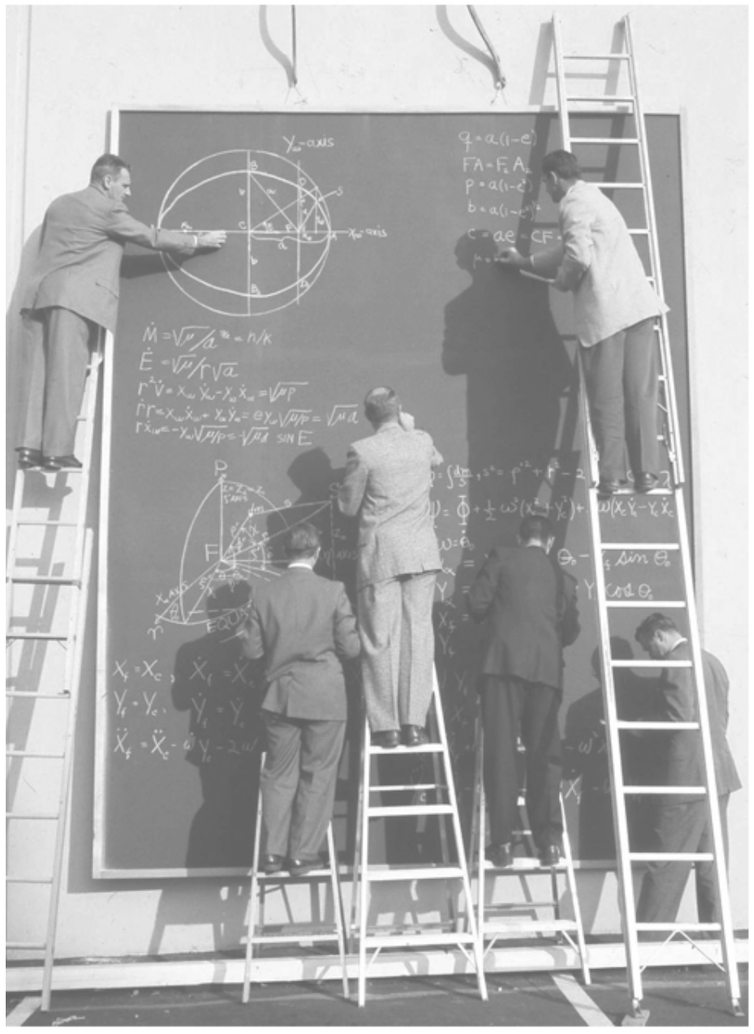
Daria Ivanova I student number 5686717
Delft University of Technology I 2023-2024
AR3AP100 Public Building Graduation Studio
Main mentor: Ir. Henk Bultstra
Second mentor: Ir. Ger Warries
Theory mentor: Ir. Sien van Dam

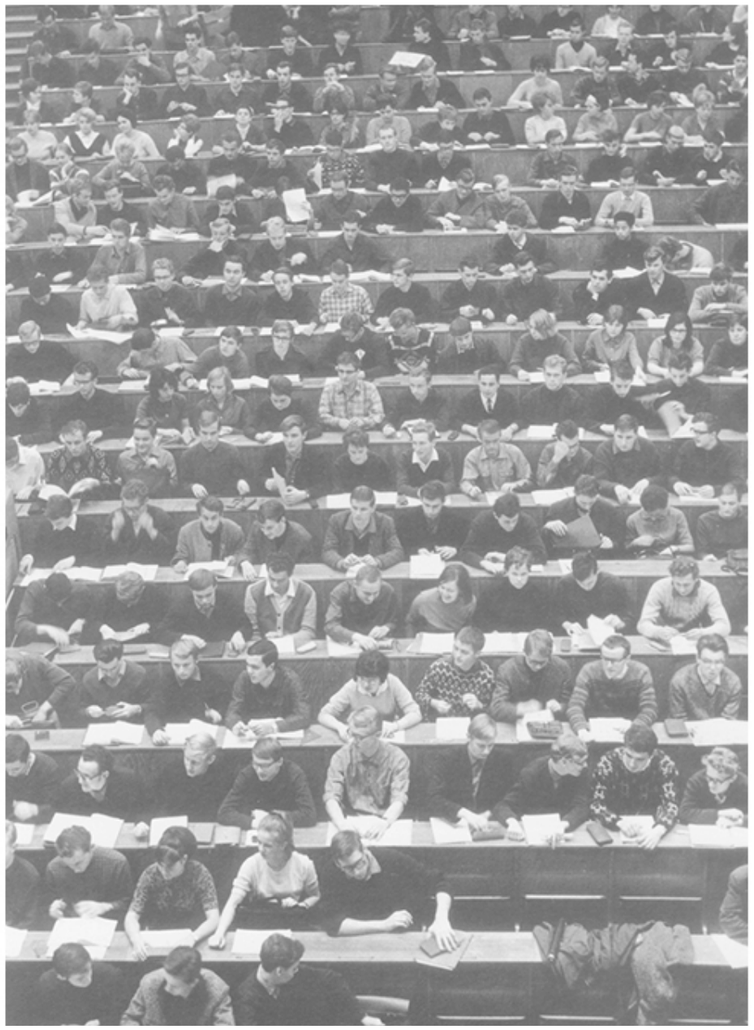
THE PLAYGROUND AS A METAPHOR FOR LEARNING

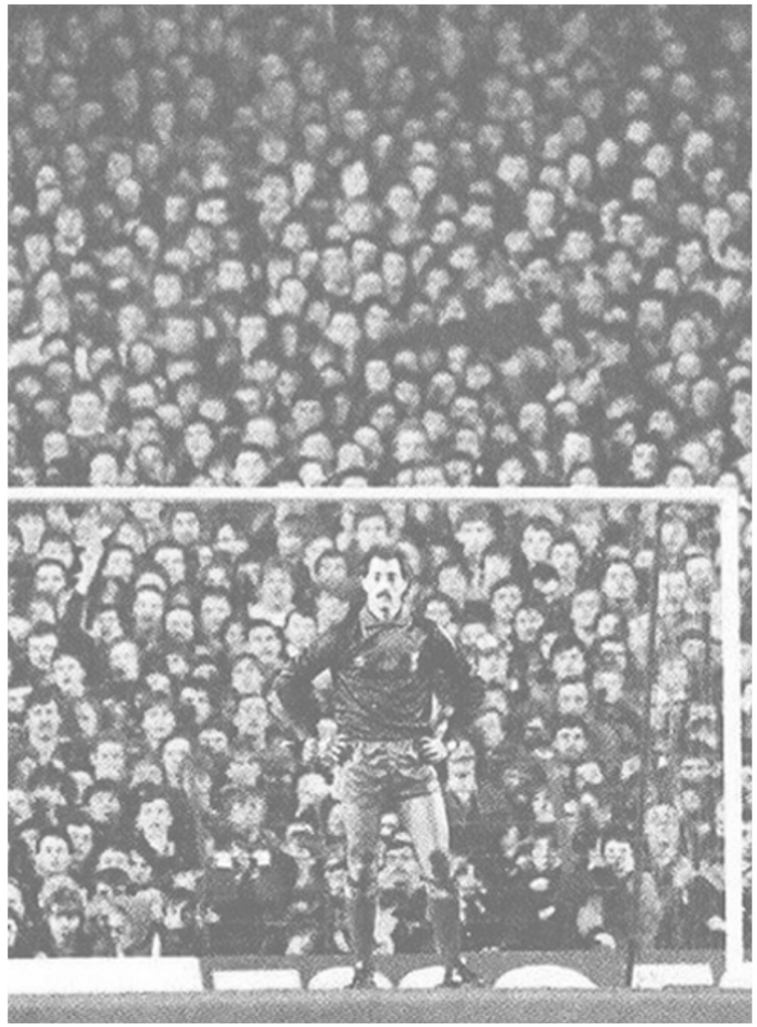
FINAL PRESENTATION



GROWTH AND AMBITION

TEAMWORK AND LEADERSHIP





PUBLICNESS AND STAGINESS

LEARNING AND PLAYING

1. Play is free, is in fact freedom.

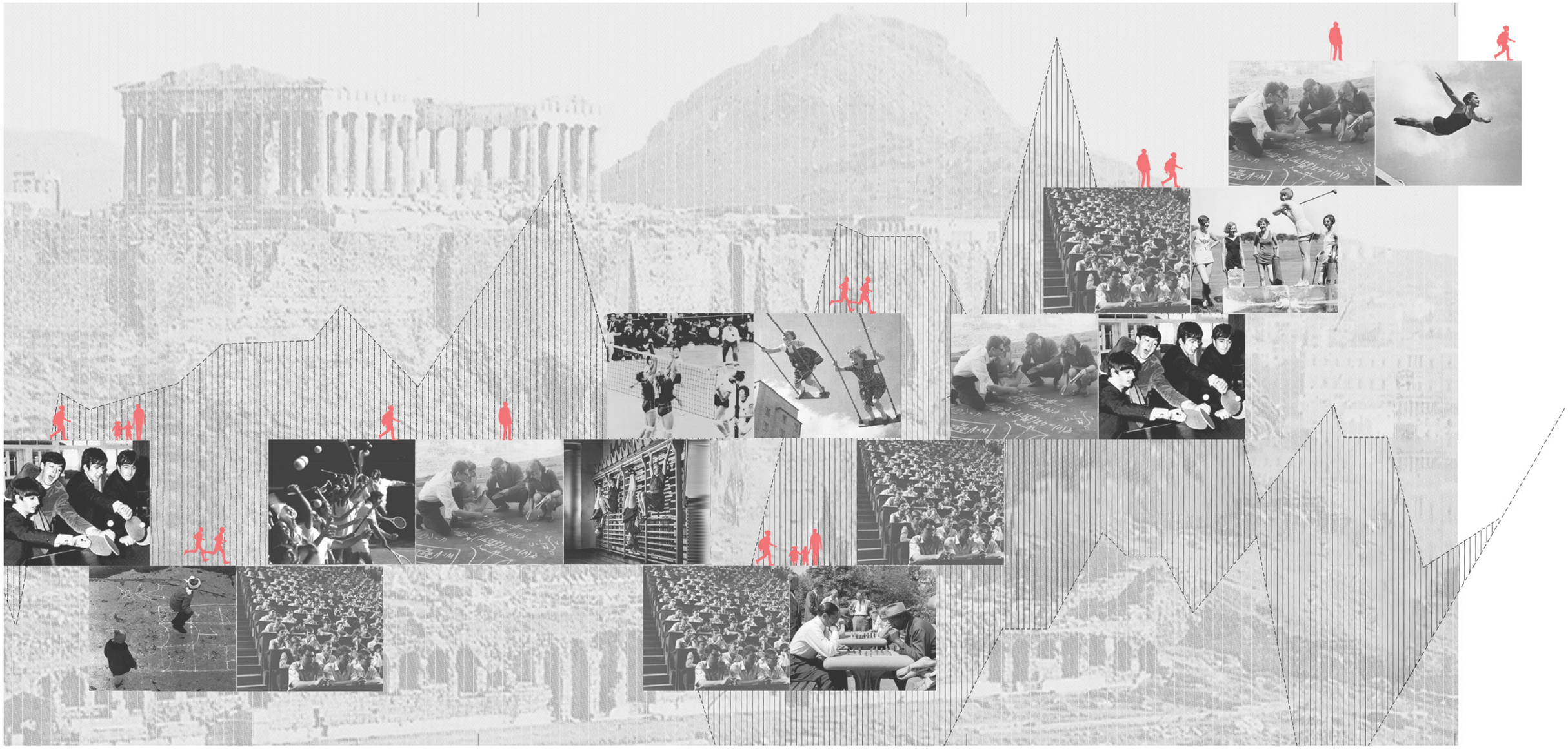
2. Play is not «ordinary» or «real» life.

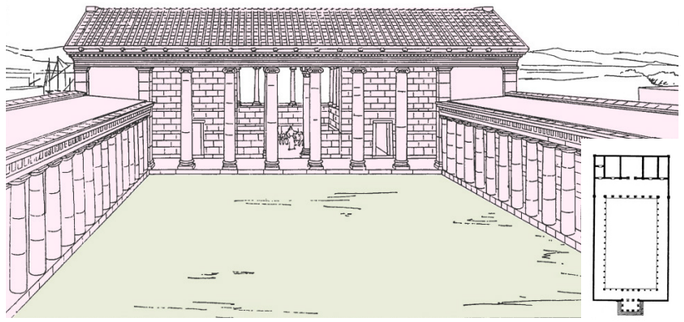
3. Play is distinct from «ordinary» life both as to locality and duration.

4. Play creates order, is order. Play demands order absolute and supreme.

5. Play is connected with no material interest, and no profit can be gained from it.

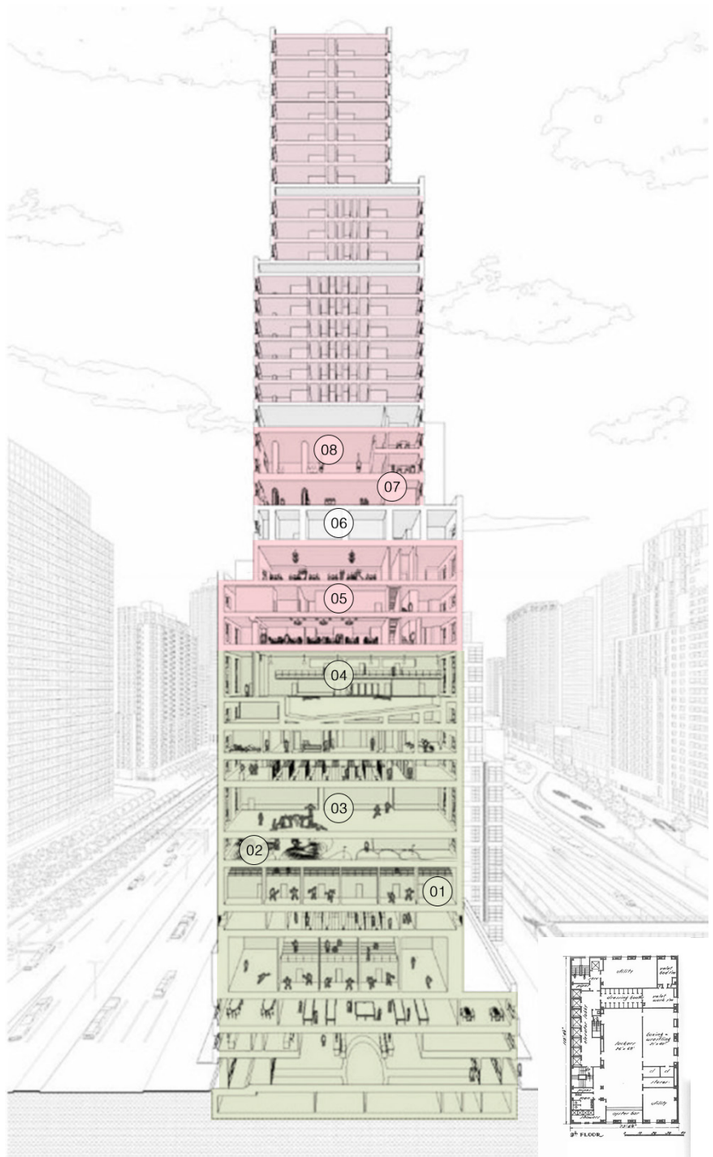
Johan Huizinga





Gymnasium in Miletus II century BC
Source: https://archvuz.ru/2019_1/3/

Indoor spaces of gymnasium
Inner courtyard



Downtown Athletic Club Building, 1929-1931, Starett and van Vleck, New York, US
Section. 01- squash courts, 02- golf, 03- gymnasium, 04- swimming pool, 05- restaurants, 06- roof garden, 07- lounge, 08- private restaurants
Source: 50 Hybrid buildings. Catalogue on the Art of Mixing Uses, 2020

Hotel
Retail
Sports

?

