

# SHARED 'LUXURY'

Adaptive Reuse of T4 & CJ3  
Office Buildings into Collective Self-organized Community  
Under the Guidance of a Circular Business Model

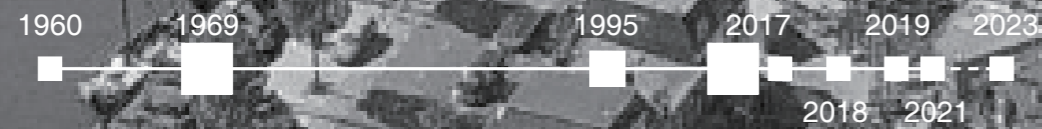
Ruowen Gao | 5055067  
30.06.2022  
P5 Presentation

AR3AE100 Architectural Engineering Graduation Studio | Second Life  
Design Tutor: Anne Snijders | Research Tutor: Olga Ioannou  
BT Tutor: Paddy Tomesen | Delegate Examiner: Ype Cuperus

# INTRODUCTION

T4 & CJ3

Location: Leeuwarden  
Completion: 1969  
Architect: Piet Zanstra, de Clercq Zubli & Partners  
Former use: Tax office  
Style: Functionalism  
Moment: Municipal monument  
Energy Label: G  
Staus: Vacant



	T4	CJ3	total
total surface area	9769	2998	12767
basement	1396	983	
ground floor	389	983	
standardfloor	7*1085.04	2*983	

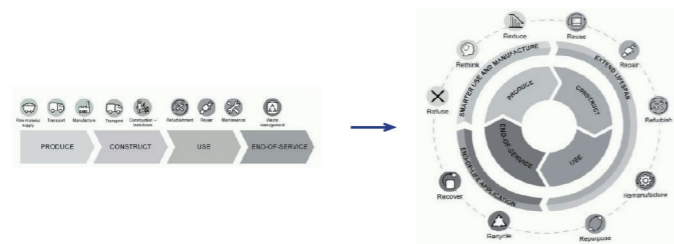


# INTRODUCTION

Context



# RESEARCH



transition to CBE  
(circular built environment)



housing shortage



adaptive reuse of vacant office stock

# RESEARCH

circularity & collective self organized housing



space should be able to be re-created and changed



# RESEARCH

future residents



school dropout  
youth unemployment



asylum seekers



start-ups  
tourists  
families  
students

.....

affordable housing  
better facilities

group

needs

goal

skill learning  
working  
living

rejoin society

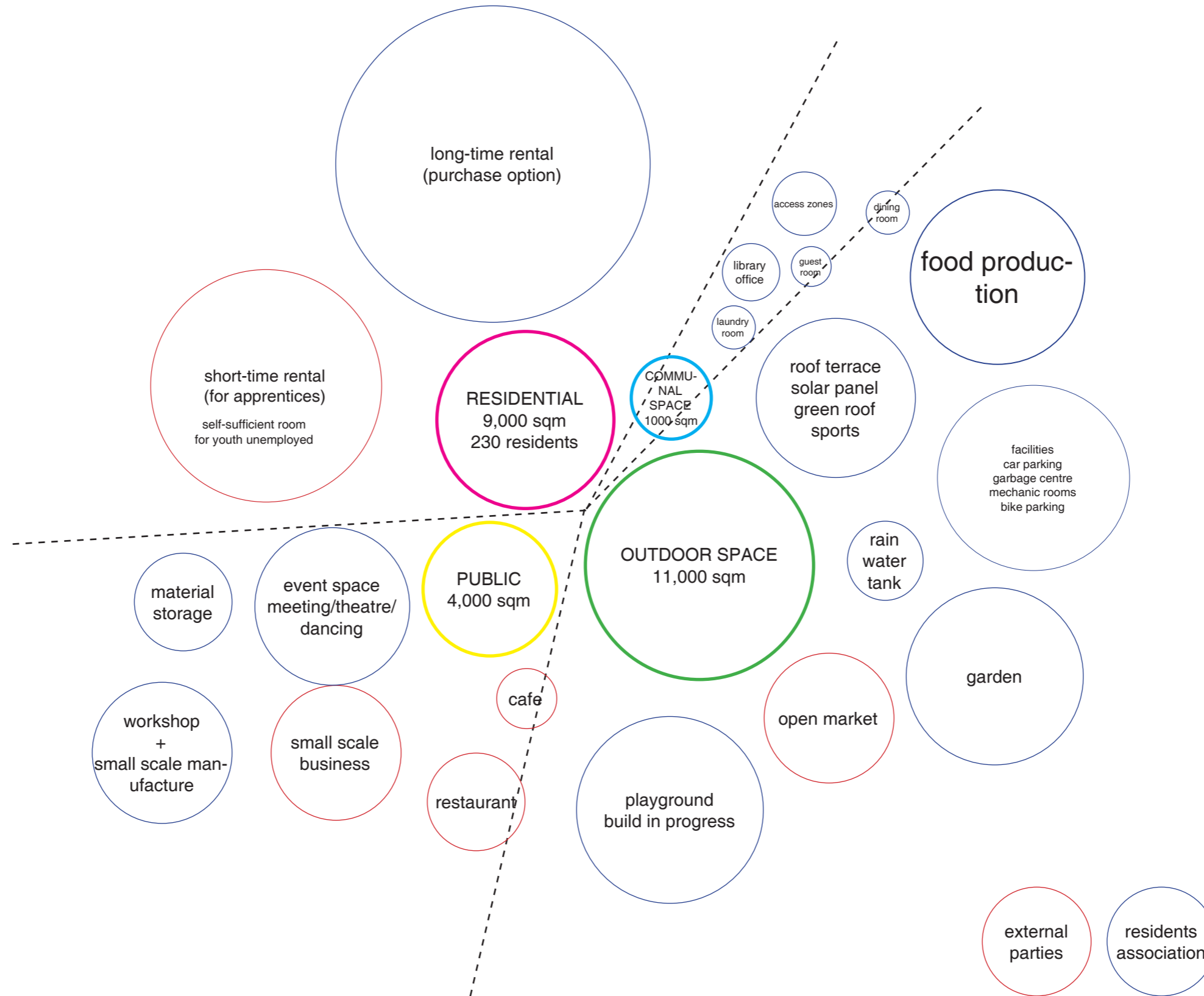
shelter  
language learning  
working  
decent living

social integration

better communal life

# RESEARCH

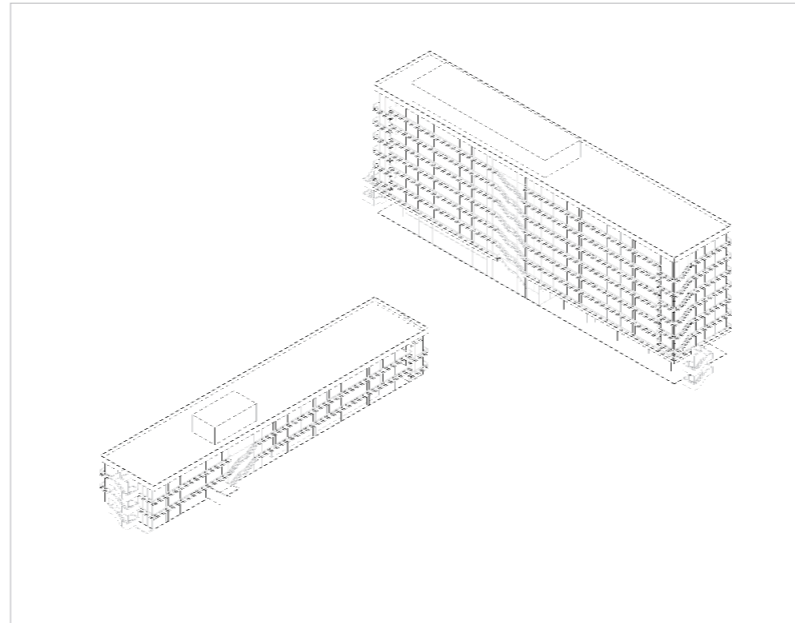
conceptual programme





# RESEARCH

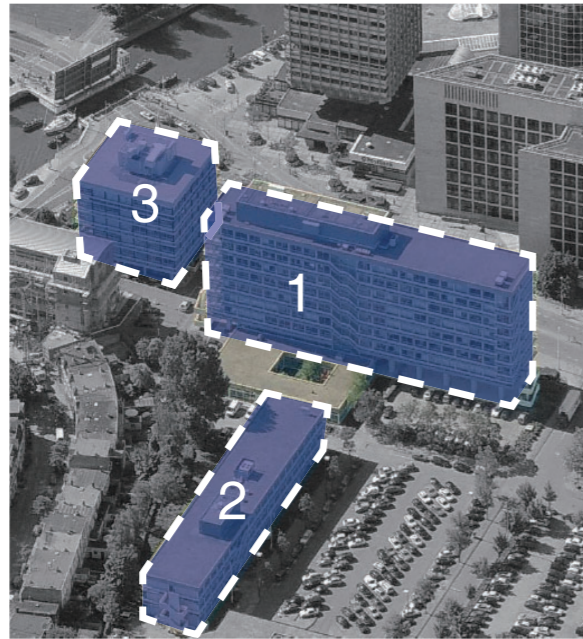
the buildings



current state

# RESEARCH

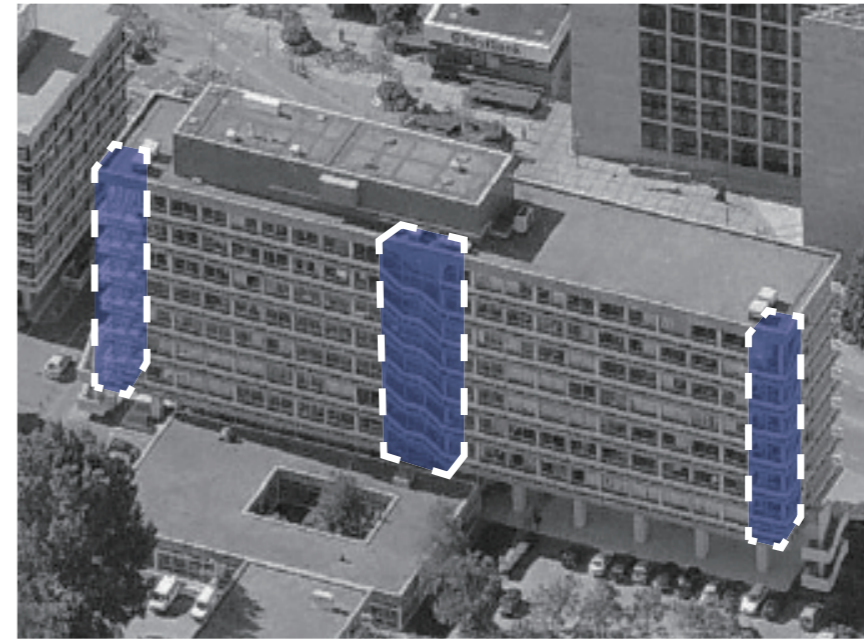
Monumentality & Opportunity



ENSEMBLE



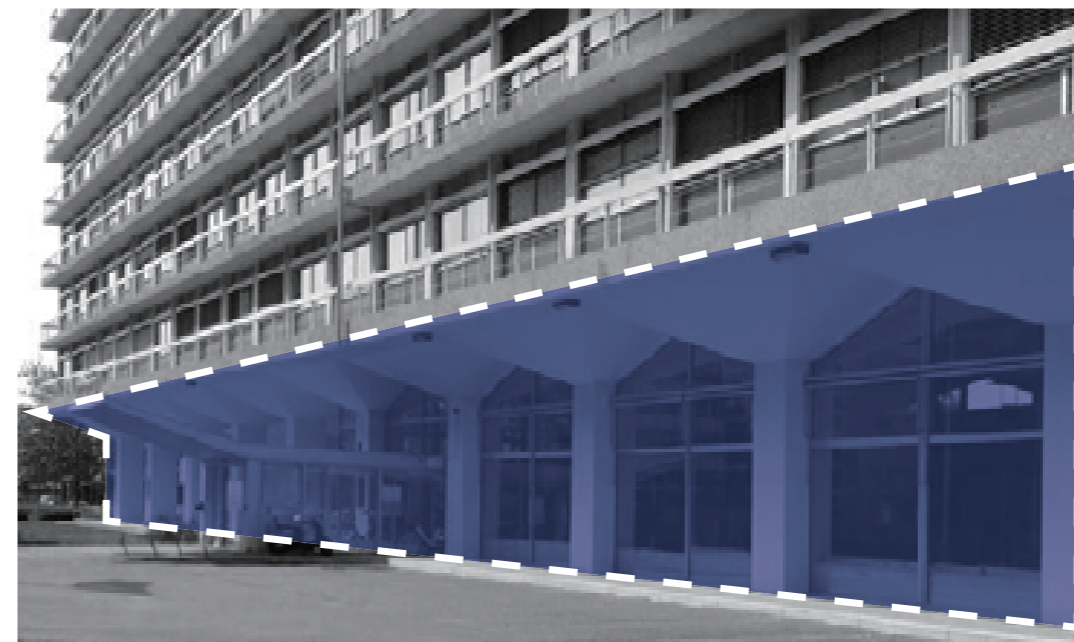
CAPPED AT  
SHORT-END



ACCENTUATING  
STAIRWELL



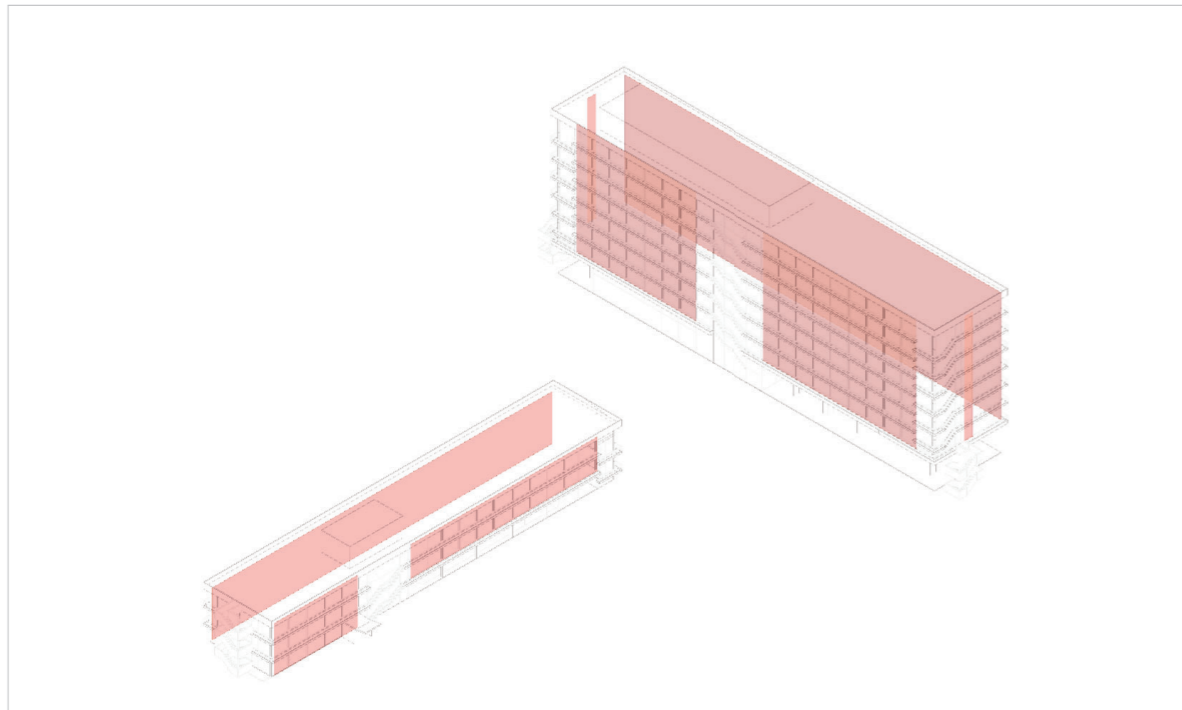
HORIZONTAL & VERTICAL  
EMPHASIS



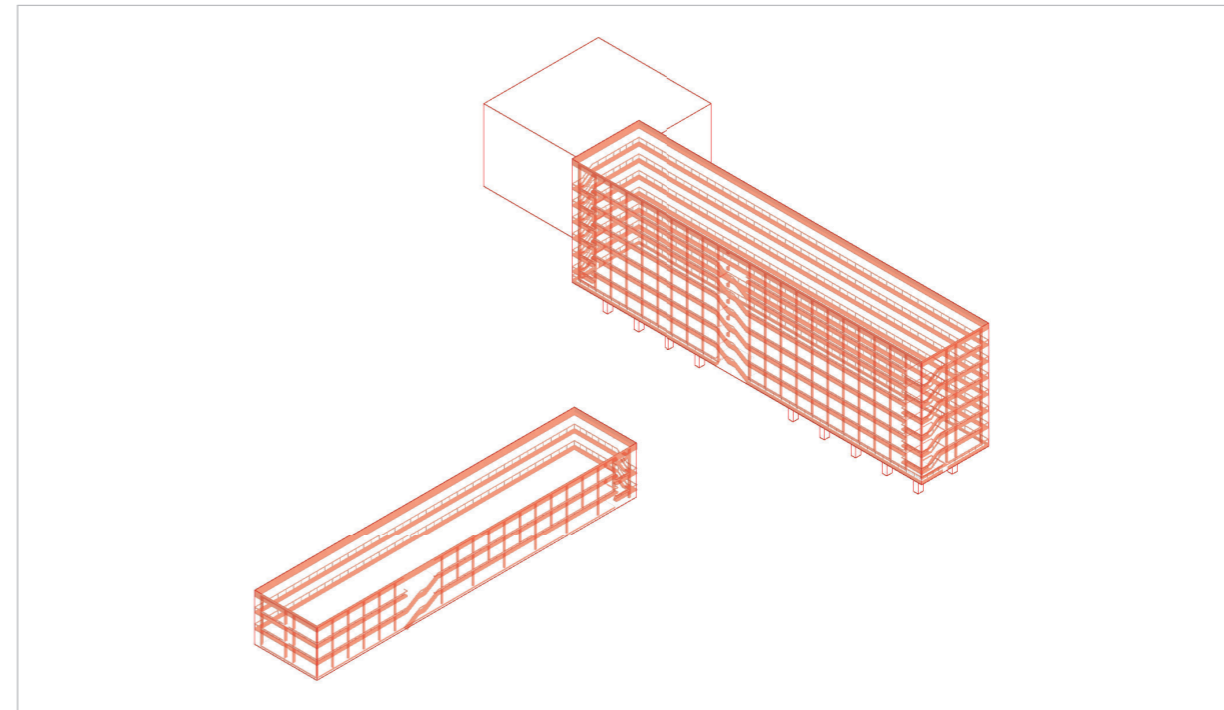
PILOTI

# RESEARCH

Obstacle



toxic asbestos panel



poor insulation  
energy label G

# RESEARCH

+

independent structure  
adaptable grid  
open ground floor  
spacious courtyard

-

energy performance  
poor insulation  
outdated service system  
lack of natural light  
asbestos panels

# DESIGN GOALS

## Shared Luxury

1

### MINIMAL INTERVENTION

The plot containing existing T4 & CJ3 office buildings will be retrofitted while keeping their cultural-historical value.

2

### INCREASED INTERACTION + INDEPENDENT

The plot will be transformed into a collective self-organized community where the residents can socialize within the various communal spaces provided.

Residents are encouraged to be independent and (re)join the civil society. Complex of living, working and learning.

3

### SLOW AND SMALL ENERGY STRATEGY

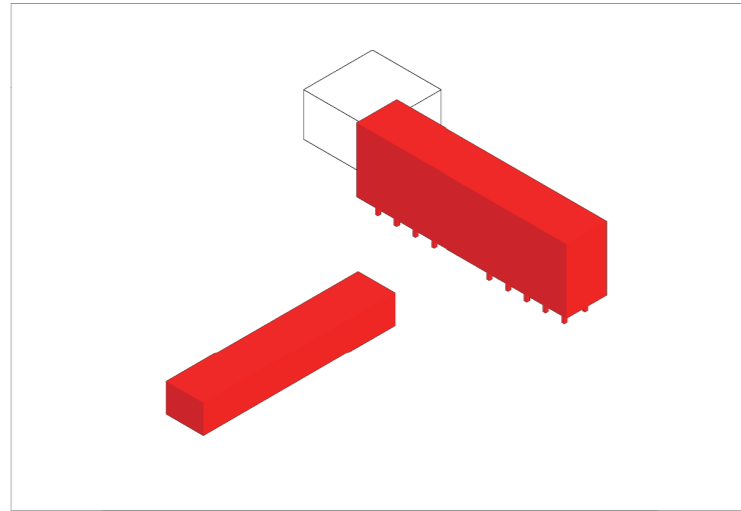
inclusion of rain water, nature and edible green, sustainable inclusion long-term planning instead of short-term problem solving.

4

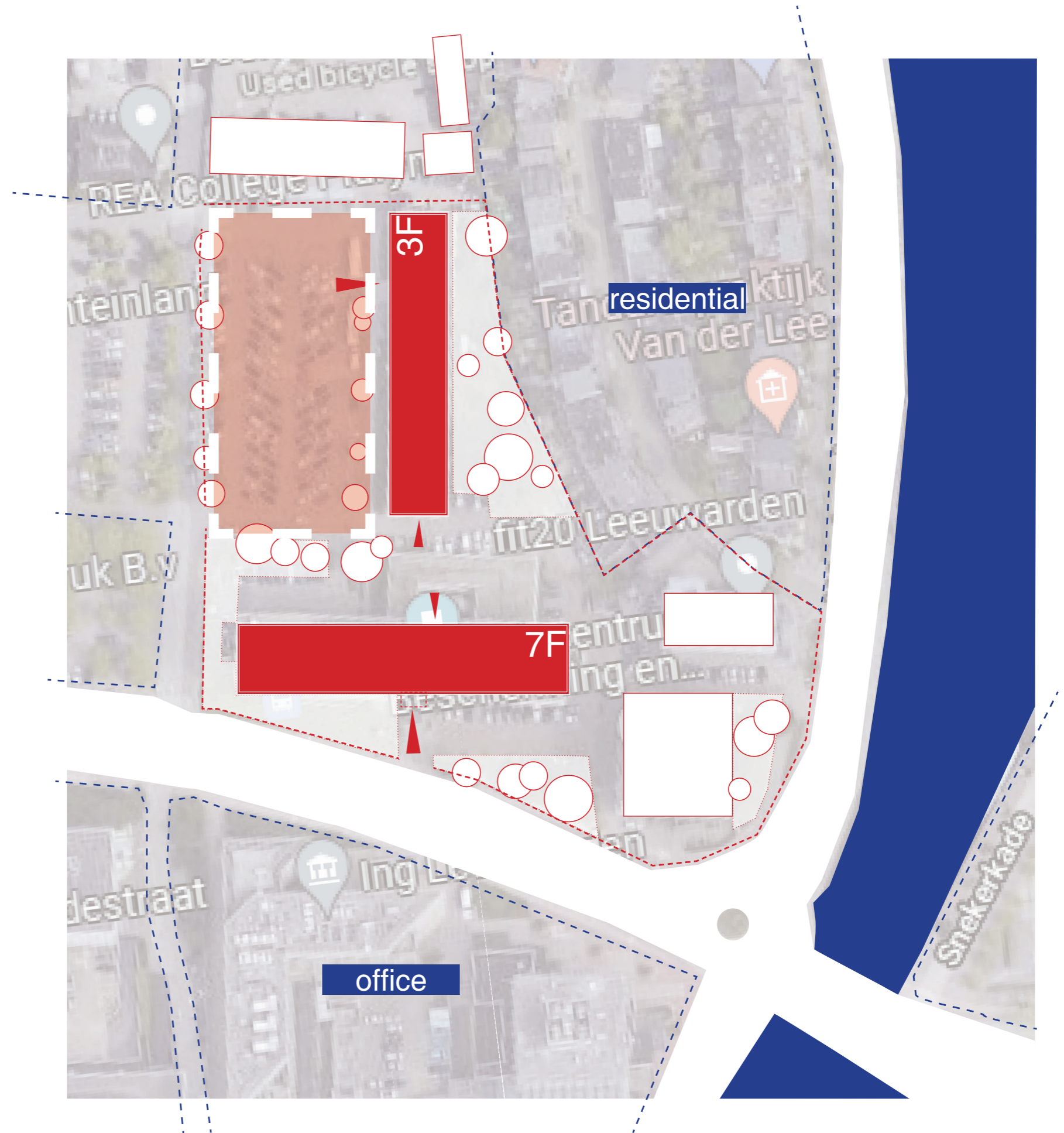
The circular business model shall serve as a guideline for design decisions in order to increase the level of circularity.



