

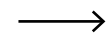


CENTRAL SPACES // PUBLIC PLACES

Redesign of the Koudenhorn police building into a public library and city dwellings

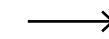
CHANGE

2013: Major changes in organizational structure



AIM

“The Dutch Police aims to adapt its accommodation to the changes in organization, structure of services and the ever increasing digitalization of both the internal workflow and their presence in society.”



CHALLENGE

Divestment of 700.000 m² of real estate

Realization of 200.000 m² of real estate

Redevelopment of 30% of real estate



The Hague



Haarlem



Rotterdam Witte de With



Rotterdam Harbour



Eindhoven



Groningen



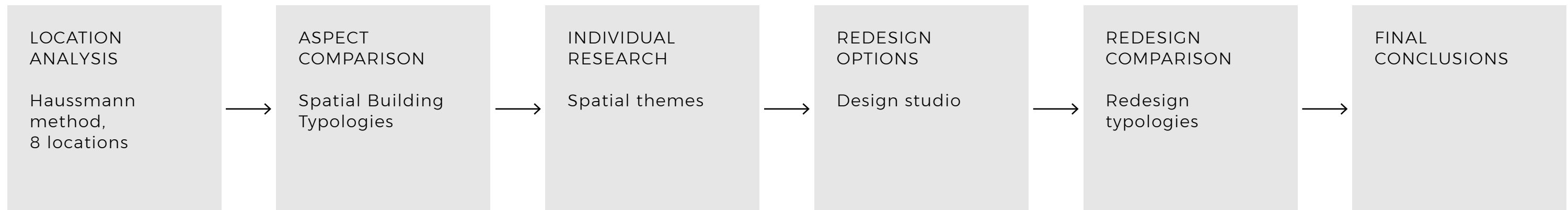
Middelburg

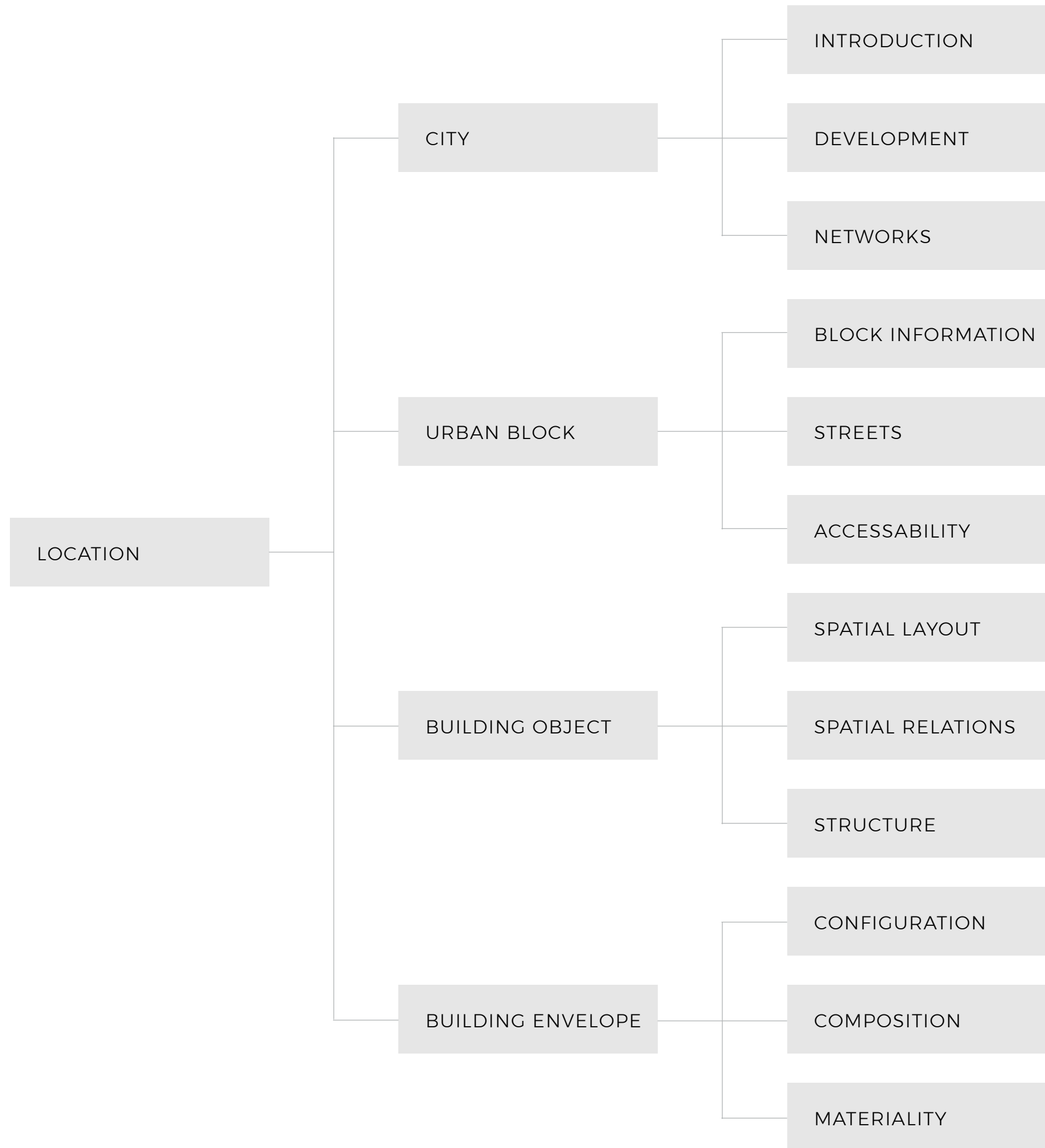


Warnsveld

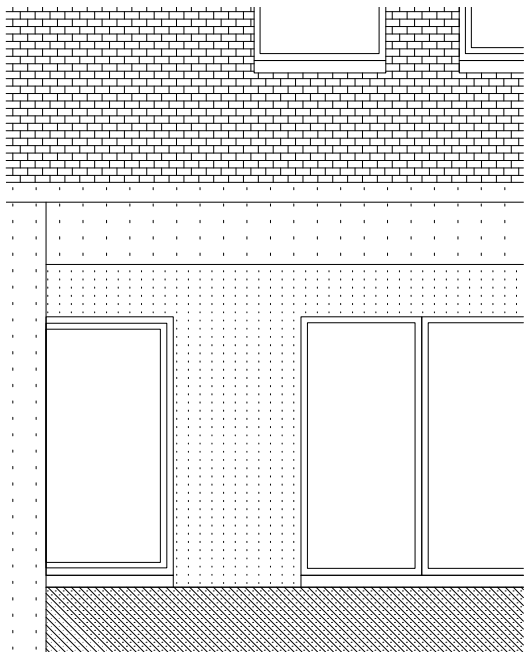
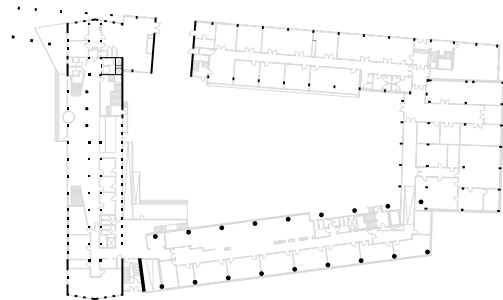
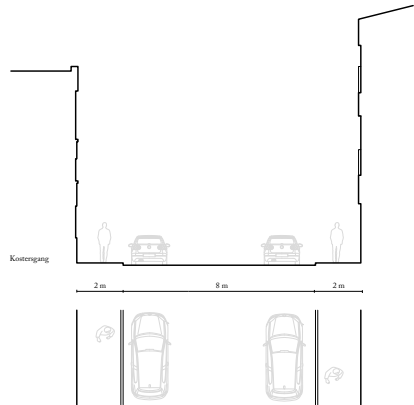
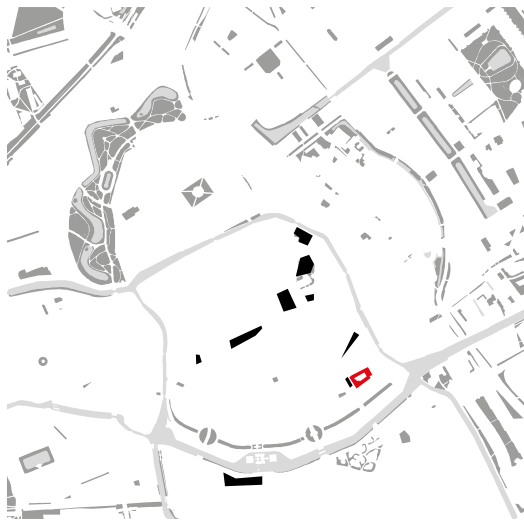


RESEARCH SPATIAL BUILDING TYPOLOGY

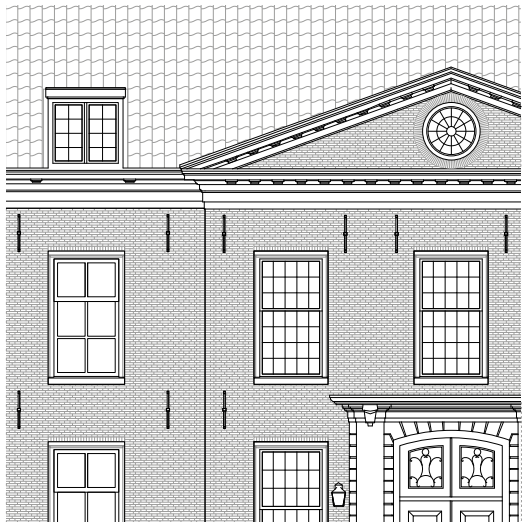
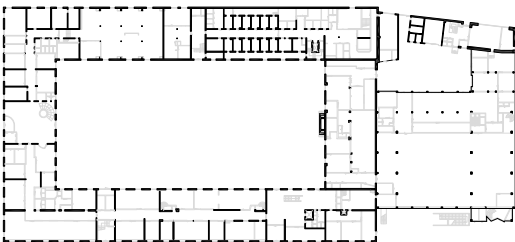
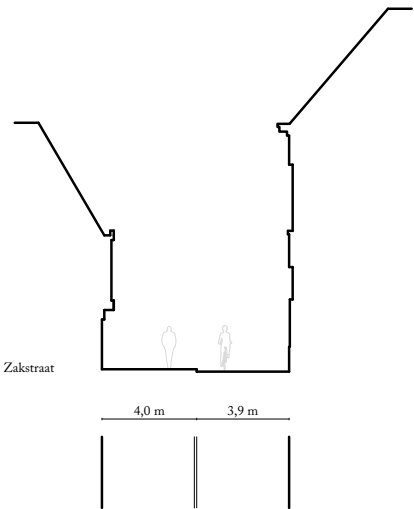




GRONINGEN



HAARLEM

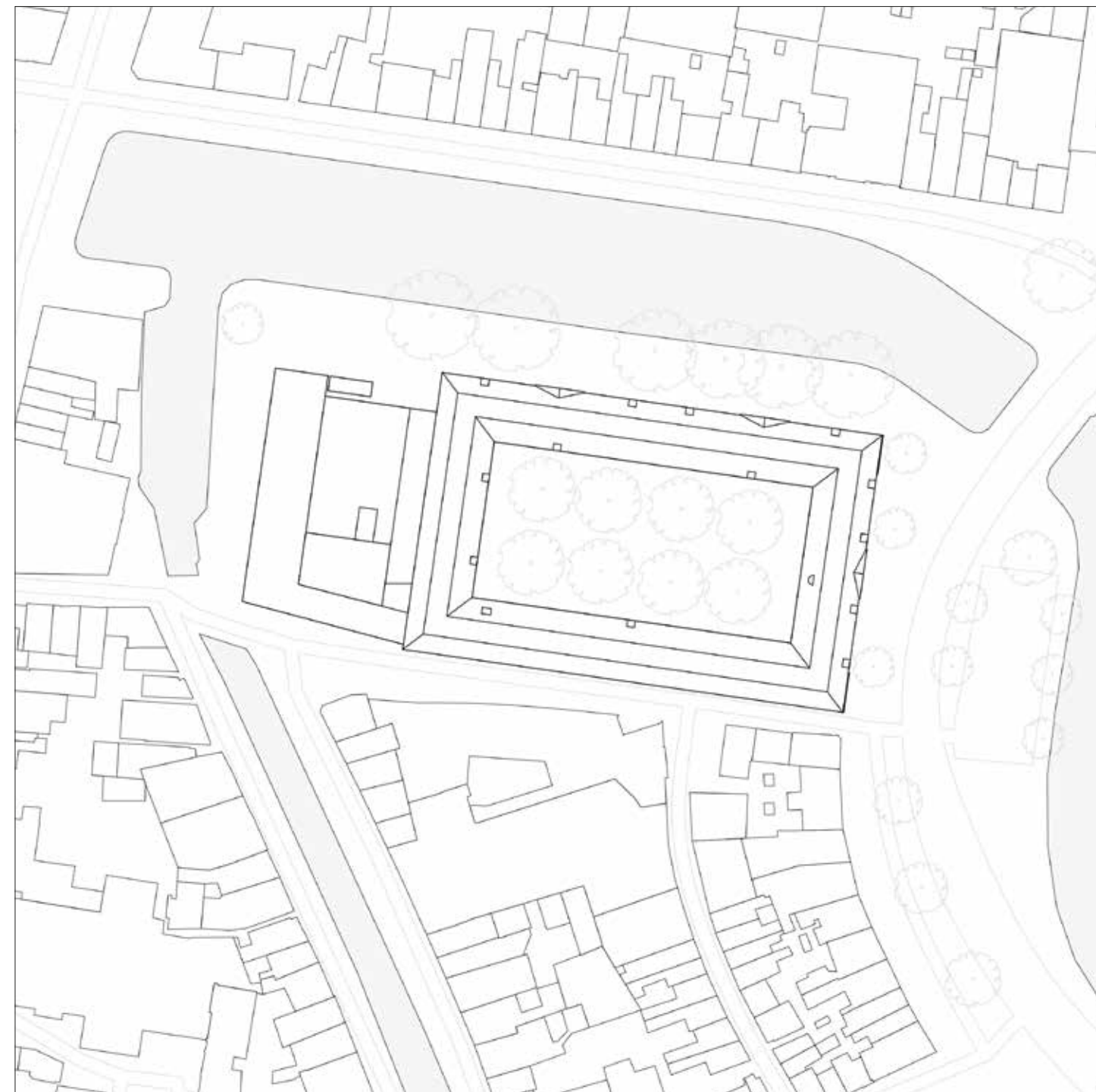
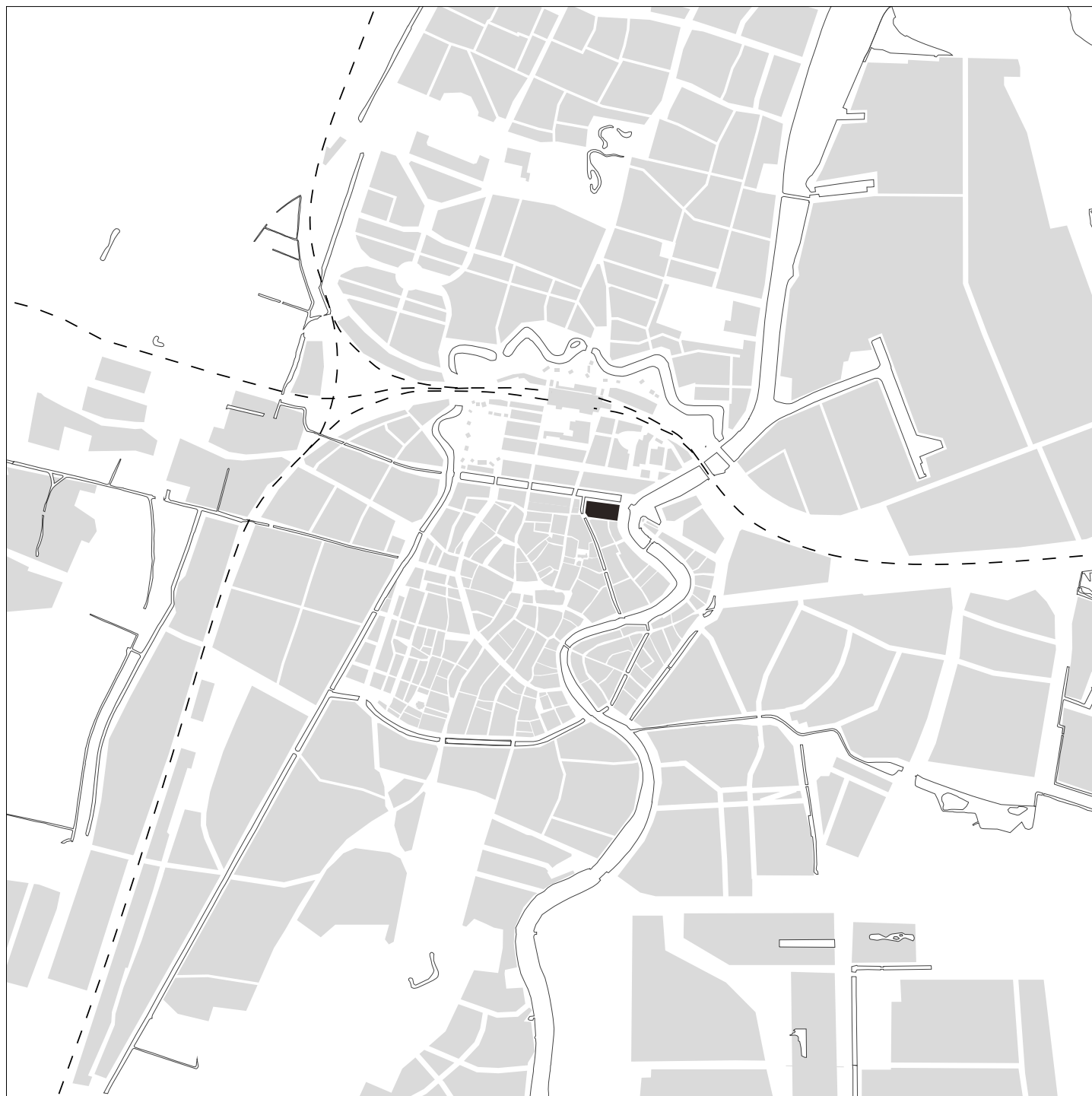


CITY SCALE

URBAN BLOCK

BUILDING OBJECT

BUILDING ENVELOPE

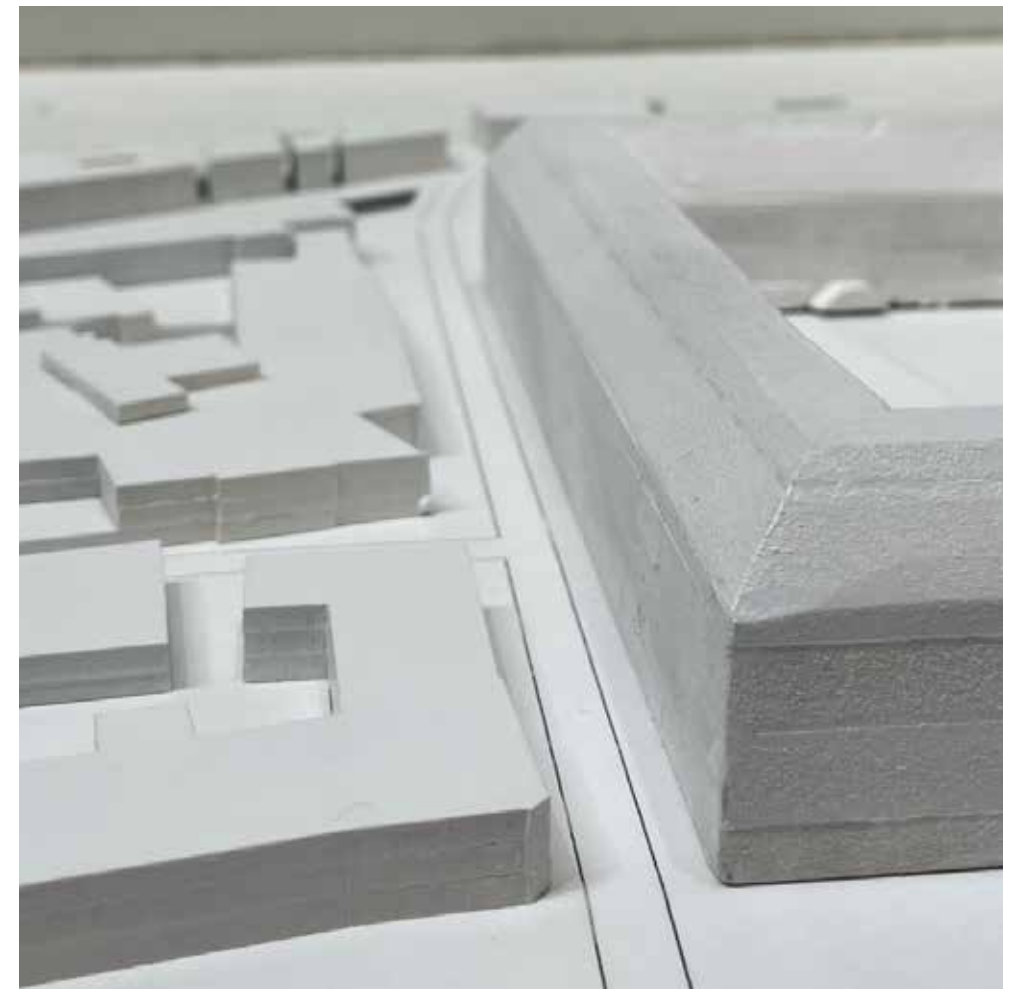




Materiality



Accessibility



Scale





Legend

- ≤ 14th Century
- 15th Century
- 17th Century
- 18th Century
- 19th Century
- 21st Century



0 100M



Grote Markt, Haarlem



Beestenmarkt, Delft

How can the courtyard typology be characterized and what opportunities does it provide for the redesign of the Koudenhorn police building?

