Towers in the Garden

Elderly Social Housing

P5 Presentation Du Jingliang

28-06-2019

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02 Site & Program

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01 The "City Room"

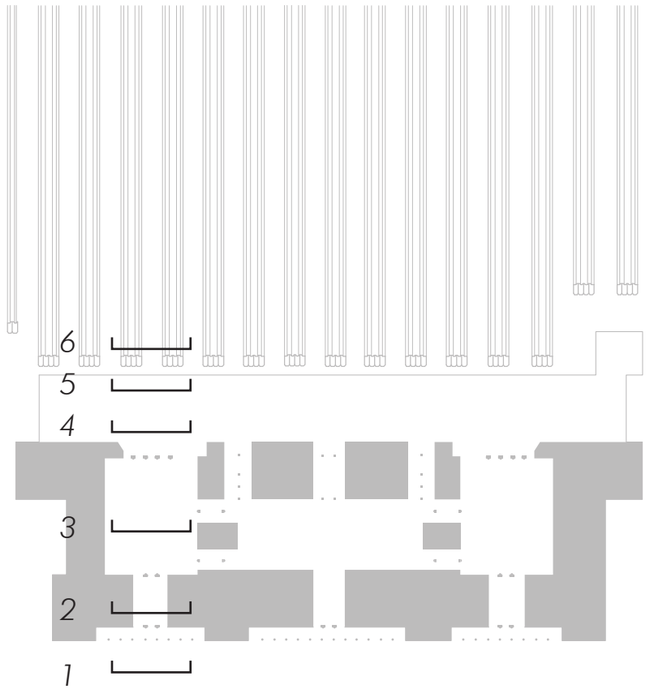
Intimate city

1.1 Moment of intimacy

Another Country in New York, Daido Moriyama, 1971

1.2 Research on intimacy

Gare de l'Est: Layering space

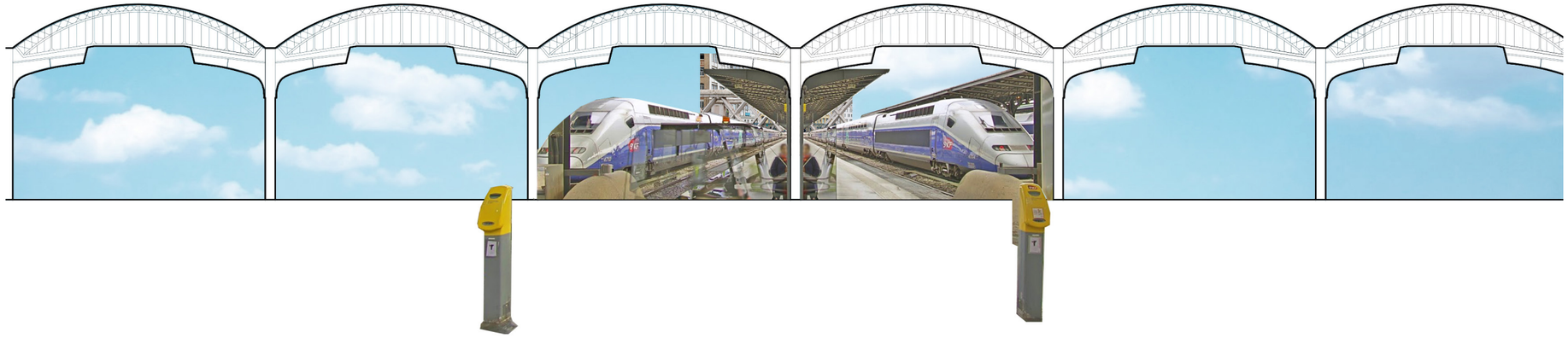


Page 1: the fragment of the facade
Page 2: lobby
Page 3: Hall Alsace
Page 4: the main concourse
Page 5: platform awning
Page 6: the view in the distance

Billets Ile-de-France
Billets Espace Alsace
Grandes Lignes
Départs Ile-de-France
Accès aux trains
Trains Ile-de-France
Trains Grandes Lignes

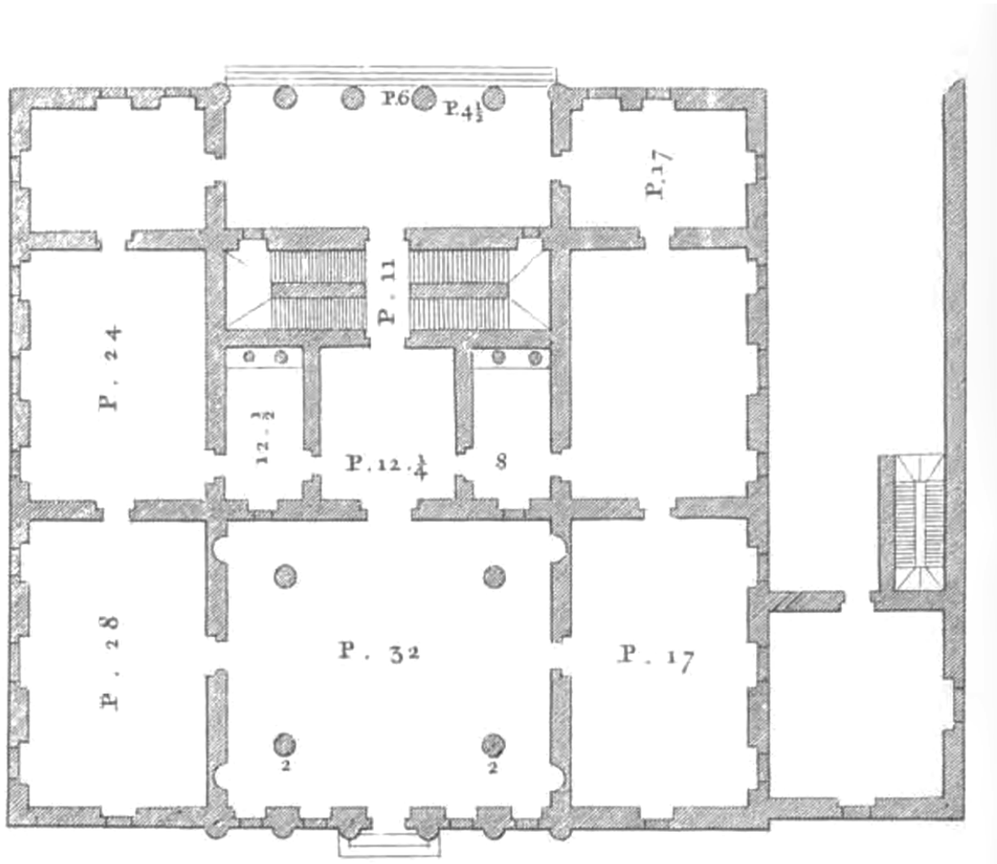
Départs Grandes Lignes
Arrivées Grandes Lignes
Départs Ile-de-France
Billets Ile-de-France
Billets Espace Abace
Grandes Lignes
Accès aux trains
Trains Ile-de-France
Trains Grandes Lignes
4 5 7

TABAC
7
8
SUPER WILD COFFEE



"Thoroughfare rooms" vs "terminal rooms"

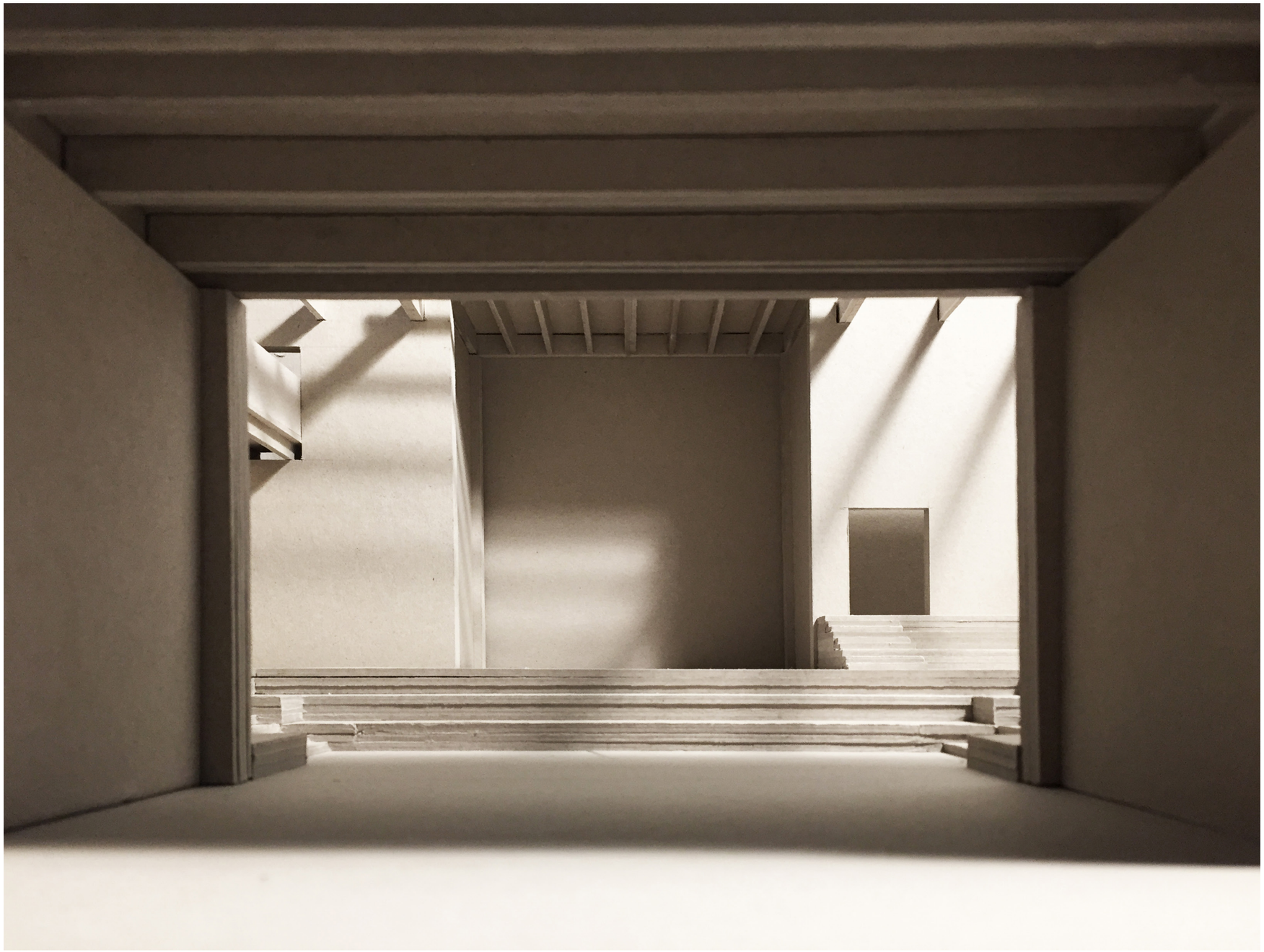
Figures, Doors and Passages. By Robin Evans
traditional and intimate; efficiency but isolated



Plan Palazzo Antonini, Udine, by Andrea Palladio, 1556

1.3 An intimate city room

Gray cardboard model



Primary thoughts on the site

the School of Athens
the loggia with no sense of the architecture (Evans)

02 Site & Program

Located in the street corner of Sint-Hubertusstraat in the southern residential district, the site used to be the private garden of an old villa. The program is a social house for senior people.

The booming development of Oud-Berchem area

Circa 1890

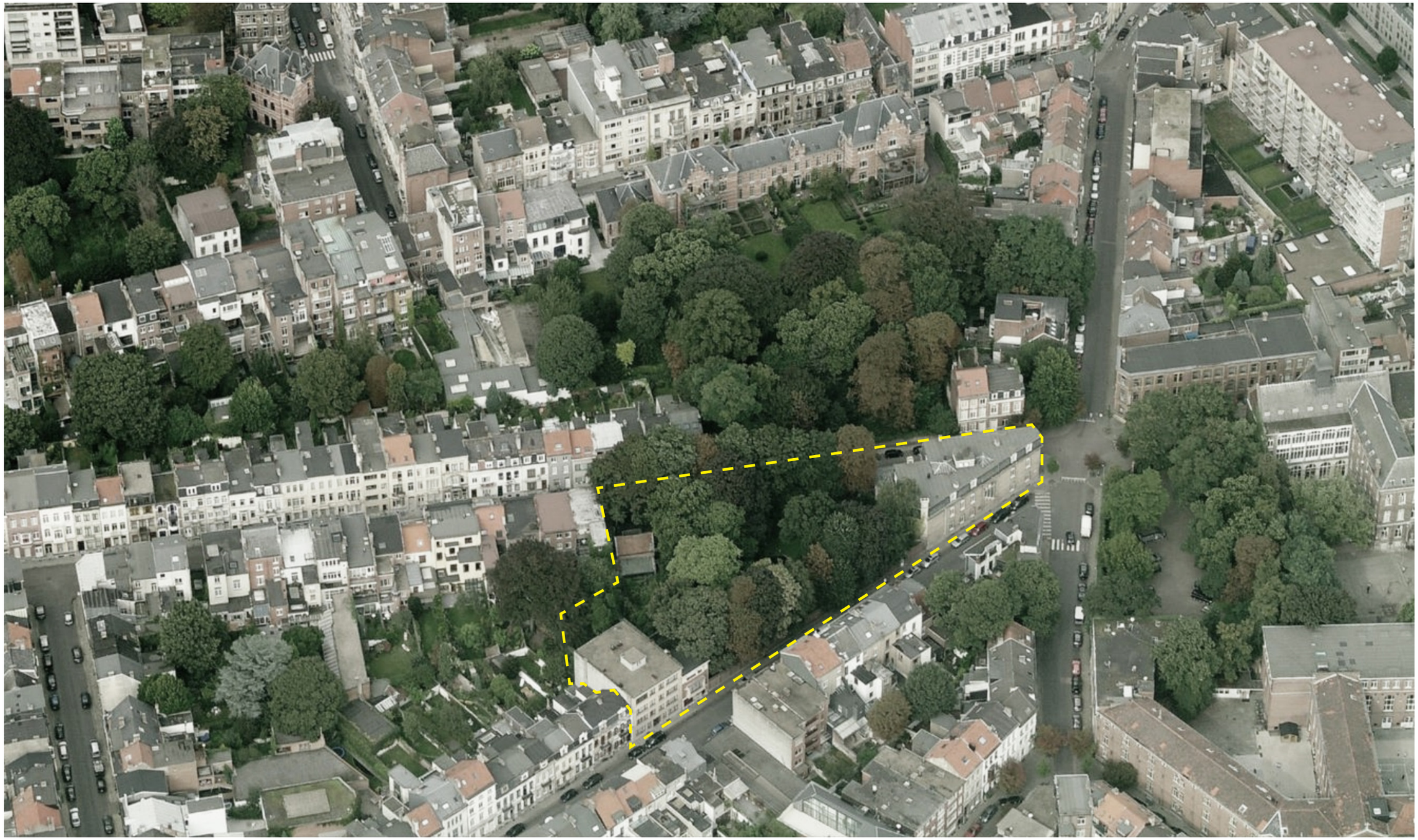
Demolition of the South Citadel and explosive growth of the city

Circa 1915

Nineteenth Century Antwerp

2.1 Site overview

Important elements of the site: Villa, garden, (garden shed), Apartment Geometry



Street views

1 Street view in Sint-Hubertusstraat

3 The site (left) and the opposite garden

4 Street view in Terlinckstraat

5 Door of the private garden (site)

7 Street view in Sint-Hubertusstraat

8 Street view from Frederik de Merodestraat

9 Street view towards Frederik de Merodestraat

10 In the tram line

2.1 Villa: House of De Lescluze

Art deco style. Designed by Adolphe van Coppernolle, built in 1936. Probably an empty property now.

2.1 Apartment Building

An unsuccessful renovation: lost of continuity
lack of public gesture

2.1 Garden

Aerial view of the inner garden

2.1 Garden

Two rows of tall trees, mainly maples (14-22m height)

2.2 The changing of time

The site & the proposed project

Spring

Autumn

Winter

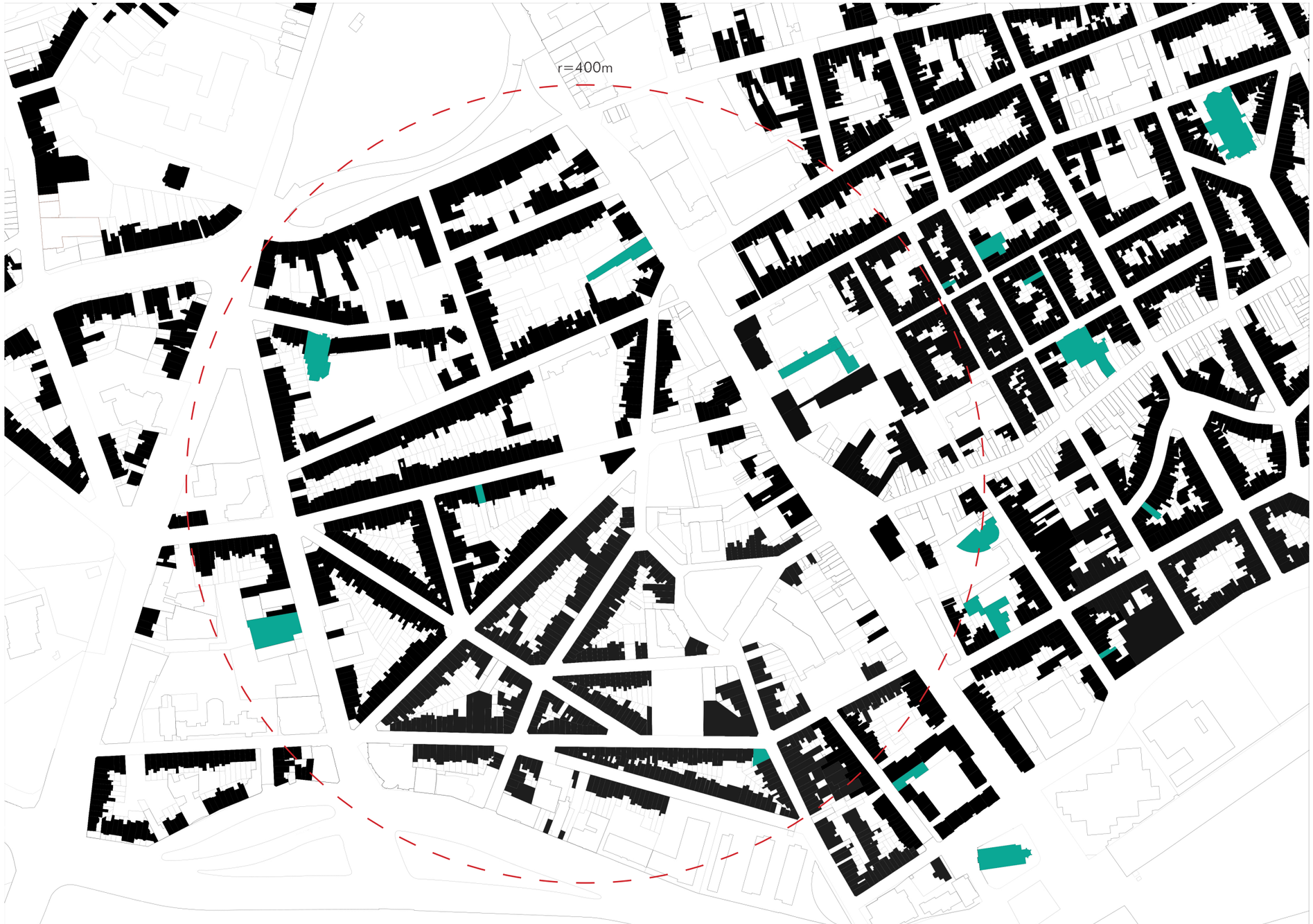
2.3 The seniors

The morning of the street corner

Function analysis

Institution Offices
Restaurants & Cafés
Cultural facilities
Schools
Sports
Shops
Hospitals
Houses
Public Parks