THE UNIVERSITY

+

WORKPLACES

DIVERSE ACADEMIC INFRASTRUCTURE INCLUDING OPEN AND CLOSED PUBLIC SPACES

INVOLVING STUDENTS, PROFESSORS, AND RESEARCHERS FROM OTHER CITIES AND COUNTRIES

SUPPORT OF LOCAL BUSINESSES

EDUCATION FOR THE LOCAL COMMUNITY

FREEDOM OF EXPERIMENTS

CAMPUS

-

ISOLATION

CLOSED ACCADEMIC COMMUNITY

THE CITY

+

DIVERSE COMMUNITY

A VARIETY OF ACTIVITIES

TRANSPORT ACCESSIBILITY

-

UNEMPLOYMENT

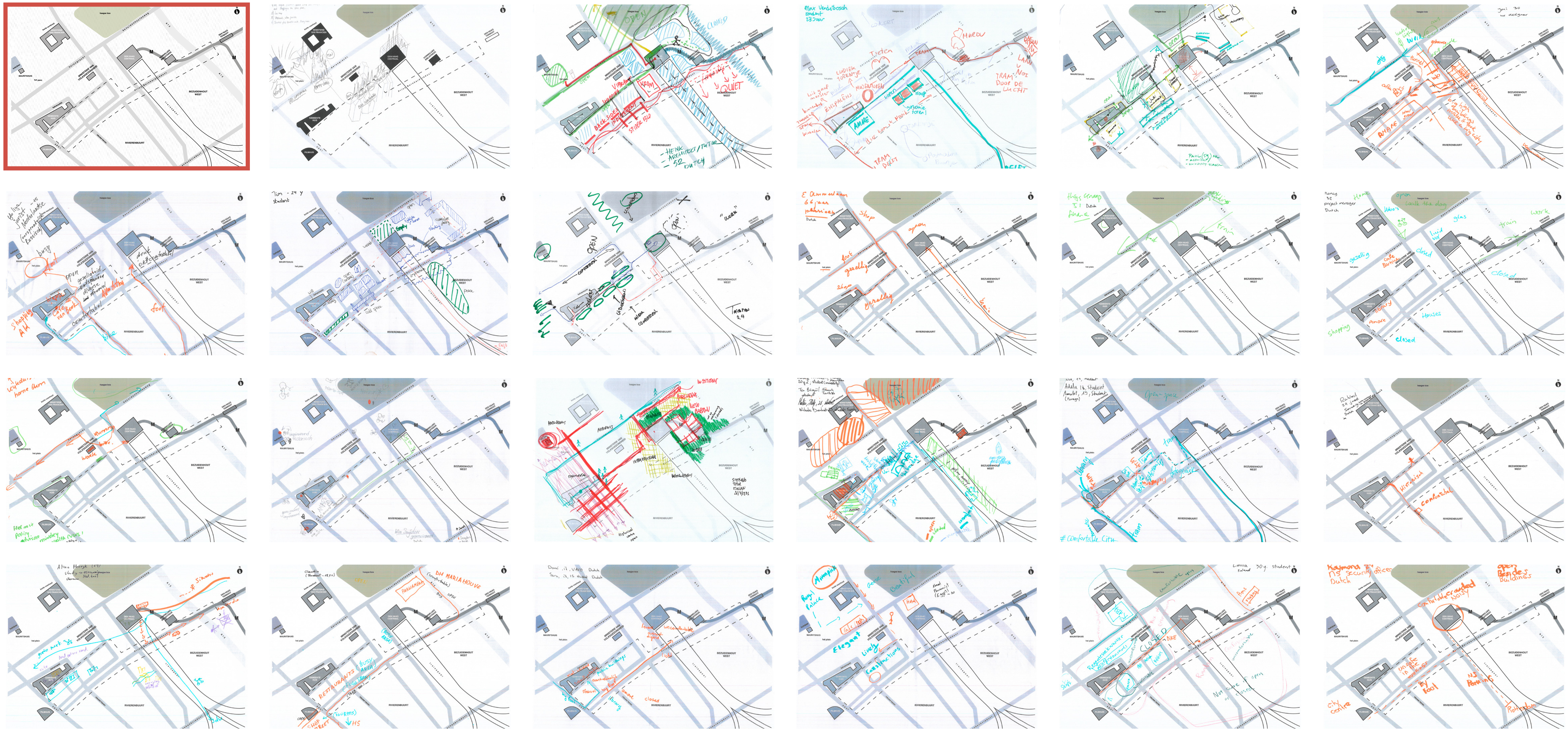
LACK OF GREEN SPACES

PHYSICAL DANGER, DEPRIVED AREAS

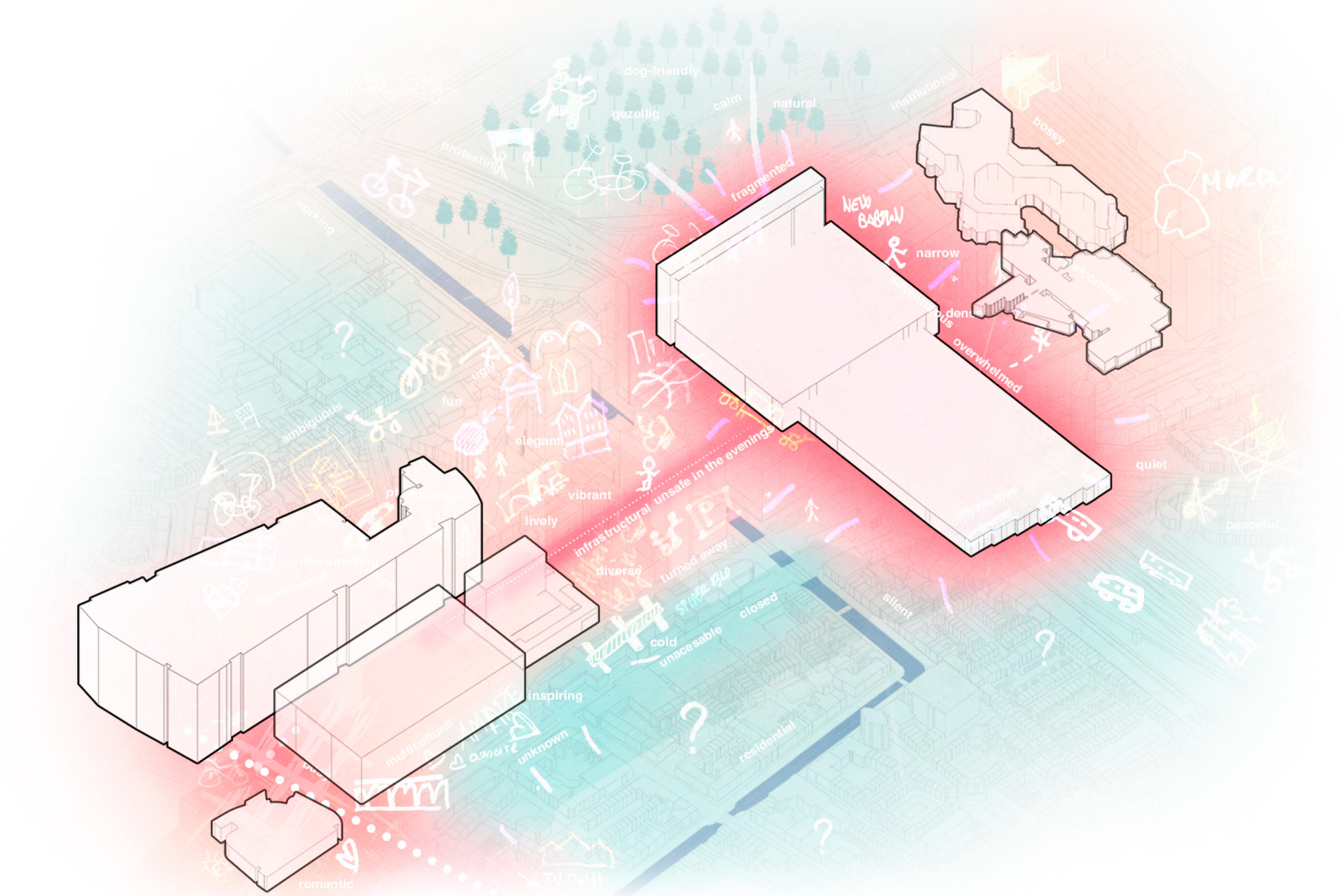
INTENSE ECONOMIC COMPETITION

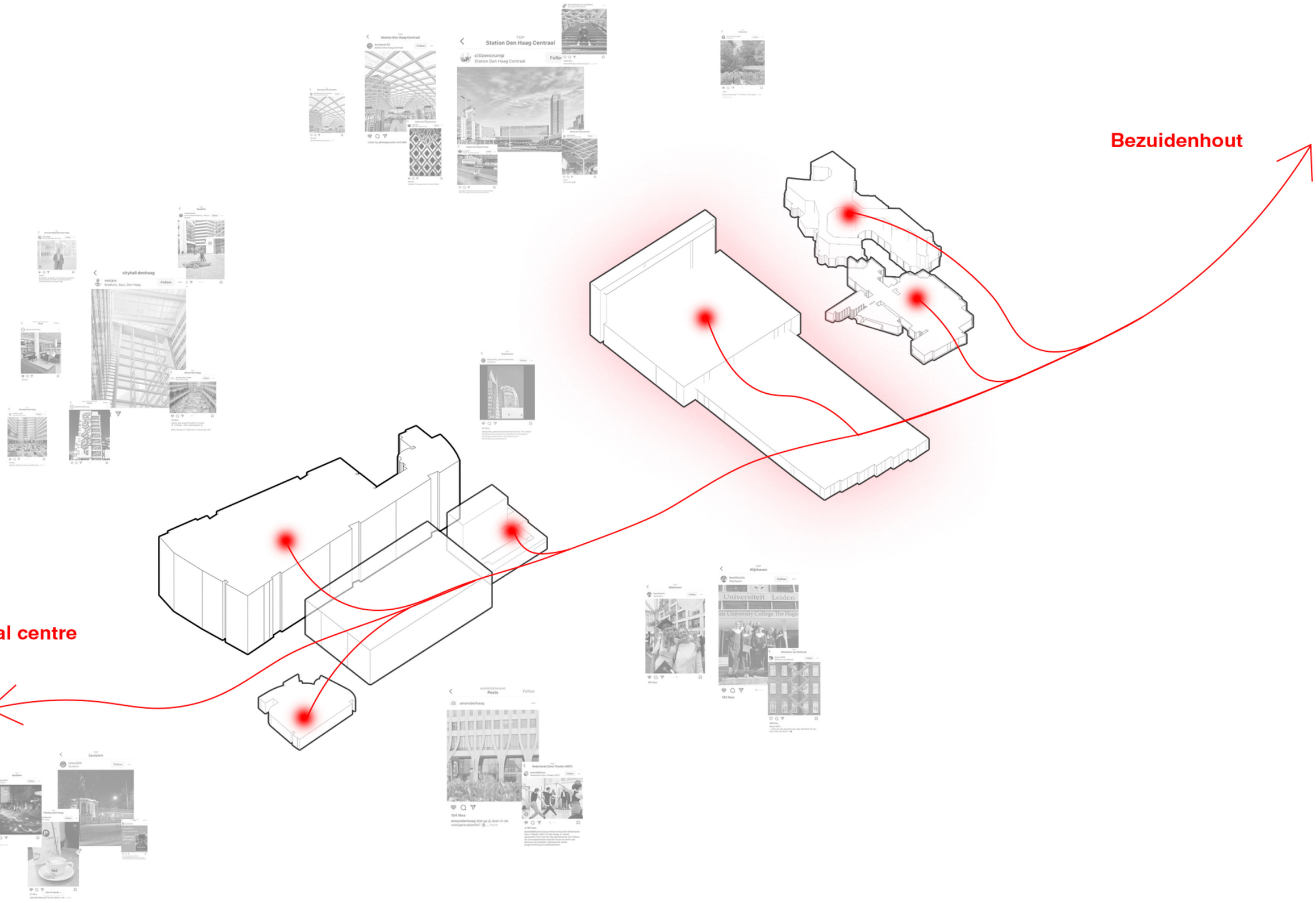
LACK OF THE DISTINCTIVE IDENTITY

LACK OF THE COMMERCIAL AND TOURIST POTENTIAL

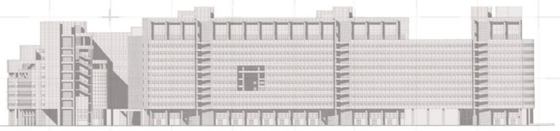


5 seniors
6 working class people
5 students from The Hague
8 architects

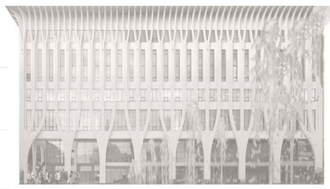

dog-friendly
gezellig
calm
natural
institutional
bossy
protesting
fragmented
working
NEW BASIN
narrow
overwhelmed
quiet
ugly
fun
ambiguous
elegant
vibrant
lively
unsafe in the evenings
infrastructural
diverse
turned away
coffee-smelling
monumental
closed
cold
unacesable
silent
inspiring
multicultural
unknown
residential
romantic
TU DARM


Bezuidenhout
historical centre

The Hague Central Station,
Benthem Crouwel Architects, 2016

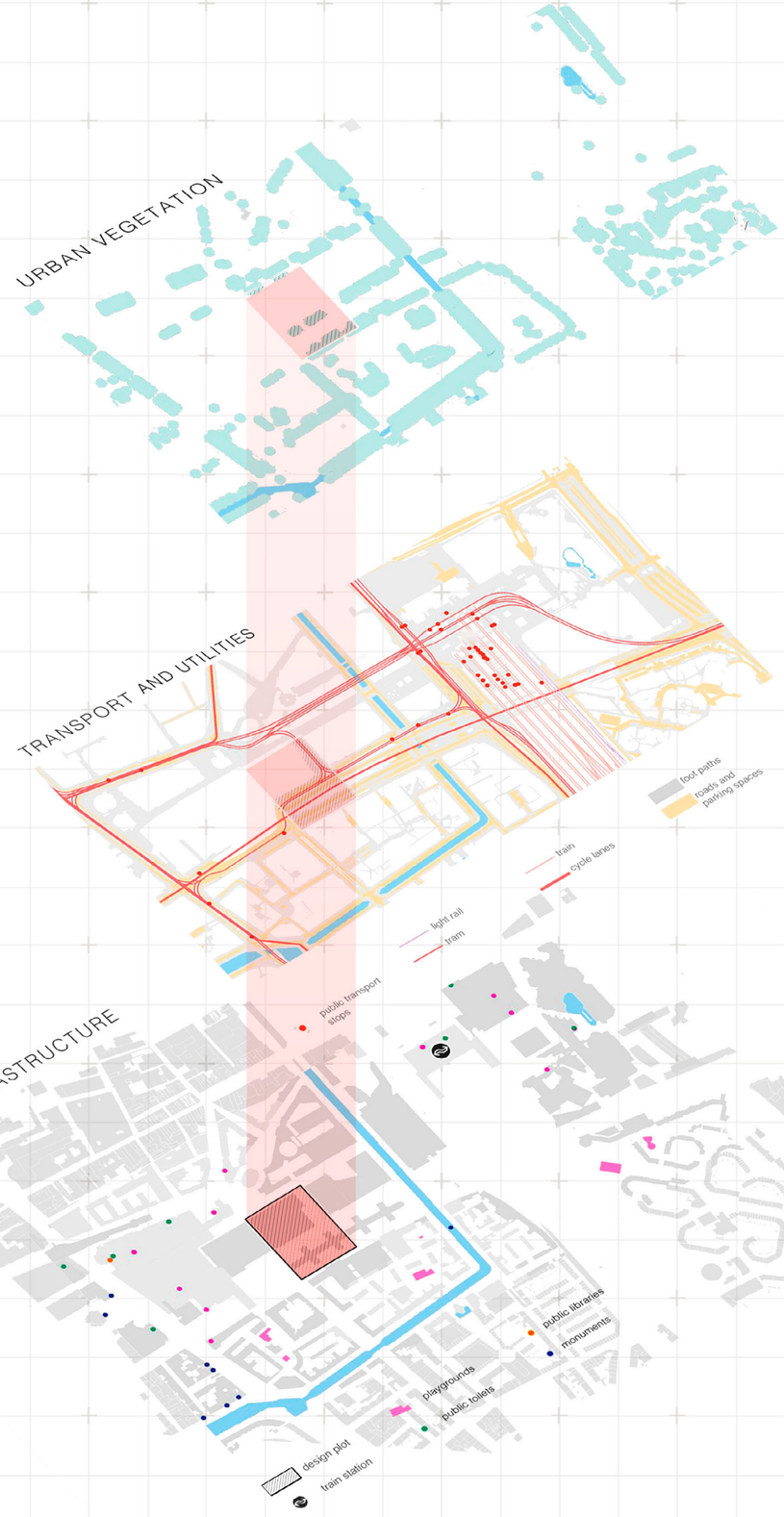


The Hague City Hall, Richard Meier, 1995



Amare Home of the Performance
Arts, NOAHH, 2021

Filmhuis Den Haag,
Herman Hertzberger, 1991



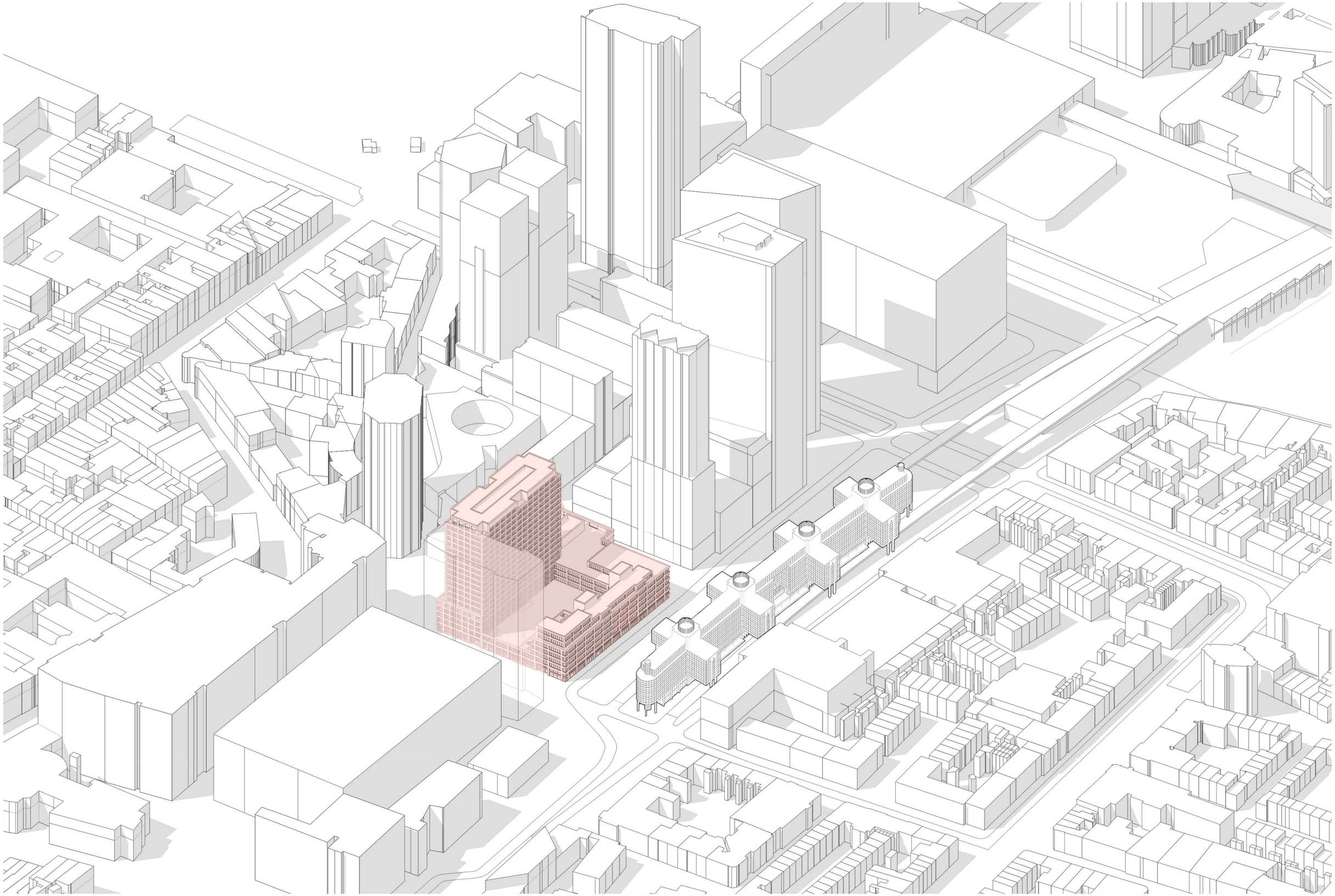
Temporary Parliament Building,
Dick Apon, 1984

Royal Library of the Netherlands,
Arie Hagoort, B.M. van der Meer, A.J. Trotz, 1982

Leiden University,
Lucas & Niemeijer, 1972-1978

A SOCIAL CITY IS A HAPPY CITY

CHARLES MONTGOMERY , “HAPPY CITY“, 2013

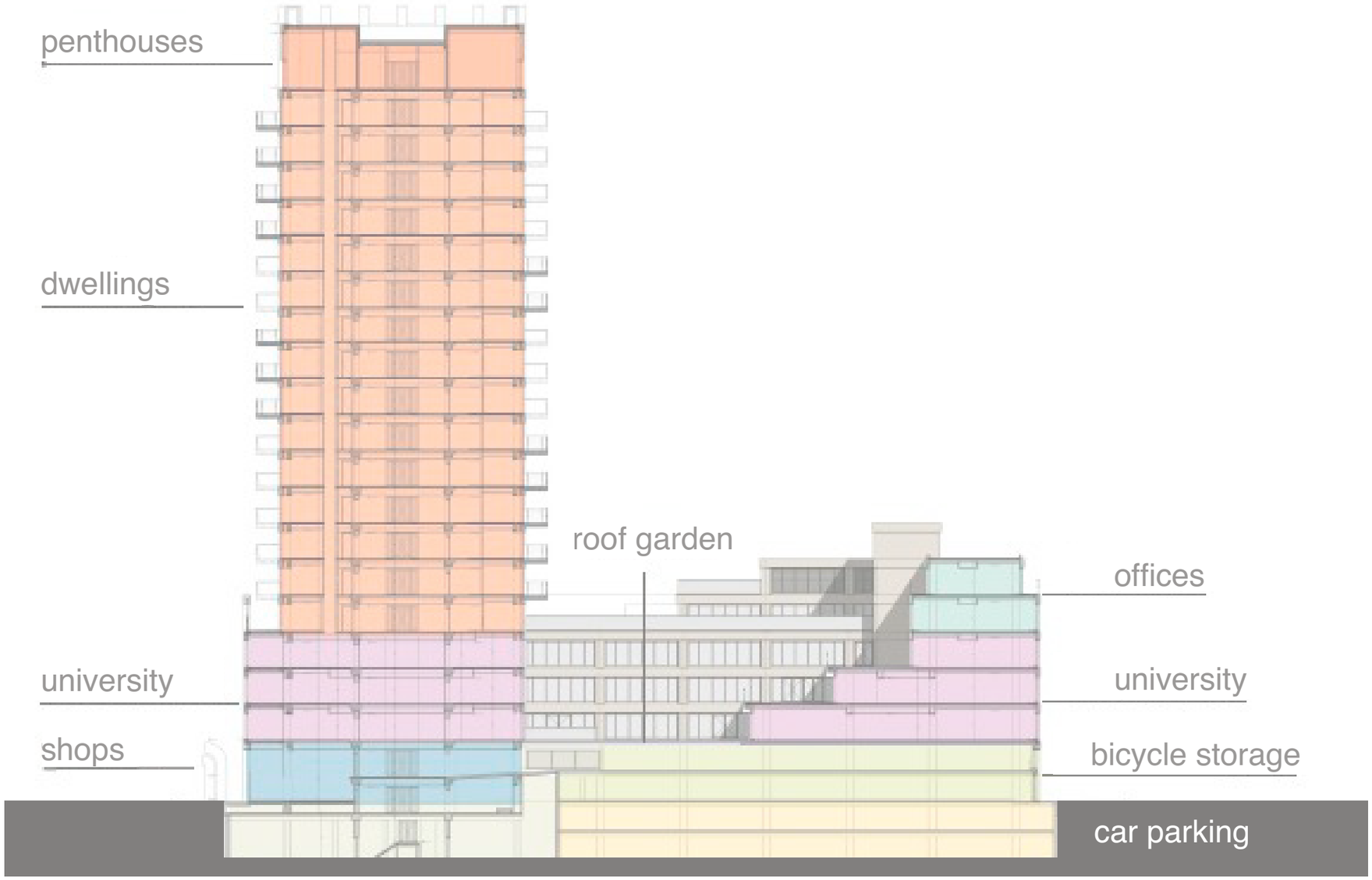


LEIDEN UNIVERSITY, WIJNHAVEN

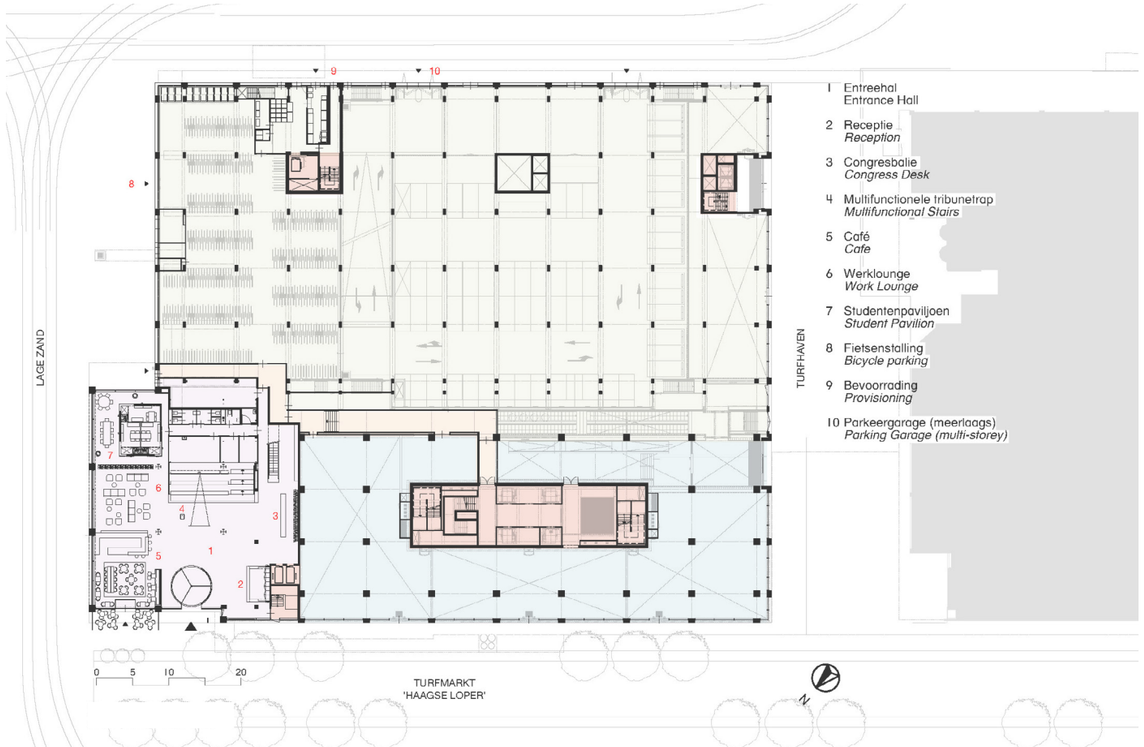
LEIDEN UNIVERSITY, WIJNHAVEN

LEIDEN UNIVERSITY, WIJNHAVEN

LEIDEN UNIVERSITY, WIJNHAVEN, 1980s

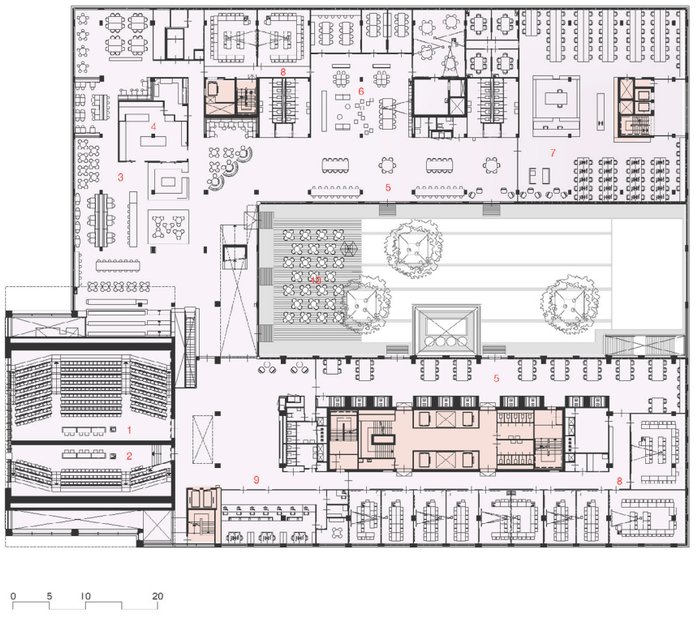


Functional Section. Source: https://architizer.com/idea/2069353/



Floor plan, ground floor. Source: https://architizer.com/idea/2069353/

Entrance area. Source: https://studioleonthier.nl/projecten/campus-den-haag-universiteit-leiden



