

┌ Bruggenbouw

THE BOUNDARIES OF SPACE EFFICIENCY

Robert-Jan Altena – P5 Presentation
Architectural Engineering Graduation
08 JULY 2020

TRANSFORMATION CONCEPT



TRANSFORMATION CONCEPT

FLEXIBLE



TRANSFORMATION CONCEPT

FLEXIBLE
MULTIFUNCTIONAL



TRANSFORMATION CONCEPT

REINTERPRETET FUNCTIONS
STRENGTHEN QUALITIES
STIMULATE USE



CONTENT

Road towards WeWo

INTRODUCTION

Problem
Objective
Ambition

RESEARCH

Efficiency of space
Adaptable architecture

Programmatic focus
Context

DESIGN

Main design assignment
Assignments explained
Workings of the building
A Day in WeWo

REFLECTION



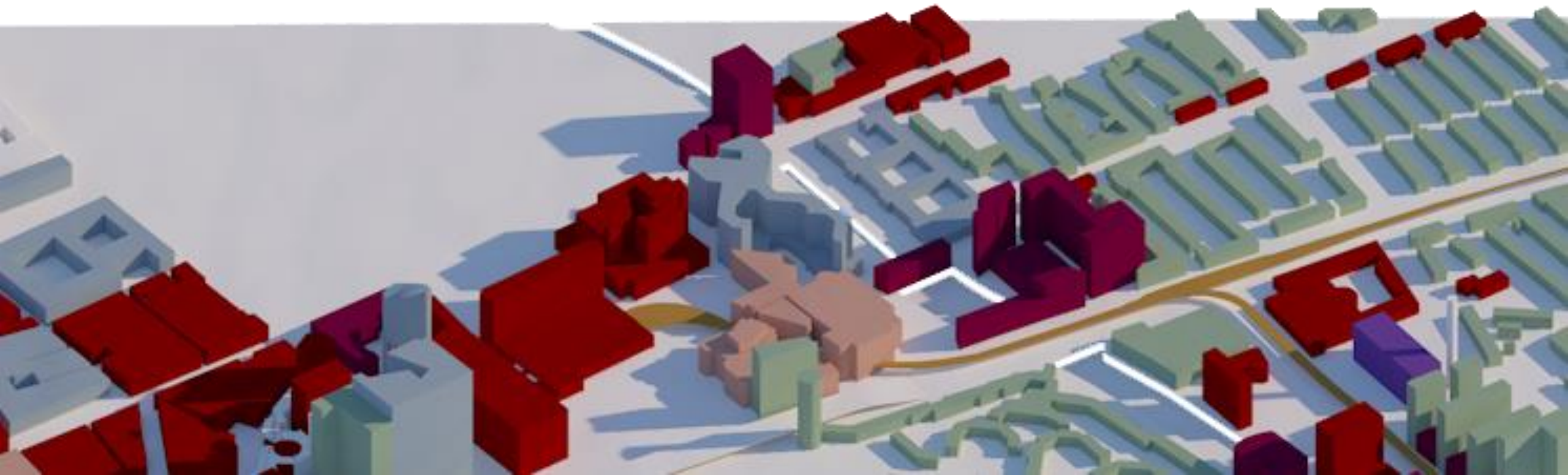
PROBLEM STATEMENT



THE HAGUE



FUTURE ?



FUNCTION SPECIFIC BUILDINGS
WASTE OF SPACE



BRUGGEBOUW-EAST
*Build in 1999 as part of a cluster of buildings
Part of the Government in 2017*

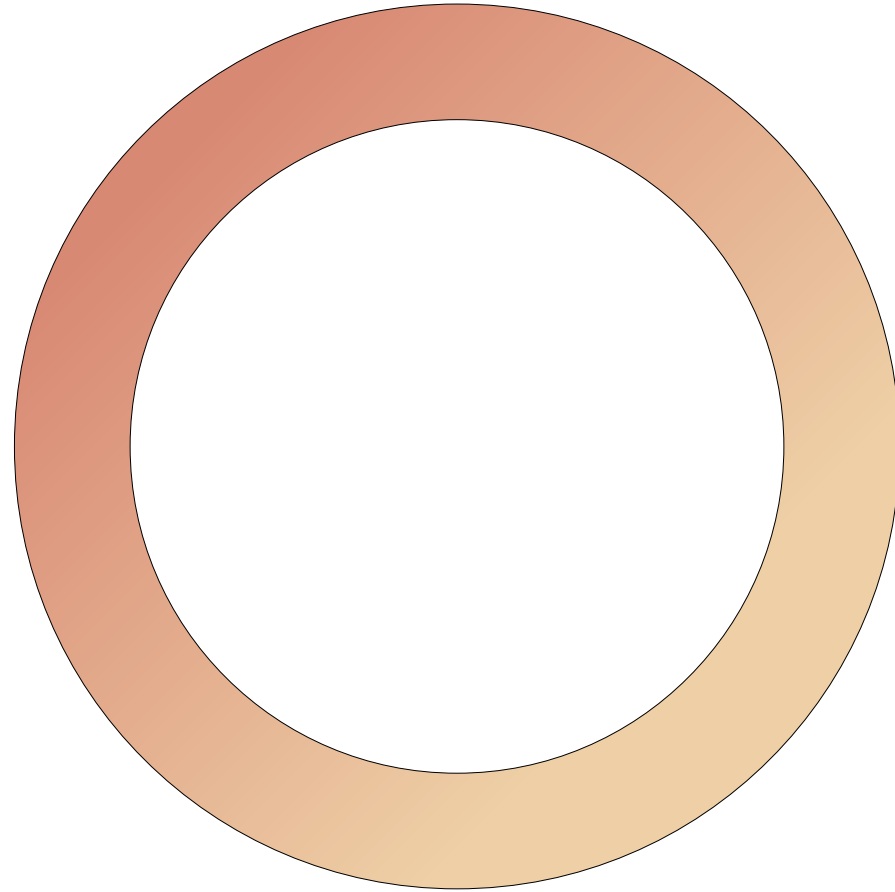
CONTEXT



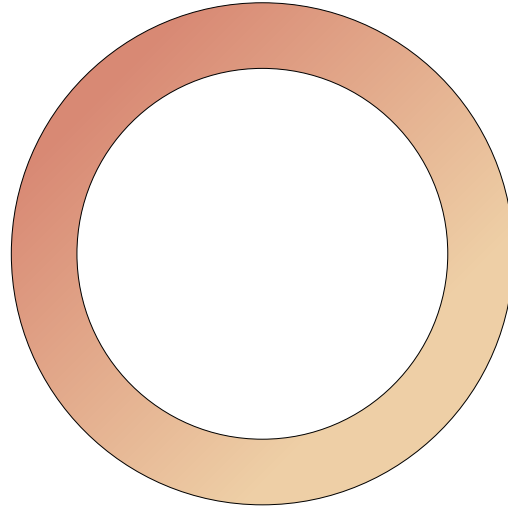
OBJECTIVE
INEFFICIENT BUILDING STOCK



AMBITION
INEFFICIENT BUILDING STOCK

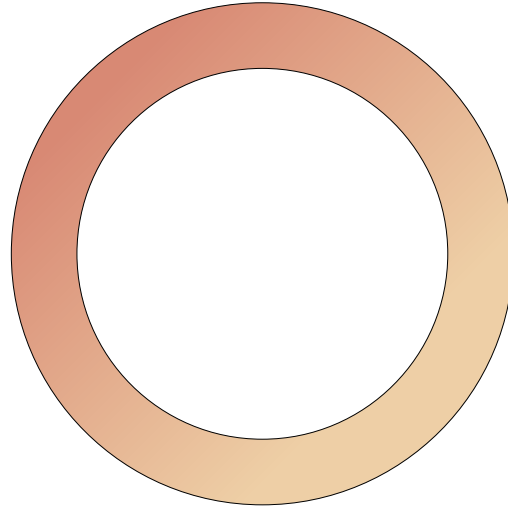


MAXIMAL USAGE



MAXIMAL USAGE

**How to transform the Bruggebouw-Oost, into
an adaptive, energy efficient building that
maximizes the usage of space?**



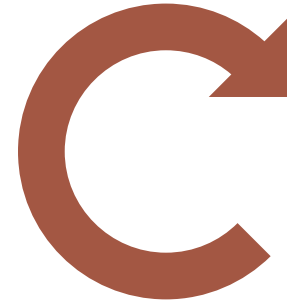
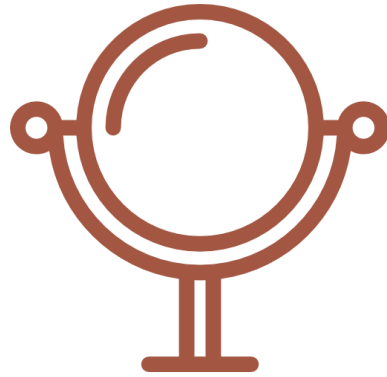
MAXIMAL USAGE

How to transform the Bruggebouw-Oost, into an adaptive, energy efficient building that maximizes the usage of space?

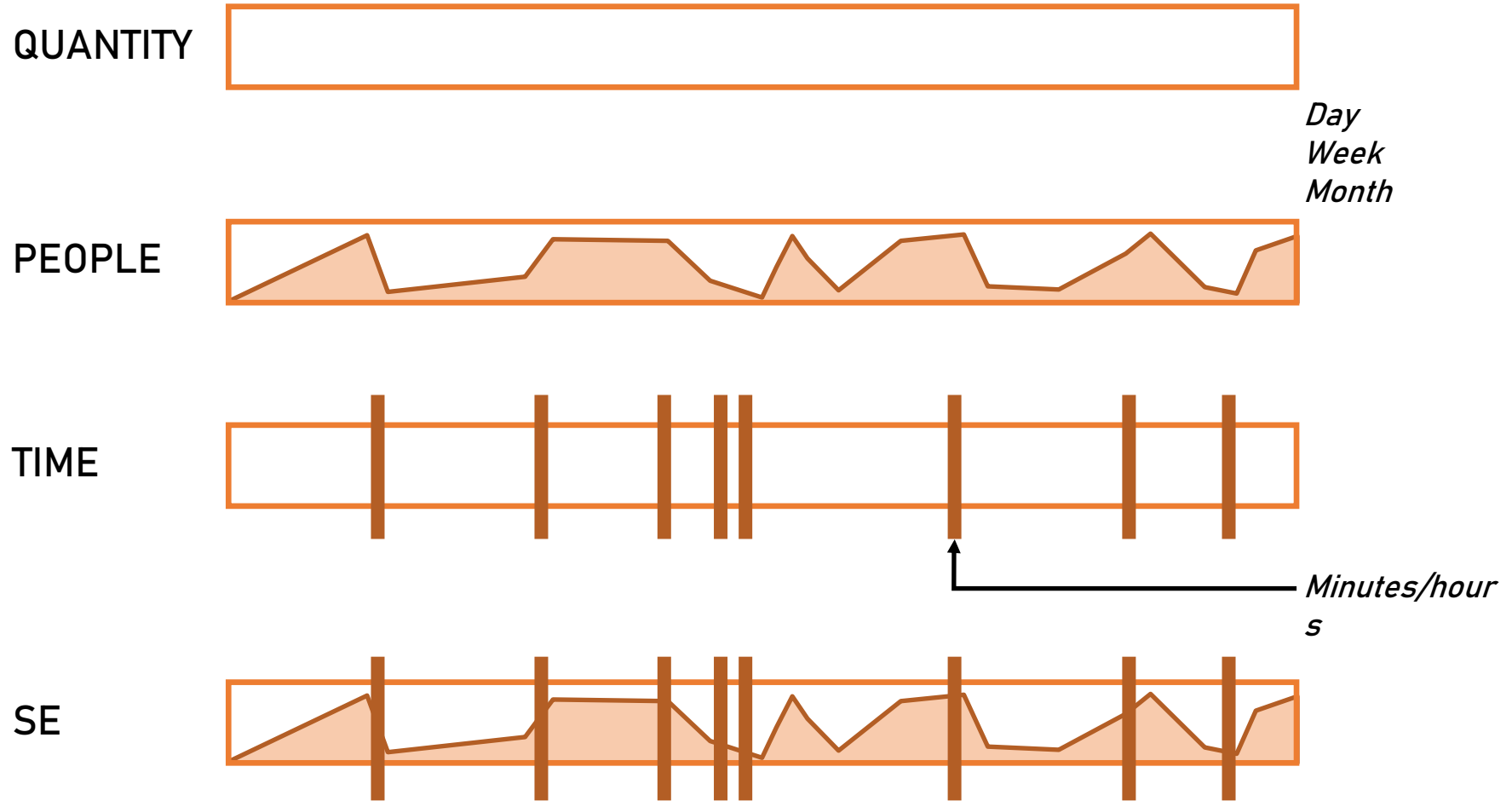
RESEARCH

How to design an **adaptive** building within an existing structure by **maximizing the efficiency of space?**

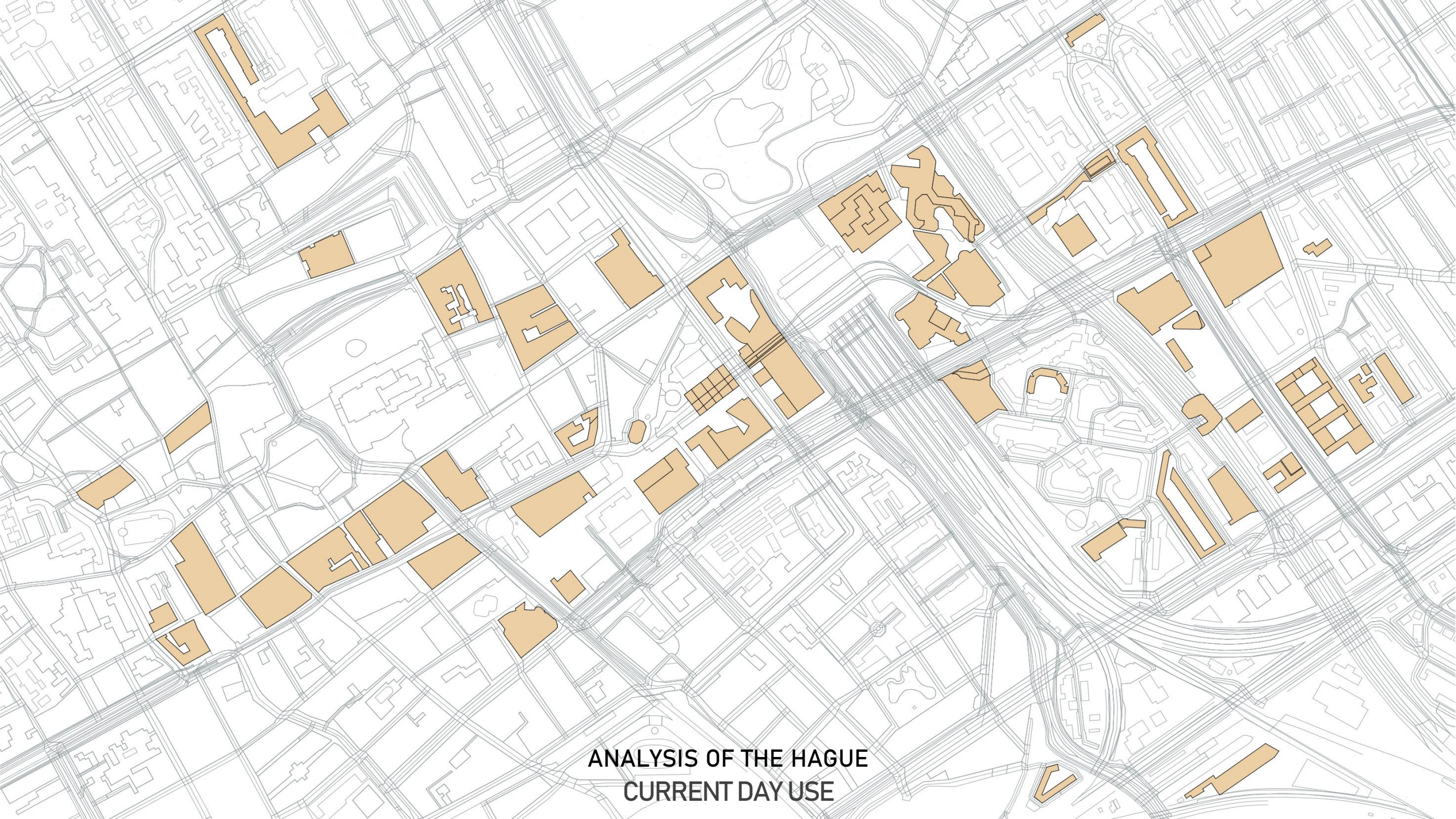
RESEARCH



HYBRID BUILDING CONCEPT
MAXIMAL USE CONCEPTS



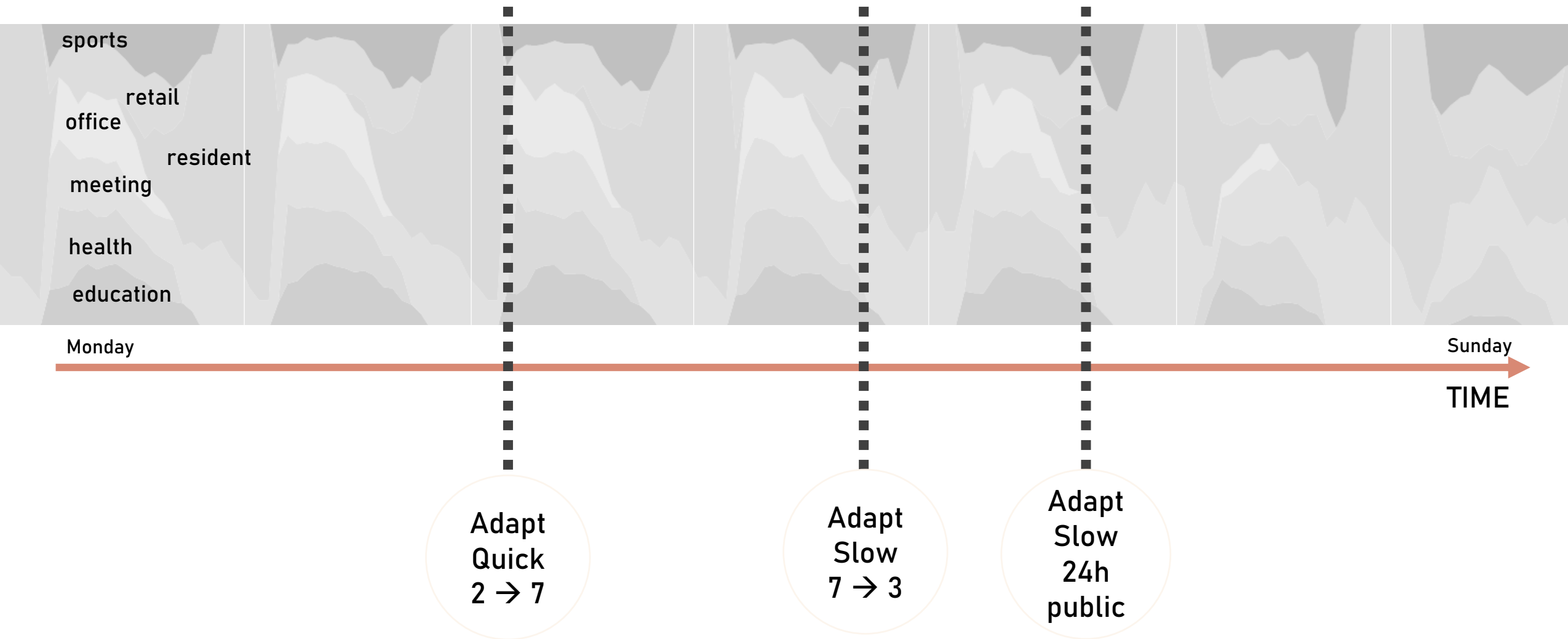
SPACE EFFICIENCY
MAXIMAL USE CONCEPTS

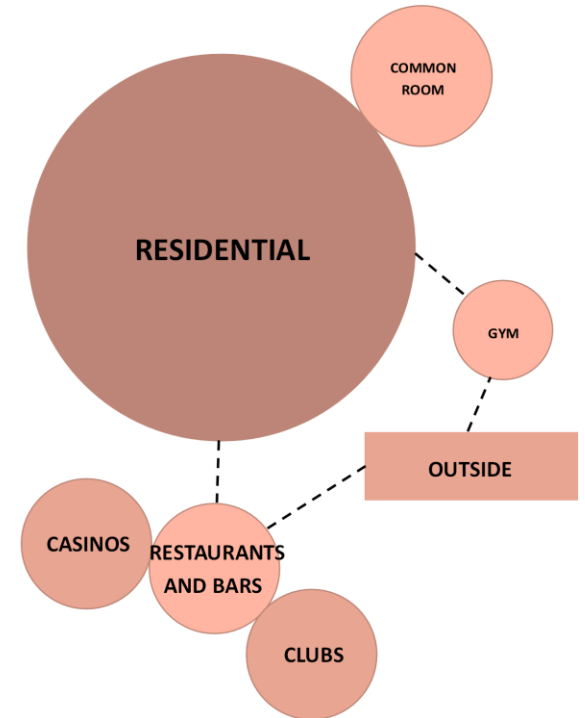
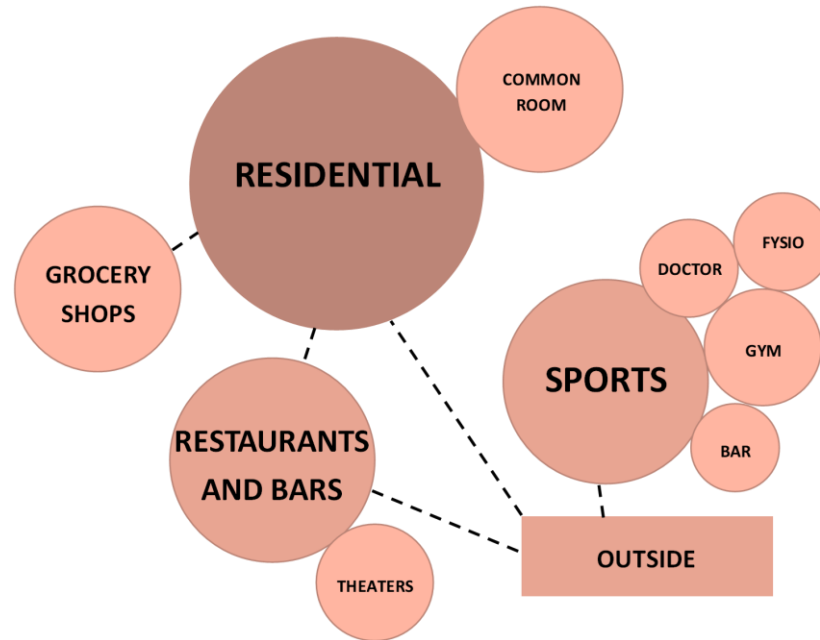
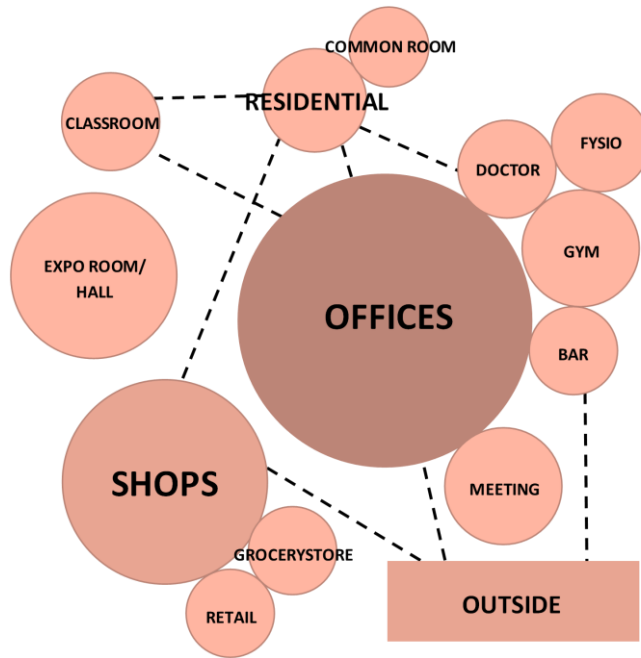


**ANALYSIS OF THE HAGUE
CURRENT DAY USE**

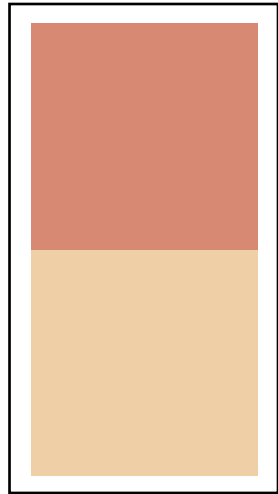
CURRENT DAY RESEARCH

USE OF CONTEXT

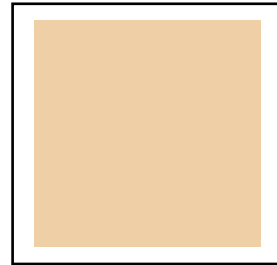




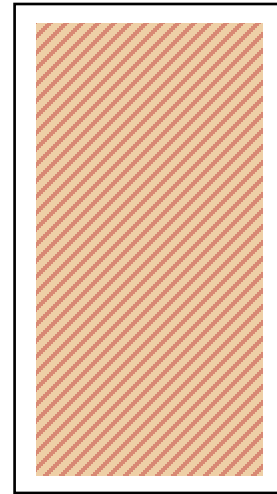
FROM FUNCTION TO FUNCTION IN TIME



Live adjacent



Live near



Live with

LIVING AND WORKING

Nieuws

11 sep 2017

Hoe Nederlandse huizen steeds kleiner worden

woningbouw

Nieuwe woningen worden steeds kleiner. Sinds de Tweede Wereldoorlog zijn appartementen niet zo klein geweest.



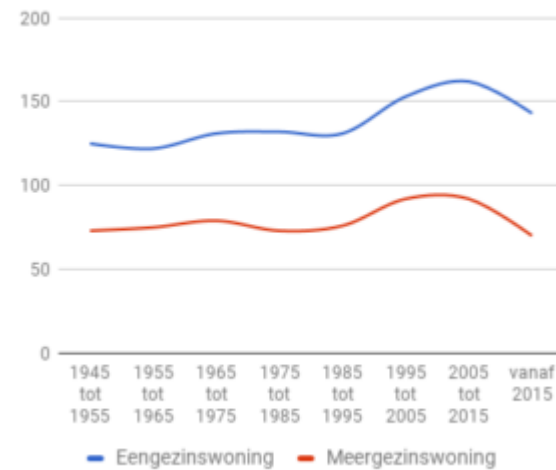
Nederlandse woningen steeds kleiner

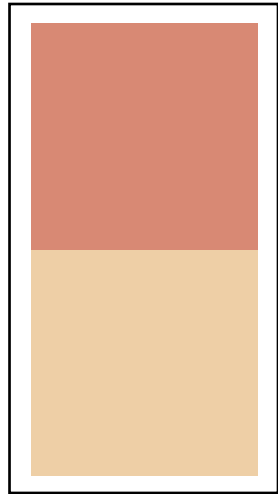
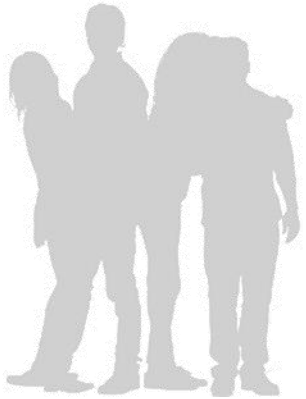
Een appartement dat na 2005 heeft een gemiddelde oppervlakte van 143 vierkante meter, blijkt uit de cijfers. Appartementen die tussen 1945 en 2005 werden gebouwd waren gemiddeld 162 vierkante meter groter.

