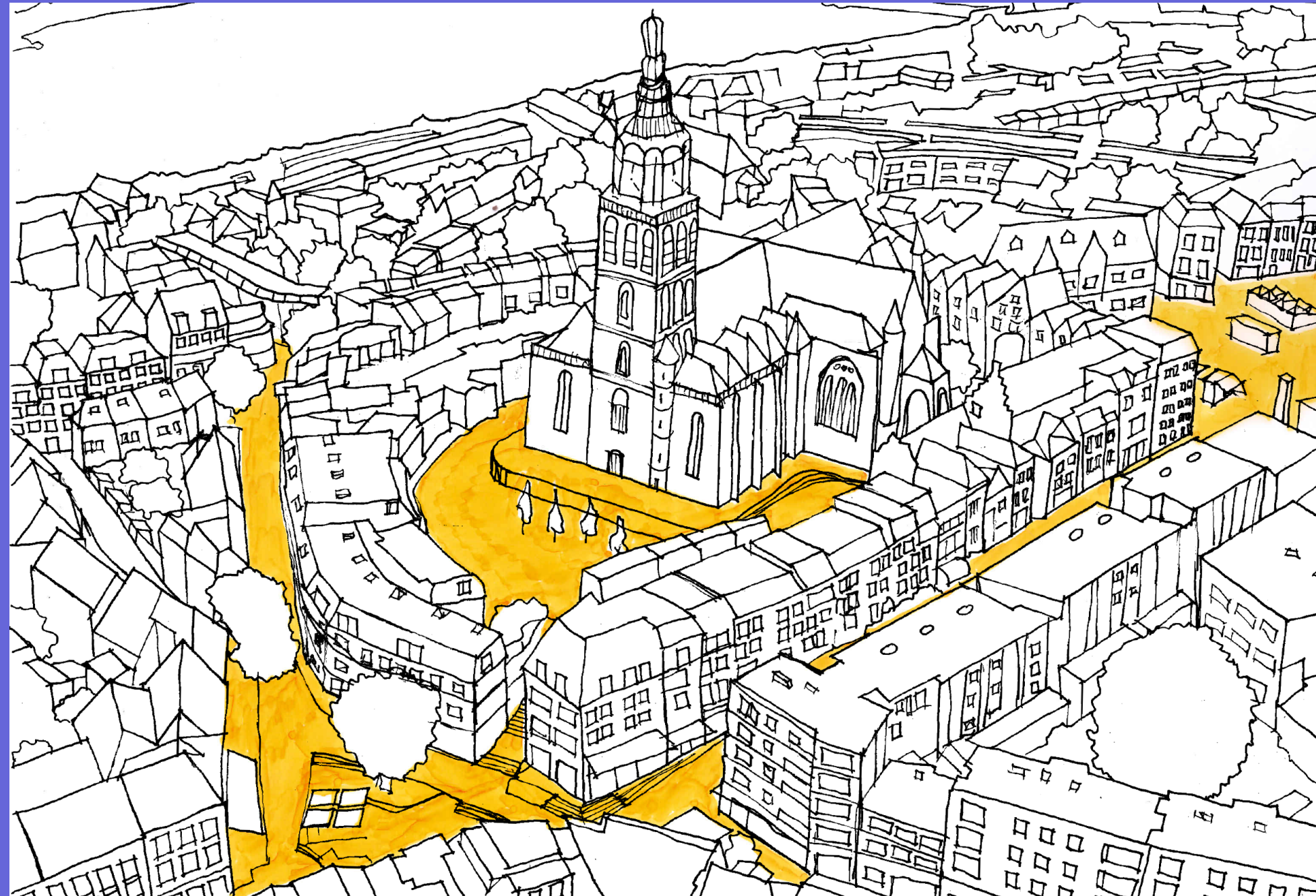


Stanislaus Ruff 5121965

CITYSCHOOL

City Within The City



Urban Architecture - Exploring Nijmegen

Graduation Studio 2021/2022

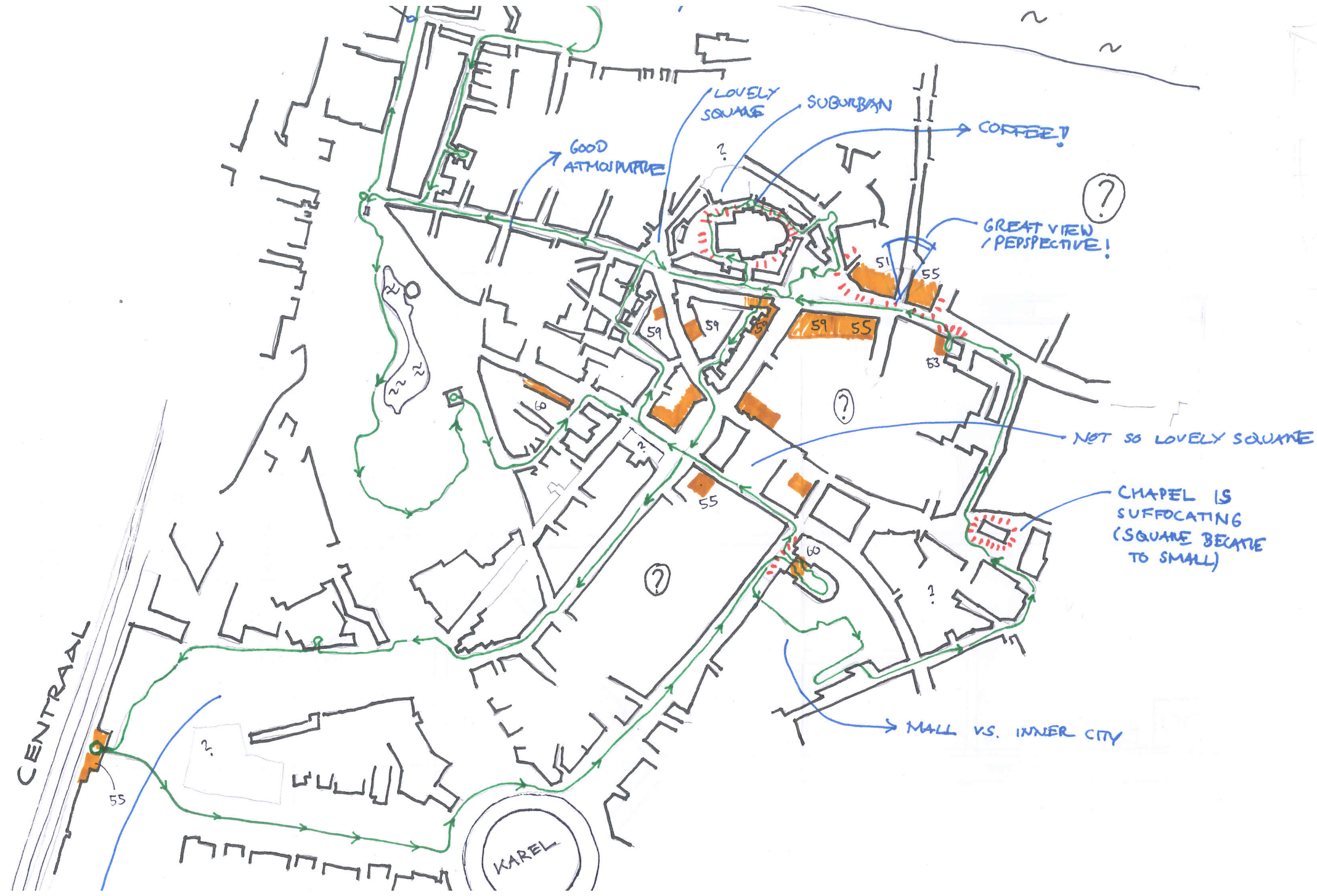
01 THE SITE

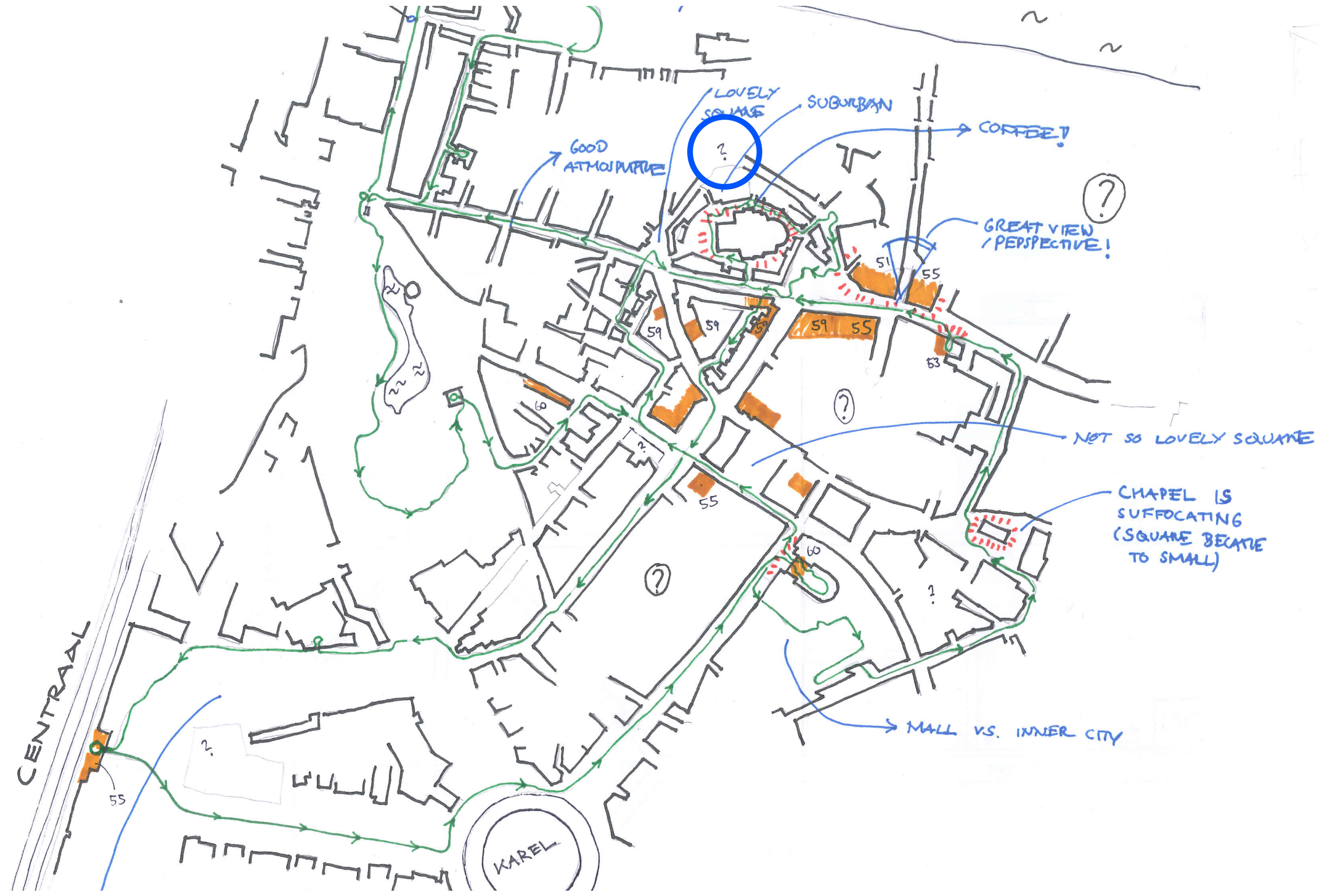
- 02 A HISTORICAL COMPARISON
- 03 THE CITY SCHOOL TODAY
- 04 WHY EXPAND?
- 05 PROGRAM
- 06 ARCHITECTURAL CONCEPT
- 07 MODERN LEARNING
- 08 BUILDING DESIGN
- 09 CLIMATE
- 10 STRUCTURE
- 11 MATERIALITY



NIJMEGEN 1945 | A City Destroyed









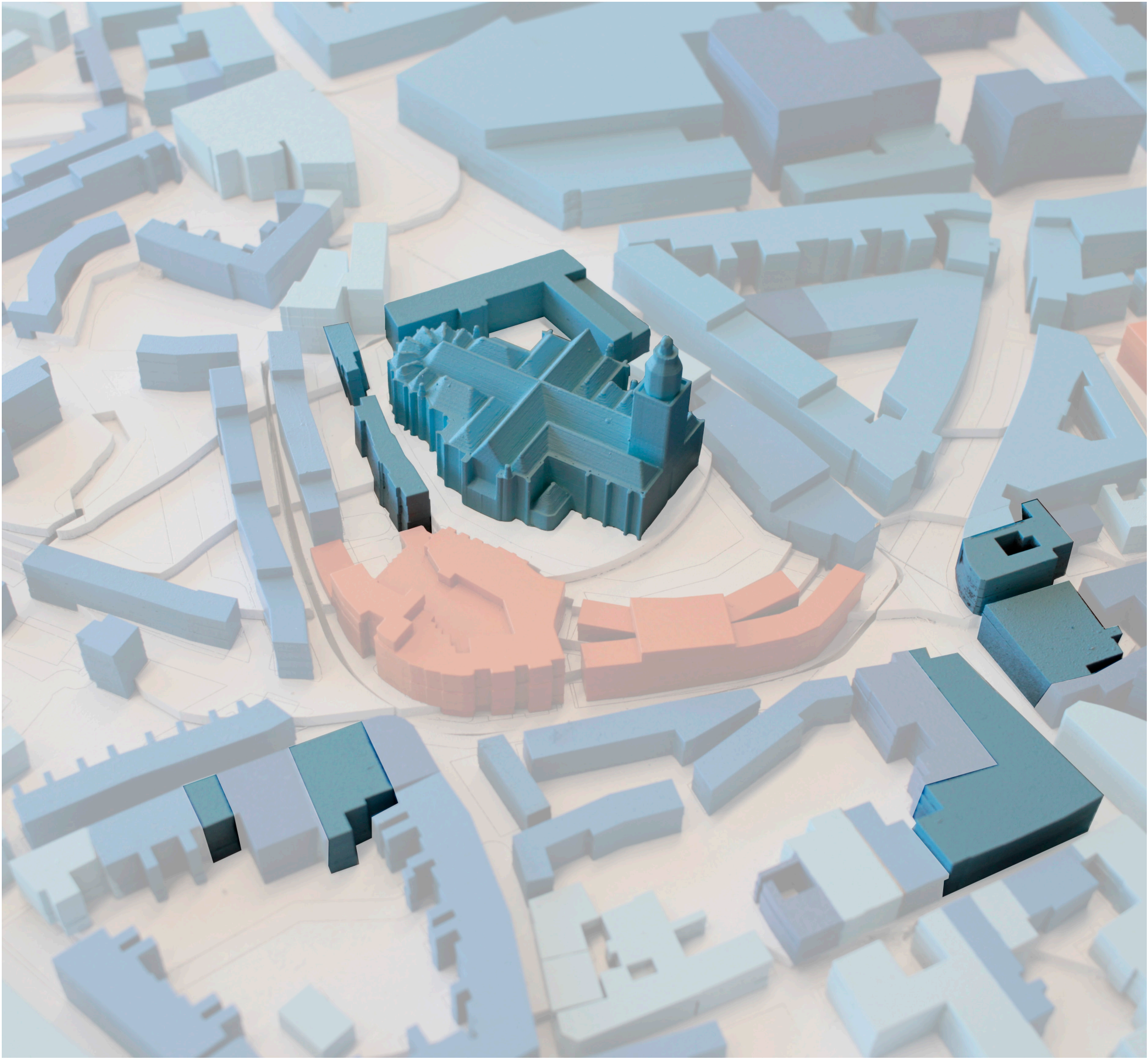
SITE LOCATION | Figure Ground Plan 1:1000



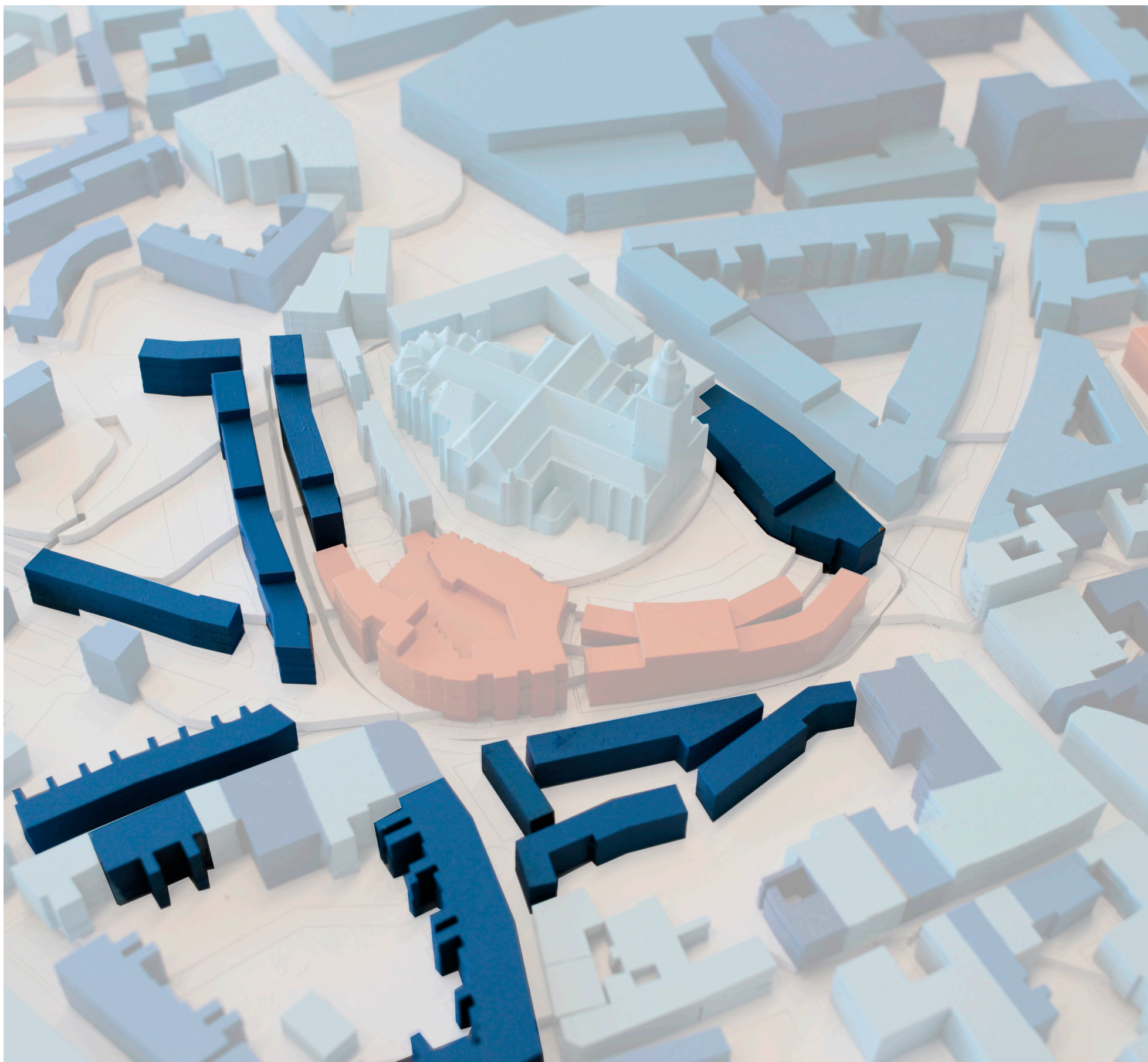
CITYSCHOOL PETRUS CANISIUS | Built 1980

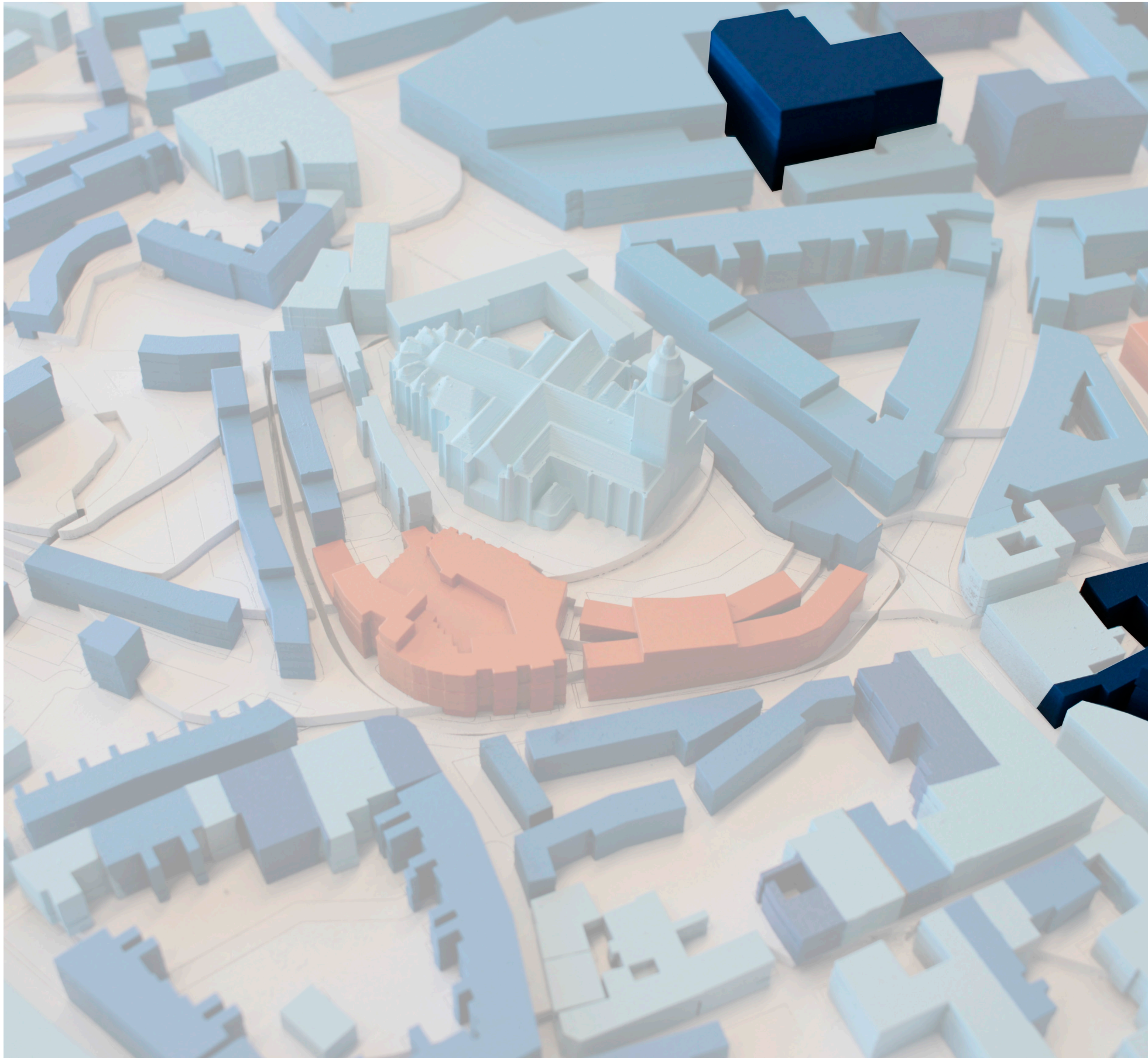


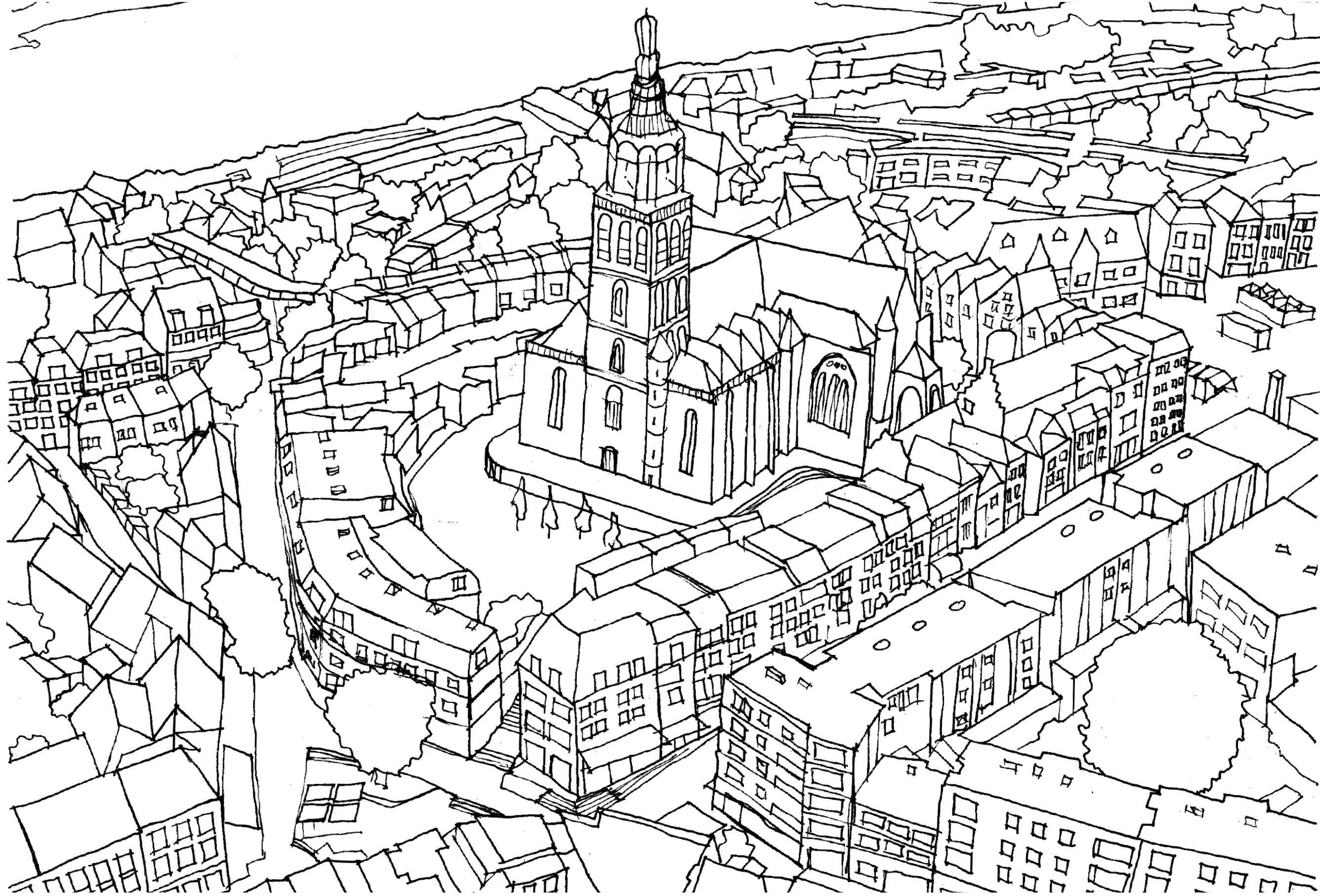
FOUR LAYERS OF TIME

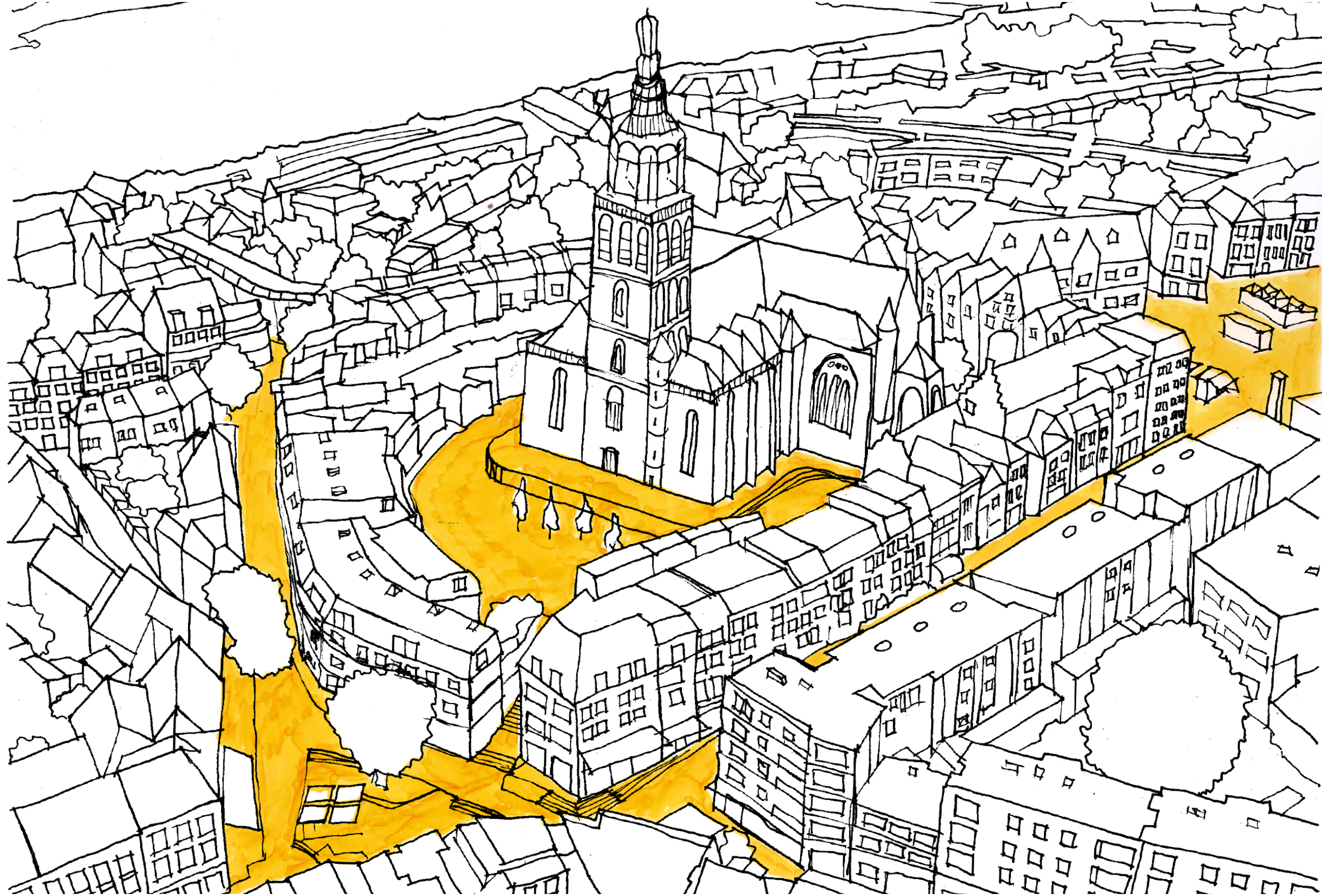












CHURCHYARD - PUBLIC SPACE | Sketch

01 THE SITE

02 A HISTORICAL COMPARISON

03 THE CITY SCHOOL TODAY

04 WHY EXPAND?

05 PROGRAM

06 ARCHITECTURAL CONCEPT

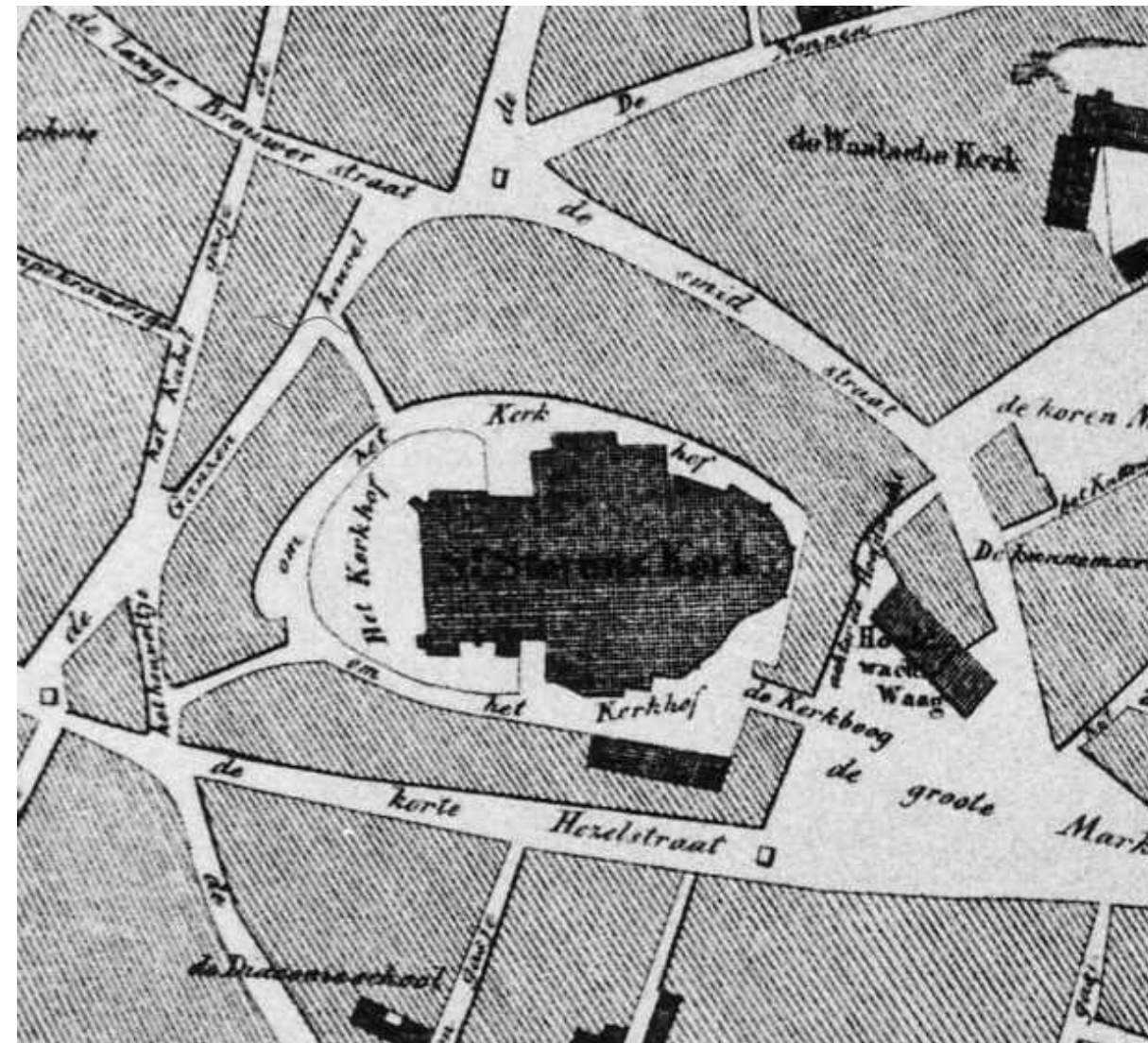
07 MODERN LEARNING

08 BUILDING DESIGN

09 CLIMATE

10 STRUCTURE

11 MATERIALITY



1925 |

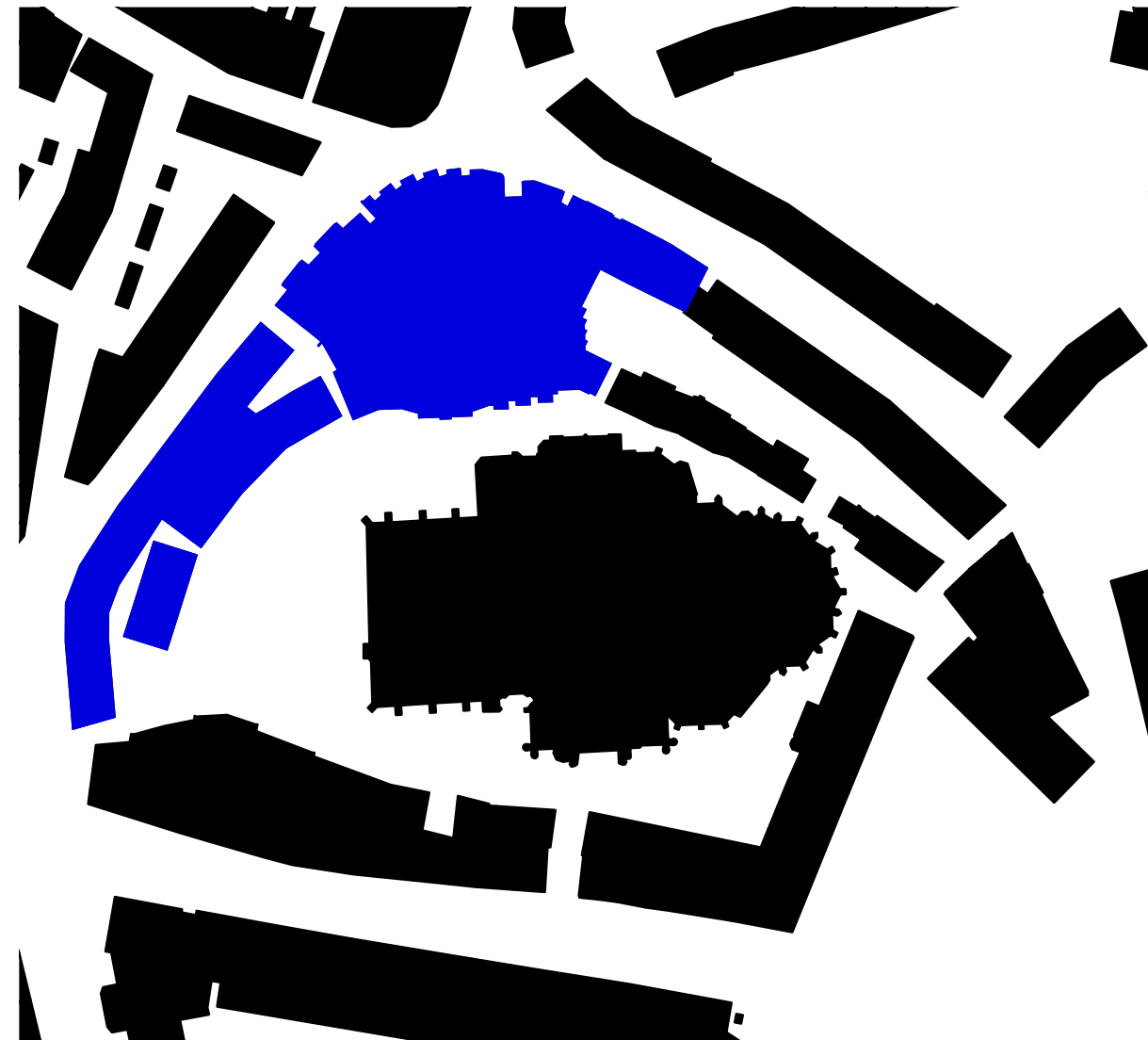


1945



1946

1979





SMIDSTRAAT - THEN AND NOW | Loss of Streetlife





PRE-WAR | Open Plinth



POST-WAR | Closed Plinth

01 THE SITE

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06 ARCHITECTURAL CONCEPT

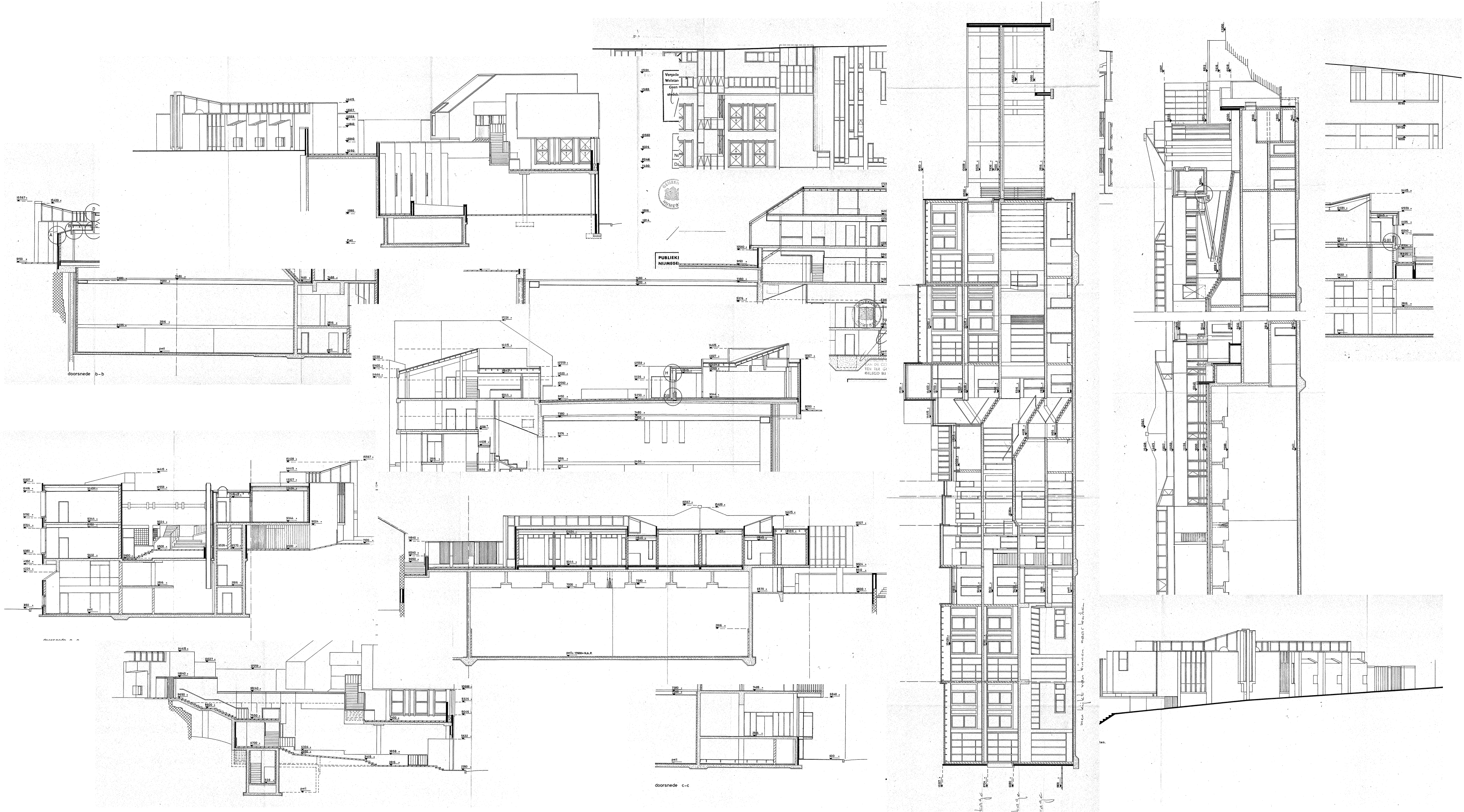
07 MODERN LEARNING

08 BUILDING DESIGN

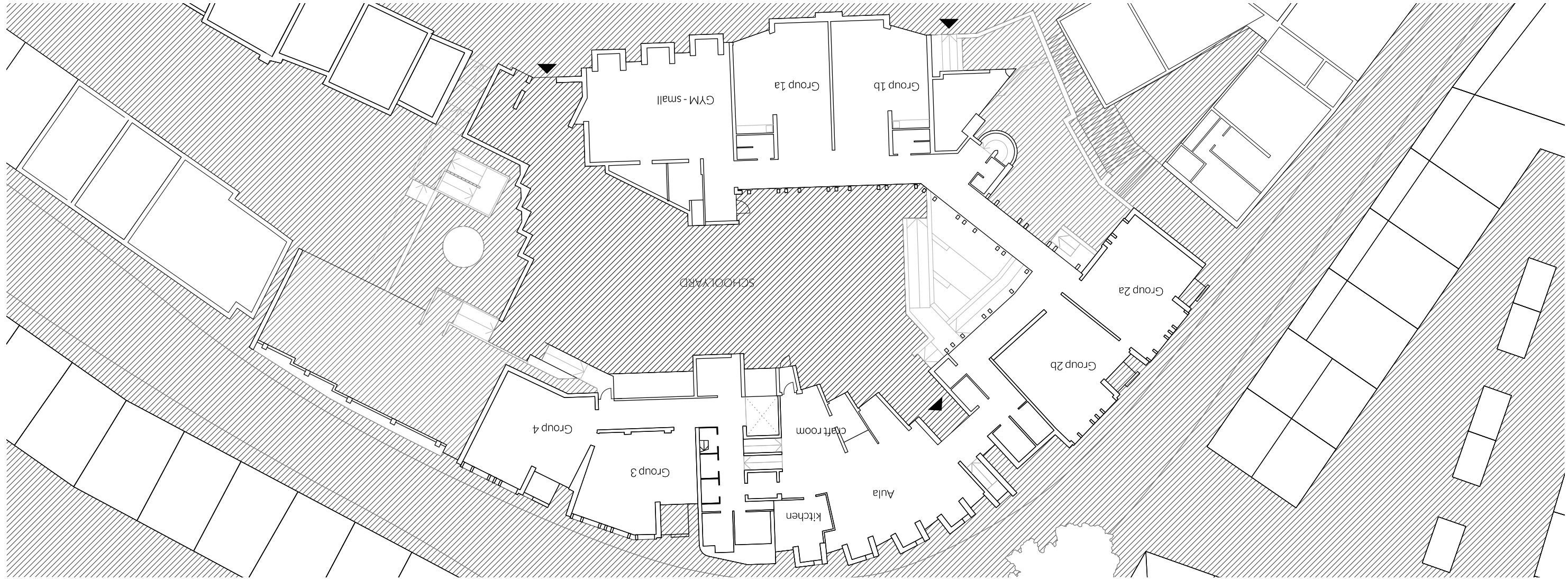
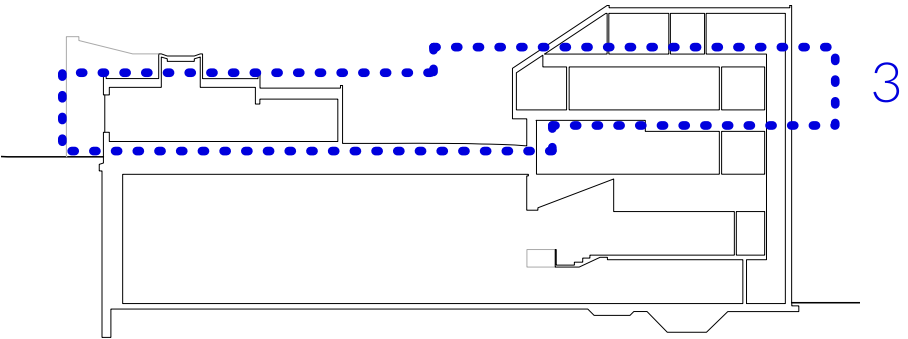
09 CLIMATE

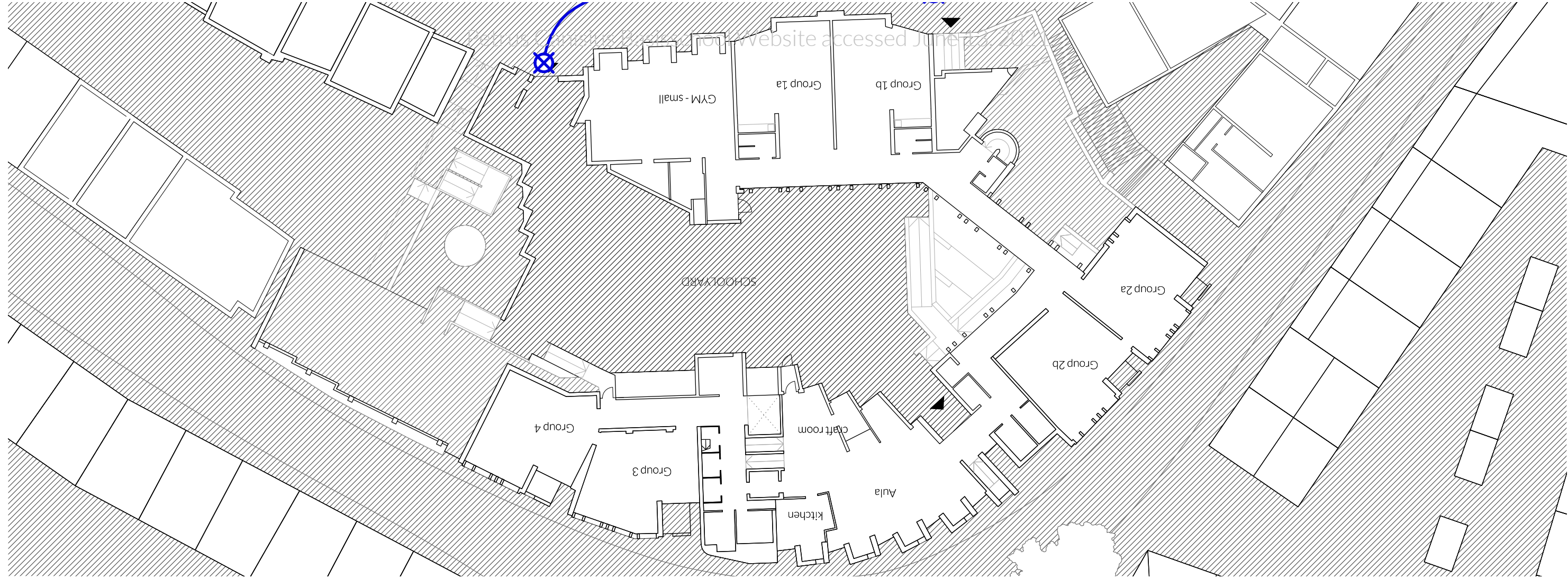
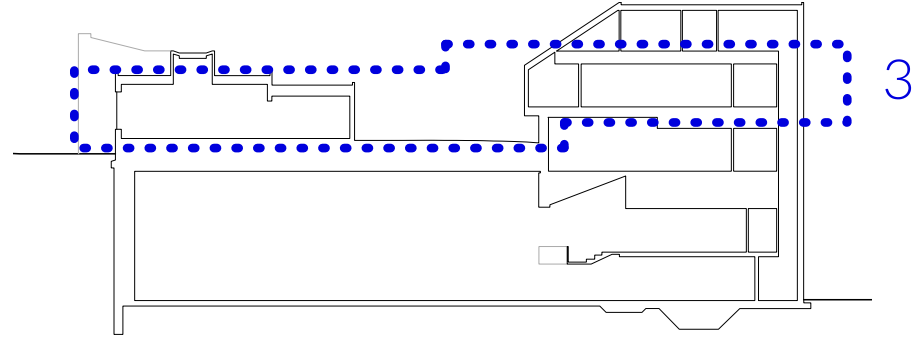
10 STRUCTURE

11 MATERIALITY

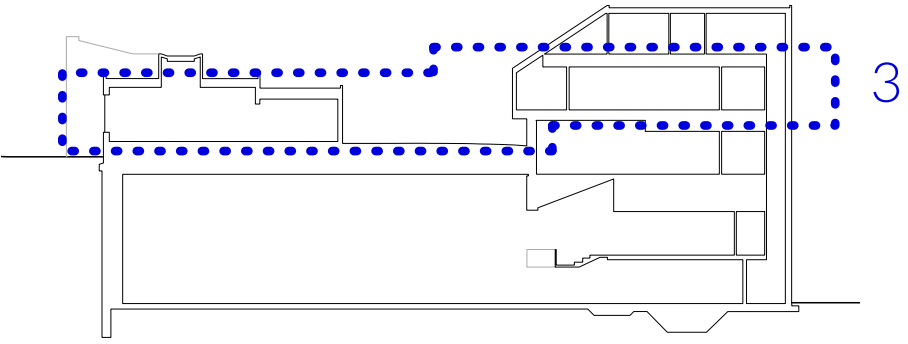
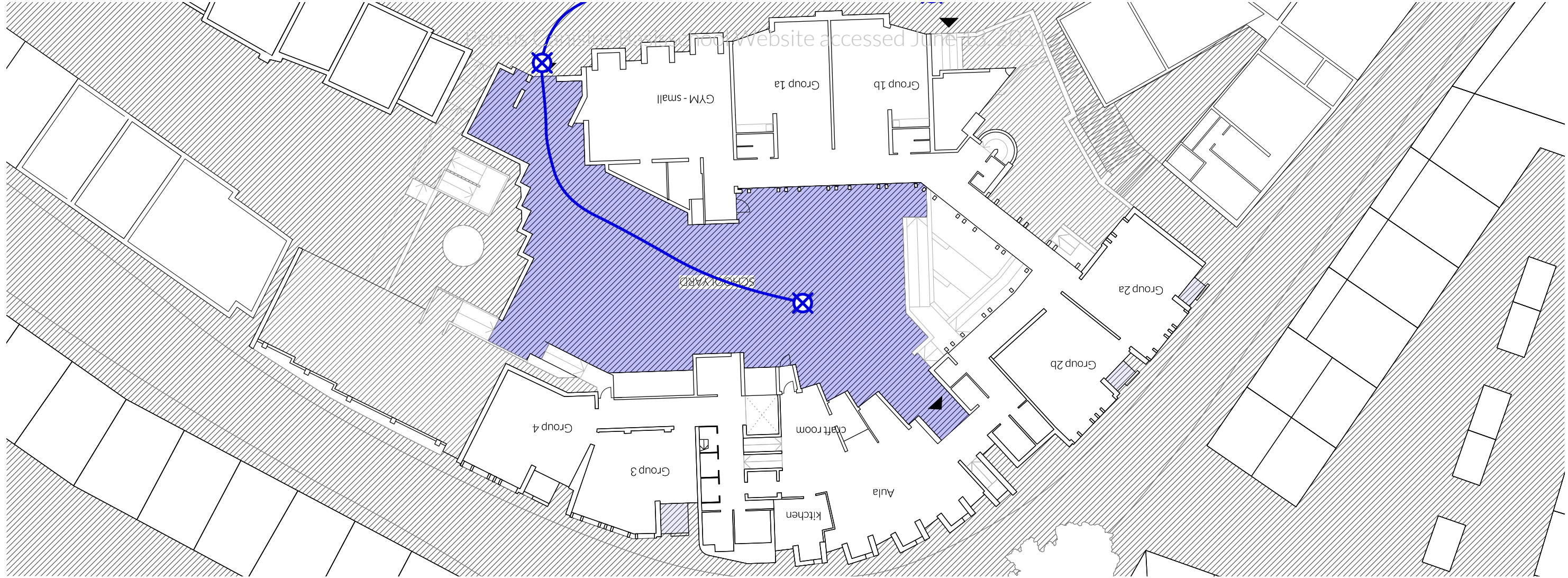


