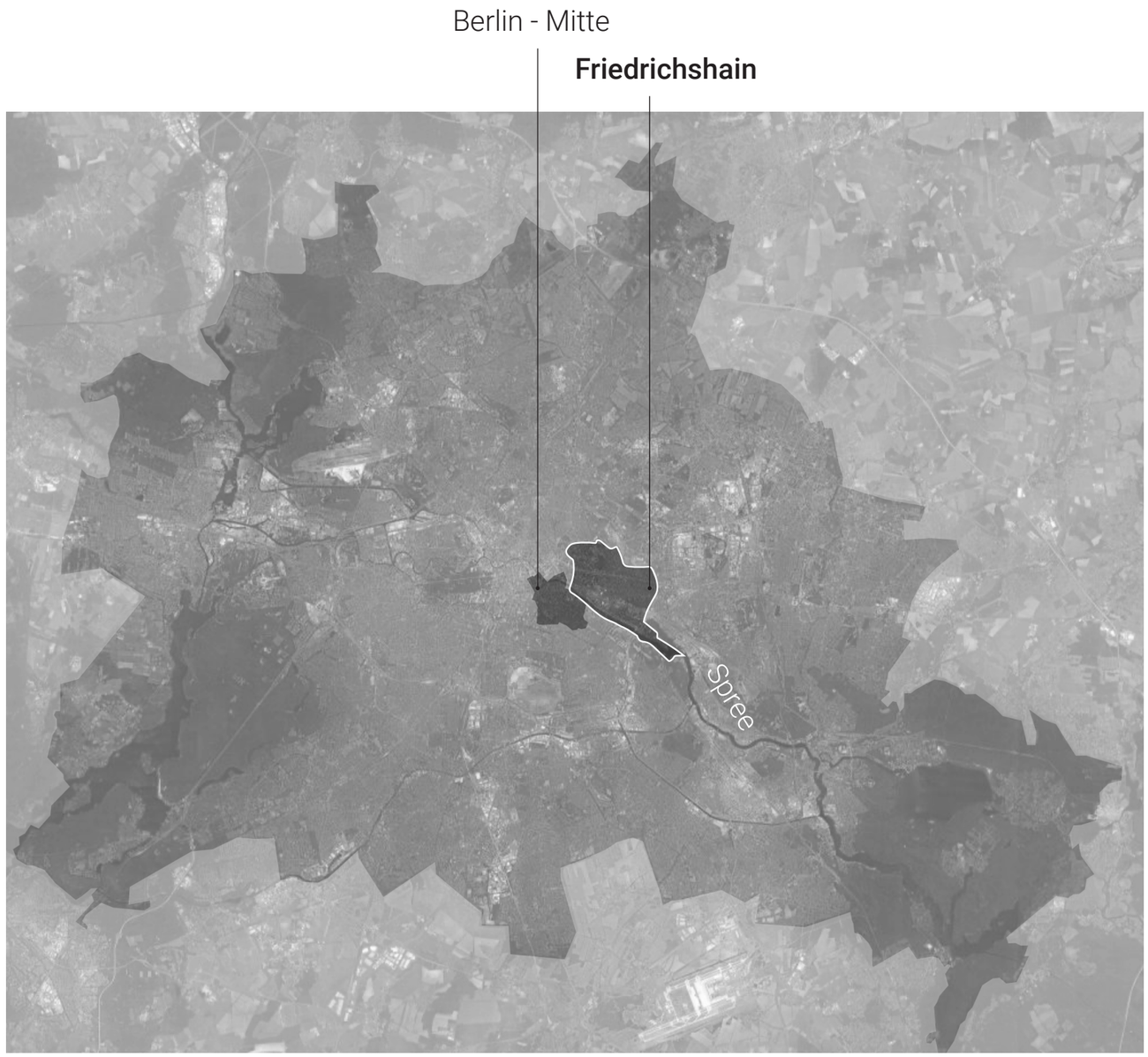
THE INVISIBLE MAGNET:
UNLOCKING DISCOVERY, ENCOUNTER AND INTERACTION.

PUBLIC BUILDING
GRADUATION STUDIO
AR3AP100 MSC 3/4 2022-23
P5 - ROSALIE GRANATA
5625939

THEORETICAL VIEW PUBLIC BUILDING

BERLIN - FRIEDRICHSHAIN

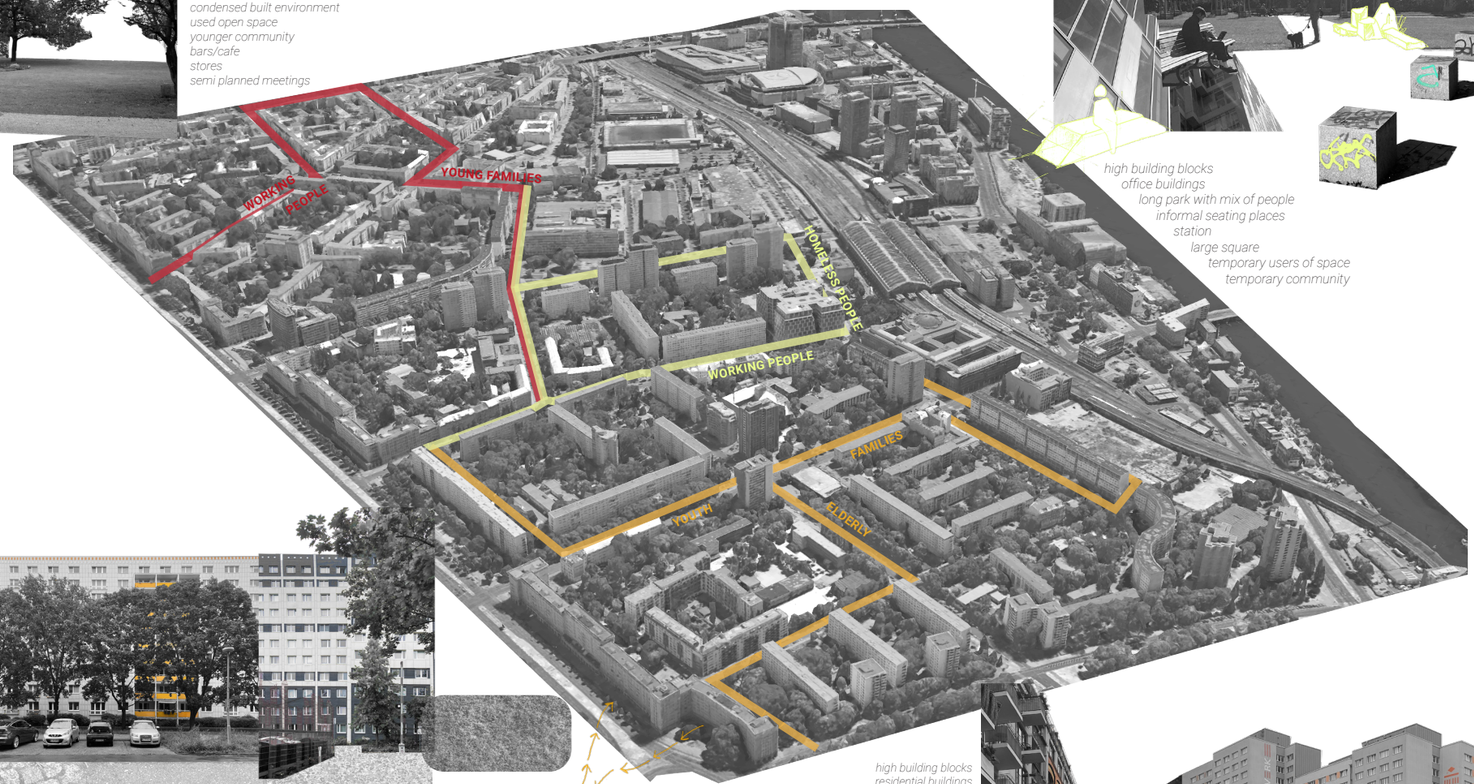


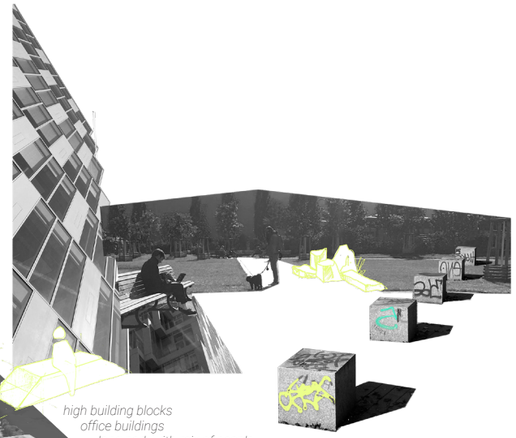
FRIEDRICHSHAIN - ANDREASVIERTEL

NEIGHBOURHOOD IMPRESSIONS

lower buildings
parks
playgrounds
squares
benches
condensed built environment
used open space
younger community
bars/cafe
stores
semi planned meetings

"Gathering together strangers enables certain kinds of activities which cannot happen, or do not happen as well, in the intimate private realm. In public, people can access unfamiliar knowledge, expanding the horizons of their information."
Richard Sennet





high building blocks
office buildings
long park with mix of people
informal seating places
station
large square
temporary users of space
temporary community

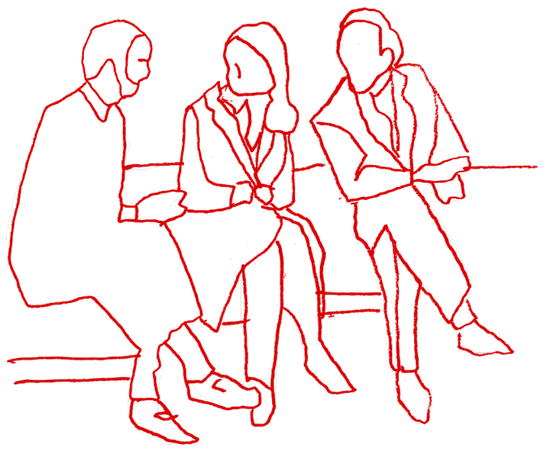
"Architecture is a social activity that has to do with some sort of communication or places of interaction, and to change the environment is to change the behaviour."
Thomas Mayne

high building blocks
residential buildings
wide streets
hidden green between buildings
lost inbetween space
green space
benches
parking spots/spaces
wide age range of residents
daily services
stores
informal unplanned meetings
elementty schools
high school
family center

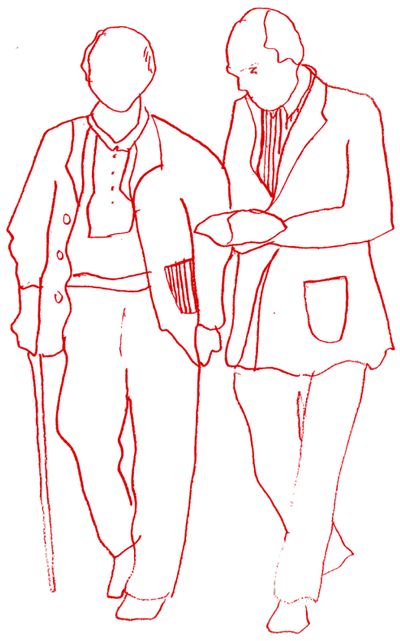
TARGET GROUP

families

youth / young adults



adults / elderly

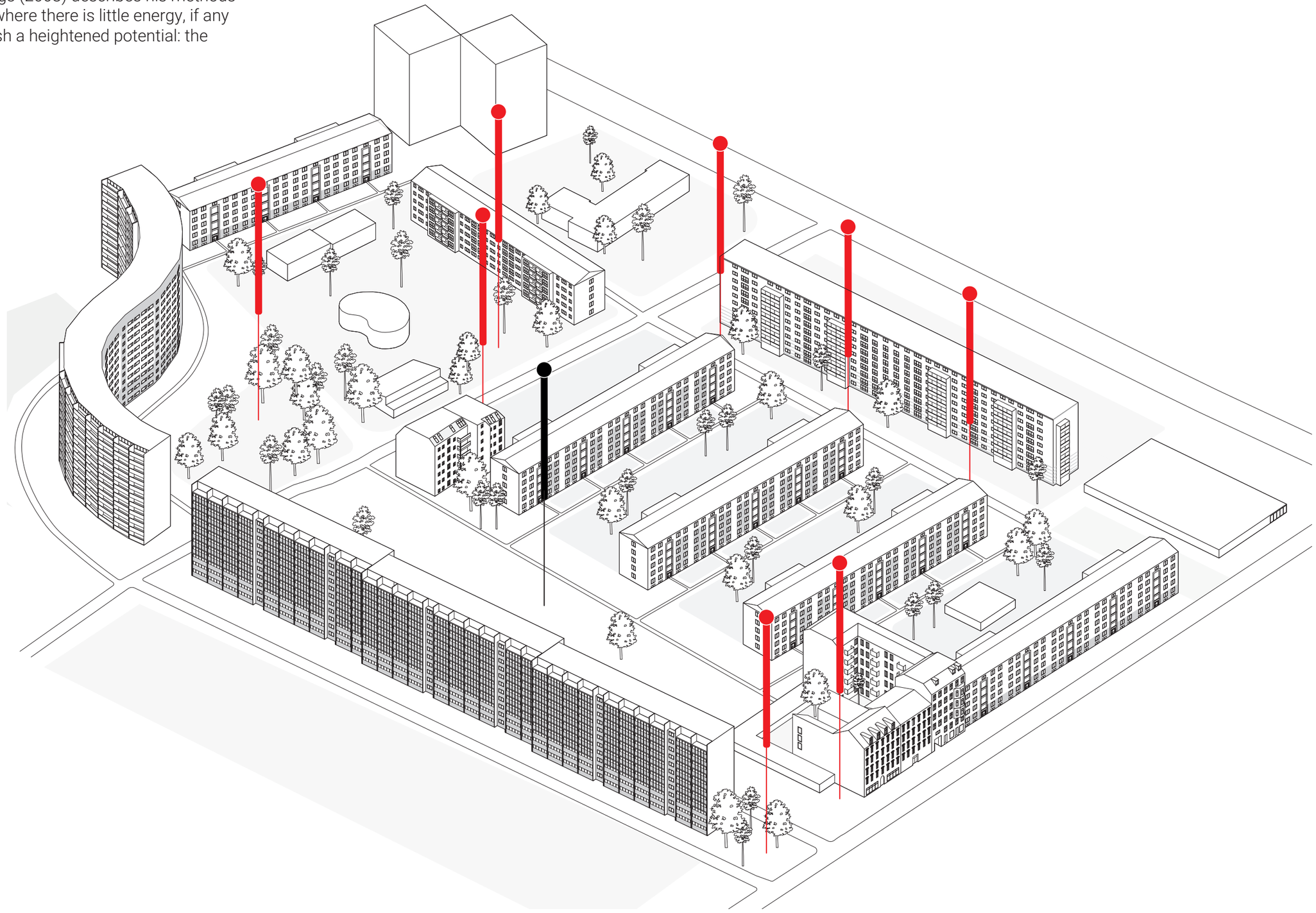


CONTEXT


Karl-Marx-Allee
Lichtenberger Straße
Straße der Pariser Kommune
Bundespolizei
Berlin Ostbahnhof

URBAN ACUPUNCTURE

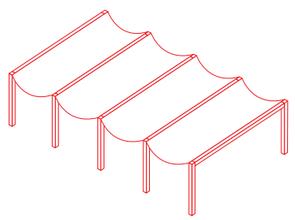
The theory of urban acupuncture was first introduced by the Barcelona architect Manuel de Solà-Morales. The Dutch architecture critic Hans Ibelings (2008) describes his methods as "… interventions at points where there is little energy, if any at all. His interventions unleash a heightened potential: the possibility of urbanity"(p11)