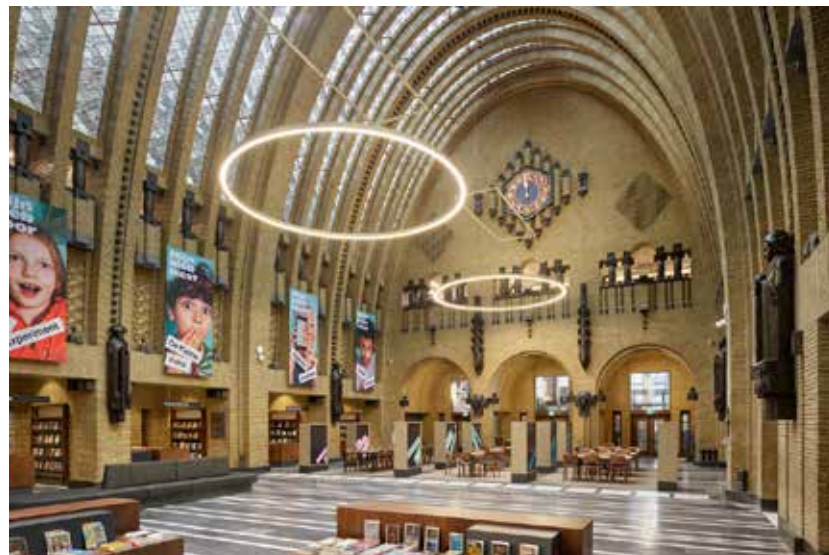




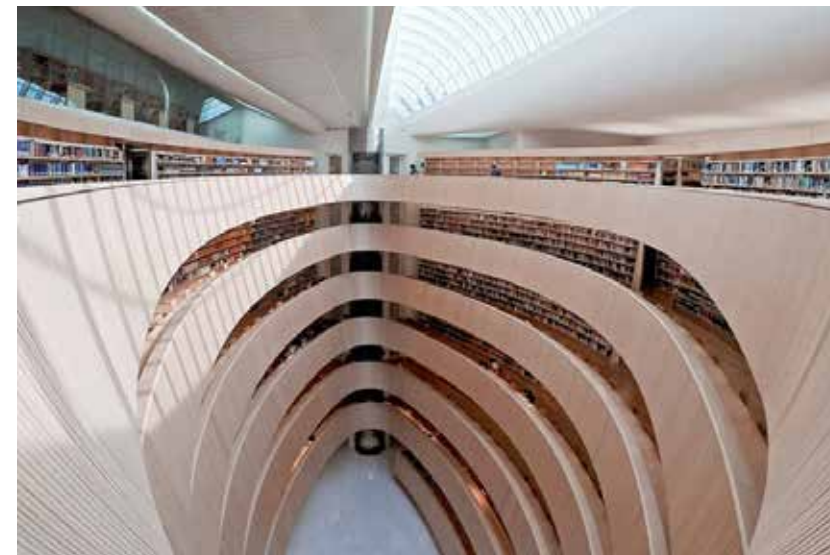
Predikheren, Mechelen



Pesthuis, Leiden



Post, Utrecht



Faculty of Law, Zürich



Kunstmuseum, The Hague



Forum, Norwich

PREDIKHEREN CITY LIBRARY, MECHELEN

GENERAL

Location: Mechelen, Belgium
Programme: Library
Area: 5840 m²
Year: 2019
Architect: Korteknie Stuhlmacher
Architecten

The Predikherenklooster is a baroque monastery that was built starting in 1650. In the 18th century it was deconsecrated and during the 19th and 20th century it was mainly used for military purposes, until it was abandoned in 1975.

Programming, spatial design, restoration concept, design of technical installations and structural interventions were intended to preserve and reinforce the characteristics of the existing edifice. The building's structure consist of an outer ring of broad multifunctional rooms, an inner ring around the courtyard, the courtyard, the attic and the church. The structure has been preserved over the years and can be experienced anywhere in the building.

The leading principle for the programmatic setup was the architectural structure and character of the existing spaces. The buildings' imperfections resulting from various modifications made through the centuries and from recent neglect were regarded as its great strenght. The restoration has striven to preserve the traces of the buildings' long and tumultuous history.

Regardless of the changing role of printed media, books and other sources of information, the architects believe that libraries can continue to play a vital role in the public life of our cities as public living rooms and collective working environments.



Figure 1: Courtyard of the Predikheren library (ArchDaily, n.d.)



Figure 2: Cloister of the Predikheren library(ArchDaily, n.d.)

CENTRAL SPACE

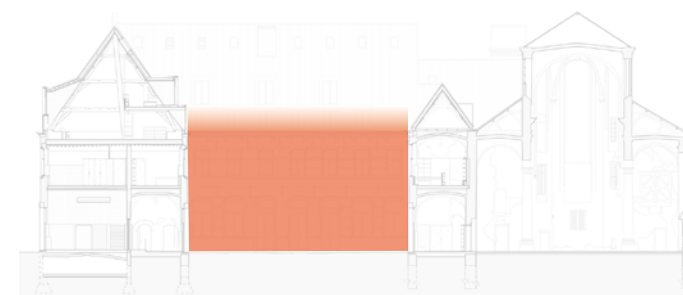
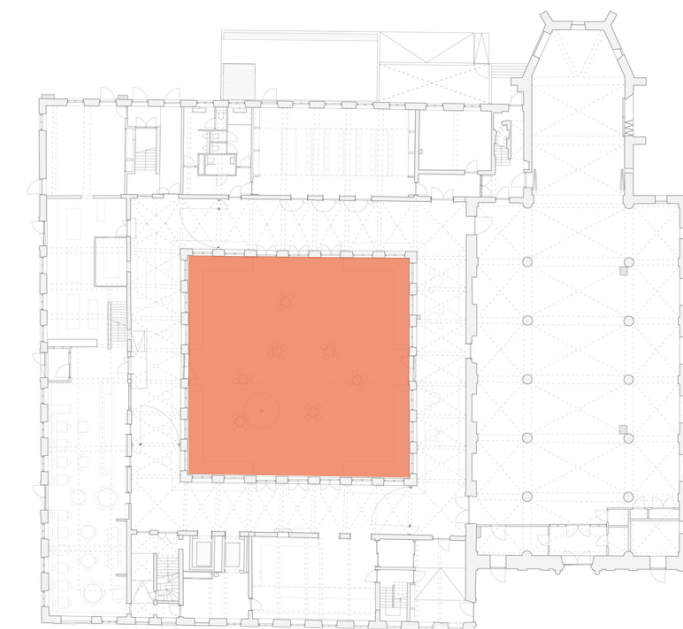
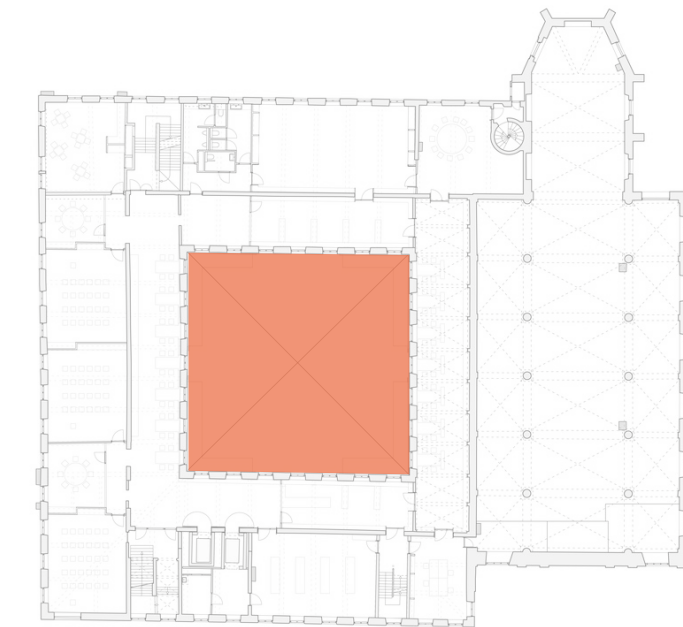


Figure 3.1: Predikheren analysis - central space

Legend

Central space

The central space of the Predikheren monastery is the open courtyard. It serves as a terrace and multipurpose 'outdoor room'. The courtyard is open to the sky, as it was originally.

0 10m

SPATIAL ORGANIZATION

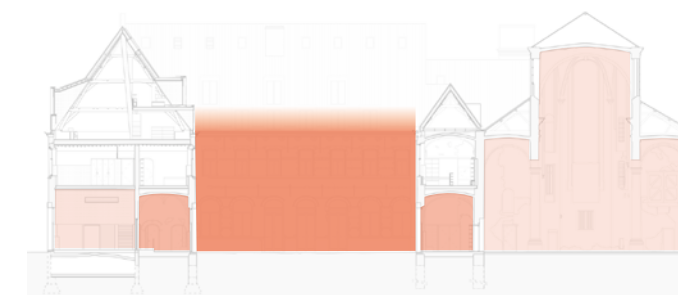
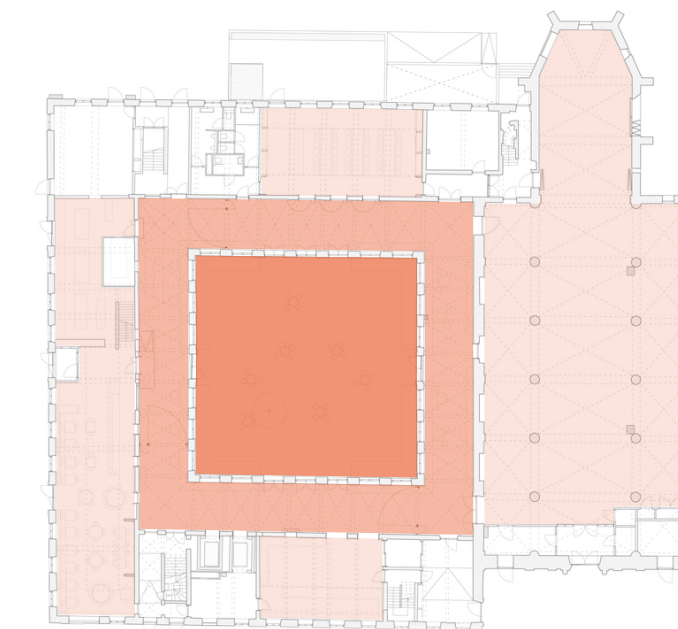
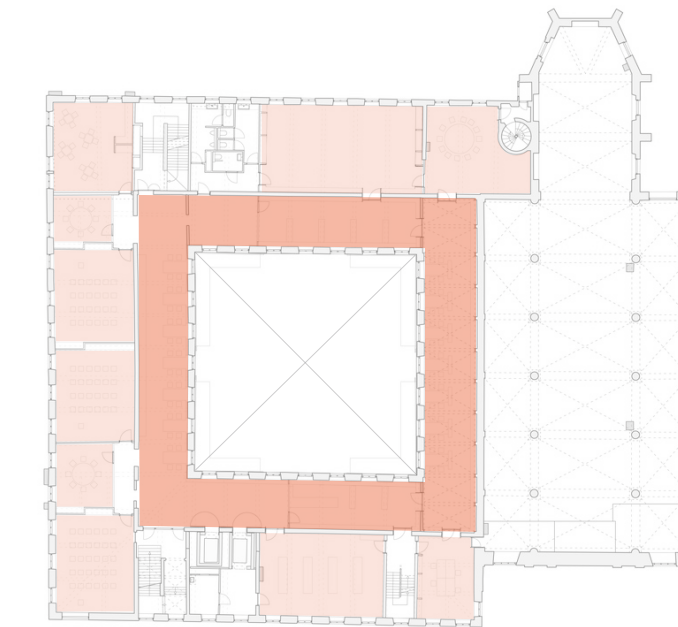


Figure 3.2: Predikheren analysis - spatial organization

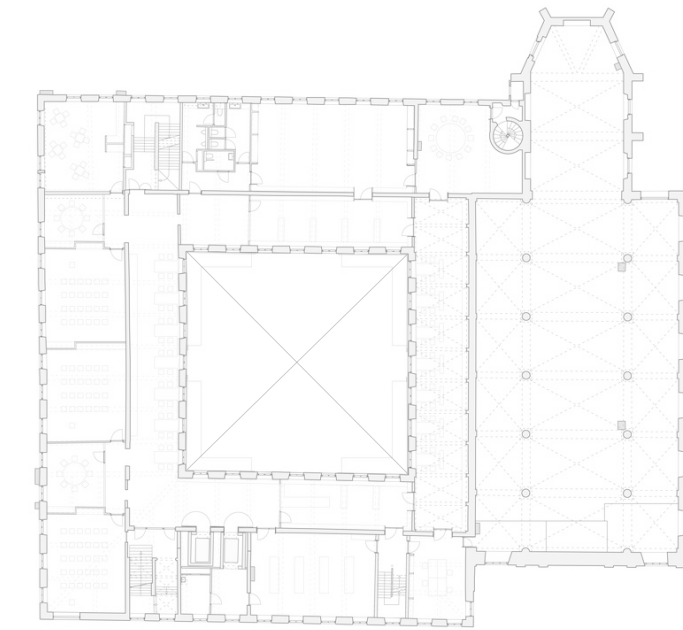
Legend

Central space
Primary
Secondary

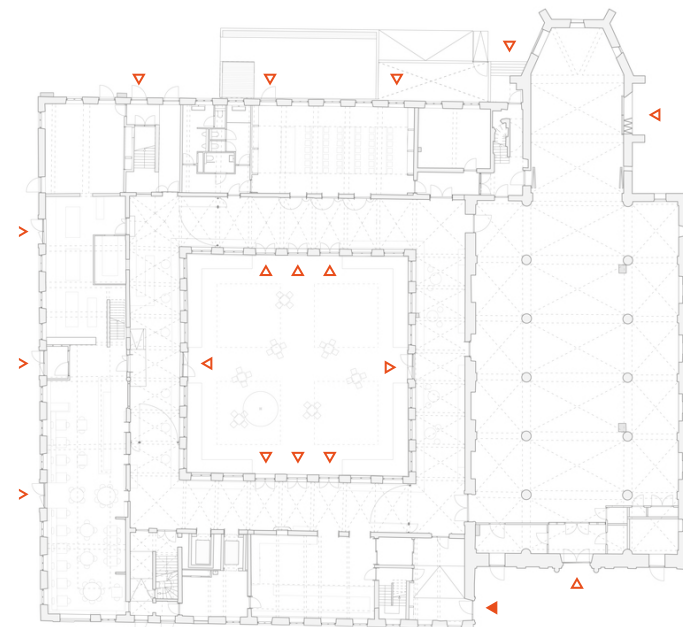
The courtyard is entirely enclosed by the cloister on both the ground and second floor. Adjacent to and accessible from the cloister are the main spaces in the outer ring of the building. On the ground floor these are the entry hall, refectory (dining hall), cafe and the church. On the first floor the staff office and library spaces are directly accessible from the cloister. The meeting rooms in the west wing of the building are accessible through a small intermediate entry space.

0 10m

ENTRANCES



First Floor



Ground Floor



Section

Figure 3.3: Predikheren analysis - entrances

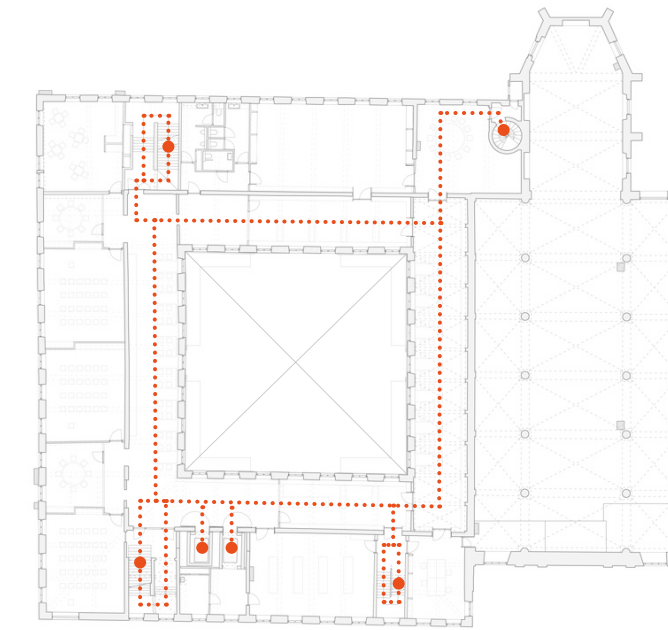
Legend

- ▶ Main entrance
- ▷ Entrance

The building has multiple entrances on all sides, adding to the accessibility and public character of the programme. The courtyard is accessible from all sides. The north and south entrances to the courtyard consist of a series of three double doors, emphasizing the connection between the courtyard and the cloister.

0 10m

ROUTING



First Floor



Ground Floor



Section

Figure 3.4: Predikheren analysis - routing

Legend

- Main routes
- Vertical access

The cloister is the main organizational principle of the building. Most entrances and stairwells are located on the continuation of the axis of the cloister. From there, almost all other spaces can be accessed. In some instances, the spaces in the outer ring of the building are interconnected, creating secondary routes.

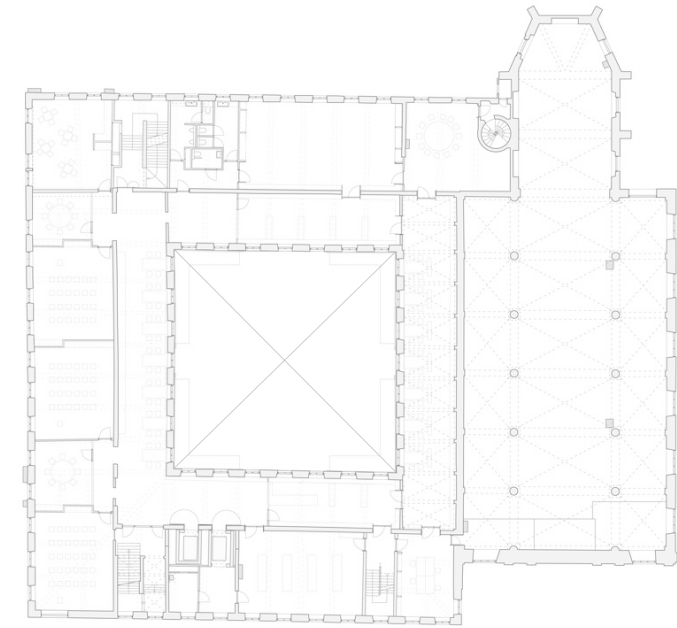
0 10m

DAYLIGHT

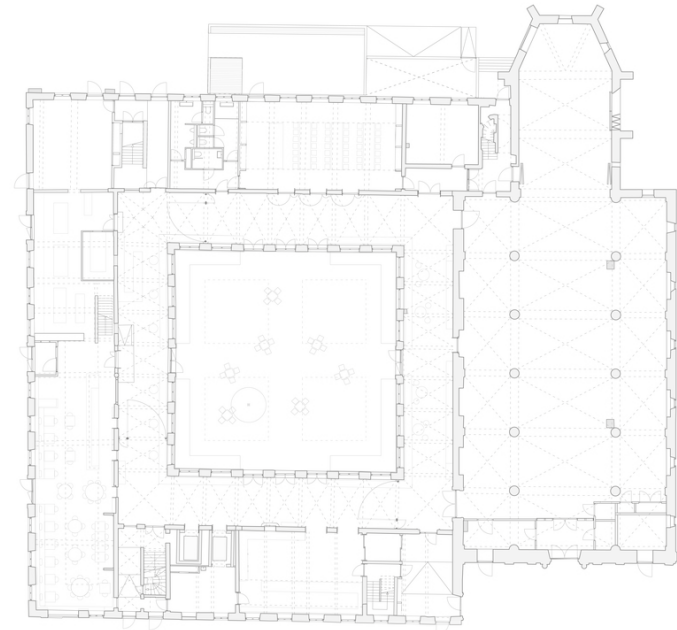
Legend

Direct daylight

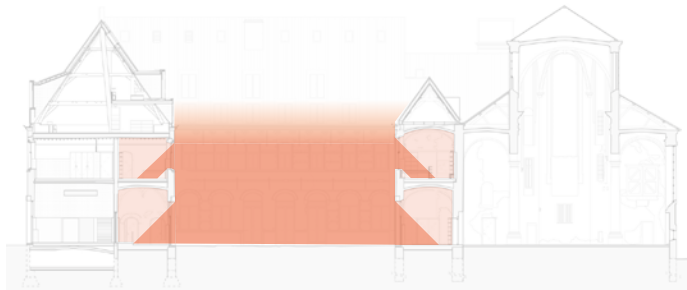
Indirect daylight



First Floor



Ground Floor



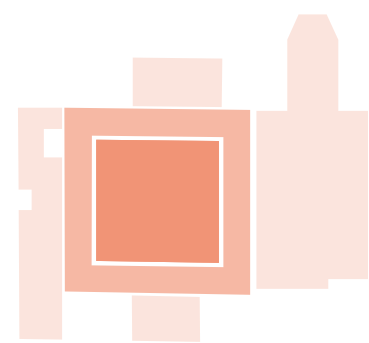
Section

Figure 3.5: Predikheren analysis - daylight

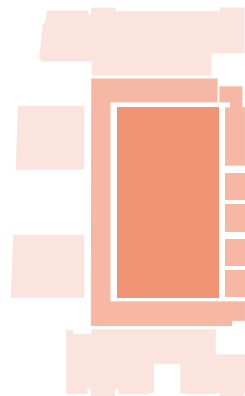
The window openings towards the courtyard allow for daylight to enter the building on the ground and first floor of the cloister. The high windows on the ground floor allow more light to enter the building, emphasizing the connection with the courtyard and the importance of the ground floor cloister.