Function analysis: Cultural facilities

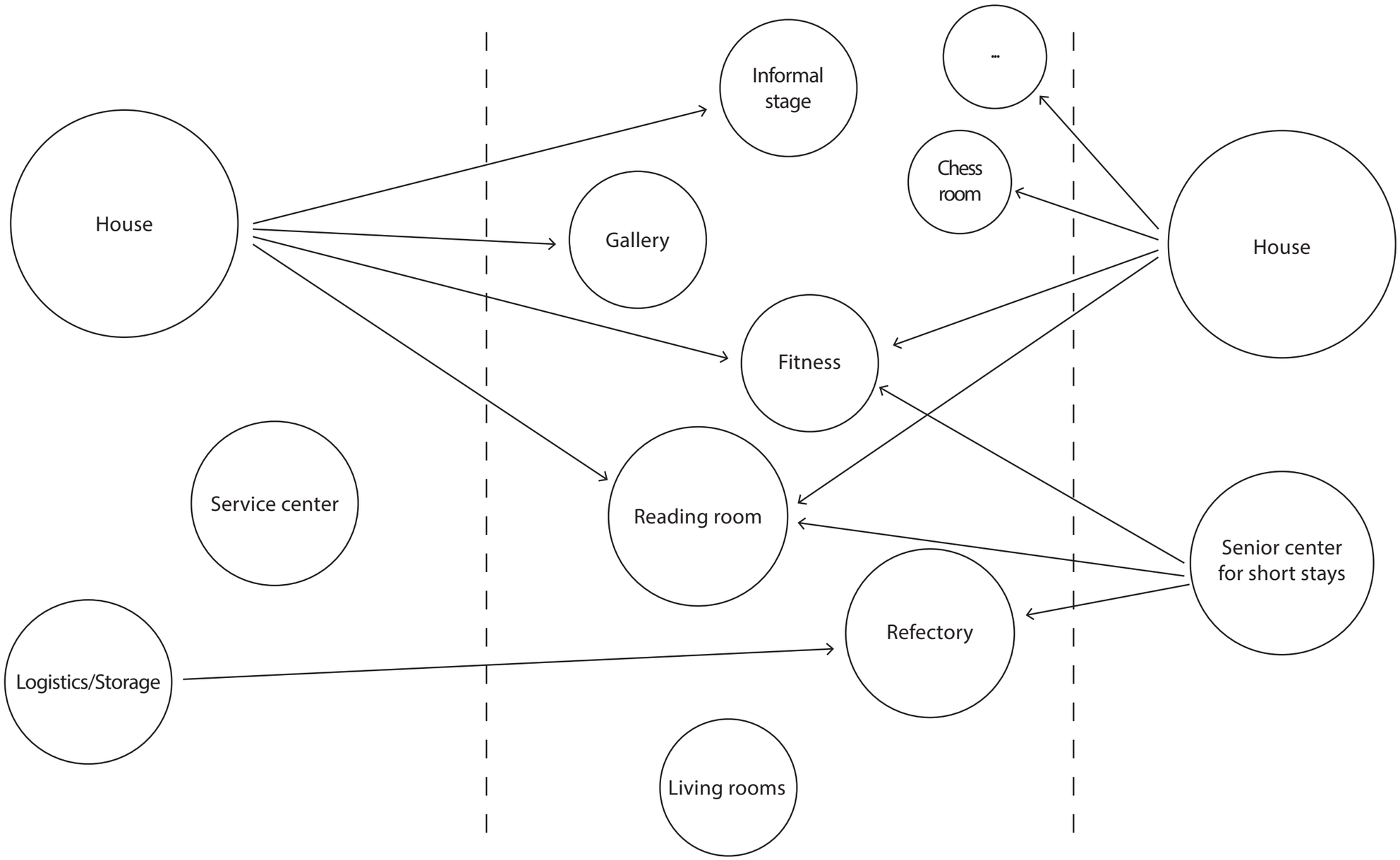


Cultural facilities

Houses

2.3 Functional diagram

Three parts of the program



2.4 Urban morphology

Design strategy

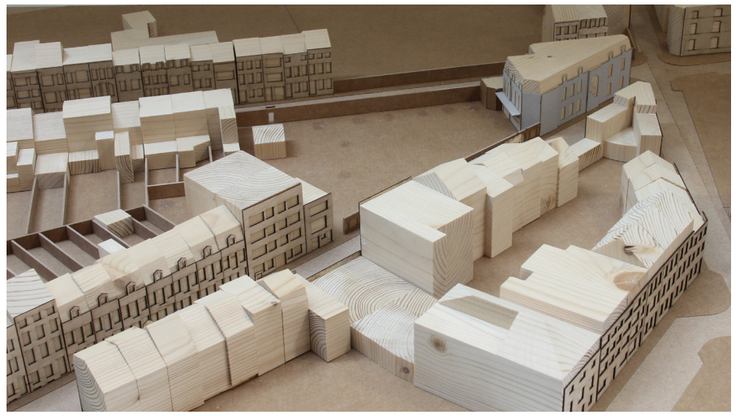
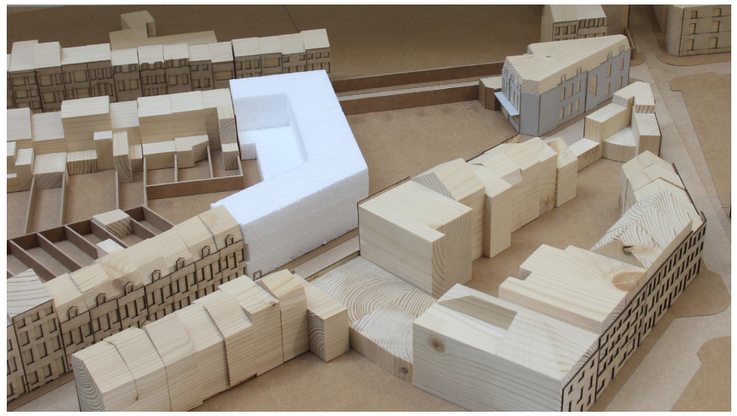
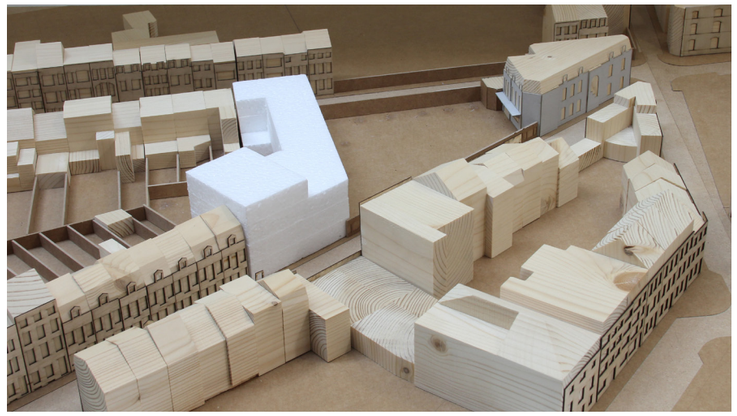
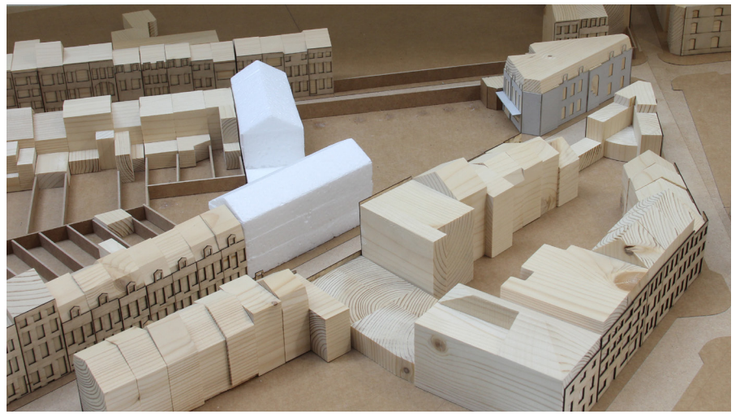
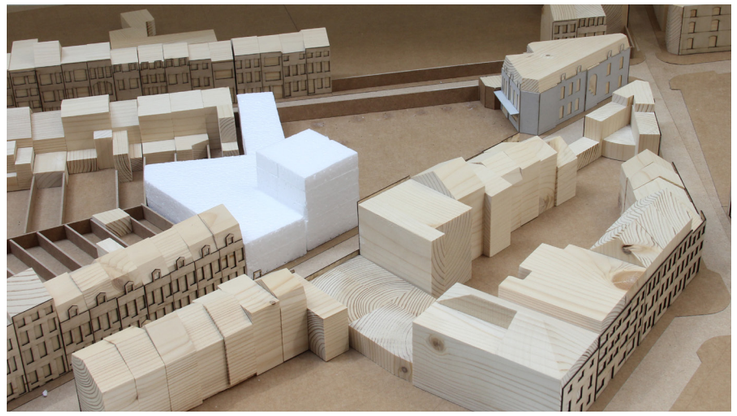
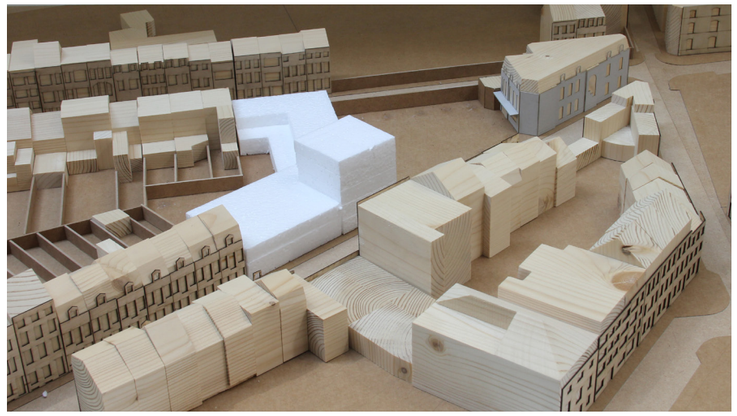
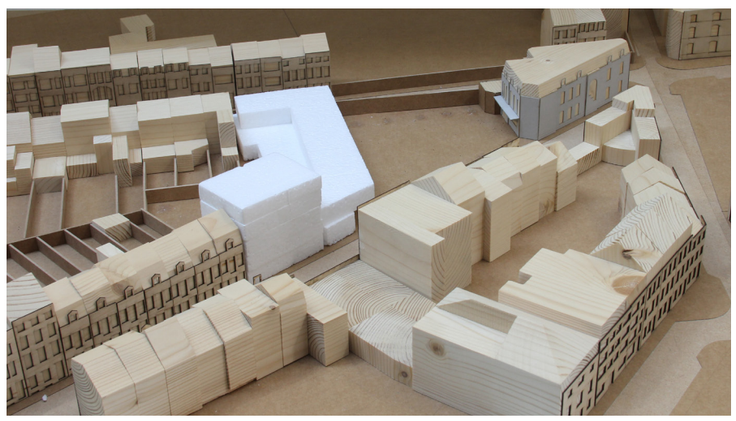
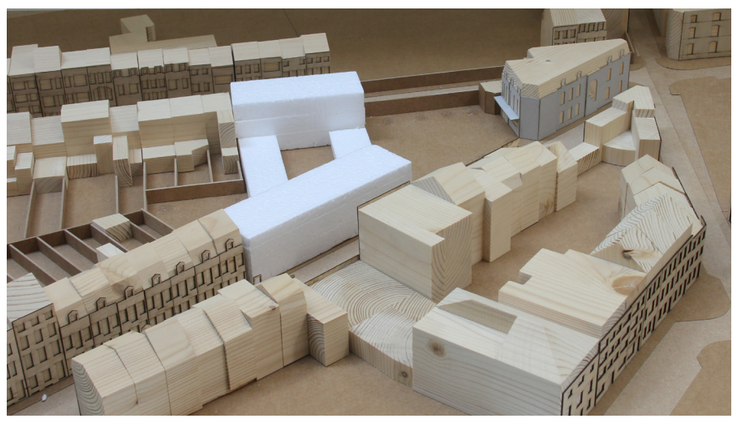
Demolish: garden shed & apartment building
Keep: the two rows of maples

Complete the urban fabric

Speak to the rear facade of the villa

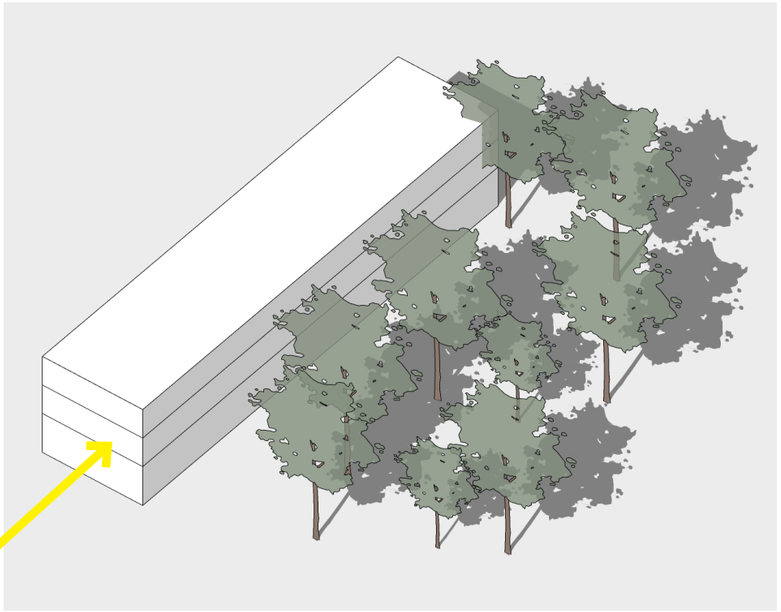
2.4 Massings

Massing tests under the urban principle

Tower or slab?

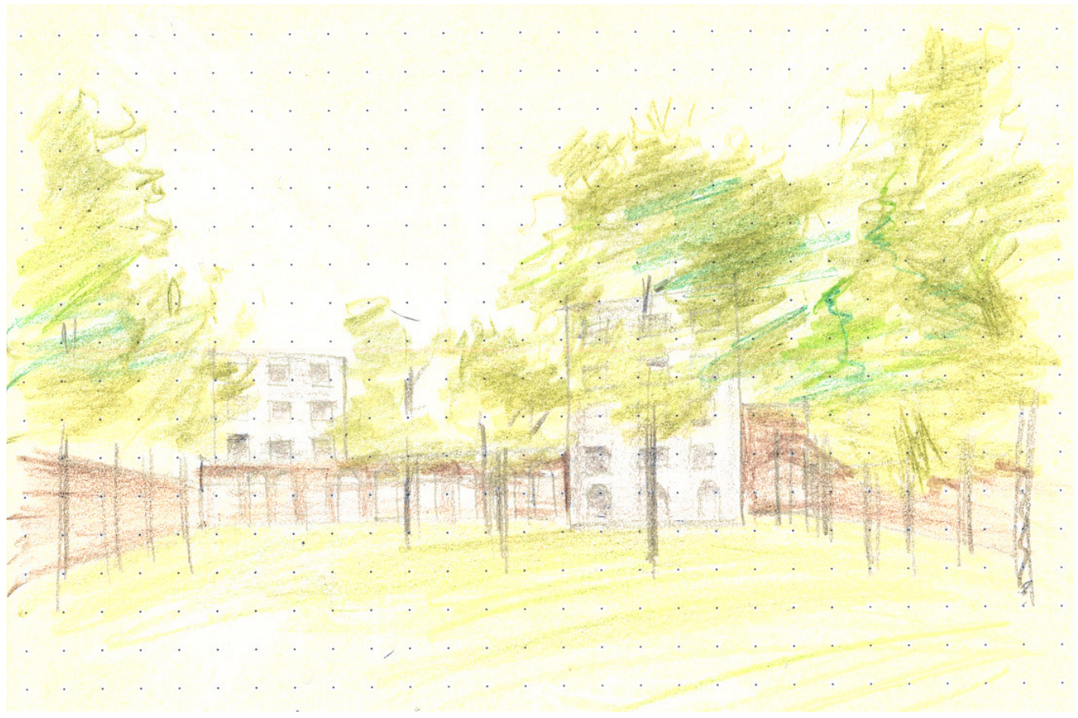
Quality comparison between them

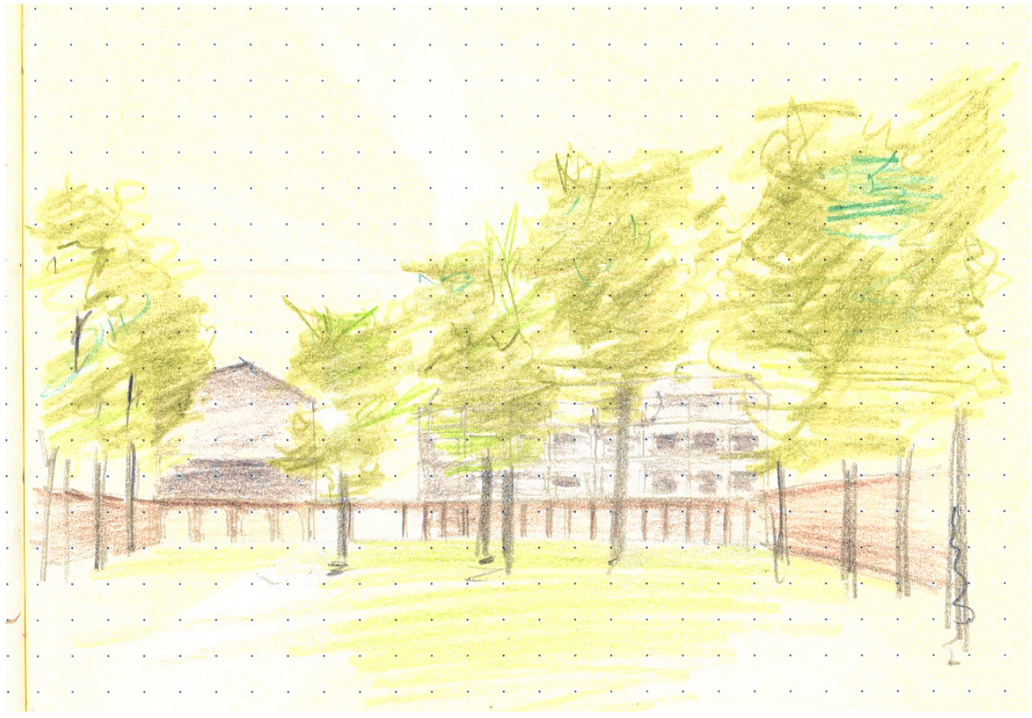


City of Antwerp	*Less urban gesture, not strictly complete the block*	*A very urban gesture, perfectly complete the block*
Form in the site	*Form fits the tall trees in terms of the sense of verticality*	*Form not so well fits, could image lower levels*
Building technology	*Plenty sunlight* *The ratio of surface/volume is high: good ventilation but require facade with more thermal abilities*	*Not enough sunlight* *The ratio of surface/volume is low (because back facade is adjacent to completely closed)*

Garden images

Attempts to imagine the atmosphere



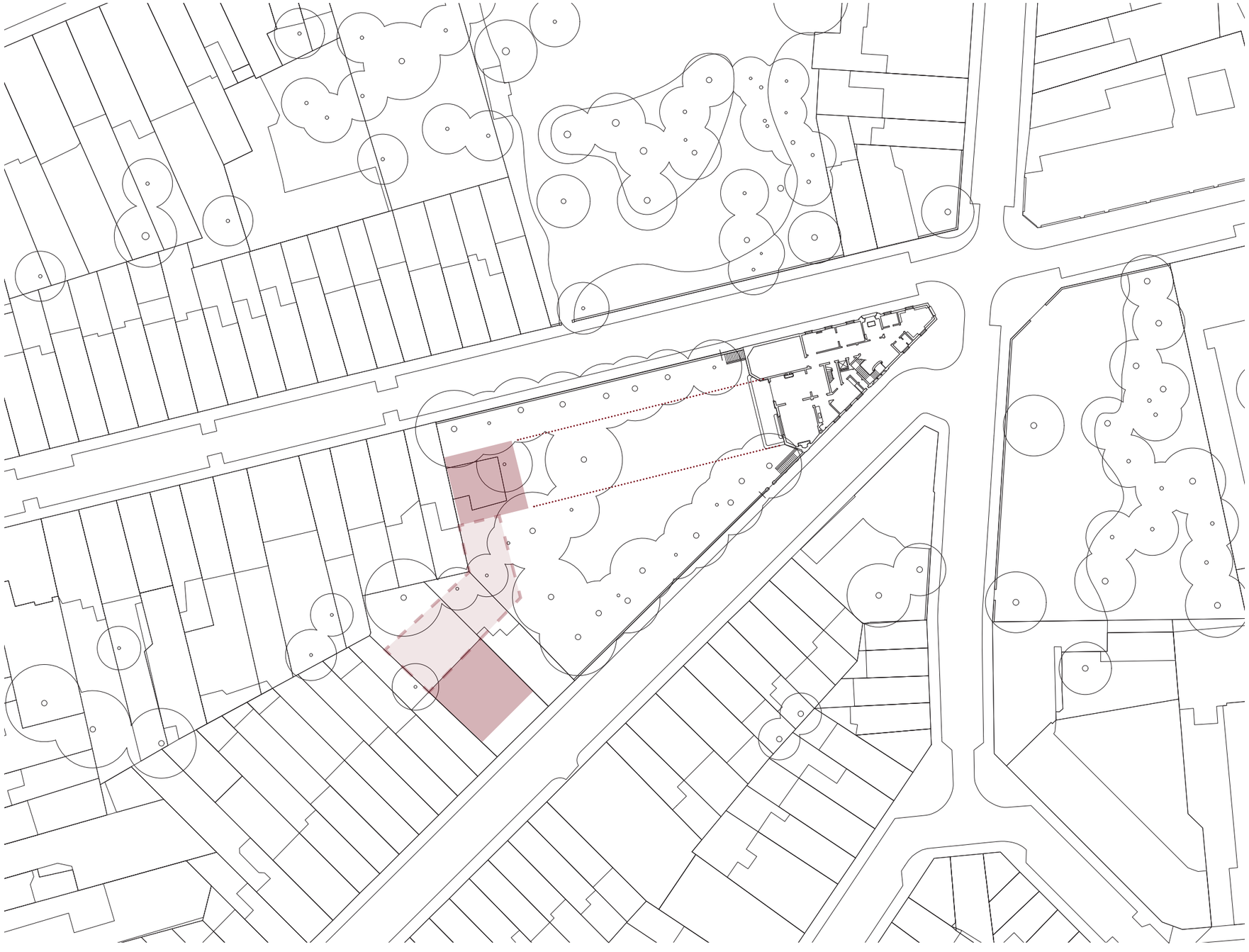


Tower Reference

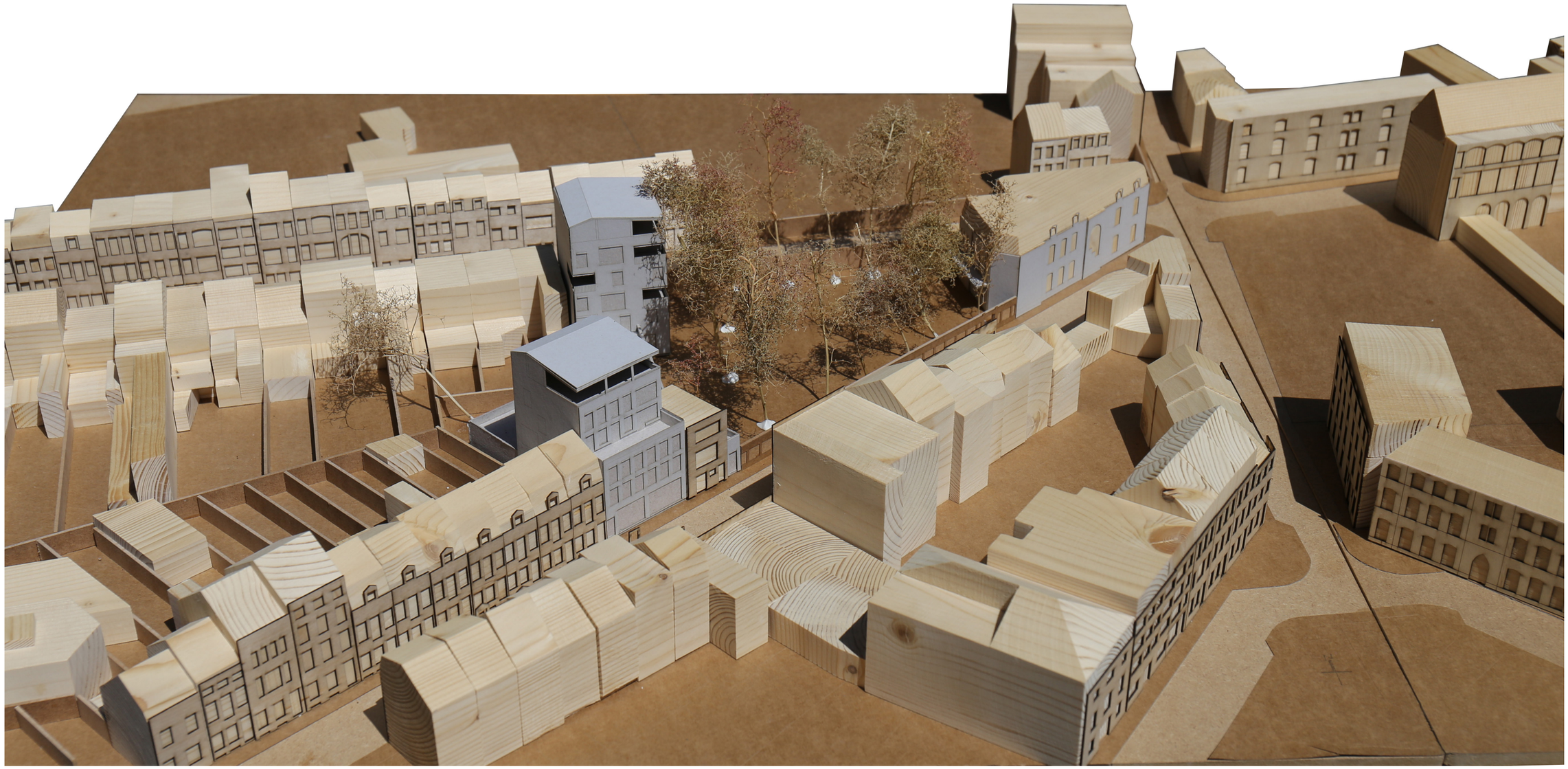
Pomonatempel, Potsdam, Germany
Painting by Karl Friedrich Schinkel, 1837

