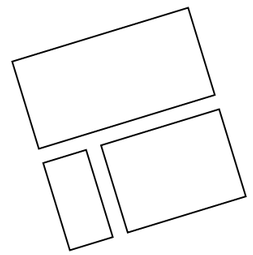


VIA GUIDO RENI 3-7

From Industrial Hangar to An Architecture School

Rome, Italy

A Master Thesis by Mujahid Nawazir

What characteristics should an architecture school should possess to effectively integrate traditional and modern pedagogies also technologies into the curriculum, while also preparing students to thrive in the resource-limited world and adapt to a collaborative working environment?

What are the fundamental skills and knowledge that an architecture school should prioritize to provide solid foundation for its students?

How can an architecture school integrate traditional and modern pedagogies into its curriculum?

What technologies should an architecture school use in its curriculum?

How can an architecture school prepare students for collaborative working environment?

What characteristics should an architecture school should possess to effectively integrate traditional and modern pedagogies also technologies into the curriculum, while also preparing students to thrive in the resource-limited world and adapt to a collaborative working environment?

How can an architecture school prepare students for a resource-limited world?

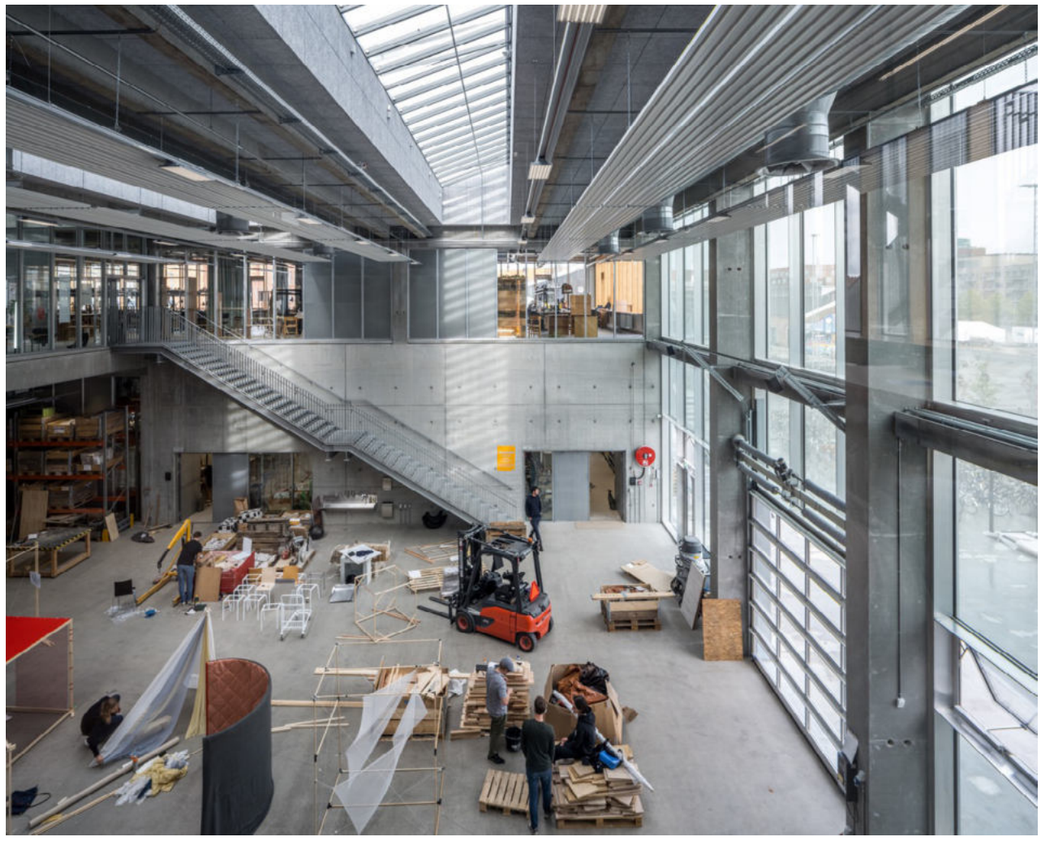
How can an architecture school create an inclusive learning environment?

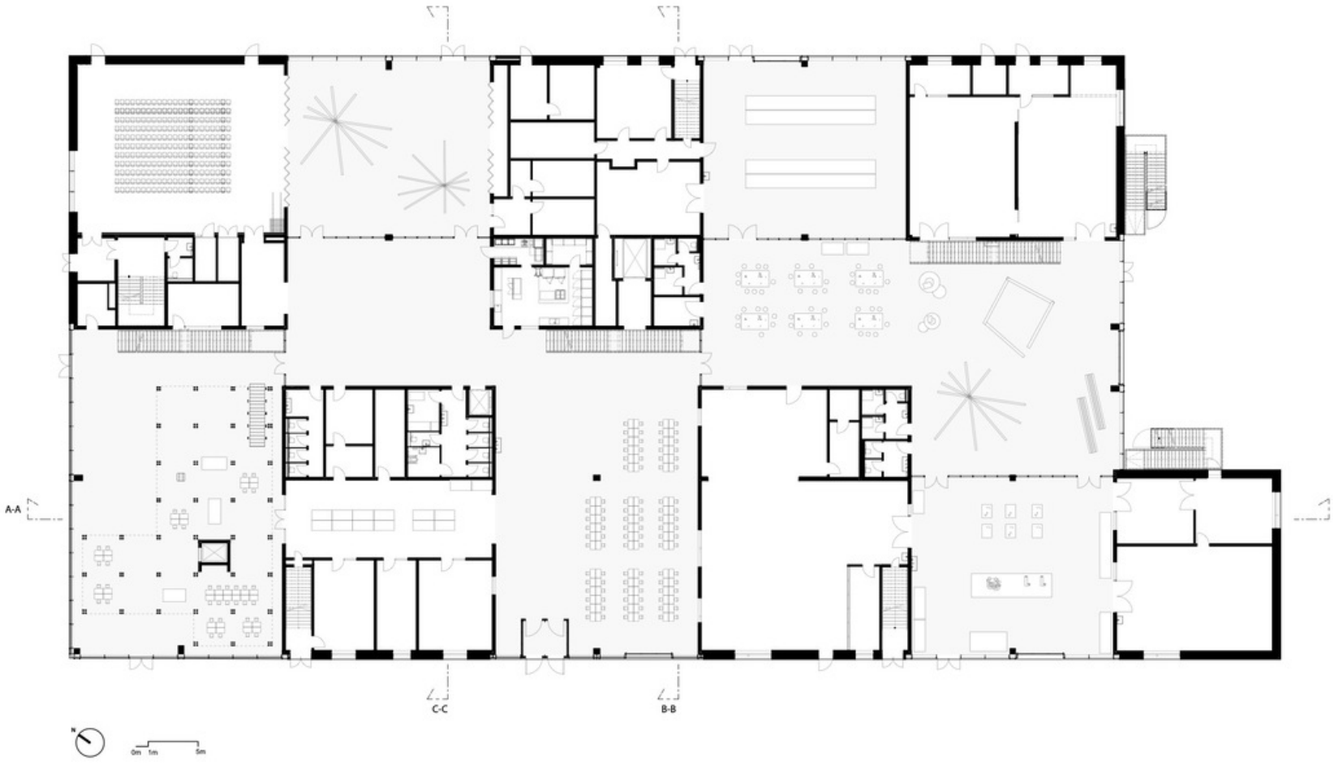
How can an architecture school encourage students to learn from their environment?

What role do industry partnership play in an architecture school's curriculum?

