

COMPLEX PROJECTS  
**SCHOOL OF TIMBER INDUSTRY 4.0**

Yifan Dong  
01/07/2024

**INTRODUCTION**

**RESEARCH**

**DESIGN BRIEF**

**CONCEPT**

**IMPLEMENTATION**

**DEVELOPMENT**



**INTRODUCTION**

**RESEARCH**

**DESIGN BRIEF**

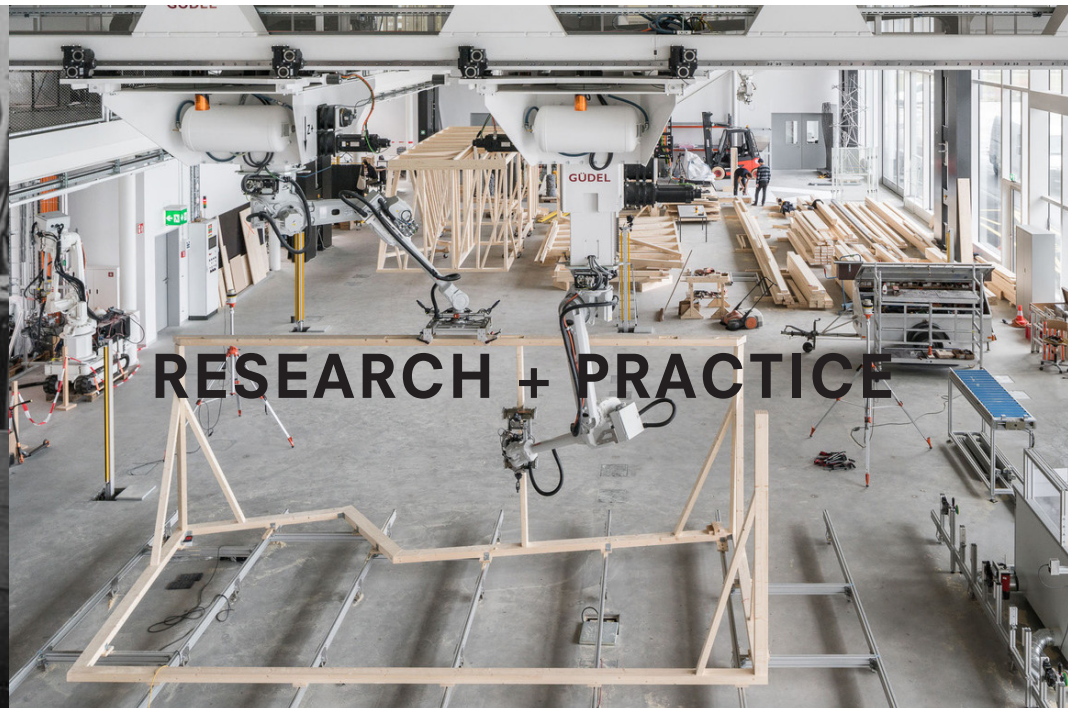
**CONCEPT**

**IMPLEMENTATION**

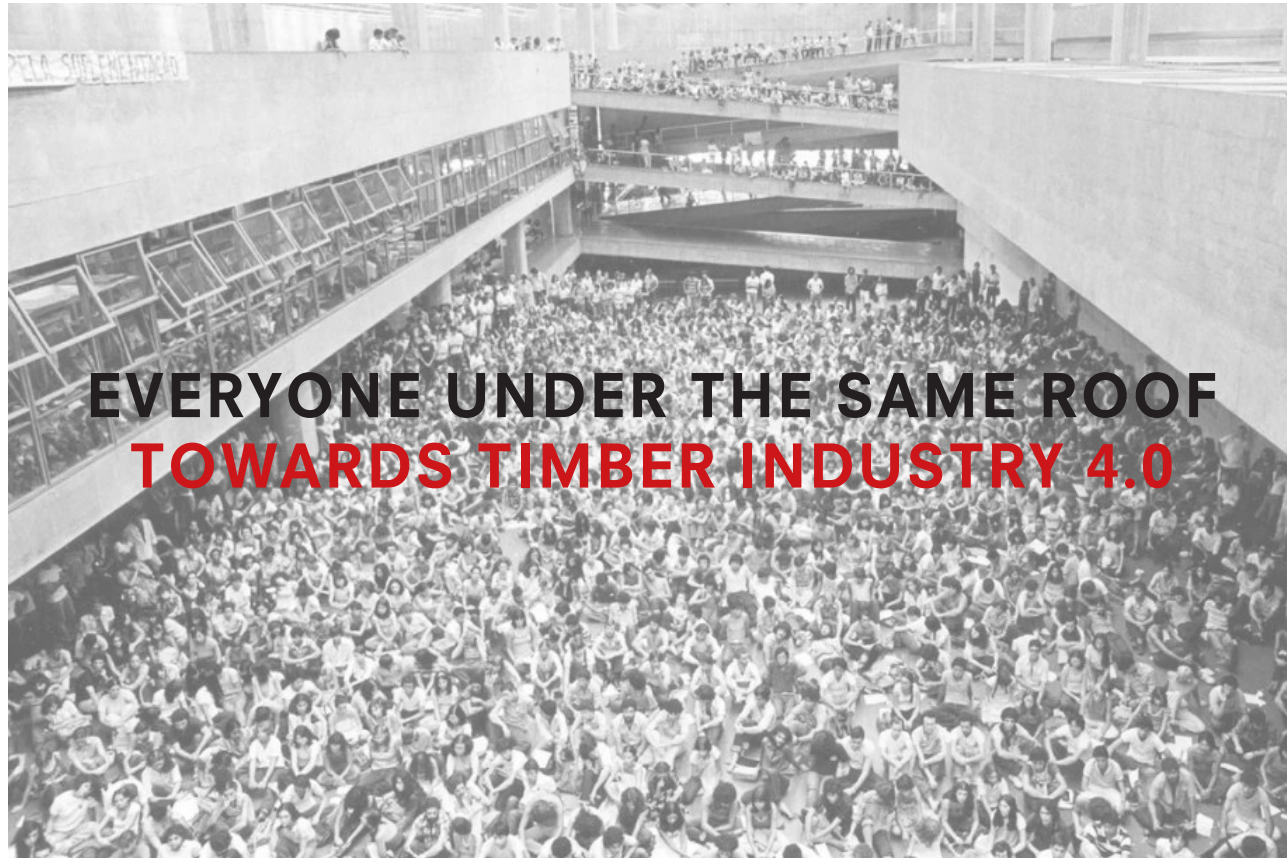
**DEVELOPMENT**



**WOODWORKING  
SCHOOL**



**RESEARCH + PRACTICE**





# CRAFTMANSHIP ROBOTICS INHABITABLE INDUSTRIAL

INTRODUCTION

**RESEARCH**

DESIGN BRIEF

CONCEPT

IMPLEMENTATION

DEVELOPMENT



Research  
**TIMBER INDUSTRY**





Research  
**TIMBER INDUSTRY**





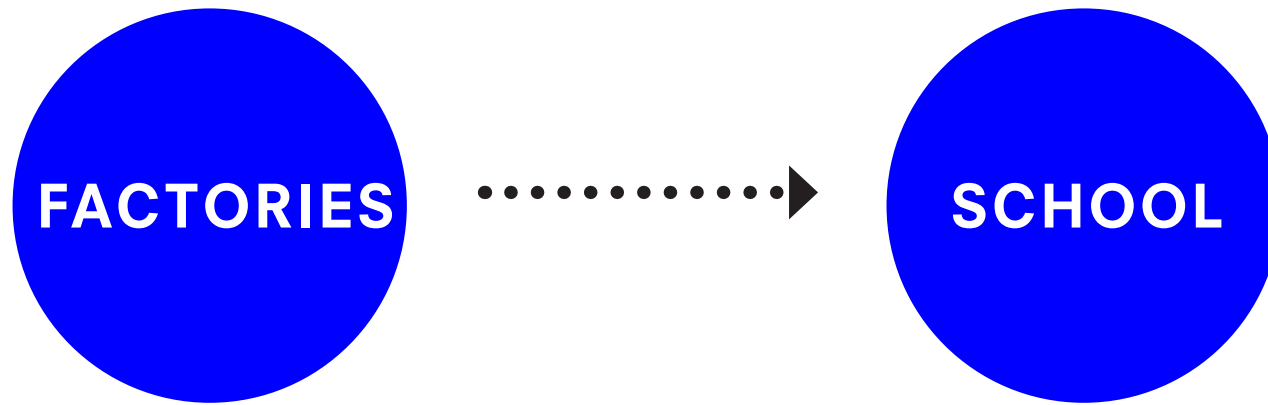
Research

# TOWARDS TIMBER INDUSTRY 4.0



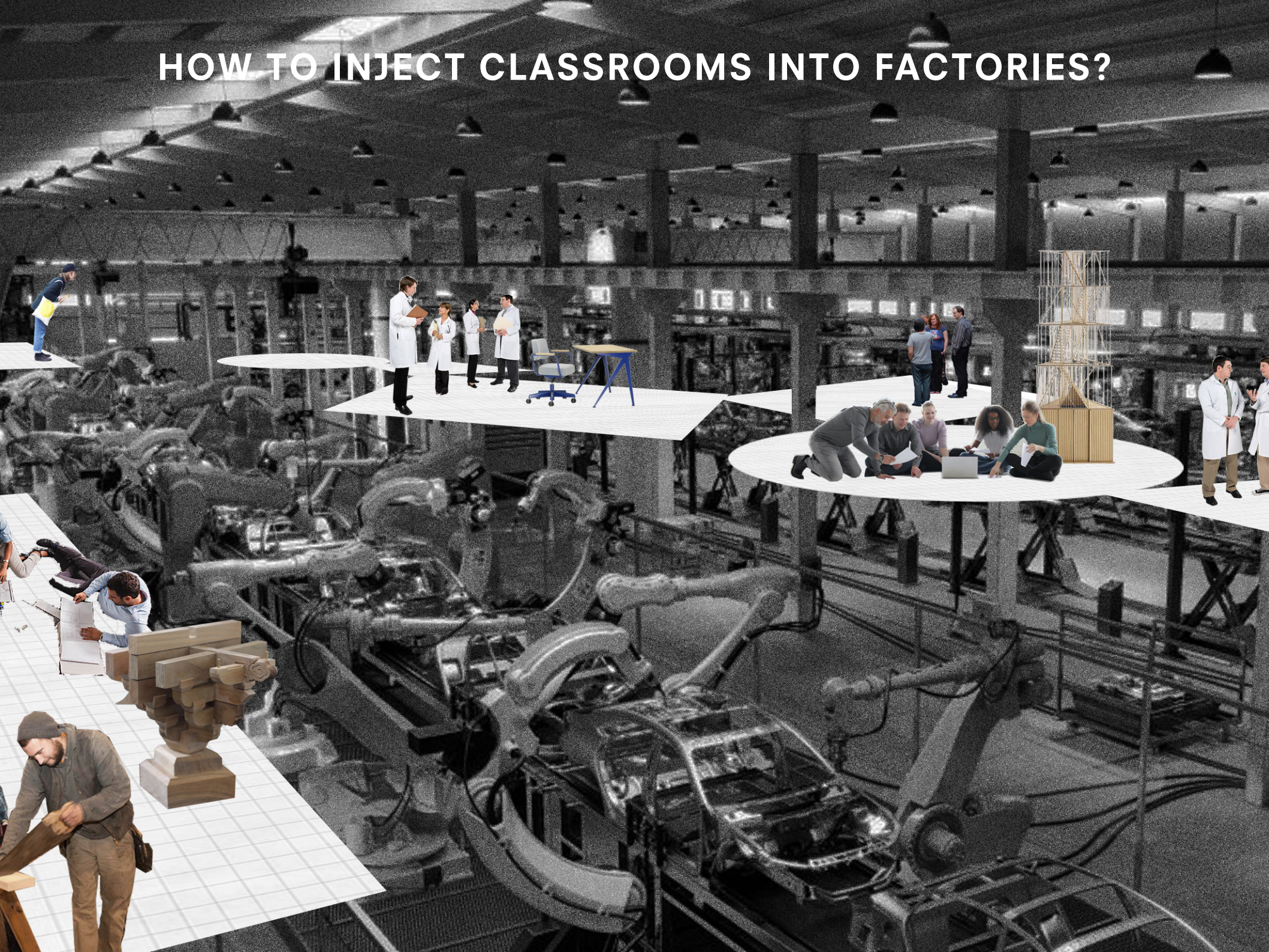
A SCHOOL  
A BRIDGE

# TOWARDS TIMBER INDUSTRY 4.0



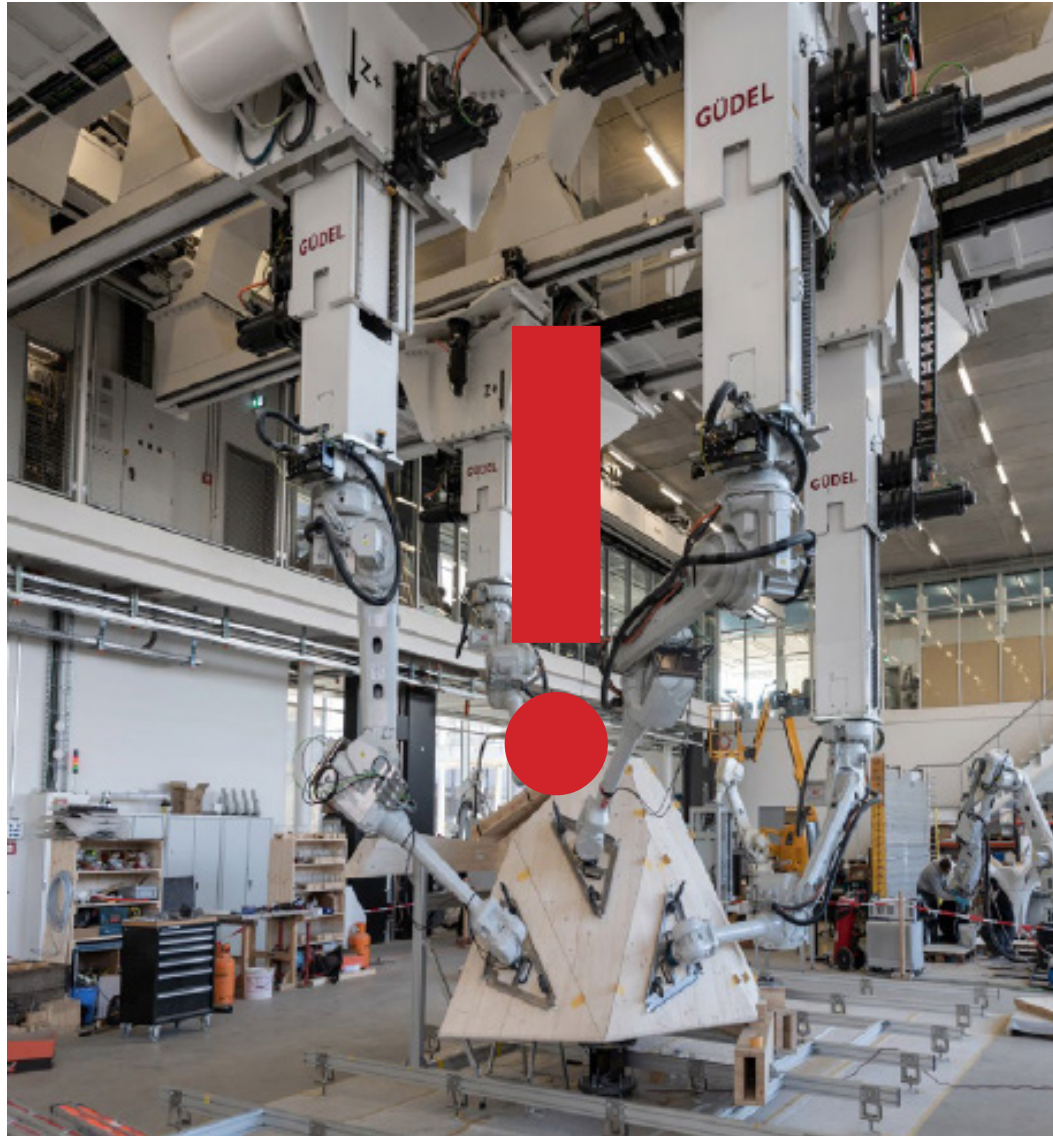


# HOW TO INJECT CLASSROOMS INTO FACTORIES?

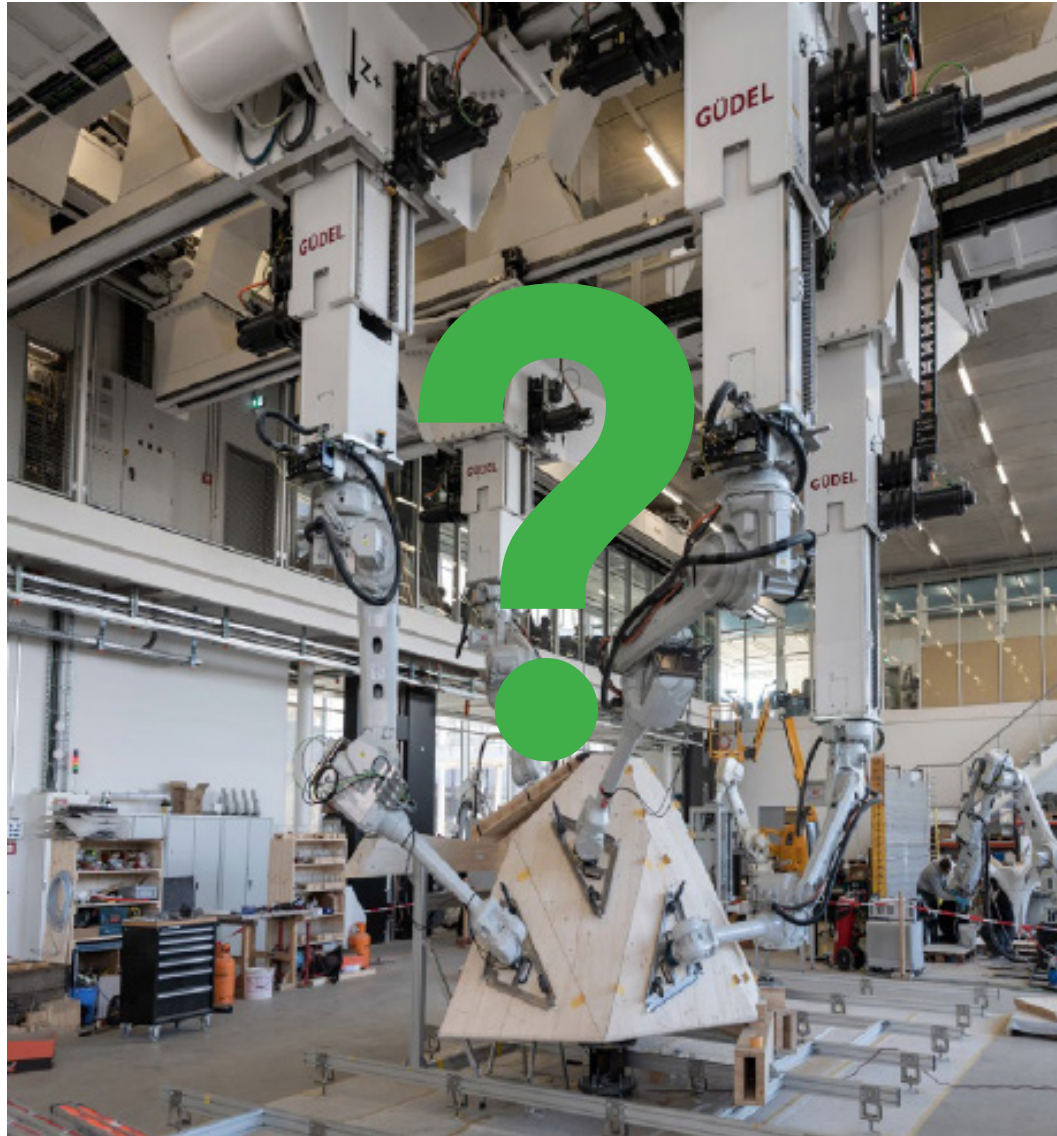




Research  
**THE 4.0**



Research  
**THE 4.0**



Research

# THINGS BEHIND THE 4.0



INTRODUCTION

RESEARCH

**DESIGN BRIEF**

/ Client

/ Site

/ Program

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IMPLEMENTATION

DEVELOPMENT



Design Brief

# STUDENTS NUMBER



**Hochschule  
für nachhaltige Entwicklung  
Eberswalde**

**Students: 500**

Bachelor of wood technology  
Master of wood technology  
technologyApprentice  
Carpentry Journeyman (DQL-4)  
Carpentry Master (DQL-7)

**Researchers: 120**

**Teachers: 60**

**Employees: 30**

**Practitioners: 100**



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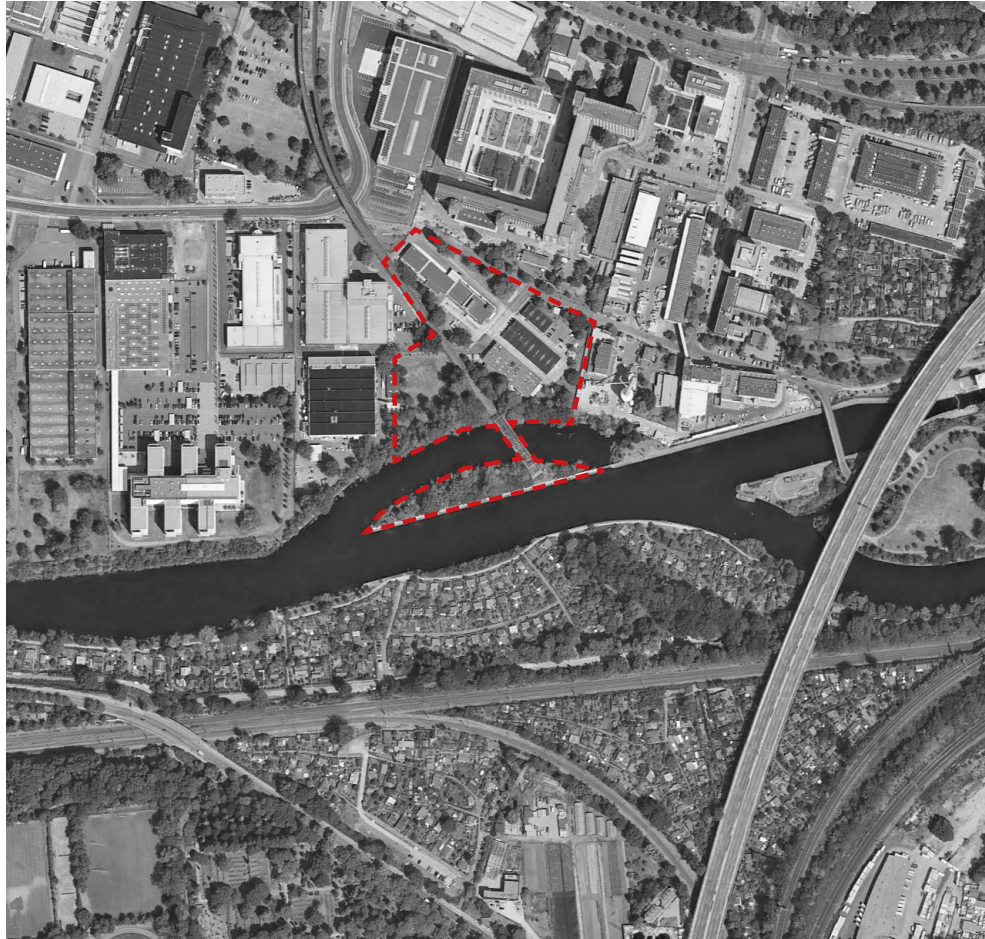
DEVELOPMENT