2.5 Final Skin

Diagram of the position of towers



2.5 Final Skin



2.6 Project Drawings

Groundfloor Plan 1:200

N

Ground Floor Plan 1:200

Fitness

Refectory

Activity rooms

Chamber hall

N

Ground Floor Plan 1:200

N

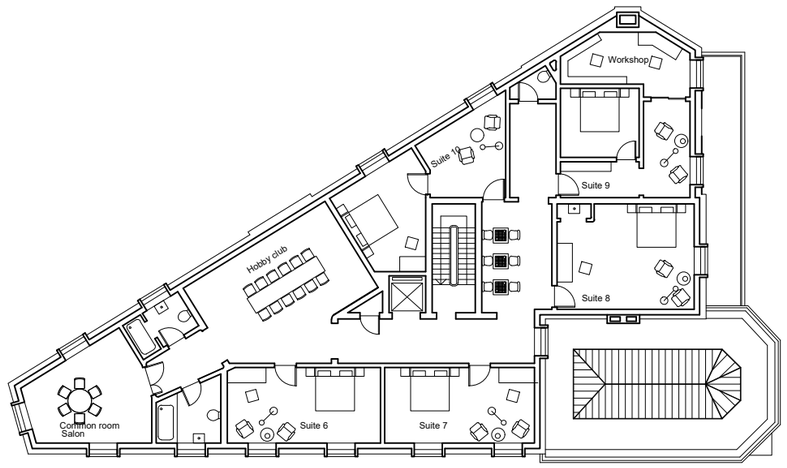
Ground Floor Plan 1:200

N

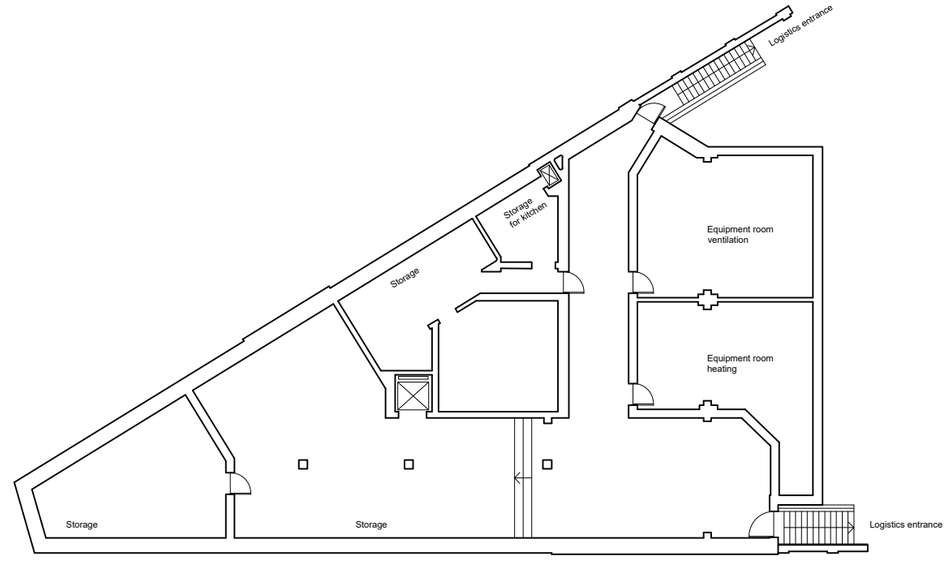
Ground Floor Plan 1:200

2.6 Project Drawings

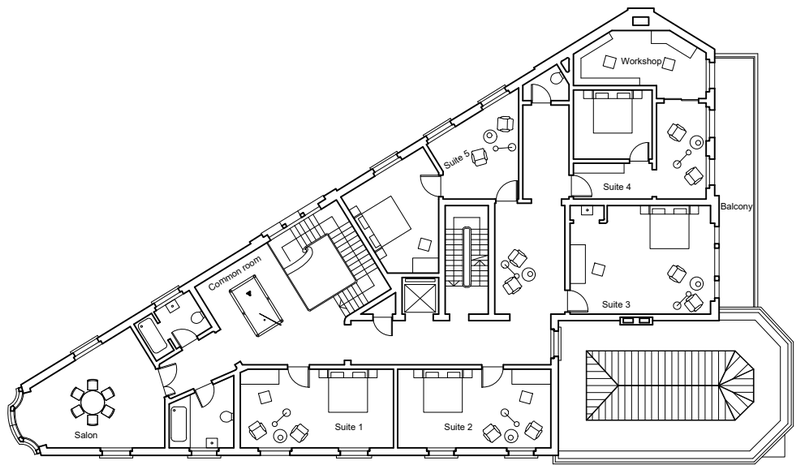
Villa plan 1:200



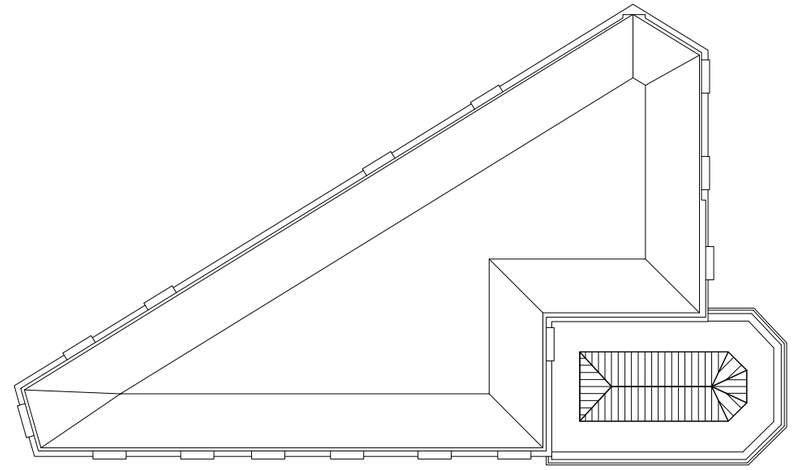
2nd Floor Plan 1:200



Underground Floor Plan 1:200



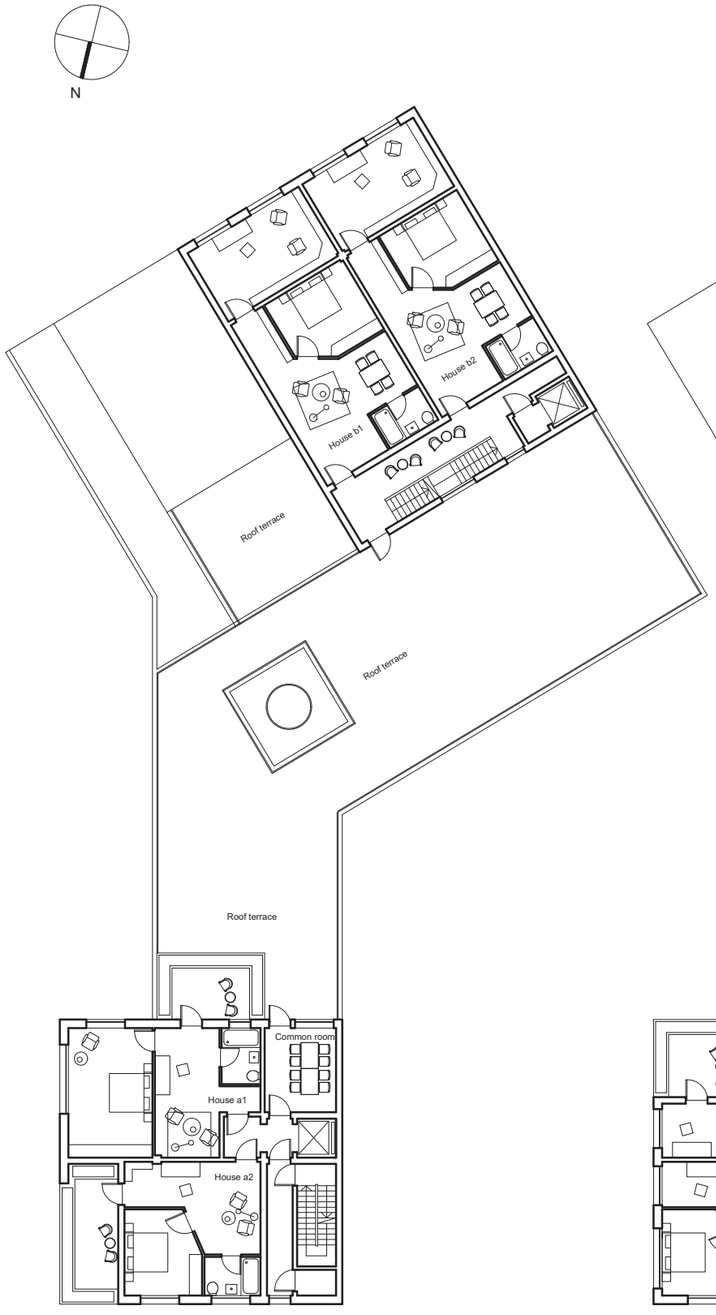
1st Floor Plan 1:200



Roof Plan 1:200

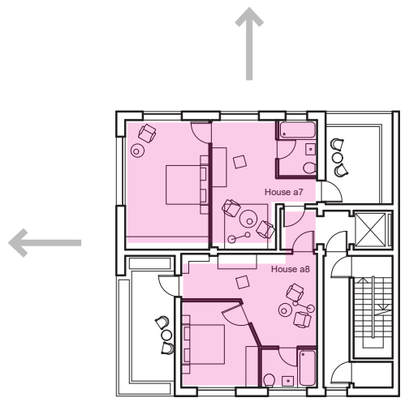
2.6 Project Drawings

Residential plan 1:200

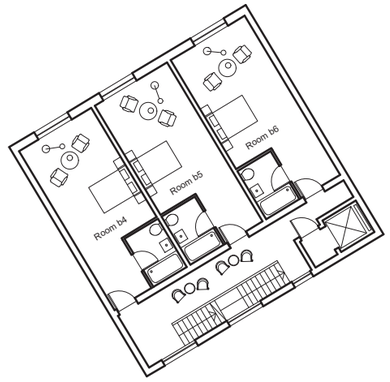


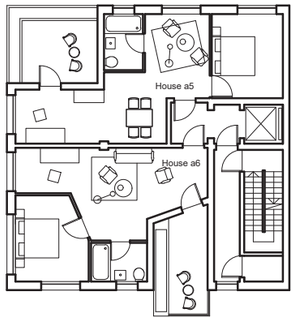
1st Floor Plan 1:200

2nd Floor Plan 1:200



3rd Floor Plan 1:200



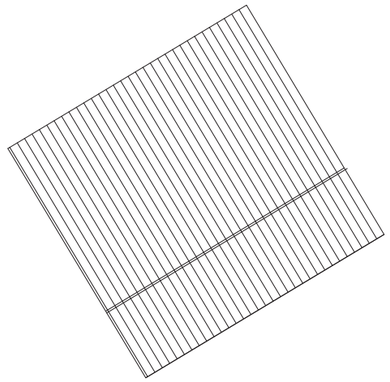


4th Floor Plan 1:200

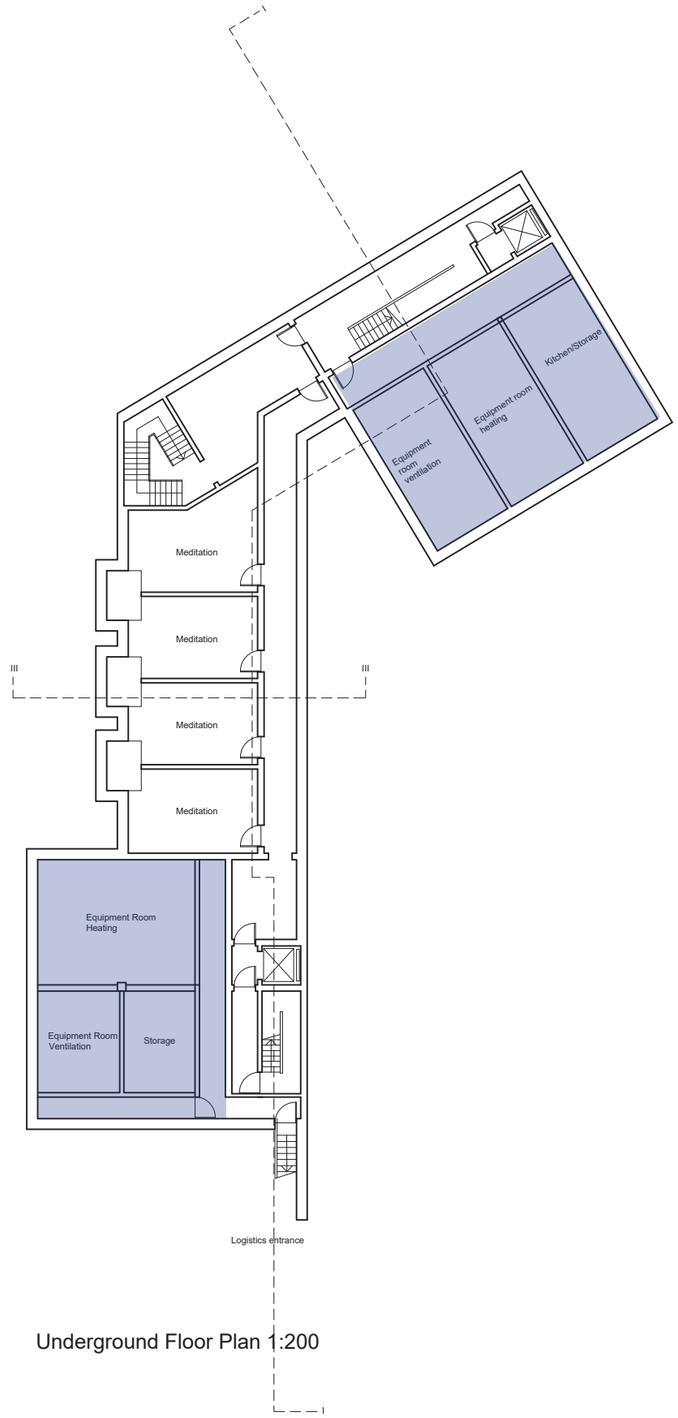
2.6 Project Drawings

Roof and basement

4th Floor Plan 1:200



Roof Plan 1:200

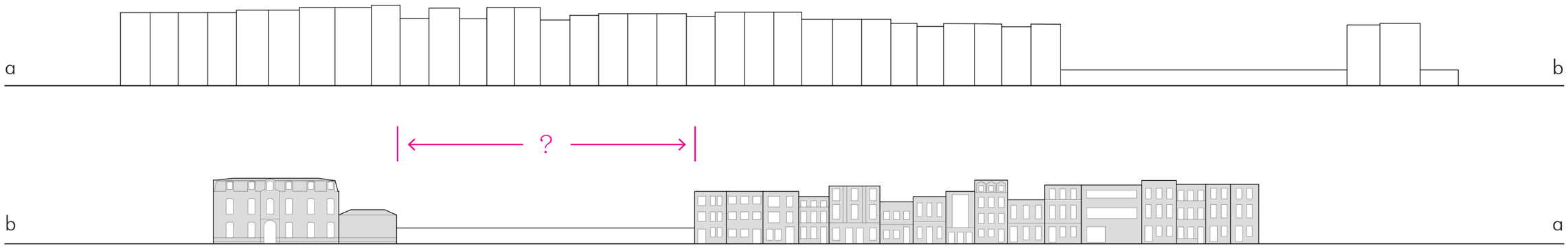


Underground Floor Plan 1:200

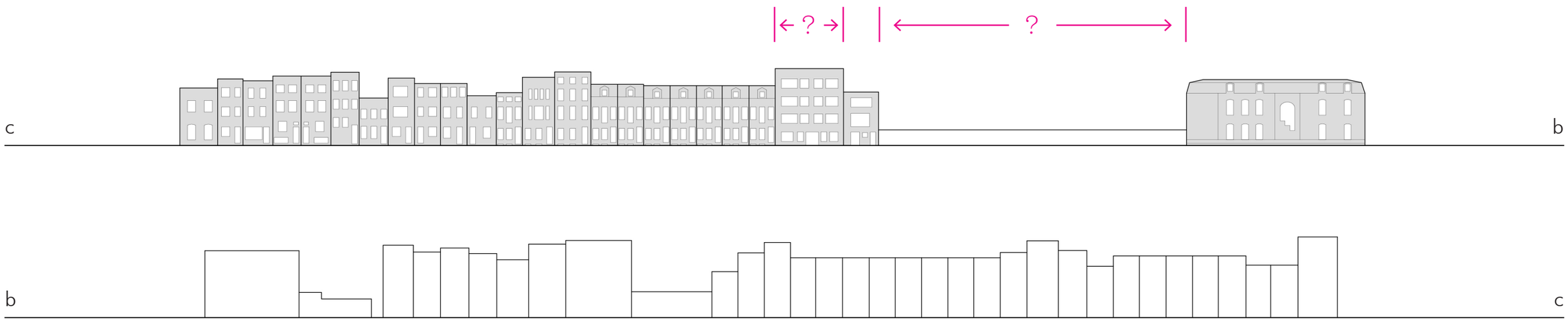
2.7 Facades

Facade studies: rhythem

Sint-Hubertusstraat



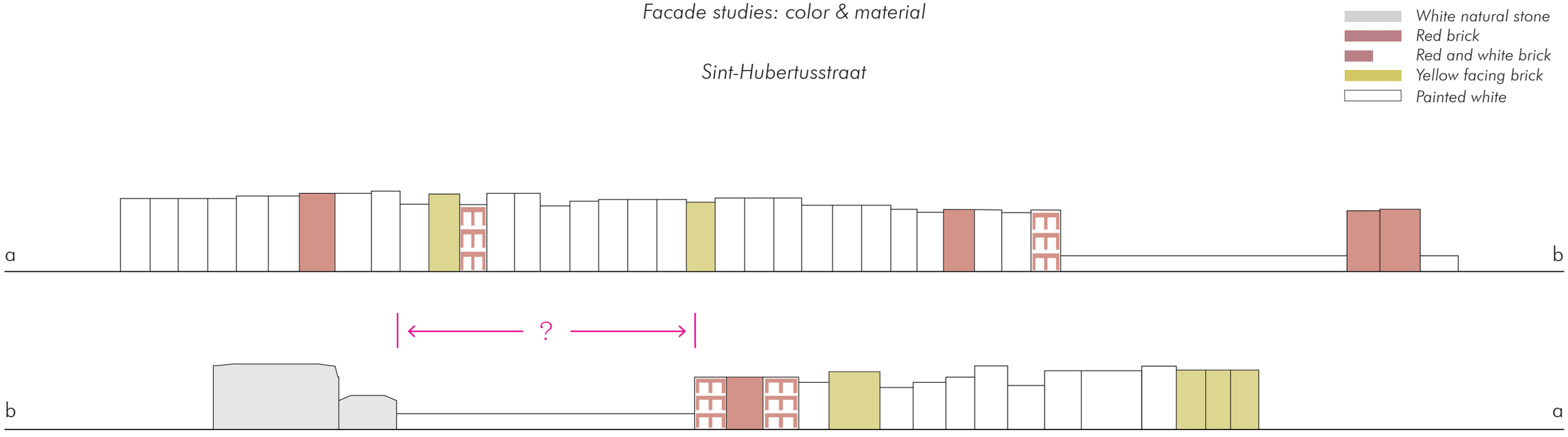
Terlinckstraat



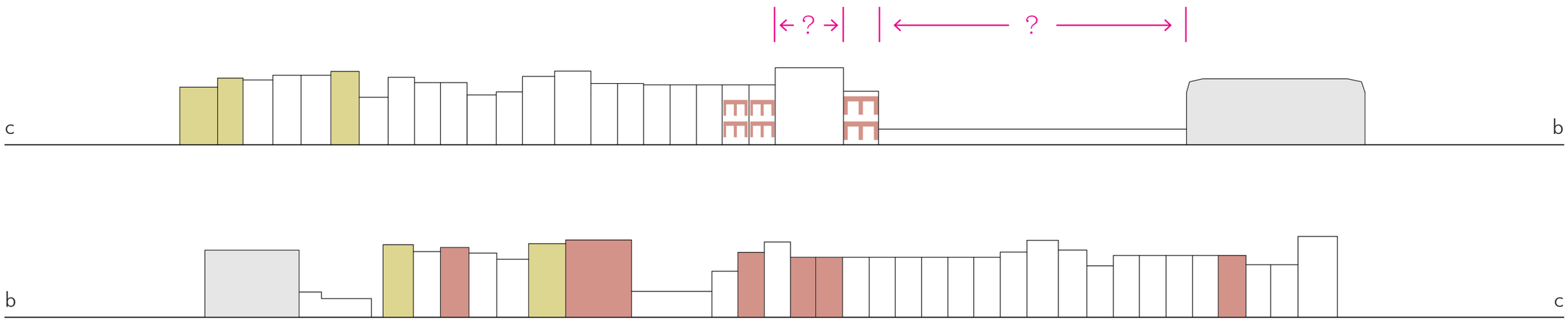
2.7 Facades

Facade studies: color & material

Sint-Hubertusstraat

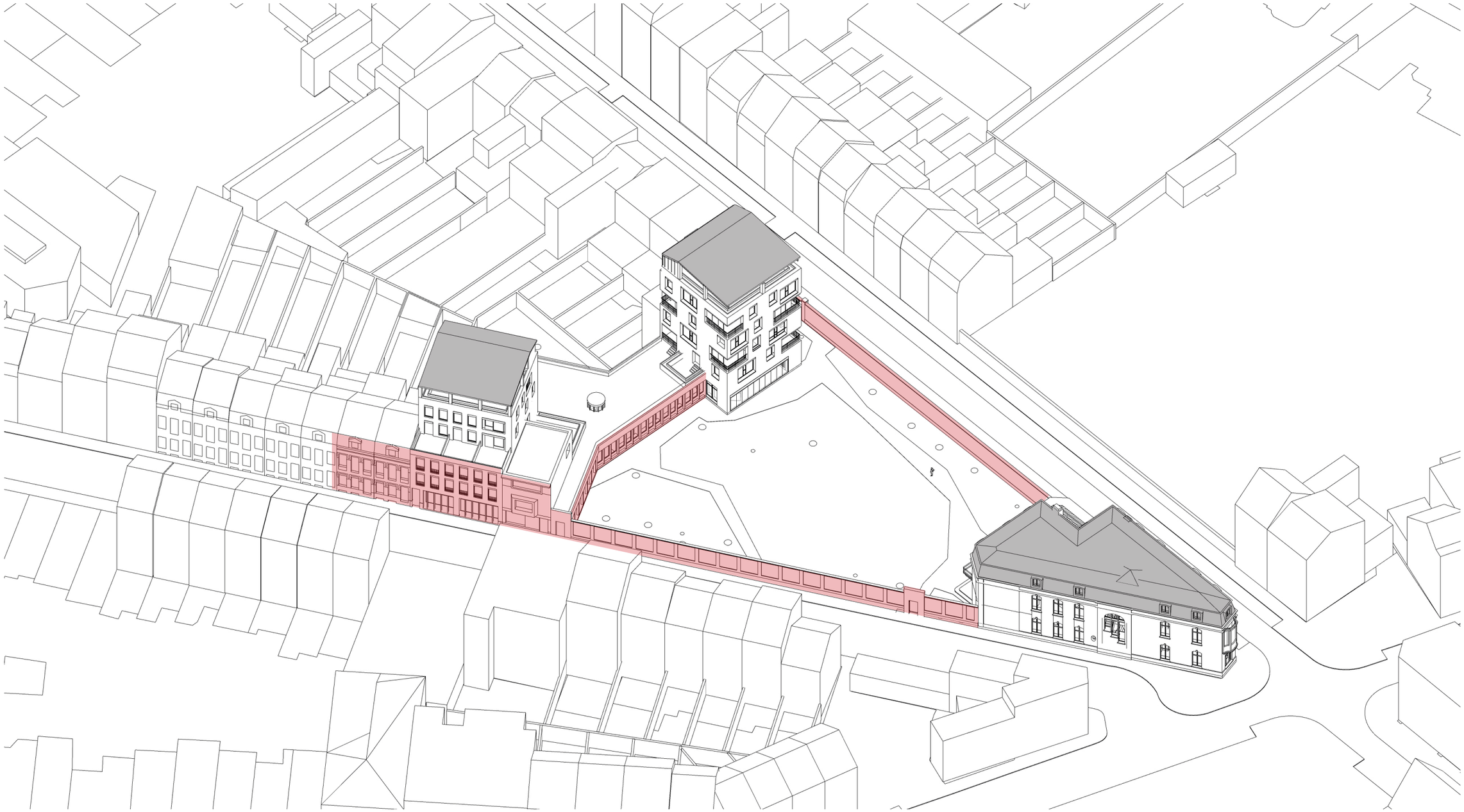


Terlinckstraat



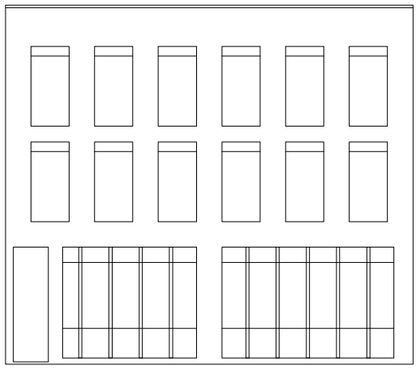
Material diagram

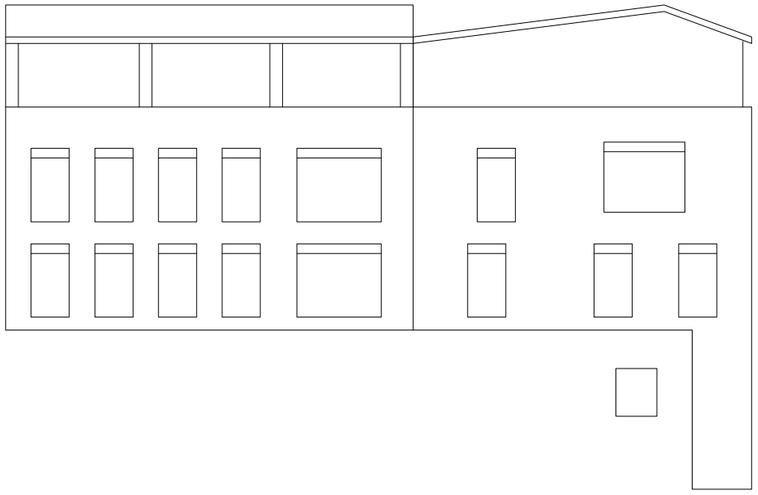
Three objects and one guiding theme

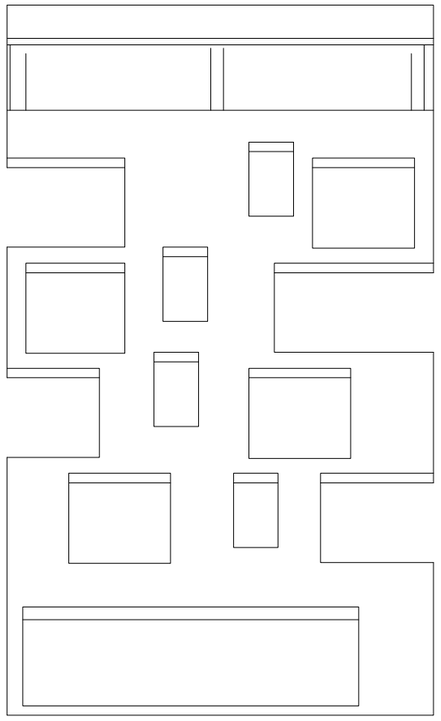


Transition of Facades

Three parts of the program







connections: window beam & proportion

03 Structure & Material

The application of the design strategies into detailing the building

3.1 Materialisation

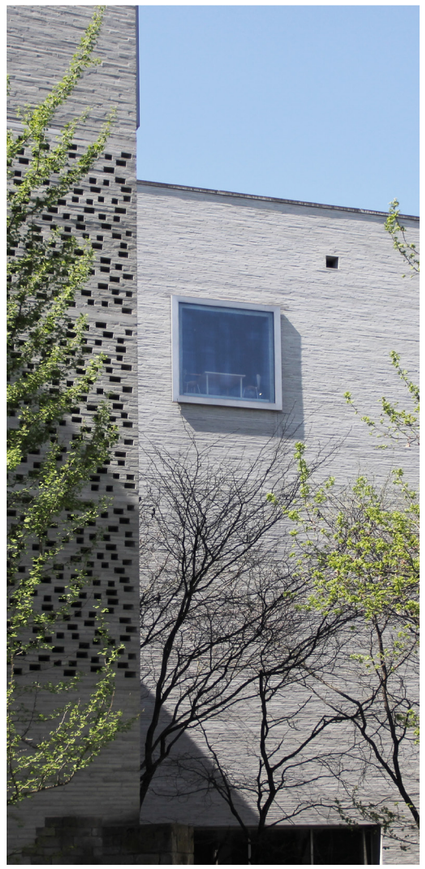
Major reference / response: Villa

Interior

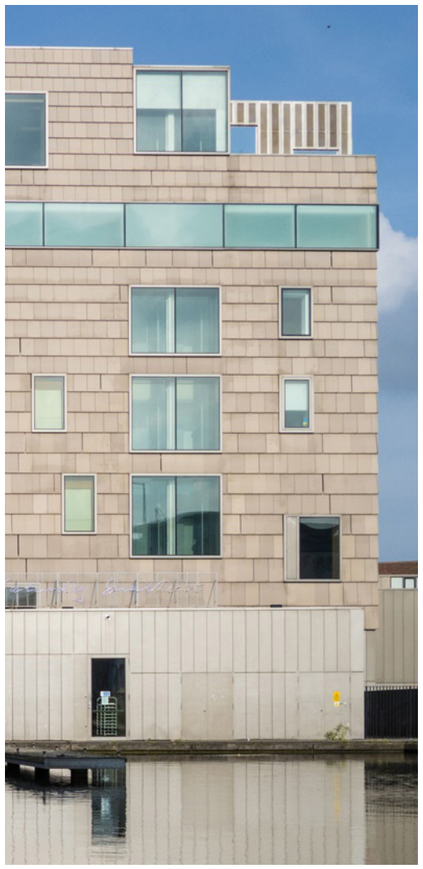
Materialisation

Choosing and comparing

