TU Delft Graduation Studio

Design for Health and Care

# MADE TO MOVE

Research by Bo Kuiper

P5 2025

# HOW MANY HOURS DO YOU SPENT SITTING PER DAY?


AVERAGE: 9 HOURS PER DAY

Stand van Nederland

## 21.000 doden per jaar door te veel zitten, experts luiden noodklok: ‘Het is een pandemie’

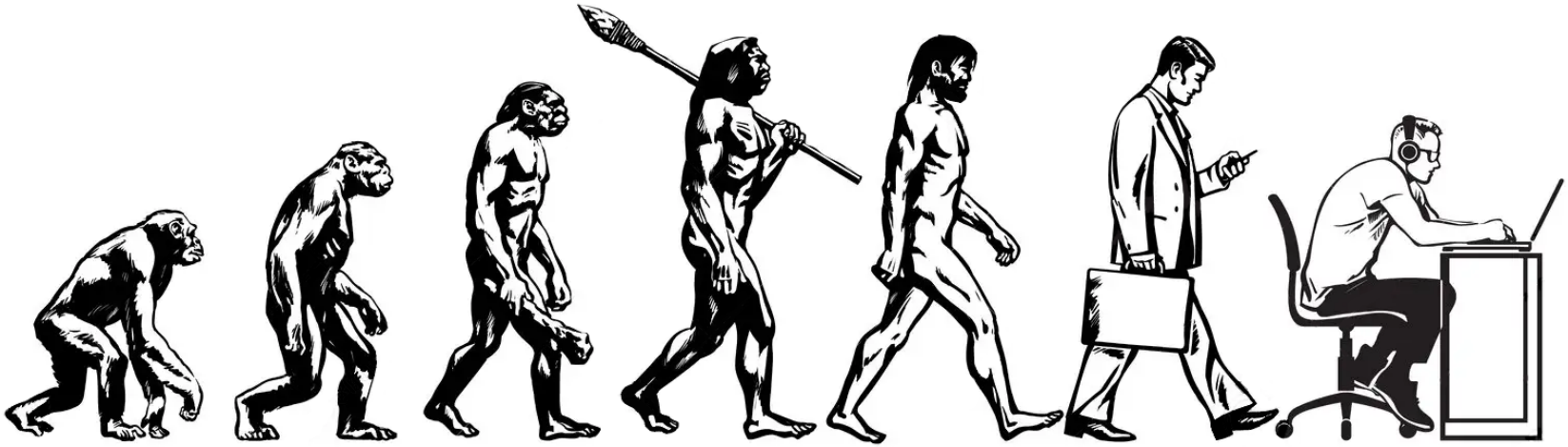
Peter Visser • 15 maart 2024 09:55


Van der Zande, 2018


€1,2 BILLION
HEALTHCARE COSTS
PER YEAR

WHY?


BAD PLANNING
MEANS
LONG JOURNEYS
THICKNESS OF THE COLOURED LINES IS
PROPORTIONATE TO NUMBER OF JOURNEYS
PLANNING
SAVES
FATIGUE
THESE TWO KITCHENS
ARE THE SAME SIZE
C COOKER
D DRESSER
S SINK
S STORE
T TABLE



Stand van Nederland

## 21.000 doden per jaar door te veel zitten, experts luiden noodklok: ‘Het is een pandemie’

Peter Visser • 15 maart 2024 09:55

# HOW CAN ARCHITECTURE IMPROVE PHYSICAL AND MENTAL WELL-BEING?

“We cannot change people’s minds, we can only change their environment.”

Dan Buettner, Blue Zones Researcher

RAAAF, 2014

THE END OF SITTING

# PEOPLE ARE NOT WILLING TO SACRIFICE COMFORT

# COMPANIES PRIORITIZE PRODUCTIVITY

“Simply standing more often does not provide substantial health benefits if overall daily movement remains minimal.”

Ahmadi et al., 2024; Pulsford, 2015

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“Standing too much increases the risk of postural blood flow issues.”

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Ahmadi et al., 2024; Pulsford, 2015

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“Standing too much increases the risk of postural blood flow issues.”

INCREASED HEART RATE

“The researchers emphasize that **regular physical activity is far more critical to improve health.**”

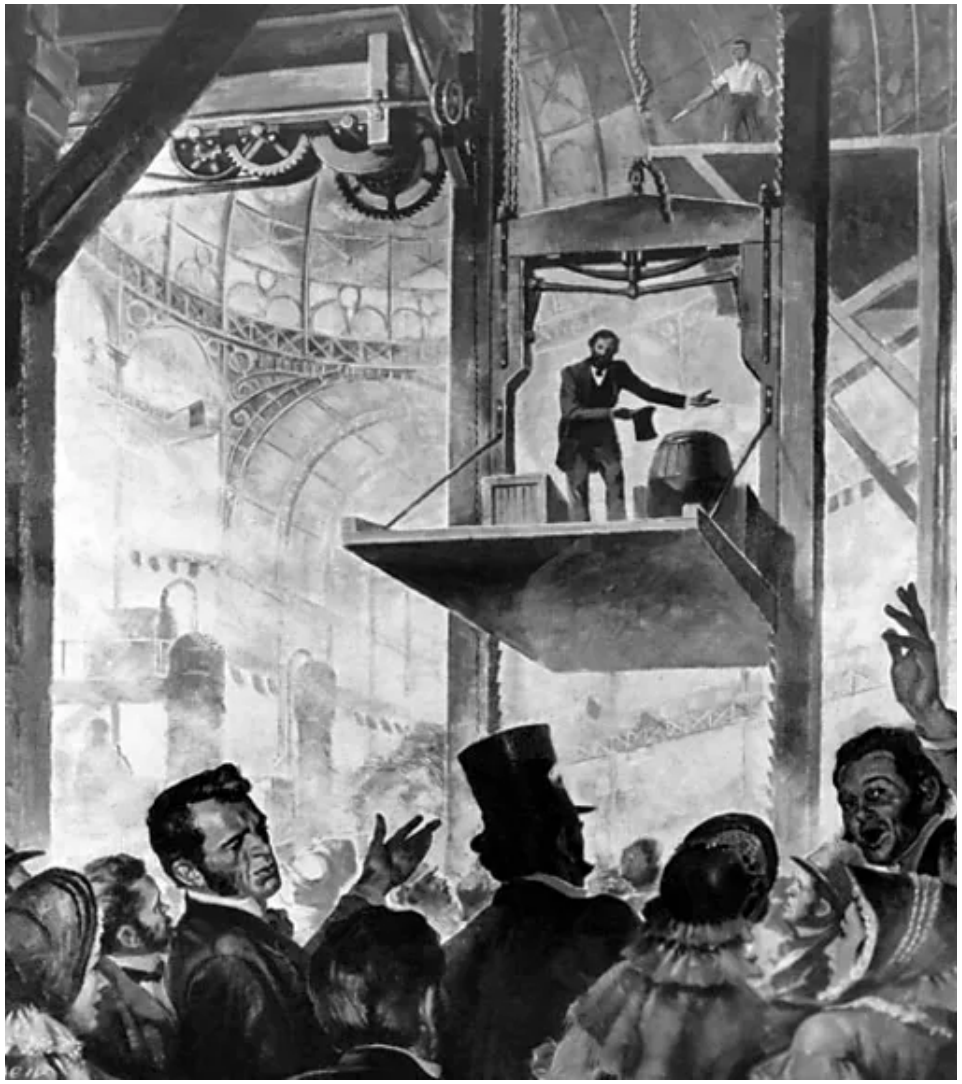
Ahmadi et al., 2024; Pulsford, 2015

To improve health, an environment should stimulate both standing and sitting, frequent short walks and **regular physical activity.**

Ahmadi et al., 2024; Pulsford, 2015

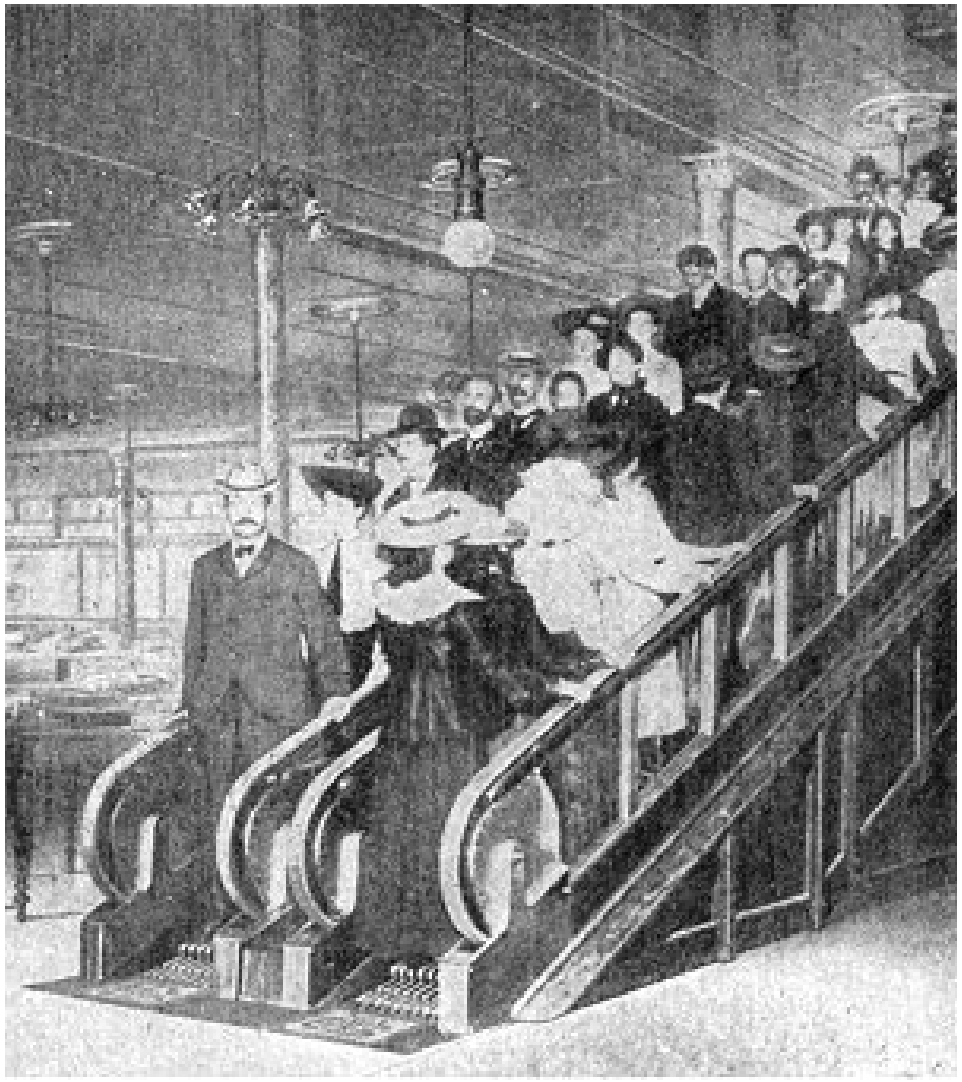
# WHAT IF THE DESIGN OF AN OFFICE COULD STIMULATE SPORTS PARTICIPATION?

# HOW CAN THIS BE DONE IN A WAY THAT BENEFITS BOTH THE EMPLOYEE AND THE COMPANY?

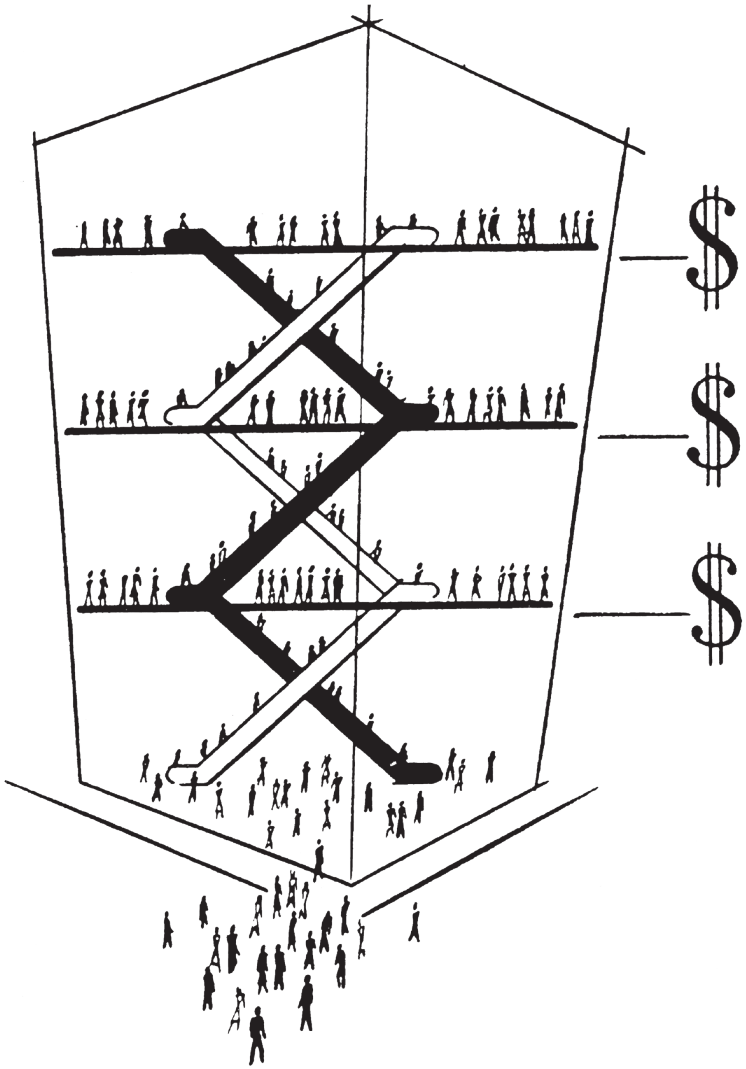


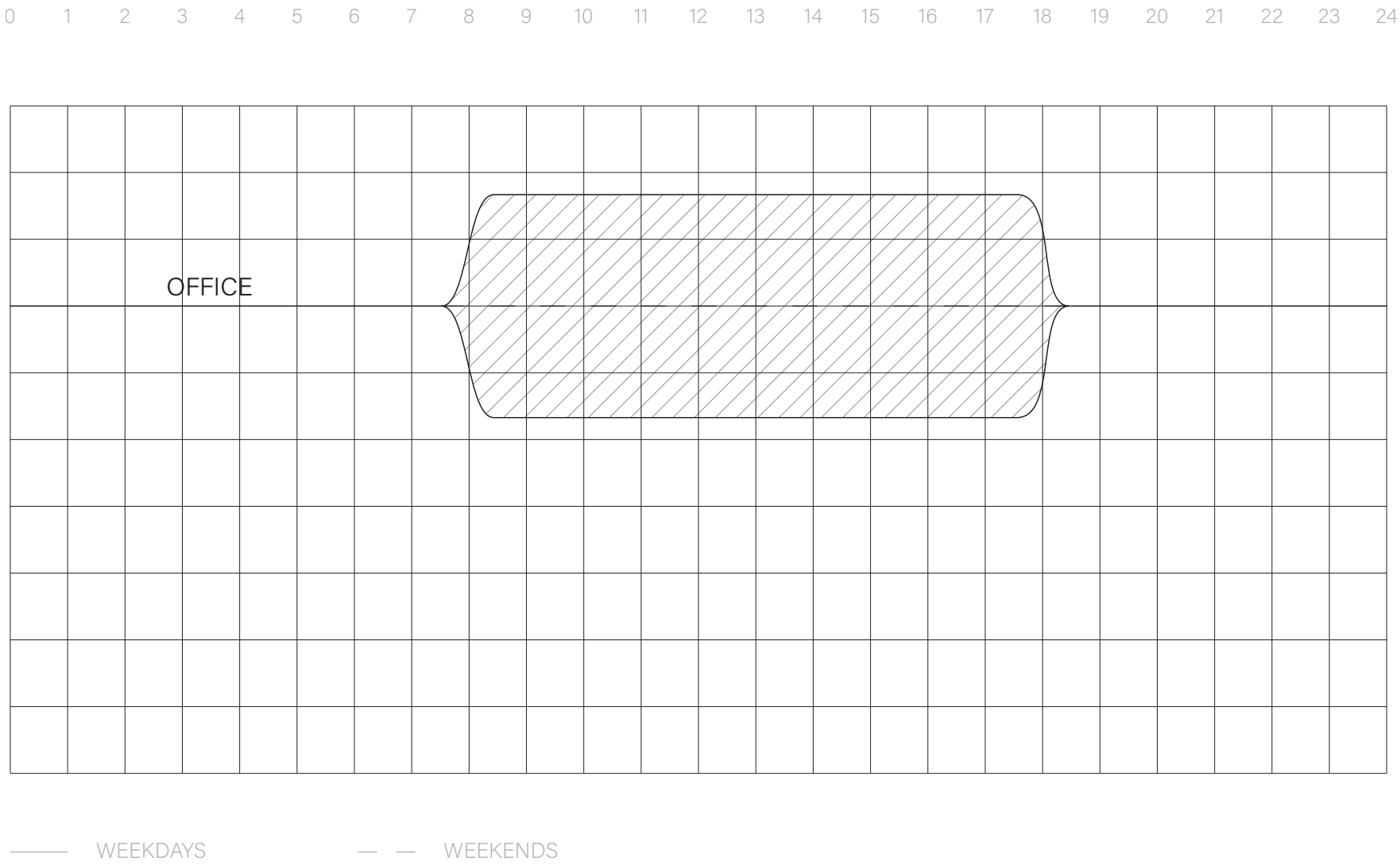


INVENTION OF ELEVATORS BY ELISHA OTIS IN 1854



INVENTION OF ESCALATORS BY GEORGE WHEELER IN 1900

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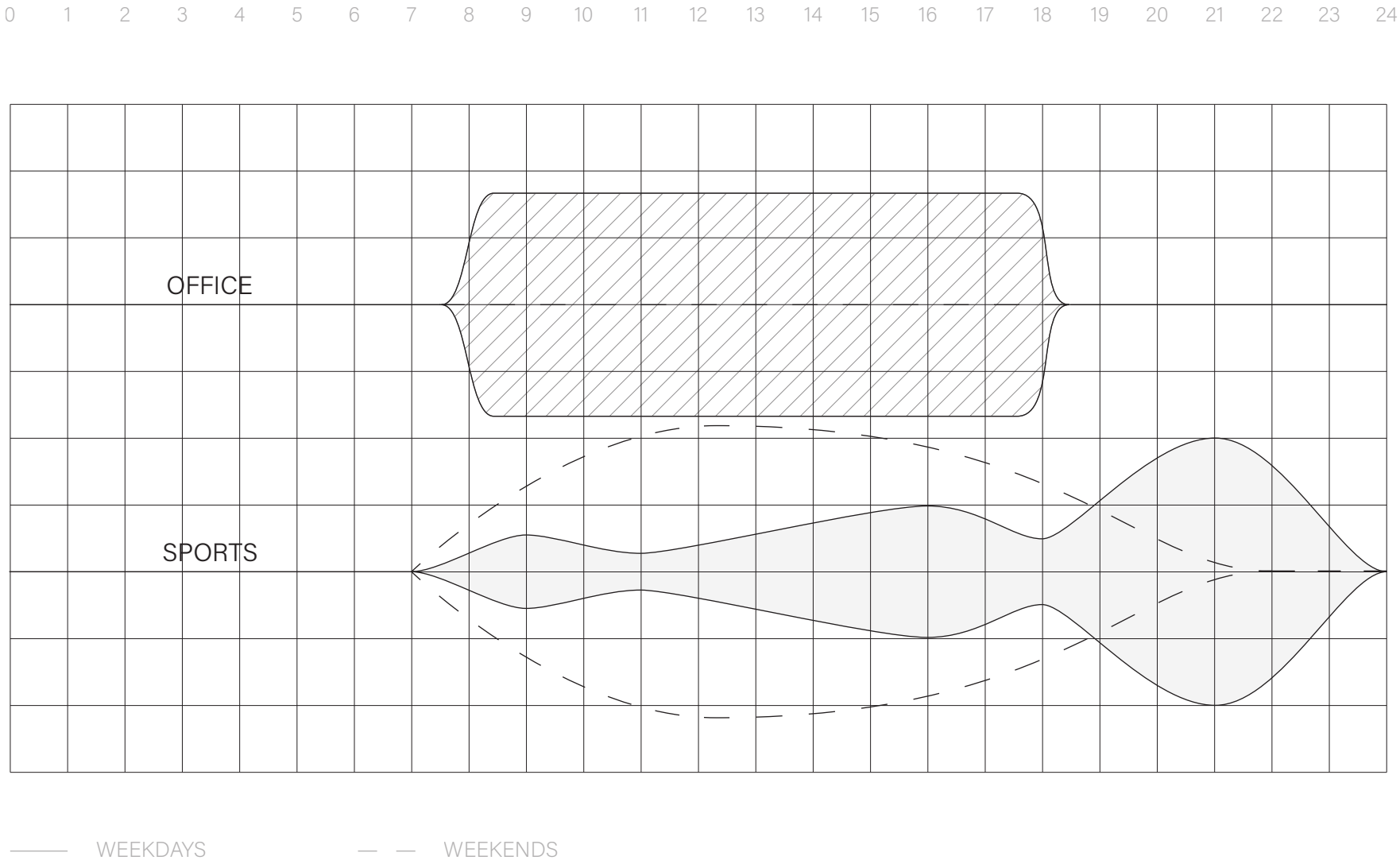
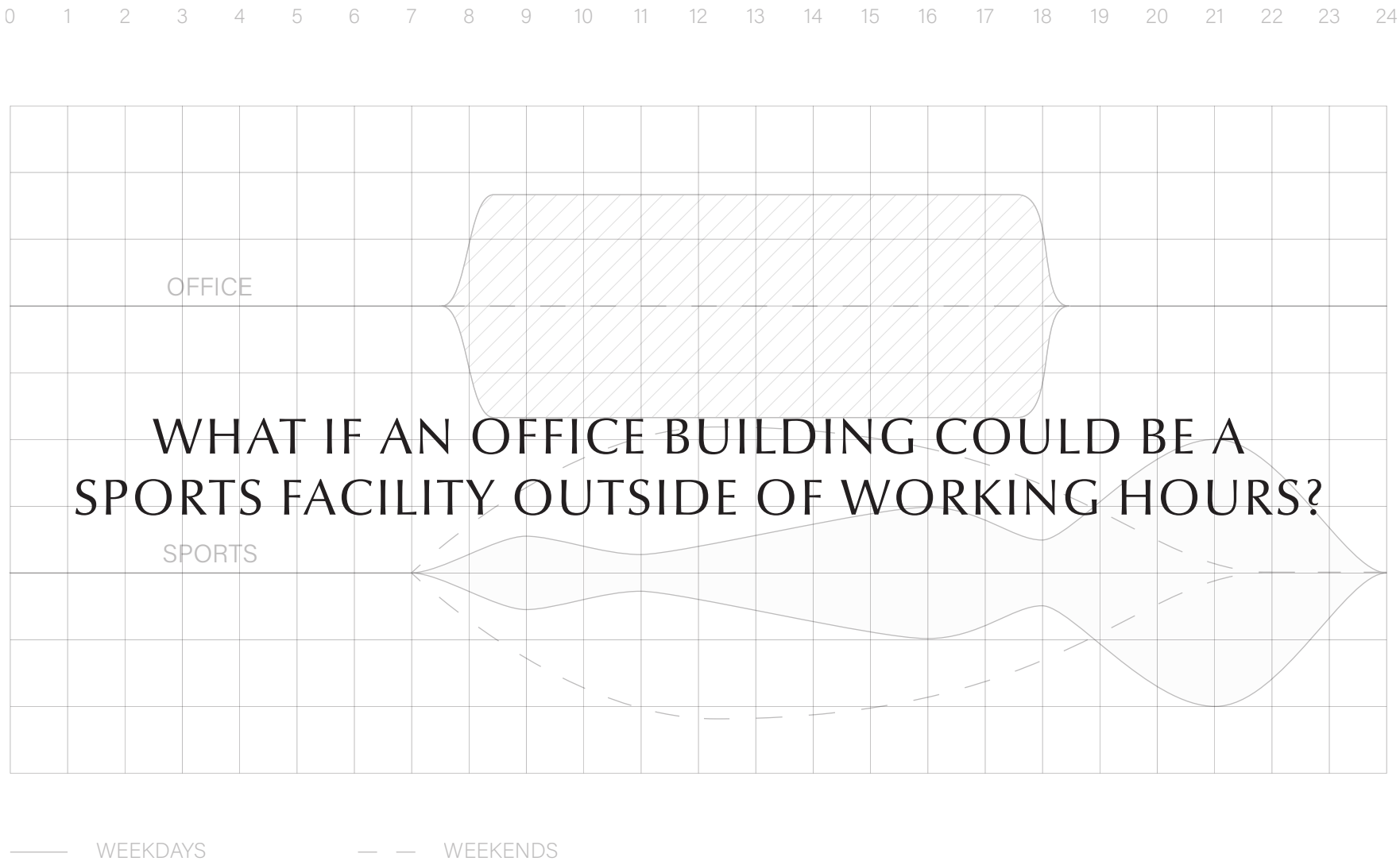
OFFICE
WEEKDAYS
WEEKENDS

TIMELINE


0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
OFFICE
SPORTS
WEEKDAYS
WEEKENDS