SPATIAL ORGANIZATION



Predikheren



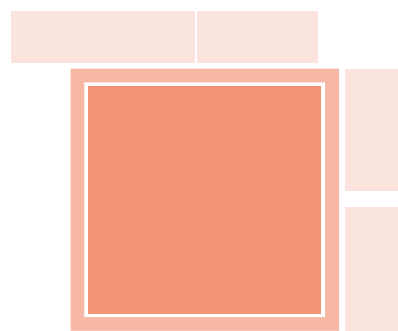
Post



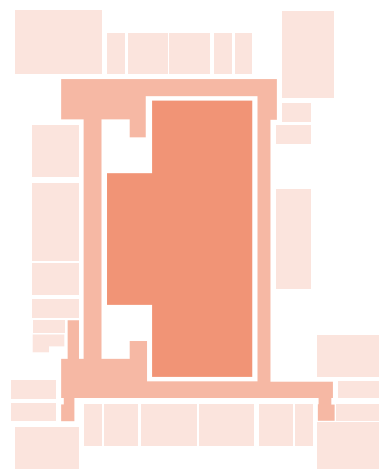
Predikheren



Post



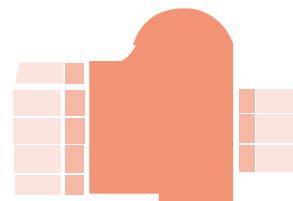
Pesthuis



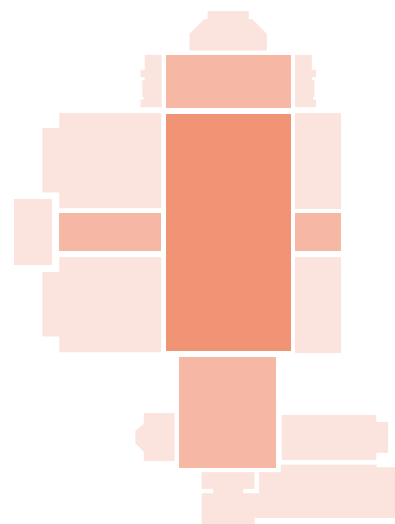
Faculty of Law



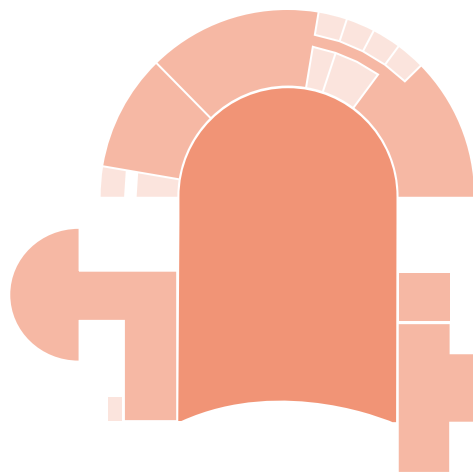
Pesthuis



Faculty of Law



Art museum



Forum



Art museum



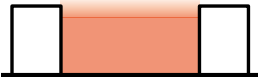
Forum

Plan

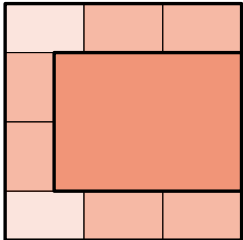
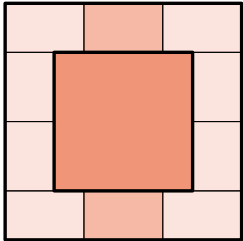
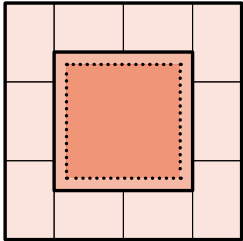
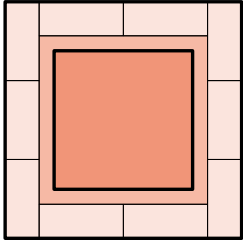
Section

0 10m

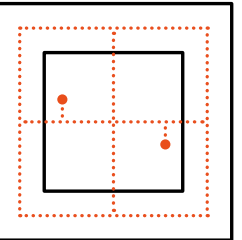
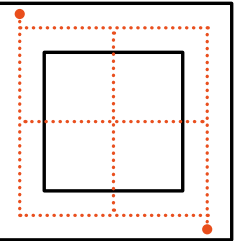
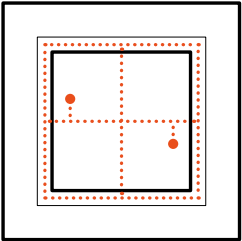
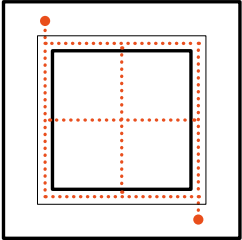
Central space



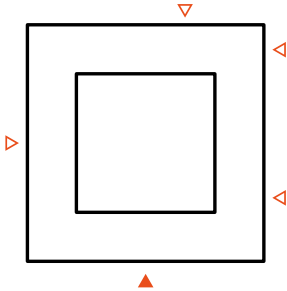
Spatial organization



Routing



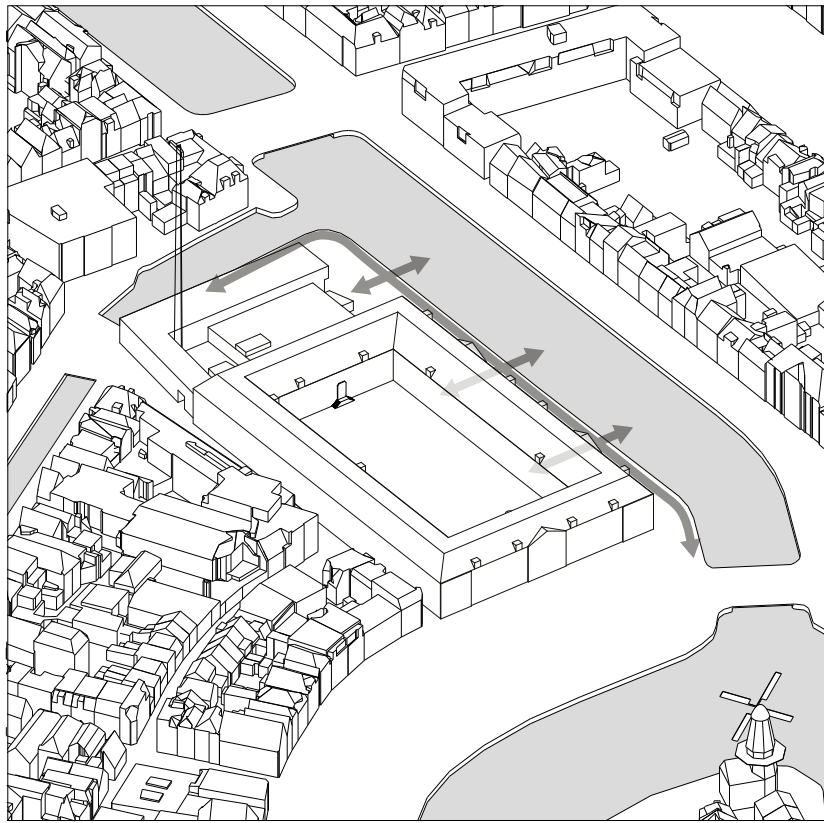
Entrances



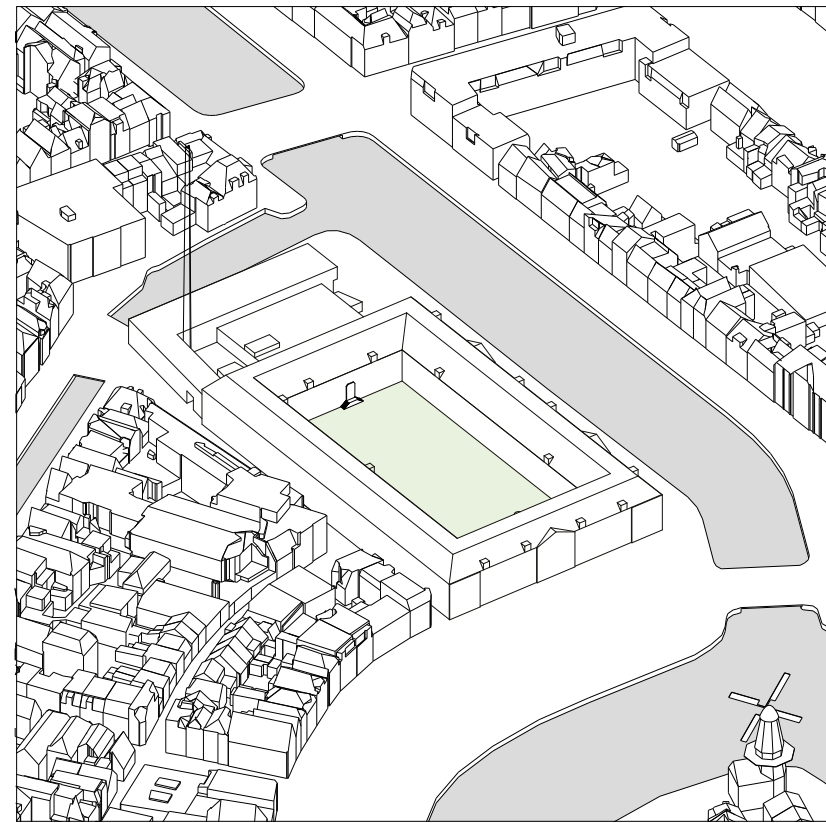
Daylight



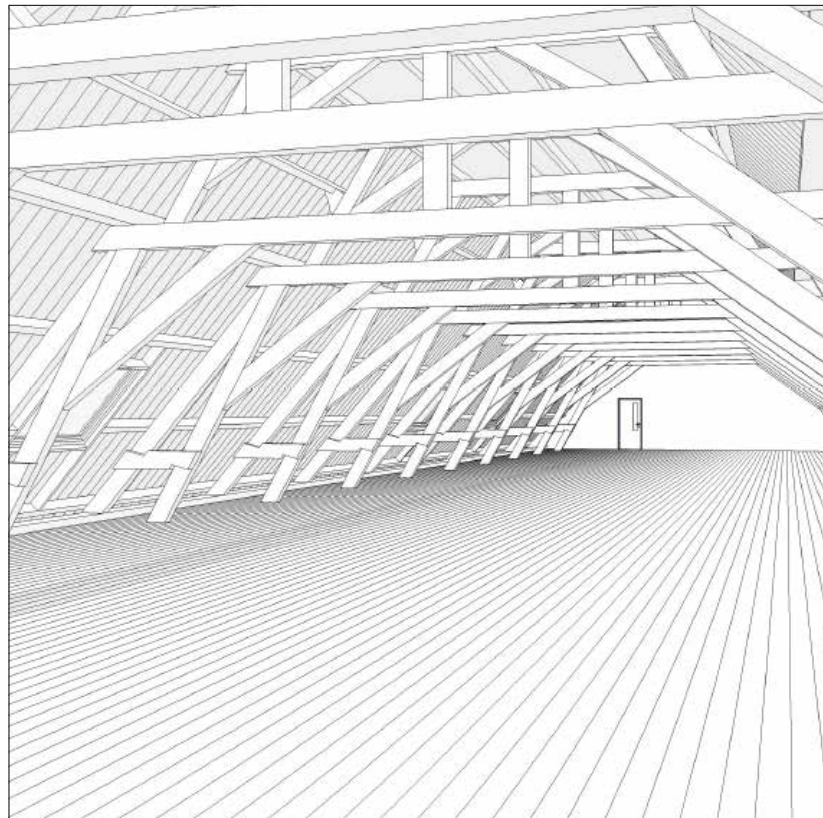
What heritage values are present in the Koudenhorn police building?



Context



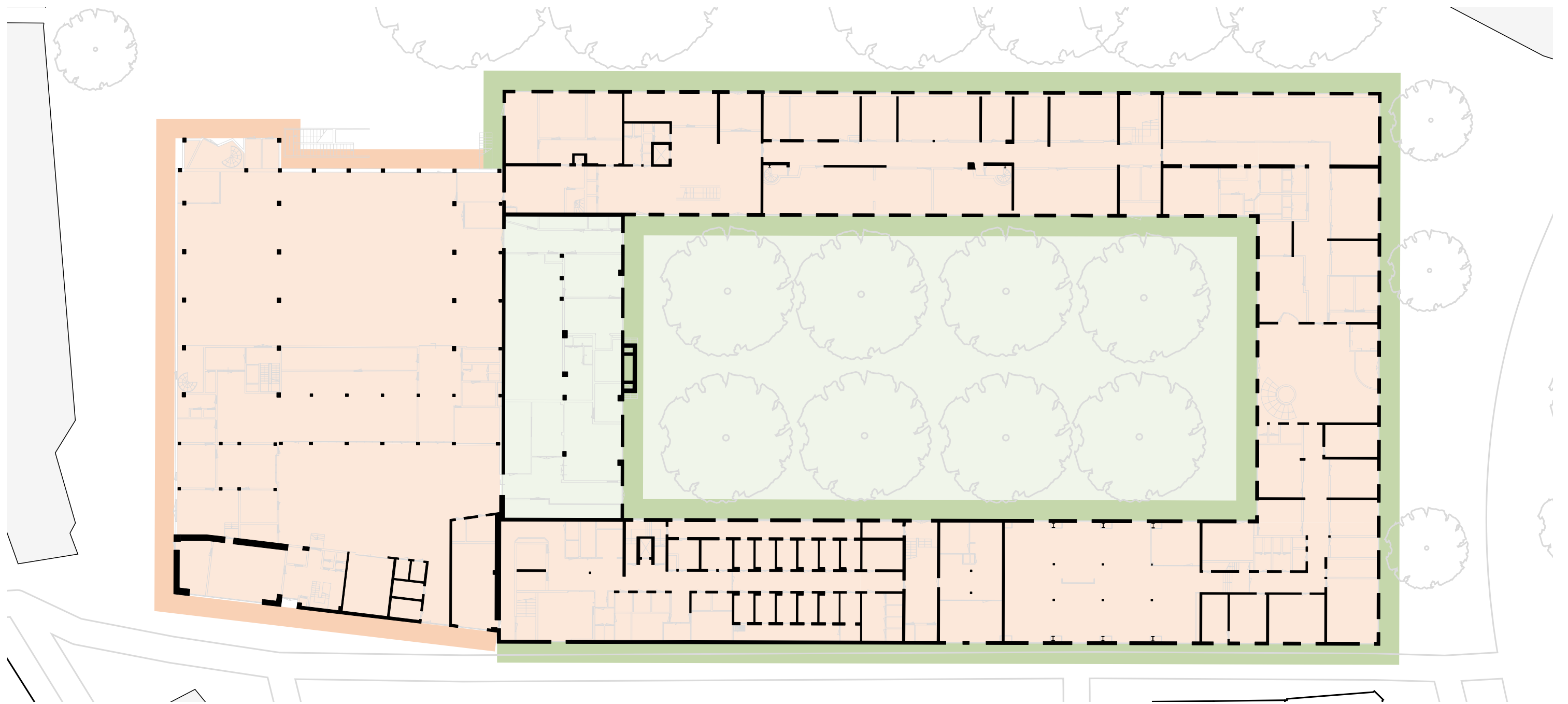
Courtyard



Structure



Skin



Value map

RELATION TO WATER

Redesign of quay
& placement
of programme
reinforce relation of
building to water.

ROOF STRUCTURE

The roof structure is
maintained and in
view

FACADE

The facades of the
original building are
maintained.

COURTYARD

The courtyard
functions as an
extension of life in
the building.

CELL BLOCK

The cell block is
maintained and
integrated into the
new space plan.

What programme is suitable for the Koudenhorn police building?

PUBLIC LIBRARY



4 locations:

- Haarlem Centrum
- Haarlem Noord
Haarlem Oost
Haarlem Schalkwijk

Haarlem Centrum:

- | | |
|-------------------------|-------------------------|
| Doelengebouw (1563) | ca. 1300 m ² |
| Stadsbibliotheek (1974) | ca. 3000 m ² |
- 'Het nieuwe bouwen', G.H.M. Holt & B. Bijvoet
 - Owned by municipality, rented by library
 - Overdue maintainance
 - Poor energy efficiency (energylabel G)
 - Plans for renovation

Changes in library functions:

- More social
From collection to connection
- More educational
 - Language
 - Digital
- Digital government

Collection & Connection:

- Living room of the city
- Cafe
- Podium
- Facilitating programme by local residents
- Facilitating new contacts
- Work/studyspaces
- Flexibility, multifunctional spaces



Haarlem central library (own images)

Conclusions

The different population groups live mostly separated, in different neighbourhoods.

The library has difficulties reaching all target groups.

The library's memberbase does not reflect the population of Haarlem.

The library's memberbase mostly consists of highly educated, prosperous households.

Points of focus

1. Diversity and encounter

The gap between wealthy and less wealthy, higher and lower educated and non-immigrants and immigrants is growing.

The city should remain a place for all population groups

Different population groups rarely encounter one another

2. Inspiration and challenge

There is a need for more encounter between different population groups and people from different walks of life

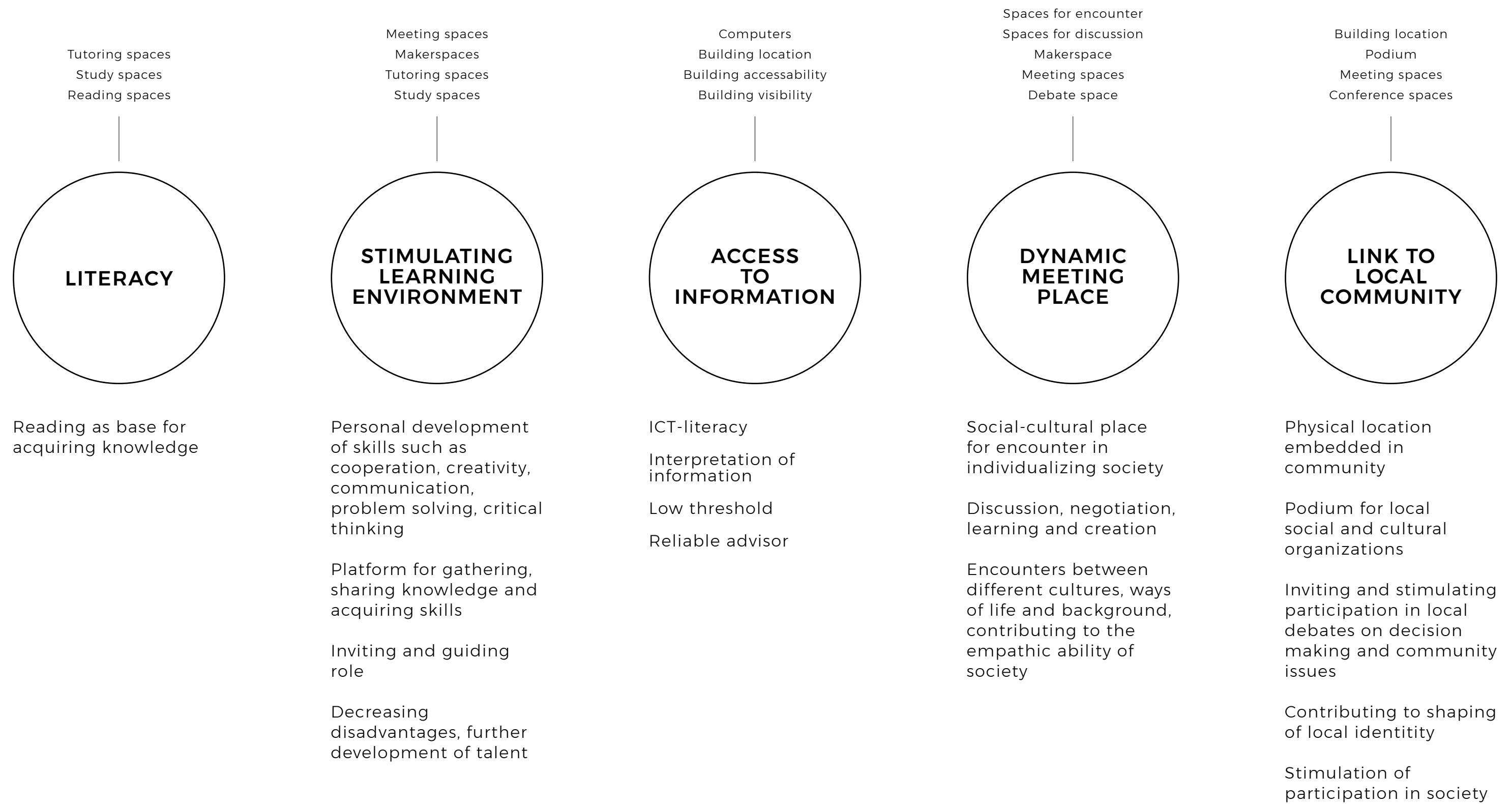
There are few innovative breeding grounds and alternative culture is missed.

Bibliotheek van

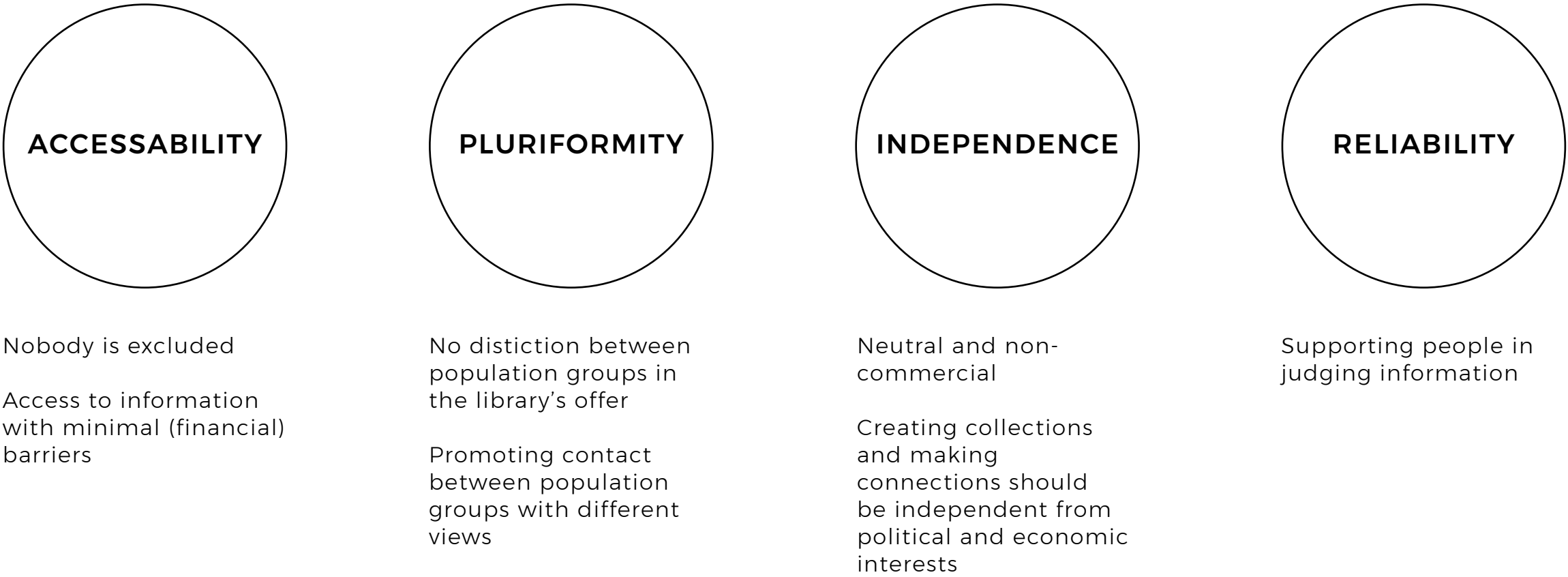
knooppunt voor kennis, contact en cultuur

de toekomst

WHAT IS THE CORE MISSION OF THE PUBLIC LIBRARY?

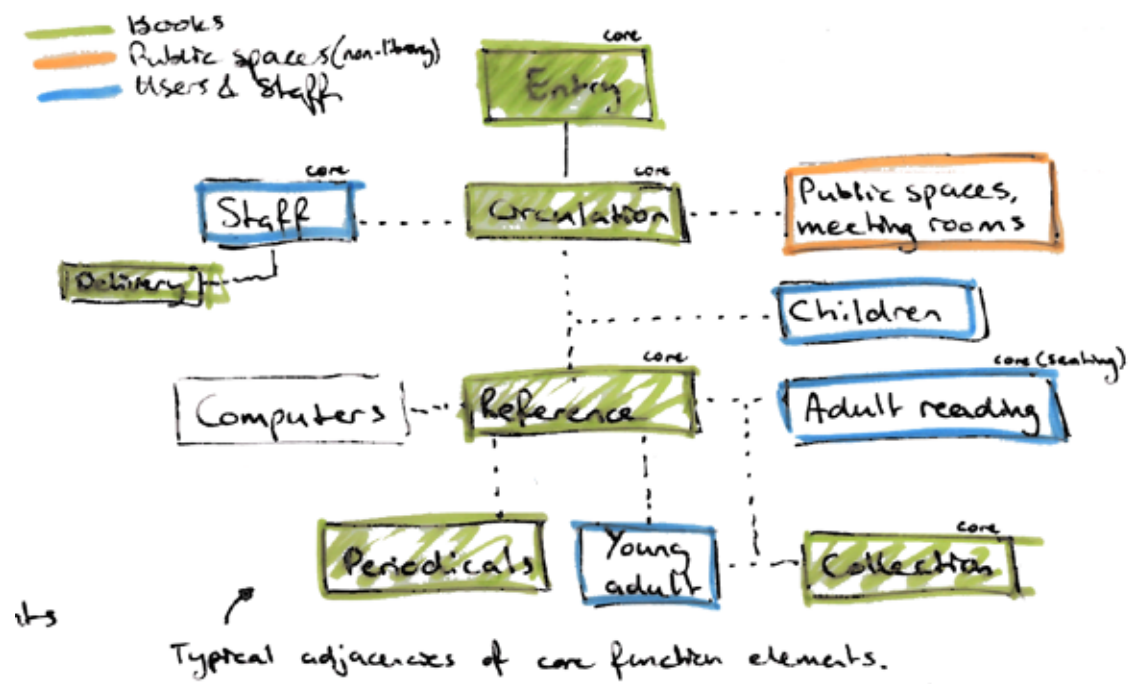


WHAT VALUES DOES THE LIBRARY OPERATE FROM?