Eengezinswoningen die na 2005 gebouwd zijn gemiddeld 143 vierkante meter

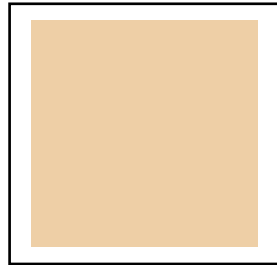
groot. Tussen 2005 en 2015 was de gemiddelde grootte nog 162 vierkante meter groot.

Oppervlakte woning (m2)

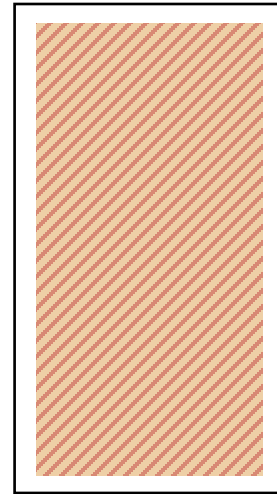




Live adjacent



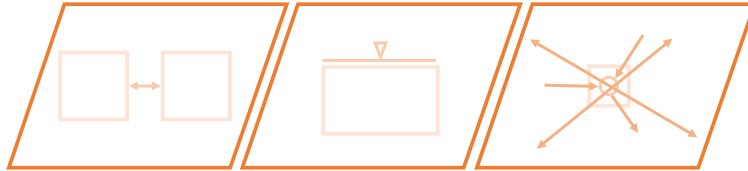
Live near



Live with

LIVING AND WORKING

COMMUNITY



CONNECTING BUILDING

DISTINCTIVE FRONT

SOCIAL INTERACTION

BUILDING



HORIZONTAL CONTROL

VERTICAL CONTROL

LARGE BLURRY CIRCULATION



SURPLUS CAPACITY OF ROOM
AND SERVICE

GRIDDED EASY FLOORPLAN

FUNCTIONS



MODULAR STUFF

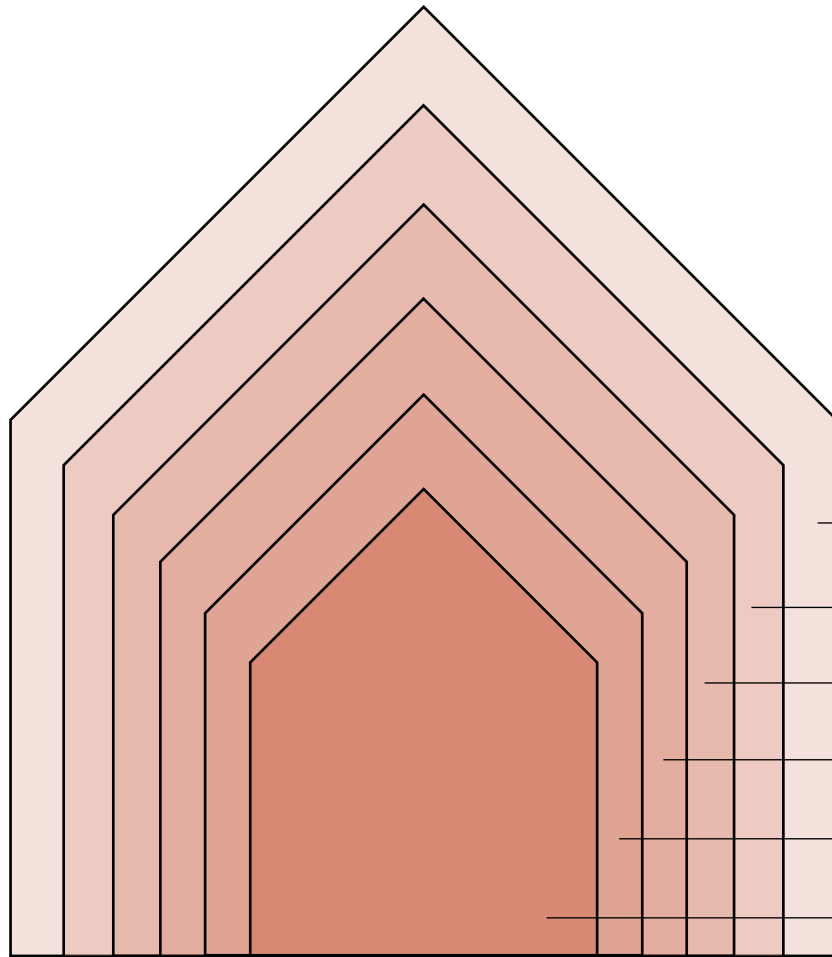
MULTIFUNCTIONAL STUFF

SPECIFIC SURPLUS CAPACITY OF
ROOM AND SERVICE



FUNCTION AS SOCIAL
CONNECTION

ADAPTABLE ARCHITECTURE



SITE

STRUCTURE

SKIN

SERVICES

SPACE PLAN

STUFF

EXISTING - RECONNECT

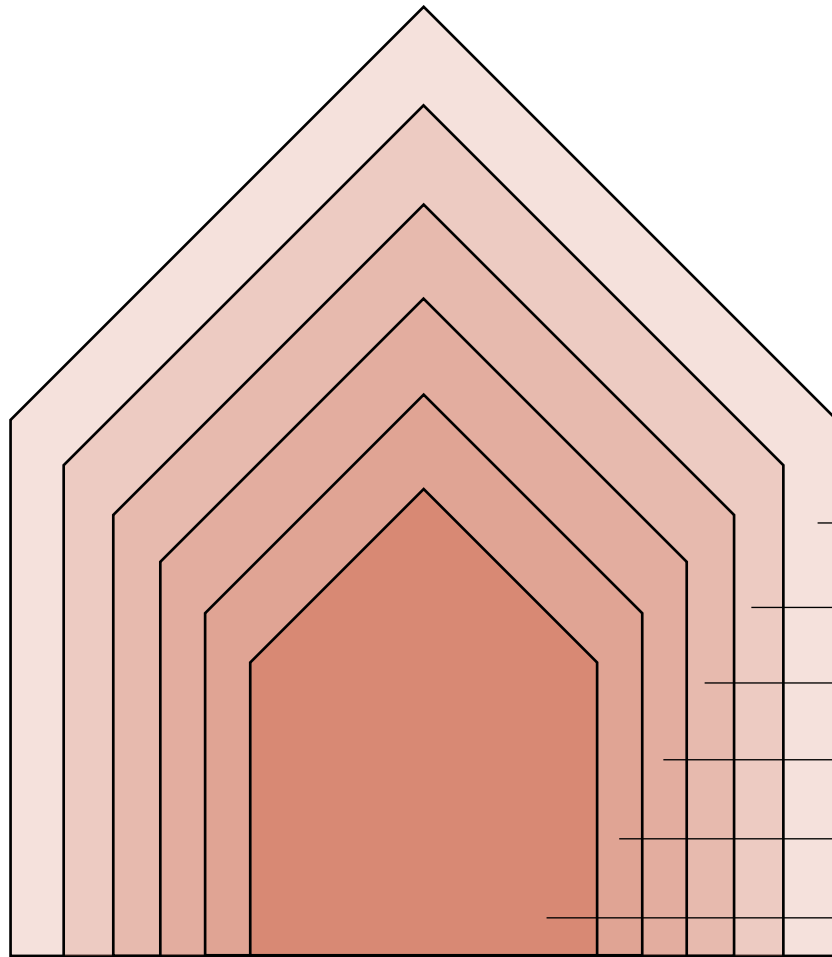
EXISTING

NEW - ADAPTABLE

NEW – REACHABLE – CHANGABLE

NEW – ADAPTABLE - MULTIUSED

NEW – ADAPTABLE - MULTIFUNCTIONAL



SITE

ETERNAL

STRUCTURE

30 YEARS – 300 YEARS

SKIN

20 YEARS

SERVICES

7 YEARS – 15 YEARS

SPACE PLAN

3 YEARS – 30 YEARS

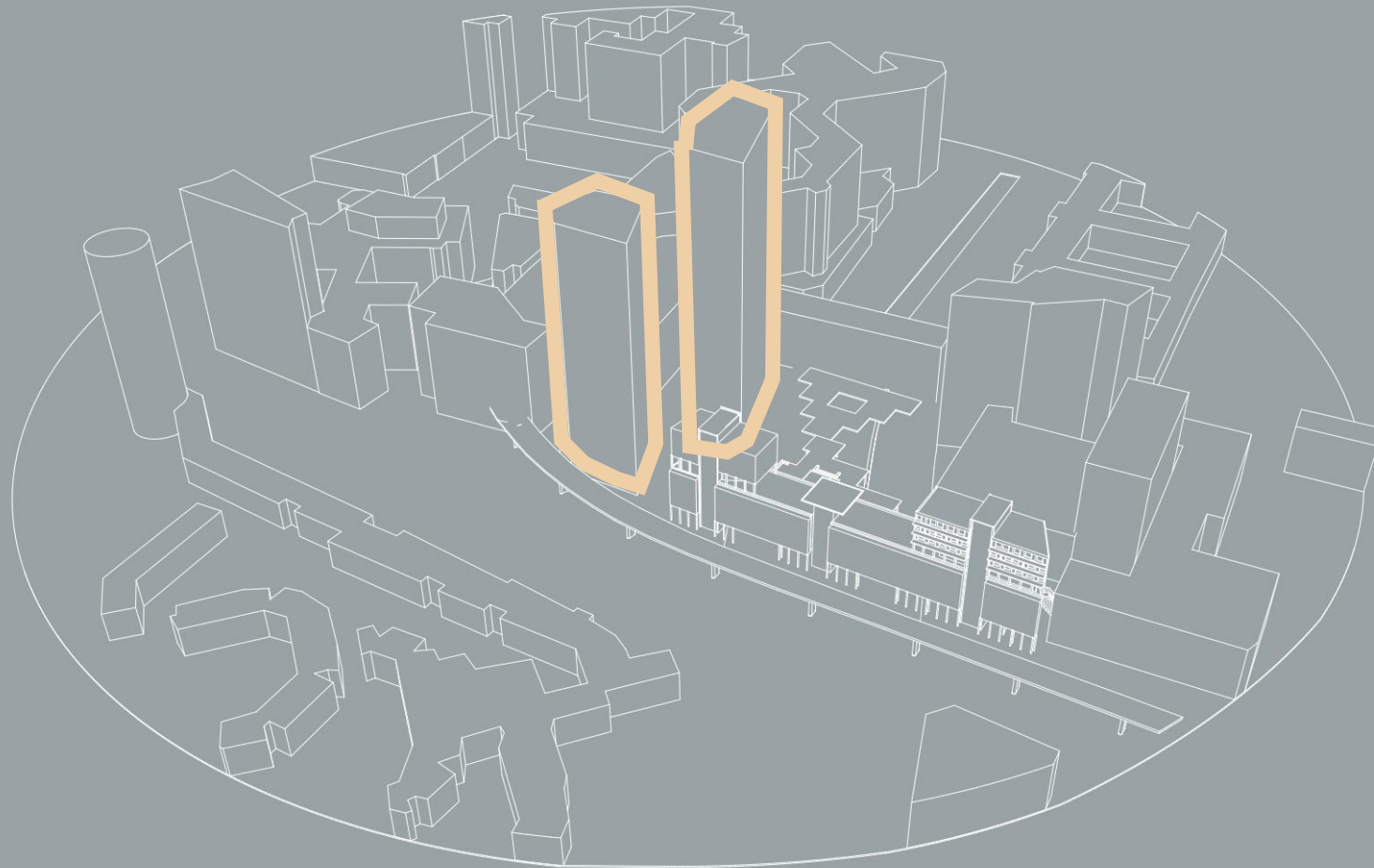
STUFF

1 DAY – 1 MONTH

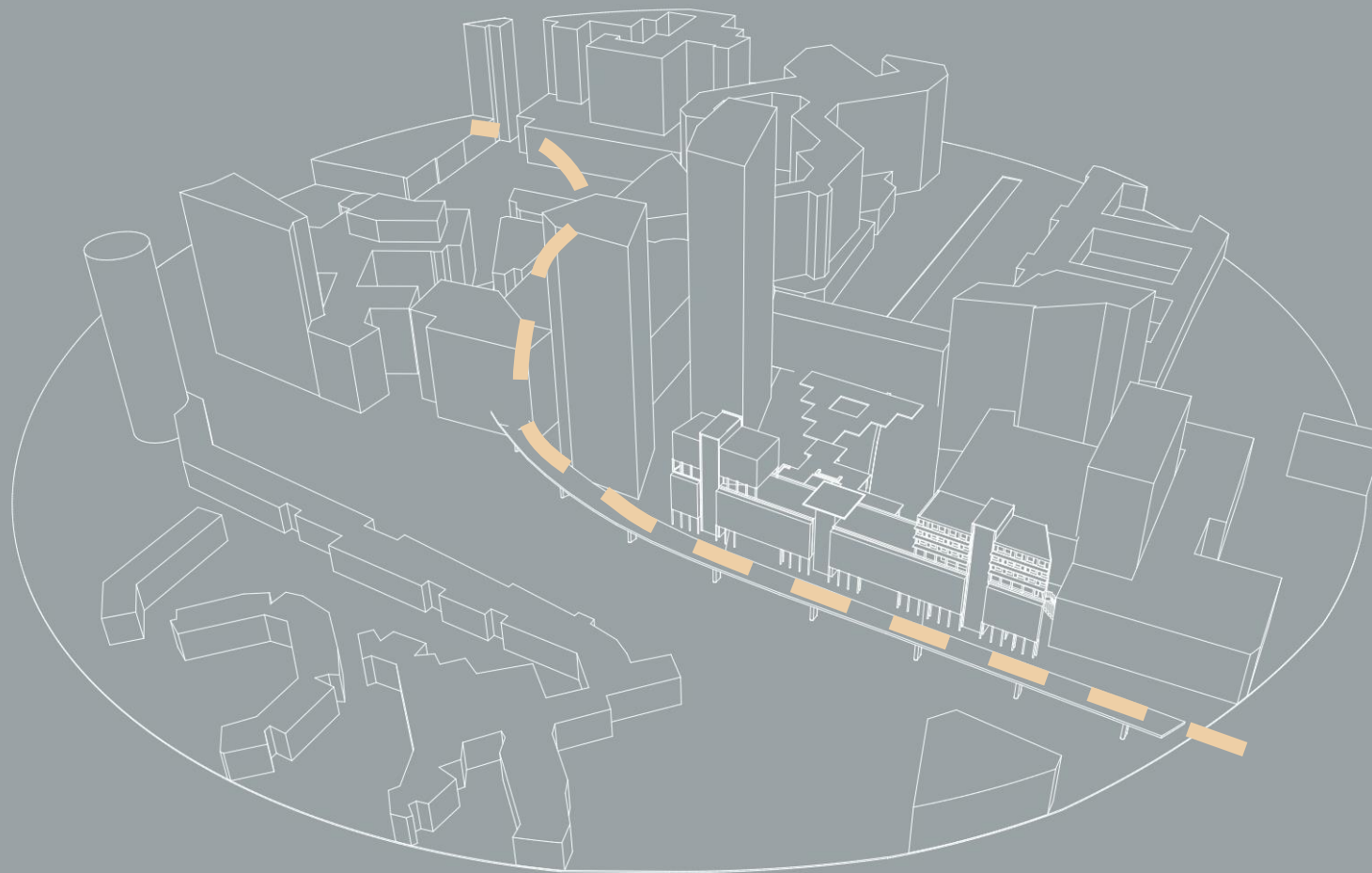
CURRENT SITUATION



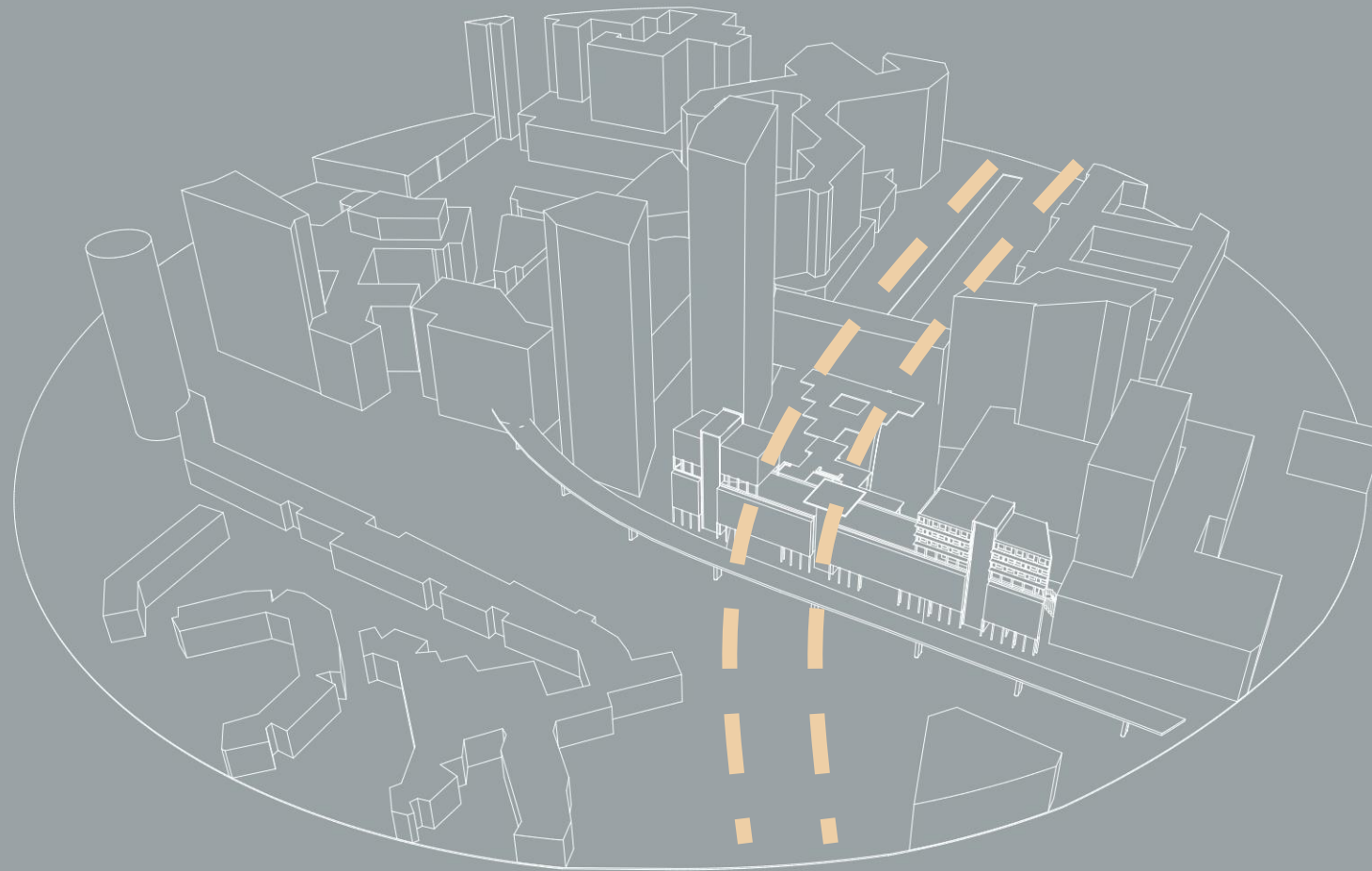
CHANGING CONTEXT



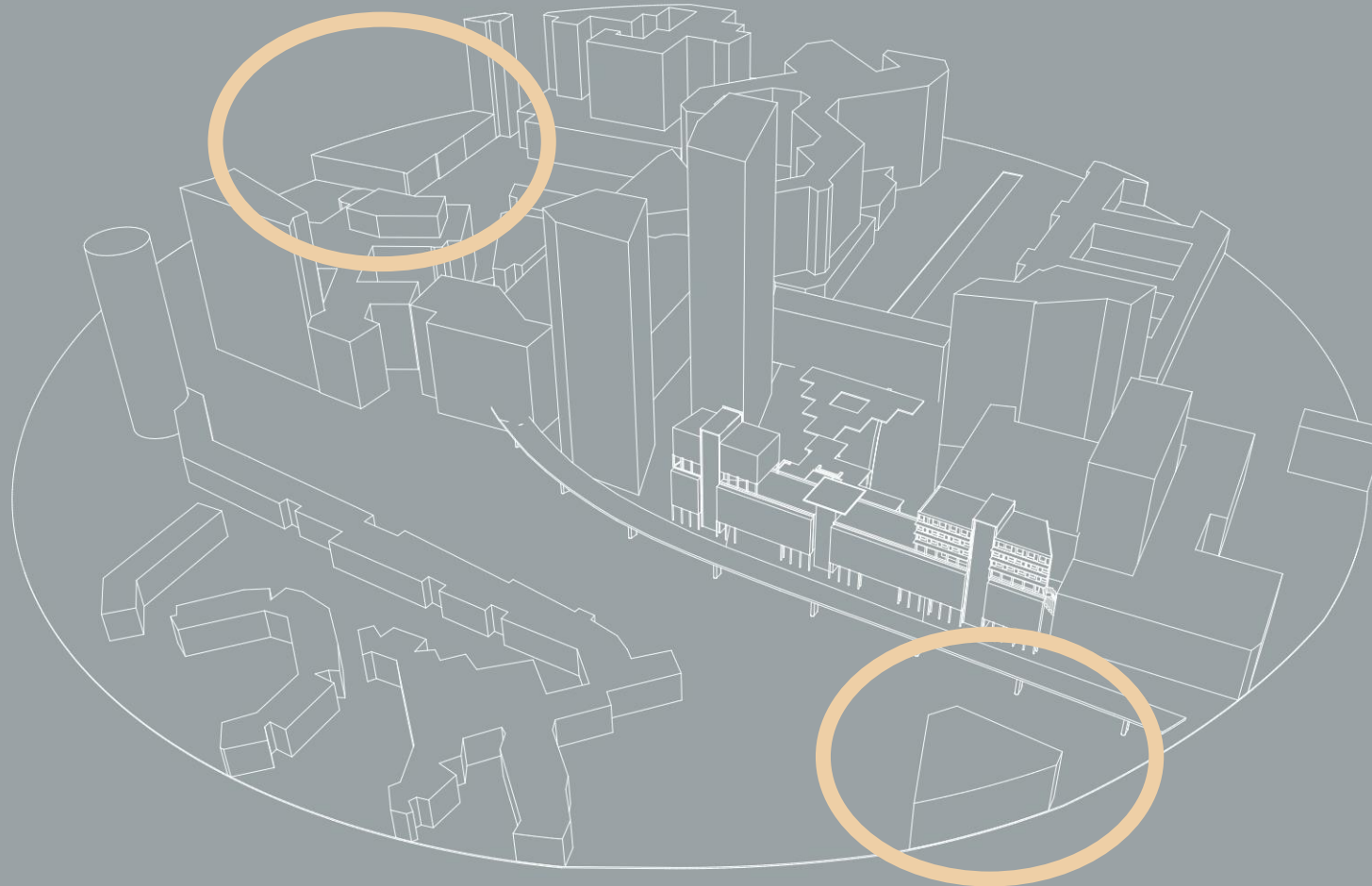
FUTURE BUILD



LIGHT RAIL

