

THE TIME-LINE

A multi-phase project in Friedrichshain, Berlin that responds to urban changes.

STUDIO: PUBLIC BUILDING
THEME: PUBLIC CONDENSER

MENTORS:
HENK BULTSTRA
STEFANO CORBO
FLORIAN ECKHARD

NATHALIE DE VRIES

EXAMINER:
RIENTS DIJKSTRA



TIME-LINE

GENTRIFICATION

VISION

CONTEXT

CONCEPT

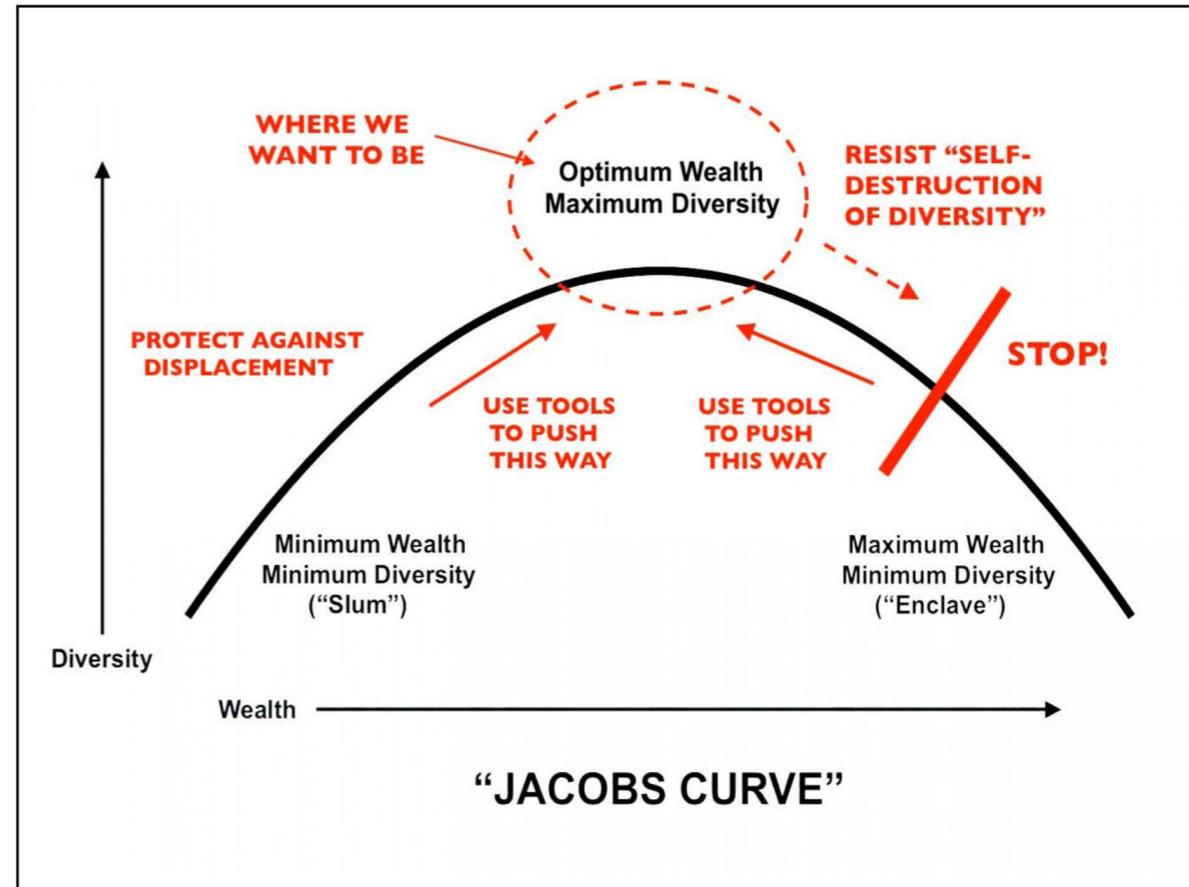
DESIGN



GENTRIFICATION
GENERAL



Jane Jacobs: "As long as gentrification proceeds gently, with moderation, it tends to continue to be beneficial, and diversifying."



Effects (-)

- Makes people move, mostly lower-educated/ lower incomes.
 - Increasing rents.
 - Decreasing sense belonging.

Effects (+)

- More diversity
- Children higher chance of finishing education

GENTRIFICATION
 NUANCED

- It is a process that happens in all cities with rapid economic development such as Paris, London, Barcelona and Berlin, the last of which is known as a young, creative and emergent metropolis.
- UN: By 2050, 70% of all worlds inhabitants will live in cities



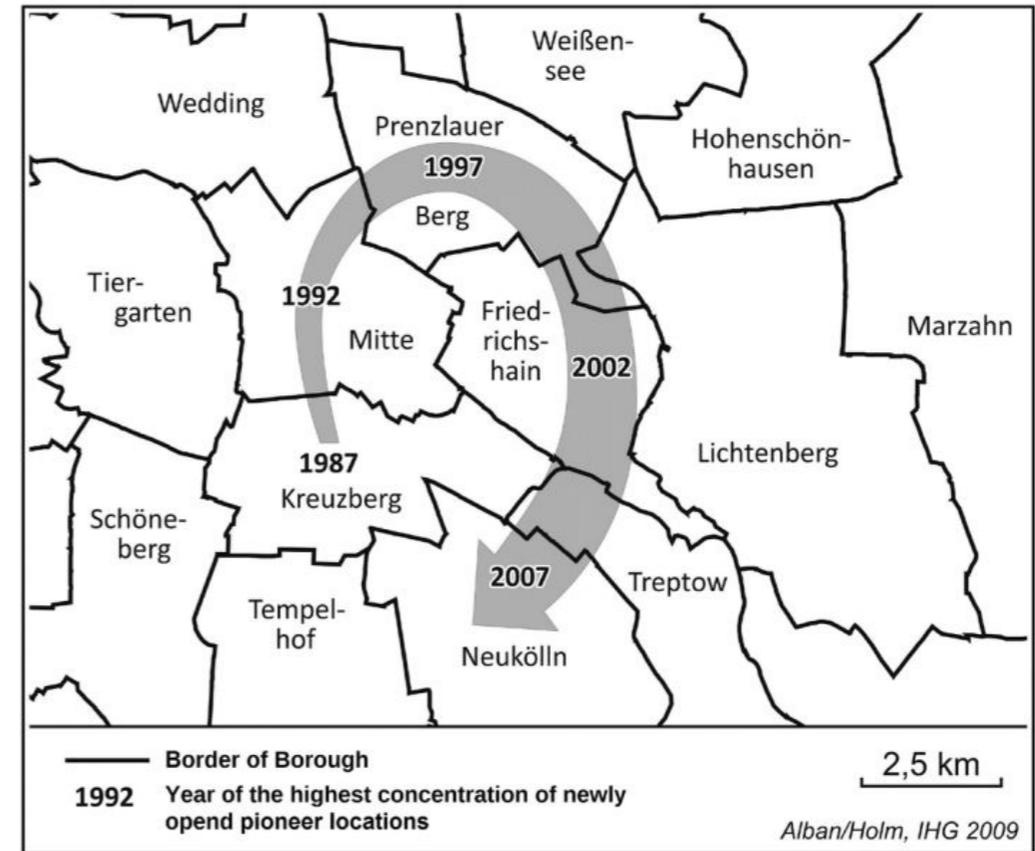
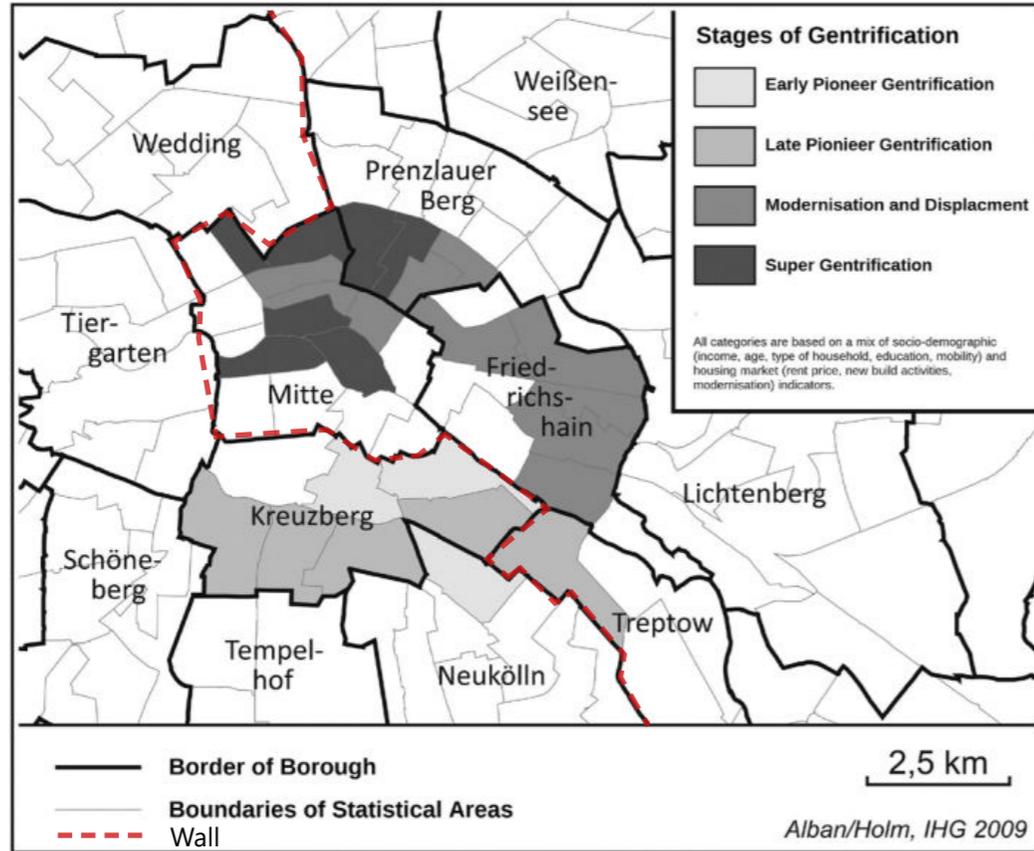
The logo for the Sustainable Development Goals, featuring the United Nations emblem on the left, the words "SUSTAINABLE DEVELOPMENT" in blue, and "GOALS" in a larger blue font with a colorful circular graphic behind the letter "O".



GENTRIFICATION
LOCATION



GENTRIFICATION
BERLIN



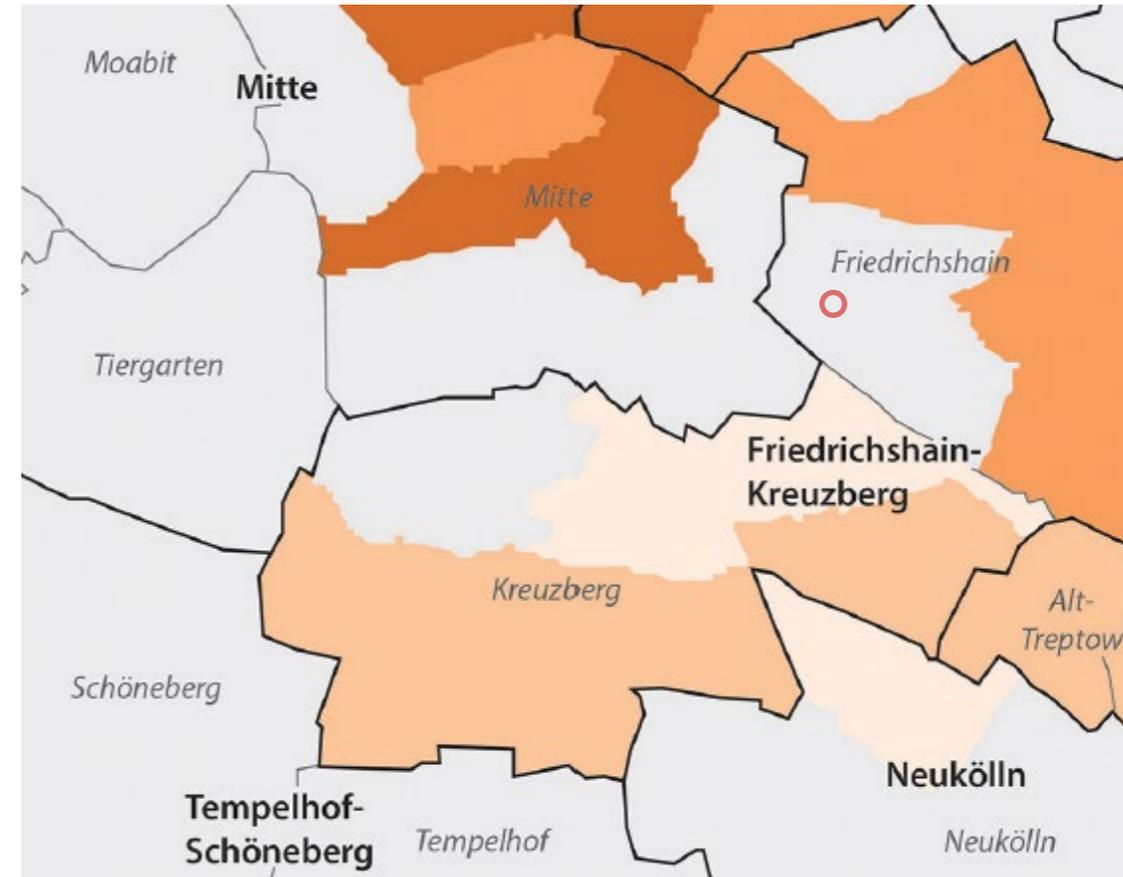
GENTRIFICATION BERLIN



Social composition:
rising share of residents with high educational status

Modernization activities:
Increased rents and commercialization.

Friedrichshain has thus undergone its pioneer phase, **evidence of displacement has surfaced**. Still diverse populated.



All categories are based on a mix of socio-demographic (income, age, type of household, education, mobility) and housing market (rent price, new build activities, modernization) indicators.

1 km

Cartography: Julia Siemer, University of Regina
Source: BKG 2017, Berlin Open Data 2017, Holm 2013

GENTRIFICATION FRIEDRICHSHAIN

- **GENTRIFICATION IS A PROCESS THAT CHANGES OVER TIME, LIKE OTHER SOCIAL AND ECONOMIC ISSUES.**
- **PEOPLE FEEL DISPLACED BY THE DECREASING SENSE OF BELONGING**

TIME-LINE

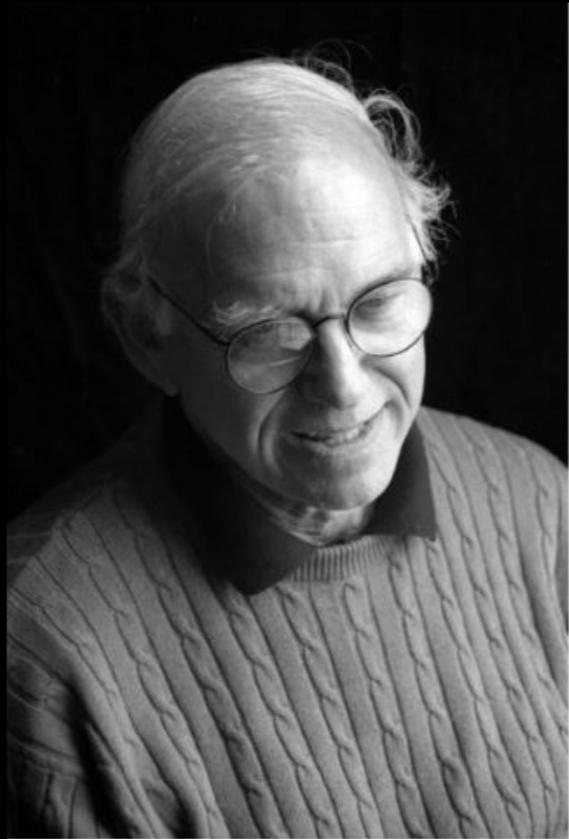
GENTRIFICATION

VISION

CONTEXT

CONCEPT

DESIGN



“The true importance of architecture lies in its ability to **solve human problems, not stylistic ones.** A building is too permanent and too influential on public life and private comfort to be created primarily as ‘public art.’”

—James Stewart Polshek

VISION
ARCHITECTURE



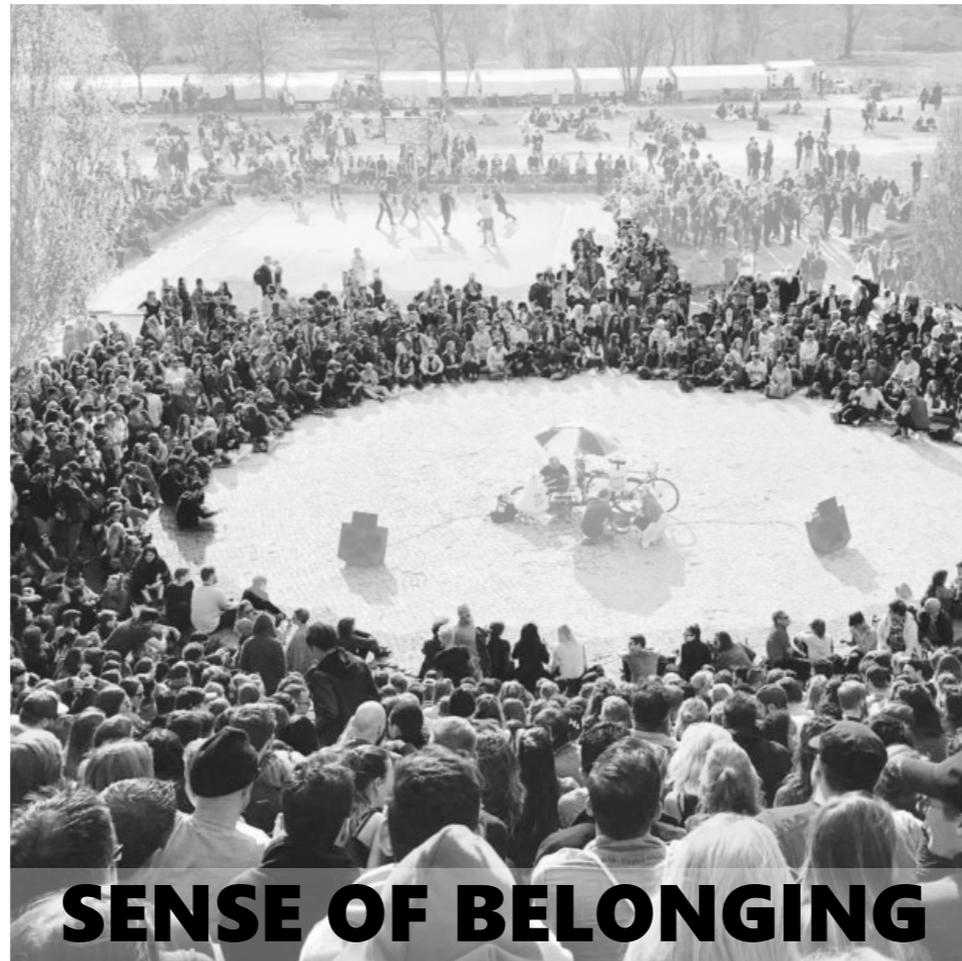
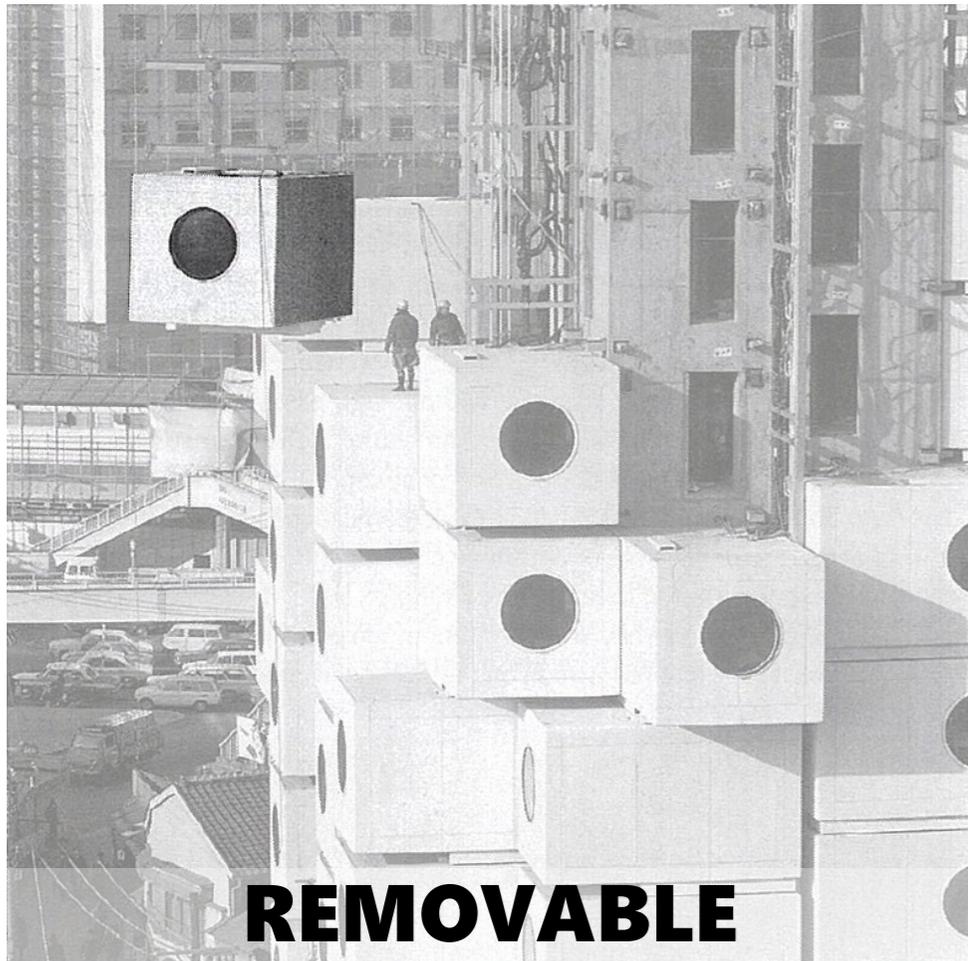
MINIMAL EFFORT

HIGH IMPACT

VISION
PUBLIC REALM

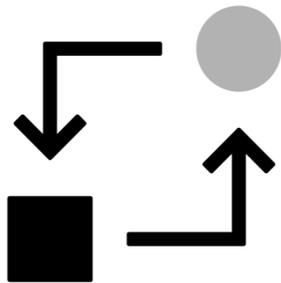
21ST CENTURY PUBLIC CONDENSER

Modest ARCHITECTURE, minimal interventions, serves as a response to social and economic issues, such as gentrification, in an ever-changing environment. It aims to address these challenges by adopting a restrained and humble approach, taking into account the specific needs and dynamics of the community it serves.



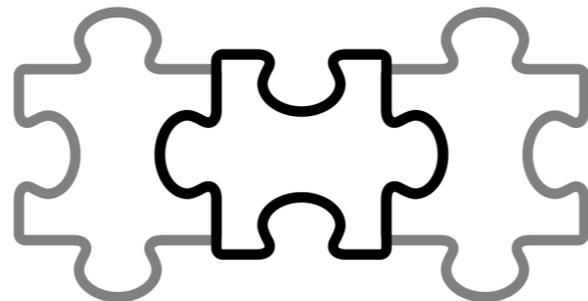
VISION
PUBLIC CONDENSER

CITY



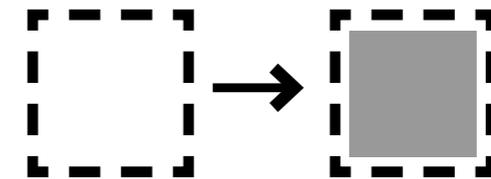
INTERCHANGEABLE
NETWORKSYSTEM

NEIGHBOURHOOD



CONNECTION

BUILDING



ADAPTIVE
RE-USE



BERLIN
CITY

REINICKENDORF

CHARLOTTENBURG



MITTE



KREUZBERG

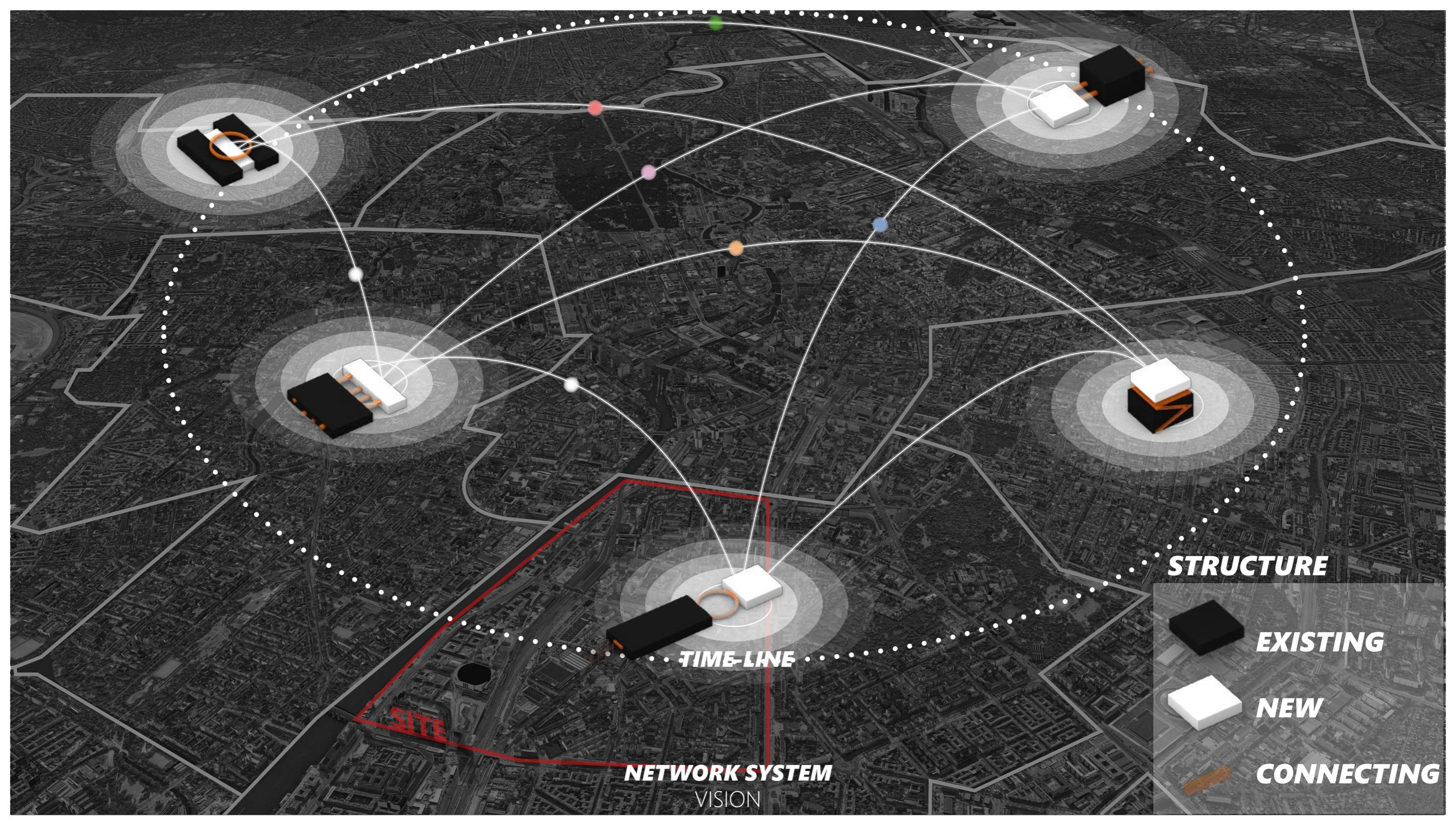
PANKOW



FRIEDRICHSHAIN

**CENTER
BERLIN**

NEUKÖLLN



STRUCTURE

EXISTING

NEW

CONNECTING

TIME-LINE

SITE

**NETWORK SYSTEM
VISION**





Preserving the concrete structure reduces the
CO2 emissions by 40%



Maintains cultural heritage



ADAPTIVE RE-USE
VISION

TIME-LINE

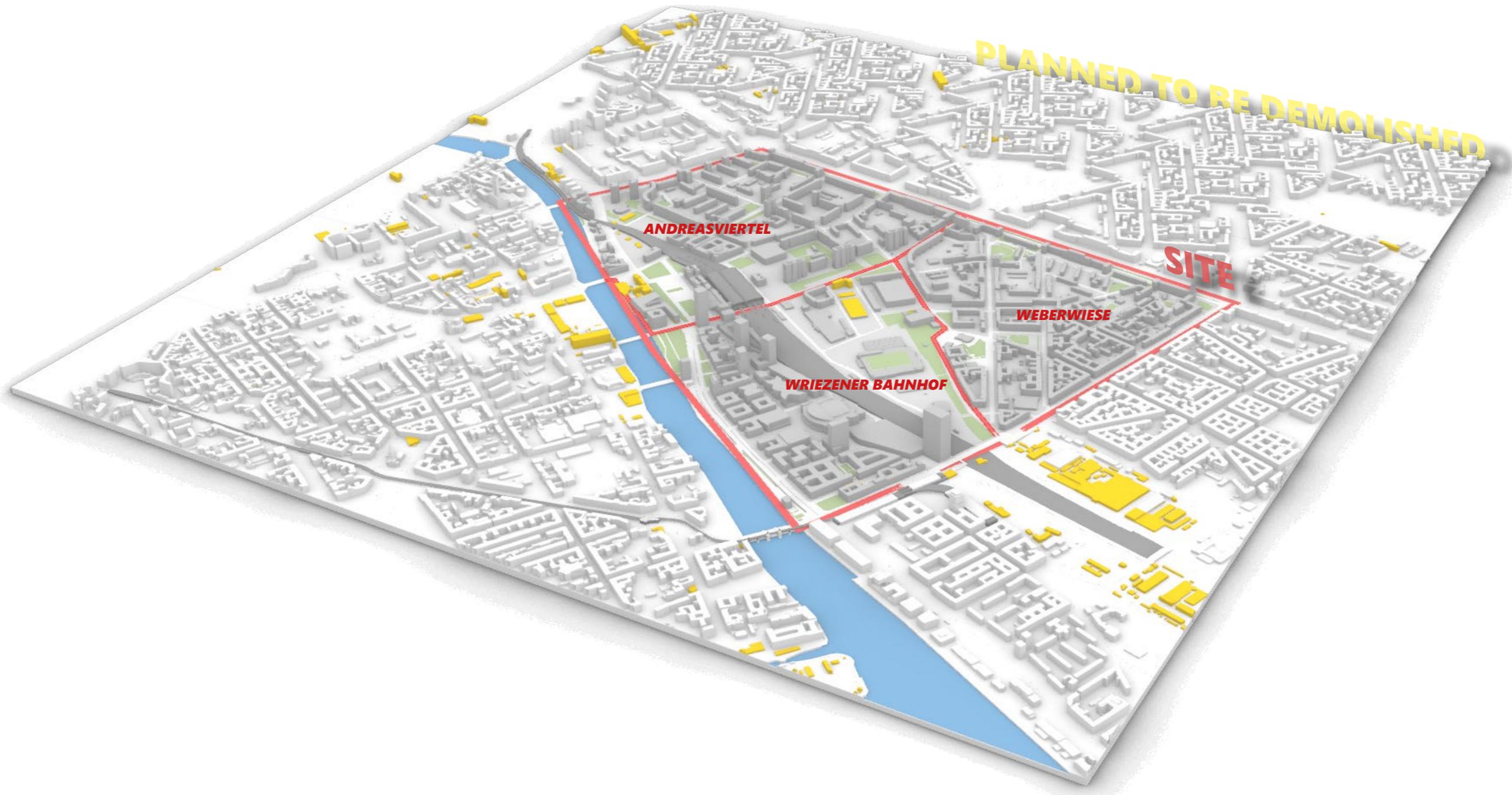
GENTRIFICATION

VISION

CONTEXT

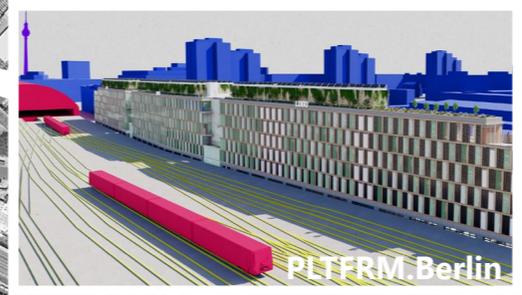
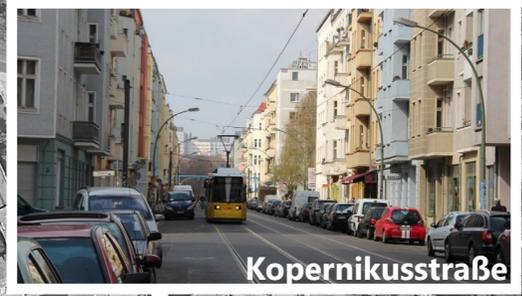
CONCEPT

DESIGN



MAP CONTEXT





500 M

SURROUNDINGS



ANDREASVIERTEL

13.151

Icons: Person with cane, Family, and a crossed-out flag.

