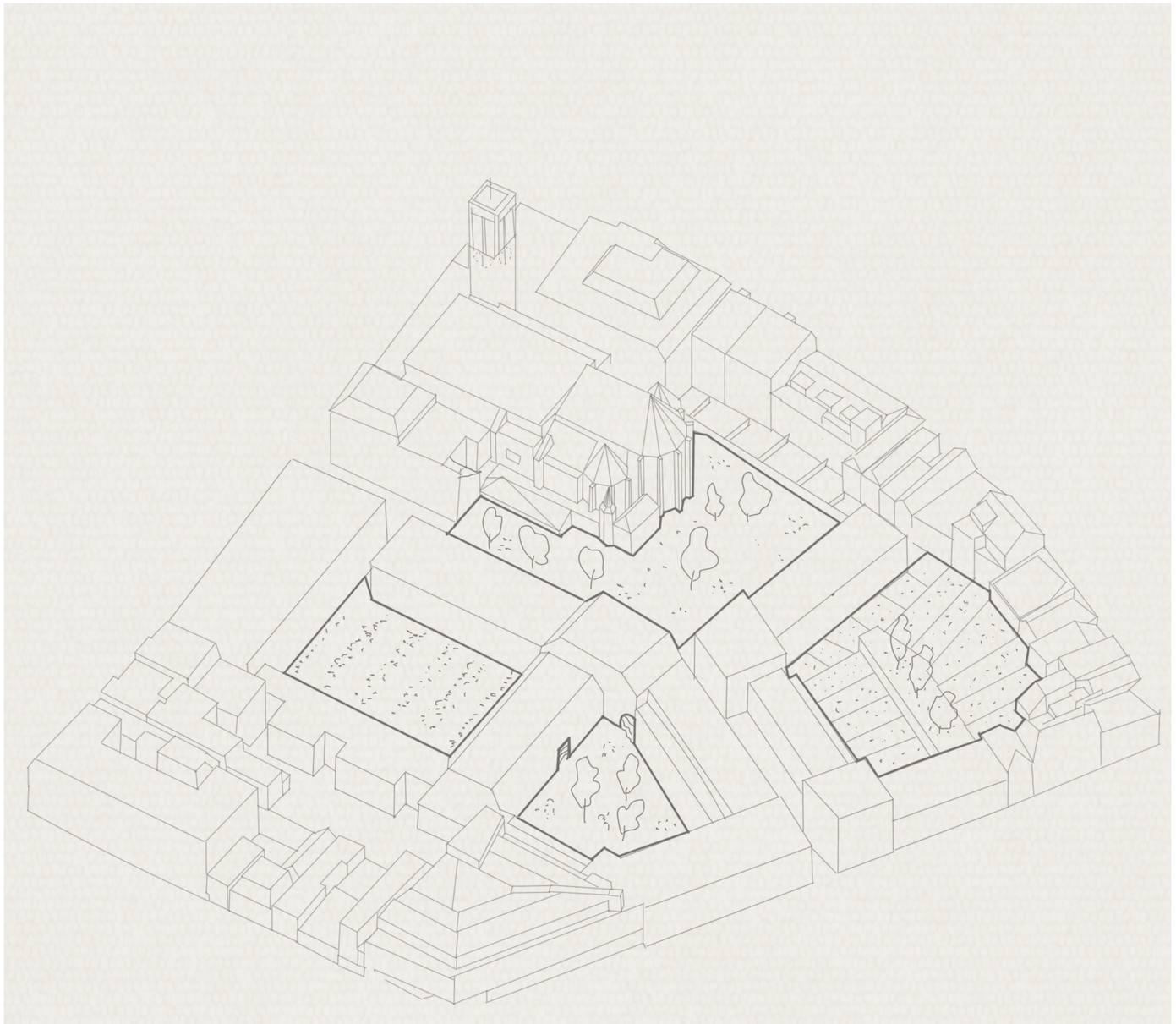
Re-connexion



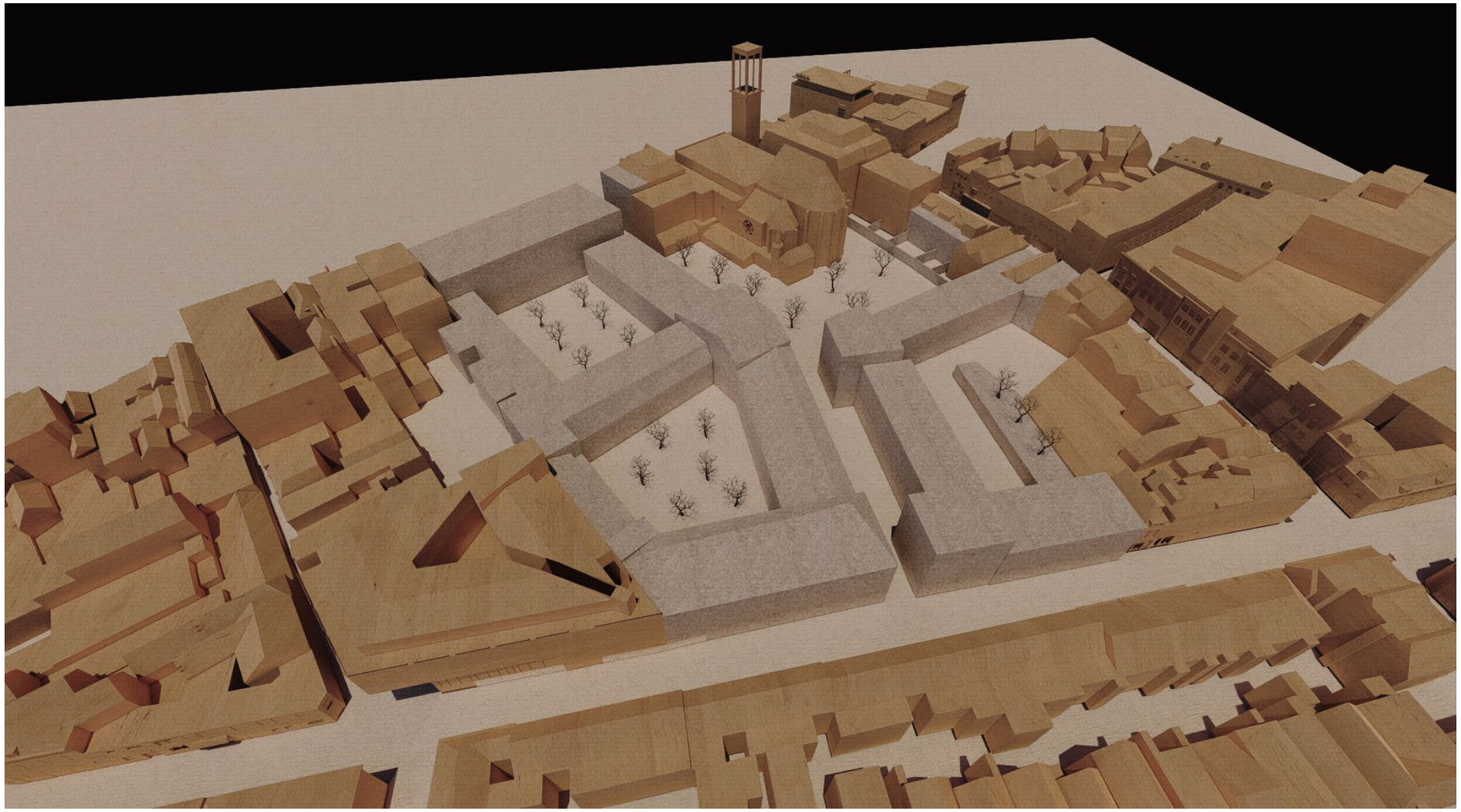
URBAN

Hortus, Horti

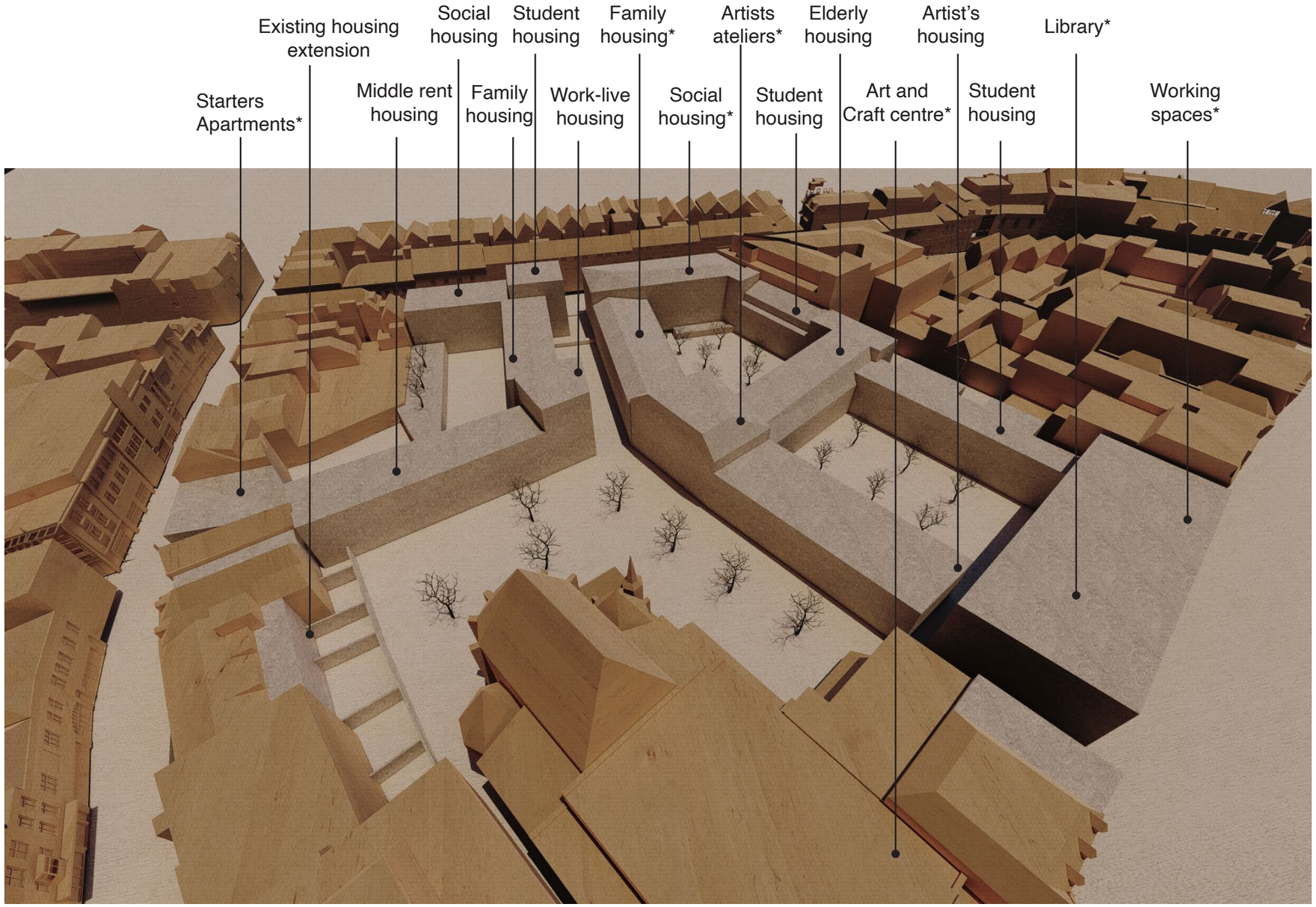




MODEL 1:1000



PROGRAM



* active plinth with shops/studios/activities

GFA

Starters aparments 345 m^2 x 3 floors= 1035 m^2

Housing extension 140 m^2 x 2 floors= 280 m^2

Middle rent housing 392 m^2 x 3 floors= 1176 m^2

Social housing 255 m^2 x 3 floors= 765 m^2

Family housing 324 m^2 x 3 floors= 972 m^2

Student housing 140 m^2 x 4 floors= 560 m^2

work-live housing 153 m^2 x 4 floors= 612 m^2

Family housing 475 m^2 x 3 floors= 1425 m^2

Social Housing 500 m^2 x 3 floors= 1500 m^2

Artist ateliers 300 m^2 x 4 floors= 1200 m^2

Student housing 150 m^2 x 2 floors= 300 m^2

Elderly housing 617 m^2 x 3 floors= 1851 m^2

Art and Craft centre 2098 m^2 x 3 floors= 6294 m^2

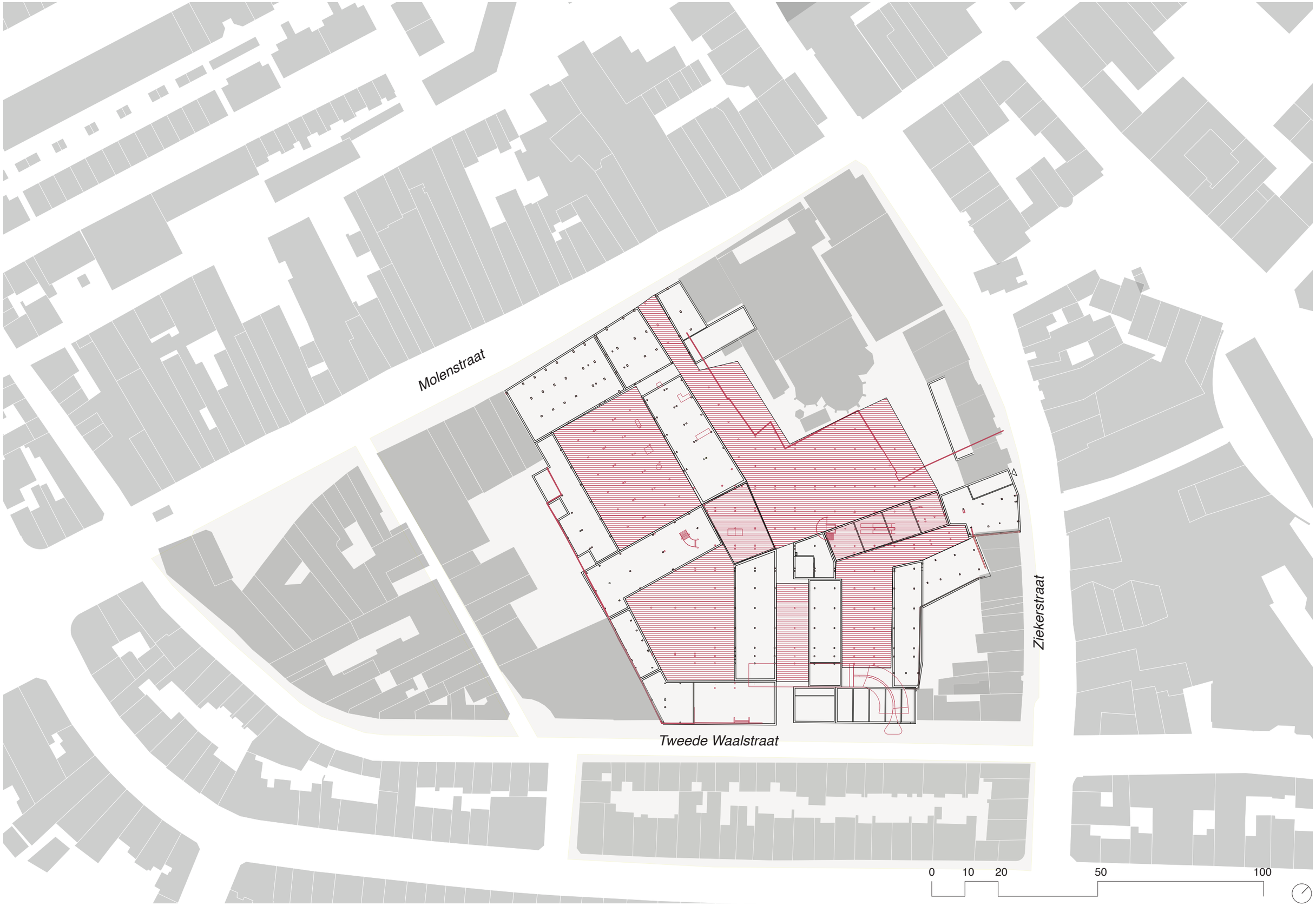
Artists housing 506 m^2 x 3 floors= 1518 m^2