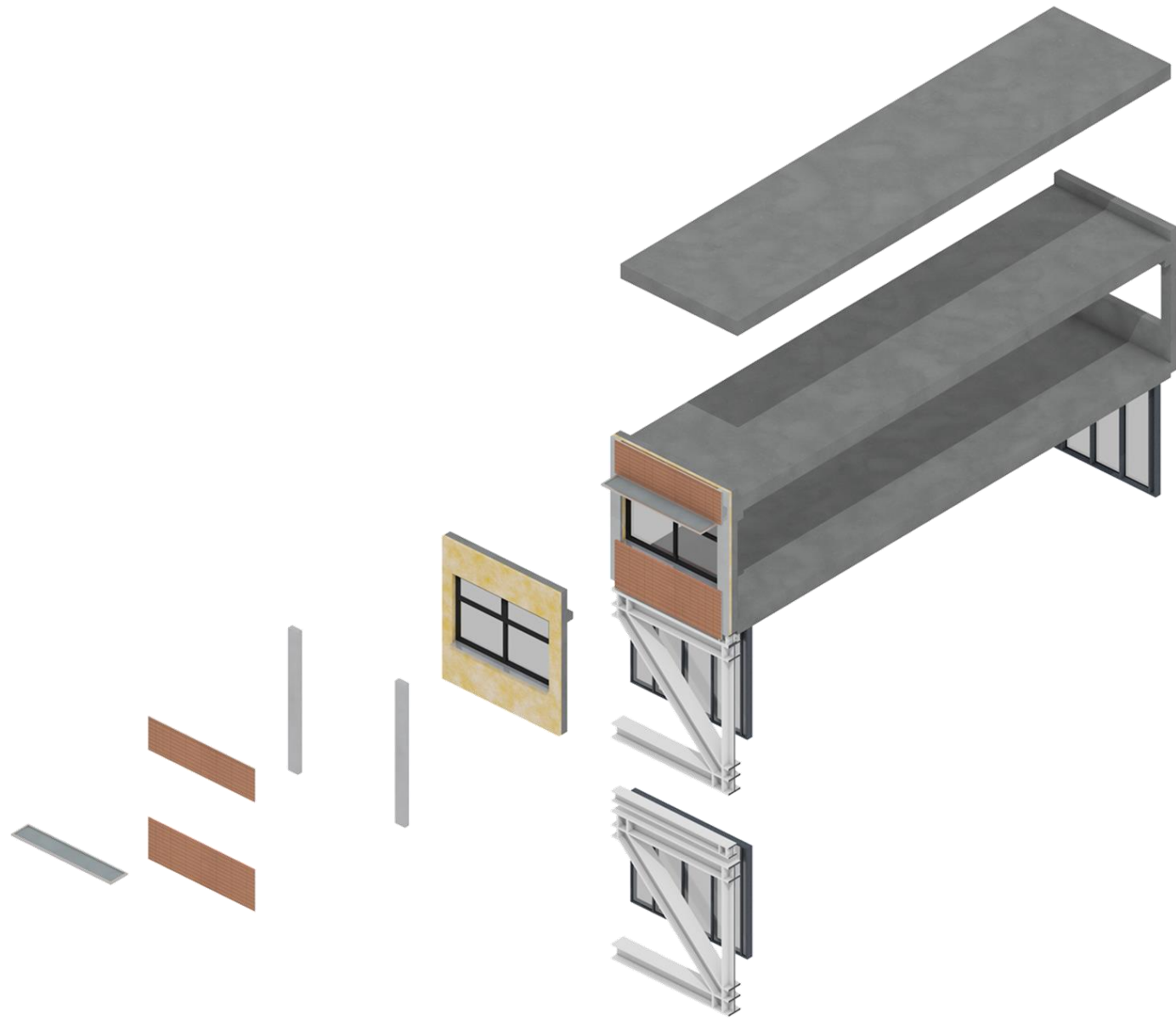


AIR CONDITIONS



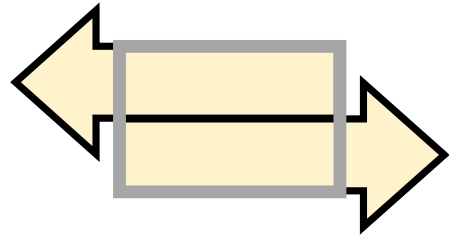
ACCESSIBLE AREA



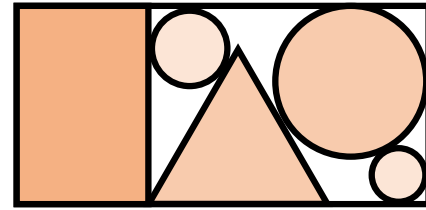


EXISTING BUILDING

DESIGN GOAL

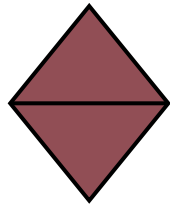


LIVING AND WORKING



MULTIPLE SUPPORTING
FUNCTIONS

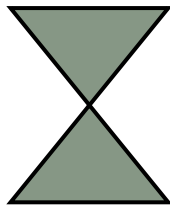
DESIGN GOAL



CIRCULARITY



CONNECTOR



ENERGY EFFICIENT



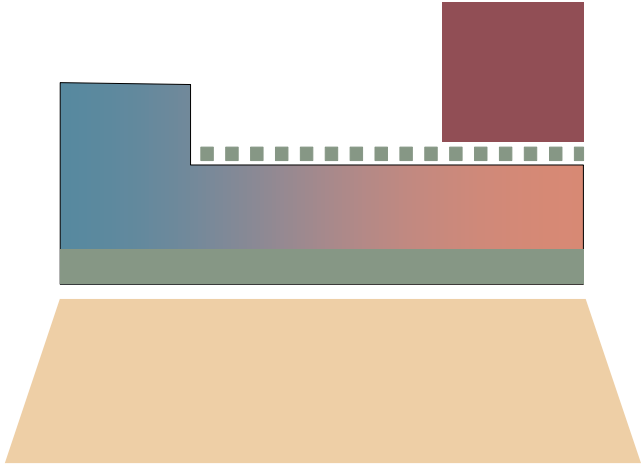
SERVICES

TECHNOLOGY

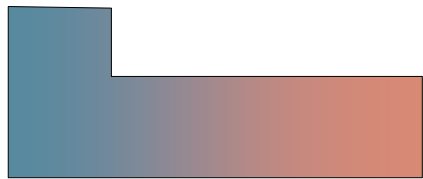
CONTEXT

DESIGN GOAL

CONCEPT

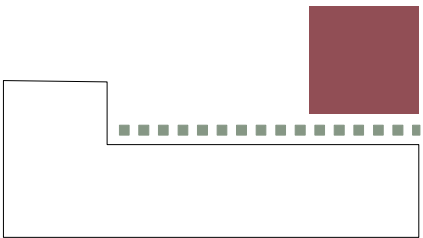


MAIN DESIGN ASSIGNMENTS



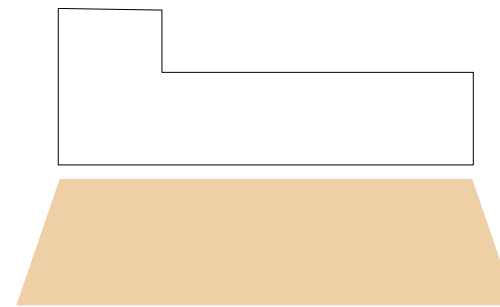
#1 MIXING

Mixing working and living as main factors



#2 FACILITIES

Facilities supporting living and working



#3 URBAN CONNECTION

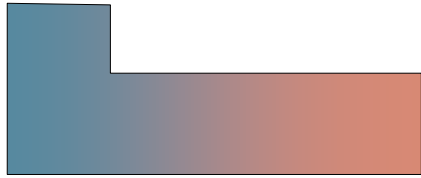
Connecting the building to the walking route



#4 ACCESSIBLE PLINTH

Activating the square and the building with the plinth





#1 MIXING

Mixing working and living as main factors



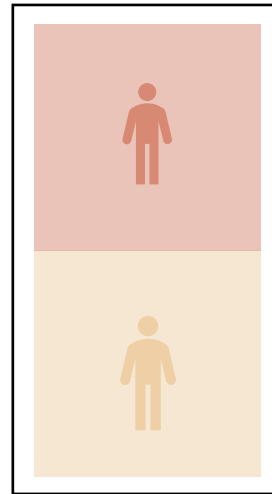
Worker

9 - 18

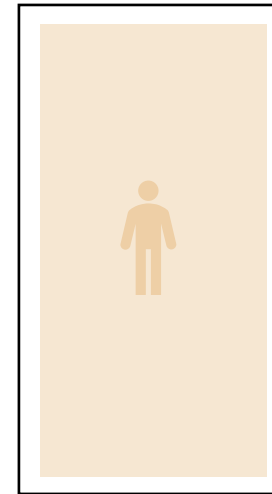


Resident

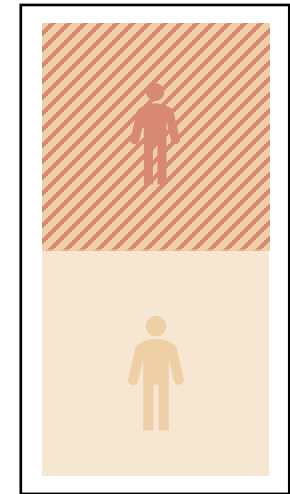
18 - 9



Living/Working
20 m² - 20 m²

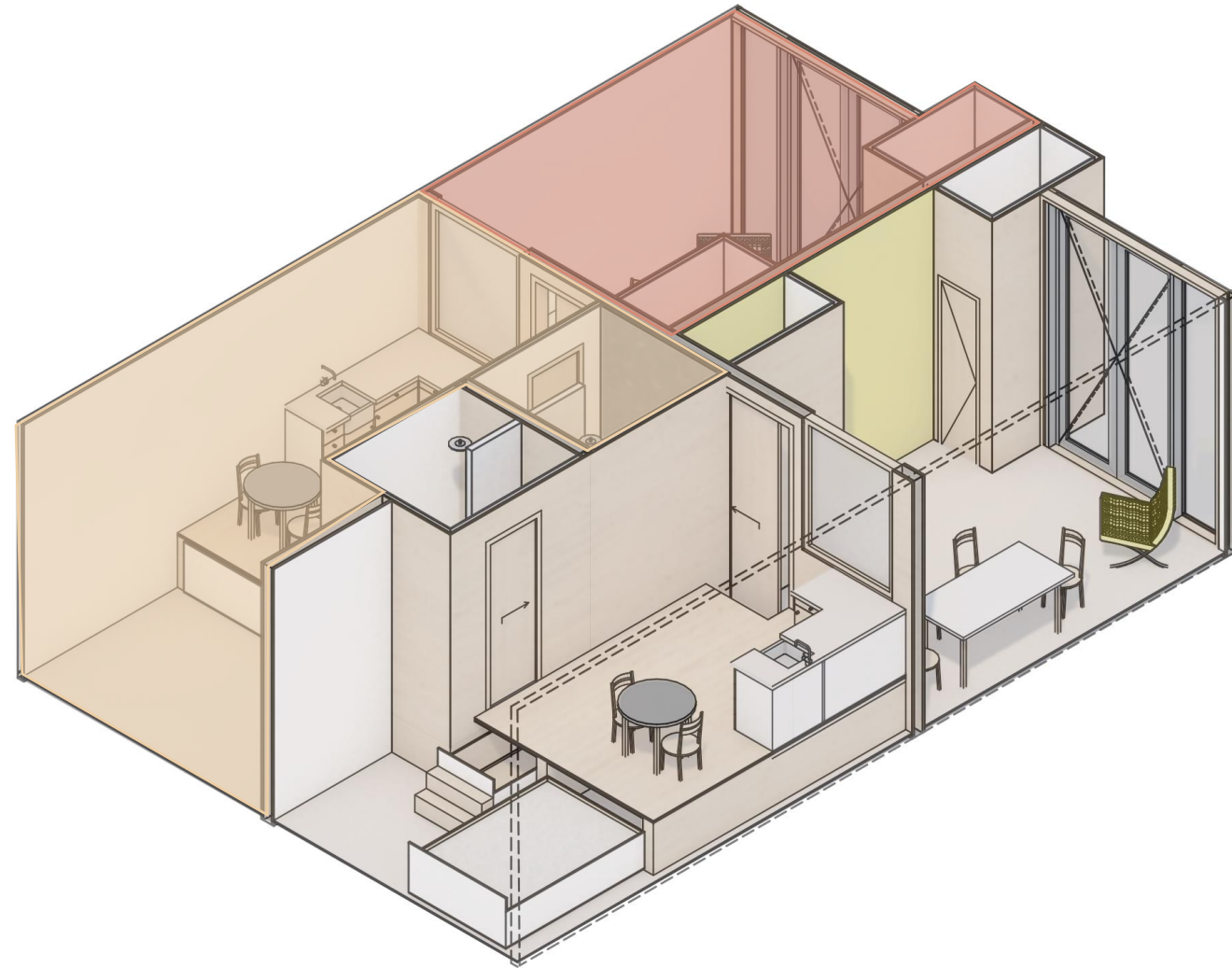


Living
40 m²

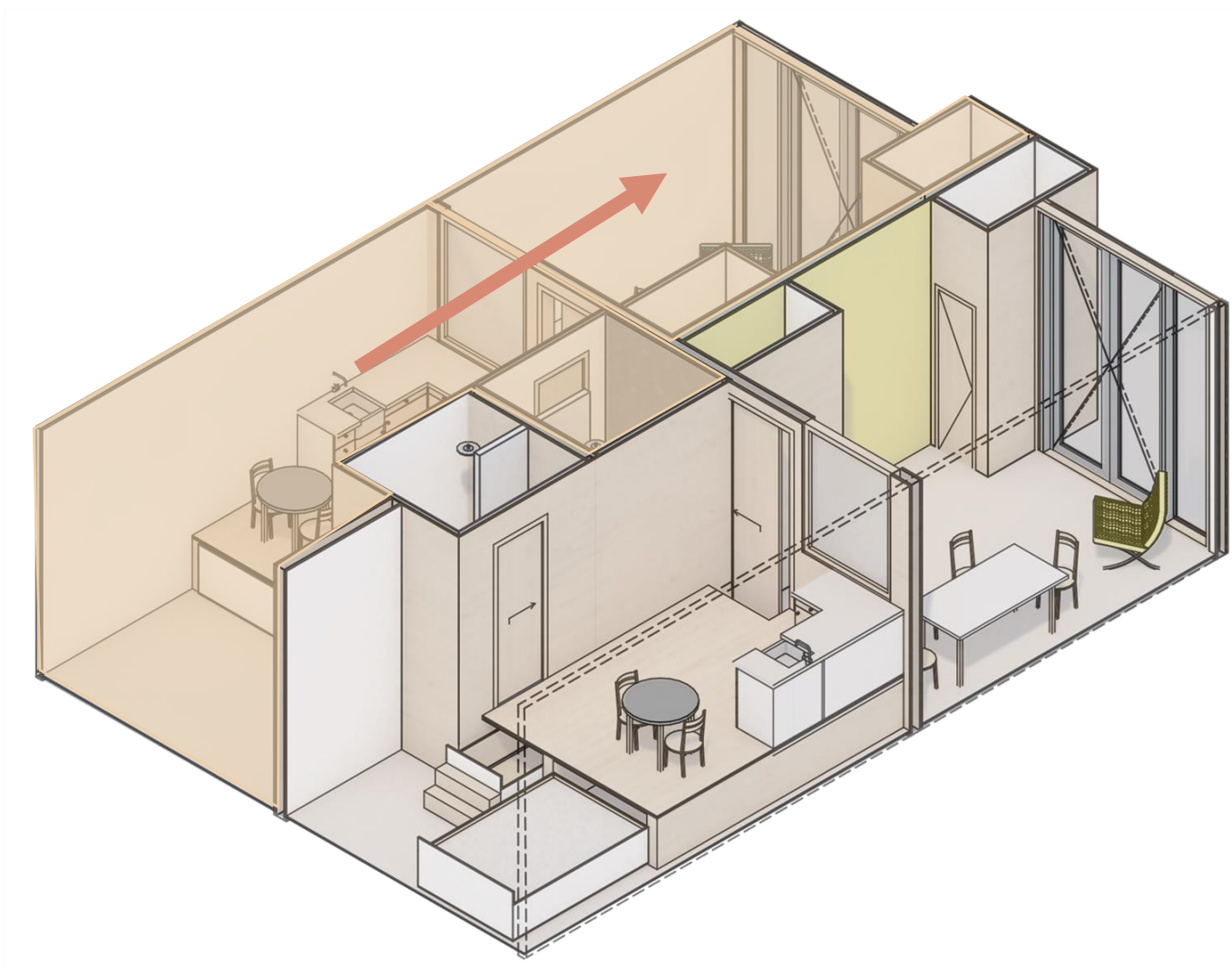


Share living/working
20 m² - 20 m²

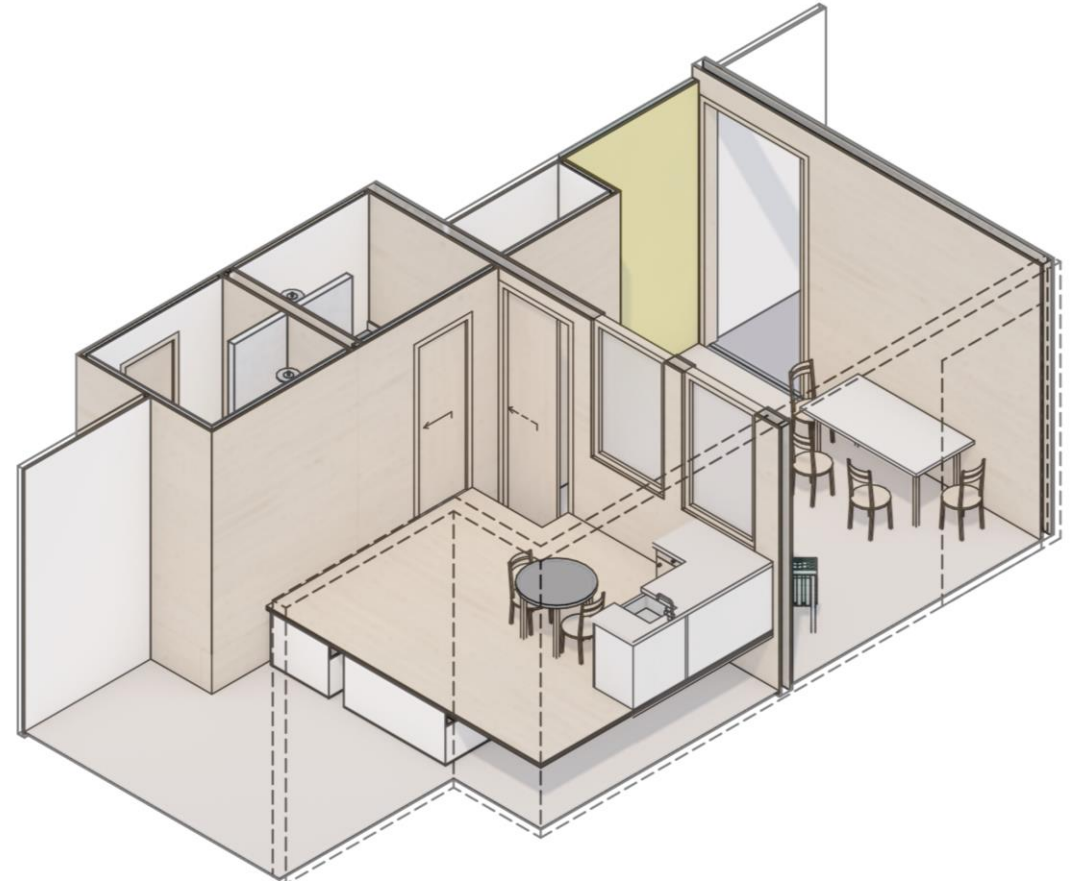
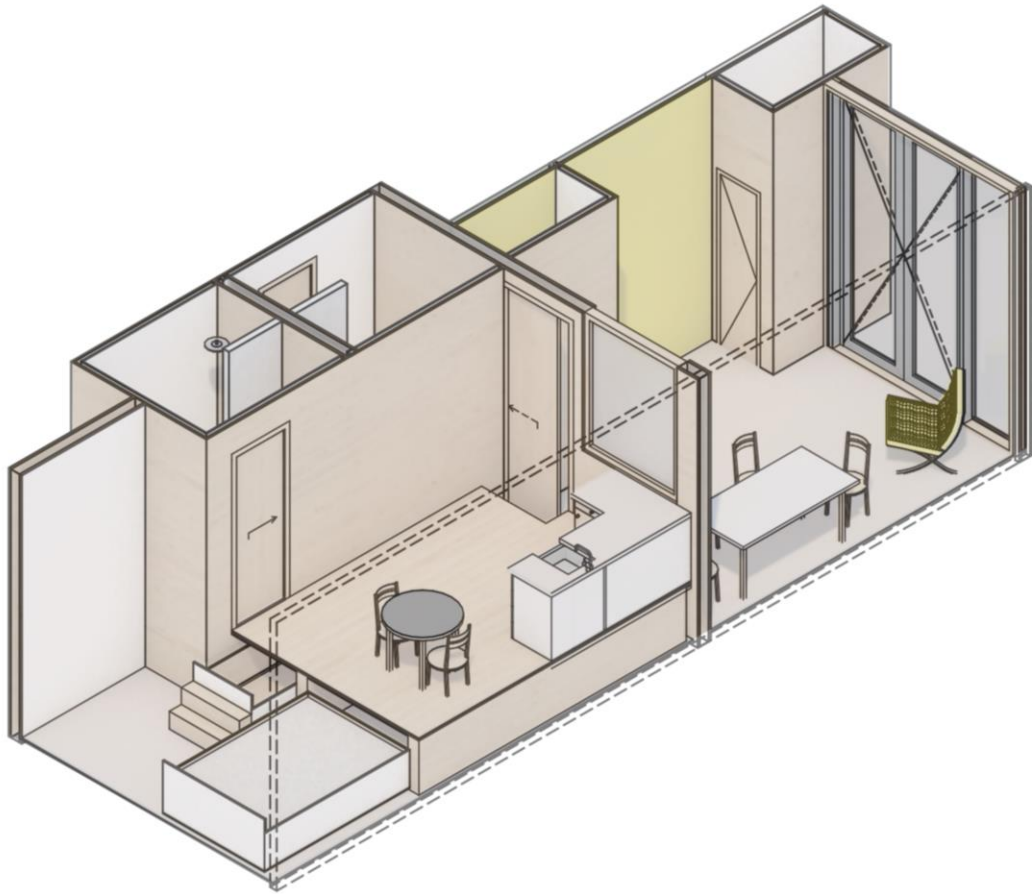
SCENARIOS
#1 MIXING



