COMPLEX PROJECTS

AI UNIVERSITY BERLIN

COLLABORATION IN THE FIELD OF AI

Casper Laan

01/11/2023

Introduction

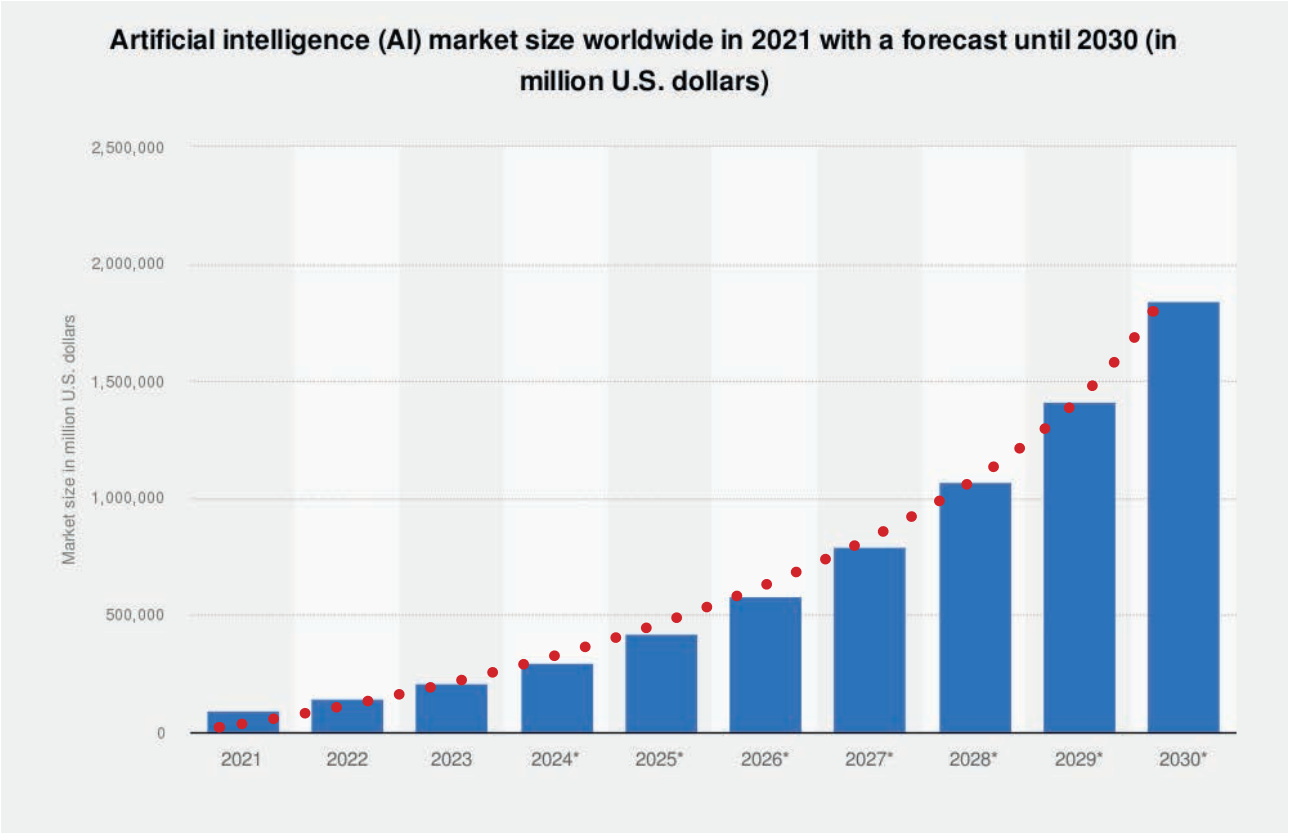
THE PLACE TO COLLABORATE IN AI WITH AI

Introduction

THE AI REVOLUTION

Disruption & Adoption

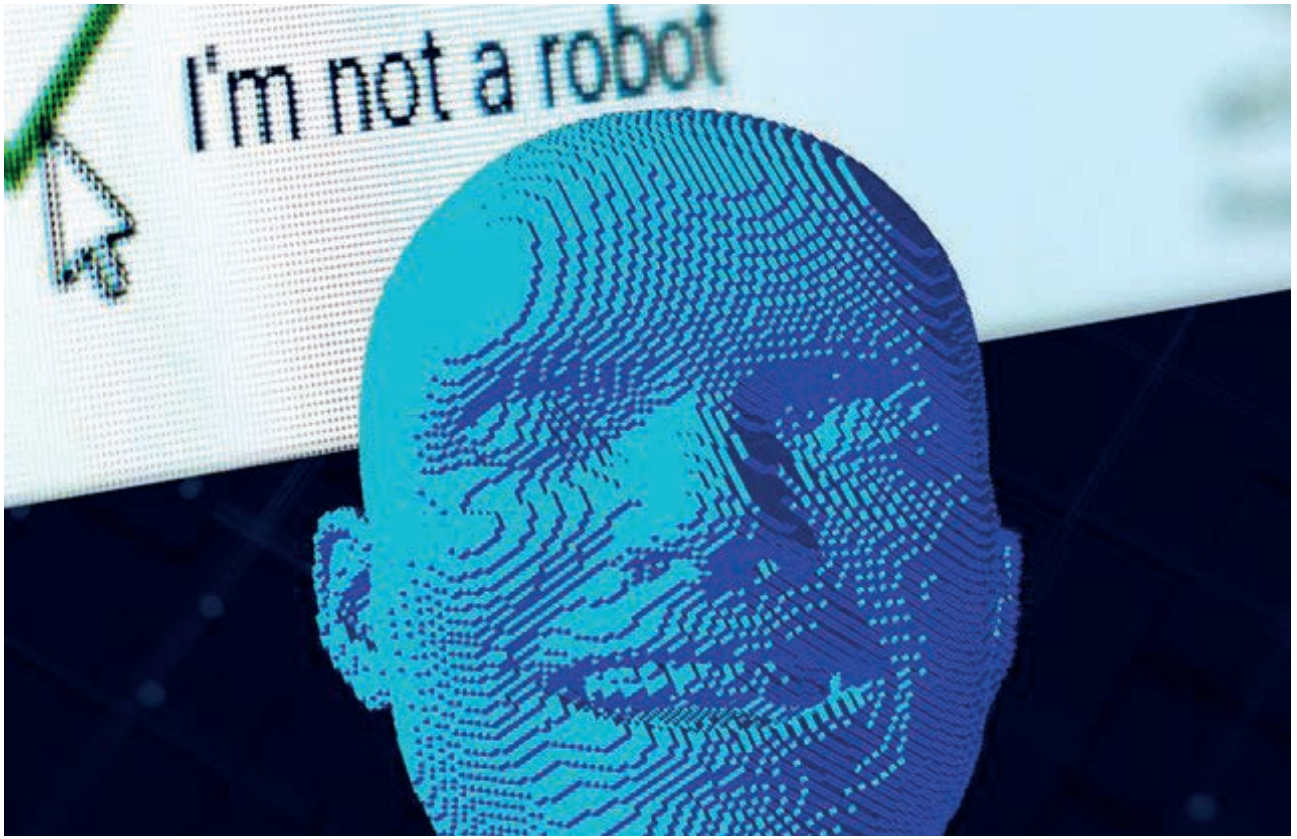
THE (PREDICTED) IMPACT OF AI



Source: Bergur Thormundsson, Sep 27, 2023

Artificial intelligence (AI) market size worldwide in 2021 with a forecast until 2030

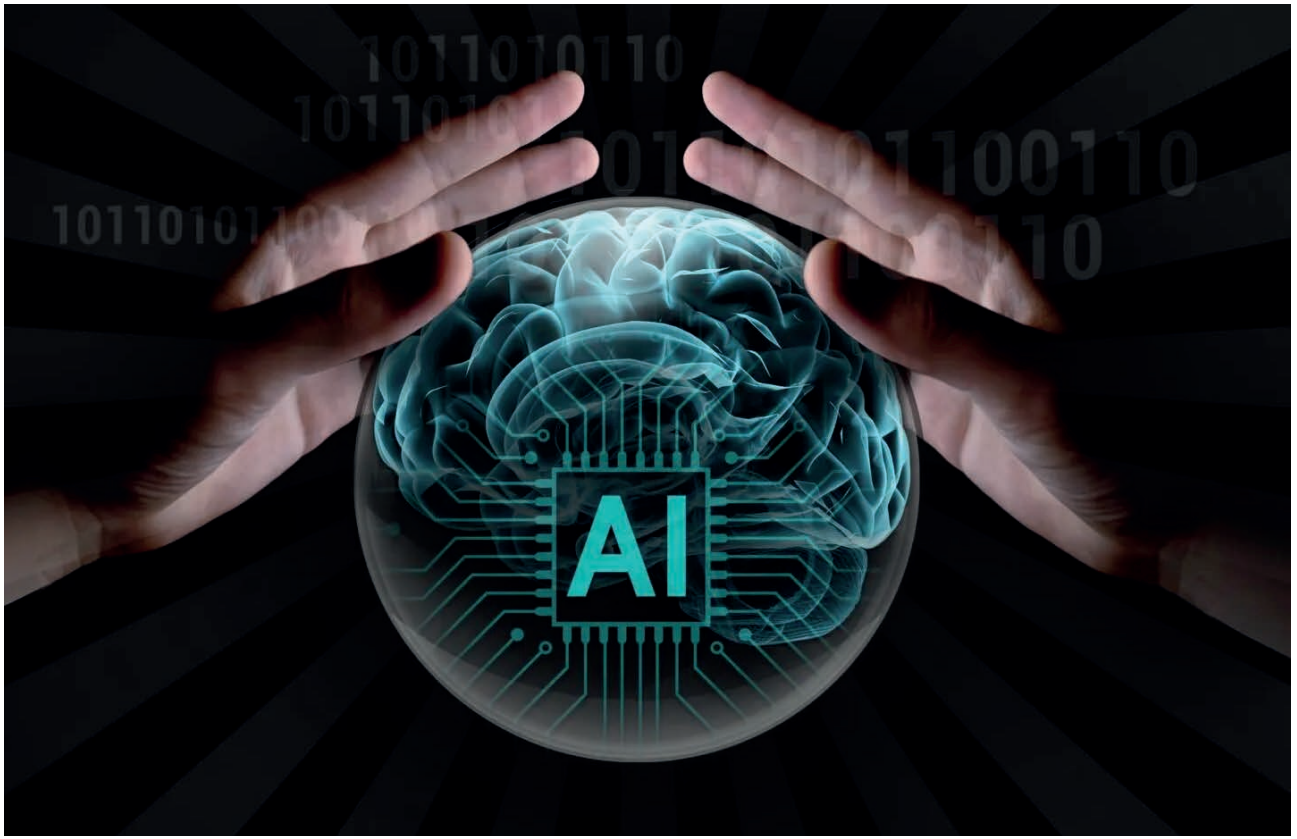
WE WILL ALL NOTICE AI'S



Blending into our daily lives

Introduction

THE UNPREDICTED FUTURE

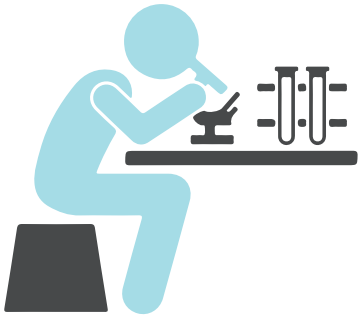


Fast developments make a need to be able to adapt to an unknown future

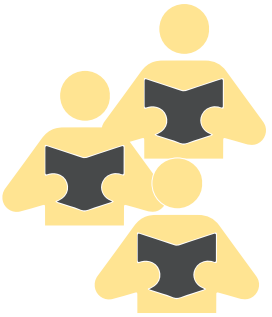
WHAT IS ARTIFICIAL INTELLIGENCE ?

Systems and algorithms executing tasks
requiring human intelligence

THE DEVELOPERS OF AI



THE RESEARCHERS

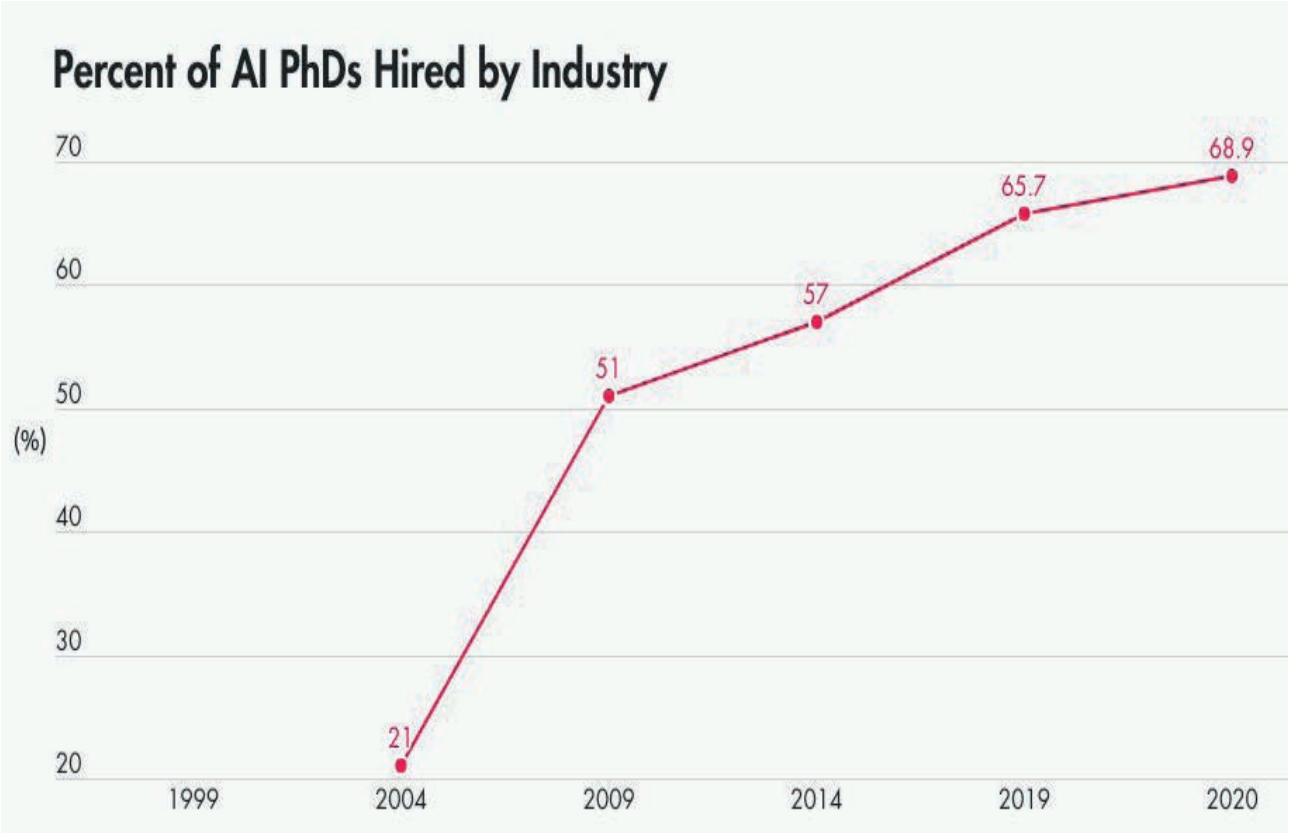


THE STUDENTS

THE INDUSTRY

Every developer plays a crucial role

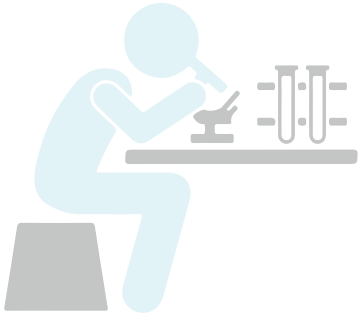
THE SHIFT



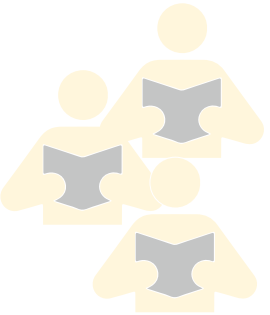
Source: Ahmed, N., Thompson, N., Wahed, M., (2023)
https://www.science.org/doi/10.1126/science.ade2420

From 21% to 68,9 %

THE USERS OF AI



THE RESEARCHERS



THE STUDENTS

THE INDUSTRY

THE PUBLIC REALM

Society engages with AI, knowingly or unknowingly

AI IMPLEMENTED BY THE INDUSTRY

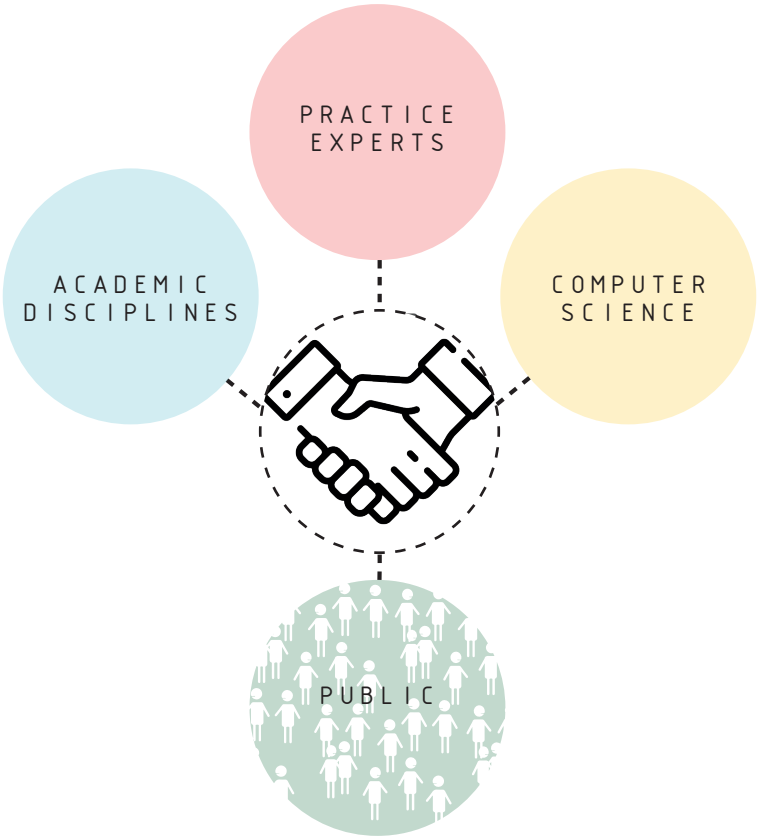
Industry Drives AI, Public Embraces/
Awareness

introduction

SUPERVISE LEARNING

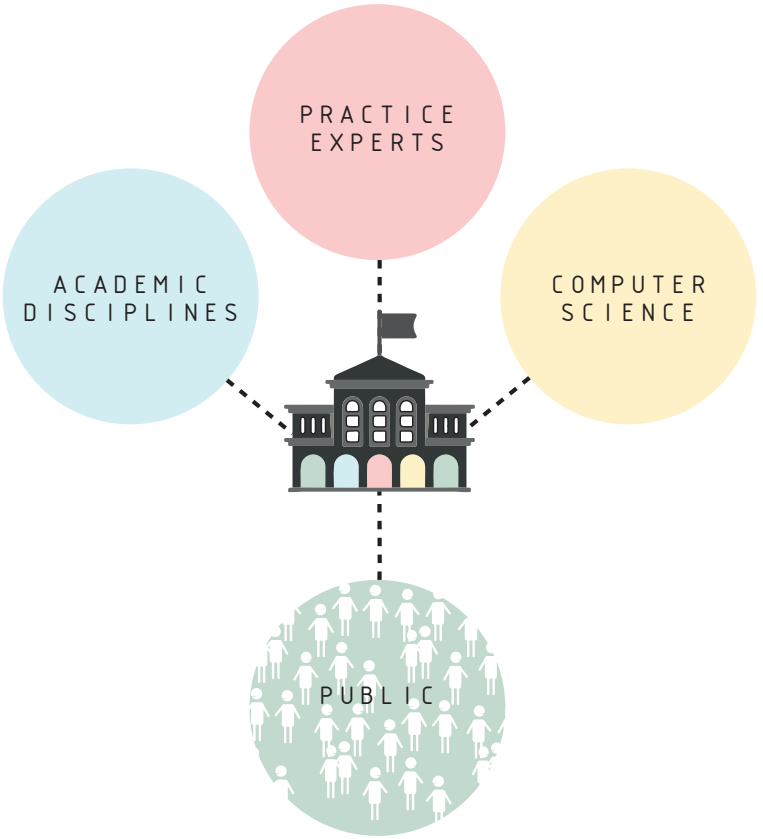
Bridging Tech and Expertise for Safe AI Development

COLLABORATION



Collaboration is key to building ethical and socially accepted AI.

PROJECT AMBITION



An education building for collaboration within AI that can respond to the unknown future of it.

HOW TO STIMULATE COLLABORATION?

To stimulate collaboration, especially for designers, it's vital to concentrate on architectural elements.

How can the collaboration between the different users of the AI university be encouraged through the design of the building?

DESIGN BRIEF

LOCATION

PROGRAM

CONCEPT

IMPLEMENTATION

REFLECTION

CONCLUSION

DESIGN BRIEF

Design brief

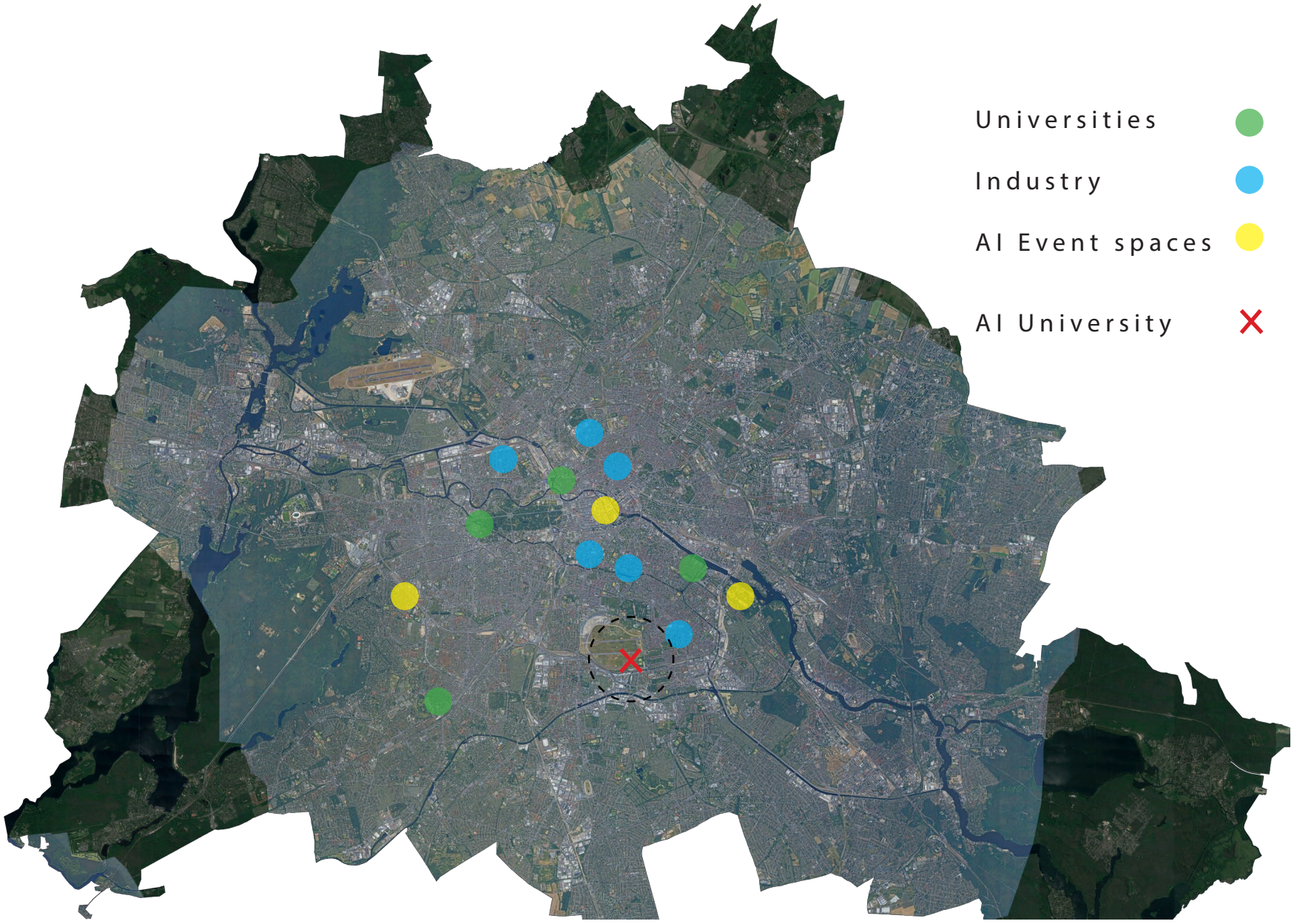
LOCATION

Design brief

AI LANDSCAPE

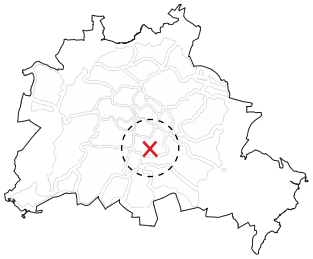
Design brief

LOCATION OF AI UNIVERSITY



Design brief

TEMPELHOF



N

Design brief

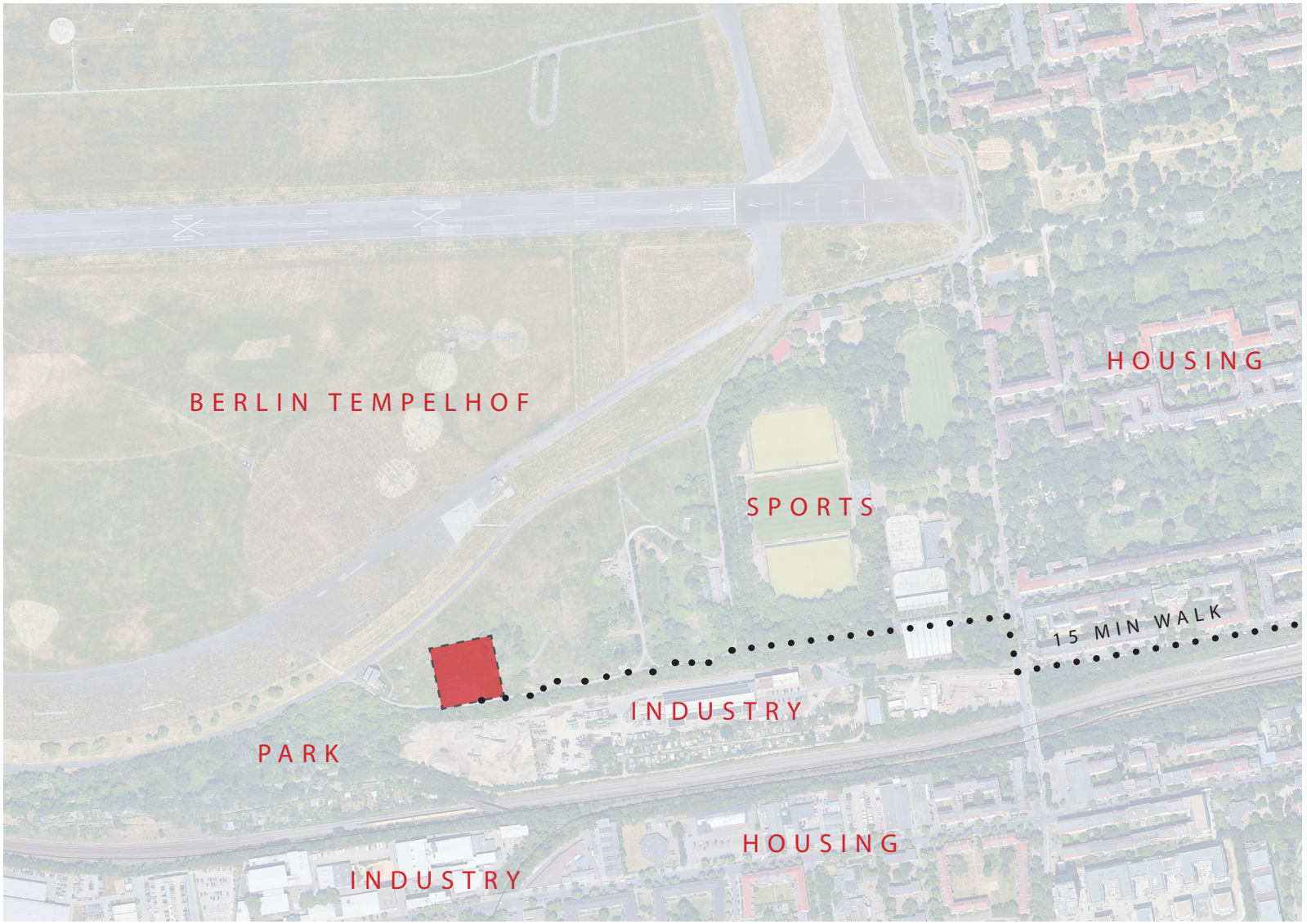
BUILDING SITE

TEMPELHOF
BORDER

N

Design brief

SITE ANALYSIS



Design brief

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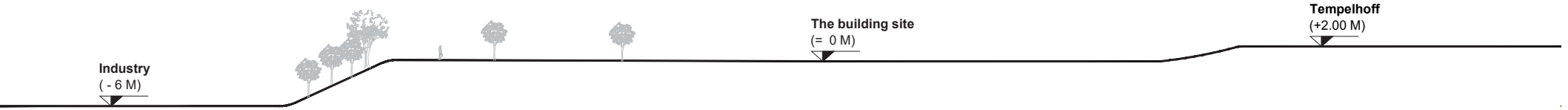
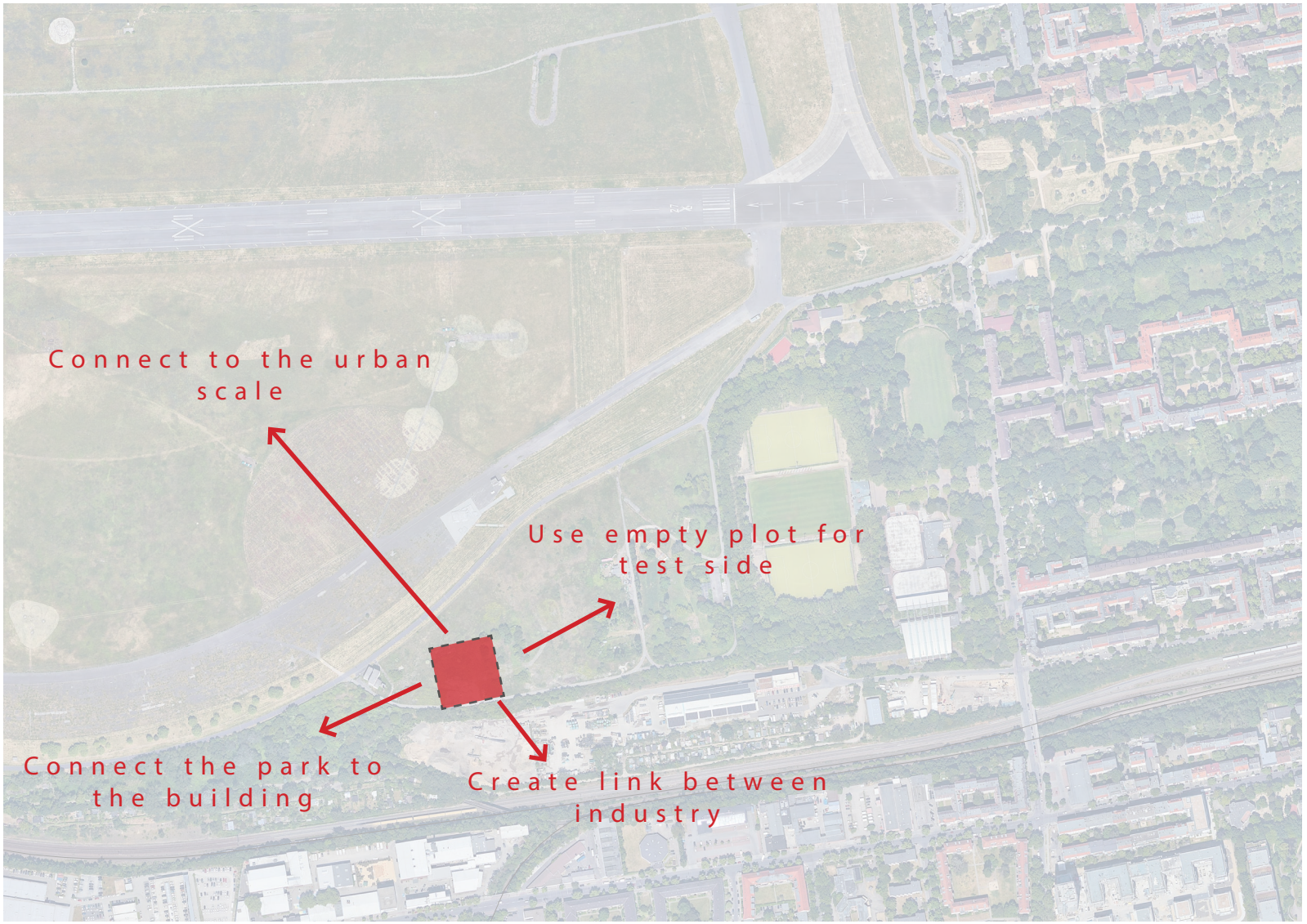