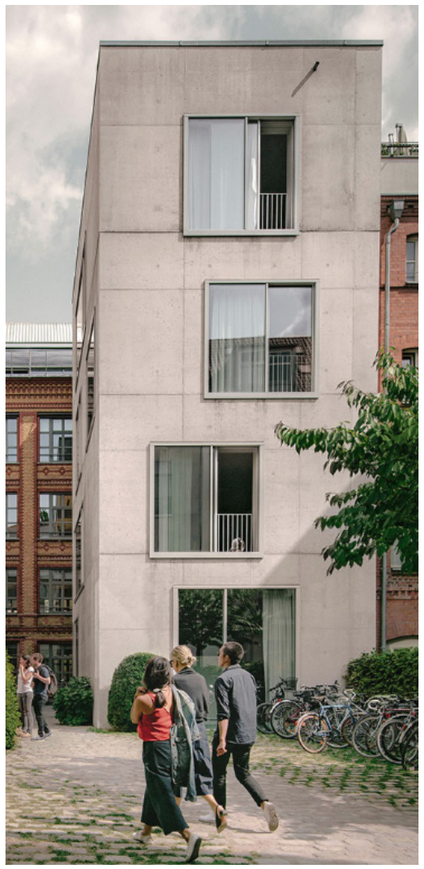
Gray bricks



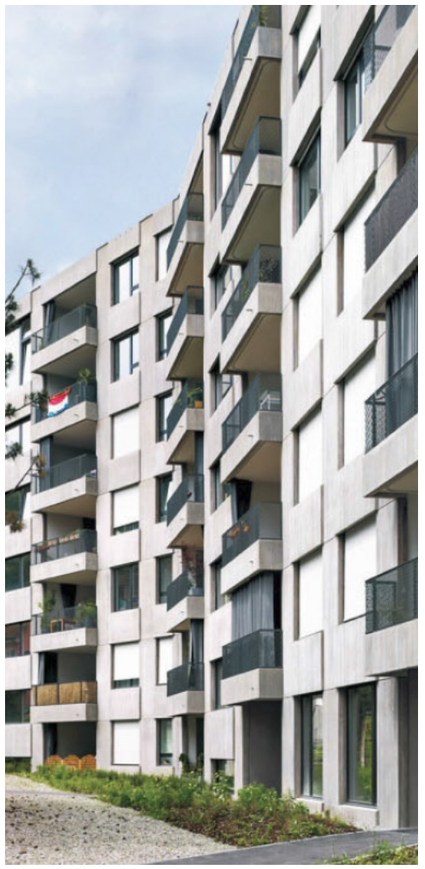
Gray plaster
(or cladded with other materials)



In situ concrete



Prefab concrete

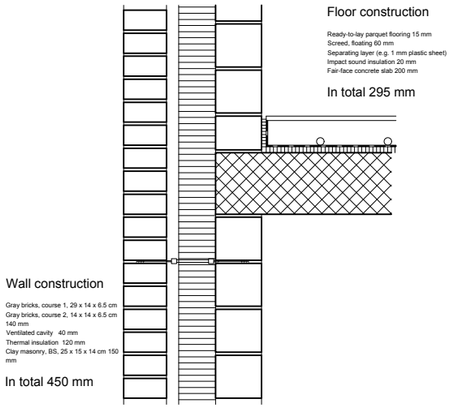


Wood structure cladded with gray wood panels

Materialisation

conclusion

Gray bricks

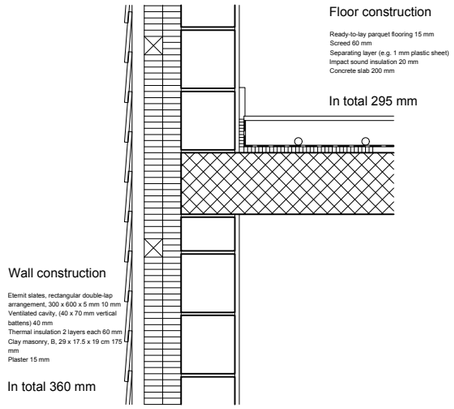


Relatively reasonable costs, sustainable, dismantlable, beautiful and textile surface, ...

heaviest, urban material

Most reasonable choice given the context of Antwerp

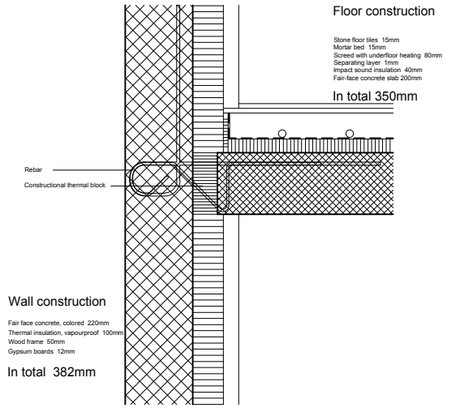
Gray claddings or gray plasters



Reasonable construction costs, sustainable, dismantlable, delicate and textile surface, lightest, ...

more maintainance needed

In situ concrete

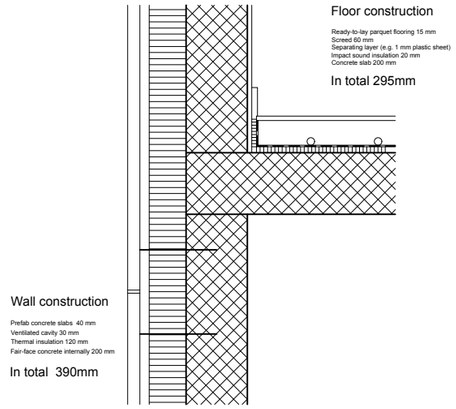


In situ concrete wholeness / free windows changes with time cavity

Sustainability ?

rational choice but worth trying

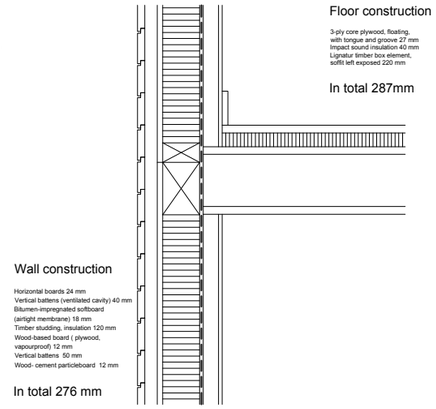
Prefab concrete



Reasonable construction costs, sustainable, dismantlable

heavy facade require concrete inner wall sense of wholeness

Wood structure cladded with gray wood panels

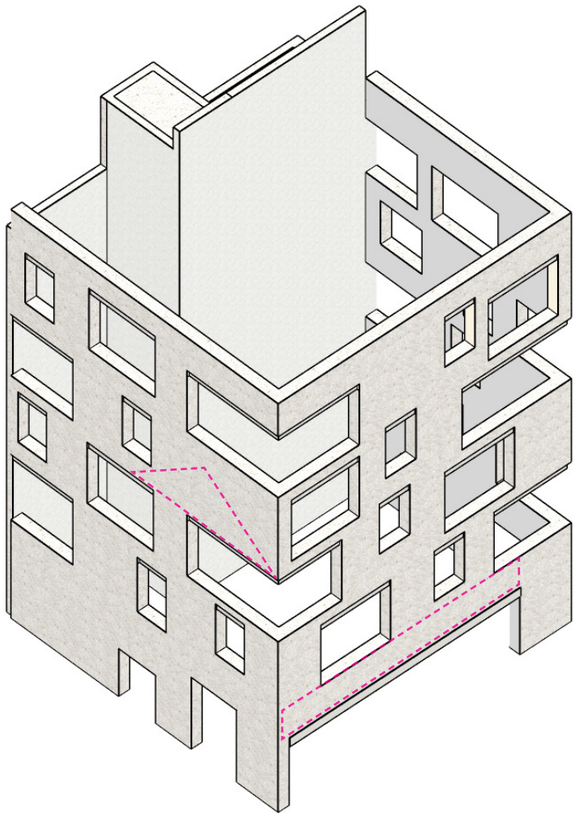


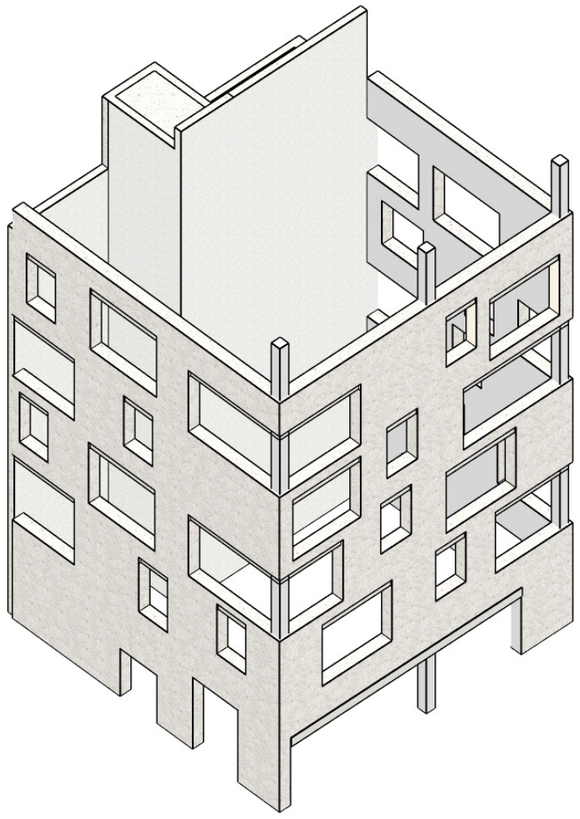
Wood structure cladded with gray wood panels

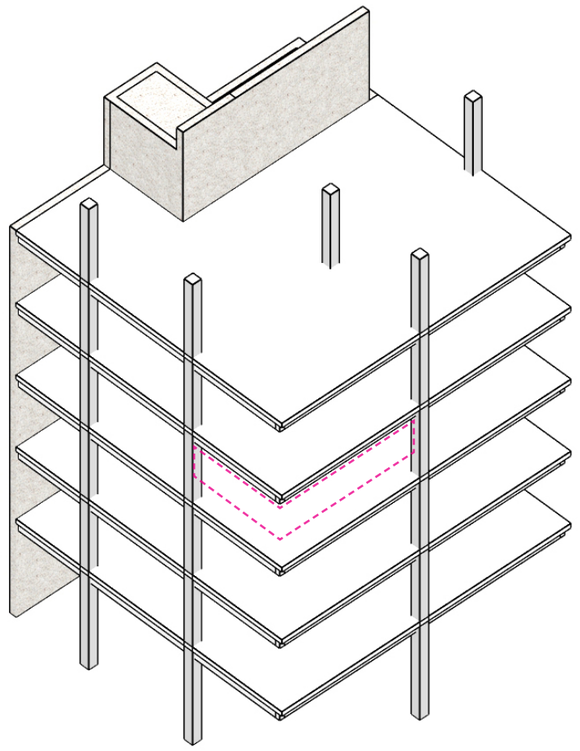
Wood structure cladded with gray wood panels

Construction considerations

conclusion: columnless corner

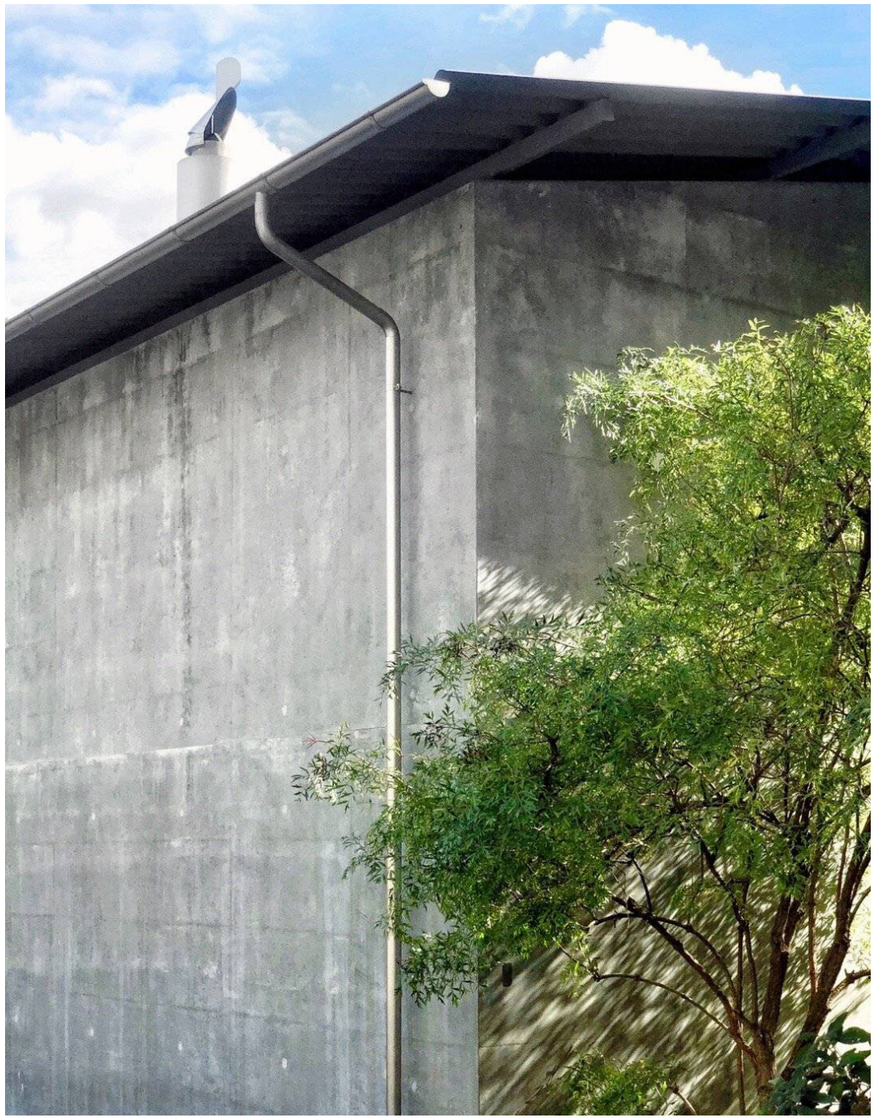






Materialisation

Concrete and garden



Materialisation

further development

sustainable because reuse the space although it is a residential project
provide flexibility: changing with time

ratio of surface/volumn: provide cavity

structural consistancy with the old villa: the contrast between exterior and interior

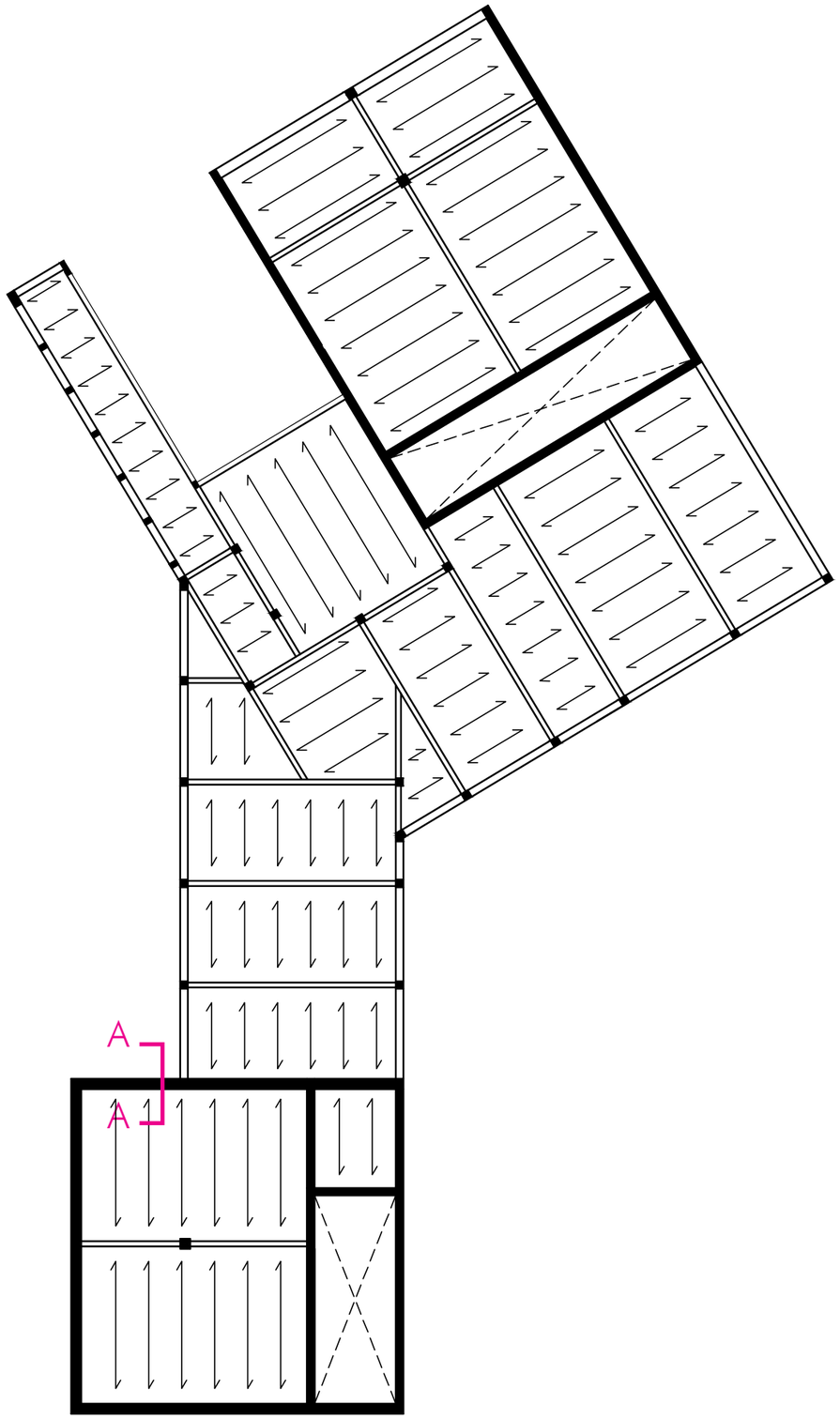
sculptural volumes

Reused concrete

Use the construction waste (red bricks for shed, gray bricks and concrete from the apartment)
as the aggragate of in-situ concrete