Arrows: Green arrow (top-right), Red arrow (top-left), Green arrow (middle-right), Green arrow (bottom-right).

WEBERWIESE

10.974

Icons: Person with cane, Family, and a crossed-out flag.

Arrows: Black arrow (top-right), Red arrow (top-left), Green arrow (middle-right), Red arrow (bottom-right).

500 M

WRIEZENER BAHNHOF

1.155

Icons: Person with cane, Family, and a crossed-out flag.

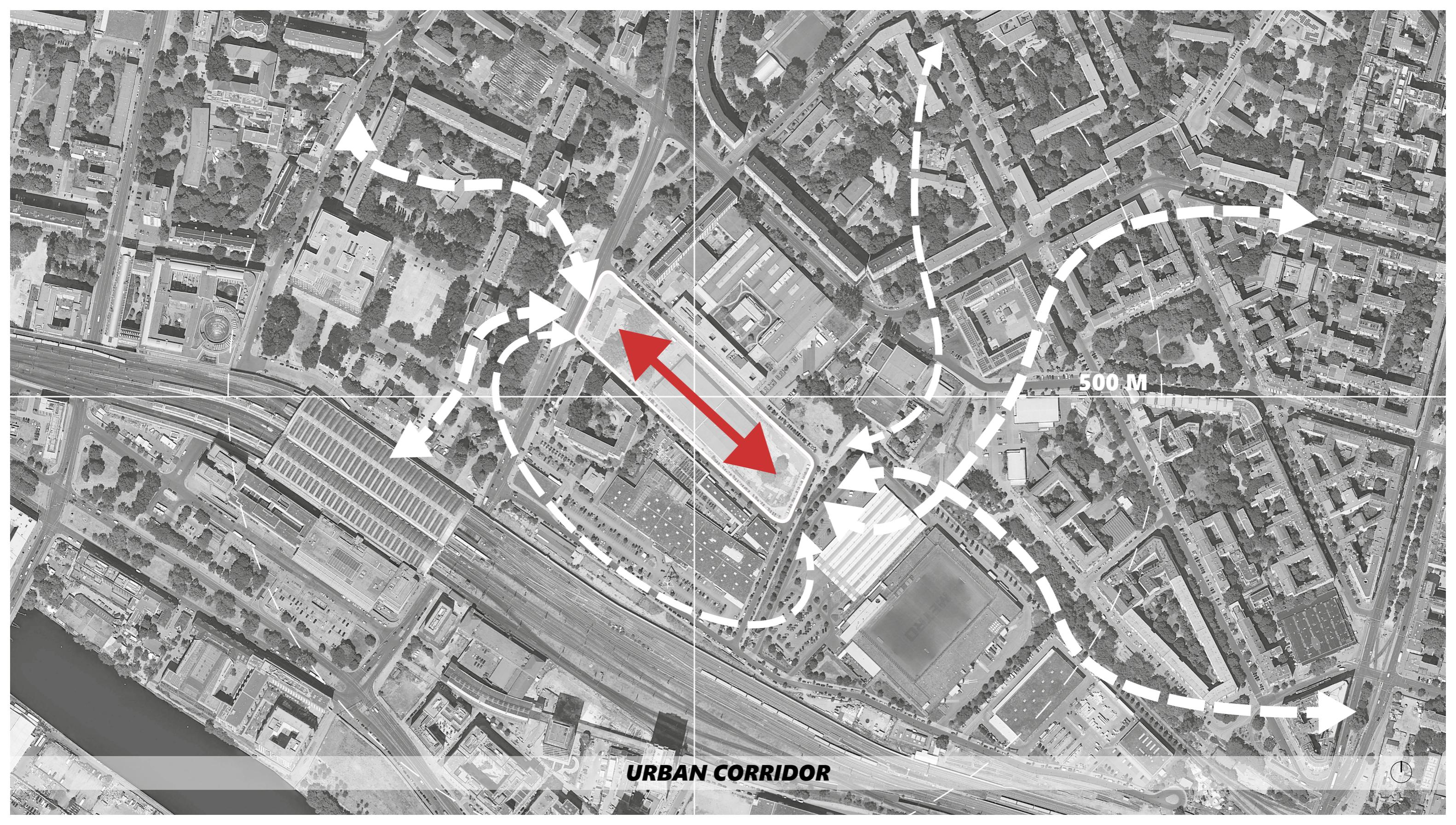
Arrows: Green arrow (top-right), Red arrow (top-left), Black arrow (middle-right), Green arrow (bottom-right).

FUNCTION ZONING

- RESIDENTIAL
- RESIDENTIAL/COMMERCE
- CORE AREA
- COMMERCIAL INDUSTRY
- PUBLIC INSTITUTIONS
- PUBLIC GREEN

FUNCTION ZONING





500 M

URBAN CORRIDOR



PLATTENBAU BUILDING
(DESOLATED HOTEL)

UTILITY BUILDING
(EMPTY)

FORMER PAPER FACTORY
(CURRENTLY EVENTSPACES)

700 SQM

864 SQM

5200 SQM

25M

18M

300M

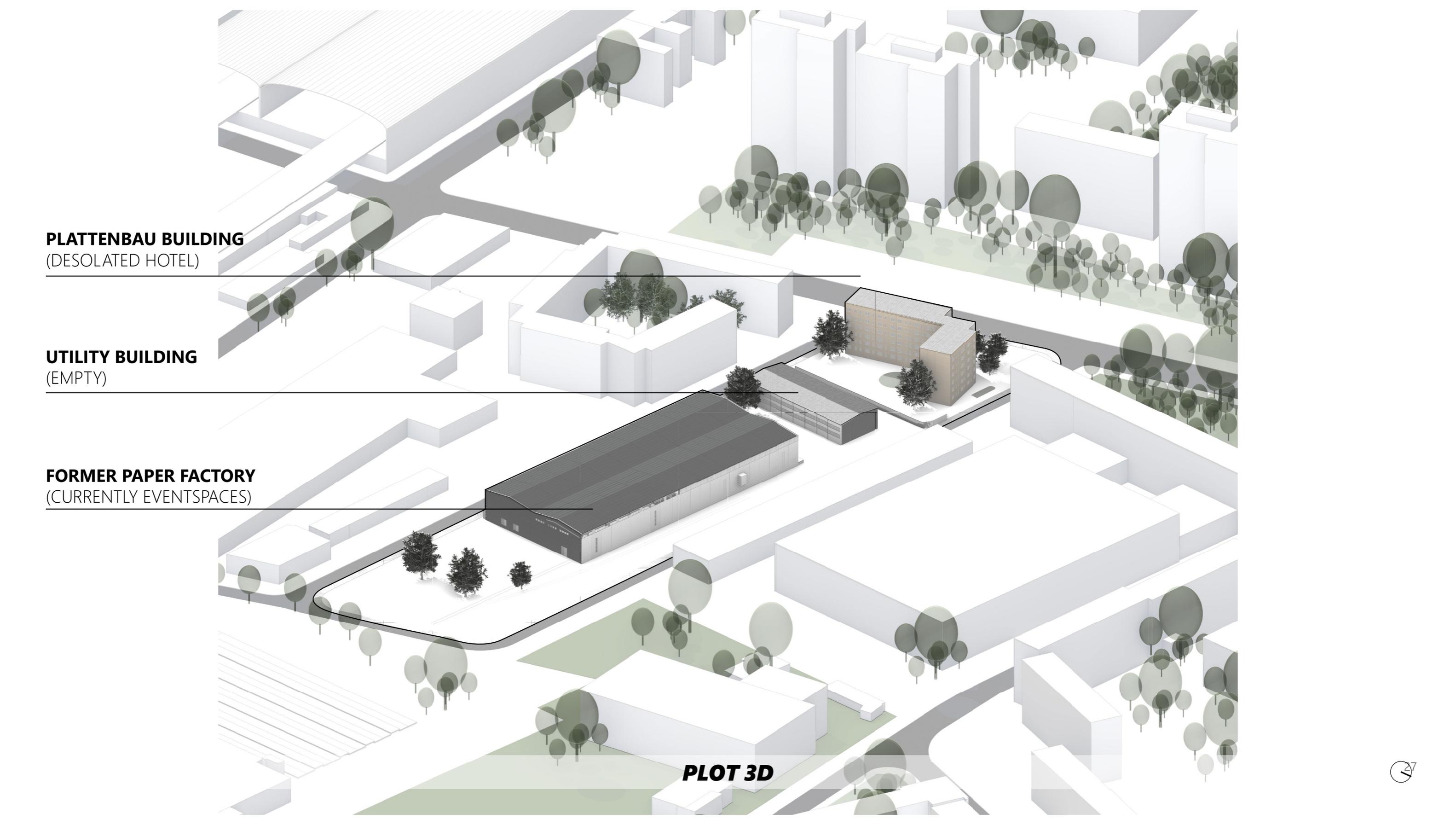
110M

48M

75M

PLOT DIMENSIONS





PLATTENBAU BUILDING
(DESOLATED HOTEL)

UTILITY BUILDING
(EMPTY)

FORMER PAPER FACTORY
(CURRENTLY EVENTSPACES)

PLOT 3D





PLATTENBAU
HOTEL



WAREHOUSE



EVENT HALL



INBETWEEN SPACE

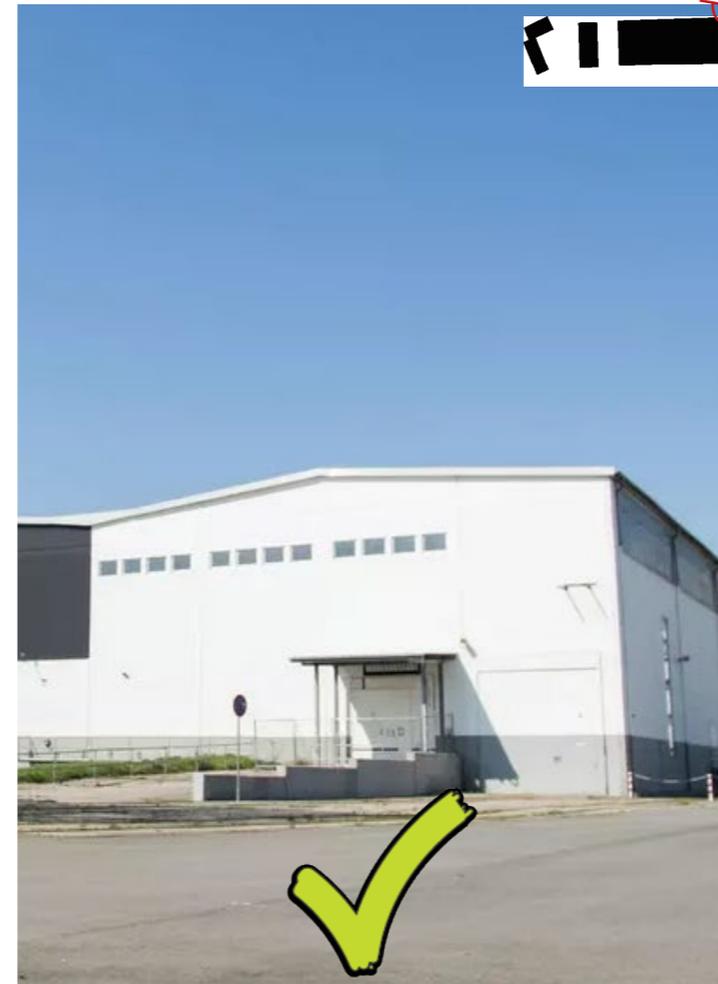
EXISTING EXTERIOR



PLATTENBAU
RESIDENCES



WAREHOUSE

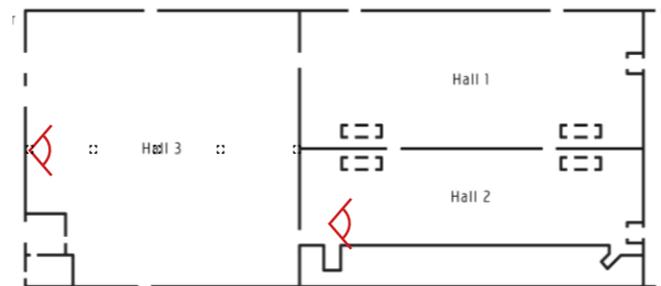
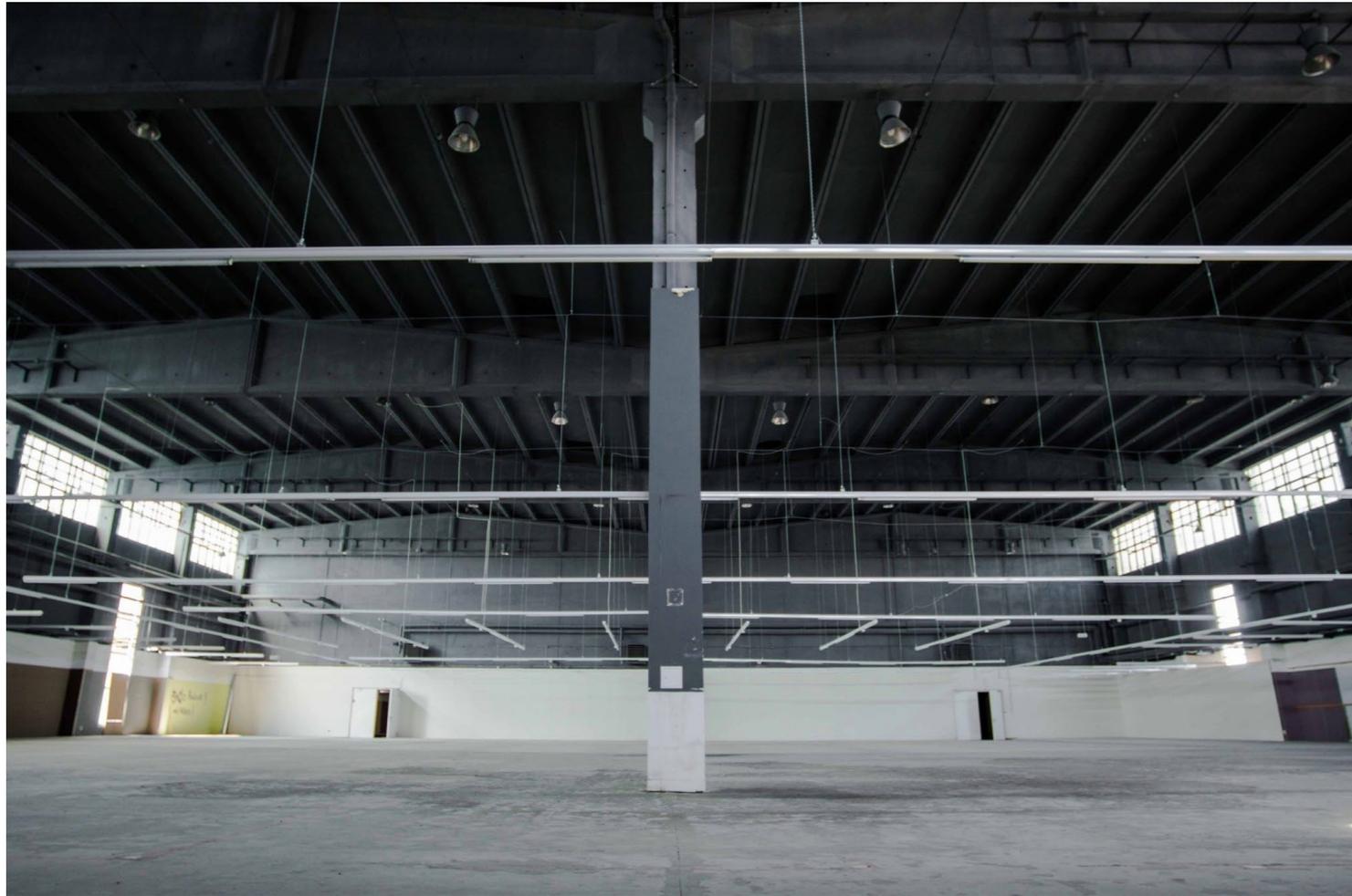


EVENT HALL

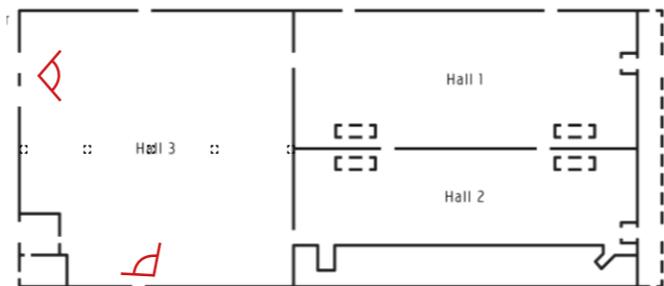


INBETWEEN SPACE

RE-USE



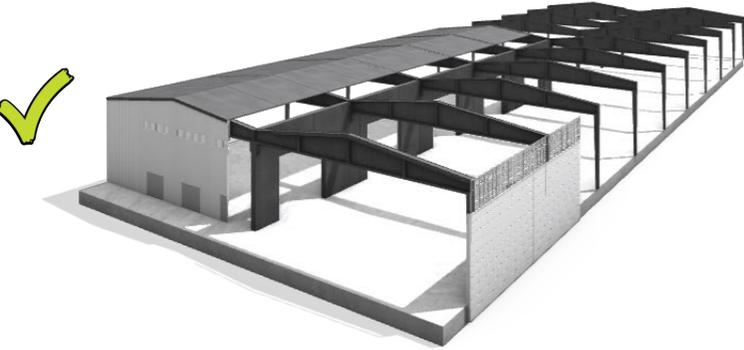
EXISTING INTERIOR
INTACT STRUCTURE



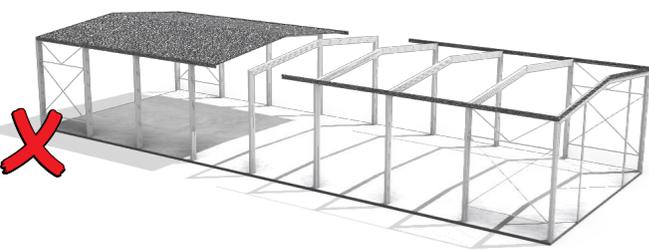
EXISTING INTERIOR
USE OF SPACE

RE-USE OLD PAPER FACTORY (EVENT HALL)

- EVENT FUNCTION
- STRUCTURE

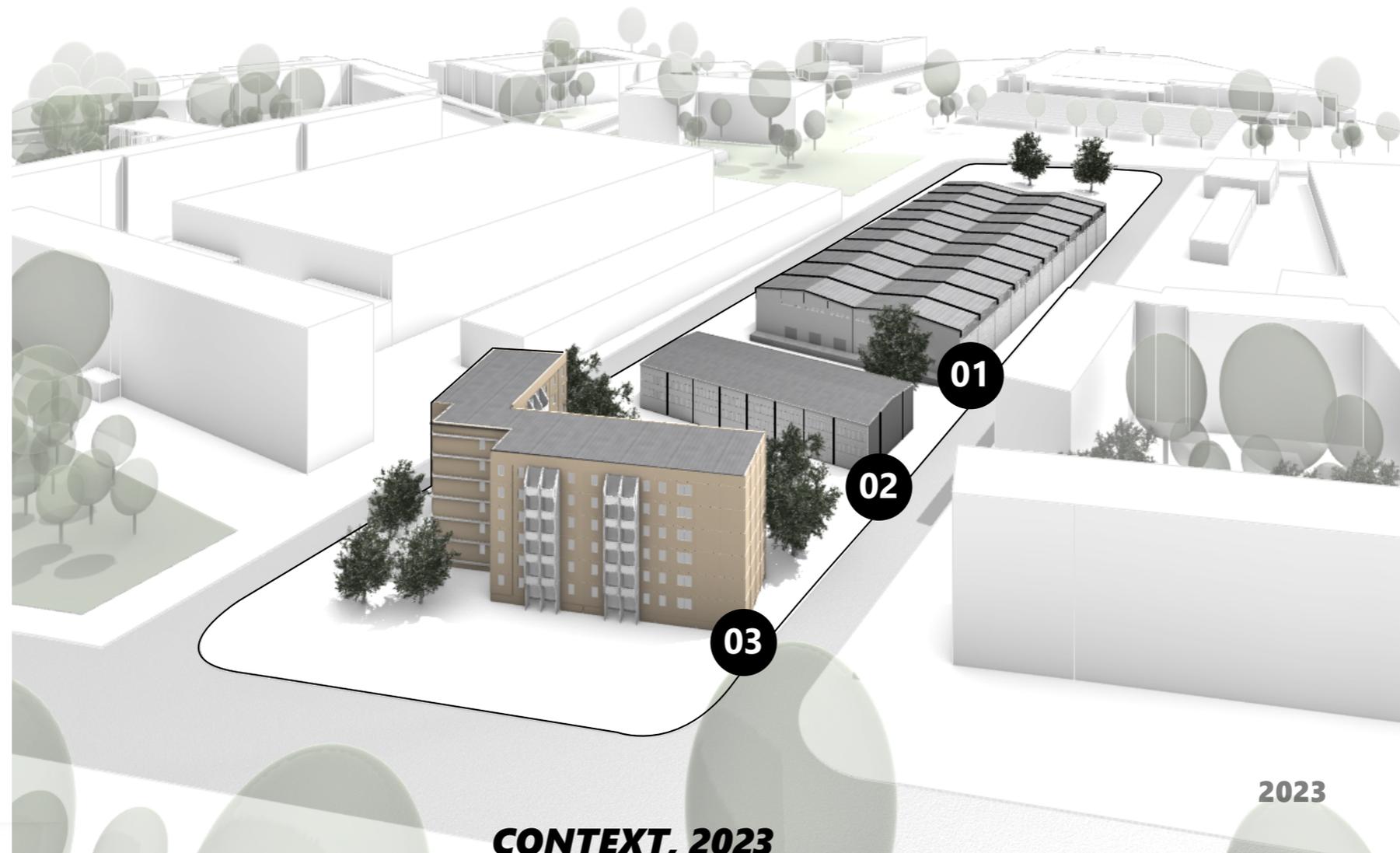
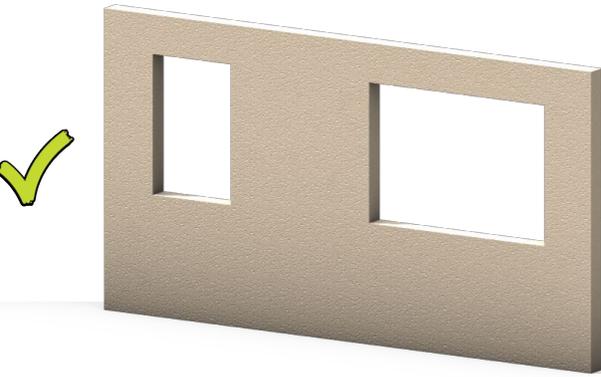


RE-USE UTILITY BUILDING (EMPTY)



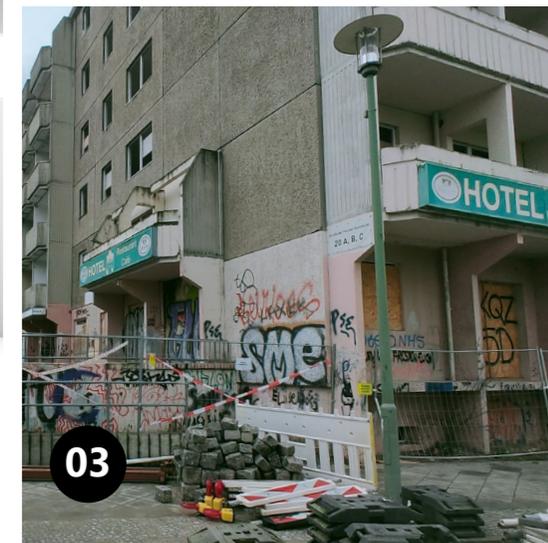
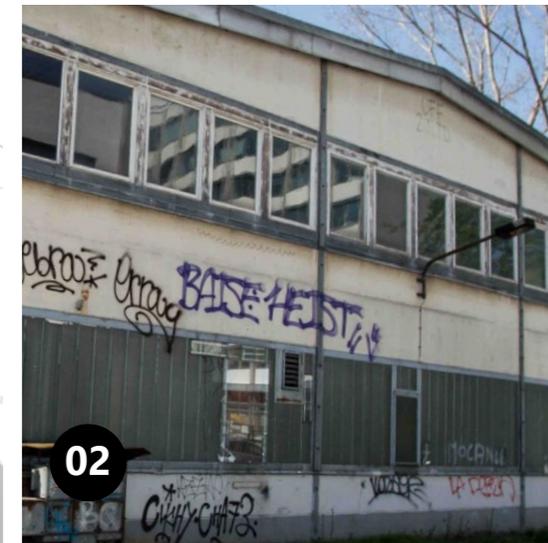
RE-USE PLATTENBAU HOTEL (EMPTY)

- FACADE ELEMENTS (PLATTEN)



CONTEXT, 2023

RE-USE OF VOLUMES AND MATERIALS



TIME-LINE

GENTRIFICATION

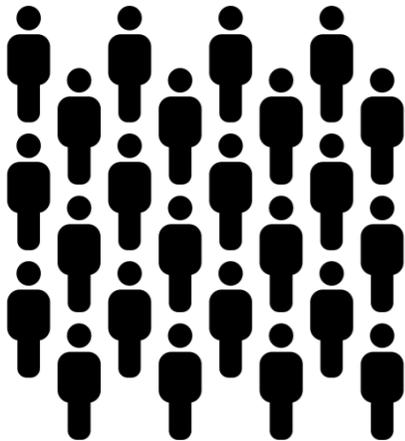
VISION

CONTEXT

CONCEPT

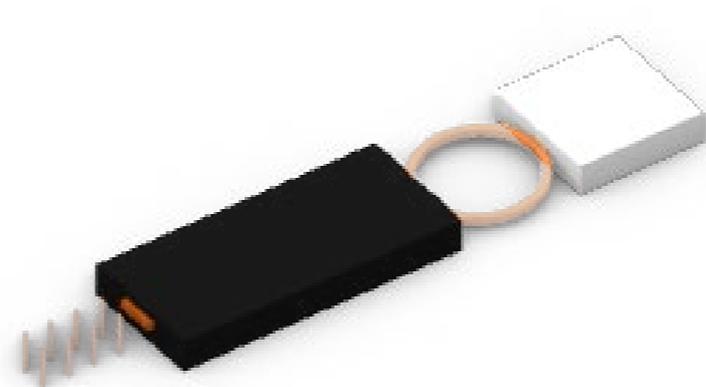
DESIGN

PROGRAM



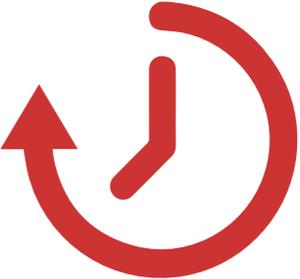
COMMONS

DESIGN



FACILITATING
EXISTING + NEW

DETAILS



TIME RELATED



***WHAT PROGRAM DO YOU PLACE IN THE
MODERNIZATION PHASE OF GENTRIFICATION?***



LIST OF POSSIBLE FUNCTIONS AND ACTIVITIES

SITE DEMOGRAPHICS



CULTURE

- Theater
- Event hall**
- Performing arts center
- Music Venue
- Art installations**
- Cinema
- Opera house
- Dance hall
- Workshop**
- Shared workspace**
- Hackerspace
- Makerspace**
- Festival**

