

A.R.C.

ARMED FORCES REHABILITATION CENTER

Niels Steverink - 4626559
Revitalising Heritage -AR3AH110
Graduation P4 Presentation
12-12-2019

HEMBRUG LOCATION



52.422476, 4.833453



HAARLEM

ZAANDAM

AMSTERDAM

AMSTERDAM



Zijkanaal
G

Provincialeweg

Provincialeweg

Provincialeweg

Zijkanaal
G

Noordzeekanaal

Isaac Baarhaven

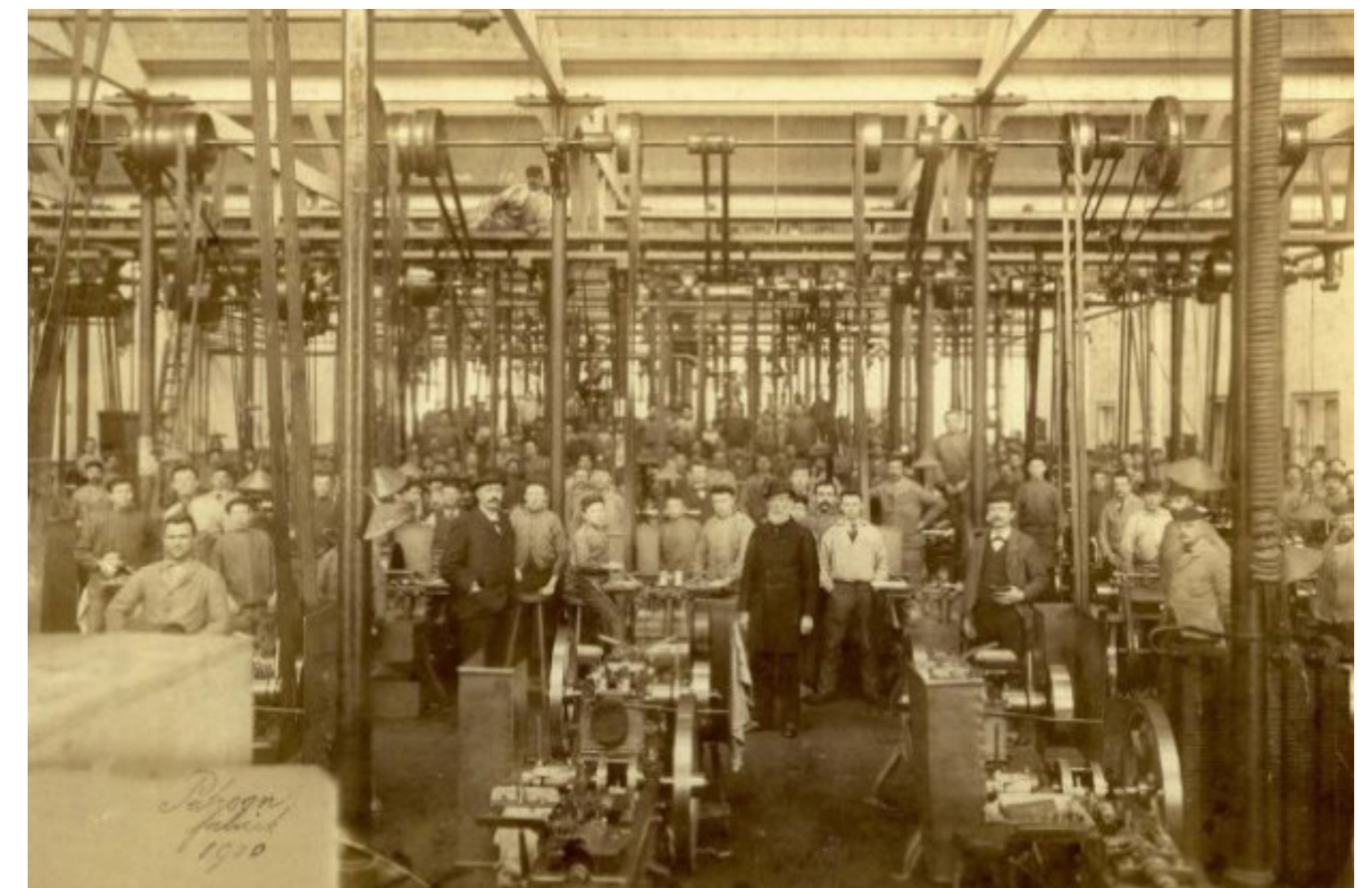
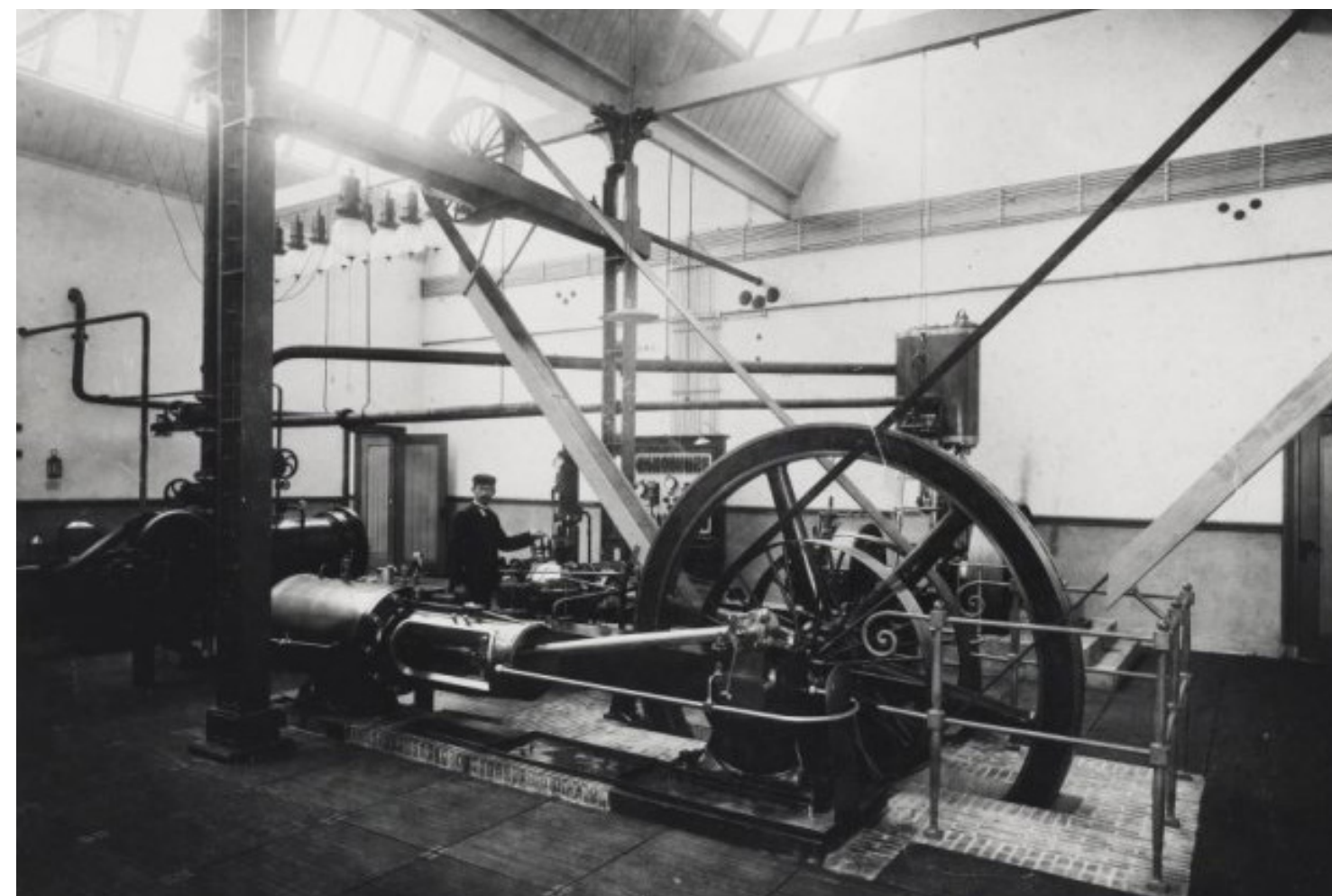
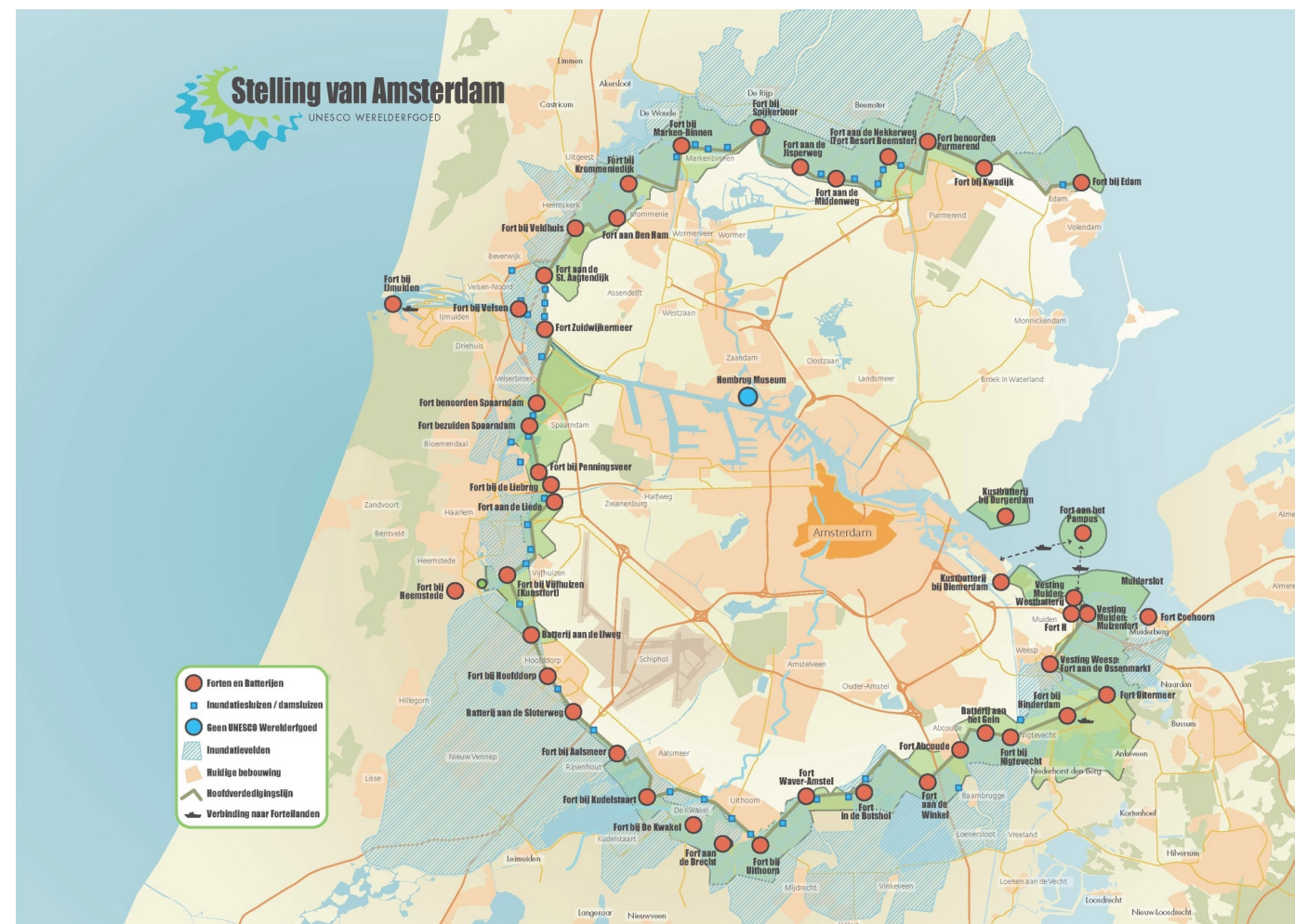
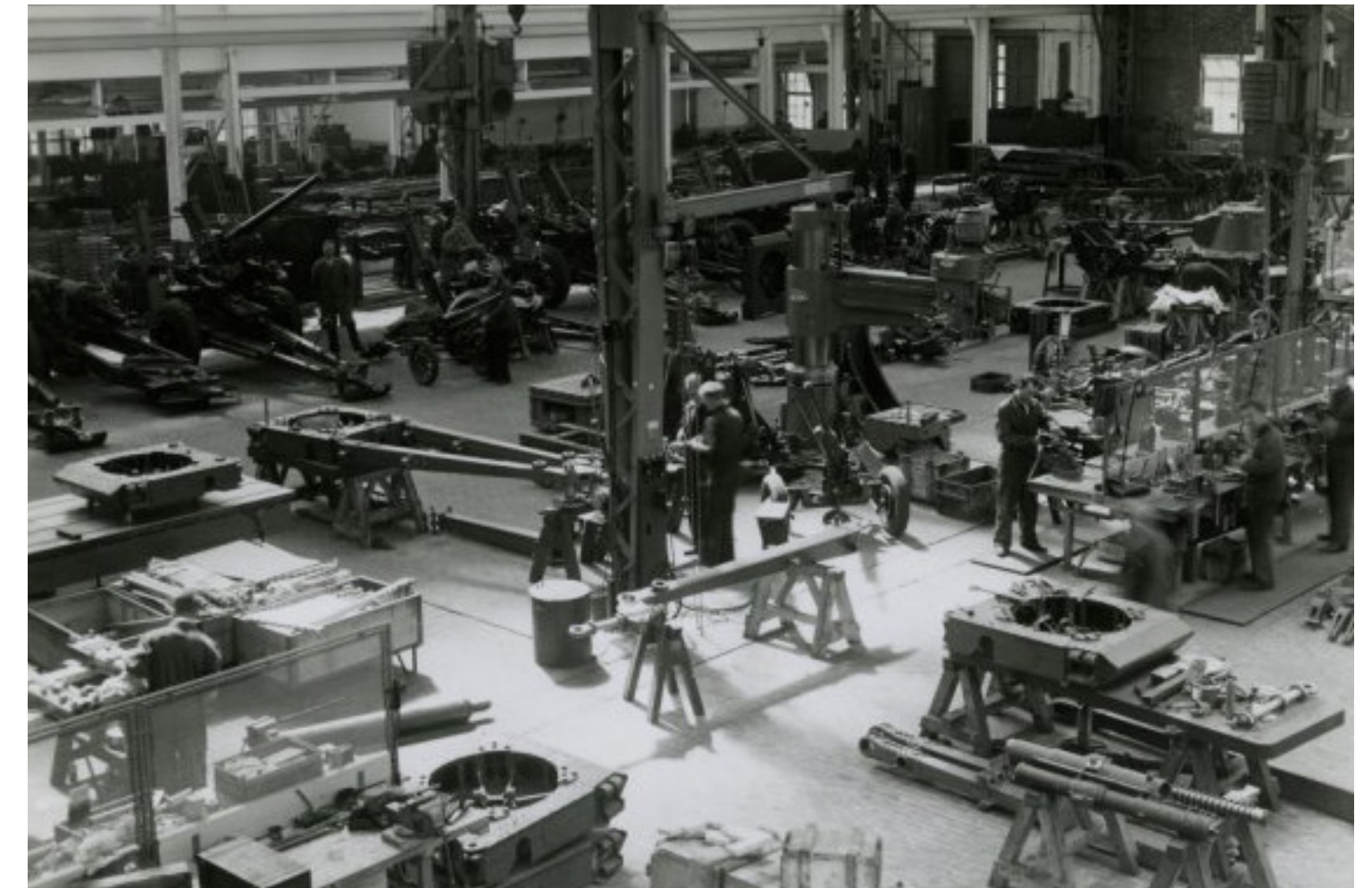
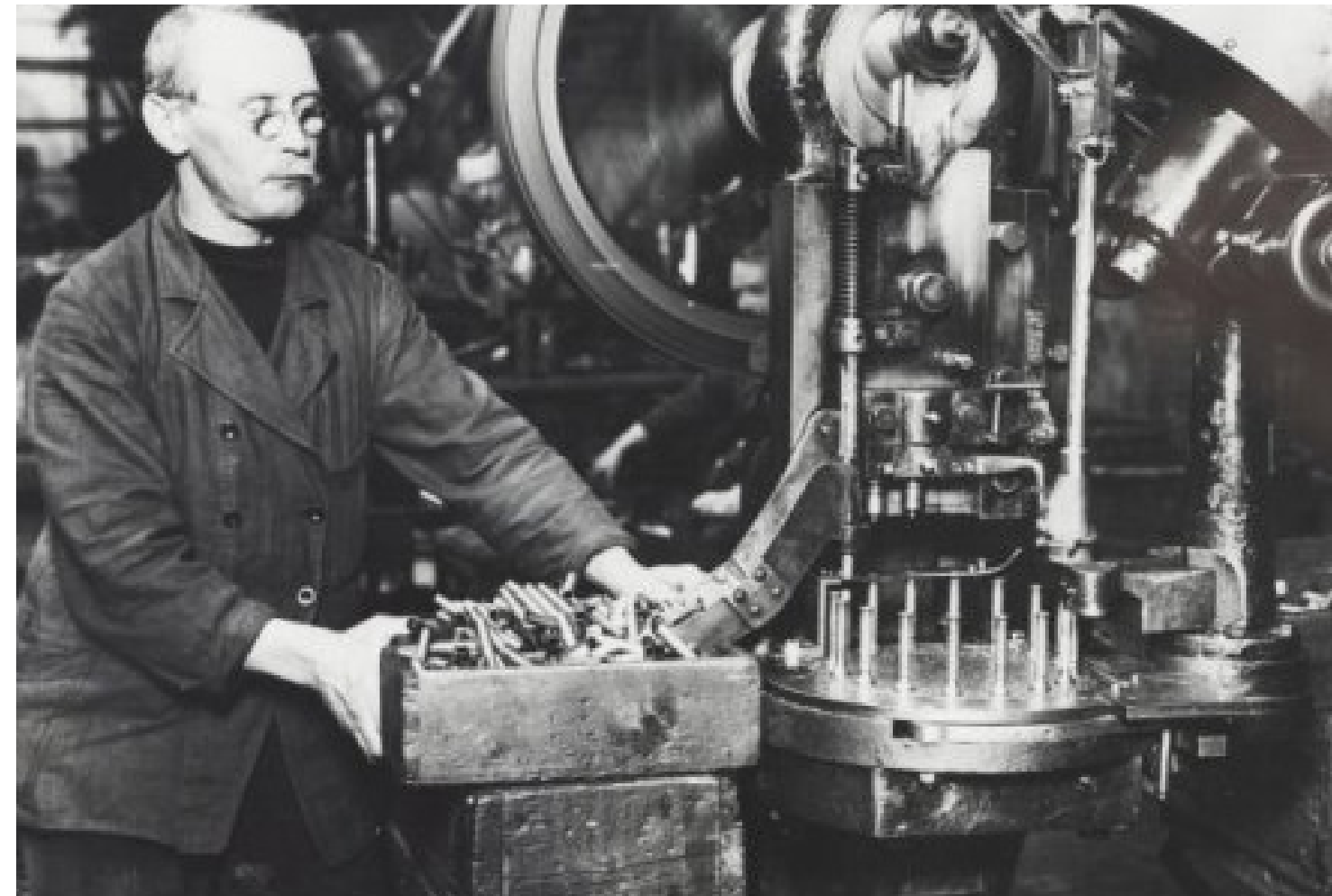
Dirk Metselaarhaven

Sportpark P...



HEMBRUG HISTORY

- Artillery production site
- Military functions
- Secluded/private
- Large scale machinery
- Industrial buildings
- 100 years of operation
- Stelling van Amsterdam
- Private community

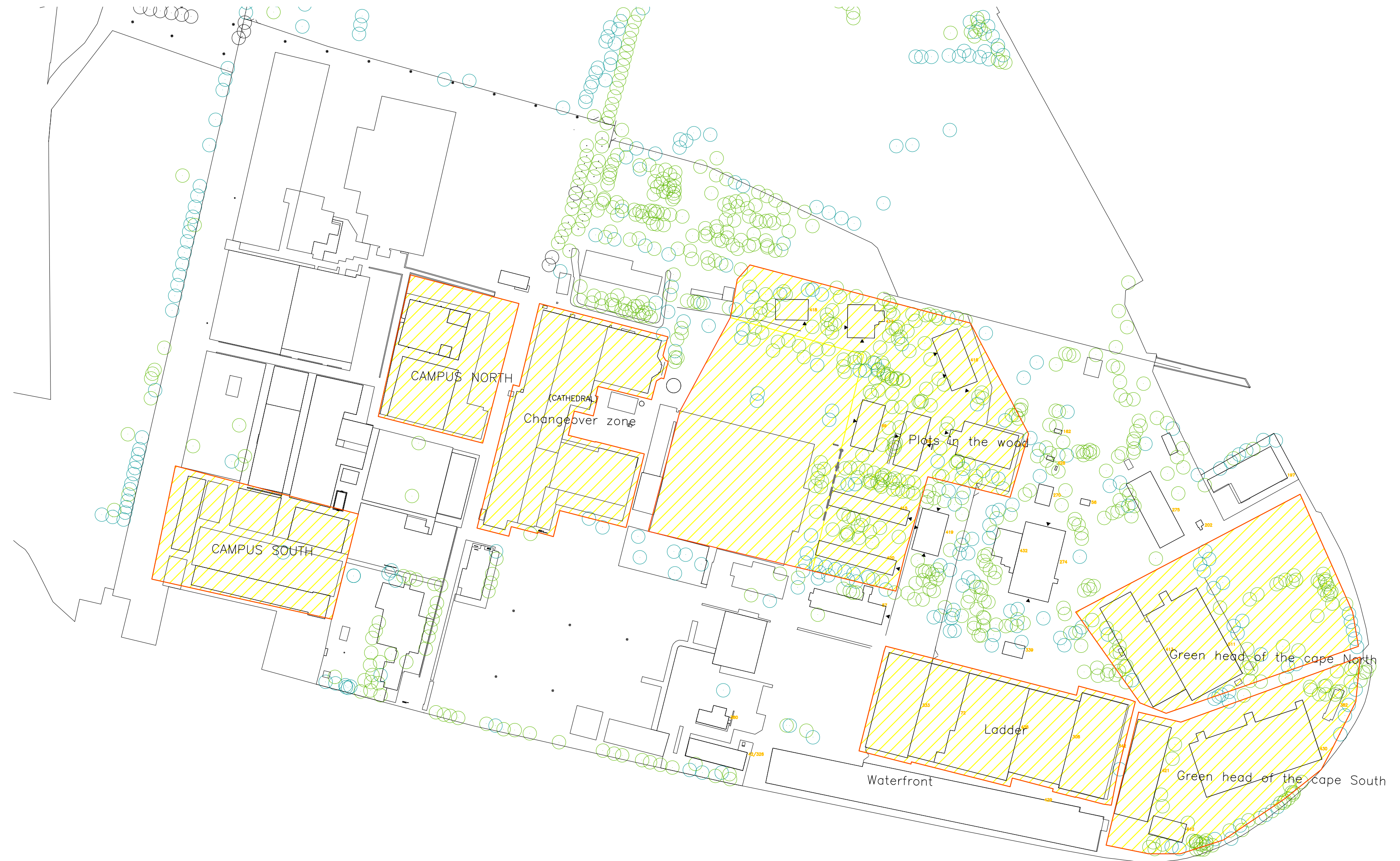


HEMBRUG CURRENT

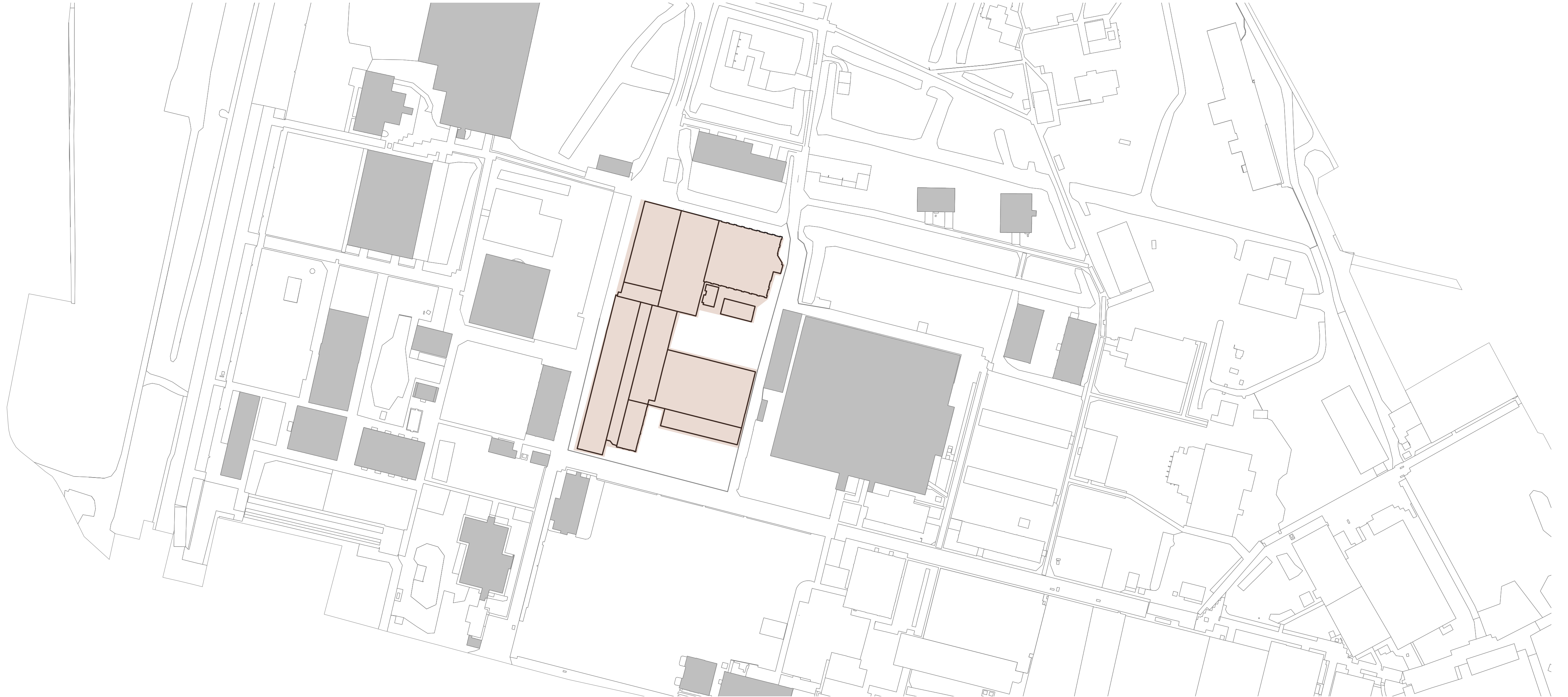
Abandoned
Historic
Quiet
Constructions
Patina
Green



MAP OF CURRENT HEMBRUG PENINSULA



CHANGEOVERZONE ENSEMBLE

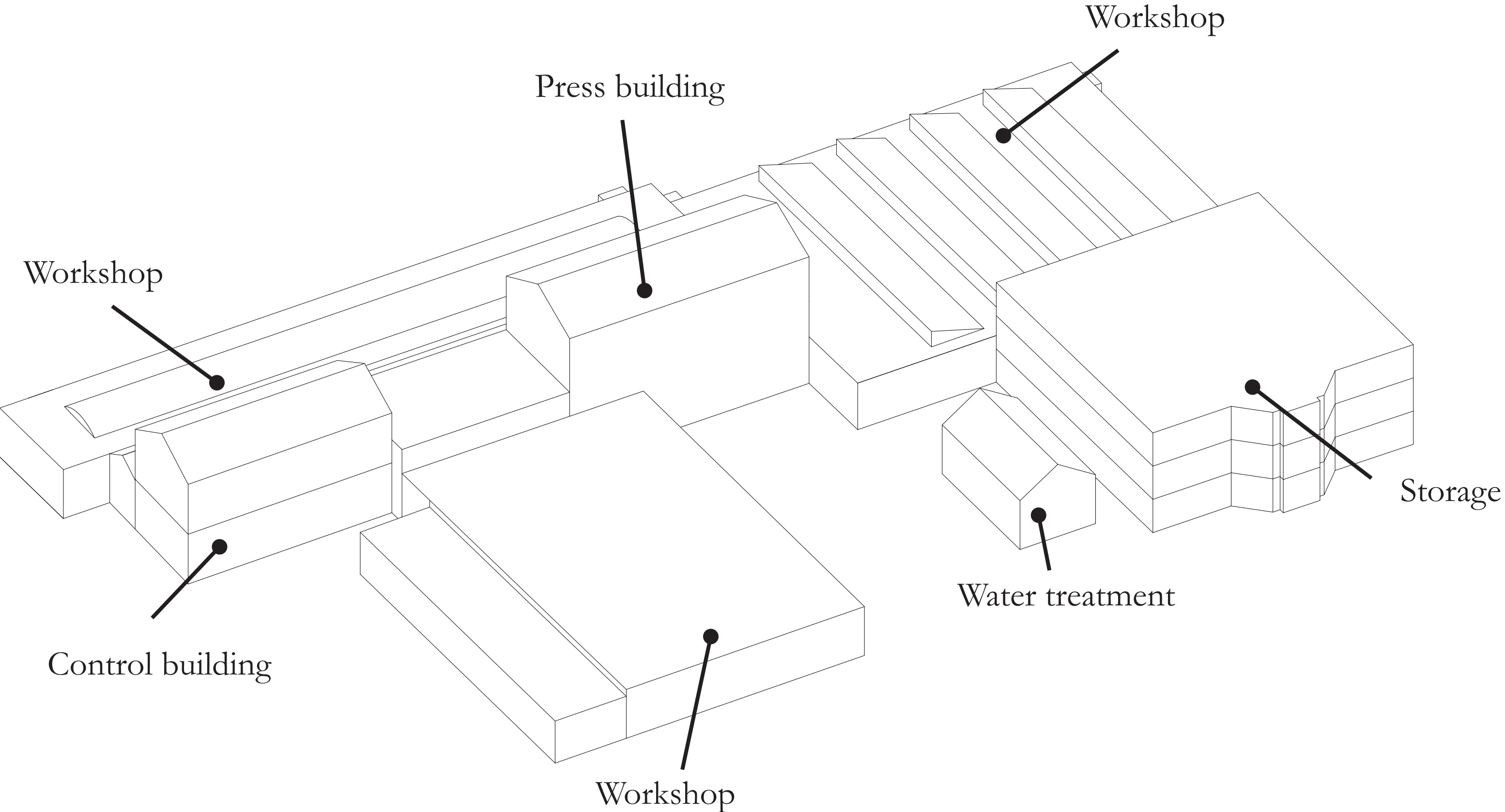


SITUATION

- Centrally located
- Main roads on south and west side
- Smaller road on east side
- Forrest towards North
- River view towards south

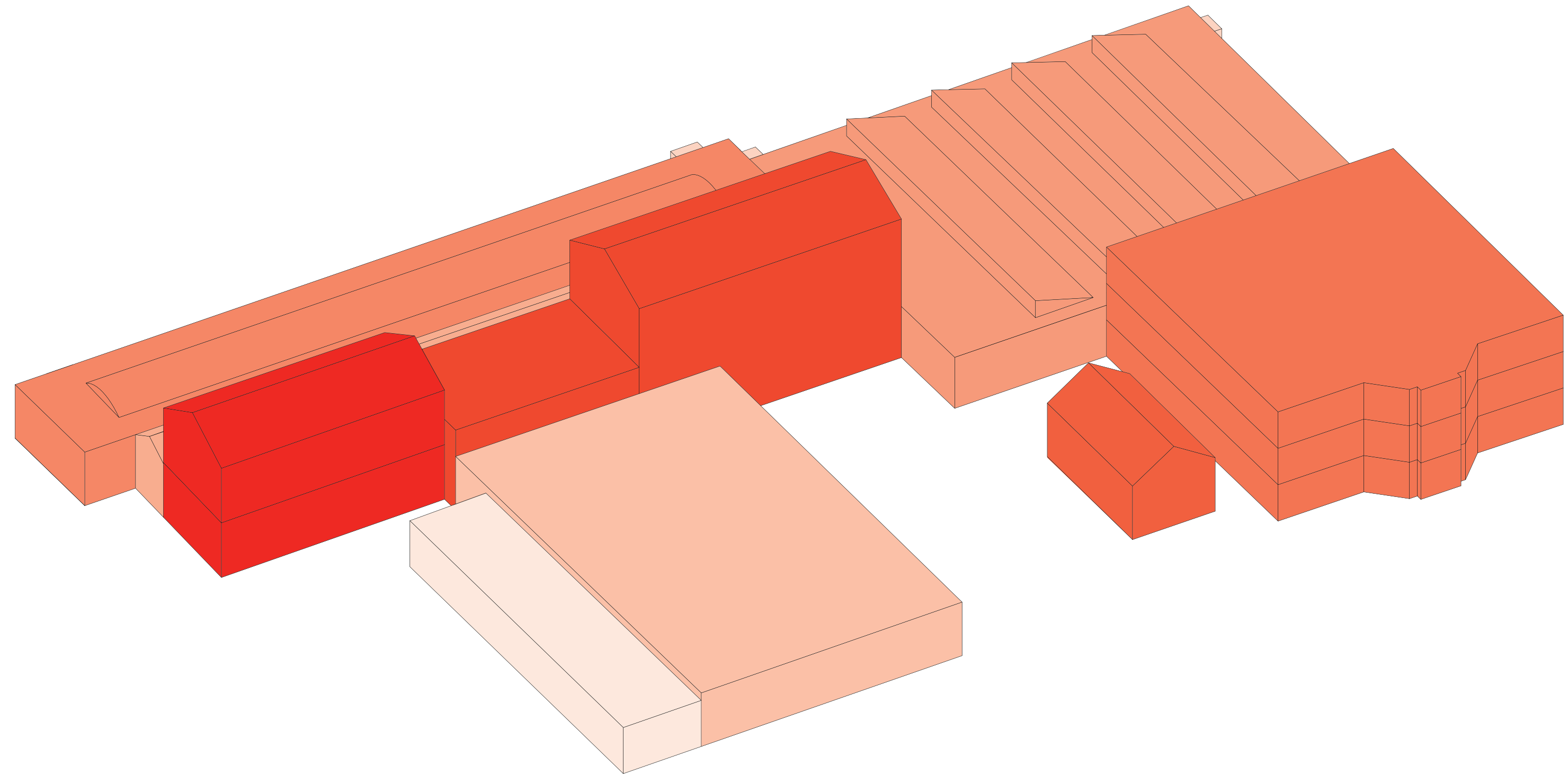


CHANGEOVERZONE ENSEMBLE



BUILDING AGE

- Building 29 (1900s)
- Building 112 (1920s)
- Building 91 (1920s)
- Building 269 (early 1930s)
- Building 294 (early 1930s)
- Building 322A/B (mid 1930s)
- Building 330 (1940s)
- Building 407 (1960s)
- Building 431 (1990s)
- Building 437 (1990s)



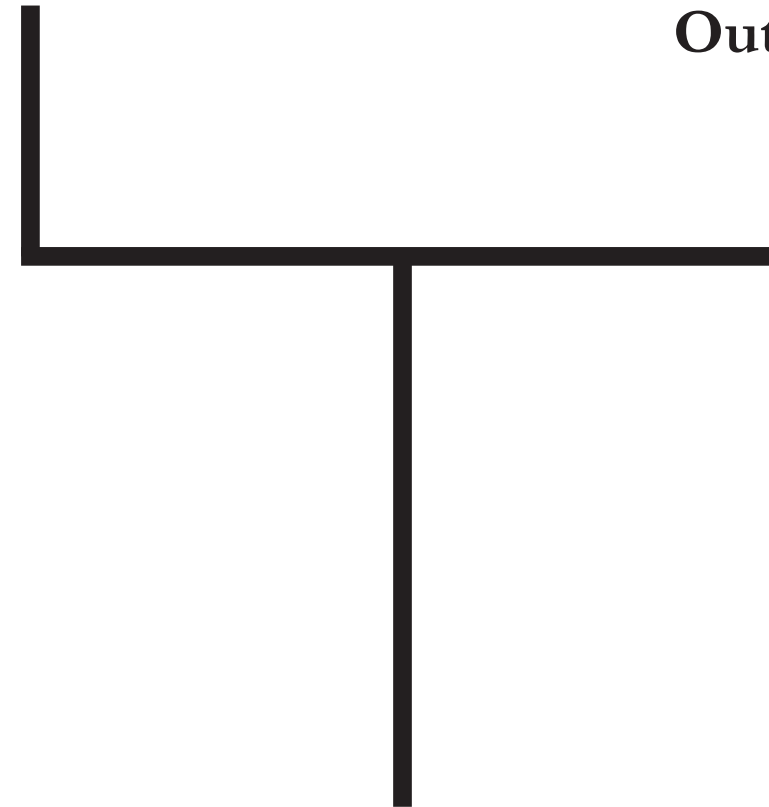


Representation of 100 years of functional architecture
“Grown” Together but still individual
Visible construction
Brickwork in all buildings
Traditional construction methods
Visible services
Roof lights
Outdoor area

CONCEPT

Hidden between major cities
Strong military connection
“Undiscovered”
Closed off from the outside
Mechanical engineering
Large machinery
Private community

Representation of 100 years of functional architecture
“Grown” Together but still individual
Visible construction
Brickwork in all buildings
Traditional construction methods
Visible services
Roof lights
Outdoor area



A new military function
A semi-public function
A secluded function
A needed function
A function using the existing structures
Diverse functions

CONCEPT

“Veterans returning from combat often face a multitude of challenges: Debilitating physical and psychological conditions, a civil society that does not support and even actively criticizes the war from which the soldiers have returned, or personal and family circumstances that changed while they were away. These and many other factors can create a situation in which veterans are unable to reintegrate into civilian life as they had planned and hoped.”

WORK: A Journal of Prevention, Assessment & Rehabilitation

10% of Dutch soldier report physical injuries in need of assistance 6 months after leaving the armed forces. 12% of Dutch soldier report depression 6 months after leaving the armed forces. 3600 people left the Dutch armed forces in 2016

Veteranennote 2016-2017



ARMED FORCES REHABILITATION CENTER

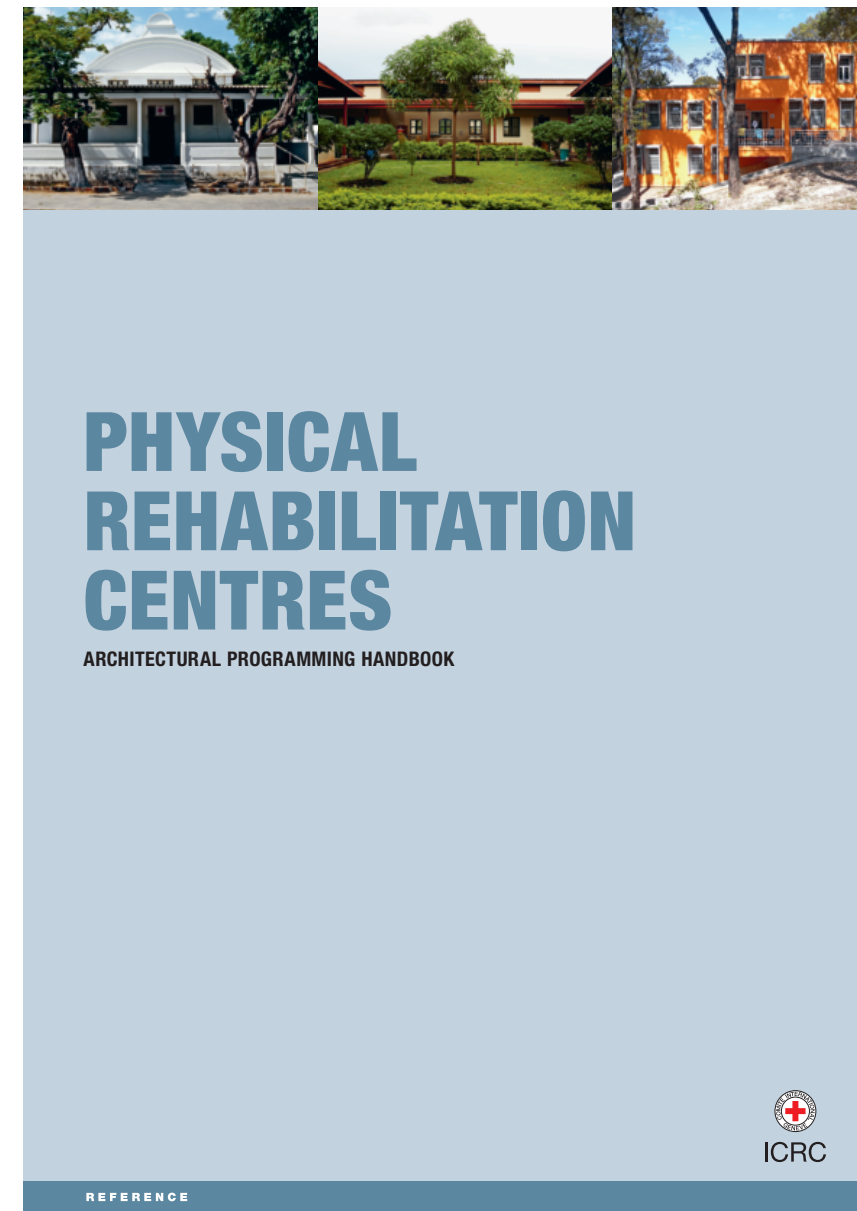
**2nd phase care facility with
a focus on mental and physical return to society after
initial care has been received.**

RESEARCH DATA

Eliminate: Dark corridors
Cold artificial lights
Boring Finish
Primitive furniture
Hospital style care
Locked up feeling

“Design rehabilitation centers as a city on their own”

Create: Space for activities
Libraries
Gyms
Food points
Cinemas
Active and quiet spaces
Flexible spaces for multiple activities
A community
Joint residence with family
More “humanized buildings”
More personal comfort



Architectuur voor de gezondheidszorg – revalidatiekliniek 'Groot Klimmendaal' door Koen van Velsen

Date: 8 januari 2013
Author: pepijnbakker
Categorie: 2000-2010, arnhem, gezondheidszorg
Tags: 2000, architectuur, arnhem, gezondheidszorg, groot klimmendaal, healing environment, kliniek, koen van velsen, ziekenhuis, ziekenhuisarchitectuur

← Waarom ik deze weblog schrijf.
Berlages laatste saluut: Het Gemeentemuseum in Den Haag →



DOI: 10.21005/pif.2018.35.B-04

PROBLEMS OF ARCHITECTURAL FORMATION OF MILITARY CLINIC REHABILITATION CENTERS
PROJEKTOWANIE MILITARNYCH CENTRÓW REHABILITACYJNYCH

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ABSTRACT

Modern experience of designing rehabilitation facilities for military personnel is very small and is represented mainly by mobile hospitals. The complexity and multivision of the problem under consideration indicates the necessity of its further in-depth study. From the above material it can be concluded that the architecture of the BMRC today is redirected to a rapid change in the processes of treatment, technological equipment.

Key words: Clinical and Rehabilitation Center, Medical Complex, Treatment Process, architectural formation.

STRESZCZENIE

Współczesne doświadczenia w projektowaniu zaplecza rehabilitacyjnego dla personelu wojskowego jest niewielkie i skupione głównie przy szpitalach mobilnych. Złożoność rozpatrywanego problemu wskazuje na konieczność jego pogłębionej analizy. Z powyższego materiału można wywnioskować, że architektura BMRC jest dziś przekierowana na szybką zmianę procesów leczenia oraz urządzeń technologicznych.

Słowa kluczowe: Centrum Kliniczno-Rehabilitacyjne, Kompleks Medyczny, Proces Leczenia, projektowanie architektoniczne.

ORGANISATIONAL APPROACH

Create a organisationally centralised but functionally separated community, creating multiple levels of privacy and opportunities for interaction.