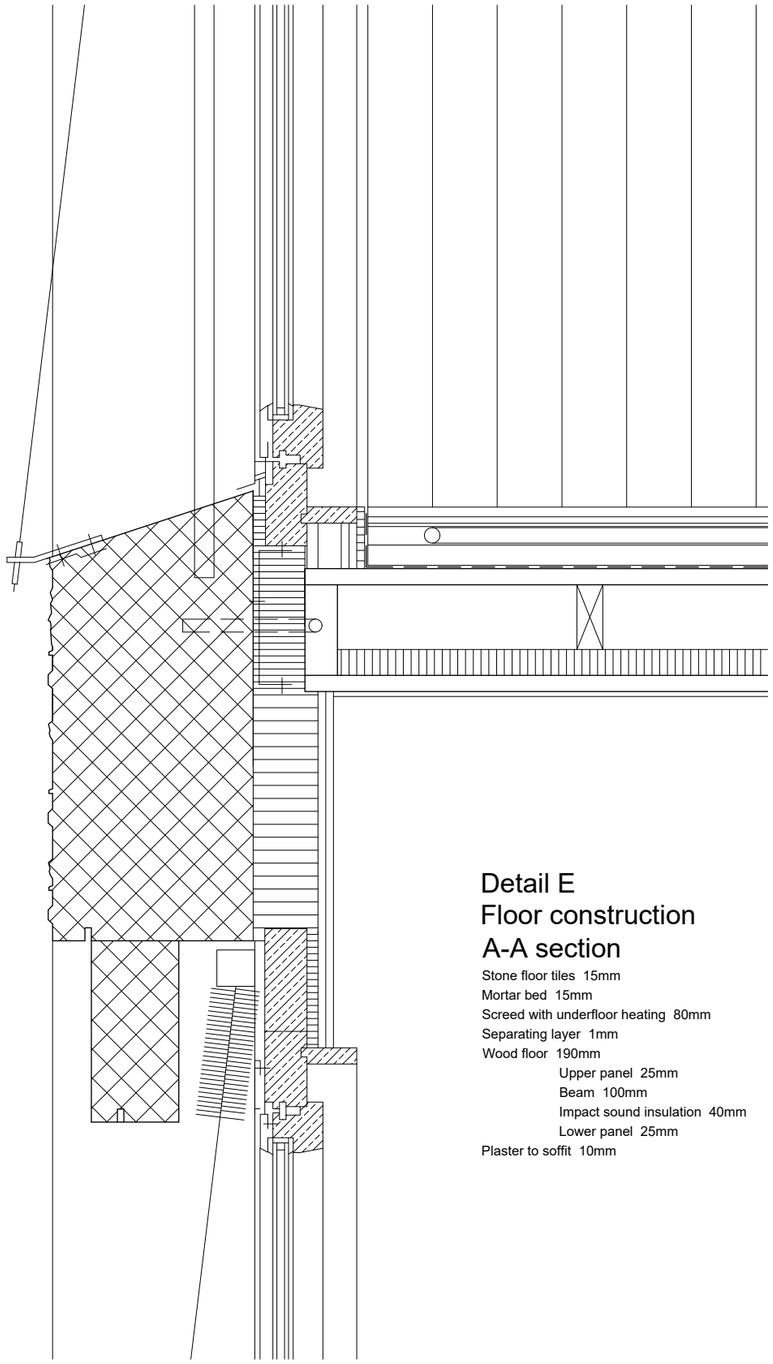
Prefabricated floor system

The exterior wall as bearing wall: floor places on walls



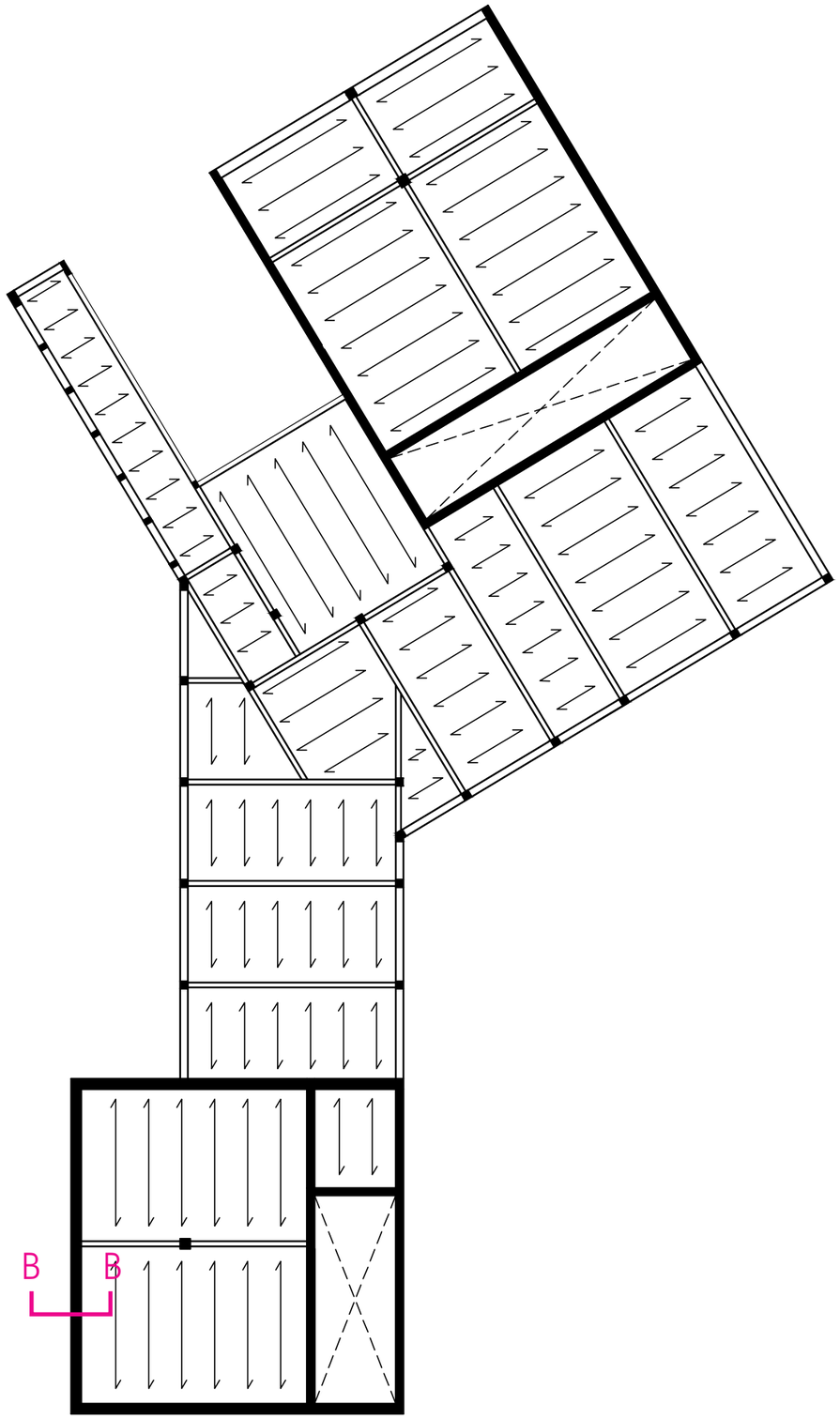
3.2 Construction

Two towers: exterior walls as load bearing and shear walls
In between community center: wood frame structure



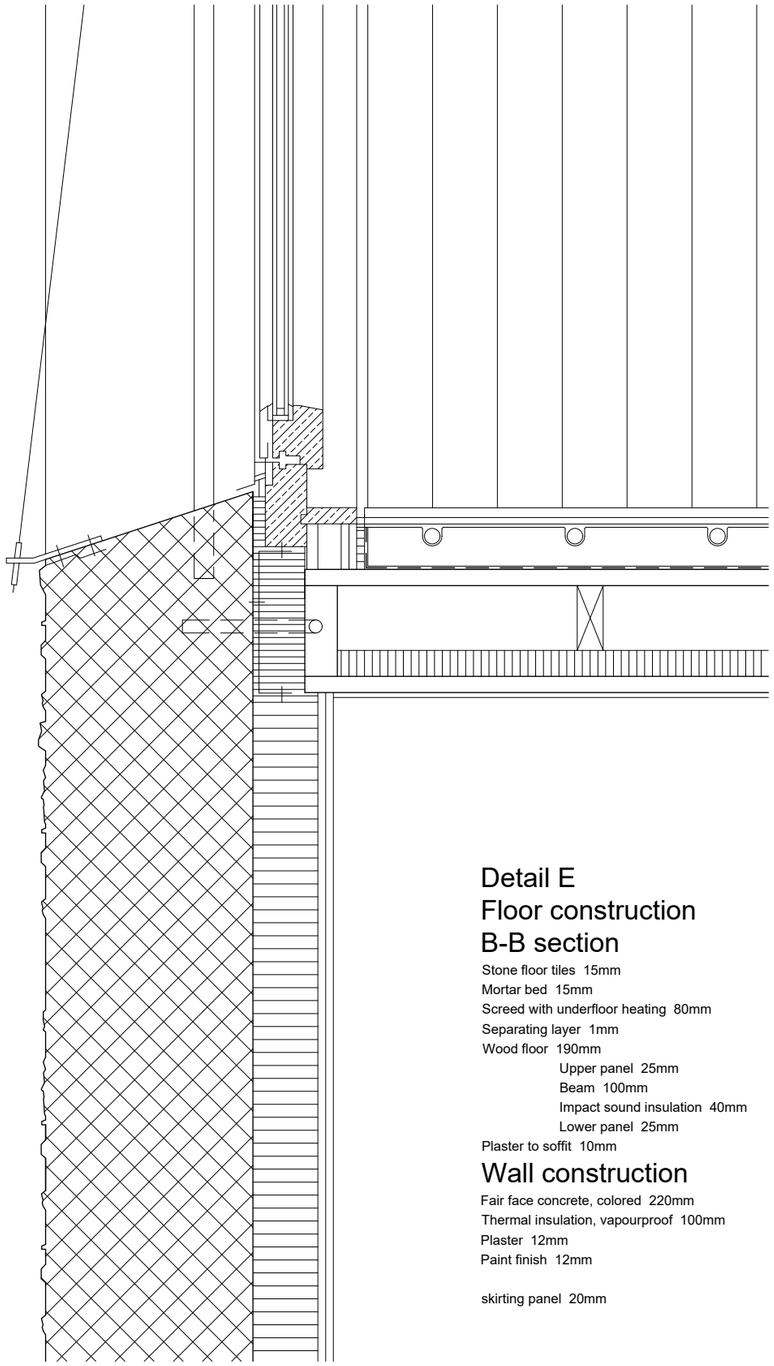
Detail E
Floor construction
A-A section

Stone floor tiles 15mm
Mortar bed 15mm
Screed with underfloor heating 80mm
Separating layer 1mm
Wood floor 190mm
Upper panel 25mm
Beam 100mm
Impact sound insulation 40mm
Lower panel 25mm
Plaster to soffit 10mm



3.2 Construction

Two towers: exterior walls as load bearing and shear walls
In between community center: wood frame structure



Detail E
Floor construction
B-B section

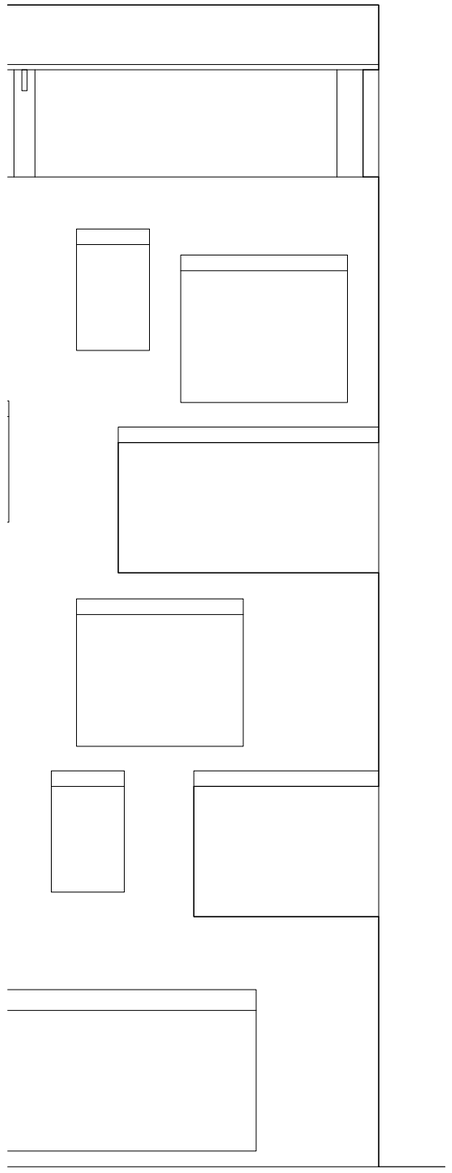
Stone floor tiles 15mm
Mortar bed 15mm
Screed with underfloor heating 80mm
Separating layer 1mm
Wood floor 190mm
- Upper panel 25mm
- Beam 100mm
- Impact sound insulation 40mm
- Lower panel 25mm

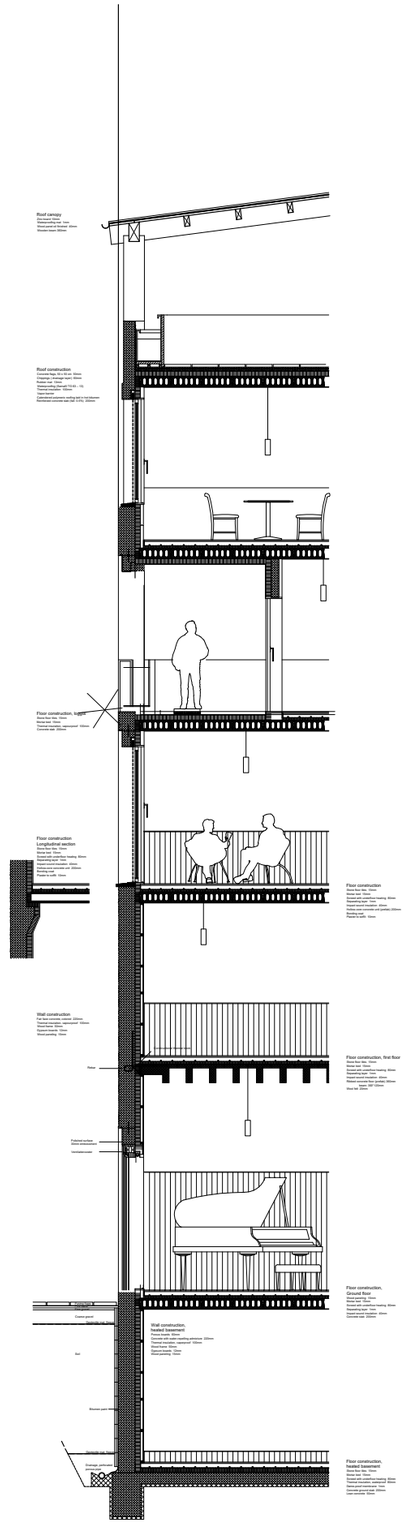
Plaster to soffit 10mm

Wall construction

Fair face concrete, colored 220mm
Thermal insulation, vapourproof 100mm
Plaster 12mm
Paint finish 12mm

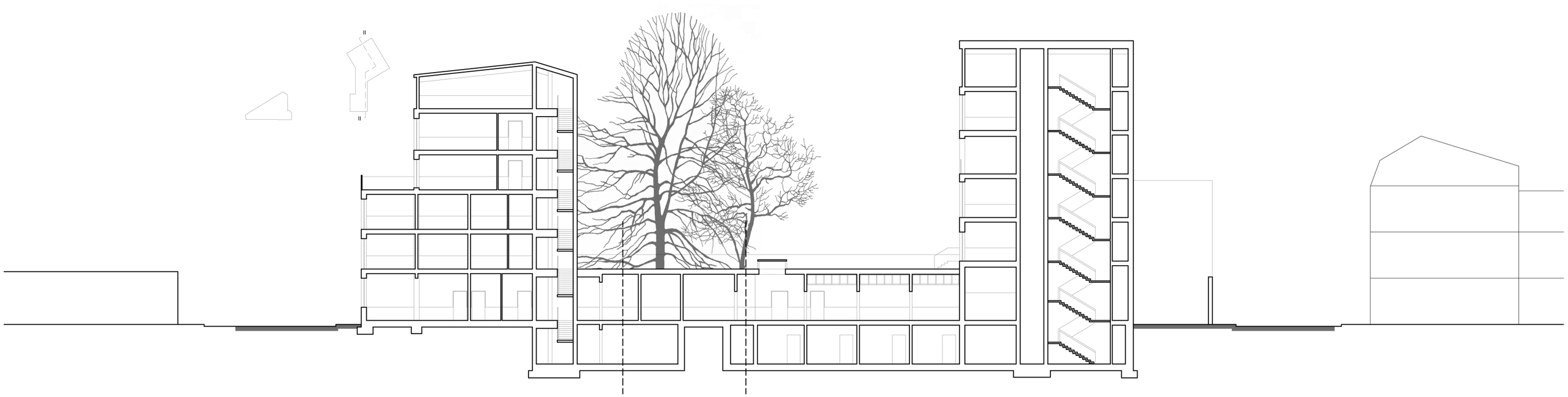
skirting panel 20mm




Roof canopy
Roof construction
Floor construction
Wall construction
Floor construction, first floor
Floor construction, Ground floor
Wall construction, heated basement
Floor construction, heated basement

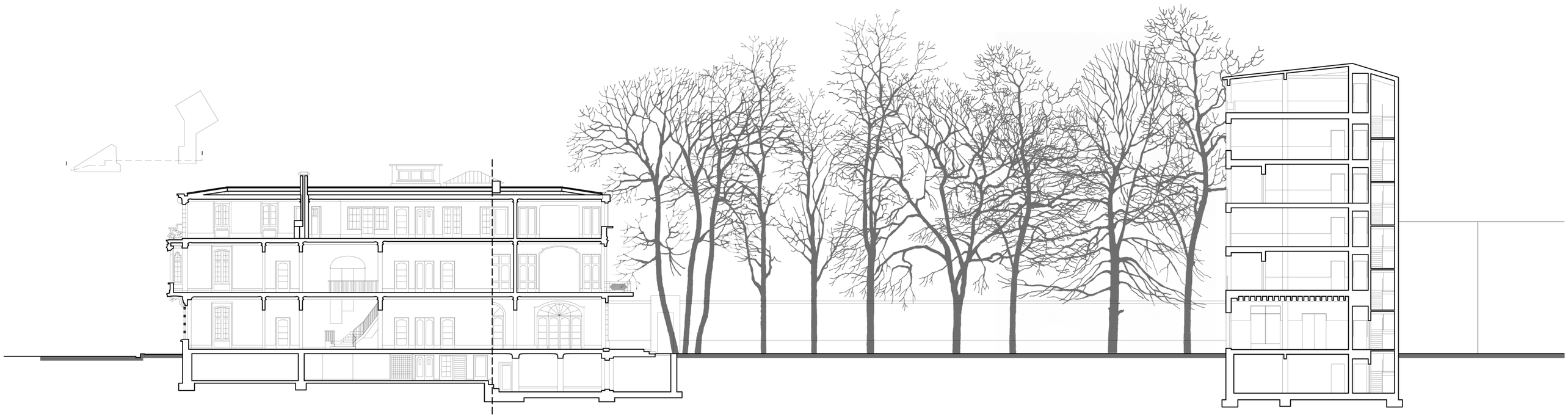
3.3 Sections

Cross section: the gesture towards urban context



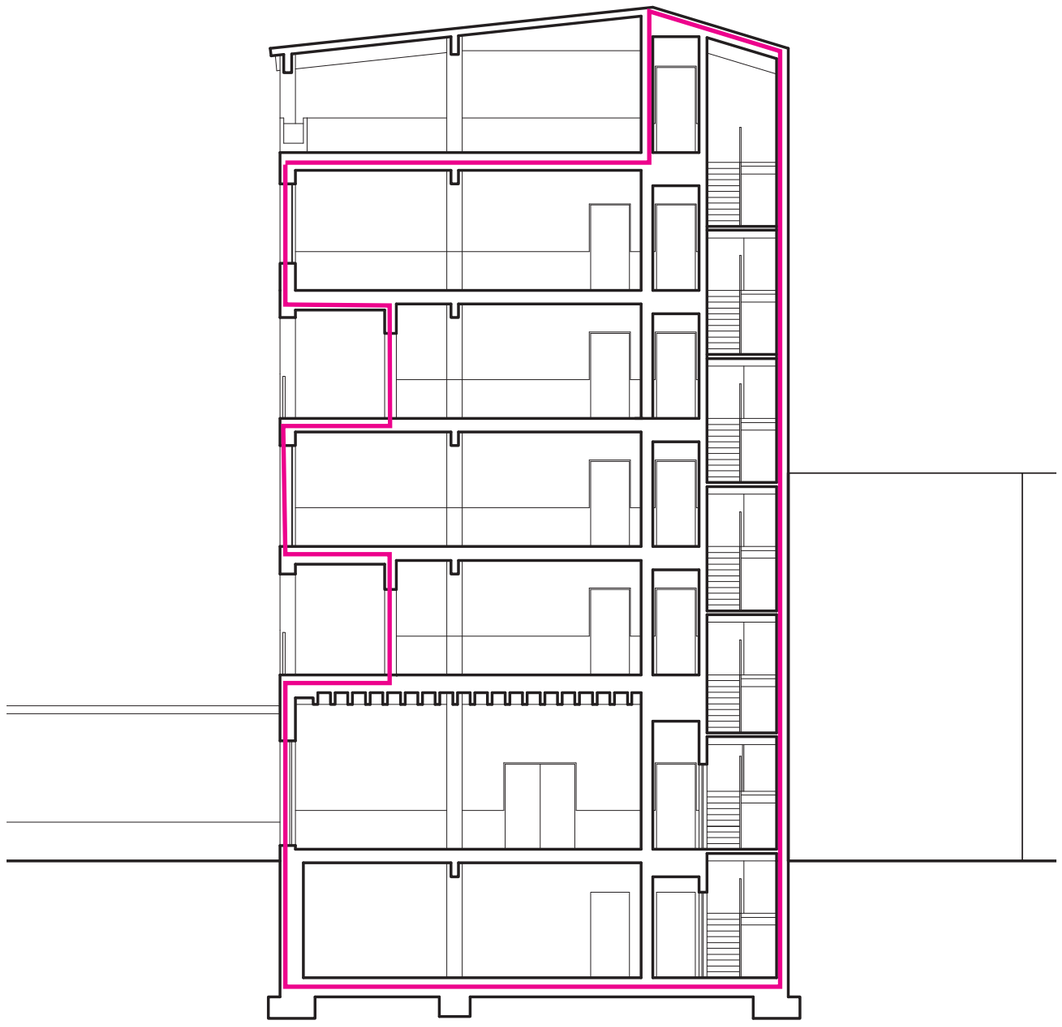
3.3 Sections

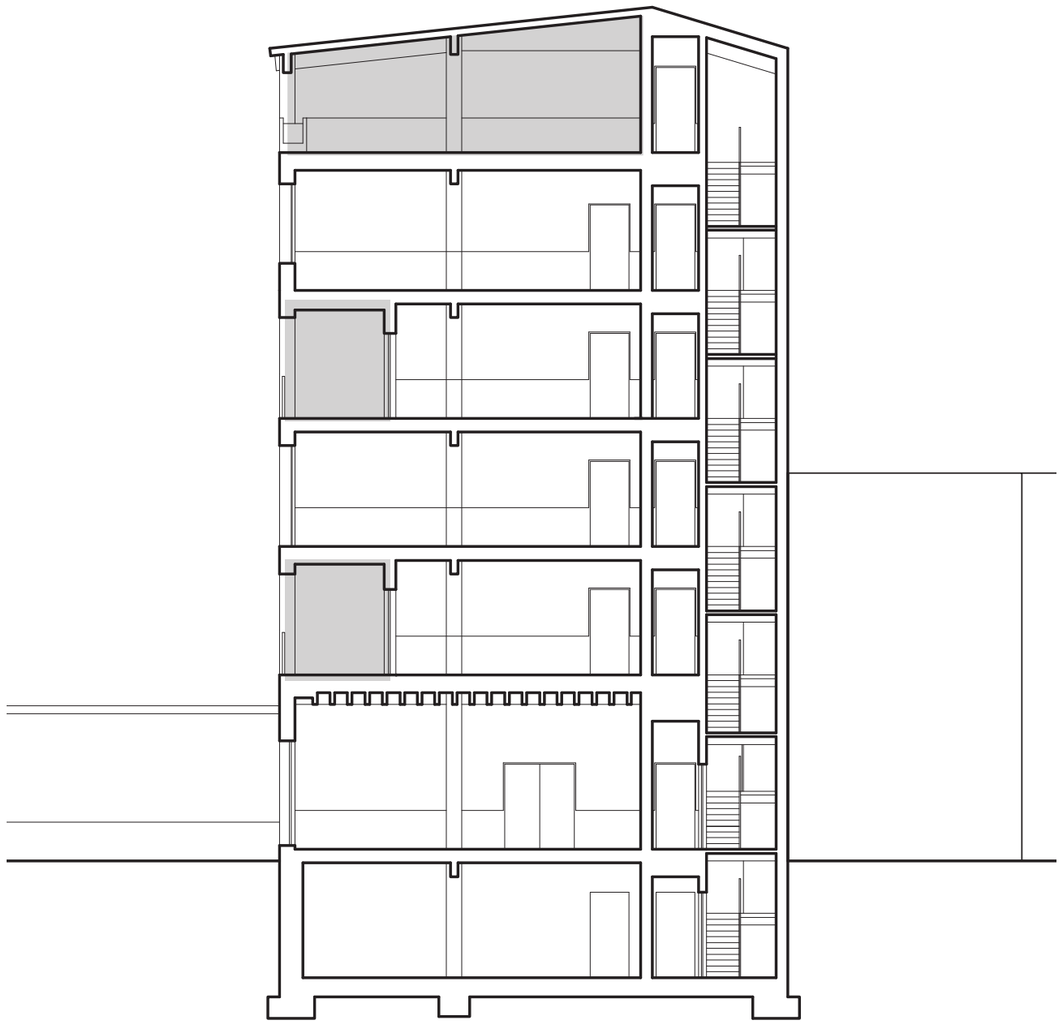
Longitudinal section: relationship between the old and new
The idea of an exterior loggia



