

DUMMBO

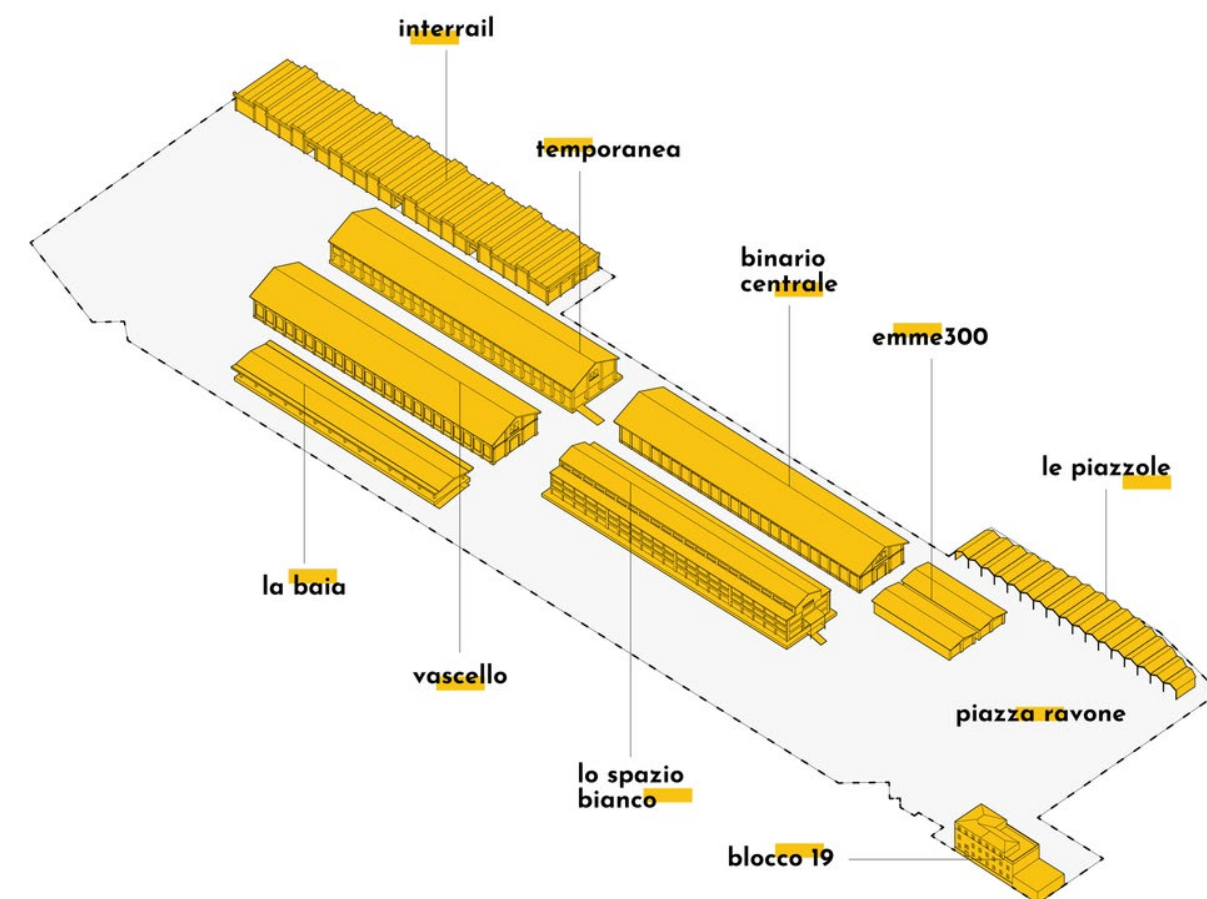
MARKO TRNČÍK

ENVIRONMENTAL RESPONSIVE BUILDING TECHNOLOGIES
BUILDING RESTORATION
ACPCL UNIBO



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

ARCHITECTURE
CPCL
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES



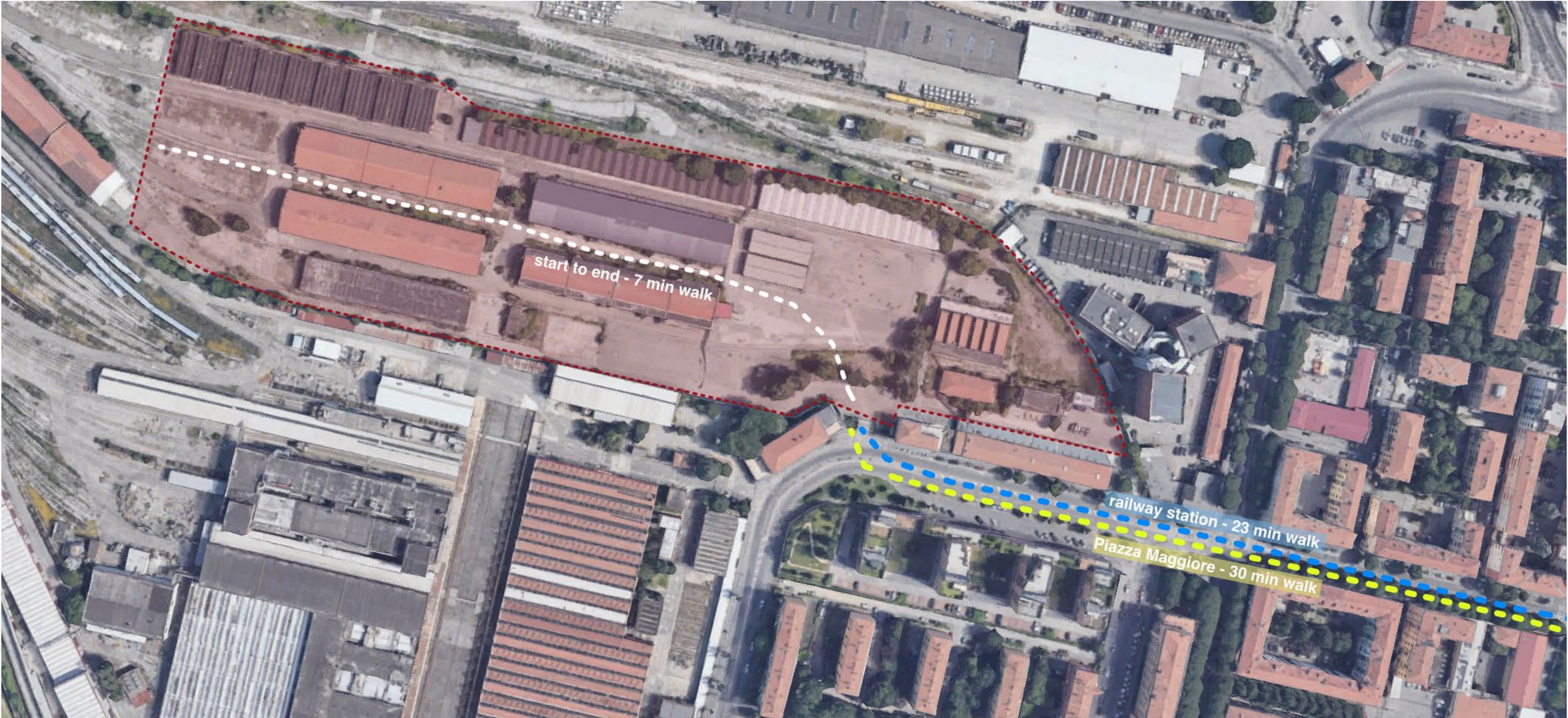
GREENERY ANALYSIS



SPATIAL QUALITIES: LAYOUT AND DIMENSIONS ANALYSIS



SPATIAL QUALITIES: CONNECTIONS WITH THE CITY



SWOT ANALYSE

STRENGTHS

- Site is near to city center, many facilities and large residential areas
- Site is well connected to transport lines
- The place have a personality, and strong name in a community of young people because it already hosting lot of events
- Pure structure, interesting and various forms of the buildings
- Creative paintings on the facades
- All used buildings have a natural daylight
- High capacity for public events

WEEKNESSES

- Site is accesable just only from 1 side
- Huge unused surrounding area
- Poor greenery inside leads to overheating of surfaces
- No communication paths (disorientation on site)
- Lack of established centre of the area or orientation points
- General feeling of chaos and desortation

OPPORTUNITIES

- Easily accesible area with potential of becoming main meeting & recreation spot in the „new” city
- A lot of open space
- A possibility of creating connections between buildings
- Variety of possible uses
- Flat land to shape according to the design
- Potential to connect new people from the same neighbourhood with similar interests

THREATS

- A lot of unused area around
- It lies on the border of mainly used area of the city
- Accessible only from one direction
- Too large area for just one fuction
- Noise from the main railway station
- Non-profitable area, without events nothing is happening there



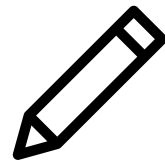
ATLAS OF PARTICIPATION



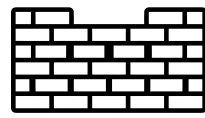
existing companies
can lost space for their
current business



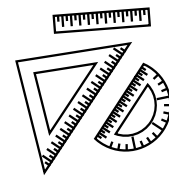
fund raising company
provide funds from public
raise



project control company
guarantee of smooth
building process



architects and
engeneering association
provide guarantee of
design proposal



architects and builders
work possibilities



local businesses around
expecting new customers



students
want a new space to go for
events



BOLOGNA SKATESCHOOL AS,
GRAN VOLLEY ASD,
CENTRO MINIBASKET



sport association
waiting for the possible
new sport facilities



COMUNE DI
BOLOGNA



regional municipality
provide some funds for the
project







MUNICIPALITY
concern about the future



DUMBO



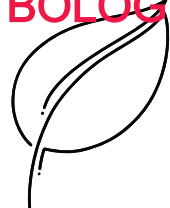
NEIGHBOURHOOD AREA
concern about the future
of their district



inhabitants of the city
concern about the future
of the city



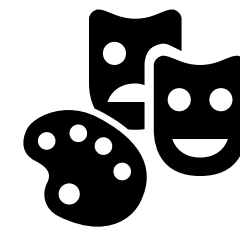
ECOREGA
U.R.C.A., V.A.S.
LEGAMBIENTE
BOLOGNA