- Museum
- Gallery
- Exhibition space**
- Acquarium
- Planetarium
- Media center**
- Offices**
- Learning center
- Science center
- Youth center
- Daycare**

SPORTS

- Playground**
- Swimming pool
- Fitness**
- Ski center
- Skatepark
- Race track
- Running track
- Martial Art
- Bouldering
- Squash

- Sports hall**
- Spa
- Yoga**
- Medical facilities
- Rehabilitation center
- Table tennis**
- Tennis
- Padel

URBAN

- Urban farm
- Botanical garden
- Herb garden
- Community garden
- Park
- Square**
- Lagoon
- Cafeteria**
- Night club
- Pub

- Restaurant
- Coffee corner**
- Lounge room
- Urban livingroom**
- Parking**

COMMERCE

- Market**
- Fashion store
- Grocery store
- Pharmacy
- Bicycle store
- Pet shop
- Temporary store**
- Hairdresser

EDUCATION

- Primary school
- After school
- Child center**
- Extra classrooms
- Language course center**

REMOVE

-  <12 months
-  1-5 years
-  5-20 years

PROGRAM FRIEDRICHSHAIN, 2035

TIME-LINE



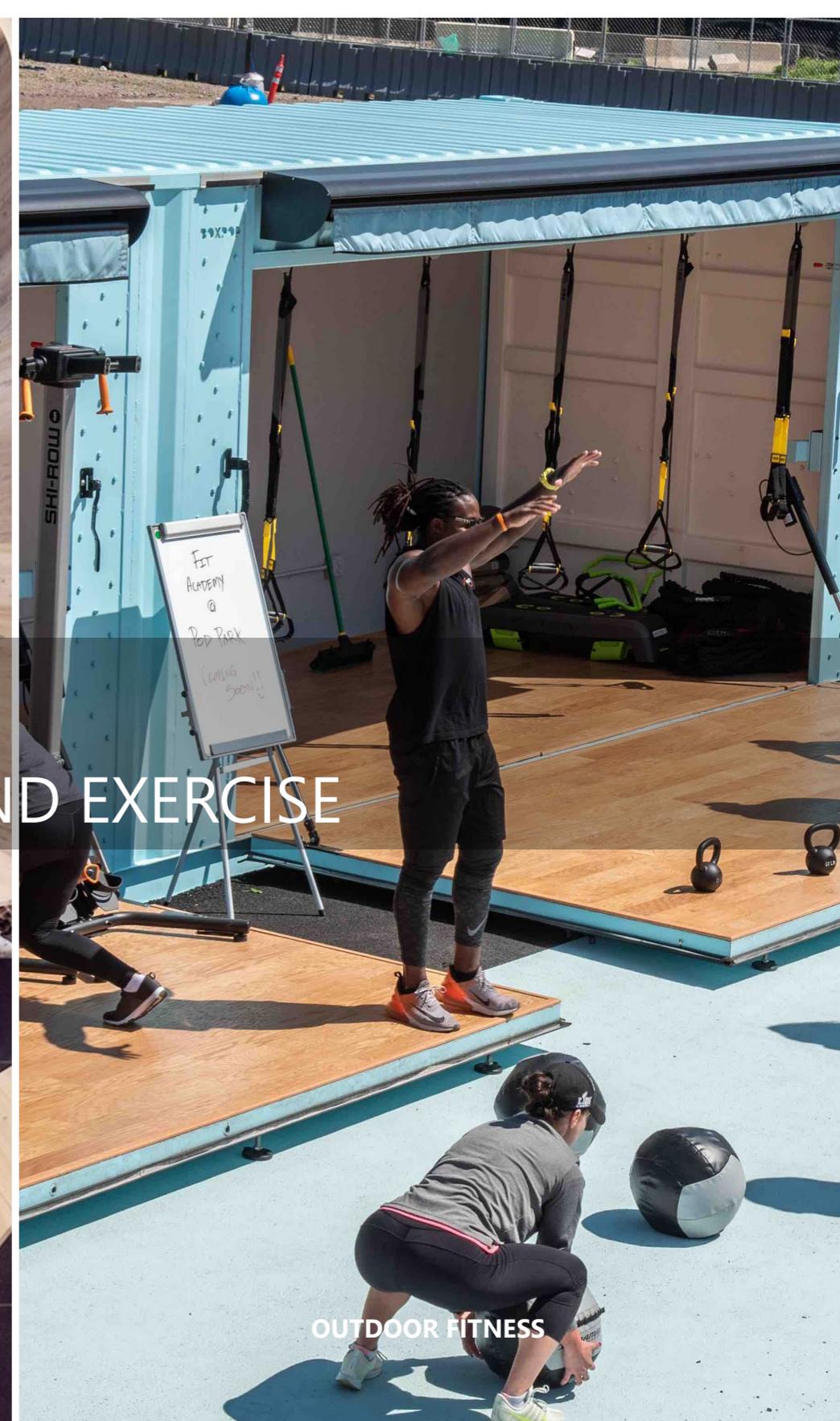
CAMDEN MARKET



2035

A NEW DESTINATION FOR LEISURE, CULTURE AND EXERCISE

ART INSTALLATION



OUTDOOR FITNESS



LIBRARY/WORKSPACE

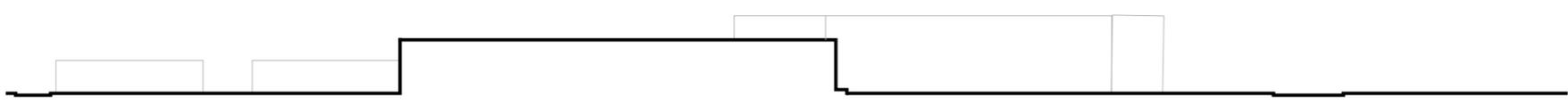
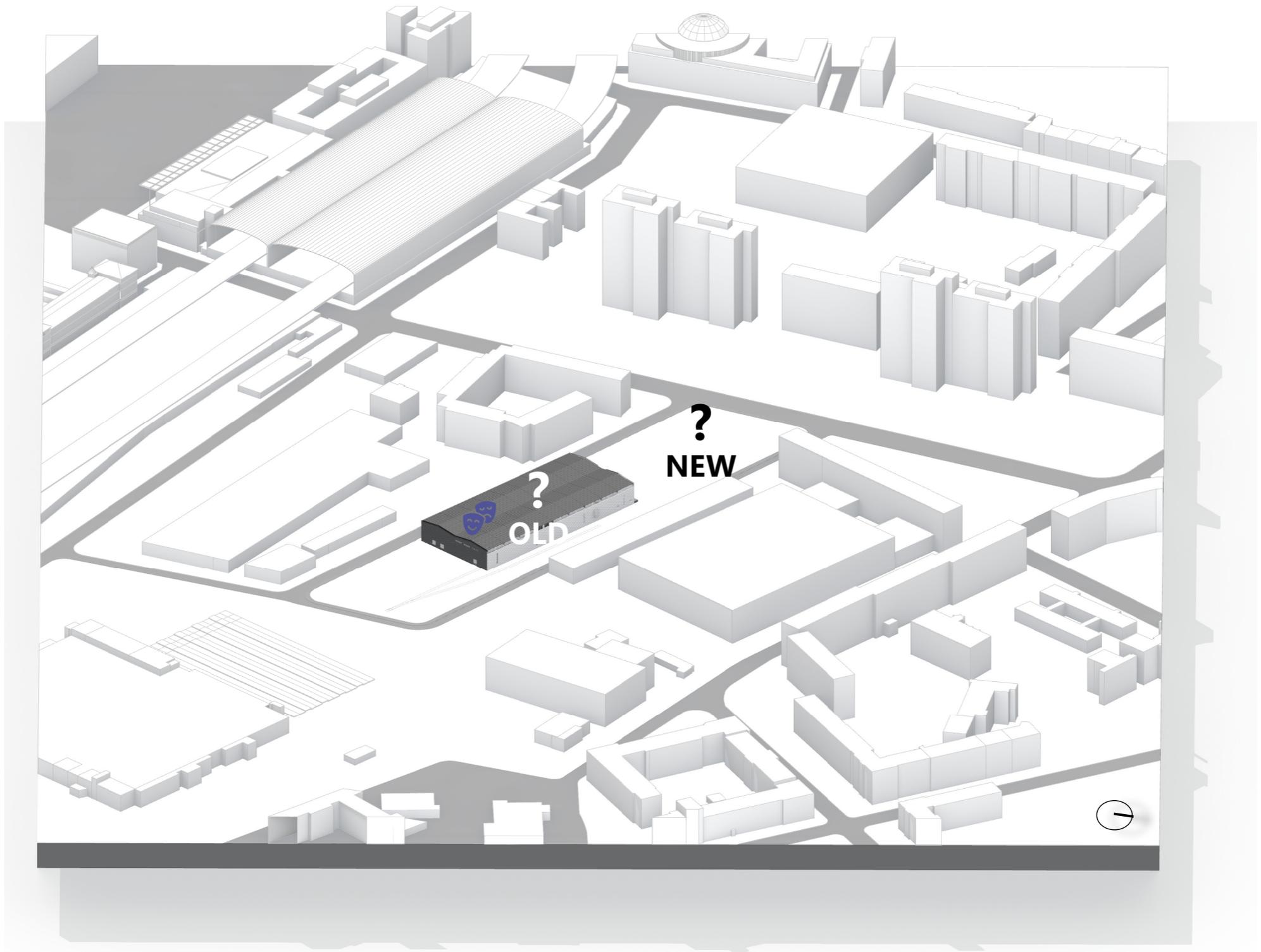


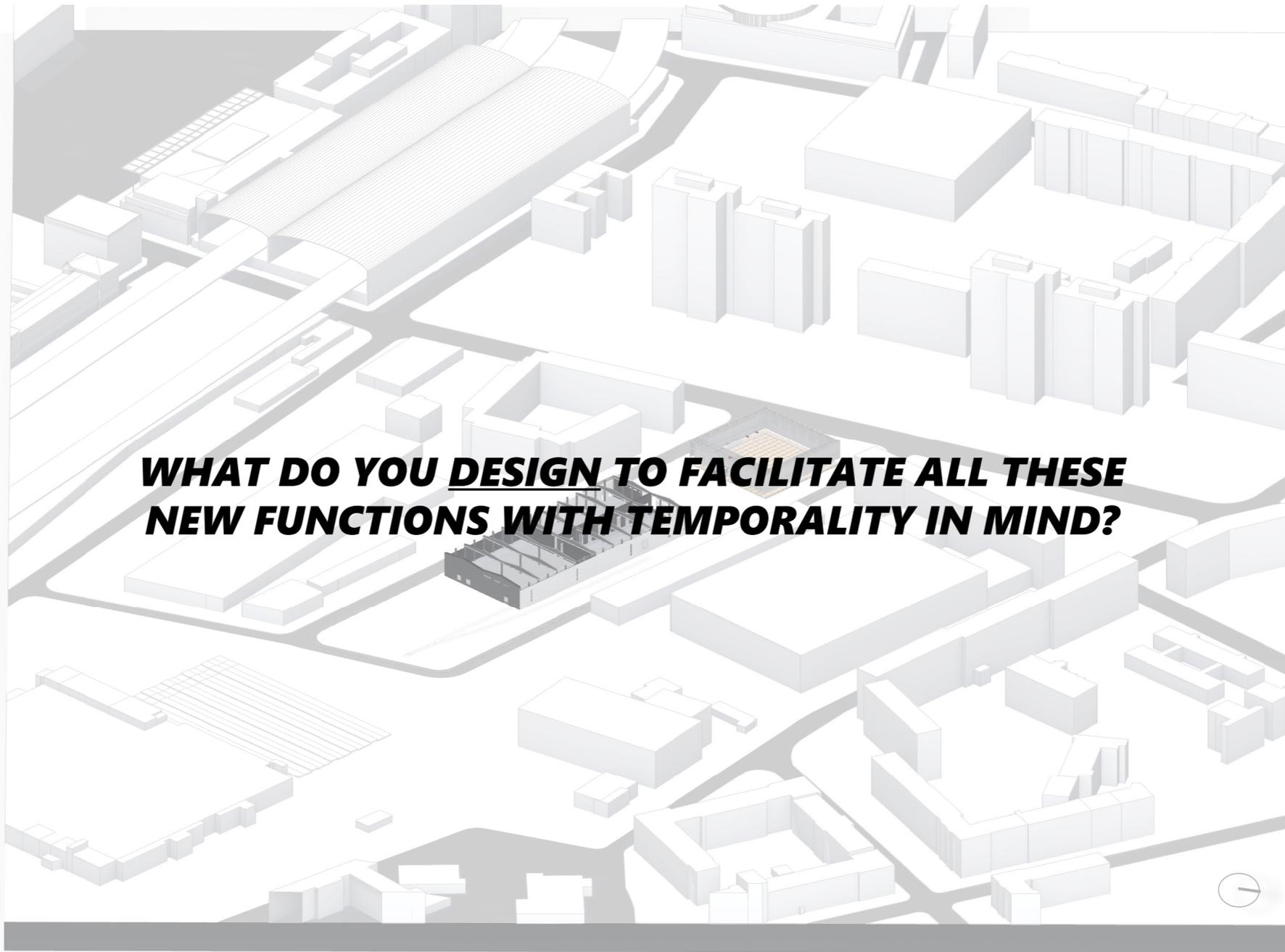
FESTIVAL/PERFORMANCE



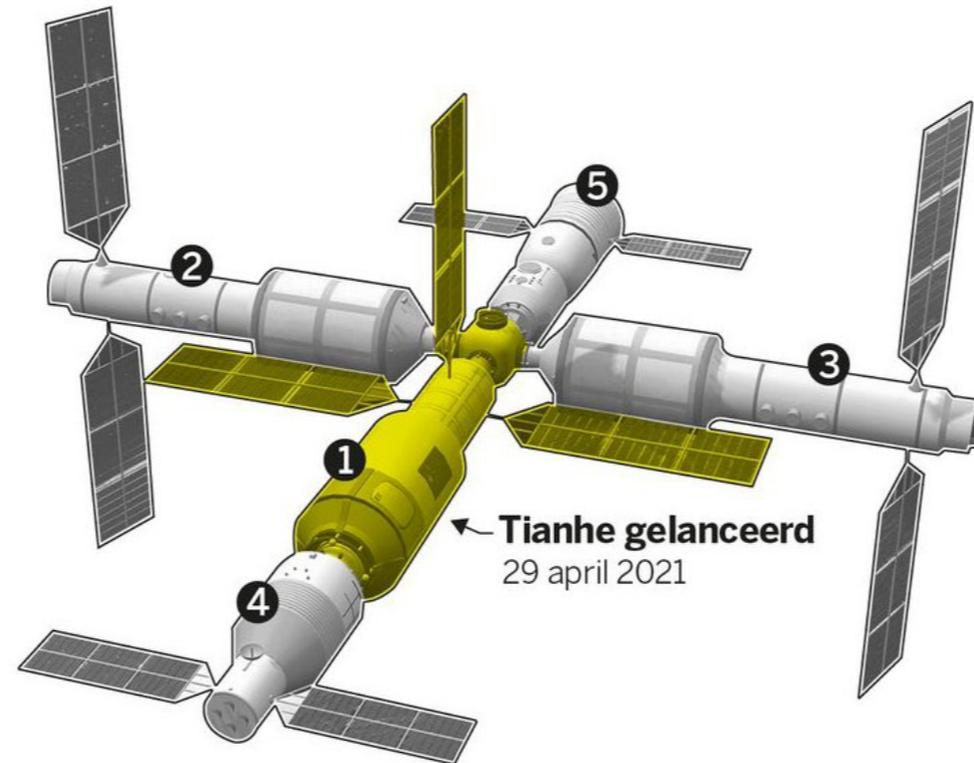
EVENT

A PLACE TO LEARN AND DISCOVER





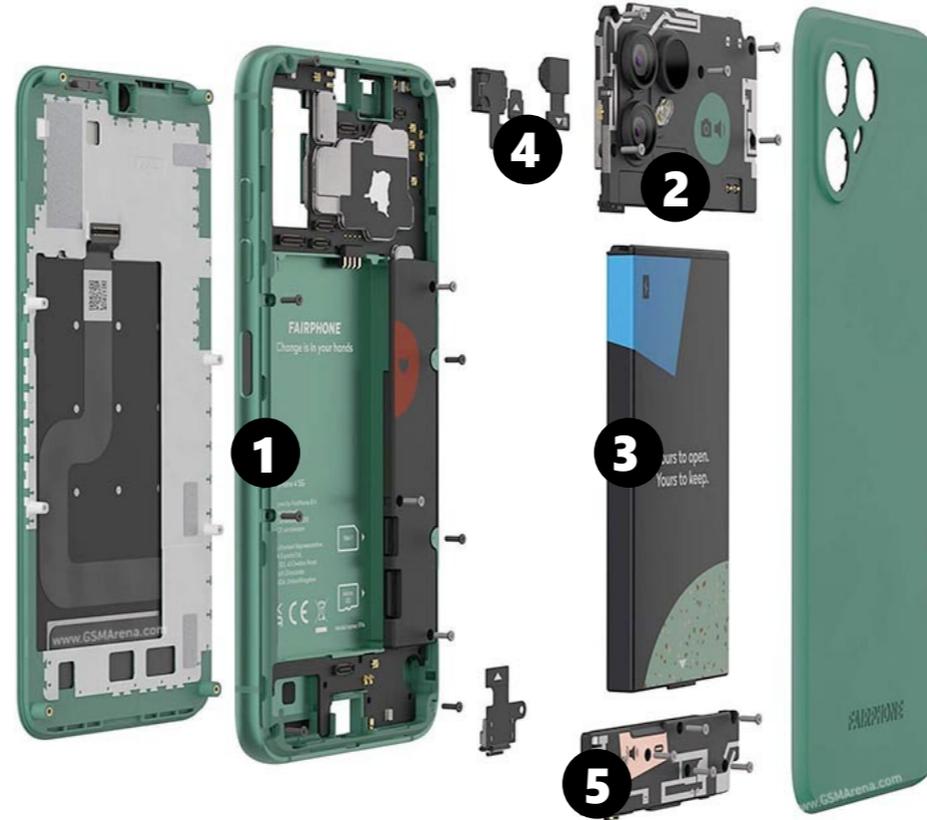
WHAT DO YOU DESIGN TO FACILITATE ALL THESE NEW FUNCTIONS WITH TEMPORALITY IN MIND?



- 1** BASE
- 2** WENTIAN, RESEARCH STATION
- 3** MENGtian, RESEARCH STATION
- 4** TIANZHOU-2, UNMANNED CARGO SHIP
- 5** SHENZHOU-12, MANNED SPACESHIP