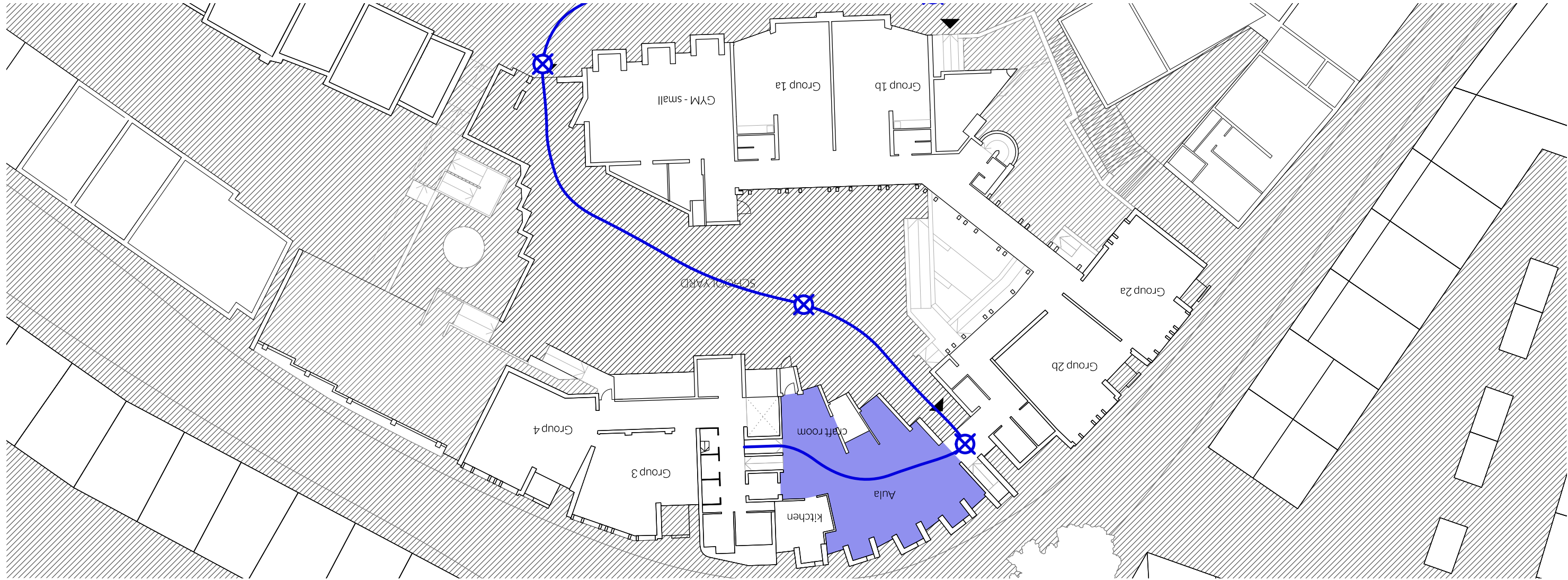
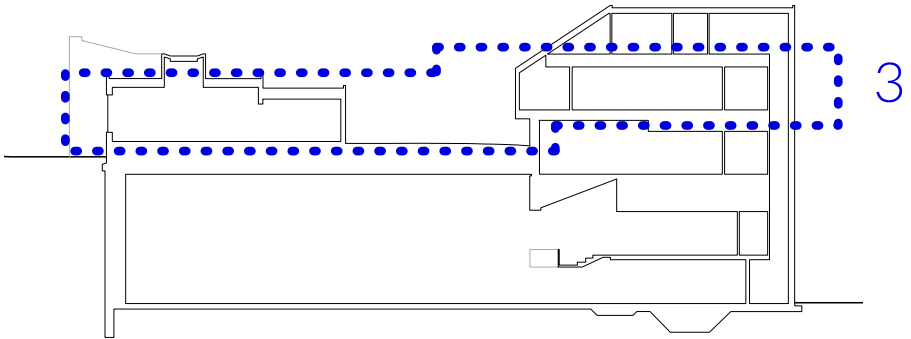


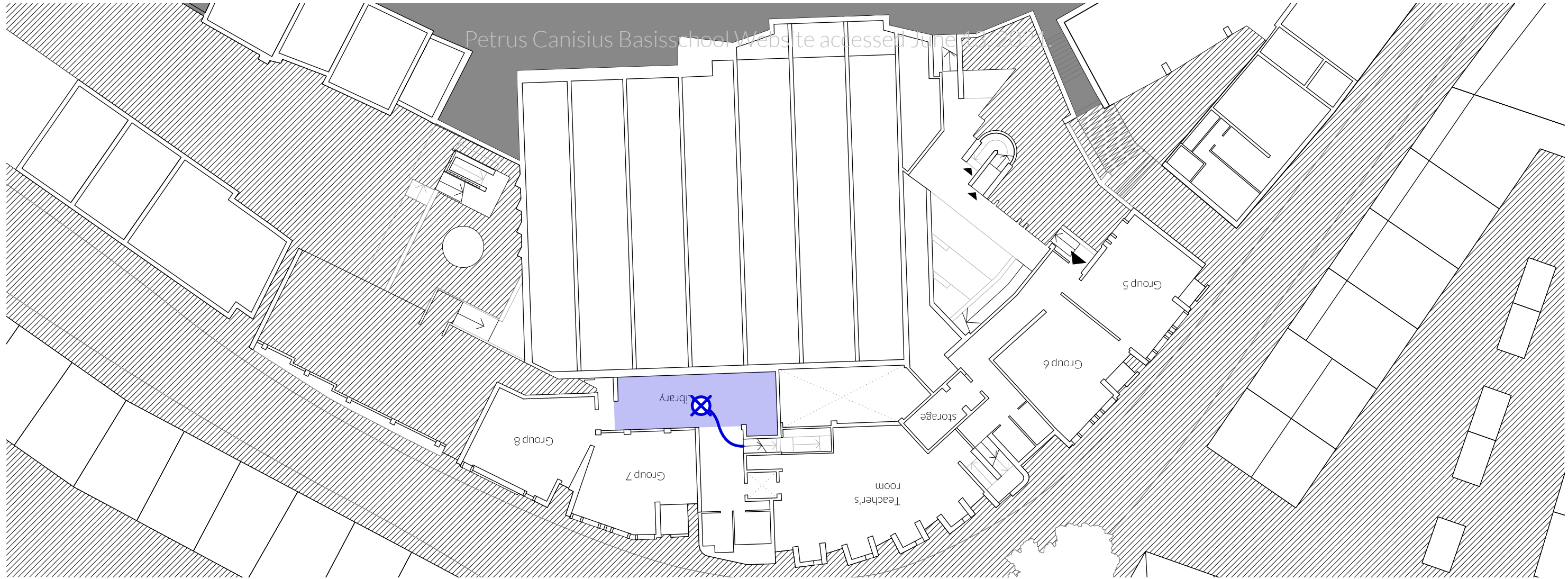
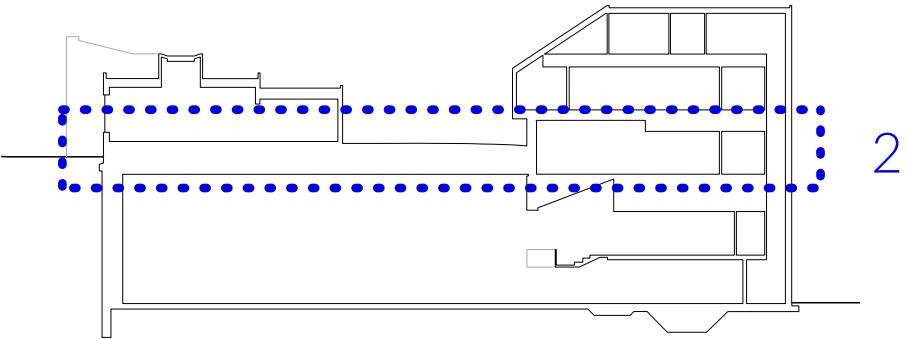


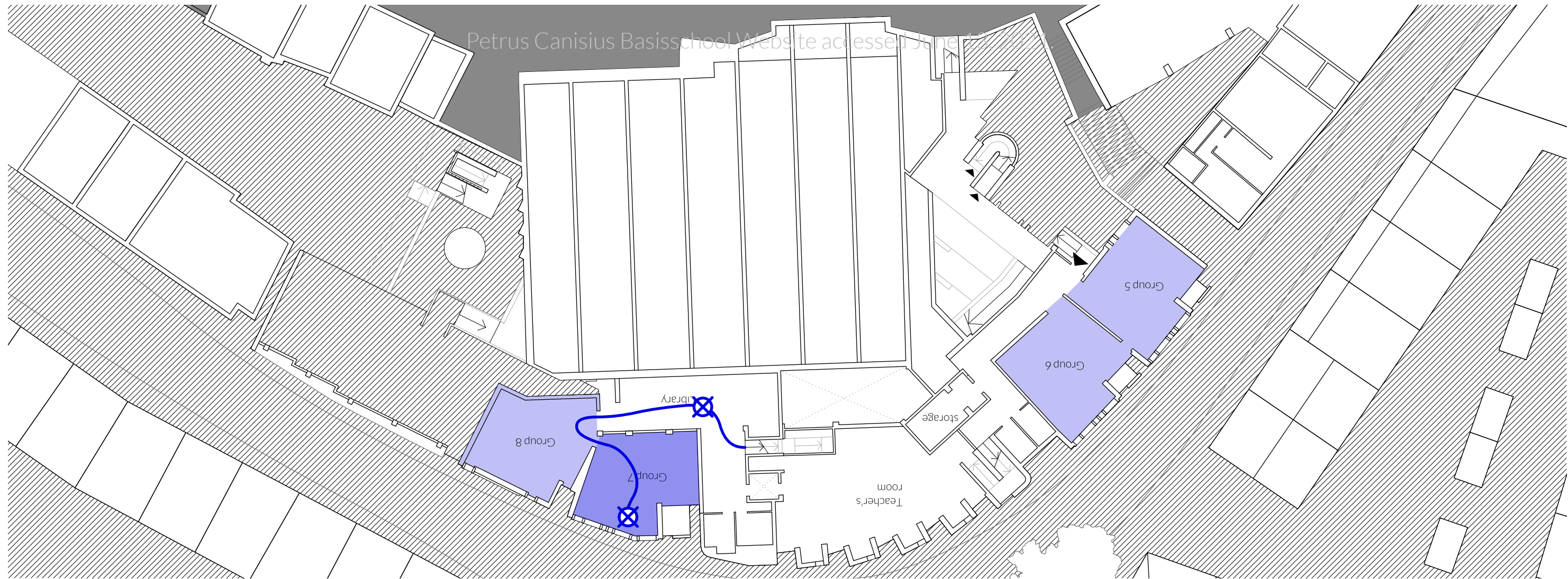
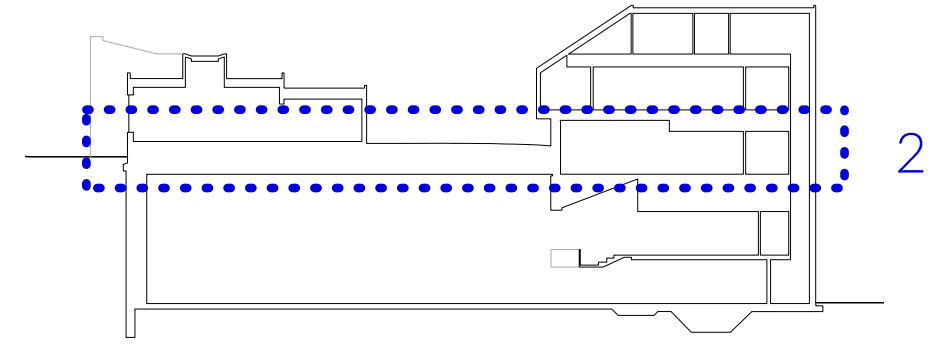


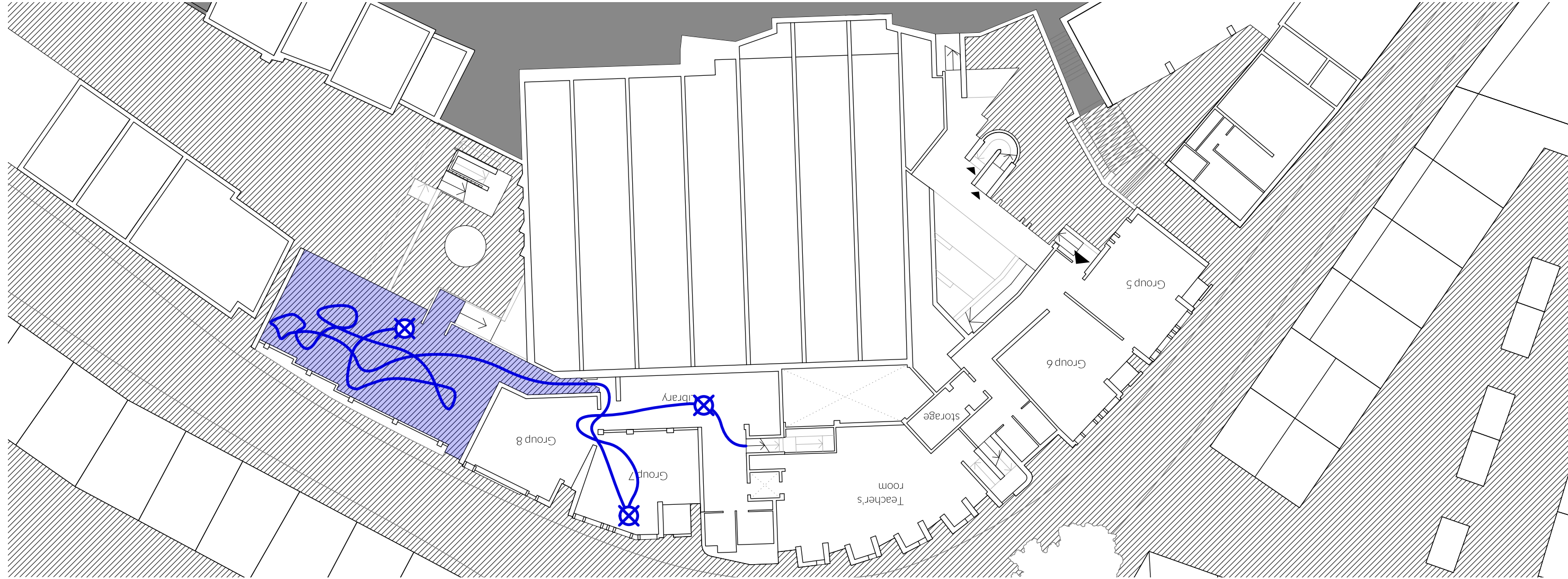
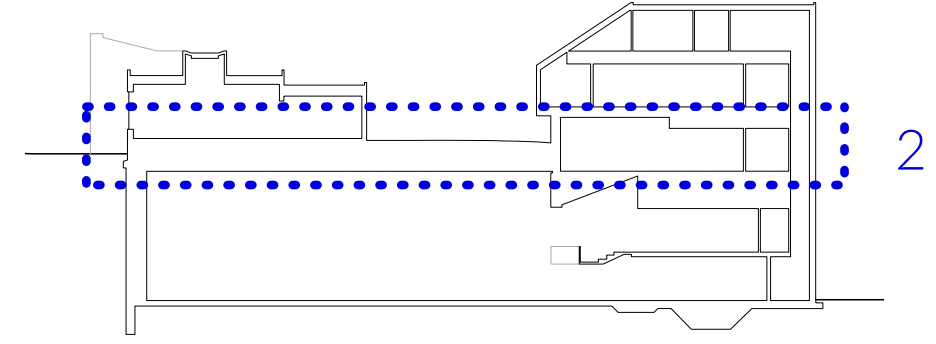
ENTRANCE GATE











PLAYGROUND ON A TERRACE



NEGATIVE

- Underutilized and neglected “semi-public” zone and access



NEGATIVE

- Underutilized and neglected “semi-public” zone and access
- Schoolyard vast and grey



NEGATIVE

- Underutilized and neglected “semi-public” zone and access
- Schoolyard vast and grey
- Kerkhof building height just one storey



NEGATIVE

- Underutilized and neglected “semi-public” zone and access
- Schoolyard vast and grey
- Kerkhof building height just one storey
- No Green



POSITIVE

- Facade with much more care developed than neighbouring buildings of the 1980s



POSITIVE

- Facade with much more care developed than neighbouring buildings of the 1980s
- Location of the Sportshall makes the best of the topography



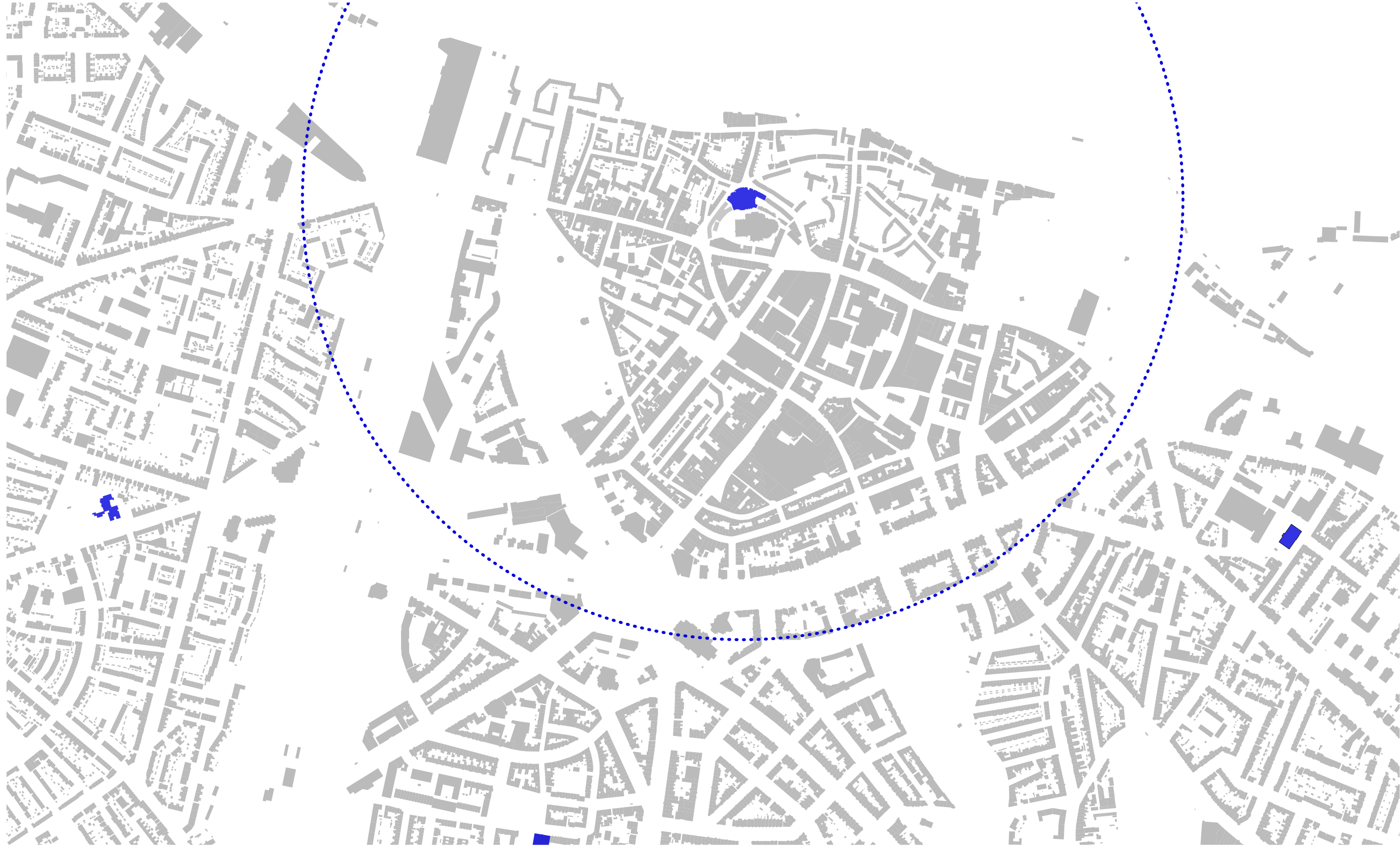
POSITIVE

- Facade with much more care developed than neighbouring buildings of the 1980s
- Location of the Sportshall makes the best of the topography
- Decent height and building envelope

- 01 THE SITE
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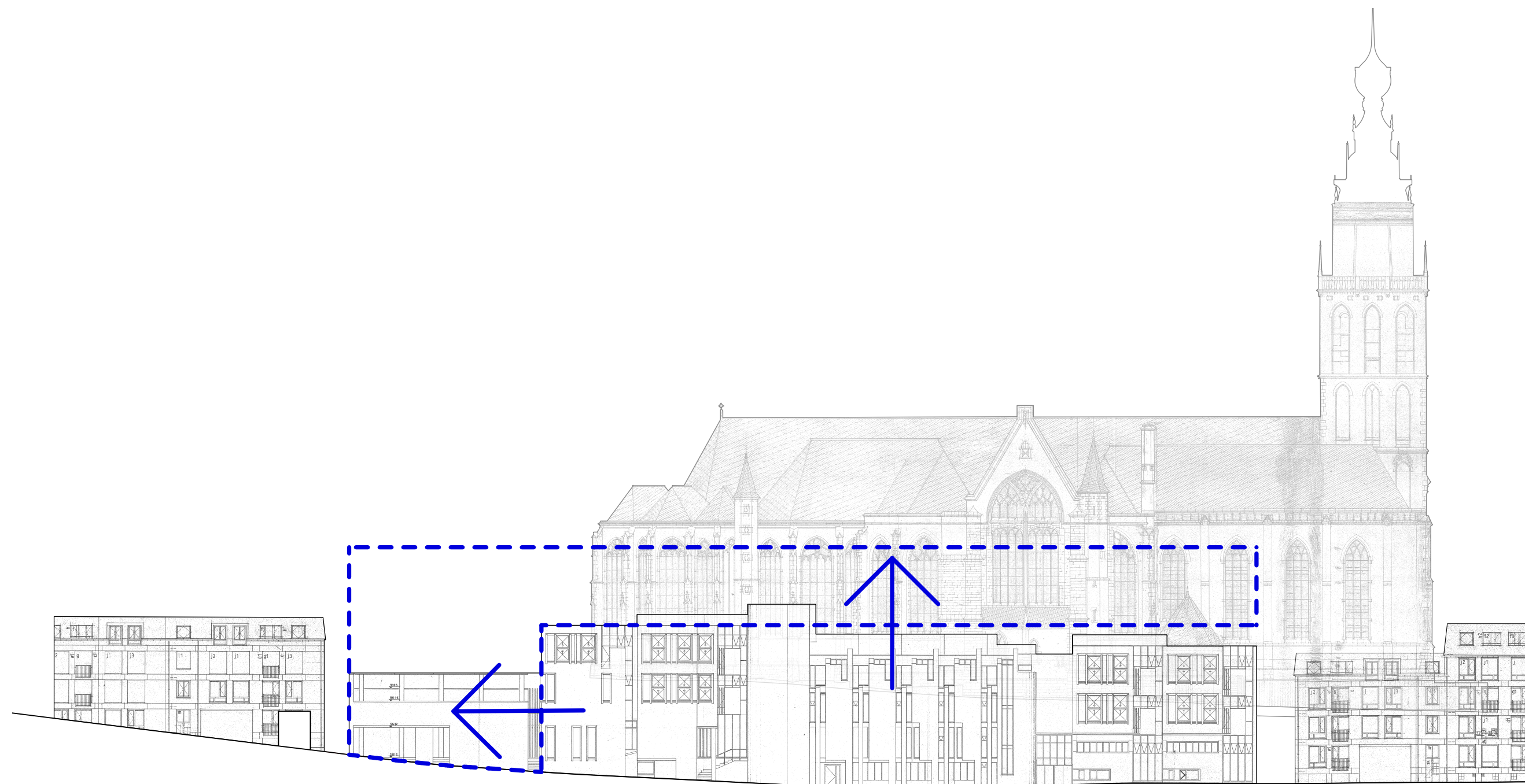




“We currently have about 225 students. Petrus Canisius will remain a medium-sized school, **as there are no possibilities for expansion.**”

Basisschool Canisius

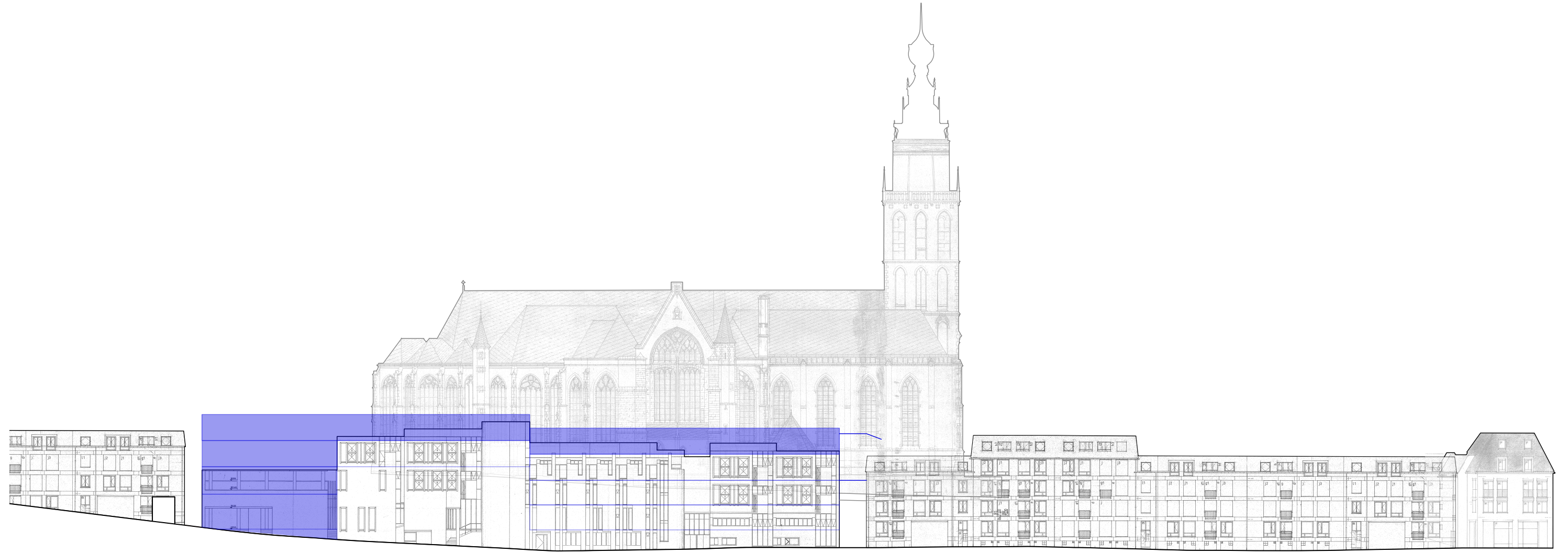
Petrus Canisius Basisschool Website accessed June 13, 2021.



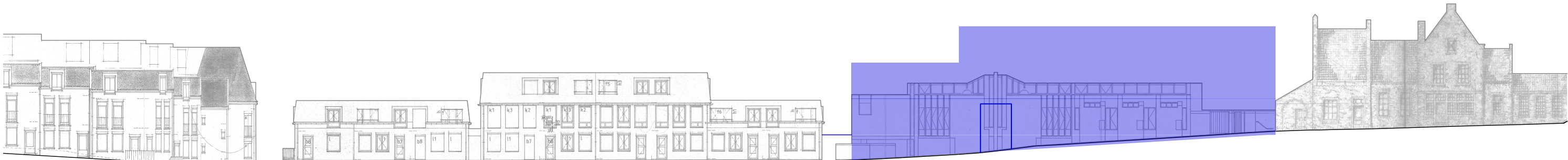
WHERE TO EXPAND TO? | Up and to the sides!

Elevation









Potential Addtional Gross Floor Area

+ 3500 m²

Current Surface Area:

GFA Cityschool ca. 2300 m²

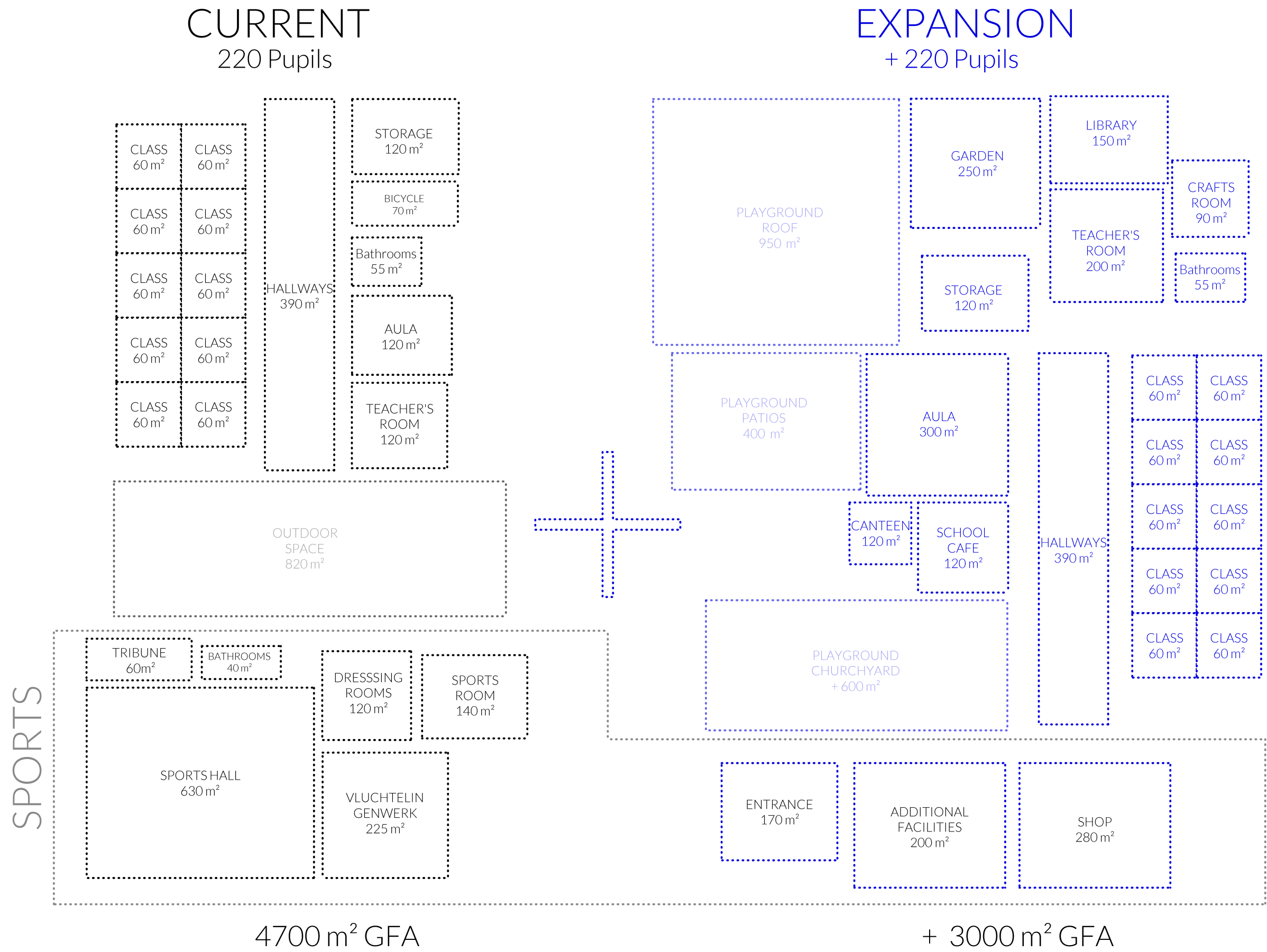
GFA Sportscenter ca. 2400 m²

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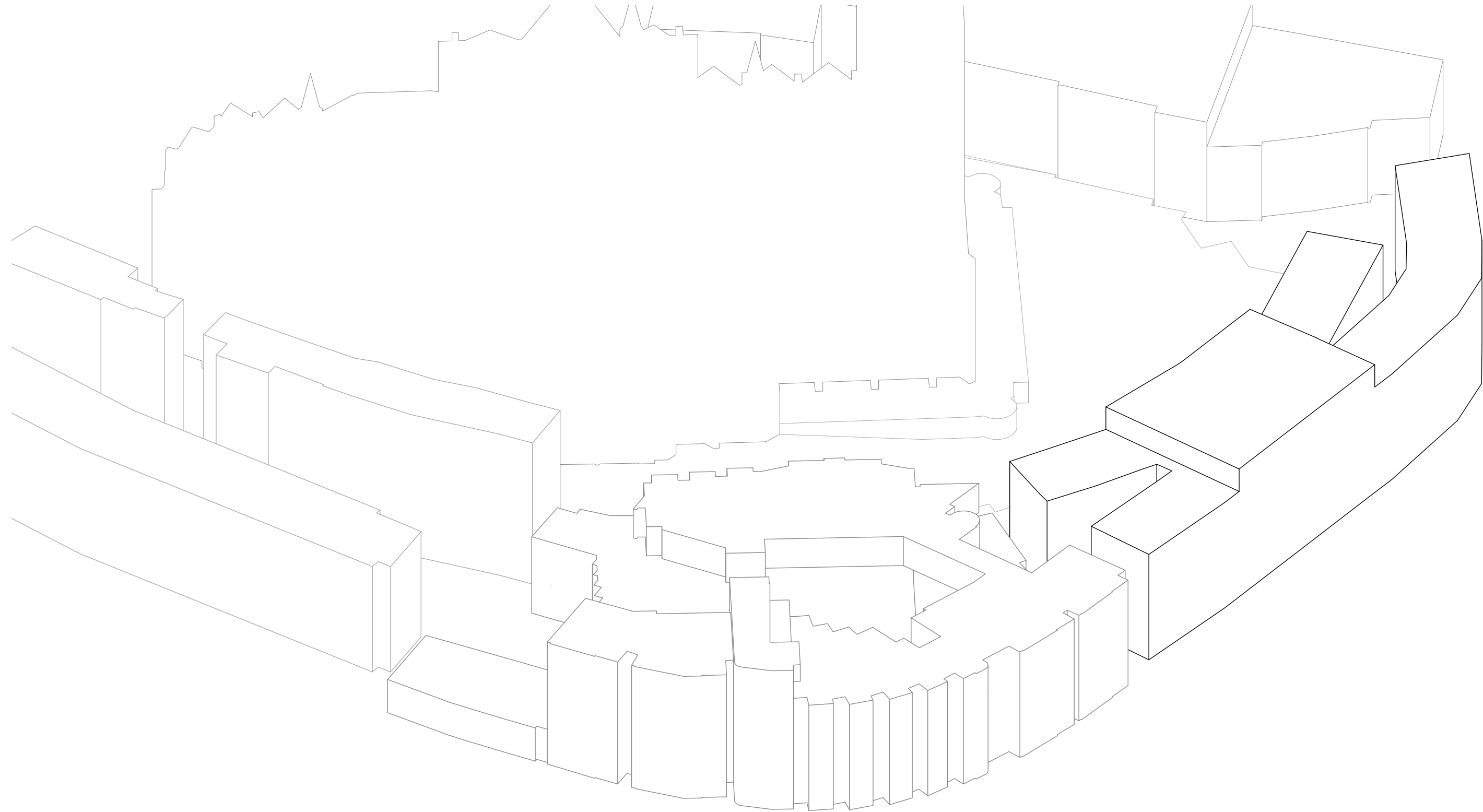
- Expanding Primary School by 100%
- Increasing mix of uses: sportscenter, schoolcafé & public groundfloor uses
- Intensifying the school's relation to the neighborhood
- Appropriating the Churchyard as Schoolyard
- Maximizing the use of the roofs

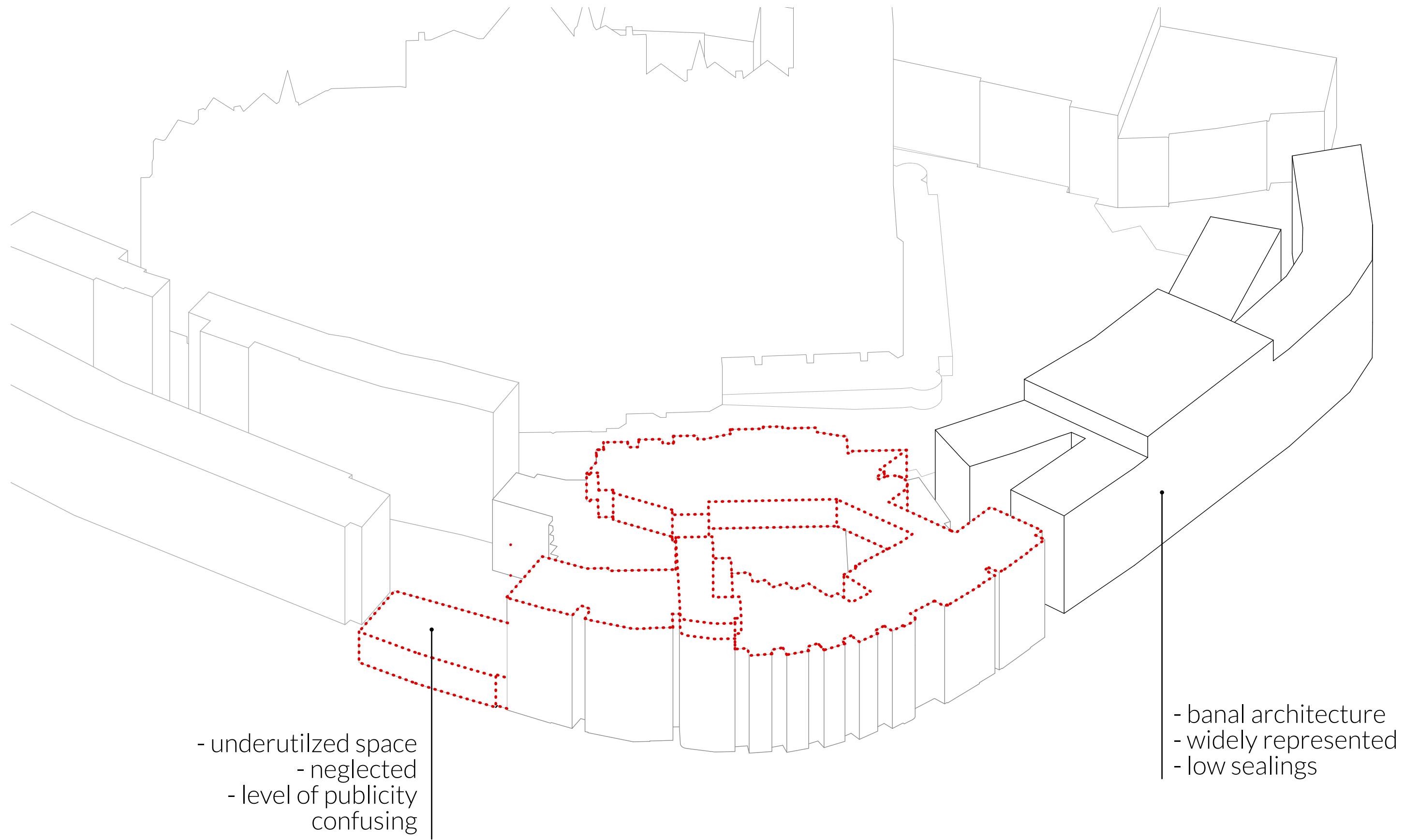


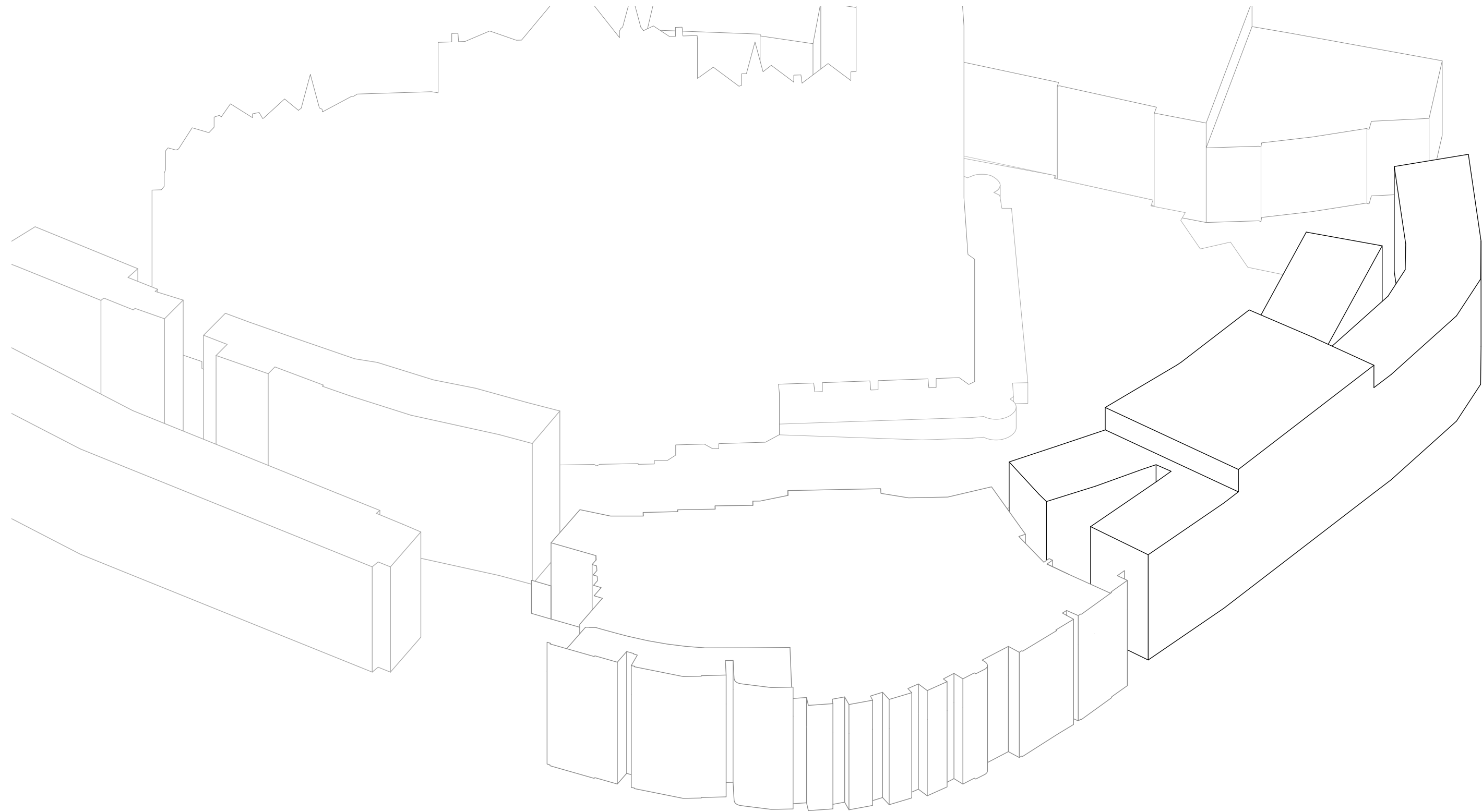
- 01 THE SITE
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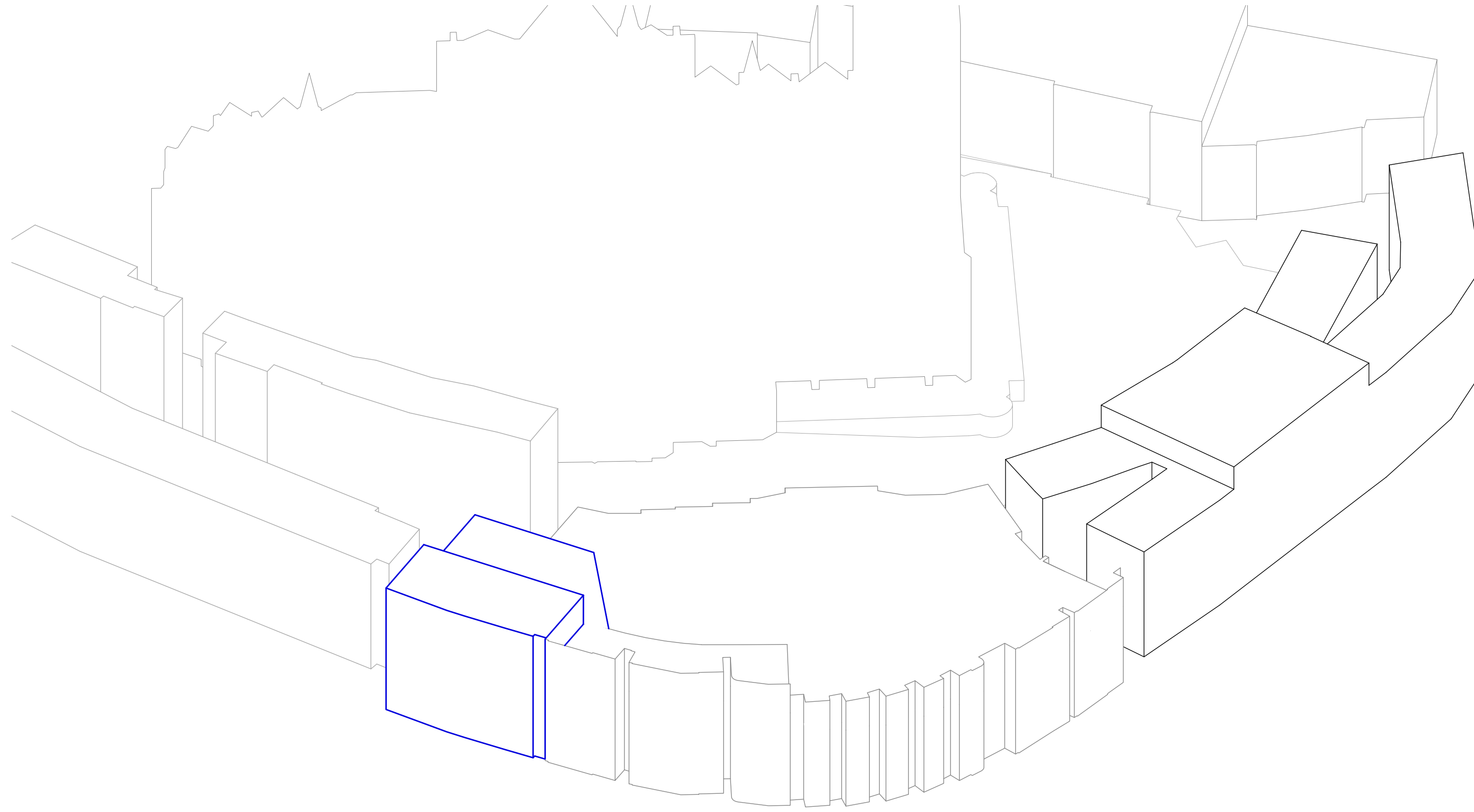
06 ARCHITECTURAL CONCEPT

- 07 MODERN LEARNING
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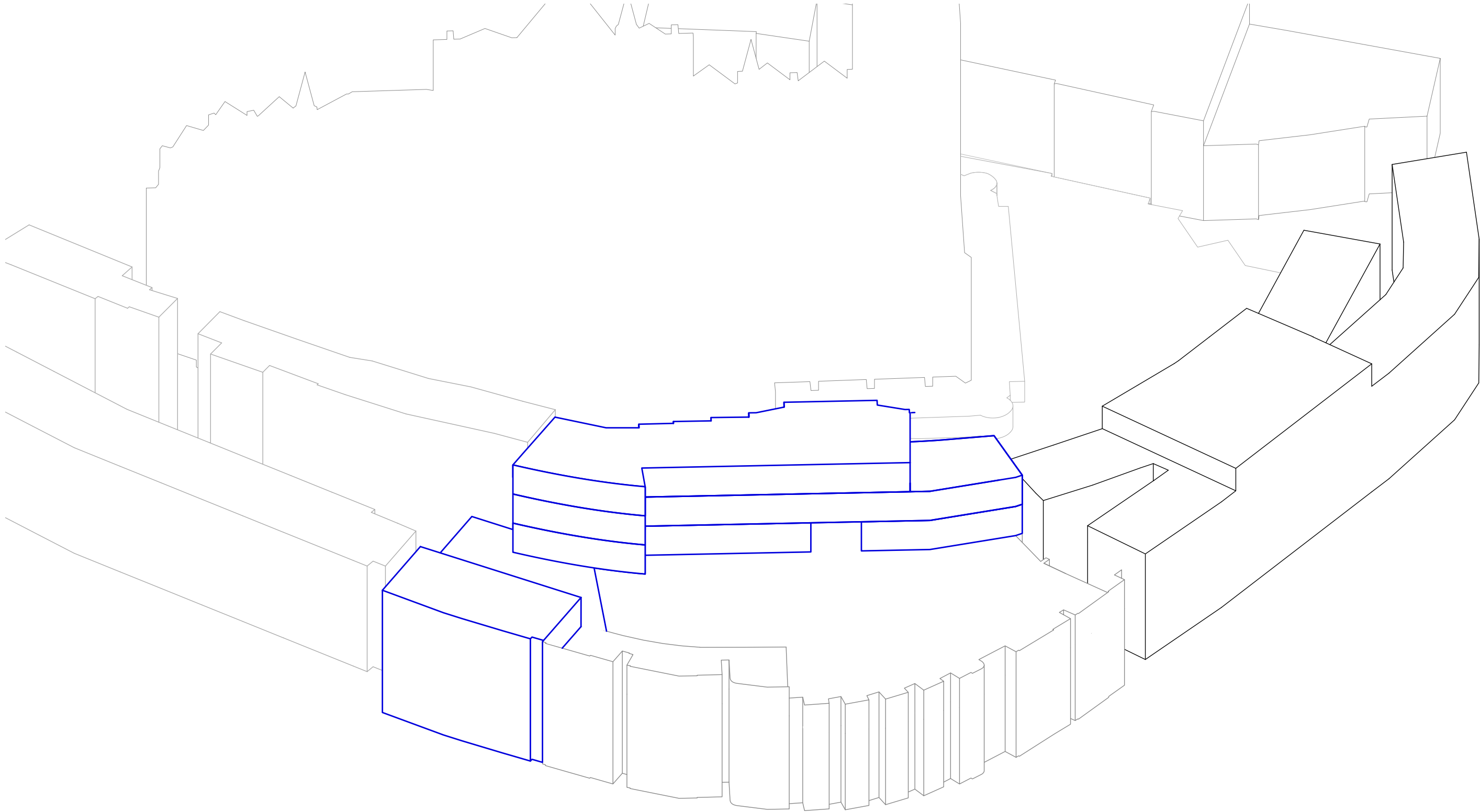