Design brief

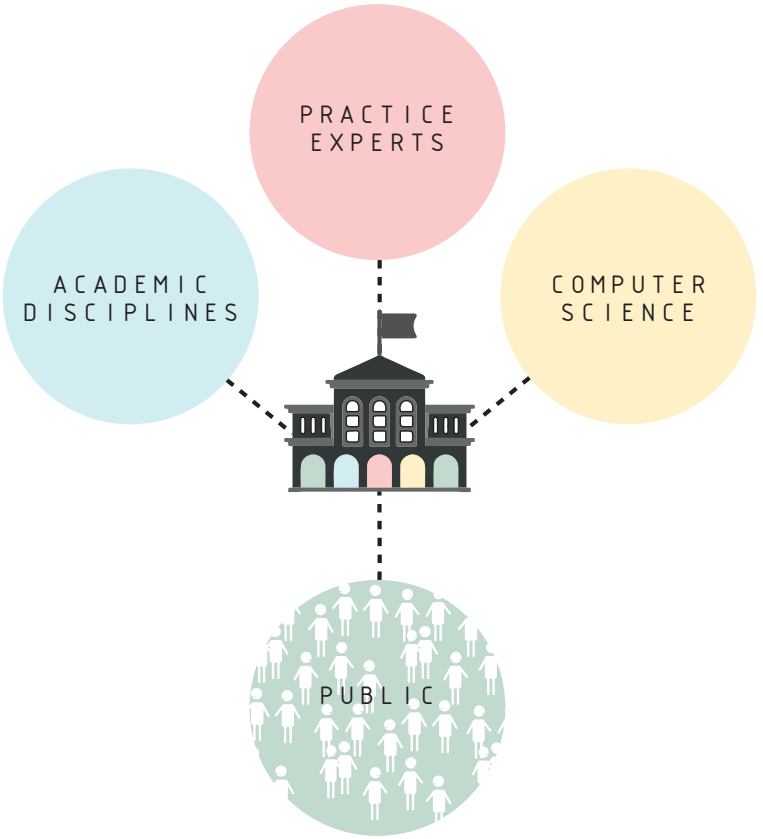
SITE AMBITIONS



PROGRAM

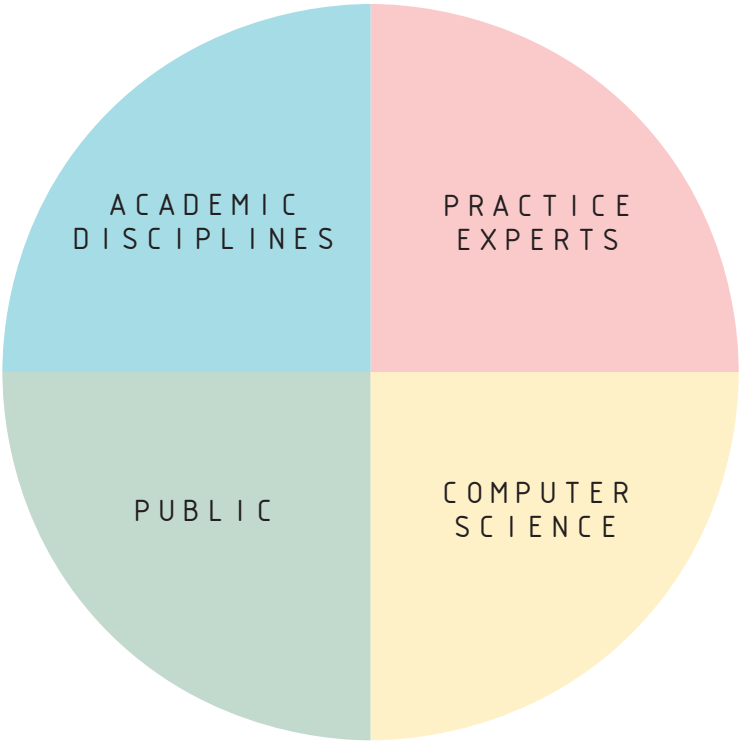
Design brief

THE USERS AND DEVELOPERS



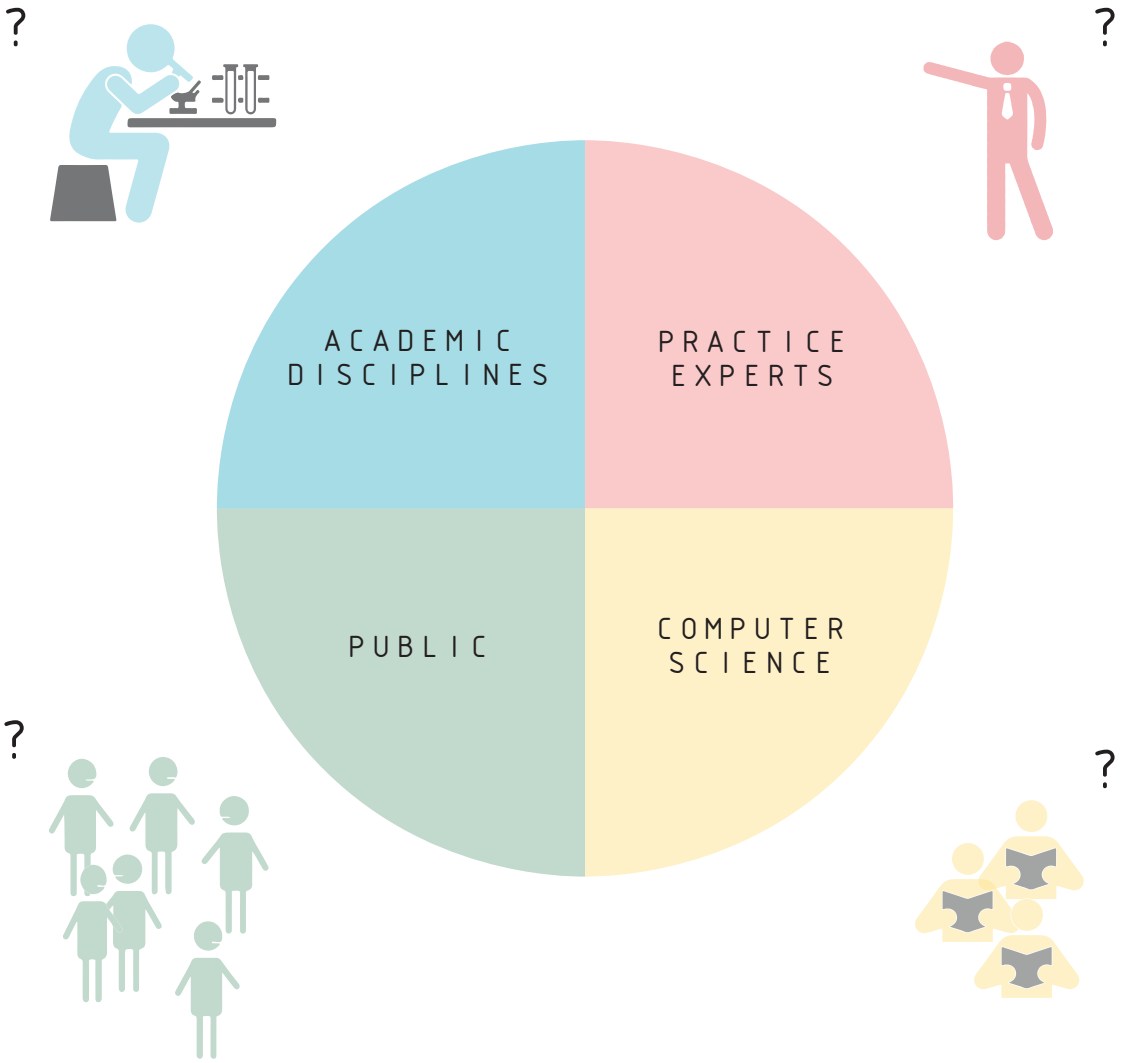
Design brief

IN ONE BUILDING



Design brief

BUT WHAT KIND OF SPACES



Design brief

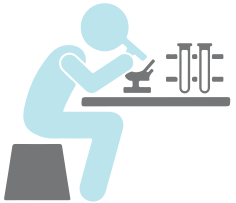
ANALYSED PROGRAM

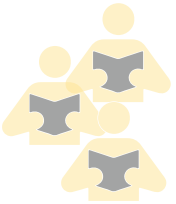
STUDY SPACES

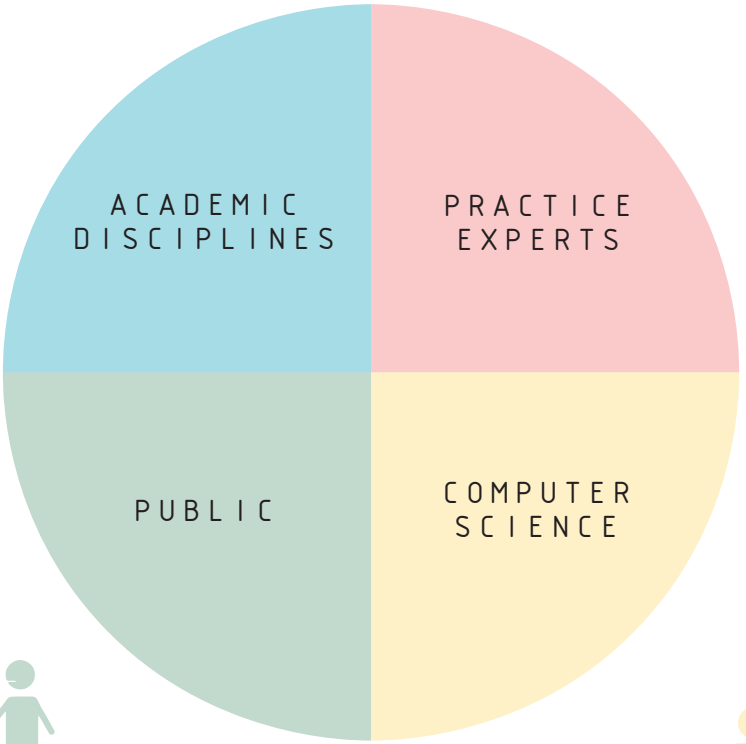
CLASSROOMS

LECTURE HALL

LABS







Design brief

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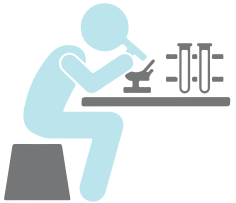


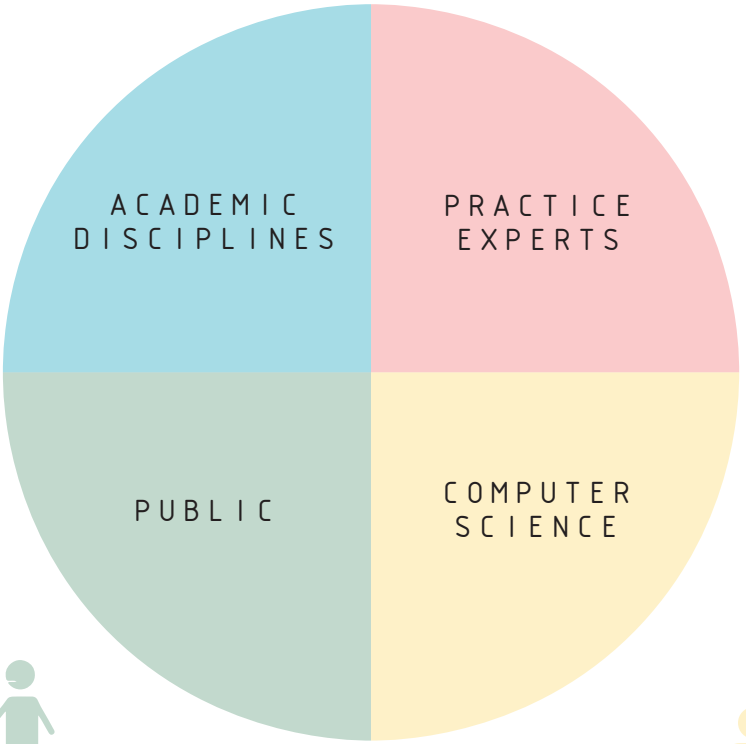
PRIVATE OFFICES

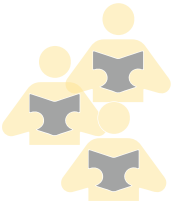
MEETING ROOMS

SHARED OFFICE

MAKERSPACE

START-UP





Design brief

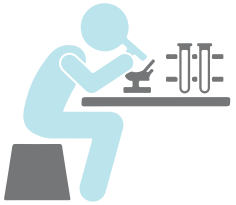
ANALYSED PROGRAM

STUDY SPACES

CLASSROOMS

LECTURE HALL

LABS



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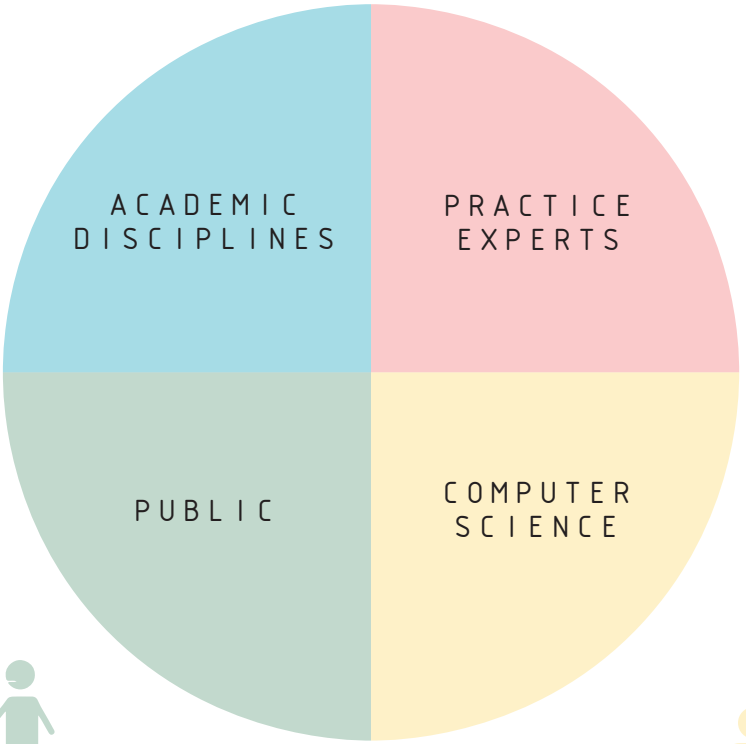
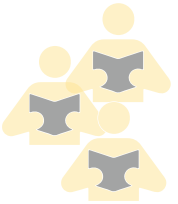




SPATIAL COMPUTING

ROOM

DATA STORAGE

Design brief

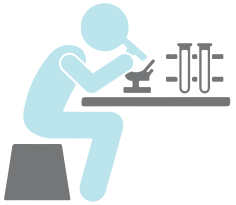
ANALYSED PROGRAM

STUDY SPACES

CLASSROOMS

LECTURE HALL

LABS



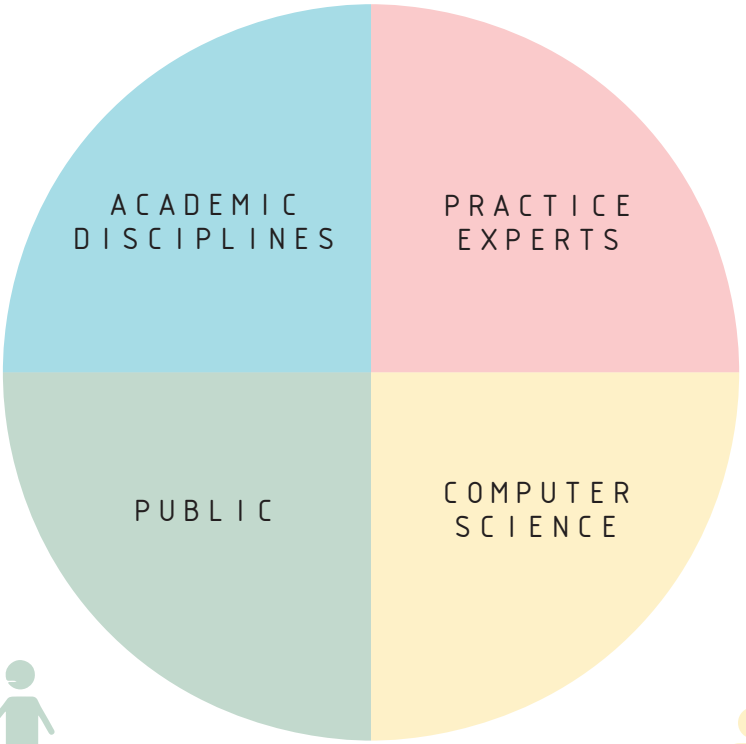
PRIVATE OFFICES

MEETING ROOMS

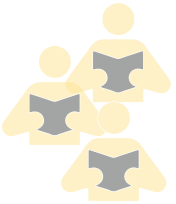
SHARED OFFICE

MAKERSPACE

START-UP



EXHIBITION



SPATIAL COMPUTING

ROOM

DATA STORAGE

Design brief

ANALYSED PROGRAM

STUDY SPACES

CLASSROOMS

LECTURE HALL

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PRIVATE OFFICES

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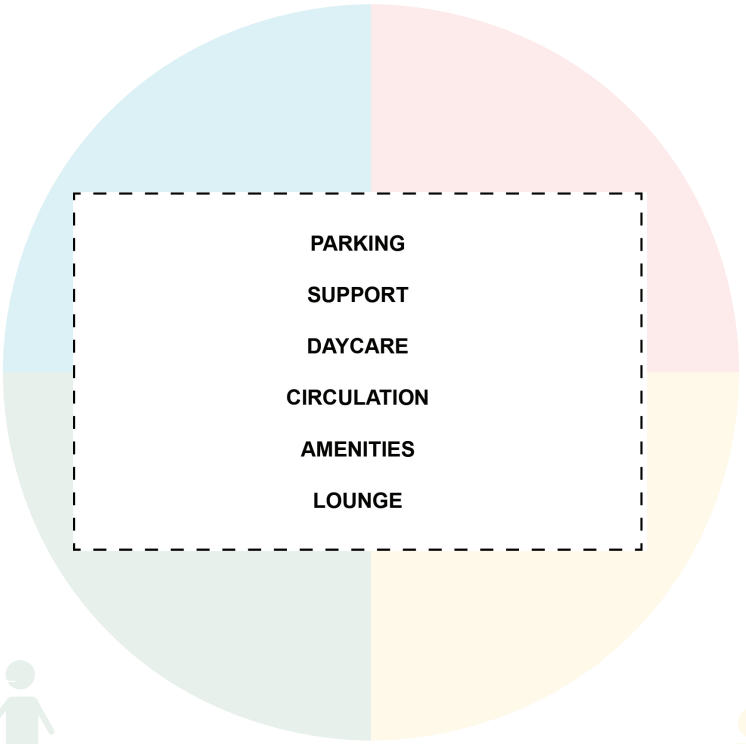
MAKERSPACE

START-UP



PARKING

SUPPORT

DAYCARE

CIRCULATION

AMENITIES

LOUNGE

EXHIBITION

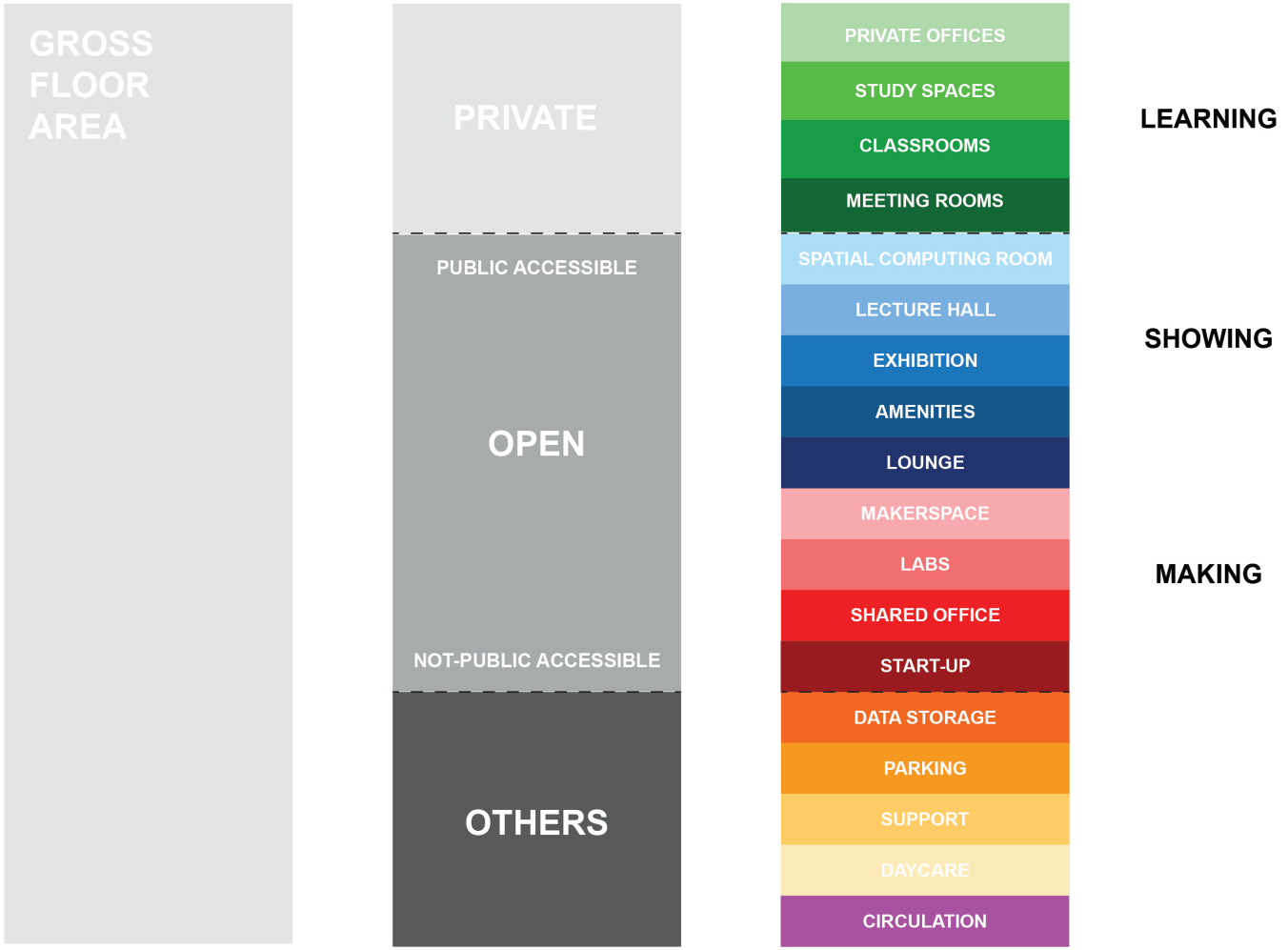
SPATIAL COMPUTING

ROOM

DATA STORAGE

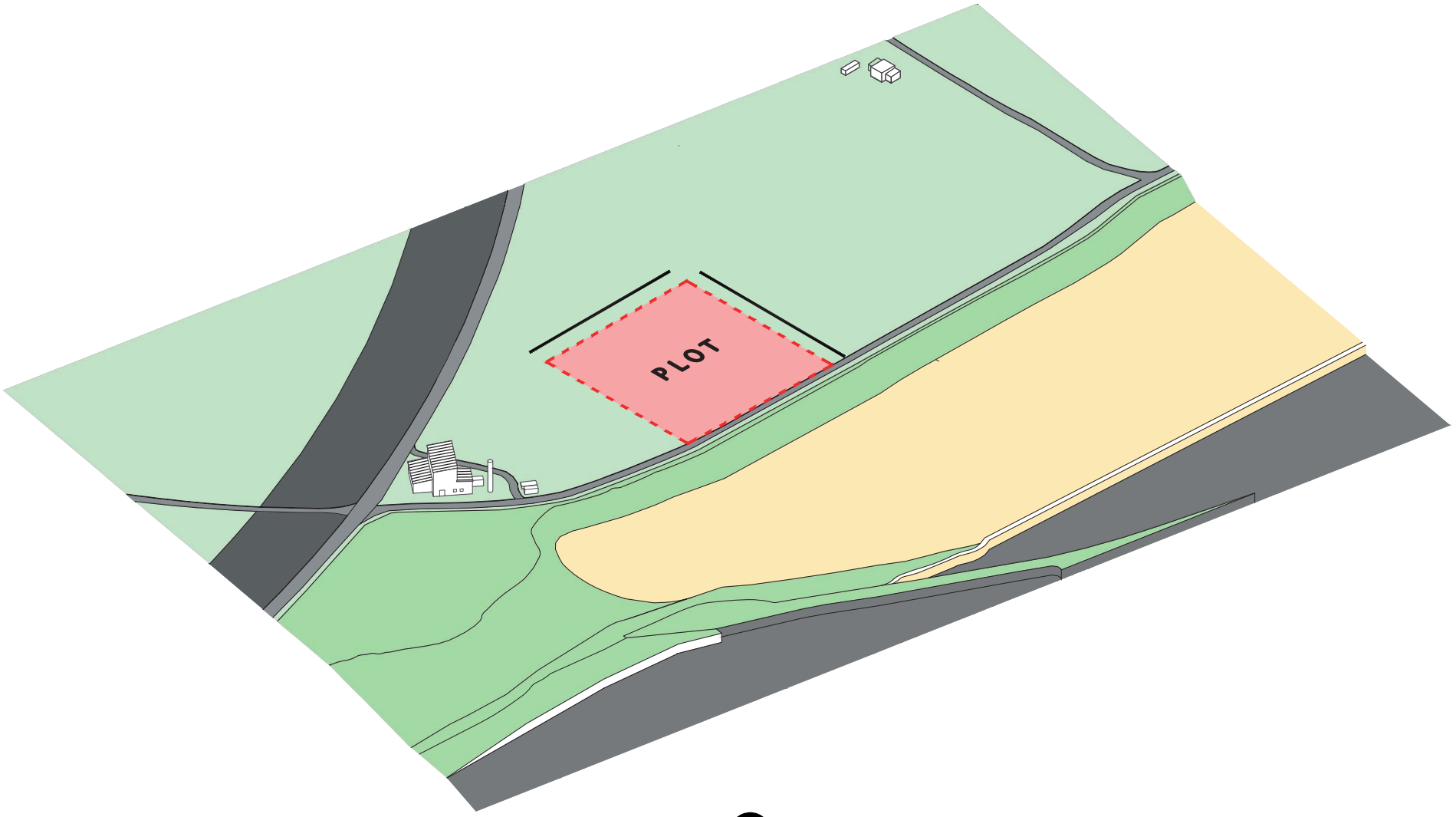
Design brief

PROGRAM BREAKDOWN



CONCEPT

BUILDING ORGANISATION



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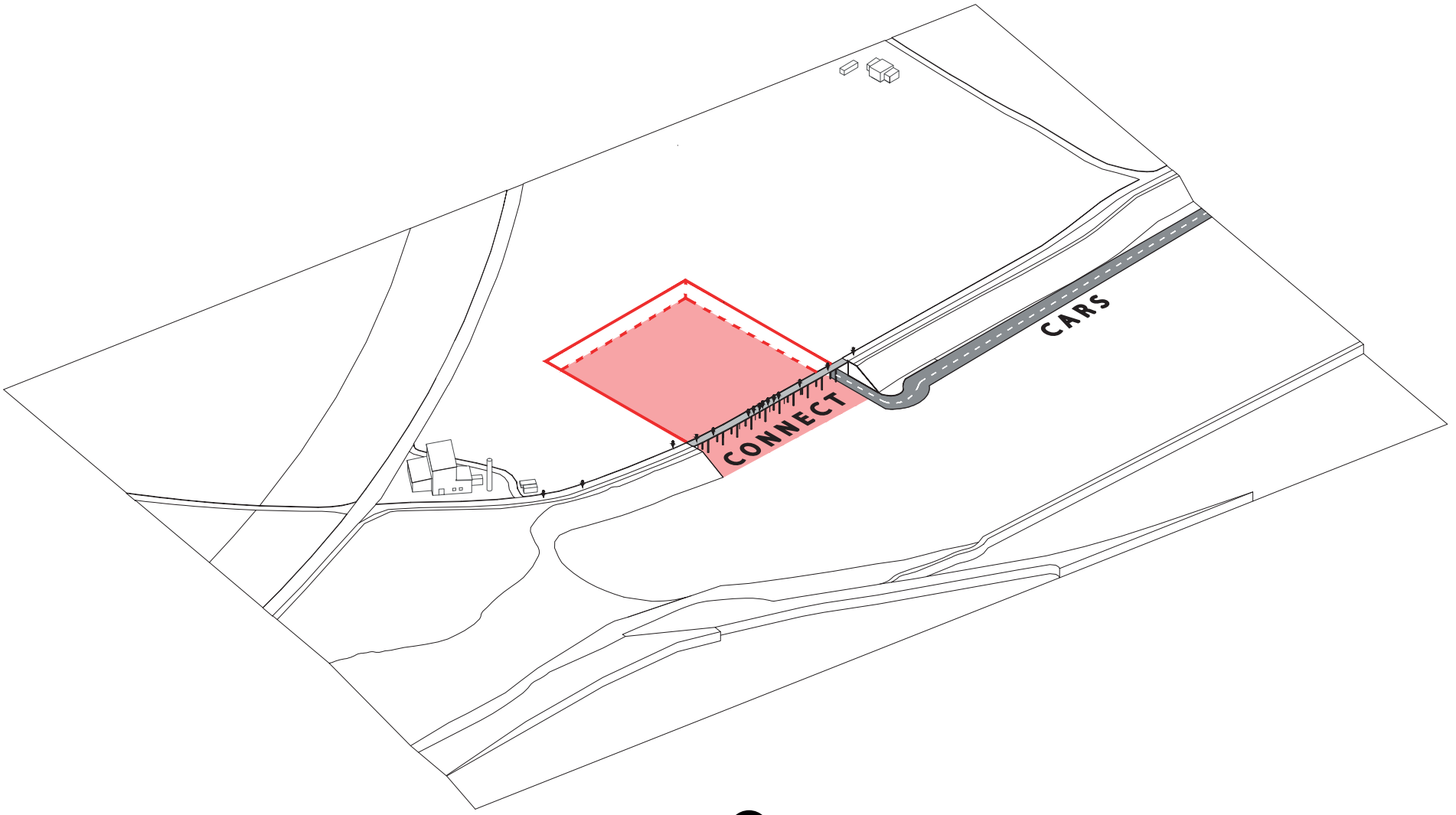