Students housing 400 m^2 x 3 floors= 1200 m^2

Library 315 m^2 x 4 floors= 1260 m^2

Woking spaces 610 m^2 x 4 floors= 2440 m^2

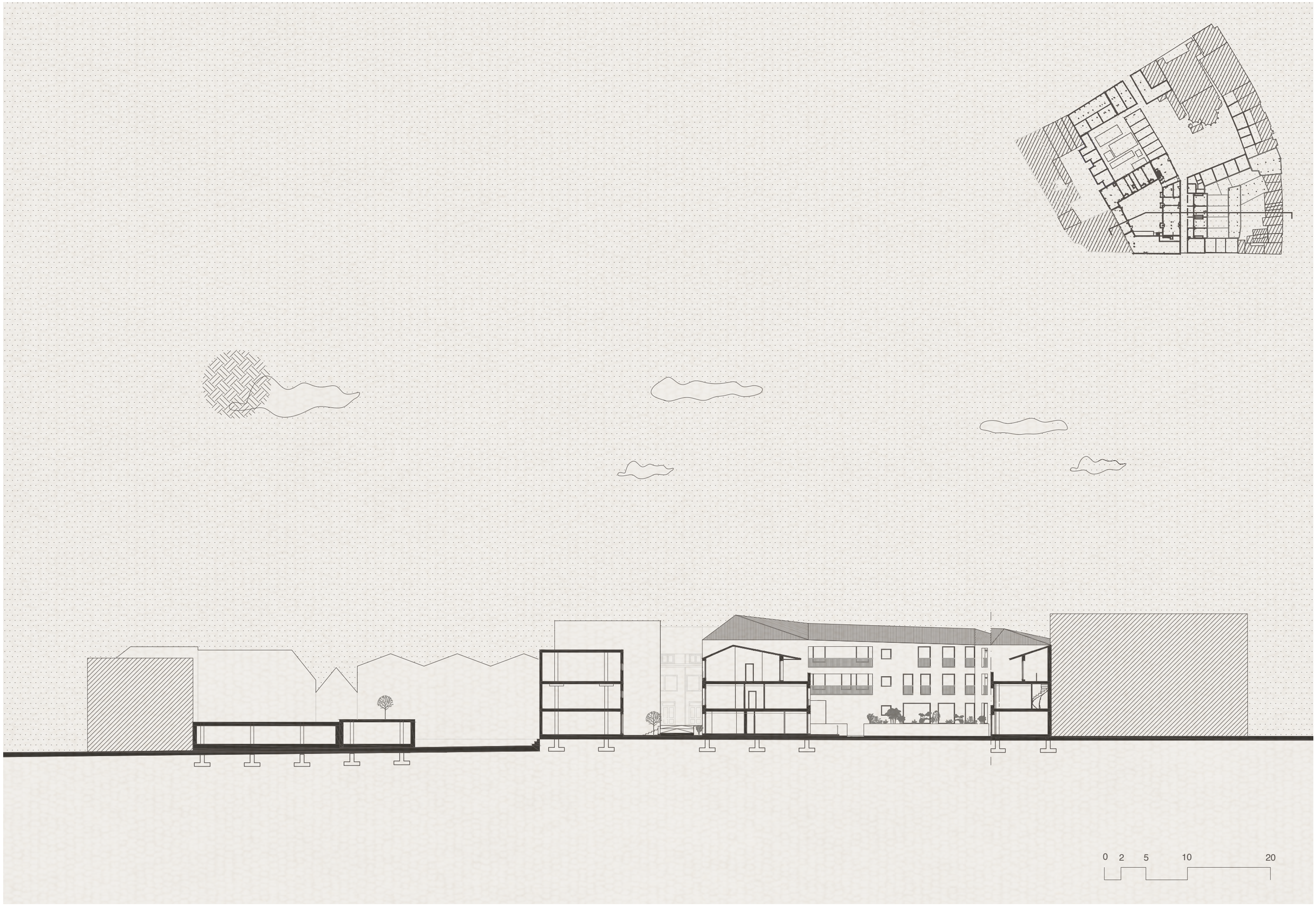
DEMOLITION PLAN



MASTERPLAN 1:1000

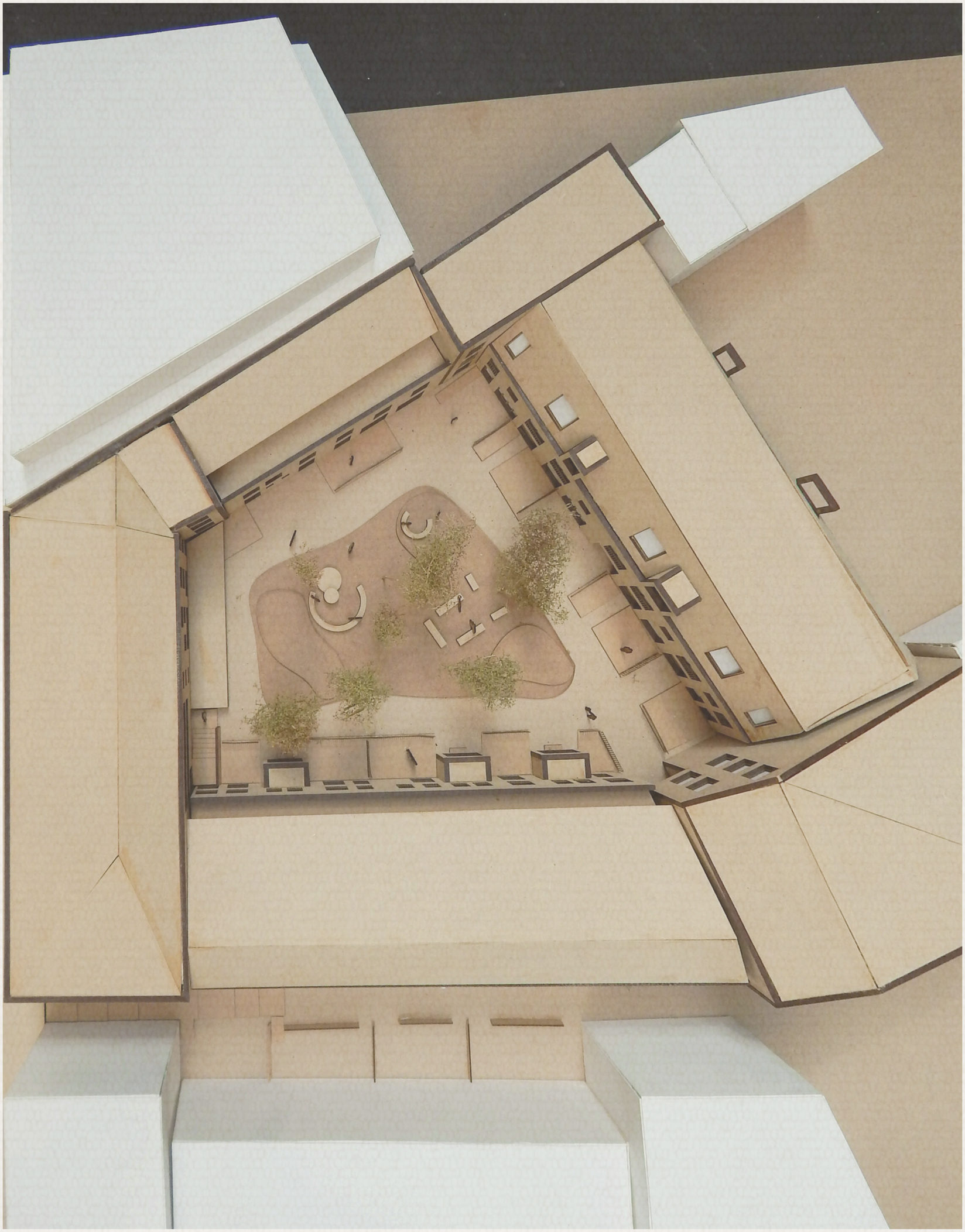
URBAN SECTION 1:400

URBAN SECTION 1:400

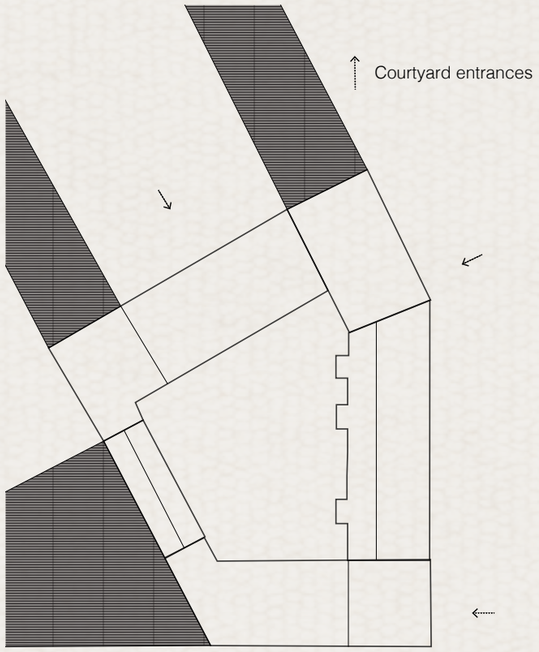


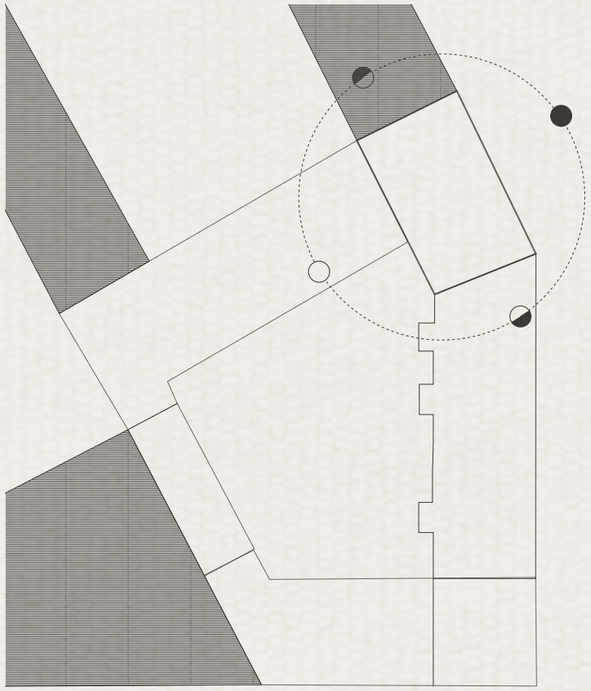
GROUND FLOOR PLAN

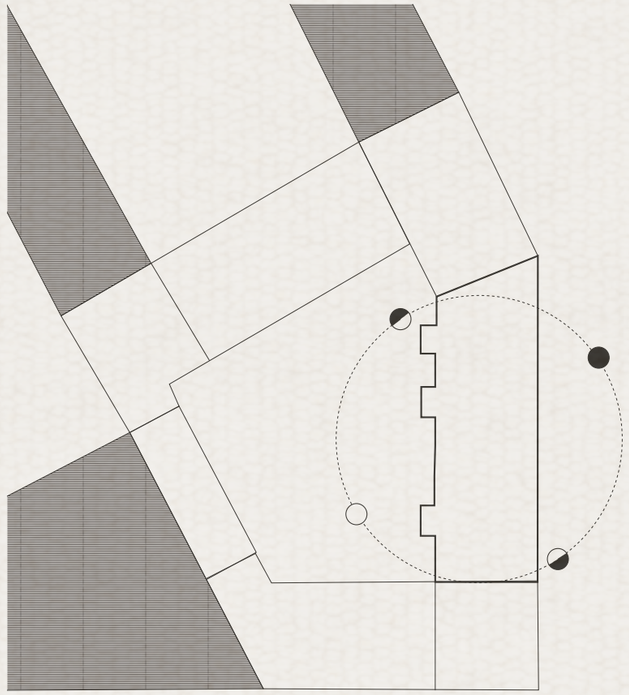
III. Architectural proposal

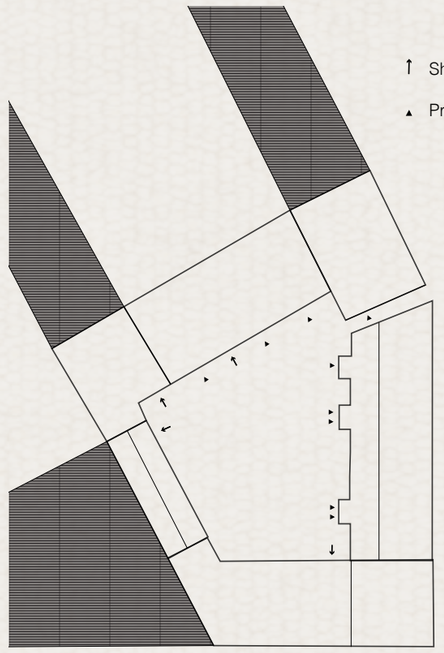


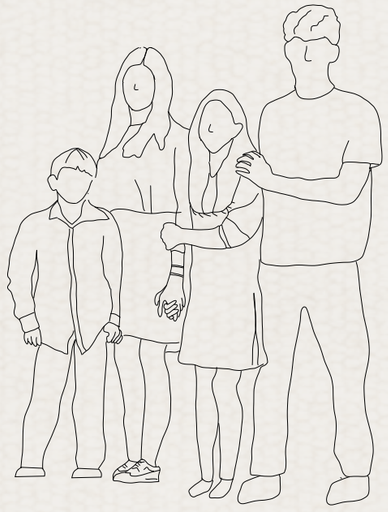
SUN EXPOSITION STUDIES











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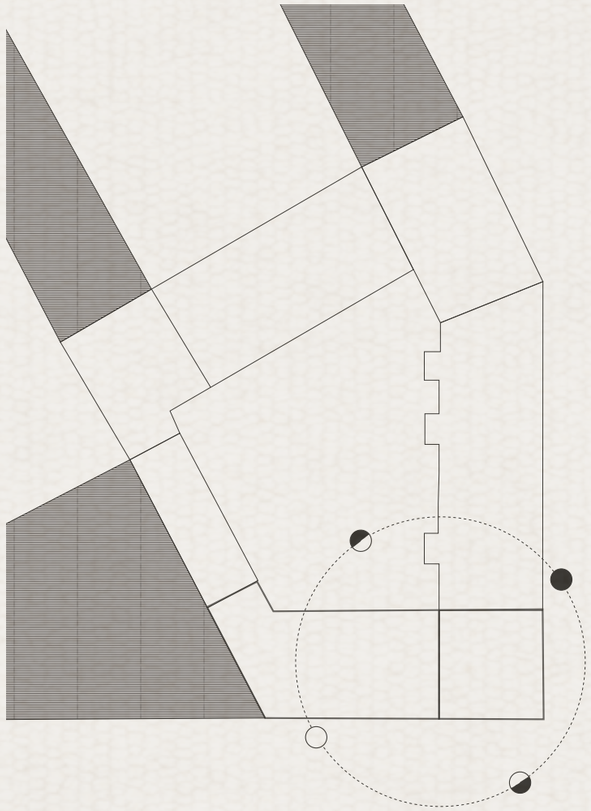
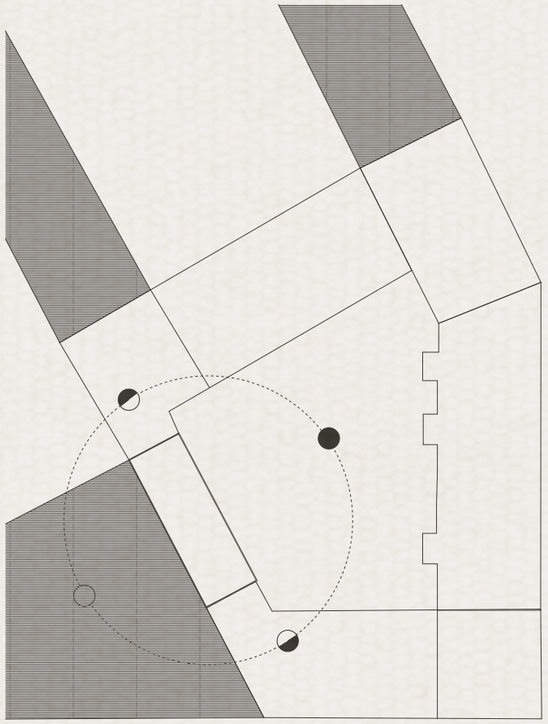
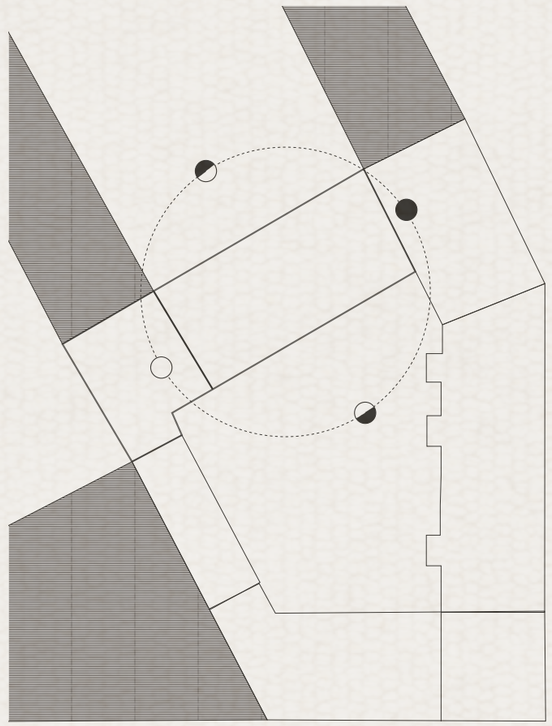
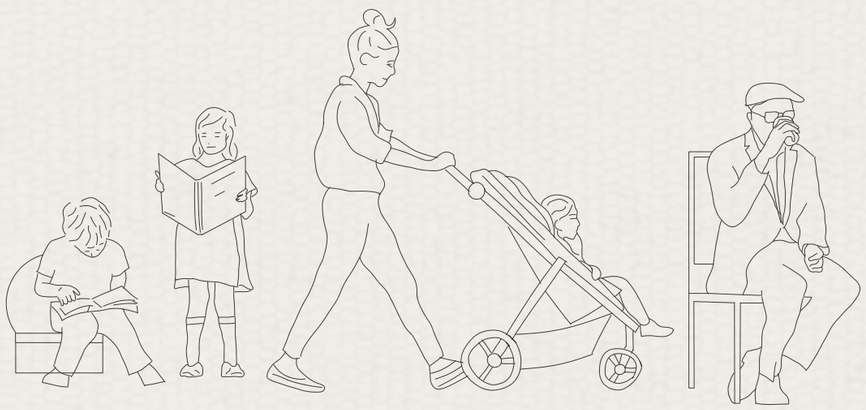
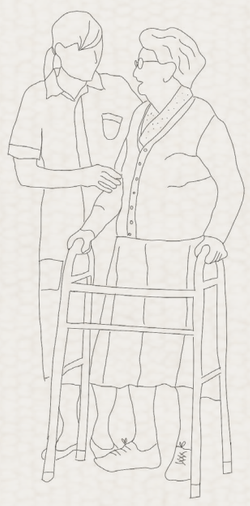
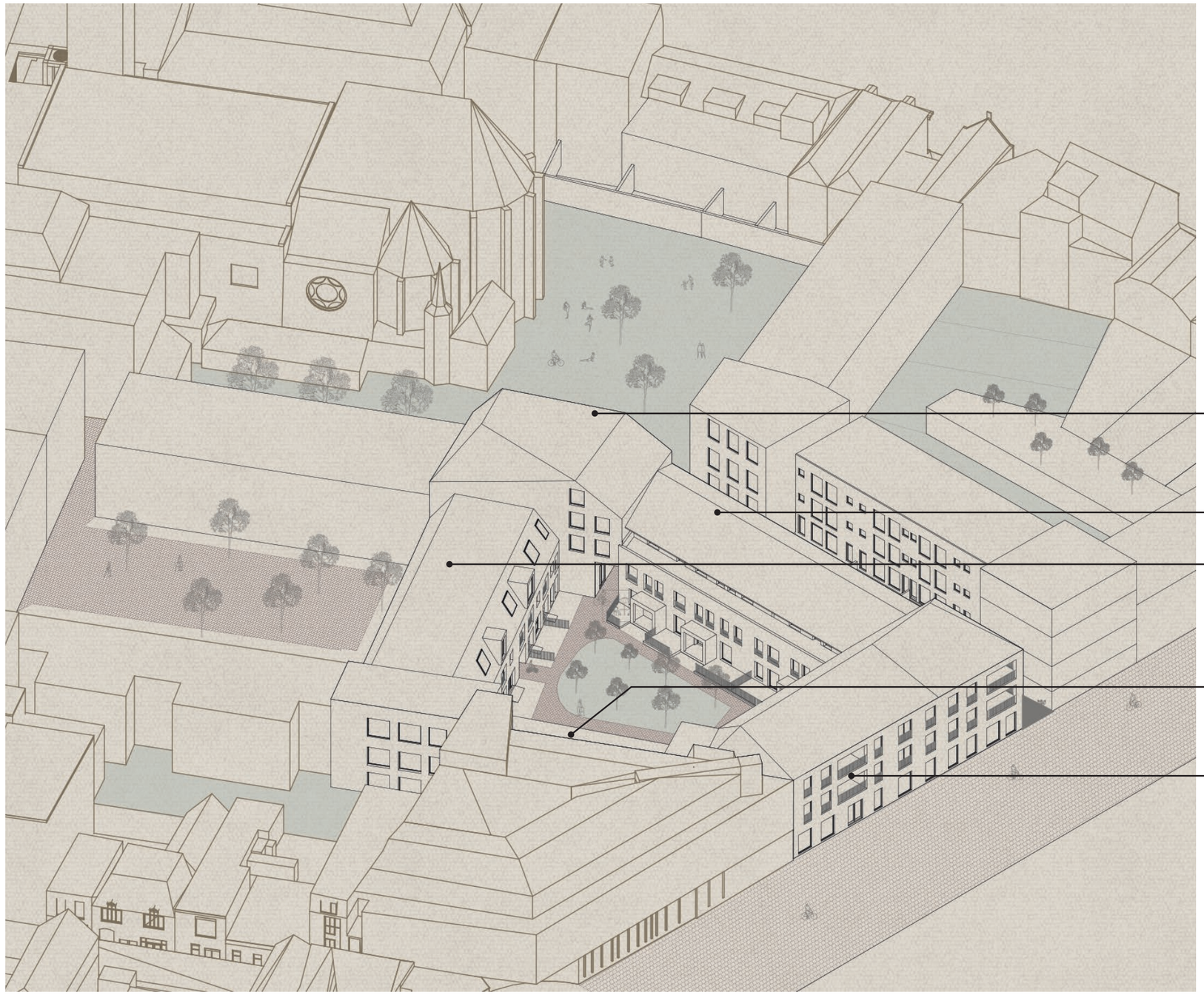












PROGRAM

Artists building
GF - Pop-up shop and cafe 140 m^2
FF - Artists ateliers 265 m^2
SF - Artist ateliers 265 m^2
TF - Exposition area 265 m^2

Family Housing
GF - Kitchen and Living, studio spaces 455 m^2
FF - bedroomds 455 m^2
SF - Studio space 366 m^2

Elderly co-living
GF - Daily care, Apartments 584 m^2