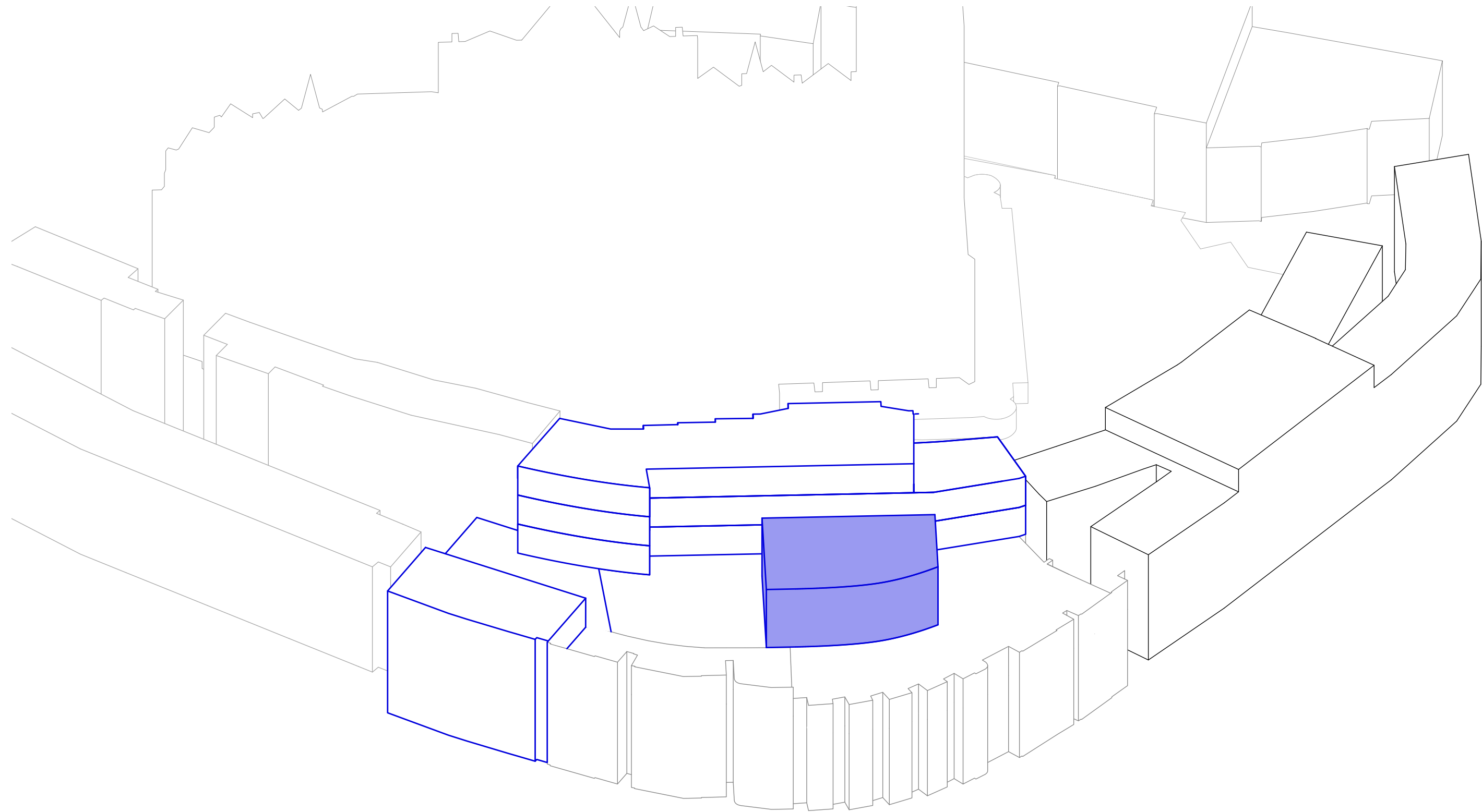


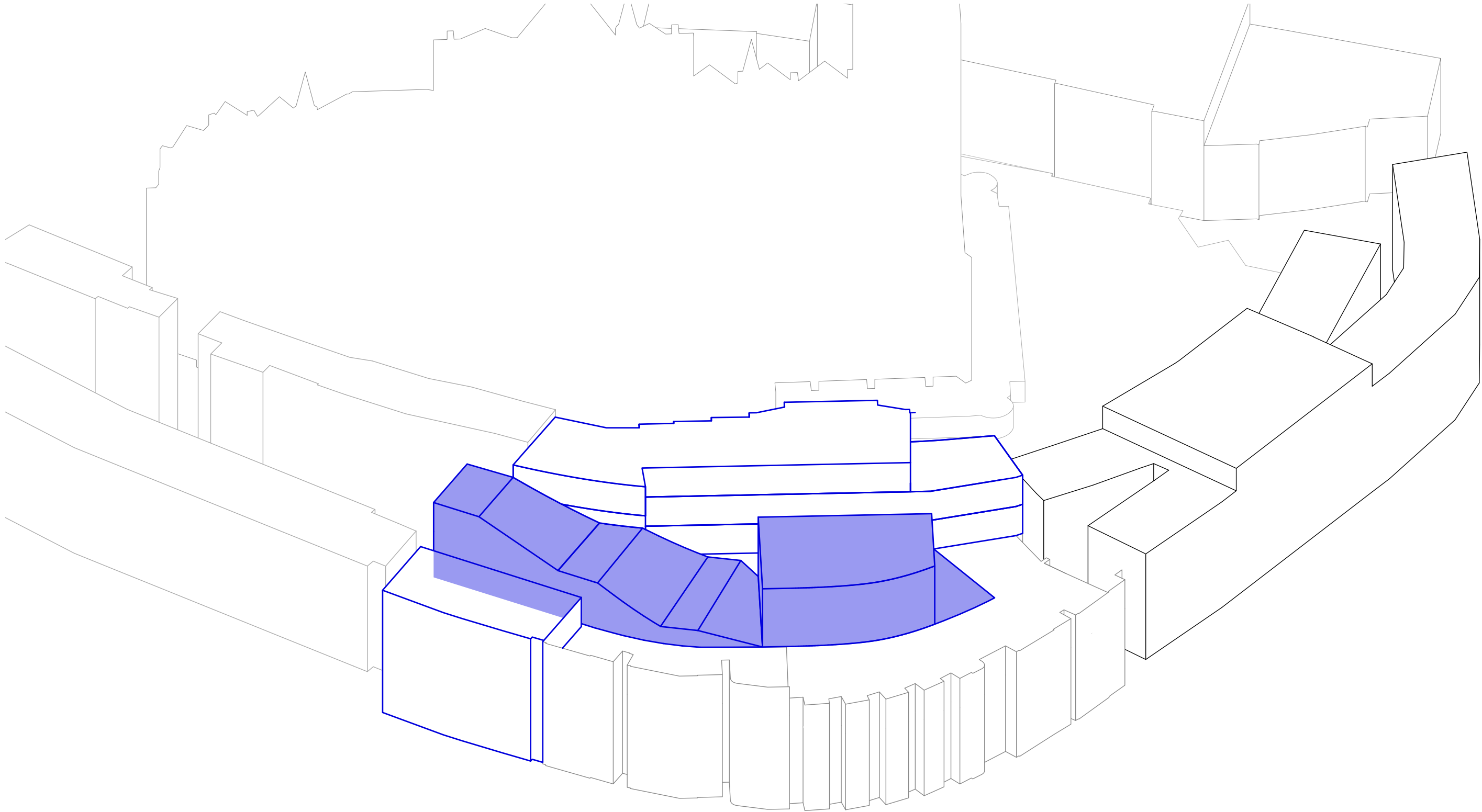


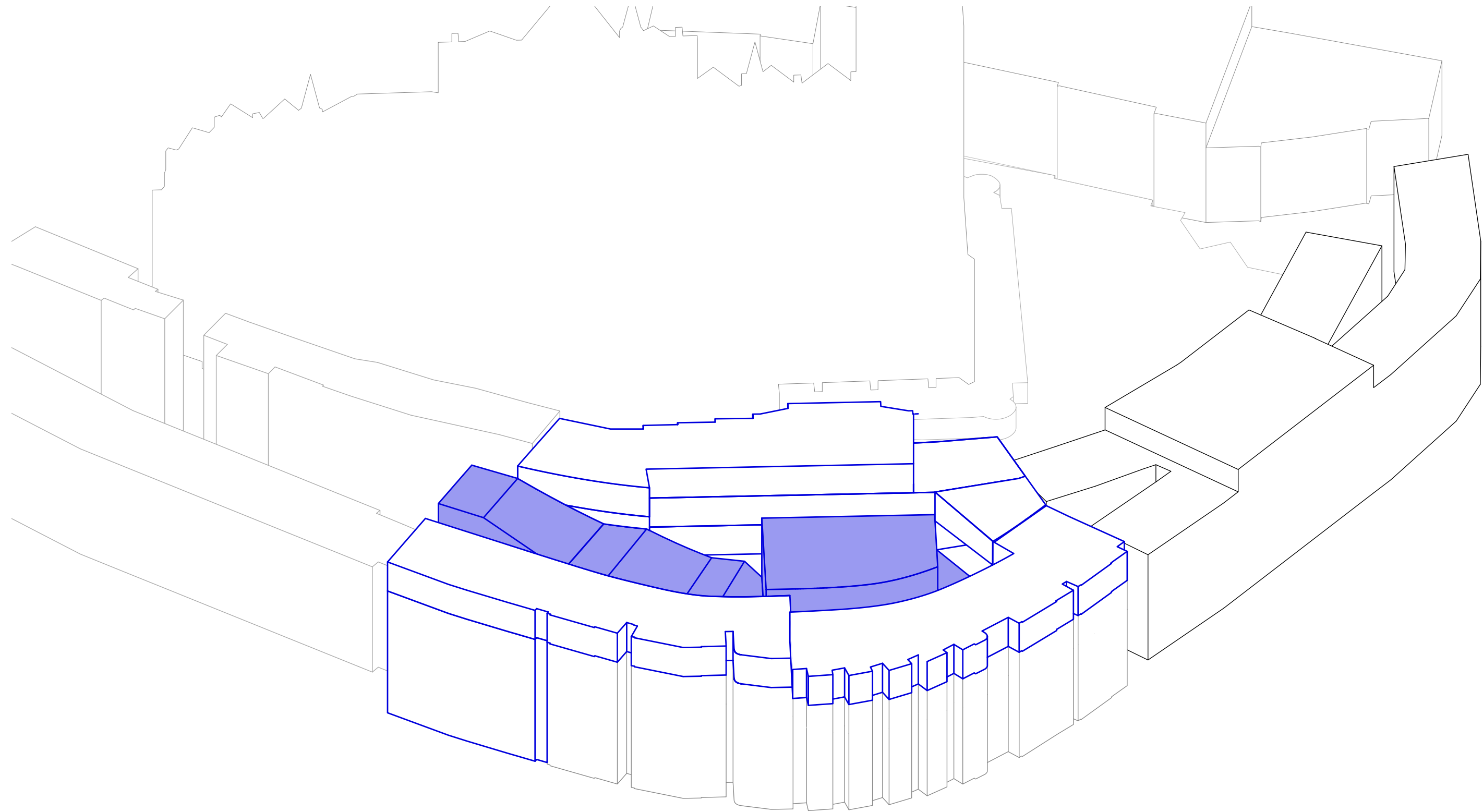


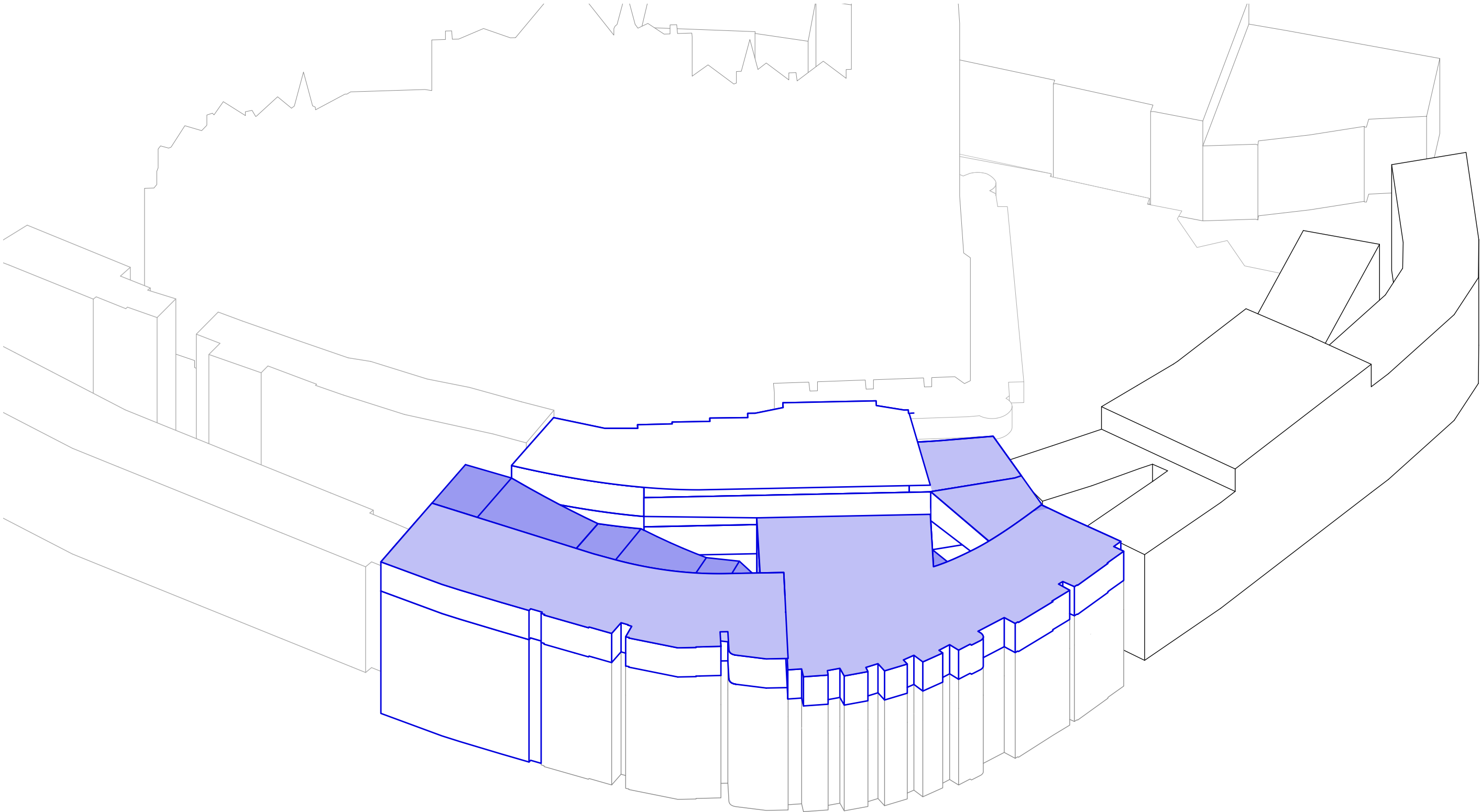
FILLING IN THE FABRIC | + 4X 360m² = 720 m² GFA

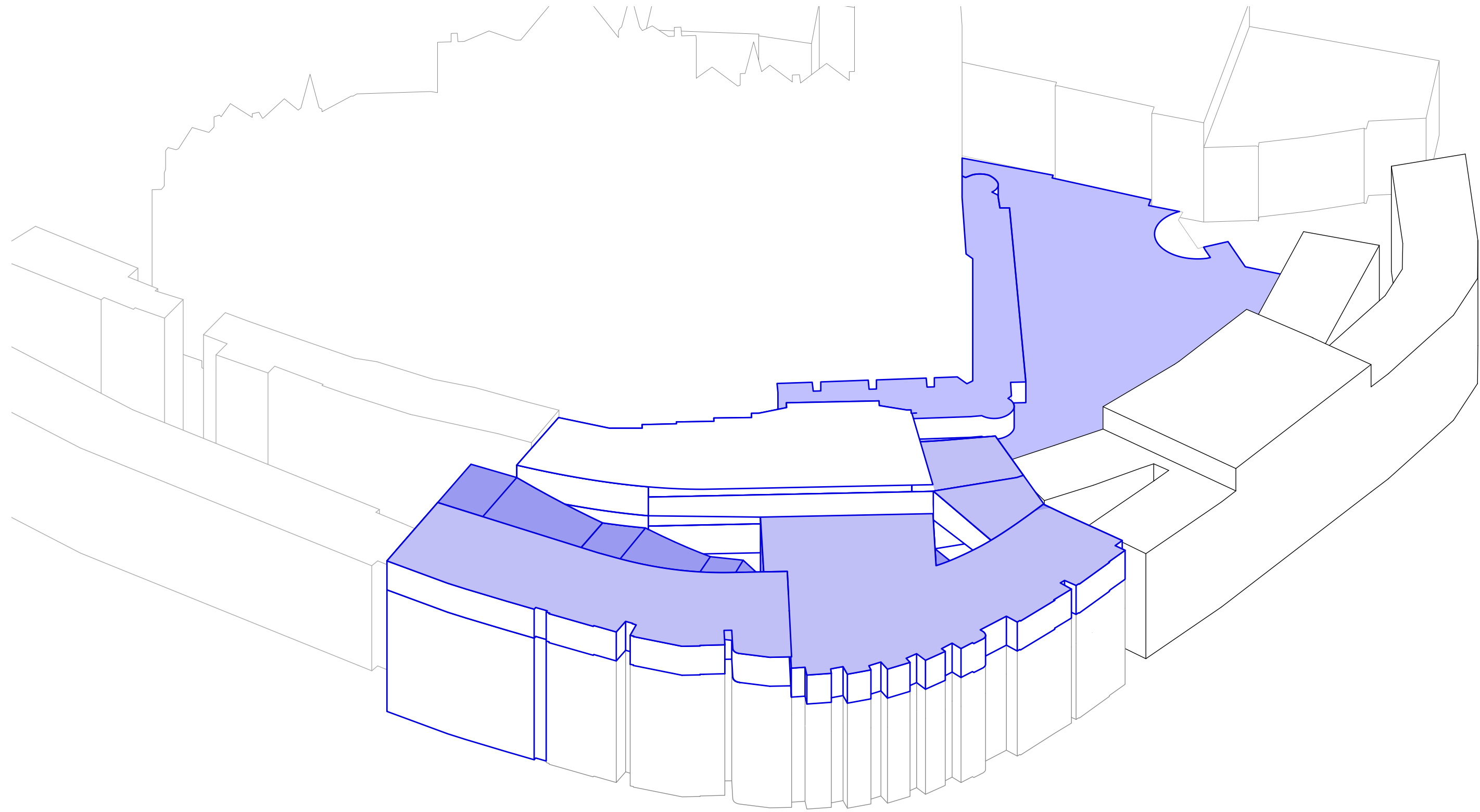


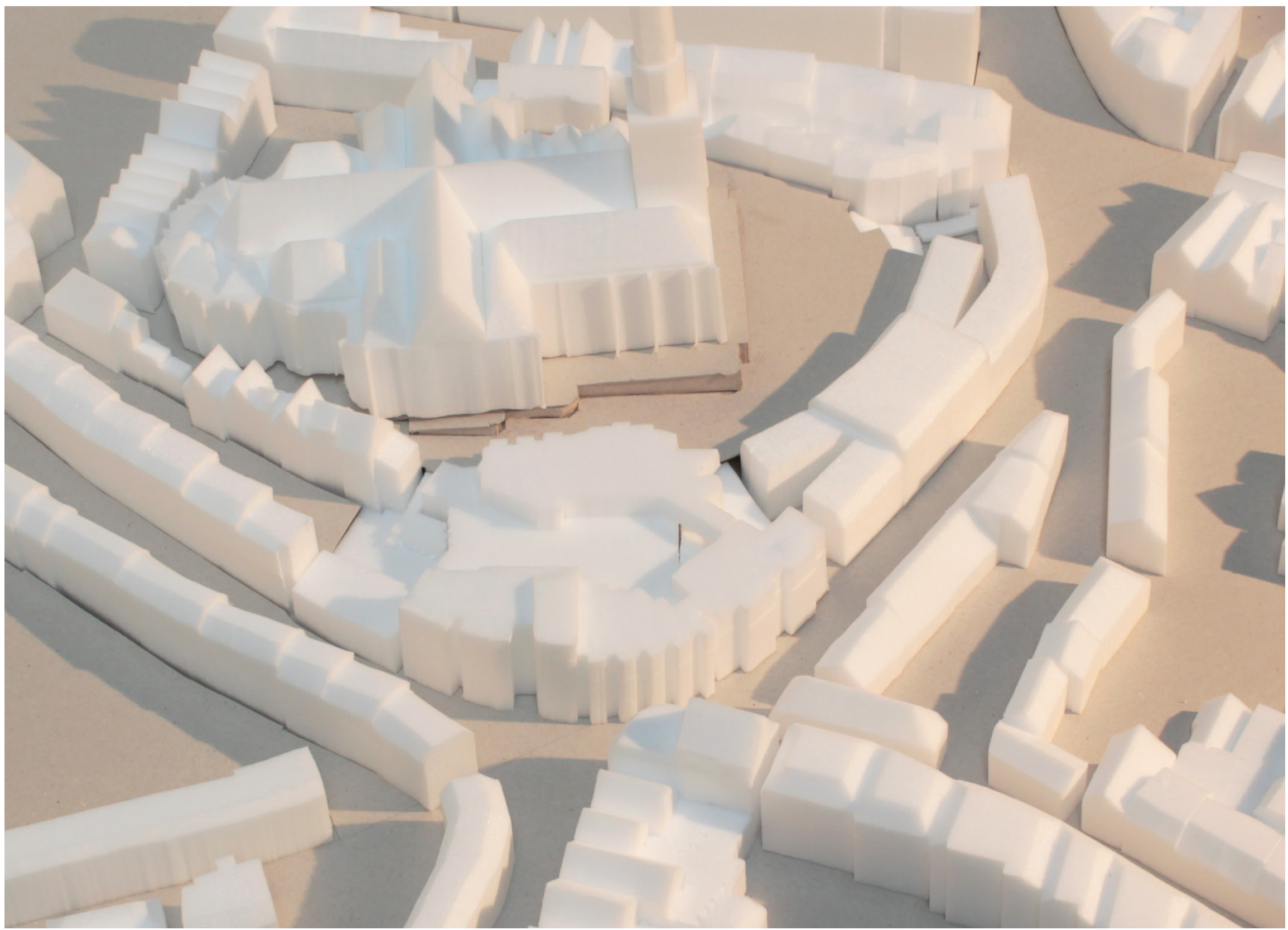




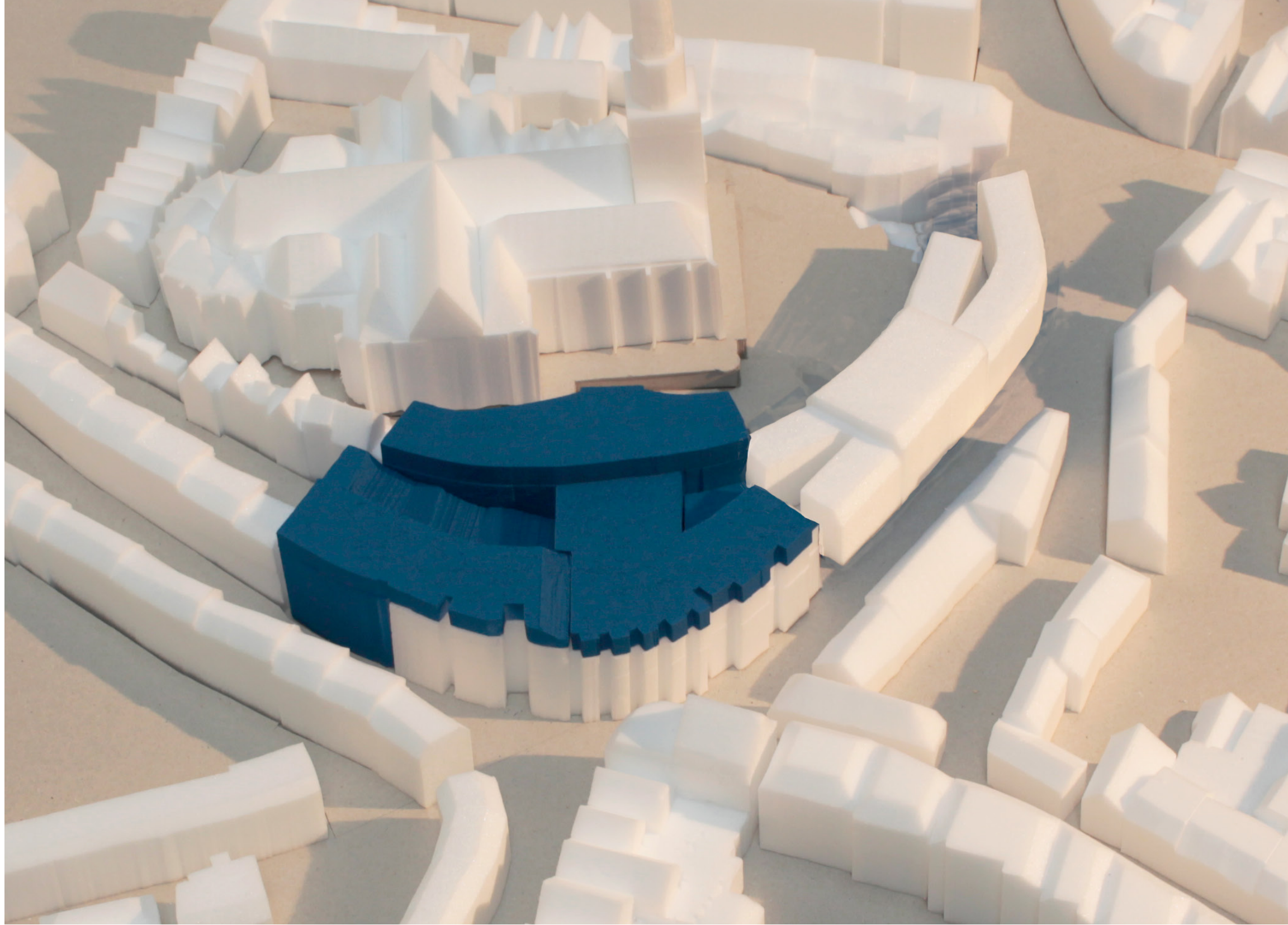








MASSING STUDY - PRESENT | Physical Model 1:300

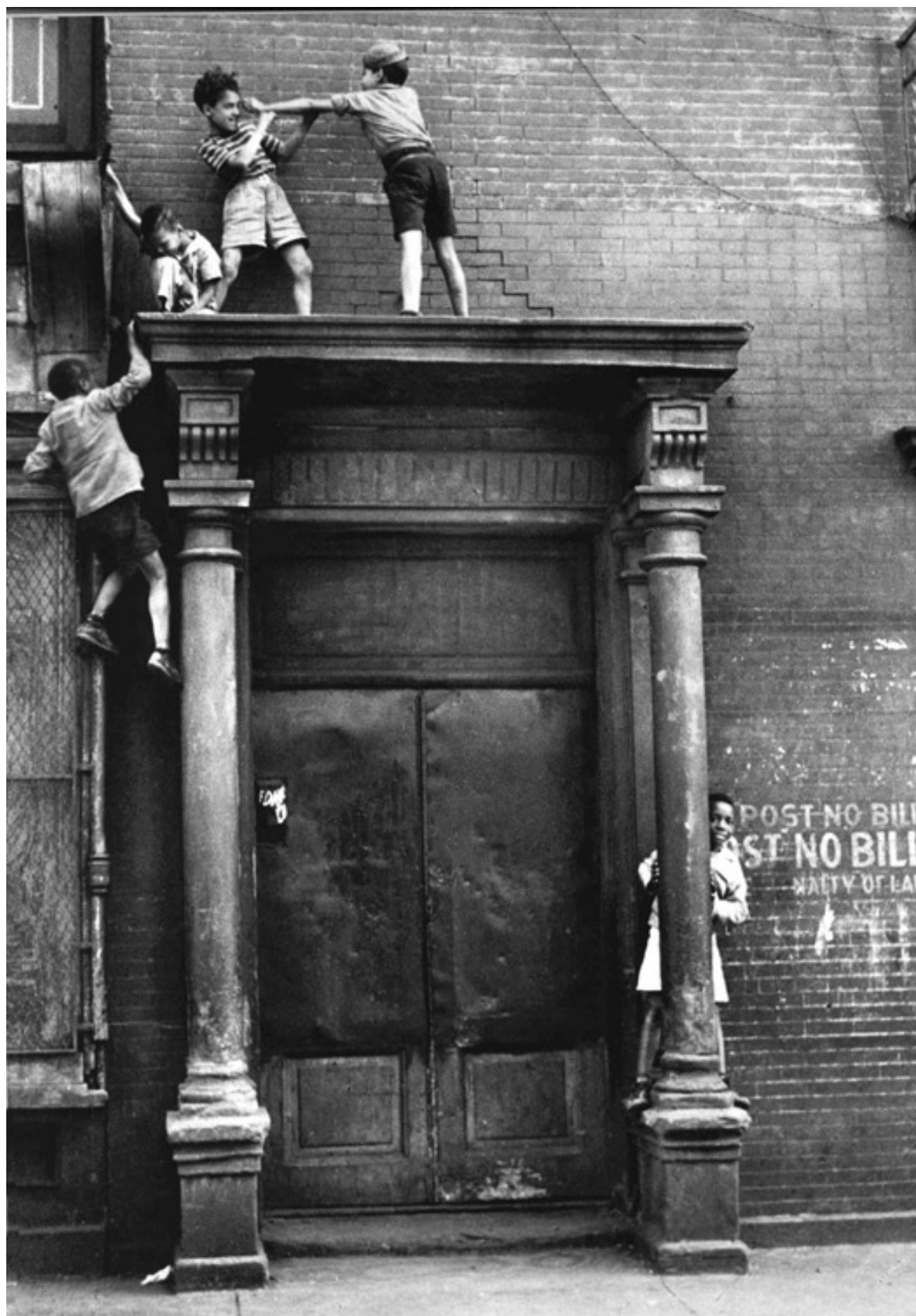


MASSING STUDY - PROPOSAL | Physical Model 1:300

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“A child has three teachers: the first teacher are the other children, the second teacher is the educator. The third teacher is the room.”

Loris Malaguzzi, educator



doren, cukrowwicz nachbaur

30 %
Frontal



sonnwendviertel, ppag

30 %
Group



exeter, louis kahn

30 %
Individual



doren, cukrowwicz nachbaur

20 %
Frontal



sonnwendviertel, ppag

20 %
Group



exeter, louis kahn

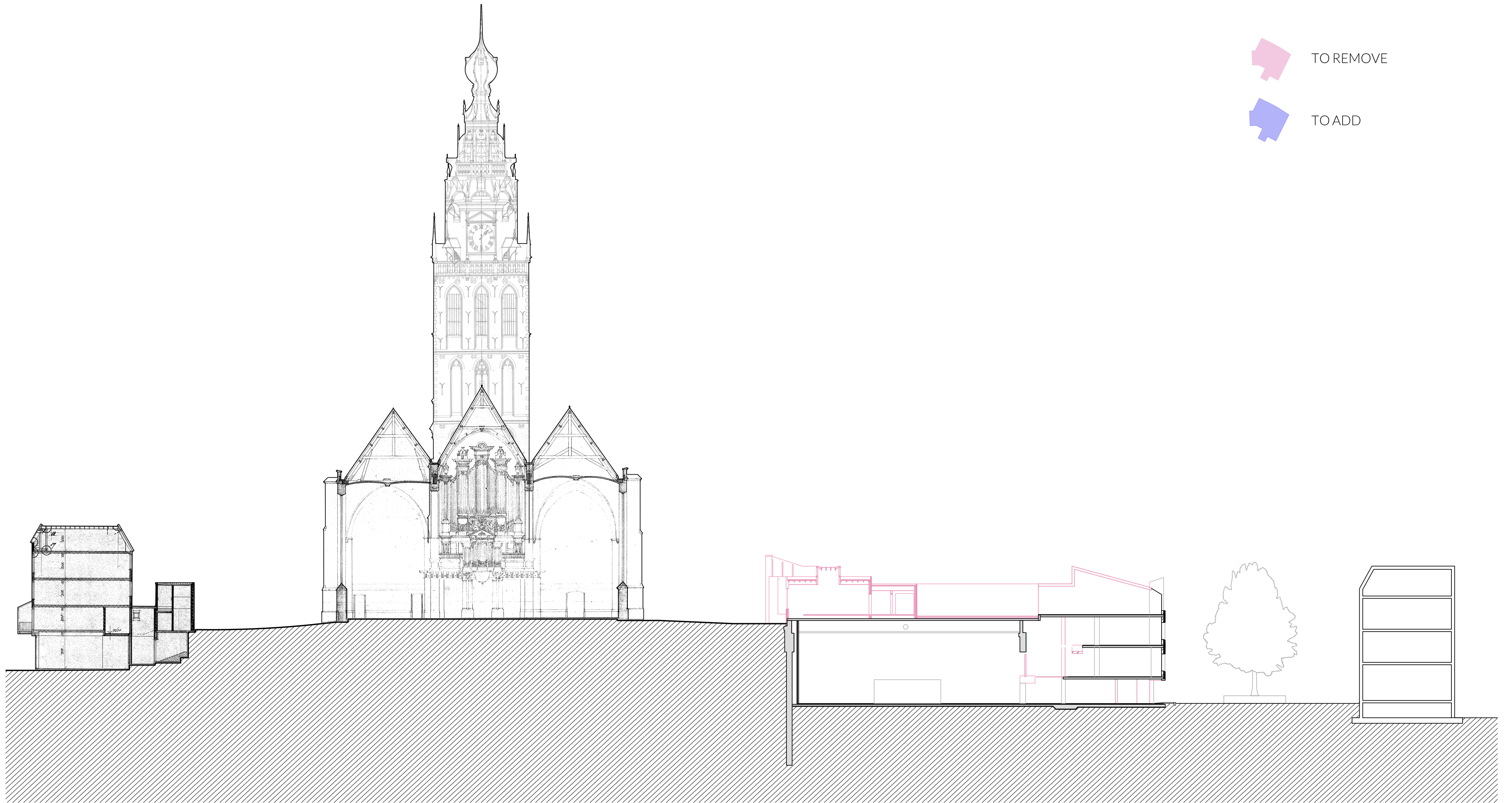
60 %
Individual

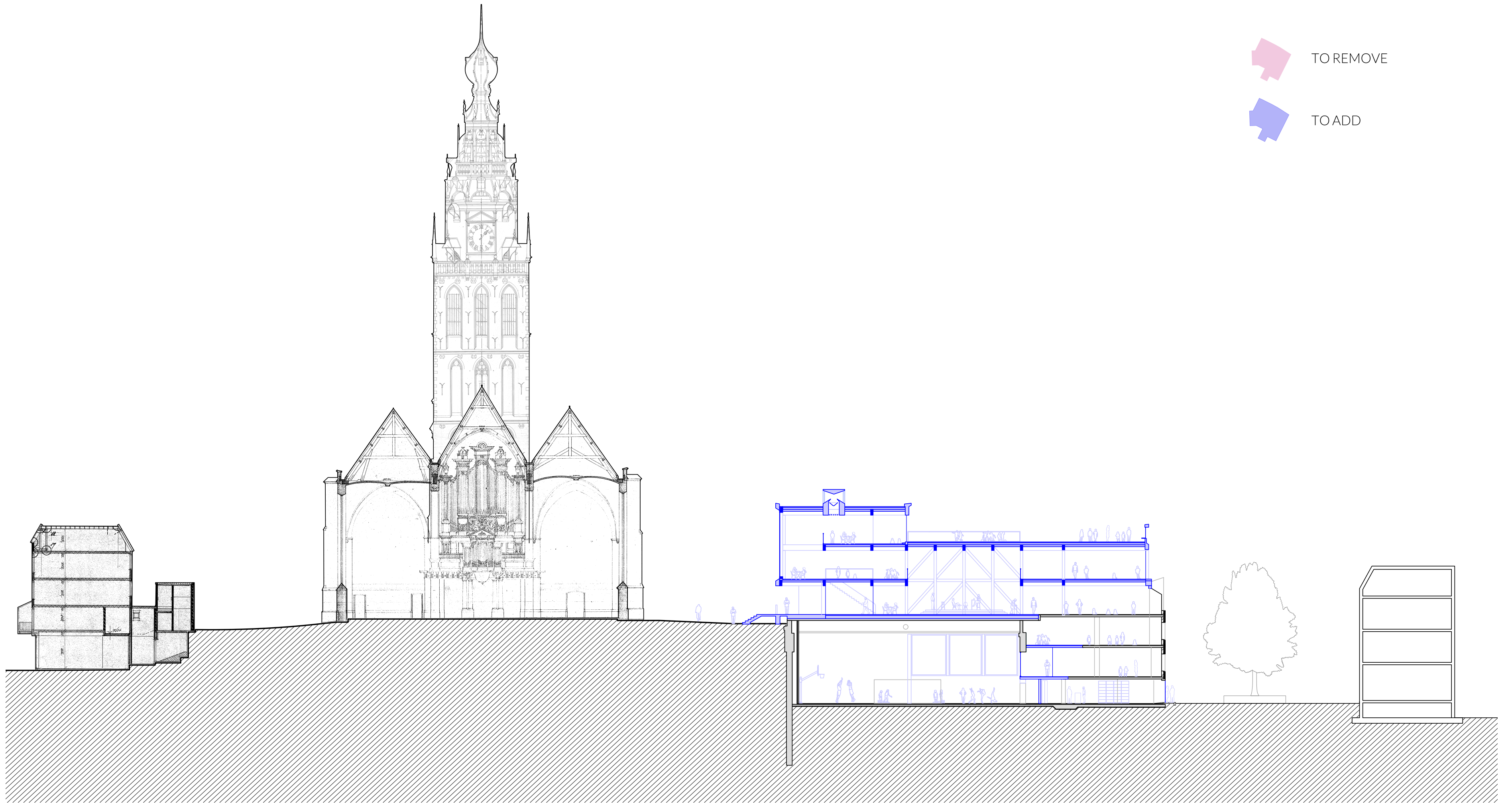
- Movement should be encouraged spatially and pedagogically - in and outside the classroom
- Independent, individual learning should be enabled by creating spaces to retreat outside of the classroom
- Outside space has to be plentiful for playing, socializing & well-being

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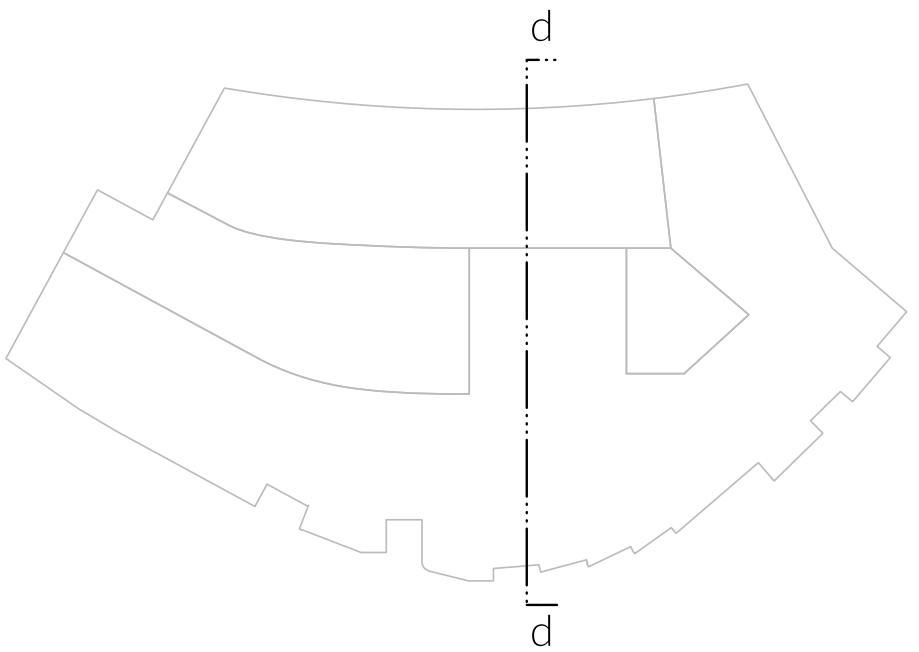
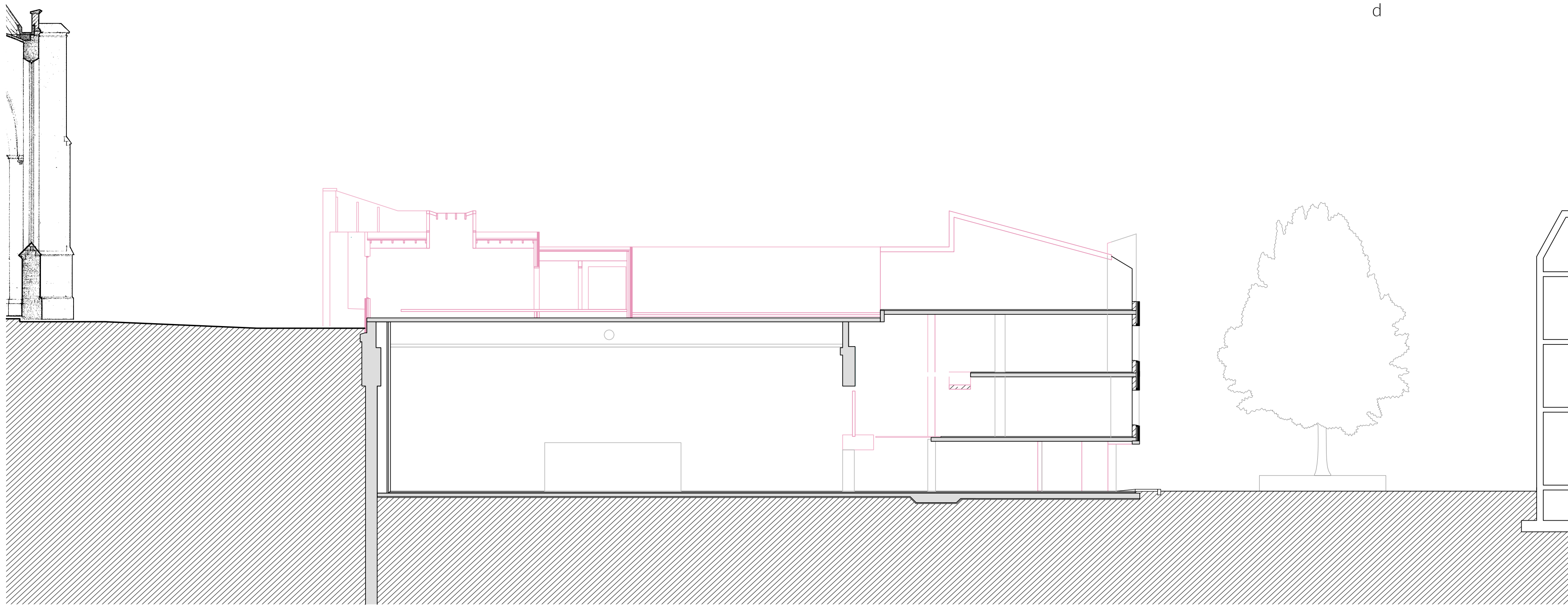




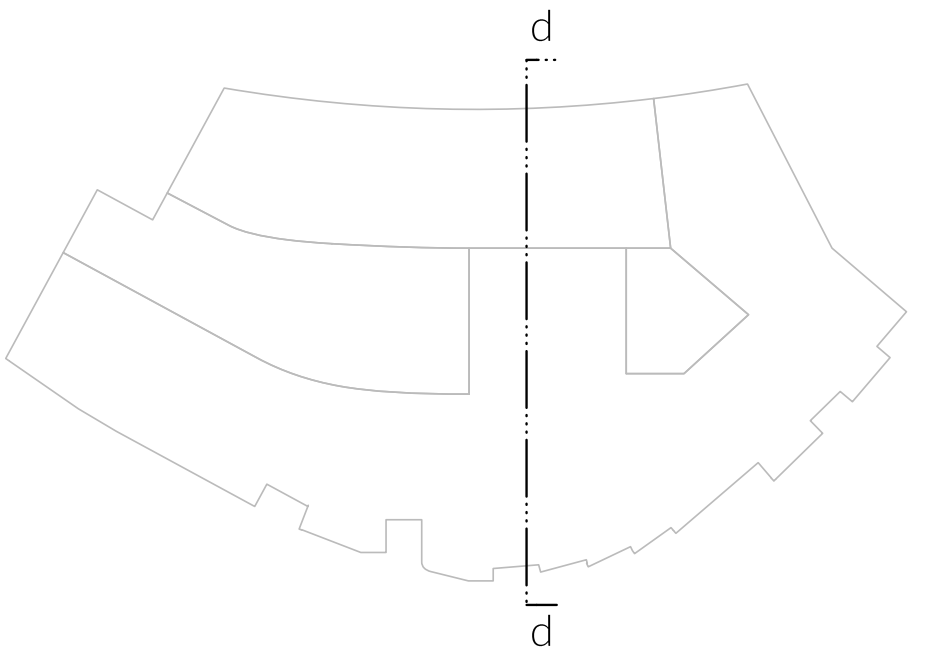
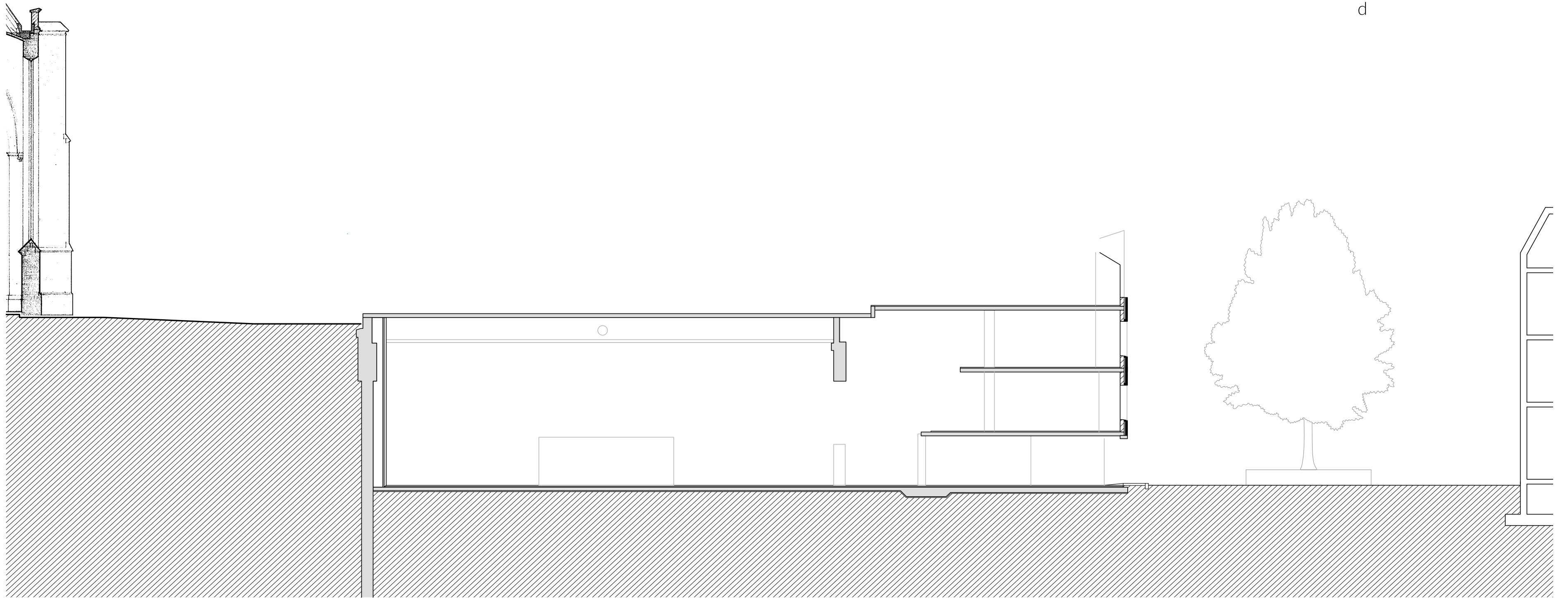
TO REMOVE

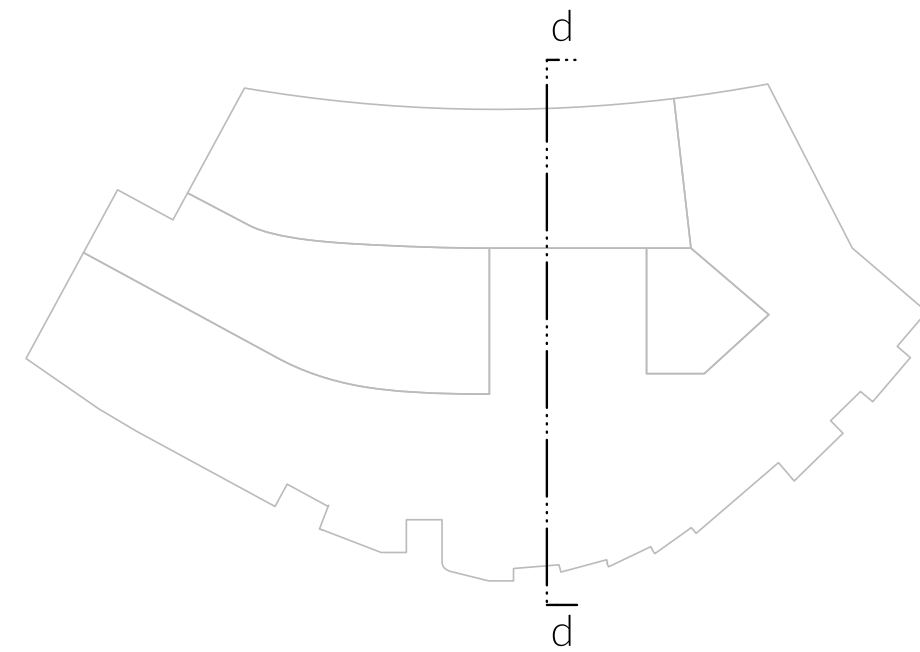
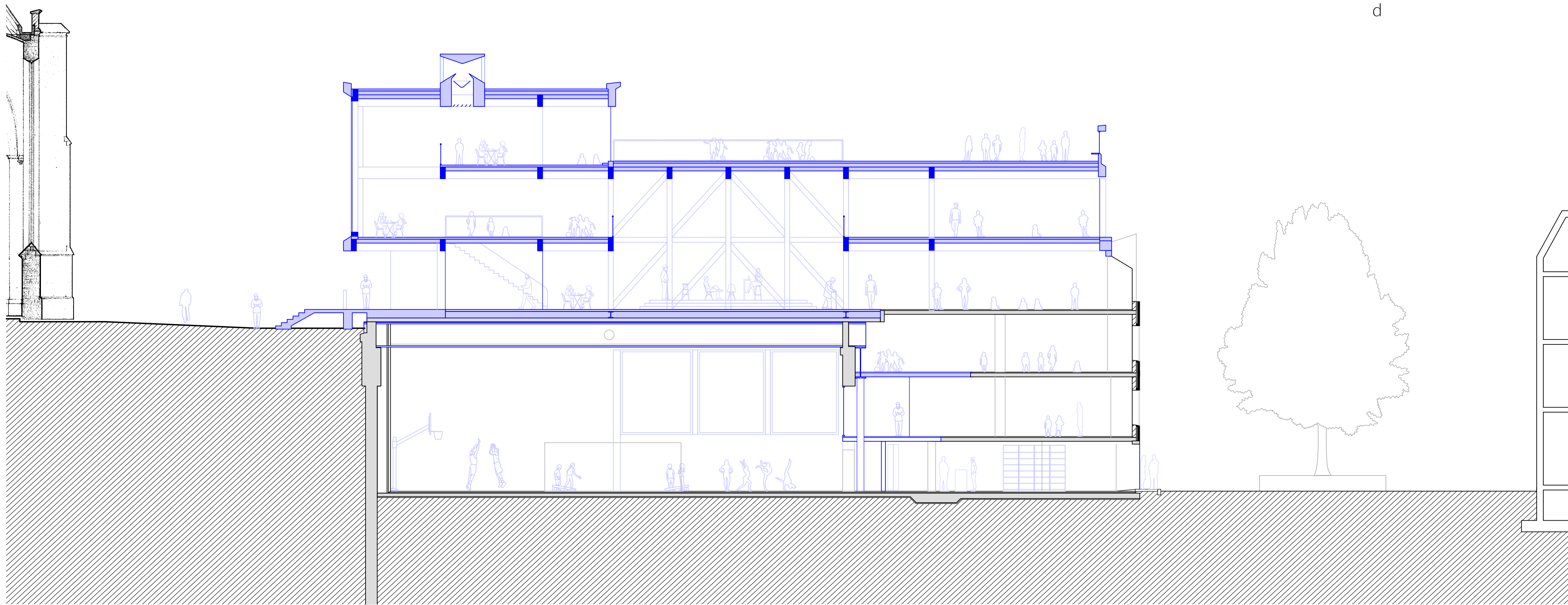


TO ADD

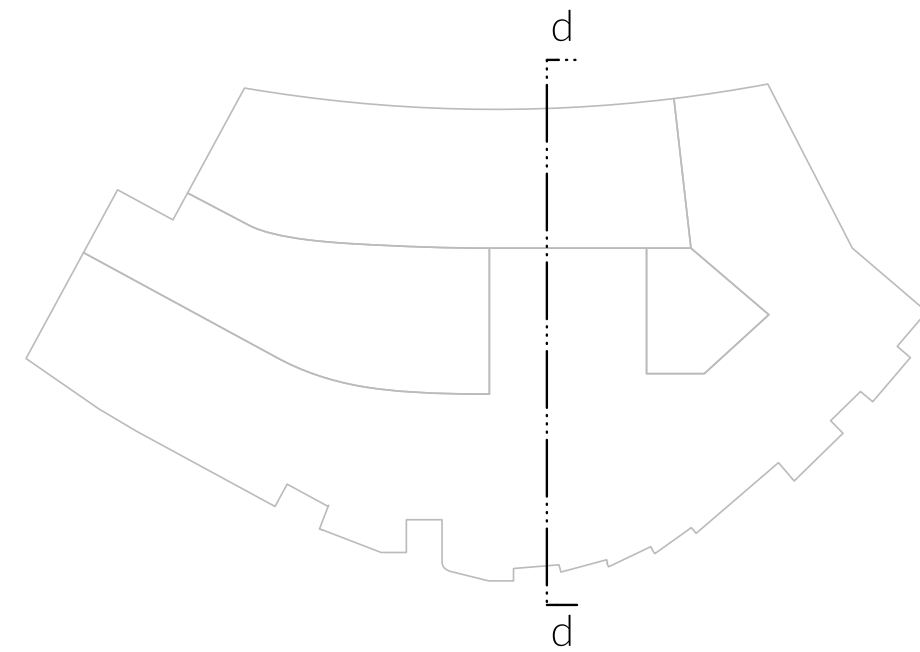
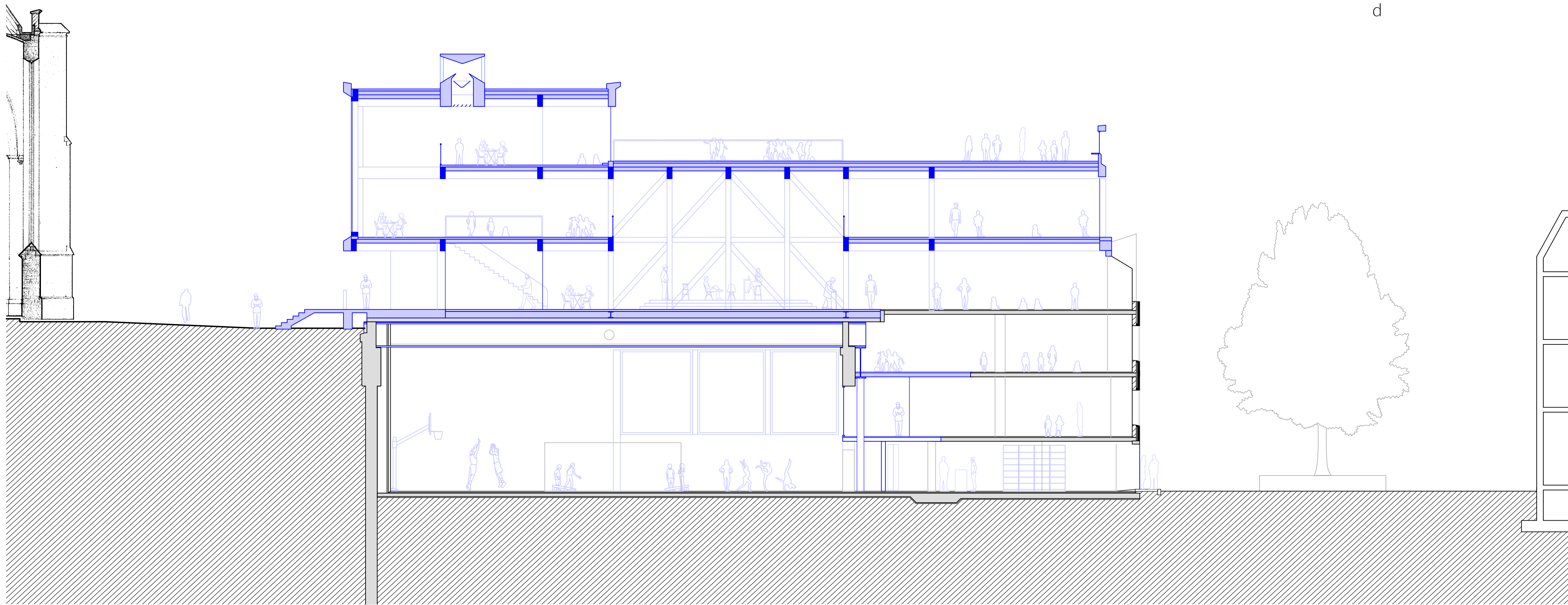