TIMELINE




# WHAT IF AN OFFICE BUILDING COULD BE A SPORTS FACILITY OUTSIDE OF WORKING HOURS?


TRESSA
AGC
STARBUCKS
B-3
B-4
B-5
B-6
B-7
B-8
B-9
B-10
B-11
B-12
B-13
B-14
B-15
B-16
B-24
B-25
B-26
B-27
B-28

# REDUCING THE **EFFORT** TO PARTICIPATE

REDUCING THE **EFFORT** TO PARTICIPATE
REDUCING THE **TIME** TO COMMUTE

REDUCING THE **EFFORT** TO PARTICIPATE
REDUCING THE **TIME** TO COMMUTE

INCREASING THE **VALUE** OF THE SPACE

REDUCING THE **EFFORT** TO PARTICIPATE
REDUCING THE **TIME** TO COMMUTE

INCREASING THE **VALUE** OF THE SPACE
REDUCE THE **AMOUNT OF SPACE** NEEDED

INTRODUCTION

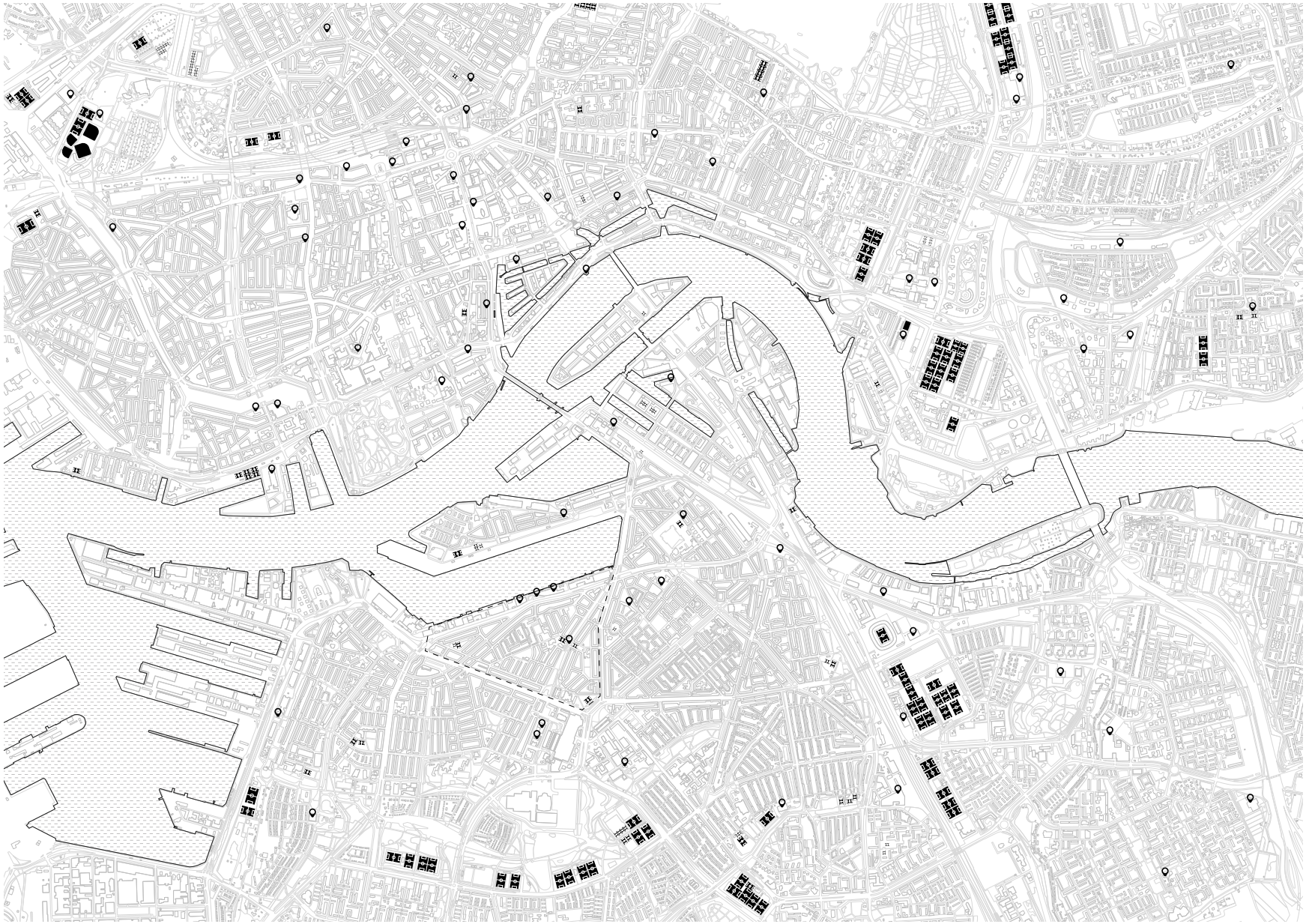
RESEARCH

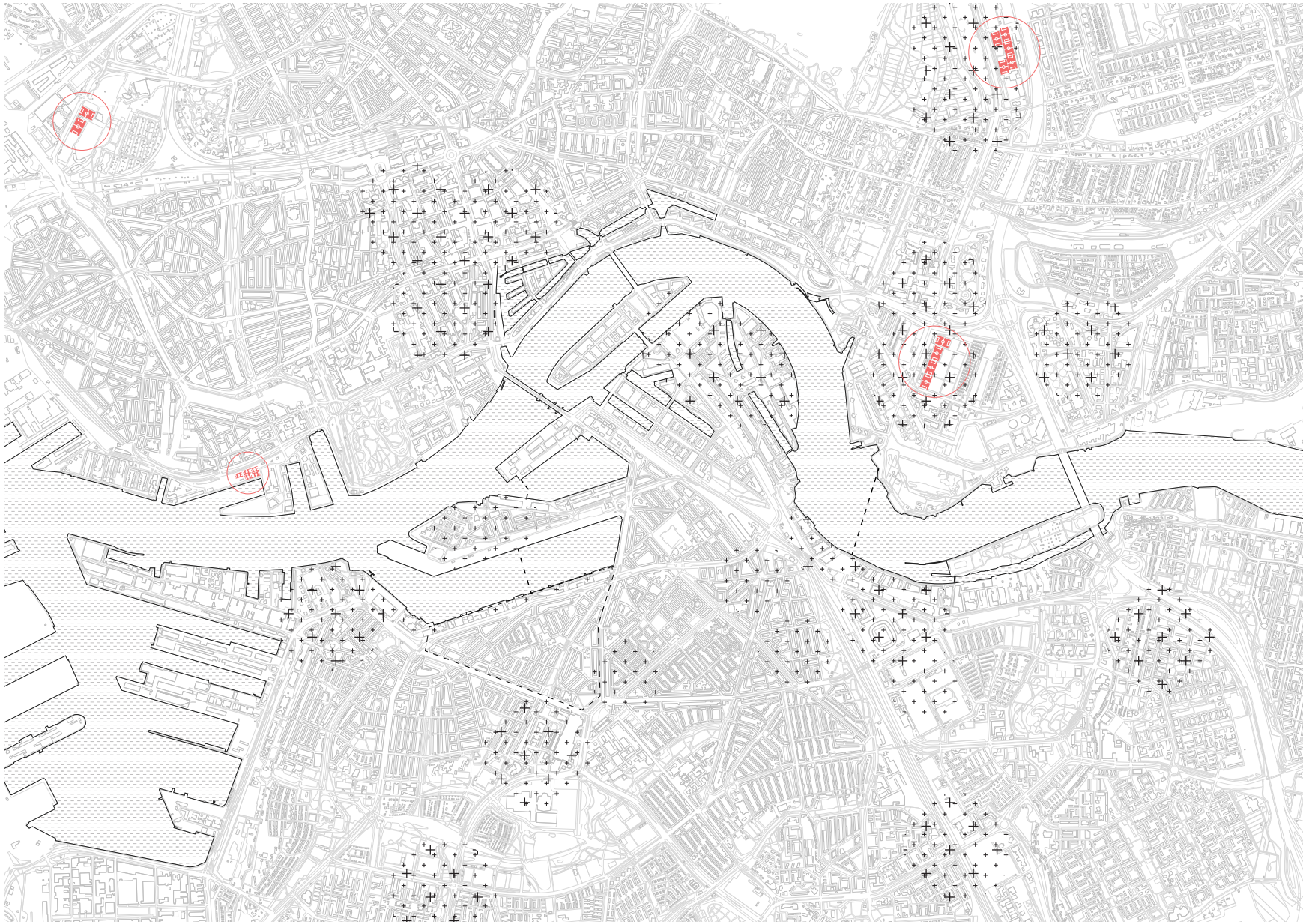
SITE

CONCEPT

DESIGN

ROTTERDAM





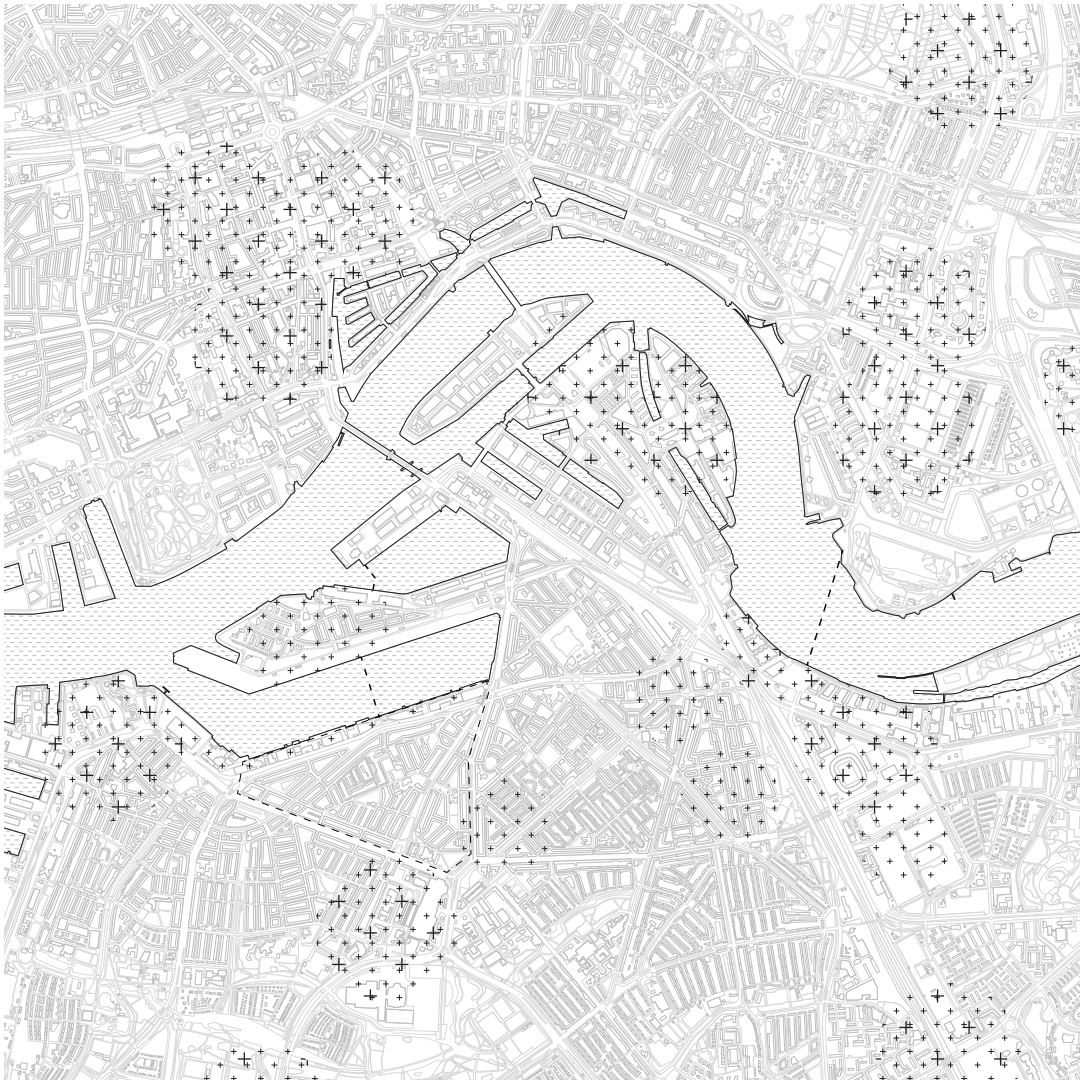
REDUCING THE **EFFORT** TO PARTICIPATE
REDUCING THE **TIME** TO COMMUTE

INCREASING THE **VALUE** OF THE SPACE
REDUCE THE **AMOUNT OF SPACE** NEEDED

WORKING-CLASS NEIGHBORHOOD

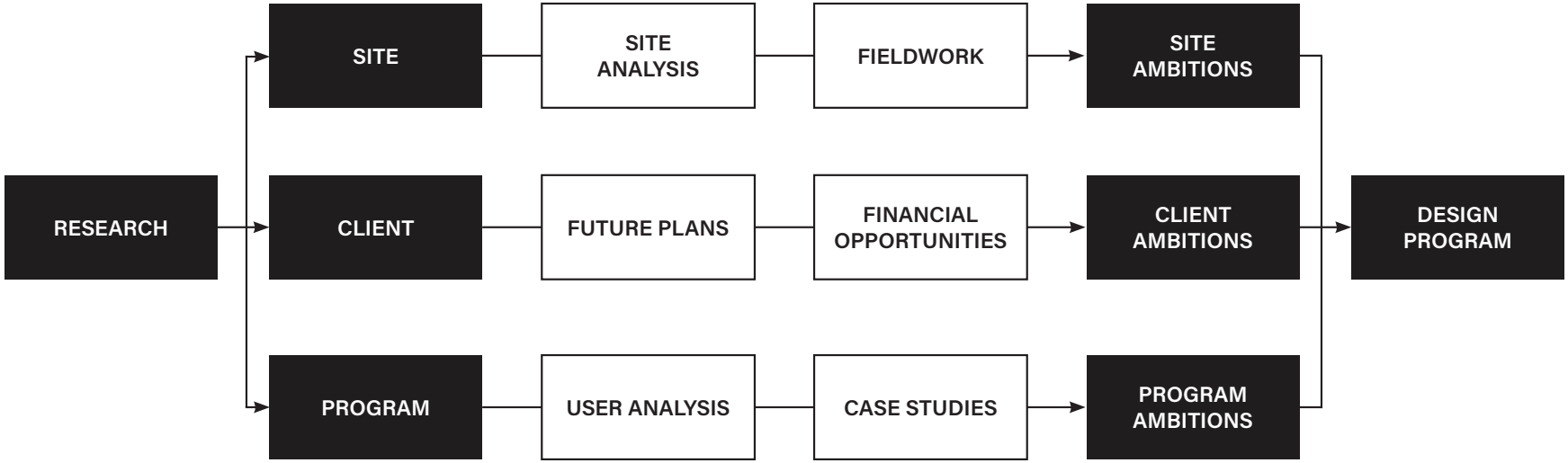

43B


het
geheim
van de
tarwewijk



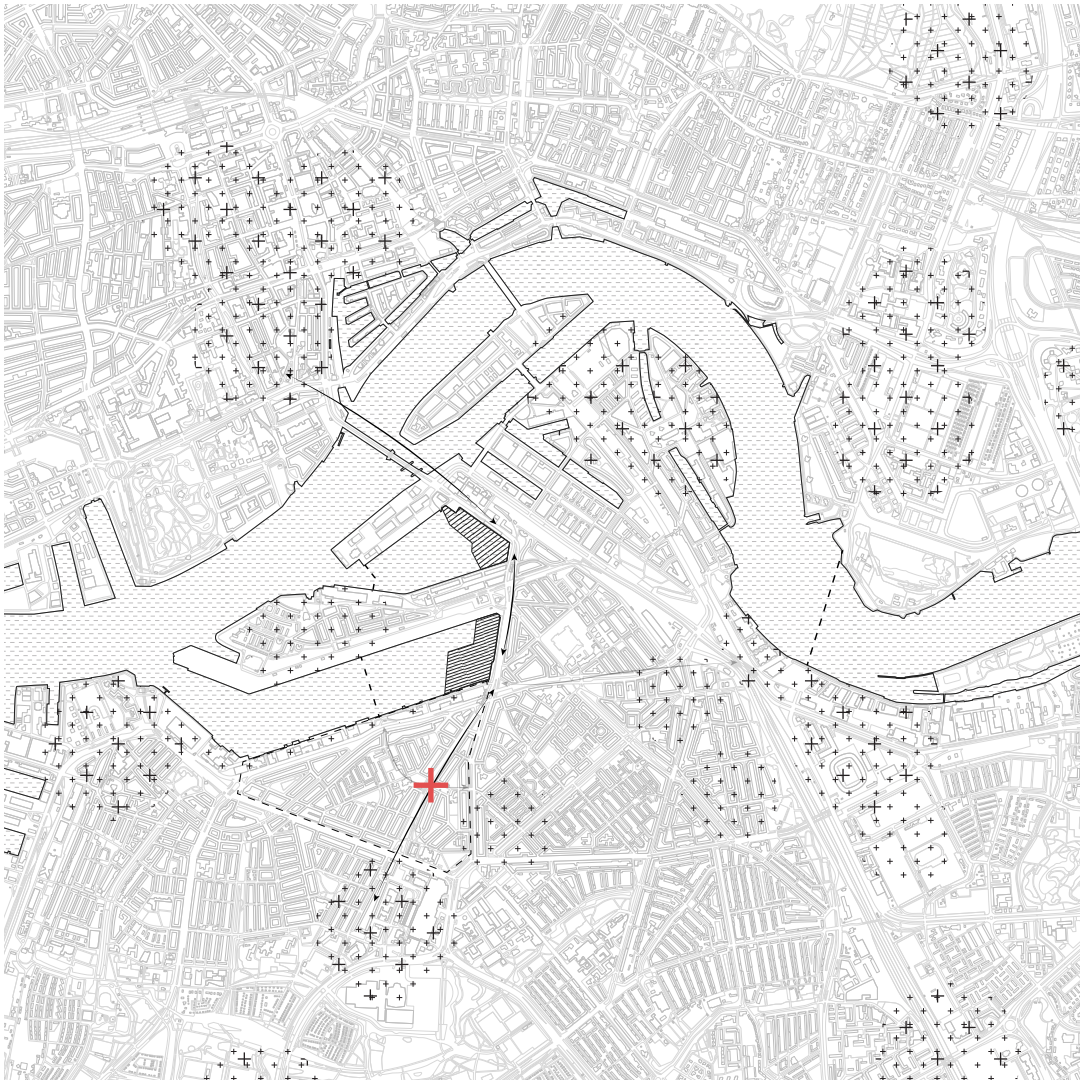

EEN RIJKE VERZAM

# AN OPPORTUNITY TO DESIGN AN OFFICE BUILDING THAT STIMULATES PHYSICAL ACTIVITY


RESEARCH
SITE
SITE ANALYSIS
FIELDWORK
SITE AMBITIONS
CLIENT
FUTURE PLANS
FINANCIAL OPPORTUNITIES
CLIENT AMBITIONS
PROGRAM
USER ANALYSIS
CASE STUDIES
PROGRAM AMBITIONS
DESIGN PROGRAM

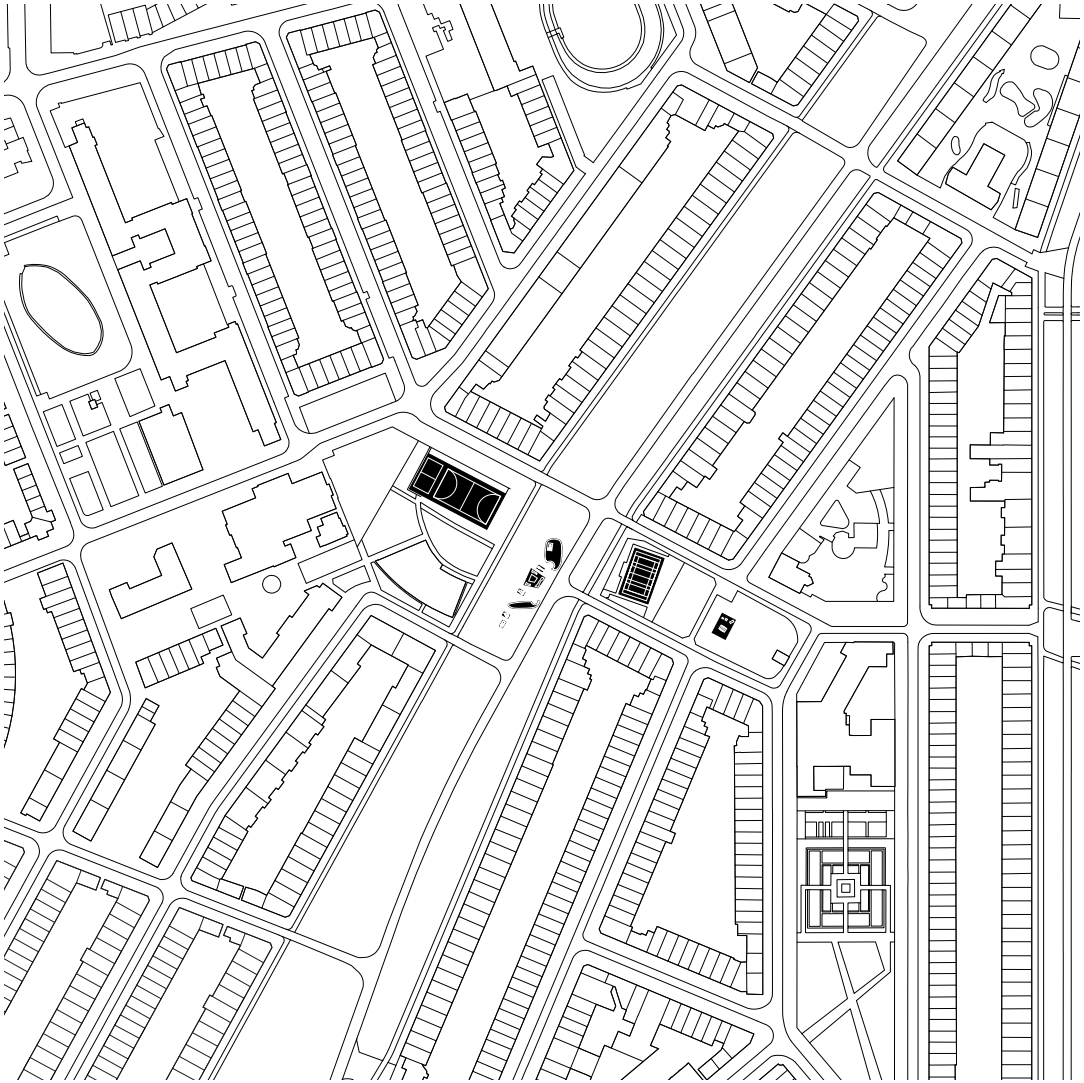
# A SHARED OFFICE BUILDING, WITH PUBLIC SPORTS FACILITIES AND INCREASED GREENERY

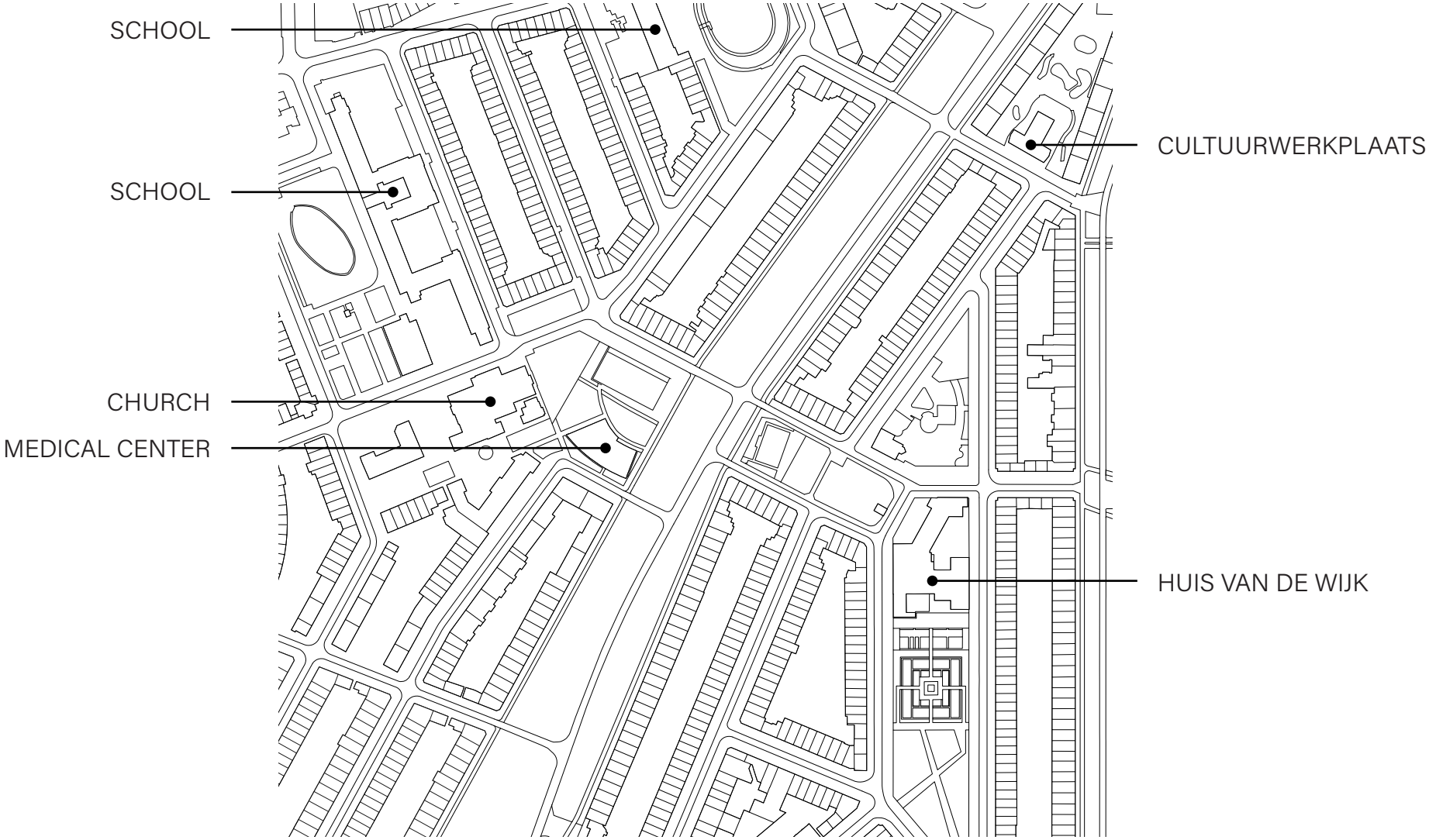

| | |
|---|---|
| **Office** | **4680 m2** |
| Private workingspaces | 250 m2 |
| Meeting rooms | 250 m2 |
| Small offices | 3240 m2 |
| Circlation | 940 m2 |
| **Sports** | **1320 m2** |
| Playground | 100 m2 |
| Multi-purpose Sportsfield | 1120 m2 |
| Calisthenics Park | 100 m2 |
| **Storage** | **1890 m2** |
| Bicycle storage | 300 m2 |
| Sports equipment storage | 150 m2 |
| Office storage | 30 m2 |
| Technical | 60 m2 |
| Car parking | 1350 m2 |
| **Communal Spaces** | **750 m2** |
| Lunch Room | 200 m2 |
| Coffee corners | 50 m2 |
| Printer rooms | 50 m2 |
| Toilets, showers, changing rooms | 450 m2 |
| **Commercial** | **900 m2** |
| Fitness | 350 m2 |
| Restaurant | 300 m2 |
| Coffee bar | 250 m2 |