REFERENCE

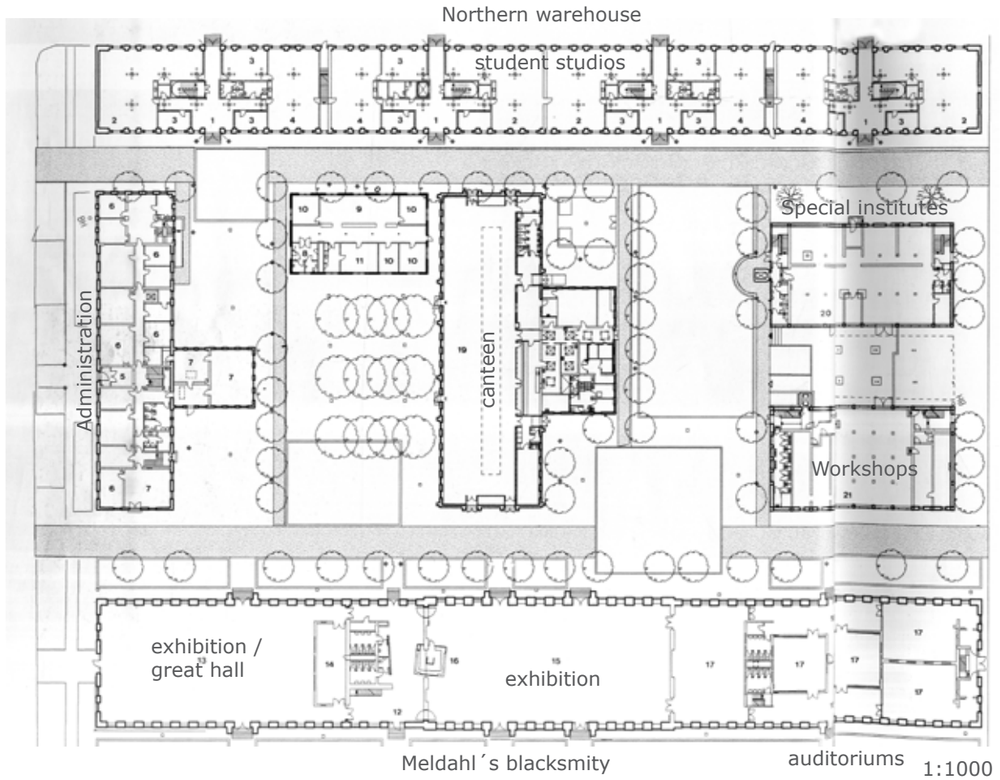
AARCH | Aarhus | Adept





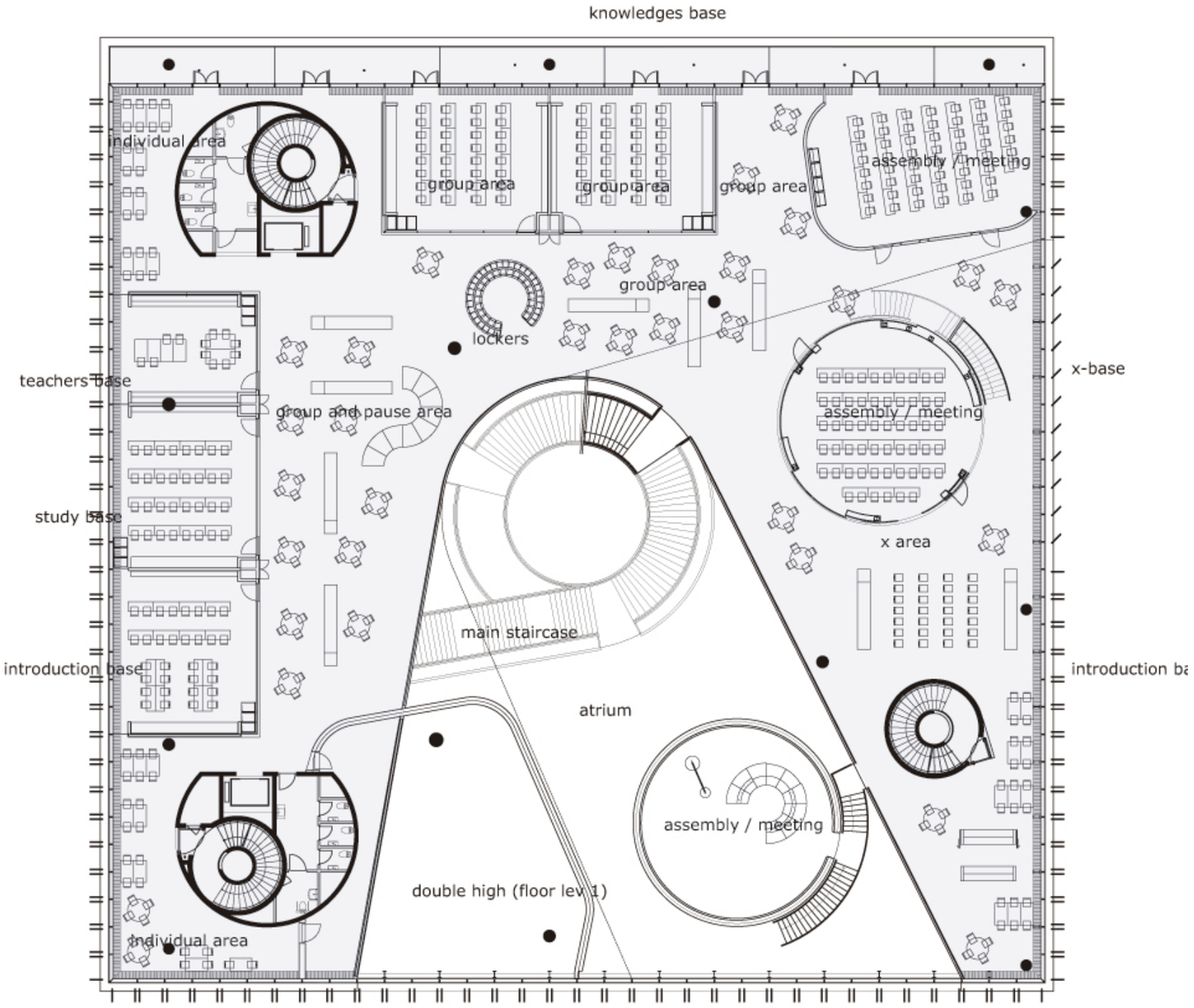
REFERENCE

Royal Danish Academy | Copenhagen | Vilhelm Lauritzen



REFERENCE

Orestad School | Copenhagen | 3XN

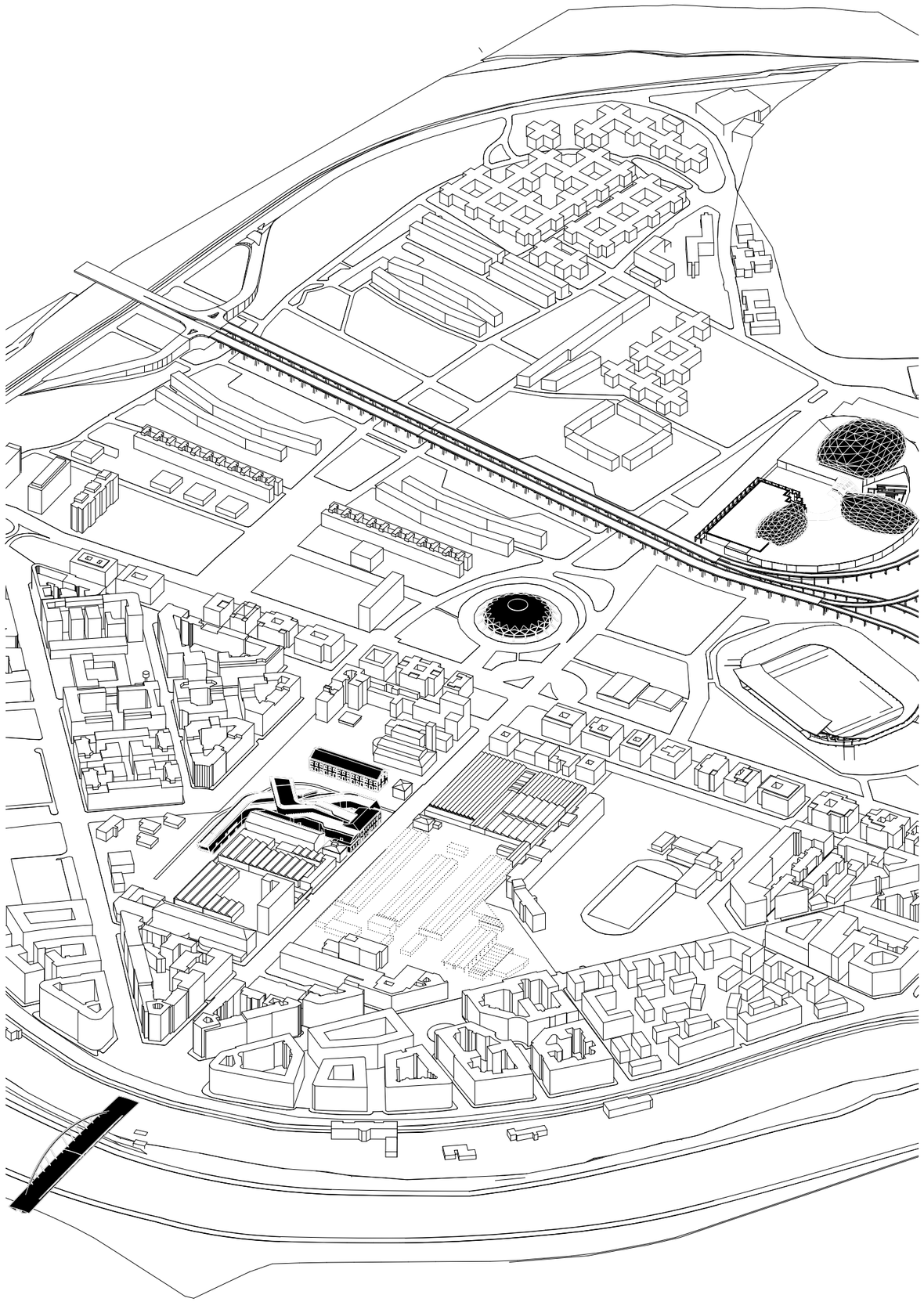


ANALYSIS - URBAN

1 : 20000

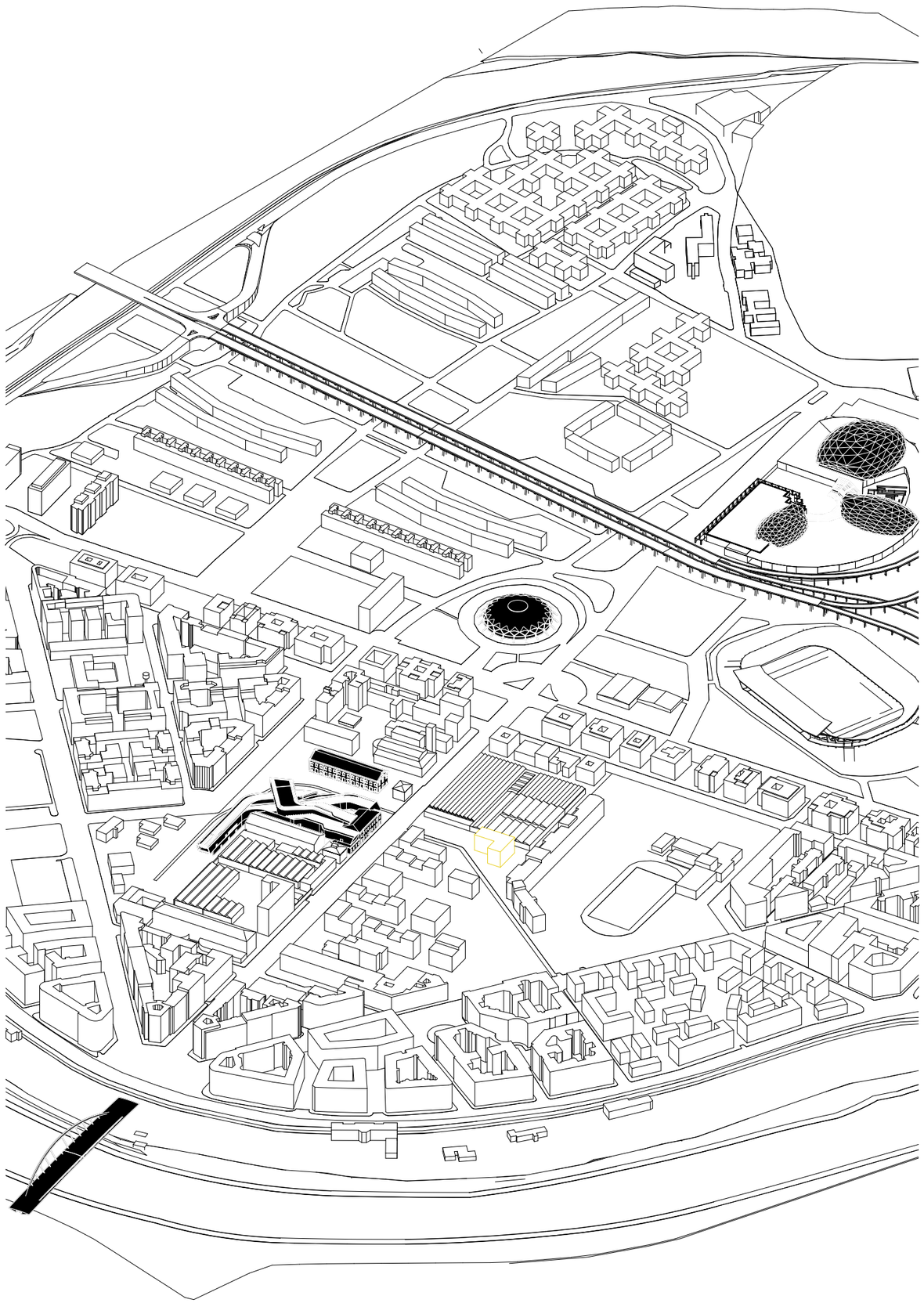
ANALYSIS - URBAN | TODAY

1 : 5000



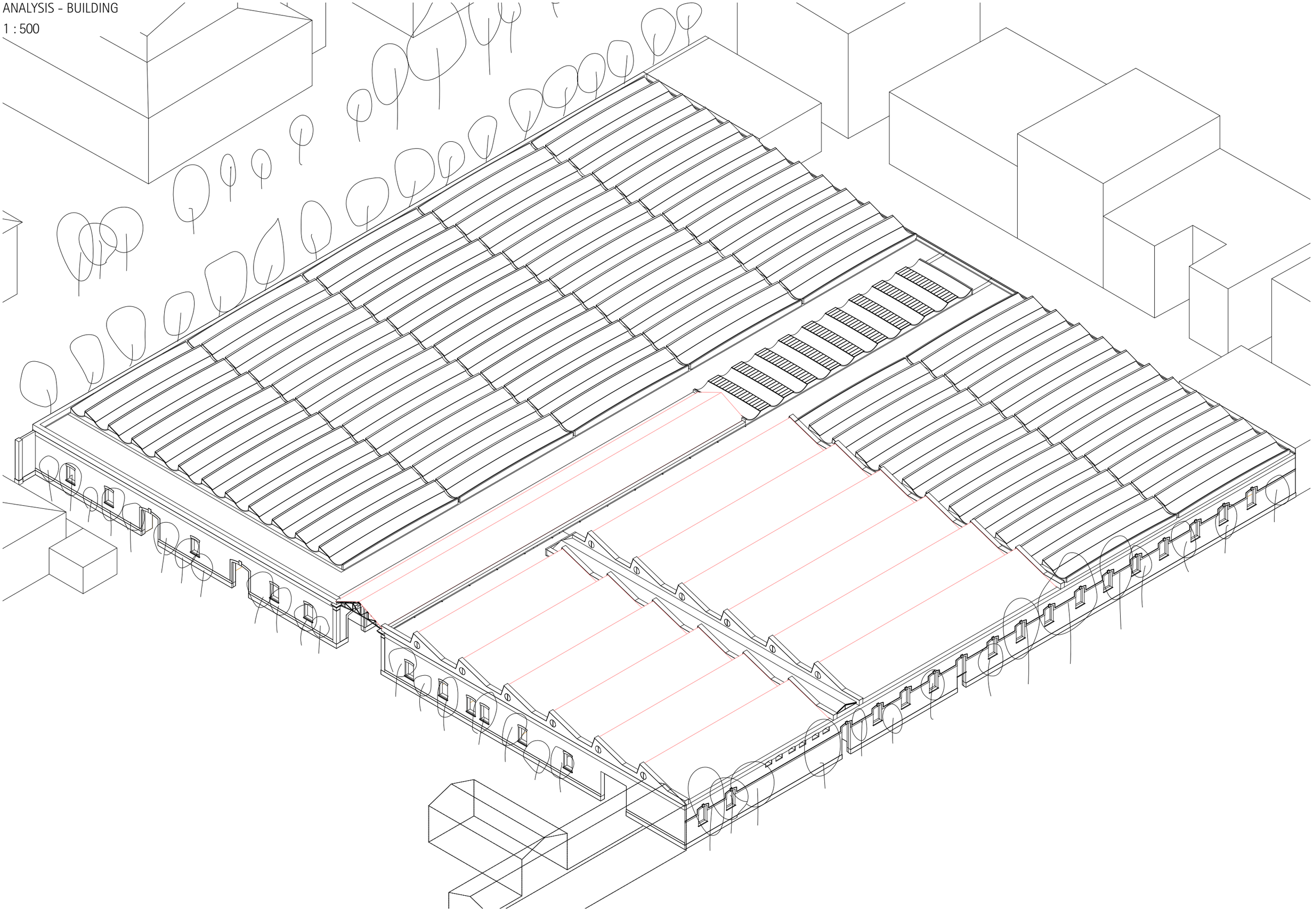
ANALYSIS - URBAN | FUTURE

1 : 5000



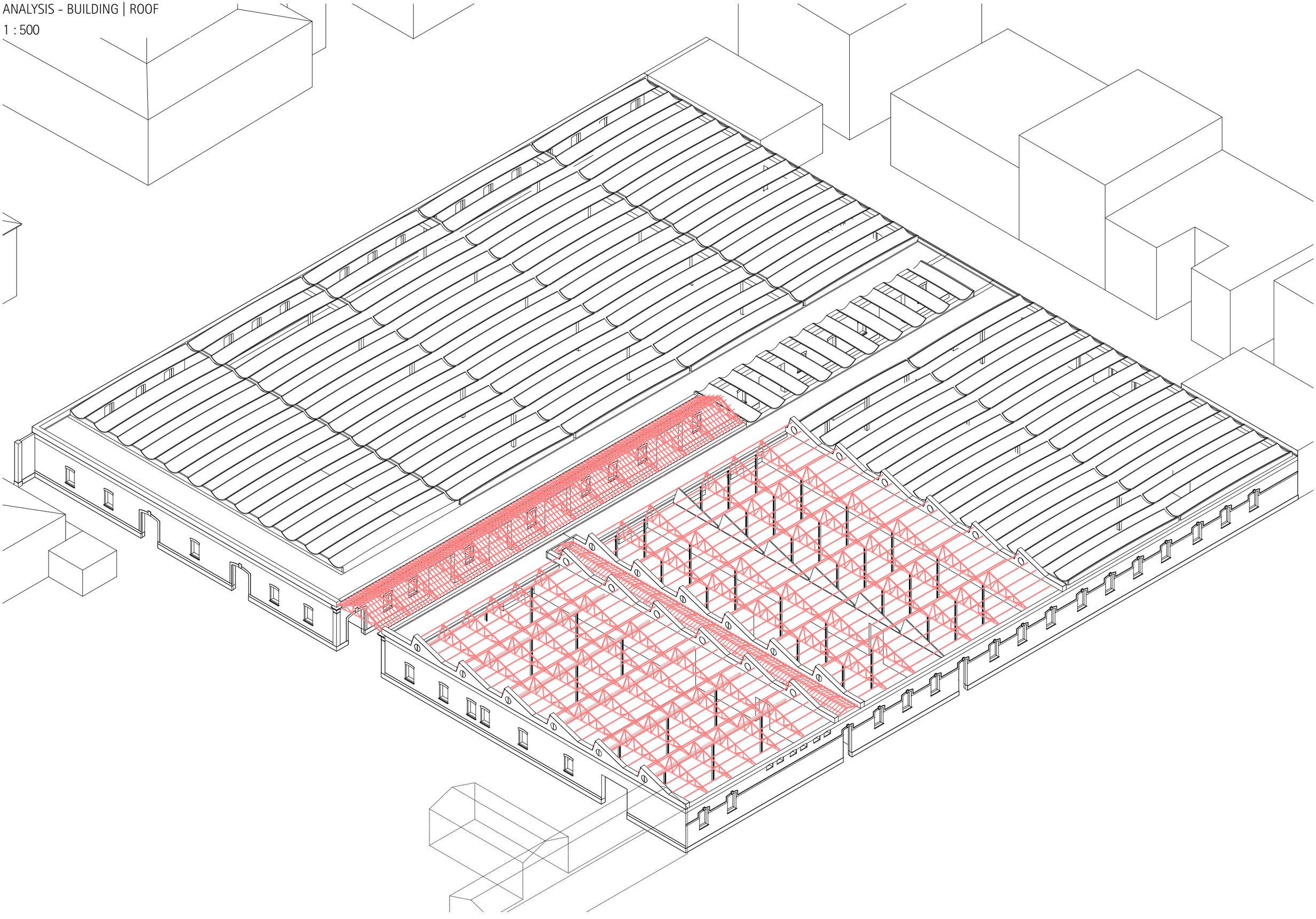
ANALYSIS - BUILDING

1 : 500



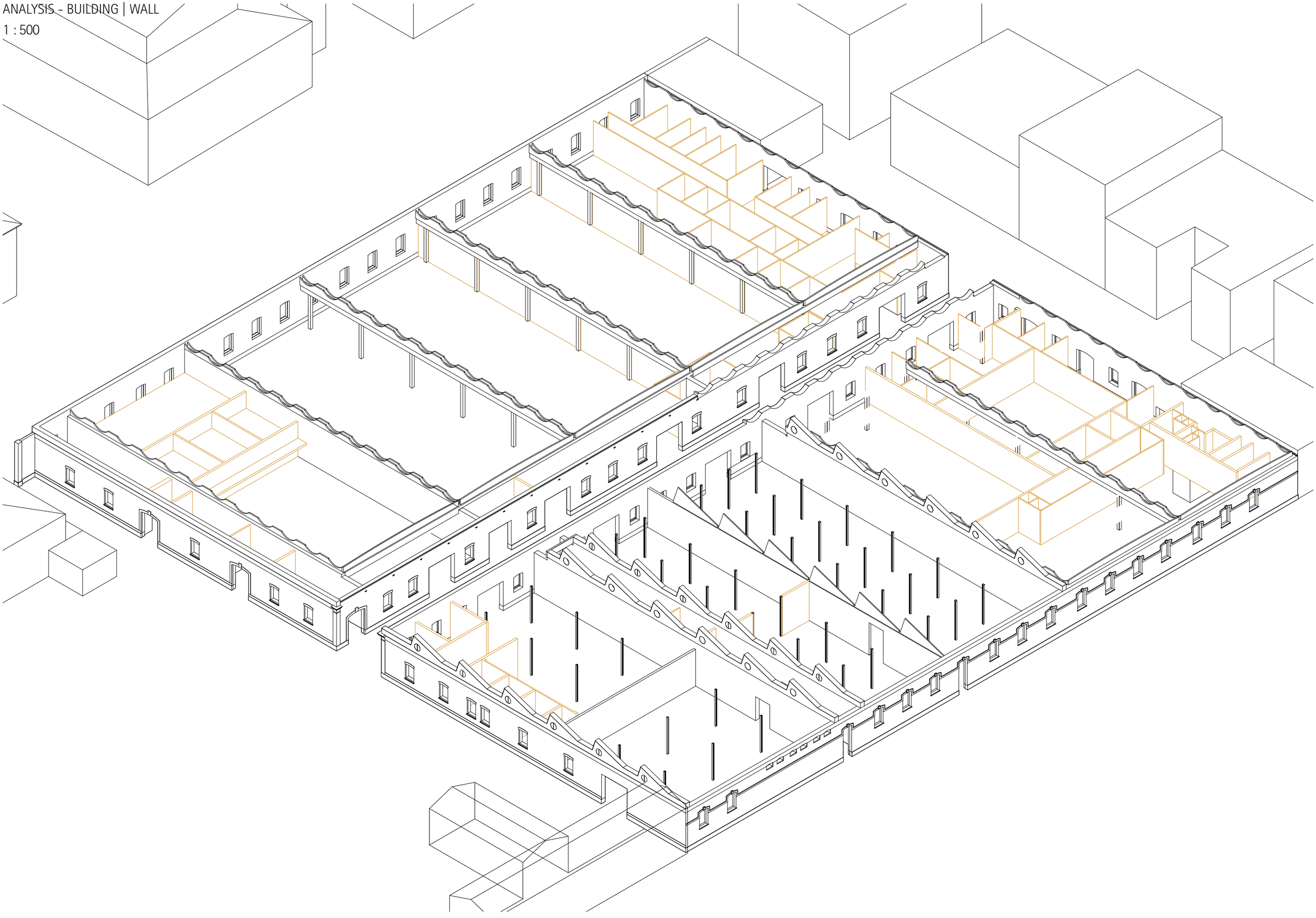
ANALYSIS - BUILDING | ROOF

1 : 500



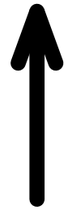
ANALYSIS - BUILDING | WALL

1 : 500



ANALYSIS - BUILDING

1 : 50

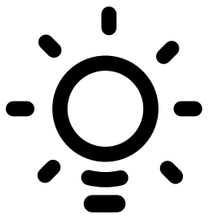