DESIGN APPROACH

Use the tough exterior and existing age and patina of the industrial buildings as a backdrop for a phase 2 rehabilitation centre



ARCHITECTURAL VISION

Historic Hembrug as stimulating healing environment

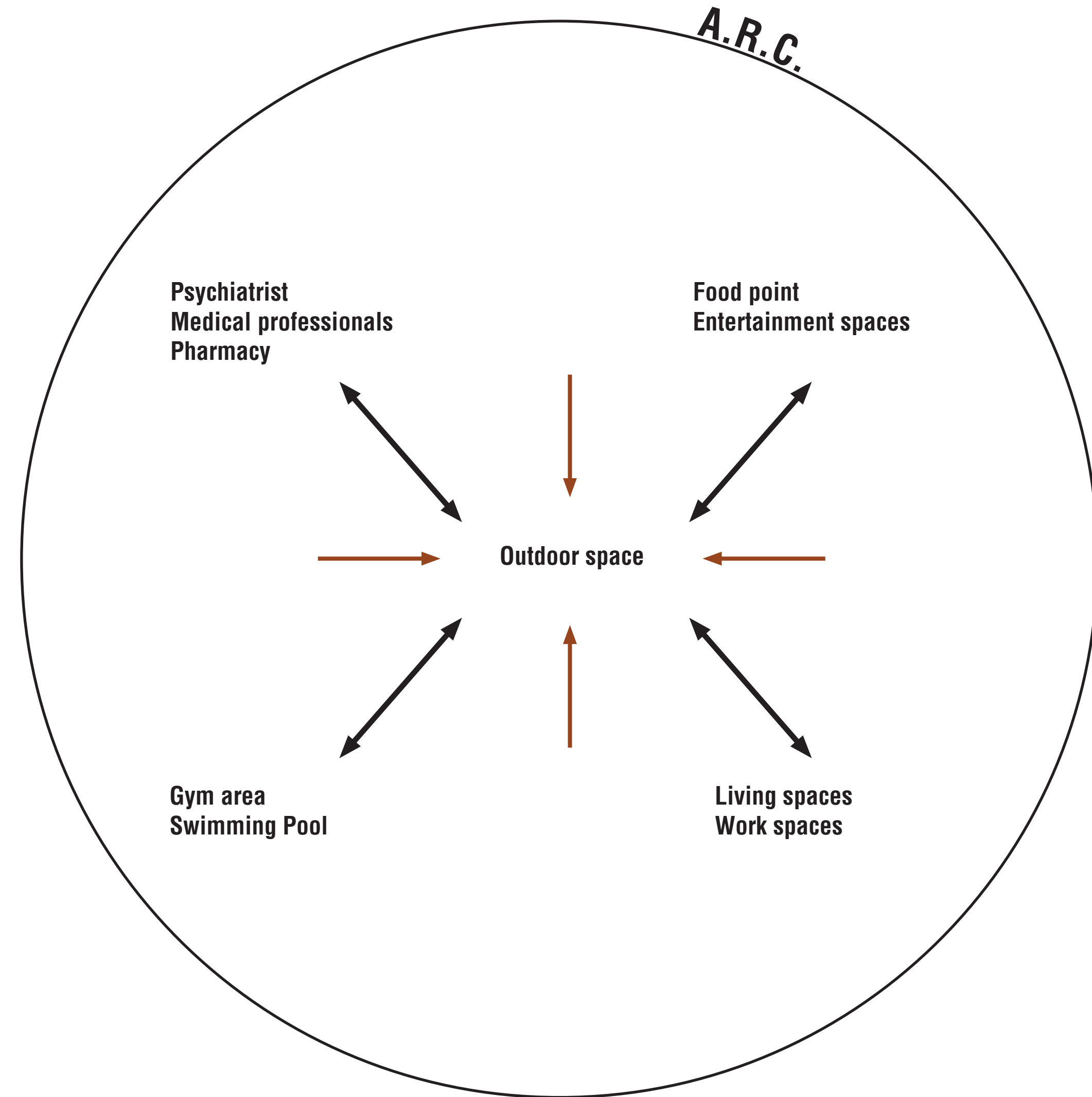
ORGANISATION

Required spaces

Living spaces
Gym area
Swimming Pool
Pharmacy
Work spaces
Food point
Entertainment spaces
Outdoor space

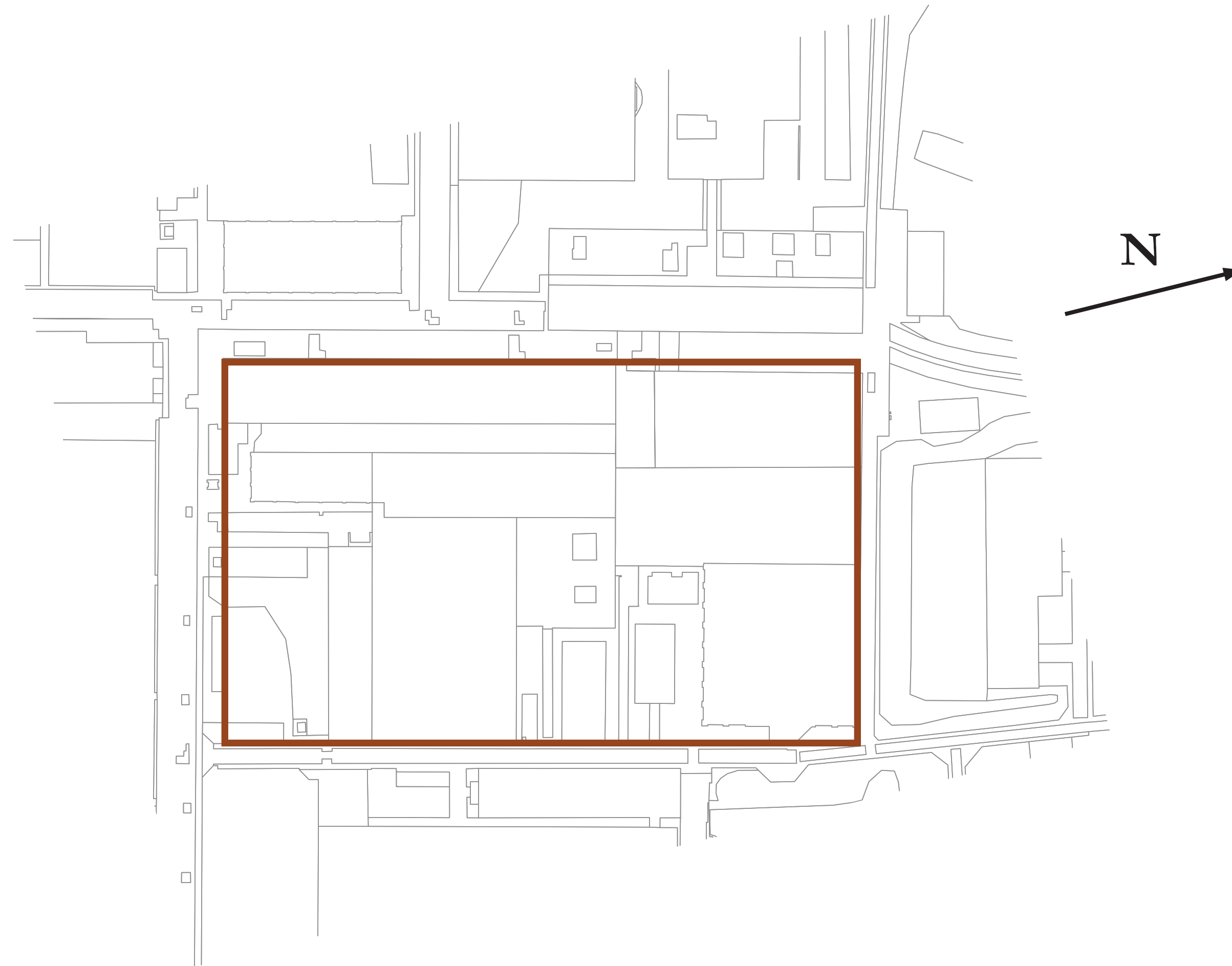
Required personell

Psychiatrist
Medical professionals



BORDERING

Create a border to increase privacy



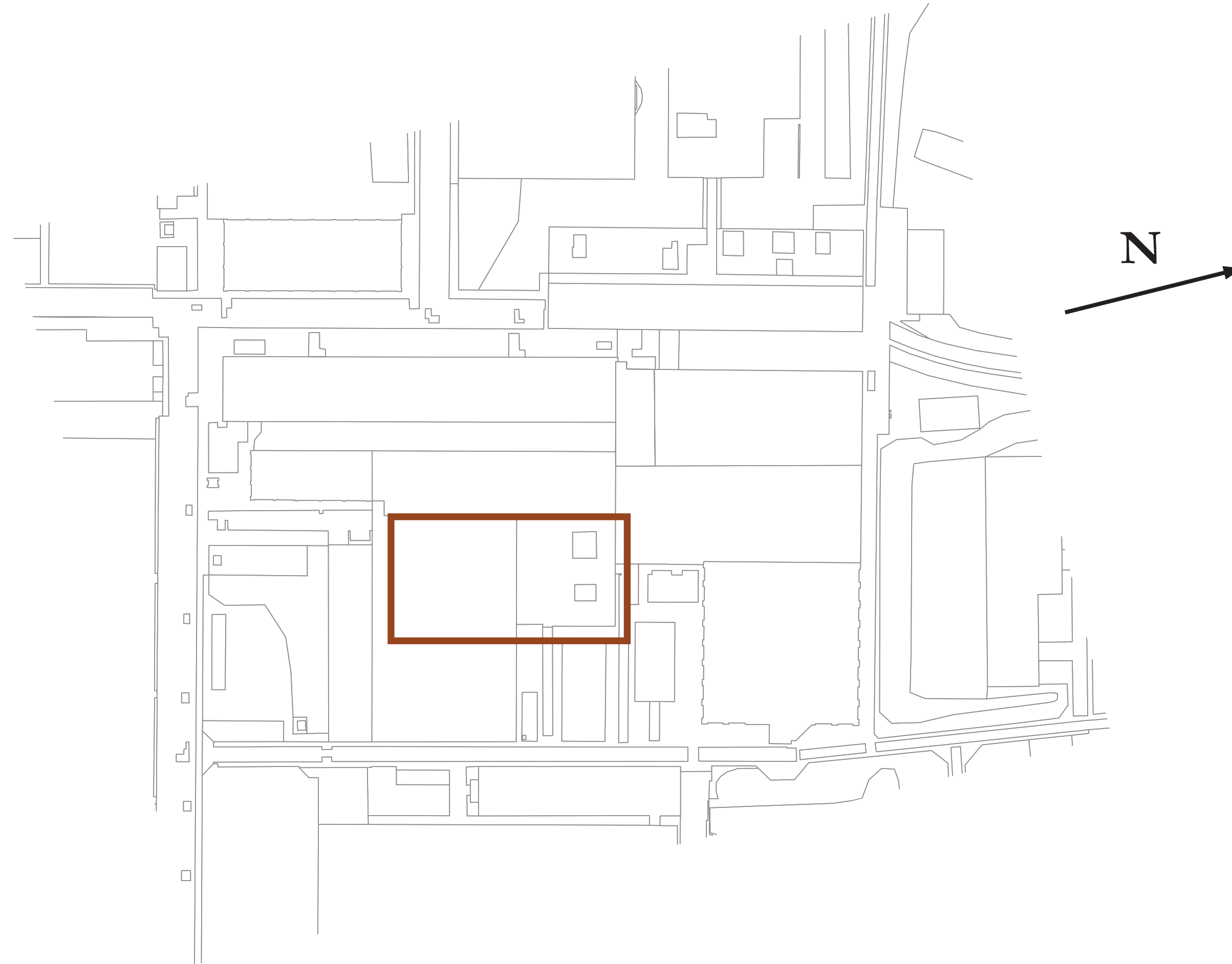
SEPERATING BUILDINGS

Seperate functions to increase city feeling



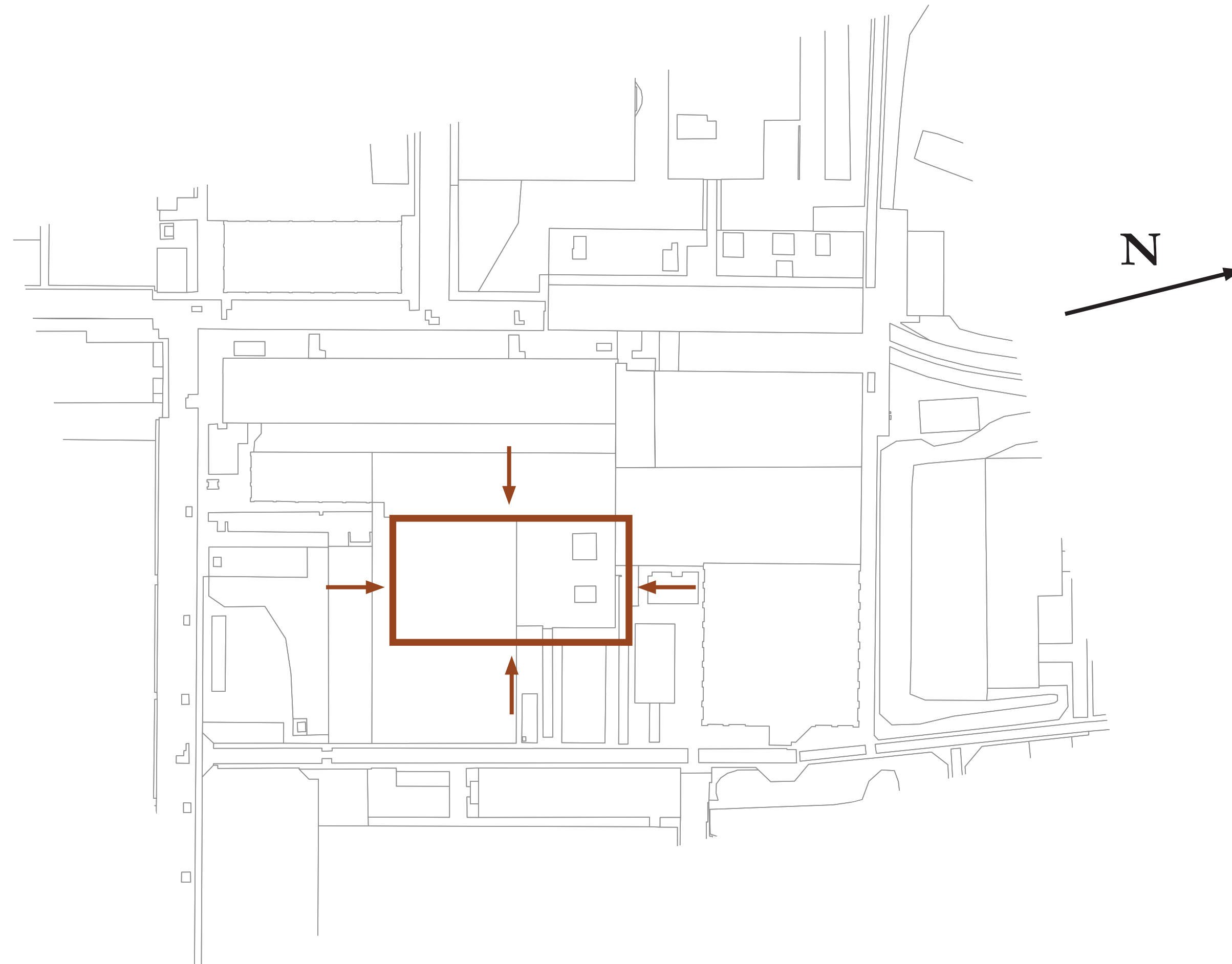
CREATE INTERIOR SQUARE

Create a second level of privacy



FOCUS BUILDINGS INWARD

All acces to activities via square

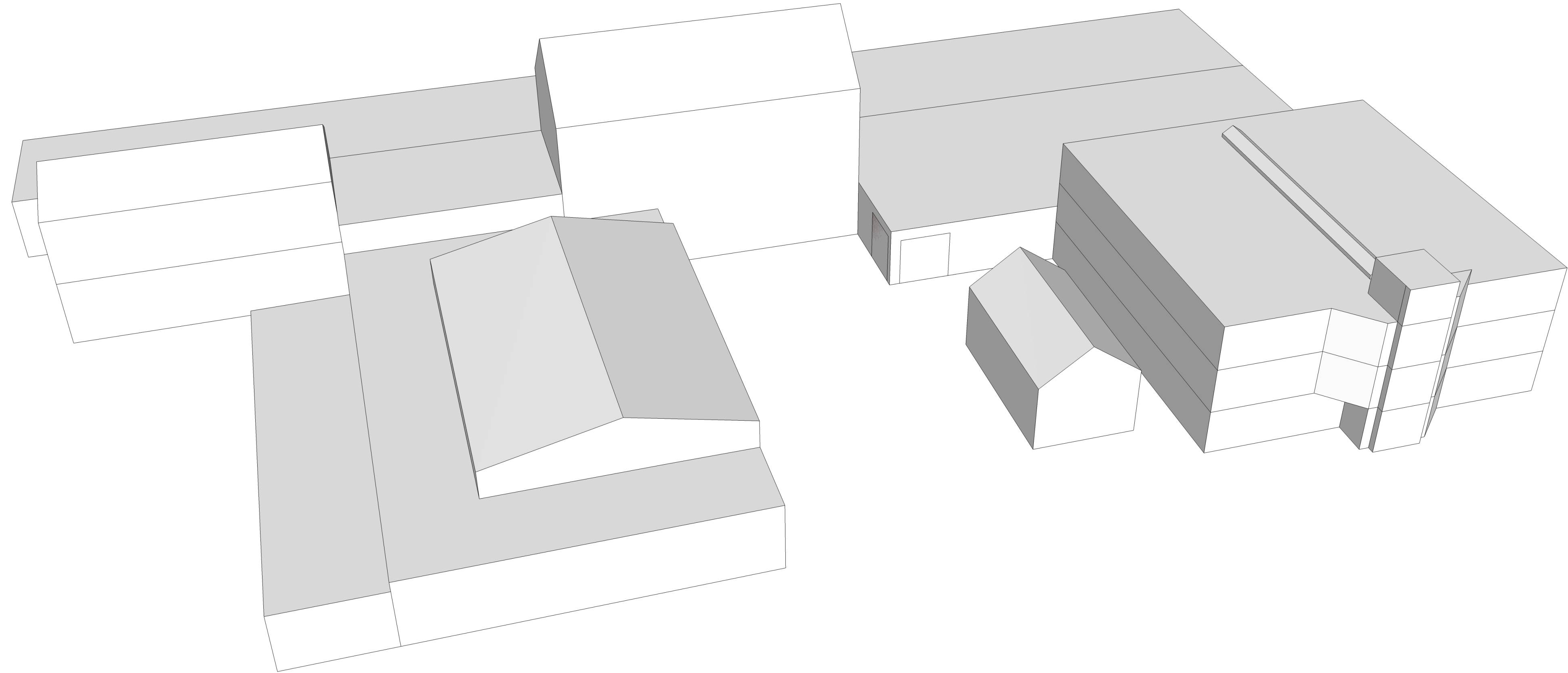


CREATE ENTRANCE ON ALL SIDES

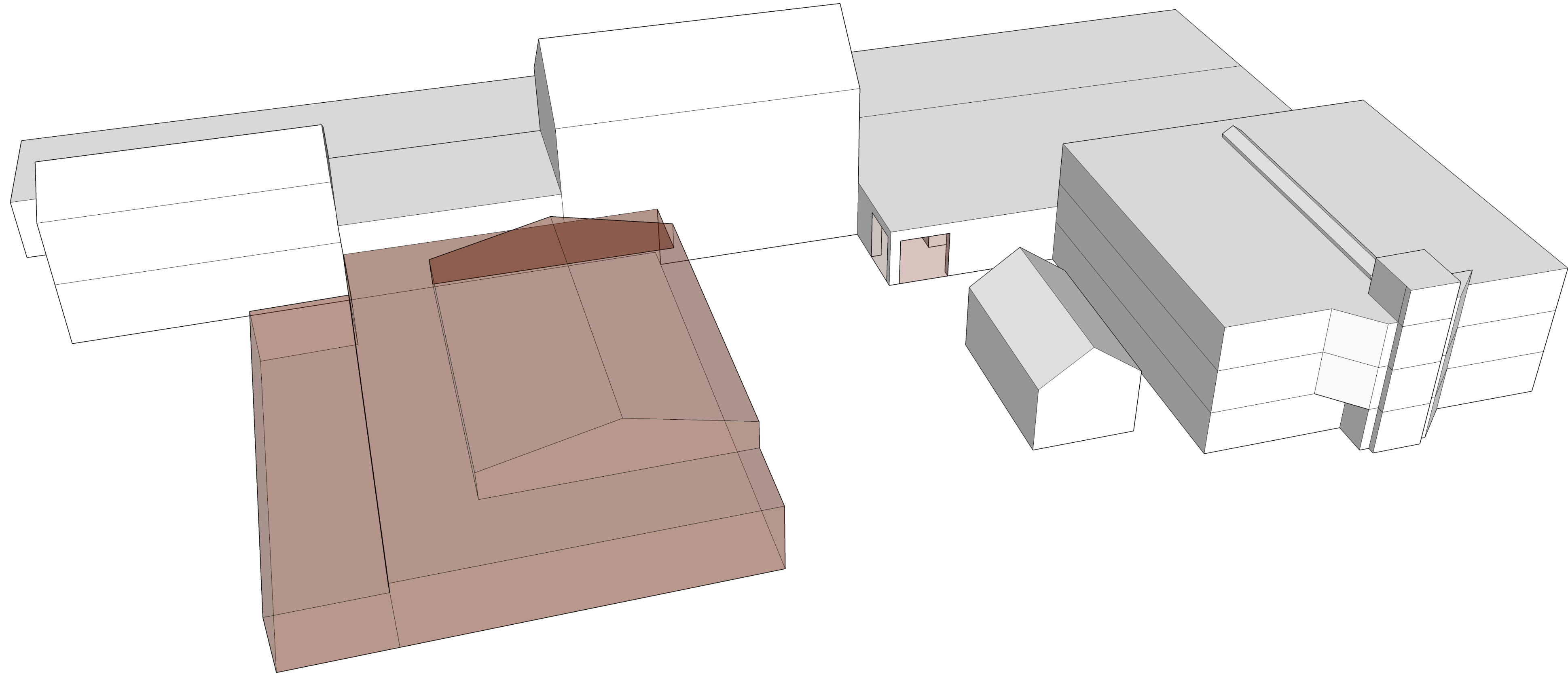
Allow mixing of public and private while
maintaining the border



EXISTING BUILDINGS

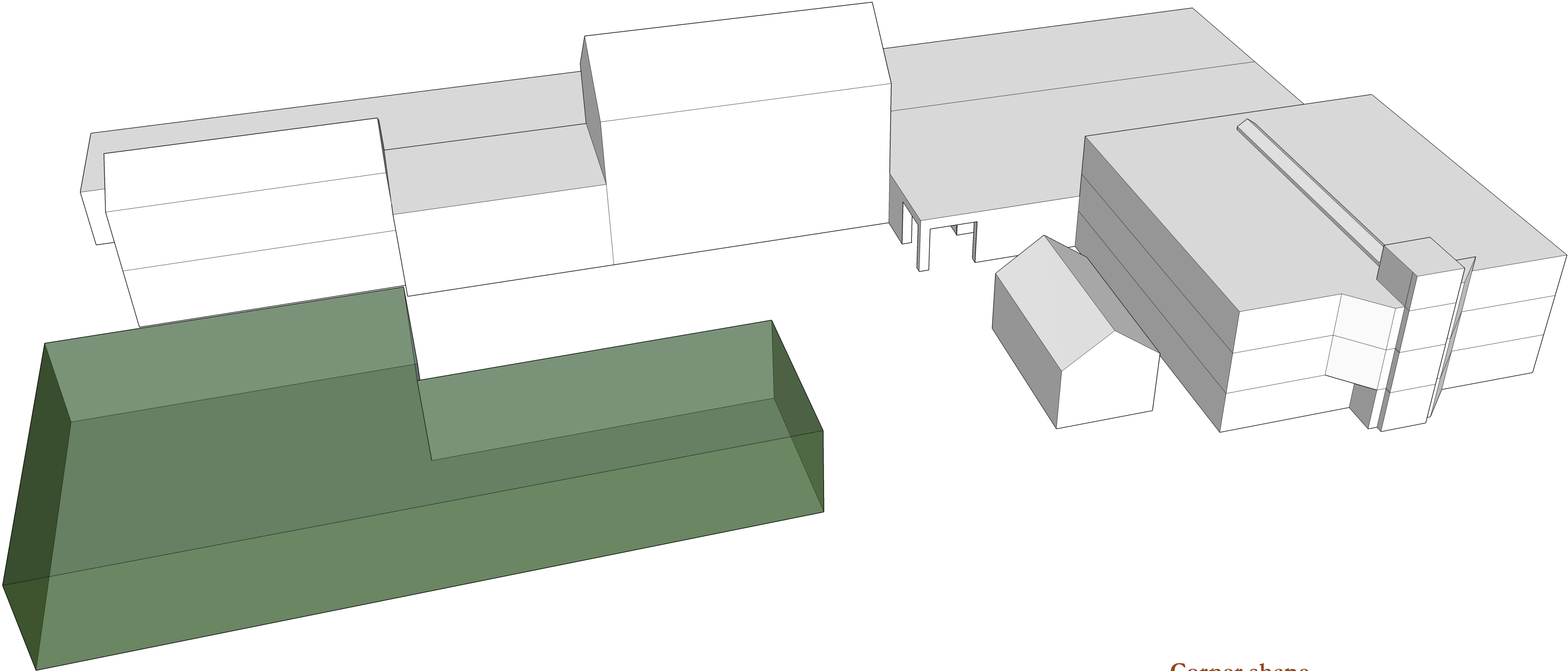


REMOVAL OF BUILDINGS ACCORDING TO LAY-OUT PRINCIPLES



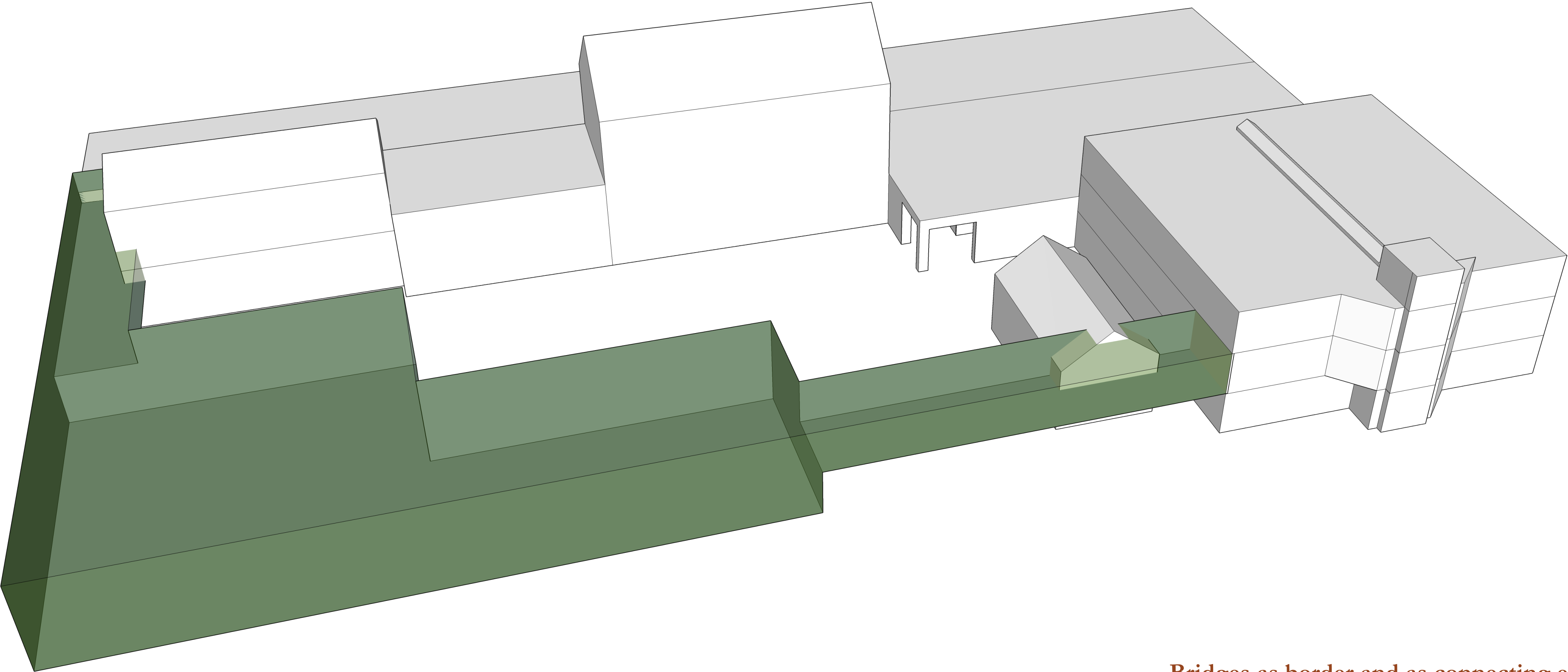
Newest buildings removed.

CREATE NEW BUILDING SHAPING THE INNER SQUARE



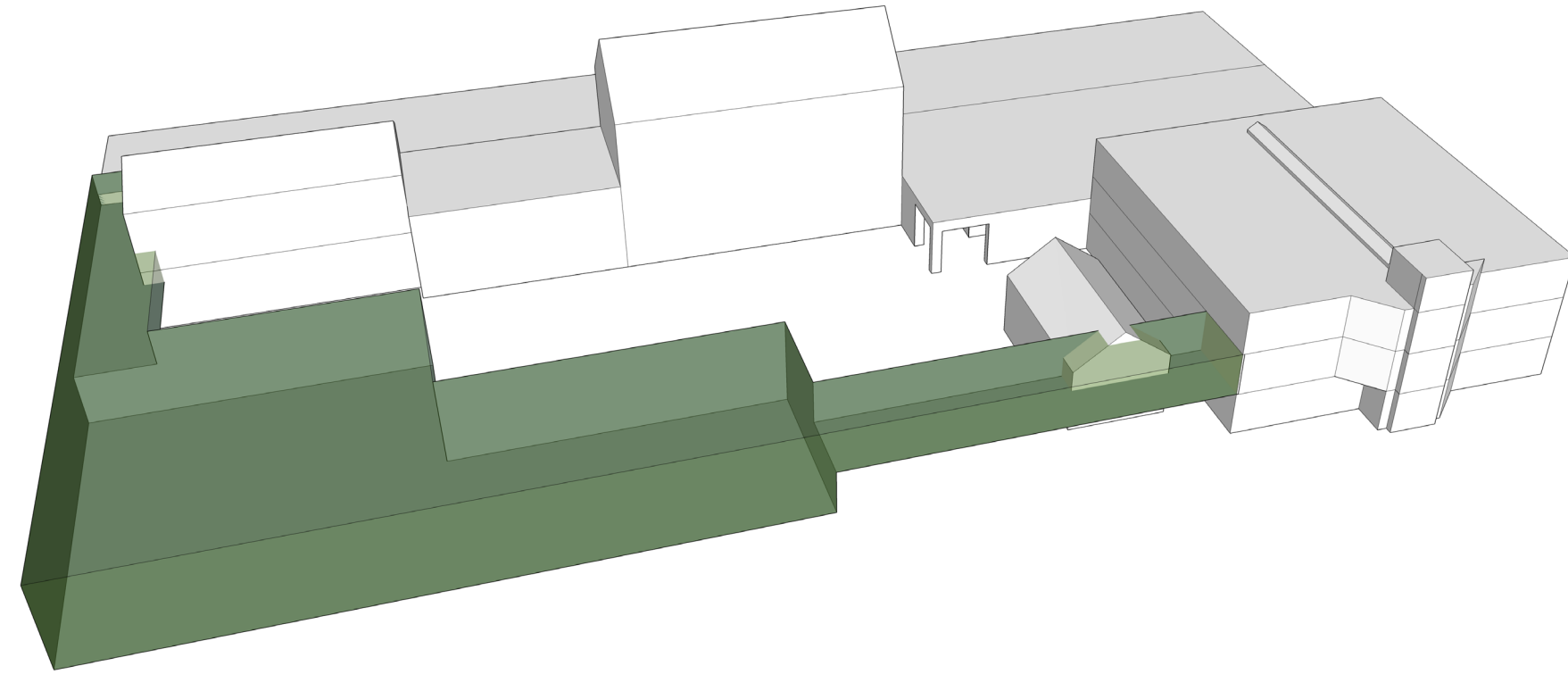
Corner shape
No taller than Cathedral or Tower

CREATE BRIDGES AS BOTH A BORDER AND ENTRYWAY

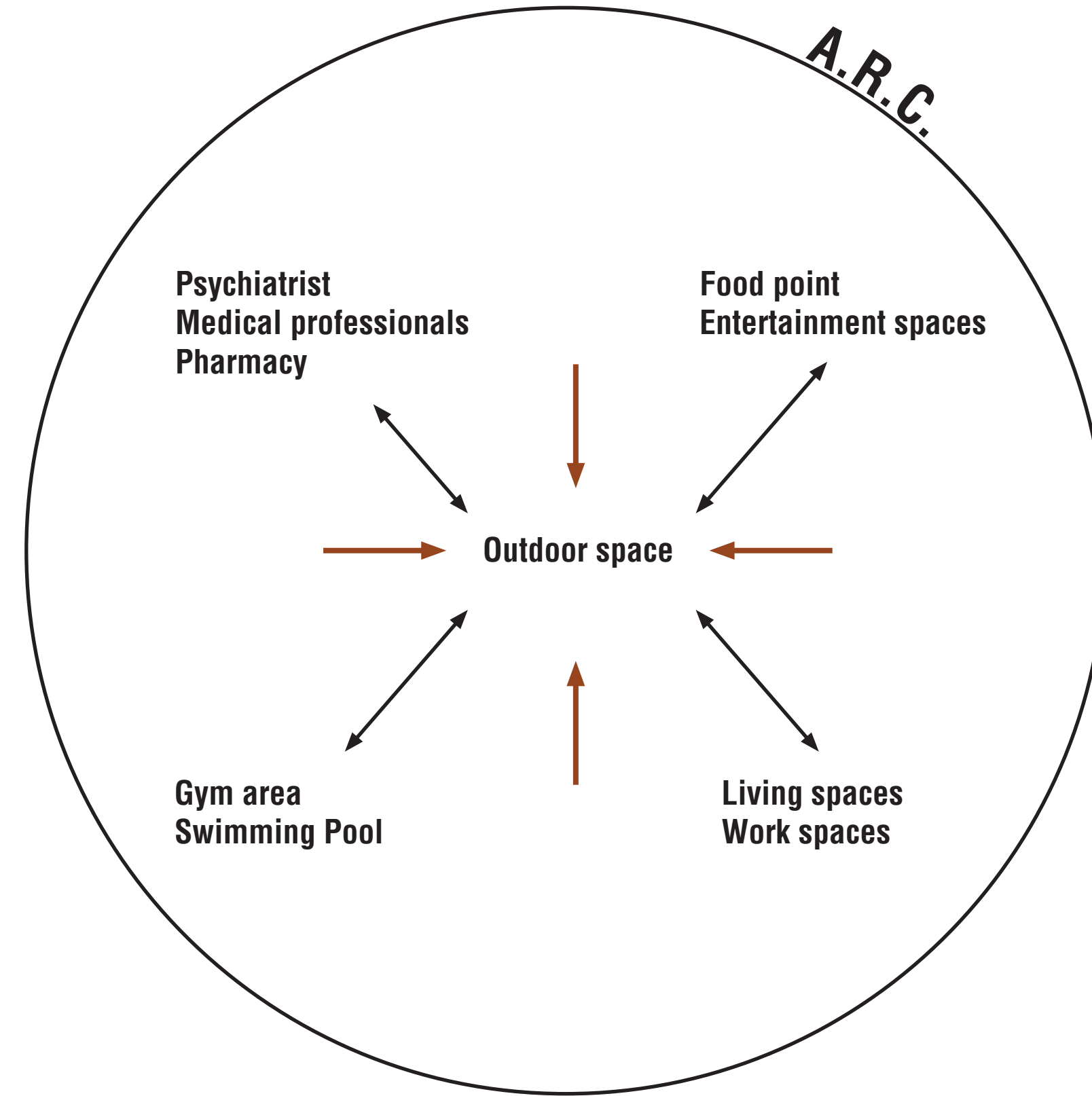


Bridges as border and as connecting elements

ORGANISATIONAL STARTING POINTS

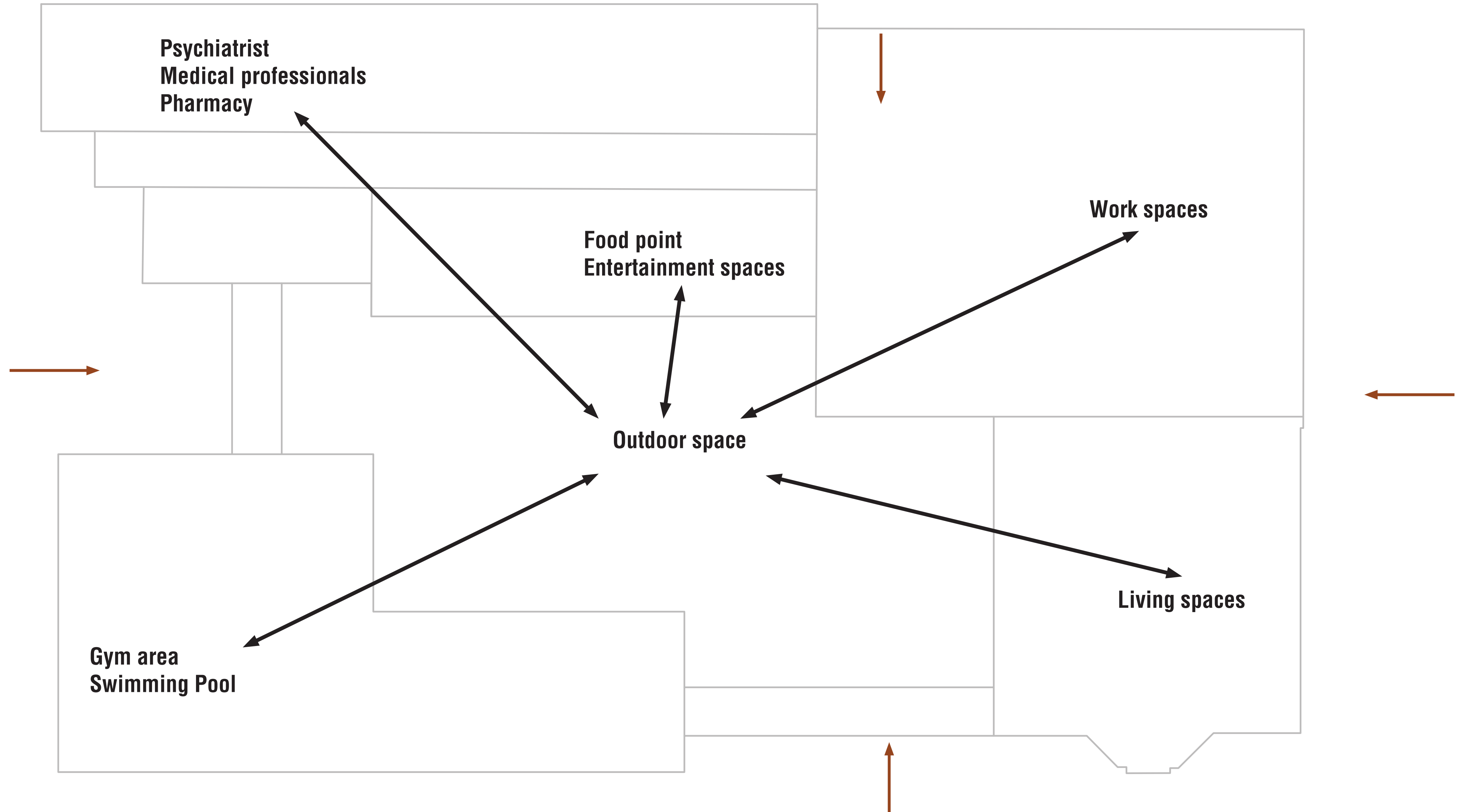


Volume



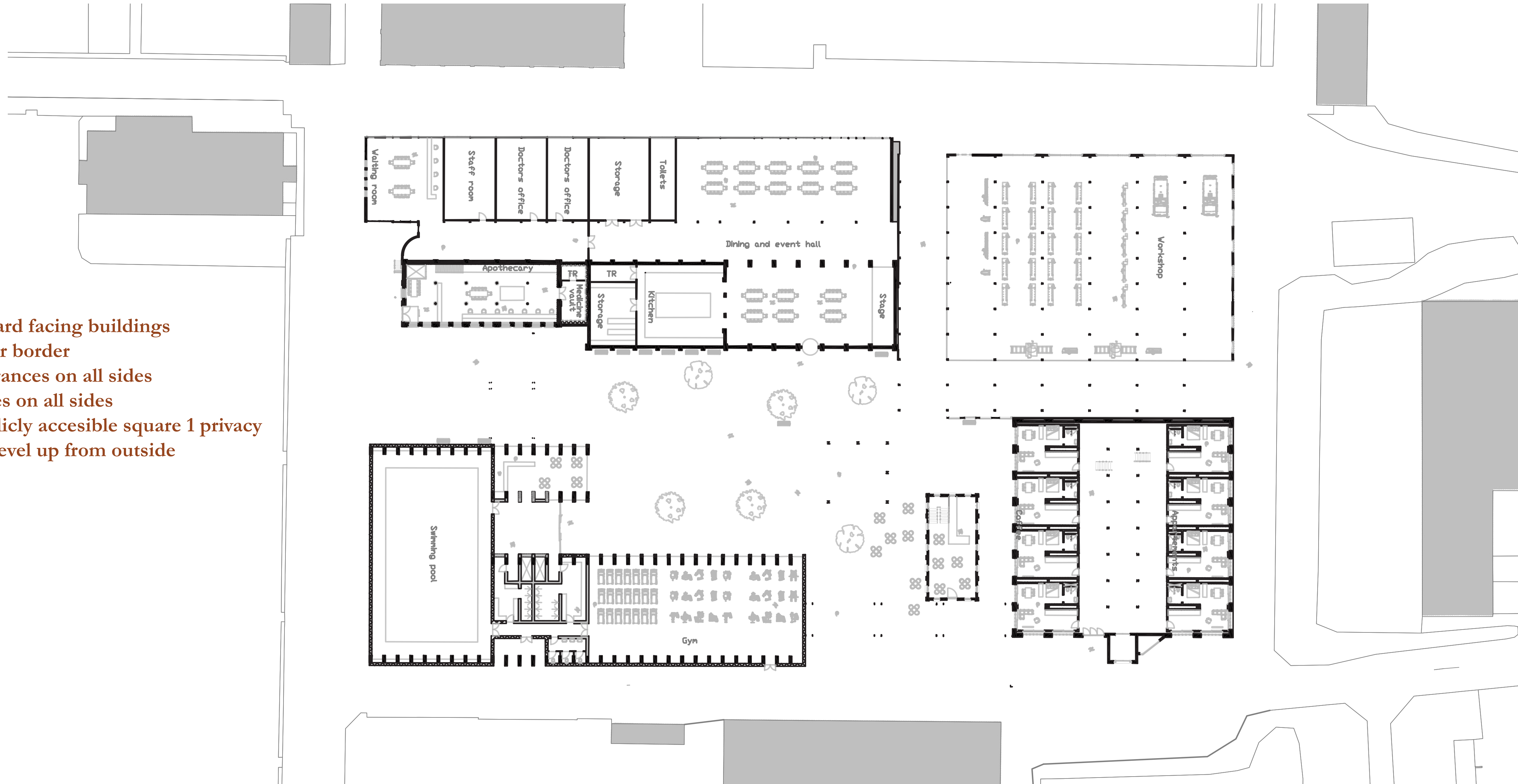
Functions

ORGANISATIONAL DEVELOPMENT



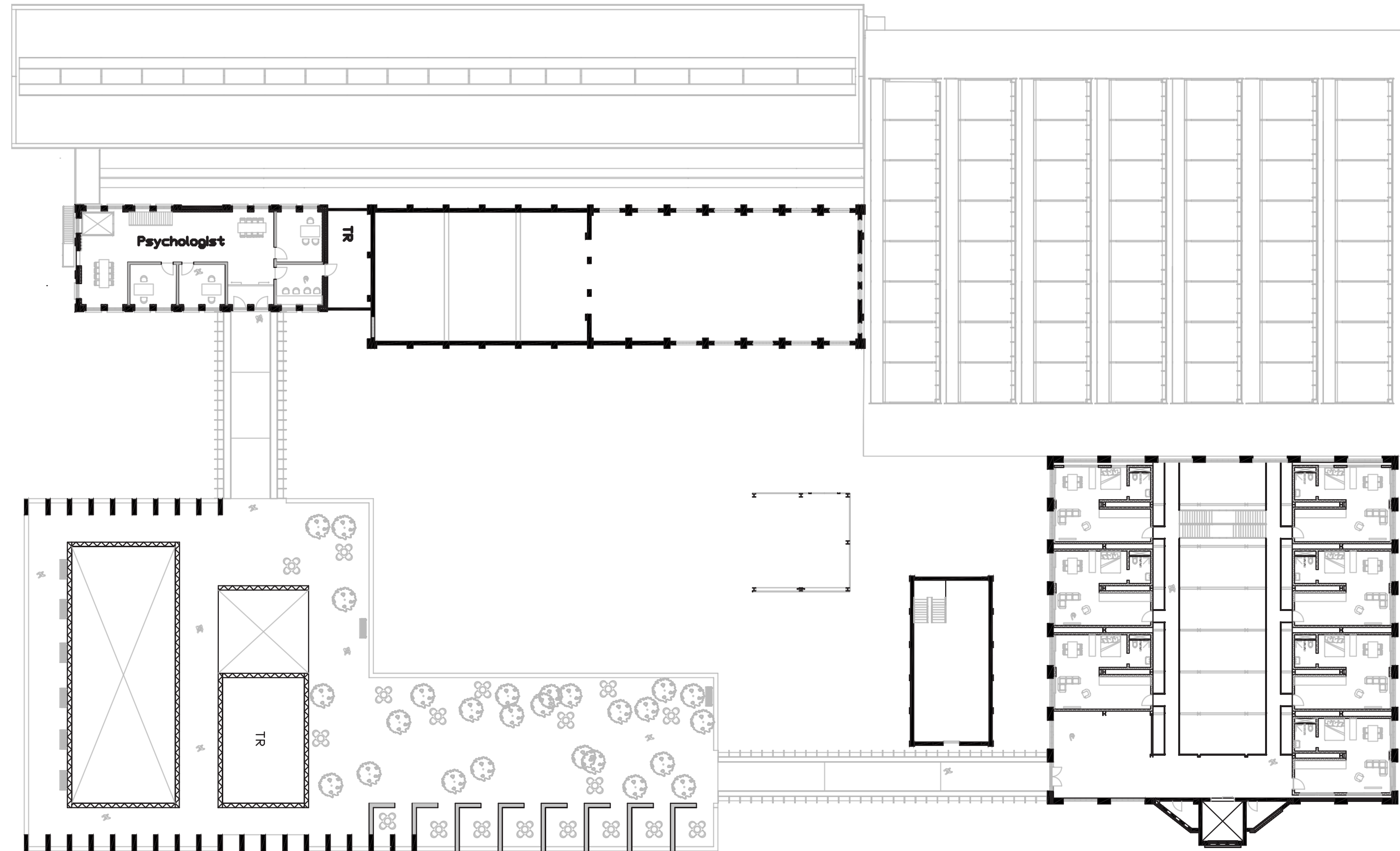
GROUND FLOOR PLAN

- Inward facing buildings
- Clear border
- Entrances on all sides
- Gates on all sides
- Publicly accessible square 1 privacy level up from outside