Design Brief  
**LOCATION**





Design Brief  
**LOCATION**

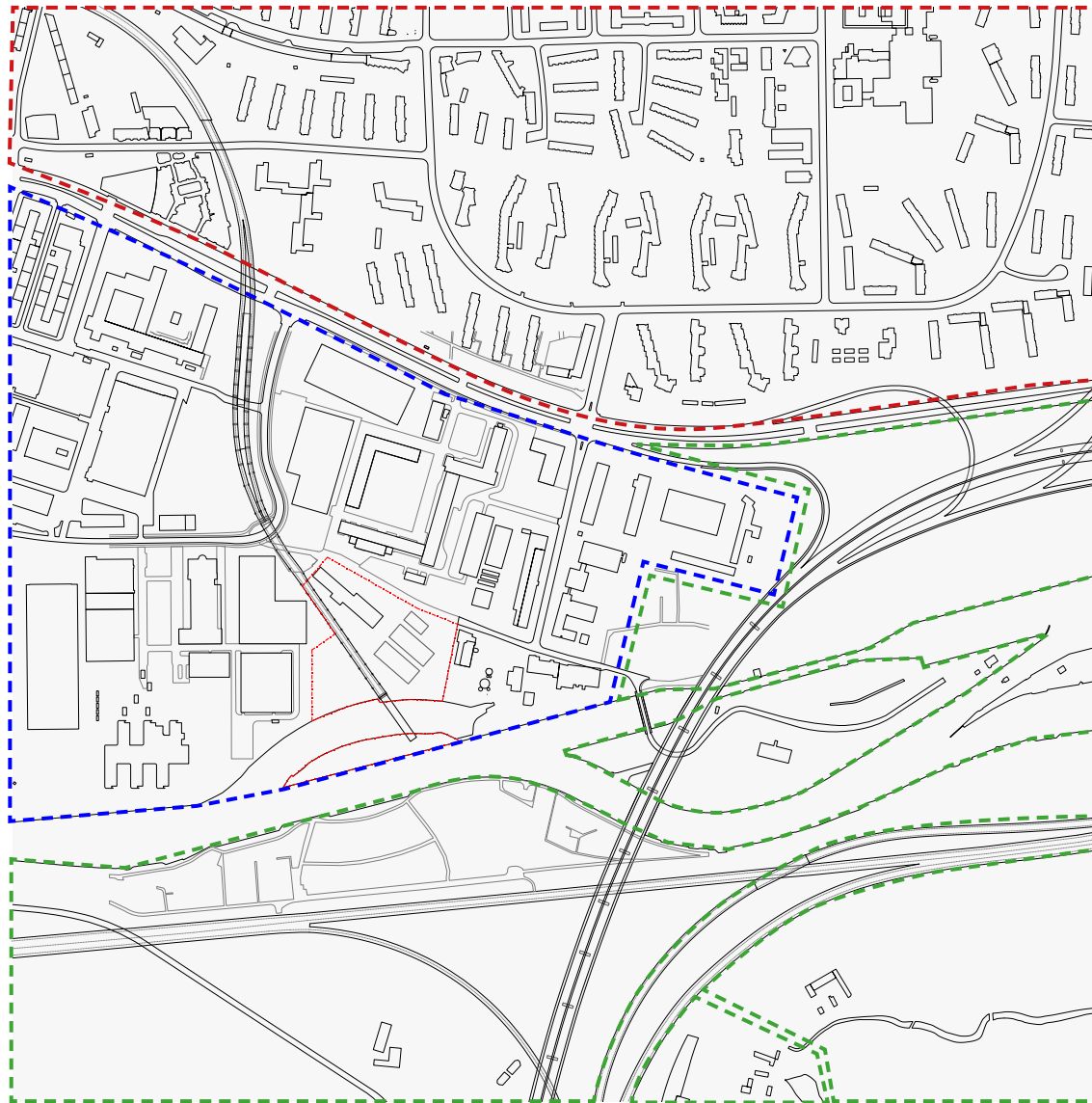


Design Brief  
**THE SITE**



# Design Brief

## CONTEXT



- Industrial area
- Residential area
- Allotment & Green area

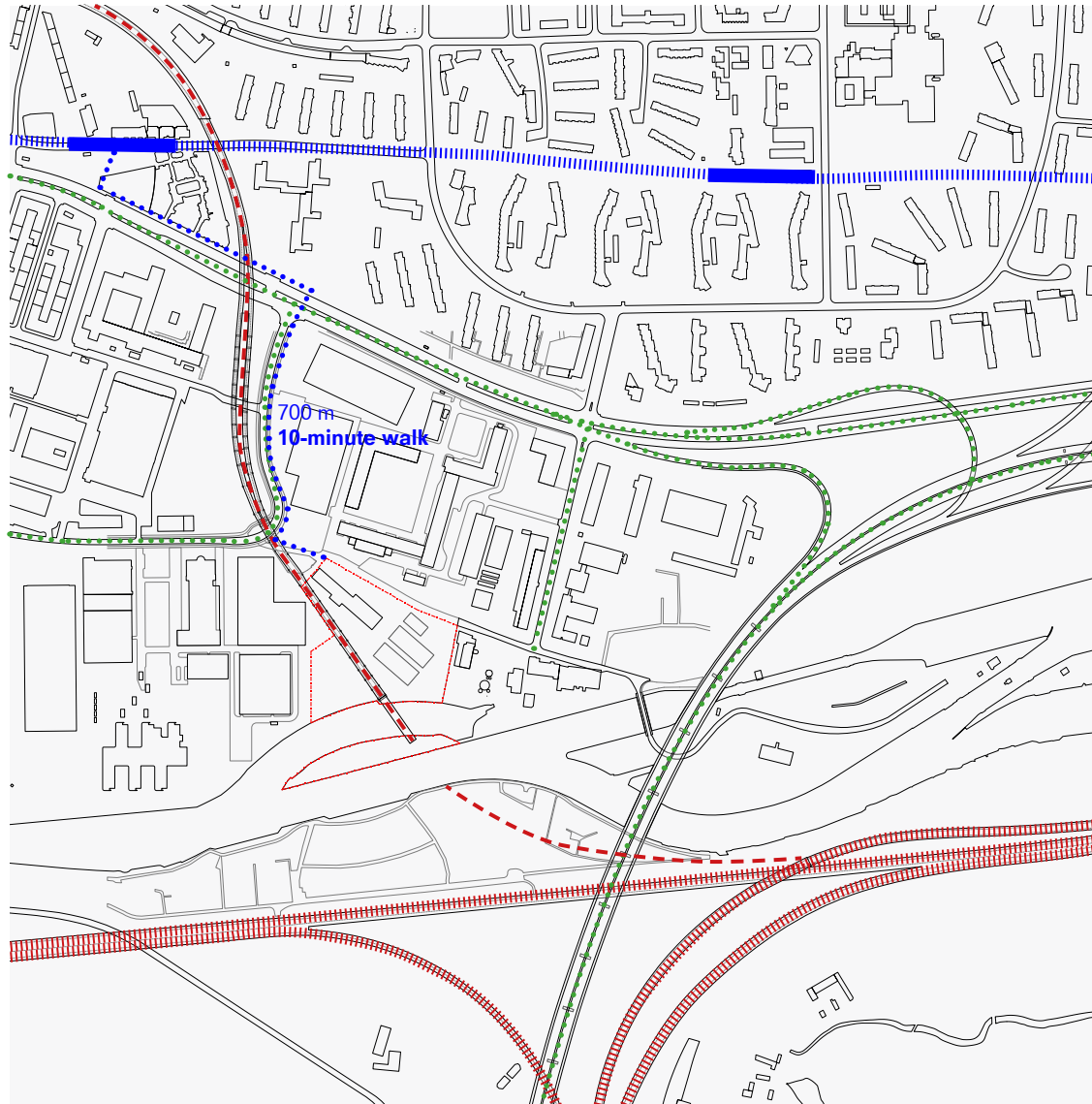


# PRODUCTION AND PLACE



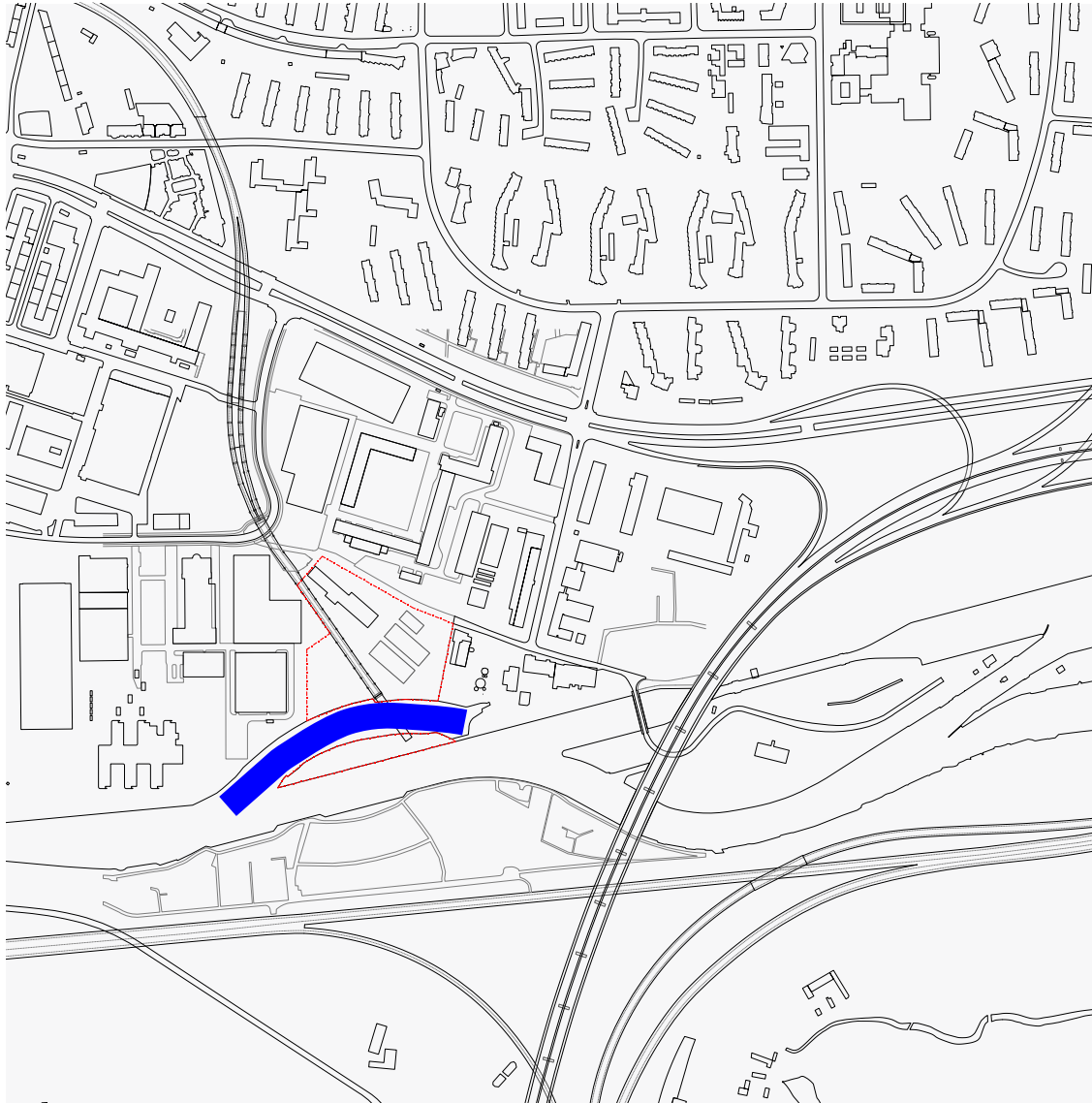
# Design Brief

## MOBILITY



- ..... pedestrian
- ..... road
- S Bahn
- Disused S Bahn
- ===== U Bahn / tram

# THE DISUSED WATER AS A PORT





# THE DISUSED VIADUCT AS "HIGHLINE"



INTRODUCTION

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CONCEPT

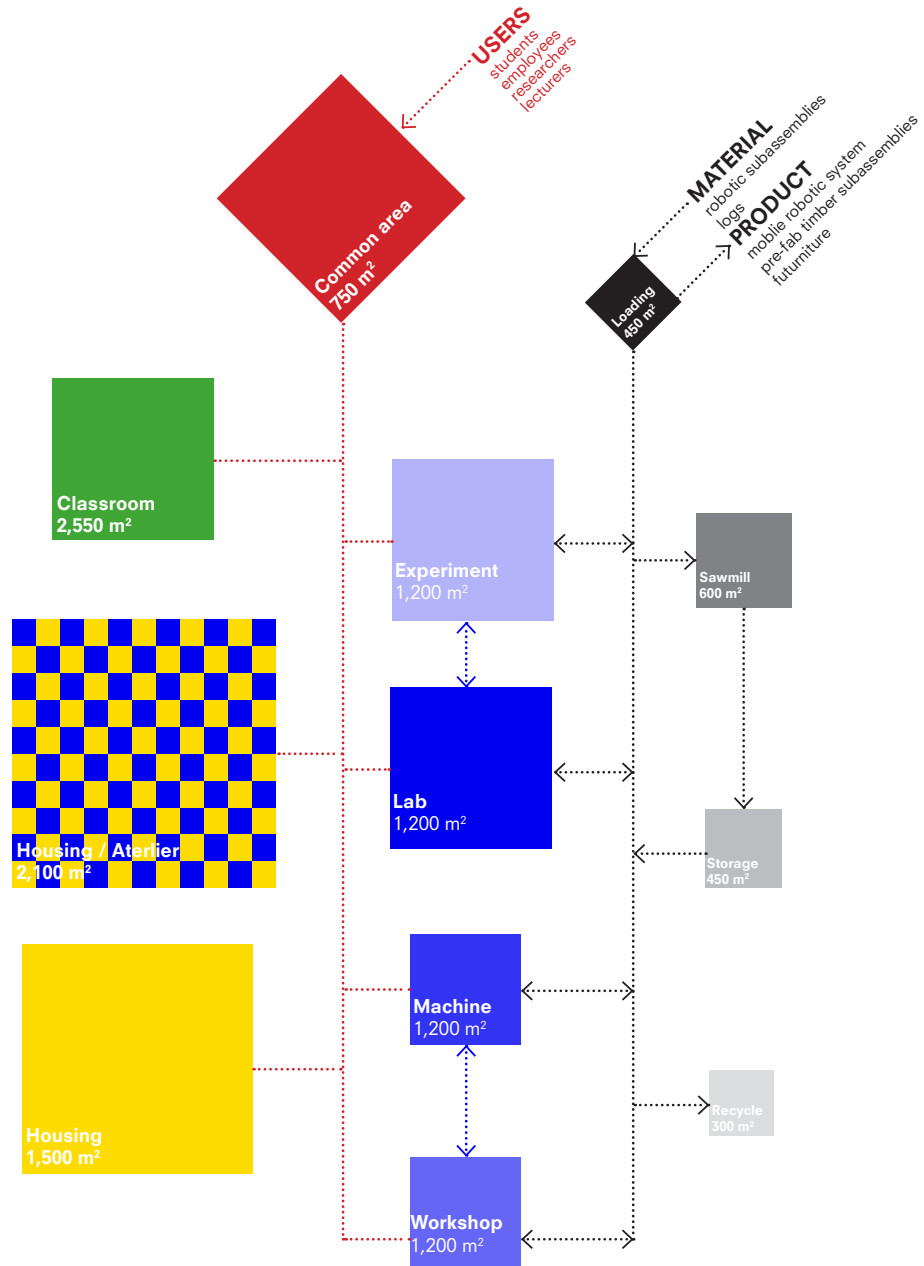
IMPLEMENTATION

DEVELOPMENT

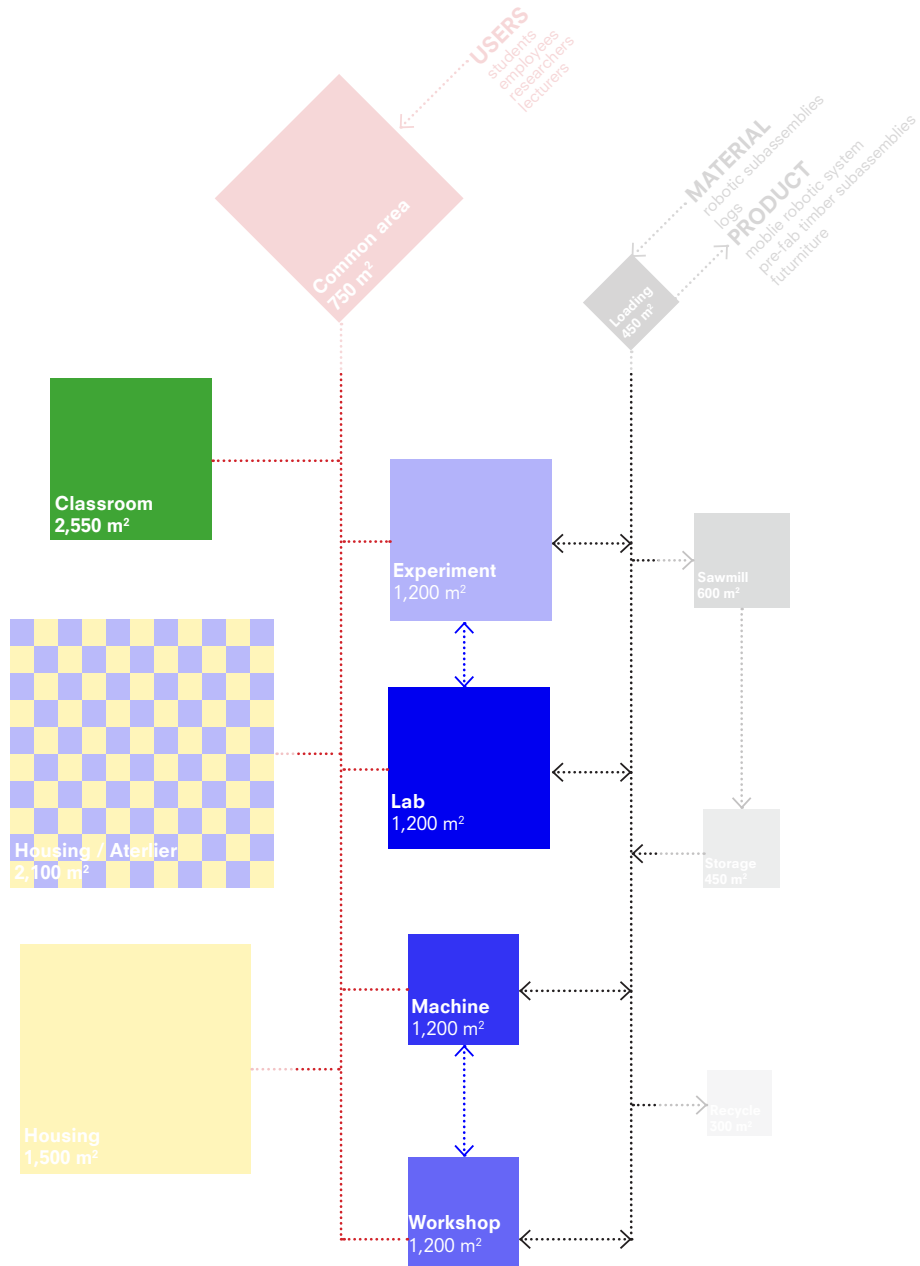


# Design Brief

## PROGRAM

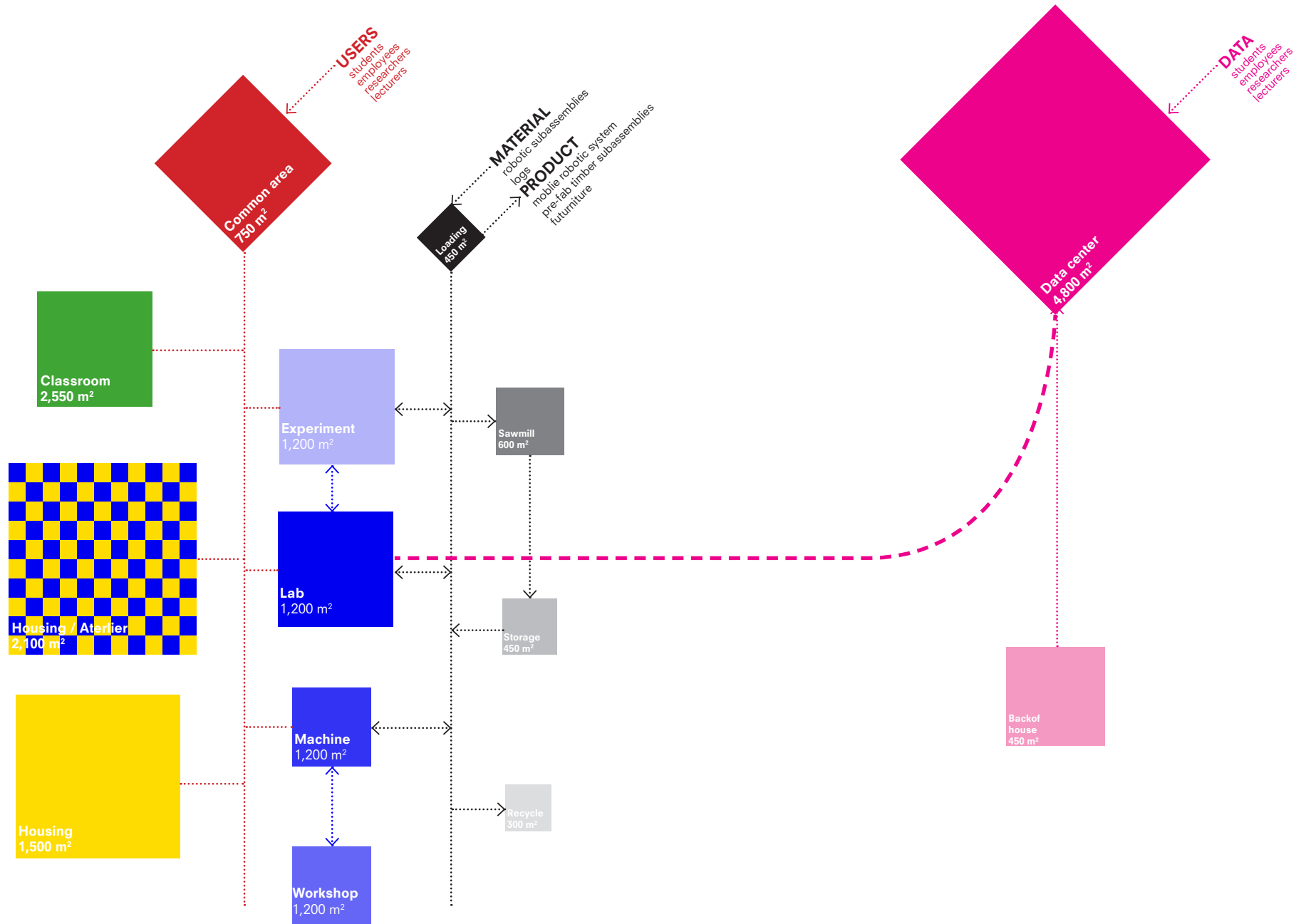


# MAKING AND LEARNING





# Design Brief



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**CONCEPT**

/ Building

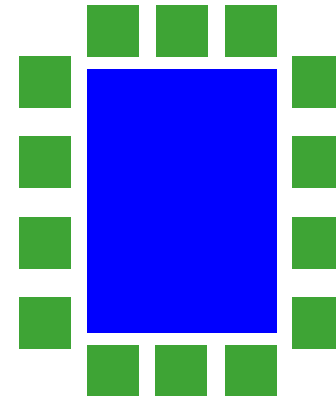
/ Urban

/ Digitalization

IMPLEMENTATION

DEVELOPMENT

# CLASSROOMS AND WORKSHOP

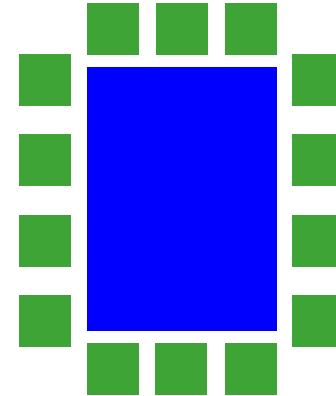
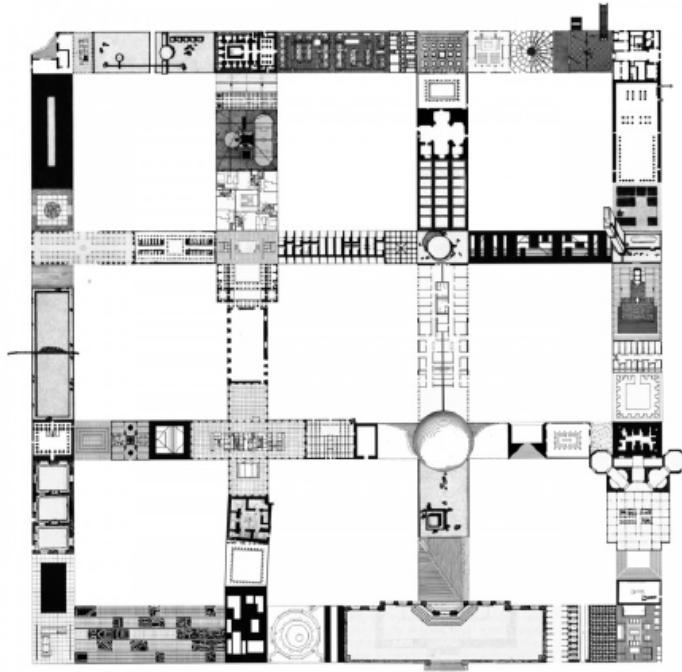


**COMMON CONFIGURATION**  
two independent parts

**WHAT IF**  
workshop framed by classrooms

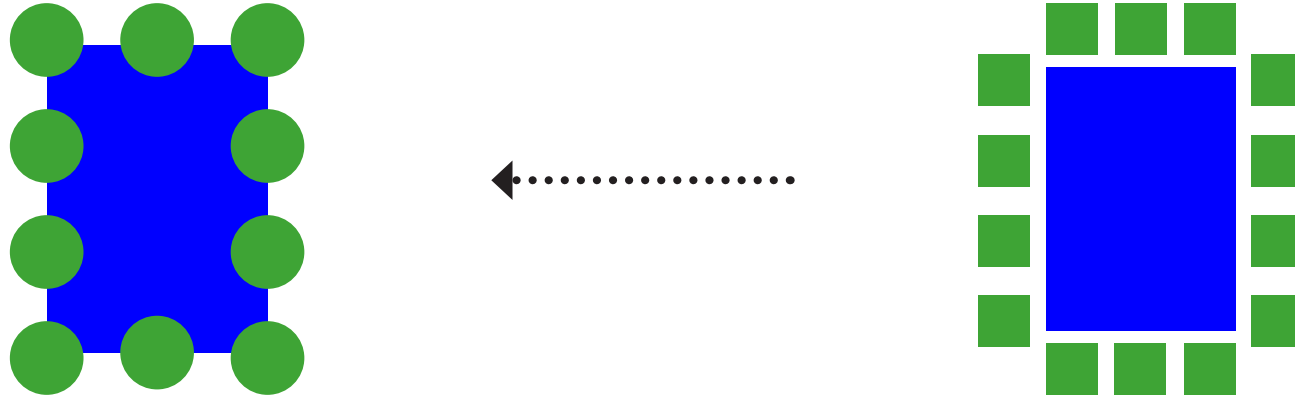


Concept  
**CONCEPT**

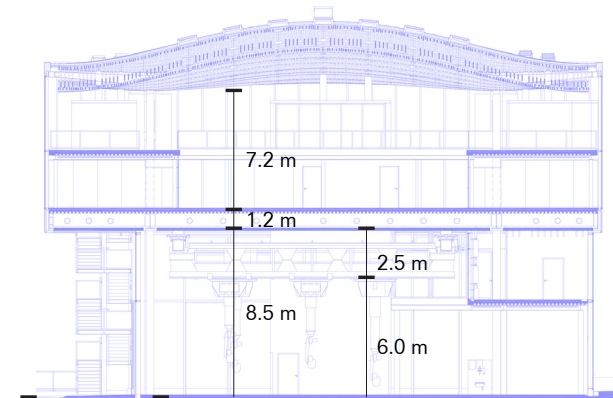
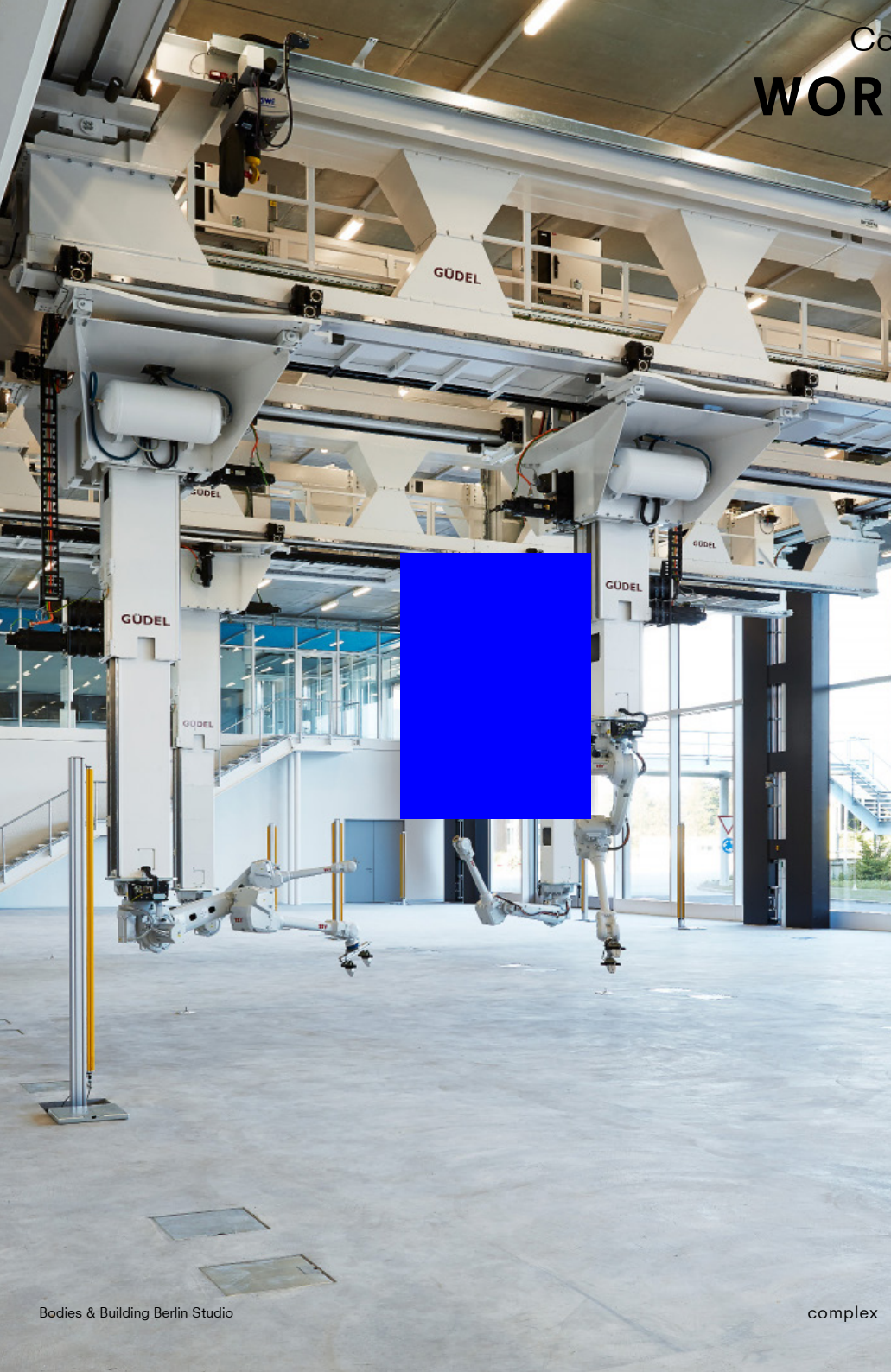


**Classrooms as the interface of the workshop**

# CONNECTED BUT TWO EXPERIENCES



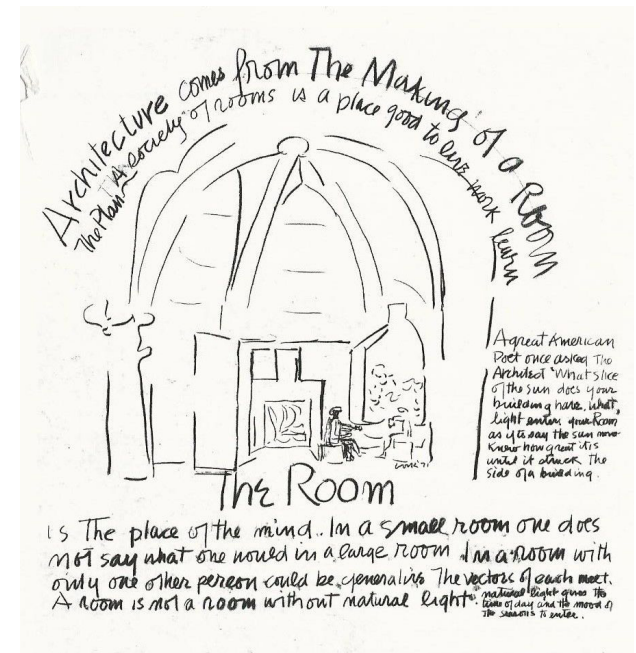
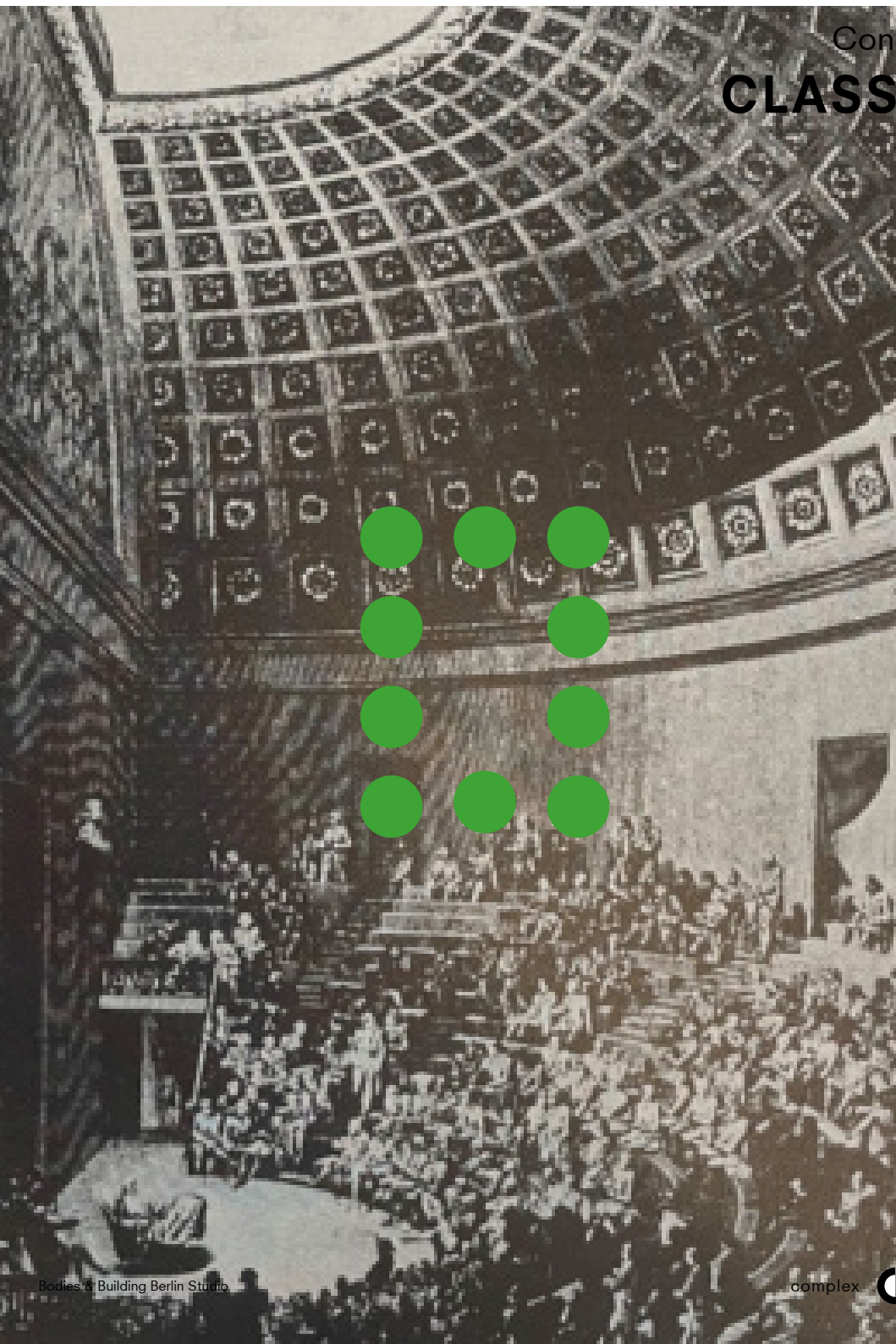
Concept  
**WORKSHOP**





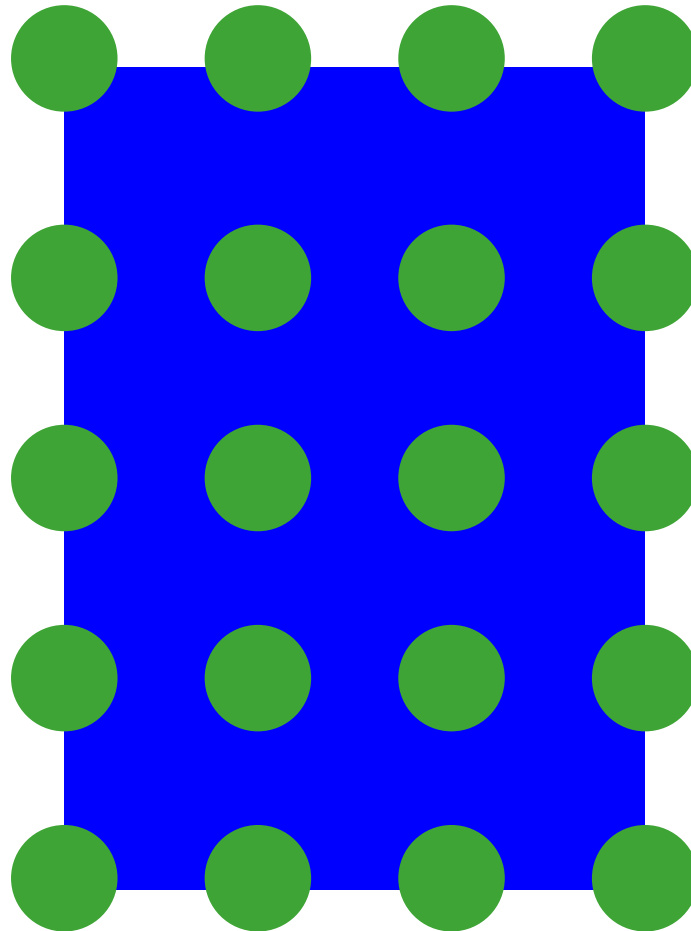
Concept

# CLASSROOM



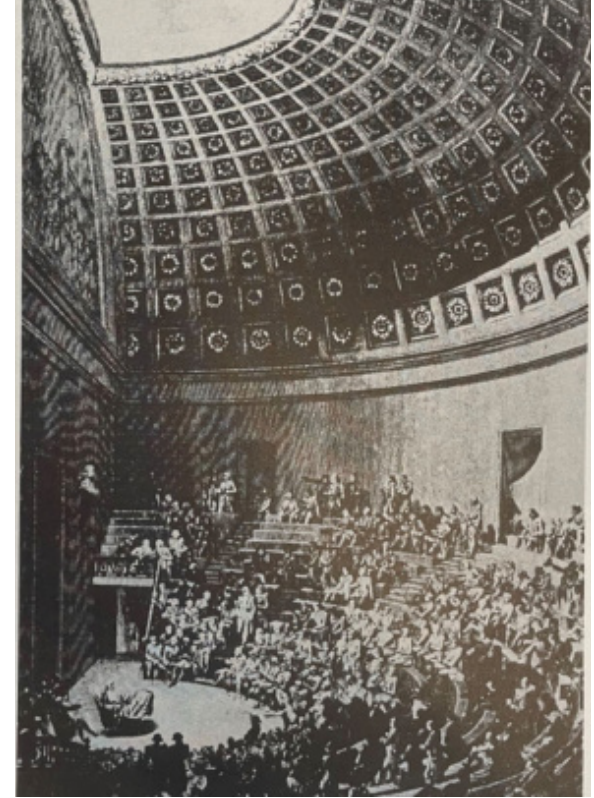
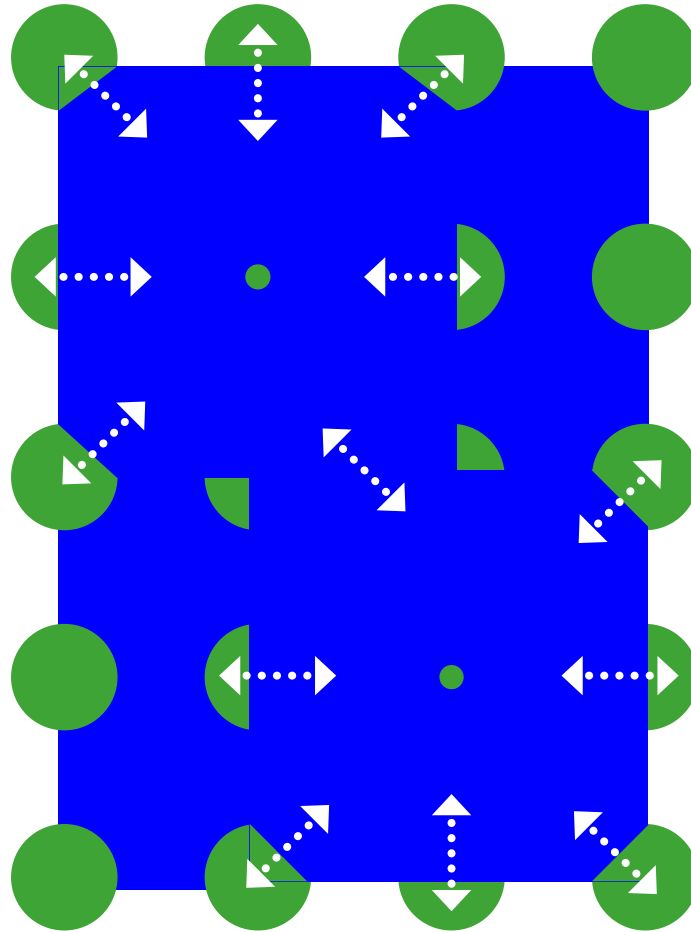
Concept