1 Groot auditorium (543 p) (meerlaags)
Grand Auditory (543 p) (multi-storey)

2 Groot auditorium (308 p) (meerlaags)
Grand Auditory (308 p) (multi-storey)

3 Restaurant
Restaurant

4 Restaurant, zelfbediening
Restaurant, self-service

5 Free Flow-studiegebied
Free Flow Study Area

6 Inspiration Lab
Inspiration Lab

7 Bibliotheek
Library

8 Zone Lesruimten
Zone Classrooms

9 Studenteninformatiebalie
Student Information Desk

10 Daktuin met terras
Roof garden with terrace

Floor plan, 2nd floor. Source: https://architizer.com/idea/2069353/

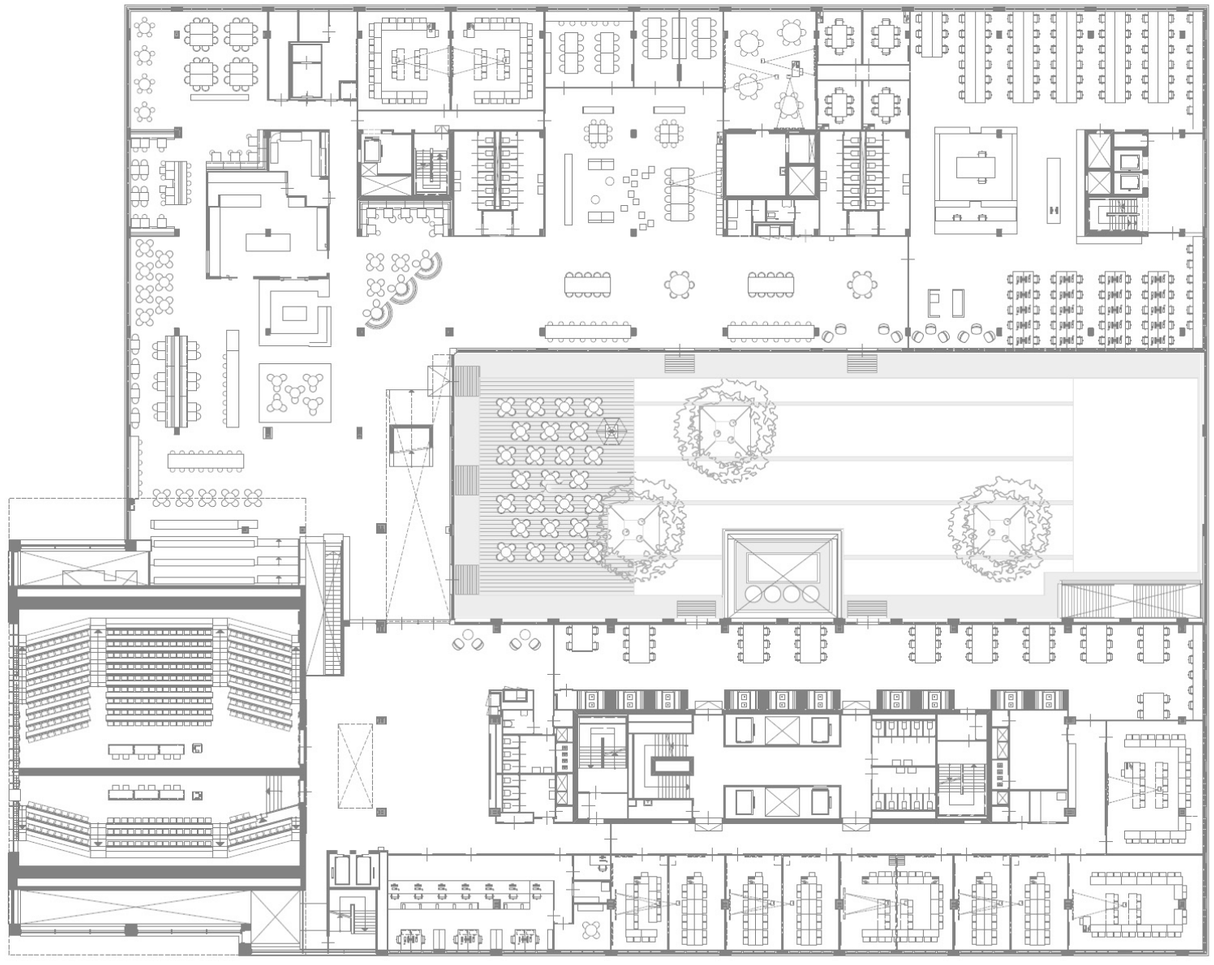
The entrance from the courtyard. Source: https://studioleonthier.nl/projecten/campus-den-haag-universiteit-leiden

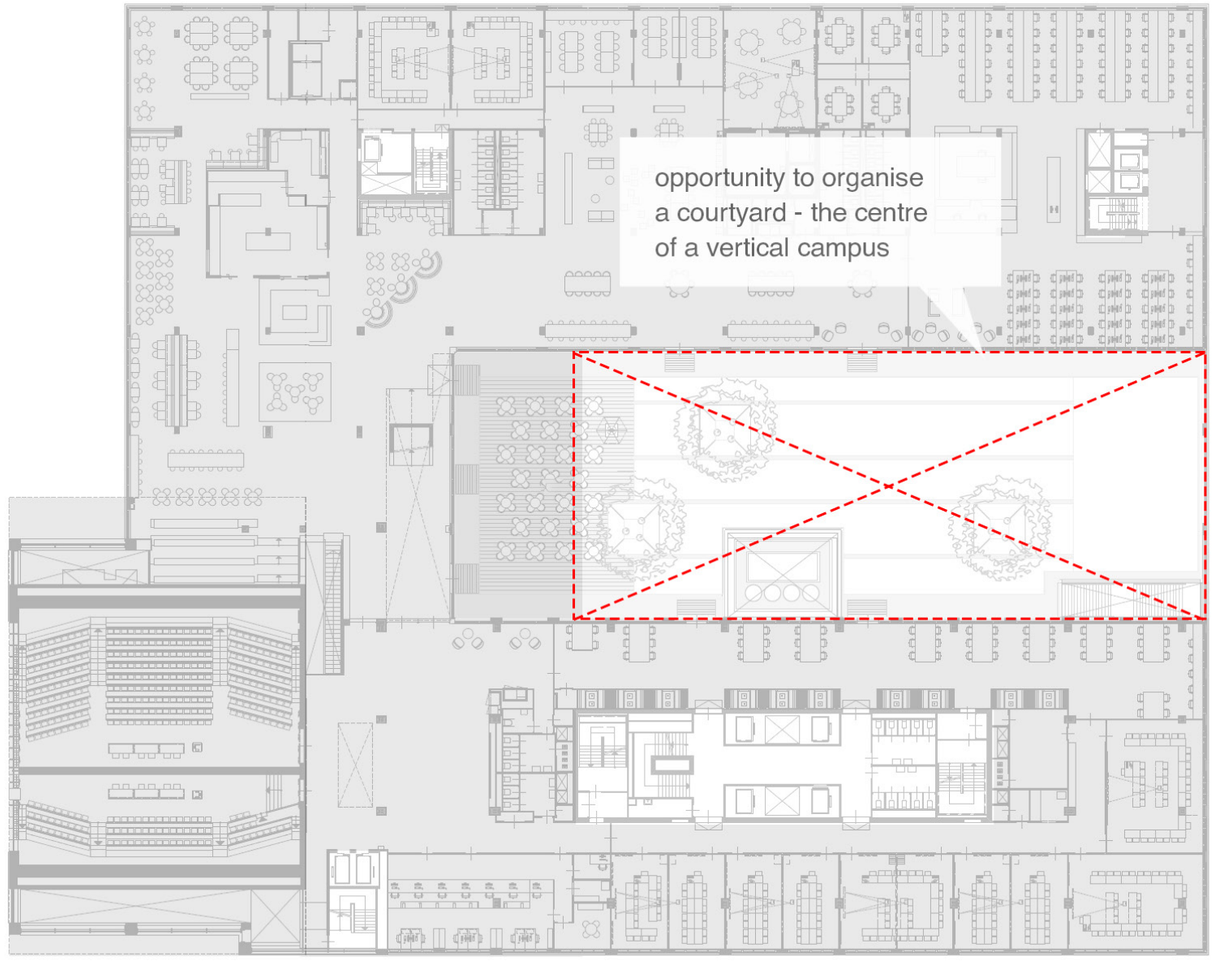
University

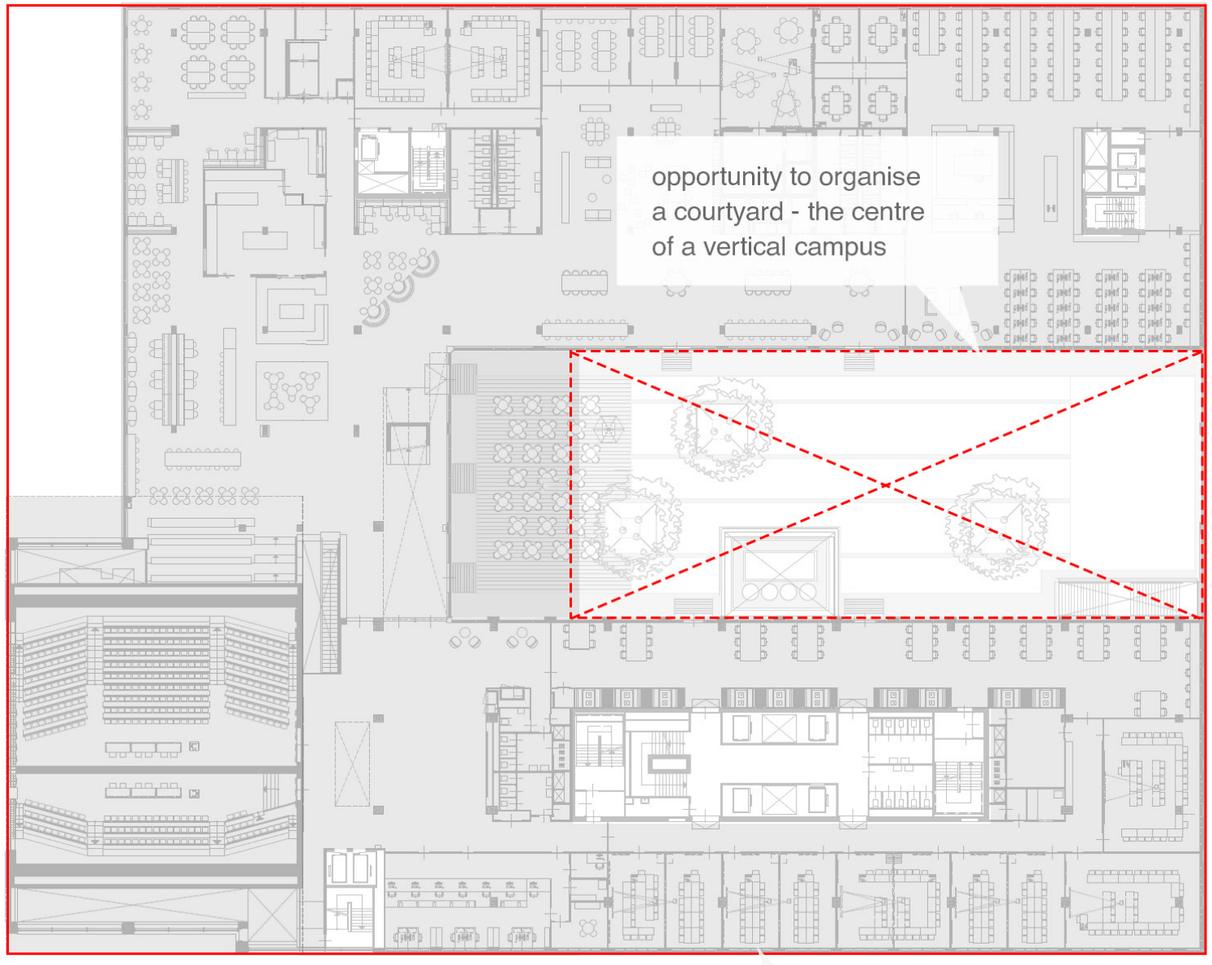
Floor plans of the tower. 20 floor. Penthouses. Source: https://www.geurst-schulze.nl/herbestemming/wijnhavenkwartier-den-haag/

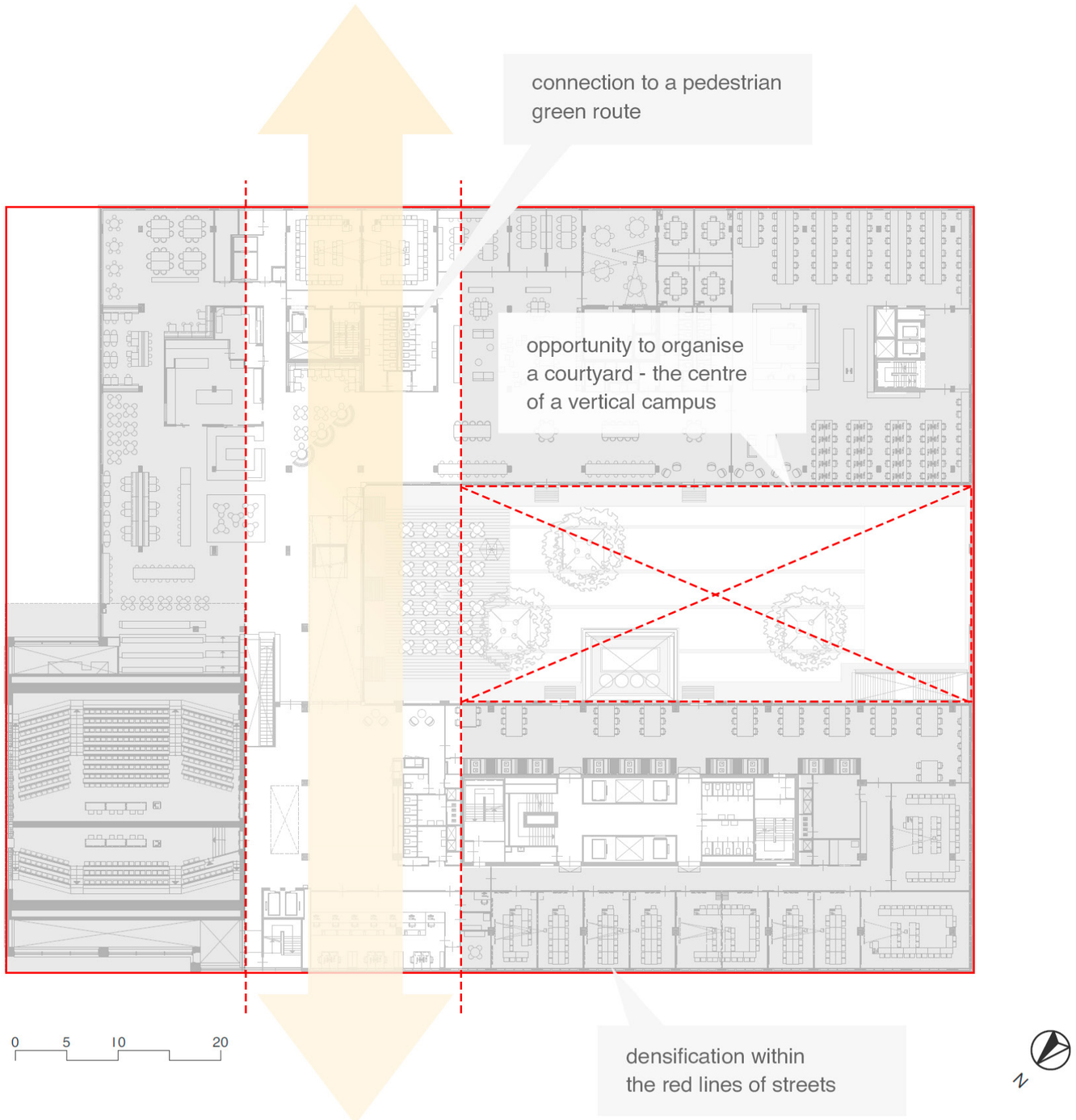
Floor plans of the tower. 11-19 floors. Source: https://www.geurst-schulze.nl/herbestemming/wijnhavenkwartier-den-haag/

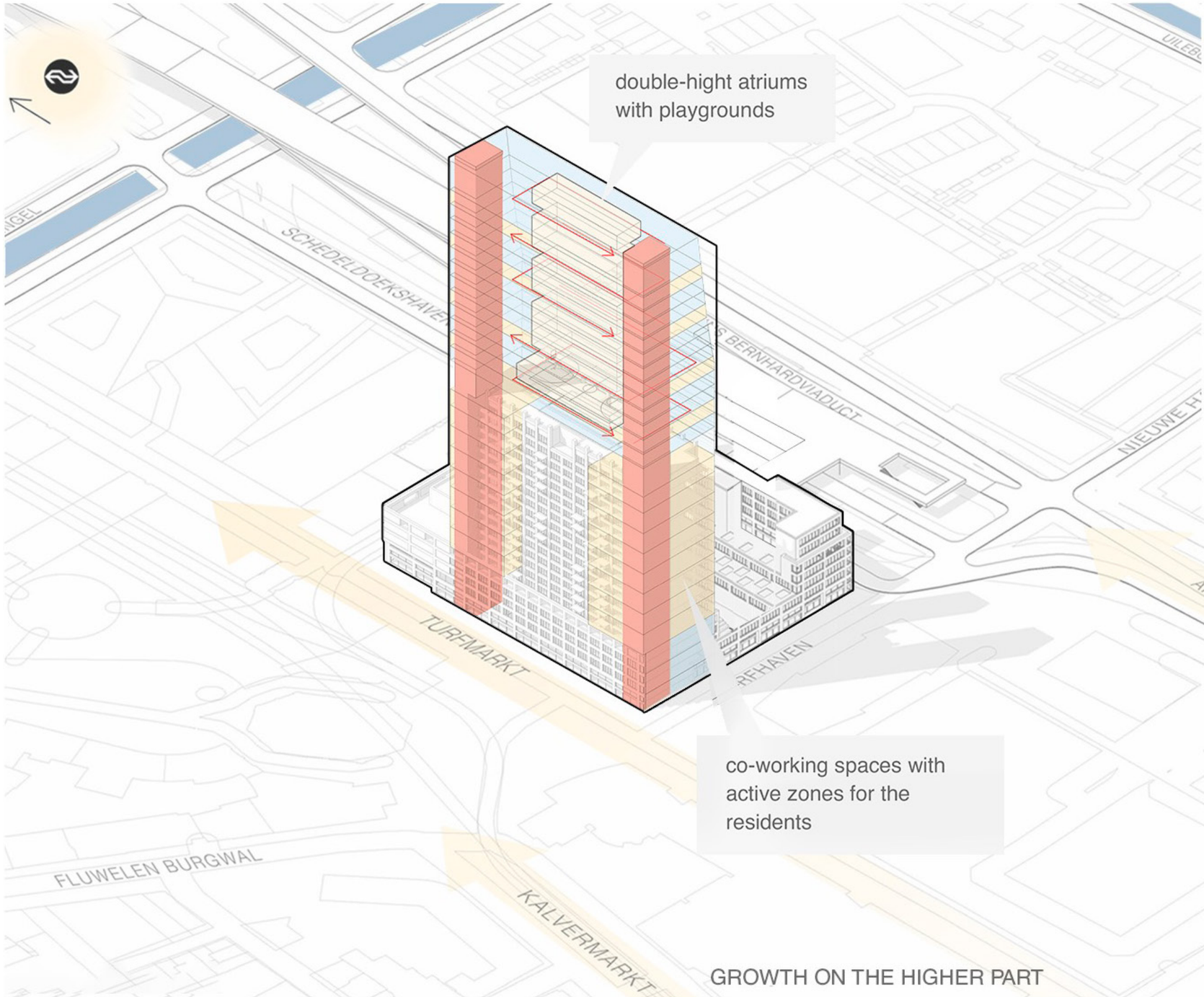
Housing. Source: https://studioleonthier.nl/projecten/campus-den-haag-universiteit-leiden


0
5
10
20
N

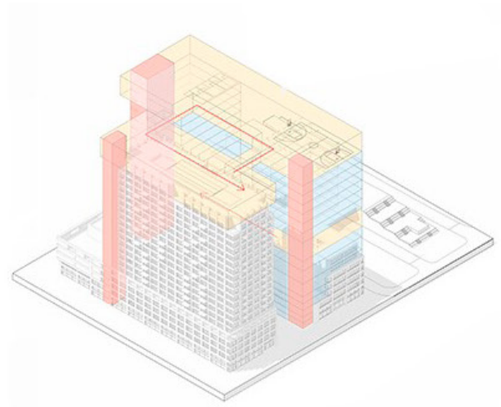

opportunity to organise
a courtyard - the centre
of a vertical campus
0
5
10
20
N


opportunity to organise
a courtyard - the centre
of a vertical campus
densification within
the red lines of streets
0
5
10
20
N


connection to a pedestrian green route
opportunity to organise a courtyard - the centre of a vertical campus
densification within the red lines of streets
0
5
10
20
N