FF - Woman shelter, Apartments, Bedrooms 584 m^2
SF - Apartments and shared space 547 m^2

Student co-living
GF - Shared spaces, bike parking 133 m^2
FF - Bedorooms 120 m^2

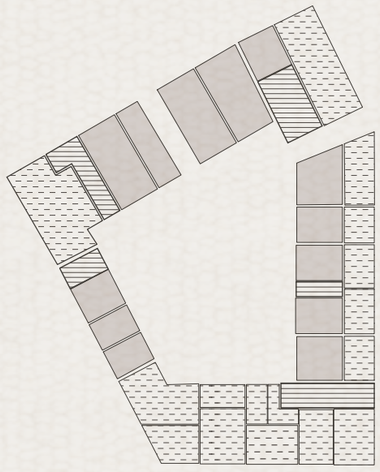
Social housing
GF - Menthal Health centre 482 m^2
FF - Apartments 506 m^2
SF - Apartments 506 m^2

TOTAL PROGRAM

Circulation 11 %

Public access 21%

Private access 68%

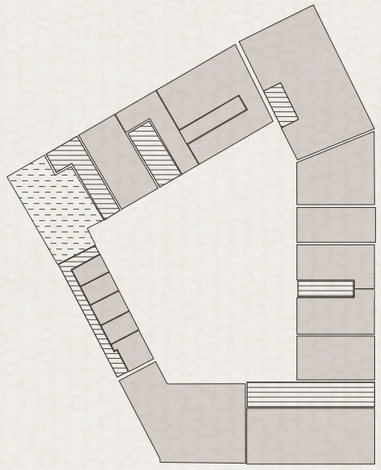


Ground Floor

Circulation 12 %

Public access 50%

Private access 38%

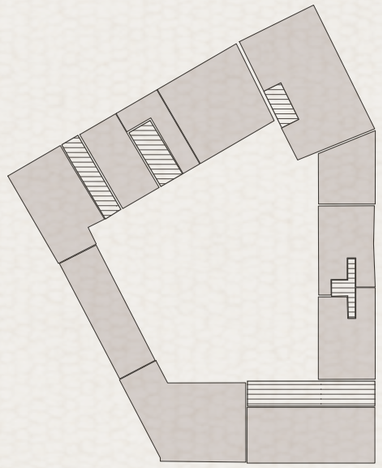


First Floor

Circulation 10 %

Public access 7%

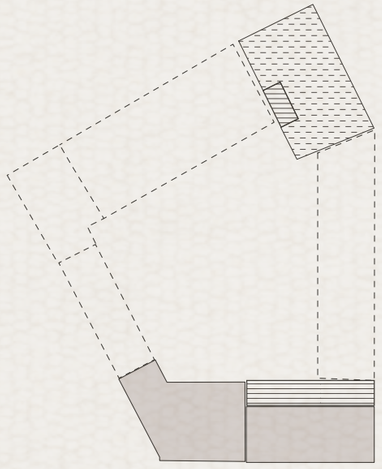
Private access 83%



Second Floor

Circulation 7%

Private access 93%



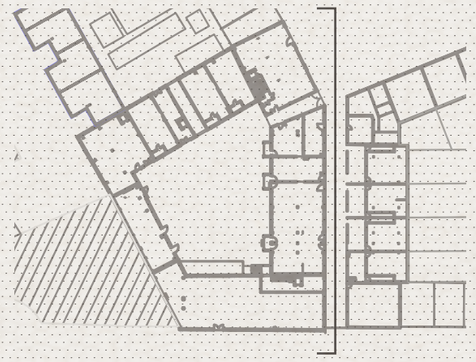
Third Floor

Circulation 14 %

Public access 39%

Private access 47%

FAÇADE OF THE ALLEY



Tweede Waalstraat

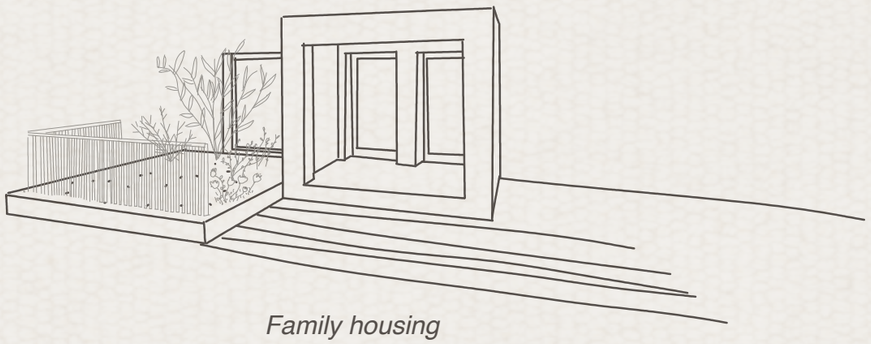
Molenpoort Alley

Courtyard entrance

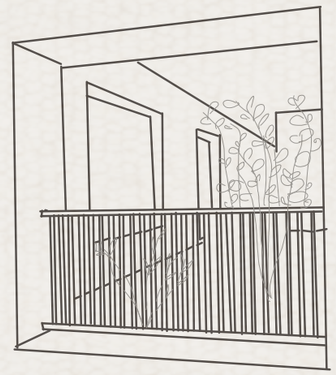
ZOOM IN

ENTRANCES AS AN URBAN FEATURE

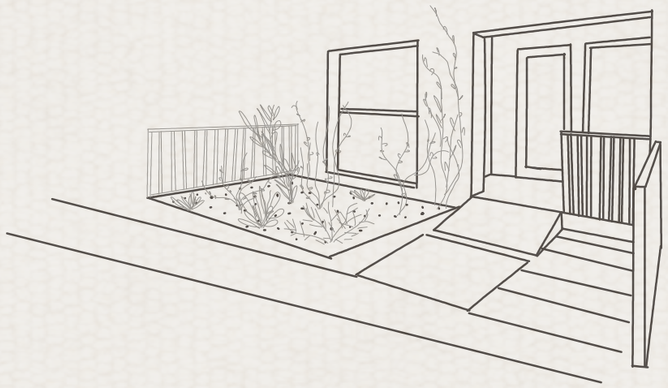
Transition space
Recognisable space
Connection inside-outside
Connection and view to the courtyard
Privacy and separation