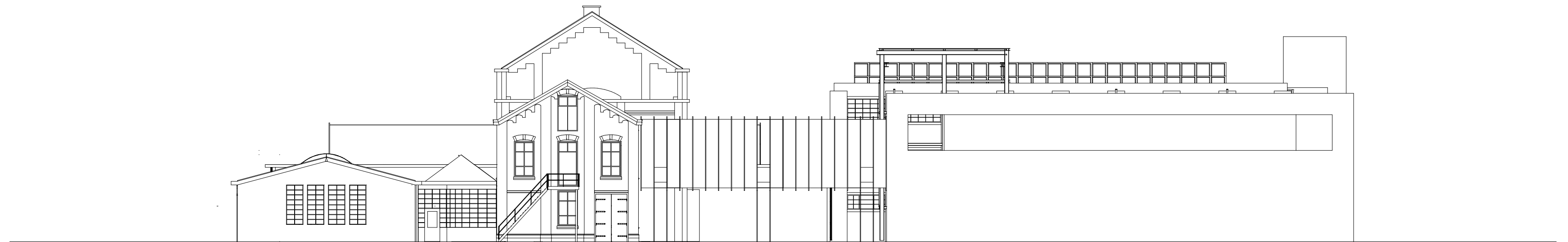
SECOND LEVEL FOR COMMUNITY TERRACE AND PRIVACY

- Create a community terrace
- A “community” only level of privacy
- A way to avoid the public when needed
- Fully community private outdoor space



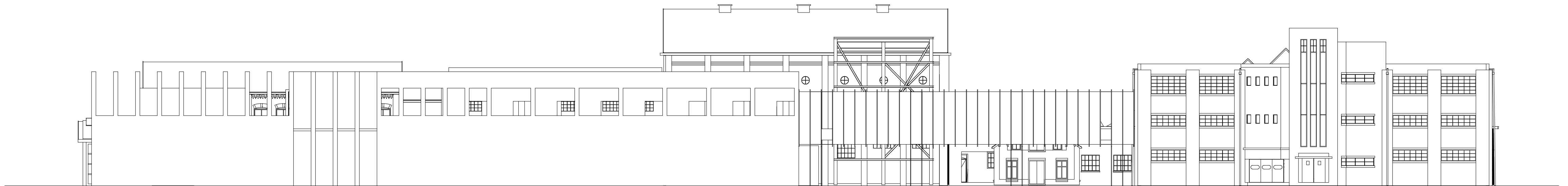
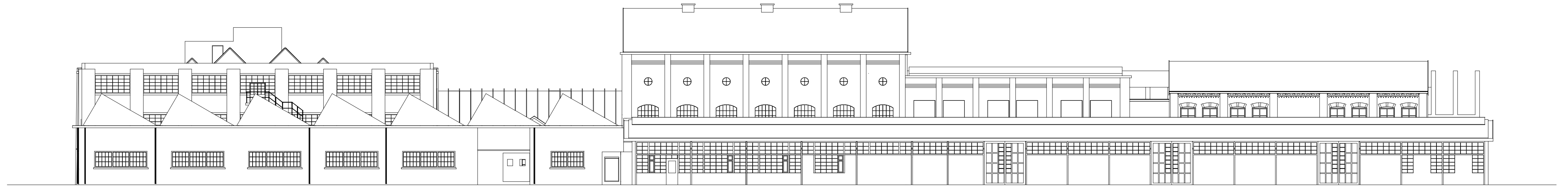
BORDERS AND GATES

Cathedral remains highest point
Closed exterior
Entrance gates



BORDERS AND GATES

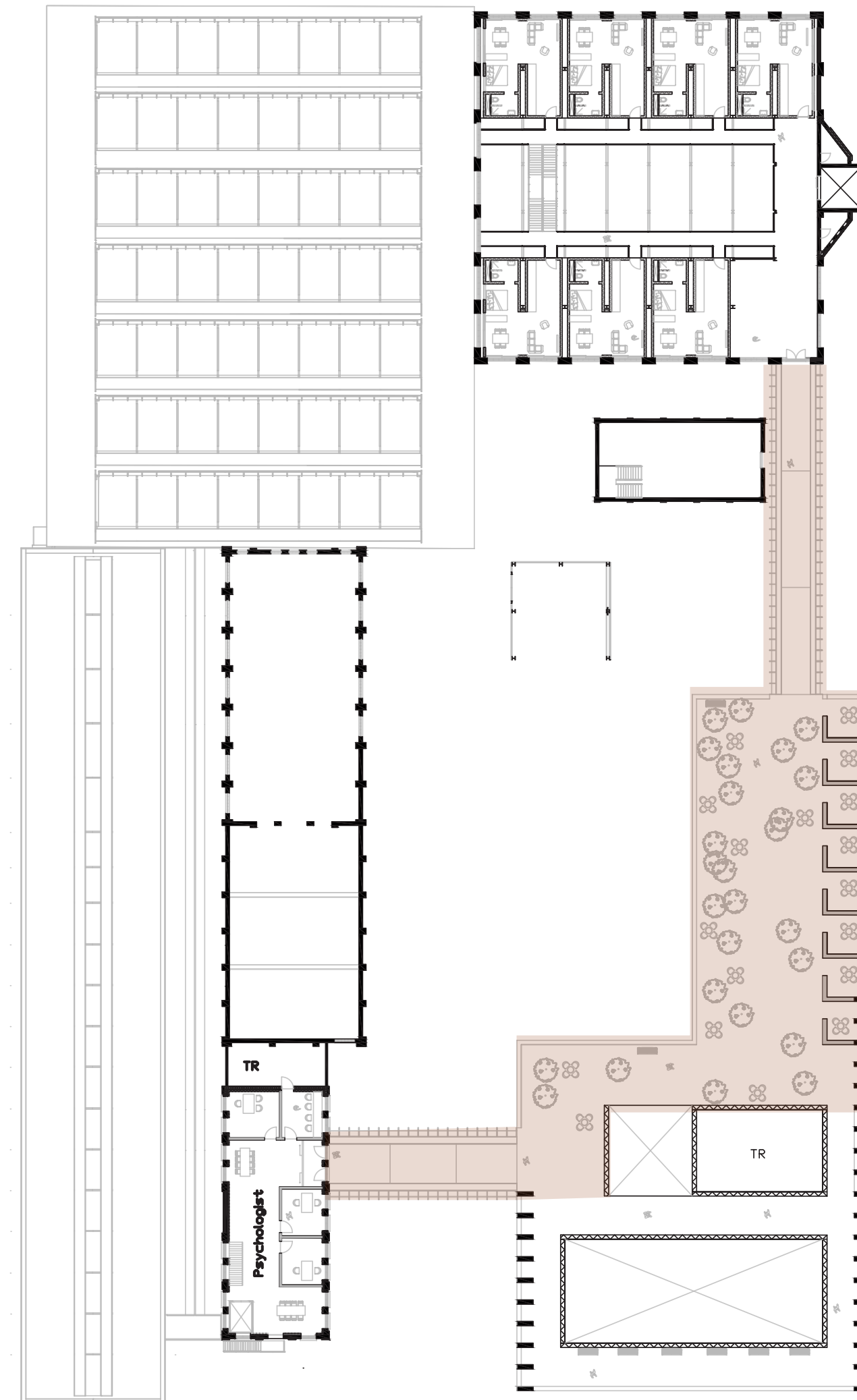
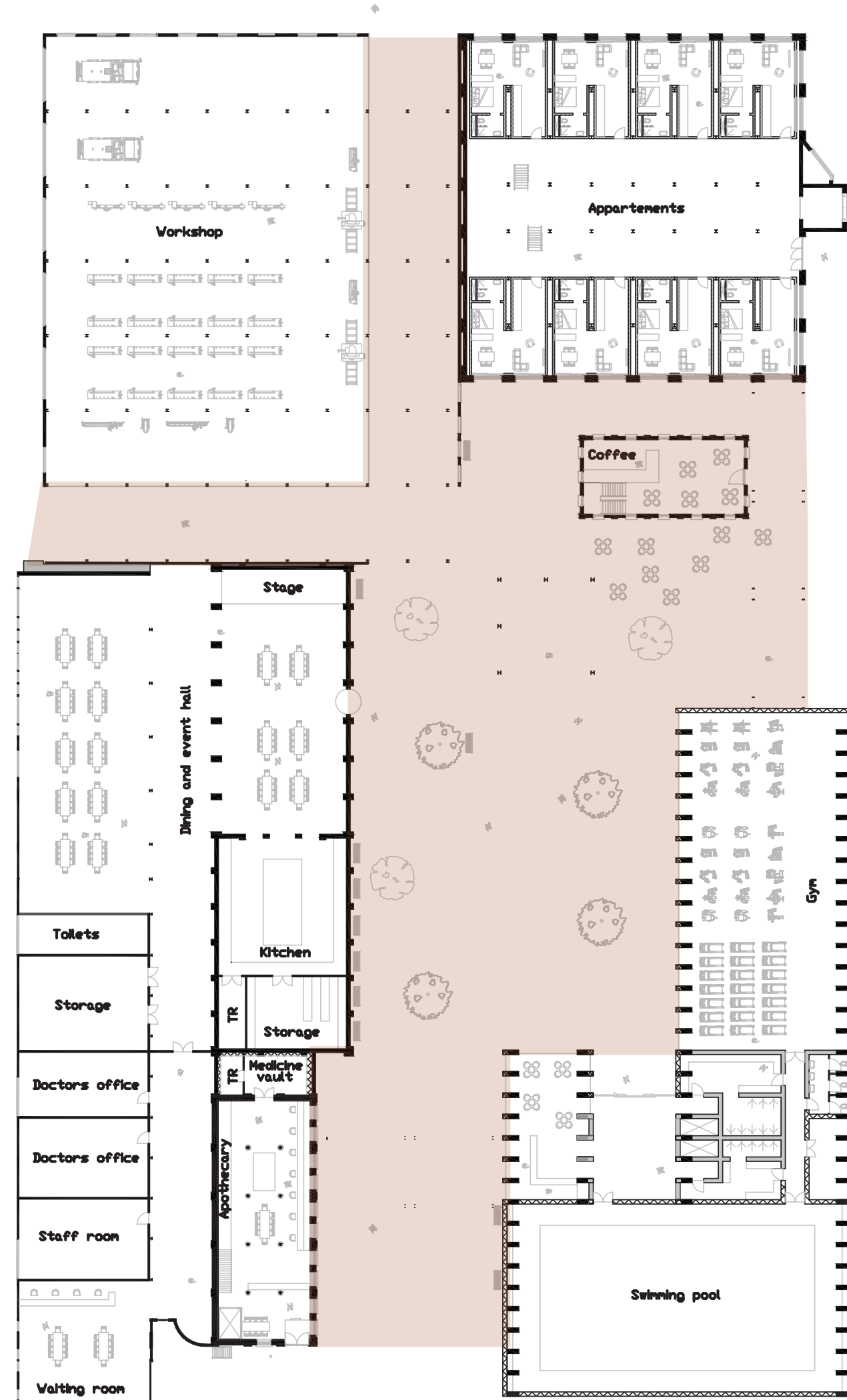
Cathedral remains highest point
Closed exterior
Entrance gates



PERSPECTIVE



CONNECTING ELEMENTS



INSPIRATION: COURTYARD AND ROOFTOP GARDENS



<https://www.creationearth.com/photography/batalha>



https://www.tripadvisor.co.uk/LocationPhotoDirectLink-g664891-d1952371-i215297086-Barra_Square-Macau.html



<https://aboutcitymarketing.wordpress.com/140-2/>



<https://www.kit.nl/nl/room/binnentuin/>



<https://www.wos.nl/reusachtige-binnentuin-in-apartementencomplex/nieuws/item?940629>



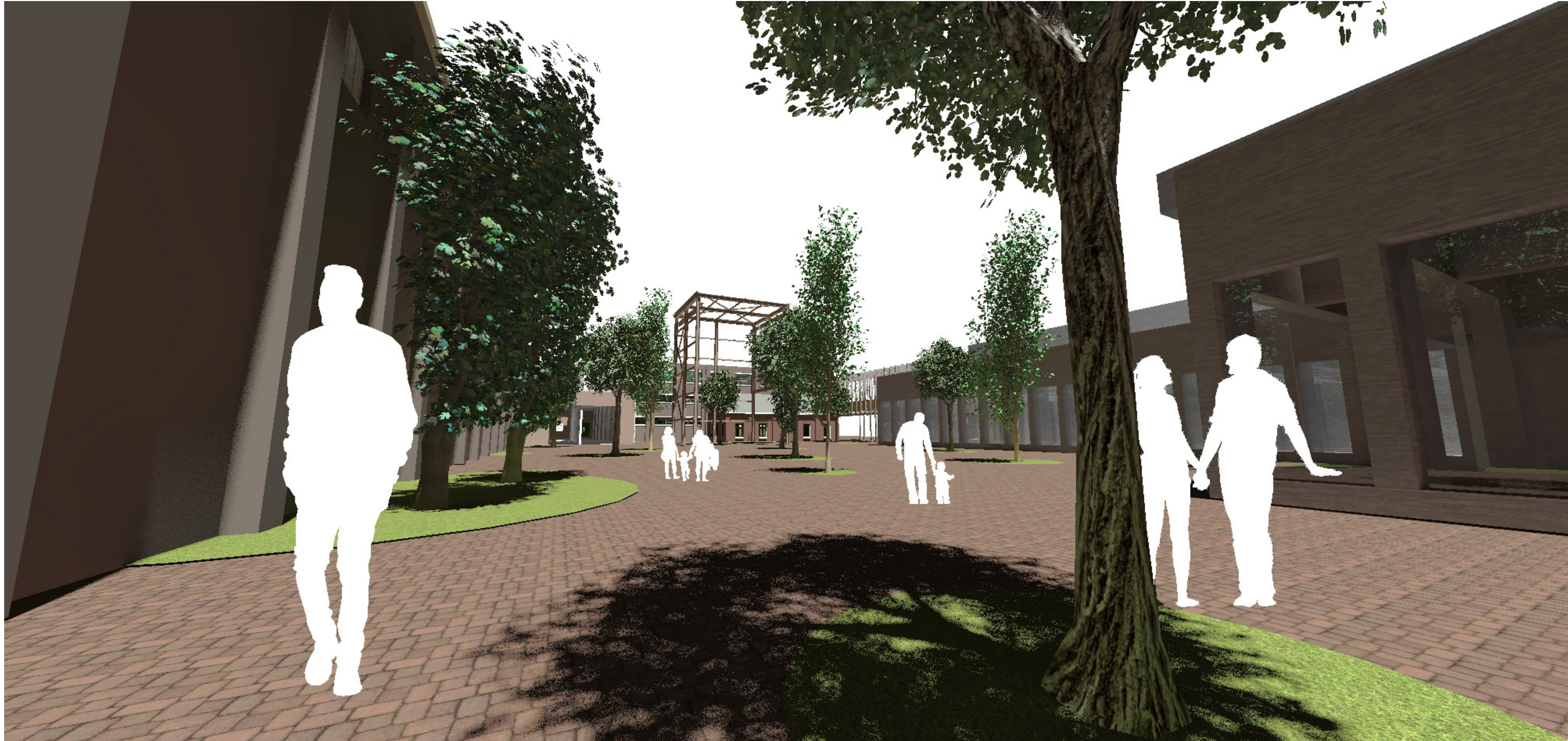
<https://www.rijnmond.nl/nieuws/95019/Klooster-tuin-blijft-s-nachts-open>











RAISED LEVELS



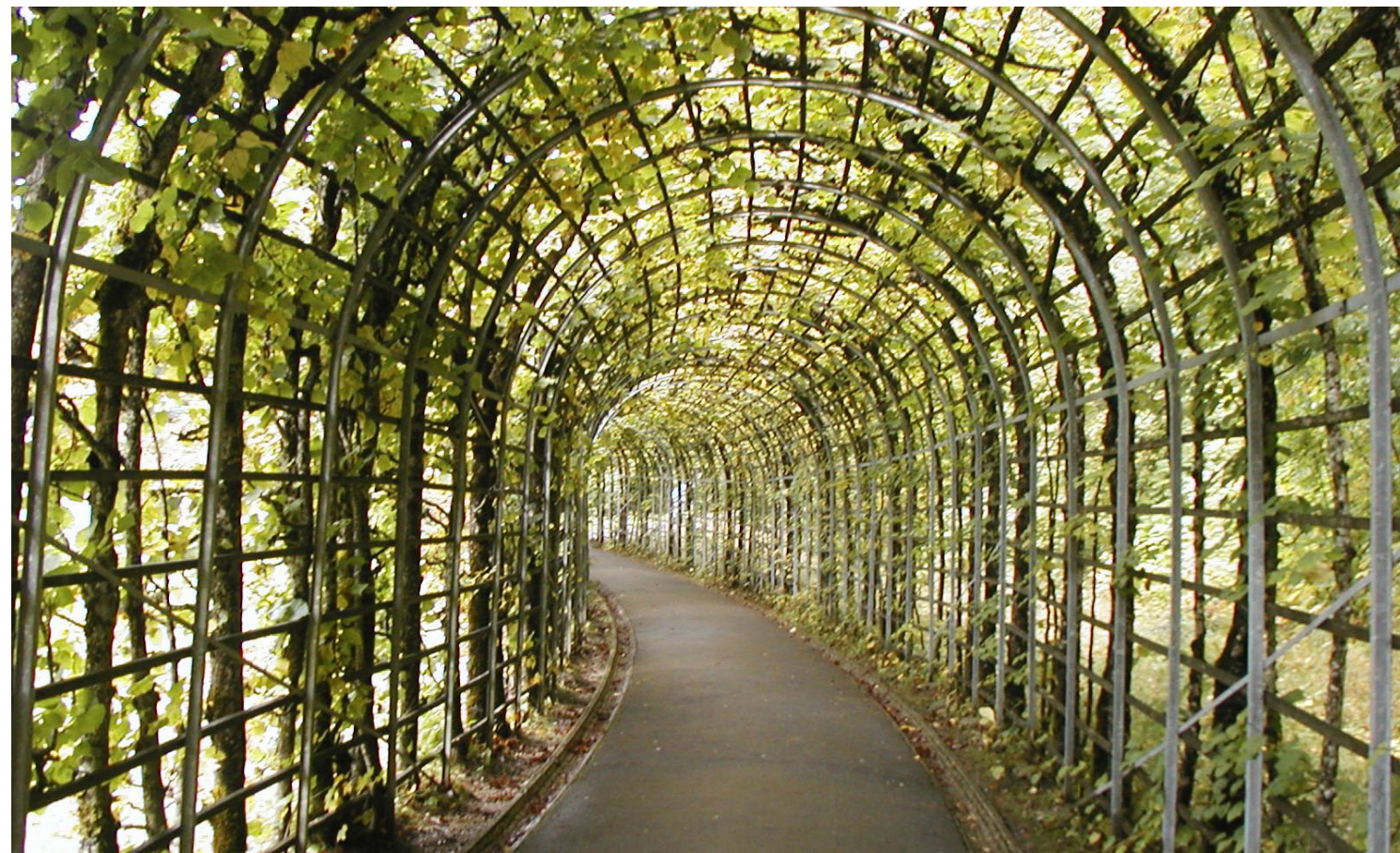
<http://www.sustainablesites.org/green-wise-head-quarters-roof-garden>



<https://styleblueprint.com/birmingham/everyday/covered-bridges-alabama/>



https://www.reddit.com/r/europe/comments/8rrqun/medieval_gate_in_the_dutch_city_of_amersfoort/



<https://www.deviantart.com/gabtu/art/Green-Pathway-182157995>



<https://www.fedsteel.com/tag/oregon/>



<https://www.gardendesign.com/rooftop/guide.html>

VISUALISATION



CANOPY



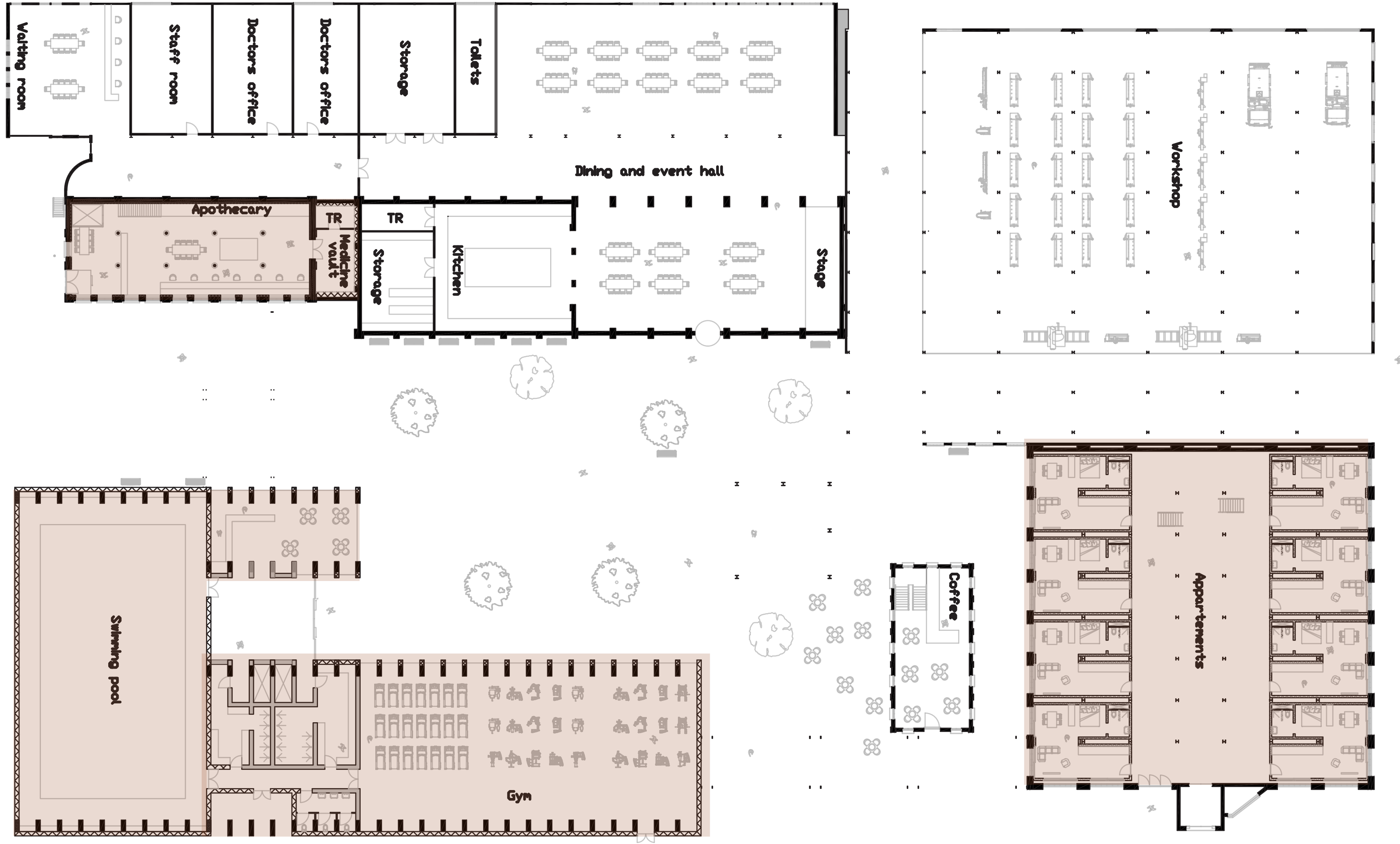
ROOFTOP GRADEN



FOCUS BUILDINGS

The 2 old buildings connected to new elements

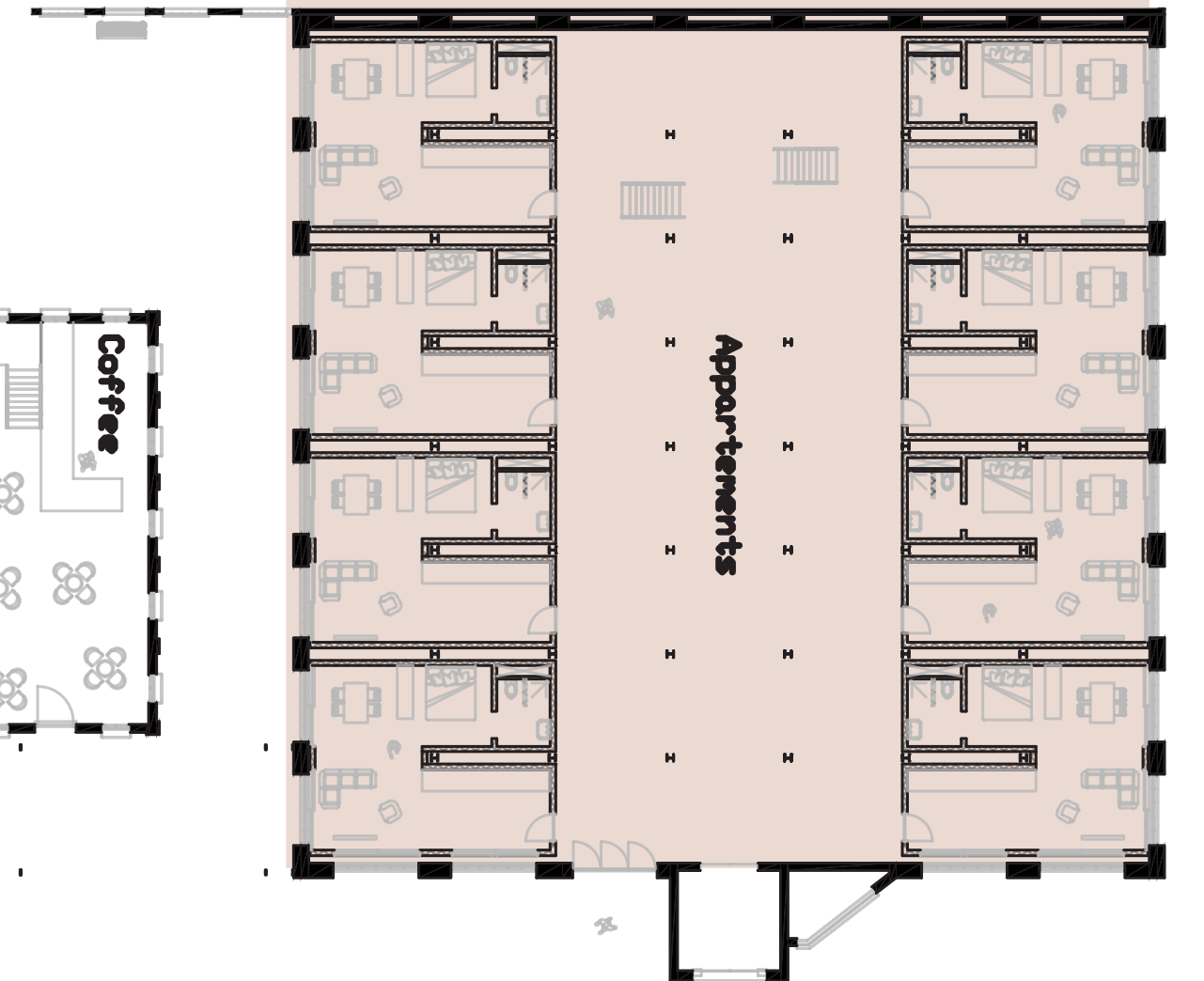
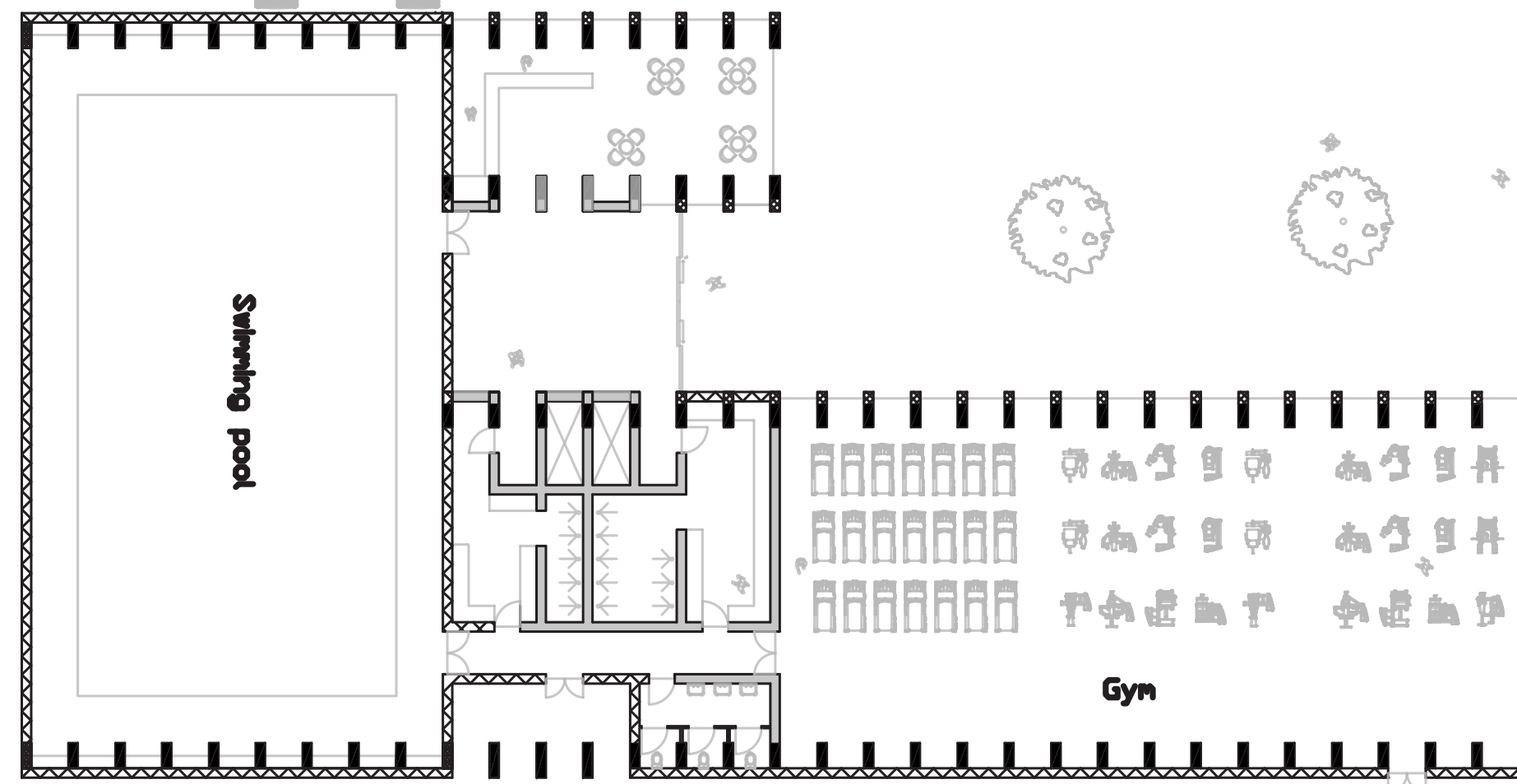
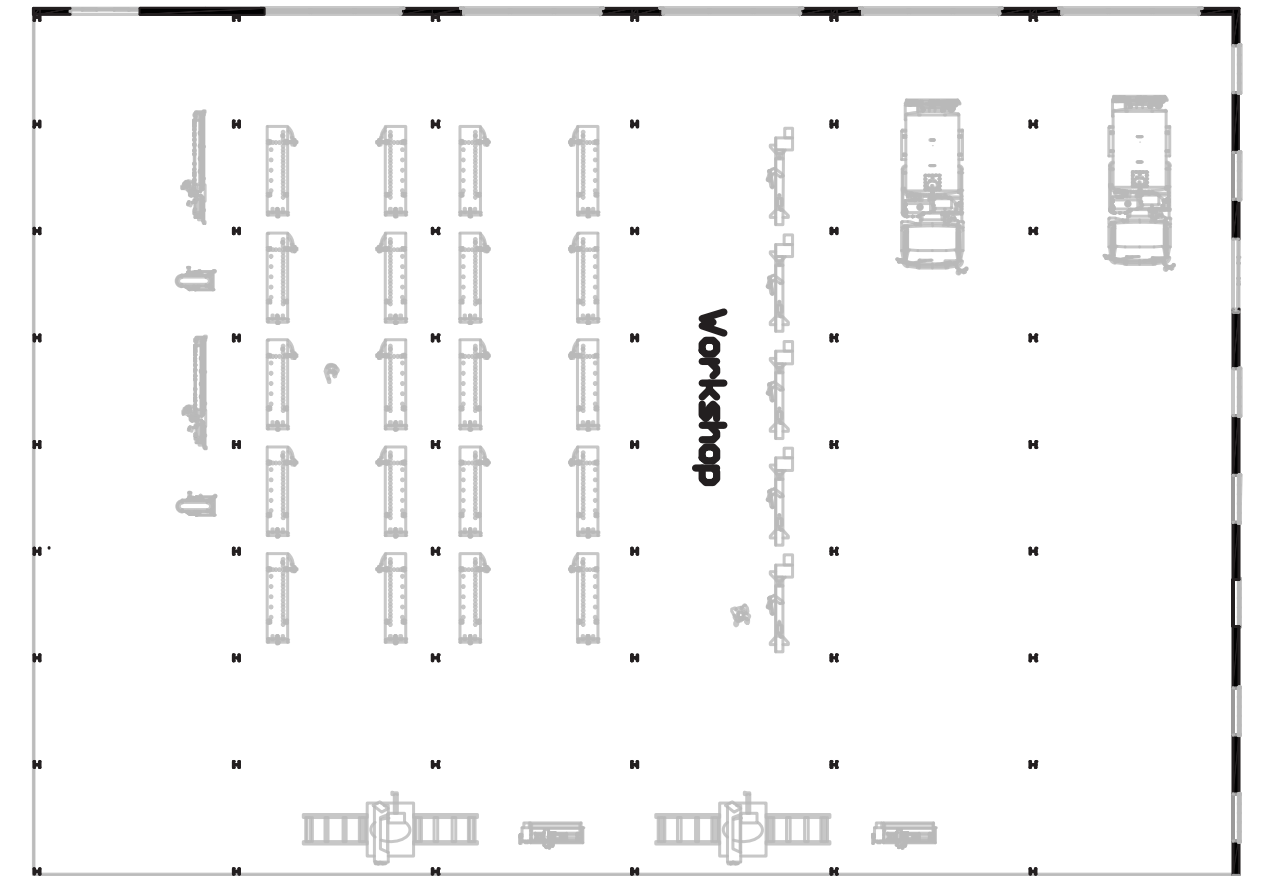
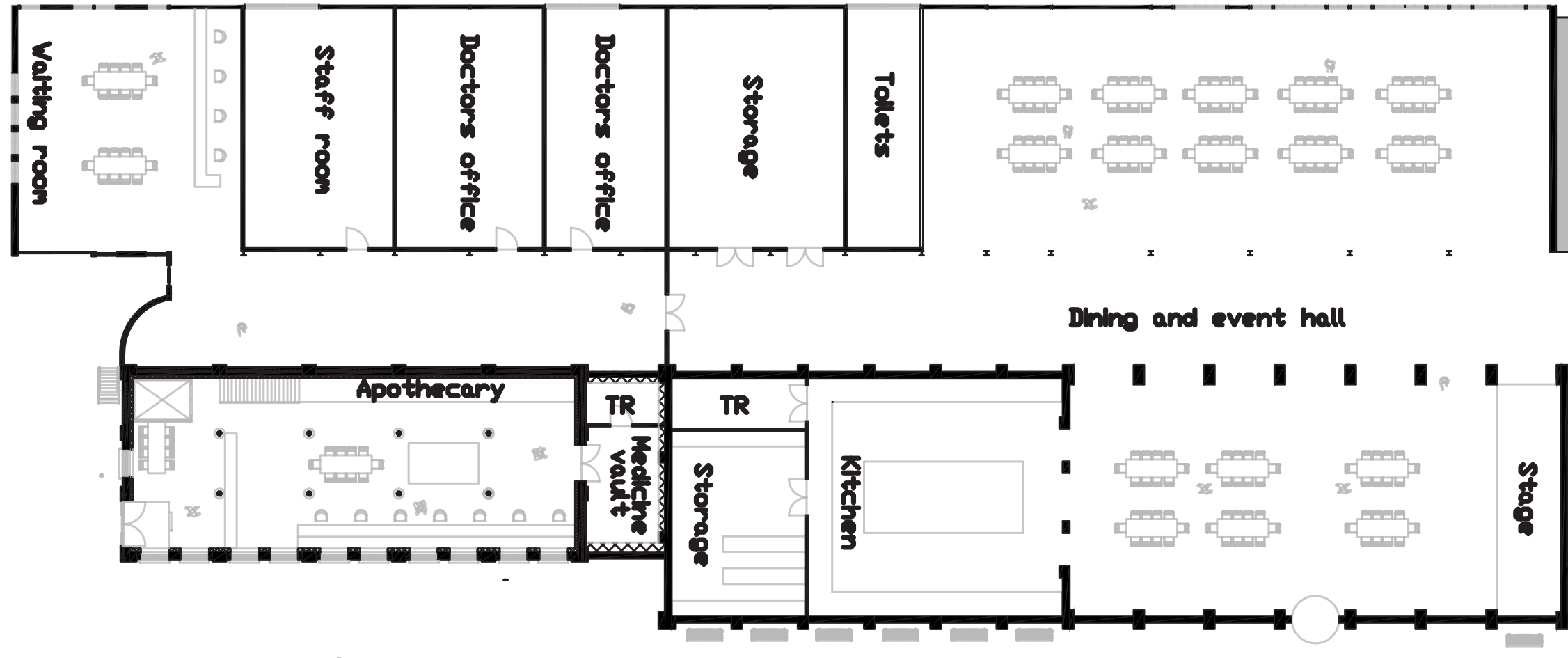
The new building



HET KWARTIER

Old warehouse
Build in the 1930's

To be:
Apartments



ELEMENTS OF VALUE

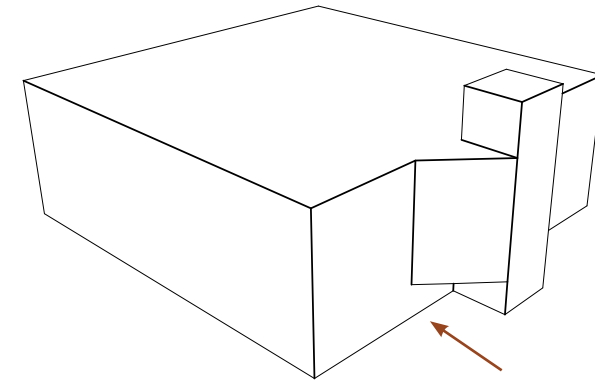
- Visible strong construction
- Rivet construction method
- Grid layout reflected in structure and facade
- Steel windows in distinct colour
- Patina
- Tower as main entrance
- Solid wood floors



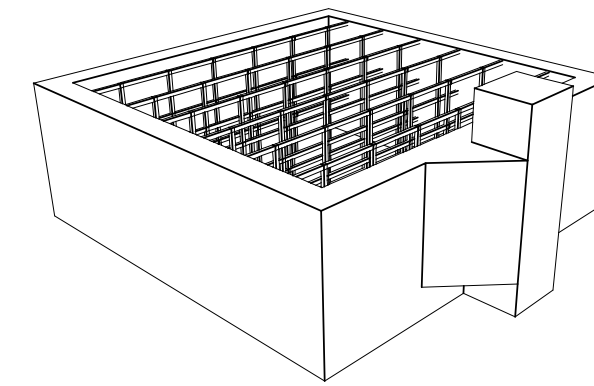
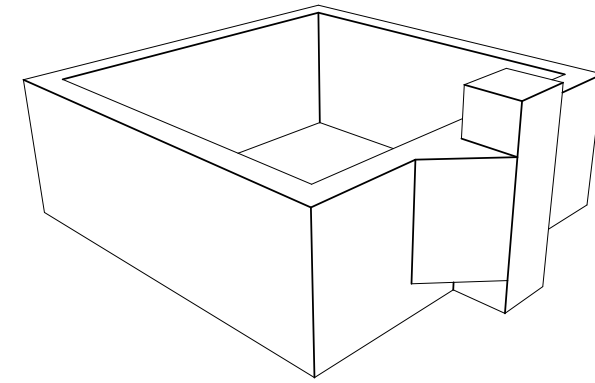
MAIN APPROACH