STRENGHTS

- Cultural Activities
  Wide variation of cultural activies around the site
- Green Area
  Abundance of trees surrounding the building
- History
  Ex-military building for industrial purpose
- Good connectivity to public transport
  Nearby tram and bus station

WEAKNESSES

- Overlight
  Abundance of light from above acan be counter produstive
- Entry Choice
  Entrance can be made in limited number
- Poor Insulation
  As industrial building it has low heat/cold retaining capacity



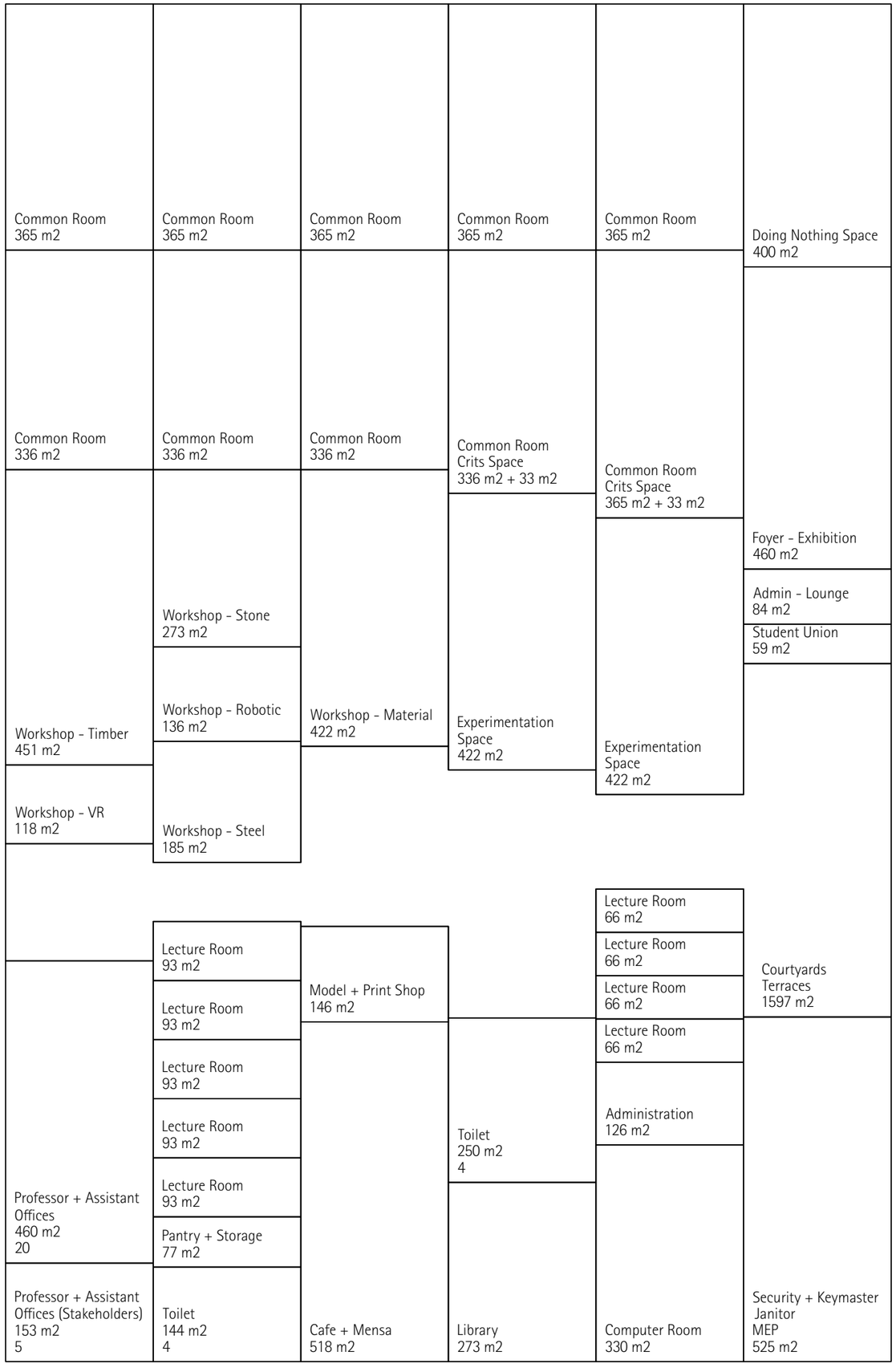
OPPORTUNITIES

- High Ceiling
  Six to seven meter clearance can be used
- Skylight
  Light from above good for production line
- Facilities Around
  Existing functions surrounding the site can be used