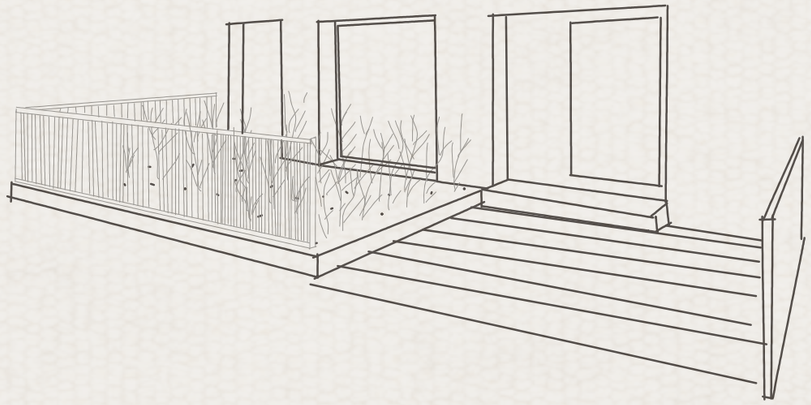
Family housing



Social housing



Elderly housing



Student housing

GROUND FLOOR PLAN

FIRST FLOOR PLAN

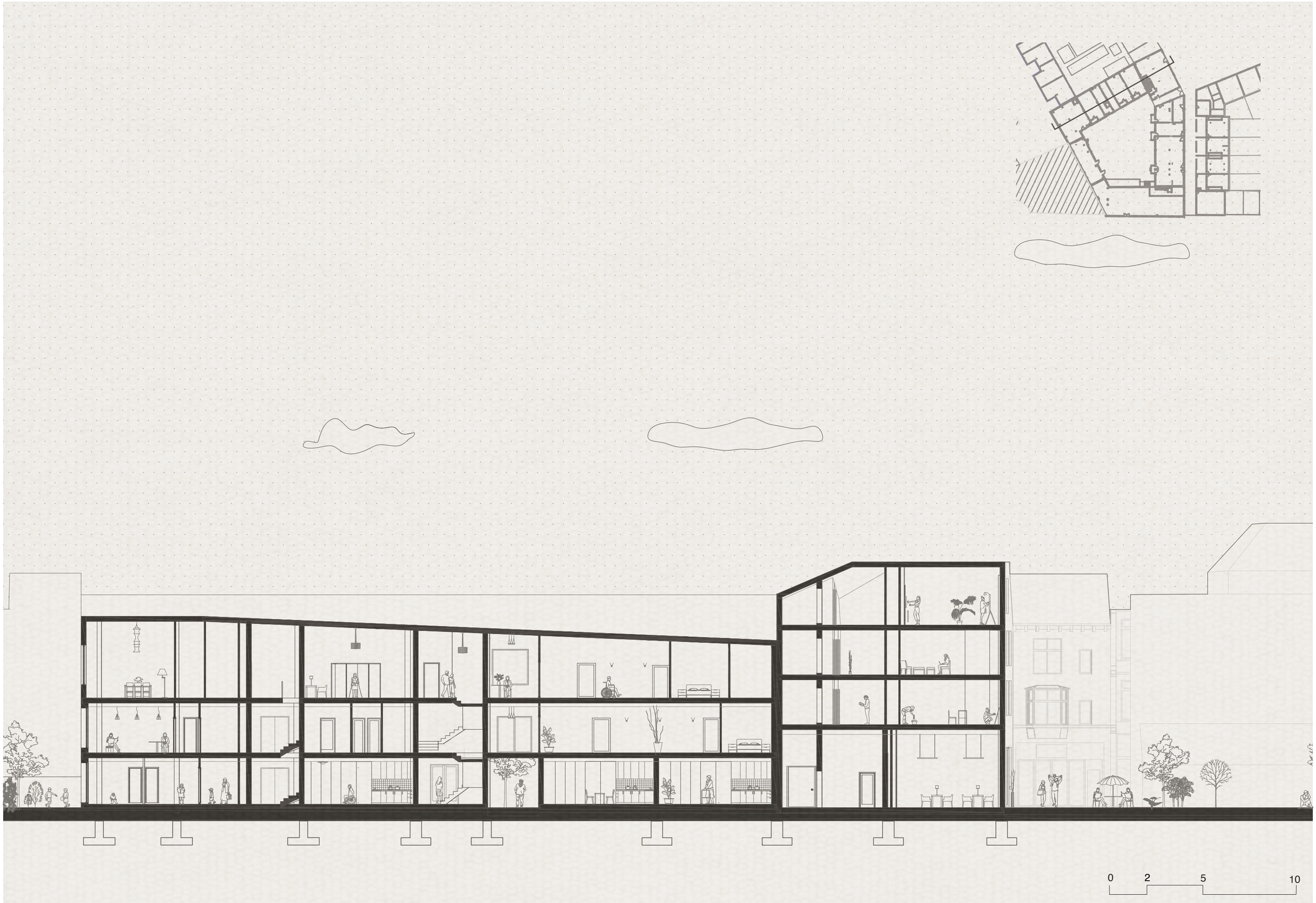
SECOND FLOOR PLAN

THIRD FLOOR PLAN

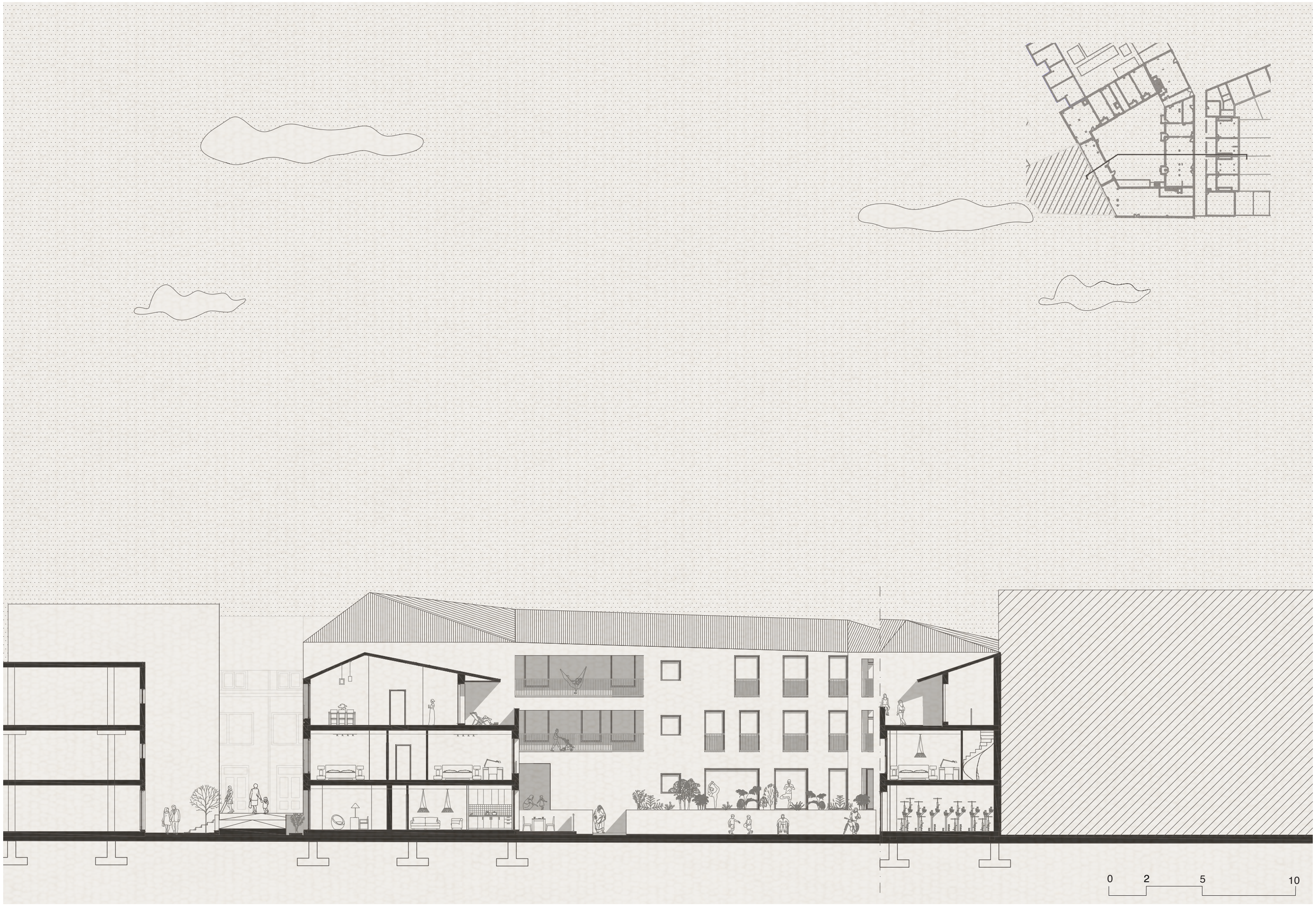
BEGUINAGE REFERENCES

ENTRANCE SECTION

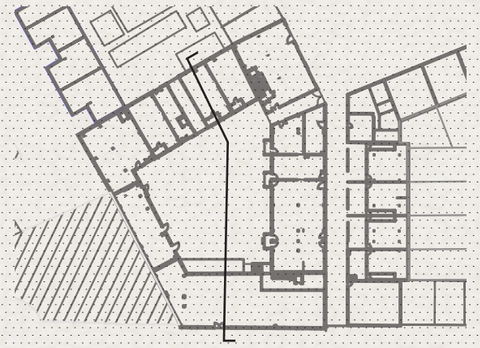
SECTION



ALLEY AND COURTYARD SECTION



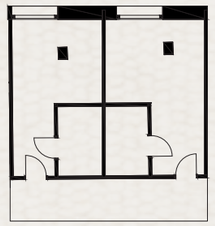
EXIT SECTION



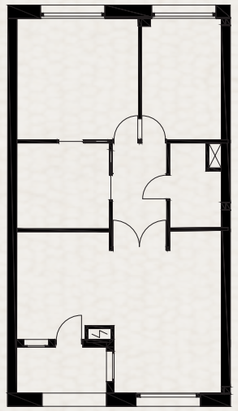
COURTYARD IMPRESSION FROM THE DAILY CARE