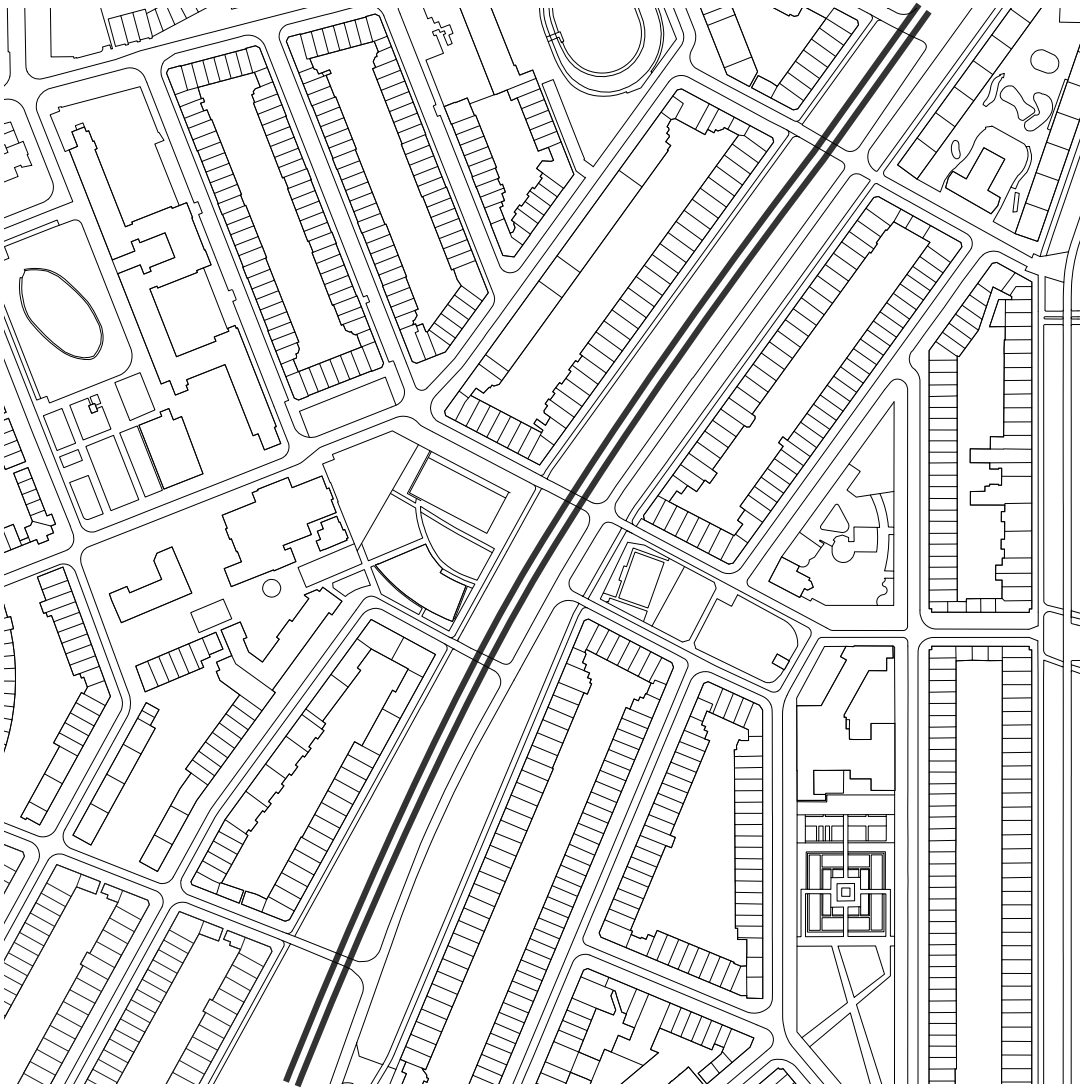


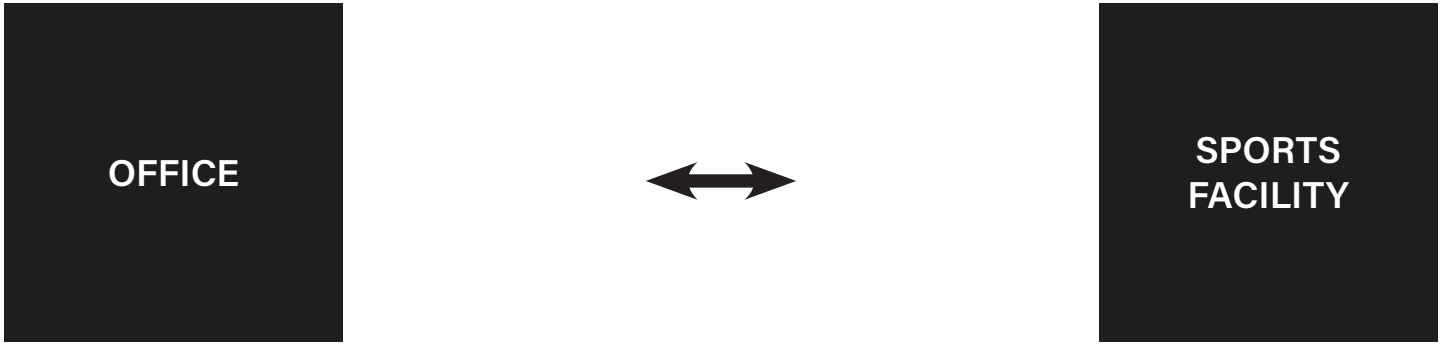
DESIGN LOCATION

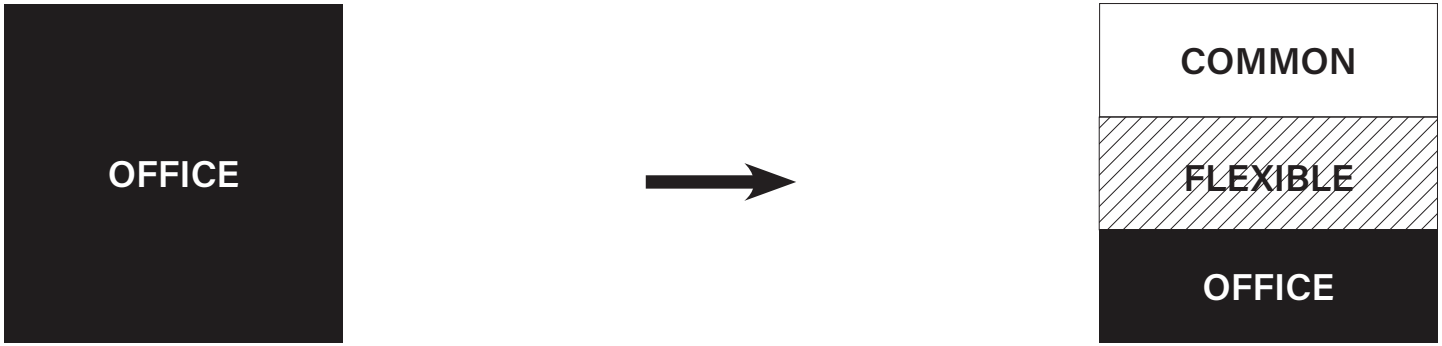
DESIGN LOCATION

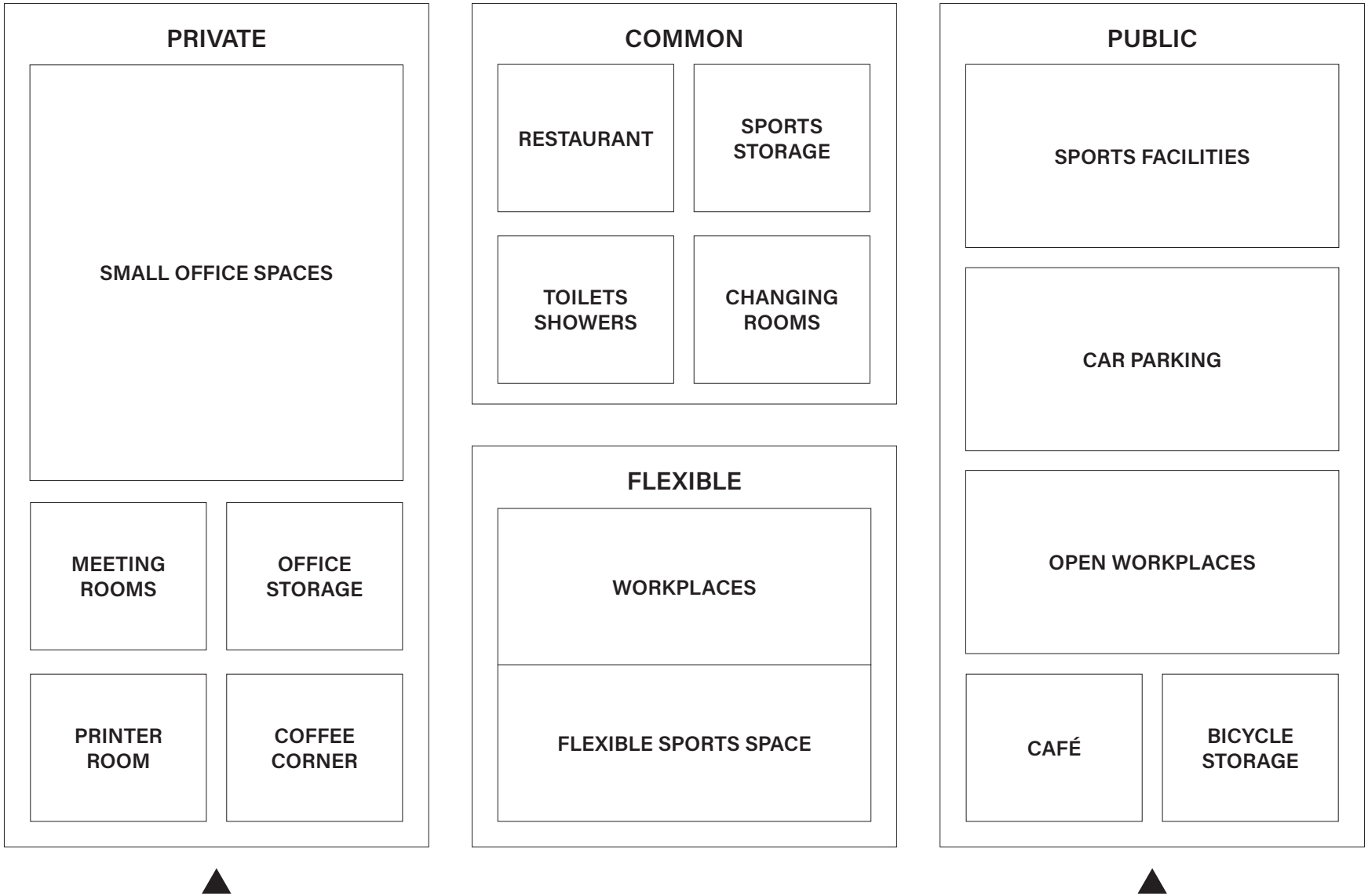


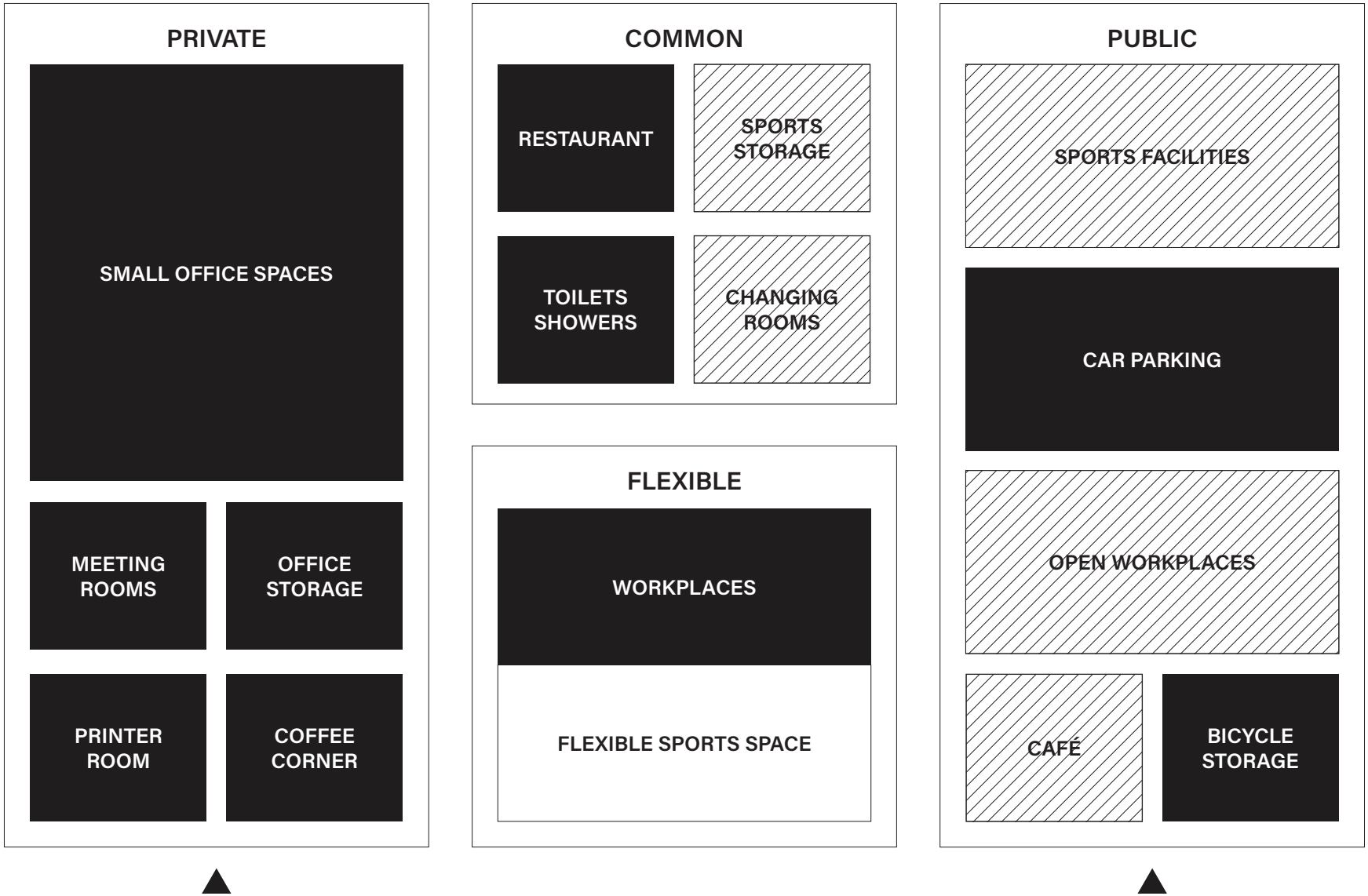

SCHOOL
SCHOOL
CHURCH
MEDICAL CENTER
CULTUURWERKPLAATS
HUIS VAN DE WIJK



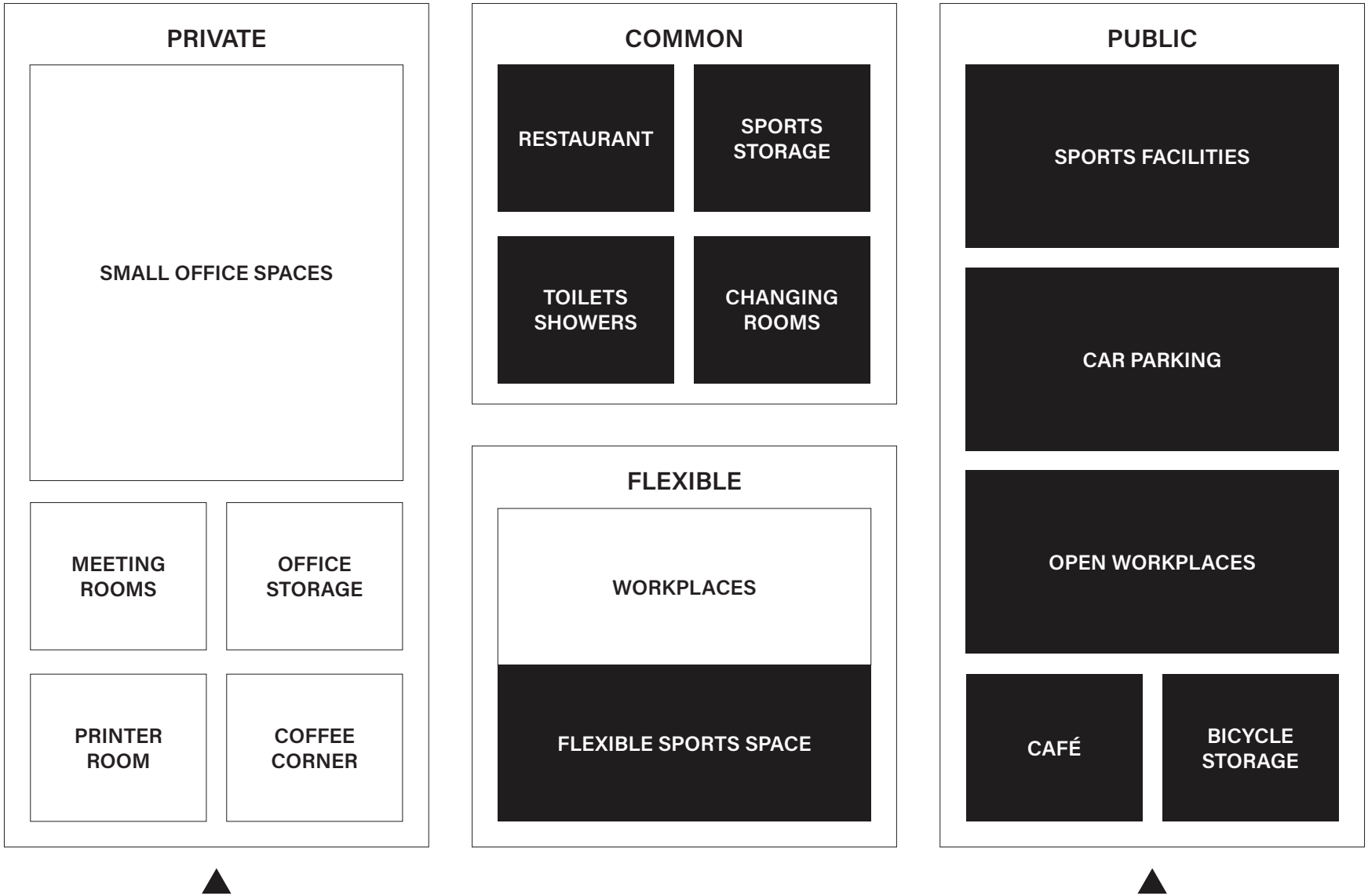

OFFICE
SPORTS FACILITY


OFFICE
COMMON
FLEXIBLE
OFFICE


PRIVATE
SMALL OFFICE SPACES
MEETING ROOMS
OFFICE STORAGE
PRINTER ROOM
COFFEE CORNER
COMMON
RESTAURANT
SPORTS STORAGE
TOILETS SHOWERS
CHANGING ROOMS
FLEXIBLE
WORKPLACES
FLEXIBLE SPORTS SPACE
PUBLIC
SPORTS FACILITIES
CAR PARKING
OPEN WORKPLACES
CAFÉ
BICYCLE STORAGE