6 CORE PROGRAMMATIC FUNCTIONS:

- Entry
- Circulation
- Reference
- Staff
- Collection
- Seating



CORE PROGRAMME

The building houses the six core programmatic library functions.

LIVING ROOM

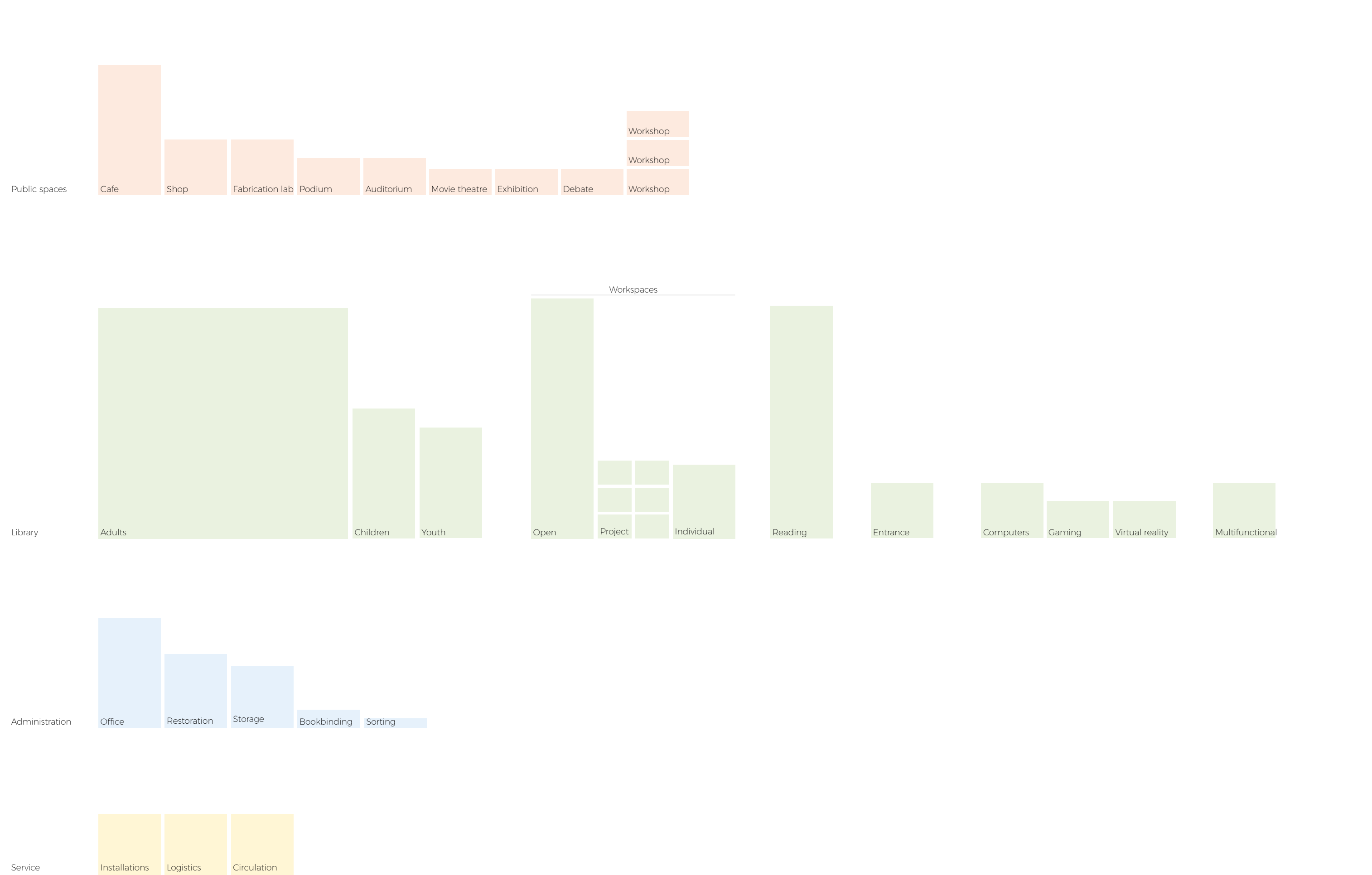
The spatial experience is that of an urban living room.

ACCESSABILITY

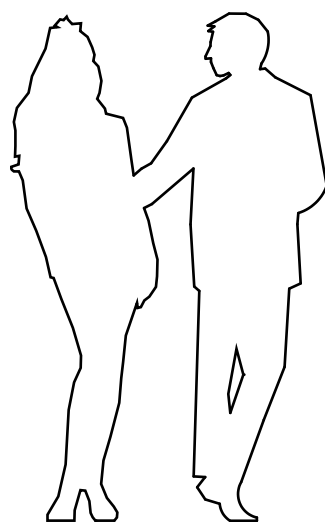
The building is easily accessible. There is a low threshold to enter the building.

ENCOUNTER

The building enables encounters between people.



DWELLINGS



Starters

WiMRA 2019: Regional decrease in influx of young households and starters

- Increase in housing prices
- Attractive houses are being bought to be rented out
- Decrease in social housing offer
- Increase in rent prices private sector



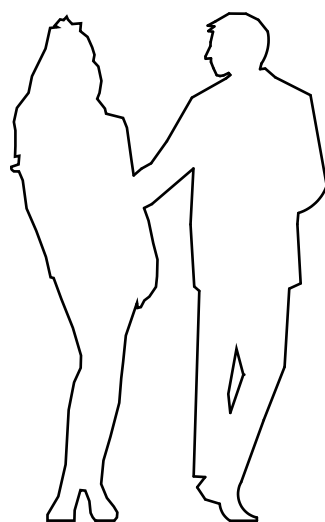
Elderly

Number of 65+ households will increase from 20.000 in 2020 to 30.000 in 2040.

Decreased mobility

Relieving pressure on housing market by moving to appropriate housing

Relieving pressure on housing with care by living self-reliantly for longer



Starters

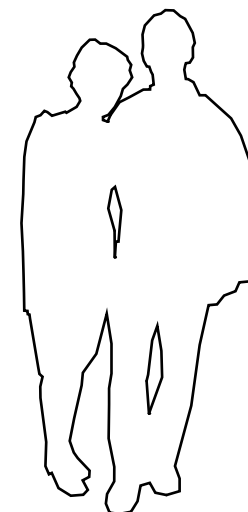
Household consisting of 1 or 2 people
Full-time job
Working from home

Needs:

Shops
Bars & Restaurants
Culture
Employment opportunities
Good infrastructure

Relation to building:

Workplaces
Cafe
Makerspace
Exhibition



Elderly

Household consisting of 1 or 2 people
Self-reliant
A lot of free time

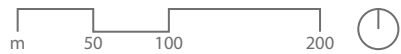
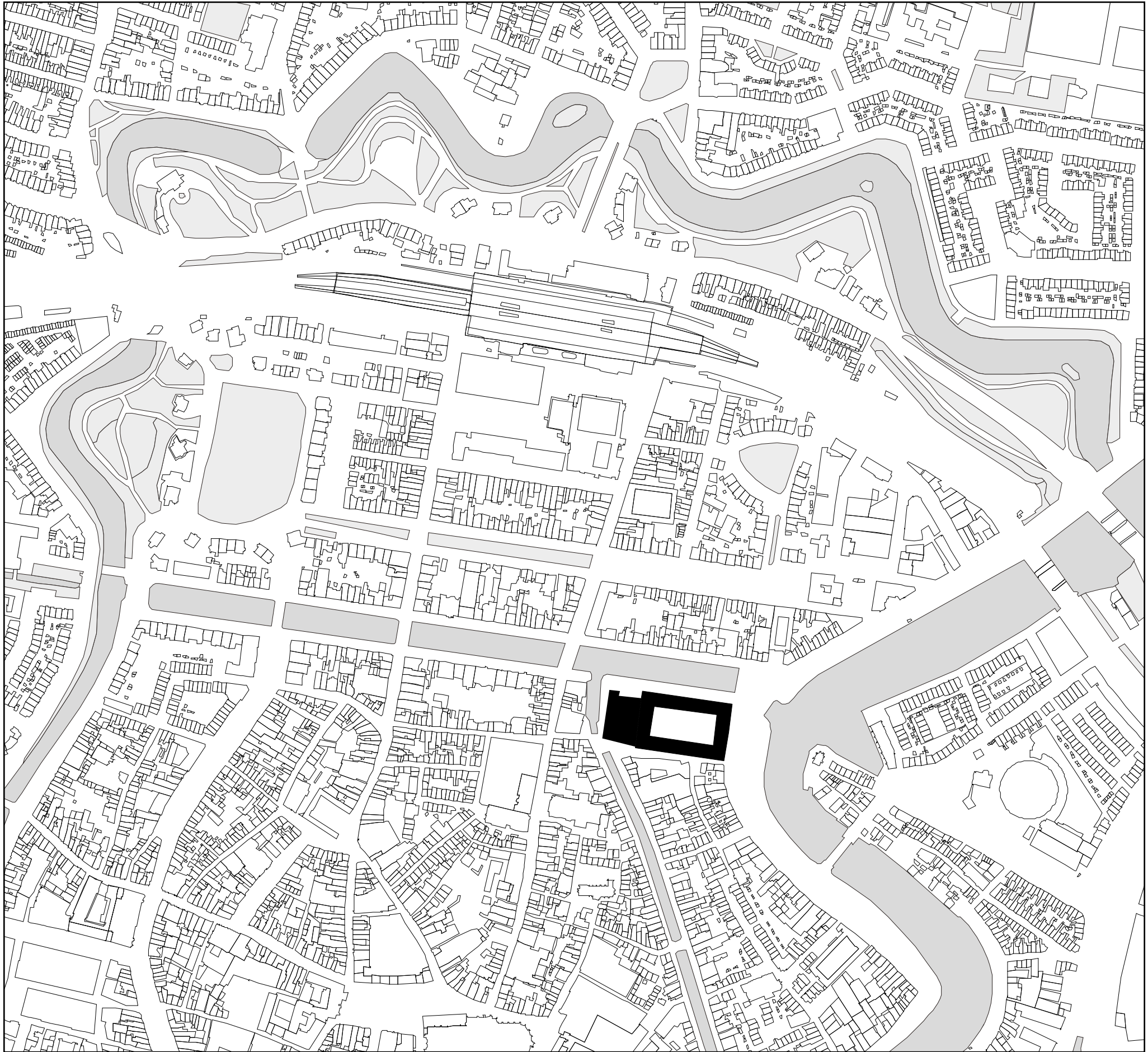
Needs:

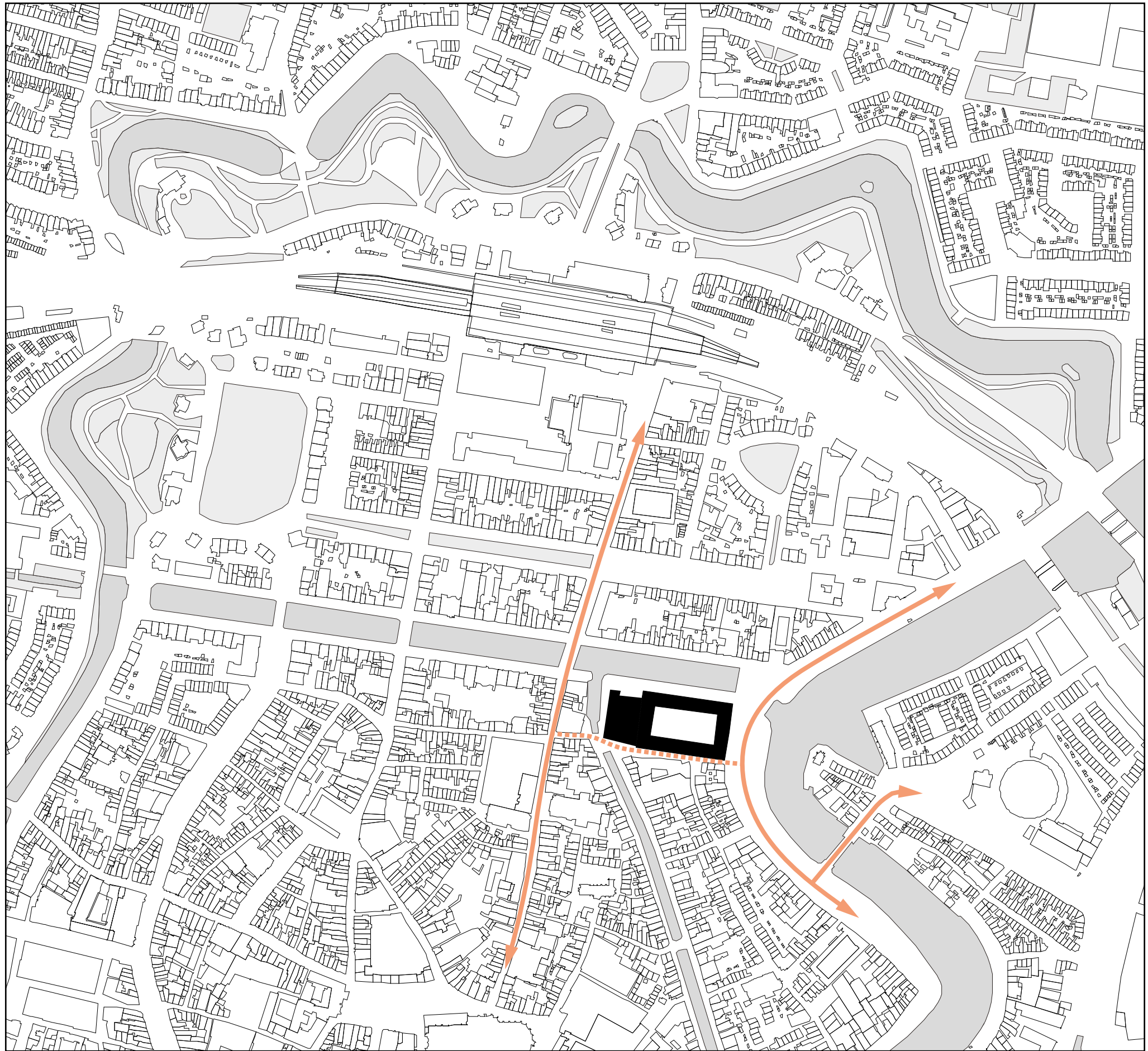
Connection to city / community
Single-floor housing
Healthcare facilities
Activities

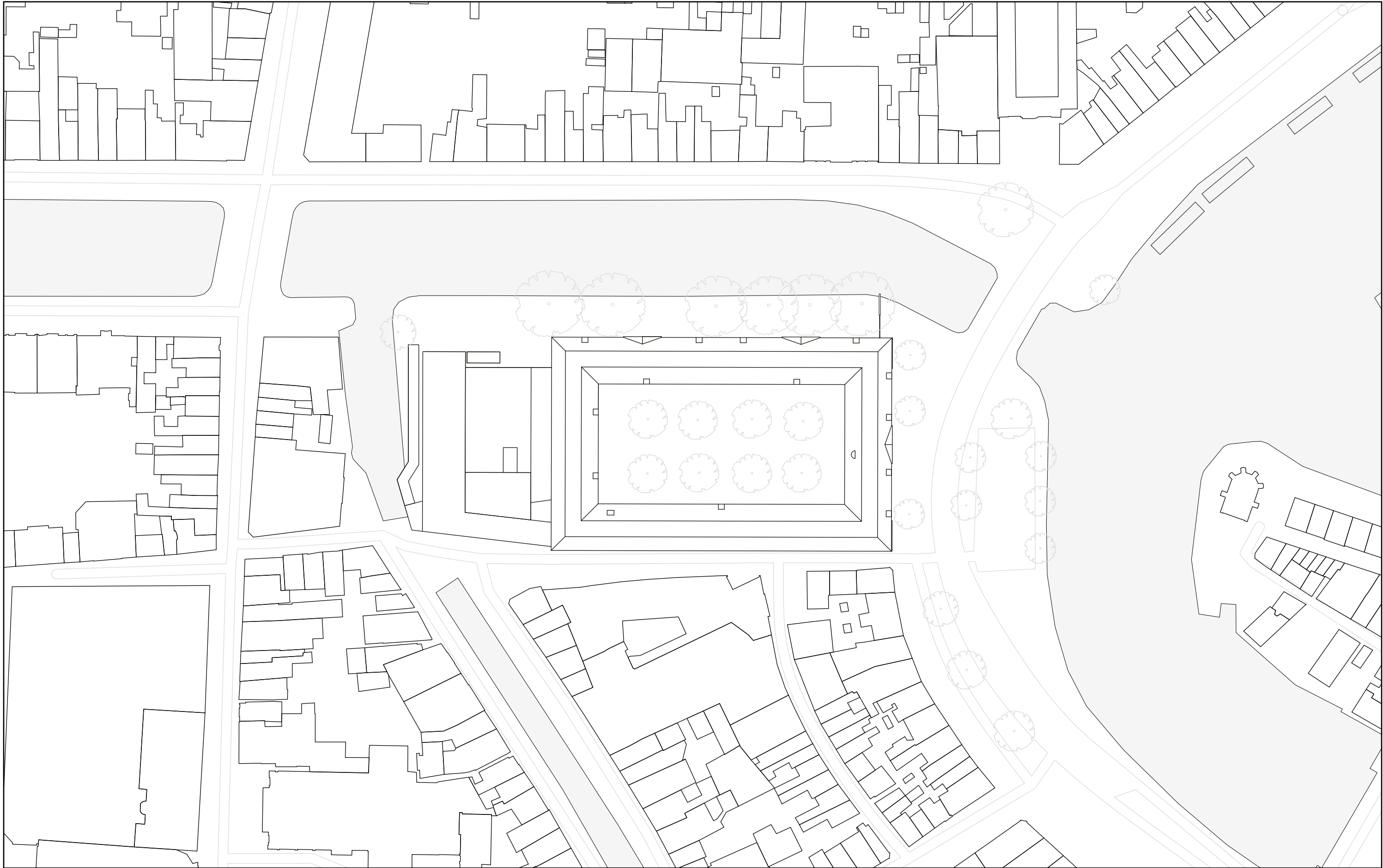
Relation to building:

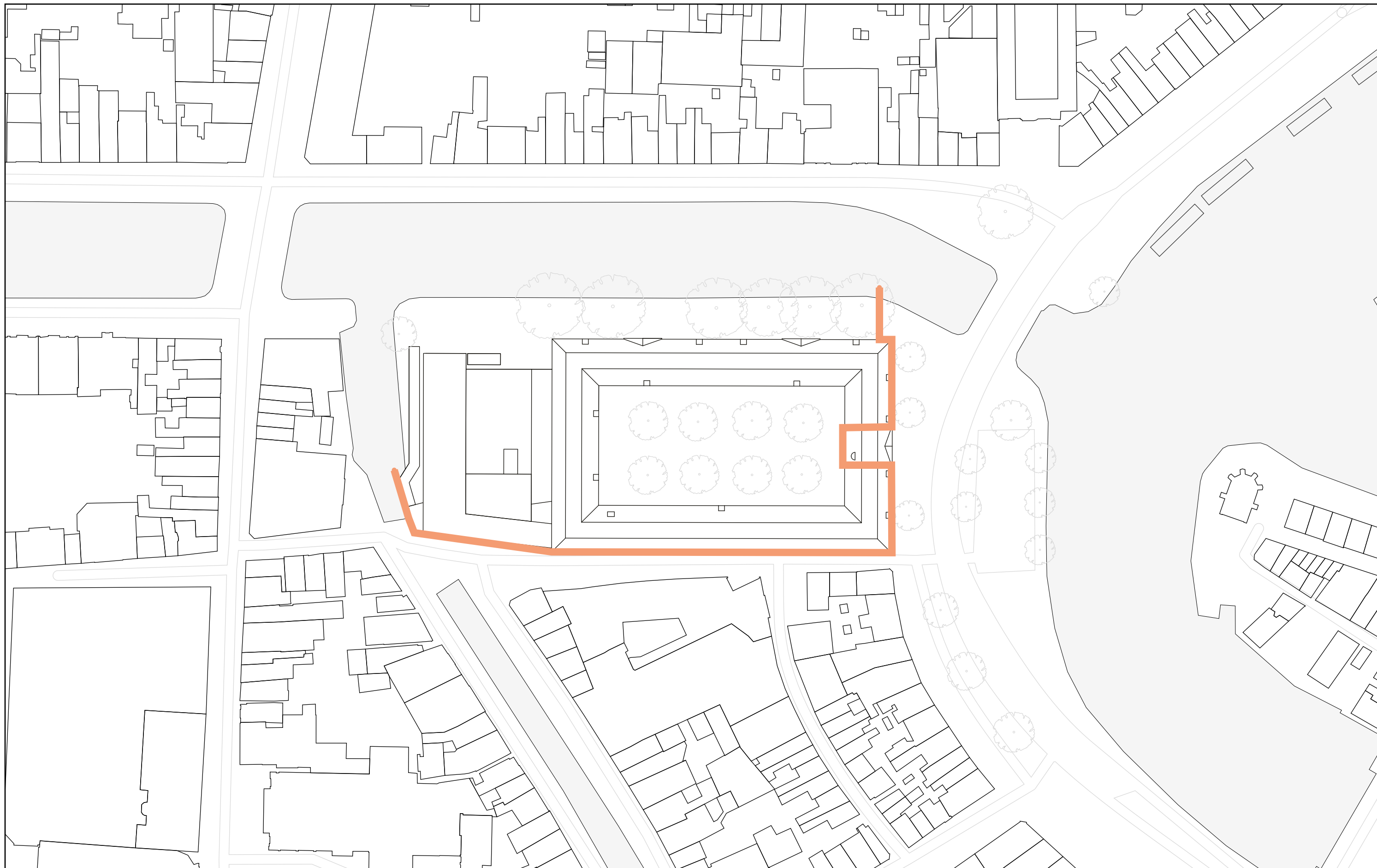
Communal spaces
Communal garden
Cafe
Digital competence
Volunteer work
Healthcare facilities

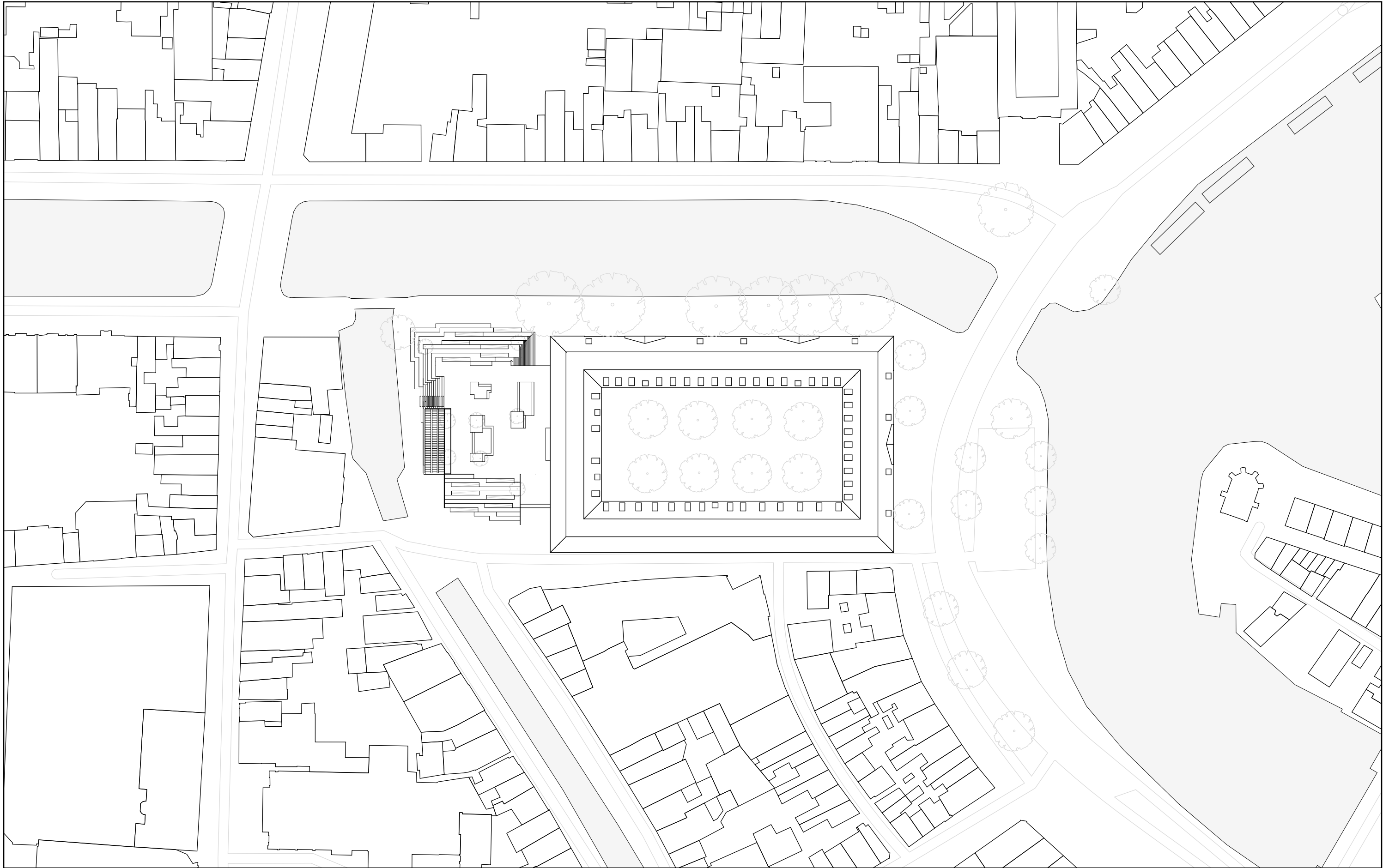
How can the Koudenhorn police building be transformed into a public library
and city dwellings?