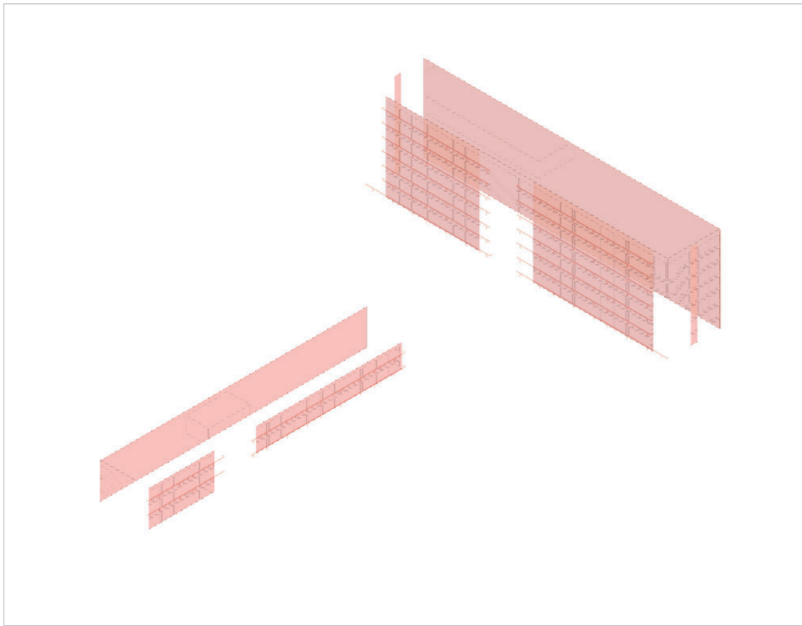
# CONTEXT



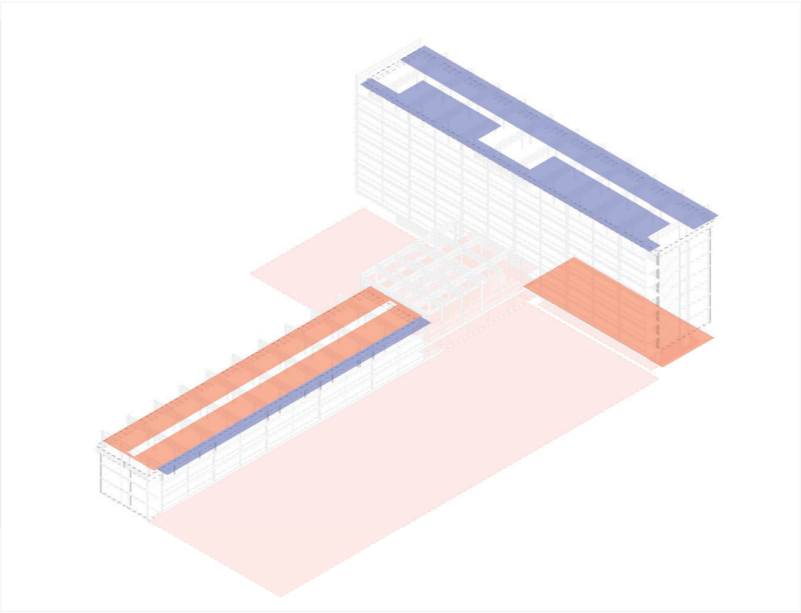
CJ3+T4



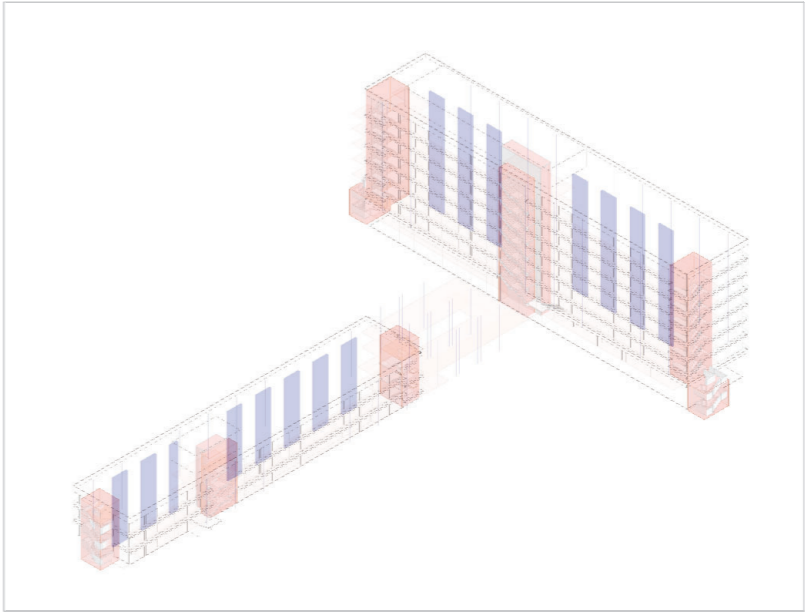
# CONCEPT



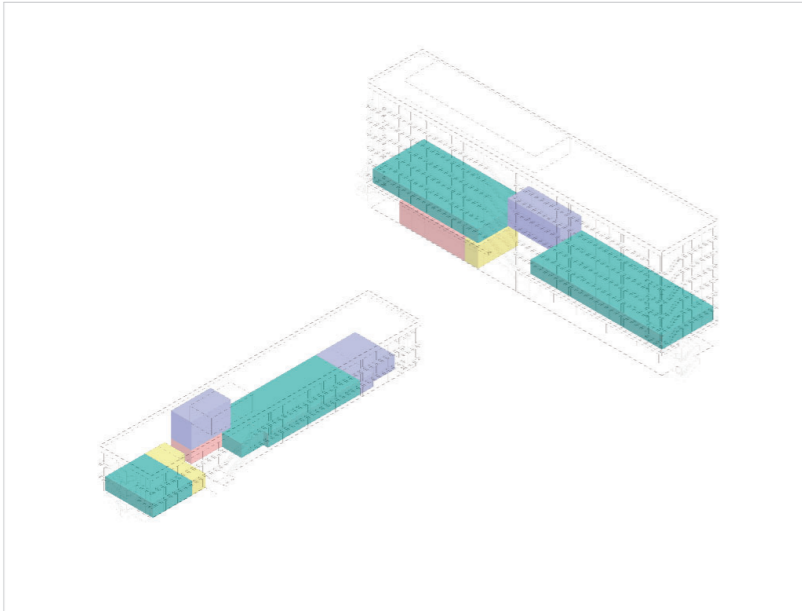
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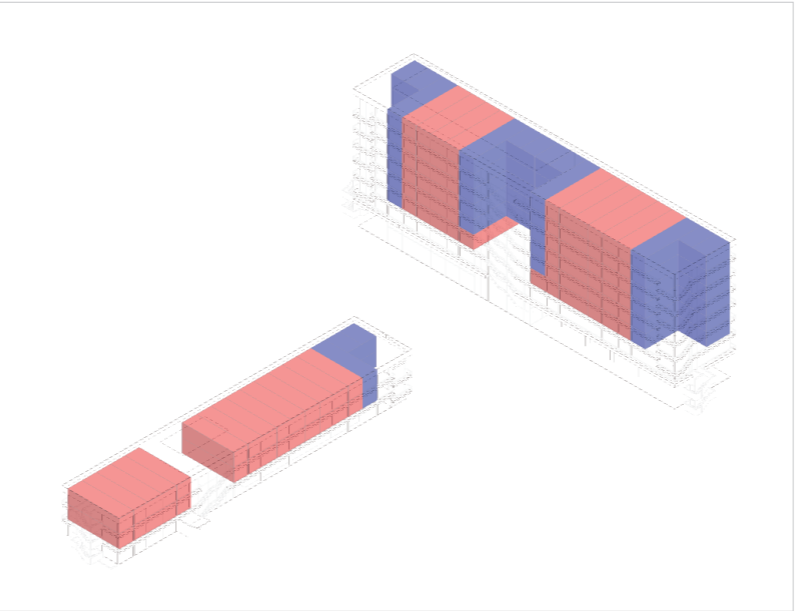
2. additional function- courtyard energy



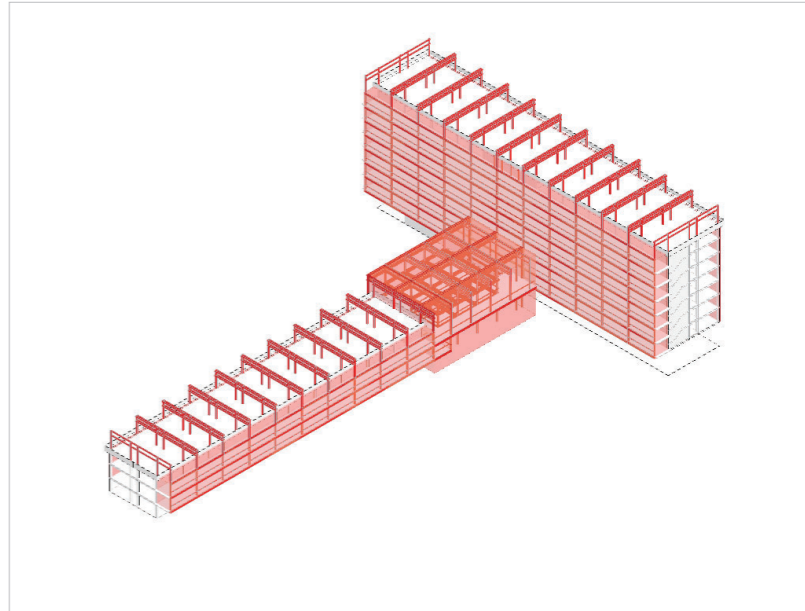
3. essentials  
access+shaft+duct+pipe



4. additional function-interior

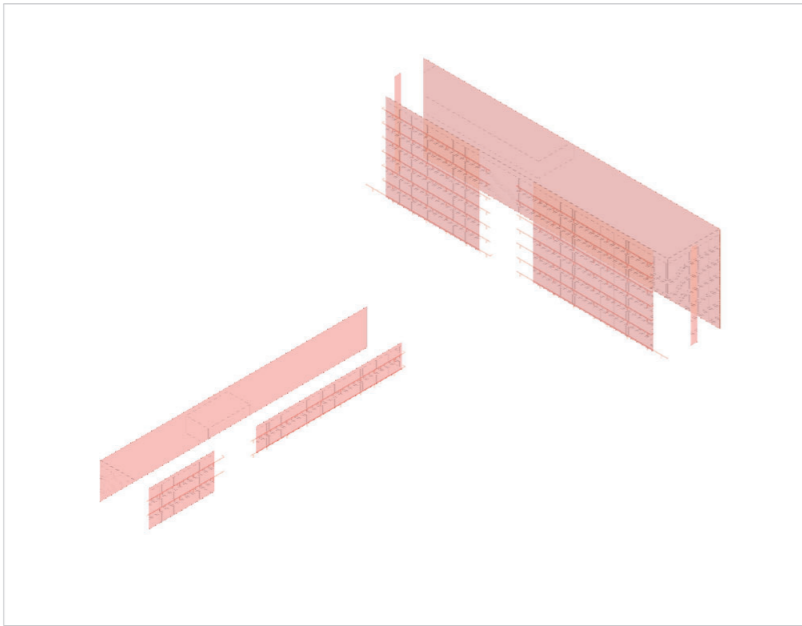


5. housing unit

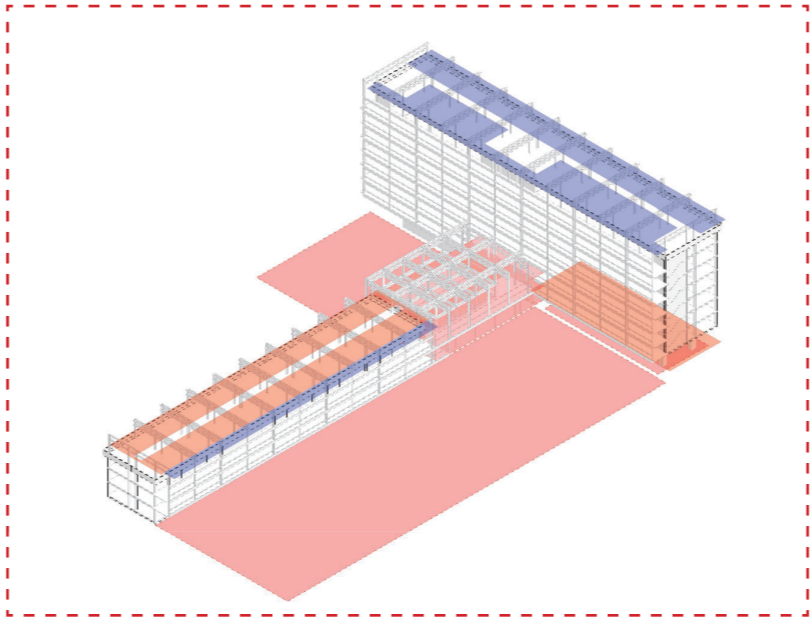


6. technology

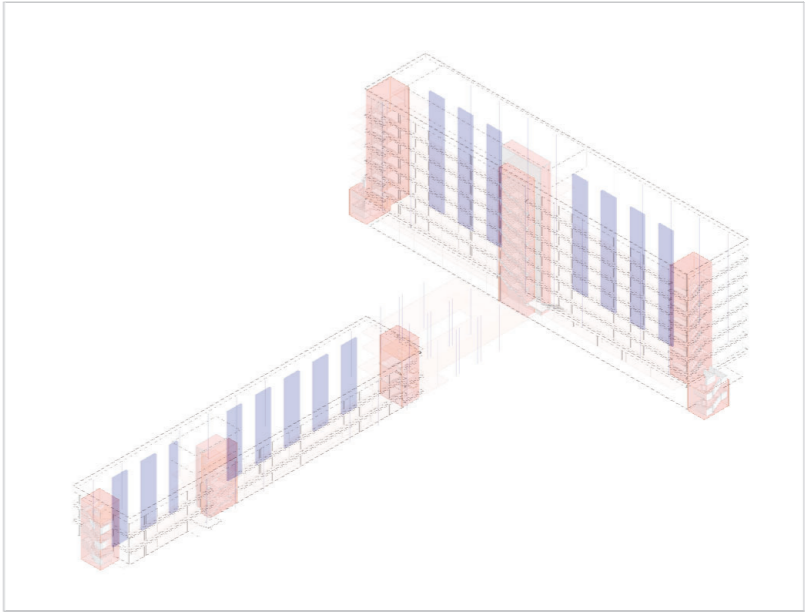
# CONCEPT



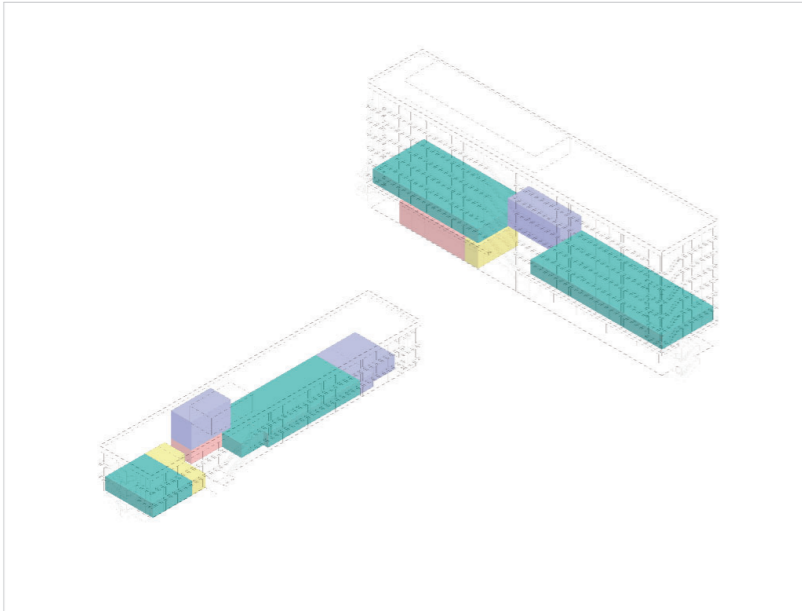
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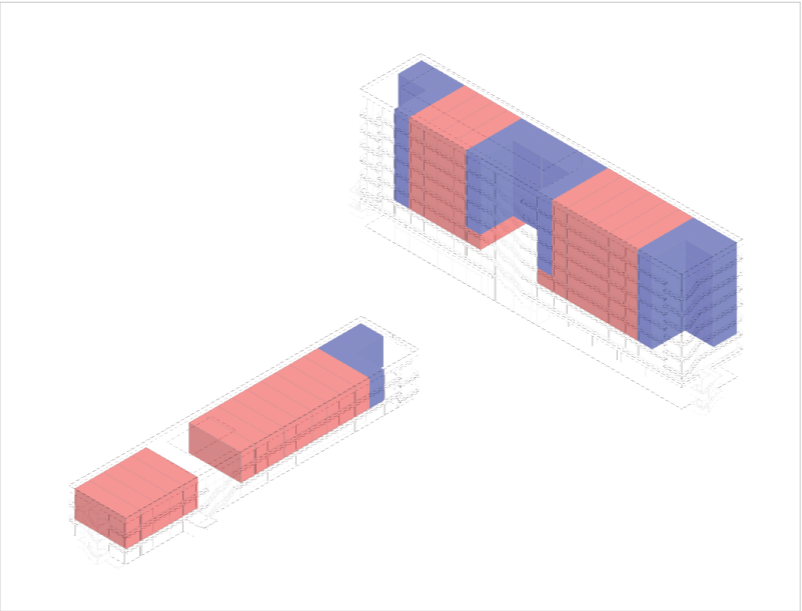
2. additional function  
courtyard & roof  
energy



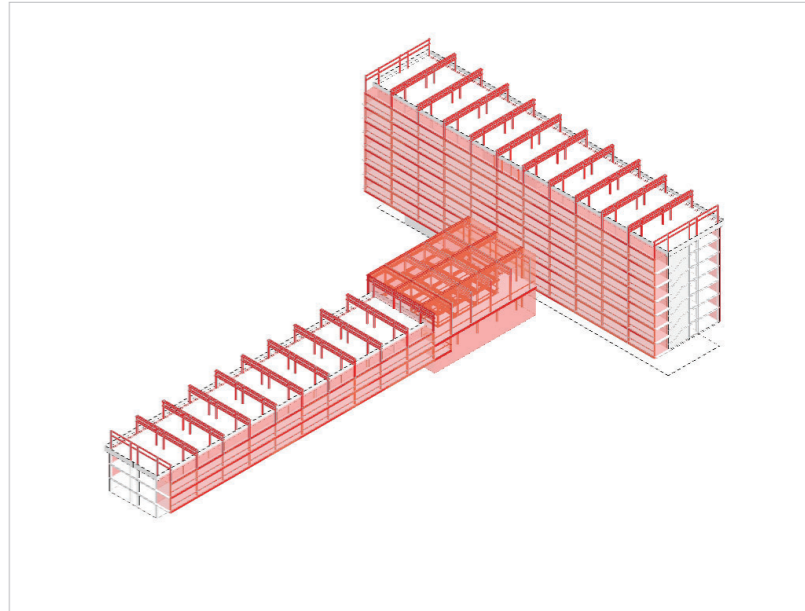
3. essentials  
access+shaft+duct+pipe



4. additional function-interior



5. housing unit

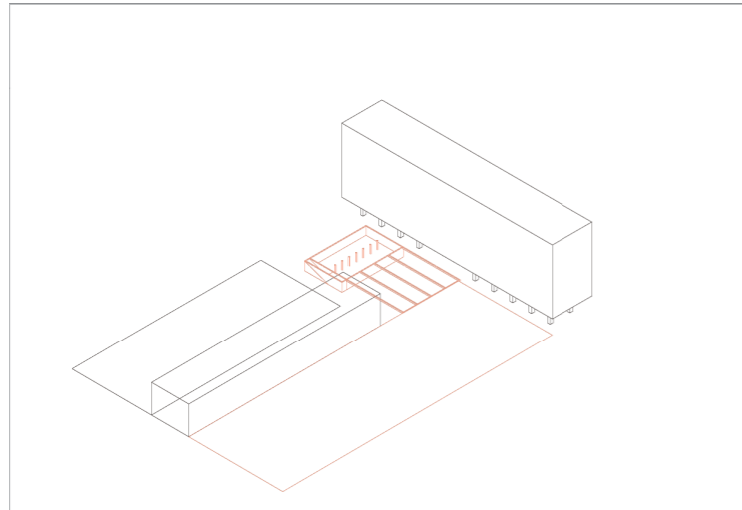


6. technology

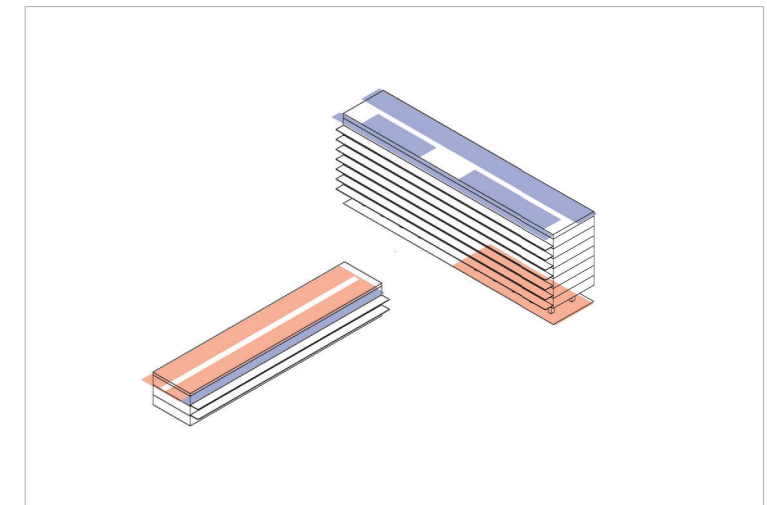
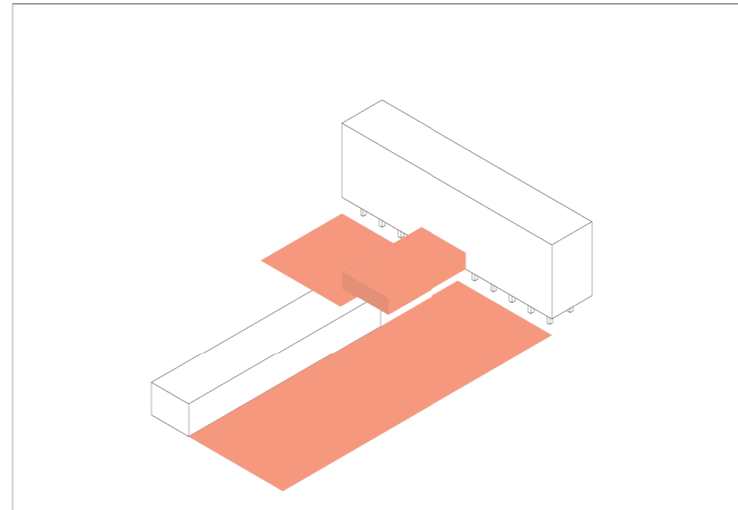


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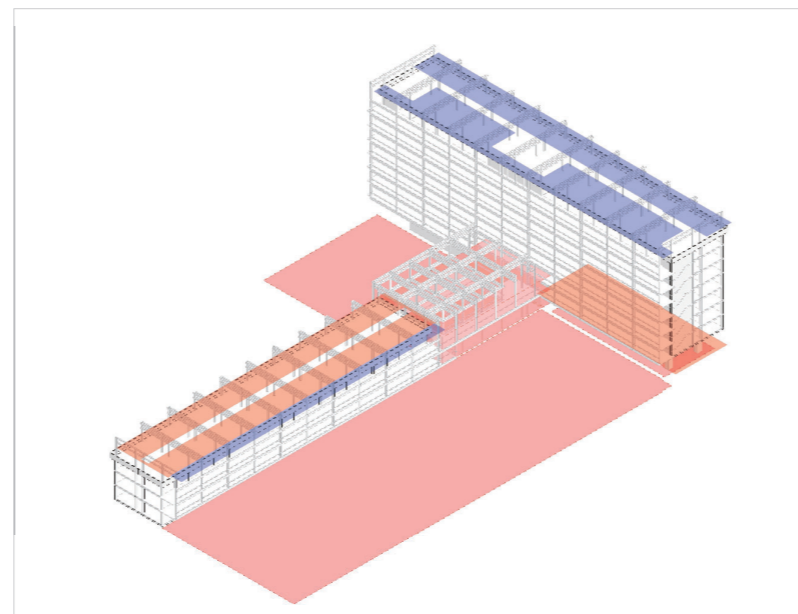
courtyard-rooftop