Work within existing construction

Tower as main entrance



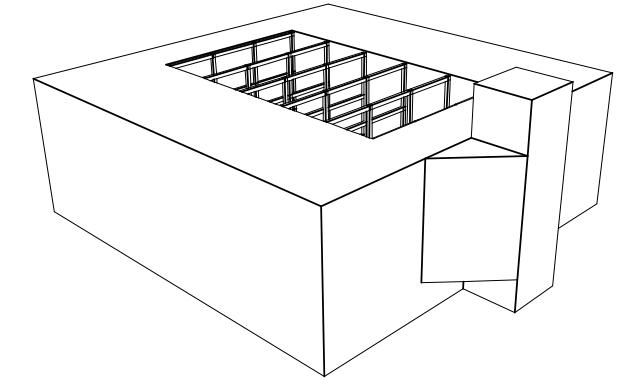
Maintain facades



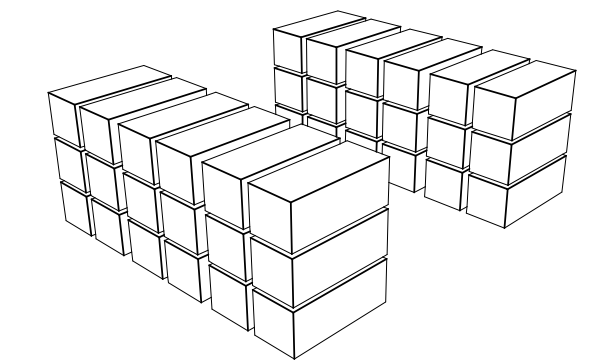
Starting frame



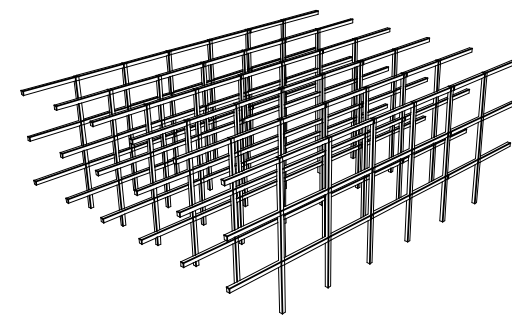
Open up roof and floors



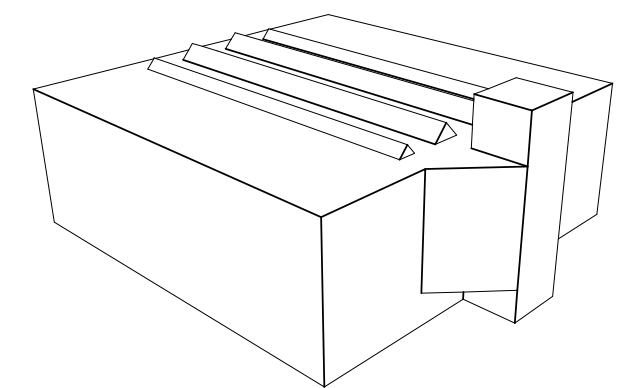
Install apartment modules between existing construction



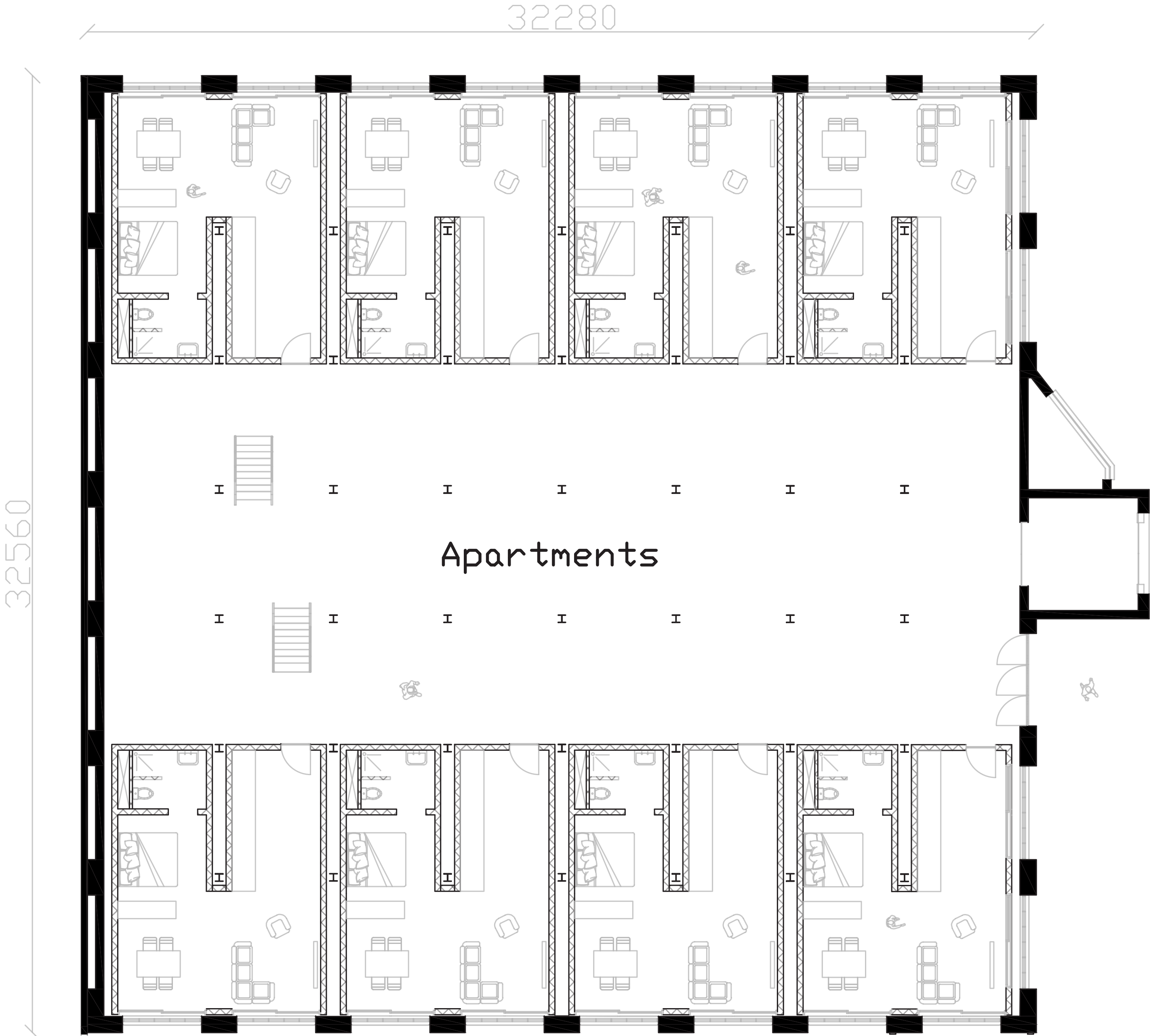
Highlight grid and patina



Close building



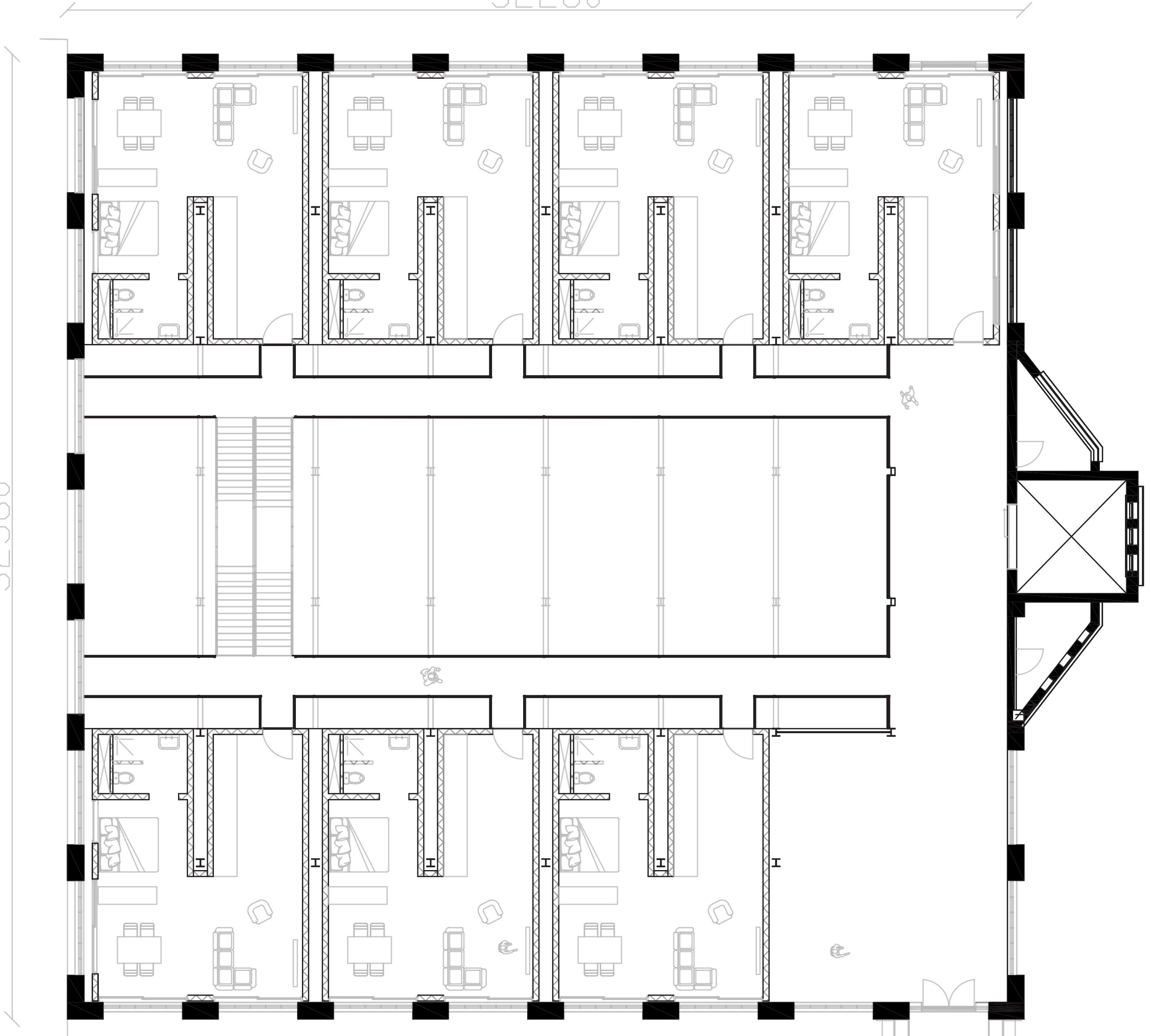
GROUND FLOOR



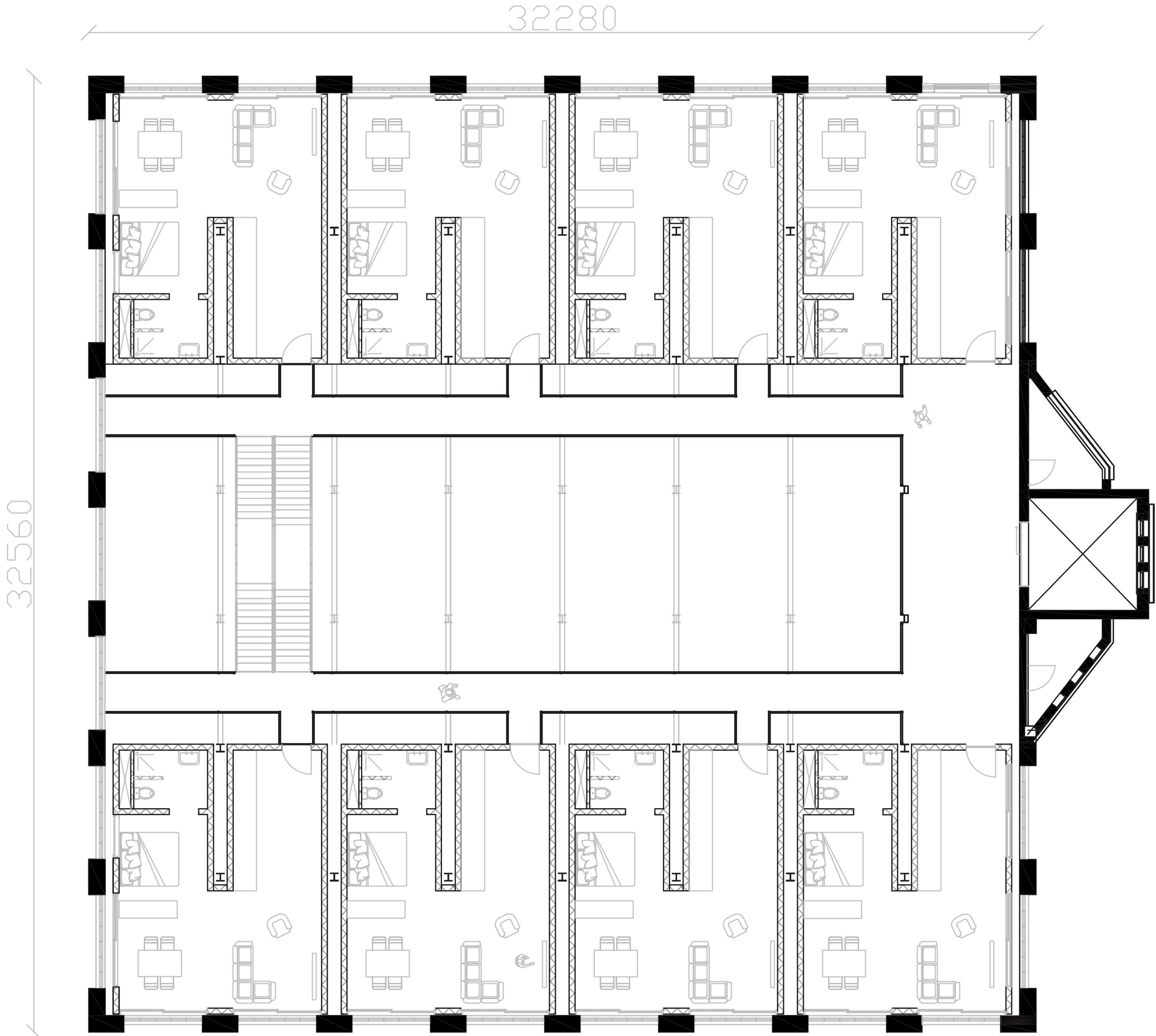
32280

FIRST FLOOR

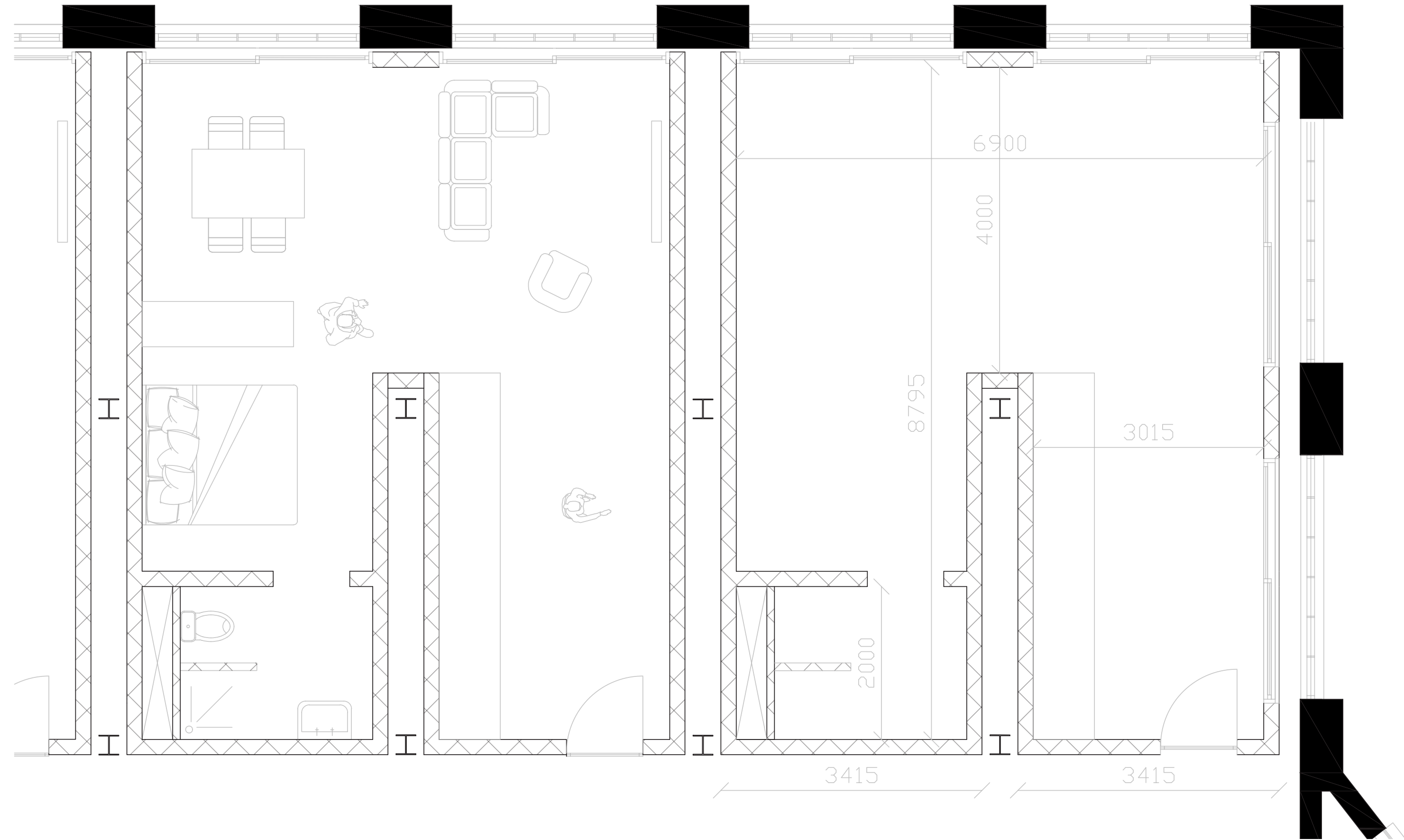
32560



SECOND FLOOR



APARTMENTS



APARTMENT INSTALLATION

<https://www.engineered-solutionsdirect.com/stand-ard-manual-hand-forklift-capacity-1000-kgs.html>



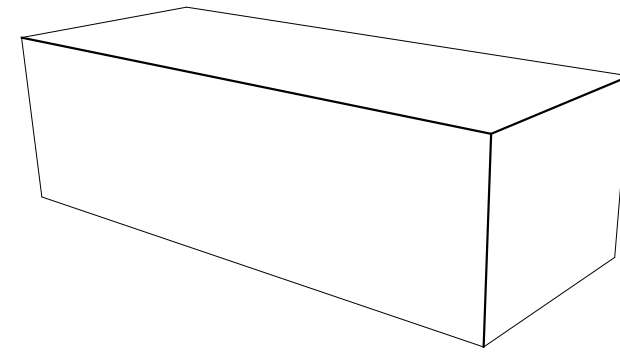
<http://palletprijzen.com/product/epal-euro-pallet-used-a-choice-kopie-2/>



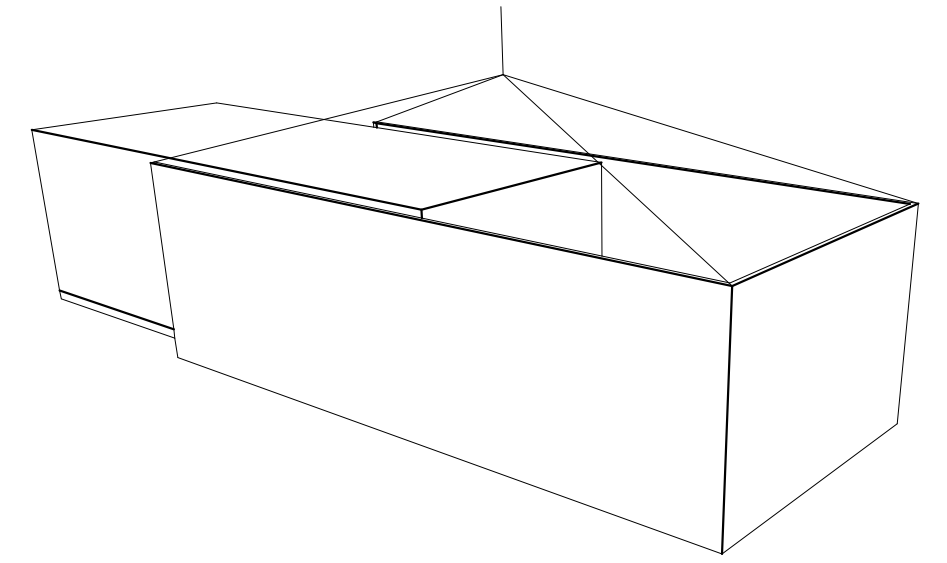
<https://www.framecad.com/en/construction/applications/pods/>