LAUNCH 2022
LAUNCH 2022
MAY 2021
JUNE 2021

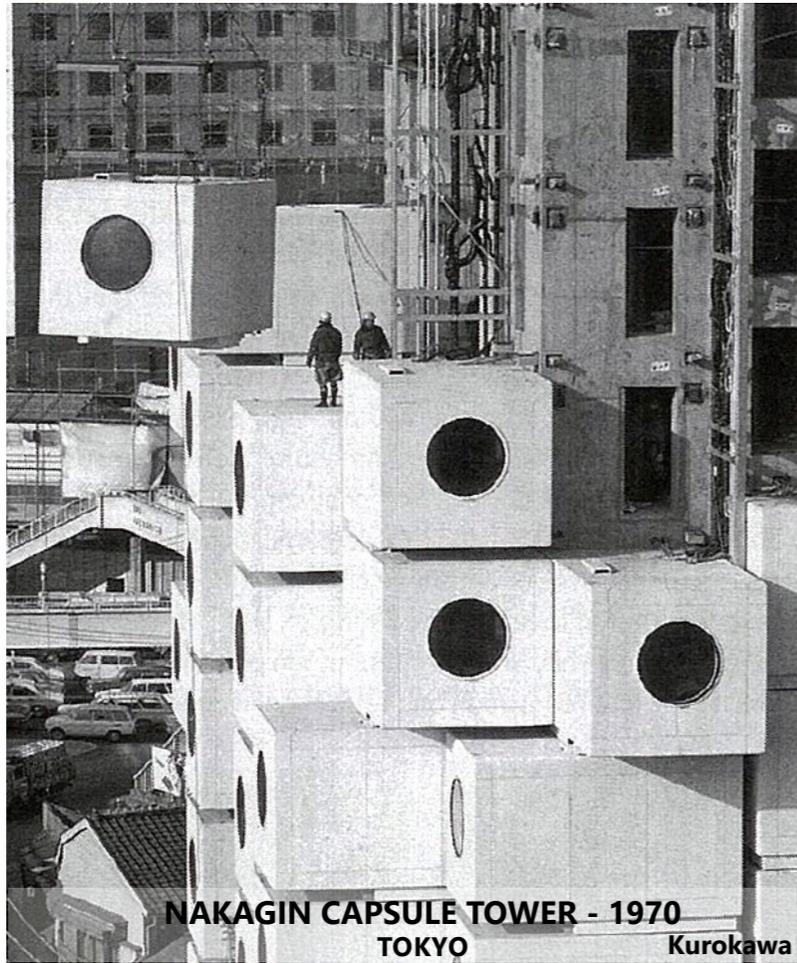
SPACE INDUSTRY
 CONNECTING TO SPACE STATION



- 1** BASE
- 2** CAMERA
- 3** BATTERY
- 4** MEMORY CARD
- 5** SPEAKERS

- 2023**
- UPDATE 2024**
- UPDATE 2025**
- UPDATE 2026**
- UPDATE 2028**

PHONE INDUSTRY
UPDATABLE HARDWARE

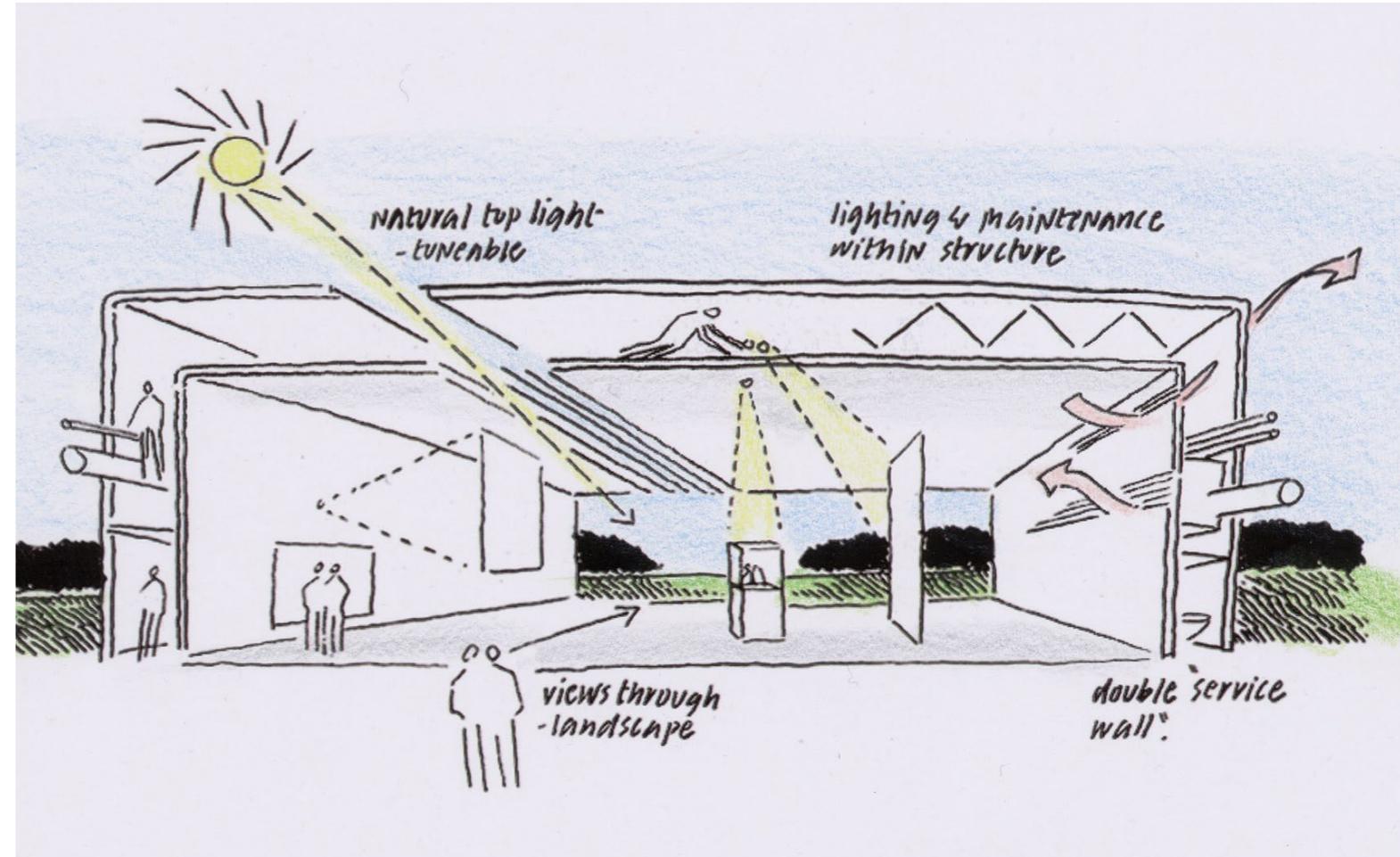


ARCHITECTURE
UPDATABLE

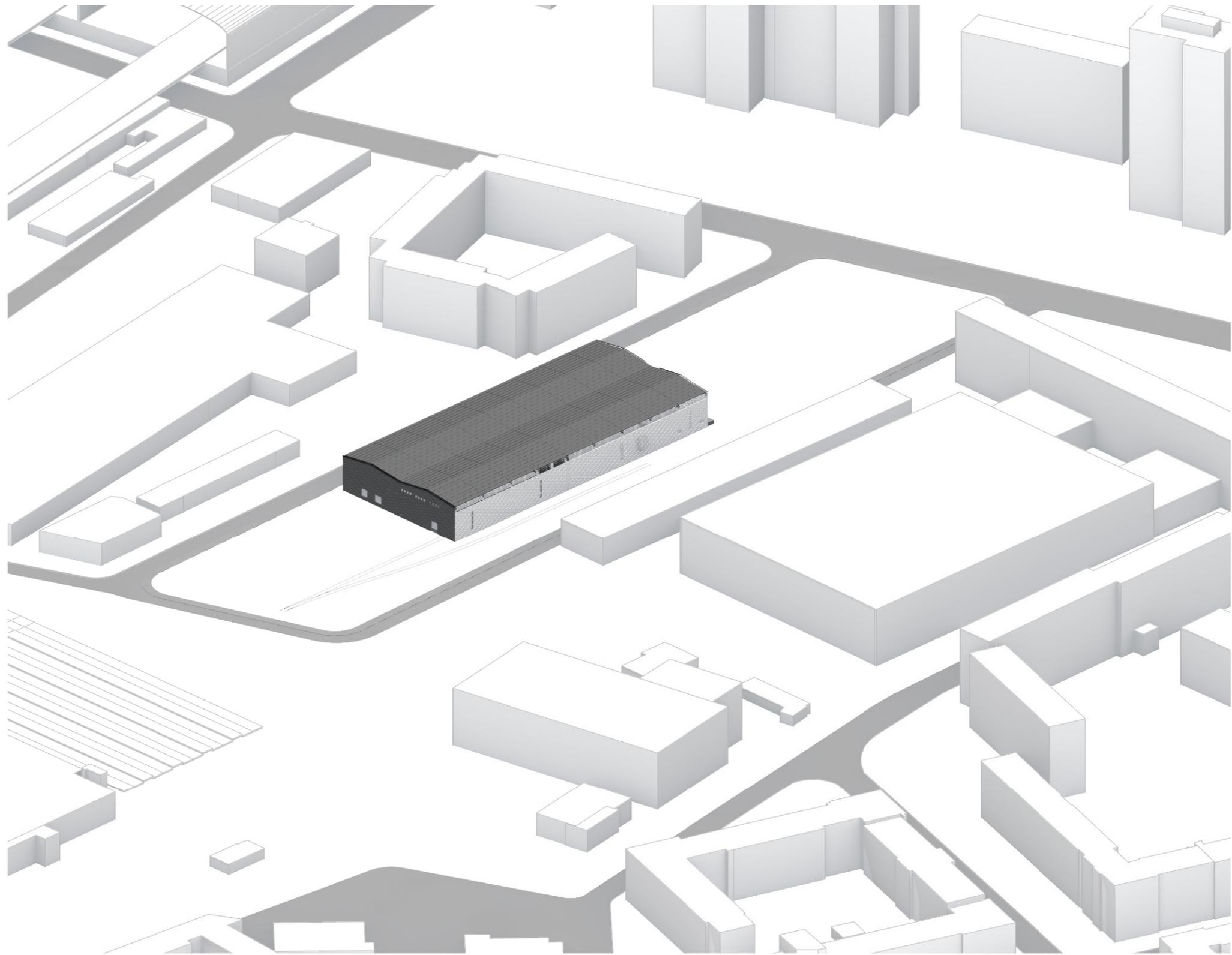


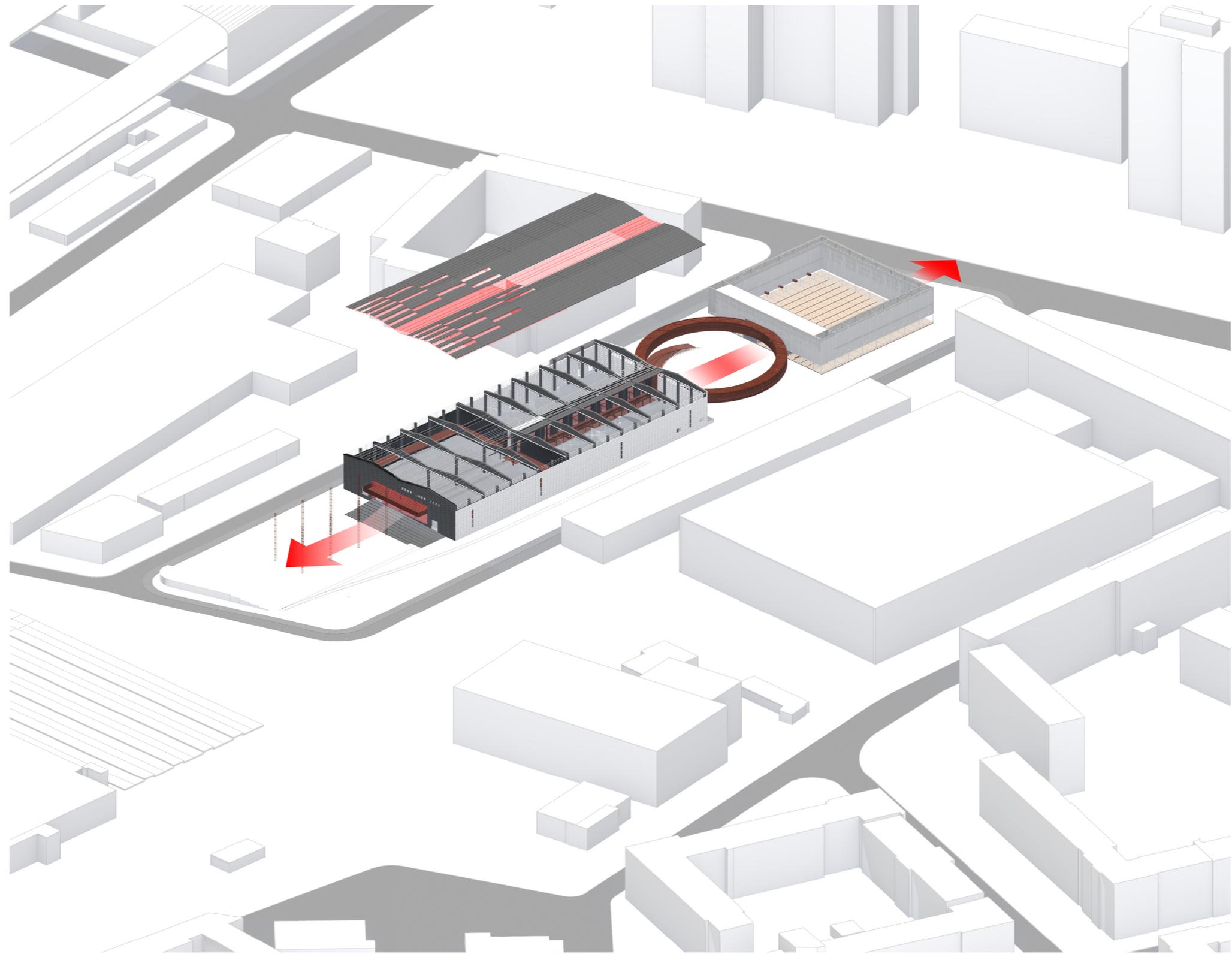
SAINSBURY CENTRE FOR VISUAL ARTS- 1974
NORWICH

Foster+Partners



HIGH-TECH ARCHITECTURE
FACILITATING







< 5 days

> 20 years

> 5 < 15 years

CONSTRUCTION TECHNIQUES



1-3 DAYS

FESTIVAL



3 MONTHS

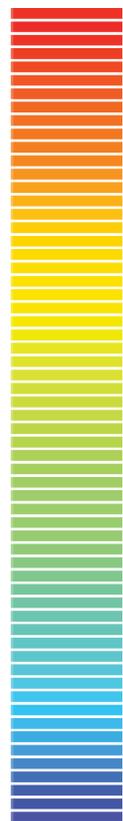
GARE MARITIME



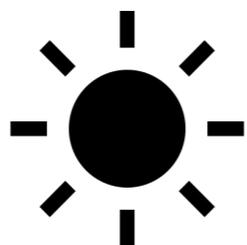
2 WEEKS

CONTAINER CITY

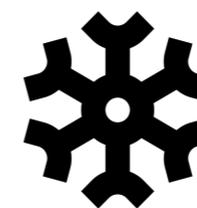
INSTALLATION TIME OF STRUCTURES



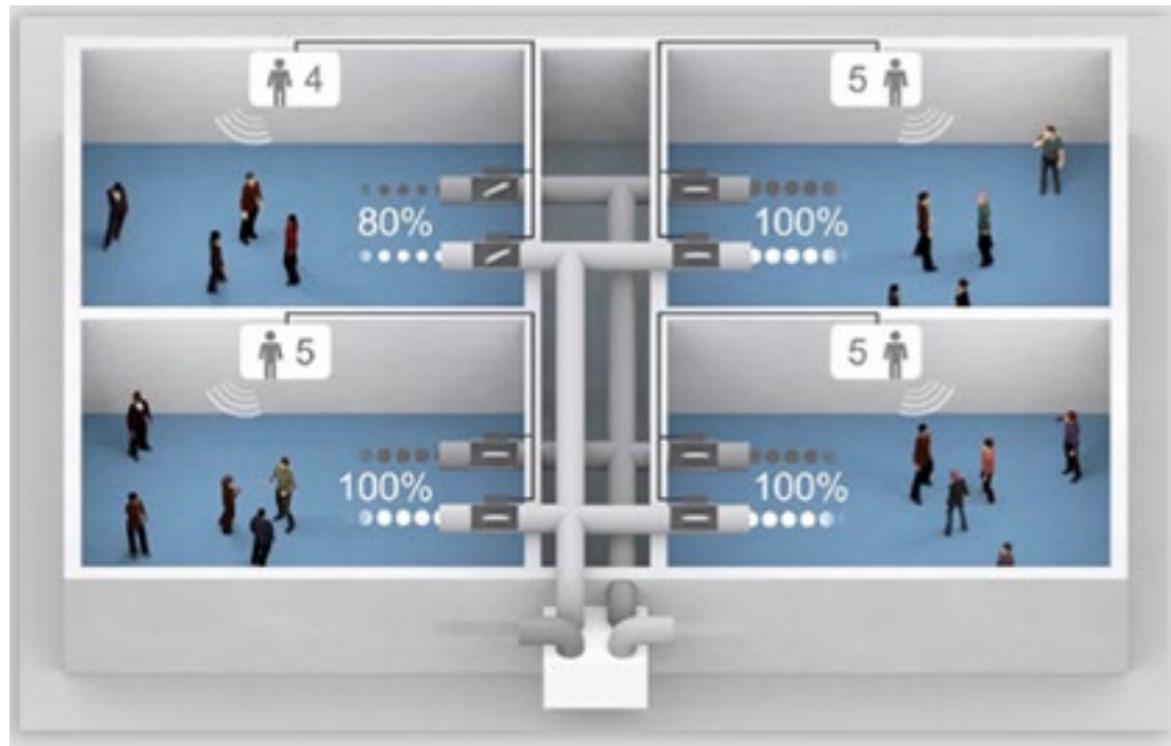
☼%



☼%



CLIMATE
NEEDS



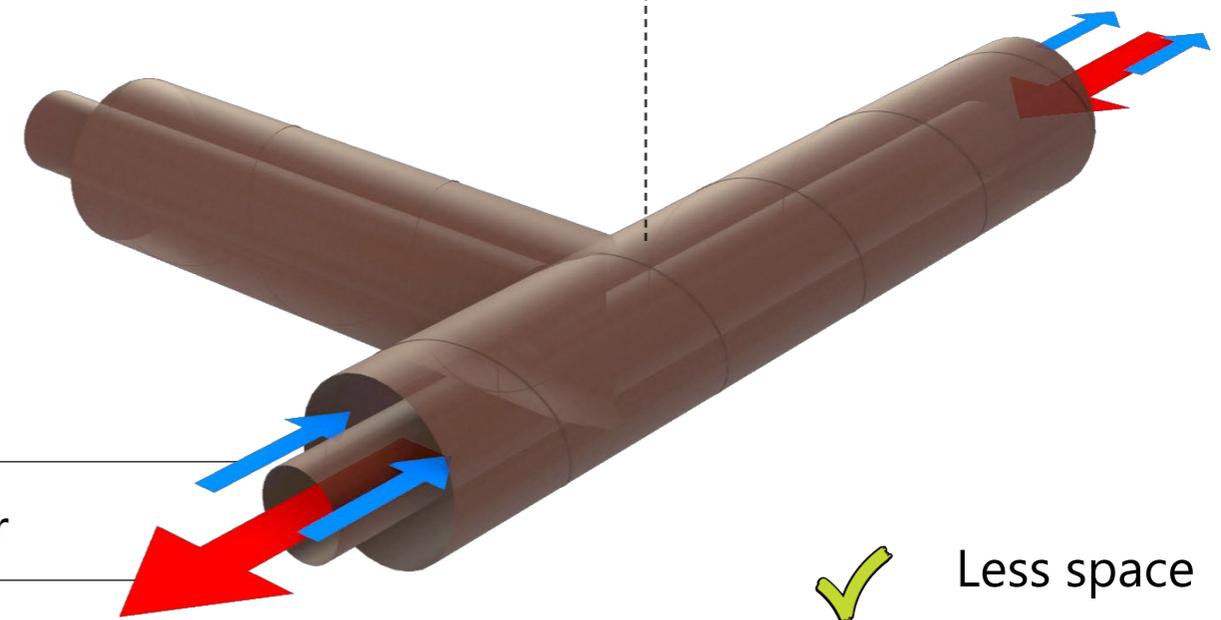
Conventional system

Supply air

Exhaust air

Integrated system

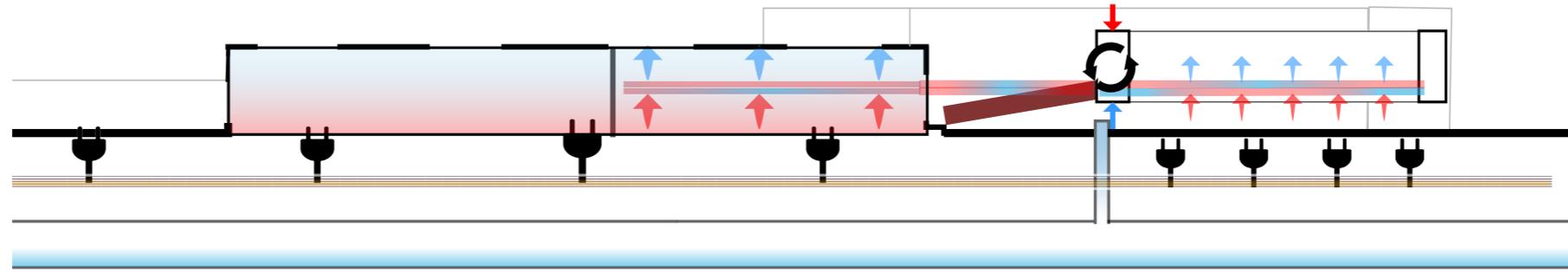
Heat recovery



- ✓ Less space
- ✓ Re-use of heat

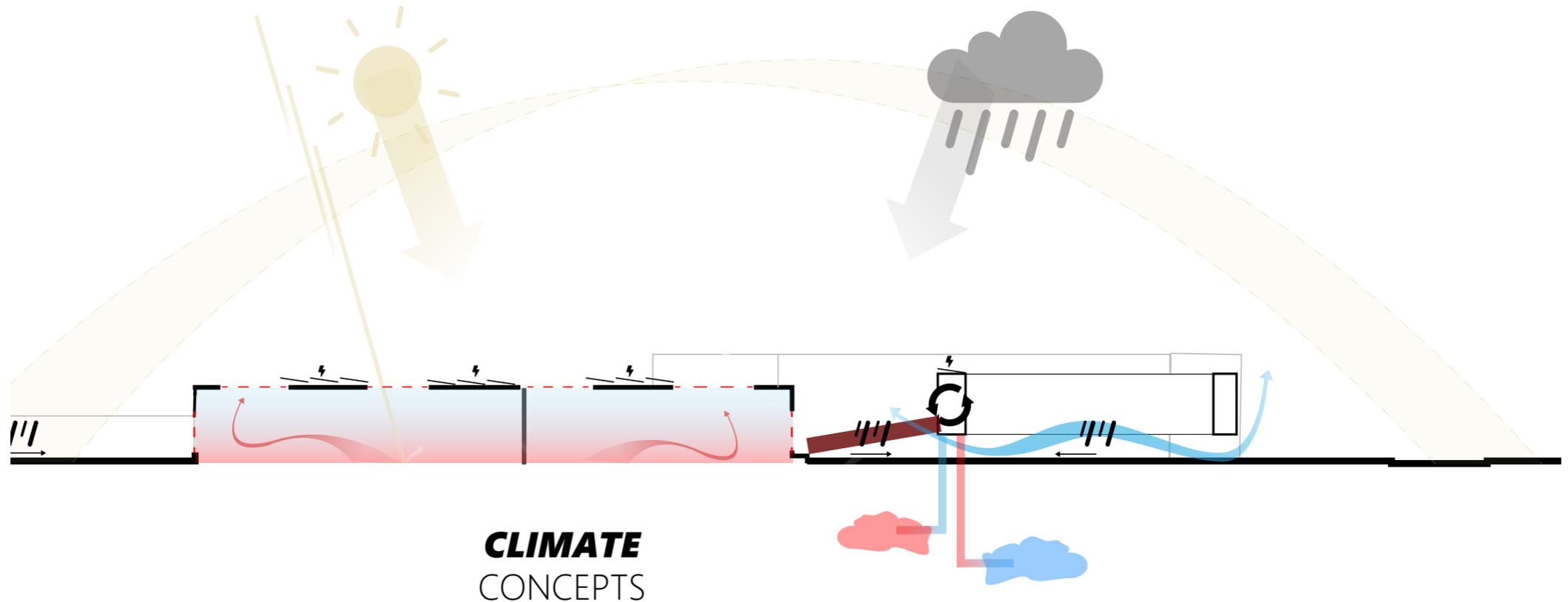
TAILORED SYSTEM
CLIMATE

**MECHANICAL
INFRASTRUCTURE**

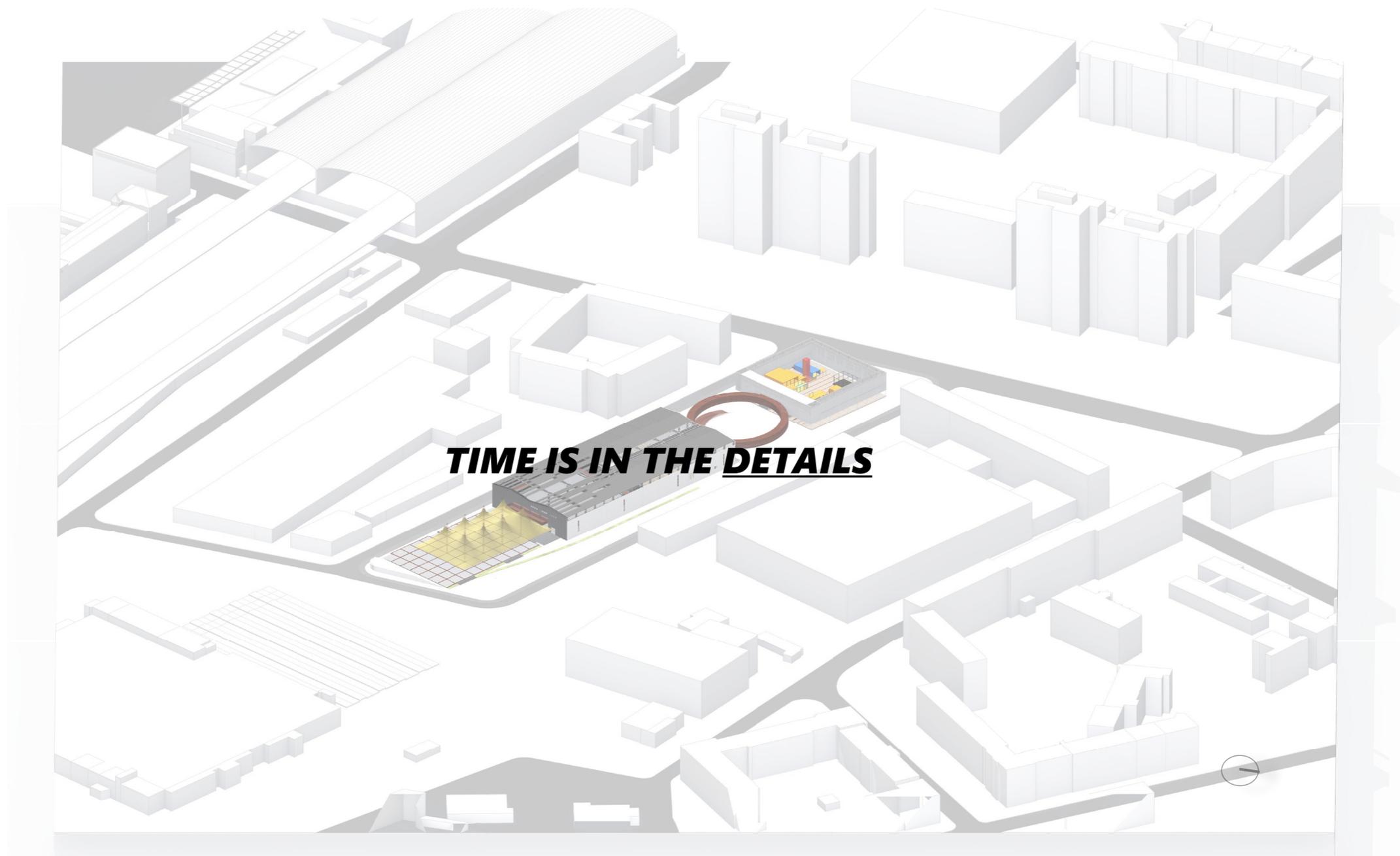


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**NATURAL
ADAPTATIONS**



**CLIMATE
CONCEPTS**

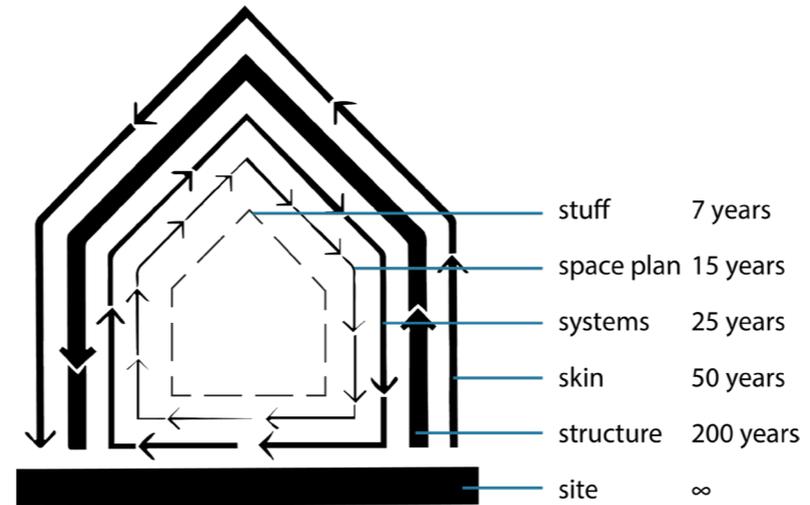


PERMANENT

'lasting or intended to last or remain unchanged'

TEMPORARY

'lasting for only a limited period of time'



Stewart Brand



BLACK CONCRETE

RE-USED



WASHED CONCRETE

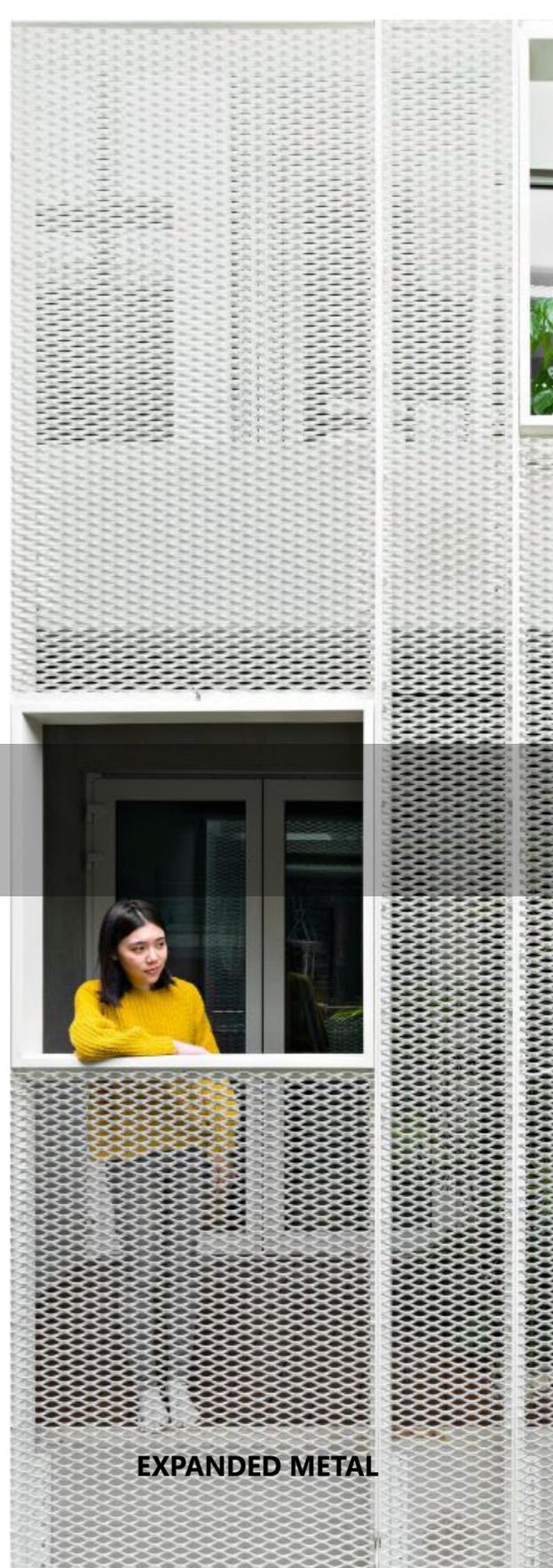
RE-USED



CORTEN STEEL



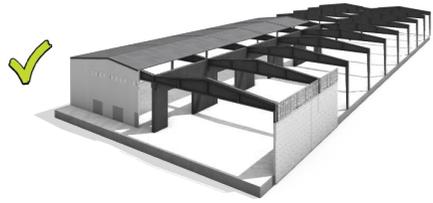
SLIM STEEL COLUMNS



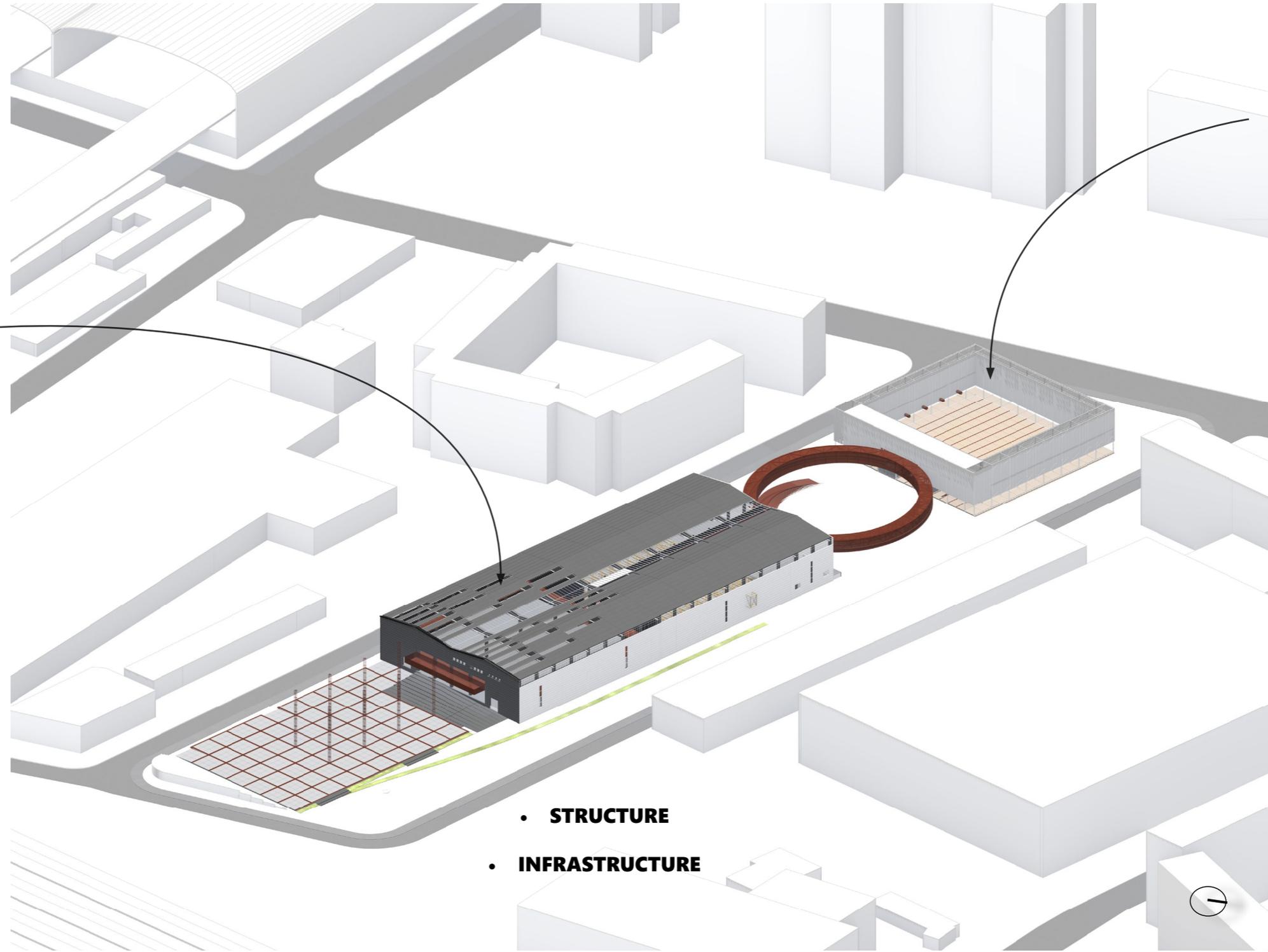
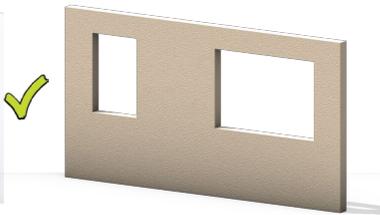
EXPANDED METAL