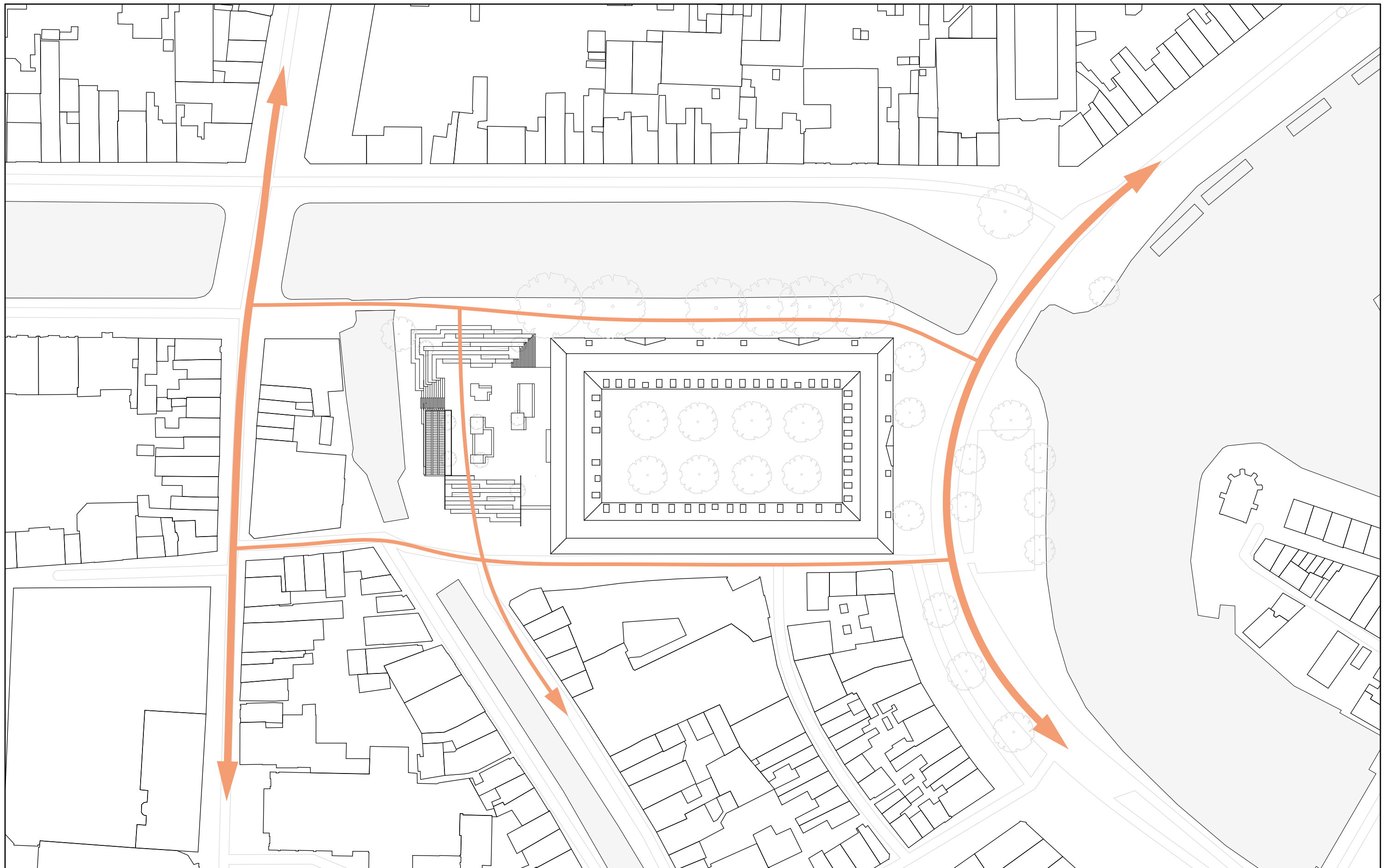


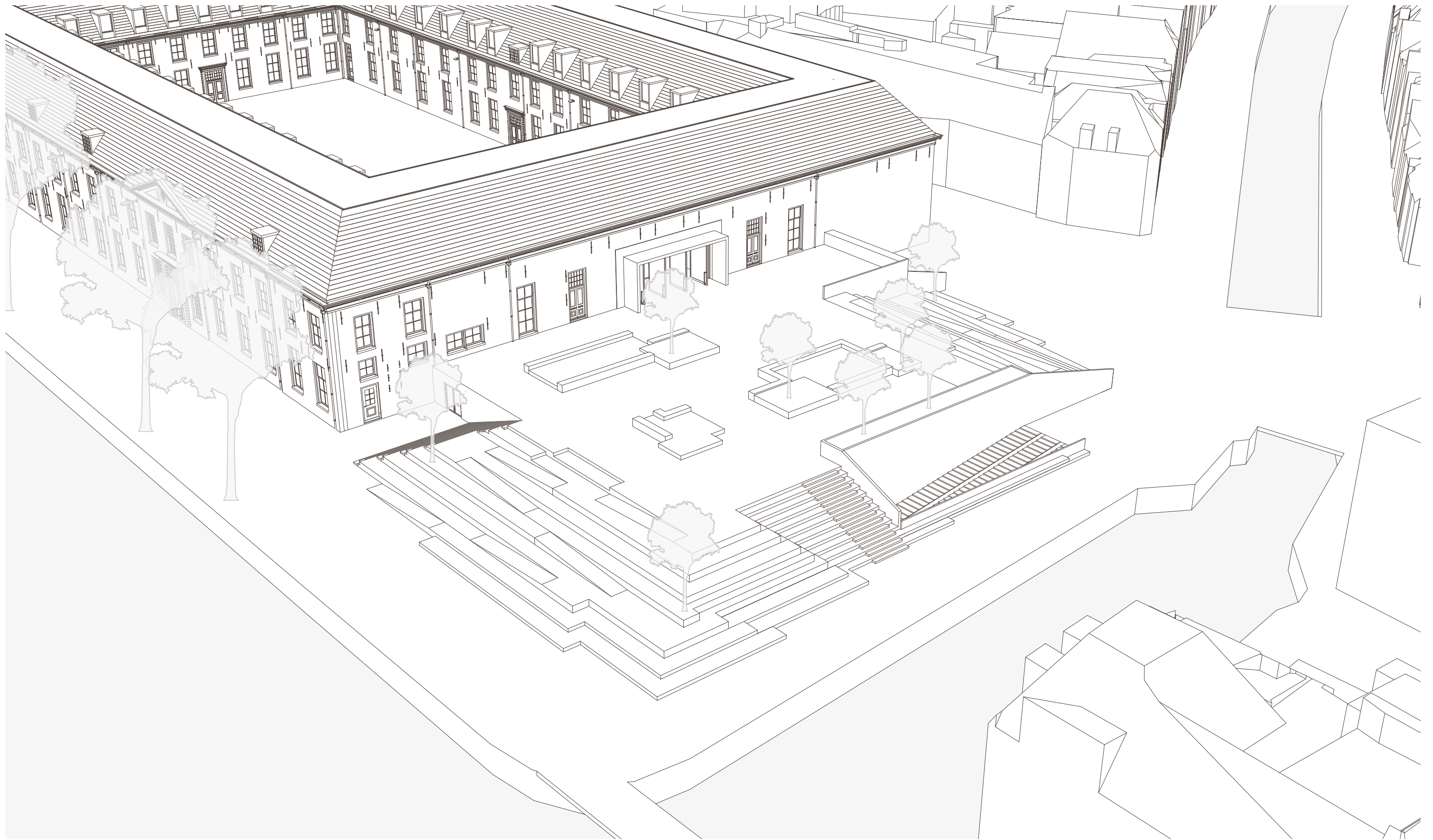




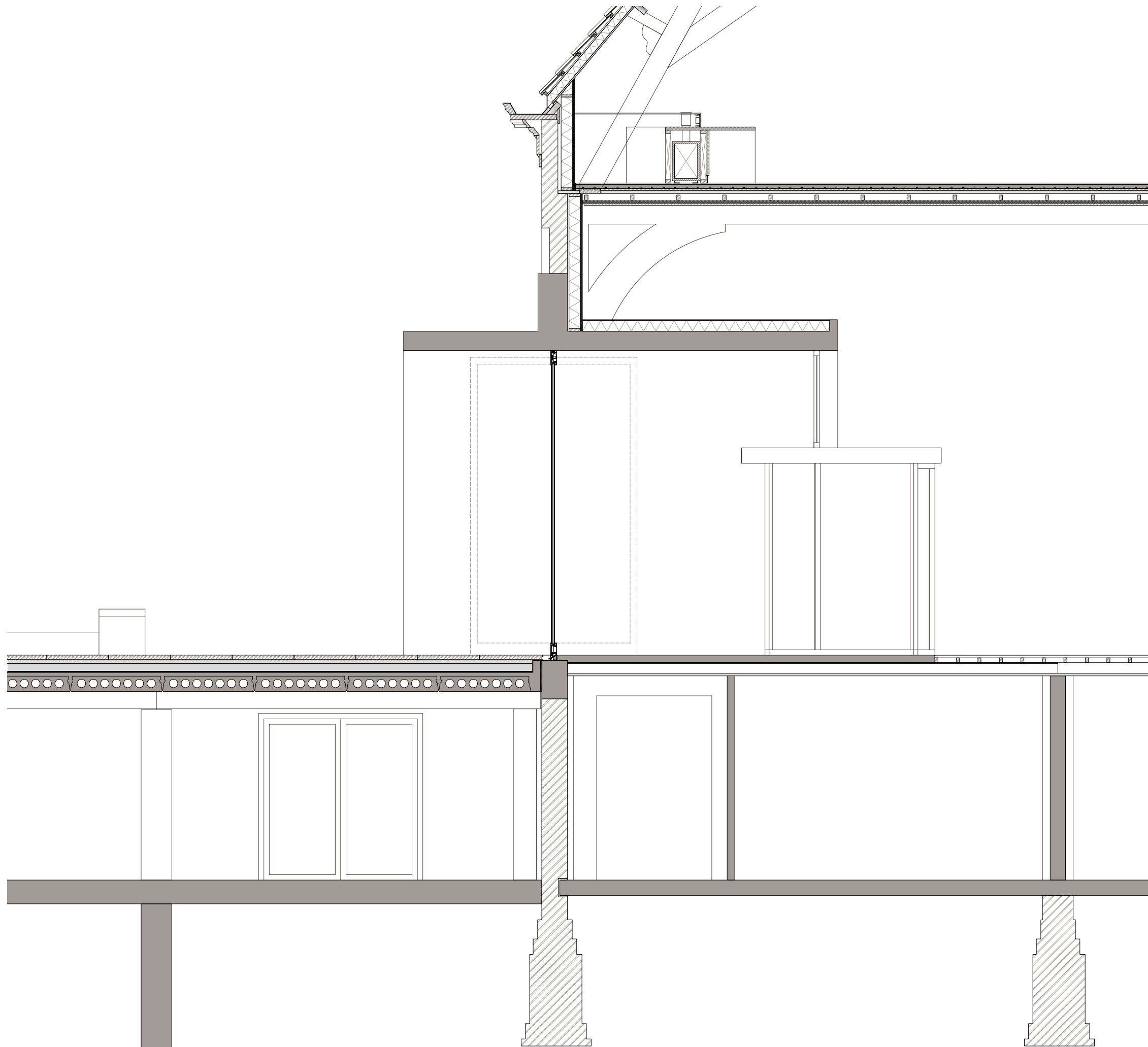




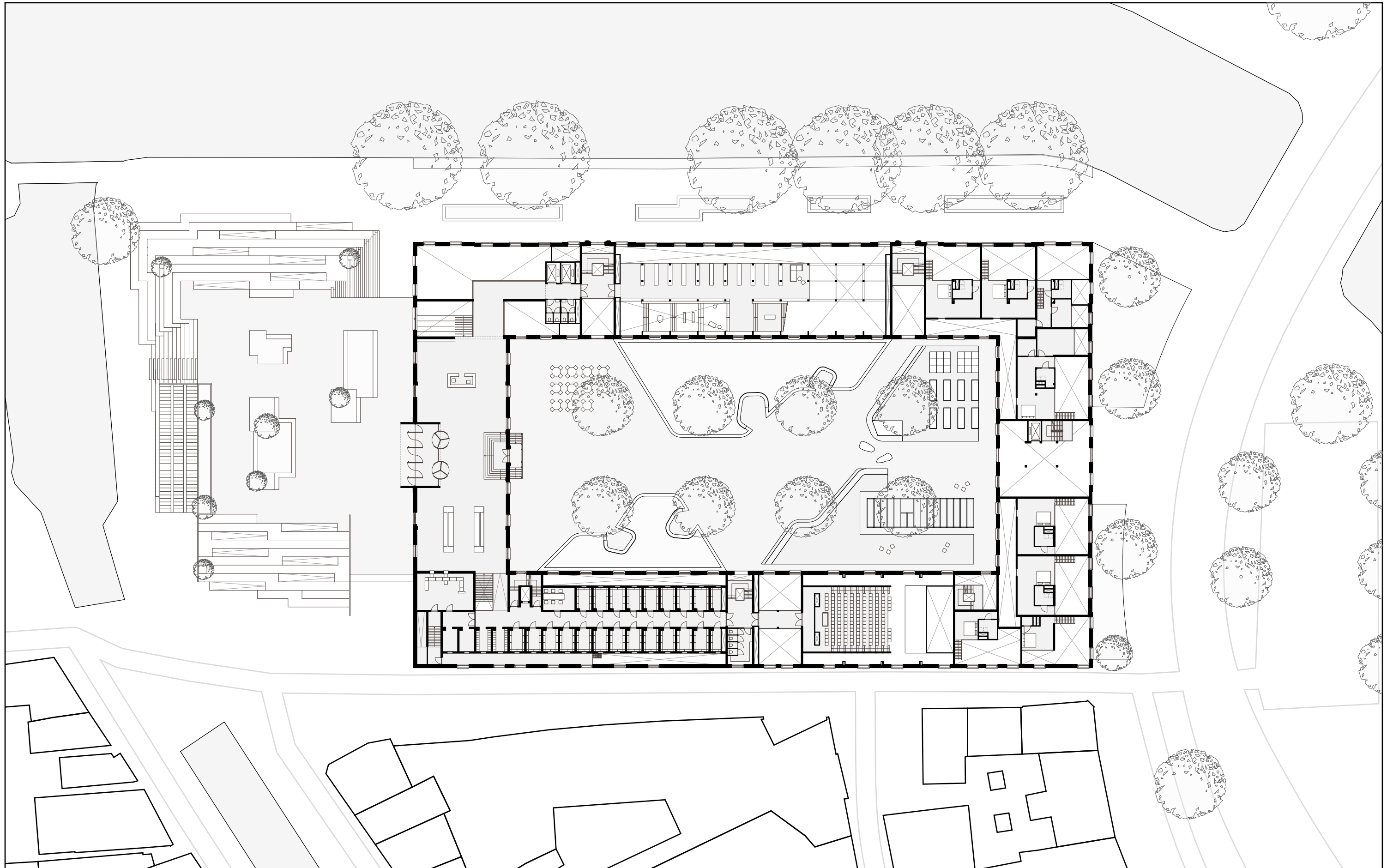


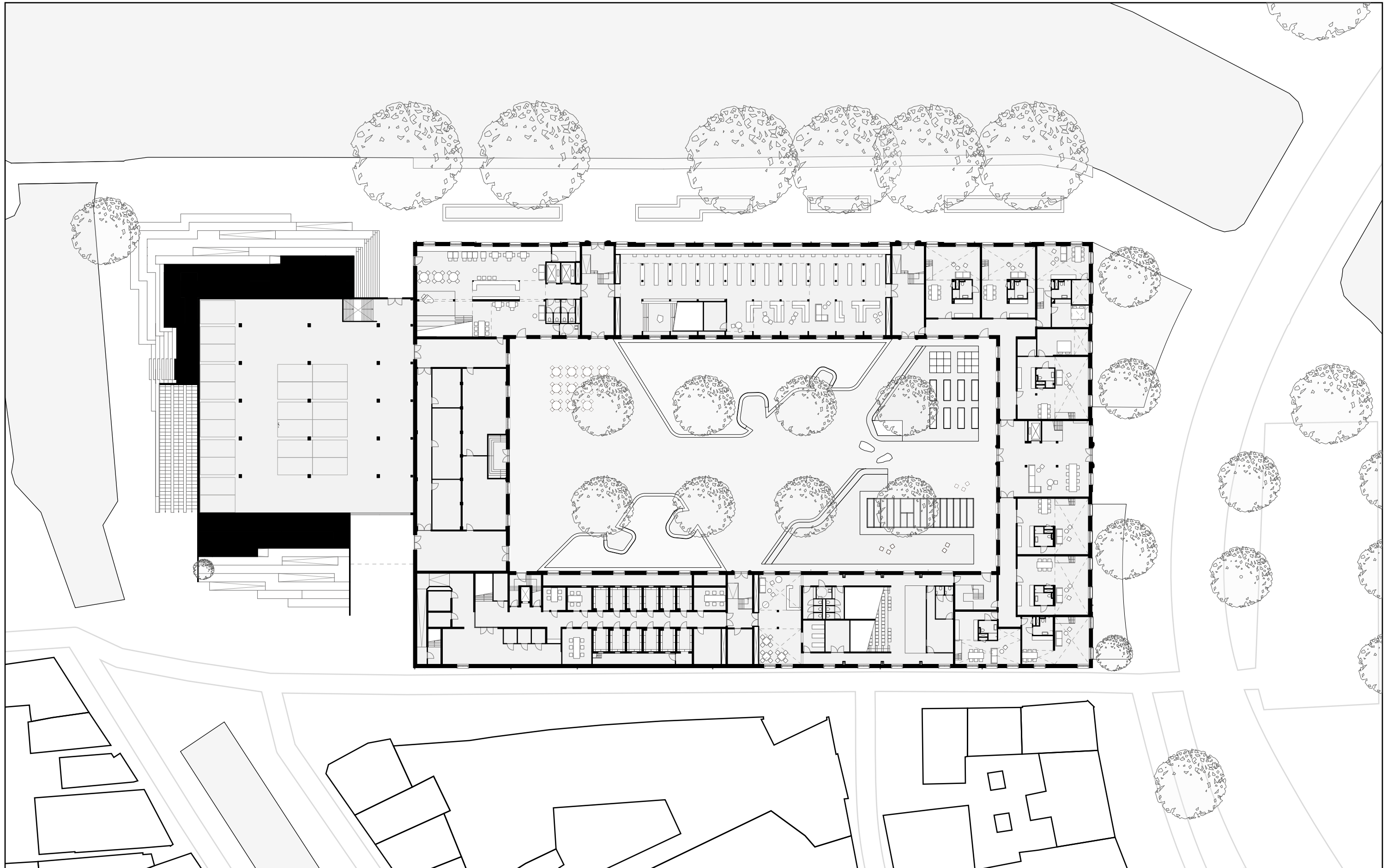






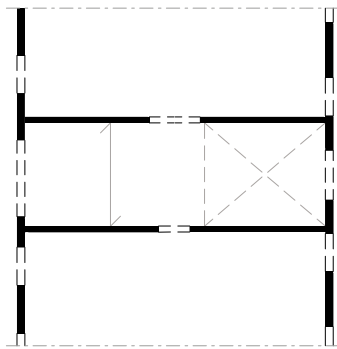
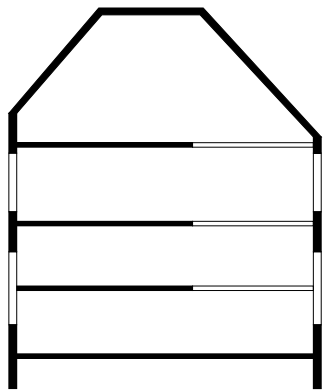
m 0,5 1 2