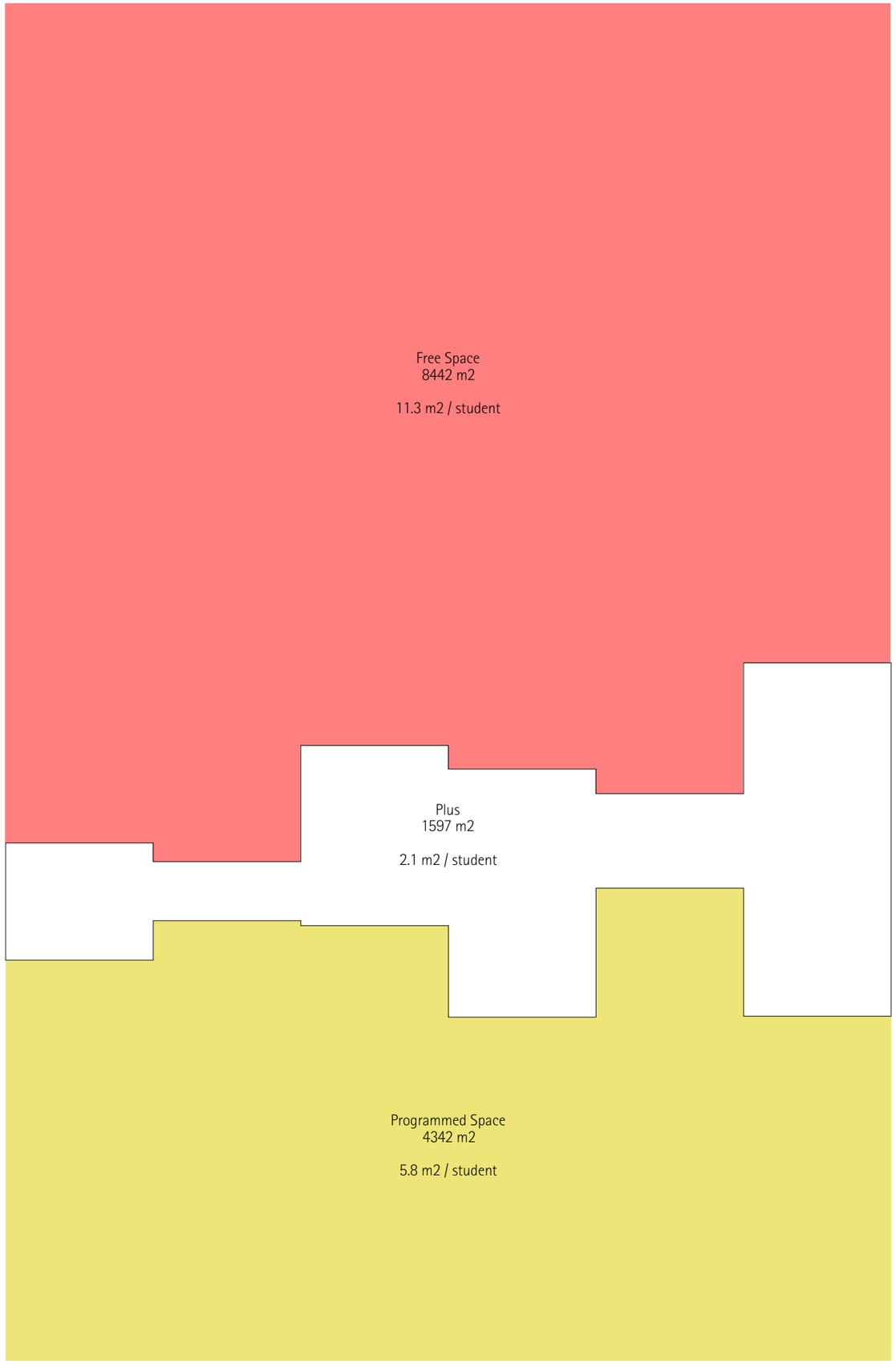
THREATS

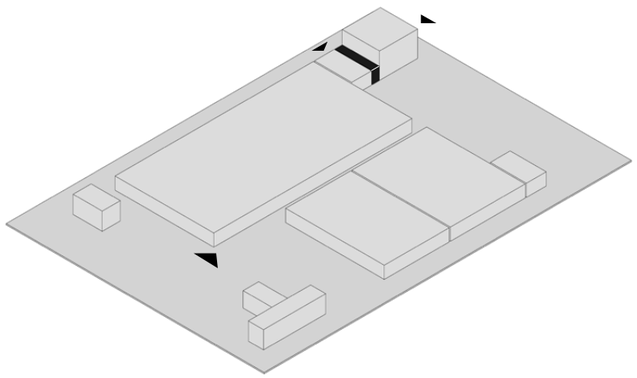
- Structural Damage
  Heavily rusted steel structure towards southwest
- Summer Heat
  High temperature in summer
- Water Distribution
  Leaks damaging current structure

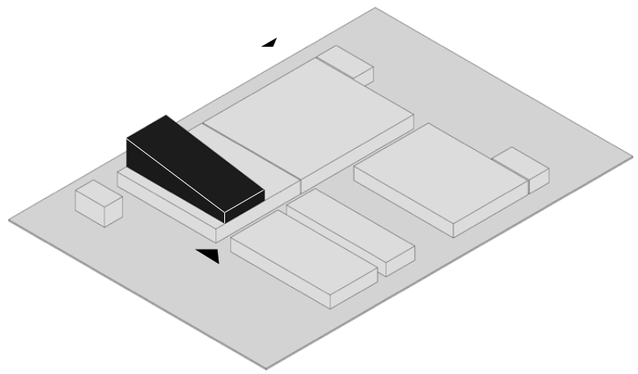
PROGRAM

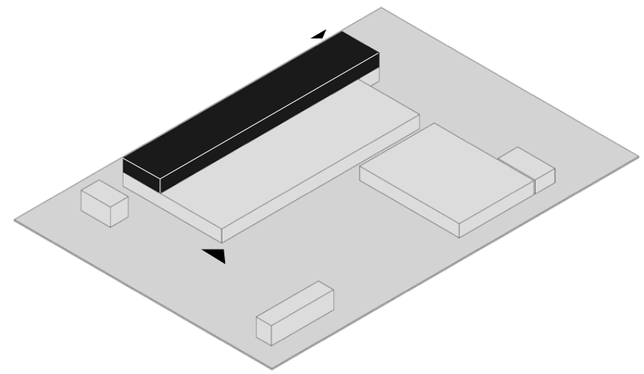

Common Room
365 m2
Common Room
365 m2
Common Room
365 m2
Common Room
365 m2
Common Room
365 m2
Doing Nothing Space
400 m2
Common Room
336 m2
Common Room
336 m2
Common Room
336 m2
Common Room
Crits Space
336 m2 + 33 m2
Common Room
Crits Space
365 m2 + 33 m2
Foyer - Exhibition
460 m2
Workshop - Stone
273 m2
Admin - Lounge
84 m2
Student Union
59 m2
Workshop - Robotic
136 m2
Workshop - Timber
451 m2
Workshop - Material
422 m2
Experimentation
Space
422 m2
Experimentation
Space
422 m2
Workshop - VR
118 m2
Workshop - Steel
185 m2
Lecture Room
66 m2
Lecture Room
93 m2
Model + Print Shop
146 m2
Lecture Room
66 m2
Courtyards
Terraces
1597 m2
Lecture Room
93 m2
Lecture Room
66 m2
Lecture Room
93 m2
Lecture Room
66 m2
Toilet
250 m2
4
Administration
126 m2
Lecture Room
93 m2
Professor + Assistant
Offices
460 m2
20
Pantry + Storage
77 m2
Professor + Assistant
Offices (Stakeholders)
153 m2
5
Toilet
144 m2
4
Cafe + Mensa
518 m2
Library
273 m2
Computer Room
330 m2
Security + Keymaster
Janitor
MEP
525 m2

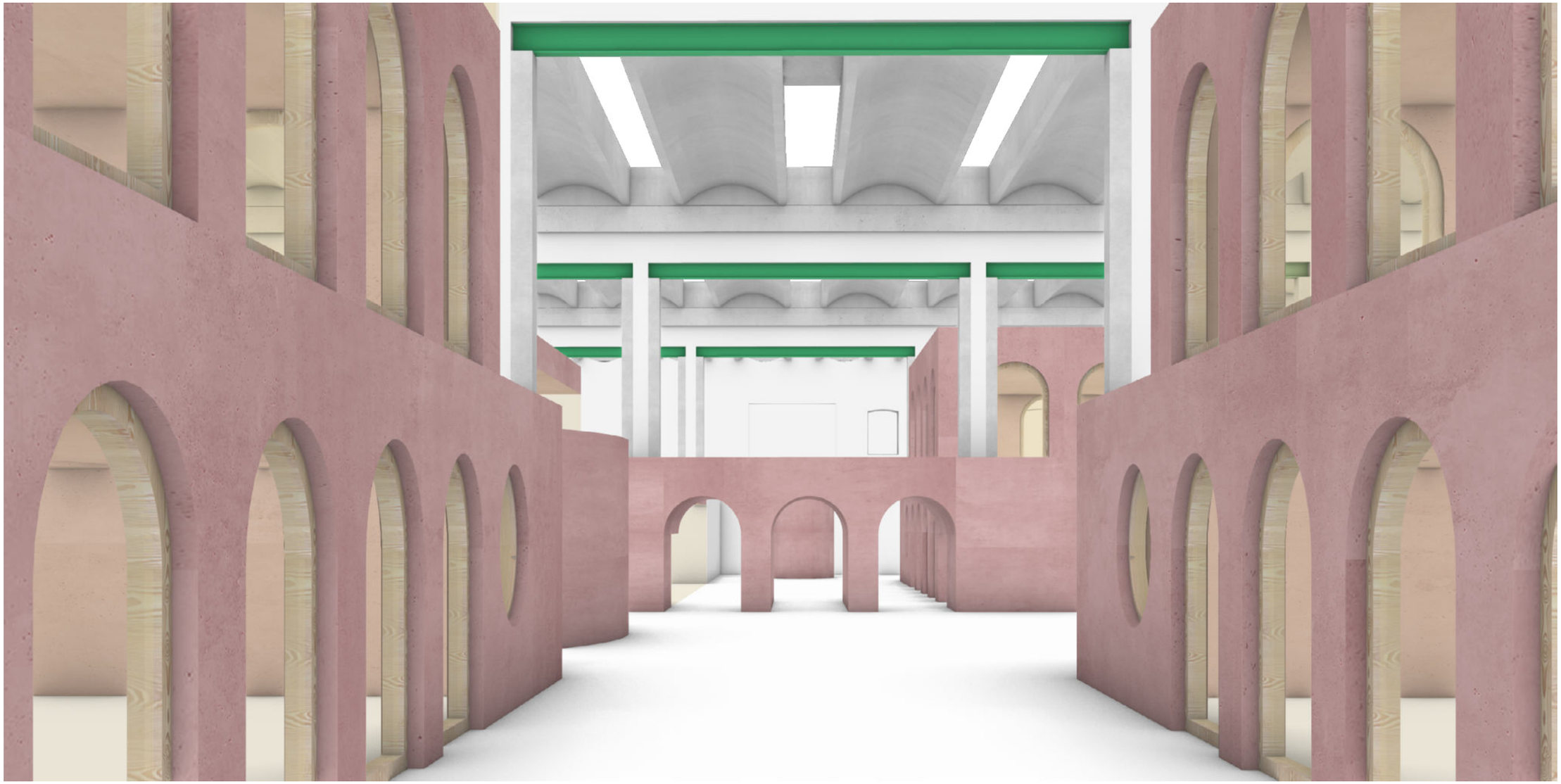
PROGRAM

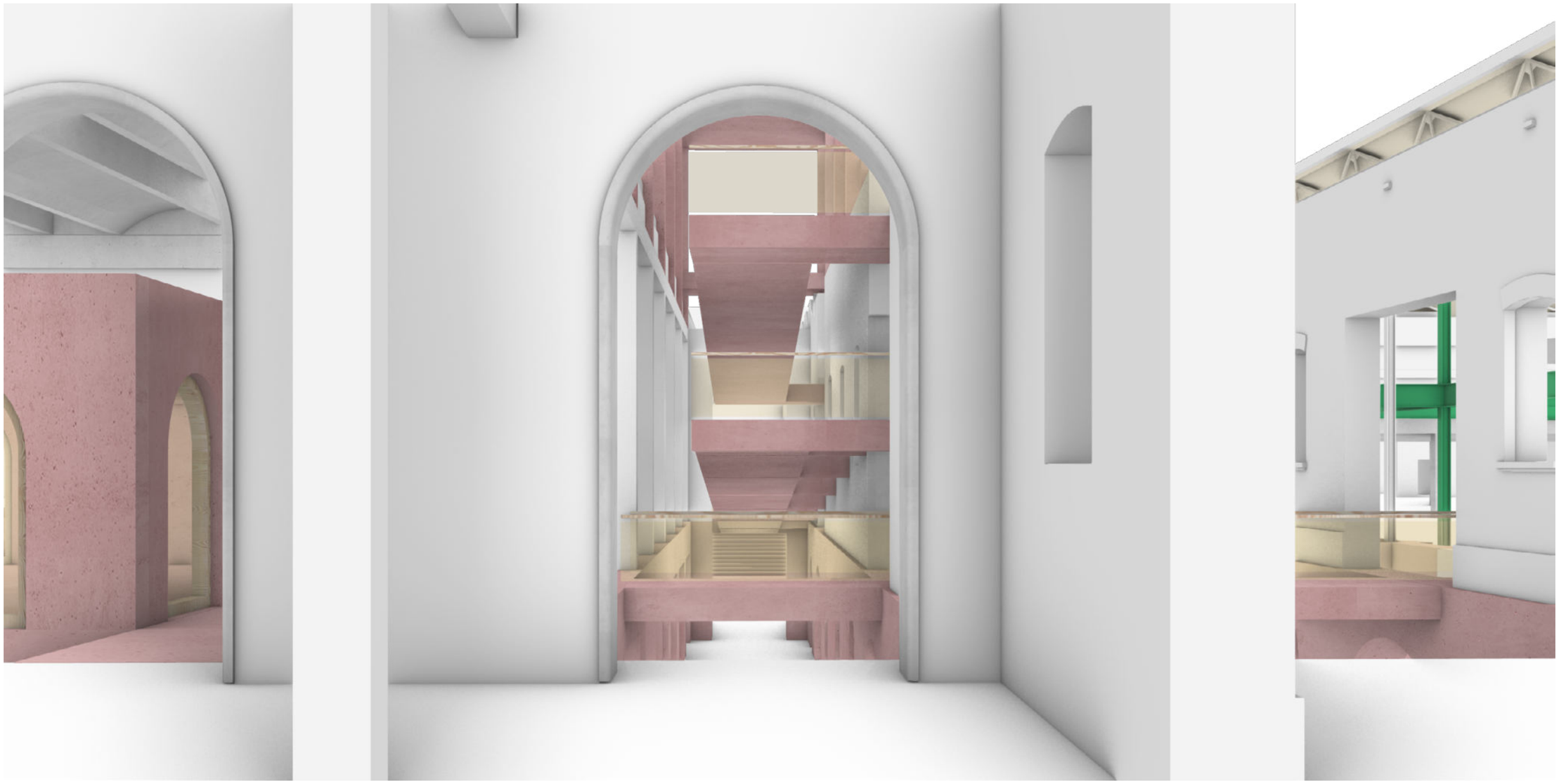

Free Space
8442 m2
11.3 m2 / student
Plus
1597 m2
2.1 m2 / student
Programmed Space
4342 m2
5.8 m2 / student