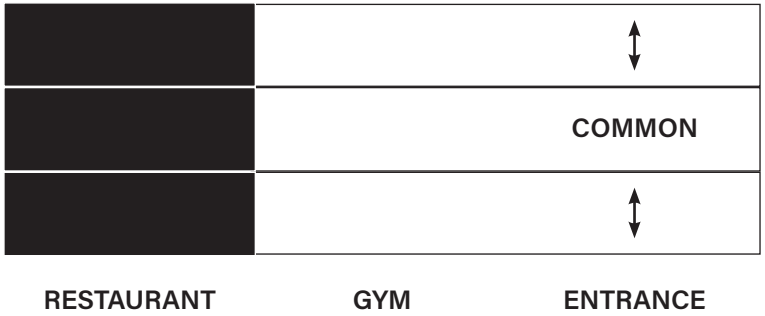


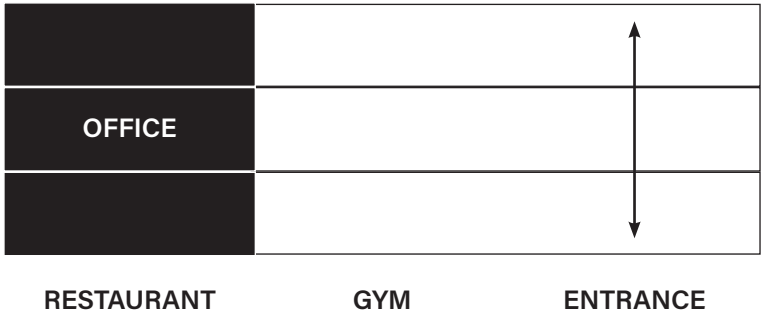

SPATIAL ORGANISATION: OFFICE HOURS

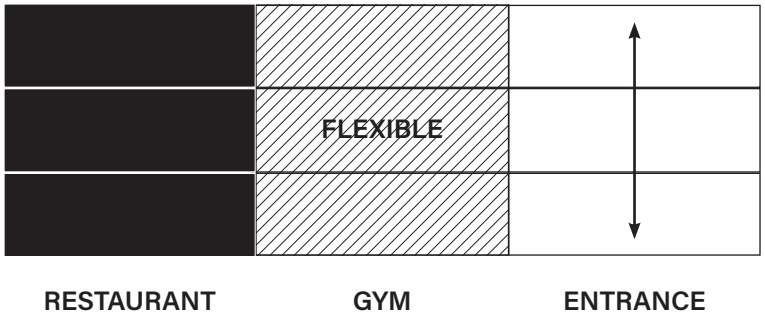


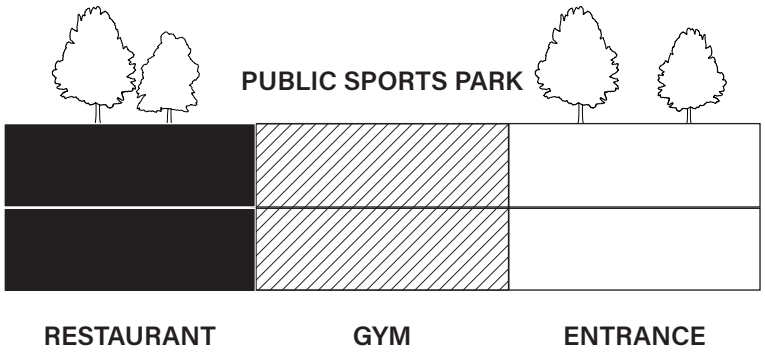

SPATIAL ORGANISATION: SPORTS HOURS

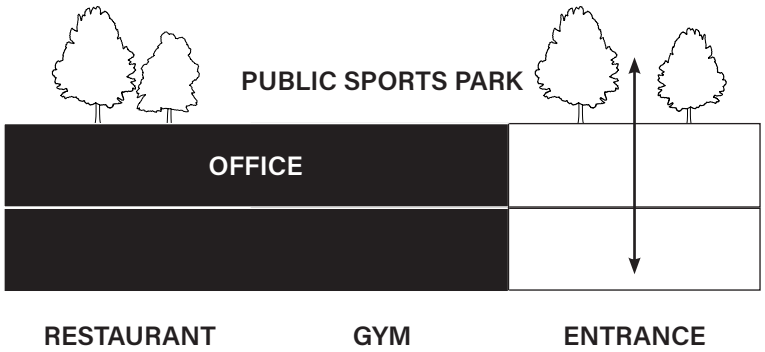
RESTAURANT GYM ENTRANCE

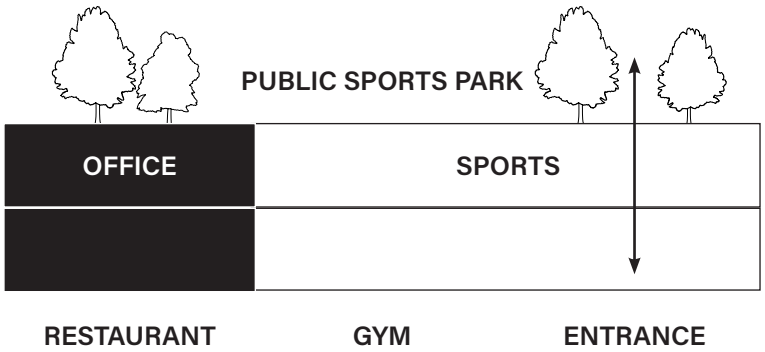

COMMON
RESTAURANT
GYM
ENTRANCE

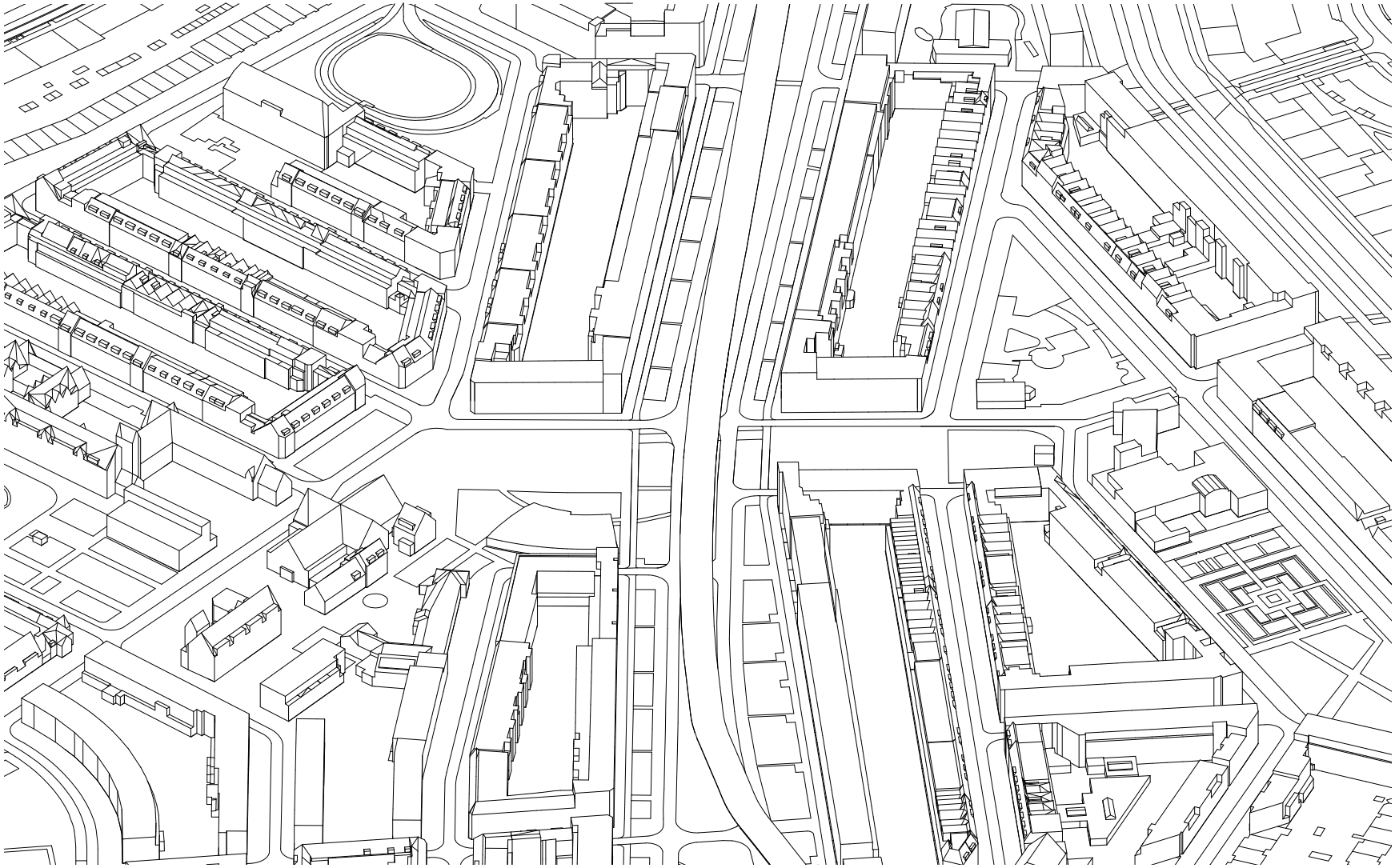

OFFICE
RESTAURANT
GYM
ENTRANCE

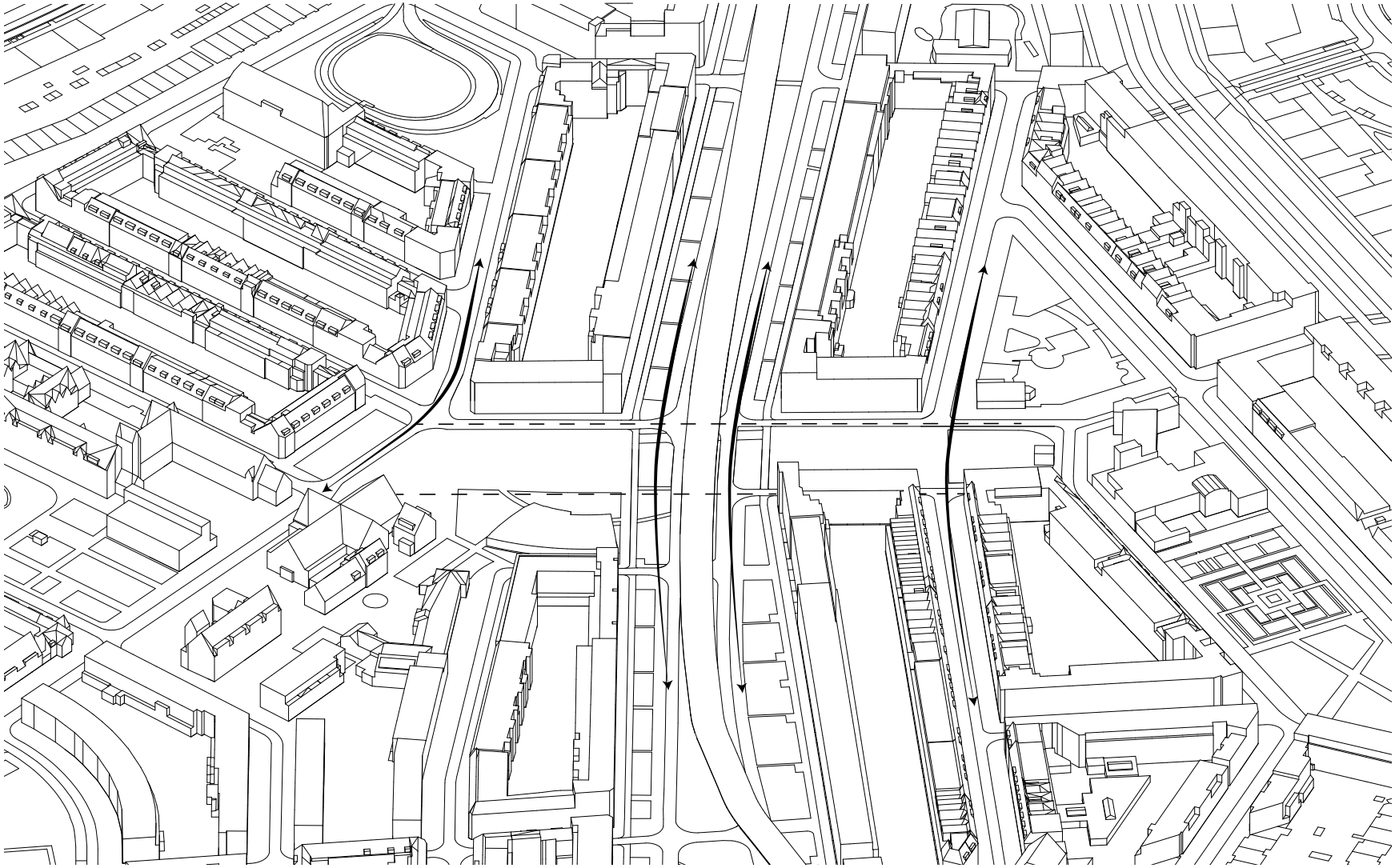

FLEXIBLE
RESTAURANT
GYM
ENTRANCE

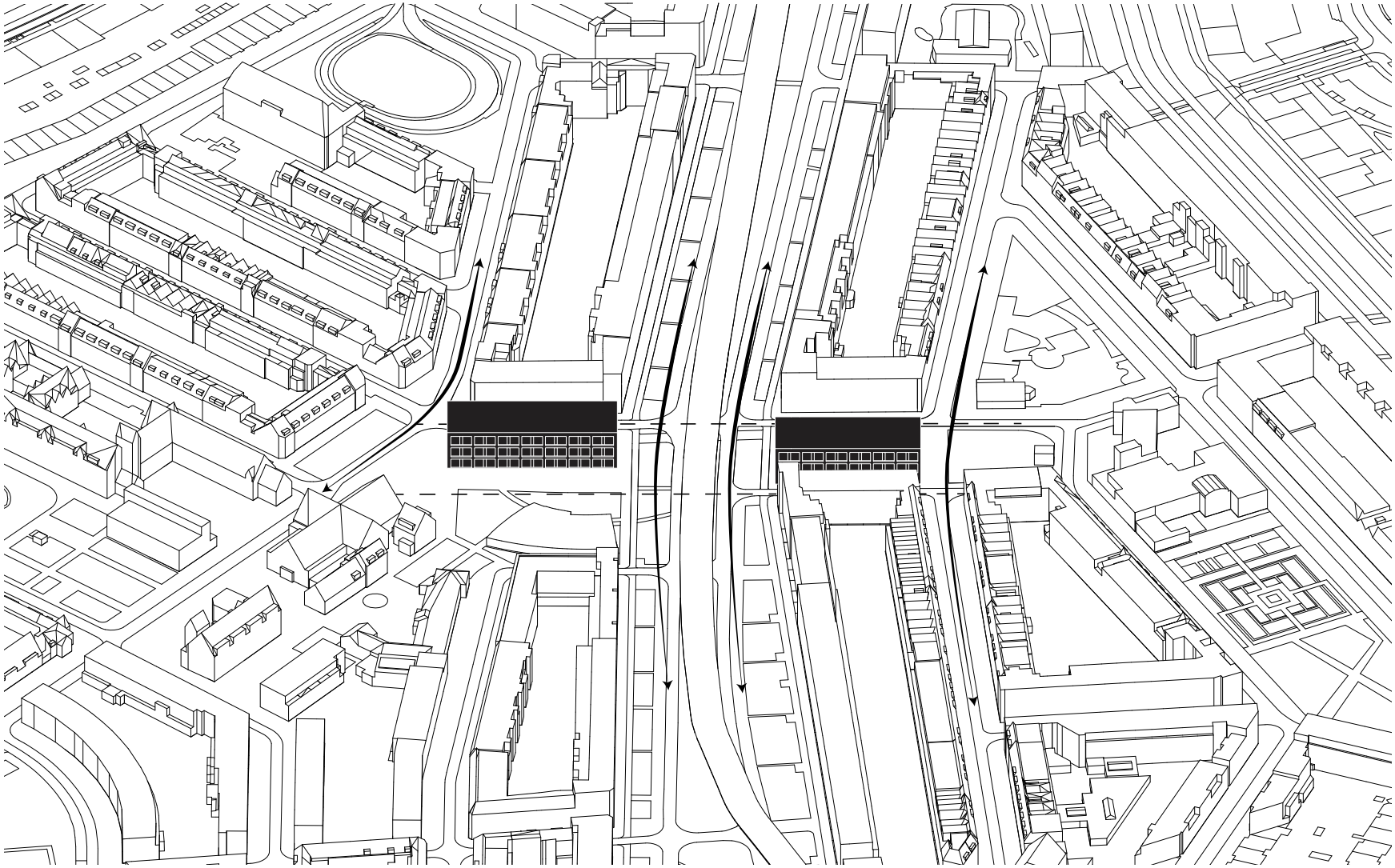

PUBLIC SPORTS PARK
RESTAURANT
GYM
ENTRANCE

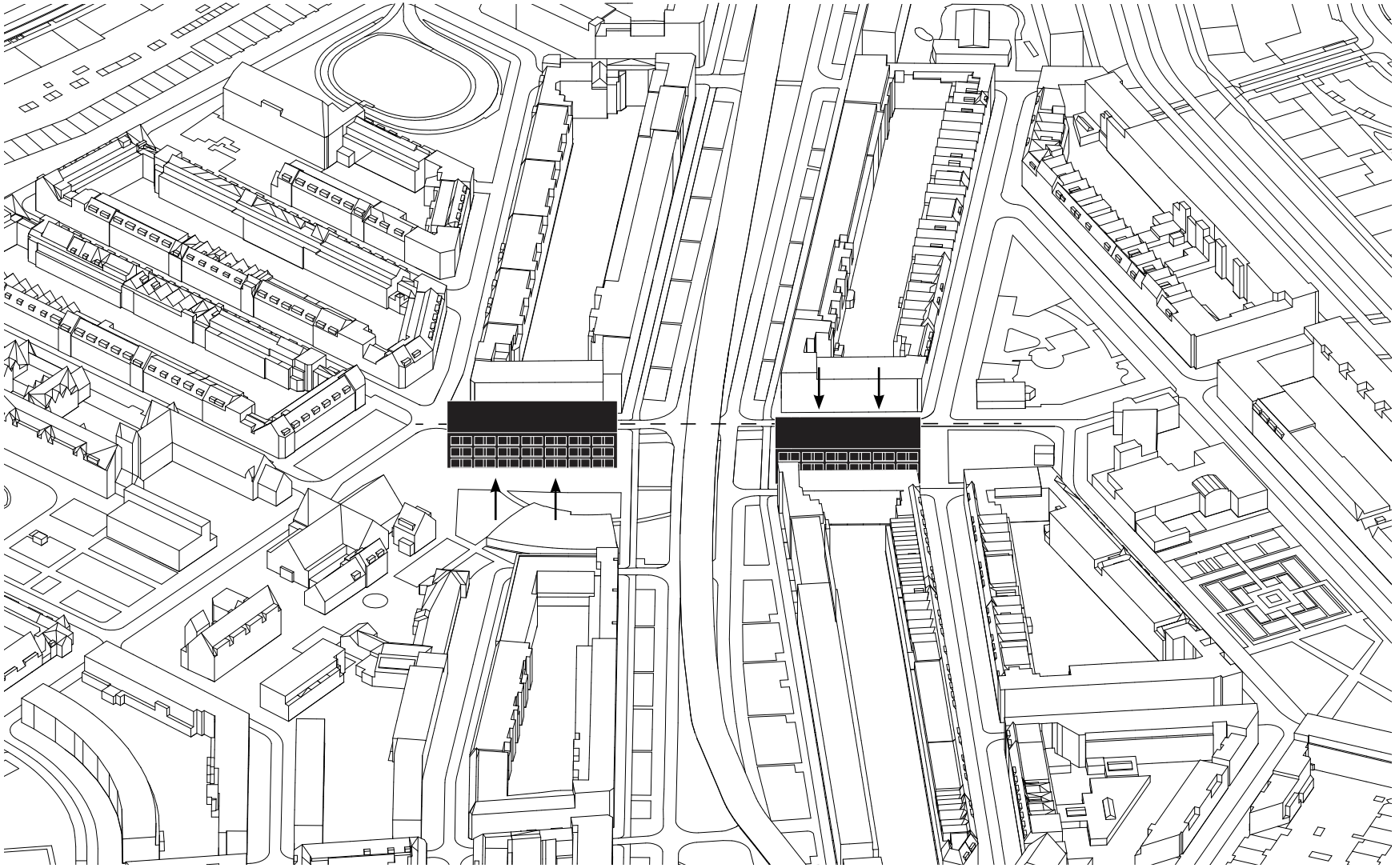

PUBLIC SPORTS PARK
OFFICE
RESTAURANT
GYM
ENTRANCE

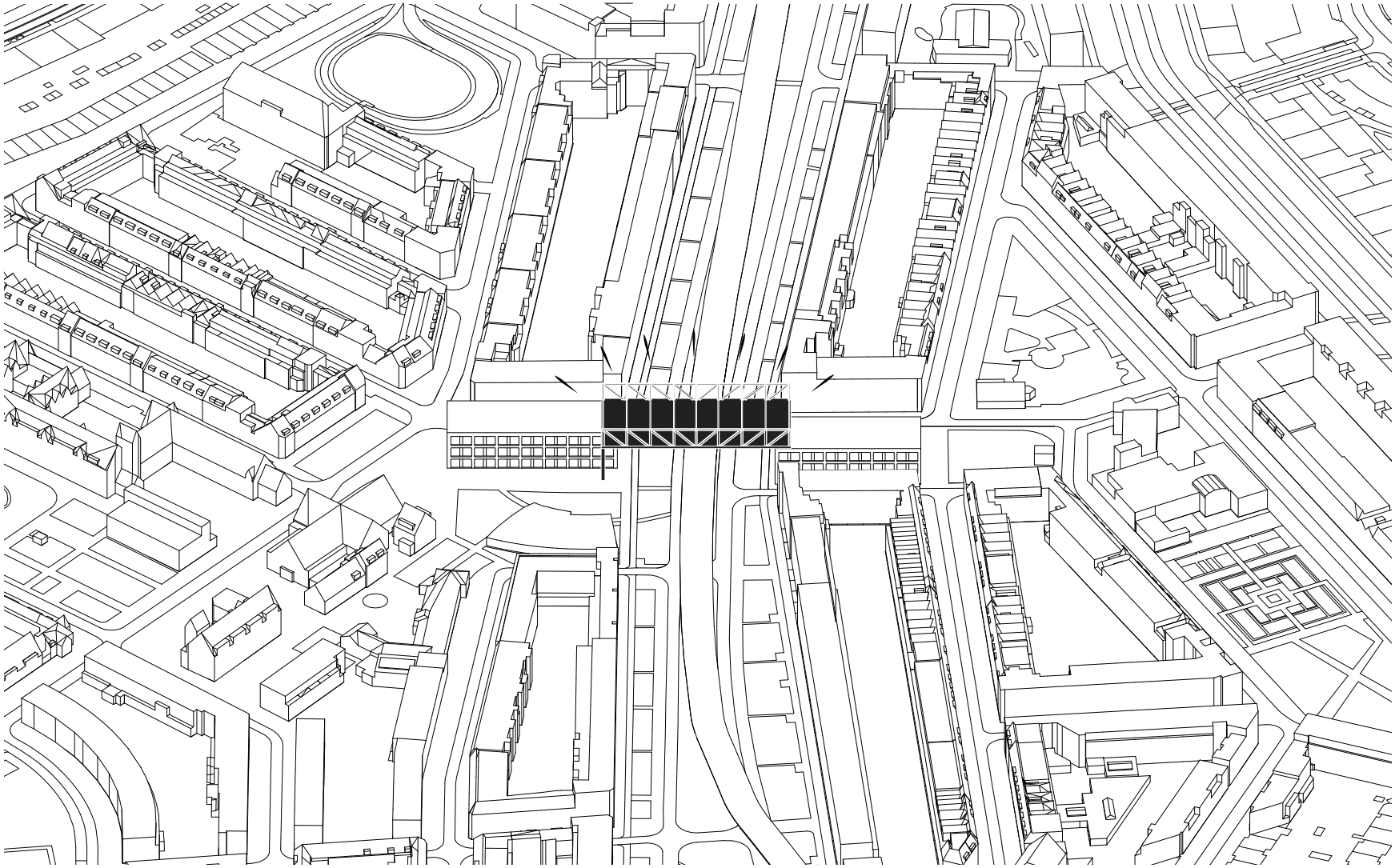

PUBLIC SPORTS PARK
OFFICE
SPORTS
RESTAURANT
GYM
ENTRANCE

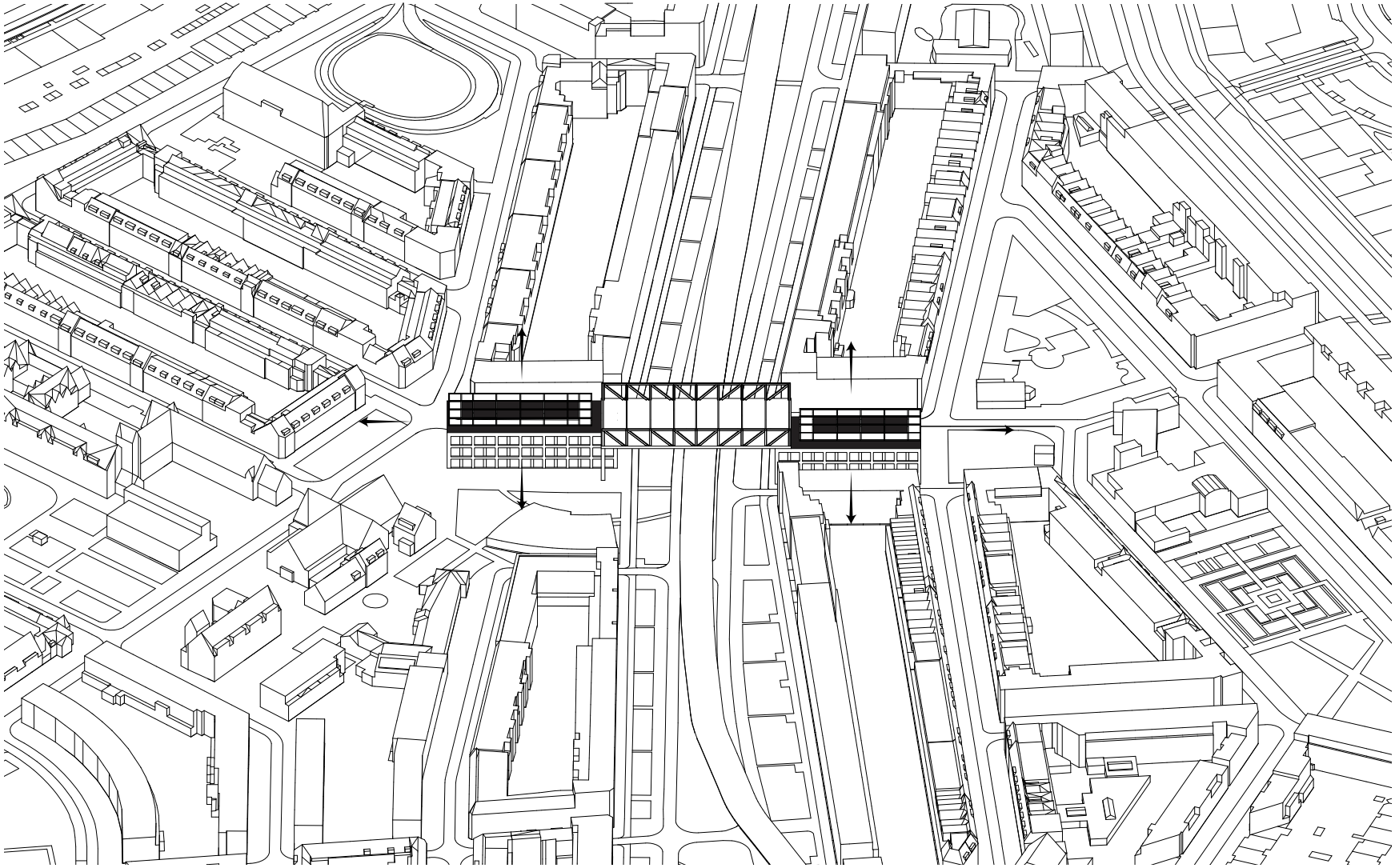


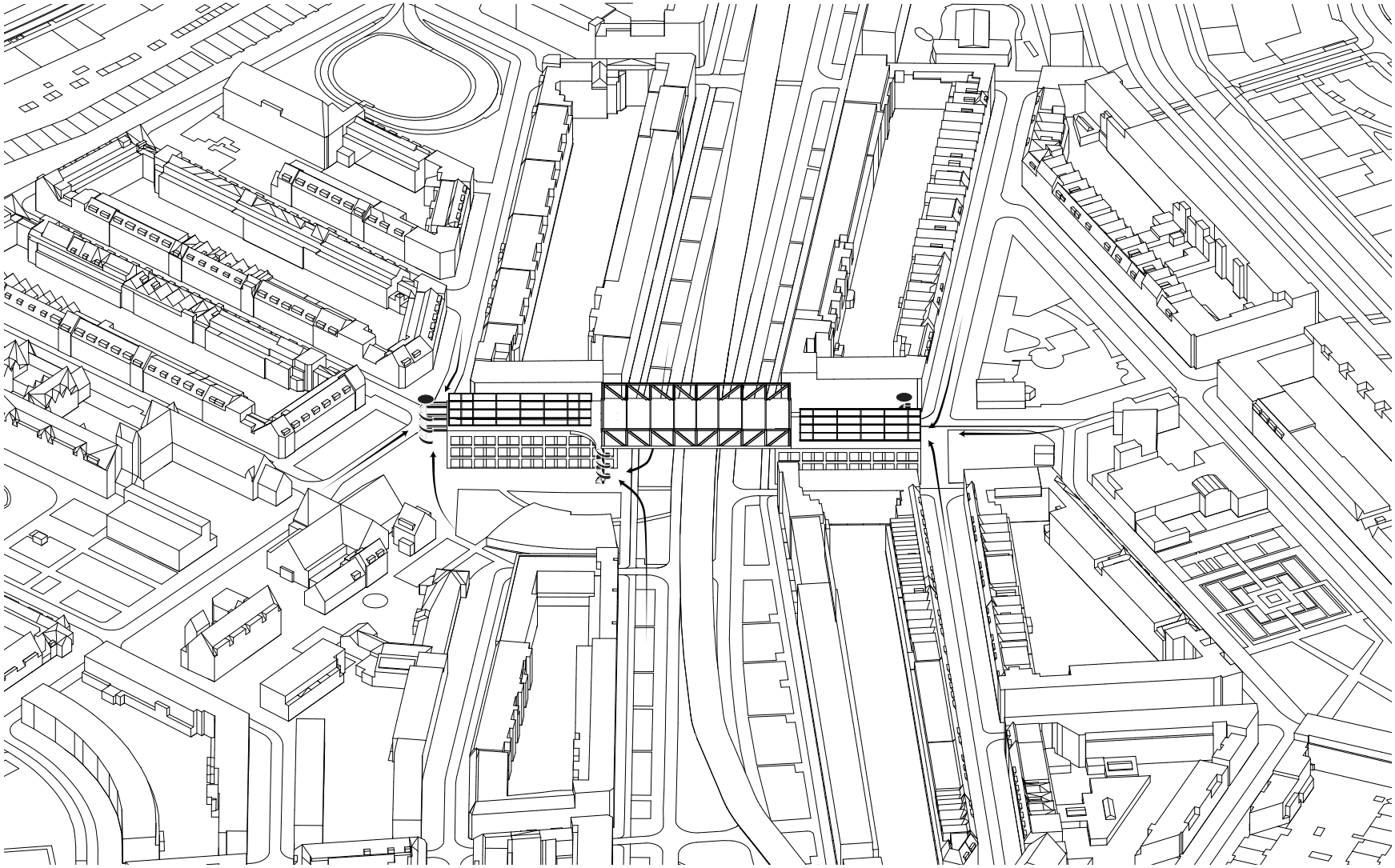