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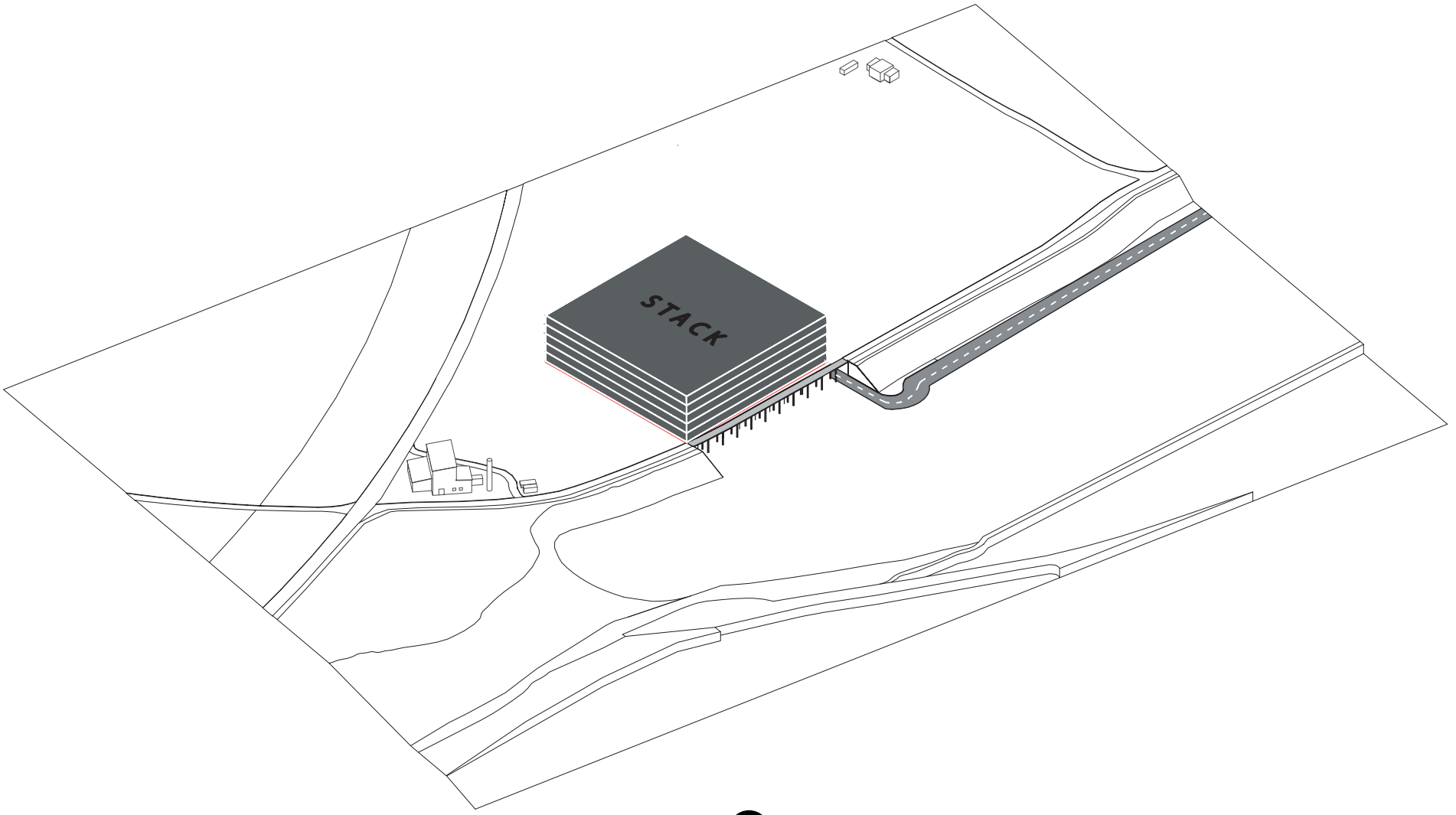
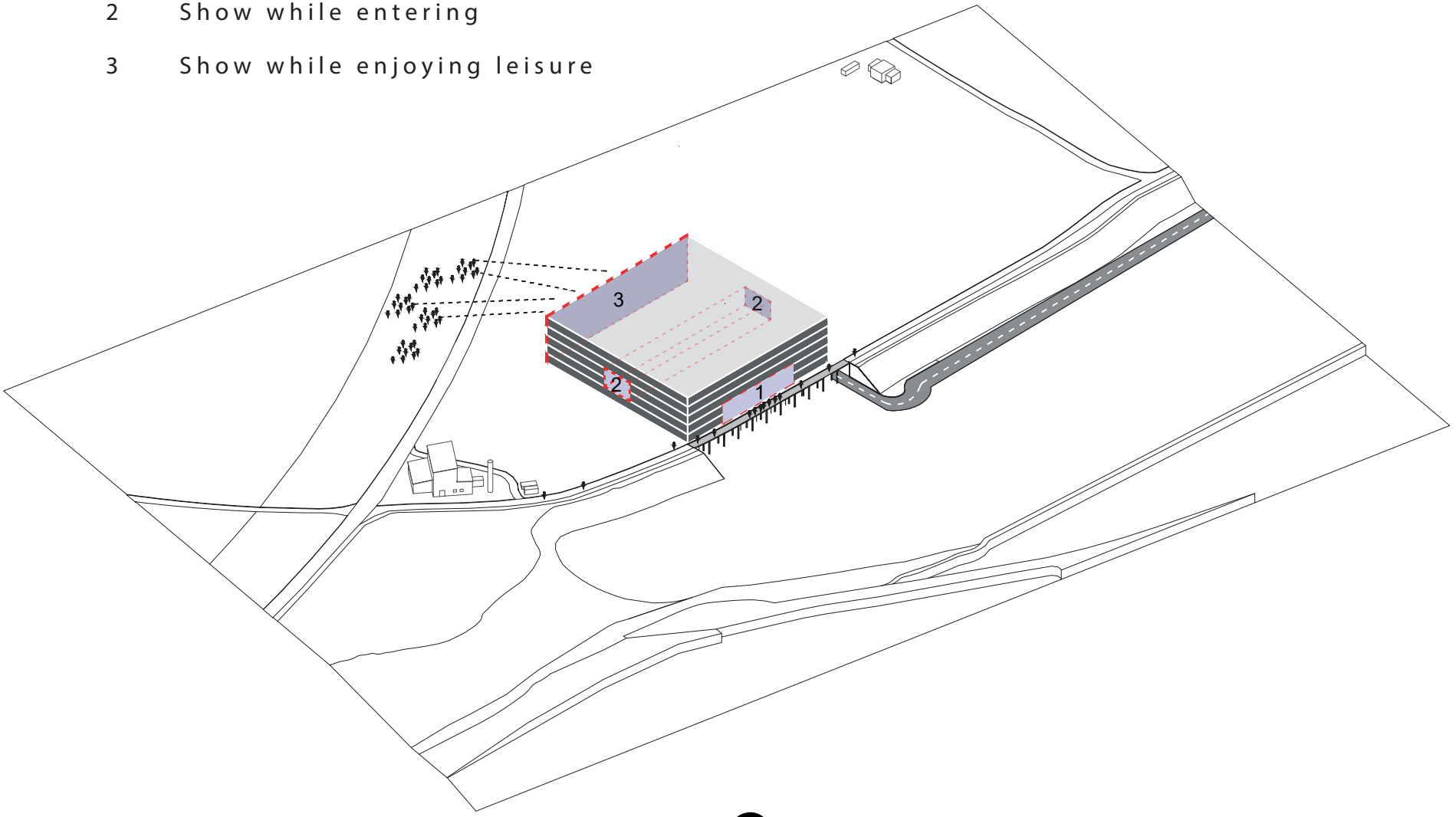


BUILDING CONCEPT

1 Show while passing

2 Show while entering

3 Show while enjoying leisure



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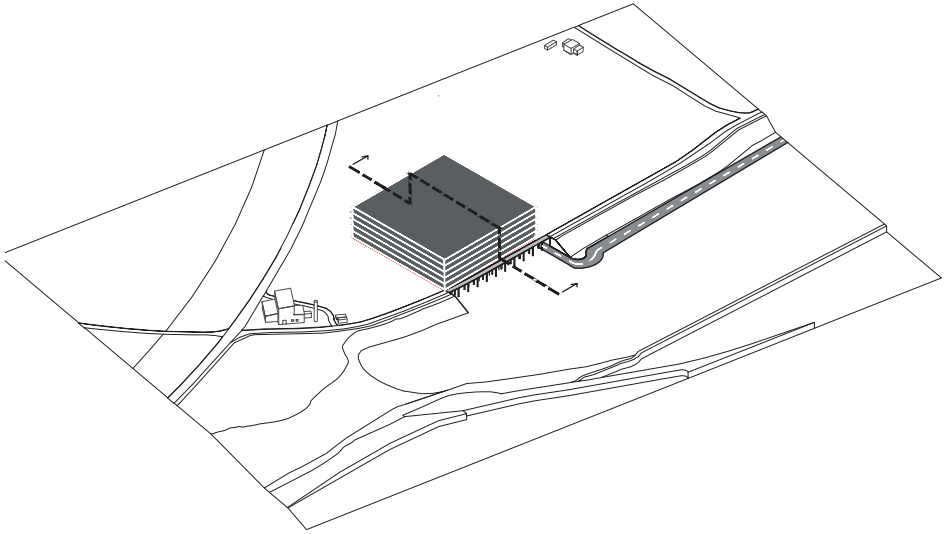

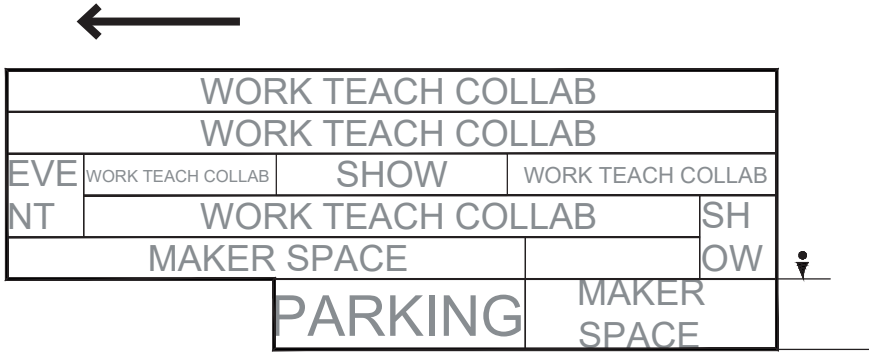

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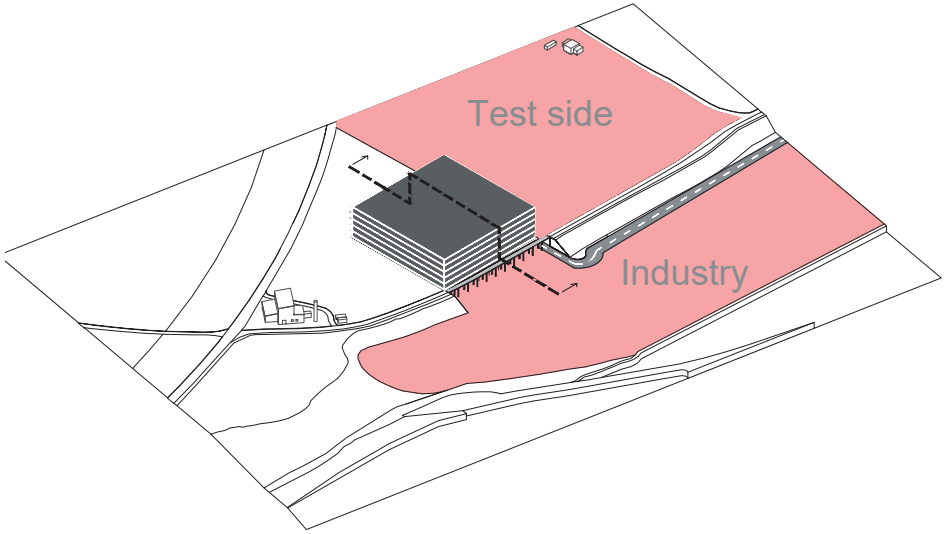

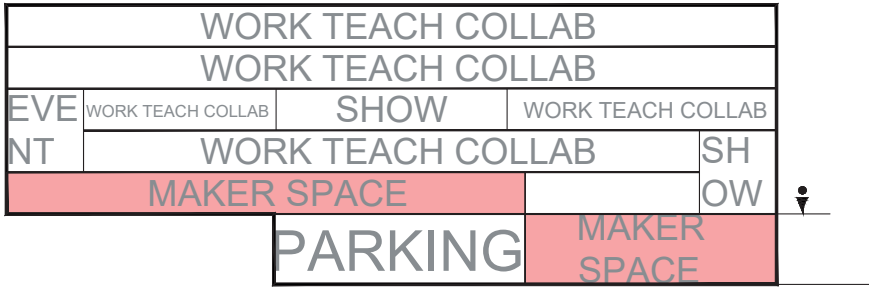

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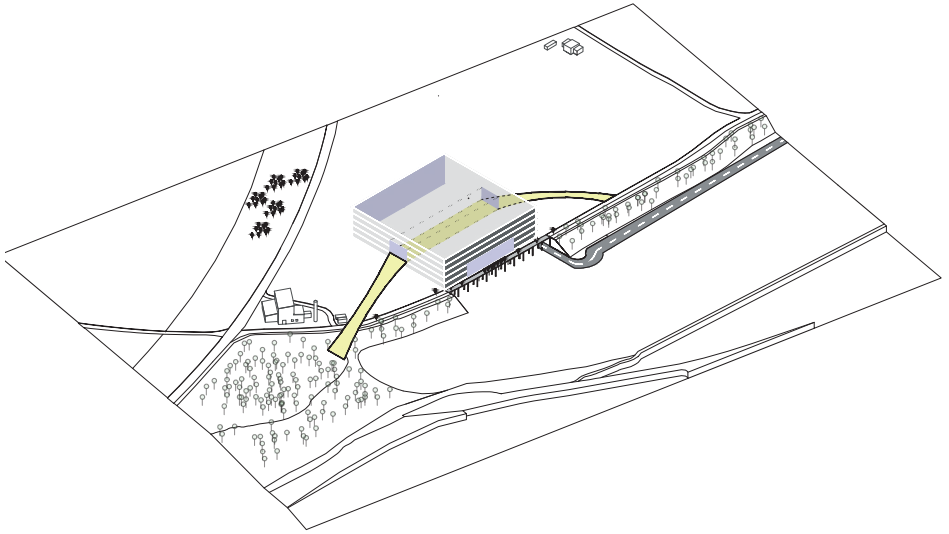
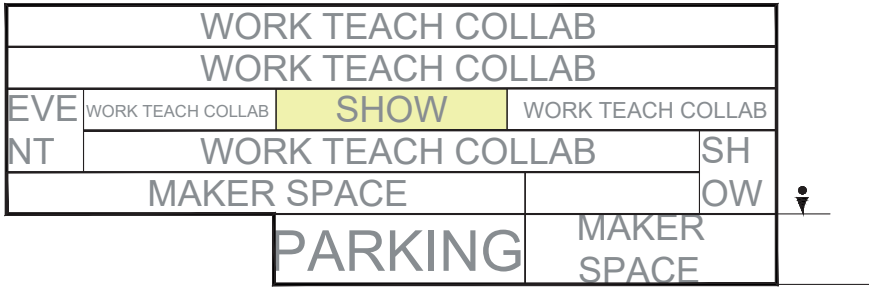
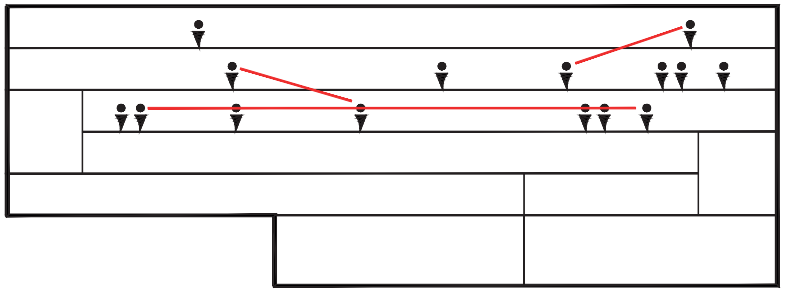


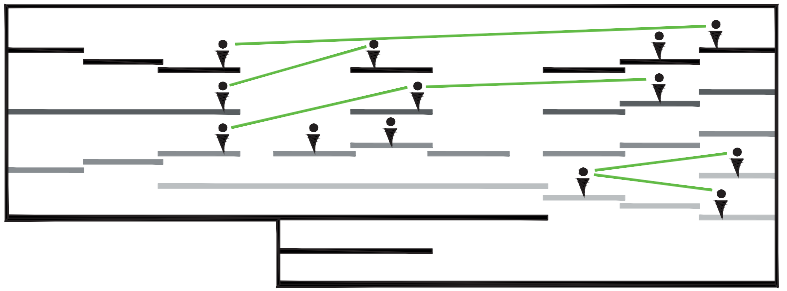


BUILDING CONCEPT

traditional organisation



collaboration organisation

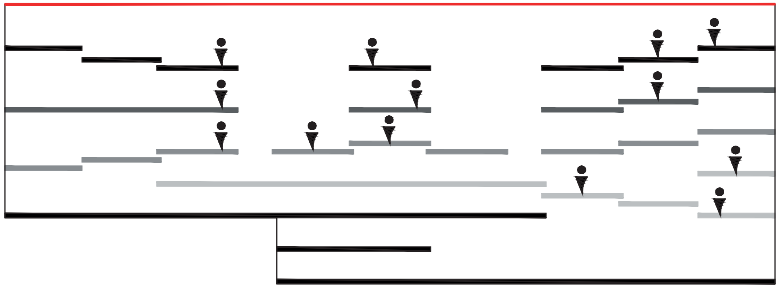


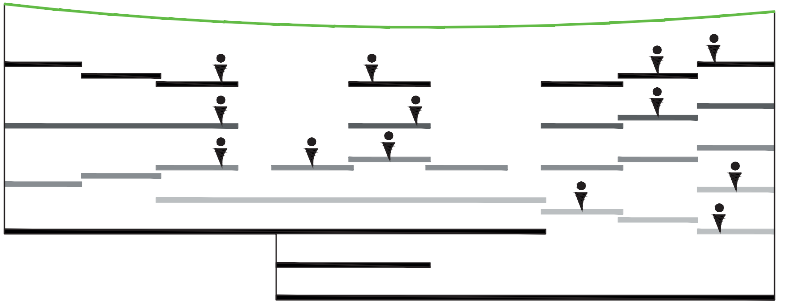
BUILDING CONCEPT

1 Focus towards the middle

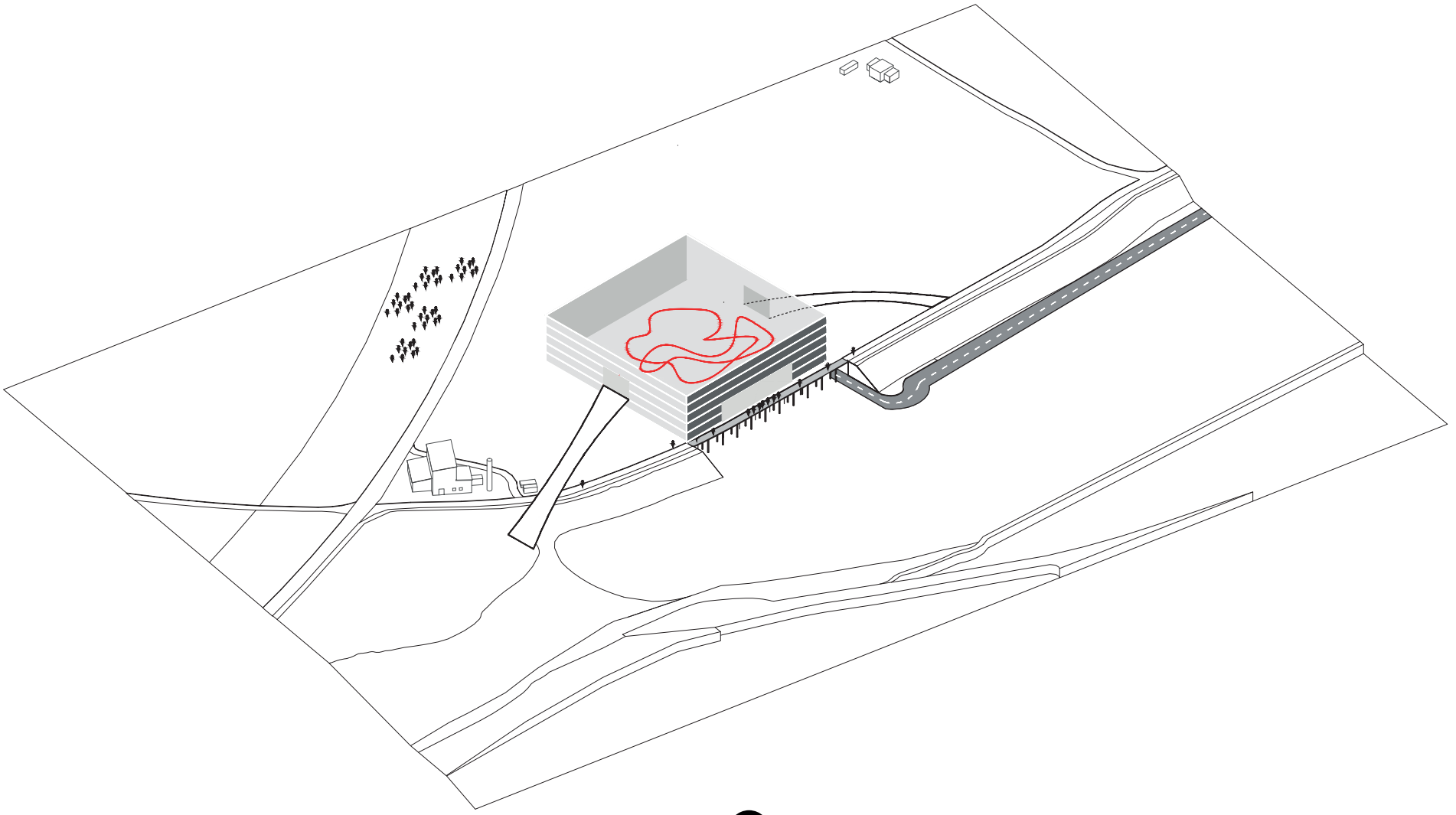
2 Optimizing its volume

3 Longer roofline for solar cels





CIRCULATION CONCEPT

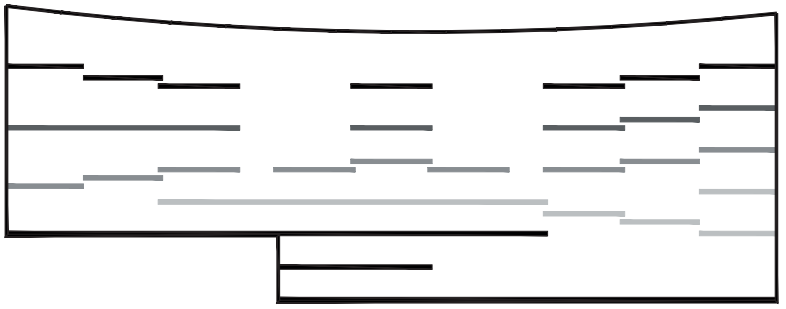


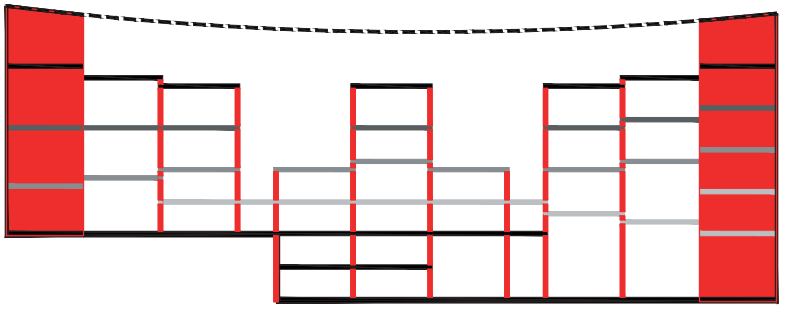
STRUCTURE CONCEPT

1 The flanks are more private

2 The cable roof provides open floorplan on the highest level

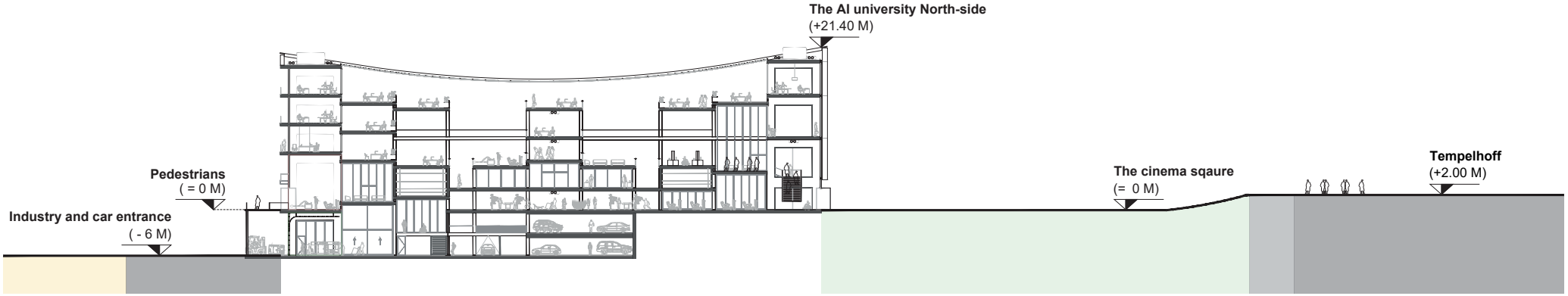
3 The colums provide an open structure





IMPLEMENTATION

CONTEXT


The AI university North-side
(+21.40 M)
Pedestrians
(= 0 M)
Industry and car entrance
(- 6 M)
The cinema sqaure
(= 0 M)
Tempelhoff
(+2.00 M)