PERMANENT STRUCTURES

RE-USE OLD PAPER FACTORY
STRUCTURE



RE-USE PLATTEN AS FLOOR ELEMENTS

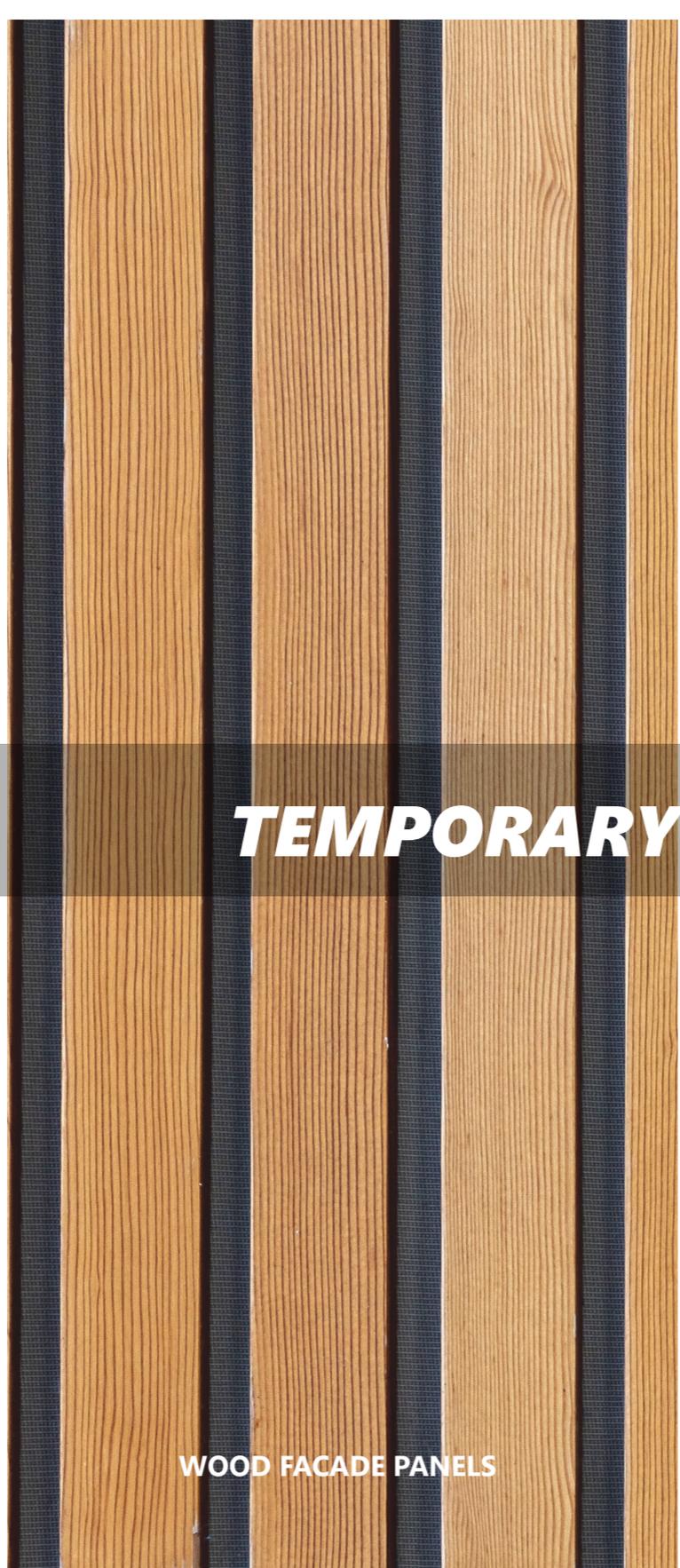


- STRUCTURE
- INFRASTRUCTURE

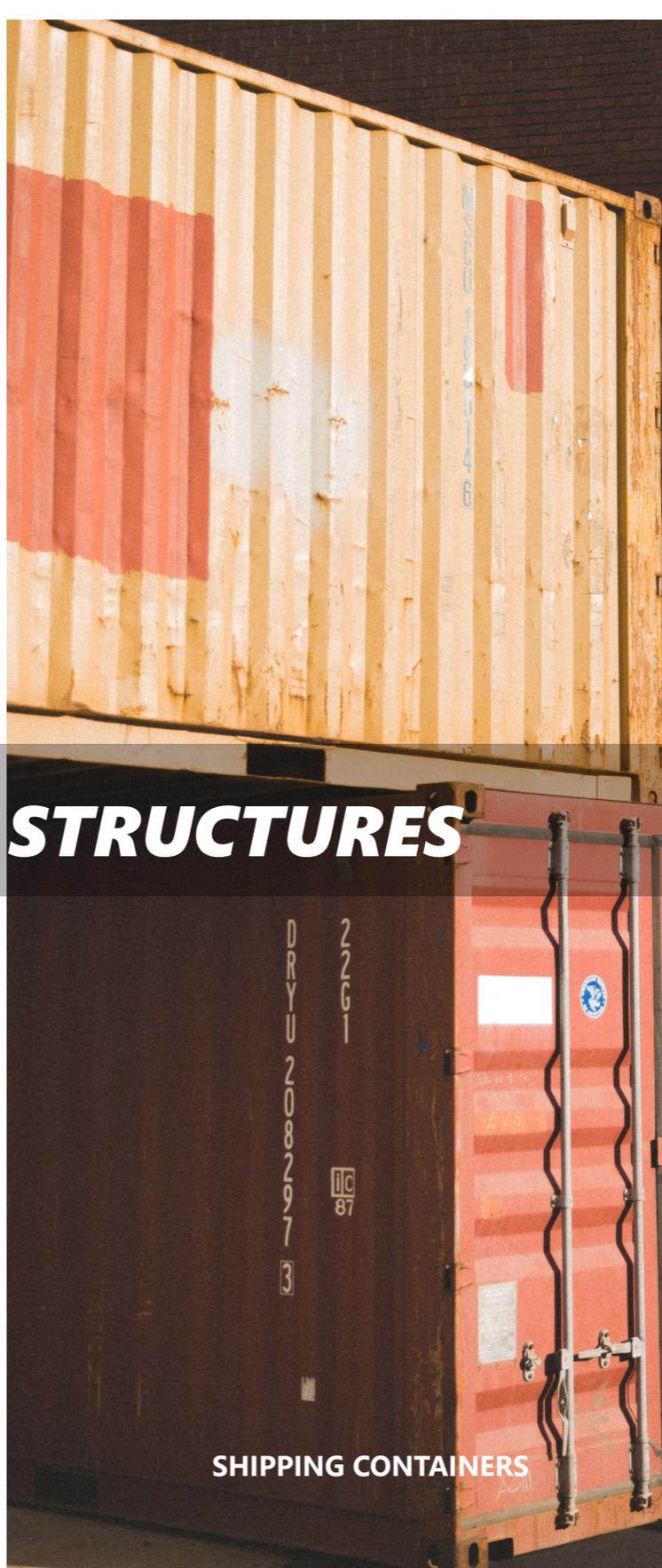
PERMANENT BACKBONE



DEMOUNTABLE WOOD



WOOD FACADE PANELS

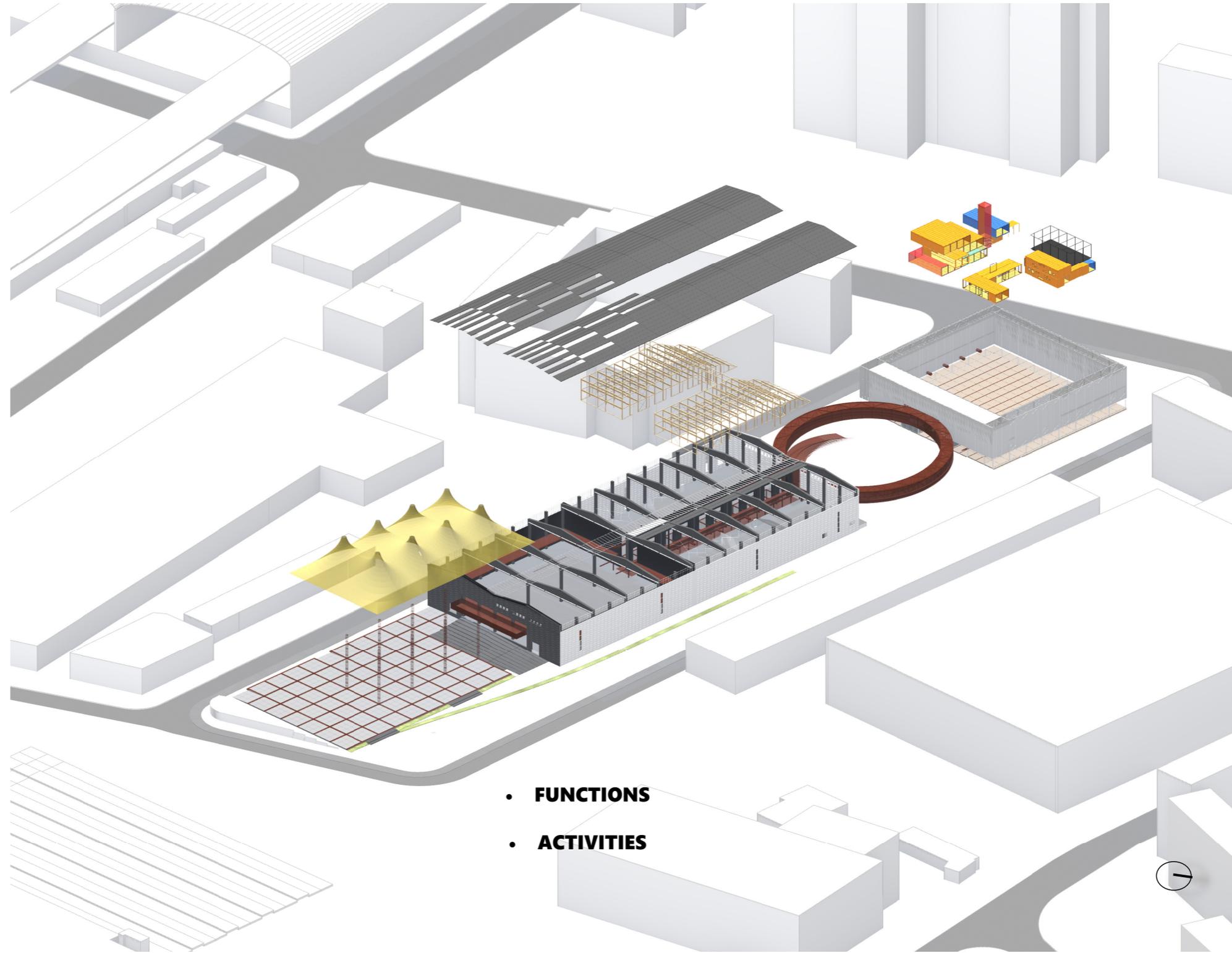


SHIPPING CONTAINERS



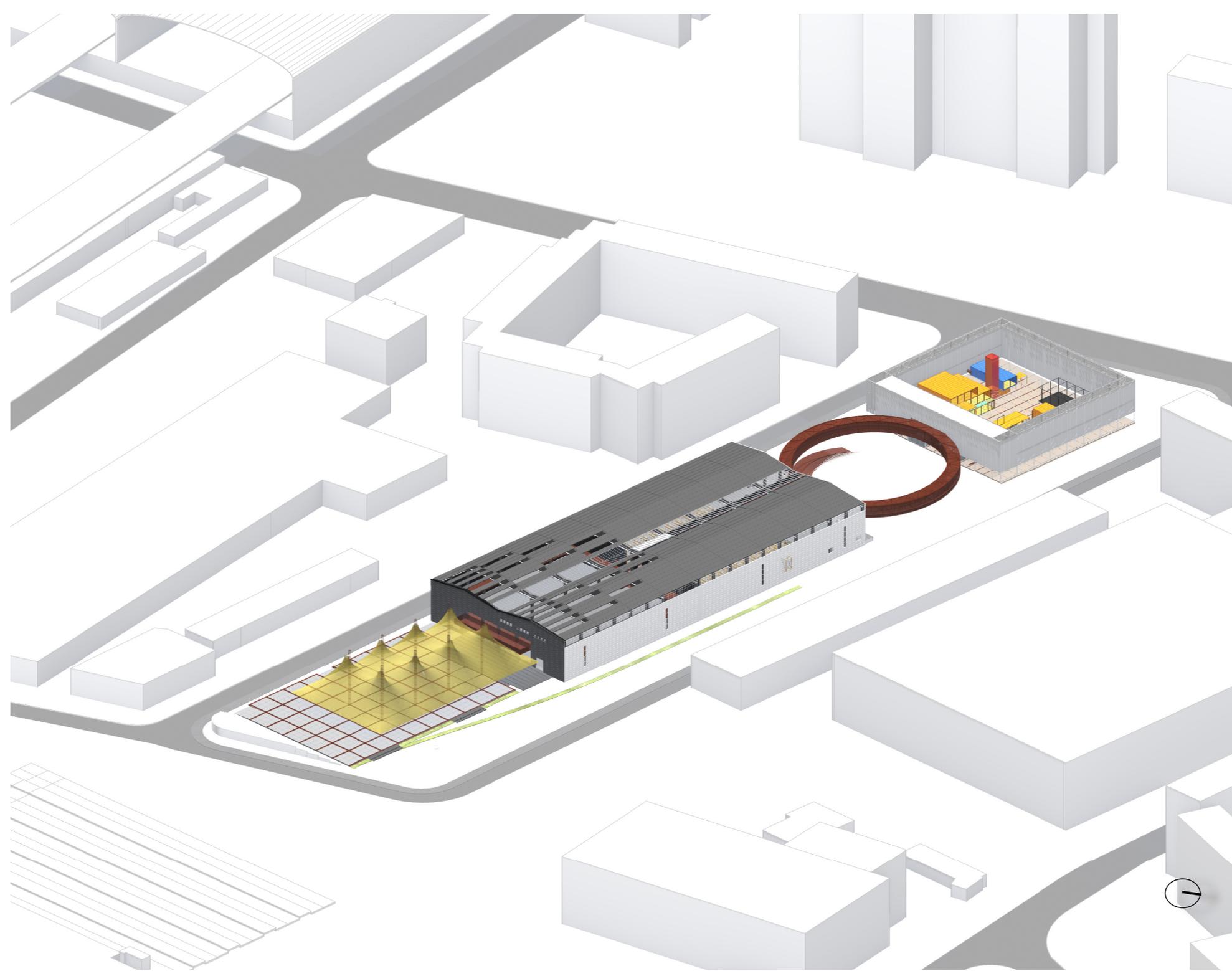
TENT FABRIC

TEMPORARY STRUCTURES

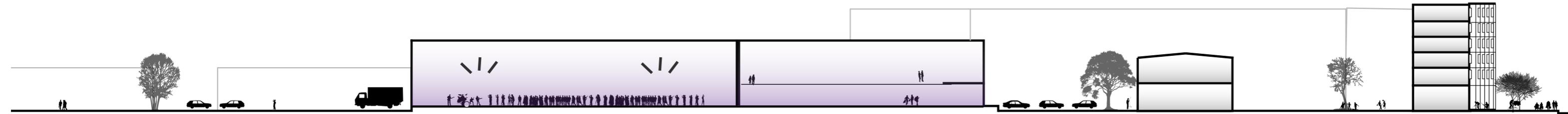


- FUNCTIONS
- ACTIVITIES

TEMPORARY FUNCTIONS



PLUG-IN TEMPORARY IN PERMANENT BACKBONE

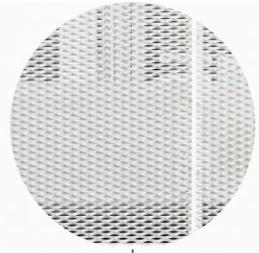
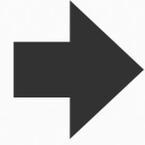


BEFORE (2023)

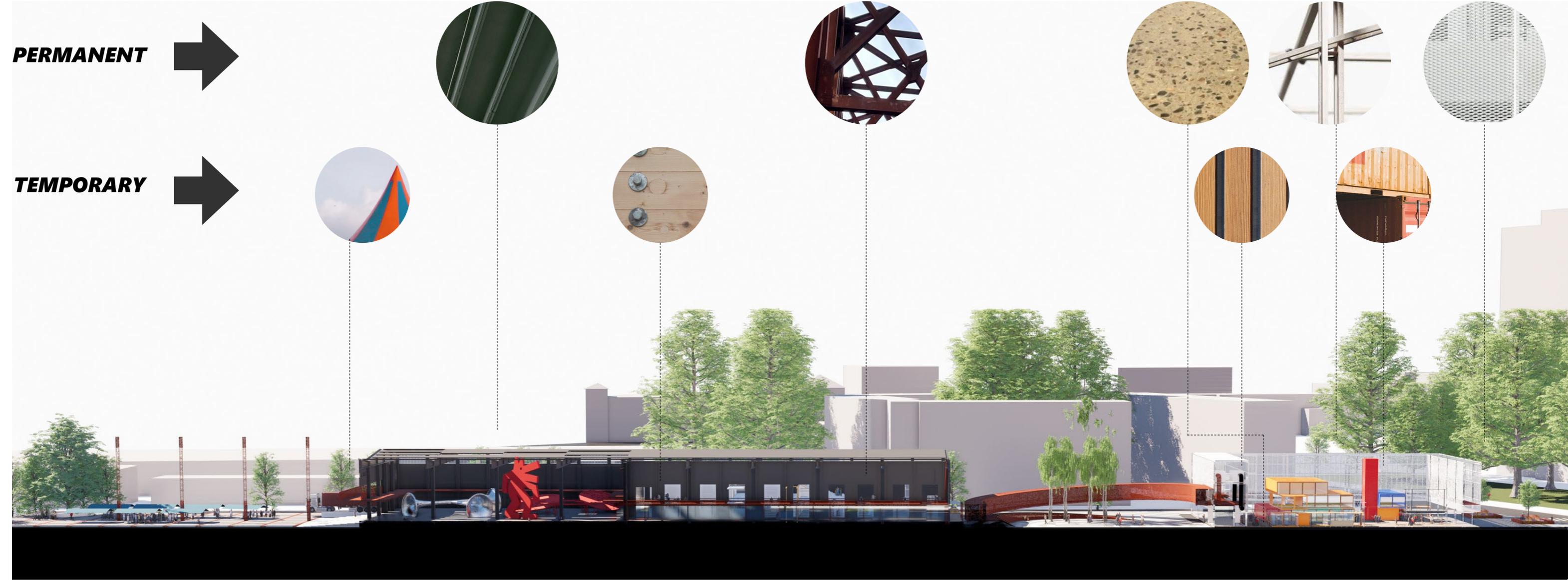
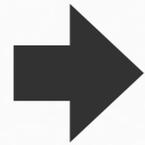


AFTER (2035)

PERMANENT



TEMPORARY



SECTION (2035)

TIME-LINE

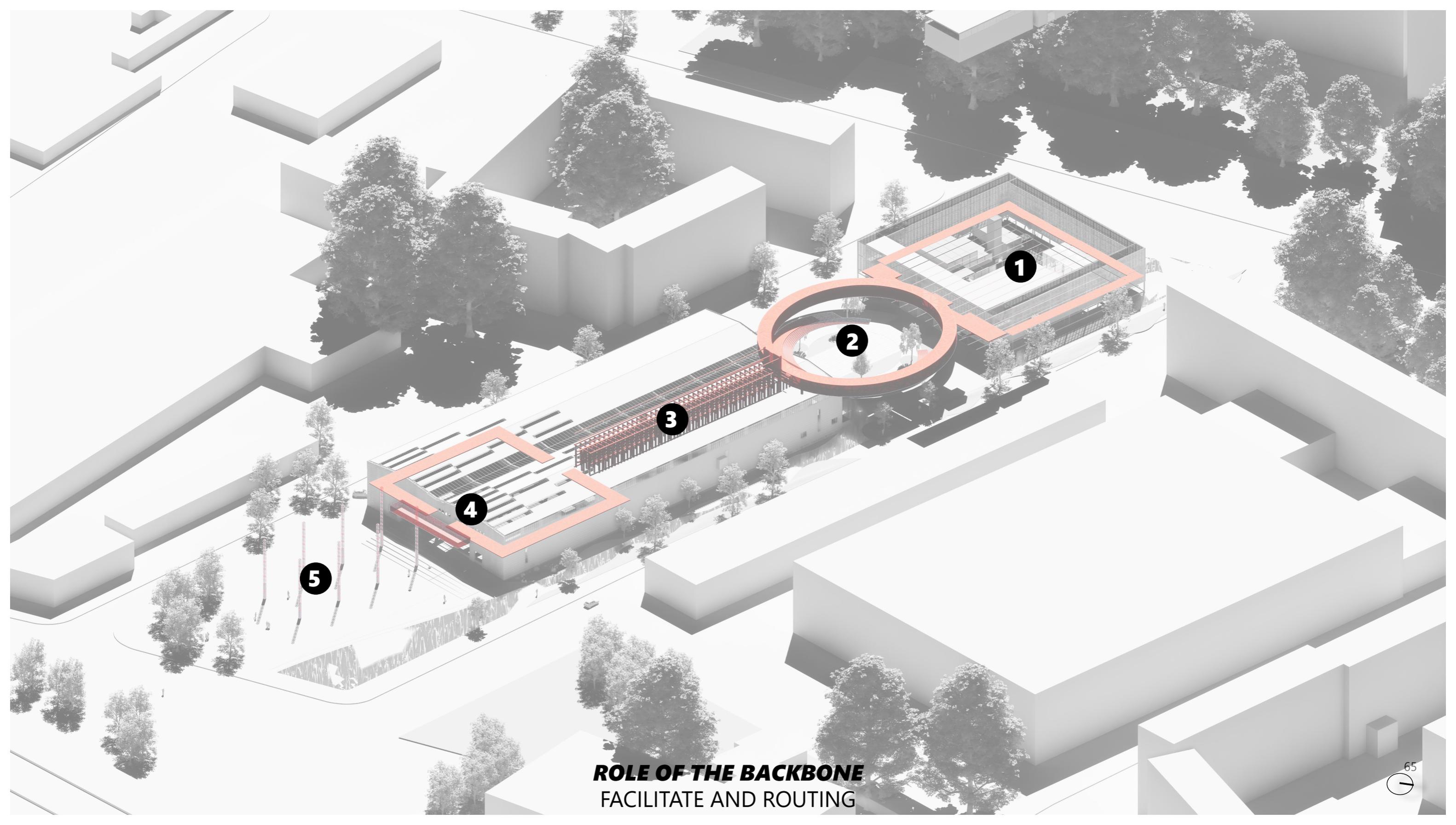
GENTRIFICATION

VISION

CONTEXT

CONCEPT

DESIGN



ROLE OF THE BACKBONE
FACILITATE AND ROUTING

5 THE SQUARE

- EVENTS
- FESTIVAL
- PARKING

4 THE PERIMETER

- EVENTS

3 THE CORRIDOR

- COFFEE CORNER
- LIBRARY
- SHARED WORKSPACES
- OFFICES

2 THE CIRCLE

- ART INSTALLATION PLAZA
- SCULPTURE ROUTE

1 THE SCREEN

- MAKERSPACE
- URBAN LIVINGROOM
- GYM
- KIDS CENTER
- DAYCARE
- LANGUAGE COURSE CENTER



FLEXIBLE PROGRAM
BACKBONE

5 THE SQUARE

- EVENTS
- FESTIVAL
- PARKING

4 THE PERIMETER

- EVENTS

3 THE CORRIDOR

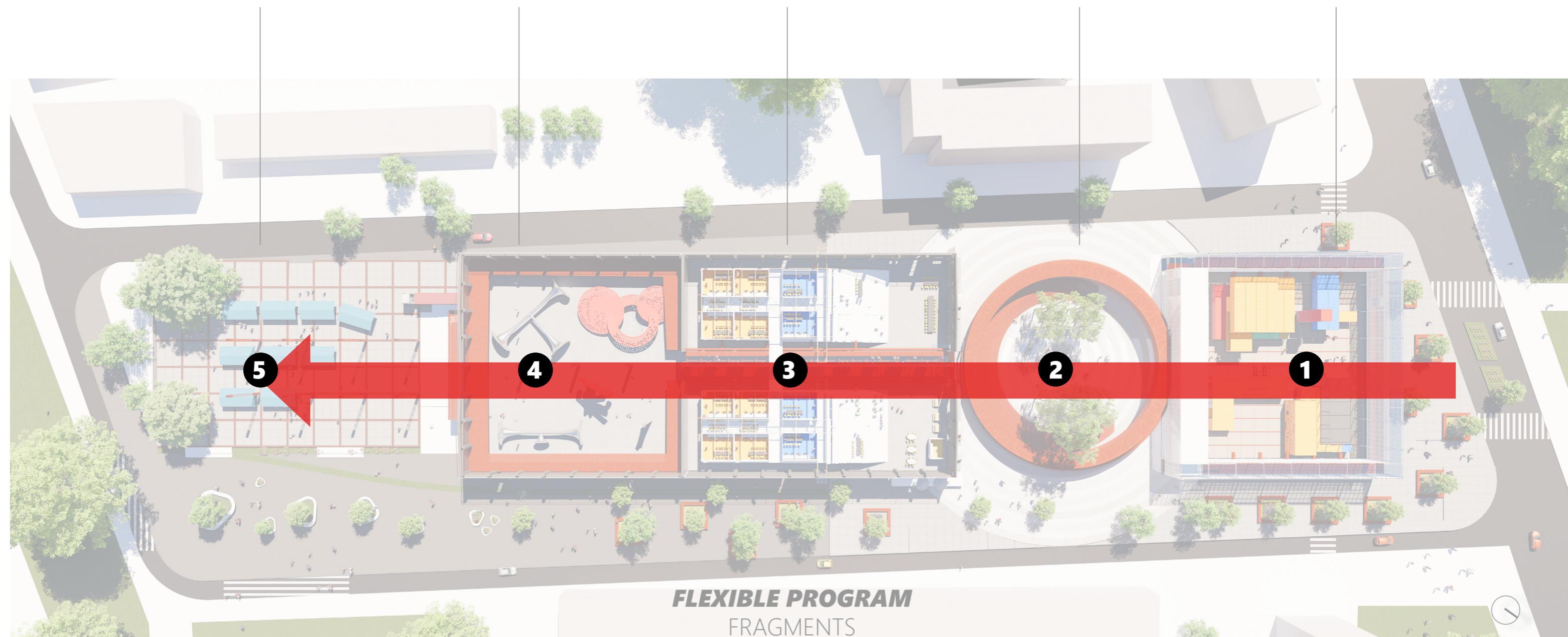
- COFFEE CORNER
- LIBRARY
- SHARED WORKSPACES
- OFFICES

2 THE CIRCLE

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- SCULPTURE ROUTE

1 THE SCREEN

- MAKERSPACE
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- KIDS CENTER
- DAYCARE
- LANGUAGE COURSE CENTER



FLEXIBLE PROGRAM
FRAGMENTS



THE SCREEN
APPROACH



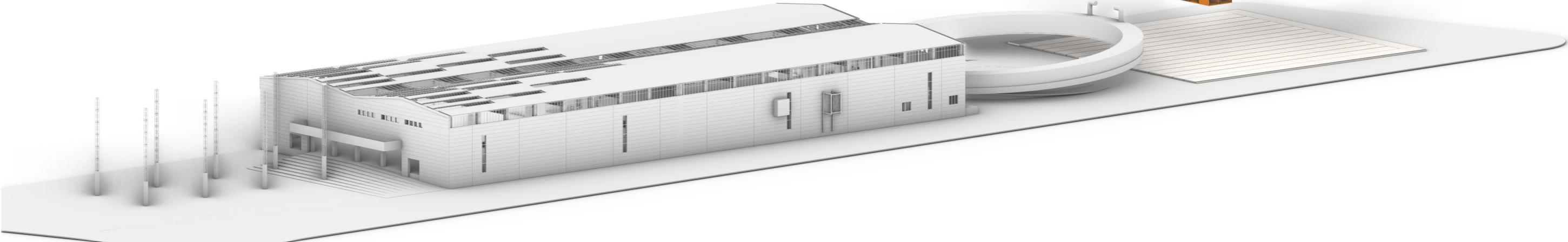
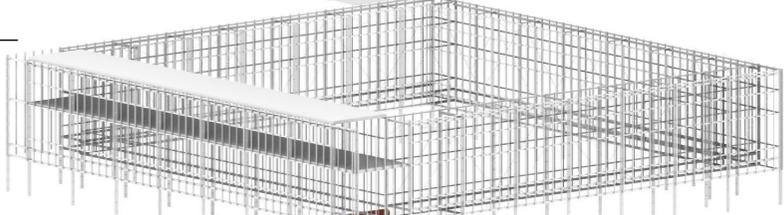
THE SCREEN
INSIDE WORLD

1

STRUCTURE

INSTALLATIONS

USE



SPACE TRUSS

Steel truss beams in combination with diagonals work as a rigid construction

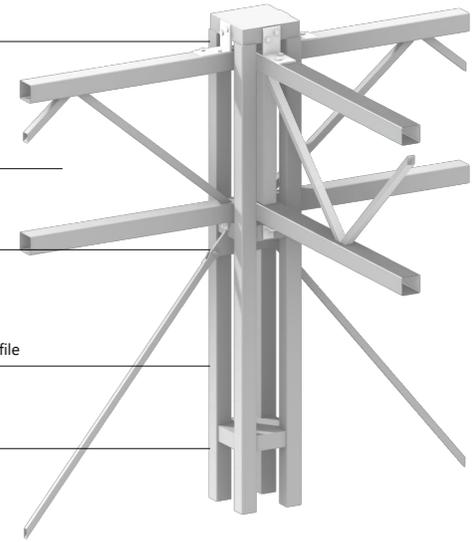
Steel L-profile, bolt connection

Trussed beams 800mm

Brace connection plate, welded

4X connected 50x50mm tube profile

Diagonal braces



VENTILATION

Ducts surrounding the square for flexible plug-in of functions

WATER

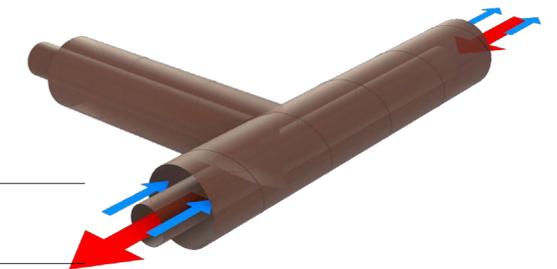
Water supply and sewerage system.

ELECTRICITY

Central cable tray

WATER RE-USE

Gutters every 3 meters. Collected rainwater is re-used for toilets and watering.



Supply air

Exhaust air

STRUCTURE / INFRASTRUCTURE
PERMANENT

CLADDING

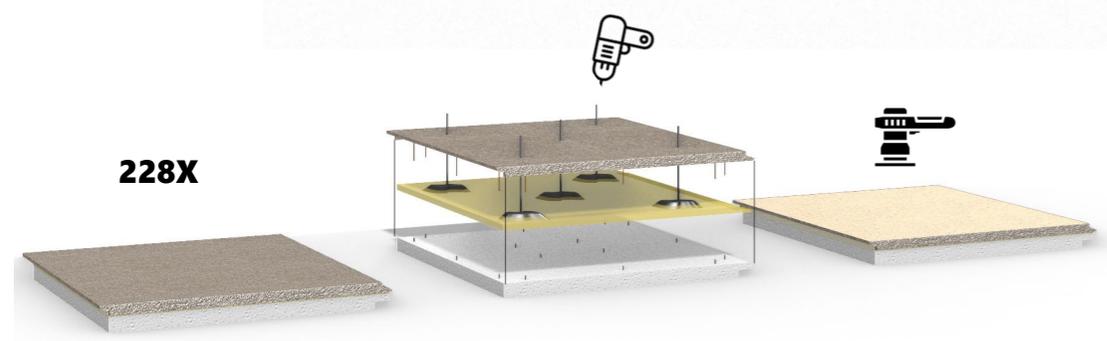
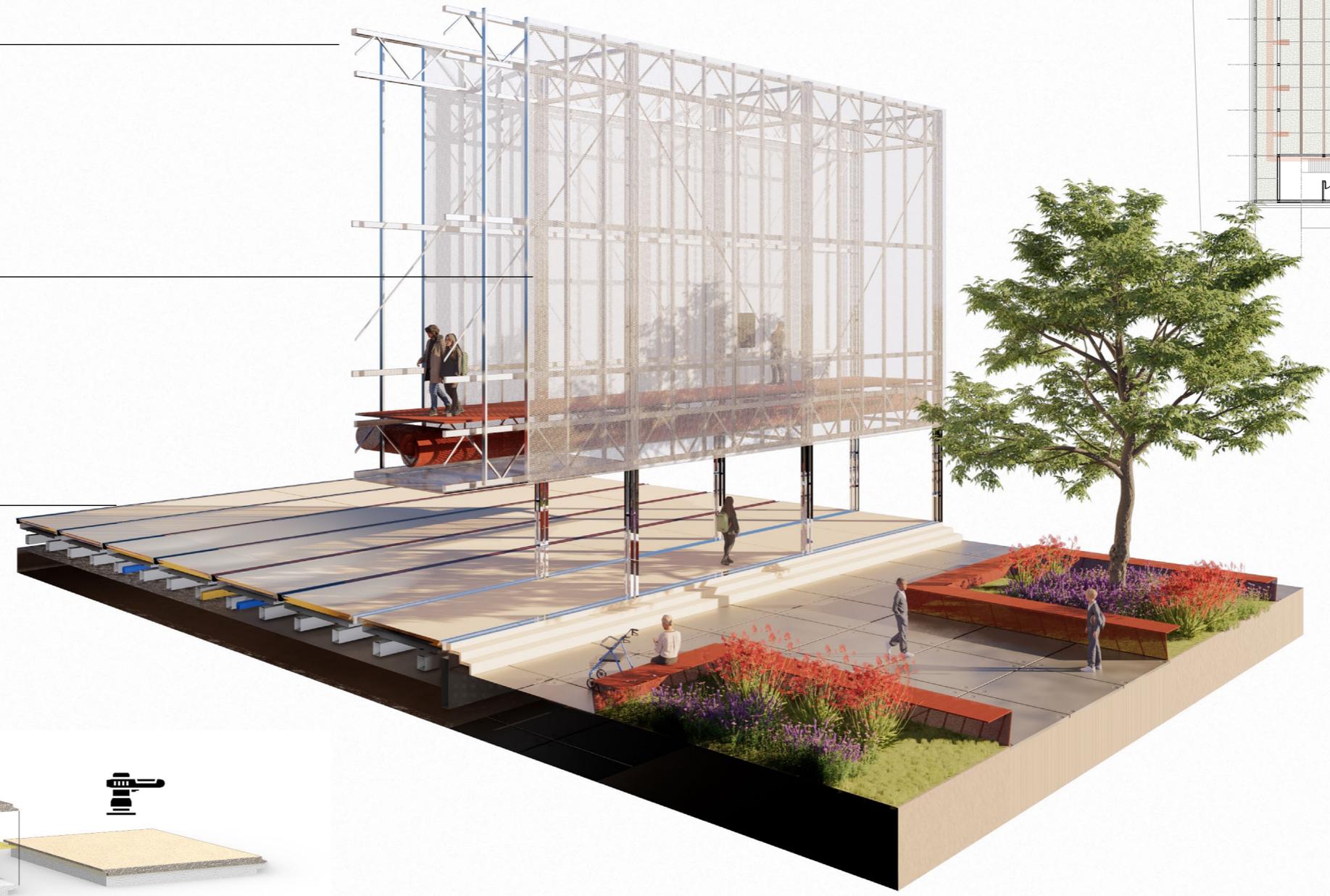
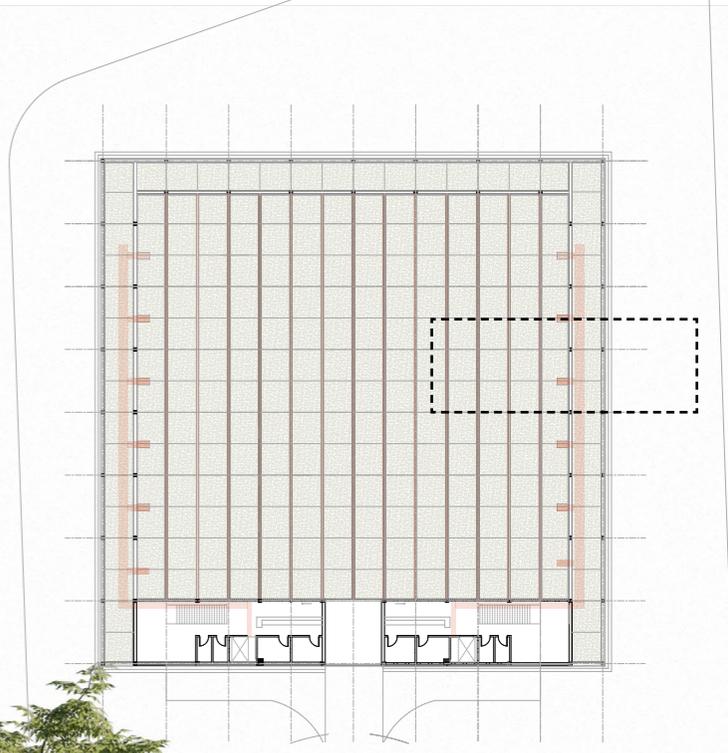
The structure is cladded with an expanded metal mesh to create unity.