SECTION dd | Context

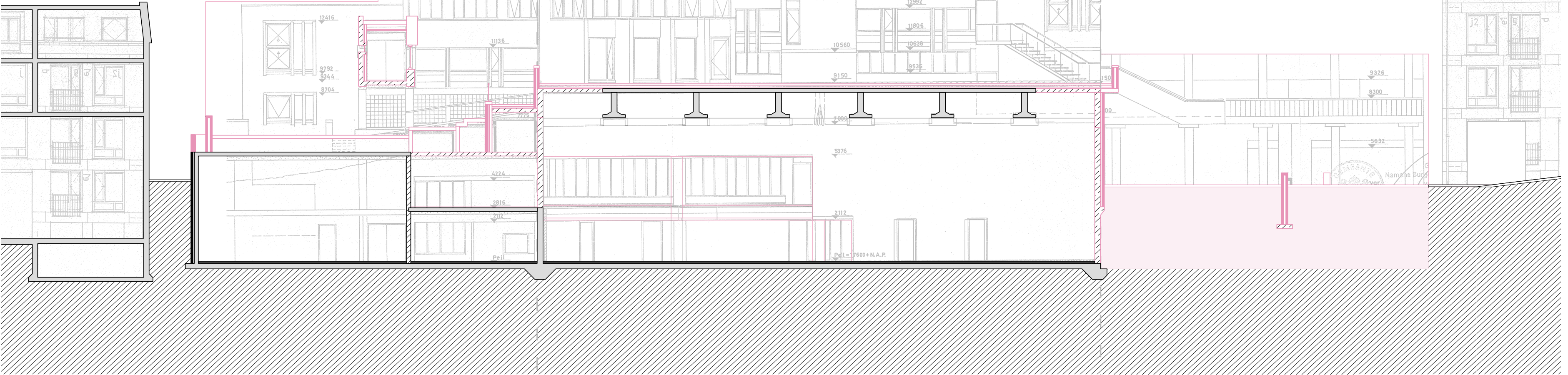




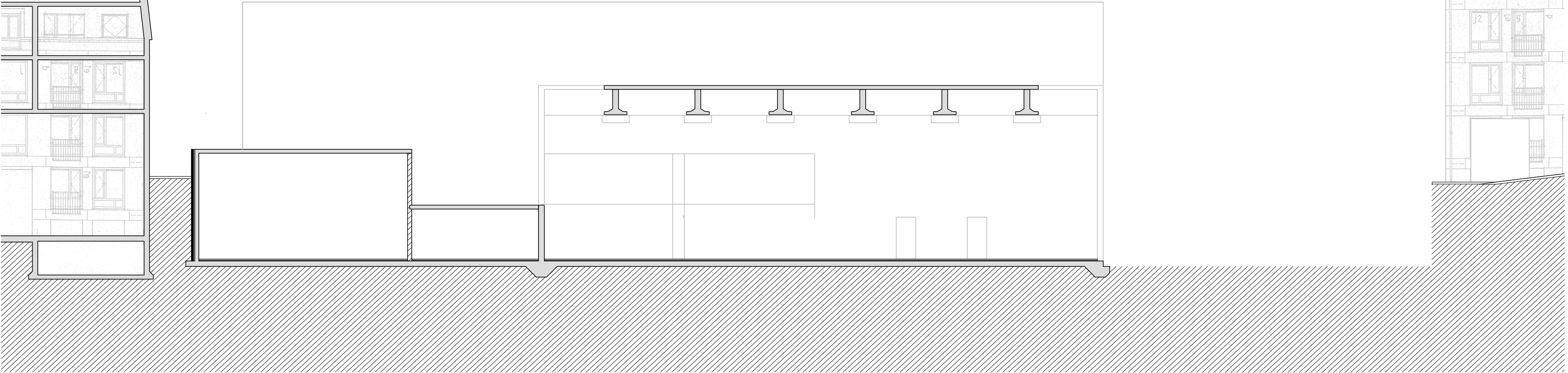
SECTION dd | Context



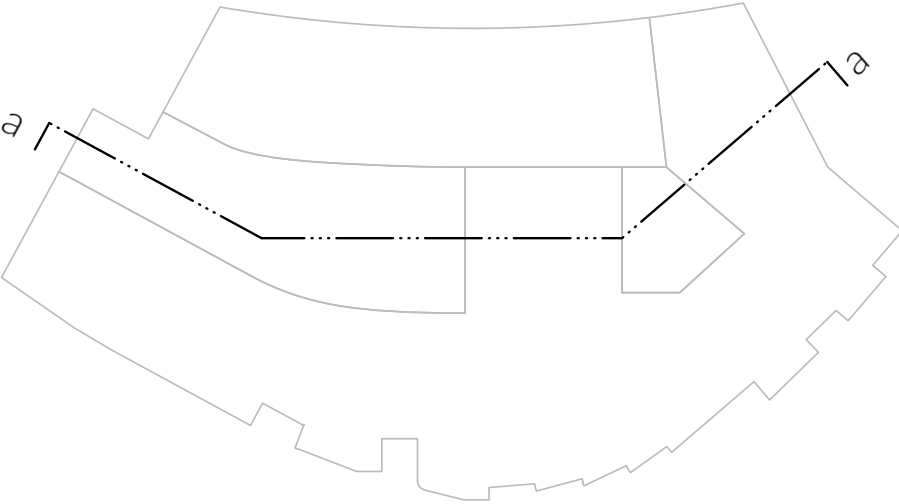
SECTION dd | Context

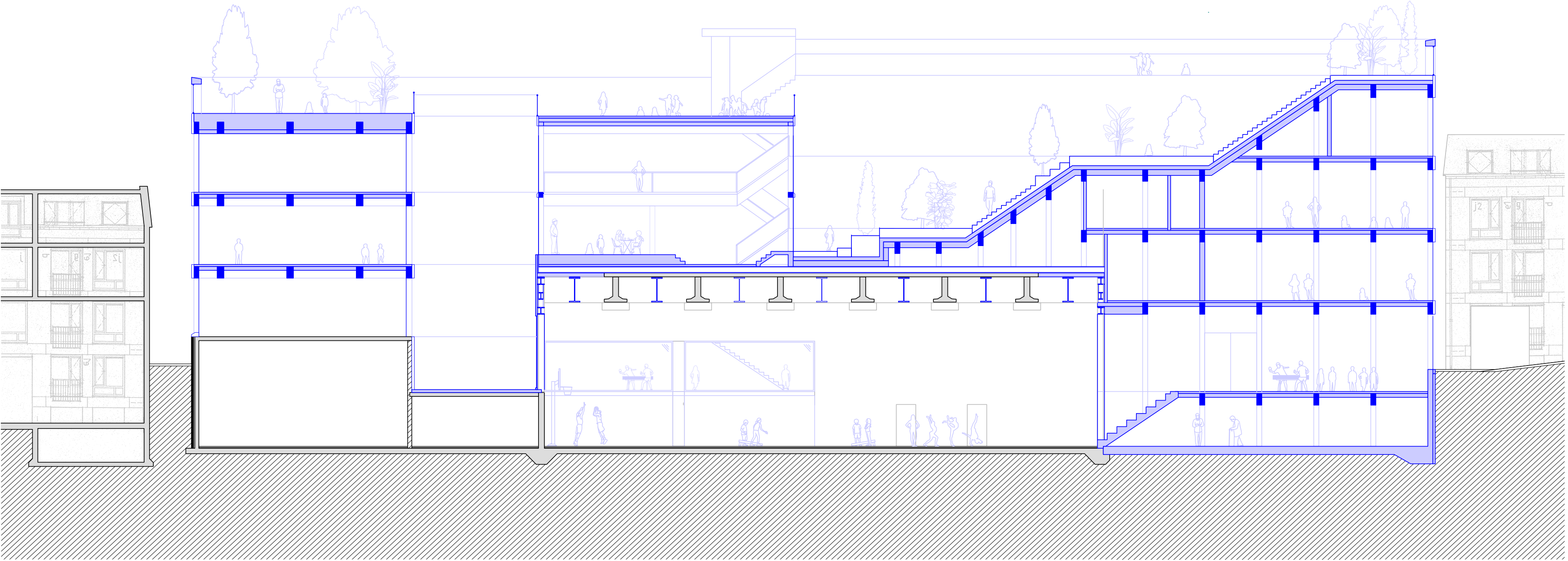


SECTION aa | Context

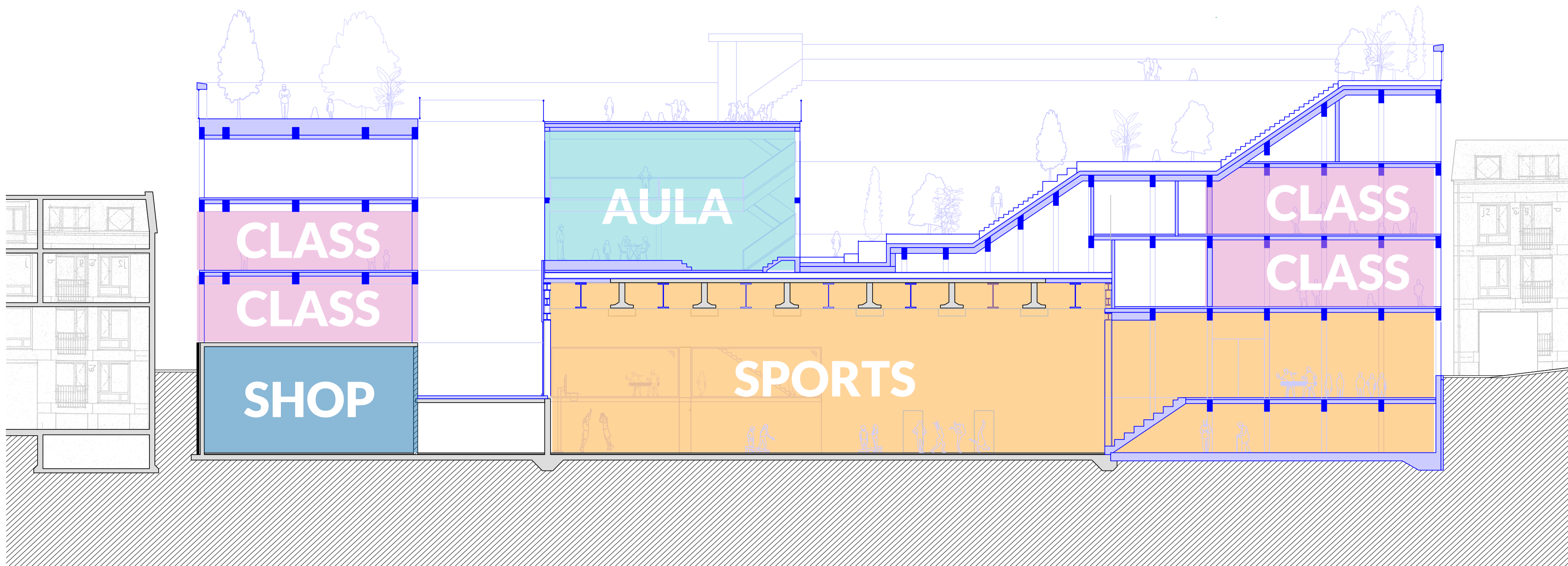


SECTION aa | Context

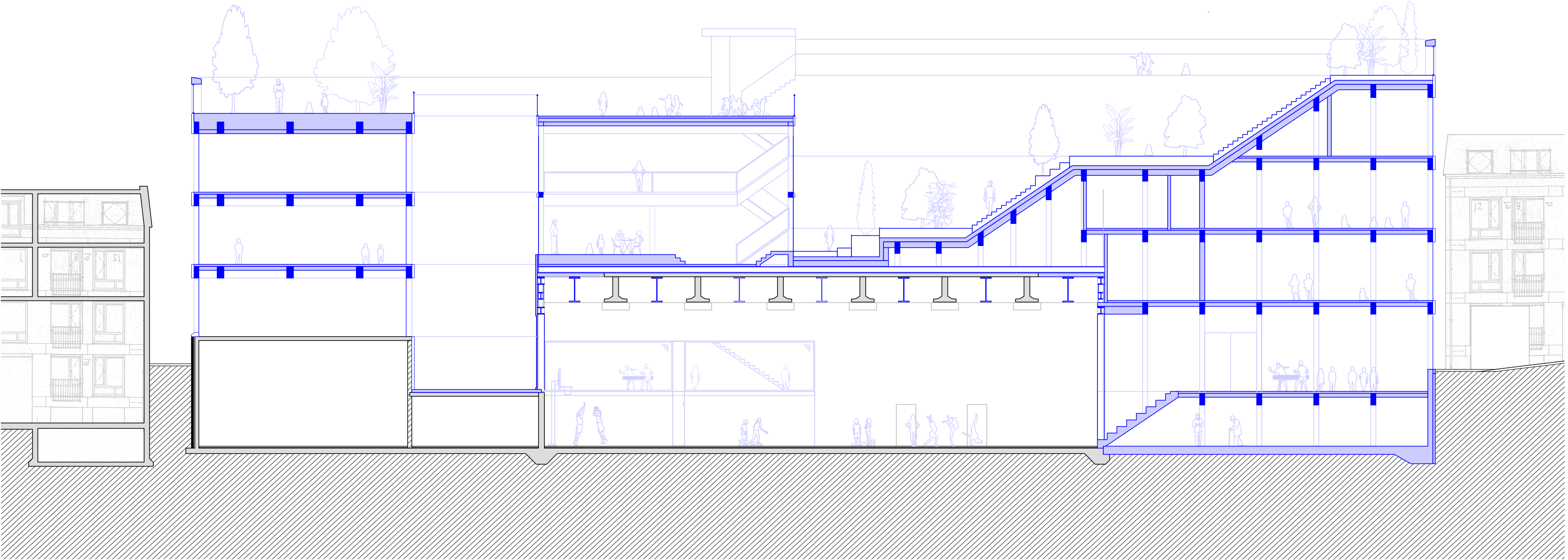




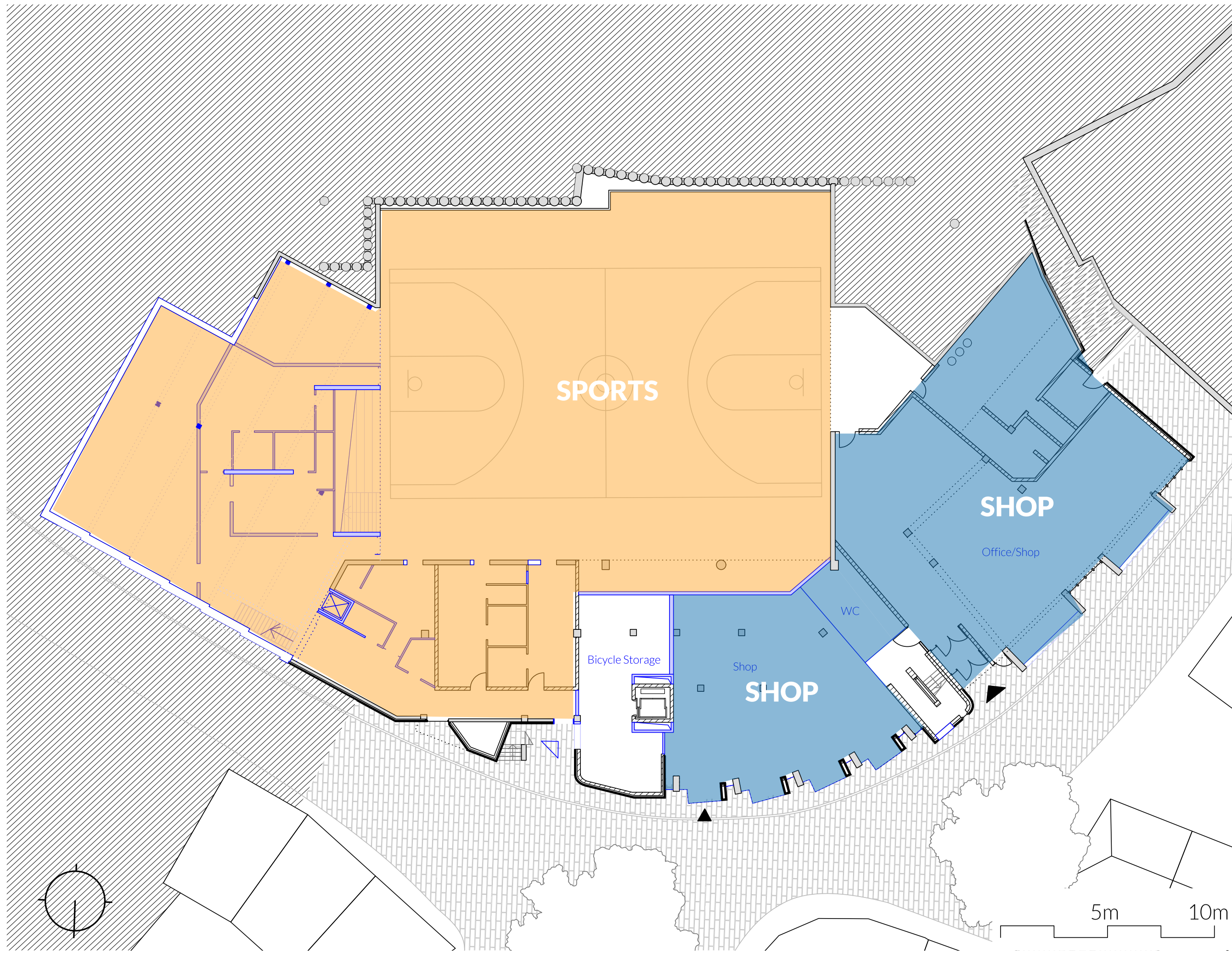
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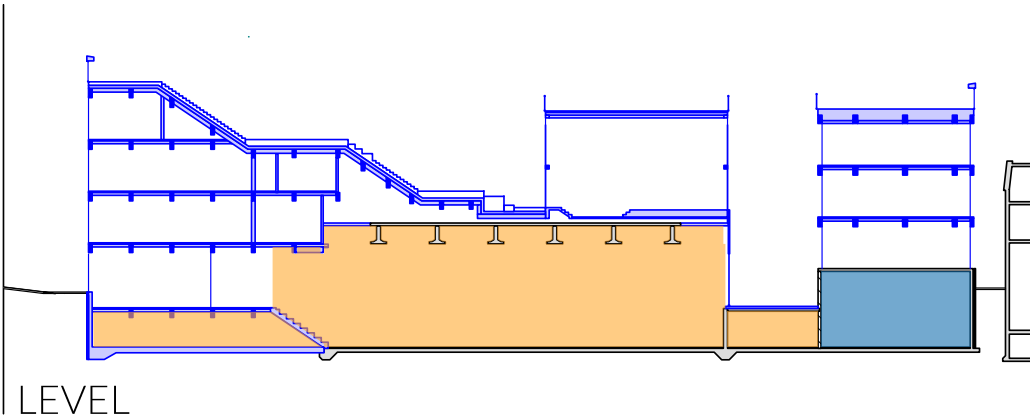
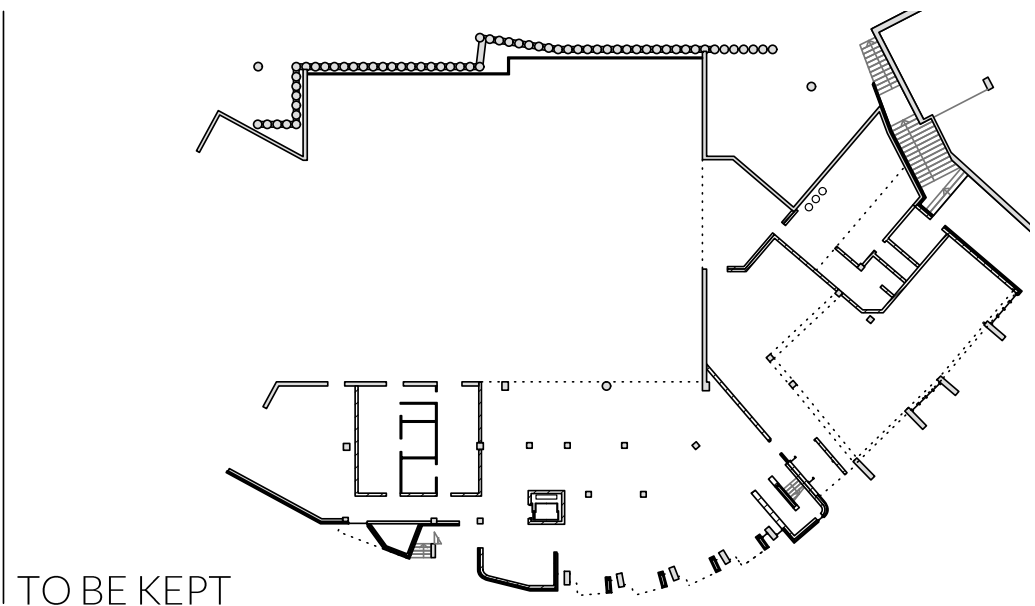
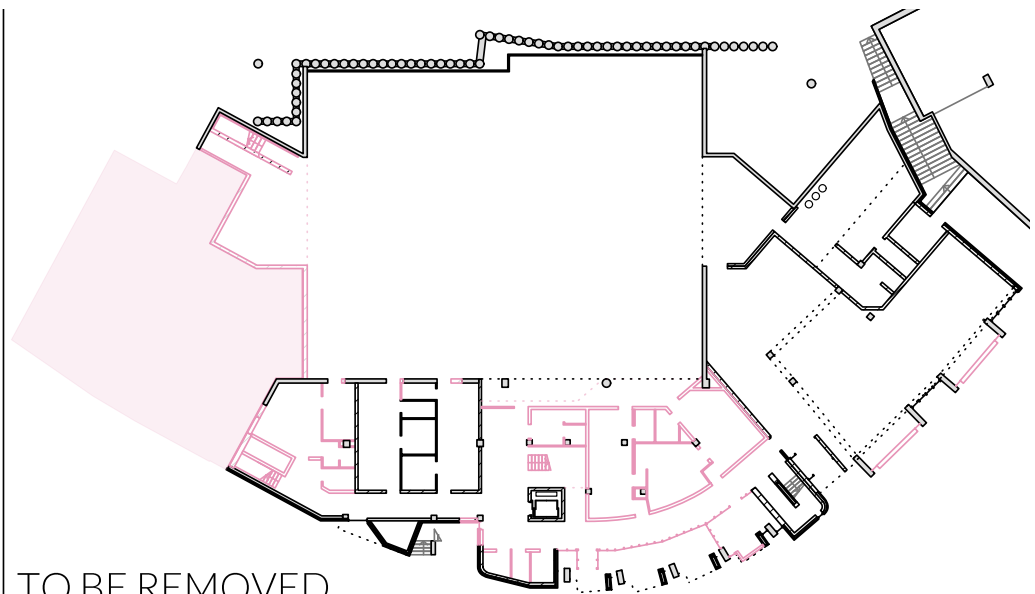
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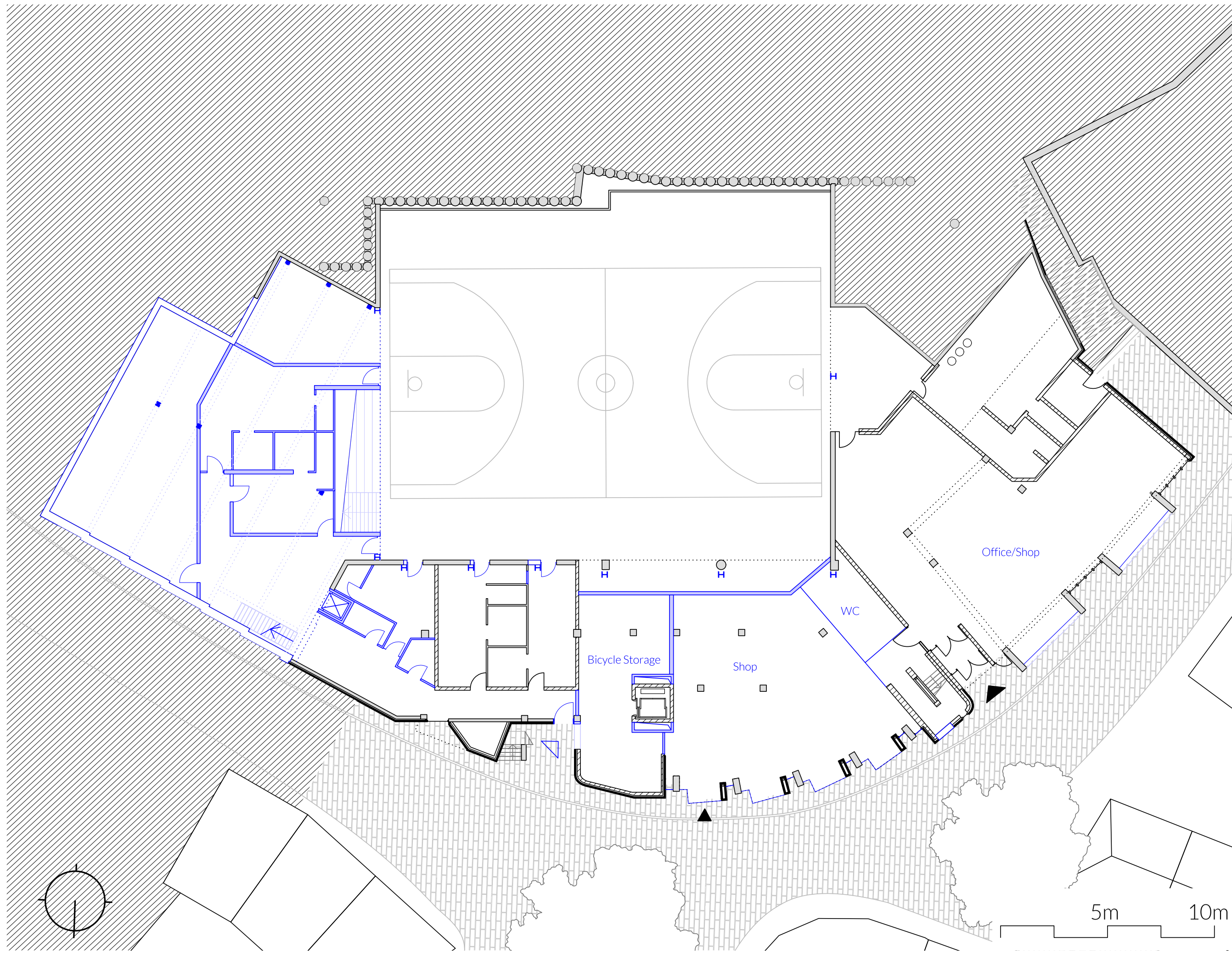
SECTION aa | Context



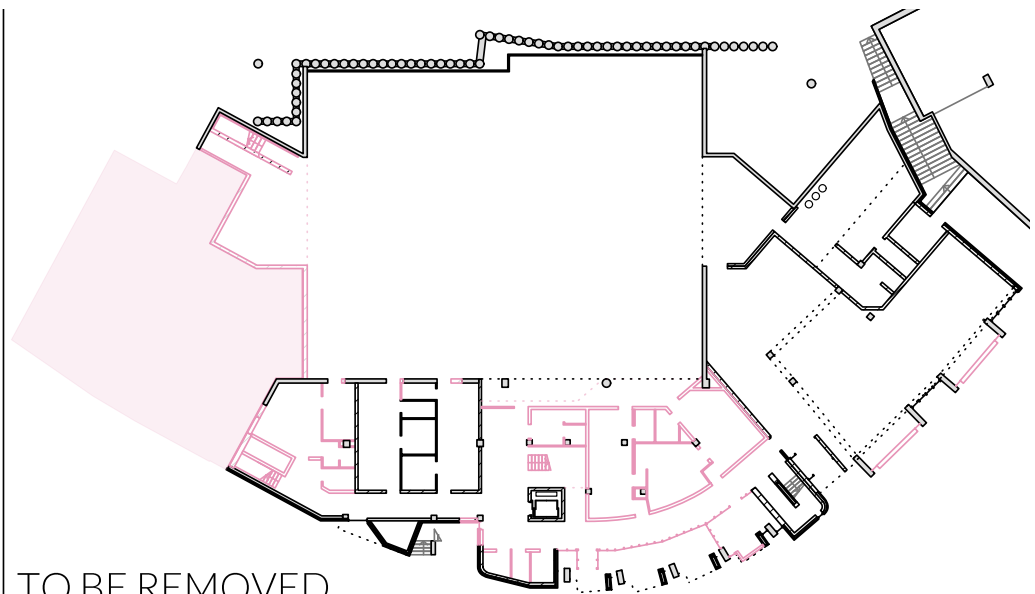
00 FLOOR | Context



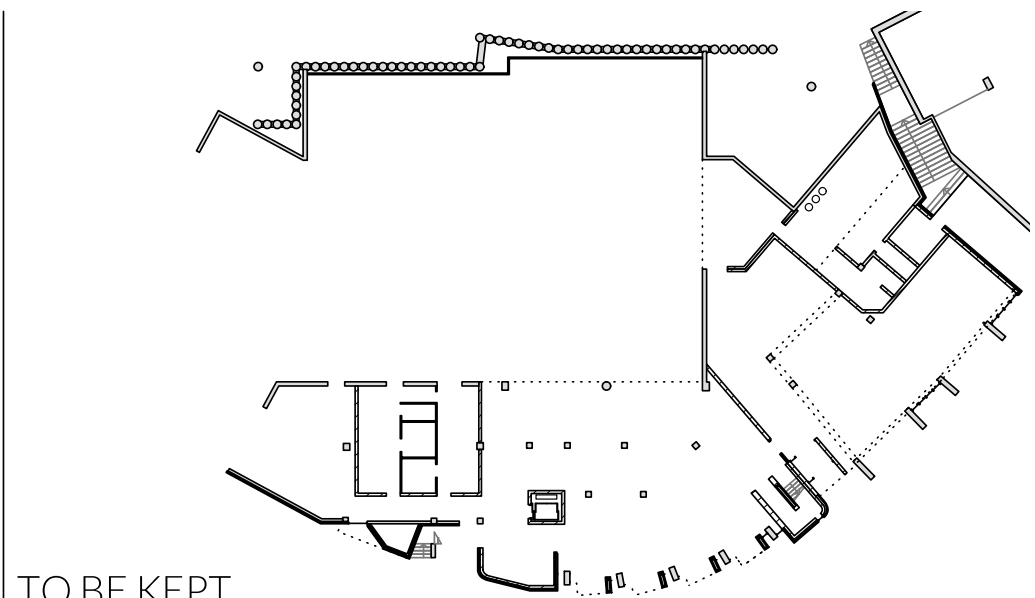
LEVEL



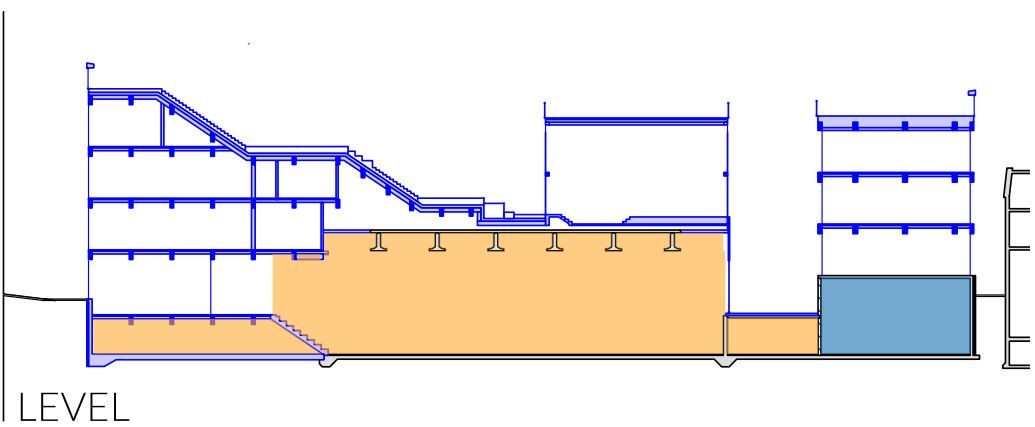
00 FLOOR | Context



TO BE REMOVED



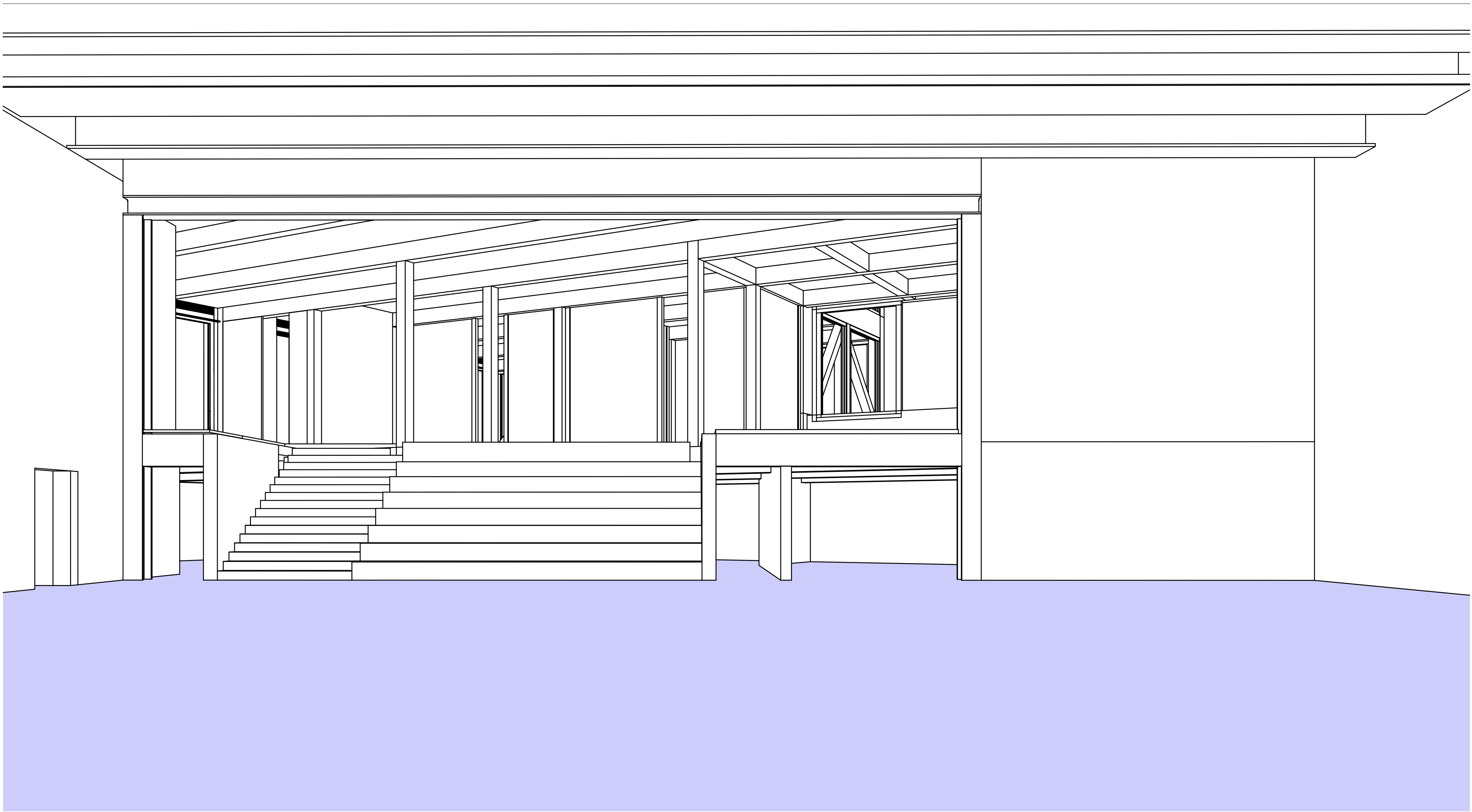
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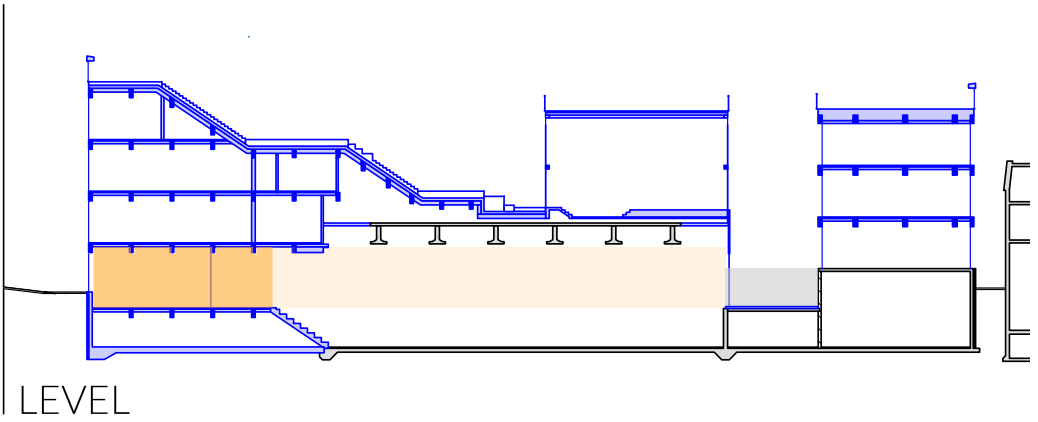
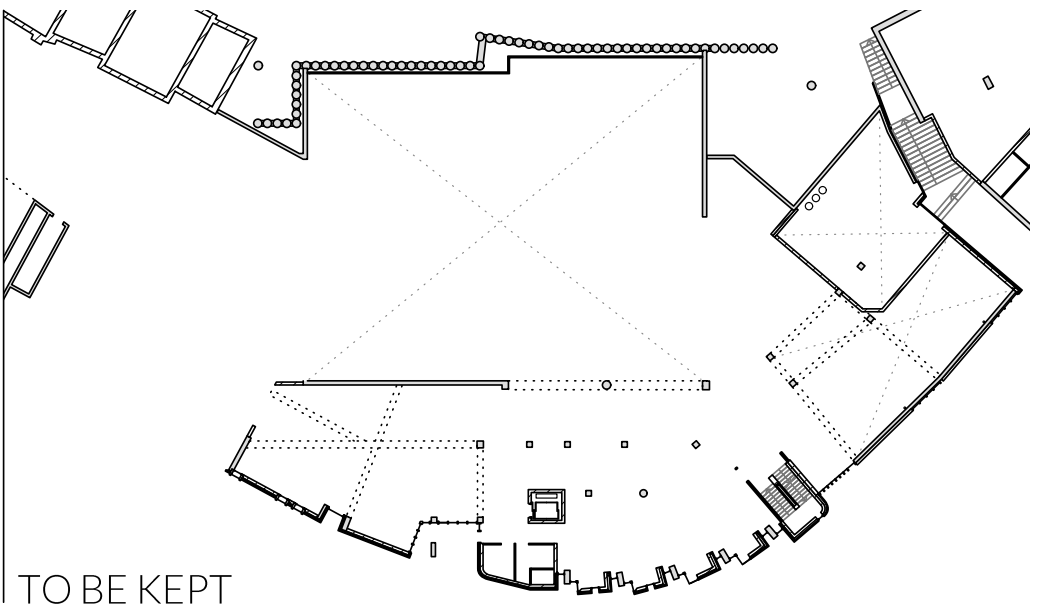
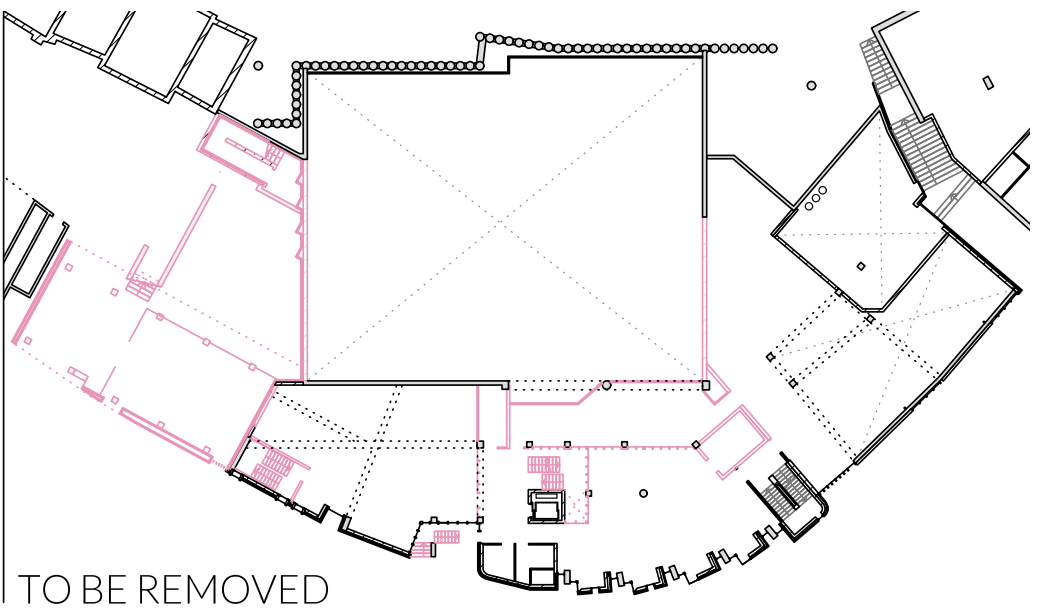
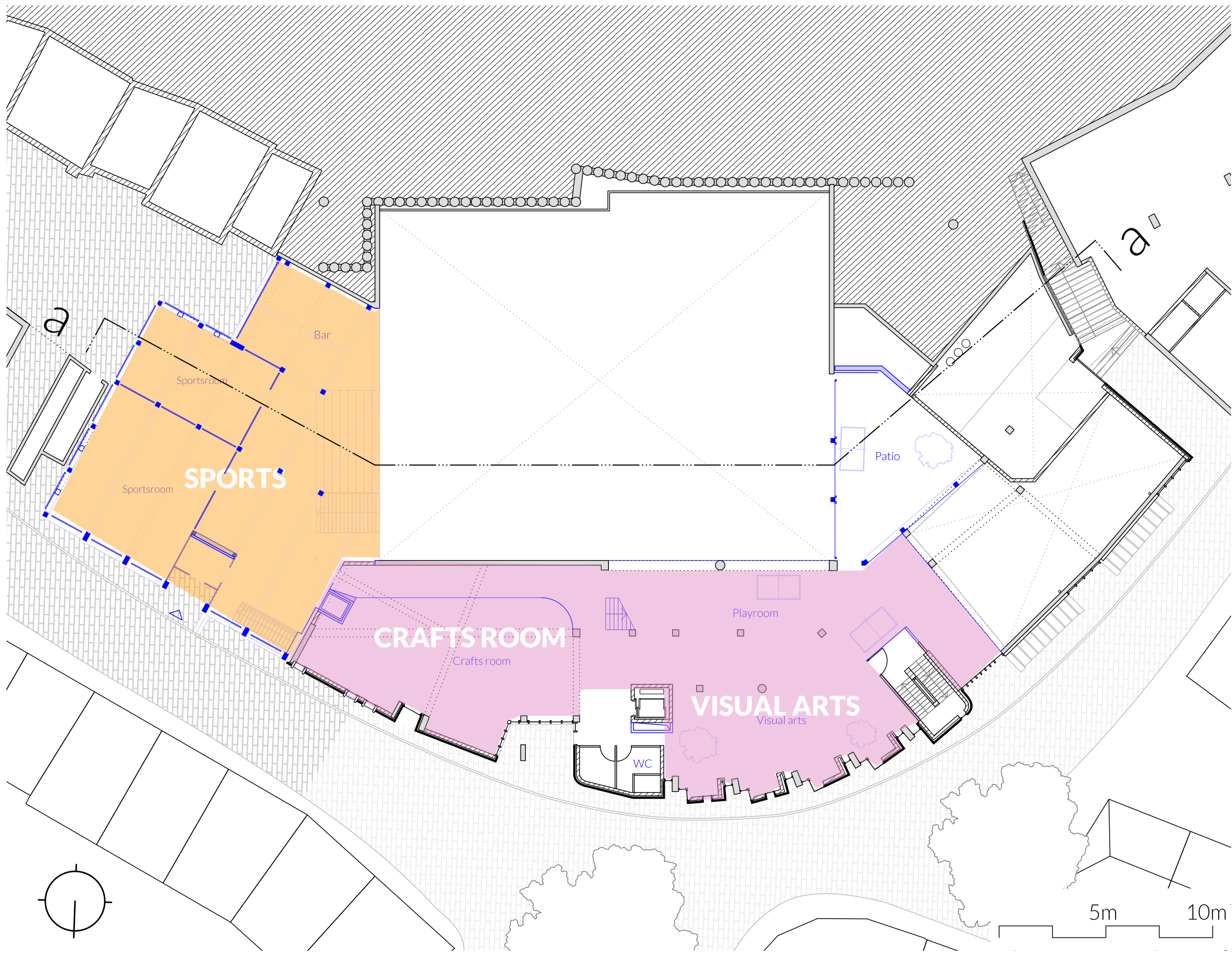


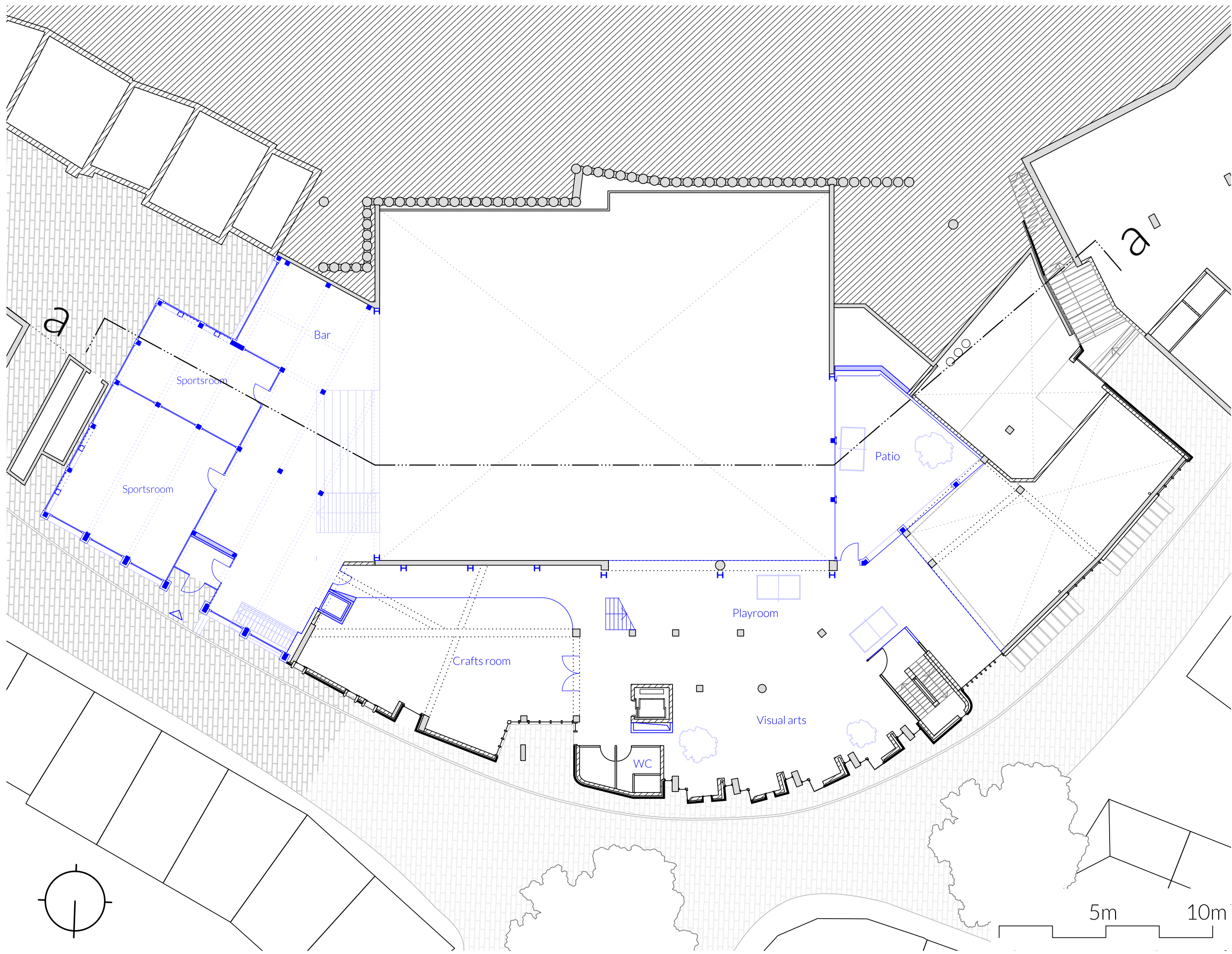
LEVEL



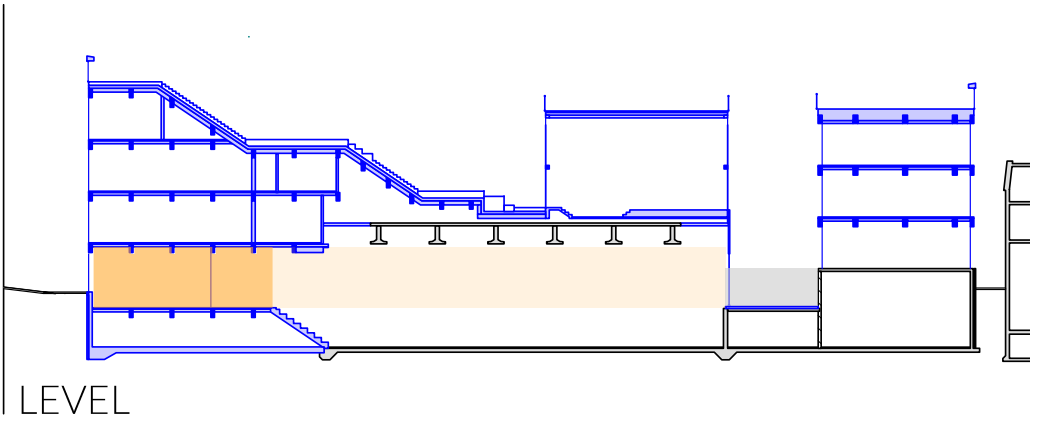
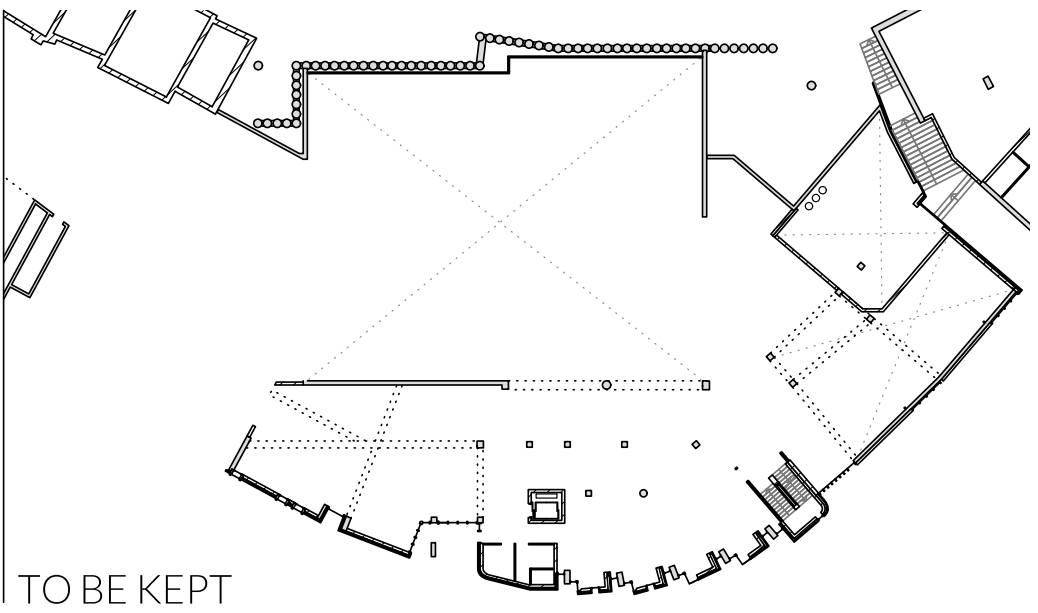
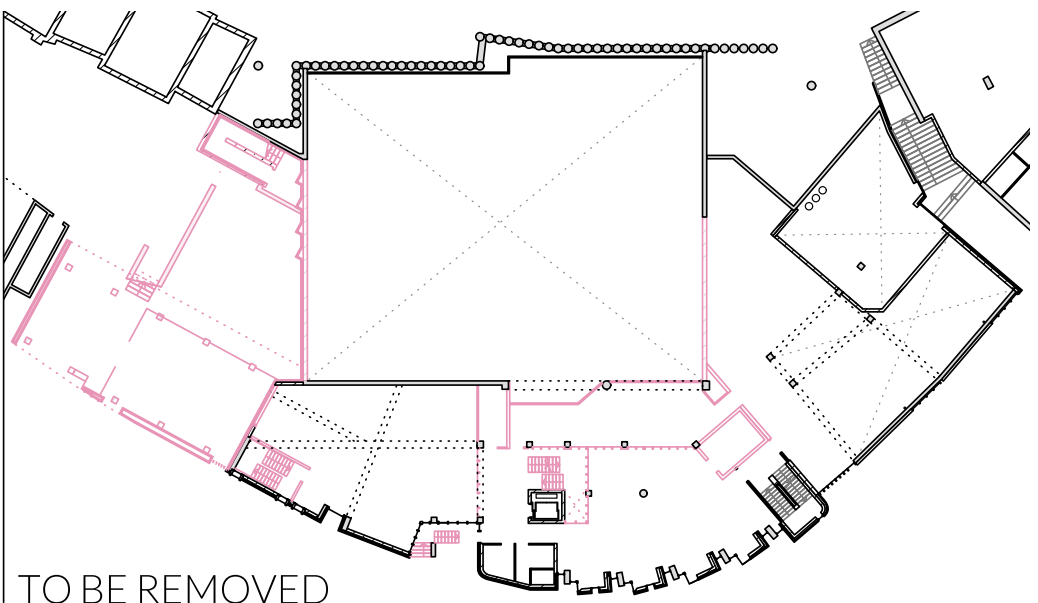
PERSPECTIVE | Schoolyard