# CONCEPTUAL PLAN



**Workshop inbetween classrooms**

Concept  
**CONCEPTUAL PLAN**

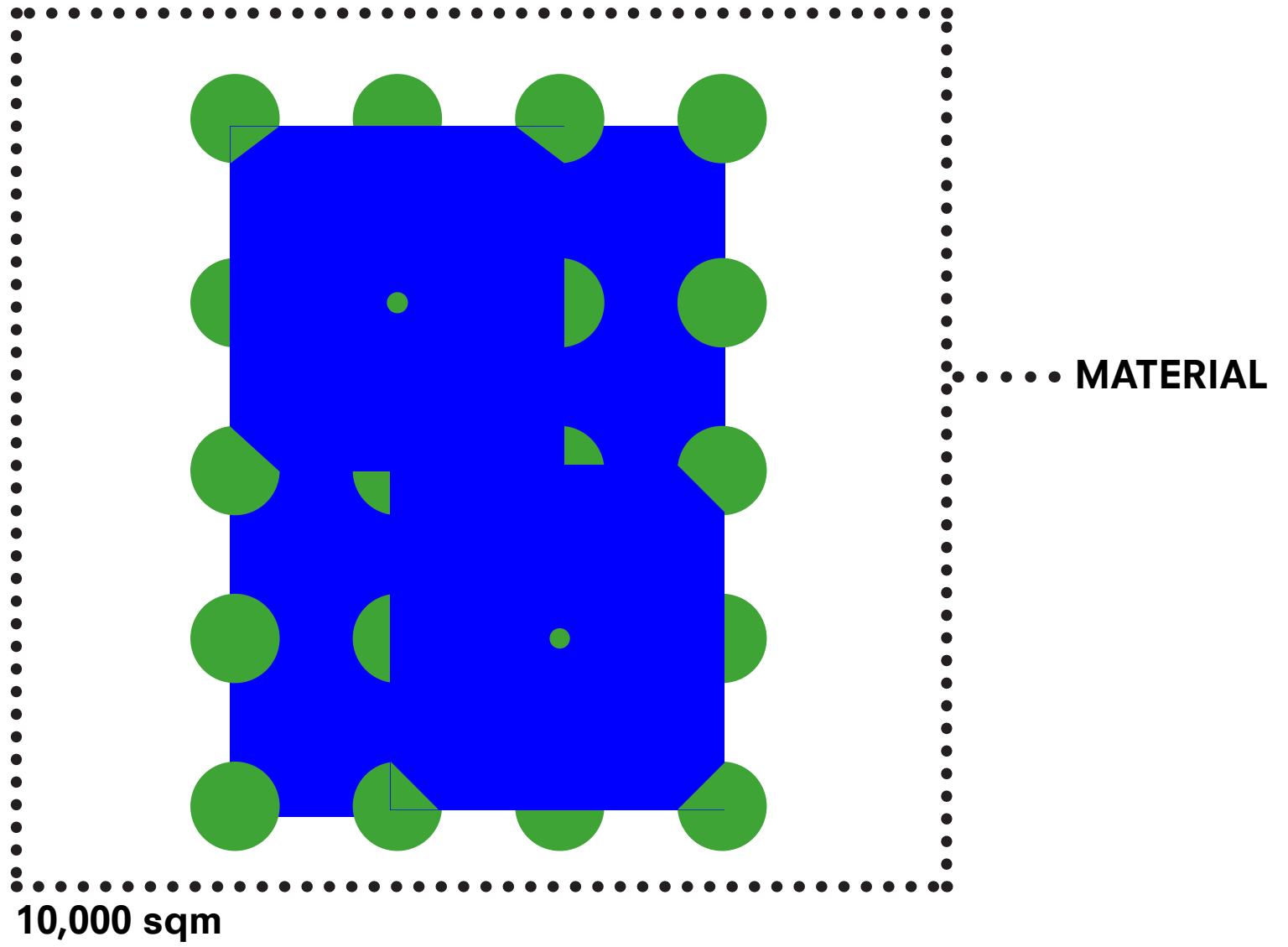


**Workshop inbetween classrooms**



Concept

# CONCEPTUAL PLAN



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**CONCEPT**

/ Building

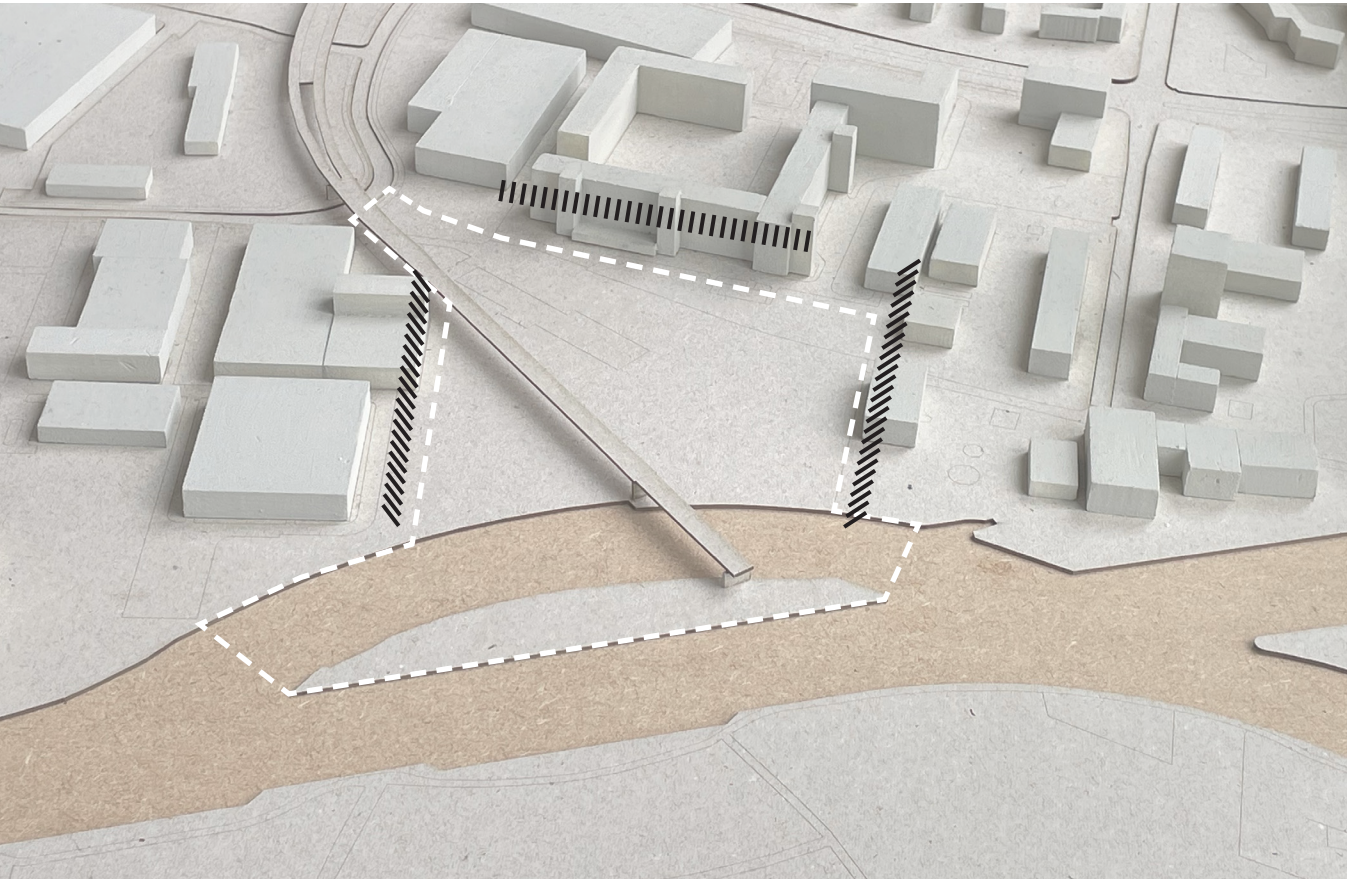
/ Urban

/ Digitalization

IMPLEMENTATION

DEVELOPMENT

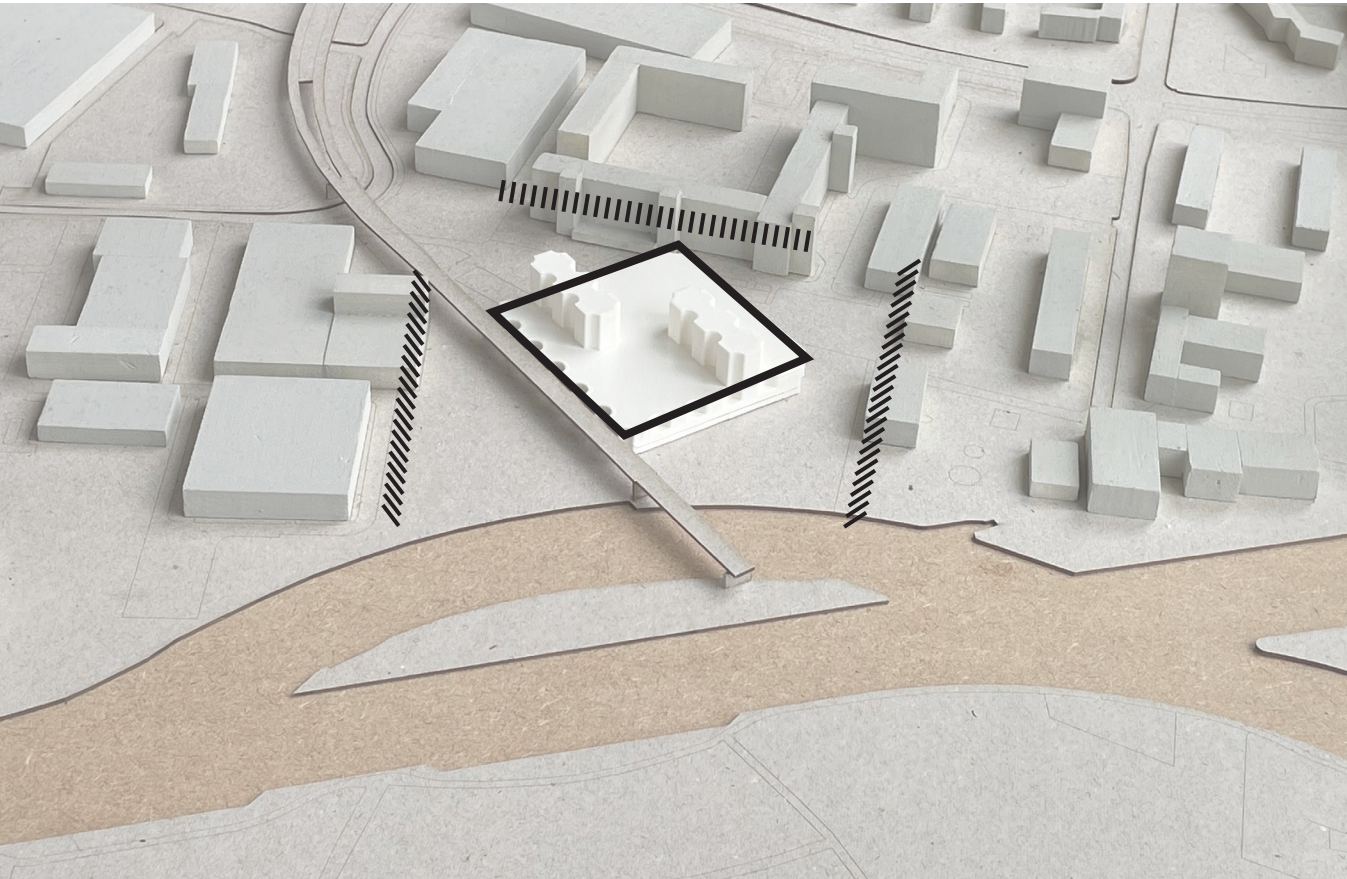
Concept  
**INDUSTRIAL CONTEXT**



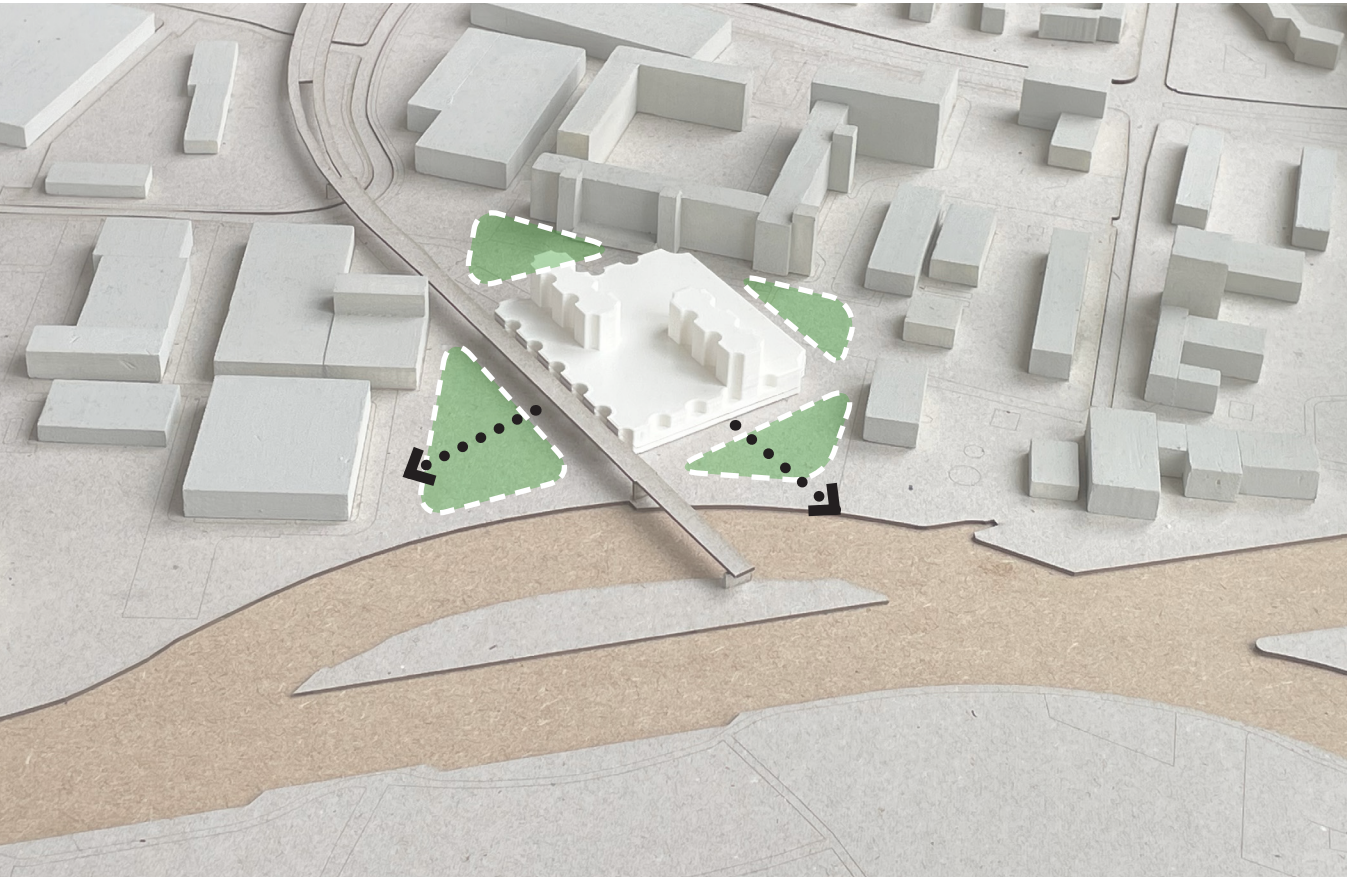


Concept

# POSITION & ORIENTATION

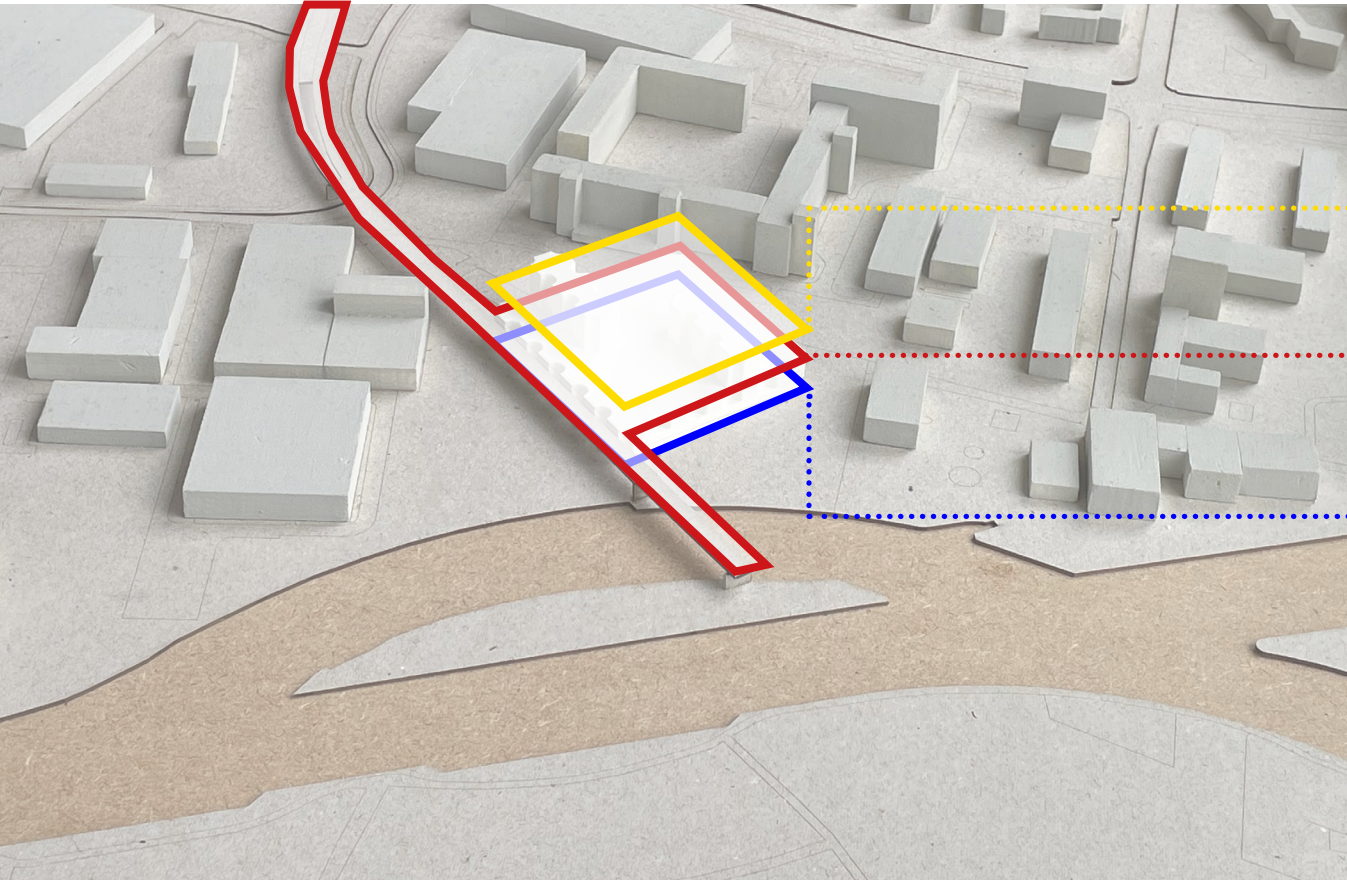


Concept  
**FOUR SQUARES**





Concept  
**THREE LEVELS**



**DWELLING, PRIVATE**

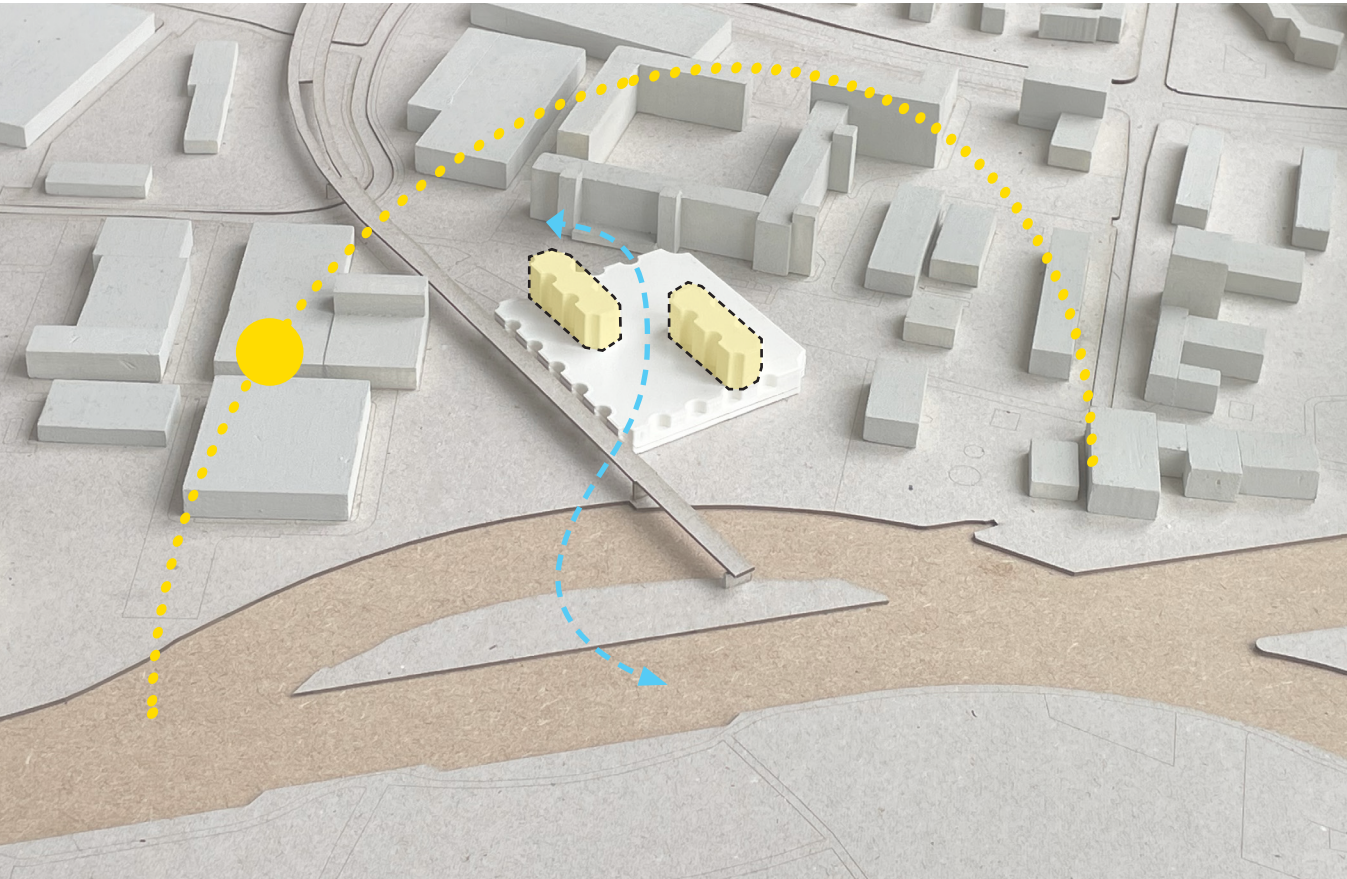
**EVENT, PUBLIC**

**CRAFTING, INDUSTRIAL**



Concept

# DWELLING ORIENTATION



# Concept



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**CONCEPT**

/ Building

/ Urban

/ Digitalization

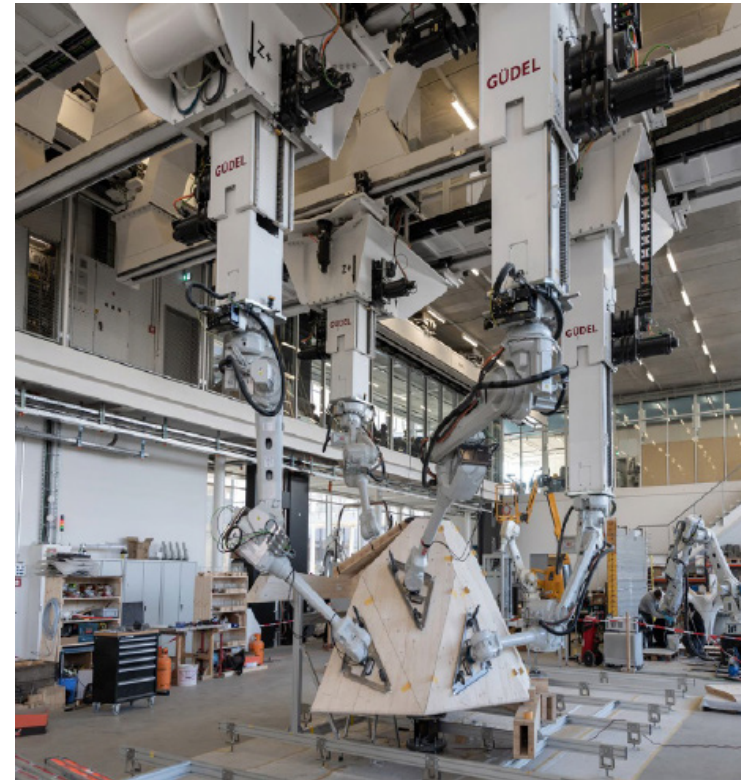
IMPLEMENTATION

DEVELOPMENT



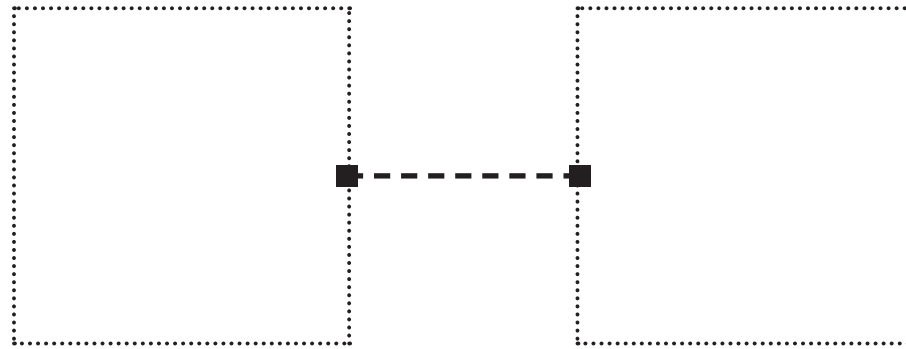
Concept

# DATA AWARENESS

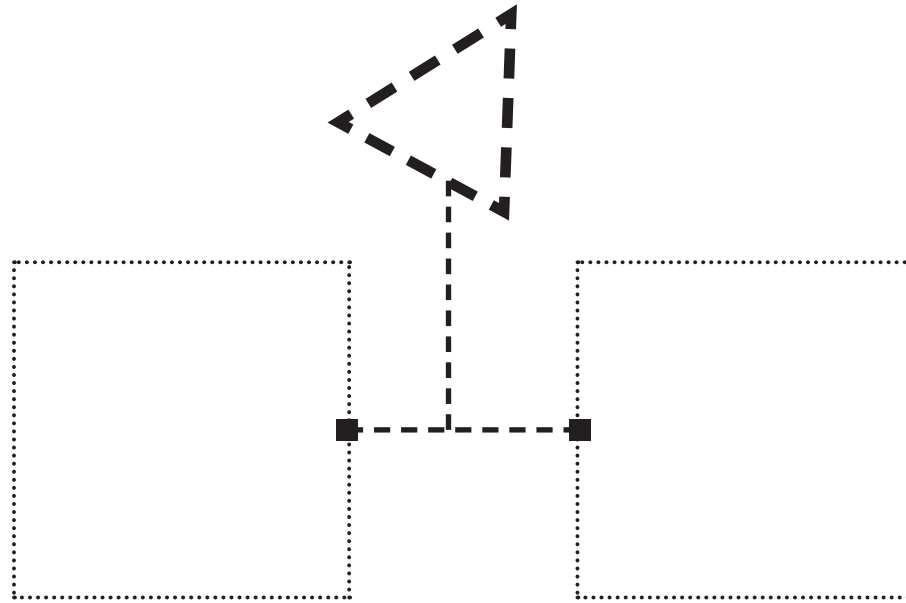


Concept

# CONNECTION

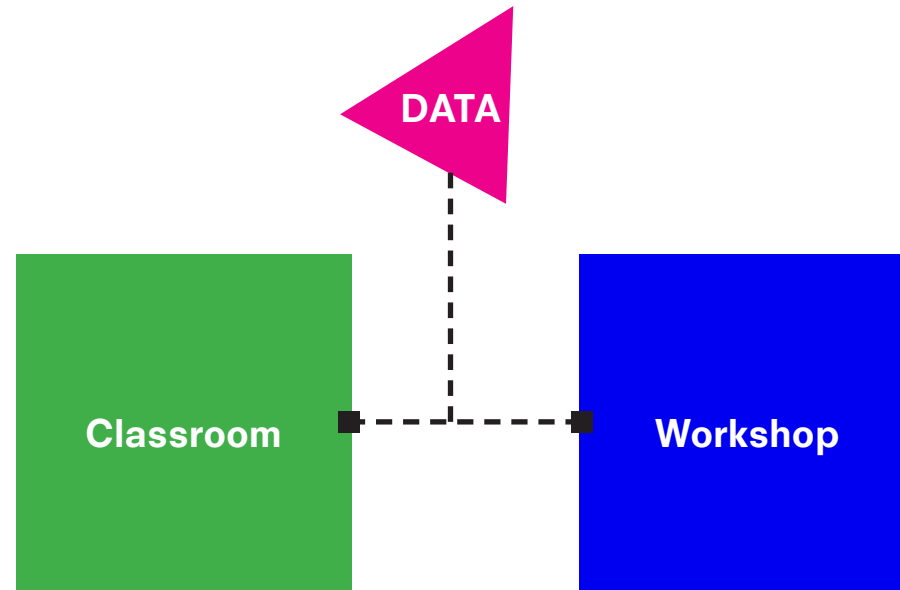


Concept  
**INTERLUDE**





Concept  
**INTERLUDE**

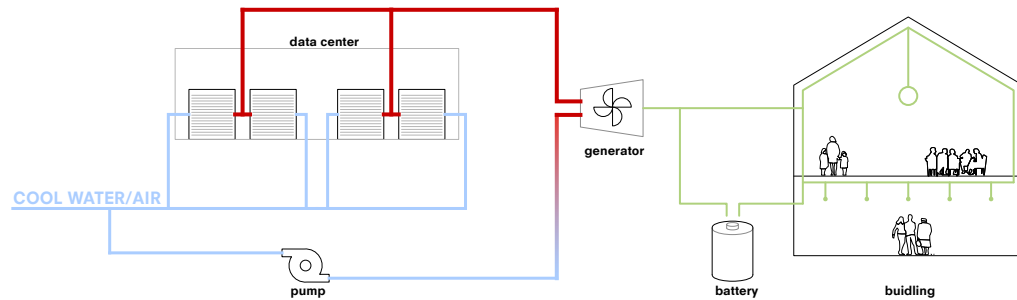


# Concept

## DATA CENTER AS HEATING SOURCE

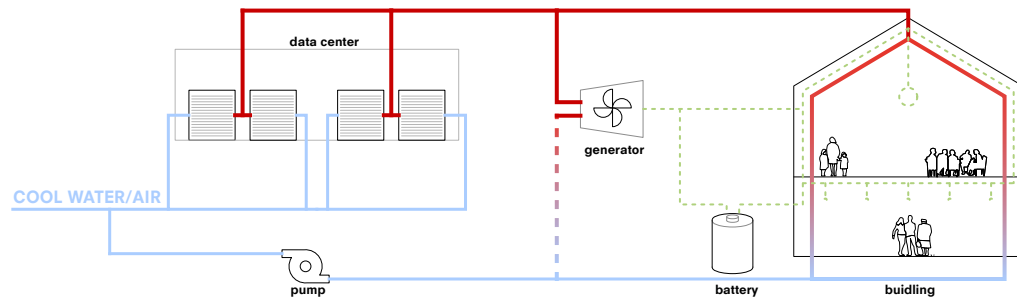
### SUMMER

The heat carried by the water and air is used to generate electricity



### WINTER

Heat produced by the data center is directly transferred by the cool water or air inlet to warm up the interior



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DESIGN BRIEF

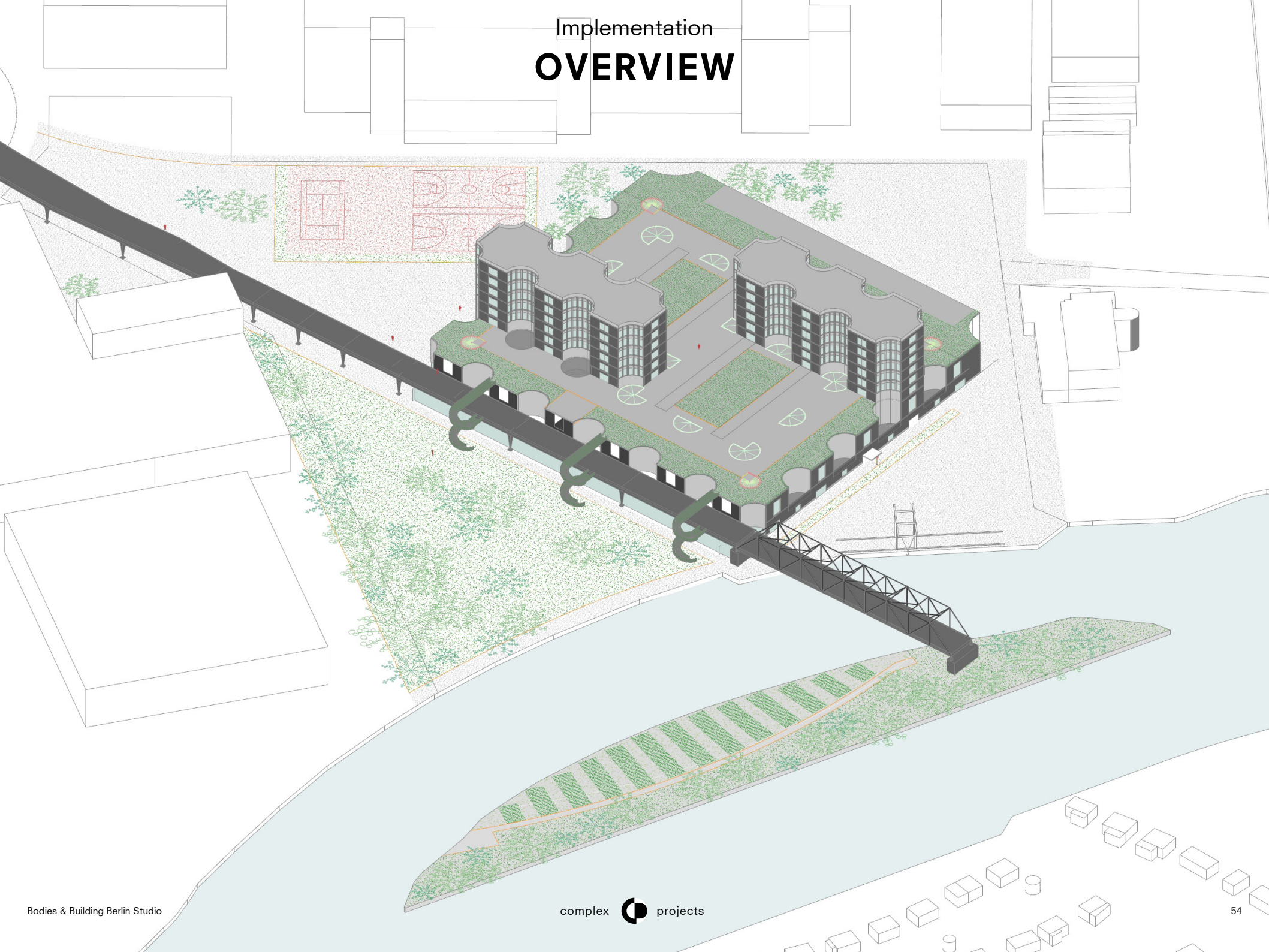
CONCEPT

**IMPLEMENTATION** / Urban  
/ Building  
/ Digitalization

DEVELOPMENT

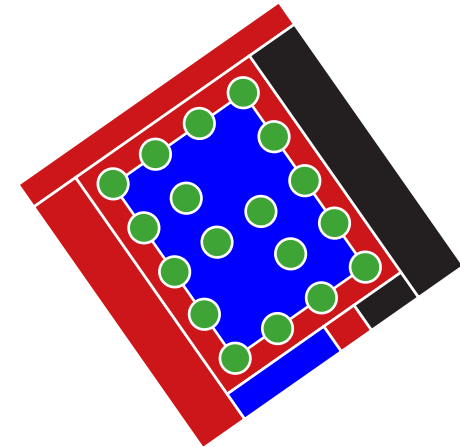
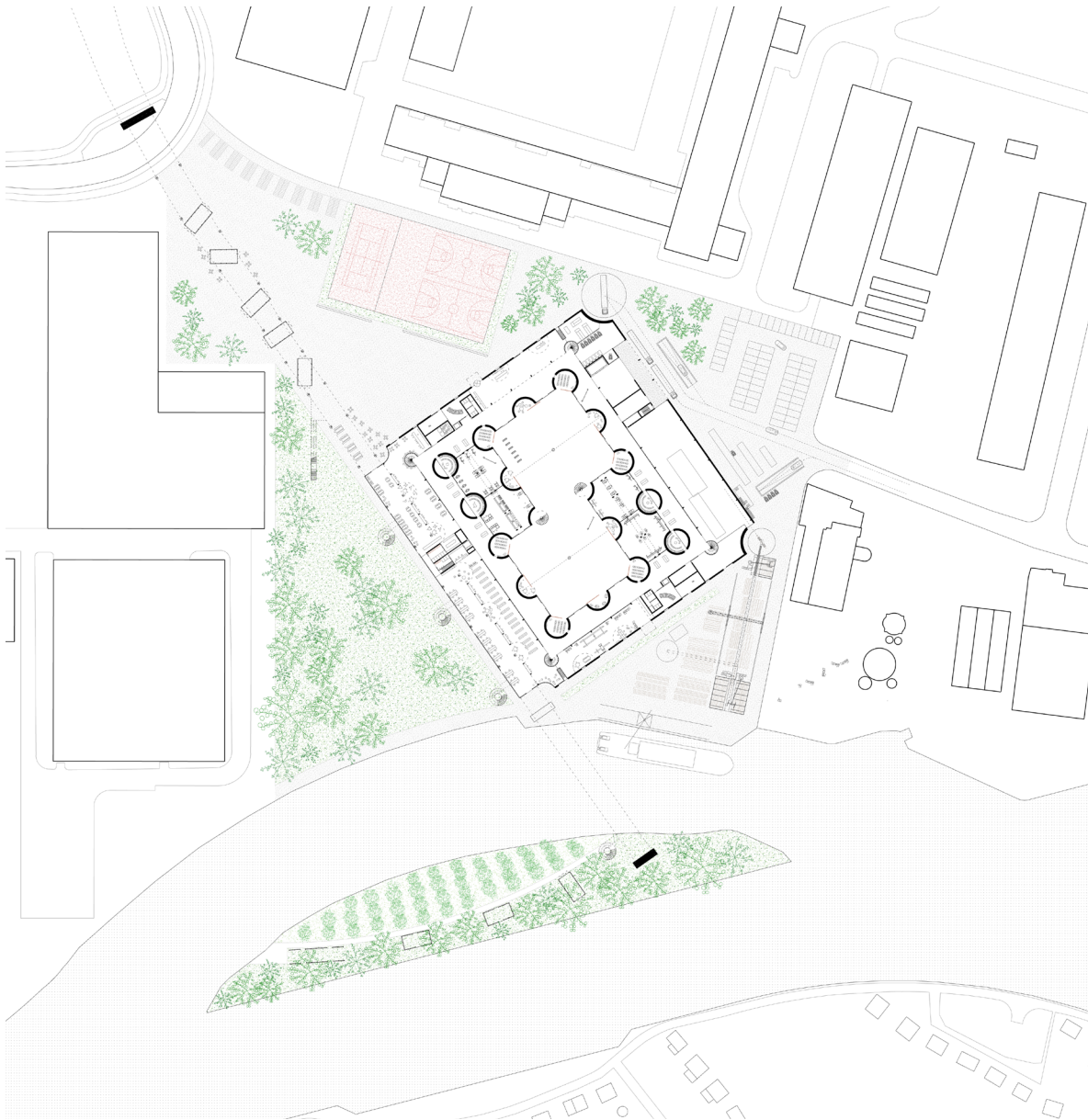


# Implementation **OVERVIEW**



# Implementation

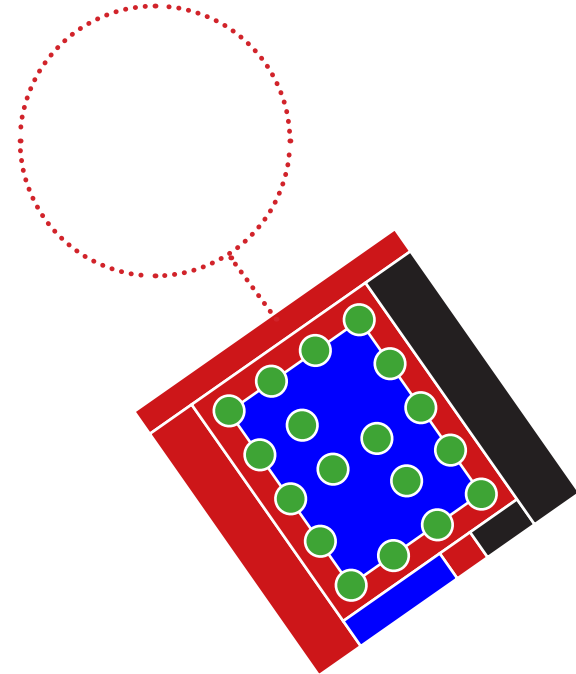
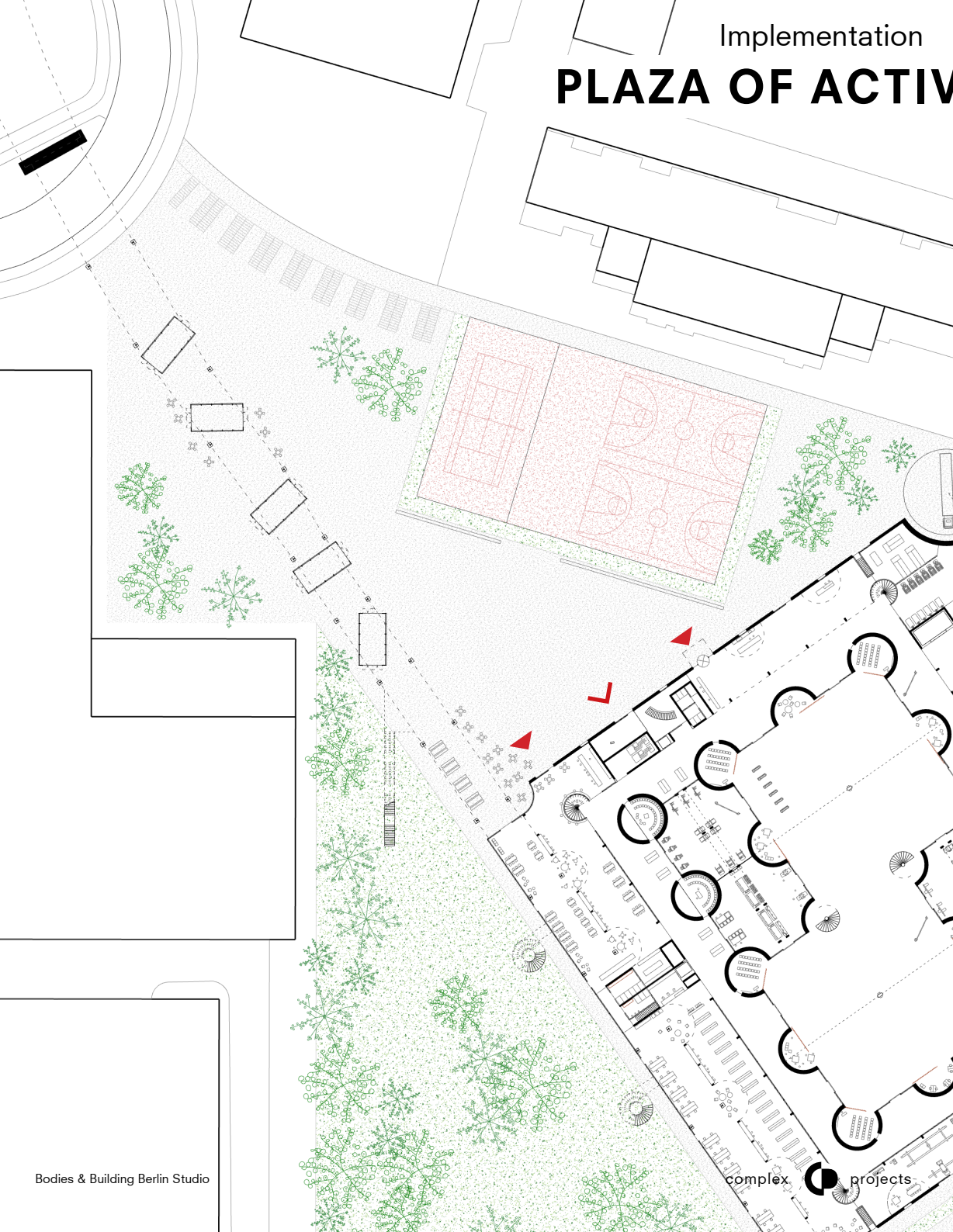
## URBAN IMPLEMENTATION