0 1
5
20
30
50M

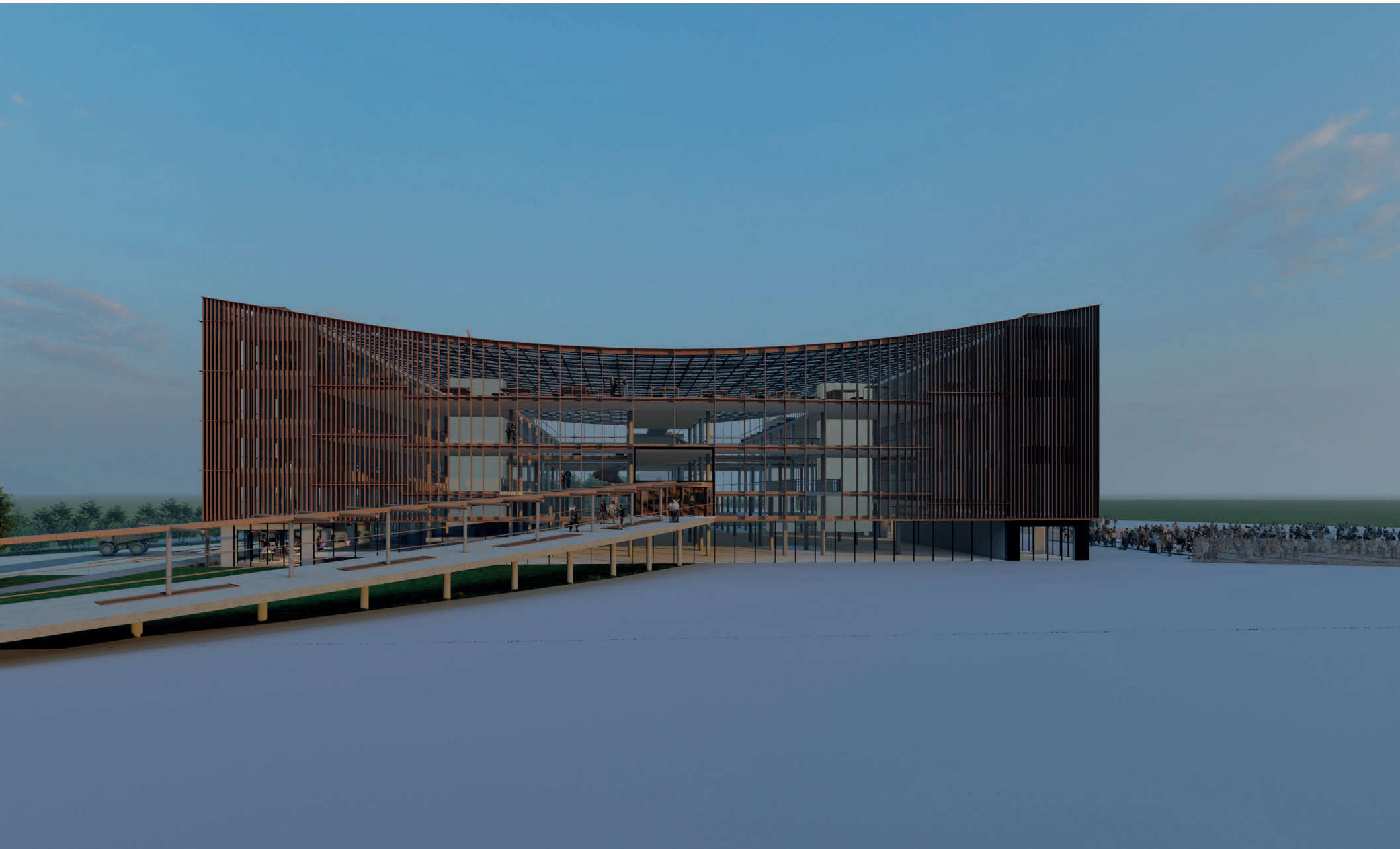
CONTEXT INTEGRATION

CONTEXT INTEGRATION

CONTEXT INTEGRATION

Implementation

CONTEXT INTEGRATION

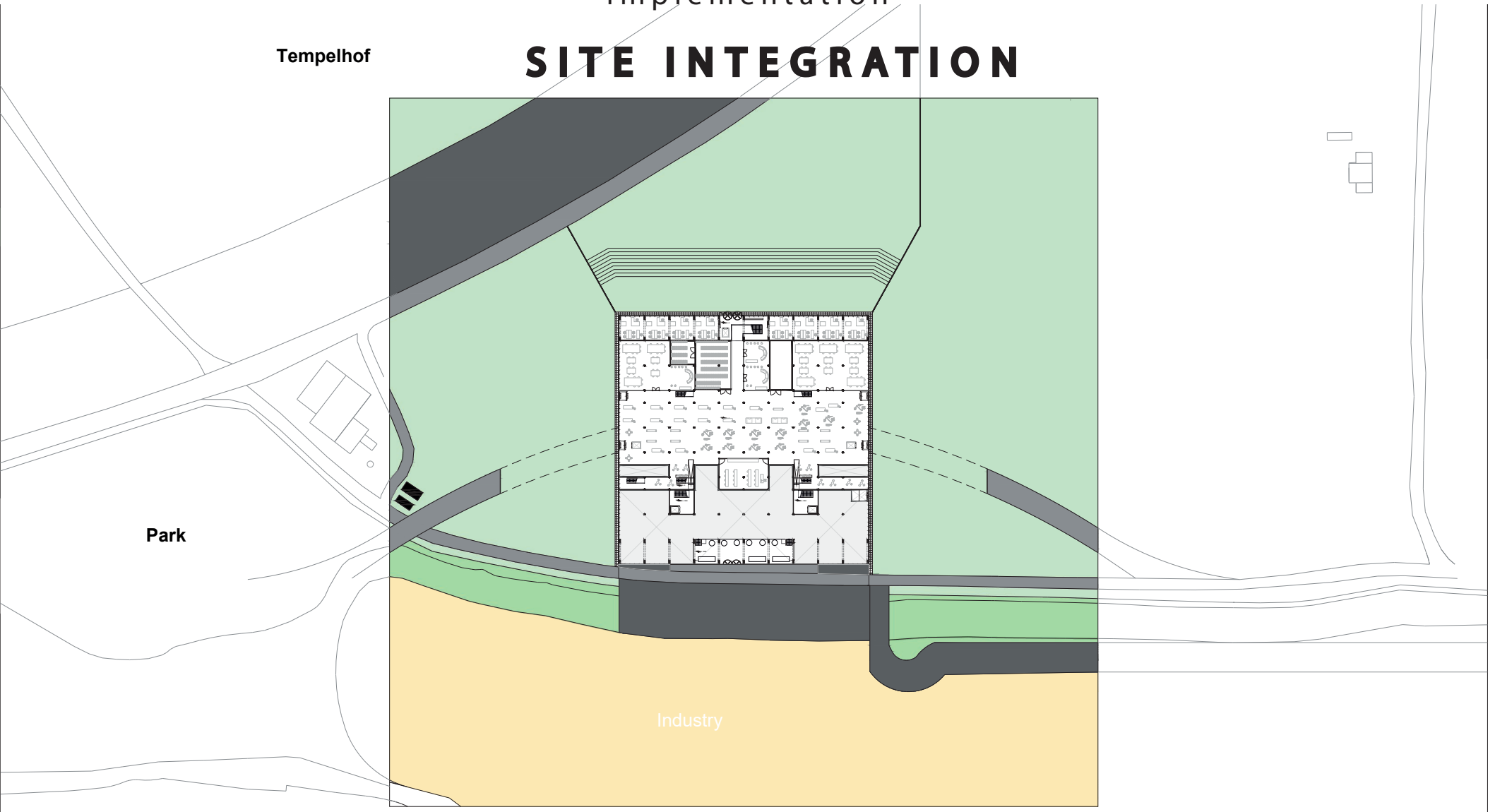


CONTEXT INTEGRATION

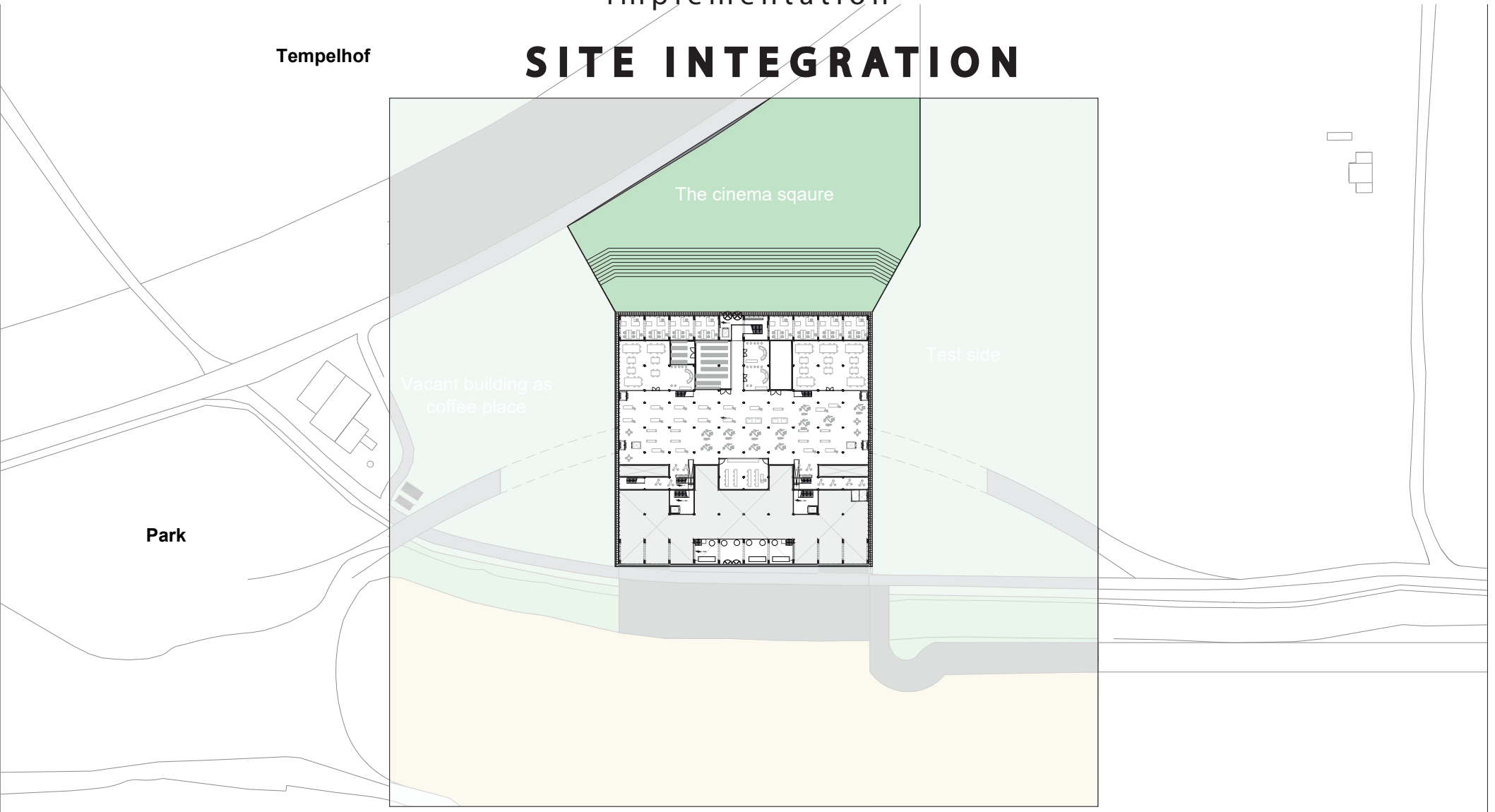
CONTEXT INTEGRATION

Entrance for big events towards Tempelhof

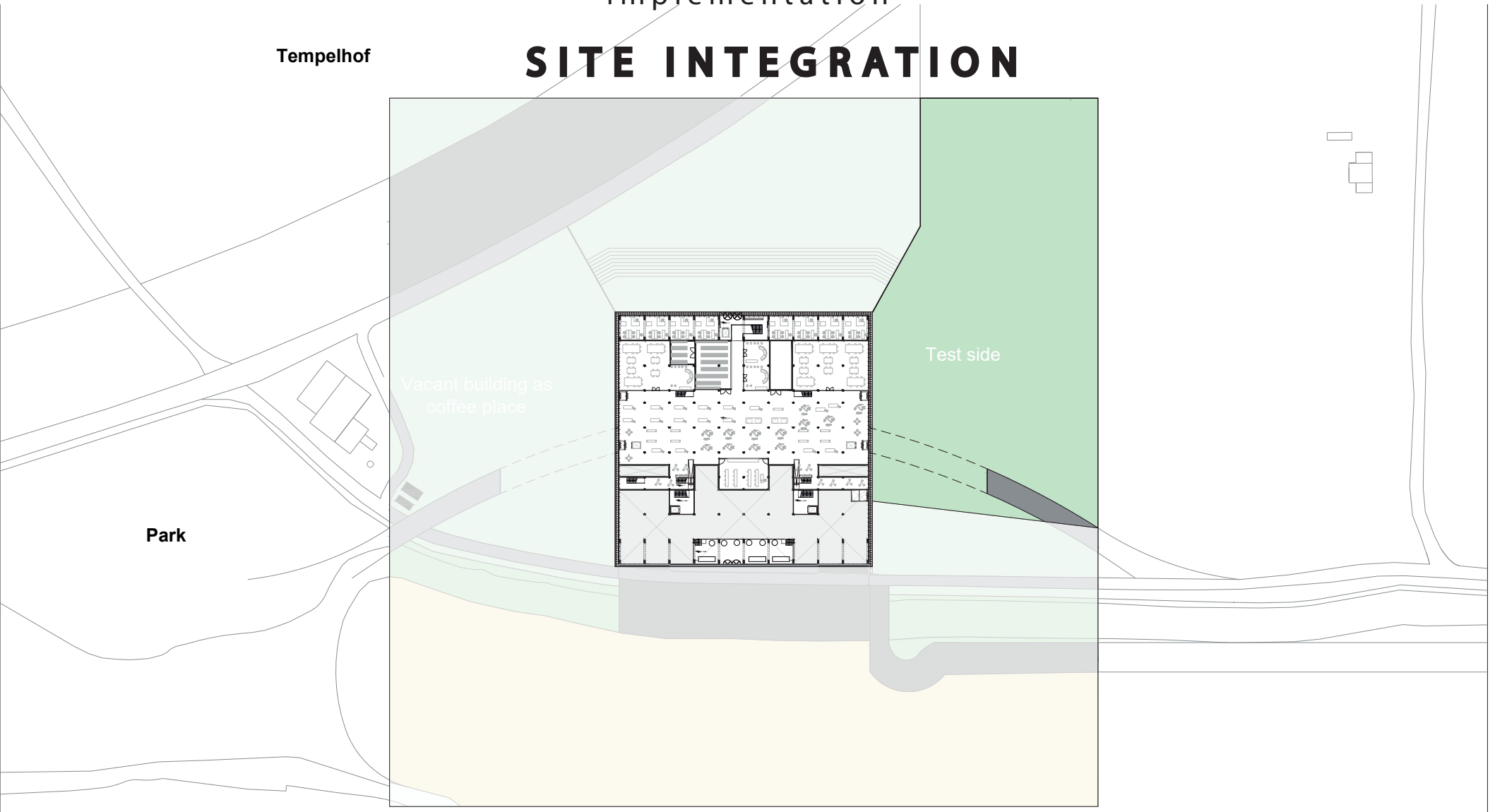
SITE INTEGRATION



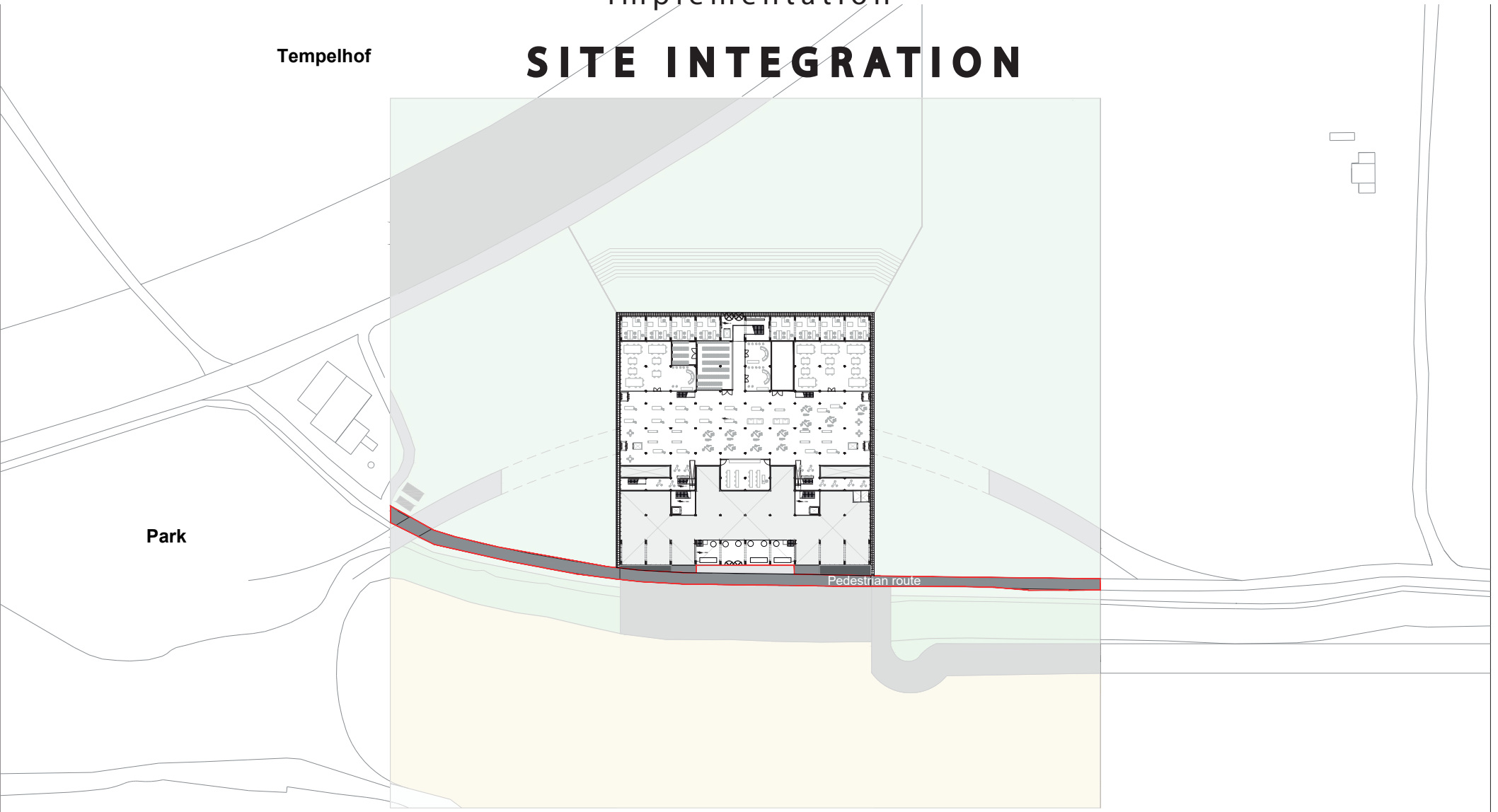
SITE INTEGRATION



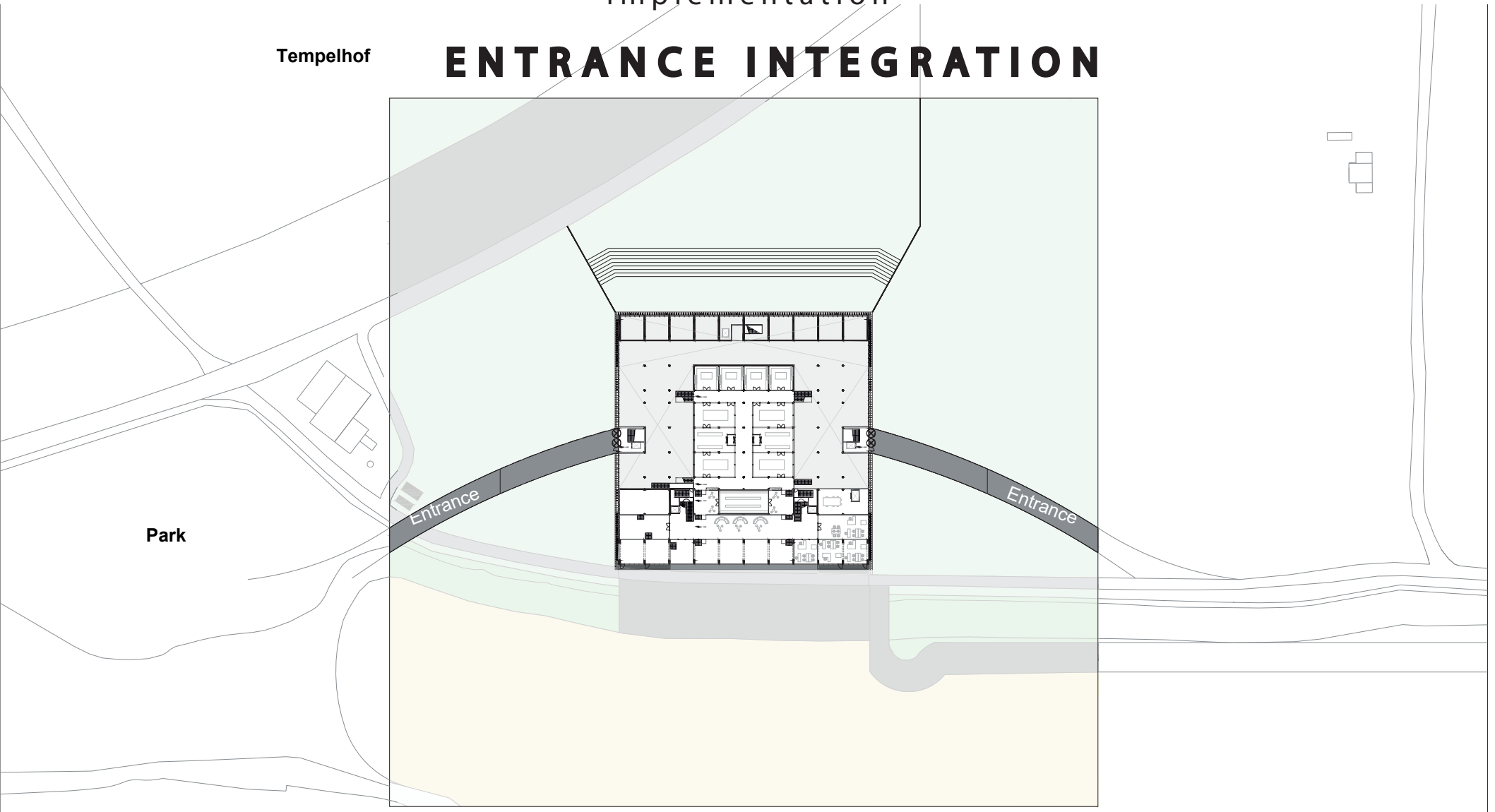
SITE INTEGRATION



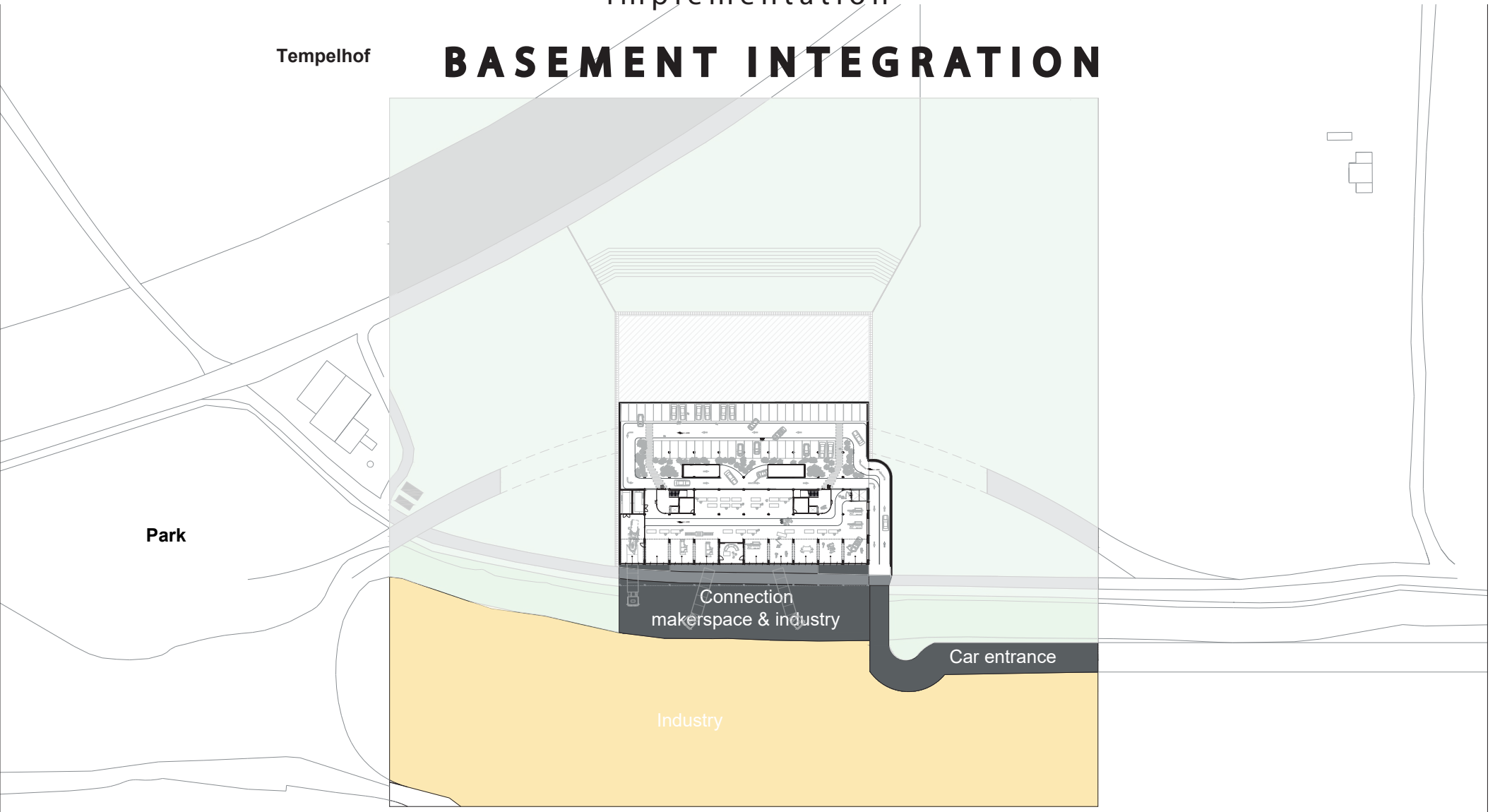
SITE INTEGRATION



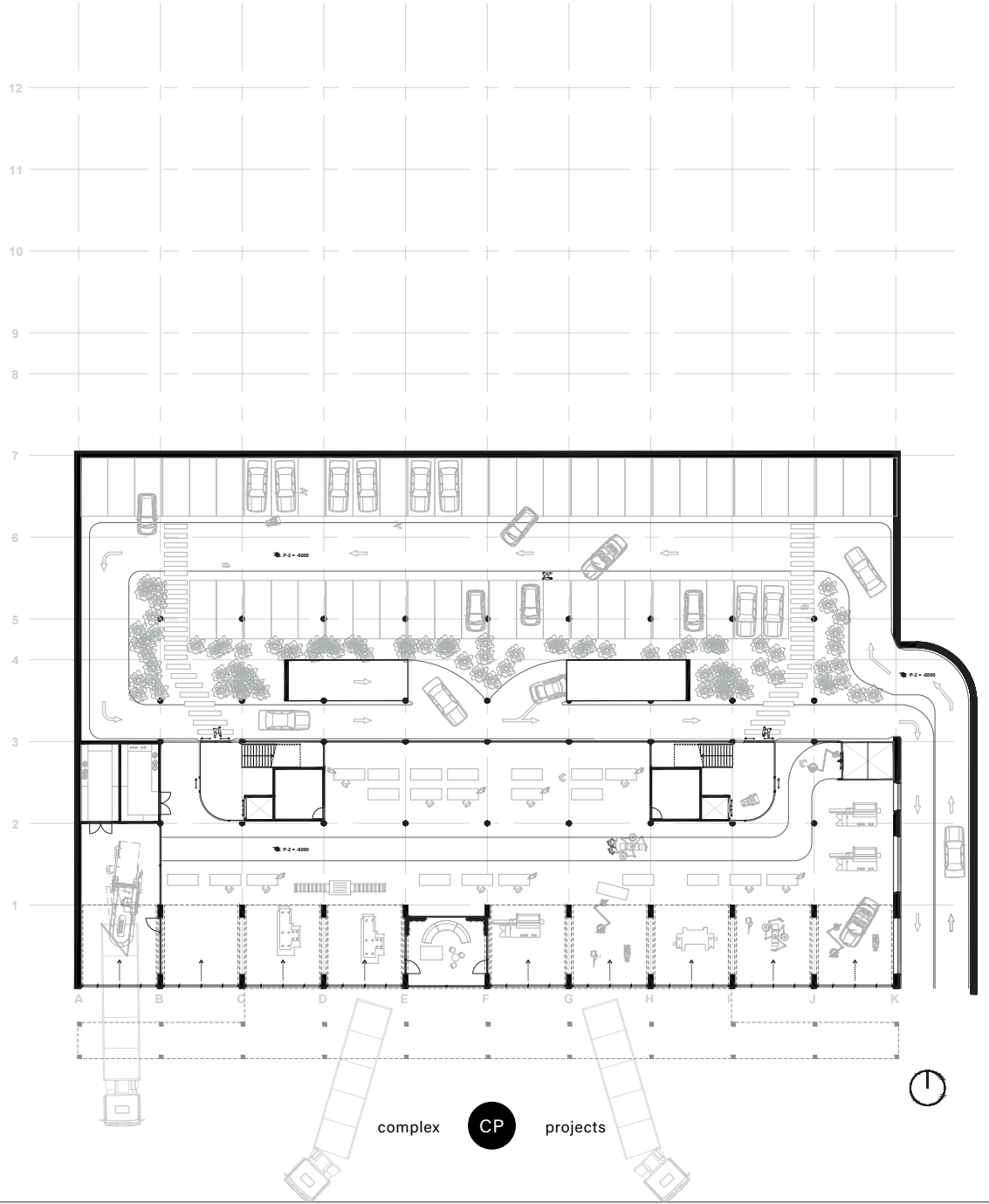
ENTRANCE INTEGRATION



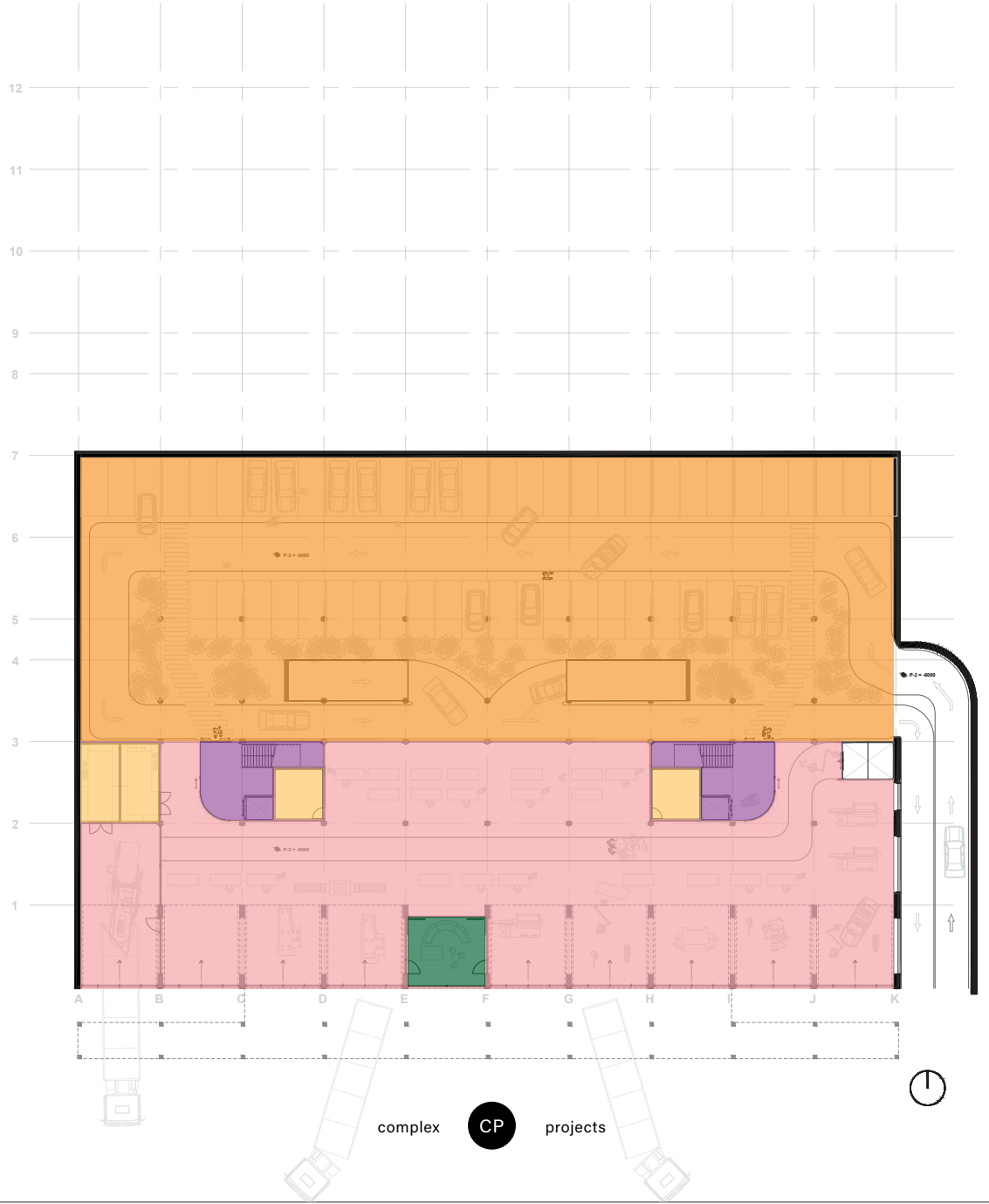
BASEMENT INTEGRATION



PLAN -2


12
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
P-2 = -6000
P-2 = -6000
P-2 = -6000
0 1
5
10
20M