enviromental association
support the project for
new greenery and land
reuse



OPEN EVENT SRL



culture association
possibility to organize new
events



teens
want a space to spend
free time and do sports



children
want a space to play



TRENITALIA, TPER



railway company
can lost control of the area
around



ITALIA NOSTRA-
SOPRINTENDENZA
BOLOGNA, MINISTERO
DELLA CULTURA



heritage association
wants to preserve existing structures



	POWER	SUPPORT	INFLUENCE	NEED
high		●●●	●●●	●●●
medium		●●	●●	●●
low		●	●	●

PHOTO SURVEY

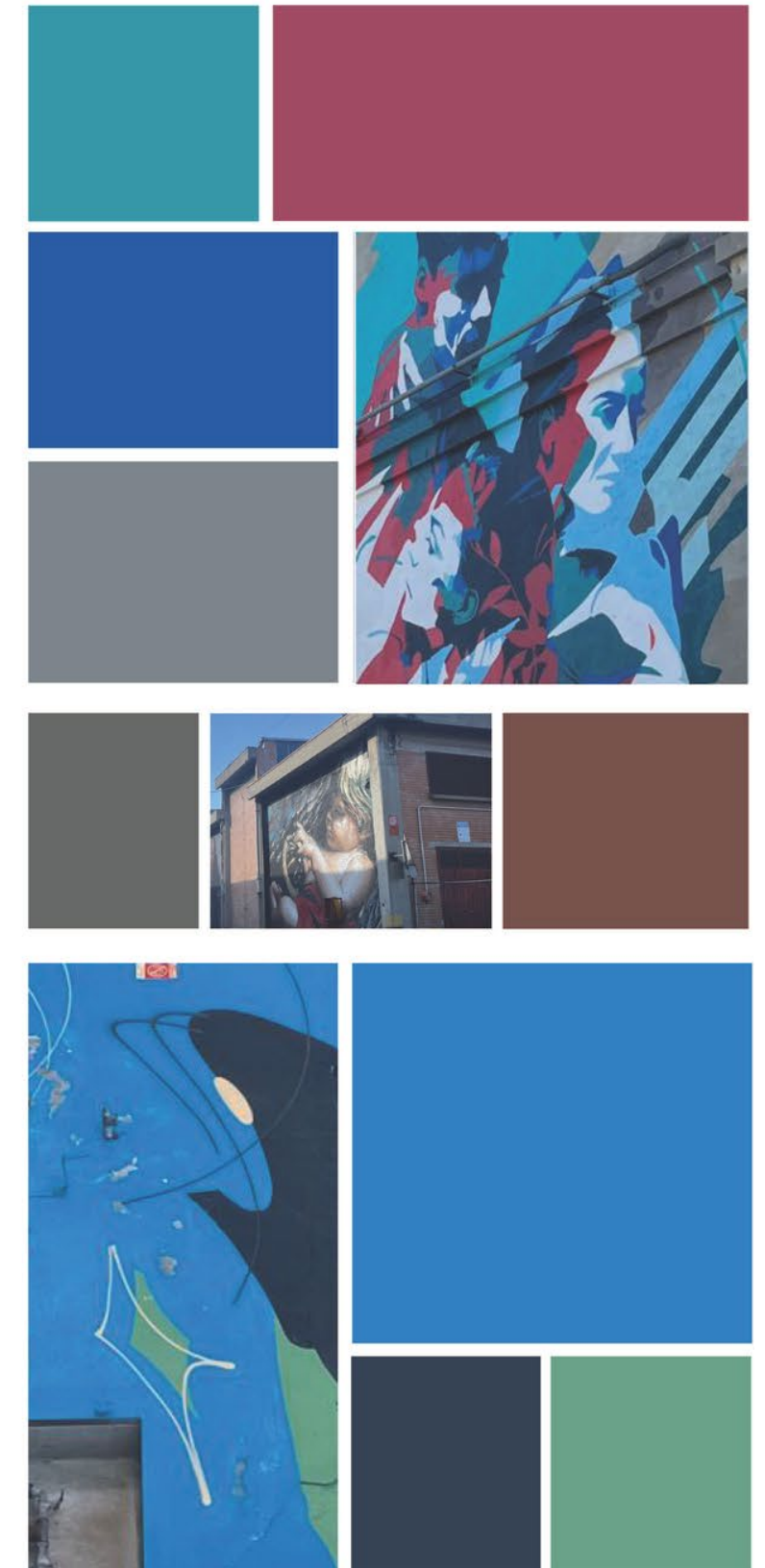
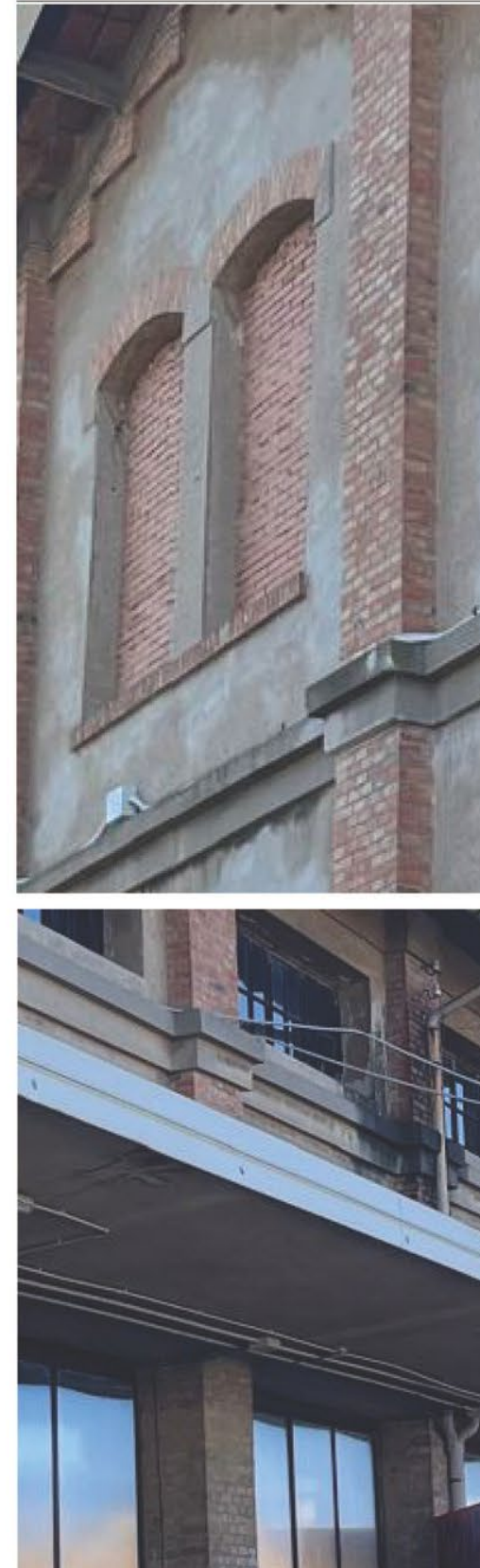
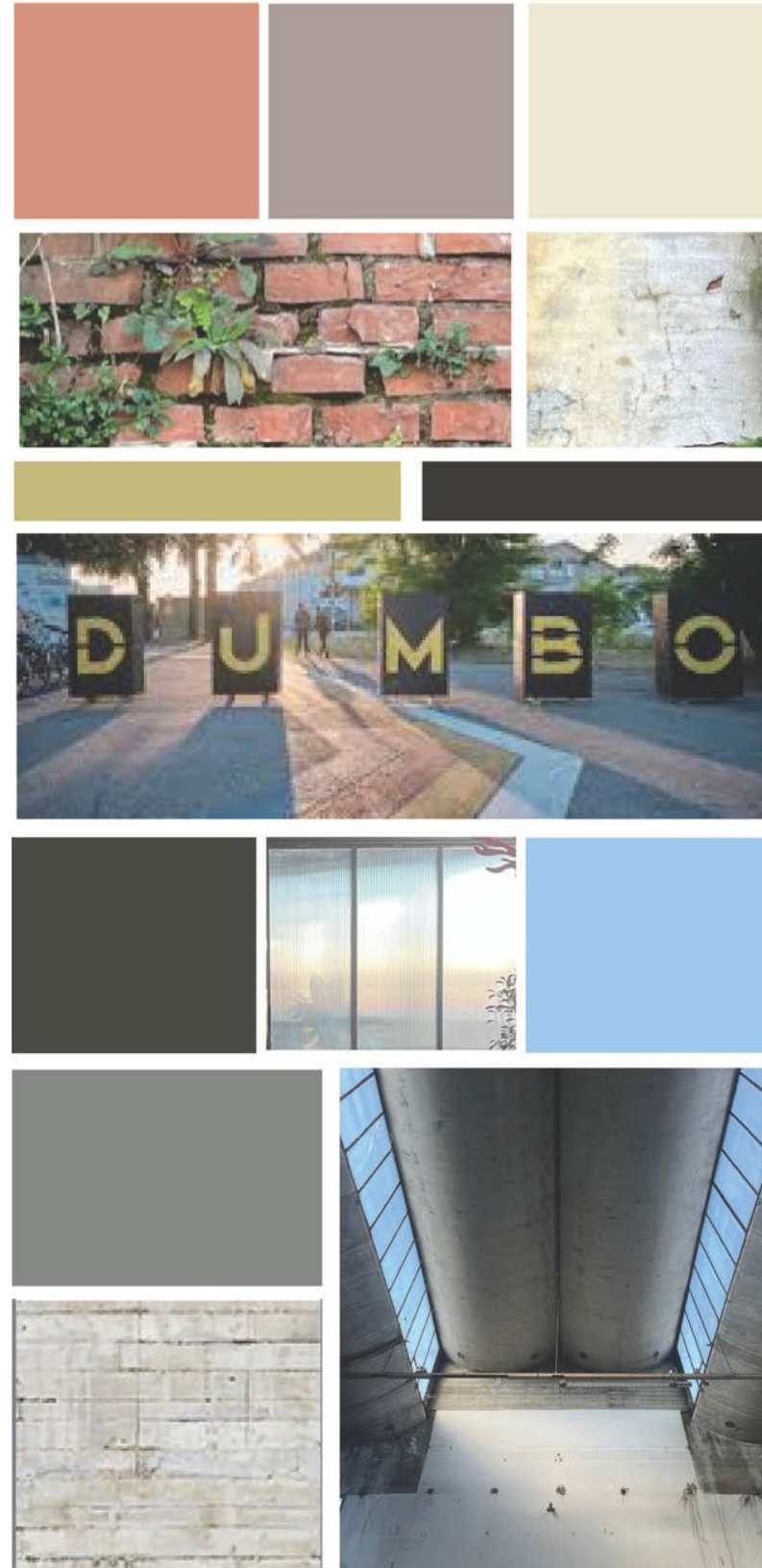