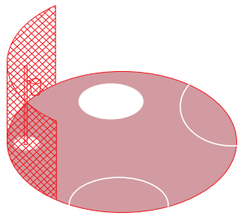
URBAN ACUPUNCTURE - CATALOGUE

framing spaces of activity

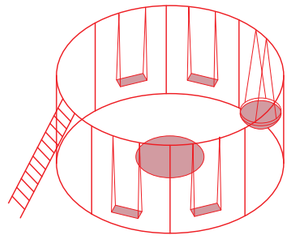
pavilion



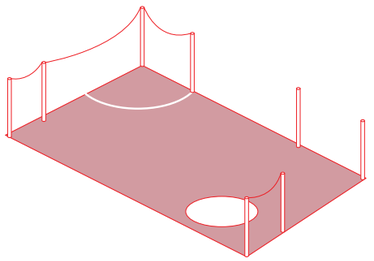
sportsfield



playground

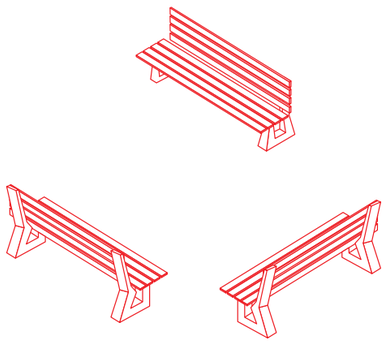


activity/event spot

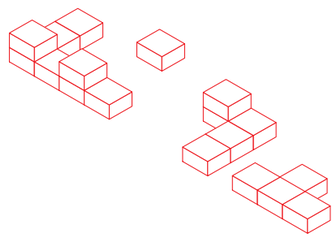


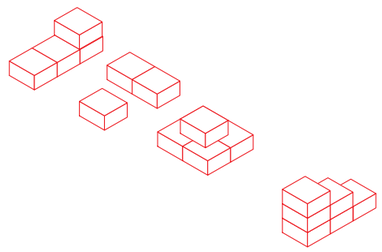
initiating meetings

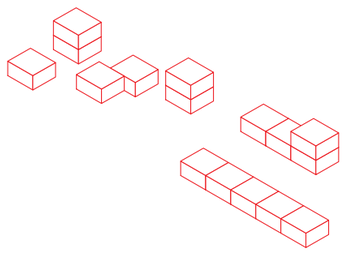
added benches



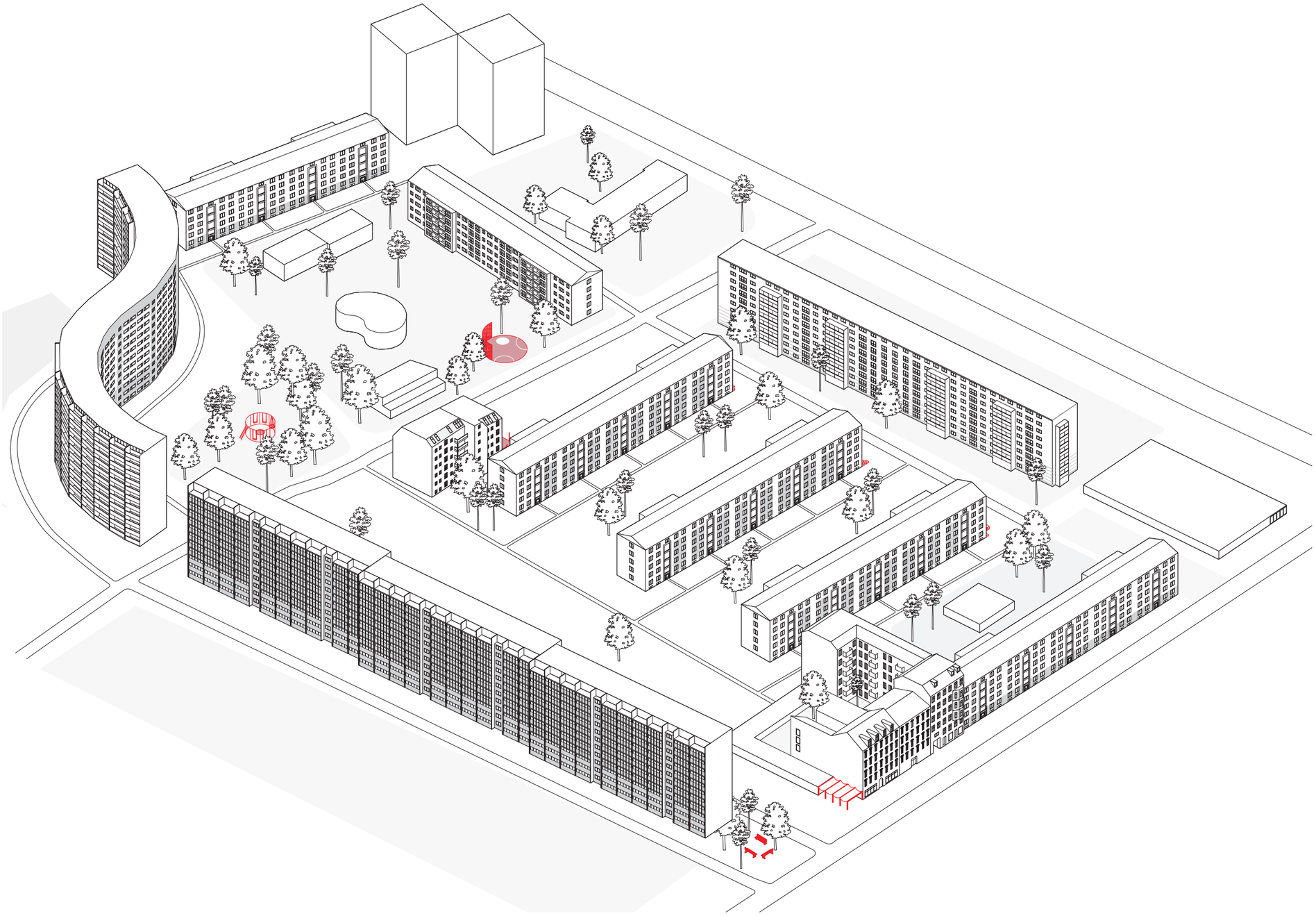
conversation pits 1





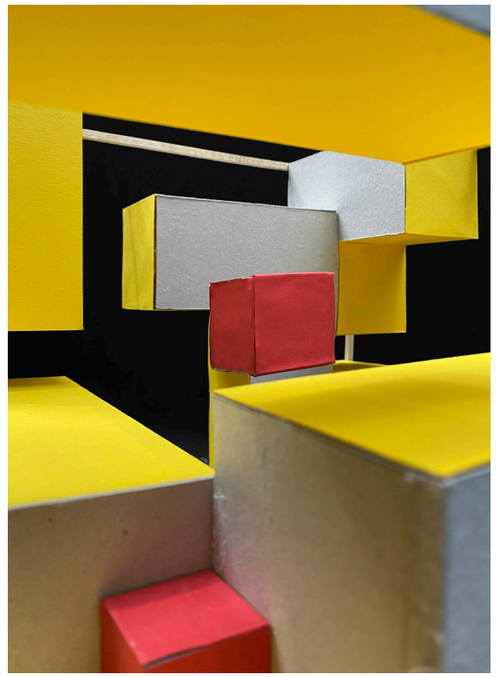


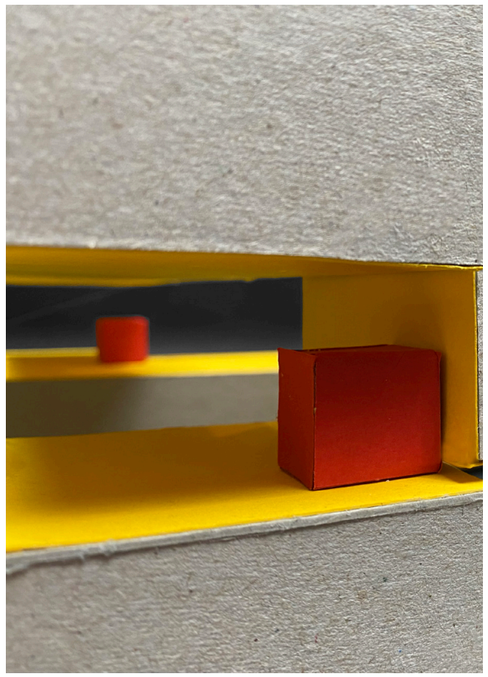
URBAN ACUPUNCTURE - IMPLEMENTATION



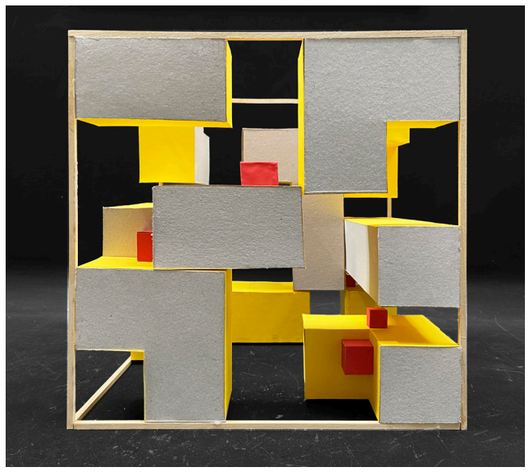
ANSWER TO SITE

hidden architecture

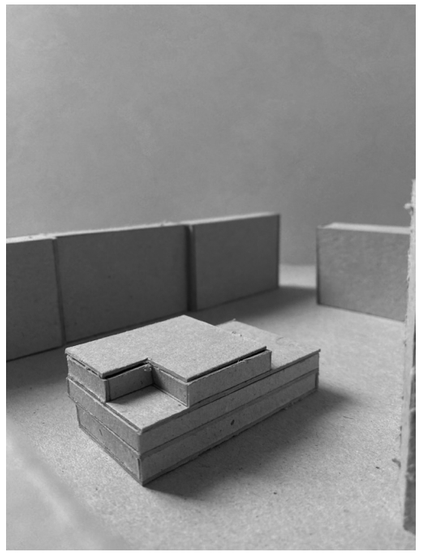


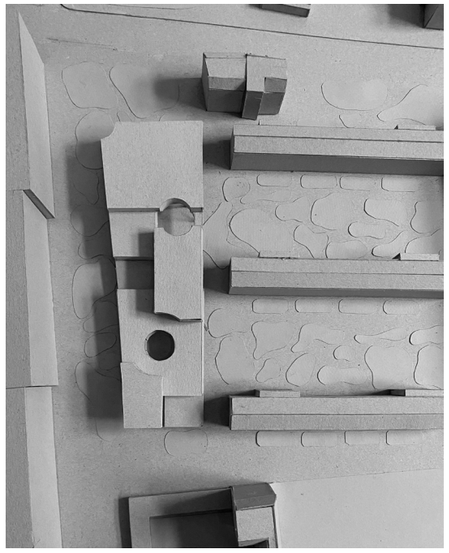
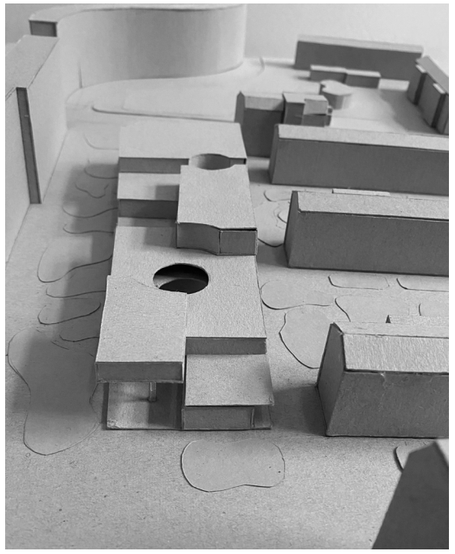