GROWTH ON THE HIGHER PART

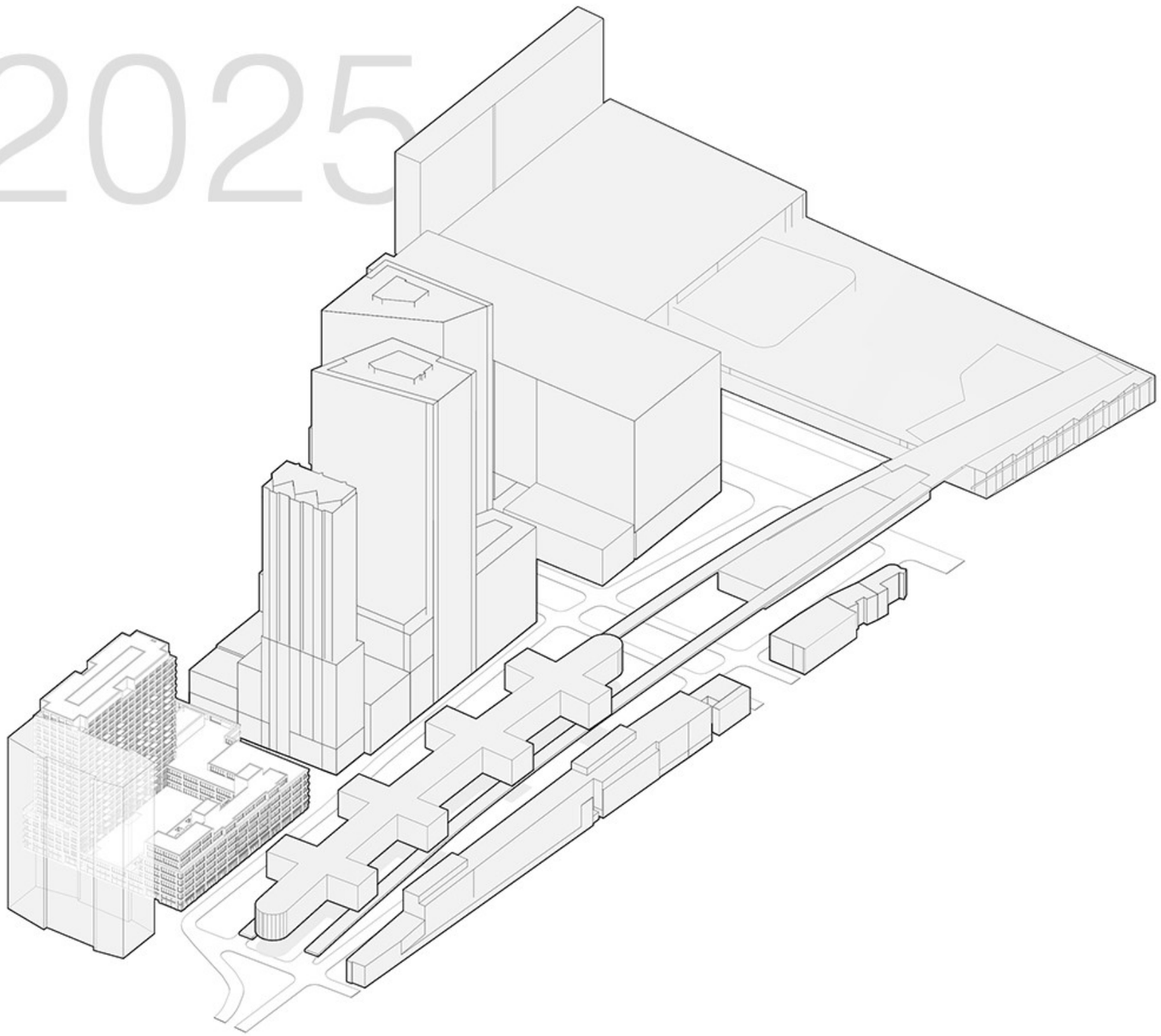


GROWTH ON THE LOWER PART

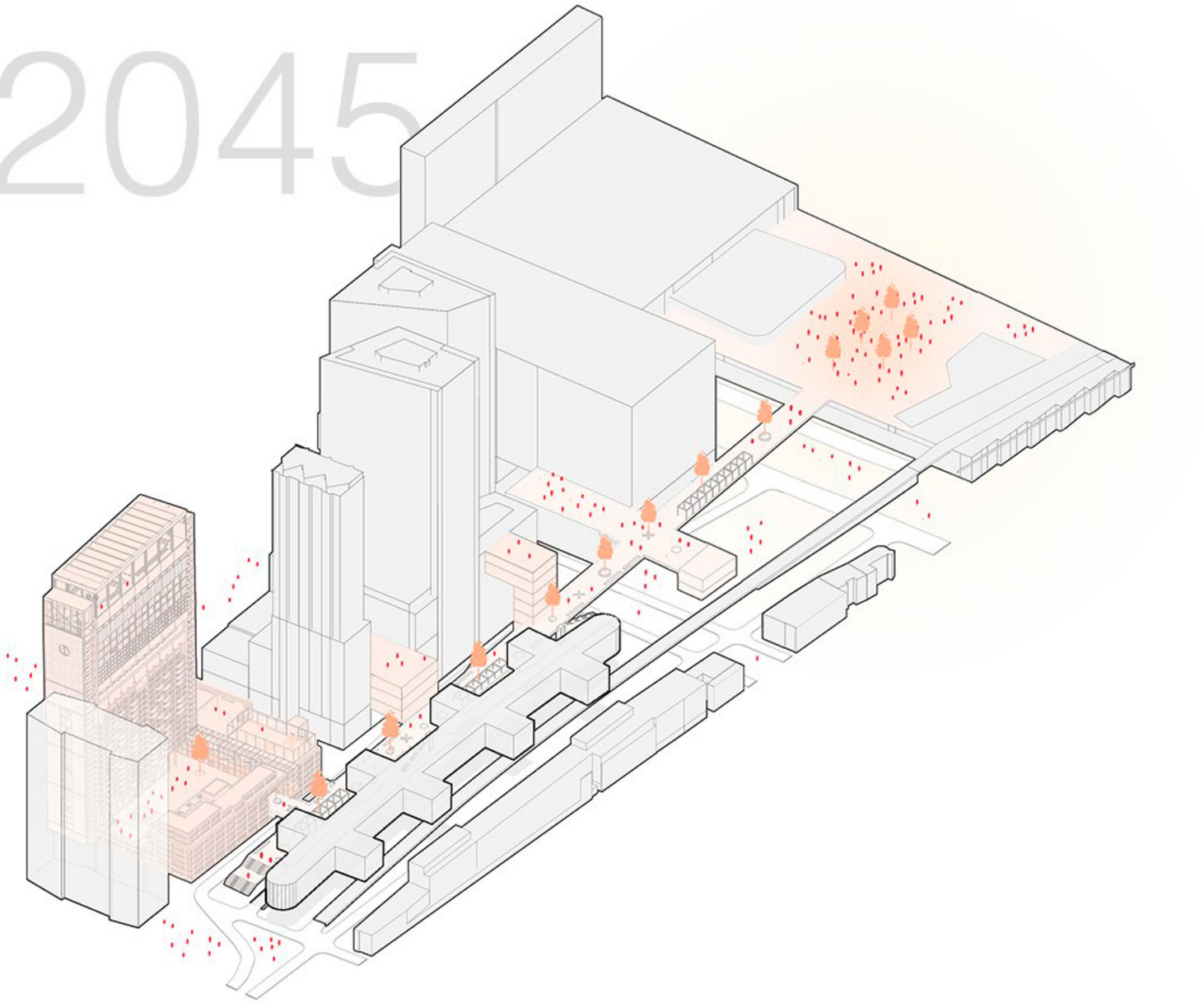
- Blocking the view of residential buildings
- Shading, insufficient sunlight
- Courtyard densification and lack of open spaces

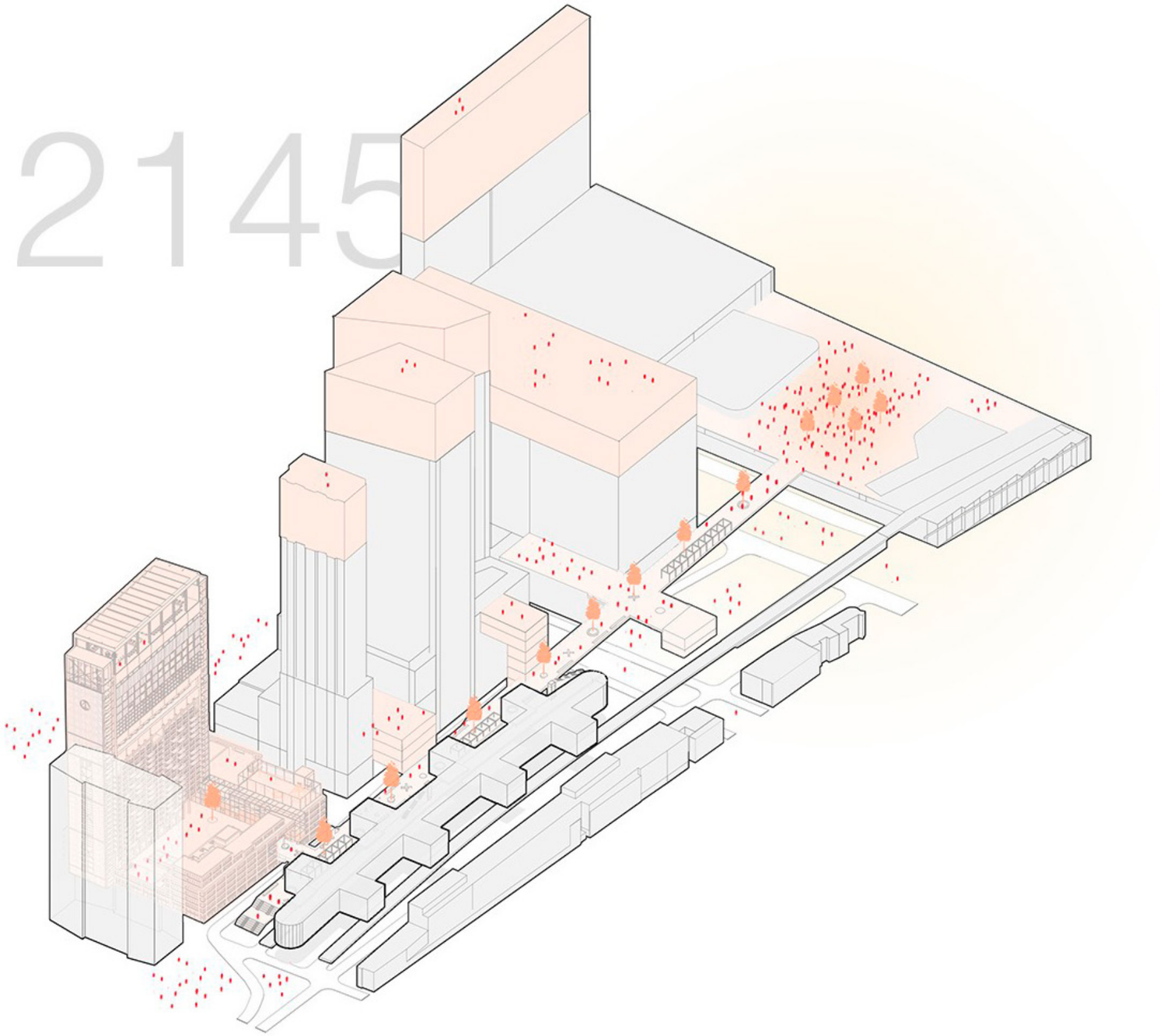
UP

2025



2045

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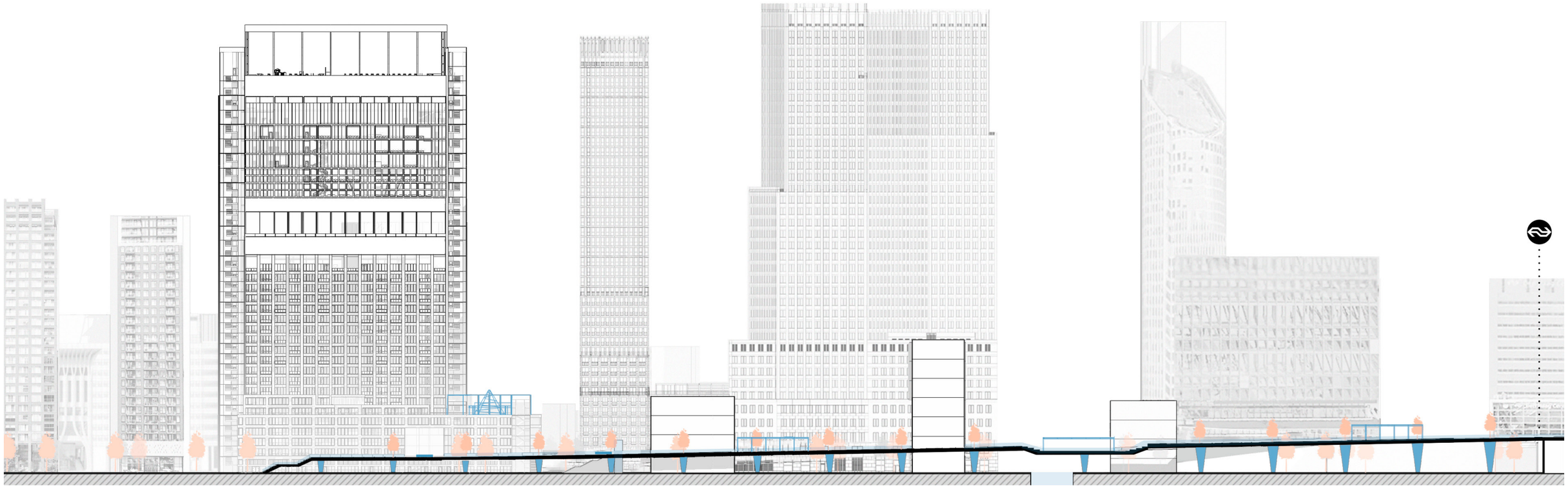
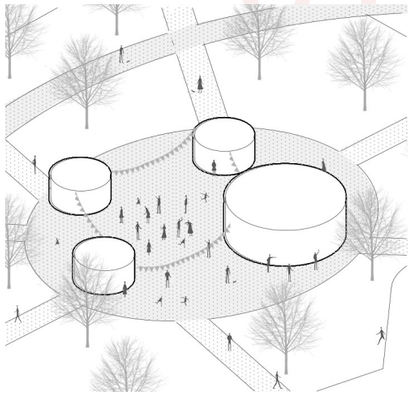
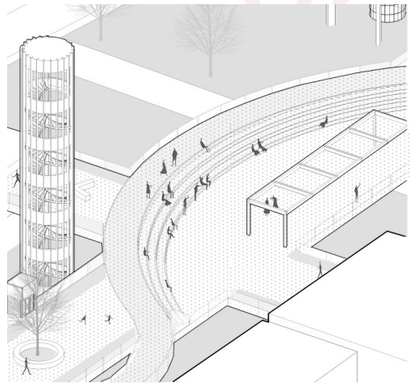


SCHEDELDOEKSHAVEN

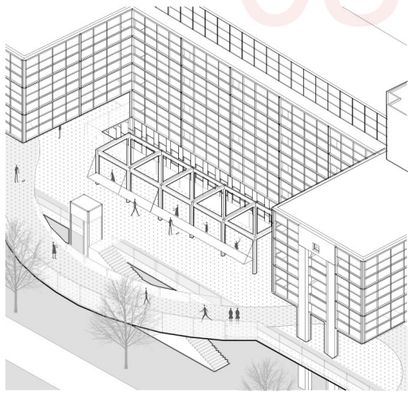
01



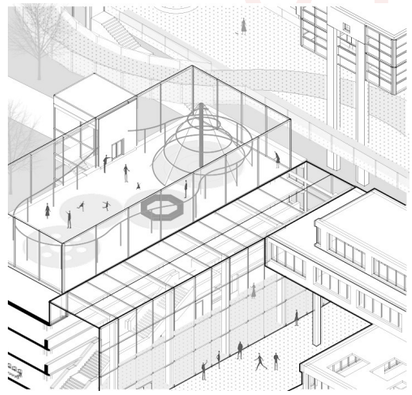
02



03



04



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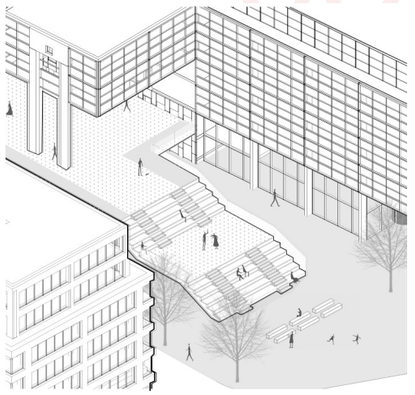
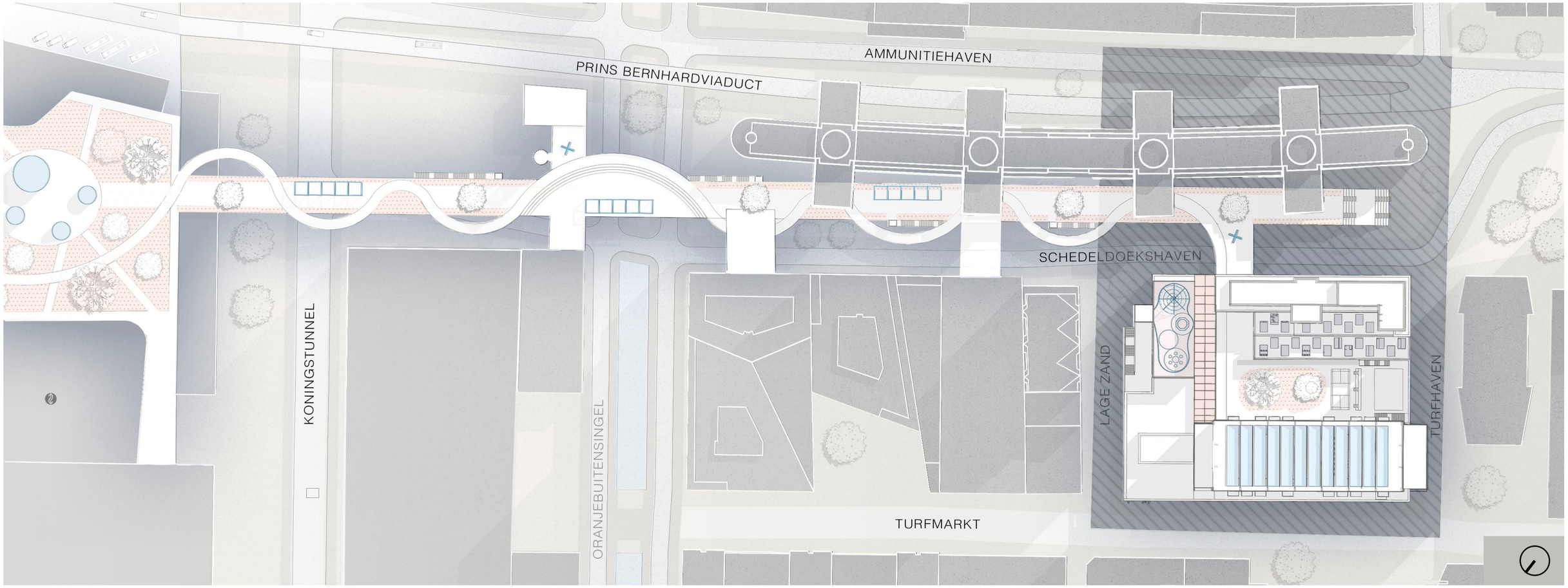
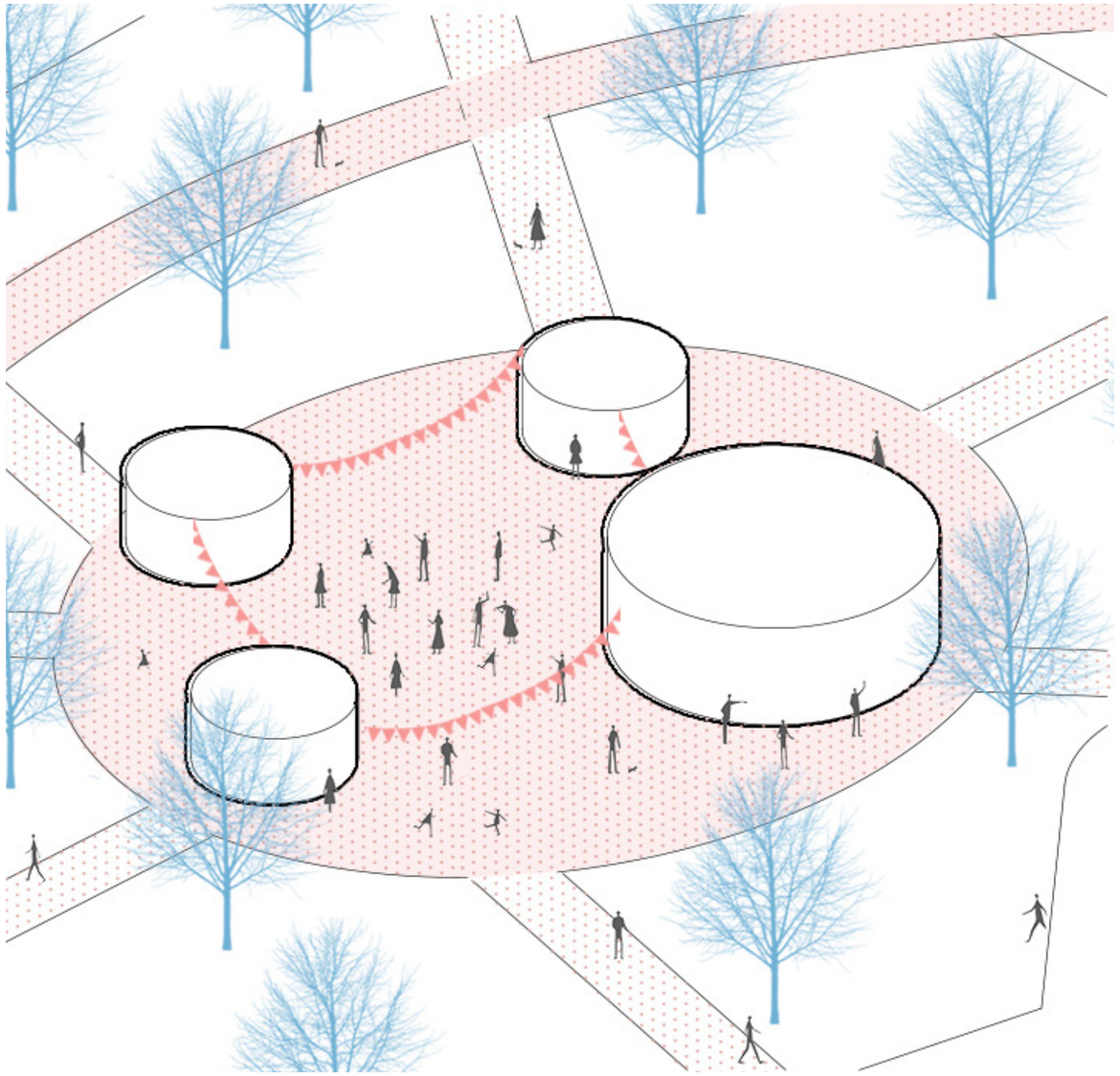
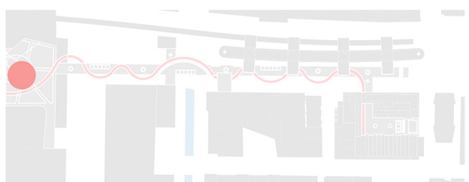
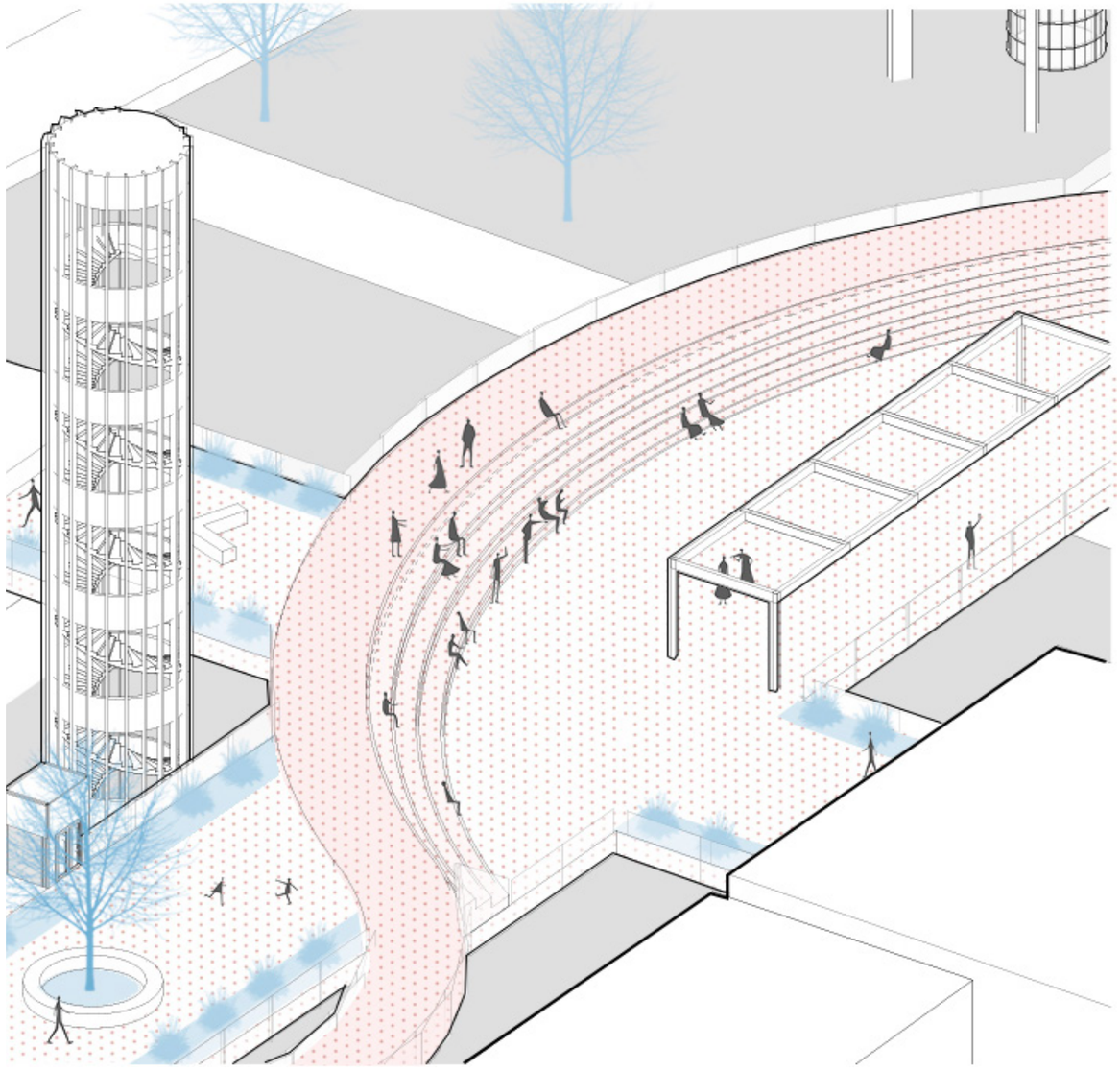



