

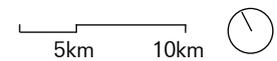
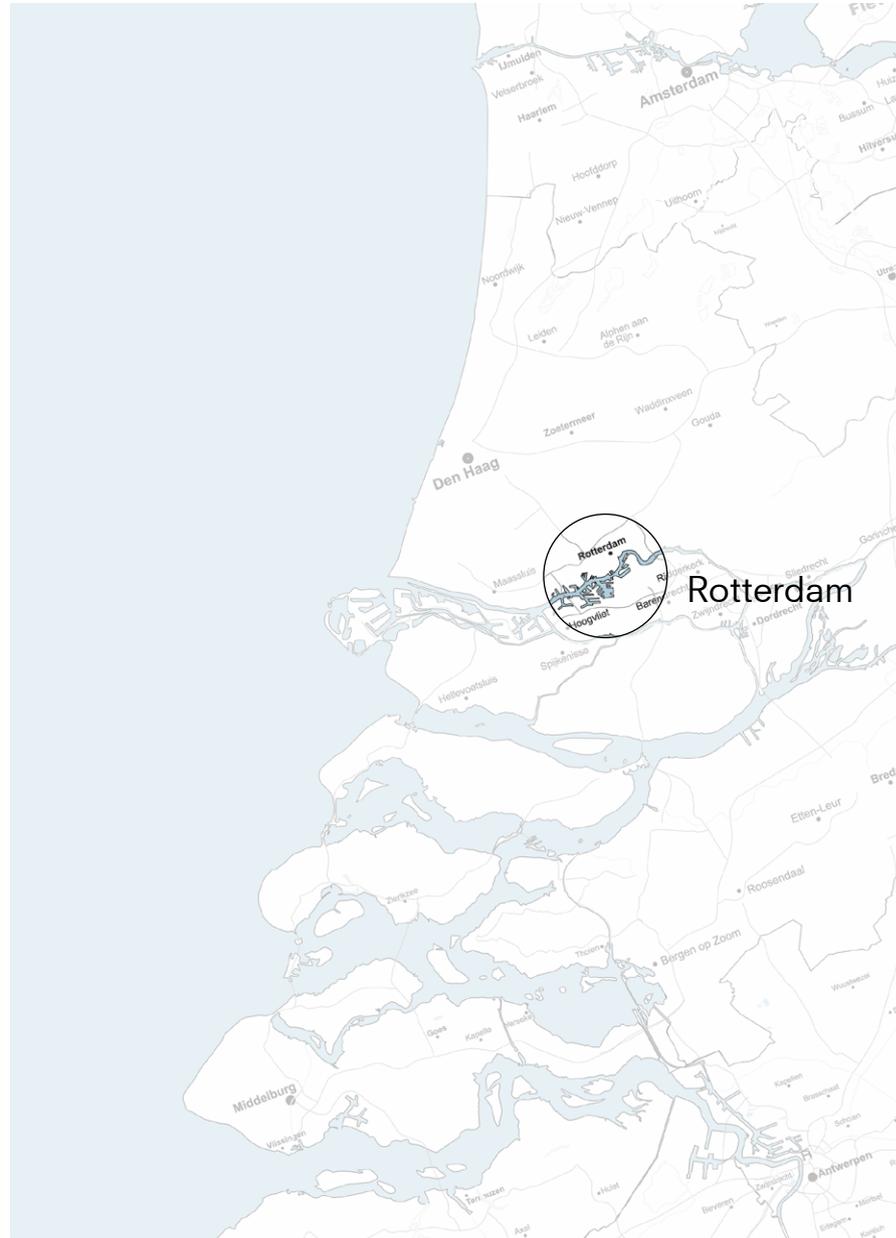
# ZUIDPLEIN 2030



## migration of idea

The movement of ideas, thoughts, philosophy, knowledge or other non-physical conditions from one space and/or time to another, where they are activated and manifested. As a result, this may purposefully or accidentally effect other existing conditions in a different setting, thereby giving birth to new ideas or phenomena.

# project location - Rotterdam



# project location - Rotterdam south



# group vision - 8 interventions



# group vision - productive waterfront



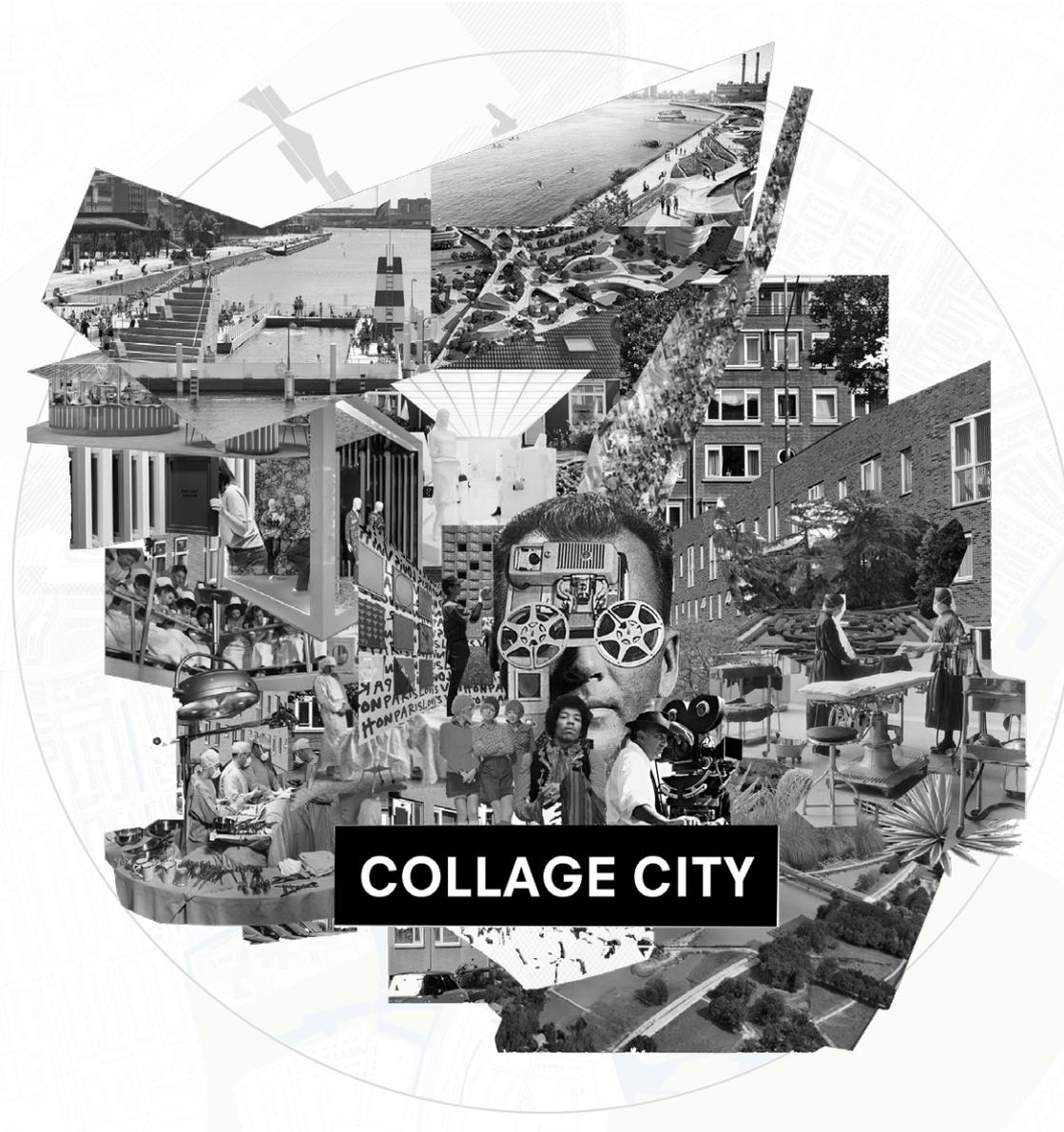
# group vision - green district



# group vision - productive waterfront



# group vision



**thesis topic**

migration of living and working space of creative class

## definition

“creative class are individuals or small scale of groups whose work turns on the creation of new forms with **intense knowledge-based industry.**”

--- Richard Florida



# definition



**programmer**



**musician**



**writer**



**designer**



**researcher**



**entrepreneur**

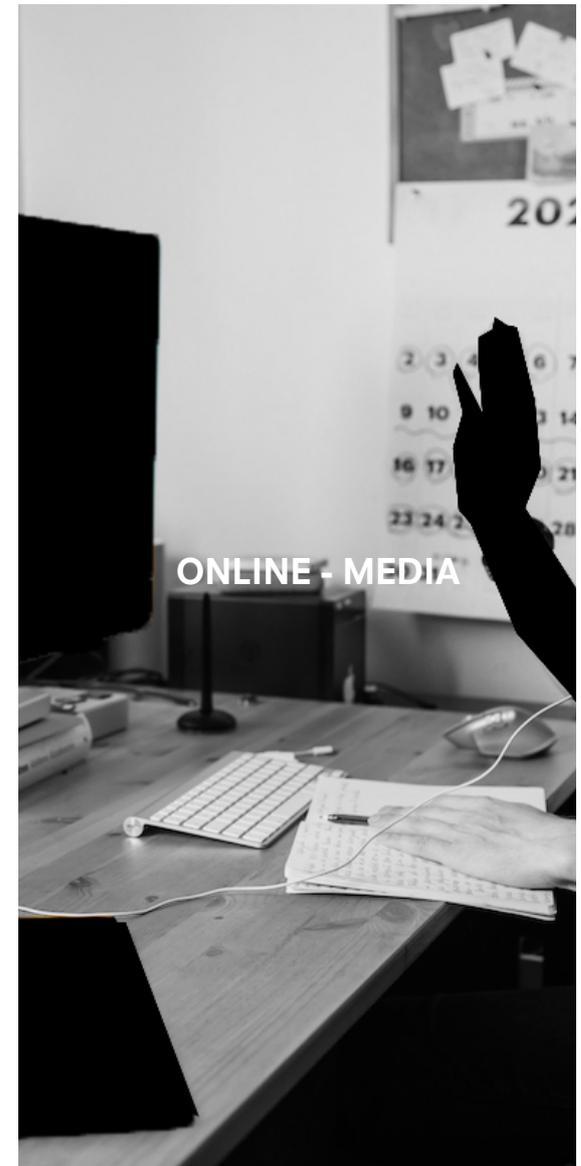
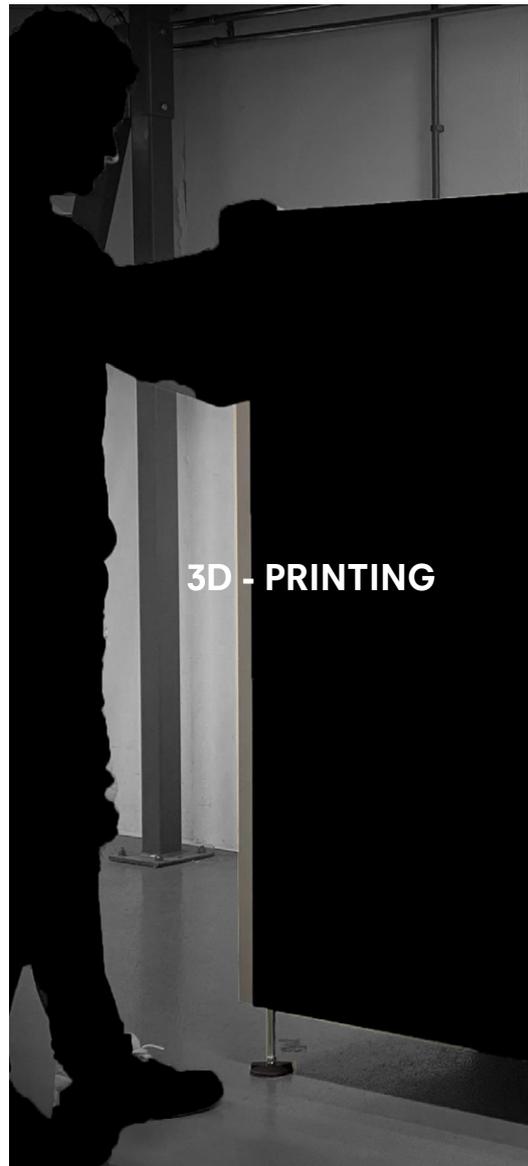
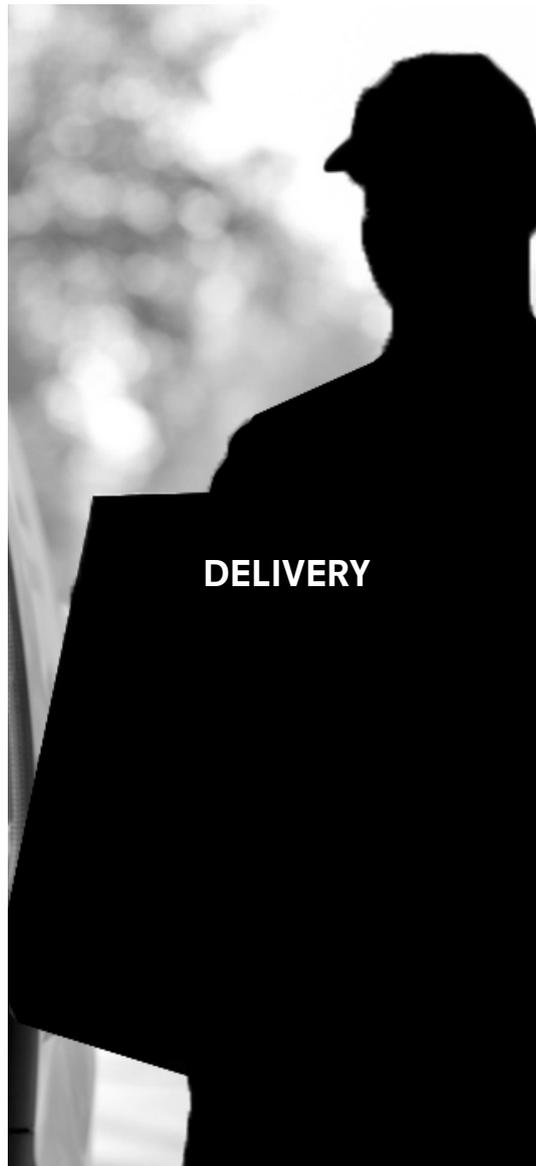
## research question

how to accommodate creative class in future urban development?

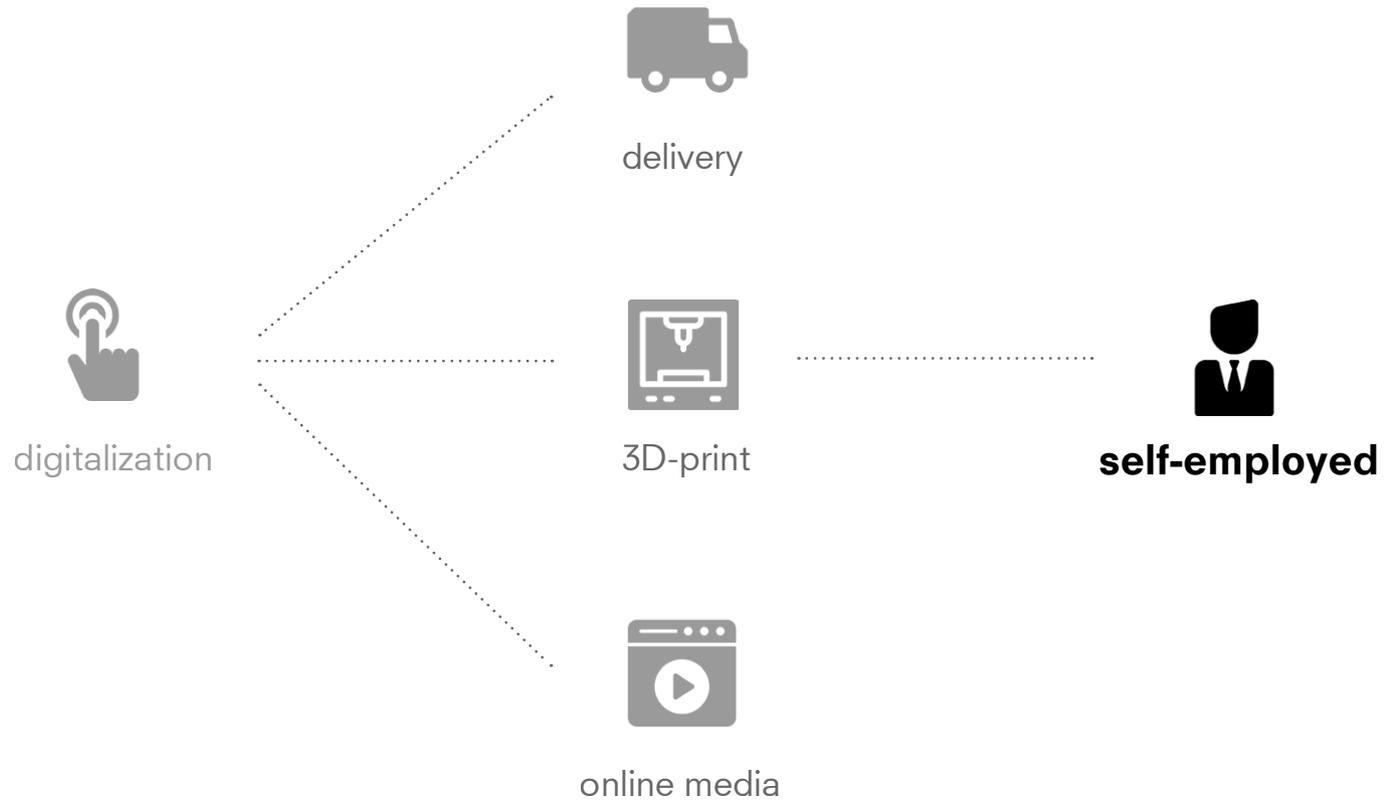
# RESEARCH - USERS AND PROGRAM



# status quo



# status quo



## status quo

“The steady growth in self-employment contributed to a major upturn in flexible working practices that has **home-based work** at its practice.”

- Frances Holliss



# one live and work space

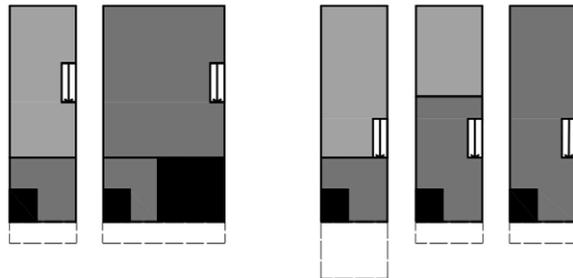


new york  
studio

cite montmartre  
aux artistes

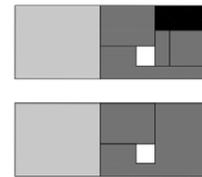
Andy Warhol's factory

united habitation



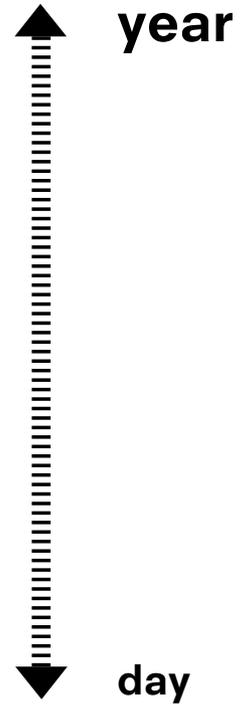
piazza ceramique

Los Angeles  
garage house

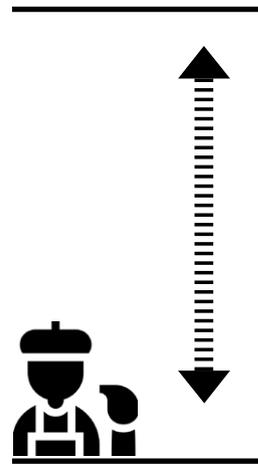


Eames' house

# flexible staying time



# adaptable space to express ideas

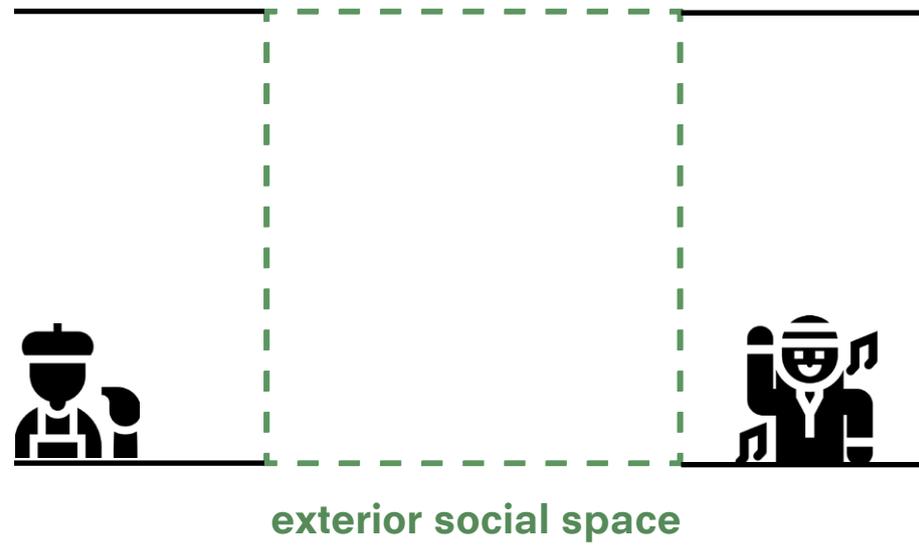


adaptable heights



adaptable widths

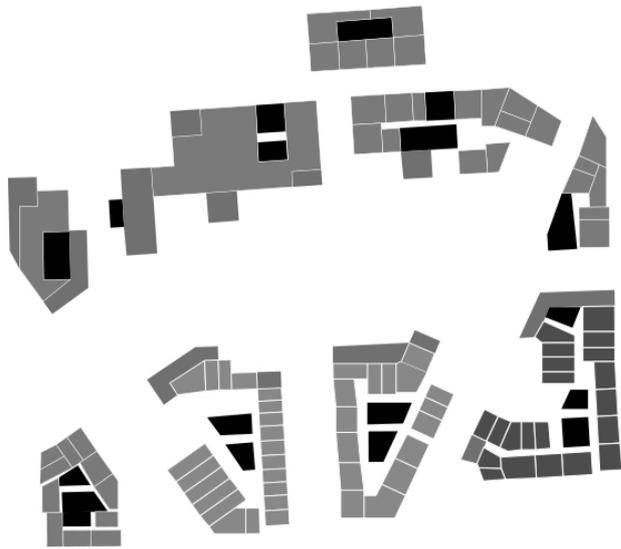
## exterior social space to exchange ideas



# one live and work space -> mixed live and work district



# mixed live and work district



Sewoon Sangga district



Shenzhen uphill lofts

## status quo

“different professions still have distinct preferences regarding the **degree of public-privacy spatial separation** in their work and live space based on their social demands”

- Frances Holliss



# social demands - exchange of ideas

local oriented  
physical oriented

global oriented  
digital oriented



visitors



public and exposed



private and quiet

## to accommodate creative groups



visitors



public and exposed



private and quiet

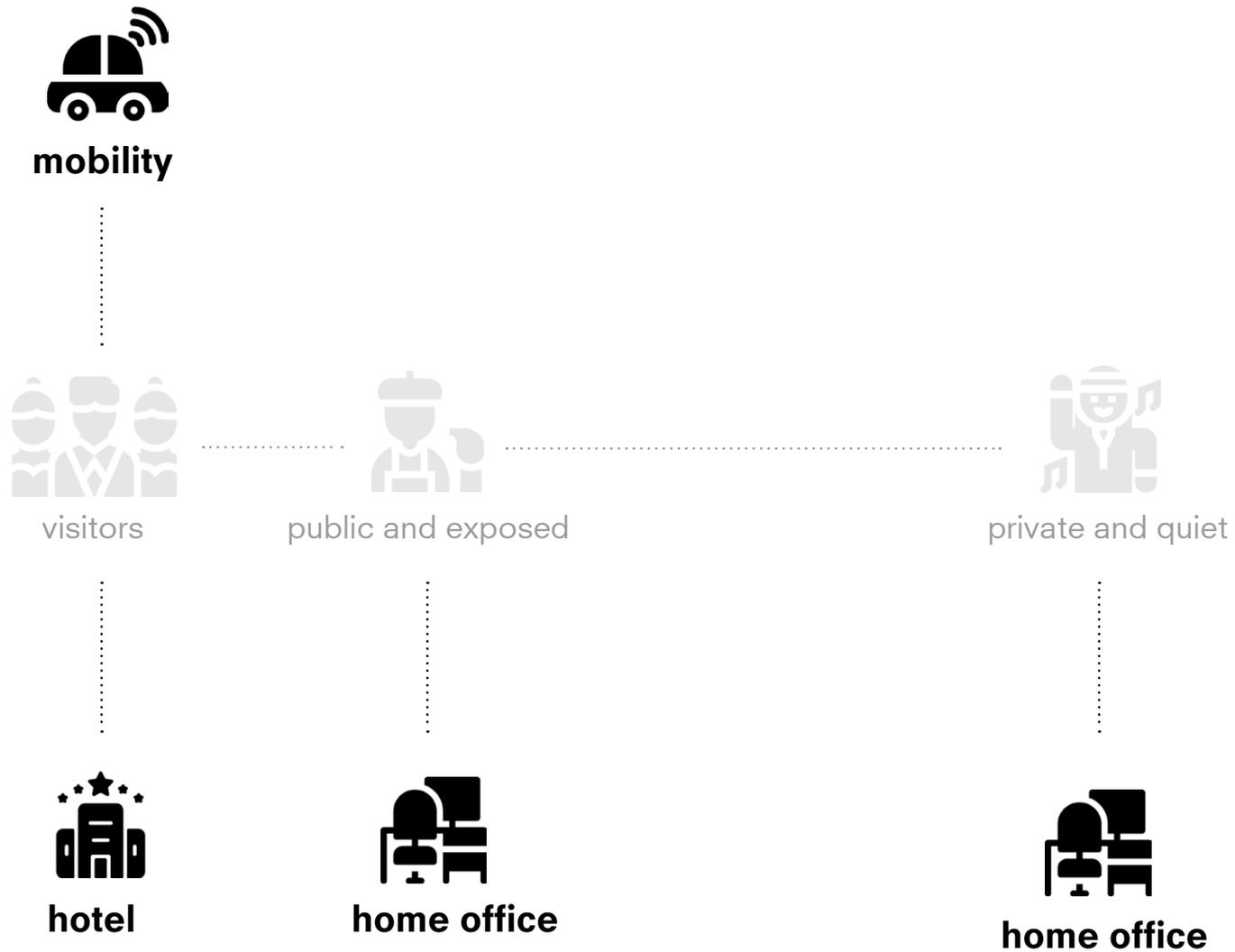


local/physical connection : **exterior sharing service - food terrace / art garden / stage**

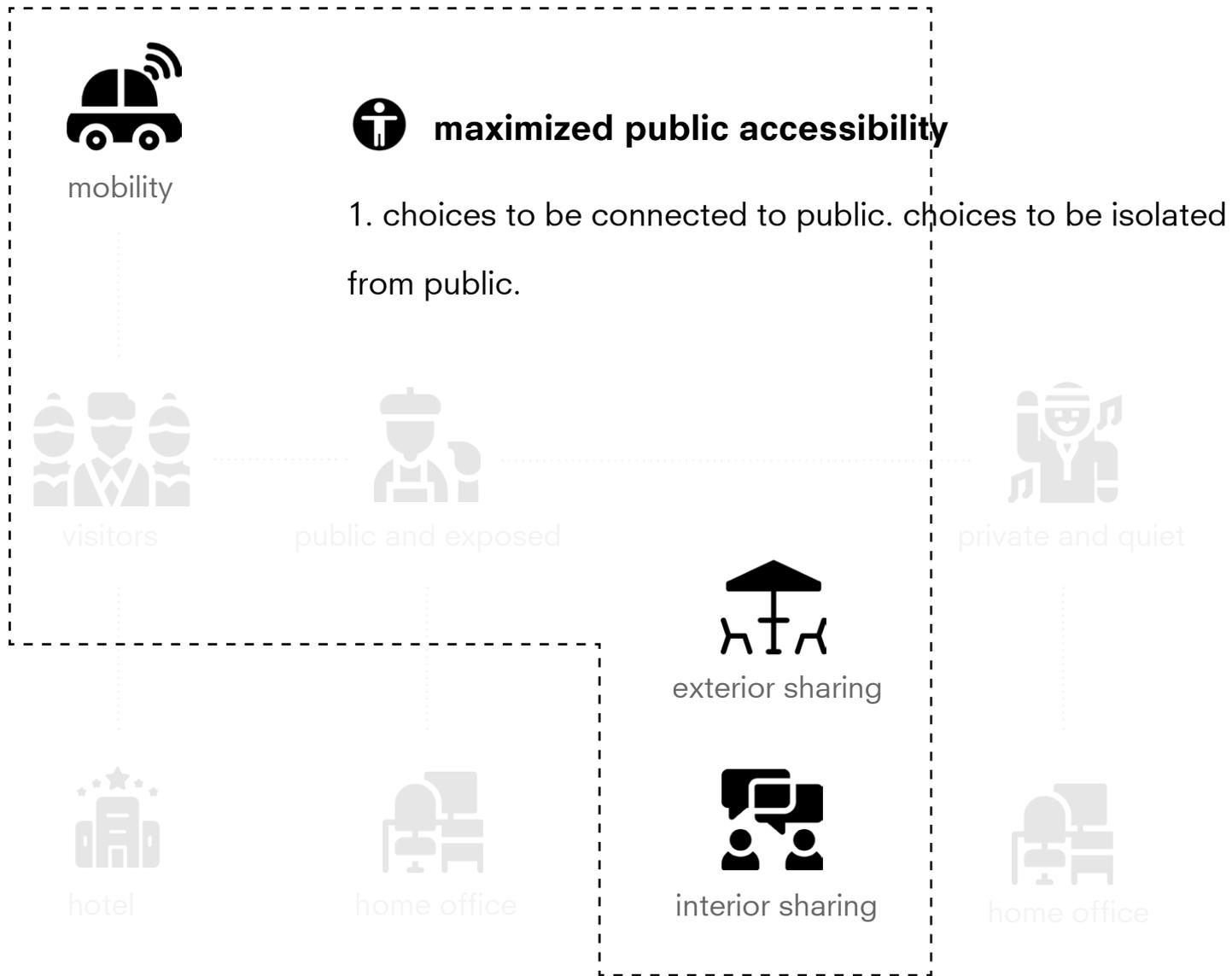


global/digital connection : **interior sharing service - 3D printing / lab / co-working**

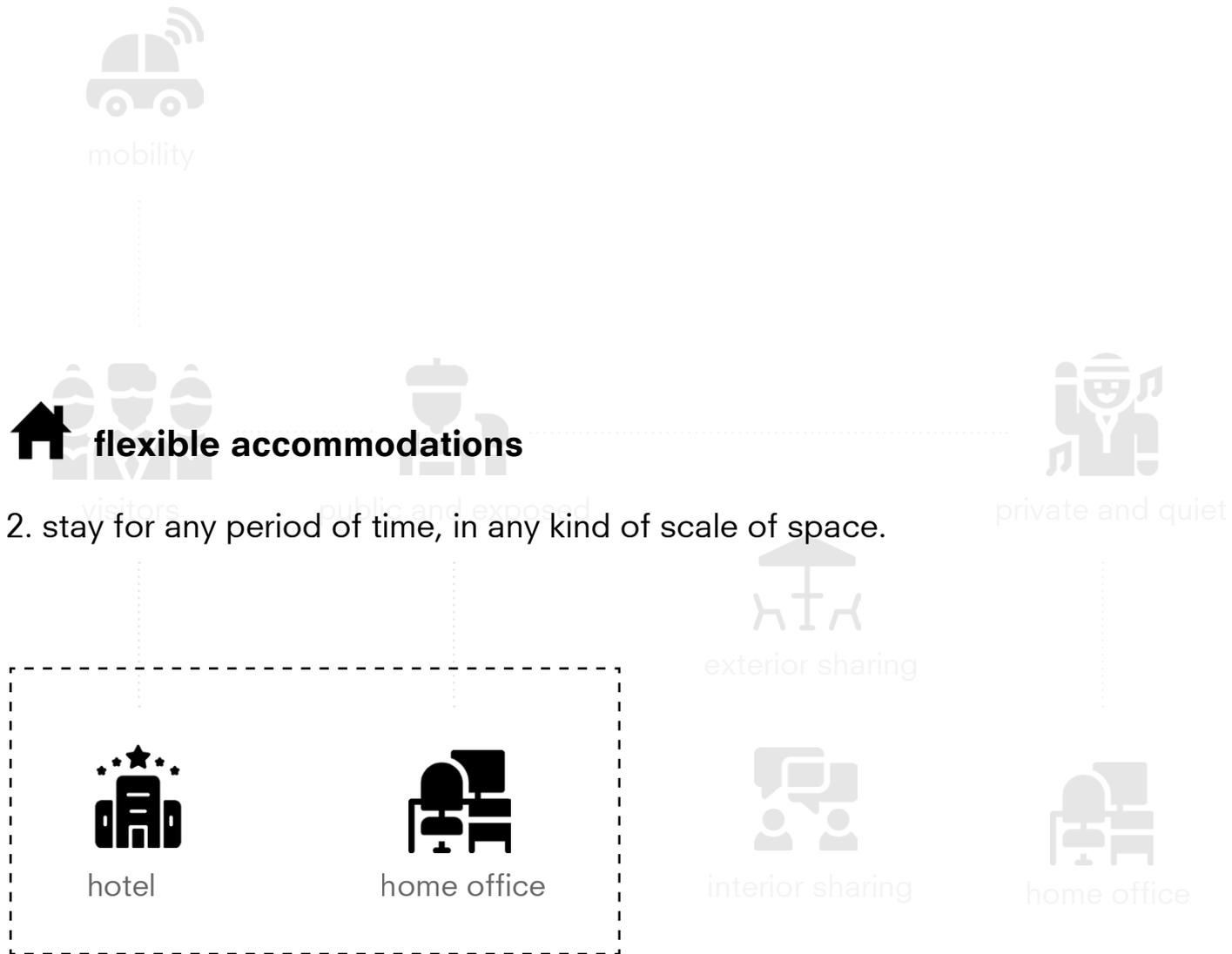
# to accommodate creative groups



# user/program ambition



# user/program ambition



2. stay for any period of time, in any kind of scale of space.

**RESEARCH - SITE**

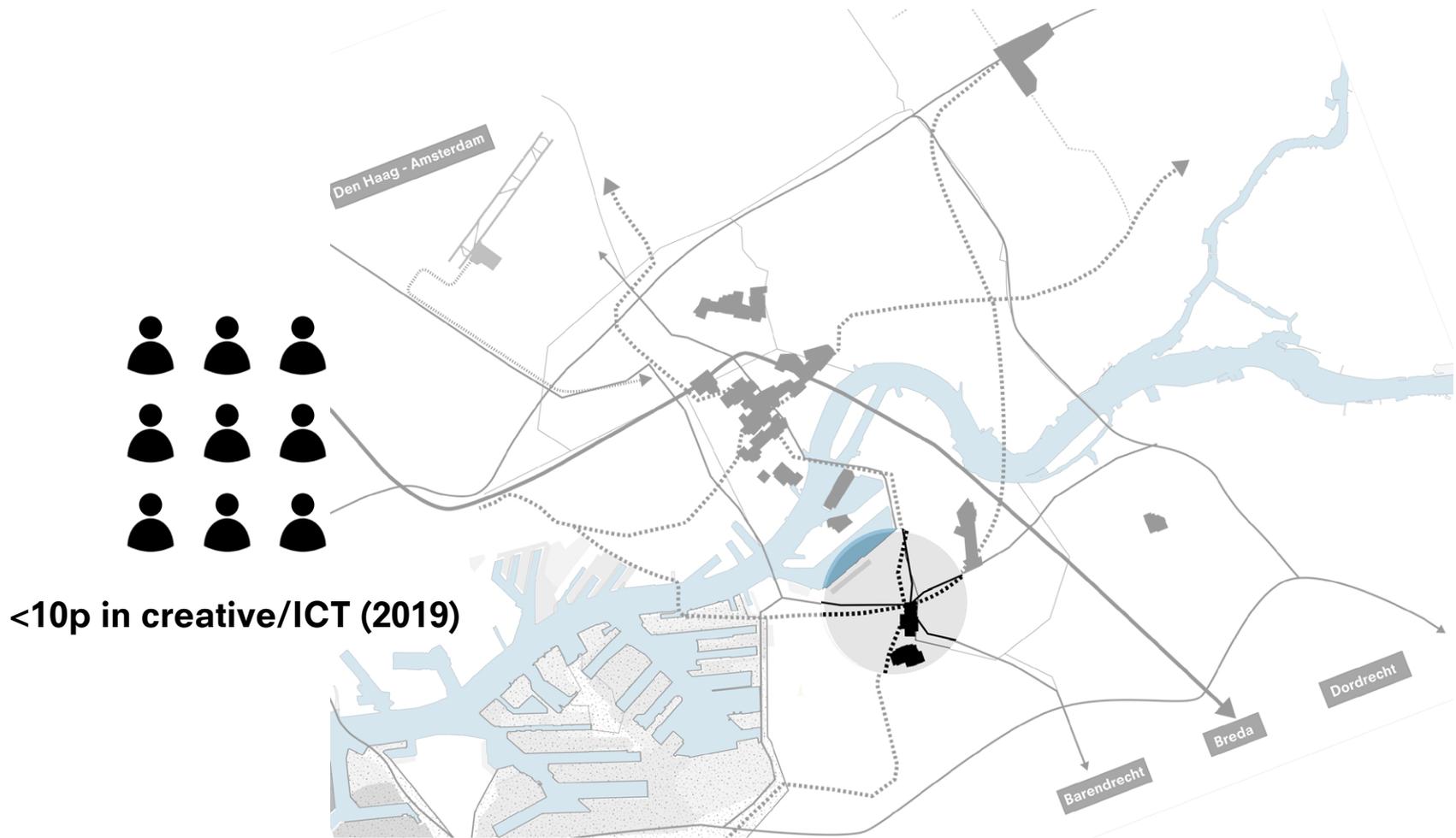
# status quo in Rotterdam South



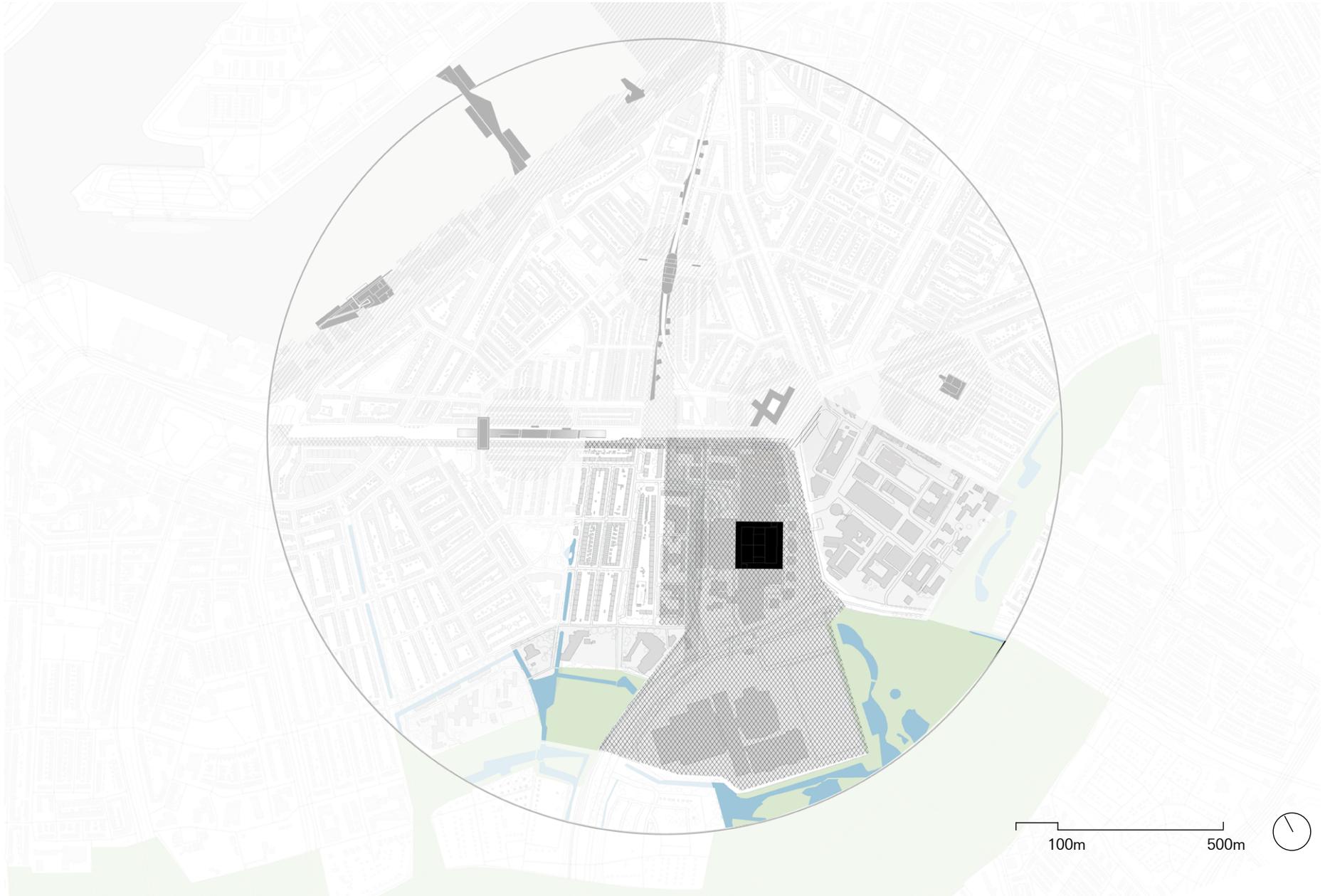
social entrepreneurs in fashion



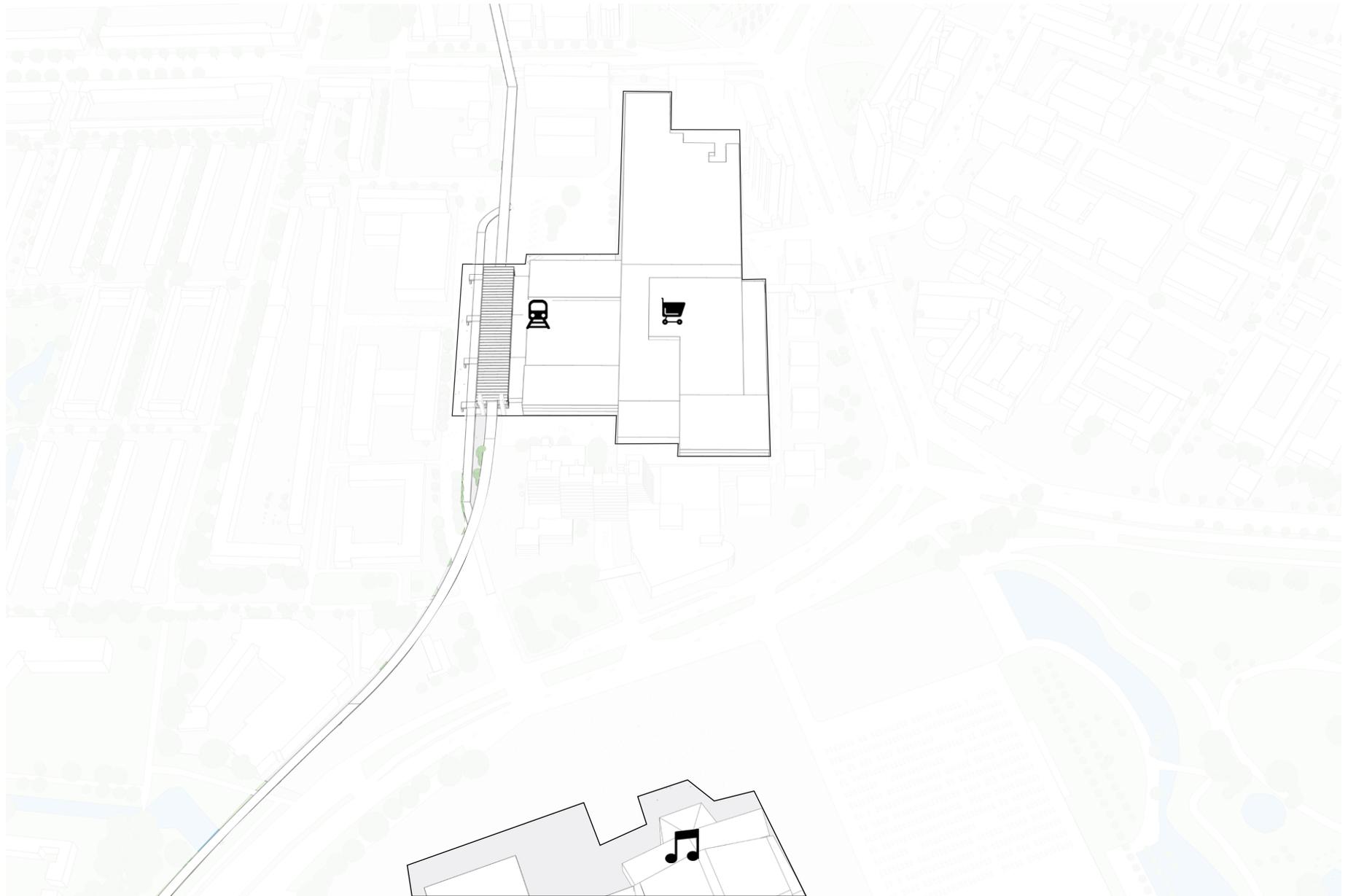
# status quo in Rotterdam South



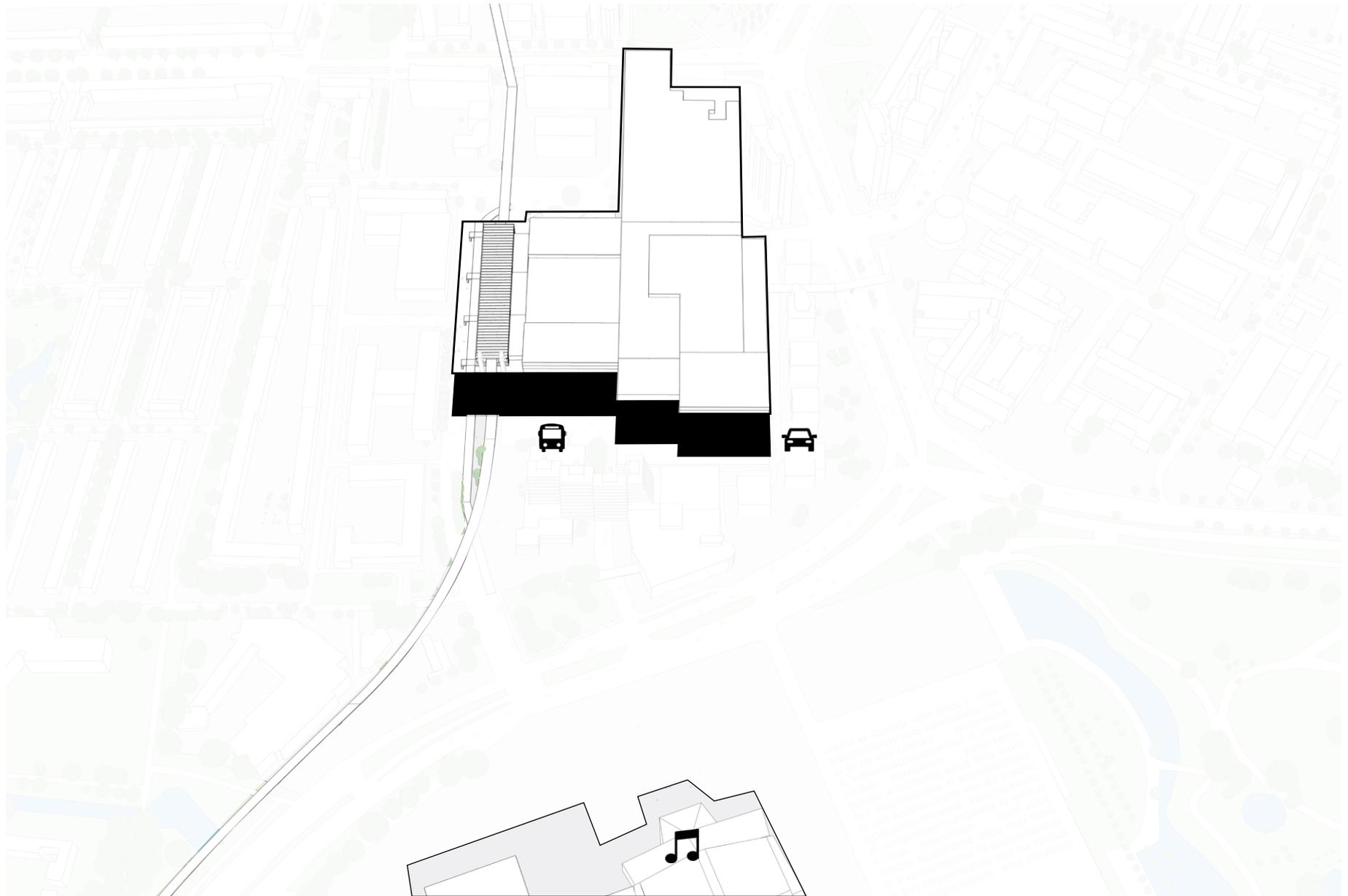
# group strategy in Rotterdam South - mobility