CASE STUDIES_INSPIRATIONS

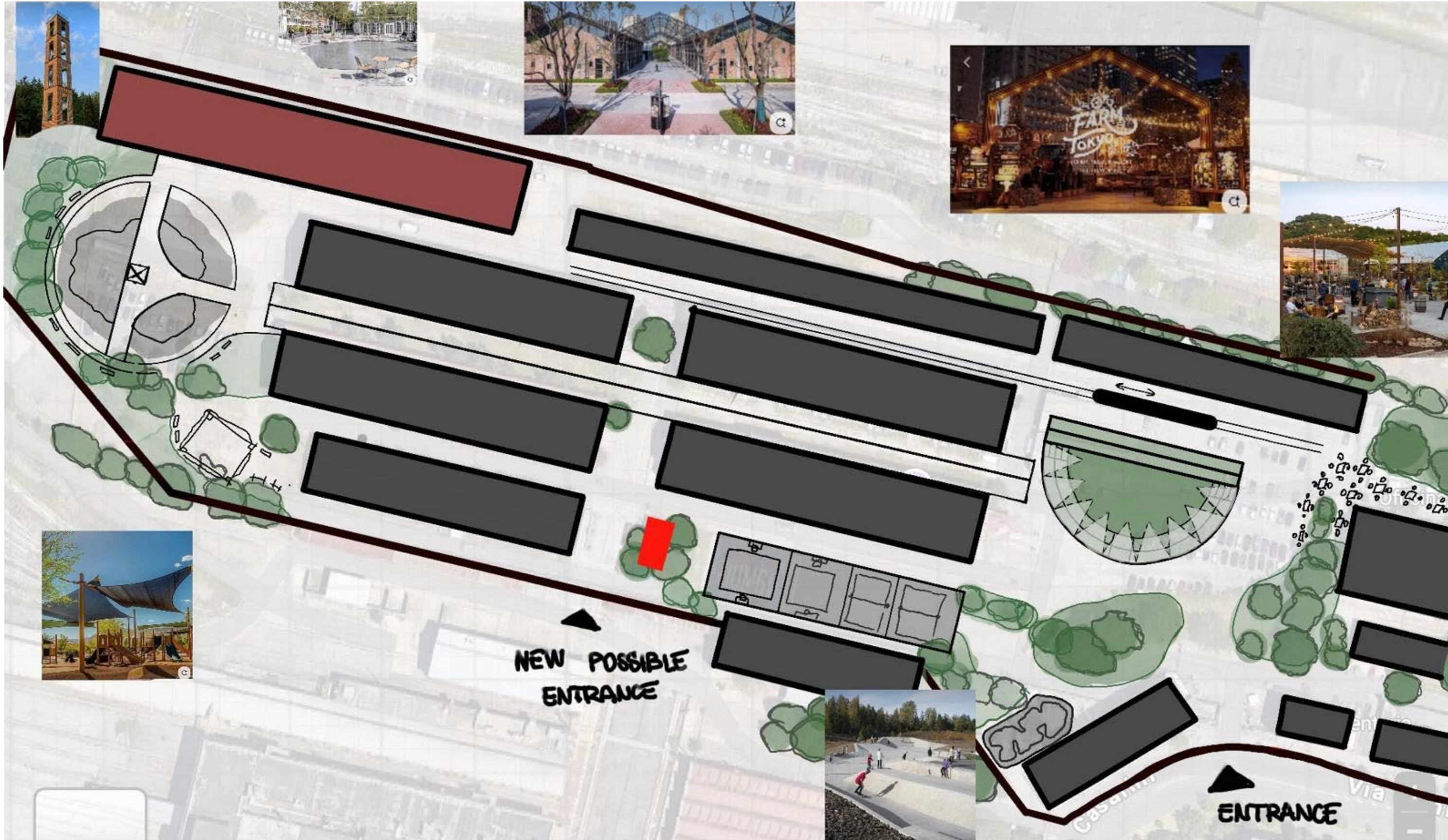


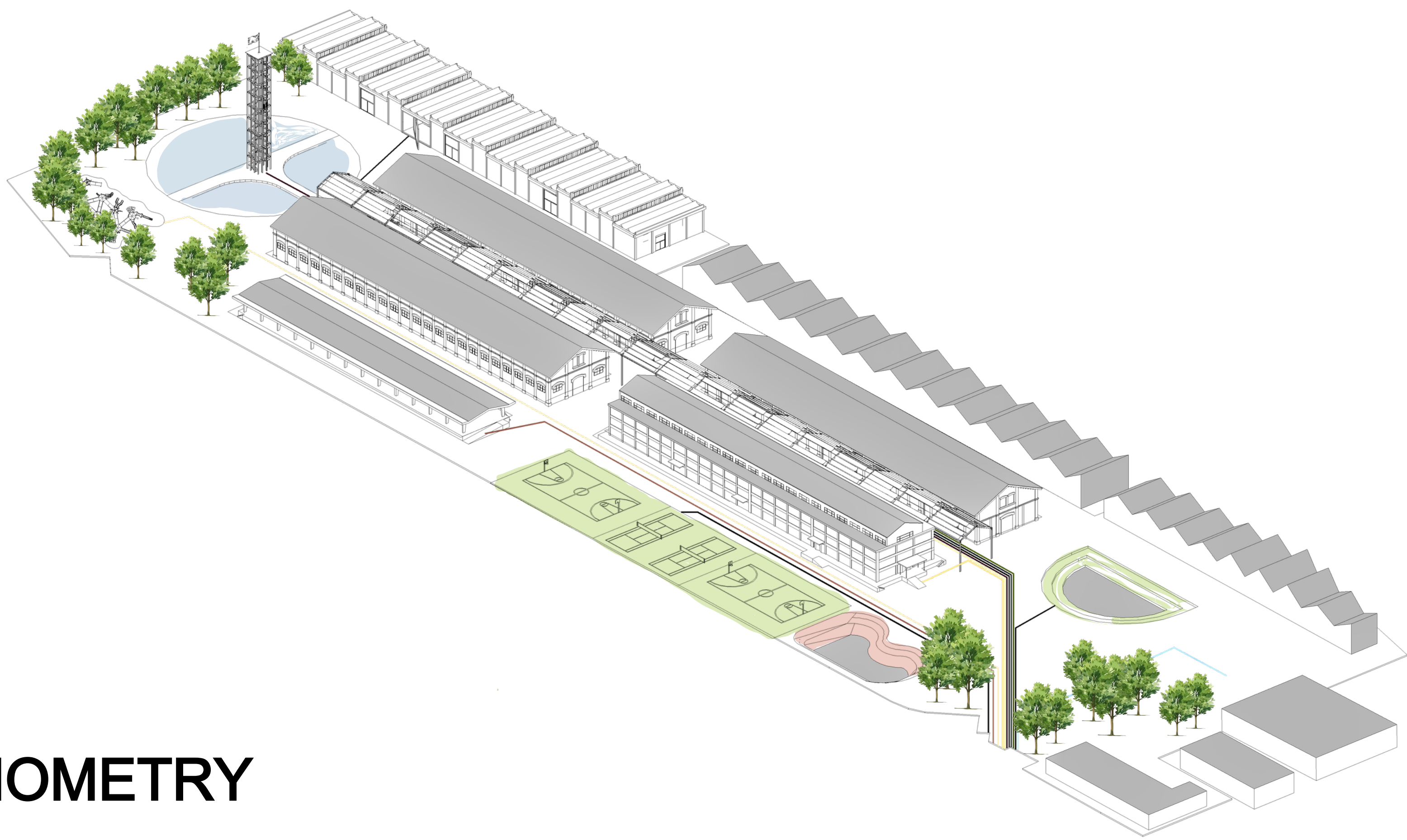
COLOUR PALETTE

building materials
building colours
graffiti colours palette



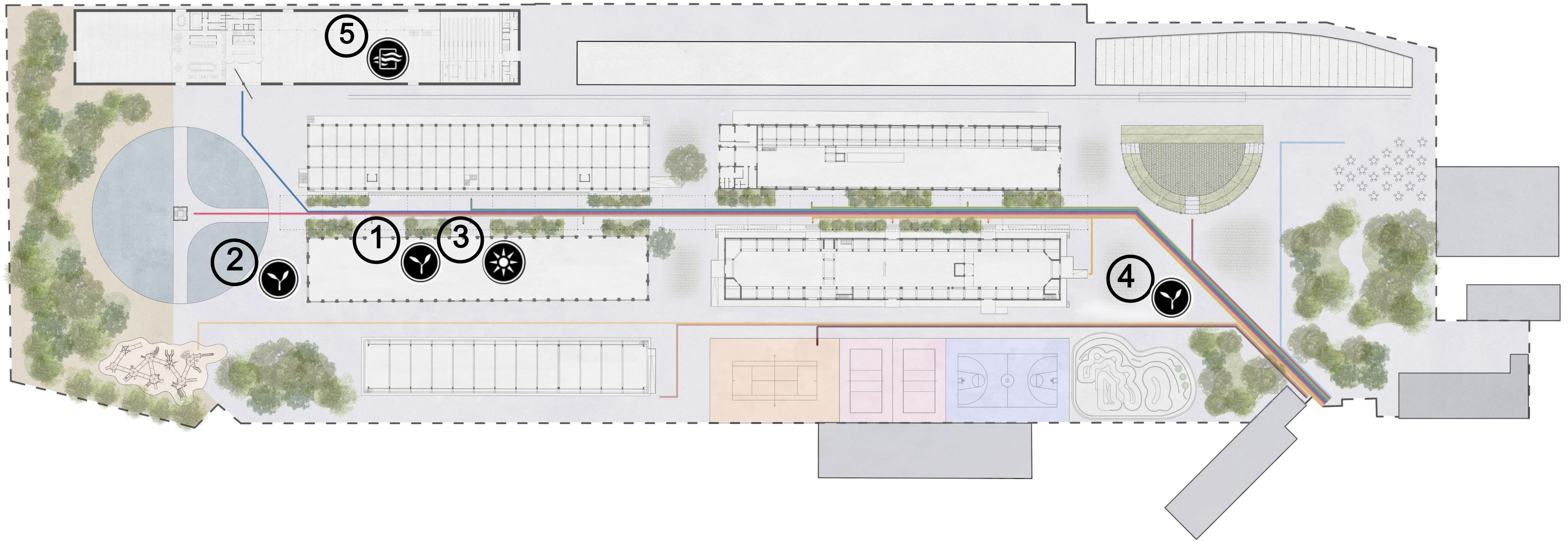
MASTERPLAN AND SPATIAL STRATEGY_CONCEPT



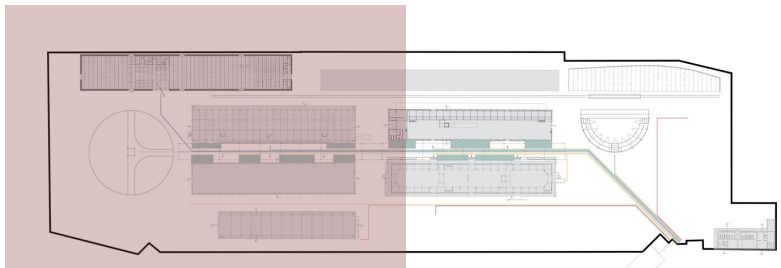
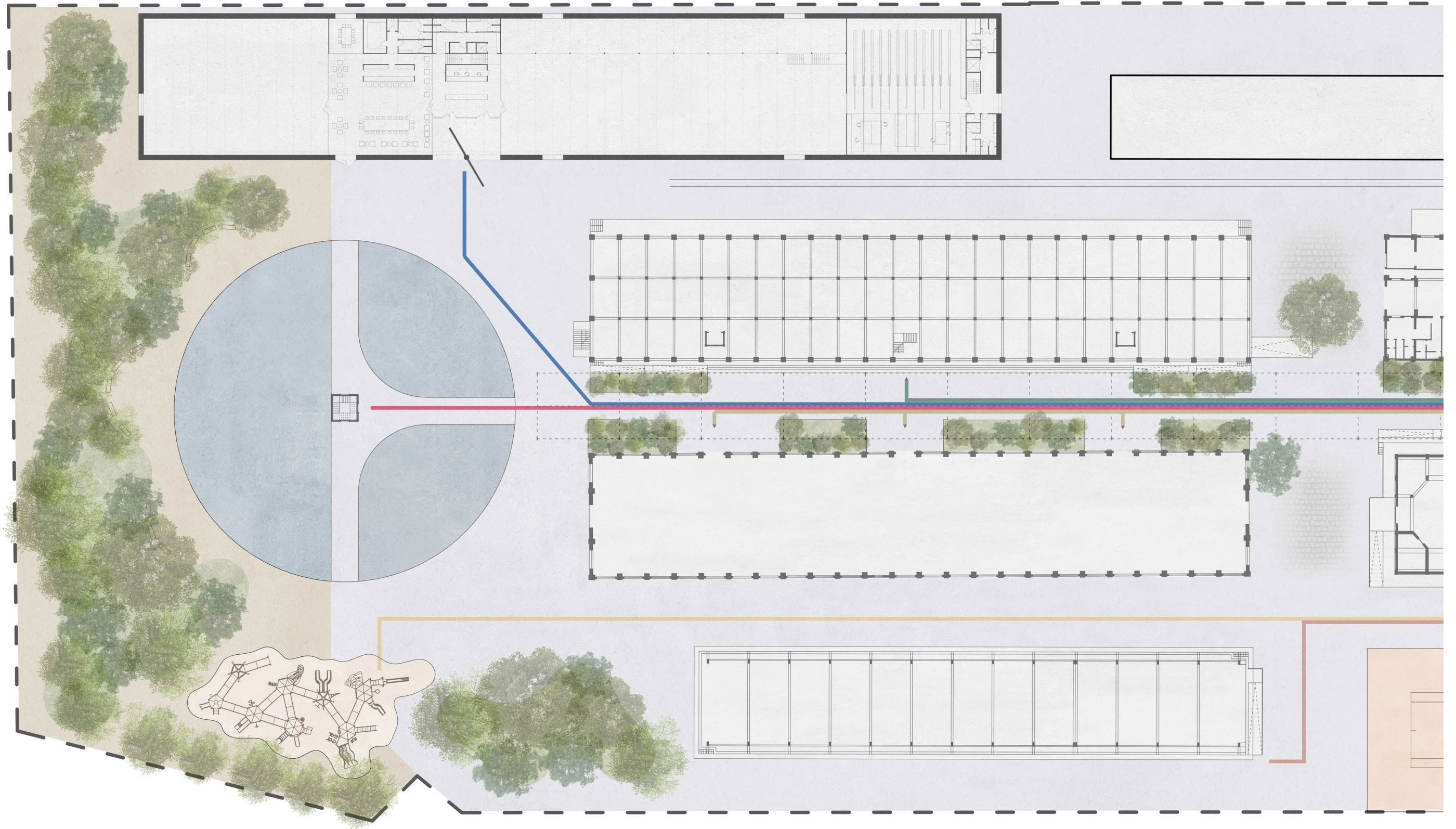
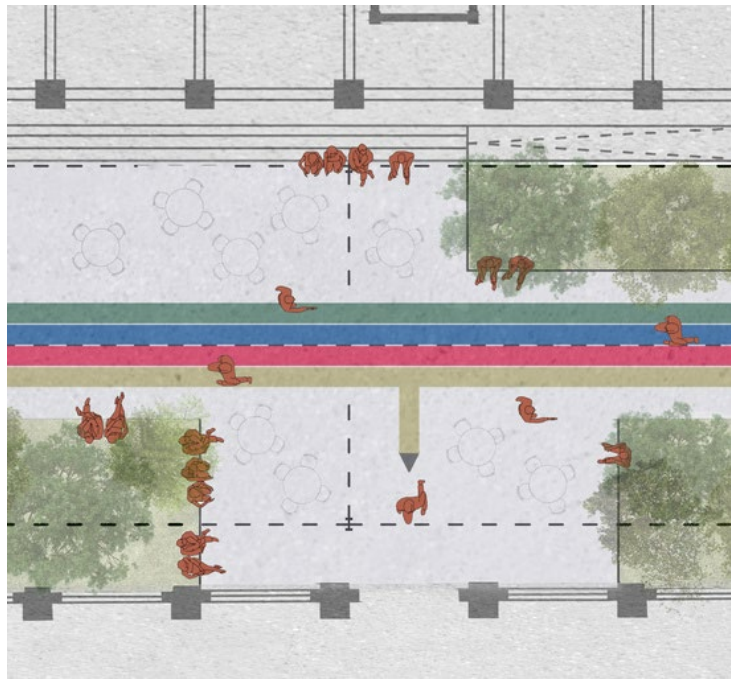
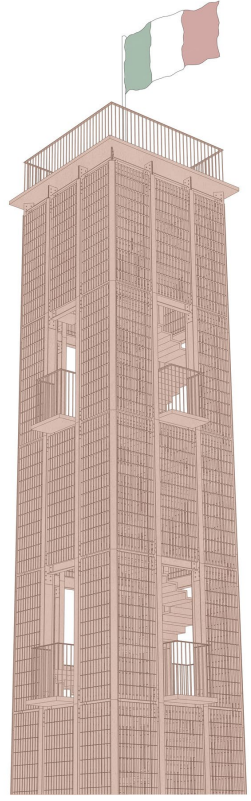