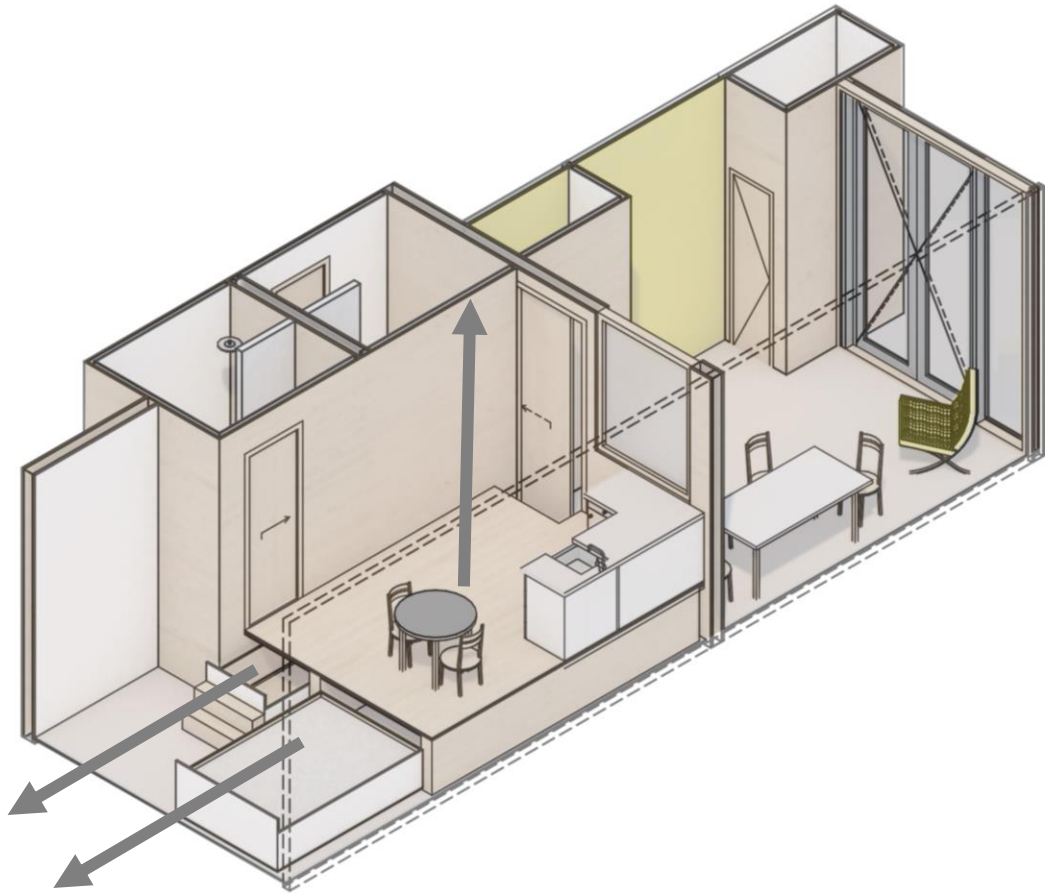
9.00 AM



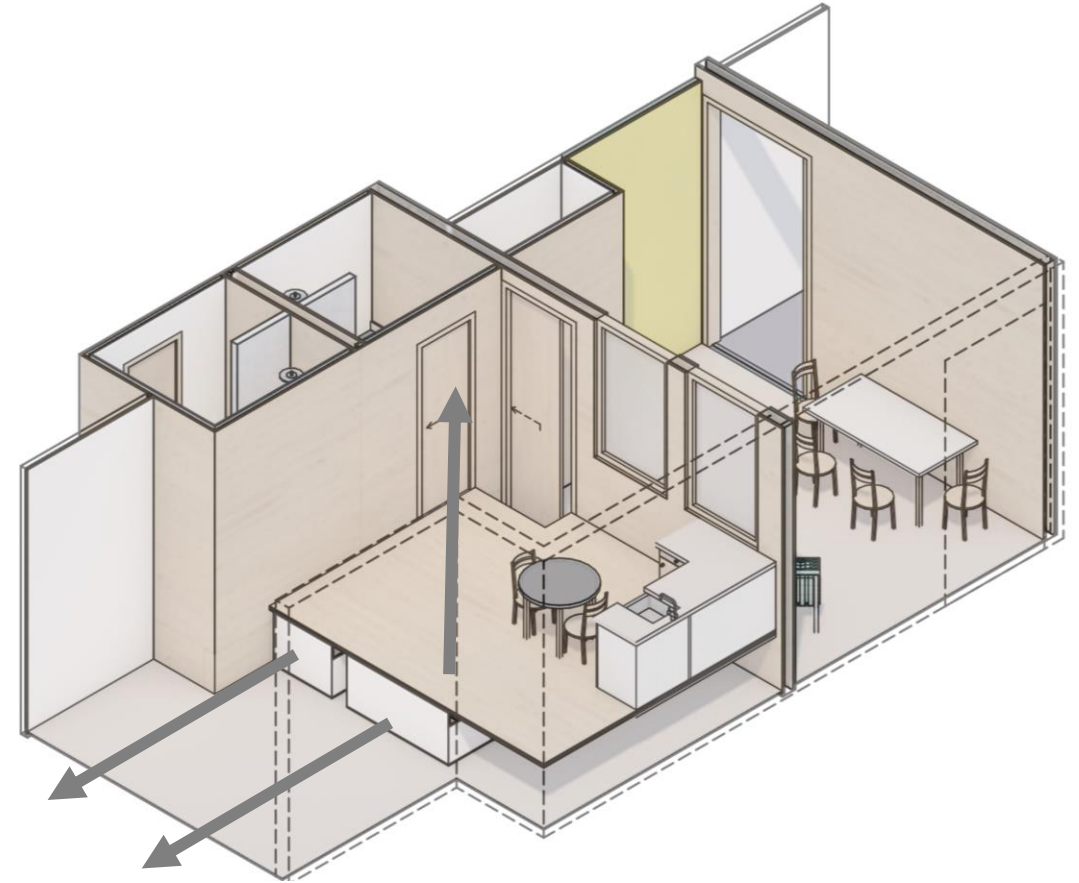
6.00 PM



TYPES OF LIVE/WORKING UNITS

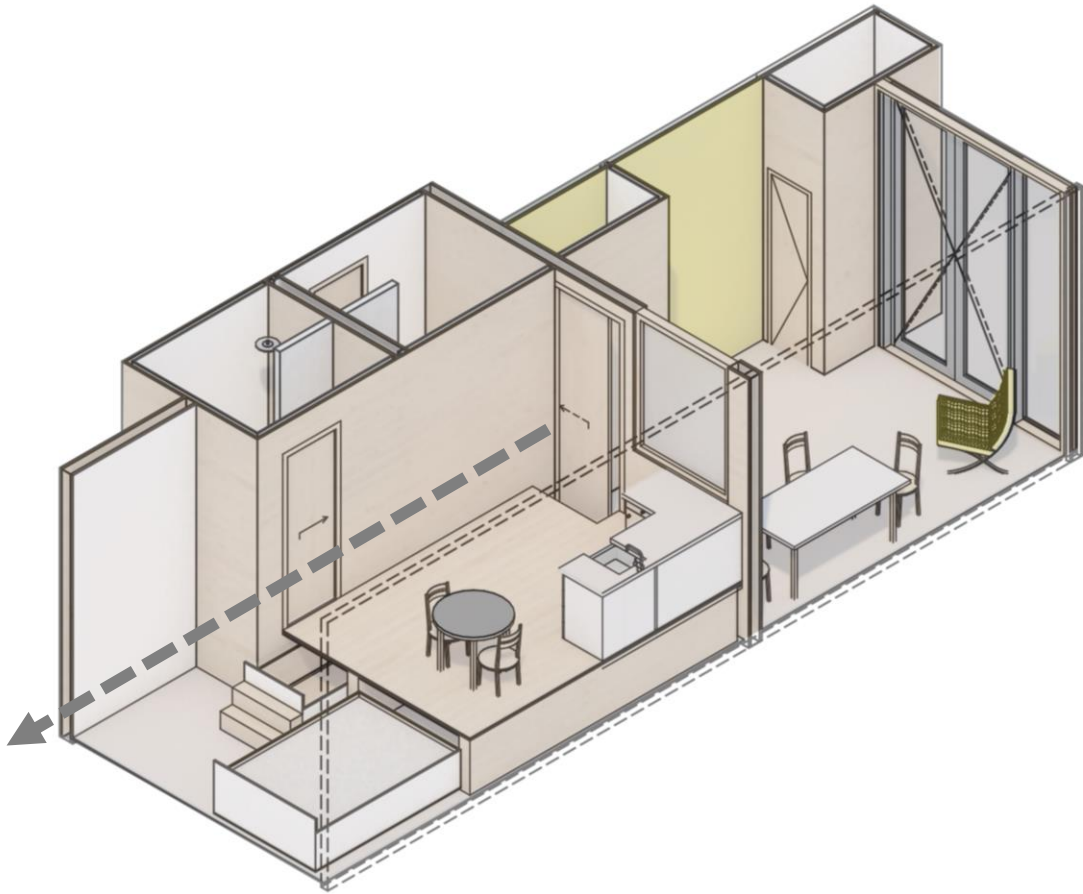


NIGHT

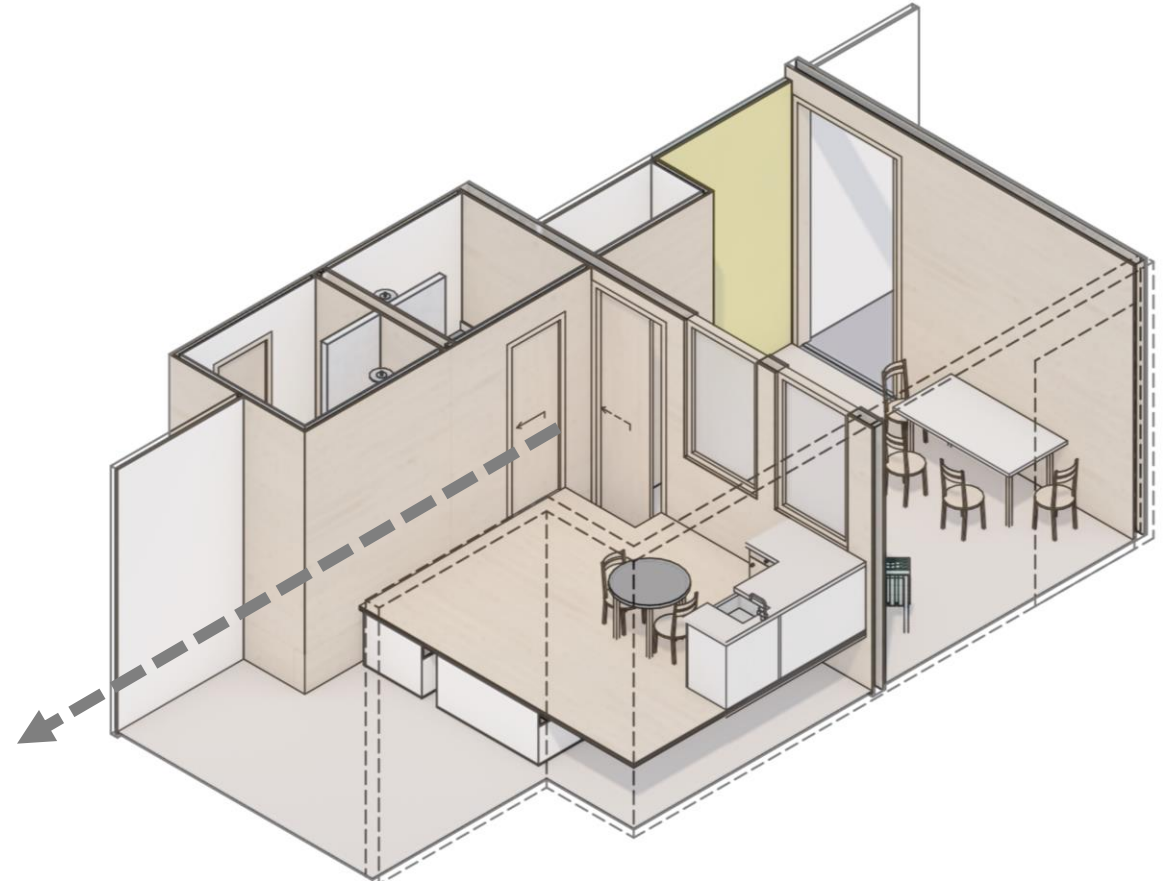


DAY

TYPES OF LIVE/WORKING UNITS

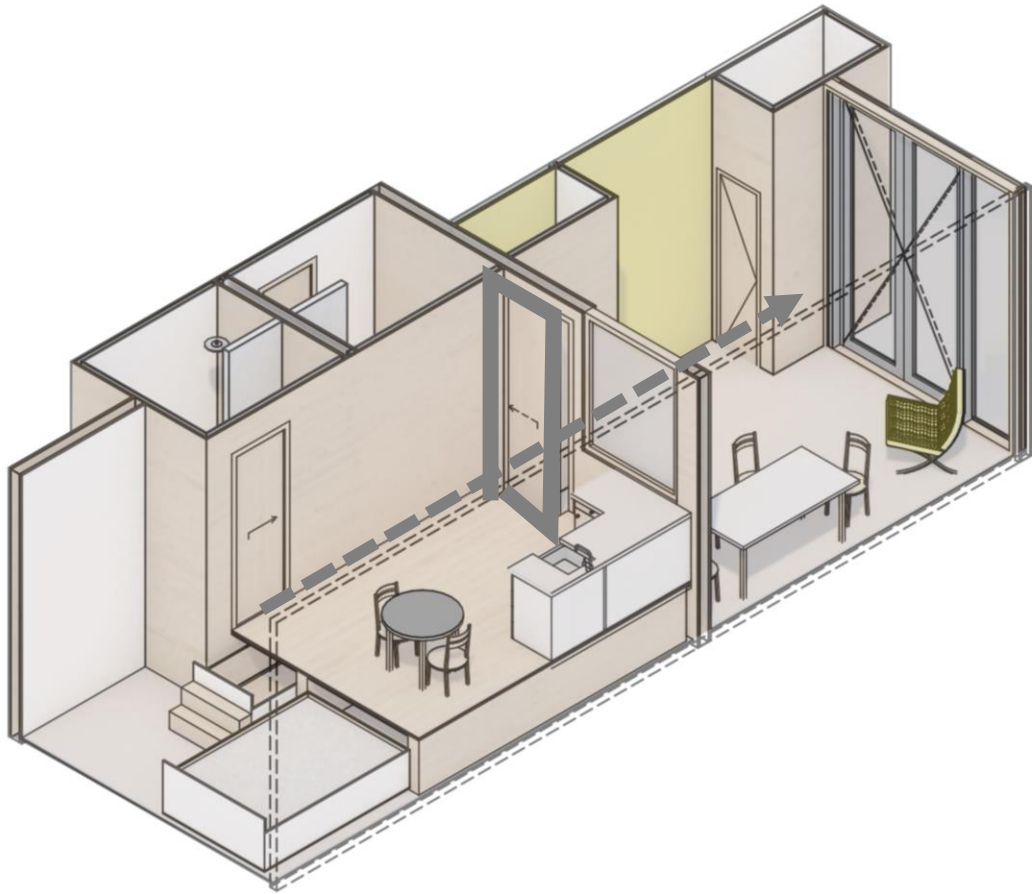


NIGHT

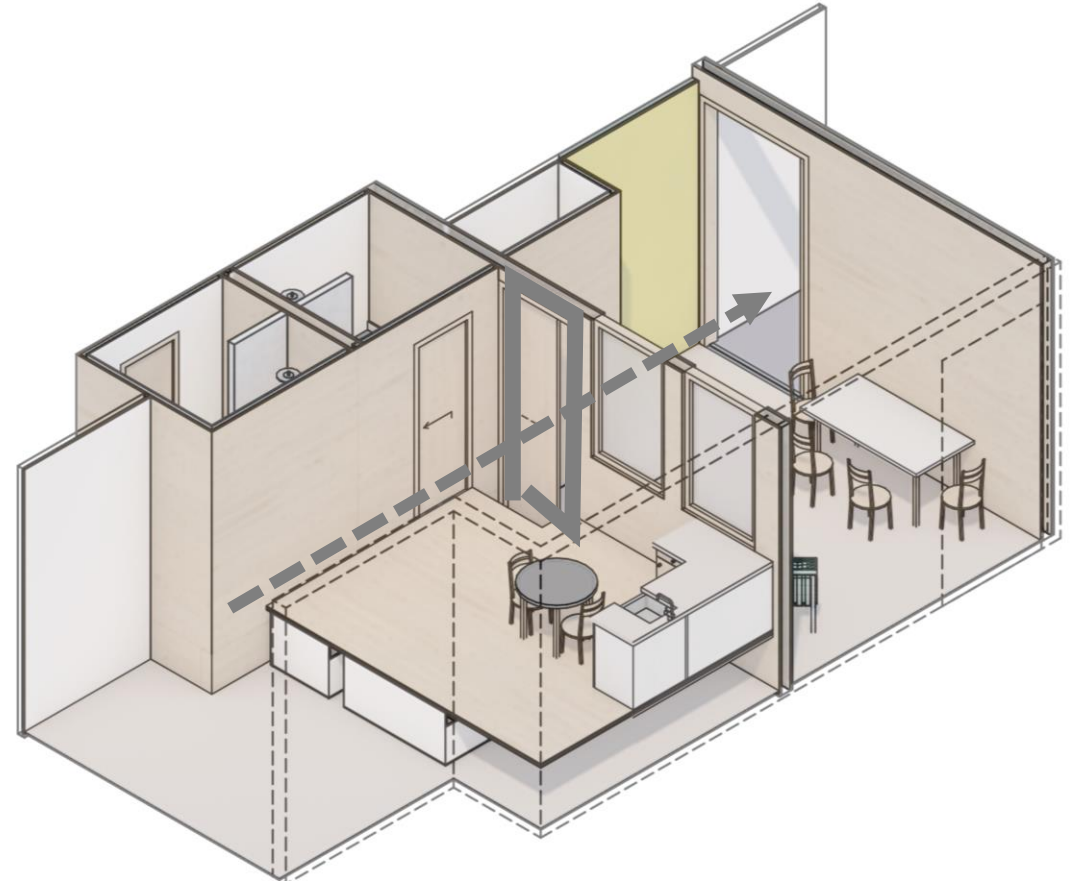


DAY

TYPES OF LIVE/WORKING UNITS

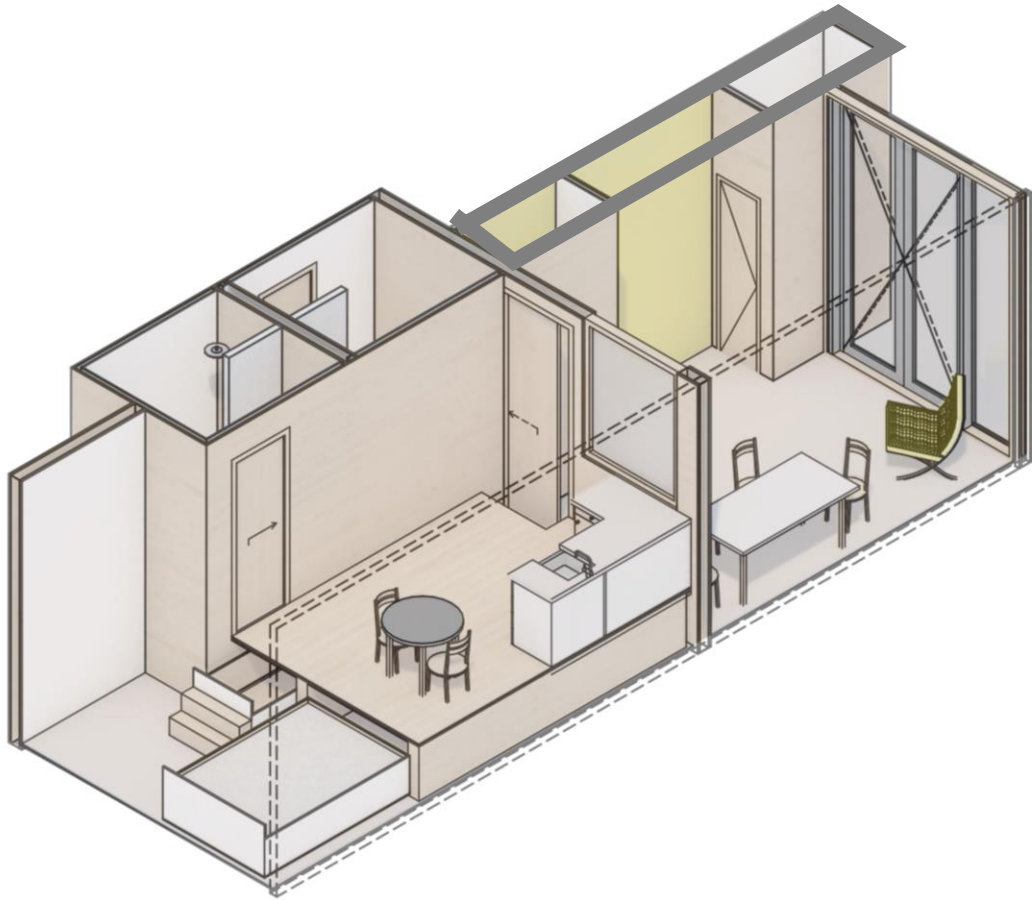


NIGHT

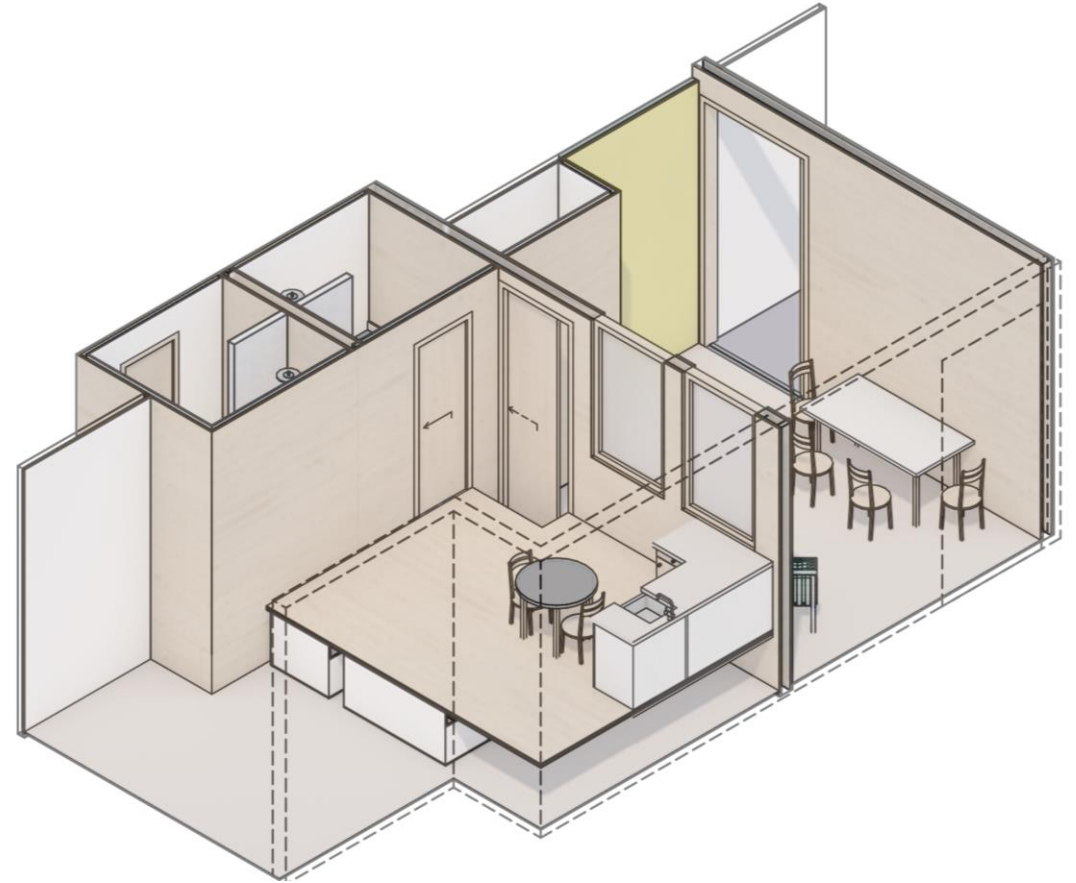


DAY

TYPES OF LIVE/WORKING UNITS

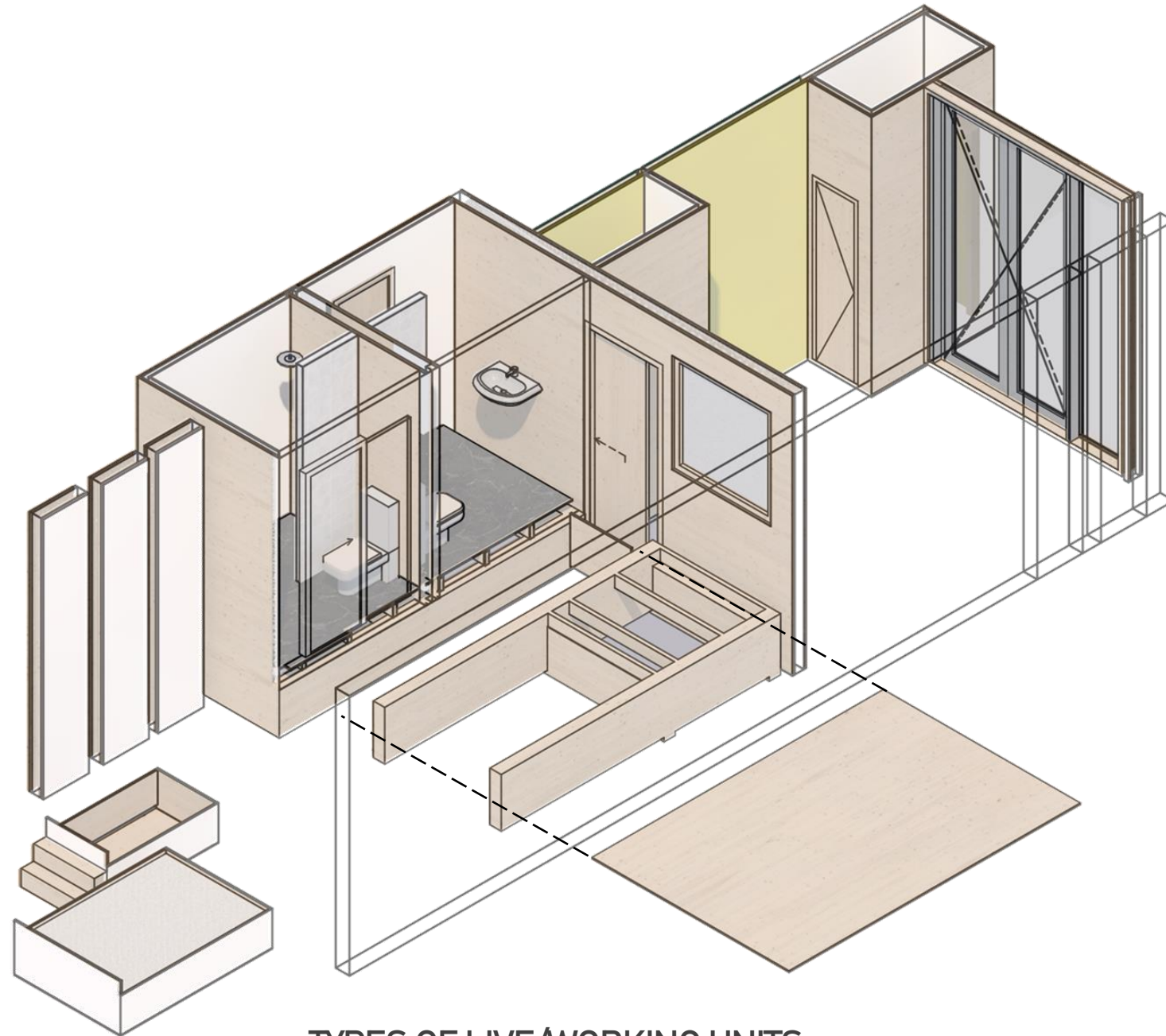


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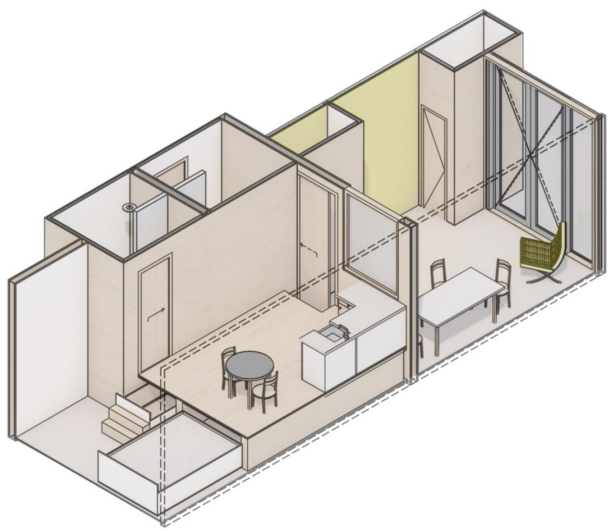


DAY

TYPES OF LIVE/WORKING UNITS



TYPES OF LIVE/WORKING UNITS

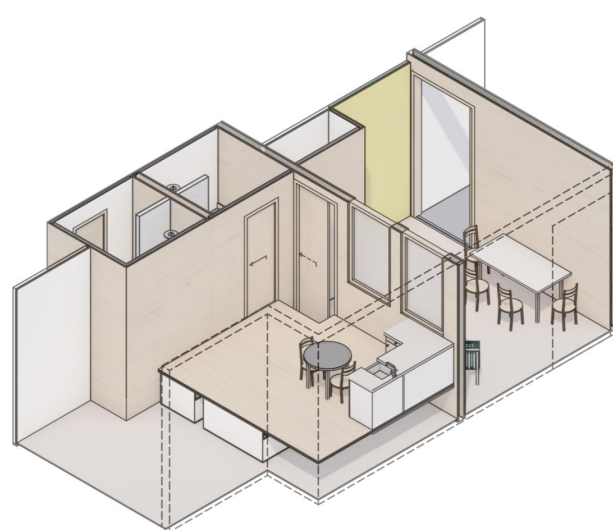


LONG 37,80 m²

Living: 17,80 m²

Work: 16,40 m²

Bathroom: 3,6 m²

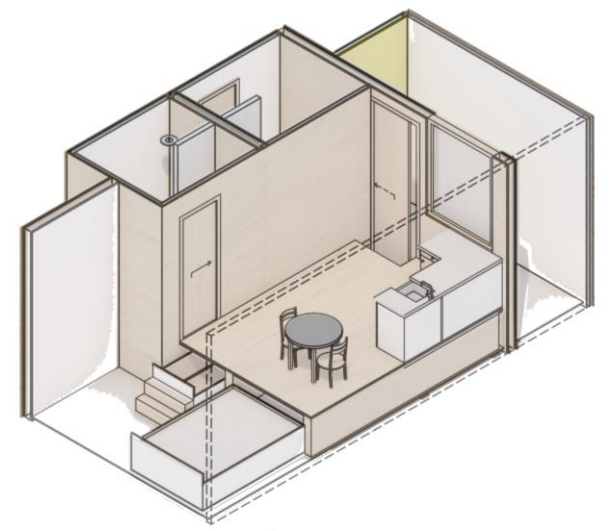


CORNER 41,38 m²

Living: 20,5 m²

Work: 17,28 m²

Bathroom: 3,6 m²

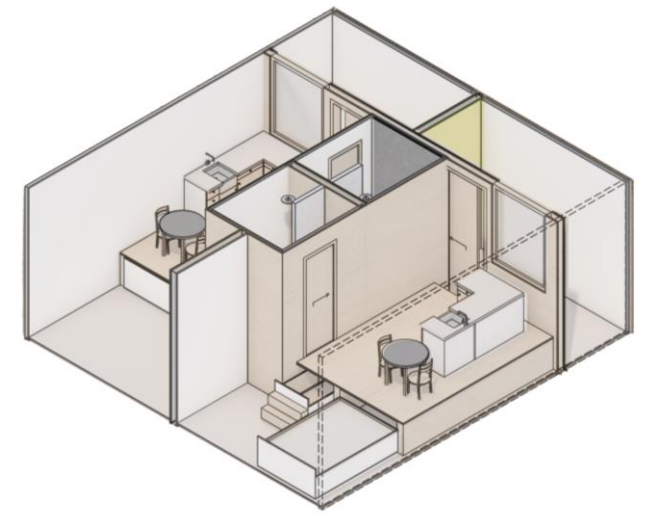
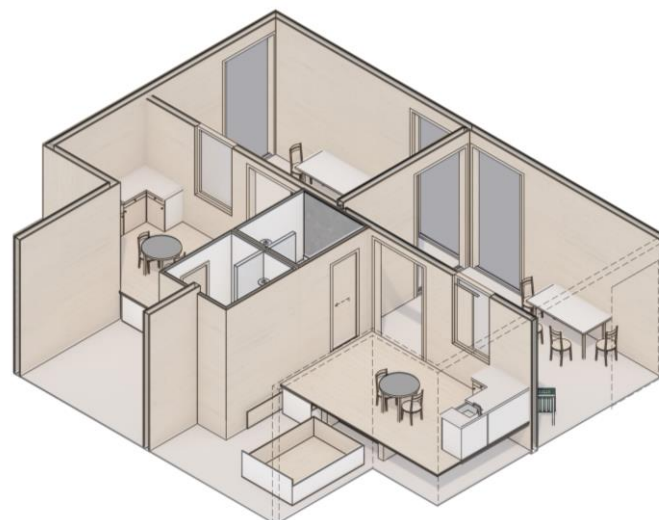
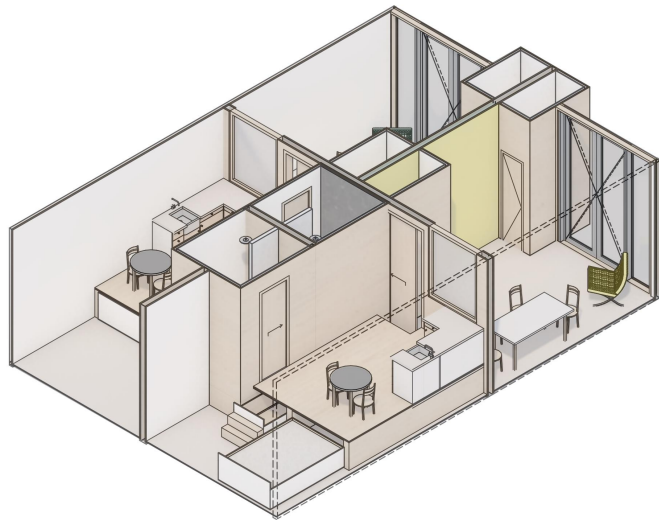