# Hart van Zuid in 1970s



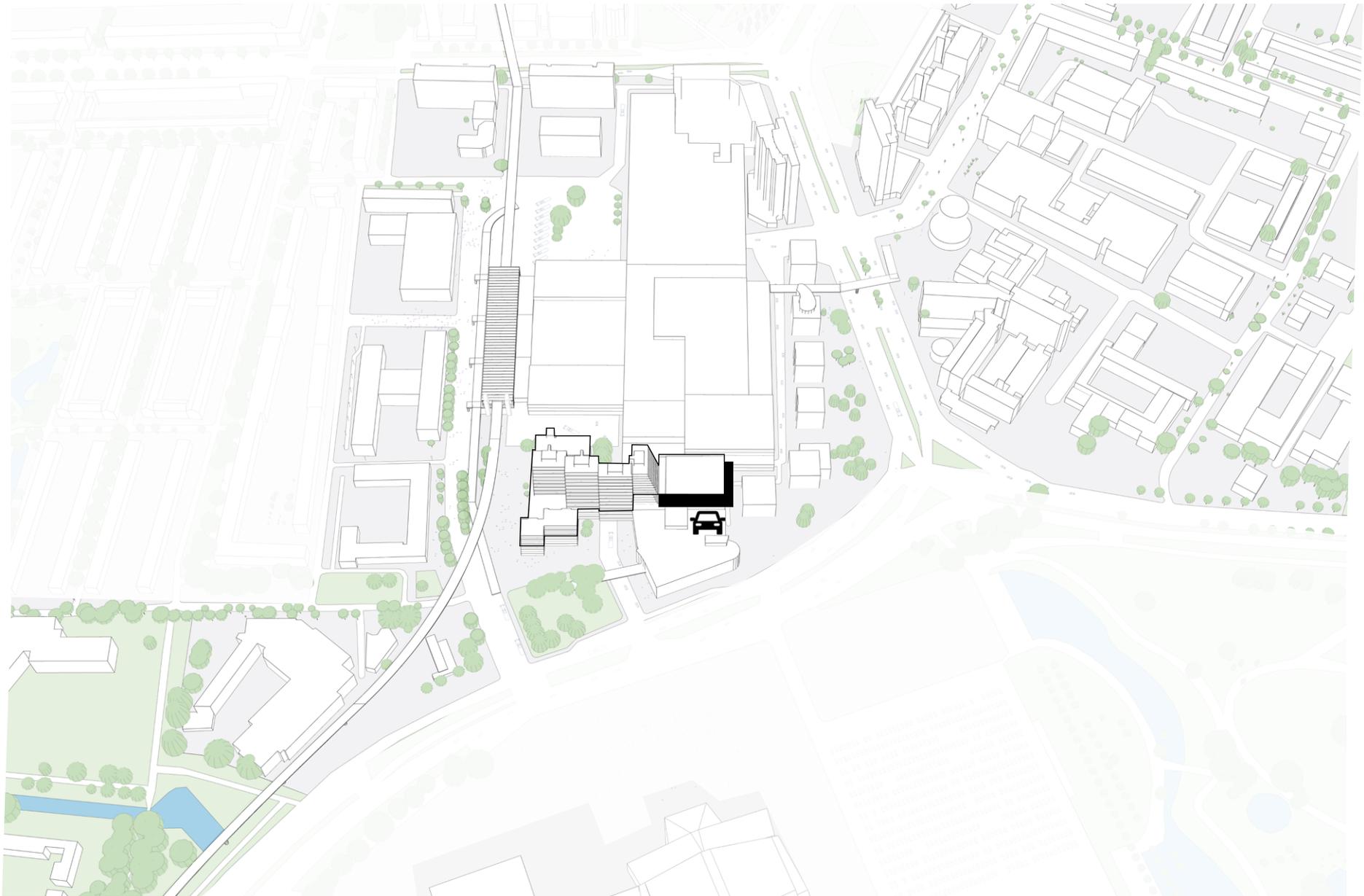
# Hart van Zuid in 1970s



# Hart van Zuid development 1970s - 2010s



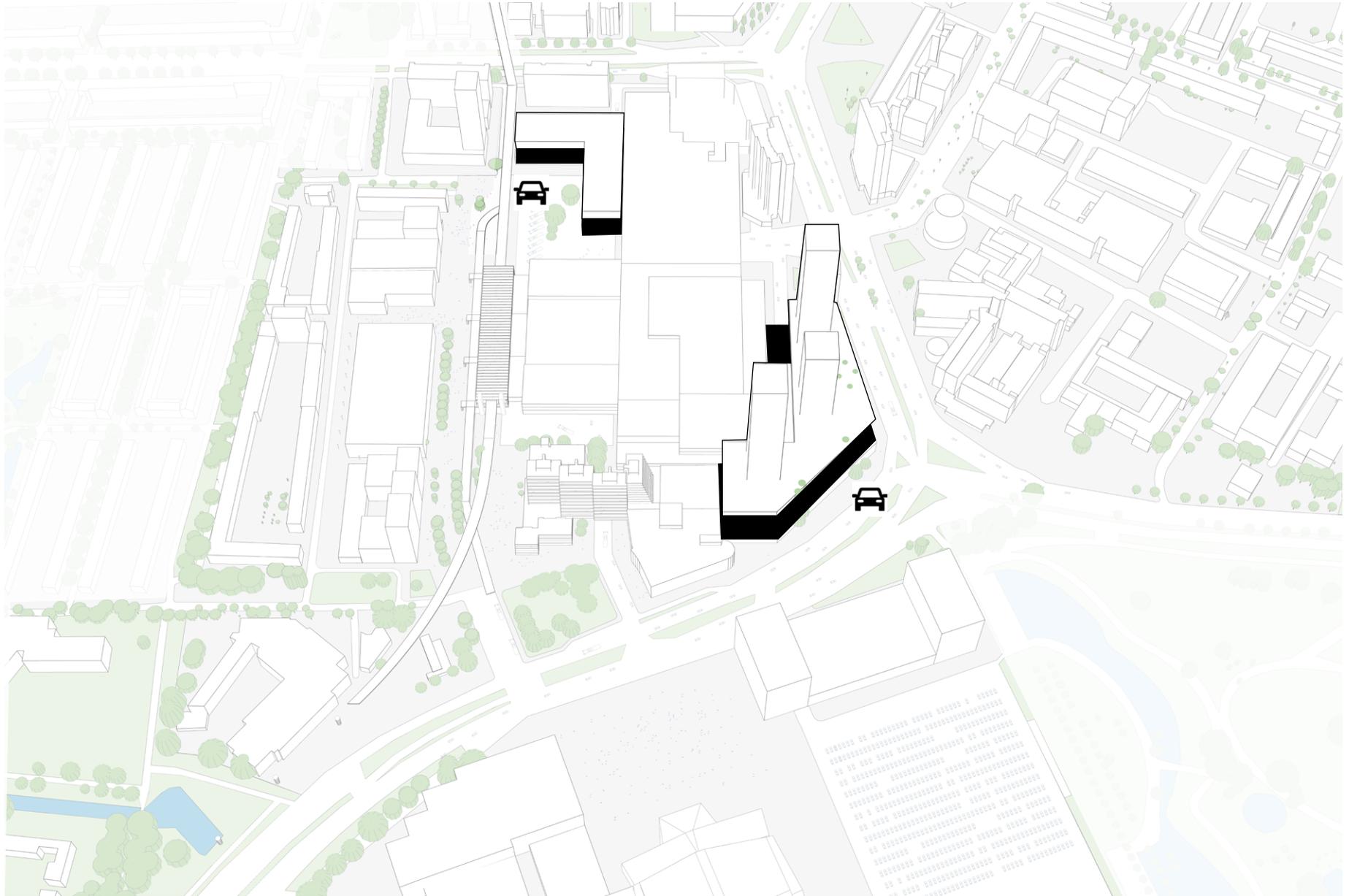
# Hart van Zuid development 1970s - 2010s



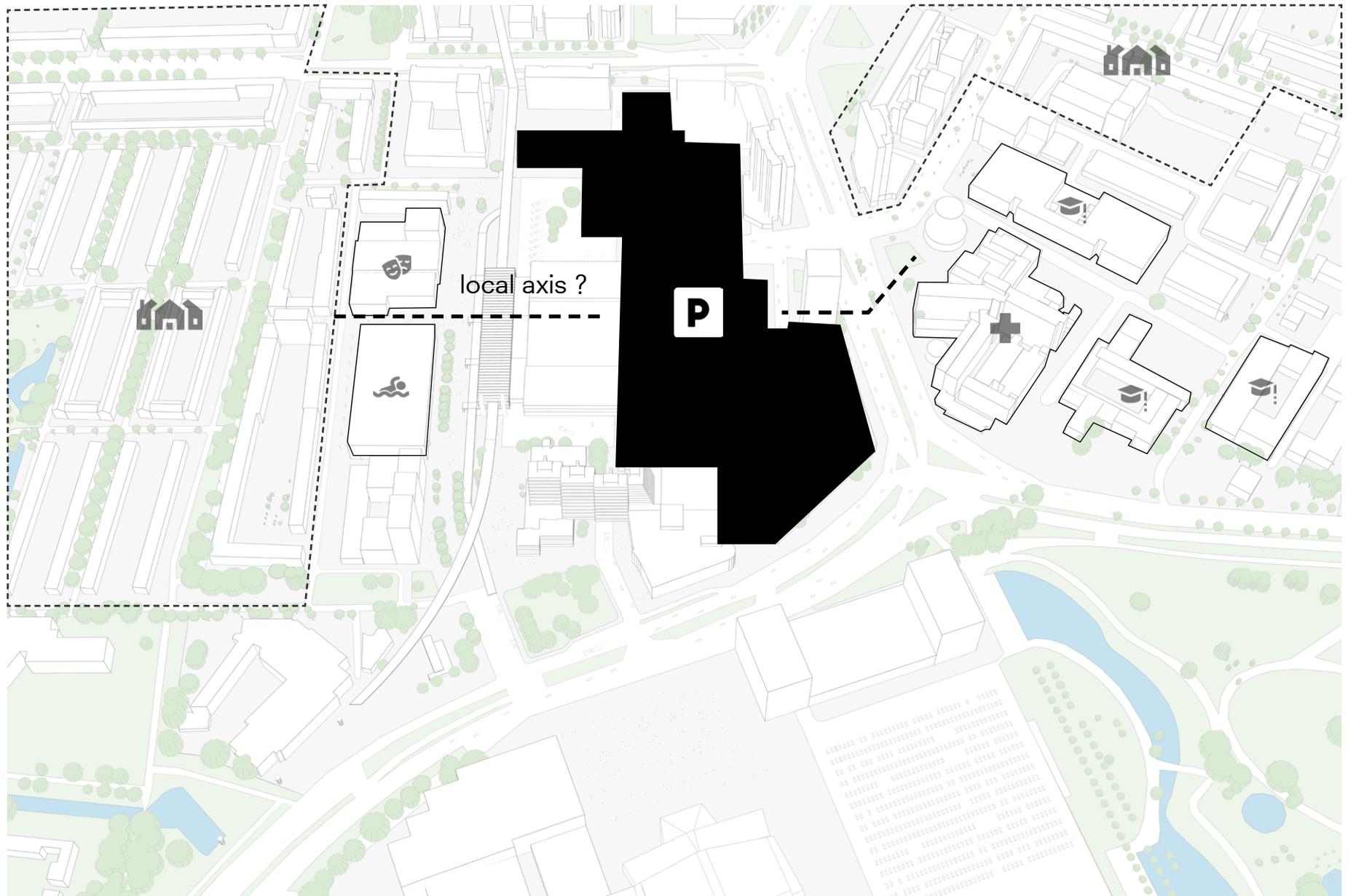
# Hart van Zuid development 2010s - 2030s



# Hart van Zuid development 2010s - 2030s



# status quo - ground floor parking space



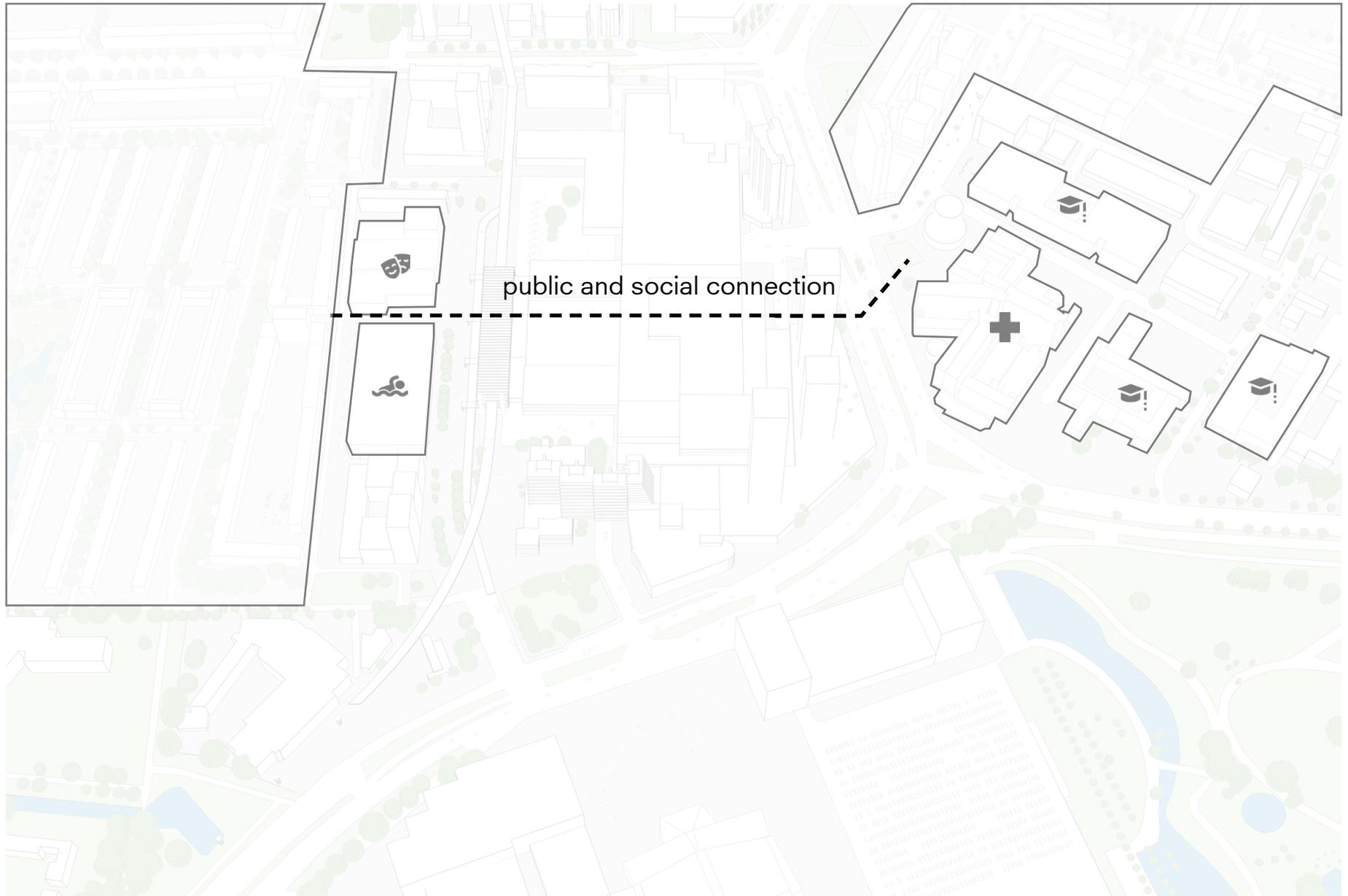
# status quo - night in work days



# status quo - night in weekends



# site ambitions



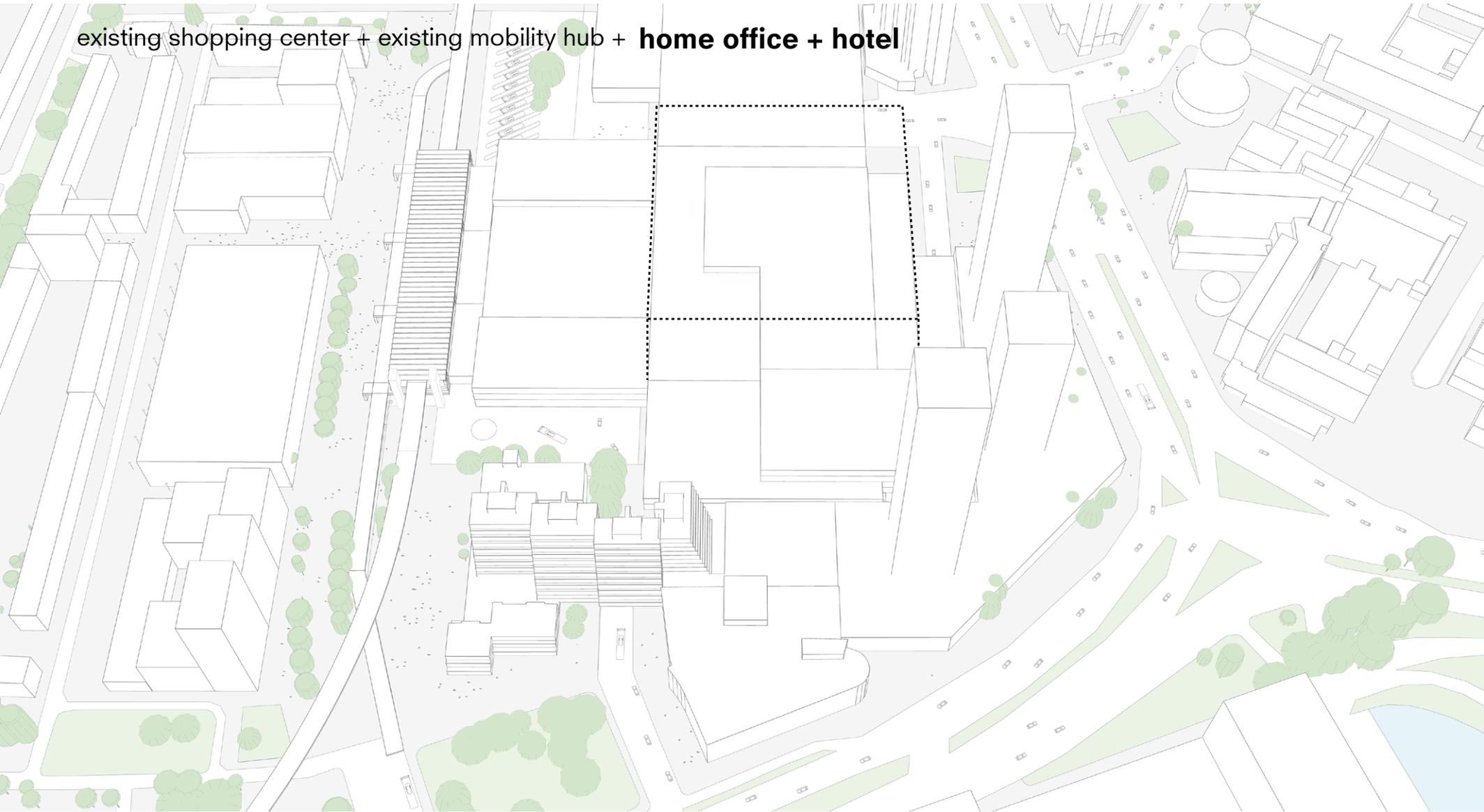
## site ambitions



# **PROJECT STATEMENT**

# project statement

existing shopping center + existing mobility hub + **home office + hotel**



# project statement



**programmer**



**performing artists**



**architect**

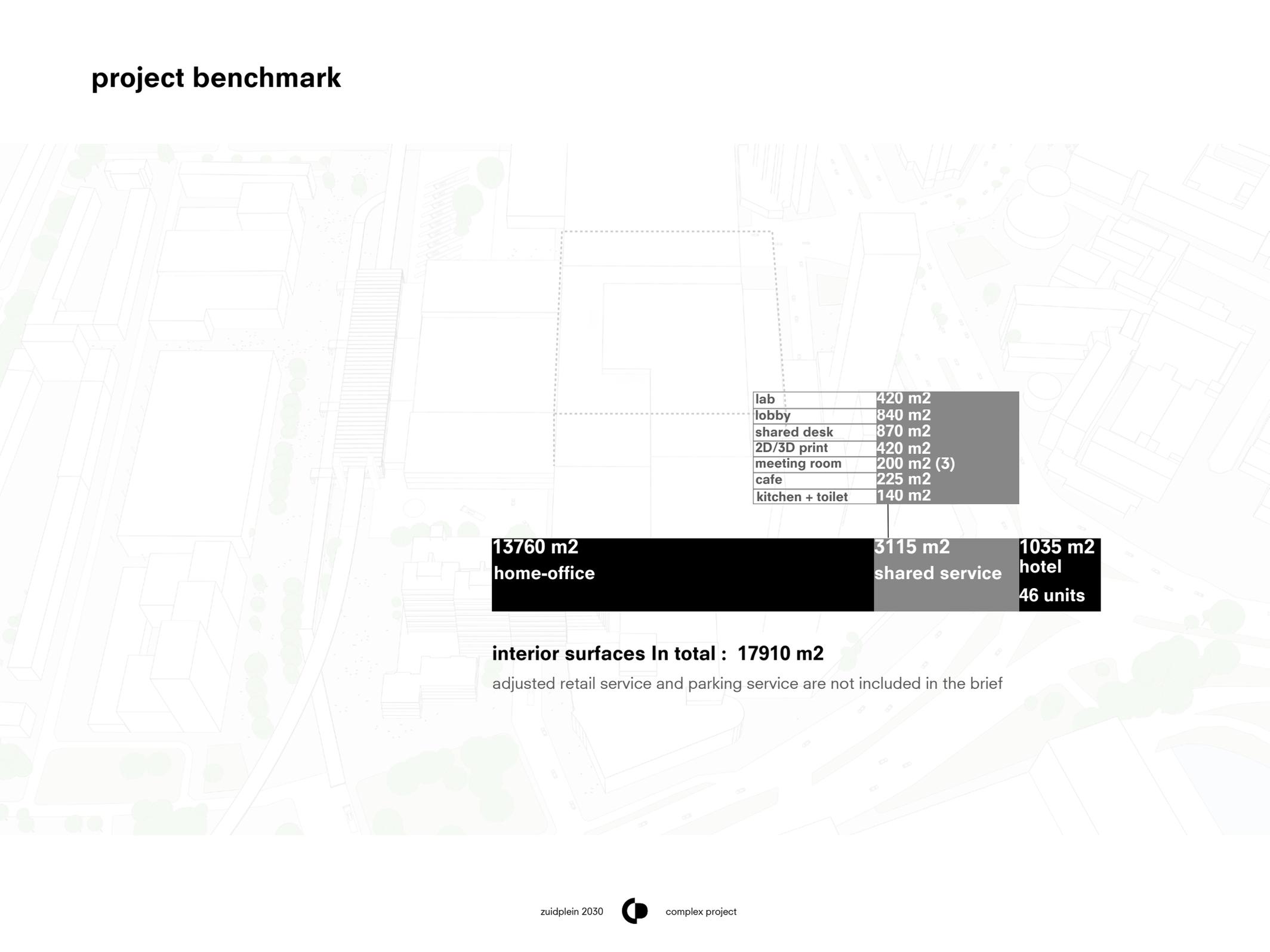


**fashion designer**



**furniture maker**

# project benchmark



lab	420 m2
lobby	840 m2
shared desk	870 m2
2D/3D print	420 m2
meeting room	200 m2 (3)
cafe	225 m2
kitchen + toilet	140 m2

**13760 m2**  
home-office

**3115 m2**  
shared service

**1035 m2**  
hotel  
46 units

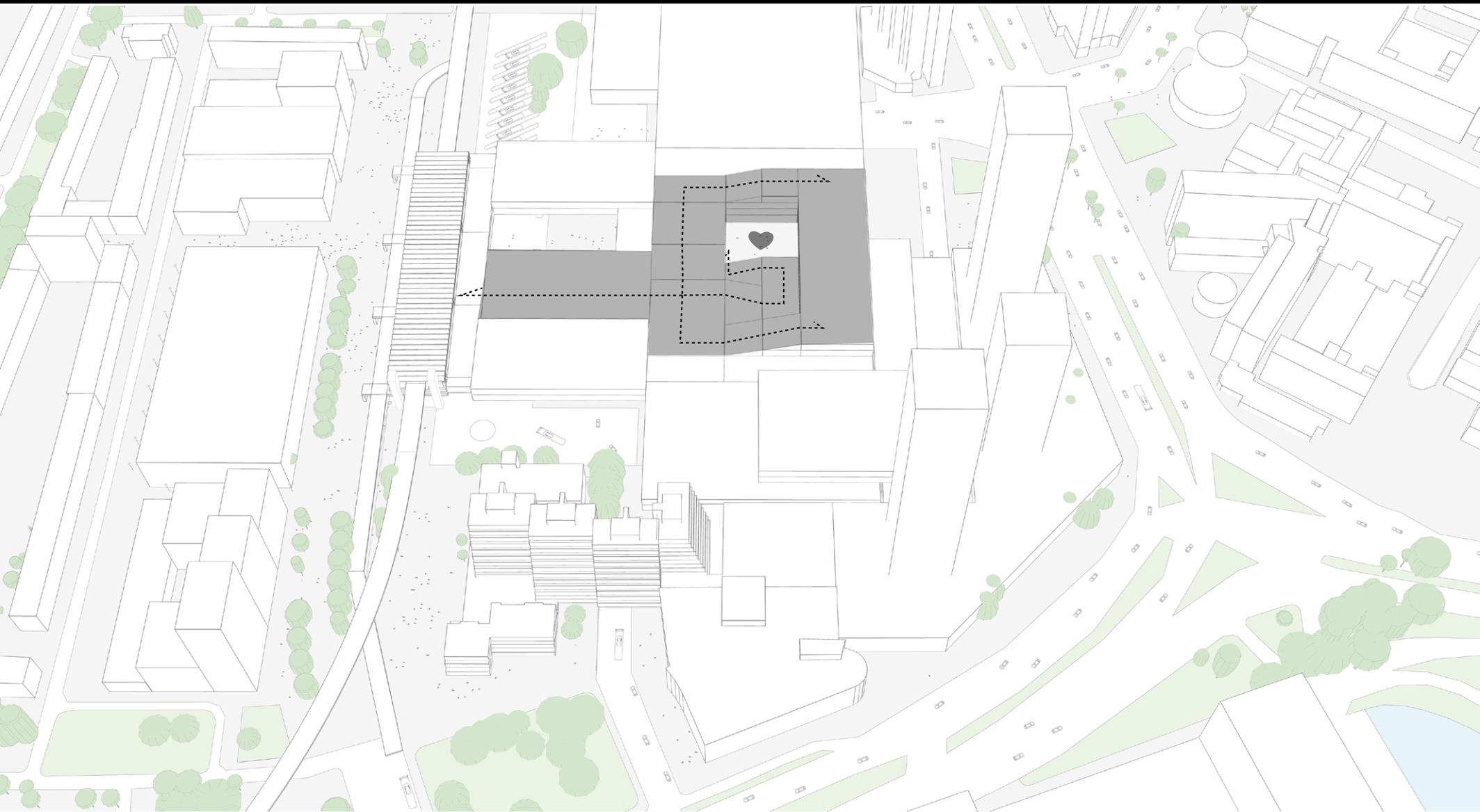
**interior surfaces In total : 17910 m2**

adjusted retail service and parking service are not included in the brief

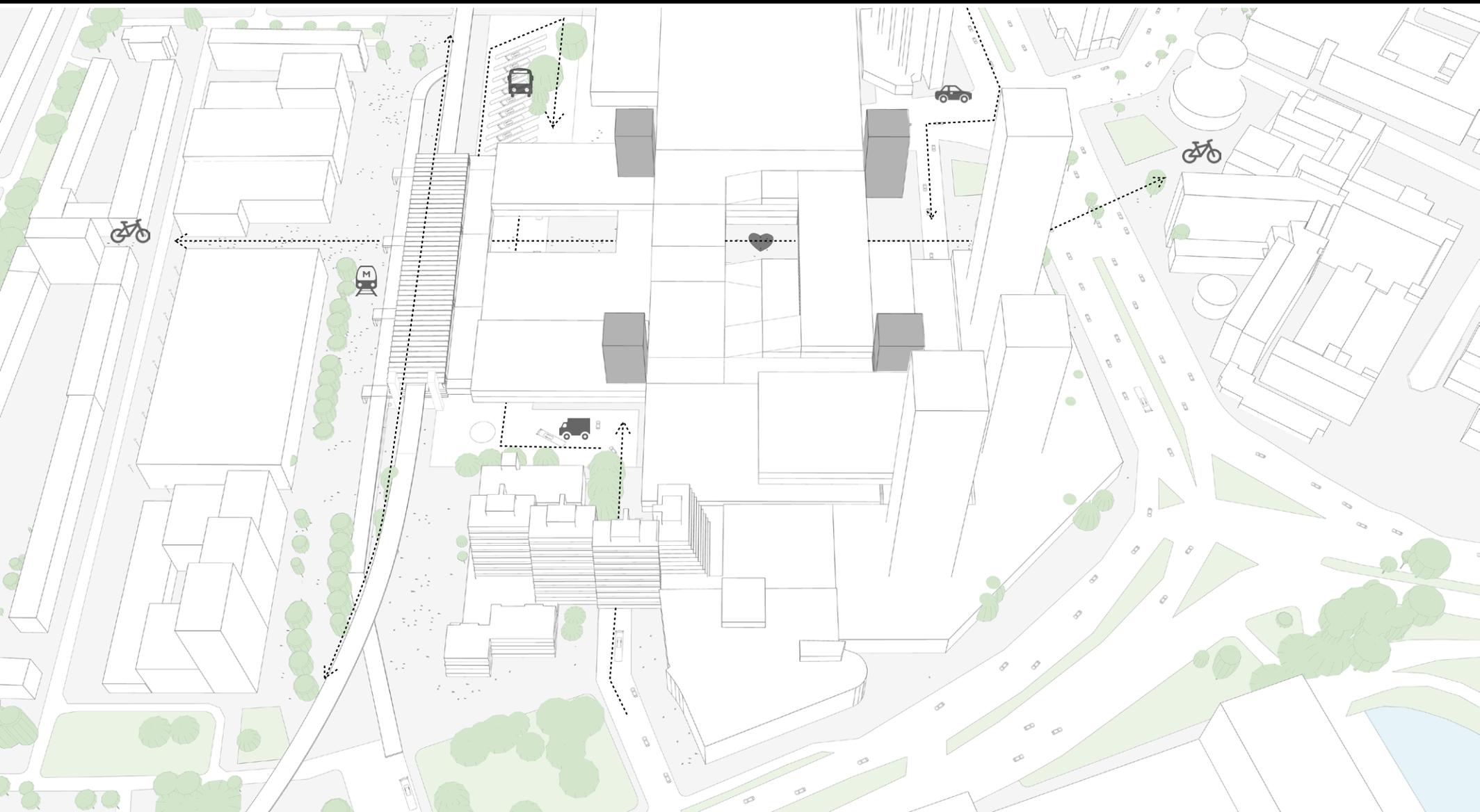
# concept - new west-east tunnel



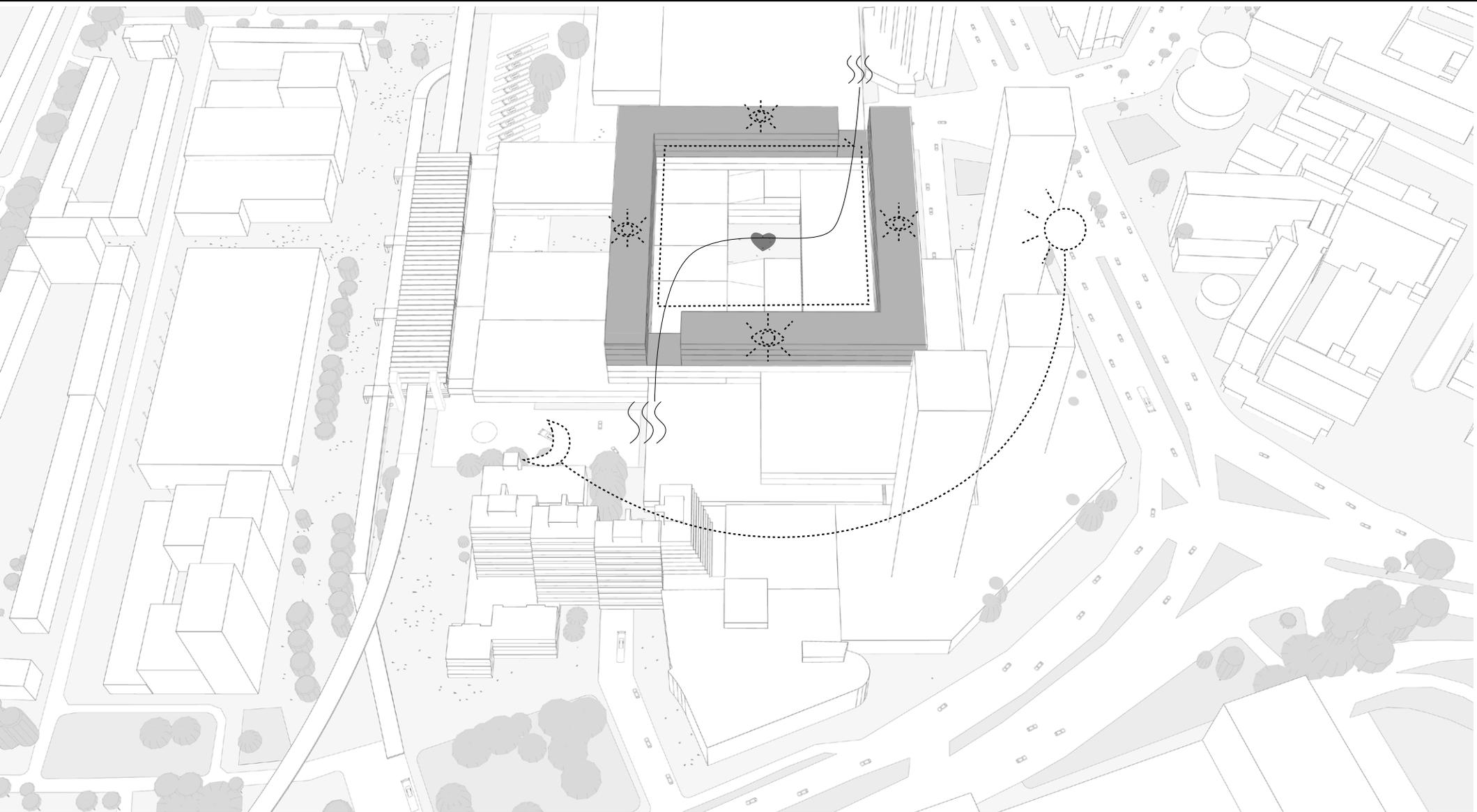
# concept - new central vertical circulation



# concept - all-direction accessibility



# concept - 24h running stage

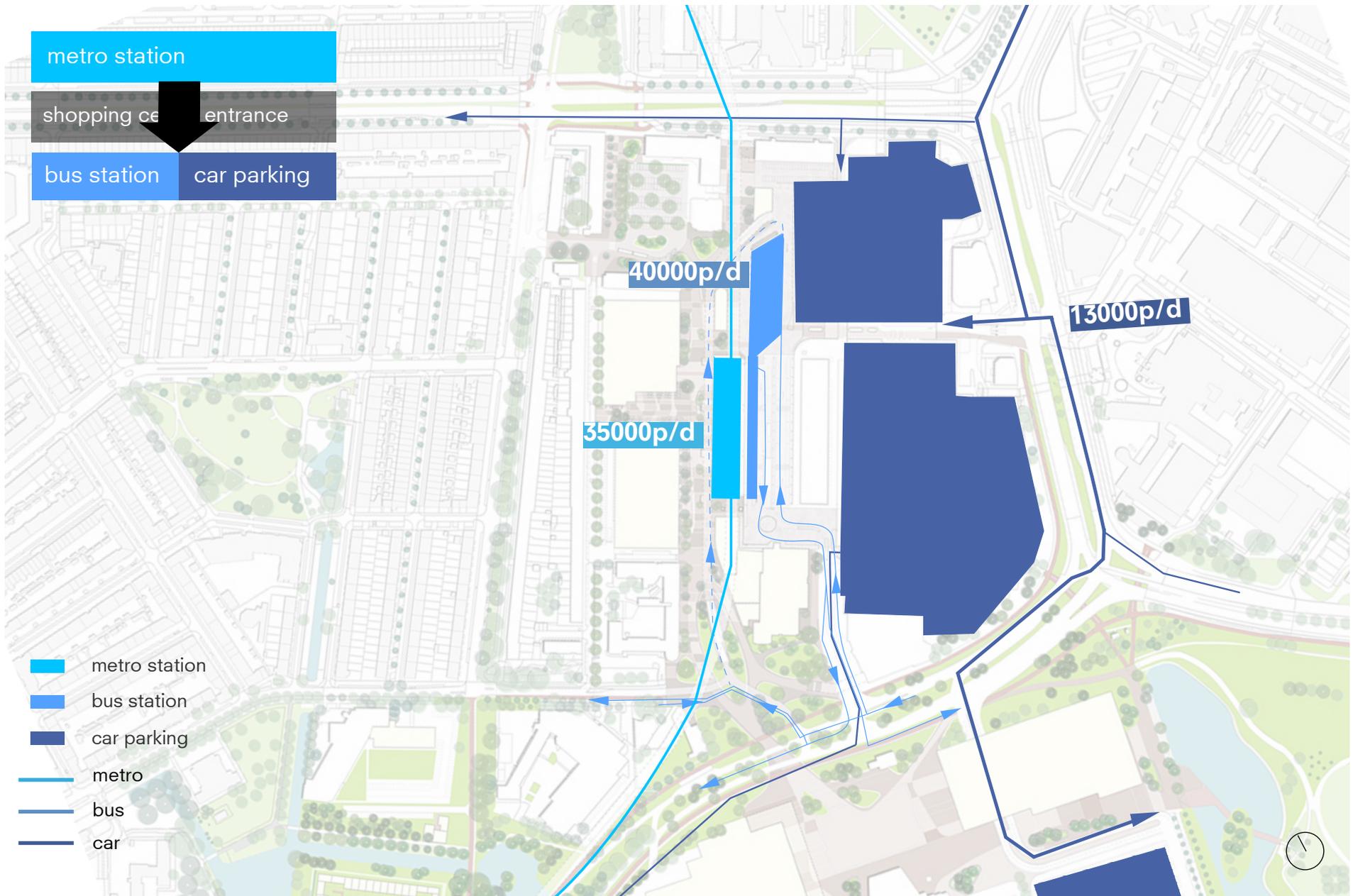


# **IMPLEMENTATION - SCHEME**

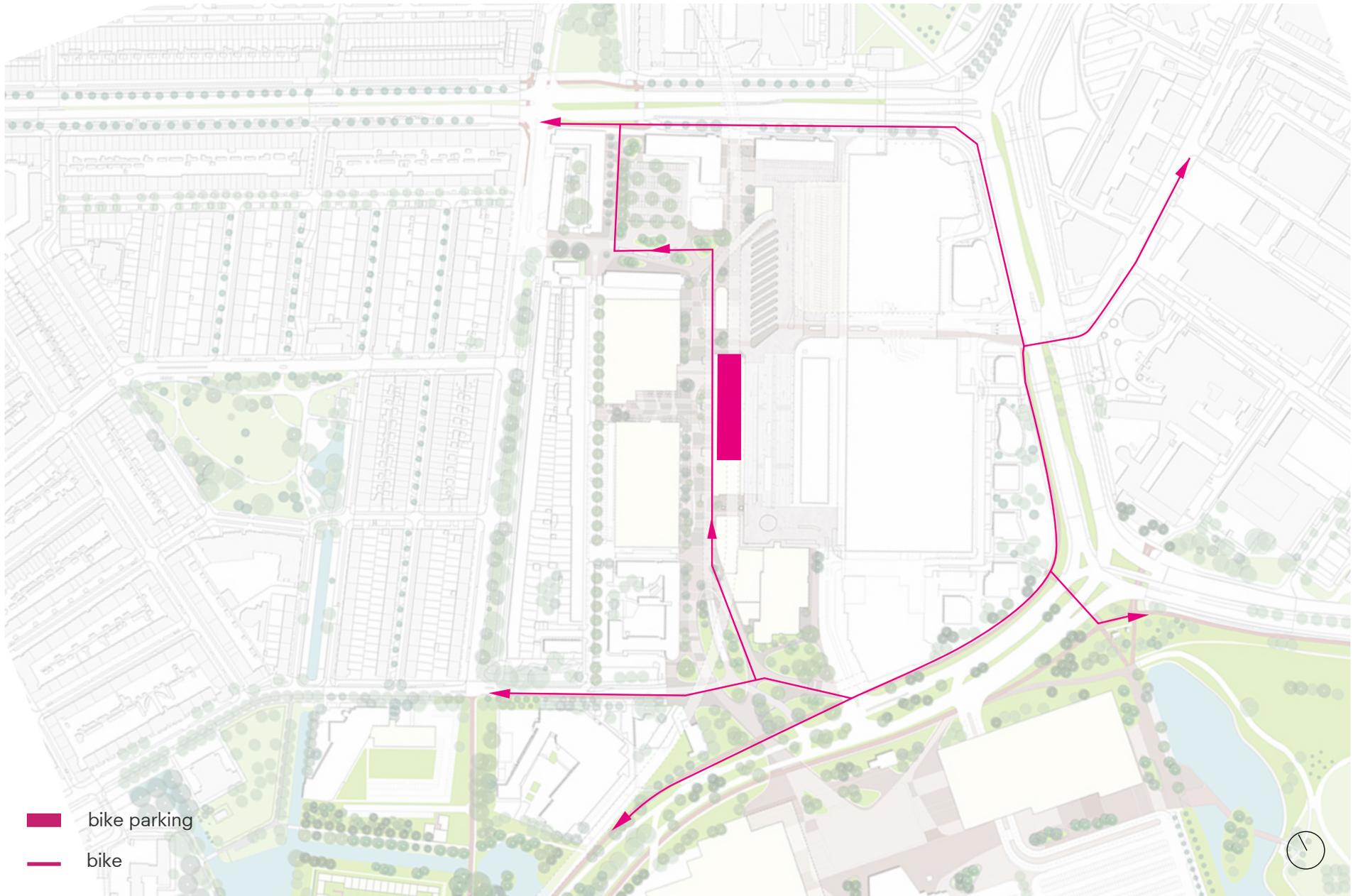
# scheme adjustment concept



# existing regional mobility

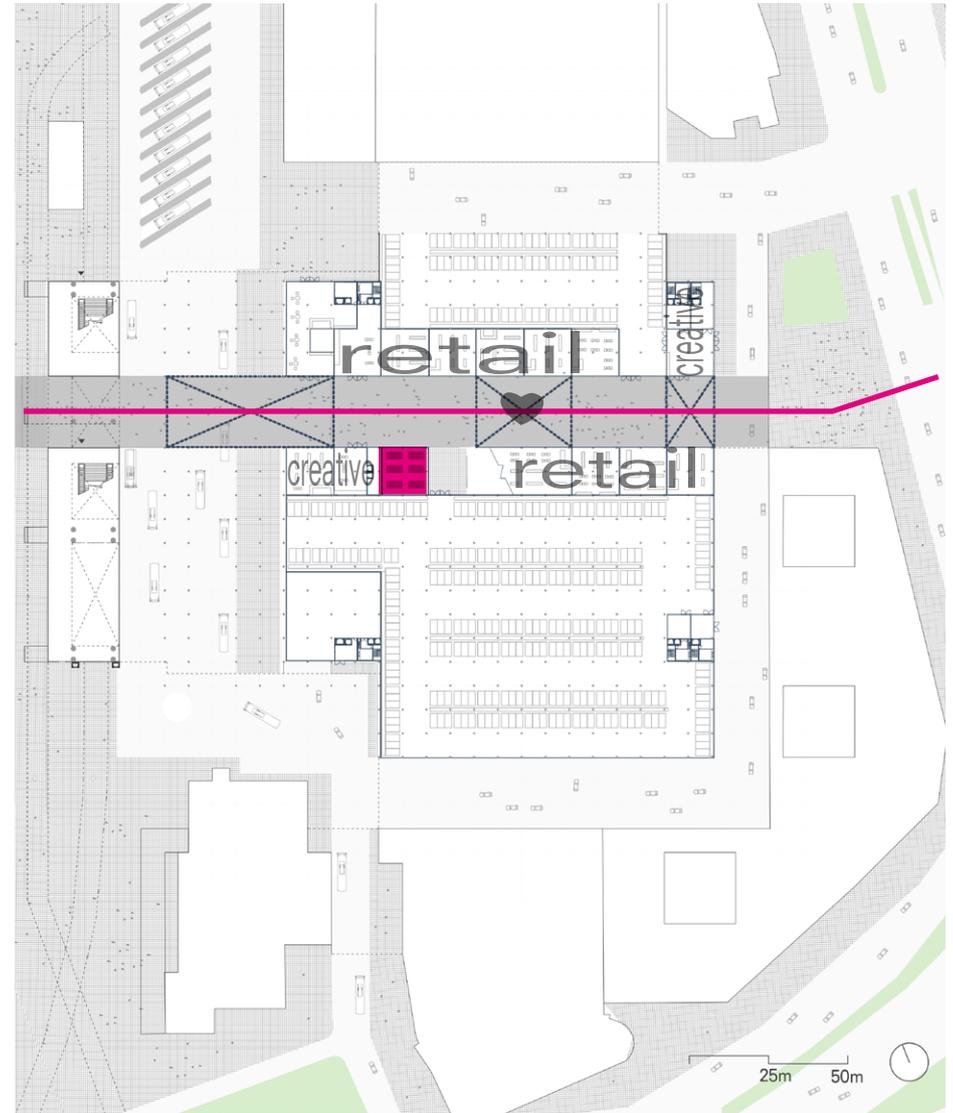
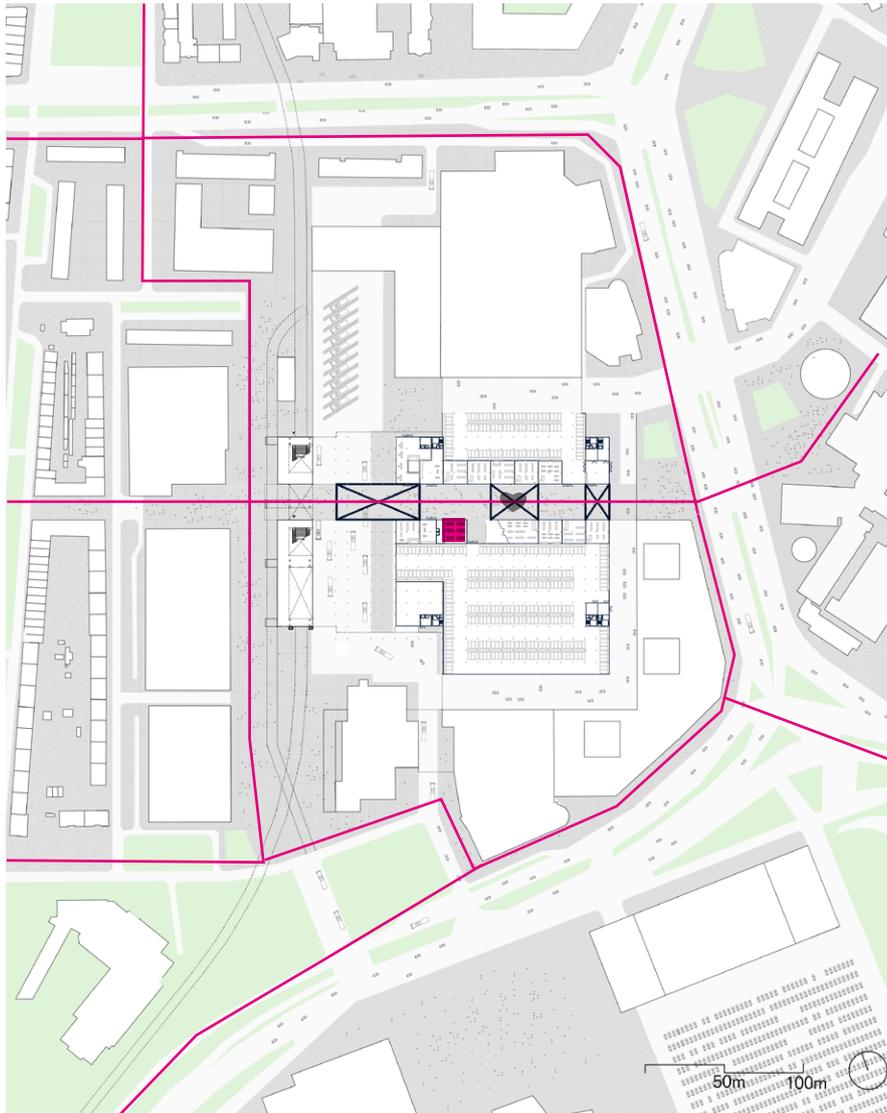