AXONOMETRY

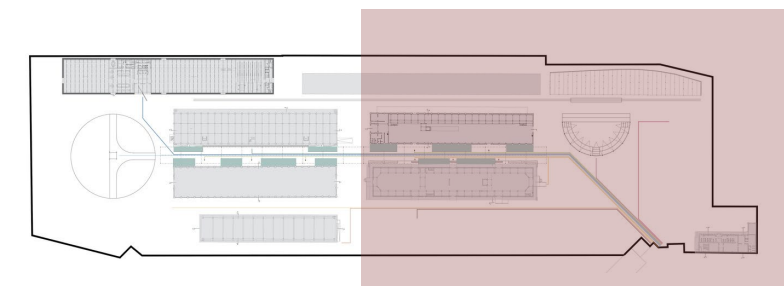
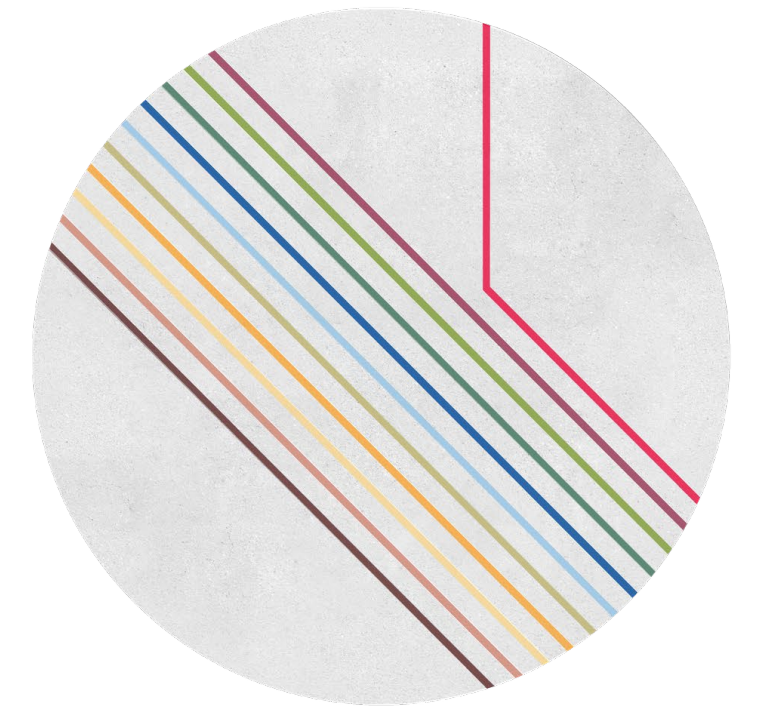
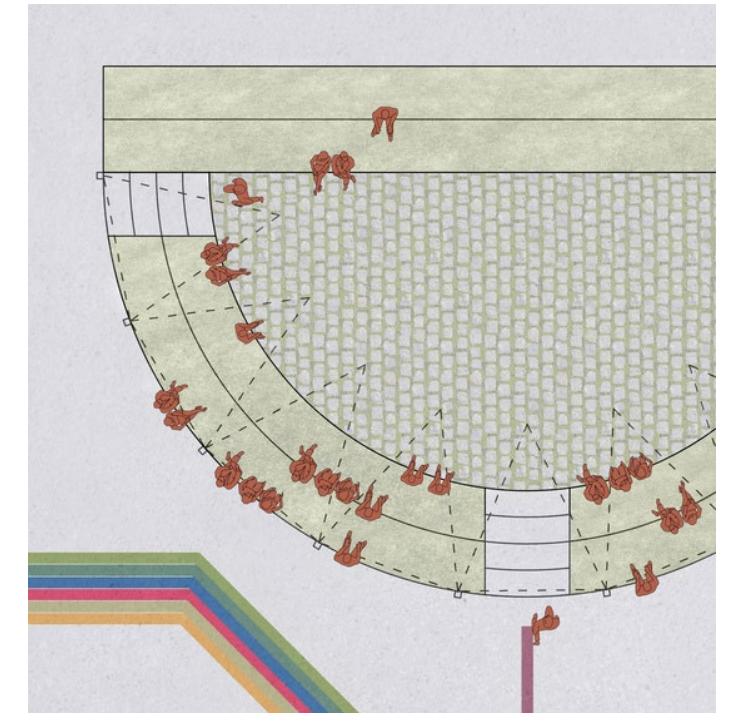
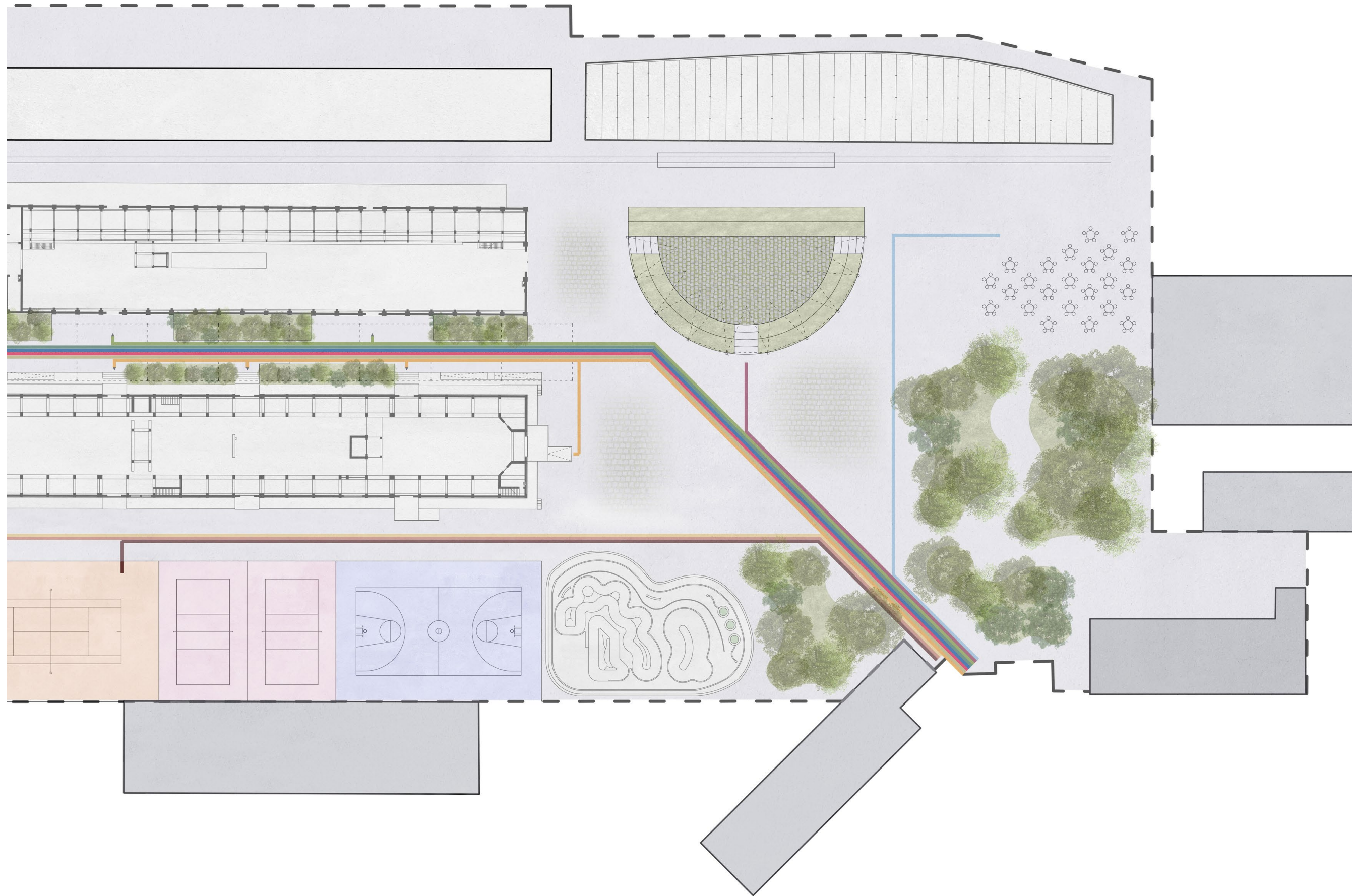
MASTERPLAN AND SPATIAL STRATEGY