COLUMNS

Slim steel columns finished with a mirror and satin polish, minimizing its presence

FLOOR TILES

Adapted by reinforcing and polishing, the 'platten' elements of the hotel function as high quality flooring tiles. (3x2.80m)



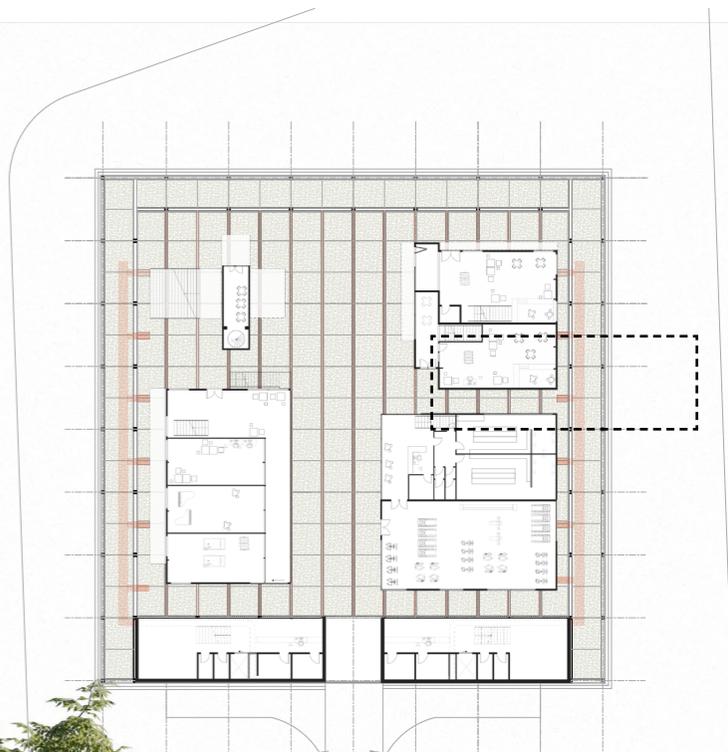
MATERIALS
PERMANENT

FITNESS (200M²)

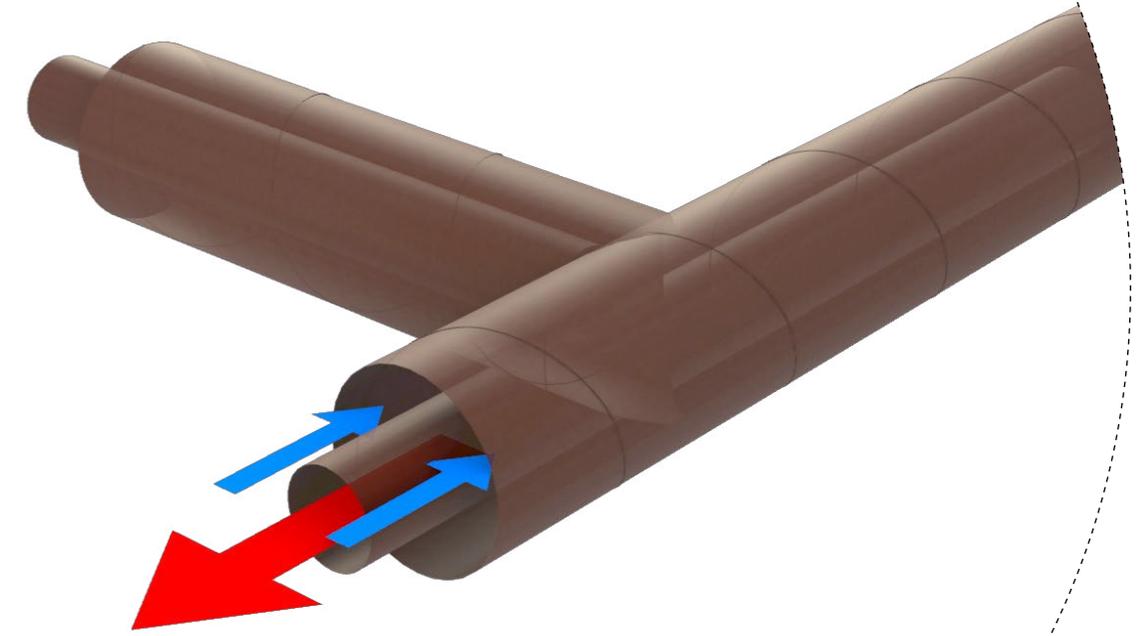
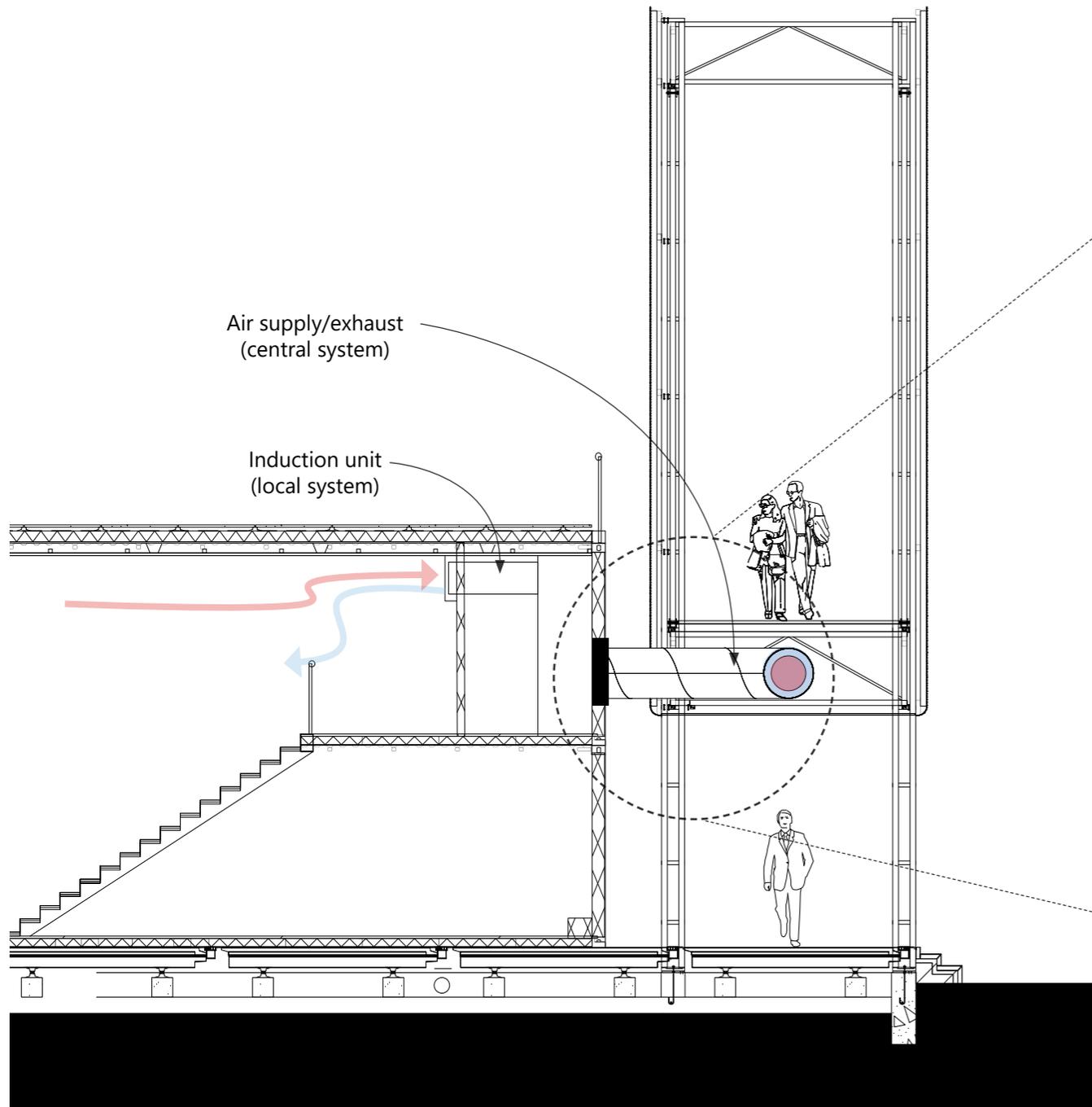
- Entrance & Reception
- Toilets
- Changing rooms
- Sports room
- Staff
- Installations

DAYCARE/SCHOOL (350M²)

- Entrance & Reception
- Toilets
- Classroom 01
- Classroom 02
- Staff
- Installations



USE
FLEXIBLE



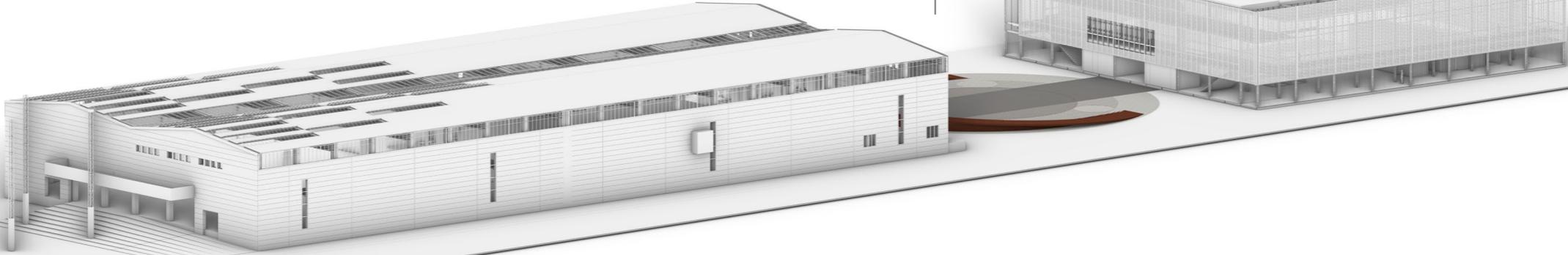
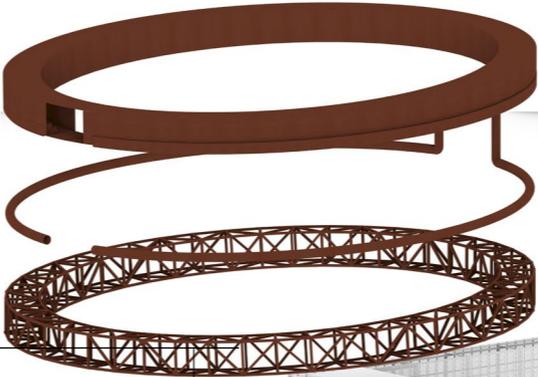
Temperature exchange inside the duct of exhaust and supply air

1:20/1:5
DETAIL FRAGMENT

2

STRUCTURE
(BACKBONE)

USE



ART INSTALLATION PLAZA

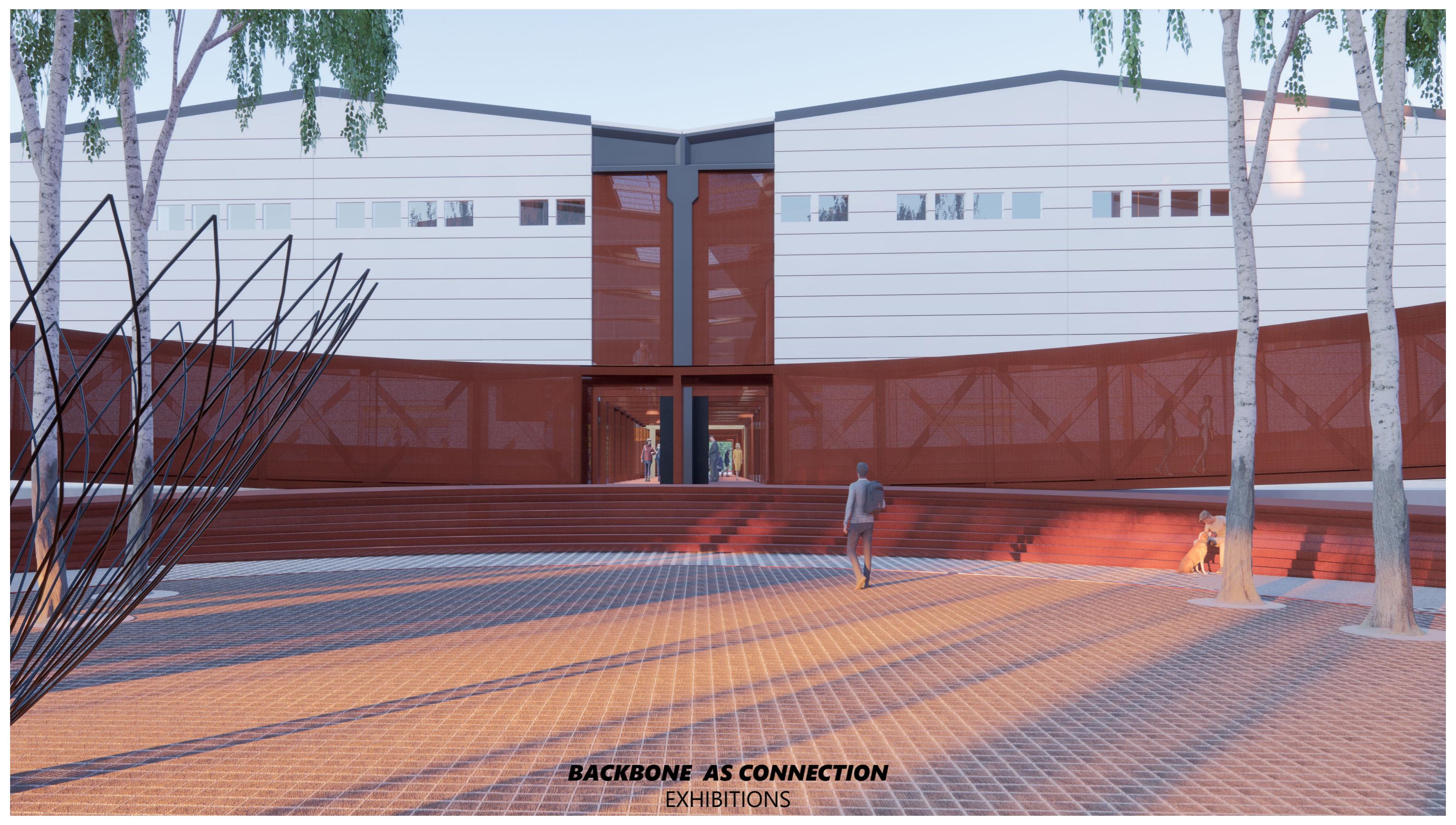
**CONNECTING
SCULPTURE ROUTE**

2



0 5 10 15 METER 20



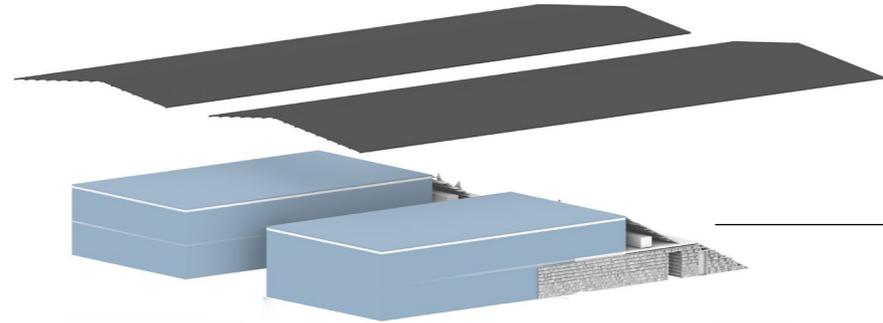


BACKBONE AS CONNECTION
EXHIBITIONS



PERMANENT
STRUCTURE

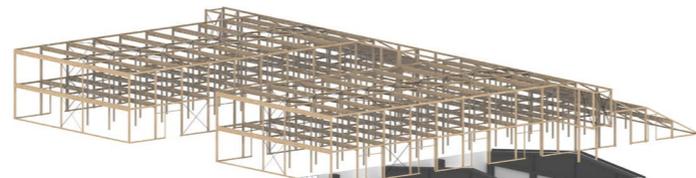
3



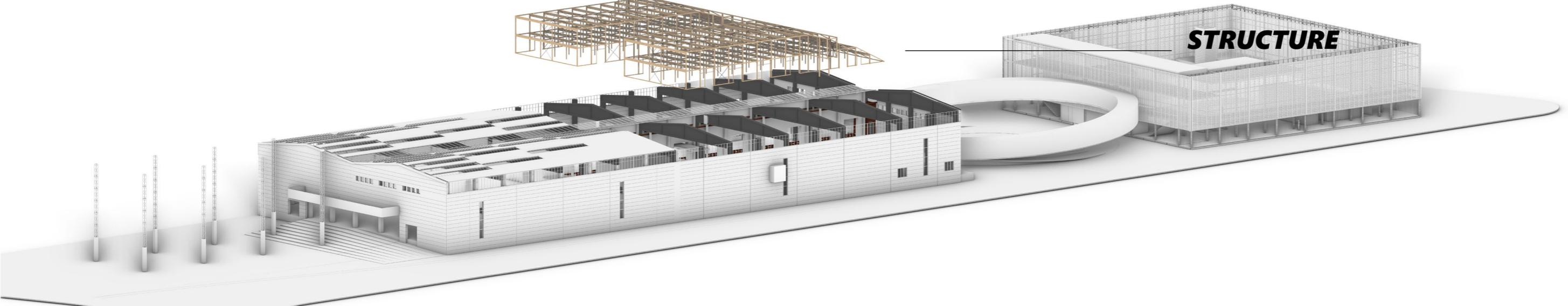
USE



INSTALLATIONS



STRUCTURE



OFFICES

SHARED WORKSPACE

LIBRARY TRIBUNE

STUDY PLACES

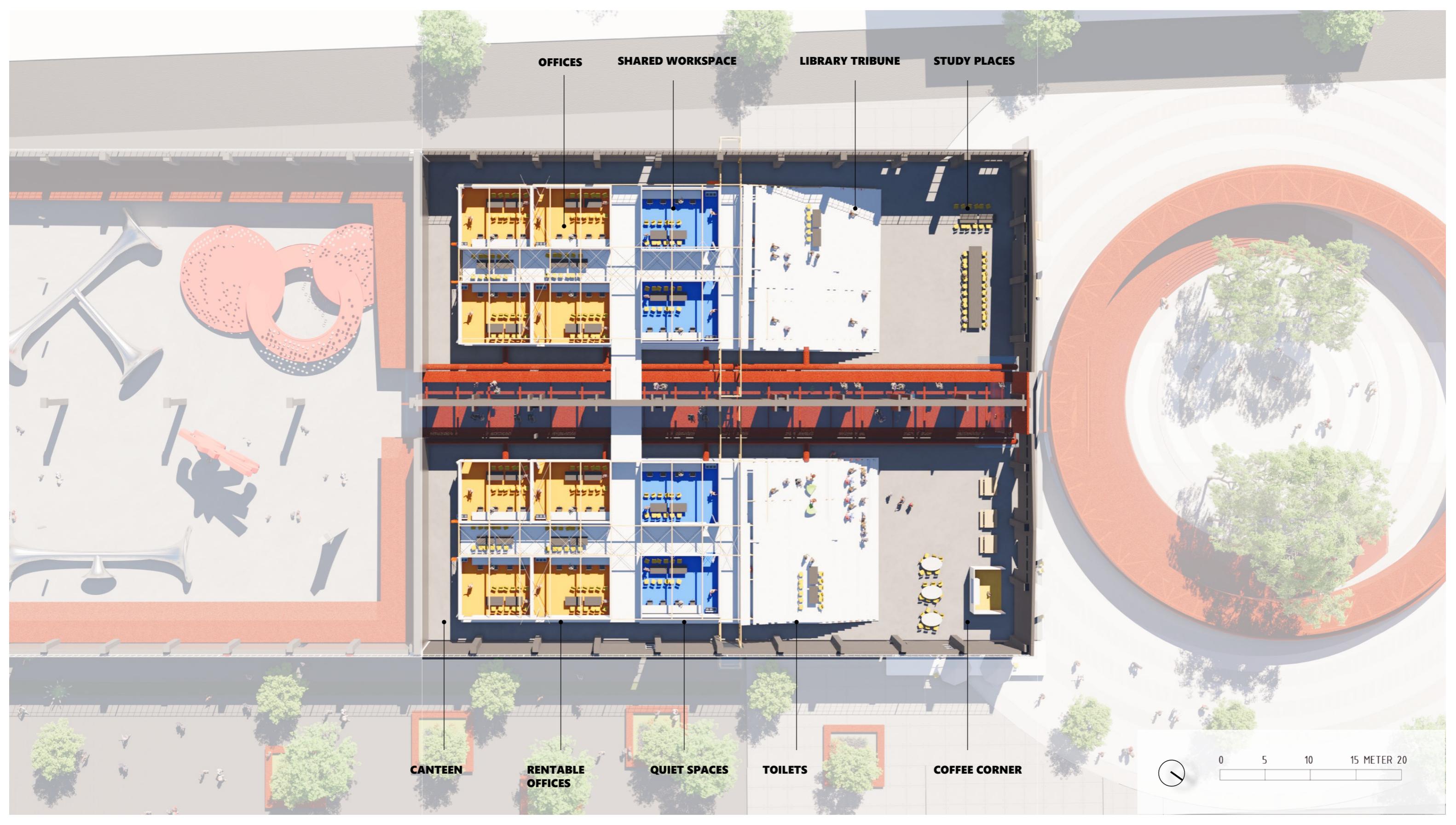
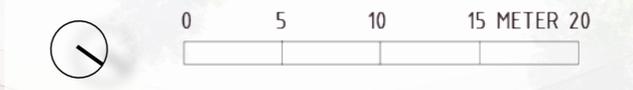
CANTEEN

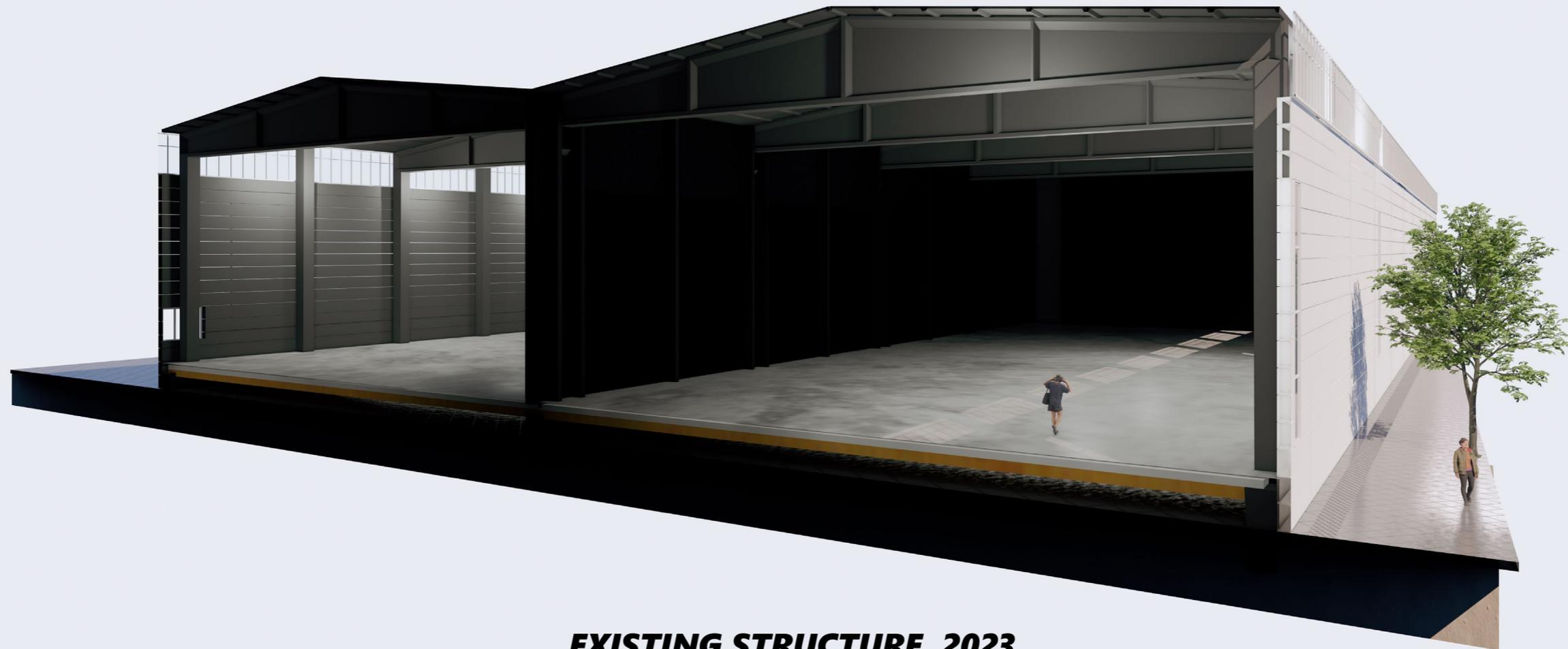
RENTABLE OFFICES

QUIET SPACES

TOILETS

COFFEE CORNER

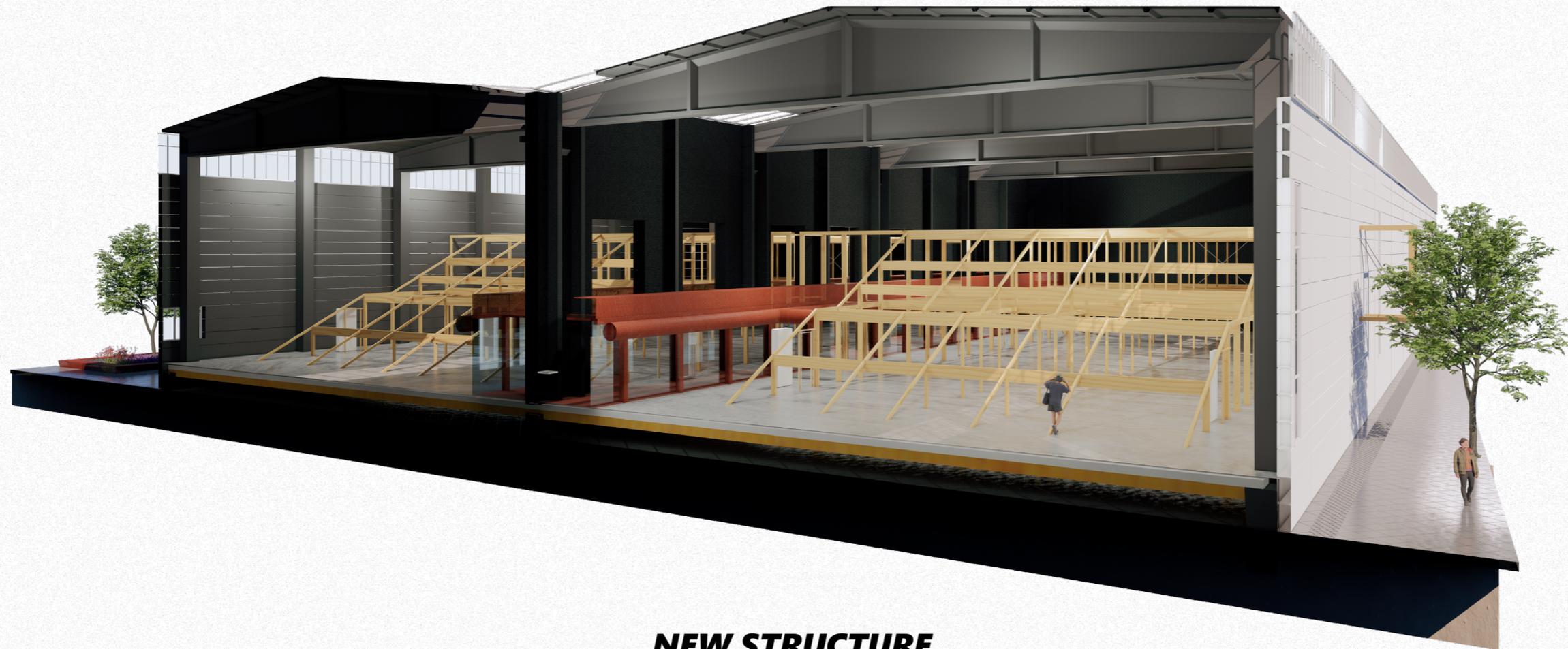
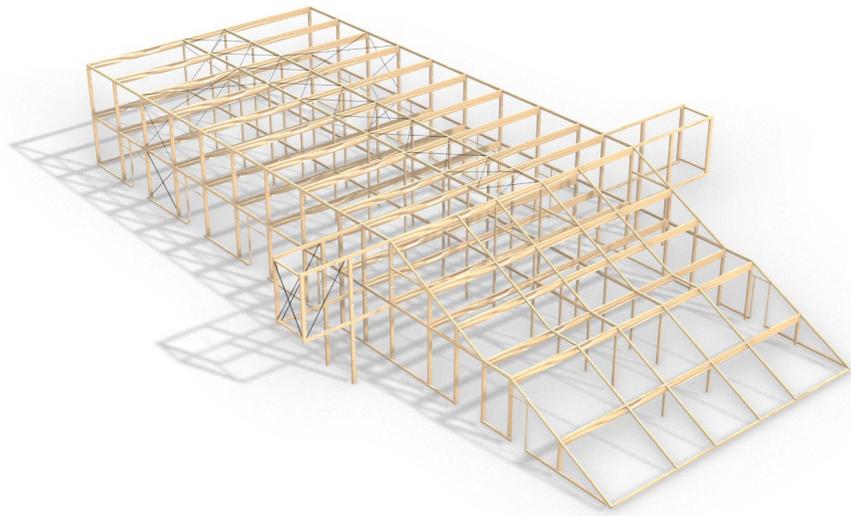