In between space

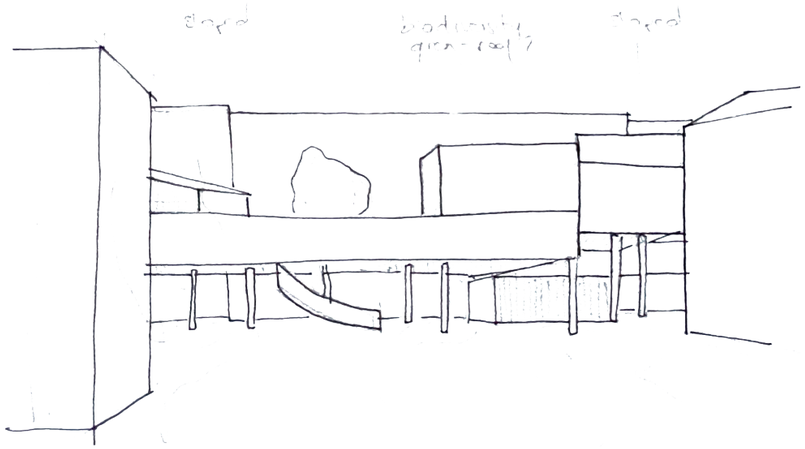


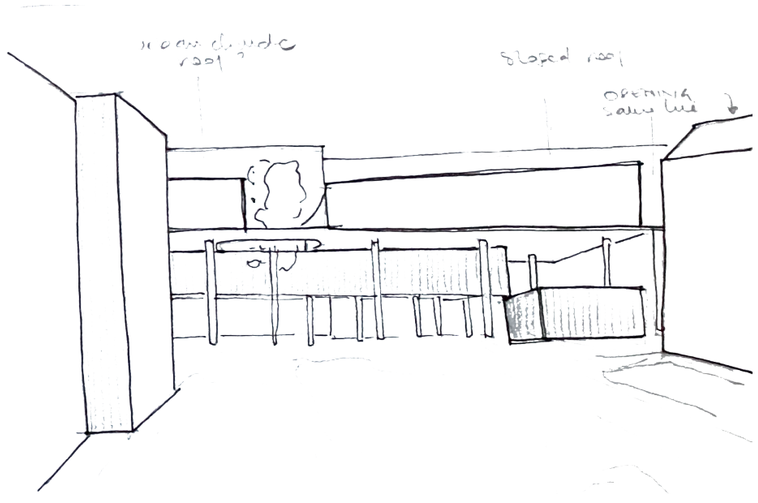
PROCESS MODELS

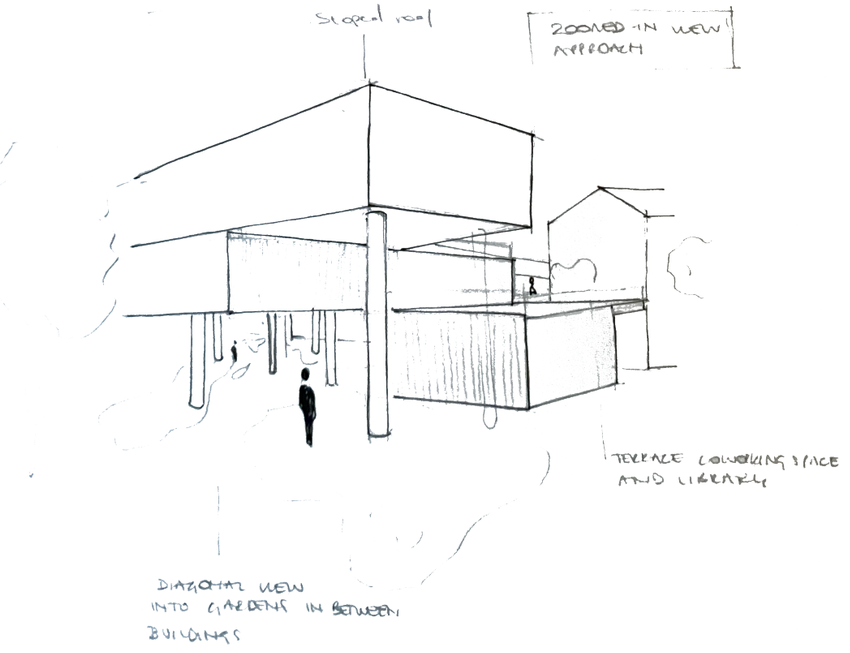


PROCESS SKETCHES



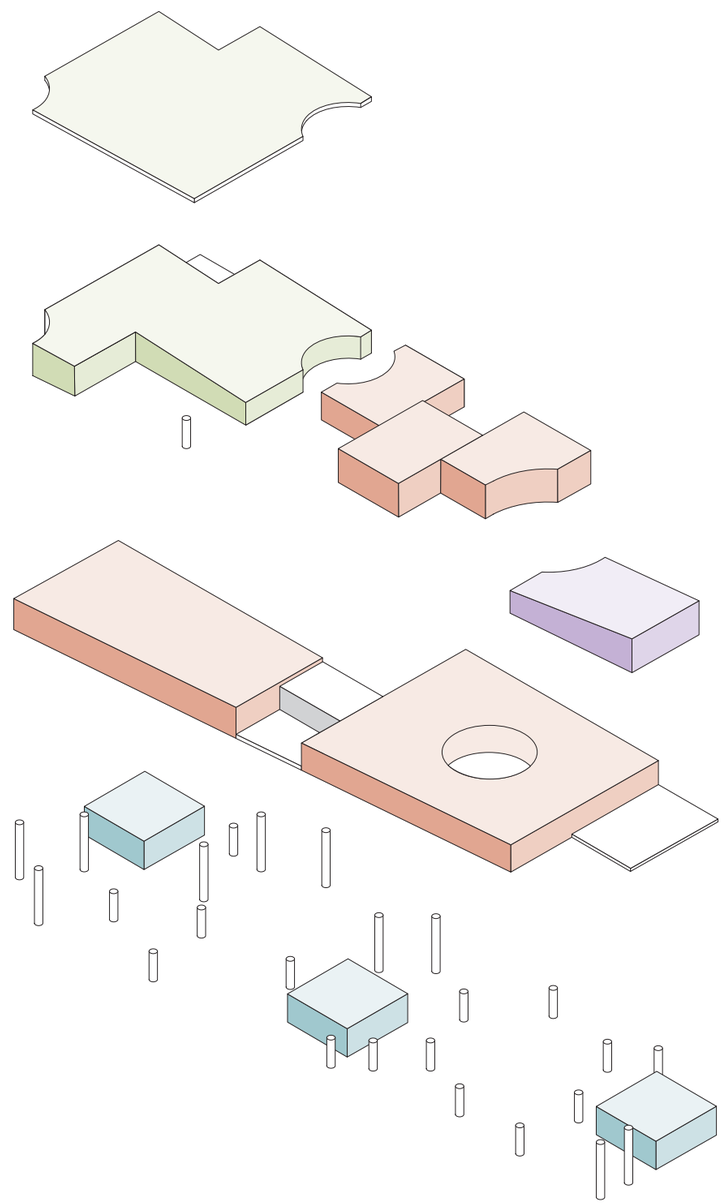




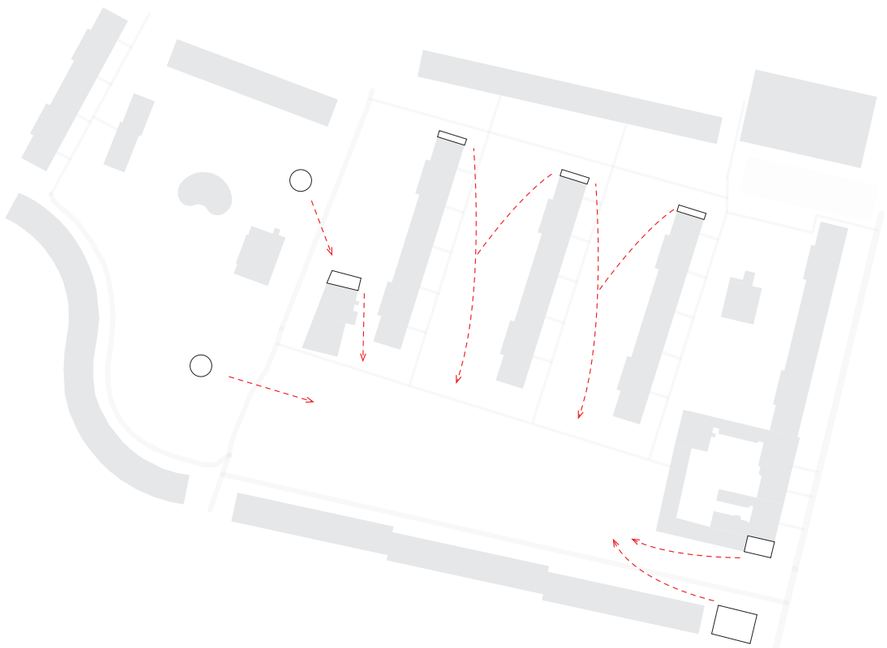
PROJECT BRIEF

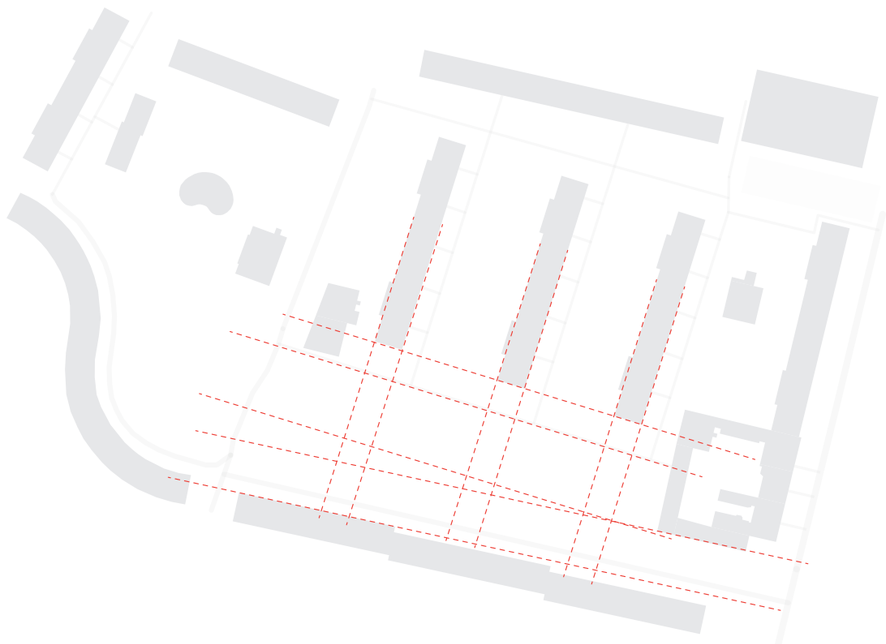
			connected public exterior
leisure	510 m²	family restaurant coffeebar	base (urban landscape)
intelectual		library readings/lectures	urban garden roof semi private roof terrace (2 levels)
media		computer spaces reading spaces	
administration	2415 m²	co-working spaces kitchen and break rooms	urban garden roof
artistic	305 m²	community gallery space	urban garden roof
physical health	1280 m²	sport facilities playgrounds	urban acupuncture
mental health		urban garden	base (urban landscape) urban garden roofs

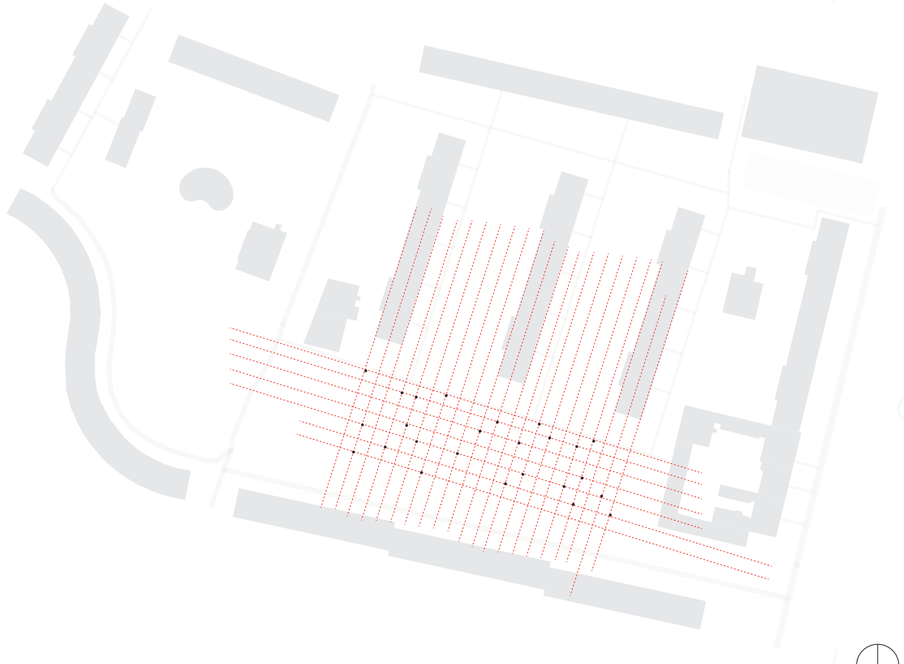
TOTAL: ± 4500 m²



FORM GENERATING PROCESS

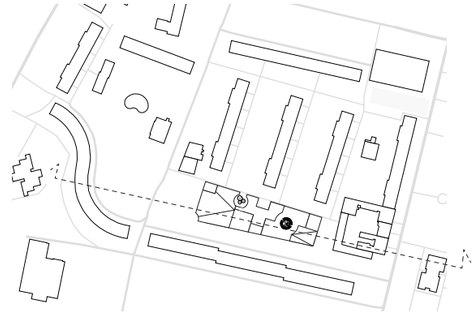






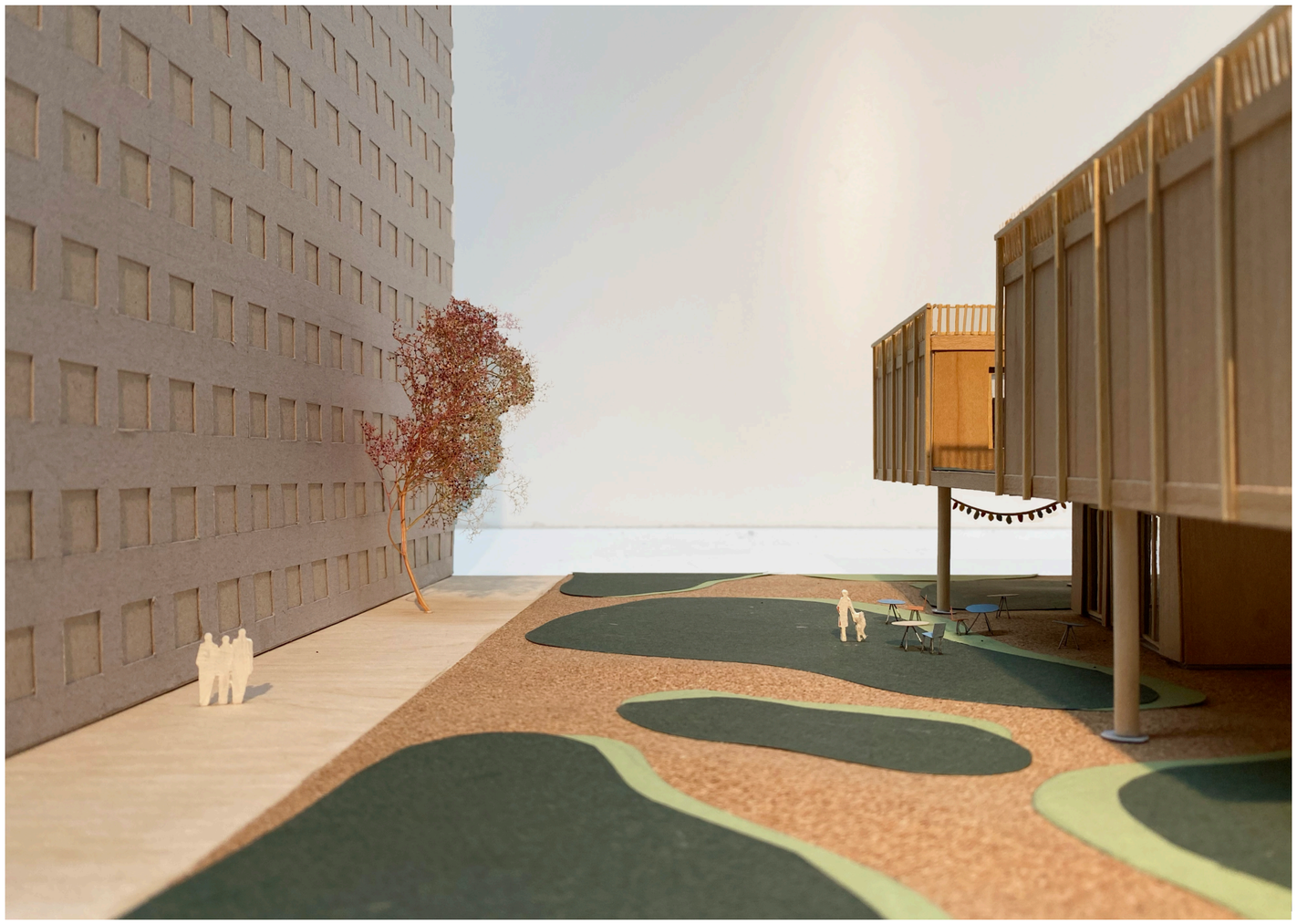
SITEPLAN

URBAN SECTION

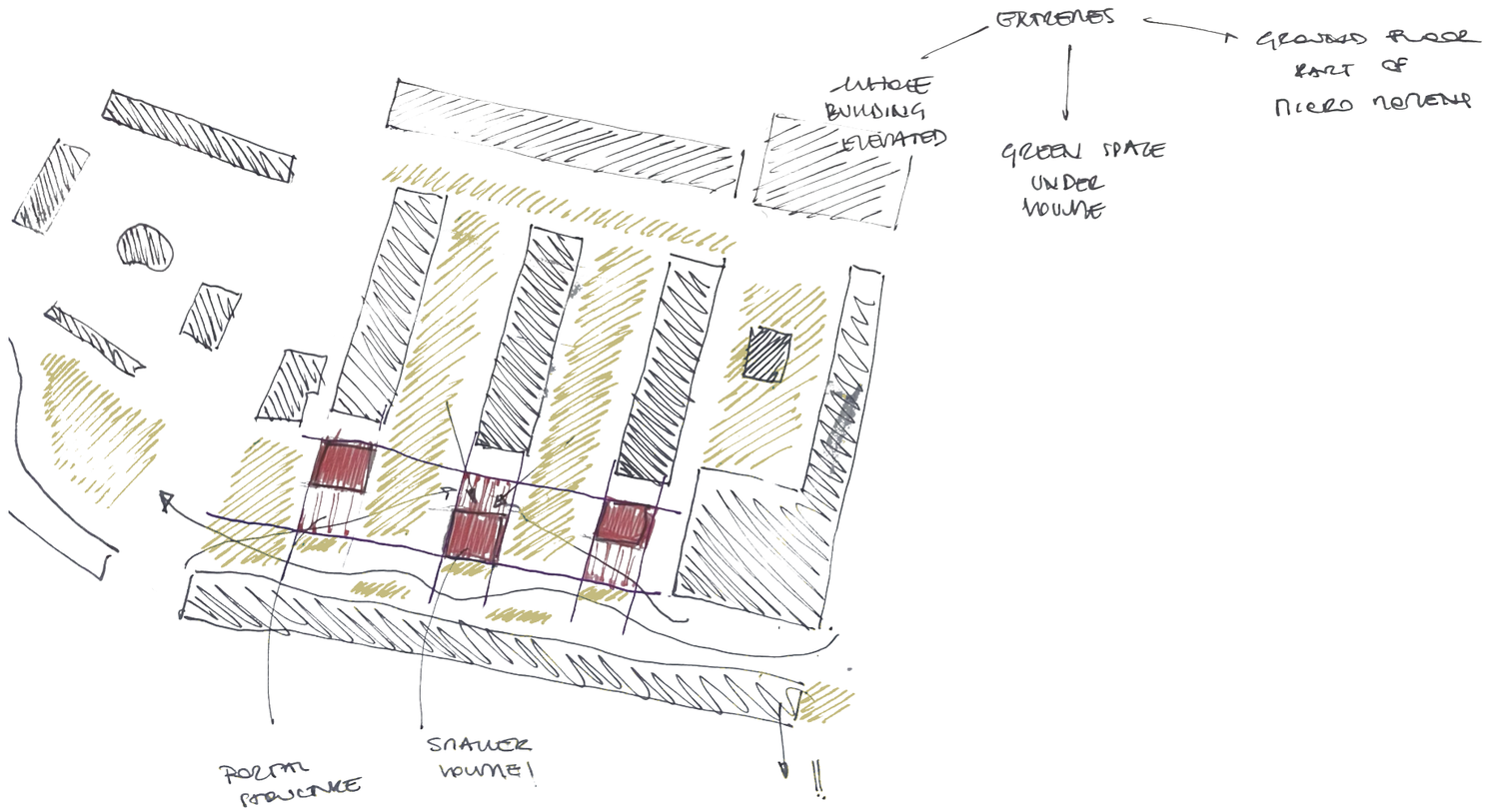


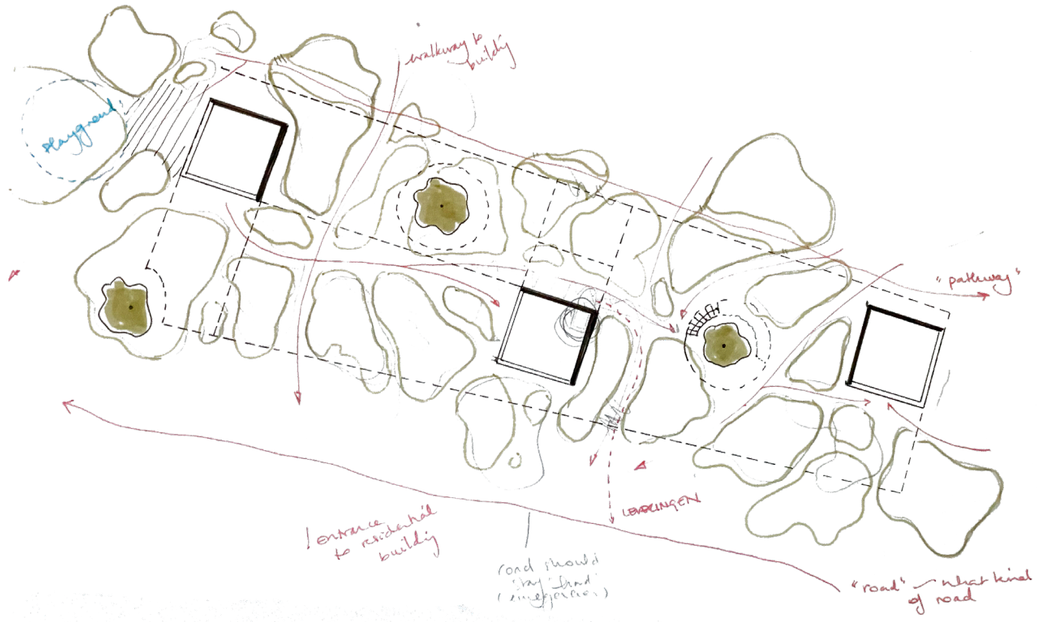
BASE - URBAN LANDSCAPE (+0)