# existing local mobility



- bike parking
- bike

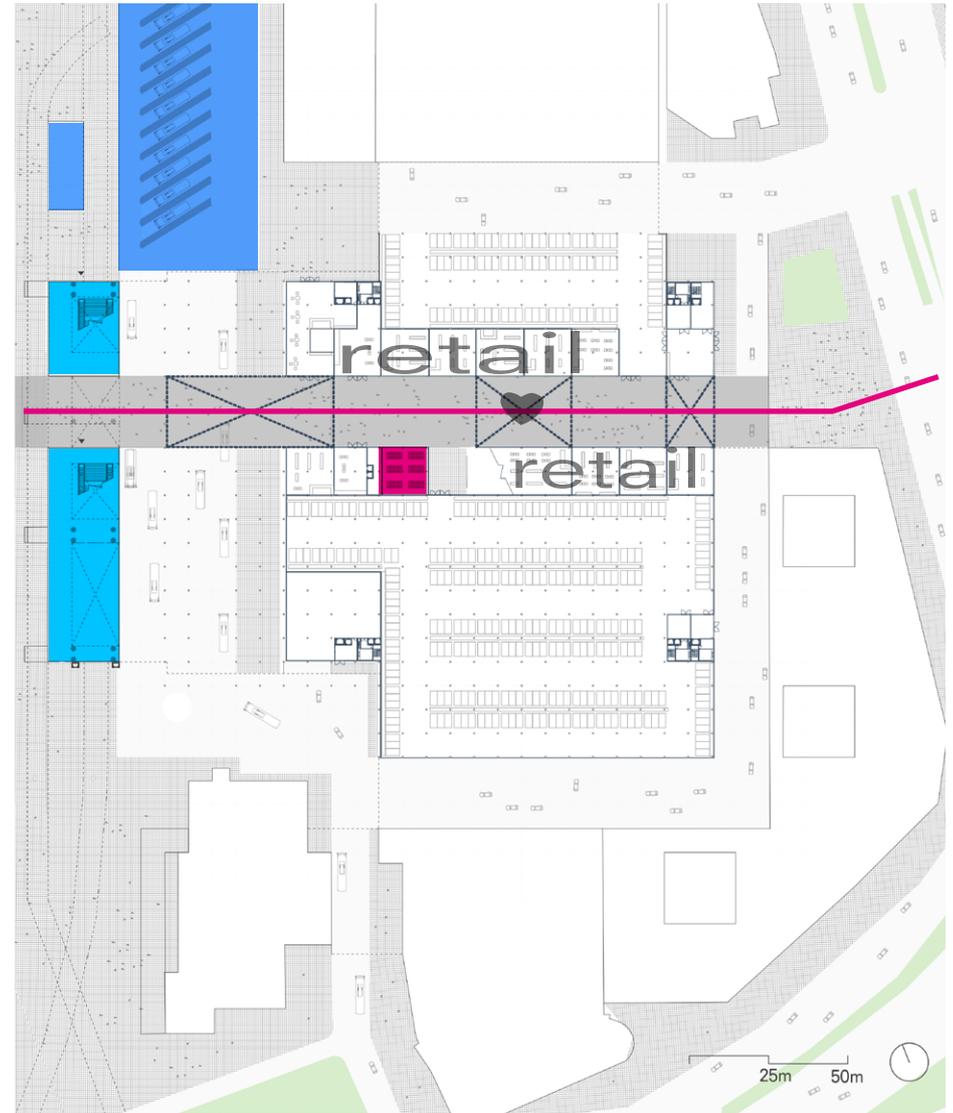
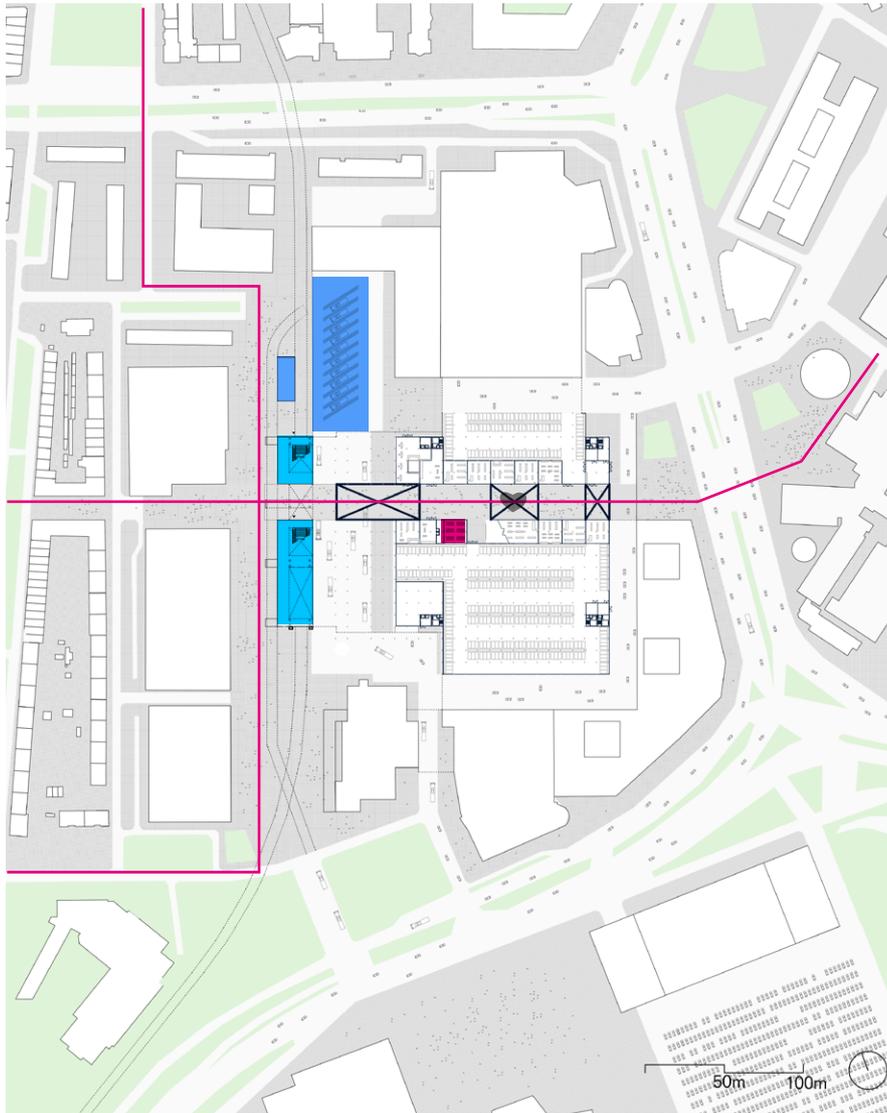
# new west-east tunnel : local foot/bike circulation



intervention — bike — bike parking

floor 00

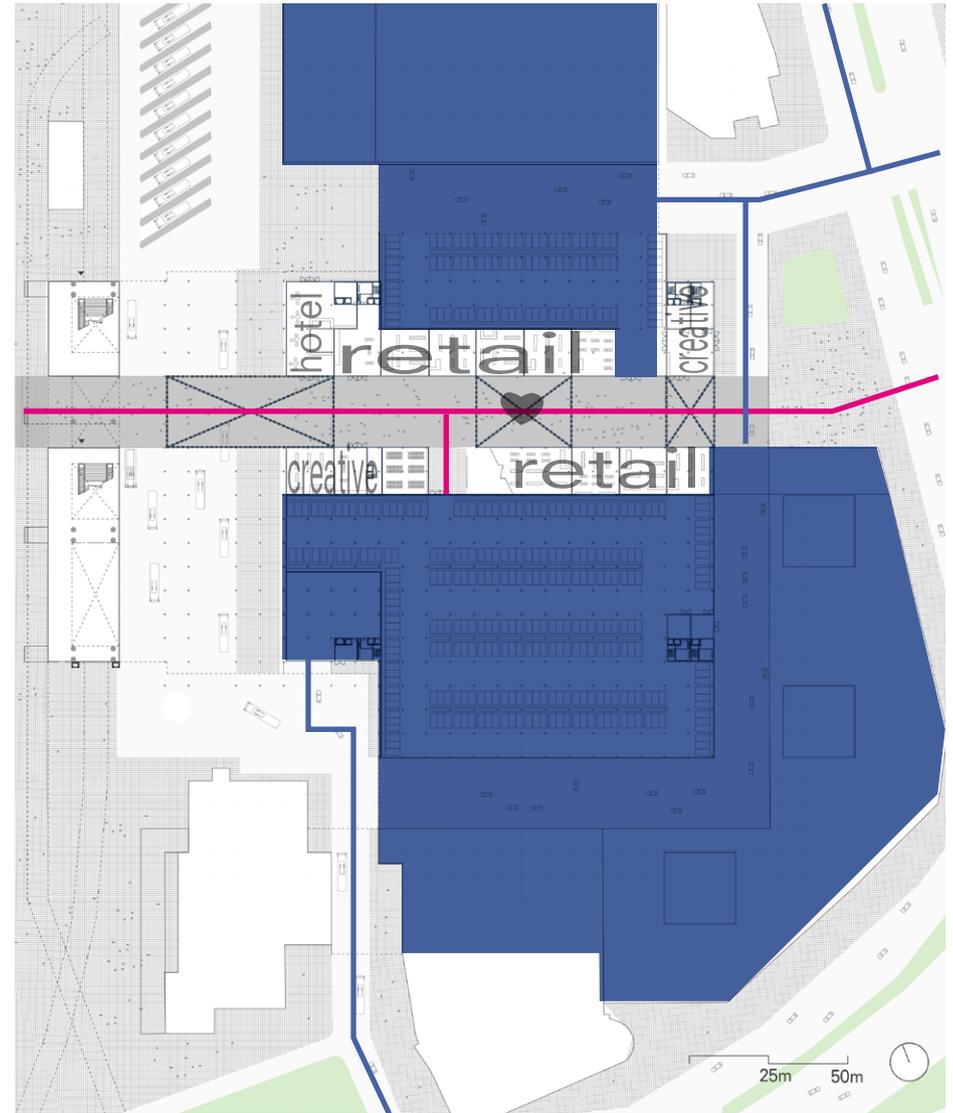
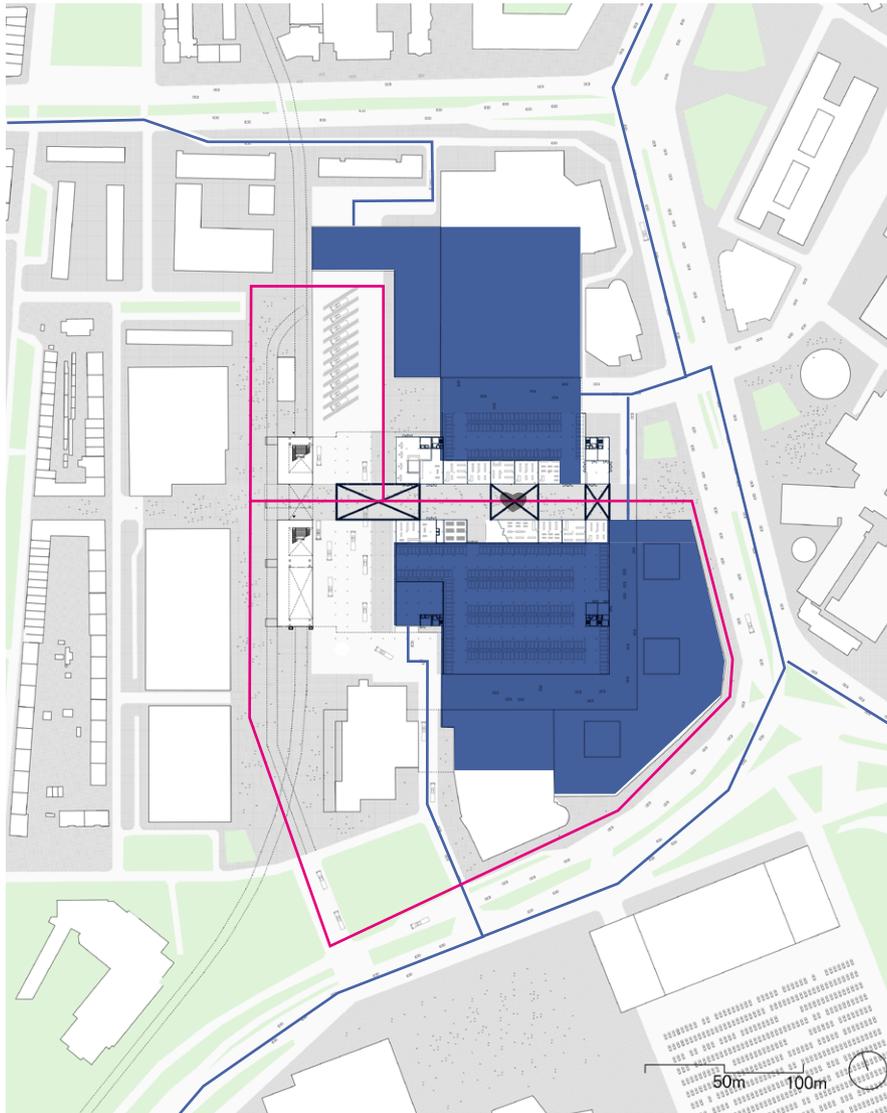
# new west-east tunnel : local foot/bike <-> metro/bus station



intervention — bike — bike parking — metro station — bus station

**floor 00**

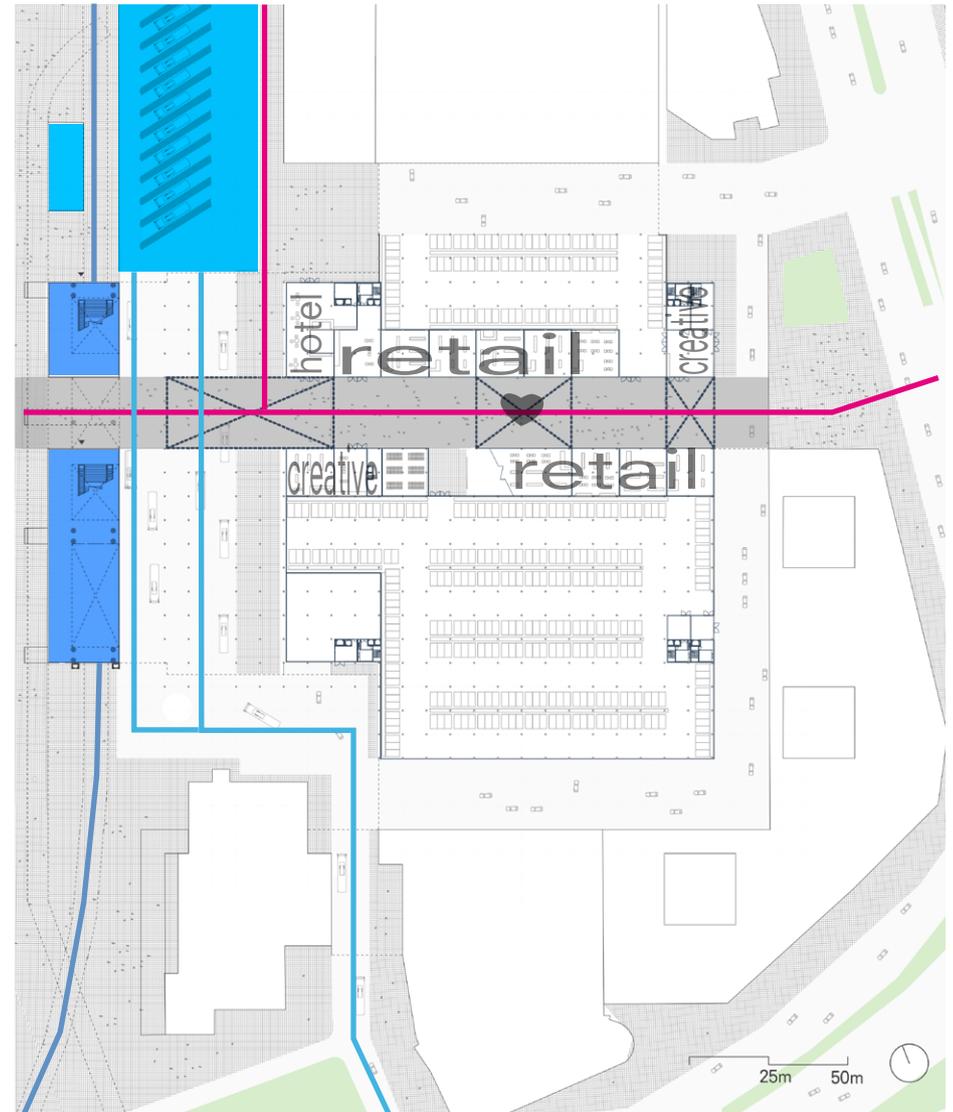
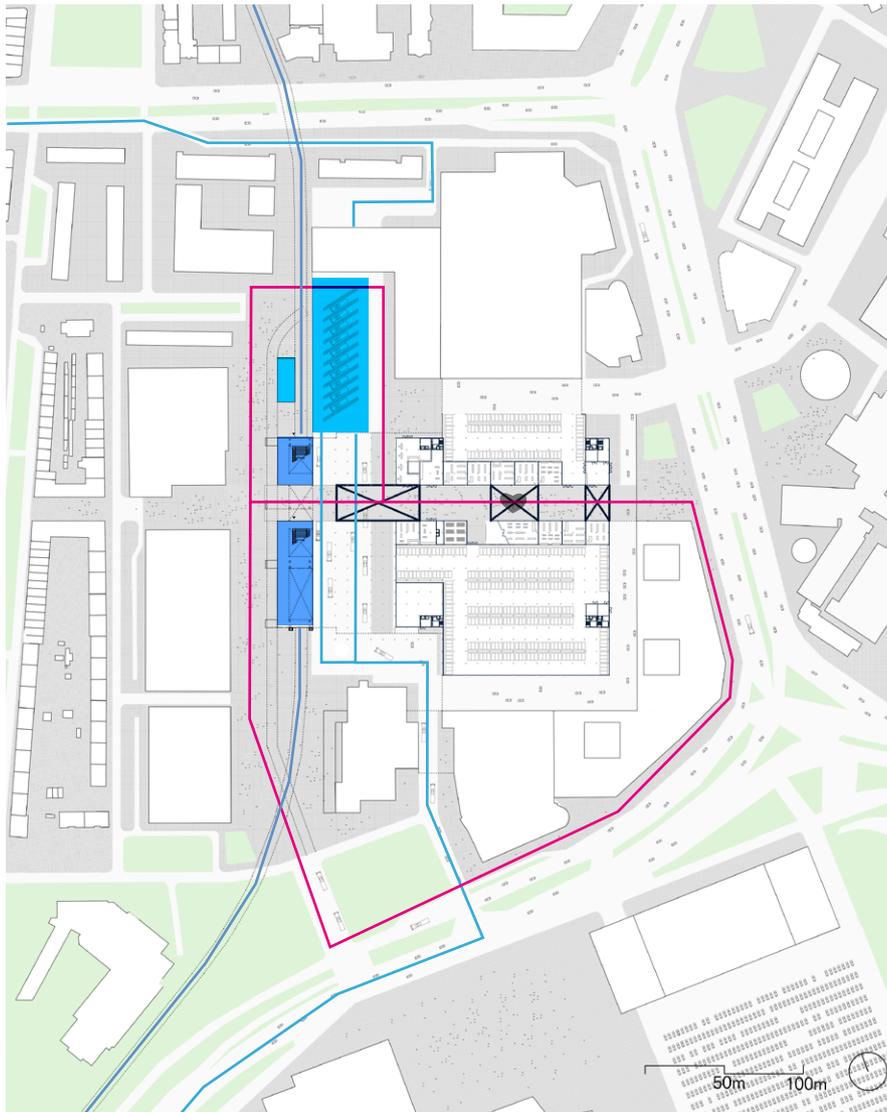
# new west-east tunnel : regional car parking <-> service



intervention — bike — bike parking — car — car parking

floor 00

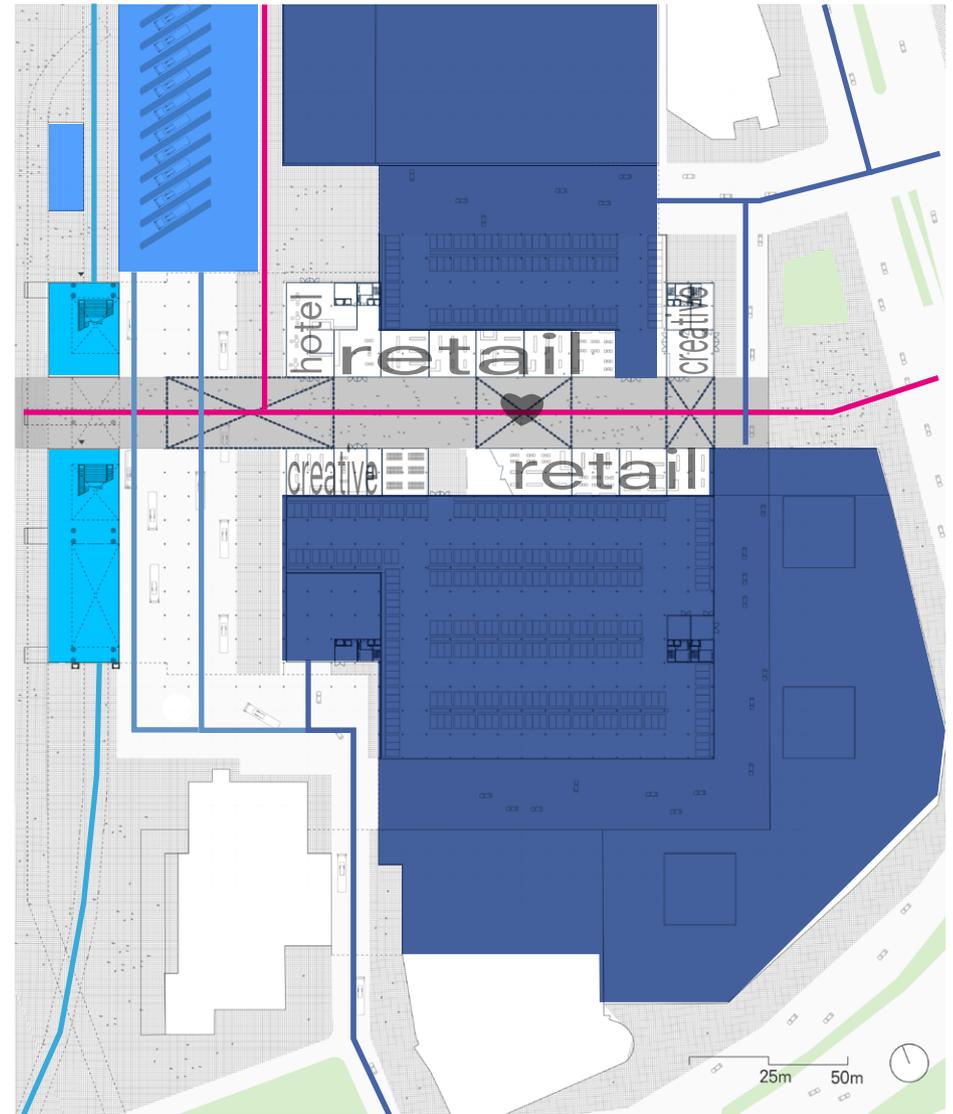
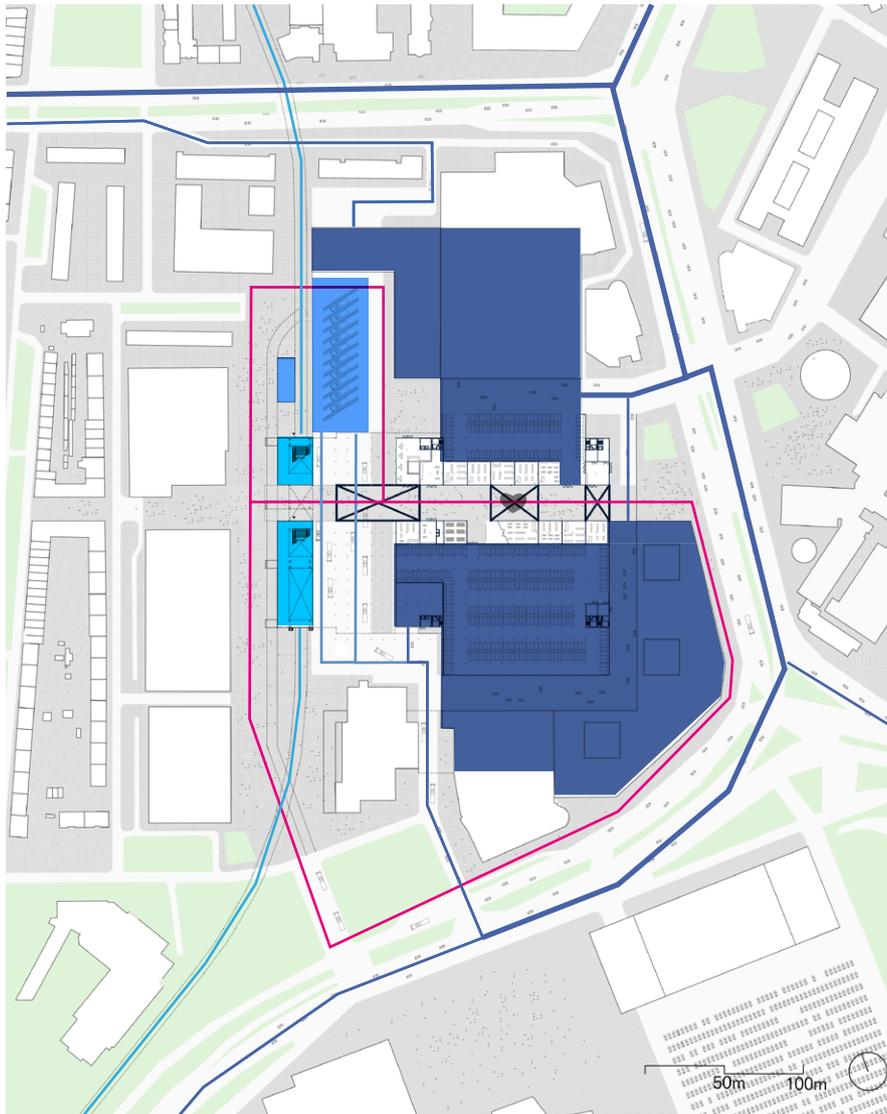
# new west-east tunnel : regional bus and metro station <-> service



- intervention
- bike
- bike parking
- metro
- metro station
- bus
- bus station

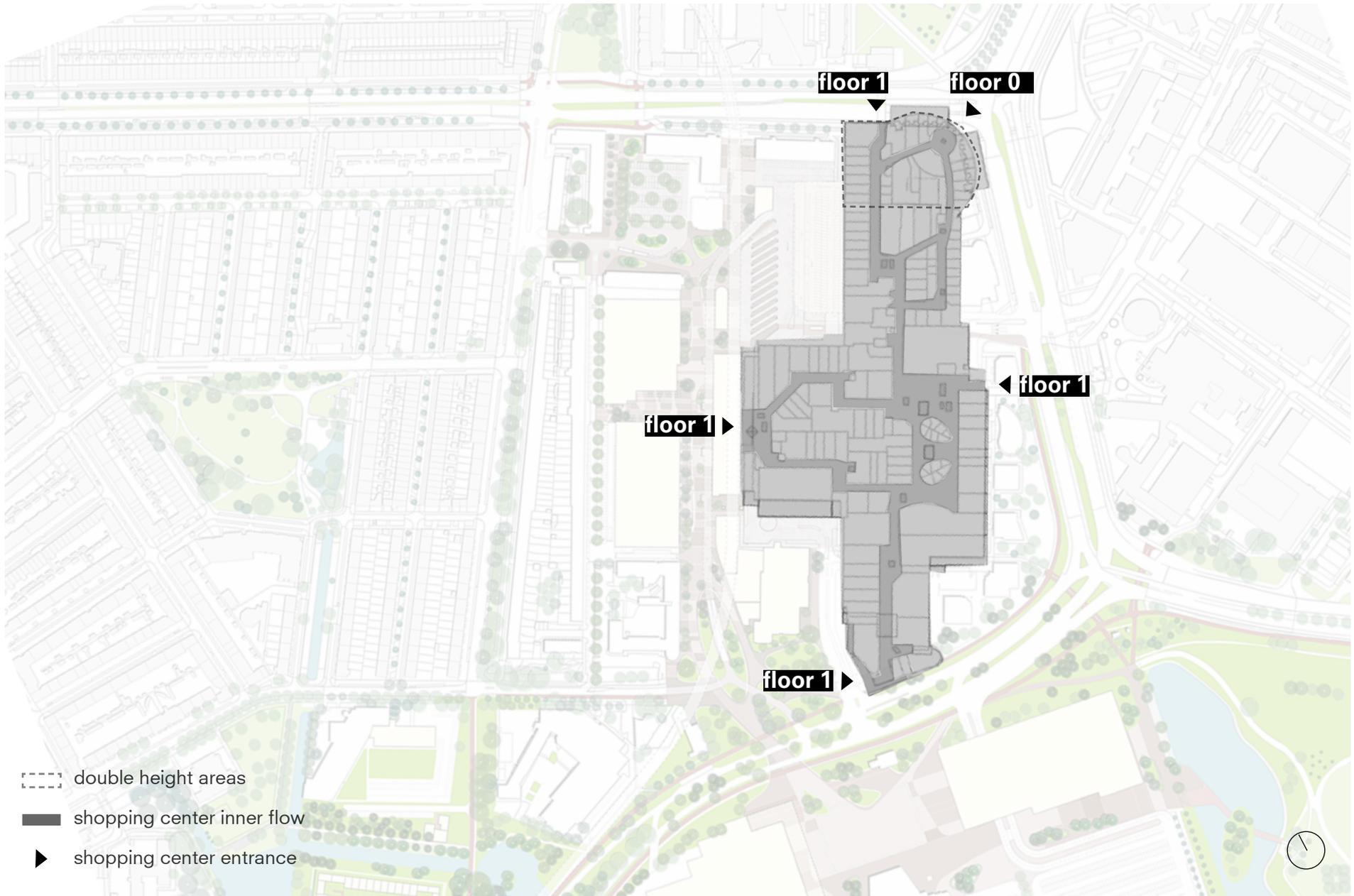
**floor 00**

# new west-east tunnel : regional car parking <-> regional bus/metro station

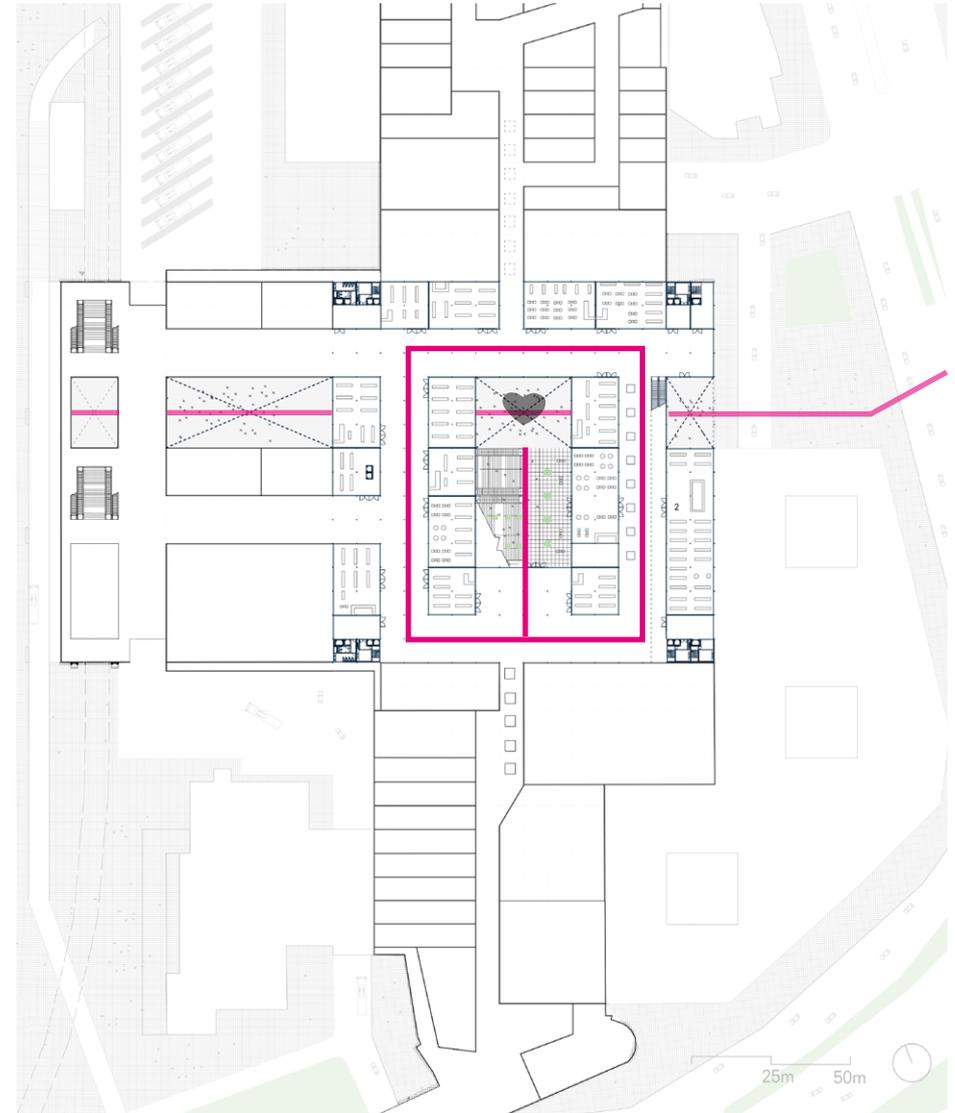
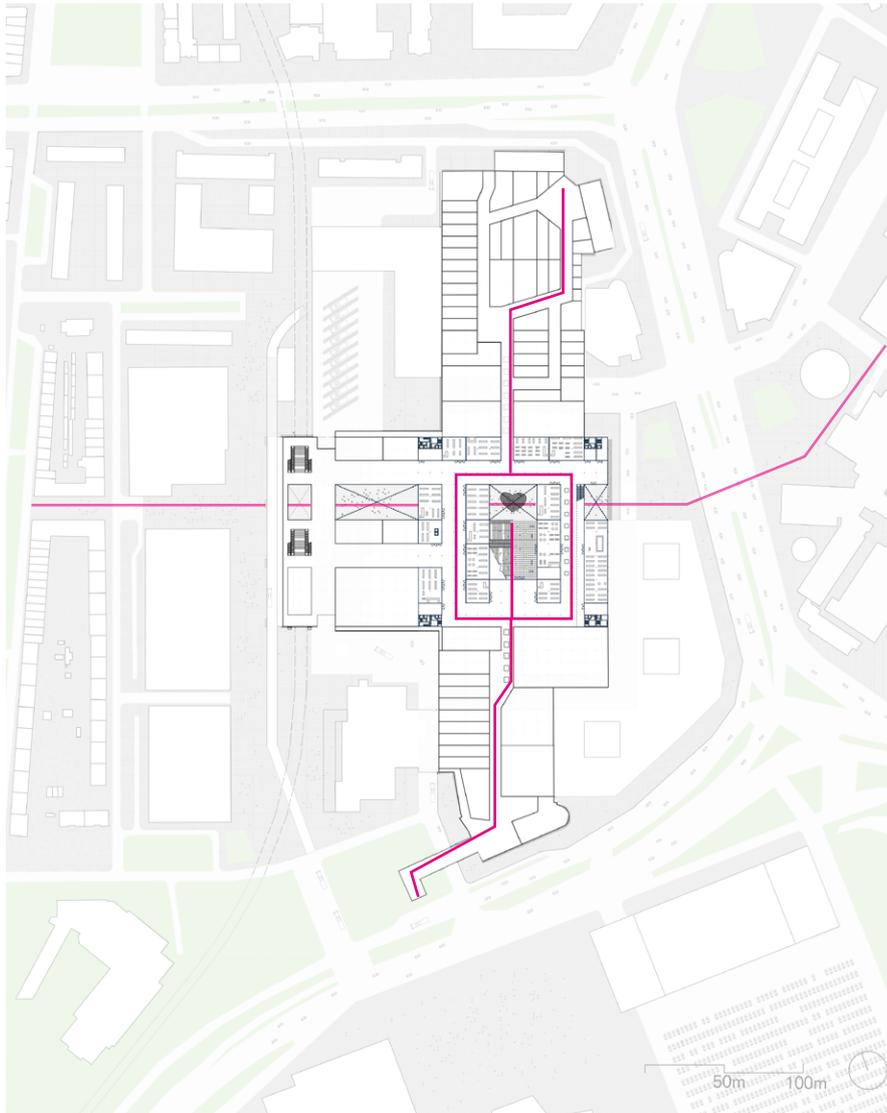


intervention  
  bike  
  bike parking  
  metro  
  metro station  
  bus  
  bus station  
  car  
  car parking  
**floor 00**

# existing shopping center



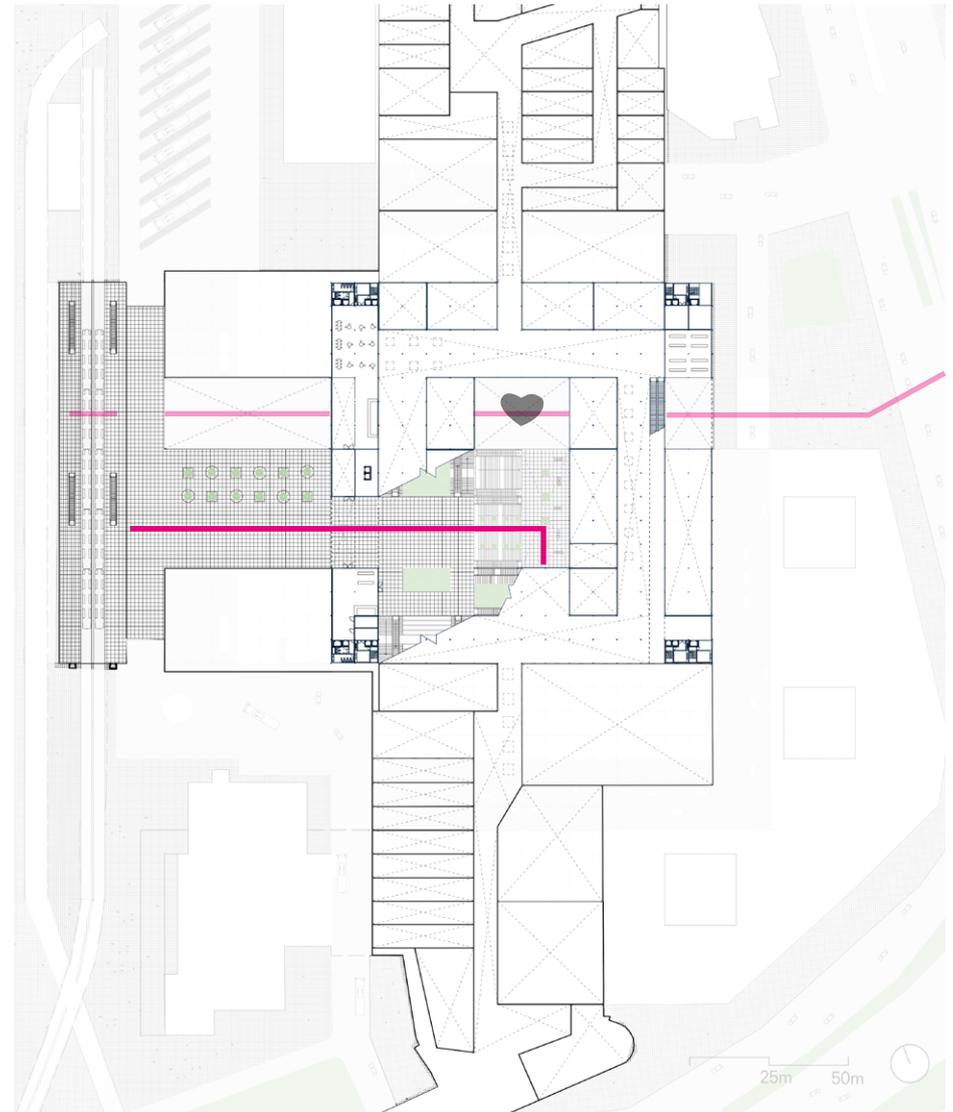
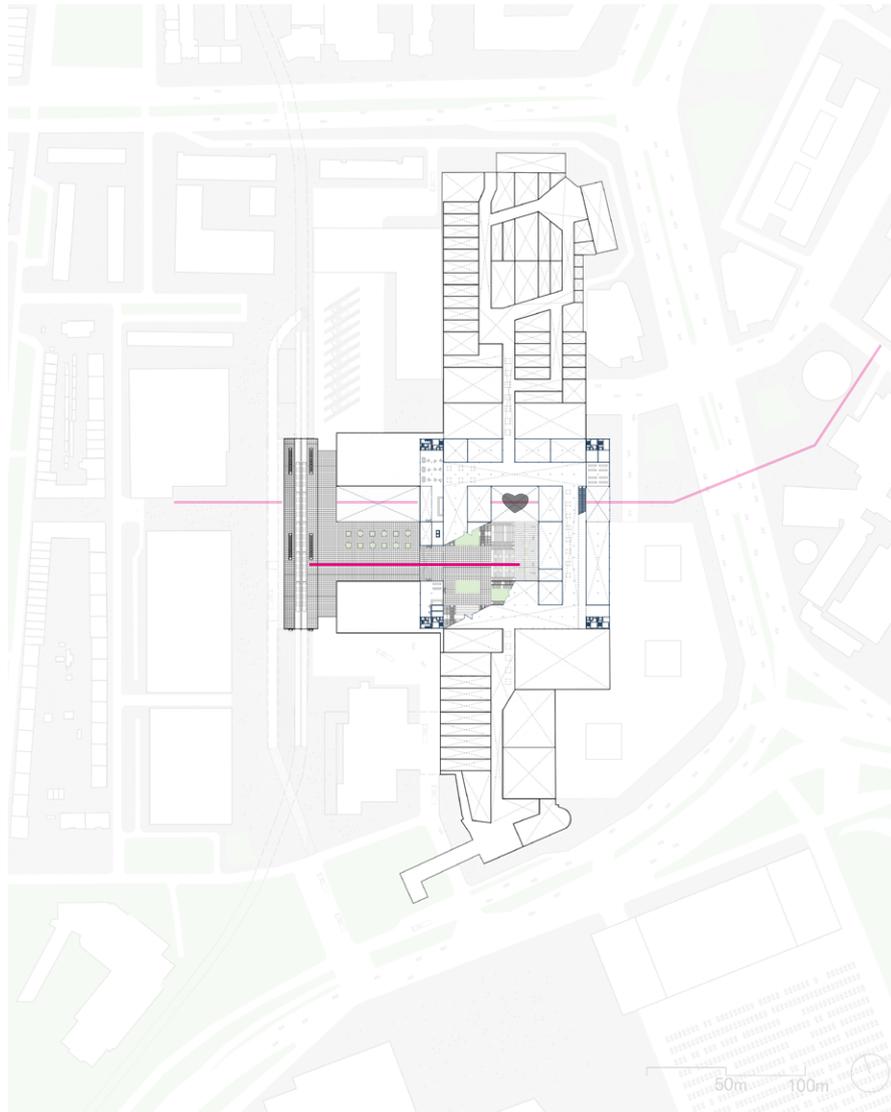
# new vertical central circulation within the shopping center



□ intervention — floor 01 — floor 02

**floor 01**

# new vertical central circulation <-> metro station



□ intervention — floor 01 — floor 02

**floor 02**

## scheme implementation concept

**ALL  
ACCESSIBILITY**

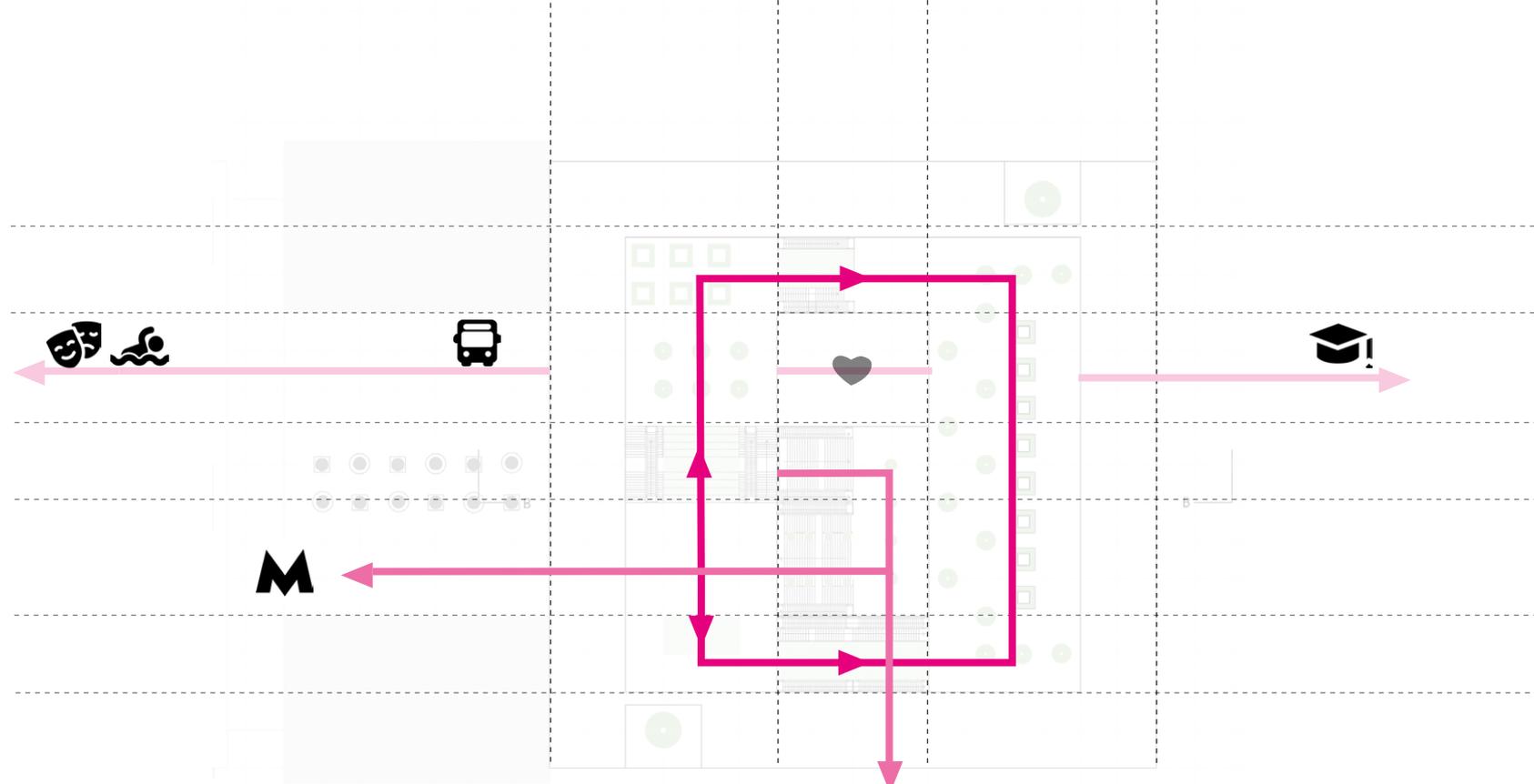
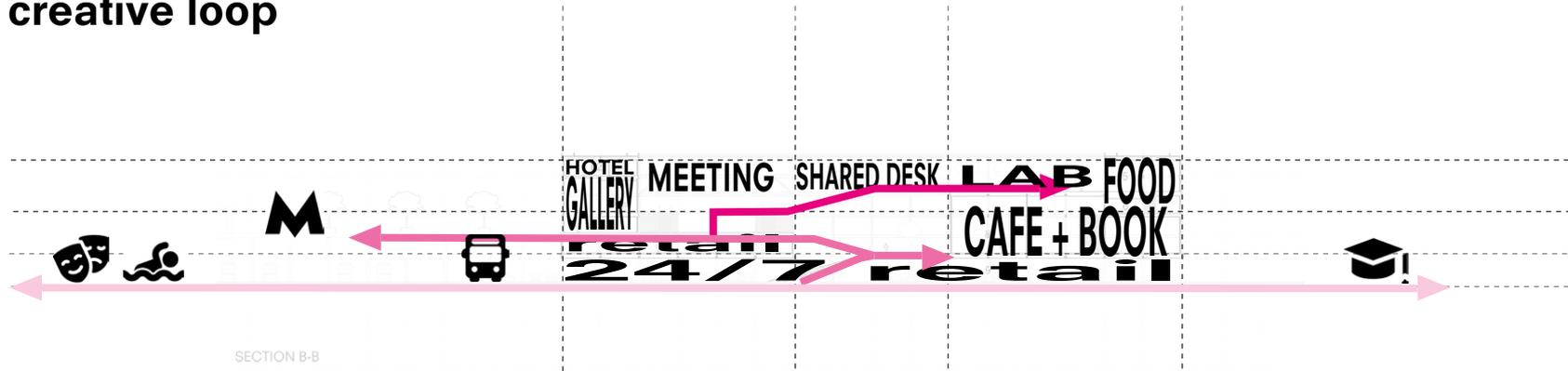