PRINS BERNHARDVIADUCT
AMMUNITIEHAVEN
SCHEDELDOEKSHAVEN
KONINGSTUNNEL
ORANJEBUITENSINGEL
TURFMARKT
LAGE ZAND
TURFHAVEN

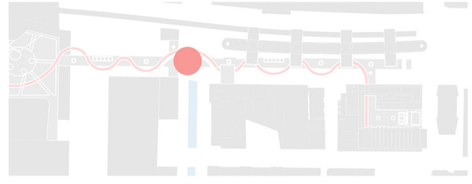


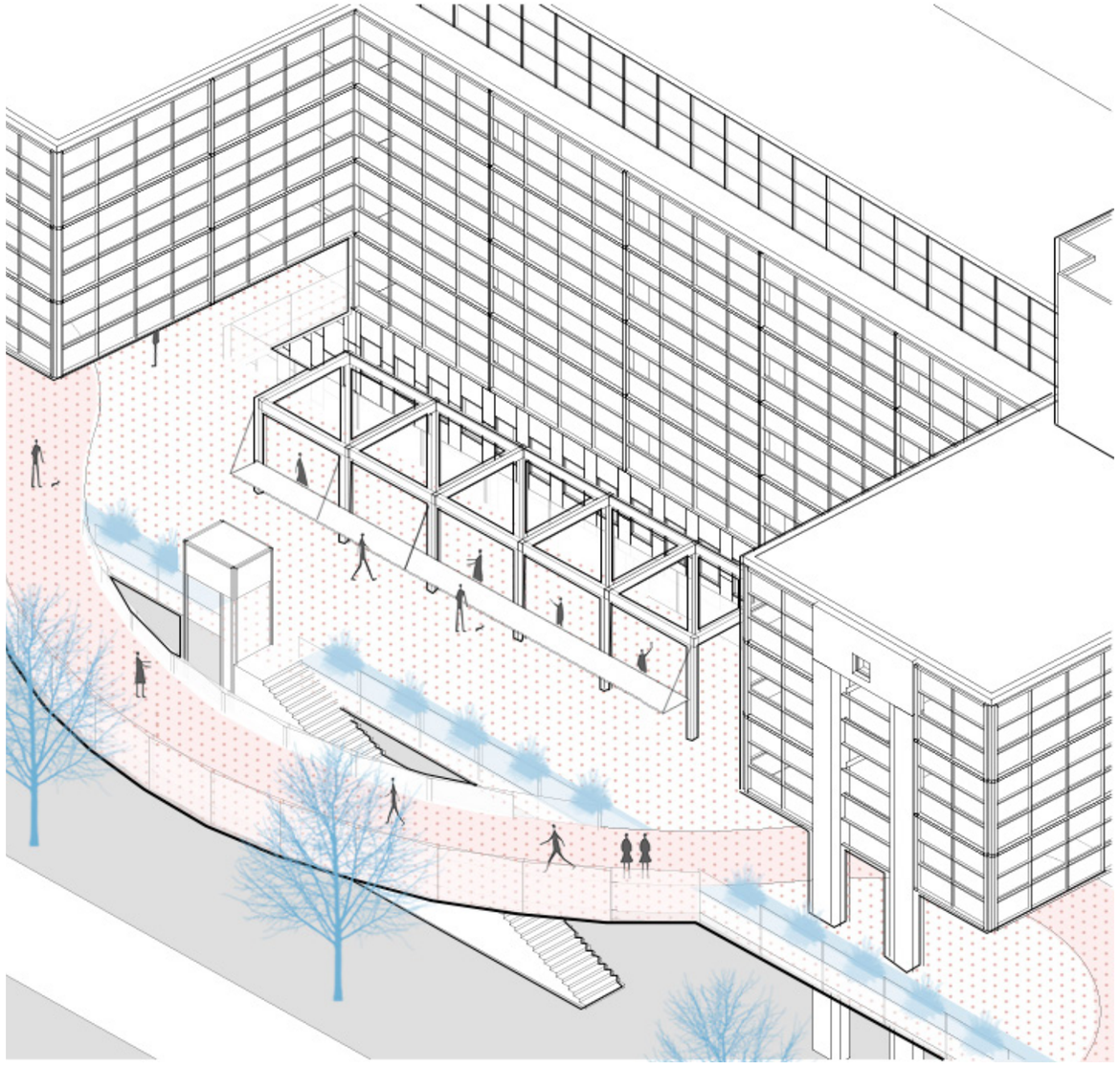
01 THE HAGUE CENTRAL STATION PARK



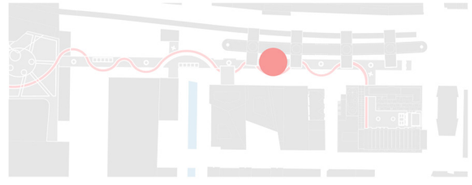


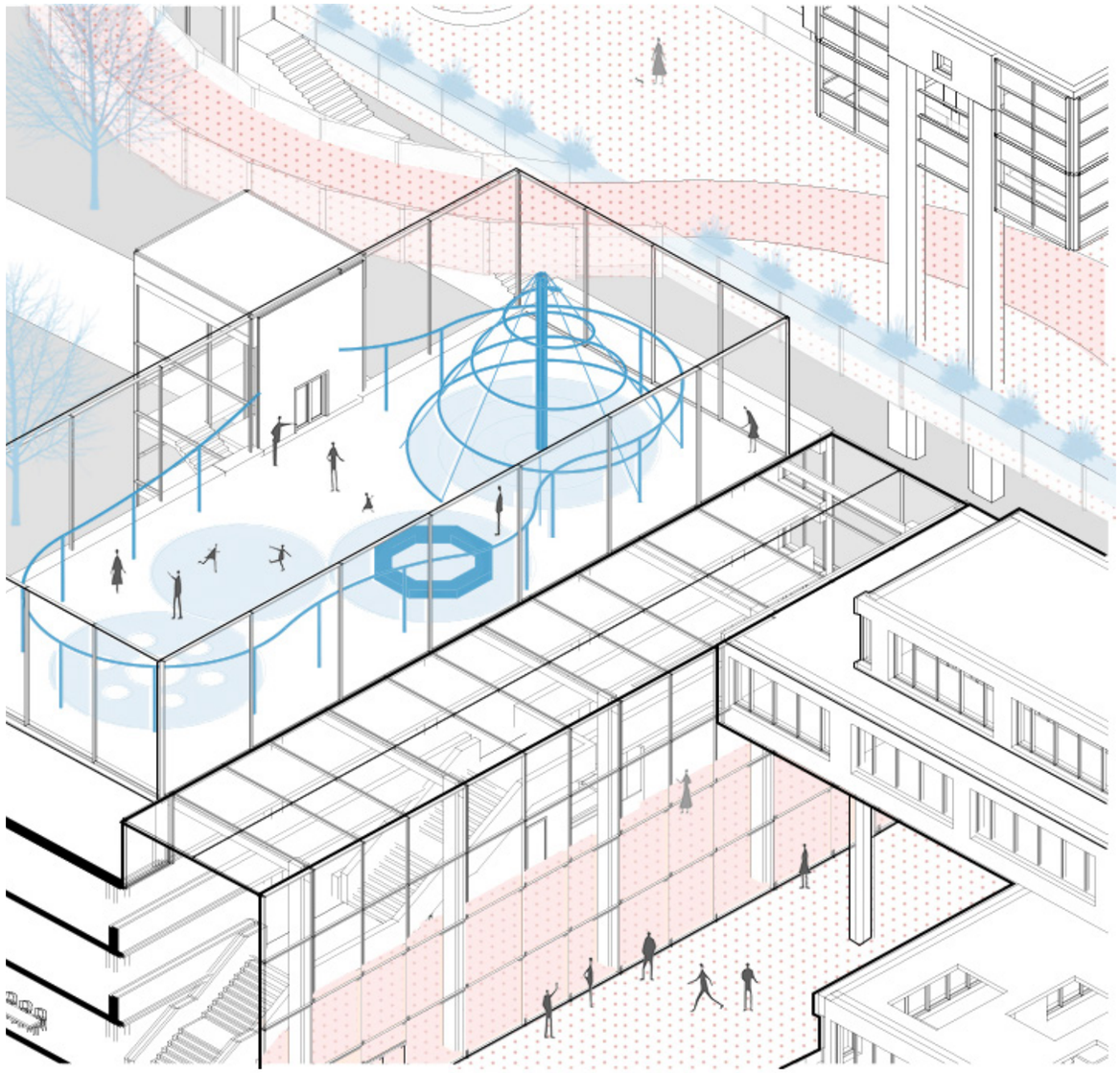
02 CITY STREET THEATRE



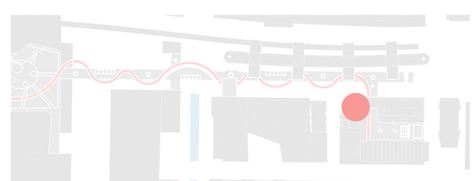


03 TRANSFORMABLE PAVILIONS



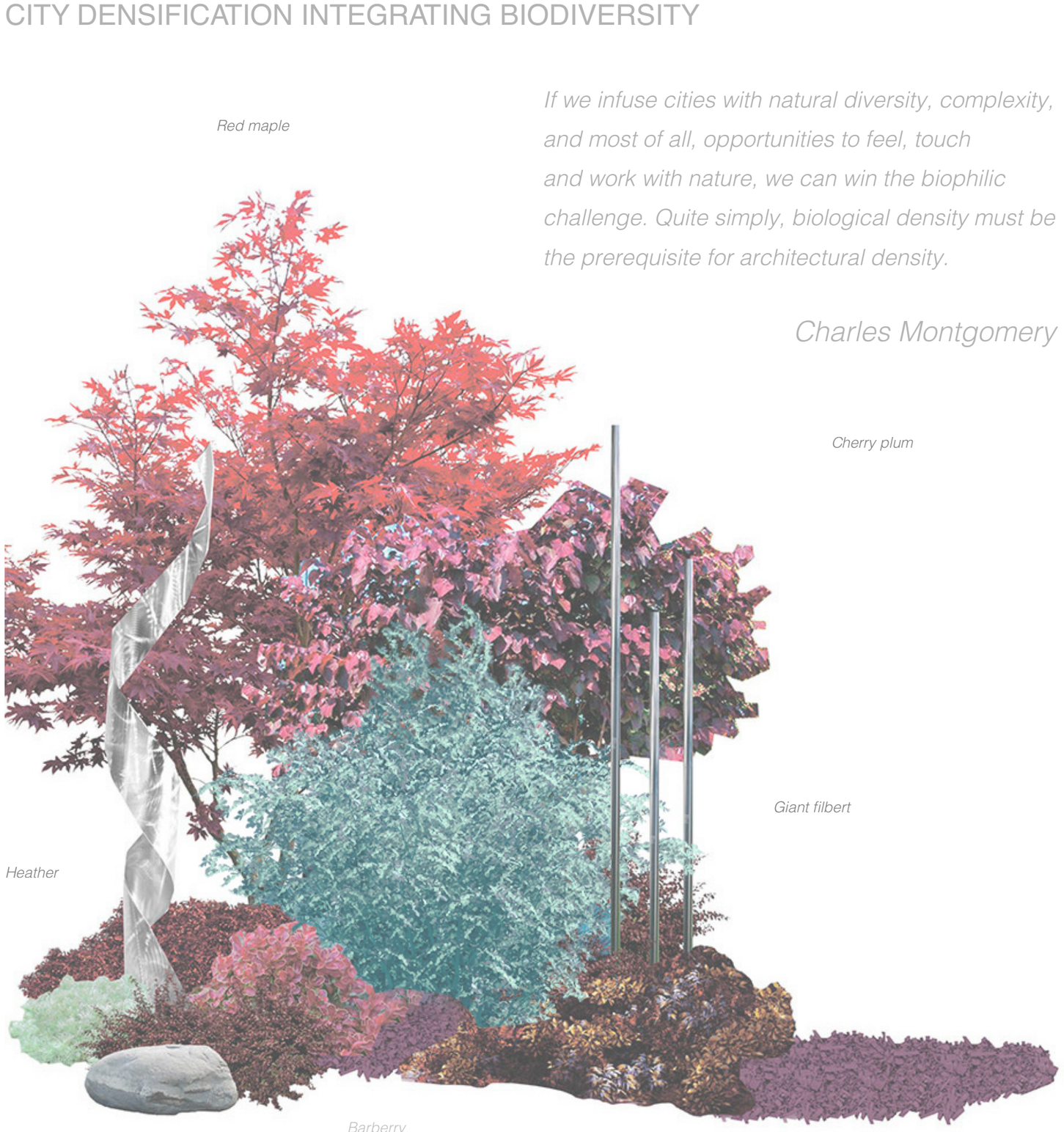


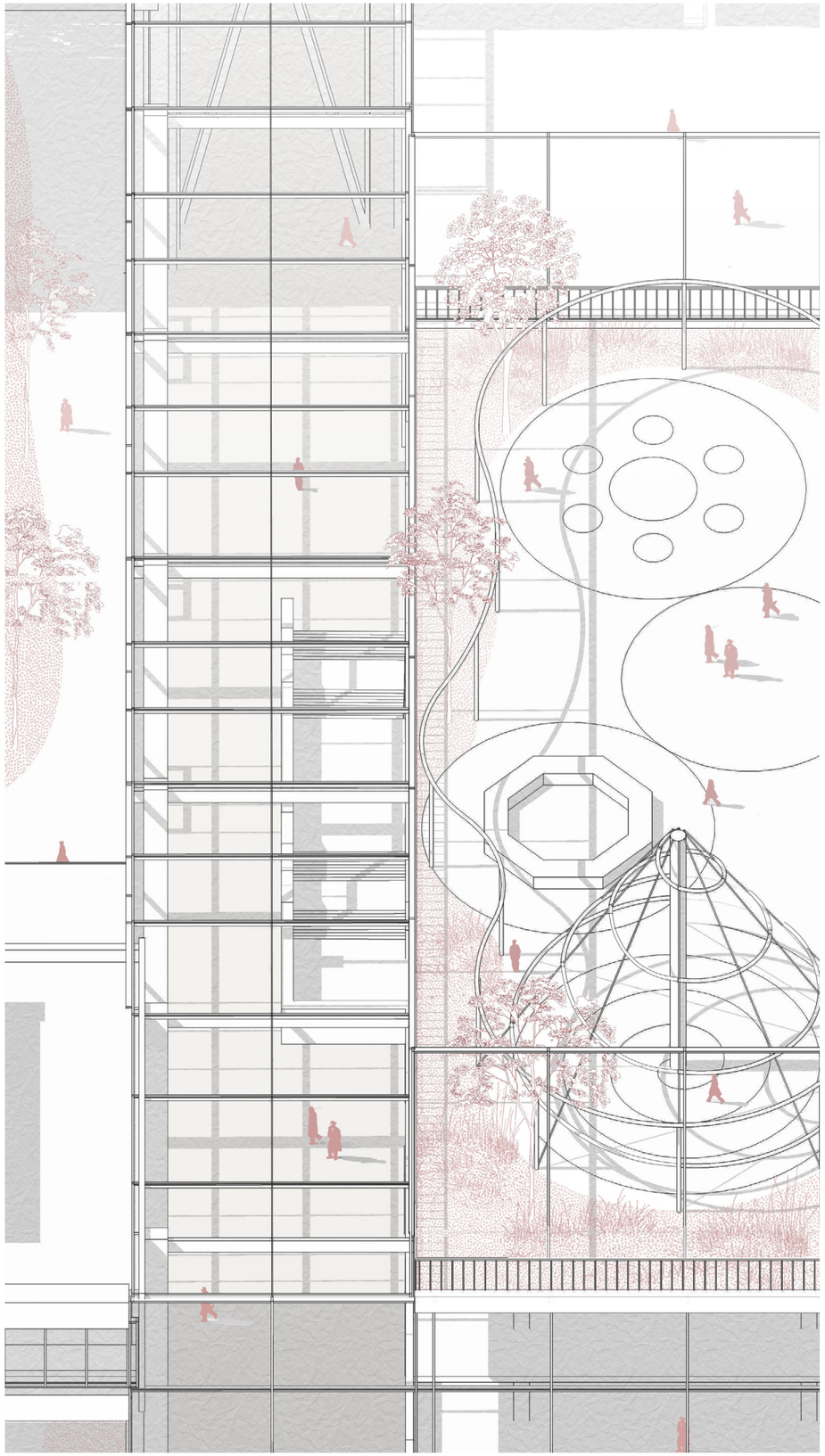
04 VERTICAL CAMPUS PLAYGROUND



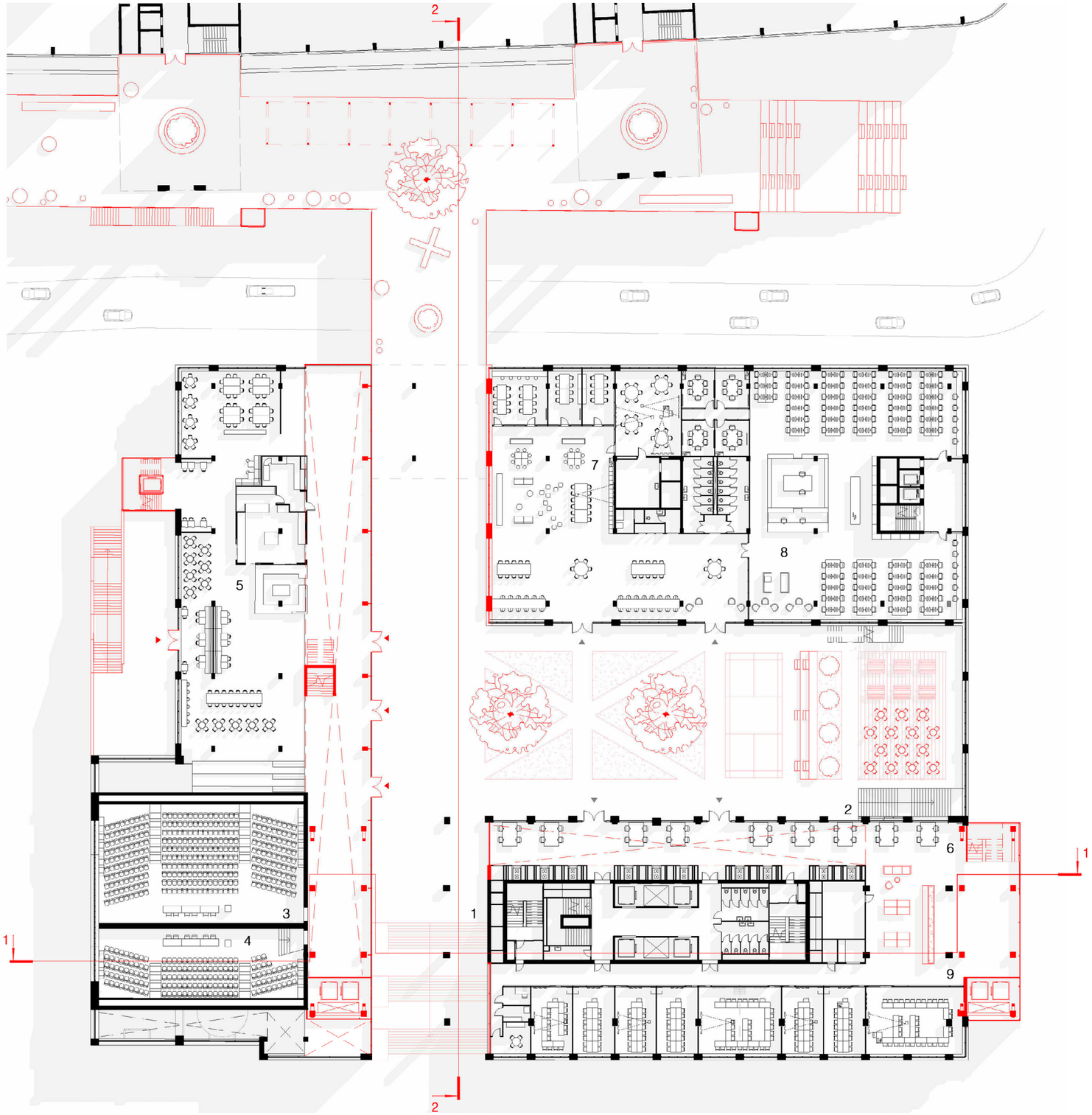
If we infuse cities with natural diversity, complexity, and most of all, opportunities to feel, touch and work with nature, we can win the biophilic challenge. Quite simply, biological density must be the prerequisite for architectural density.