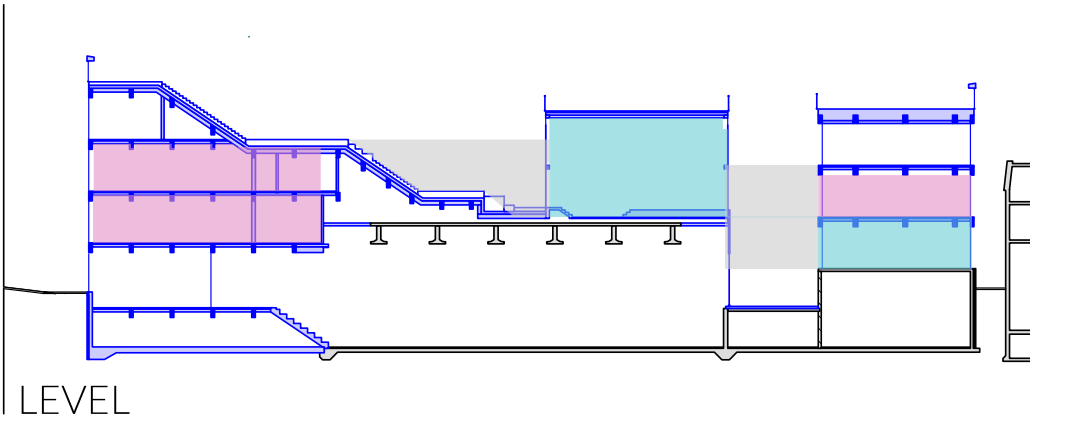
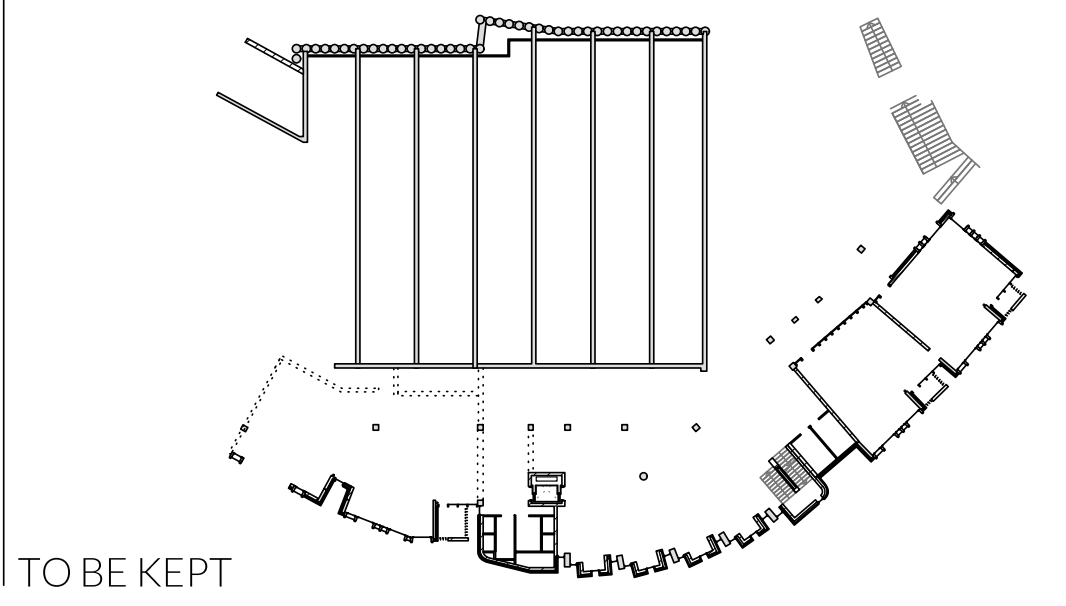
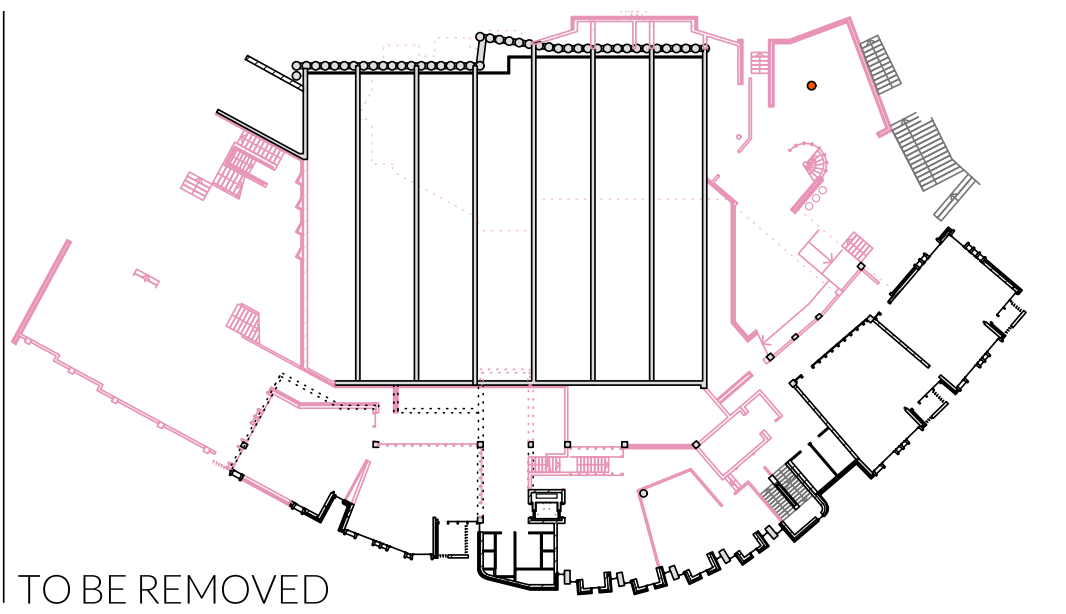
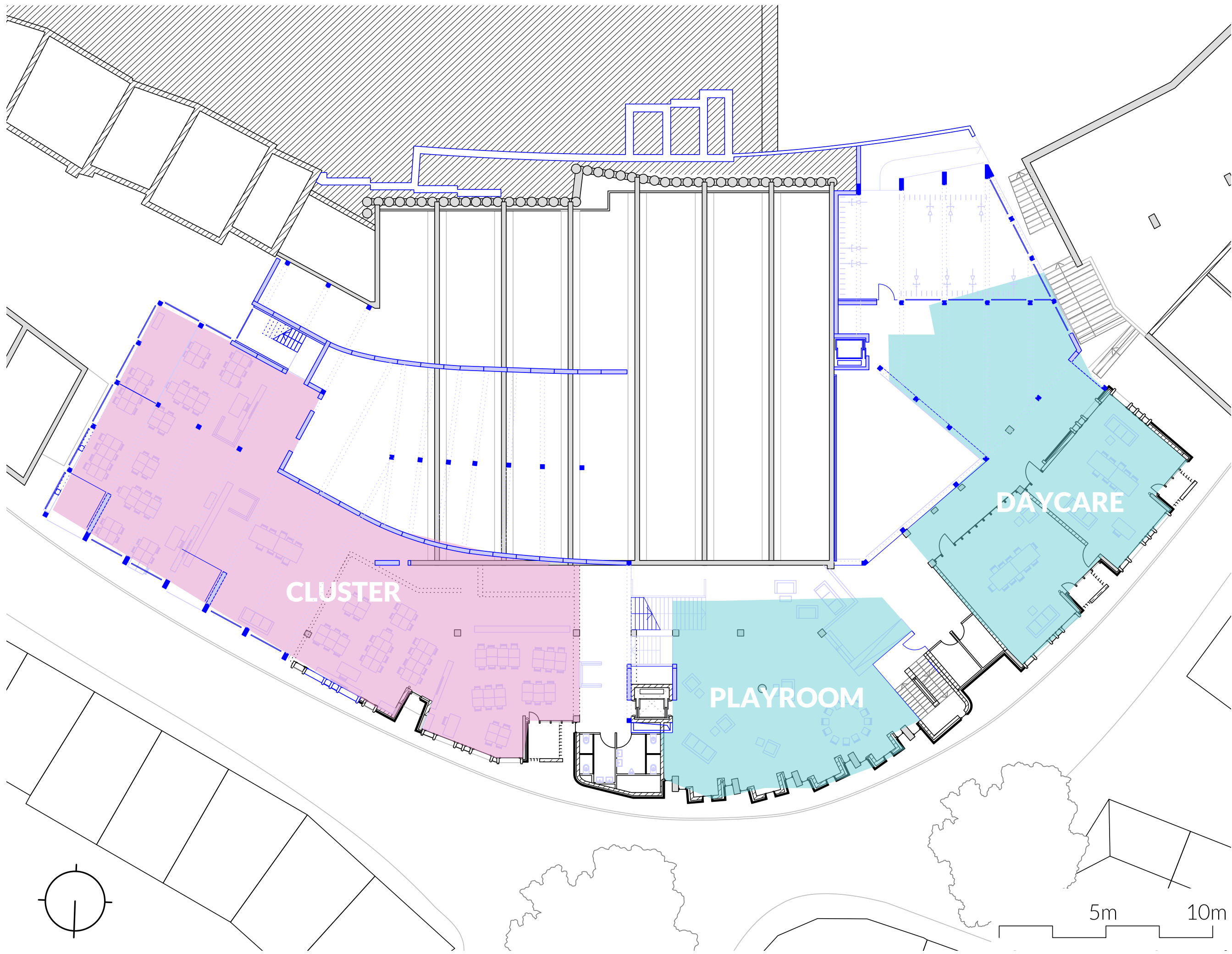


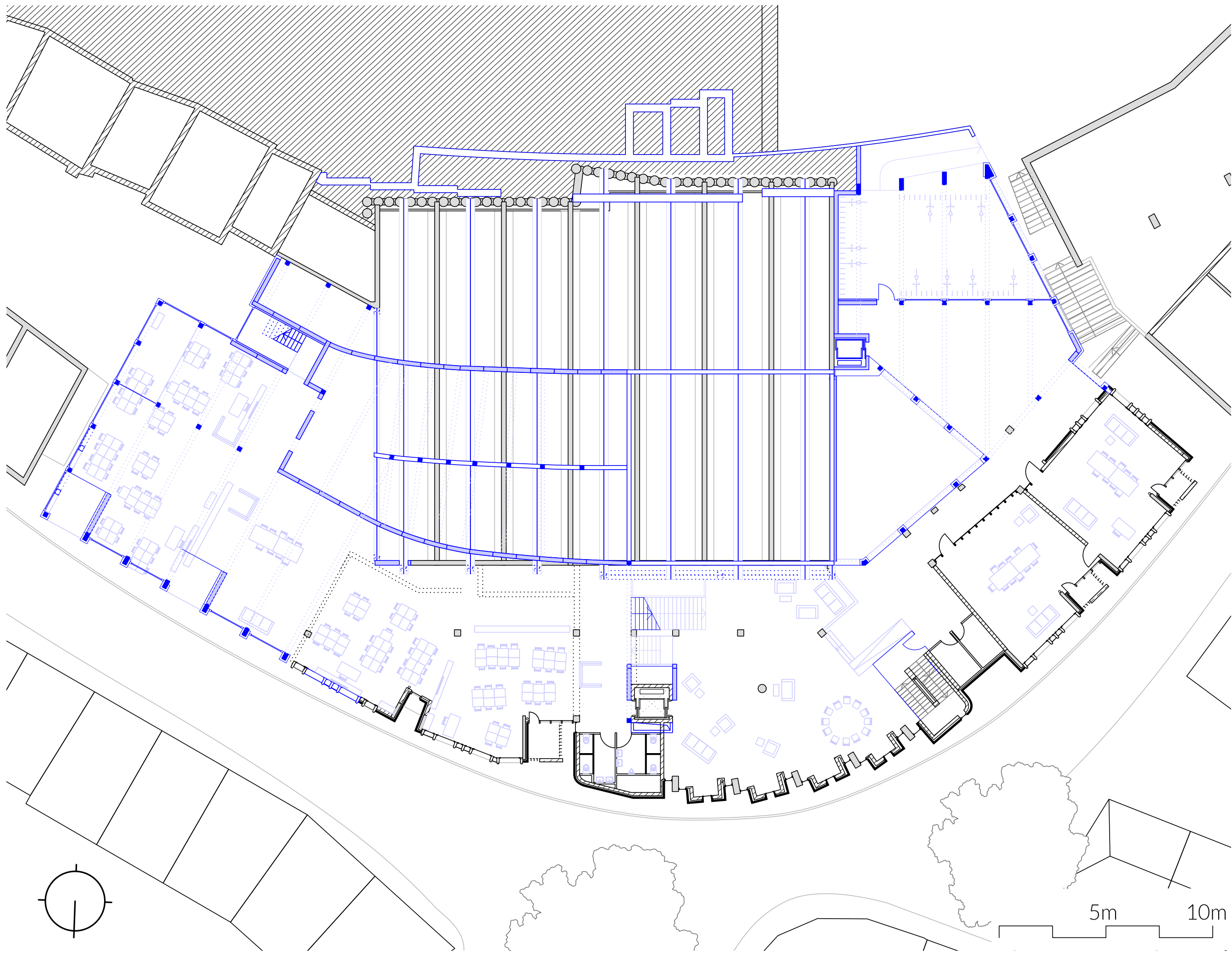




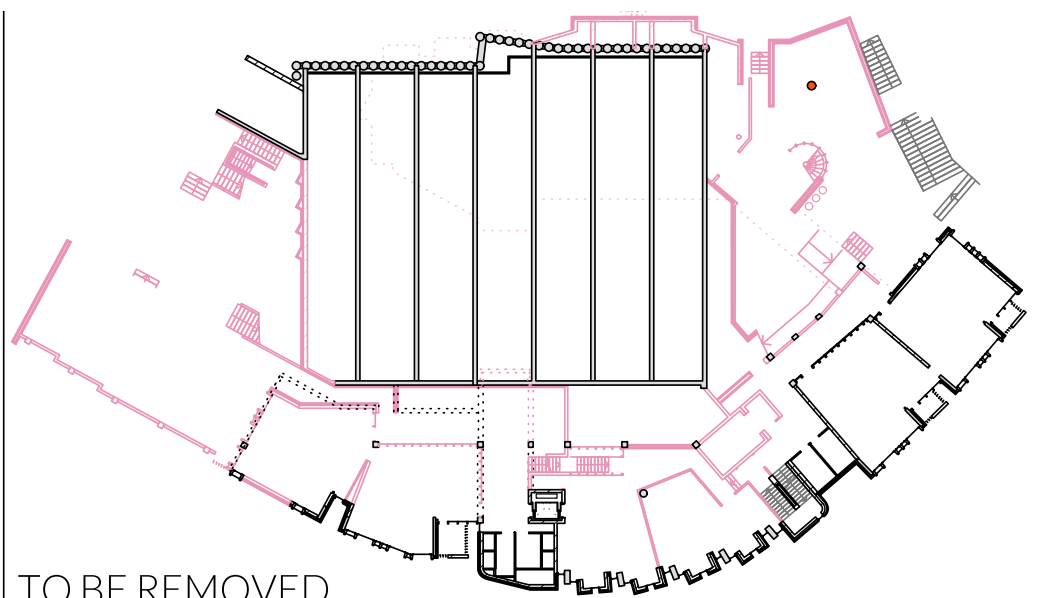
01 FLOOR | Context



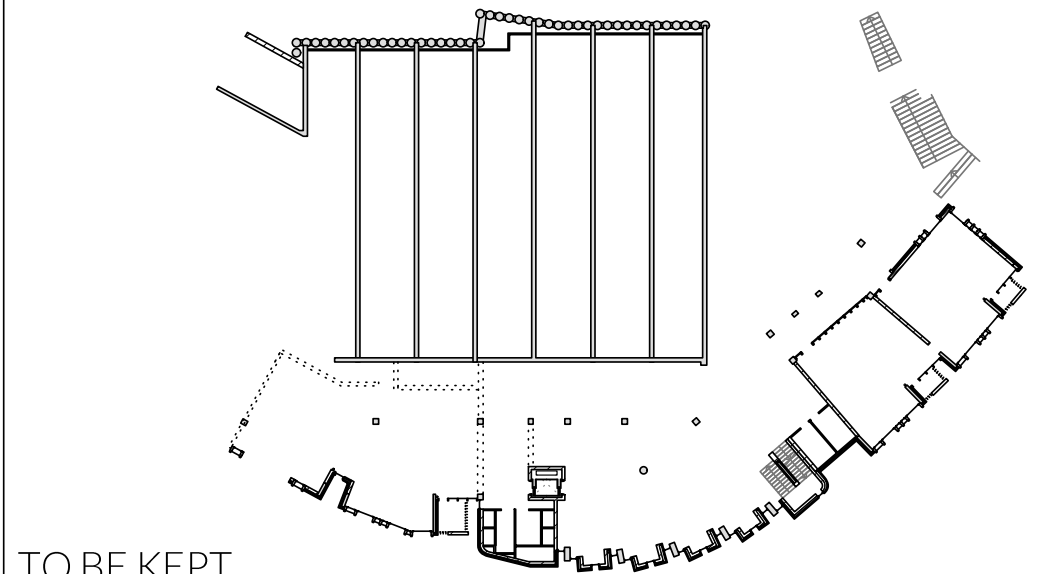




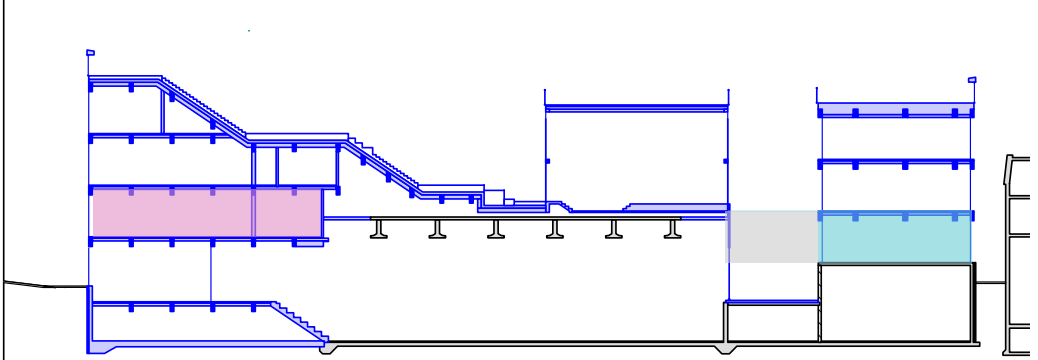
02 FLOOR | Context



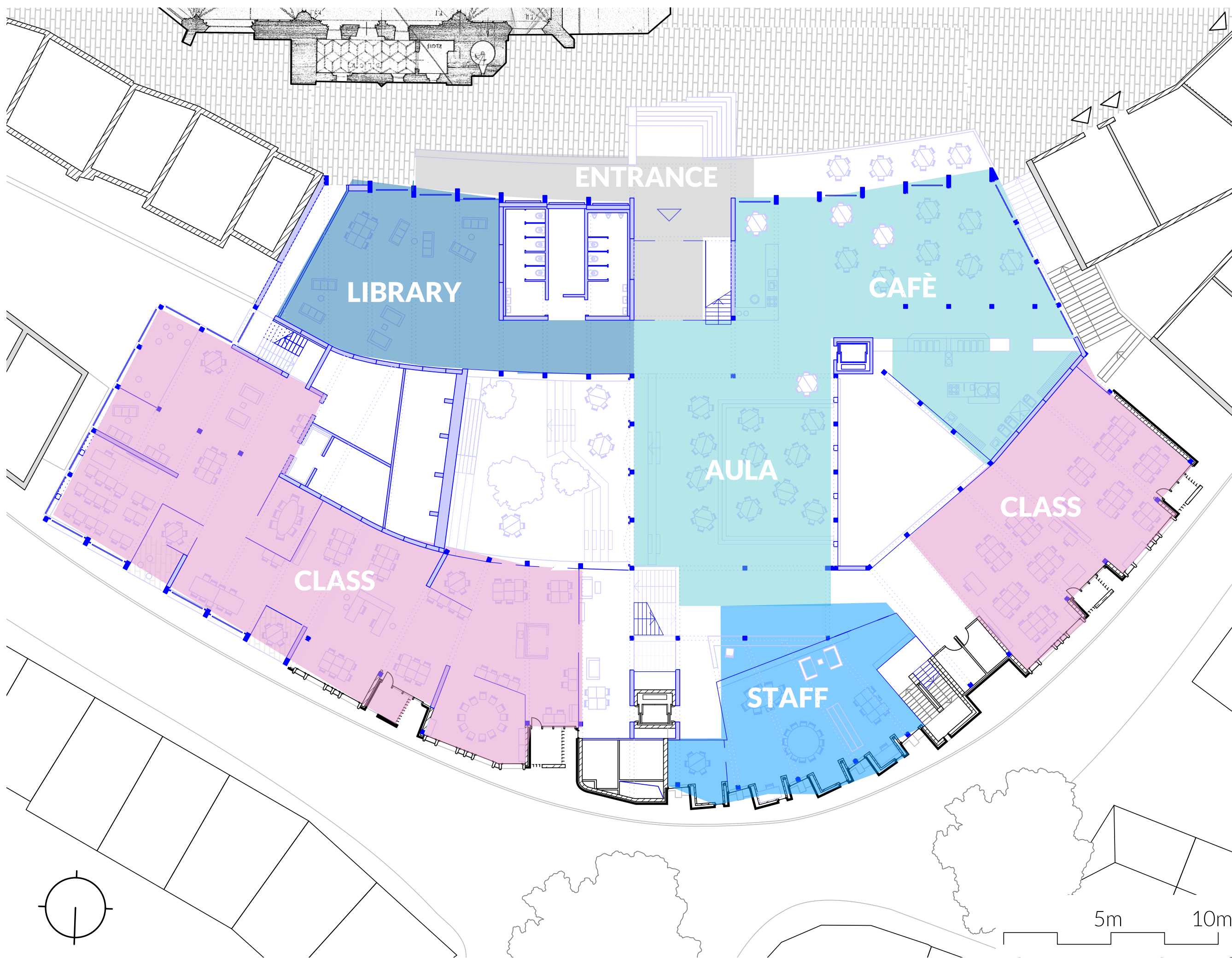
TO BE REMOVED



TO BE KEPT



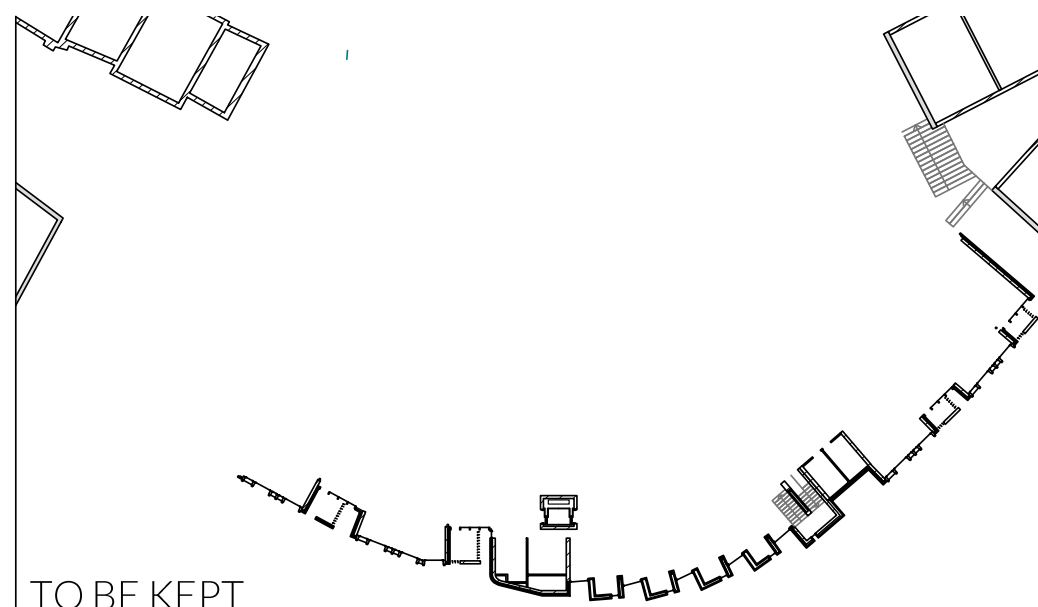
LEVEL



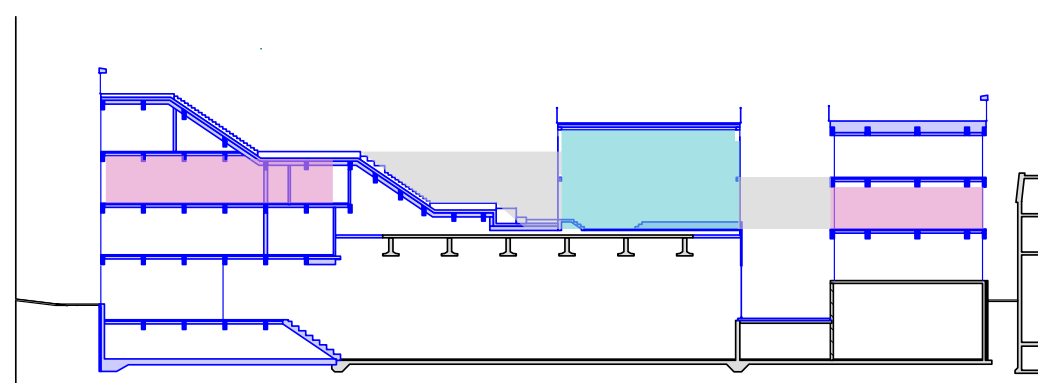
03 FLOOR | Context



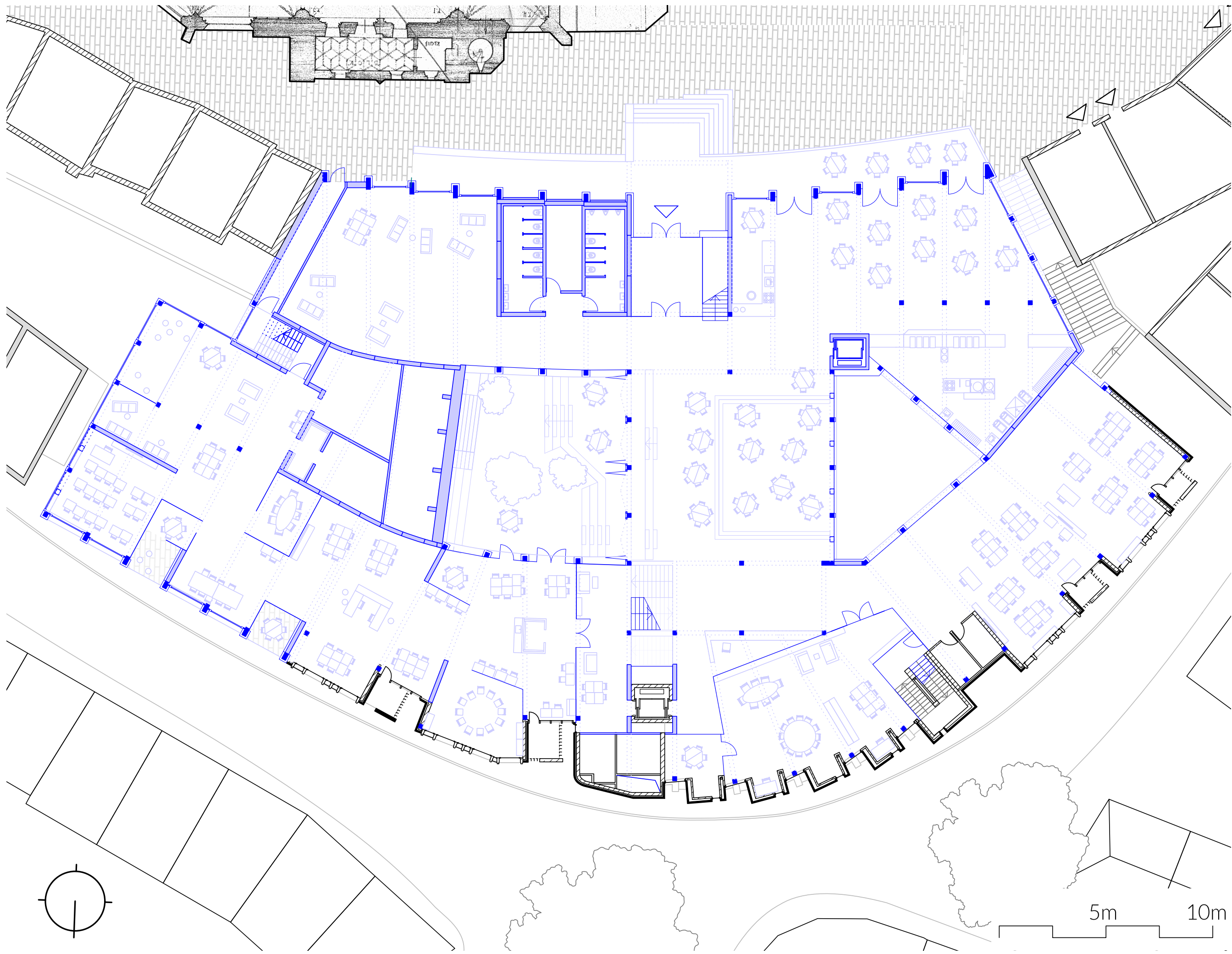
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TO BE KEPT

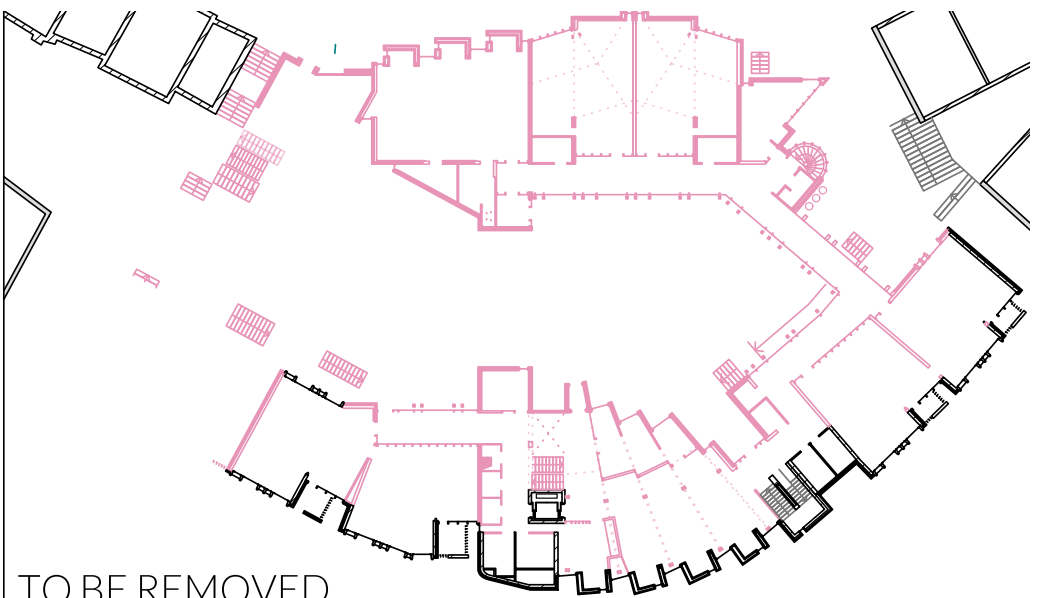


LEVEL

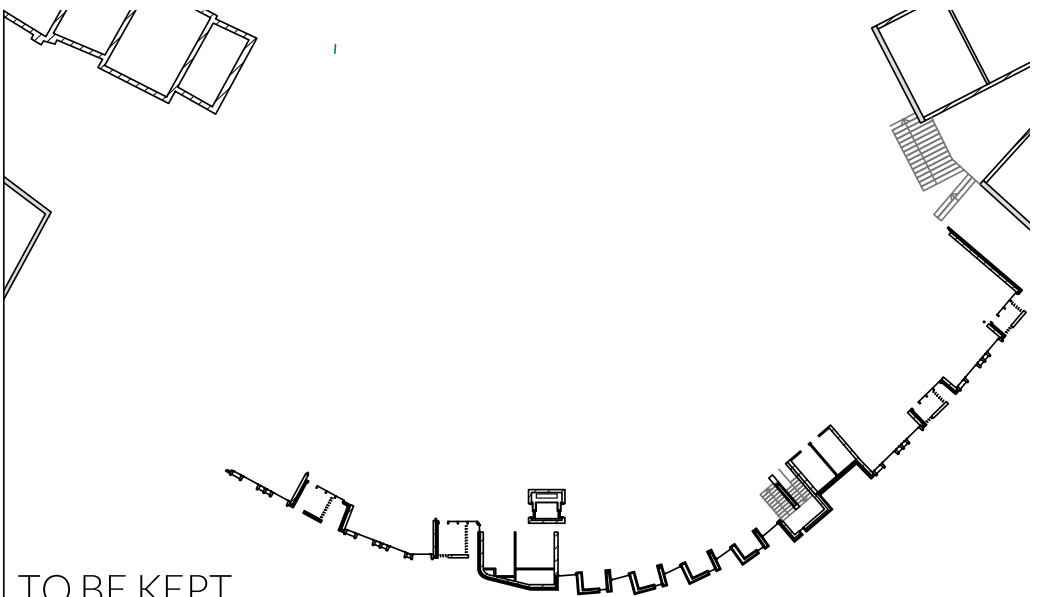


03 FLOOR | Context

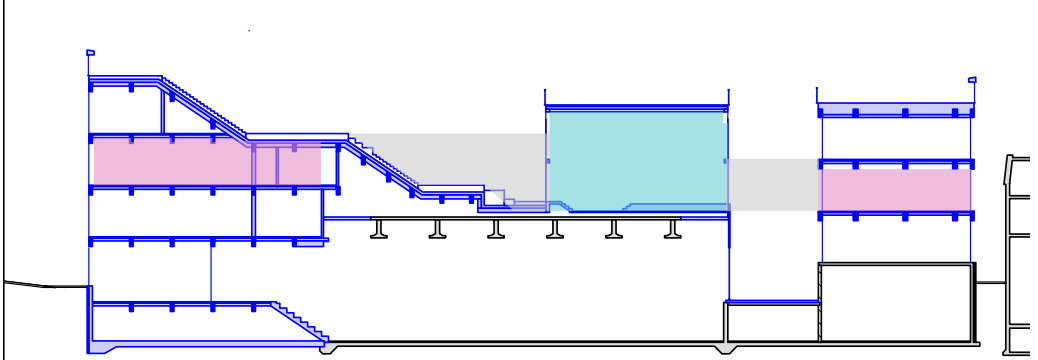
Sportshall, Classrooms



TO BE REMOVED



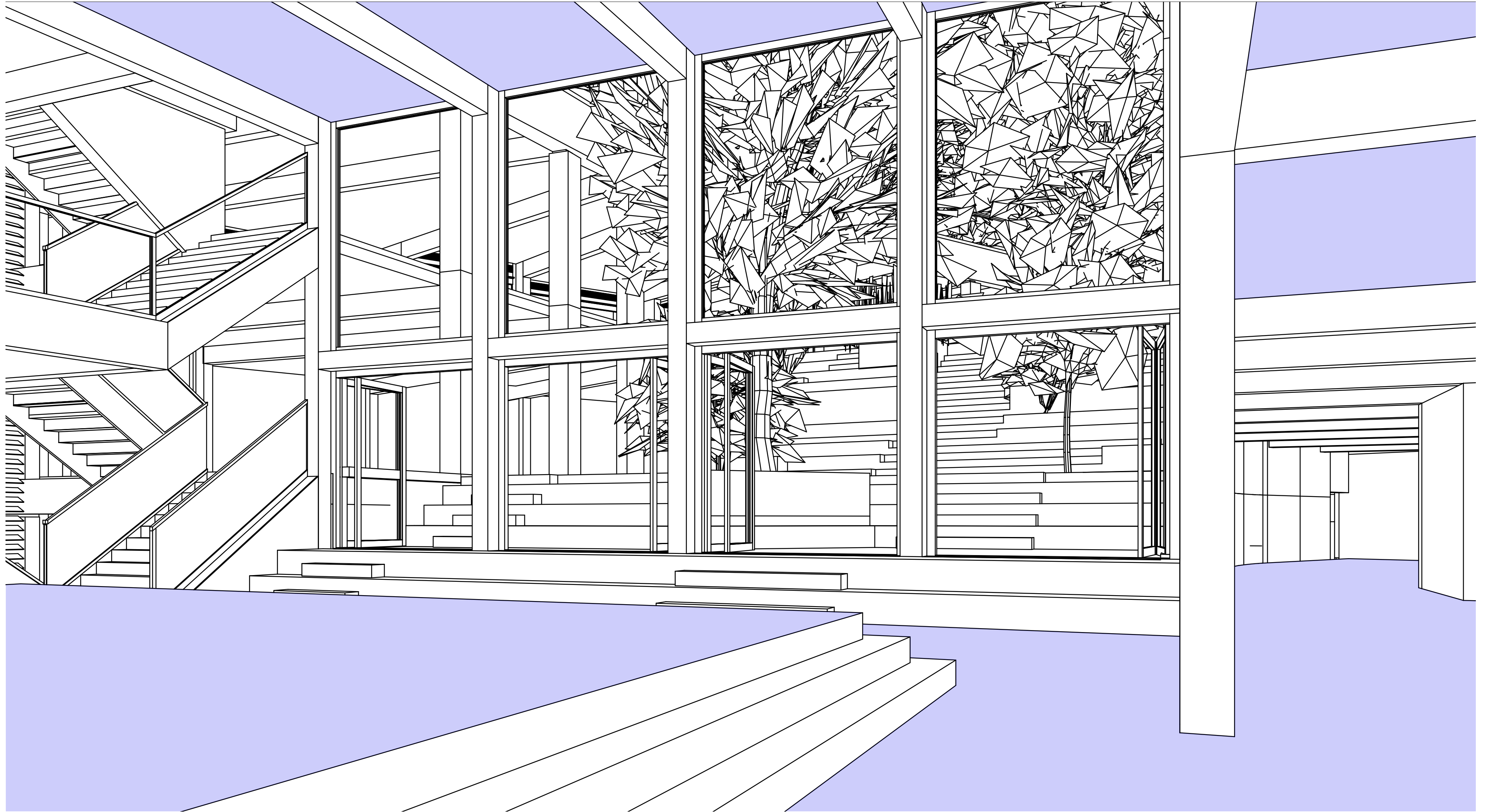
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LEVEL



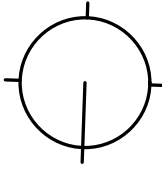
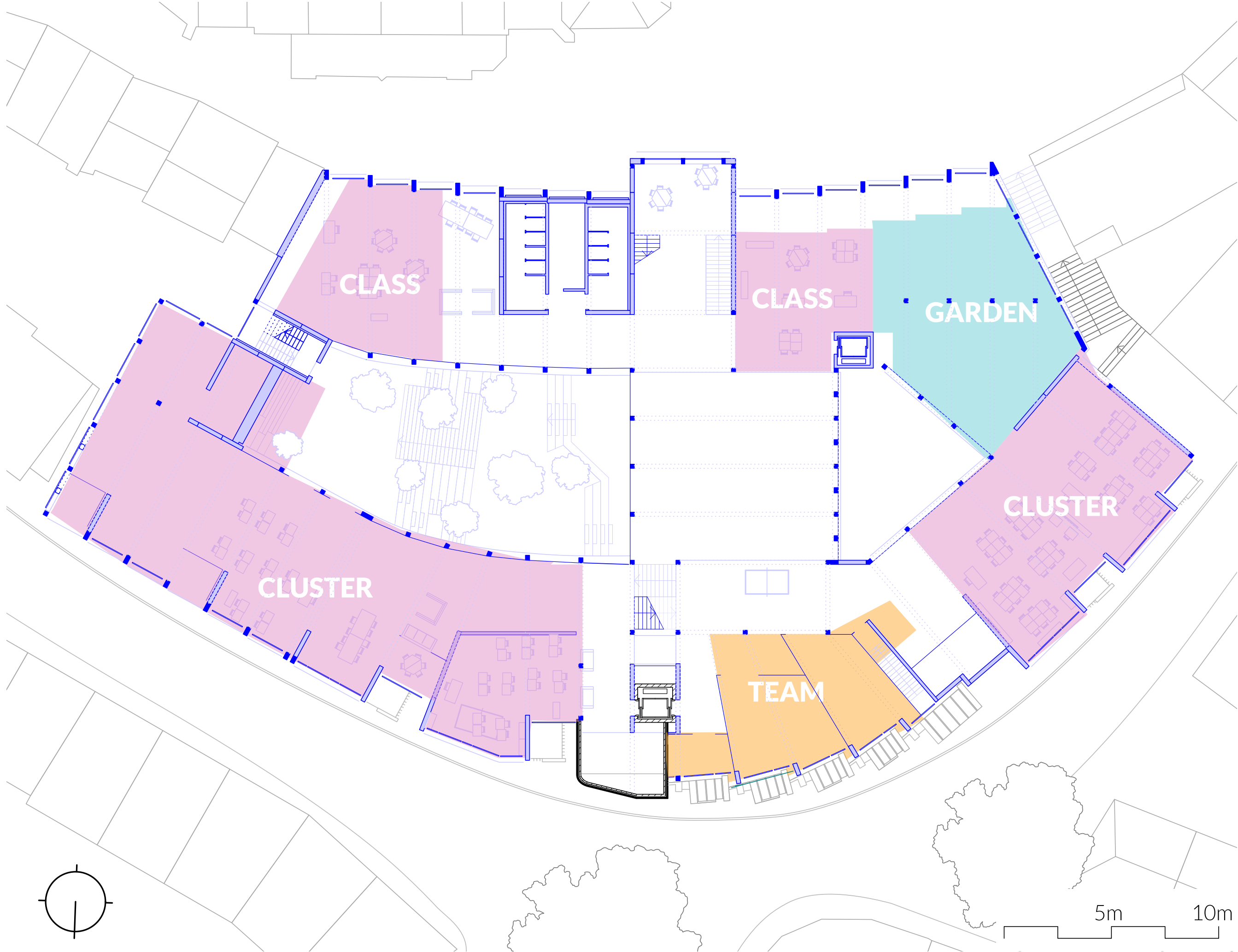
PERSPECTIVE | Schoolyard



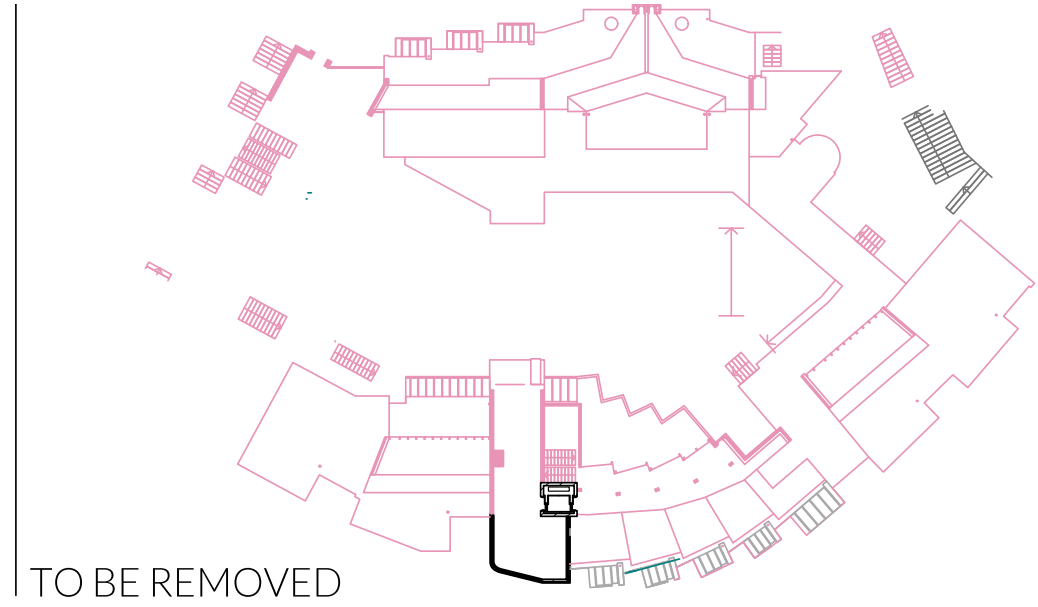
PERSPECTIVE | Schoolyard



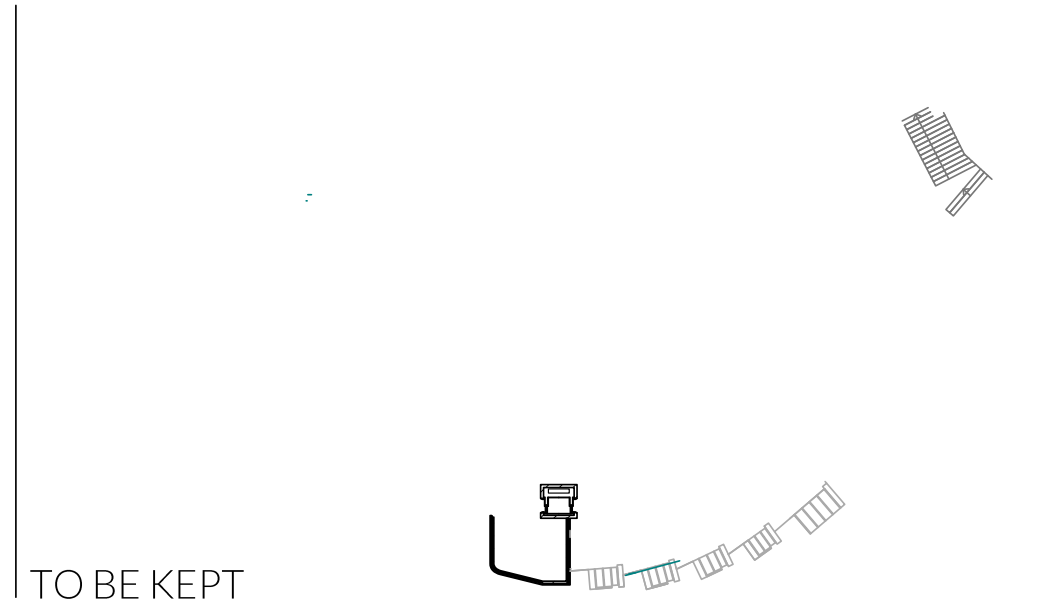
PERSPECTIVE | Schoolyard



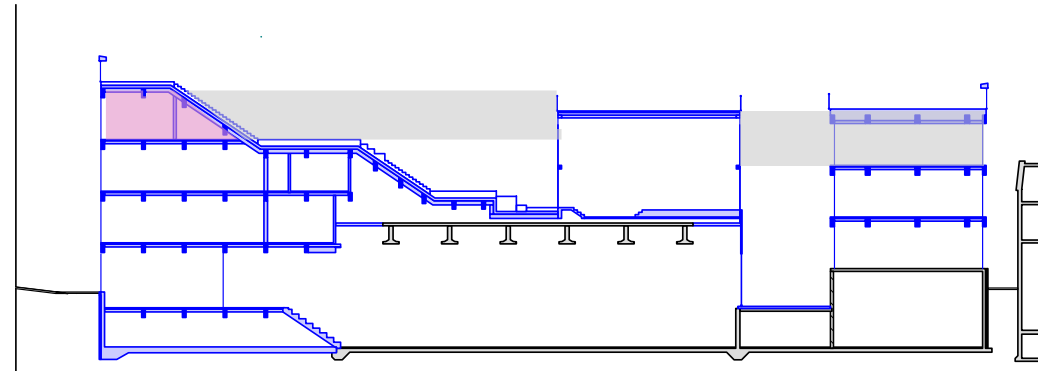
5m 10m



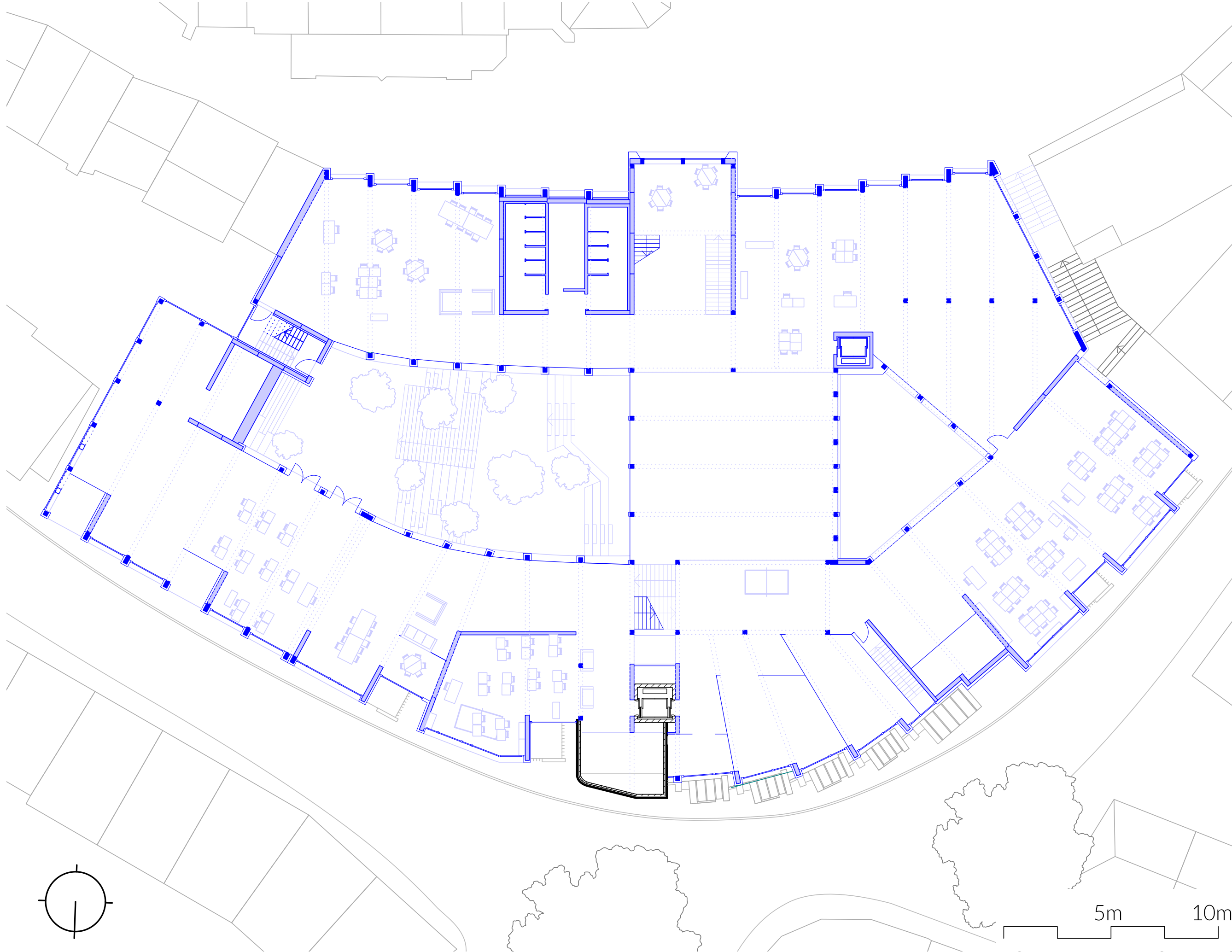
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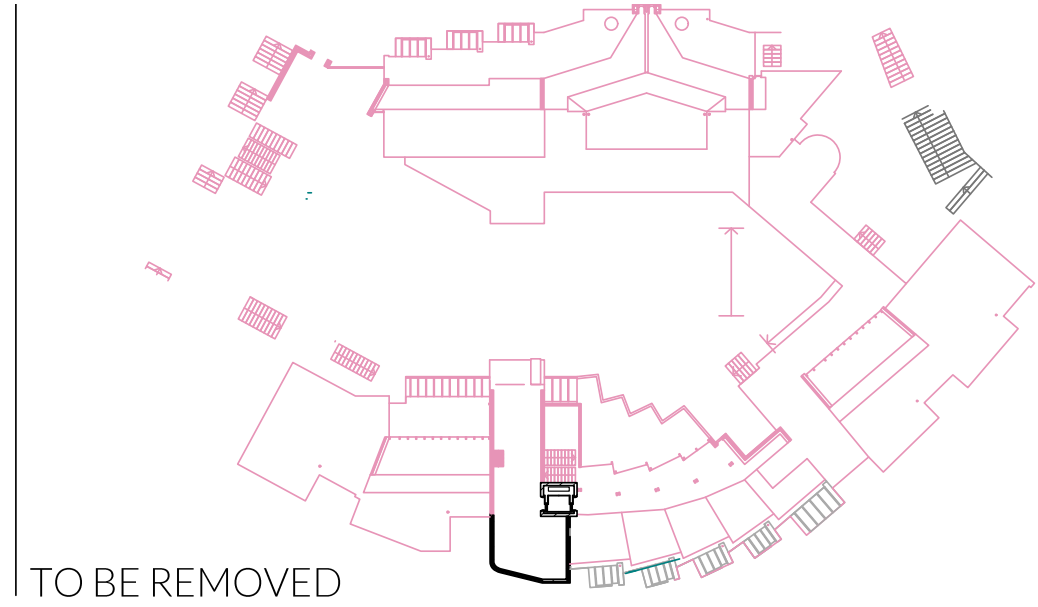
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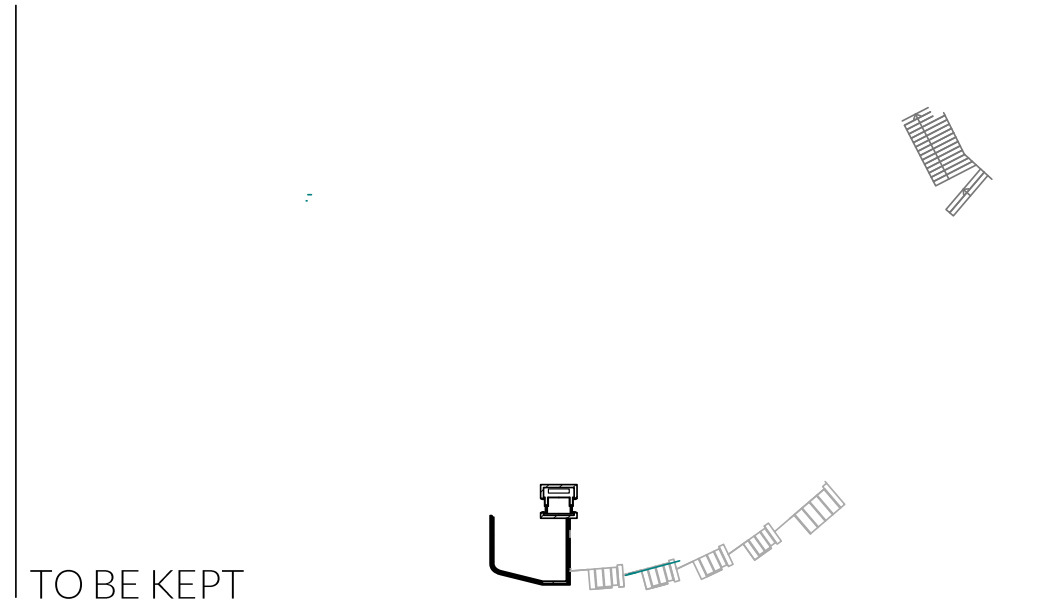
LEVEL