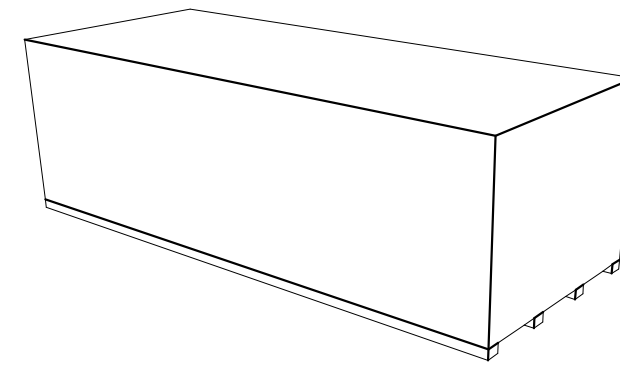
Prefab unit



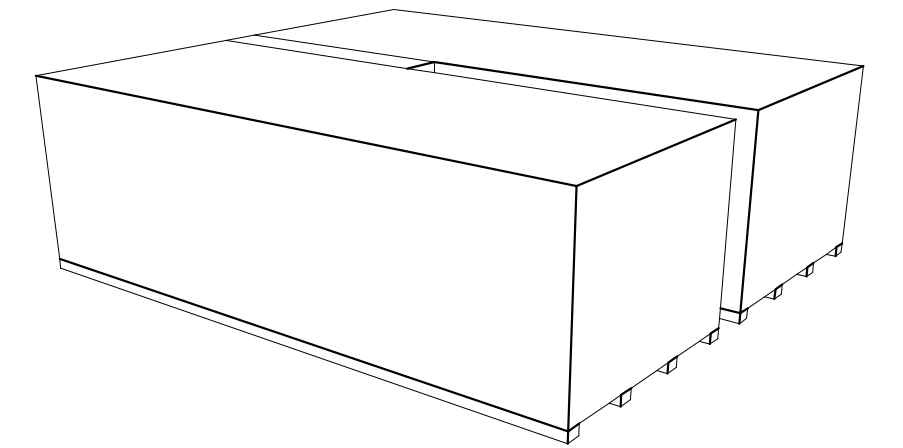
Slide into construction



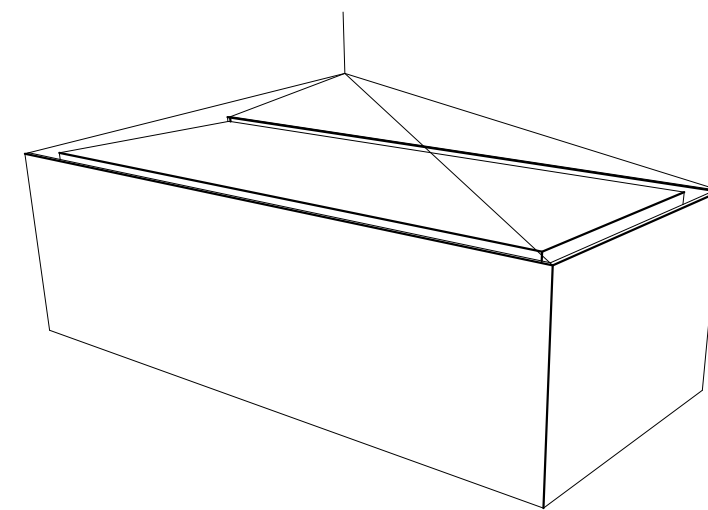
Raise unit



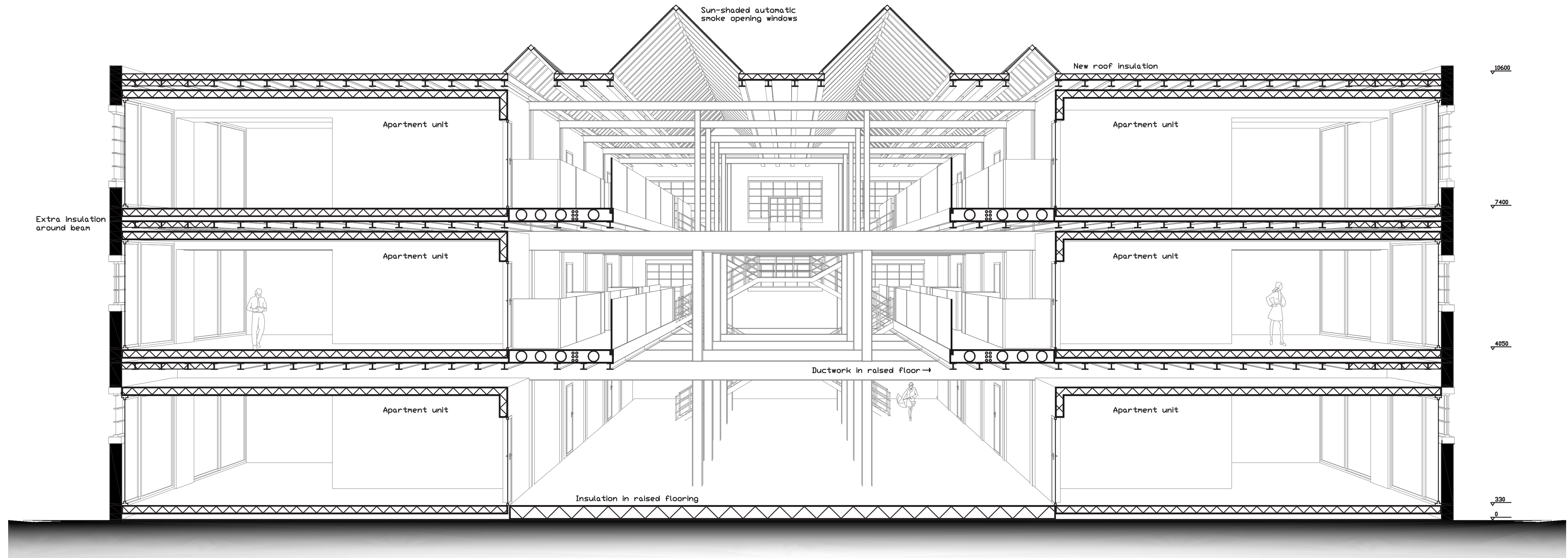
Connect to other unit



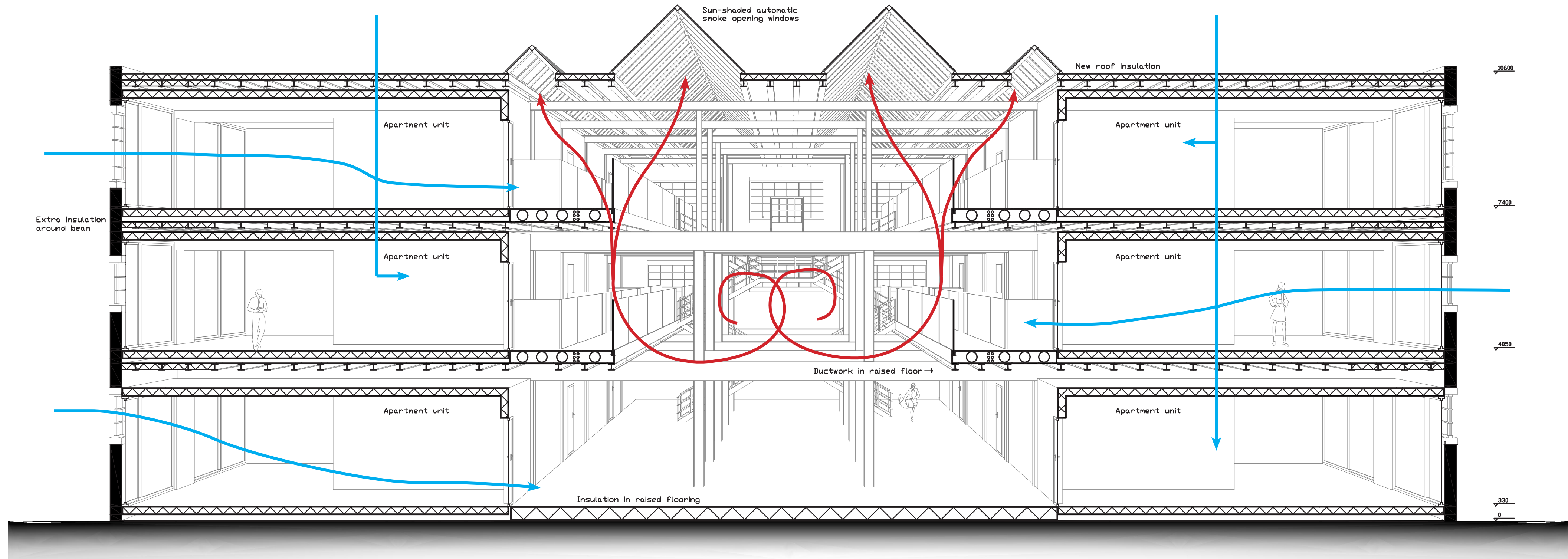
Lift unit into building



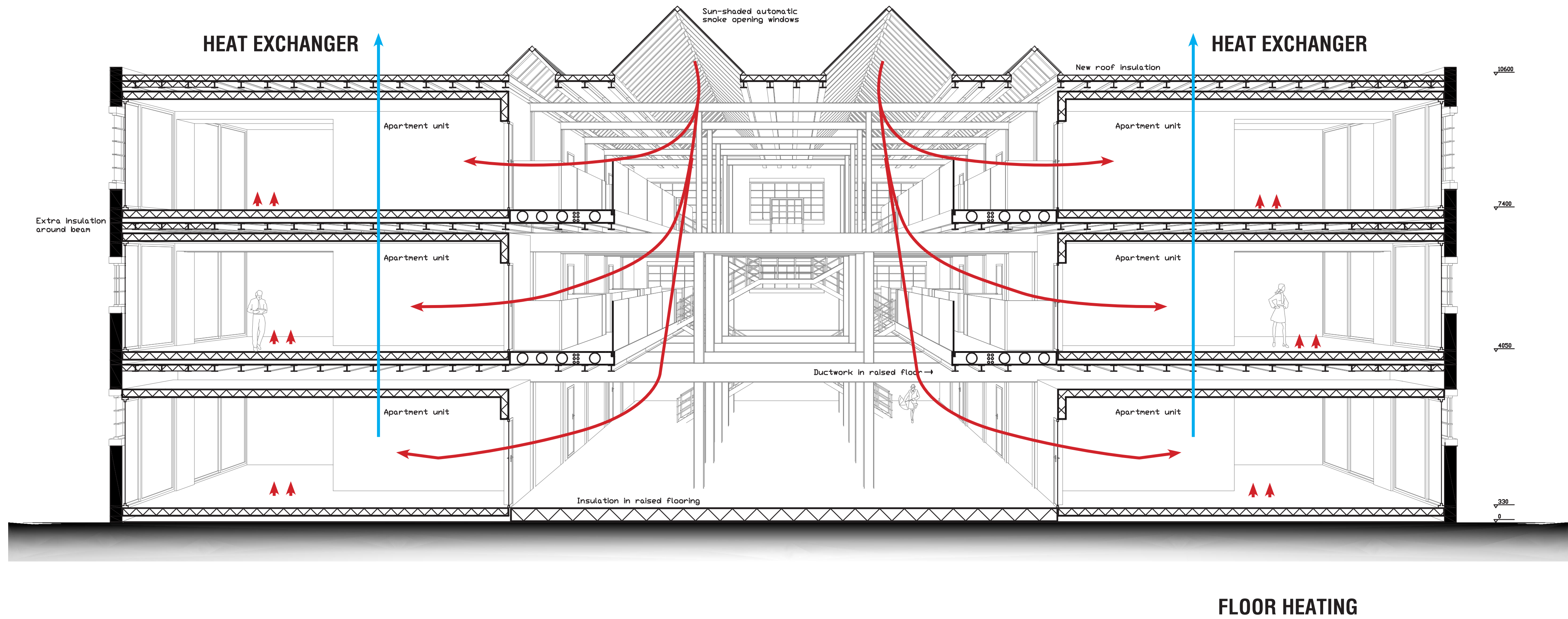
SECTION



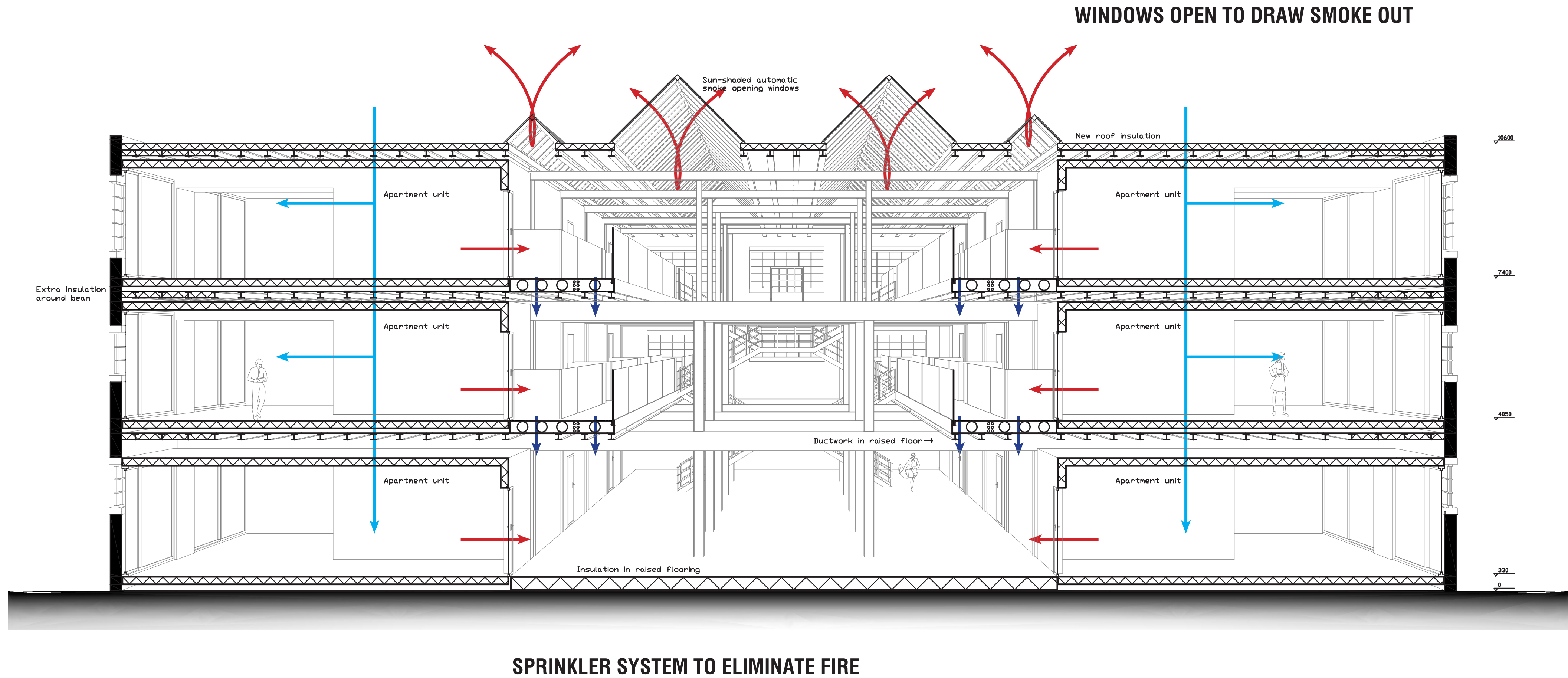
CLIMATE PRINCIPLES SUMMER NATURAL COOLING



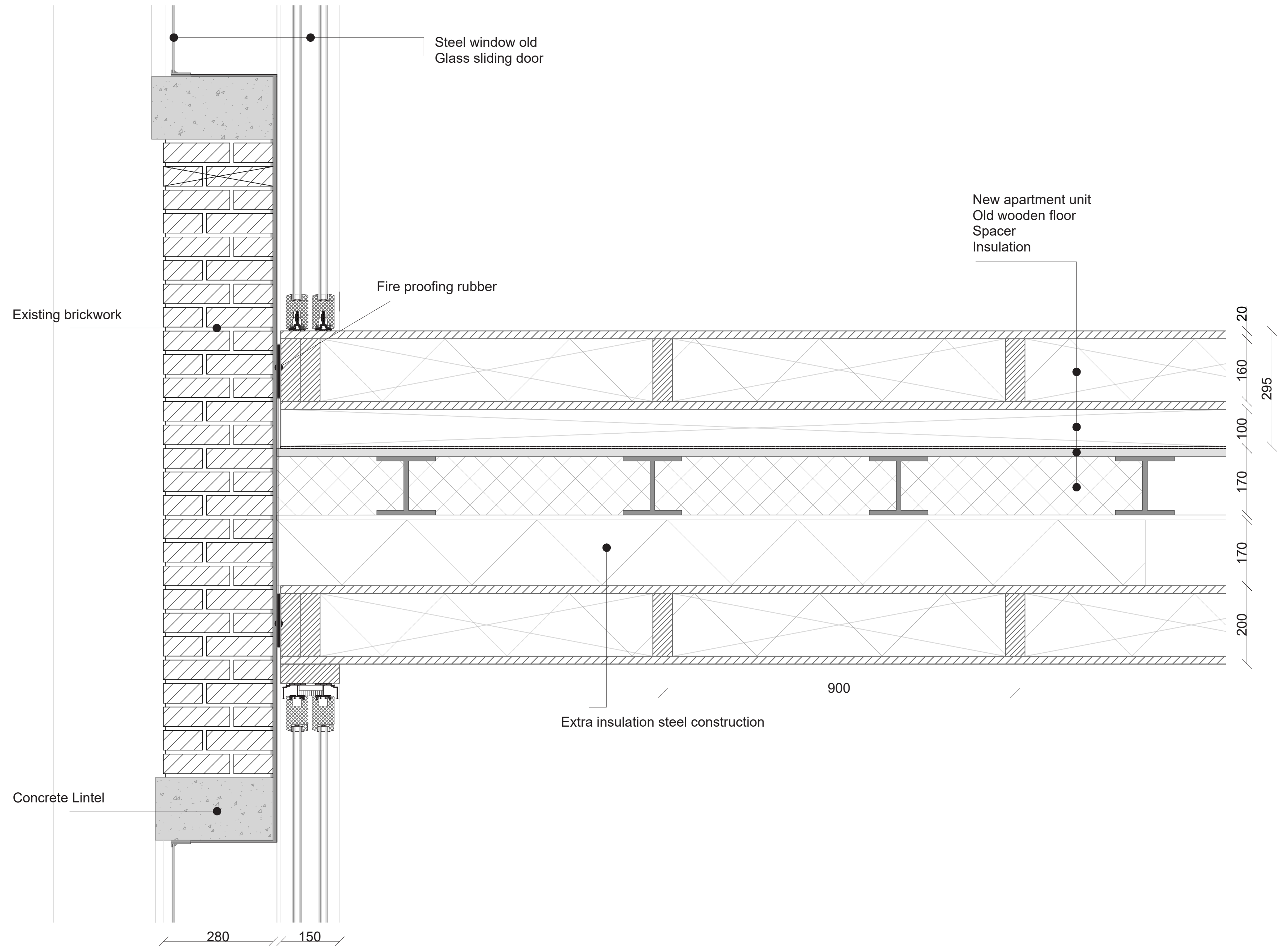
CLIMATE PRINCIPLES WINTER HYBRID HEATING



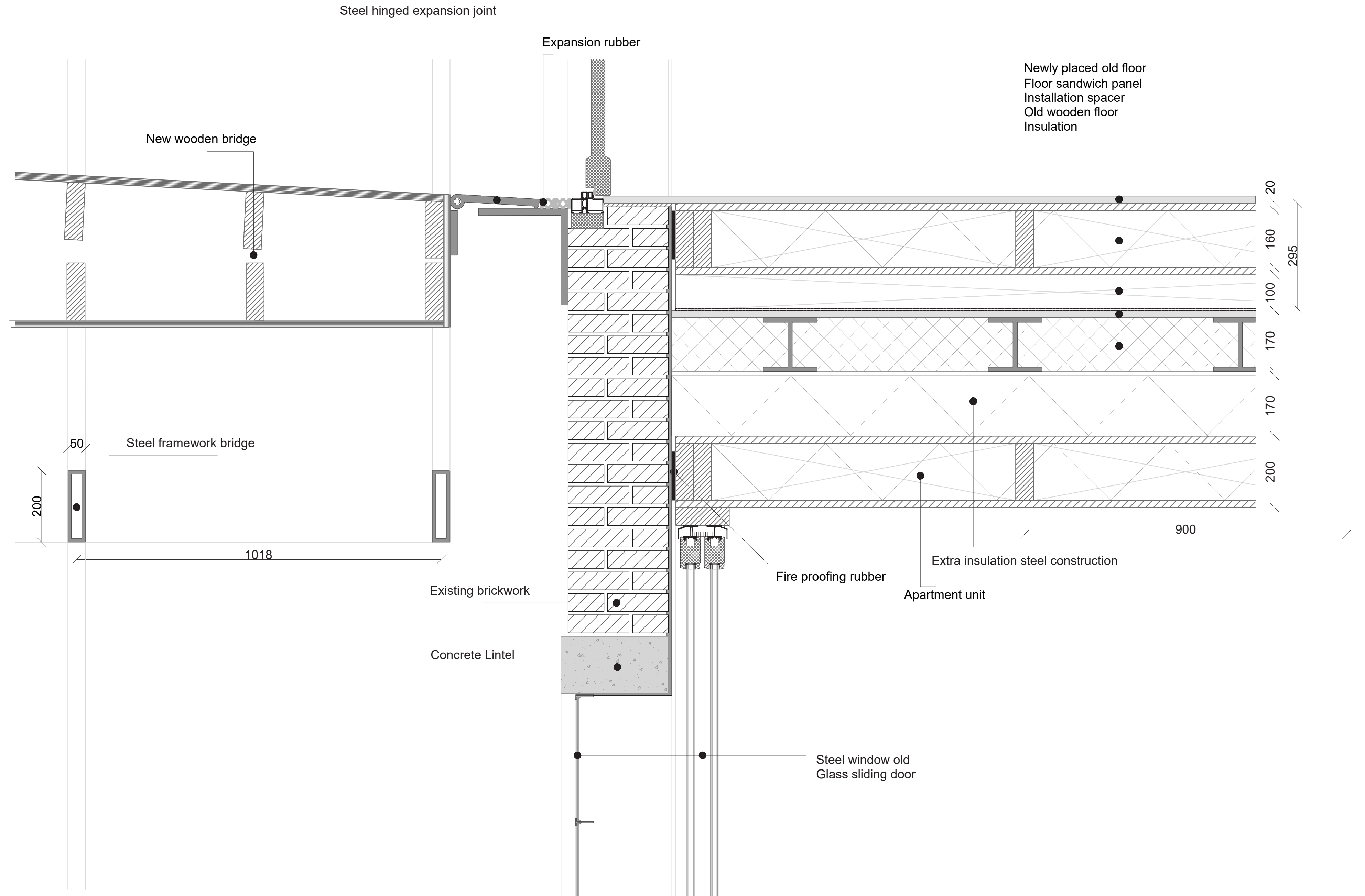
FIRE AND SMOKE PREVENTION



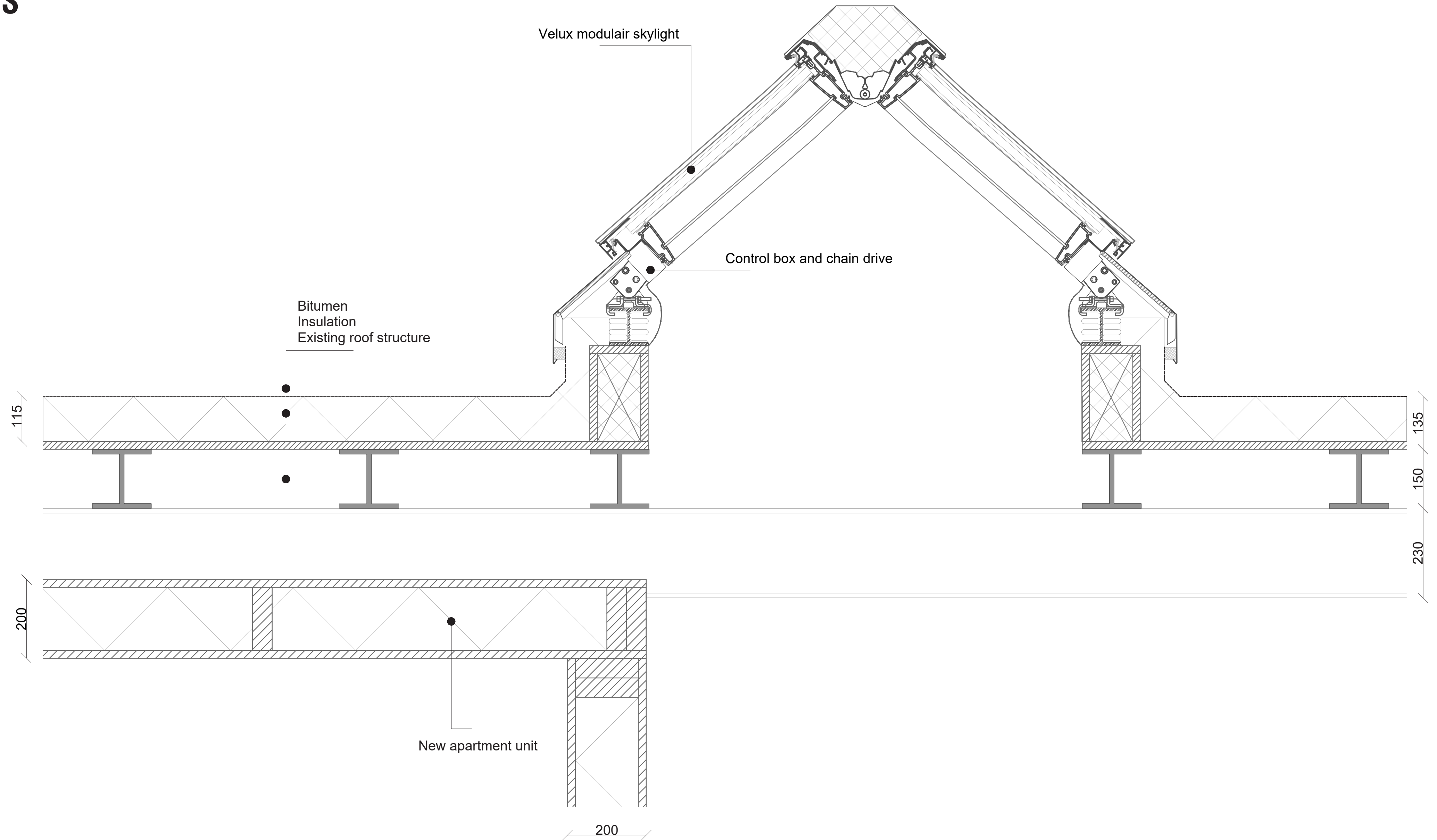
CONNECTION UNIT TO EXISTING



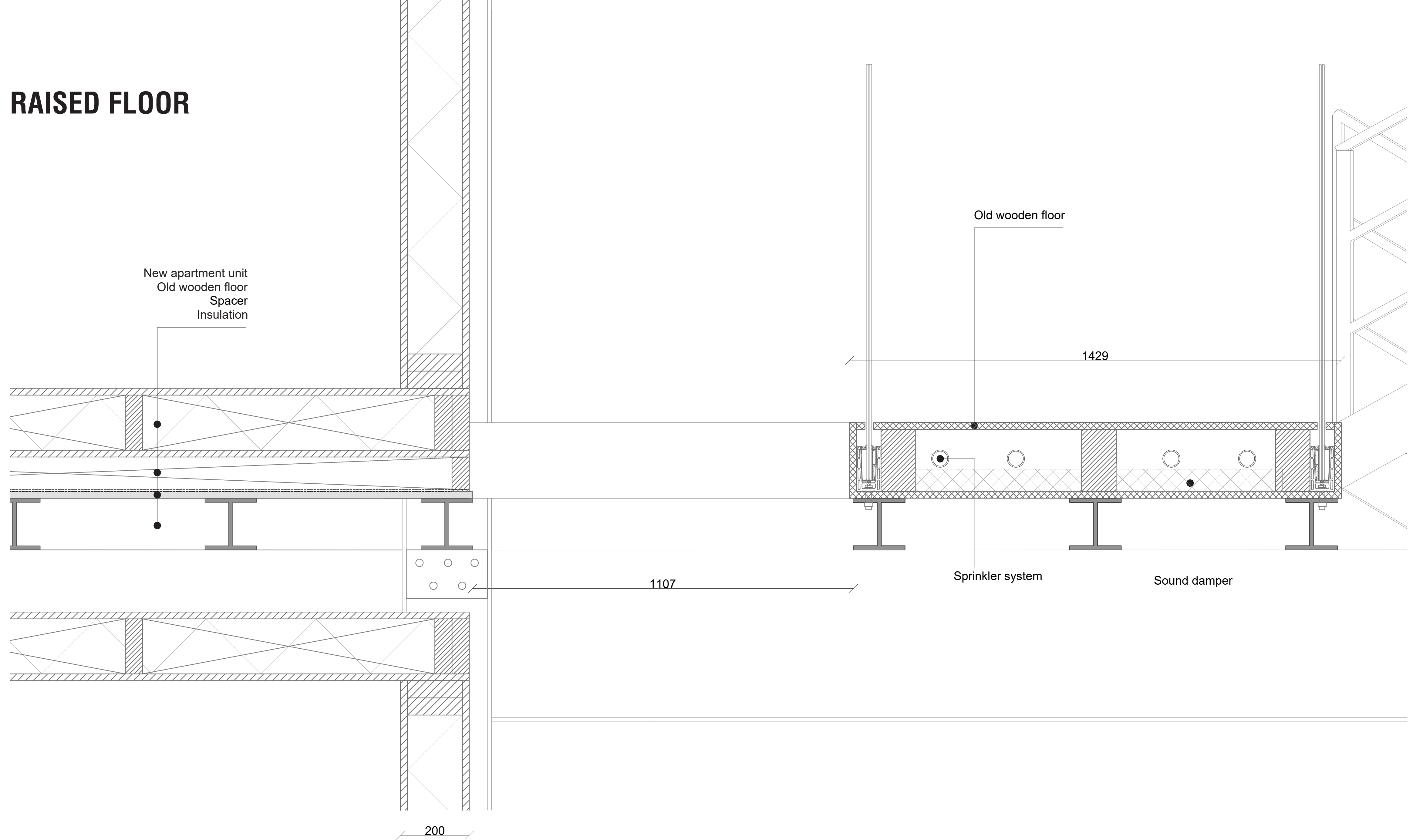
JOINT BUILDING AND BRIDGE



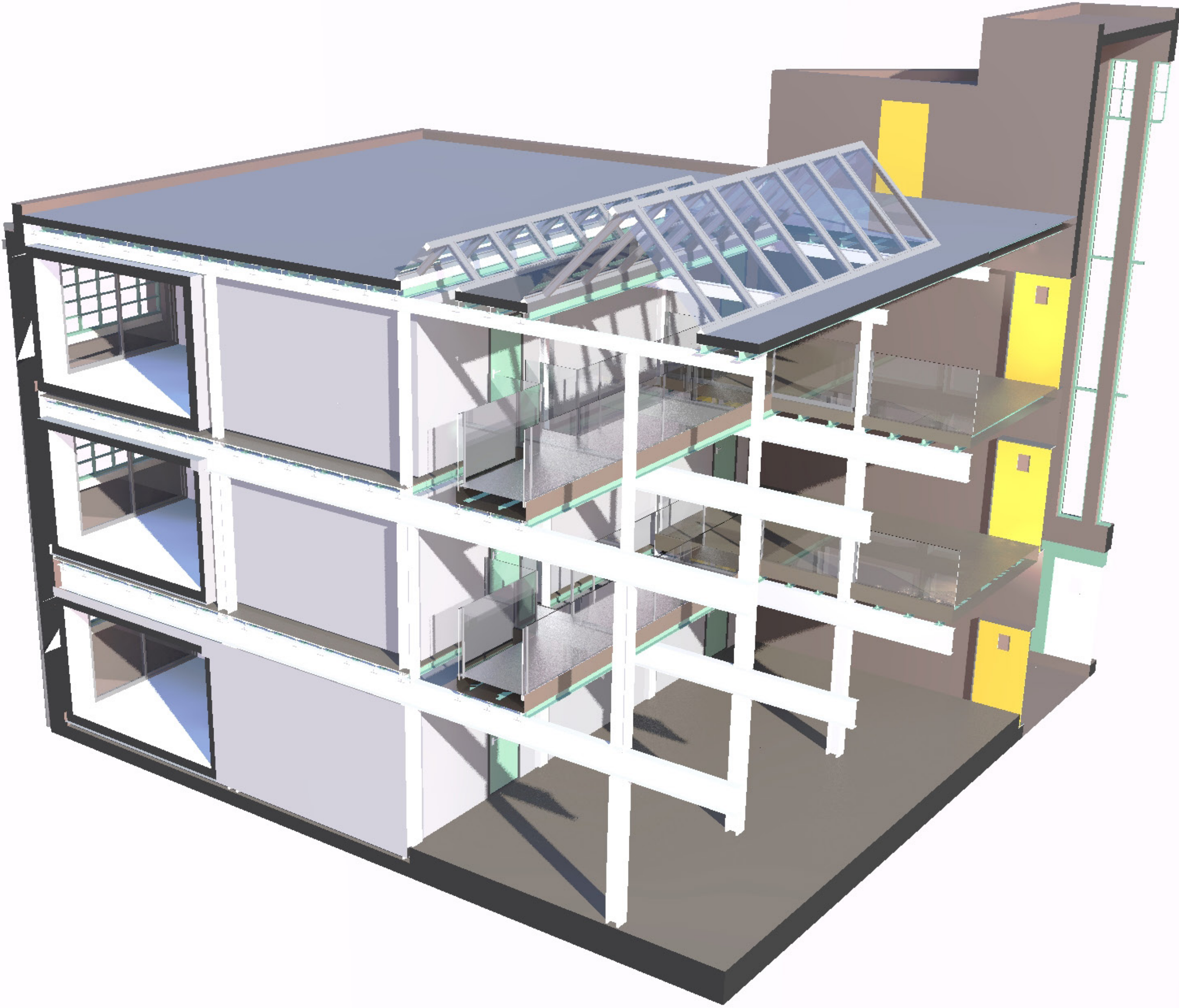
SKYLIGHTS



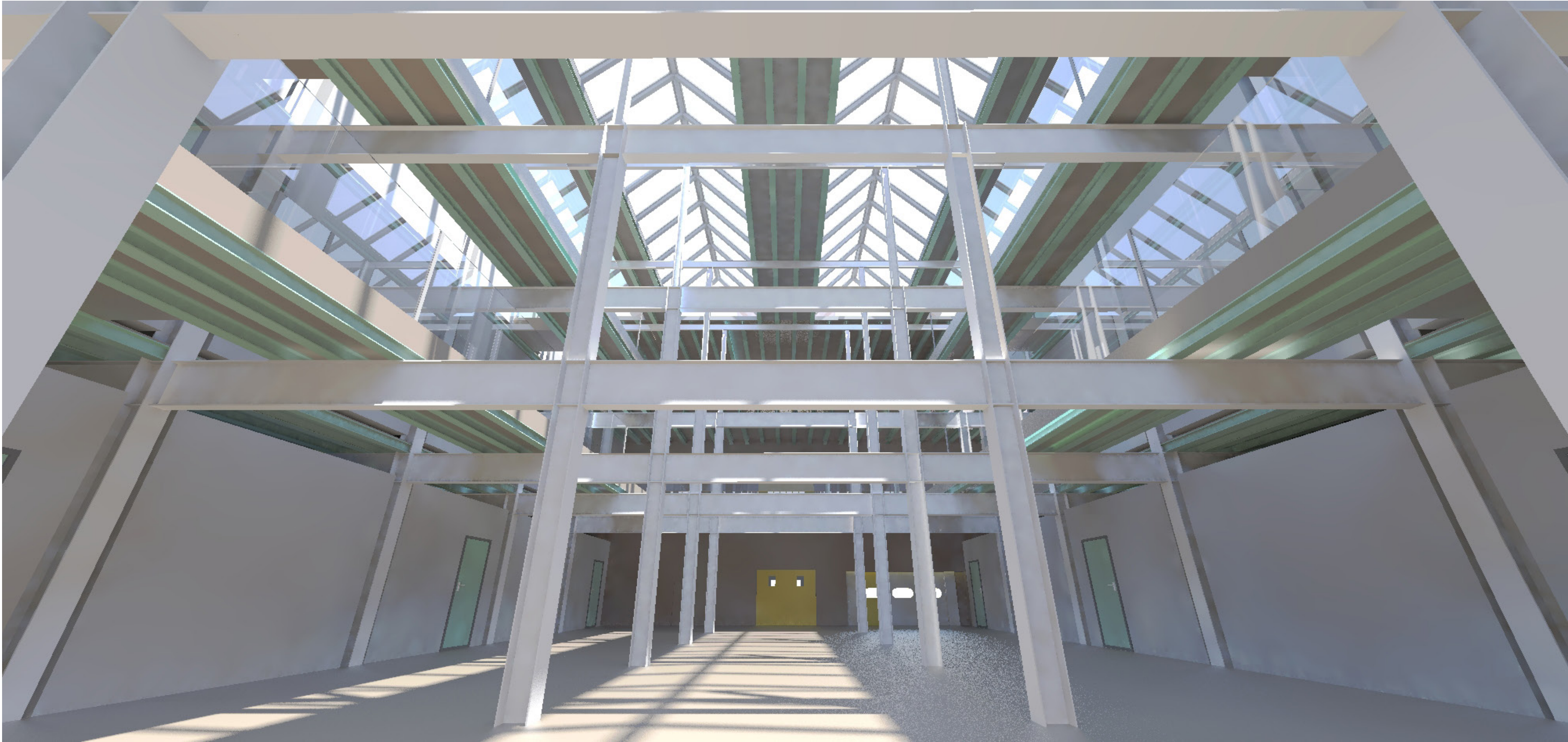
RAISED FLOOR



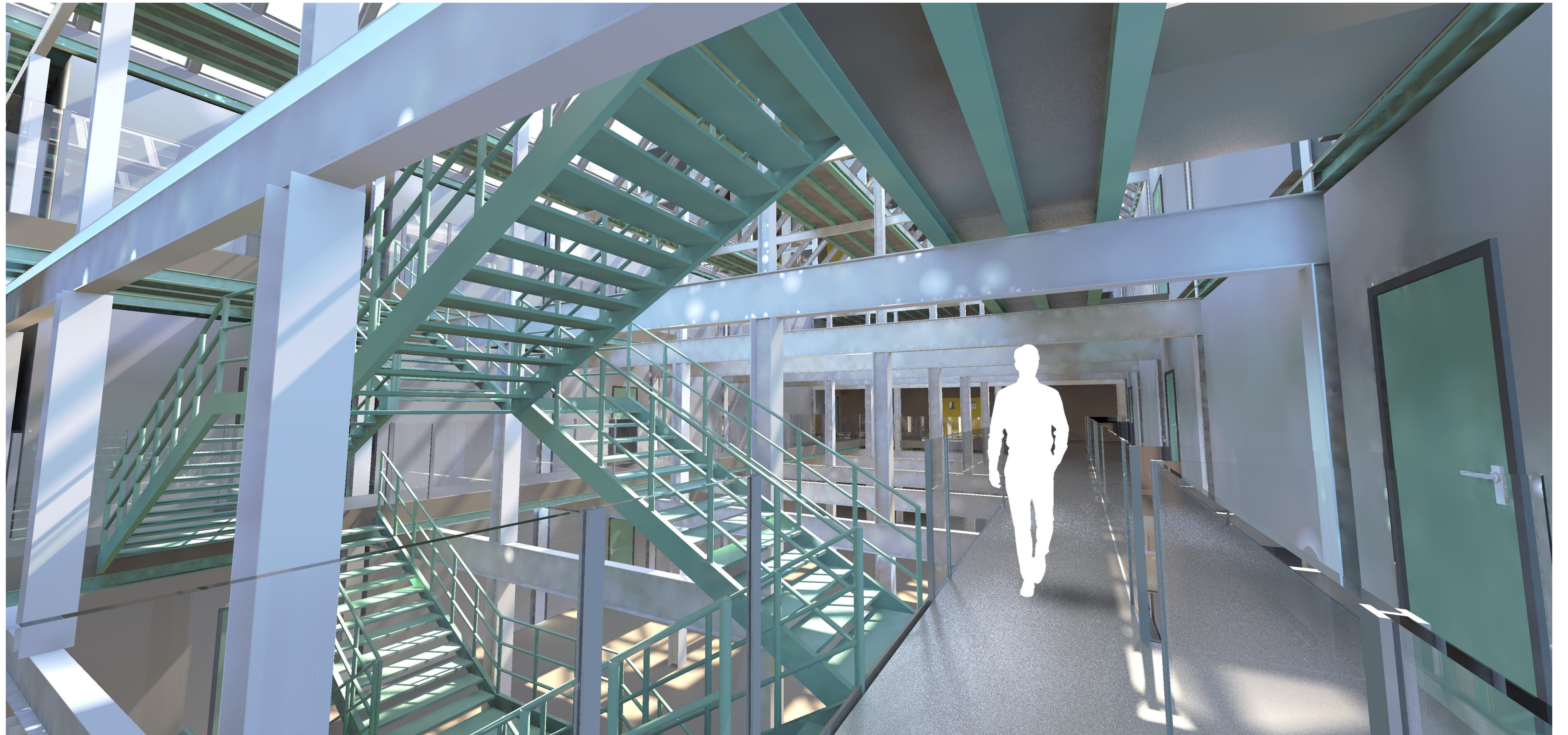
SECTION



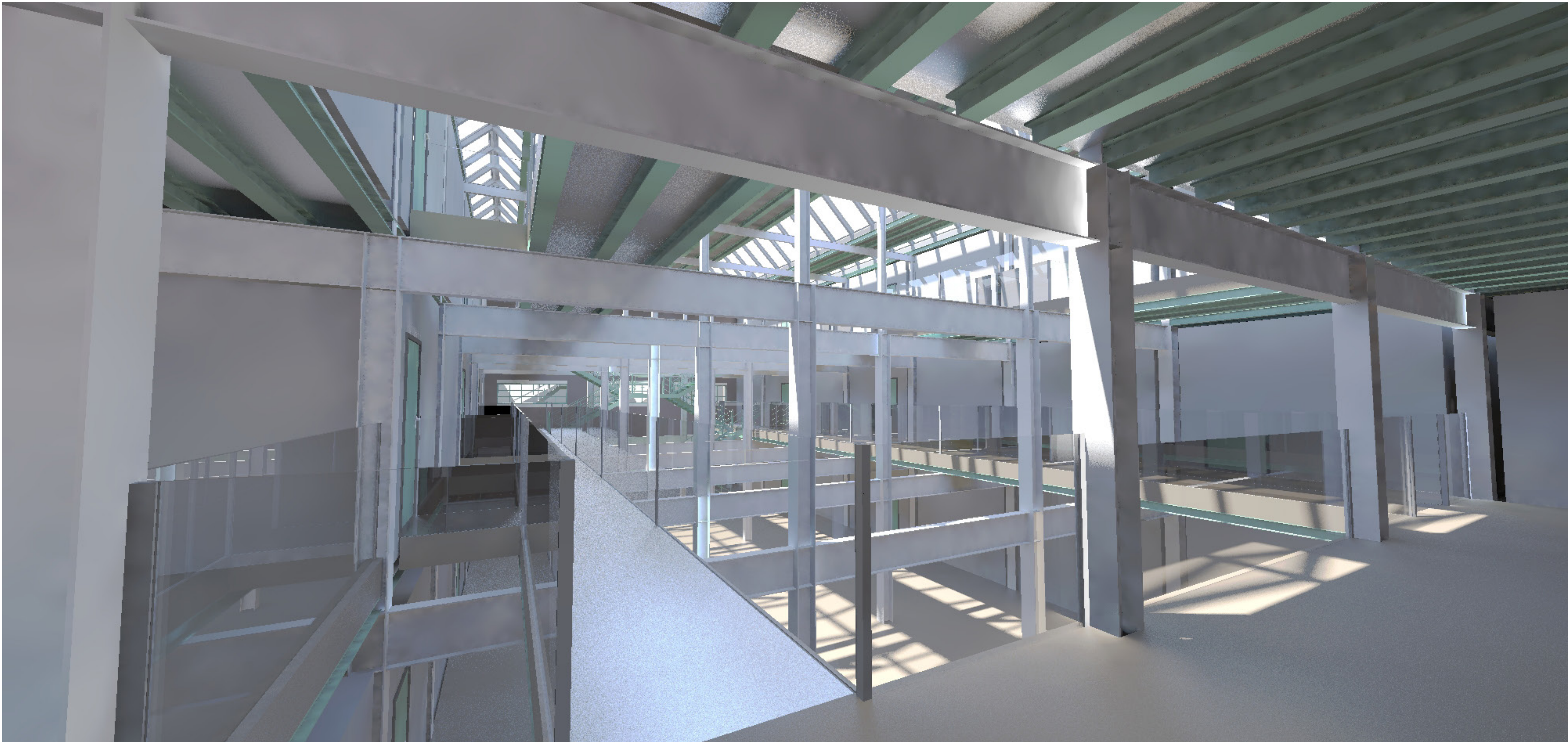
FLOOR OPENING



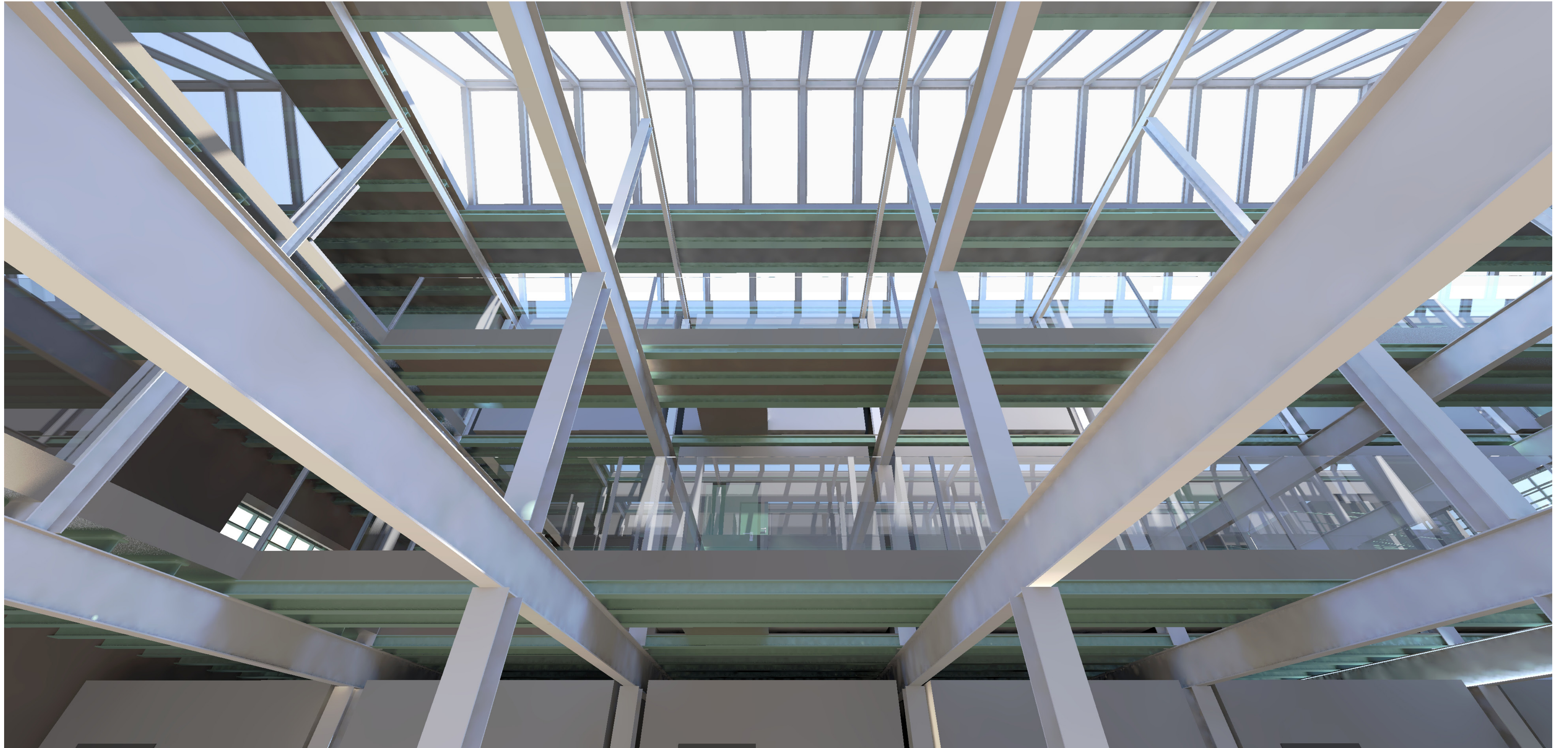
INTERIOR VIEW HALLWAY



ORIGINAL CONSTRUCTION AND COLOURS



EFFECT OF GRID CONSTRUCTION



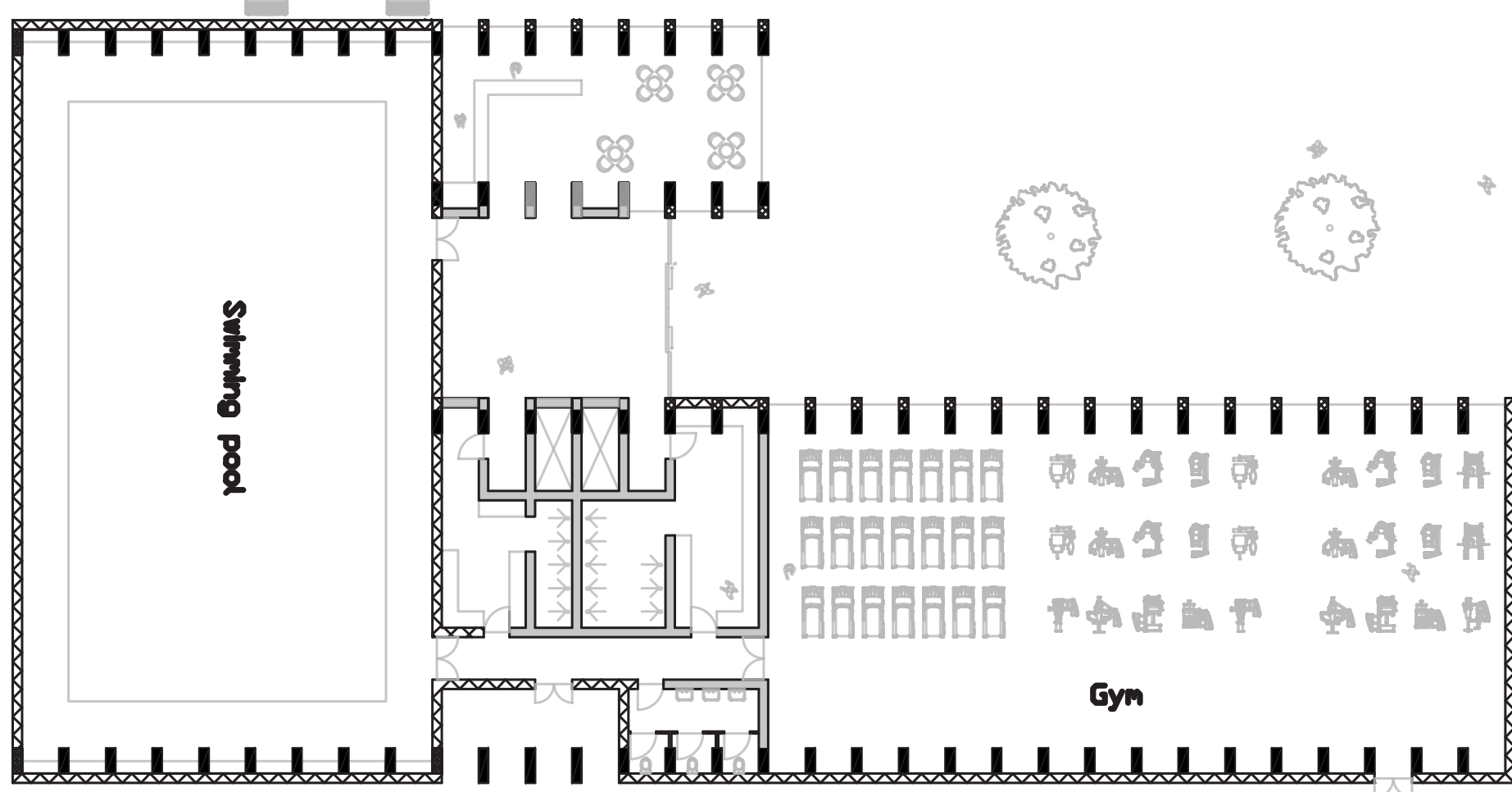
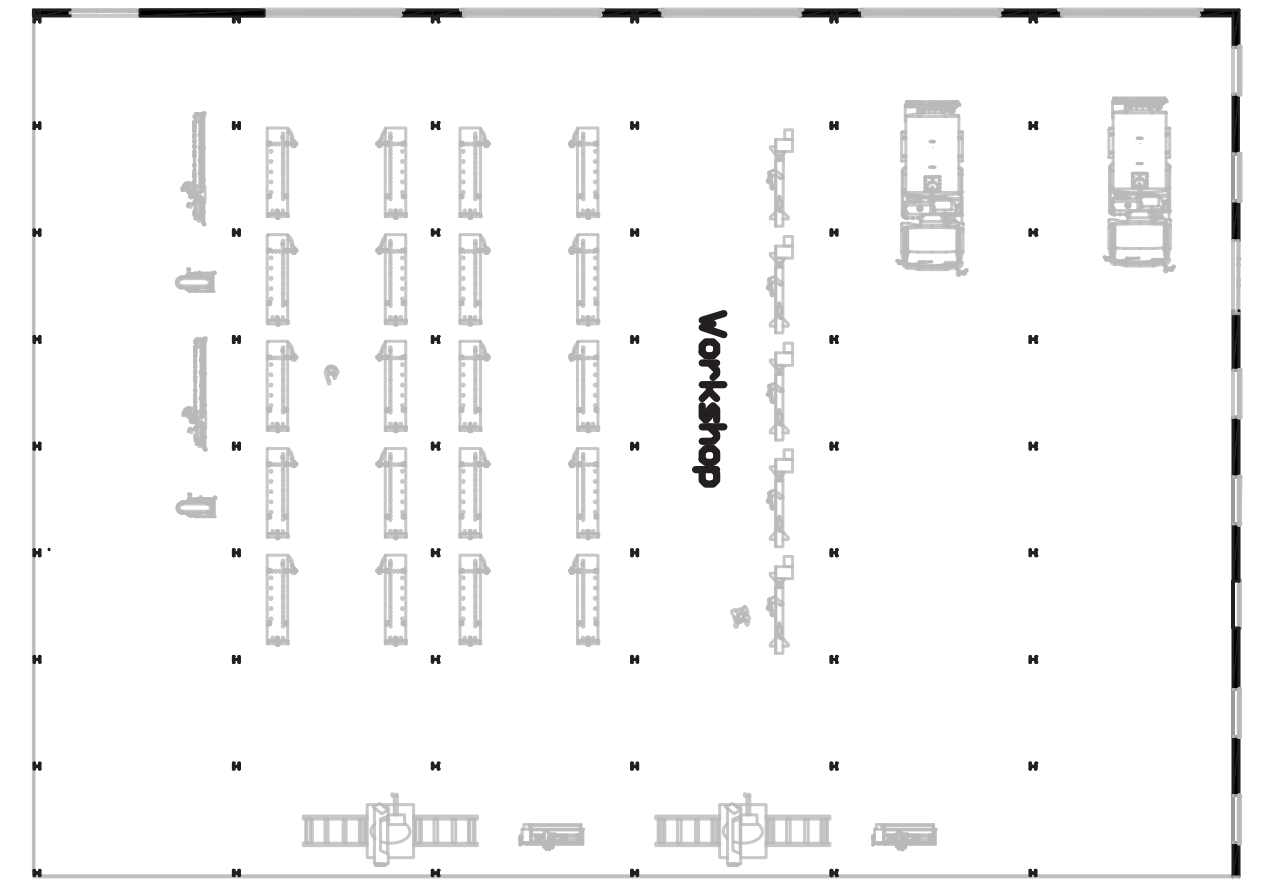
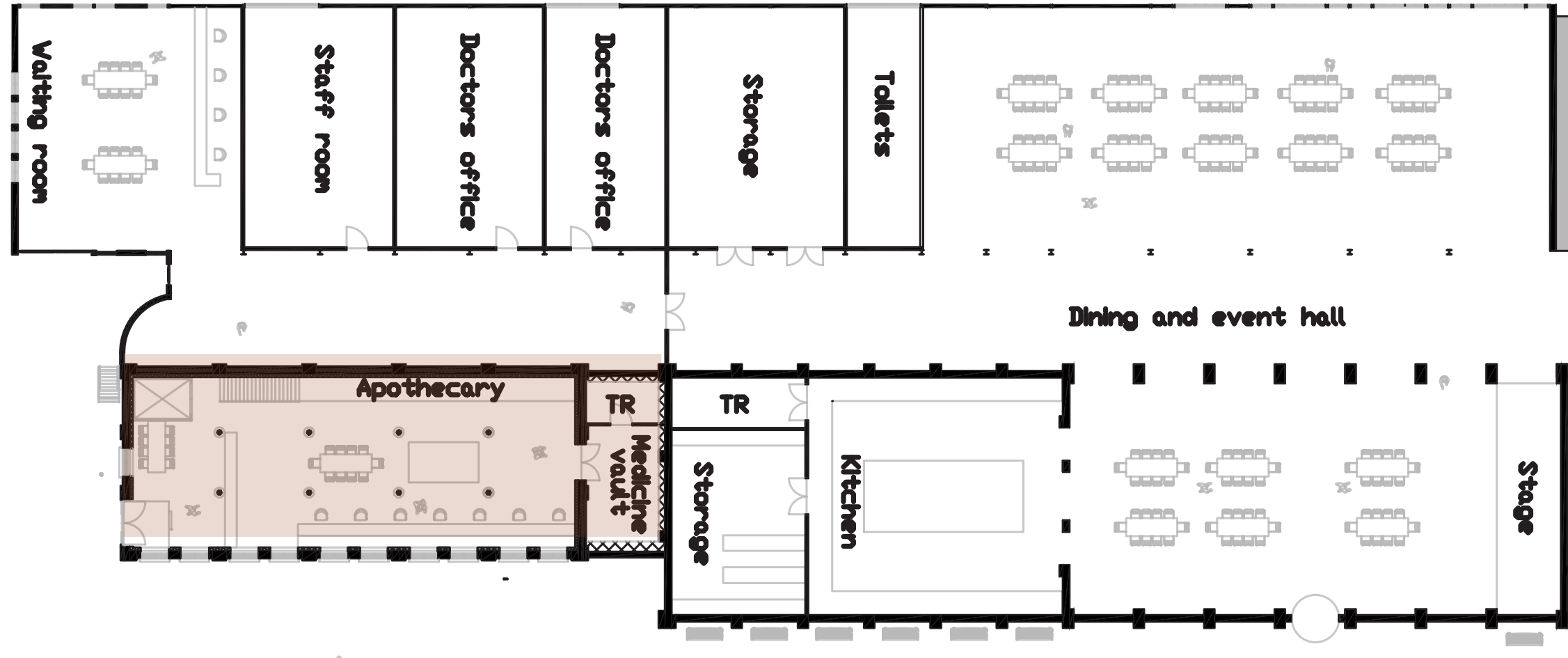
APPARTEMENT UNITS INTERIOR



APOTHECARY

Former production facility
Former warehouse
build in the early 1900's

To be:
Apothecary
Psychologist office



ELEMENTS OF VALUE

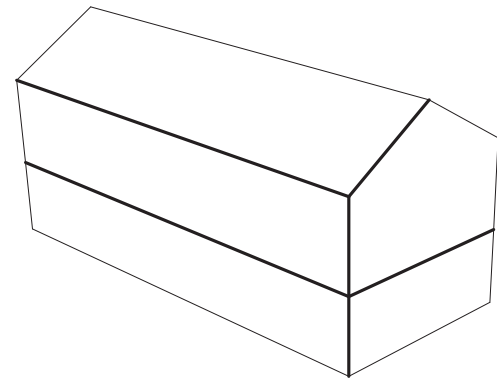


- Visible strong construction
- Cast iron columns
- Grid layout reflected in structure and facade
- Patina
- Decorative brickwork
- Open plan
- Large industrial doors

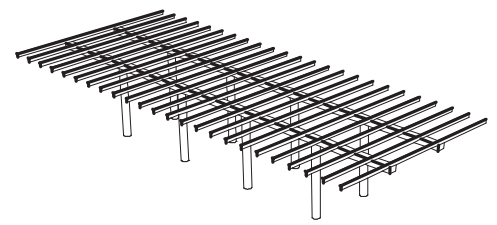


MAIN APPROACH

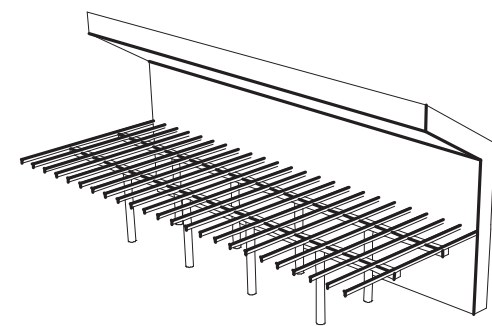
Maintain decorative
facades



Highlight construction
and patina



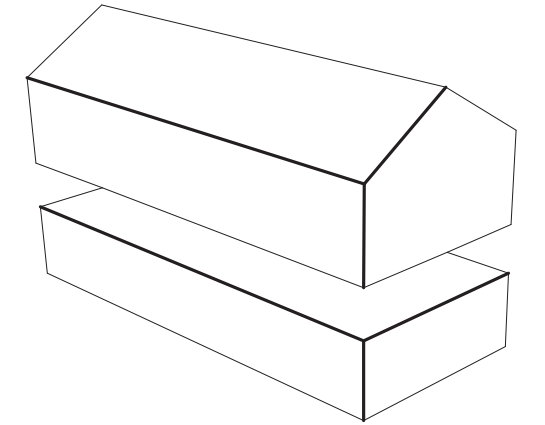
Recreate classic column



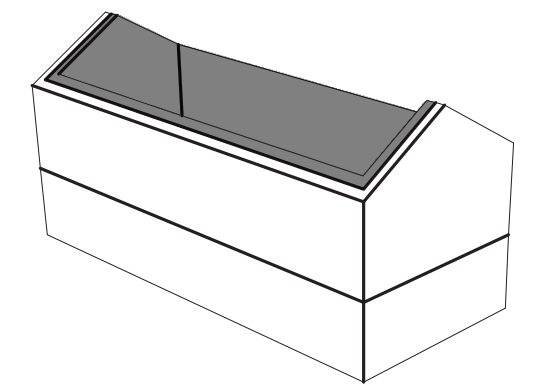
Starting frame



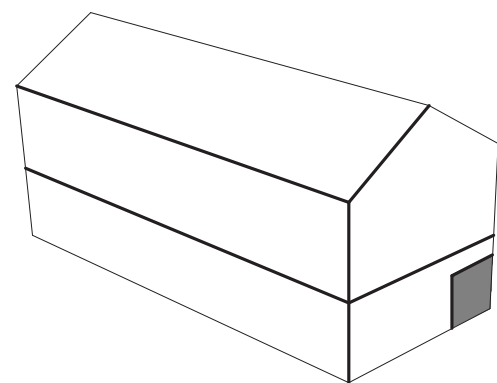
Create 2 separate
functions on the floors