- communal
- material
- workshop
- classroom



# Implementation PLAZA OF ACTIVITIES

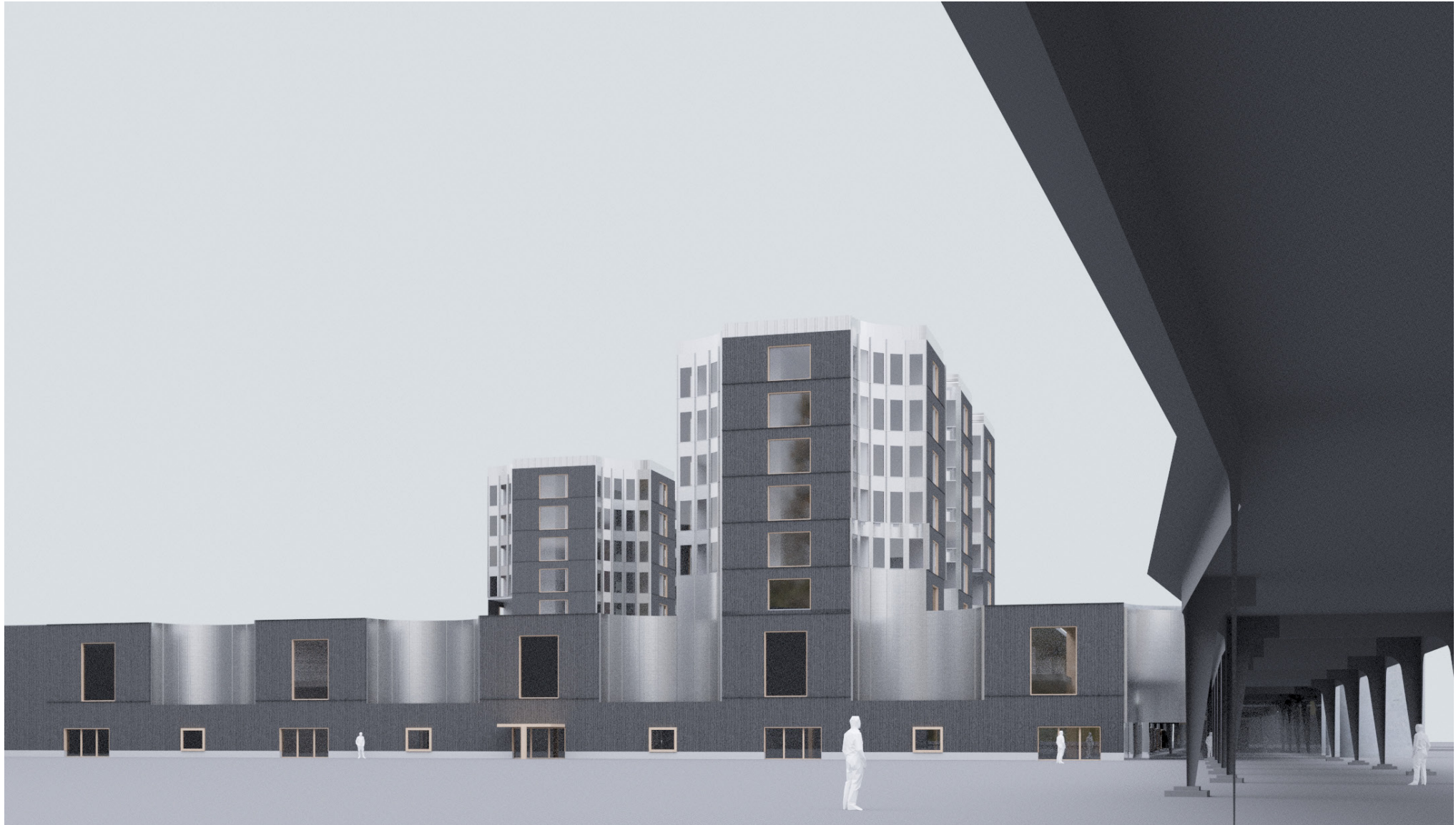


- communal
- material
- workshop
- classroom



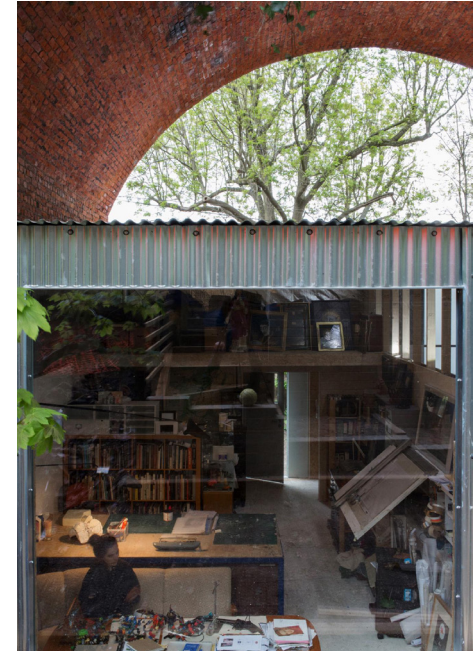
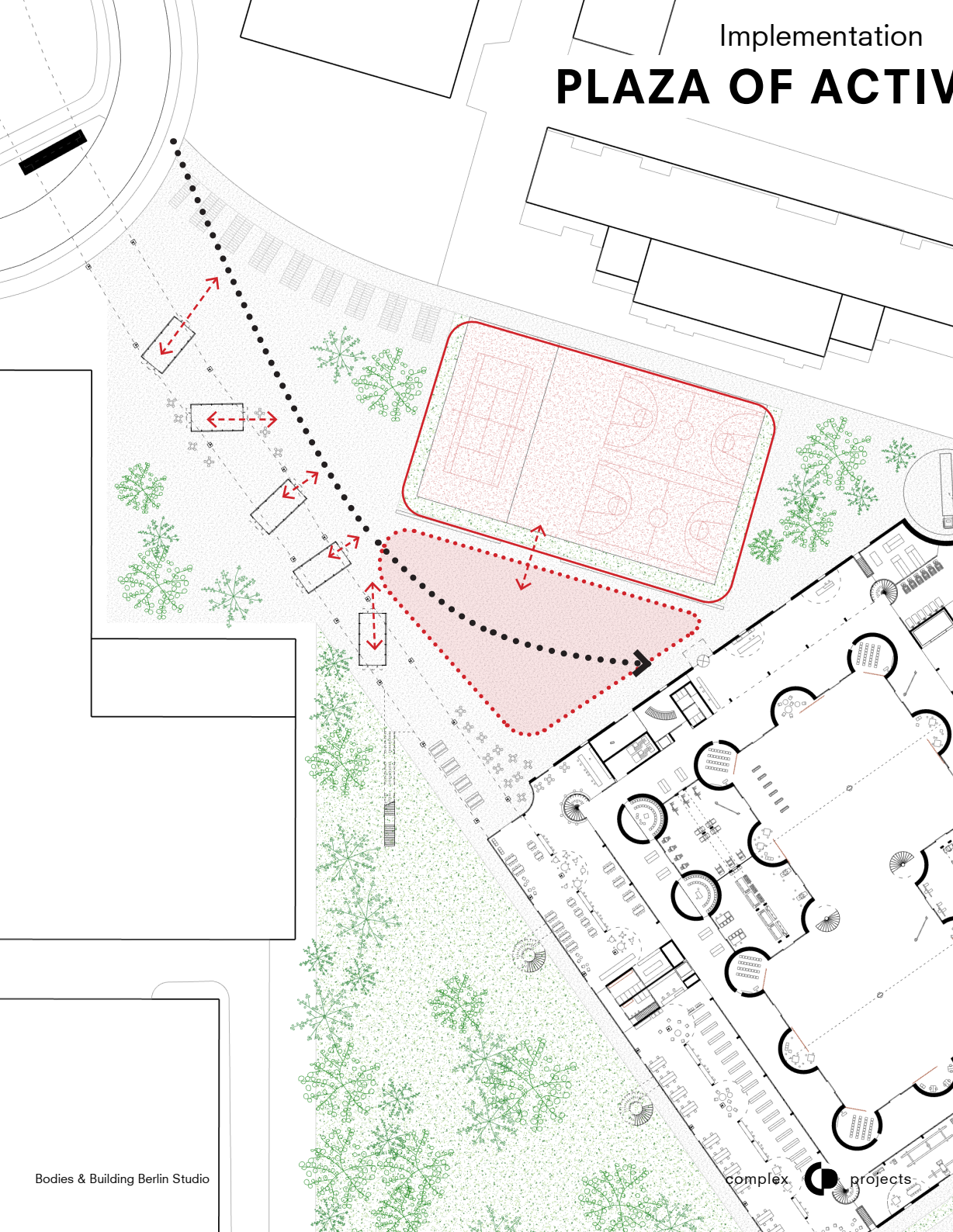
Implementation

# PLAZA OF ACTIVITIES





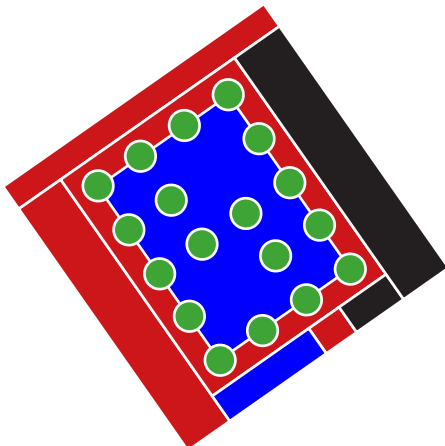
# Implementation PLAZA OF ACTIVITIES





Implementation

# PLAZA OF GREENERY

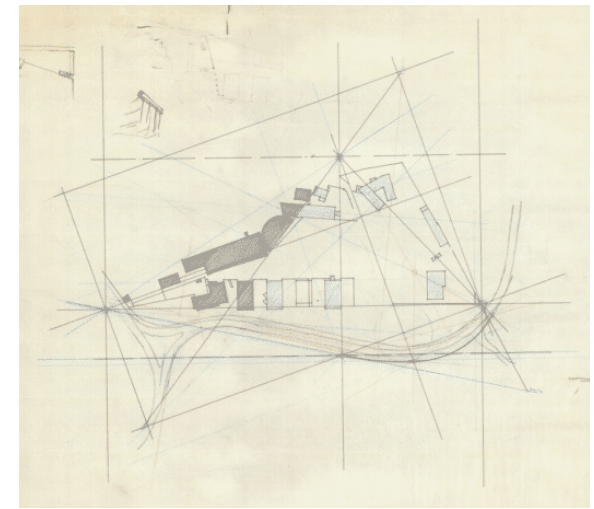


- communal
- material
- workshop
- classroom



Implementation

# PLAZA OF GREENERY



reference: Porto School of Architecture, Porto, Alvaro Siza



Implementation

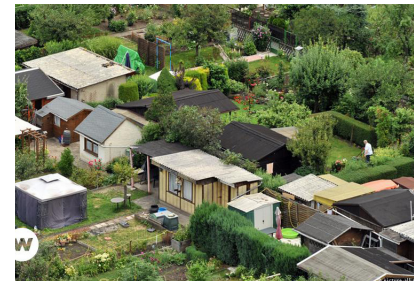
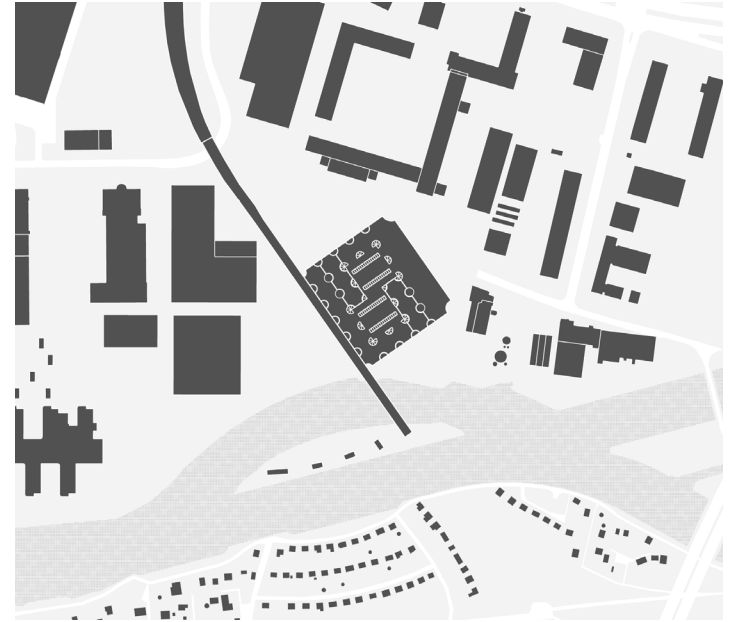
# PLAZA OF GREENERY





Implementation

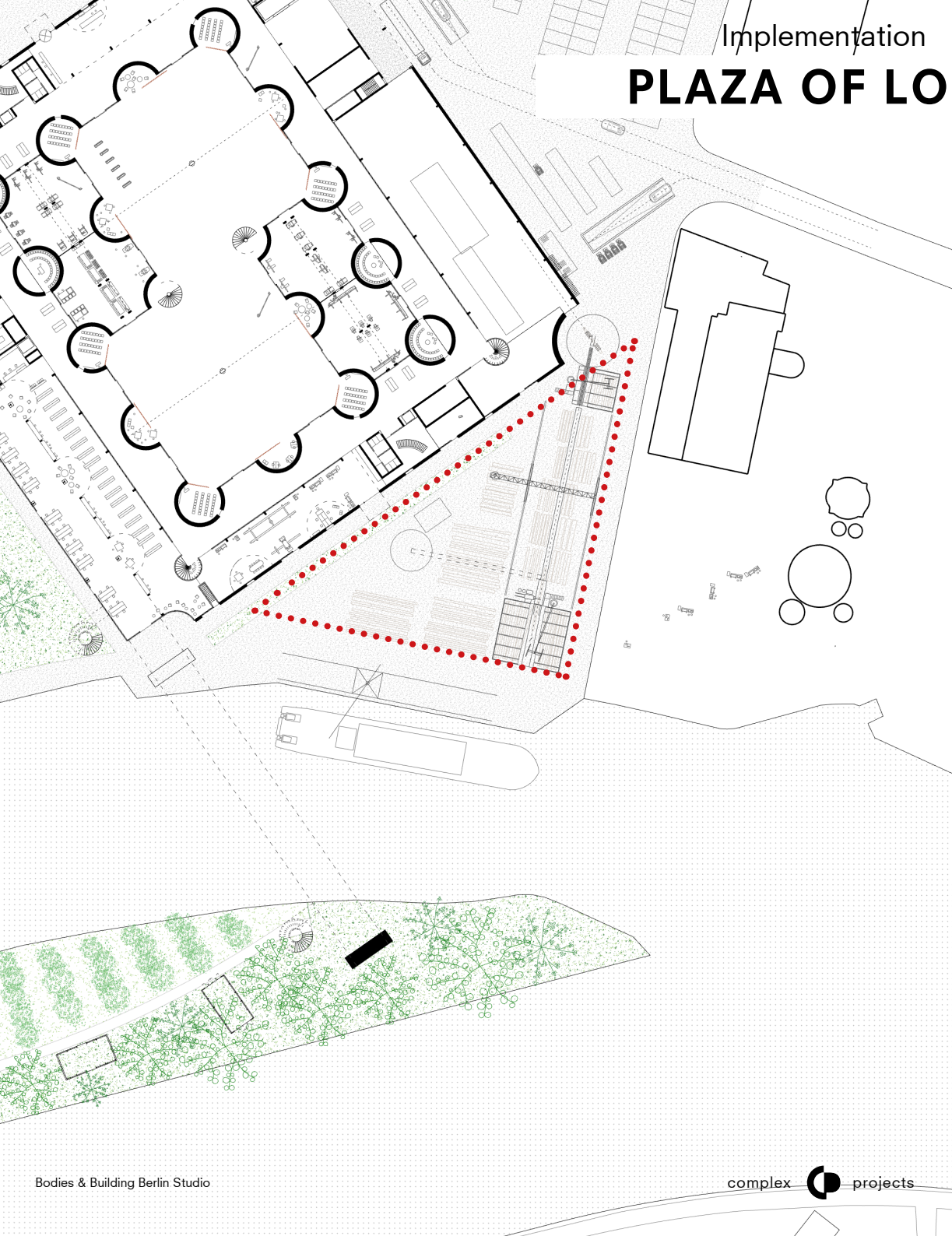
# PLAZA OF GREENERY



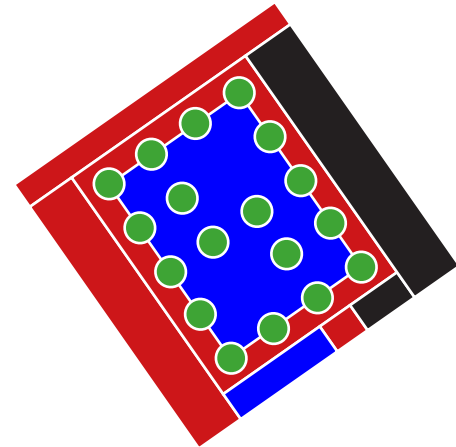


Implementation

# PLAZA OF LOGS



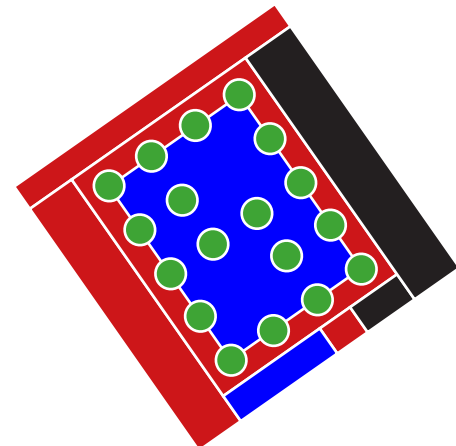
# PLAZA OF LOGS



- communal
- material
- workshop
- classroom



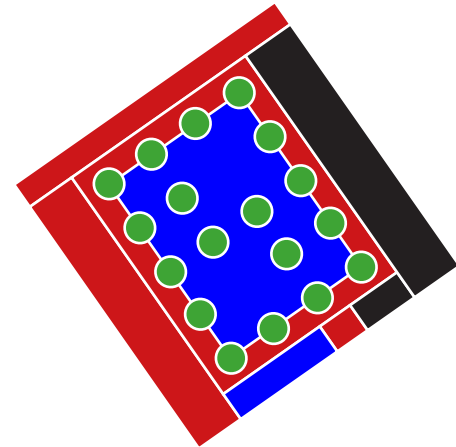
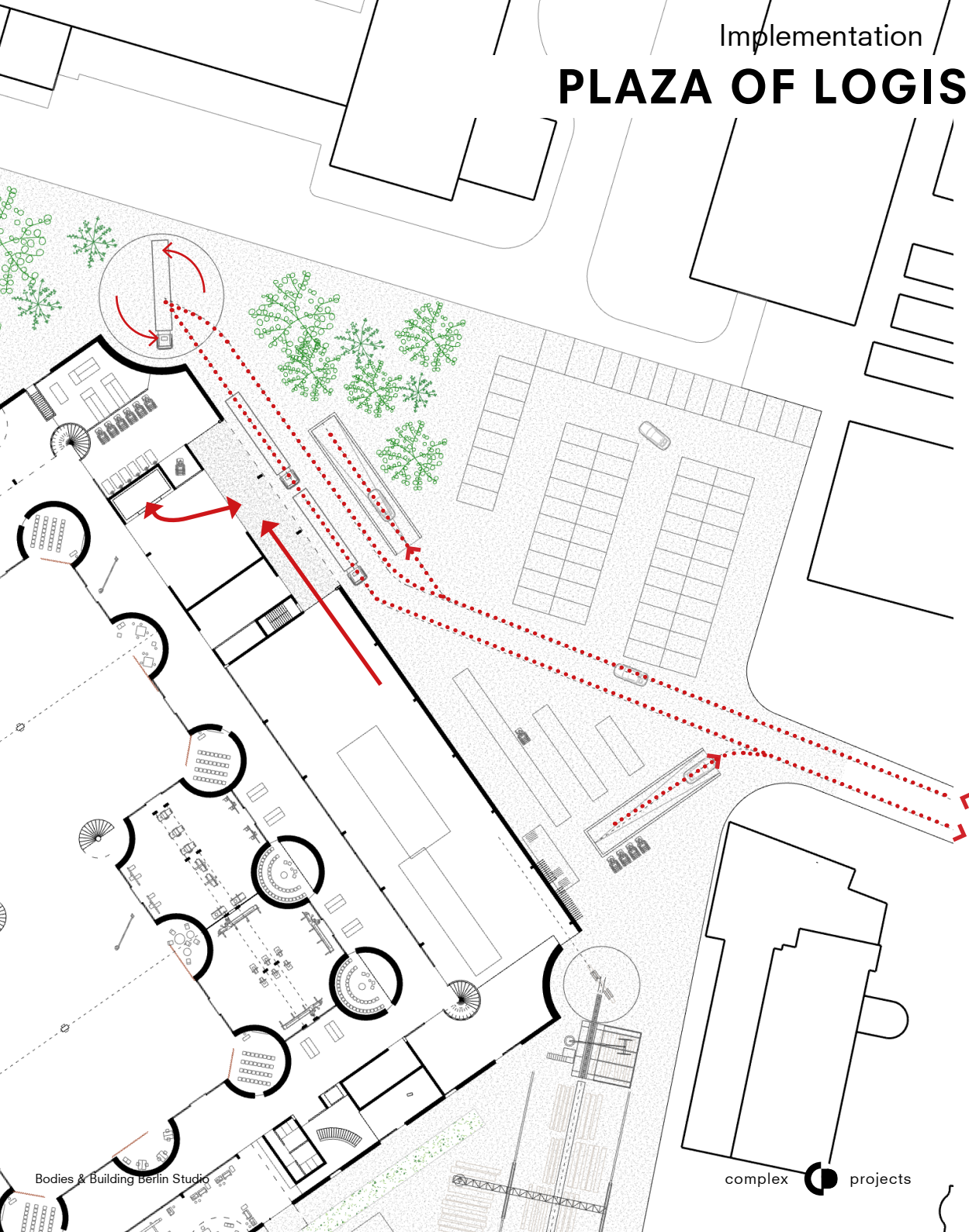
# PLAZA OF LOGISTICS



- communal
- material
- workshop
- classroom



# PLAZA OF LOGISTICS



- communal
- material
- workshop
- classroom

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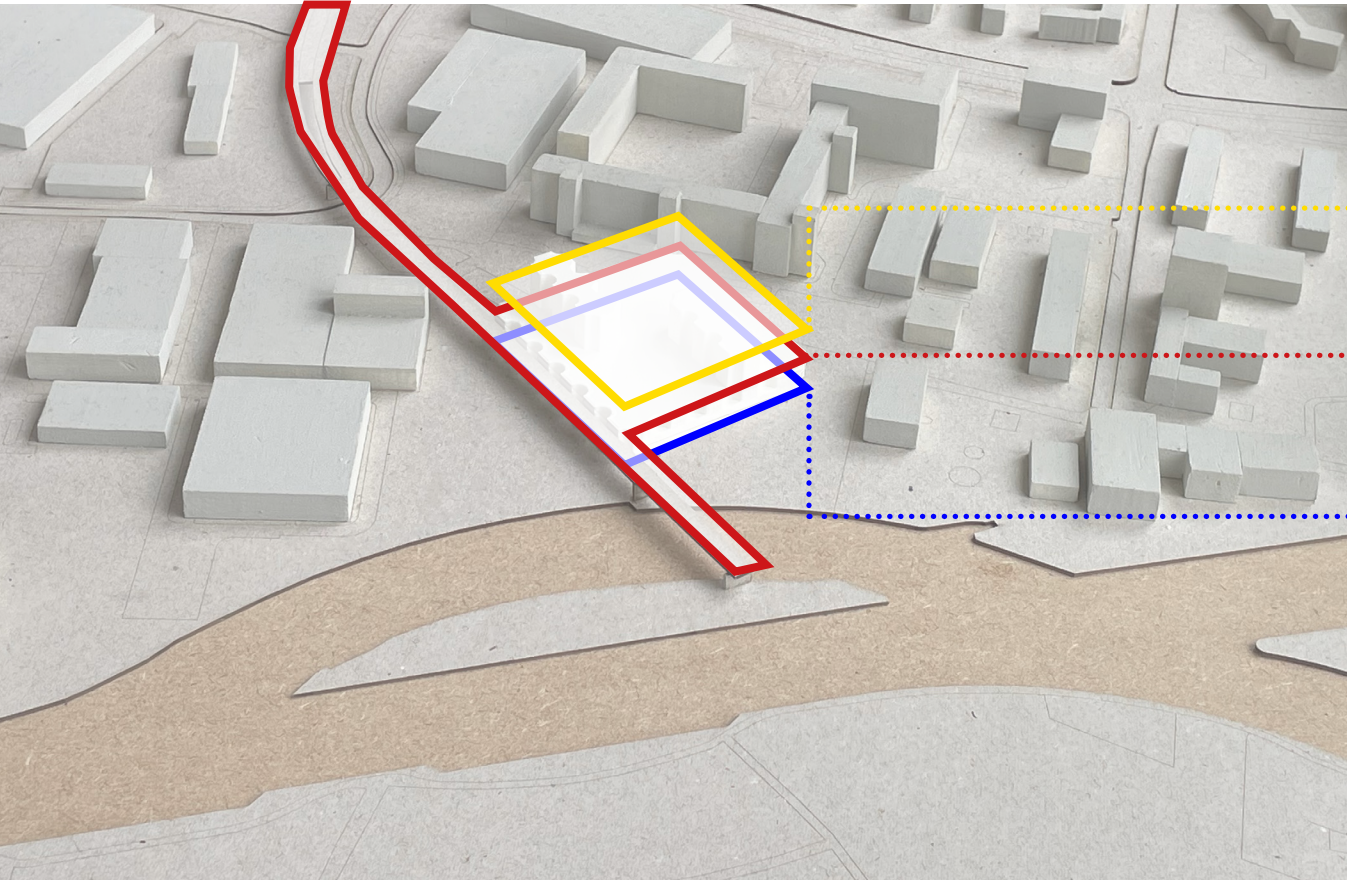
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**IMPLEMENTATION** / Urban  
/ Building  
/ Digitalization