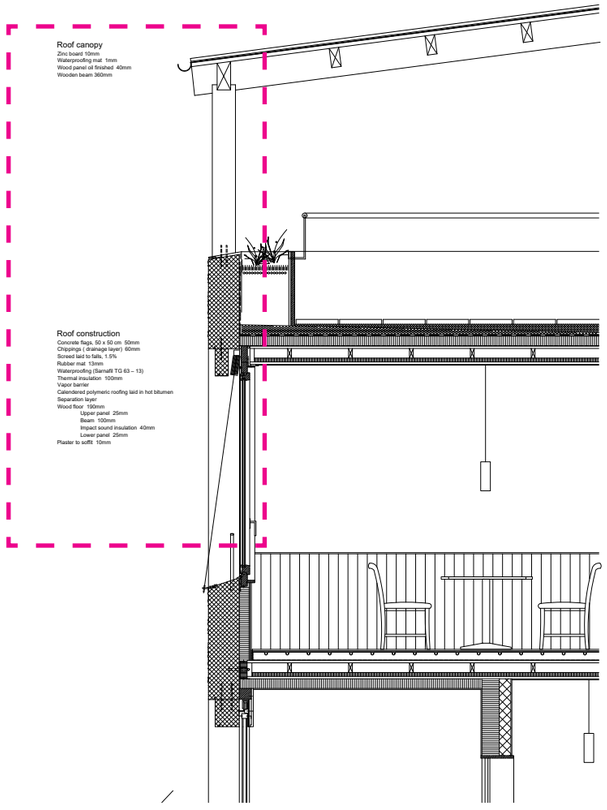
3.4 Insulation

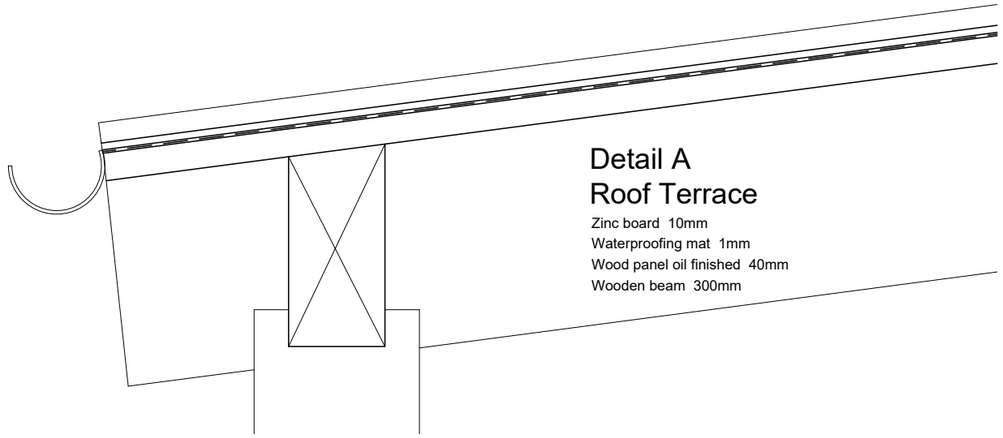
Exterior loggia and roof: introduction of greenery into interior
As insulation buffer when closed (changes with time)





Detail A: Roof

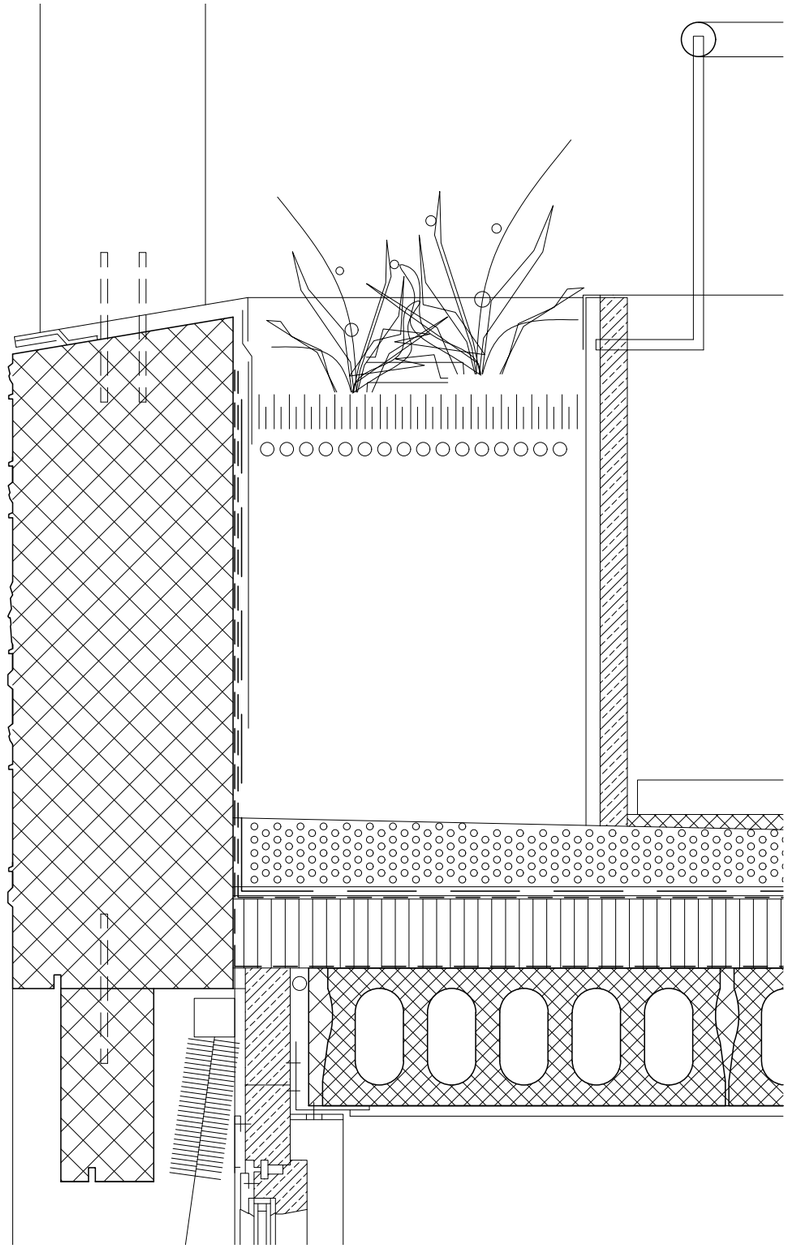




Detail A
Roof Terrace

Zinc board 10mm
Waterproofing mat 1mm
Wood panel oil finished 40mm
Wooden beam 300mm

Prefabricated concrete board
50mm
Screed laid to falls, 1.5%
Separation layer
Thermal insulation
100 mm rigid-foam polystyrene
Separation layer
Hollow-core concrete unit
200mm
Plaster to soffit 15mm

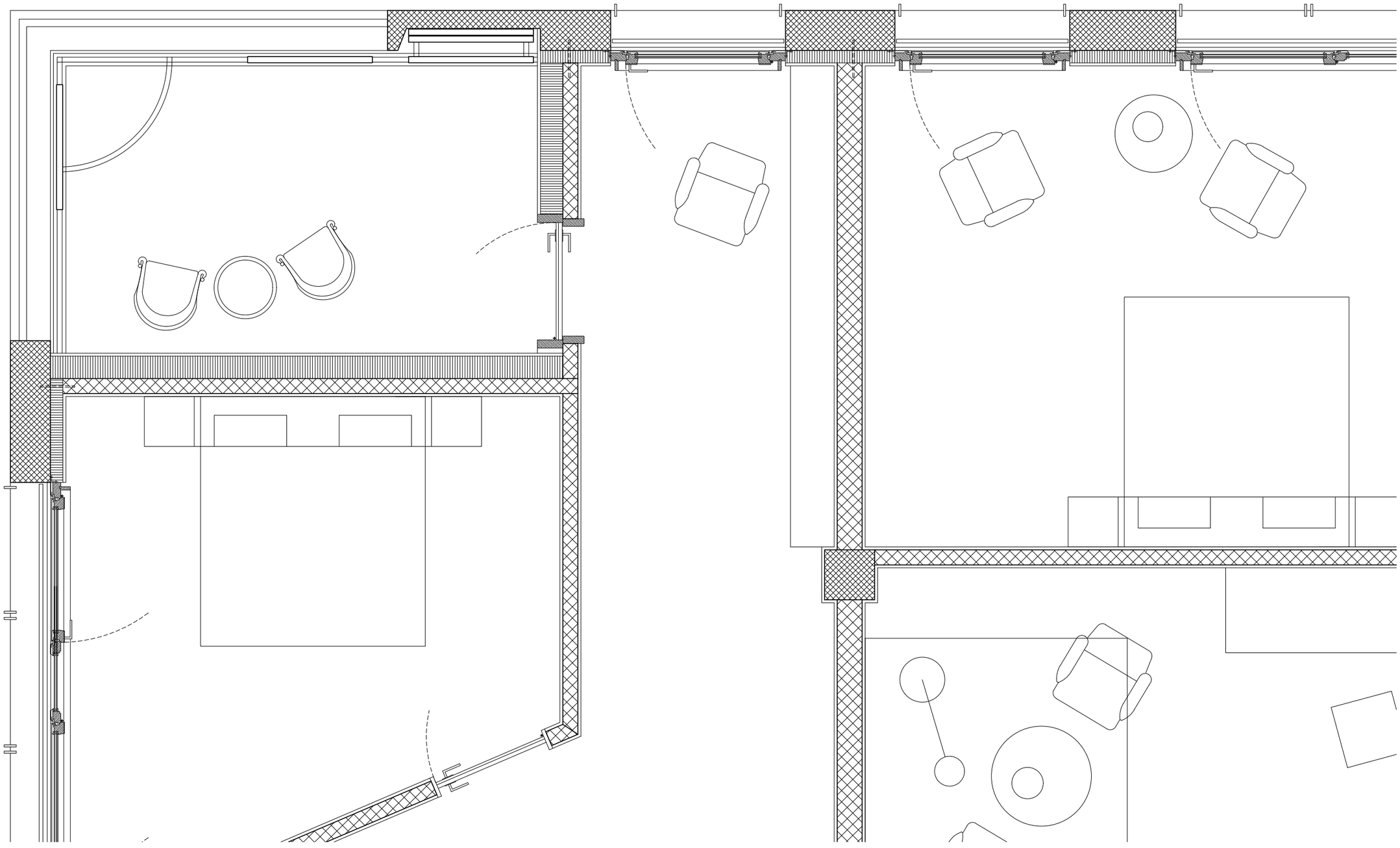


Roof terrace

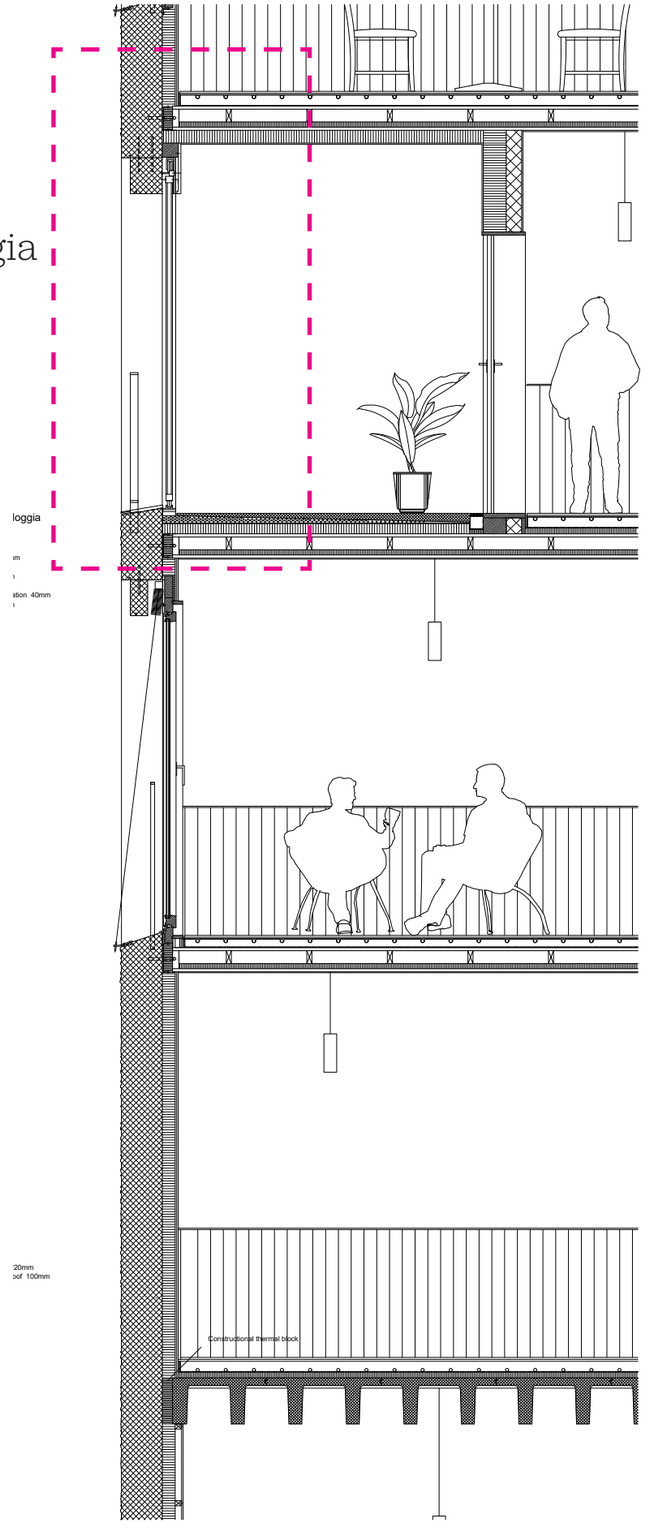
Exterior event venue

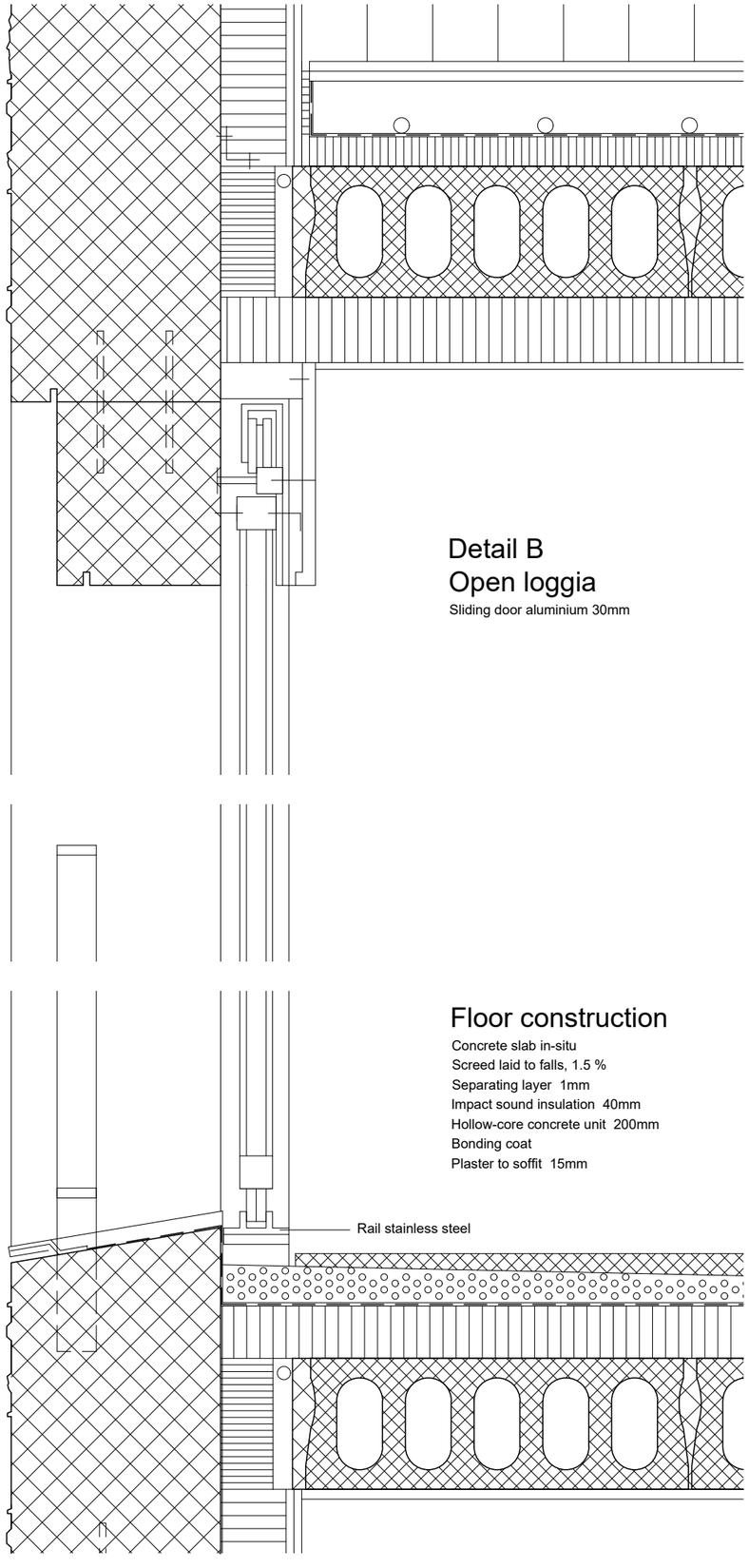
Loggia

Plan fragment in detail



Detail B: Loggia



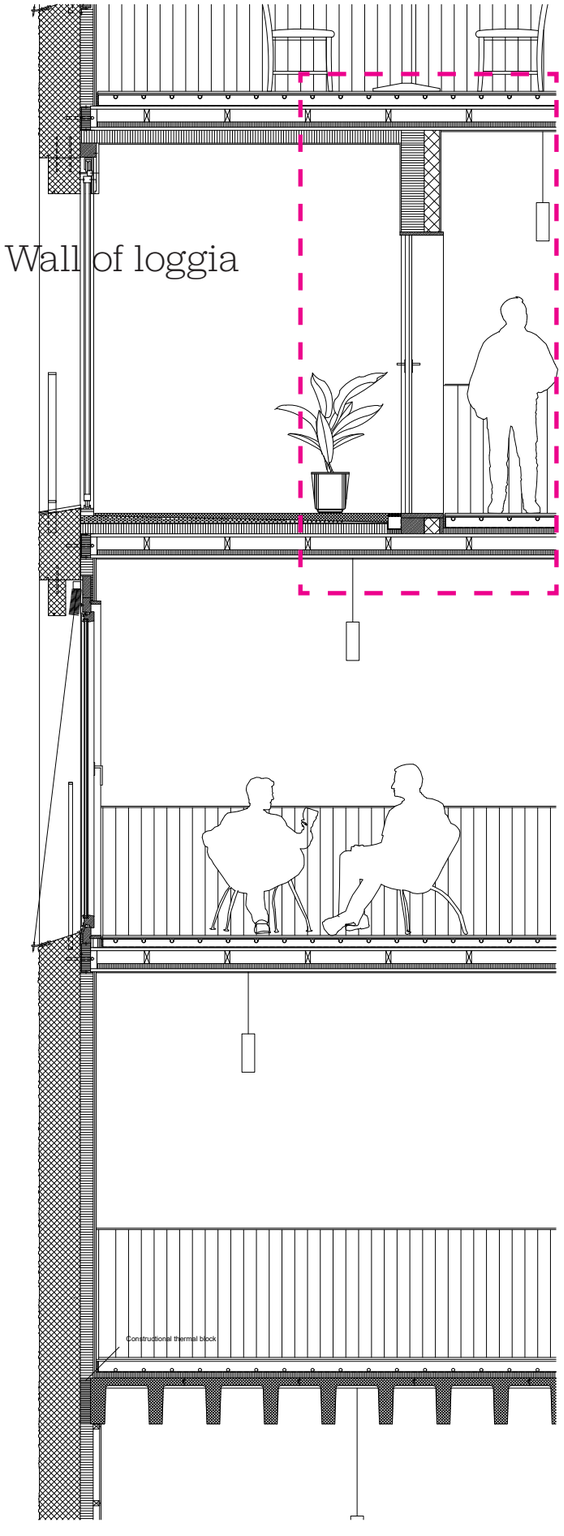


Detail B
Open loggia
Sliding door aluminium 30mm

Floor construction
Concrete slab in-situ
Screed laid to falls, 1.5 %
Separating layer 1mm
Impact sound insulation 40mm
Hollow-core concrete unit 200mm
Bonding coat
Plaster to soffit 15mm