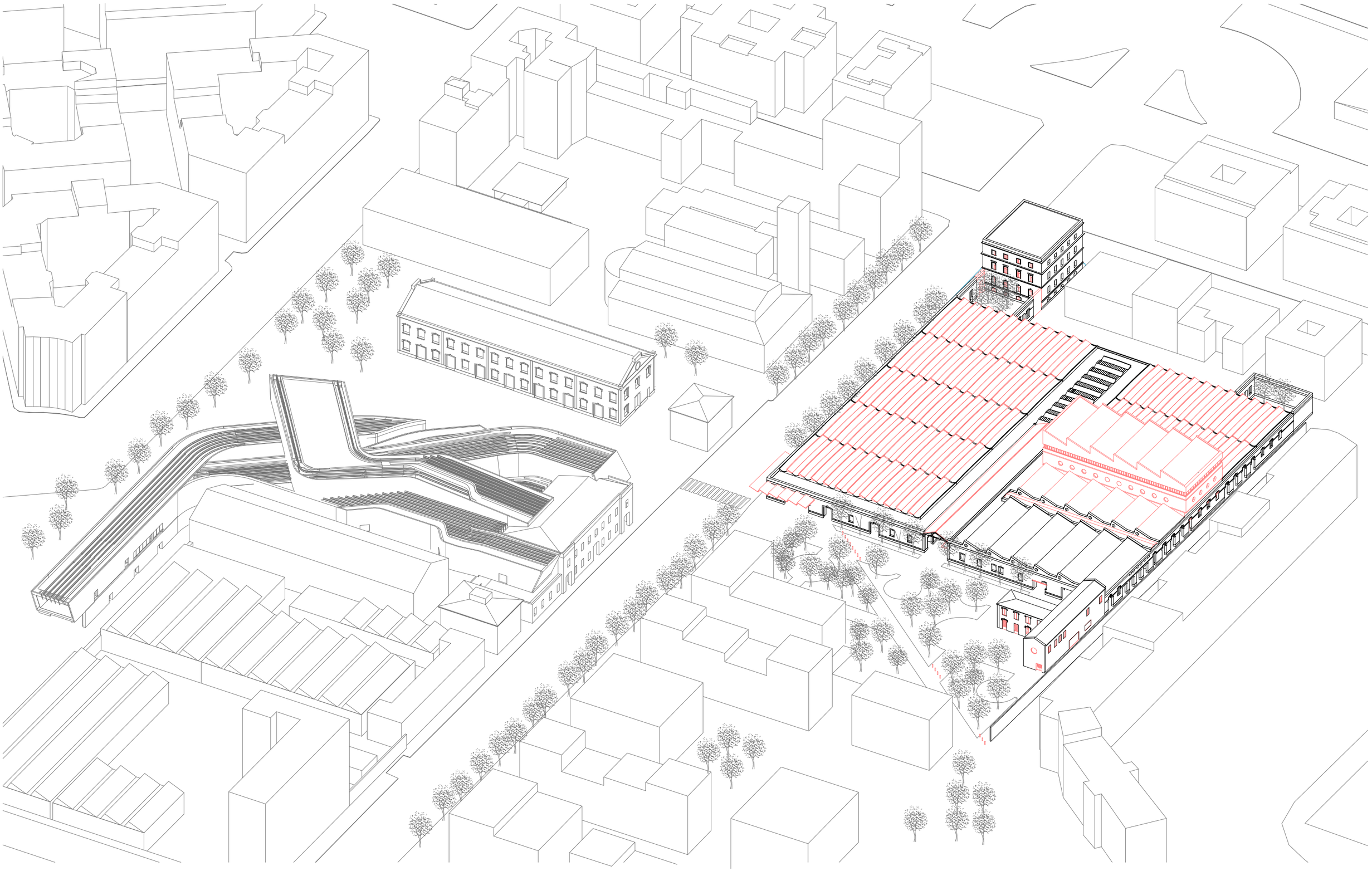


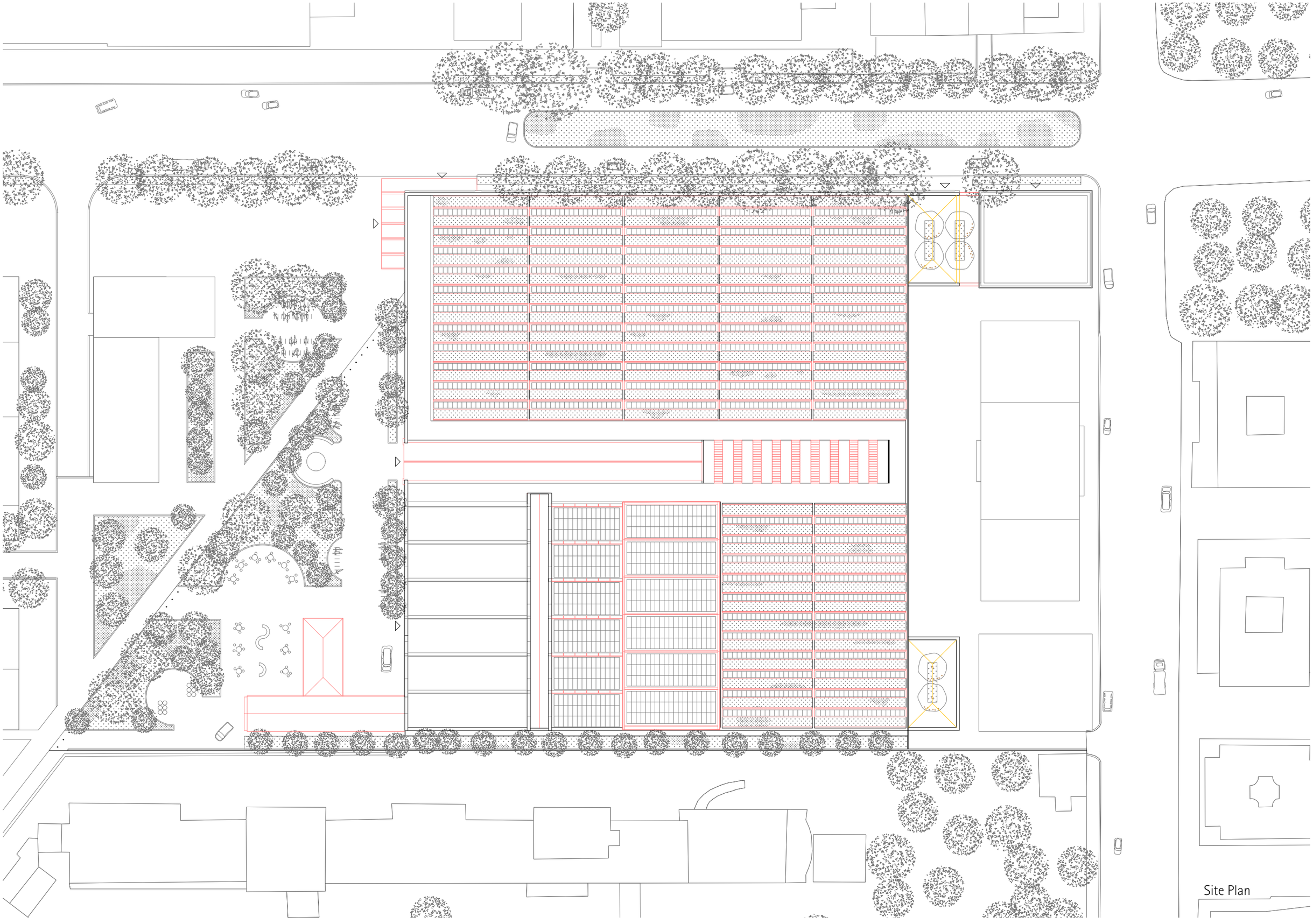




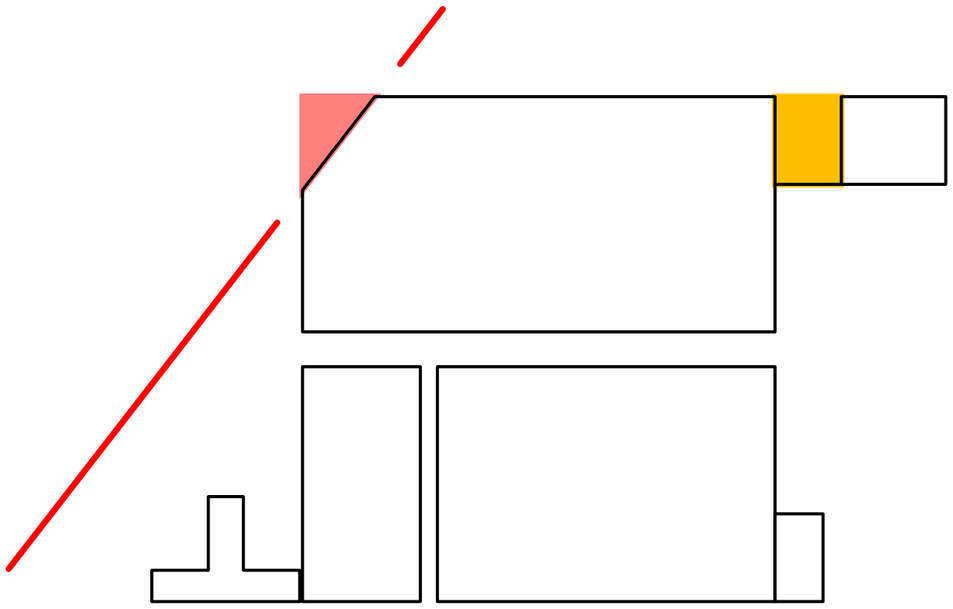






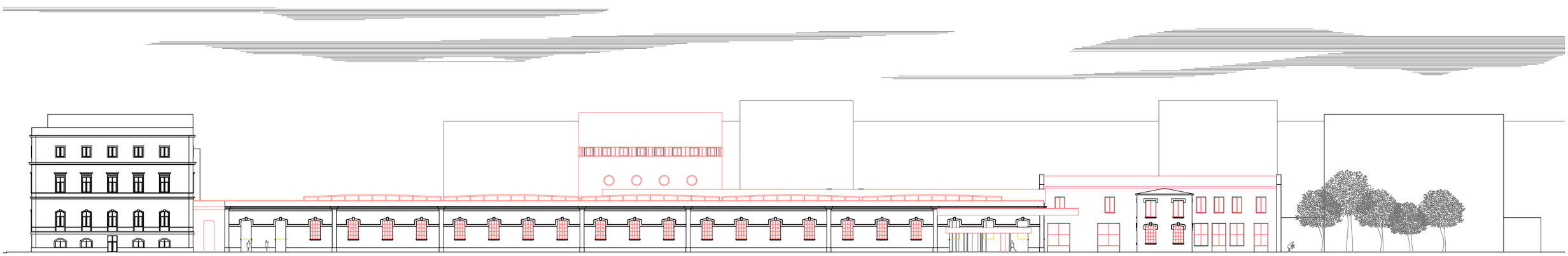


Site Plan

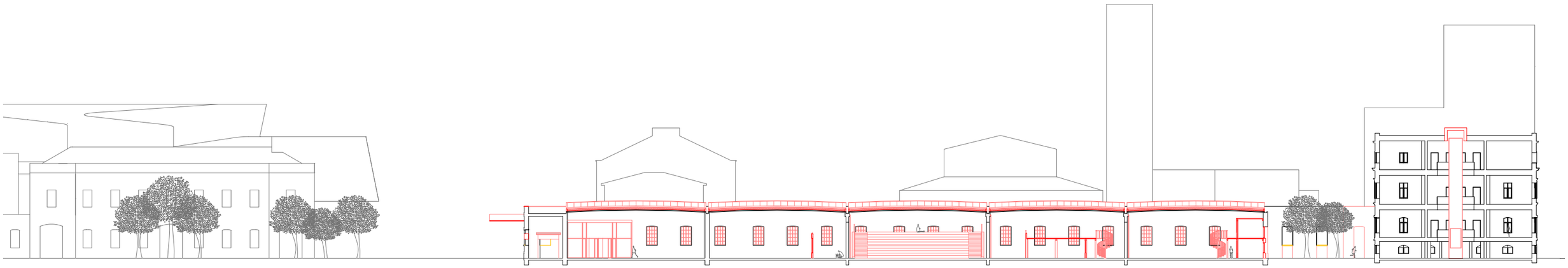


Urban Context - 'Red Corner'

the new axis from the south west ends abruptly on the side of our building. this was addressed by partially removing the wall, providing an entrance and freeing the flow. also towards the north, the connecting volume, between main building and the corner volume, will be opened as a side entrance.