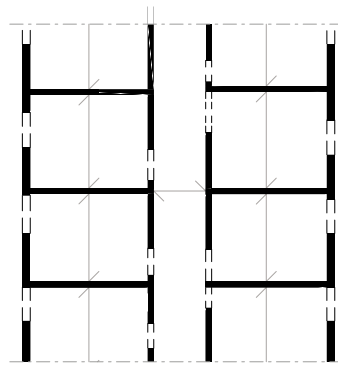
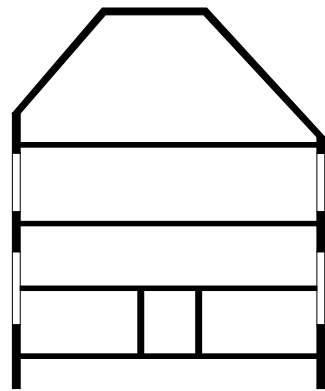


1.
Structural walls

1A.
Perpendicular

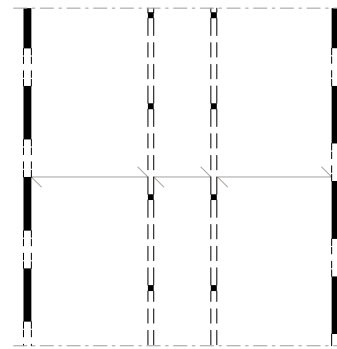
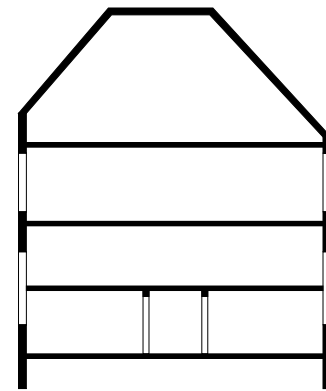


1B.
Both axis

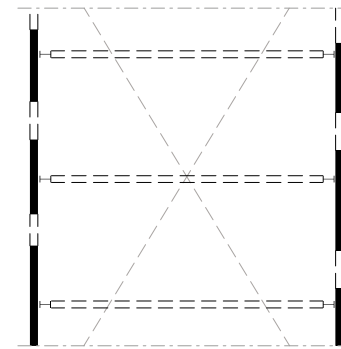
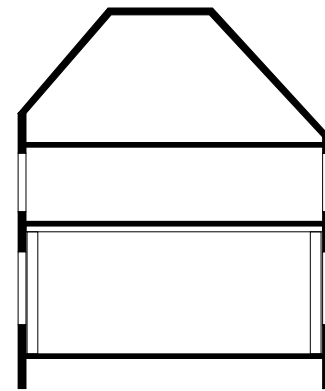


2.
Columns & Beams

2A.
Corridor

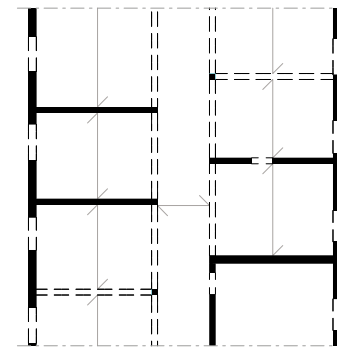
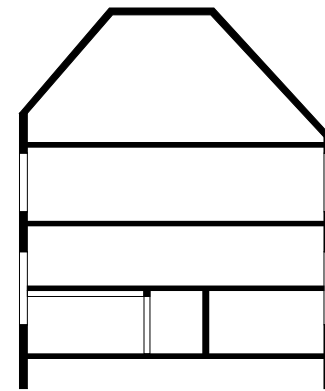


2B.
Side

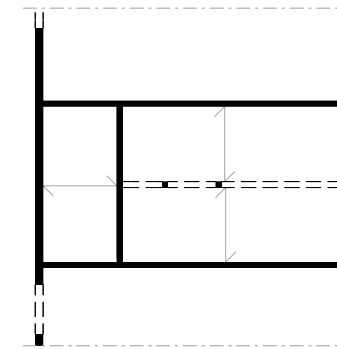
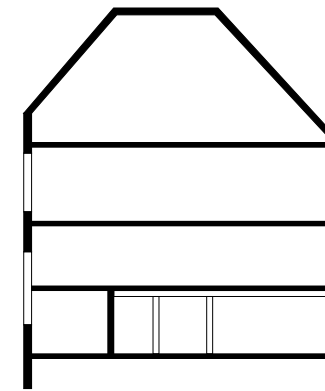


3.
Combination

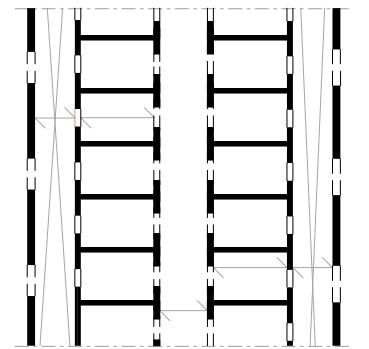
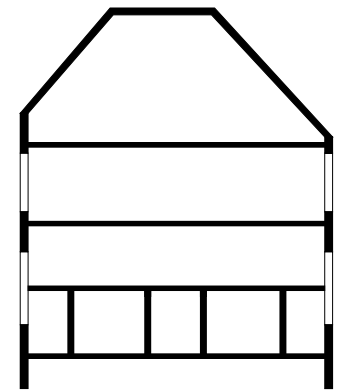
3A.
Corridor



3B.
Central



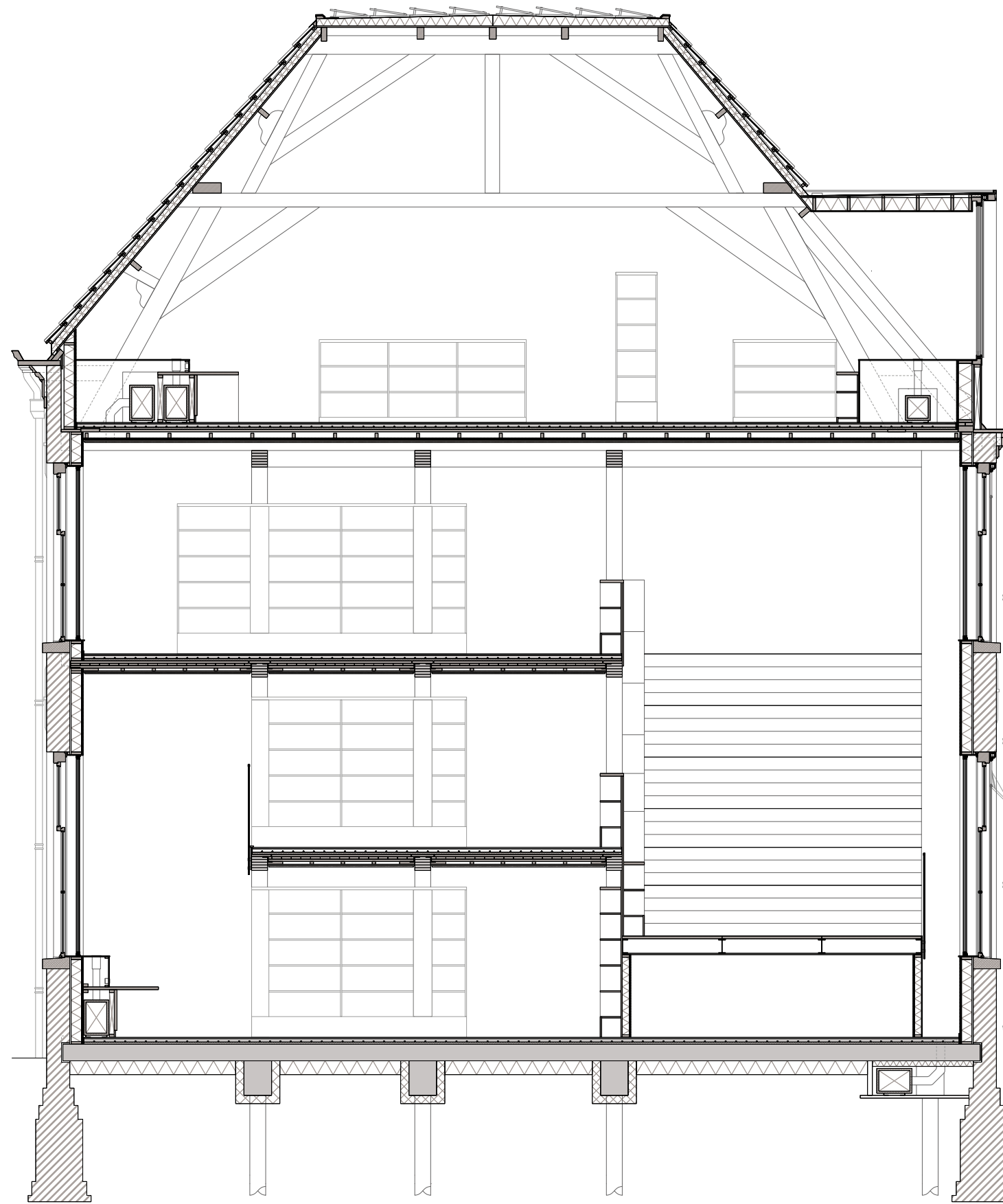
3C.
Cell block

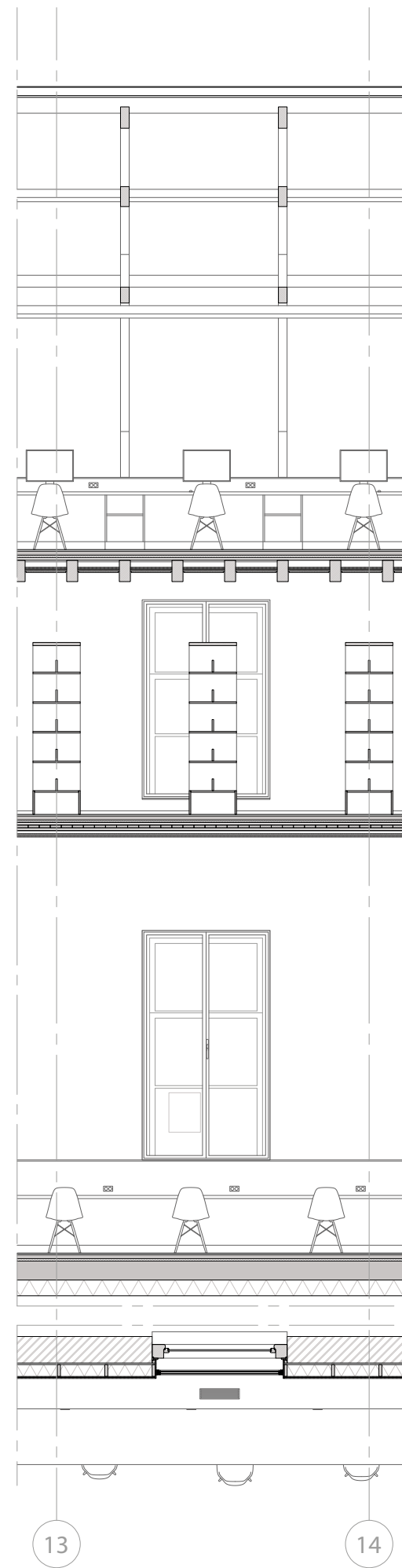
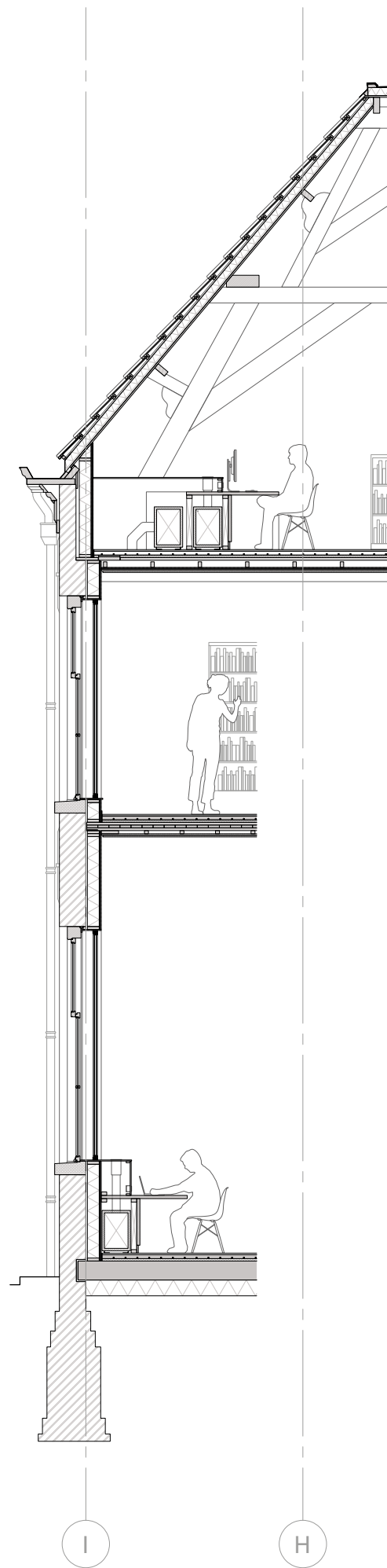
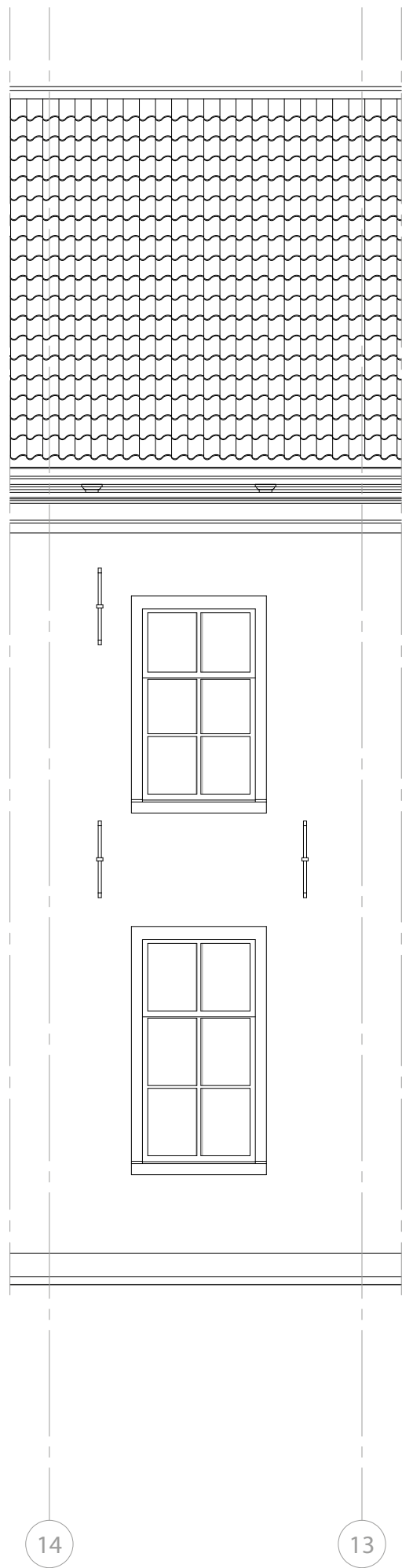


PLAN ENTRESOL

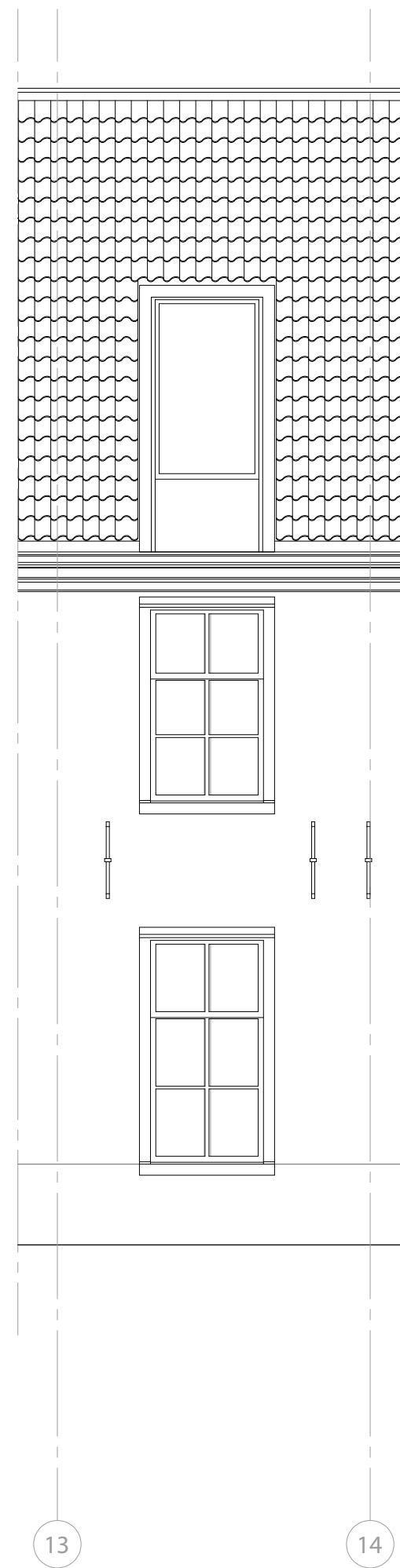
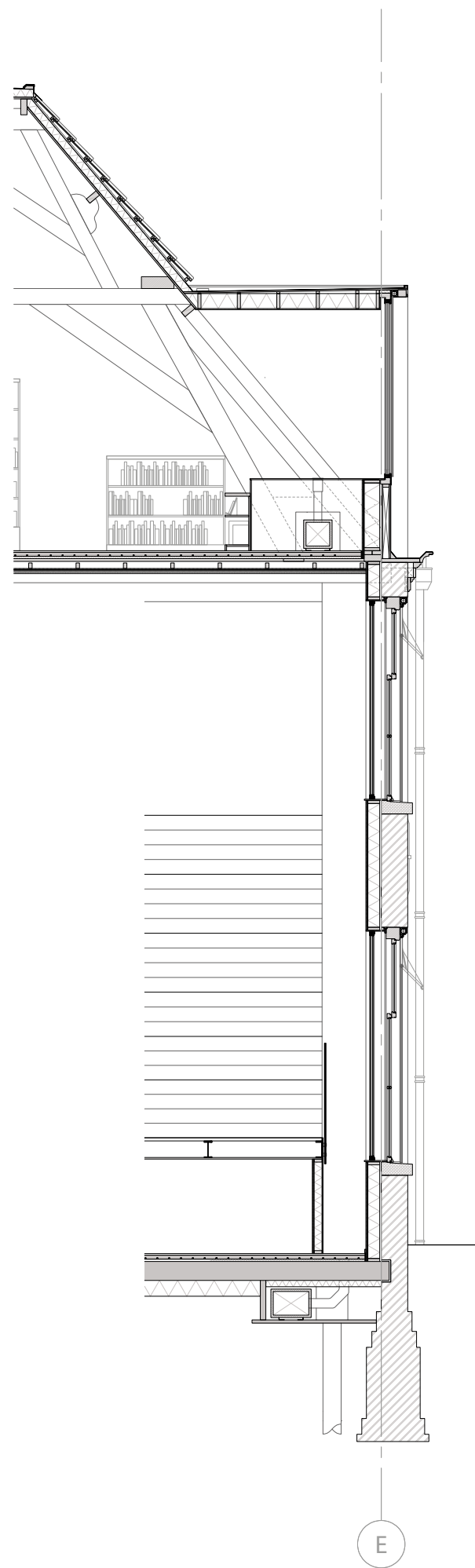
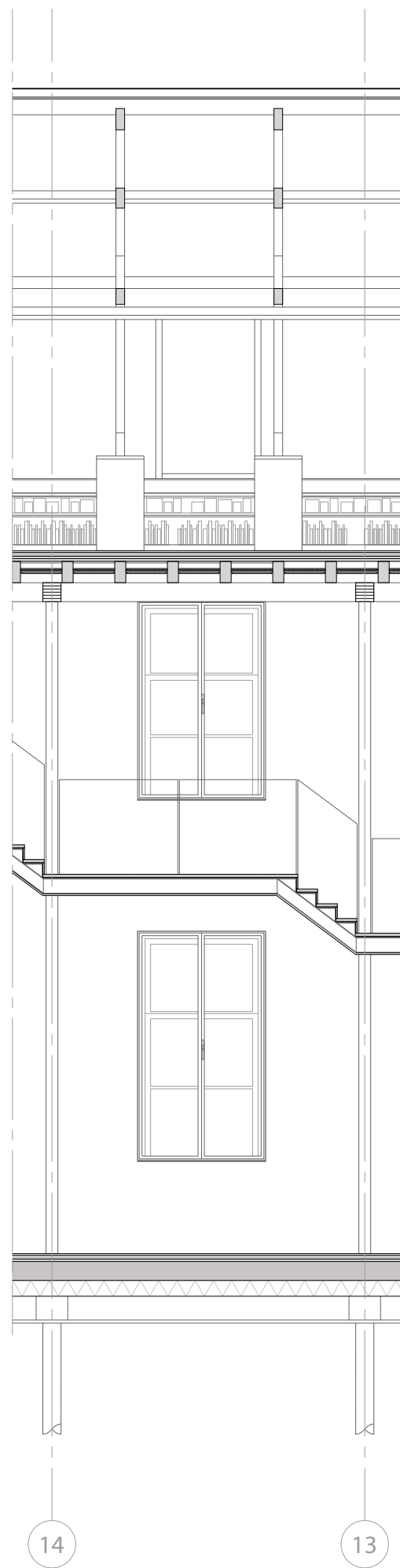


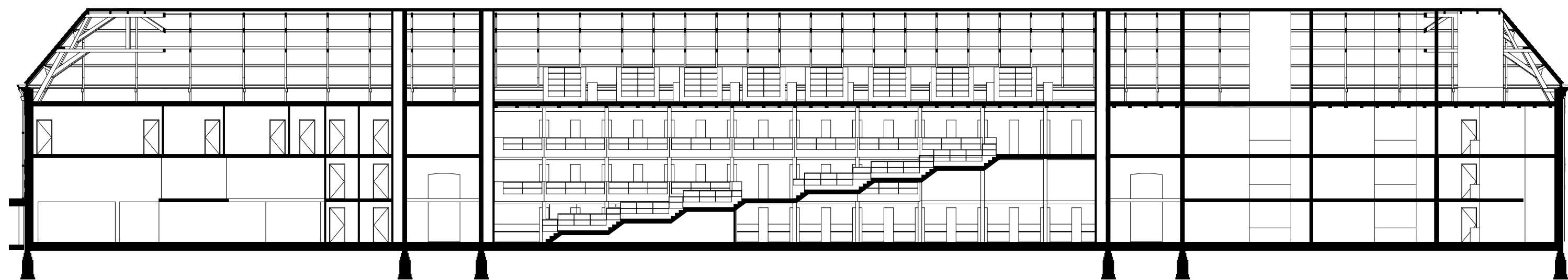
1. Entrance Hall
2. Book intake
3. Book collection (closed stacks)
4. Auditorium
5. Book collection (open stacks)