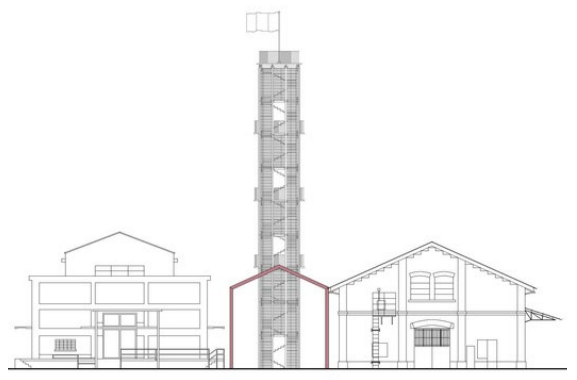
MASTERPLAN AND SPATIAL STRATEGY



MASTERPLAN AND SPATIAL STRATEGY



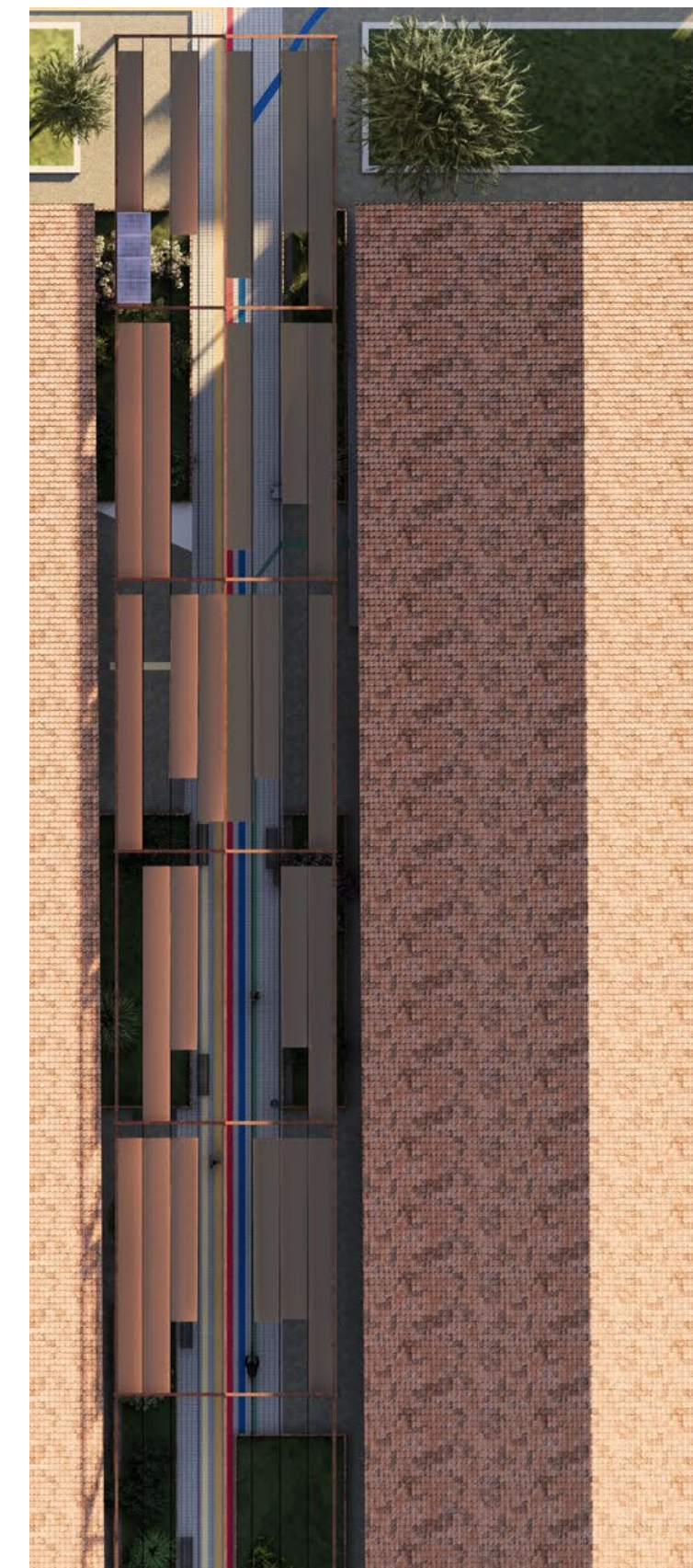
MASTERPLAN AND SPATIAL STRATEGY_TOWER



MASTERPLAN AND SPATIAL STRATEGY **BOULEVARD**



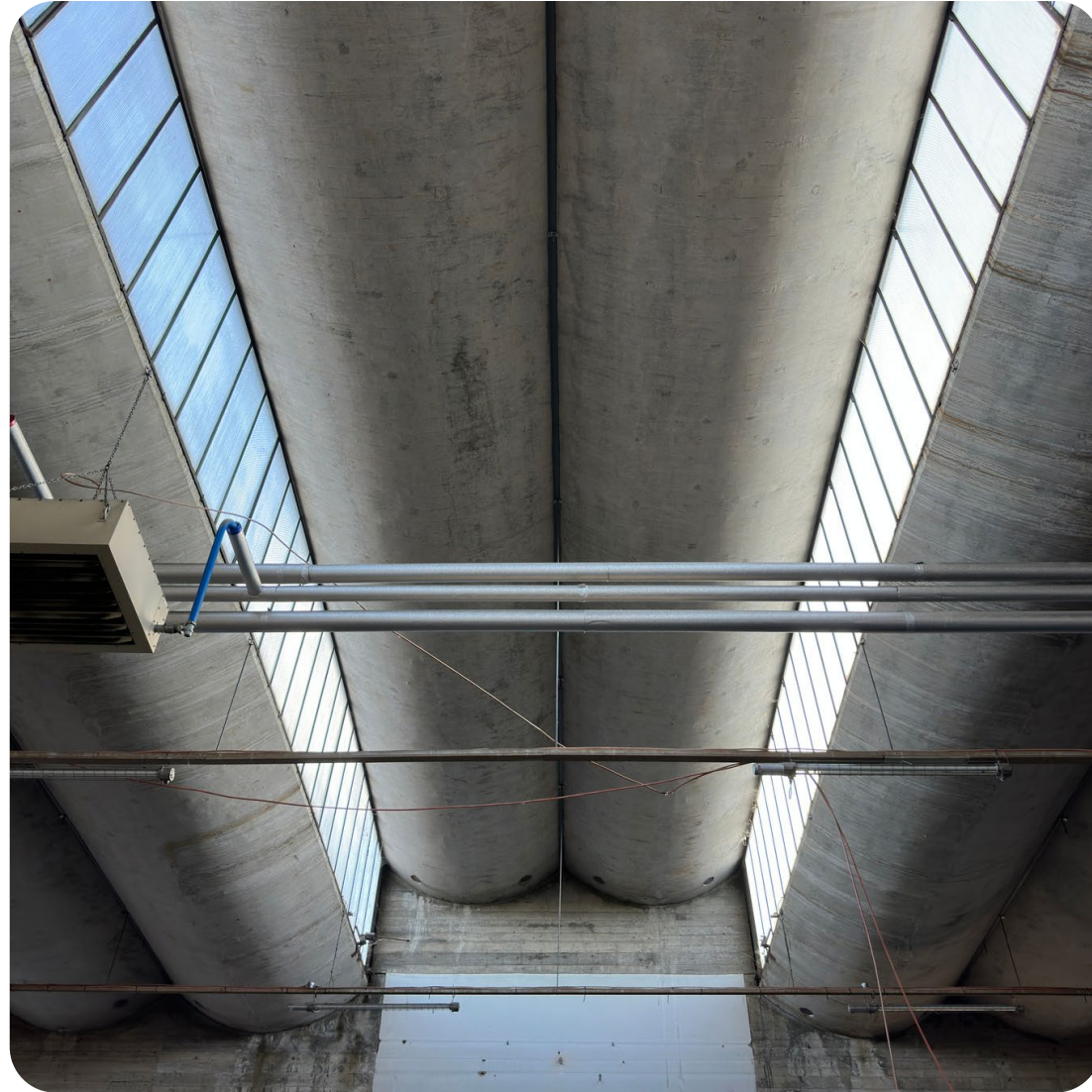
MASTERPLAN AND SPATIAL STRATEGY **BOULEVARD**



CHOICE_INTERRAIL



most unconventional
form and interesting
facade shape



extraordinary roof
structure and
additional sky light

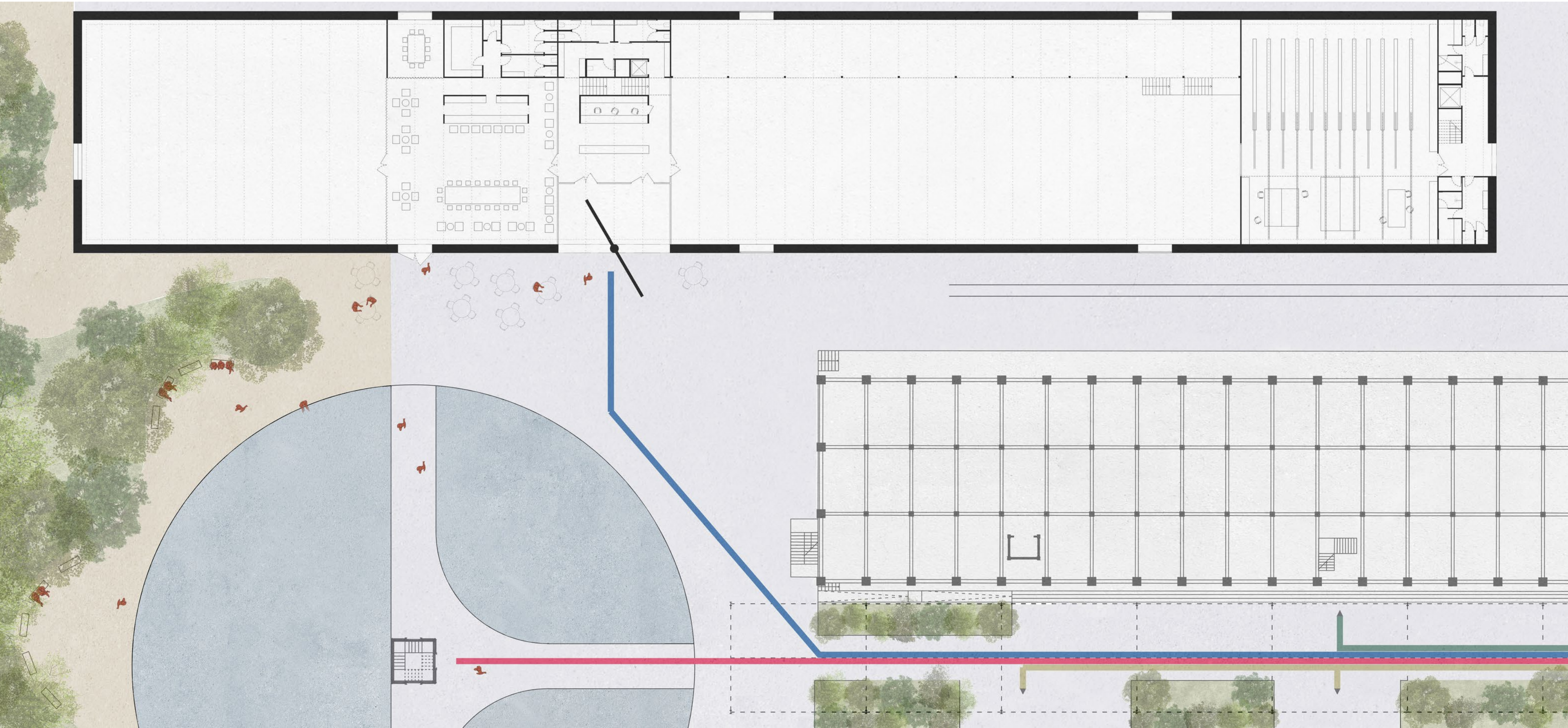


open space inside,
no structural elements,
central location of the
main entrance

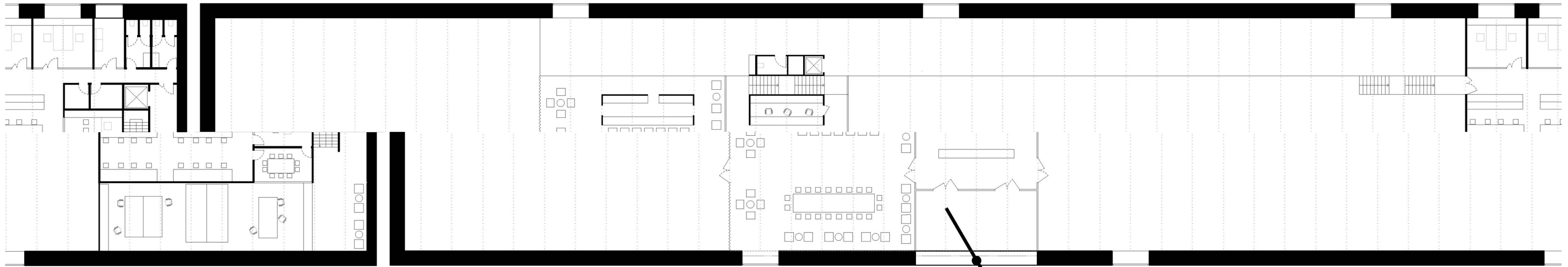
INTERRAIL



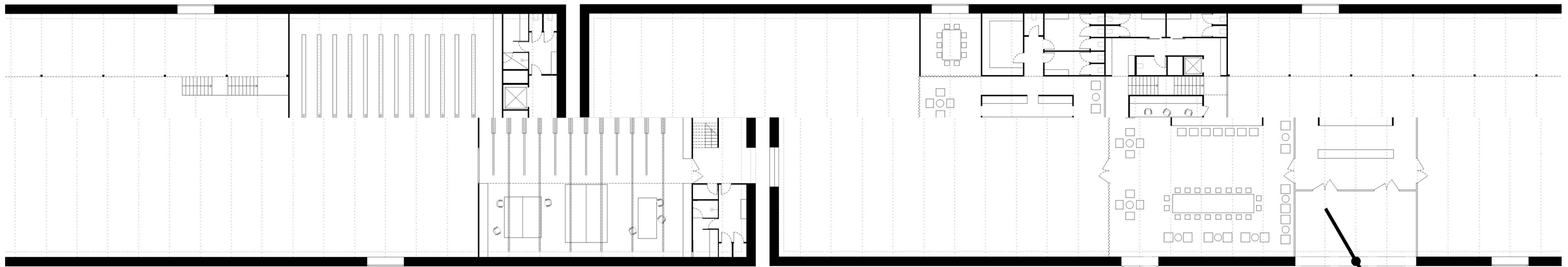
DETAILED BUILDING DESIGN FLOORPLANS



DETAILED BUILDING DESIGN FLOORPLANS

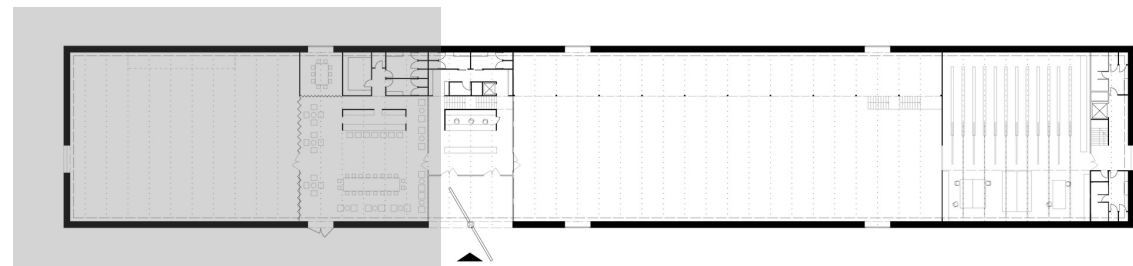
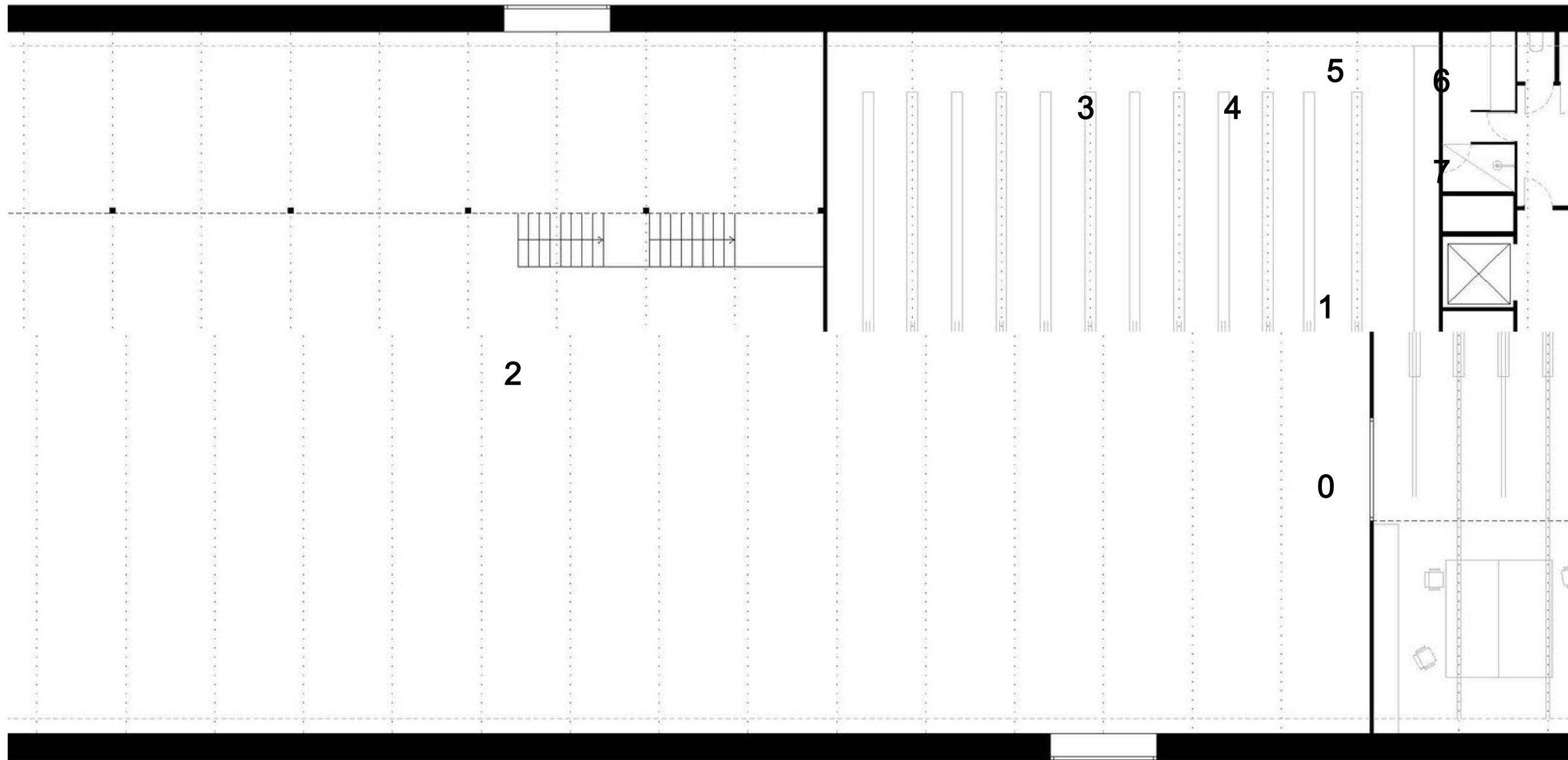


first floor



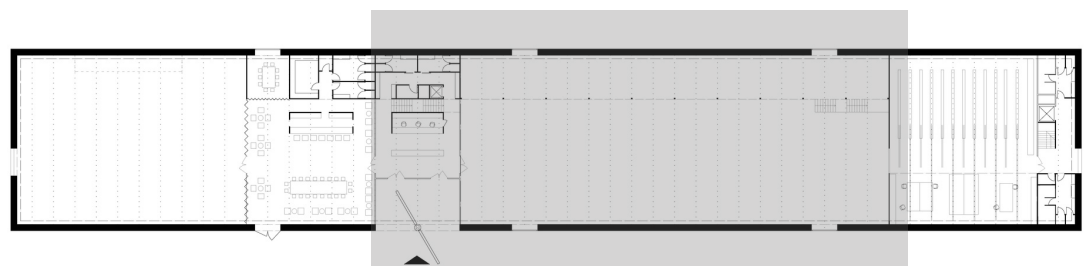
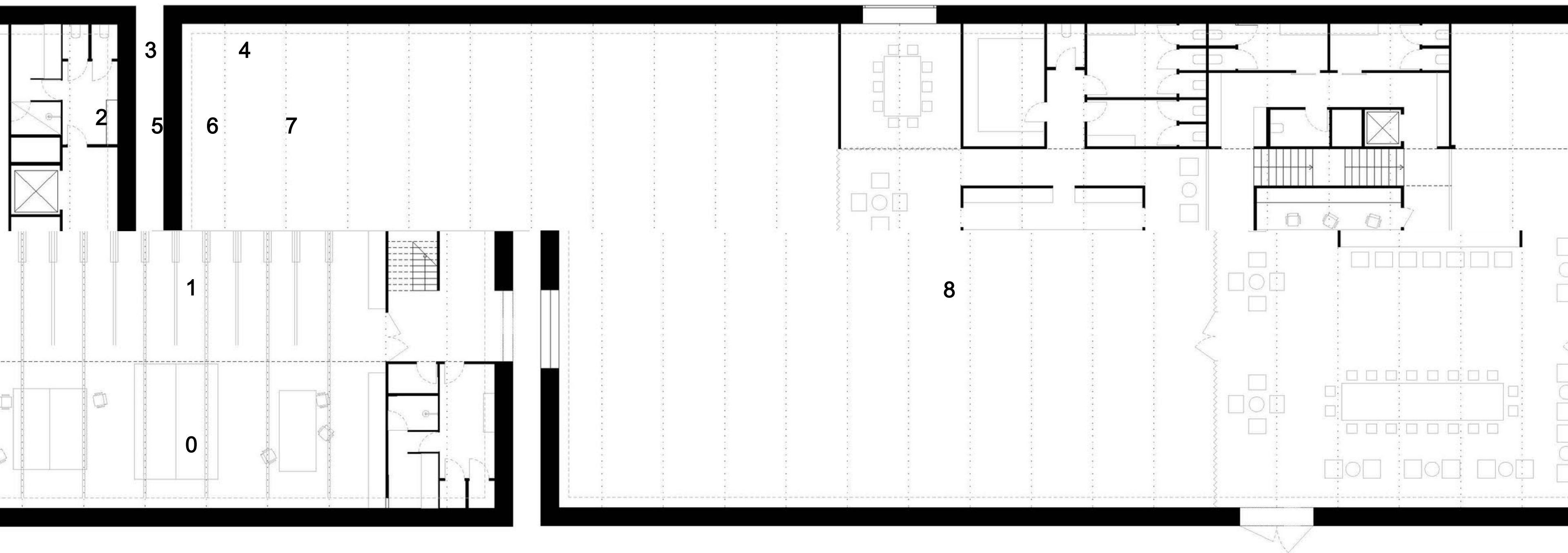
ground floor