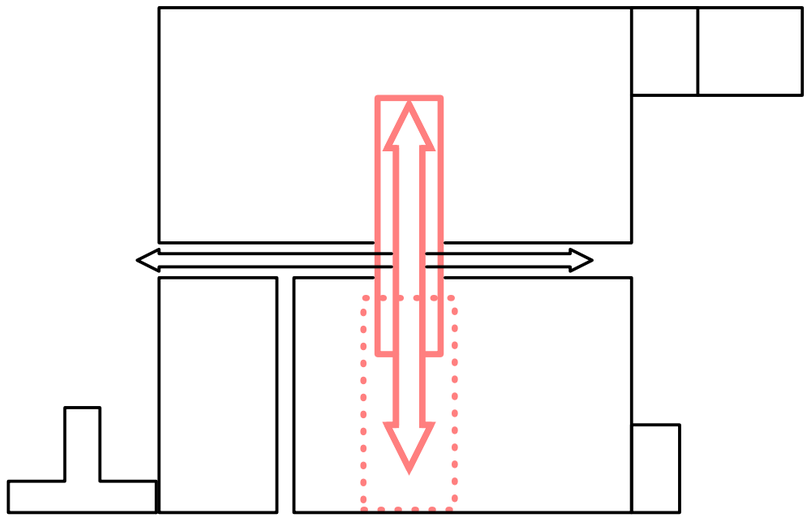


North Elevation



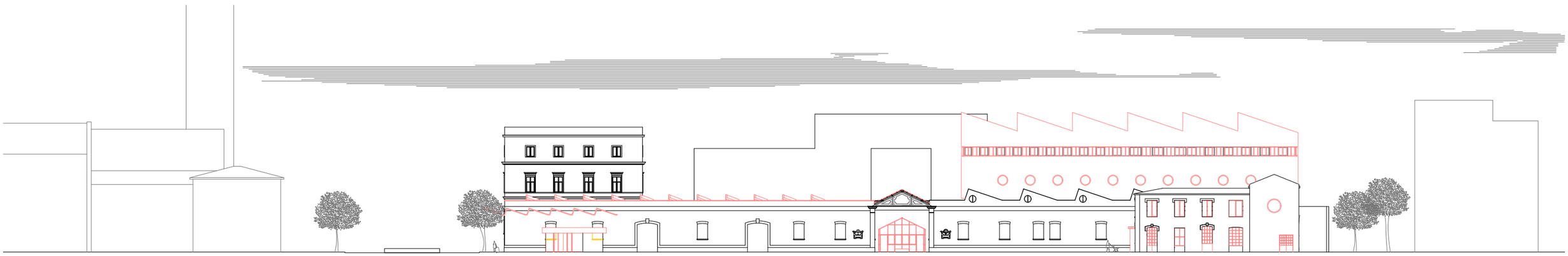
Section BB'

The Red Corner



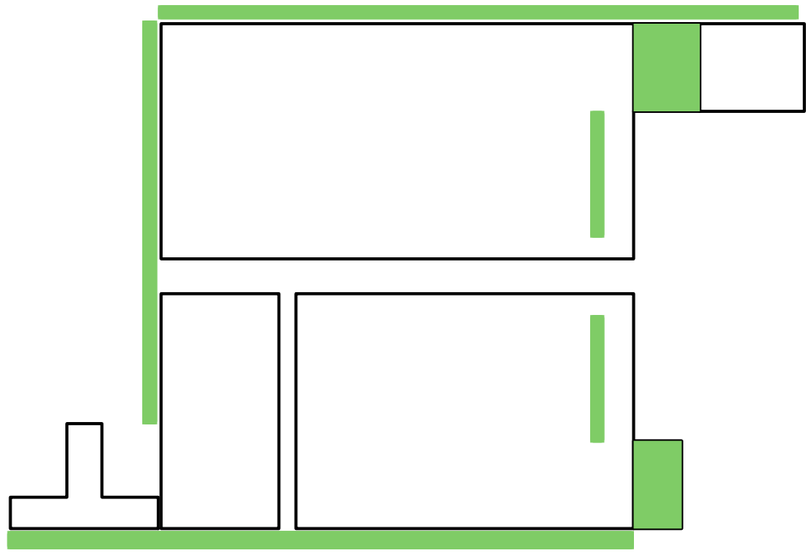
New Axis - Concentrated Intervention

the old axis used to be corridor that connects east and west part of the whole complex. at the same time, it divided the building into two parts. to connect this two parts, a new axis is created by making a shallow sunken court. on top of that, a new volume is place along this axis to make a concentrated intervention.



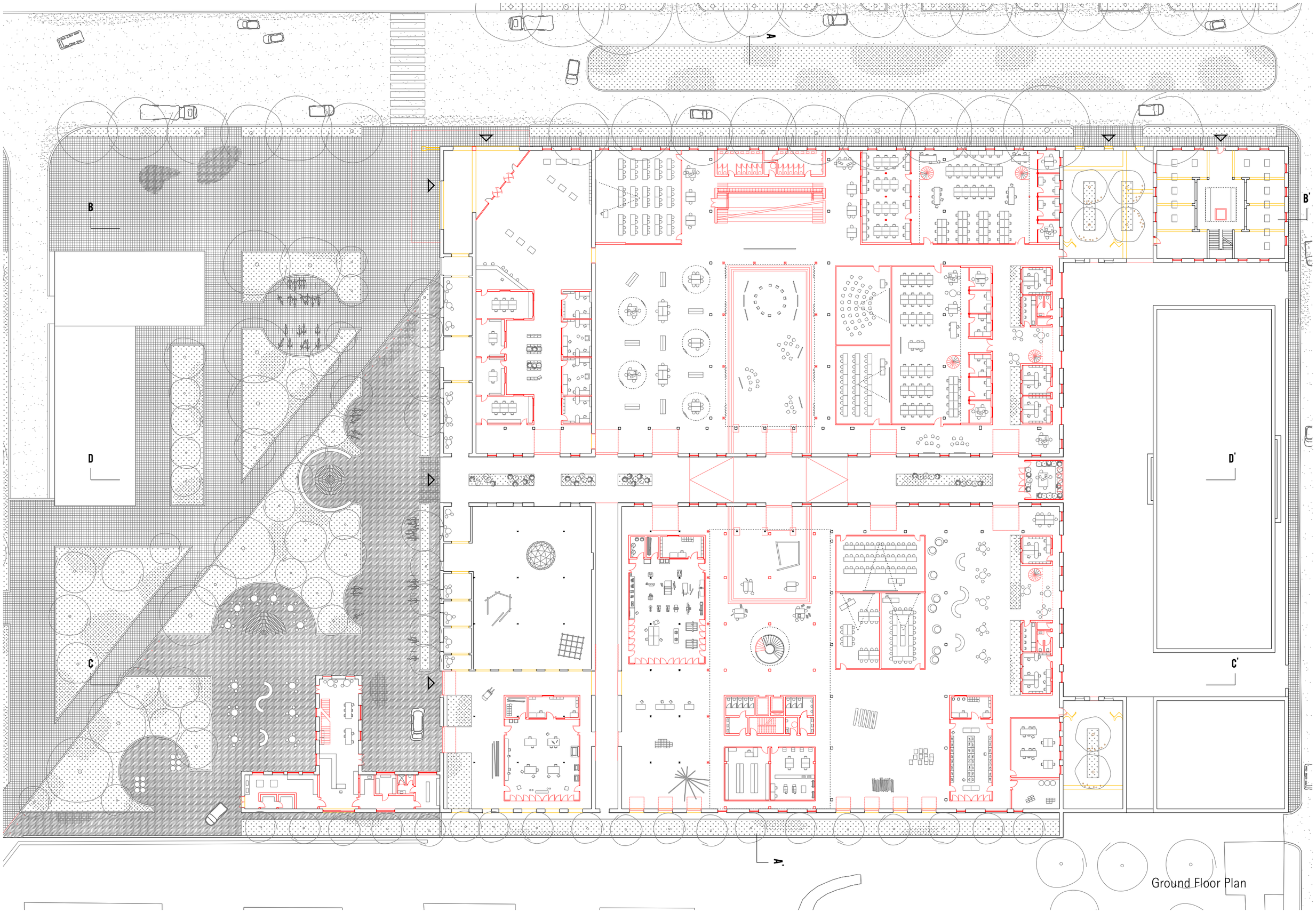
West Elevation

Section AA'



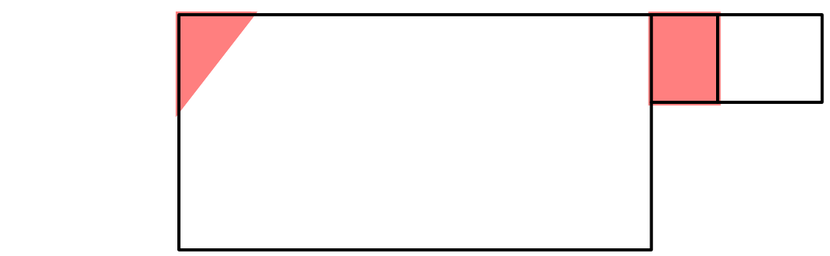
Inner Courtyard - Strips of Green

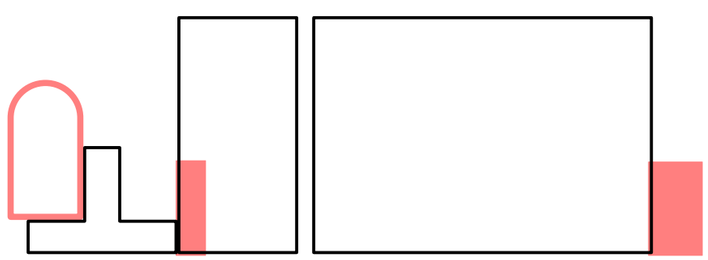
in today's condition, there are lines of trees on the north, west, and south part of the building. it would be make sense if we also continue this towards the east.



Ground Floor Plan

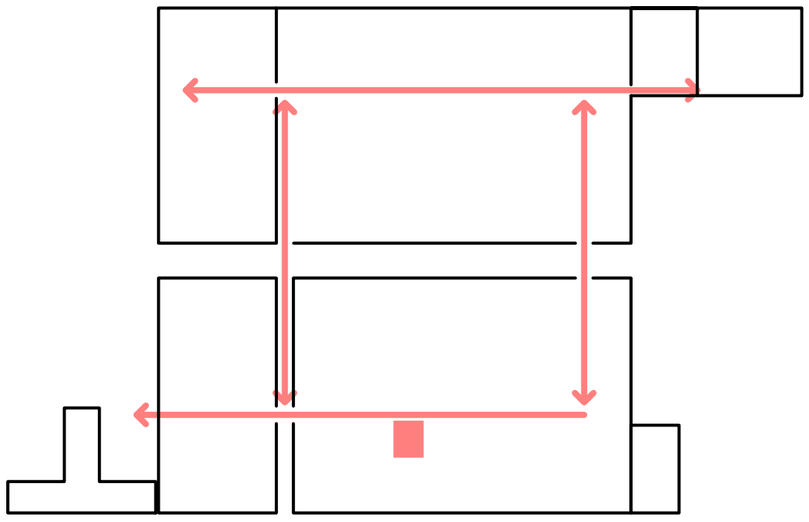
Reading | Working Space





Open Space - 'Doing Nothing'

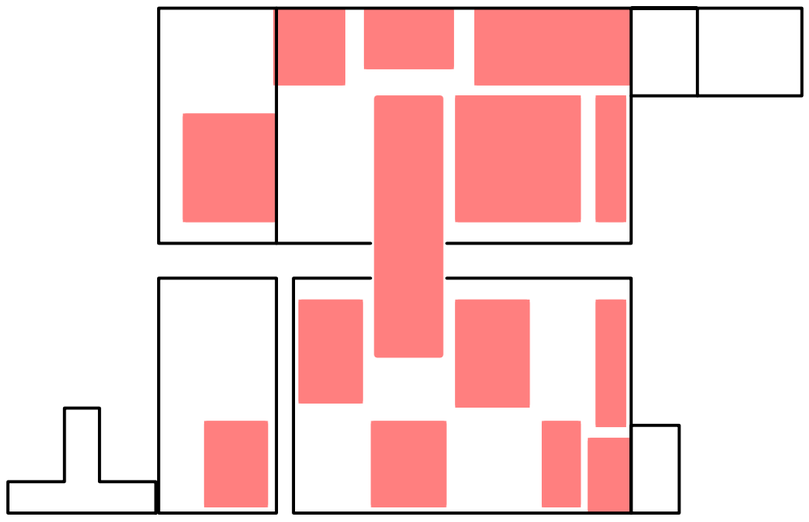
each corners of the building act as an open space. towards the north and northeast there are orange garden. towards the west, we have the entrance, and towards the southwest we have a garden within the ruin and outdoor area of the canteen.



Passage - Internal Circulation

by connecting the open space and by placing passages along existing wall and strips of the green, naturally there is an internal circulation that make connection from north - south and east - west part of the building surrounding the new main axis.

The Passage



New Volumes - A 'City' Within A Ruin

along side the inner circulation, new volums are arranged in a way that there is an open space where the student can work, discuss, or just simply sitting and relaxing.

Studio Year 1 & 2

A

A'

B

B'

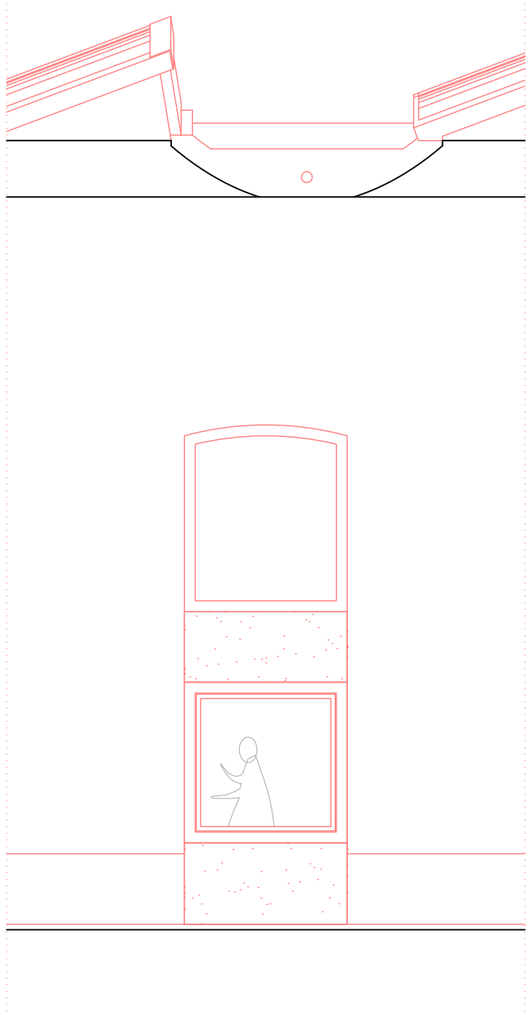
C

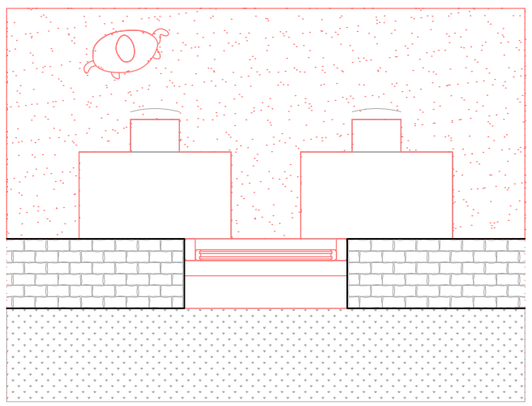
C'