Rail stainless steel

Detail C: Wall of loggia



n, loggia
40mm
5mm
nsulation 40mm
5mm

d 220mm
urproof 100mm
lmm

Flo
Stor
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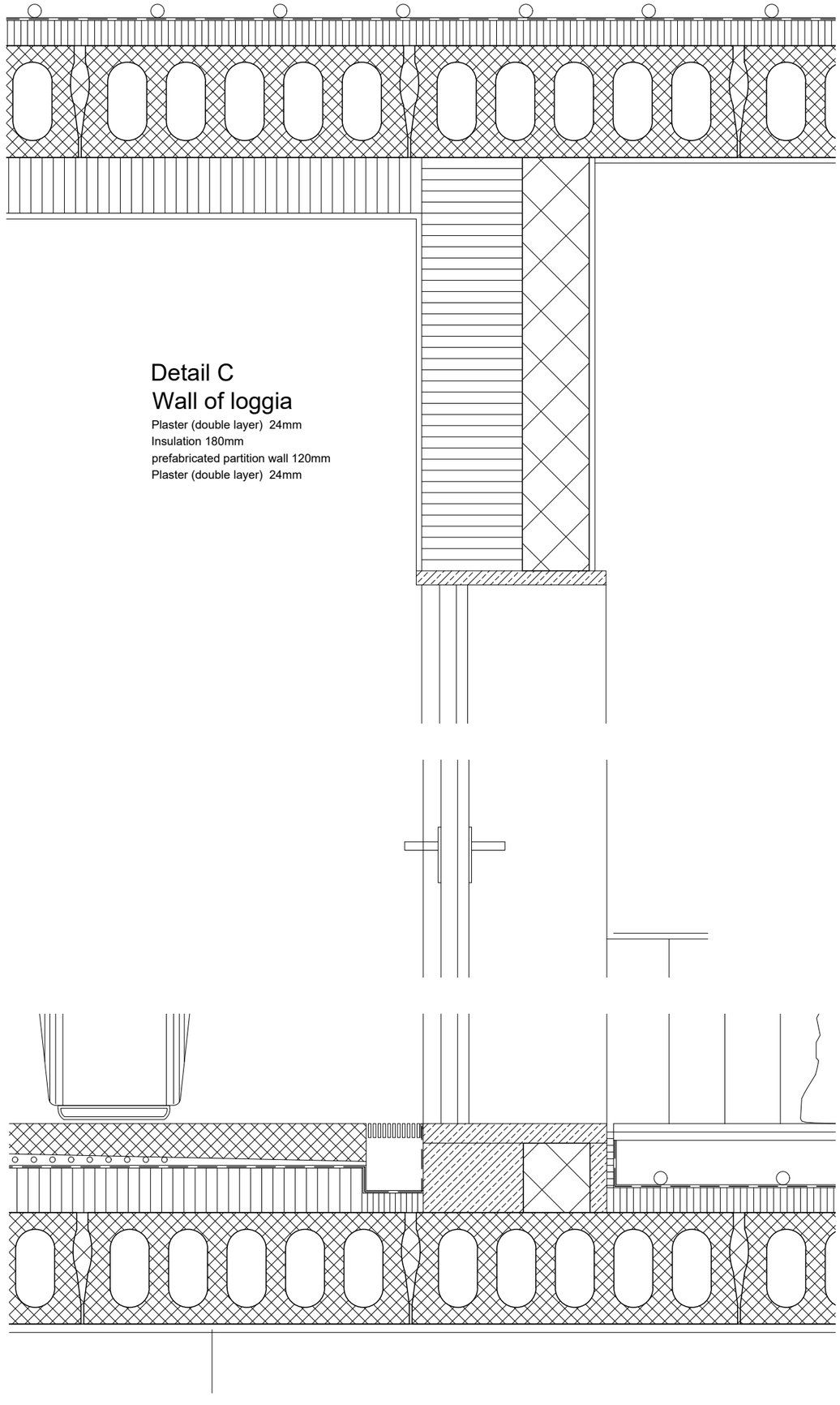
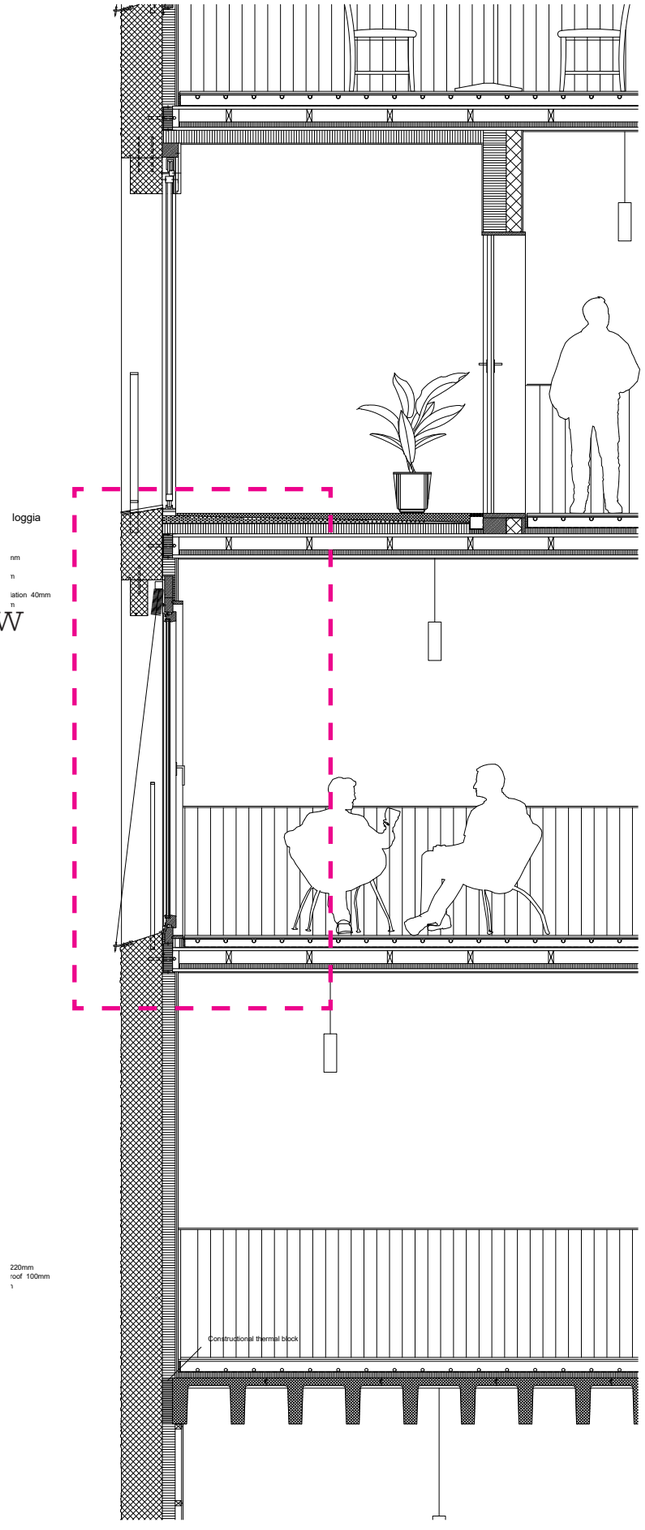
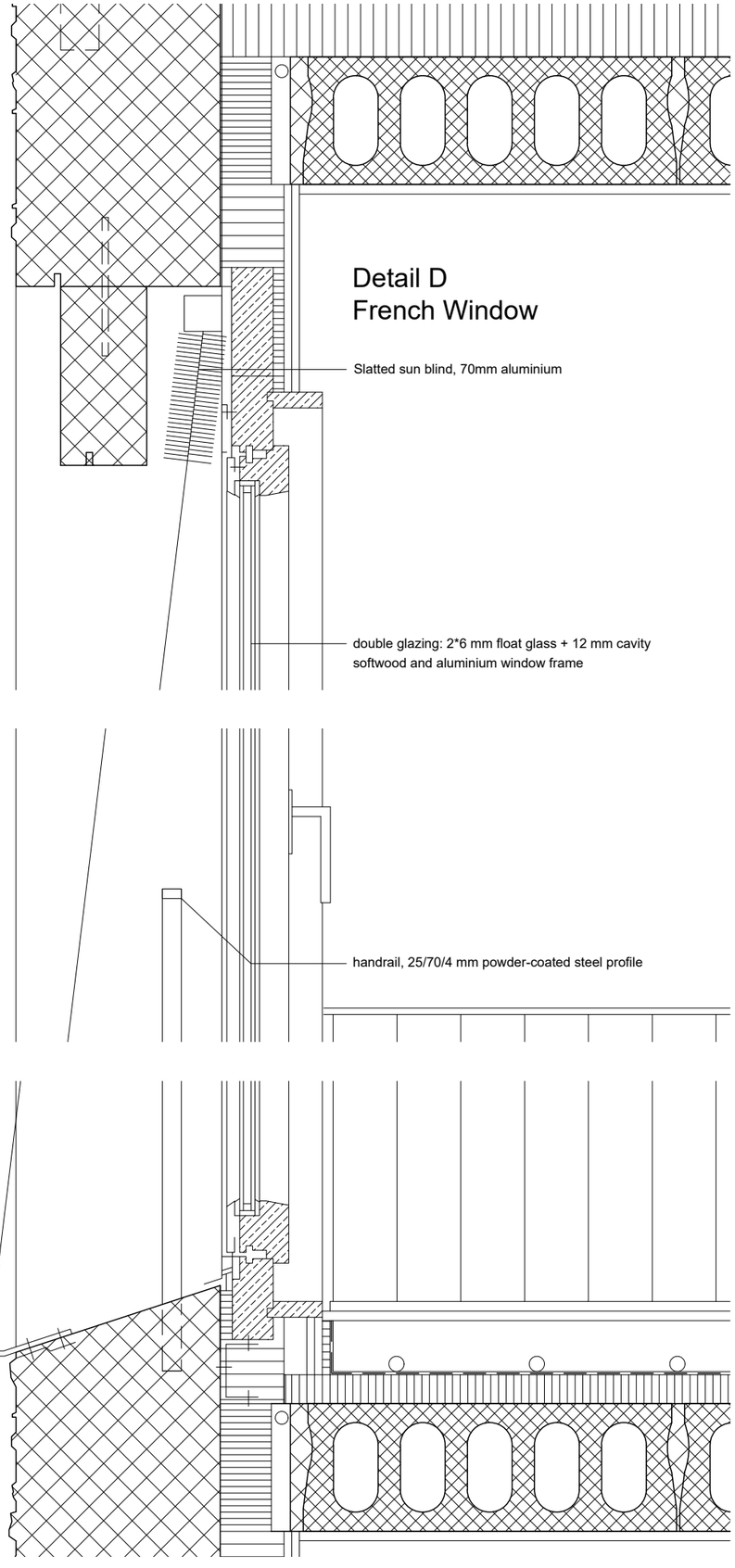


Detail C
Wall of loggia

Plaster (double layer) 24mm
Insulation 180mm
prefabricated partition wall 120mm
Plaster (double layer) 24mm

Detail D:
French window





Climate

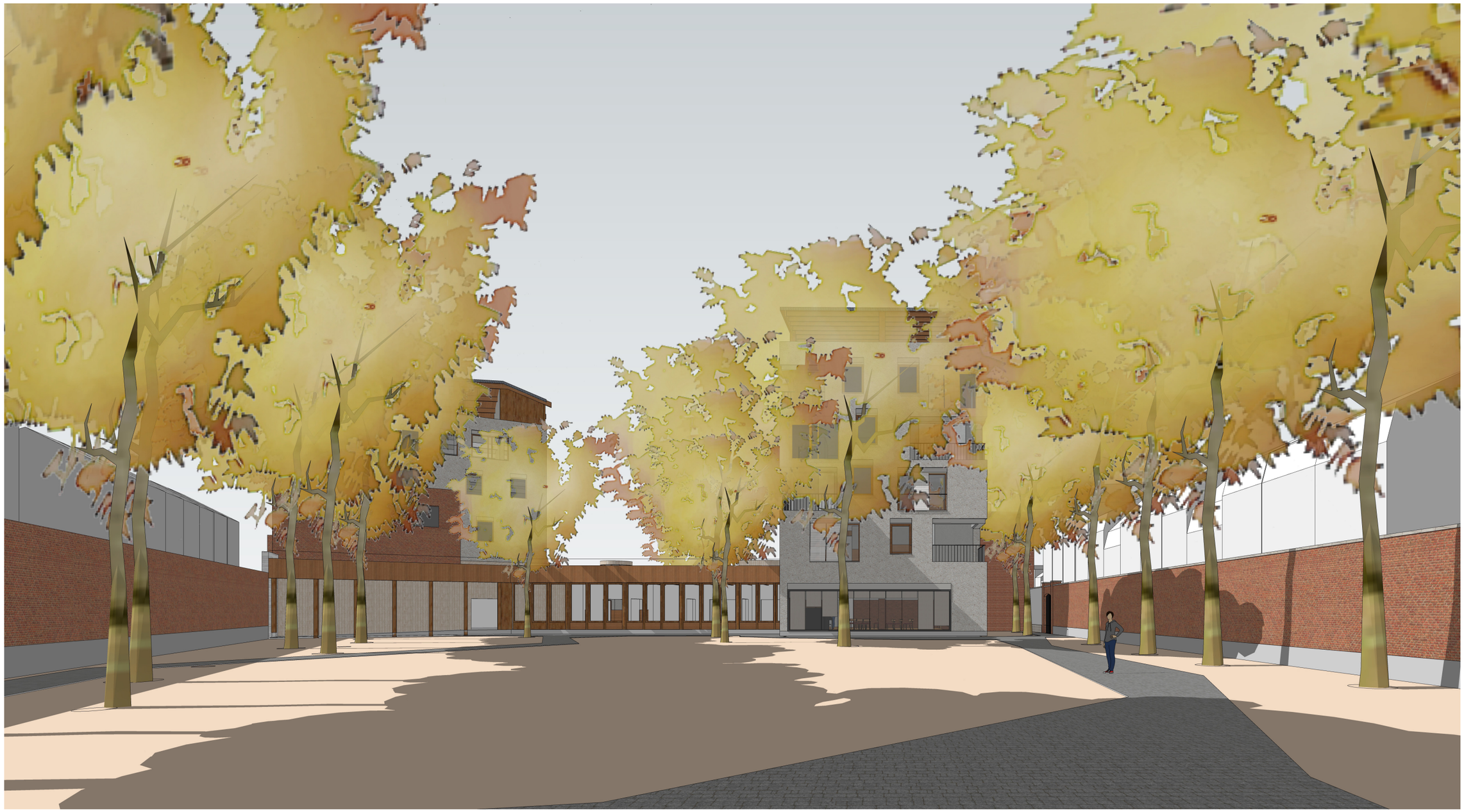
Modula control: reflect back to the context

The Changing Facades & Climate strategies

Spring / Summer

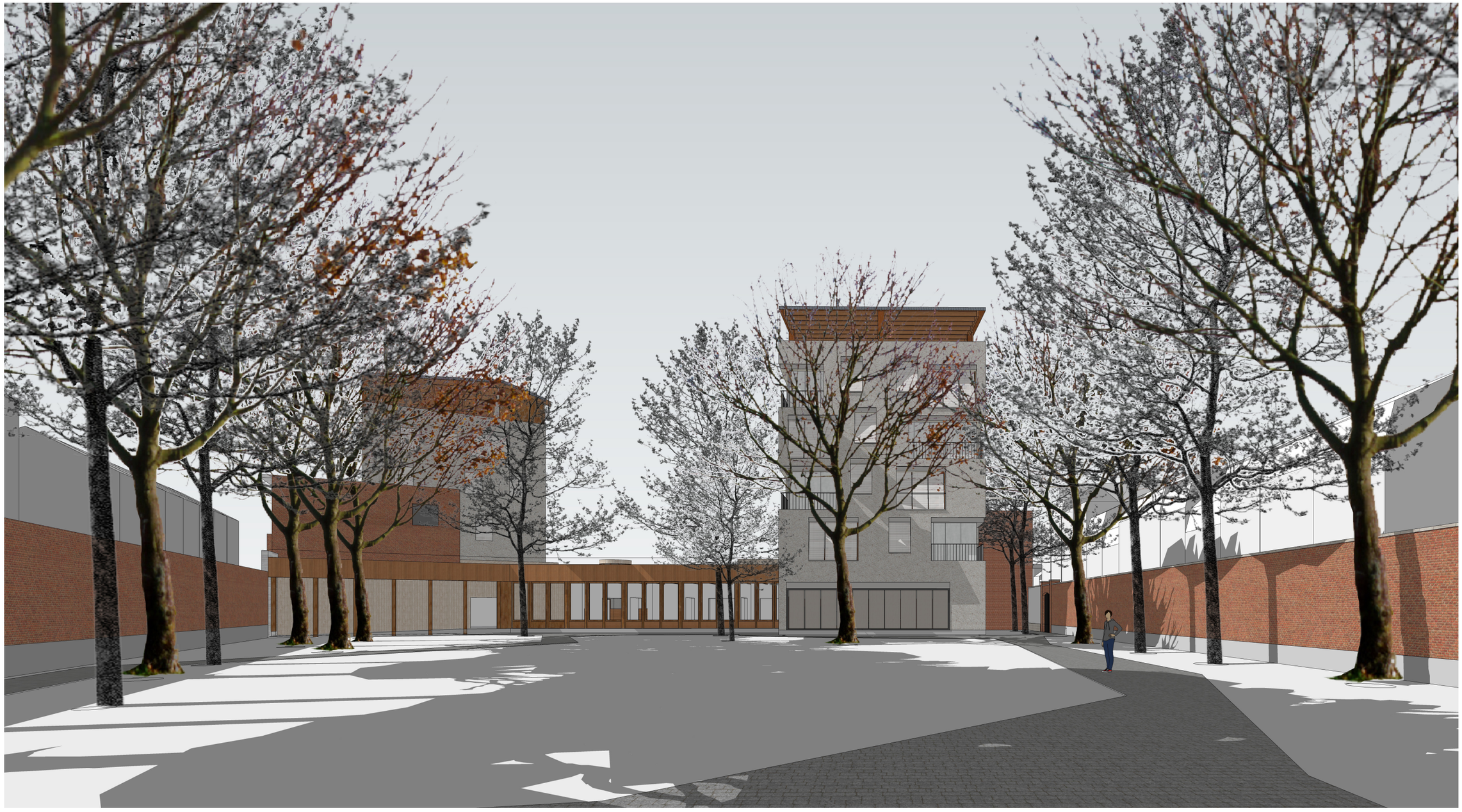
The Changing Facades

Autumn



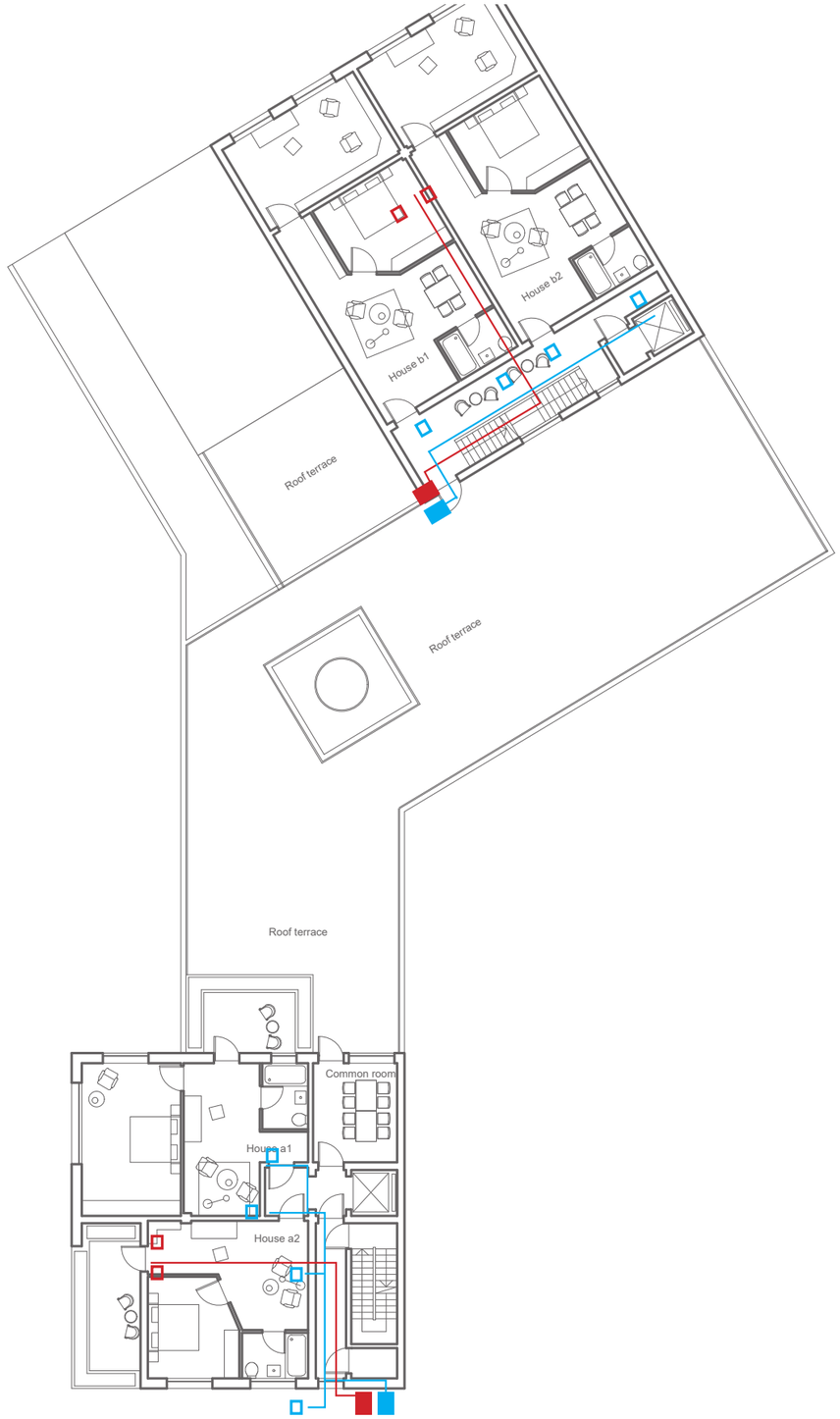
The Changing Facades

Winter / Bad wheater



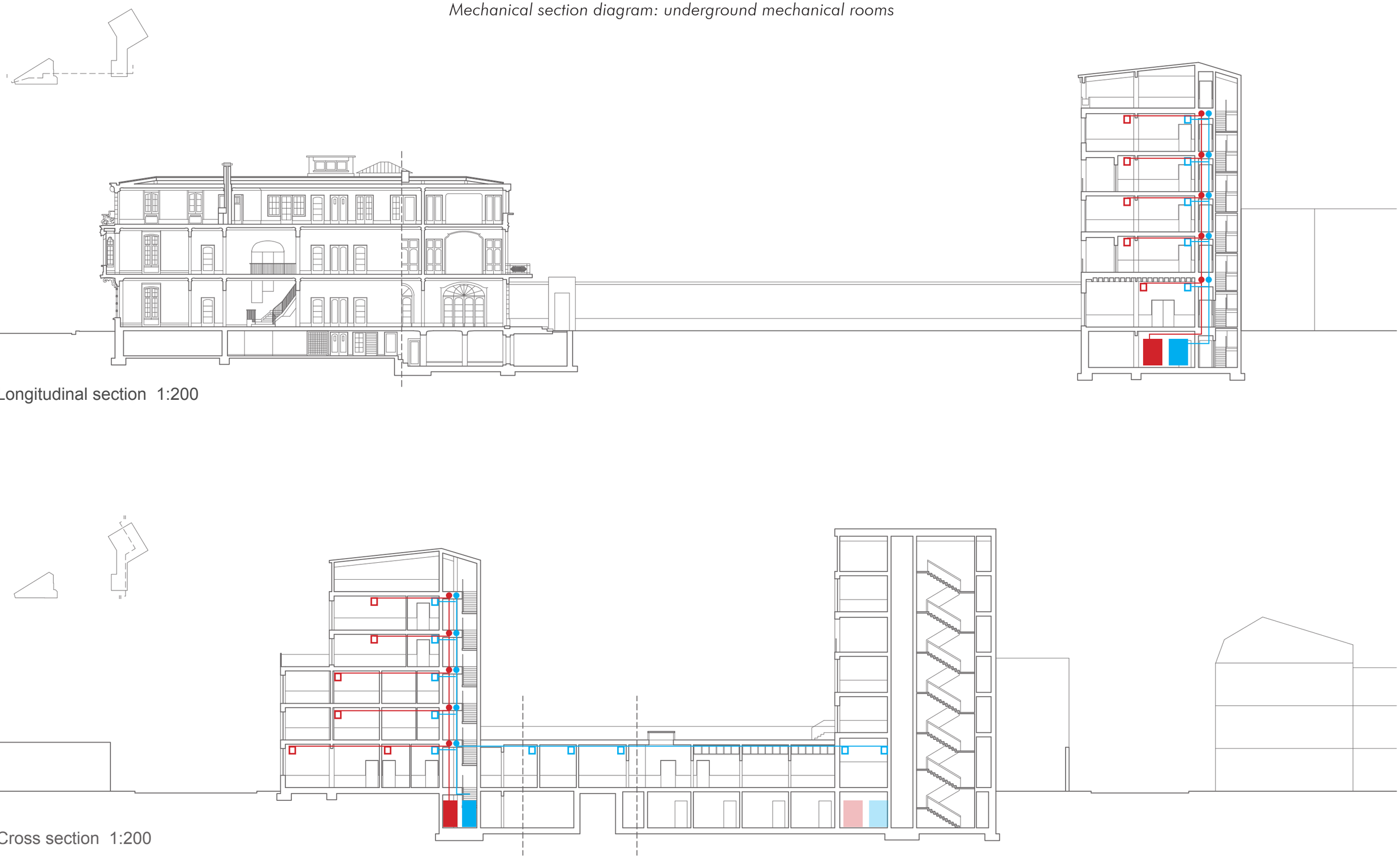
3.5 ventilation

Mechanical ventilation diagram



3.5 ventilation

Mechanical section diagram: underground mechanical rooms

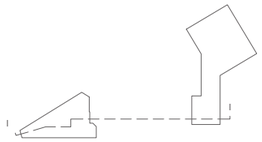


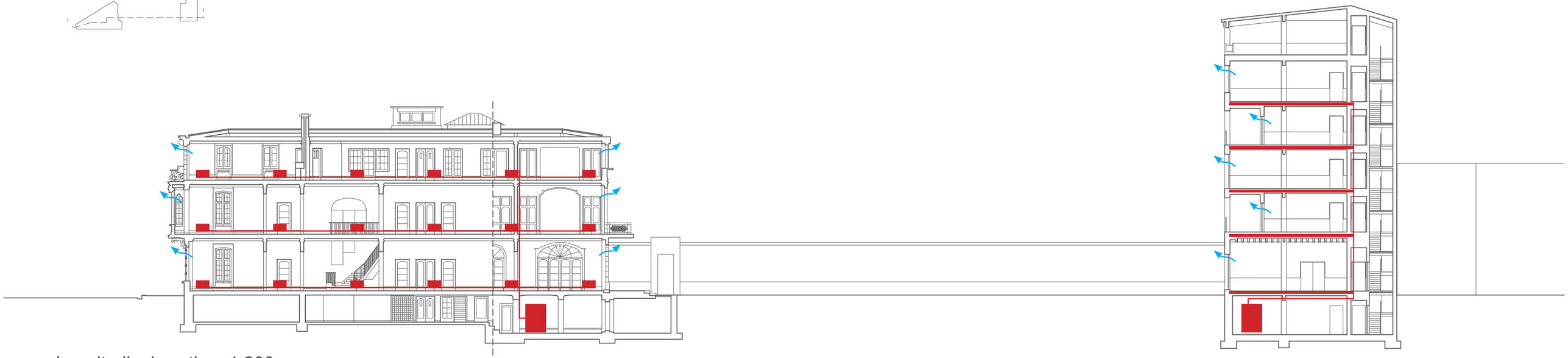
Longitudinal section 1:200

Cross section 1:200

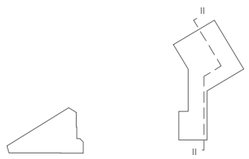
3.5 Heating / Cooling

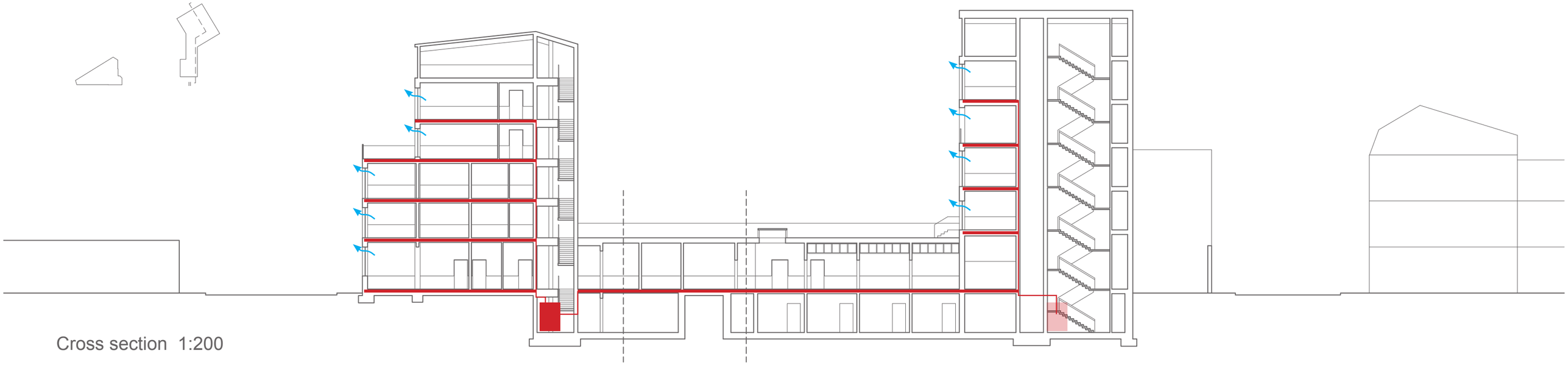
Old villa: radiators New building: floor heating Both passive cooling