PLAN -2



Legend

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- Study spaces
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- Meeting room
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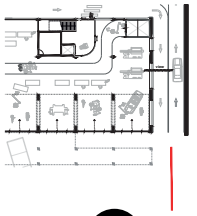
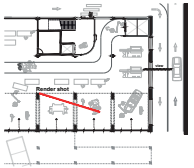
- Exhibition
- Amenities
- Lounge
- Makerspace
- Labs
- Shared office
- Startups
- Data storage
- Parking
- Support
- Daycare
- Circulation

0 1 5 10 20M

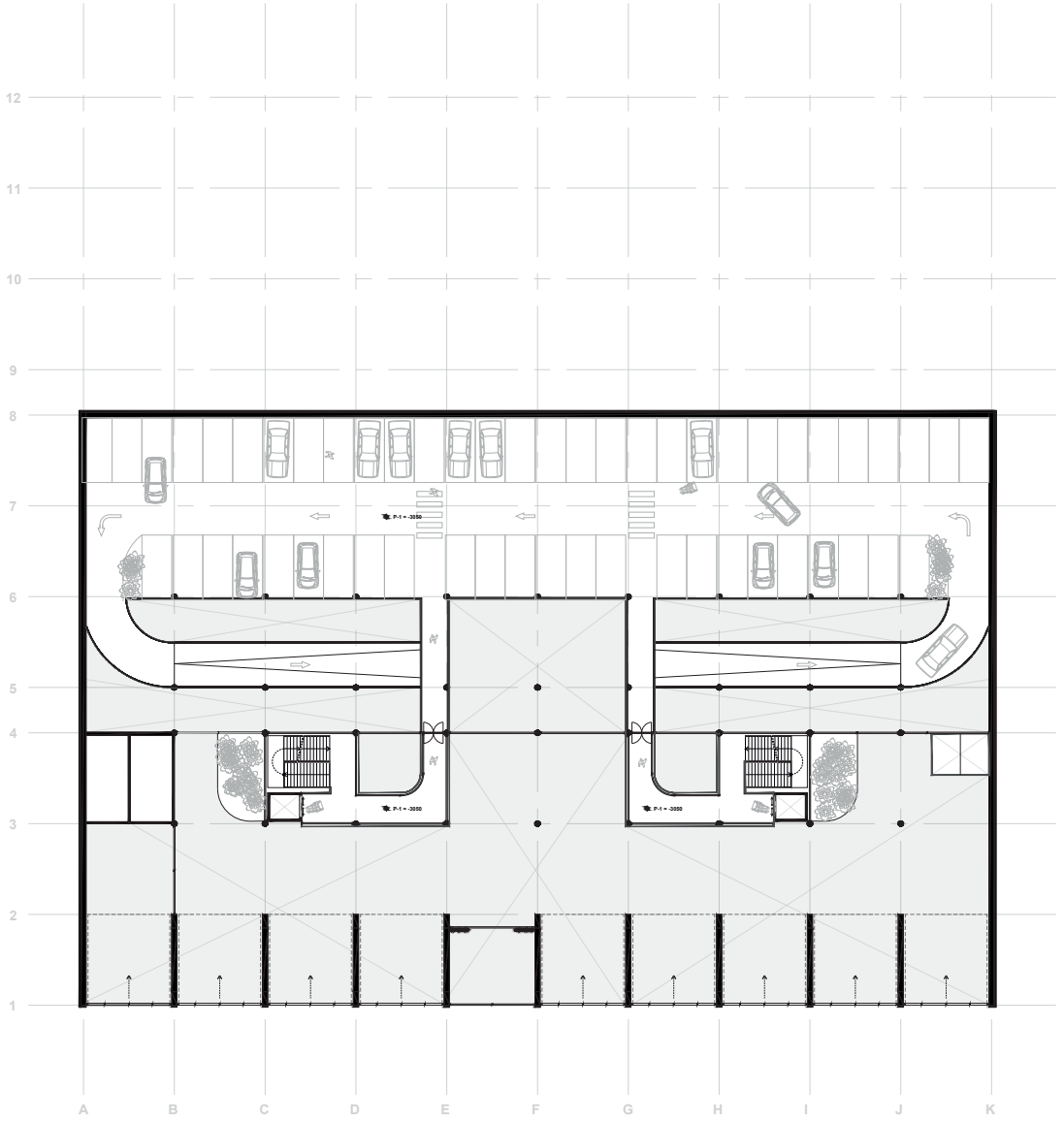
EXPERIENCE



EXPERIENCE

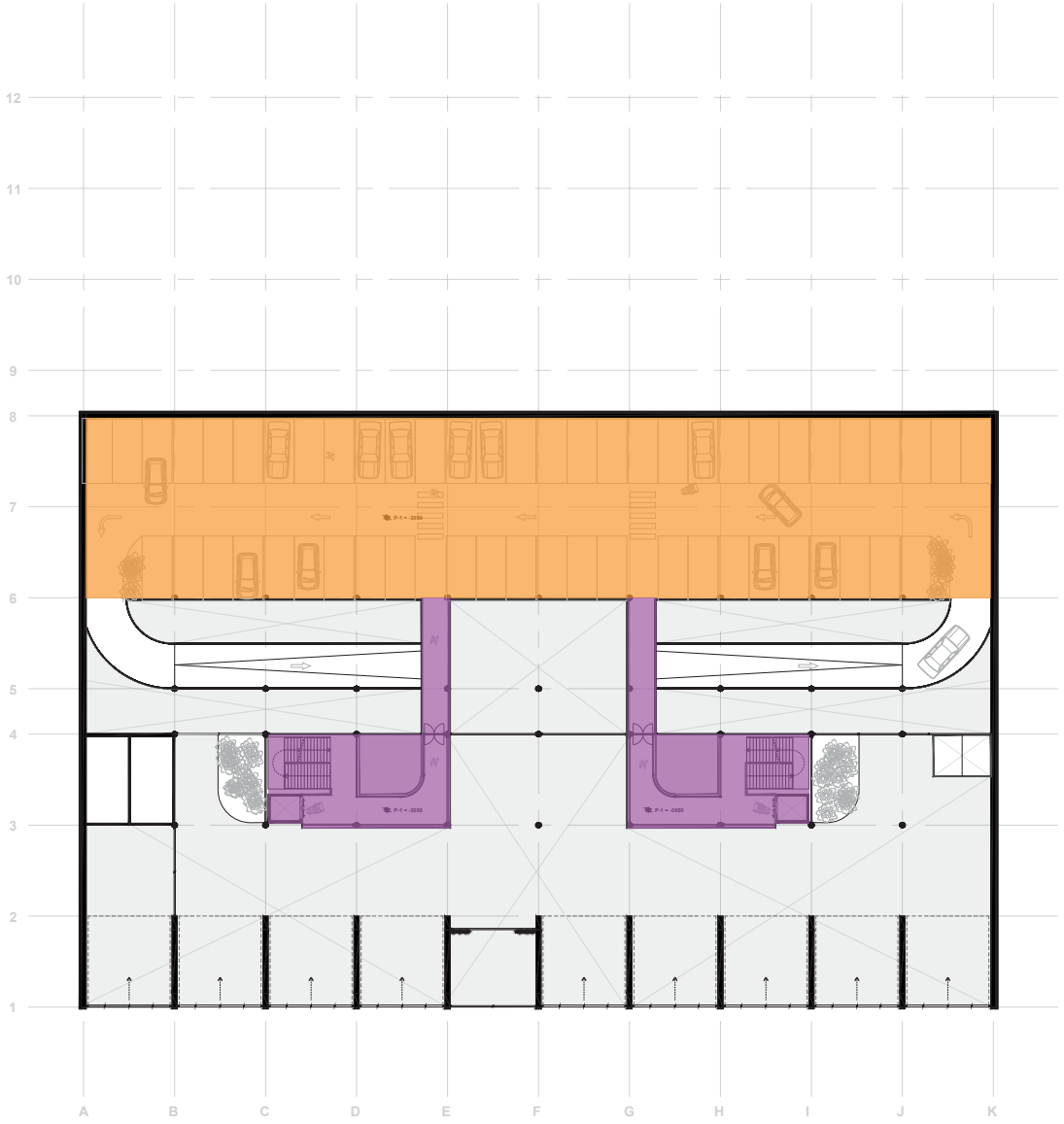


PLAN -1



0 1 5 10 20M

PLAN -1



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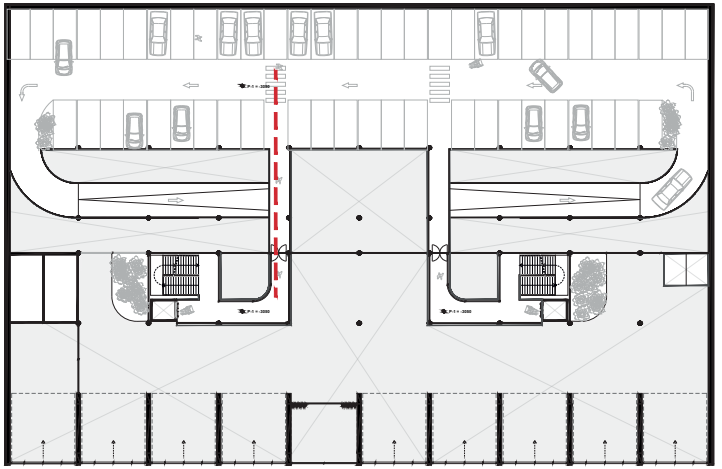
0 1 5 10 20M

EXPERIENCE



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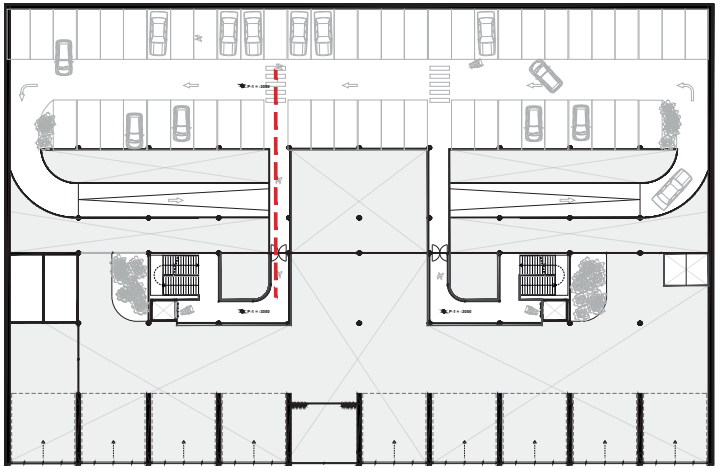
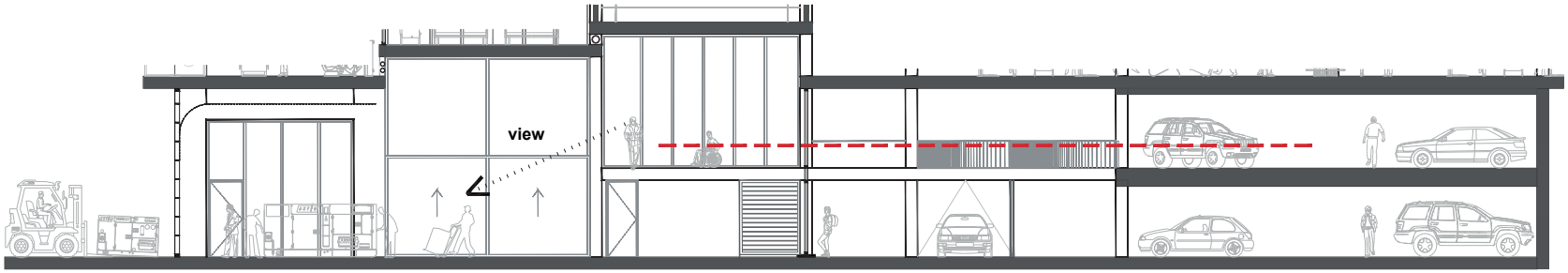
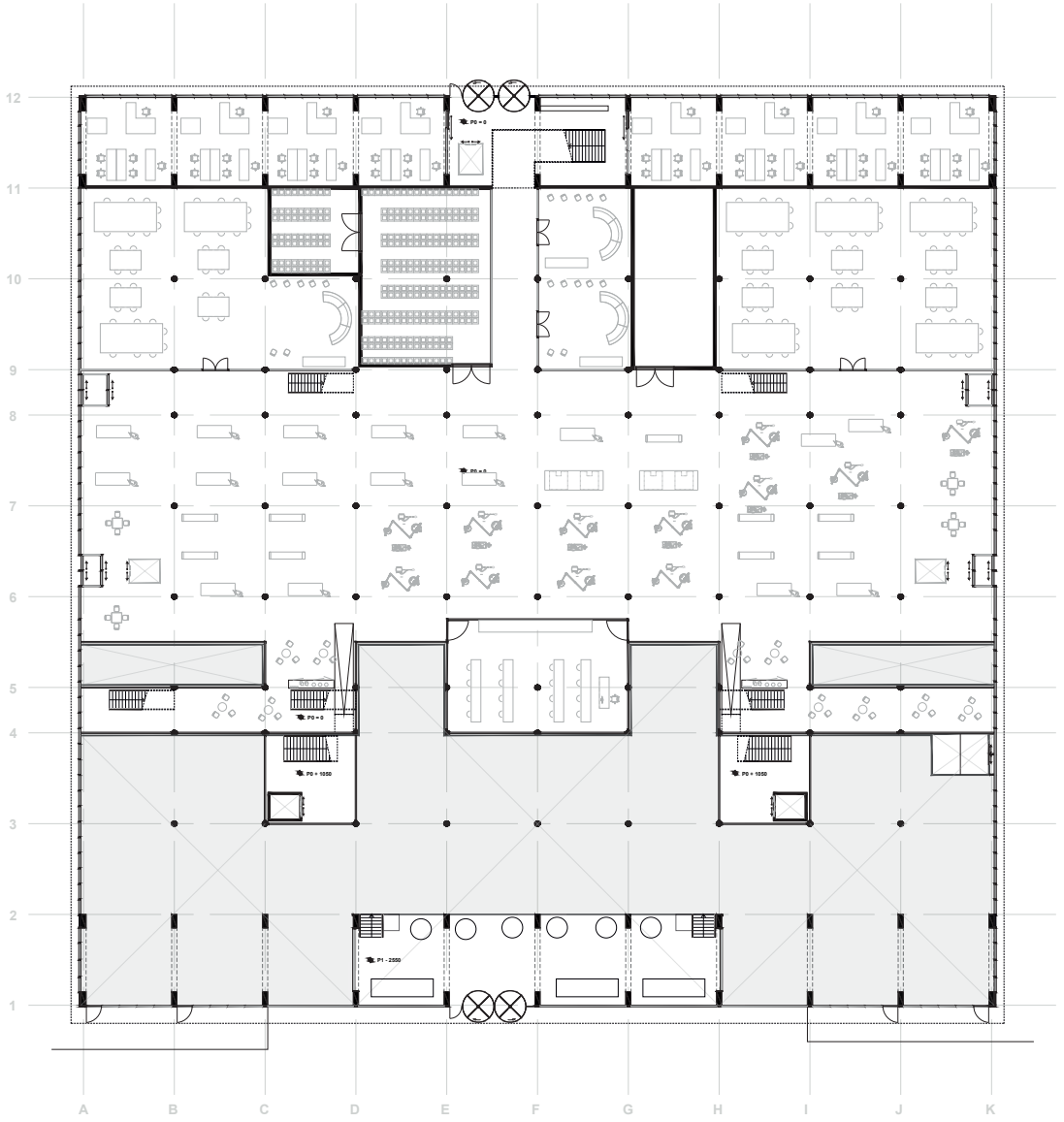


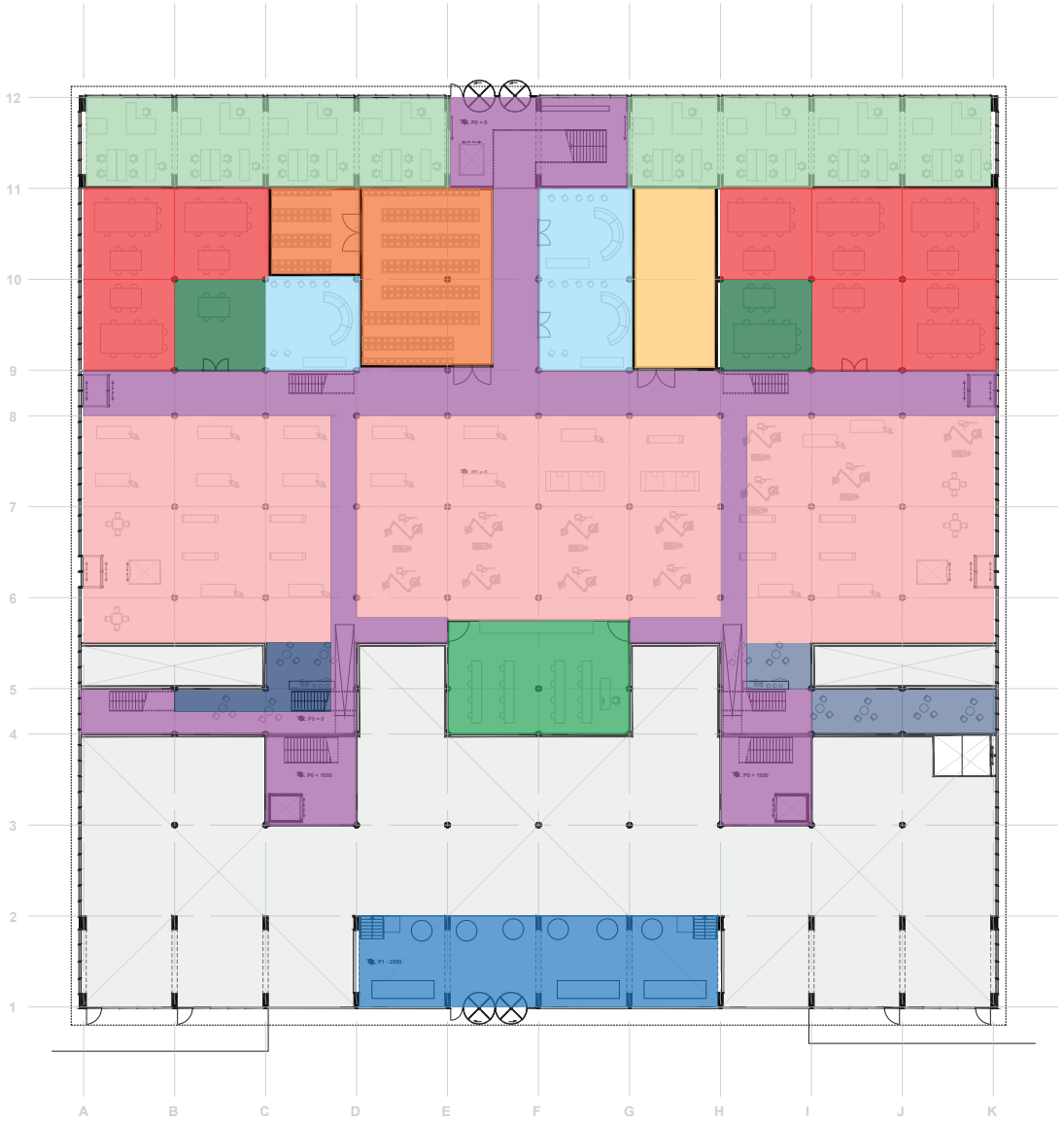


PLAN 00



0 1 5 10 20M

PLAN 00



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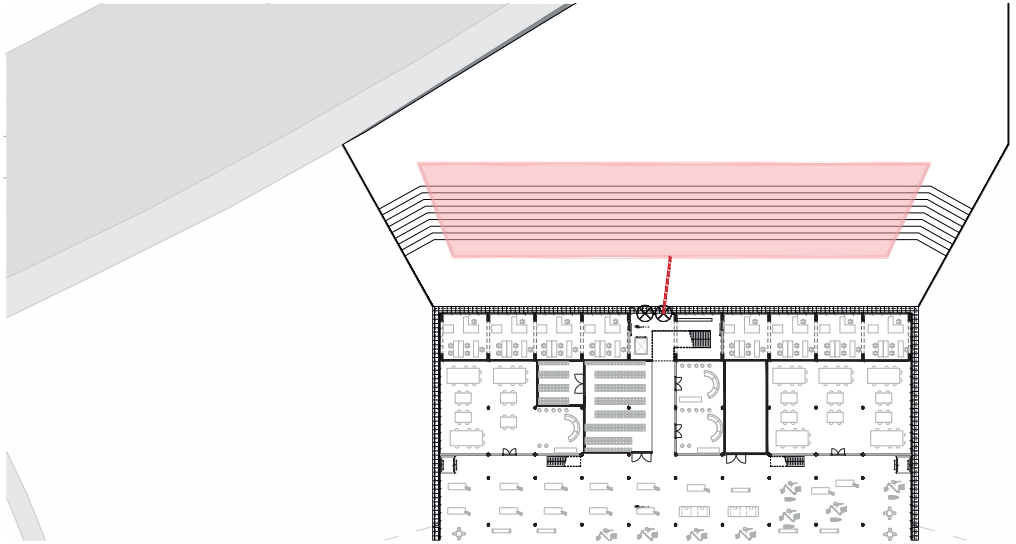
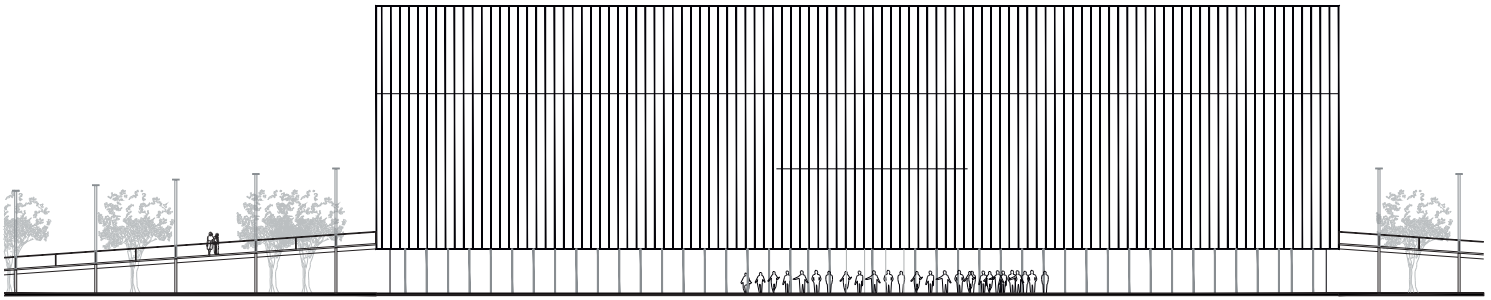
0 1 5 10 20M