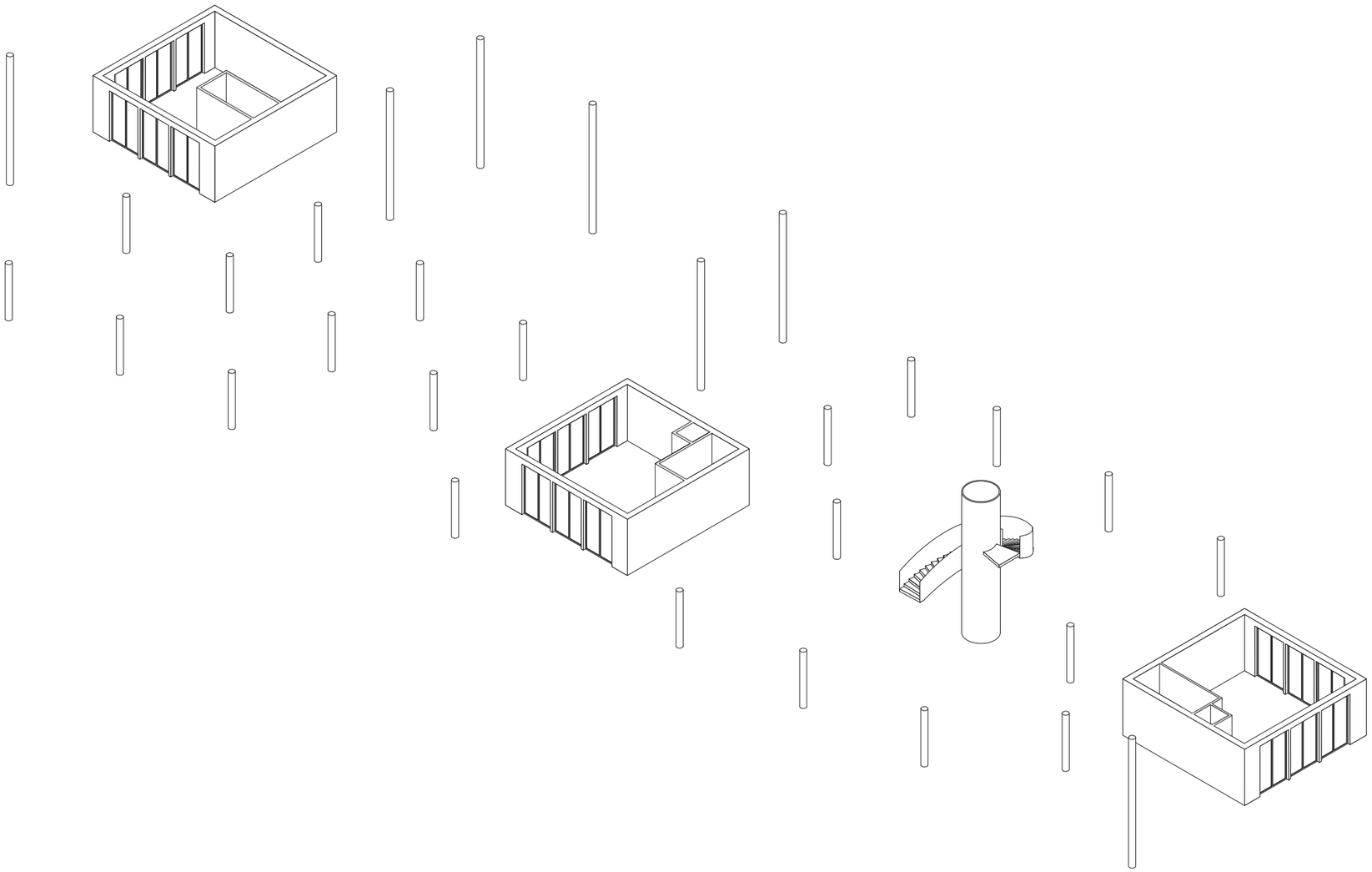
INTERACTION EXISTING - ADDED



PROCESS DESIGN URBAN LANDSCAPE







FRAGMENT BASE - URBAN LANDSCAPE (+0)

1. coffeebar
2. main spiral staircase
3. main round elevator
4. bar

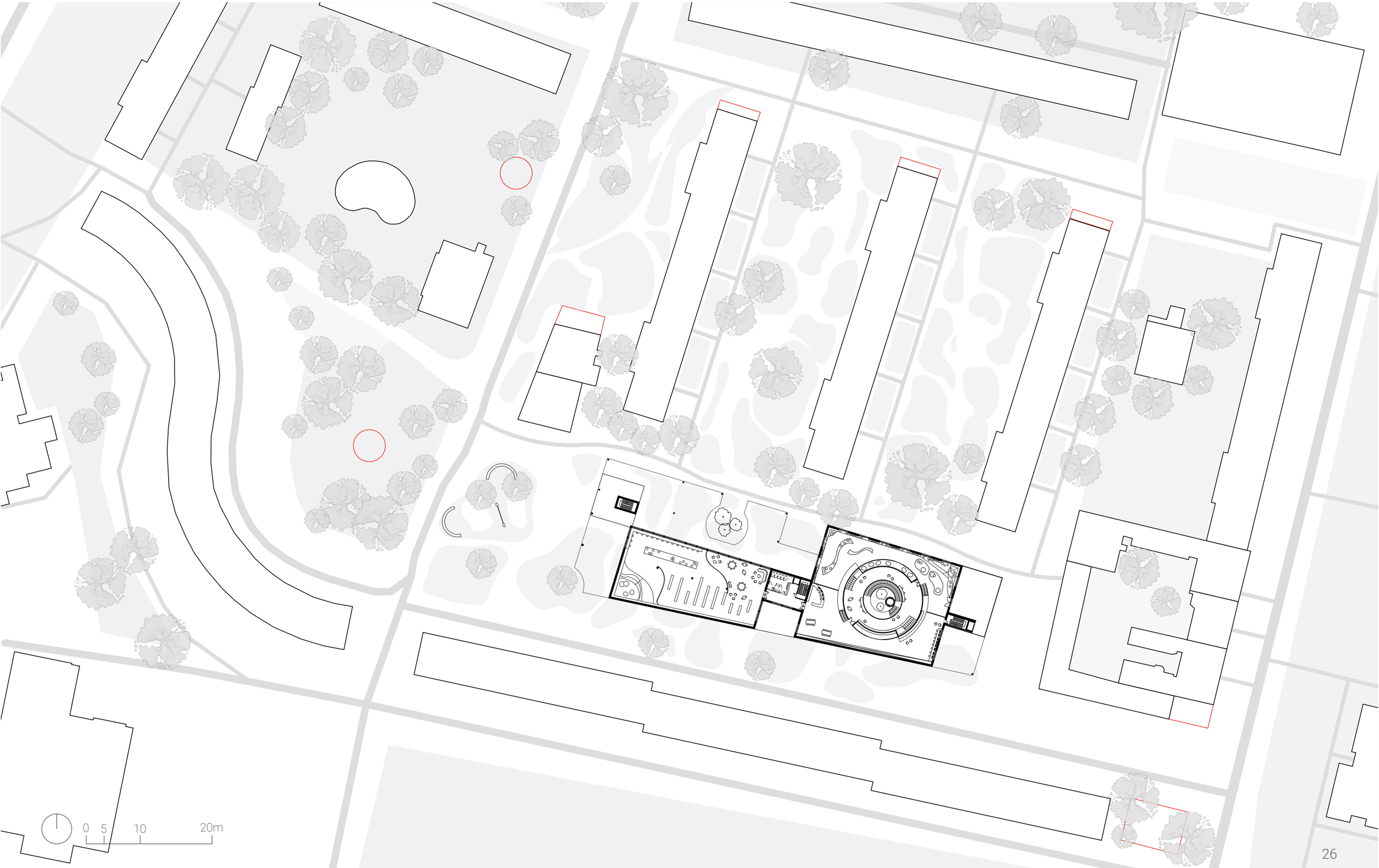
BASE - DISCOVERY (+0)

MODEL - VIEWS BASE (+0)

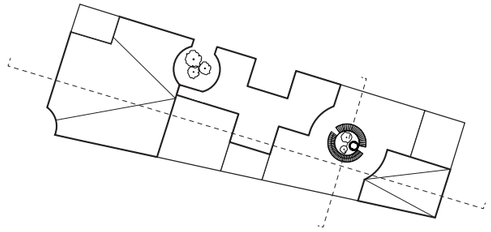
coffeebar

atmospheres created by jumps in volumes

PLATEAU (+1)



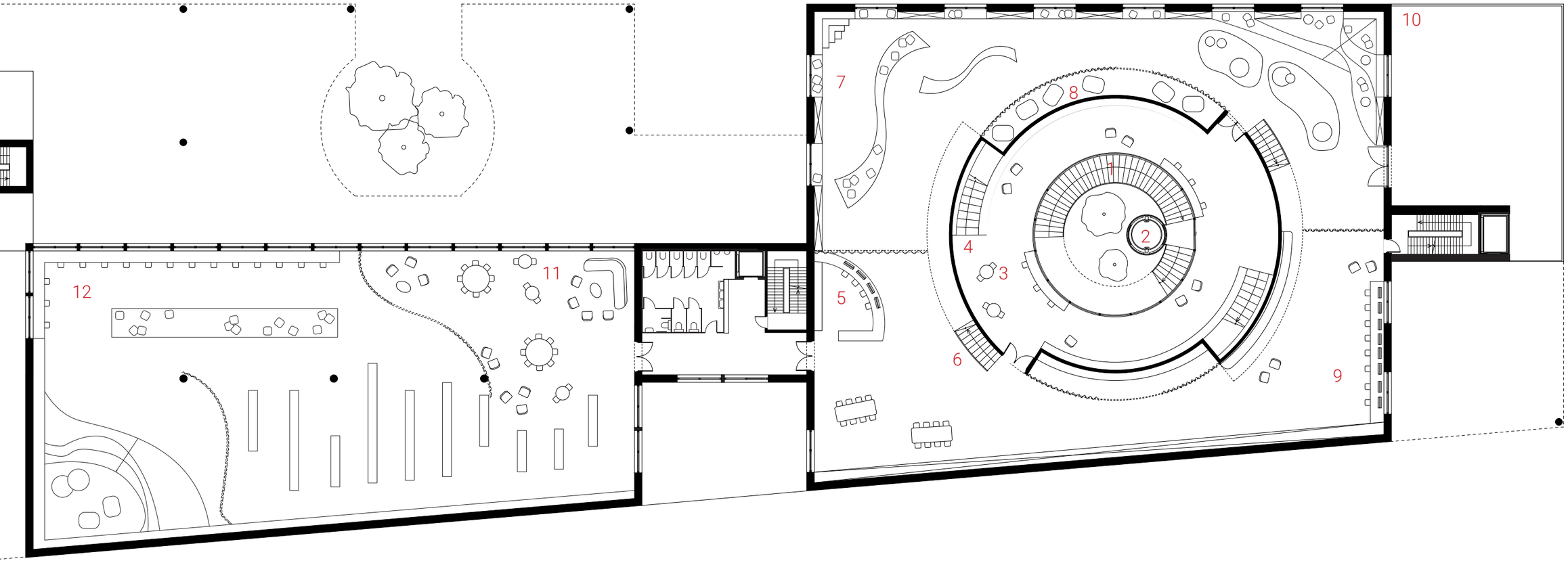
SECTIONS



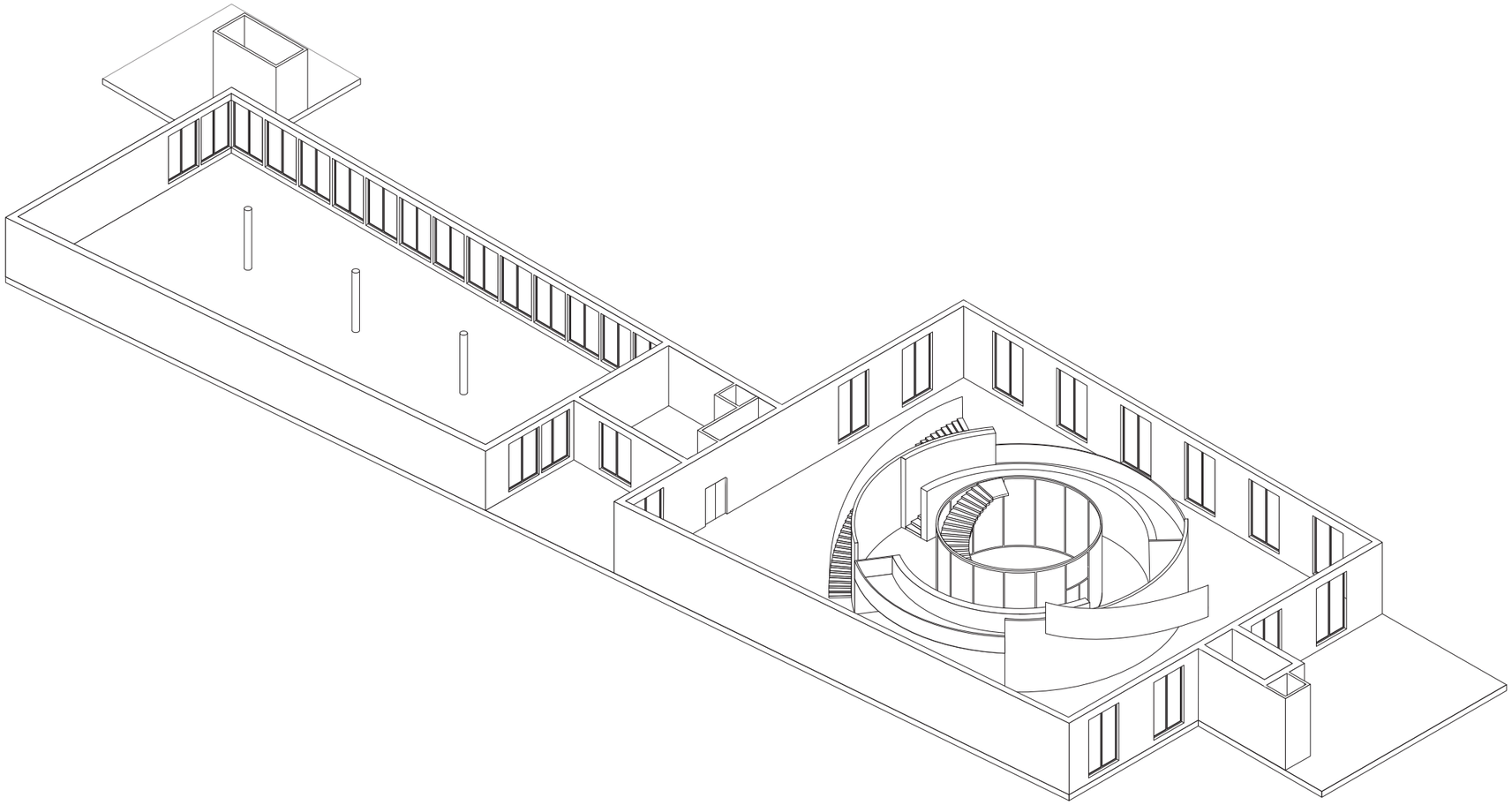
0 5 10 20m

FRAGMENT PLATEAU (+1)

1. main spiral staircase
2. main round elevator
3. first entrance space
4. staircase mezzanine
5. information/help desk
6. spiral staircase to next level
7. children's library
8. closed reading nook children
9. computer area
10. roof terrace library
11. reading area formal library
12. working landscape