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**THREE LEVELS**



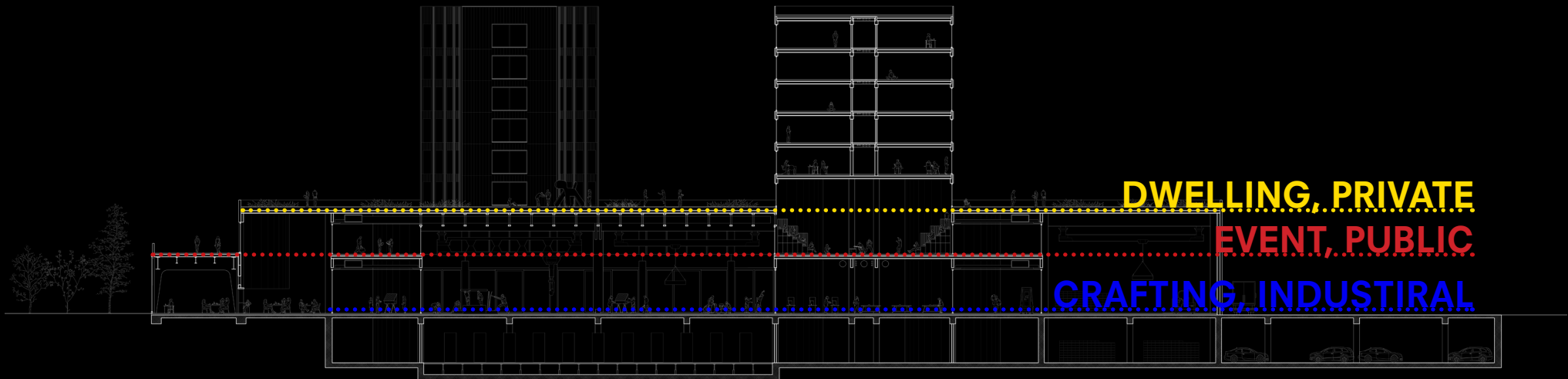
**DWELLING, PRIVATE**

**EVENT, PUBLIC**

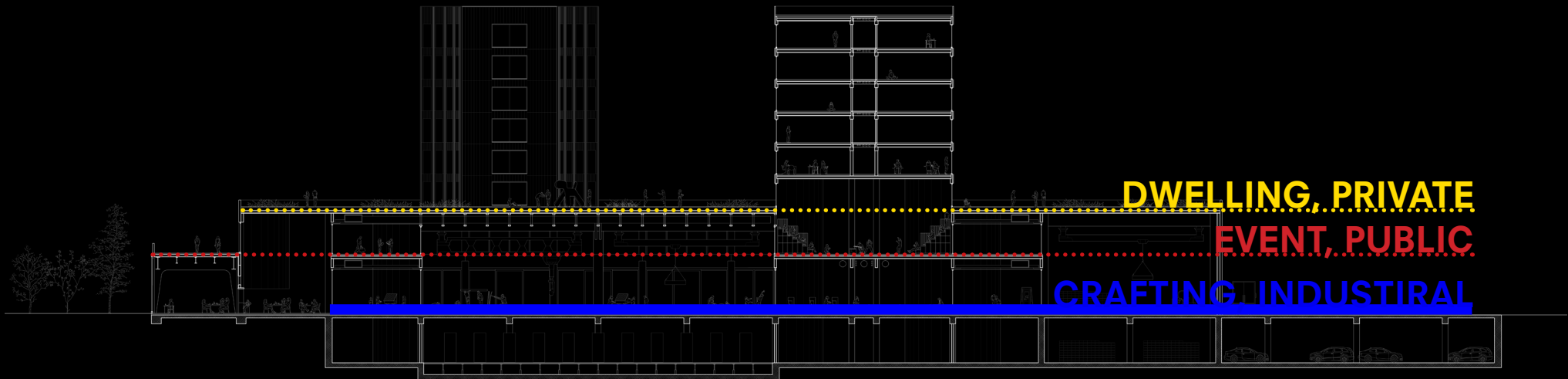
**CRAFTING, INDUSTRIAL**



Implementation  
**THREE LEVELS**

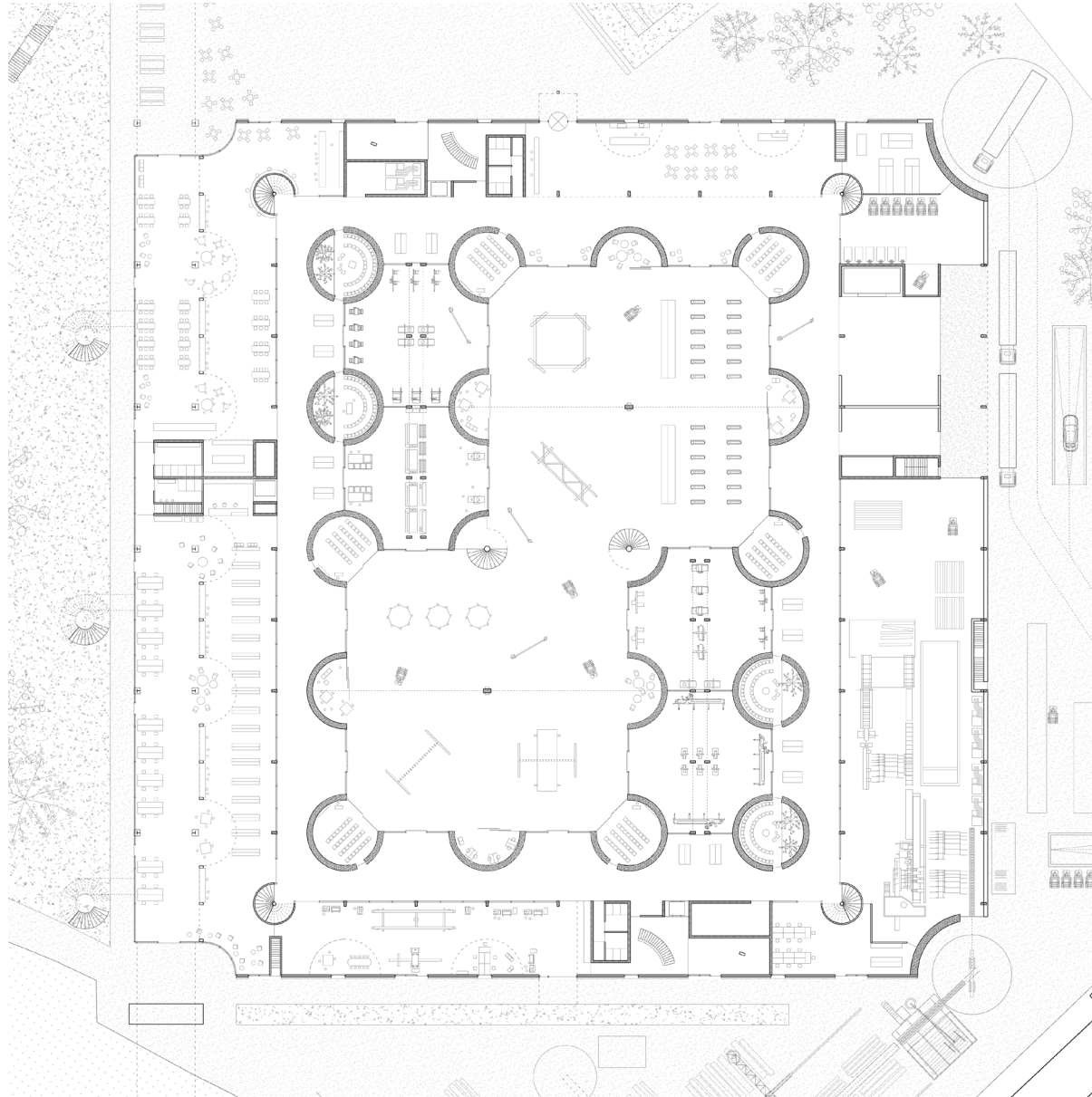


Implementation  
**THREE LEVELS**



# Implementation

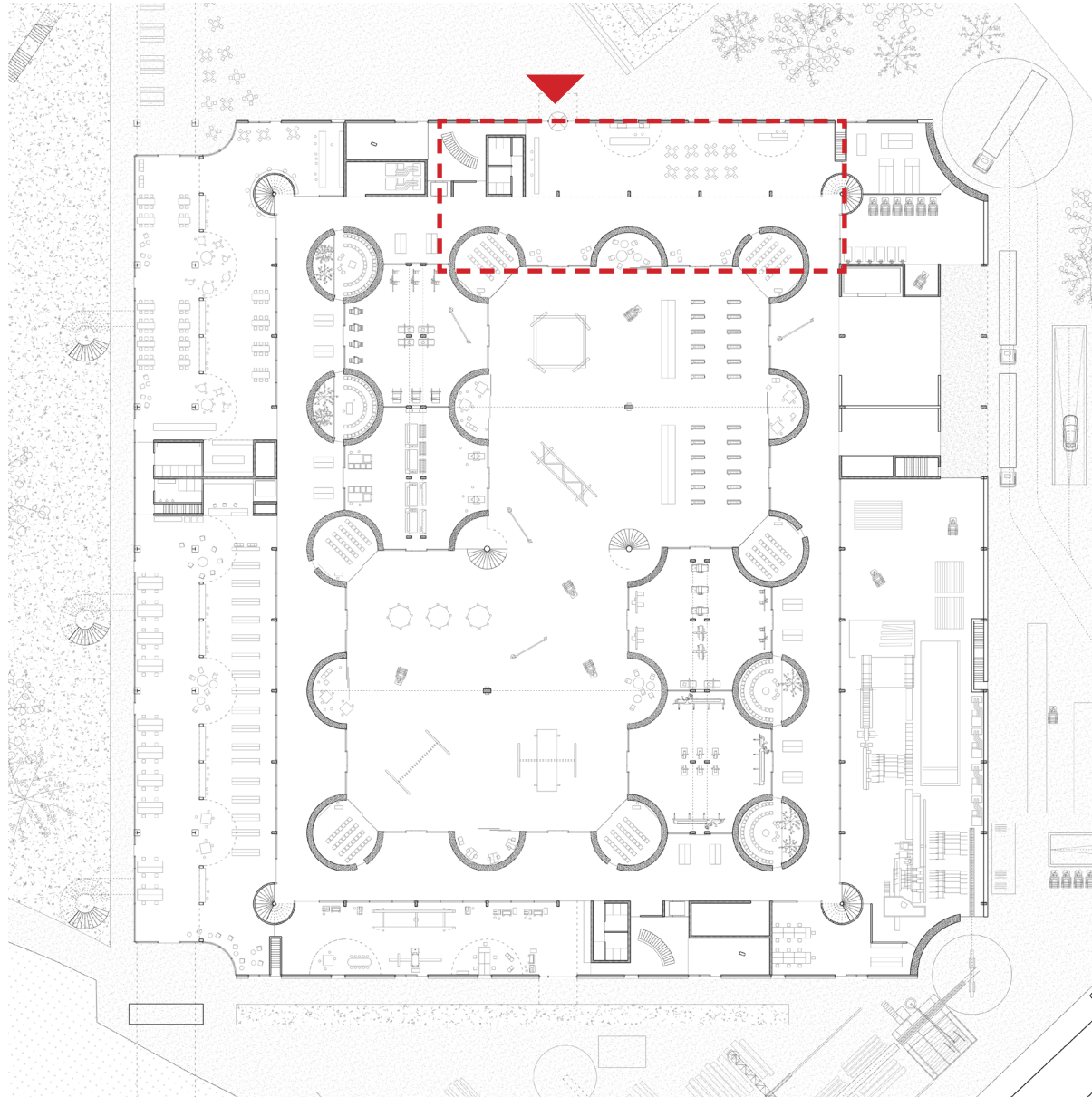
# CRAFTING





# Implementation

# CRAFTING

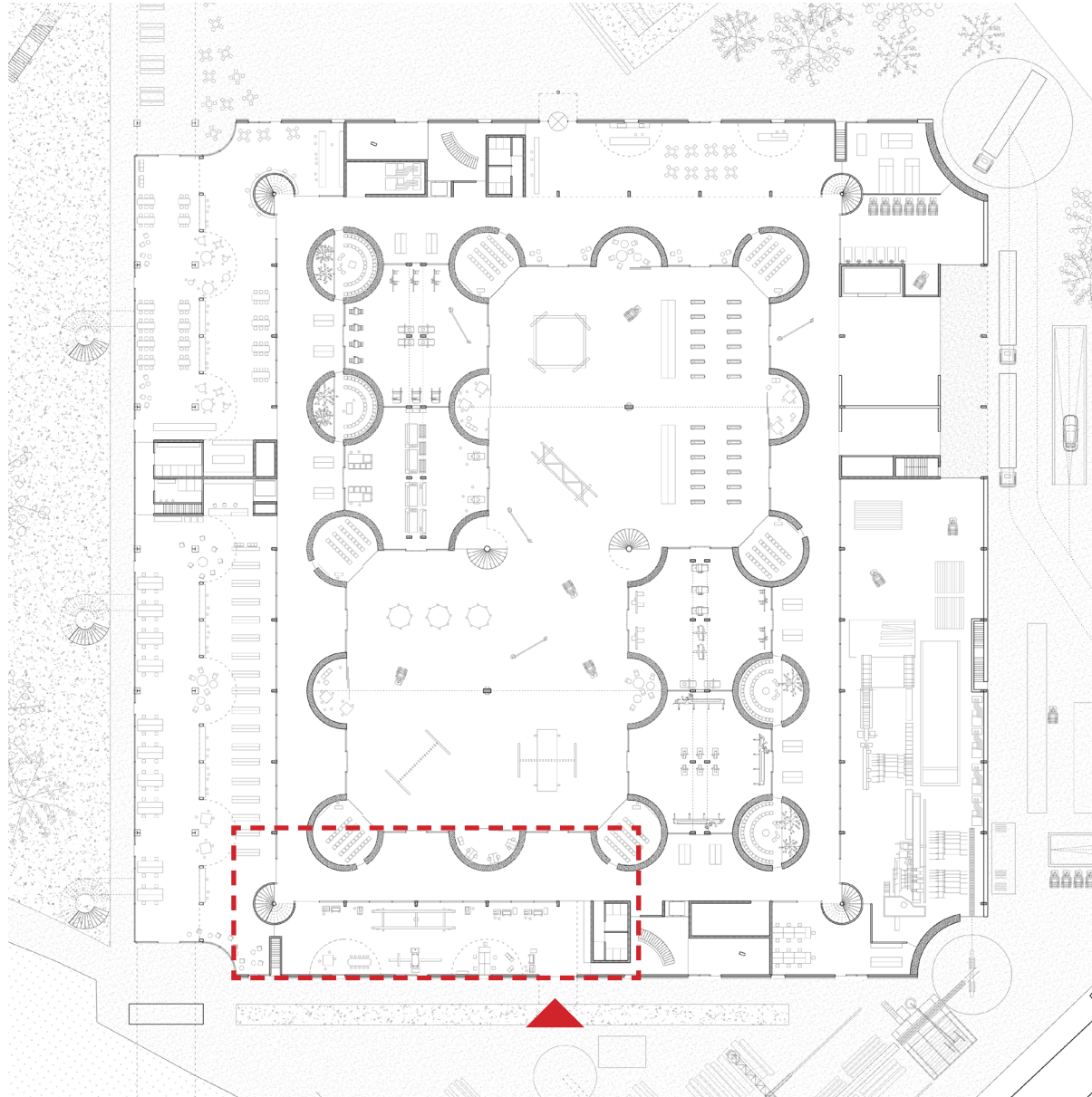








# CRAFTING



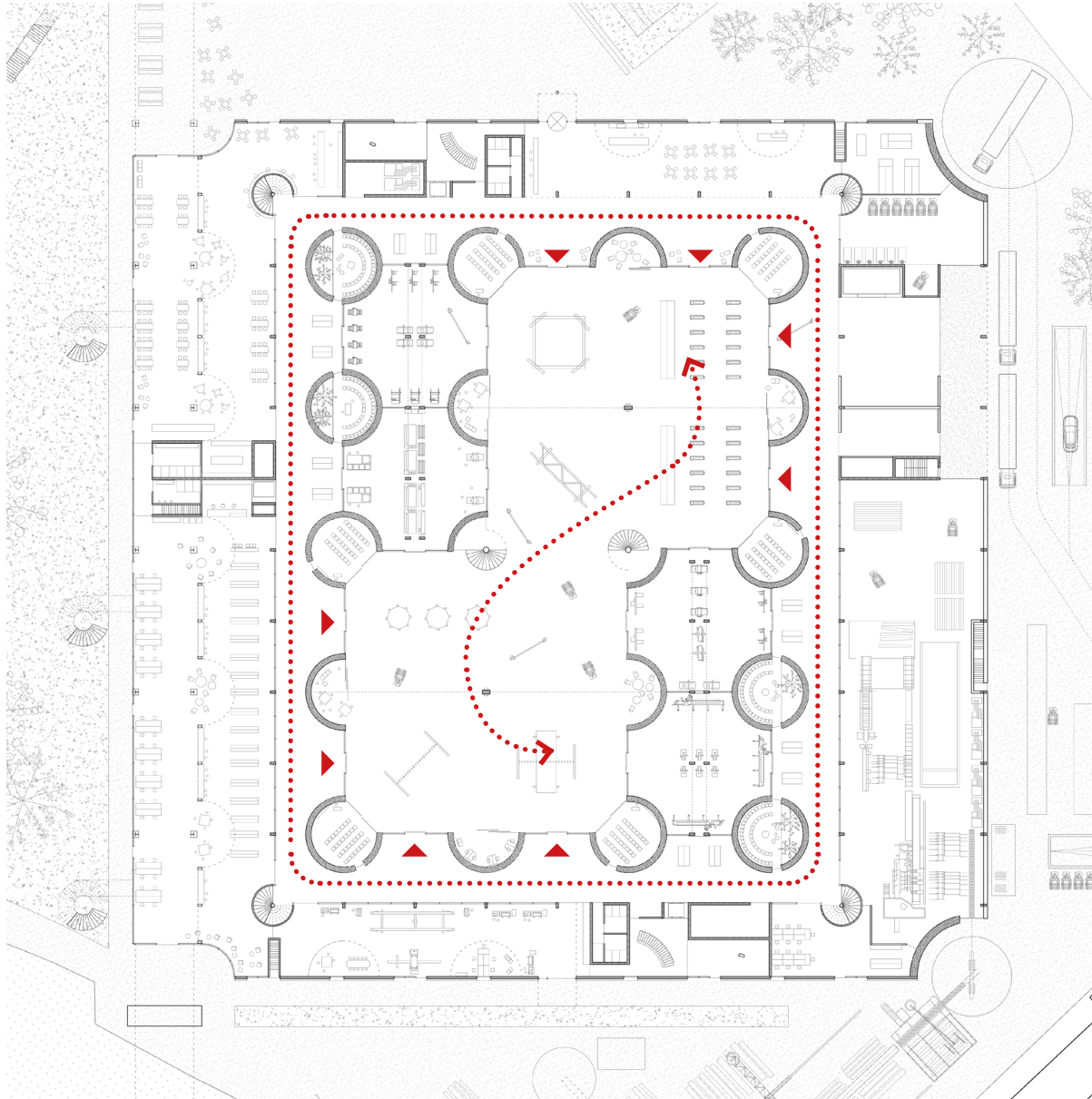






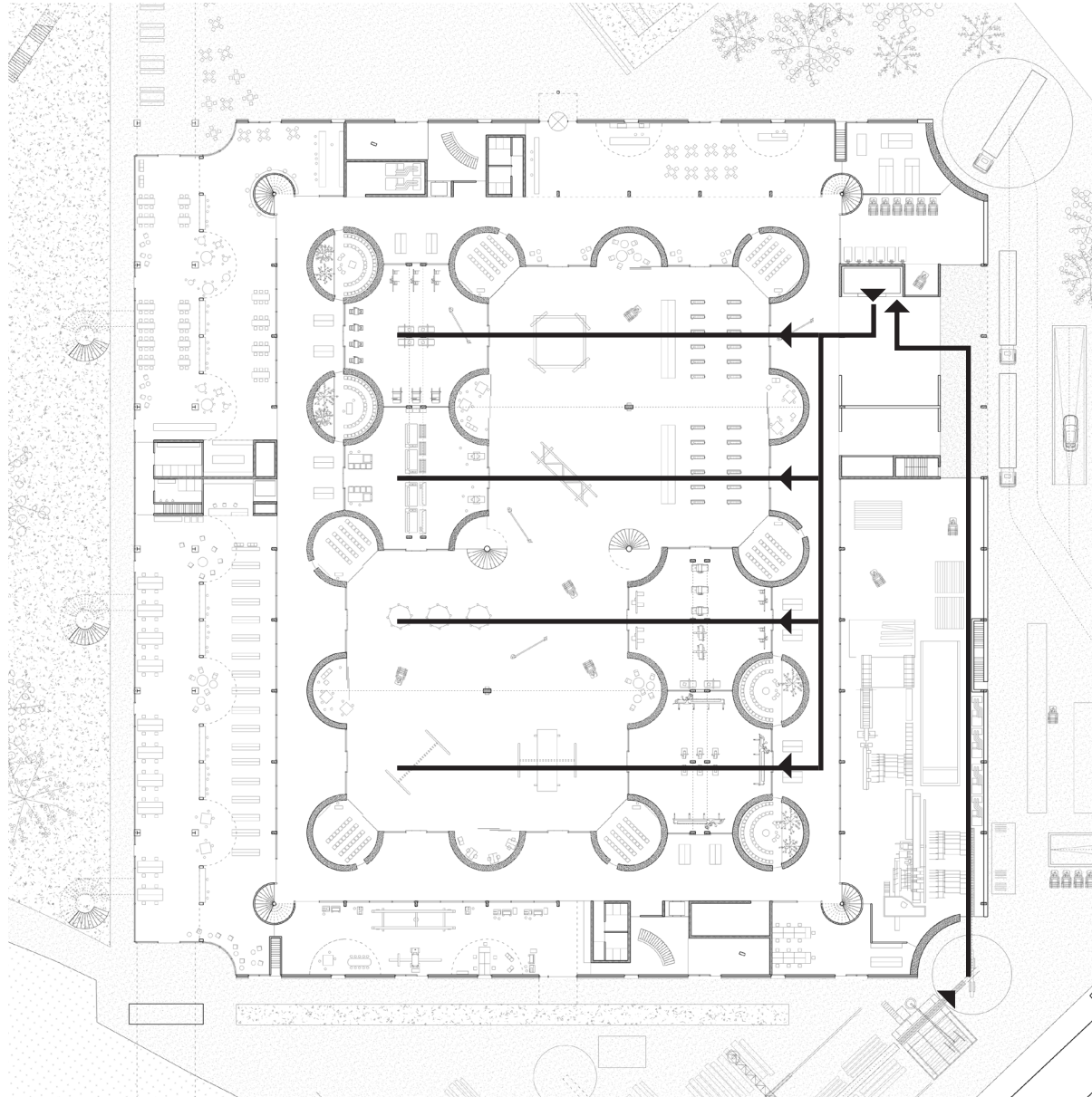
# Implementation

## CIRCULATION



# Implementation

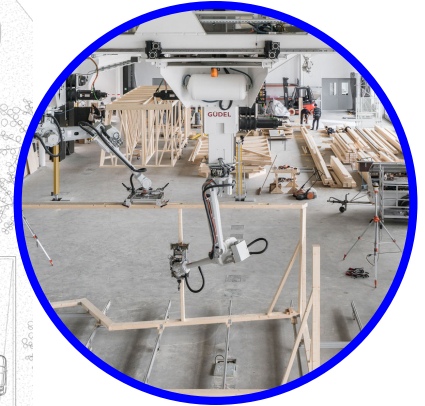
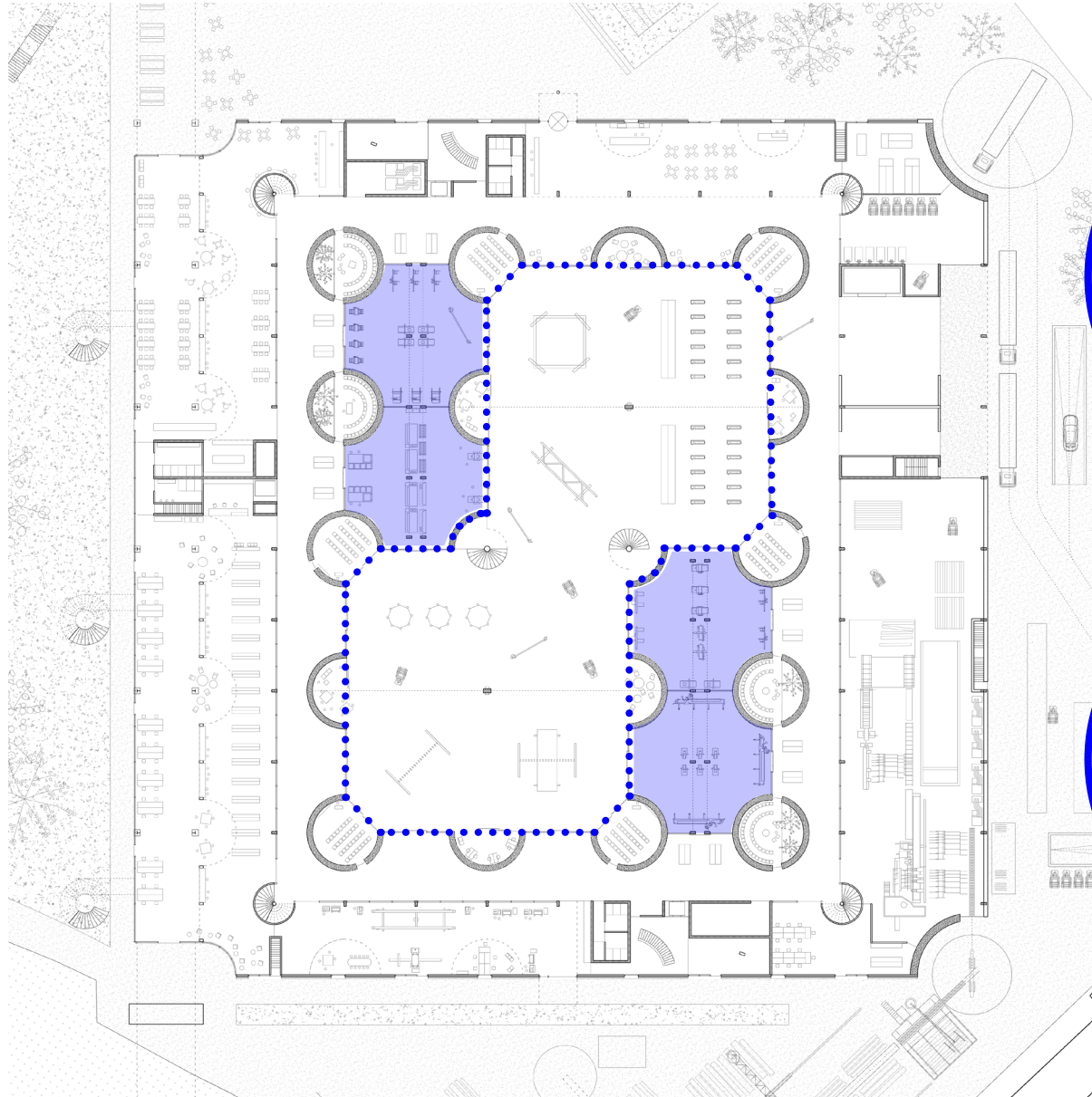
## CIRCULATION