DETAILED BUILDING DESIGN GROUND FLOOR



- | | | | | | |
|---|----------------------|---|------------|---|---------|
| 0 | caffeteria | 3 | study room | 6 | toilets |
| 1 | bar | 4 | storage | 7 | toilets |
| 2 | temporary exhibition | 5 | cleaning | | |

DETAILED BUILDING DESIGN GROUND FLOOR

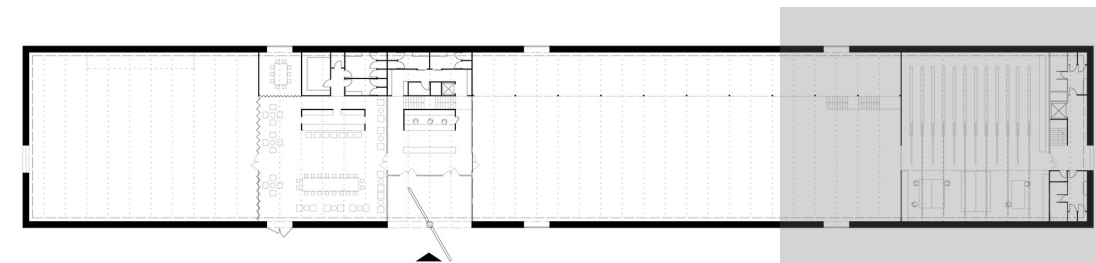
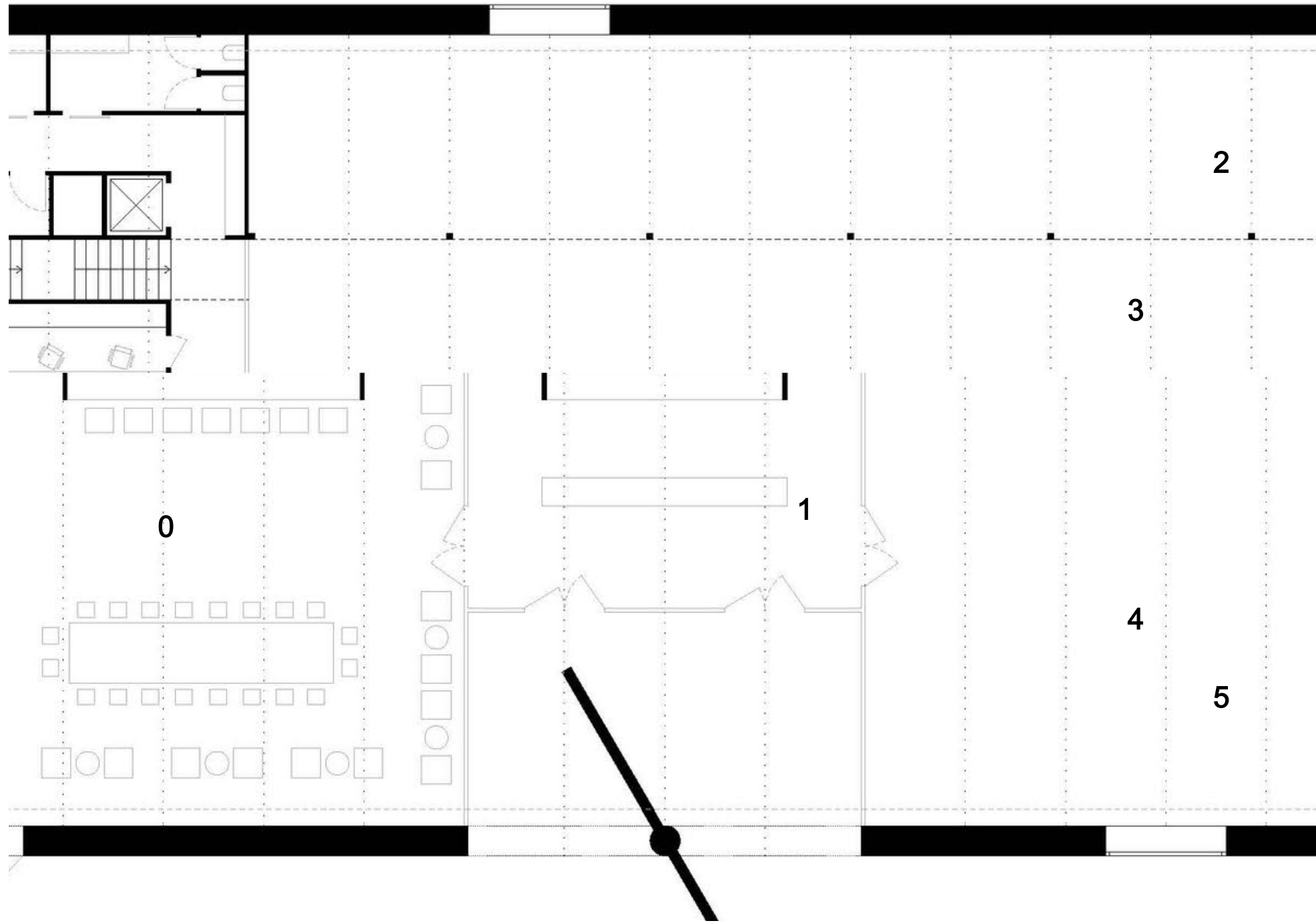


0 entrance
1 reception
2 lockers

3 toilet
4 toilet
5 storage

6 technical room
7 lift
8 permanent exhibition /museum of memory/

DETAILED BUILDING DESIGN GROUND FLOOR

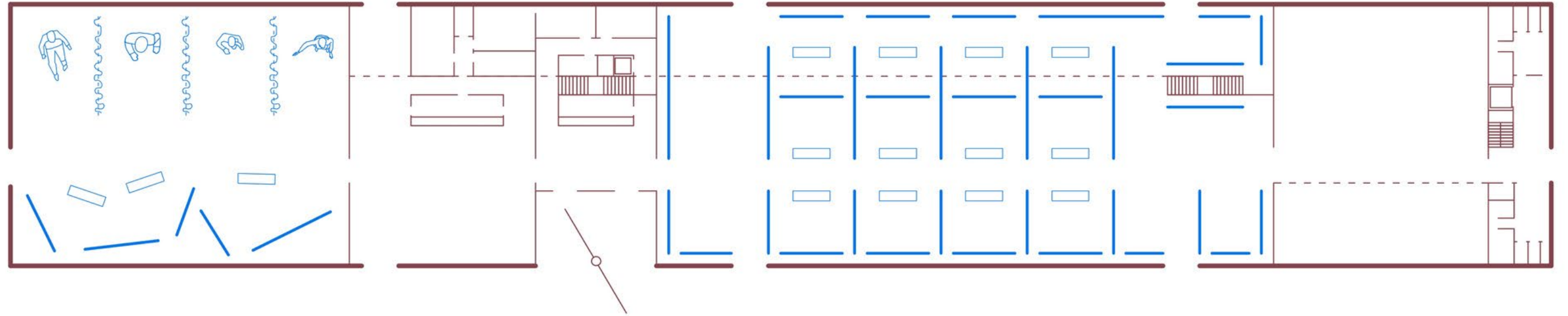


- | | | | |
|---|------------------------|---|----------------|
| 0 | pernament exhibition | 3 | lift_technical |
| 1 | restorations/ archives | 4 | technical |
| 2 | staff area | 5 | staff area |

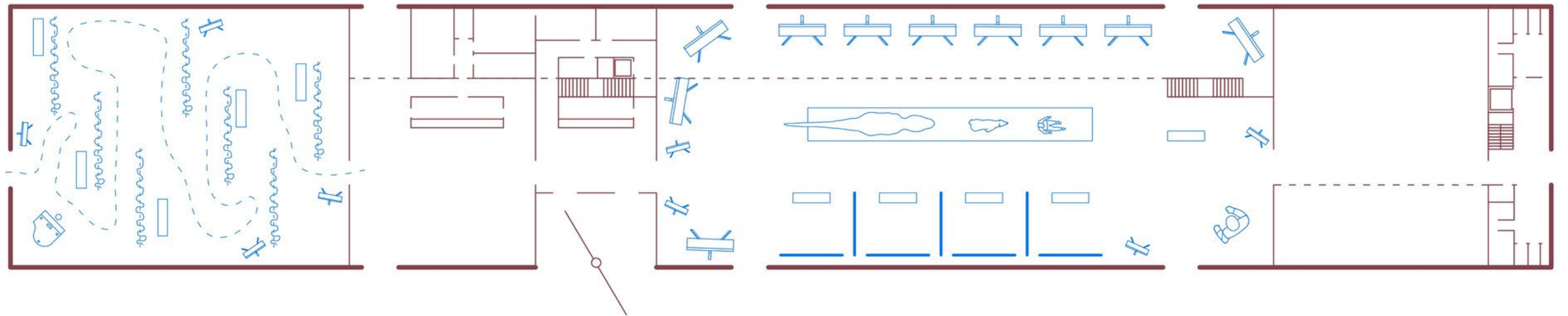


EXHIBITION SPACES_VARIANTS

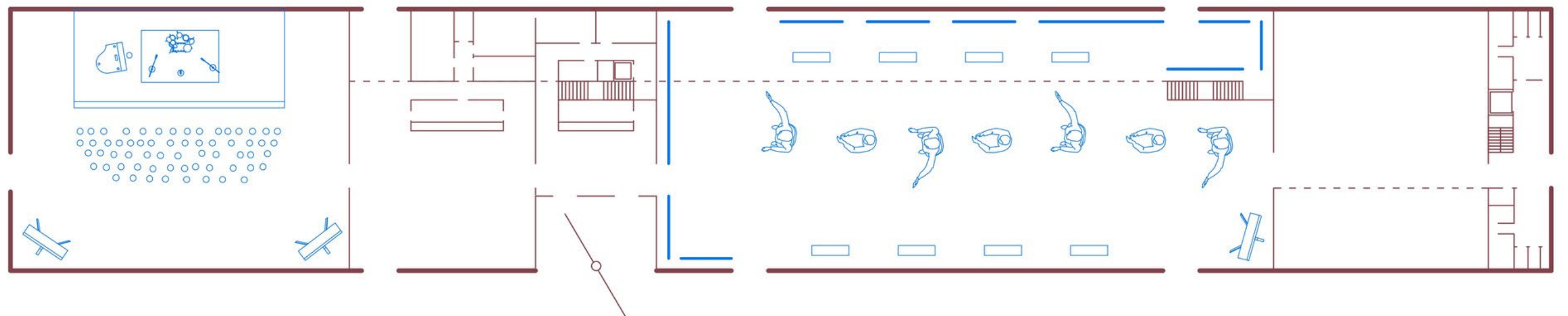
A



B



C



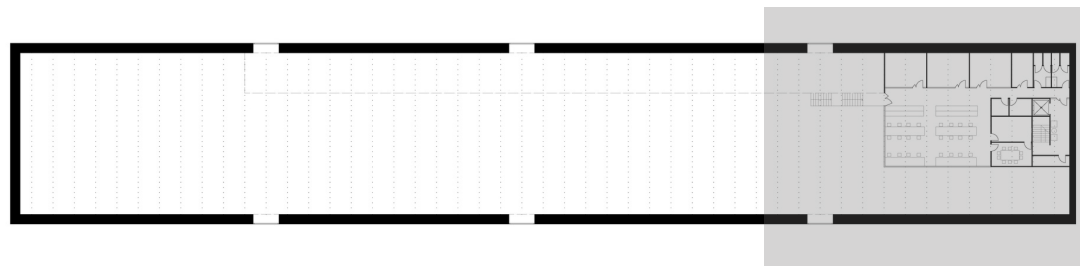
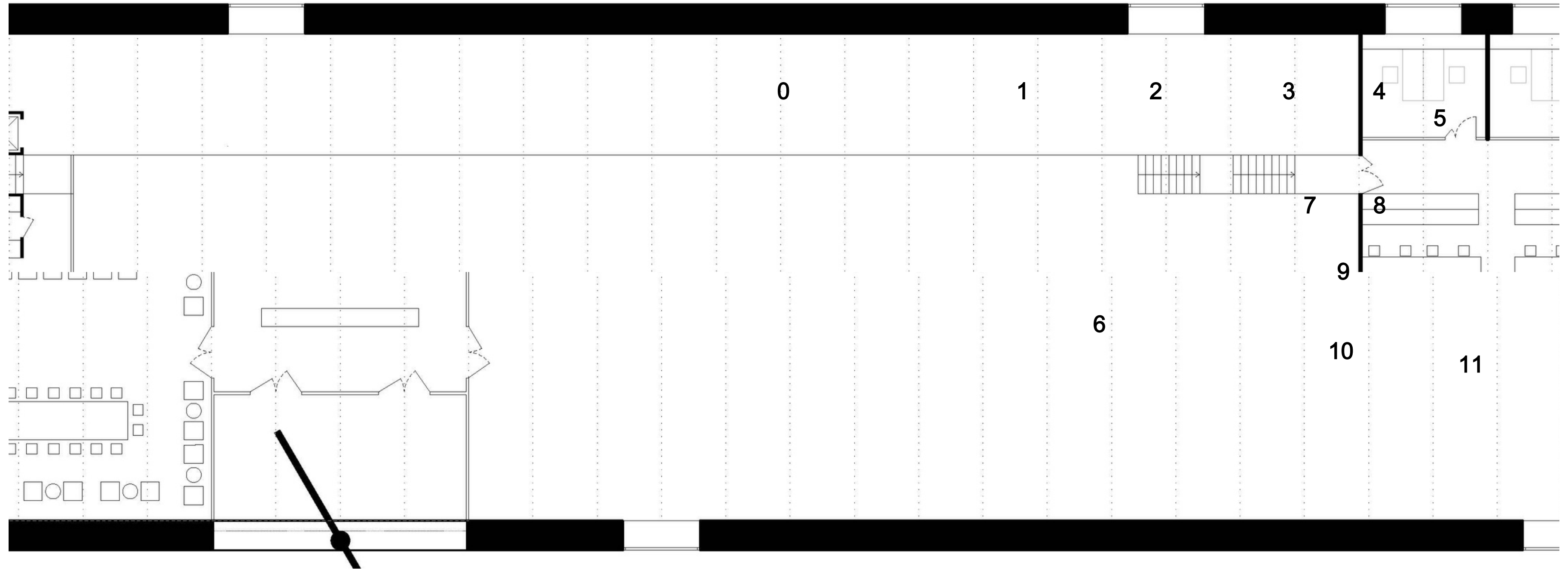
DETAILED BUILDING DESIGN INTERIOR