0 2 5 10m

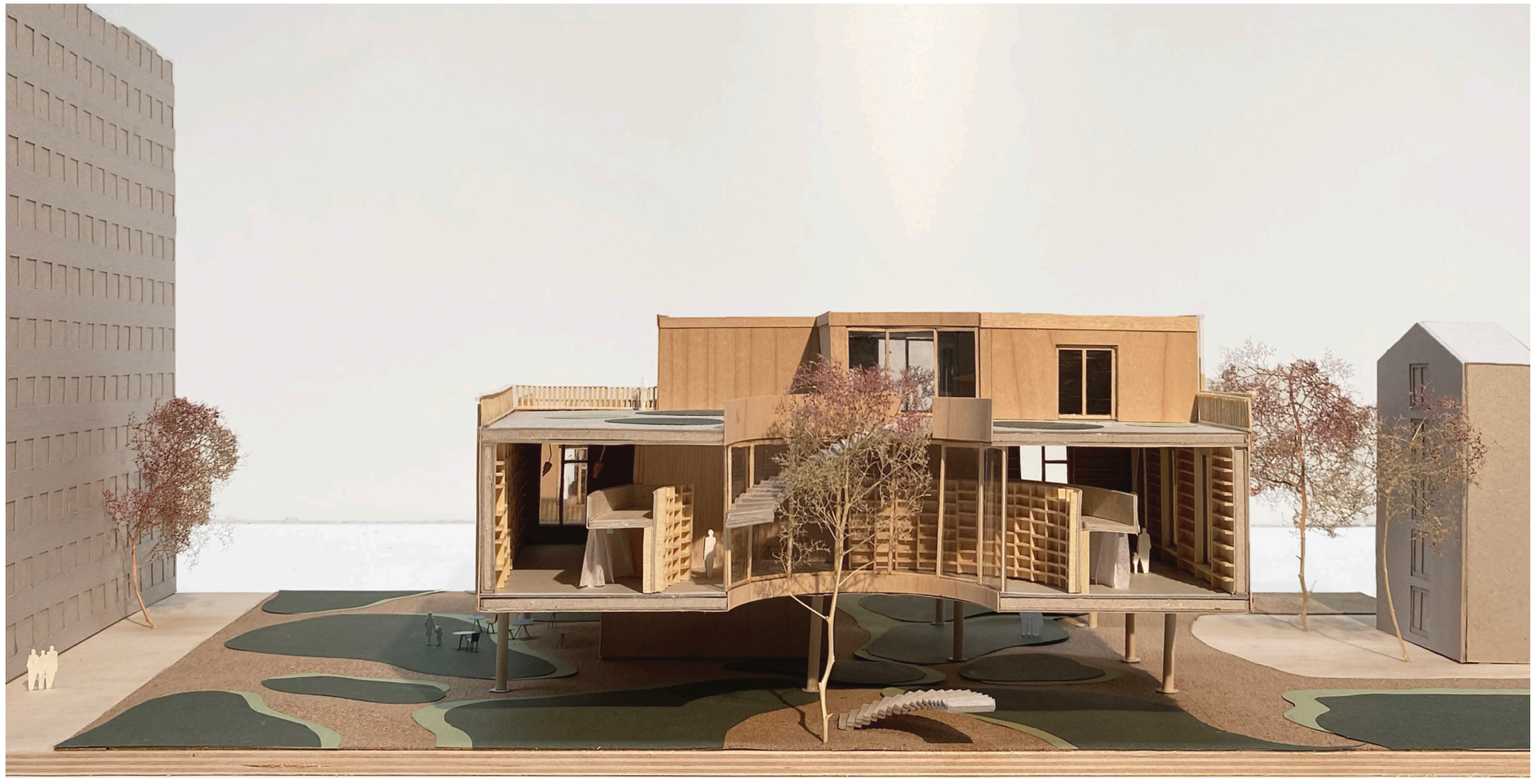


MODEL - VIEWS PLATEAU (+1)

fragment round entrance space

children’s library

SECTION MODEL - EAST



IMPRESSION ‘FORMAL’ LIBRARY

CORONATION - FRAGMENTATION (+2)

IMPRESSION IN BETWEEN

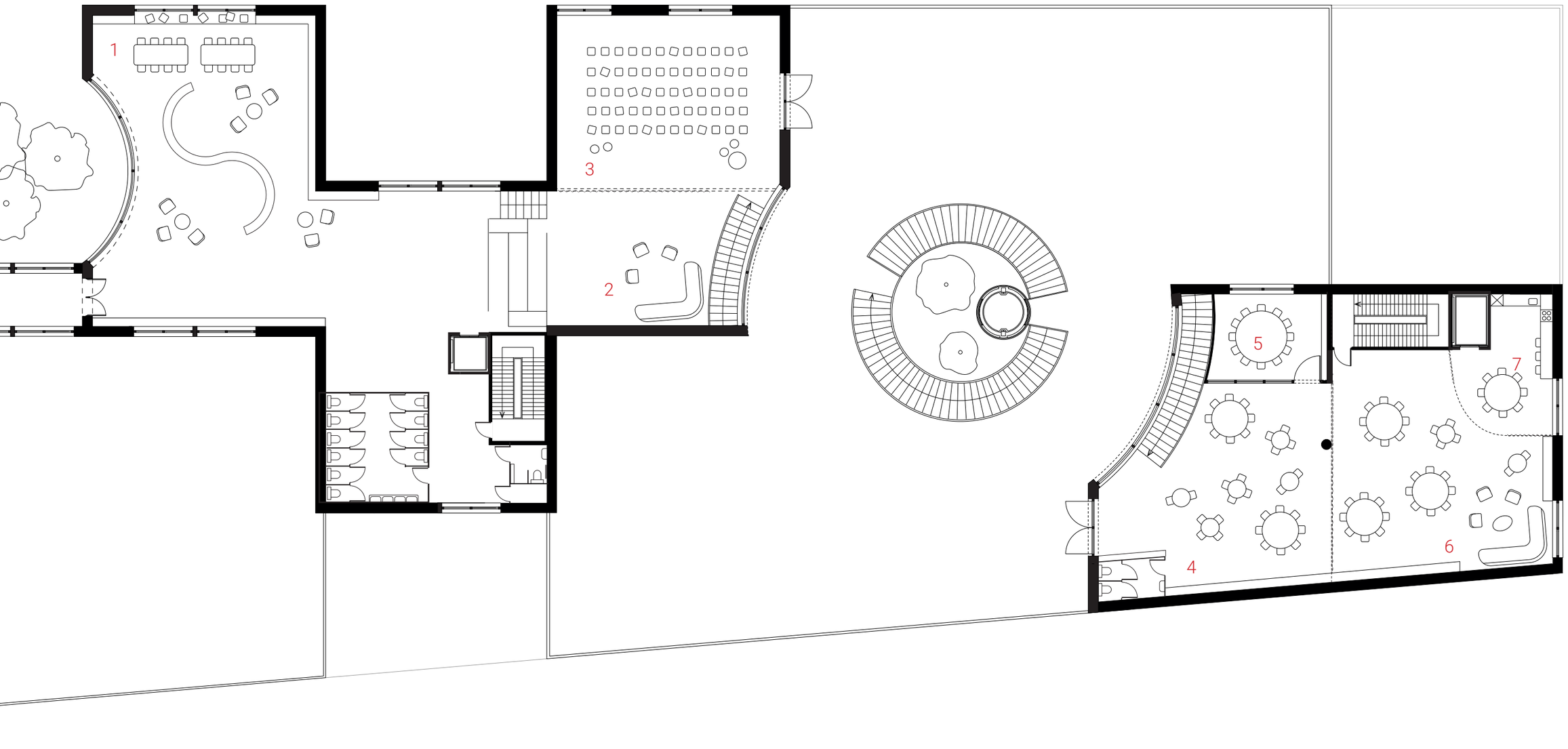
FRAGMENT CORONATION (+2)

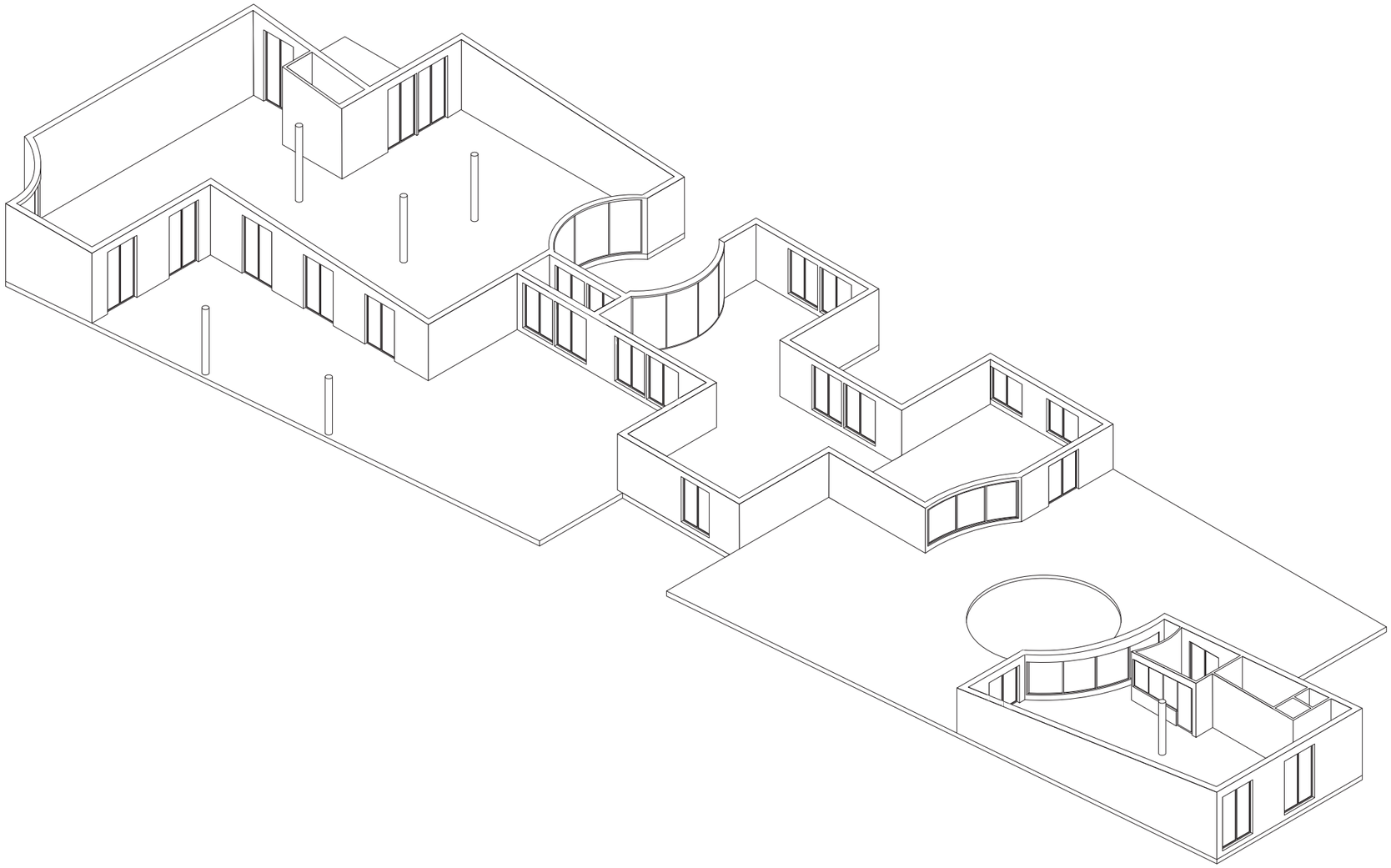
library

1. art section library
(as a passage to the gallery)
2. possible reception area
3. presentation/reading space

co-working space

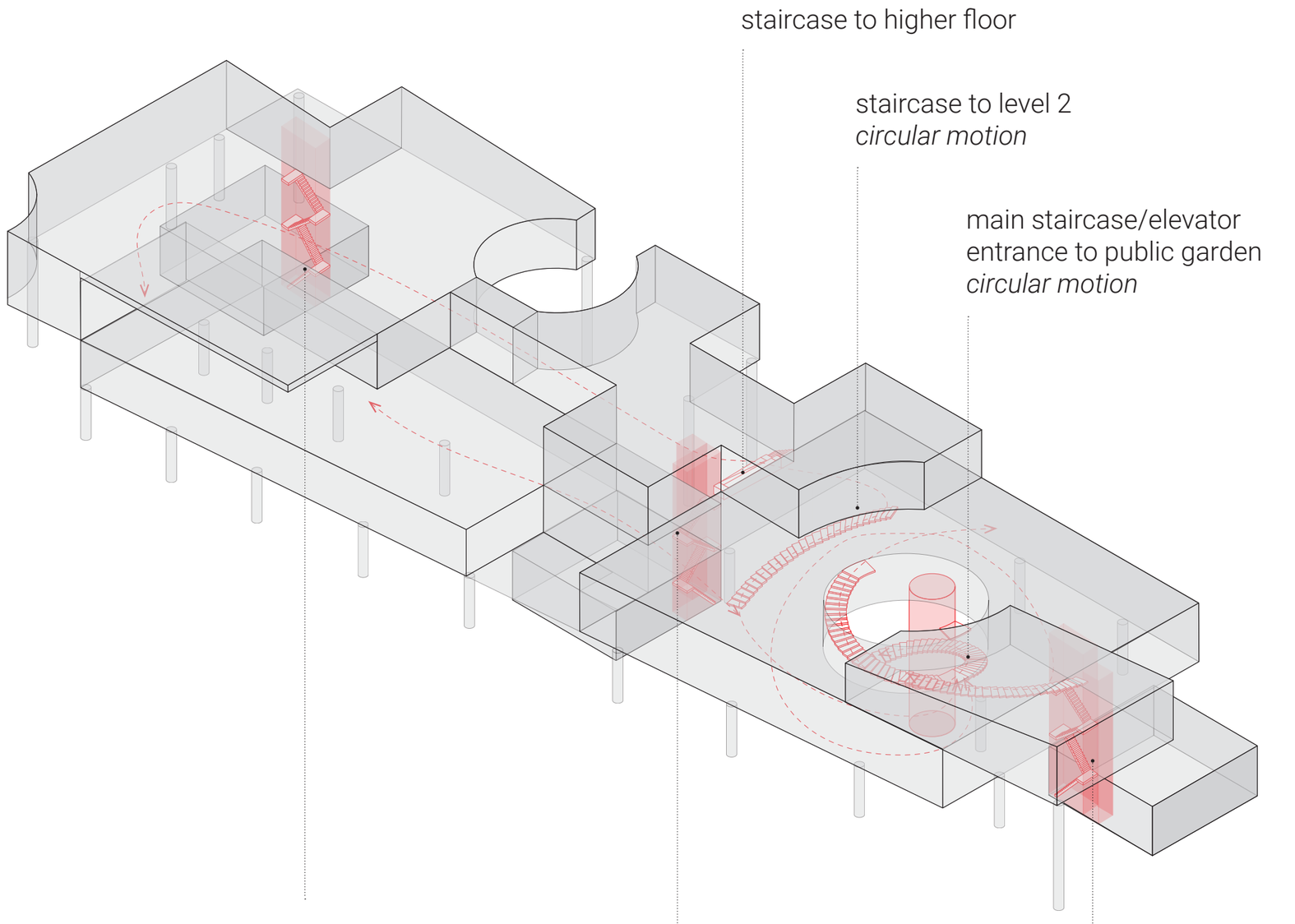
4. “formal” working space
5. meeting room (12p)
6. “informal working space
7. kitchen