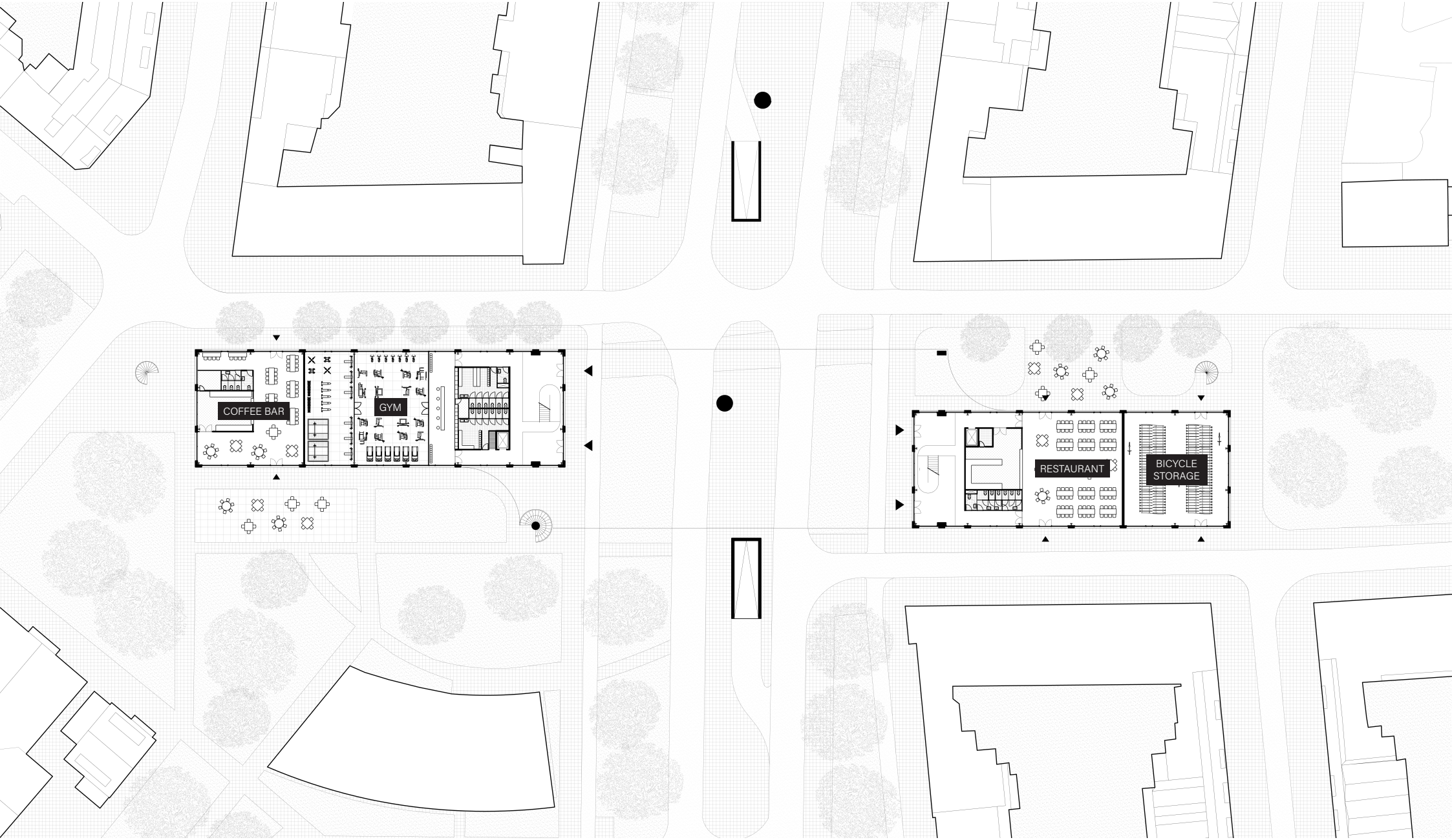





STAIRCASE VISIBILITY

SOUTH FACADE

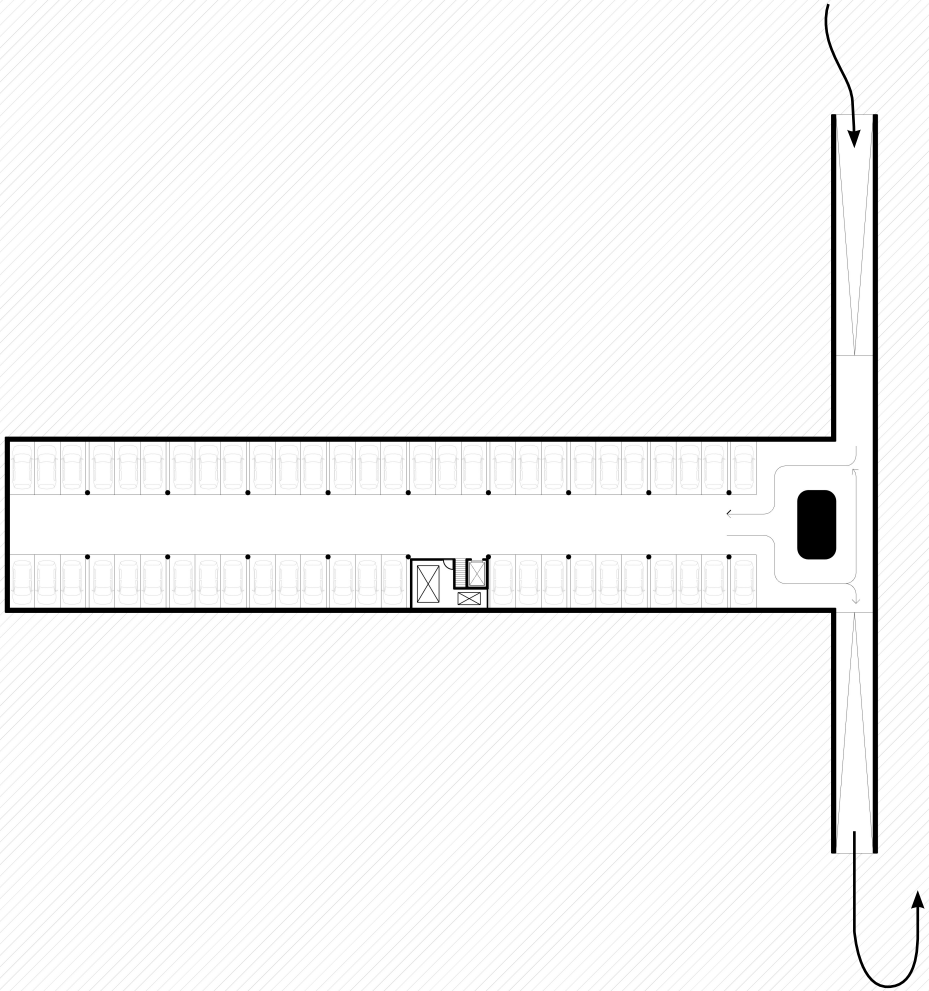
AERIAL VIEW




SCALE 1:500

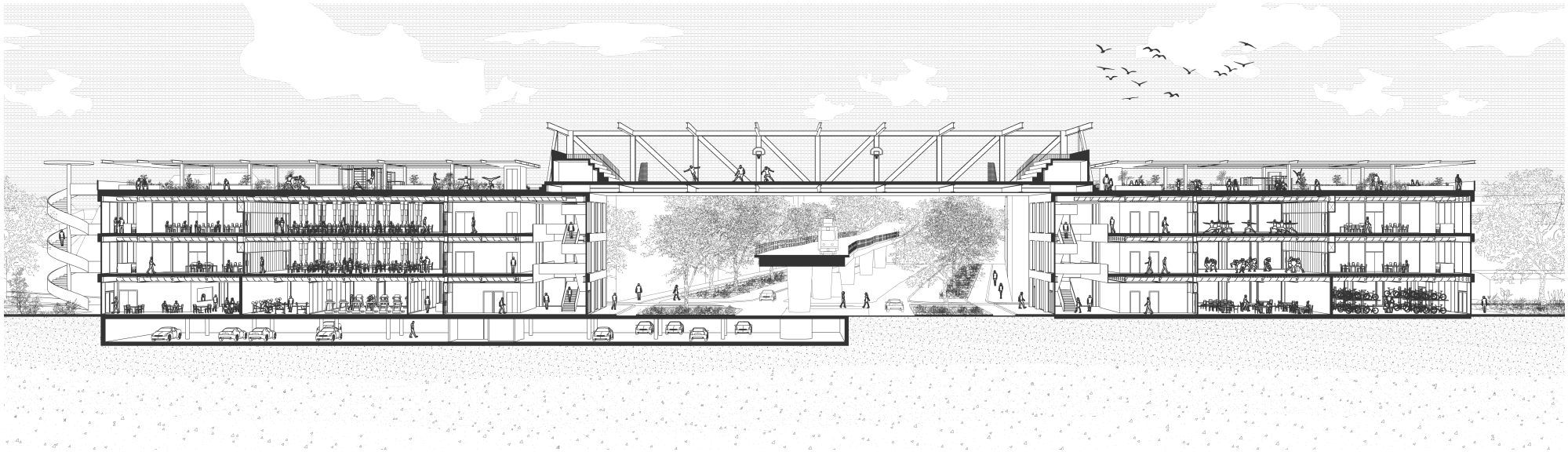
SITE PLAN

ENTRANCE HALL



SCALE 1:500

PARKING GARAGE



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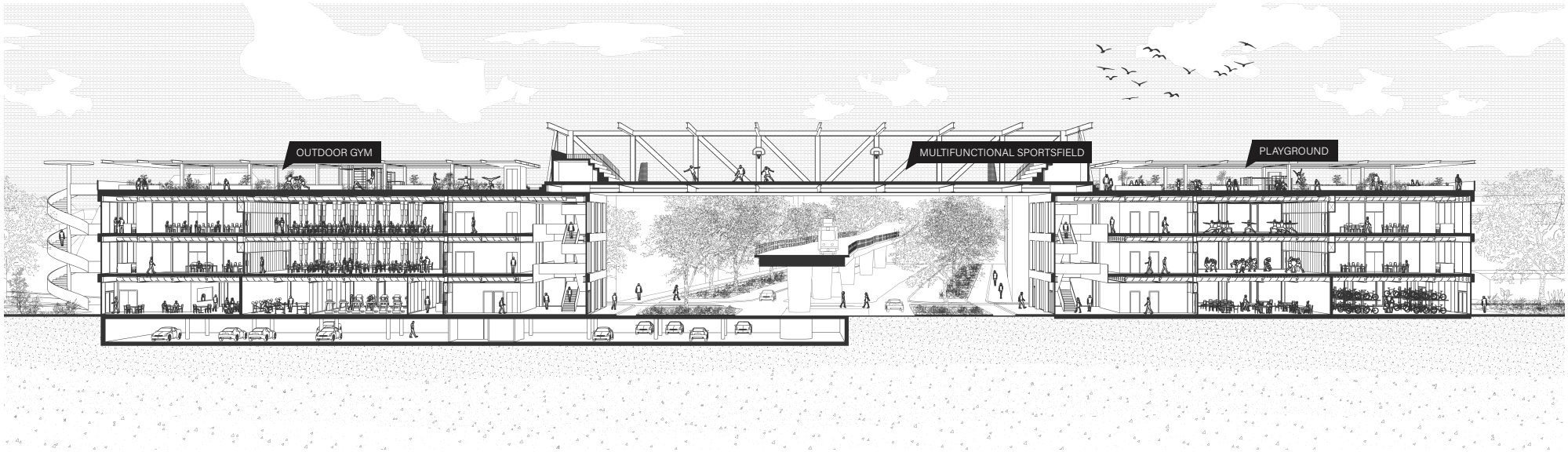
LONGITUDINAL SECTION

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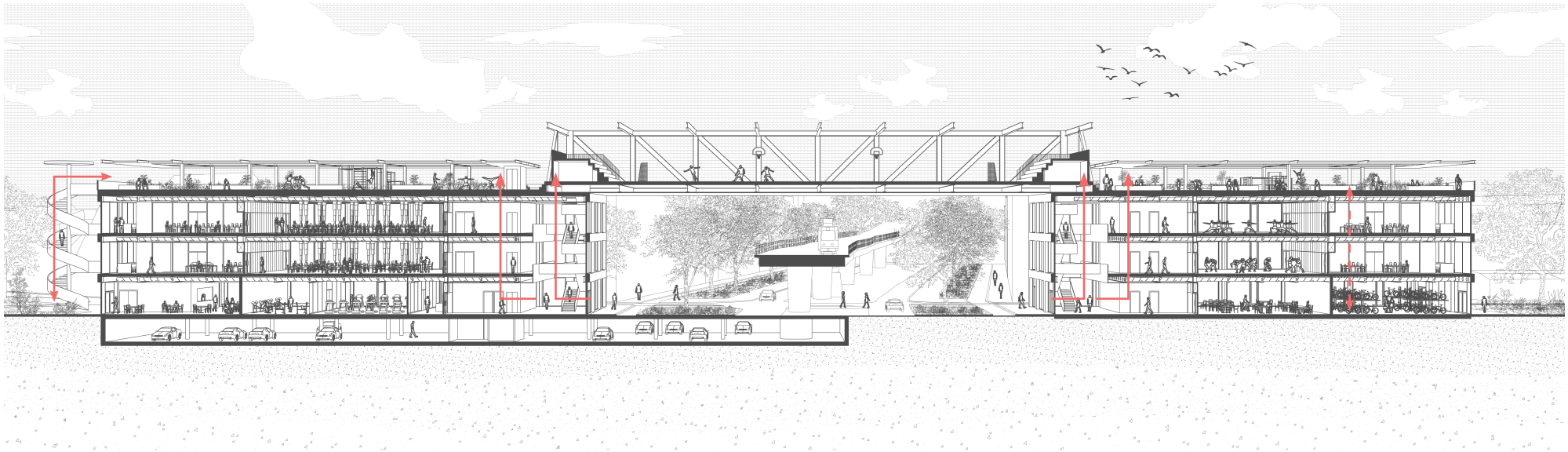

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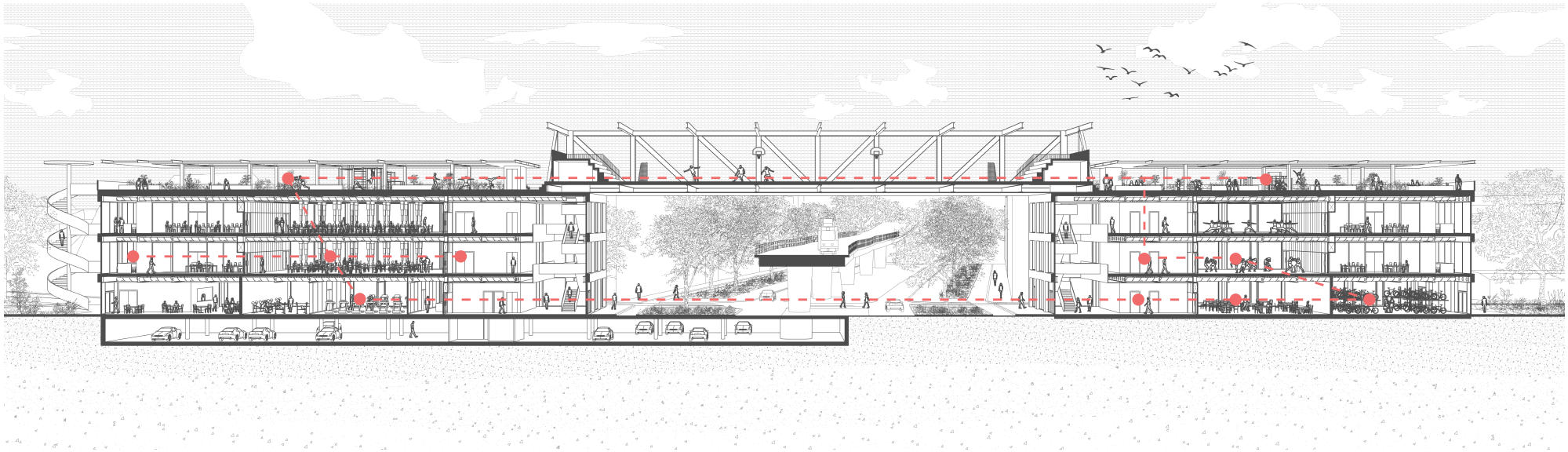
LONGITUDINAL SECTION



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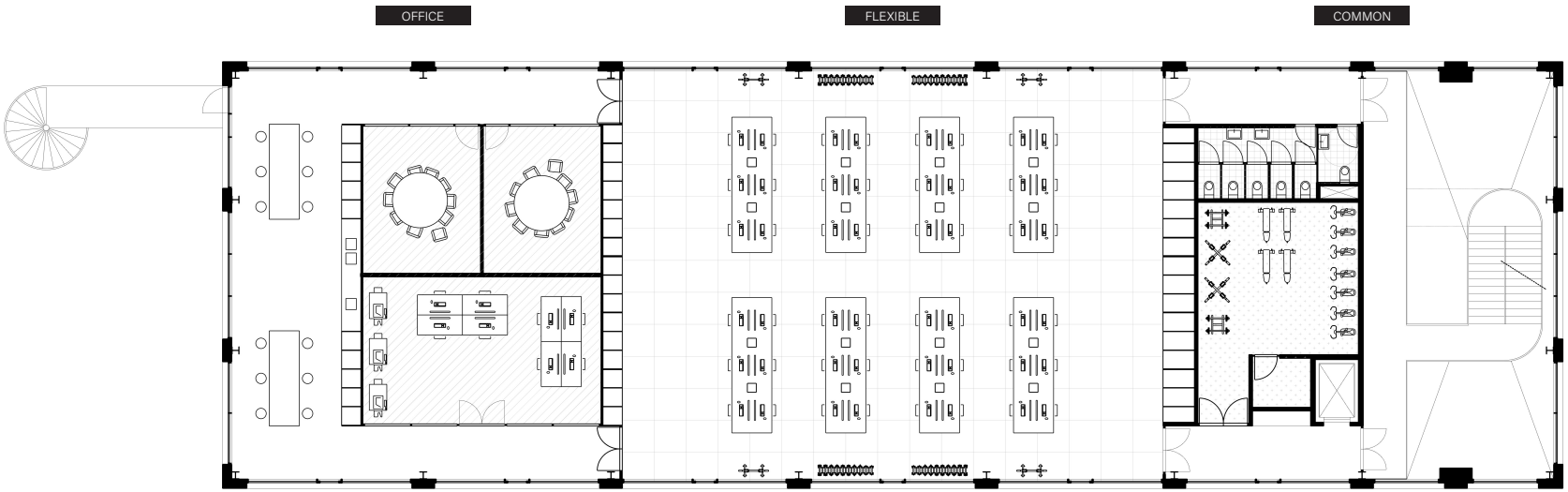
LONGITUDINAL SECTION

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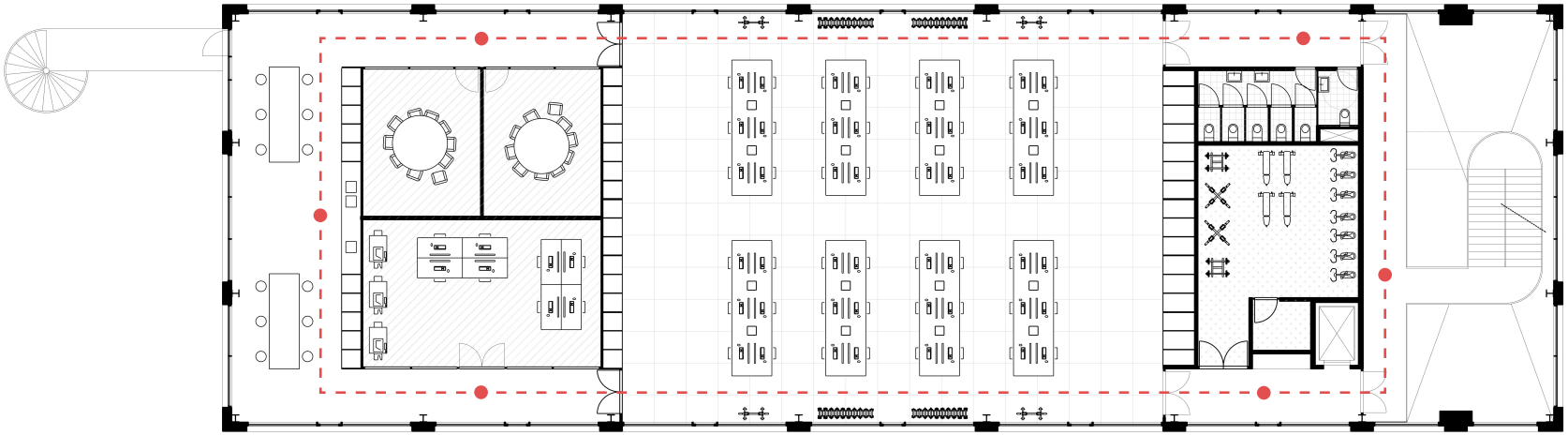
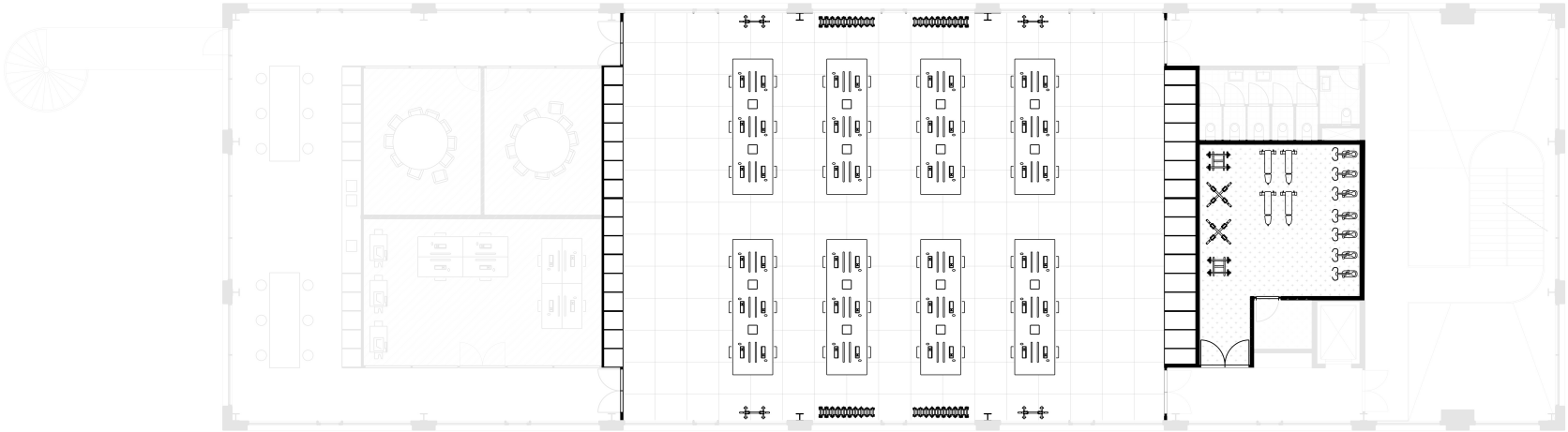
TYPICAL OFFICE FLOOR PLAN