# Implementation

## CRAFTING









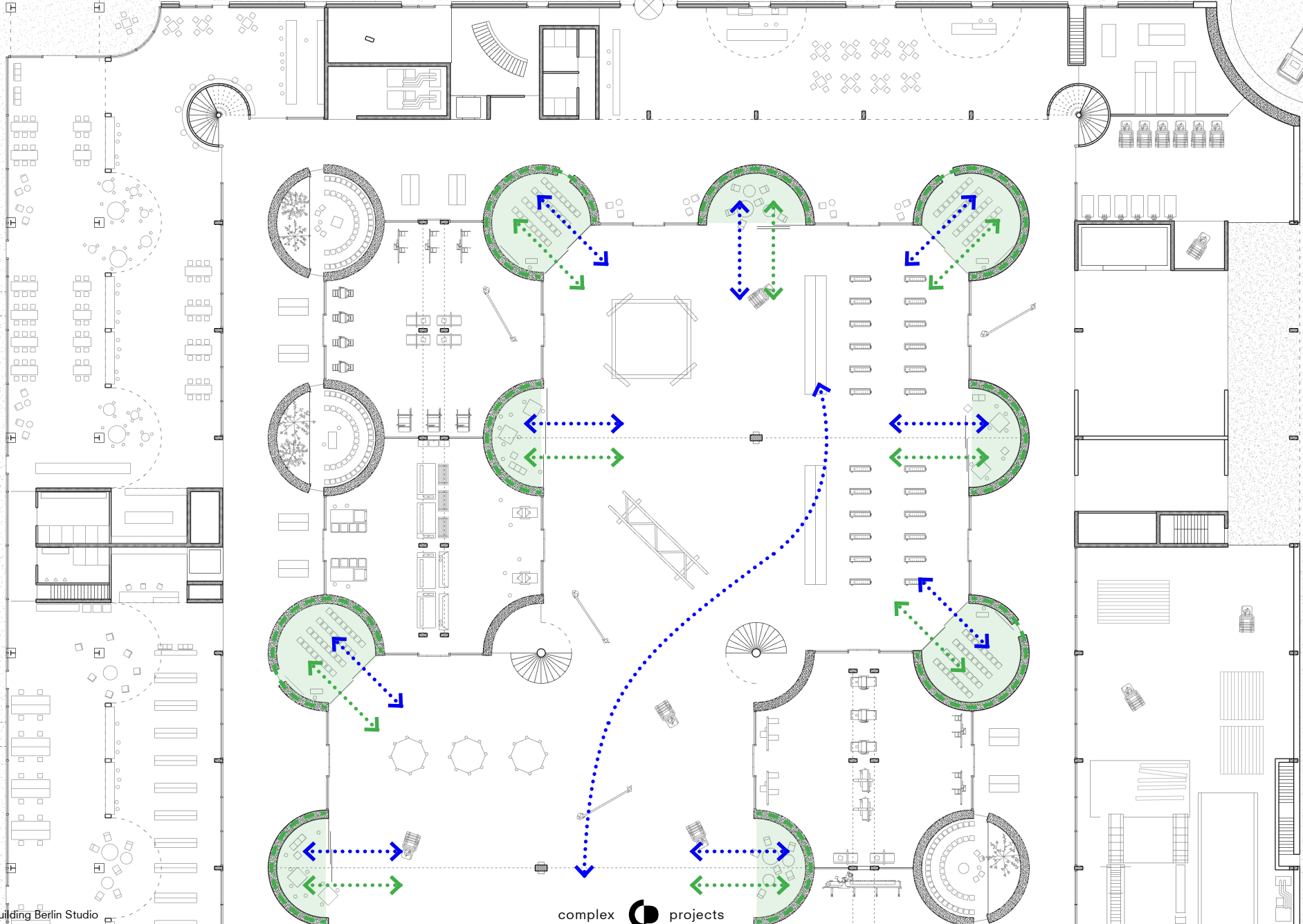








# CRAFTING AND CLASSROOM

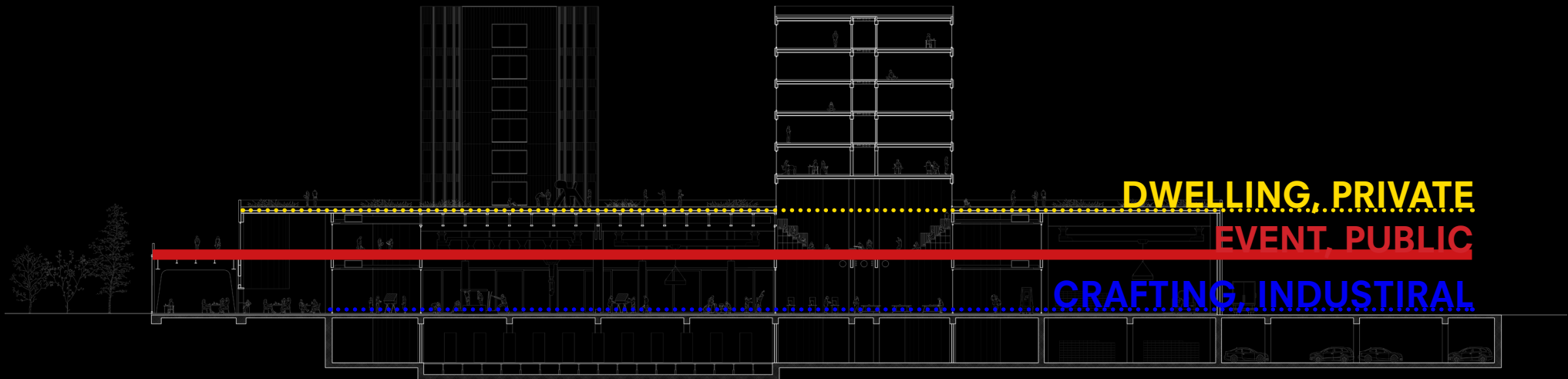






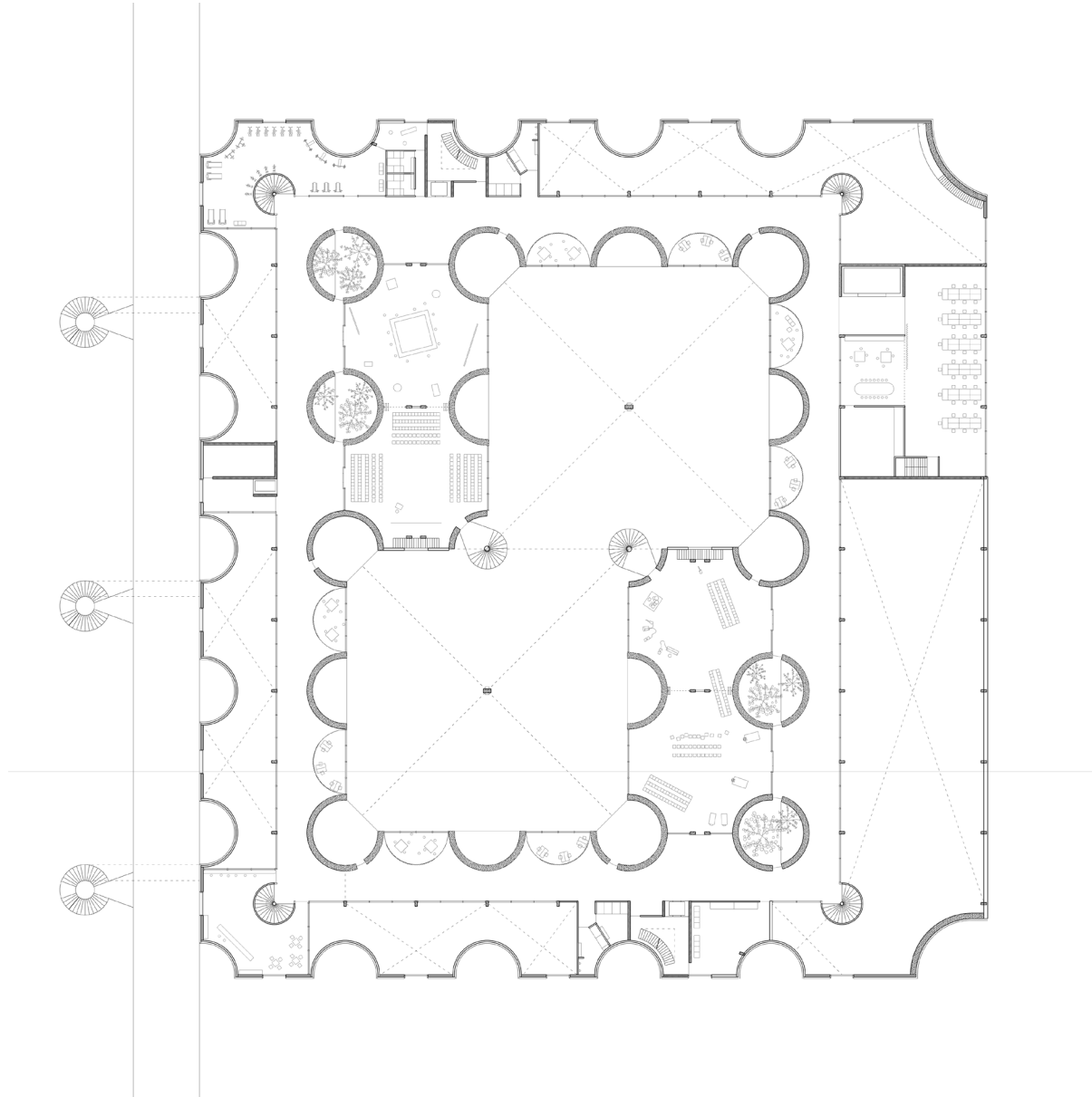


Implementation  
**THREE LEVELS**



# Implementation

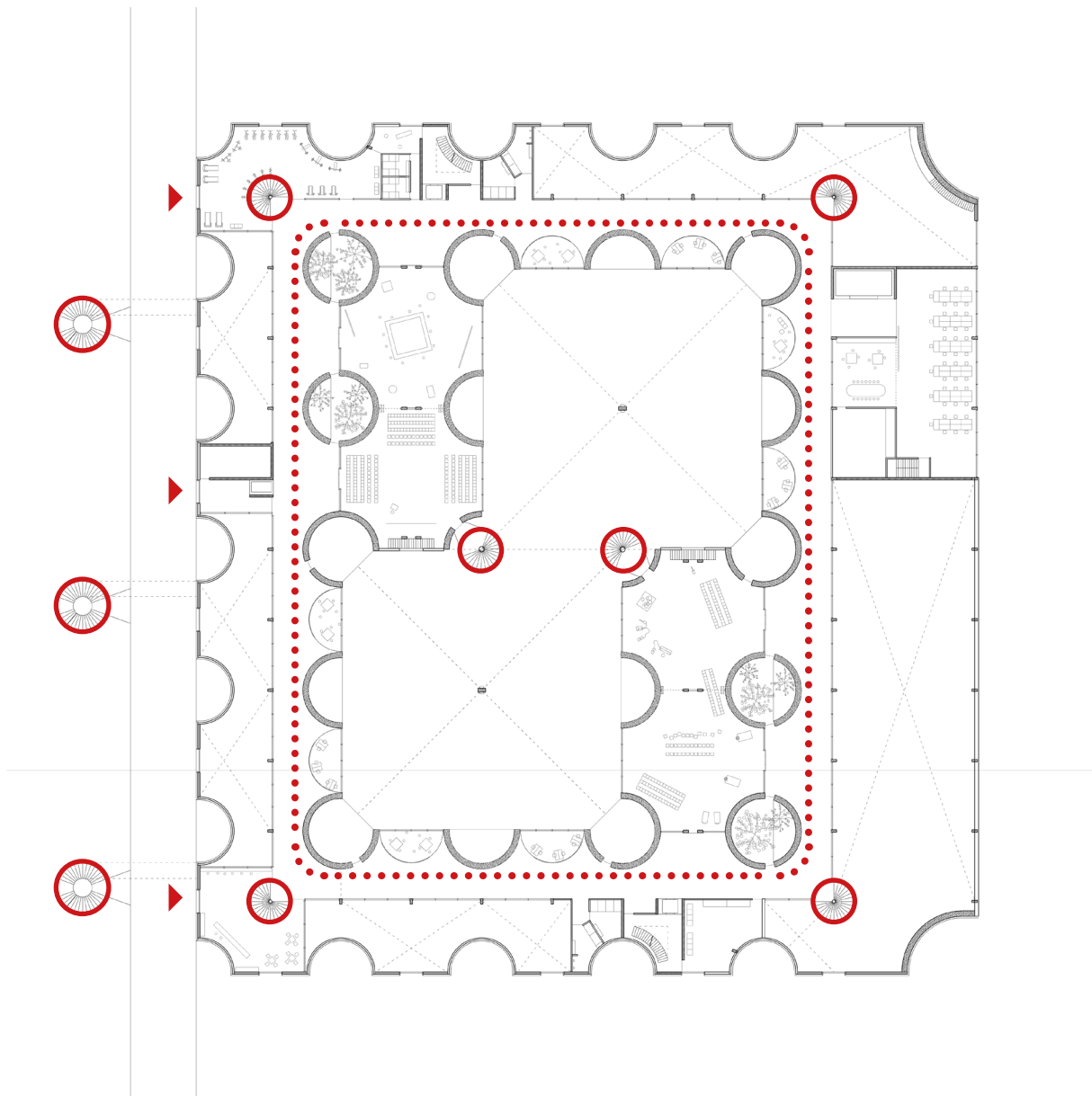
# **PUBLIC**



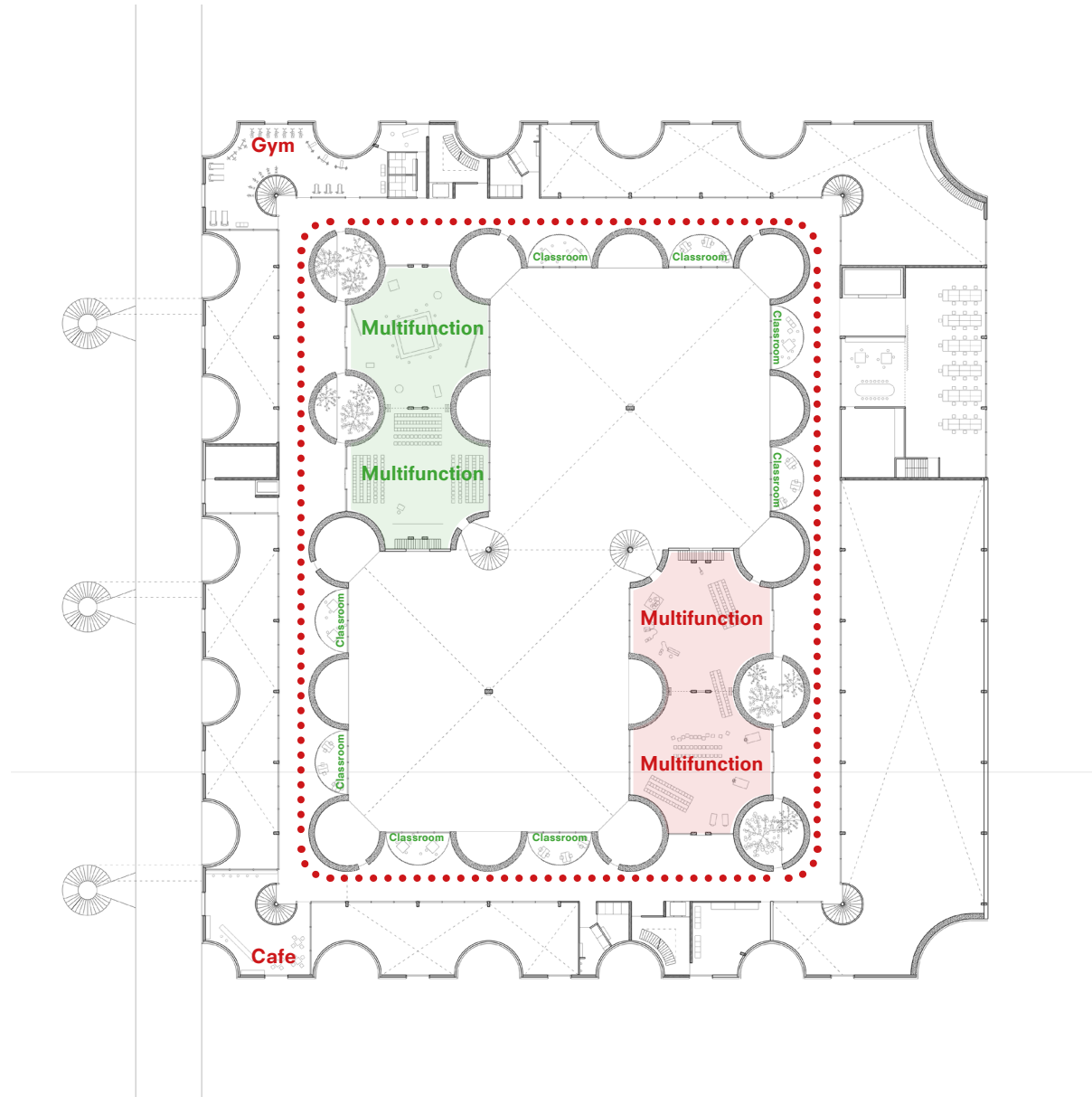


# Implementation

## CIRCULATION



# Implementation PROGRAM



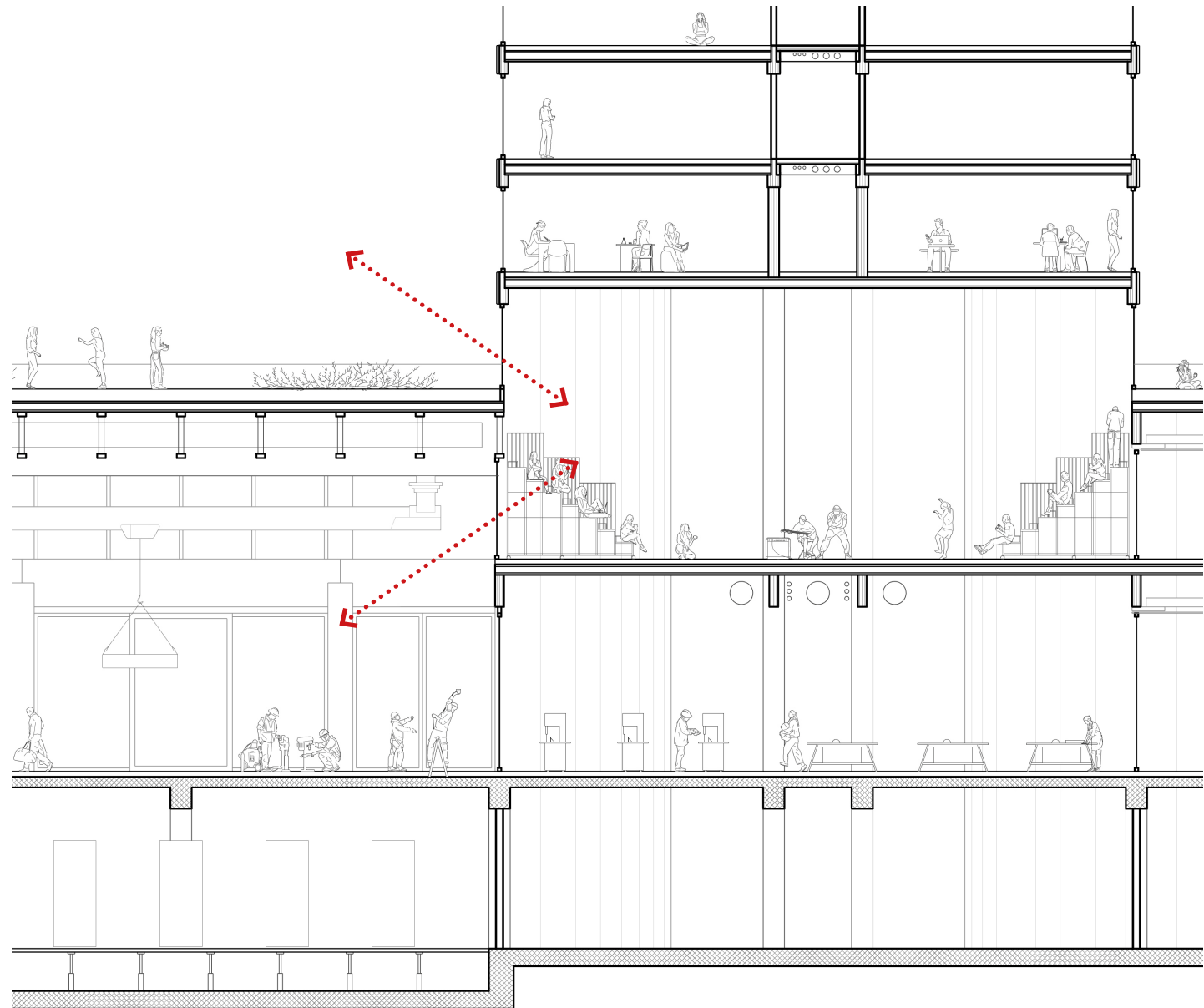
# Implementation



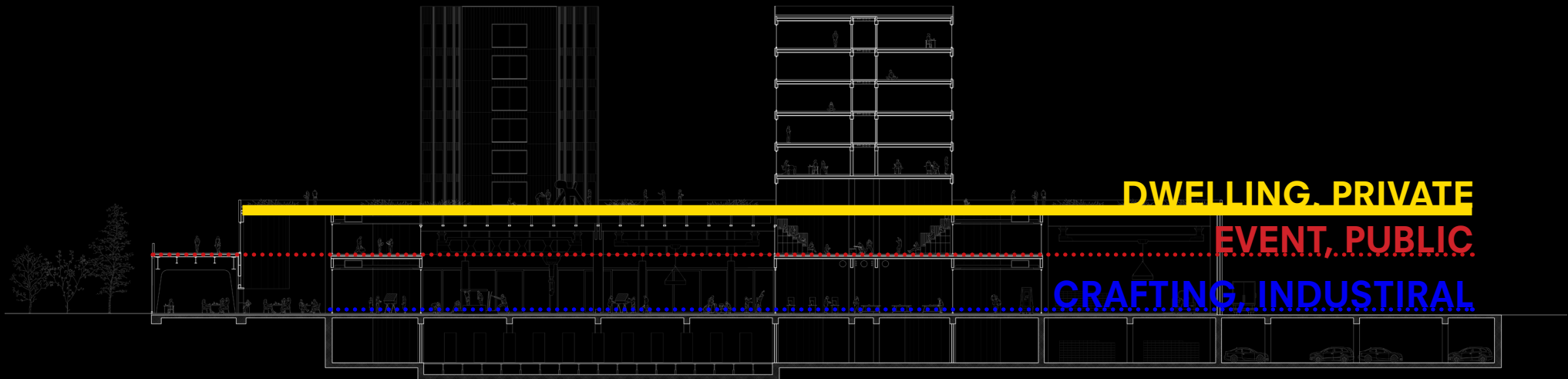


# Implementation

## VISUAL CONNECTION

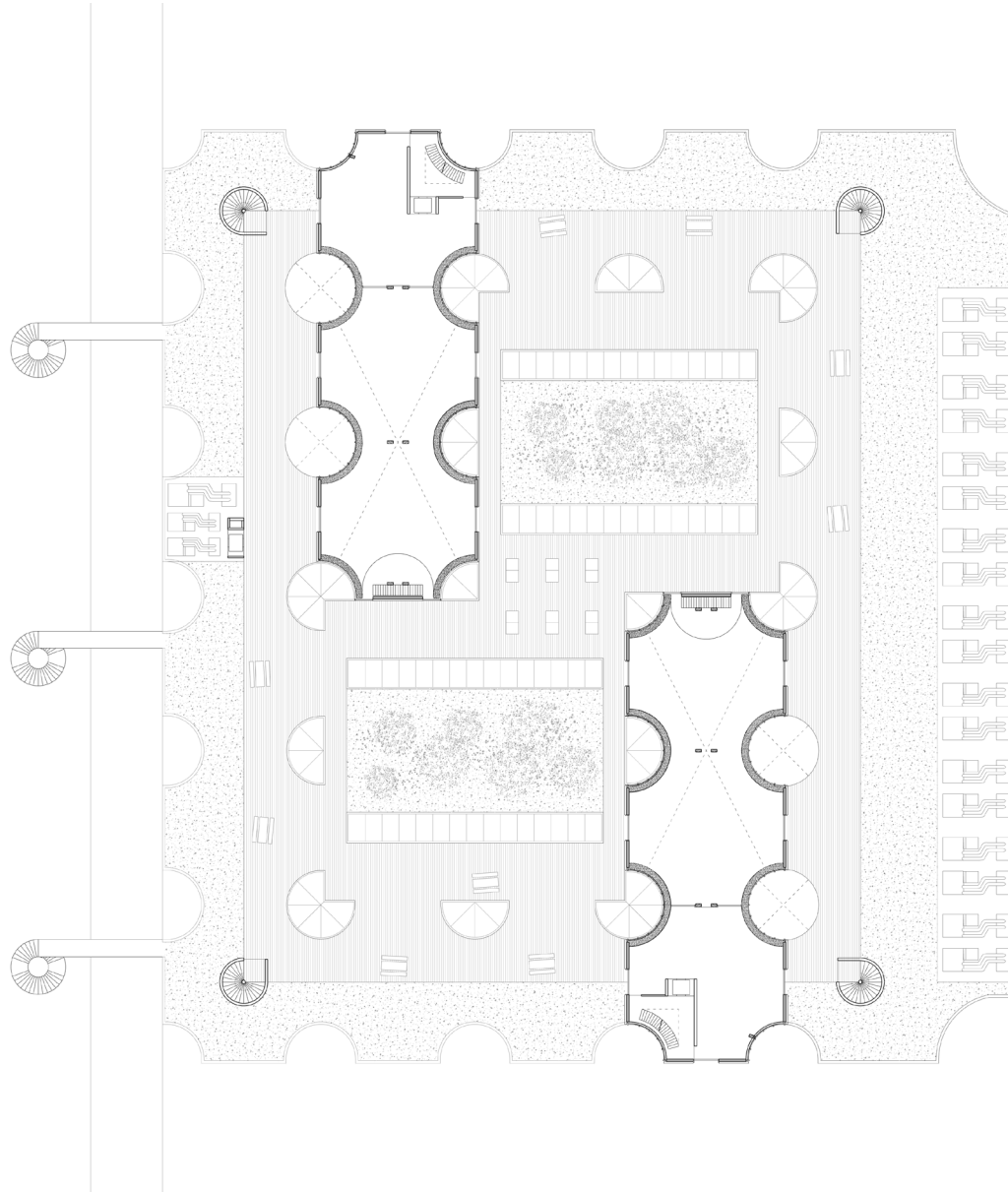


Implementation  
**THREE LEVELS**



# Implementation

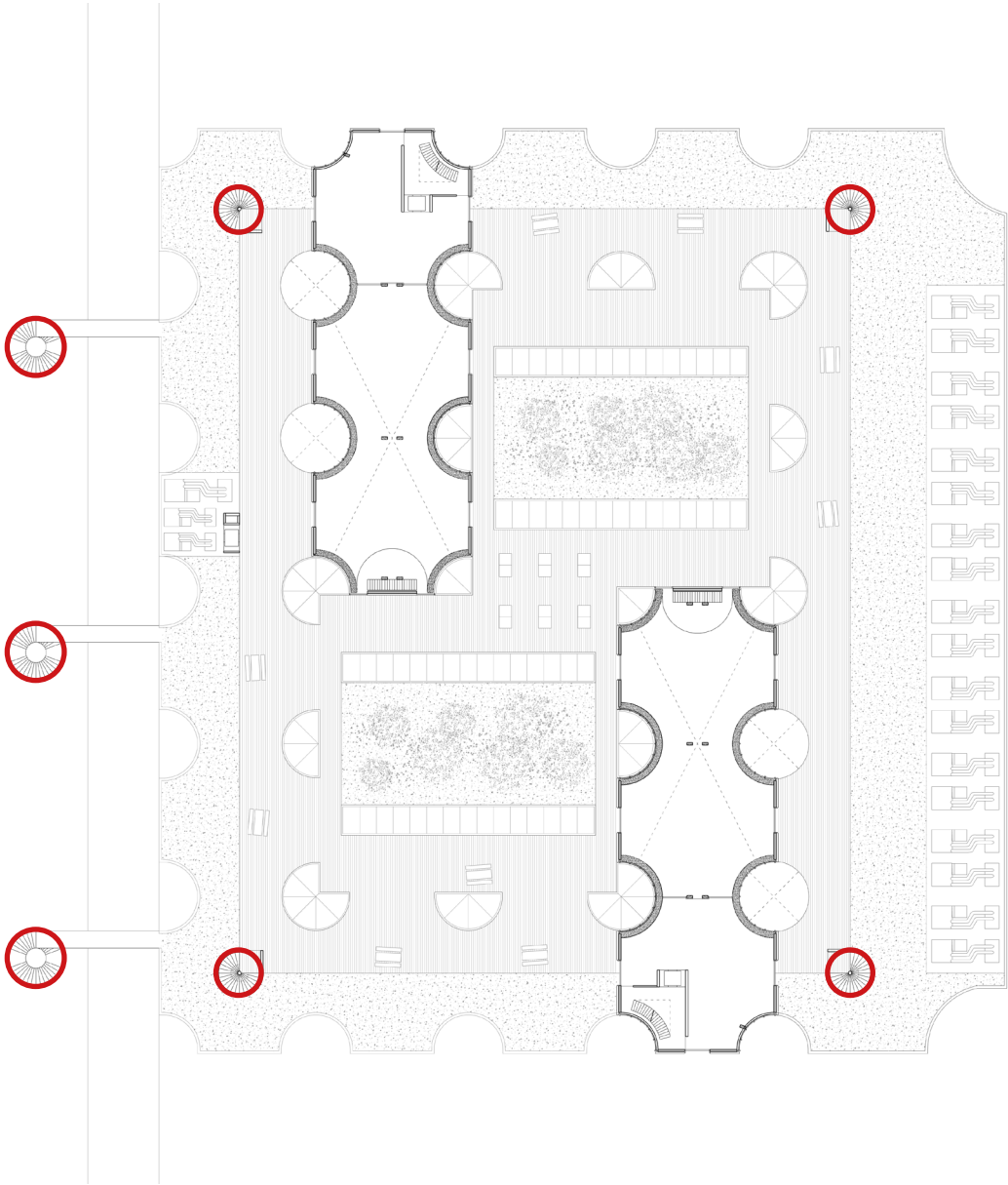
## DWELLING





# Implementation

## CIRCULATION



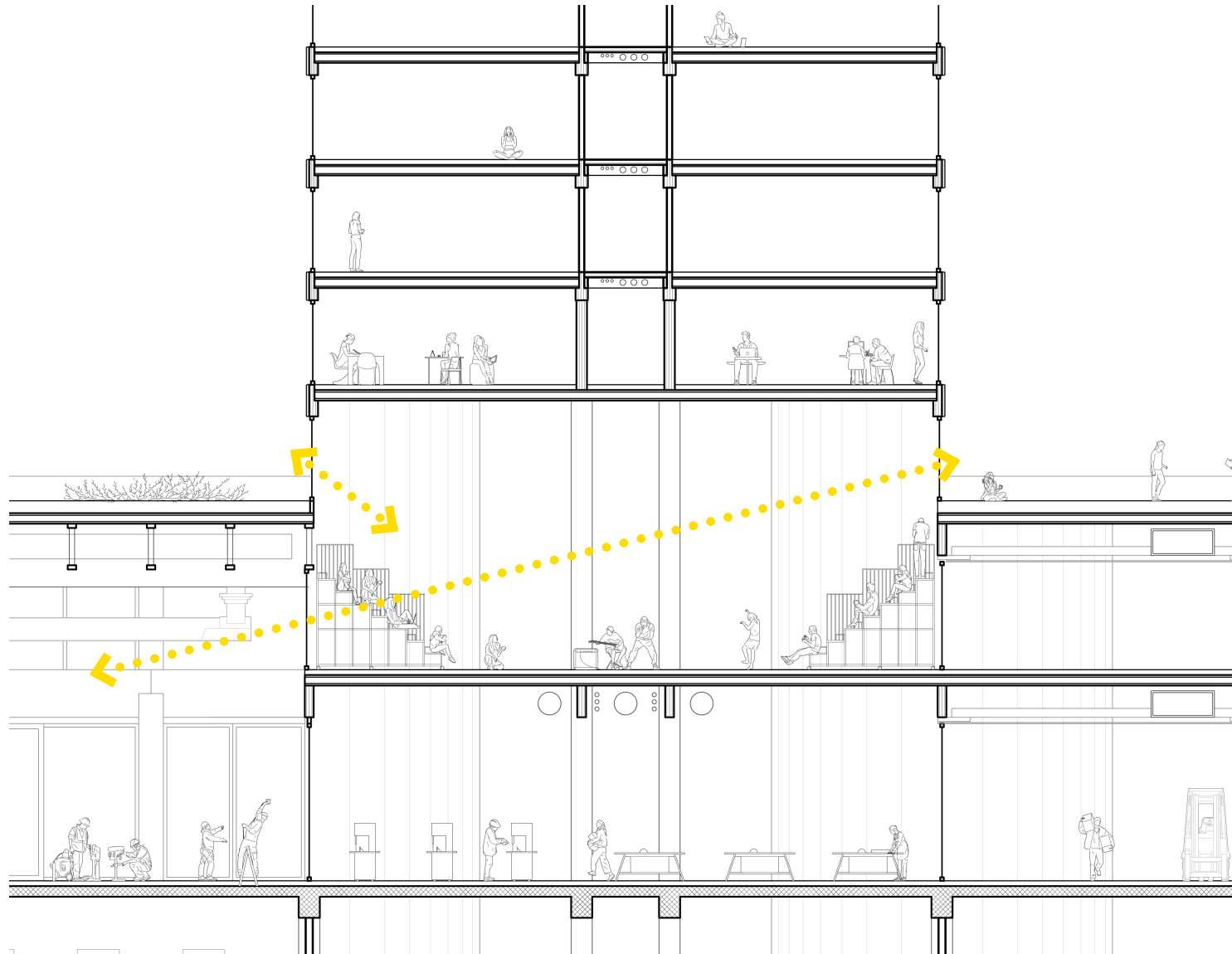
Implementation

# GARDEN FOR THE DWELLING



# Implementation

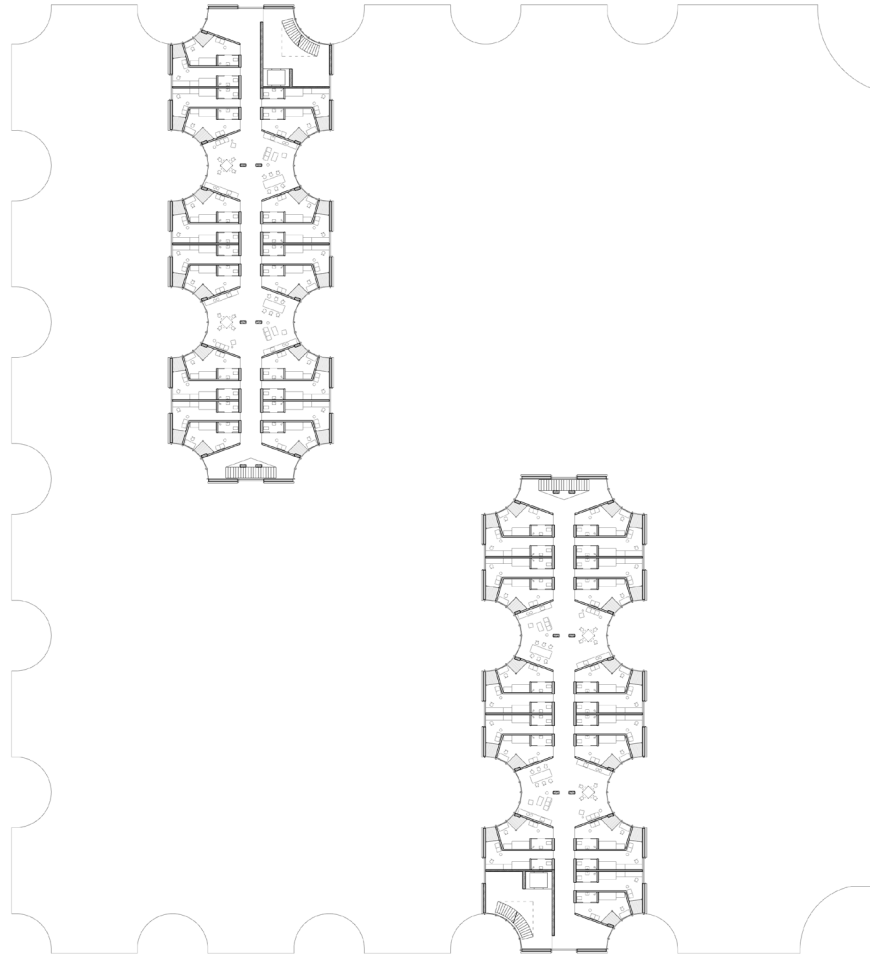
## VISUAL CONNECTION





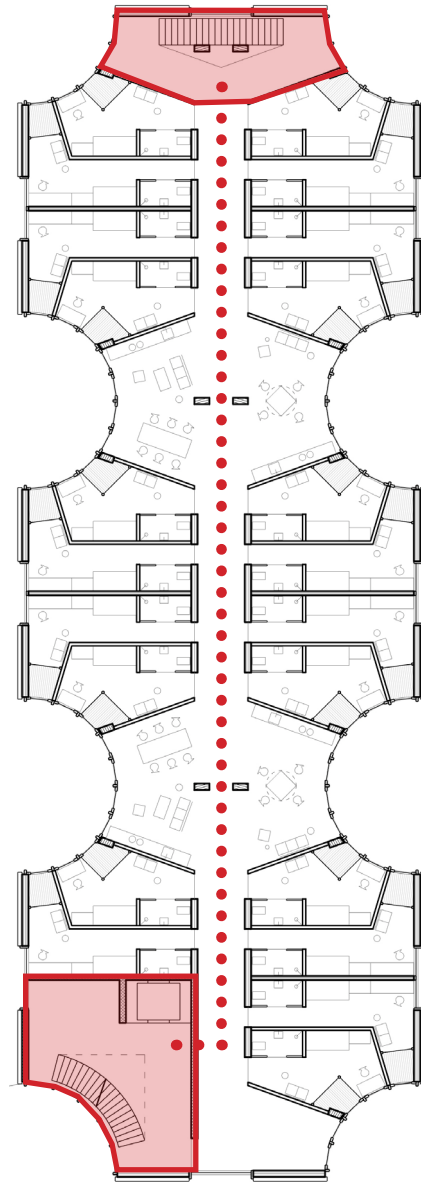
# Implementation

## DWELLING



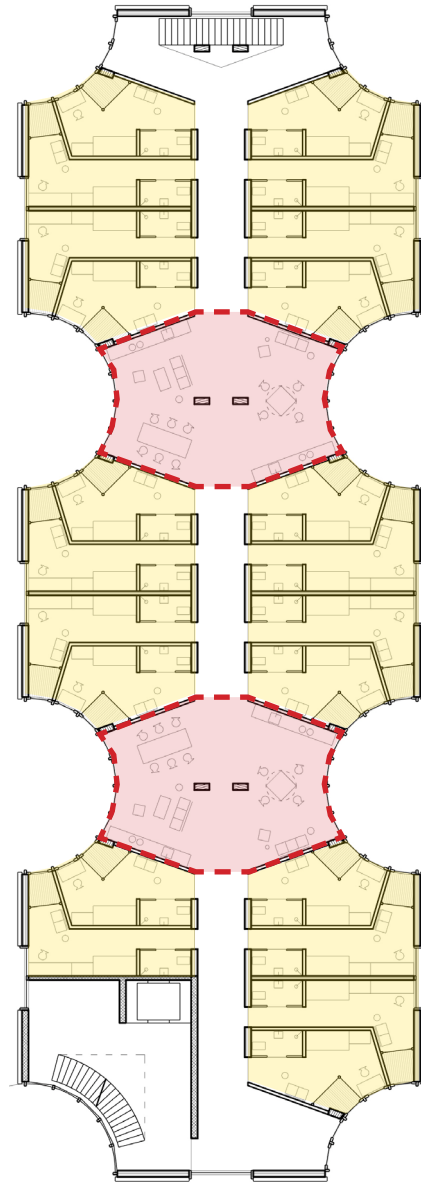
# Implementation

## CIRCULATION



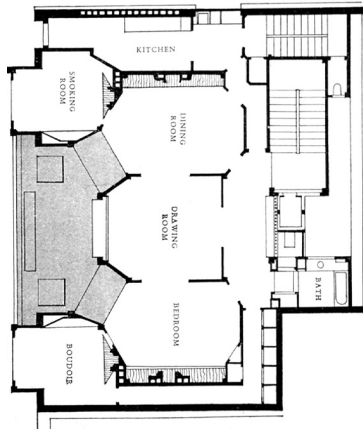
Implementation

# COLLECTIVE LIVING

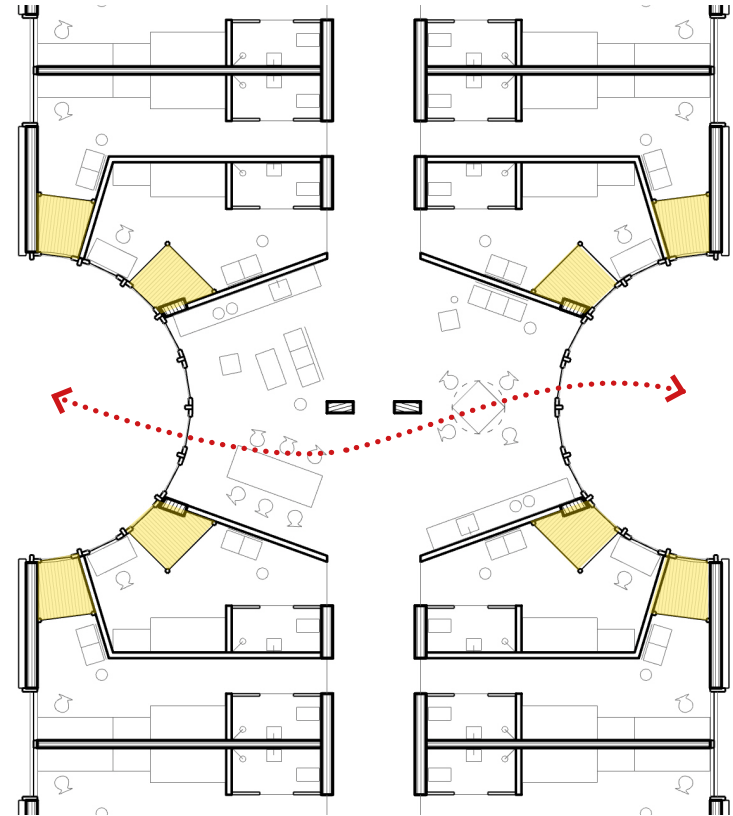




# Implementation LOGGIA

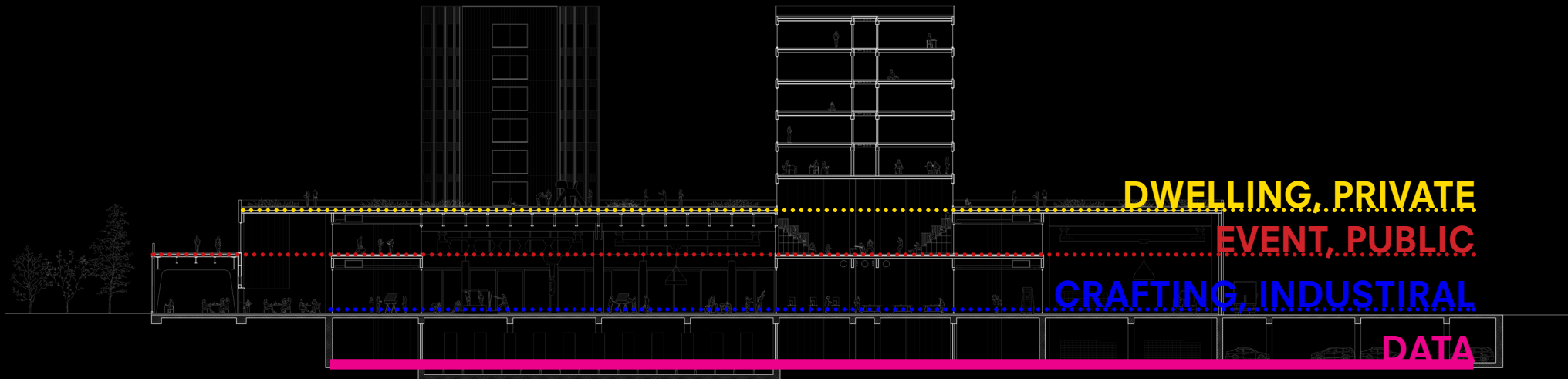


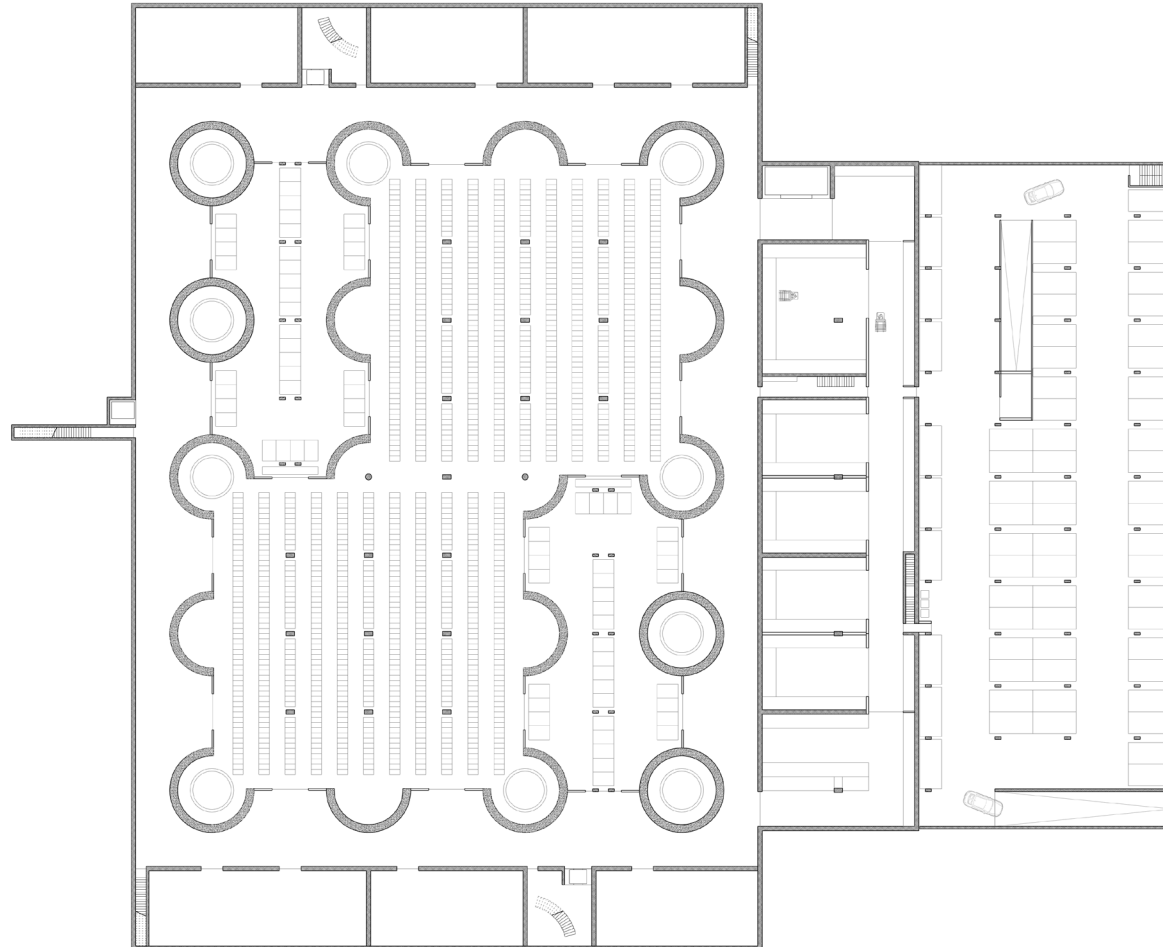
reference: Rue Franklin Apartments, Paris, Auguste Perret



Implementation

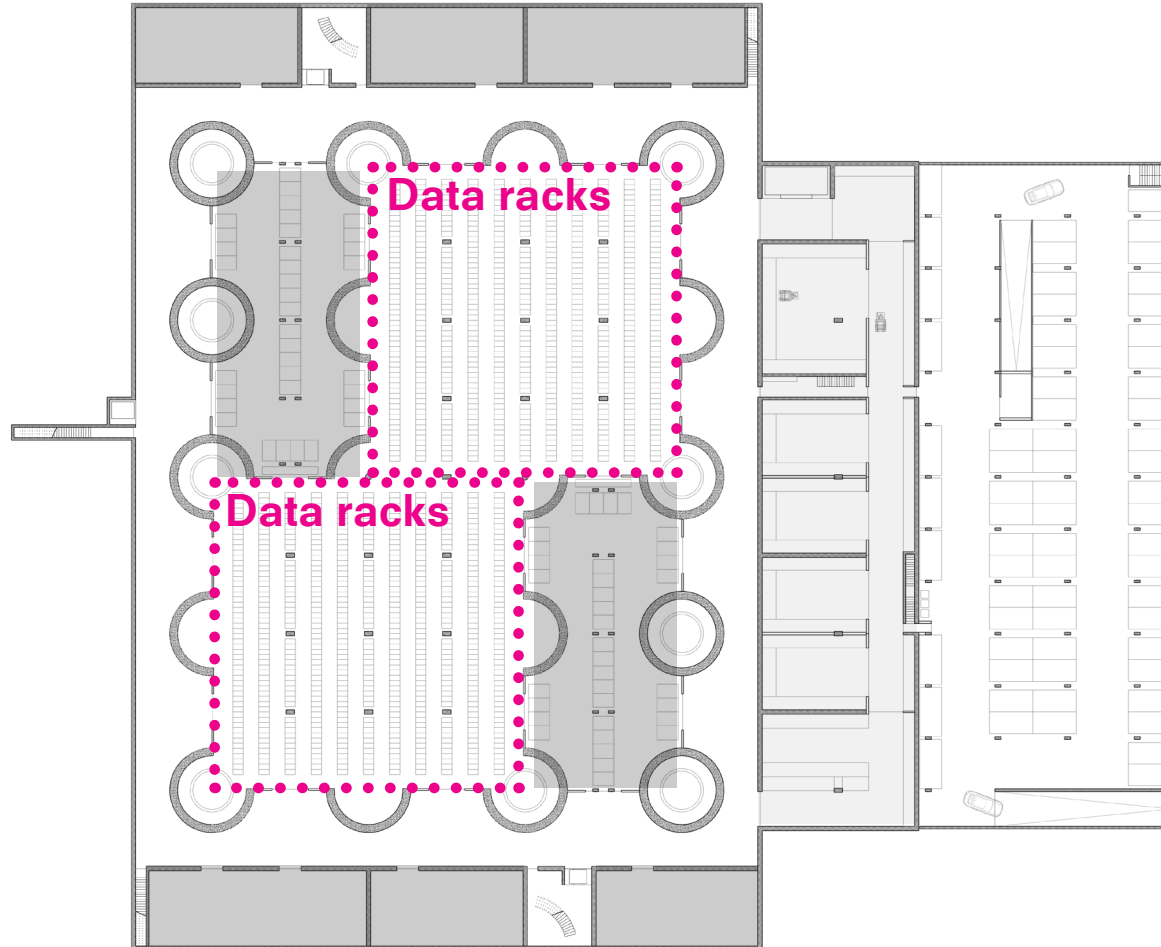
# DATA CENTER UNDERGROUND



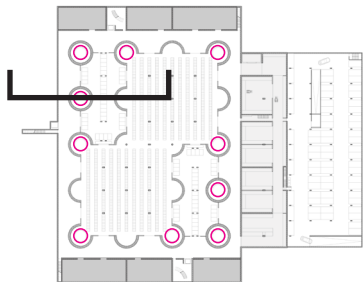
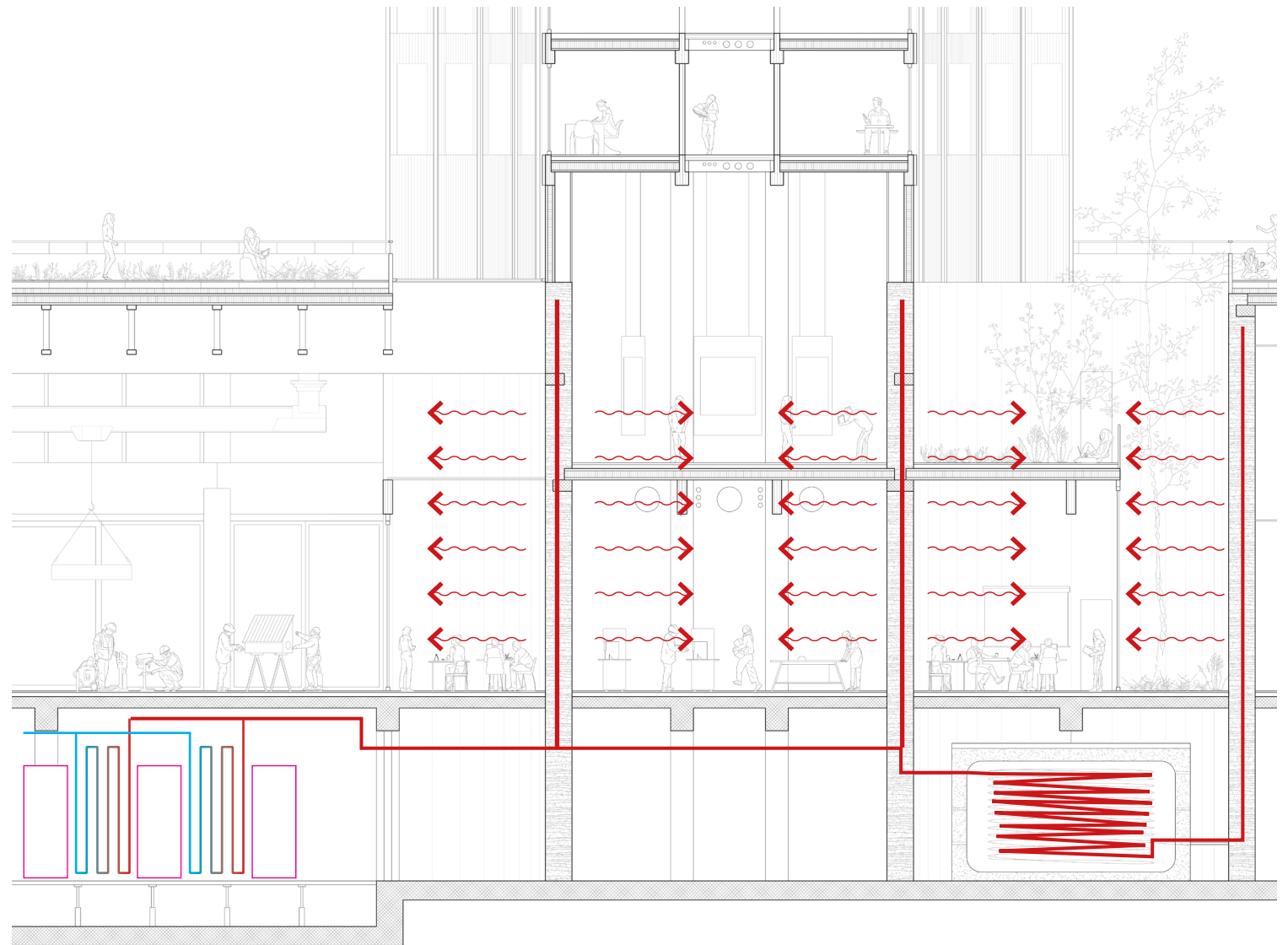




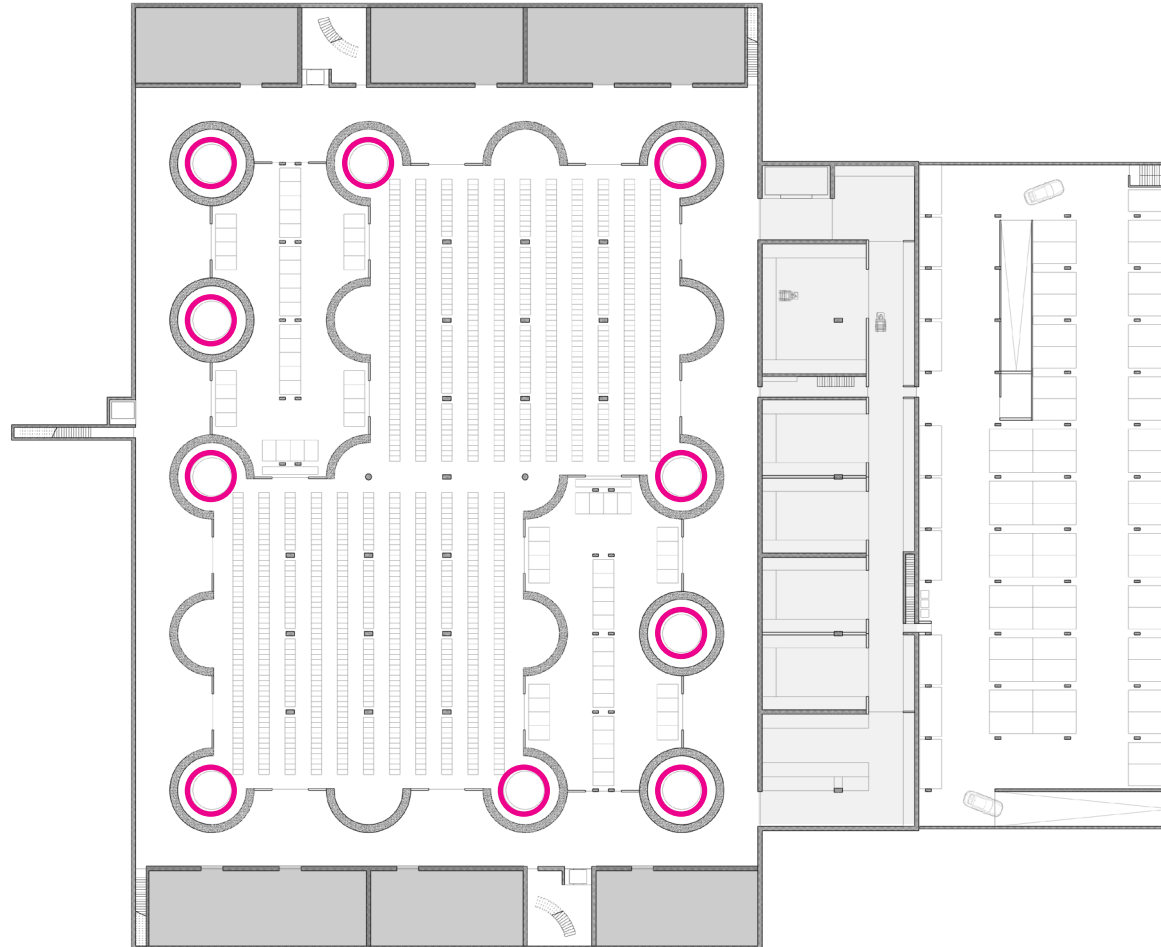
# Implementation PROGRAM



# Implementation PROGRAM



# Implementation PROGRAM





Implementation  
"COOLING TOWER"