Connection  
Re-use parking-lot  
re-use foundation

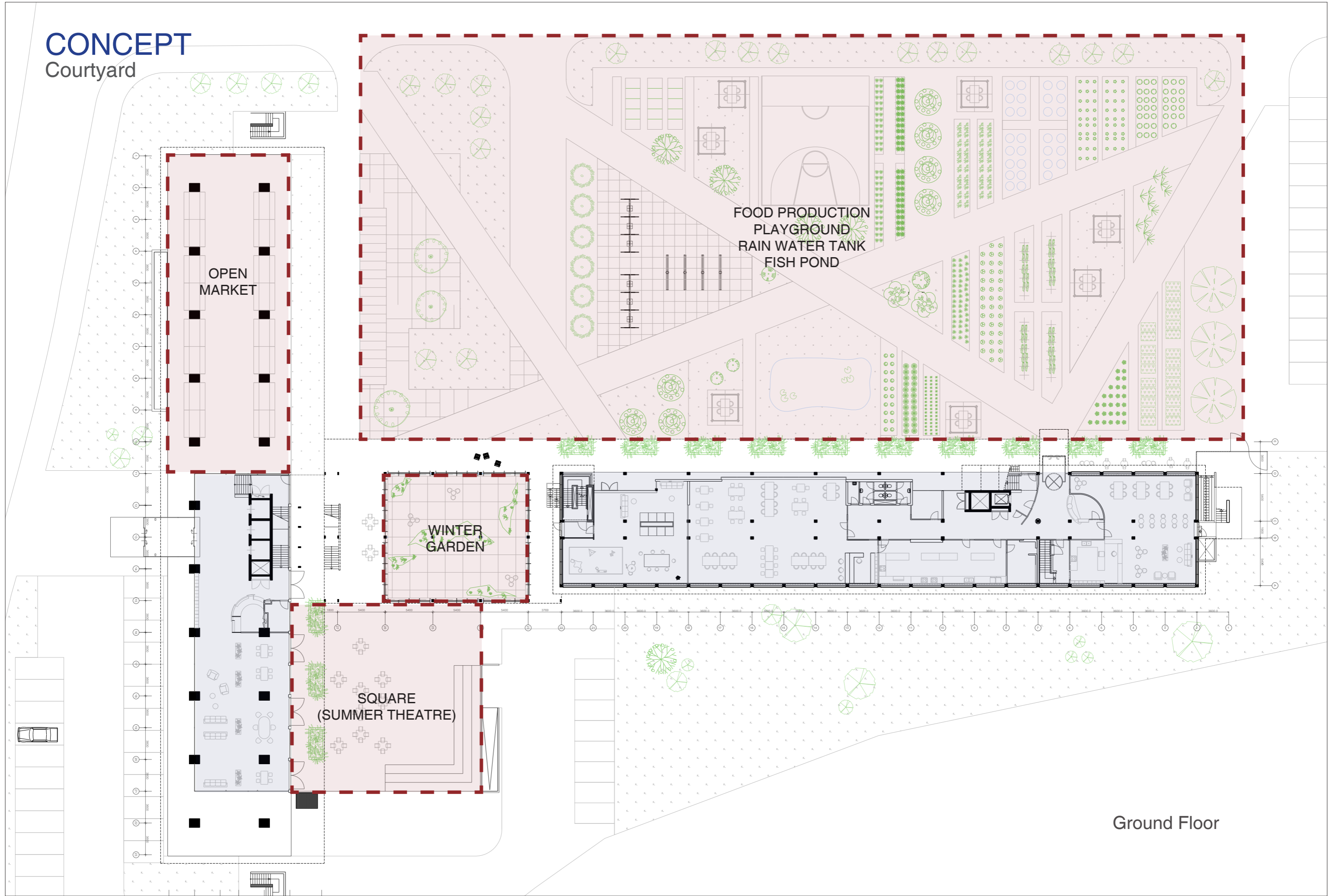


Roof usage



# CONCEPT

Courtyard



OPEN  
MARKET

FOOD PRODUCTION  
PLAYGROUND  
RAIN WATER TANK  
FISH POND

WINTER  
GARDEN

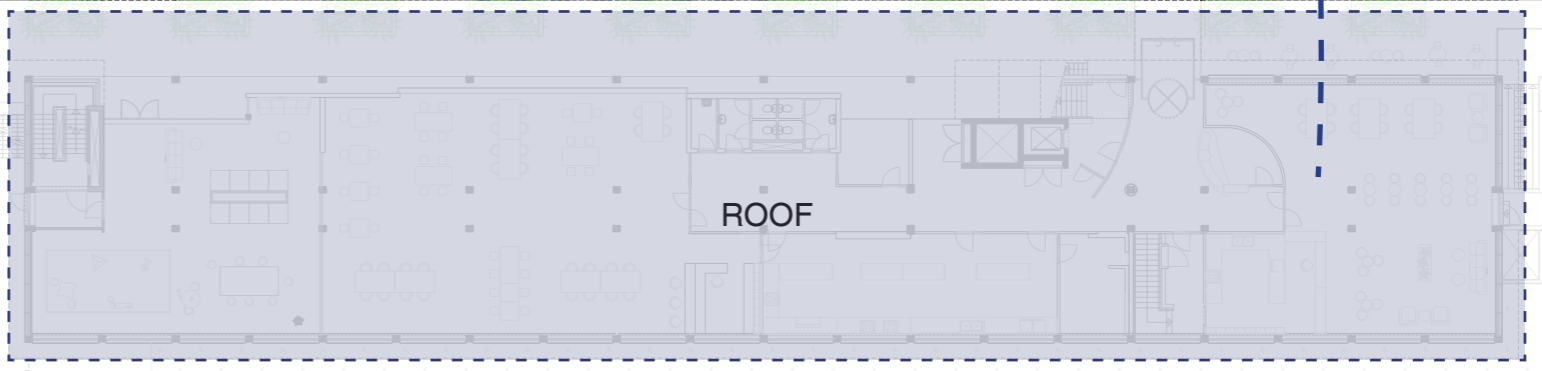
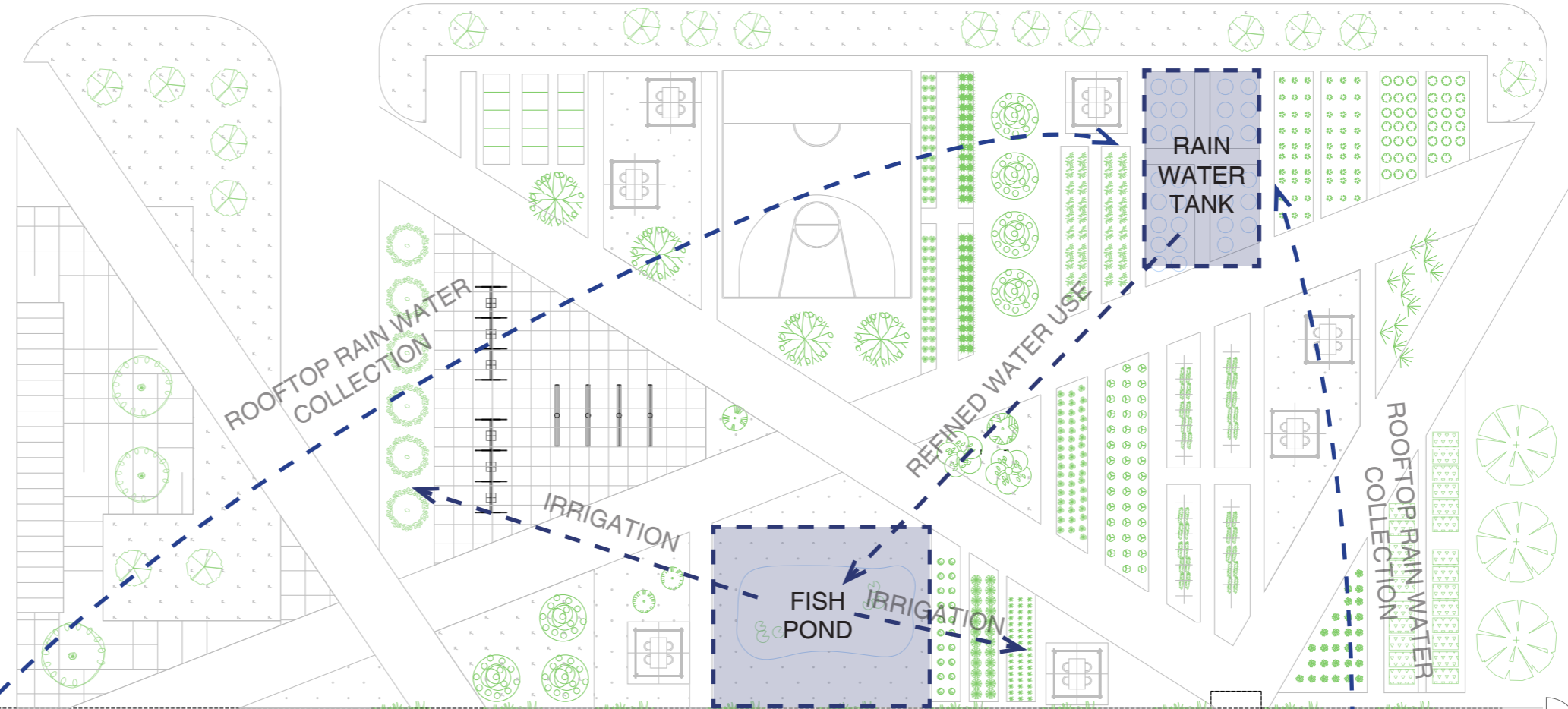
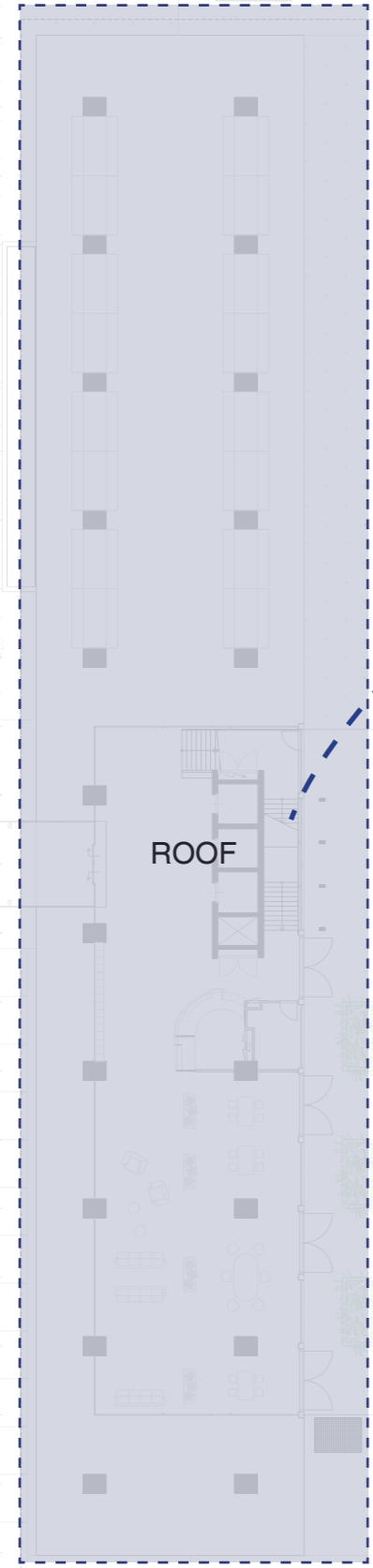
SQUARE  
(SUMMER THEATRE)

Ground Floor



# CONCEPT

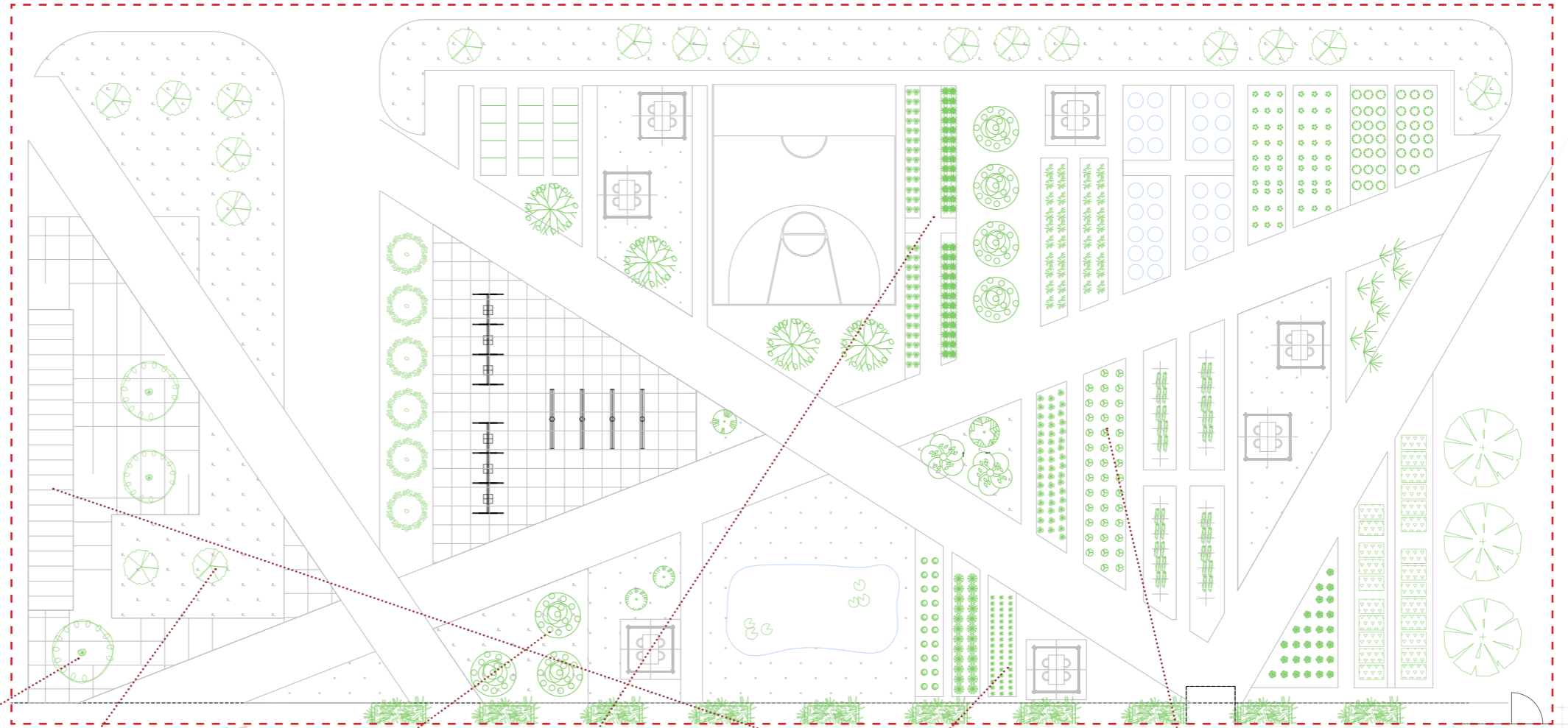
Food forest  
aqua ponic system  
rain water collection



AQUA-PONIC SYSTEM  
Ground Floor

# CONCEPT

Food forest  
aqua ponic system  
rain water collection



7. canopy



6. under-story



5. shrub



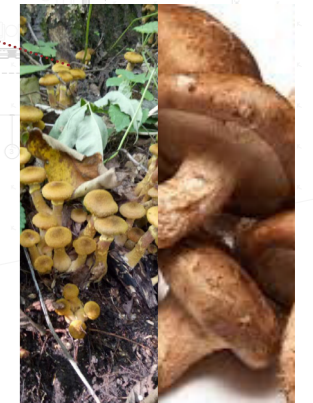
4. ground cover



3. rhizosphere



2. vertical



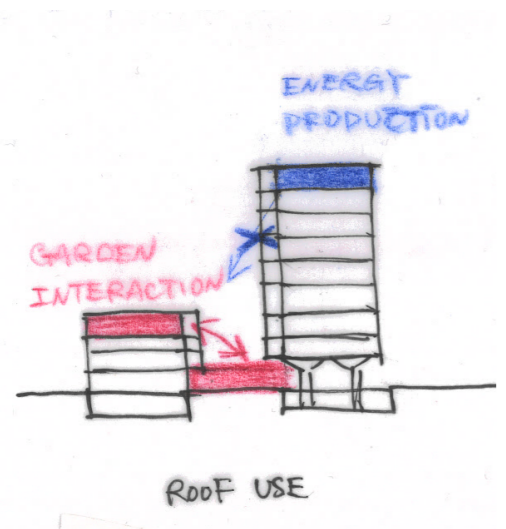
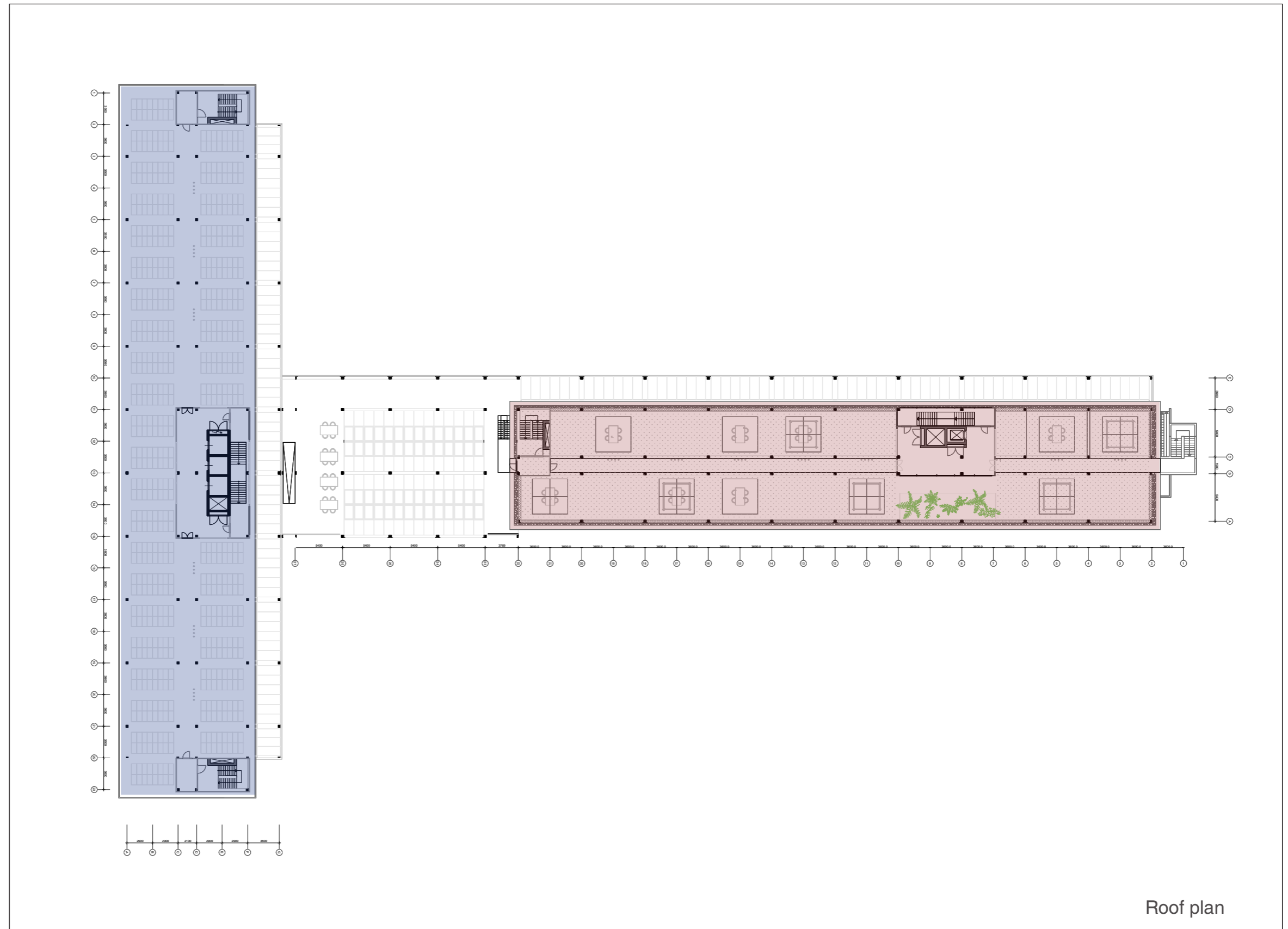
1. mycelial

**FOOD FOREST  
SYSTEM**  
Ground Floor



# CONCEPT

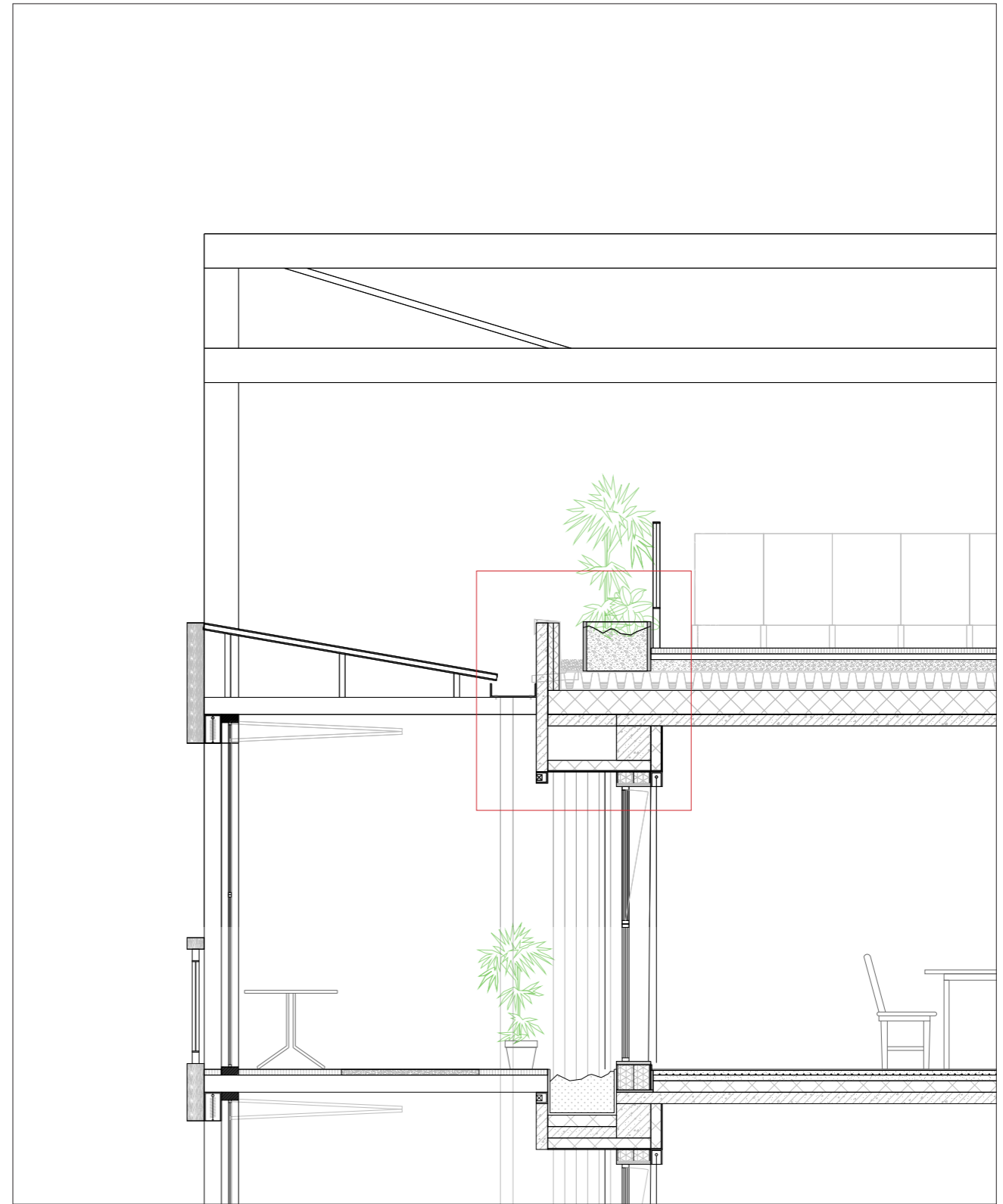
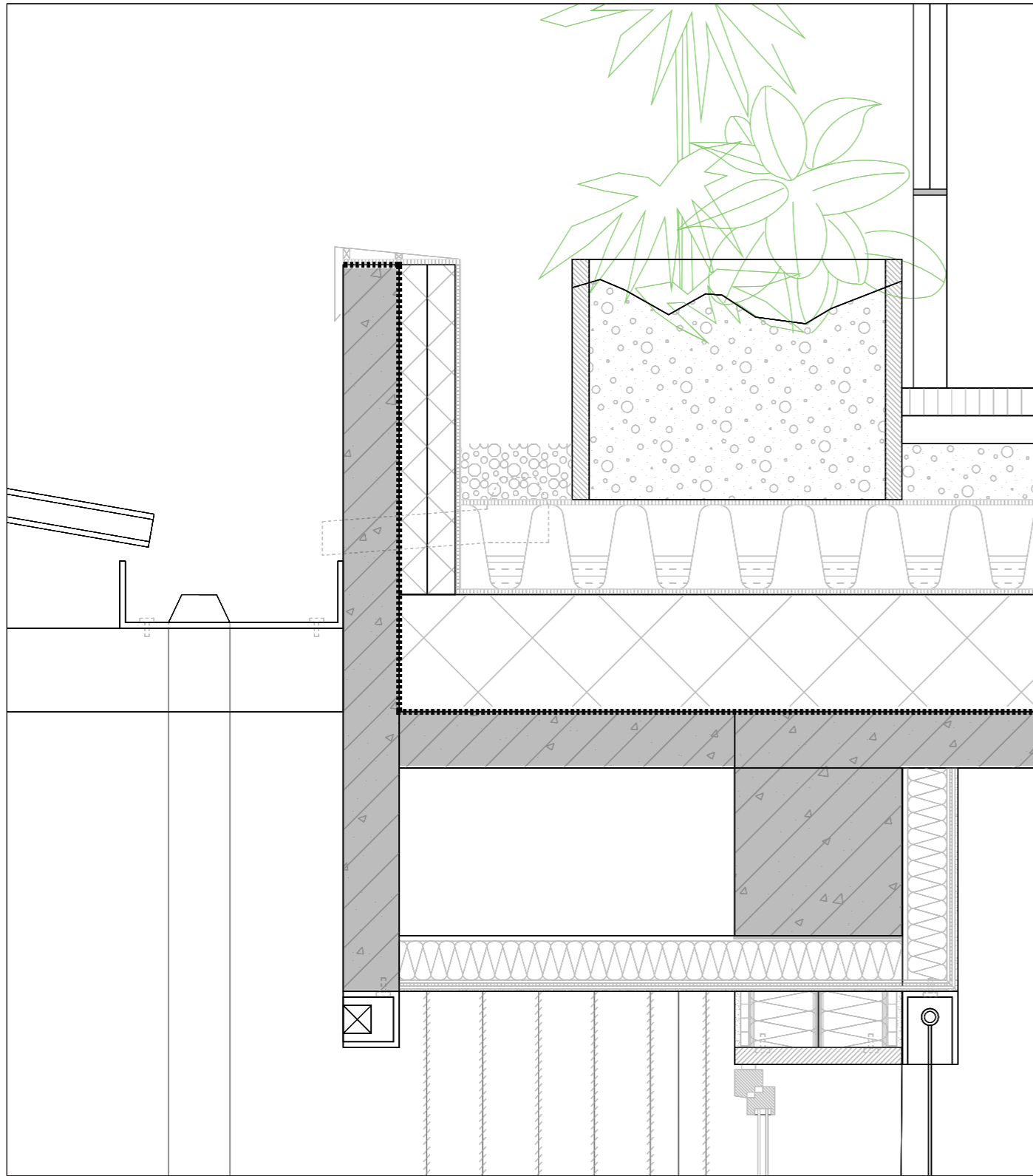
rooftop  
solar energy  
roof garden