Charles Montgomery



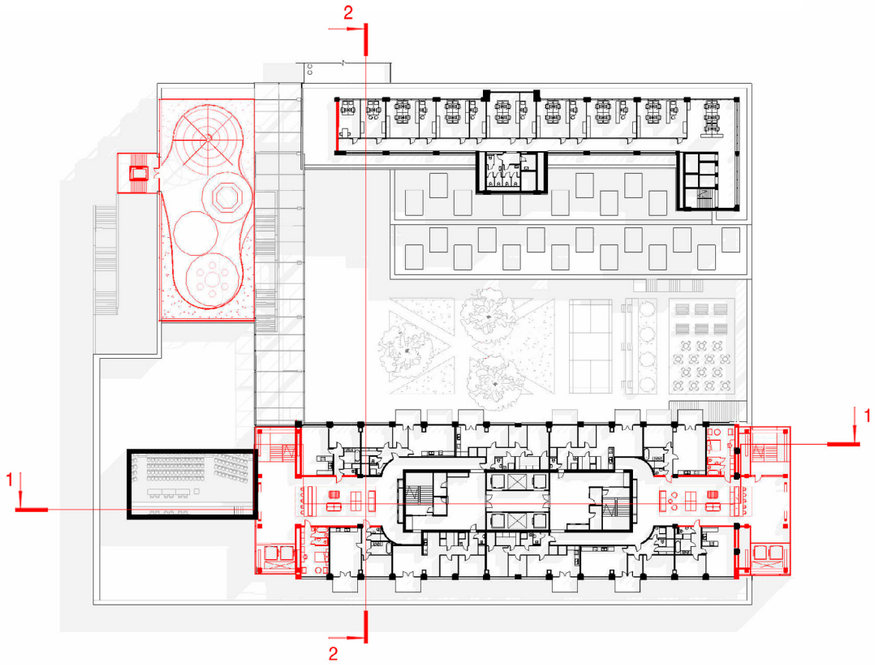



BUSINESS
DESTINATION
THE HAGUE
FLOORS



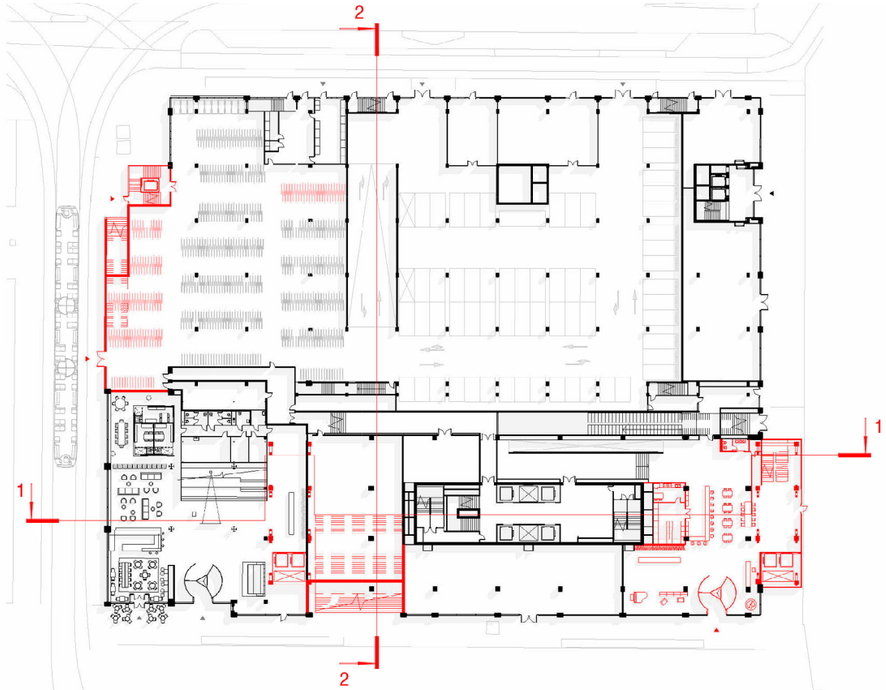
FLOOR AT +5.400

1. NEW PASSAGE AND ENTRANCE HALL
2. COURTYARD WITH THE BADMINTON COURT
3. GRAND AUDITORY (543 P)
4. GRAND AUDITORY (308 P)
5. RESTAURANT
6. FREE FLOW STUDY AREA
7. INSPIRATION LAB
8. LIBRARY AND MEDIA CENTRE
9. CLASSROOMS ZONE WITH NEW PLAYGROUNDS



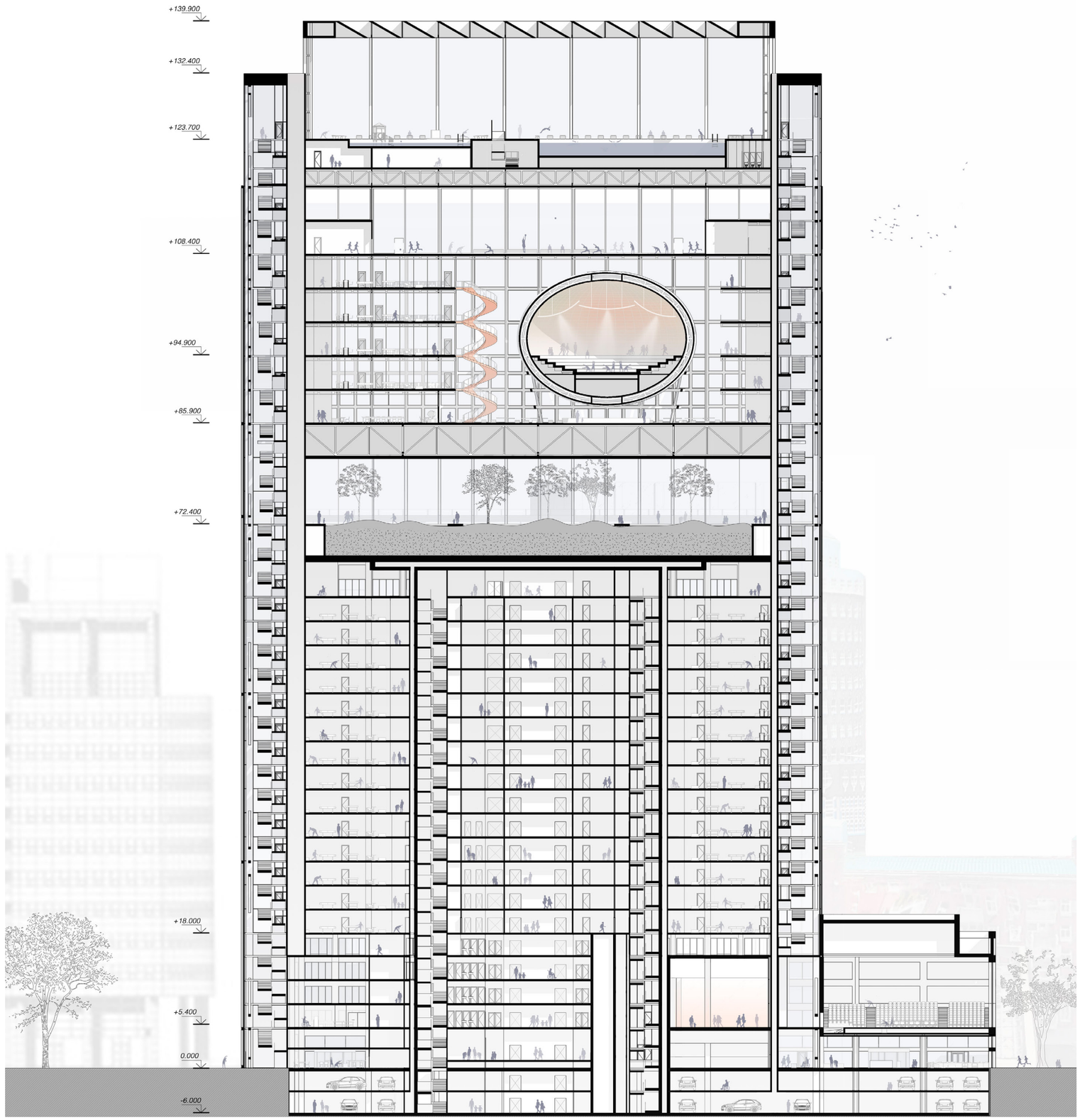
FLOOR AT +18.000

1. NEW STUDENT FLATS
2. NEW STUDENT PLAYGROUNDS
3. ROOF PLAYGROUND
4. EXISTING FLATS
5. WORKSPACES AND SECONDARY FUNCTIONS



GROUND FLOOR 0.000

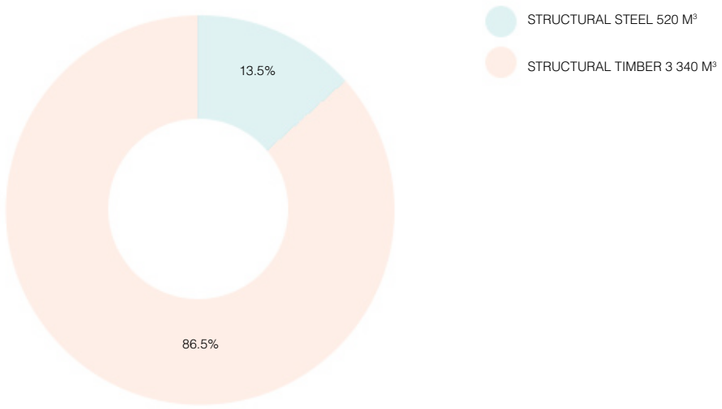
1. NEW PASSAGE TO THE OPEN-ACCESS PUBLIC ROUTE
2. NEW ENTRANCE HALL
3. EXISTING ENTRANCE HALL AND RECEPTION



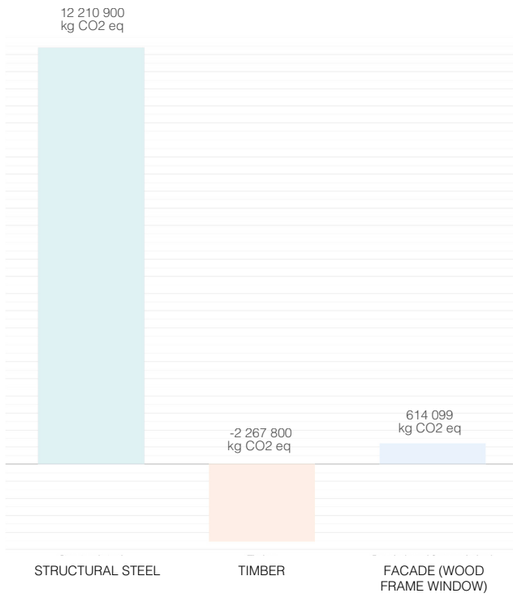
FLEXIBLE STRUCTURE

GWP [KG CO^2 EQ / M^3]

MATERIAL VOLUME



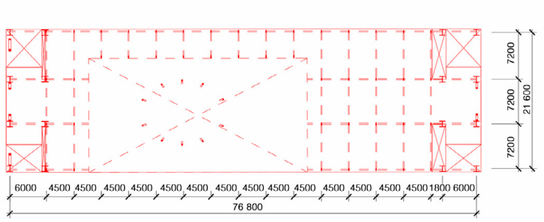
EMBODIED CARBON



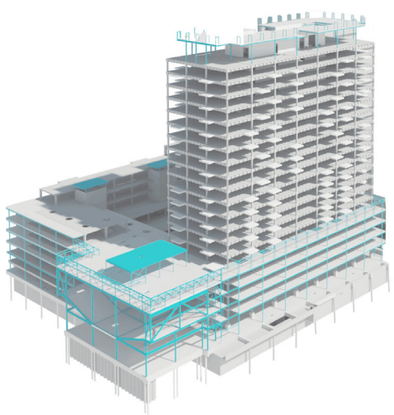
IN TOTAL: 10,557,199.5 kg CO2 eq

Building Materials Pyramide organized by Carbon footprint6
Royal Danish Academy Centre for Industrialised Architecture (CINARK), 2019
Source: https://www.materialepyramiden.dk/

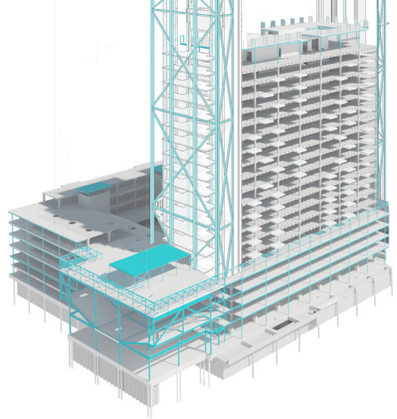
STRUCTURE



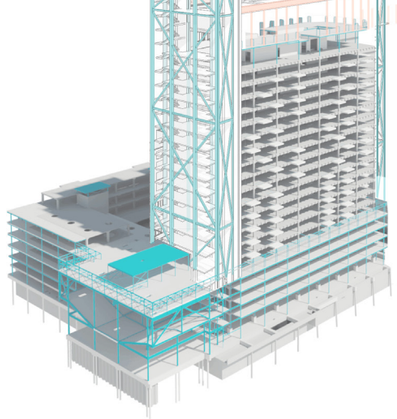
STRUCTURAL SCHEME



EXISTING STRUCTURE



STEEL TRUSSES



TIMBER SUBSTRUCTURE

SUSTAINABILITY STRATEGY

STUFF (DAILY)

SPACE PLAN (3-30 YEARS)

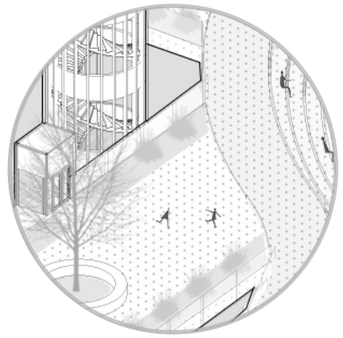
SERVICES (7-15 YEARS)

SKIN (20-50 YEARS)

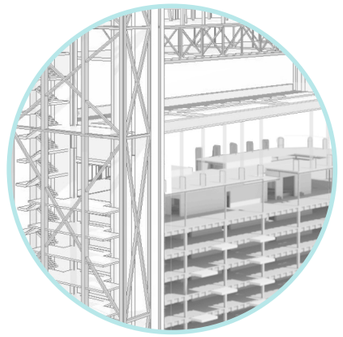
STRUCTURE (30-300 YEARS)

SITE (ETERNAL)

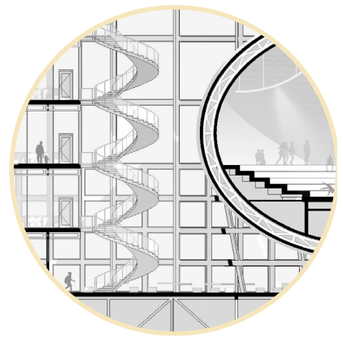
DENSIFICATION OF THE CITY
INTEGRATING BIODIVERSITY



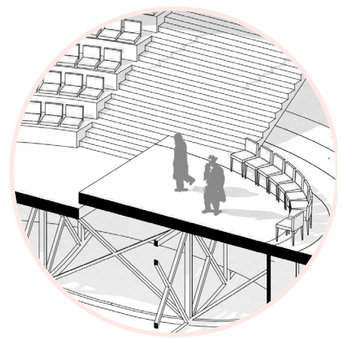
TRANSFORMATION OF
THE EXISTING STRUCTURE +
FLEXIBLE NEW STRUCTURE



TRANSFORMABILITY AND
DIVERSITY OF SPACES

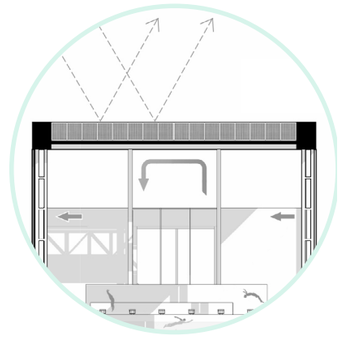


VARIETY OF USE SCENARIOS



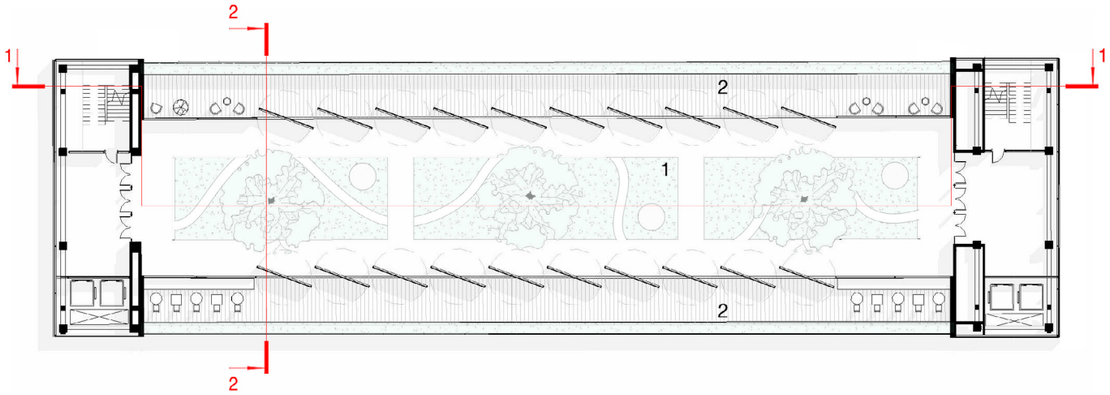
ENERGY EFFICIENT
RECYCLED FACADE
MATERIALS THAT MINIMIZE
THE CARBON FOOTPRINT

ENERGY PRODUCTION AND
HEALTHY INDOOR CLIMATE



Stewart brand, Shearing diagram
How Buildings Learn, 1994

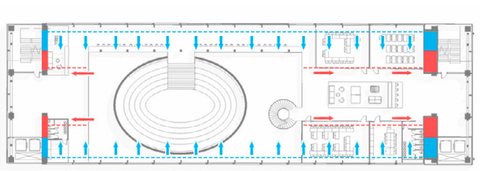
CLIMATE



FLOOR AT +85.900

1. SKY GARDEN

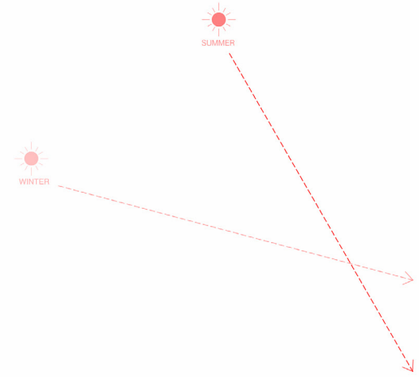
2. GREEN BALCONIES

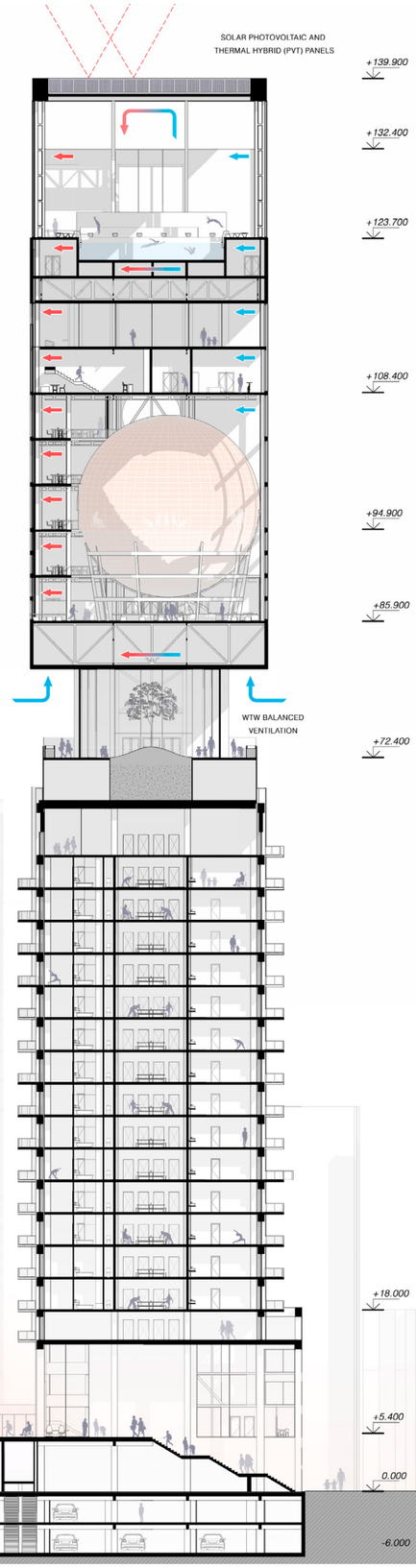


VENTILATION SCHEME

SUPPLY

EXHAUST

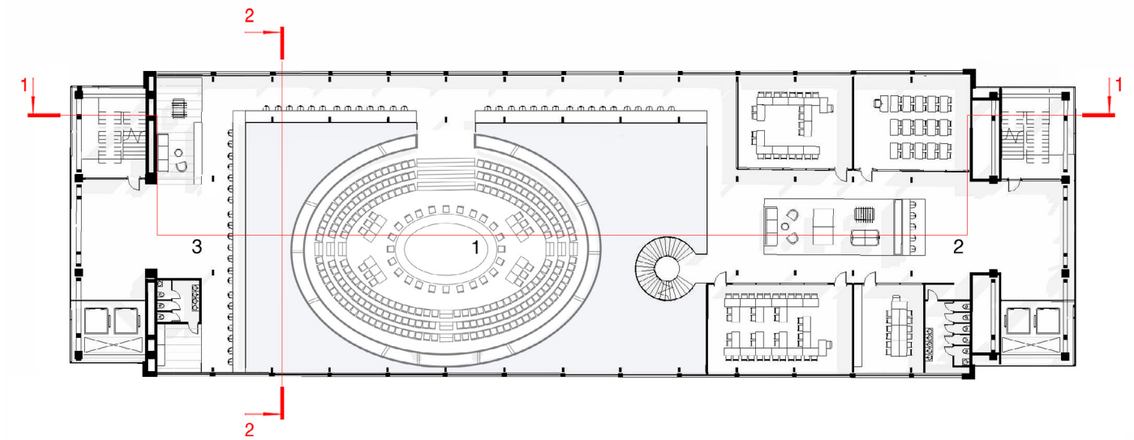




280 000.00 KWH

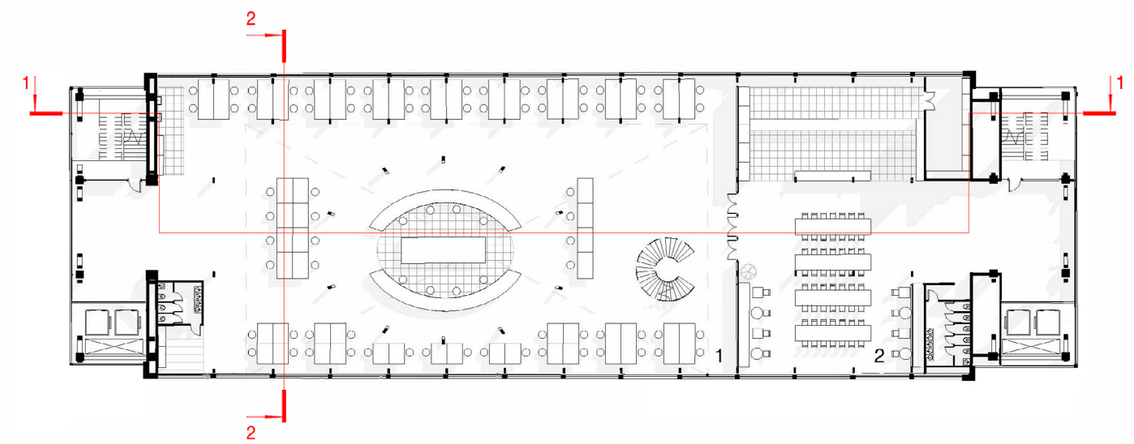
PER YEAR IN AVERAGE
(WITH SOLAR MODULES 340 W)