SHORT 41,38 m²

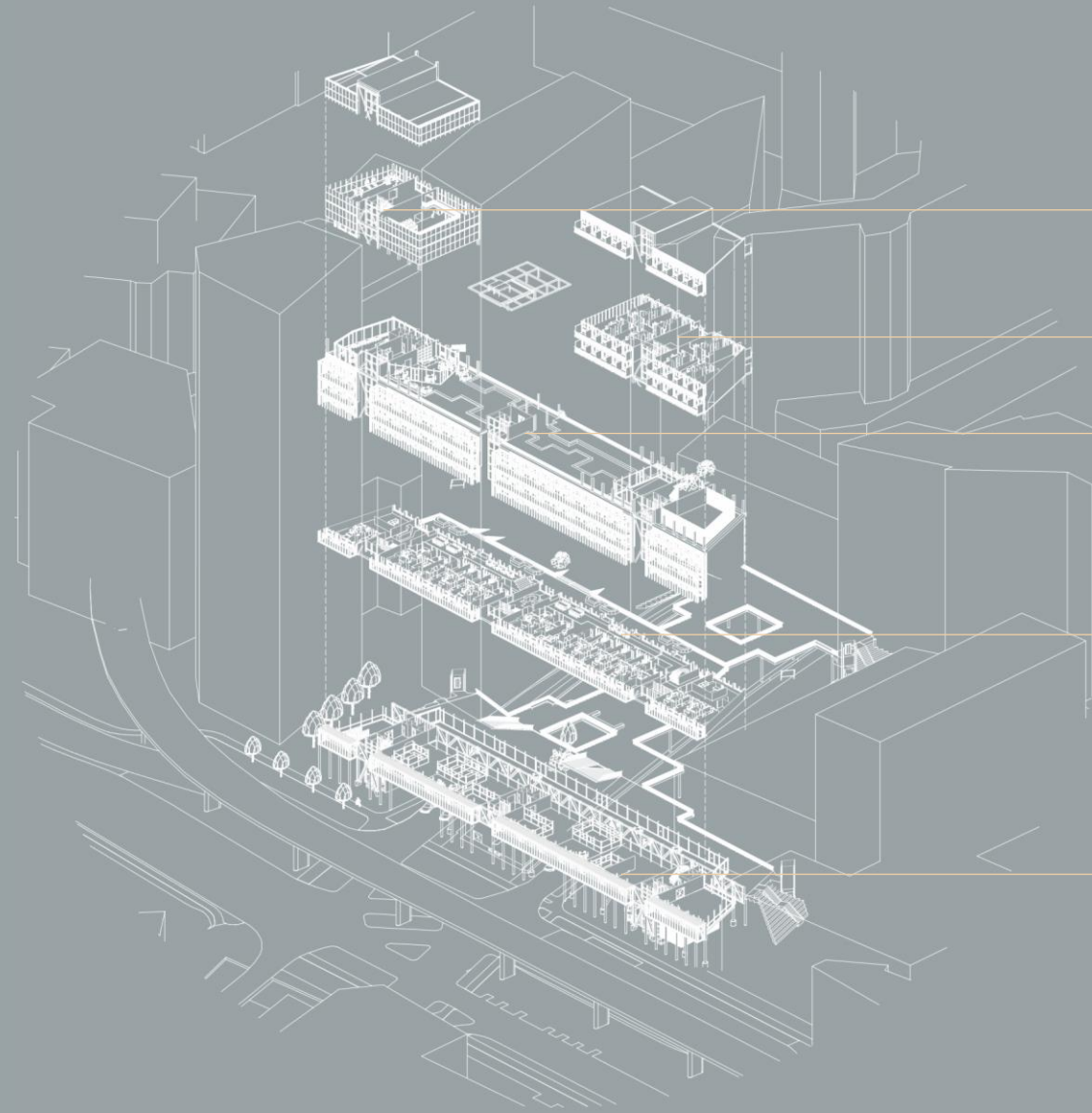
Living: 20,5 m²

Work: 17,28 m²

Bathroom: 3,6 m²



DESIGN



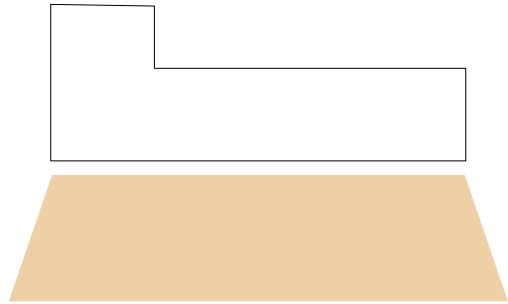
FACILITIES

LIVING

RESTAURANTS AND BARS

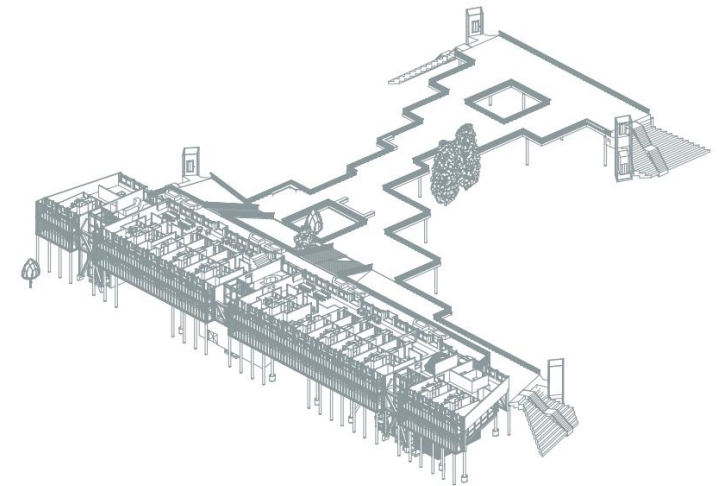
WORKING/DWELLING

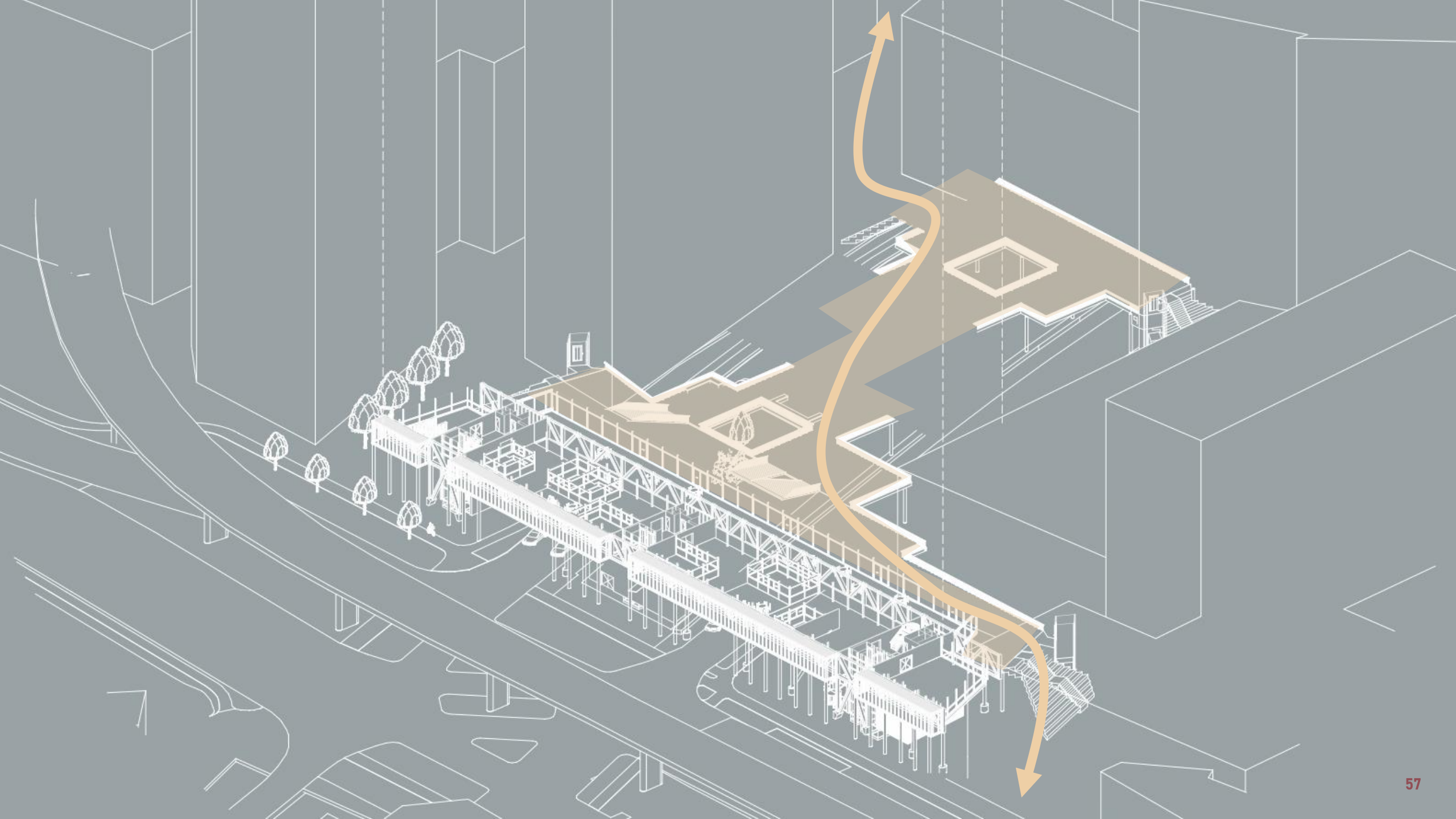
SHOPS AND RETAIL

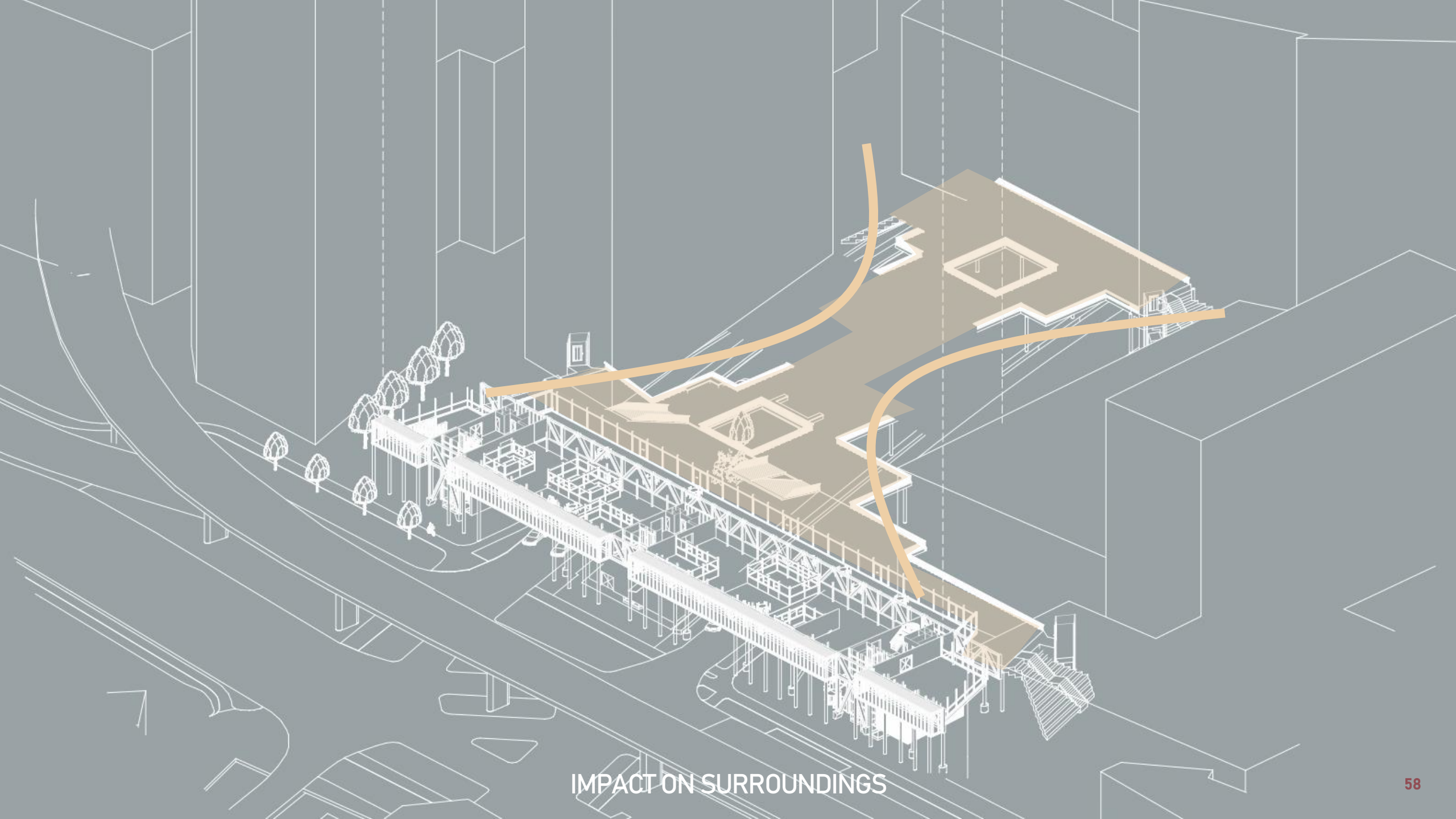


#3 URBAN CONNECTION

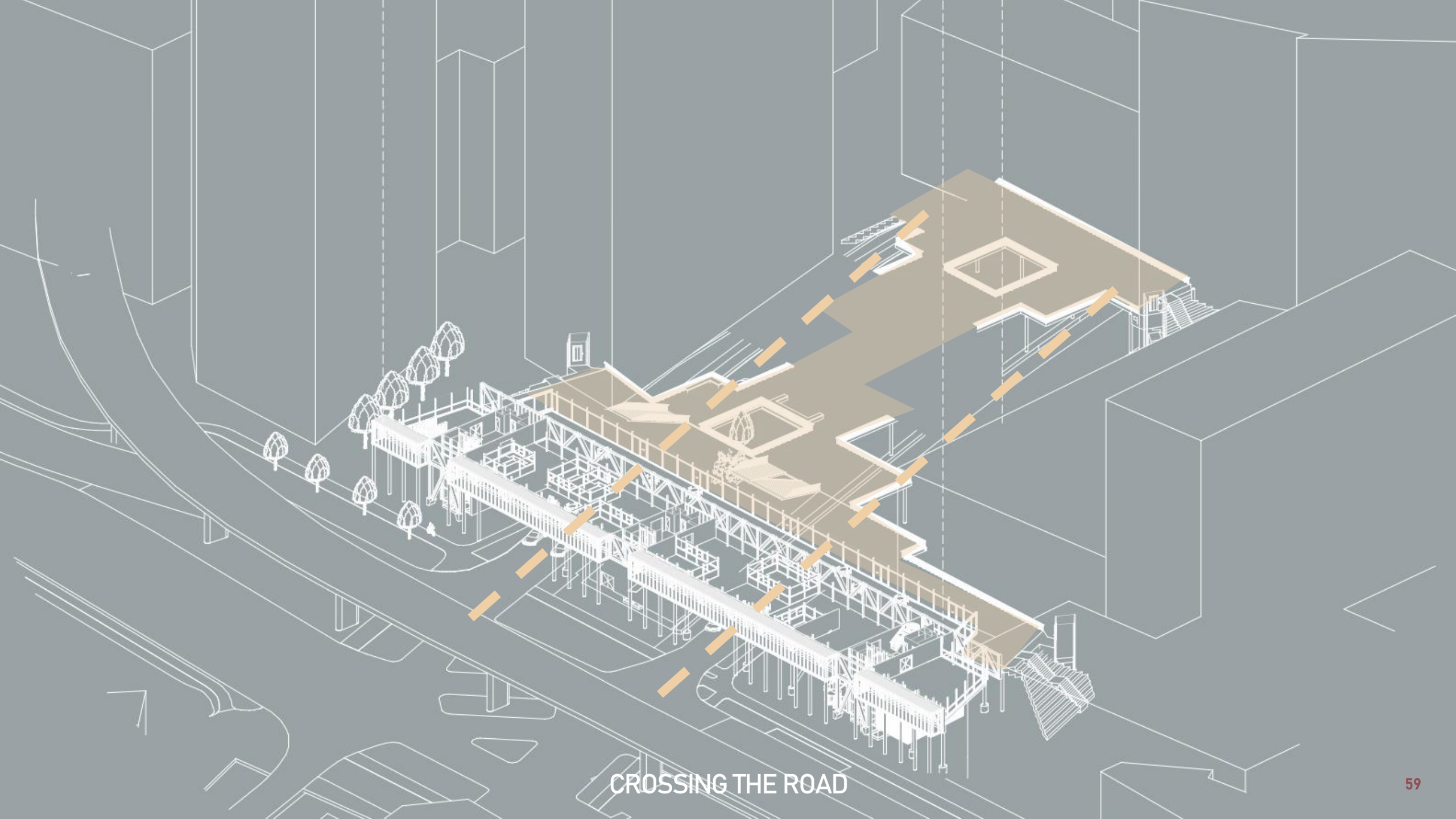
Connecting the building
to the walking route



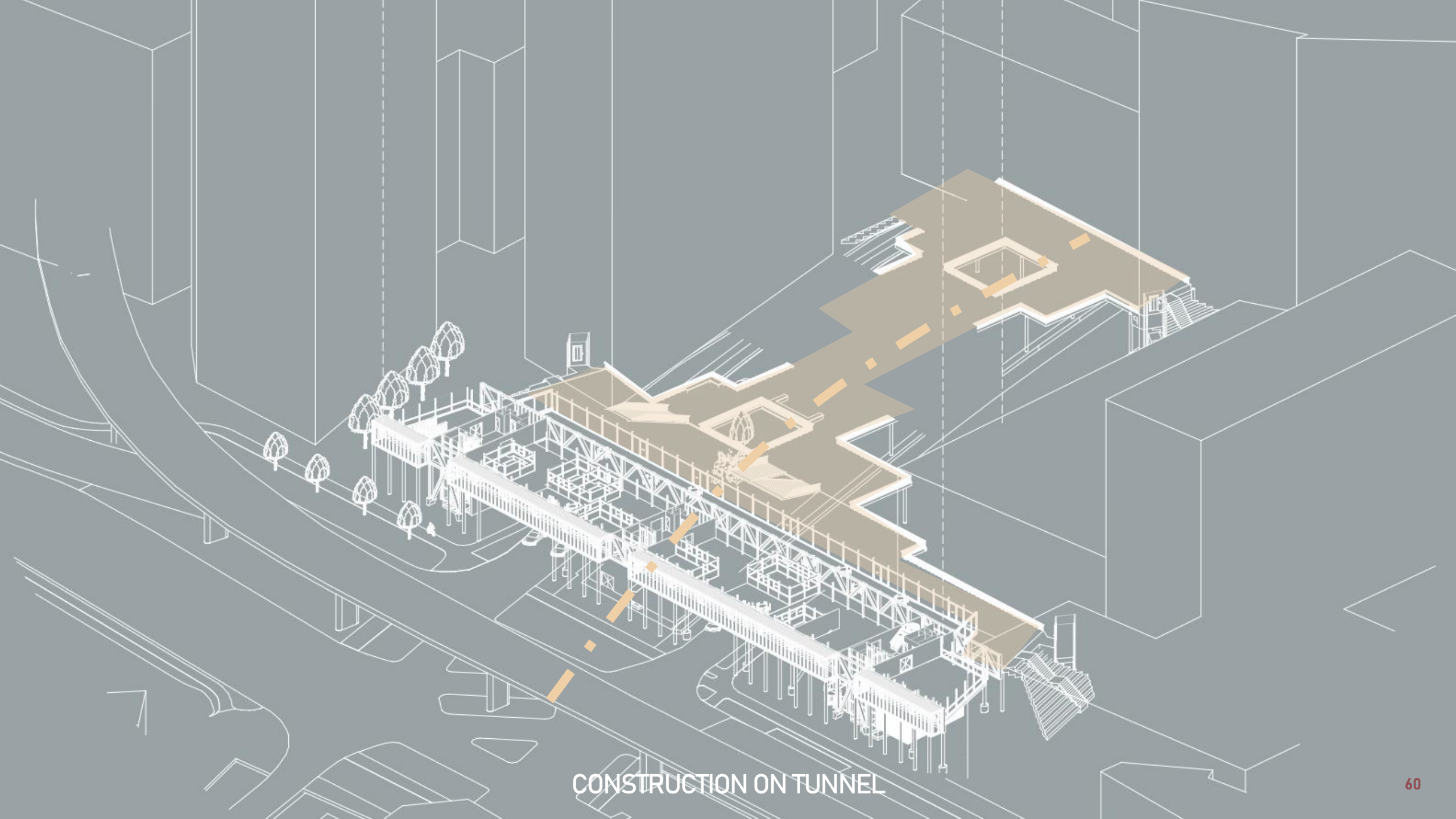




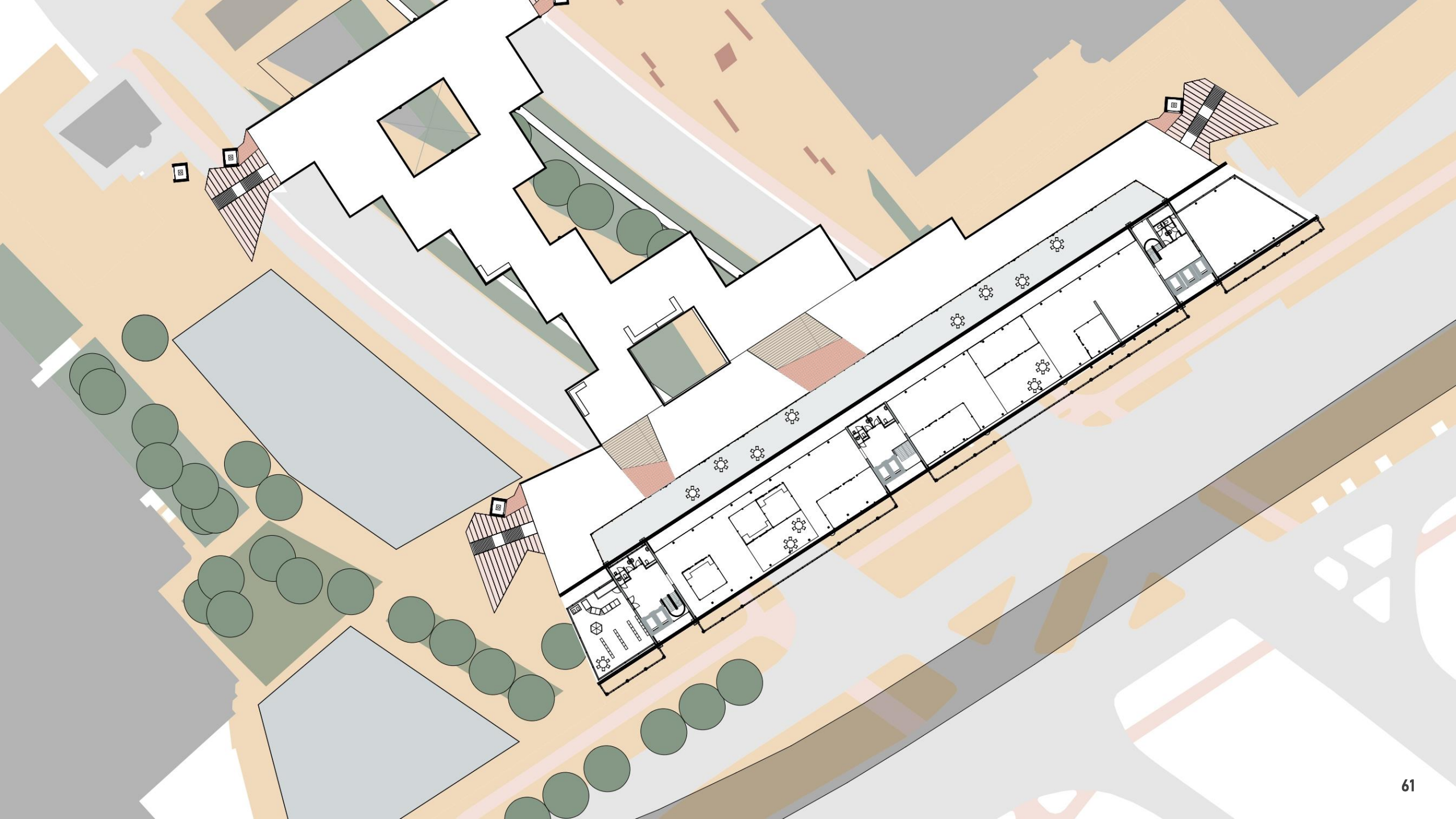
IMPACT ON SURROUNDINGS

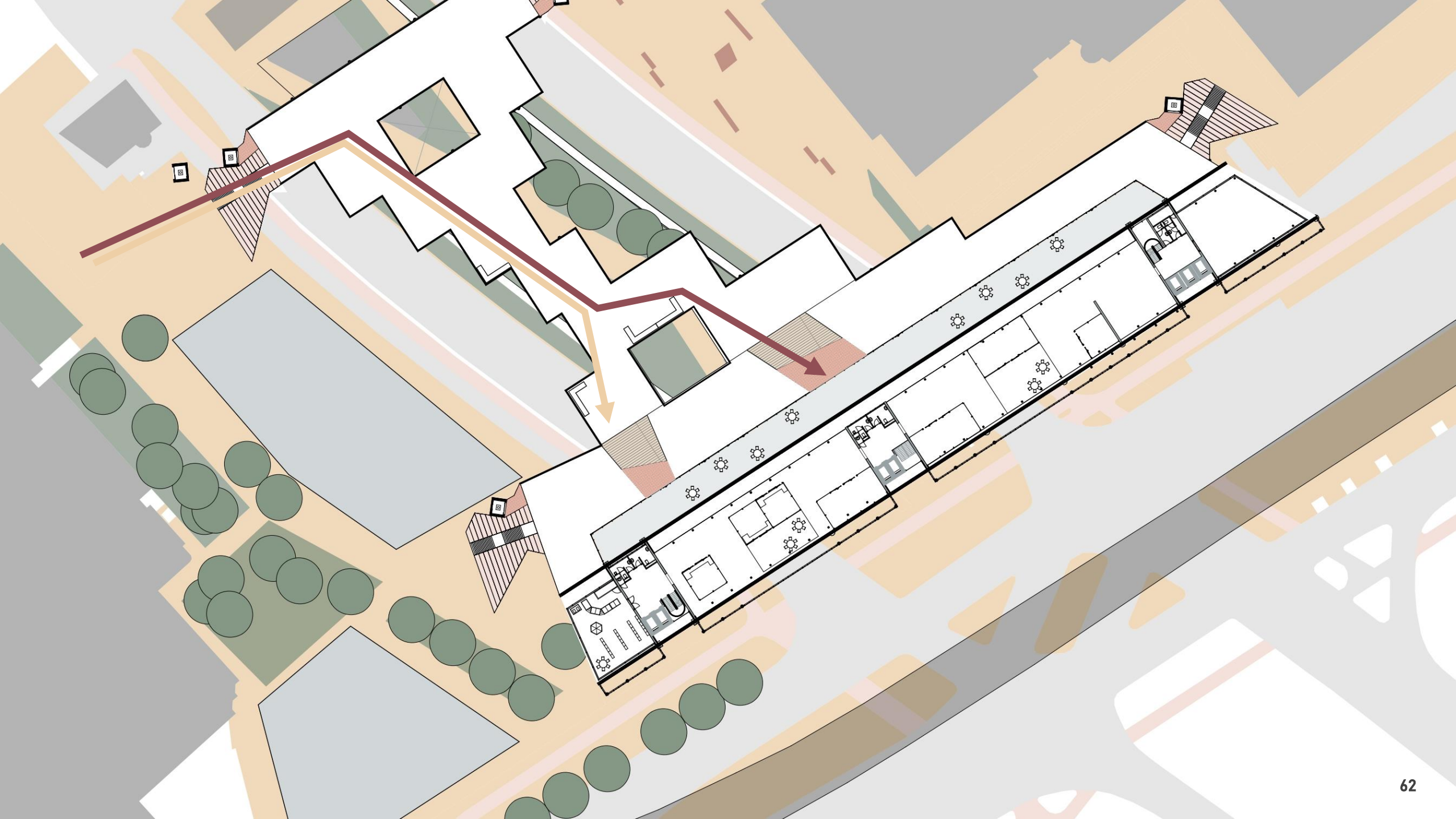


CROSSING THE ROAD



CONSTRUCTION ON TUNNEL





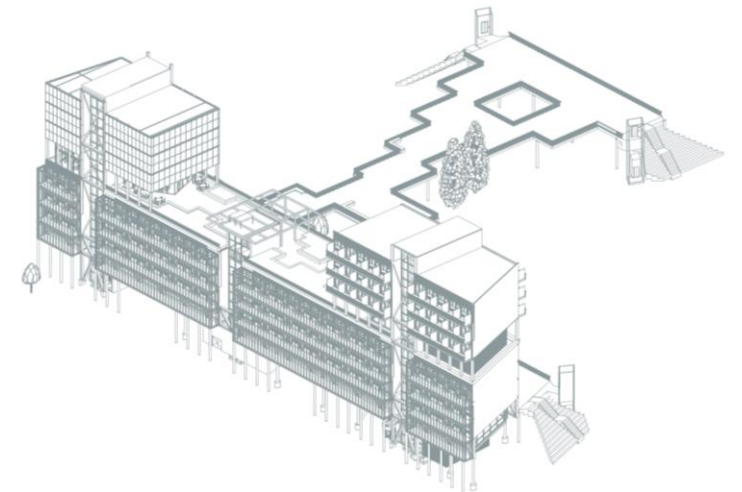
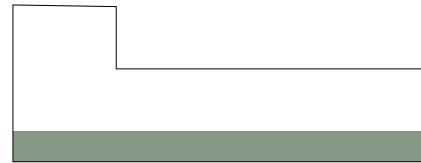