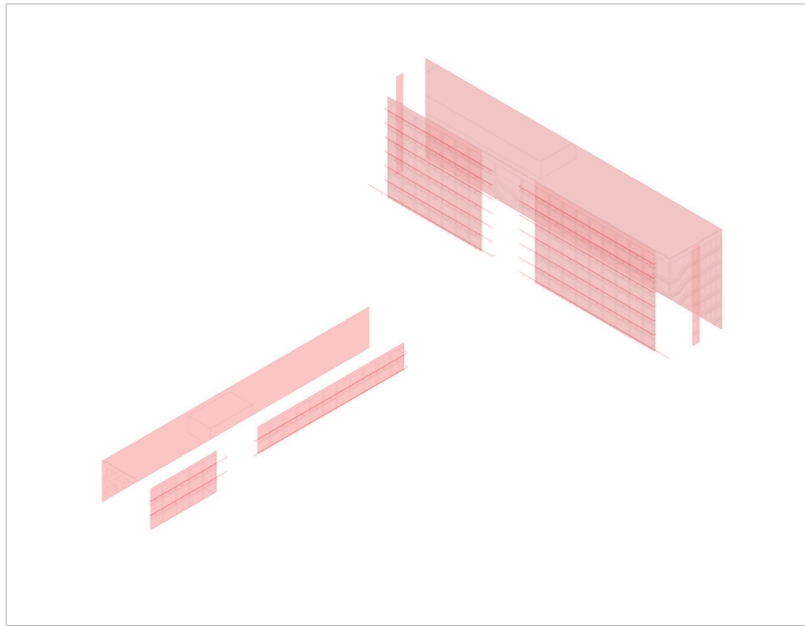
Roof plan

# CONCEPT

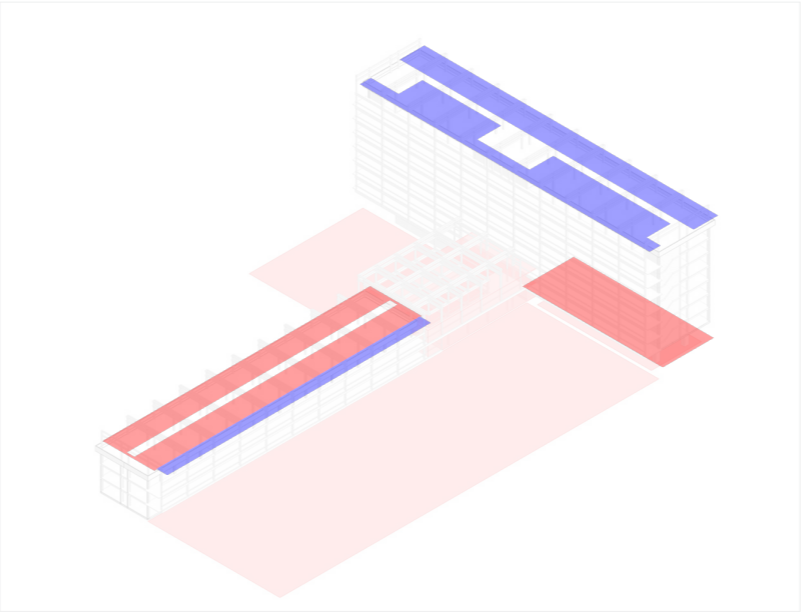
roof garden



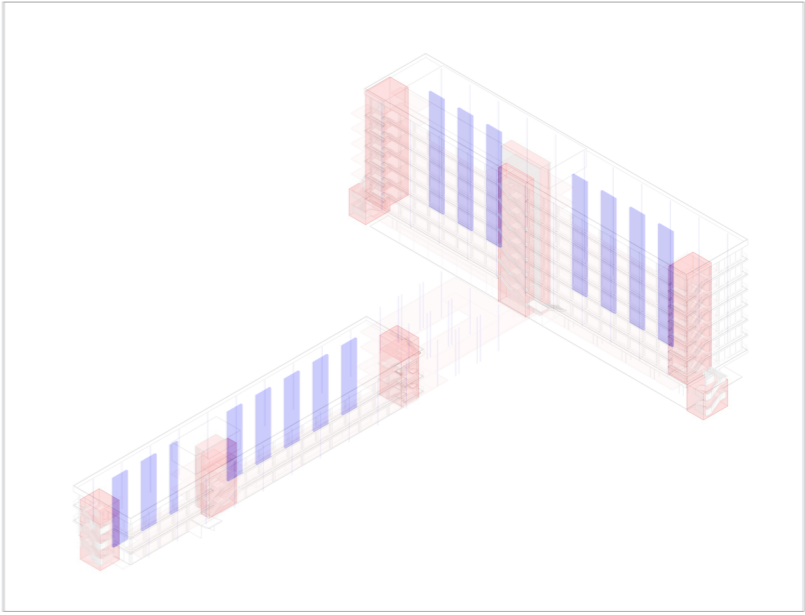
# CONCEPT



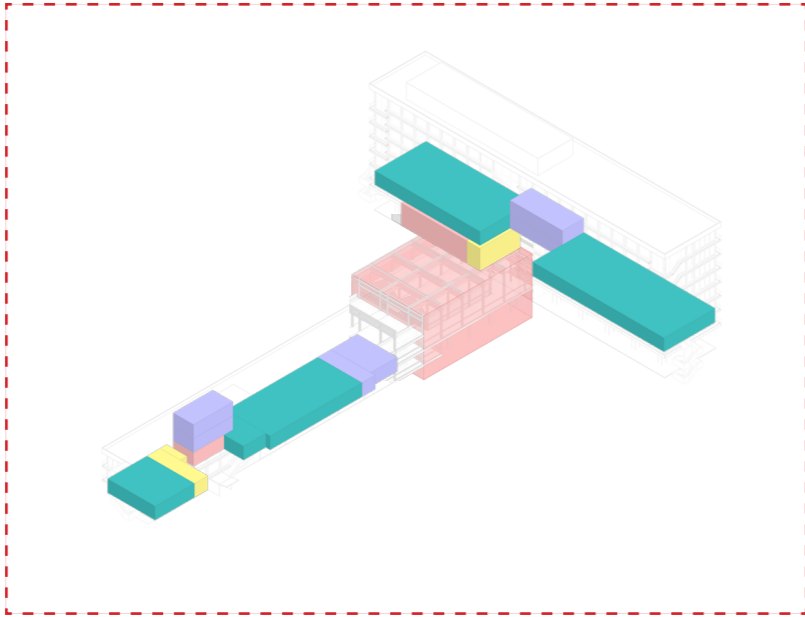
1. remove minimal



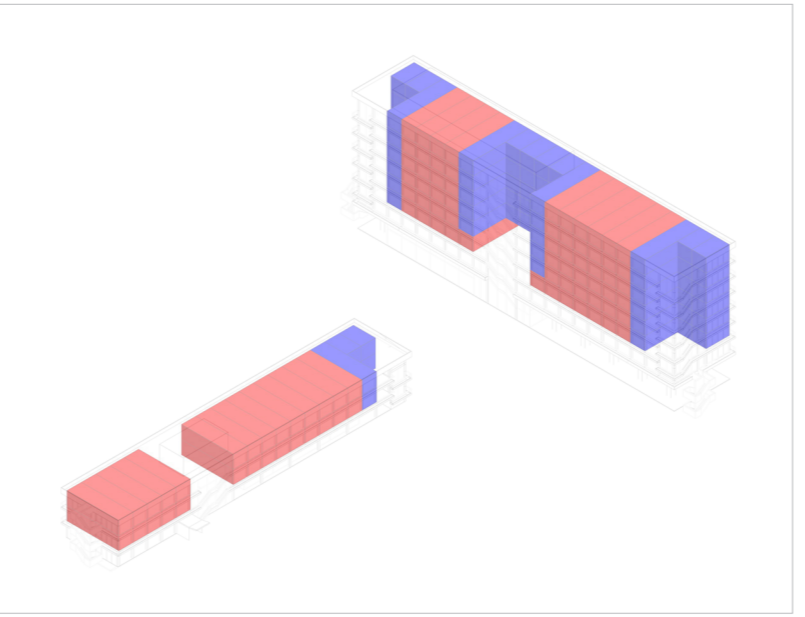
2. additional function- courtyard energy



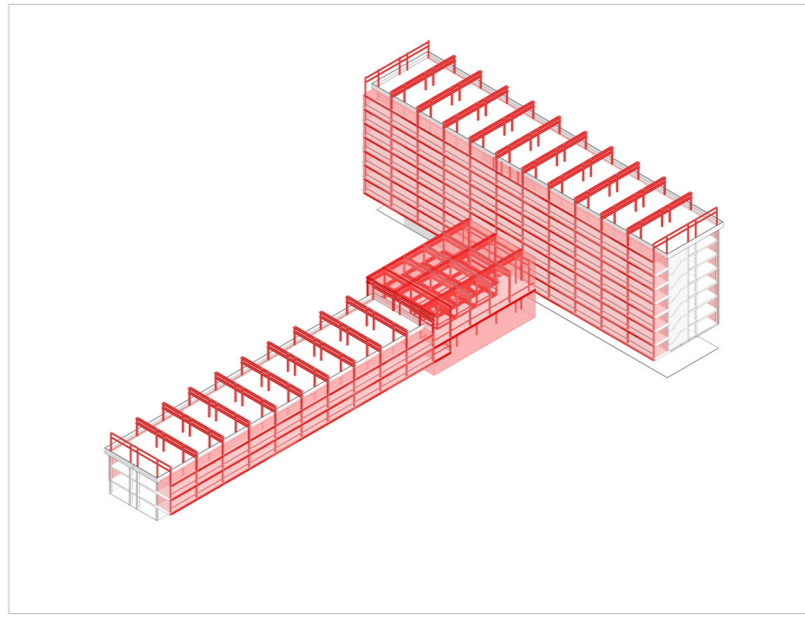
3. essentials  
access+shaft+duct+pipe



4. additional function-interior



5. housing unit

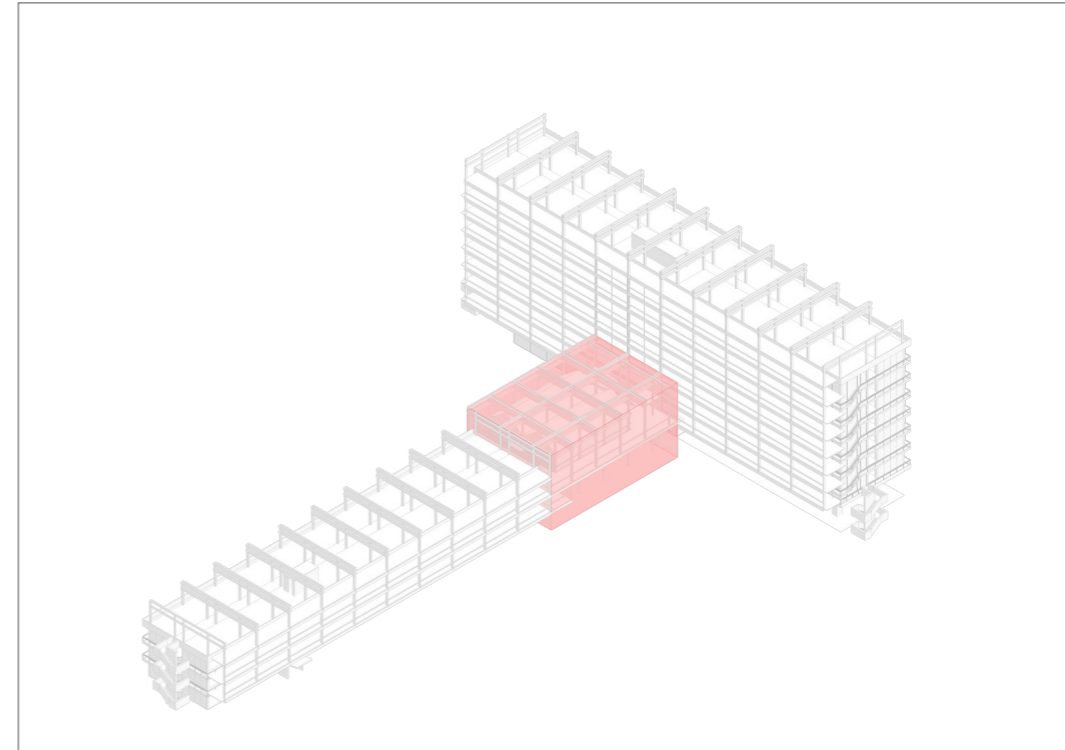
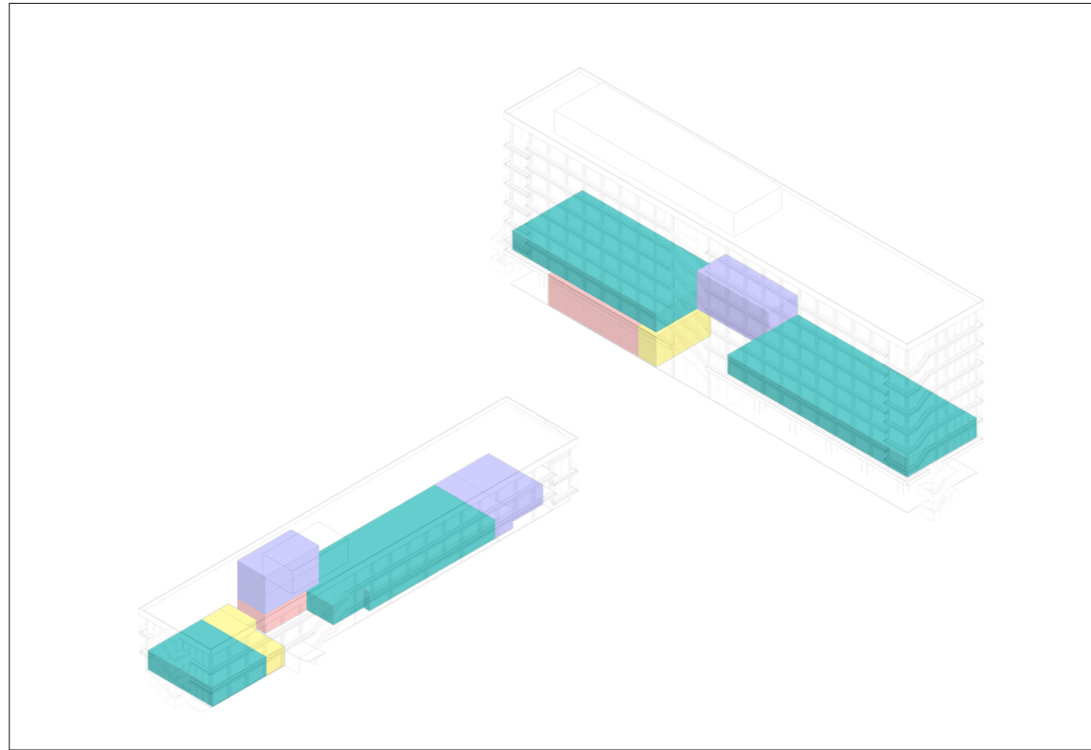


6. technology



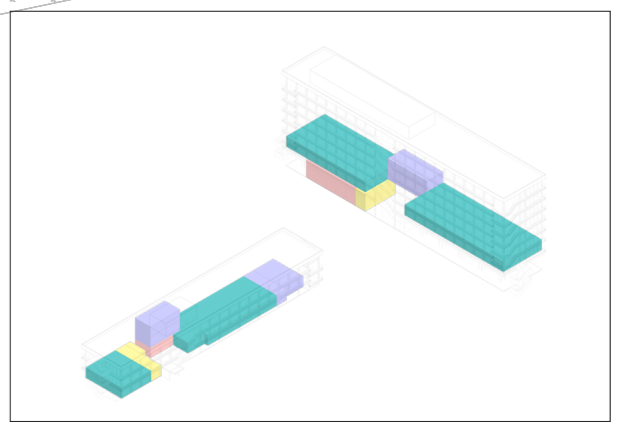
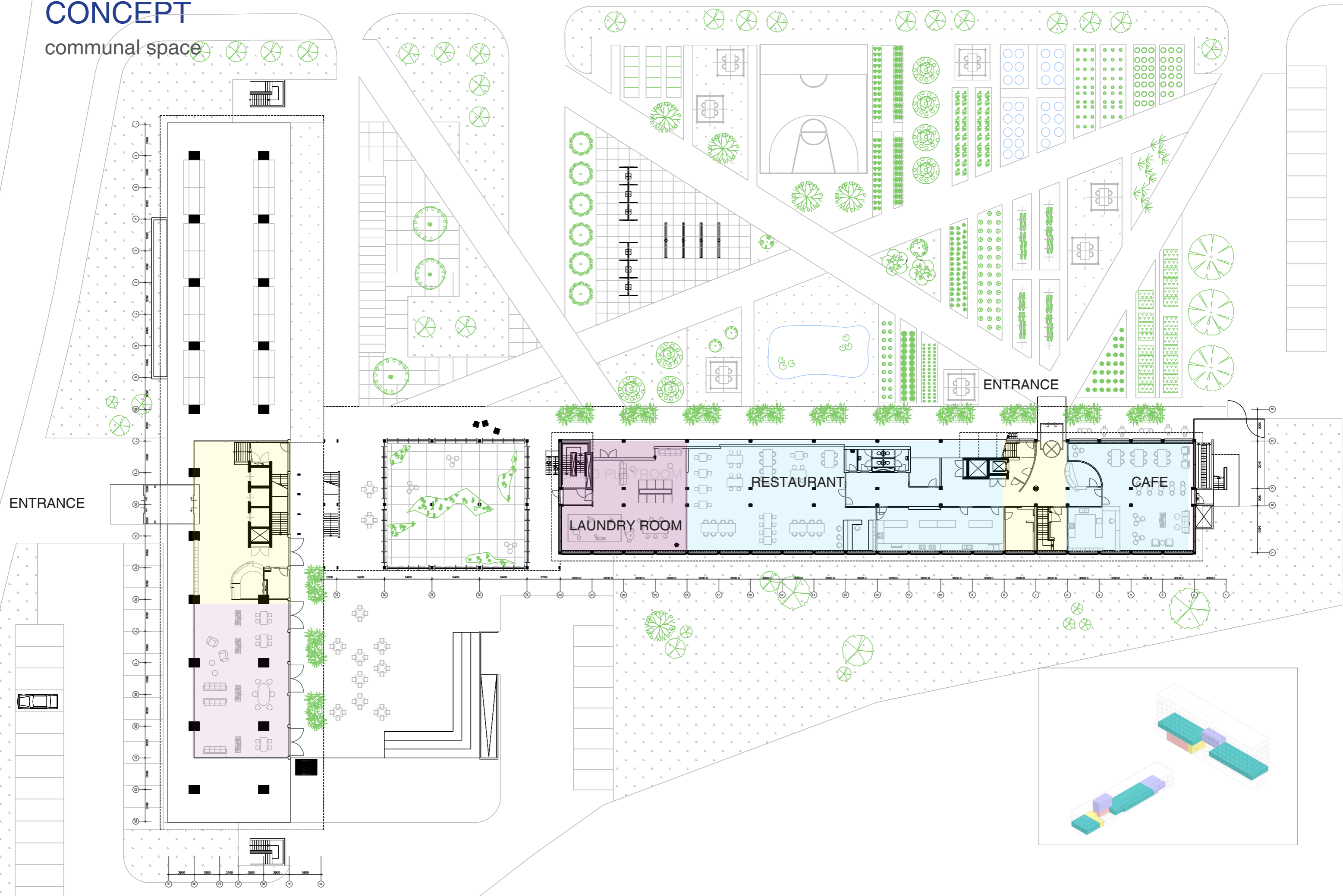
# CONCEPT

communal space



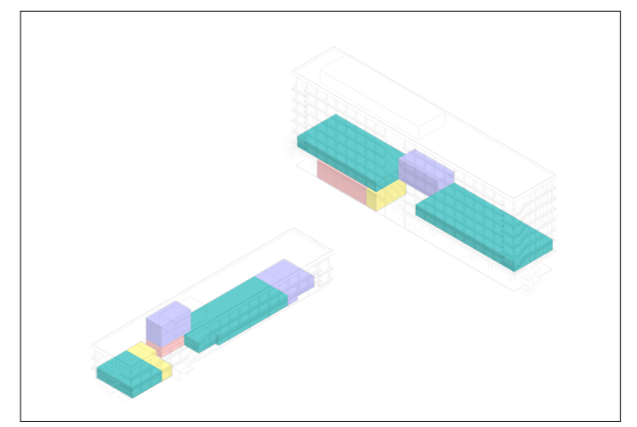
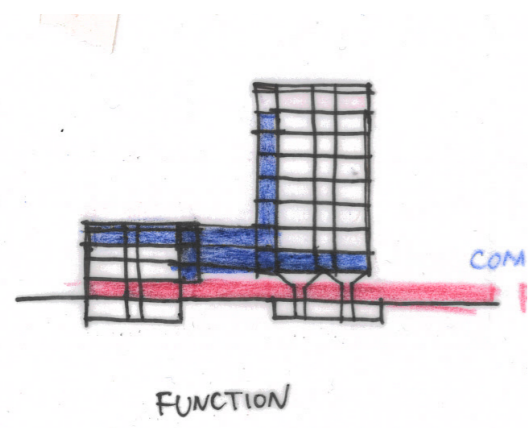
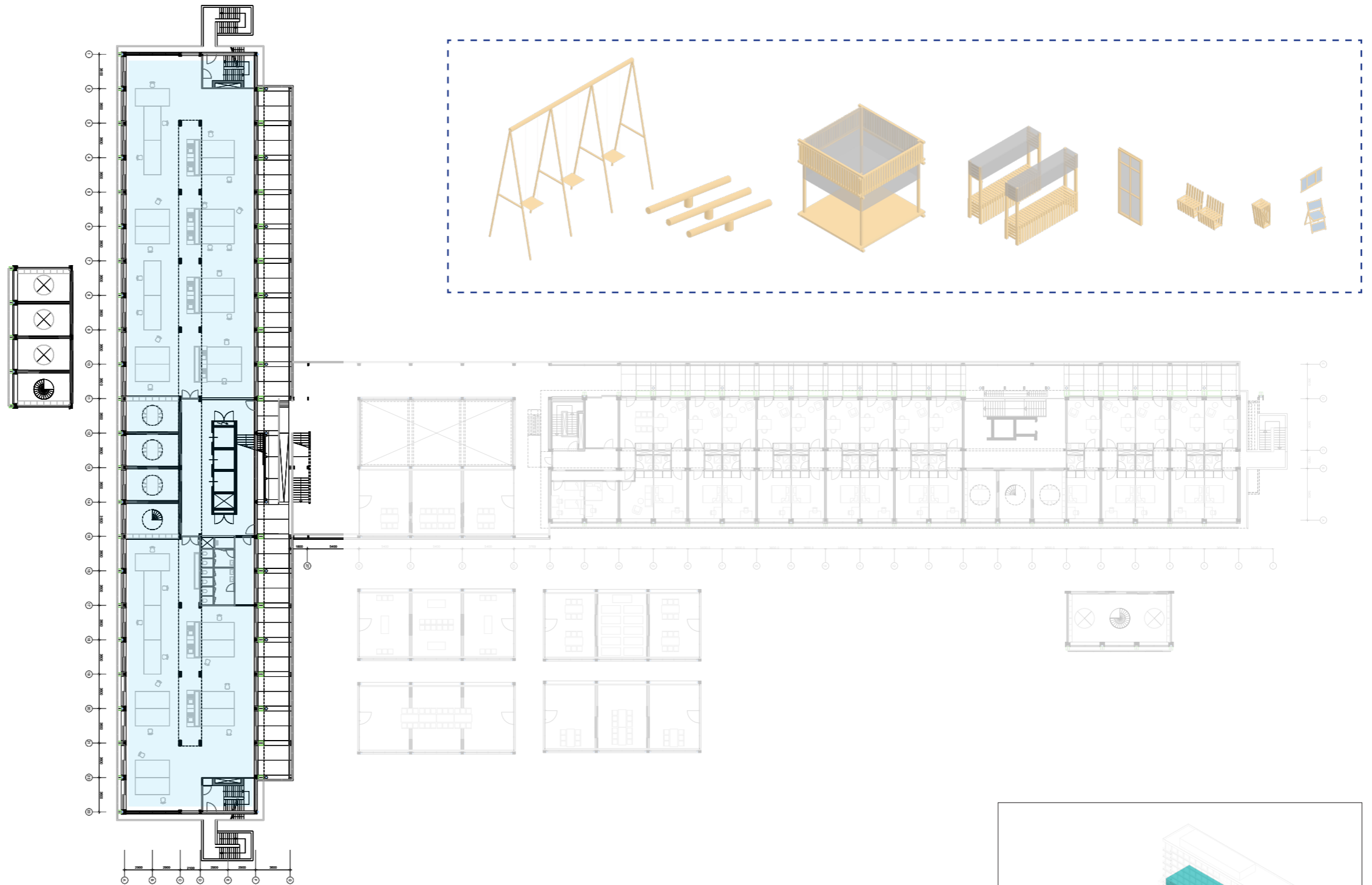
# CONCEPT