STUDY SPACES



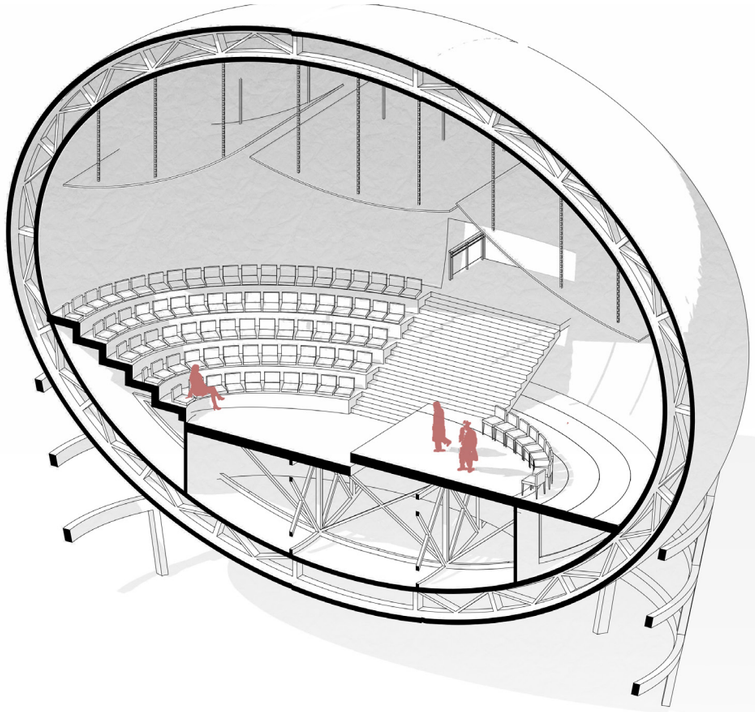
FLOOR AT +94.900

1. CENTRE FOR ADVANCED VIRTUALITY
2. TEACHING, LEARNING & DEVELOPMENT SPACES WITH PLAYGROUNDS
3. FREE FLOW STUDY AREA



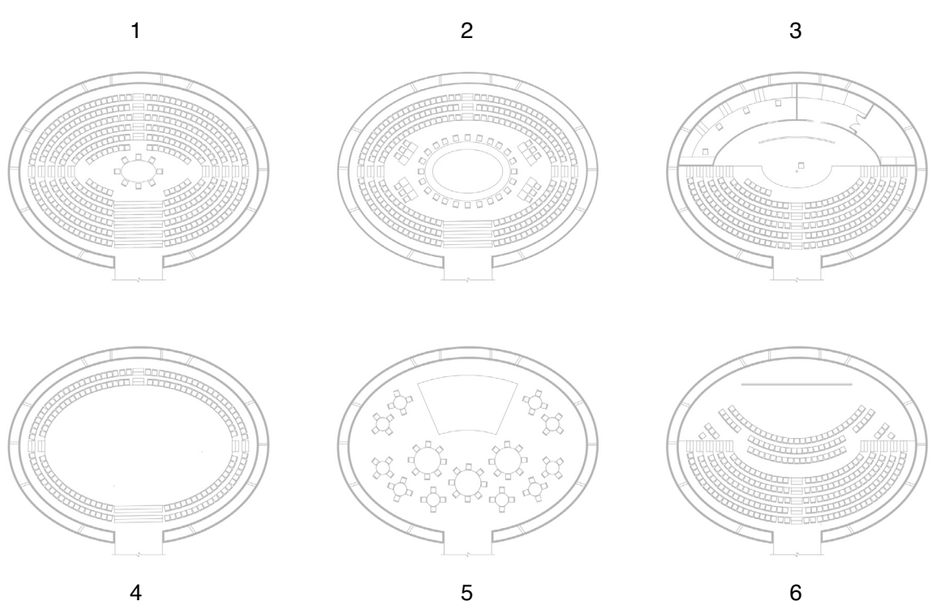
FLOOR AT +85.900

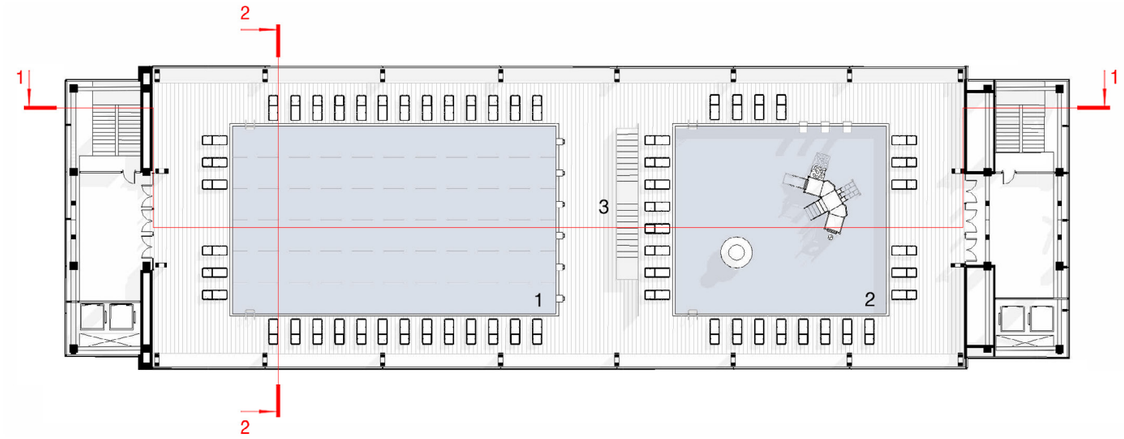
1. WORKSHOP AREA
2. CANTEEN



BASIC TRANSFORMATION SCENARIOS

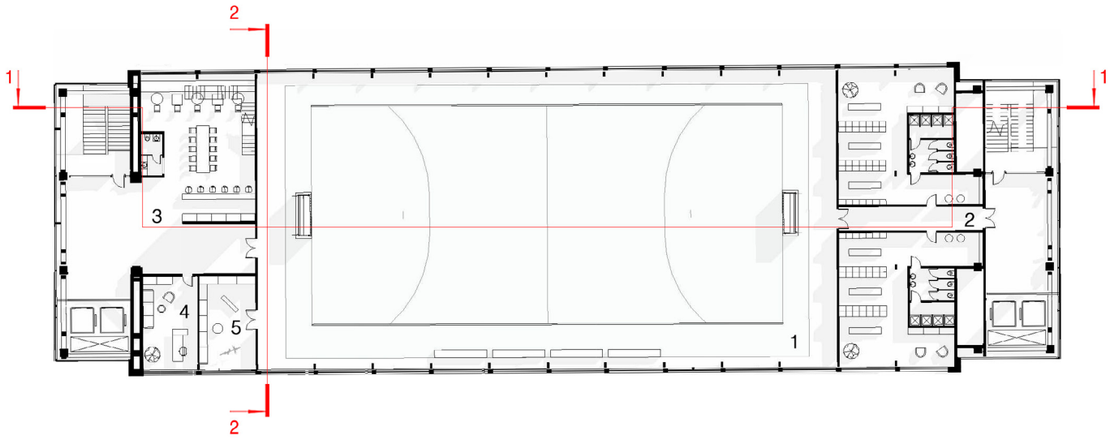
1. FORUM
2. SUMMIT
3. CONCERT
4. DANCE FLOOR OR EXHIBITION
5. BANQUET
6. CINEMA





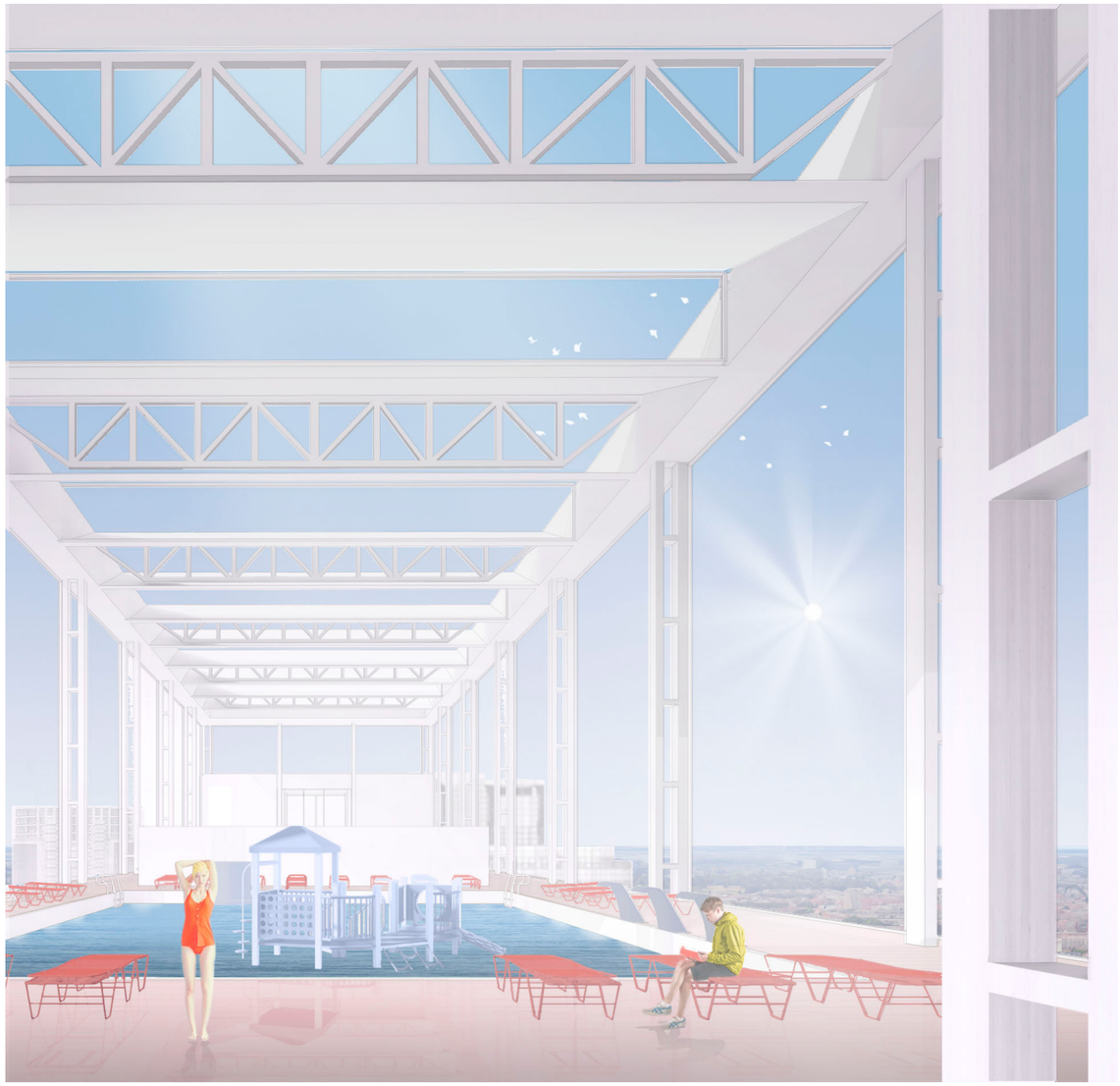
FLOOR AT +123.700

1. 25-METER SPORT SWIMMING POOL
2. SWIMMING POOL FOR CHILDREN
3. STAIRS TO THE DRESSING ROOMS



FLOOR AT +108.400

1. UNIVERSAL GYMNASIUM
2. DRESSING ROOMS
3. CAFETERIA
4. COACH'S OFFICE
5. STOREROOM



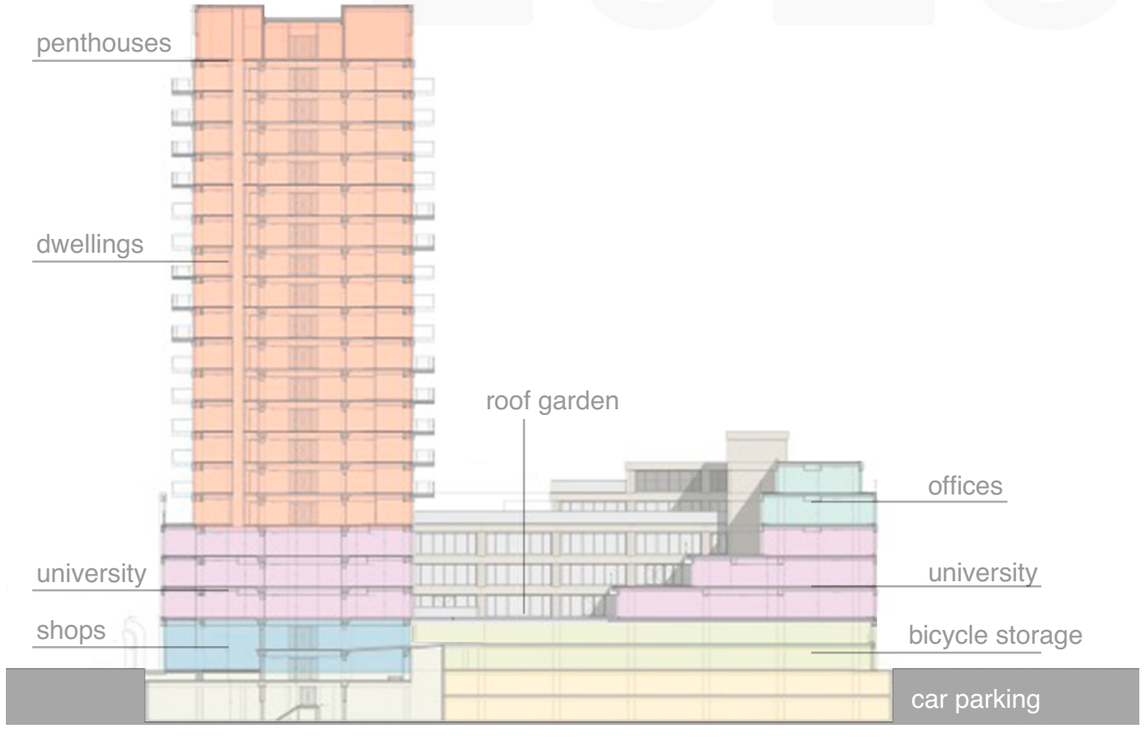
55 000 M² IN TOTAL

6 663 M² OF CONVENTIONAL, RECENTLY RENOVATED LEARNING SPACES

170 FLATS, INCLUDING PENTHOUSES

1 000 M² OF COMMERCIAL SPACE FOR HOSPITALITY AND RETAIL

224 PARKING SPACES



70 500 M² IN TOTAL

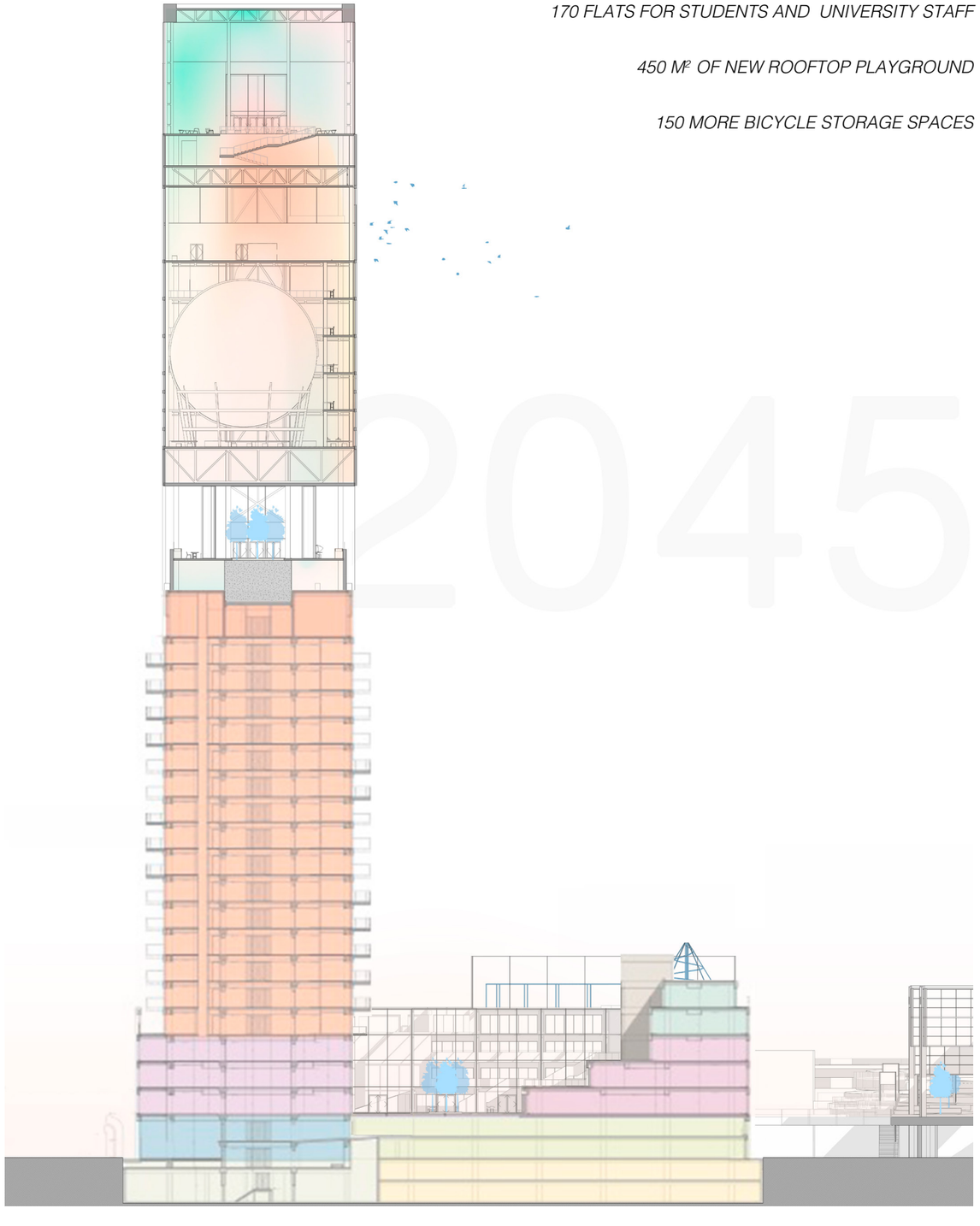
15 500 M² OF NEW HYBRID LEARNING SPACES

11 000 M² OF NEW OUTDOOR PUBLIC SPACES

170 FLATS FOR STUDENTS AND UNIVERSITY STAFF

450 M² OF NEW ROOFTOP PLAYGROUND

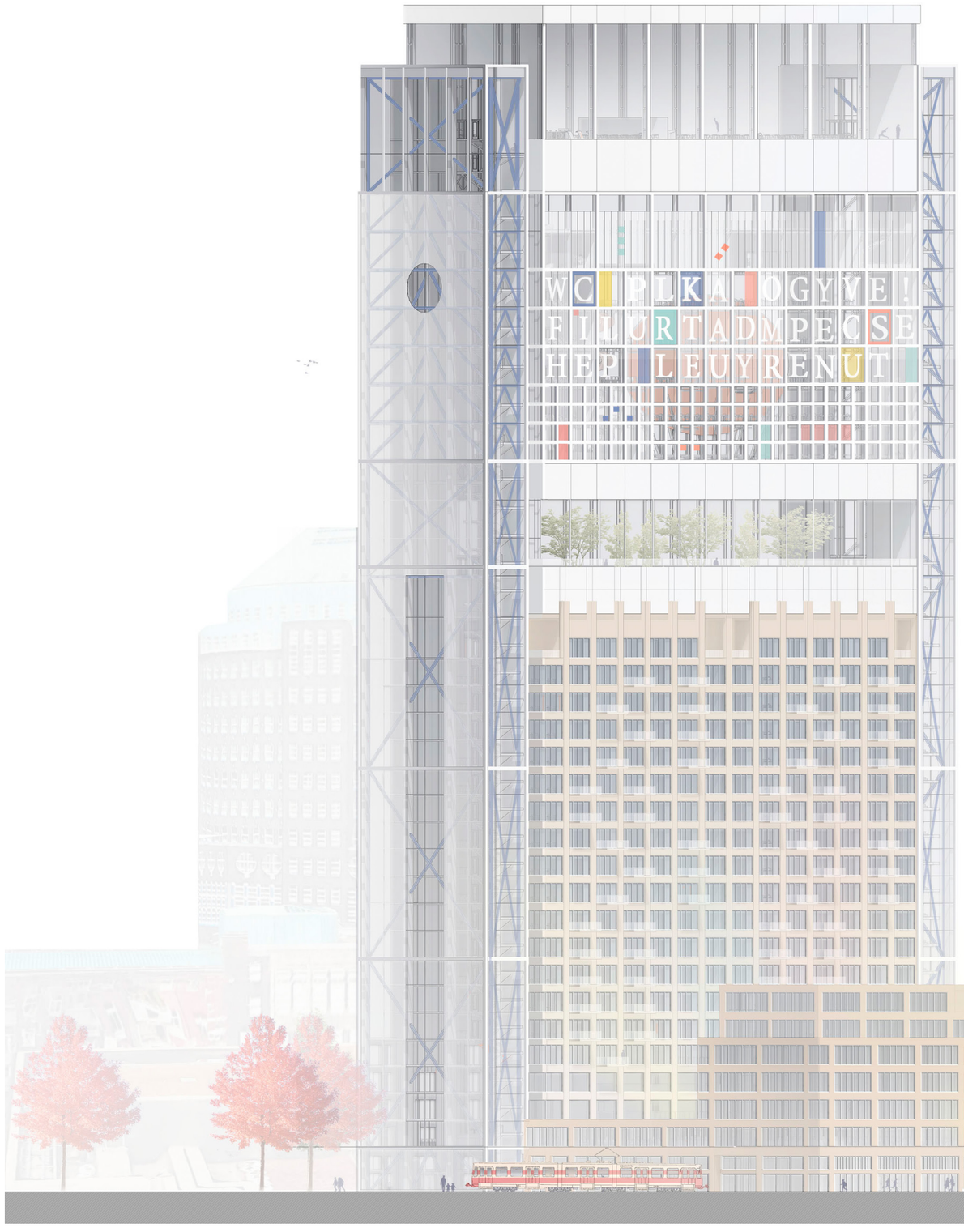
150 MORE BICYCLE STORAGE SPACES



Lycée Français de New York, US, Ennead Architects, 2016
Source: https://www.archdaily.com/892866/lycee-francais-de-new-york-ennead-architects

Maggie's centre Barts, London, UK, Steven Holl, 2017
Source: https://www.stevenholl.com/project/maggies-centre-barts/