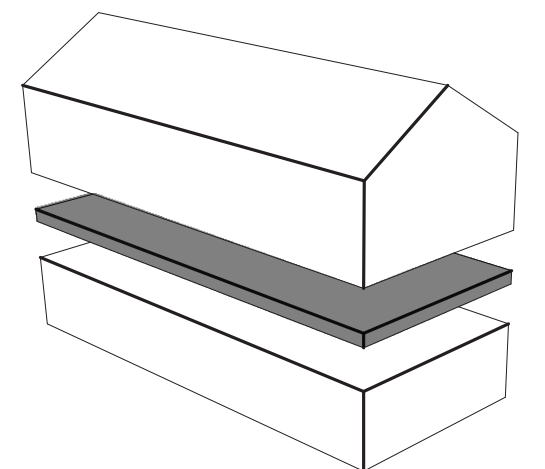
Add interior insulation



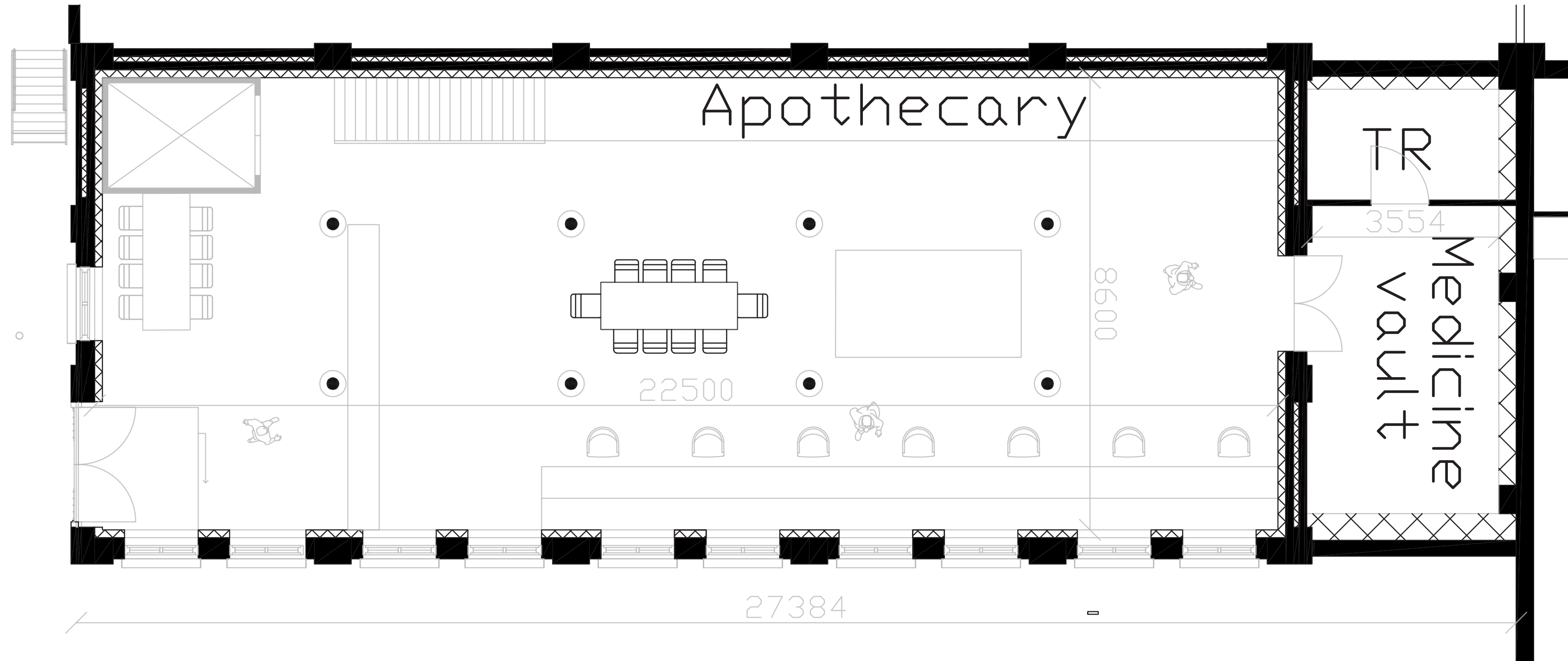
Maintain original
doorway



Separate floor by floating
screed insulation



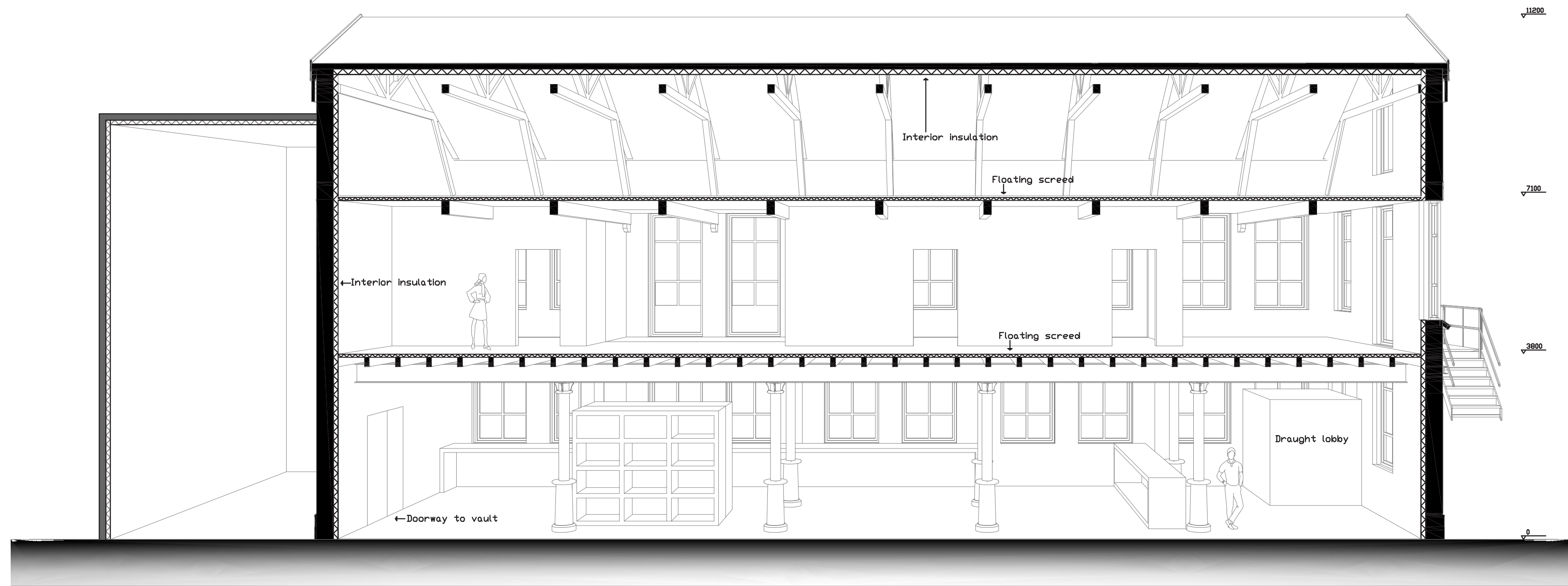
GROUND FLOOR



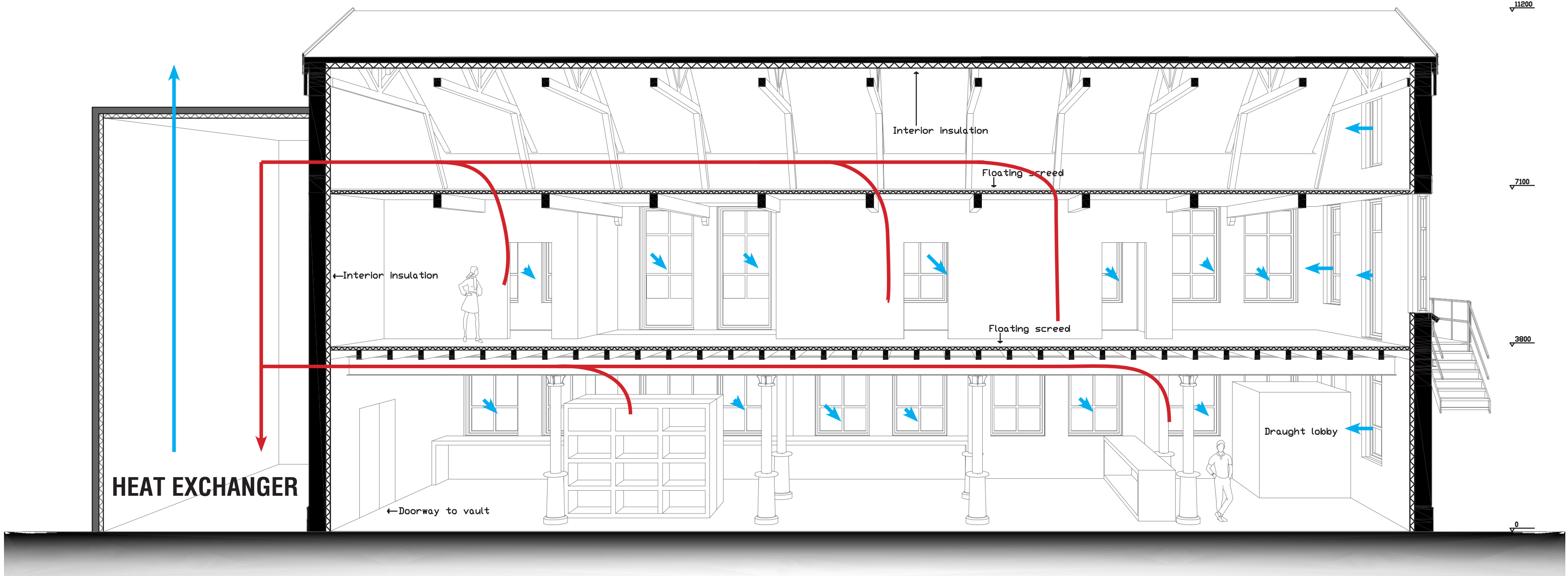
FIRST FLOOR



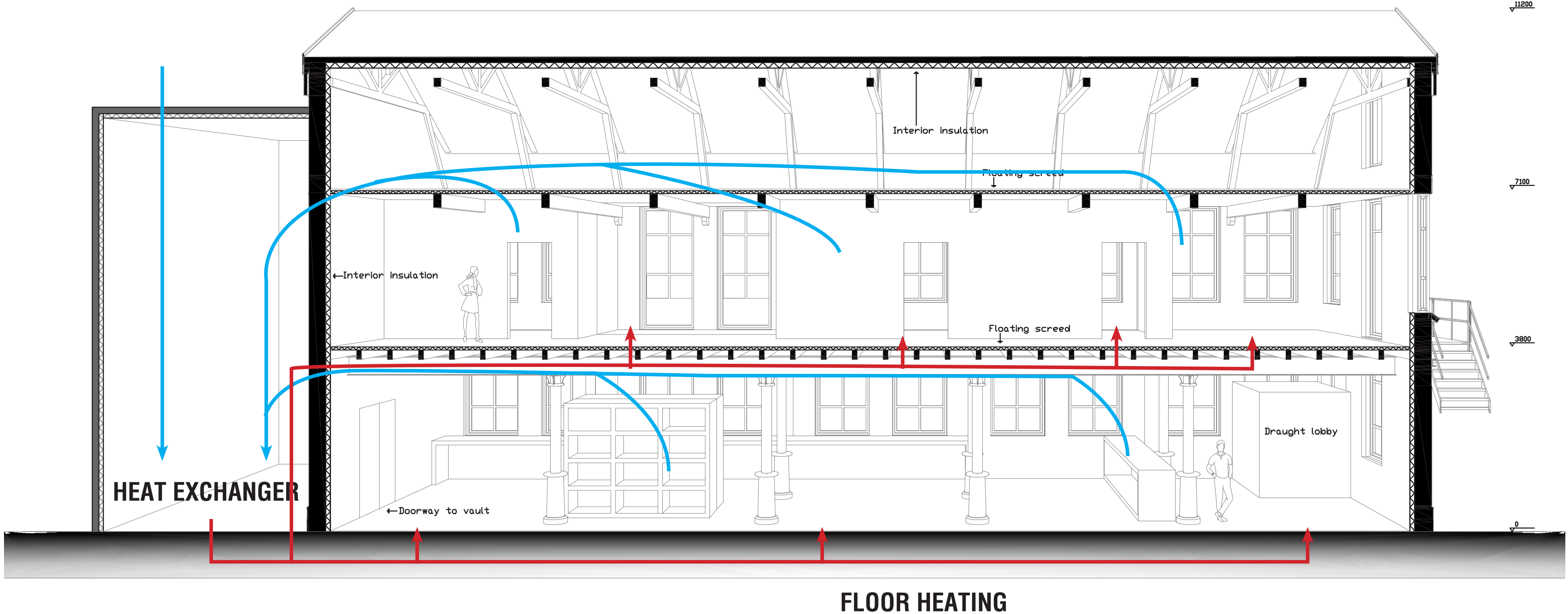
SECTION



CLIMATE PRINCIPLES HYBRID COOLING IN SUMMER



CLIMATE PRINCIPLES MECHANICAL HEATING IN WINTER



BRIDGE CONNECTION EXTERIOR



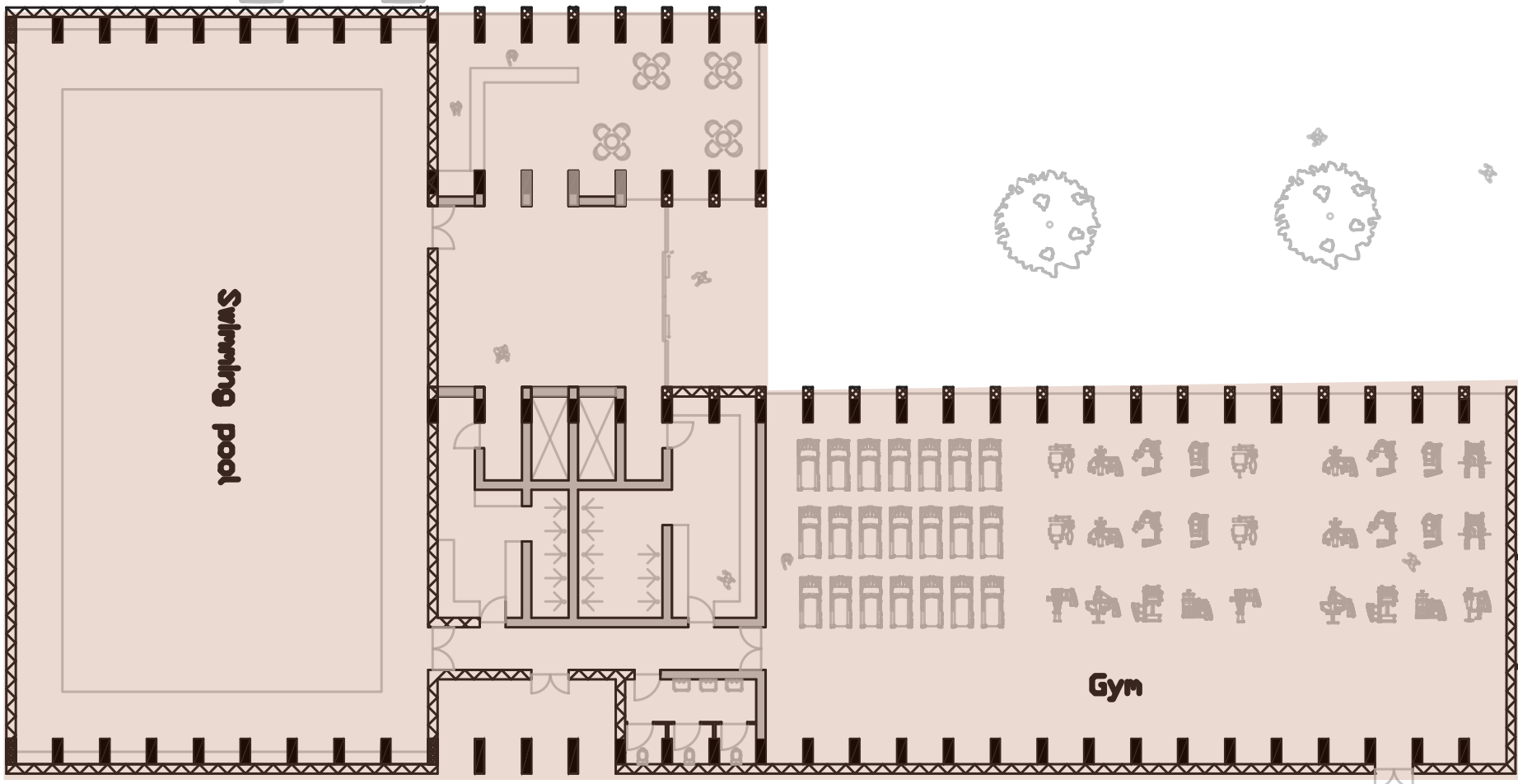
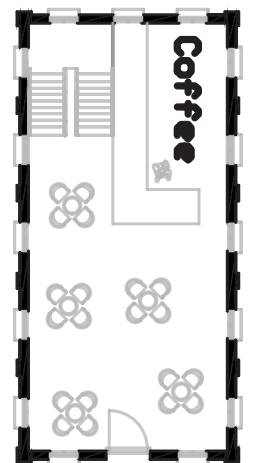
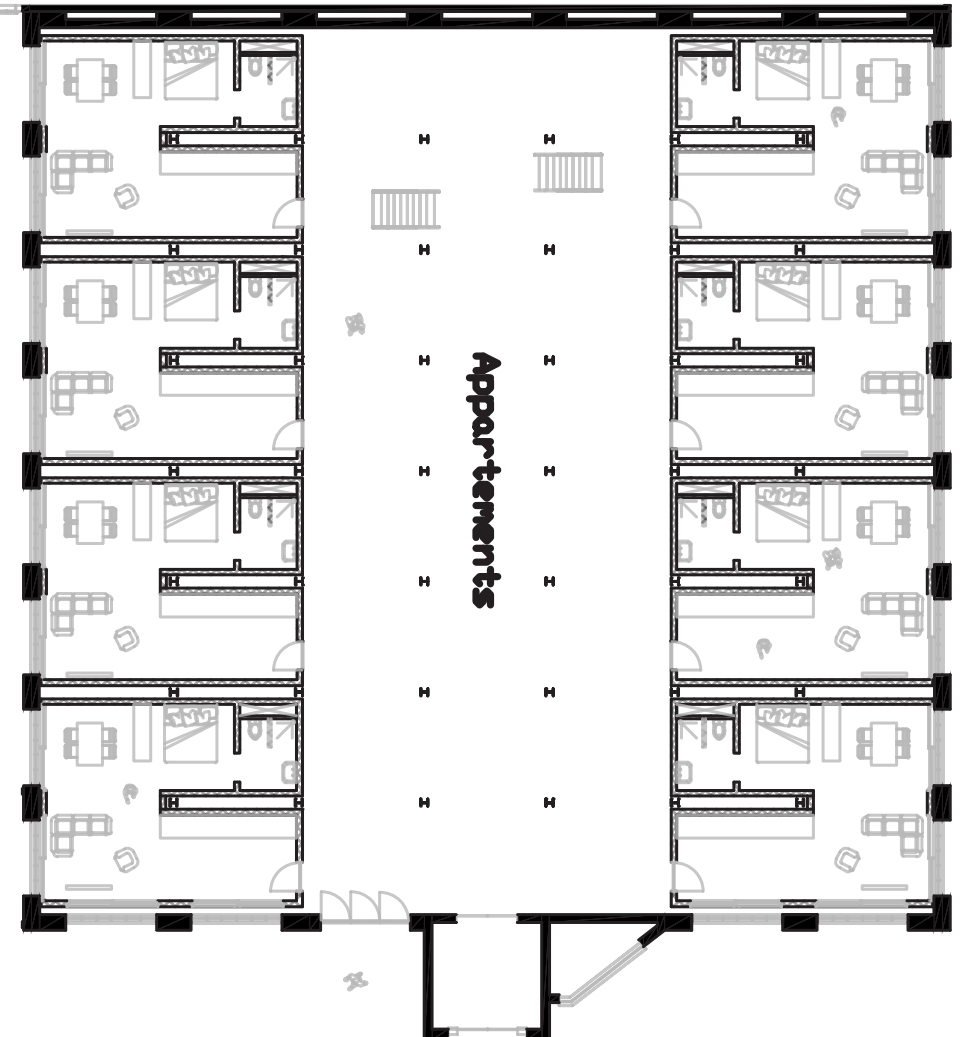
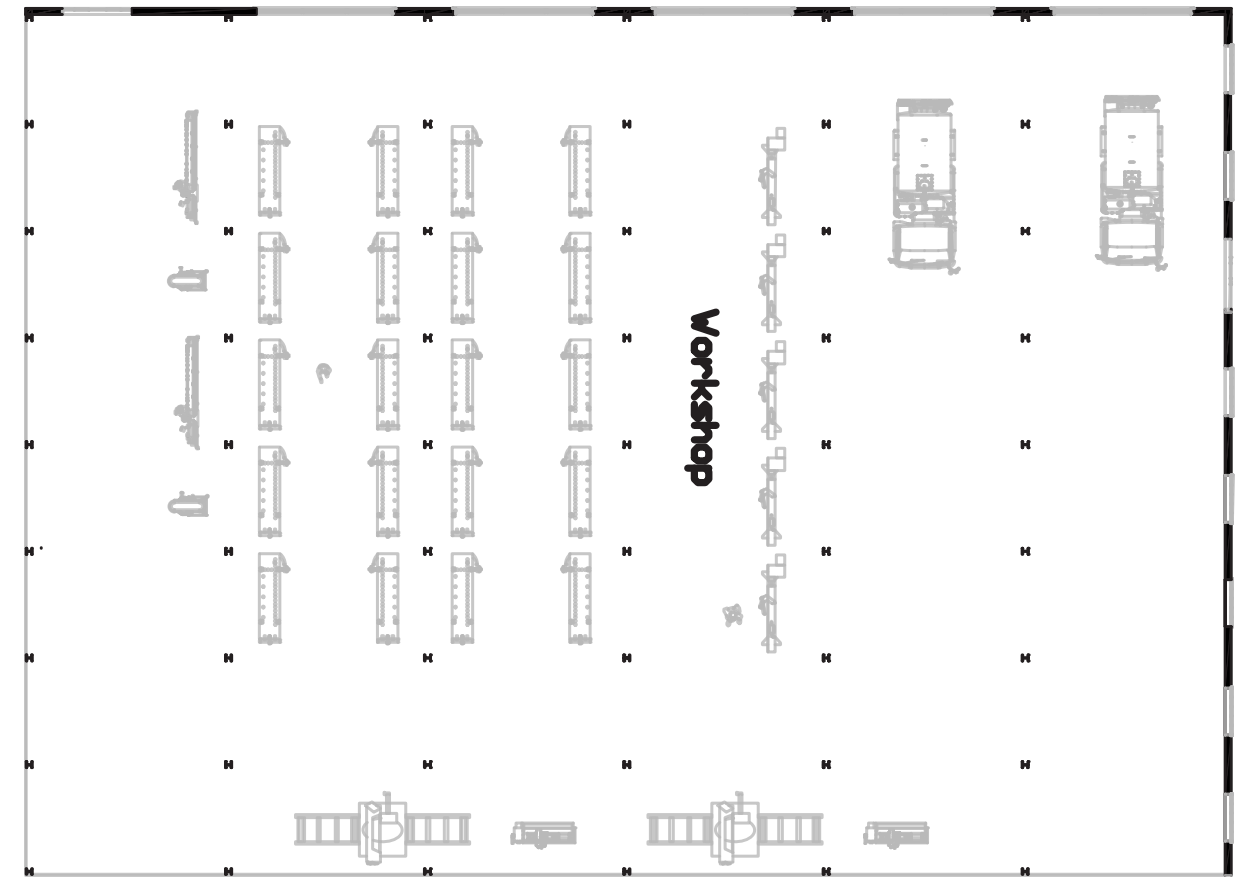
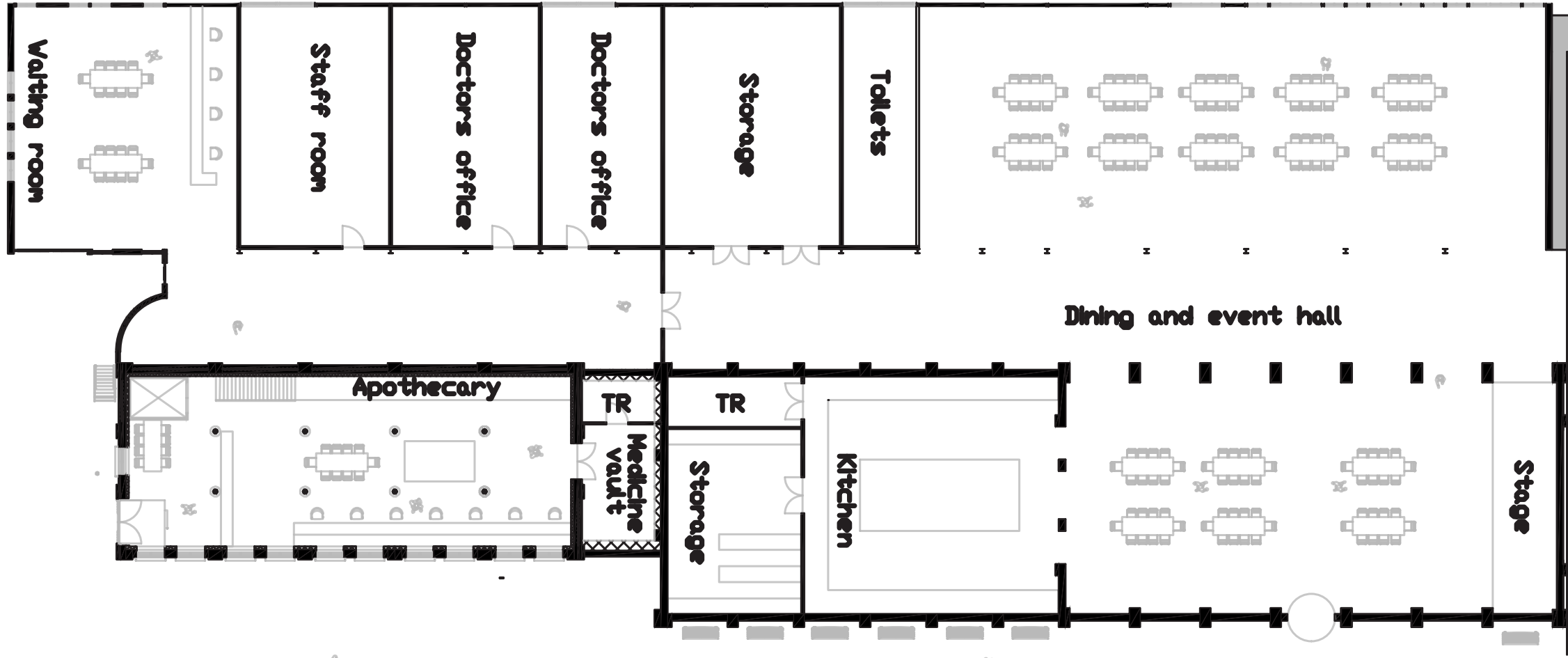
APOTHECARY INTERIOR



PSYCHOLOGIST OFFICES



GYM



APPROACH

Research:

Non-boring finish
Non-hospital style
Eliminate cold artificial lights

Ensemble:

Construction focussed
Construction visible
Utility focussed

Programme:

Pool
Gym

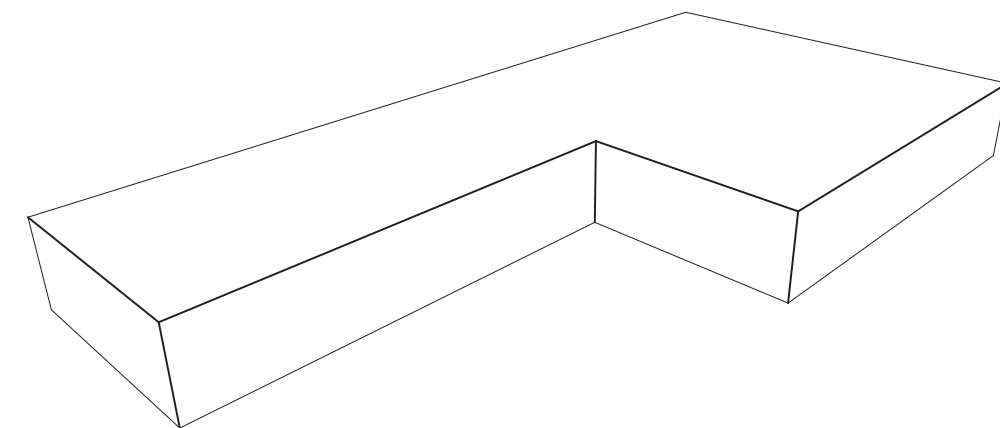
Physical exertion so mental
calm is required

Environment:

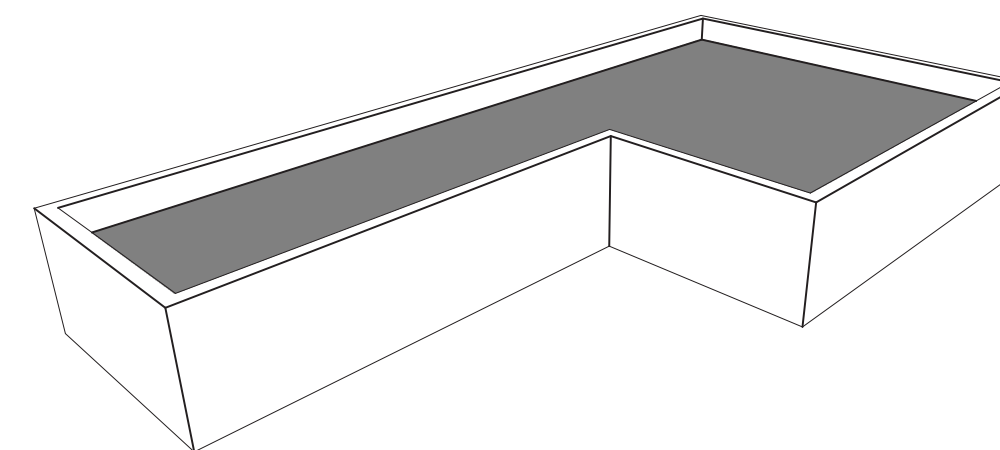
Sustainable material
Well insulated

Organisation:

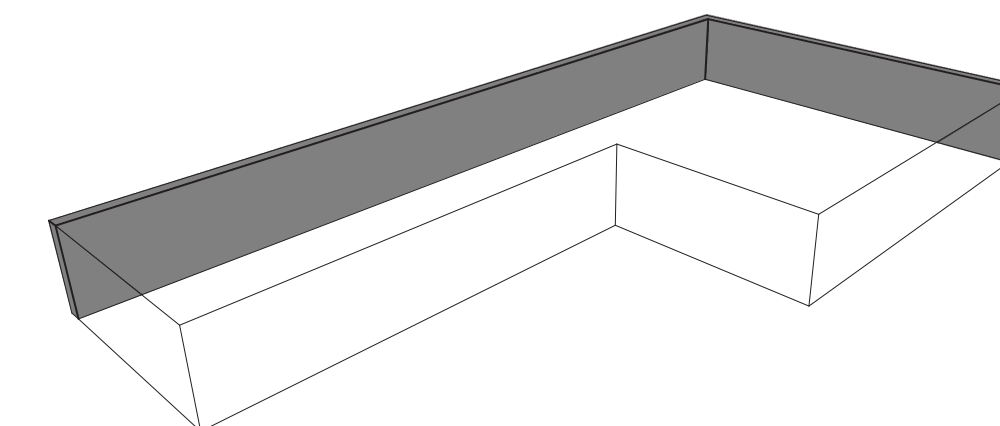
Create corner to square



Rooftop garden



Open on square site
Closed outside



Brutalist starting point

REFERENCES



Source: <http://thewordmagazine.com/neighbourhood-life/13-belgian-brutalist-gems/>



Source: <https://nl.pinterest.com/pin/91057223700924910/>



Source: <https://www.graubuenden.ch/de/thermevals>



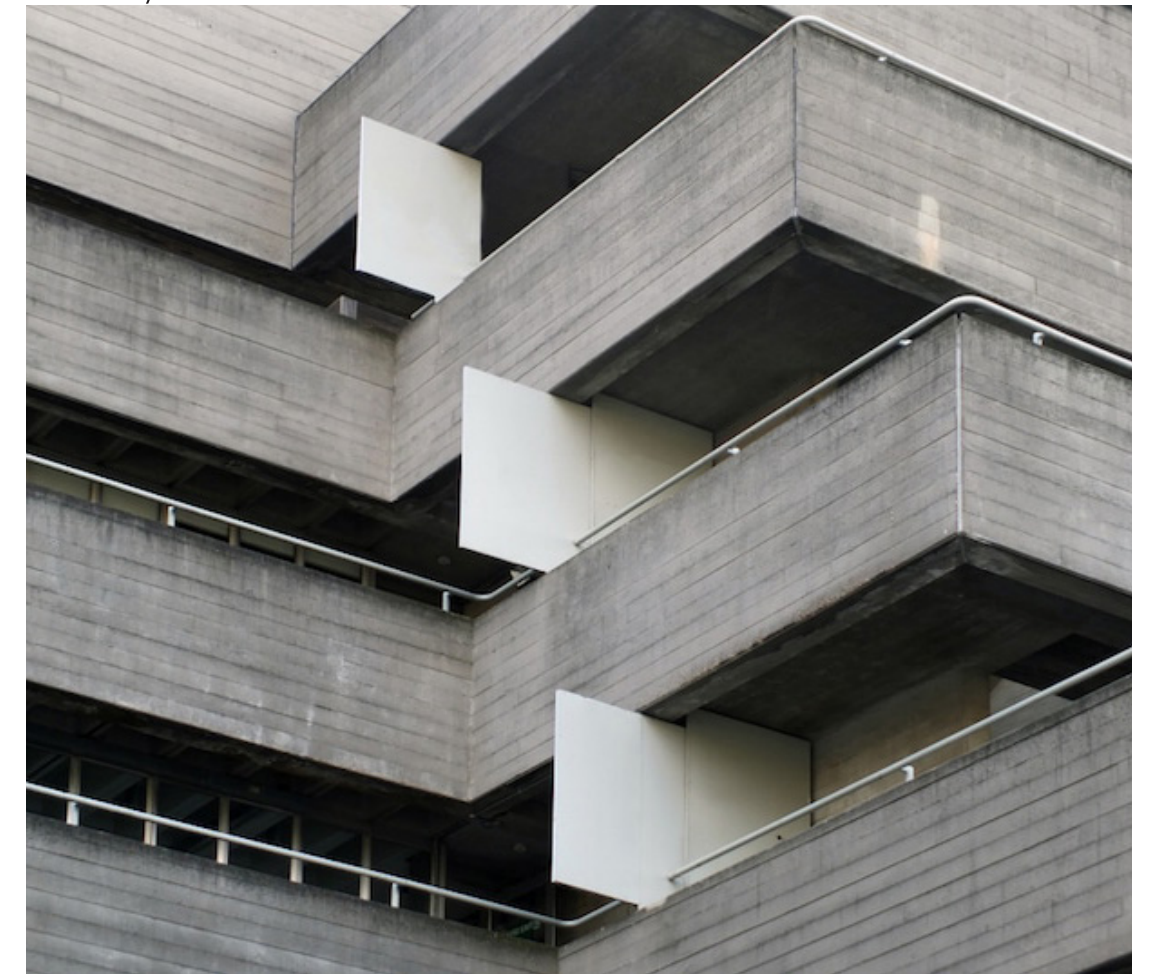
Source: <https://www.abc.net.au/news/2017-01-17/rooftop-garden/8187572>