EXISTING STRUCTURE, 2023
PERMANENT



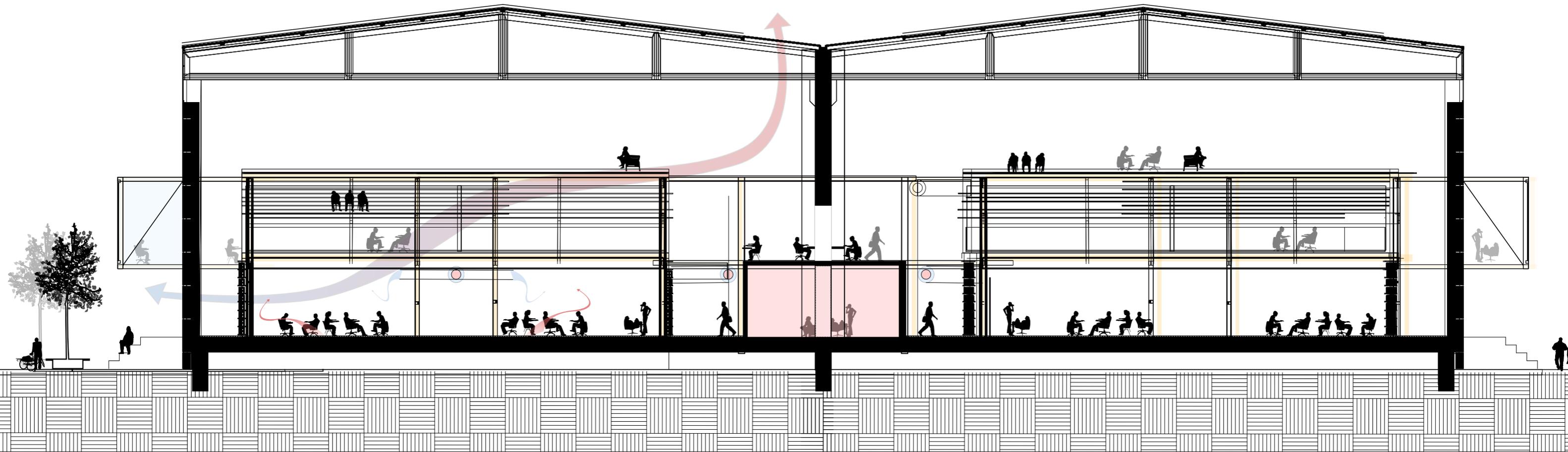
OPEN UP ROOF AND WALLS + BACKBONE
PERMANENT



NEW STRUCTURE
FLEXIBLE

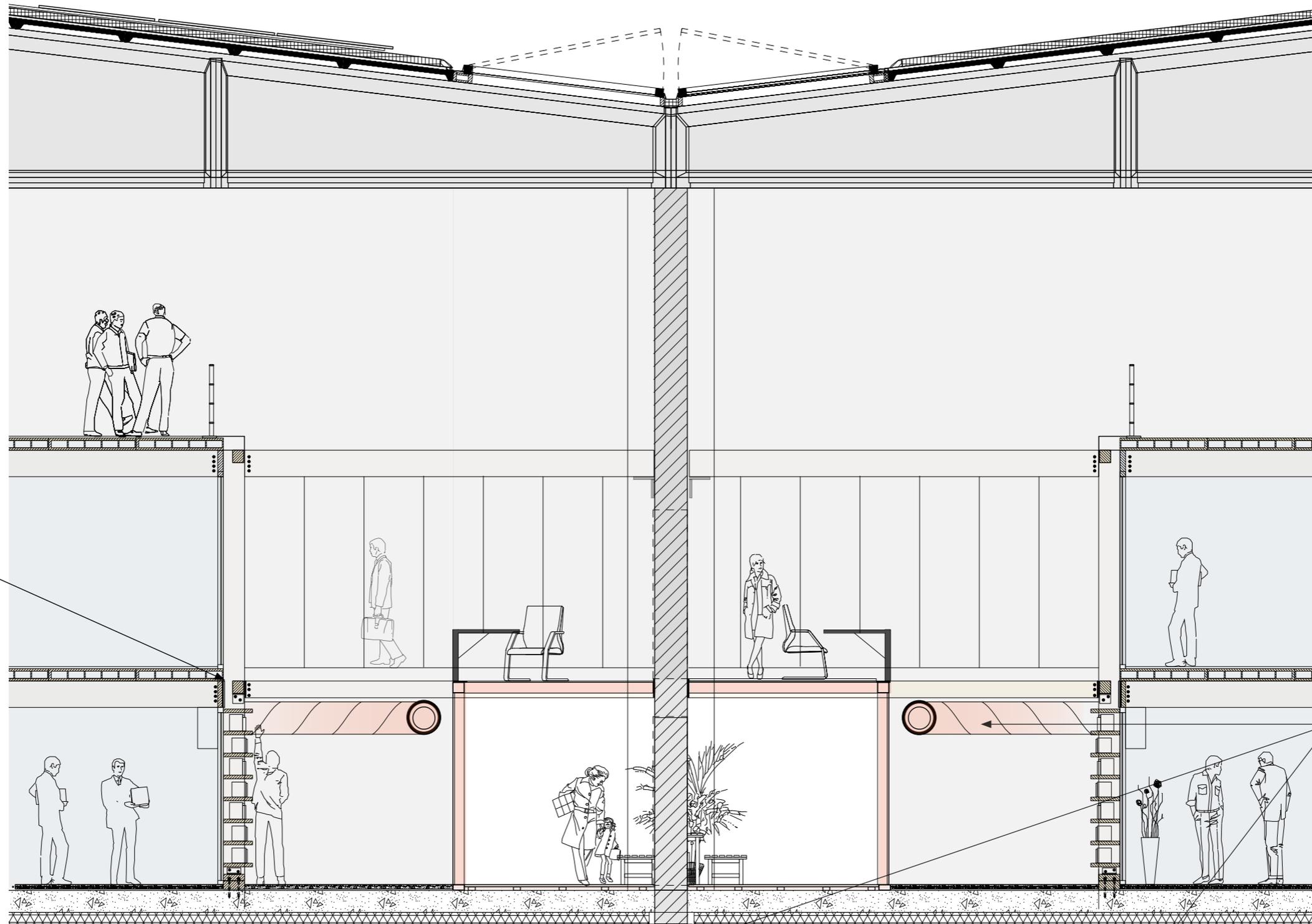


USE
FLEXIBLE



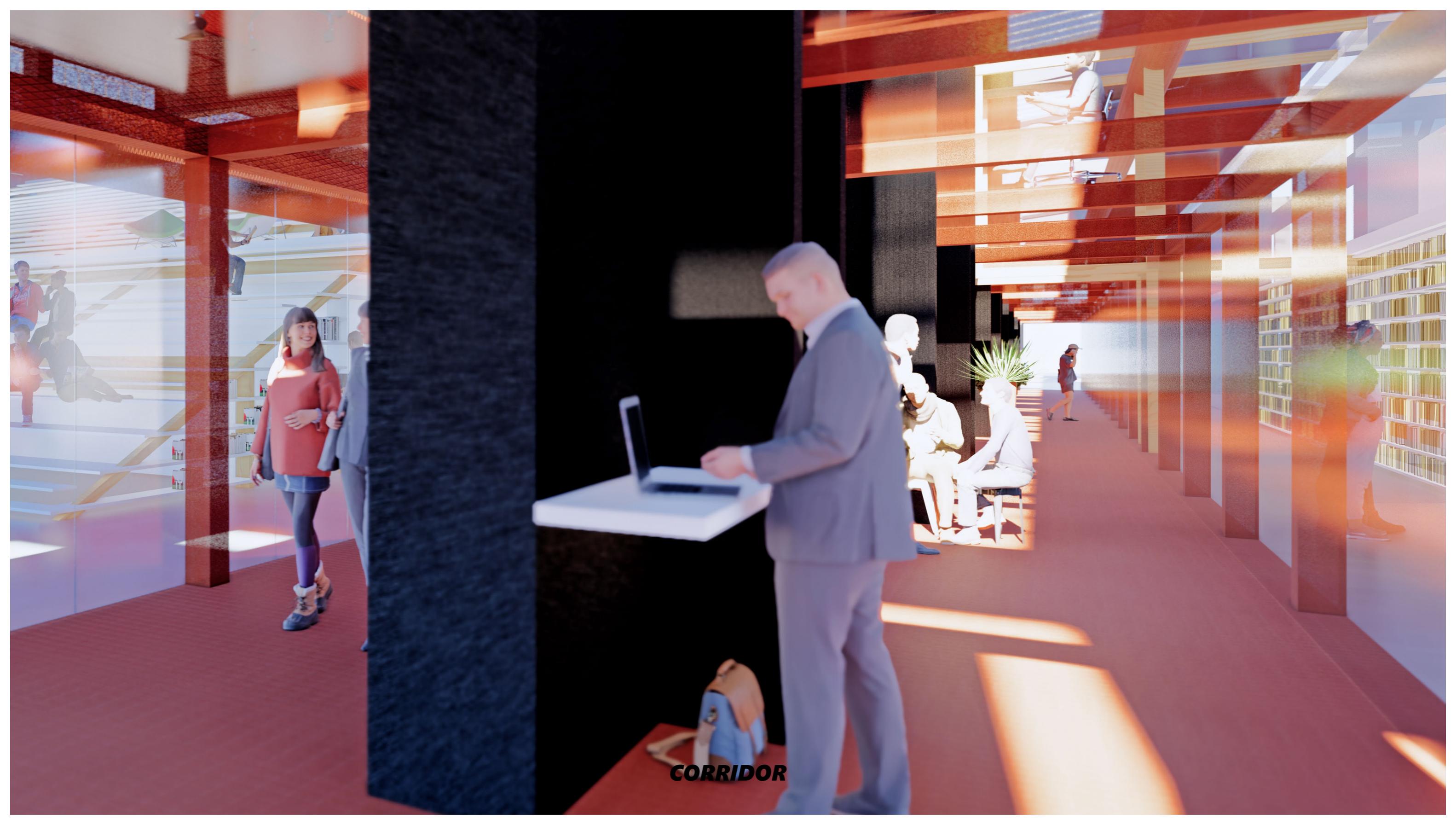
VENTILATION
MECHANICAL/NATURAL

WOODEN STRUCTURE
Demountable

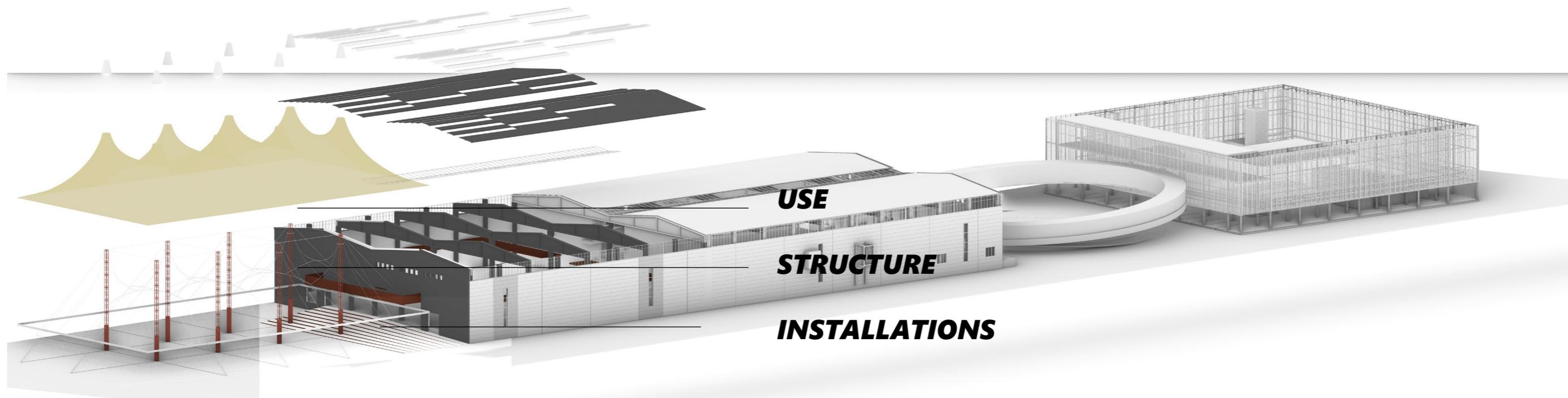


INFRASTRUCTURE
• ventilation
• electricity
• water

1:20
DETAIL



CORRIDOR



PART 04 + 05

EVENT SQUARE

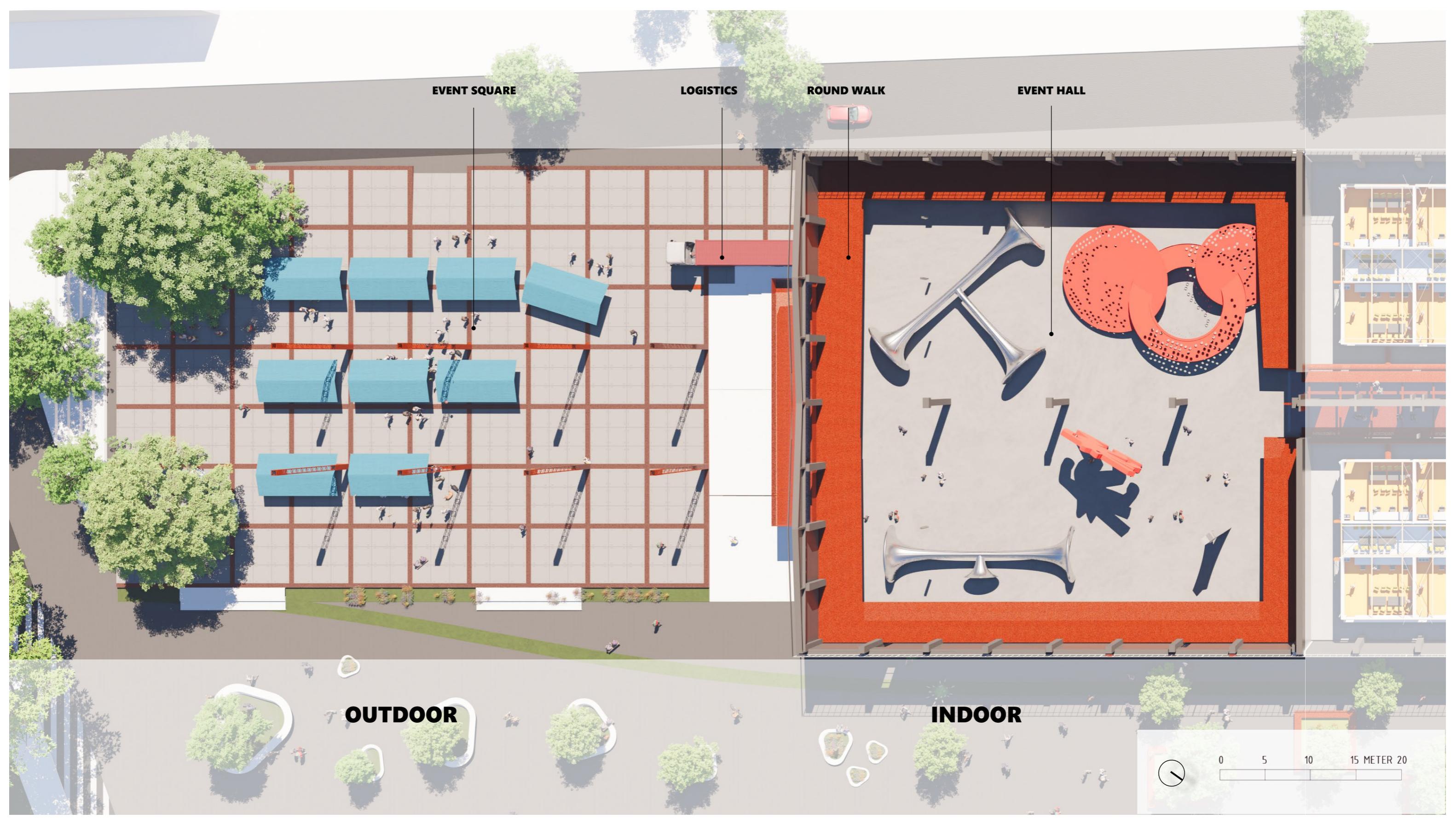
LOGISTICS

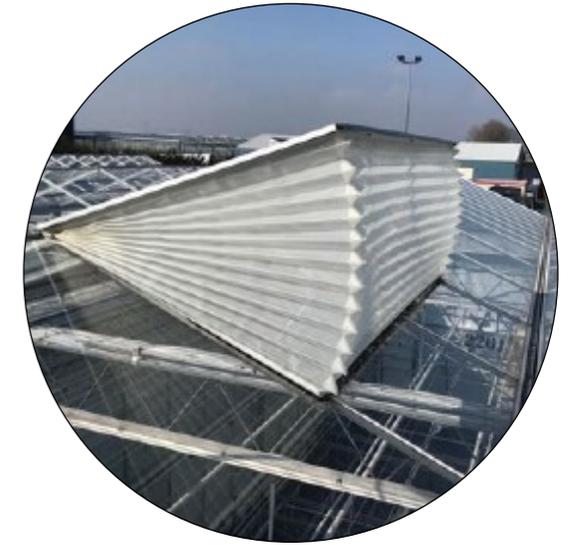
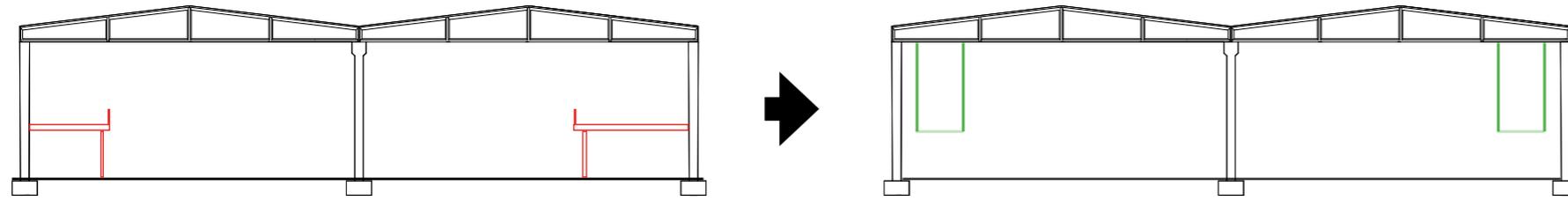
ROUND WALK

EVENT HALL

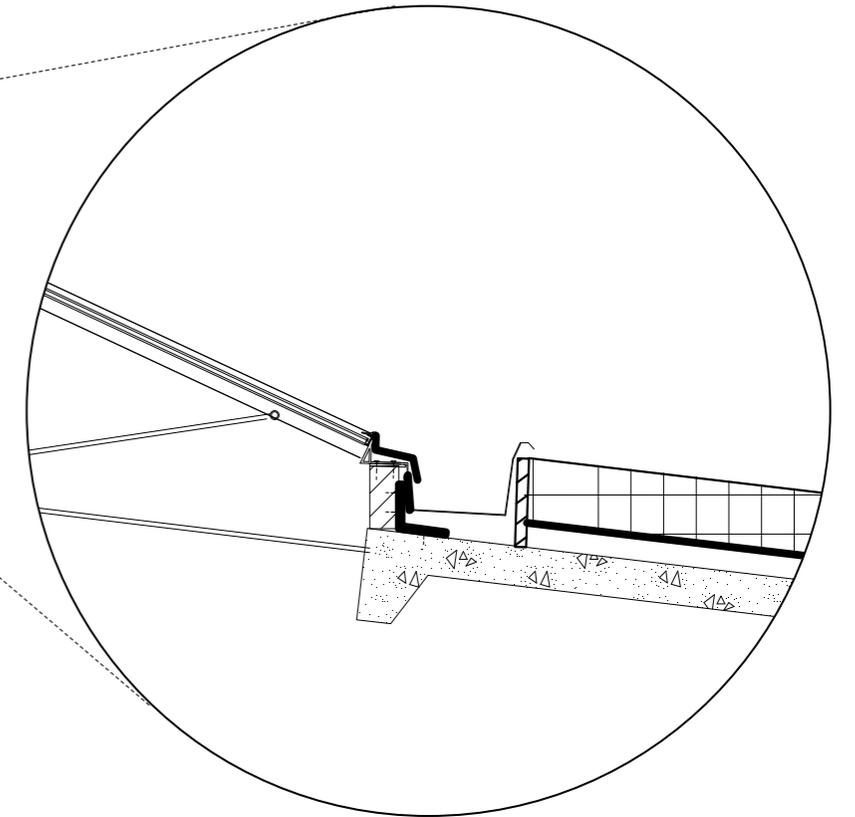
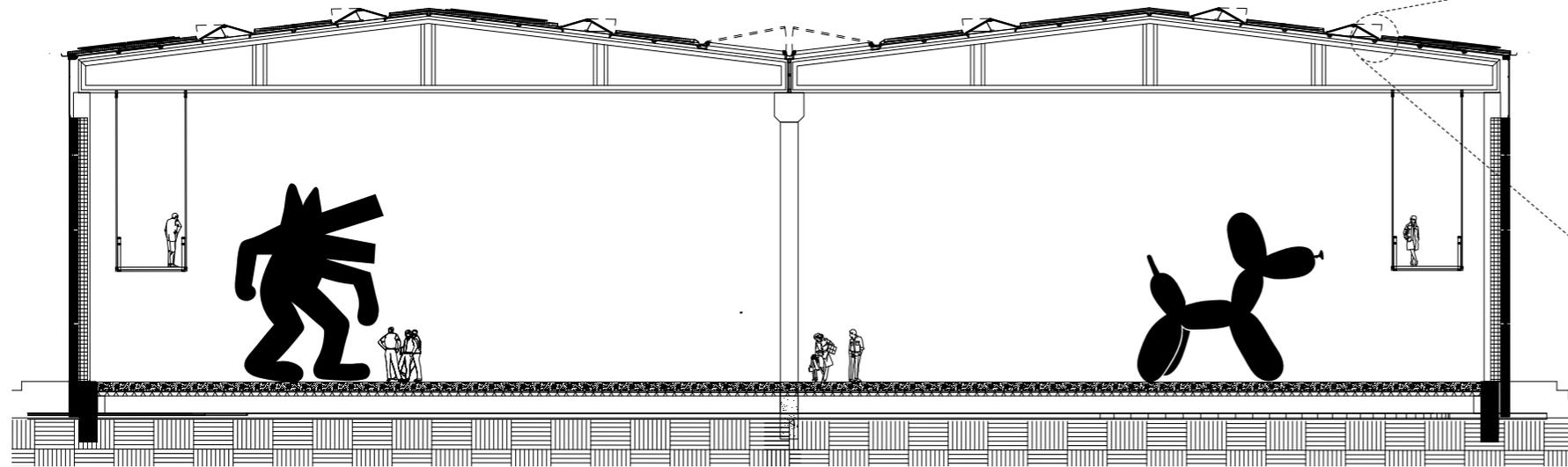
OUTDOOR