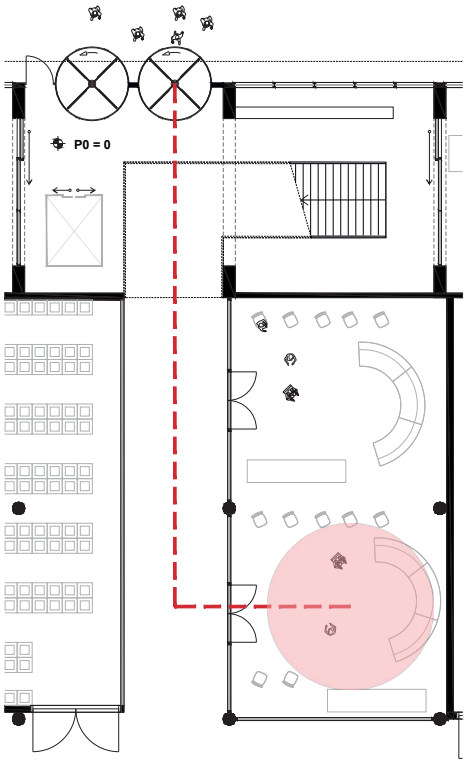
EXPERIENCE



Urban scale



North facade



Spatial computing room

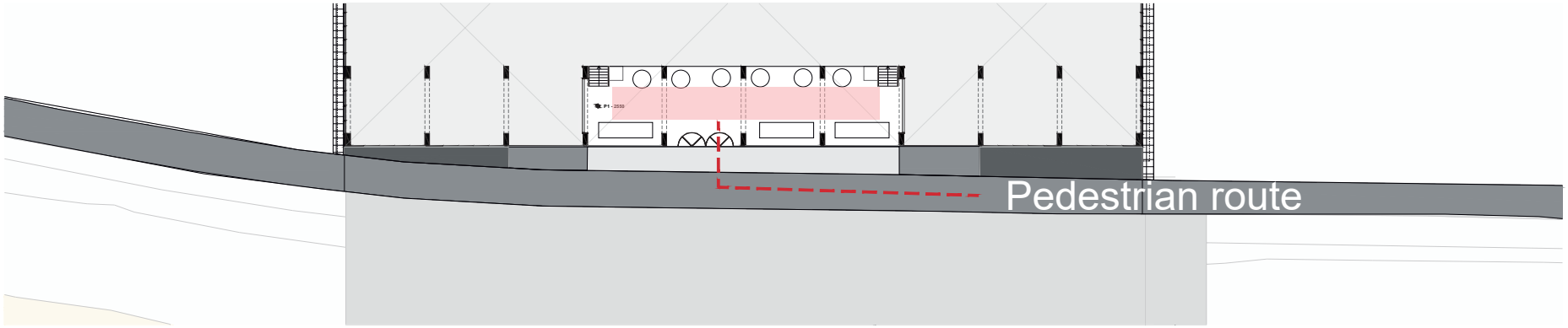
Implementation

DURING THE DAY

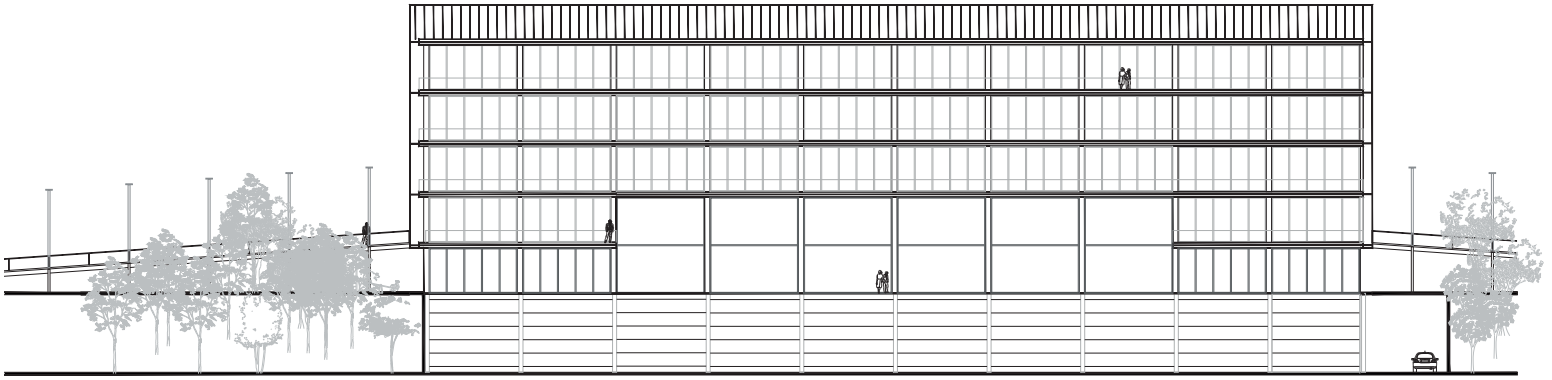
Implementation

DURING THE EVENING

EXPERIENCE



Human scale

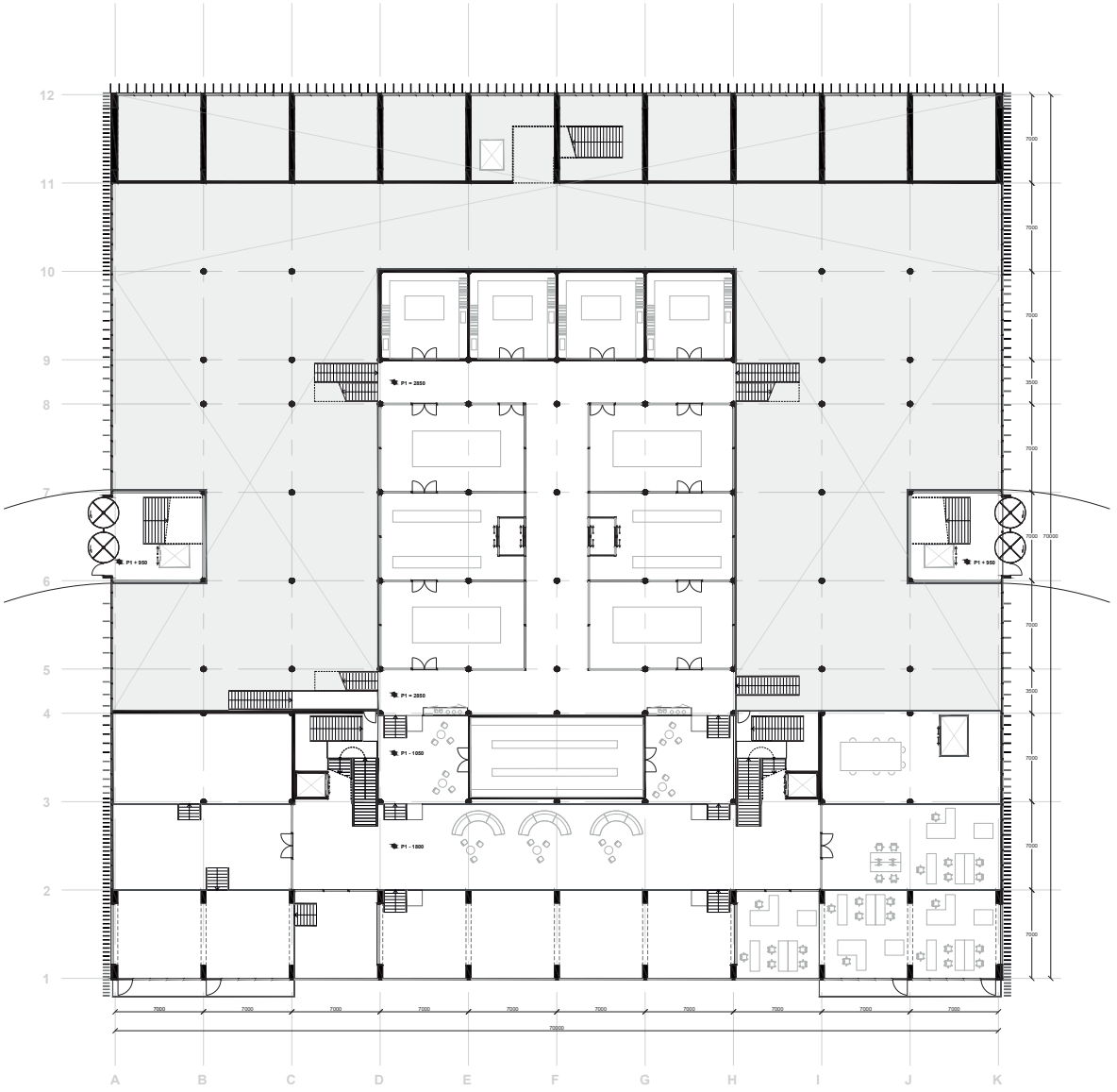


South facade

Implementation

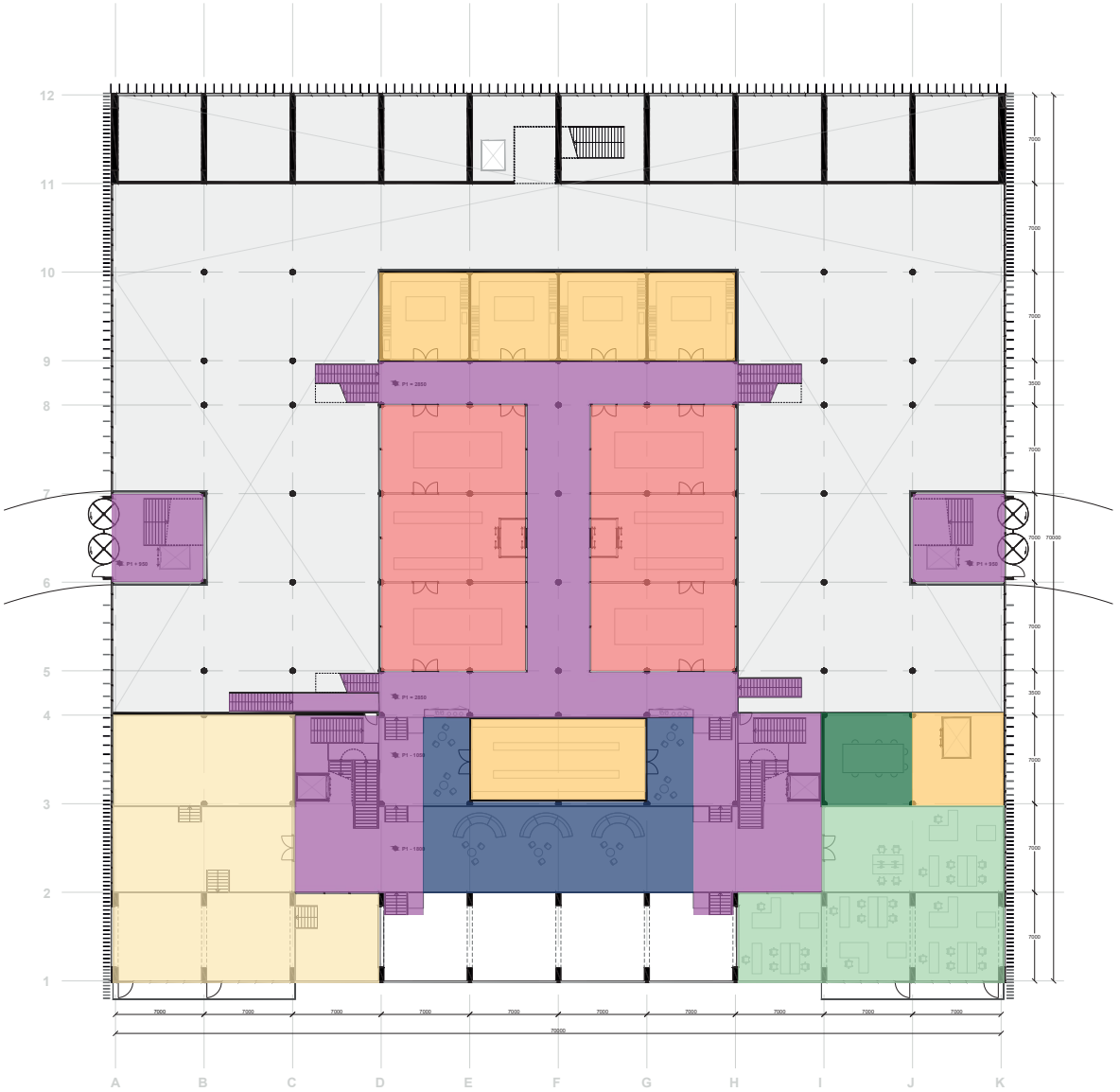
EXPERIENCE

PLAN 01



0 1 5 10 20M

PLAN 01



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- Shared office
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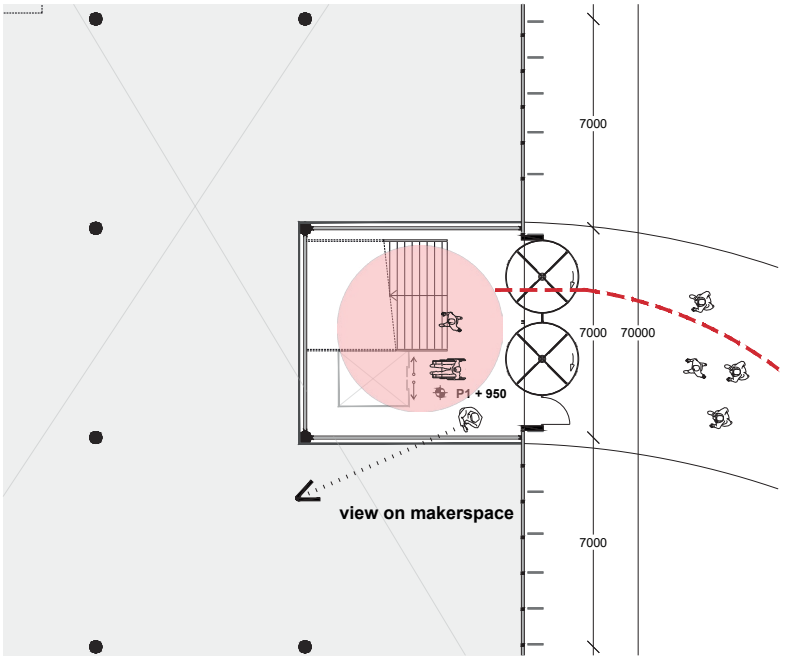
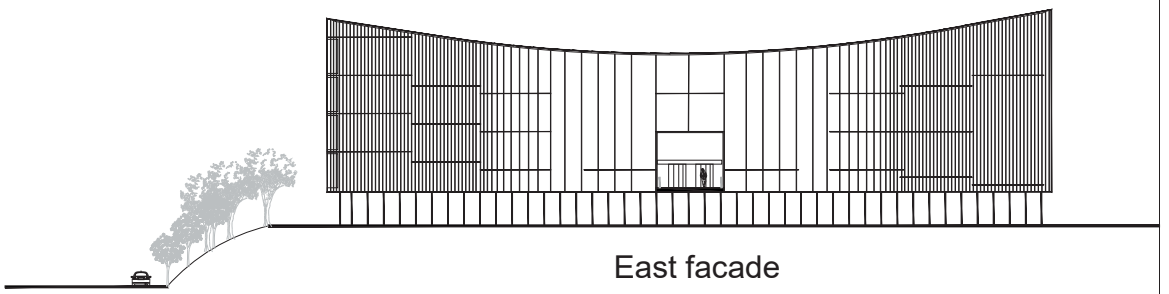
- Data storage
- Parking
- Support
- Daycare
- Circulation

0 1 5 10 20M

EXPERIENCE

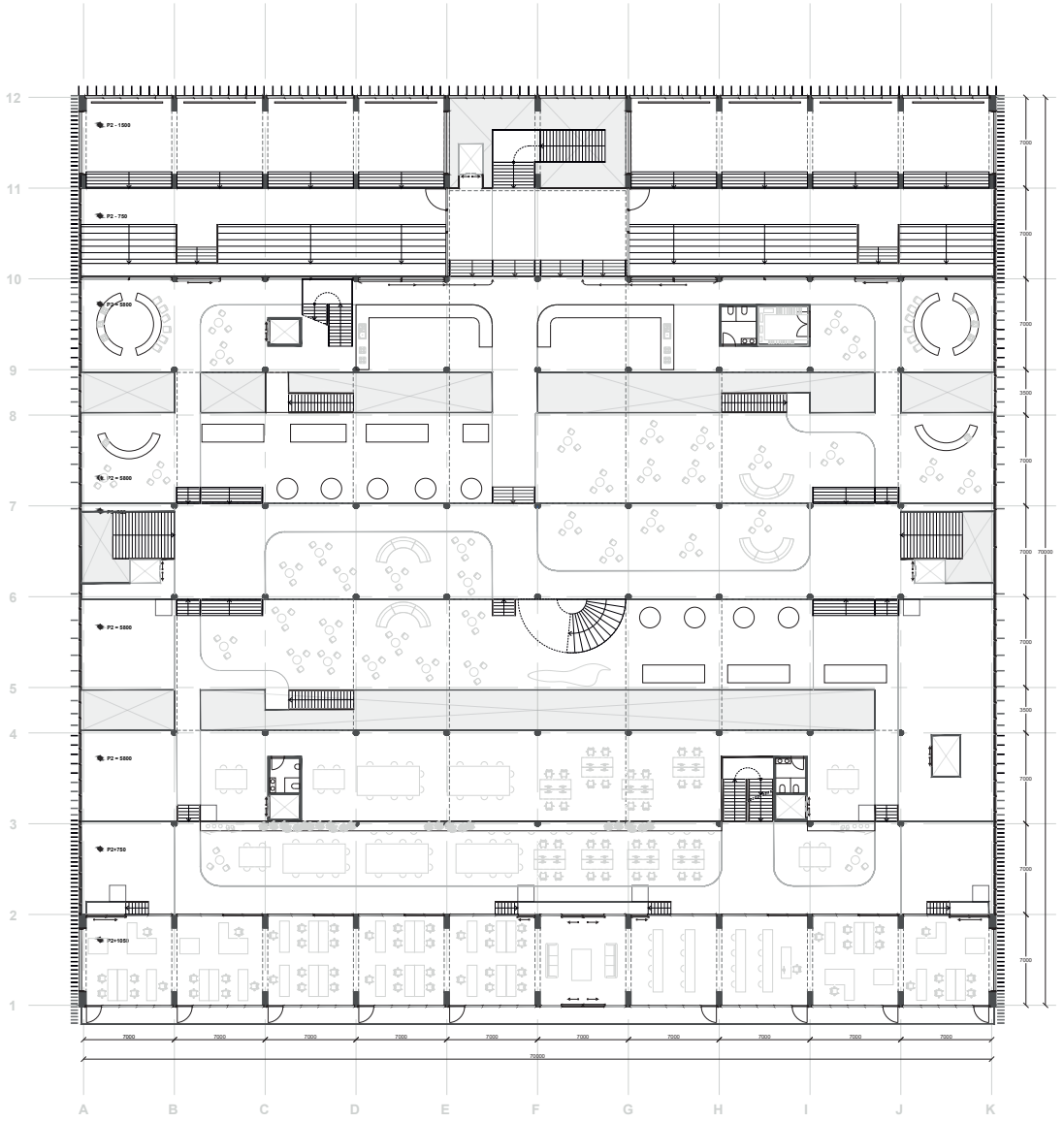




Implementation

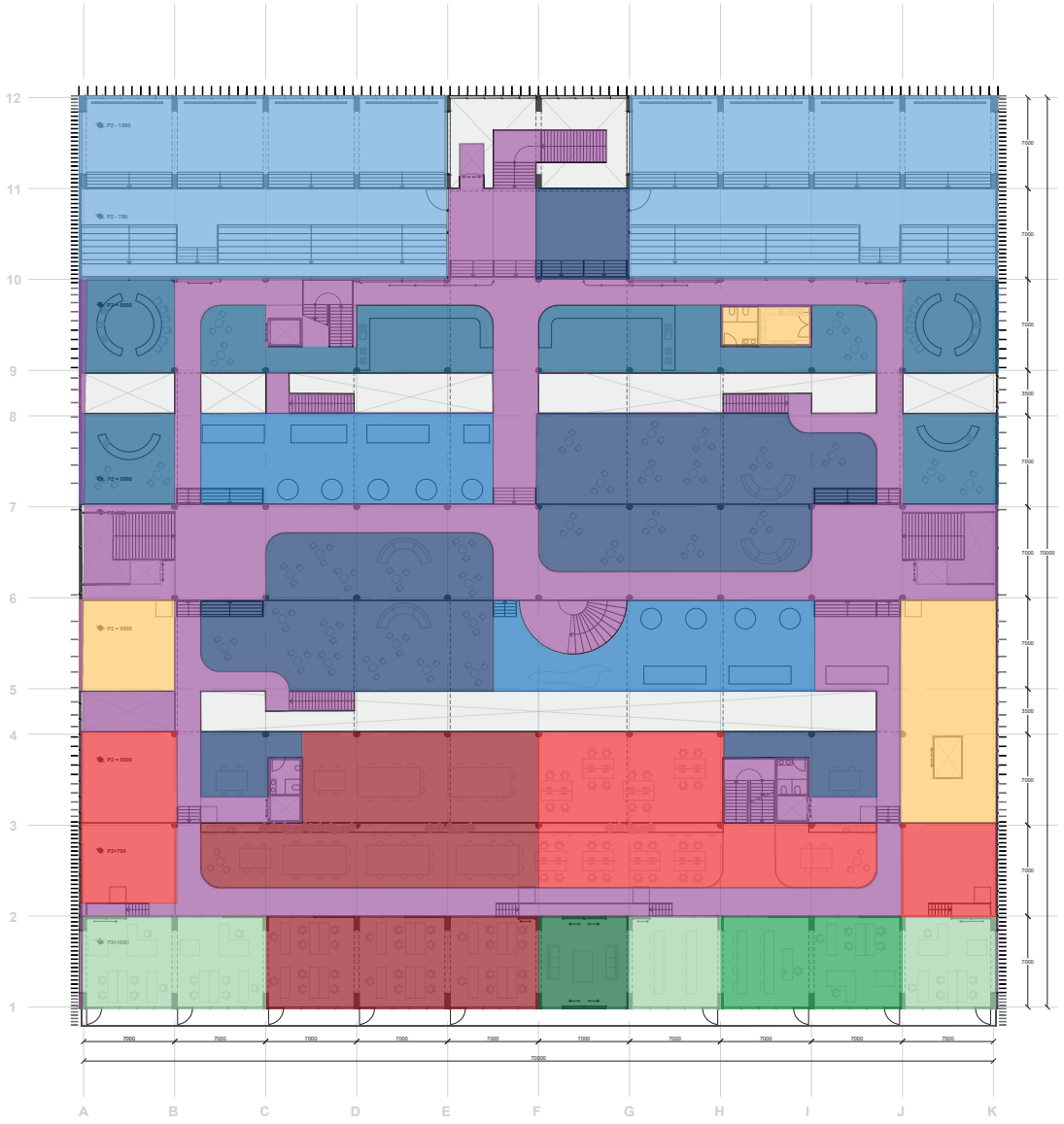
EXPERIENCE

PLAN 02



0 1 5 10 20M

PLAN 02



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- Daycare
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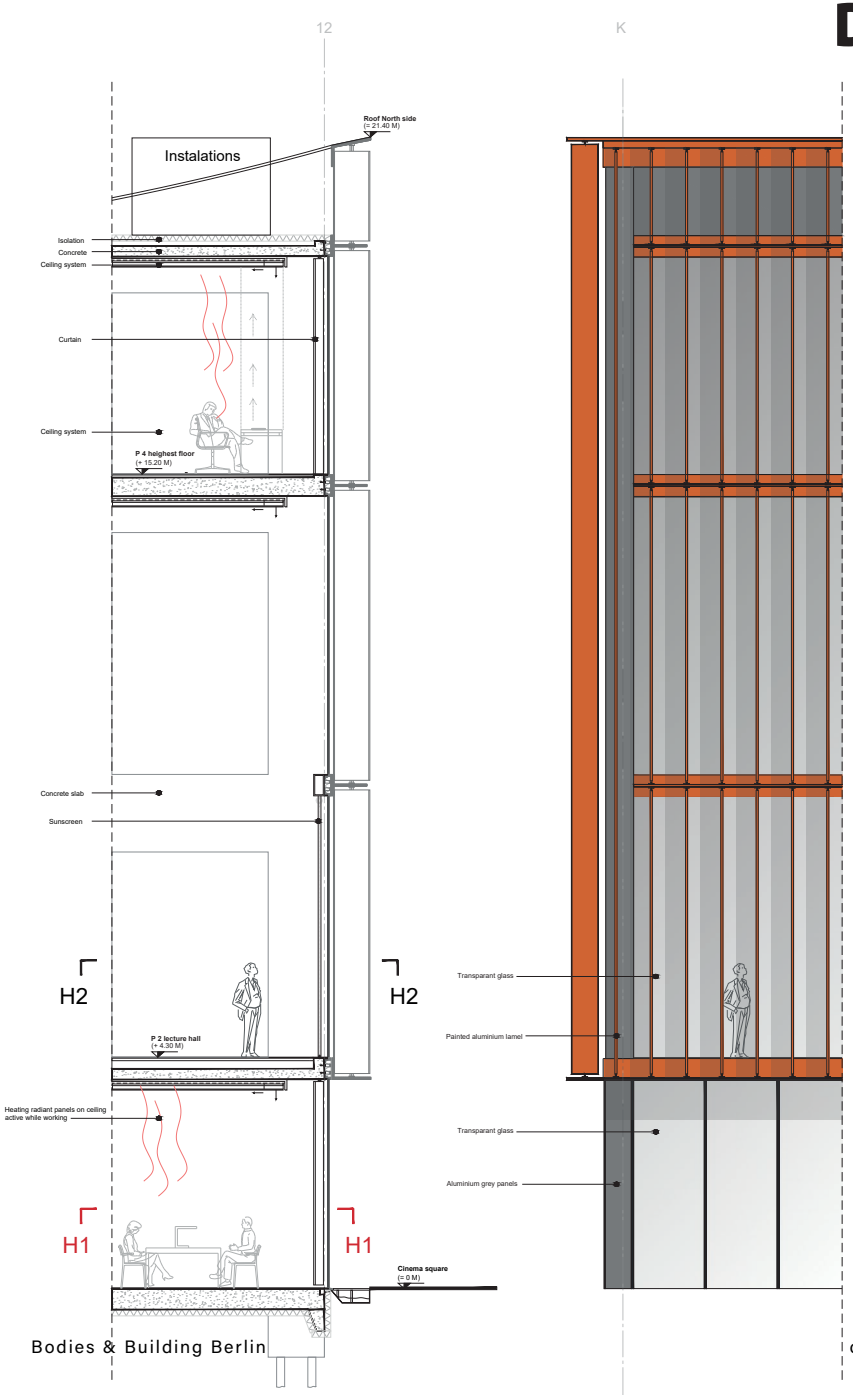
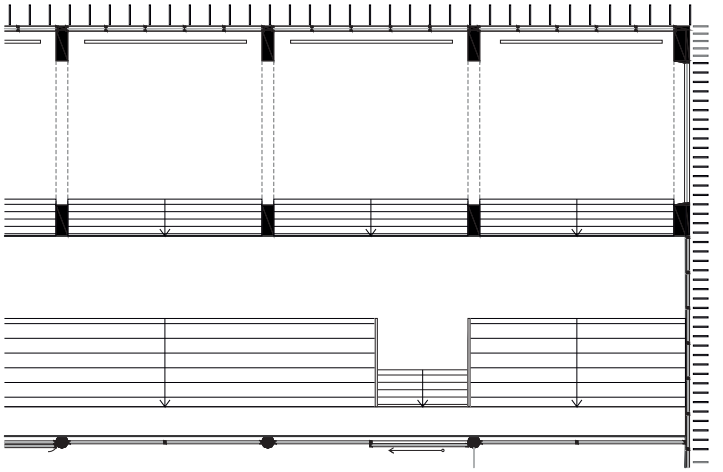
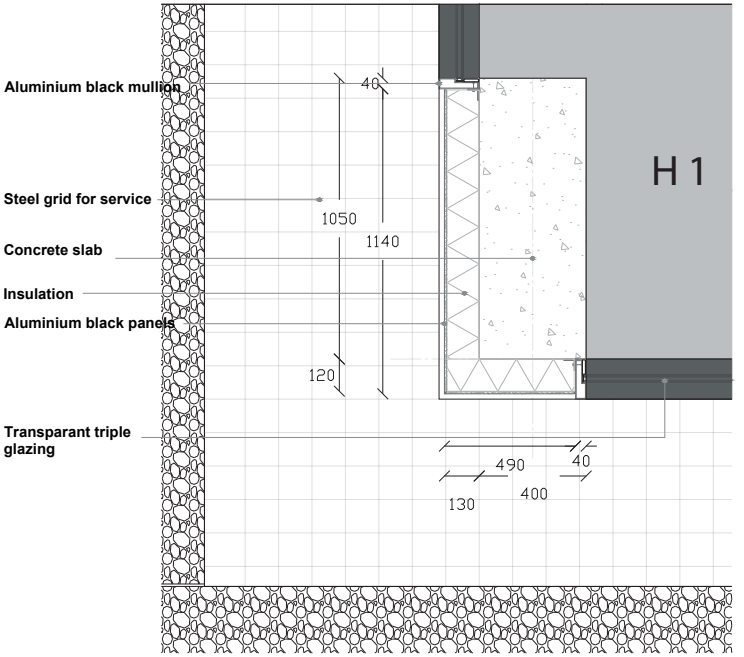
0 1 5 10 20M

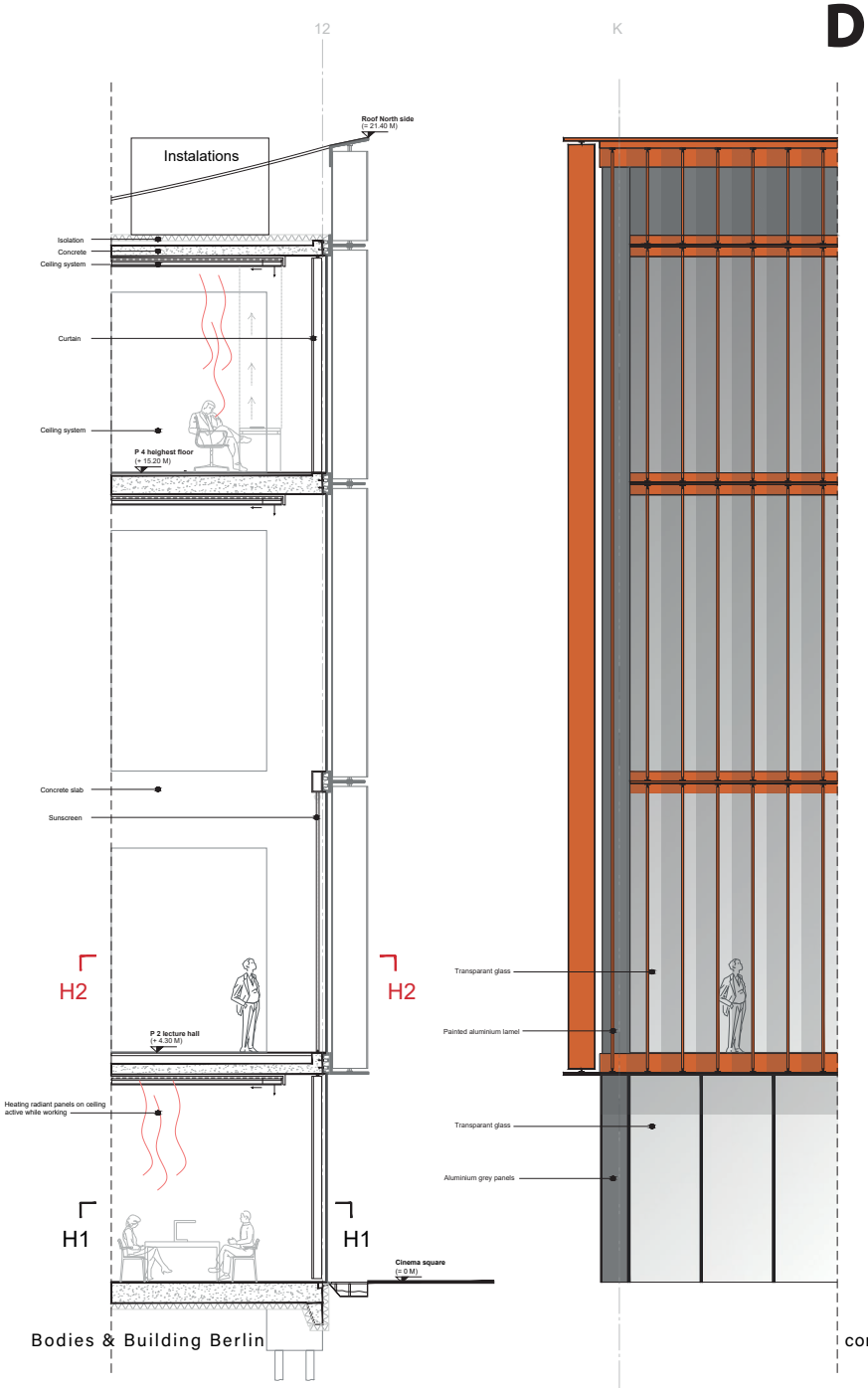
DETAILS

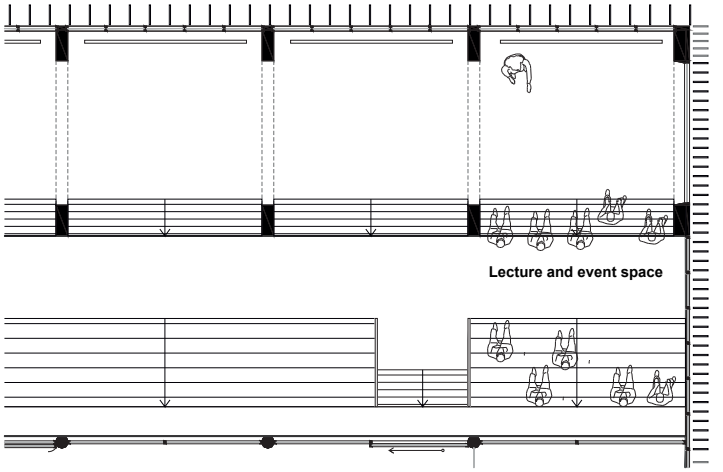

12
K
Instalations
Roof North side
(+ 21.40 M)
Isolation
Concrete
Ceiling system
Curtain
Ceiling system
P 4 heighest floor
(+ 15.20 M)
Concrete slab
Sunscreen
H2
H2
P 2 lecture hall
(+ 4.30 M)
Heating radiant panels on ceiling
active white working
H1
H1
Cinema square
(+ 0 M)
Transparant glass
Painted aluminium lamel
Transparant glass
Aluminium grey panels

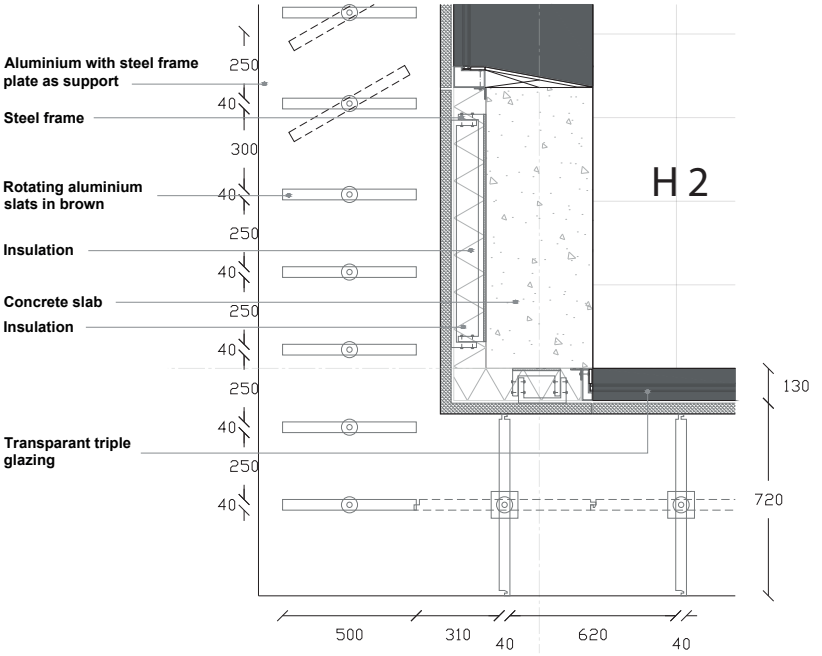



Aluminium black mullion
Steel grid for service
Concrete slab
Insulation
Aluminium black panels
Transparant triple
glazing
40
1050
1140
120
H 1
490
40
130
400