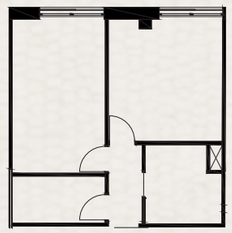
HOUSING TYPOLOGIES

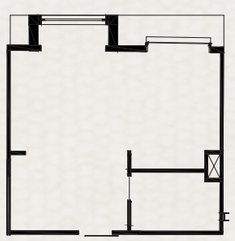
Student co-living



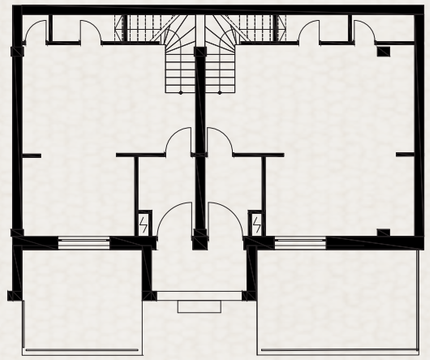
Elderly co-living

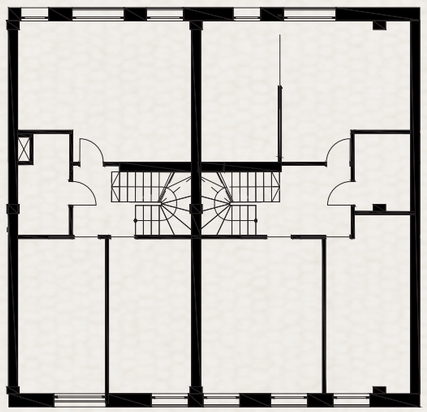


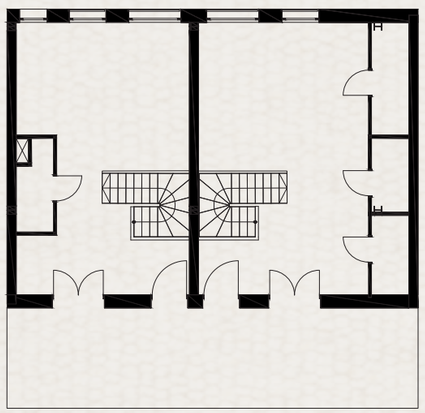




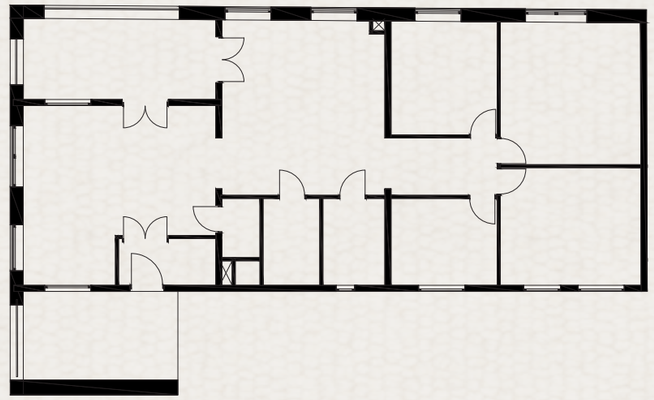
Family housing

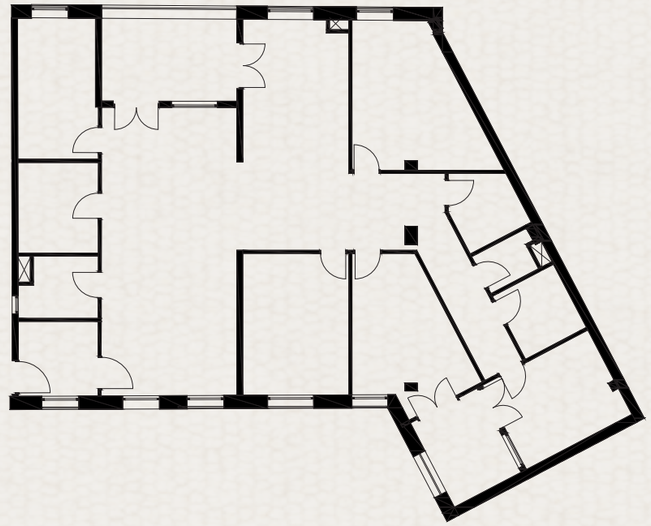




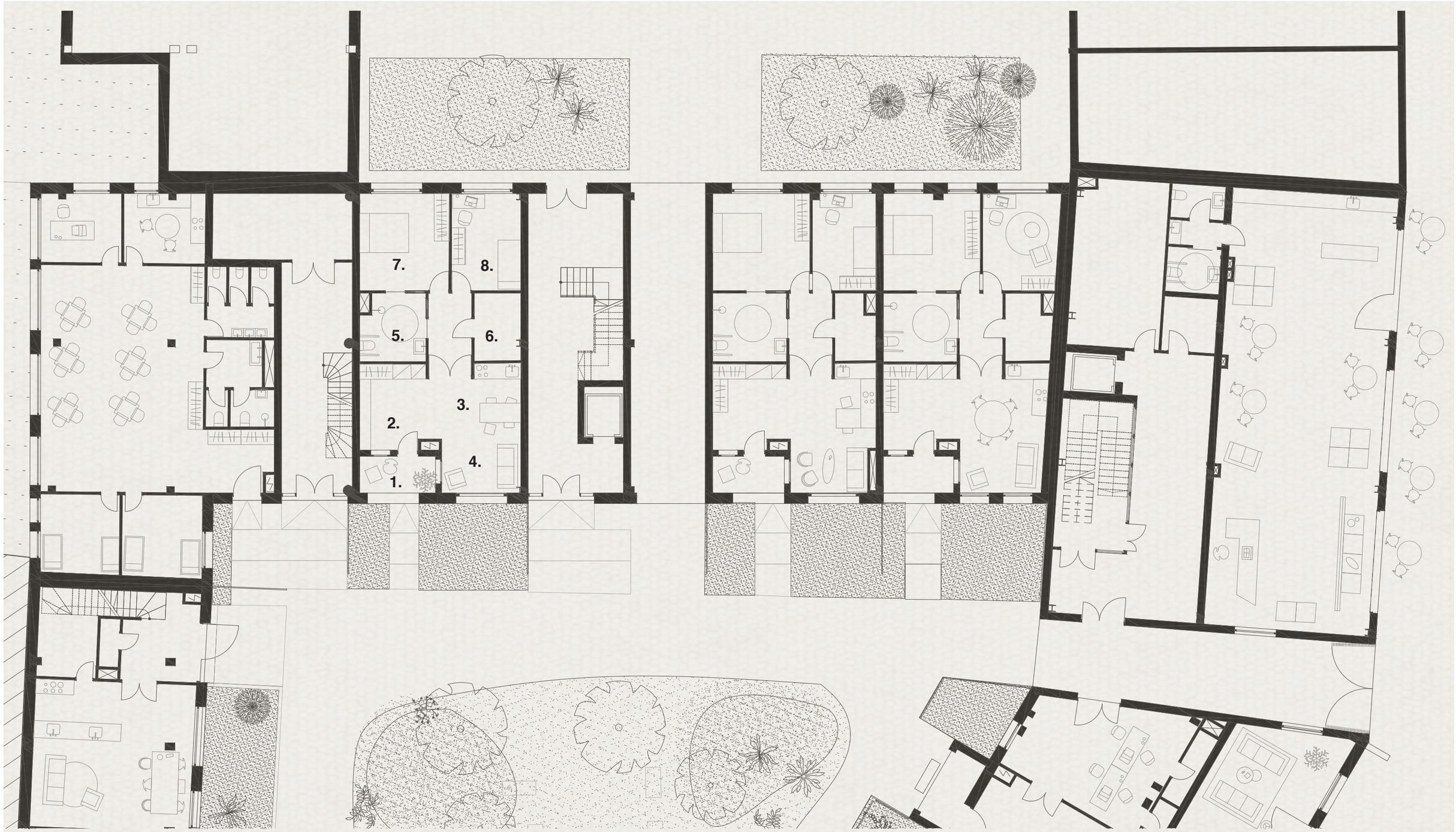


Social Housing for numerous families





ELDERLY HOUSING GF



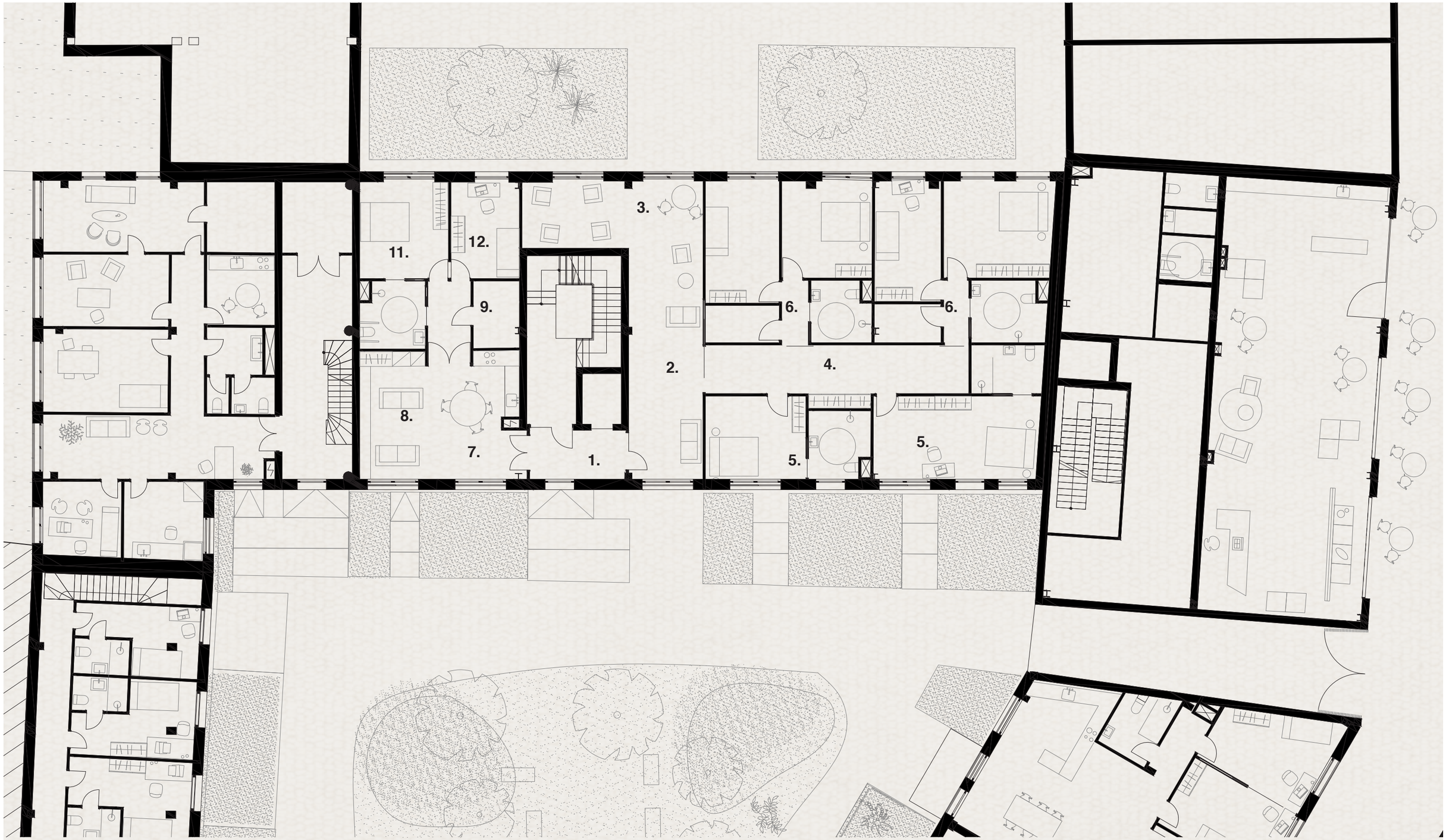
KEY

1. Covered entrance
2. Entrance
3. Kitchen
4. Living
5. Bathroom
6. Storage
7. Main bedroom
8. Bedroom

0 1 2 5

ELDERLY HOUSING GROUND FLOOR IMPRESSION

THE ELDERLY HOUSING FF

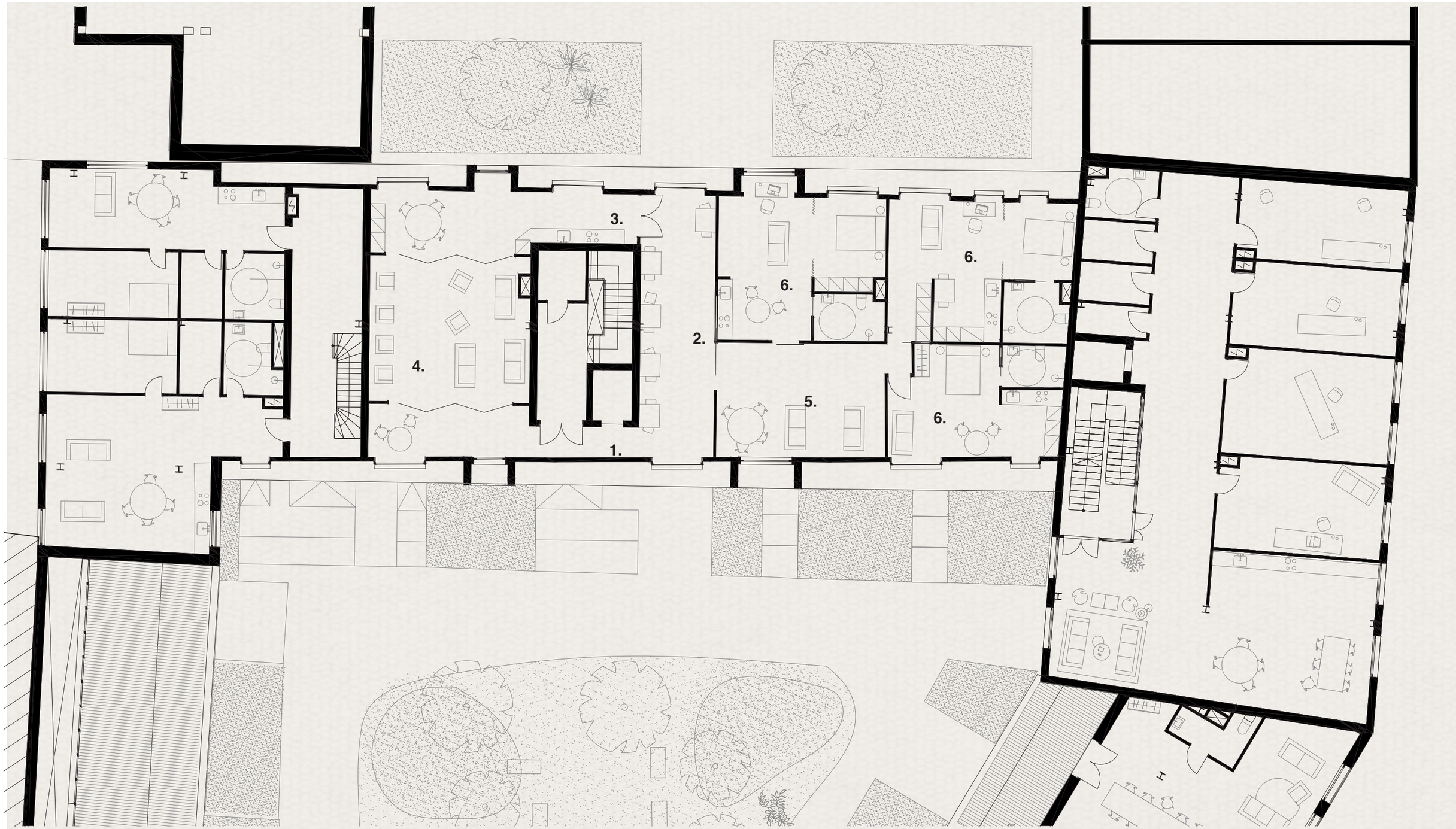


KEY

1. Entrance
2. Common area
3. Relax area
4. Distribution space
5. Room + bathroom
6. 2rooms + bathroom
7. Apt. Kitchen
8. Apt. Living
9. Storage
10. Bathroom
11. Second room
12. Bedroom

0 1 2 5

ELDERLY HOUSING SF



KEY

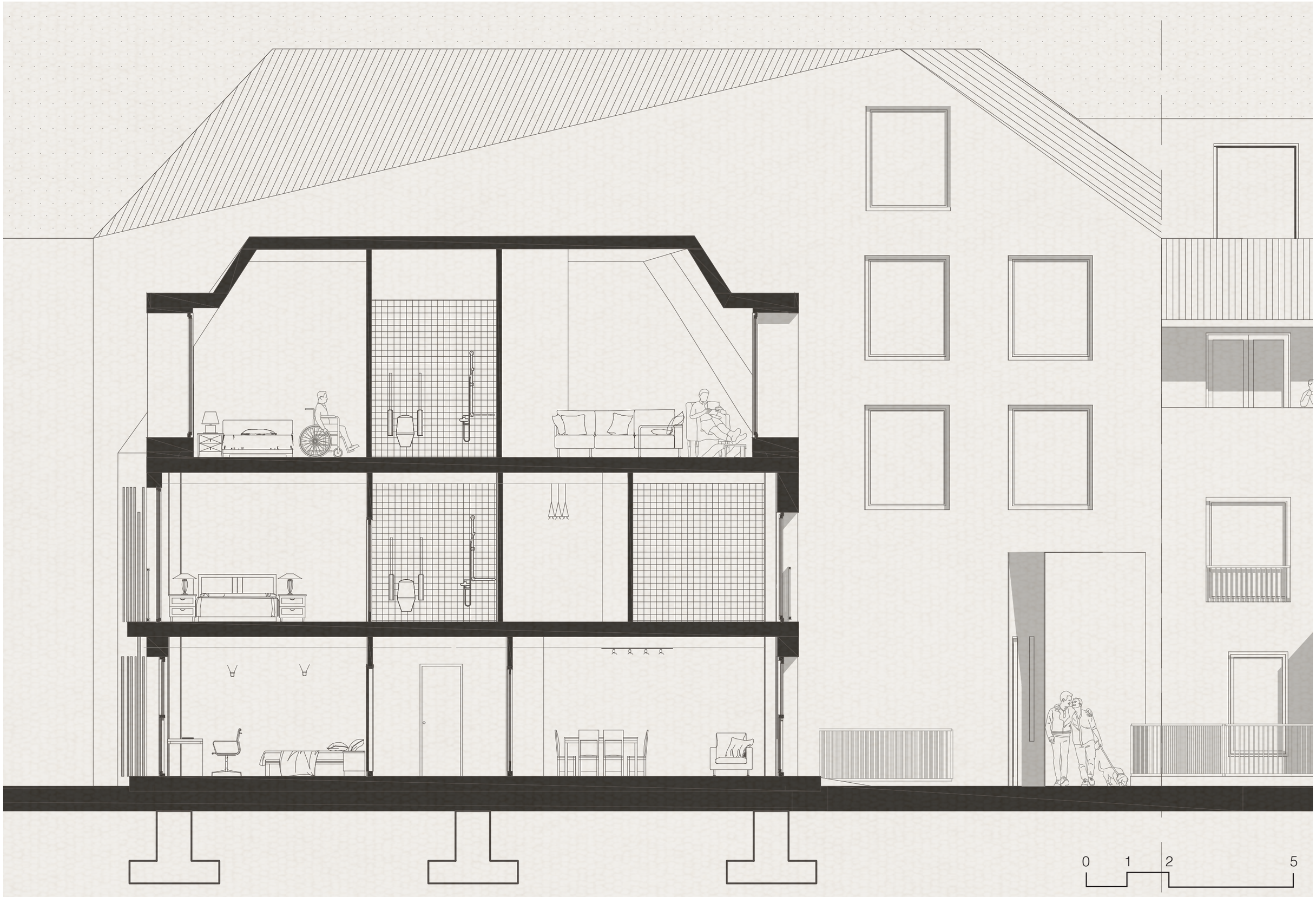
1. Entrance
2. Dining area
3. Kitchen
4. Living
5. Reading area
6. Apartment

0 1 2 5

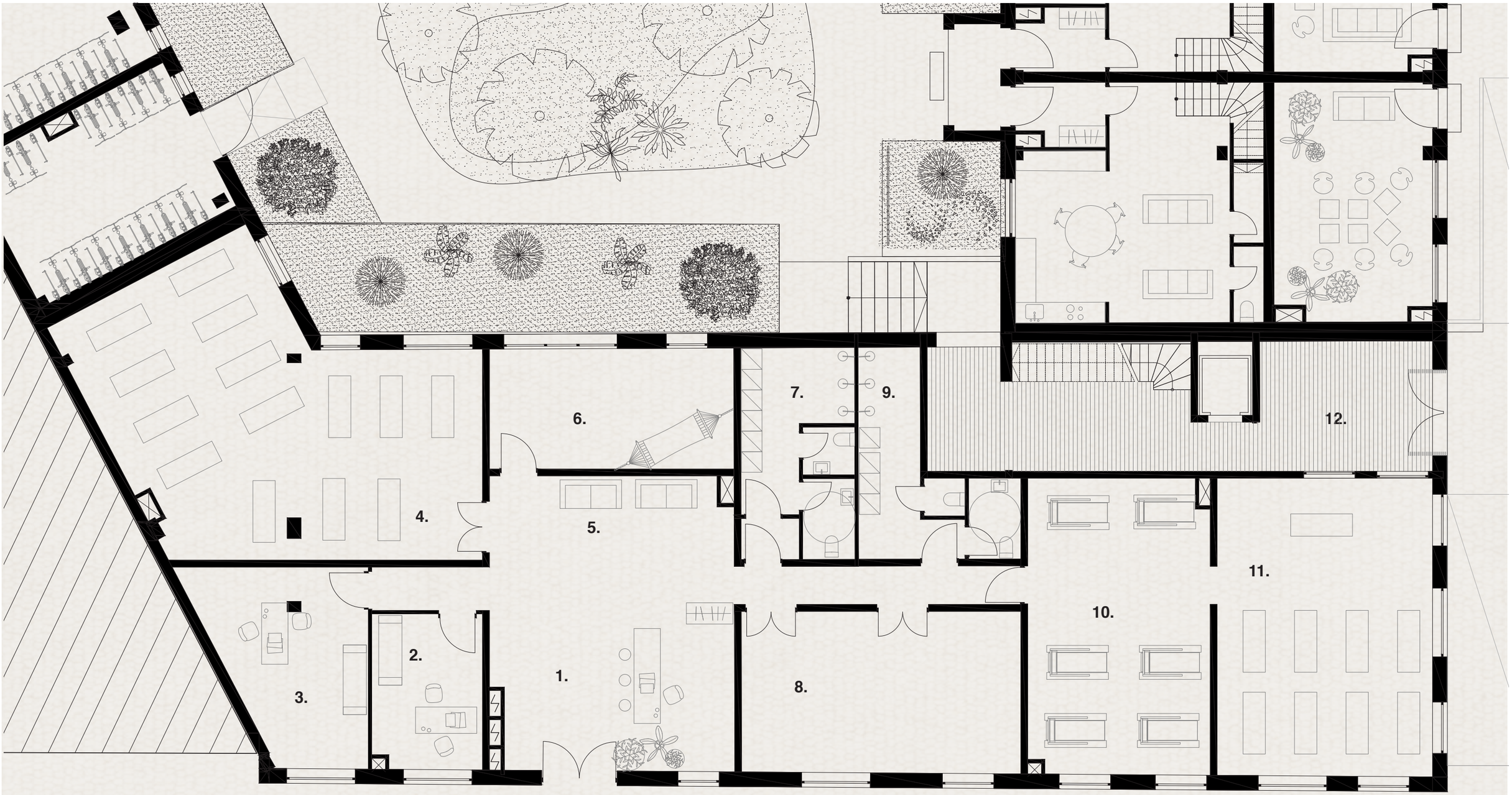
ELDERLY HOUSING TOP FLOOR IMPRESSION

THE ELDERLY HOUSING EAST FAÇADE

ELDERLY HOUSING CROSS SECTION



MENTAL HEALTH CENTRE GF



KEY

1. Entrance
2. Therapy room
3. Therapy room
4. Yoga room
5. Waiting area
6. Relax room
7. Changing rooms
8. Flexible room
9. Changing rooms
10. Pilates room
11. Groups room
12. SH access

0 1 2 5

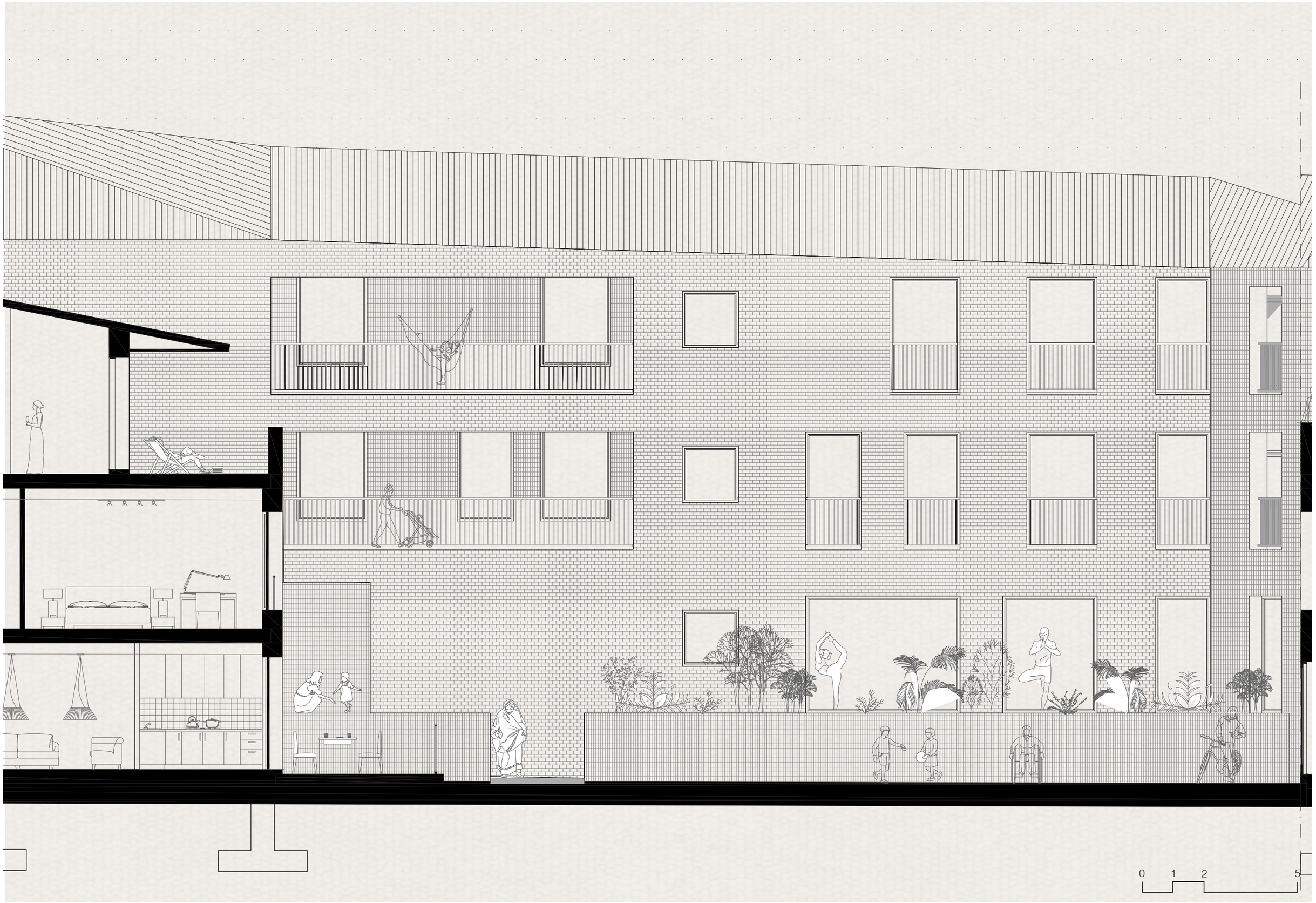
SOCIAL HOUSING FF

KEY

1. Gallery
2. Outdoor entrance
3. Entrance
4. Living & dining
5. Toilet
6. Storage
7. Loggia
8. Kitchen
9. Bathroom
10. Single room
11. Double room