communal space



# CONCEPT

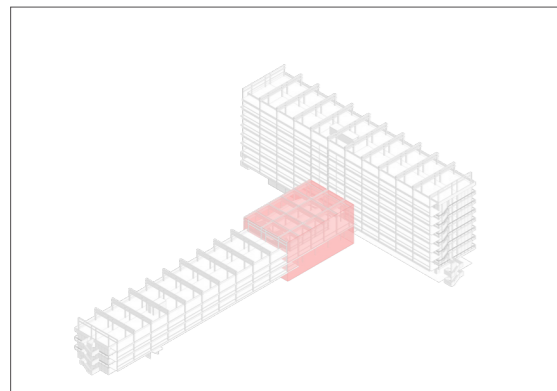
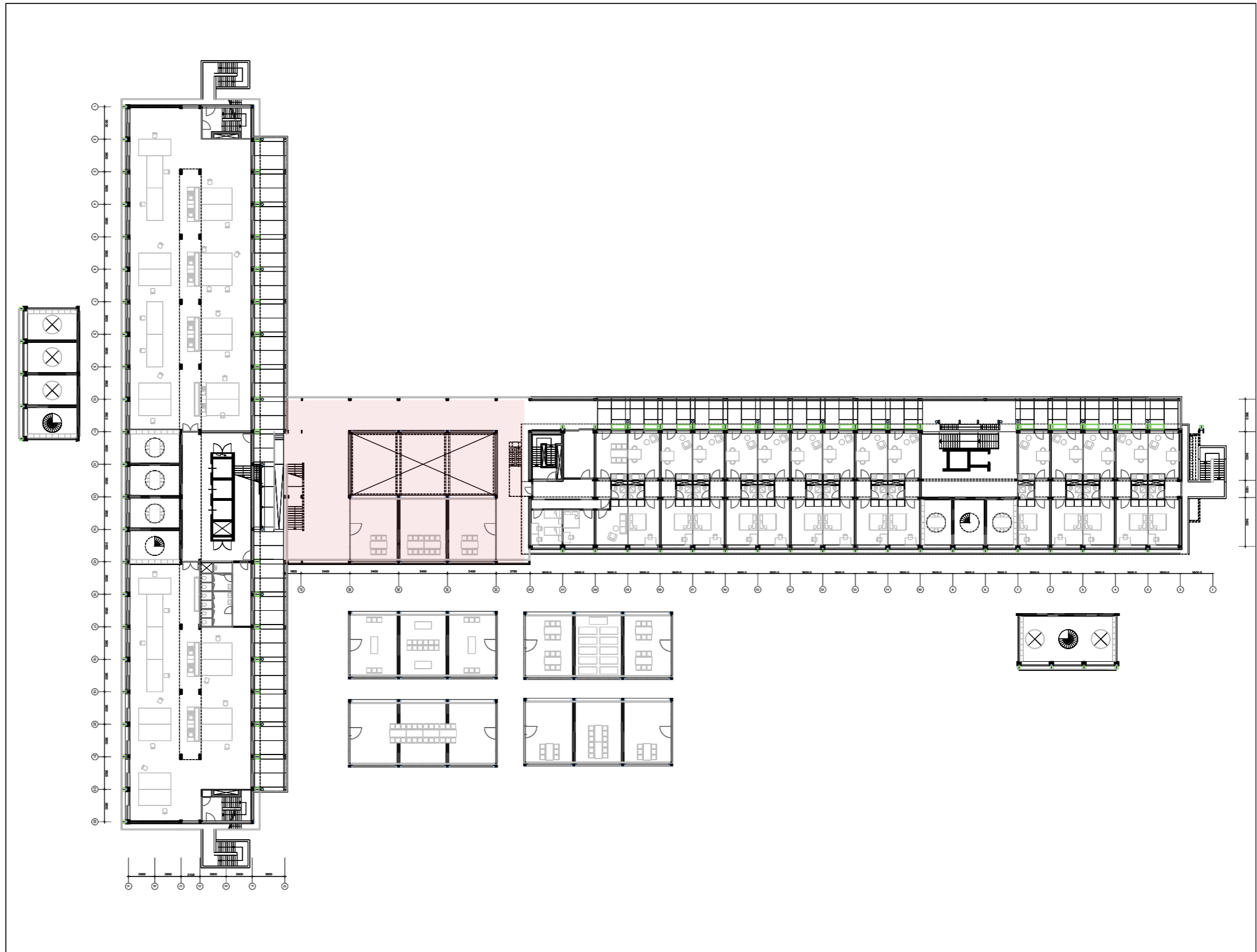
workshop



# COMMUNAL SPACE

connection

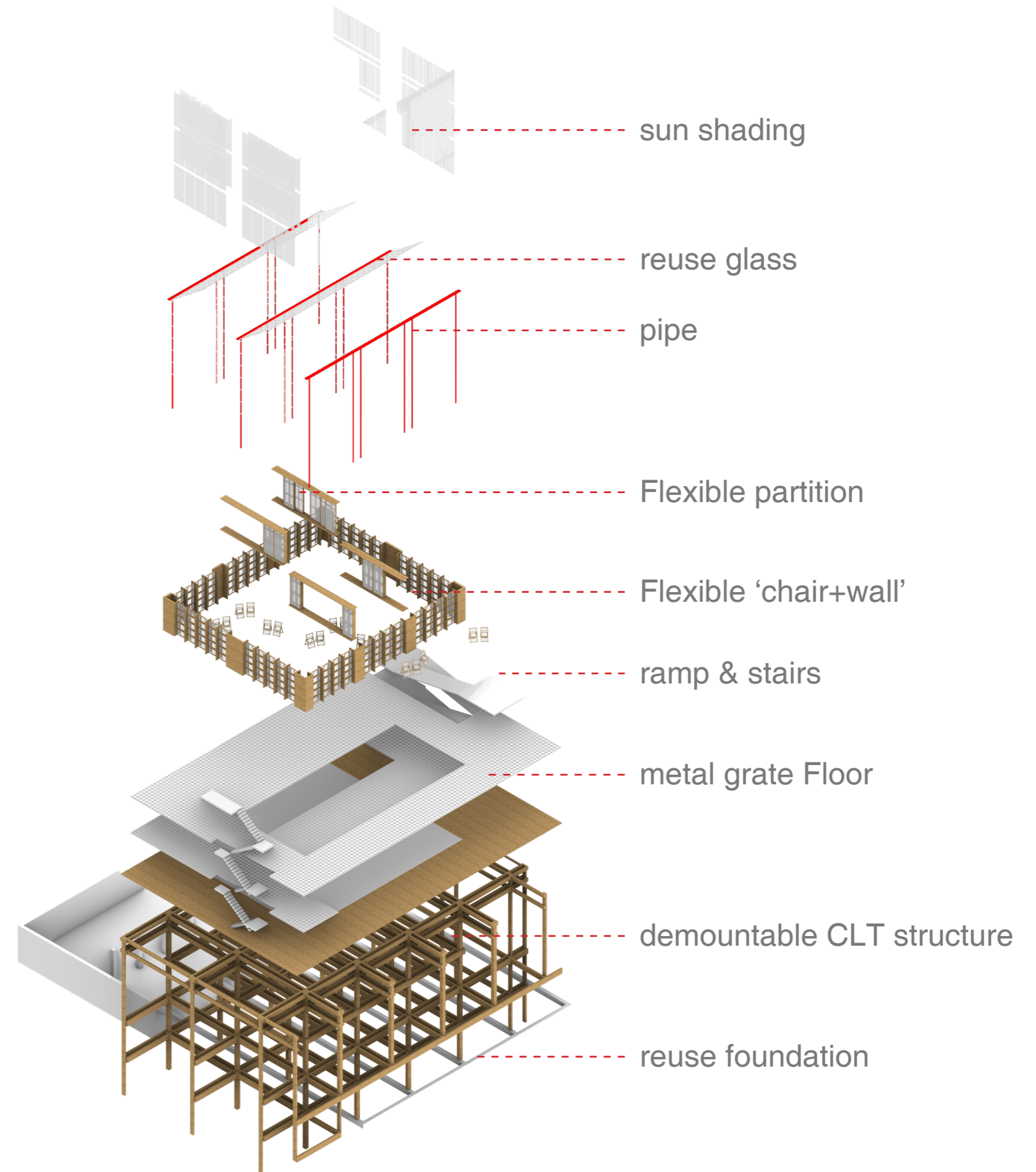
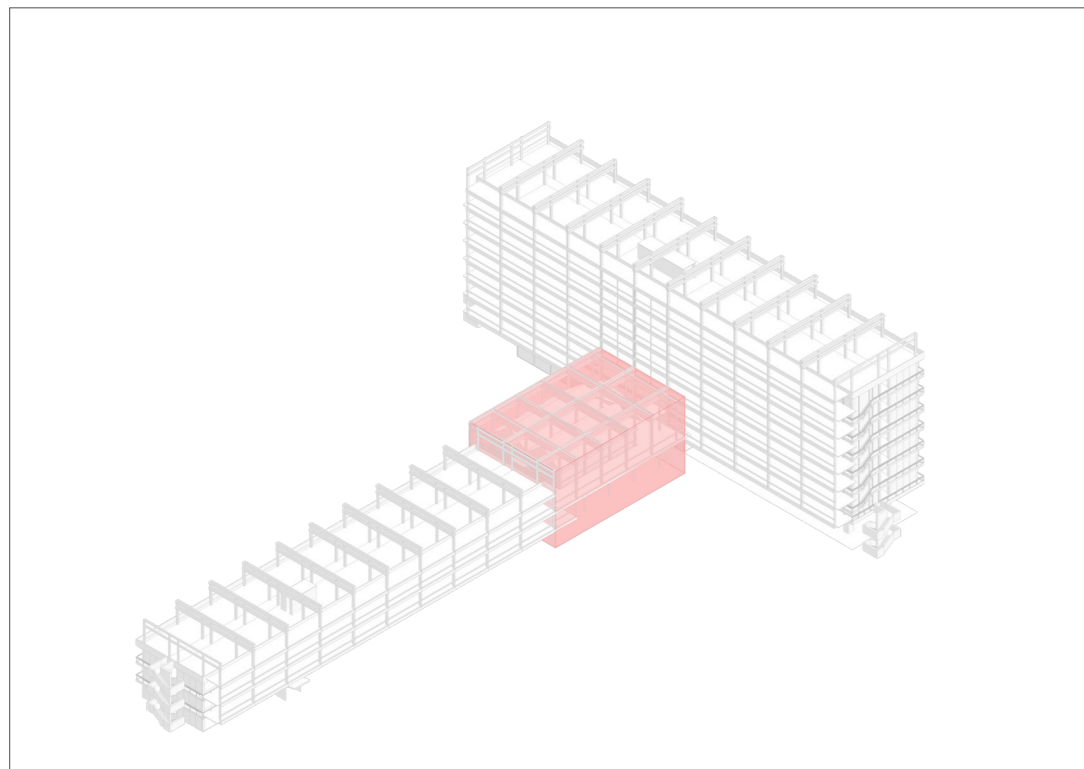
winter garden  
summer party





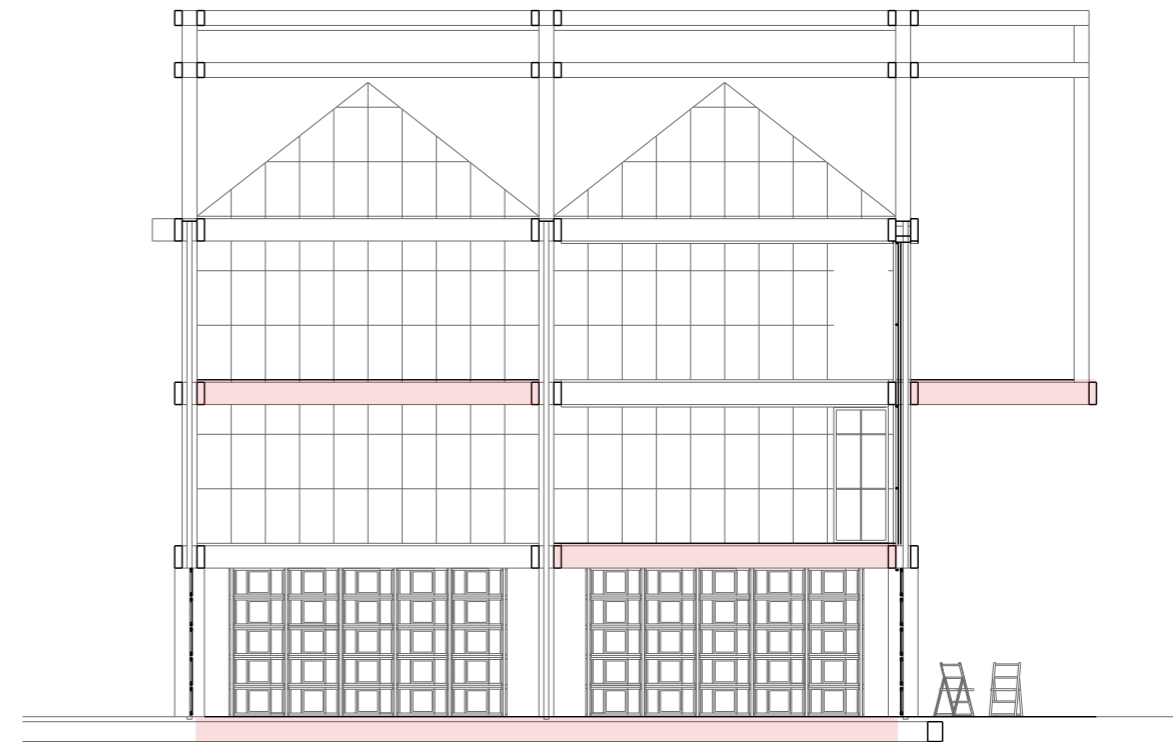
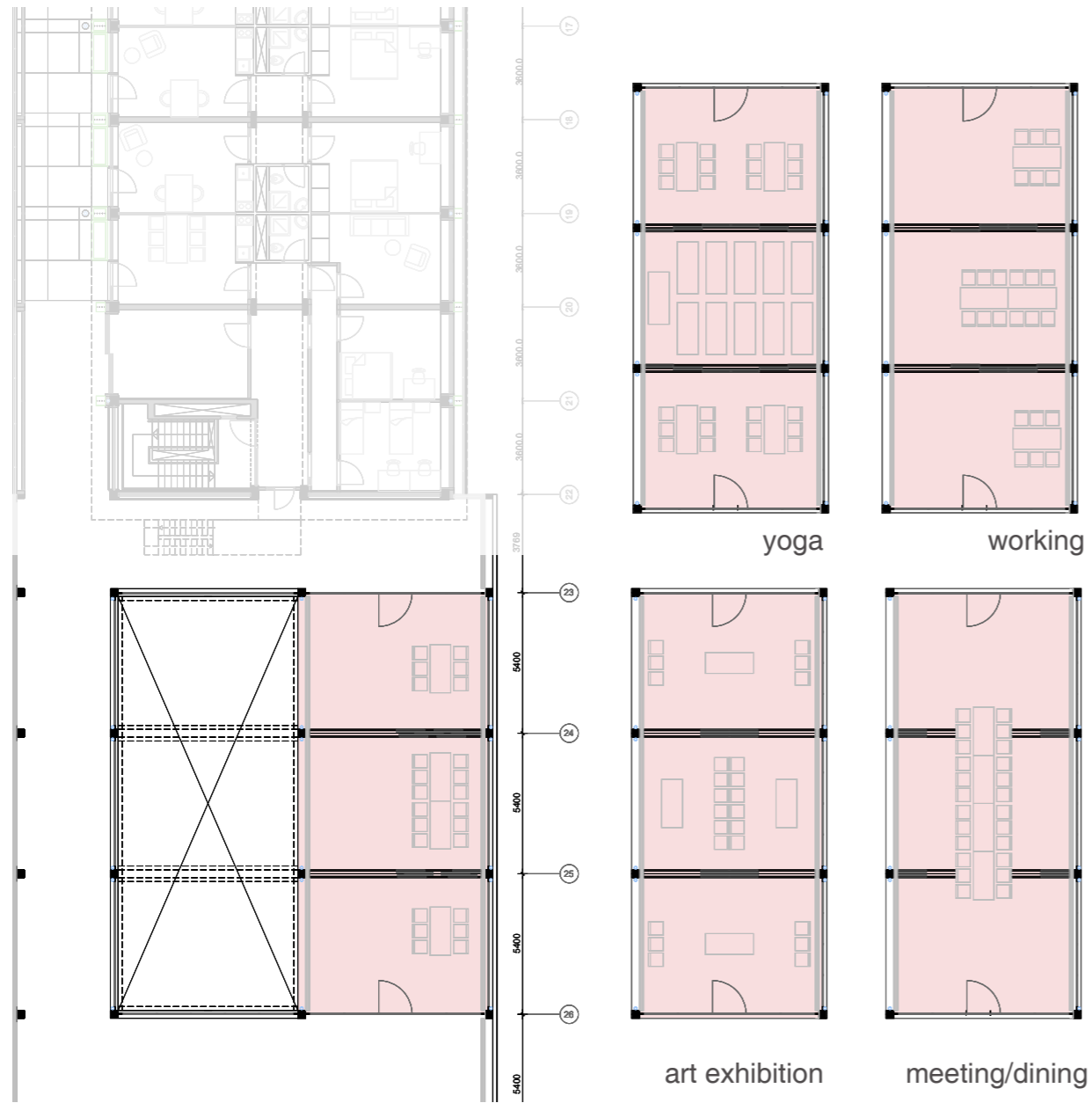
# COMMUNAL SPACE

connection-Flexible



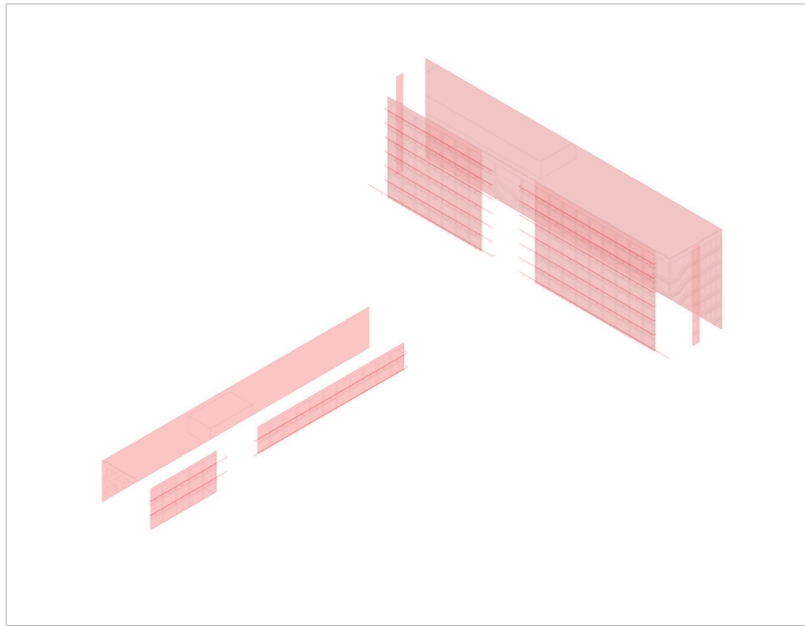
# COMMUNAL SPACE

connection-Flexible

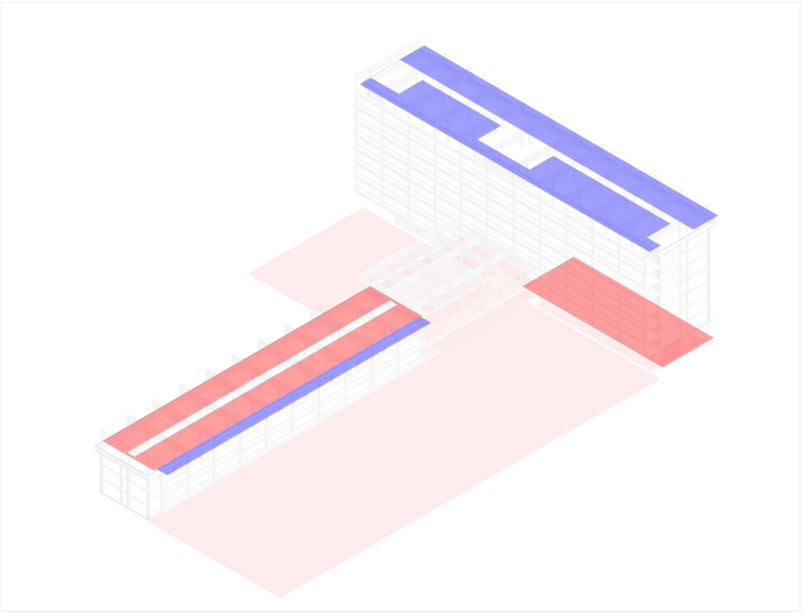


Section

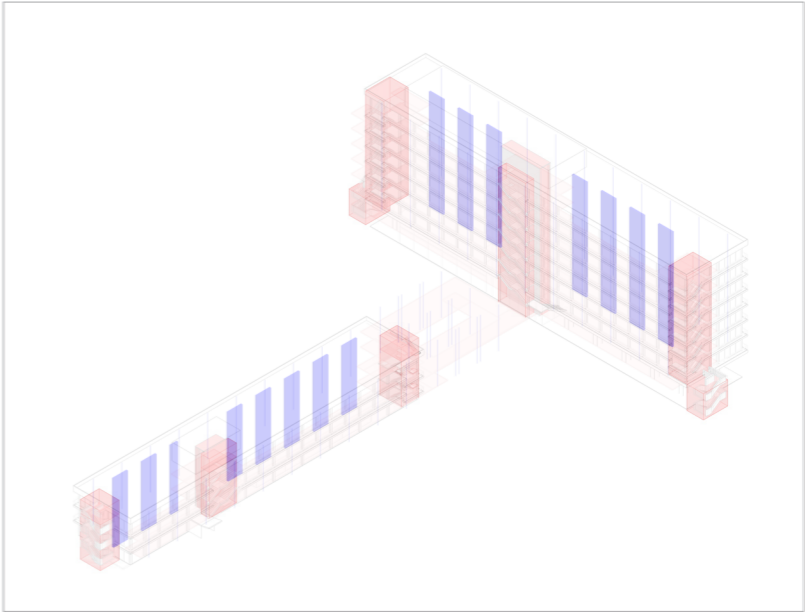
# CONCEPT



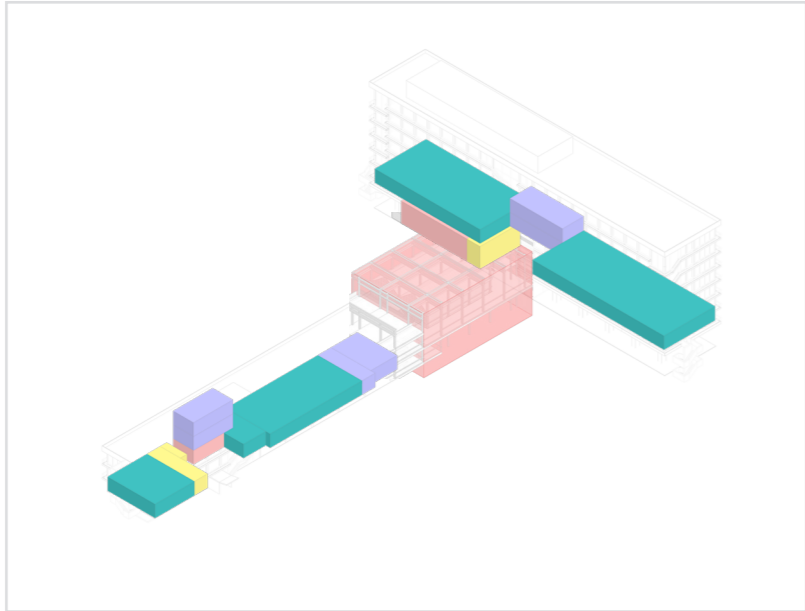
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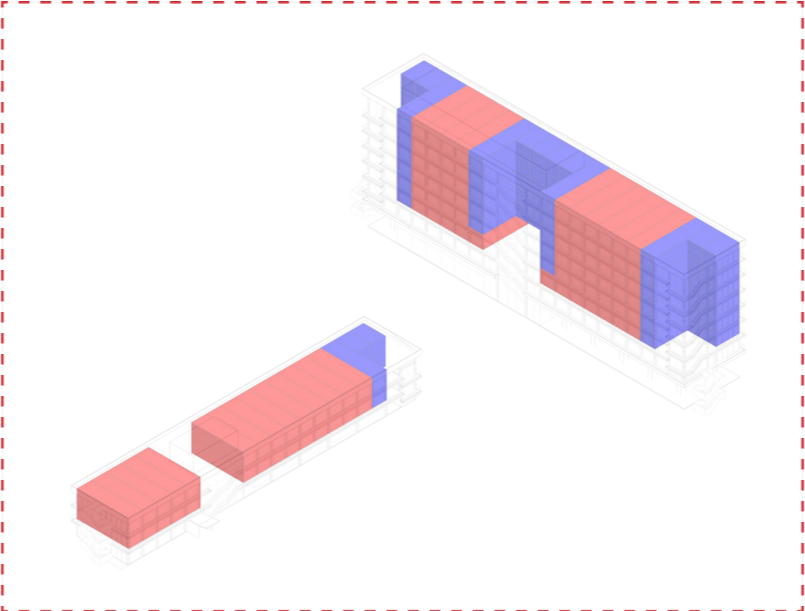
2. additional function- courtyard energy