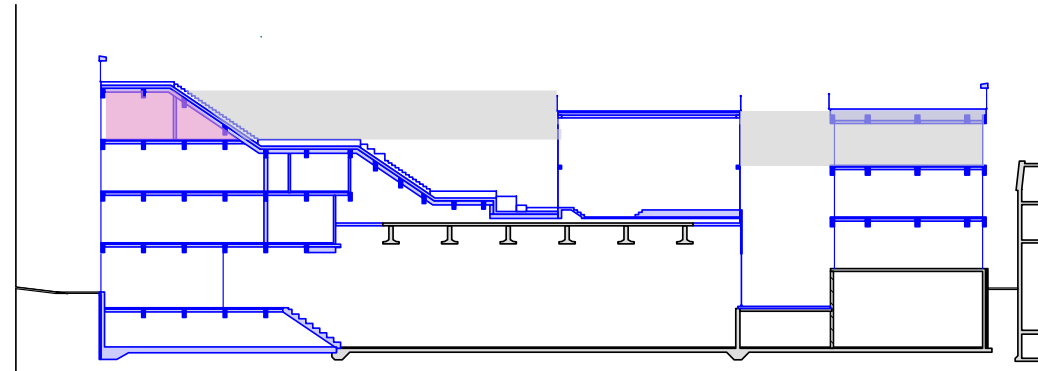
04 FLOOR | Context



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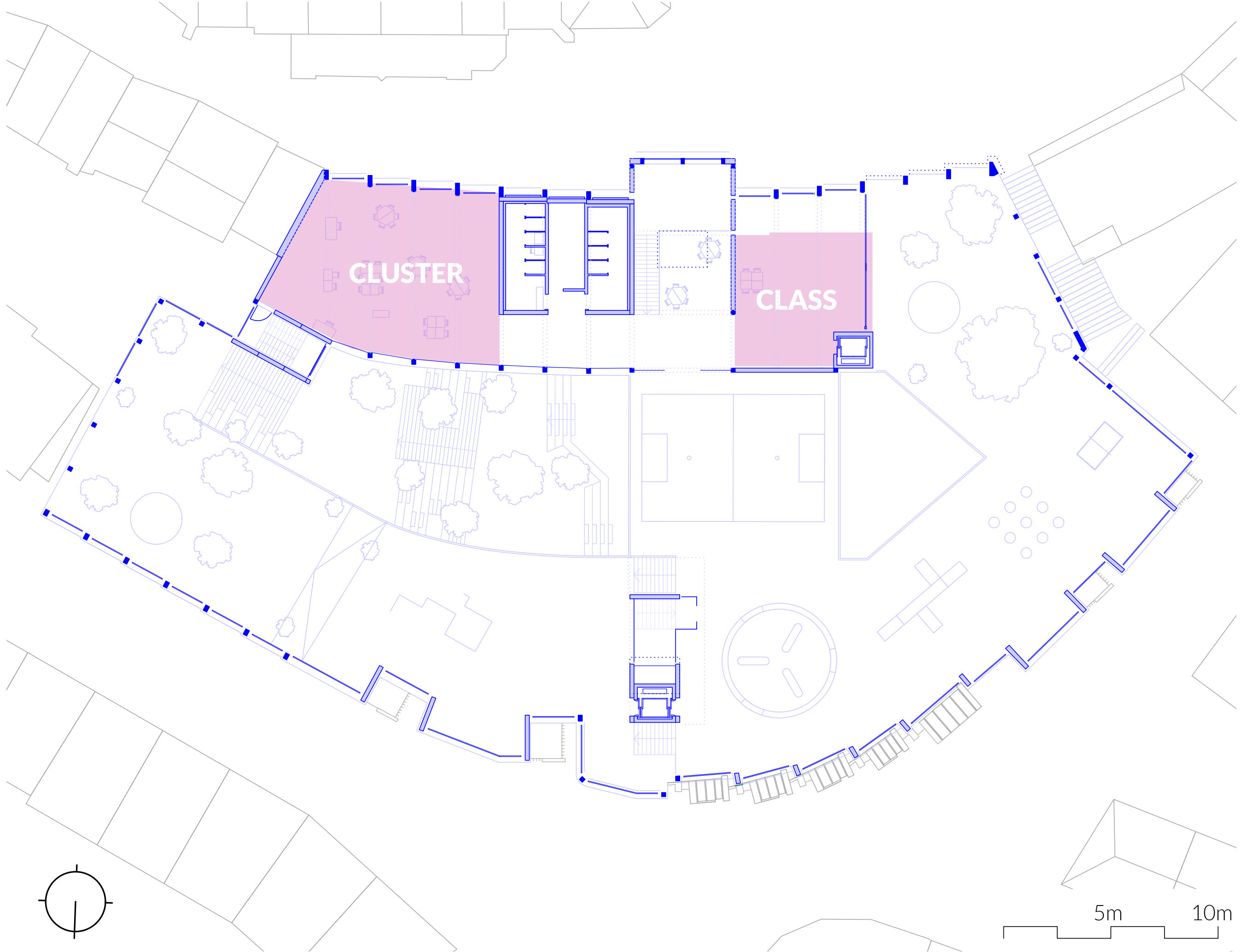
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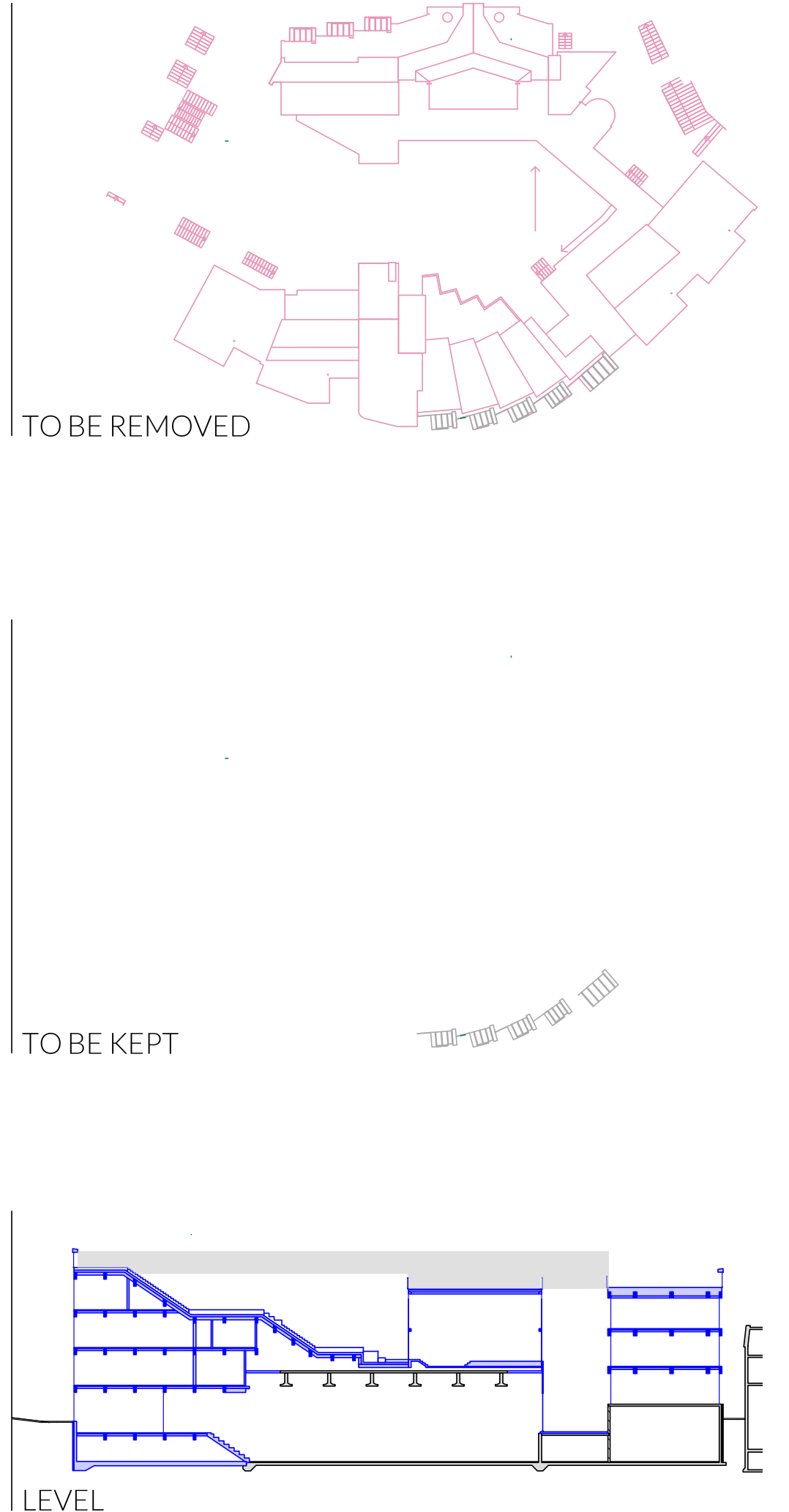
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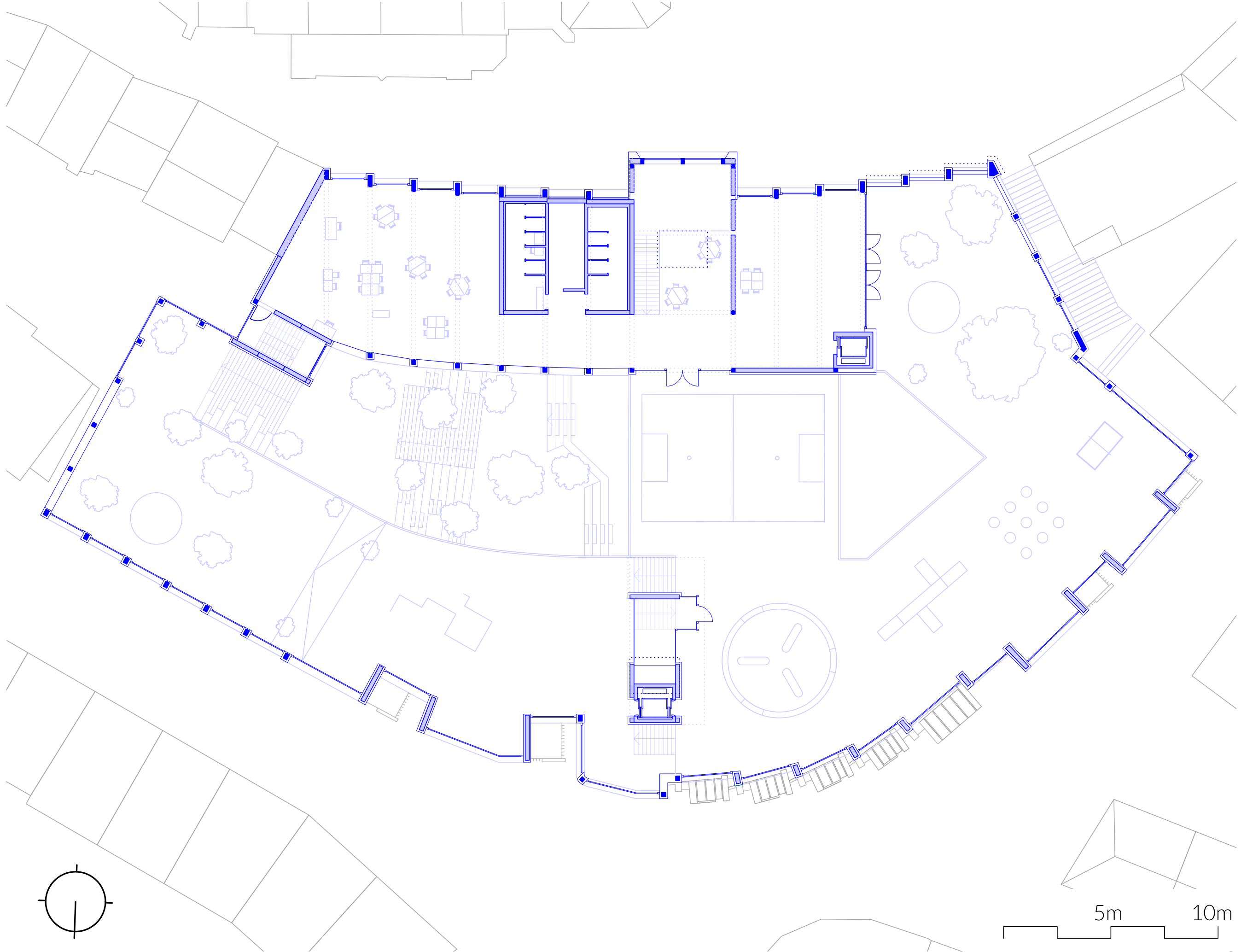
CLASSROOM IMPRESSION



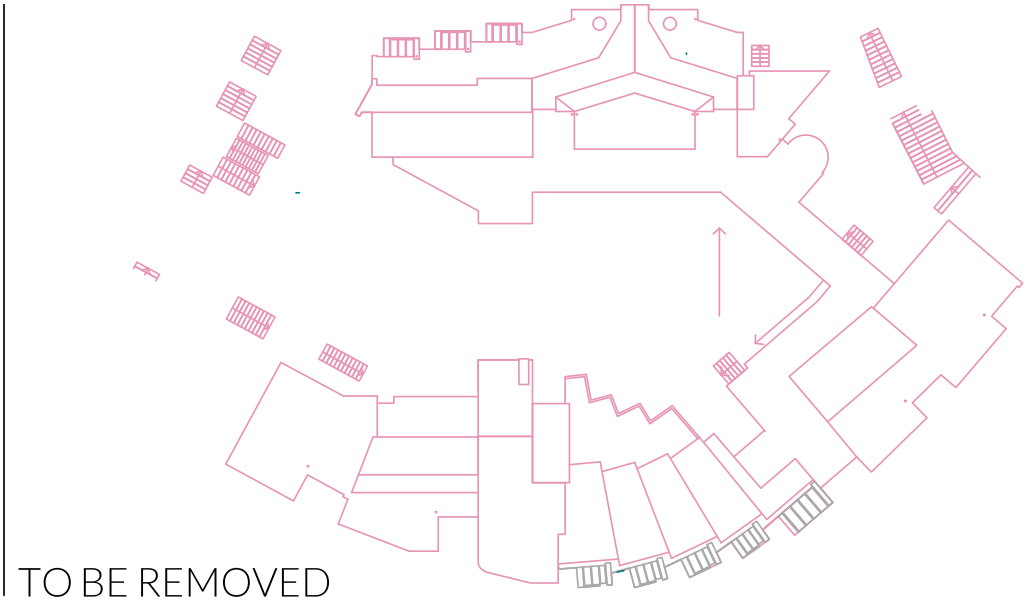
05 FLOOR | Context



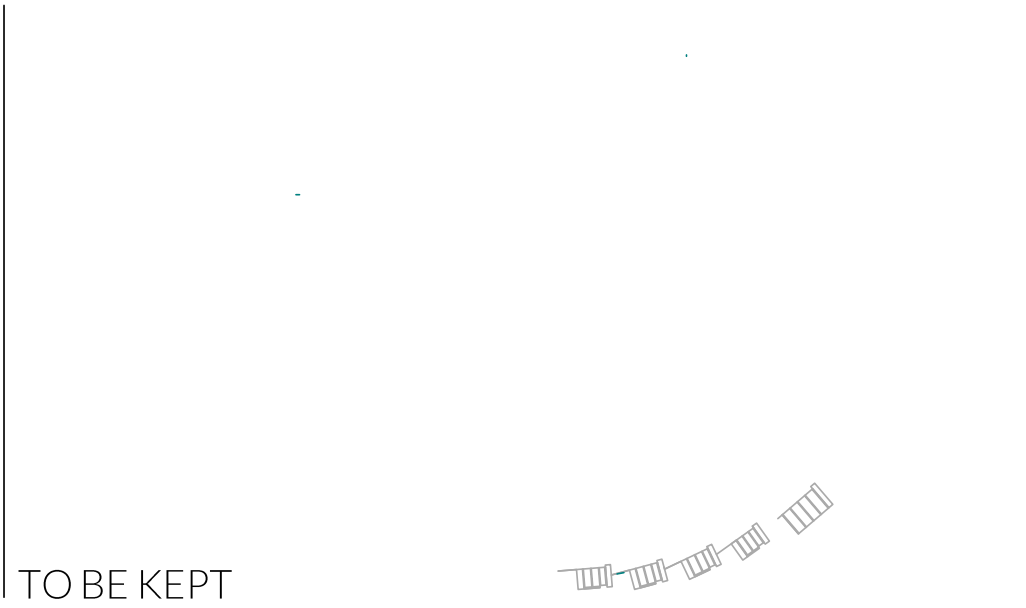
LEVEL



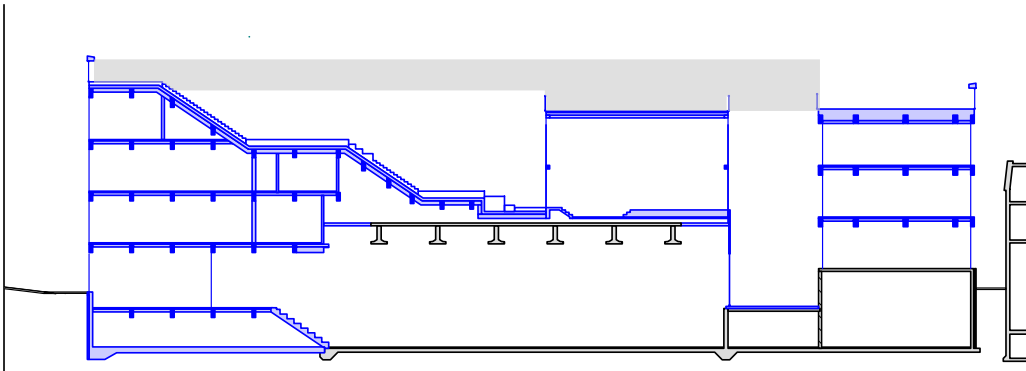
05 FLOOR | Context



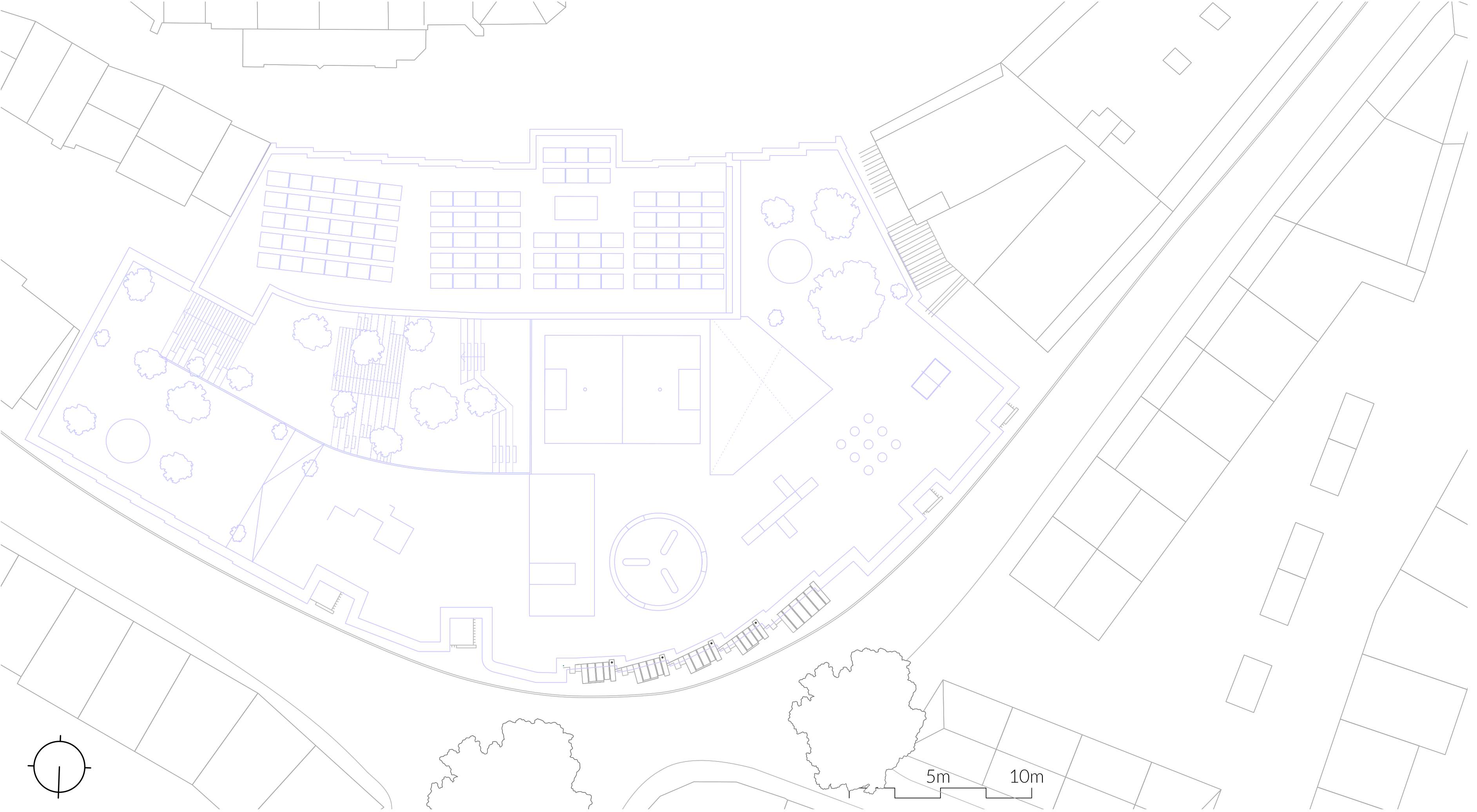
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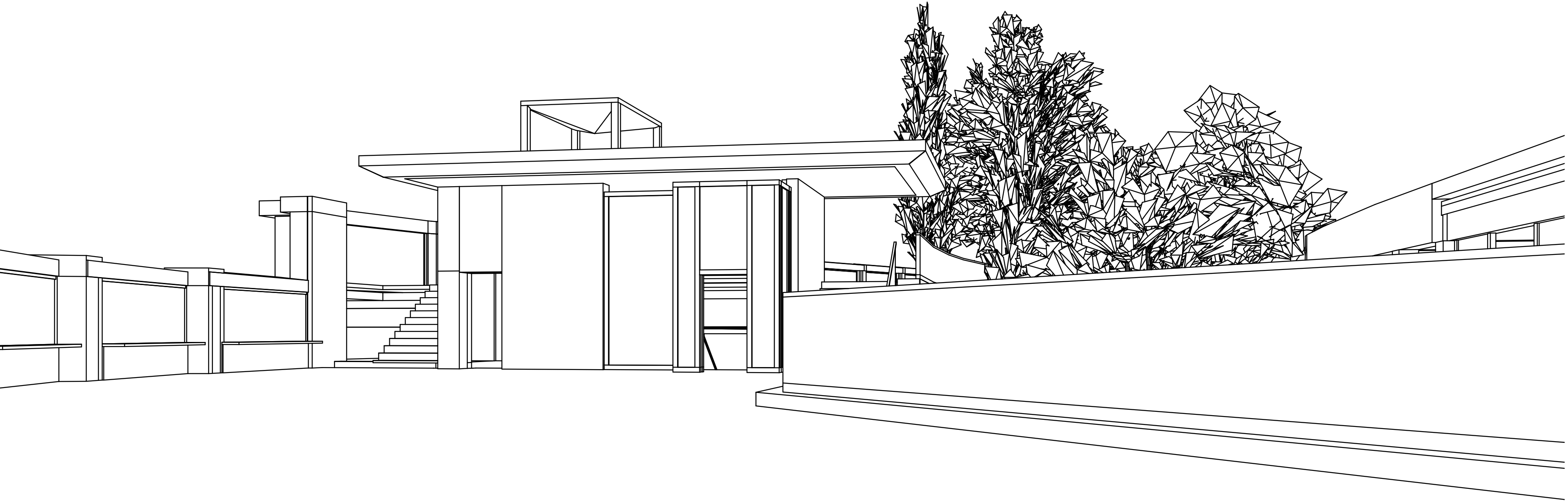


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LEVEL





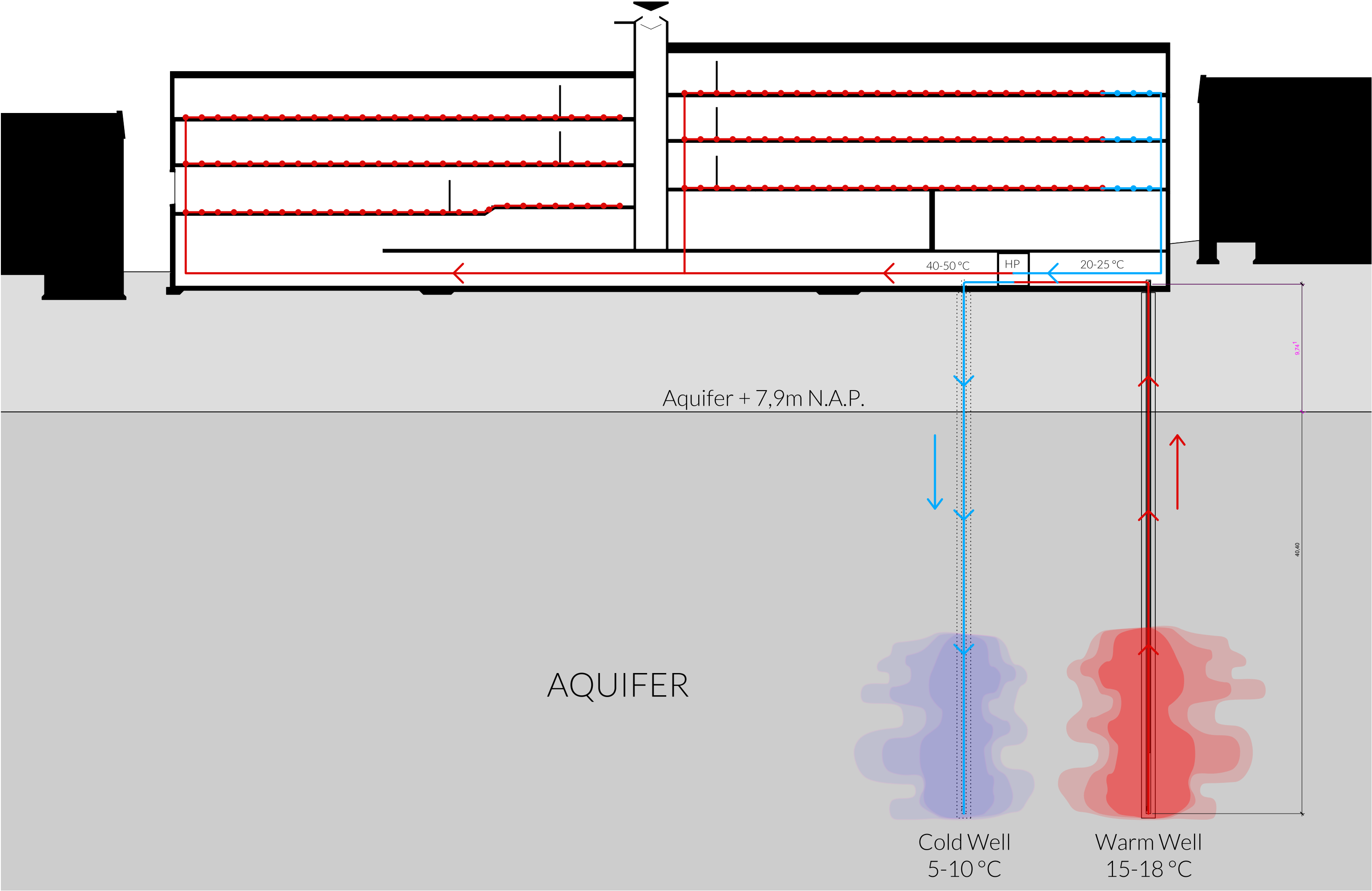


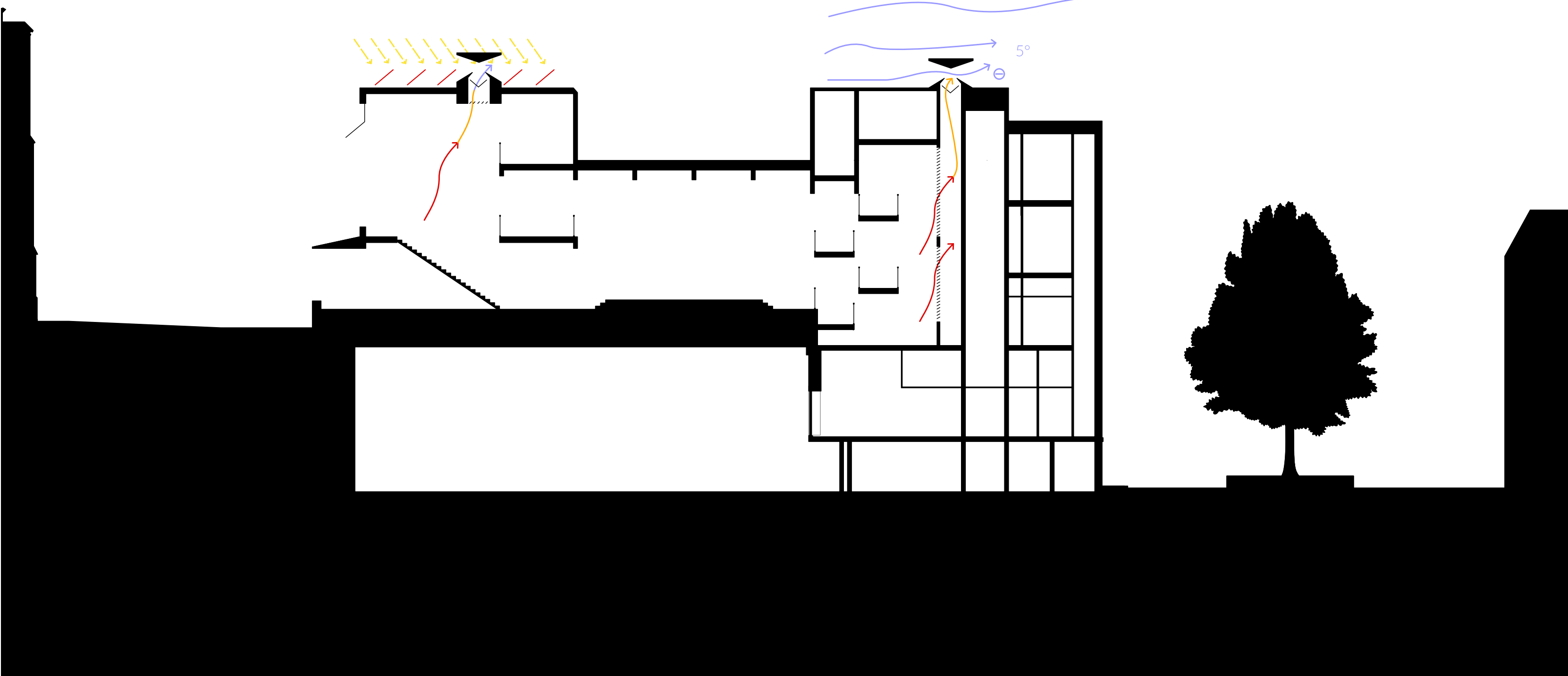
PERSPECTIVE | Schoolyard

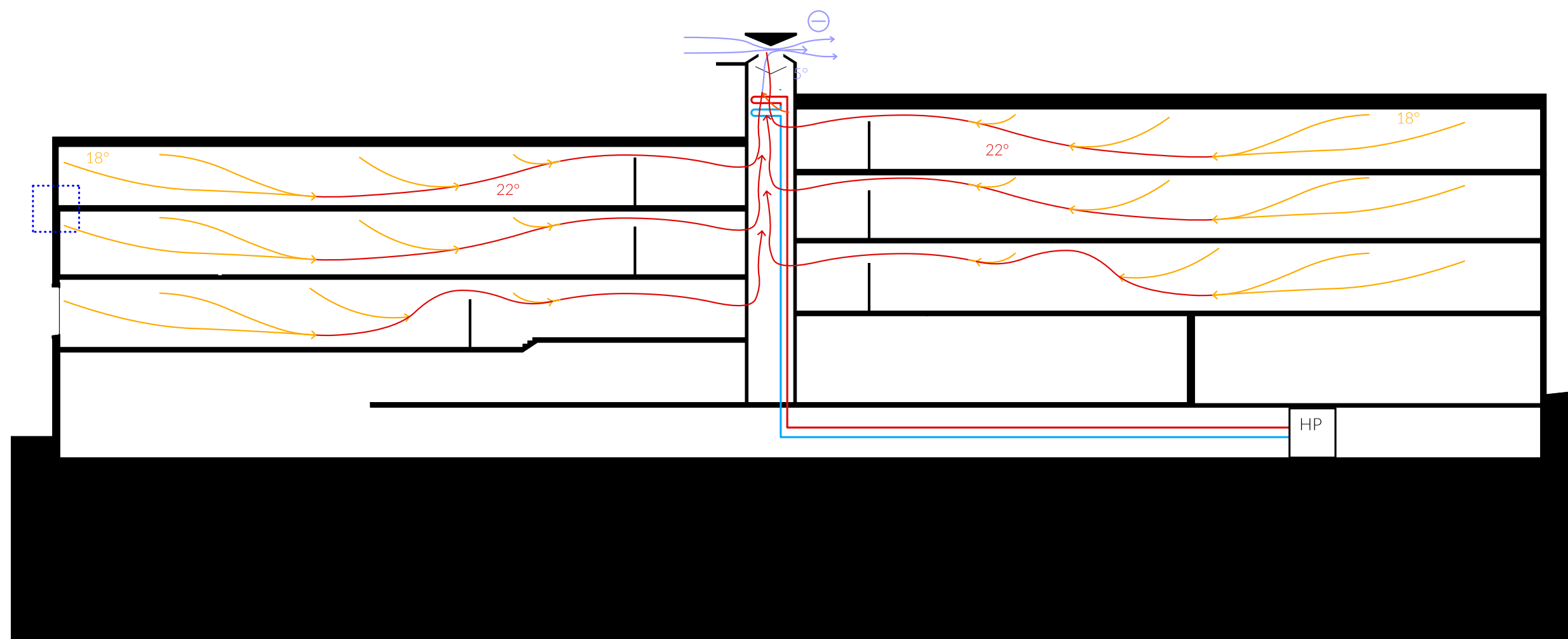
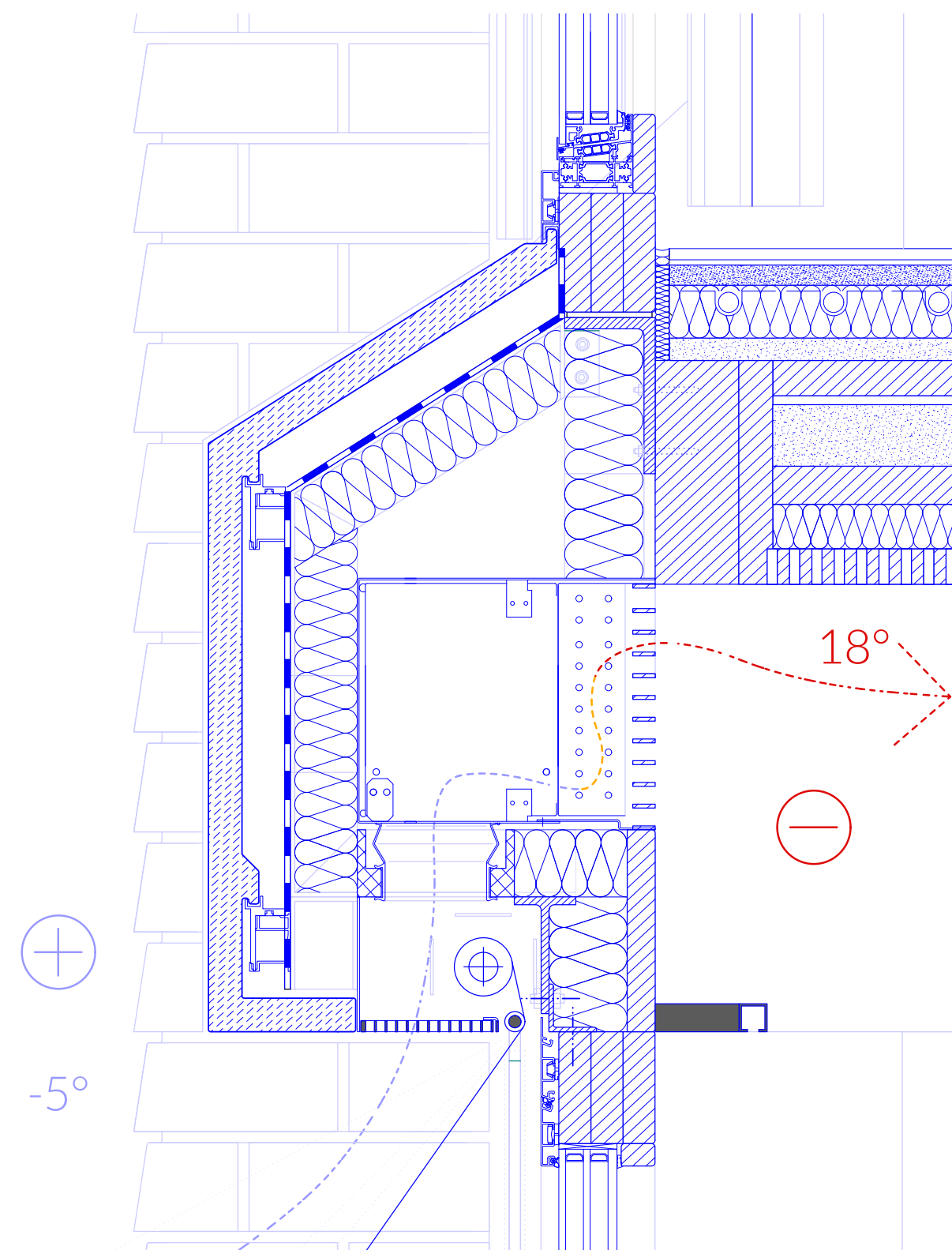
- 01 THE SITE
- 02 A HISTORICAL COMPARISON
- 03 THE CITY SCHOOL TODAY
- 04 WHY EXPAND?
- 05 PROGRAM
- 06 ARCHITECTURAL CONCEPT
- 07 MODERN LEARNING
- 08 BUILDING DESIGN

09 CLIMATE DESIGN

- 10 STRUCTURE
- 11 MATERIALITY







Objective:

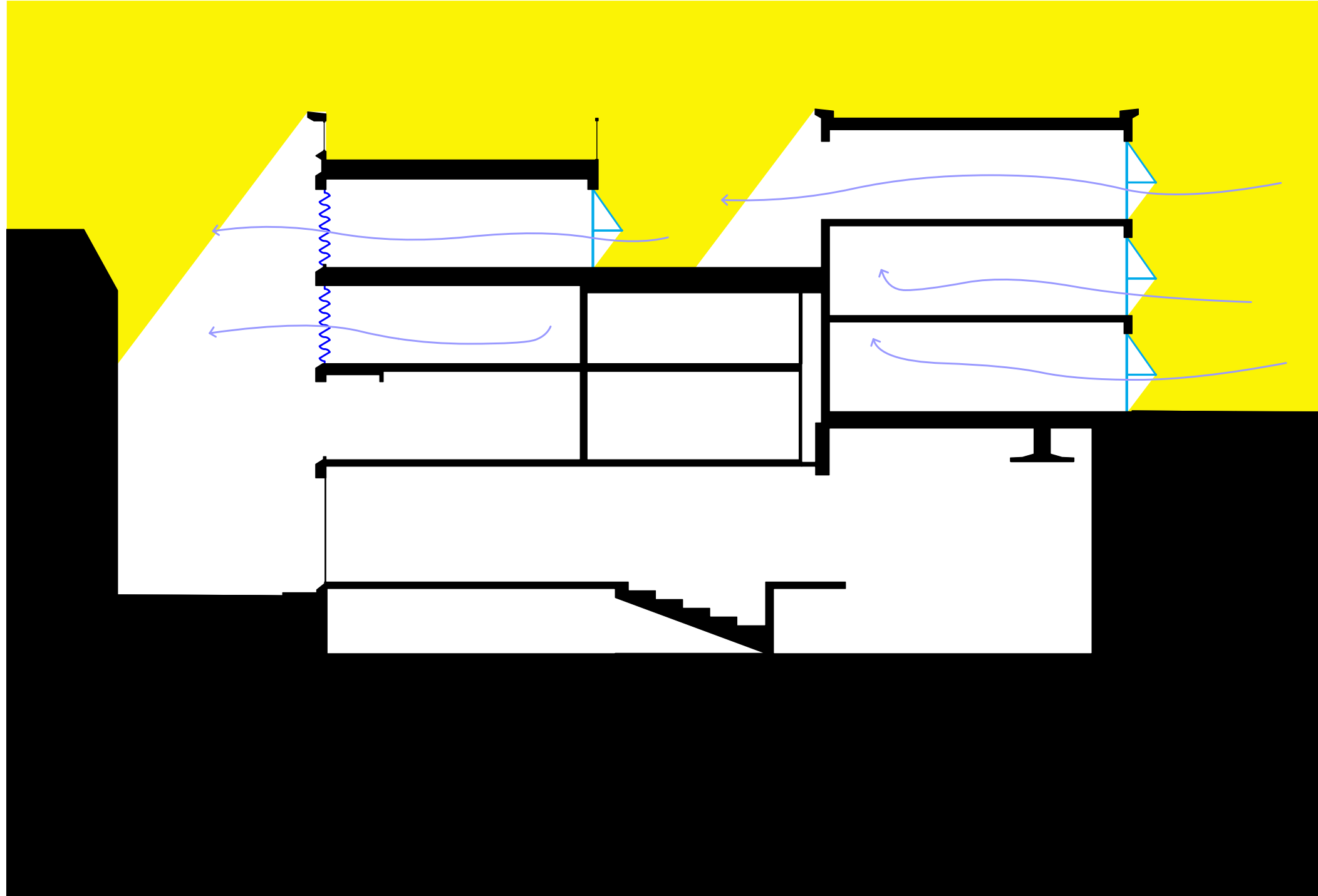
- Reducing energy demand by using passive strategies
- As little mechanical ventilators and air-ducts as possible
- Using soil as heat storage over the seasons

Passive

- reducing demand by increasing insulation (interior)

Active

- Heatsource: ground source geothermal heat pump
- Distribution: floor heating



Objectives:

- Reducing energy demand by using passive strategies
- As little mechanical ventilator and air-ducts as possible

Passive

- Avoiding rooms heating up through shading systems (markisolettes)
- Night cooling via considerable heat storage capacity of masonry & concrete
(Open façade vents/openings at night)
- Considerable roof insulation (ca. 200mm)
- Cooling and shading effect due to green roofs and vegetation (evaporation & transpiration)
- Cross-ventilation to increase personal comfort

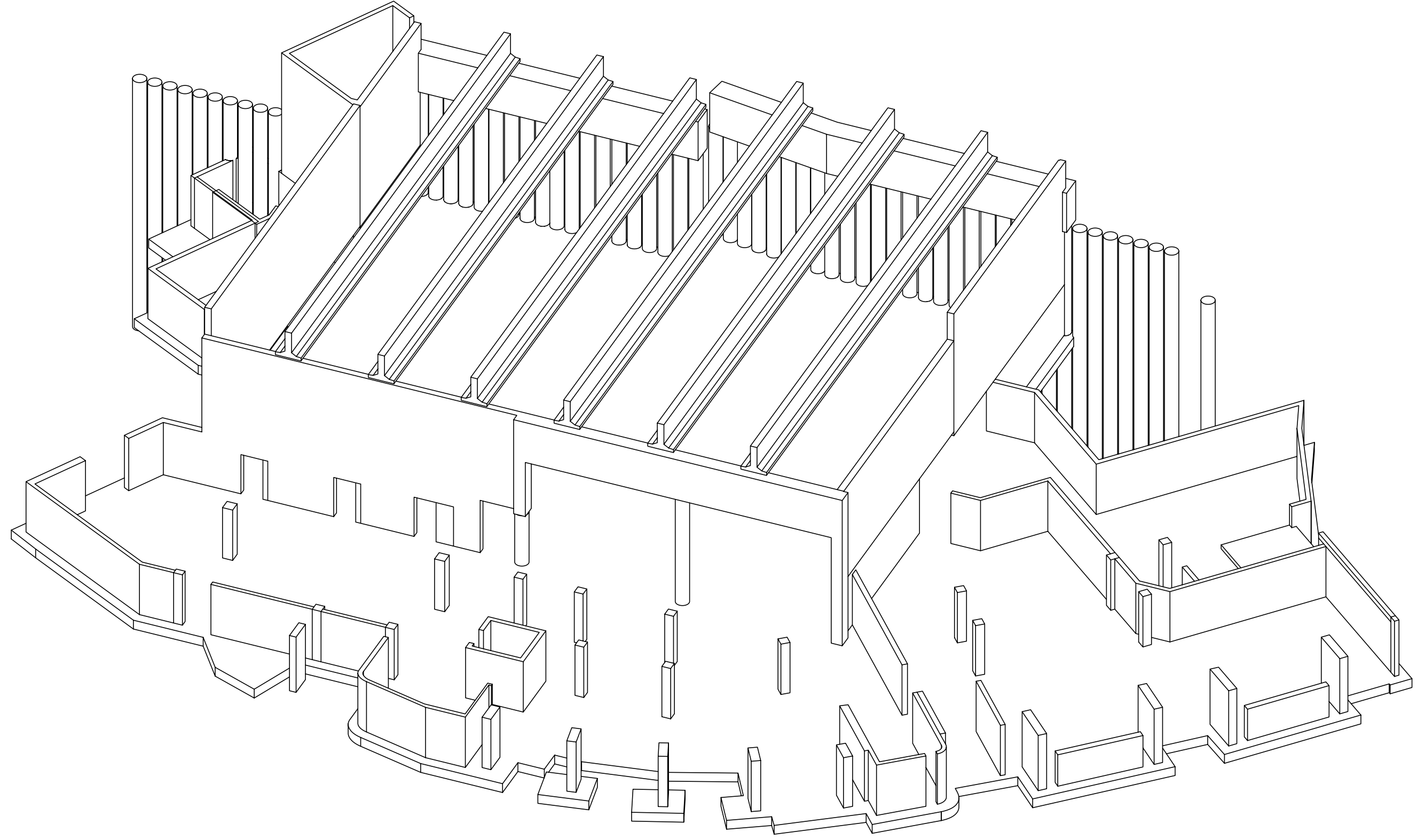
Active

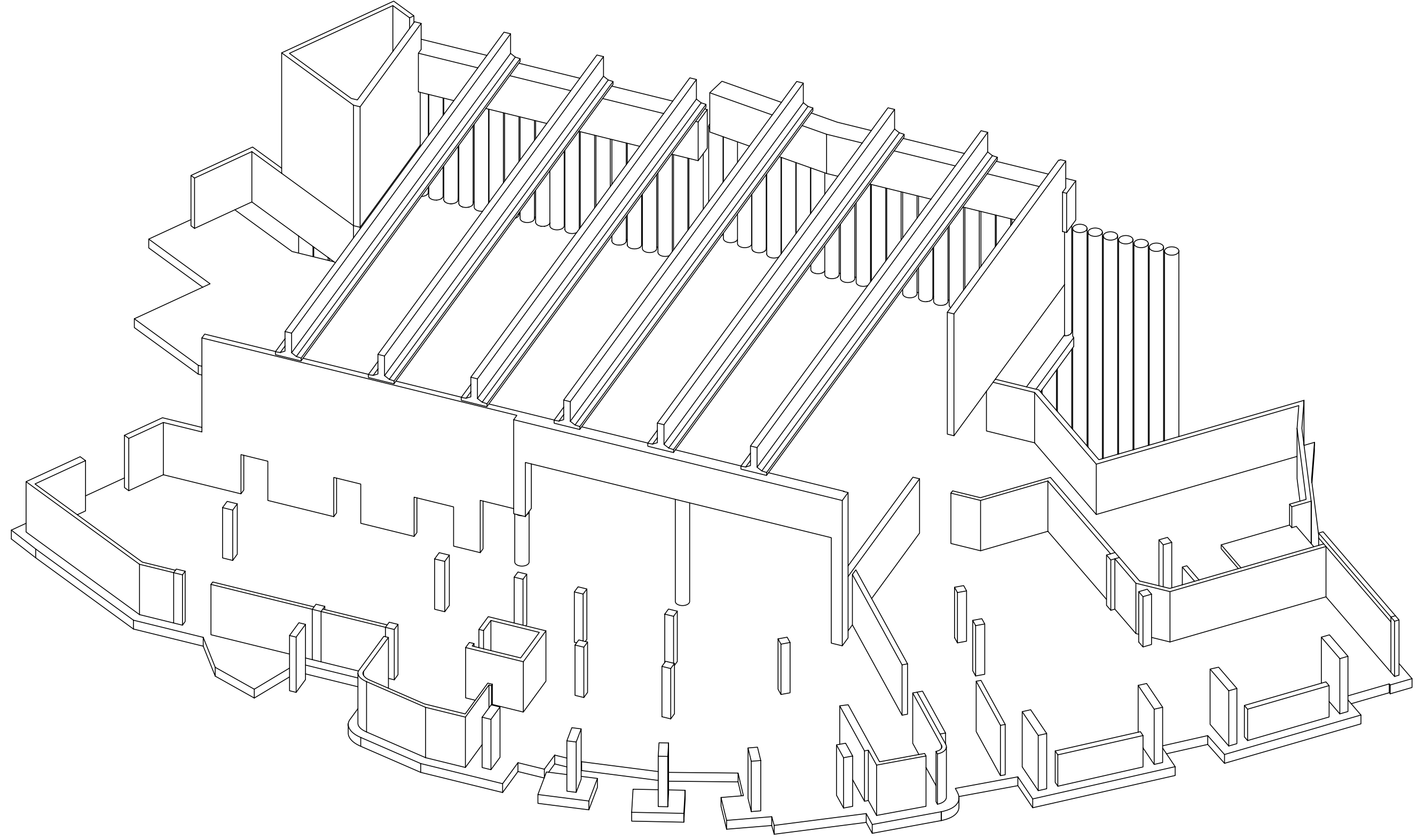
- horizontal ground source heat pump for cooling; floor activation

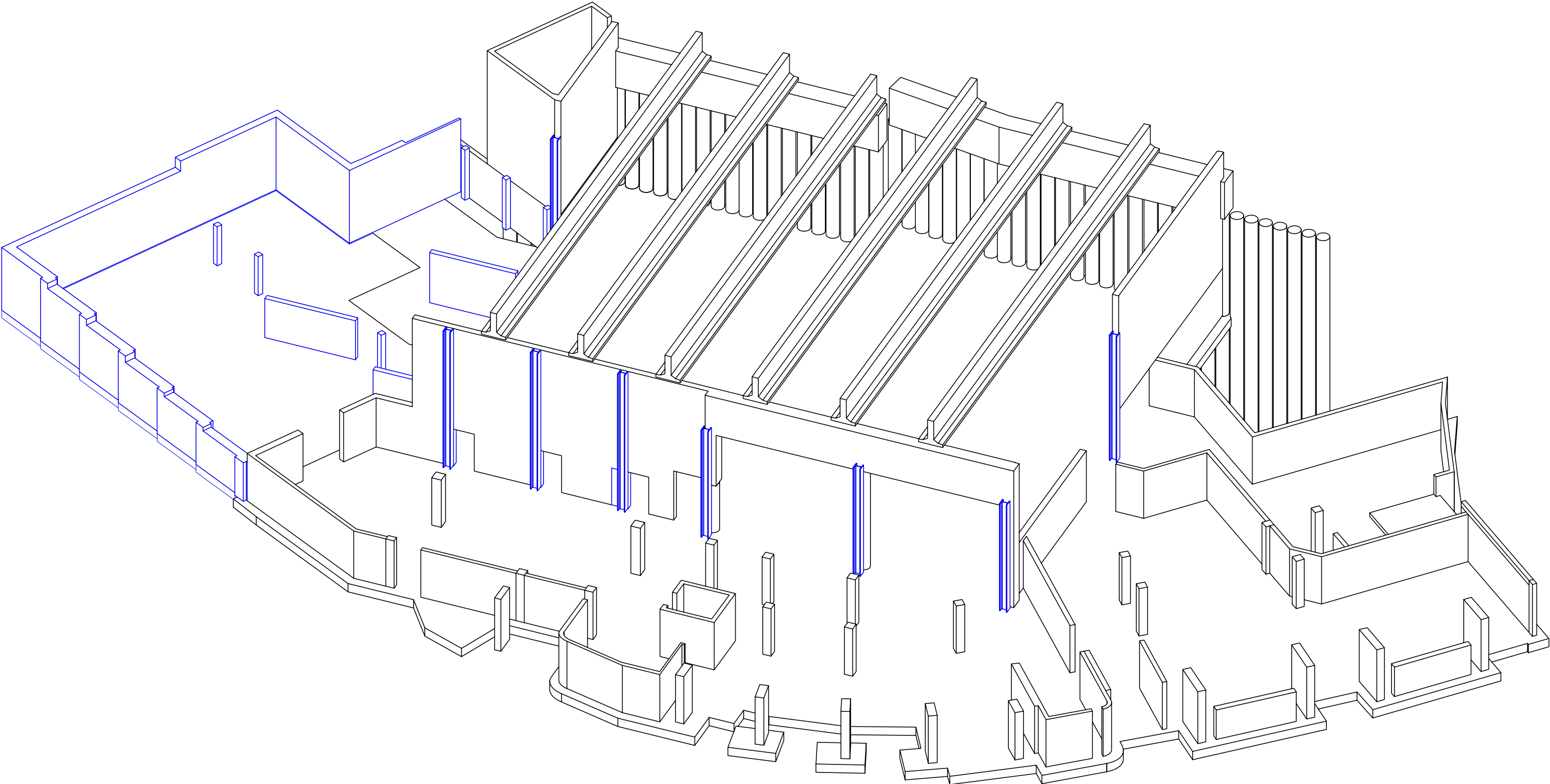
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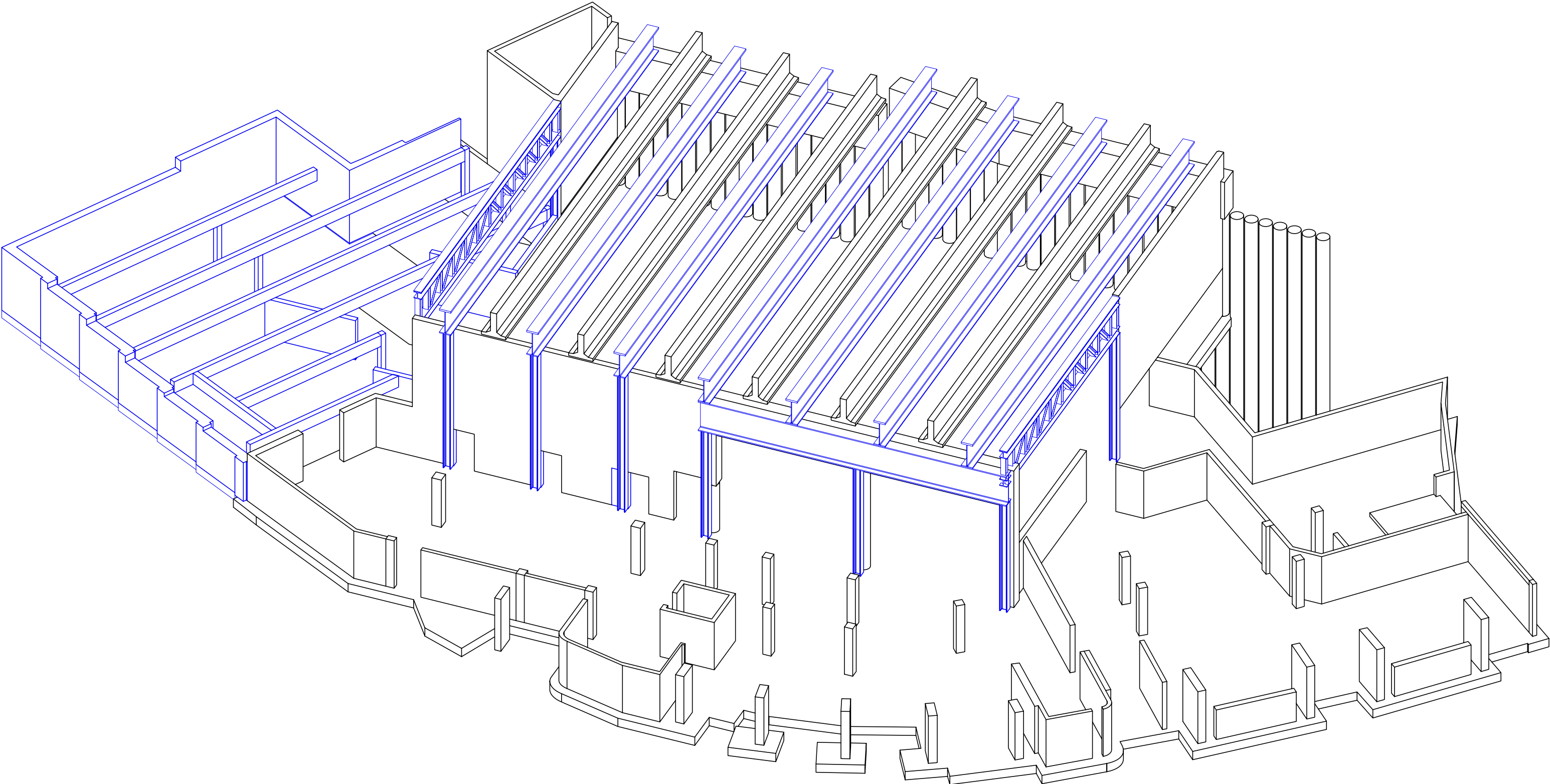
10 STRUCTURE