**24H  
VITALITY**





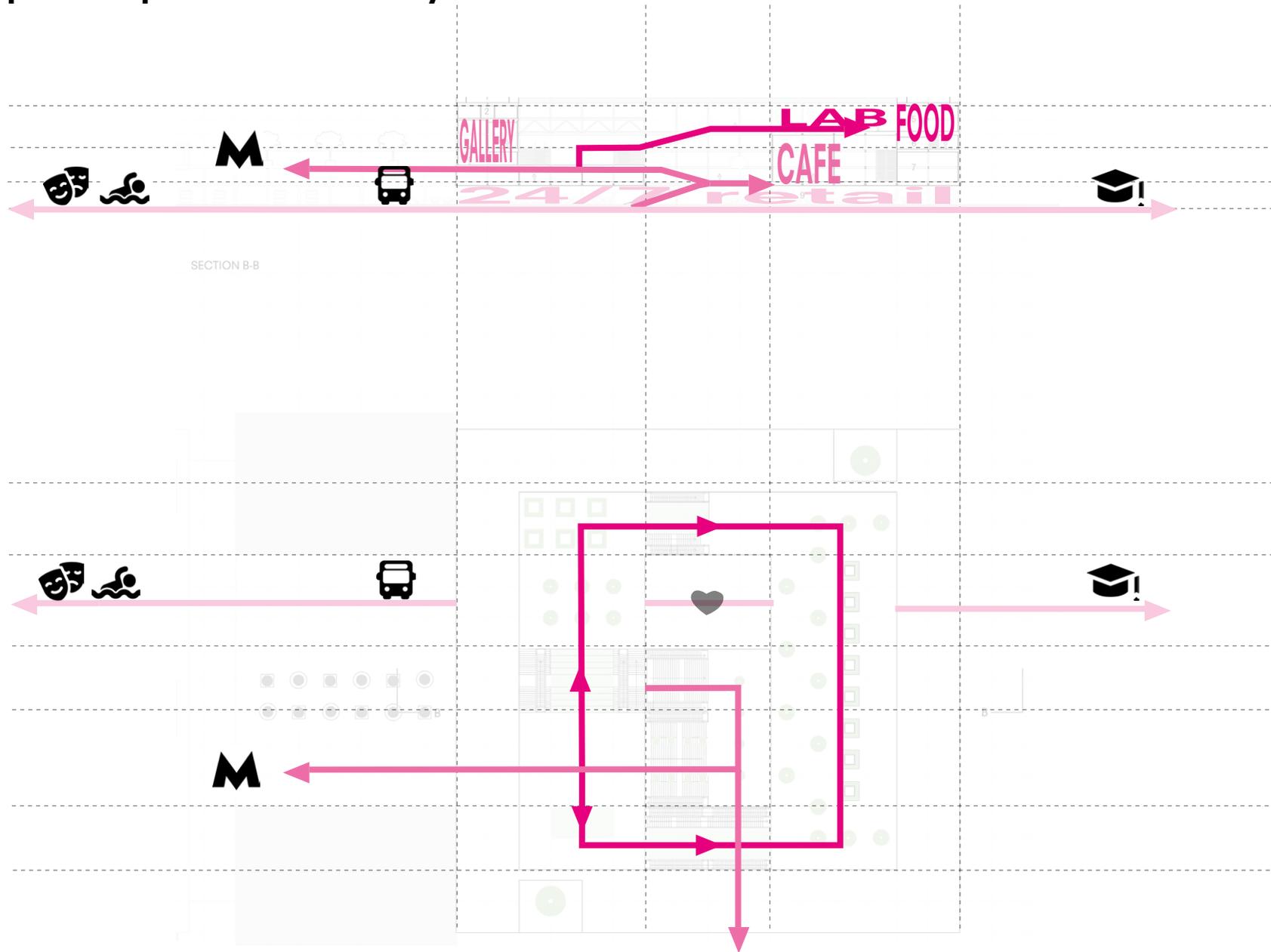
# creative loop



ROTTERDAM  
**ΔHOY**



# public space accessibility



SECTION B-B

rooftop plan

ROTTERDAM  
**ΔHOY**

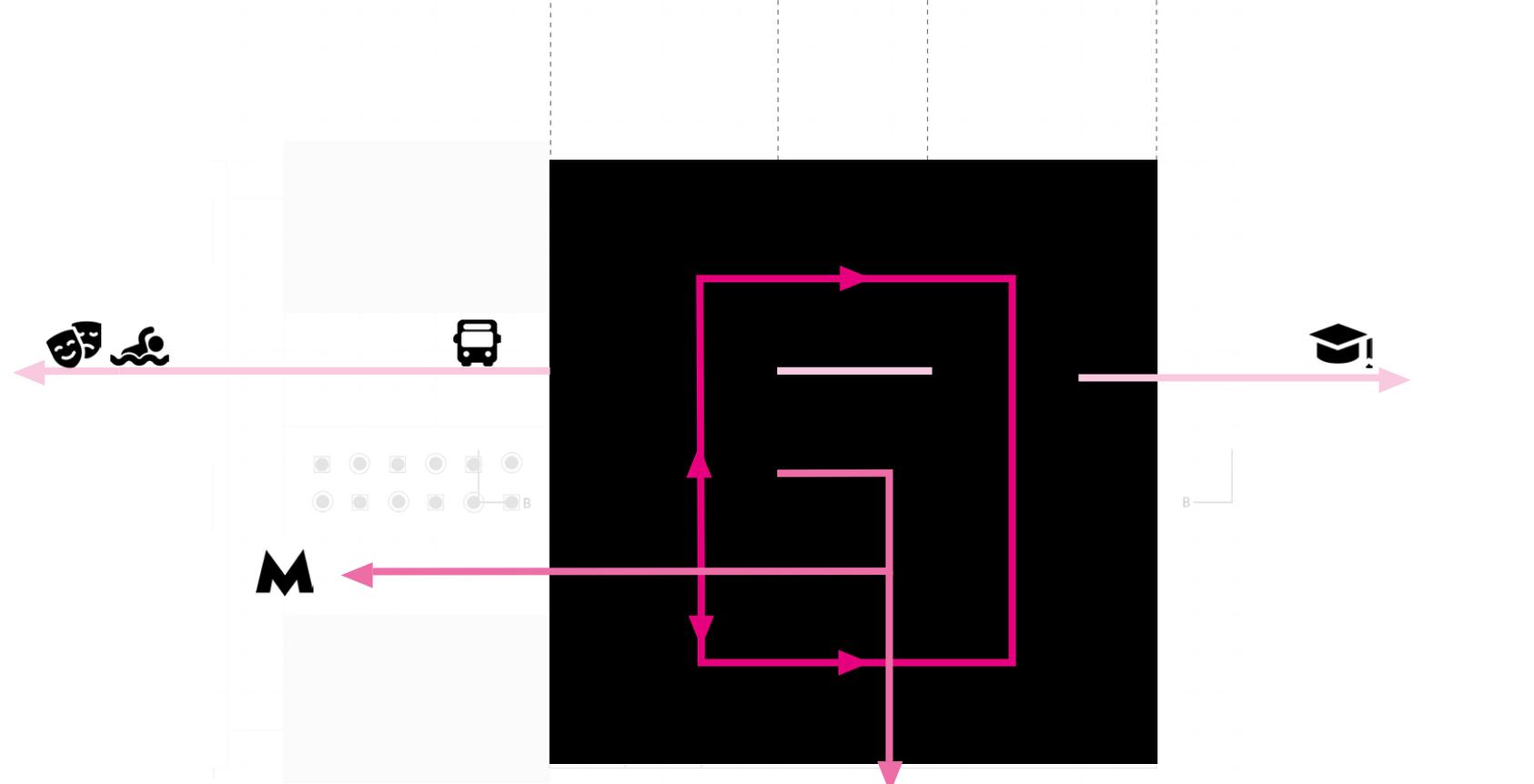
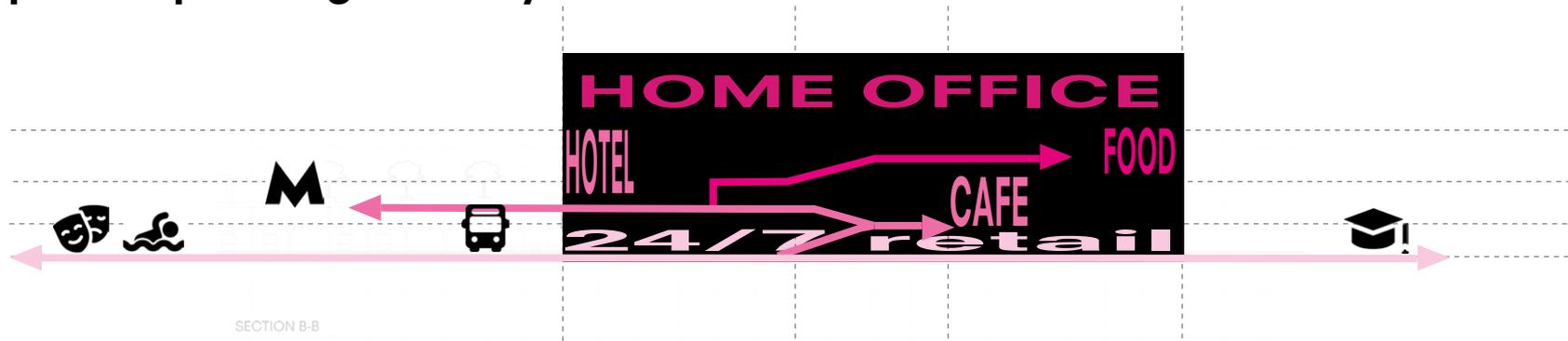
zuidplein 2030