Longitudinal section 1:200





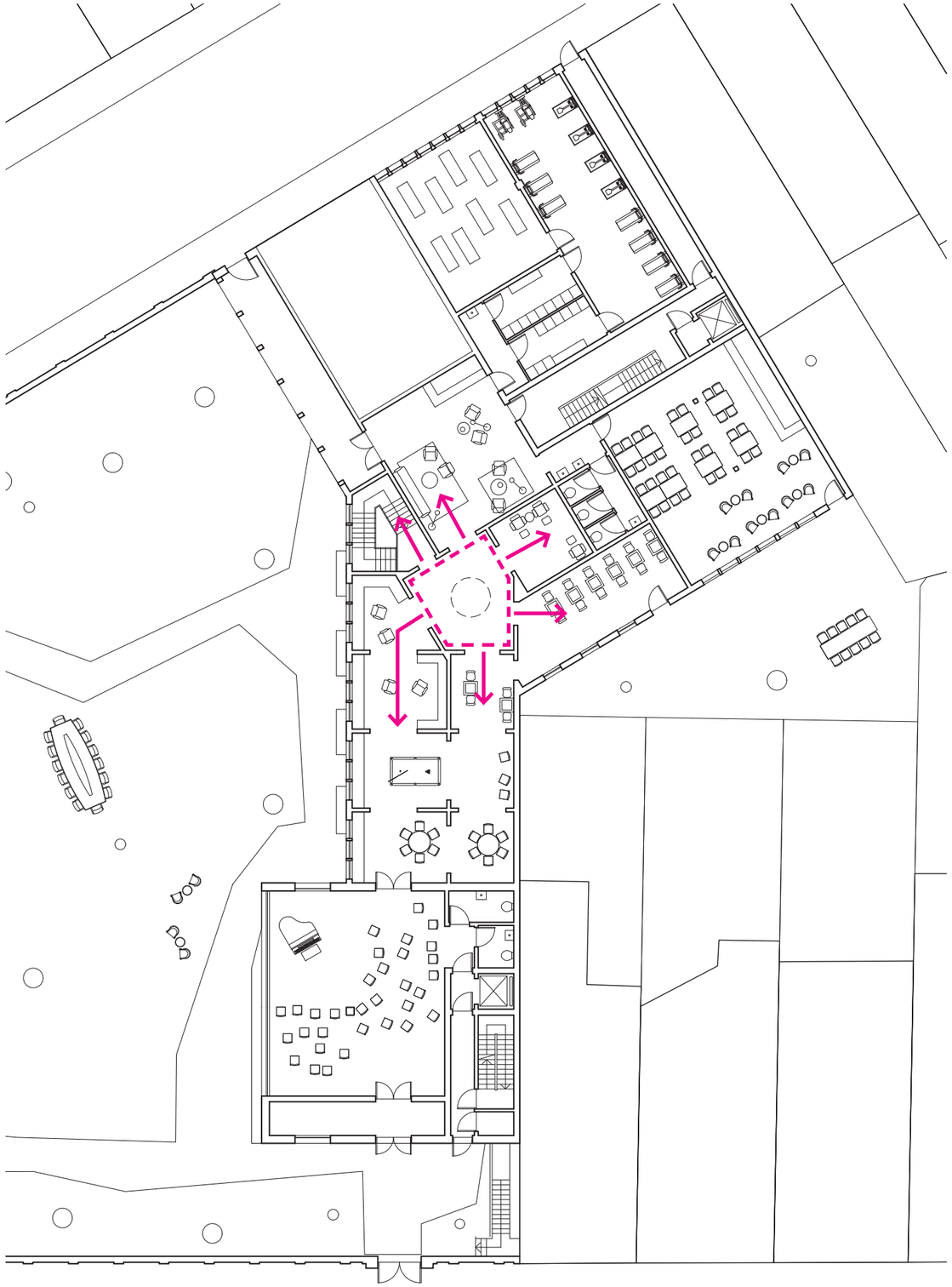
Cross section 1:200

04　City Room

How intimate atmosphere is created

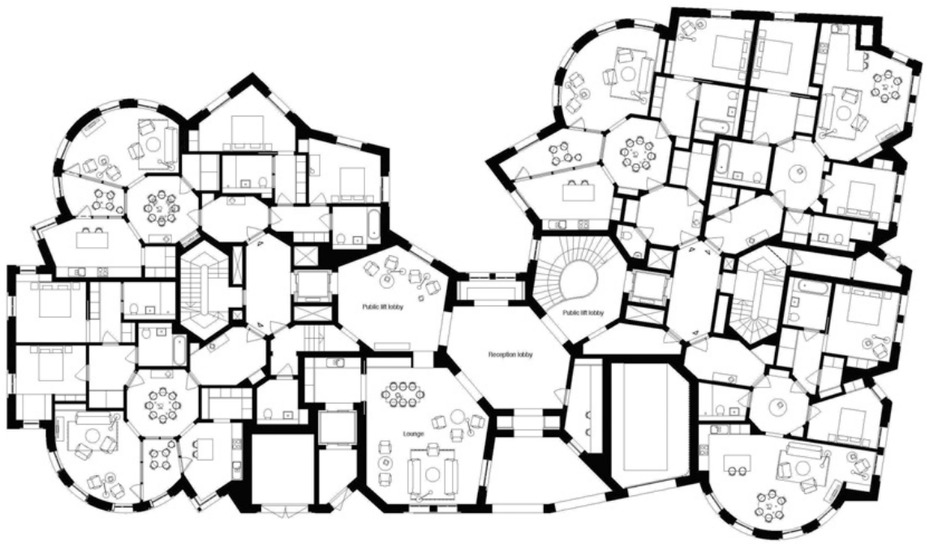
The Rooms

Application of thoroughfare rooms



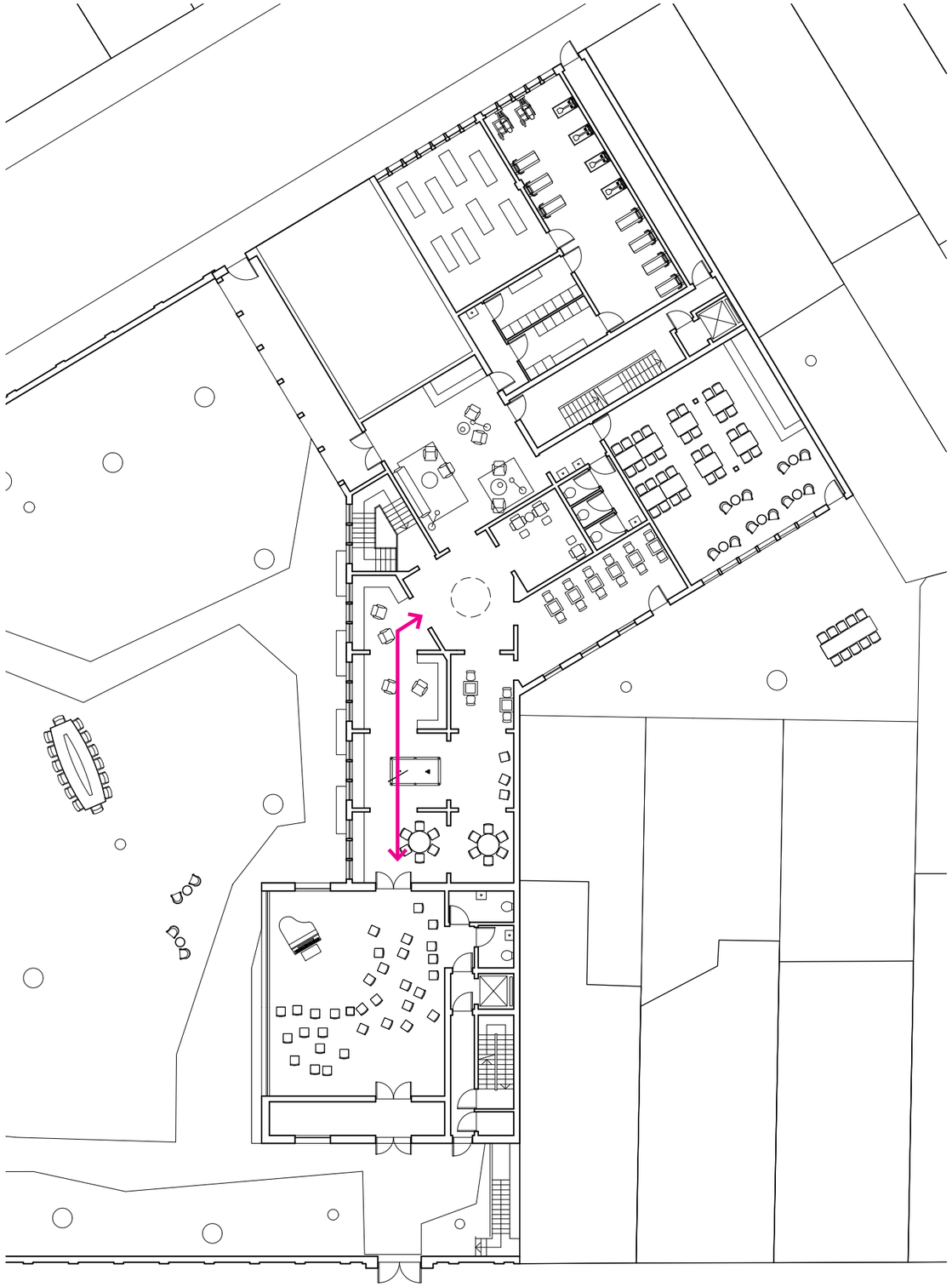
The Central room

Central room as the knot connecting with the matrix of rooms



Reference: Urban Housing, Hampstead, by Sergison Bates

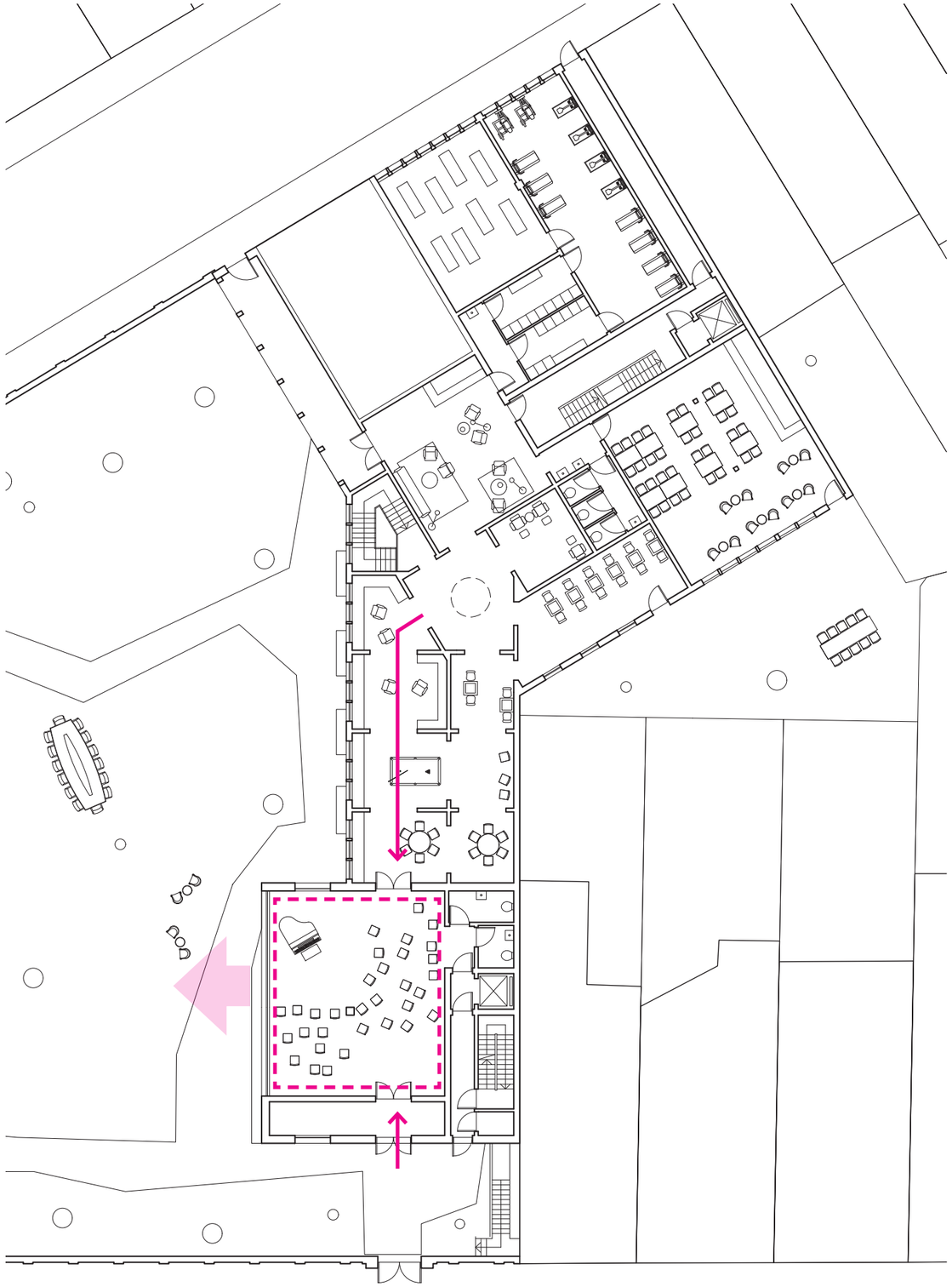
Center hall of the rooms



The Sequence

Sequence of room as enfilade
Used as hobby room/ living room

Enfilade

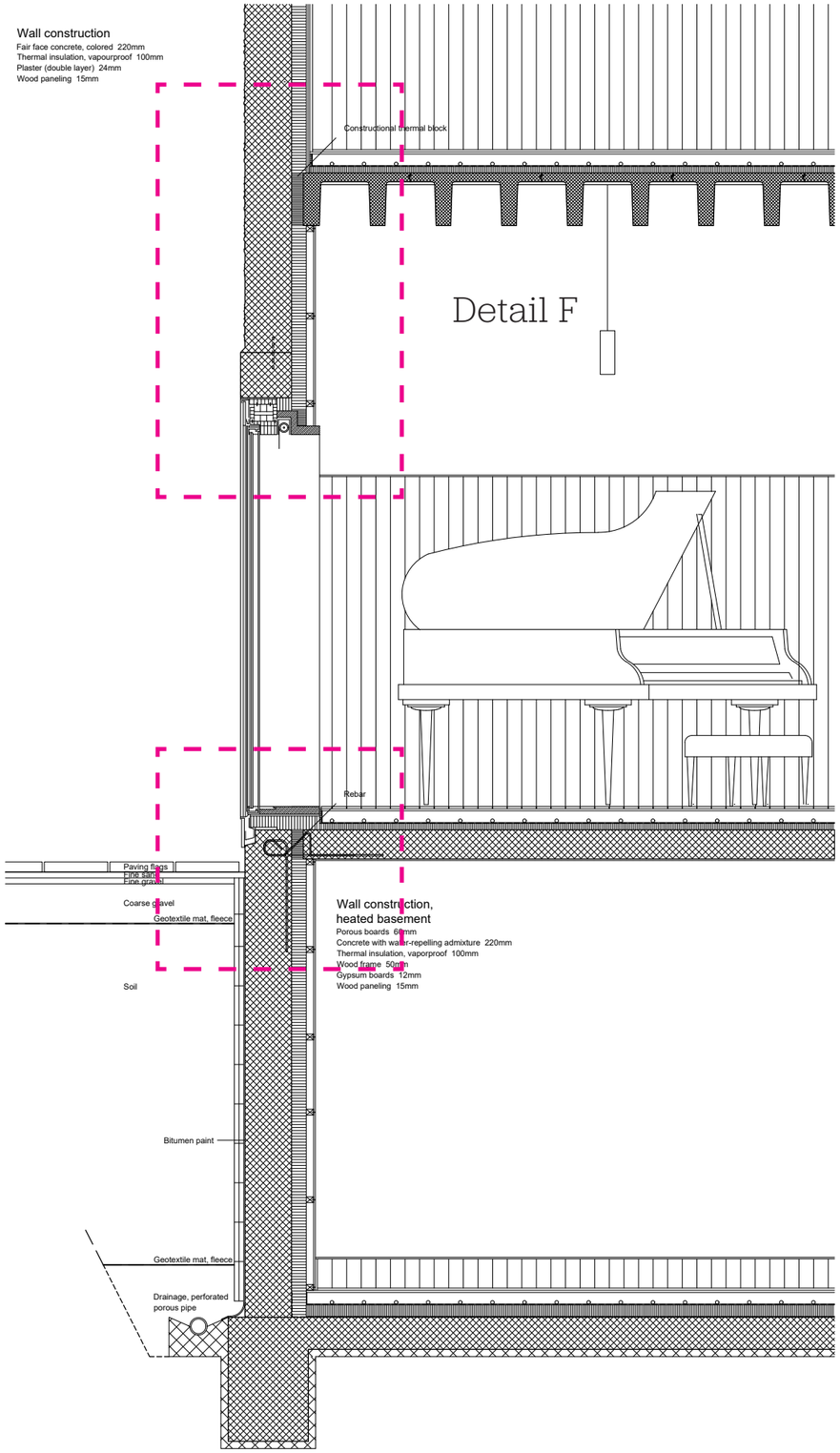


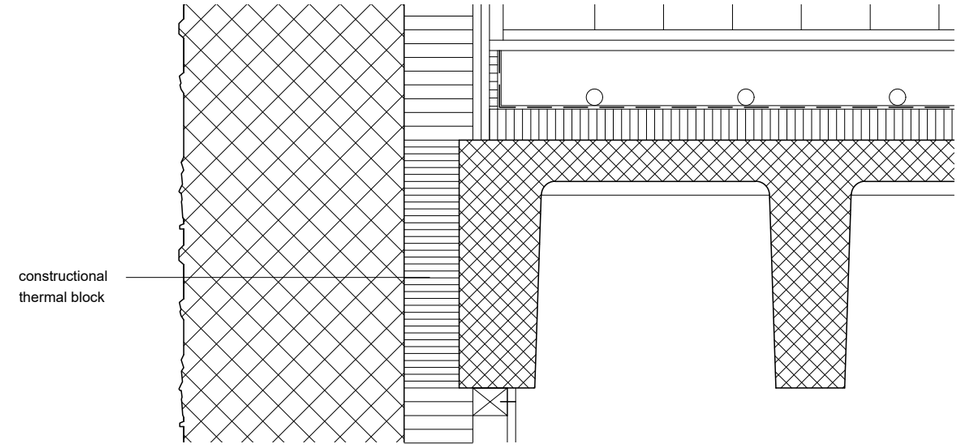
The Chamber

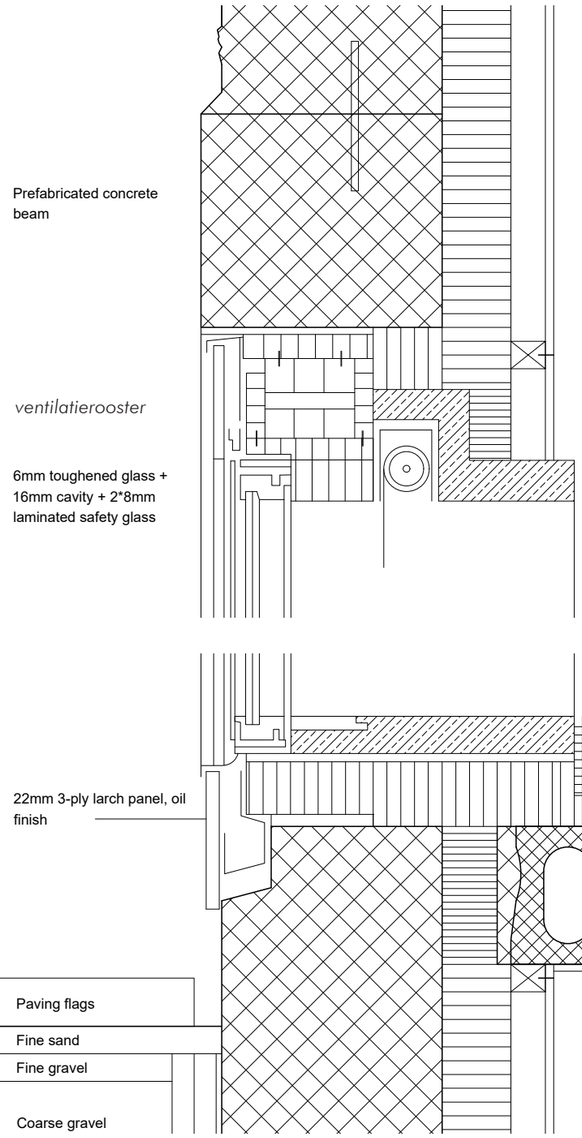
Chamber hall (multifunctional events venue) as the end point of the enfilade sequence (or the starting point in another direction)

Spatial diagram chamber hall

Accoustic / structural consistency
Embedded in wooden enclosure
see / touch





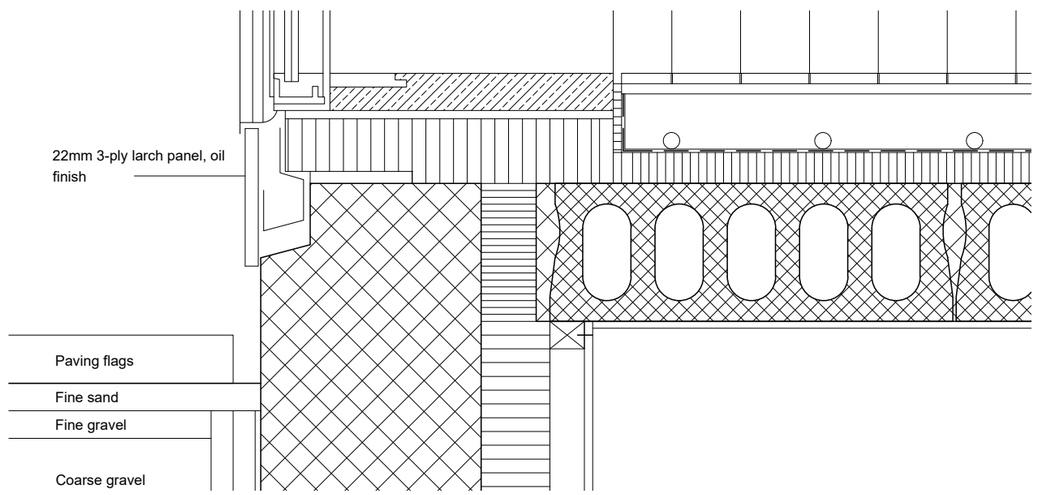


Floor construction, Ground floor

Stone floor tiles 15mm
Mortar bed 15mm
Screed with underfloor heating 80mm
Separating layer 1mm
Impact sound insulation 40mm
Ribbed concrete floor (prefab) 360mm
beam: 300*120mm
Wool felt 20mm

Wall construction

Fair face concrete, colored 310mm
Thermal insulation, vapourproof 100mm
Wood frame 50mm
Gypsum boards 12mm



TDI

The experiences from urban to interior

Entrance Colonade

Under the trees

Looking to the villa

Roof terrace

Thank you!