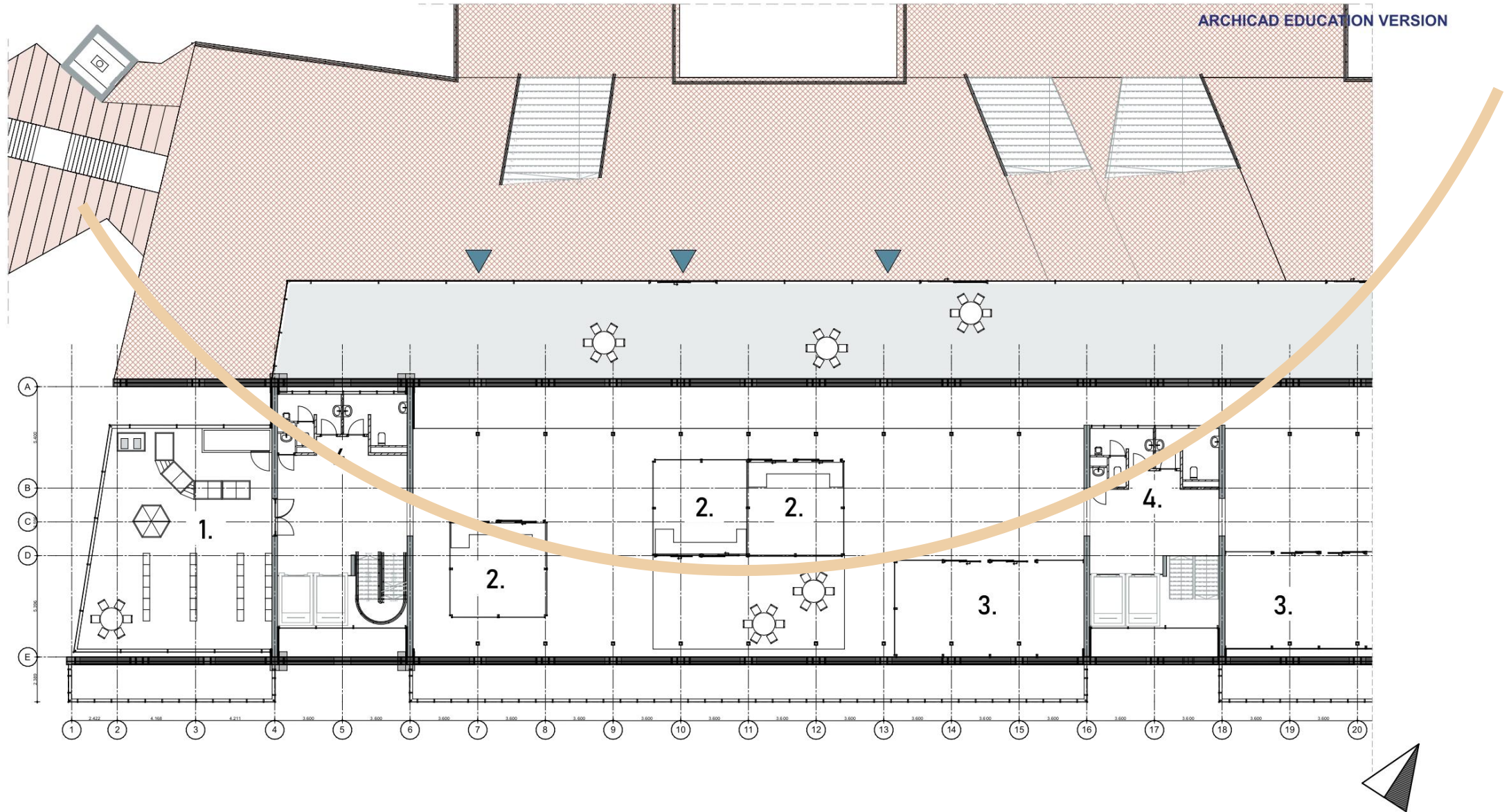


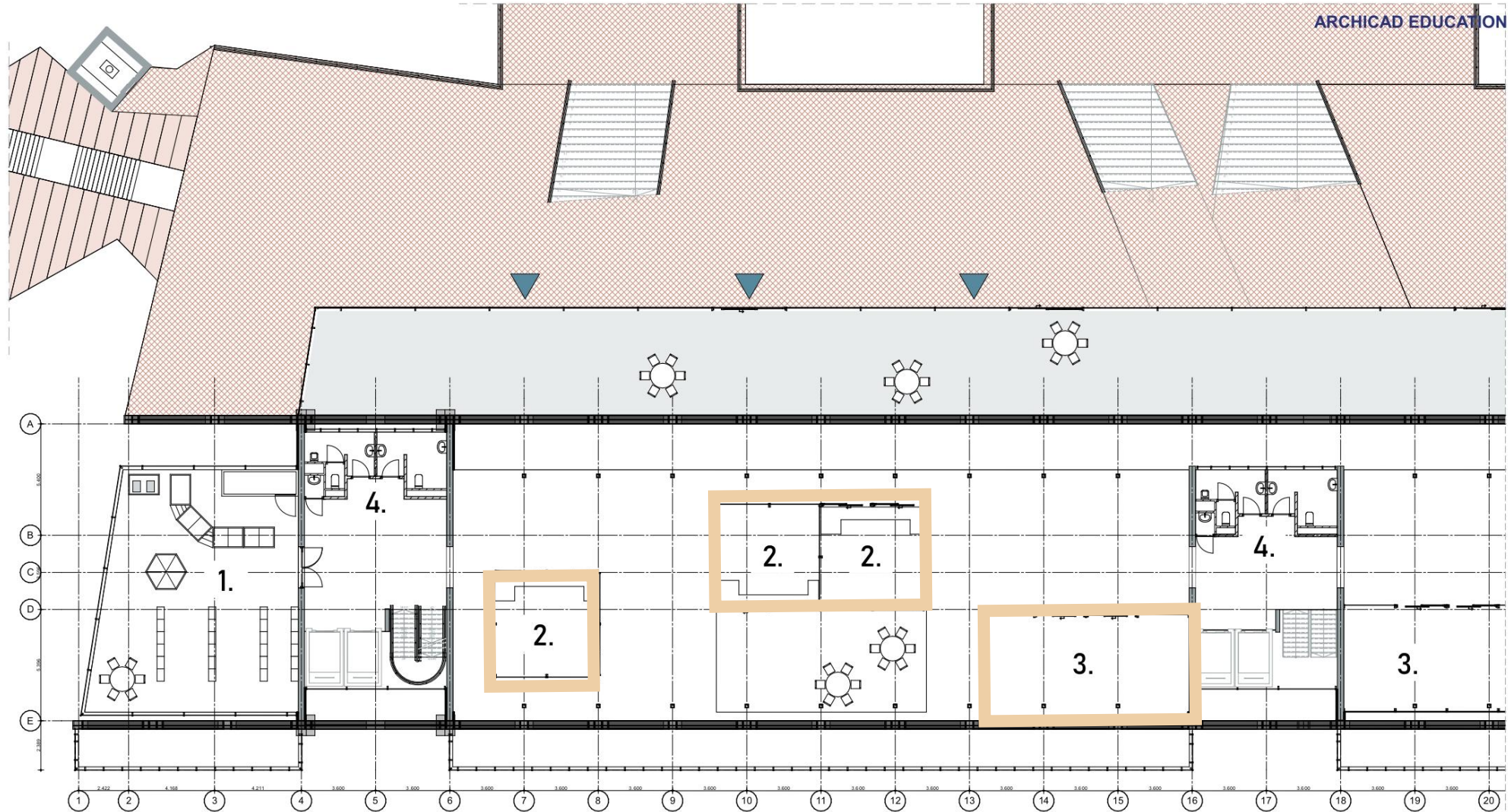


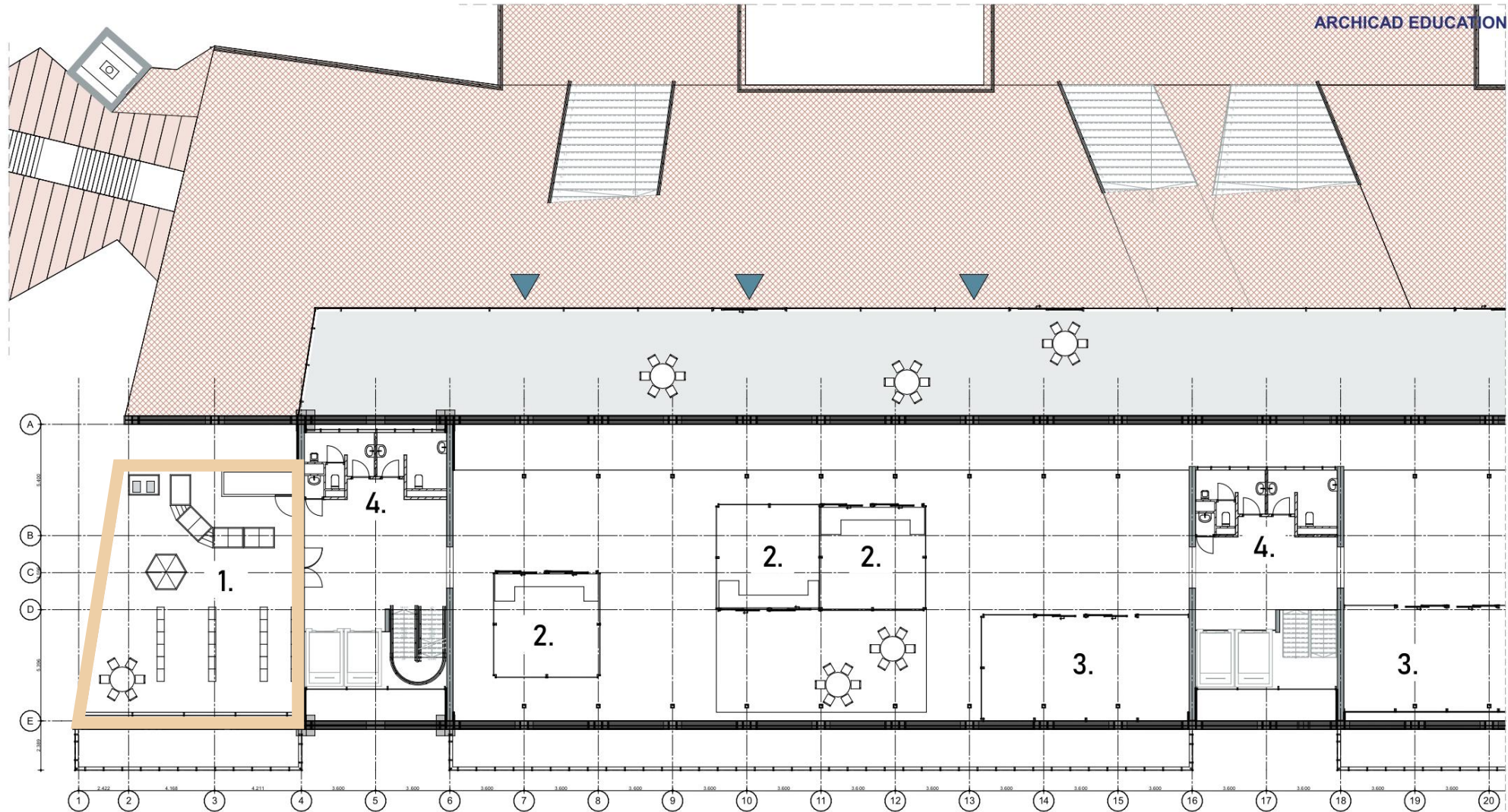
#4 ACCESSIBLE PLINTH

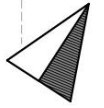
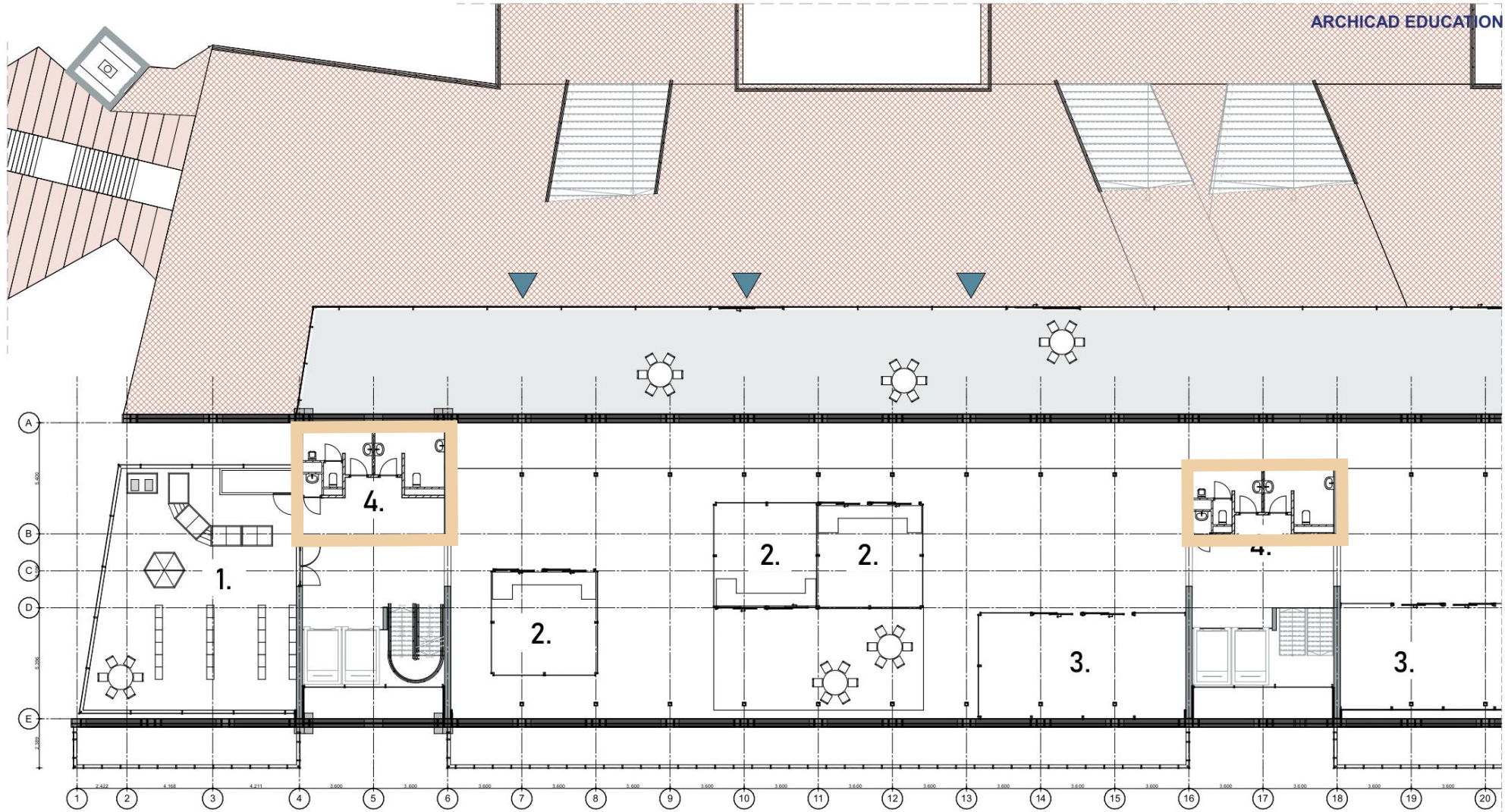
Activating the square
and the building with
the plinth