complex project



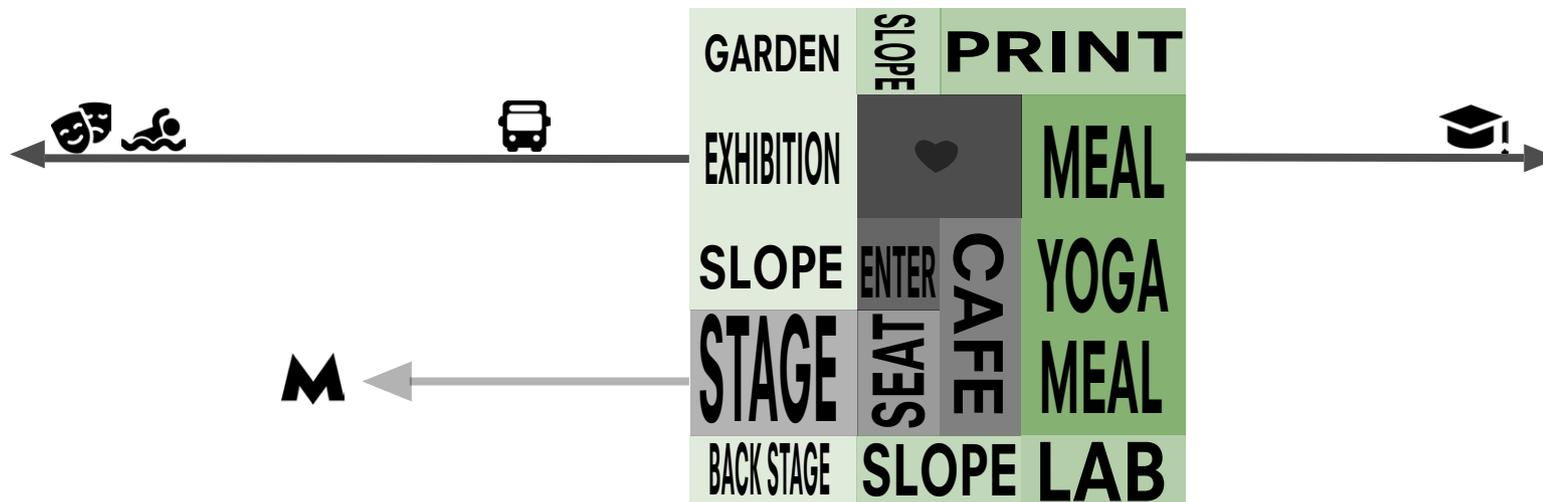
# public space night vitality



ROTTERDAM  
**ΔHOY**



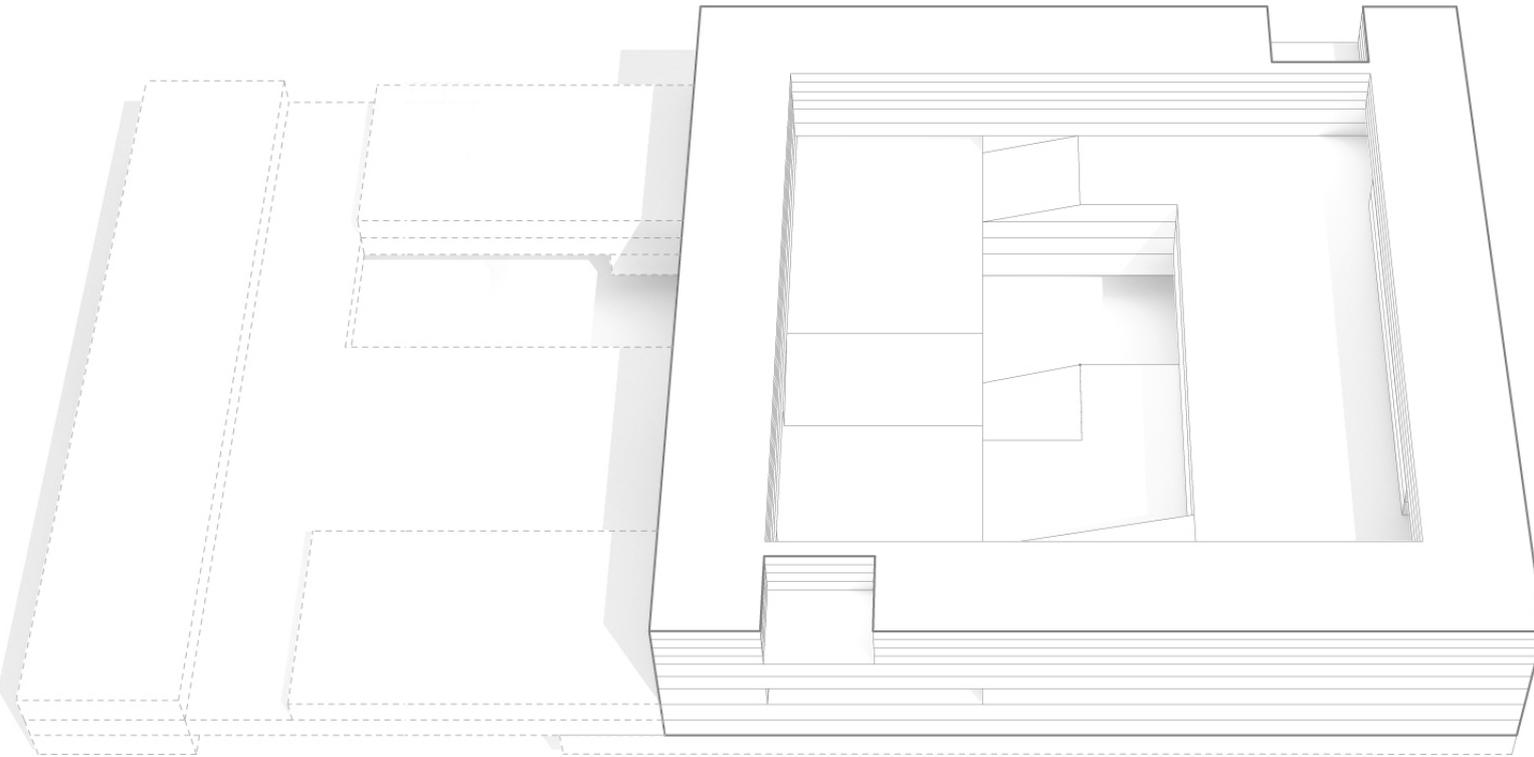
# public landscape



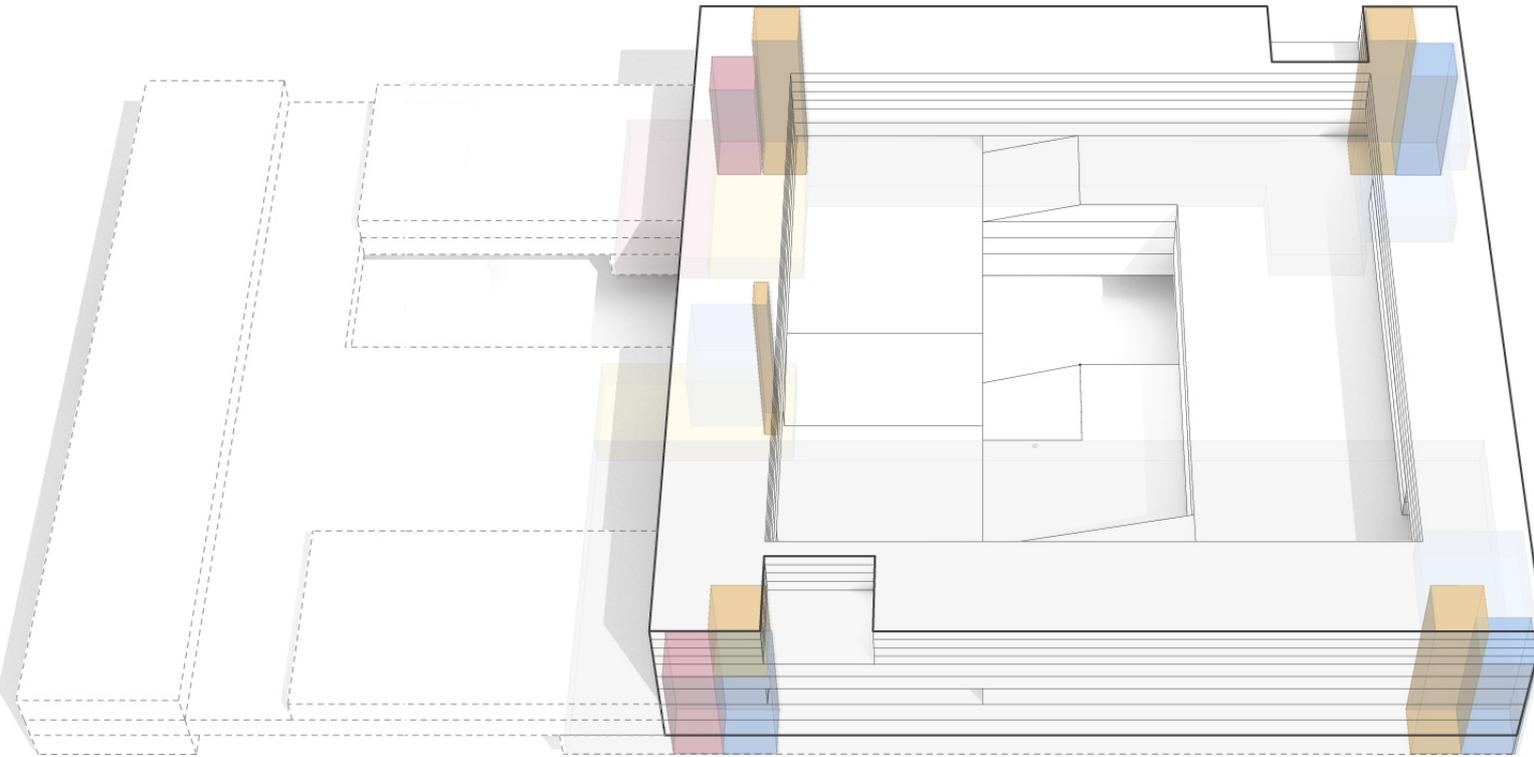
ROTTERDAM  
**AHOY**



# volume

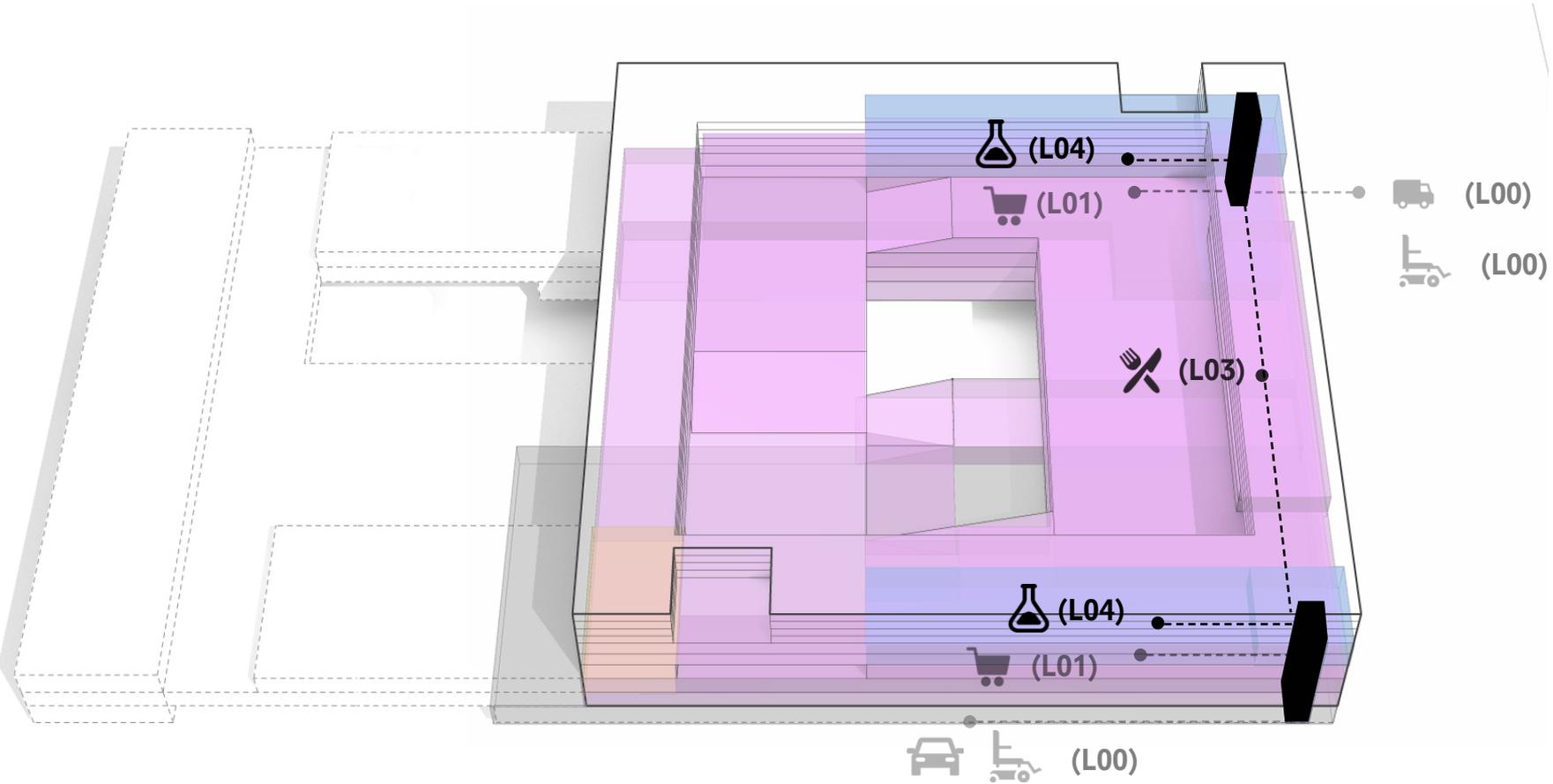


# service core



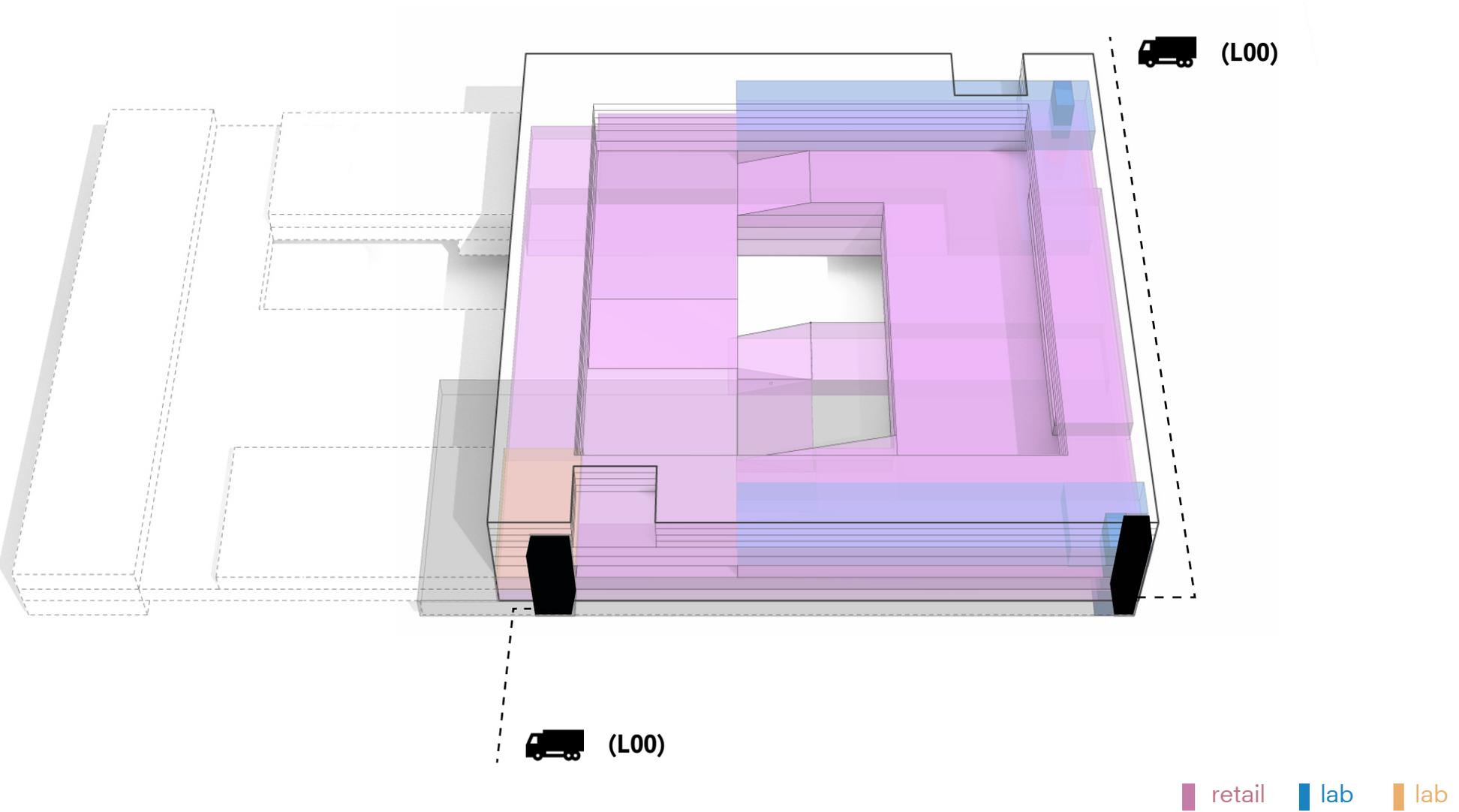
■ hotel ■ public ■ residential

# public core

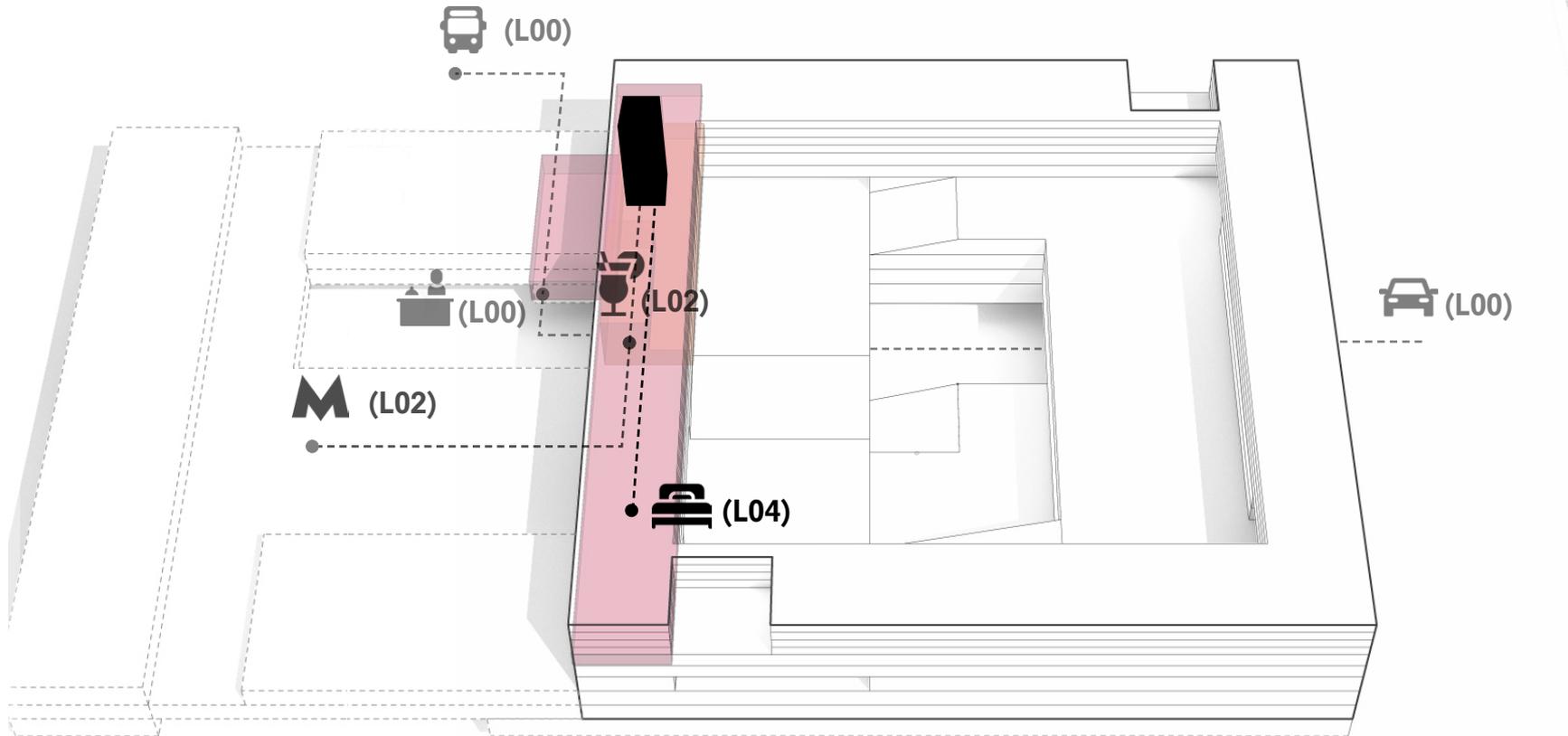


■ retail ■ lab ■ lab

# public logistic

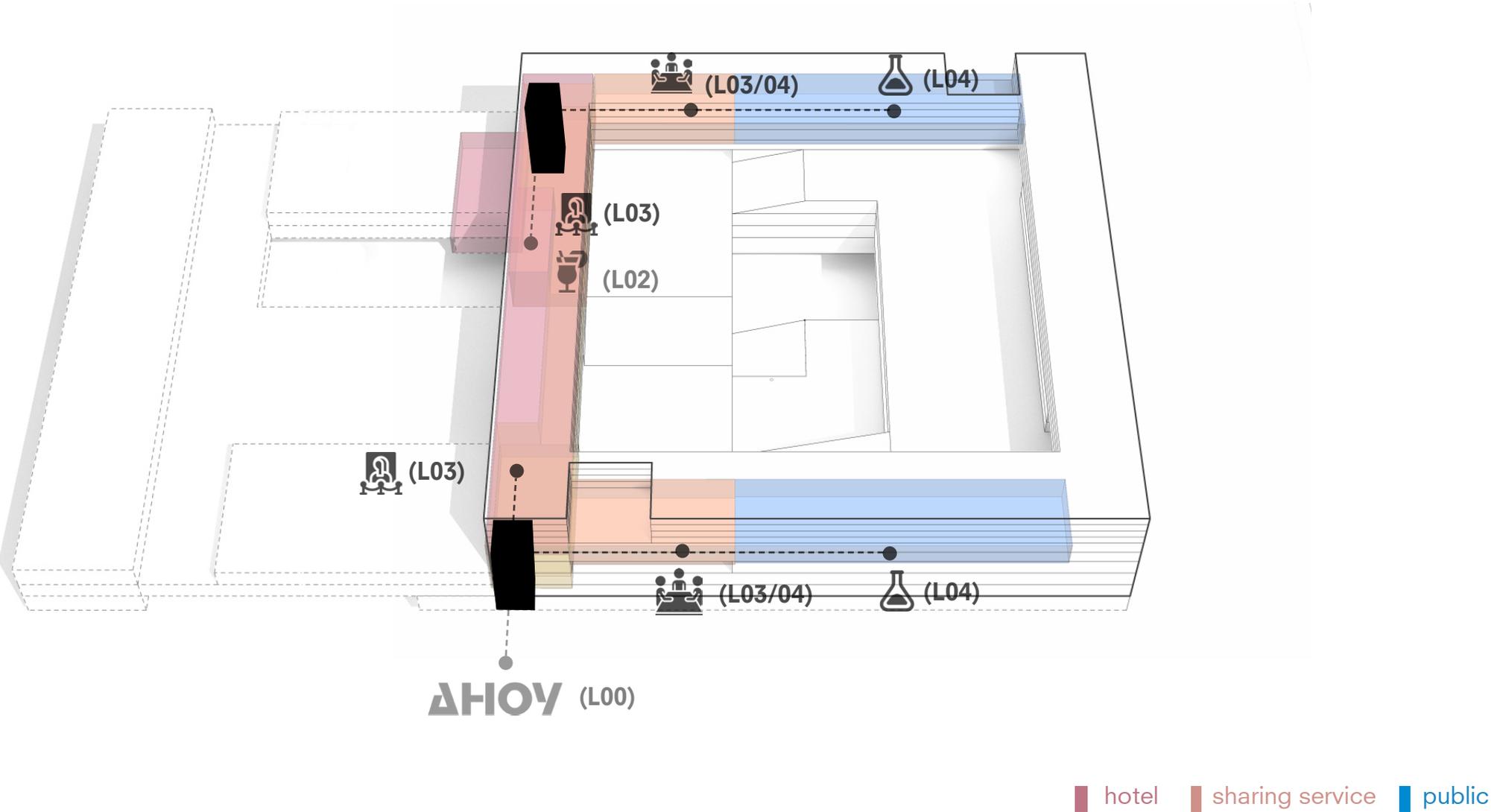


# hotel check in / check out

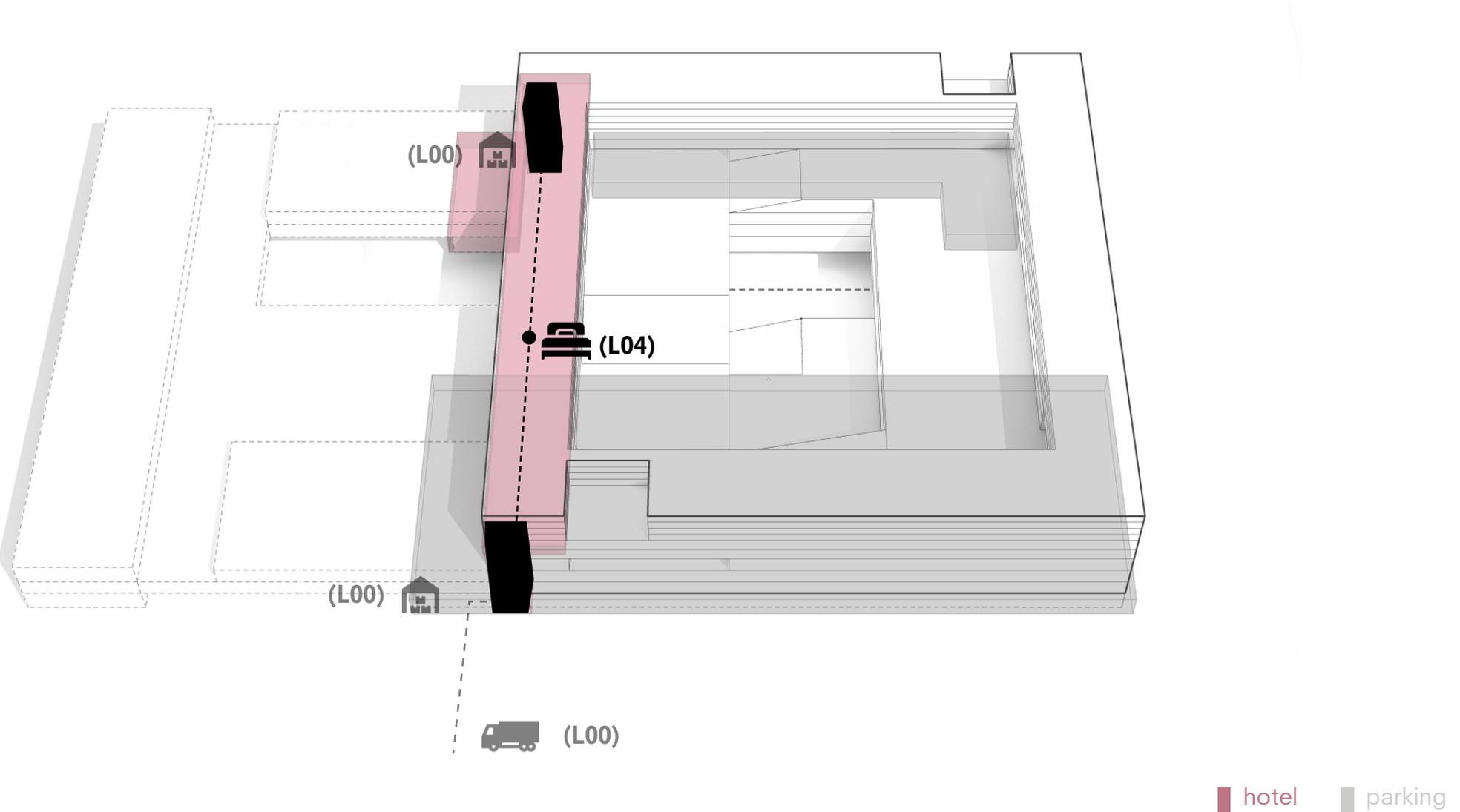


■ hotel ■ sharing service

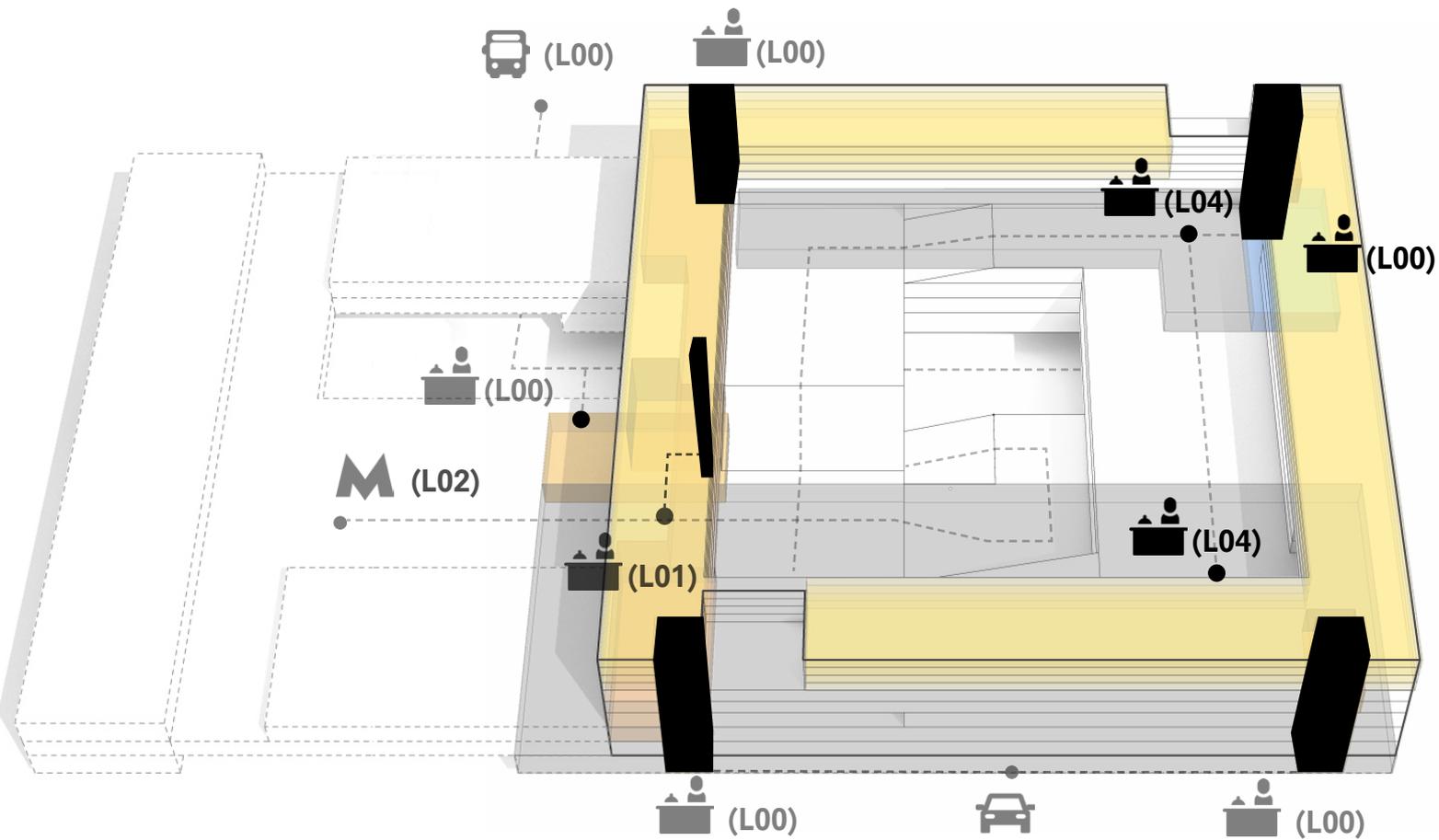
# hotel sharing



# hotel logistic

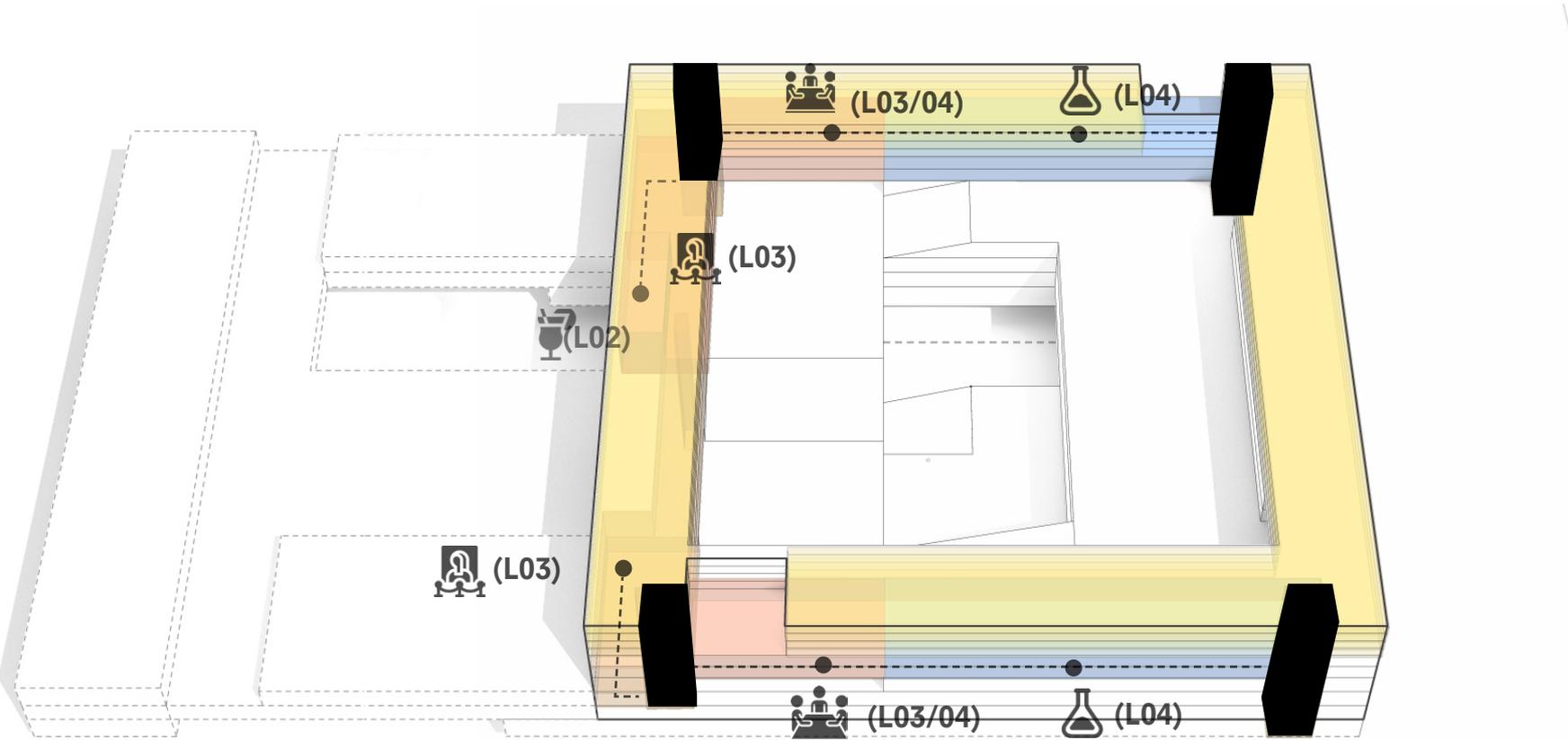


# residents circulation



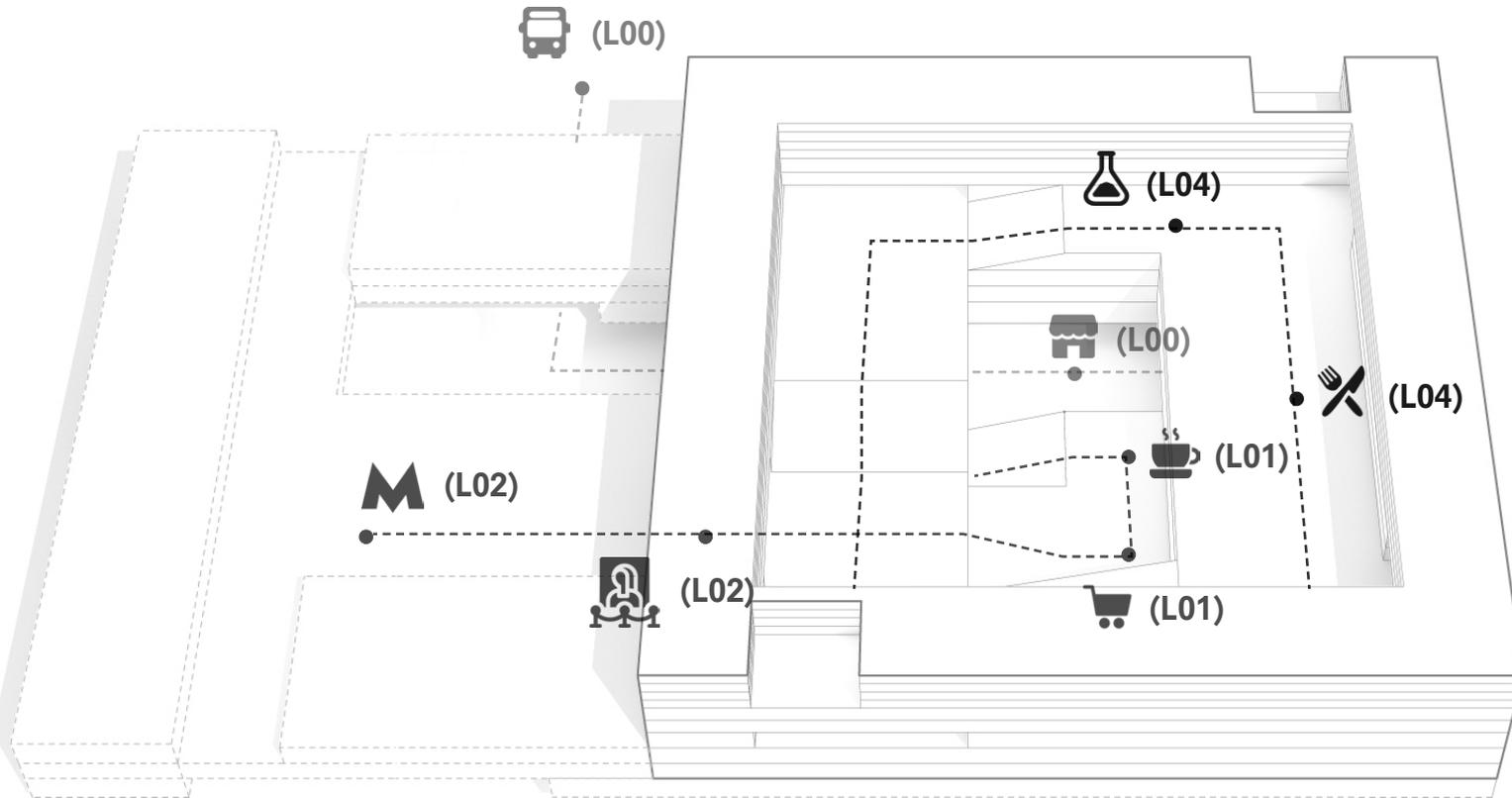
residential public

# residents sharing

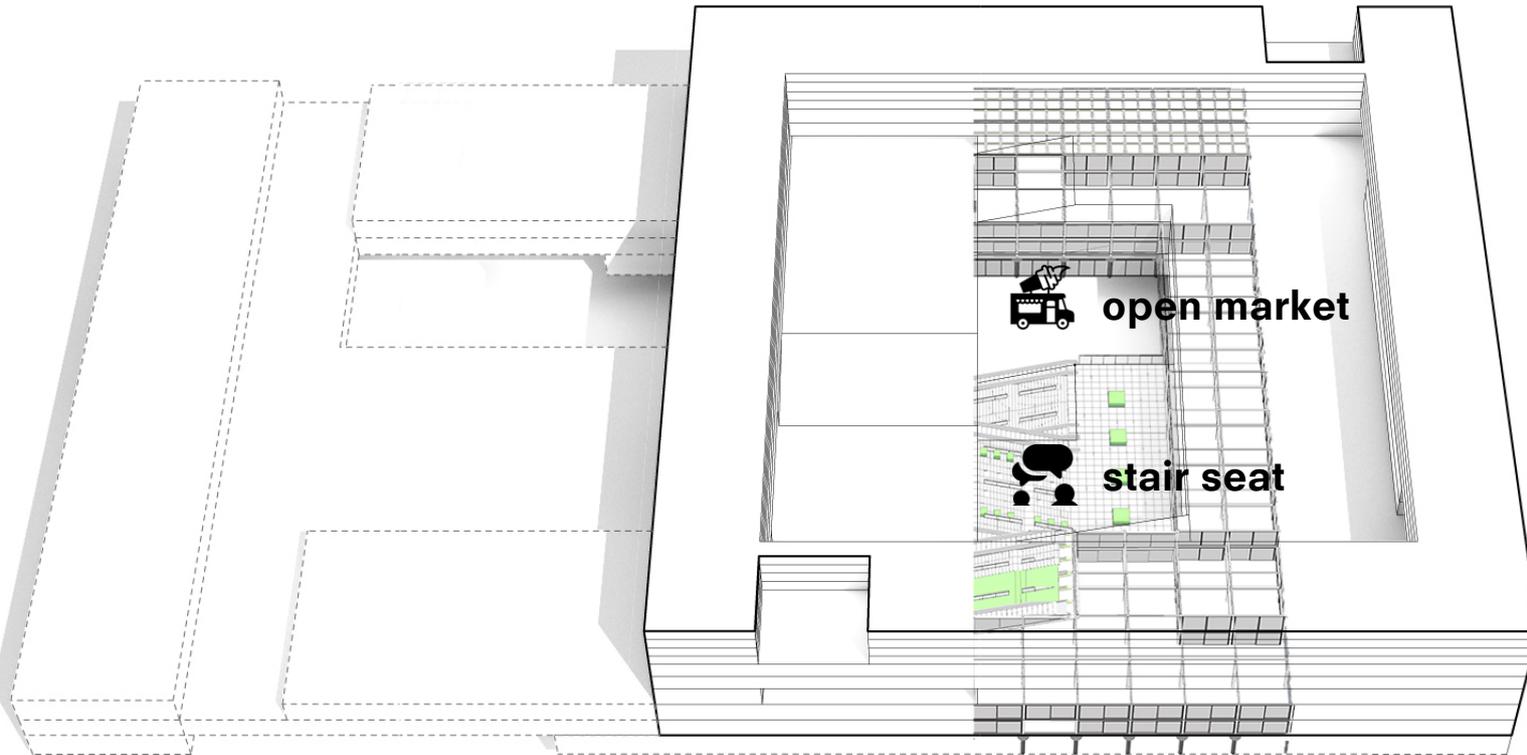


residential public sharing service

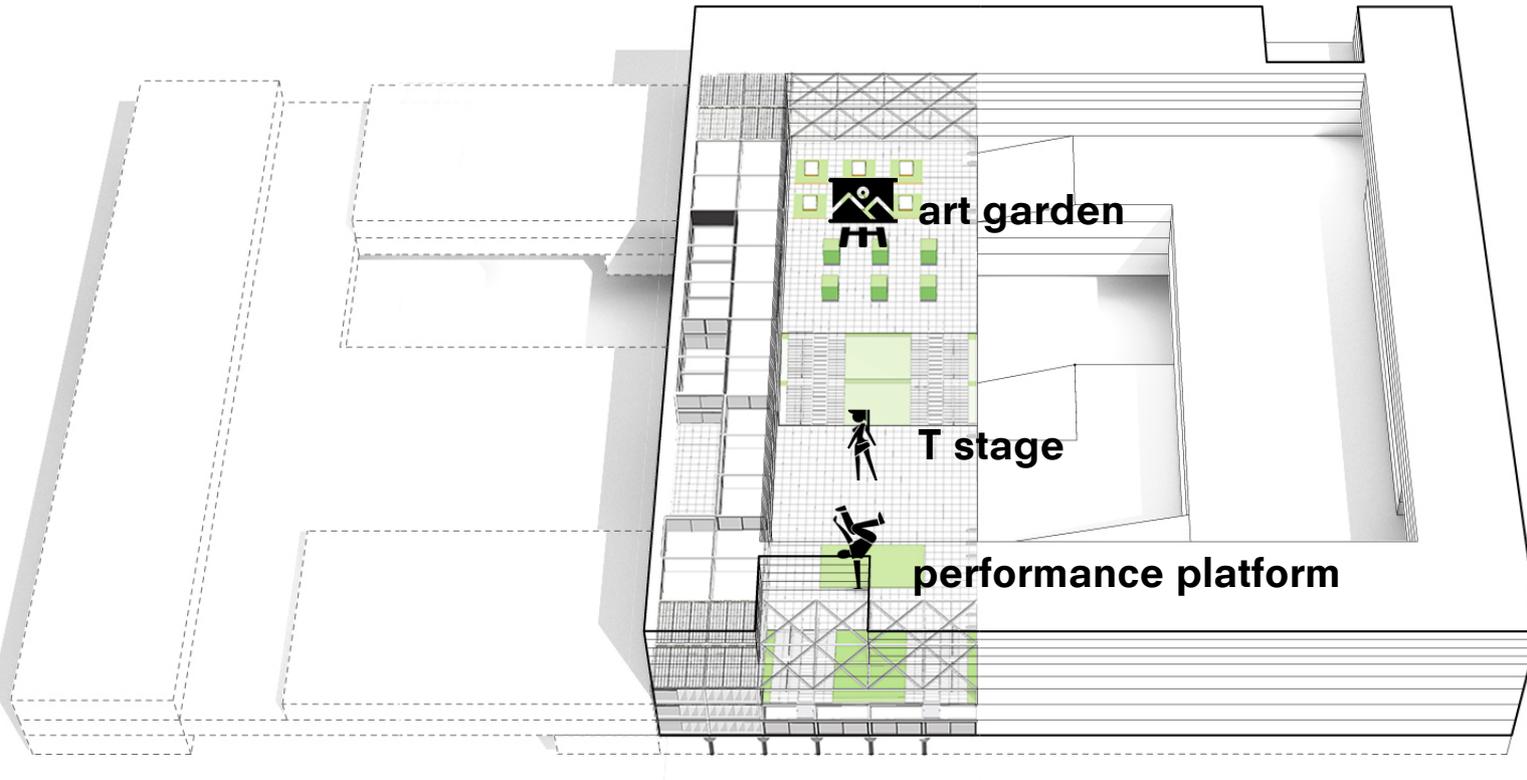
# public space circulation



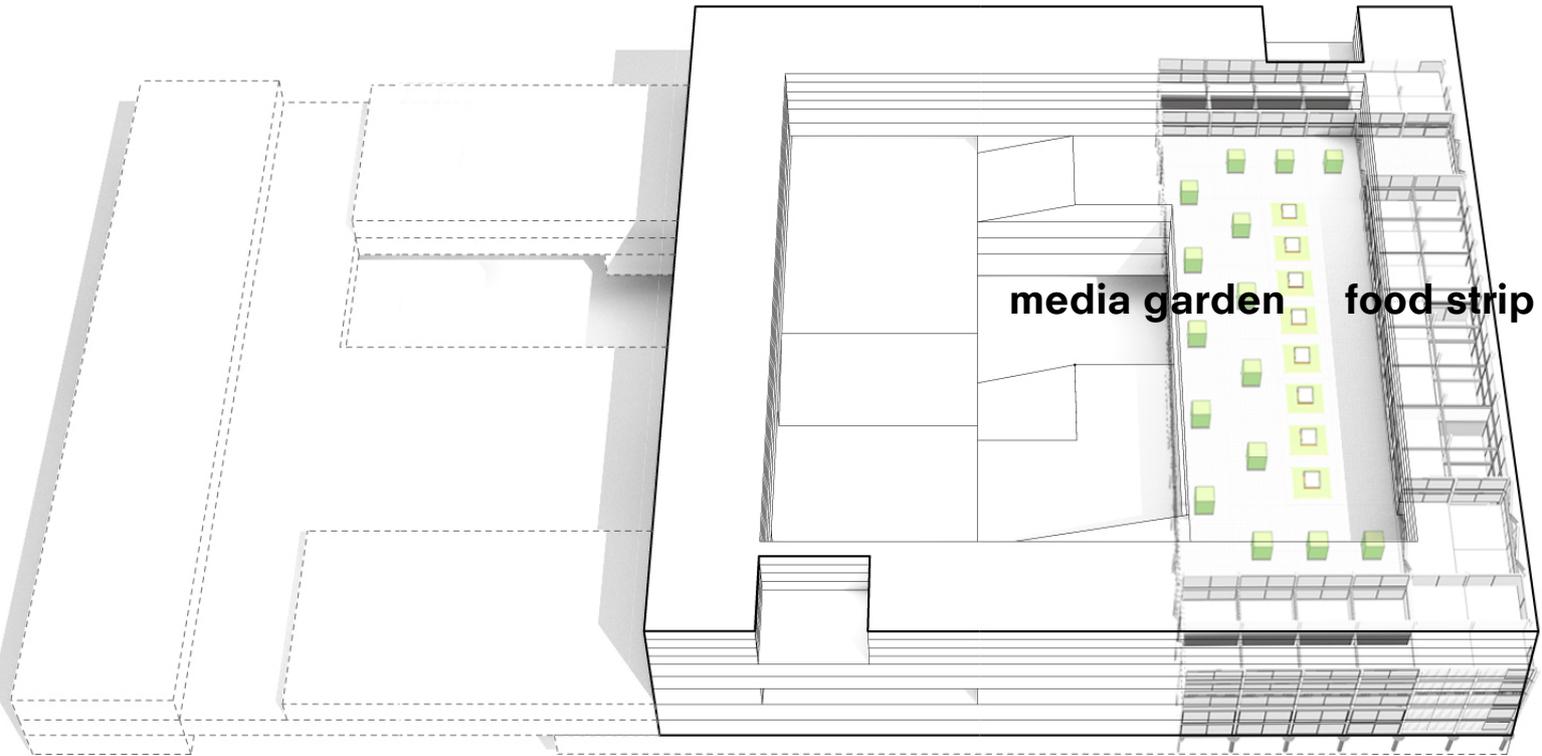
# cafe/tunnel anchor public events

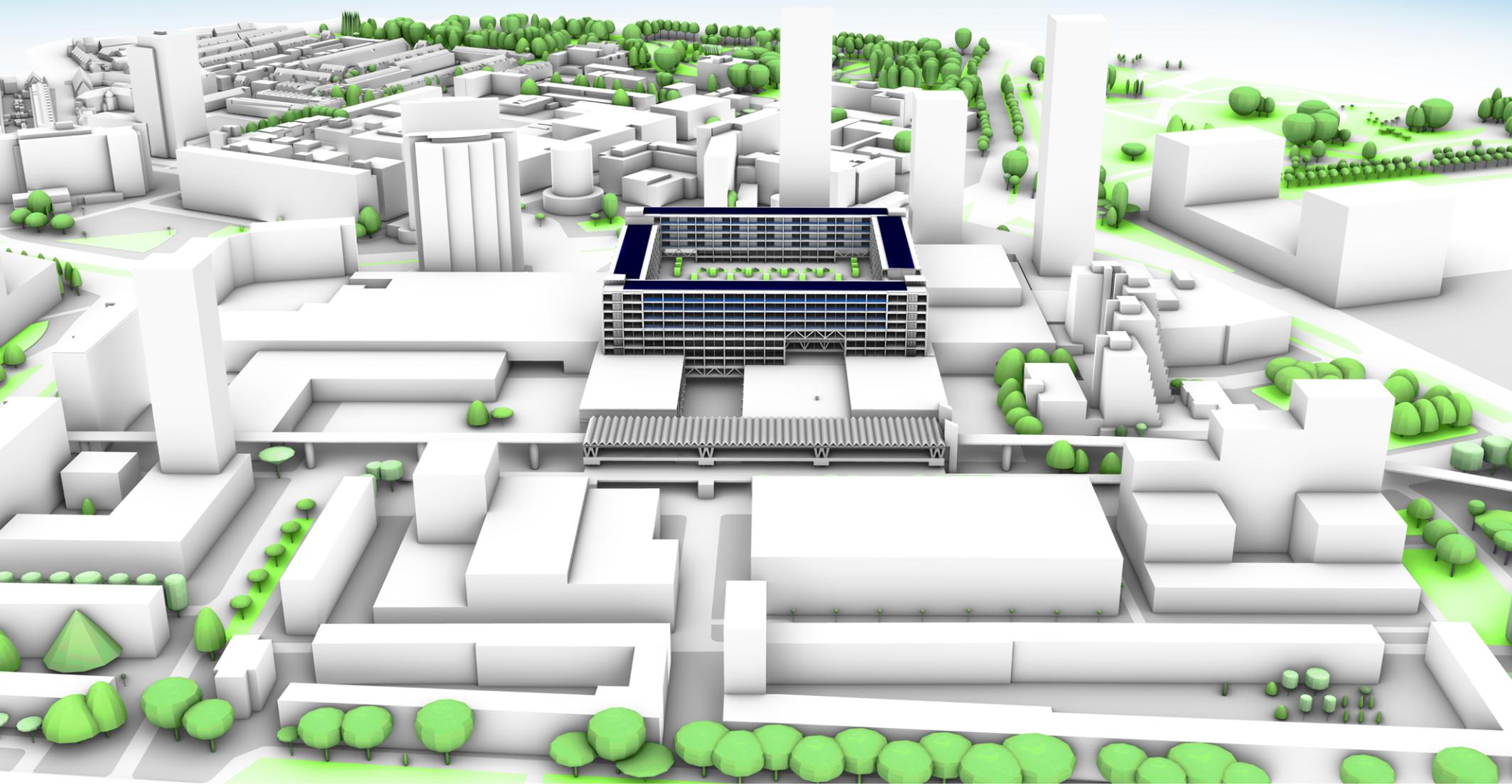


# gallery anchor public events

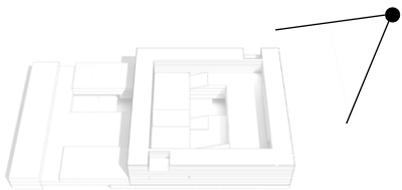
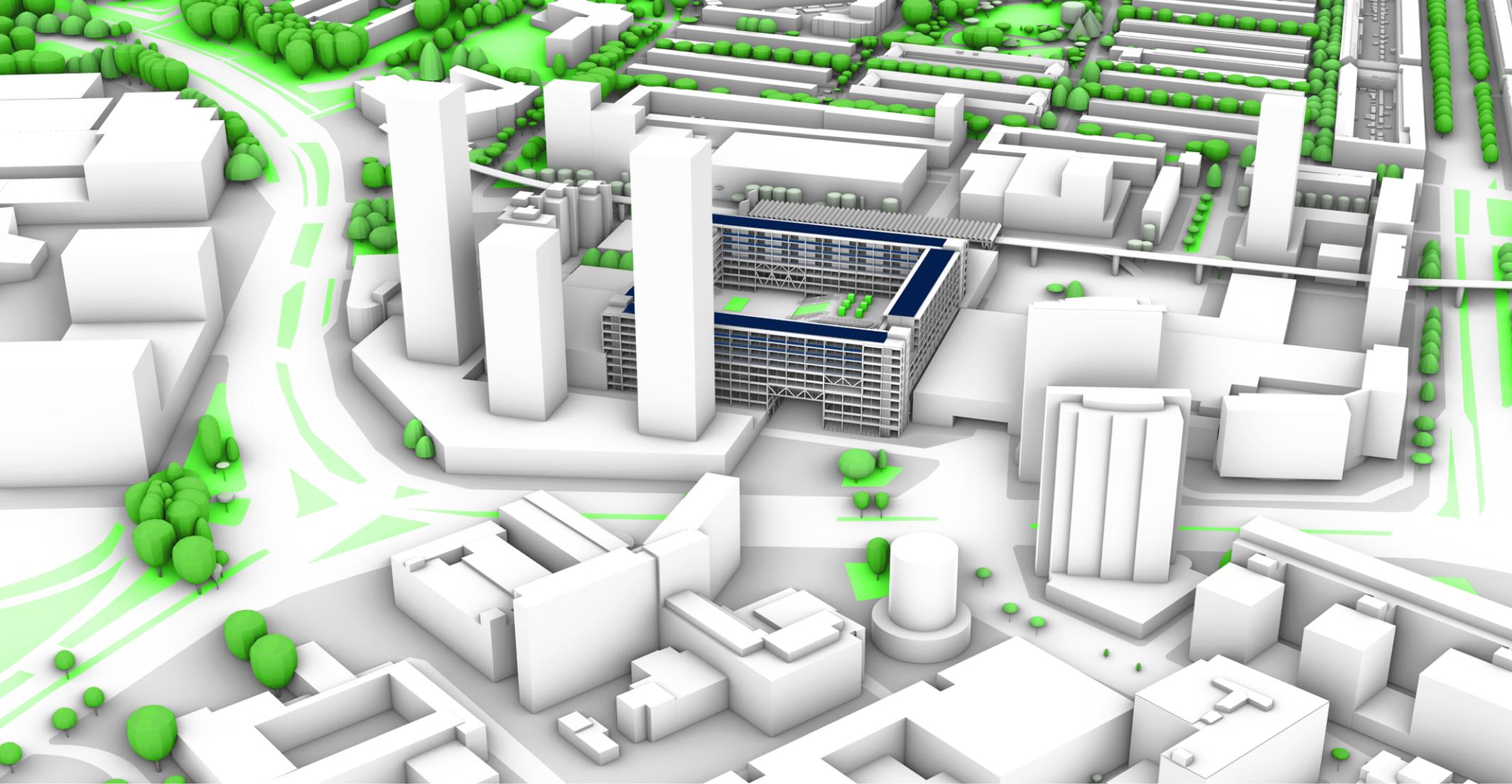


# lab/gastronomy anchor public events

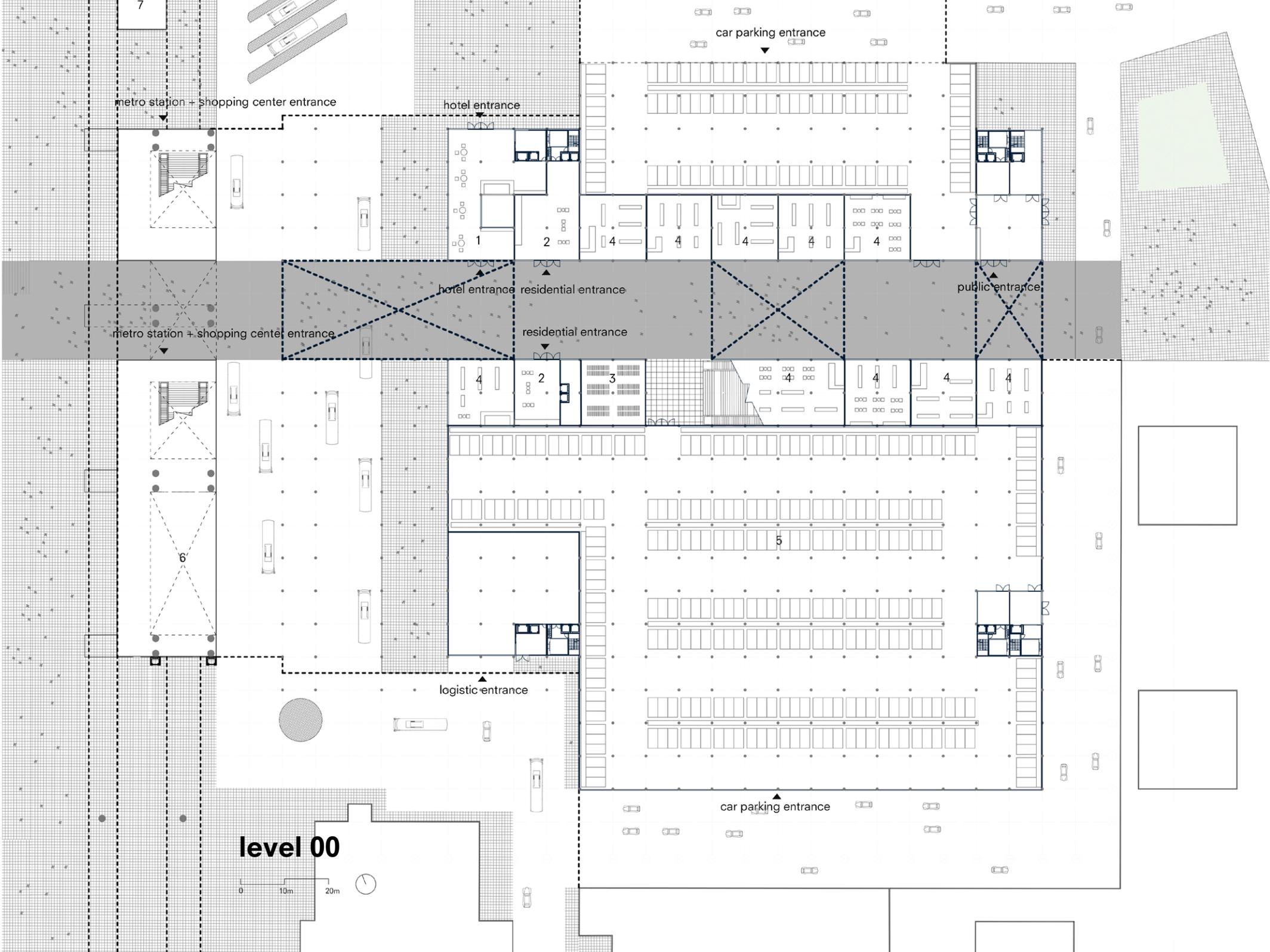




**bird view**



**bird view**



car parking entrance

metro station + shopping center entrance

hotel entrance

1

2

4

4

4

4

4

public entrance

metro station + shopping center entrance

hotel entrance

residential entrance

residential entrance

4

2

3

4

4

4

6

5

logistic entrance

car parking entrance

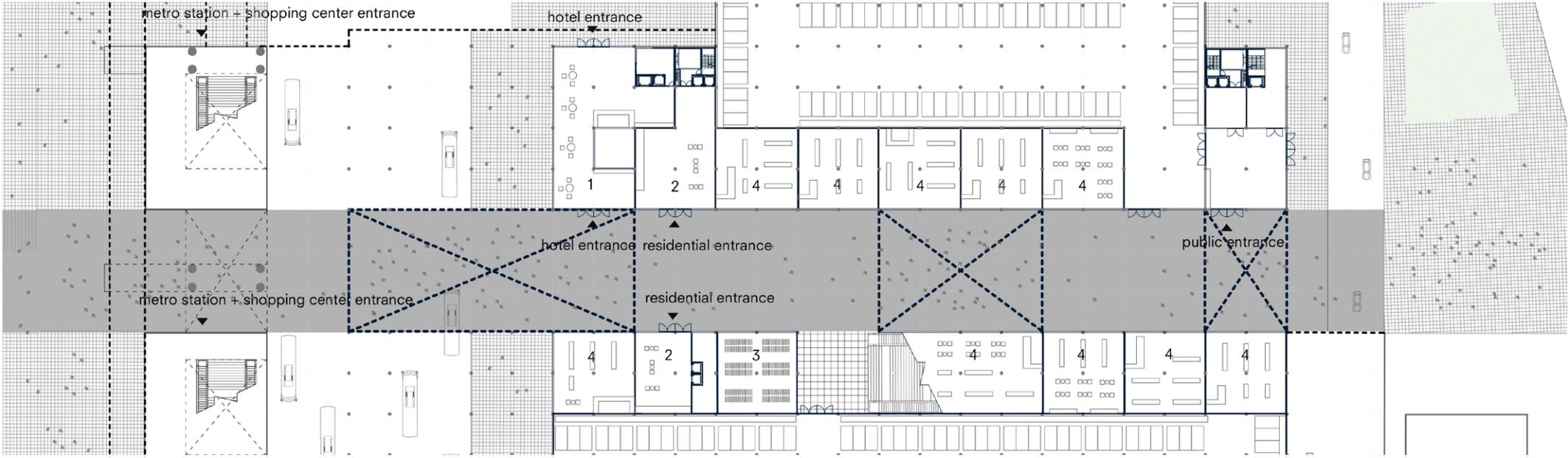
level 00

0 10m 20m

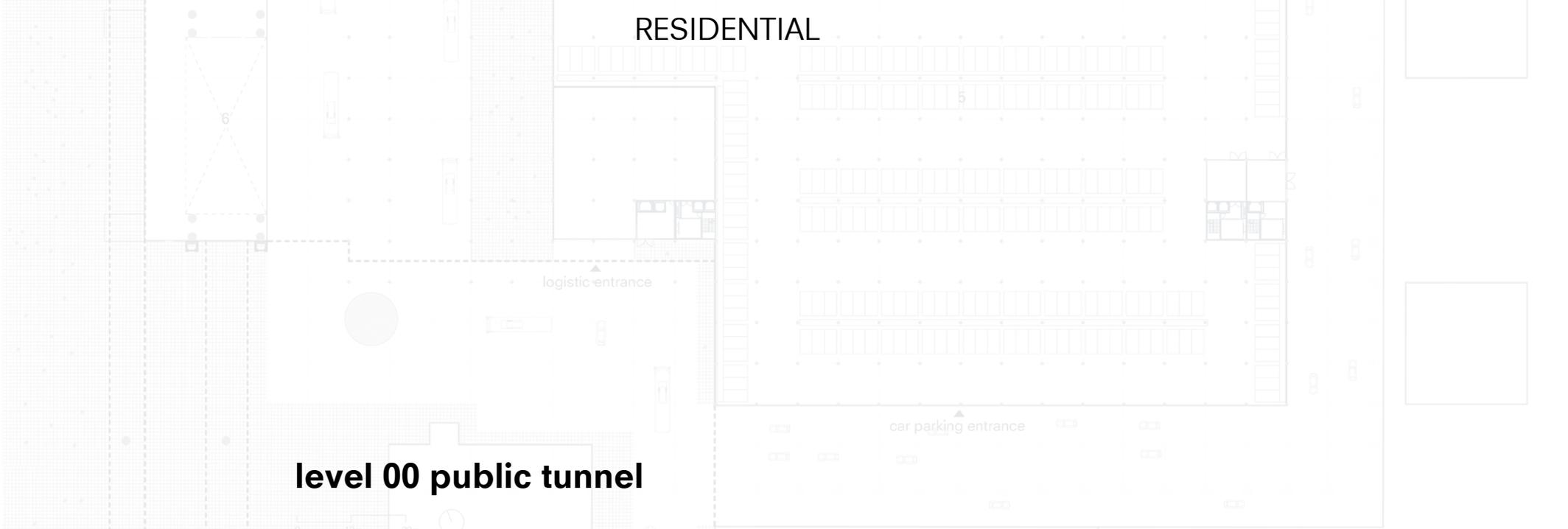


# HOTEL RESIDENTIAL

# PUBLIC

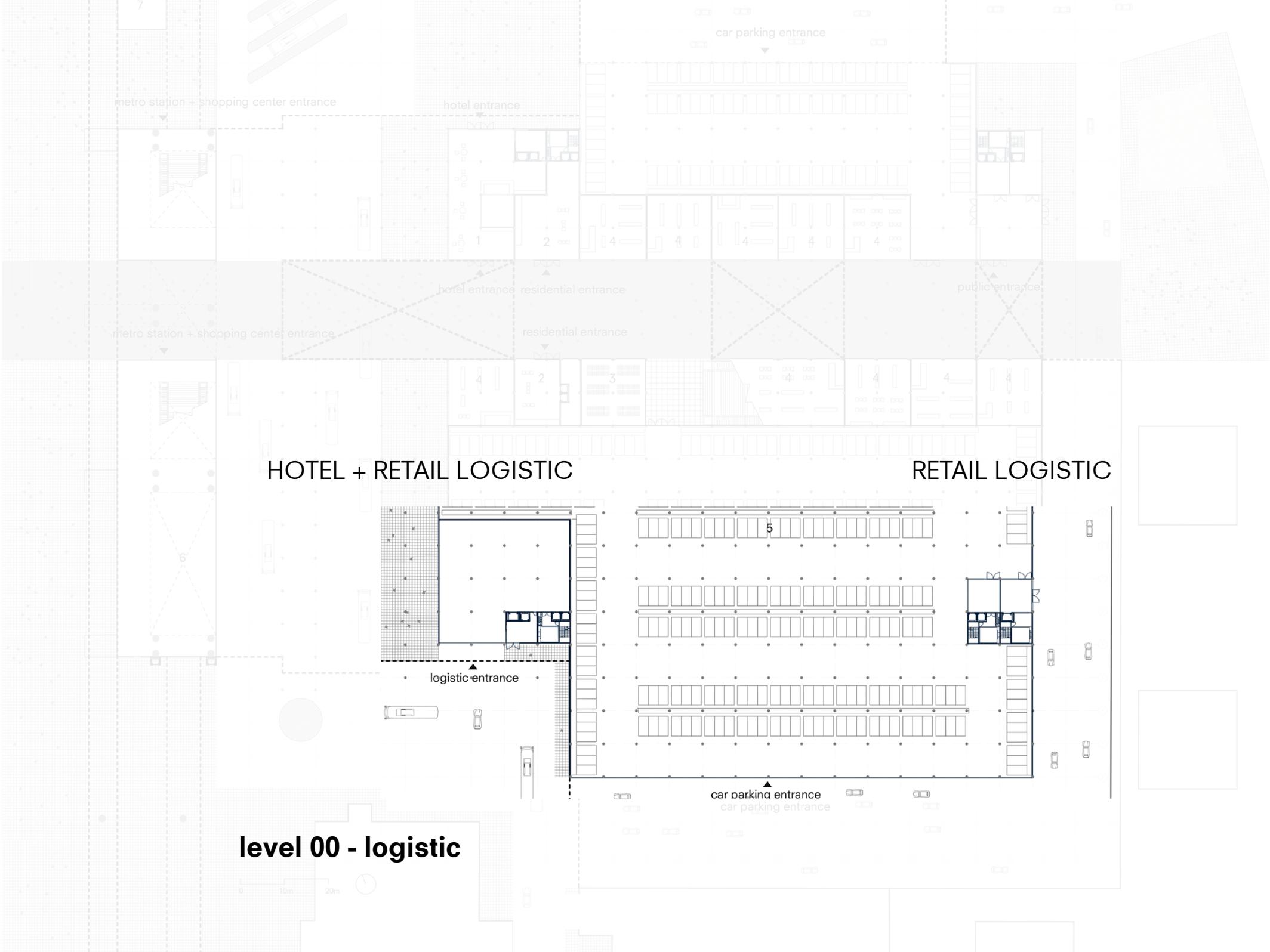


# RESIDENTIAL



**level 00 public tunnel**

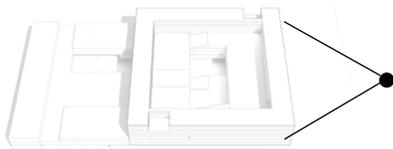




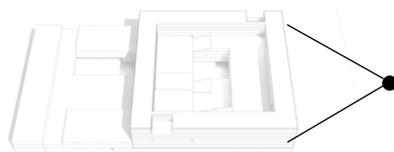
HOTEL + RETAIL LOGISTIC

RETAIL LOGISTIC

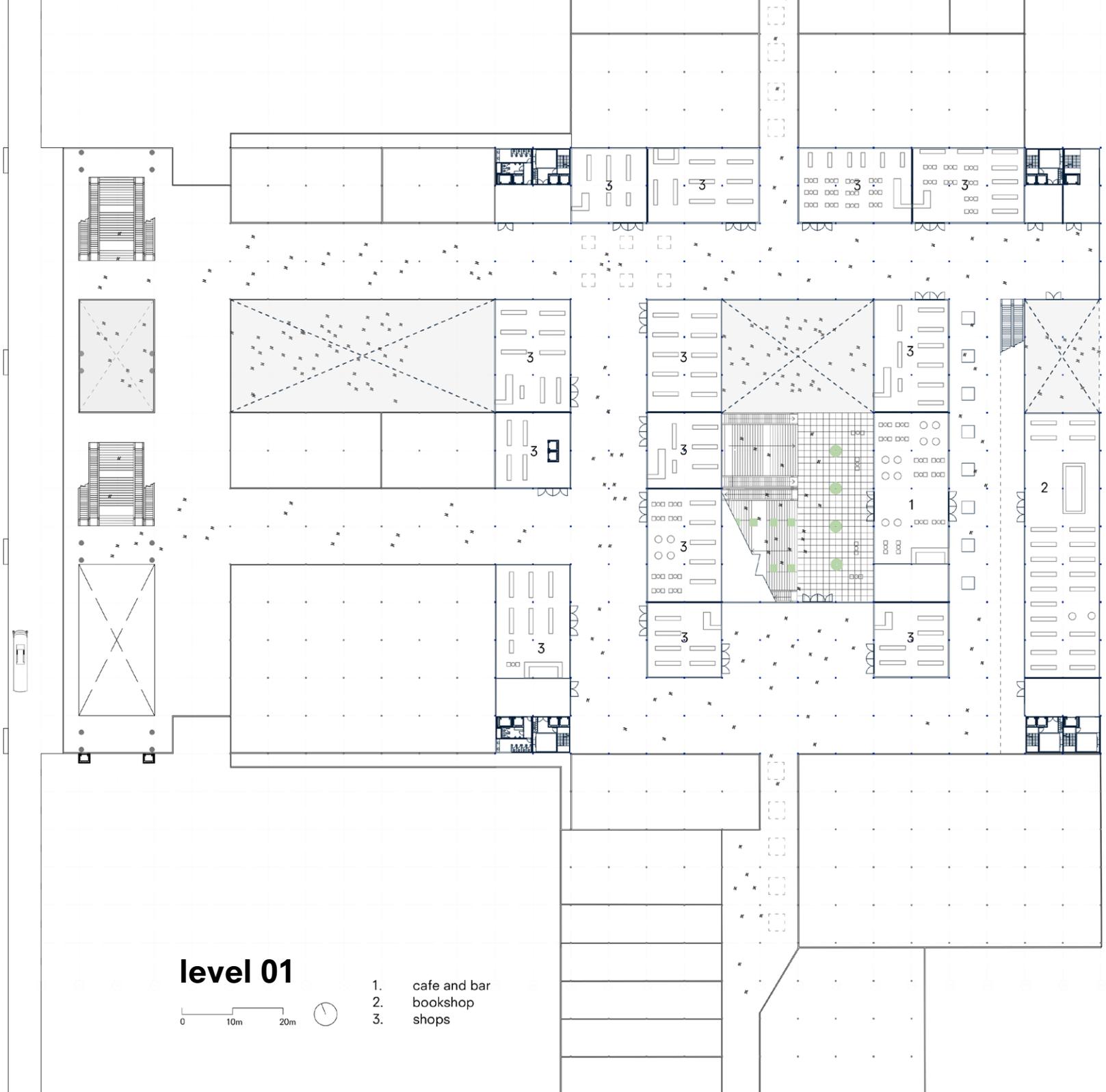
level 00 - logistic



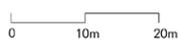
**level 00 - tunnel in the noon**



## level 00 - tunnel at night



# level 01



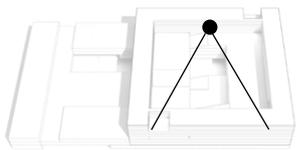
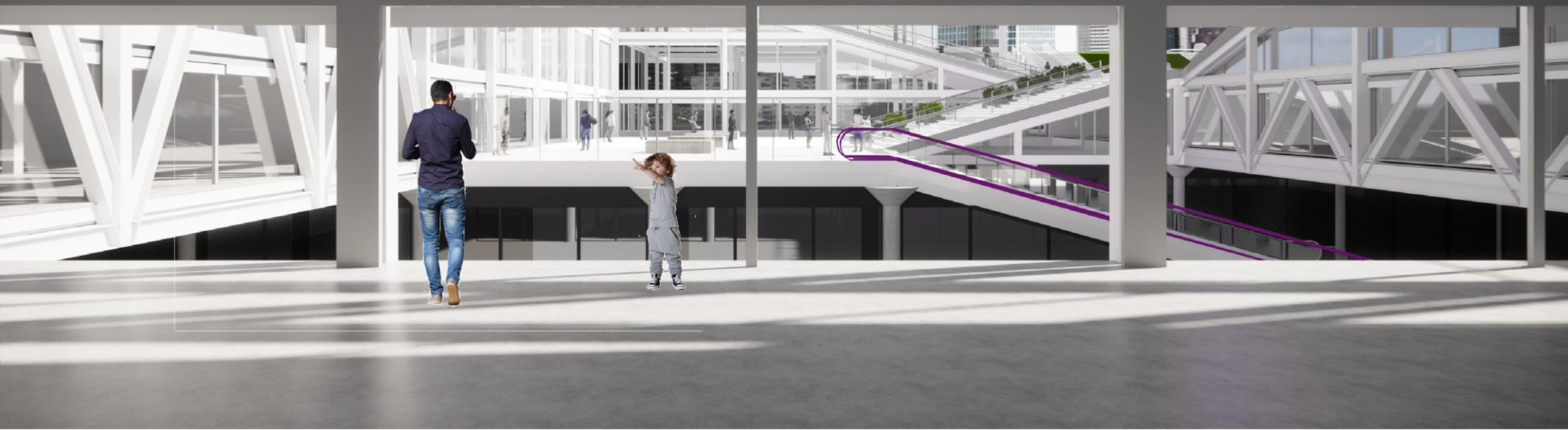
- 1. cafe and bar
- 2. bookshop
- 3. shops



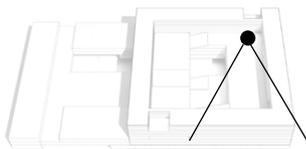
# level 01 - central void



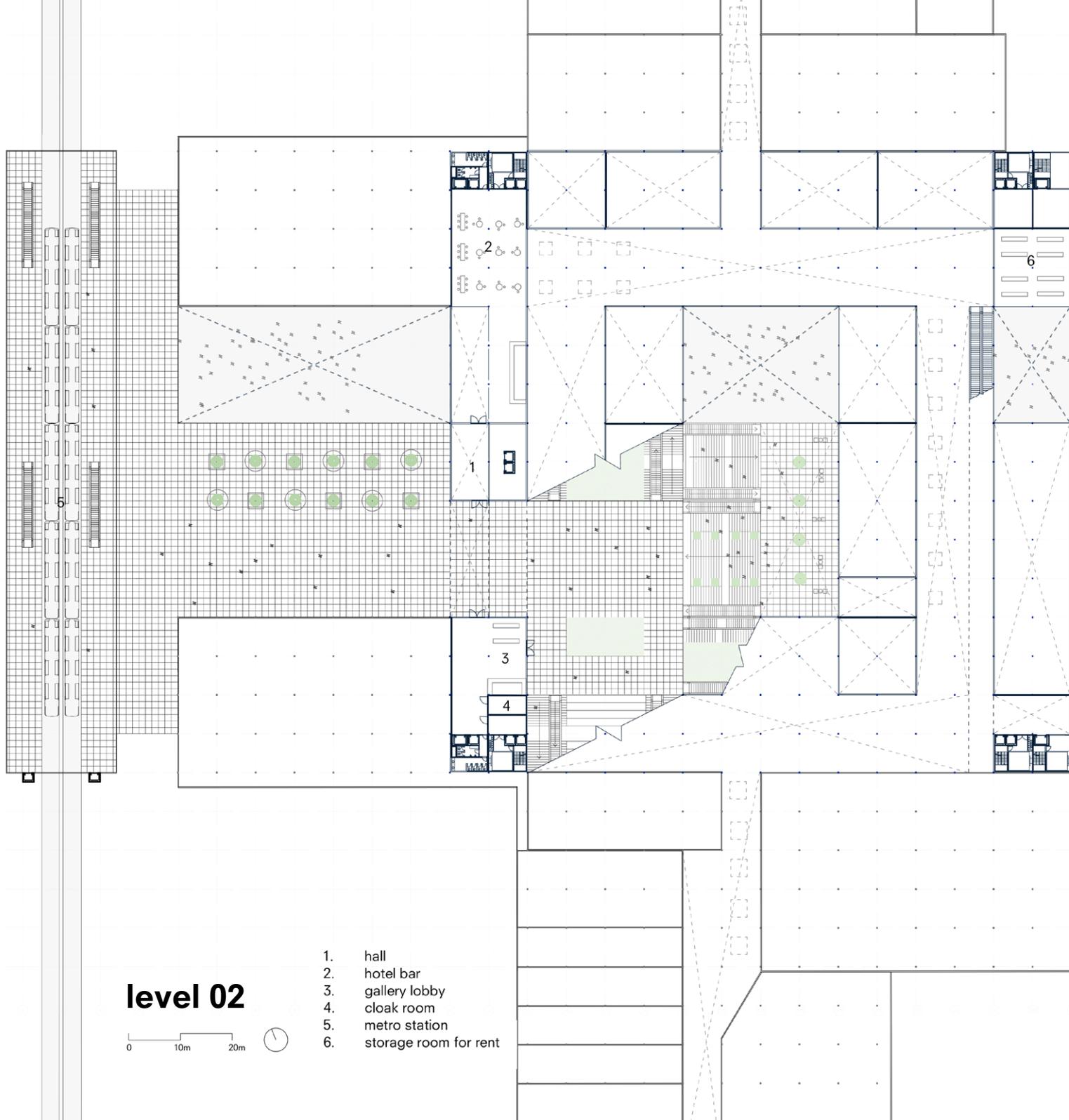
- 1. cafe and bar
- 2. bookshop
- 3. shops



## level 01 - central void



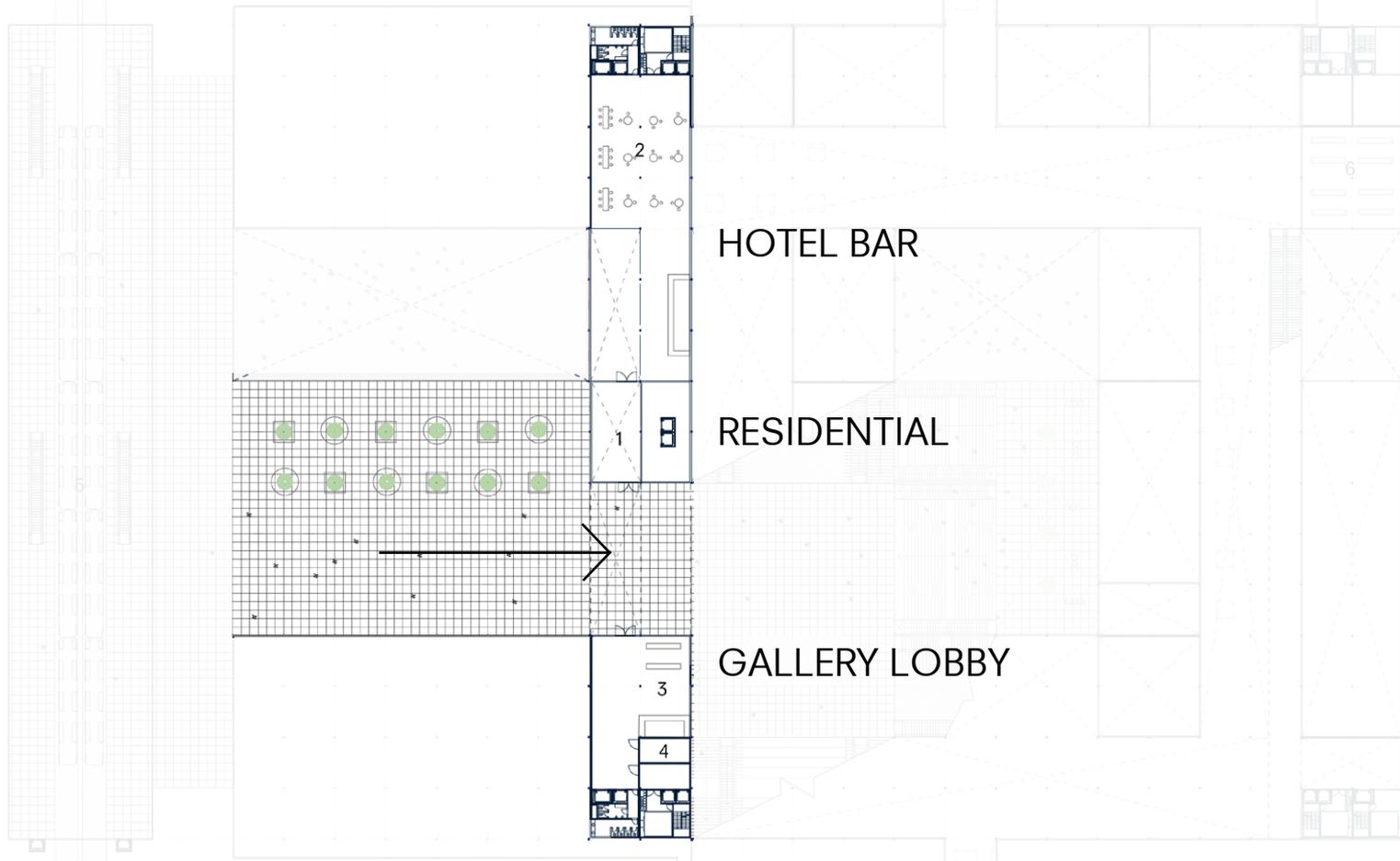
## level 01 - shopping center



# level 02



- 1. hall
- 2. hotel bar
- 3. gallery lobby
- 4. cloak room
- 5. metro station
- 6. storage room for rent



HOTEL BAR

RESIDENTIAL

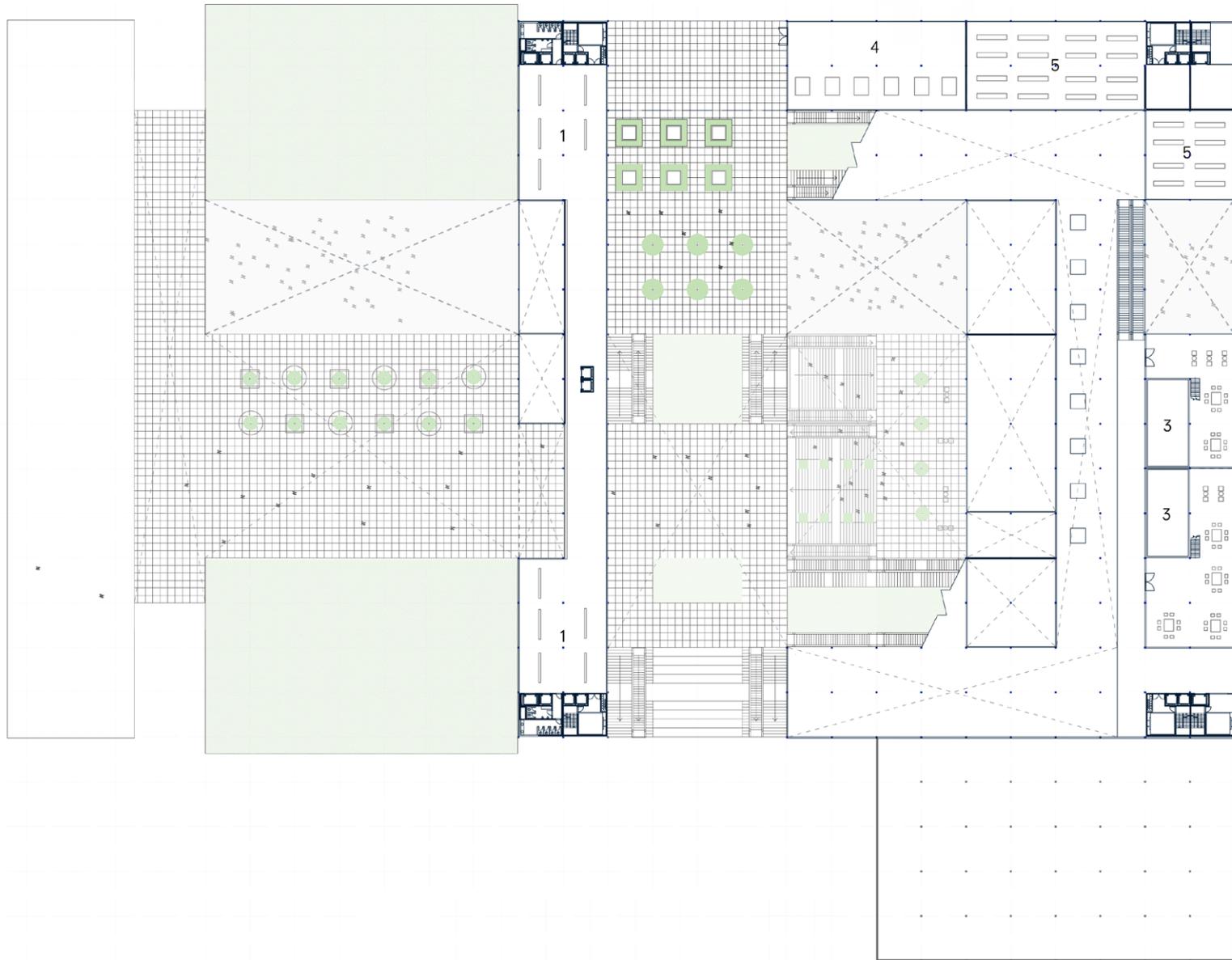
GALLERY LOBBY

**level 02 - gallery and bar**

- 1. hall
- 2. hotel bar
- 3. bar room
- 4. metro station
- 5. metro station
- 6. storage room for rent

0 10m 20m

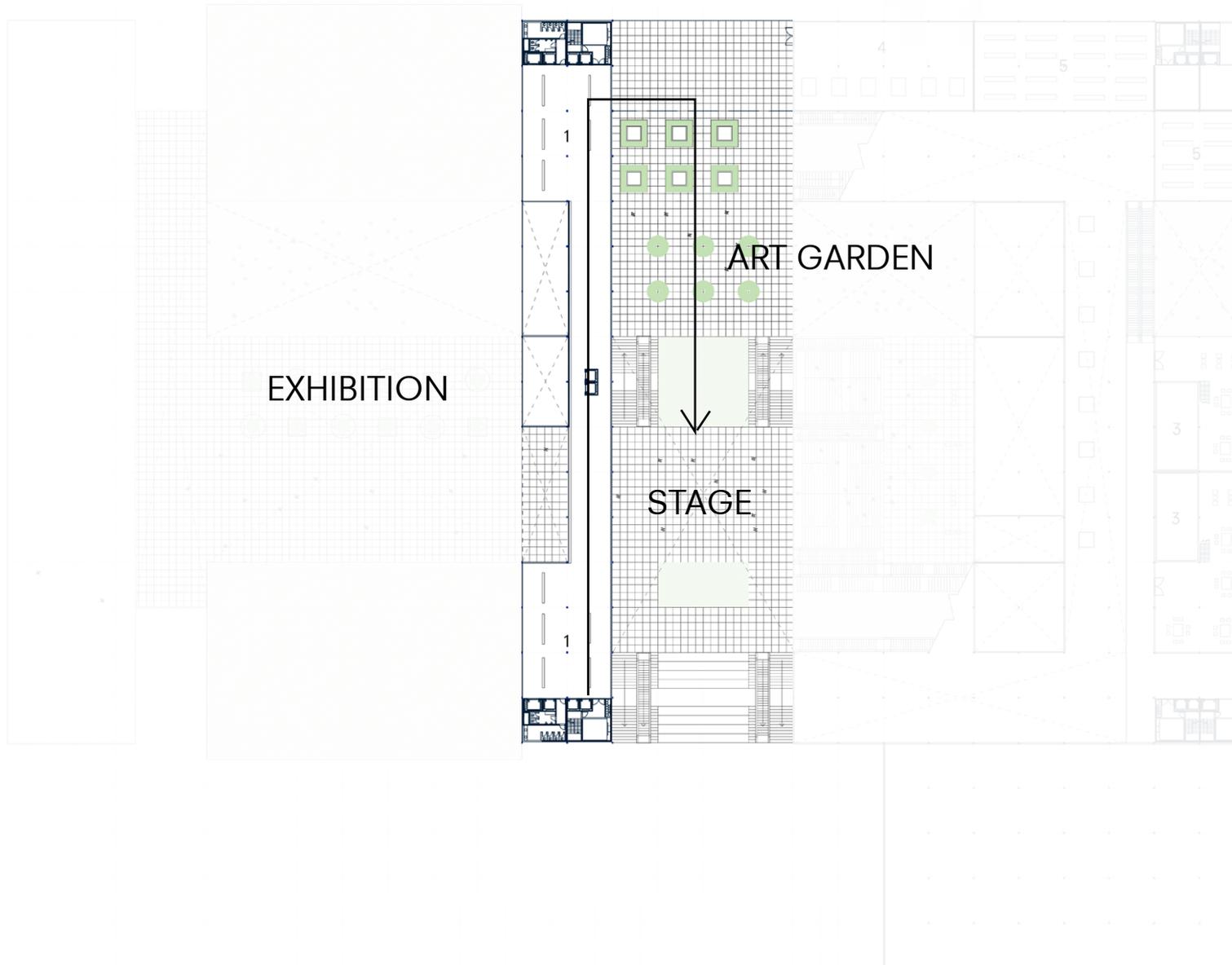




## level 03



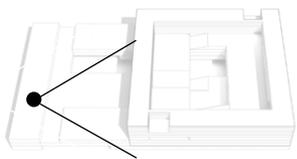
1. gallery
2. storage room + toilet
3. gastronomy
4. replaced installation + new installation
5. storage room for rent



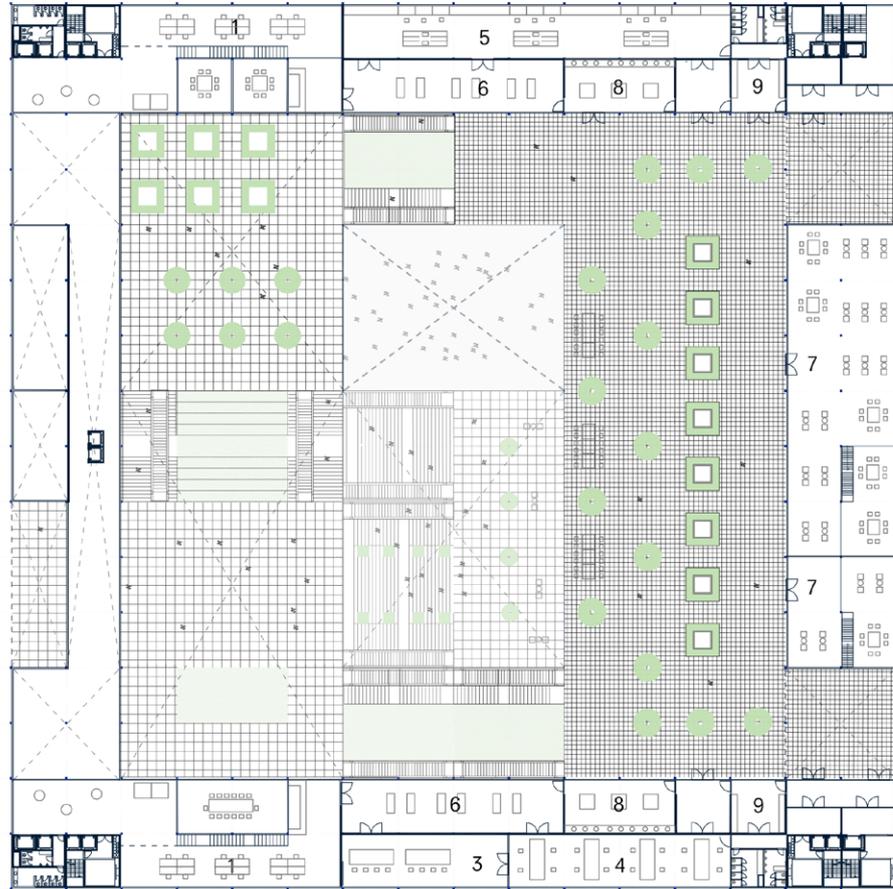
# level 03 - gallery



- 1. gallery
- 2. storage room + toilet
- 3. gastronomy
- 4. replaced installation + new installation
- 5. storage room for rent