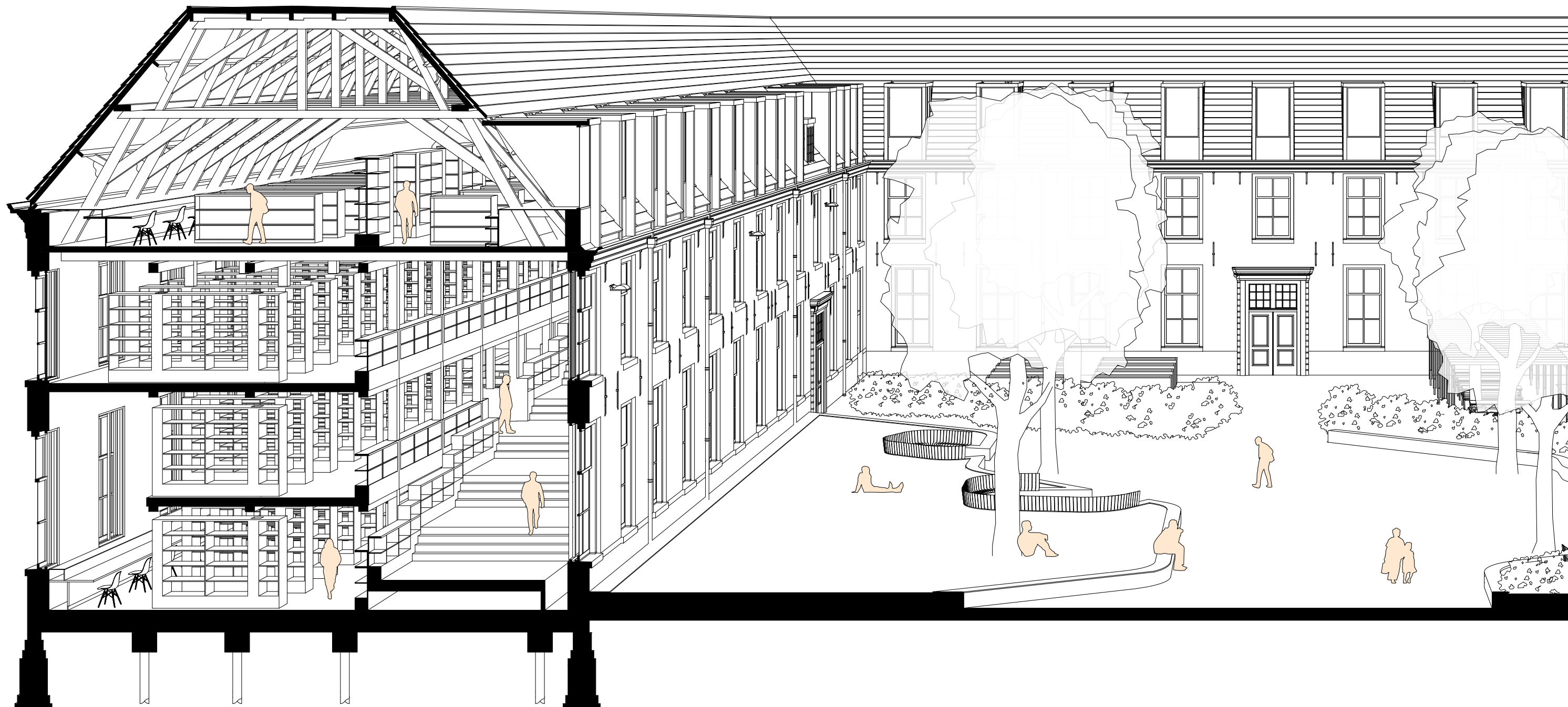




m 0,75 1,5 3



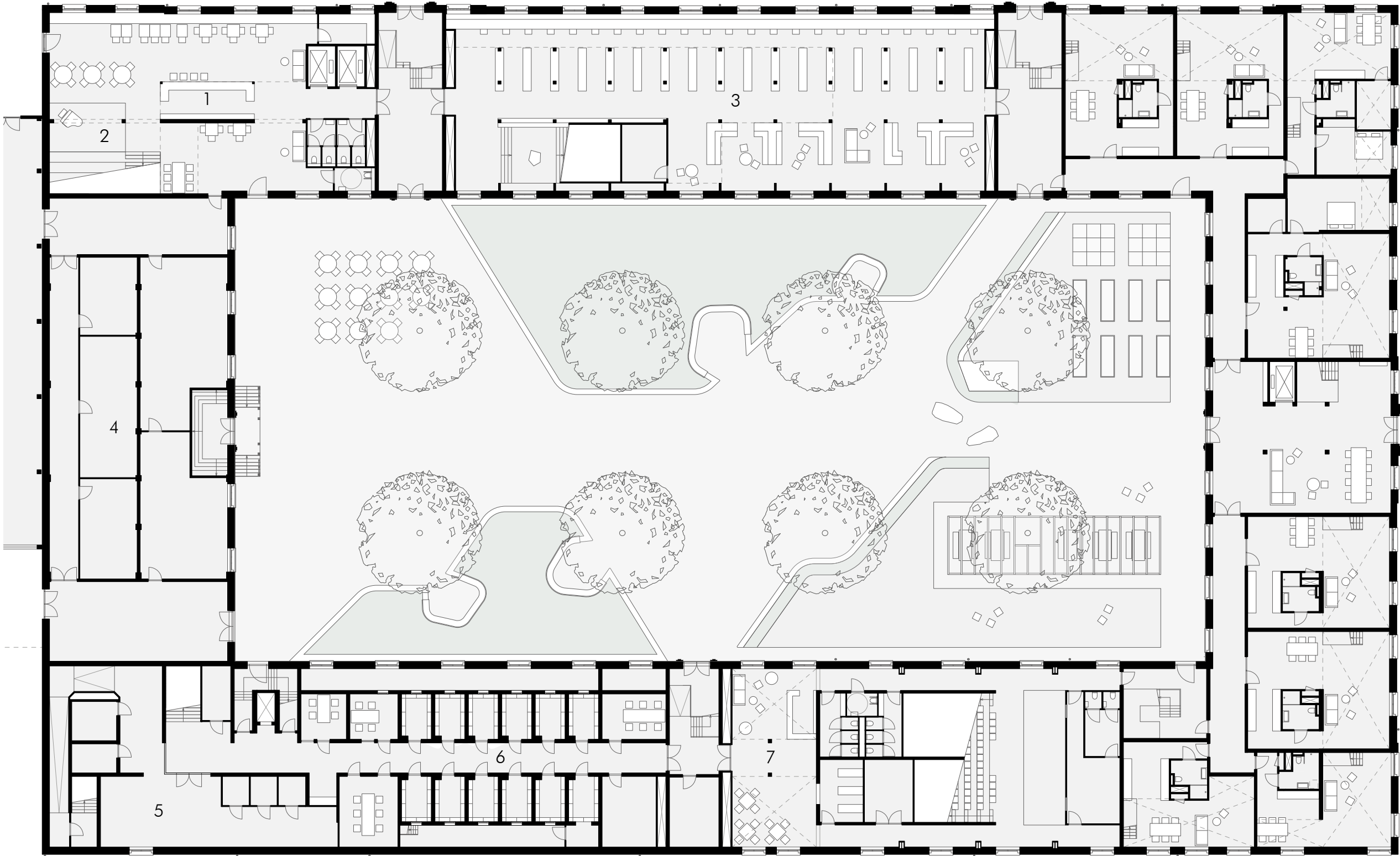








PLAN GROUND FLOOR



- 1. Cafe
- 2. Podium
- 3. Book collection

- 4. Storage & logistics
- 5. Library operations
- 6. Book collection (closed stacks),
Project rooms

- 7. Auditorium & lobby
- 8. Auditorium







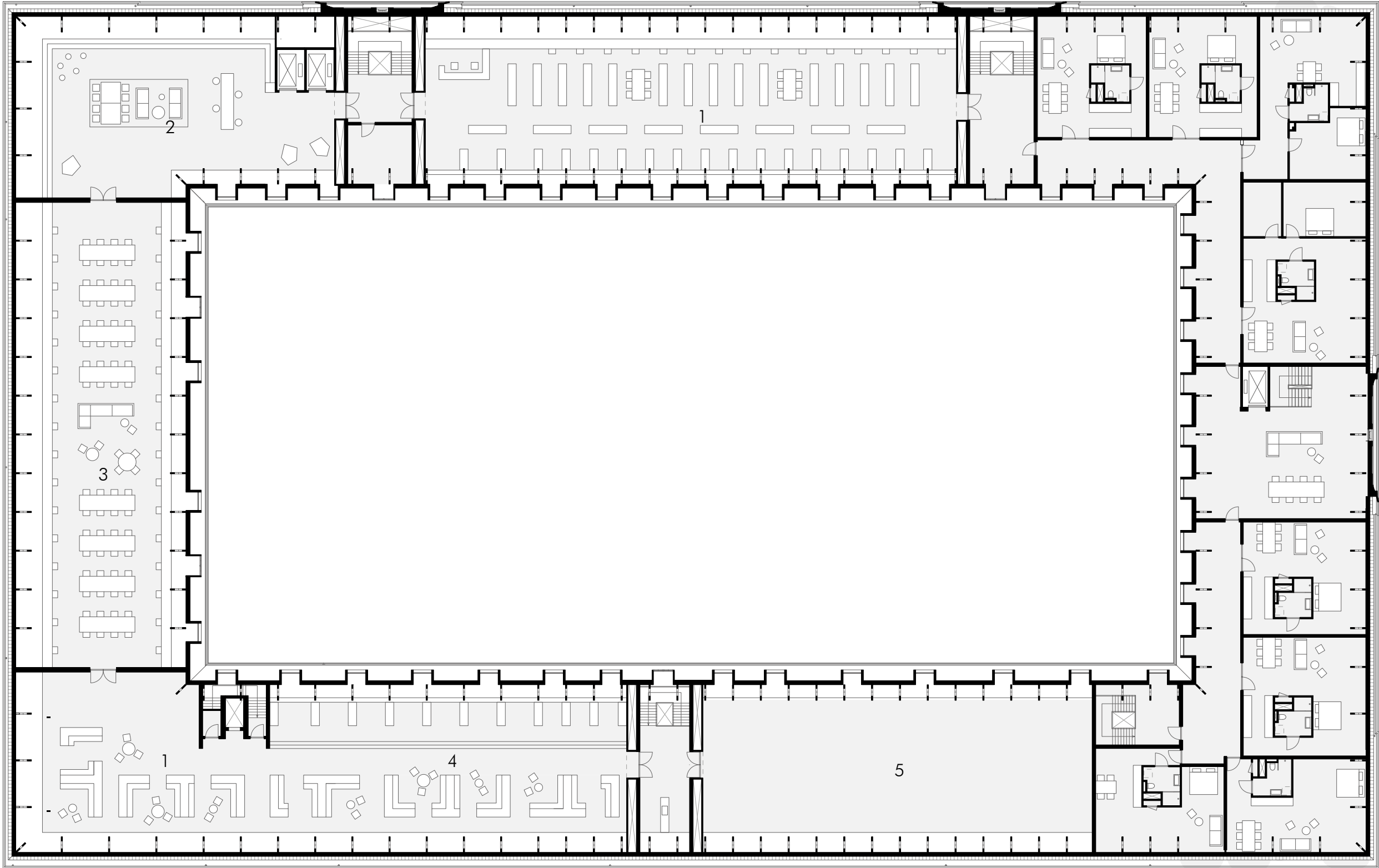
PLAN FIRST FLOOR



- 1. Meeting rooms
- 2. Book collection (open stacks)
- 3. Staff office
- 4. Workshop rooms



PLAN SECOND FLOOR



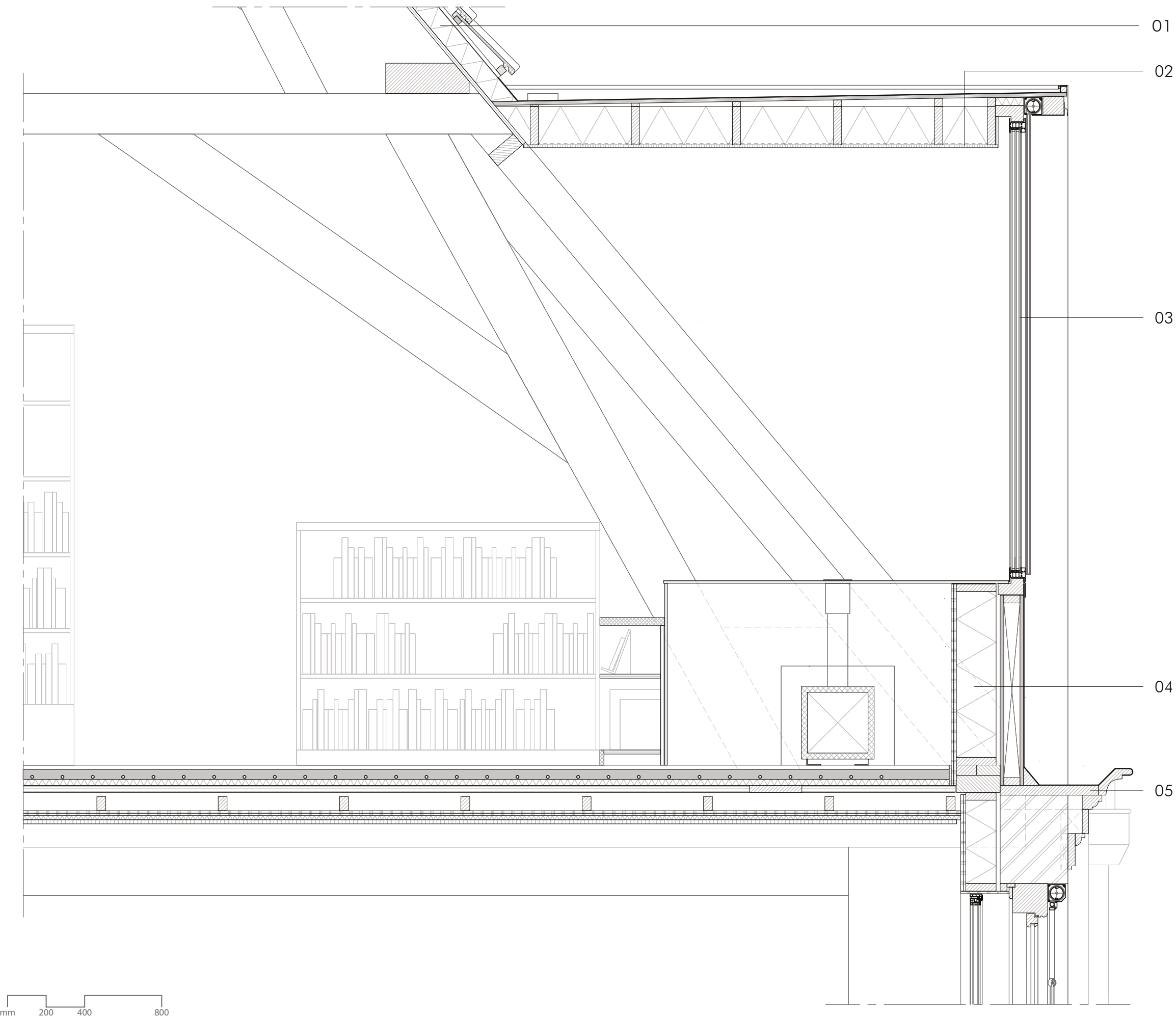
1. Book collection (open stacks)
2. Childrens library

3. Reading room
4. Teenagers library

5. Event space



DETAIL 04



- 01 Roof
- existing roof tiles (re-used)
 - 24 x 38 mm wooden battens
 - water barrier foil
 - 100 mm PIR renovation panels
 - 20 mm roof sheathing existing

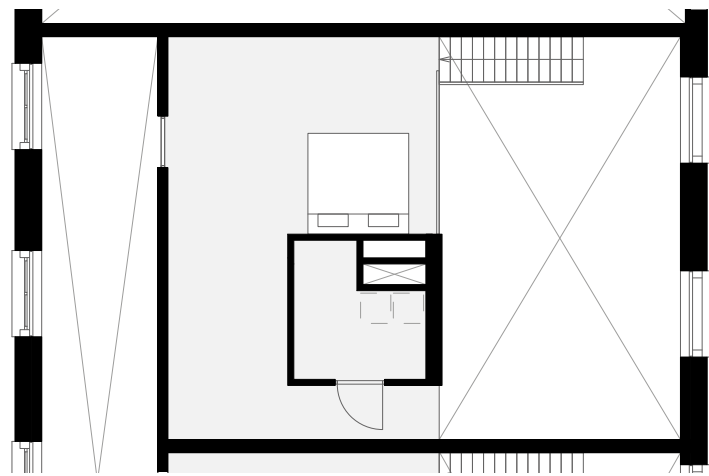
- 02 Dormer
- EPDM roofing membrane
 - 18 mm multiplex
 - 38 x 140 mm wooden battens
 - 190 mm mineral wool
 - vapour barrier foil
 - 14 mm wooden slat panel

03 Jansen Janisol HI 60

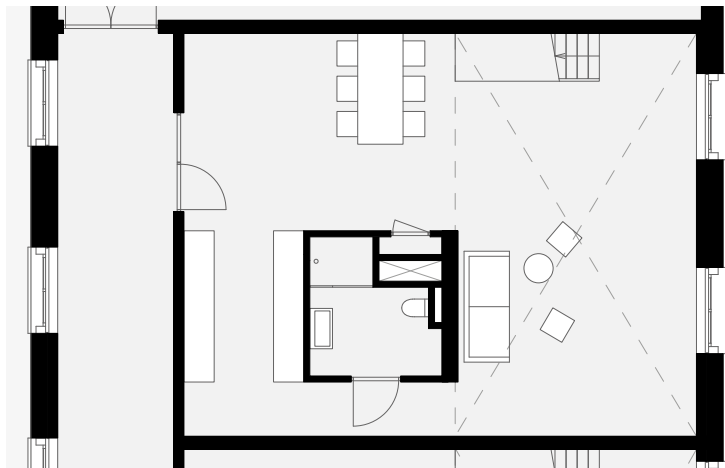
- 04 Dormer
- zinc cladding
 - support structure wooden
 - 38 x 150 mm battens
 - 200 mm mineral wool
 - vapour barrier foil
 - 2x 12,5 mm plasterboard

05 existing eaves, new zinc gutter cladding

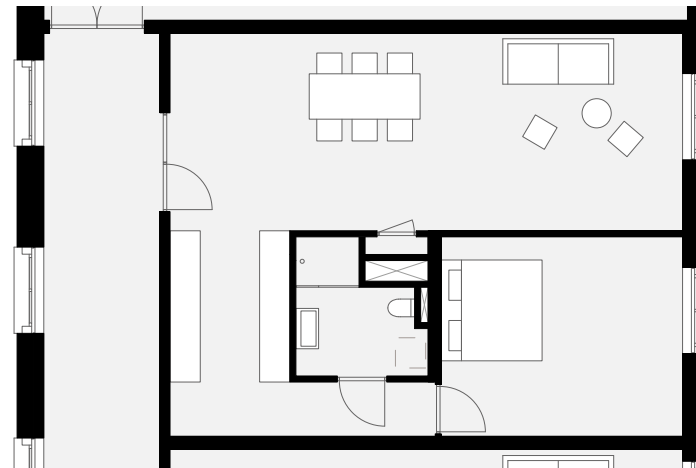




Ground floor +



Ground floor (split level)



First floor (elderly)

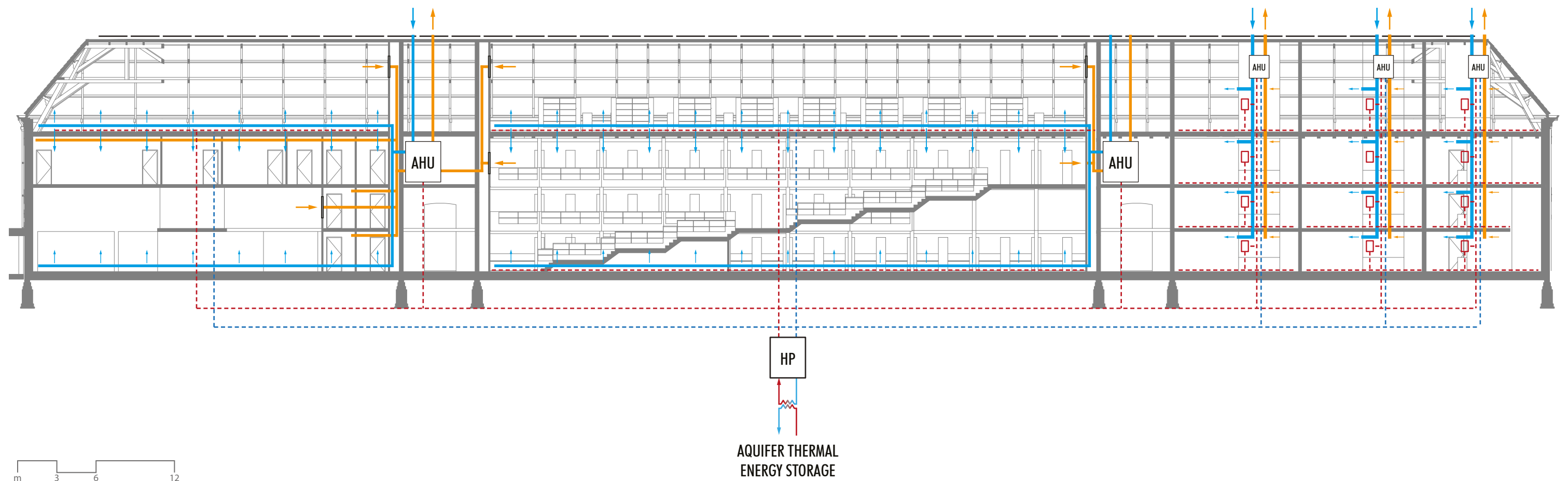


Second floor (studio)