Source: <https://www.graubuenden.ch/de/thermevals>



Source: <https://timeout-secondhome.com/clt-bouw/>



Source: <https://mymodernmet.com/brutalist-architecture/>

CLT BRUTALISM



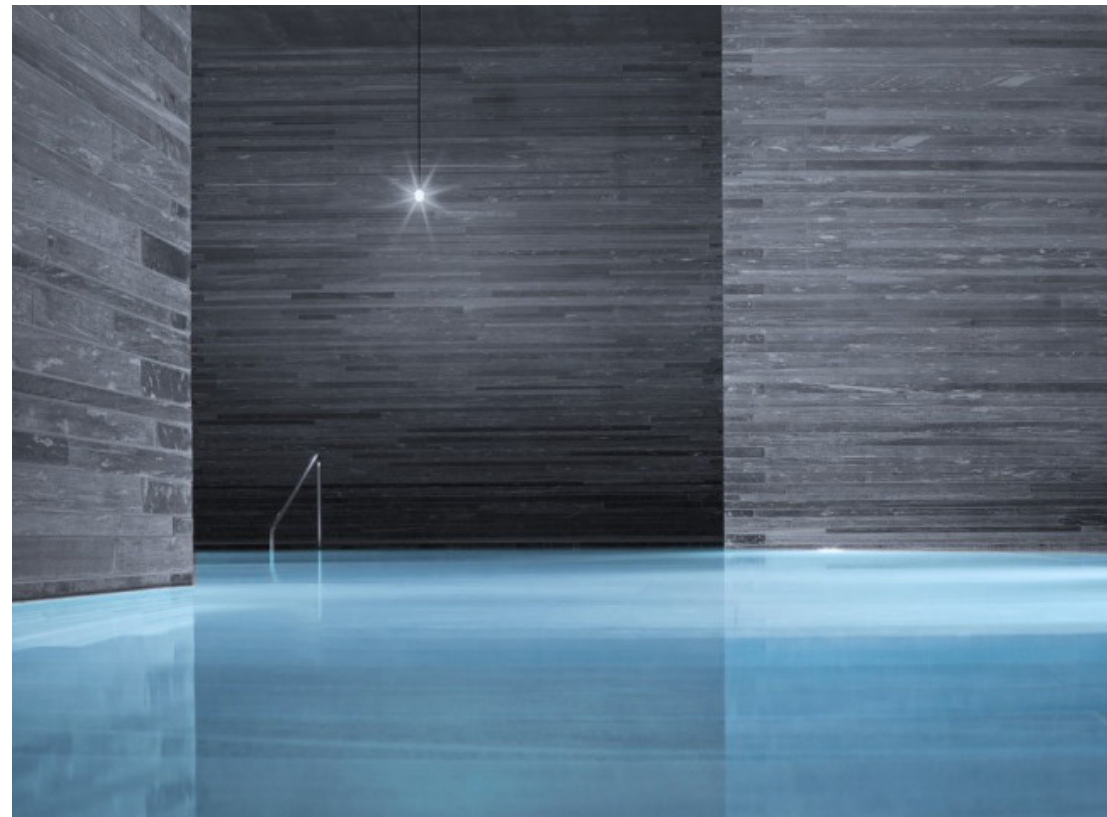
Lighting



Construction visibility



Finish



Tranquility

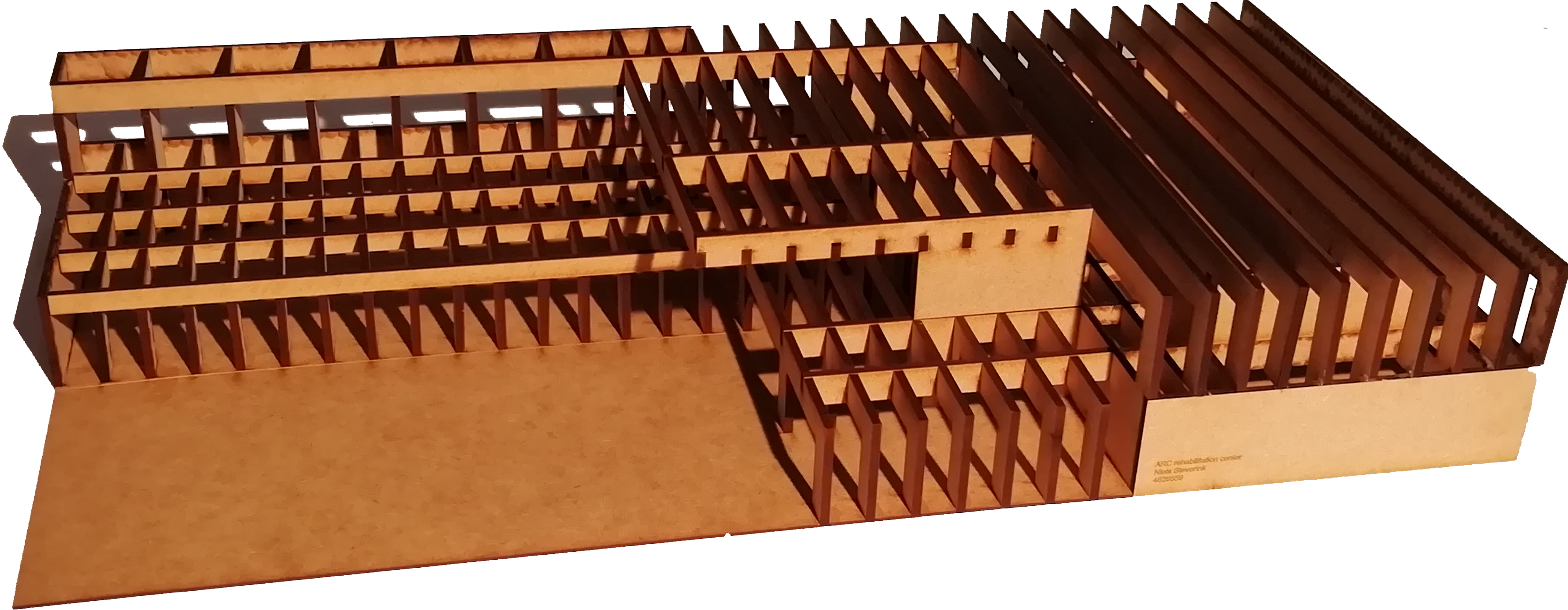


Material

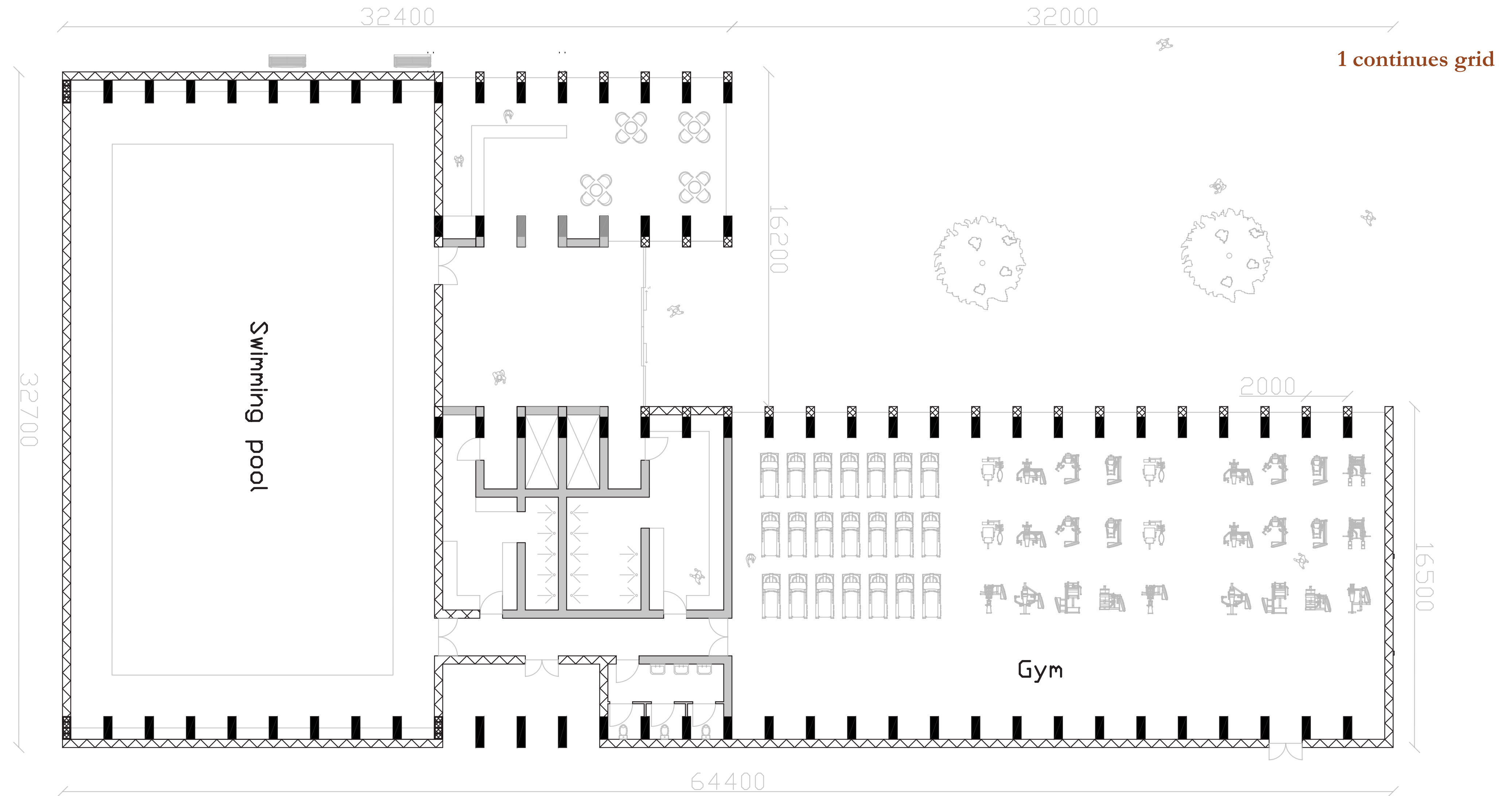


Texture

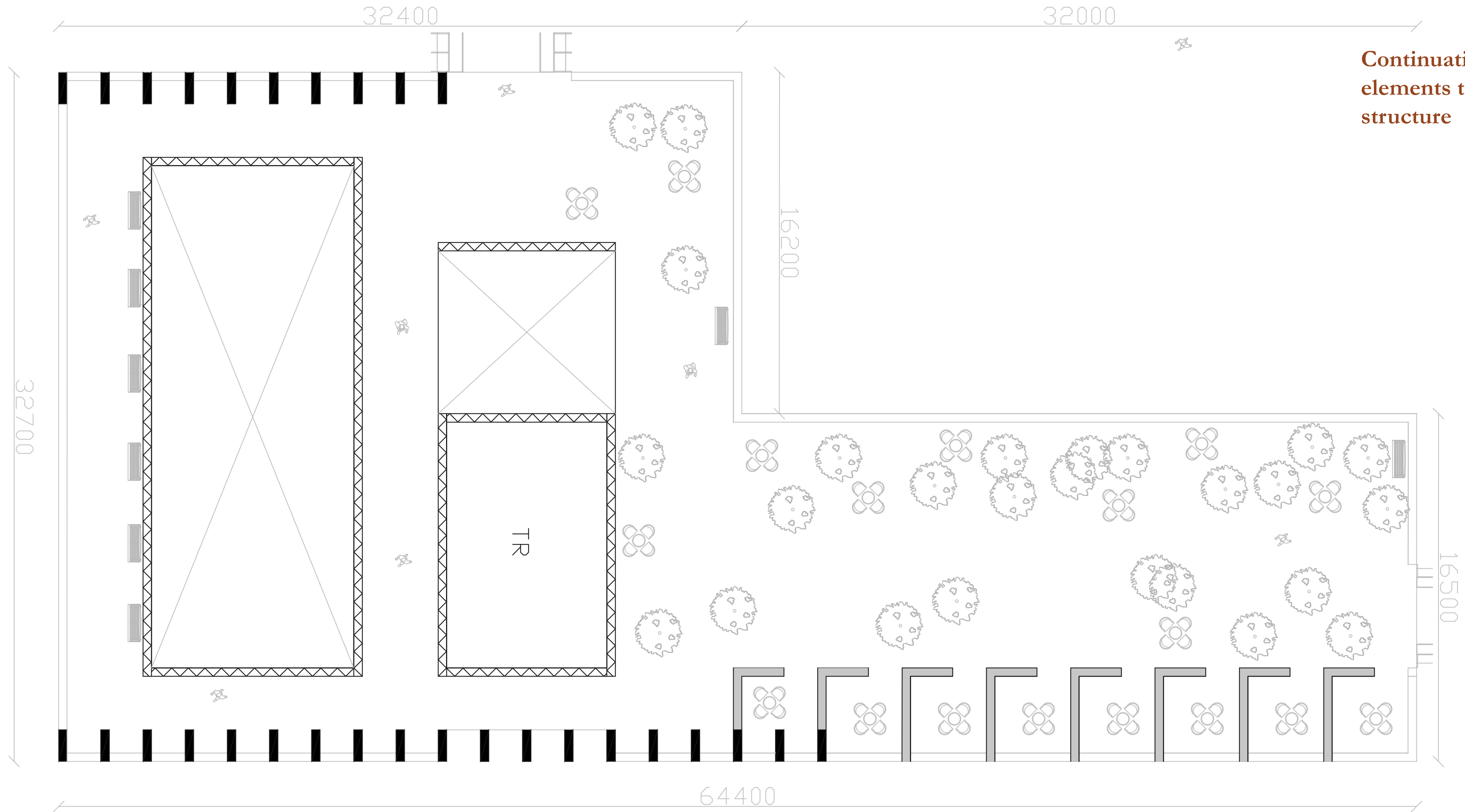
CONSTRUCTION AS STARTING GRID



GROUND FLOOR



FIRST FLOOR

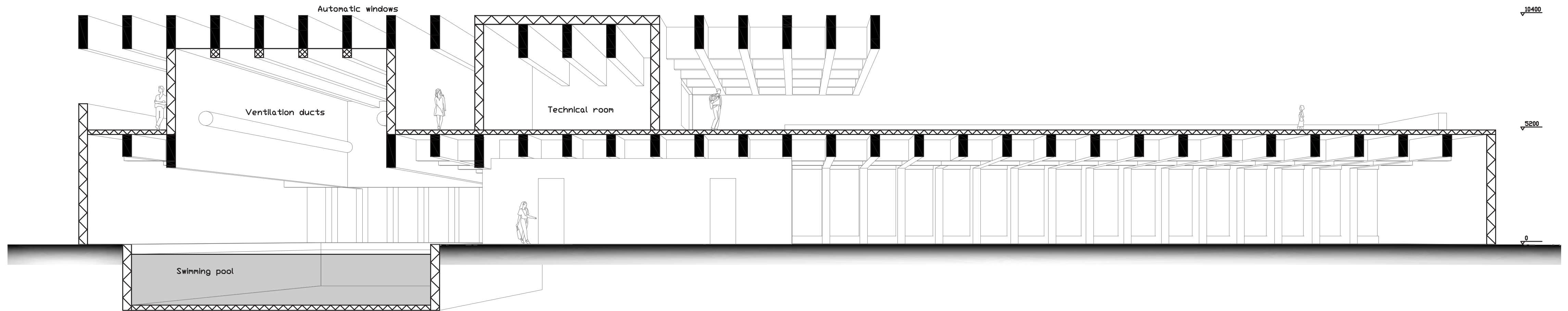


Continuation of
elements to highlight
structure

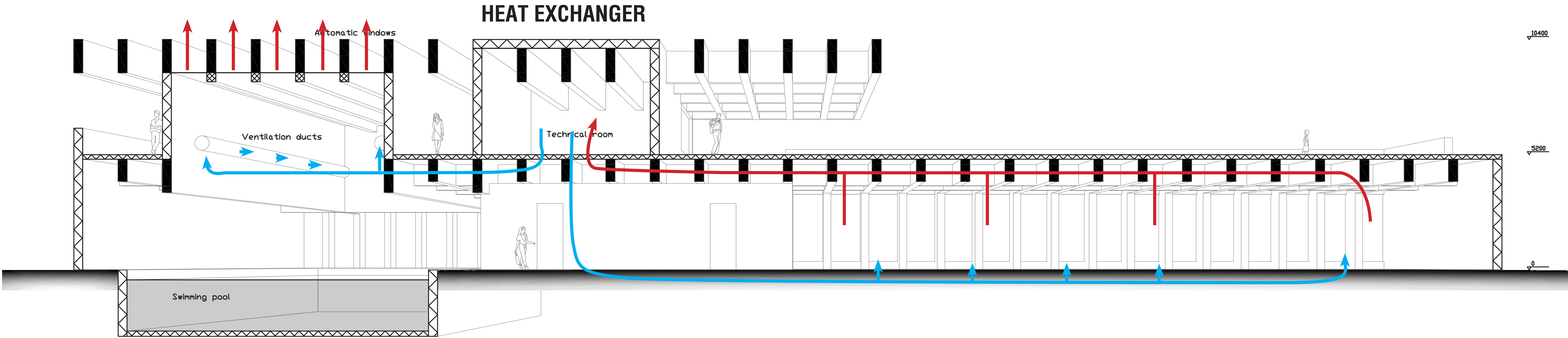
SECTION

Canopy to highlight construction and serve as entrance marker

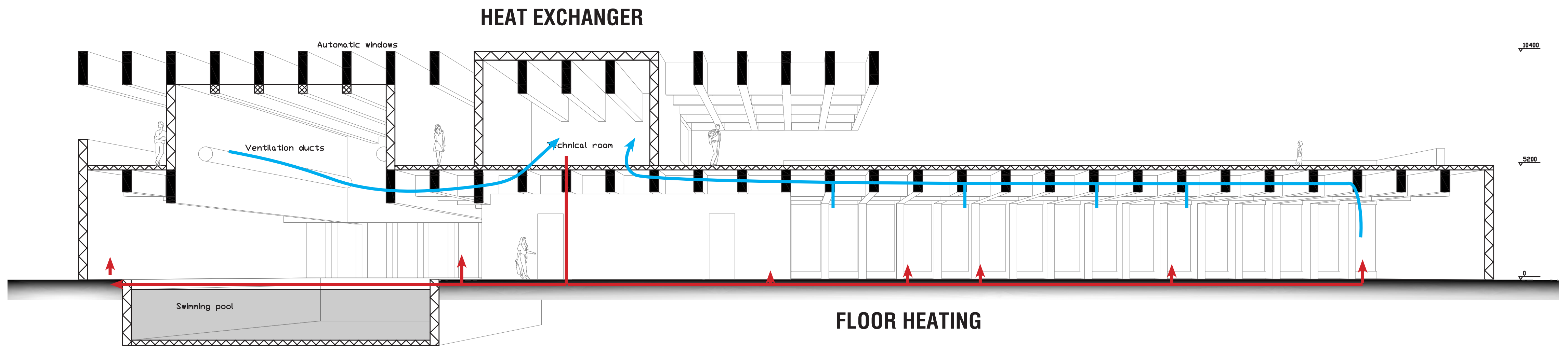
Continuation of grid



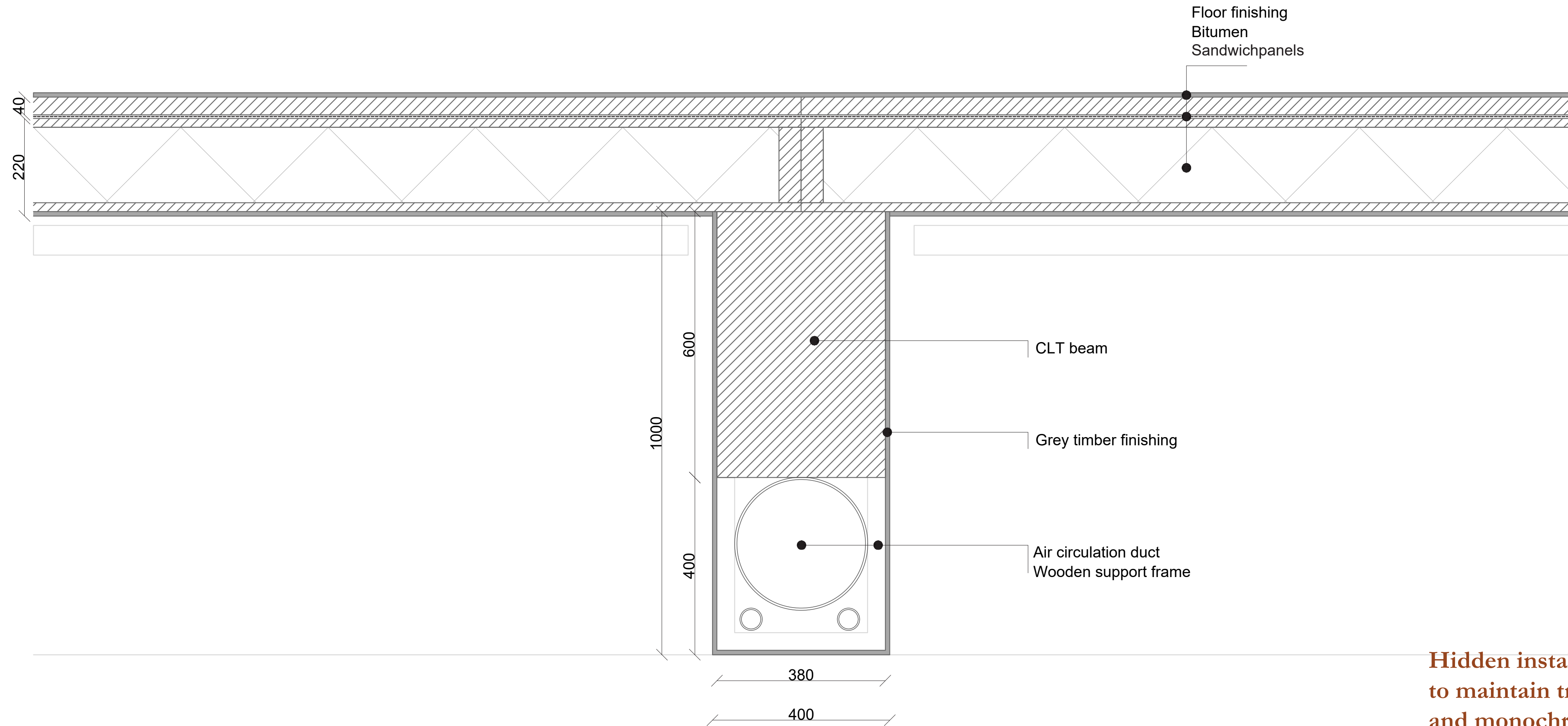
CLIMATE PRINCIPLES HYBRID COOLING SUMMER



CLIMATE PRINCIPLES FULL MECHANICAL HEATING WINTER

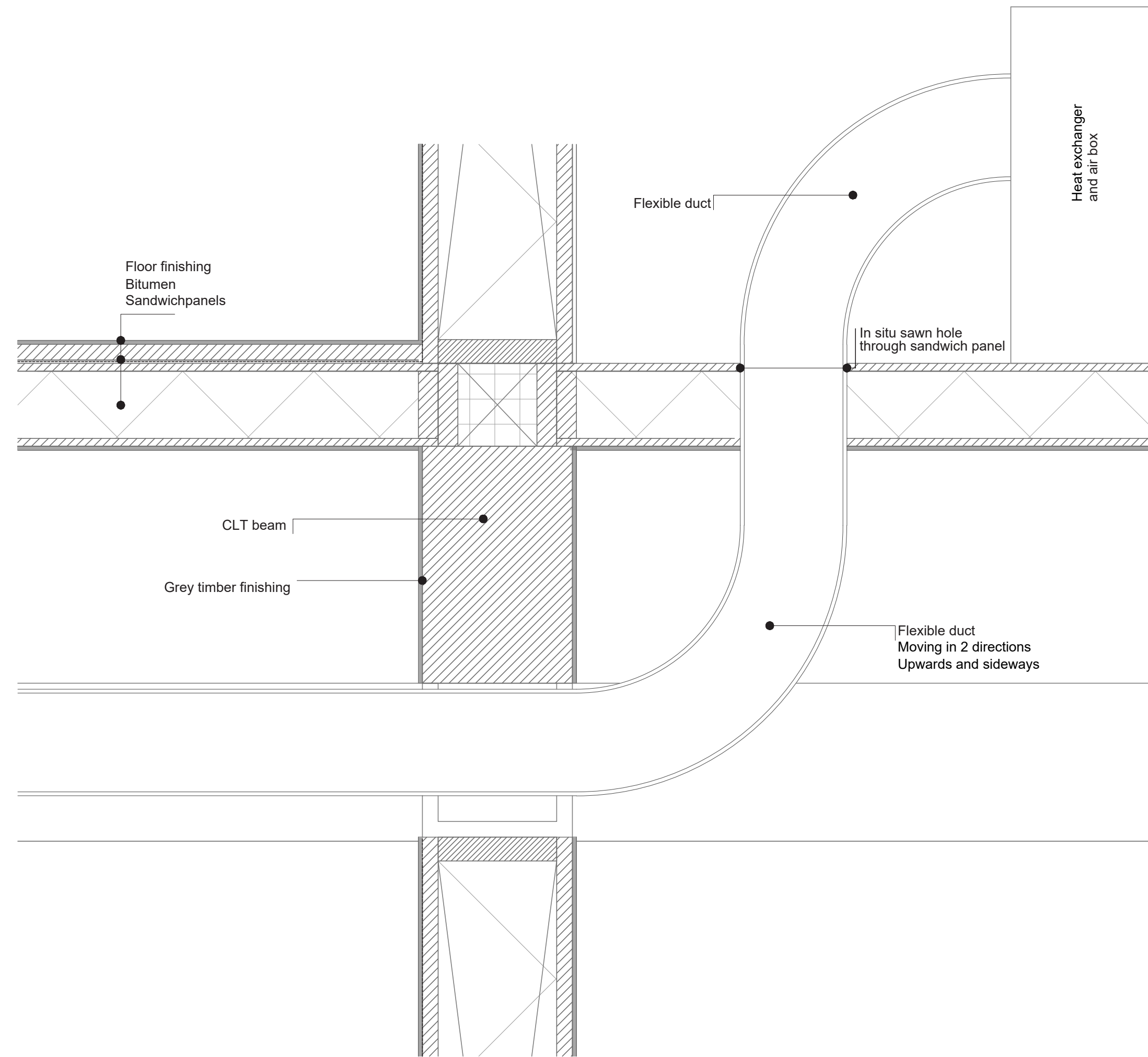


HIDDEN DUCTWORK



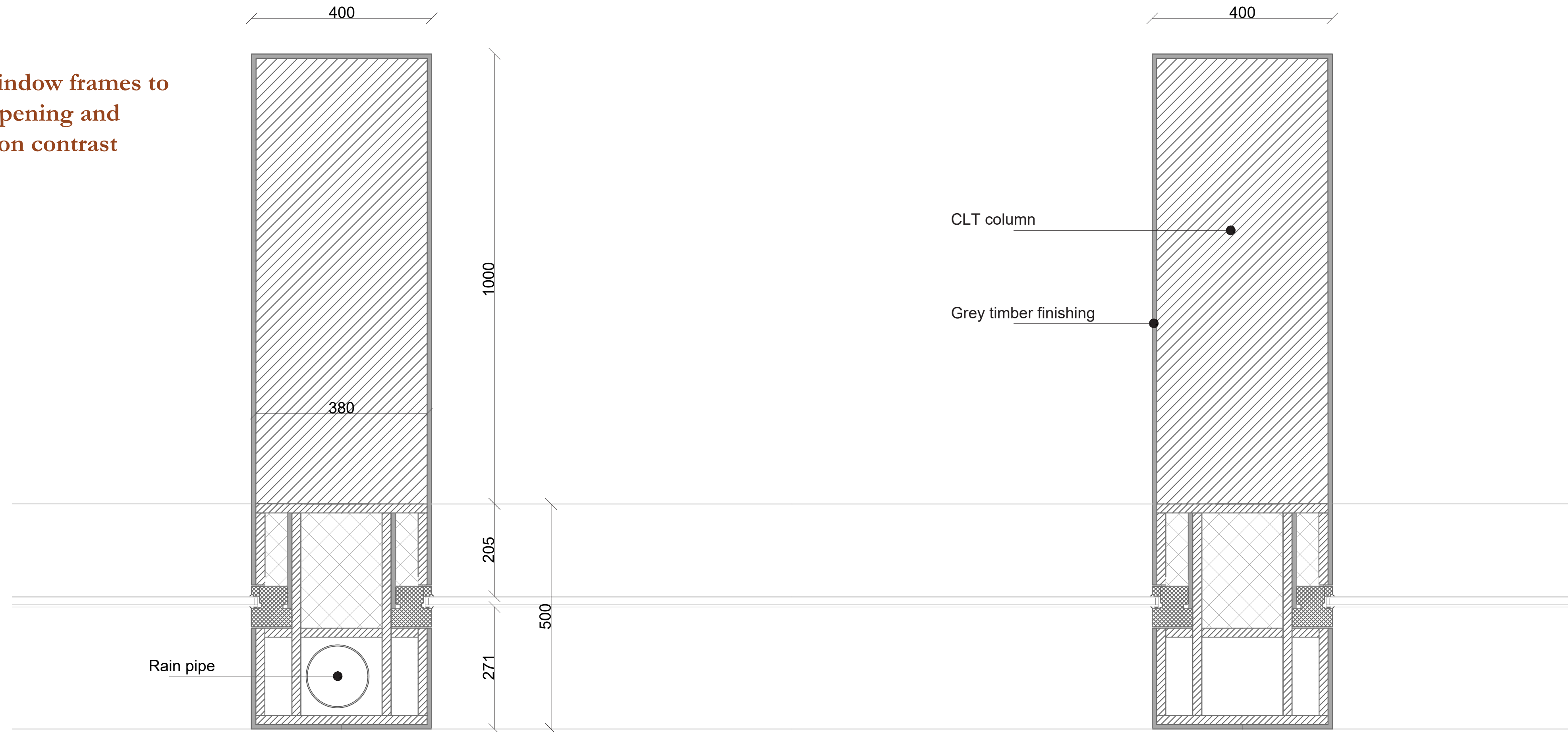
**Hidden installations
to maintain tranquility
and monochrome look**

INSTALLATION



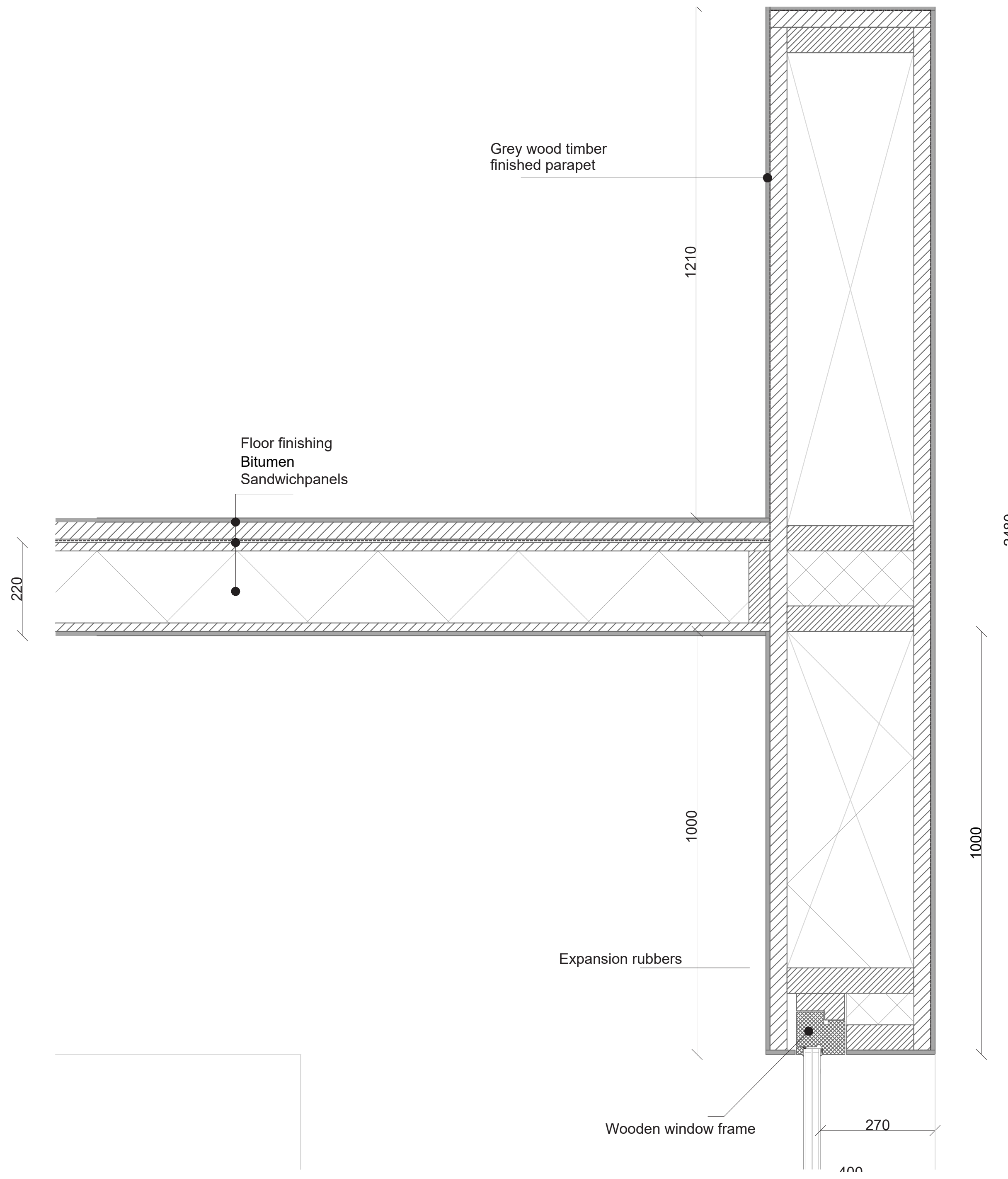
RECESSED WINDOW FRAMES

Hidden window frames to enhance opening and construction contrast

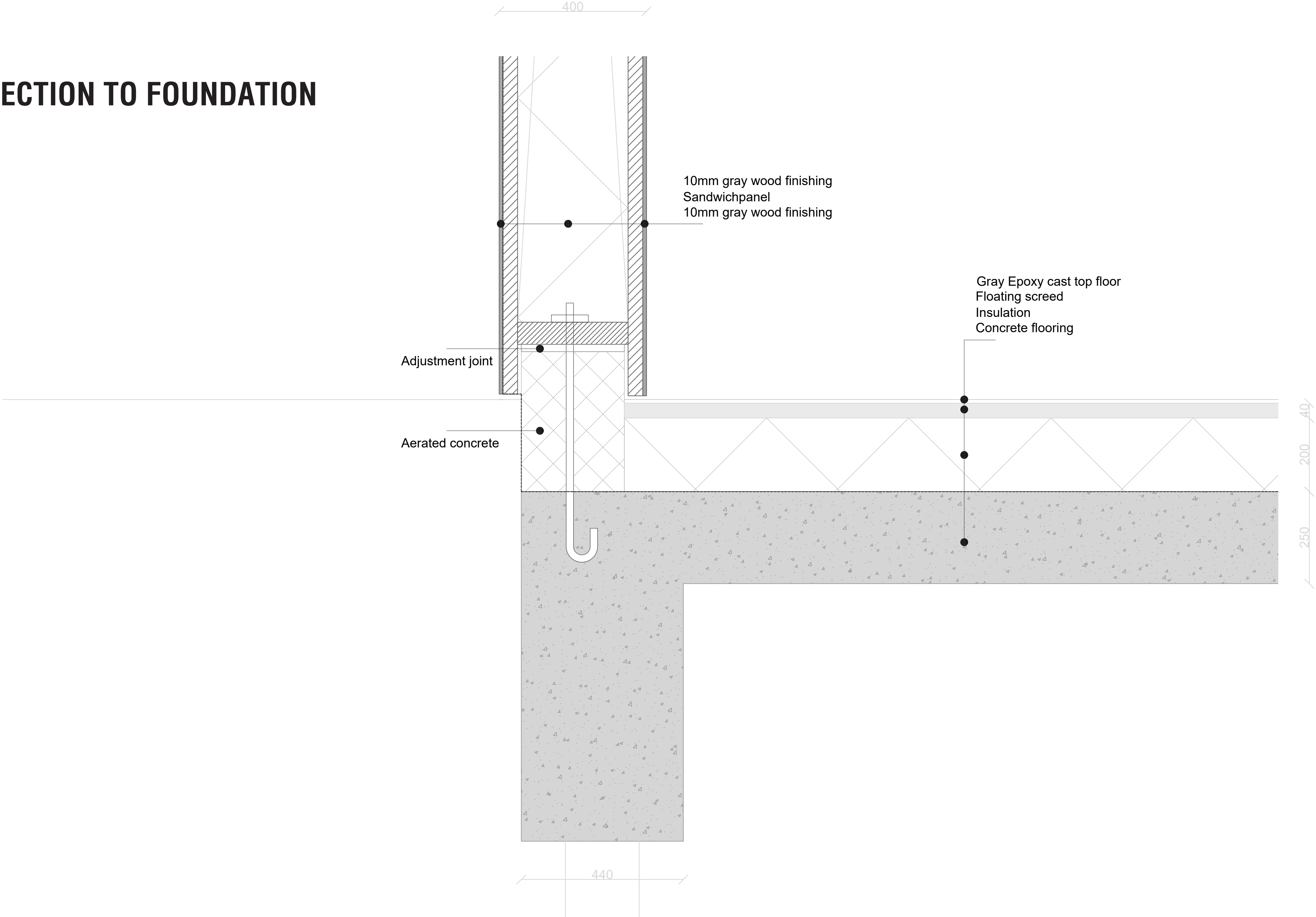


RECESSED WINDOW FRAMES

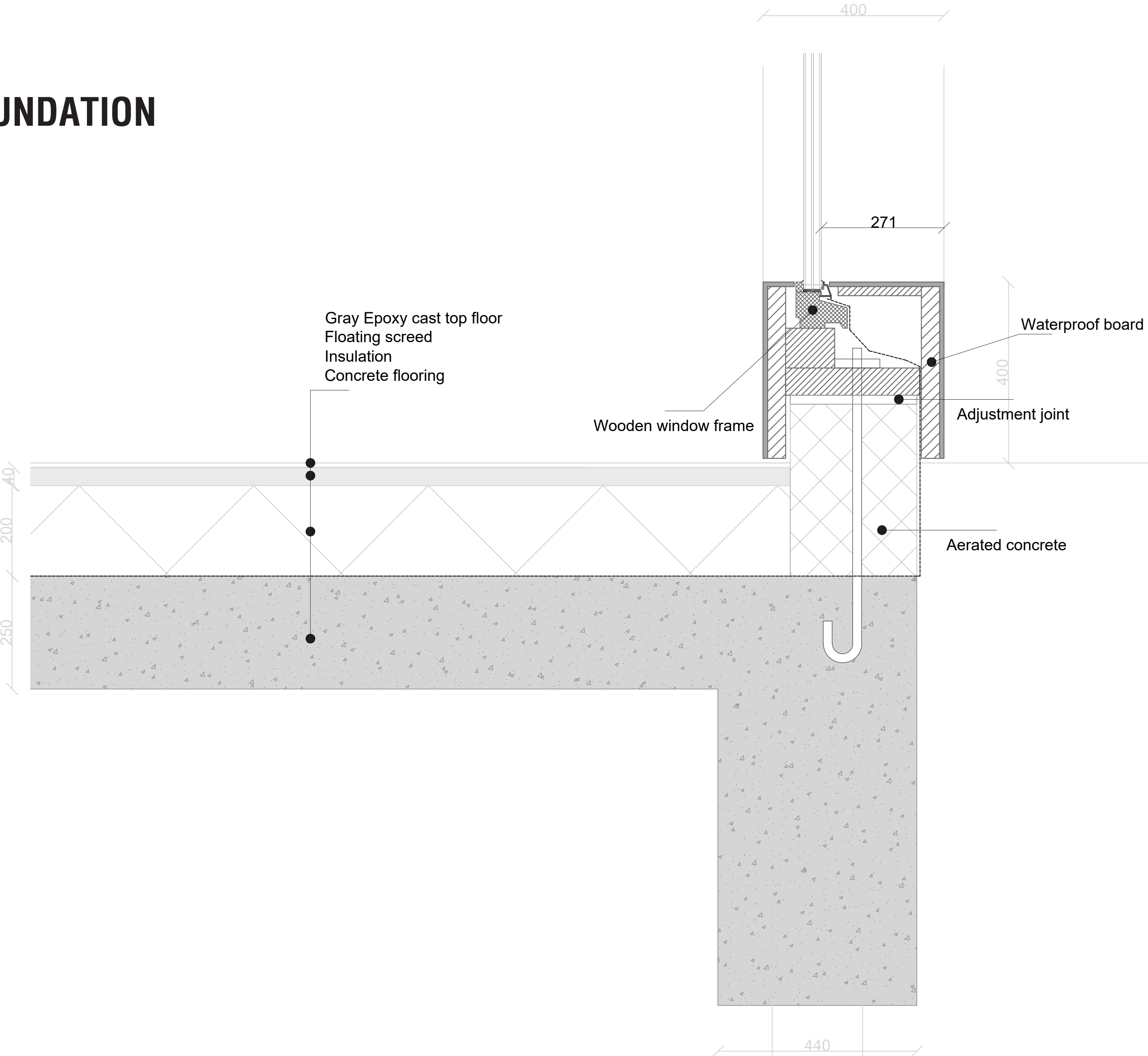
Hidden window frames to enhance opening and construction contrast