# Implementation

## “COOLING TOWER”



INTRODUCTION

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DESIGN BRIEF

CONCEPT

IMPLEMENTATION

**DEVELOPMENT**

/ Materialization

/ Structure

/ Climate



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CONCEPT

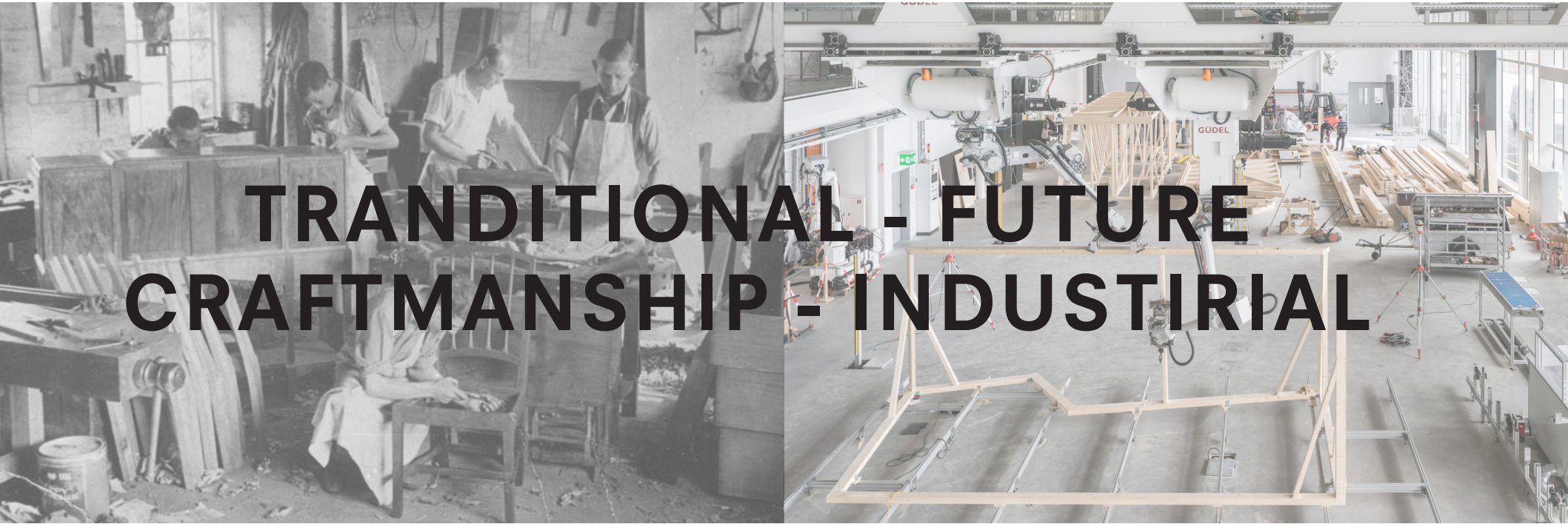
IMPLEMENTATION

**DEVELOPMENT**

/ Materialization

/ Structure

/ Building system



**TRADITIONAL - FUTURE**  
**CRAFTSMANSHIP - INDUSTRIAL**

Development

# TO RESONATE WITH THE VIADUCT





Development

# TO RESONATE WITH THE VIADUCT



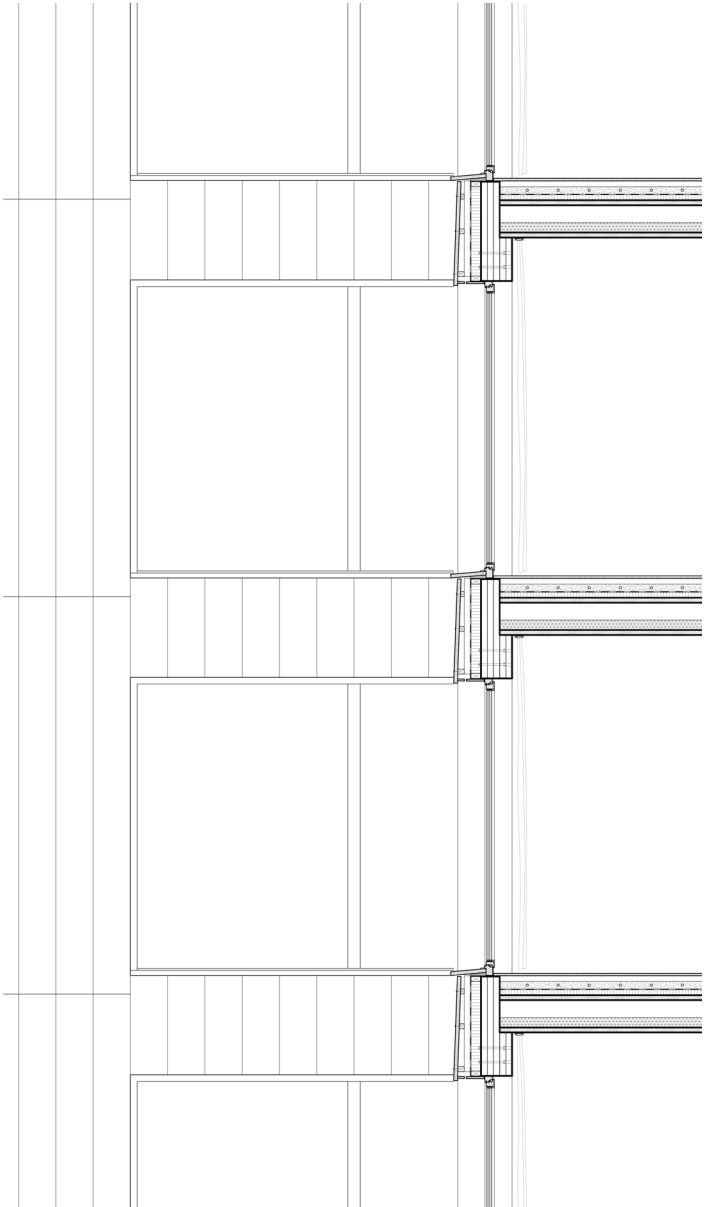
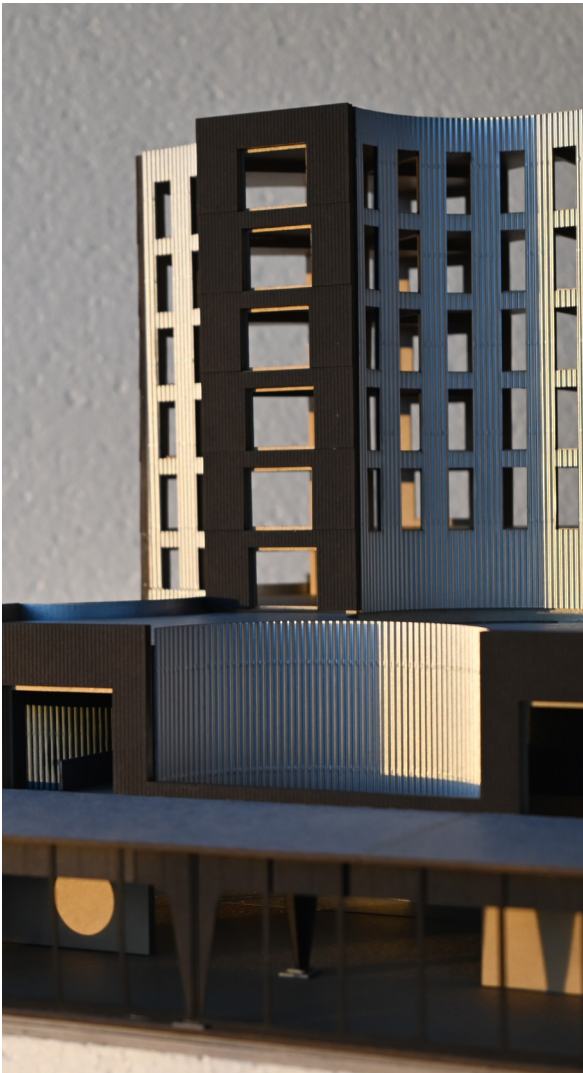
Development

# HARD OUTSIDE, SOFT INSIDE



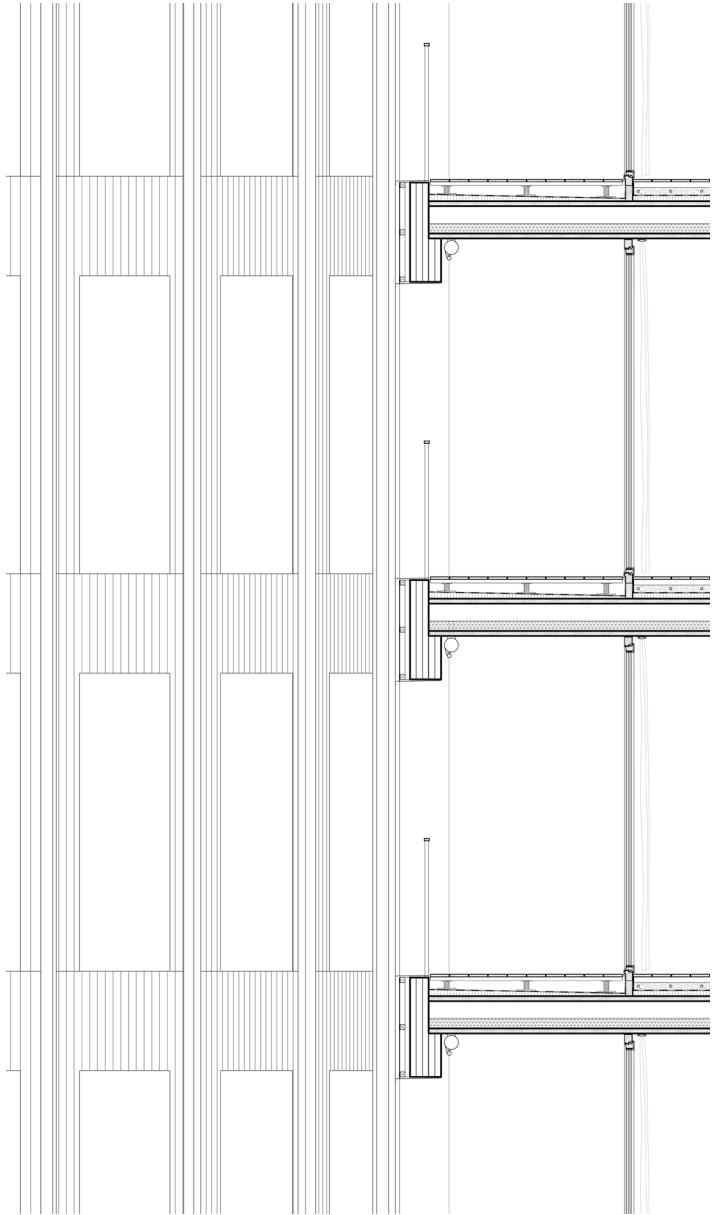
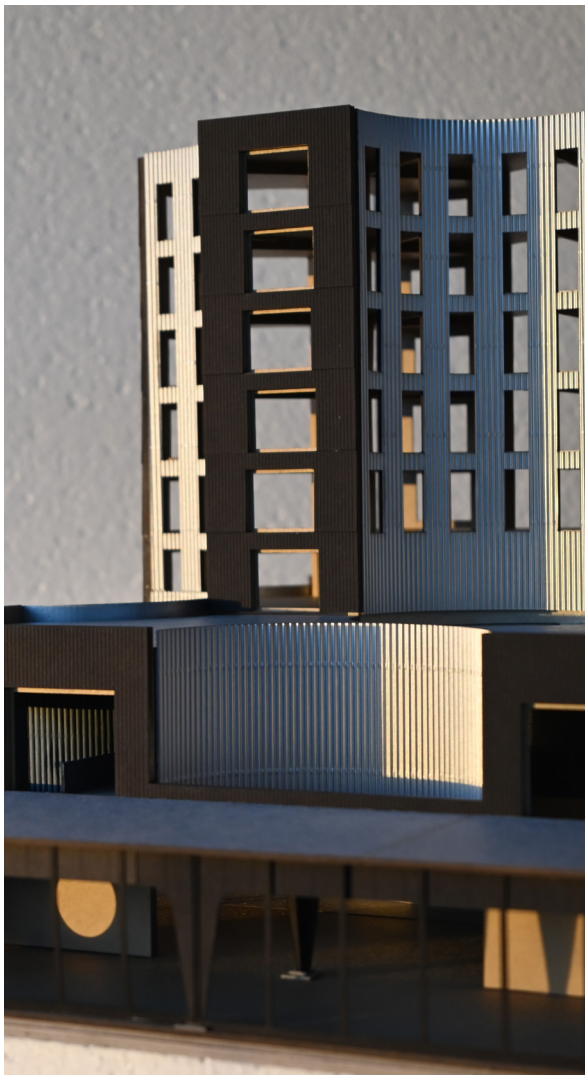


Development  
**WOOD**





Development  
**METAL**



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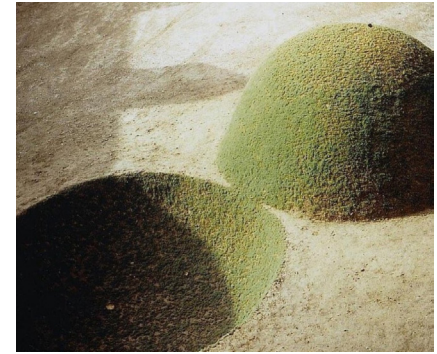
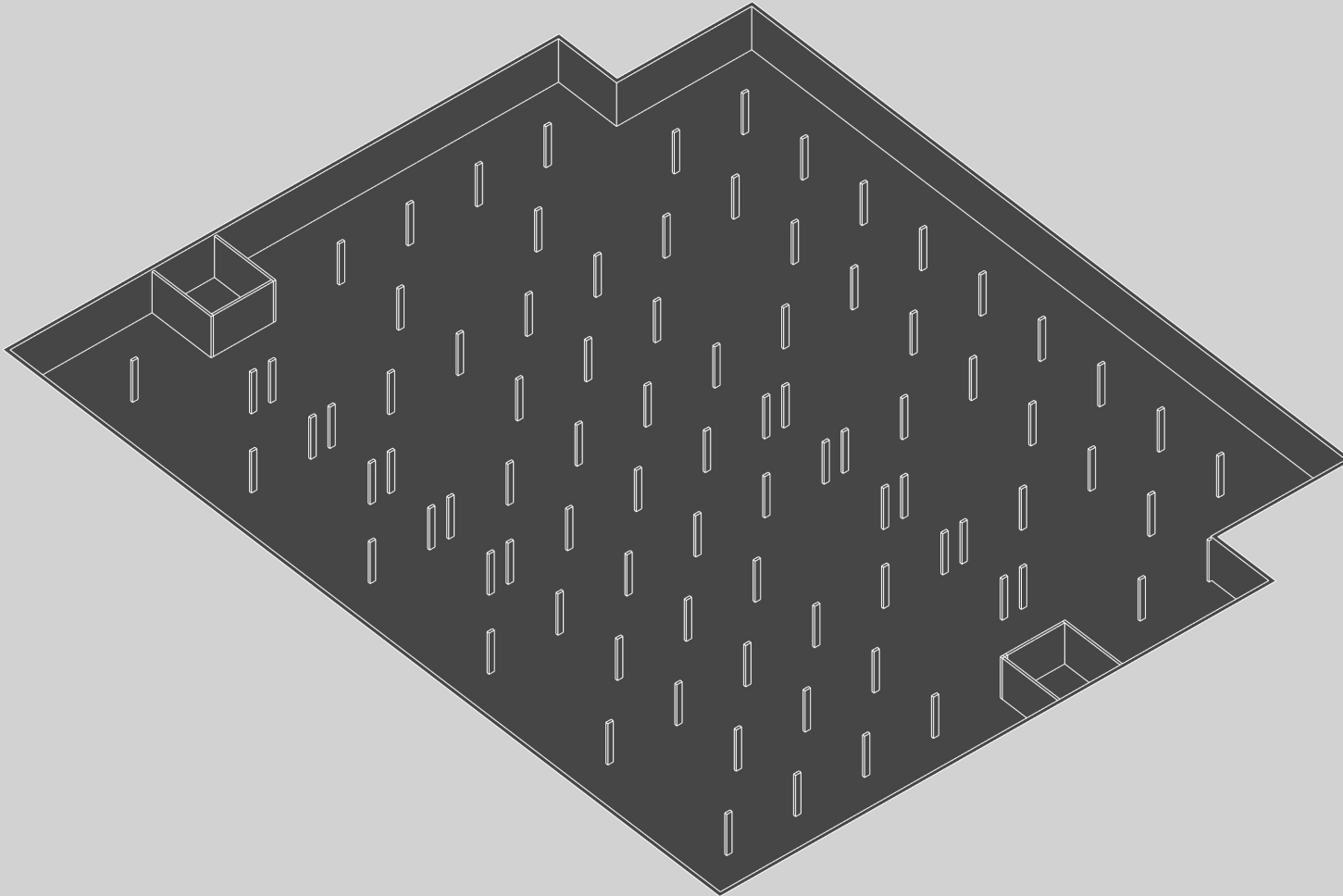
**DEVELOPMENT**