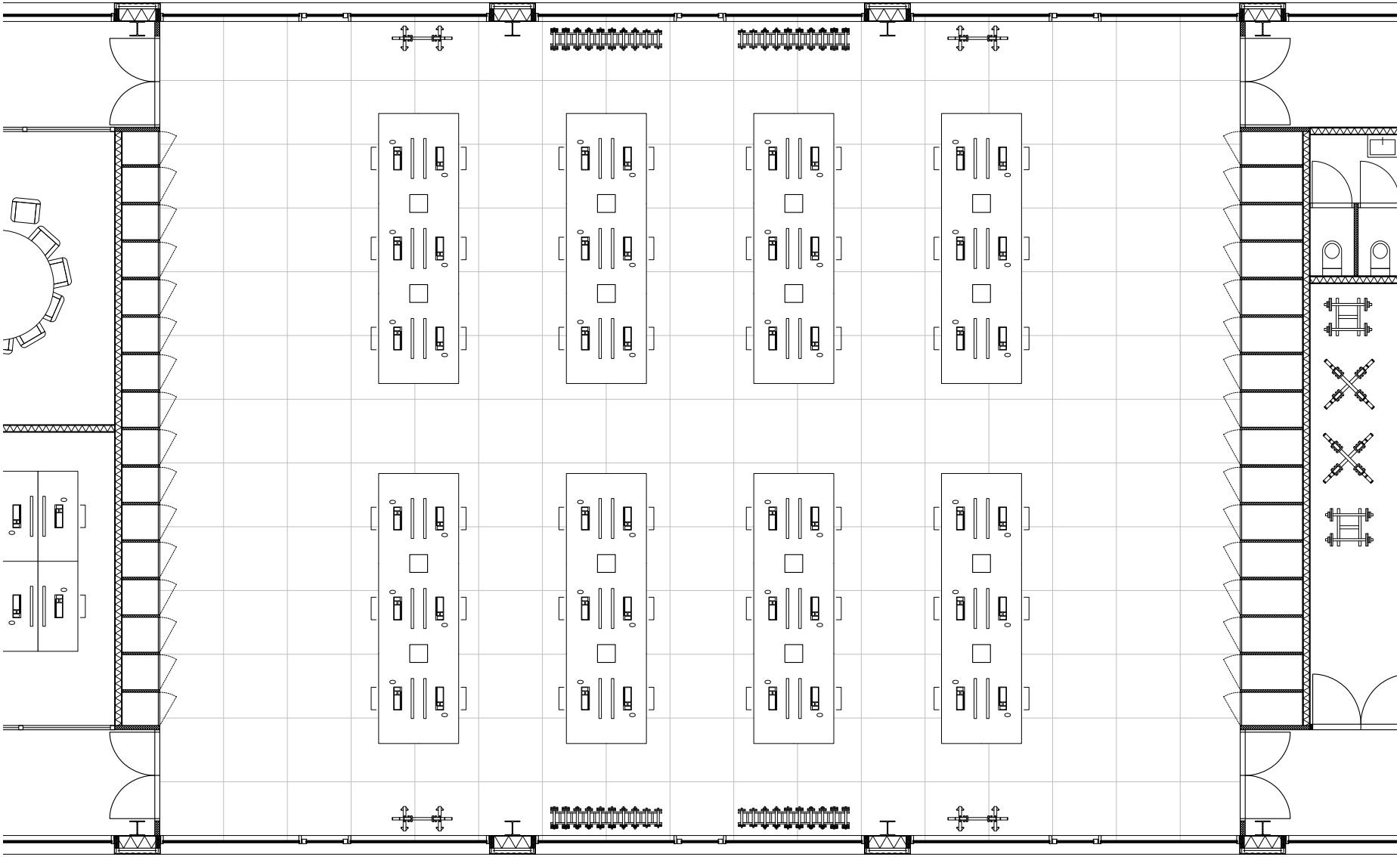
SCALE 1:200

TYPICAL OFFICE FLOOR PLAN



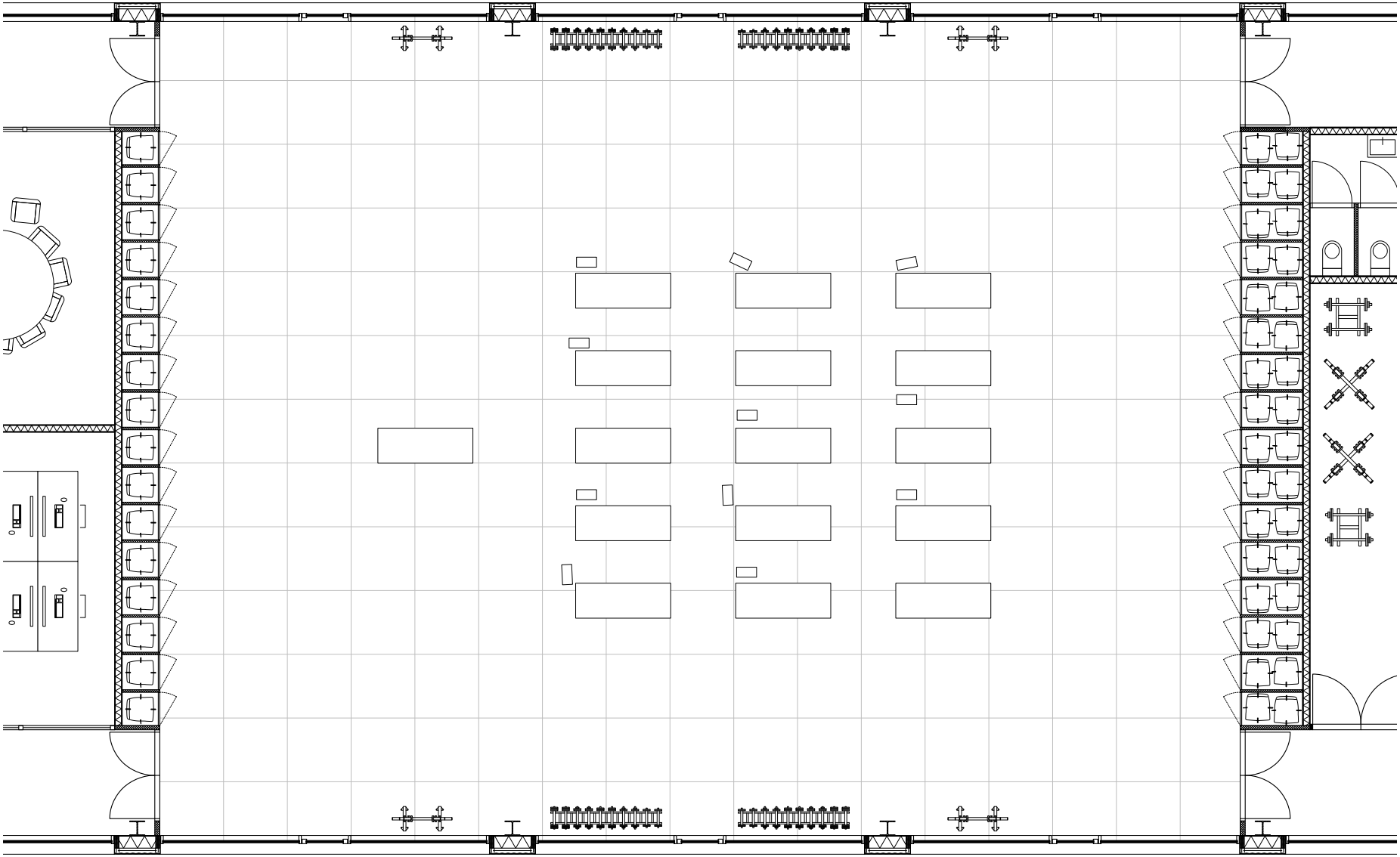
SCALE 1:200

TYPICAL OFFICE FLOOR PLAN



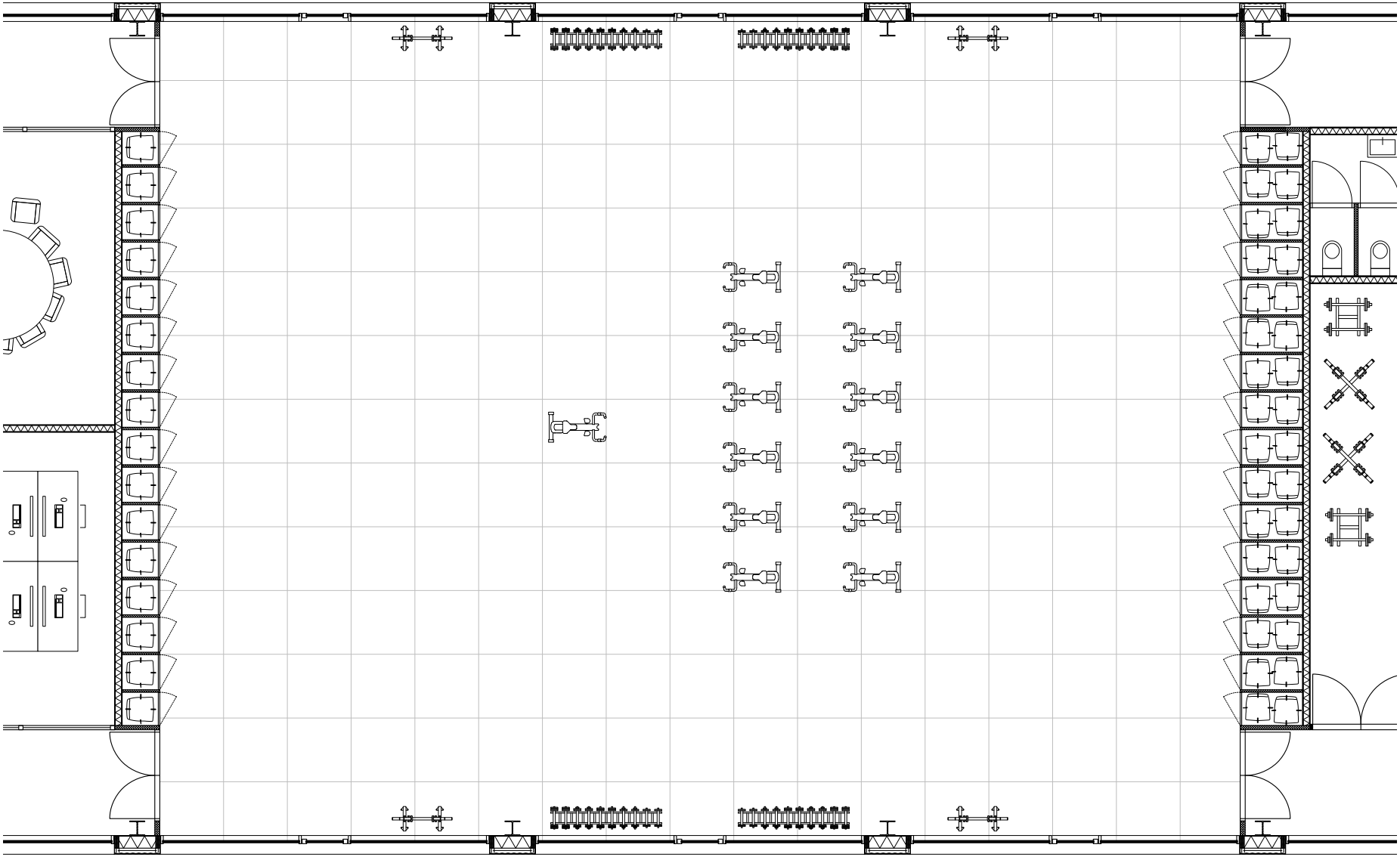
SCALE 1:50

FLEXIBLE OFFICE PLAN



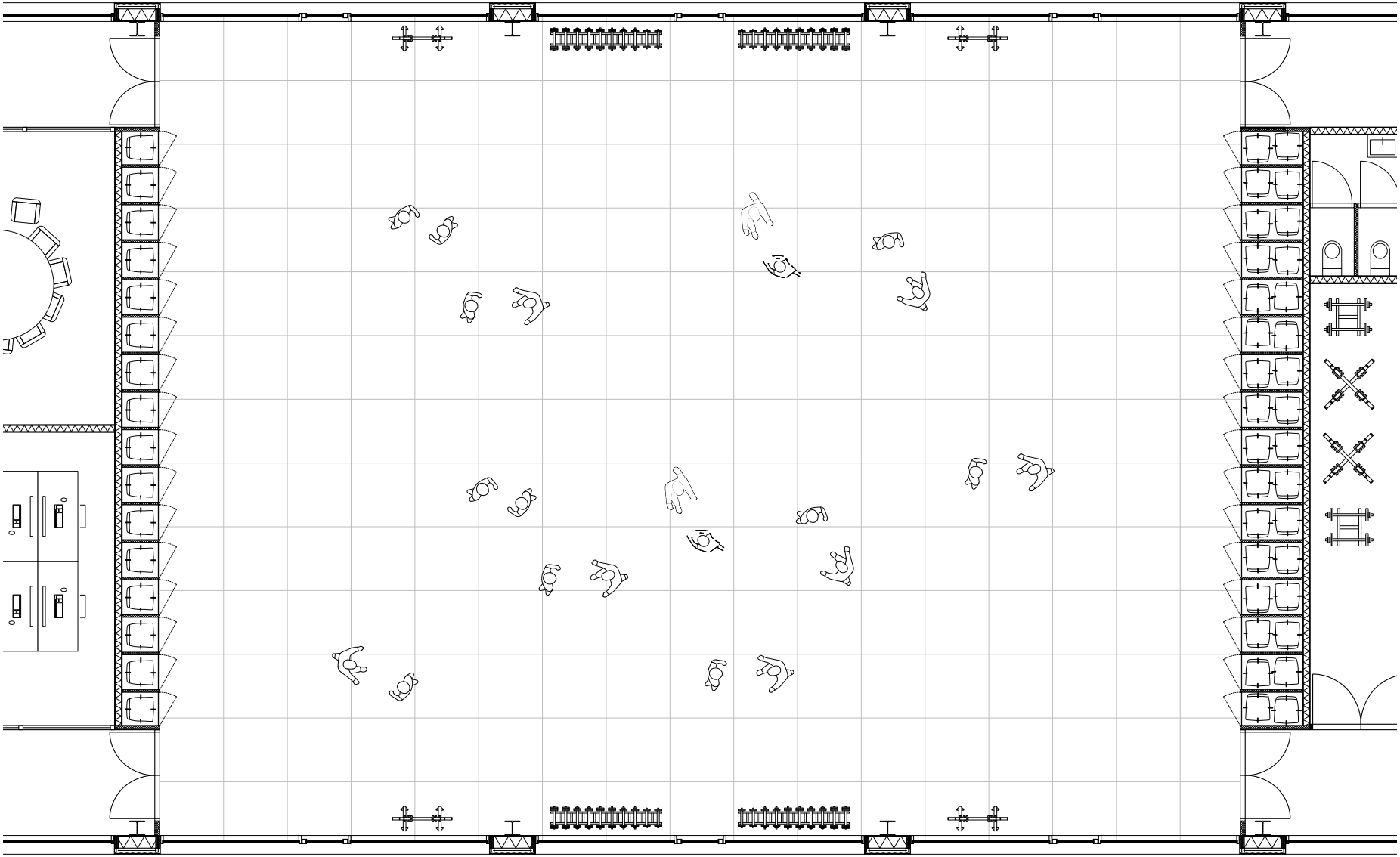
SCALE 1:50

FLEXIBLE OFFICE PLAN



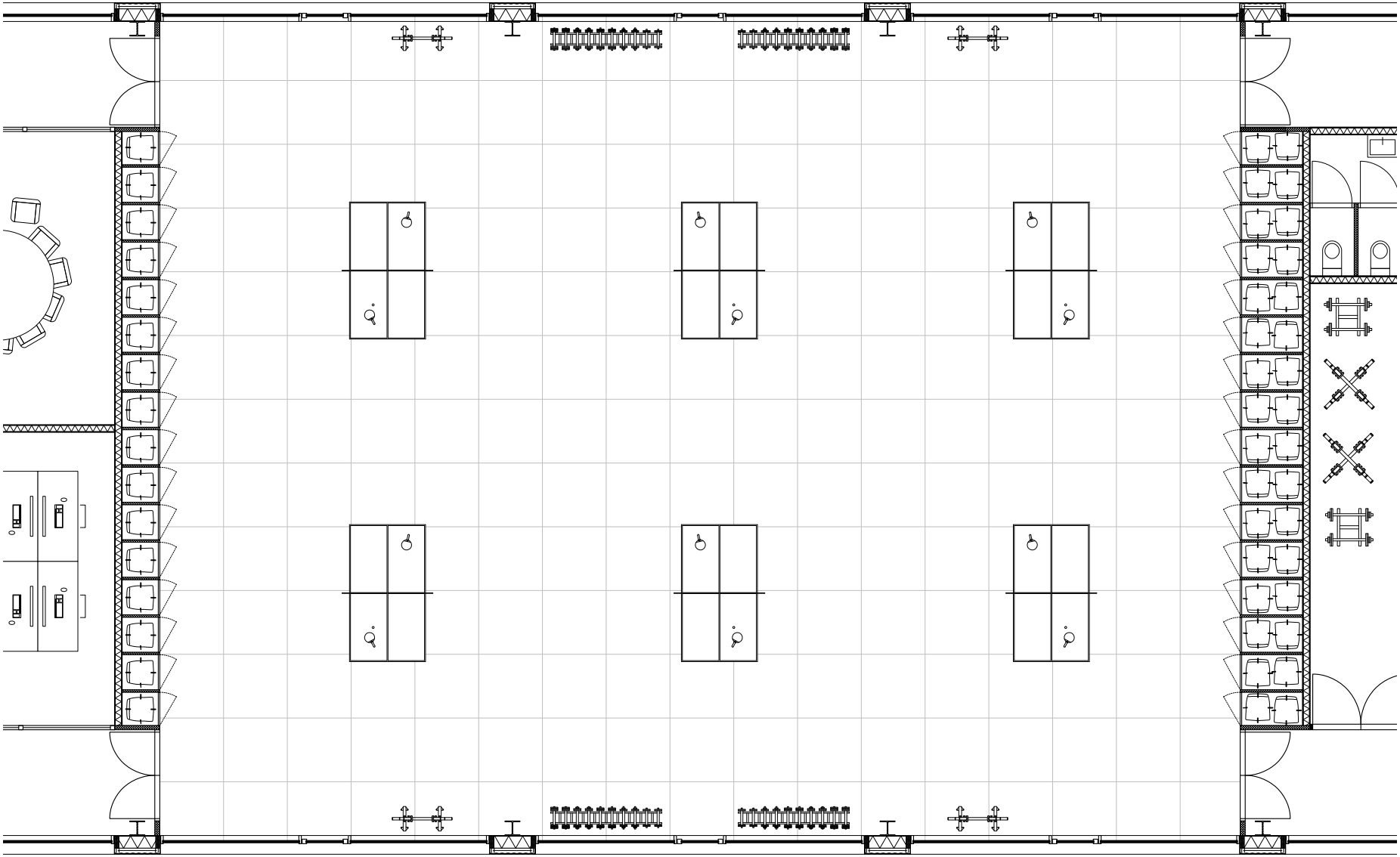
SCALE 1:50

FLEXIBLE OFFICE PLAN



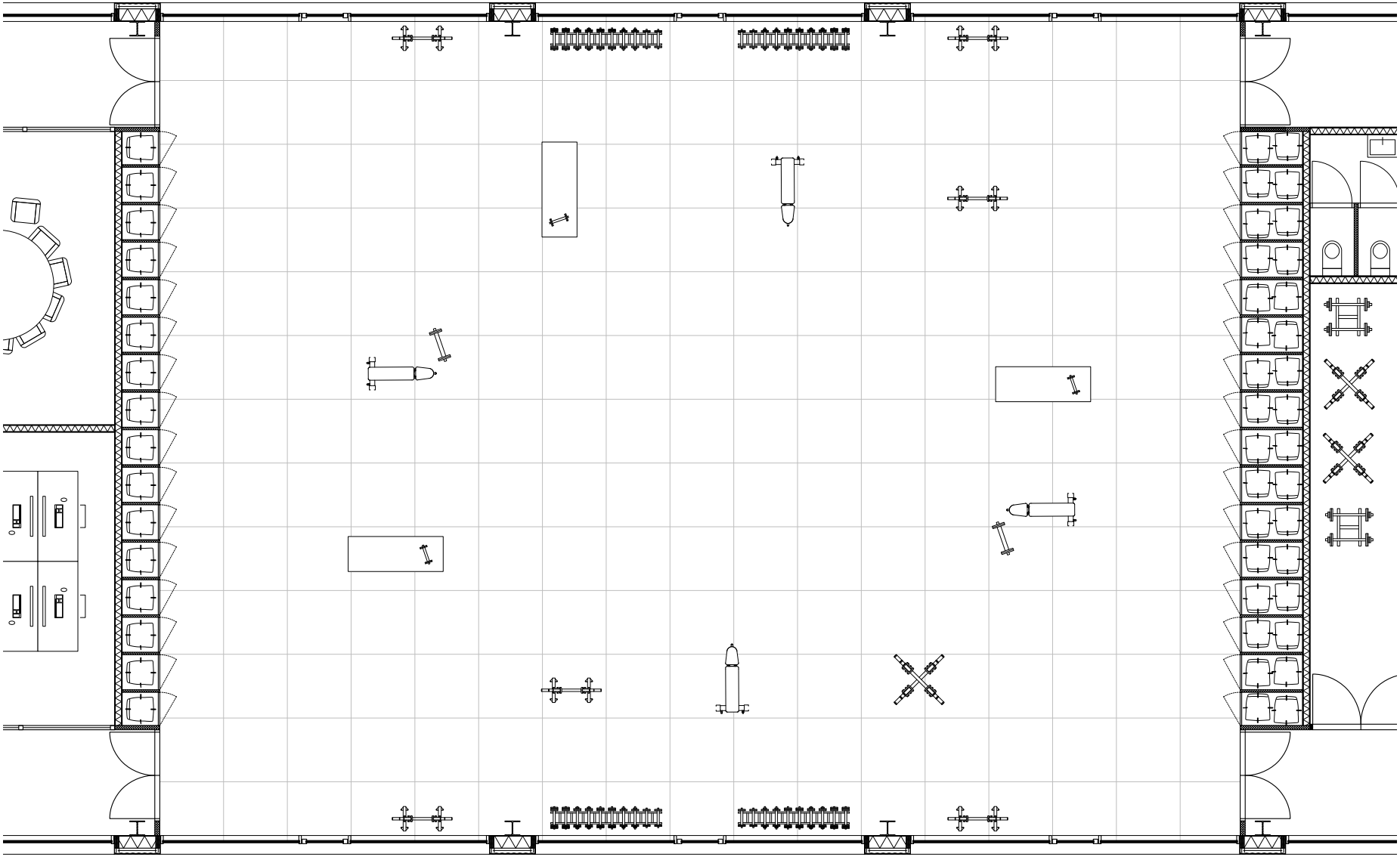
SCALE 1:50

FLEXIBLE OFFICE PLAN



SCALE 1:50

FLEXIBLE OFFICE PLAN

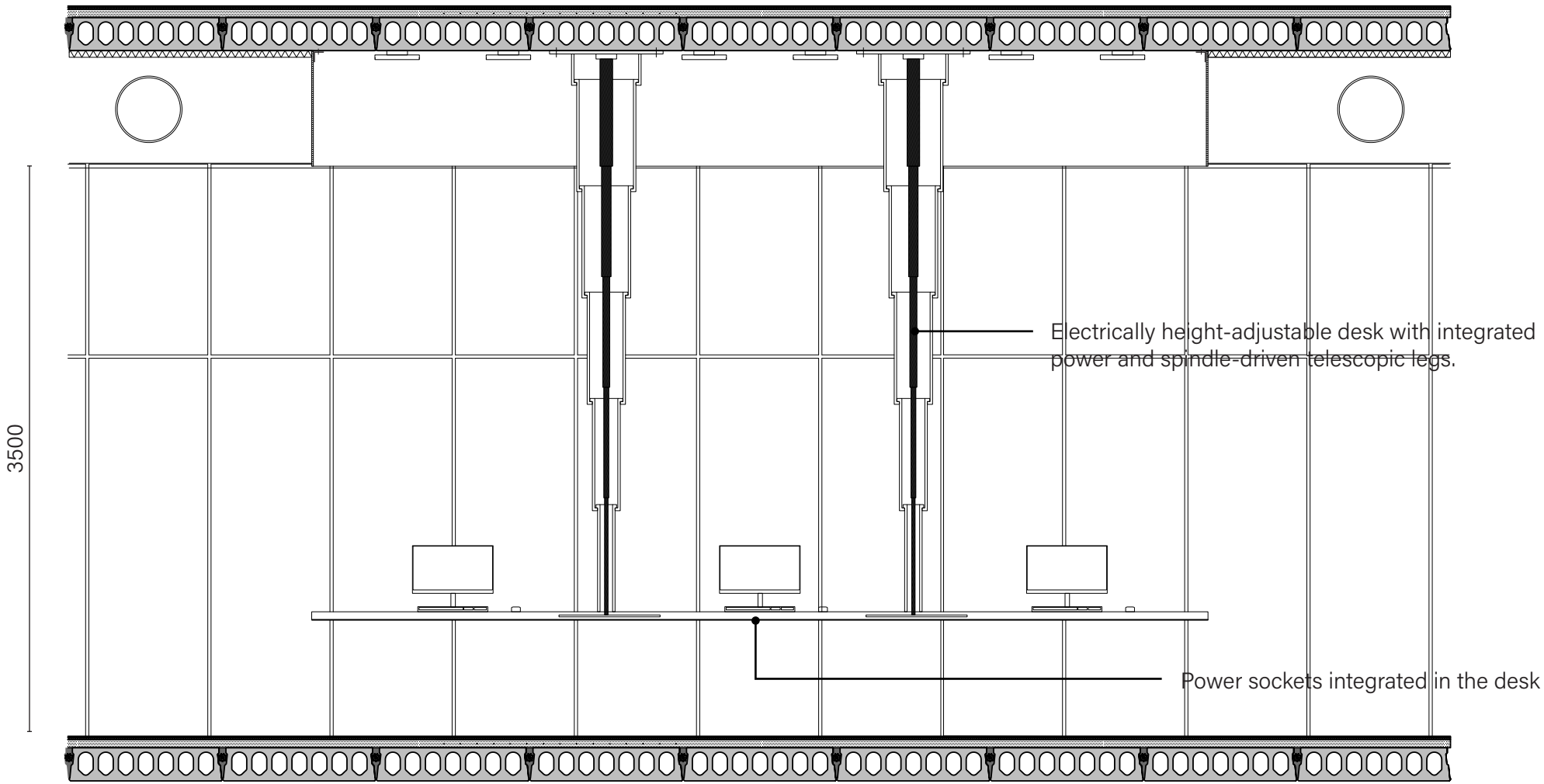


SCALE 1:50

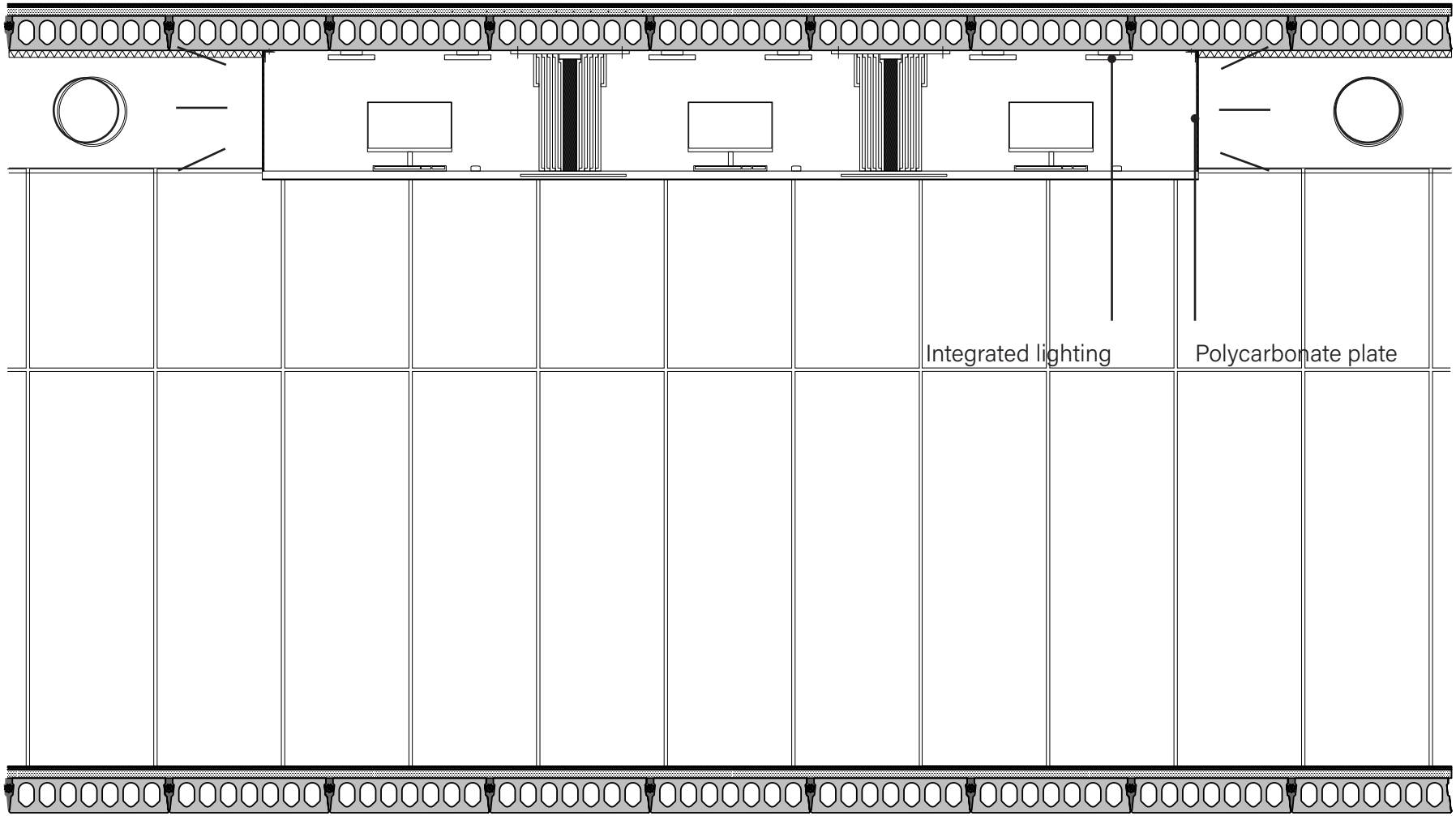
FLEXIBLE OFFICE PLAN

FACADE DURING OFFICE HOURS

FACADE DURING SPORTS HOURS

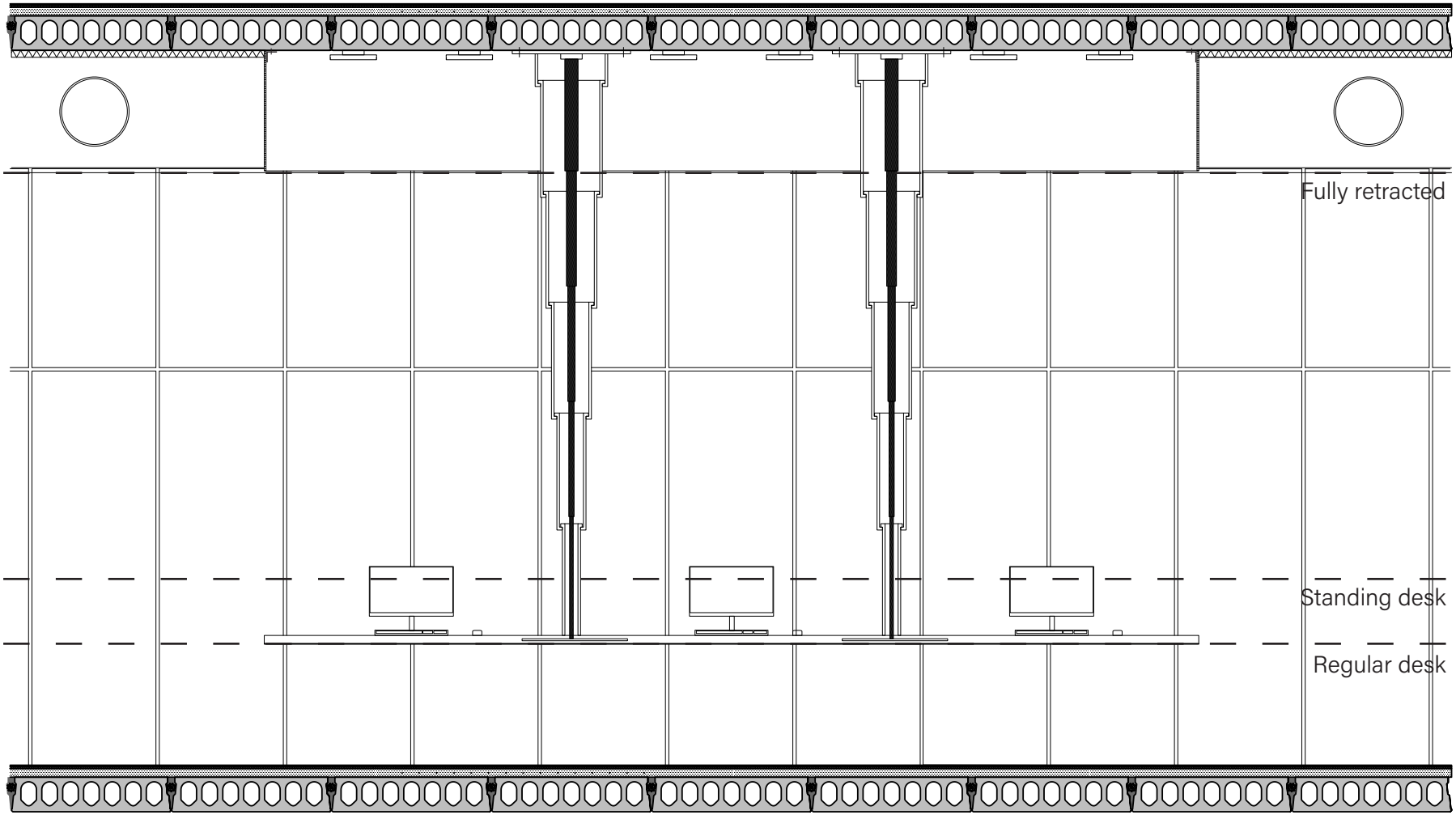

3500
Electrically height-adjustable desk with integrated power and spindle-driven telescopic legs.
Power sockets integrated in the desk