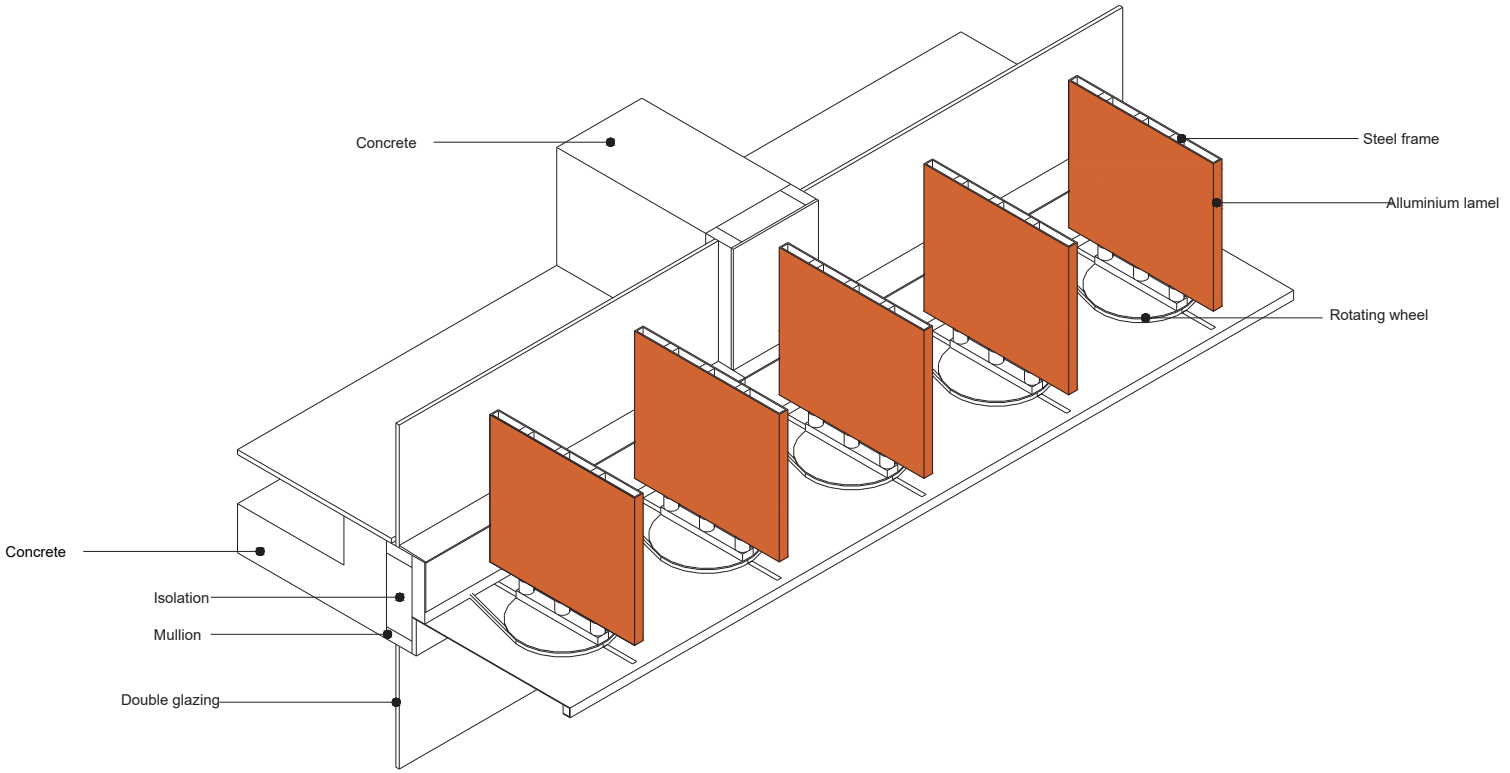
DETAILS


12
K
Instalations
Roof North side
(+ 21.40 M)
Isolation
Concrete
Ceiling system
Curtain
Ceiling system
P 4 heighest floor
(+ 15.20 M)
Concrete slab
Sunscreen
H2
H2
P 2 lecture hall
(+ 4.30 M)
Heating radiant panels on ceiling
active white working
H1
H1
Cinema square
(+ 0 M)
Transparant glass
Painted aluminium lamel
Transparant glass
Aluminium grey panels

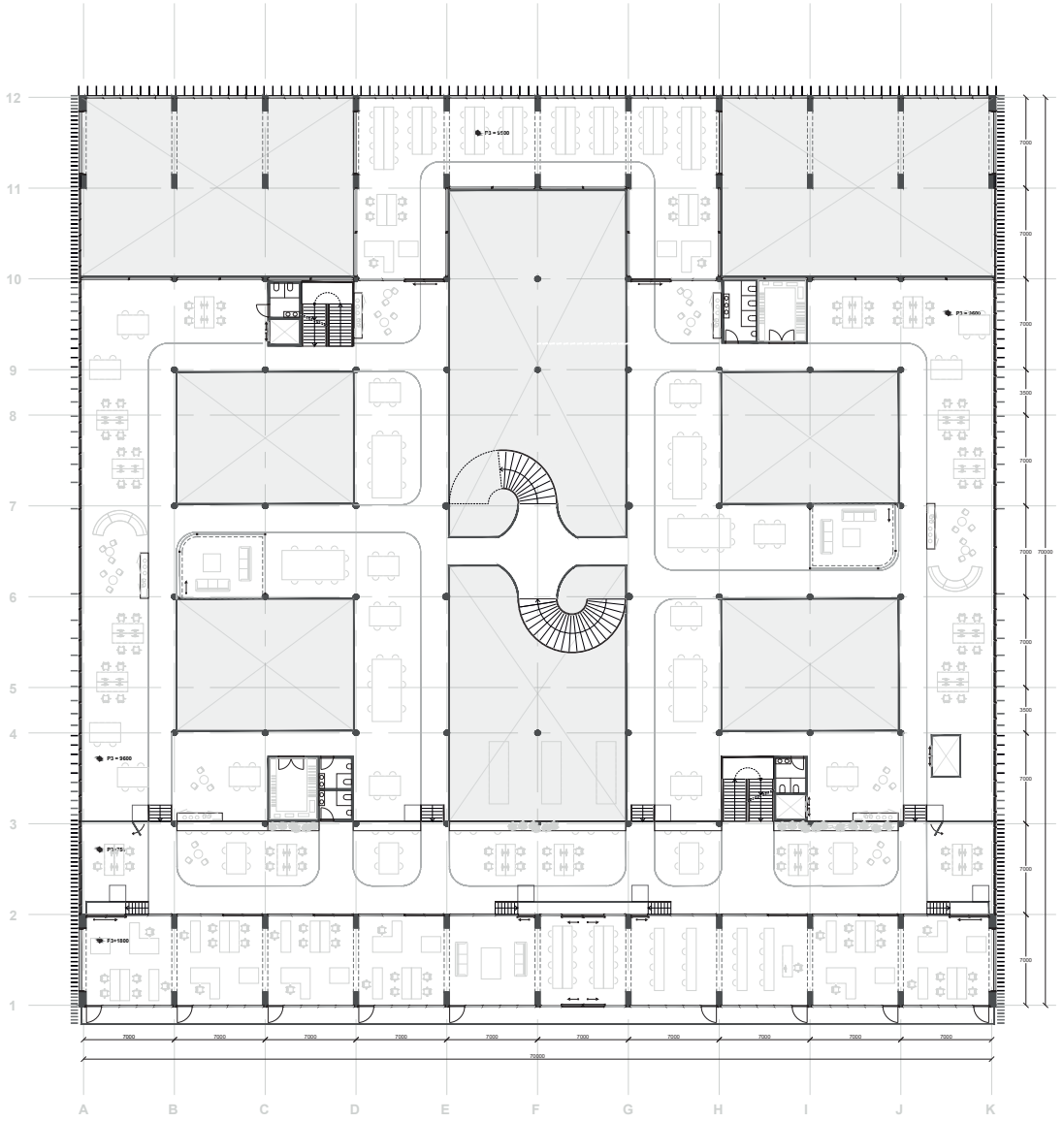

Lecture and event space


Aluminium with steel frame
plate as support
Steel frame
Rotating aluminium
slats in brown
Insulation
Concrete slab
Insulation
Transparant triple
glazing
250
40
300
40
250
40
250
40
250
40
250
40
H 2
130
720
500
310
40
620
40

DETAILS

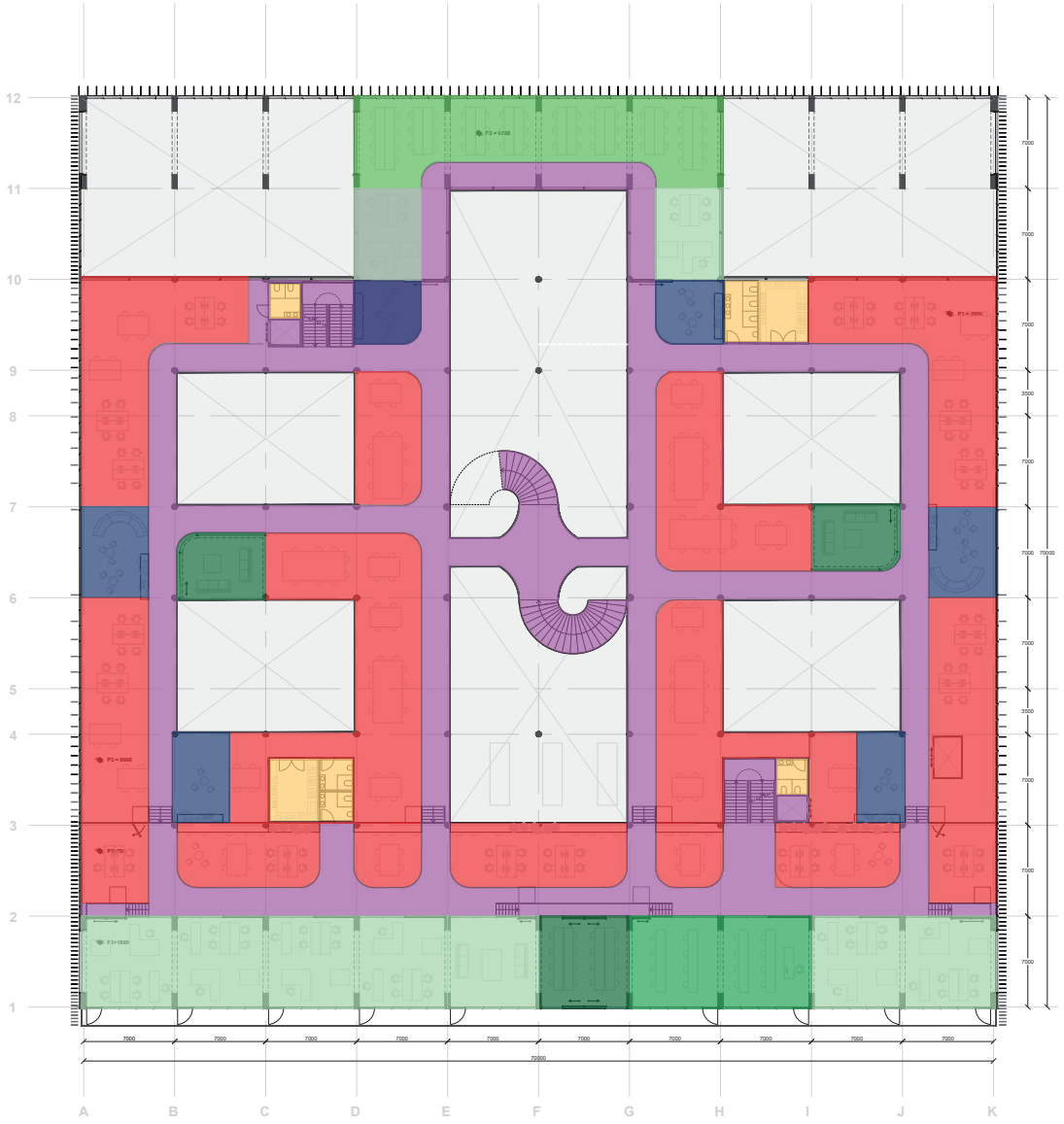

Concrete
Steel frame
Alluminium lamel
Rotating wheel
Concrete
Isolation
Mullion
Double glazing

PLAN 03



0 1 5 10 20M

PLAN 03



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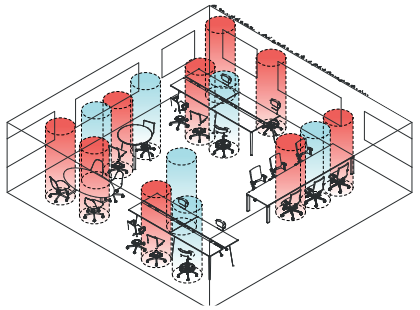
- Support
- Daycare
- Circulation

0 1 5 10 20M

STIMULATE COLLABORATION



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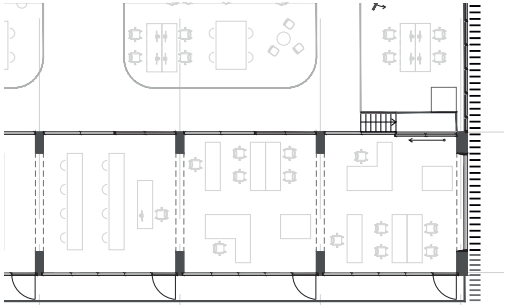
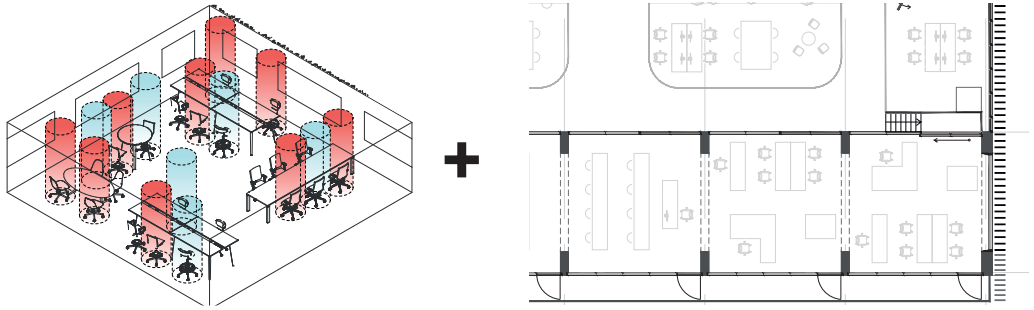
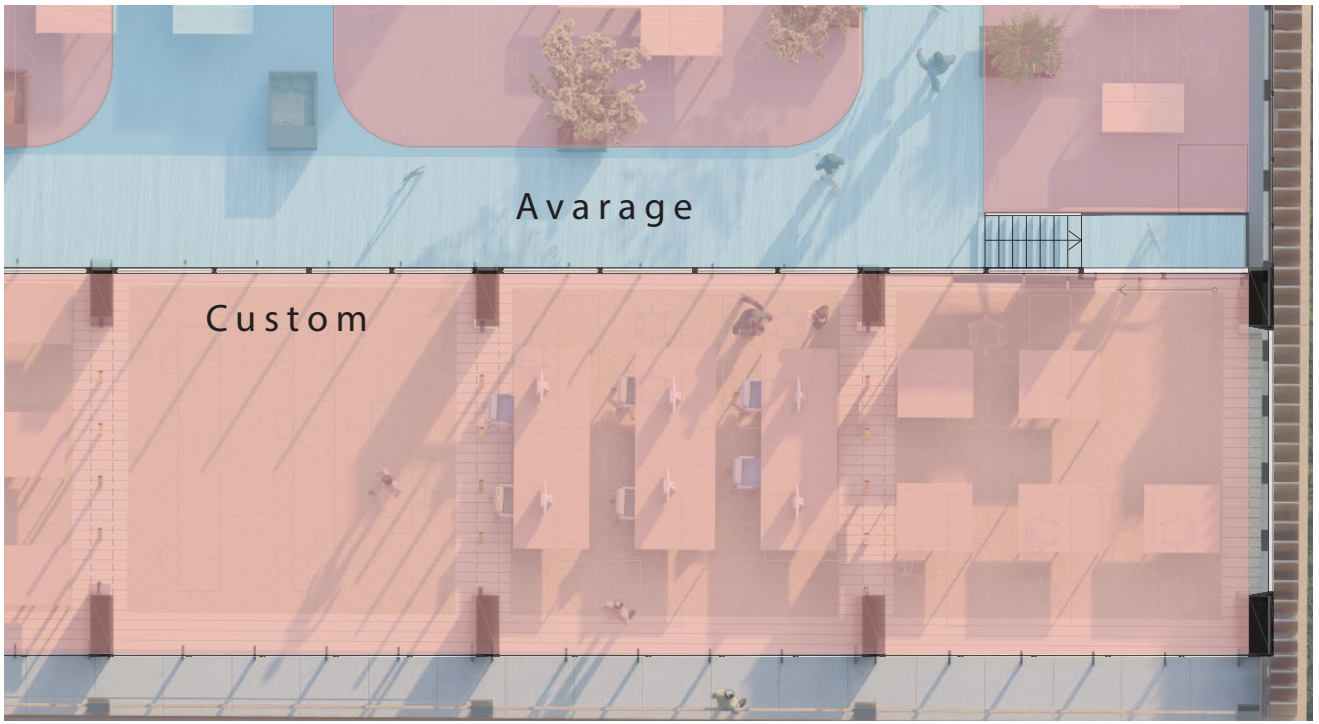
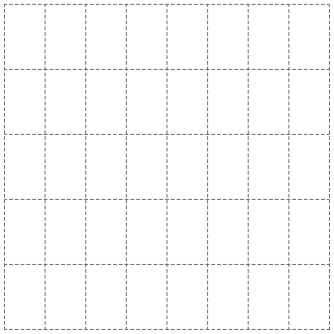


CUSTOM TEMPERATURE

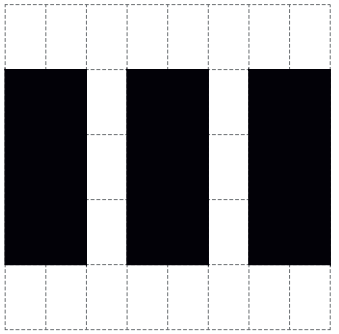




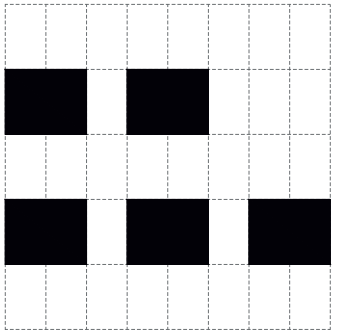
THE UNKNOWN OF AI



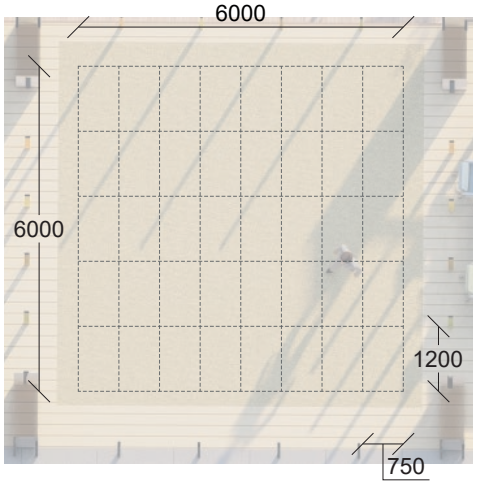
Empty project room

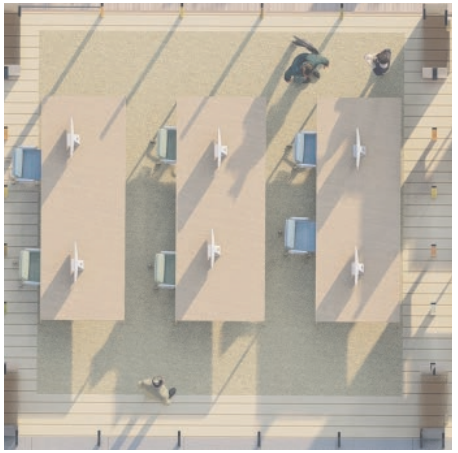


Office room



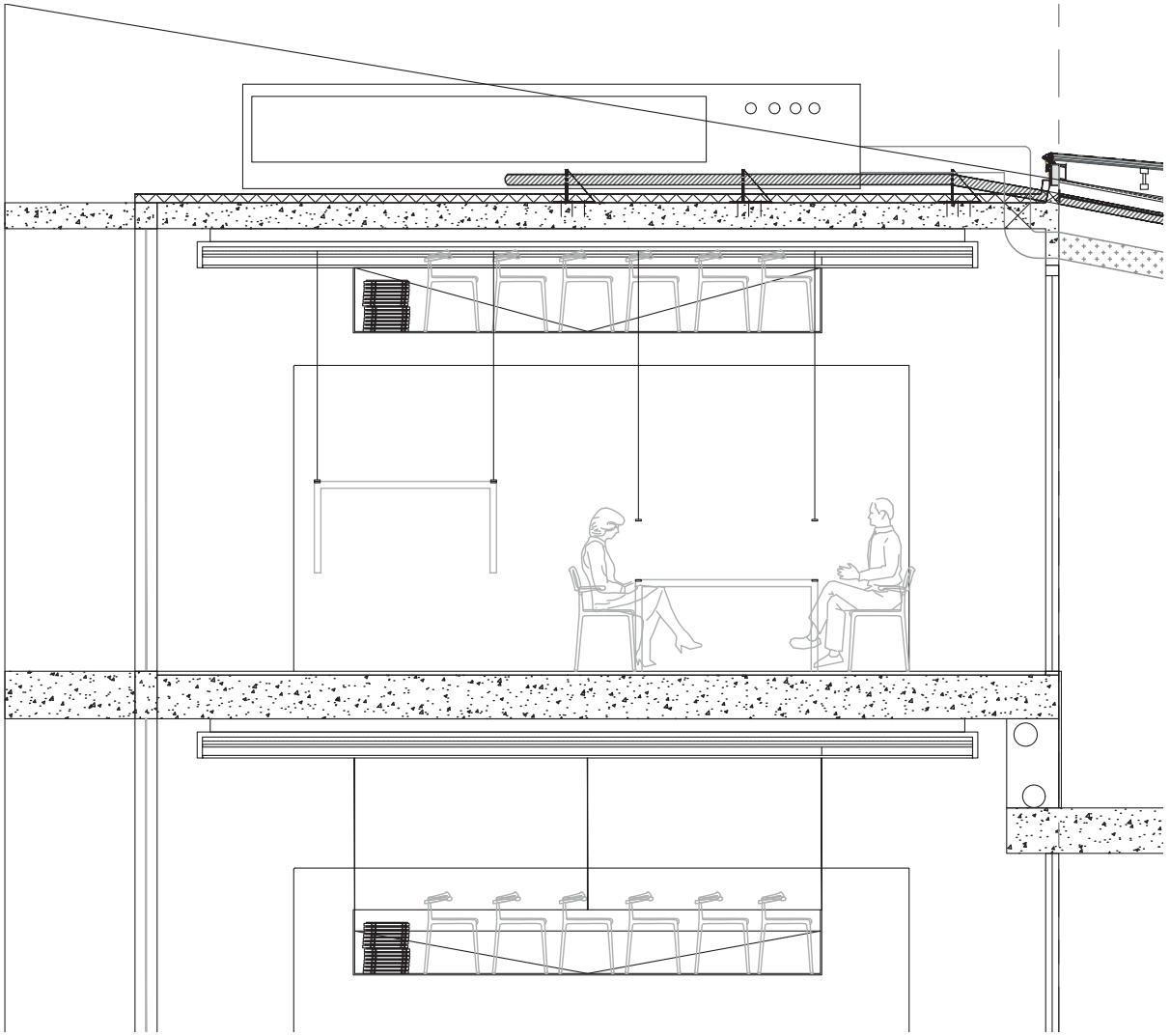
Study room



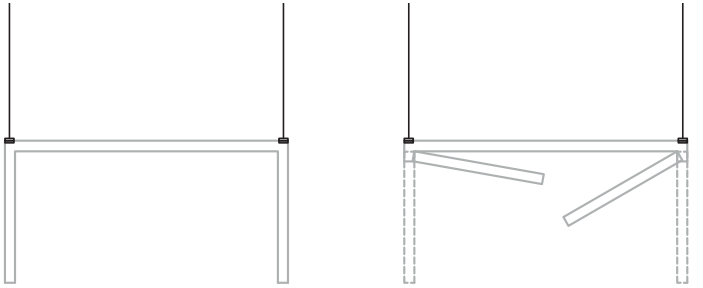


FLEXIBILITY OF OCCUPANCY

HOW DOES IT WORK

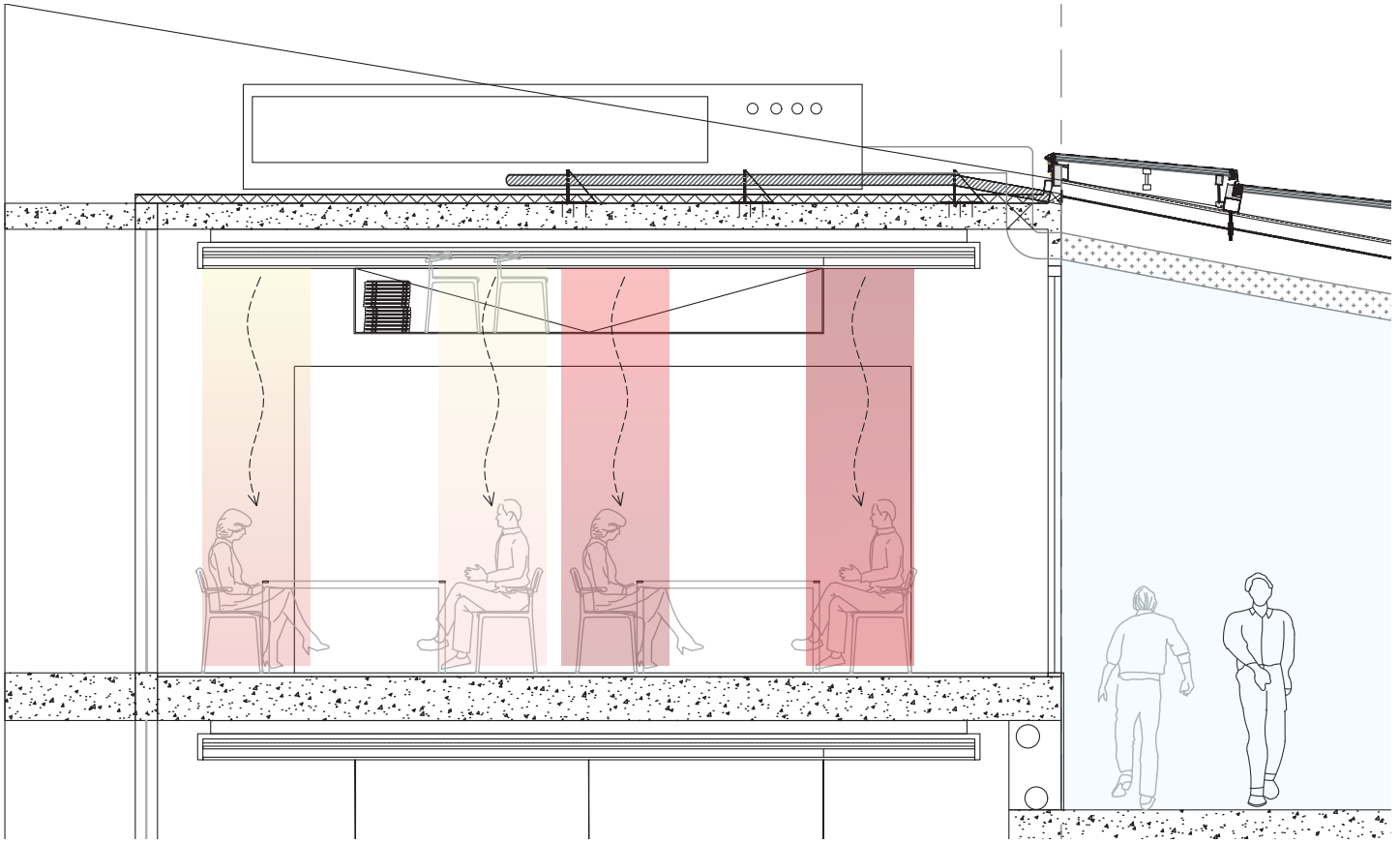


Folding chair



Folding table attahced with magnets

SMART CEILING SYSTEM



Custom

Unoccupied

Occupied

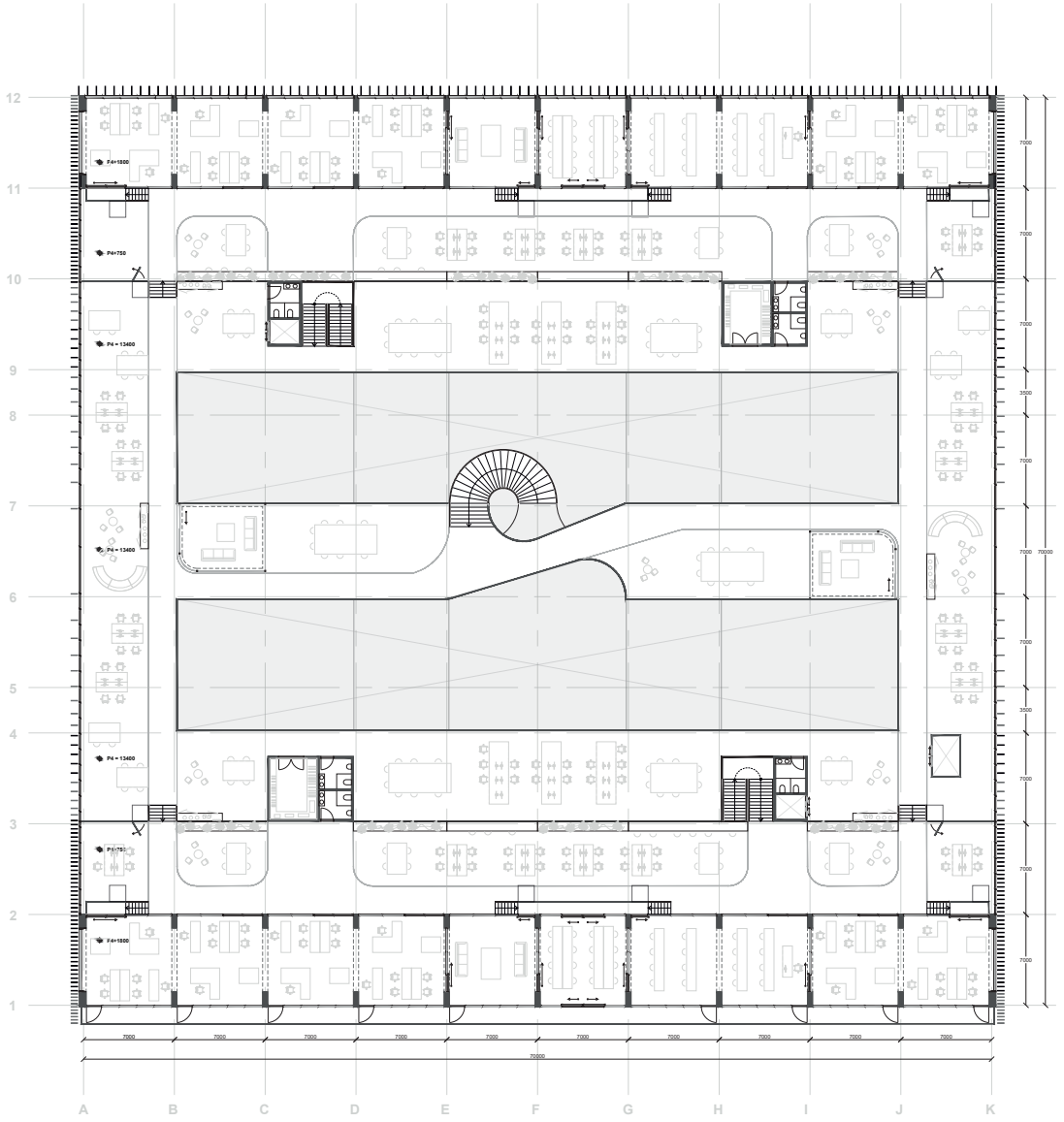
Avarage

UNOCCUPIED

Implementation

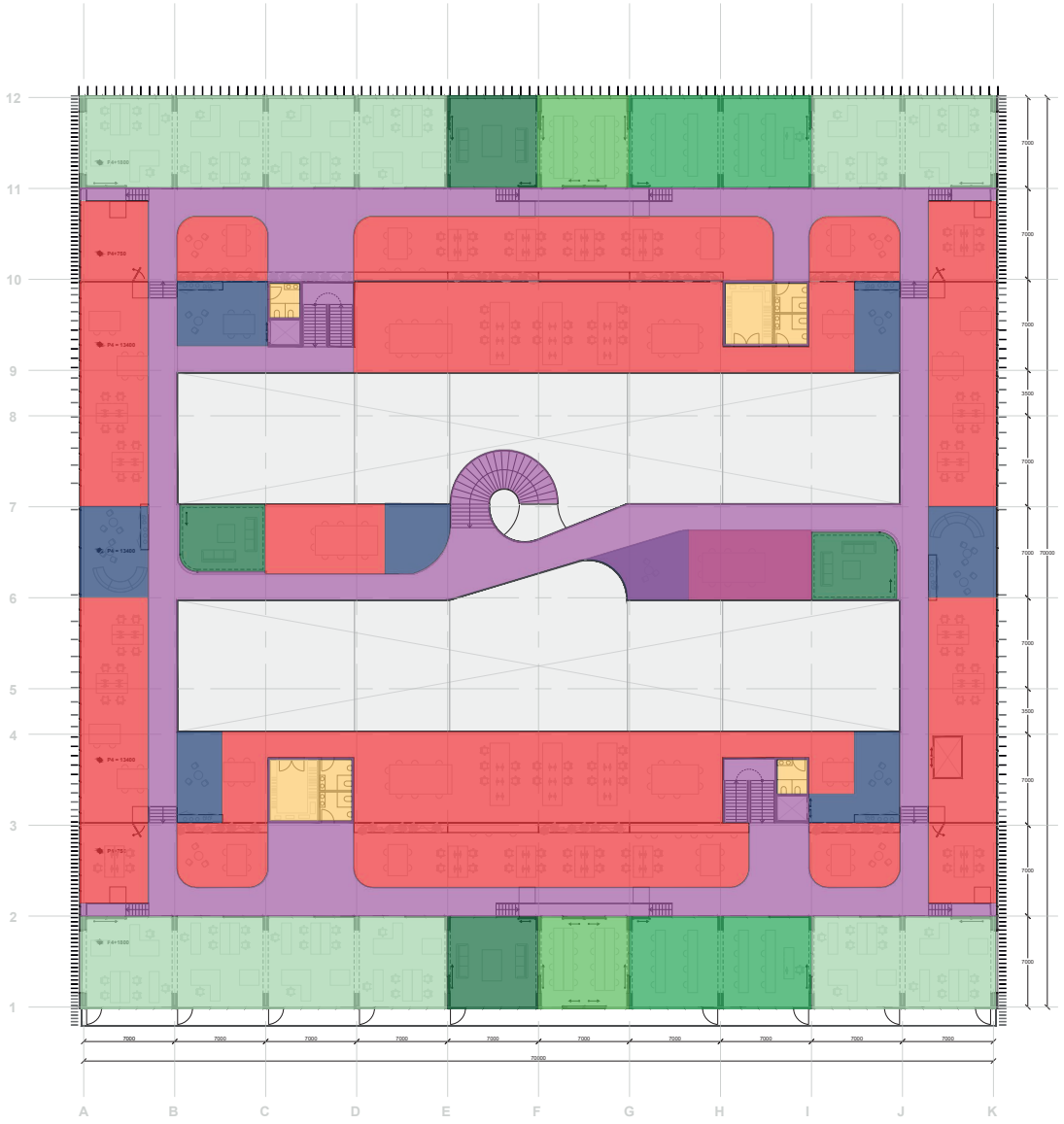
OCCUPIED

PLAN 04



0 1 5 10 20M

PLAN 04



Legend

- Privat office
- Study spaces
- Classroom
- Meeting room
- Saptial computing room
- Event space & lecture hall
- Exhibition
- Amenities
- Lounge
- Makerspace
- Labs
- Shared office
- Startups
- Data storage
- Parking
- Support
- Daycare
- Circulation