/ Materialization

/ Structure

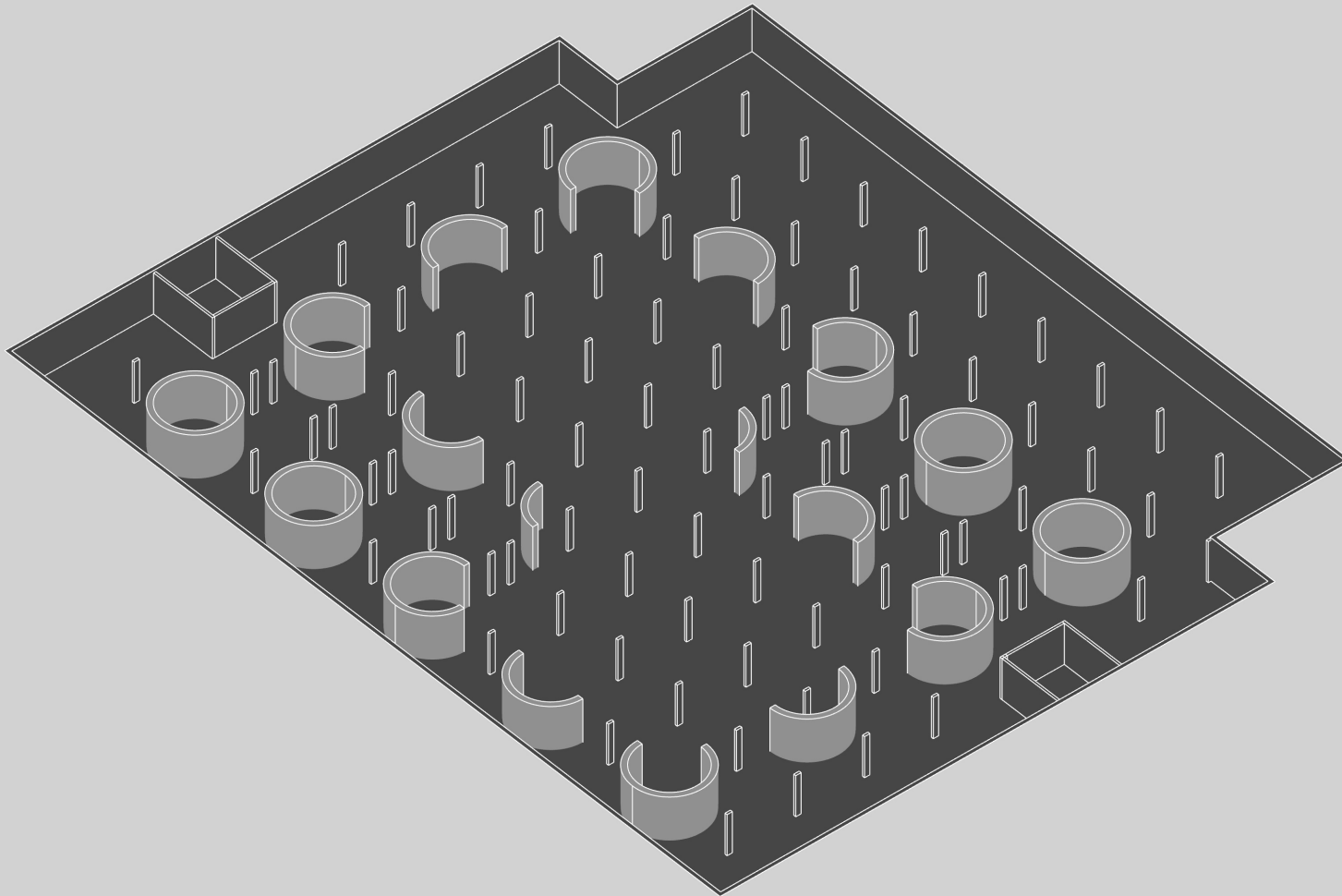
/ Building system

# Development **EXCAVATION**

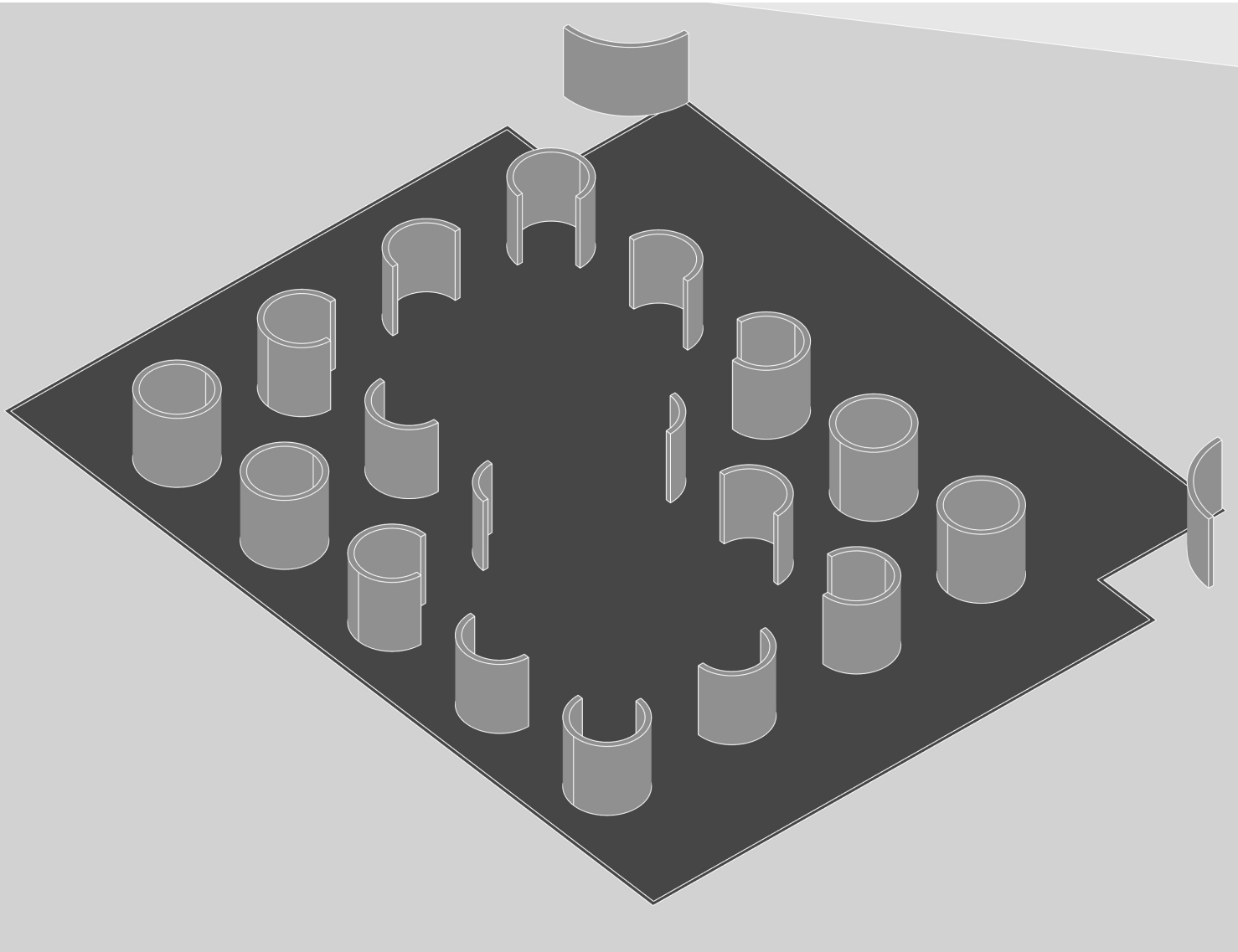




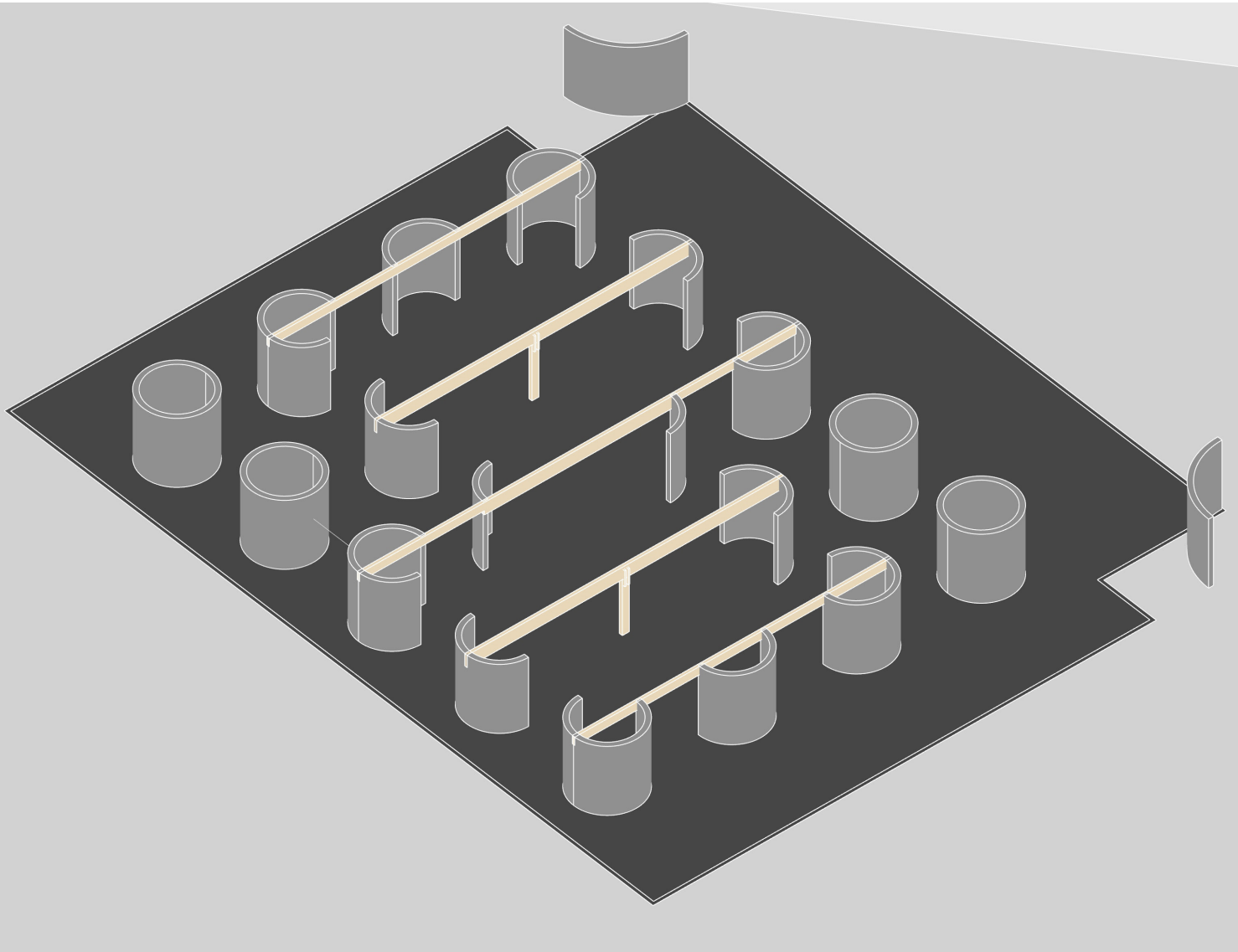
Development  
**RAMMED EARTH**



Development  
**RAMMED EARTH**



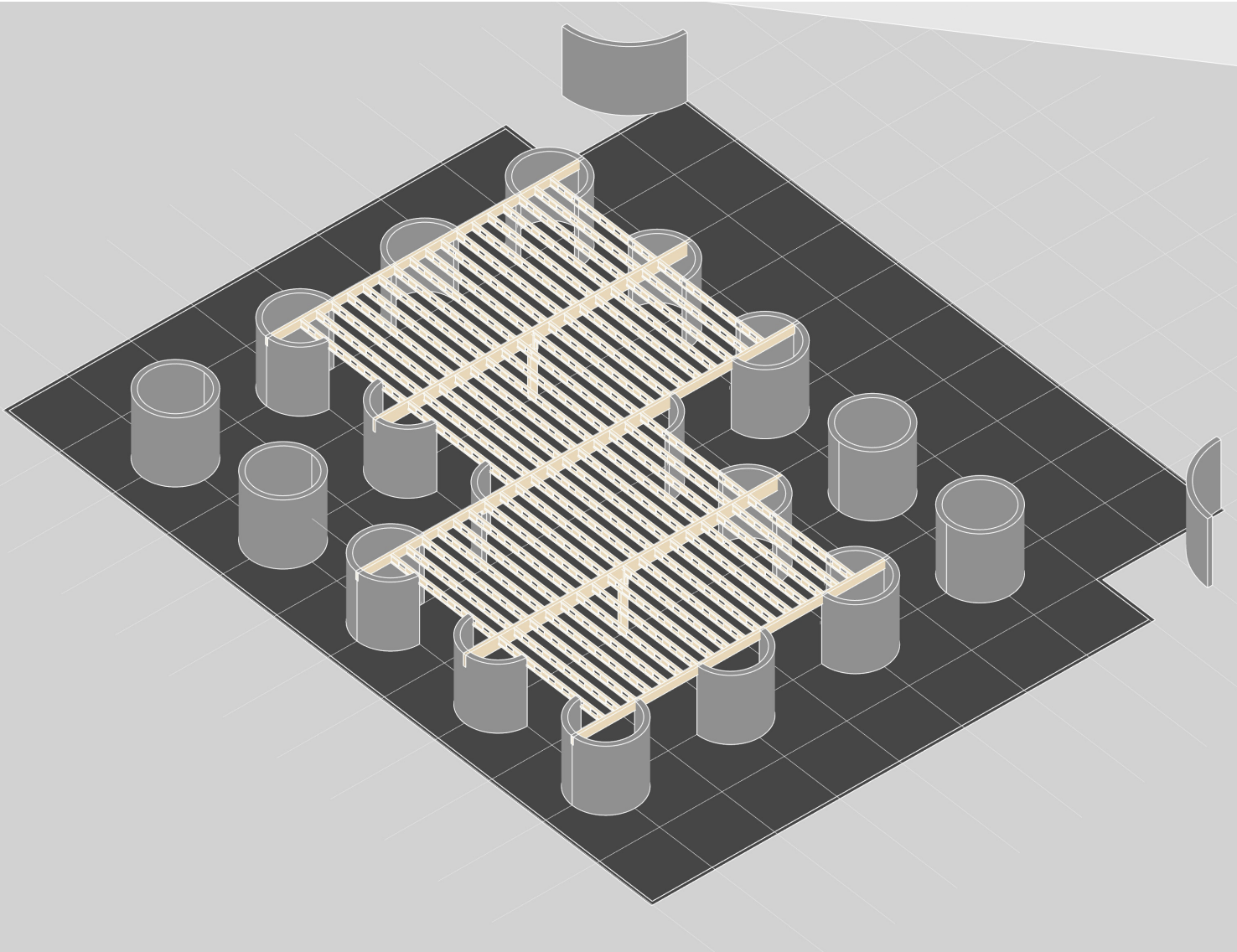
Development  
**MAIN BEAMS**





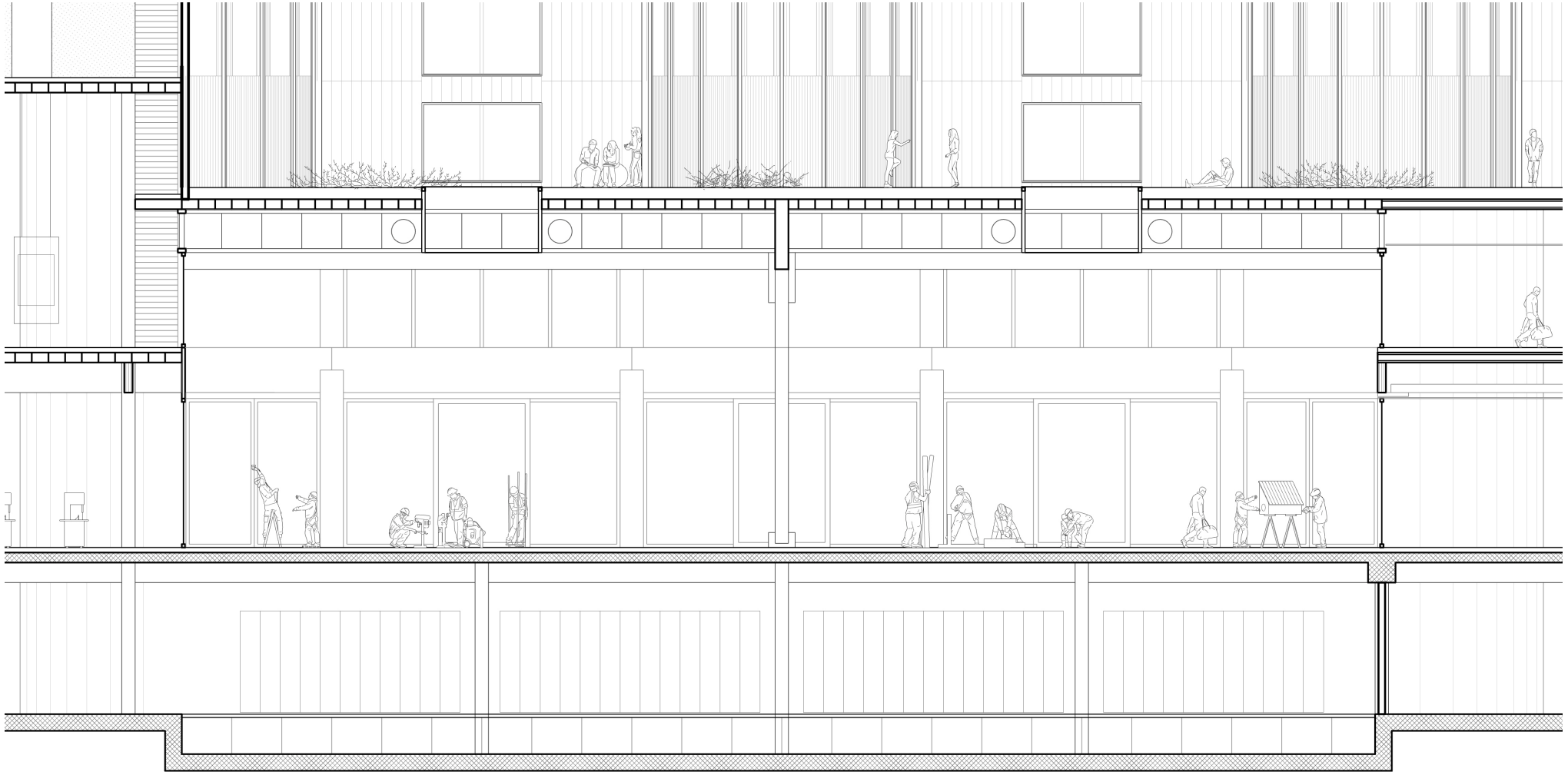
Development

# SECONDARY BEAMS



Development

# STRUCTURE OF WORKSHOP





Development

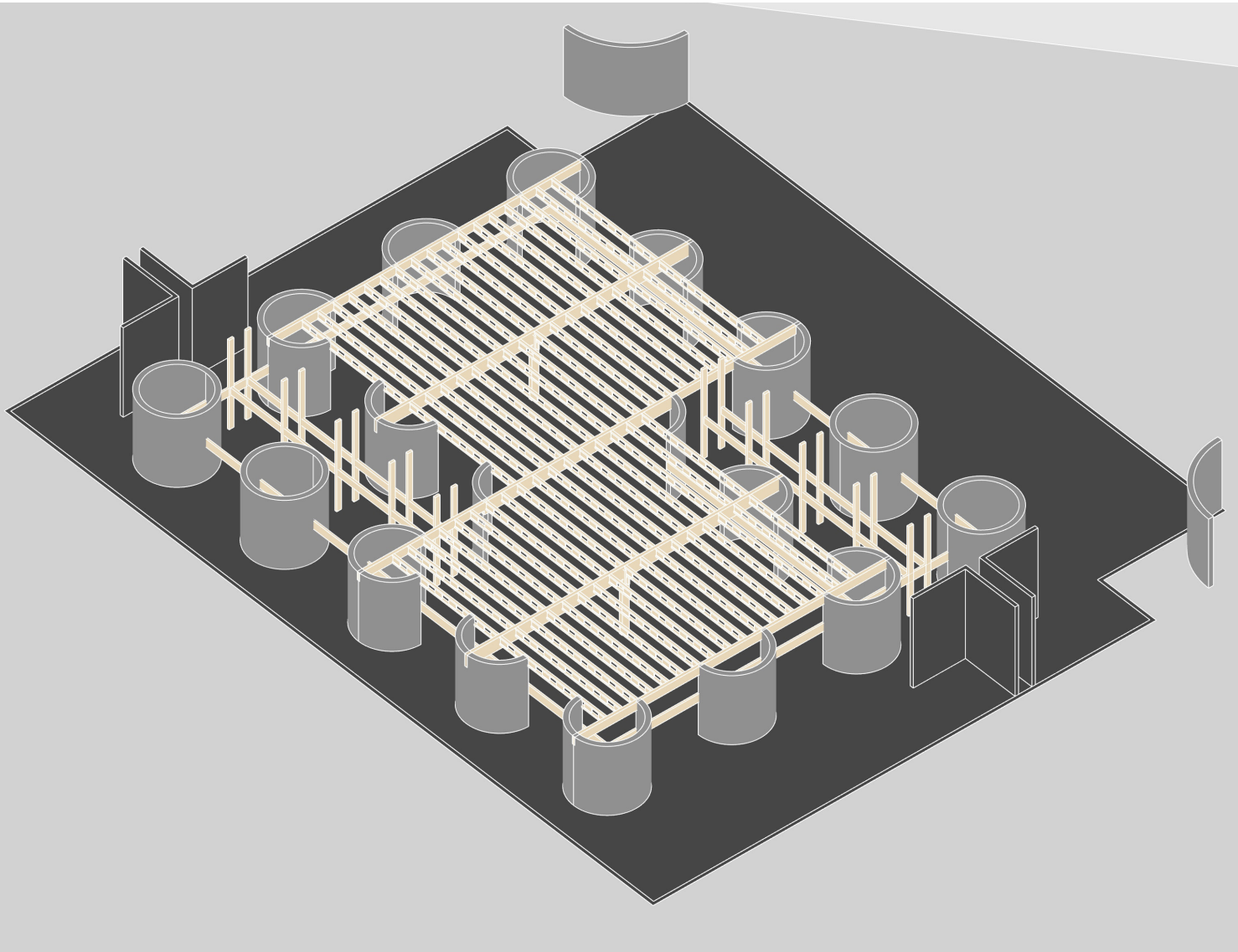
# STRUCTURE OF WORKSHOP





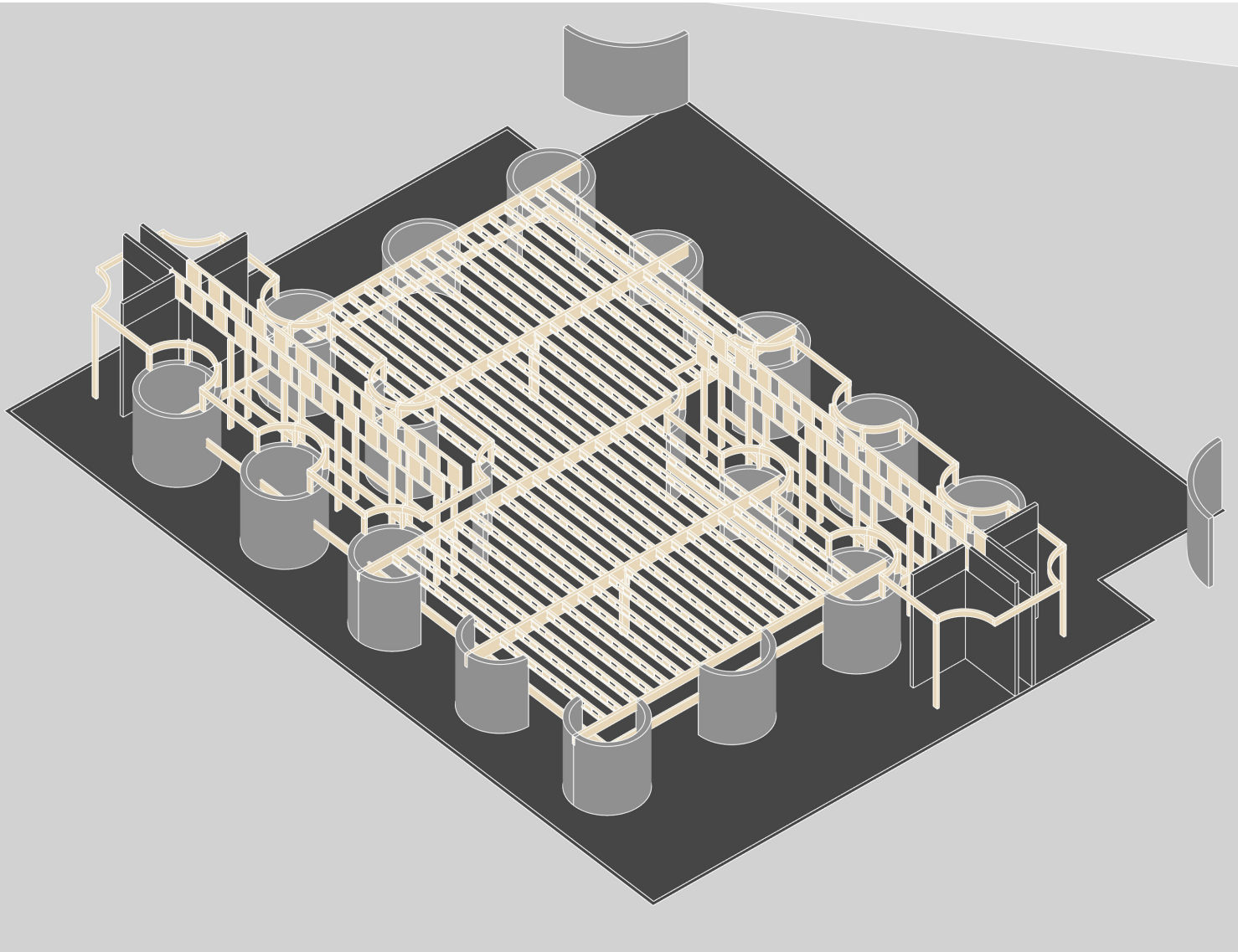
Development

# STRUCTURE OF DWELLINGS



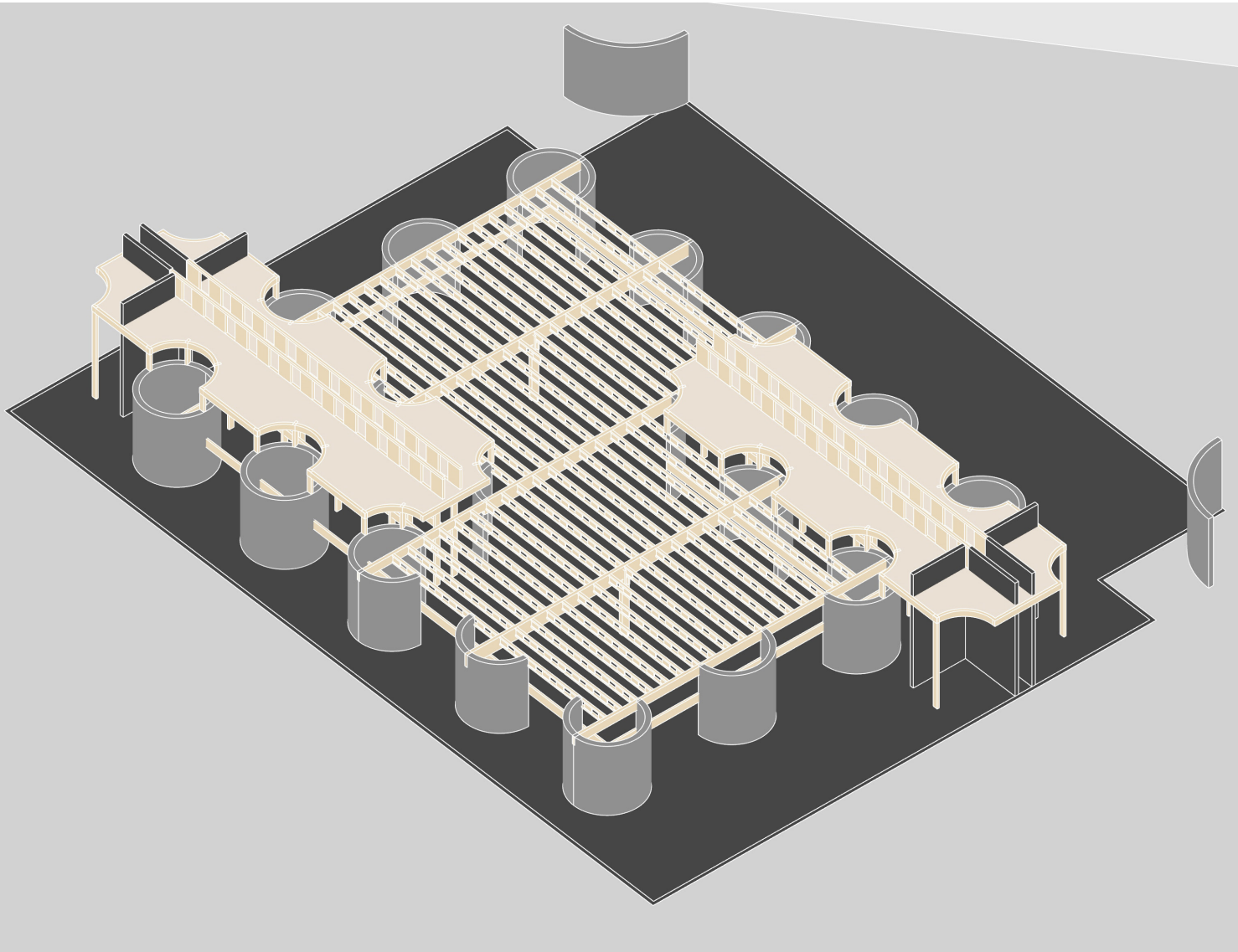
Development

# STRUCTURE OF DWELLINGS



Development

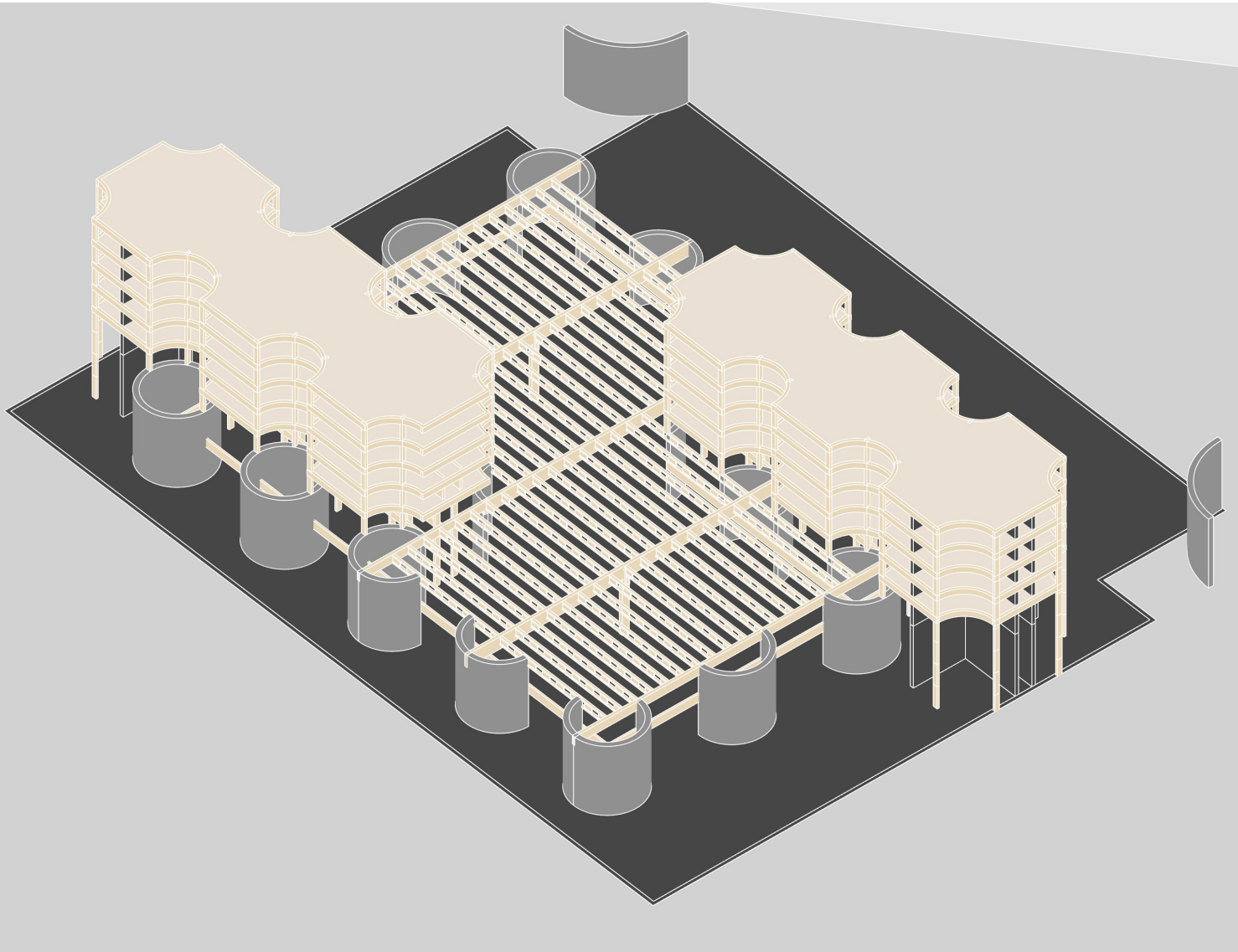
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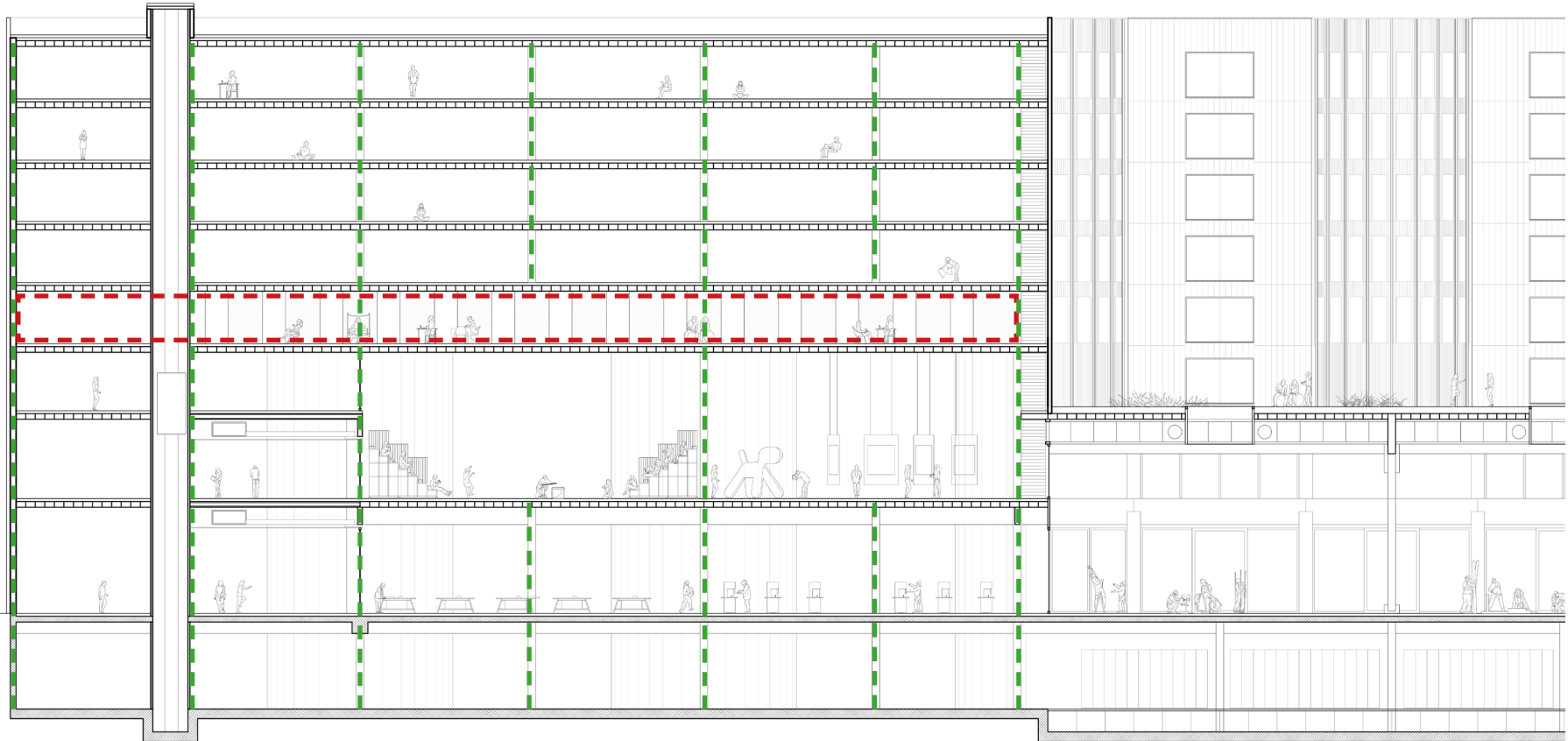
Development

# STRUCTURE OF DWELLINGS



Development

# STRUCTURE OF DWELLINGS



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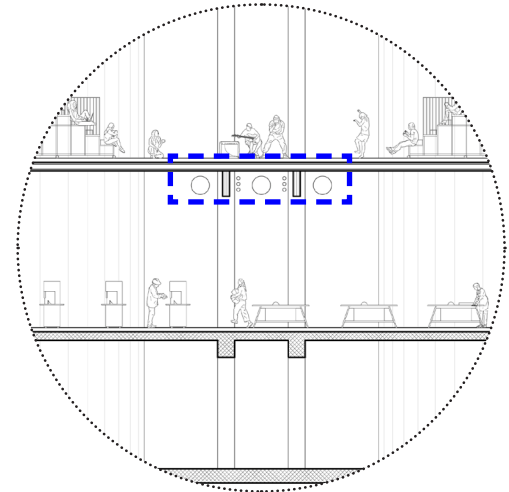
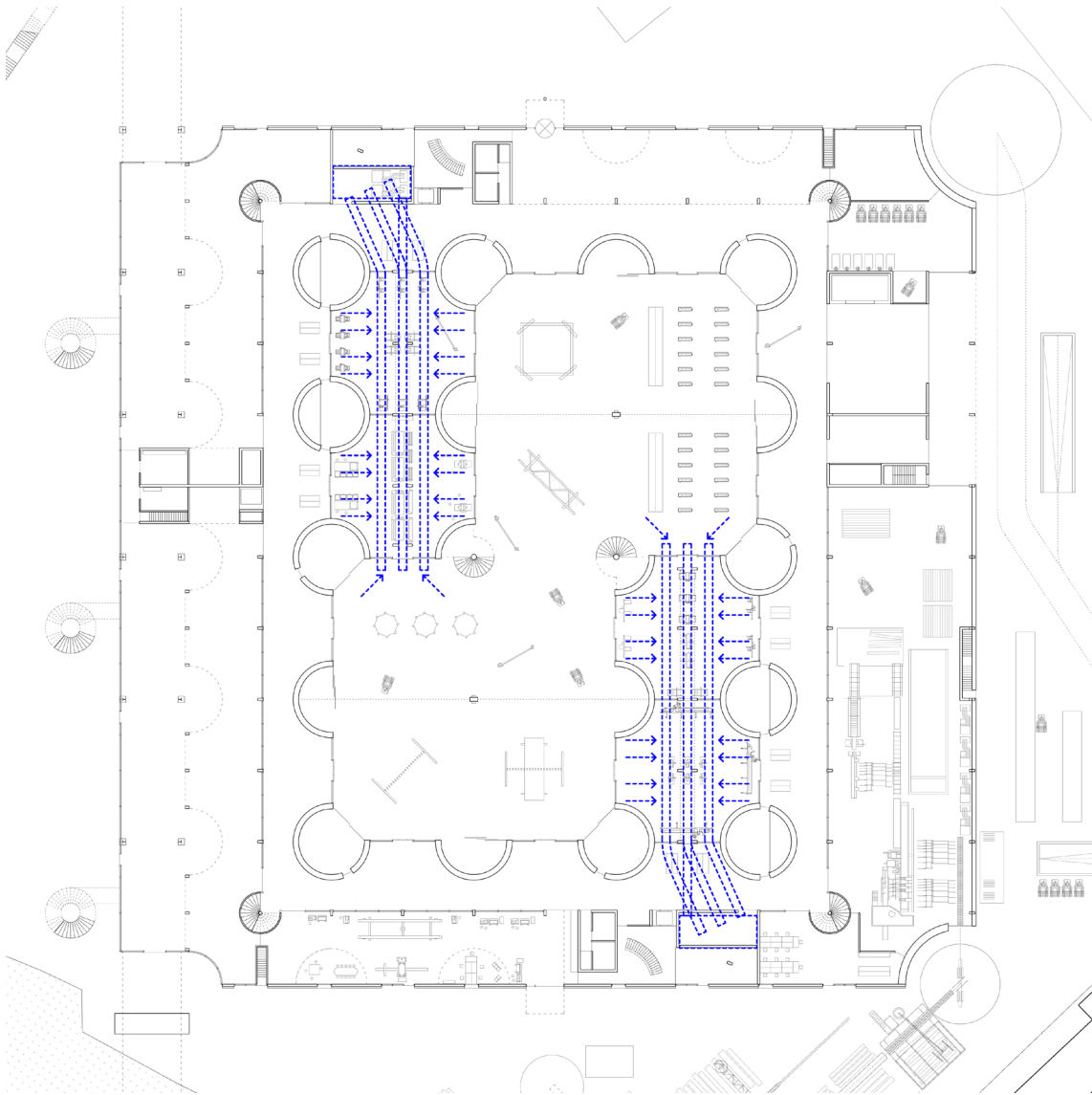
/ Building system



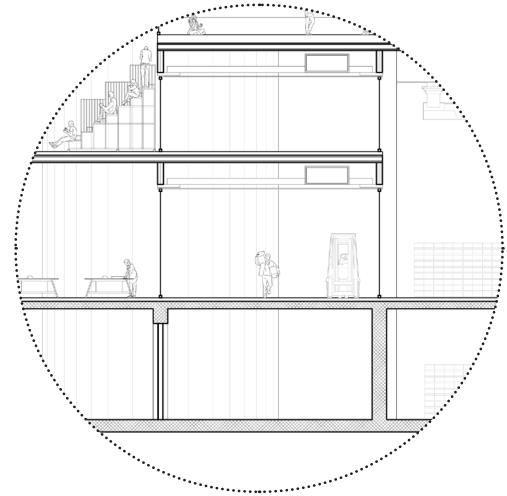
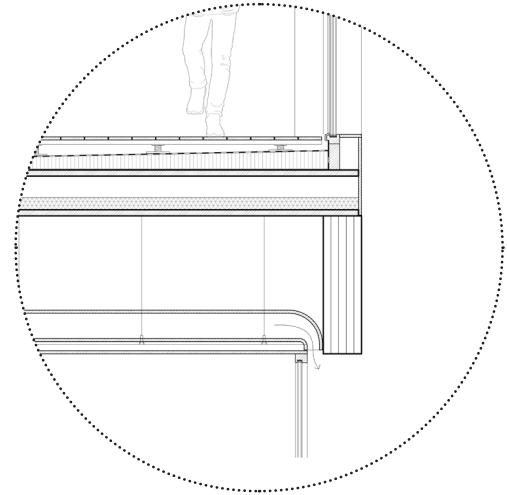
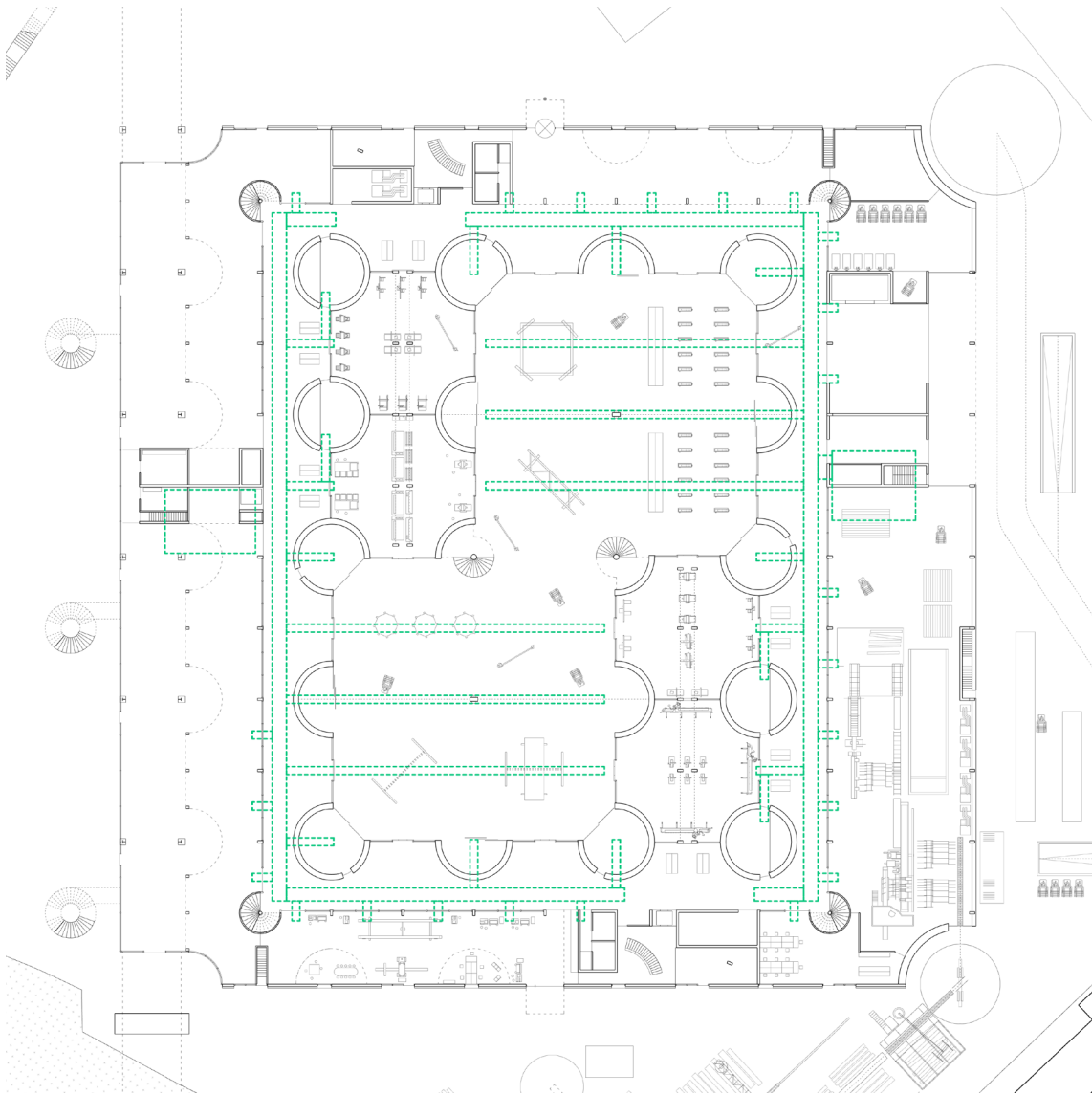
Development  
**DUST SUCTION**



# Development **DUST SUCTION**

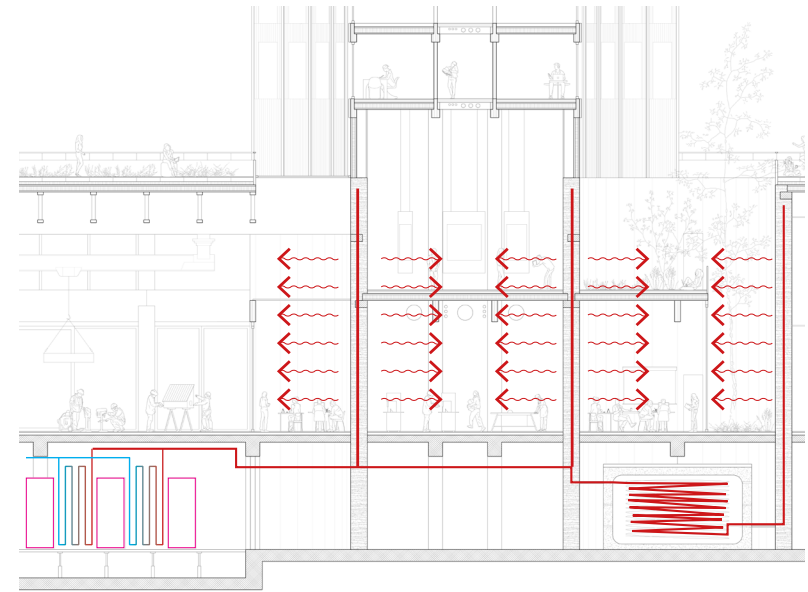
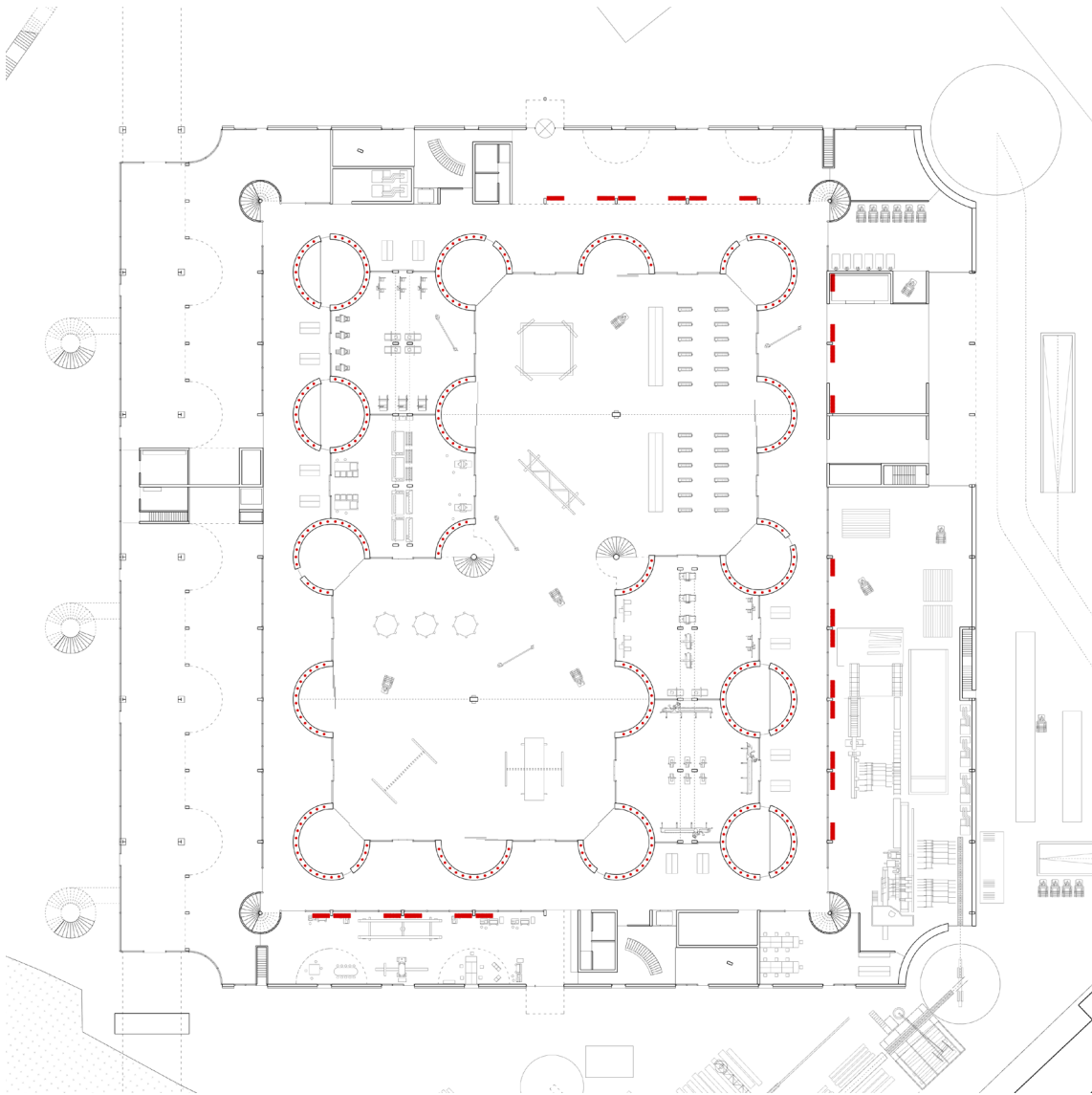


# Development VENTILATION





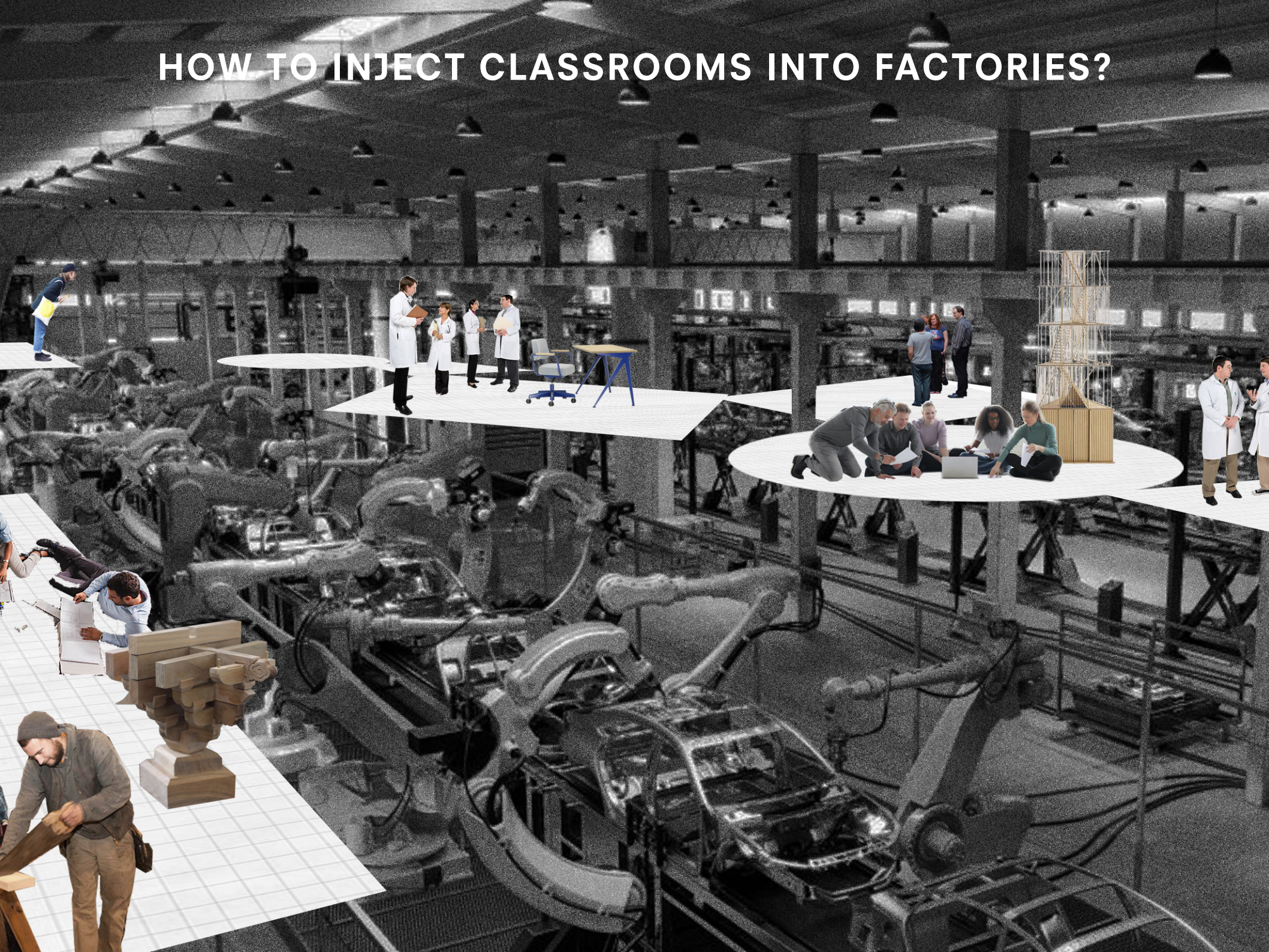
# Development HEATING



**CONCLUSION**

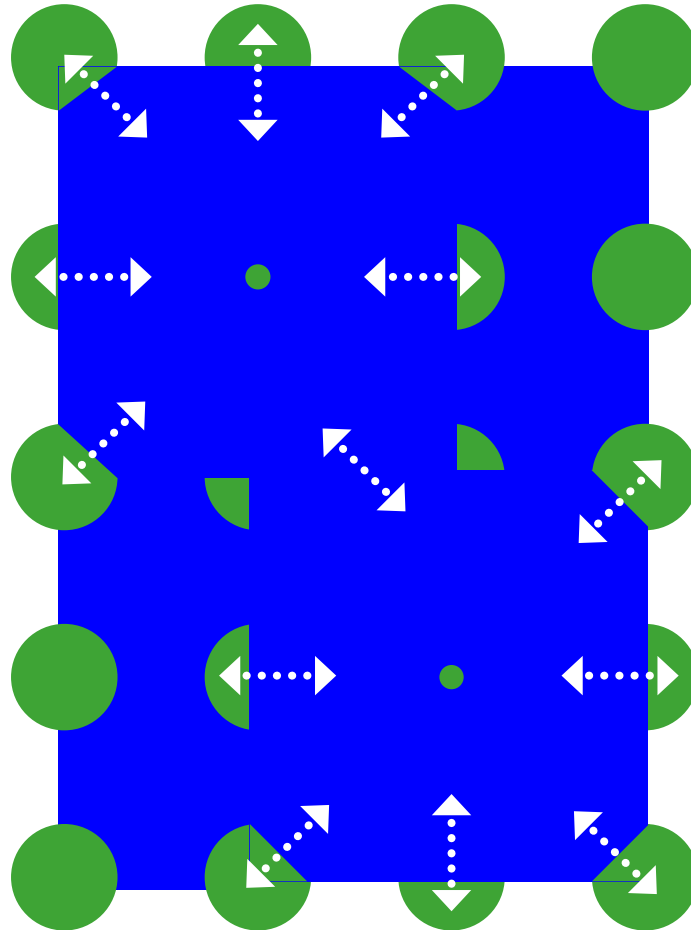


# HOW TO INJECT CLASSROOMS INTO FACTORIES?





Conclusion  
**CONCEPT**



**Workshop inbetween classrooms**



# Conclusion





THANK YOU