DETAILED BUILDING DESIGN SECTION

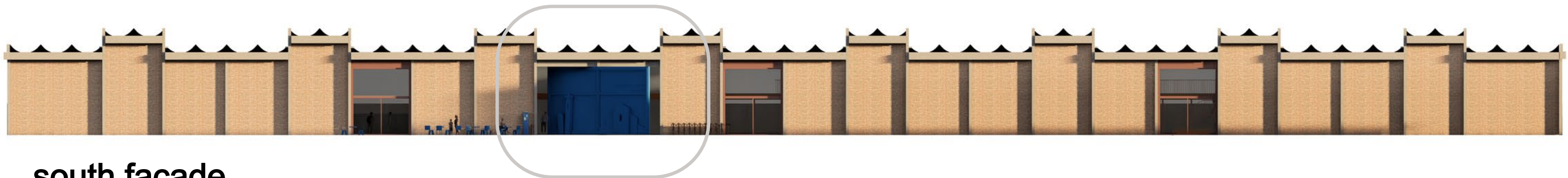
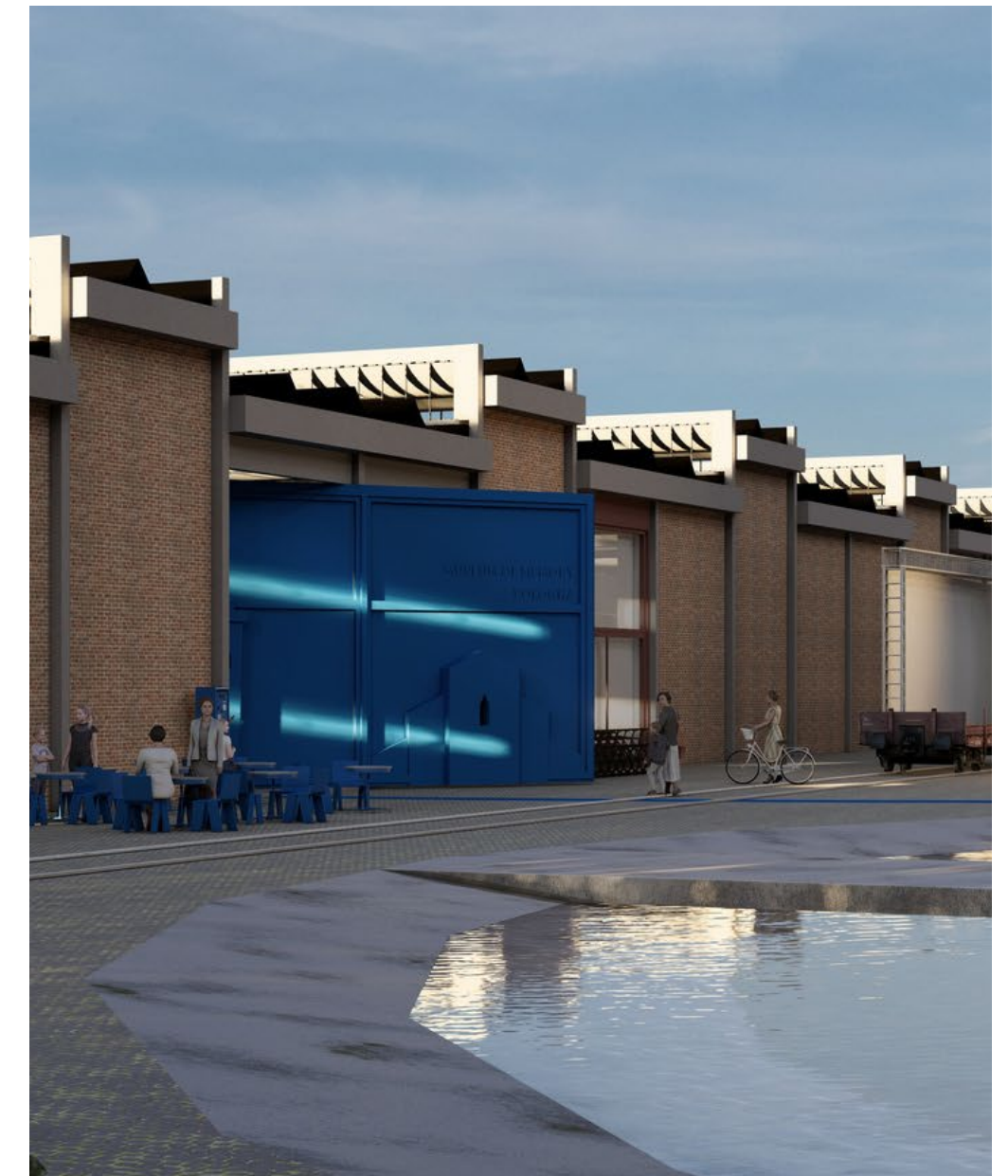


DETAILED BUILDING DESIGN FIRST FLOOR



- | | | | | | | | |
|---|----------------------|---|-------------|---|------------------|----|-----------------|
| 0 | temporary exhibition | 3 | office_rest | 6 | open space | 9 | principal |
| 1 | office_marketing | 4 | chill room | 7 | server | 10 | conference room |
| 2 | office_eco/lawyers | 5 | toilets | 8 | storage/cleaning | 11 | balcony |

DETAILED BUILDING DESIGN FACADES



south facade

DETAILED BUILDING DESIGN FACADES



east facade

INTERRAIL



APPLICATION OF LEED

Design classification:

BD+C - New Construction

**NEW
CONSTRUCTION
AND MAJOR RENOVATIONS**

Complete Construction

Appropriate for:

Buildings that are undergoing new construction or **major renovation** (or gut rehab) and a complete interior fit - out.

There are five rating systems in this category:

- **LEED for New Construction and Major Renovations**
- LEED for Schools
- LEED for Healthcare
- LEED for Retail: New Construction and Major Renovations
- LEED for Homes



SUSTAINABLE SITES

Rainwater Management

To reduce runoff volume and improve water quality by replicating the natural hydrology and water balance of the site, based on historical conditions and undeveloped ecosystems in the region.