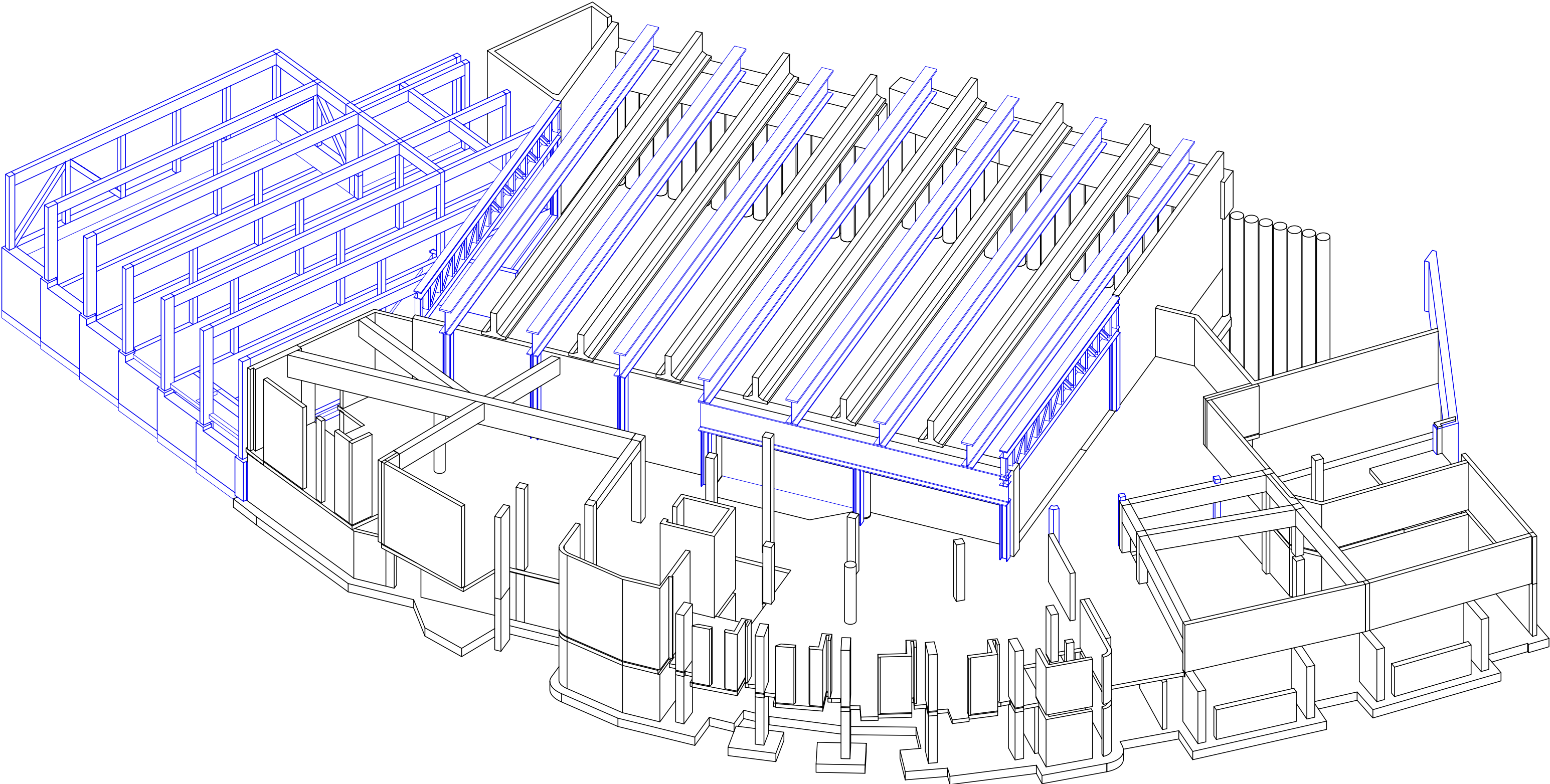
- 11 MATERIALITY

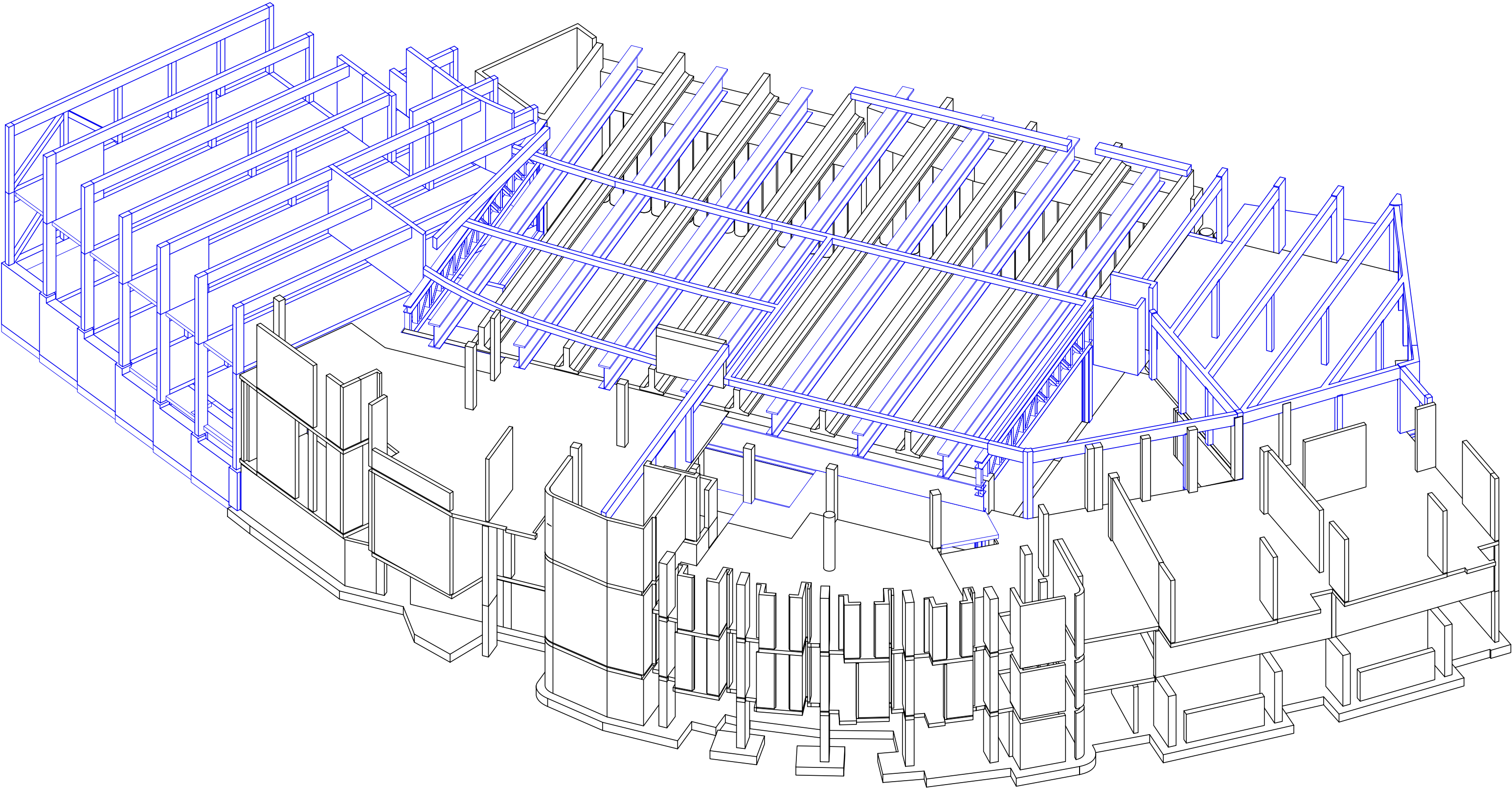


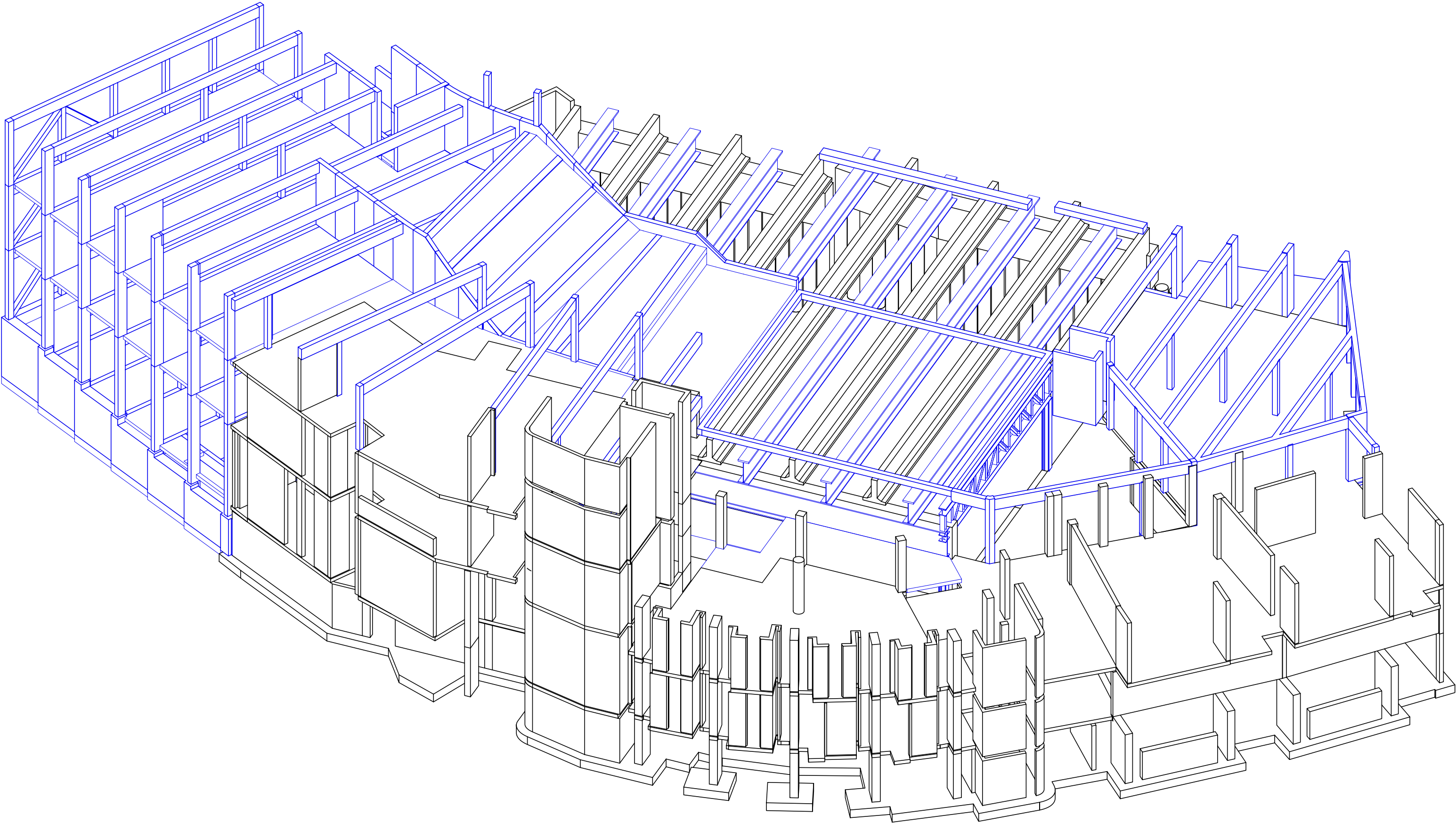


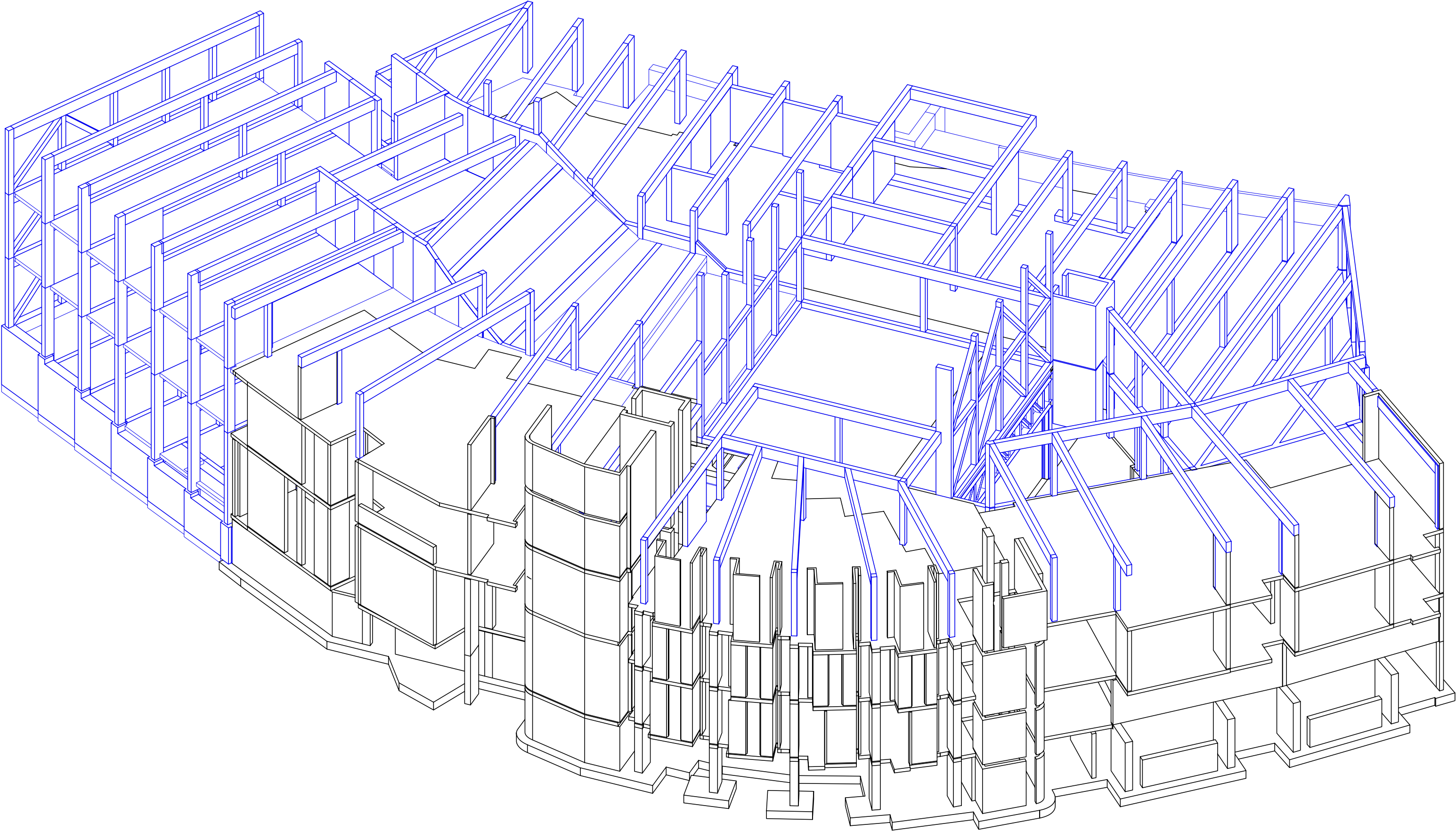


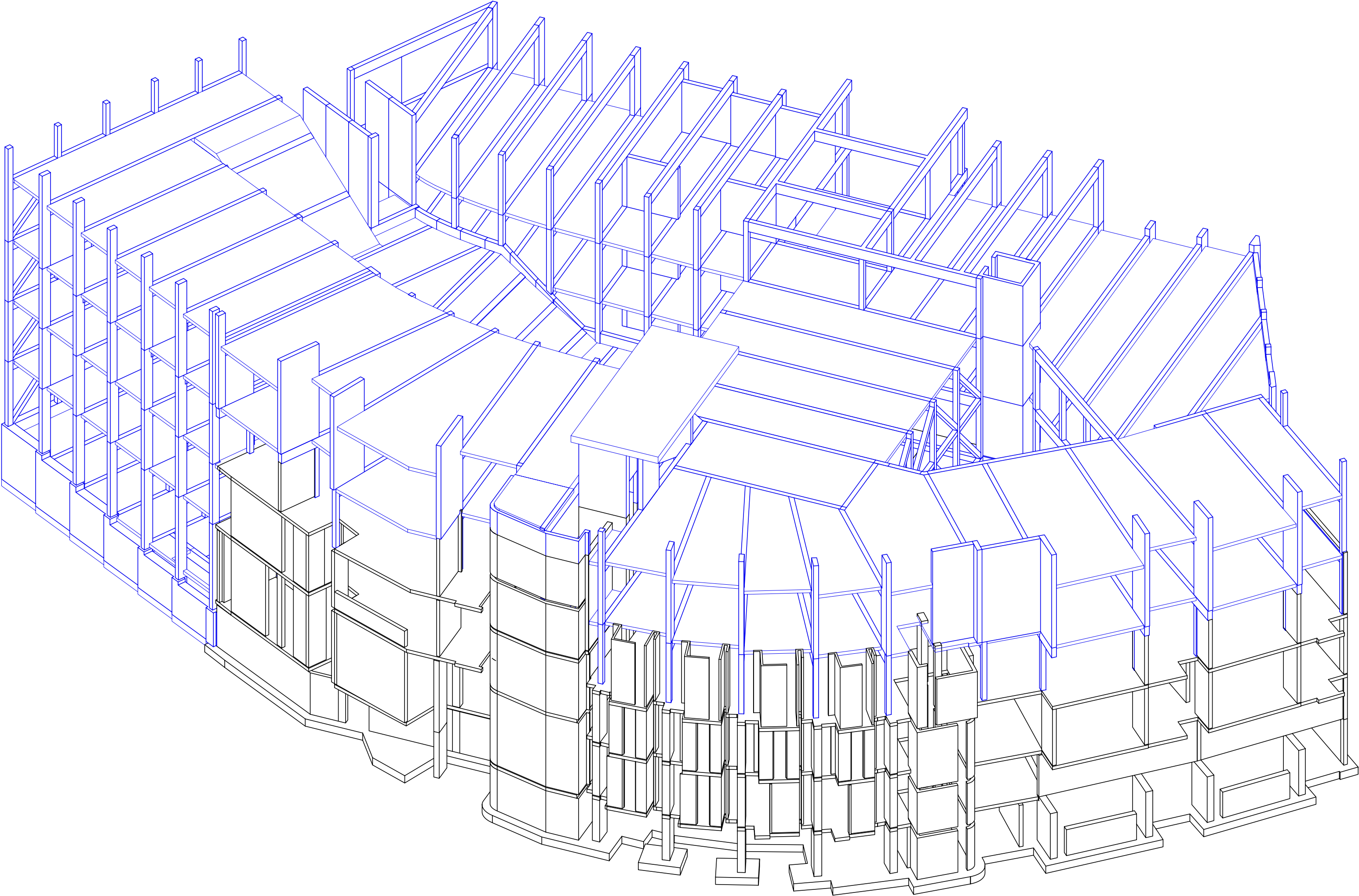


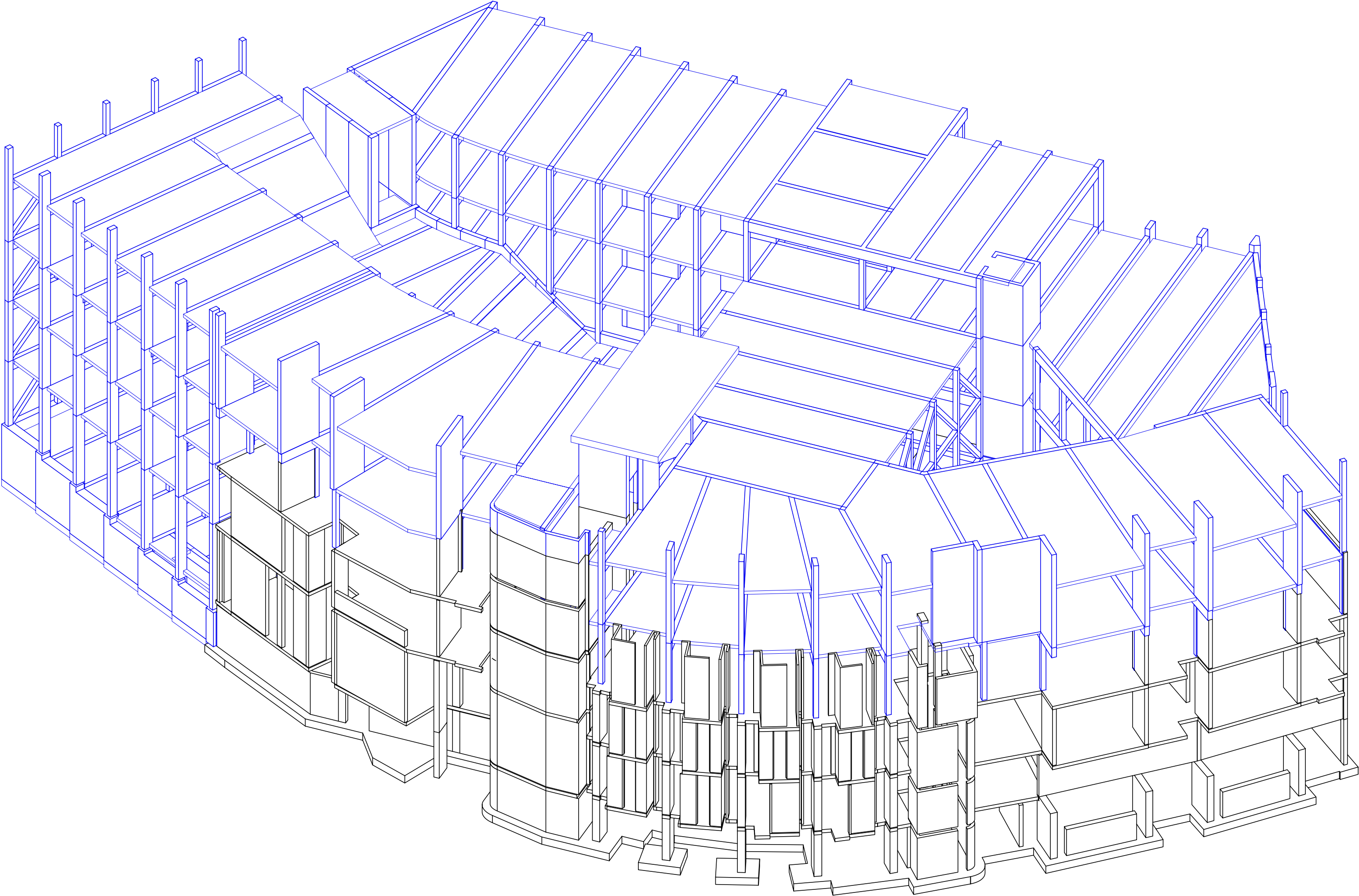


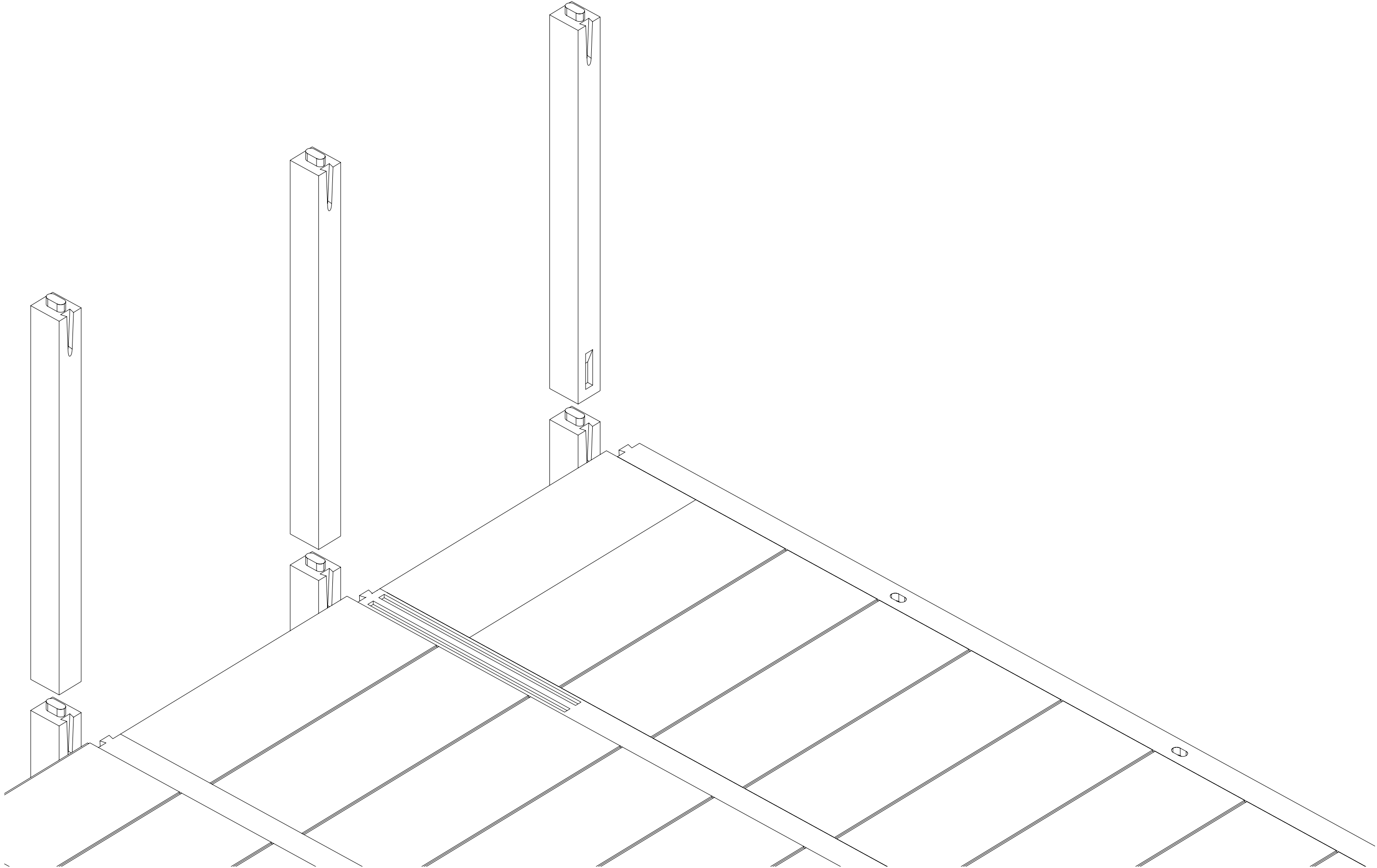


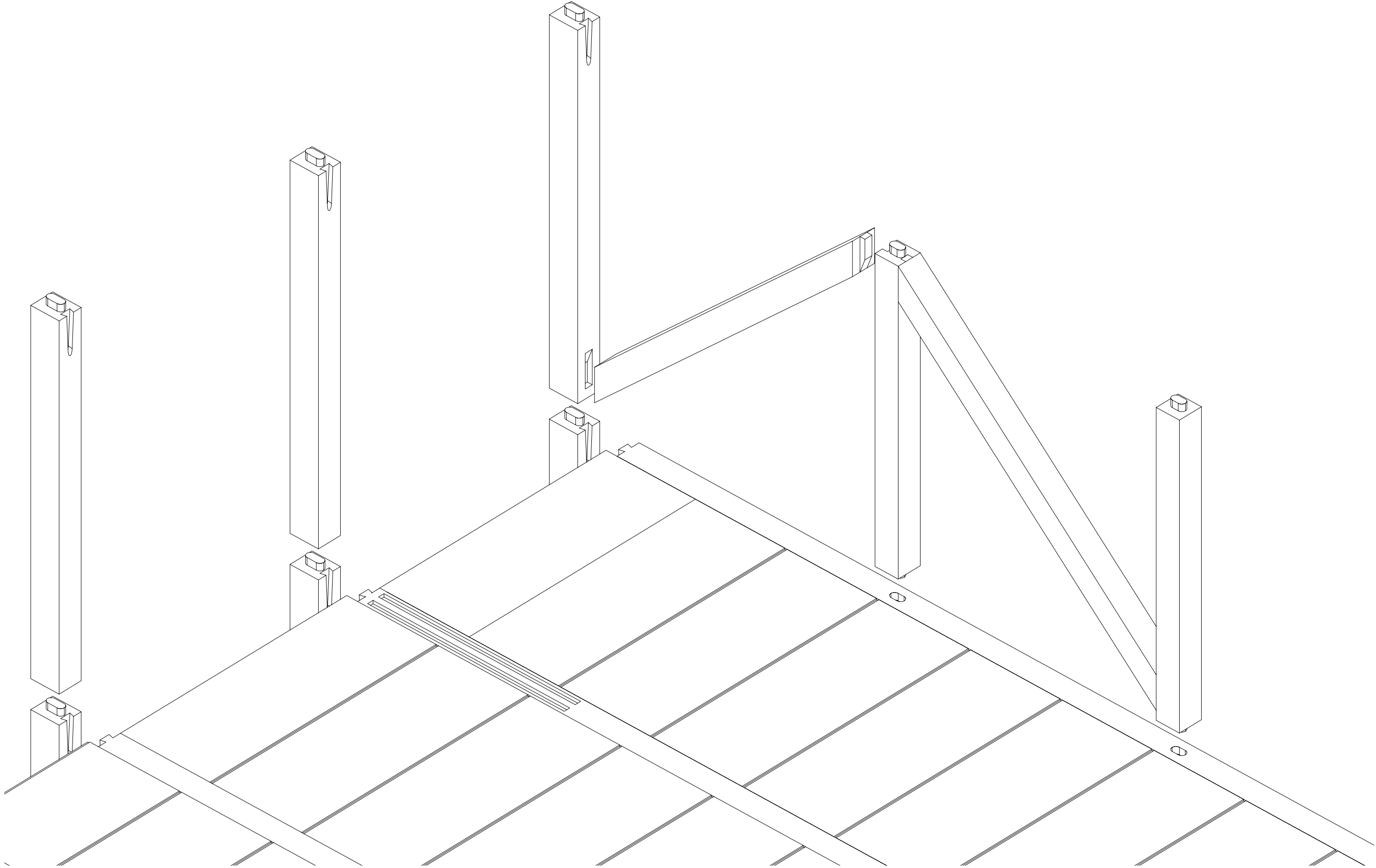


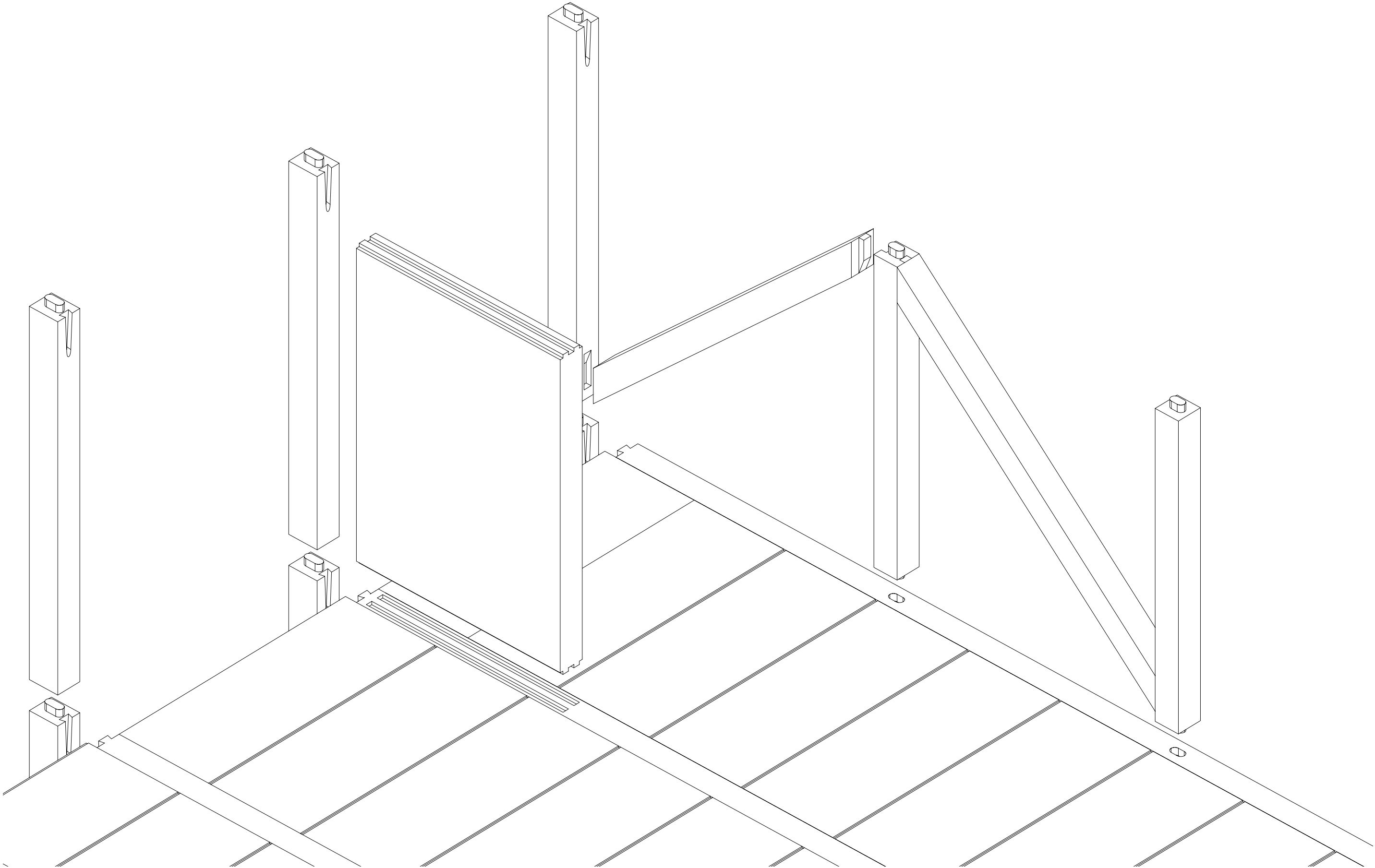


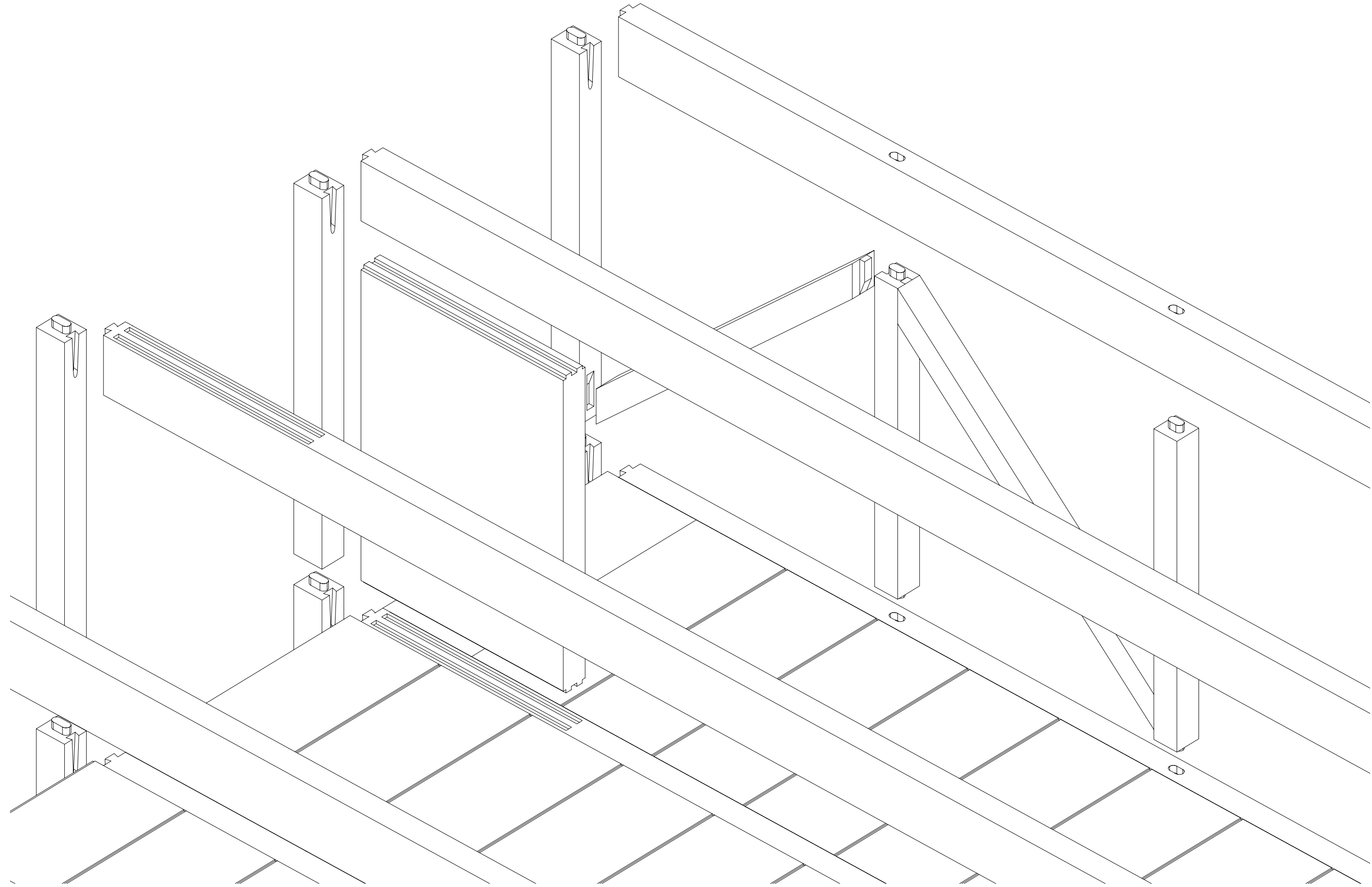








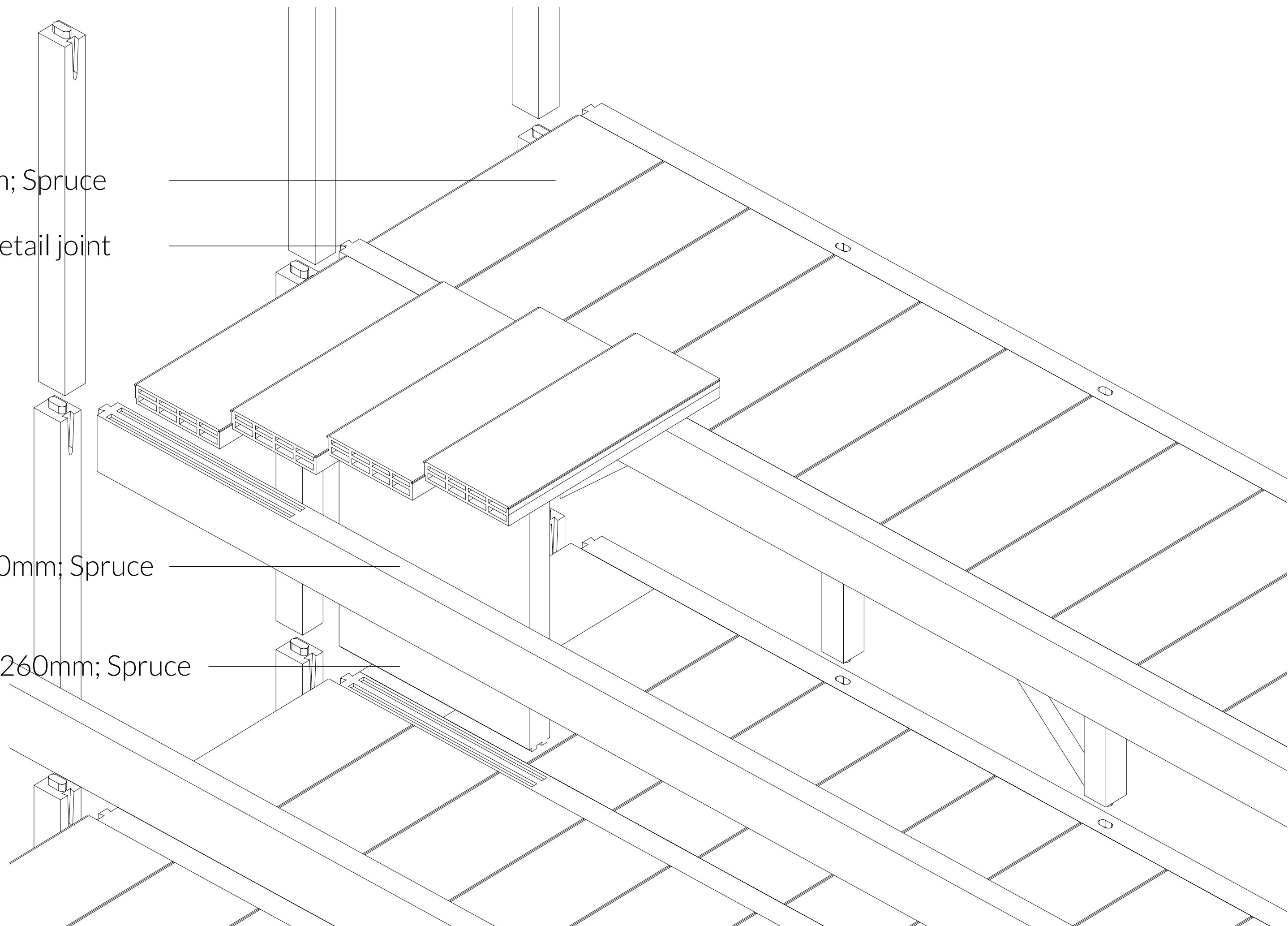




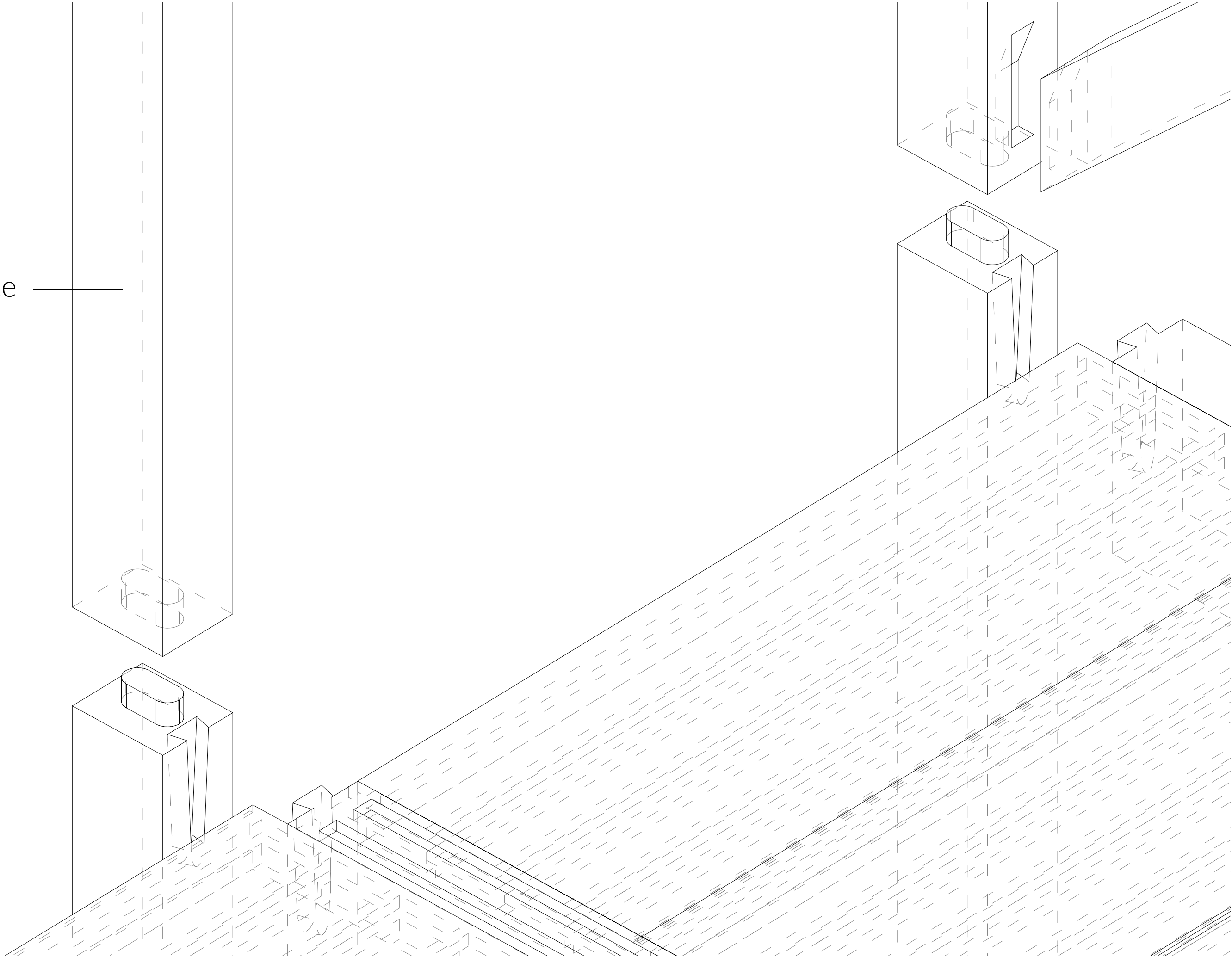
Box Slab 200mm; Spruce
CNC-milled dovetail joint

Glulam 260x600mm; Spruce

CLT-Sheer Wall 260mm; Spruce

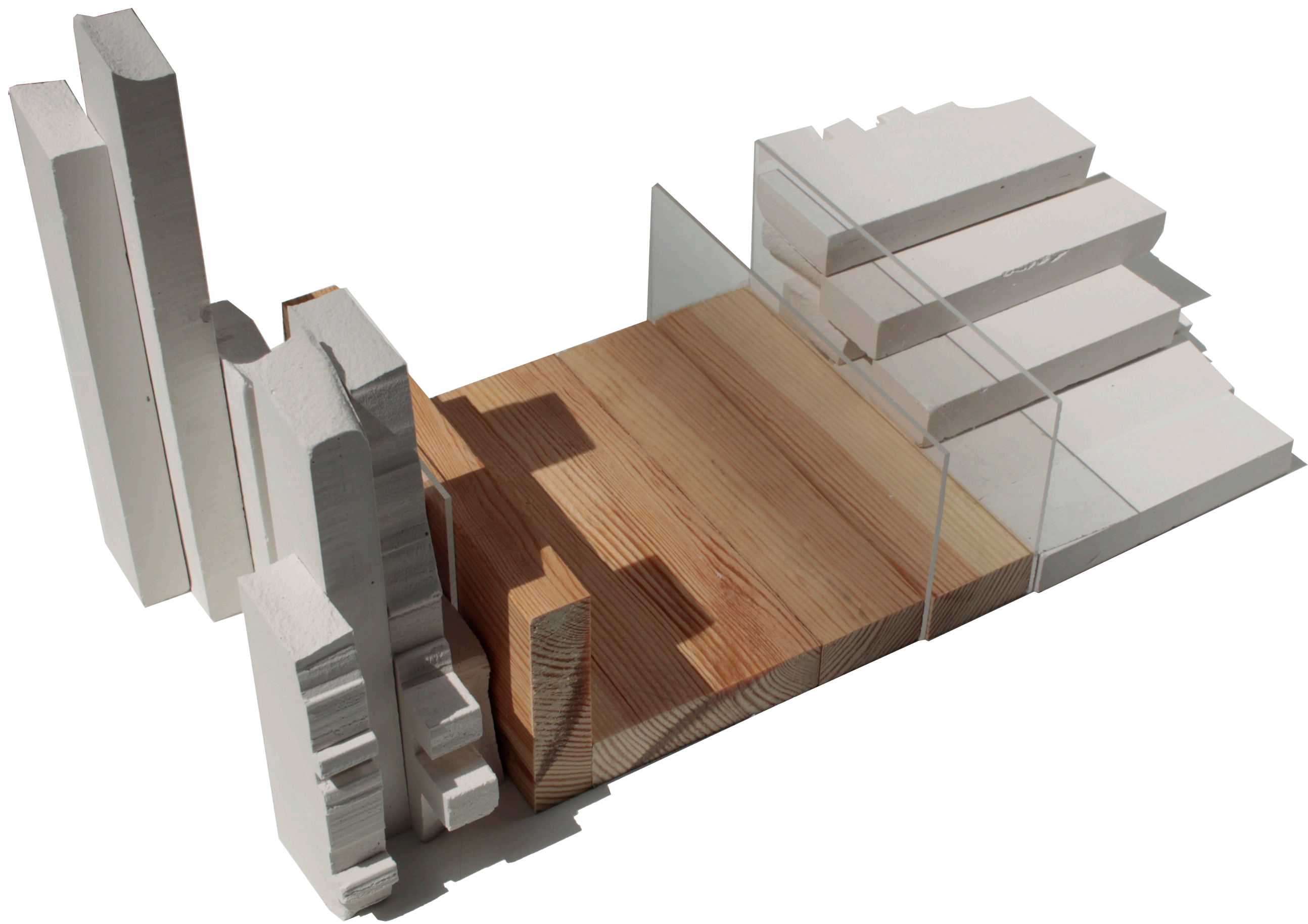


Glulam 260x600mm; Spruce



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ELEVATION SMIDSTRAAT | Context