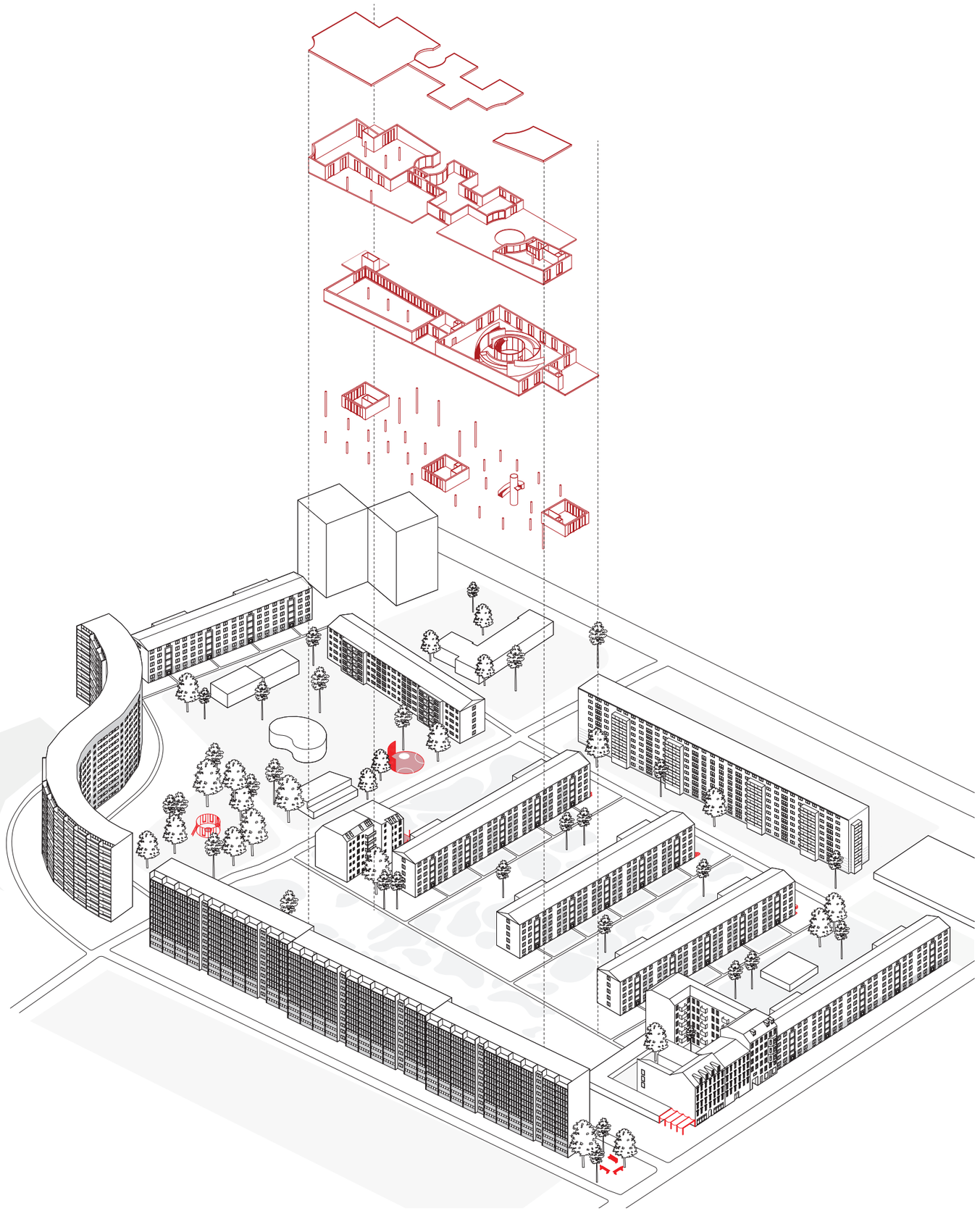


IMPRESSION INTERIOR ATMOSPHERE

CIRCULATION

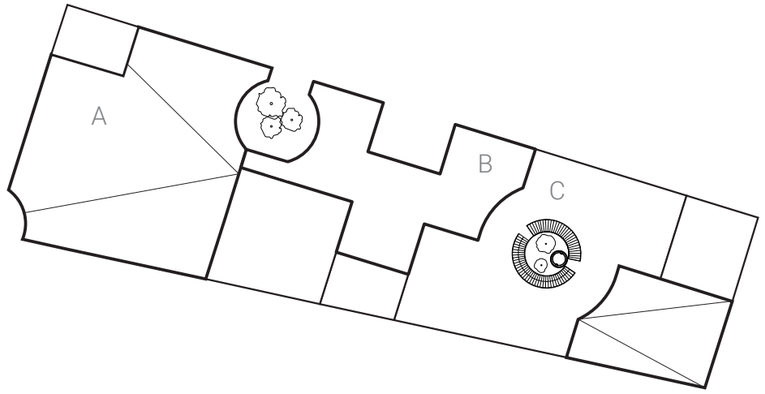


FRAGMENTATION AND STACKING

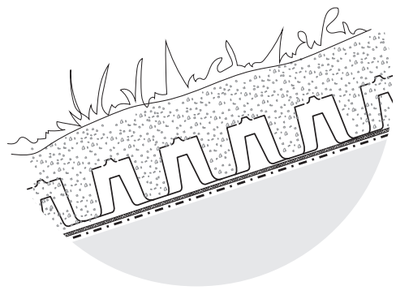


SUSTAINABILITY/CIRCULARITY APPROACH

1. Green roofs - Heat Island effect



A. sloped green roof

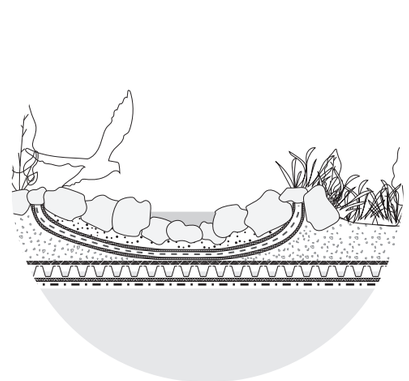


purpose: Thermal protection and reduction in heating and cooling costs

how:
- Substrate layer has to be protected against erosion
- Waterproofing should be root resistant

thickness = 130mm
(above roof construction)

B. biodiversity green roof

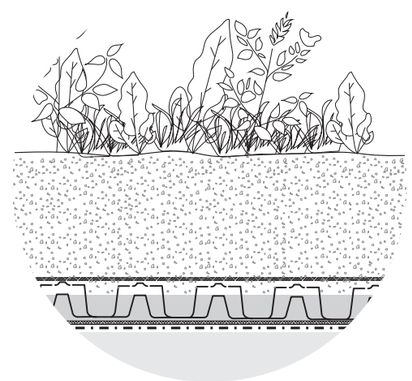


purpose: Providing Substitute Habitats for Flora and Fauna

how:
- Modulating the substrate surface
- Sand pockets and coarse gravel beds
- Temporary water bodies
- Plant selection, e.g. forage plants
- Nesting aids
- Introducing deadwood

thickness = ± 120mm
(above roof construction)

C. intensive green roof



purpose: Additional space for improved quality of life

how:
- Modulating the substrate surface
- Sand pockets and coarse gravel beds
- Temporary water bodies
- Plant selection, e.g. forage plants
- Nesting aids
- Introducing deadwood

thickness = > 270mm
(above roof construction)

CLIMATE DIAGRAM

S
5 °C

W
0 °C

E
-1 °C

trees lose leaves and allow for more sunlight to fall in during winter through circular openings

trees lose leaves and allow for more sunlight to fall in during winter through circular openings

East facing PV solar panels on green roof (green has cooling effect on the panels)

bio diversity green roof (new habitat for originial flora and fauna)

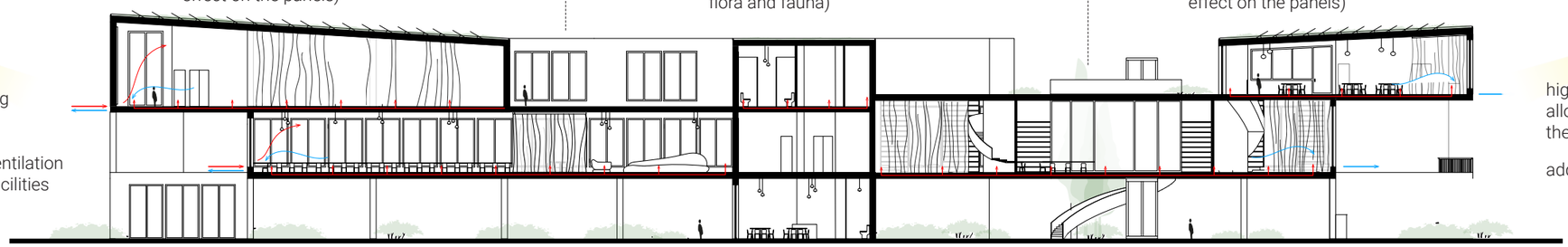
West facing PV solar panels on green roof (green has cooling effect on the panels)

higher West facing windows allow for more sunlight during the evening

decentralized ventilation system for all facilities

higher East facing windows allow for more sunlight during the morning)

added floor heating to all facilites



winter

S
24 °C

W
20 °C

E
18 °C

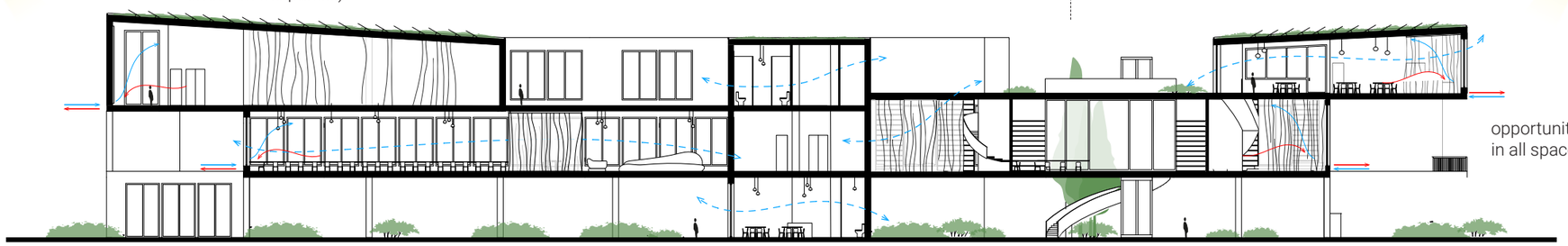
trees block direct sunlight but still allow for views to outside green

East facing PV solar panels on green roof (green has cooling effect on the panels)

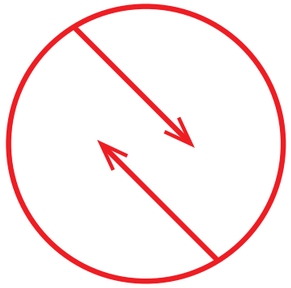
West facing PV solar panels on green roof (green has cooling effect on the panels)

decentralized ventilation system for all facilities

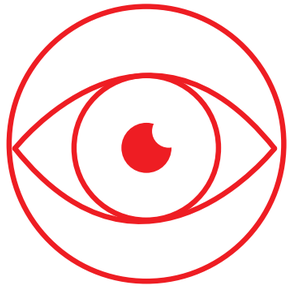
opportunity for natural ventilation in all spaces



summer



counteracting
context



engaging
senses

sound
dampener

biobased/
sustainable

LIFECYCLE BUILDING MATERIALS

Forests absorb CO2 from the atmosphere

Trees are a renewable resource and store carbon

Manufacturing processes typically use all parts of the log, producing no waste and little pollution

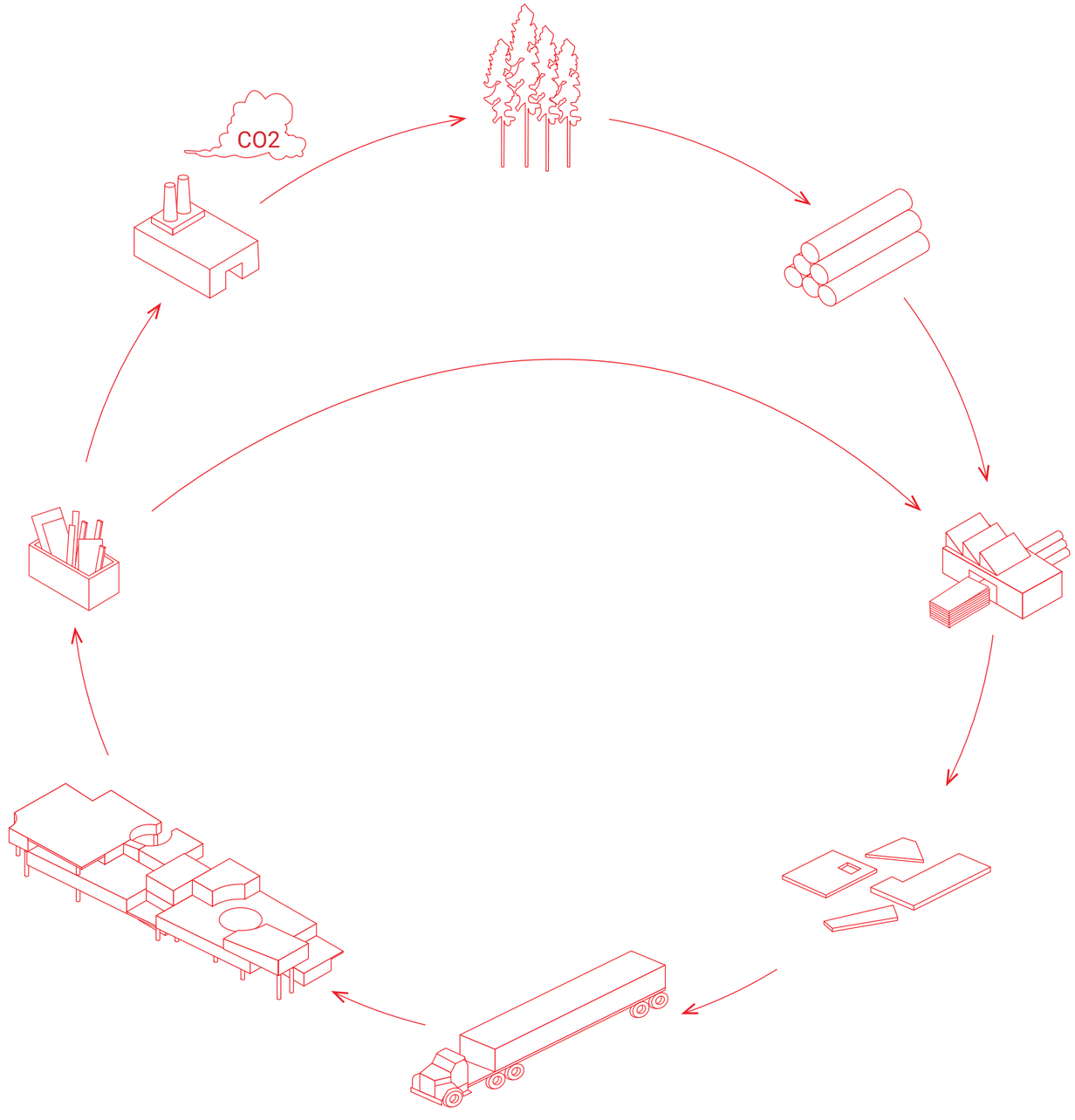
Cutting and planing of the panels for more efficient construction

Transportation

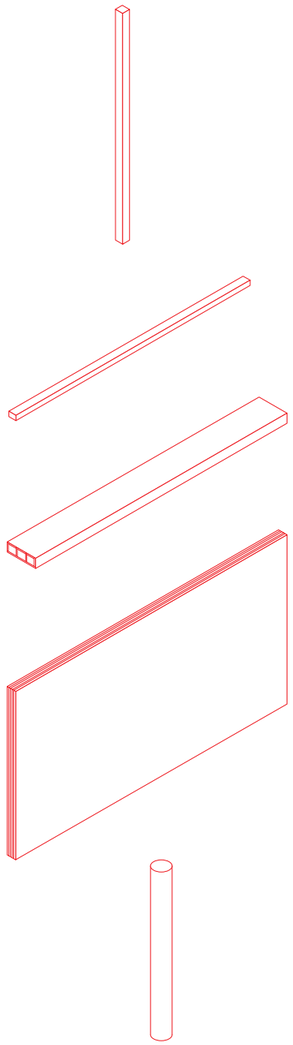
Timber buildings store carbon in their structures for the period of their maintained life