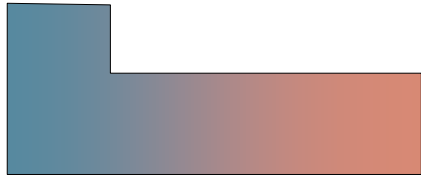






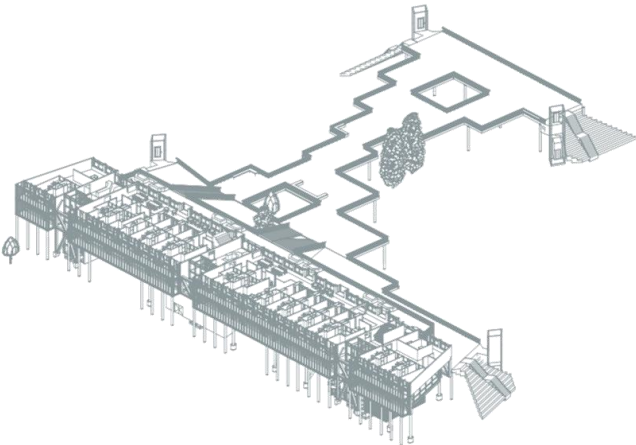


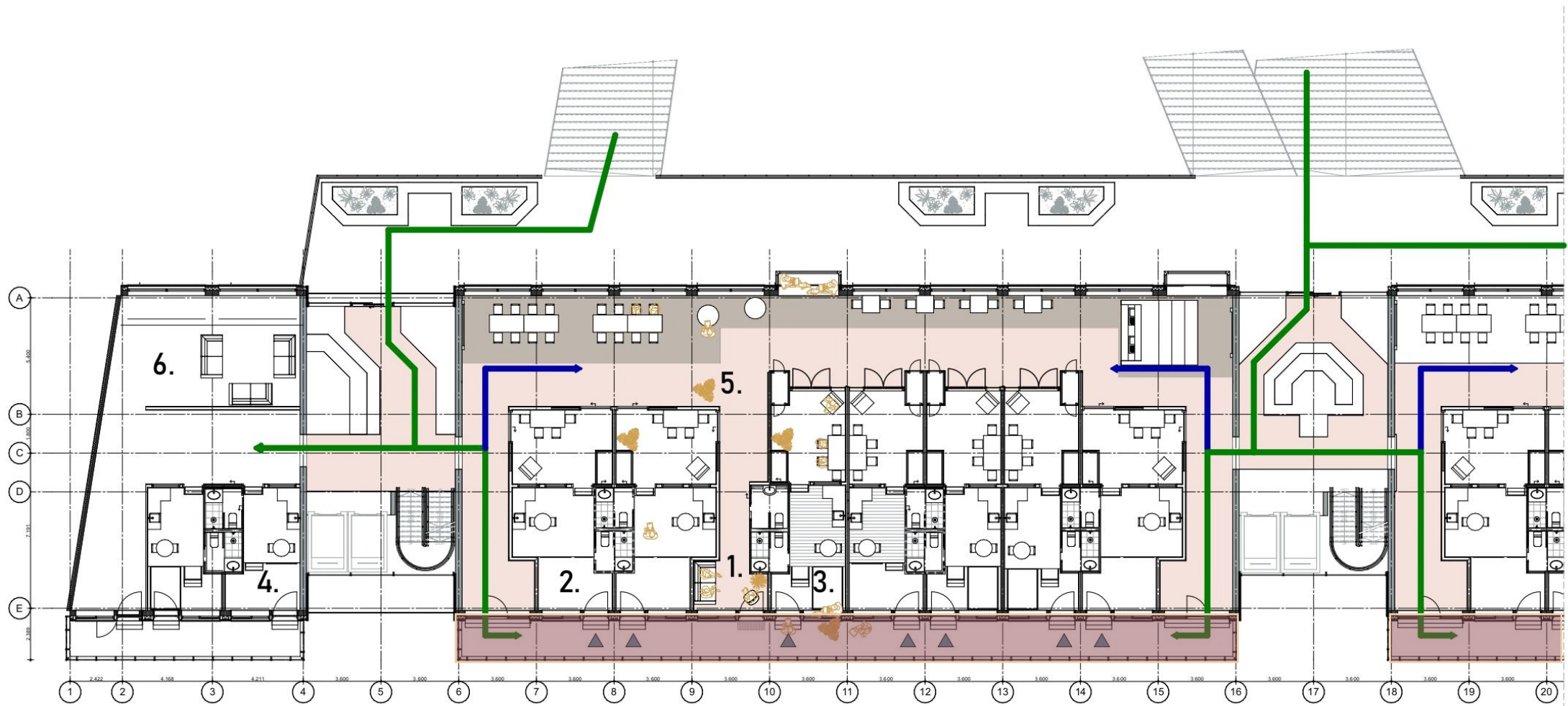


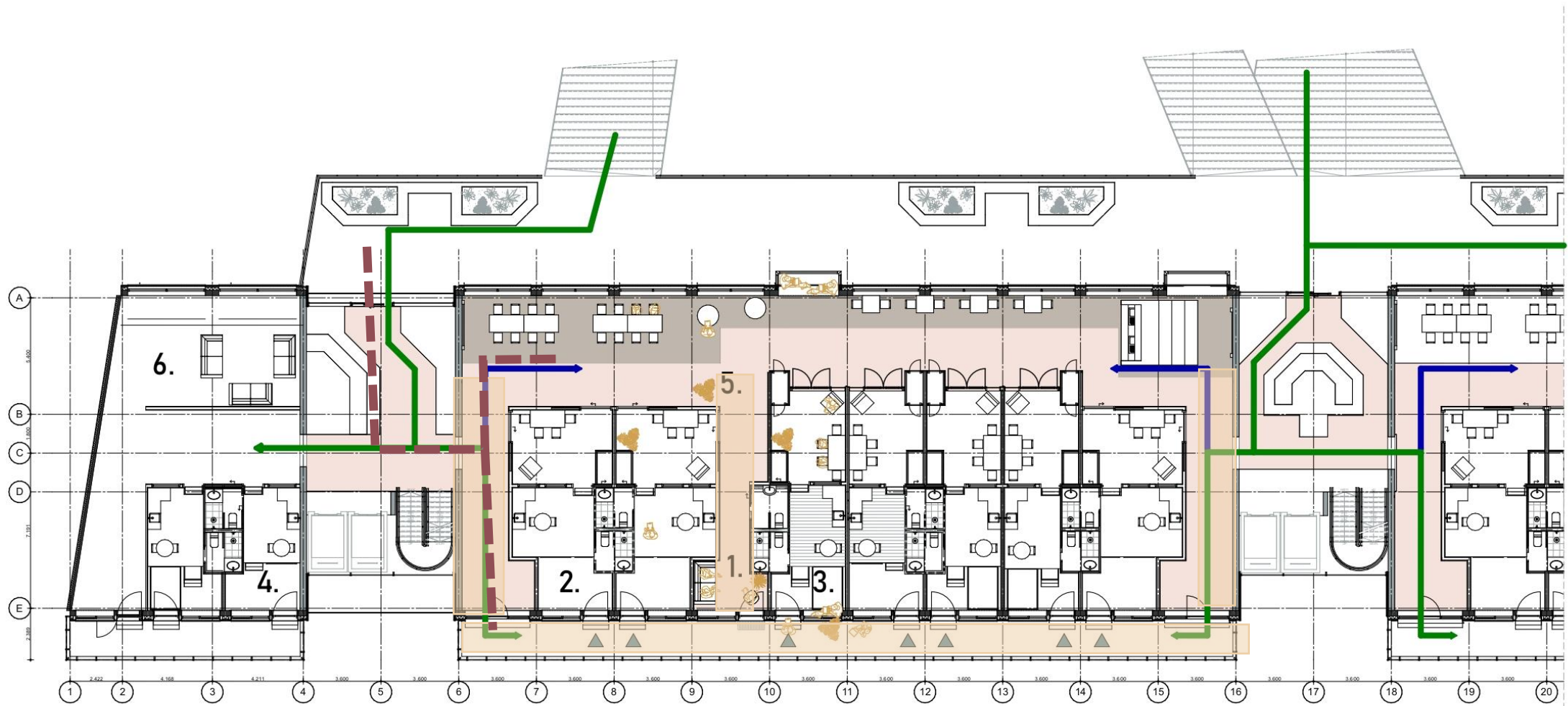


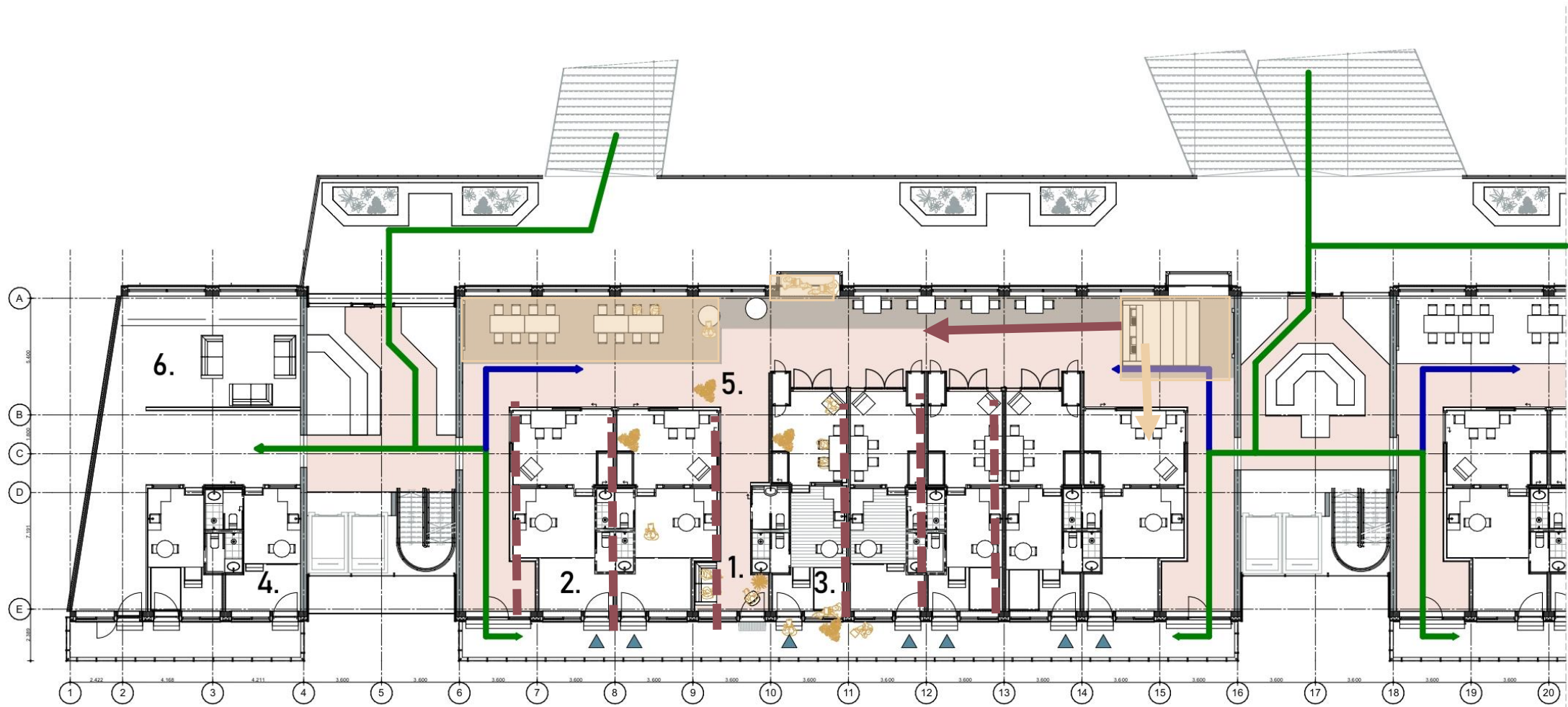
#1 MIXING

Mixing working and living as main factors

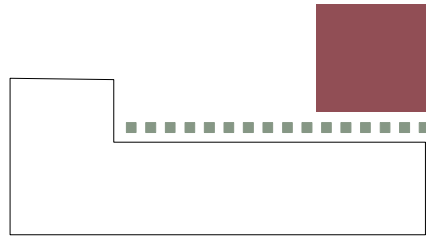






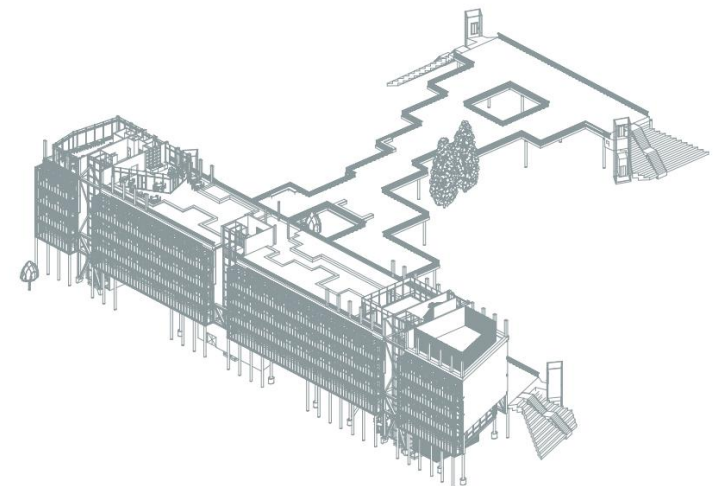




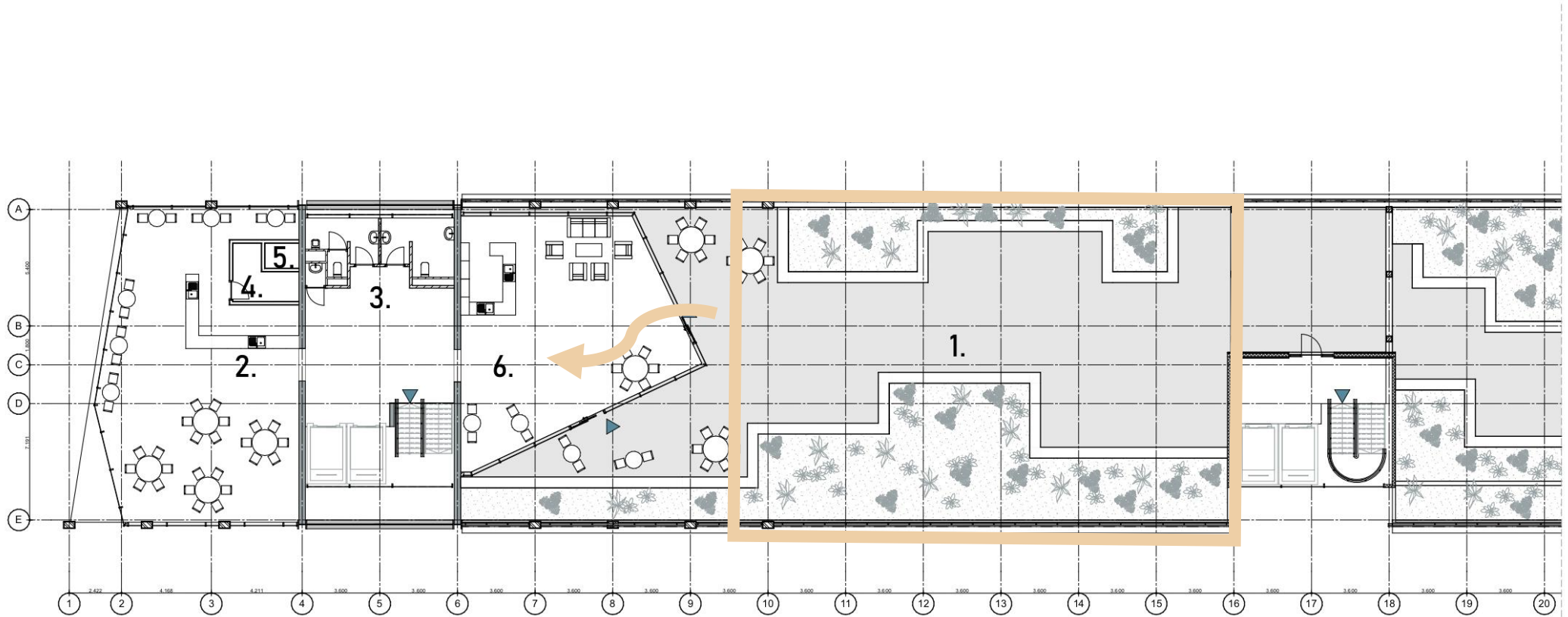


#2 FACILITIES

Facilities supporting living and working

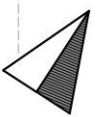


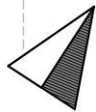
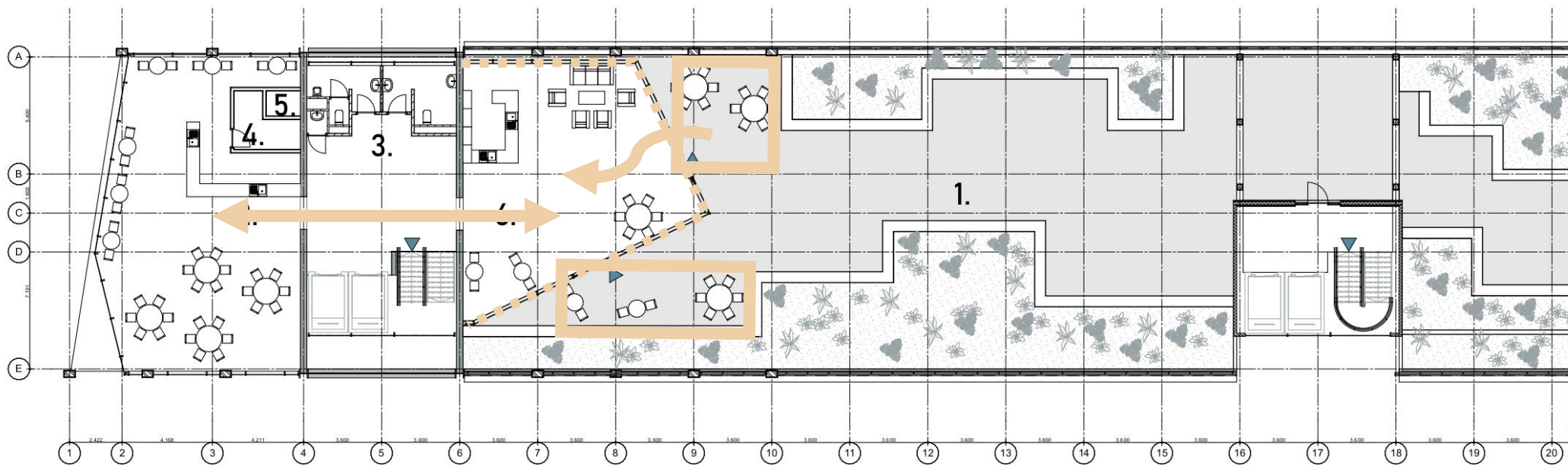
FACILITIES



CLASS

LEGEND





SPORTS

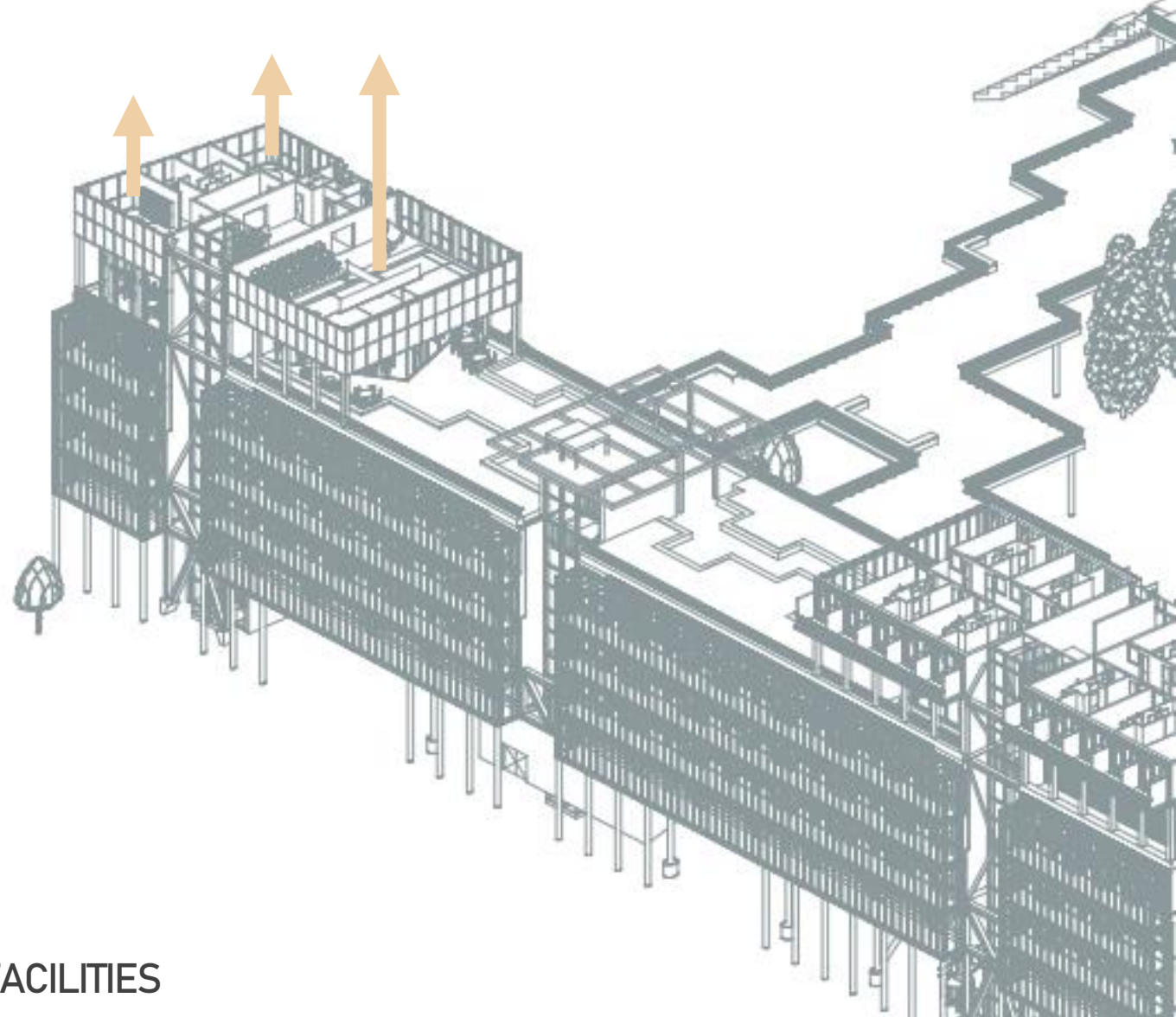
EVENTS

CINEMA

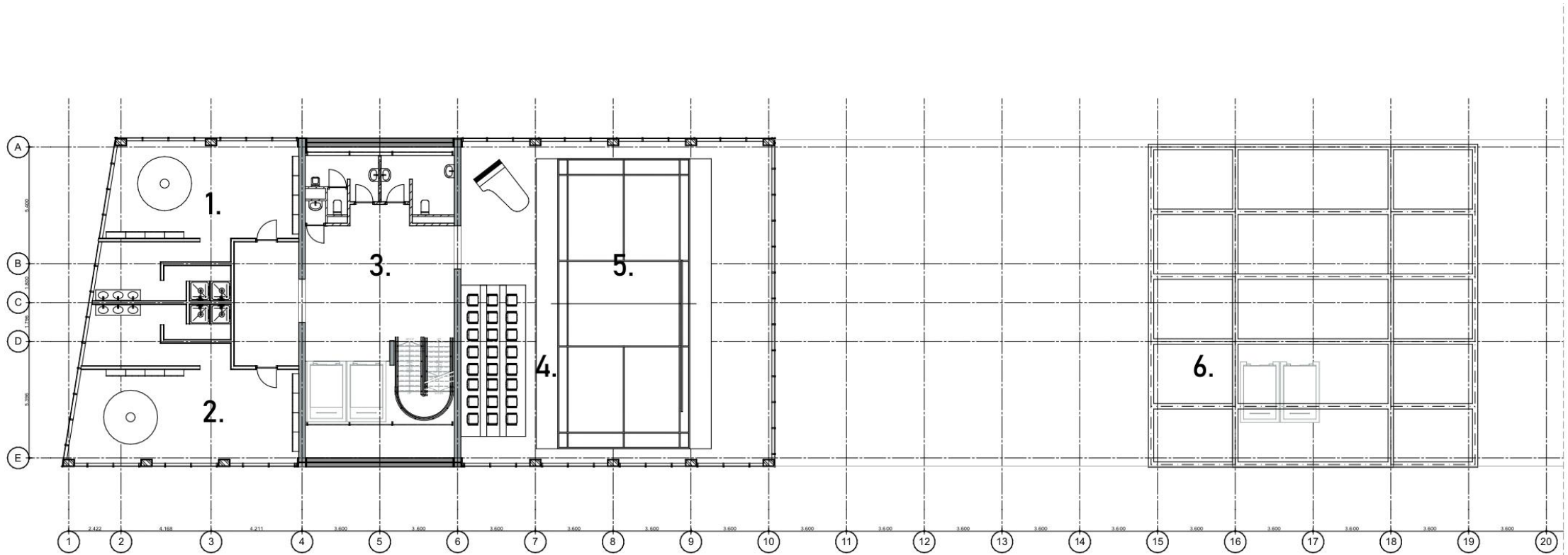
PRESENTATIONS

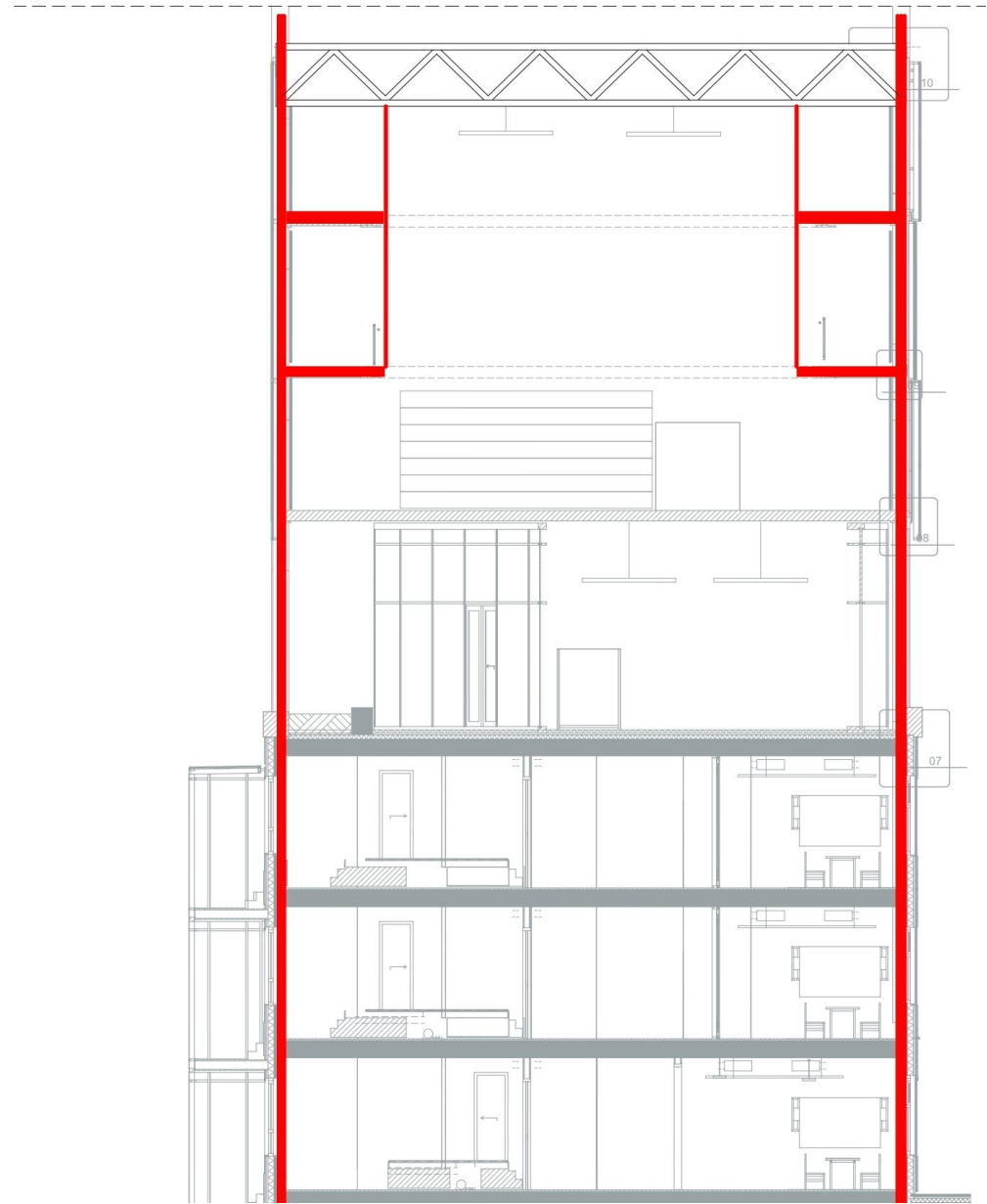
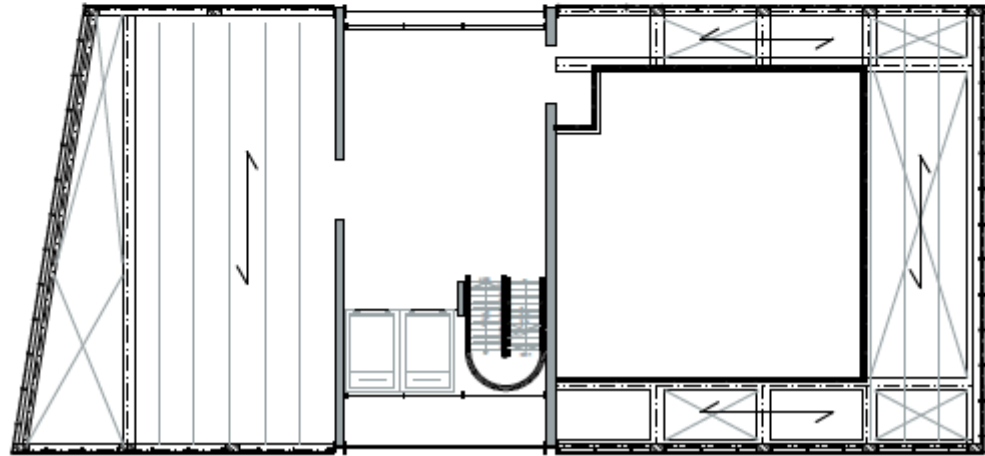
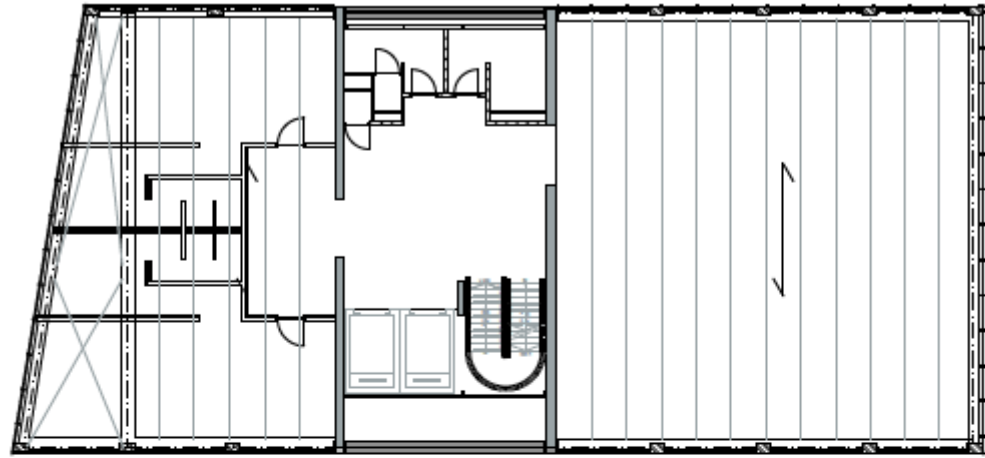
OUTSIDE