SCALE 1:50




SCALE 1:50

OFFICE DESKS

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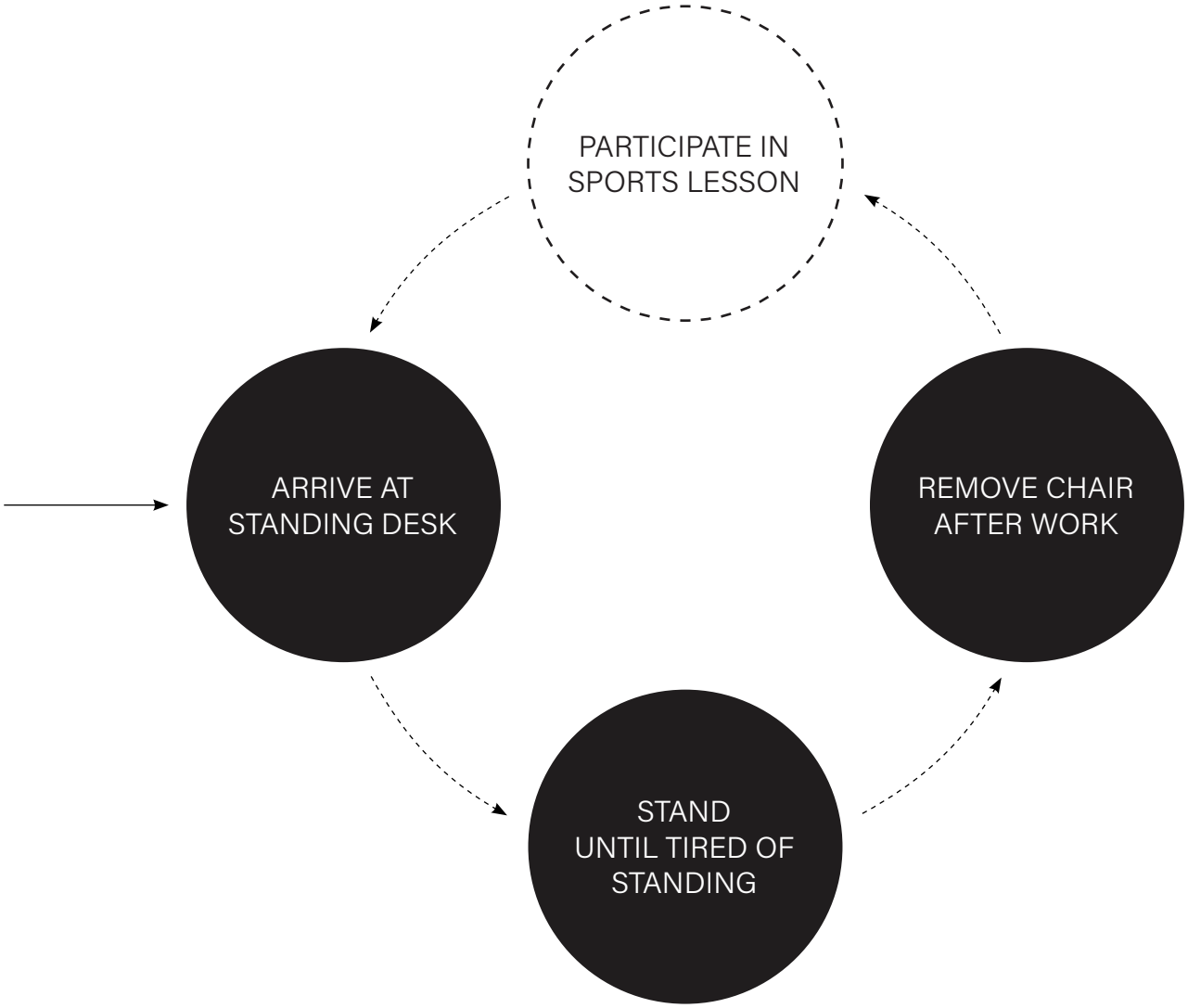
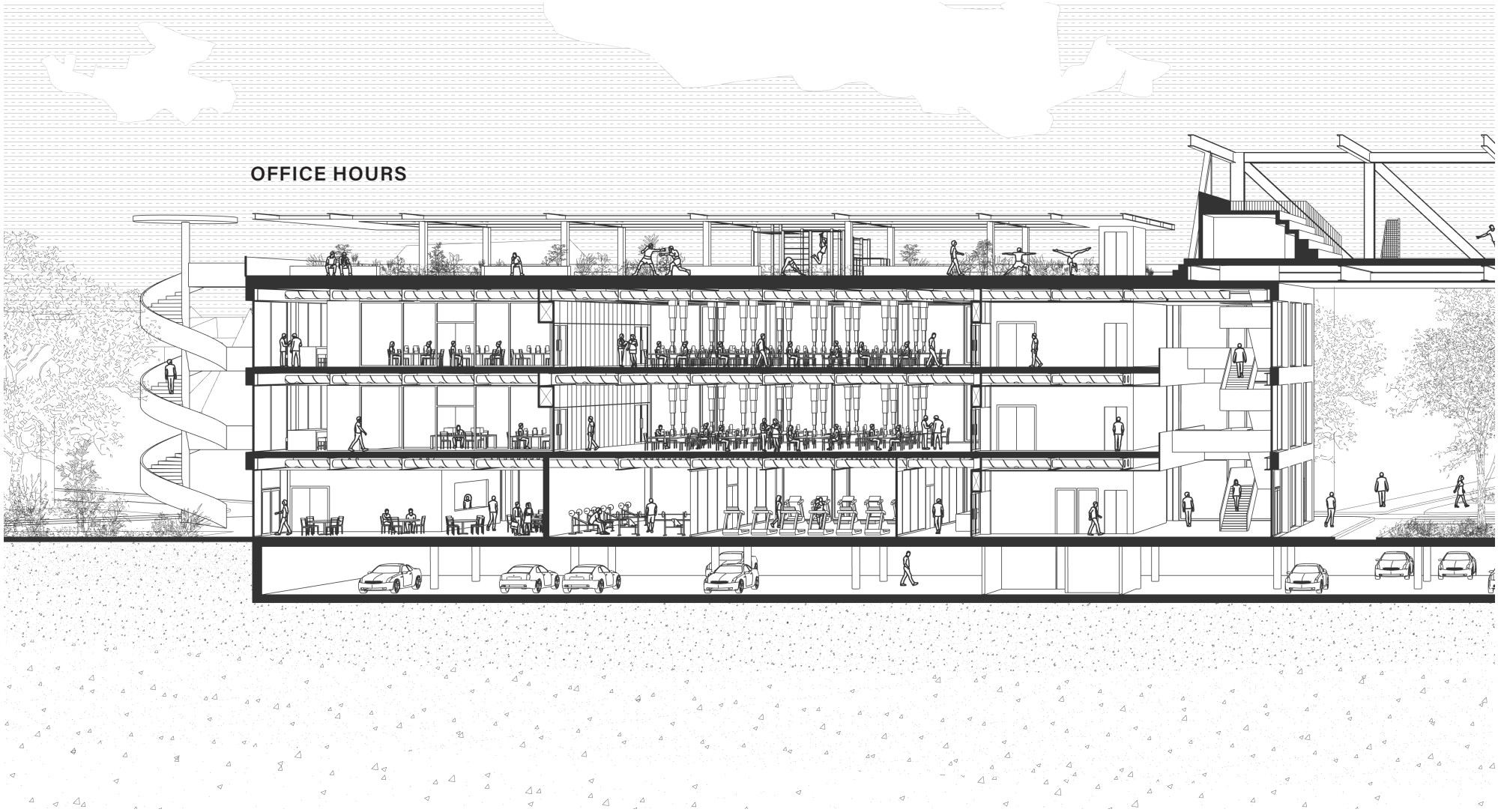
OFFICE DESKS




WORKING DAY WORKFLOW


ARRIVE AT STANDING DESK


SWITCH TO REGULAR DESK

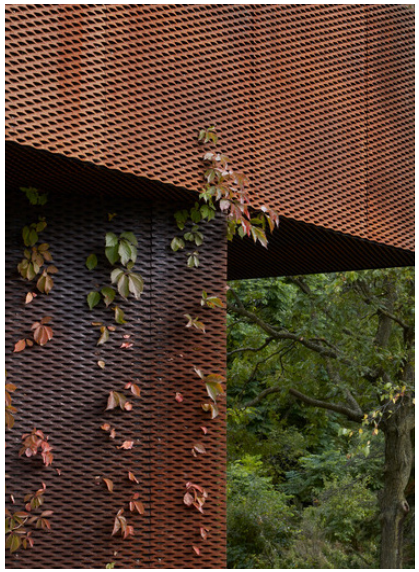



SCALE 1:200

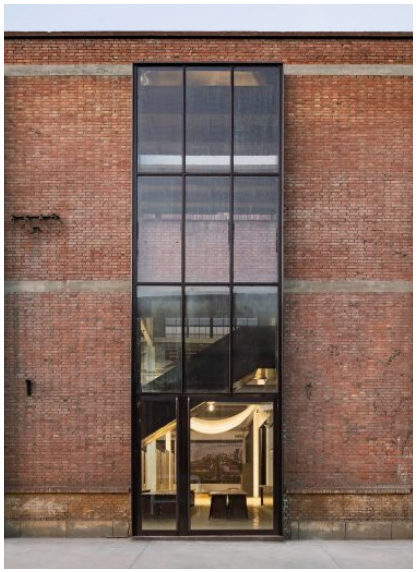
LONGITUDINAL SECTION


LONGITUDINAL SECTION

CORTEN STEEL FACADE

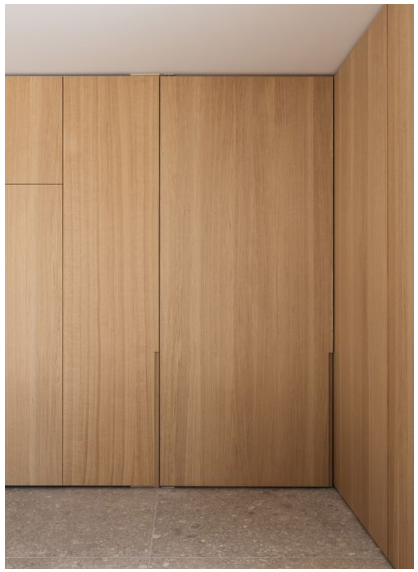


LARGE WINDOWS

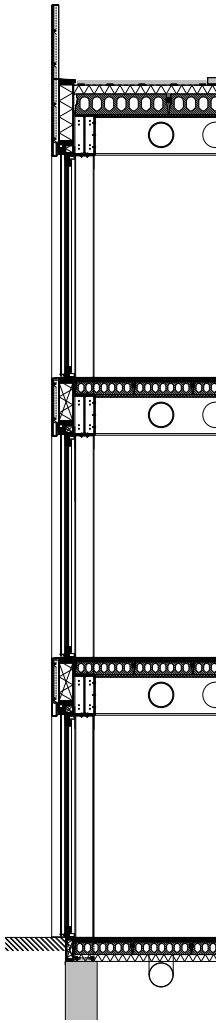


MIRROR

WOOD INTERIOR

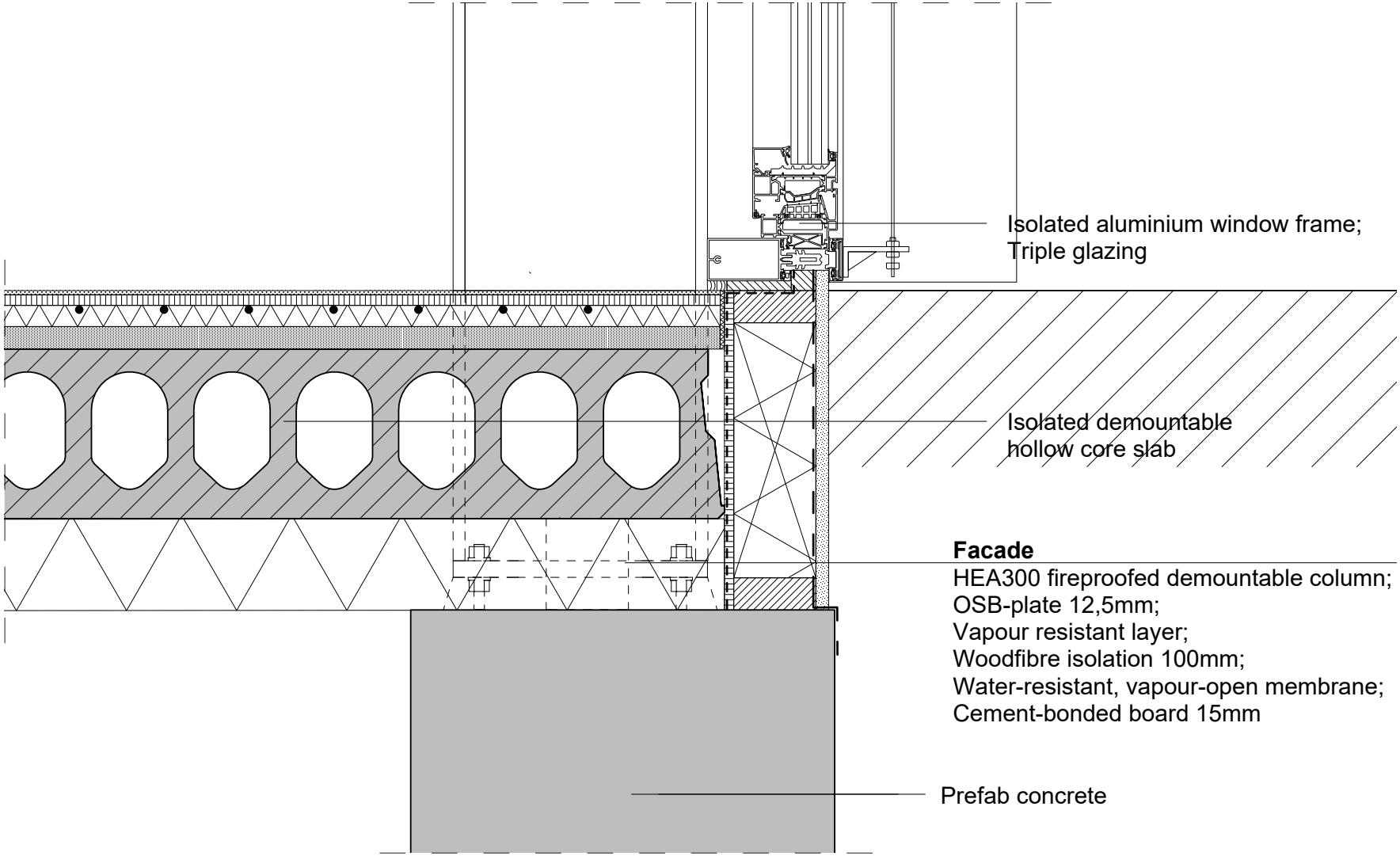


SOUTH FACADE



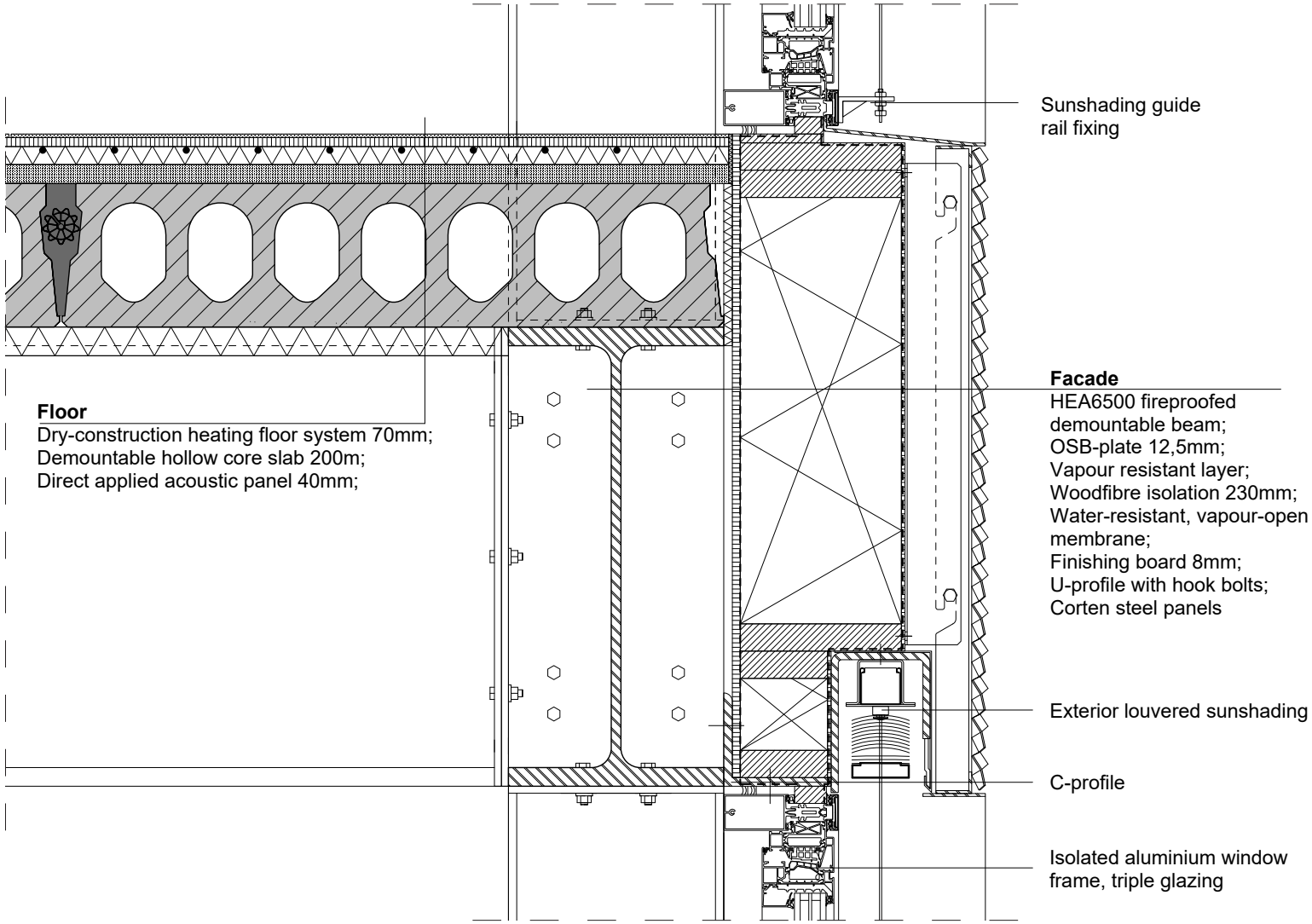
SCALE 1:50 (RESCALED)

FACADE FRAGMENT



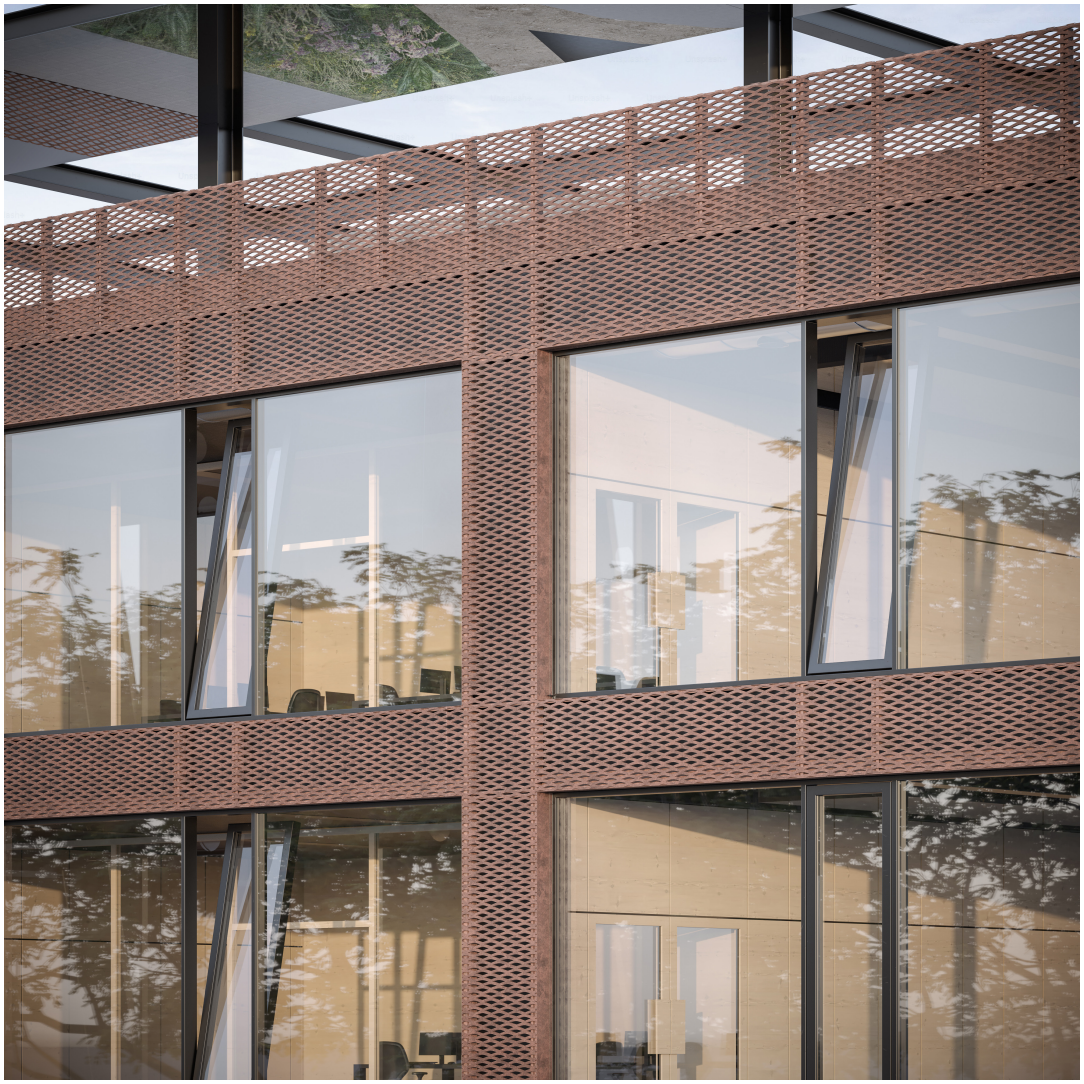

SCALE 1:5

DETAIL 1

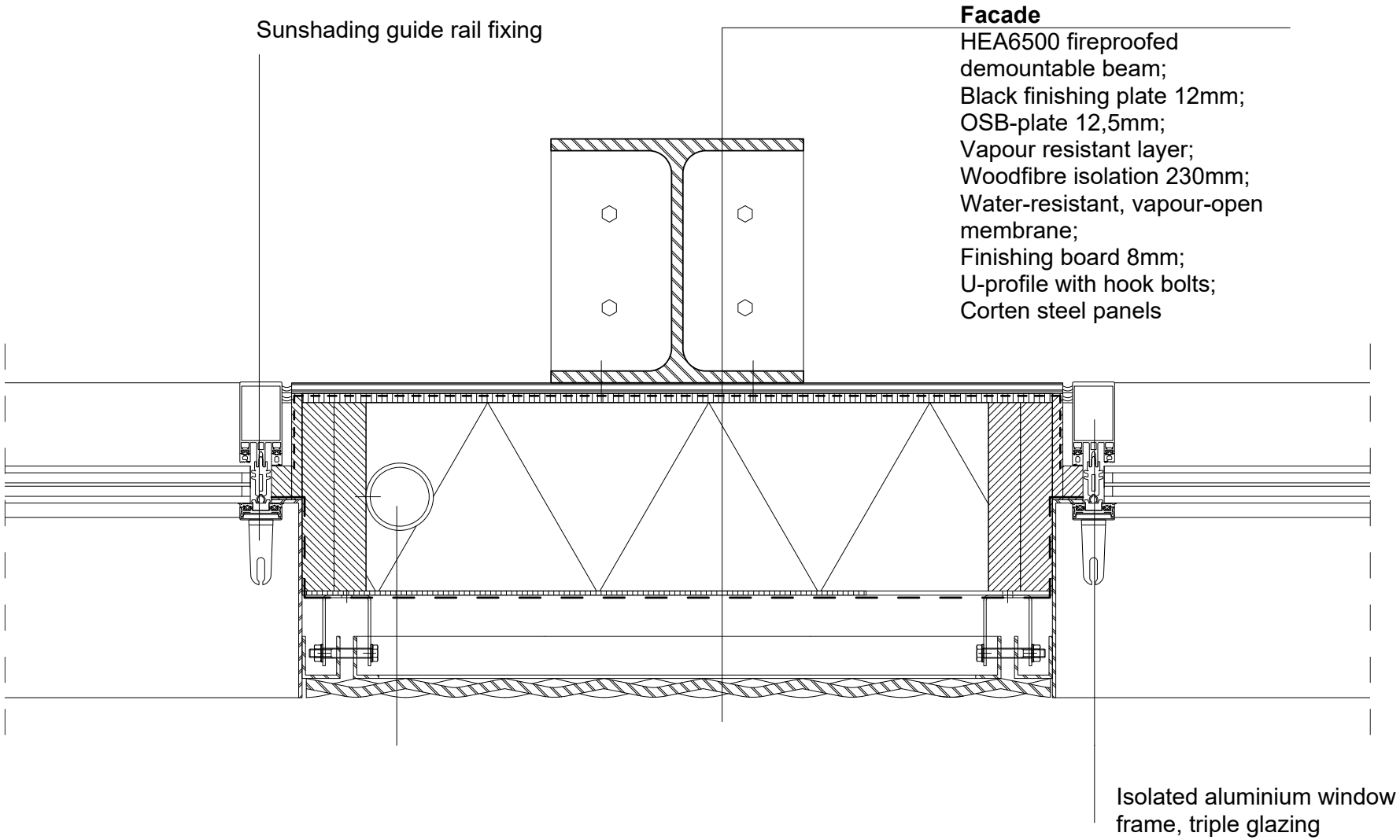



SCALE 1:5 (RESCALED)