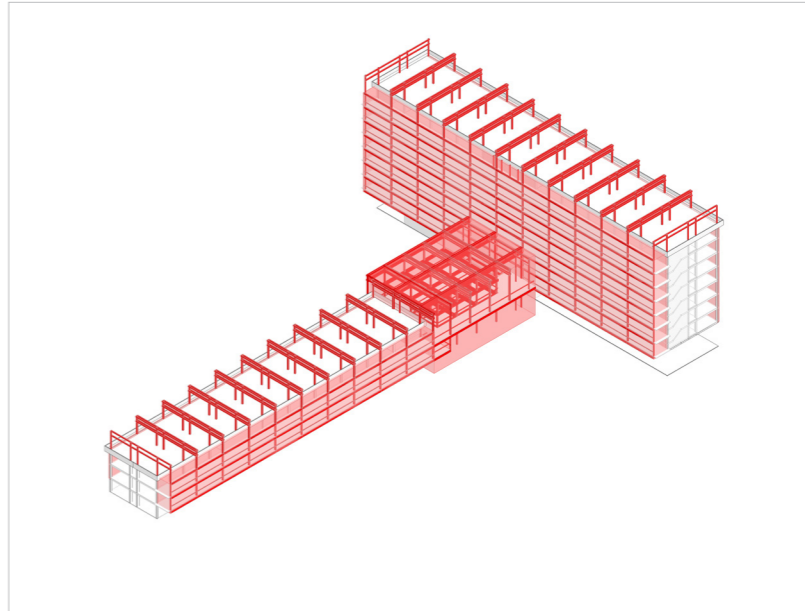
3. essentials  
access+shaft+duct+pipe



4. additional function-interior



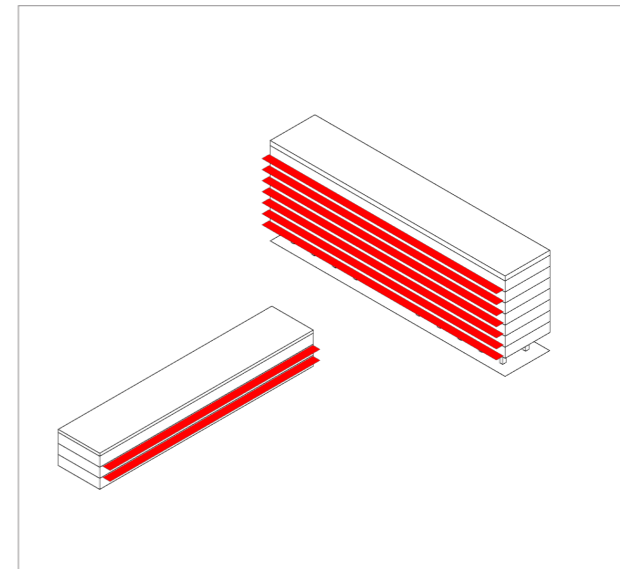
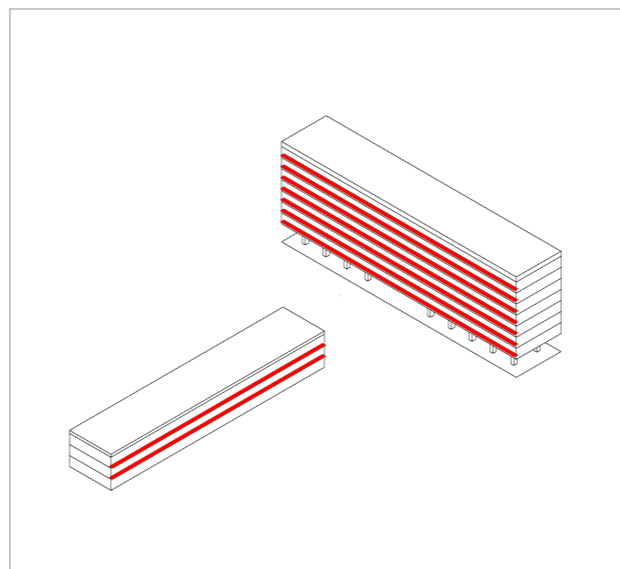
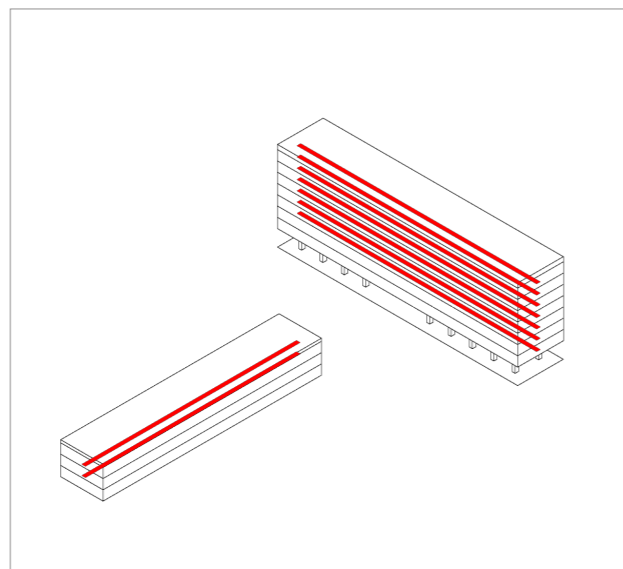
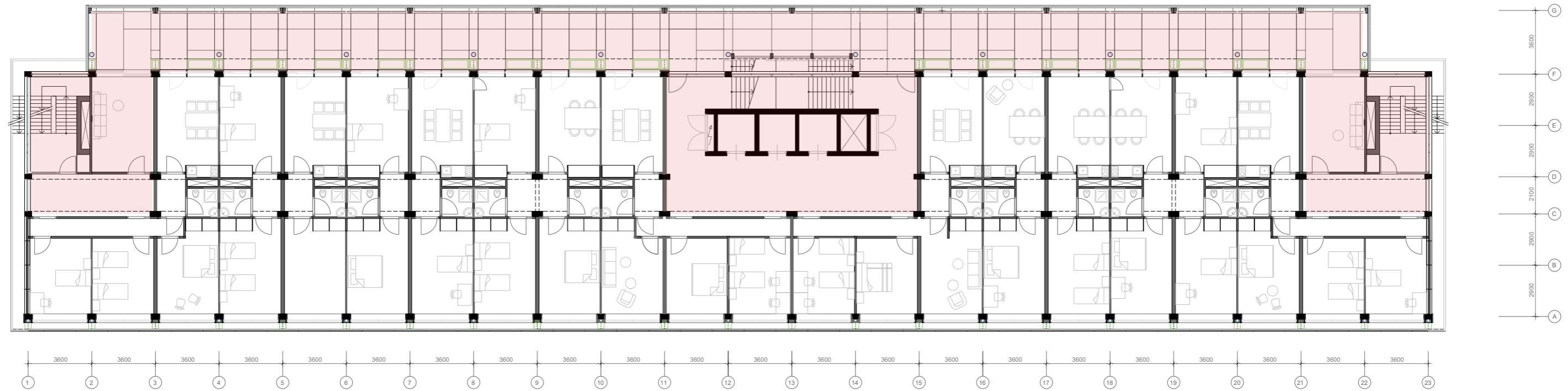
5. housing unit



6. technology

# CONCEPT

housing unit- gallery





# CONCEPT

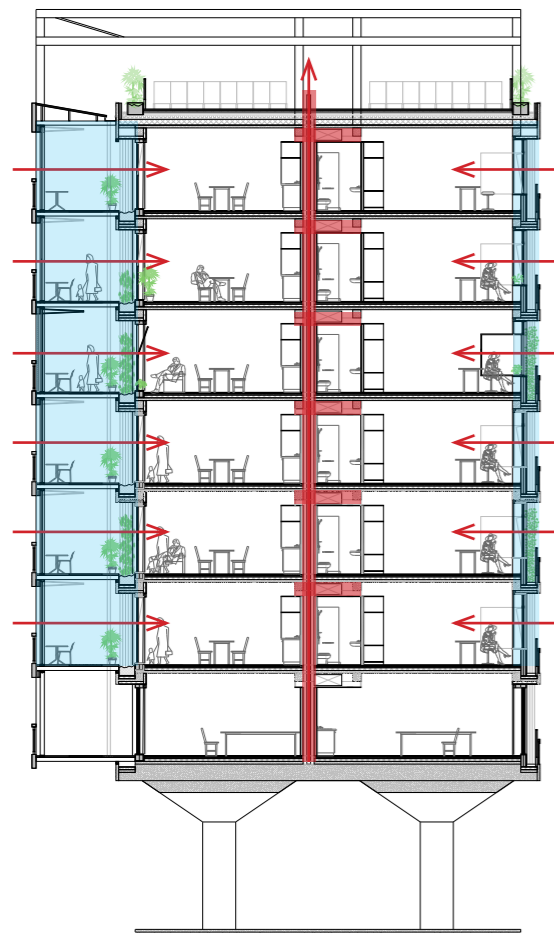
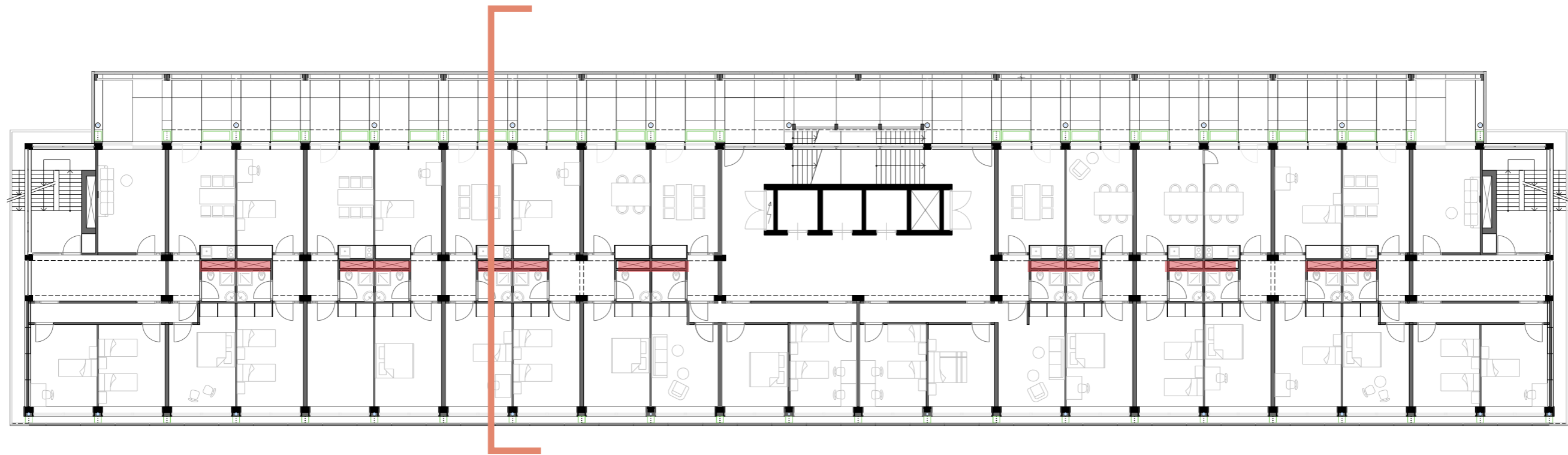
housing unit- gallery