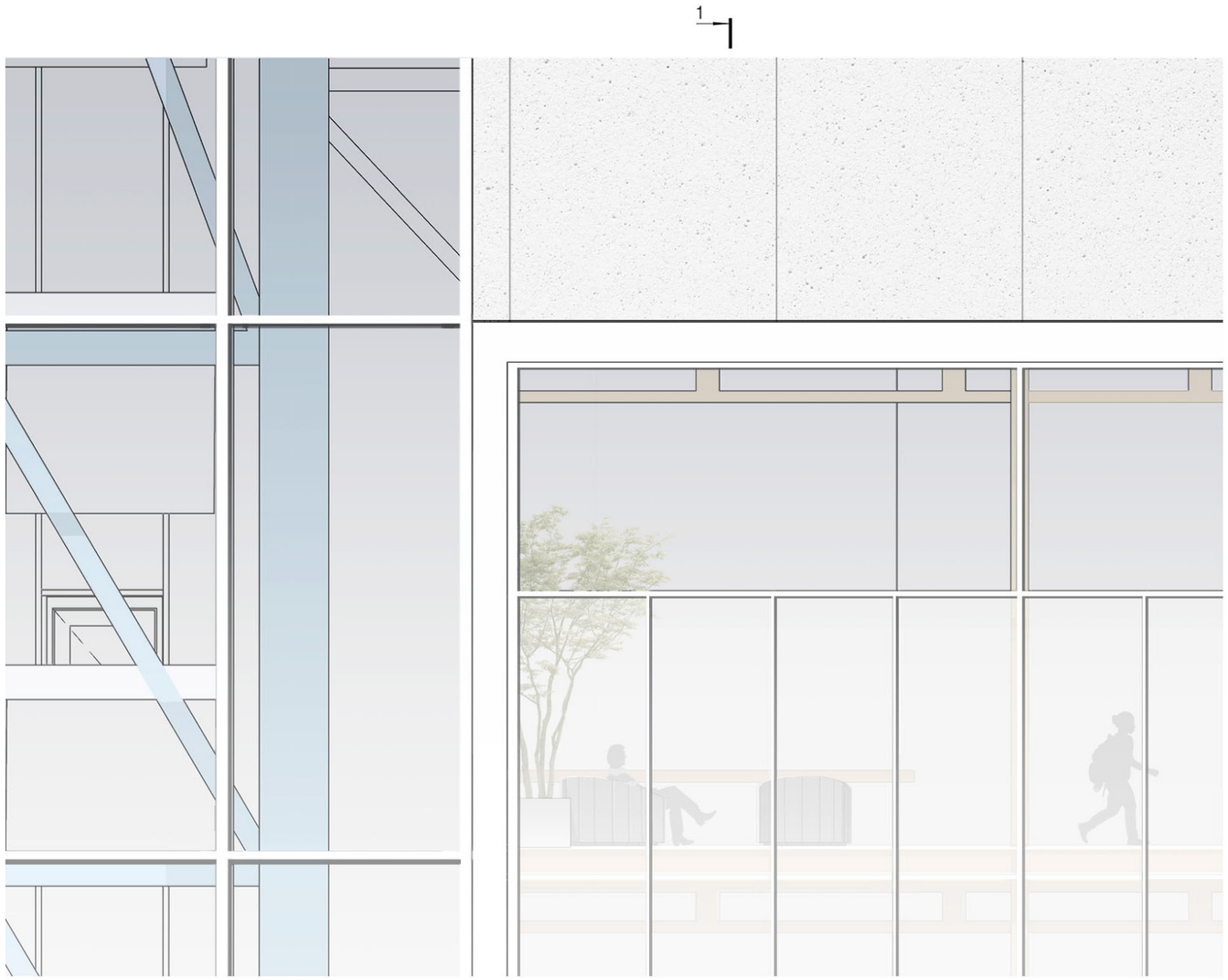
Omgeving Centr'al. Vorst, Belgium, B-Architecten, 2020
Source: https://b-architecten.be/projects/central

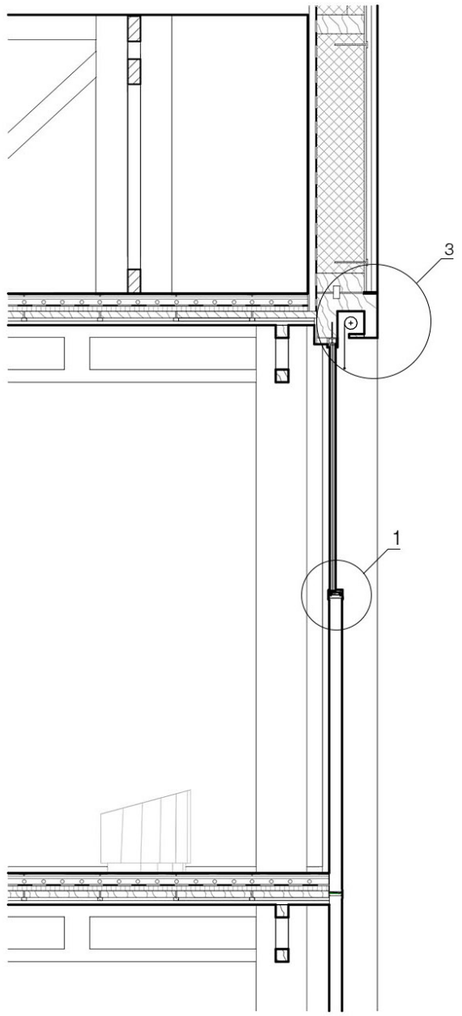


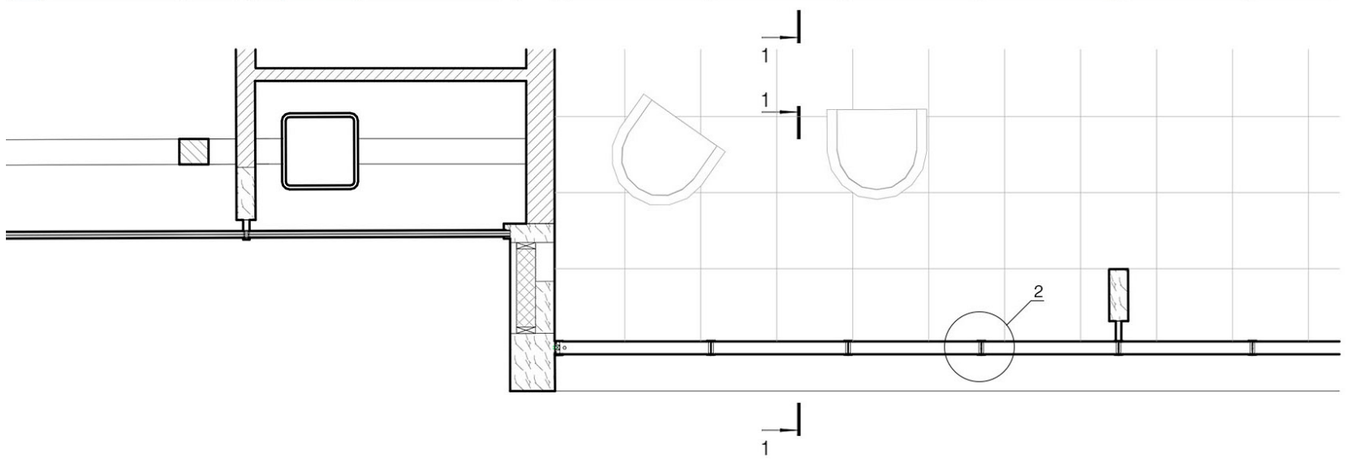
01

02

03







Floor construction

- Ceramic tiles 60x60 mm
- Tile adhesive
- Fermacell boards,
- Screed with underfloor heating 80 mm
- Separating layer (1 mm foil)
- Insulation, 40 mm
- Counter-floor (diagonal boarding with butt joints), 20 mm
- Timber joists 50 mm
- Battens, 24 mm
- Clapboard, 15 mm

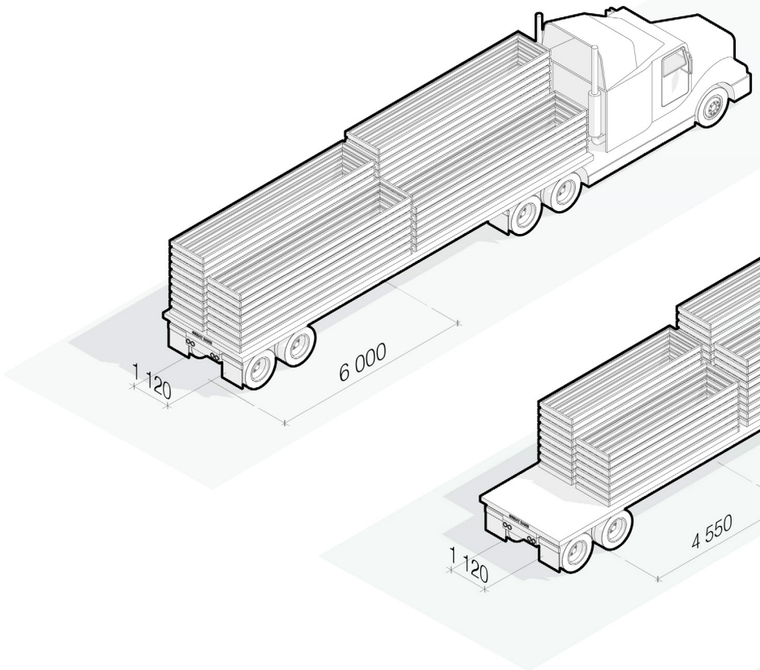
Translusent sandwich **100 mm panels** (Kalwall)

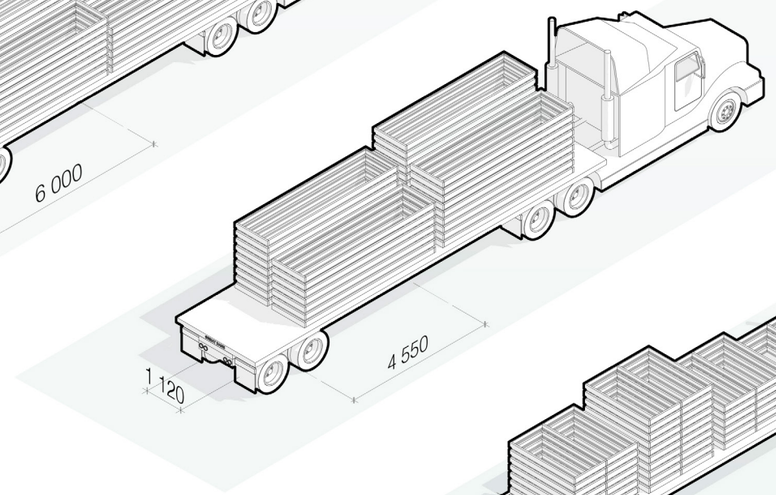
- Kalwall Weatherable Surface (KWS), self-cleaning protective coating
- Exterior color-stable Fiberglass Reinforced Polymer (FRP) face sheets
- Translucent Insulation, aerogel
-Interior shatterproof FRP face sheets
- Aluminium composite Grid Core

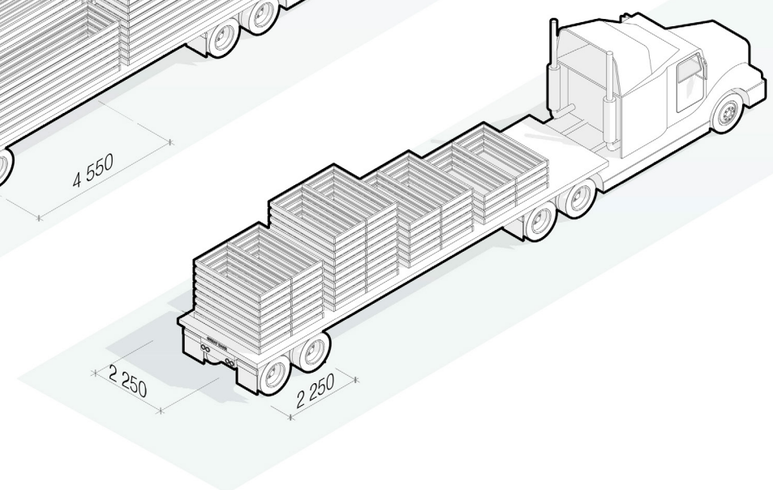
Exterior FRP and Interior FRP are white
U factor= 0.55 W/m2K
Visible Light Transmission (VLT) % = 23%
Solar Heat Gain Coefficient @ 0o = 0.38

Wall construction

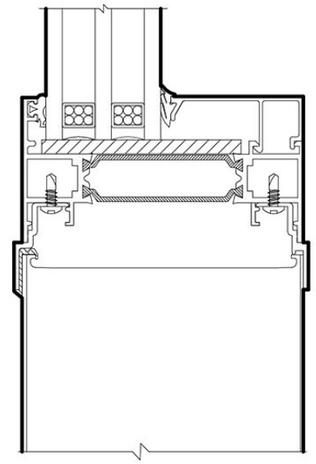
Platform frame construction
- Rieder recycled glassfibre reinforced concrete panels, 13 mm
-Ventilated cavity and fastening, 75 mm
- Softboard (airtight membrane), 18 mm
-Thermal insulation, frame, 300 mm
- Vapour check
- Plain angled connections
- Battens (space for services), 50 mm
- Wood-cement particleboard







1



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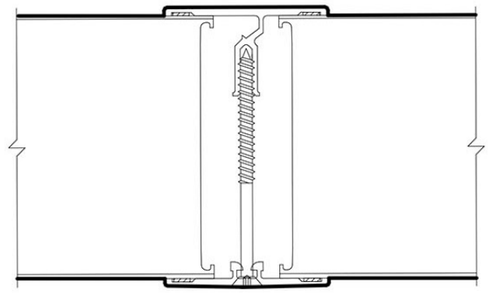

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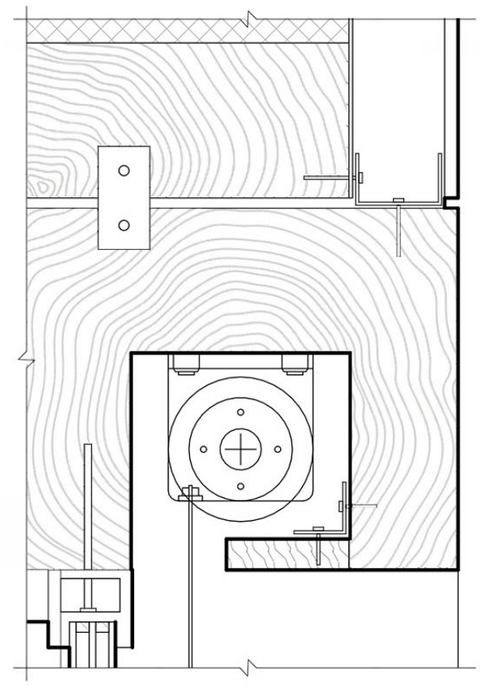
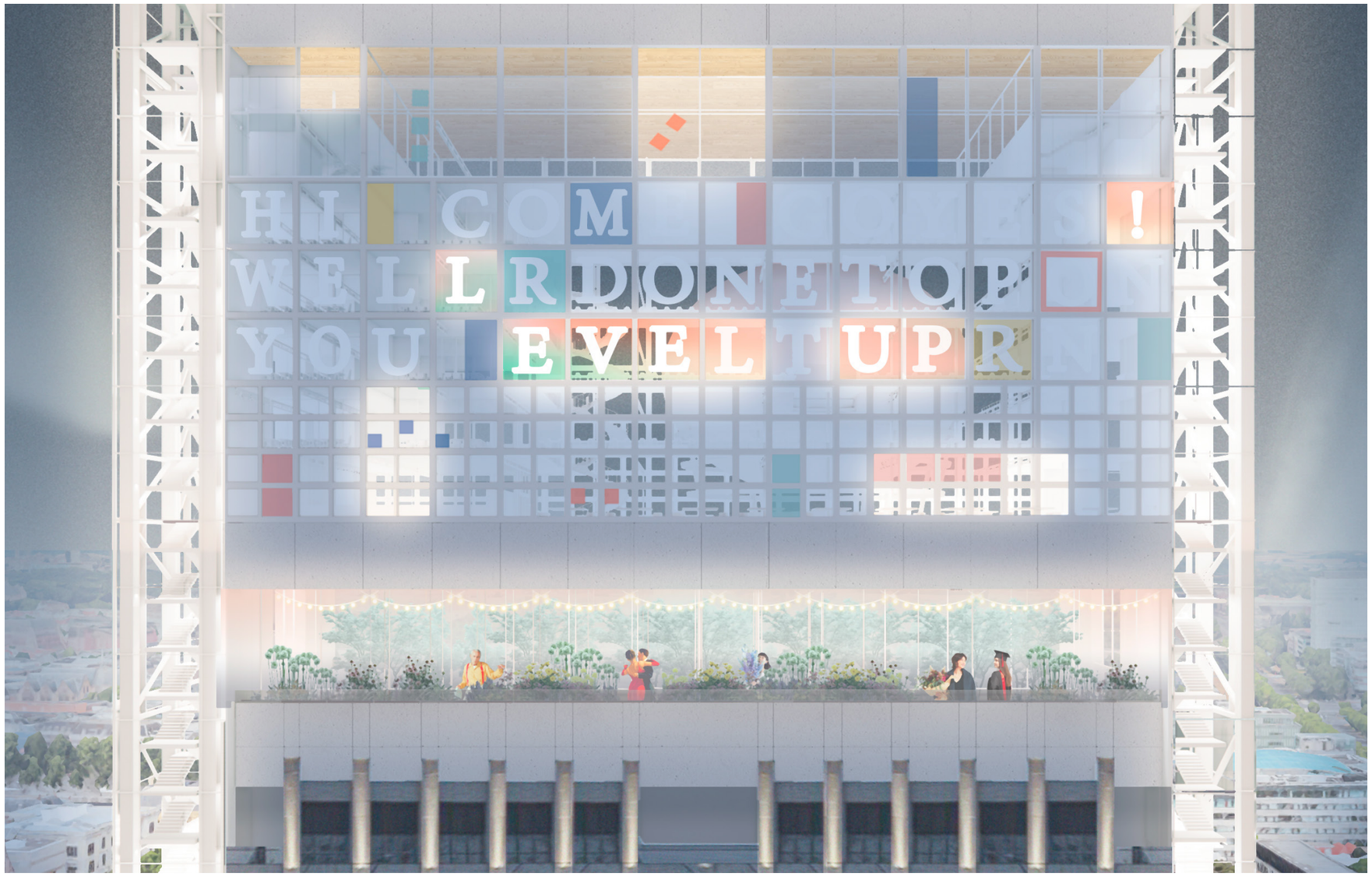


FACADE TRANSFORMATION

FACADE TRANSFORMATION



FACADE TRANSFORMATION

FACADE TRANSFORMATION

SPACE FOR EXPERIMENTS

SPORTS FACILITIES

BUILDING TRANSFORMATION

FLEXIBLE FRAMEWORK

DYNAMIC FAÇADE

LEARNING GARDEN

PUBLIC ROOFTOPS

VEGETATED ROOF

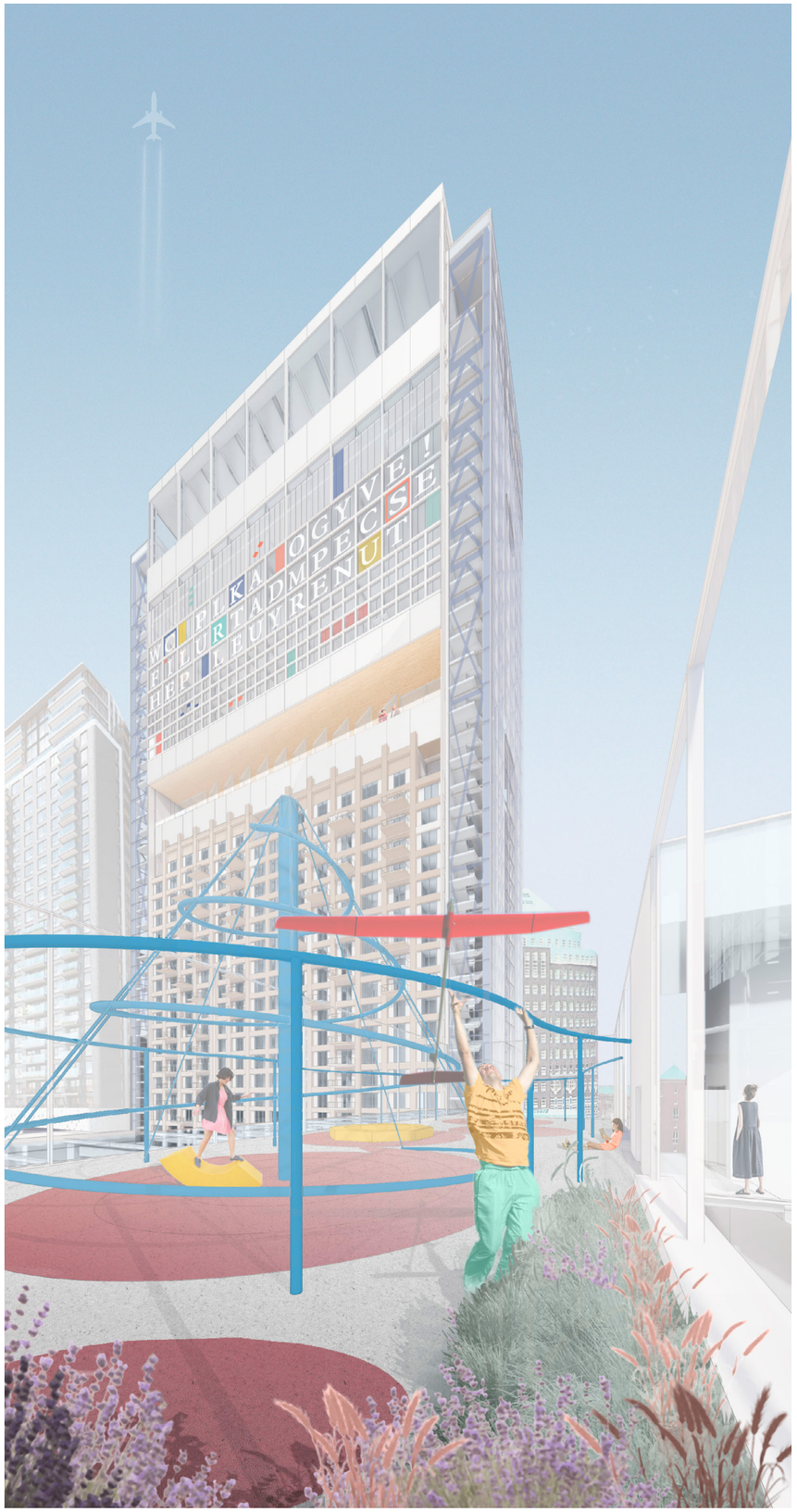
UNIVERSITY COURTYARD

DIVERSE SCENARIOS

TRANSFORMABLE MEDIACENTRE

COMPREHENSIVE EDUCATION

PLAYGROUND




WELCOME!
WELL DONE!
THANK YOU!