Indoor climate

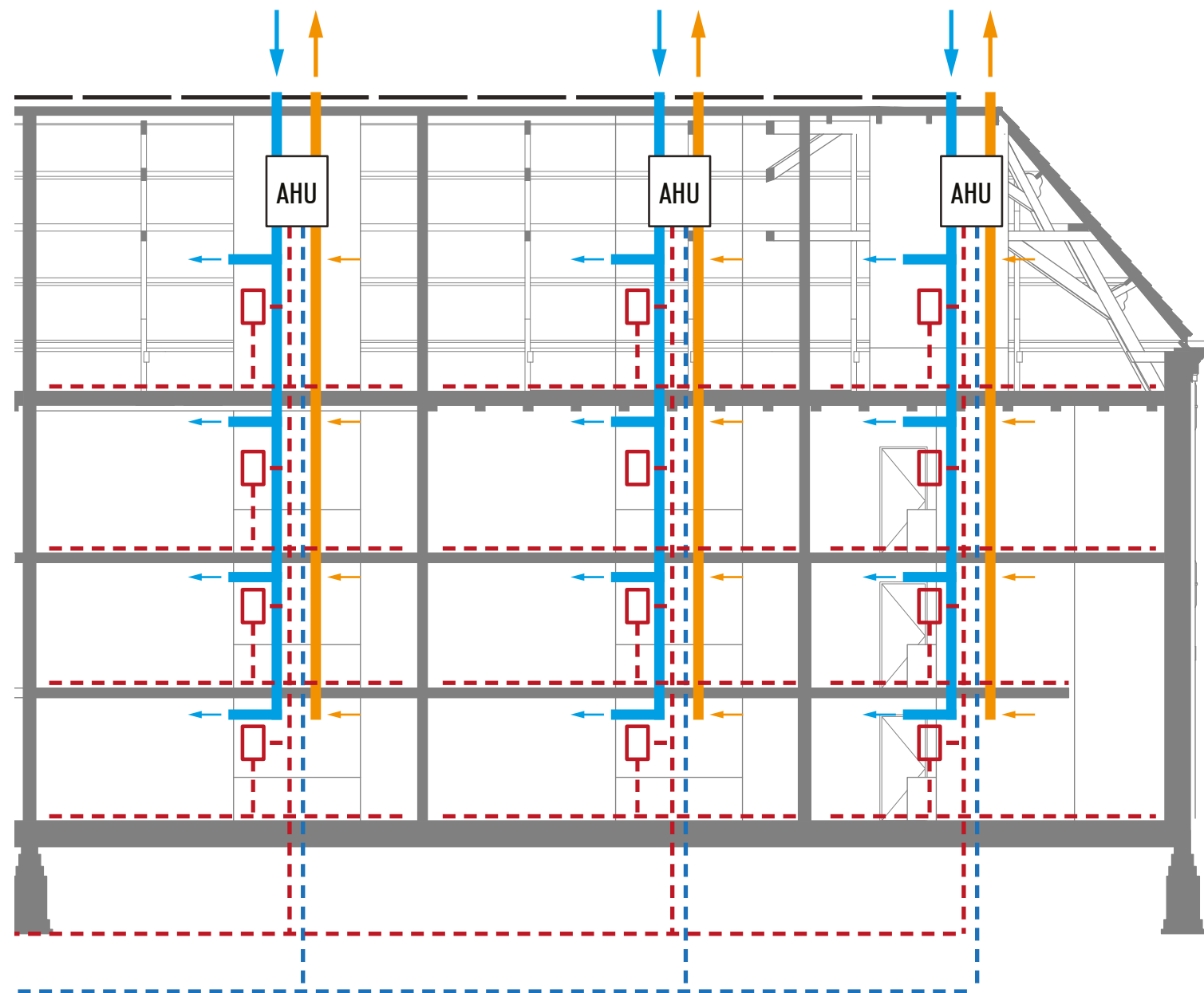
- Air supply duct
- Fresh air
- Air exhaust duct
- Stale air
- - - LTH cold
- - - LTH warm

- Thermal insulation of exterior walls and roof
- Secondary thermal glazing
- Aquifer thermal heat storage and heat pump (HP) provide low temperature heating (LTH) and cooling
- PVT panels provide electricity for climate installations and general use
- PVT panels provide warm tapwater (through heat exchanger) and replenishment of aquifer thermal energy storage
- Air handling units (AHU) provide mechanical ventilation
- Double walls function as ventilation shafts



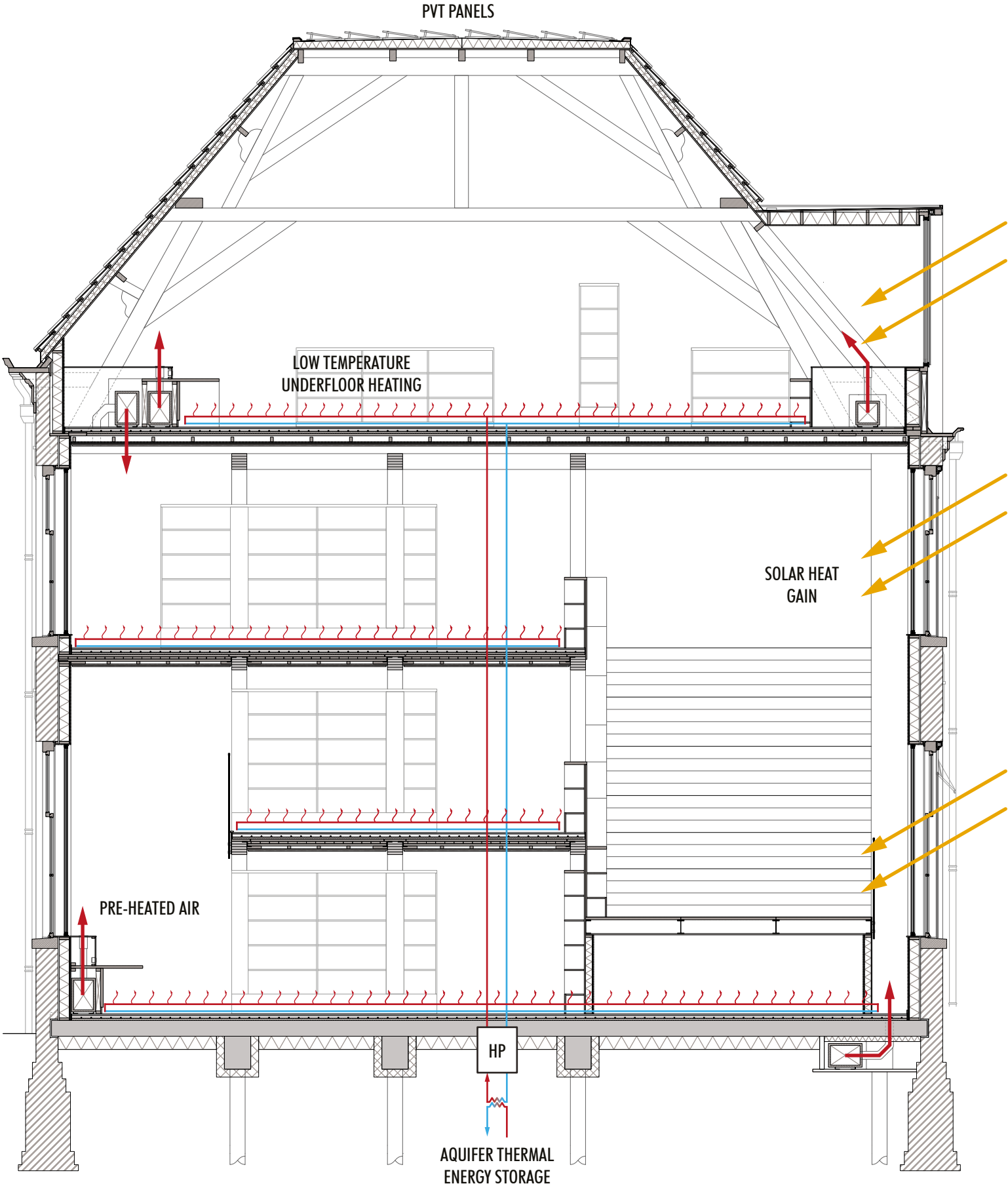
- Air supply duct
- Fresh air
- Air exhaust duct
- Stale air
- - - LTH cold
- - - LTH warm

- Air handling unit (AHU) with heat recovery per 3 stacked dwellings
- Ventilation shaft in stacked bathroom units
- Air extraction in kitchen, bathroom and toilet
- Air inlet in living spaces
- Low temperature underfloor heating and cooling
- Boiler for warm tapwater per dwelling (powered by PVT panels)

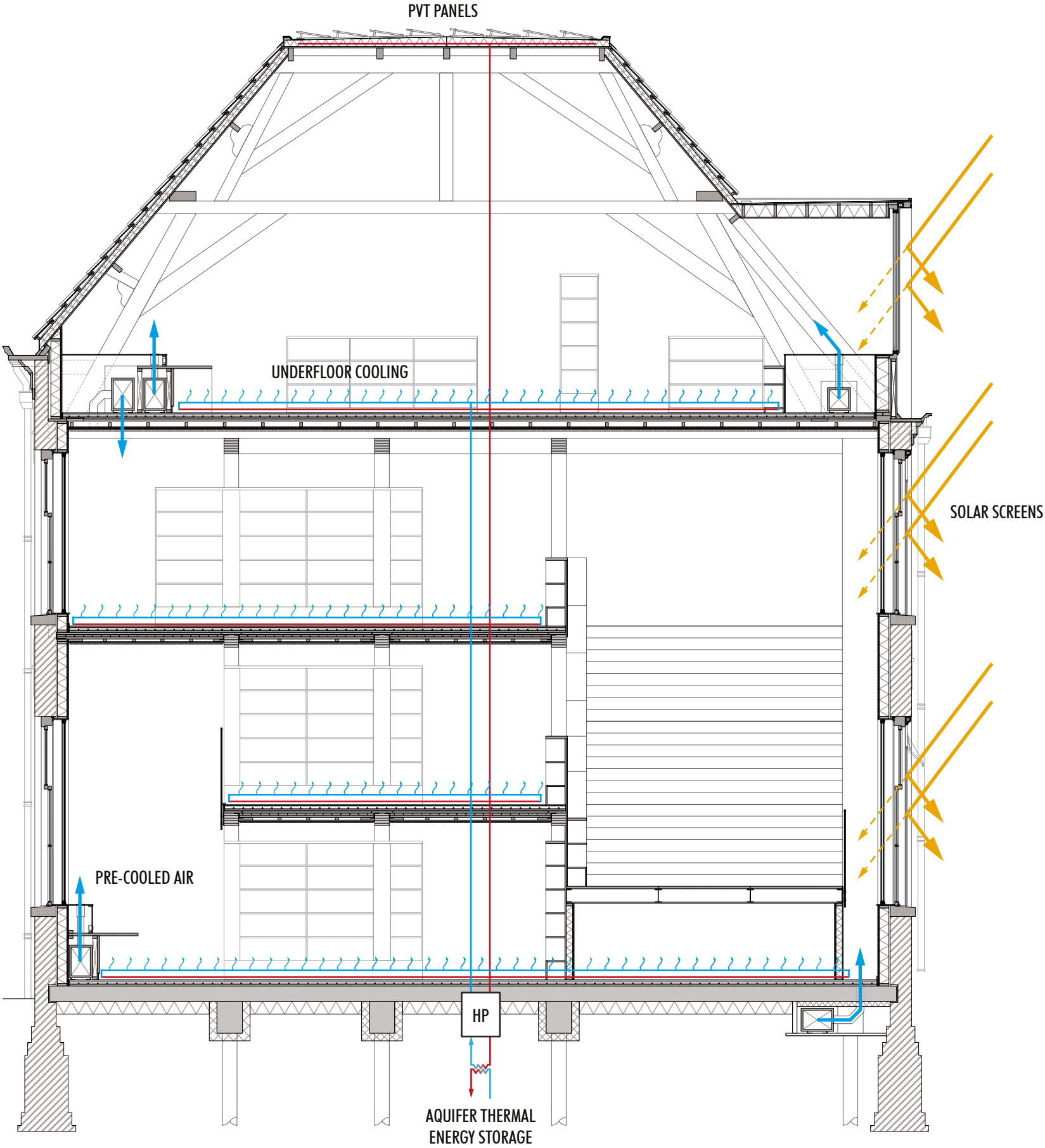


m 1 2 4

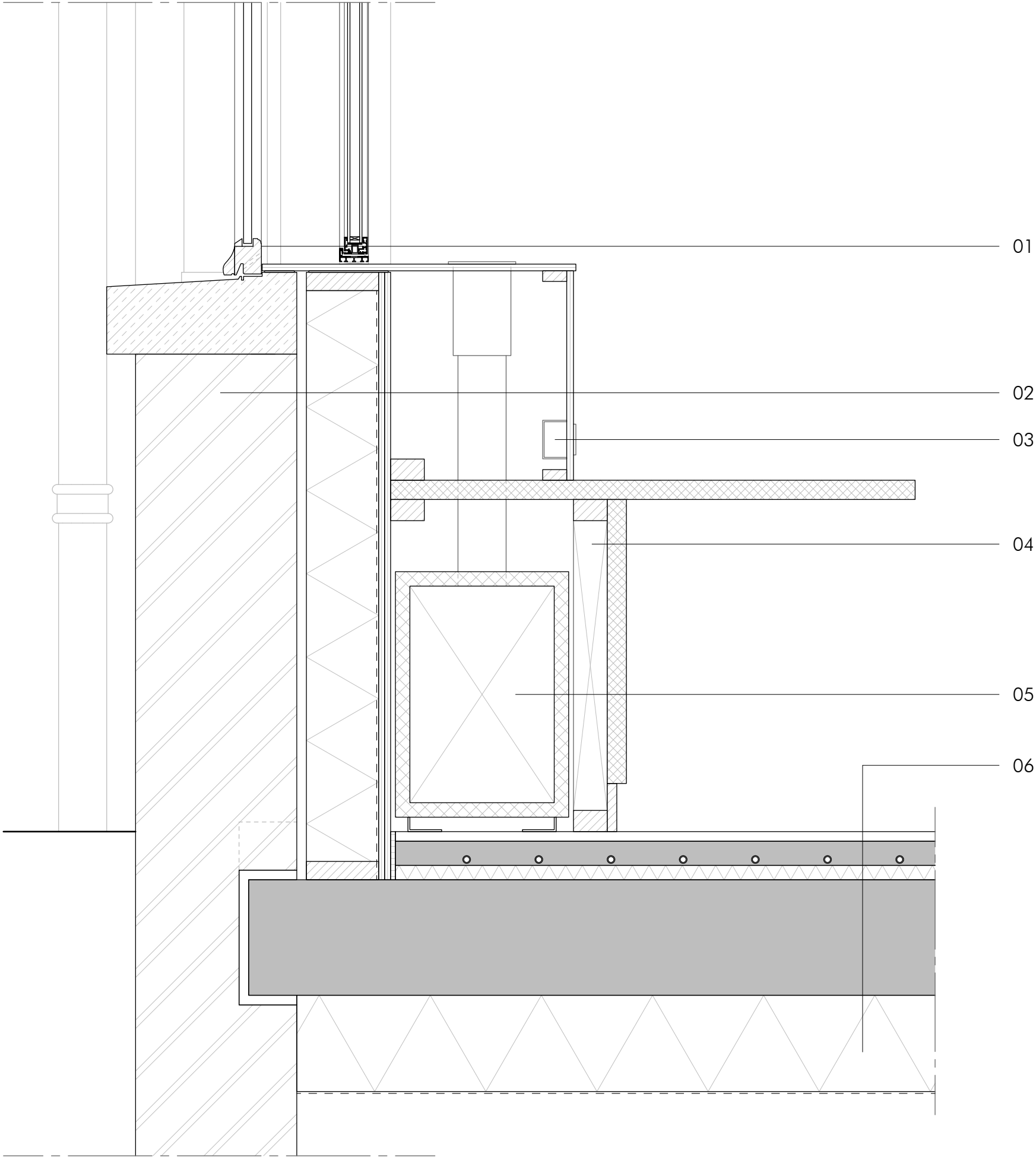
WINTER



SUMMER



DETAIL 01



- 01 Windows
- existing window frames, new openings for ventilation
 - slightly ventilated air cavity
 - MetaPlus Energy AMS-1 window

- 02 Wall
- 355 mm existing brick wall
 - 20 mm air cavity
 - 38 x 150 mm battens
 - 150 mm mineral wool
 - vapour barrier foil
 - 2x 12,5 mm plasterboard
 - 3 mm film layer

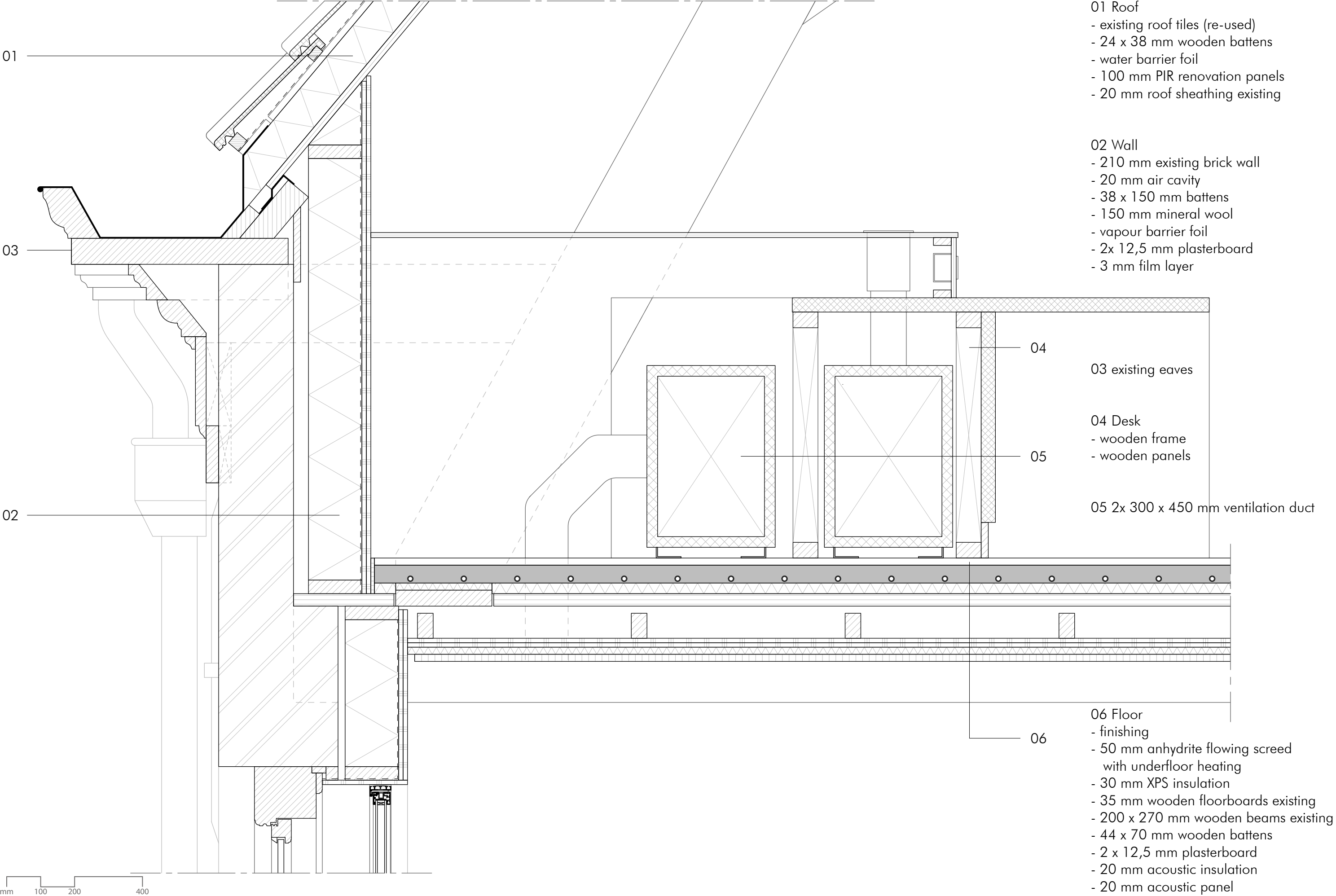
03 electrical outlet

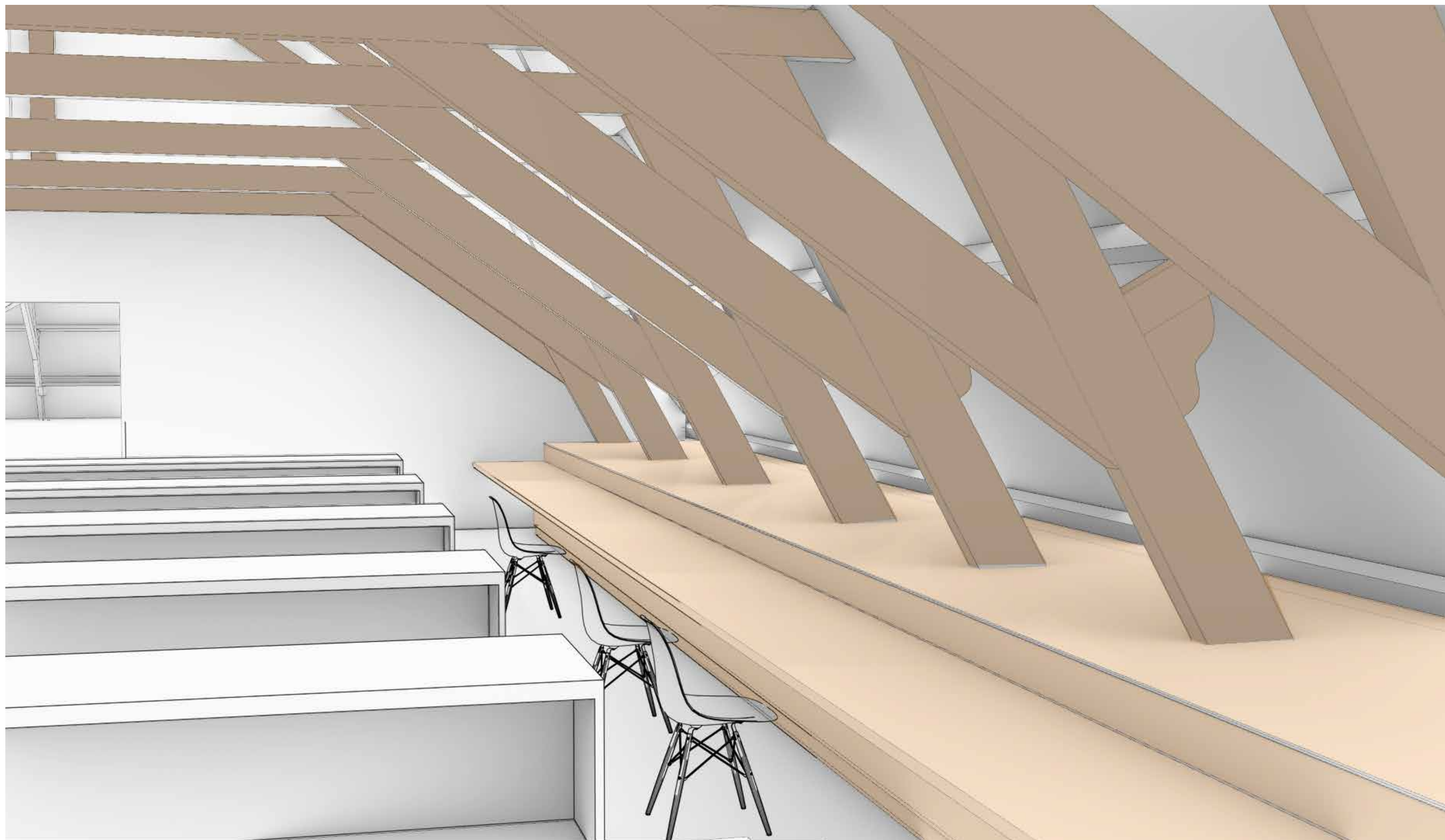
- 04 Desk :
- wooden frame
 - wooden panels

05 300 x 450 mm ventilation duct

- 06 Floor:
- finishing
 - 50 mm anhydrite flowing screed with underfloor heating
 - 30 mm XPS insulation
 - 240 mm in-situ concrete floor slab
 - 200 mm EPS insulation
 - PE foil water barrier

DETAIL 03





Conclusion & Reflection

How can the Koudenhorn police building be transformed into a public library
and city dwellings?

Research

Heritage approach

Programme



Thank you