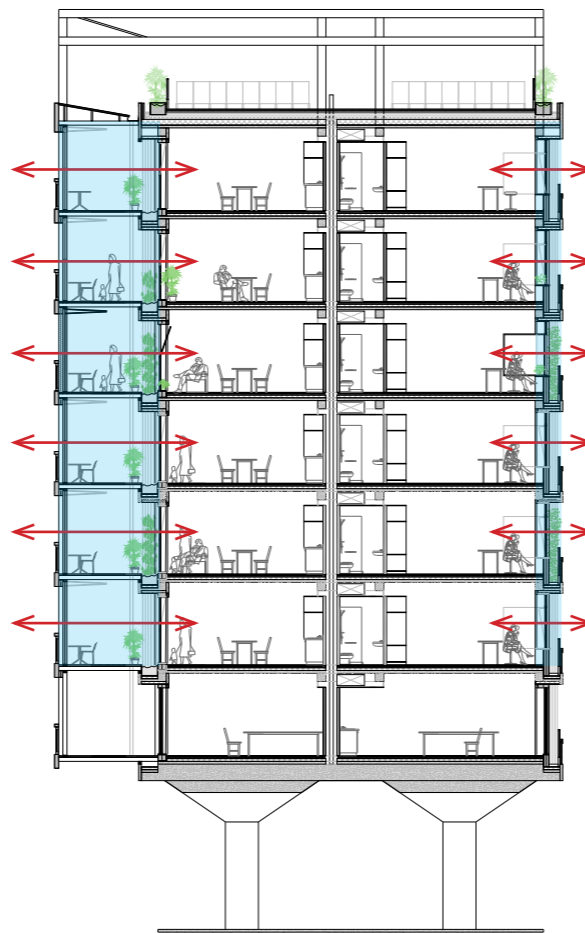


# CONCEPT

housing unit- shaft duct ventilation



active ventilation



cross ventilation

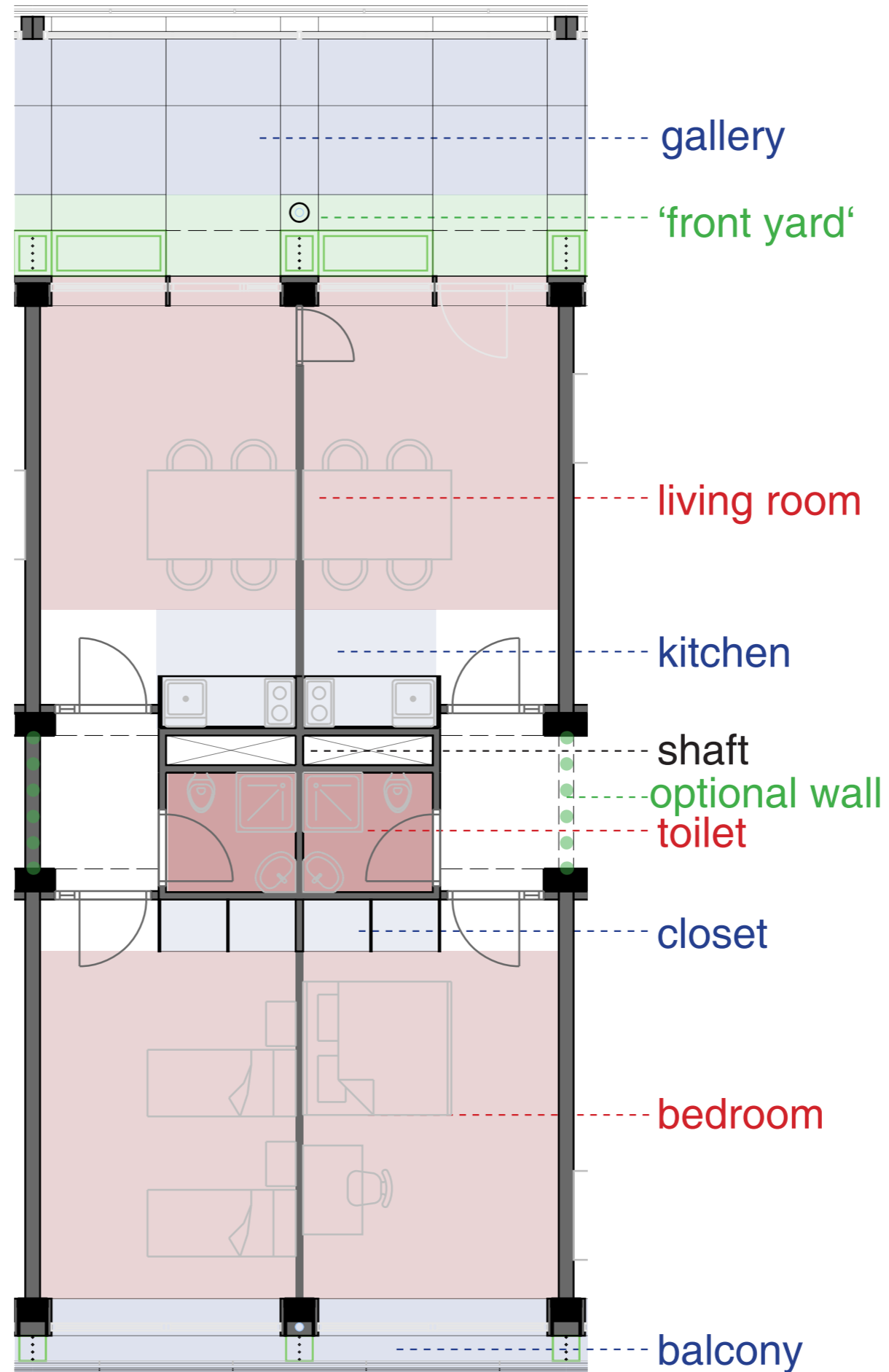


heating

heat pump

# CONCEPT

housing unit- room layout





# CONCEPT

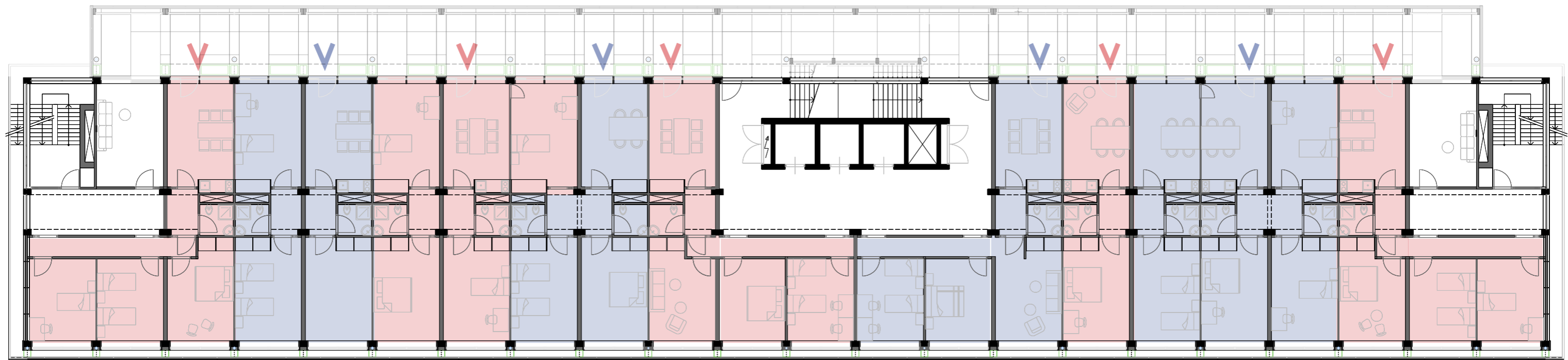
housing unit- room layout





# CONCEPT

housing unit- Flexible



4 rooms



4 rooms



5 rooms



3 rooms



4 rooms



4 rooms



2 rooms



6 rooms

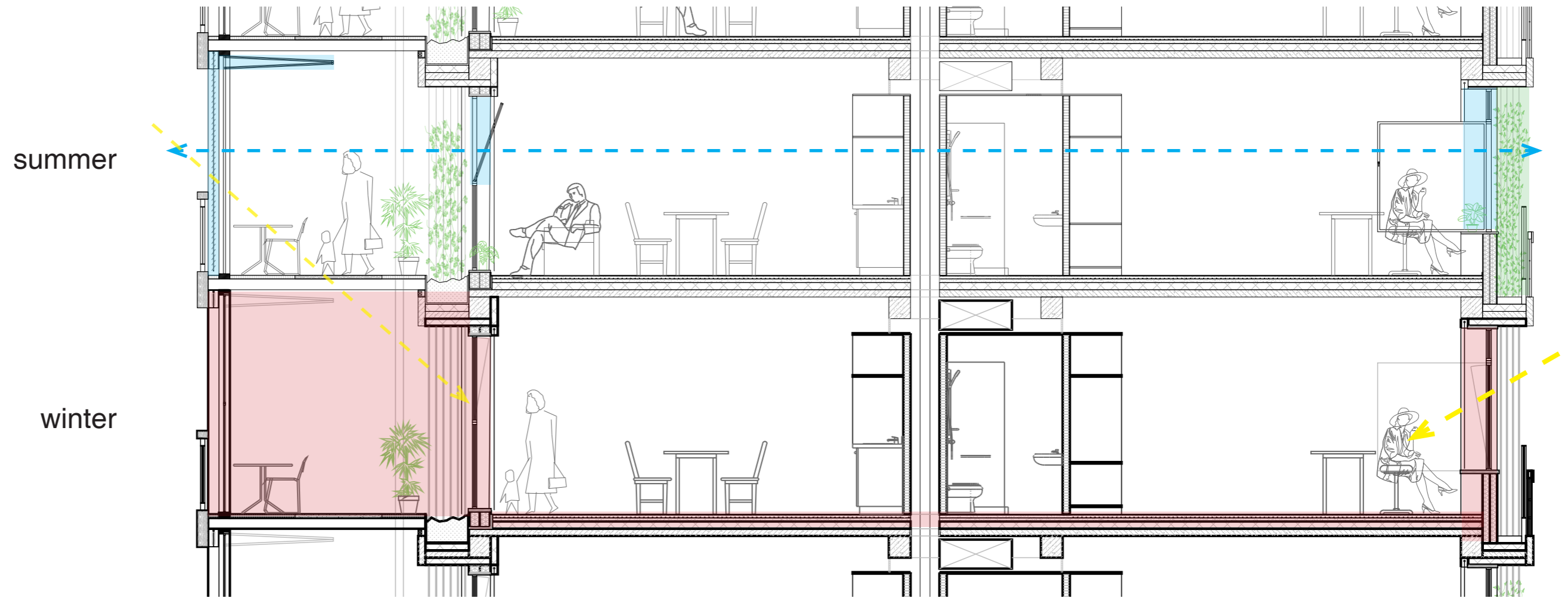


4 rooms



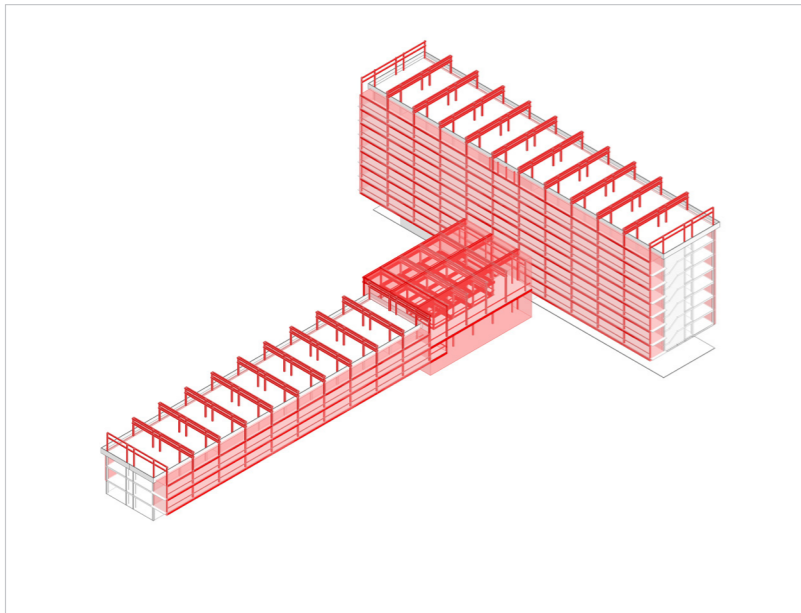
# HOUSING UNIT

climate

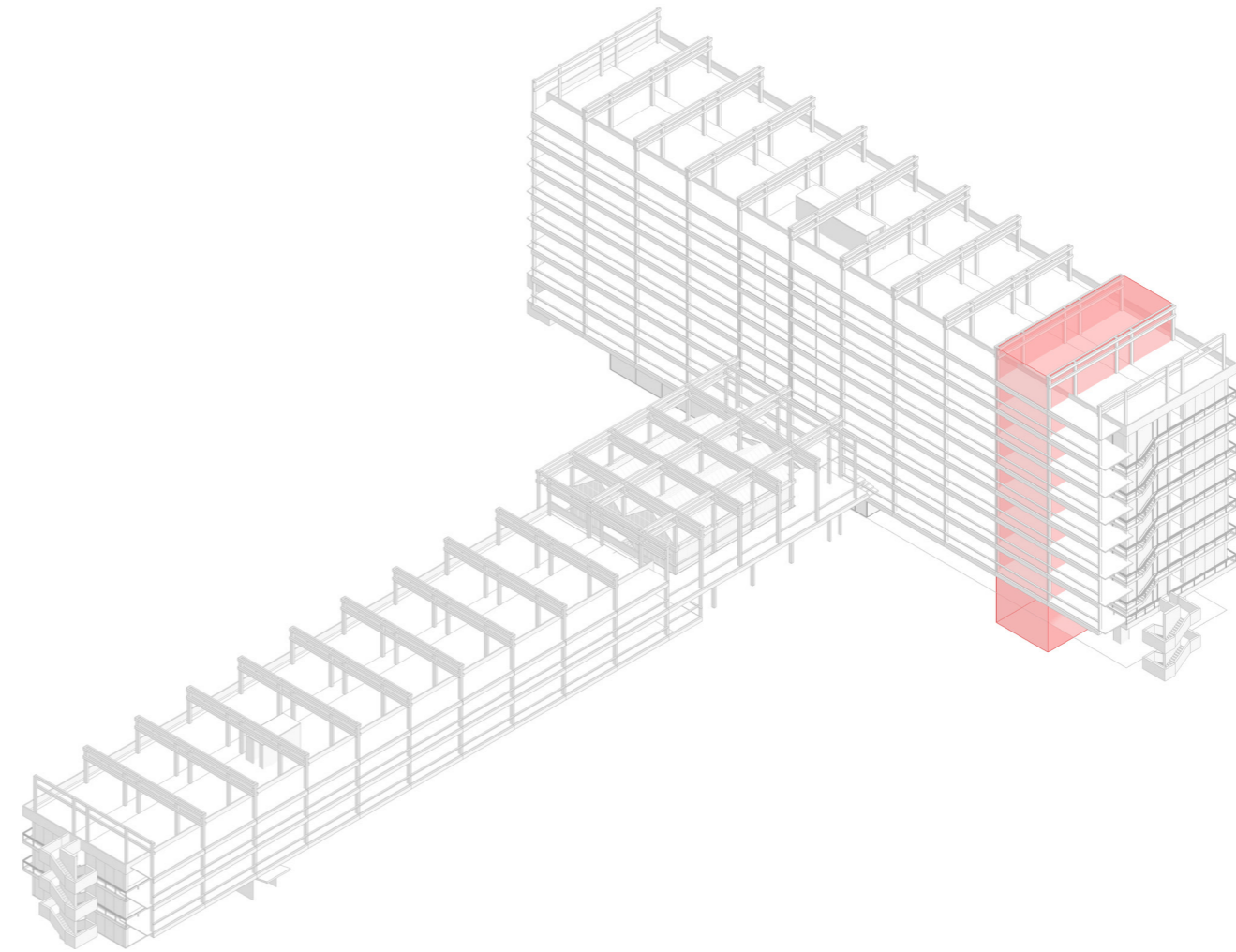


# CONCEPT

technology



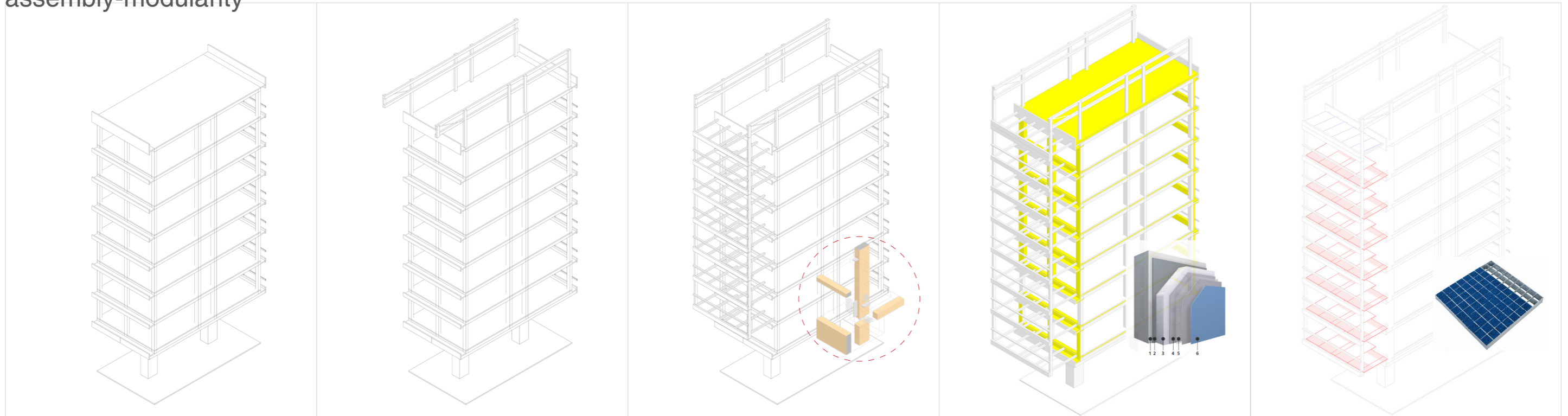
technology



- modularity
- dismountable timber structure
- pre-fabrication facade panel
- monumentality
- dry connection
- low cost
- low carbon footprint

# TECHNOLOGY

assembly-modularity



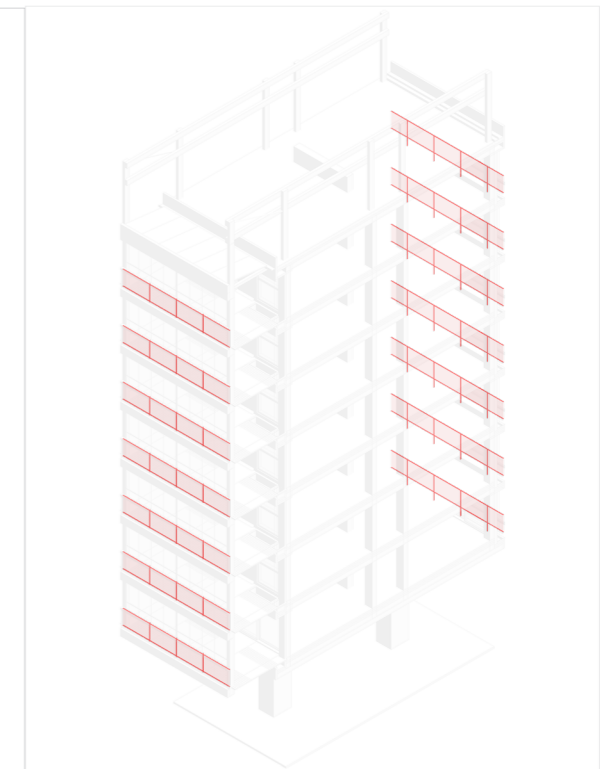
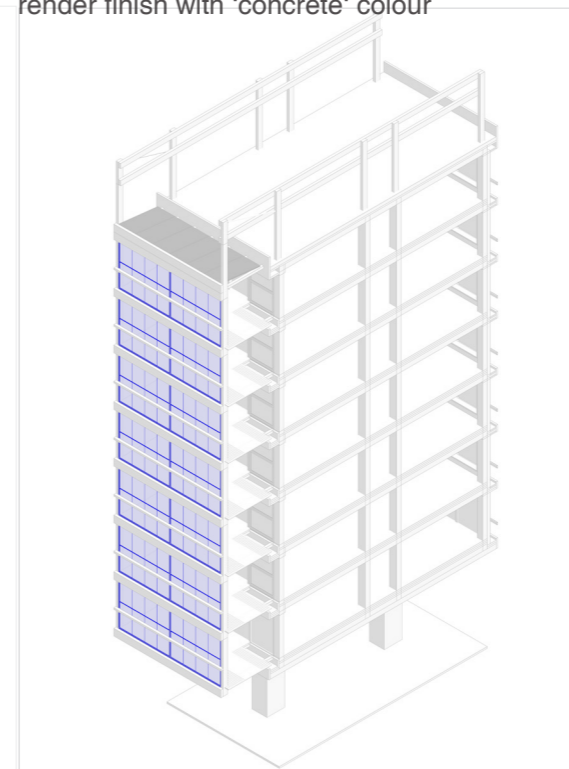
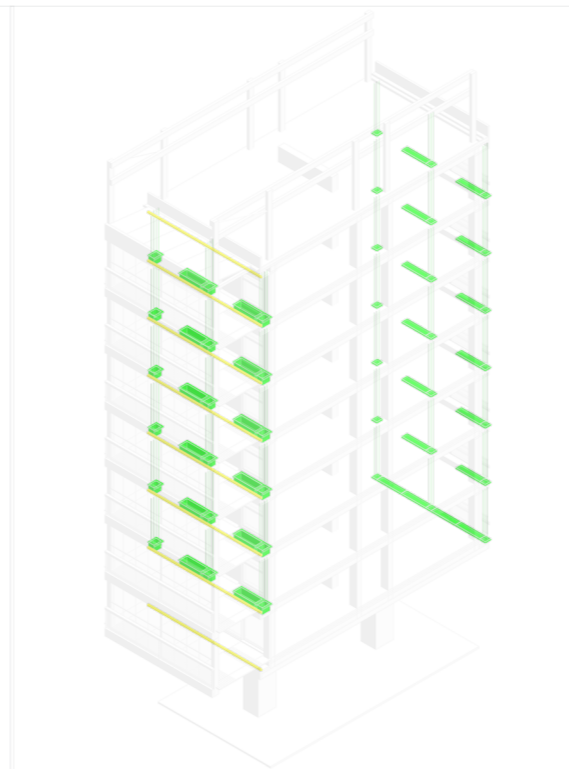
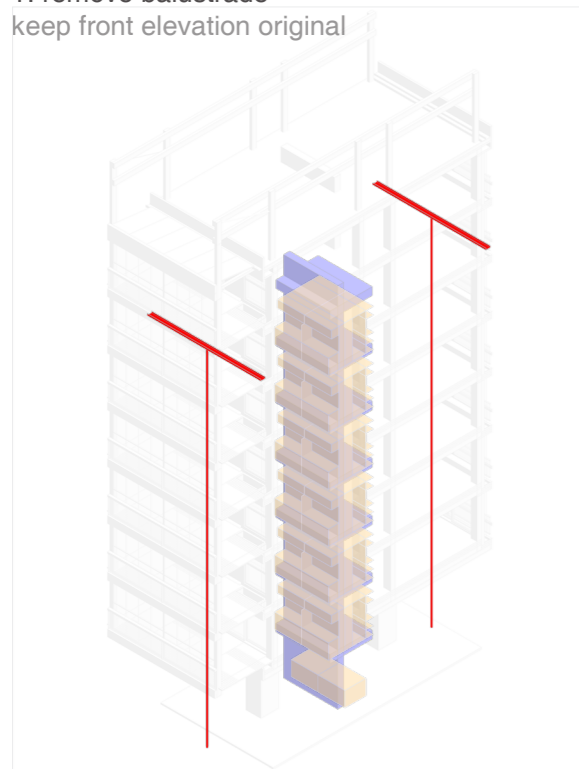
1. remove balustrade  
keep front elevation original

2. columns and trusses  
according to existing structure

3. suspending structure  
demountable timber

4. thermal insulation  
dry construction railing  
instead of adhesive mortar  
re-purposed rock wool insulation panel  
render finish with 'concrete' colour

5. gallery  
metal grate with partial rubber infill  
wide + natural light



5. service system  
minimized  
maximized "free" room layout

5. Doors and windows AND partition  
pre-fabricated

lighting+pot  
smart use of the existing balcony  
nature inclusion

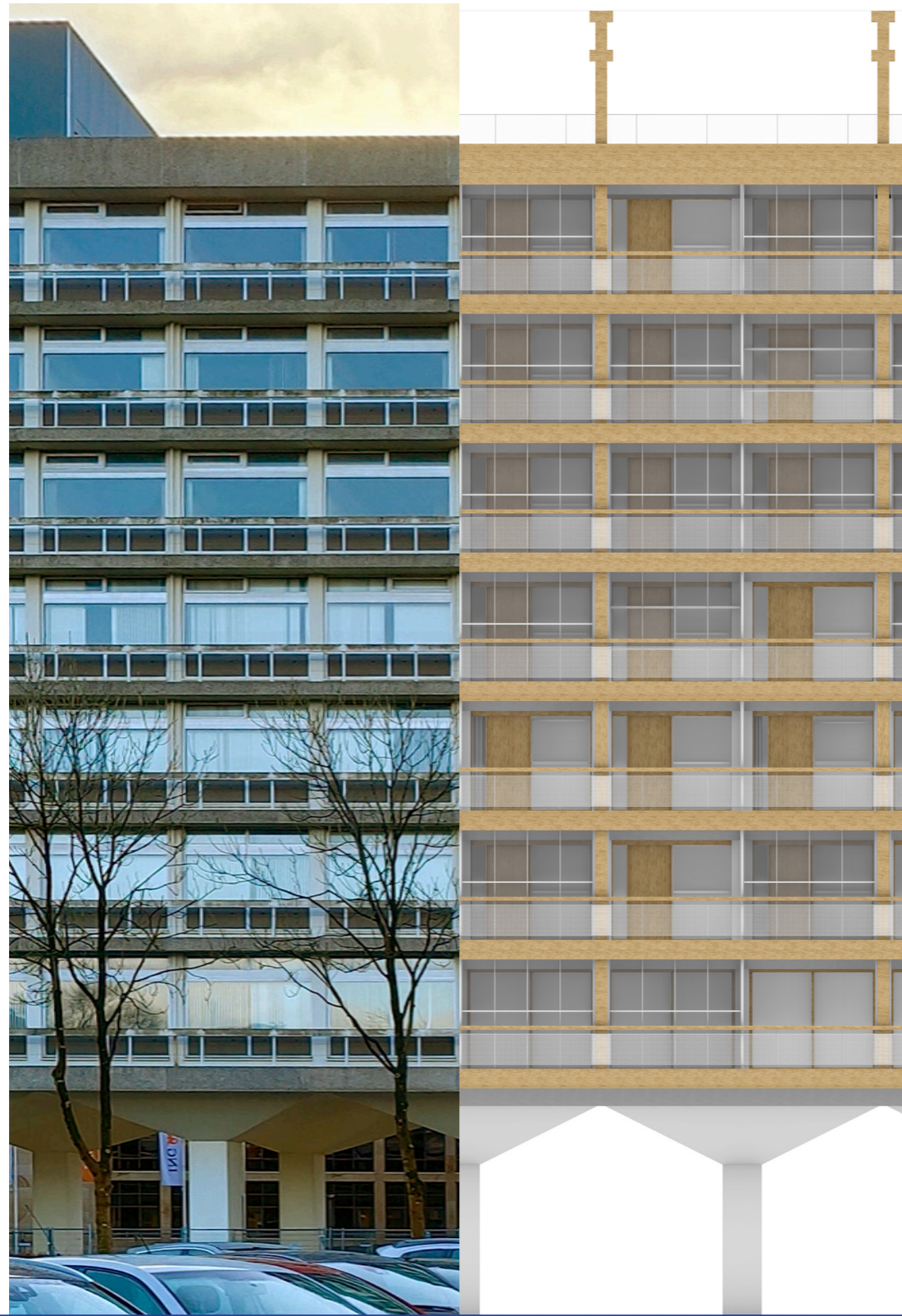
6. glass  
vertical two folding  
climate indoor comfort winter

7. railing  
metal mesh  
'invisible' effect

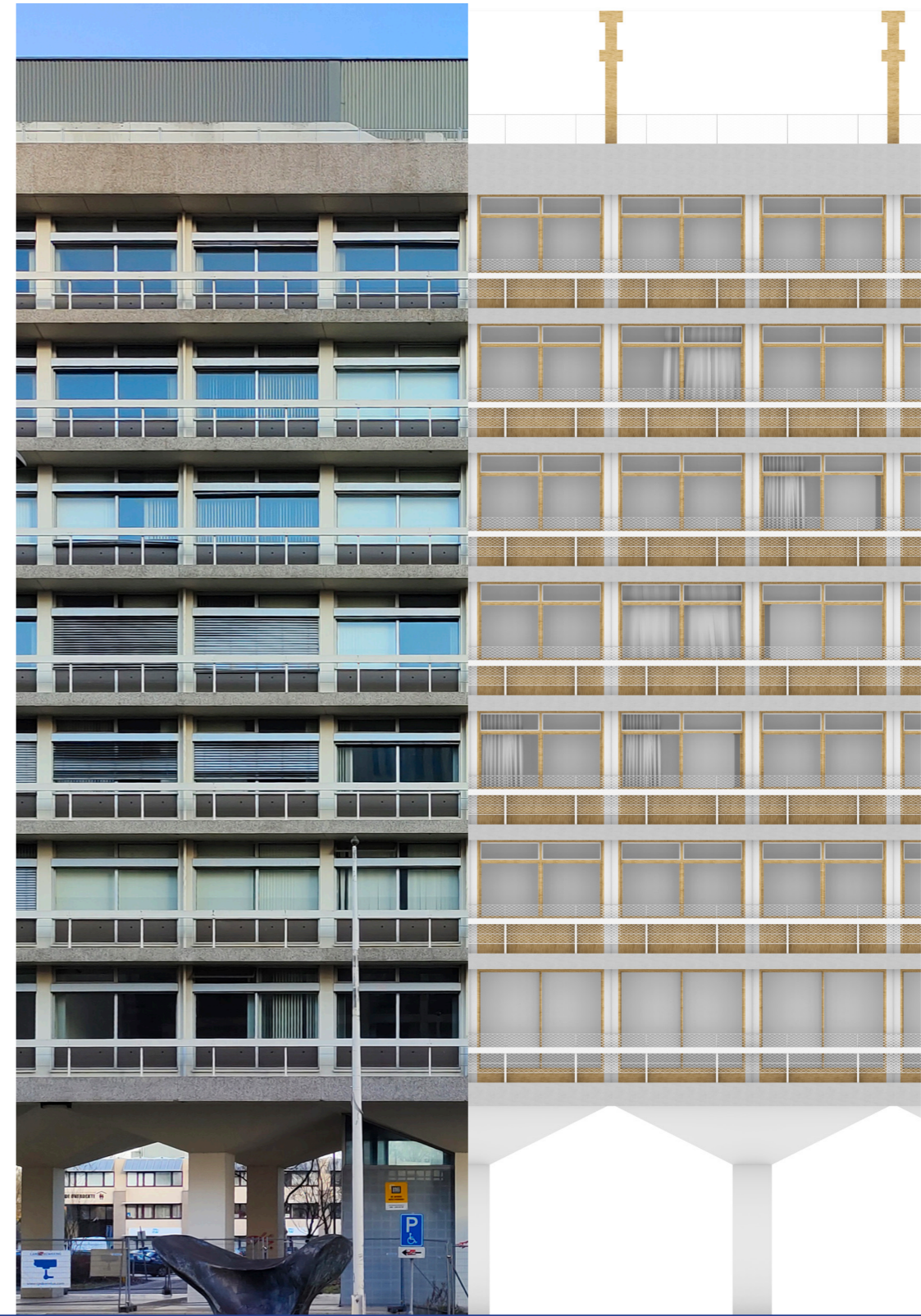


# FACADE

old & new



North elevation - Before North elevation - After

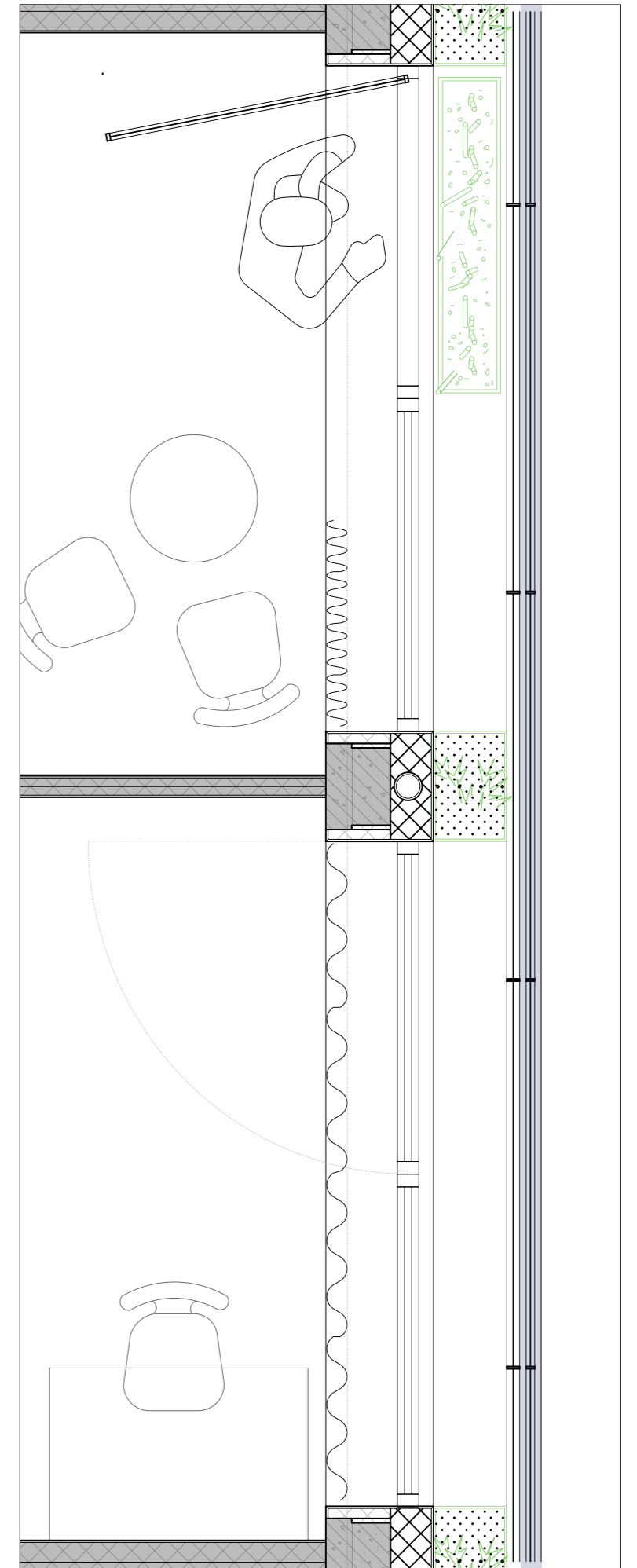
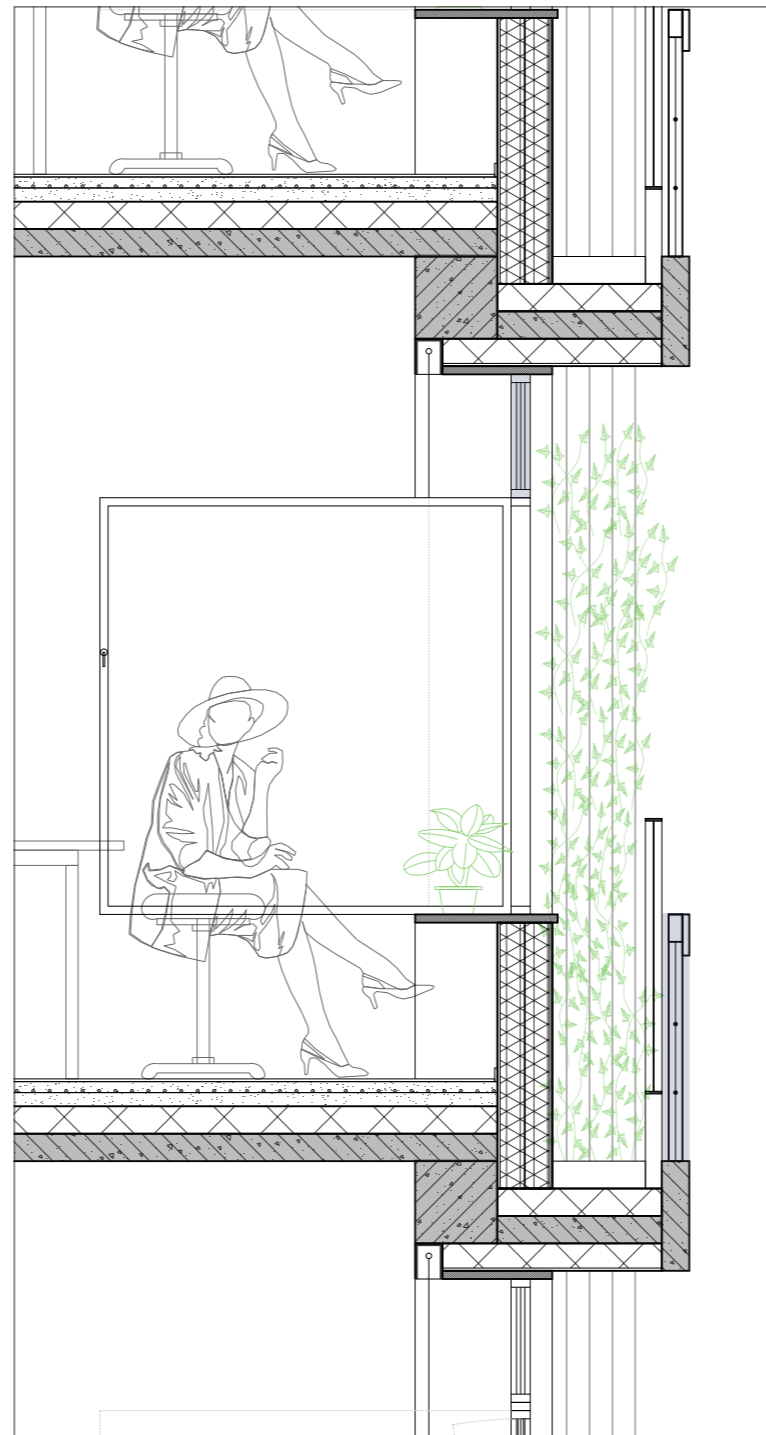
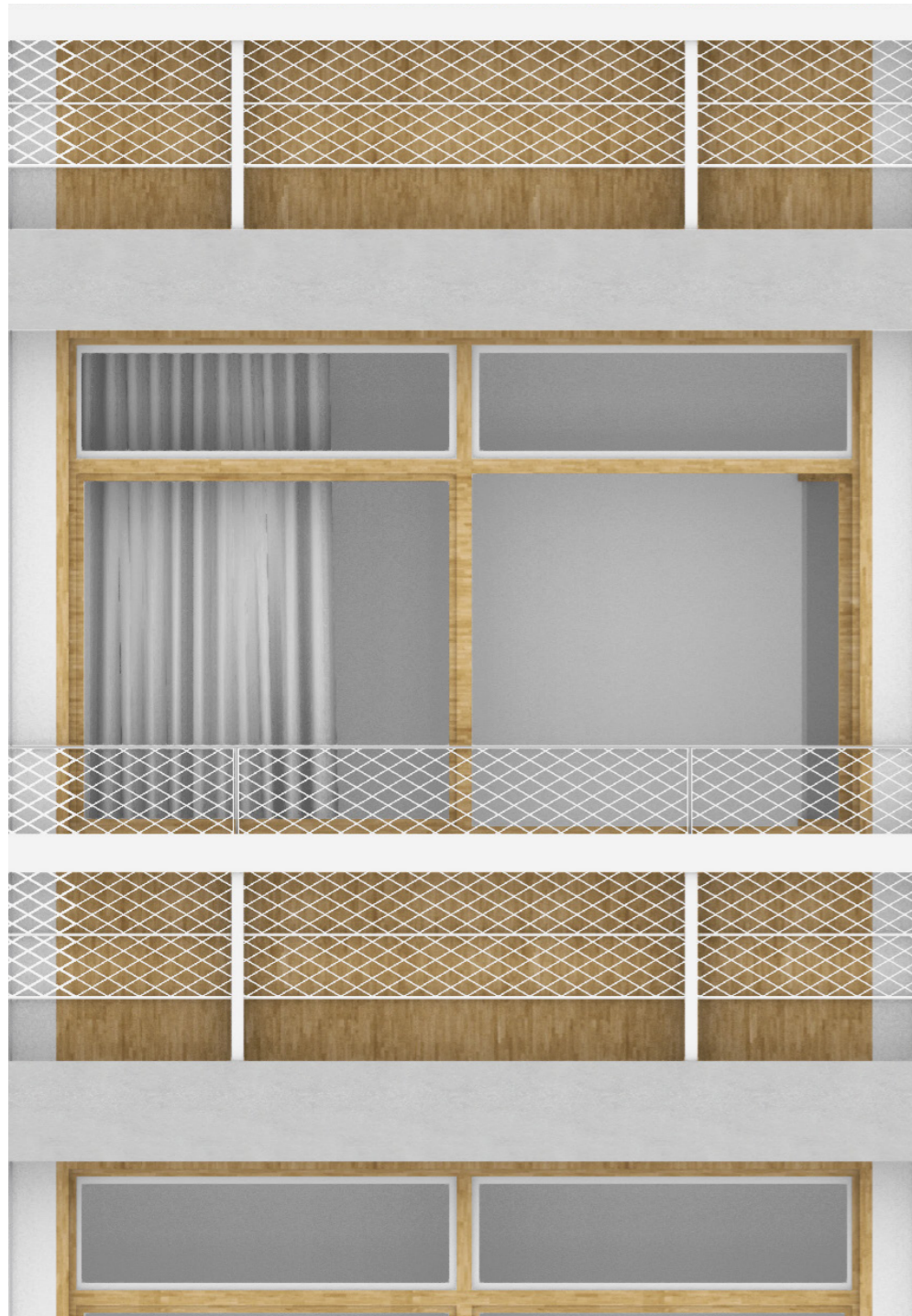