CONNECTION TO FOUNDATION



CONNECTION TO FOUNDATION



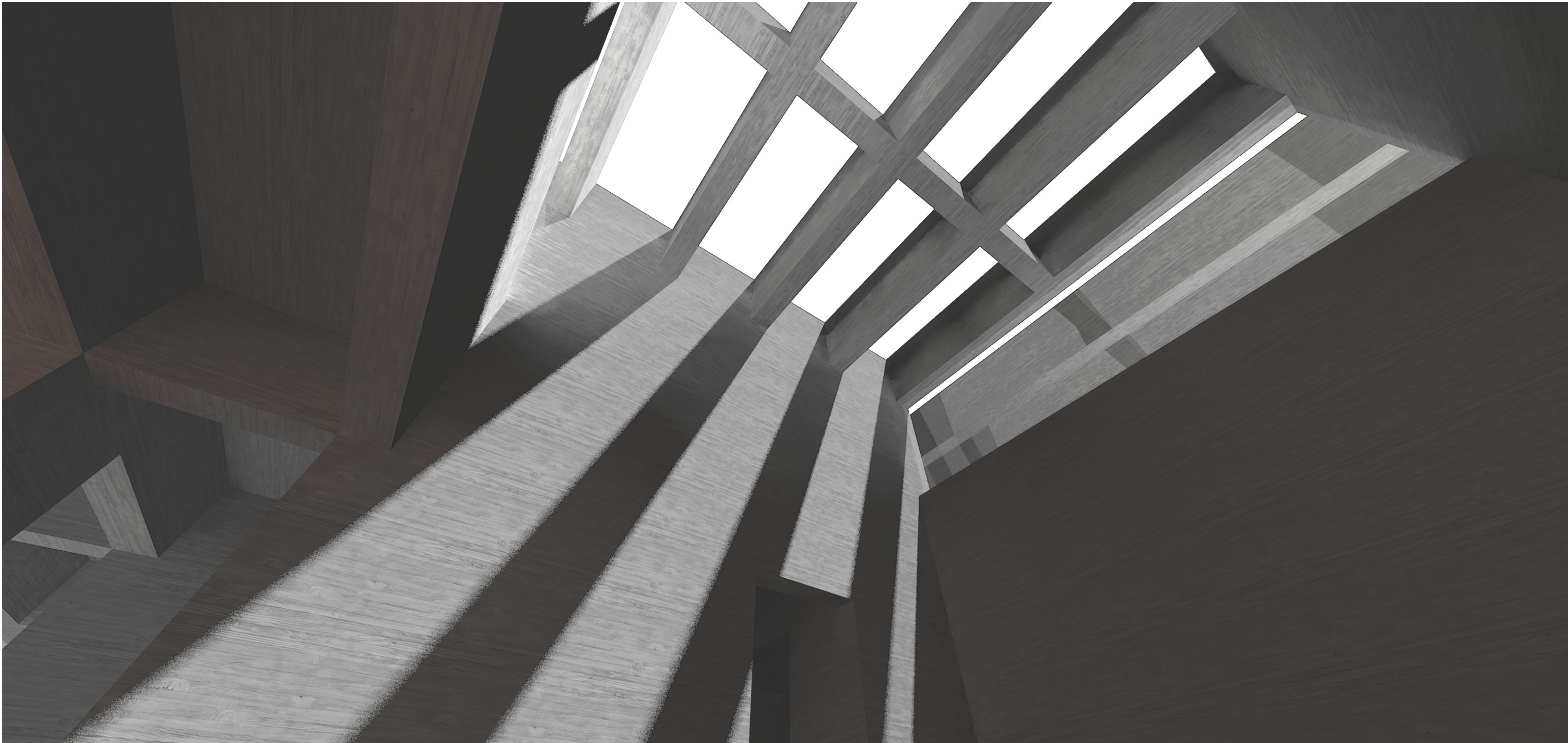
ENTRANCE CANOPY



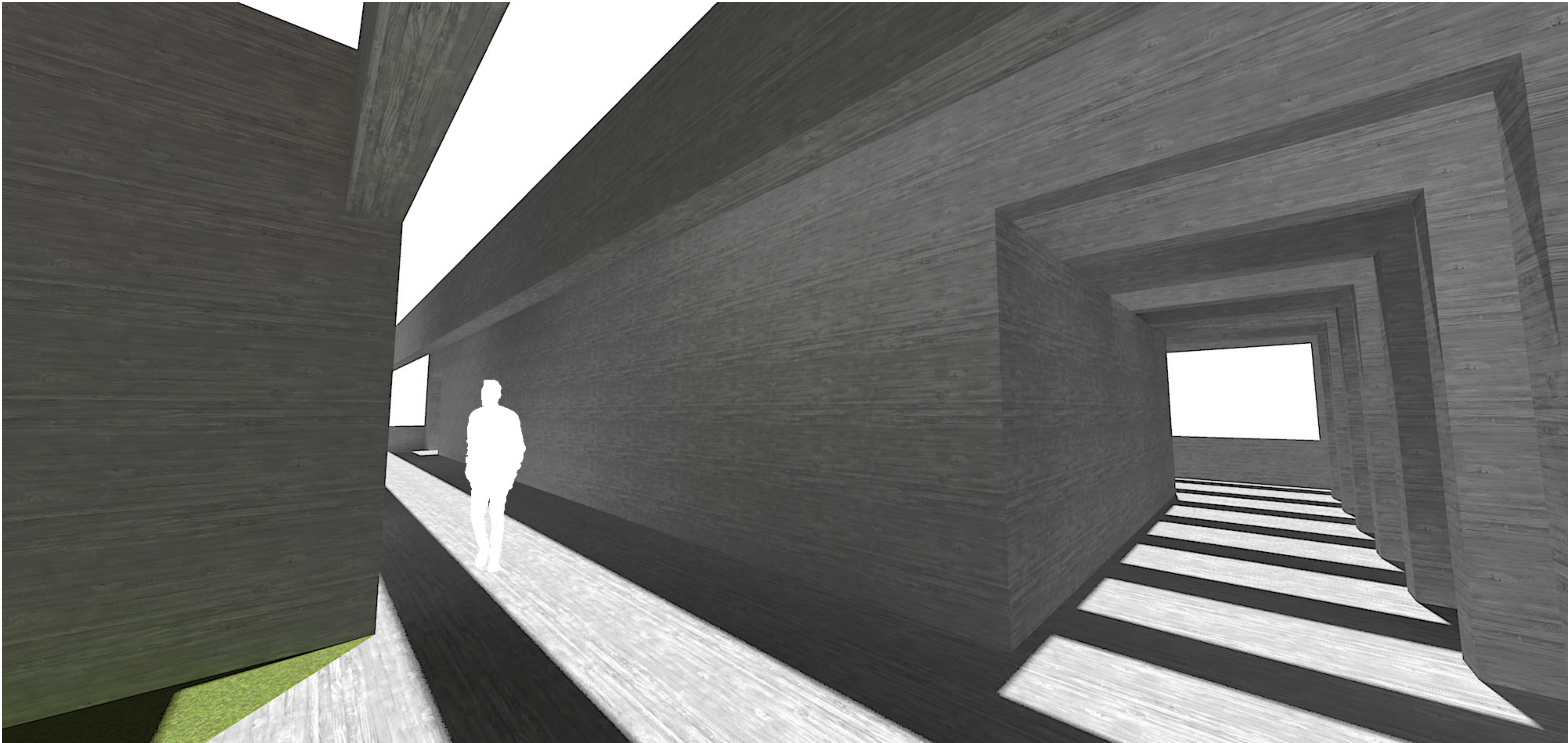
ROOFTOP GARDEN AND CANOPY



ENTRANCE SKYLIGHT



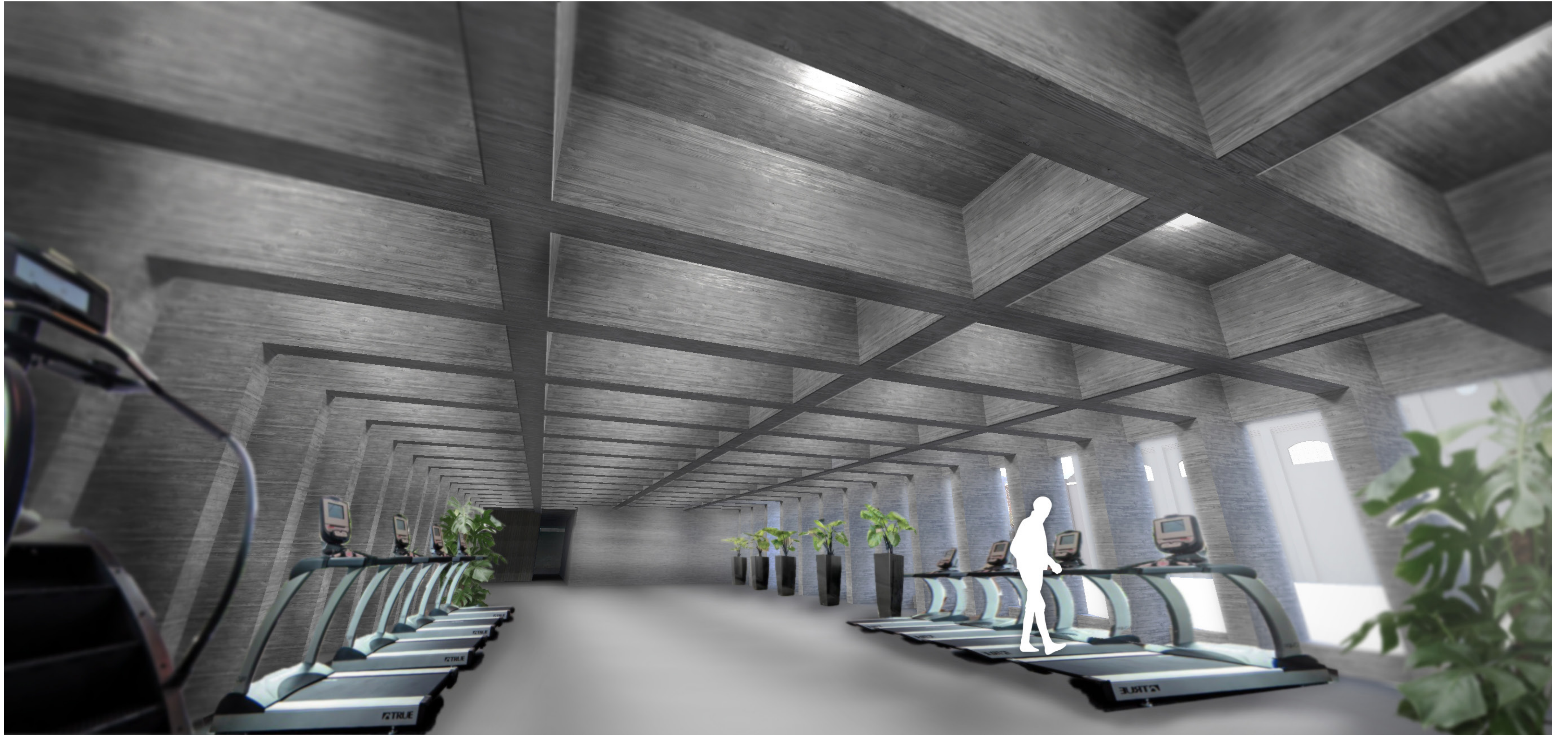
WALK THROUGH CONSTRUCTION TOWARDS RIVER VIEW



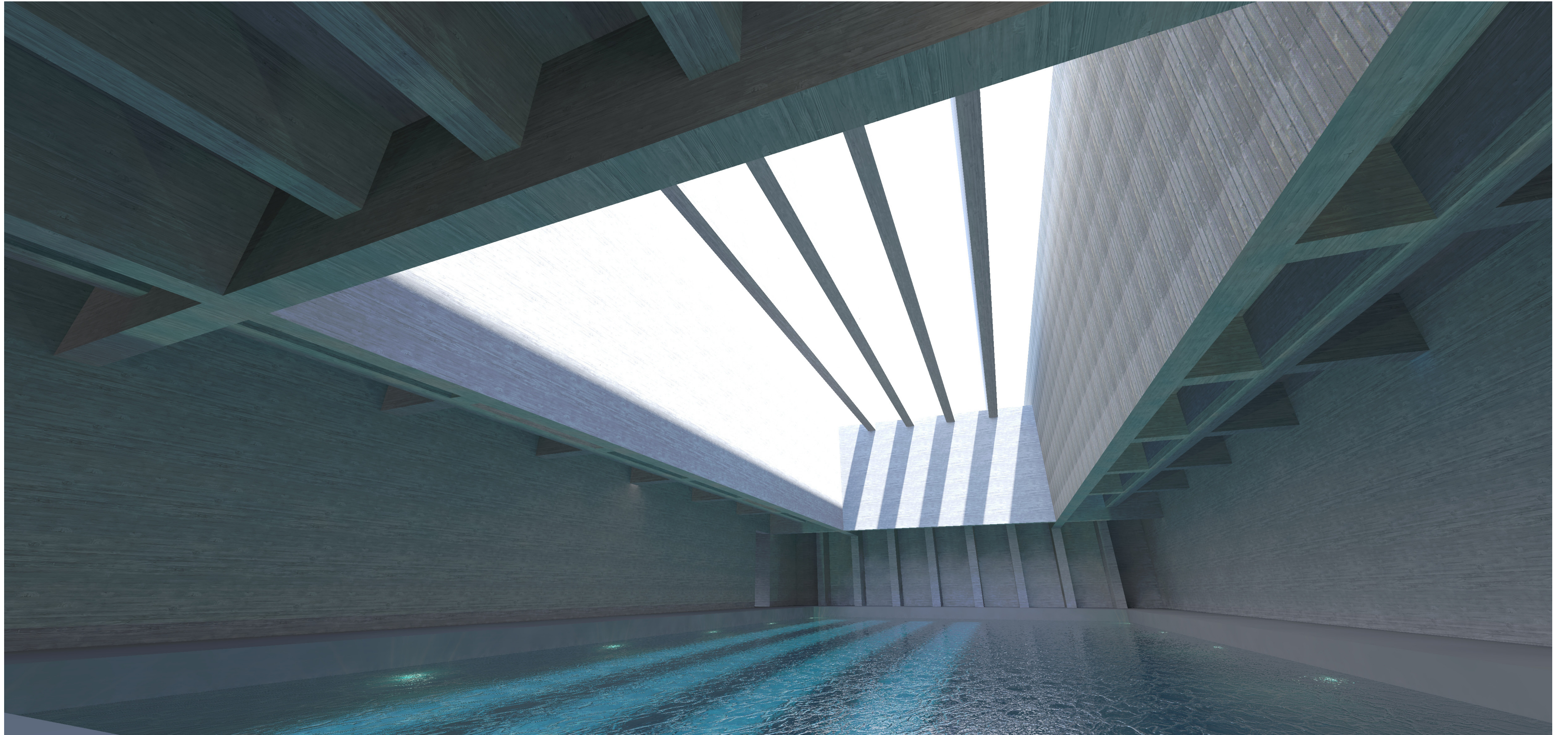
GYM CIELING



INTERIOR GYM



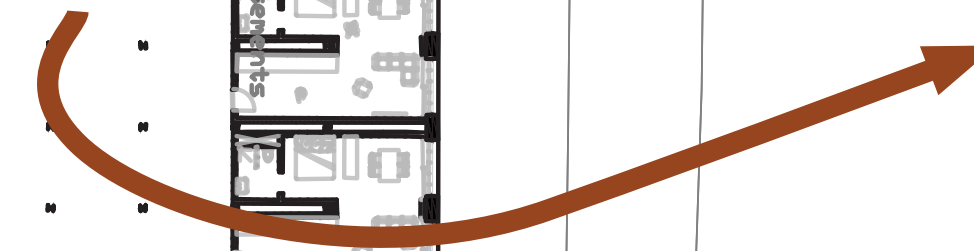
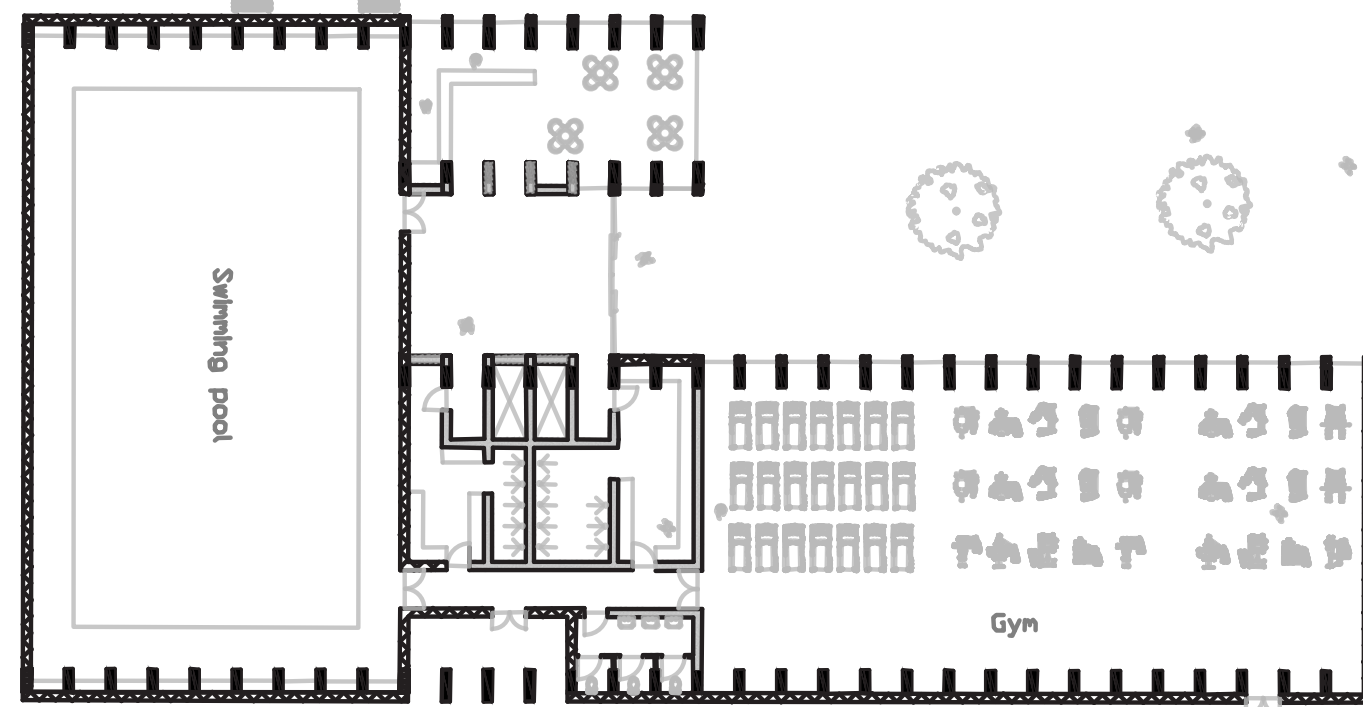
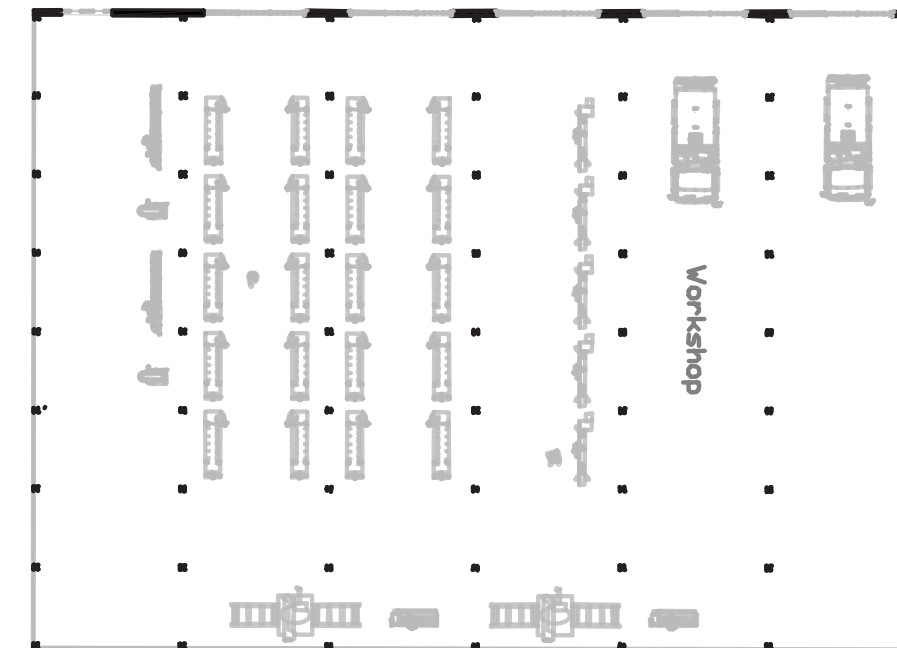
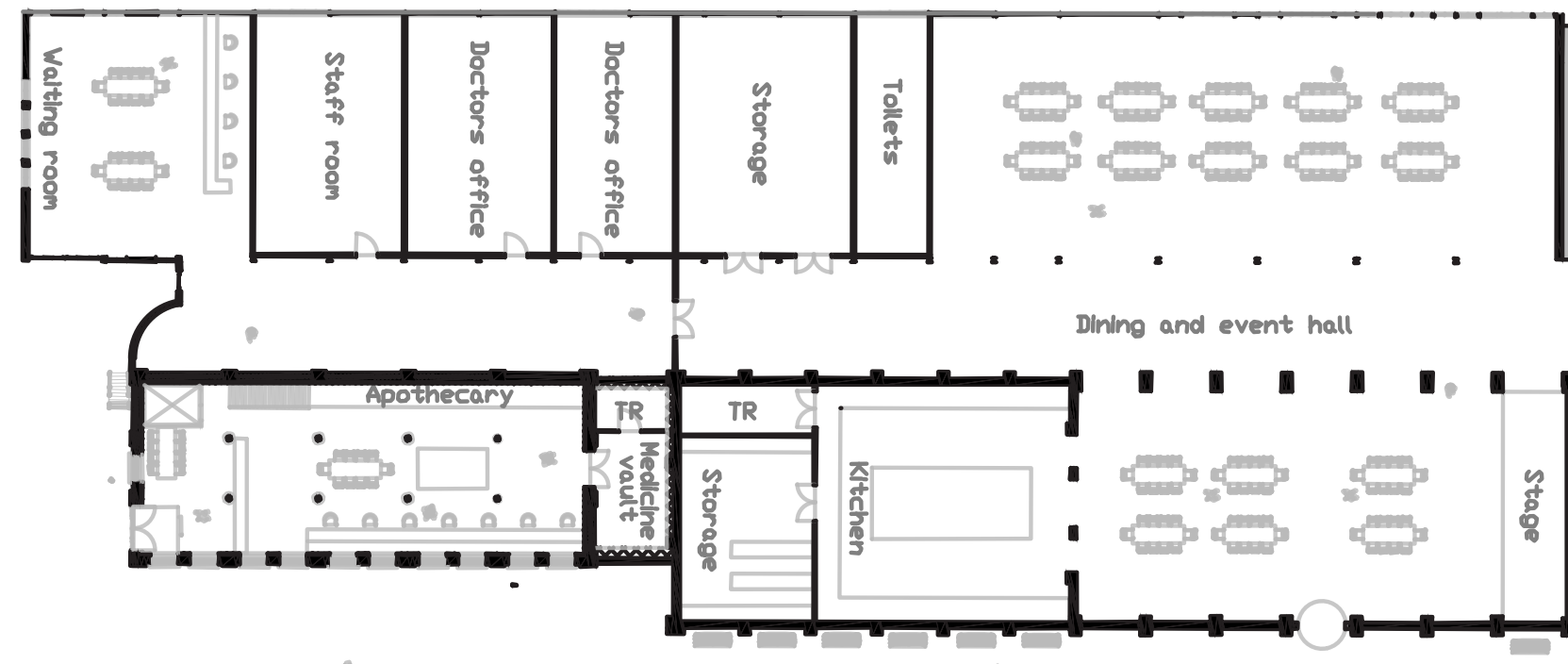
SECLUDED POOL

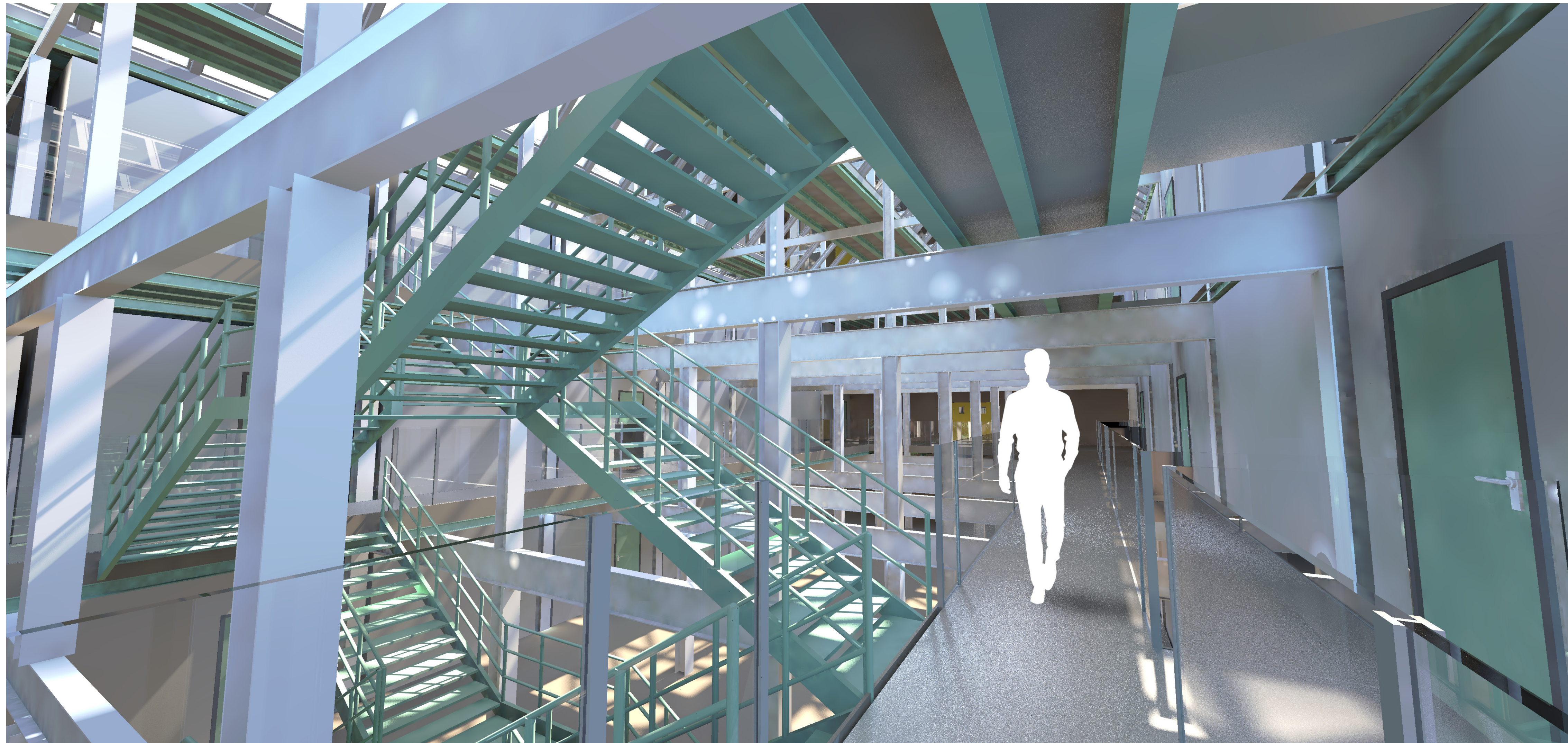


A DAY OF USE

A DAY OF USE: 9:00 - MORNING WALK IN PLOFBOS - FEW INTERACTIONS

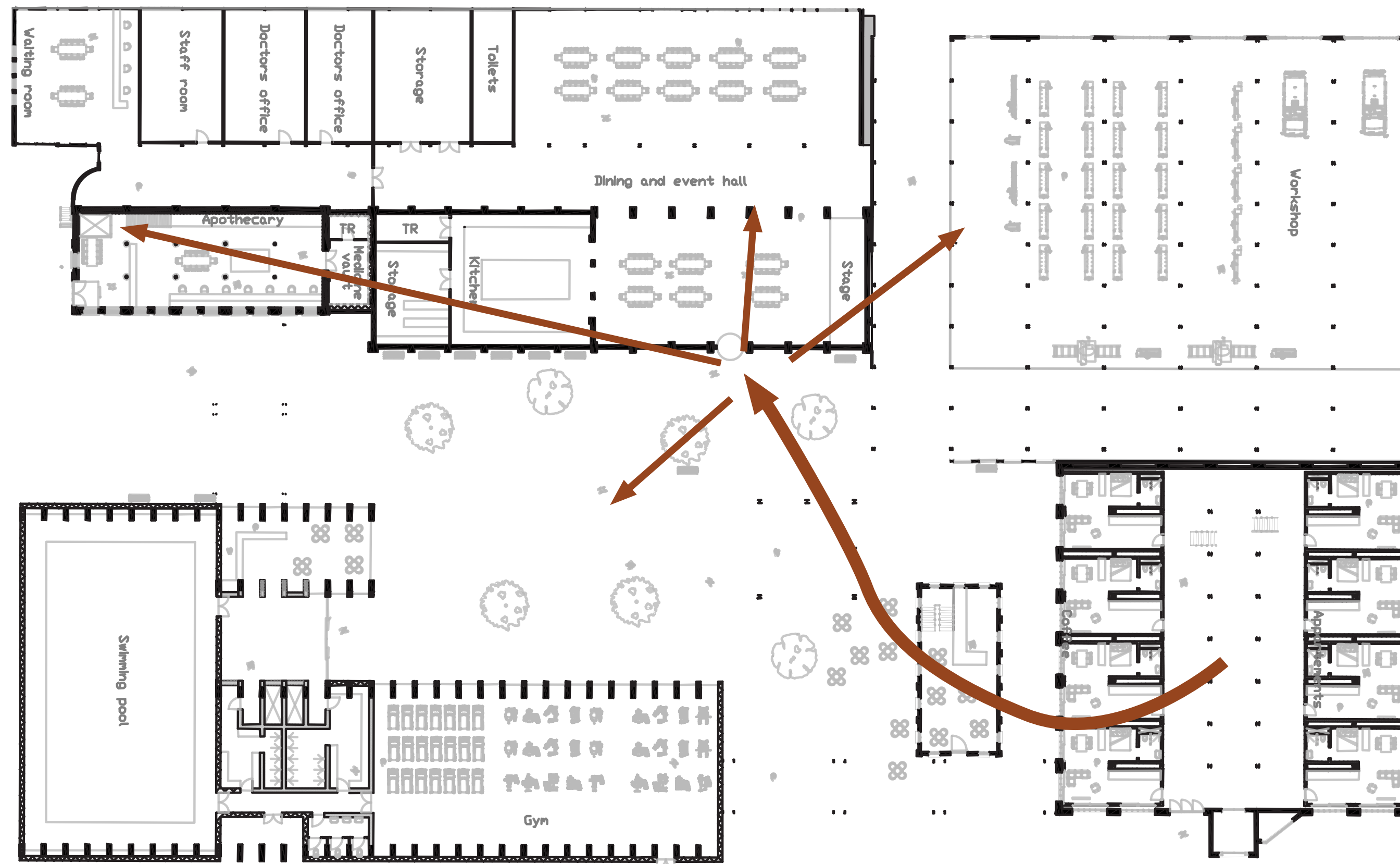
Alone time so able to leave without passing over the square for privacy





A DAY OF USE: 10:00-17:00 DAILY ACTIVITIES - HEAVY PROFESSIONAL AND PUBLIC INTERACTIONS

- Gym
- Mechanic shop
- Shared lunch
- Doctors visit
- Activities on square
- Phyciatrist visit
- Be among people



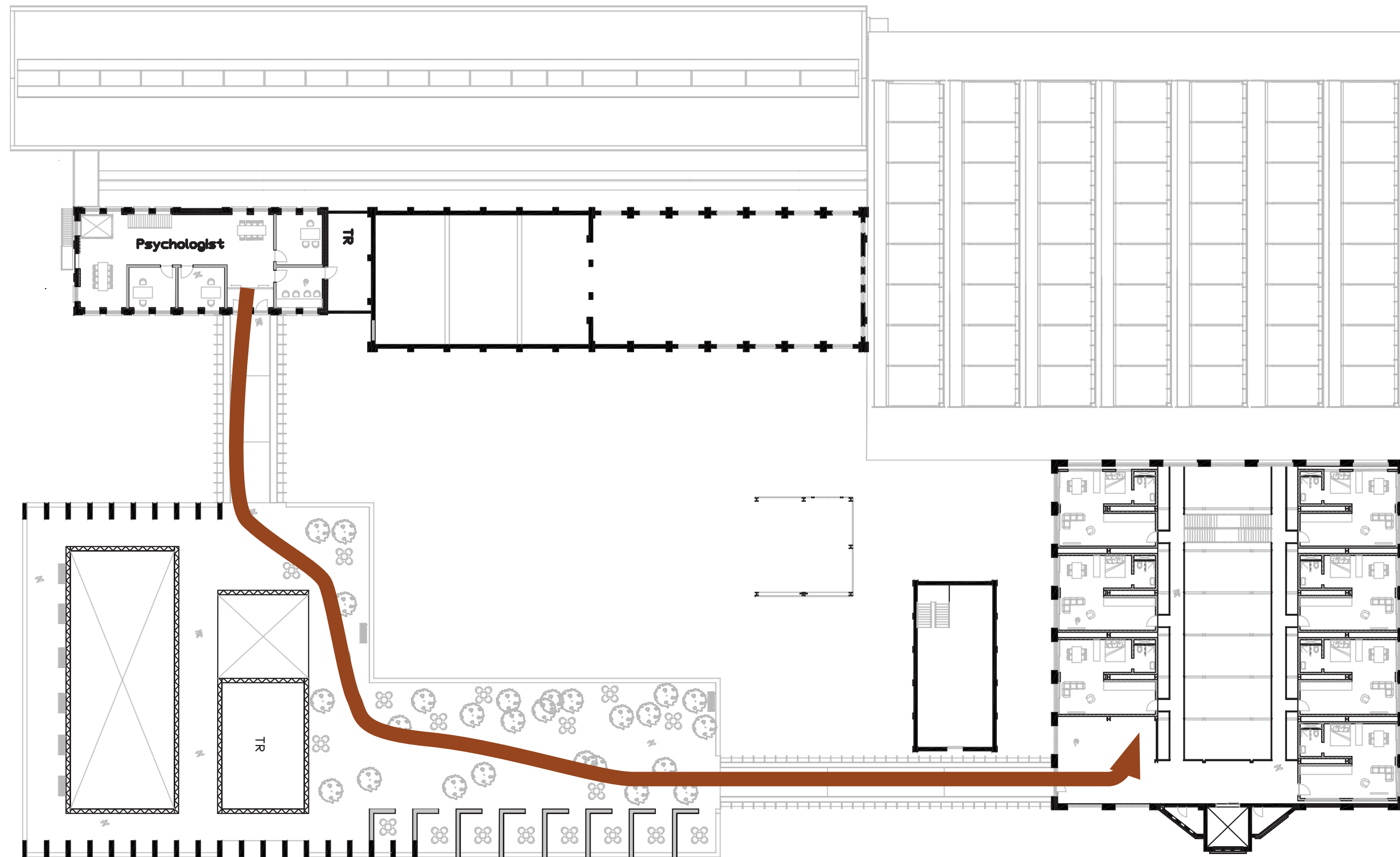






A DAY OF USE: 17:00 RETURN FROM PHYCOLOGIST - PRIVACY WITHIN COMMUNITY

Reduced exterior inputs
Safe space

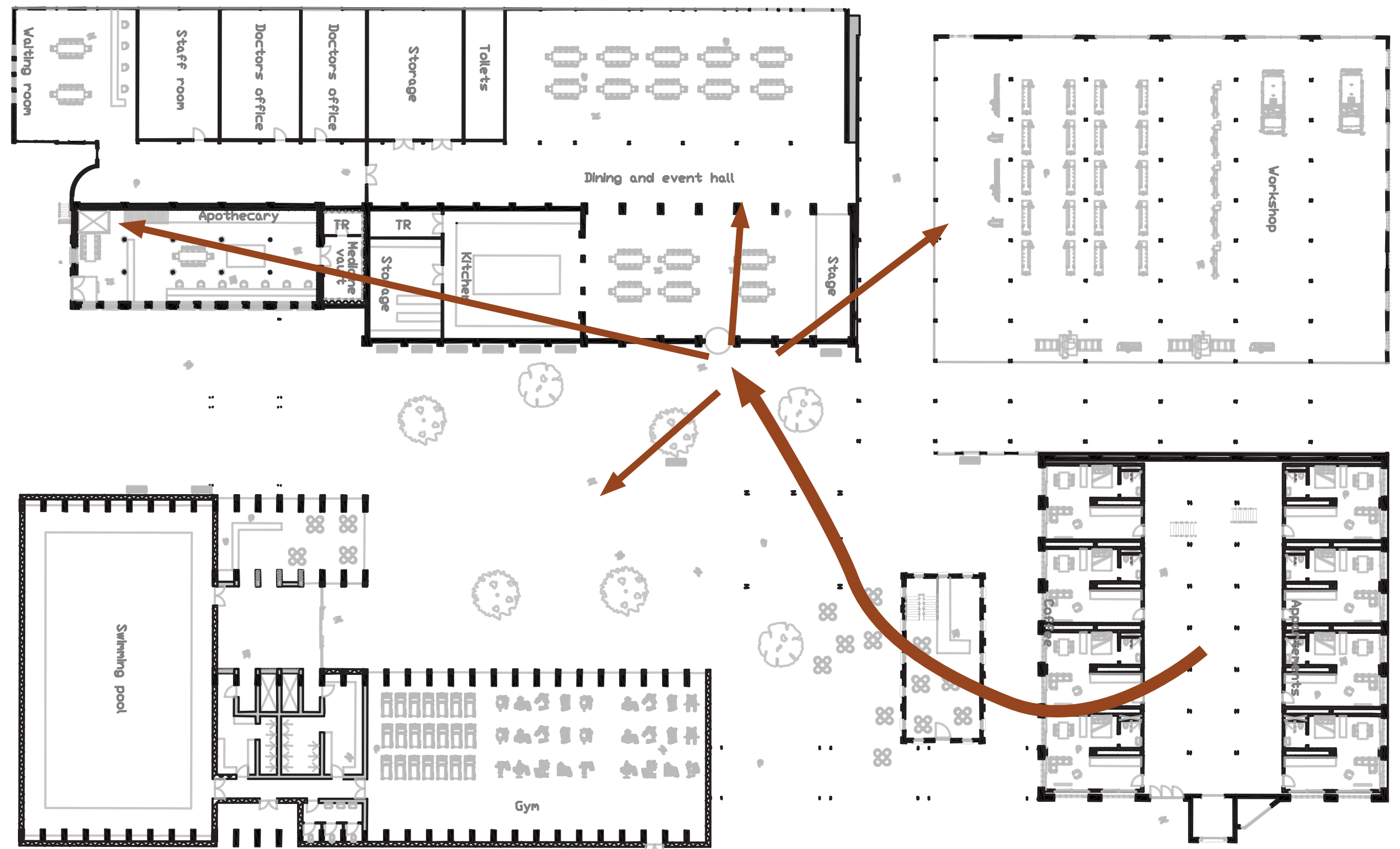


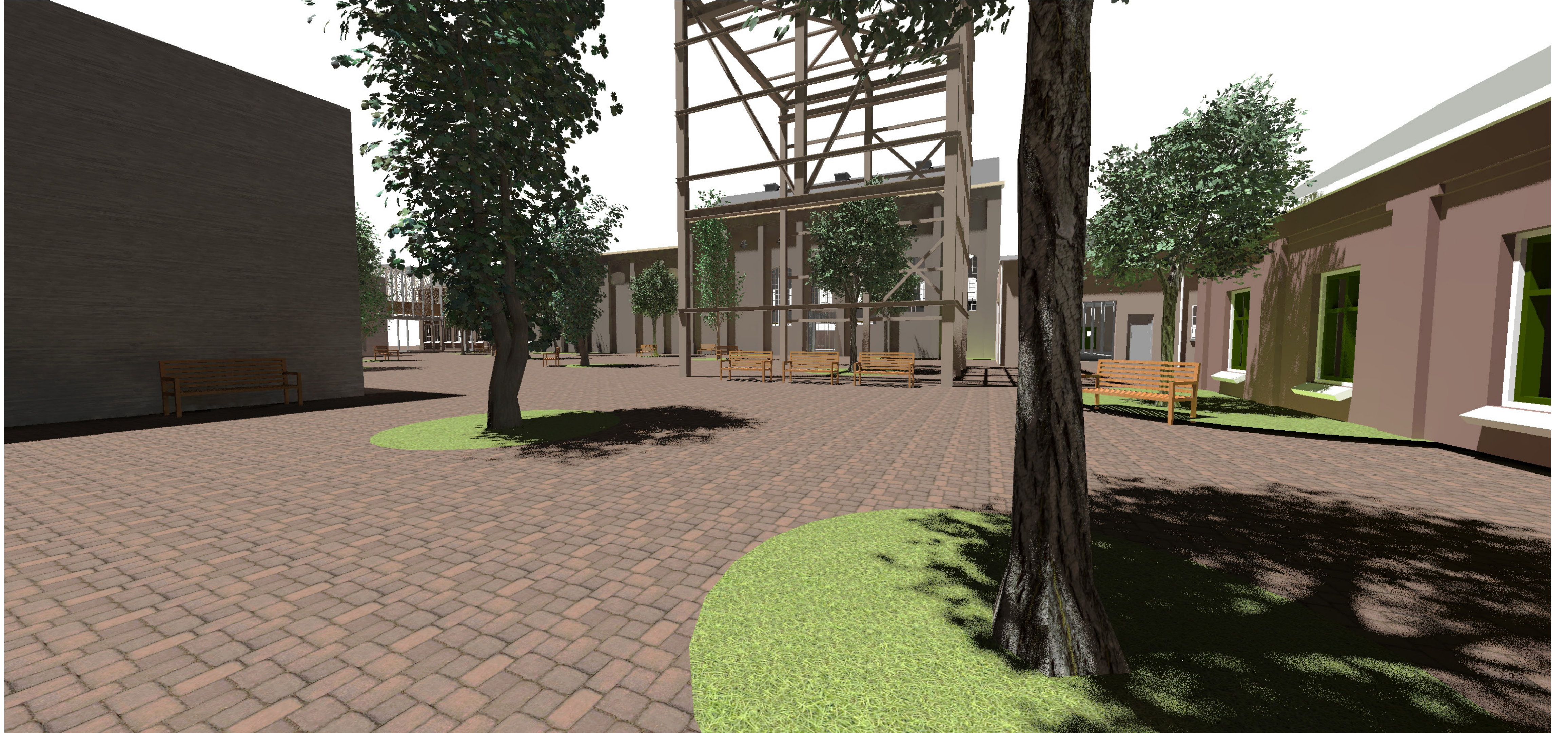




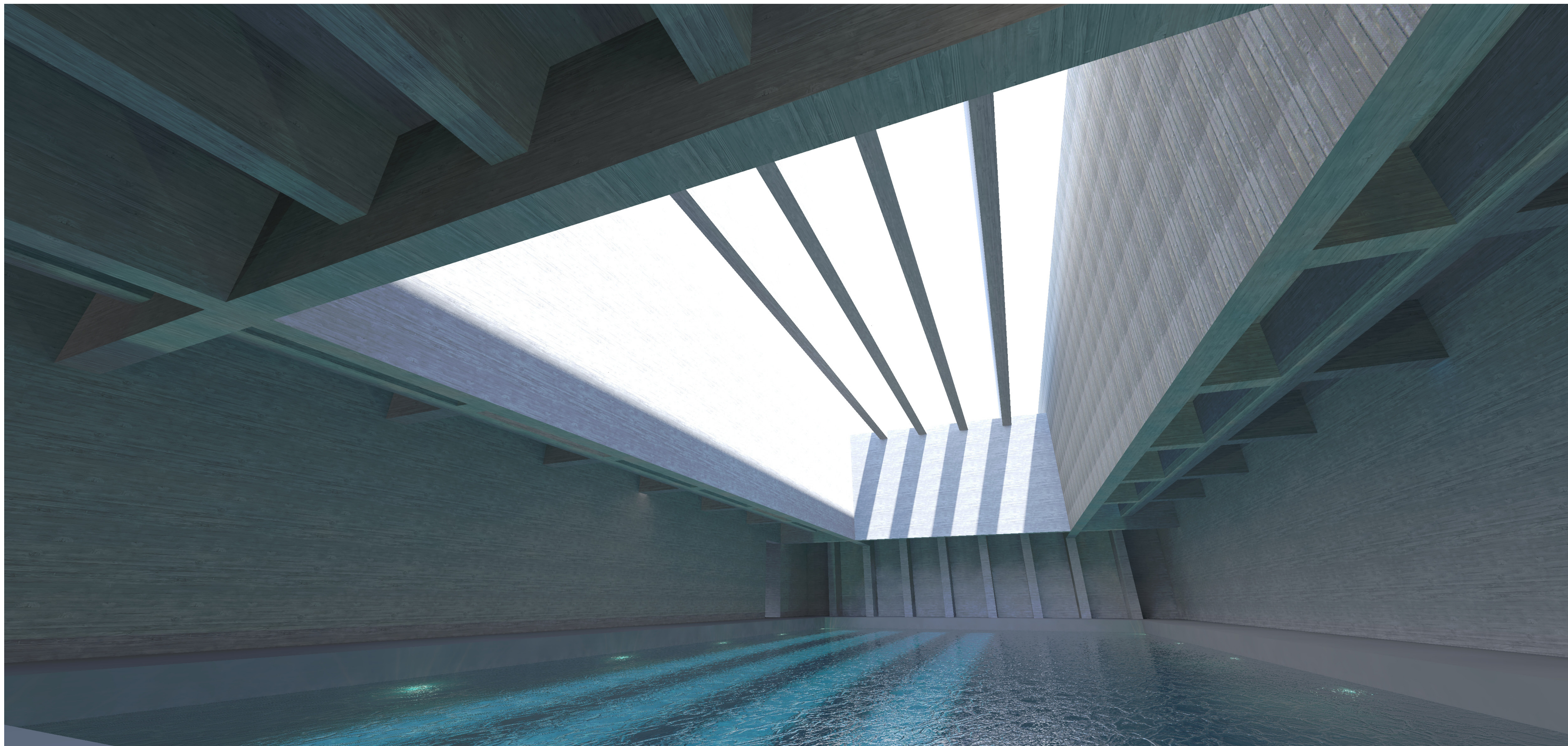
A DAY OF USE: 17:00-20:00 DINNER AND EVENING ACTIVITIES - MEDIUM PUBLIC INTERACTIONS

- Cooking class
- Gym
- Mechanic shop
- Shared lunch
- Activities on square



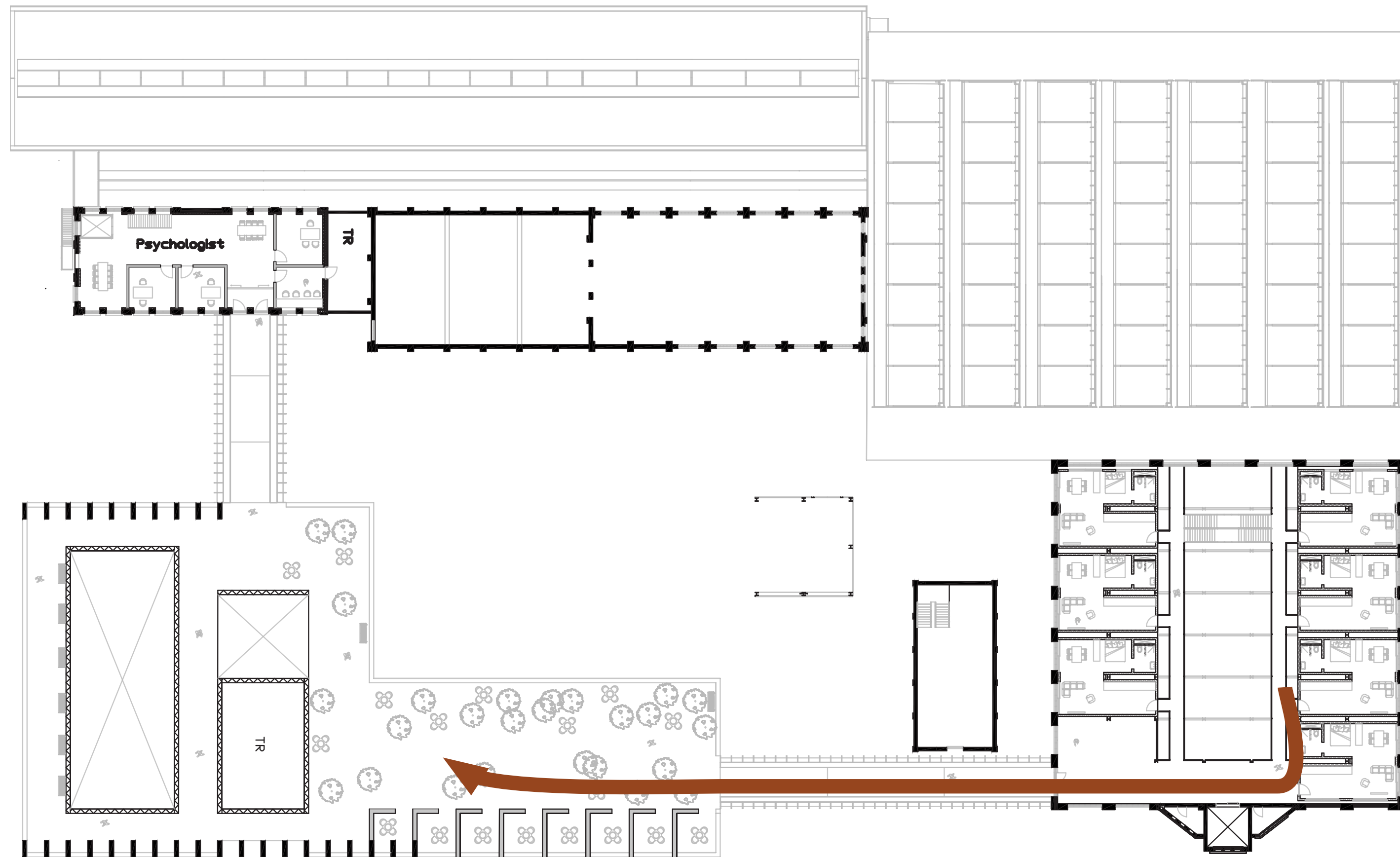






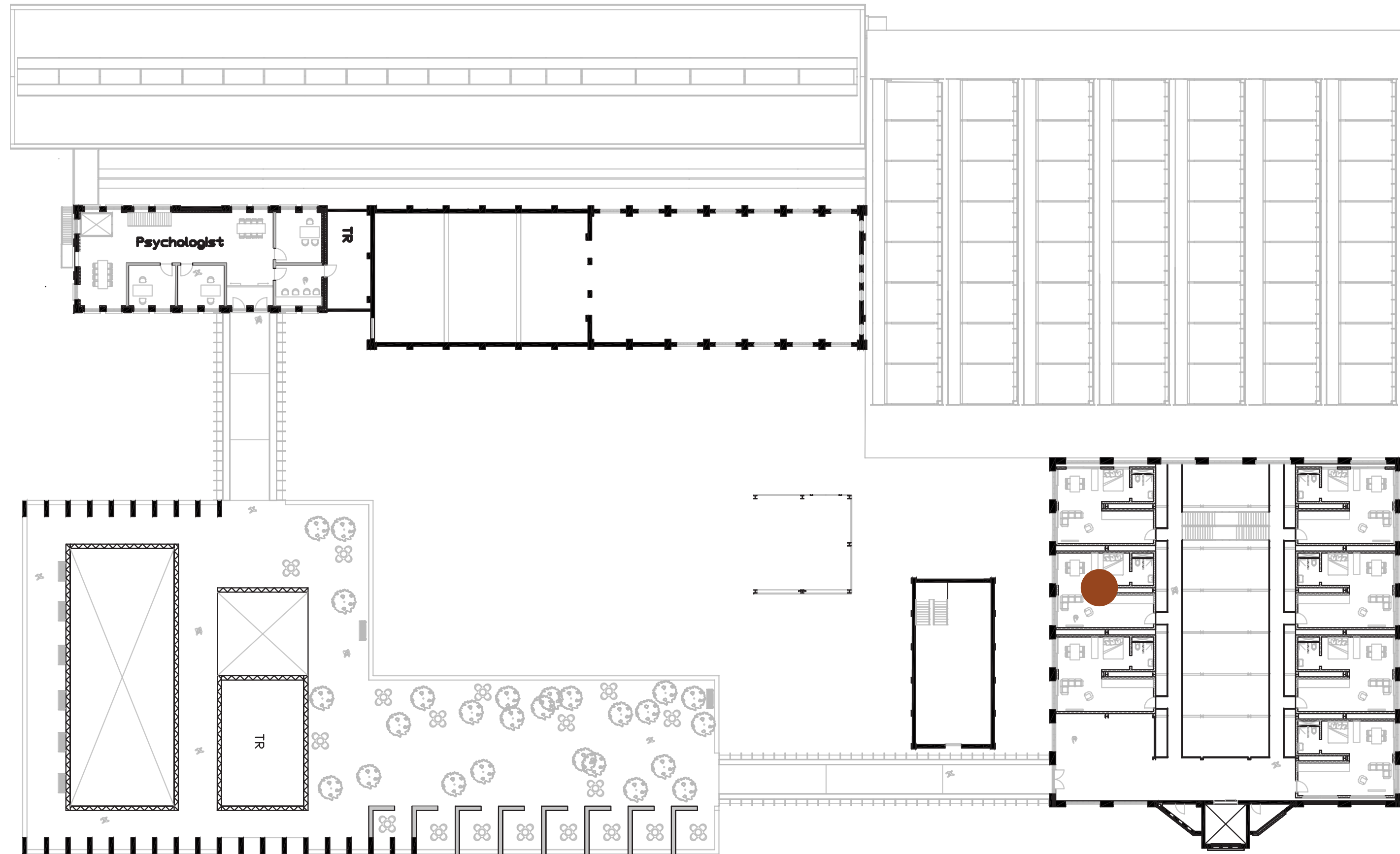
A DAY OF USE: 20:00 - 22:00 PERSONAL INTERACTIONS WITH FRIENDS / FAMILY - PRIVATE WITHIN COMMUNITY

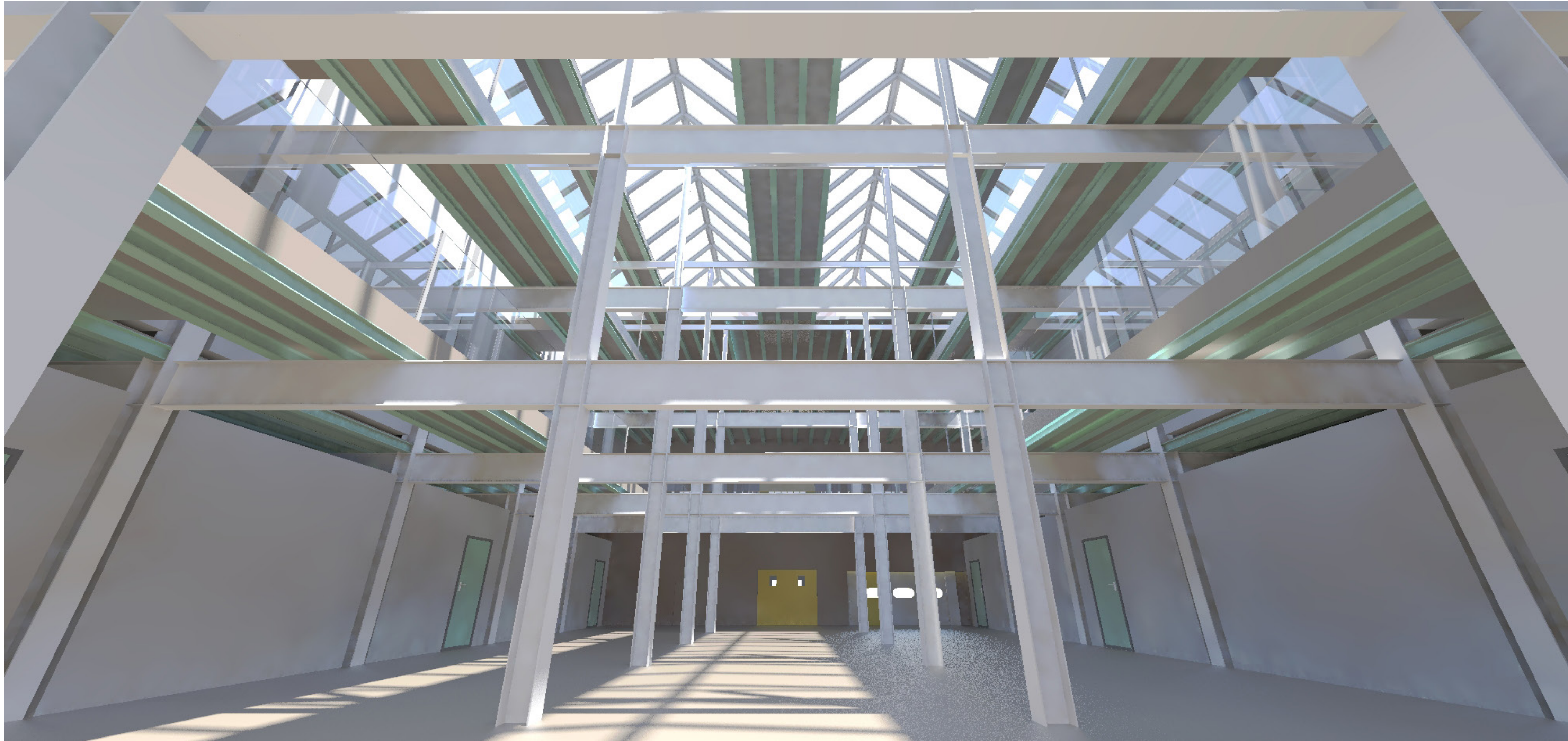
Use of rooftop garden
as balcony





A DAY OF USE: 22:00 + FULL PRIVACY WITHIN APARTMENT







QUESTIONS?