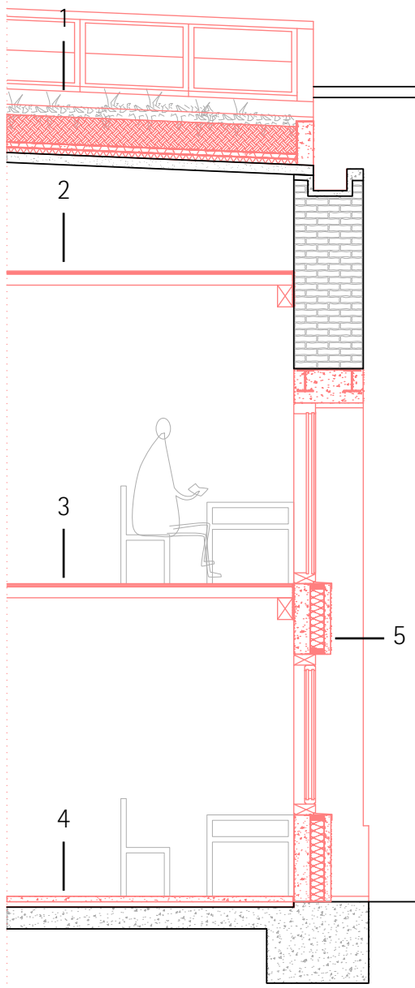
D

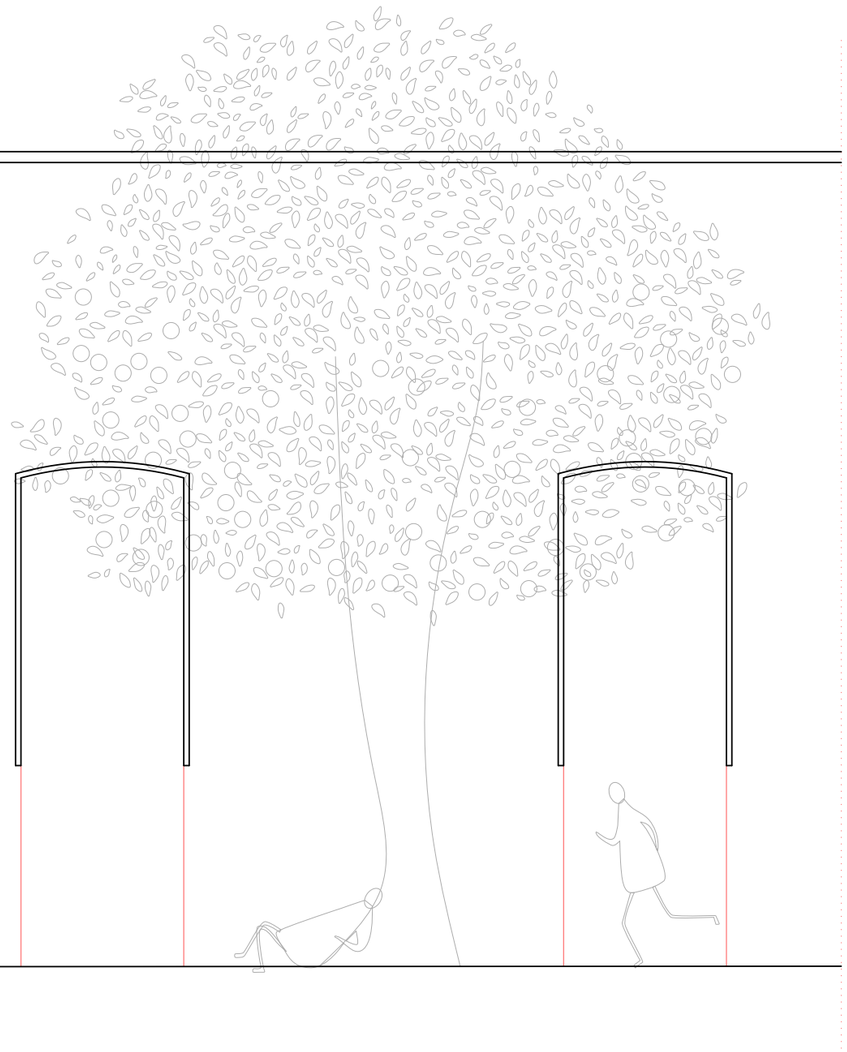
D'

First Floor



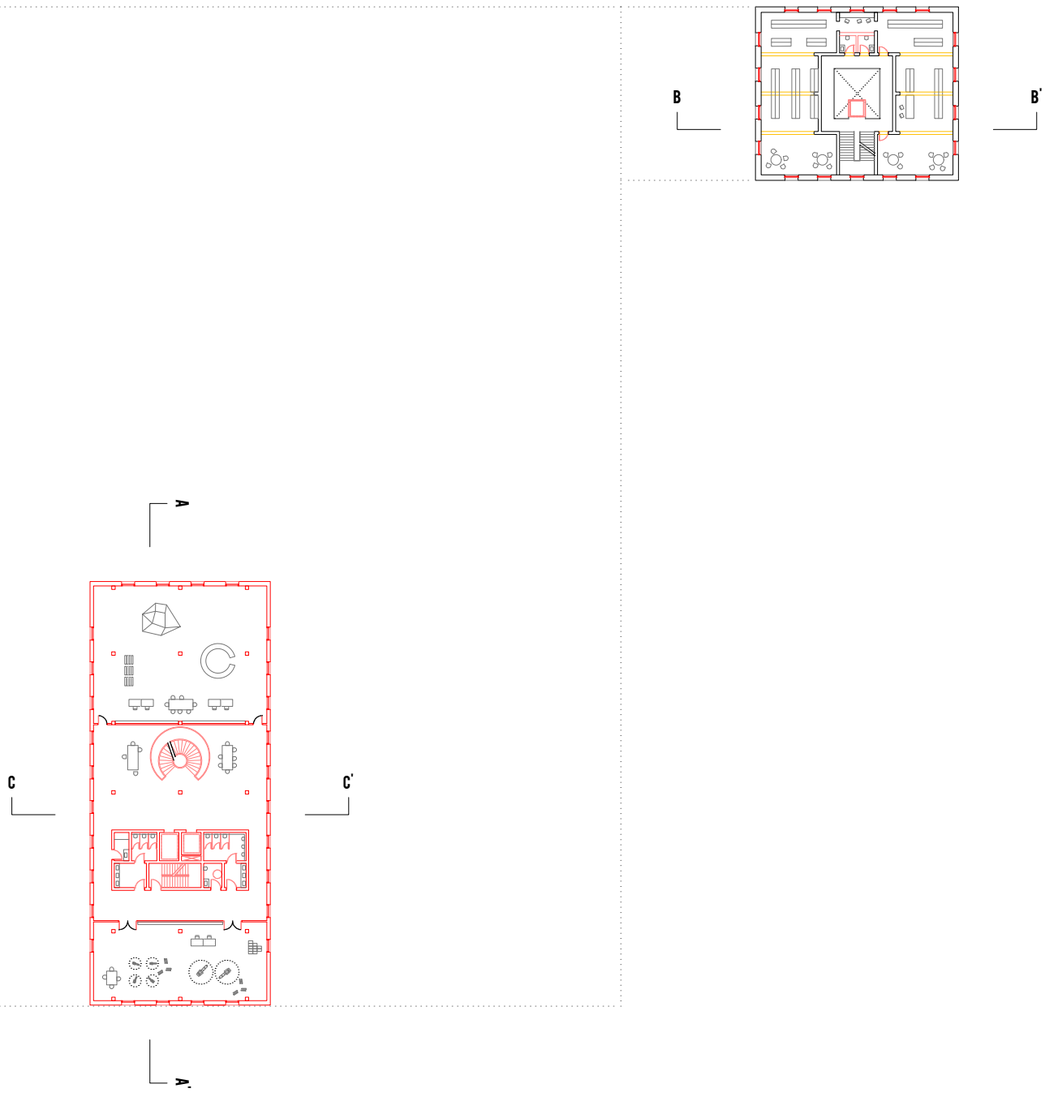




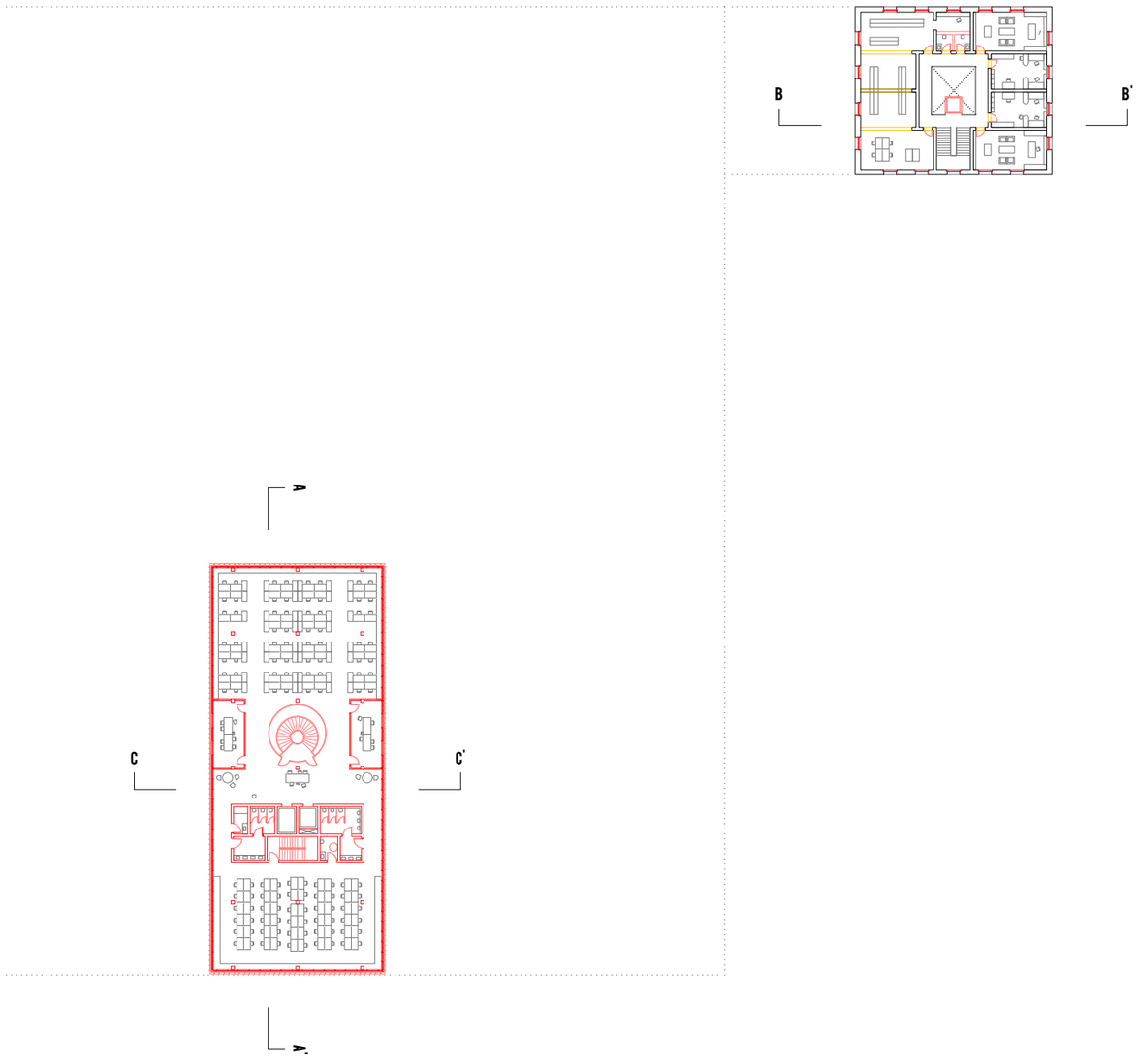


CONSTRUCTION DETAIL

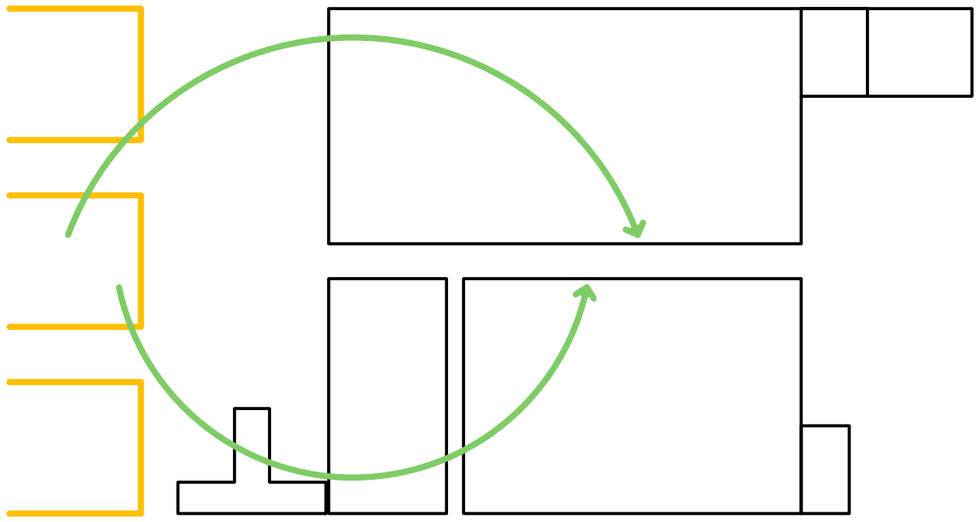
1 Roof Construction	
Soil	250 mm
Geotextile	0.5 mm
Drainage	50 mm
Waterproofing	
Hard Insulation	50 mm
Prestressed Concrete Roof	90 mm
2 Ceiling Construction	
Solid Timber Board	30 mm
Timber; every 300 mm	100/40 mm
3 Floor Construction	
Solid Timber Board	30 mm
Timber; every 300 mm	100/40 mm
4 Floor Construction	
Polished Concrete	50 mm
Screed	50 mm
Existing Floor	200 mm
5 Facade Construction	
Concrete Panel	60 mm
Waterproofing	
Thermal Insulation	130 mm
Vapour Barrier	
Concrete Beam	150 mm