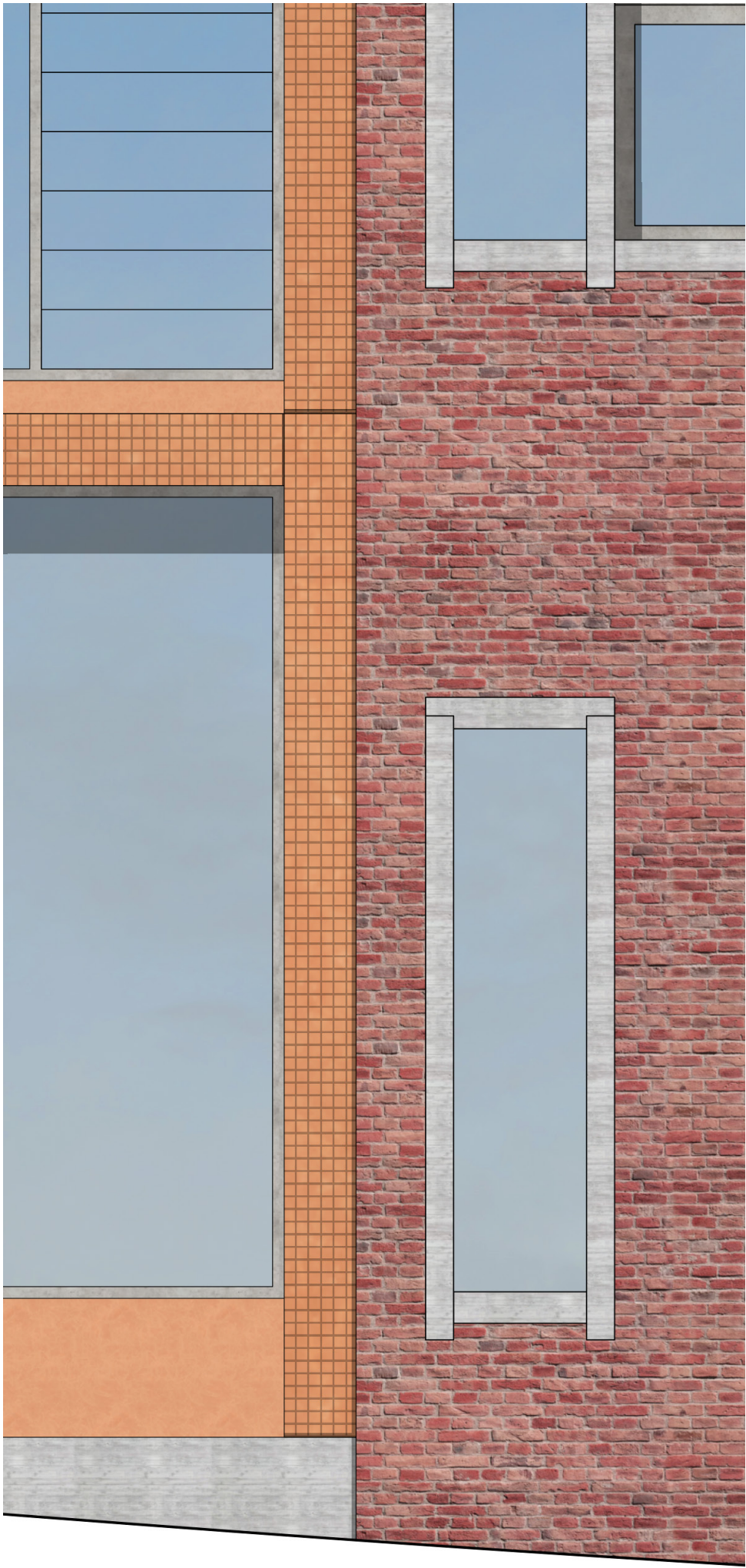


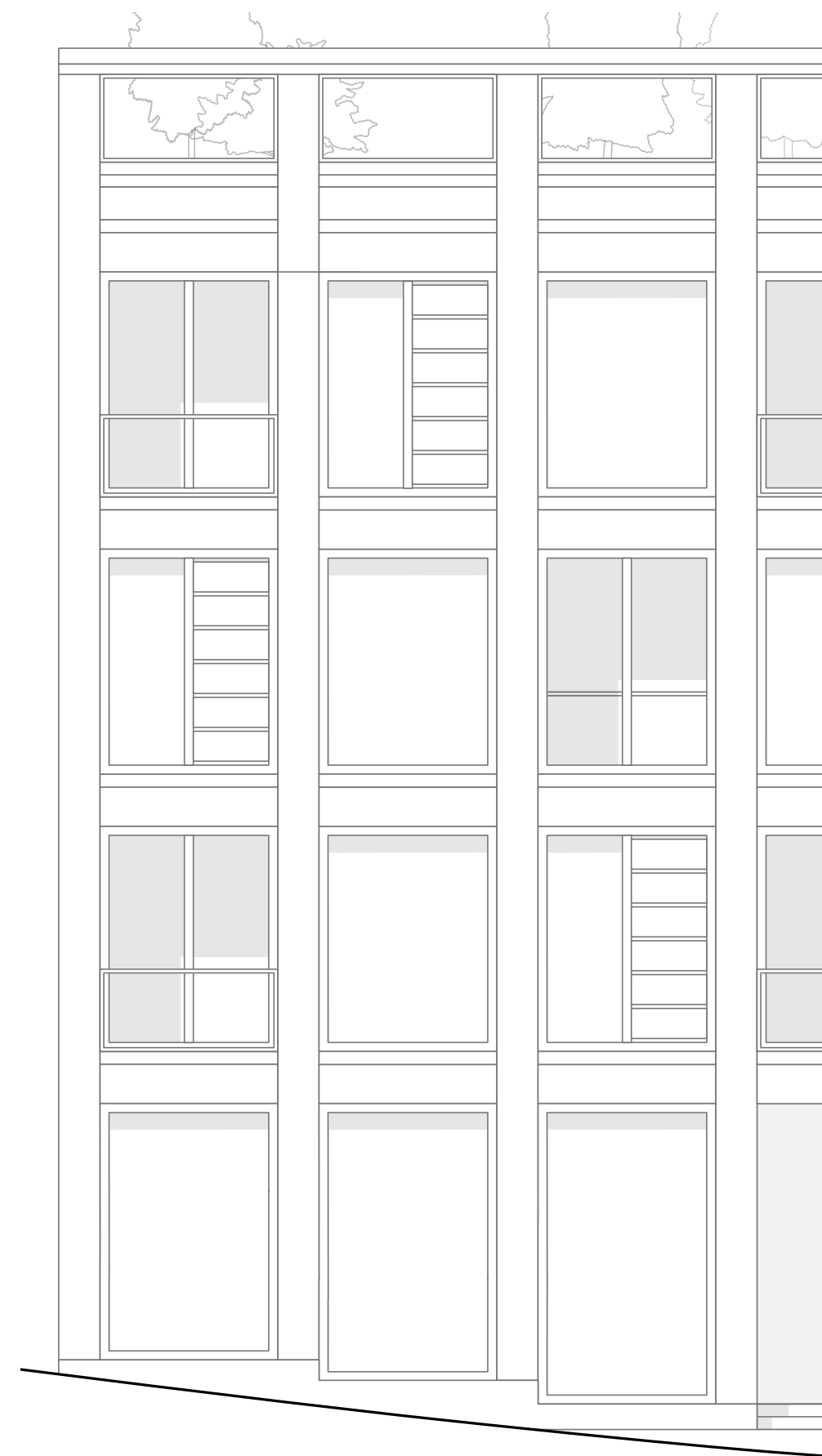
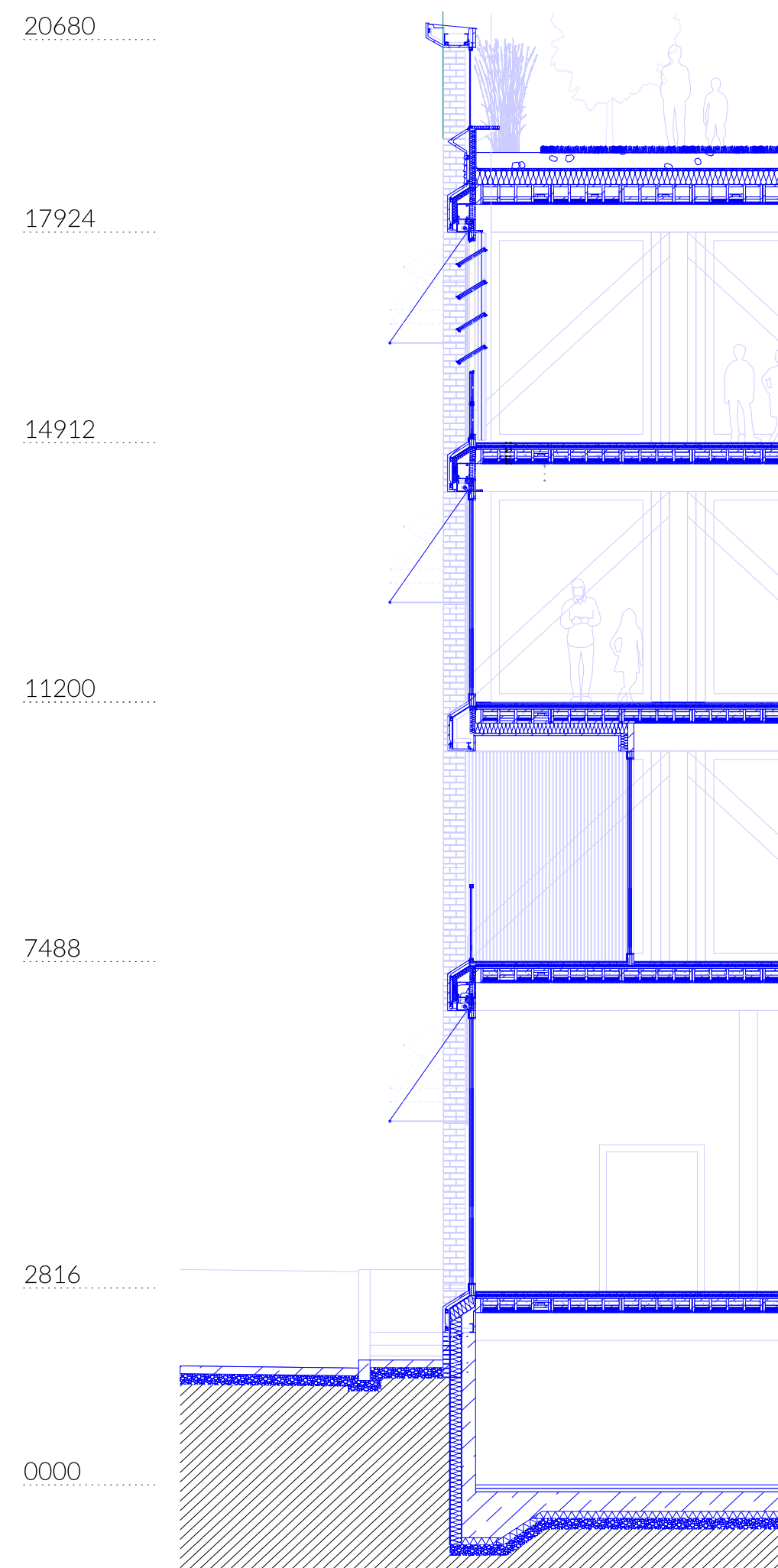


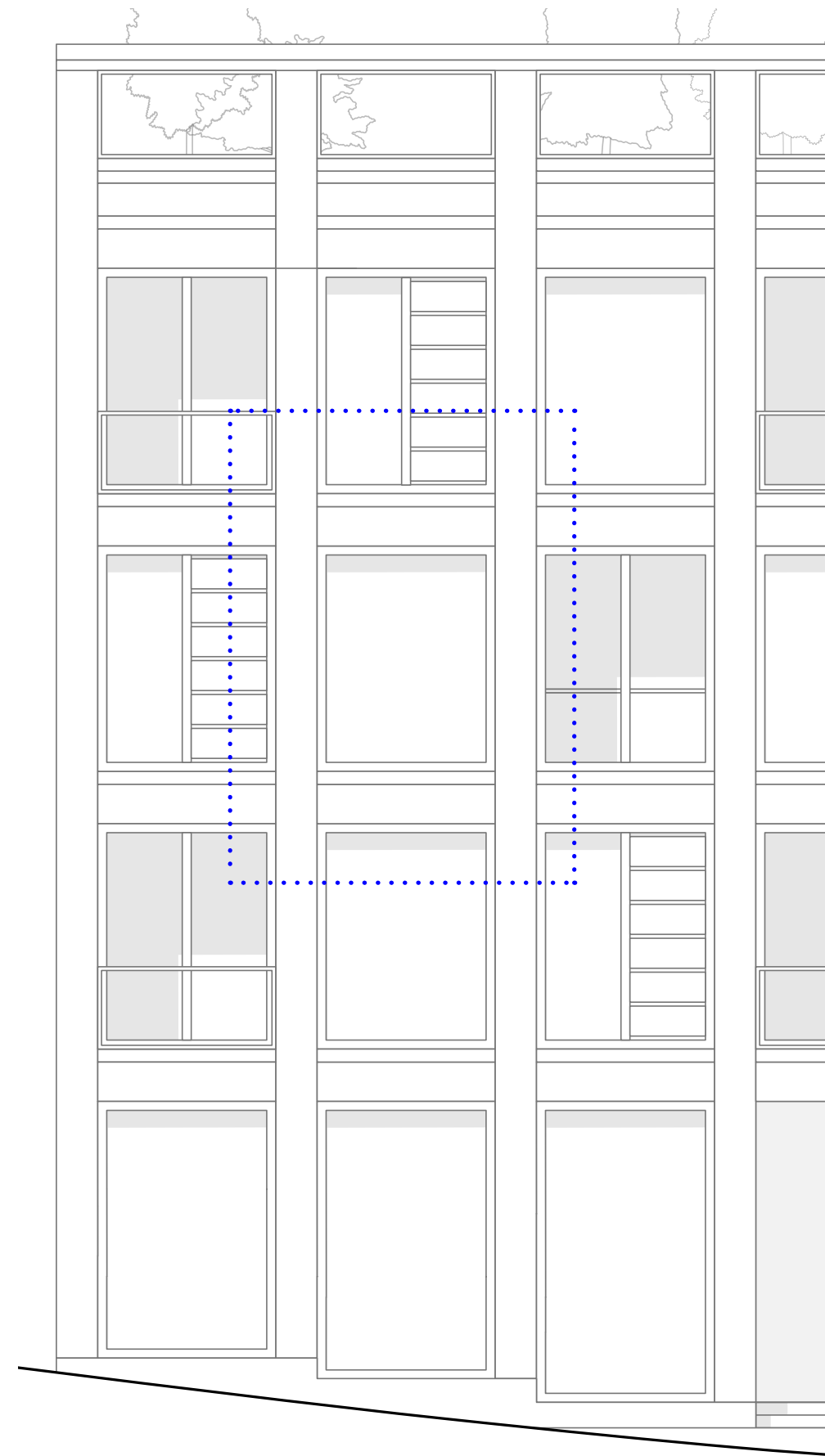
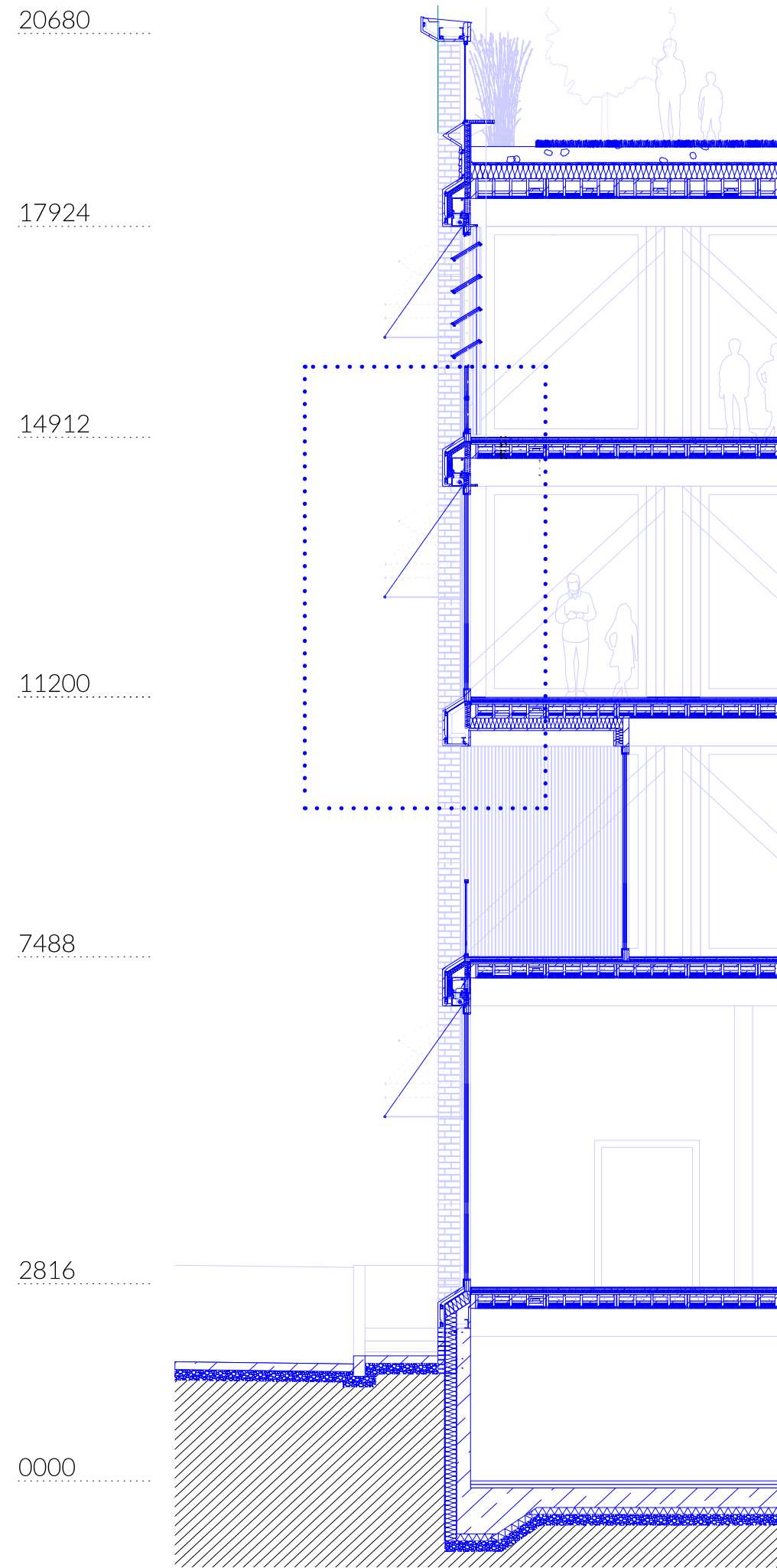
ELEVATION SMIDSTRAAT | Context

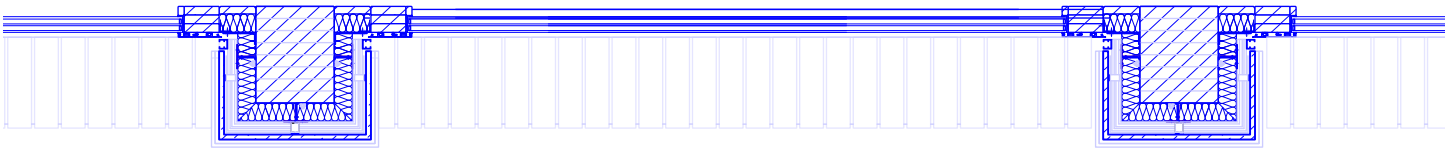
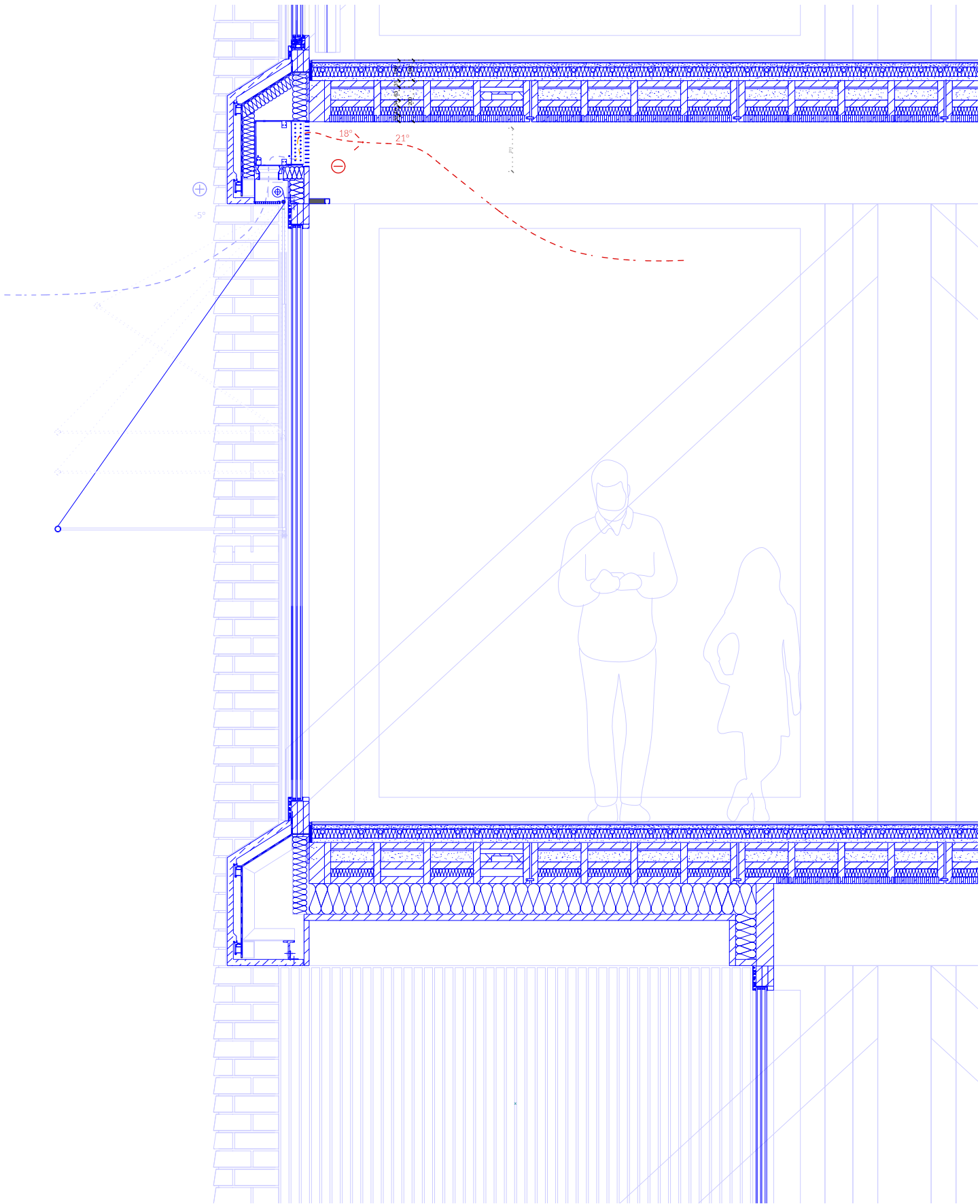


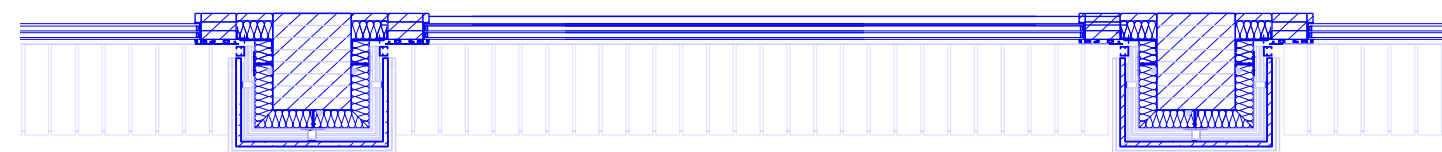
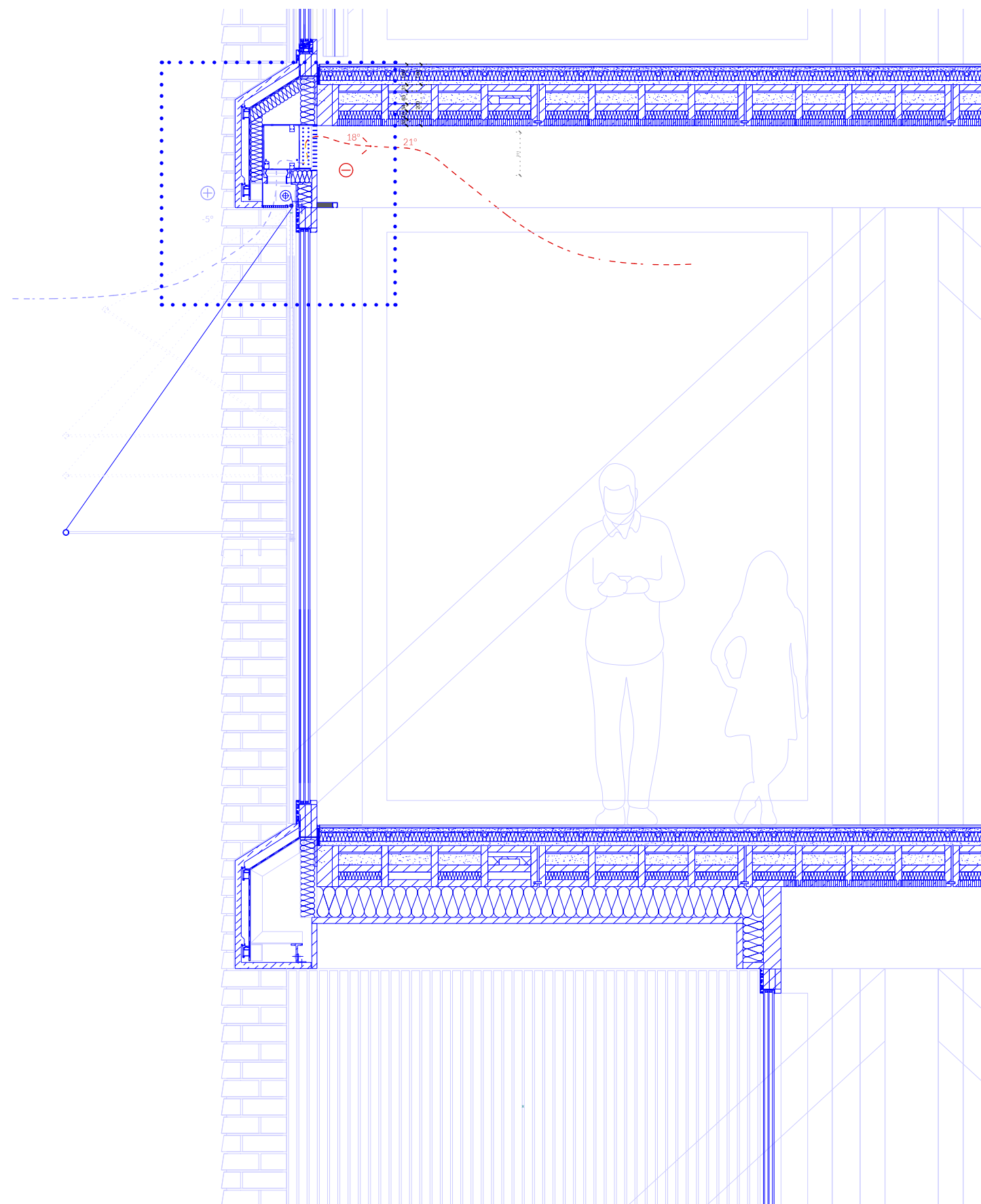
ELEVATION SMIDSTRAAT | Context



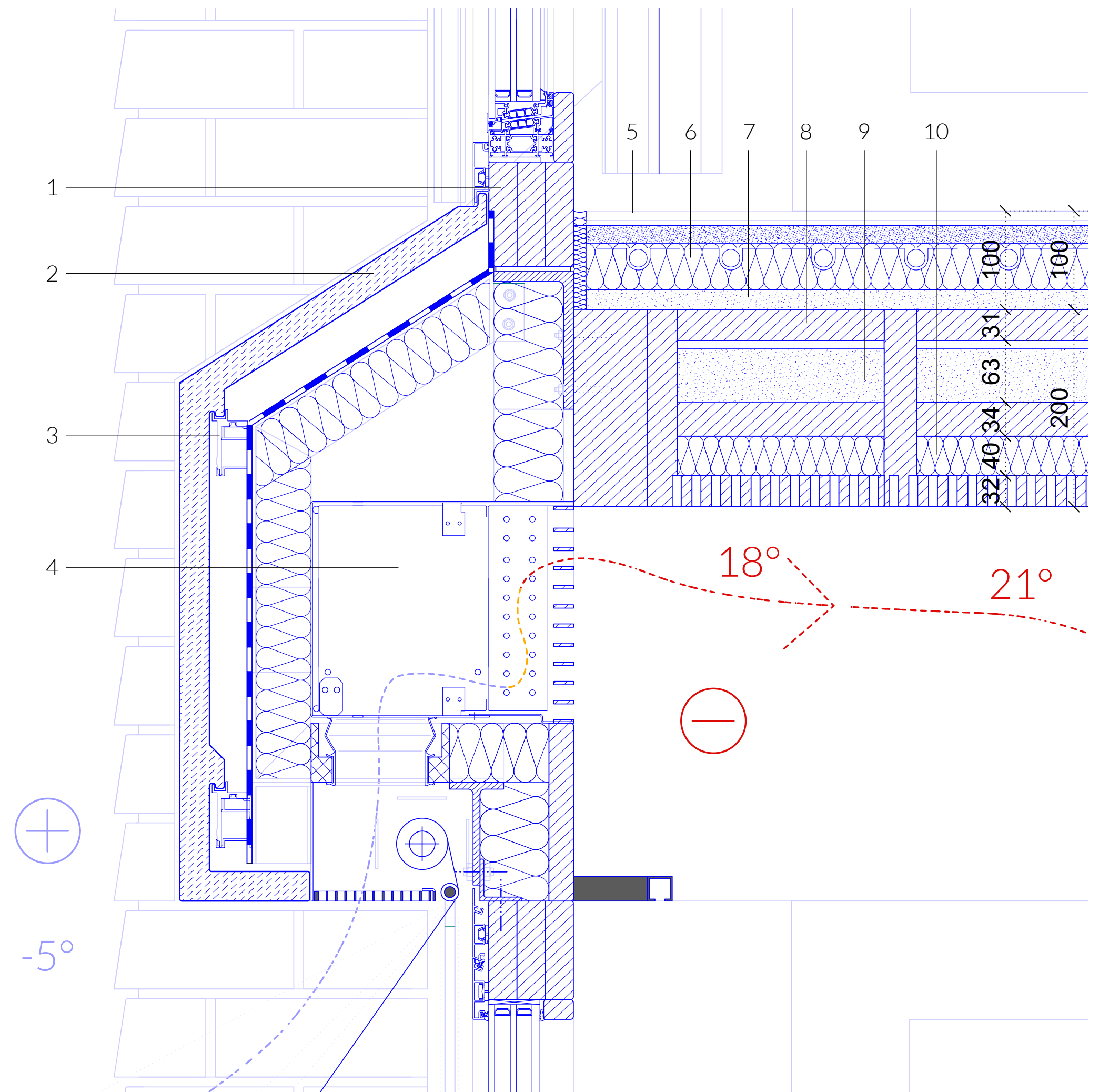


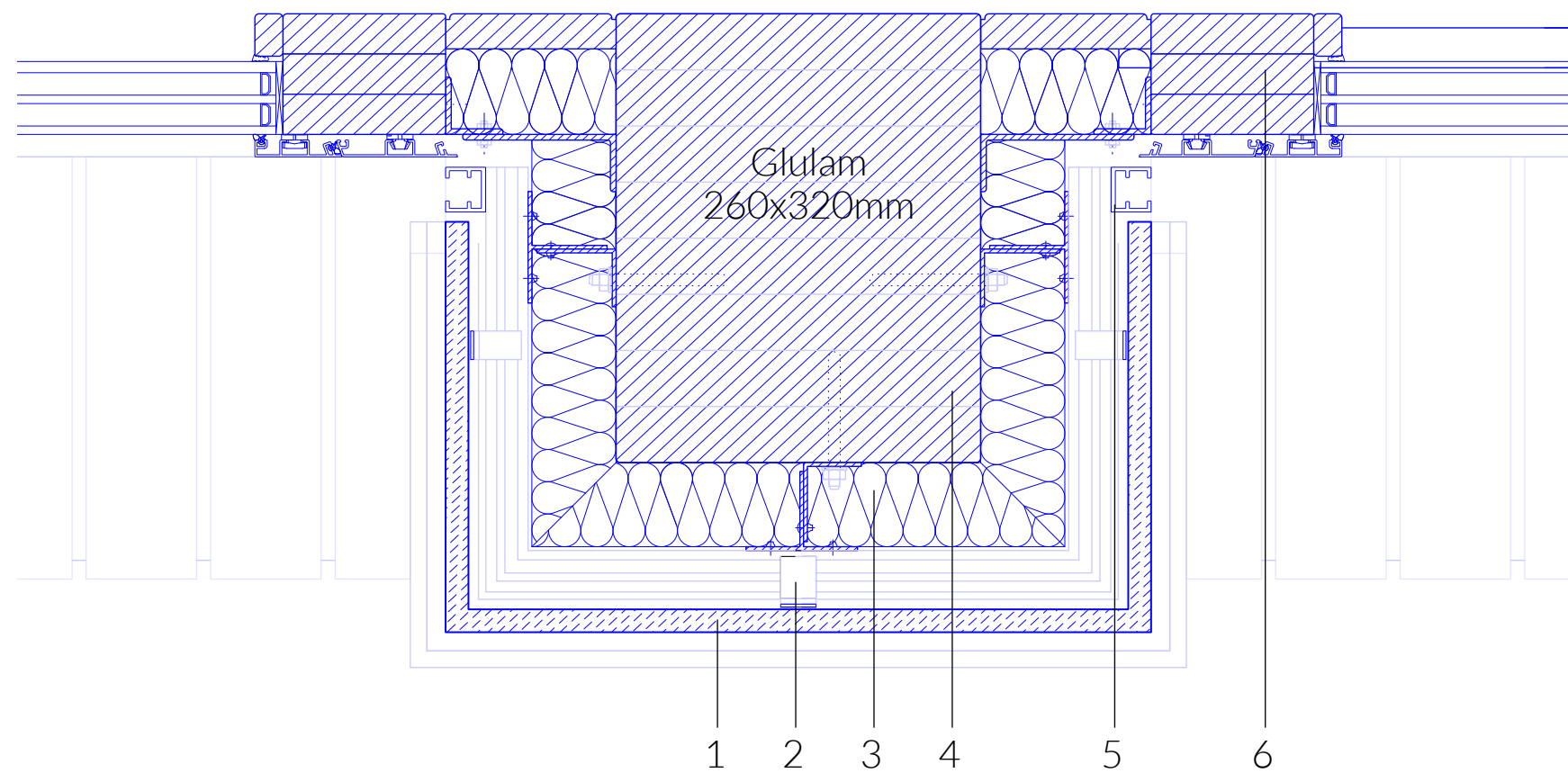




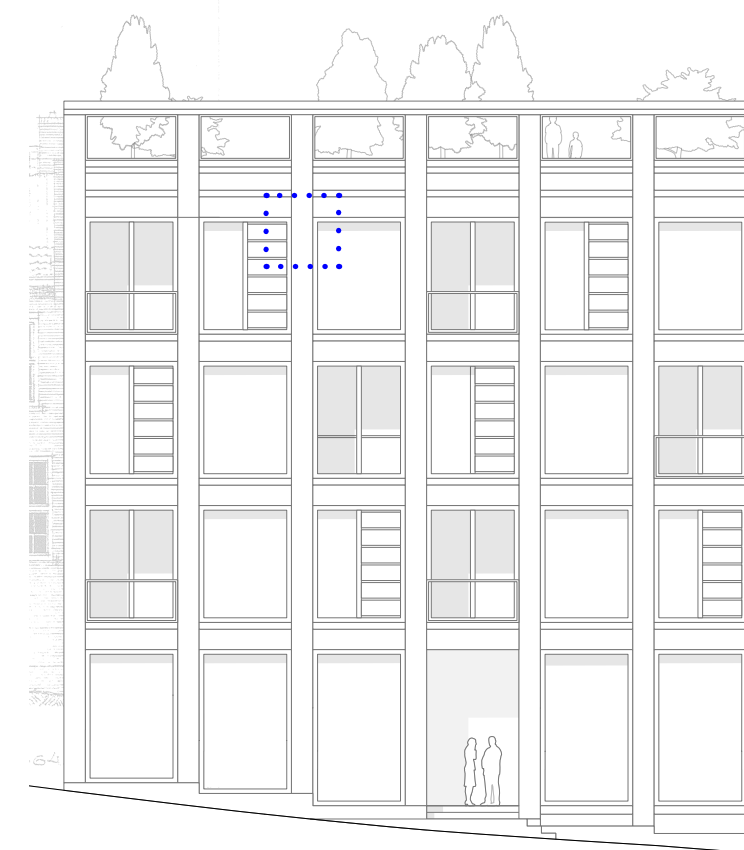
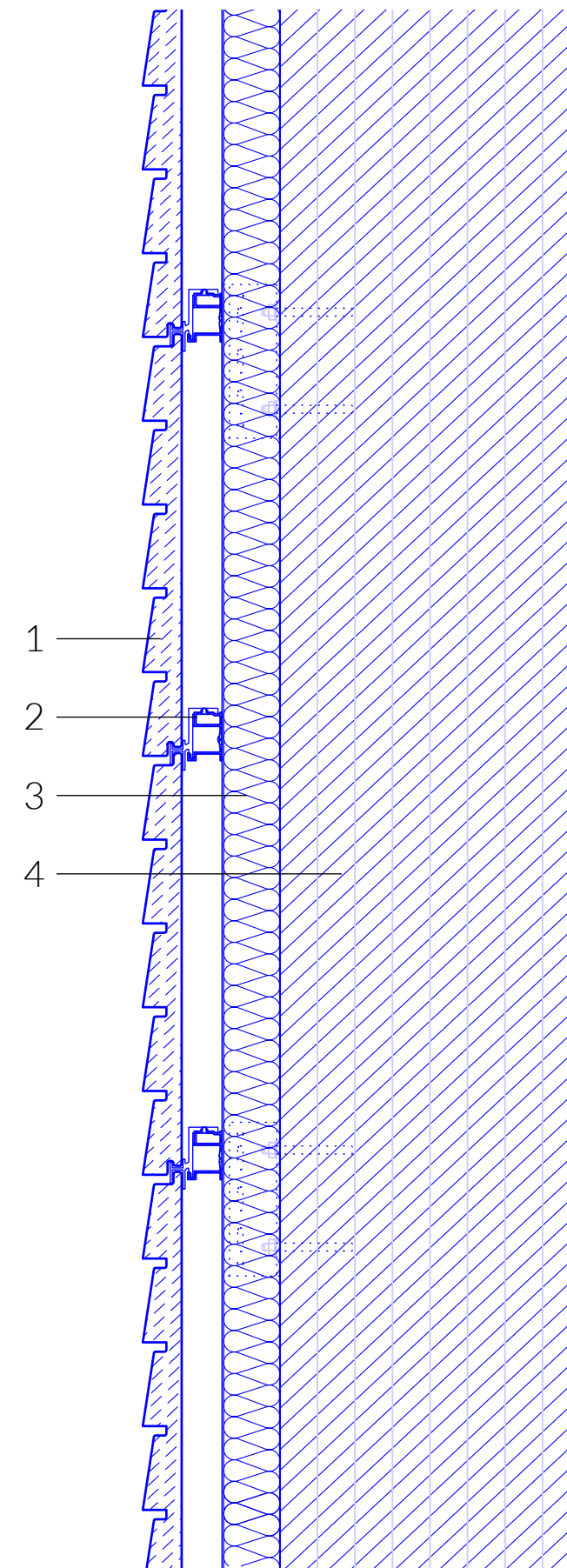


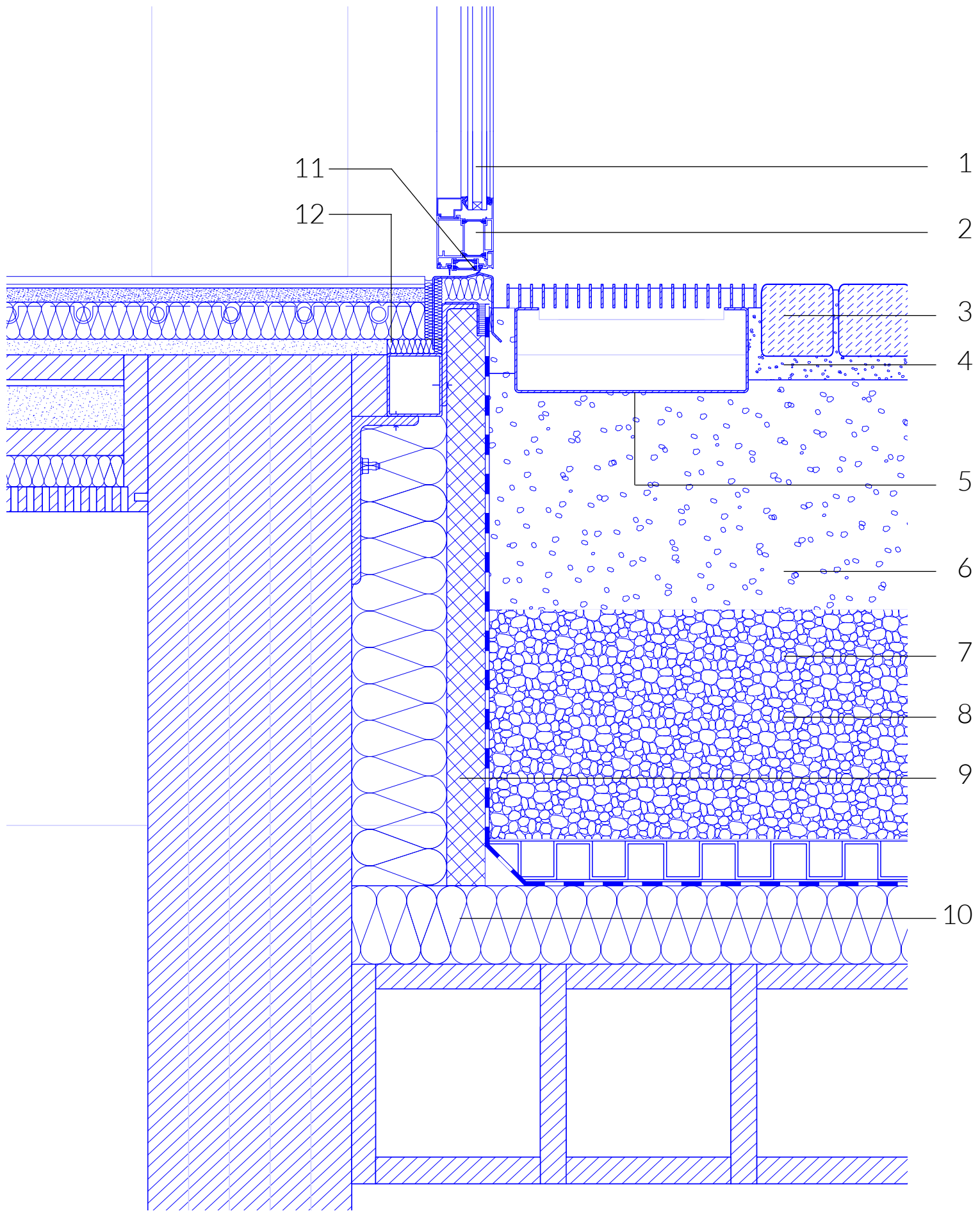
- 1 Wooden window frame, triple glazing 53mm
- 2 Ceramic cast tiles, 30-55mm
- 3 Aluminium substructure w. clip fasteners, 45mm
- 4 Isolated ventilation vents, regulated
- 5 Linoleum flooring, 3mm
- 6 Floor heating, footstep sound insulation
- 7 Levelling fill, 30mm
- 8 Box slab ceiling elements, spruce
- 9 Sound proofing filling, 45mm
- 10 Acoustic panels, 25mm



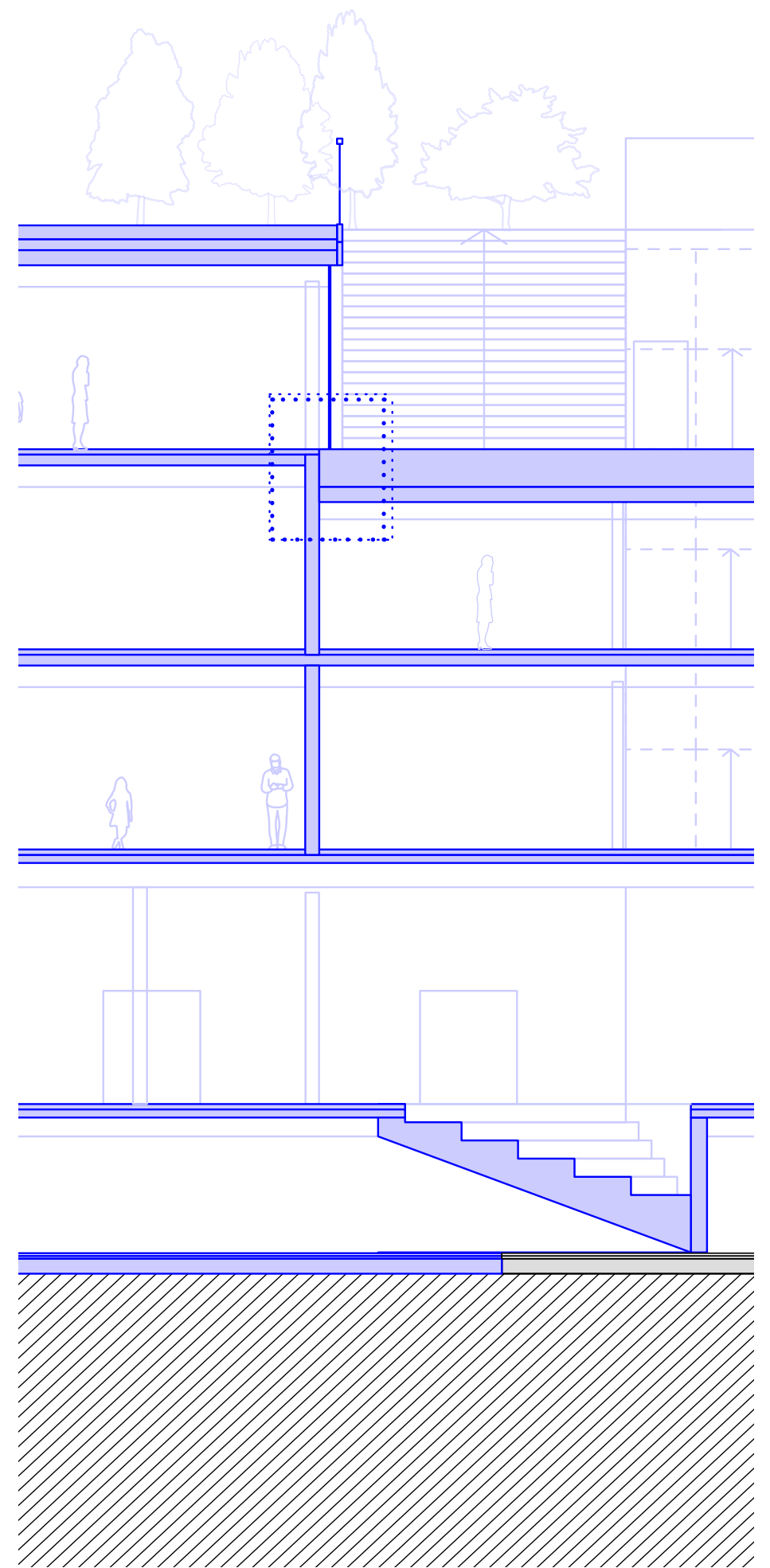


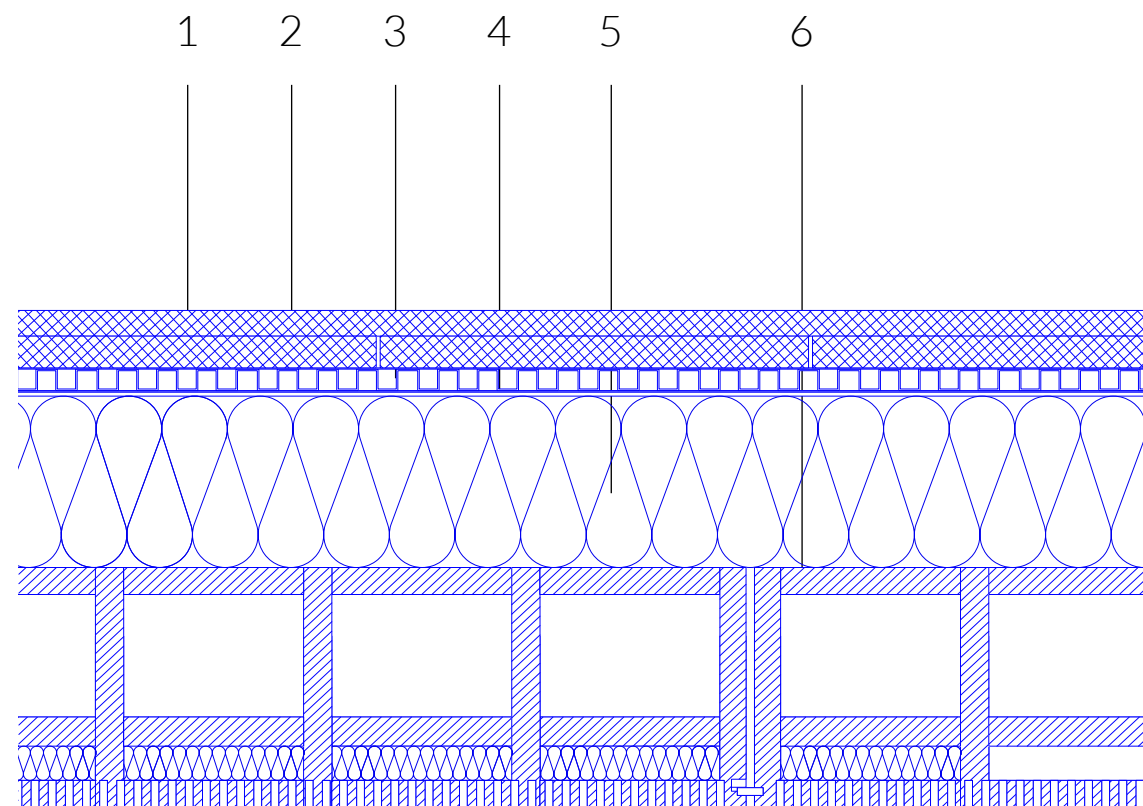
- 1 Ceramic cast tiles, 30-55mm
- 2 Aluminium substructure w. clip fasteners, 45mm
- 3 Insulation Woodfiber-panels, 60mm
- 4 Glulam 260x320mm, Spruce
- 5 Guides sun shading, textile awning
- 6 Wooden window frame, triple glazing 53mm



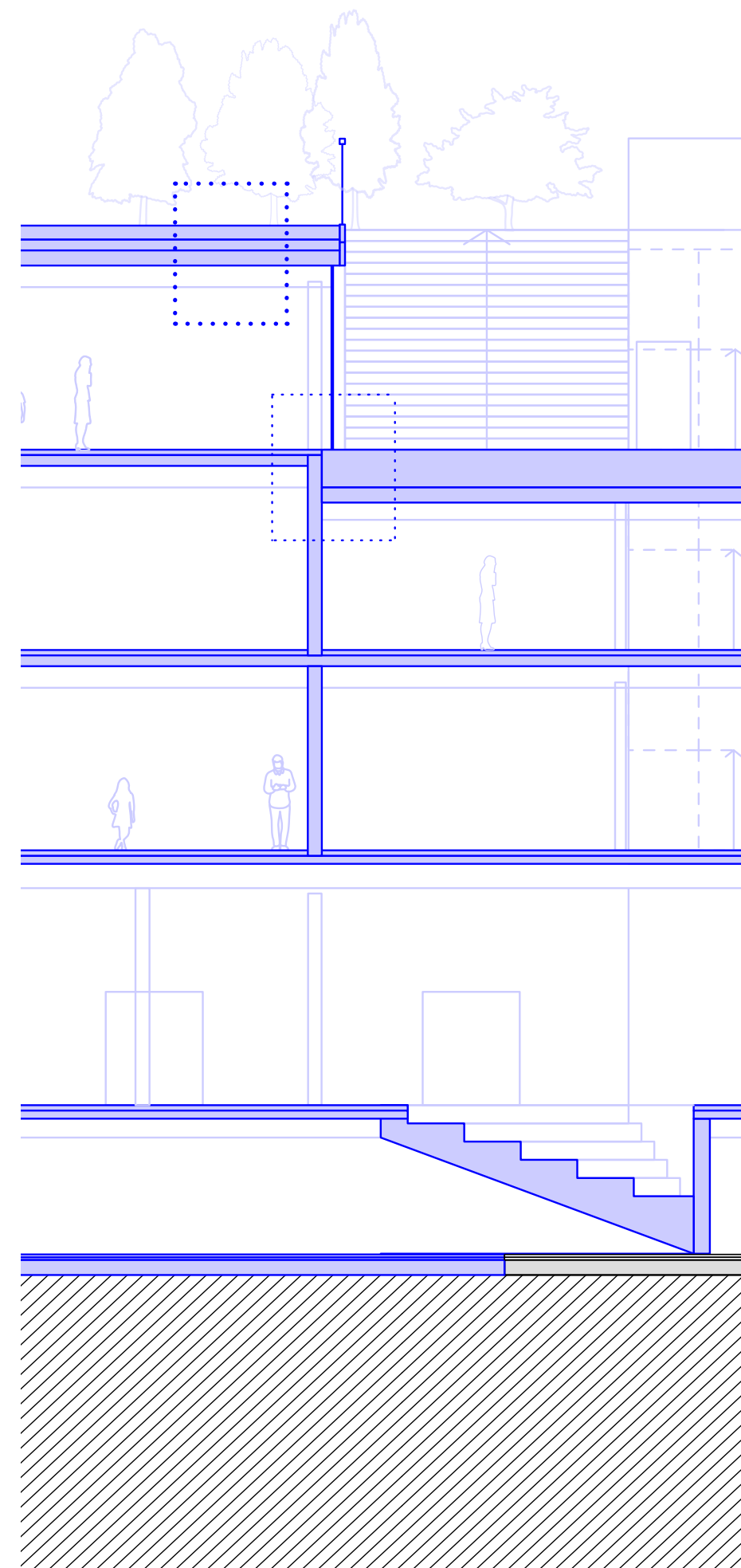


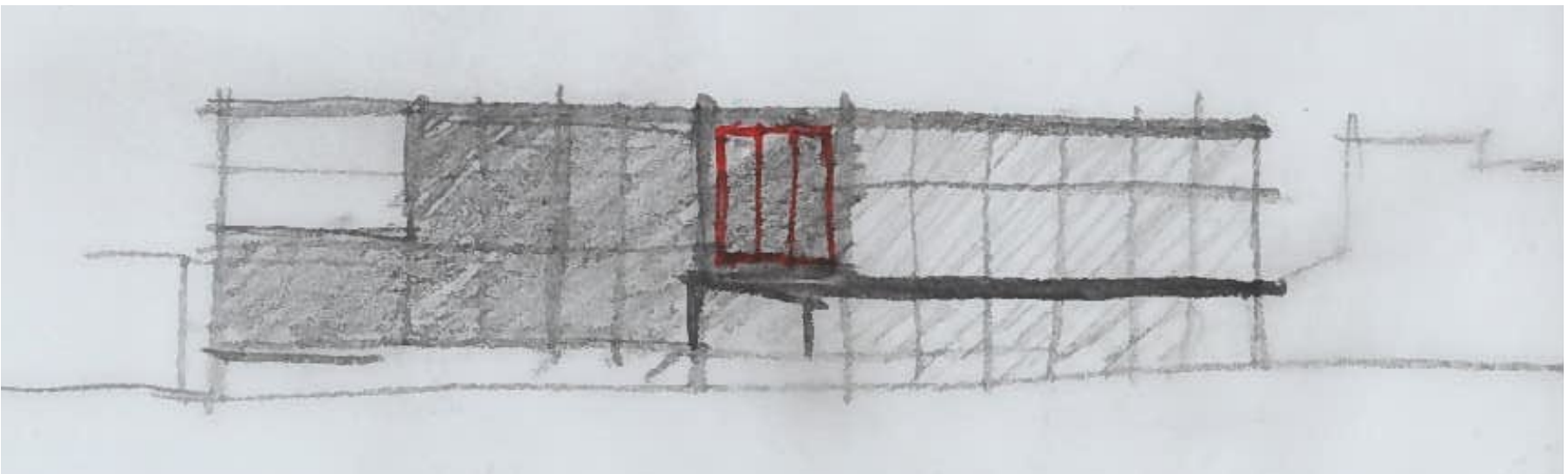
- 1 Insulated glazing
- 2 Aluminium door frame
- 3 Cobblestones, 90mm
- 4 Gravel bed,
- 5 Facade gutter, 300x140mm
- 6 Base course, 200mm
- 7 Base course gravel, 300mm
- 8 Water proving EPDM, 2mm
- 9 Insulation, waterproof, 50mm
- 10 Insulation, mineral woll, 120mm
- 11 Metal profile threshold, 2mm
- 12 Metal angle, 12mm

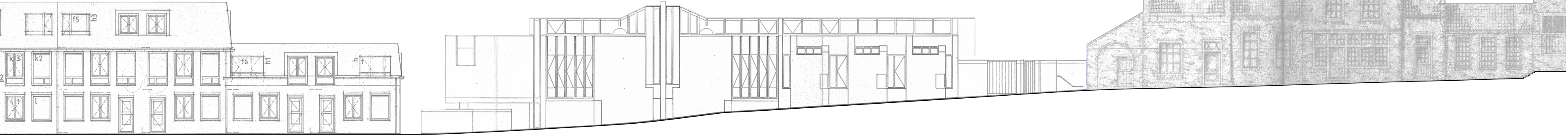




- 1 Pured Rubber tiles, 30mm
- 2 Rubber Tiles, 40mm
- 3 Drainage, 30mm
- 4 Waterproofing EPDM, 2mm
- 5 Insulation mineral wool, 200-250mm
- 6 Box-slab elements, 280mm











PERSPECTIVE | Schoolyard





CHURCHYARD BECOMES SCHOOLYARD

THANK YOU