INDOOR





RE-USE OPENABLE GREENHOUSE ROOFS



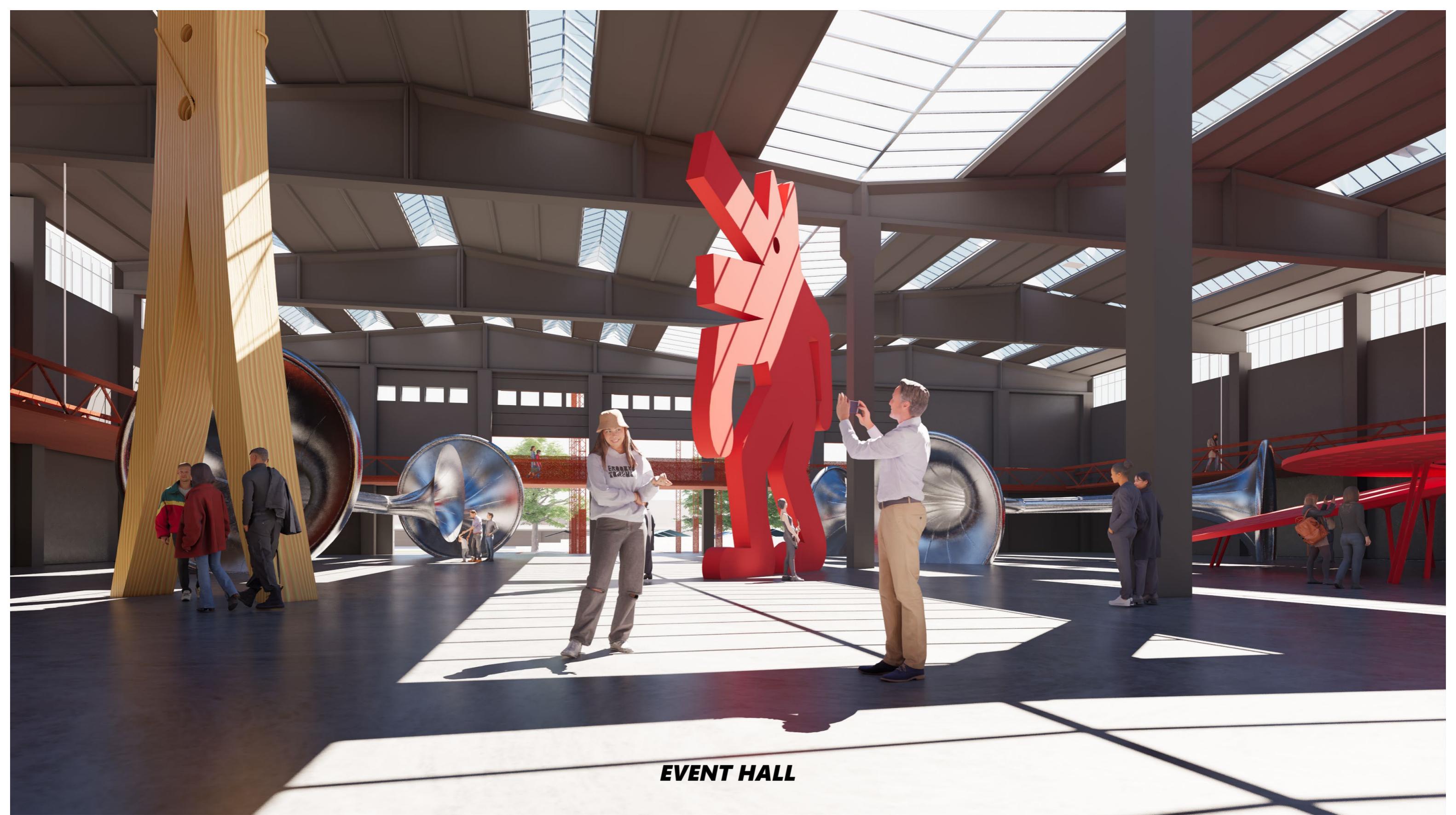
INDOOR



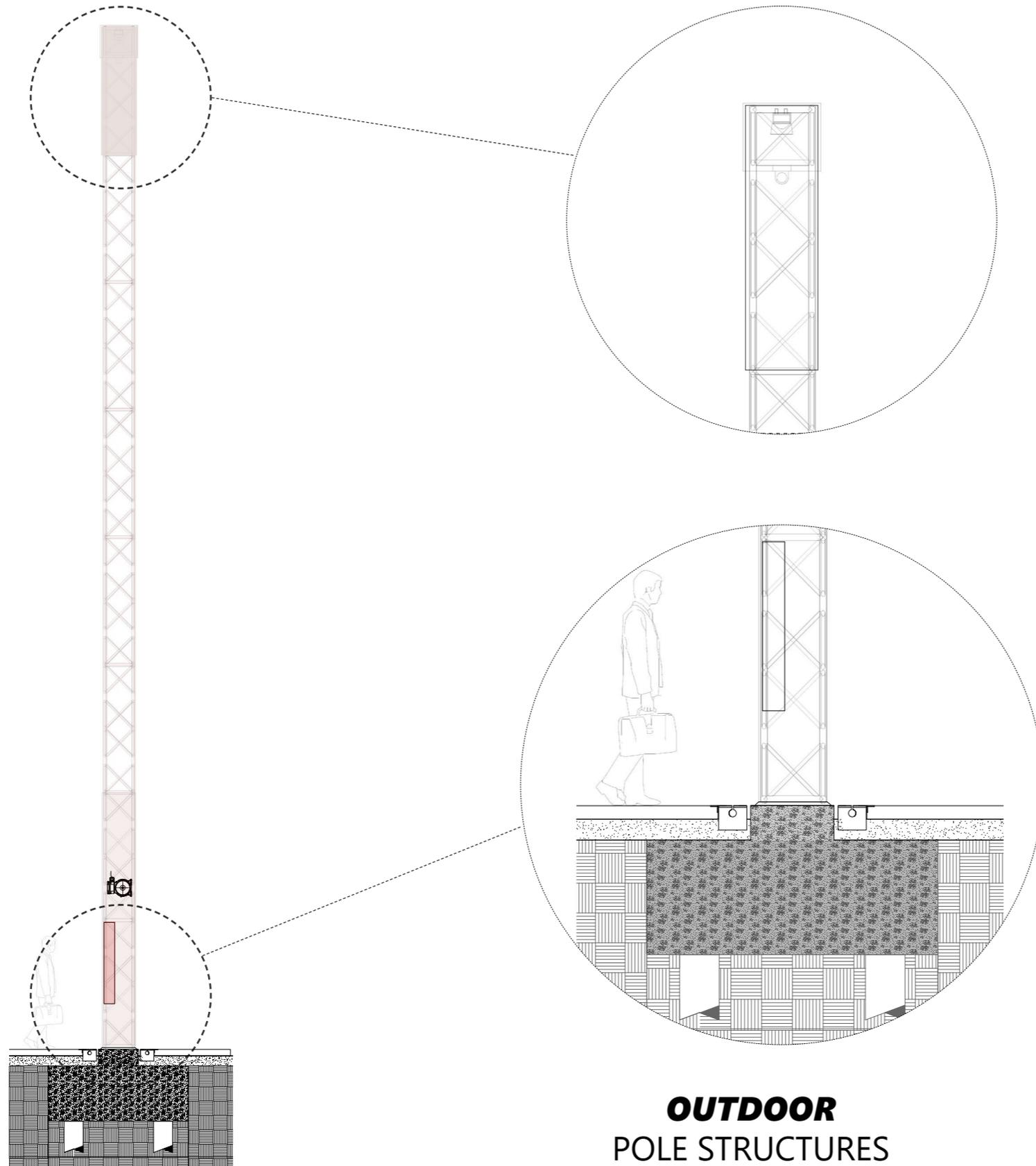
EXISTING



ADAPT + BACKBONE



EVENT HALL



OUTDOOR
POLE STRUCTURES



FESTIVAL TENT



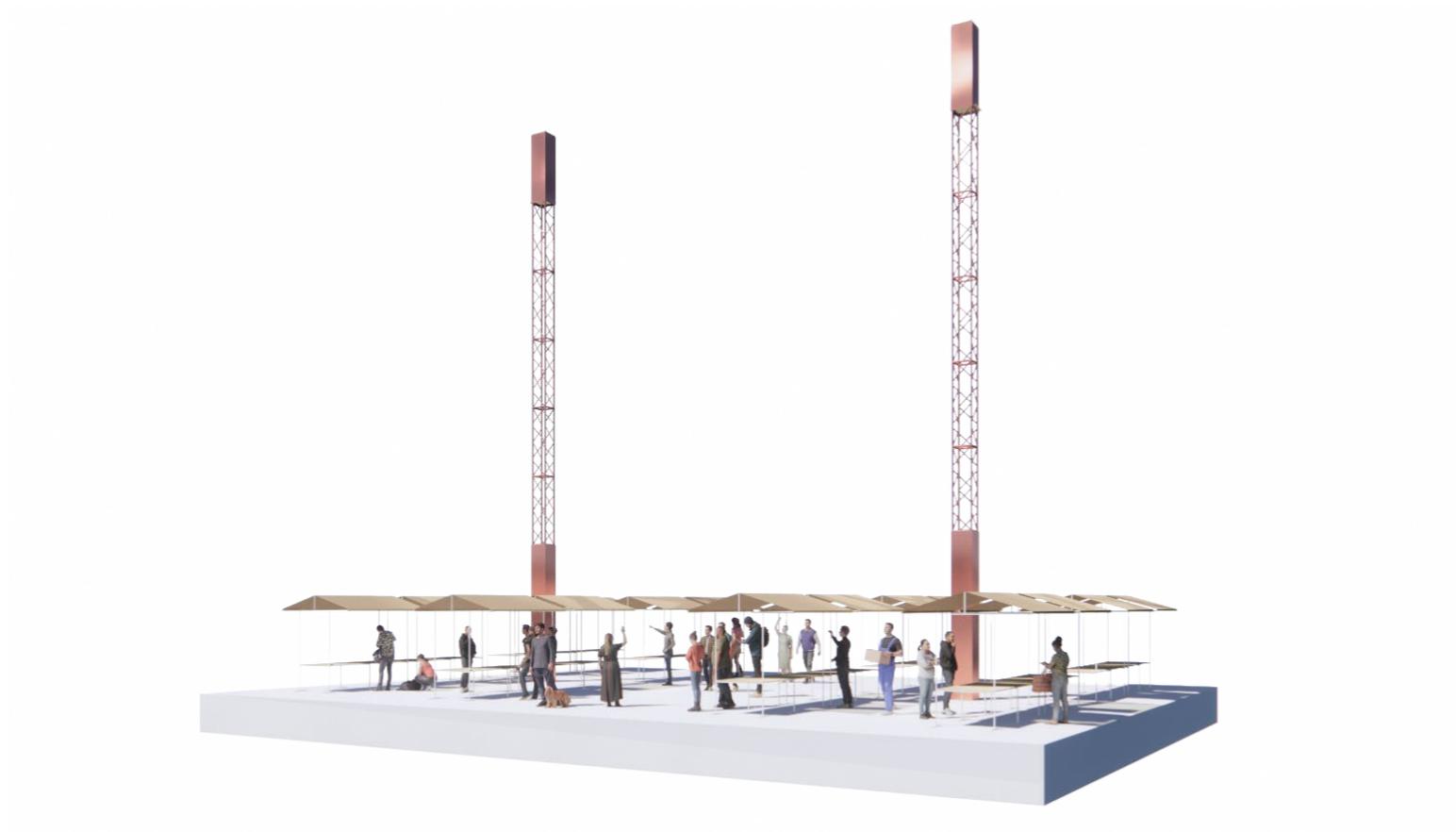
CHARGING POLES



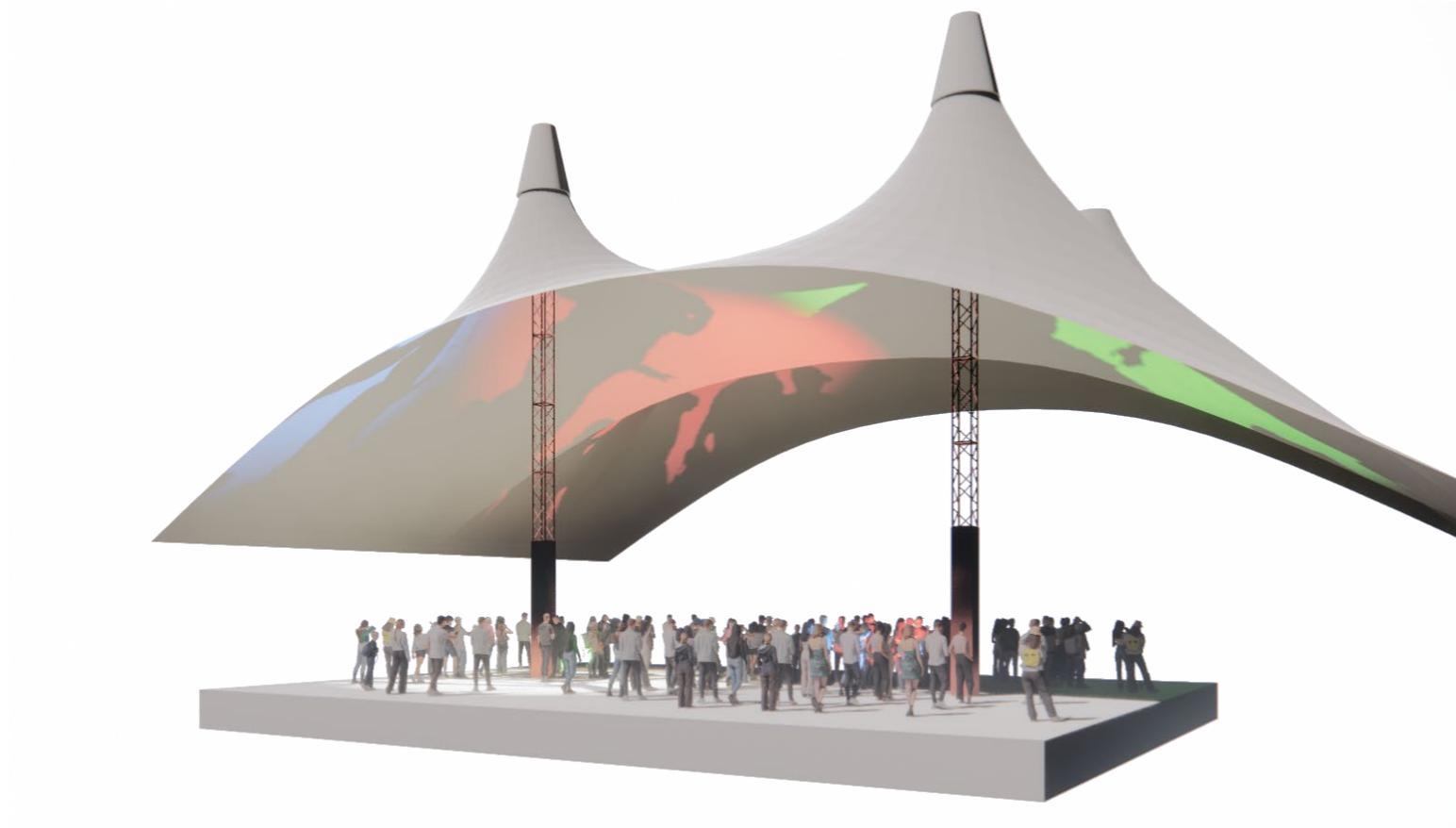
ELECTRICITY FOR MARKETS



CAR CHARGING



MARKET



FESTIVAL



STREETLIGHT SCULPTURES



CHANGING SYSTEM





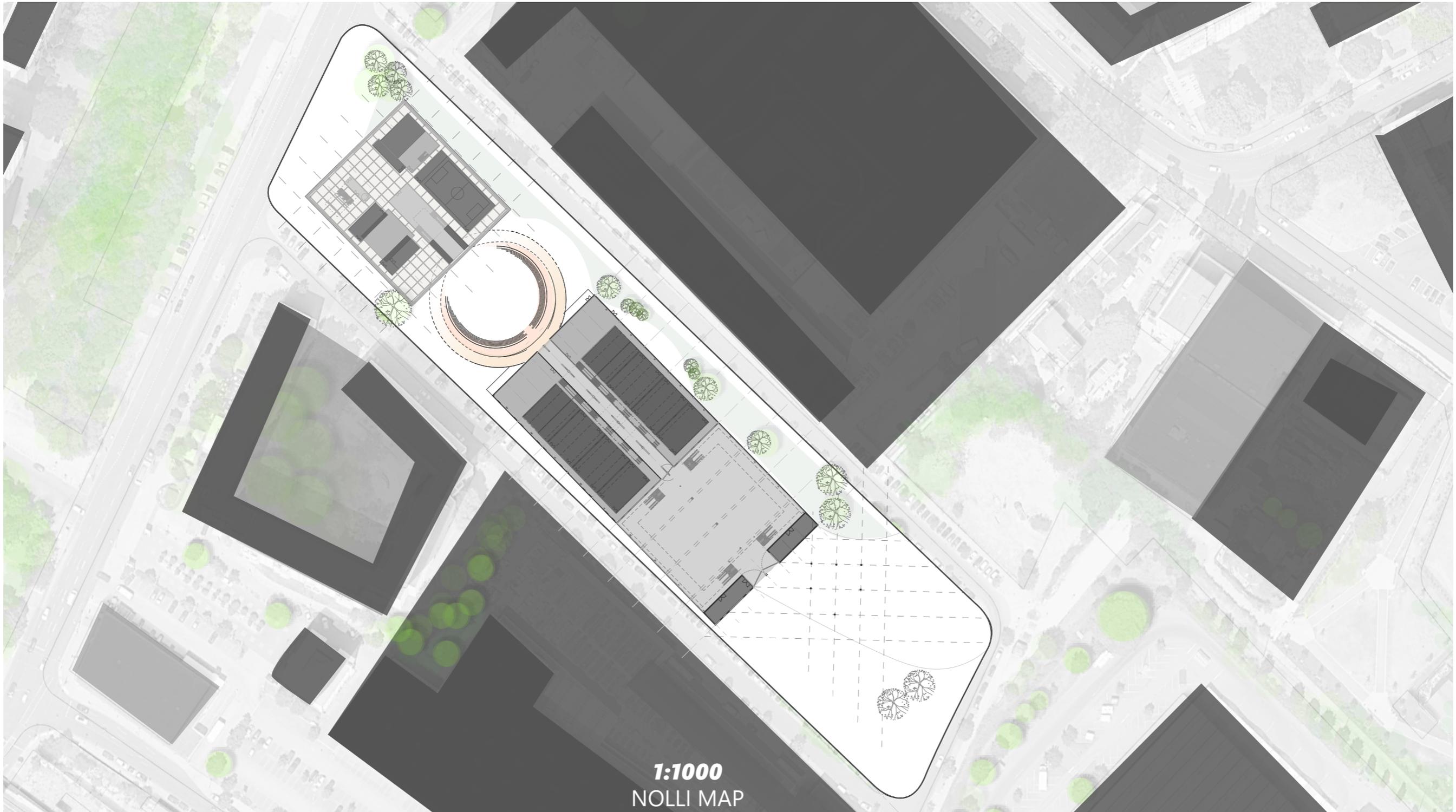
ARTICULATE EXISTING



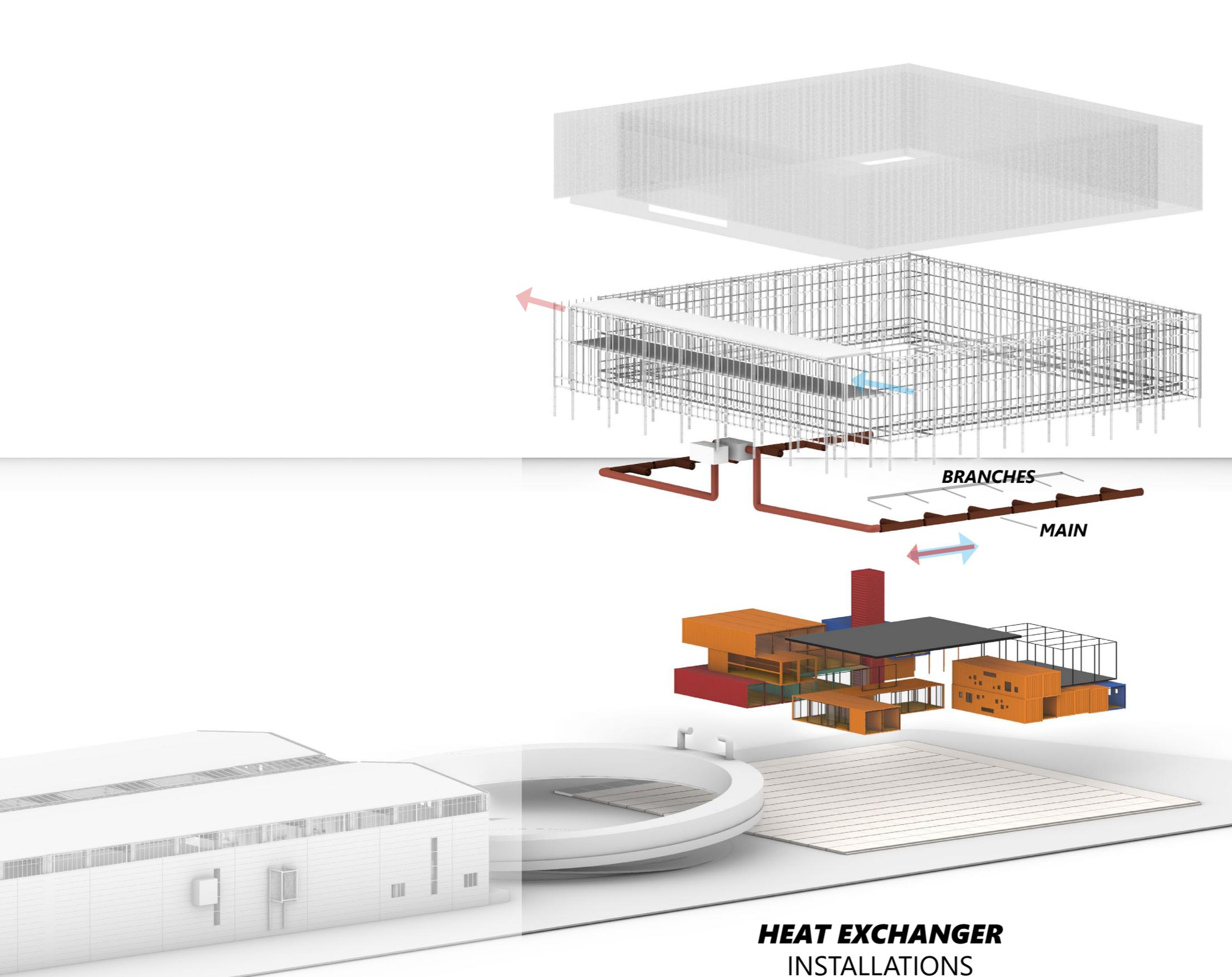


INCLUSIVE SQUARE





1:1000
NOLLI MAP



CALCULATION

BRANCH VENTILATION DUCT

3m/s

1 CLASSROOM = 702 m³/h
 = 300mm

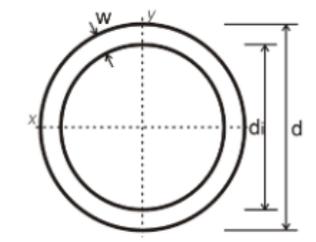
2 CLASSROOMS = 1404 m³/h
 =450mm exhaust
 =640mm supply

MAIN VENTILATION DUCT

5m/s

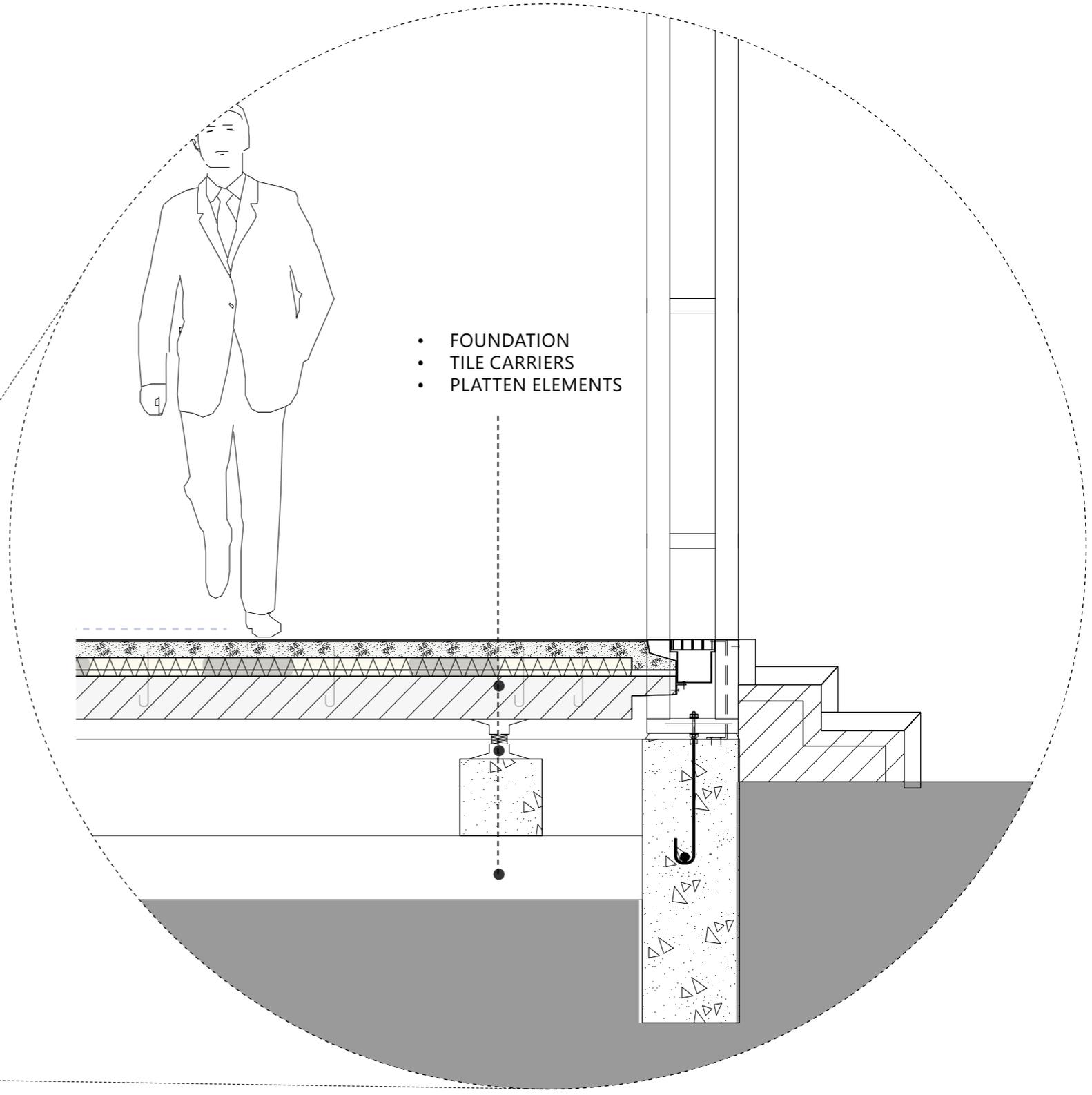
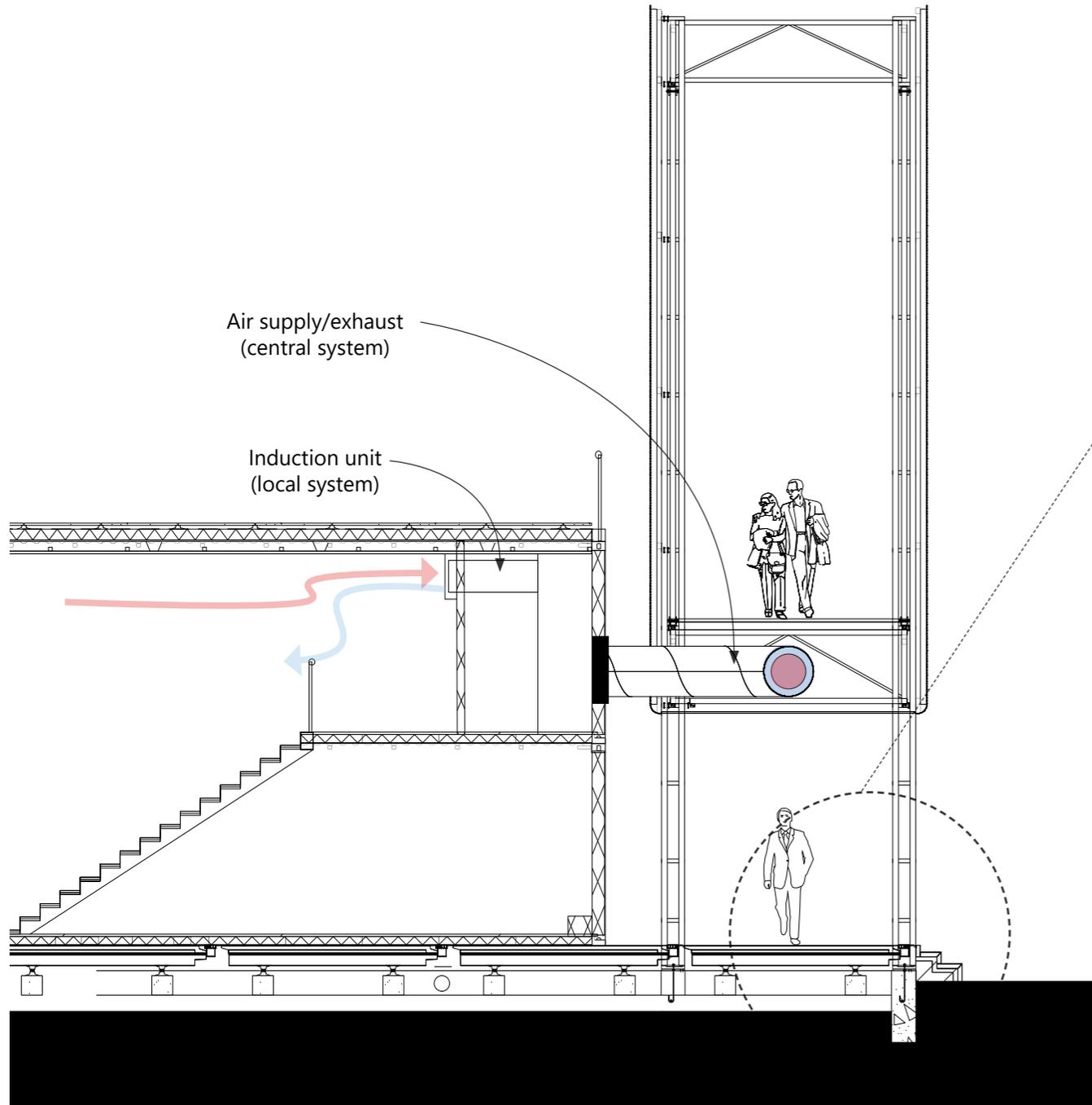
4 CLASSROOMS
 1 GYM
 1 SPORTSHALL
 CANTINE + AMENITIES 5600m³/h

= 600 mm exhaust
 = 840mm supply

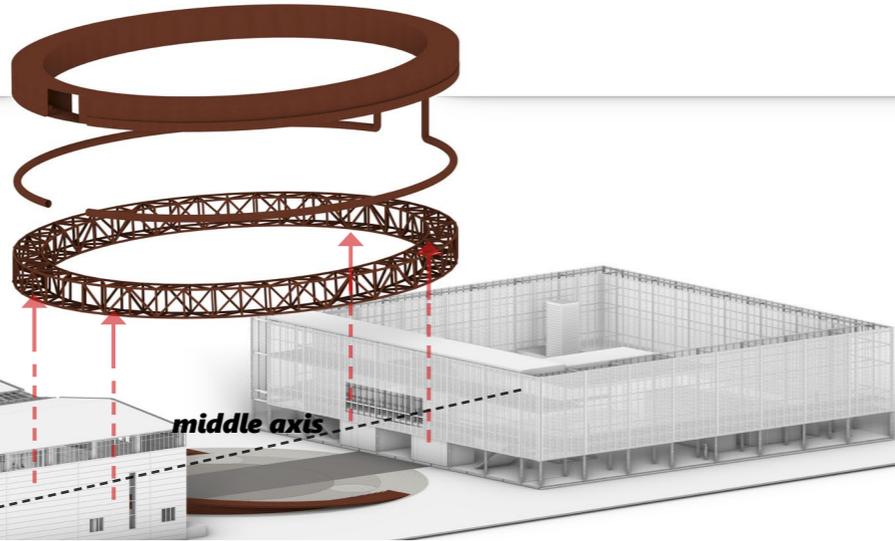


$$A = \frac{\pi(d^2 - d_i^2)}{4}$$

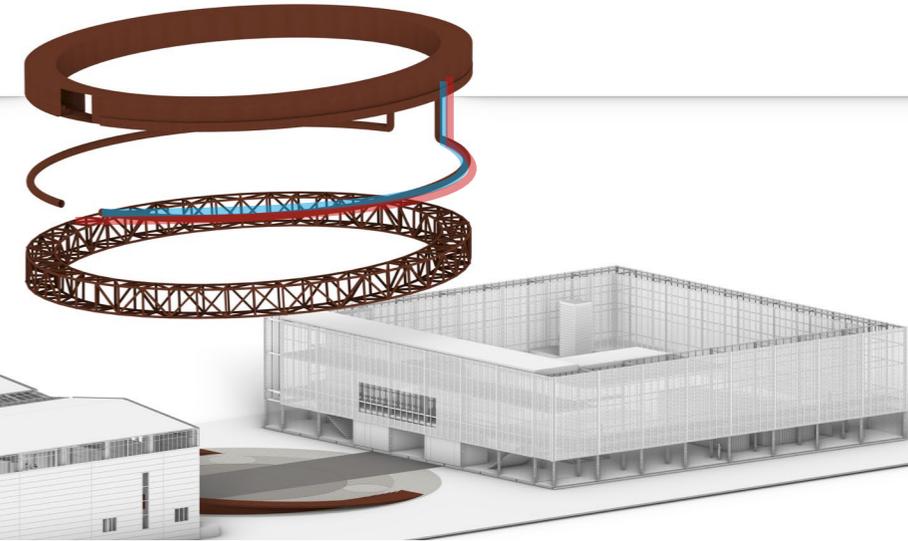
HEAT EXCHANGER INSTALLATIONS



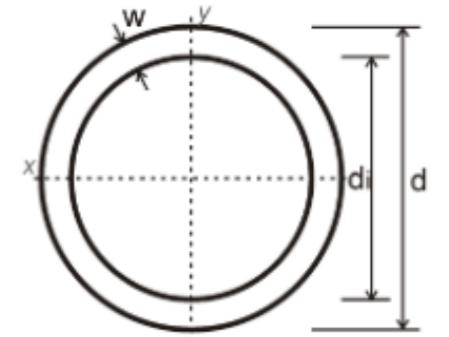
1:20/1:5
DETAIL FRAGMENT



forces transferred 2/5 out of the circle it's middle line



Ventilation ducts



$$A = \frac{\pi(d^2 - di^2)}{4}$$