Wood products can be reused or recycled to create new products

Wood can be burned for clean energy



STRUCTURAL PRINCIPLES



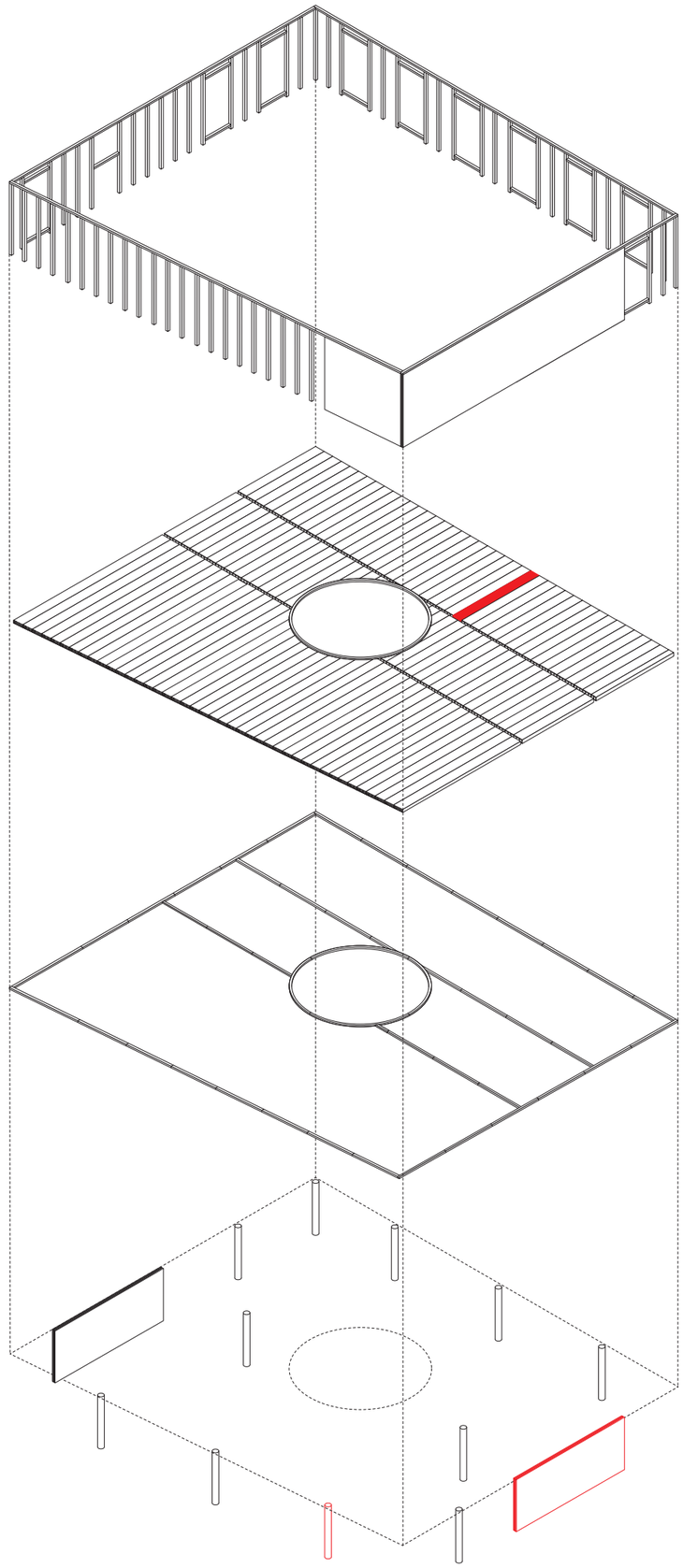
timber post
w = 160 mm
d = 60 mm

timber beam
h = 60 mm
d = 160 mm

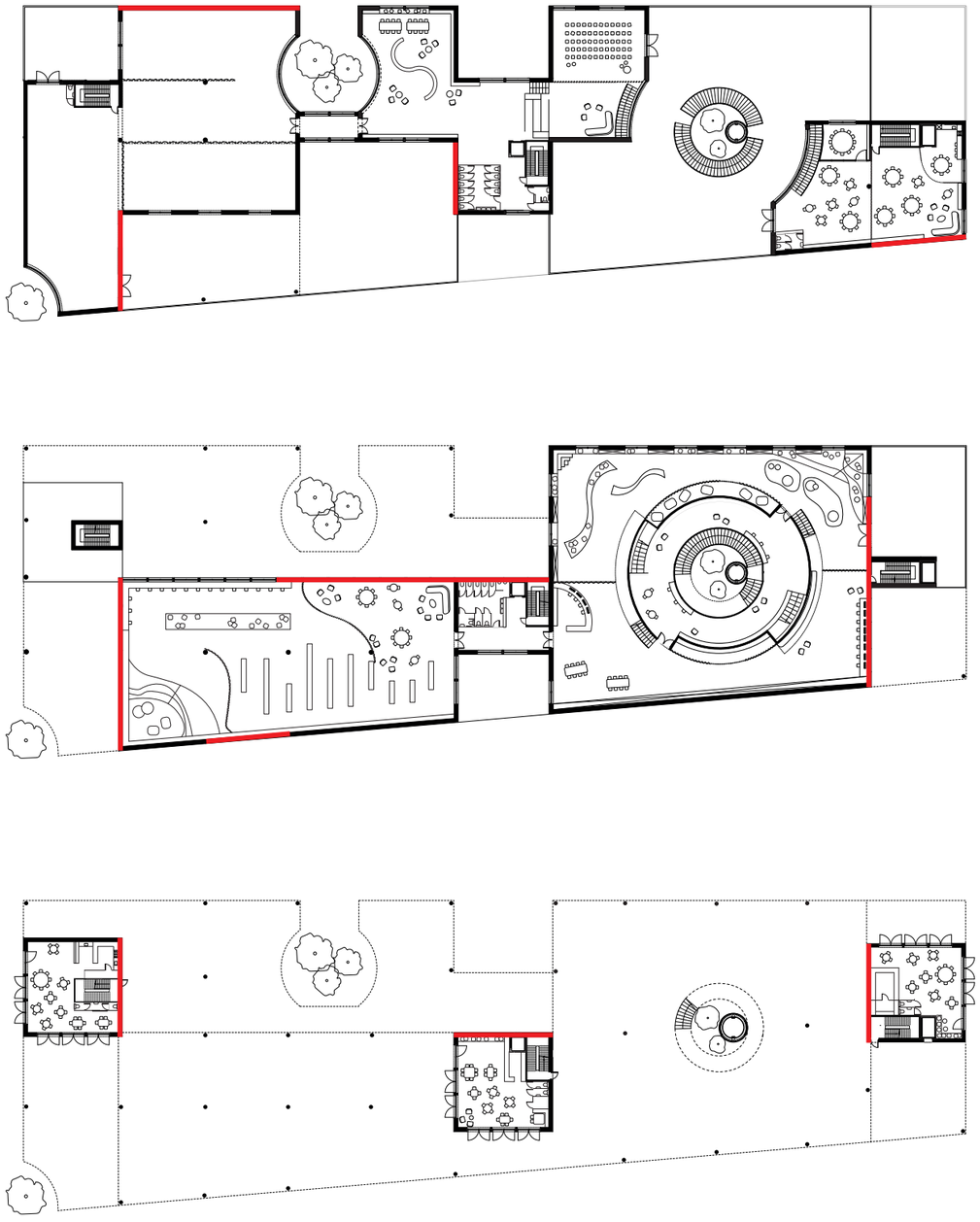
Lignatur element
h = 320 mm
d =1000 mm

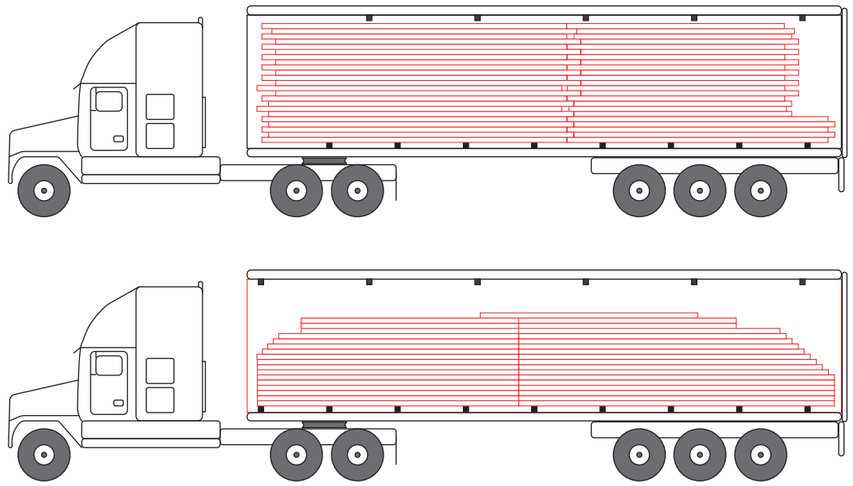
CLT bracing wall
t = 166 mm

timber column
d = 400 mm



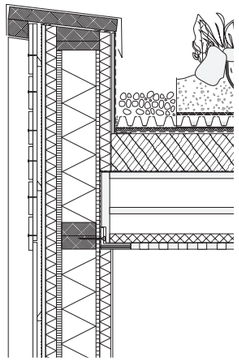
CLT BRACING WALLS





STRUCTURAL PRINCIPLES - DETAILS

1



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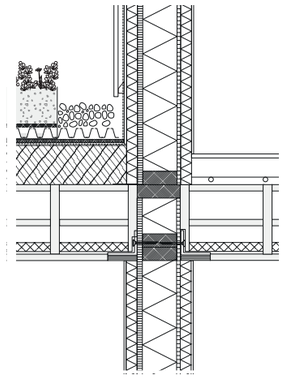

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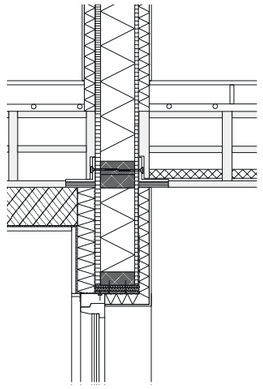

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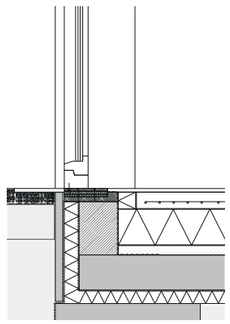
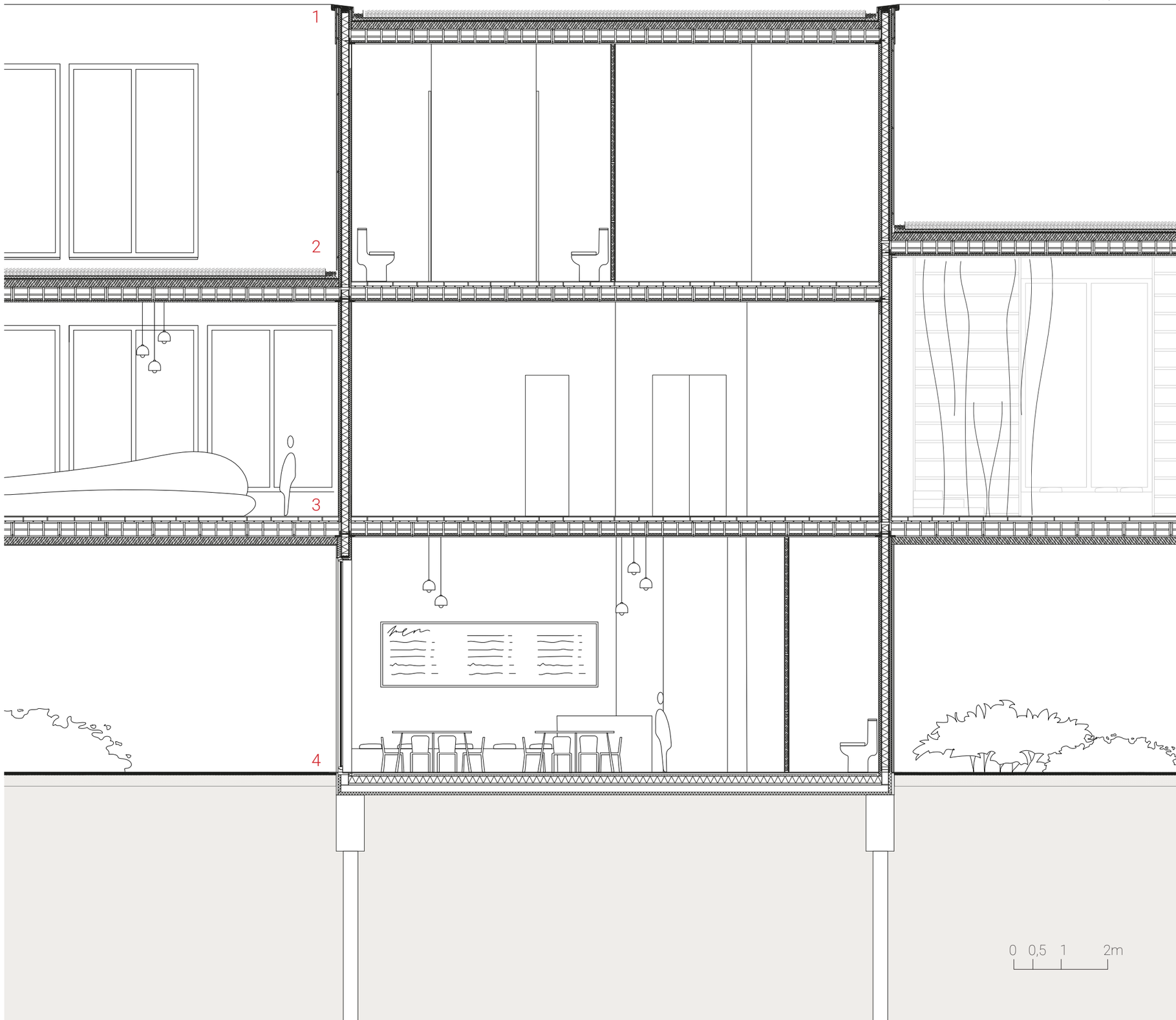
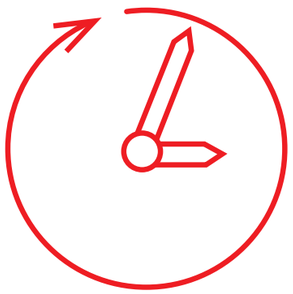




WHY SIBERIAN LARCH?



natural
durability

dense
annual rings

natural rot
resistant

LIFECYCLE FACADE MATERIAL

Larch forest proivded by
HIT HOLZ

Manufacturing processes typically use all parts of the log, producing no waste and little pollution

Transportation to factory by trucks or rail. Max. distance forest to factory 200km

Sawing of the plates

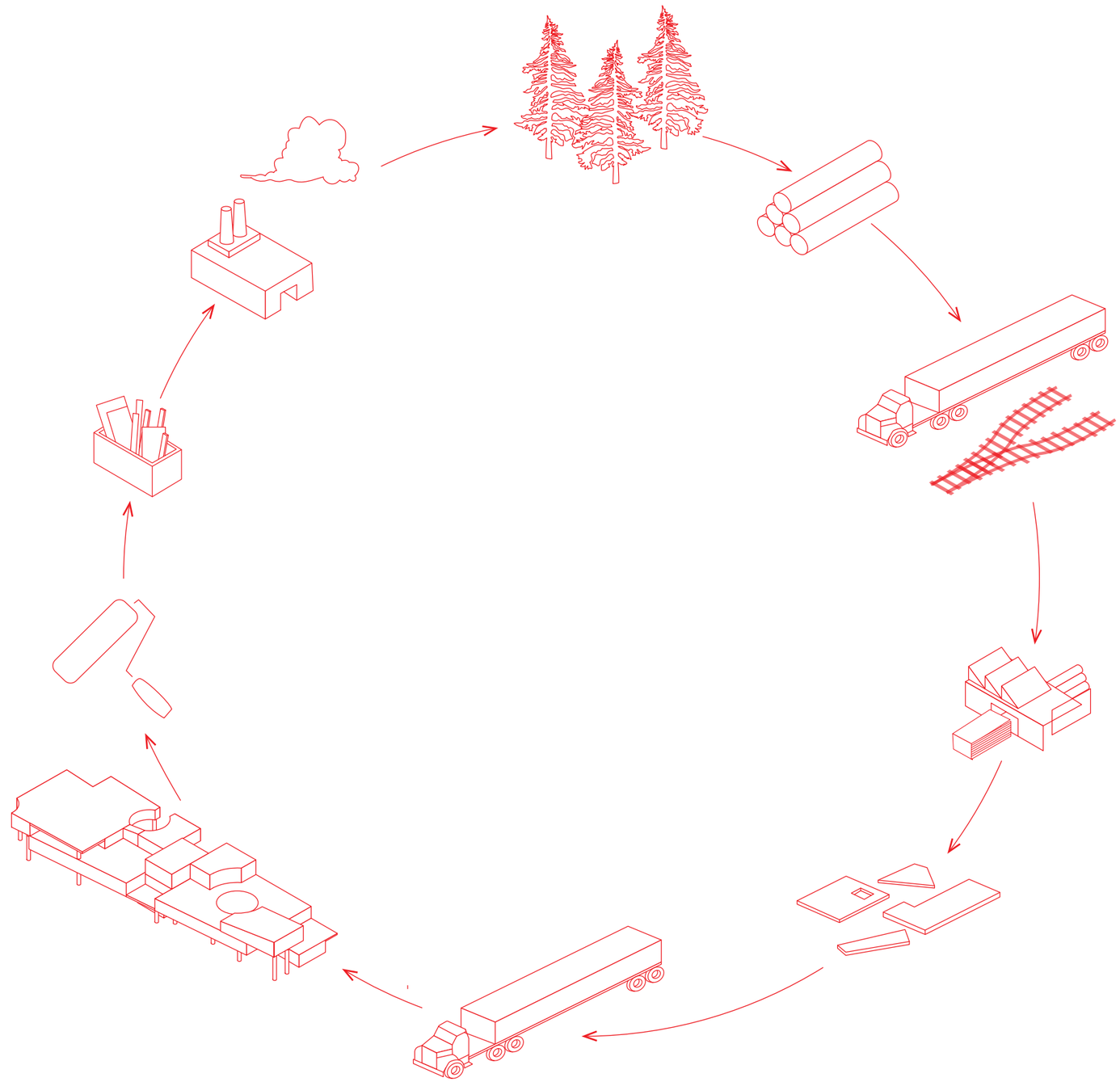
Cutting and planing of the panels for more efficient construction