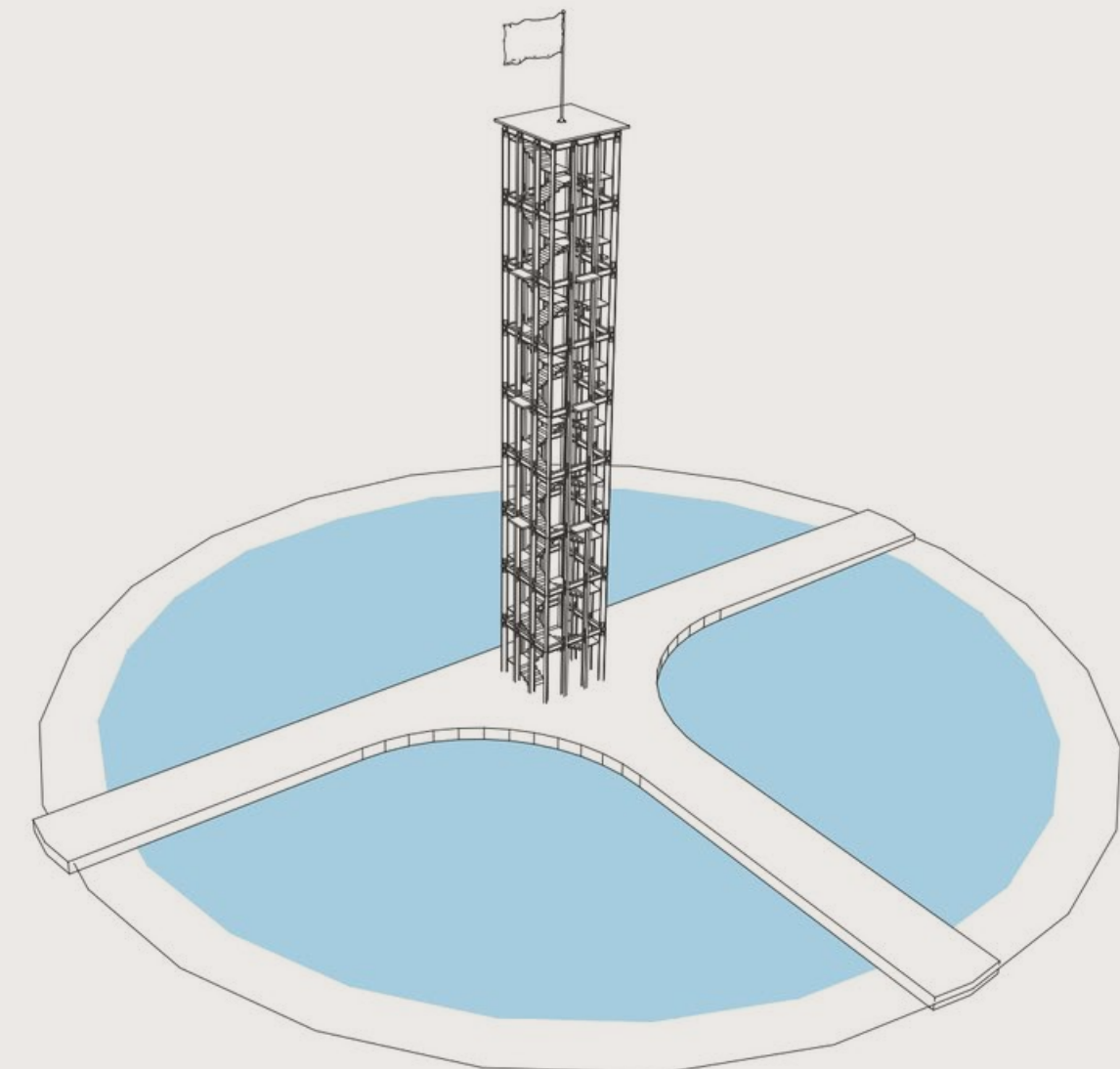
RAINGARDENS

1



RETENTION BASIN

2





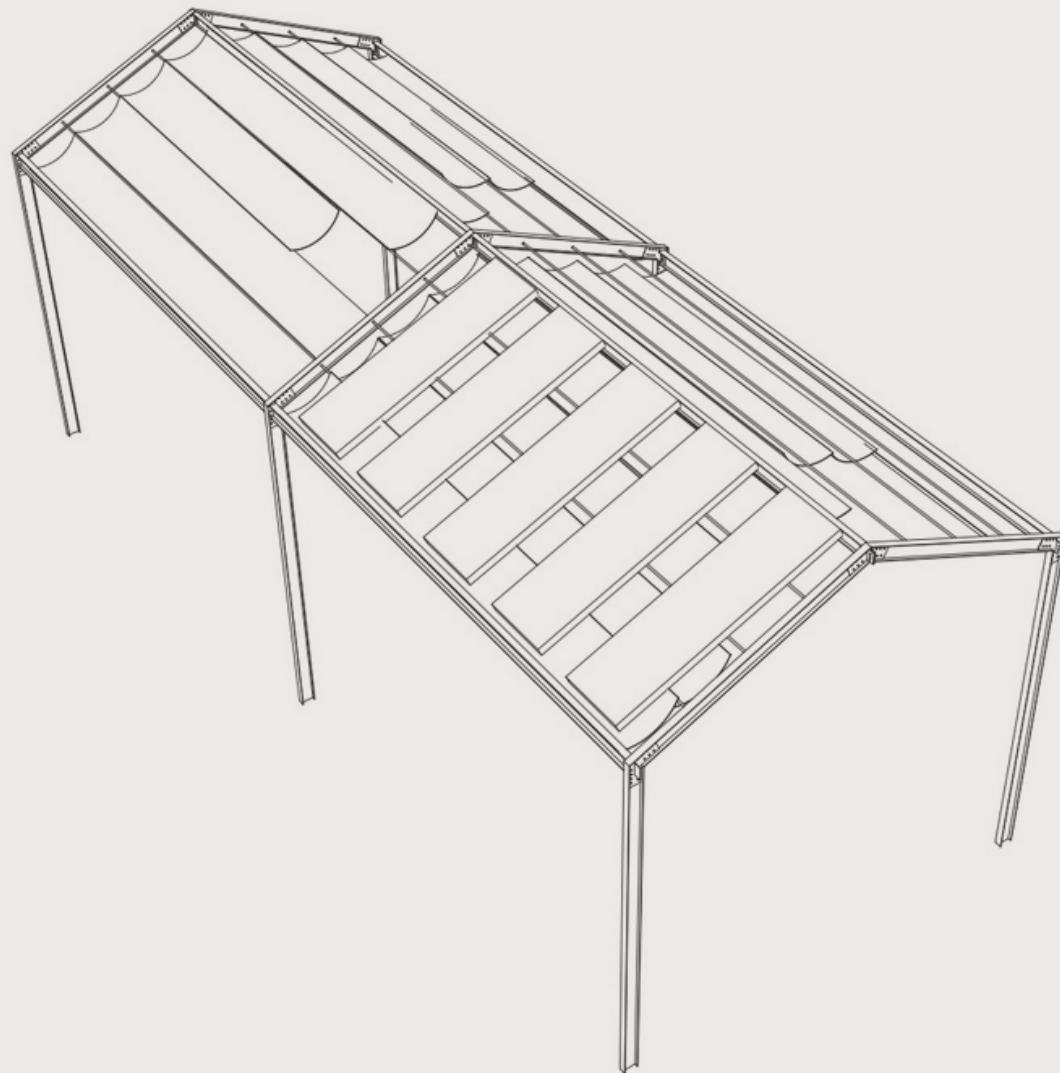
SUSTAINABLE SITES

Heat island

To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

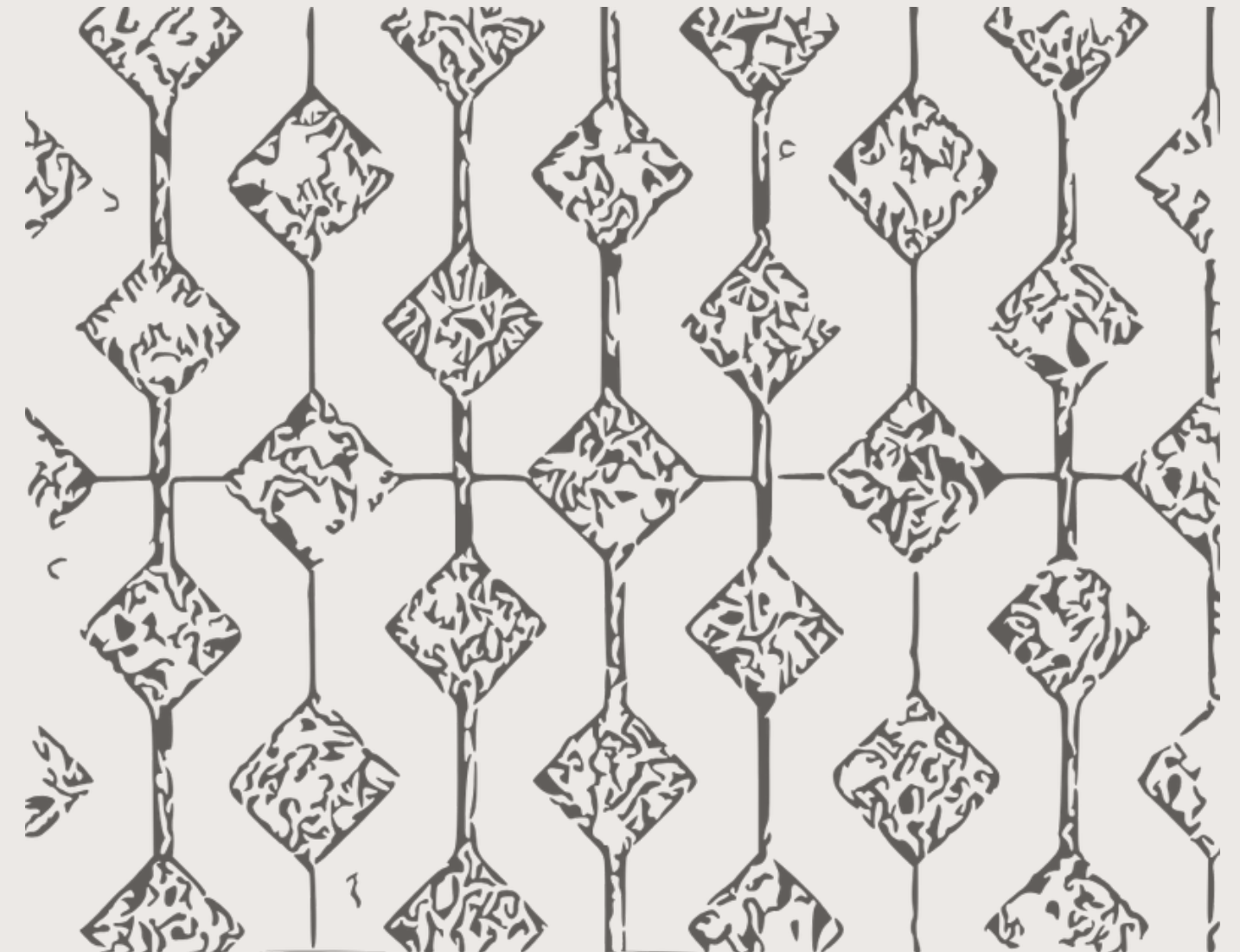
PROVIDING SHADE WITH STRUCTURES COVERED BY ENERGY GENERATION SYSTEMS

3



USING AN OPEN - GRID PAVEMENT SYSTEM

4





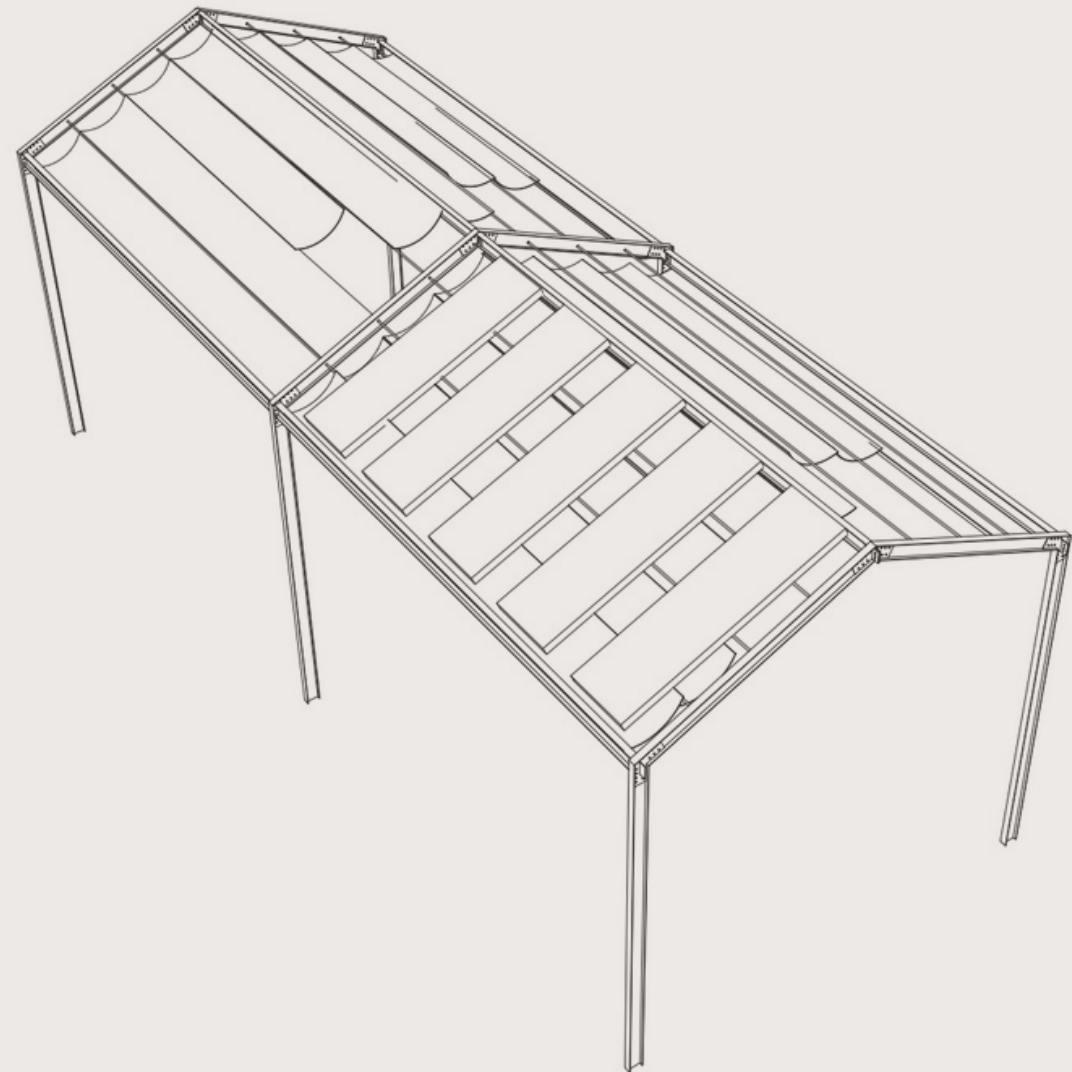
ENERGY AND ATMOSPHERE

Renewable Energy Production

To reduce the environmental and economic harms of fossil fuel energy by increasing self - supply of renewable energy.

LOCATION OF PV PANELS ON THE SOUTHERN ROOFLINE OF THE METAL STRUCTURE

3



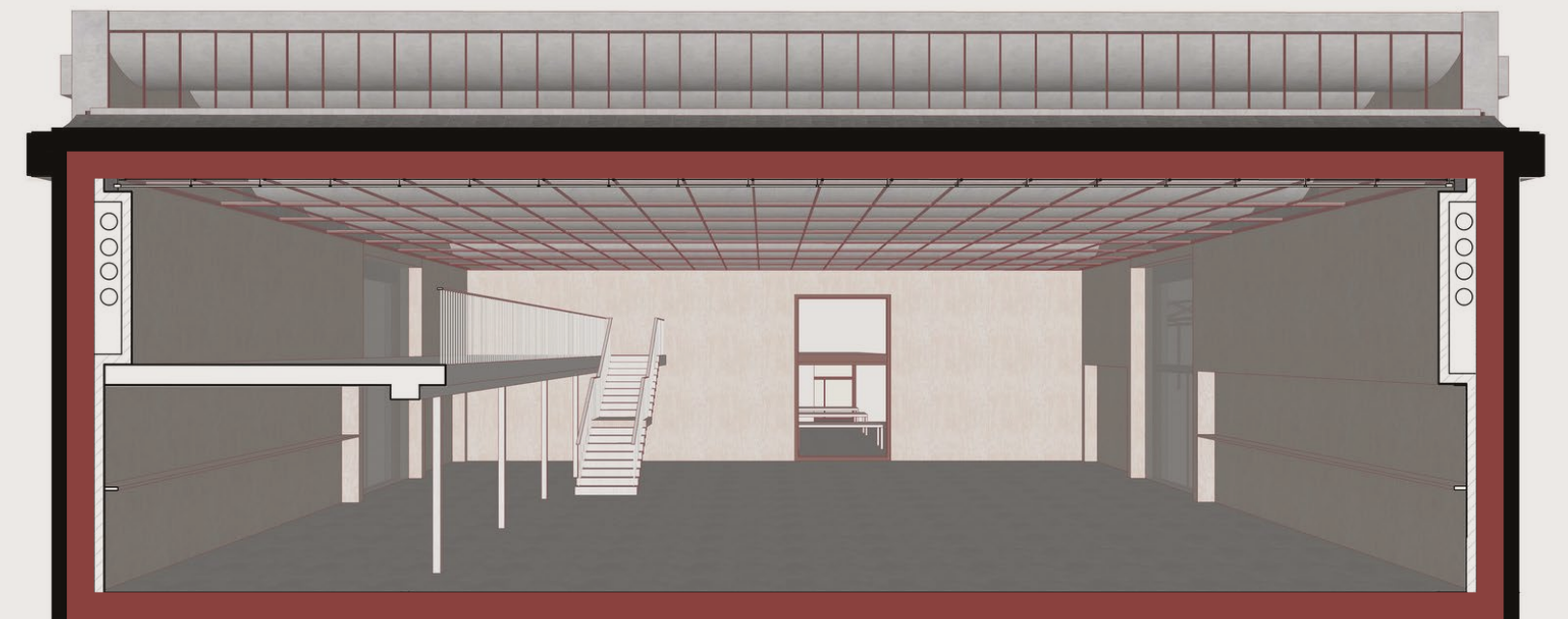
INDOOR ENVIRONMENTAL QUALITY

Thermal comfort

To promote occupants' productivity, comfort, and well-being by providing quality thermal comfort.

ADDED CONTINUOUS INSULATION FROM THE INSIDE OF THE BUILDING

5





MATERIALS AND RESOURCES

Building and material reuse avoids environmental harms throughout a material's life cycle, from supply chain and use to recycling and waste disposal. It saves environmental burden of the manufacturing process of new materials.

Construction and Demolition Waste Management

Planning
Reducing construction and demolition waste
(recovering, reusing, and recycling materials)

Building Life - Cycle Impact Reduction

Maintaining more than 50% of the existing building structure, enclosure, and interior structural elements
(Only replacing units necessary to provide entrances)

Design for Flexibility

Considering ease of future adaptation
(designing additional structures as independent)



thank you