0 1 5 10 20M

Implementation

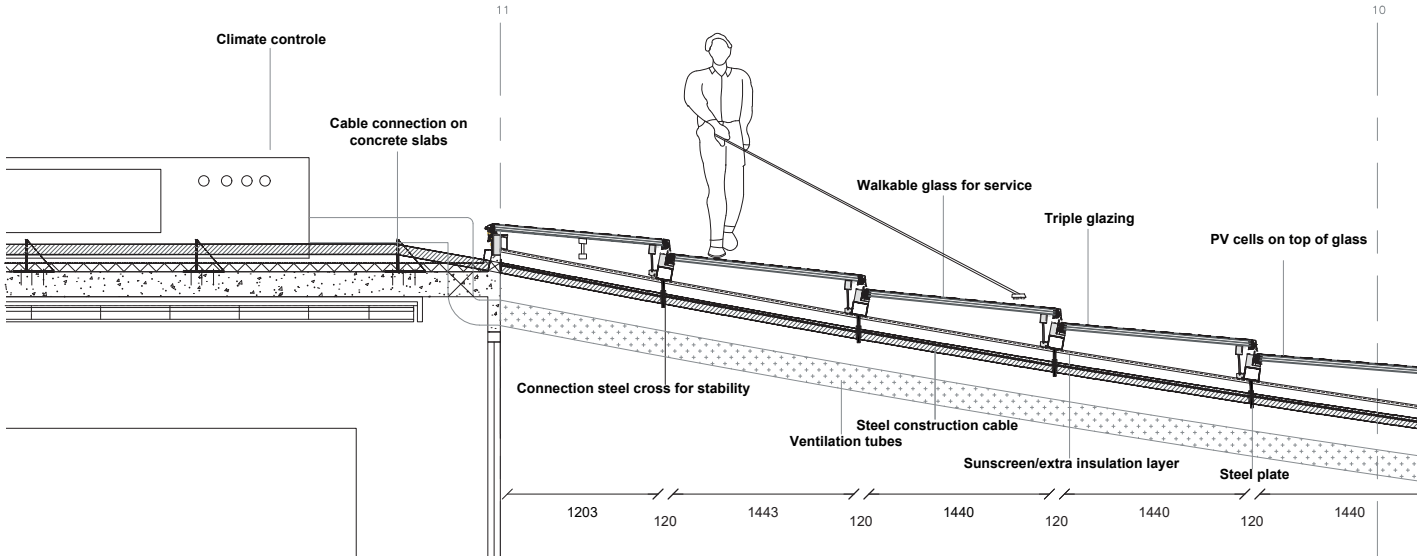
EXPERIENCE

MATERIALS INTERIOR

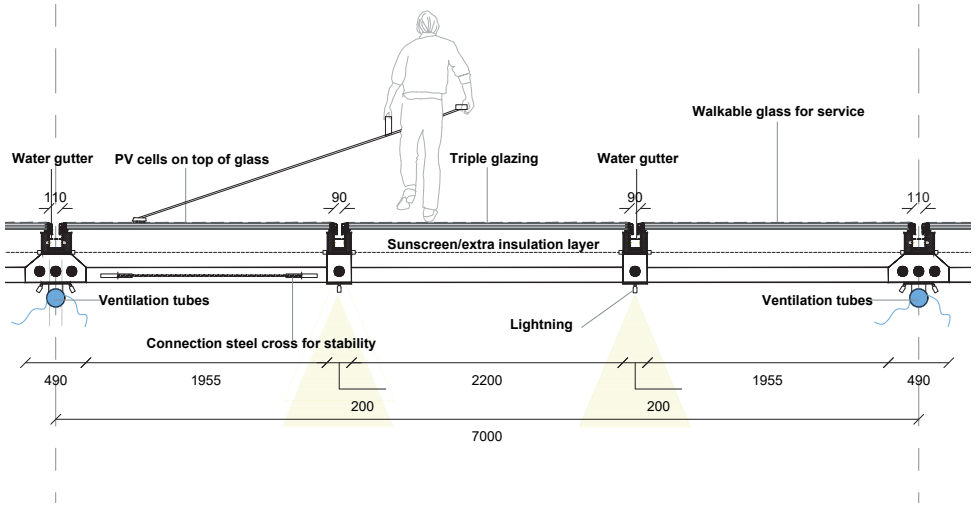
Implementation

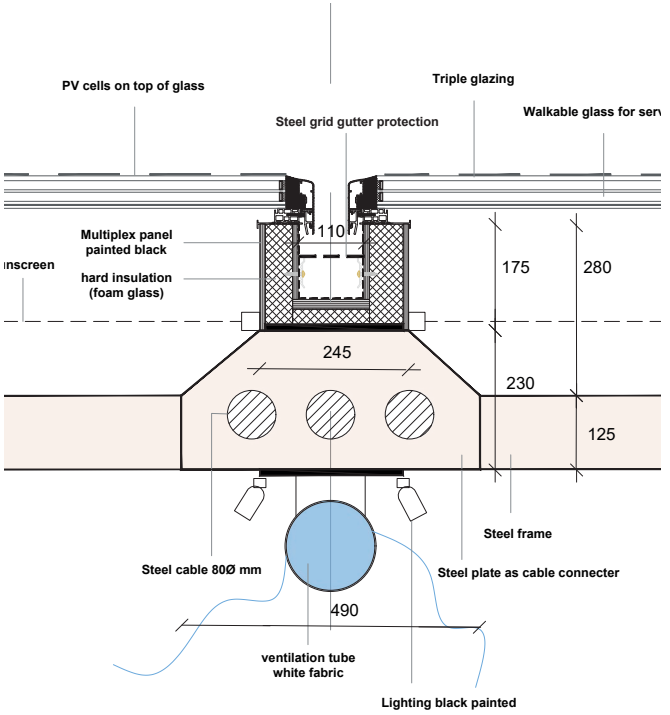
EXPERIENCE

ROOF DETAILS

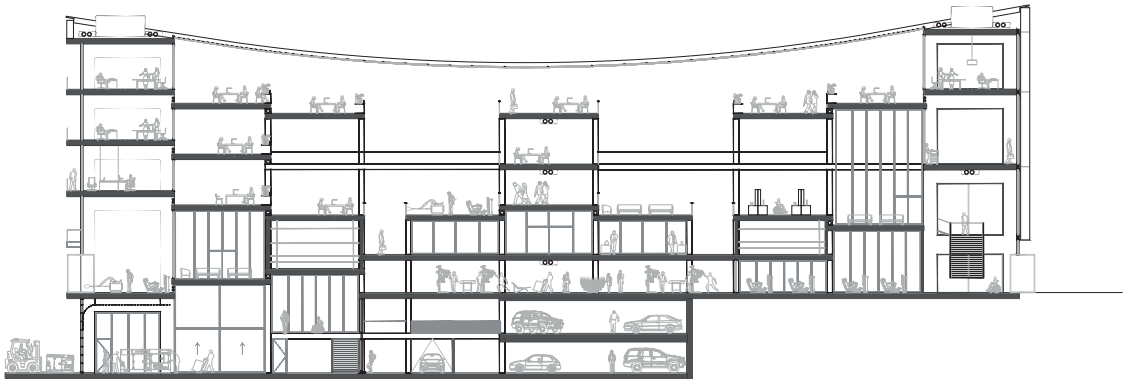


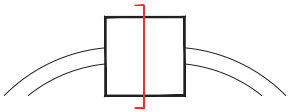
ROOF DETAILS



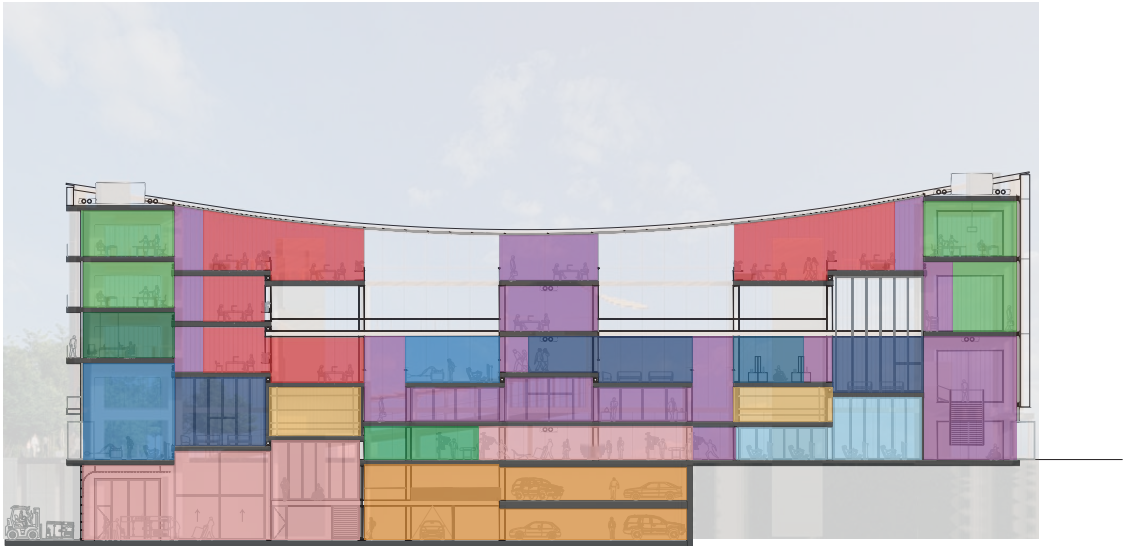


SECTION AA





SECTION AA



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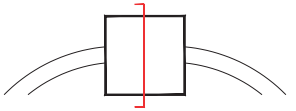
0 1 5 10 20M



Implementation

EXPERIENCE

Implementation

EXPERIENCE

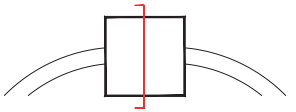
SECTION AA

Legend

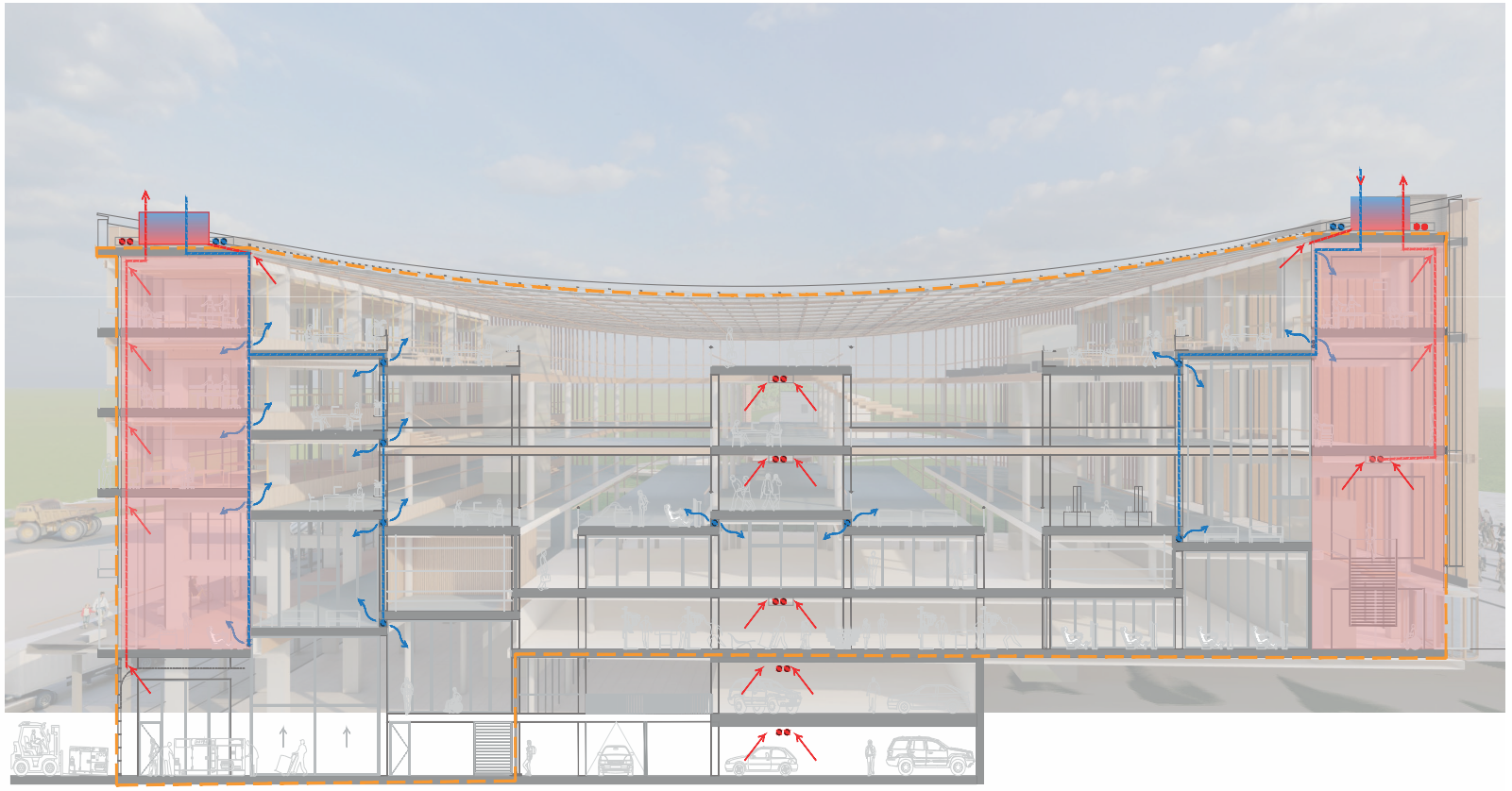
Privat

Public

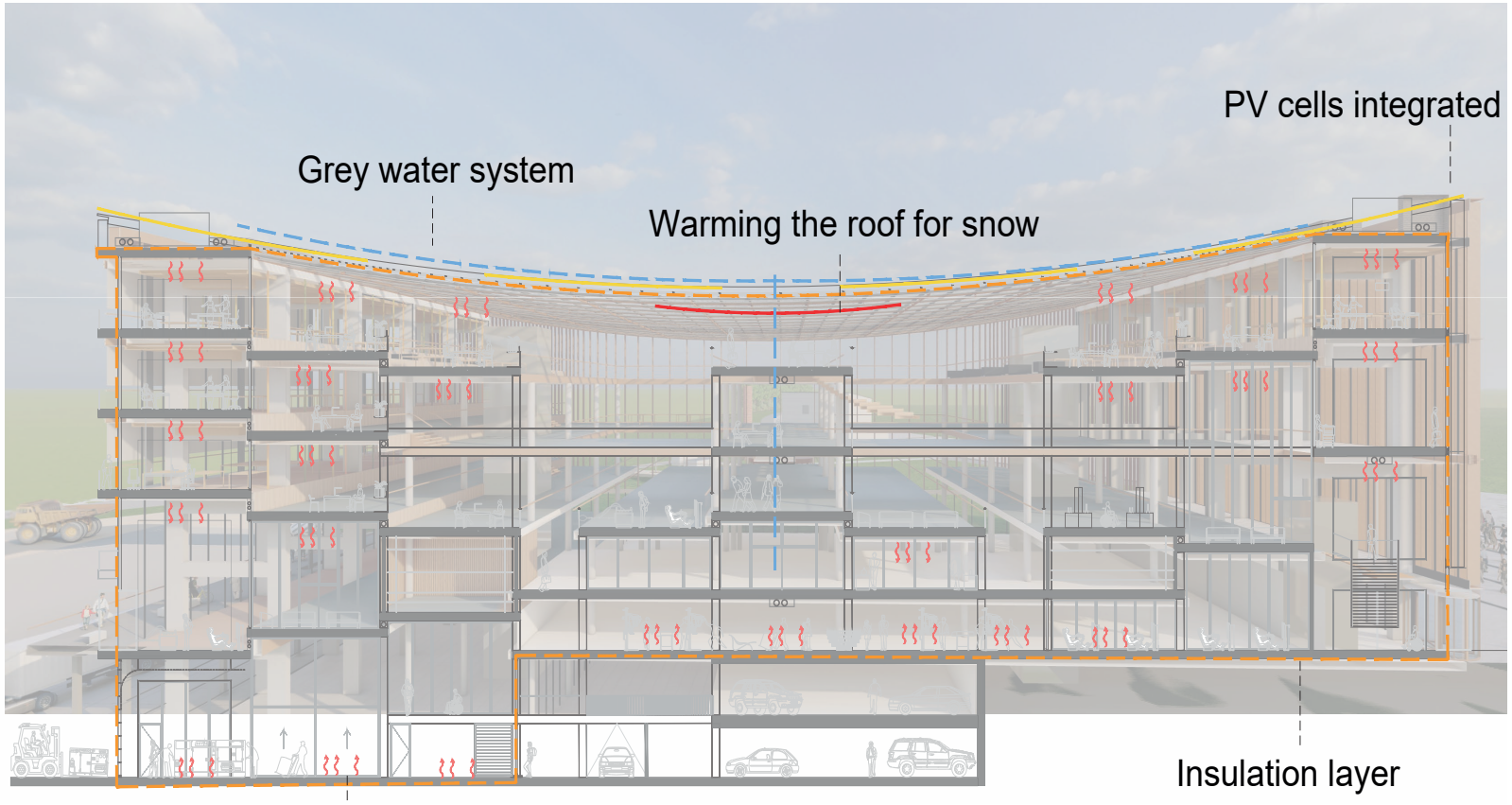
0 1 5 10 20M



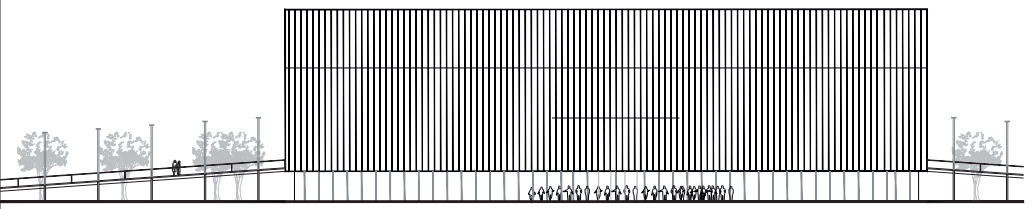
VENTILATION



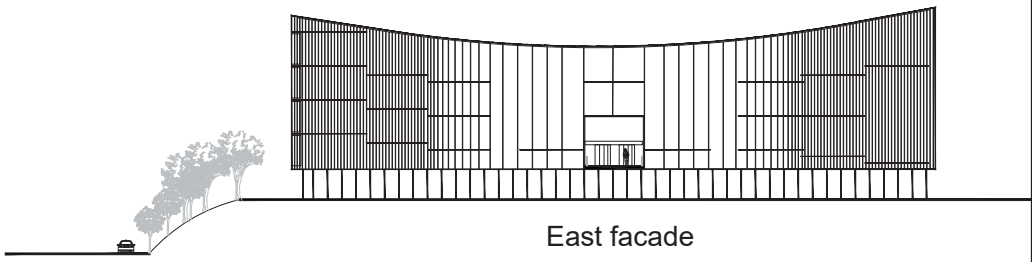
ENERGY & WATER



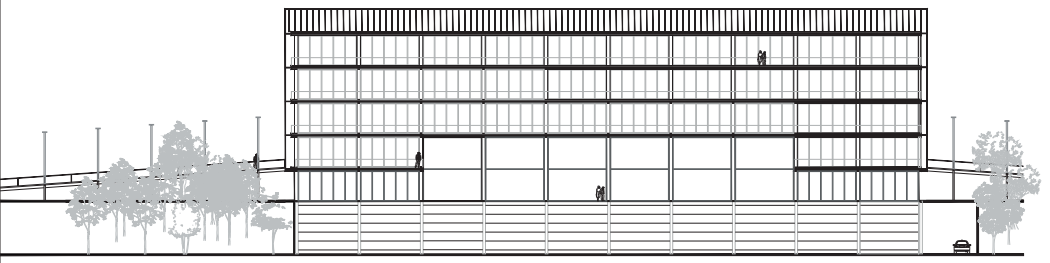
FACADES



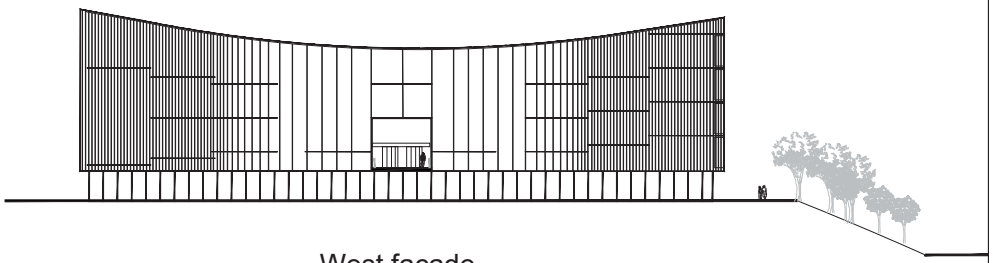
North facade



East facade

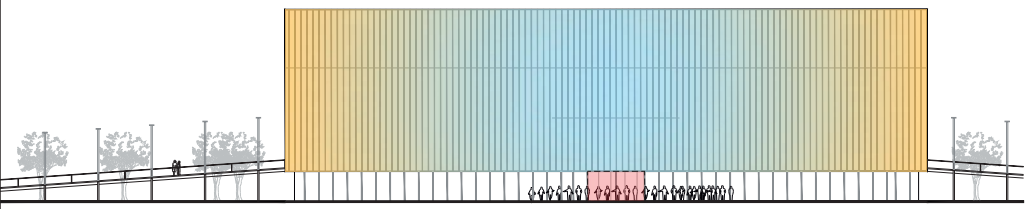


South facade

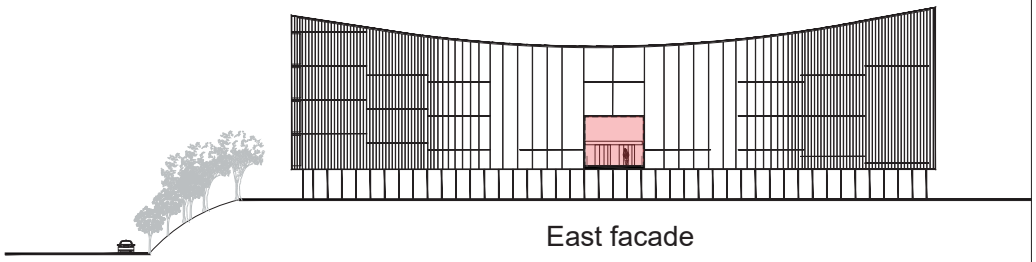


West facade

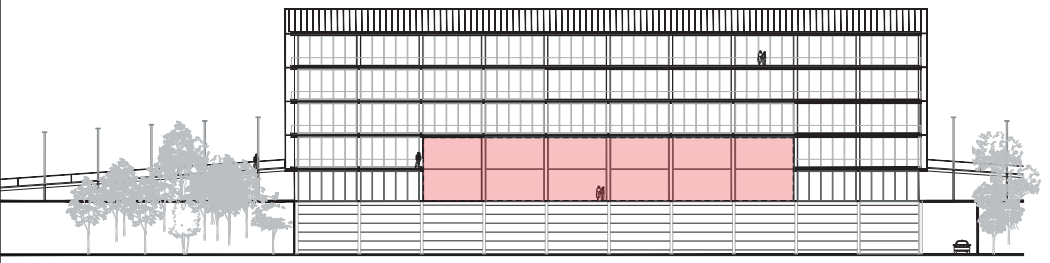
FACADES



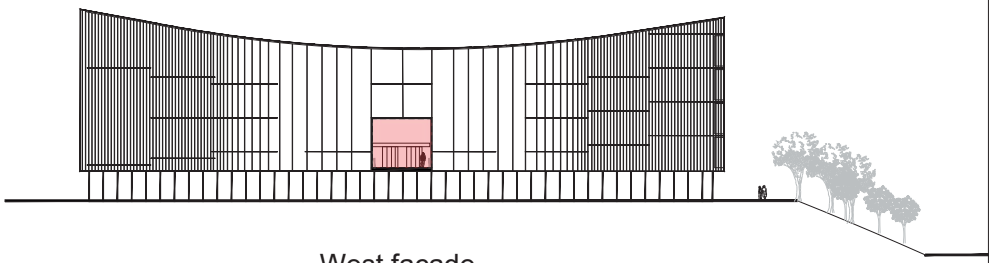
North facade



East facade

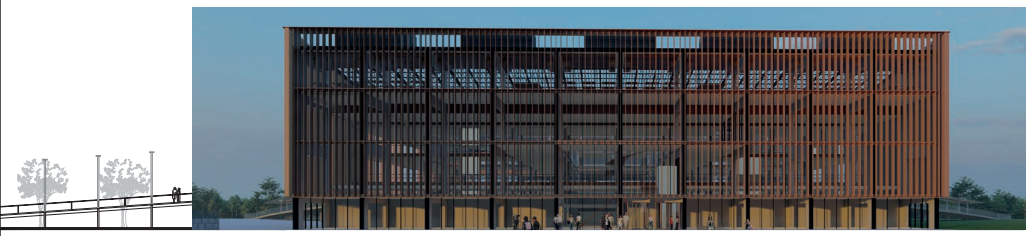


South facade

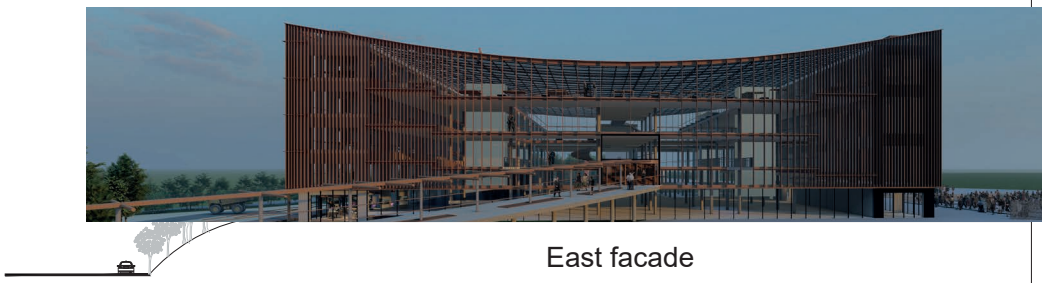


West facade

FACADES



North facade



East facade

South facade

West facade

REFLECTION

Abstraction

CONCLUSION

But how to react to the unknown future of AI

Increasing flexibility in
occupancy and usability
across different areas.

How can the collaboration between the different users of the AI university be encouraged through the design of the building?

The building fosters collaboration among various users through the following architectural elements

Roof curved towards the middle

Continuously routing fosters informal interaction

Promoting user interaction with transparent visibility into occupied spaces and through the building

The building fosters collaboration among various users technically by enhancing individual comfort through:

The ability to regulate temprature for each user

THANK YOU