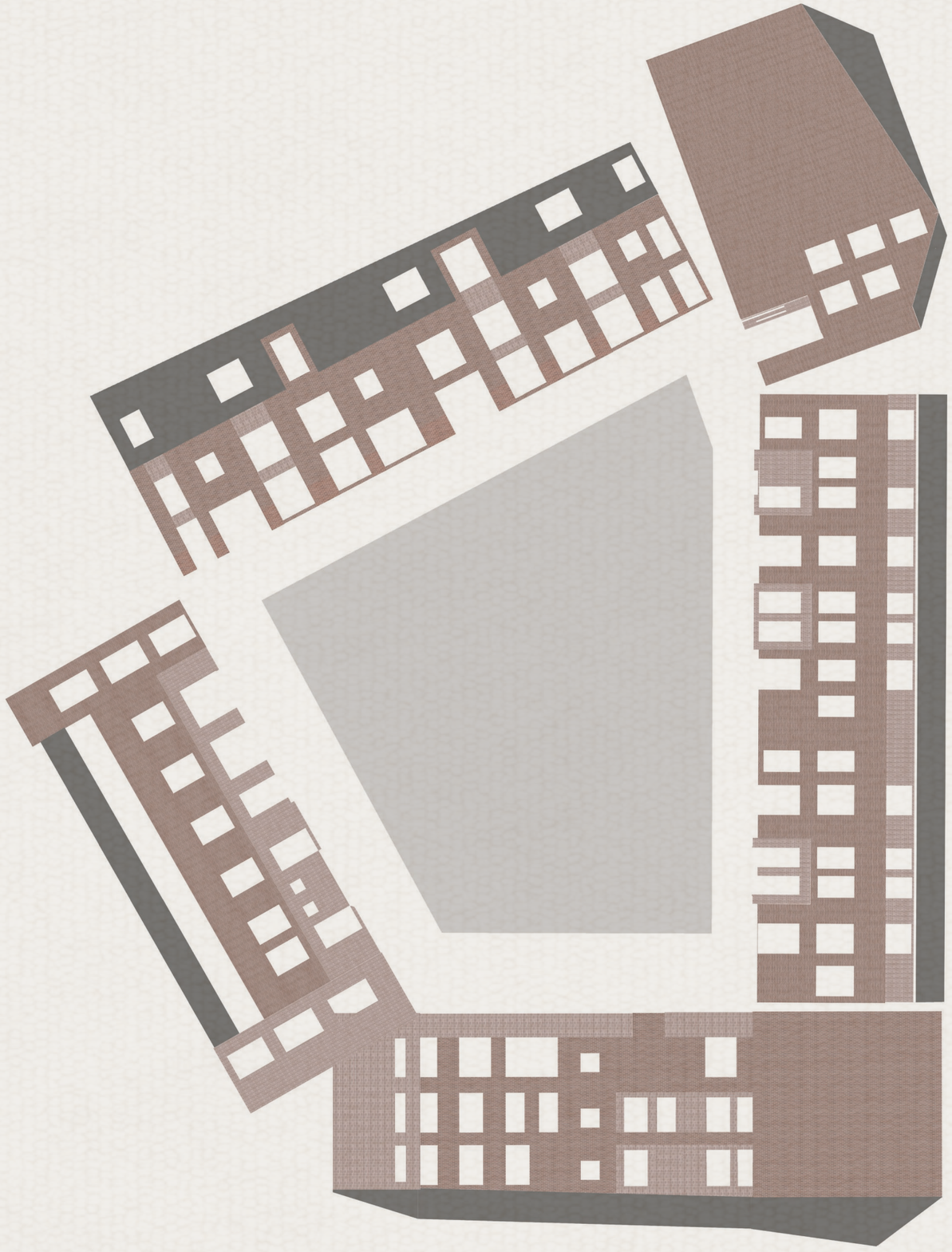
0 1 2 5

SOCIAL HOUSING WEST FAÇADE

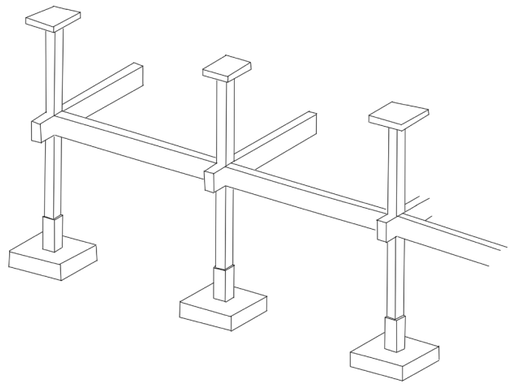


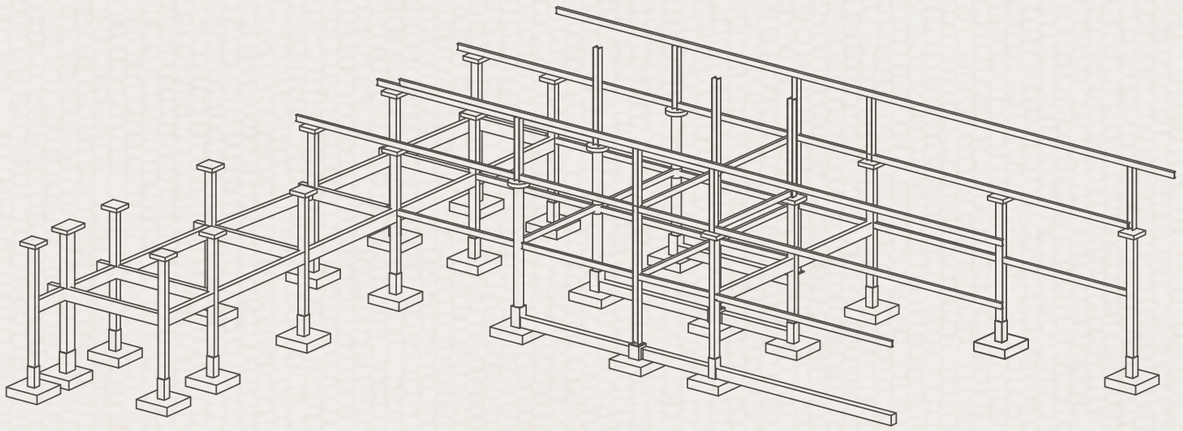
METAL HEALTH AND SOCIAL HOUSING BUILDING CROSS SECTION

MATERIAL STUDIES: FACADE CONTINUITY OF THE COURTYARD

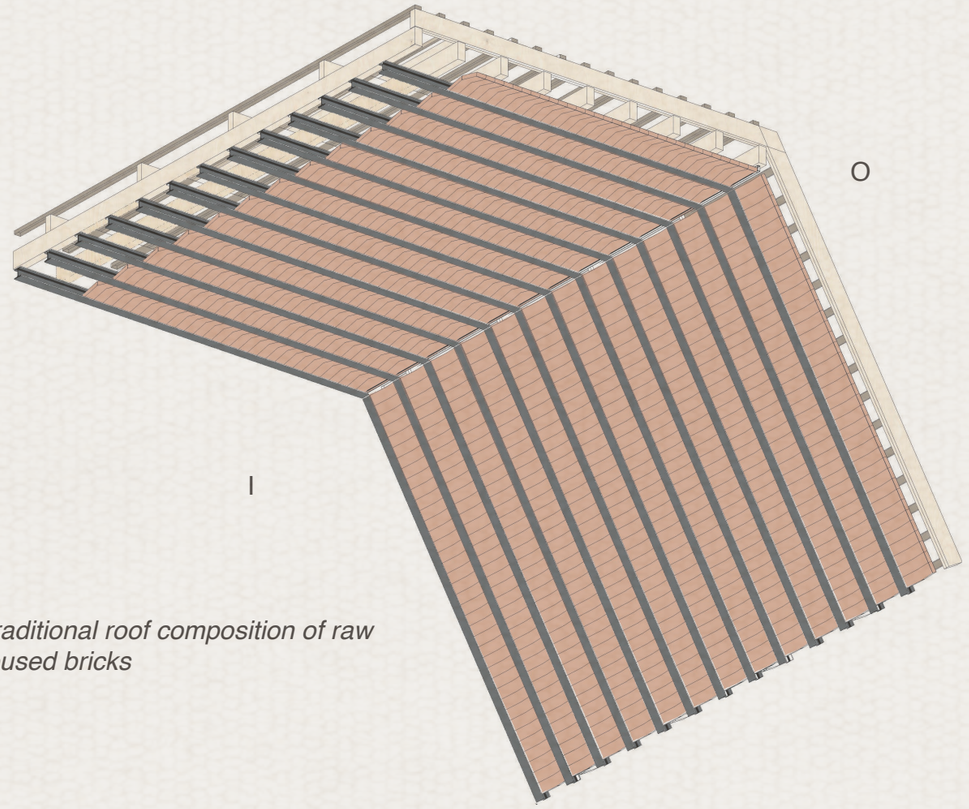


IV. Material position

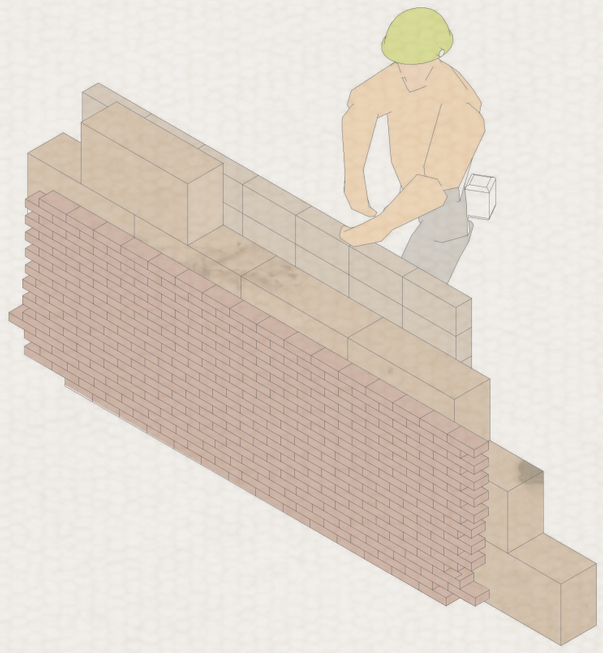




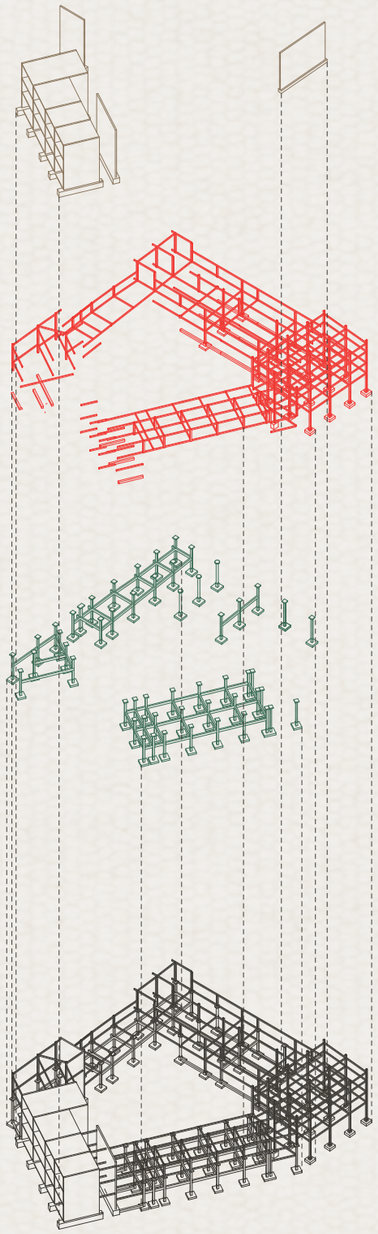
Existing Molenpoort structure and connections with the reused steel structure



Traditional roof composition of raw reused bricks



Traditional wall composition of reused bricks, hemp blocks and compressed clay bricks



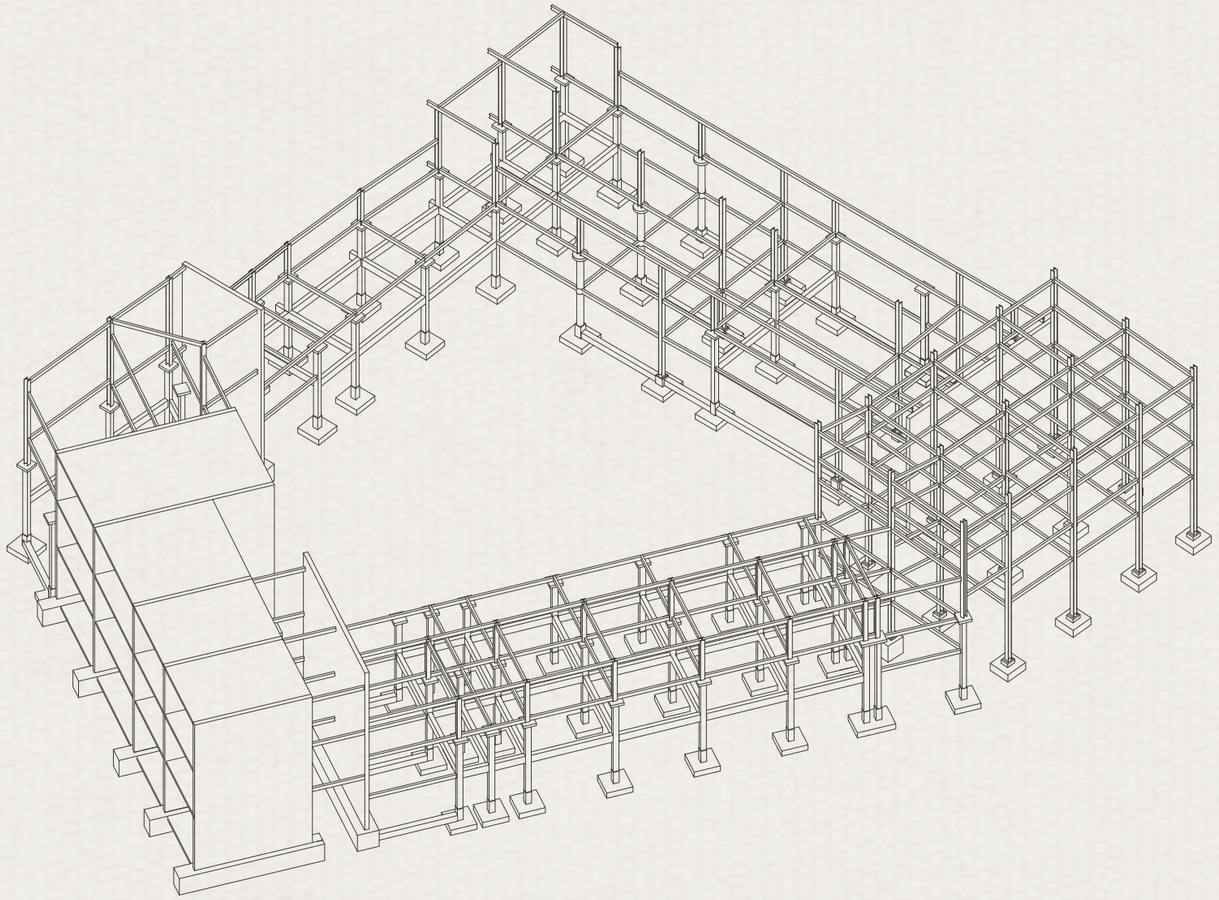
Load Bearing concrete walls

Framed steel strictural system

Existing Concrete framed structure

Composition and stability
of the structural concept

Construction assembly



CLIMATE CONTROL

WINTER

SUMMER

When the heavy rains come in winter or summer, the courtyard functions as a catalyst element for water collection and distribution.

Under floor heating or celing with the same system for the summer time creates a confort temperature inside the apartment of around 20° C

In winter Heat Recovery Ventilation allows for a good quality indoor air without the need of opening windows, so mantaining the warm termperature inside.