South elevation - Before South elevation - After



# SOUTH FACADE

monumental value  
'sacrifice' & 'compensation'





# SOUTH FACADE

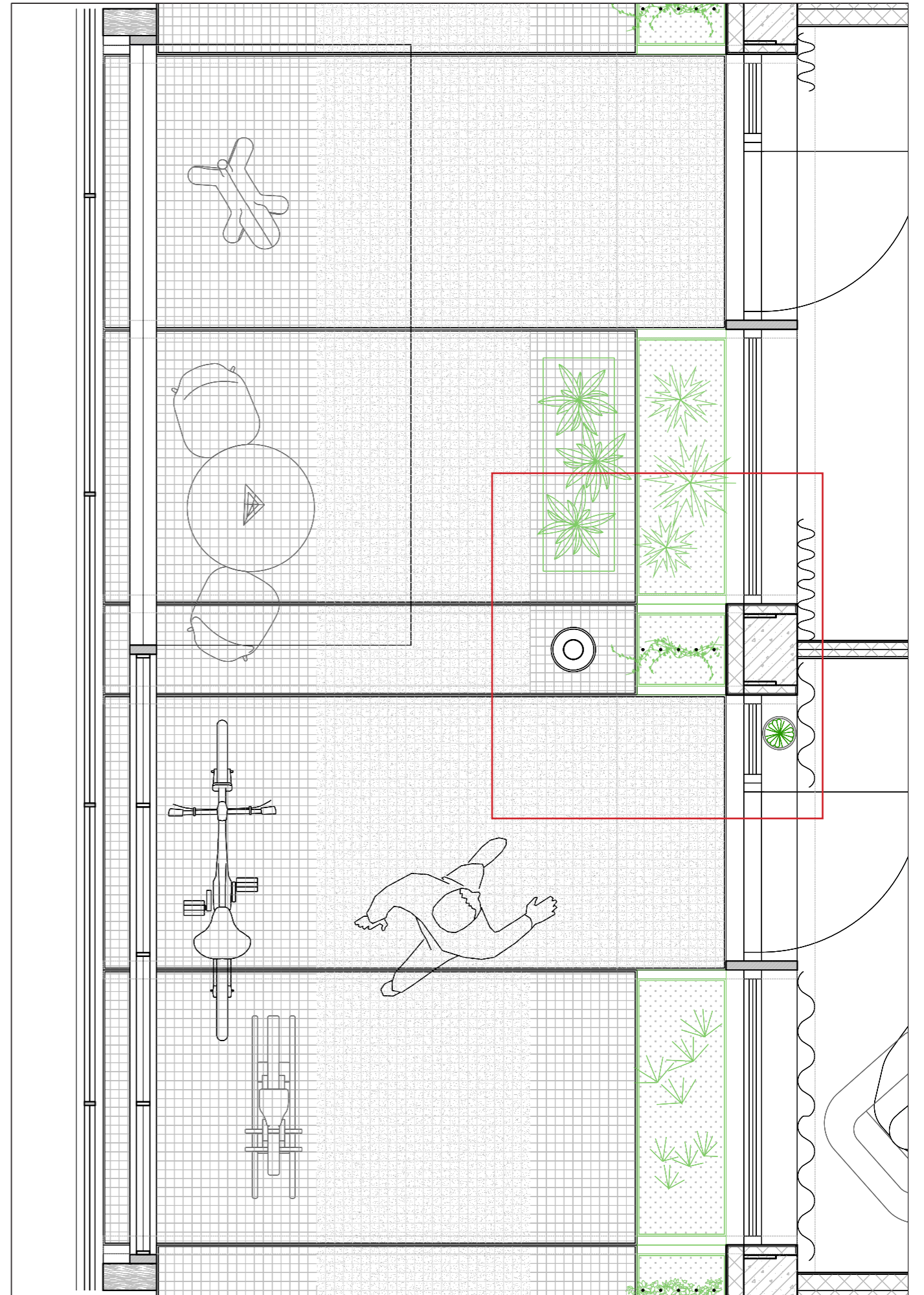
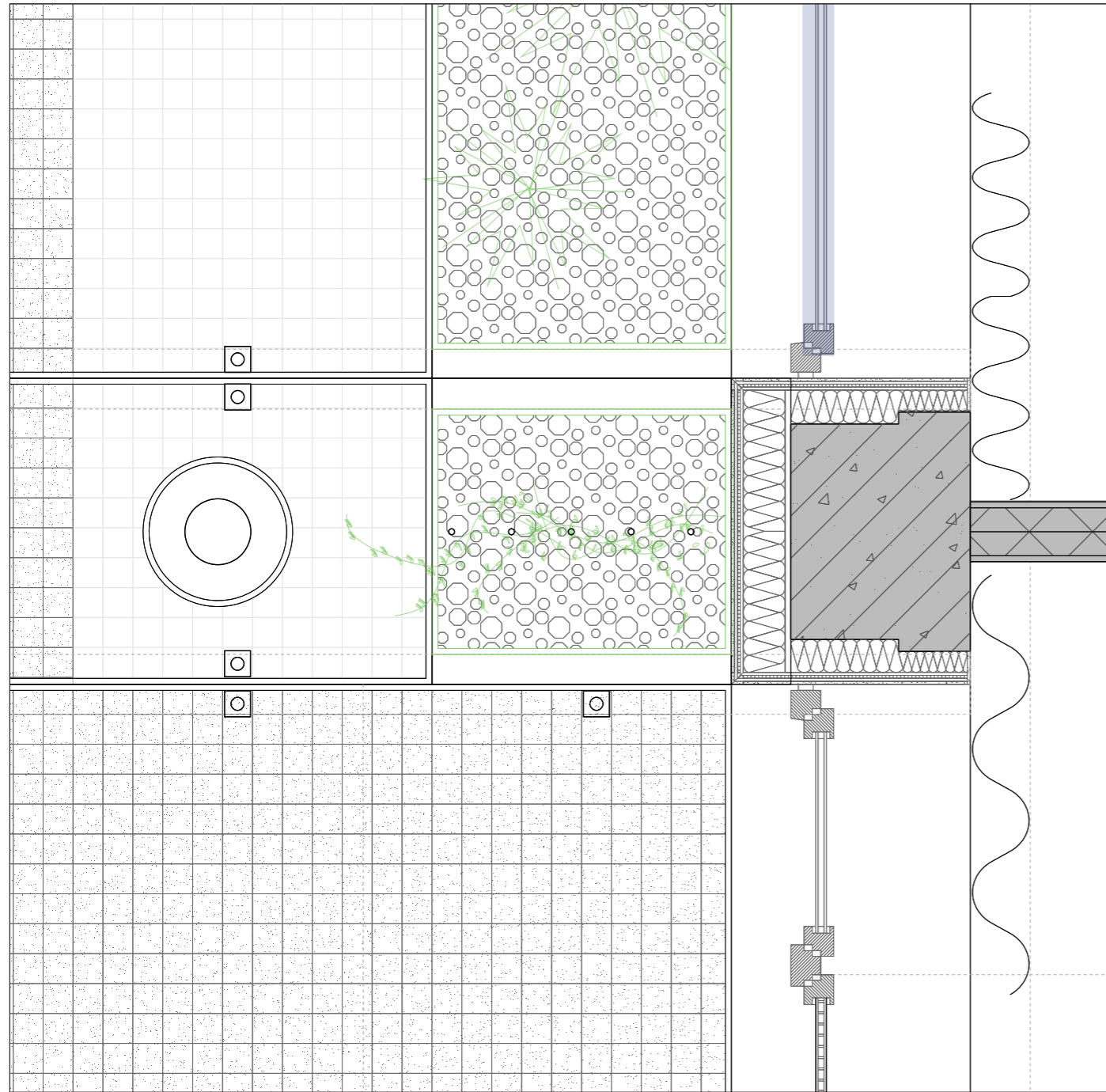
monumental value  
'sacrifice' & 'compensation'





# NORTH FACADE

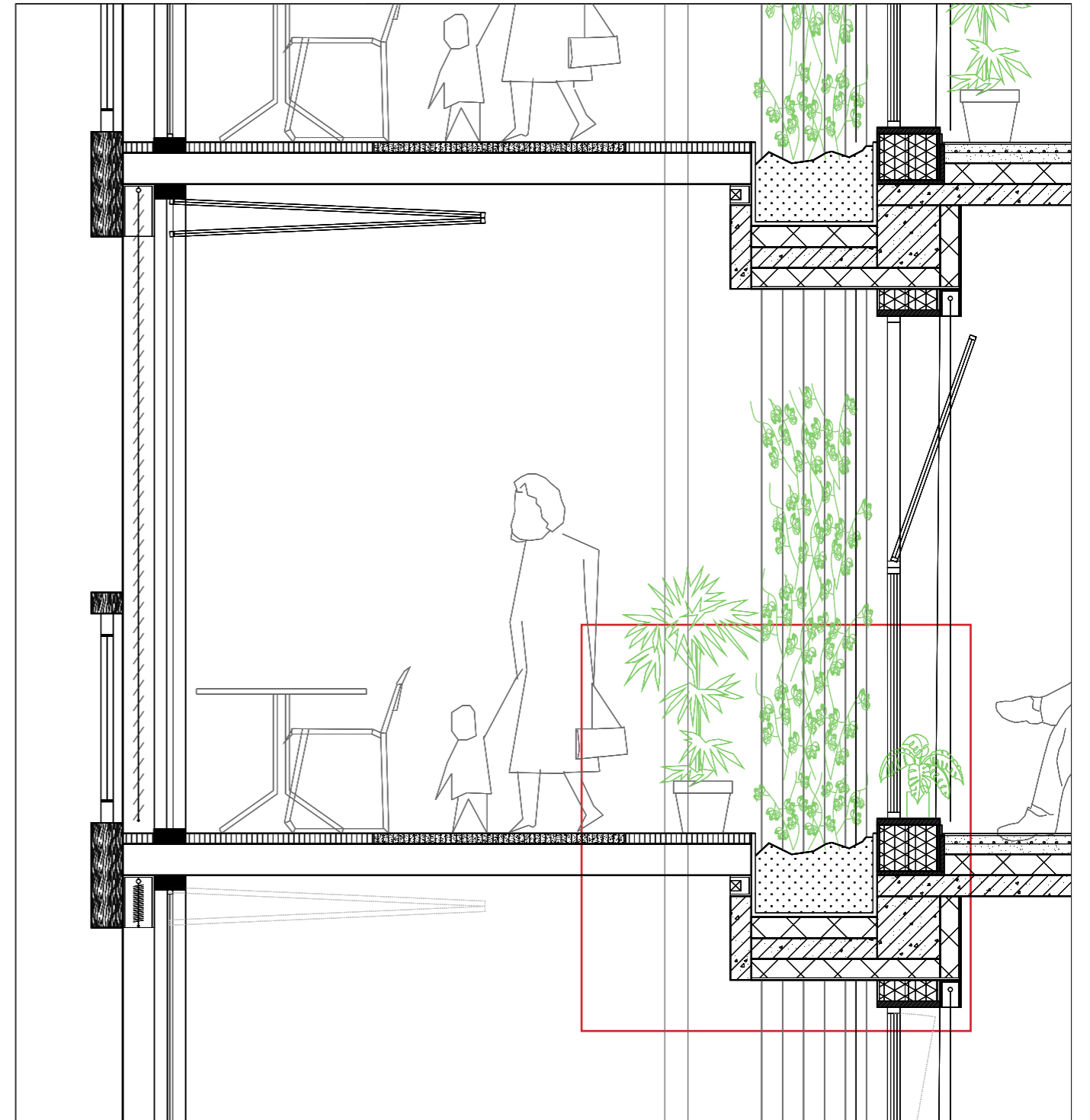
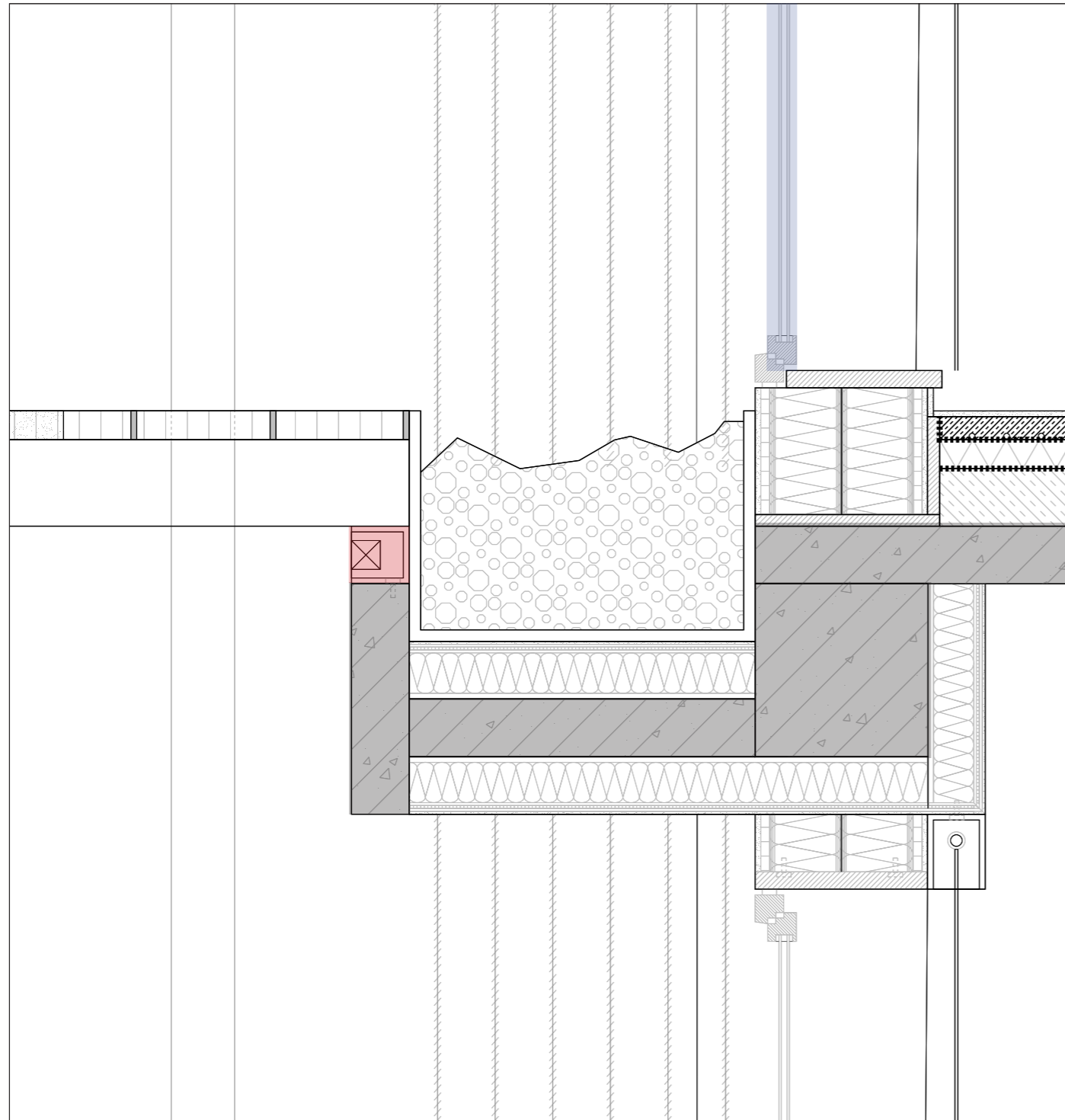
greenery-light-use of existing





# NORTH FACADE

greenery-light-use of existing





# SUMMERY & REFLECTION

minimal impact  
increased interaction & independent  
slow and small energy strategy

REDUCE WASTE  
adding gallery outside

REDUCE CONSTRUCTION COST AND CARBON EMISSION  
MODULARITY & PRE-FABRICATION

RECYCLABLE/DEMOUNTABLE  
TIMBER STRUCTURE

RE-USE site structure and (partial) skin

REPAIR AND REFURBISH OF THE BUILDING

VERTICAL PLANTS  
SUN SHADING

RE-USE WINDOW

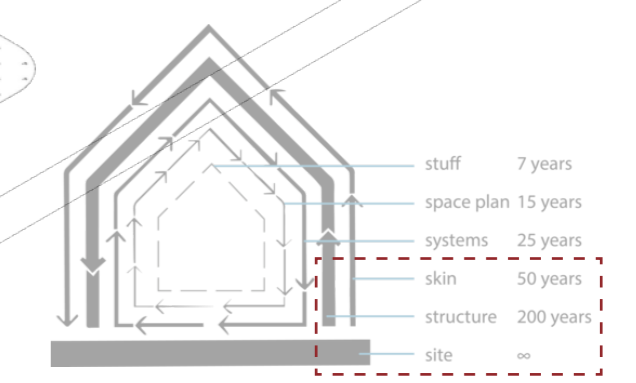
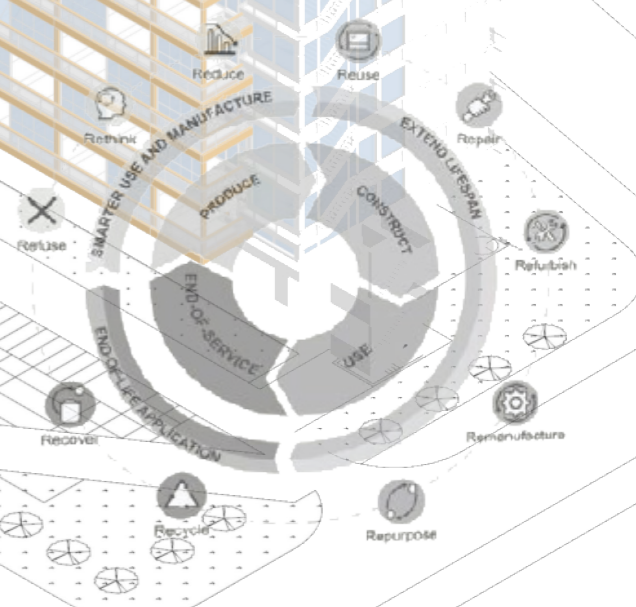
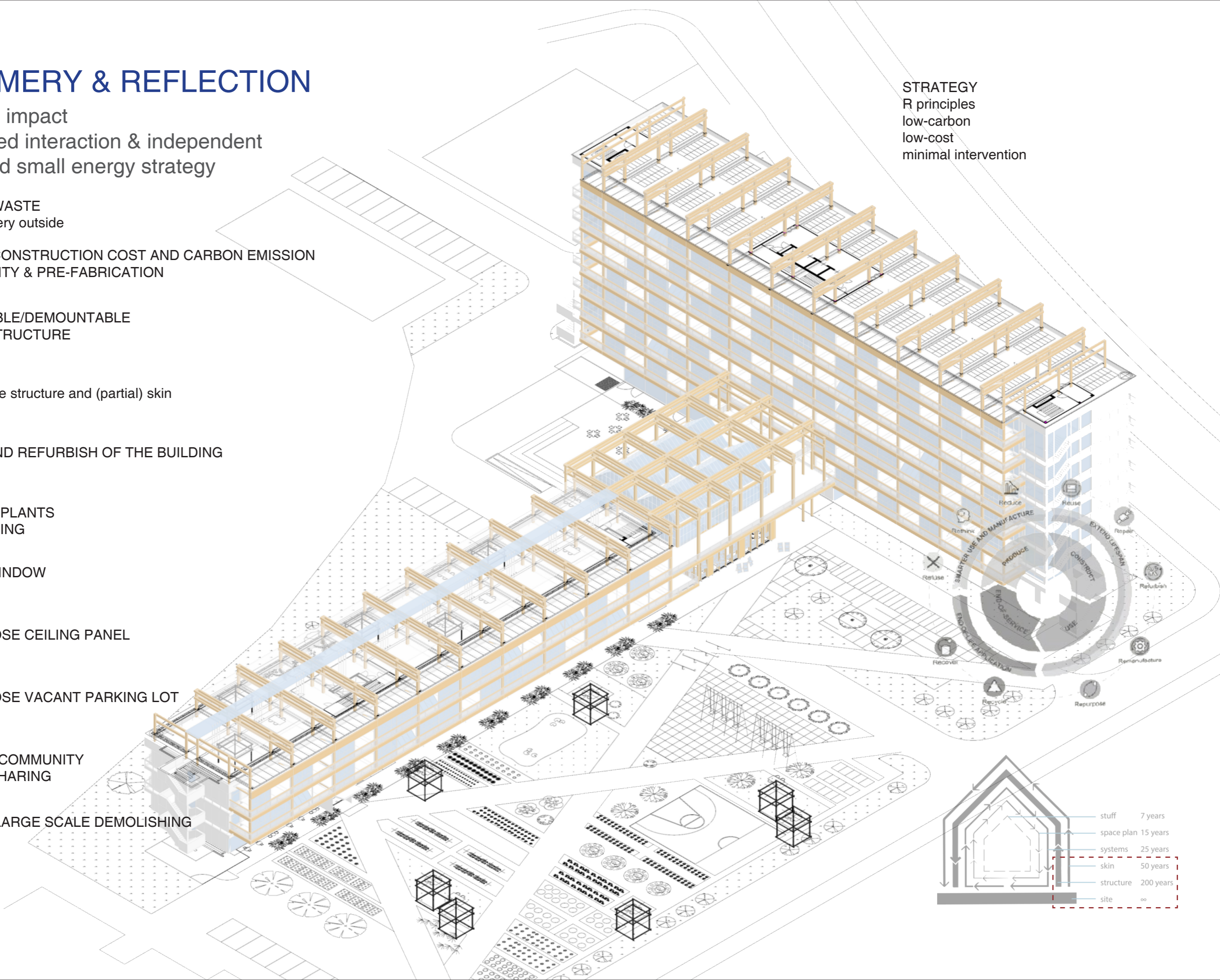
RE-PURPOSE CEILING PANEL

RE-PURPOSE VACANT PARKING LOT

RE-THINK COMMUNITY  
IDEA OF SHARING

RE-FUSE LARGE SCALE DEMOLISHING

STRATEGY  
R principles  
low-carbon  
low-cost  
minimal intervention







“ To do simple things in rich, complex situations instead of creating complexity in situations stripped of all their elements.”

(LACATON & VASSAL, ELcroquis 177/178, 2015)



THANK YOU !