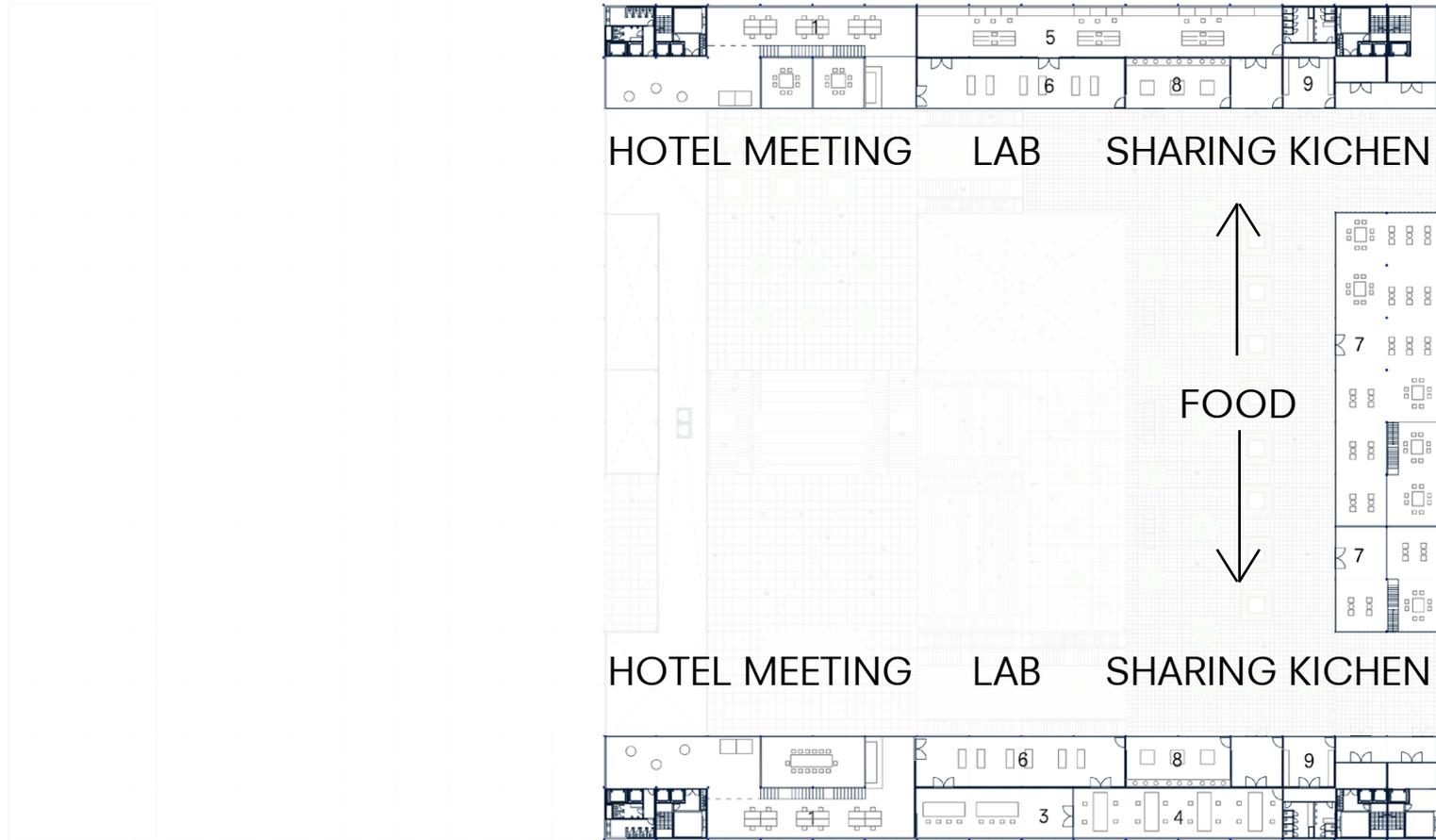
## level 02 - metro entrance at night



## level 04



- |    |                  |    |                          |    |                           |
|----|------------------|----|--------------------------|----|---------------------------|
| 1. | shared desk      | 5. | 2D/3D printing           | 9. | wardrobe and storage room |
| 2. | storage + toilet | 6. | flexible work/live space |    |                           |
| 3. | media lab        | 7. | gastronomy               |    |                           |
| 4. | IOT lab          | 8. | shared kitchen           |    |                           |



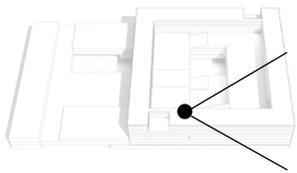
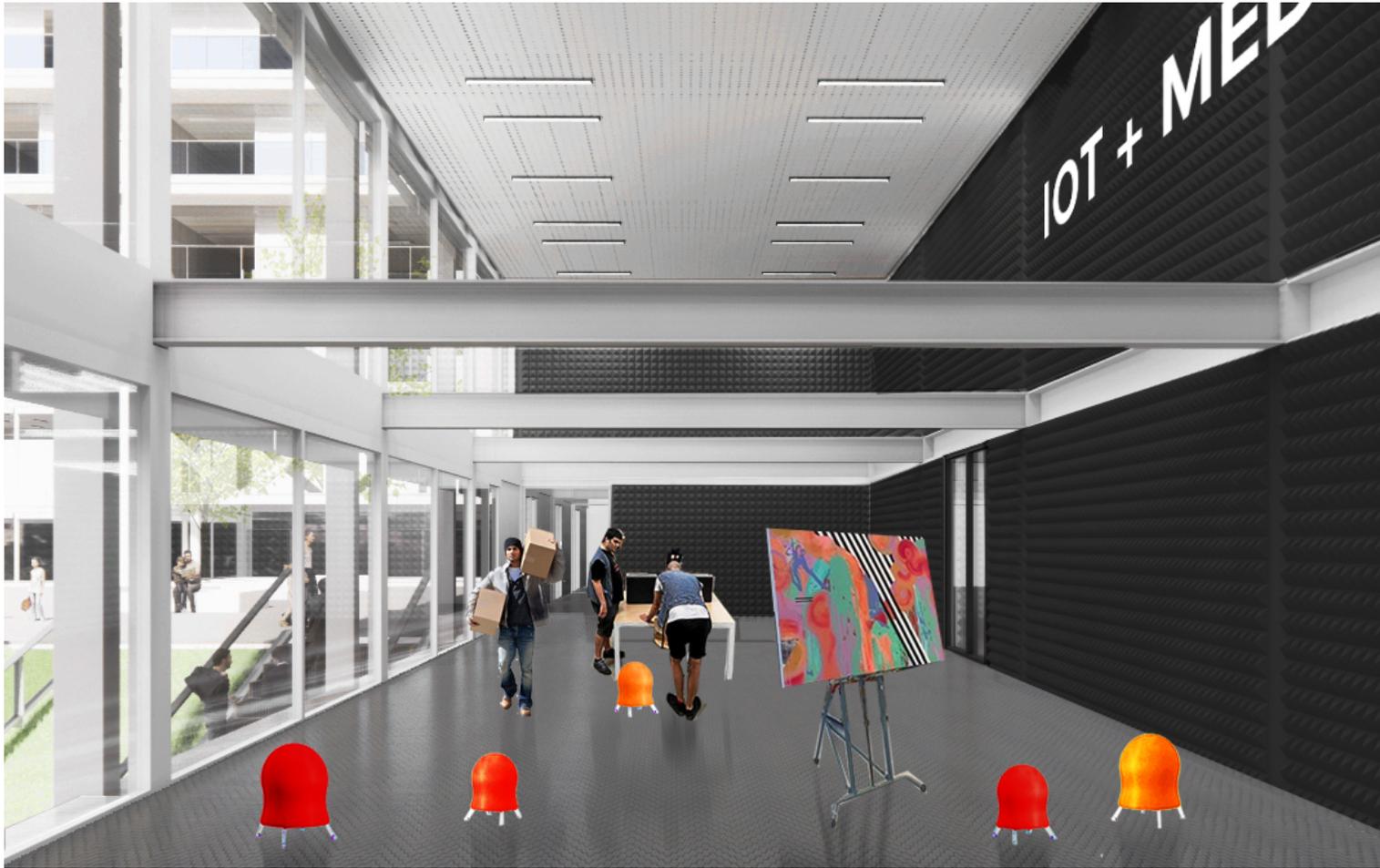
## level 04 - lab and food



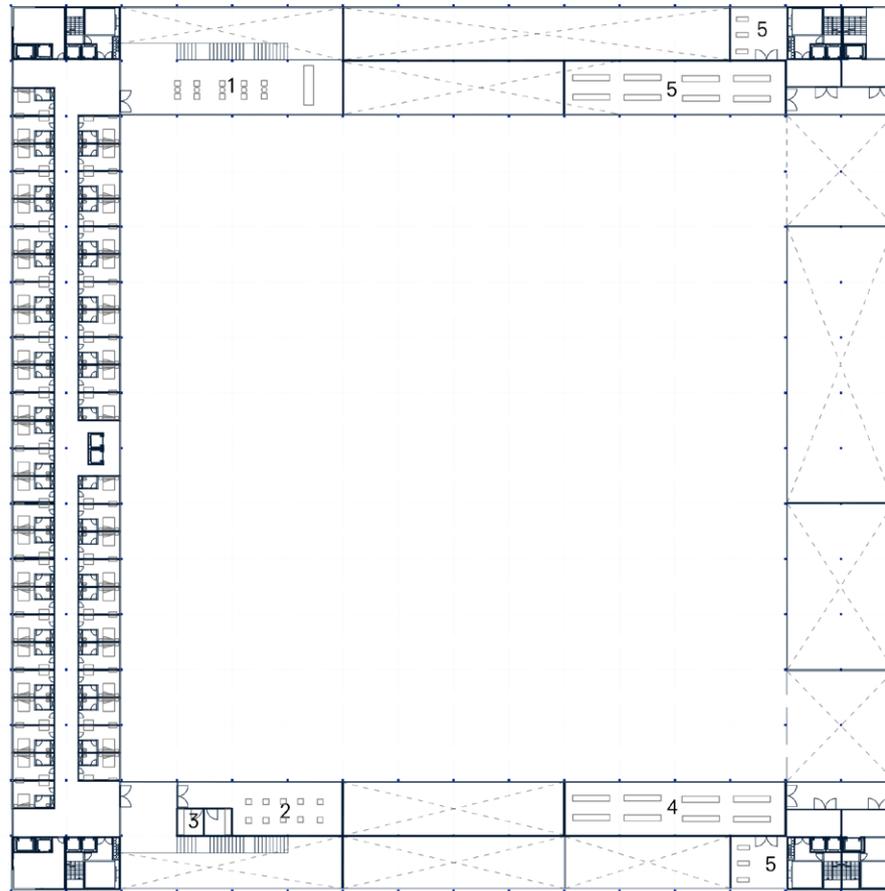
- 1. shared desk
- 2. storage + toilet
- 3. media lab
- 4. IOT lab

- 5. 2D/3D printing
- 6. flexible work/live space
- 7. gastronomy
- 8. shared kitchen

- 9. wardrobe and storage room



**level 04 - lab**



## level 05 - hotel



1. sky bar
2. fitness
3. lock room
4. lab storage room
5. industrial cleaning room

# HOTEL MEETING

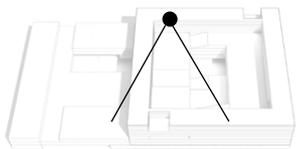
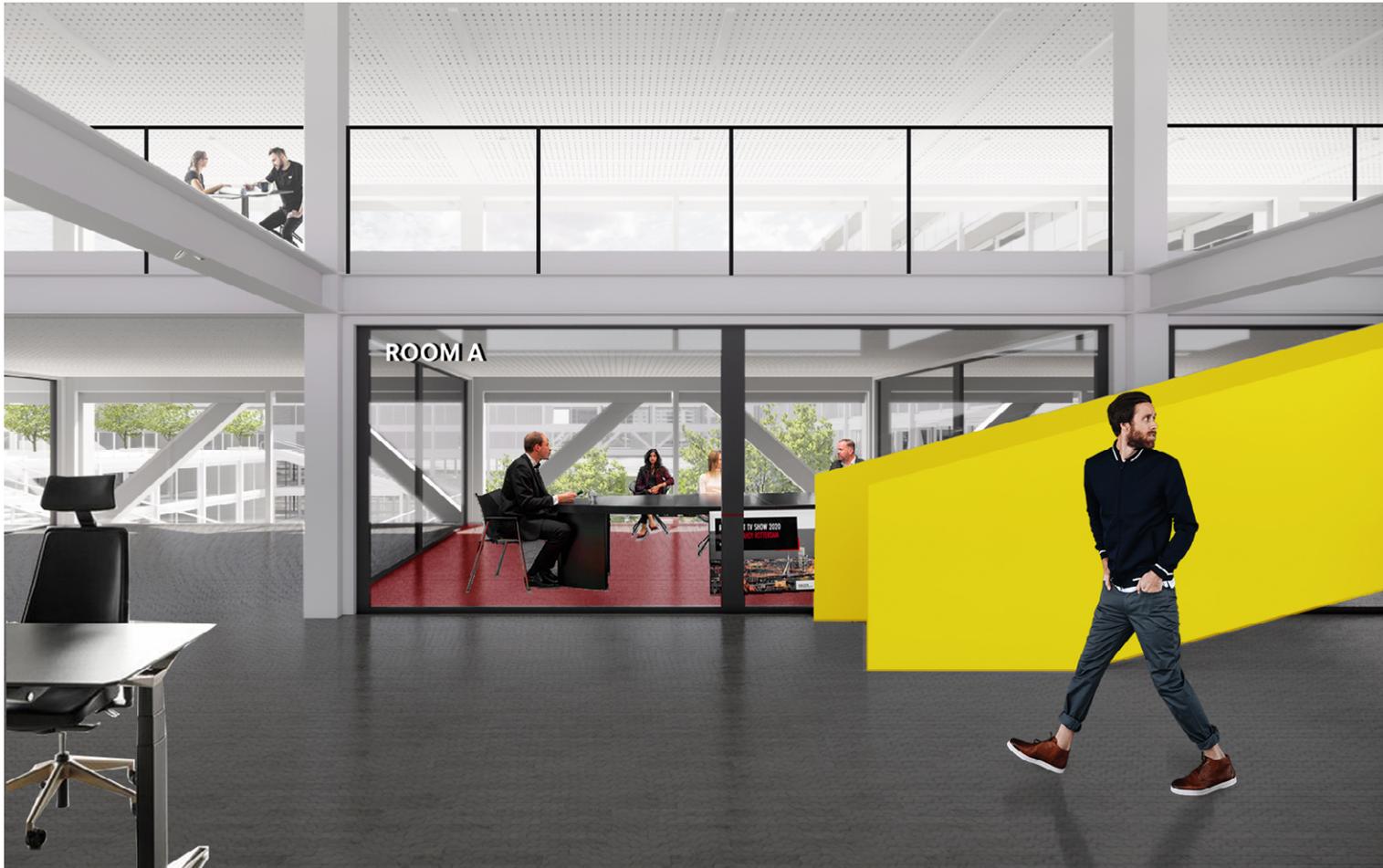


## level 05 - hotel

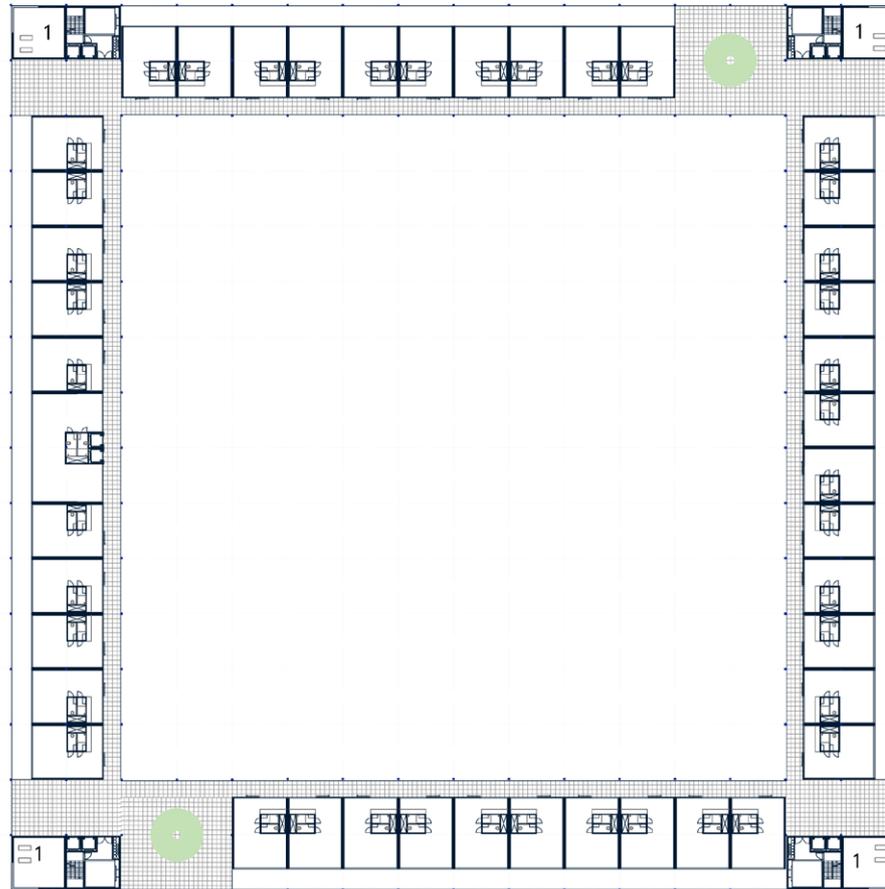


1. sky bar
2. fitness
3. lock room
4. lab storage room
5. industrial cleaning room





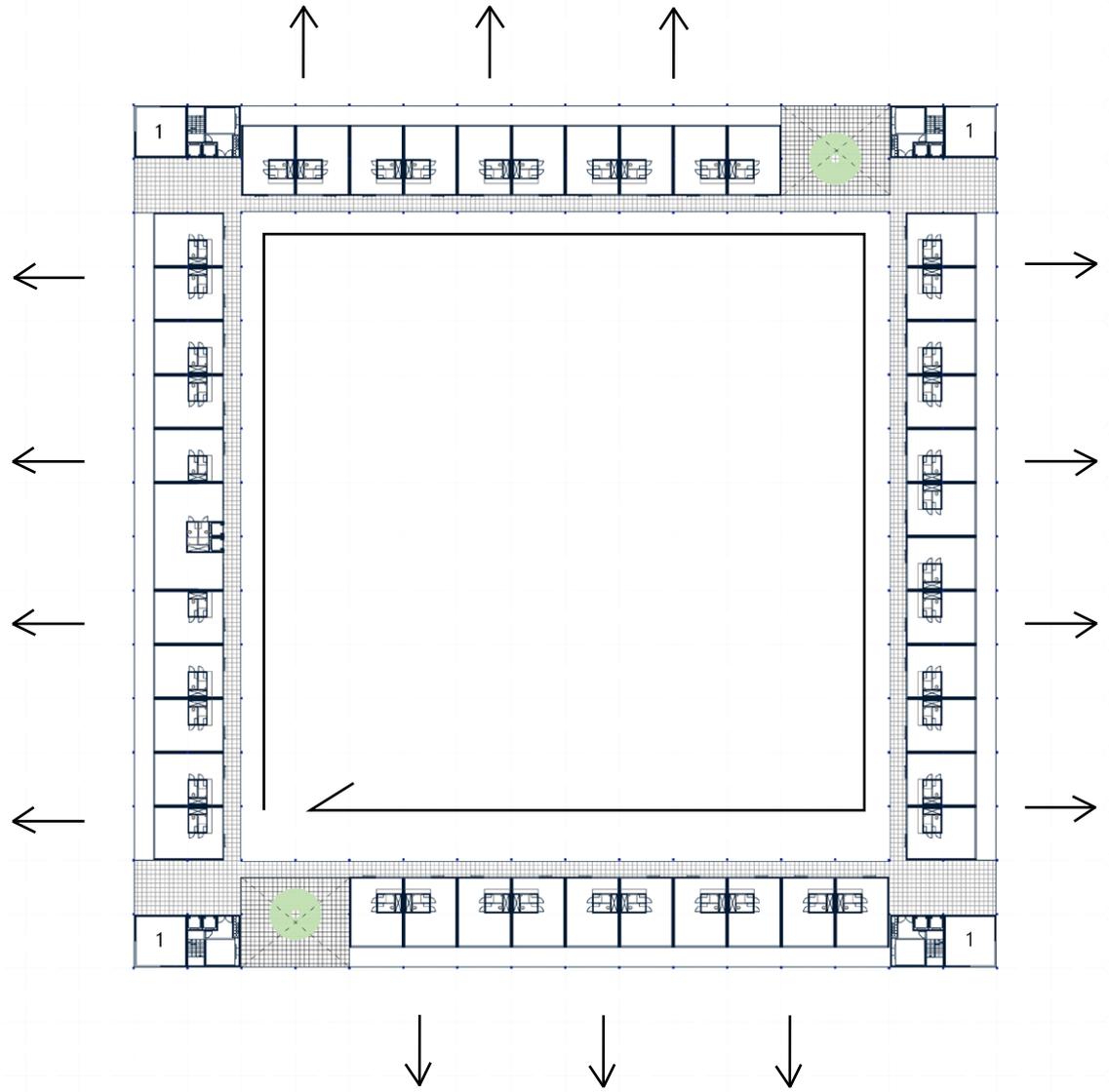
## level 04 - meeting room



## level 06 - home office



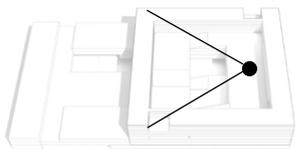
1. industrial cleaning room



## level 07 - 09 home office

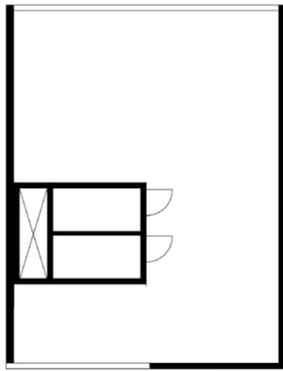


1. industrial cleaning room

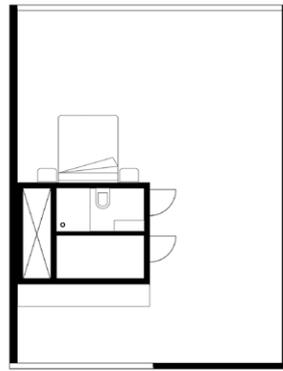


## level 04 - food strip towards the office

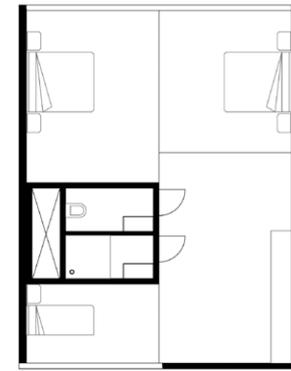
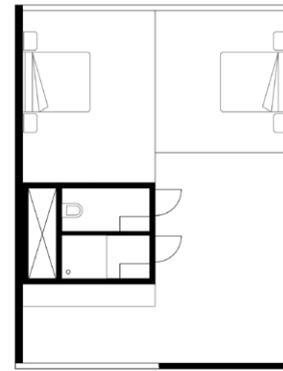
**1-3 p**



**2-4 p**

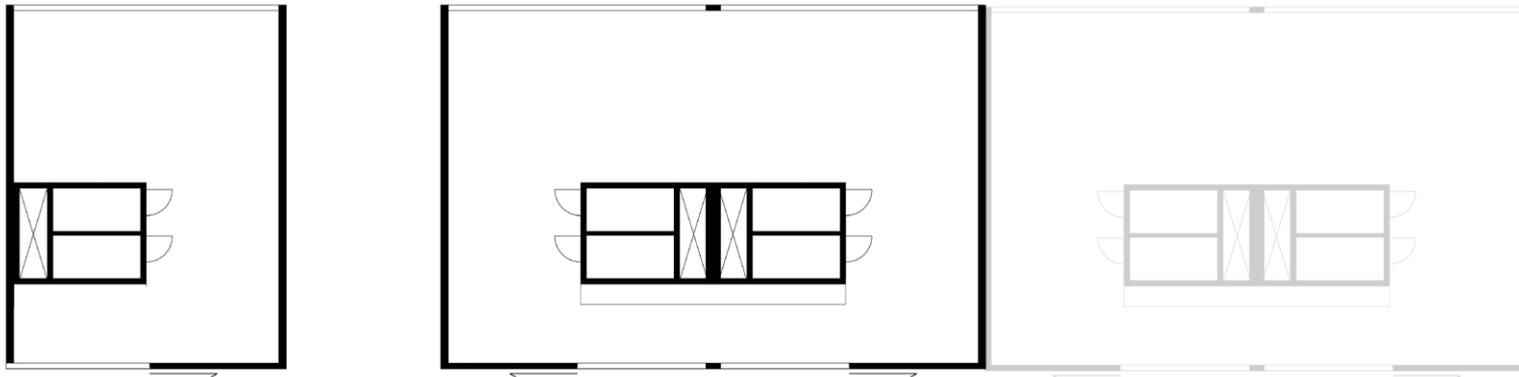


**3-5 p**

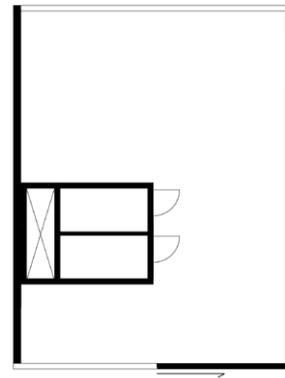
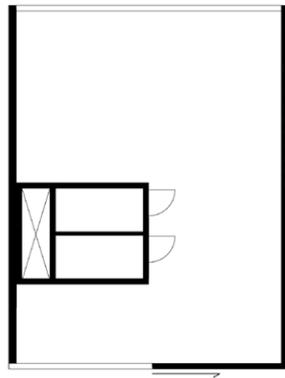
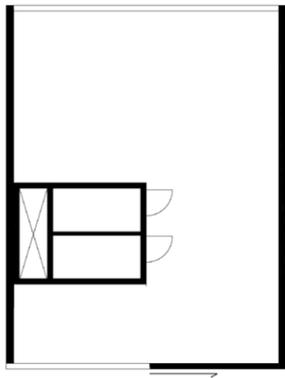
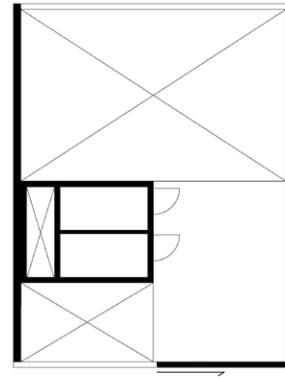
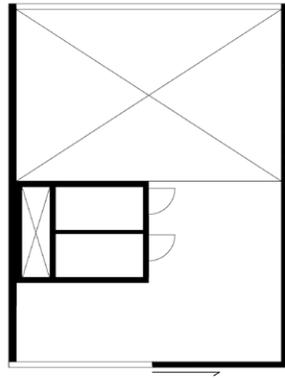


## home office individual flexibility

## horizontal



## home office horizontal flexibility



**vertical**

**home office vertical flexibility**

**DEVELOPMENT - ARCHITECTURE/BUILDING TECHNOLOGY**

**FLOAT  
IN  
3D FRAME**

**ORDER**

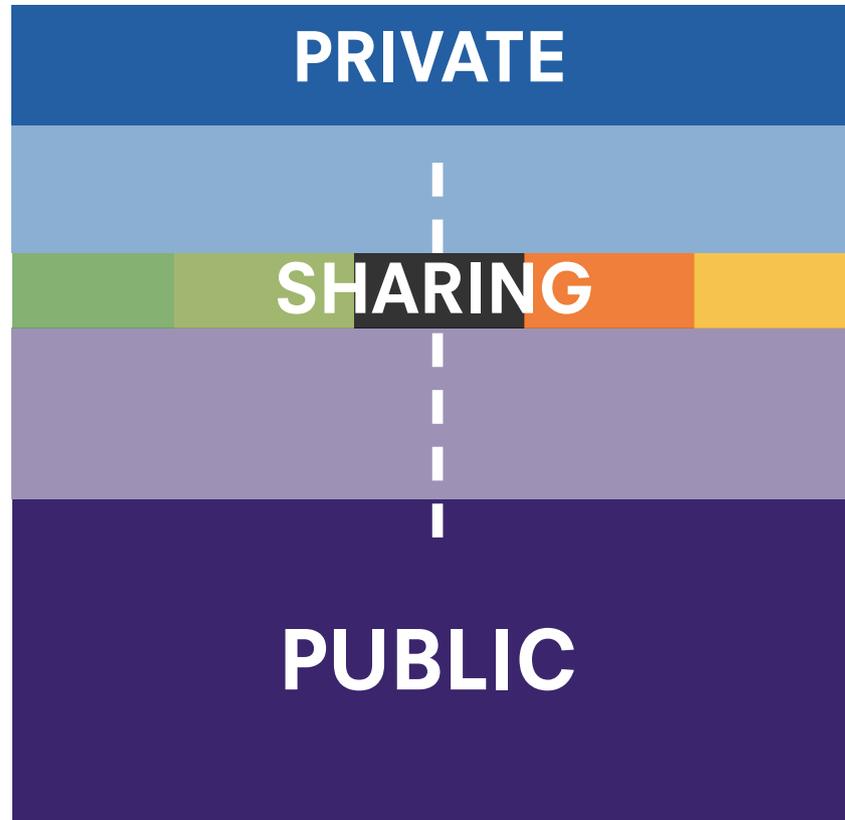
**MATERIAL  
PERFORMANCE**

**LIGHT**

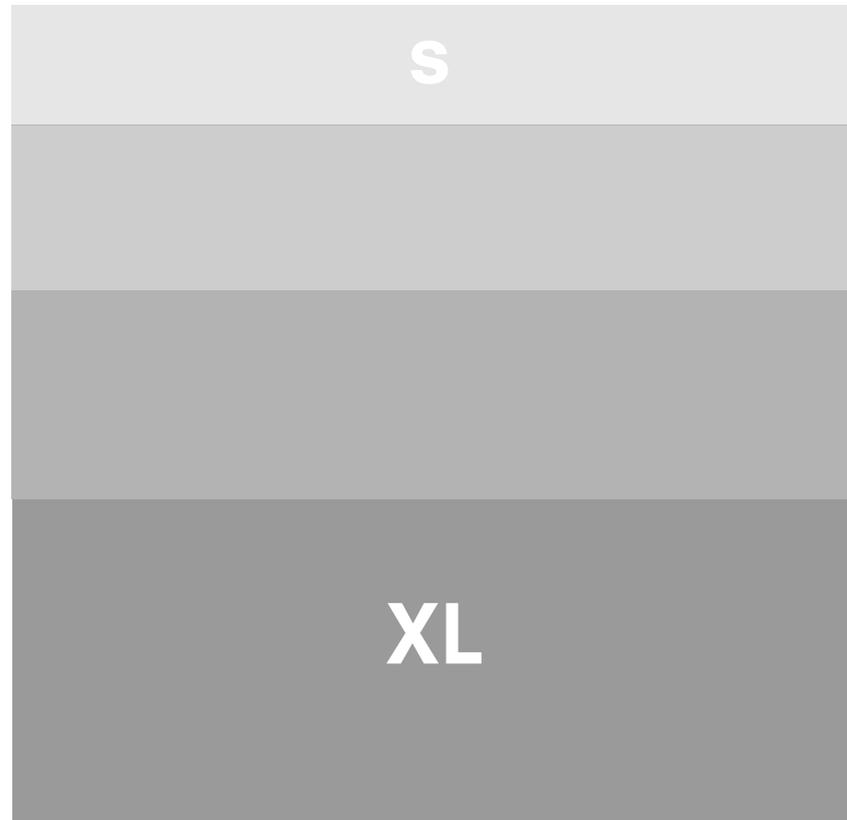
**VERTICAL  
ACCESSIBILITY**

**SPATIAL  
FLEXIBILITY**

## materialization concept :



## materialization concept :



## materialization concept :



## materialization concept :



## materialization concept :



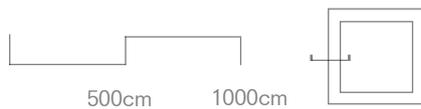
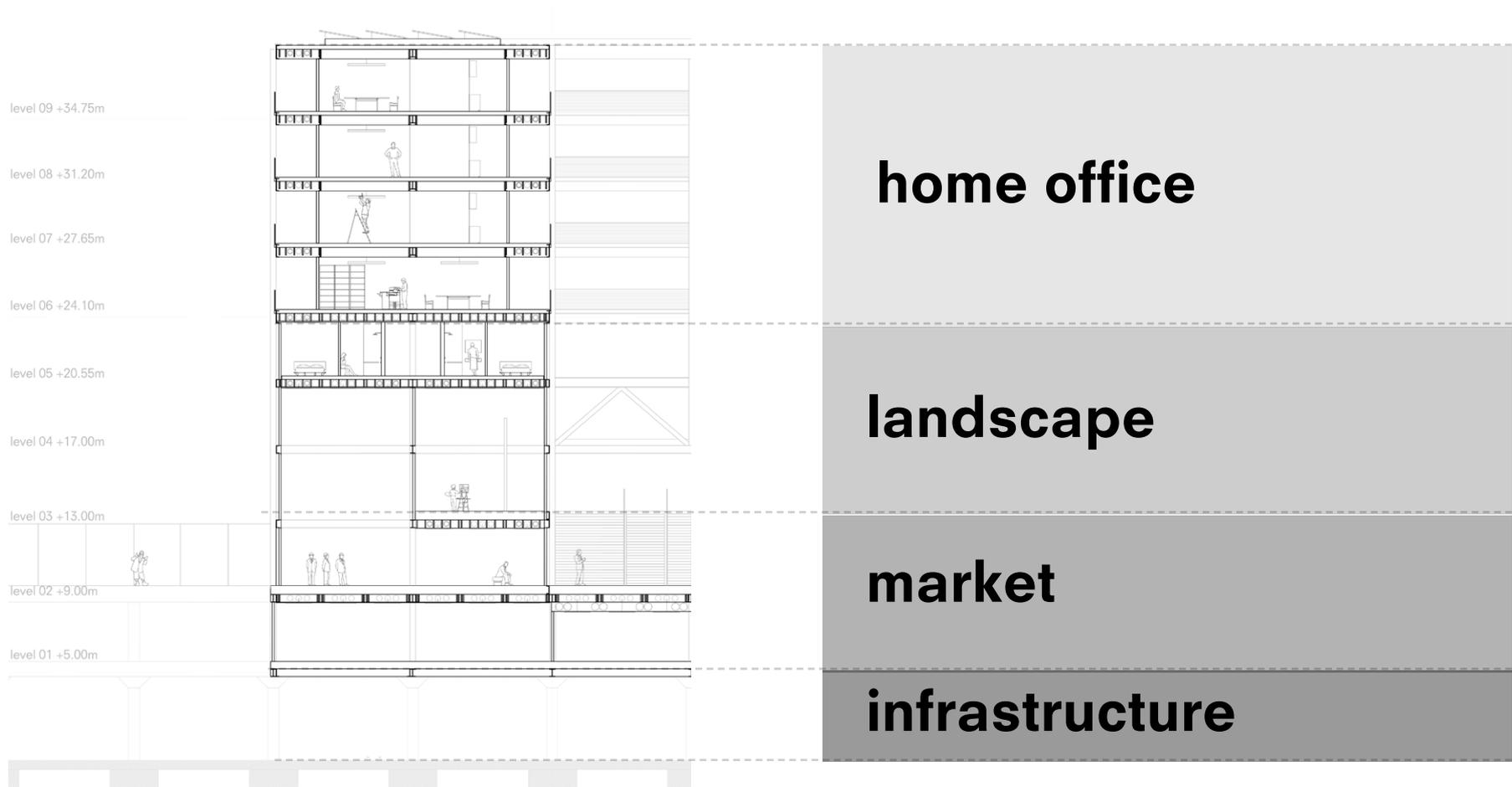
**materialization concept :**



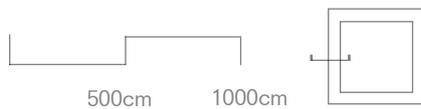
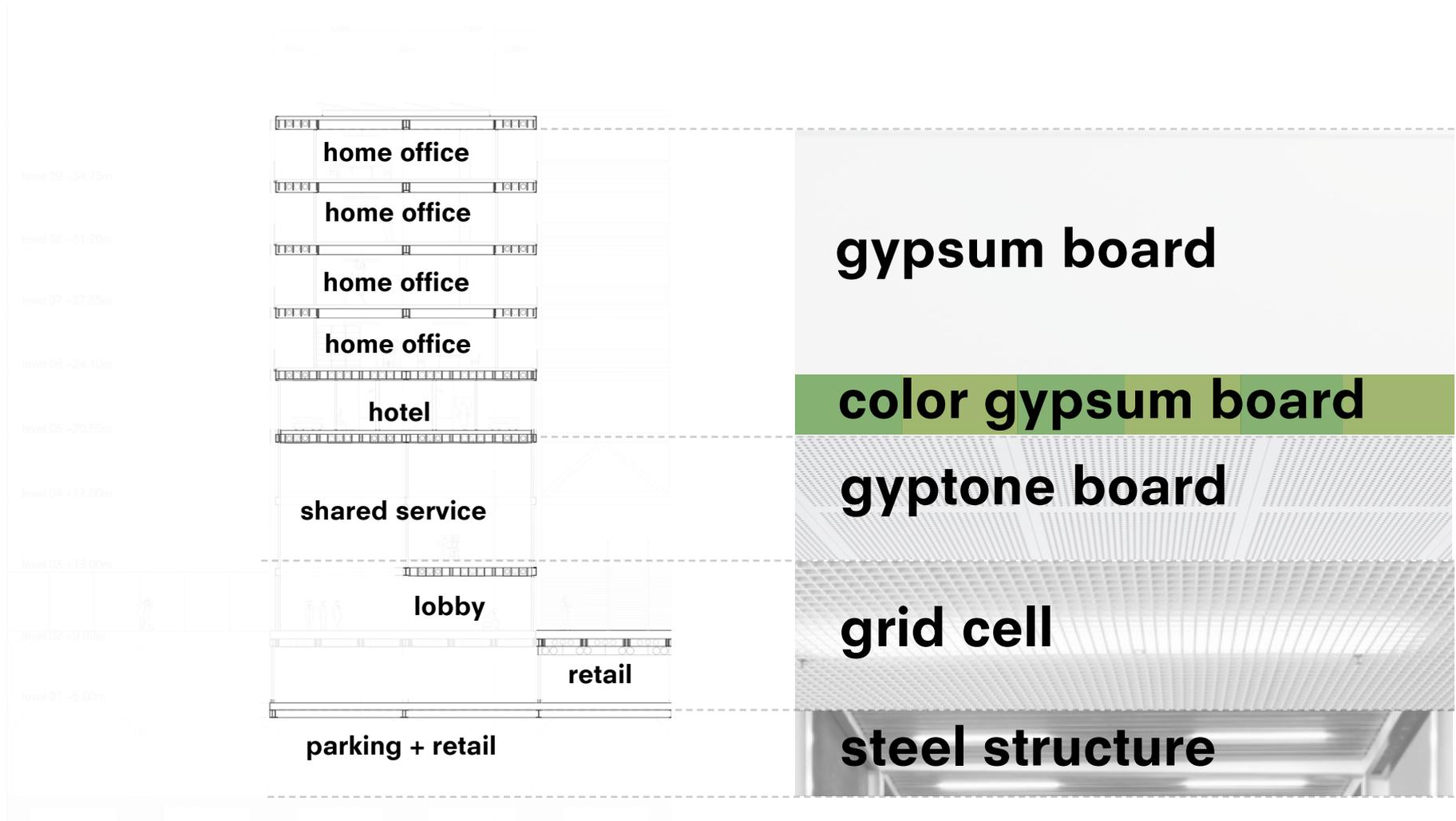
## materialization concept :



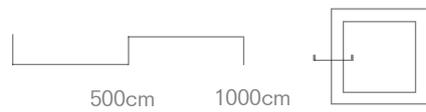
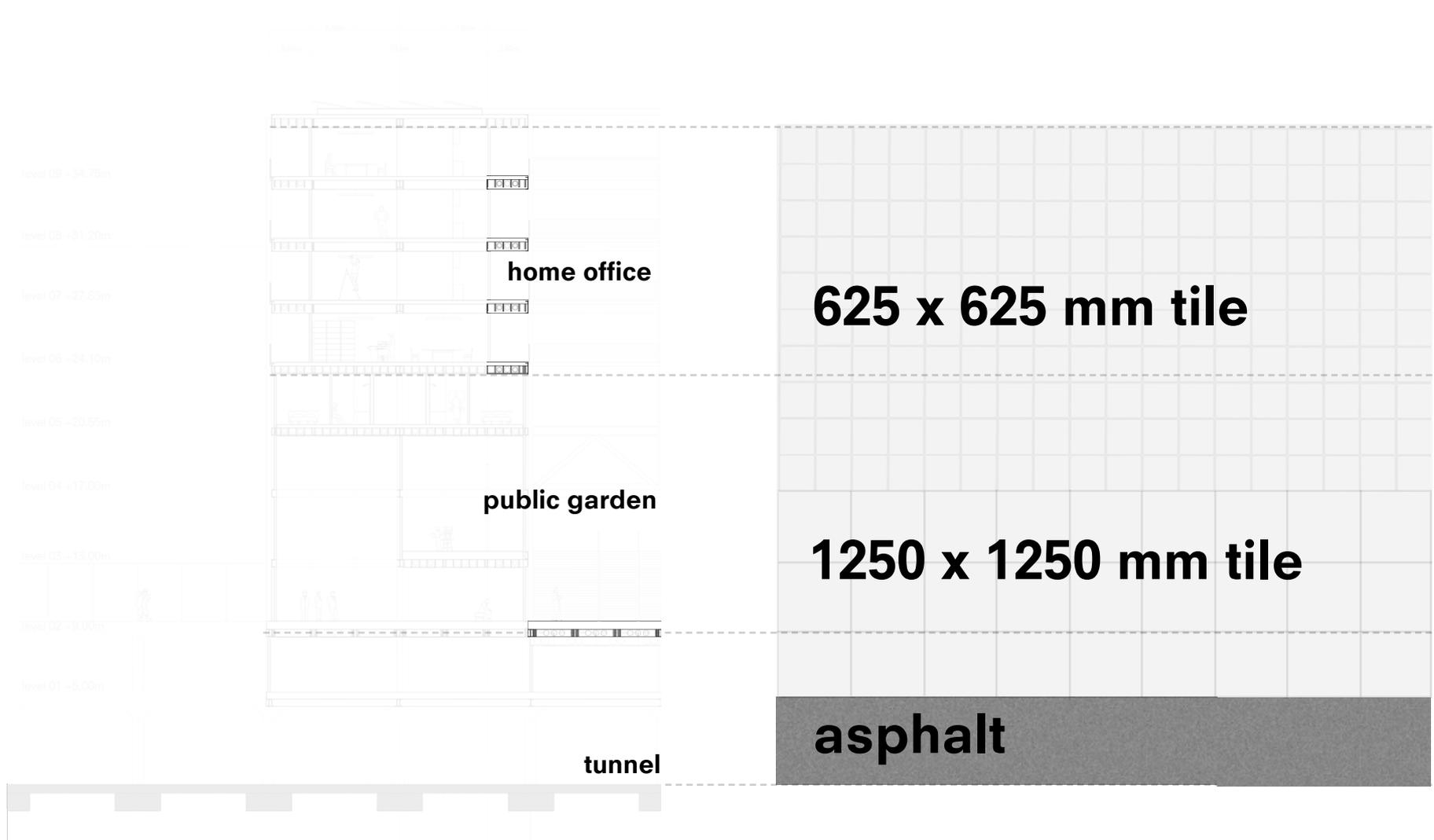
# materialization



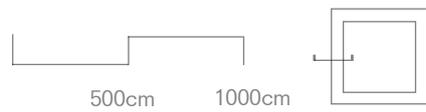
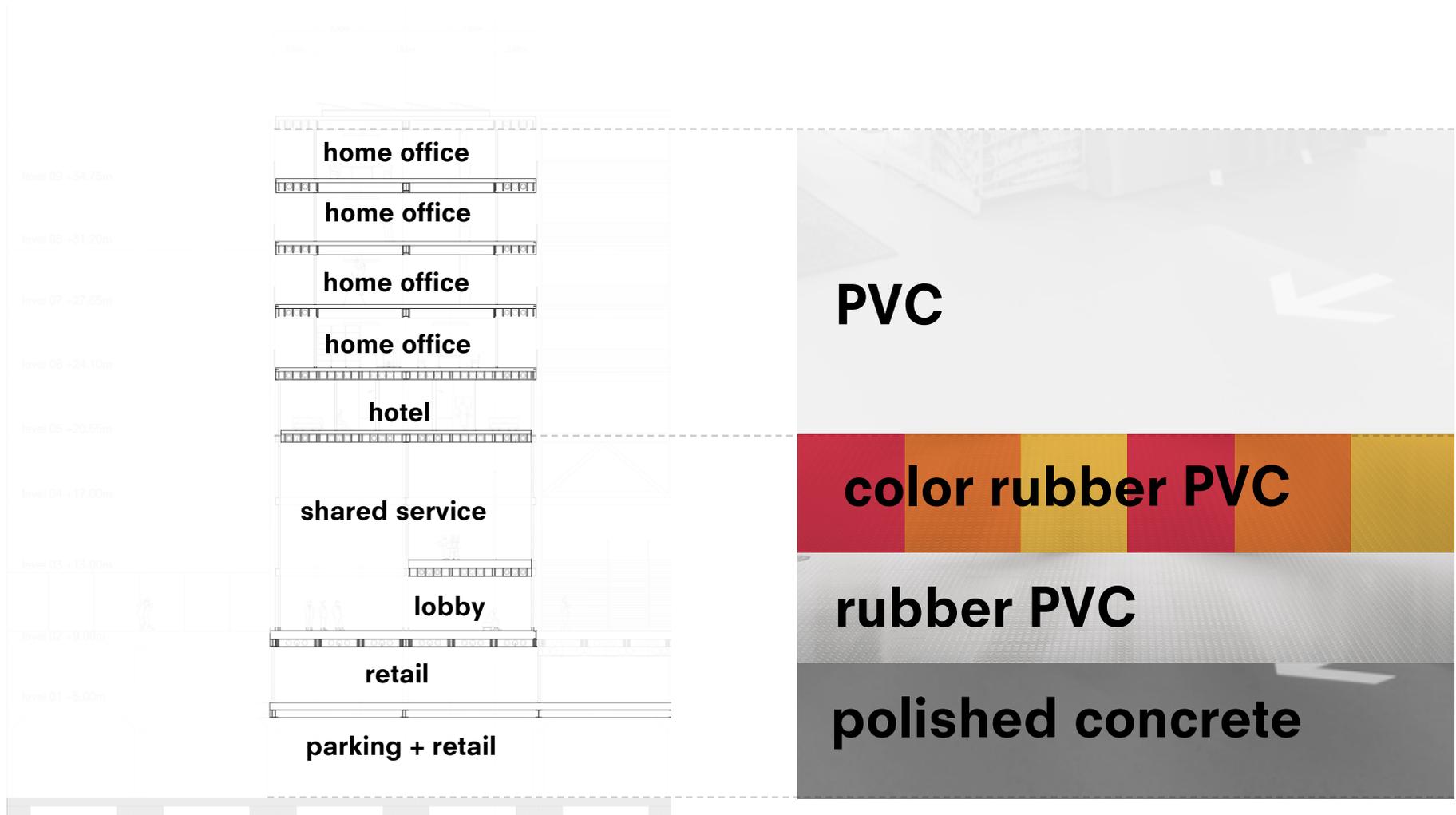
# materialization - ceiling