High performance windows with optimazed glazed area

Wall composition with highly insulated materials and reused bricks guardantees a climate performance of the dwellings and reduces carbon footprint emission

In winter the courtyard allows for more direct light , keeping a cold temperature, but protecting from shielding off the chilling winds.

Plants, bushes and trees in the courtyards allow for soft top light and fresh air during summer that can reduce the temperature up to 4°C

Sun screening avoids the overheating inside the apartments, allowing the confort temperature to be mantained along the warm days.

Roof inclination for direct sun screening.

In summer natural ventilation guarantees a great air quality for the apartments

Under floor cooling will create a confort temperature inside the apartment

Loggias work as transition areas during summer where shadow can be created and natural ventilation allows for a confort area outside the apartment

For public access activities, natural ventilation won't be enough and HRV will be activated

Water redistribution

Water collection

Rain water tank connected to apartment and irrigation system

1:20 FACADE FRAGMENT

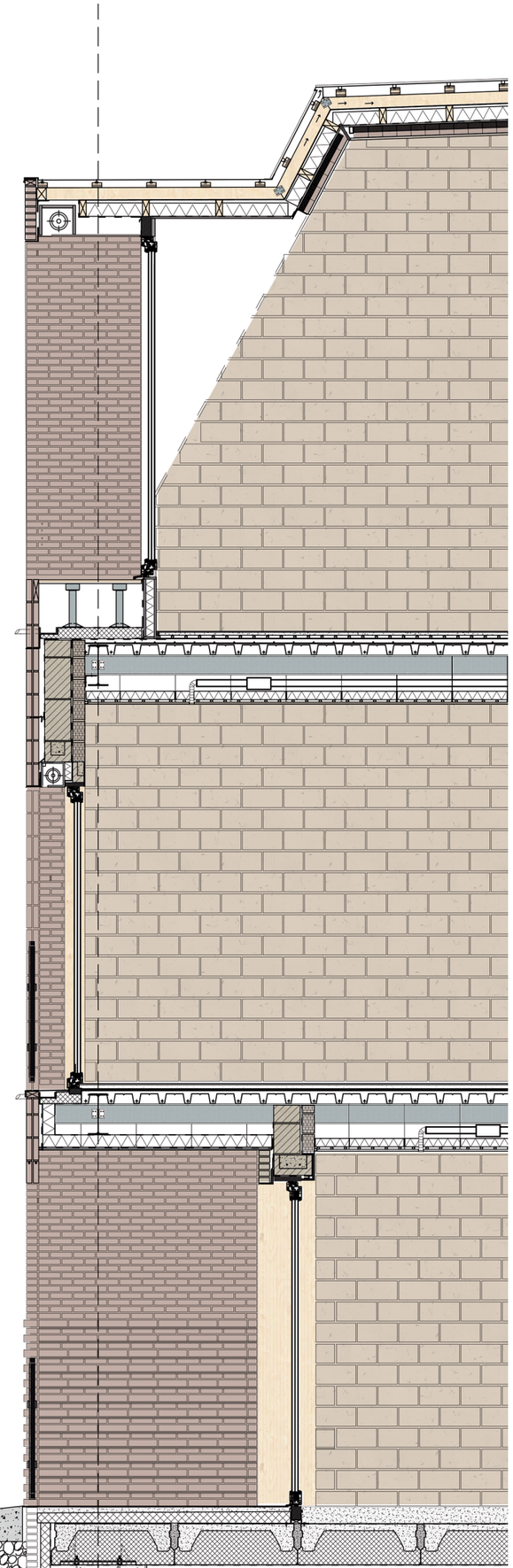
+10830

+6720

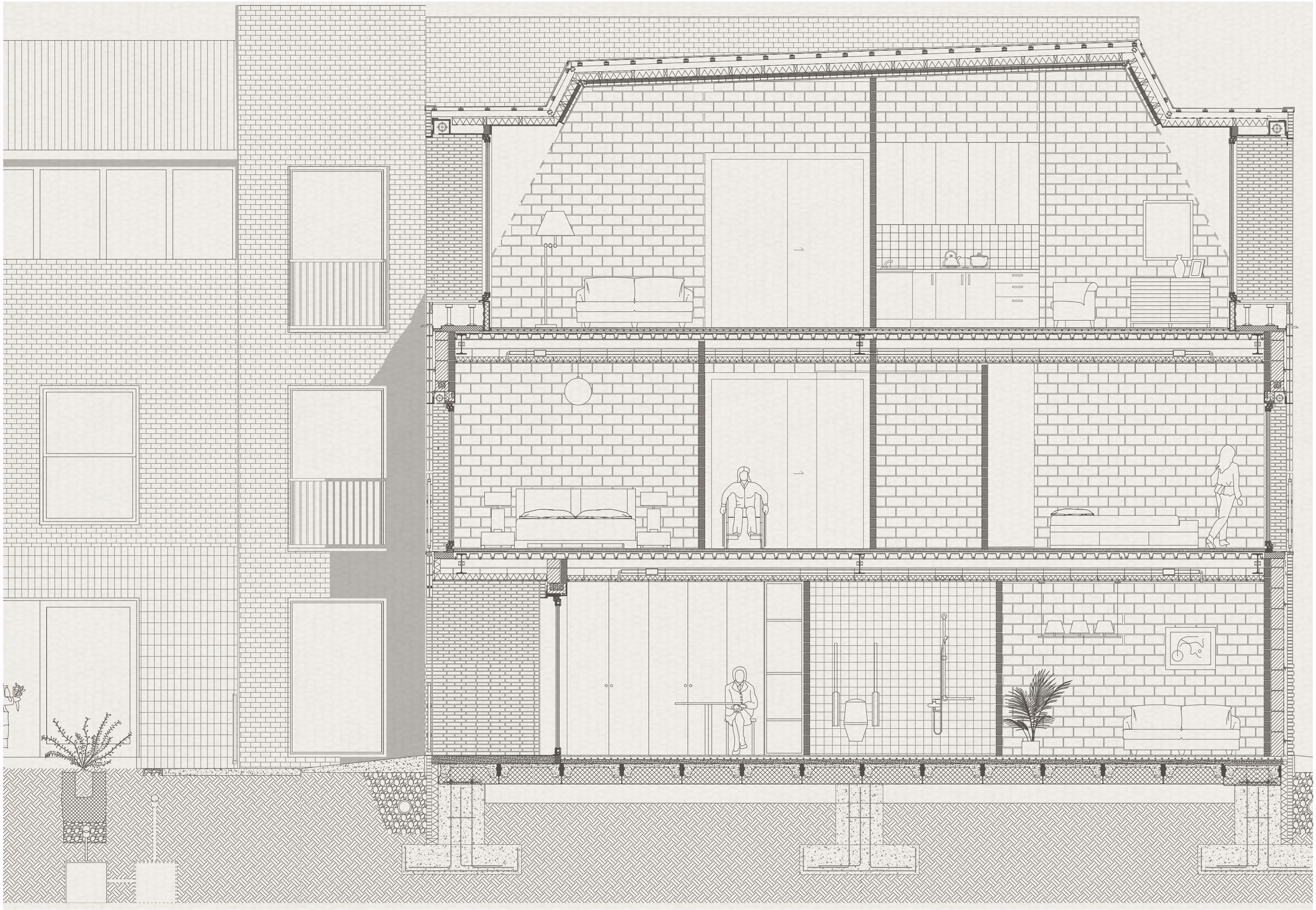
+3300

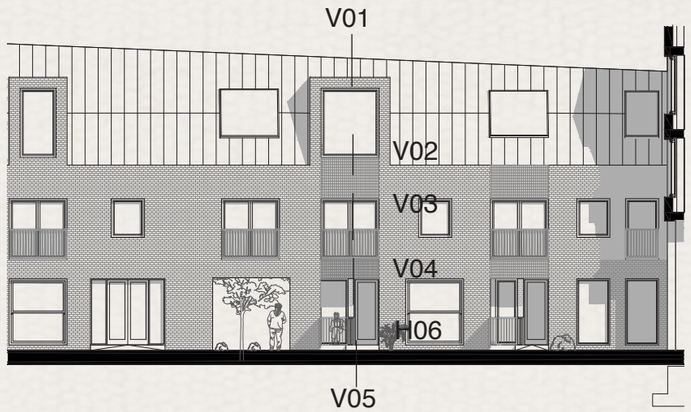
KEY

1. Quartz zinc panels (400x 1900 mm)
2. Blue Paeprsteen and Klamp-steen bricks mixed together and laid in strecher bond (160x80x40) with natural hy-draulic lime mortar (10 mm)
3. Window uPVC with high termal insulation, with Velux electric opener (2400x2100 mm) - olive green
4. Steel cables for hight protec-tion
5. White washed new bricks laid vertically (160x80x40) - light red/ pink
6. Steel railing hot-dip galva-nised to prevent corrosion (2150 x 1000 mm) - olive green
7. External steel front door covered with timber panels from Opalis 2400 x 825
8. Spanish moef bricks on the Plinth (laid with an extent of 20mm)
9. Limestone ramp from Opalis (antique steps)- cut (1200x1200mm)

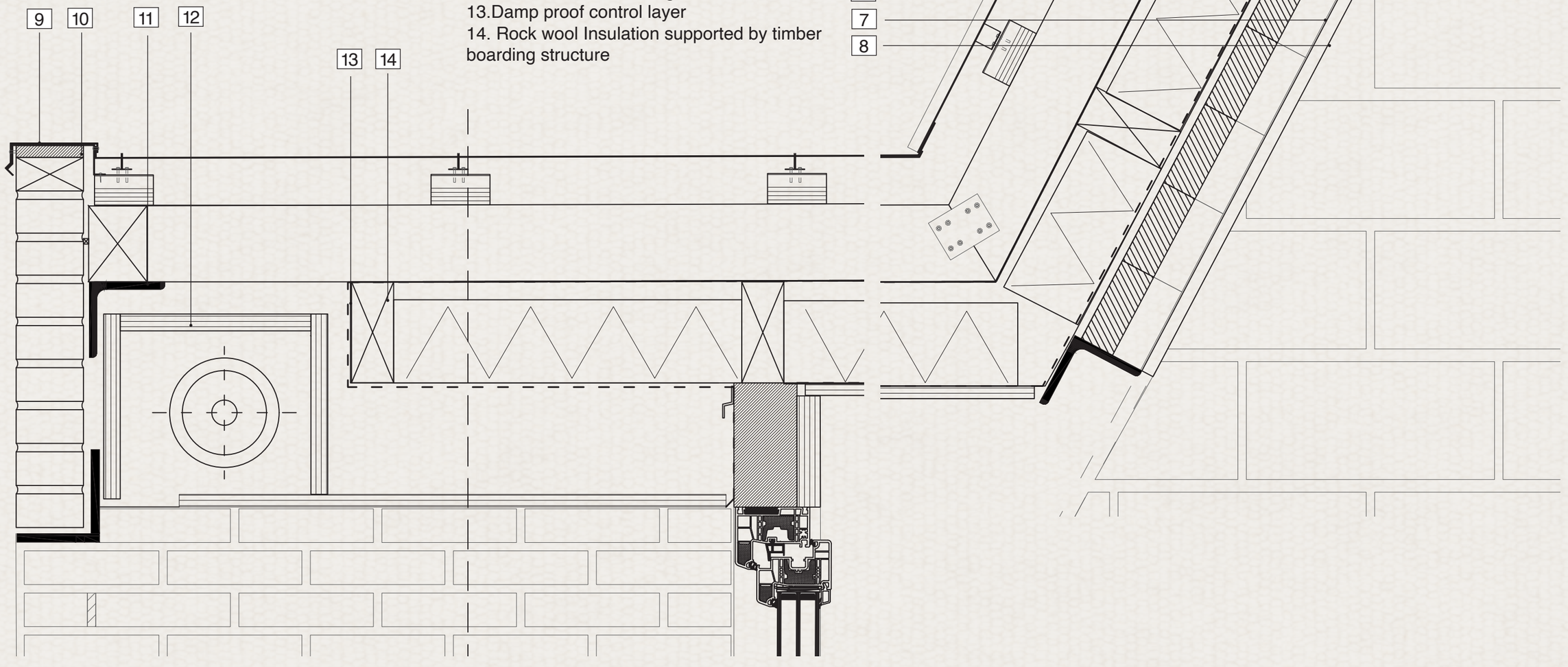


1:20 SECTION





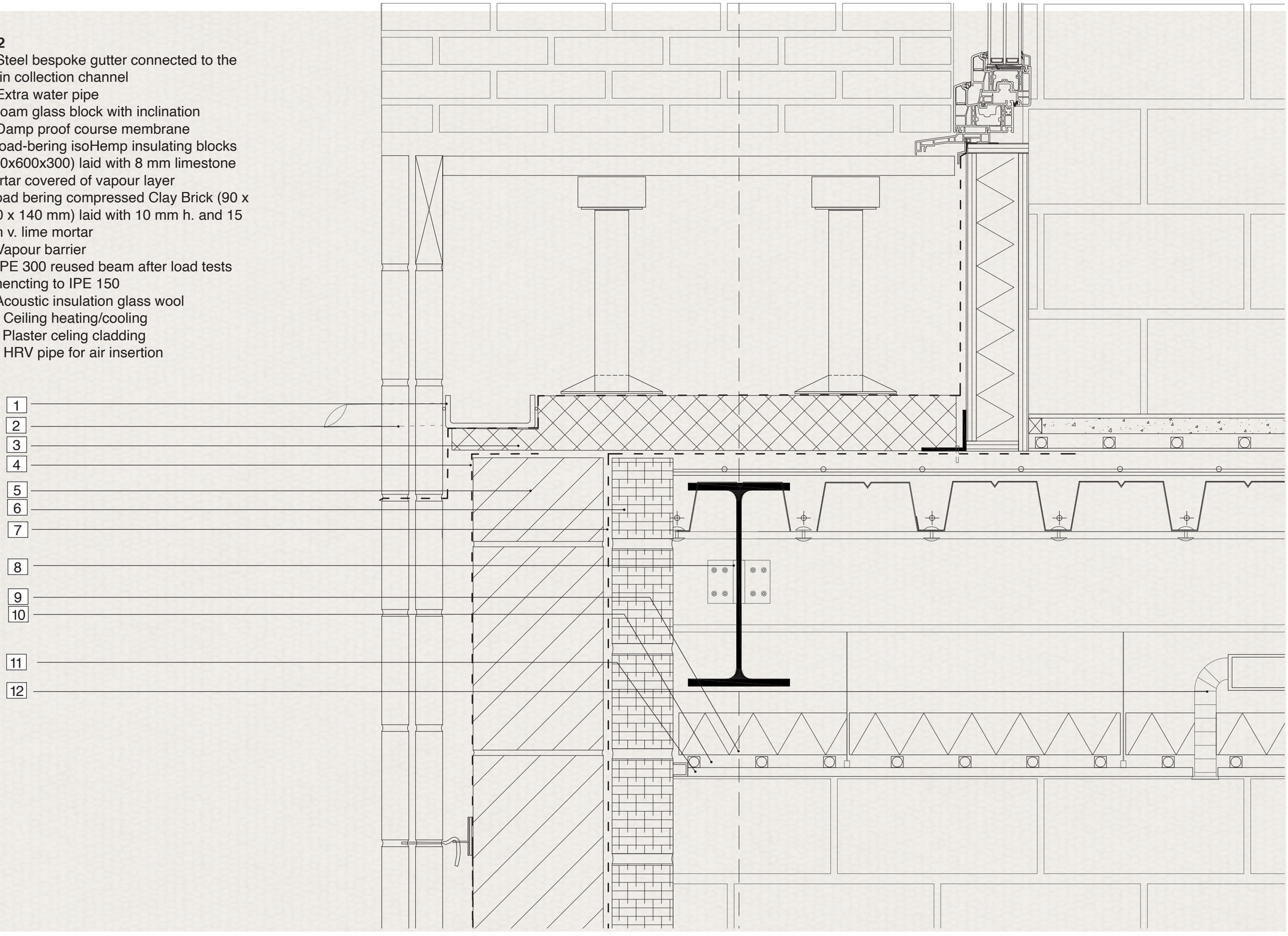
V01
1. Quartz zinc panels (400x 1900 mm)
2. Zinc panels timber support
3. Timber boarding structure (90 mm x 40mm)
4. Damp proof sarking membrane
5. Thermal and acoustic rock wool insulation (100 mm)
6. Vapour barrier
7. Klampsteen bricks laid in couples with cement mortar(160x80x40)
8. Reused (resistence verified) steel beams H100 every two bricks
9. Closure Flashing clapping
10. Support for flashing
11.Steel achoring for opening
12. Prefab Plywood structure for venetian sun screening
13.Damp proof control layer
14. Rock wool Insulation supported by timber boarding structure