FACADE DETAIL



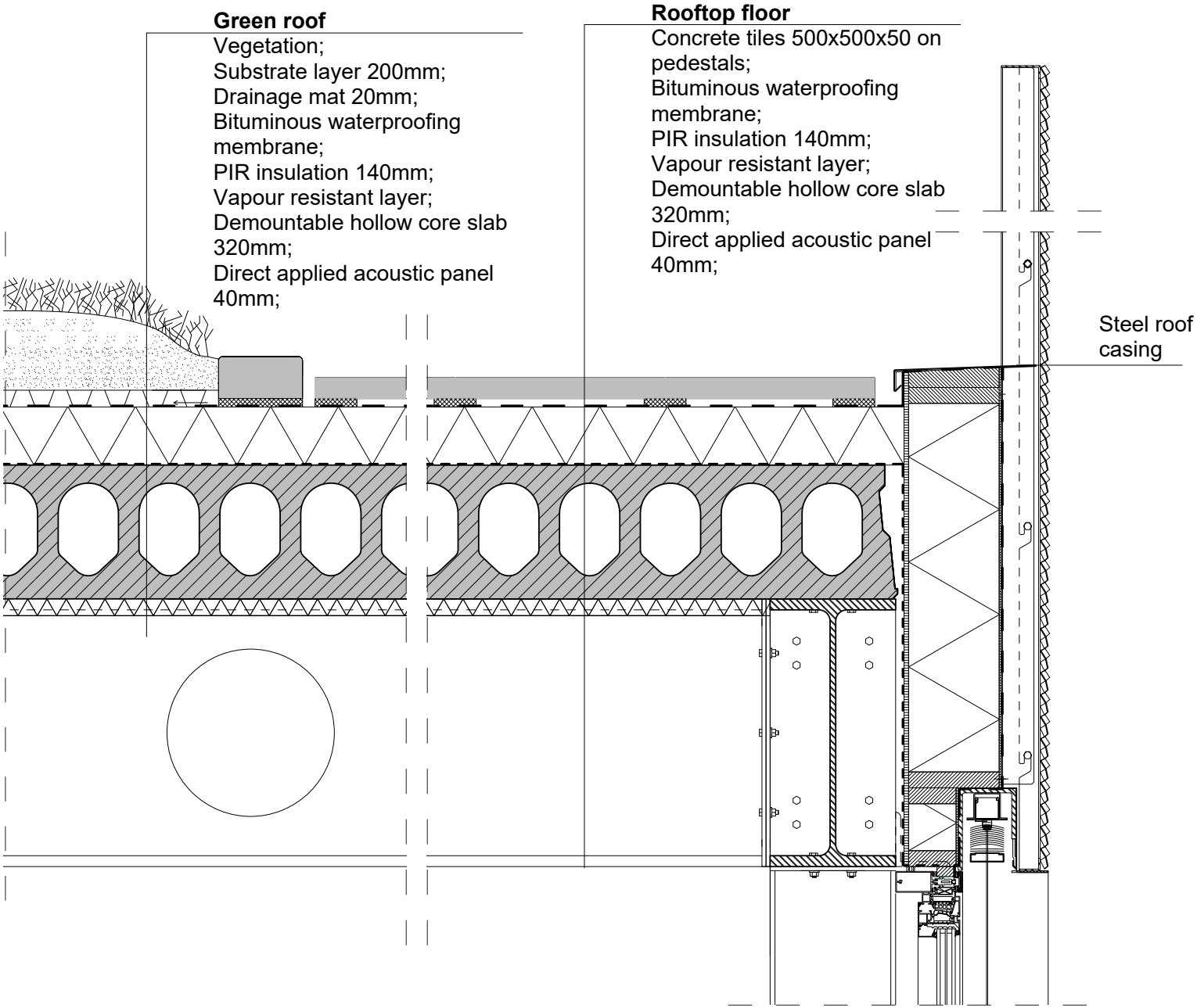
FACADE DETAIL




SCALE 1:5

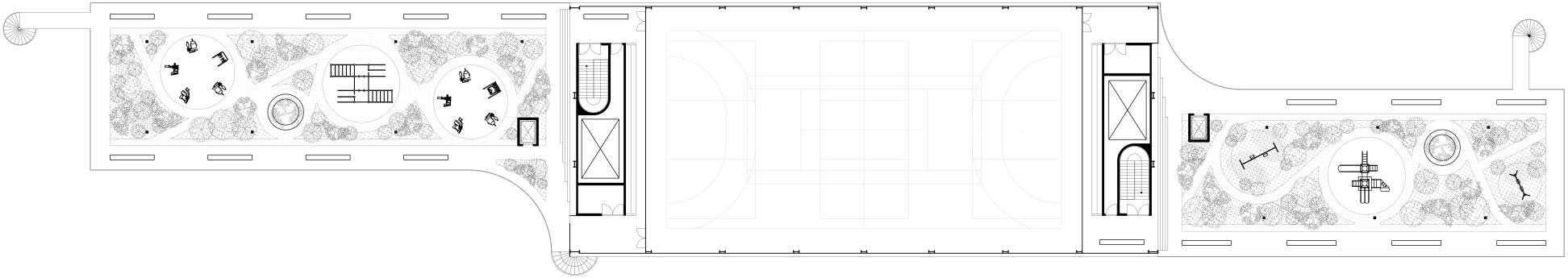
FACADE DETAIL

ROOF BALUSTRADE DETAIL



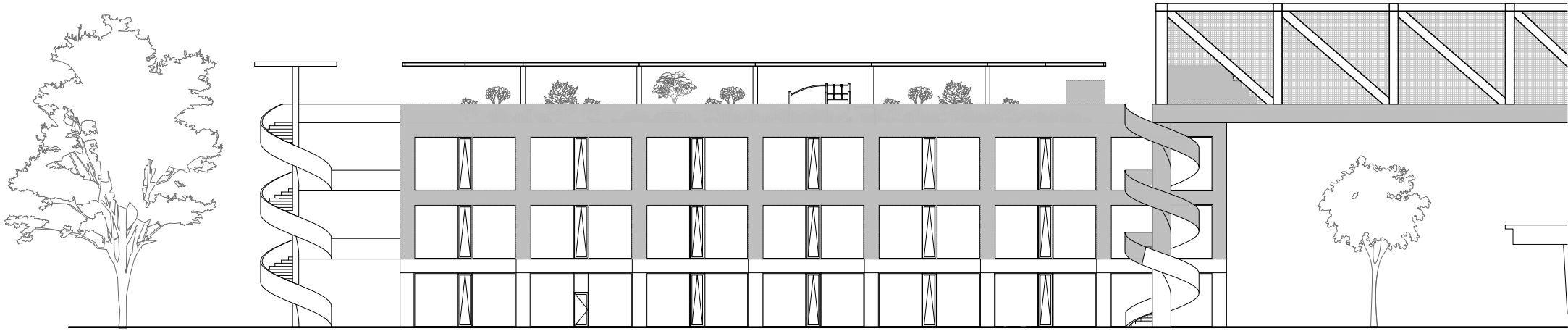

SCALE 1:5 (RESCALED)

ROOF EDGE DETAIL



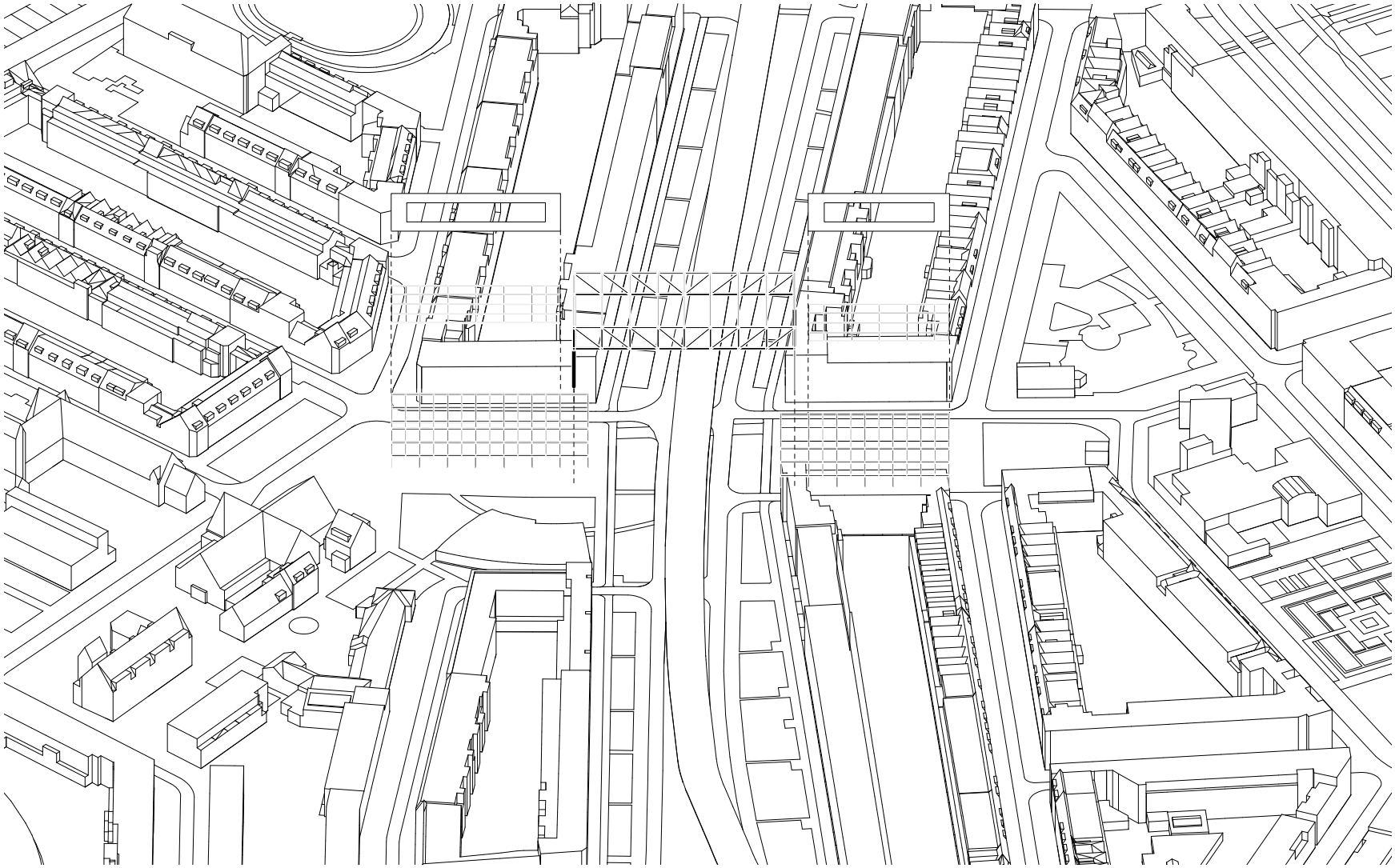
SCALE 1:400

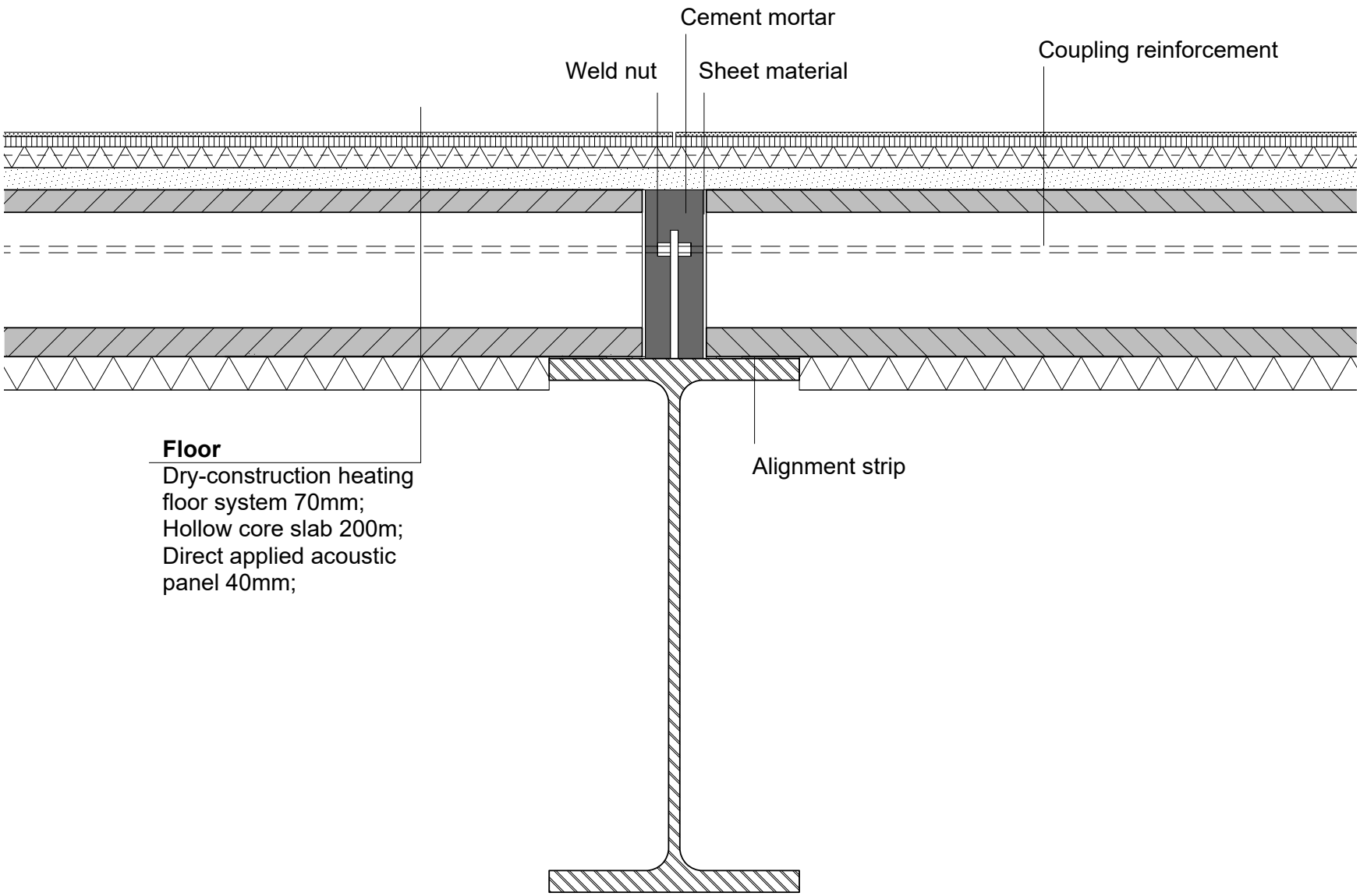
ROOF FLOOR PLAN



SCALE 1:200

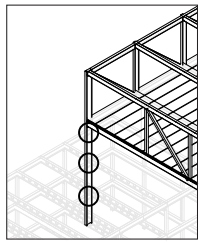
SOUTH ELEVATION

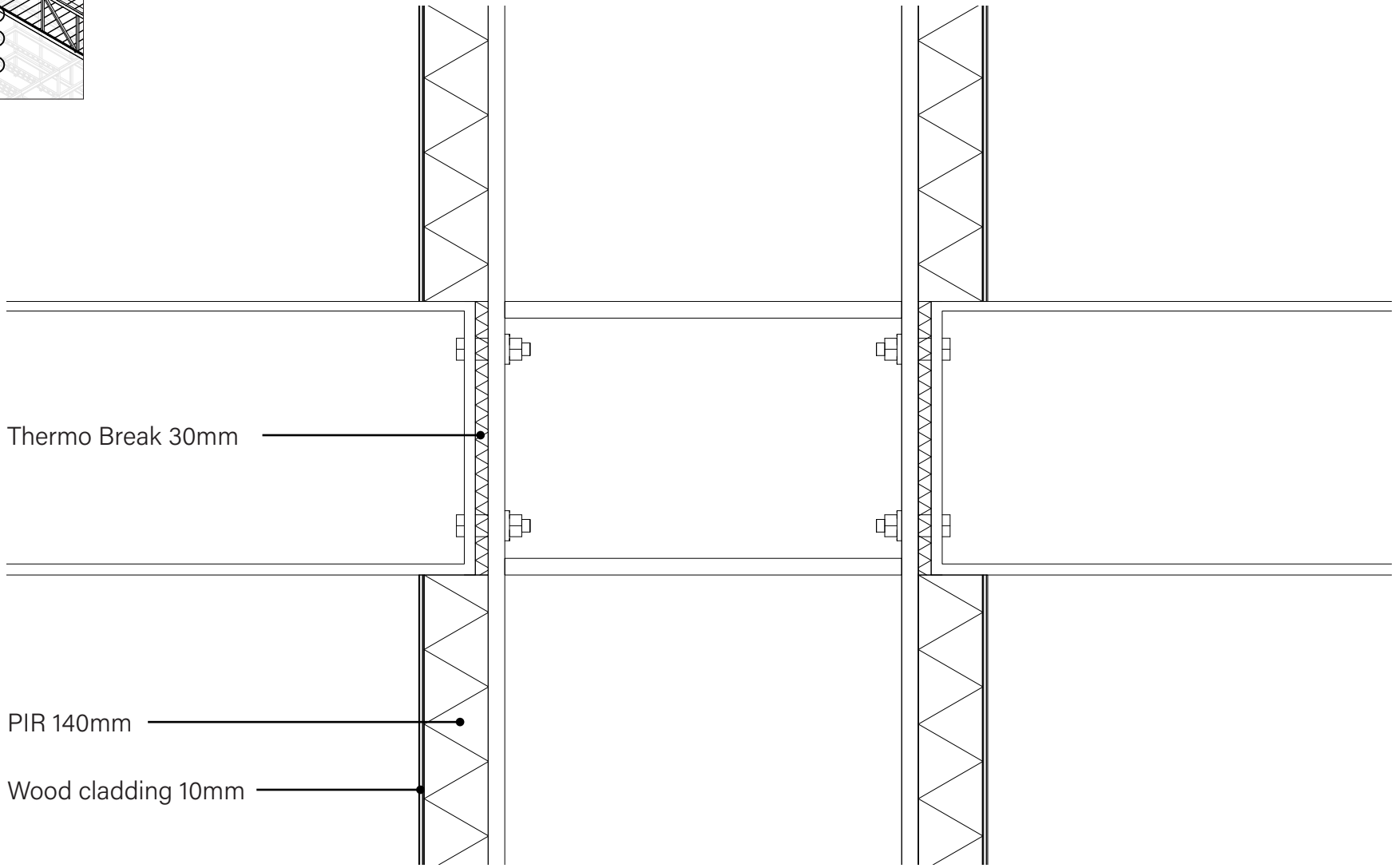





SCALE 1:5

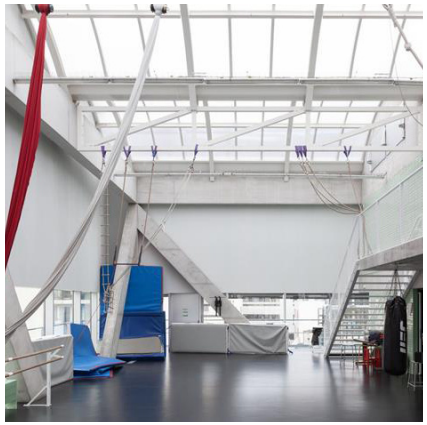
FLOOR DETAIL






STRUCTURE DETAIL

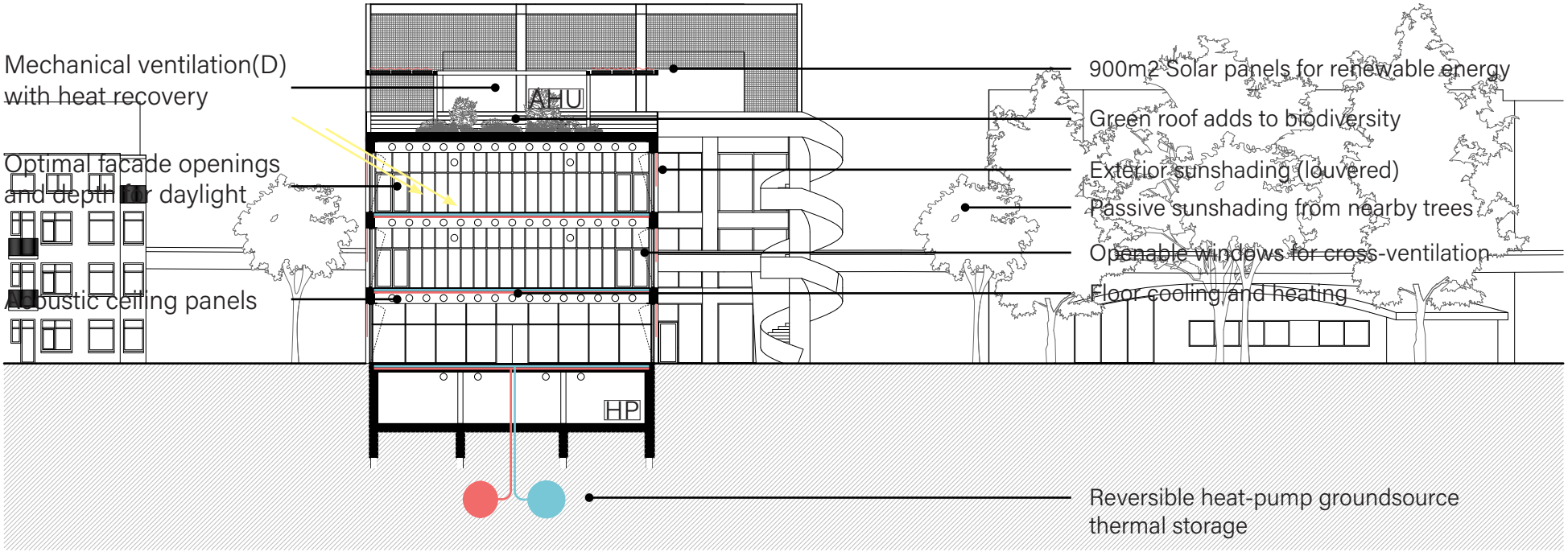
ADAPTABILITY



DISASSEMBLY

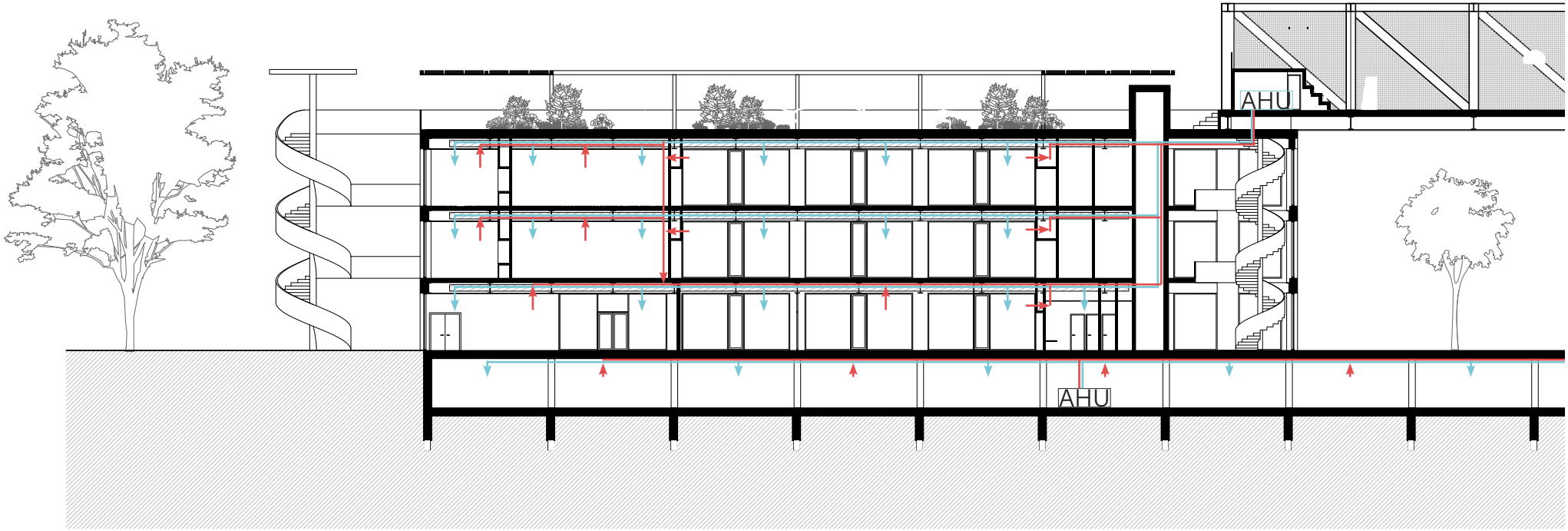
LONGEVITY

RECYCLE




SCALE 1:200

CLIMATE CONCEPT




SCALE 1:200

VENTILATION CONCEPT

# HOW CAN ARCHITECTURE IMPROVE PHYSICAL AND MENTAL WELL-BEING?


STIMULATING SPORTS IN A WAY THAT BENEFITS
BOTH THE EMPLOYEE AND THE COMPANY


AN OFFICE THAT STIMULATES
MOVEMENT AND STAIR USE

# AN OFFICE THAT GIVES BACK TO THE LOCAL COMMUNITY


AN OFFICE WHICH IS NOT ONLY
MADE TO WORK, BUT ALSO


MADE TO MOVE


THANK YOU