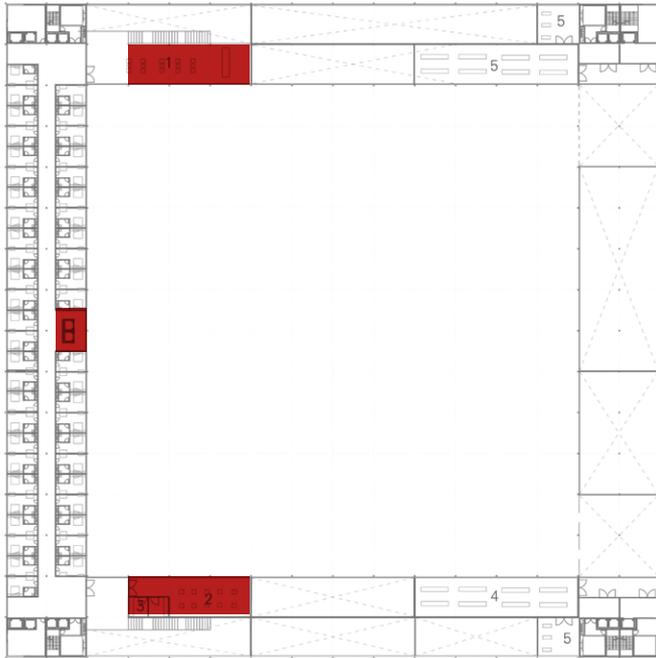
# materialization - exterior floor



# materialization - interior floor

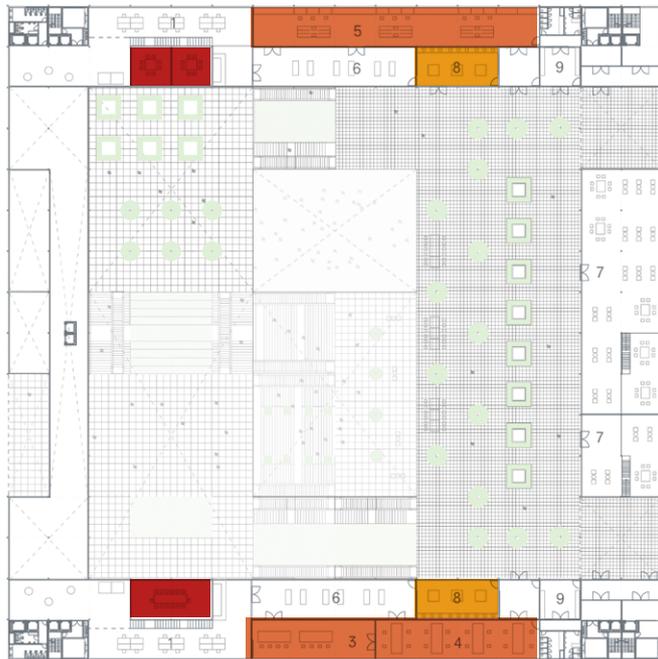


## materialization - interior floor



## LEVEL 05 HOTEL

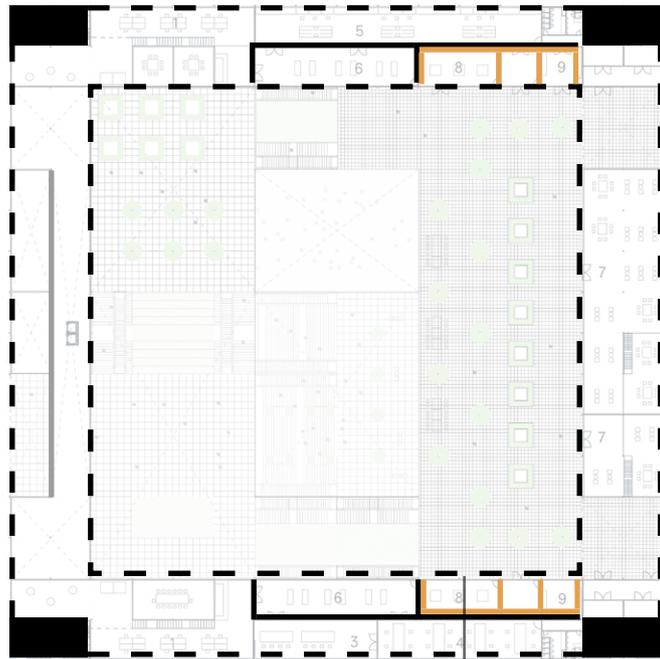
## materialization - interior floor



color rubber PVC

## LEVEL 04 SHARING SERVICE

# materialization - facade



lab



core



support service



glass facade



door frame

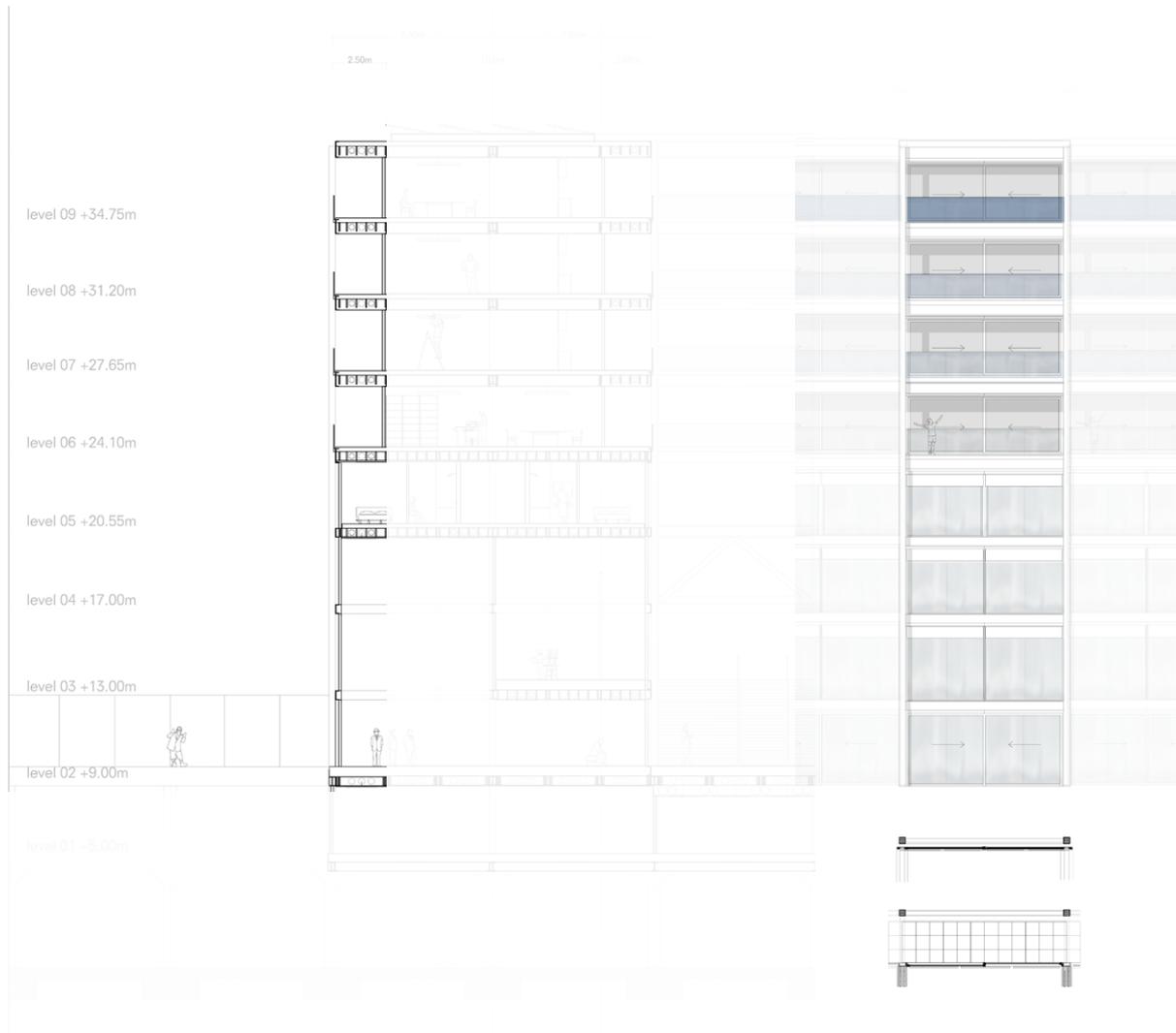
structure frame

exterior

interior

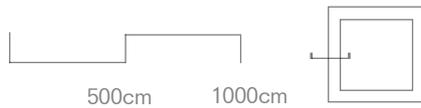
## LEVEL 04 SHARING SERVICE

# materialization - facade and privacy

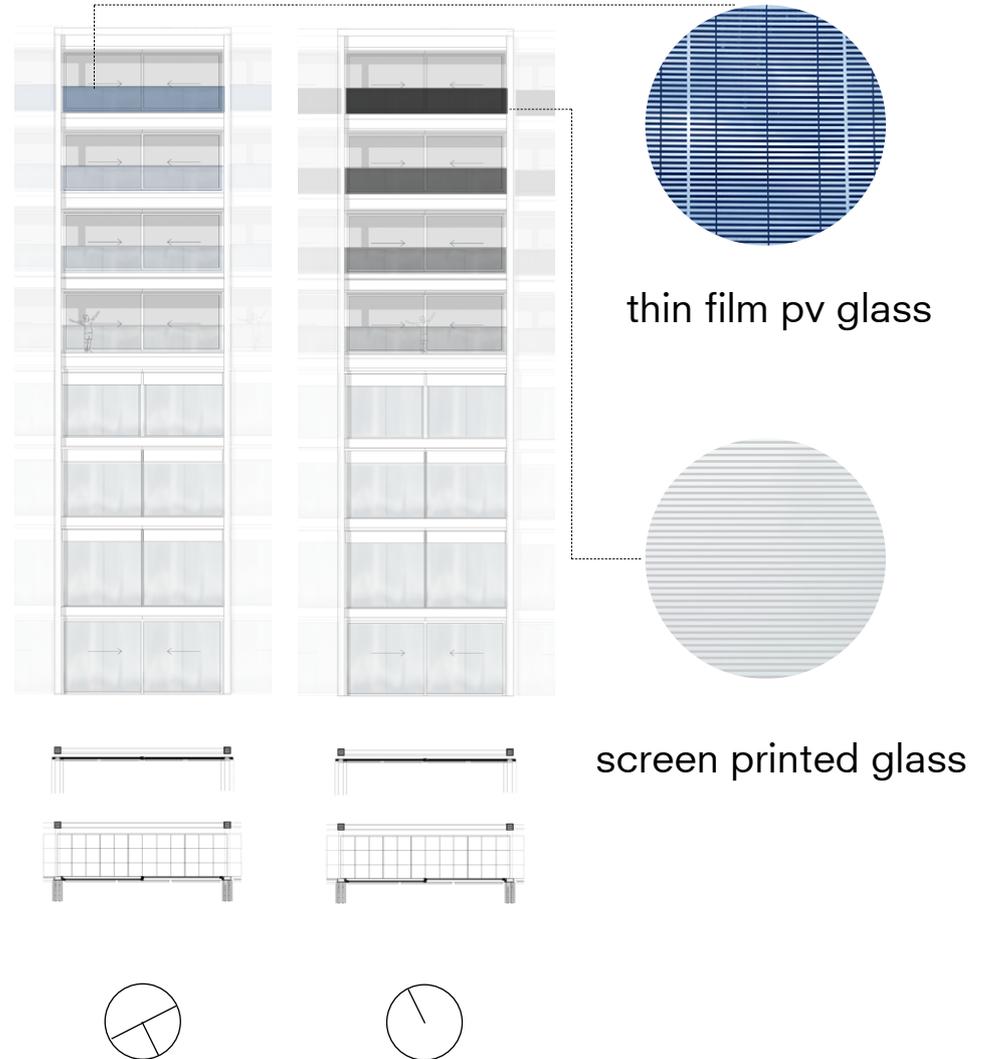
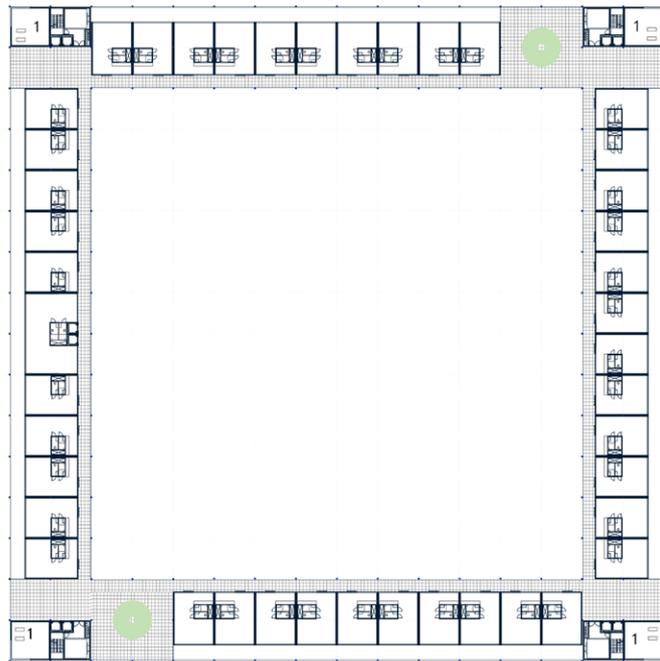


↑ solid balustrade

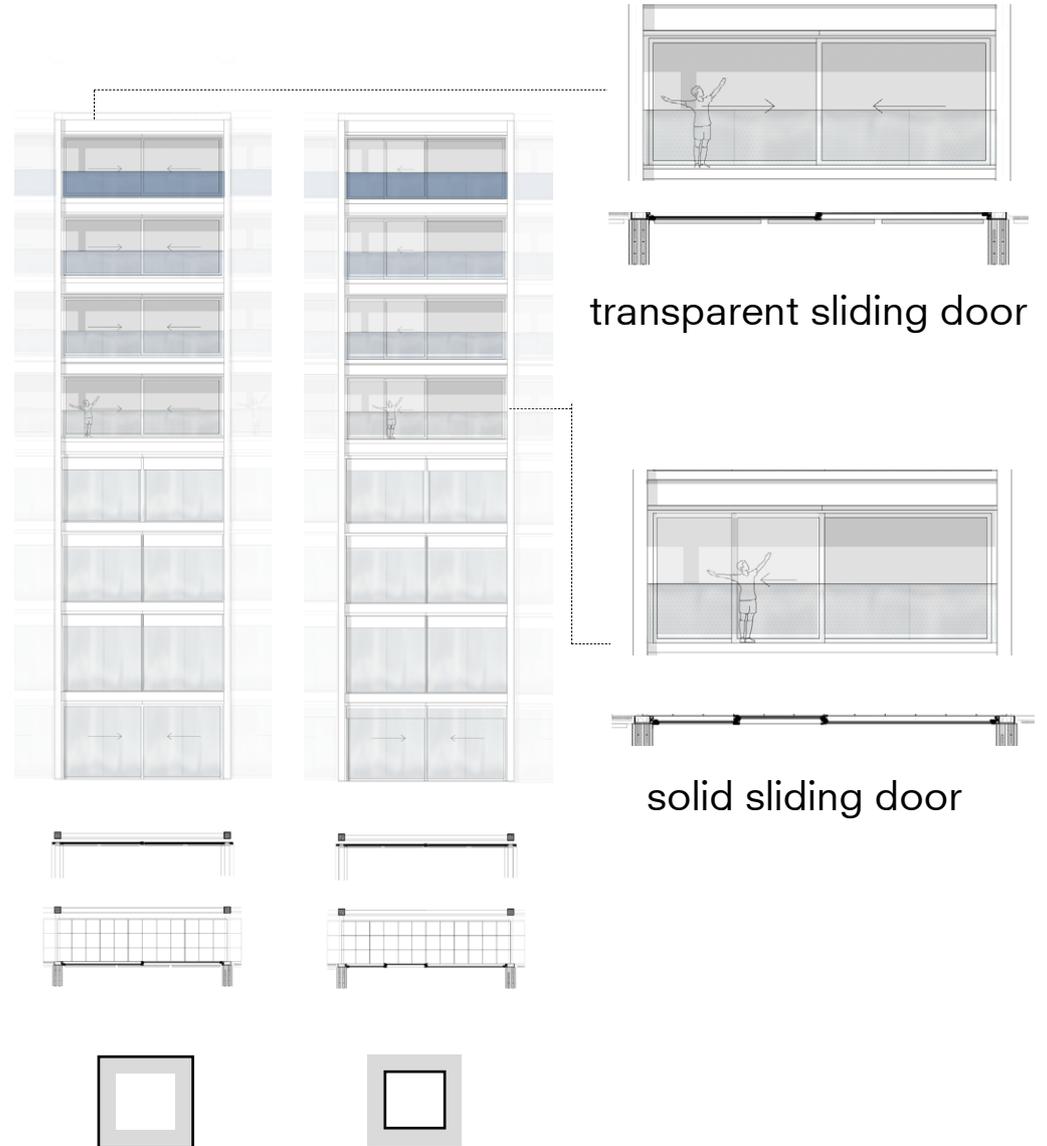
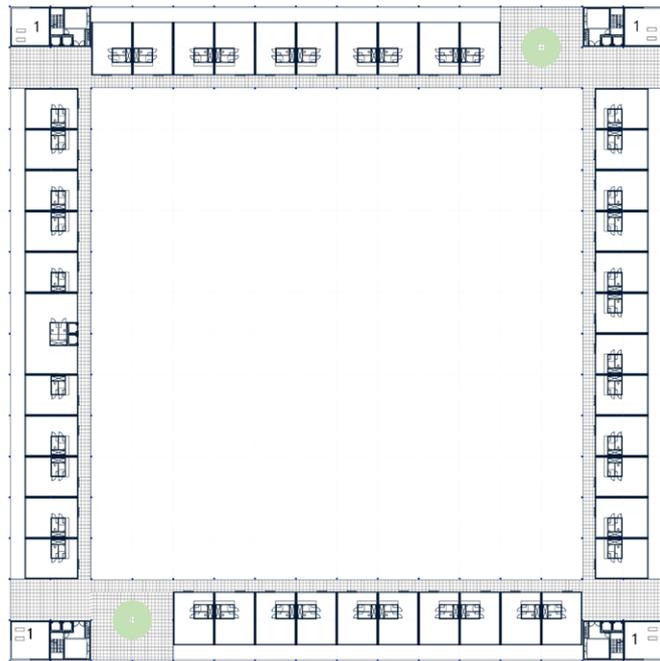
reflective facade



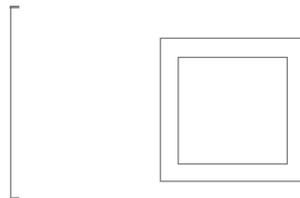
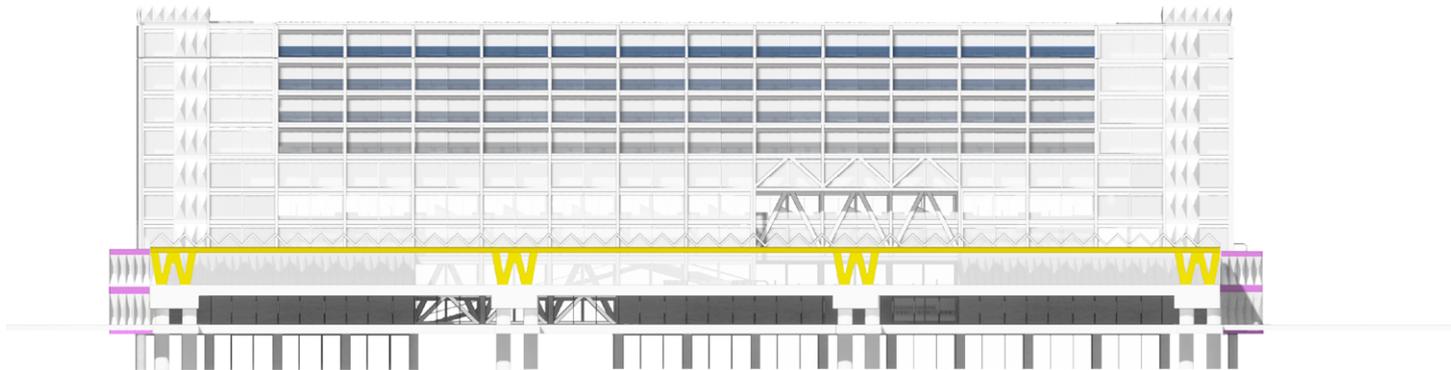
# materialization - facade and orientation



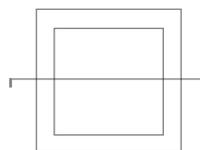
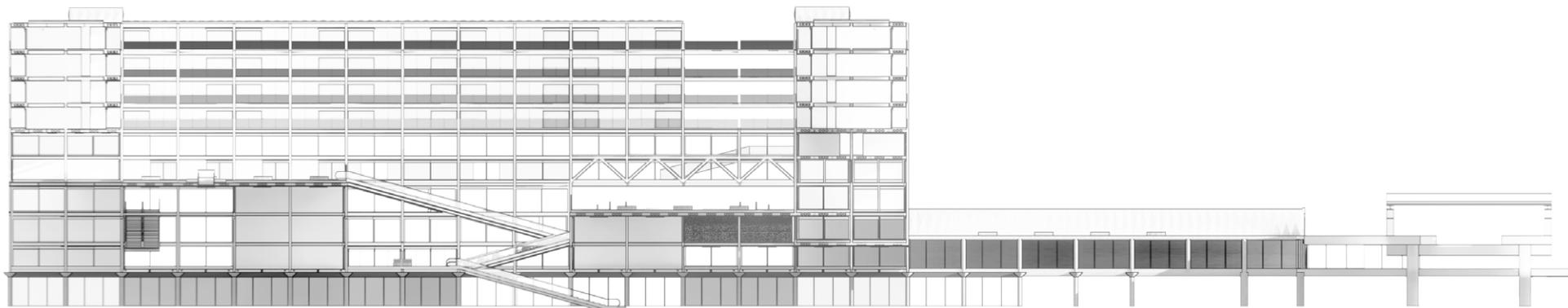
# materialization concept - facade and orientation



# materialization - western facade



# materialization - section



**building technology**

**construction  
adaptability**

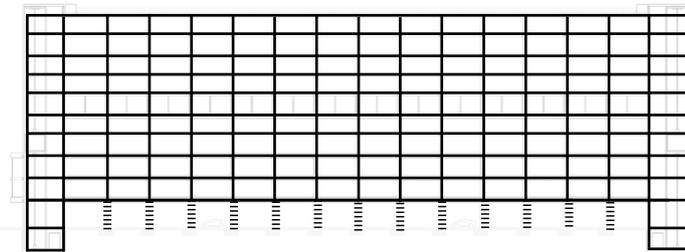
**utilization  
of natural  
resources**

# 3D steel-timber hybrid structure

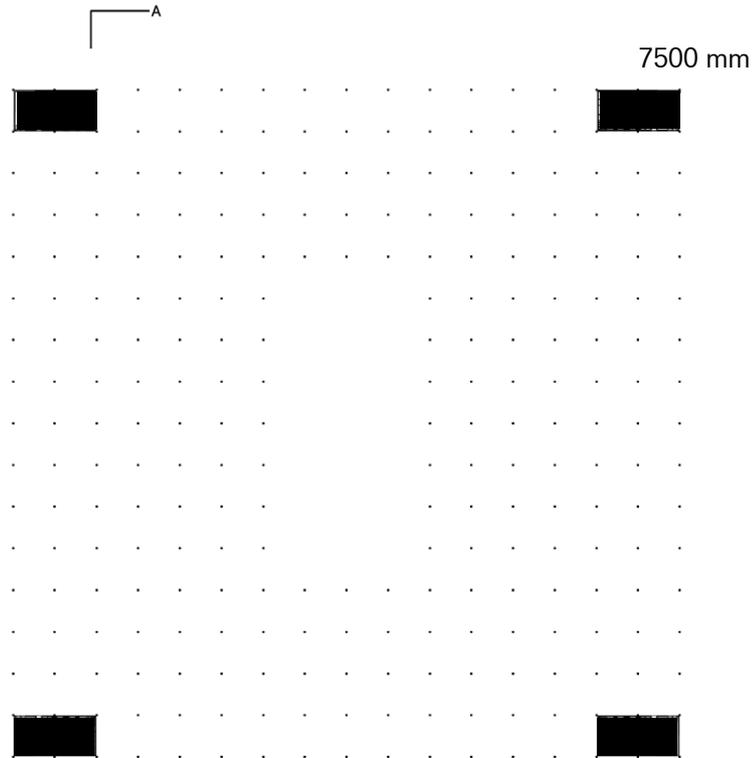


||||| existing concrete column

— new steel and timber hybrid structure

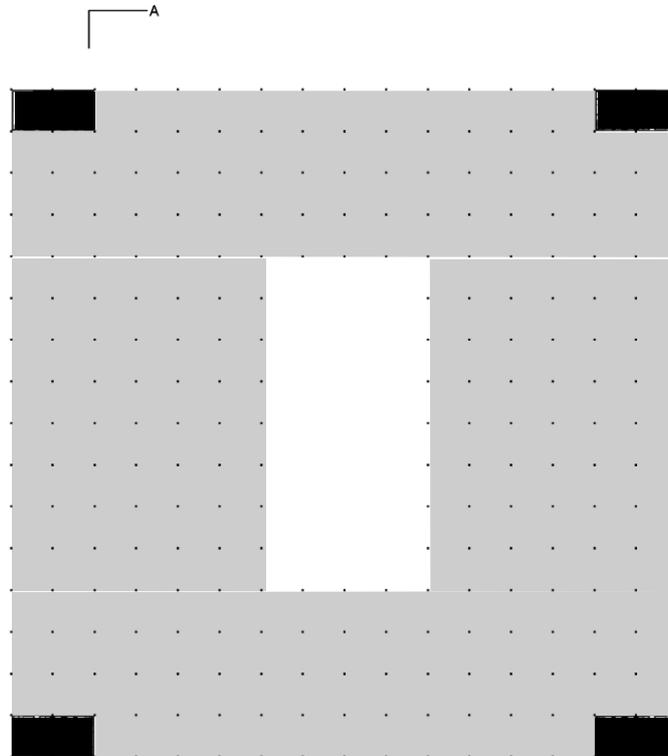
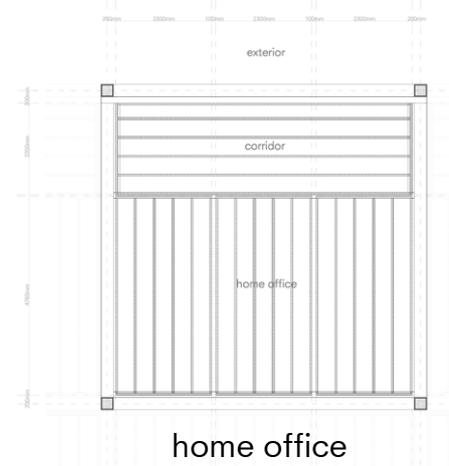
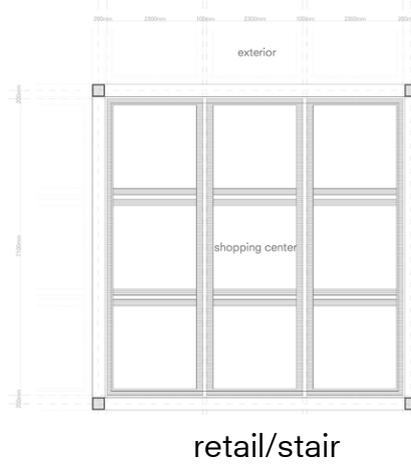
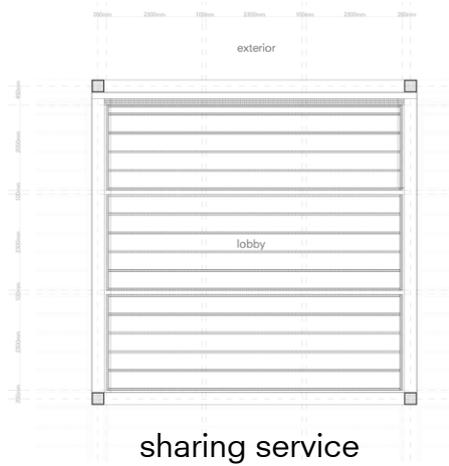


SECTION A-A

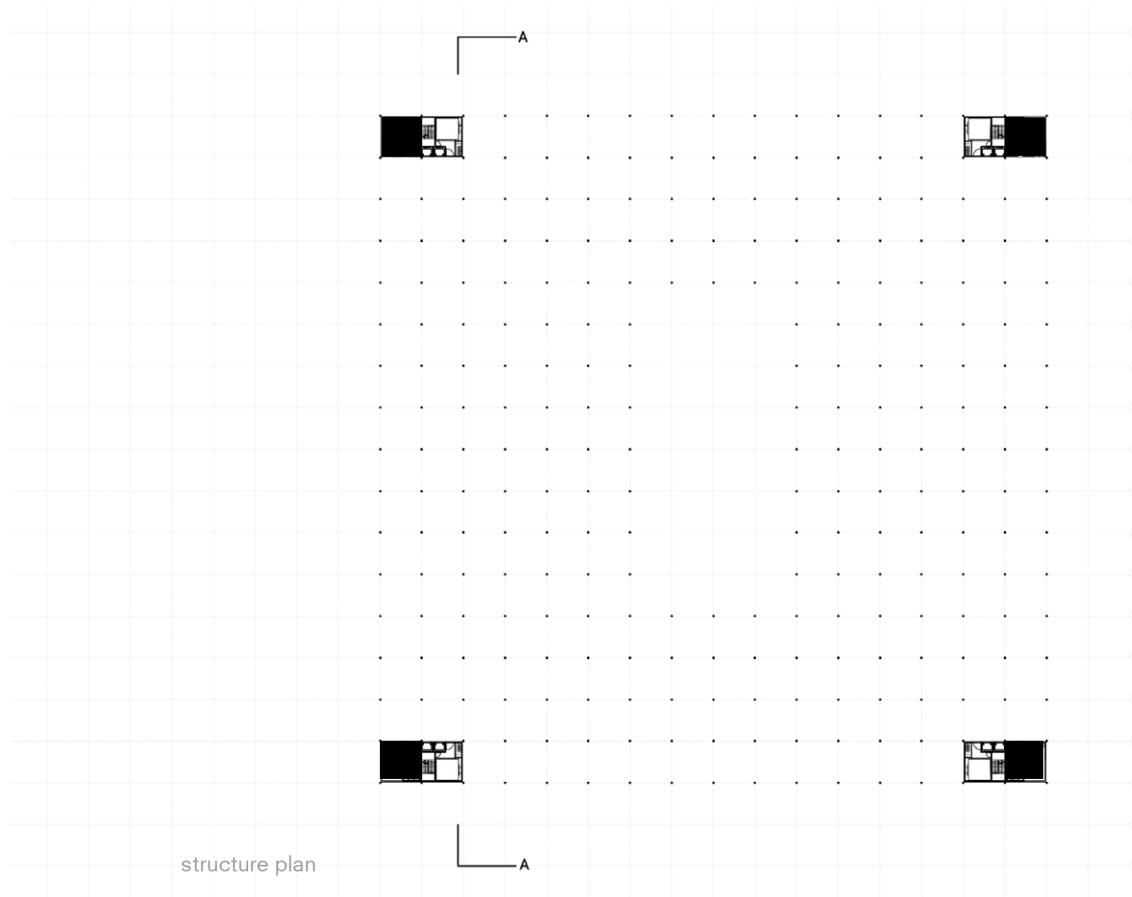
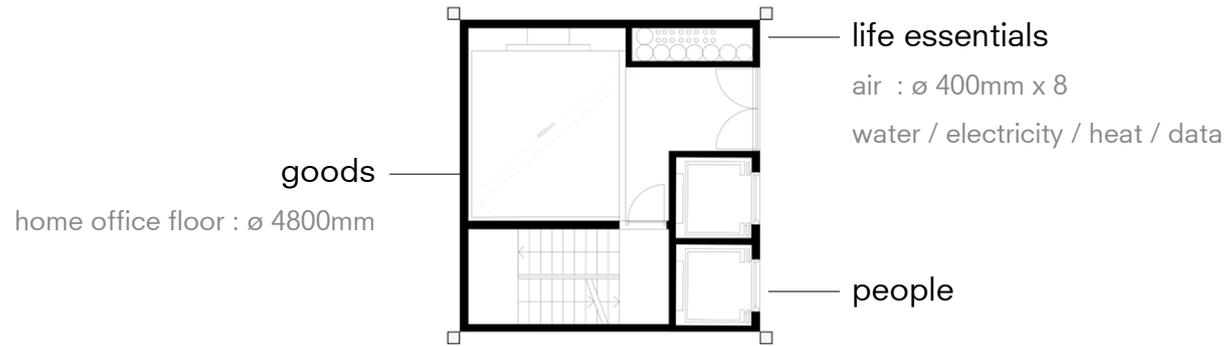


structure plan

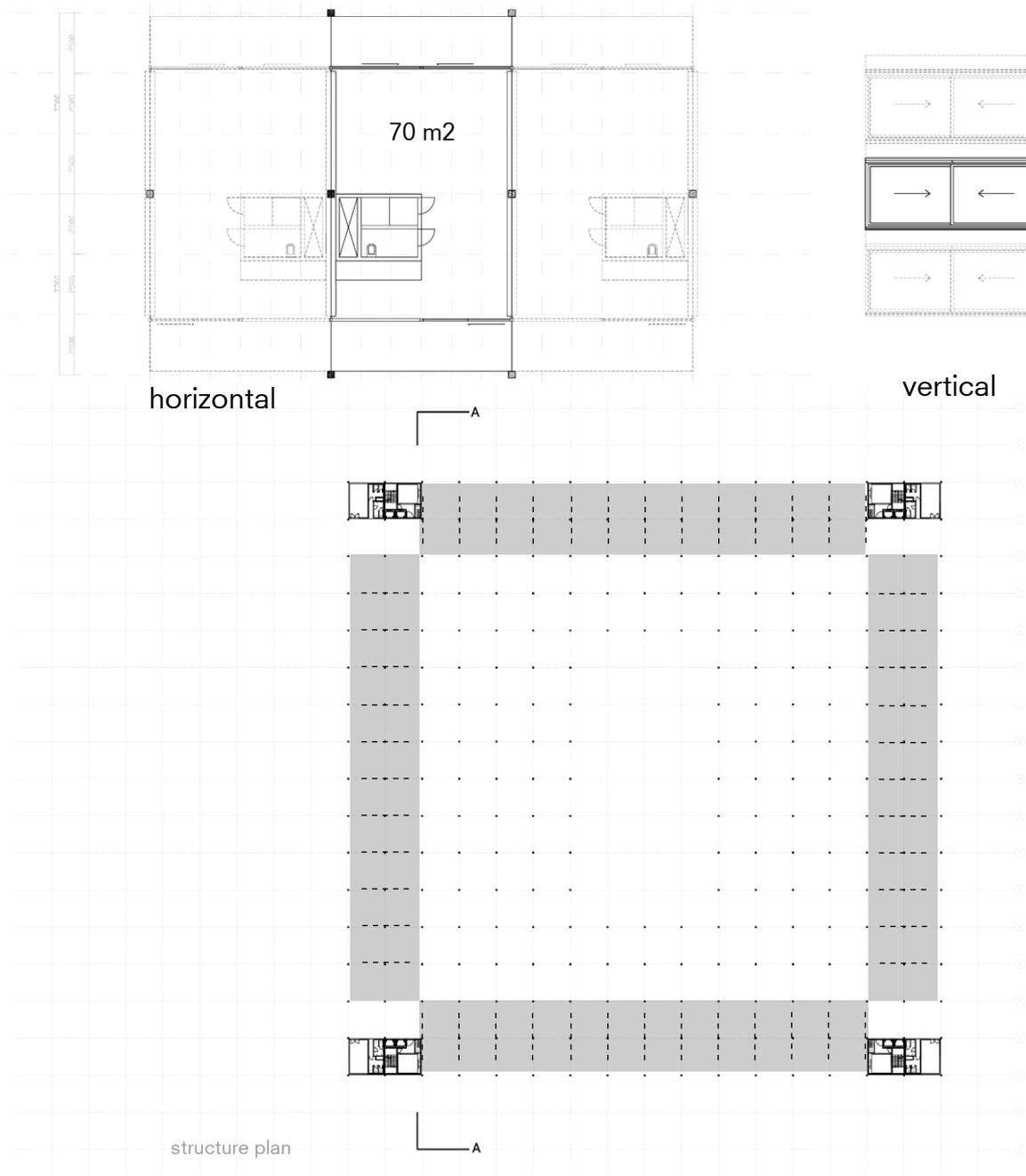
# prefab floors



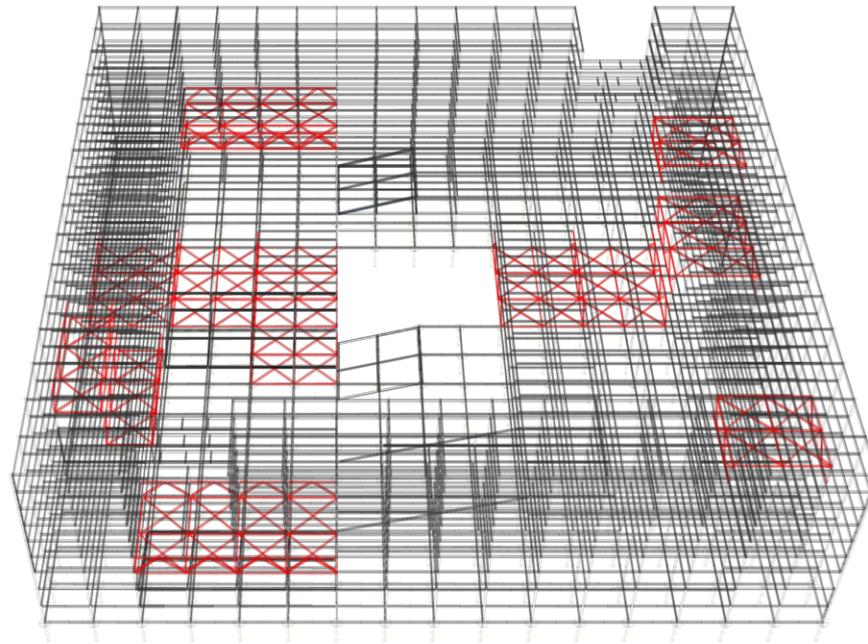
# residential service core



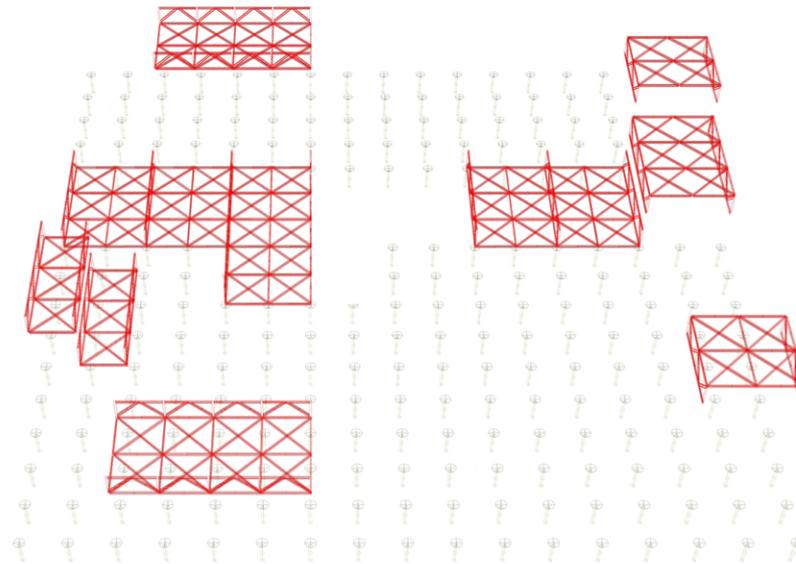
# extendable home office



# structure system

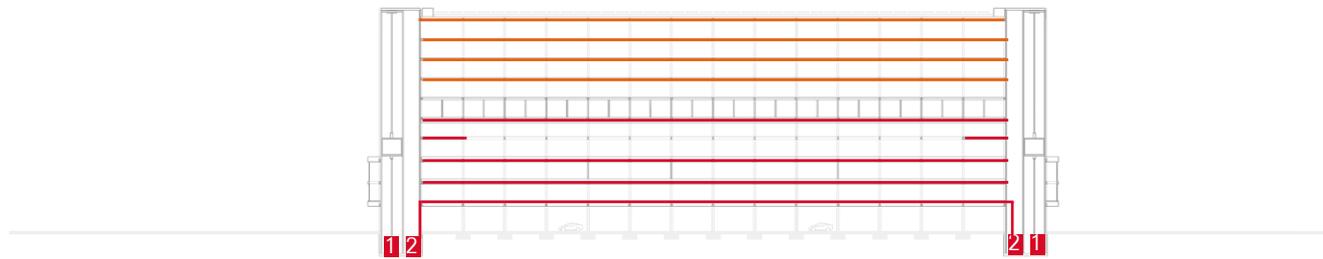


# structure system



-  span
-  existing column

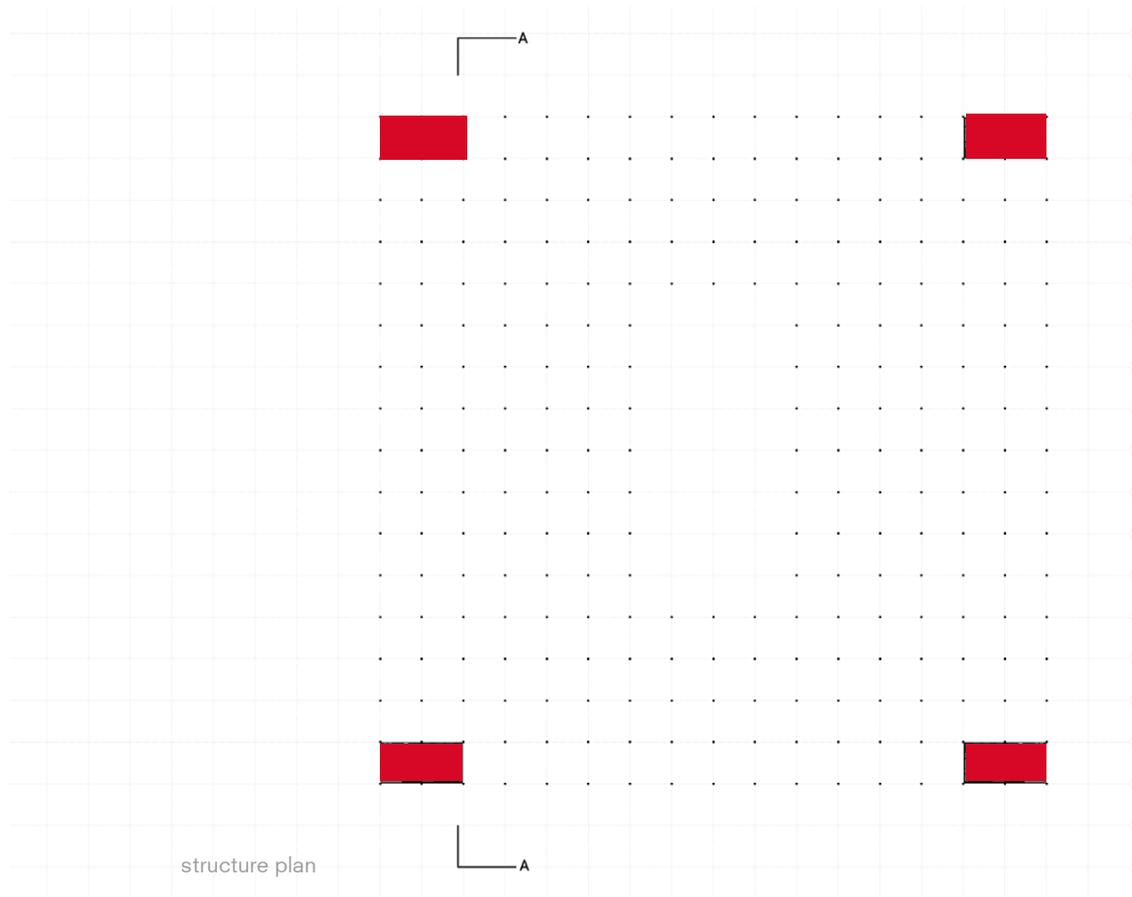
# heat supply



SECTION A-A

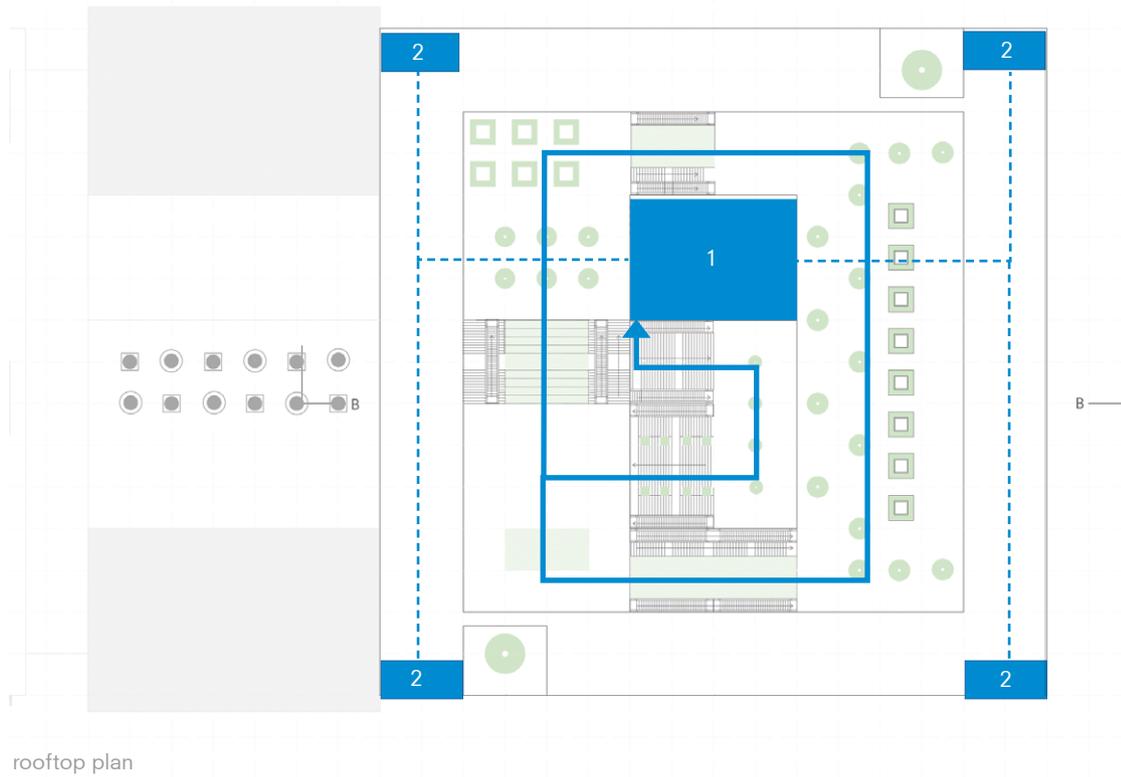
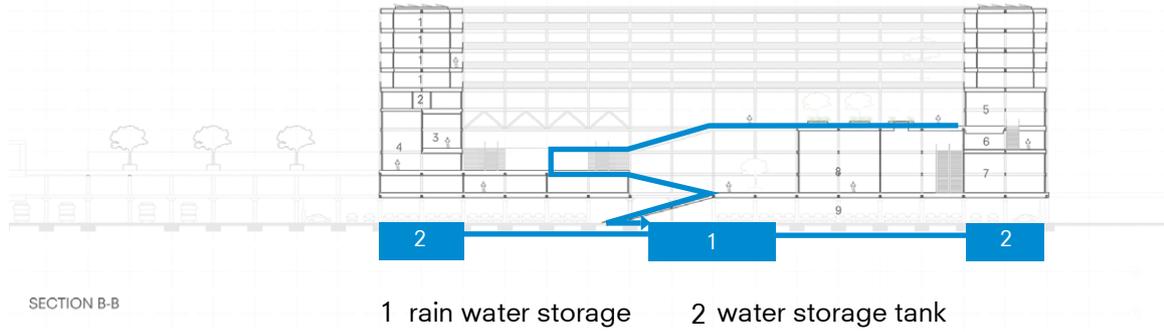
1 heat exchanger 2 heat pump

— floor heating — radiant ceiling heating

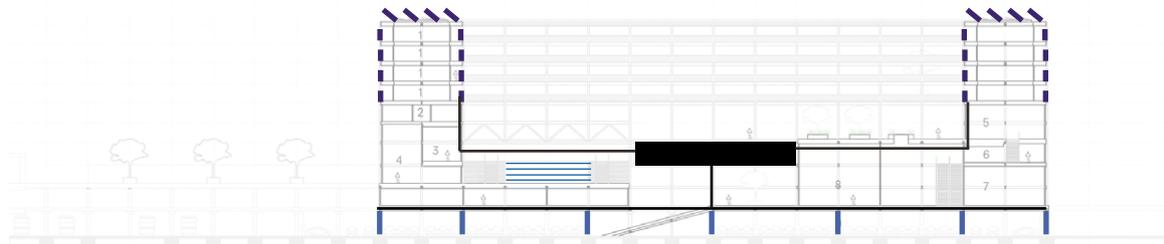


structure plan

# reuse-water supply

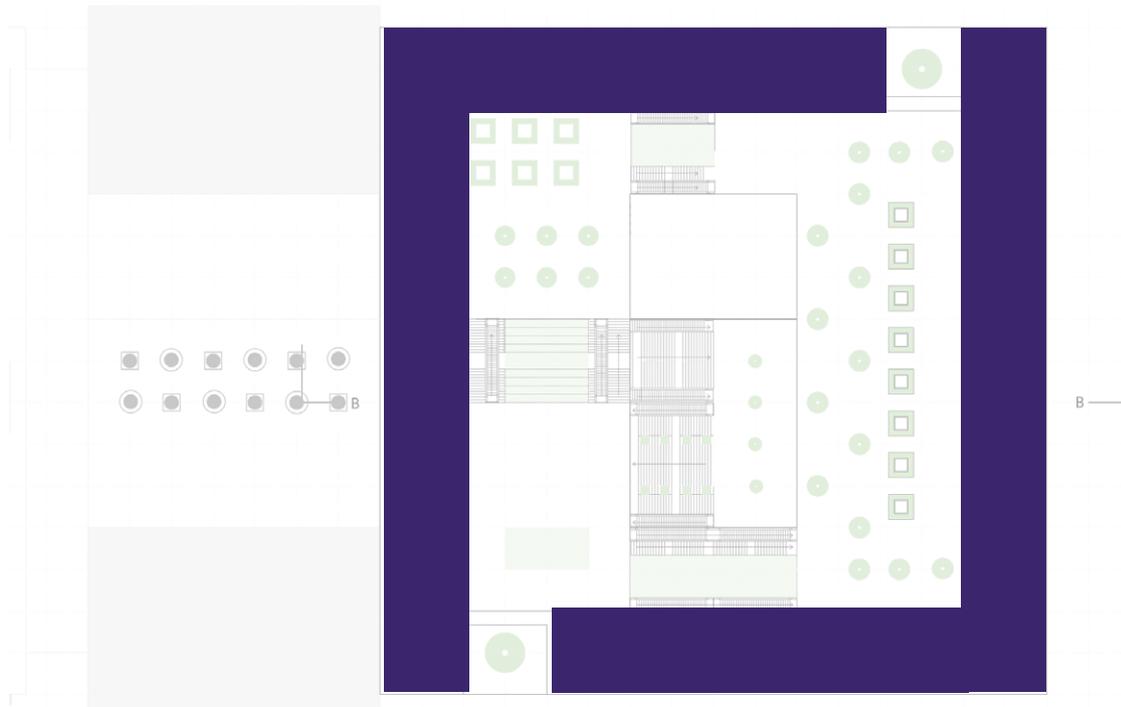


# electricity supply



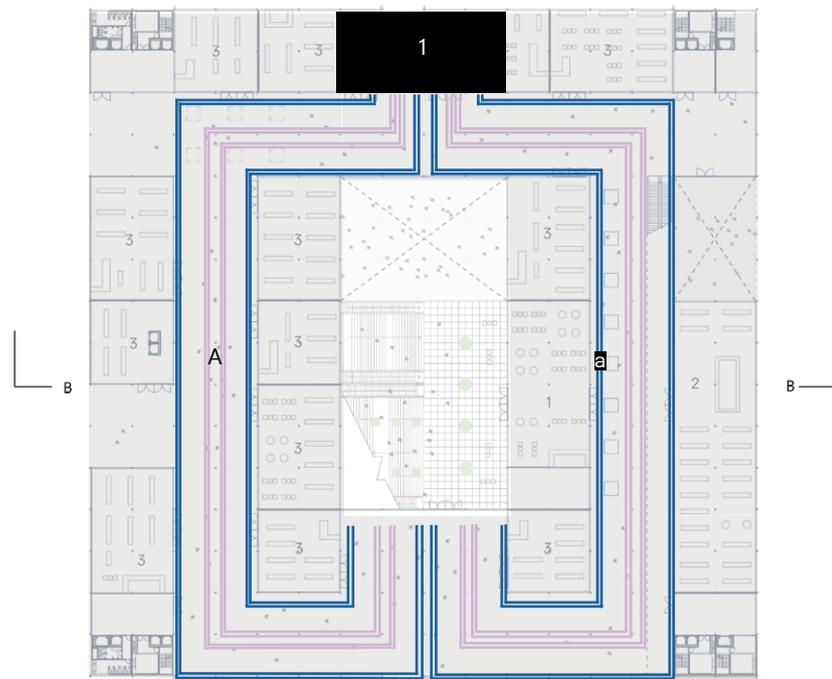
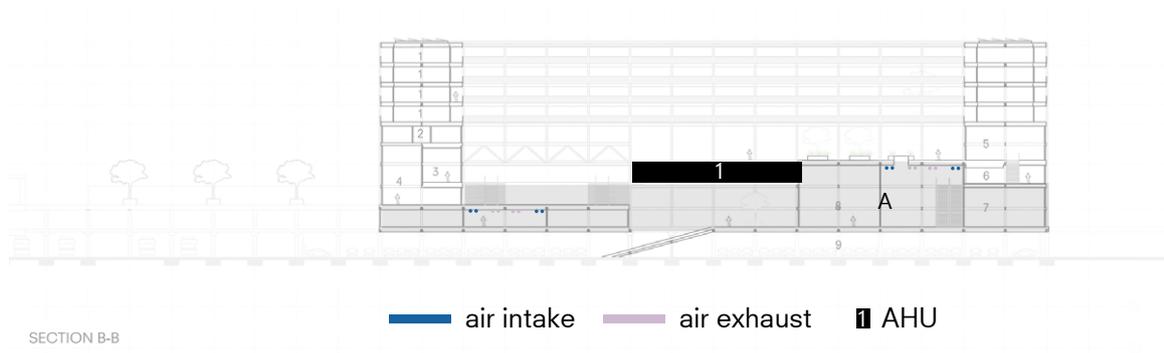
SECTION B-B