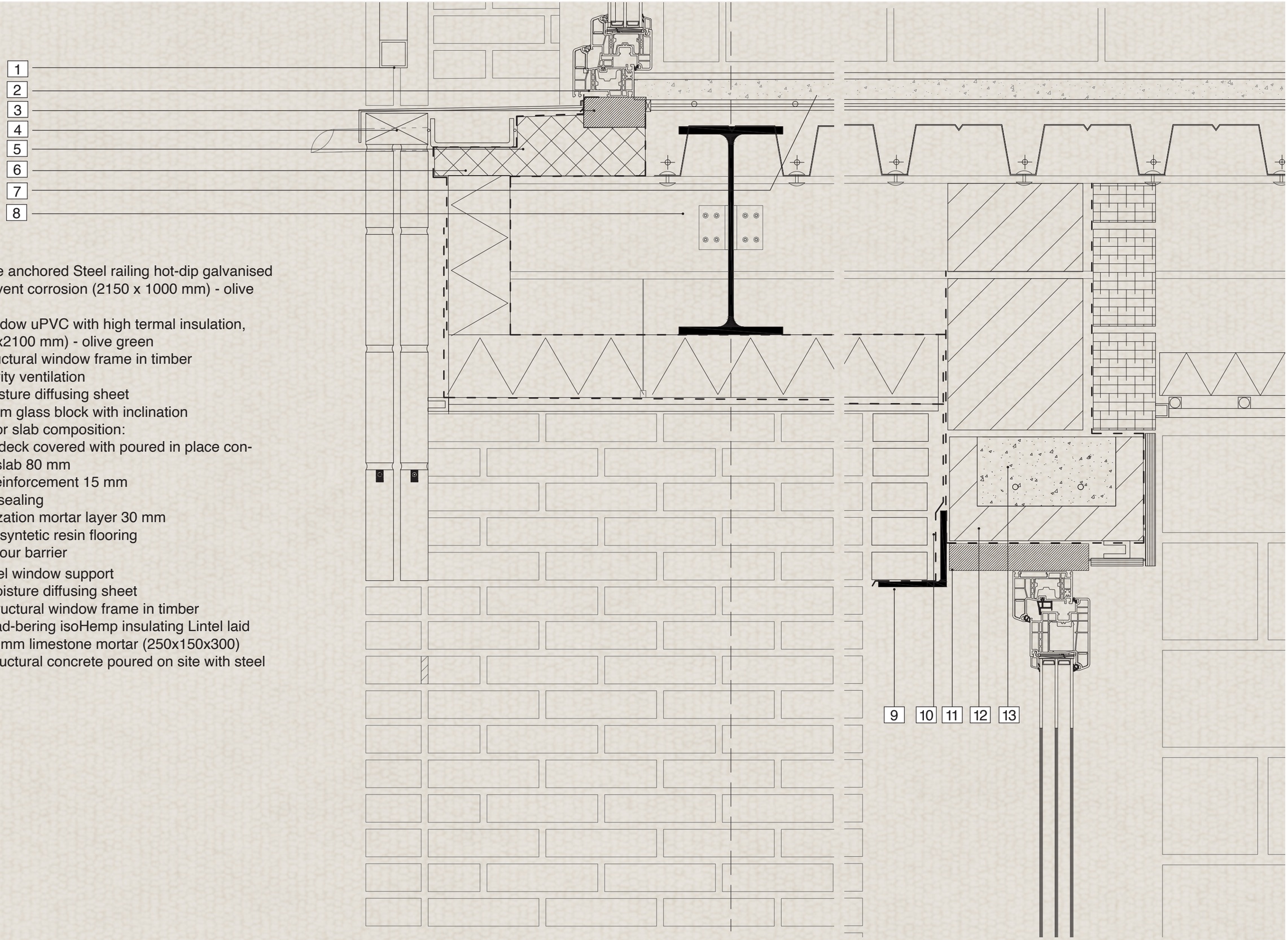
1:5 DETAIL

V02

1. Steel bespoke gutter connected to the main collection channel
2. Extra water pipe
3.Foam glass block with inclination
4. Damp proof course membrane
5. load-bering isoHemp insulating blocks (200x600x300) laid with 8 mm limestone mortar covered of vapour layer
6.load bering compressed Clay Brick (90 x 300 x 140 mm) laid with 10 mm h. and 15 mm v. lime mortar
7. Vapour barrier
8. IPE 300 reused beam after load tests conencting to IPE 150
9. Acoustic insulation glass wool
10. Ceiling heating/cooling
11. Plaster celing cladding
12. HRV pipe for air insertion



1:5 DETAIL



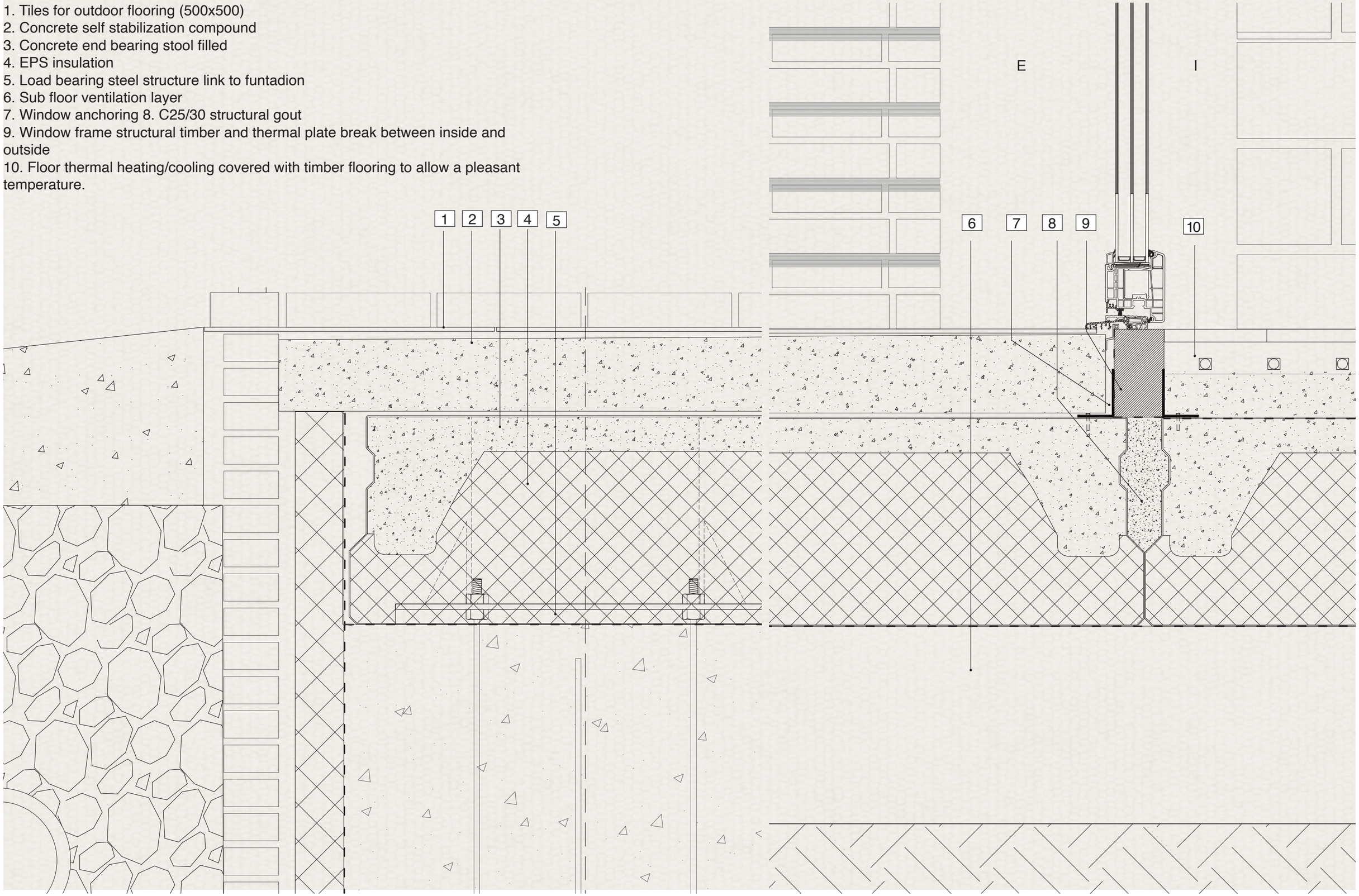
V04

1. Side anchored Steel railing hot-dip galvanised to prevent corrosion (2150 x 1000 mm) - olive green
2. Window uPVC with high termal insulation, (2400x2100 mm) - olive green
3. Structural window frame in timber
4. Cavity ventilation
5. Moisture diffusing sheet
6. Foam glass block with inclination
7. Floor slab composition:
Metal deck covered with poured in place concrete slab 80 mm
slab reinforcement 15 mm
crack sealing
stabilization mortar layer 30 mm
green syntetic resin flooring
8. Vapour barrier
9. Steel window support
10. Moisture diffusing sheet
11. Structural window frame in timber
12. load-bering isoHemp insulating Lintel laid with 8 mm limestone mortar (250x150x300)
13. structural concrete poured on site with steel bars

1:5 DETAIL

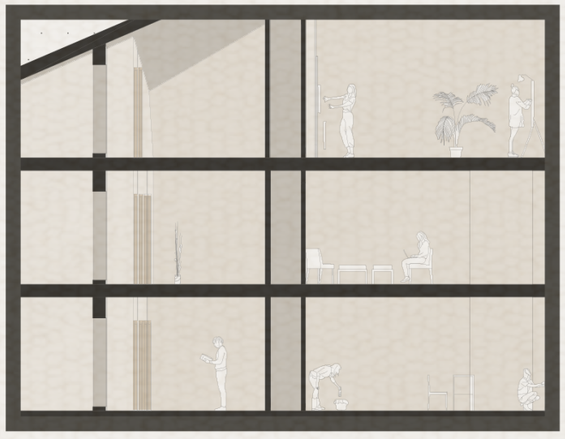
V05

1. Tiles for outdoor flooring (500x500)
2. Concrete self stabilization compound
3. Concrete end bearing stool filled
4. EPS insulation
5. Load bearing steel structure link to funtadion
6. Sub floor ventilation layer
7. Window anchoring 8. C25/30 structural gout
9. Window frame structural timber and thermal plate break between inside and outside
10. Floor thermal heating/cooling covered with timber flooring to allow a pleasant temperature.



V. Conclusion

FRAGMENTS OF THE ALTERITY OF THE INTERIOR SPACES



FRAGMENTS OF THE ALTERITY OF THE FACADES

FRAGMENTS OF THE ALTERITY OF THE OUTDOOR SPACES

FRAGMENTS OF THE ALTERITY OF THE COMMUNITY SPACES

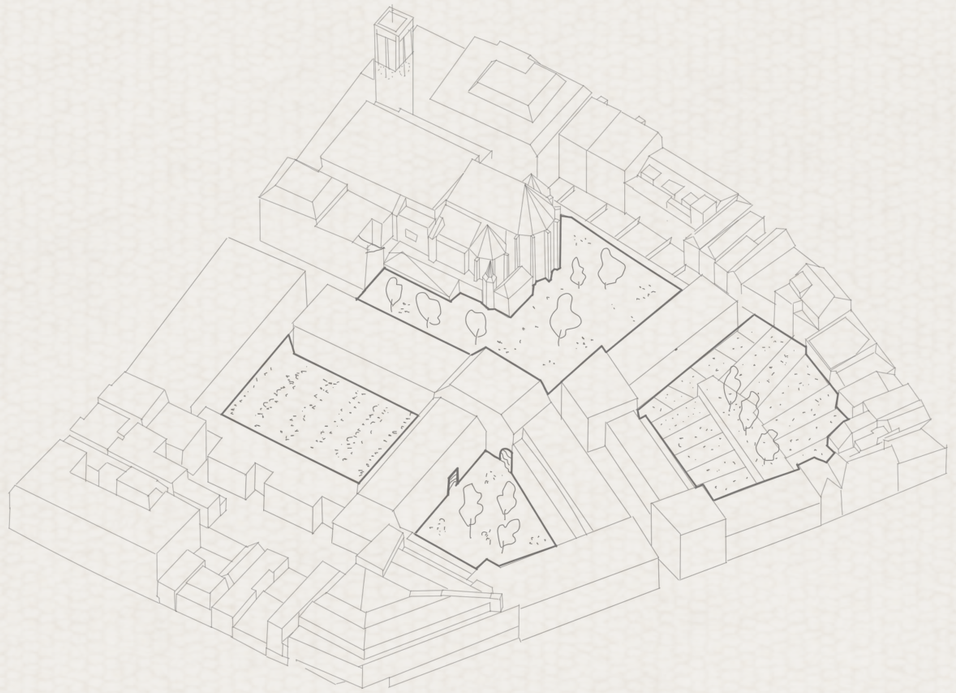
Mechelen's beguines at work, anonymus, 17th century, Busleyden museum.

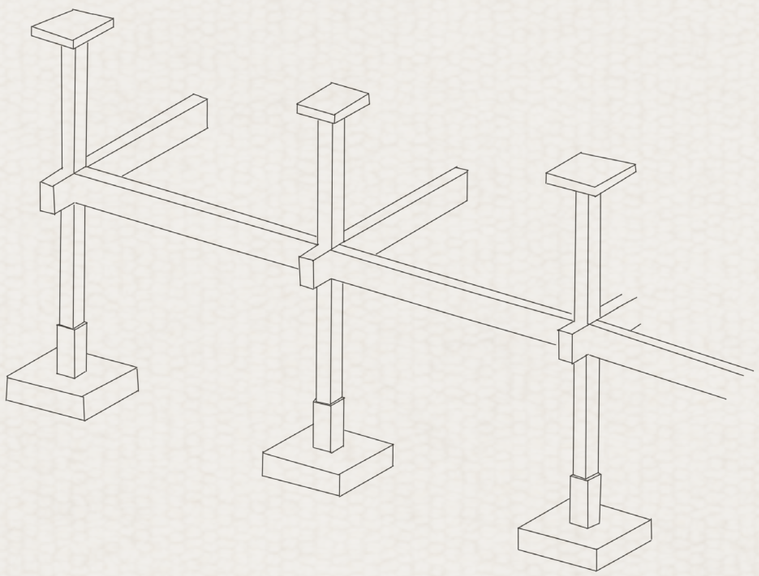
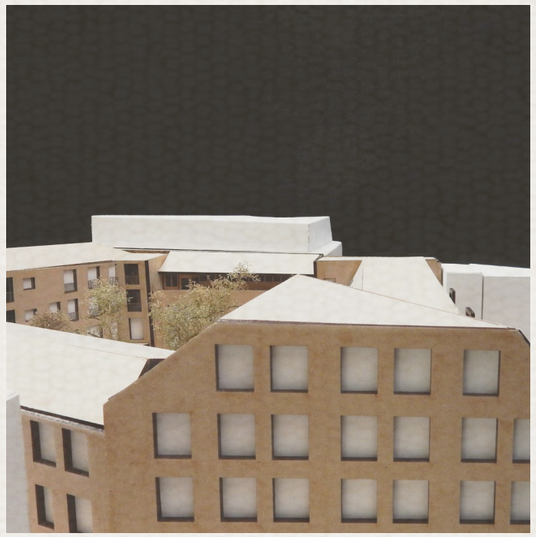
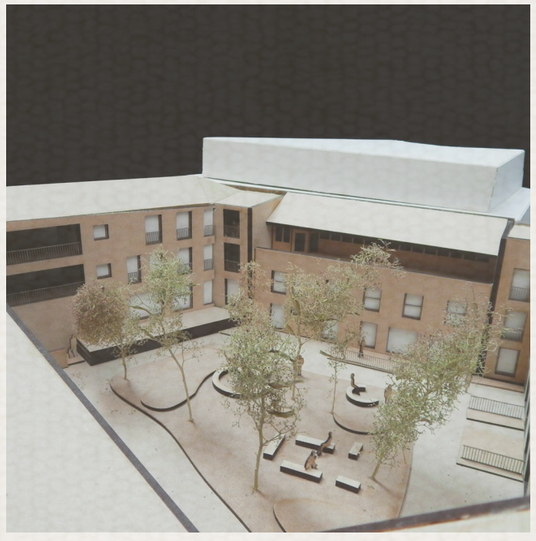
“.. Instead of presupposing a causal relation between form and behavior, it constrains the unpredictable within the comprehensible form.”

Grossform, A Perspective on the Large-Scale Urban Project , Lara Schrijver, DASH n.05 - The Urban Enclave, 2011.

RE-USE OF ALTERITY AND ATHENTICITY AT ALL SCALES

A new language for Molenpoort





Thank you