Second Floor



Third Floor

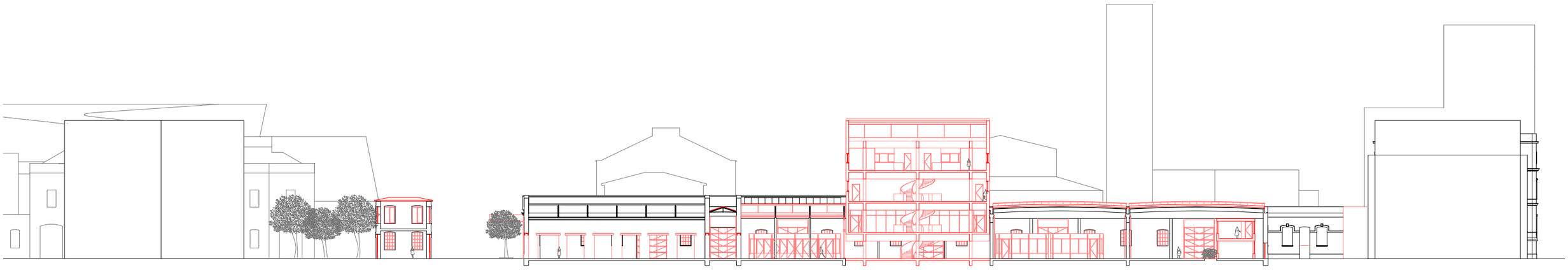


Recycling - New Chapter

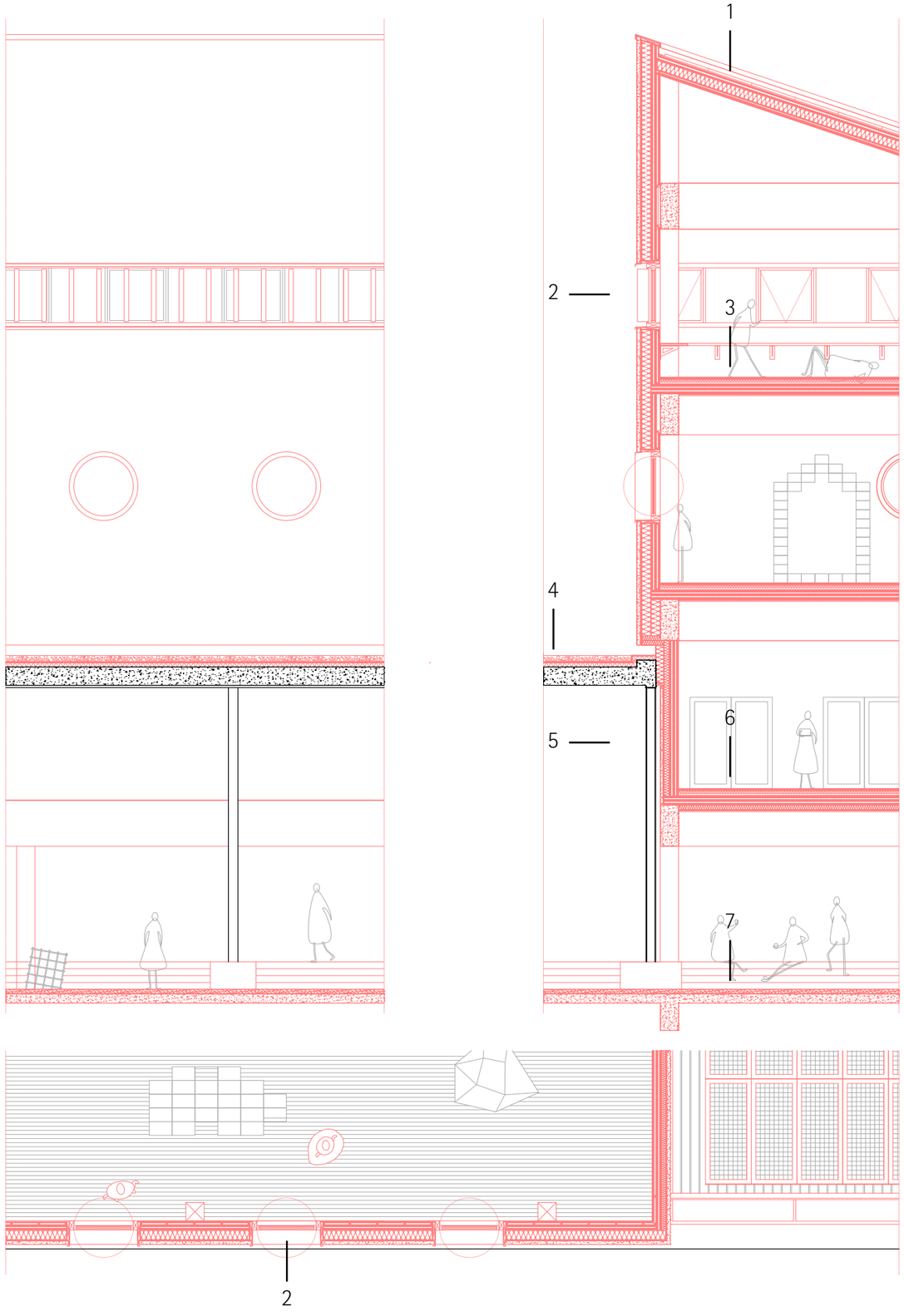
witht the new masterplan, existing building towards the south east of our building will be demolished. the brick from the wall are not in good condition. however, the roof structure and the column is proven to be valuable. it will get a new phase in use as structual member of the school and furnitures of the students

Timber Workshop

Section DD'



Section CC'



CONSTRUCTION DETAIL

1 Roof Construction

Photovoltaic Panels	
Zinc Standing Seam Metal Roofing	
Sound Insulation; separating layer	0.8 mm
Timber Boarding	20 mm
Back Ventilation	50 mm
Roofing Membrane	
Boarding	24 mm
Timber Section; between them Mineral Wool	80 x 200 | 200 mm
OSB Board	15 mm
Battens - Service Layer	40 x 40 mm
Sound Insulation	25 mm
Vapour Barrier	20 mm
Solid Timber Board	

2 Facade Construction

Concrete Panels	80 mm
Back Ventilation	20 mm
Water proofing	
Thermal Insulation	210 mm
Cross Laminated Timber	120 mm
Battens - Service Layer	40 x 40 mm
Sound Insulation	25 mm
Vapour Barrier	
Solid Timber Board	20 mm

3 Second and Third Floor Flooring

Wood Flooring	20 mm
Impact Sound Insulation	10 mm
Installation Gap	20 mm
Separating Layer	
Hard insulation	50 mm
Screed + Floor Heating	50 mm
Separating Layer	
Cross Laminated Timber	200 mm
Sheeps' Wool Sound Insulation	
Solid Timber Board	20 mm

4 Existing Roof Addition

Gravel	d. 20-40 mm
Bitumen	20 mm
Sealing Layer	
Hard Insulation; slabs to fall	50-100 mm
Existing Slab	

5 First Floor Wall Construction

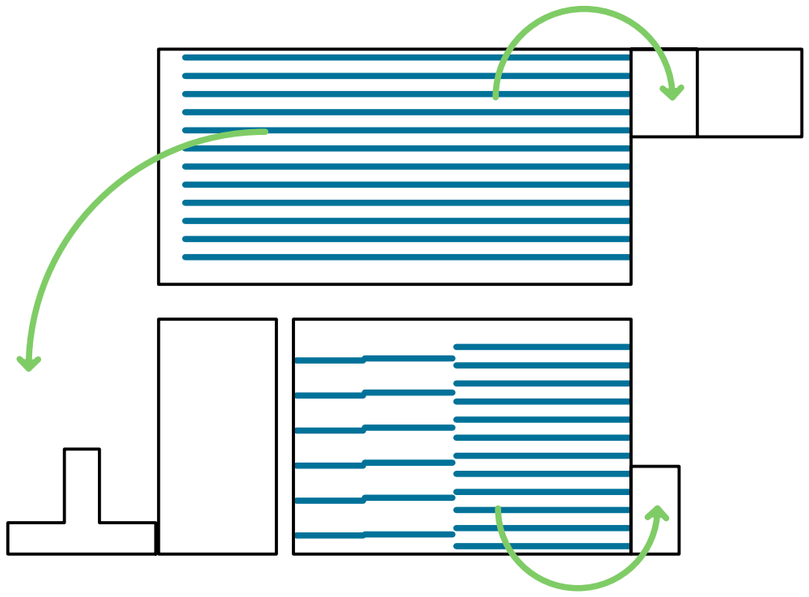
Concrete Panels	60 mm
Back Ventilation	20 mm
Water proofing	
Thermal Insulation	115 mm
Cross Laminated Timber	120 mm
Battens - Service Layer	40 x 40 mm
Sound Insulation	25 mm
Vapour Barrier	
Solid Timber Board	20 mm

6 First Floor Flooring

Wood Flooring	20 mm
Impact Sound Insulation	10 mm
Installation Gap	20 mm
Separating Layer	
Hard insulation	50 mm
Screed + Floor Heating	50 mm
Separating Layer	
Cross Laminated Timber	200 mm
Thermal Insulation	100 mm
Sheeps' Wool Sound Insulation	20 mm
Plaster Board; render concrete	20 mm

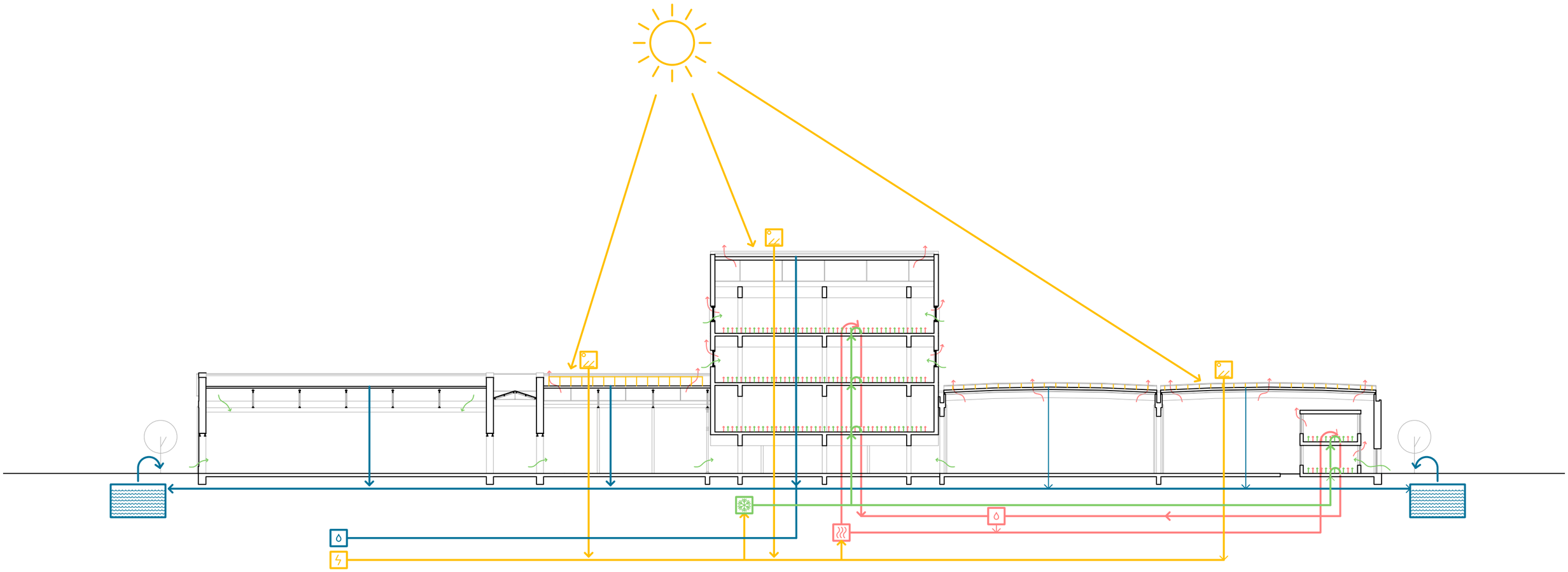
7 Ground Level Flooring

Polished Red Screed	100 mm
Reinforced Concrete Slab	200 mm



Reuse - Rainwater as Resource

with a big area coverage of the roof, a huge amount of water can be harvested, stored and used later. the storage will be on the underground level. the water can be used for watering the plants like orange tree that requires a lot of water



other than doing rain water harvesting, the solar gain can also produce electricity by installing photovoltaic panels on the roof. active and passive cooling mehode is implemented to keep the building comfortable. furthermore, heated water from cooling effort will be stored in the thermal well that later will be used to heat building in the time of winter.