FACILITIES



FACILITIES





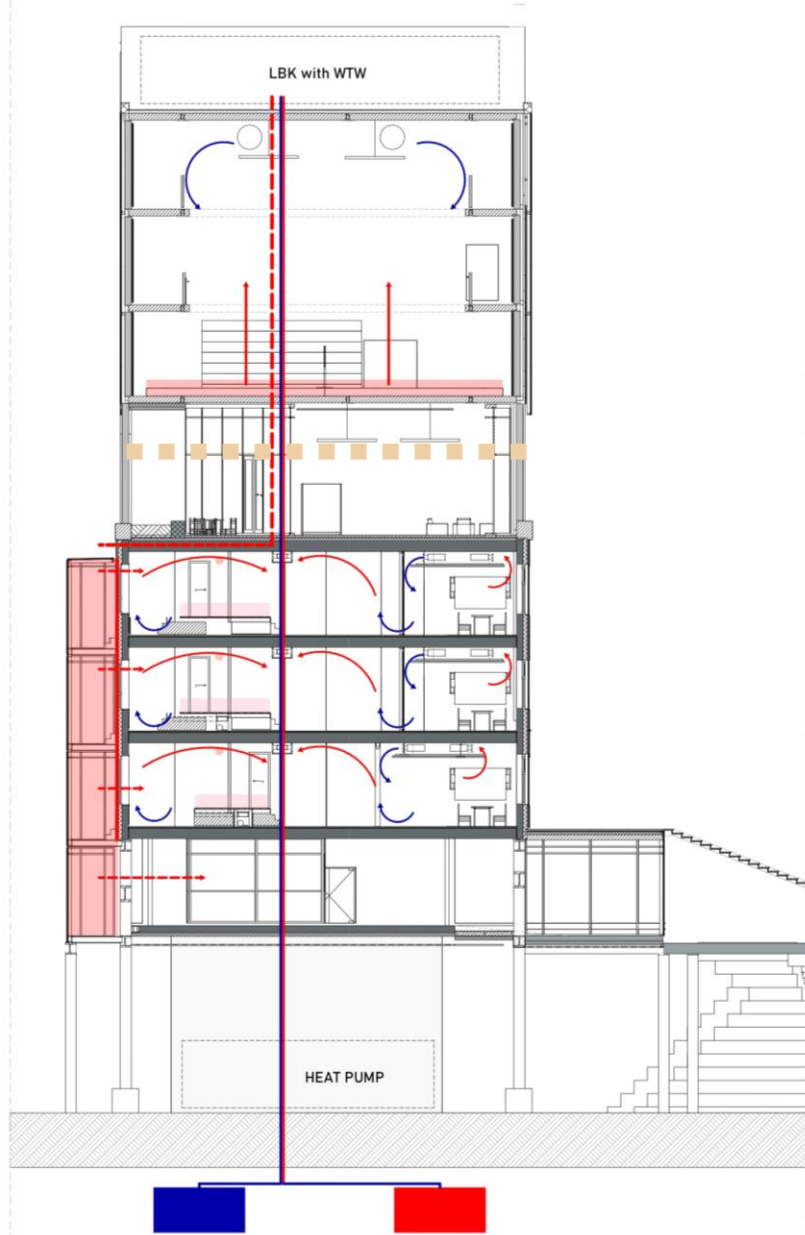




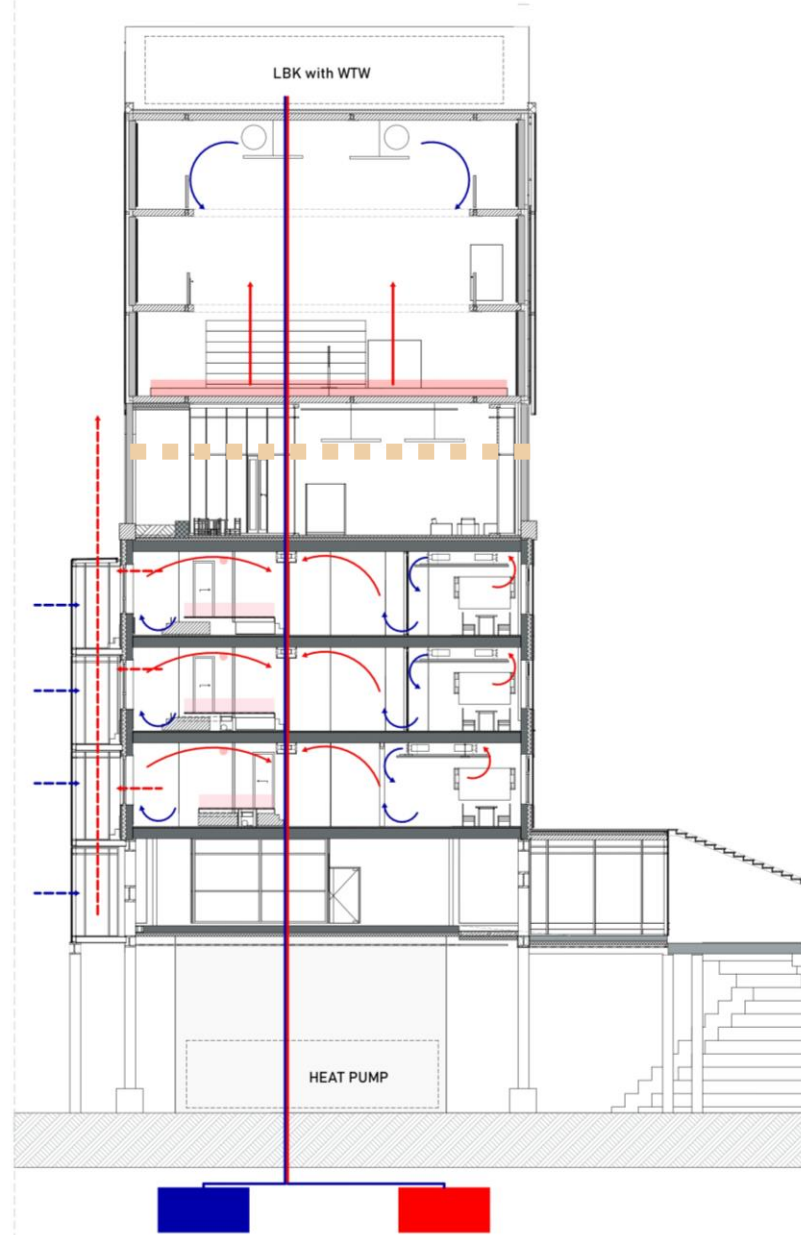
COMBINING

CLIMATE AND TECHNOLOGY

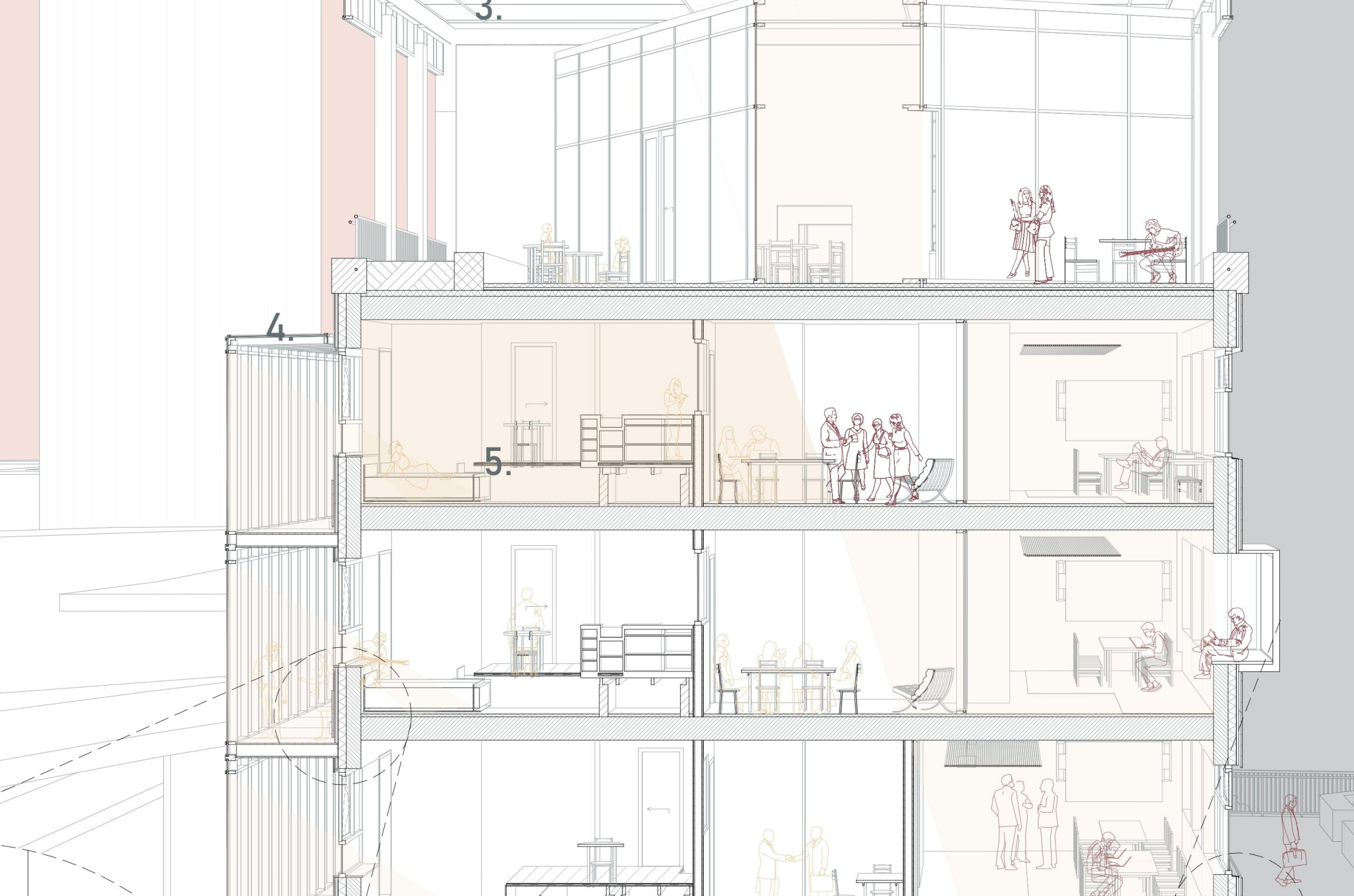
WINTER

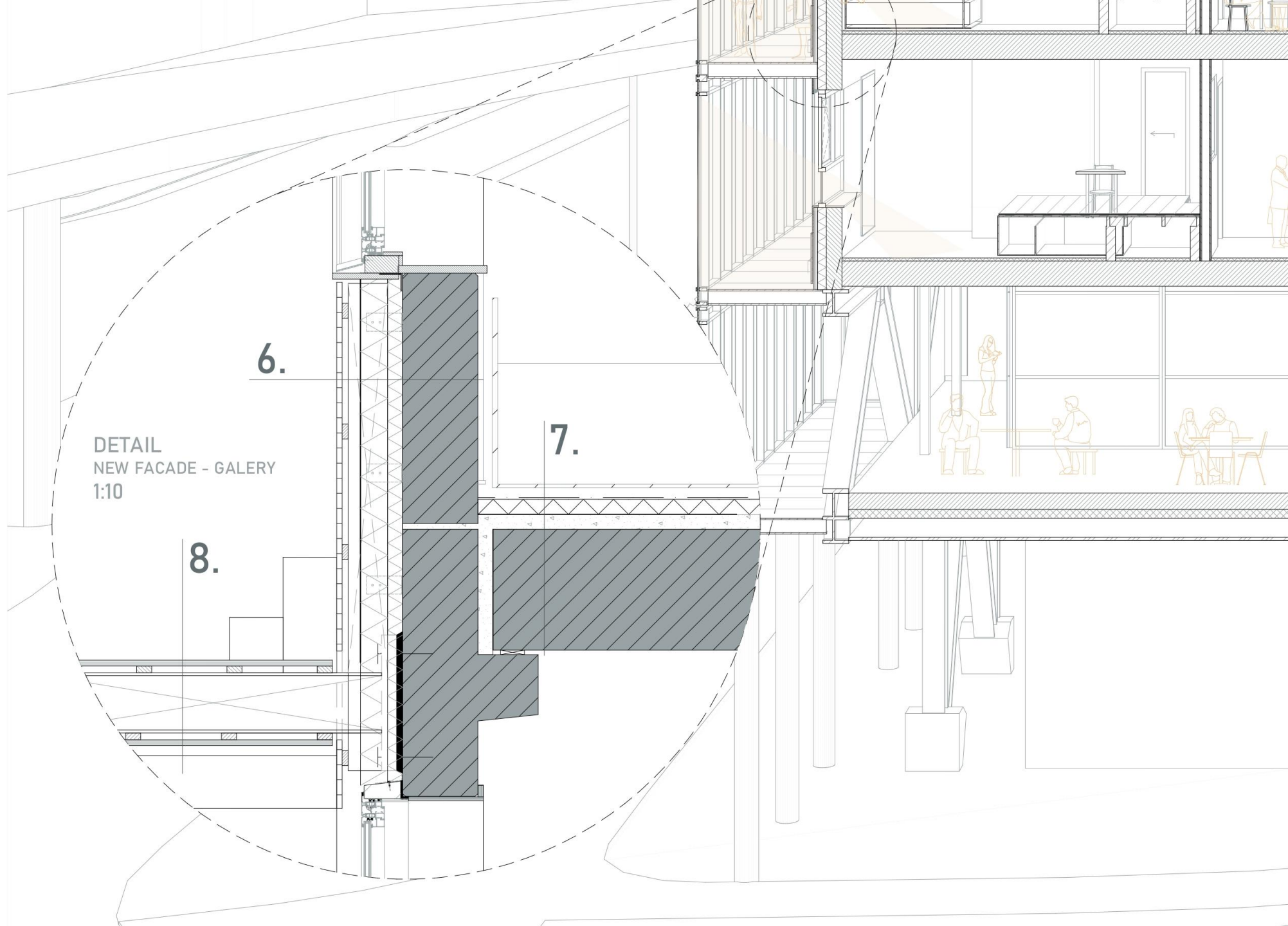


SUMMER







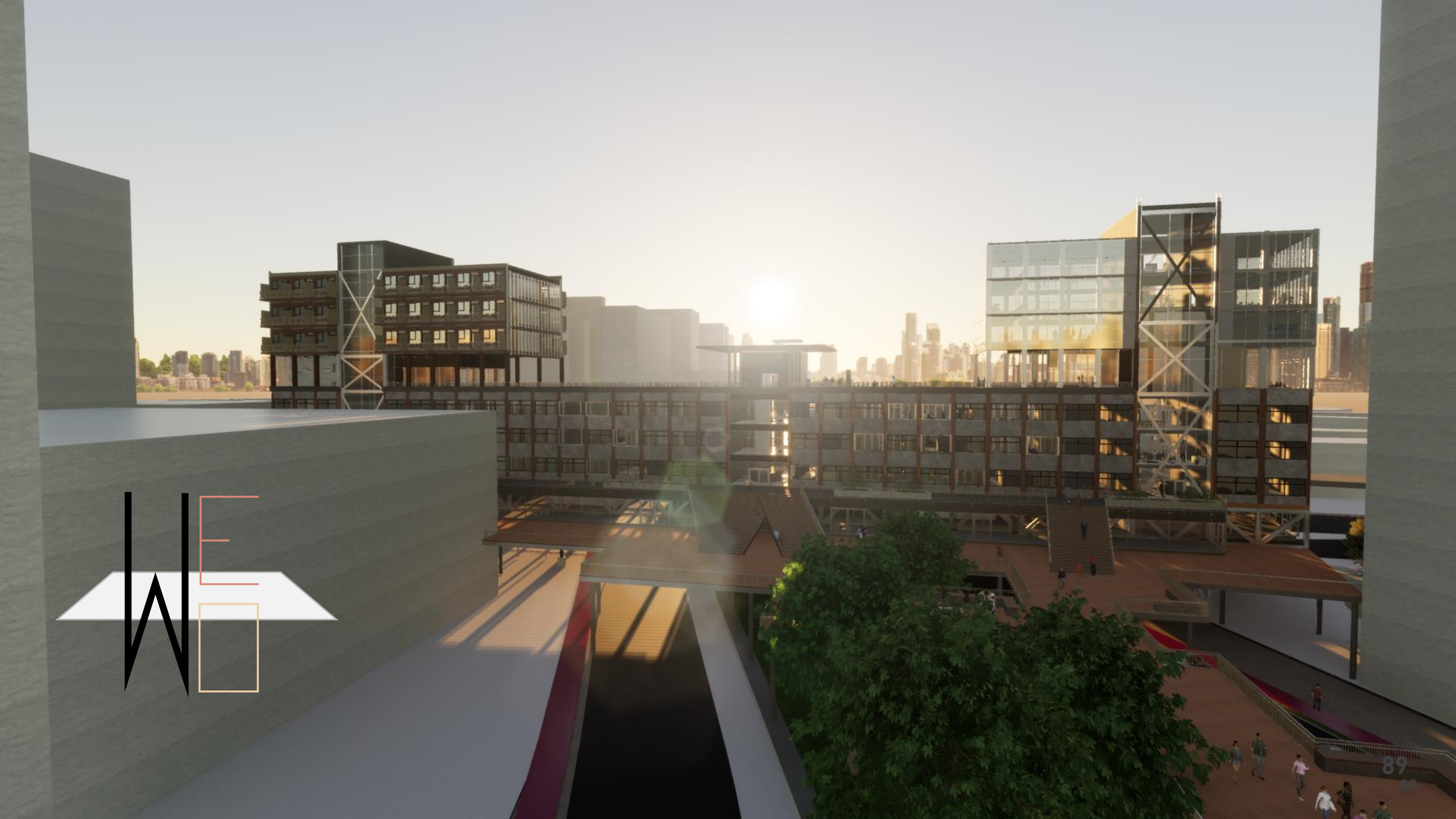


DETAIL
NEW FACADE - GALERY
1:10

6.

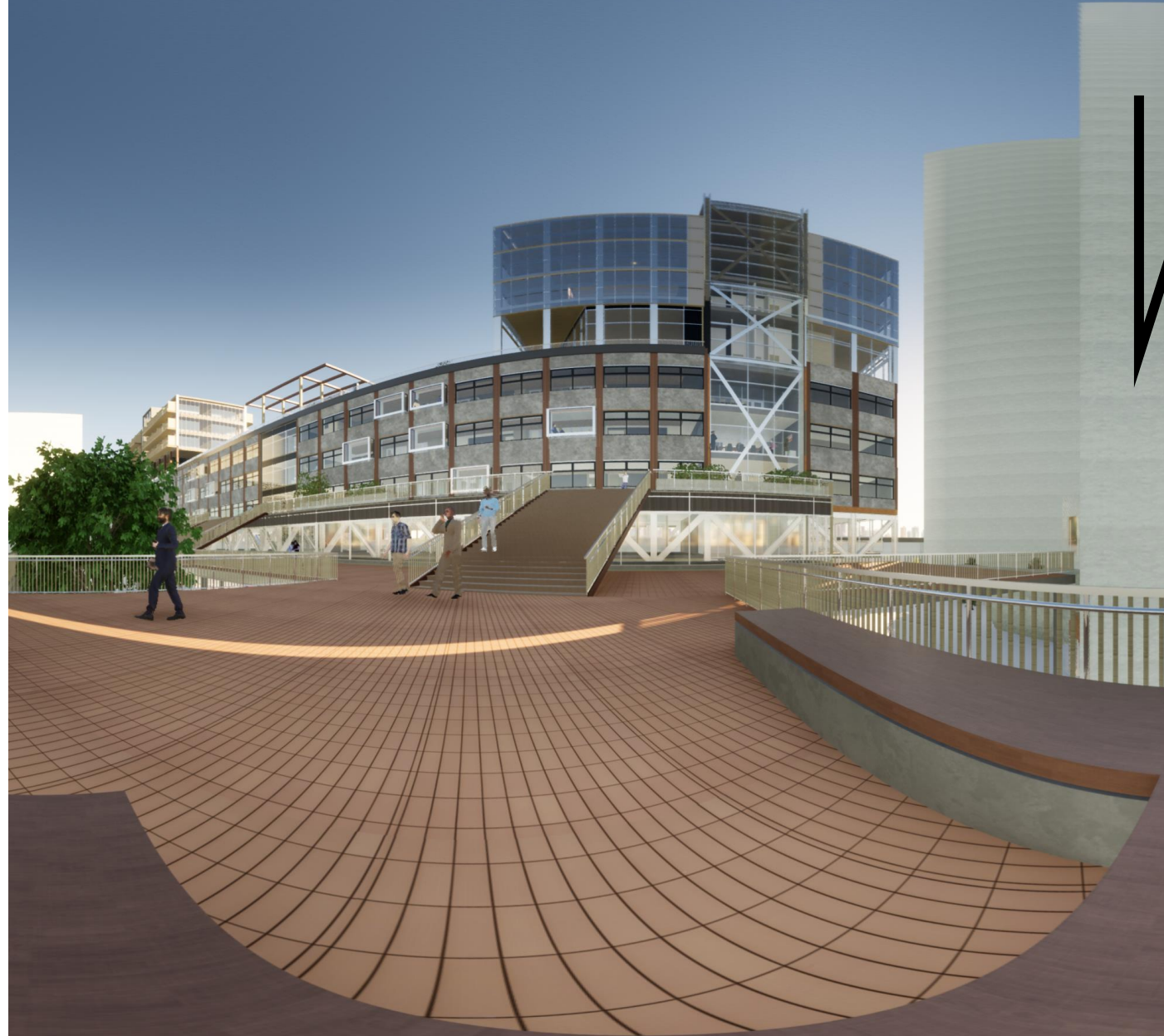
7.

8.





A DAY IN THE WeWo BUILDING



Bruggebouw

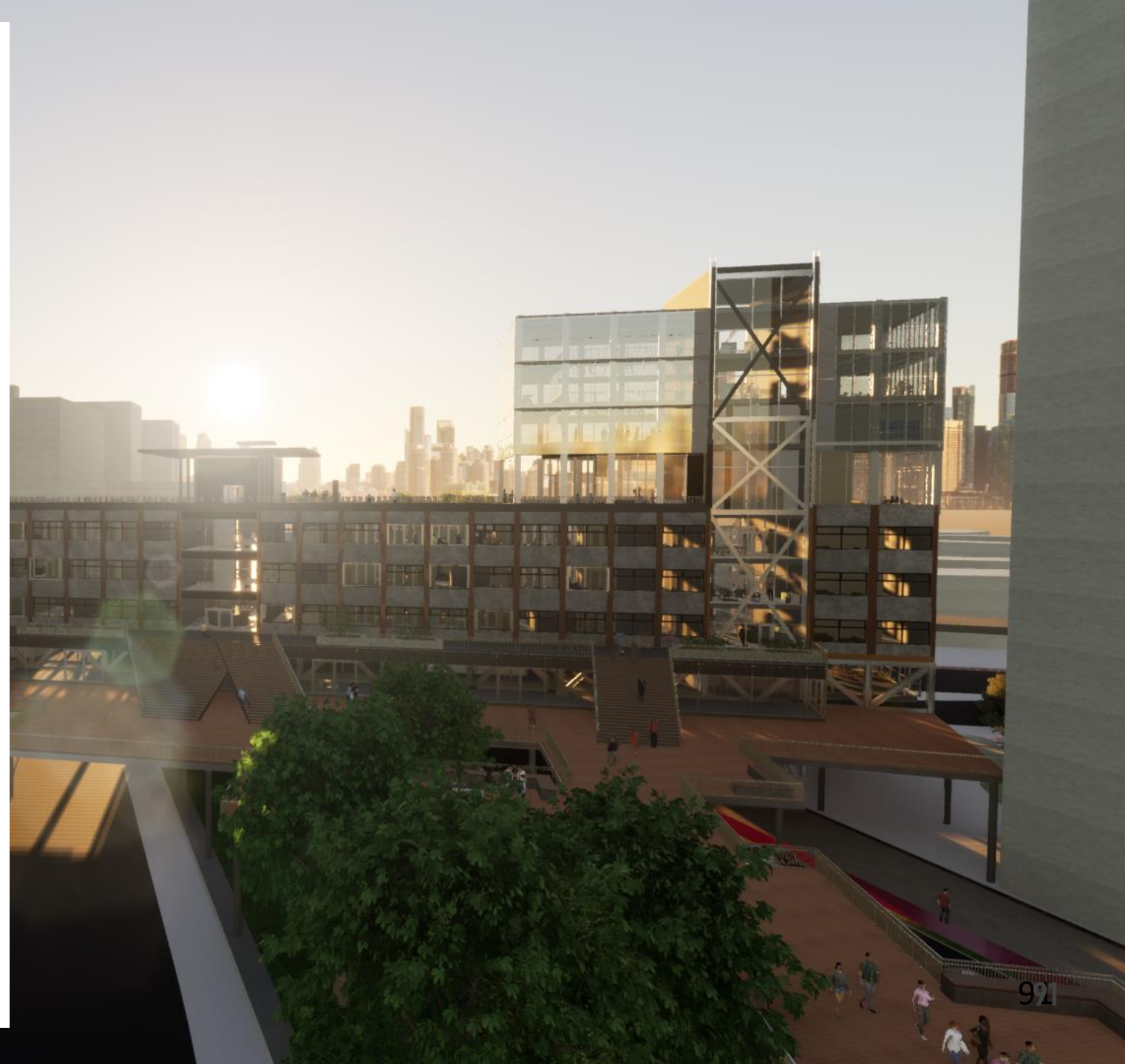
Questions

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4813952

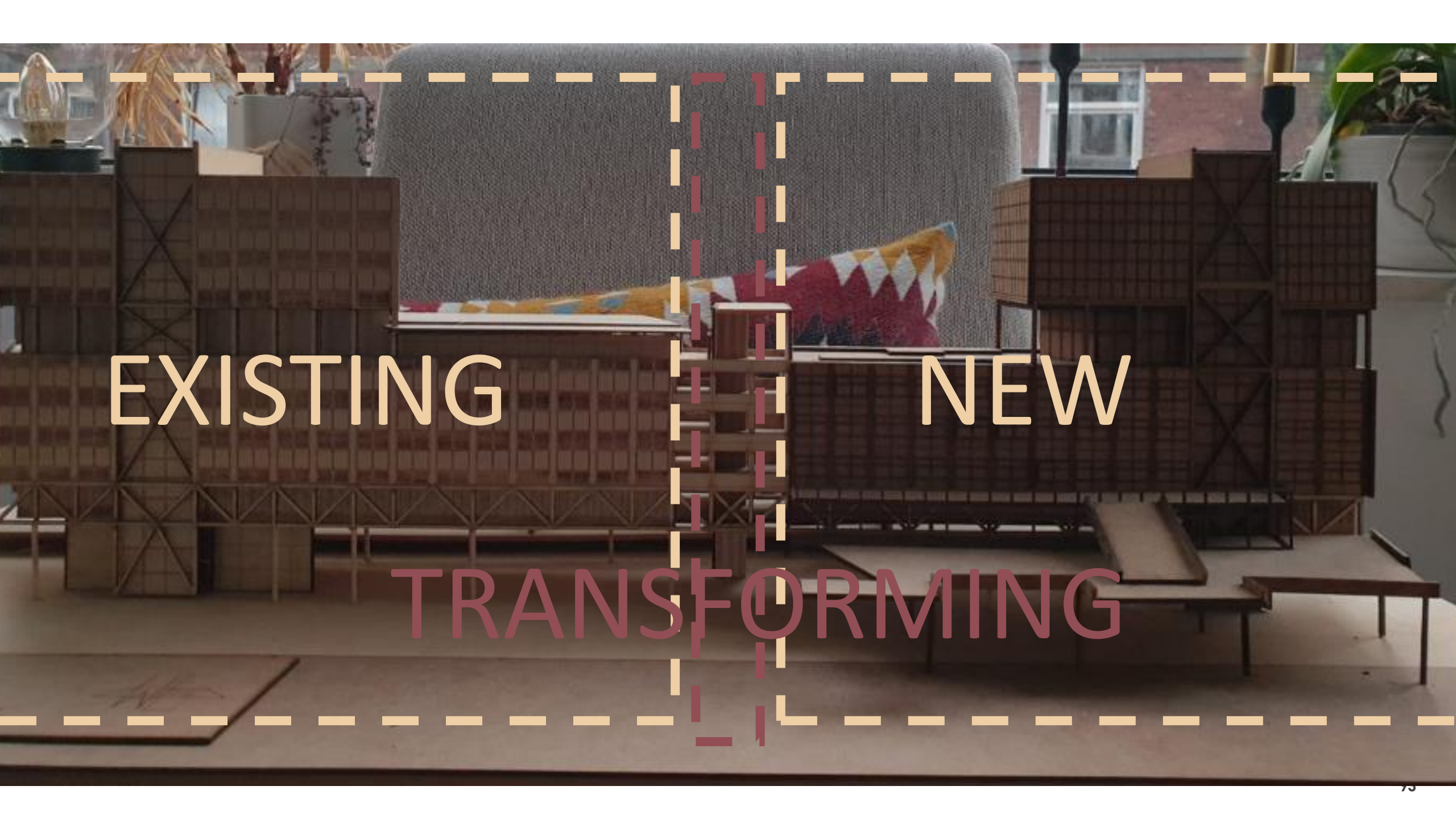


kantoor als ontmoetingsplek en thuis het nieuwe kantoor

ARNHEM - De samenleving zal nooit meer worden zoals voor de uitbraak van corona. Dat heeft de intelligente lockdown van drie maanden bewezen, stellen leidinggevenden van tien grote organisaties en bedrijven in Arnhem. Het kantoor wordt een plek van ontmoeting en thuis het nieuwe kantoor.

Eric van der Vegt 14-06-20, 08:41 Laatste update: 10:09

<https://www.gelderlander.nl/arnhem/het-werkende-leven-na-corona-kantoor-als-ontmoetingsplek-en-thuis-het-nieuwe-kantoor~a88cd2c1/?referrer=https://www.google.com/>



EXISTING

NEW

TRANSFORMING