Transportation from Torgau to Berlin

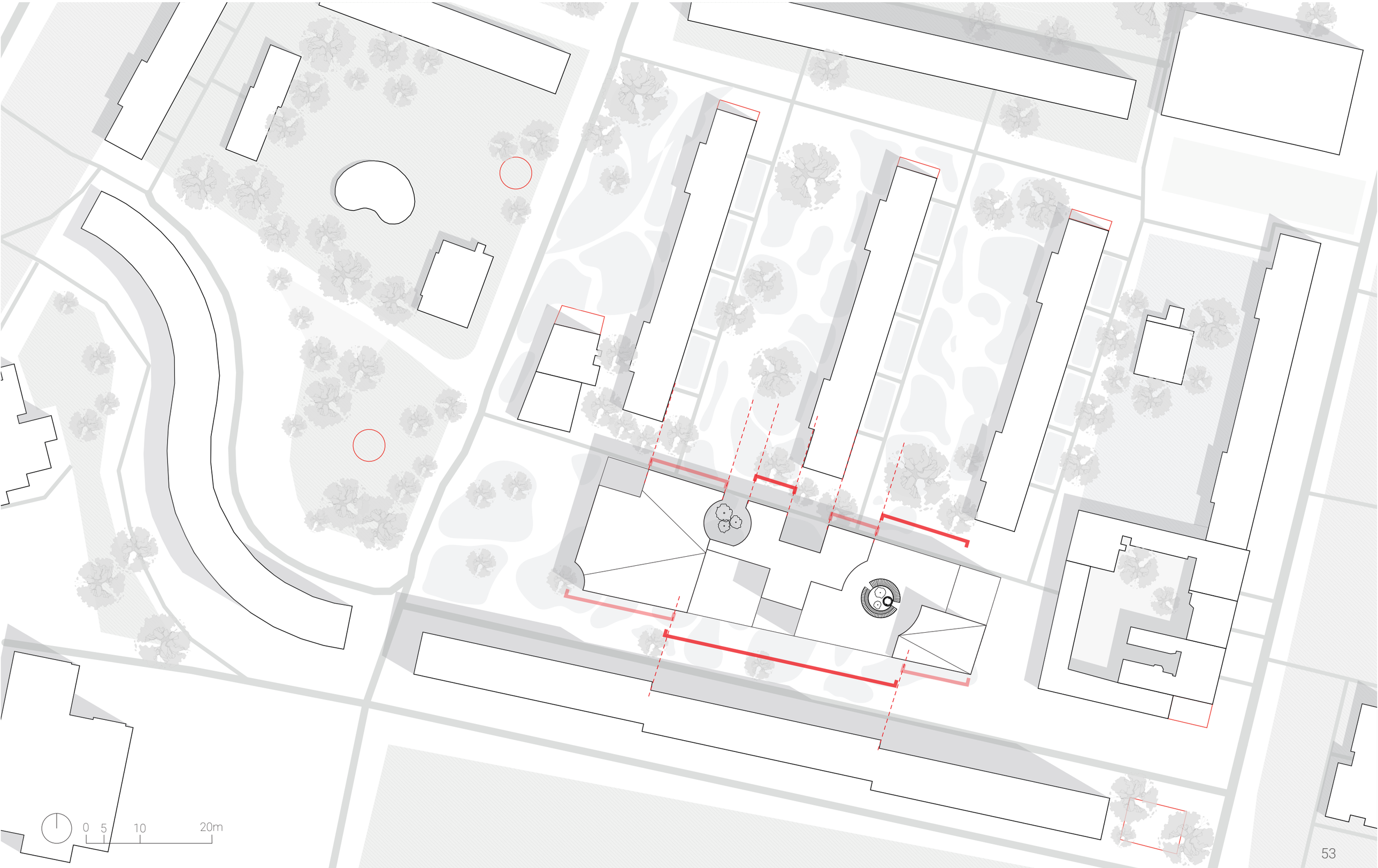
Oil treatment to ensure UV and water protection. Colour preservation over time

Wood products can be reused or recycled to create new products

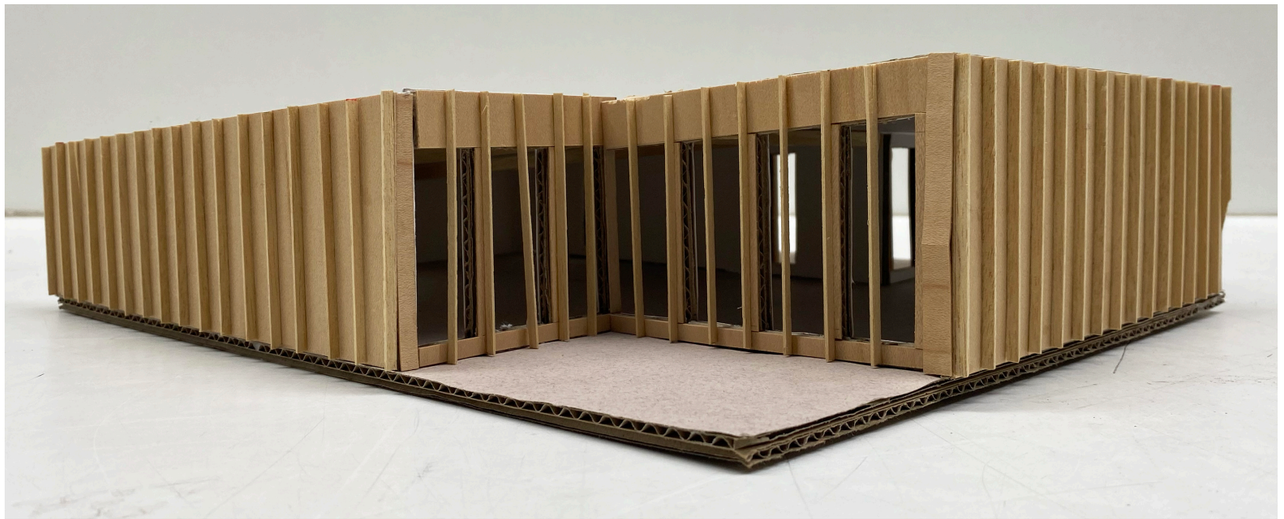
Wood can be burned for clean energy

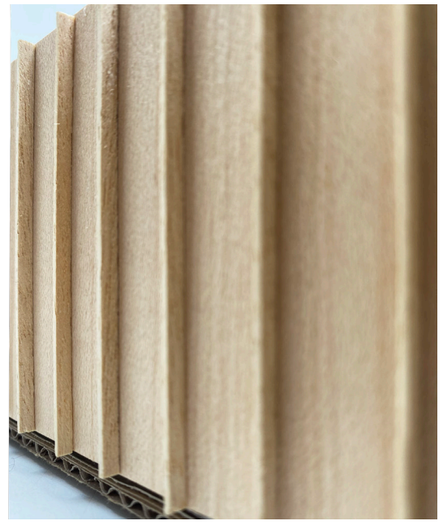


FACADE PRINCIPLES

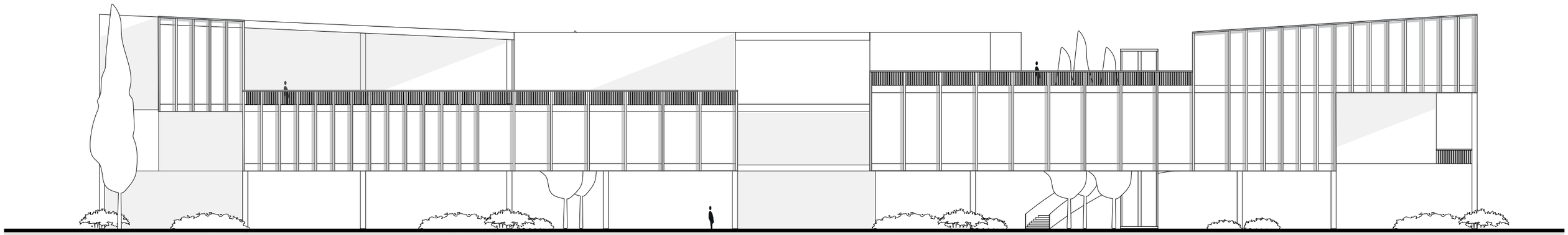


PROCESS MODEL





ELEVATIONS

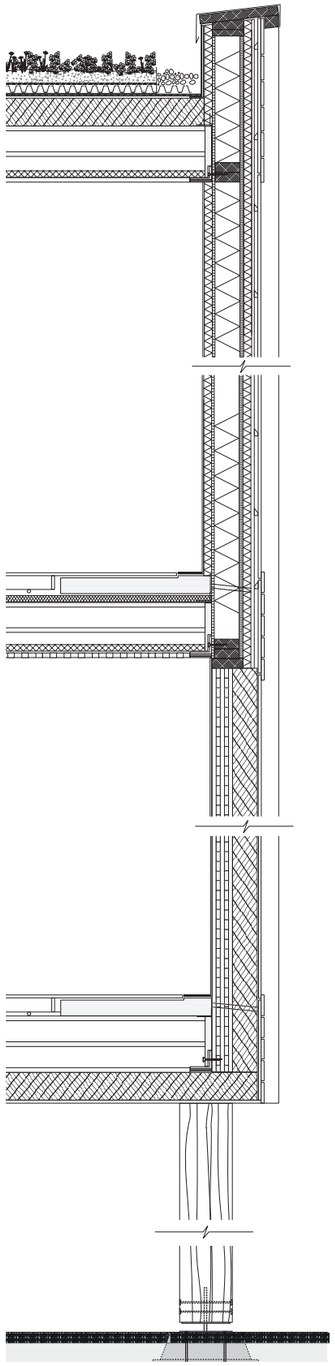


South

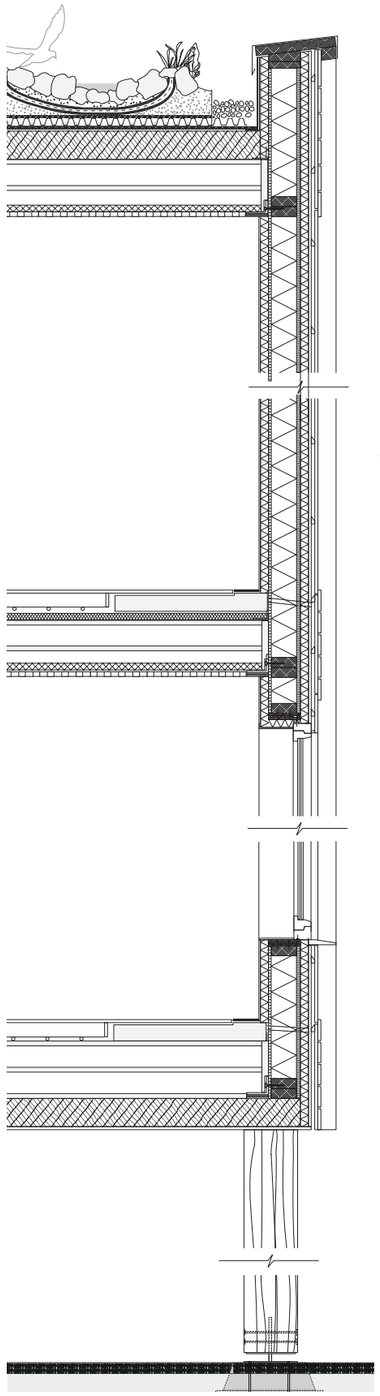
North

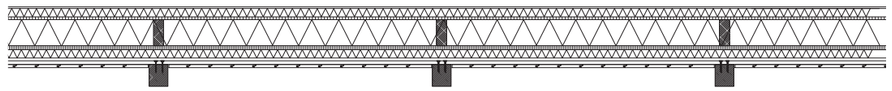
TYPICAL SECTIONS

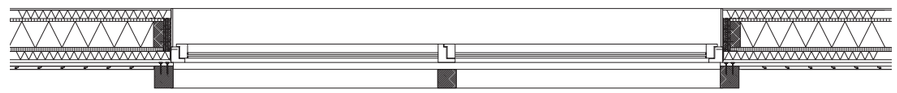
timber frame +
CLT bracing element



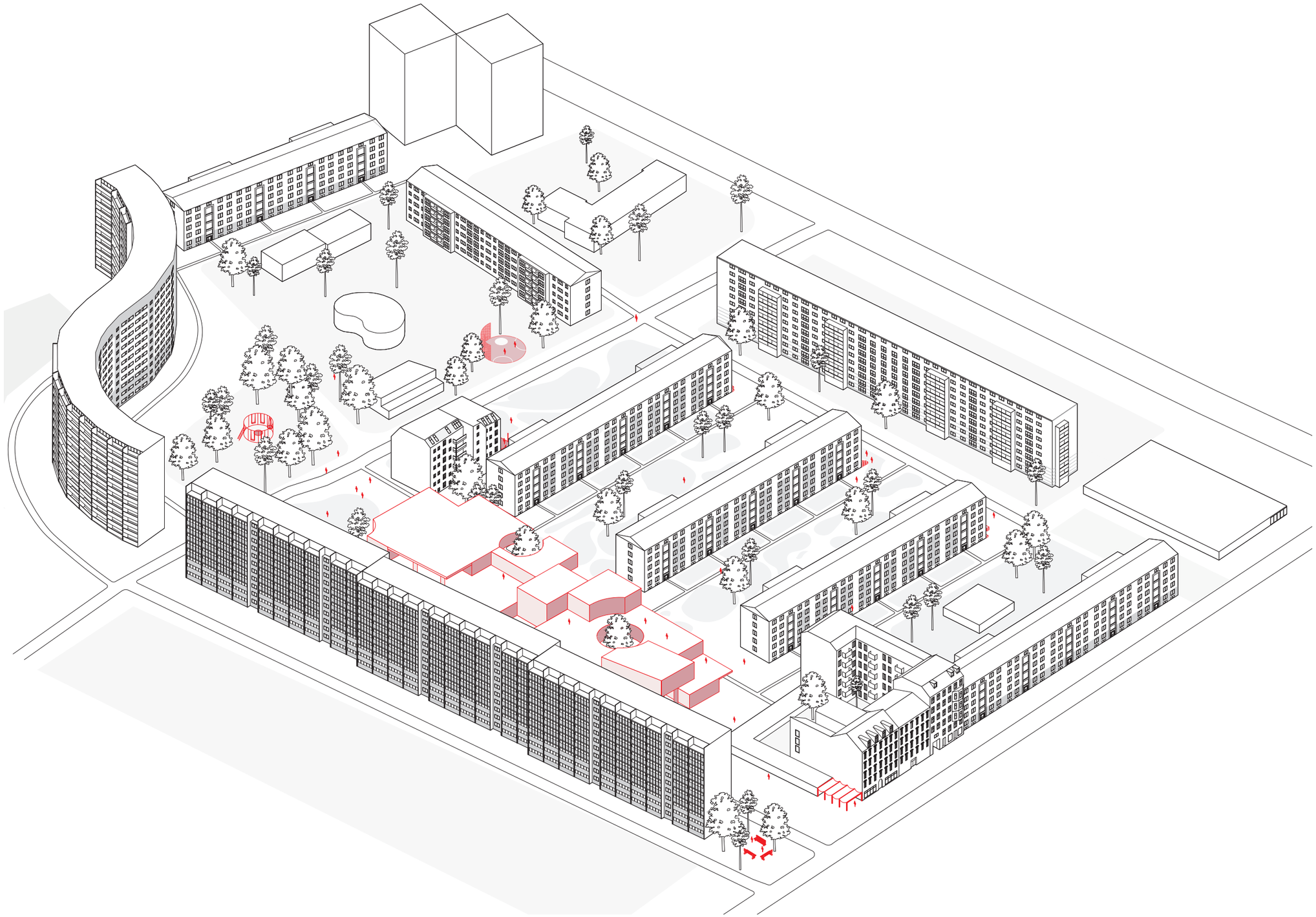
timber frame







0 0,2 0,5 1m



THE INVISIBLE MAGNET:
UNLOCKING DISCOVERY, ENCOUNTER AND INTERACTION.

PUBLIC BUILDING
GRADUATION STUDIO
AR3AP100 MSC 3/4 2022-23
P5 - ROSALIE GRANATA
5625939