- pv panel
- electric car loading poles
- public lighting system
- DC battery



rooftop plan

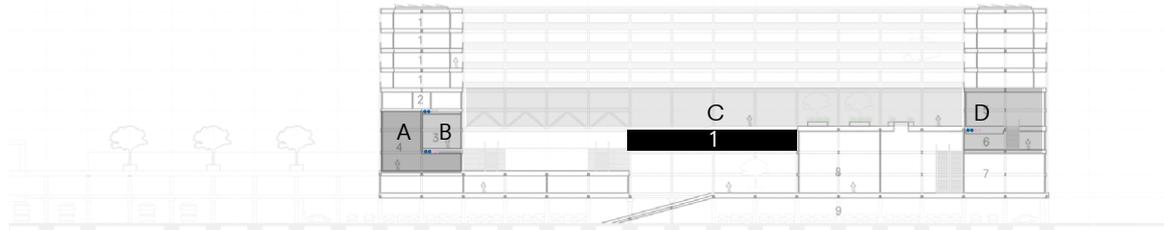
# air supply - retail



A : retail 1000 p  
ø a : 600 mm

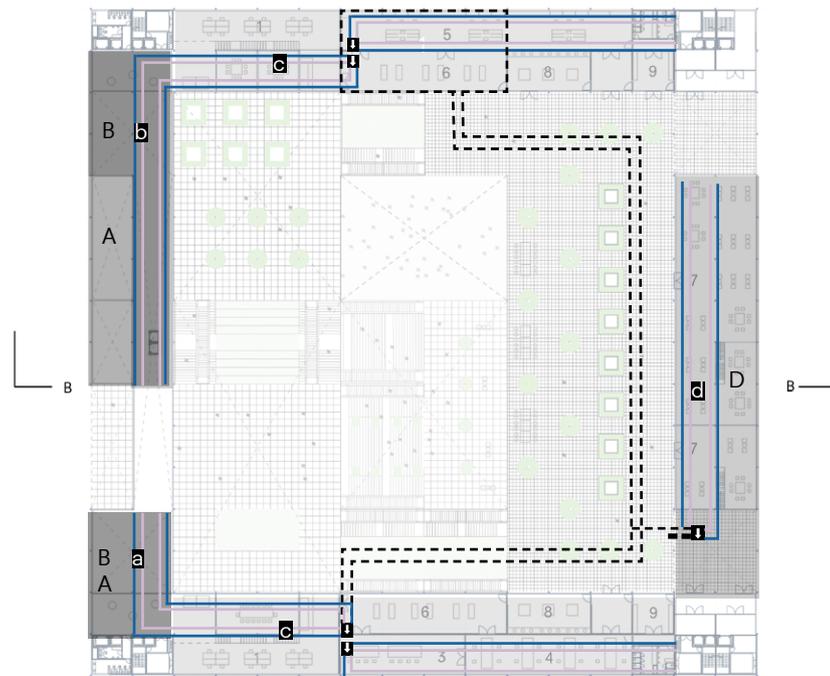
retail : level 01 - level 04

# air supply - creative service



SECTION B-B

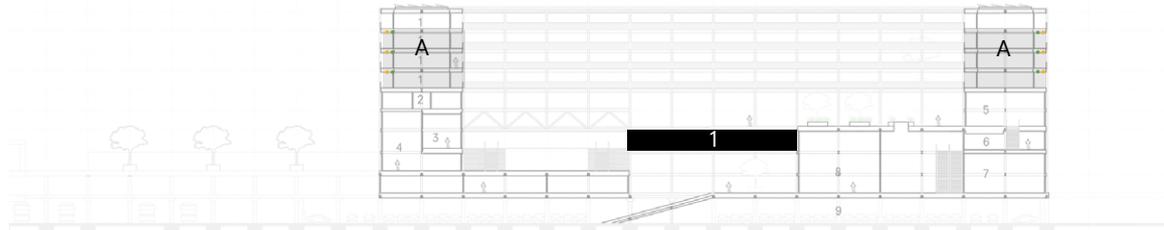
— air intake   
 — air exhaust   
 1 AHU   
 □ vertical transition  
 - - - - - installation in retail floors



A : hotel/gallery lobby 50p  
 ø a : 250 mm  
 B : gallery 50p  
 ø b : 250 mm  
 C : creative service 50p  
 ø c : 250 mm  
 D : gastronomy 100p  
 ø d : 380 mm

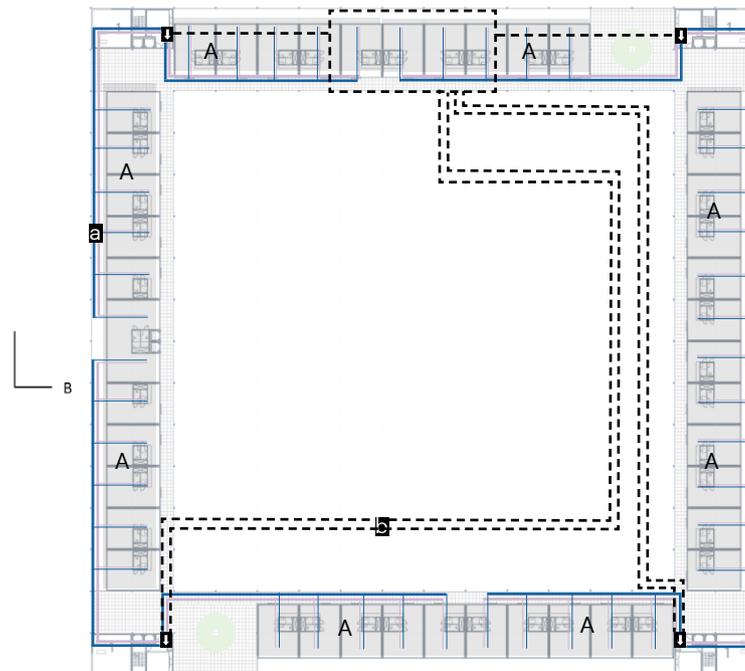
creative : level 02 - level 05

# air supply - home office



SECTION B-B

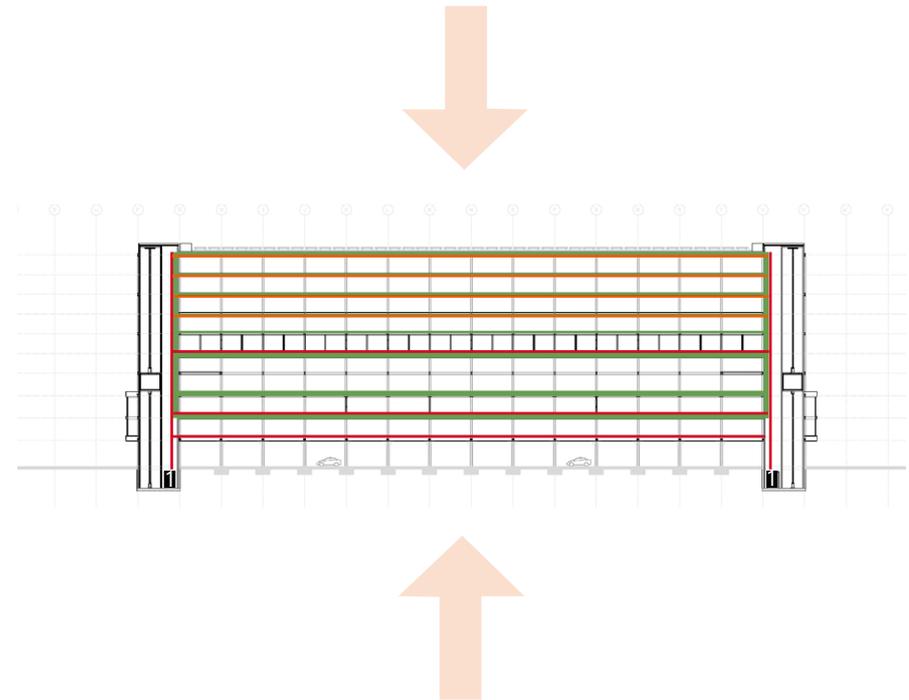
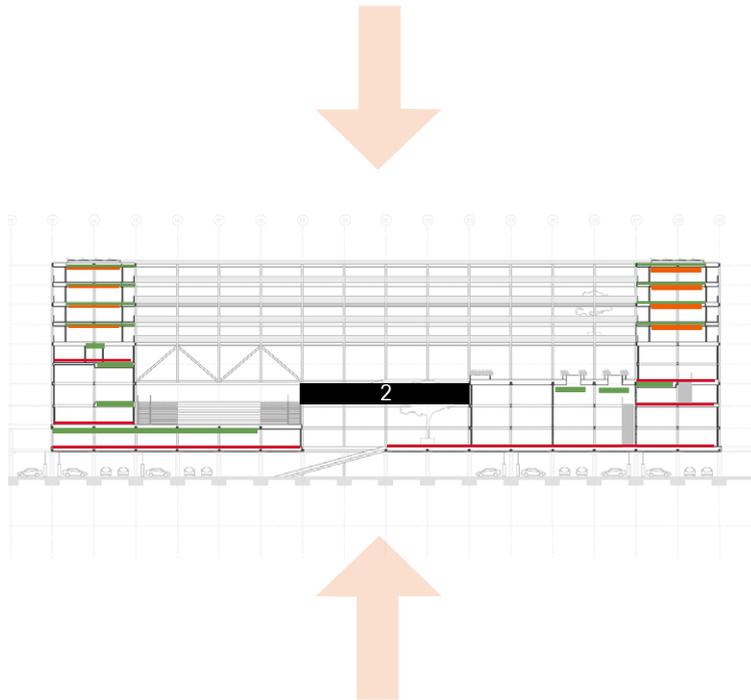
- ▬ air intake
- ▬ air exhaust
- A AHU
- A vertical transition
- - - - installation in retail floors



A : home office 30p  
 ø a : 250mm  
 ø b : 700mm

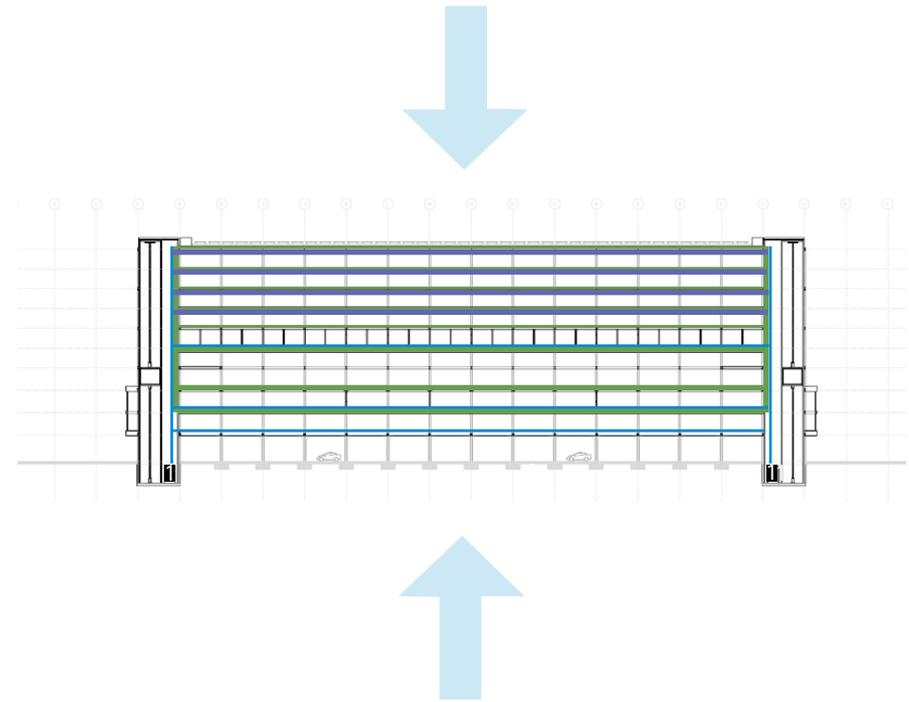
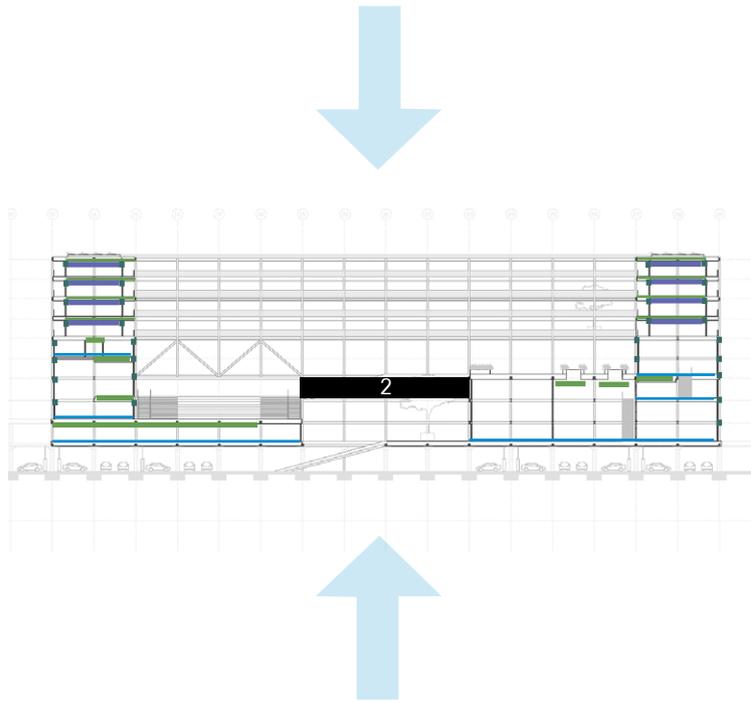
home office: level 06 - level 09

# climate in winter



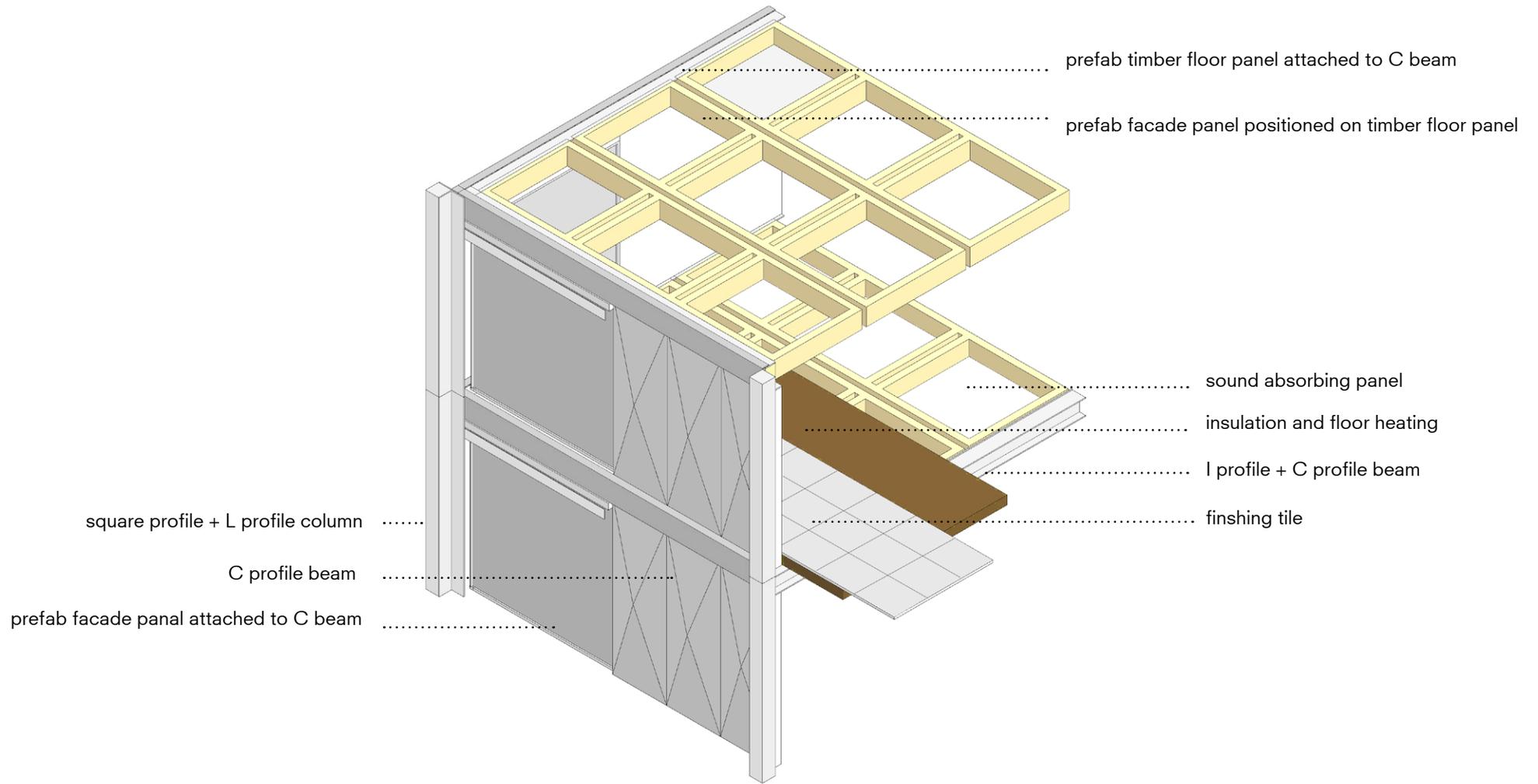
- mechanic ventilation with heat recovery
- floor heating
- radiant ceiling heating
- heat exchanger + heat pump
- AHU

# climate in summer

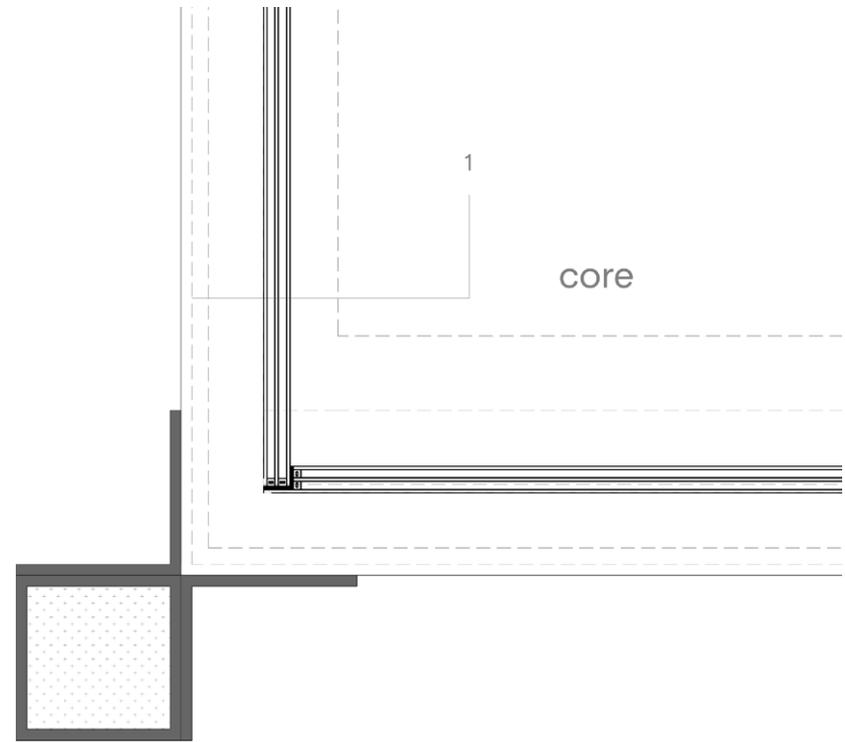
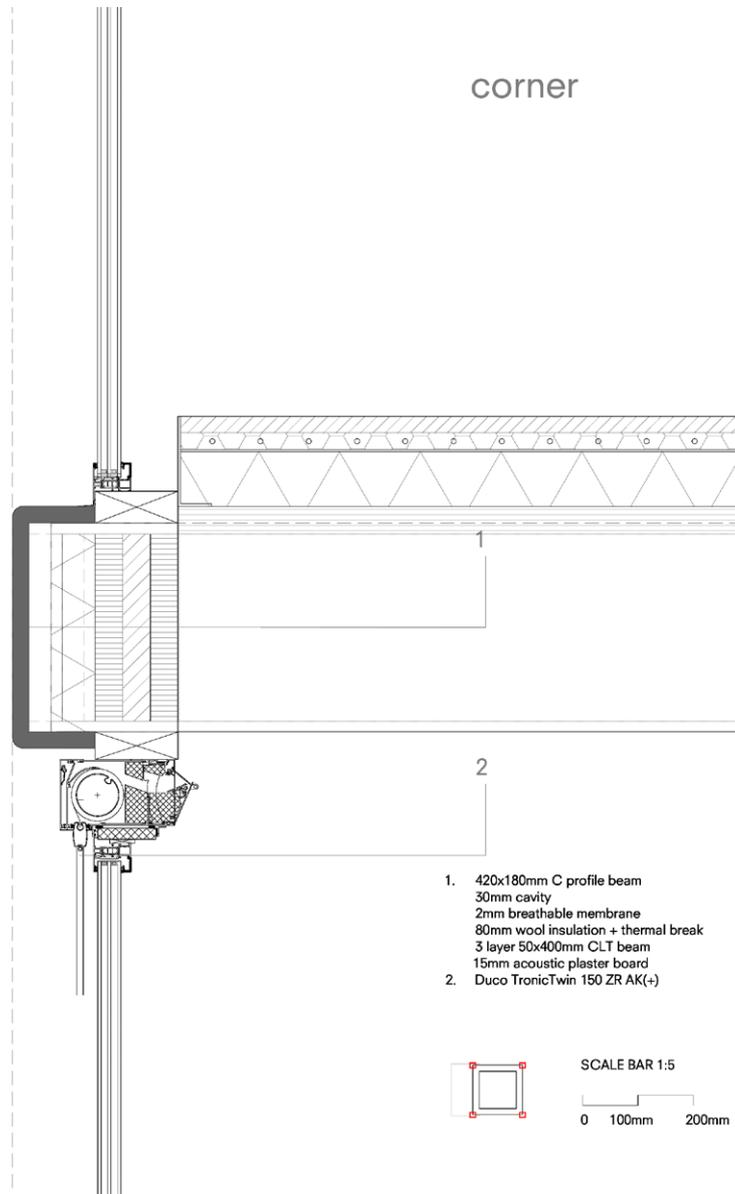


- green — mechanic ventilation with heat recovery
- dark green — ventilation grill + sunscreen
- blue — ceiling radiant cooling
- light blue — floor radiant cooling
- 1 heat exchanger + heat pump
- 2 AHU

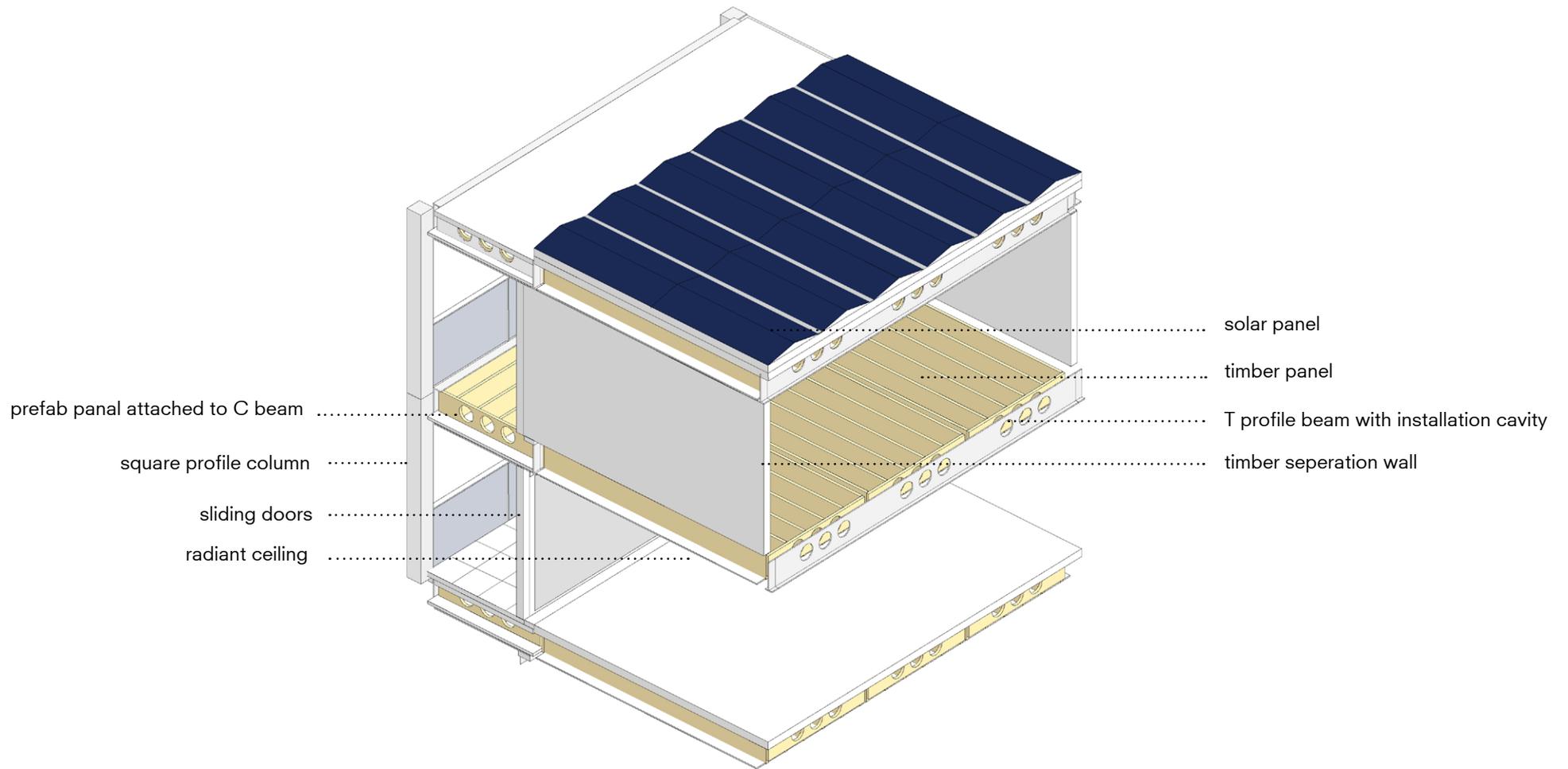
# corner element



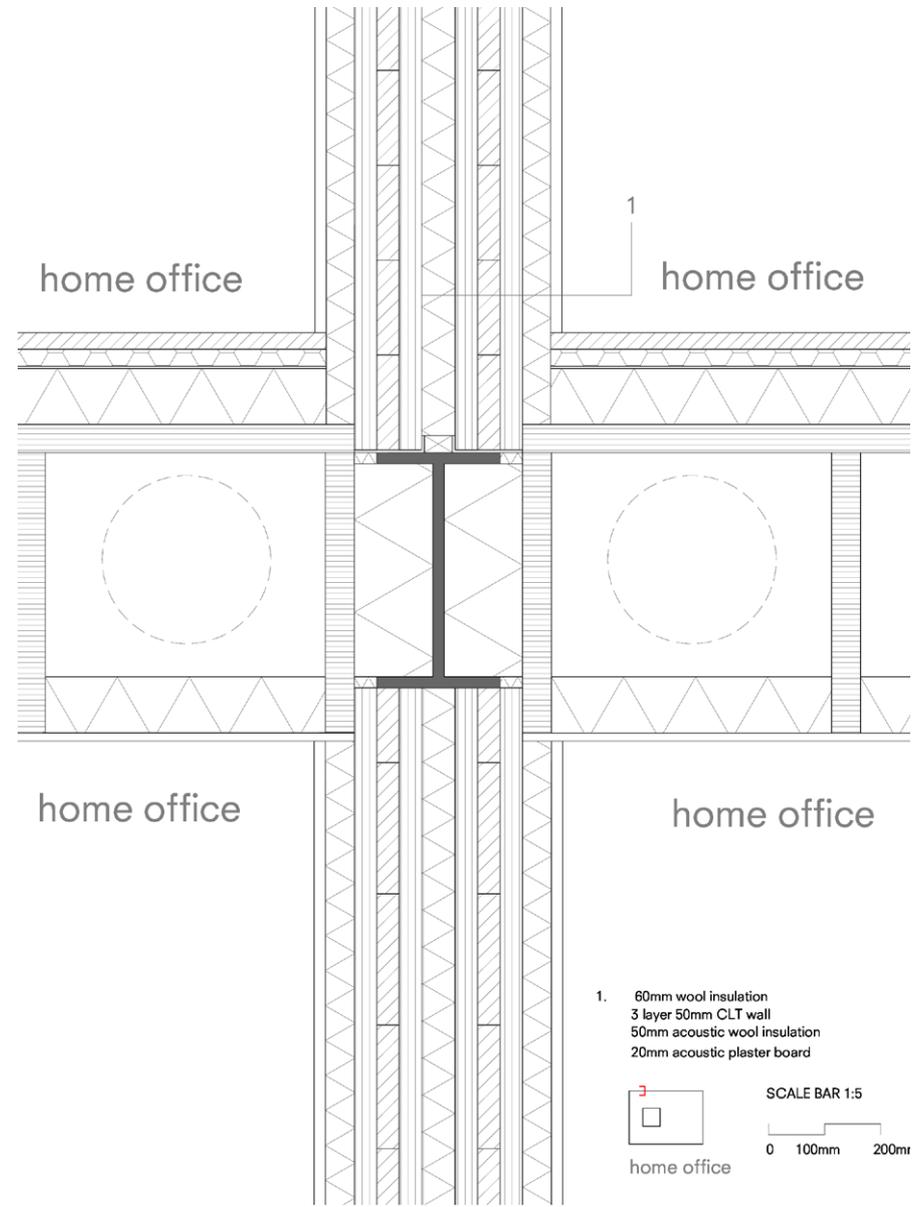
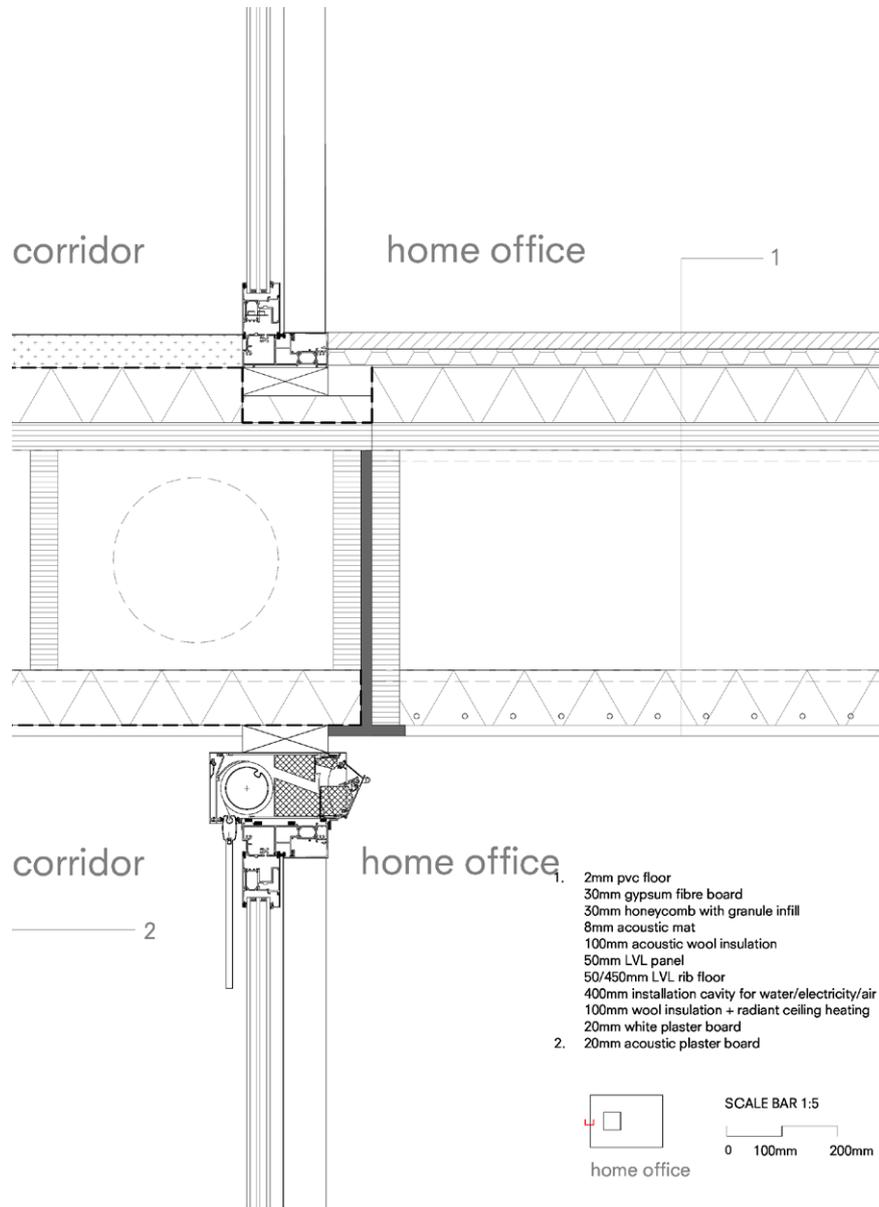
# corner detail



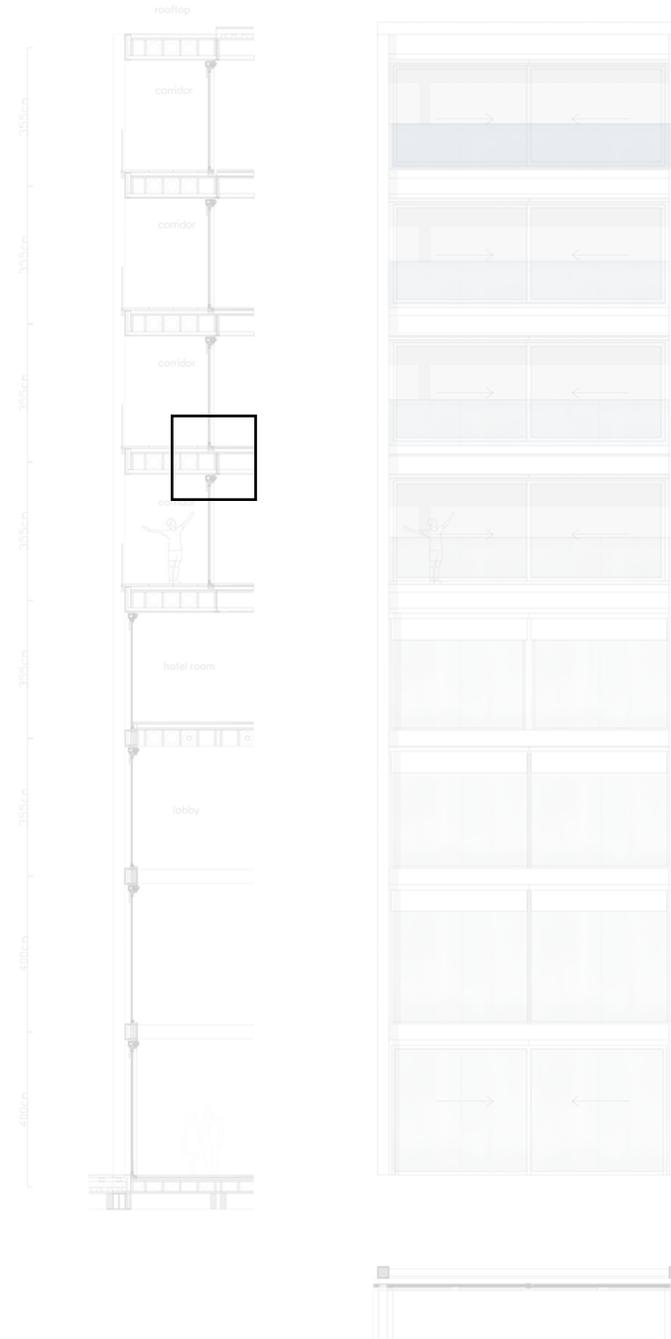
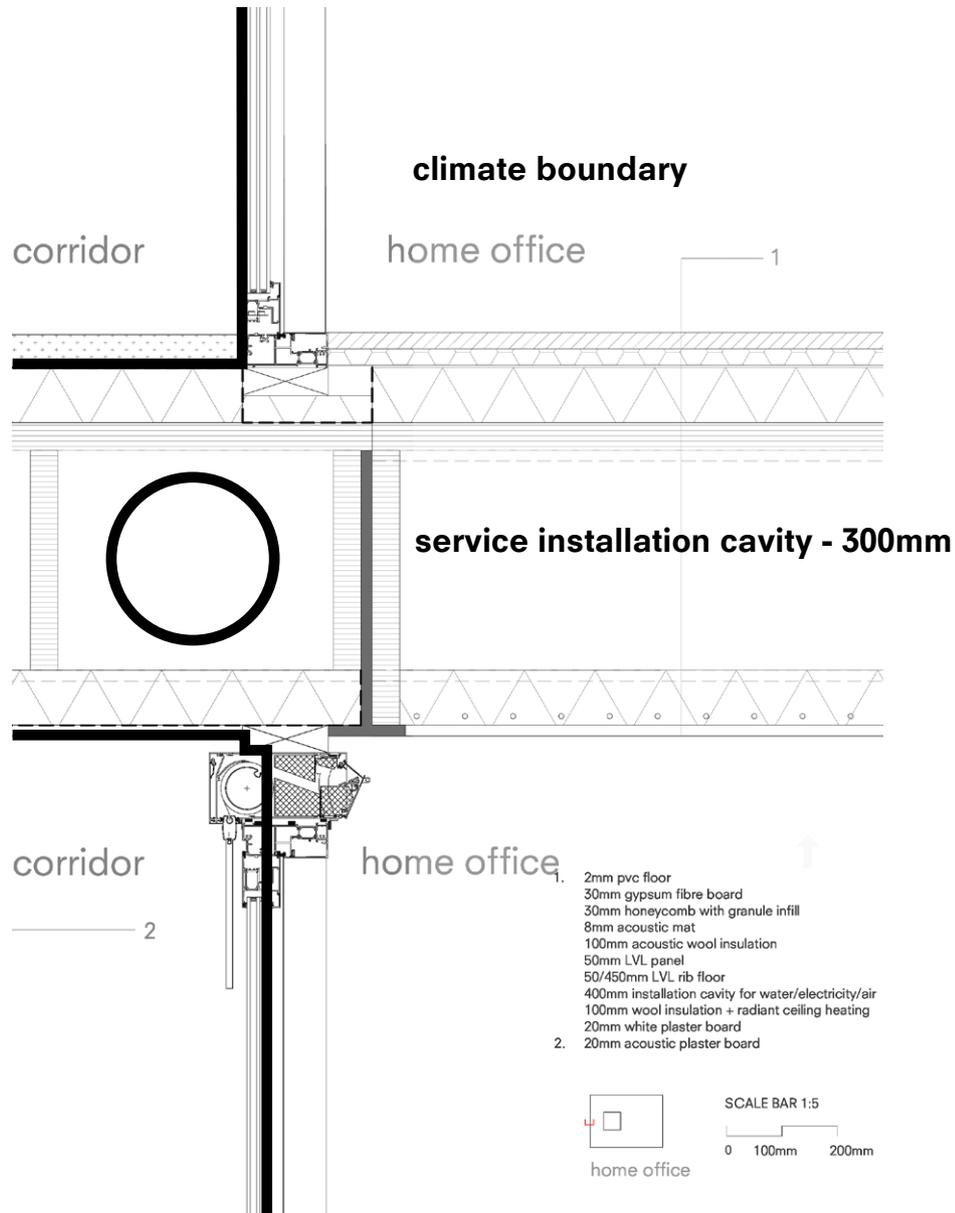
# home office element



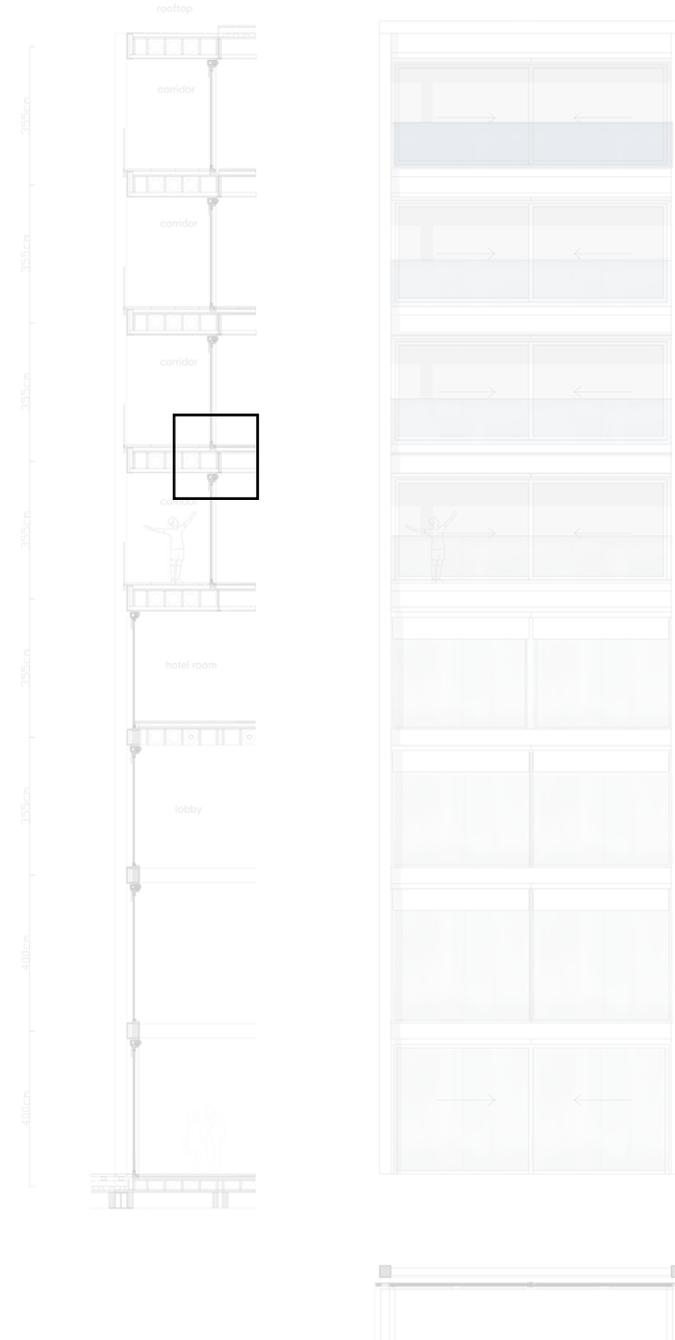
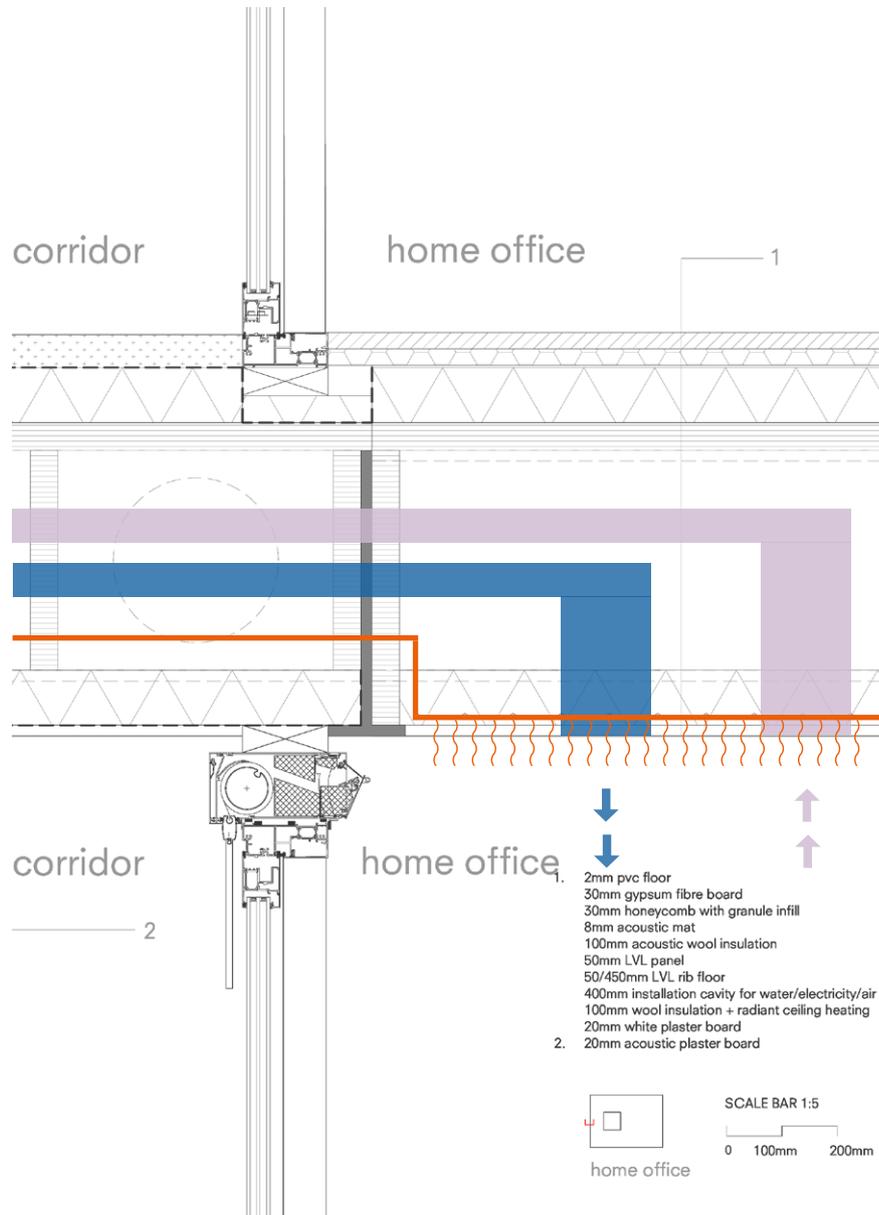
# home office detail



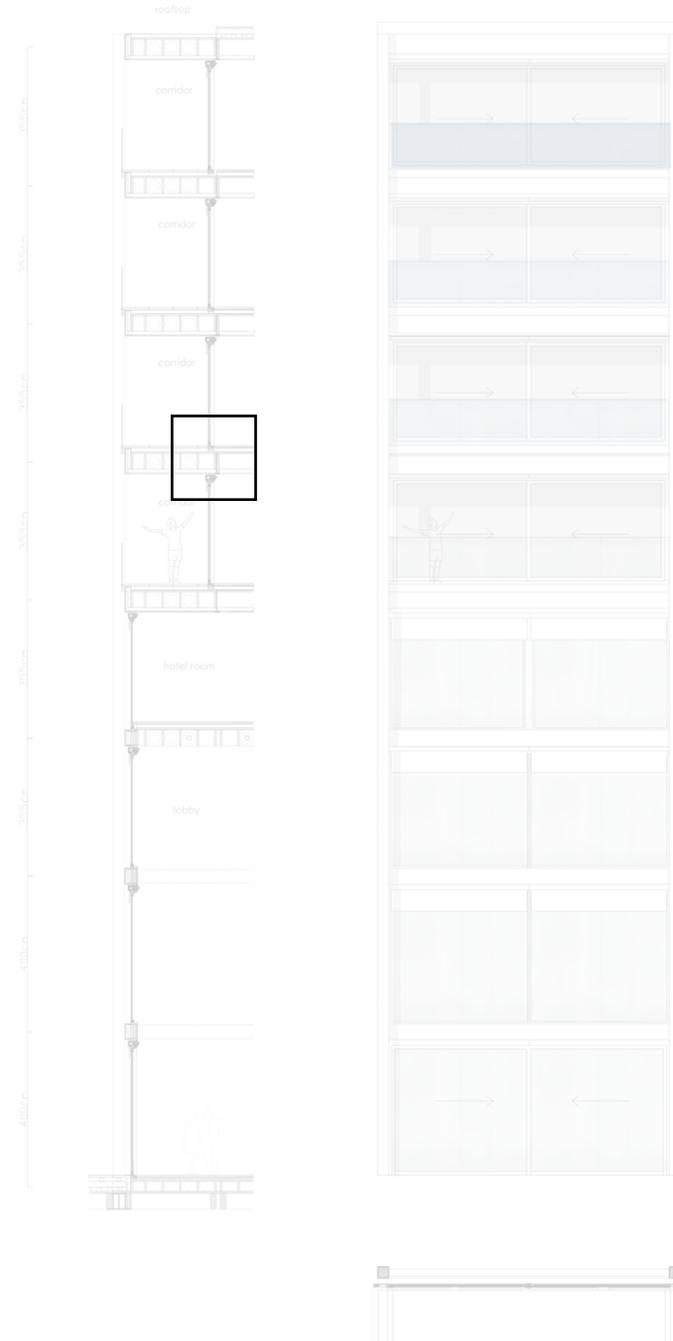
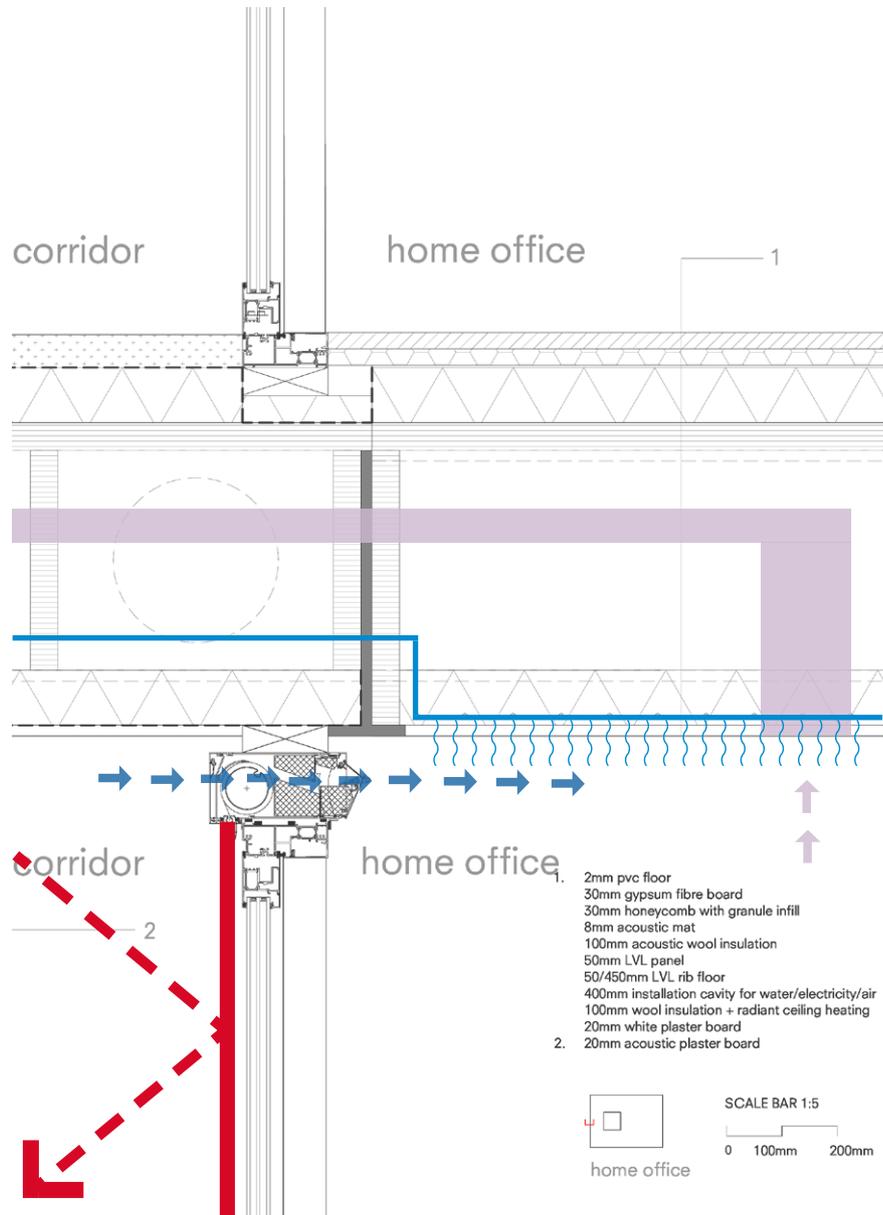
# home office envelope



# home office climate in winter



# home office climate in summer



**reflection**

**STATUS QUO**

**FUTURE**

**reflection**

**DIGITAL -  
PHYSICAL HYBRID**

**FLEXIBLE-  
EMPLOYED**

reflection

**RE-  
URBANIZATION**

reflection

**ACTORS  
OF URBAN  
STAGE**

reflection

**NARRATIVE  
4D STRUCTURE**

reflection

**RELATIONS  
OF  
MASSIVE**