

# 1 MERGING STRUCTURES, CREATING FREEDOM

Transforming a vacant office building into flexible housing by merging a new structure with the existing and thereby making use of its potentials.

17 April 2015

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# 3 FASCINATIONS



**TE HUUR**

ca. 4.200 m<sup>2</sup>  
kantoorruimte + 94 P



www.zeddelhoff.nl  
020 355 550



JONES LANG  
LASALLE

070 318 13 13

JLL NL

**TE HUUR**

ca. 4.200 m<sup>2</sup>  
kantoorruimte + 94 P

DTZ

Zeddelhoff

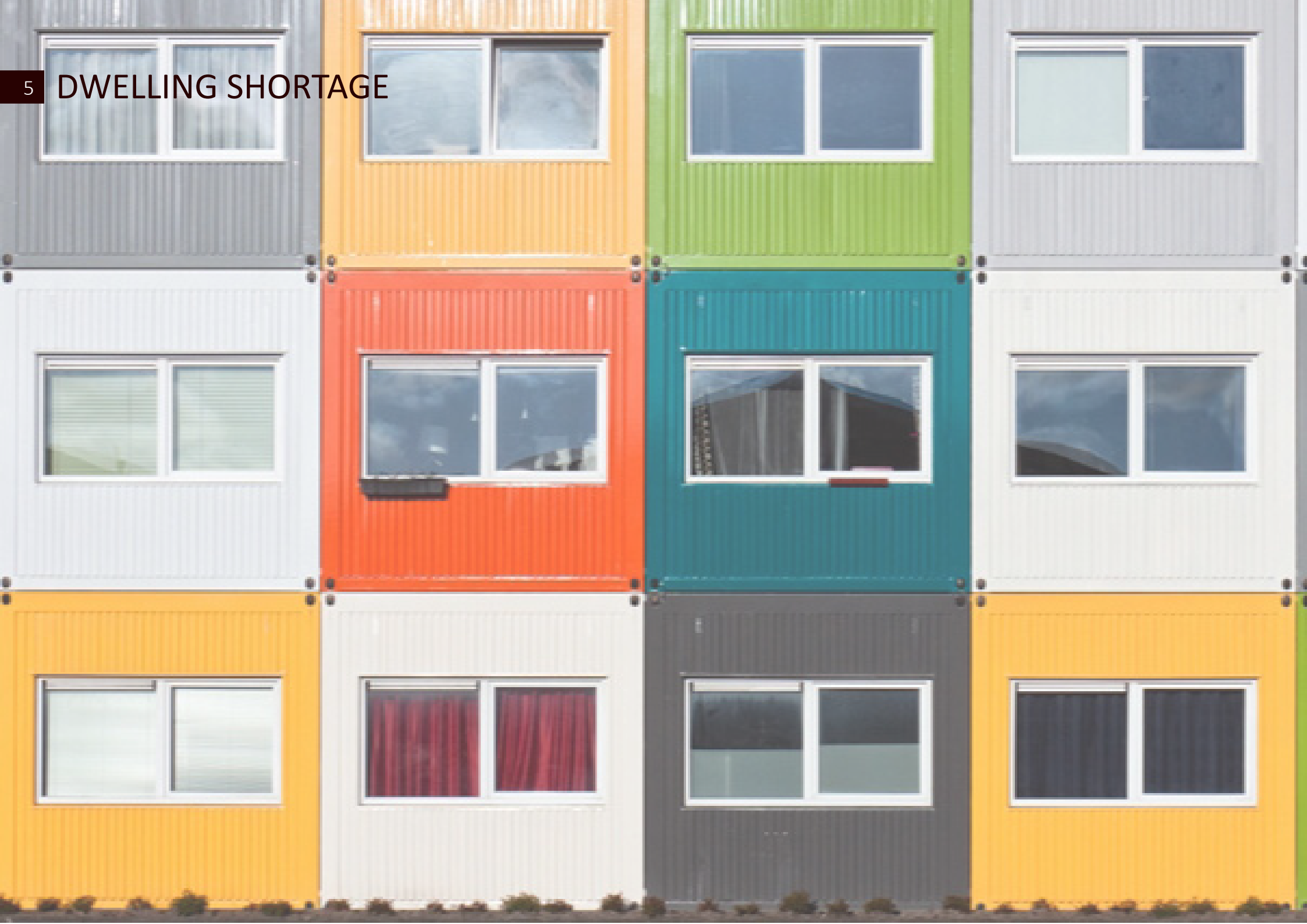
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JONES LANG  
LASALLE

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5 DWELLING SHORTAGE



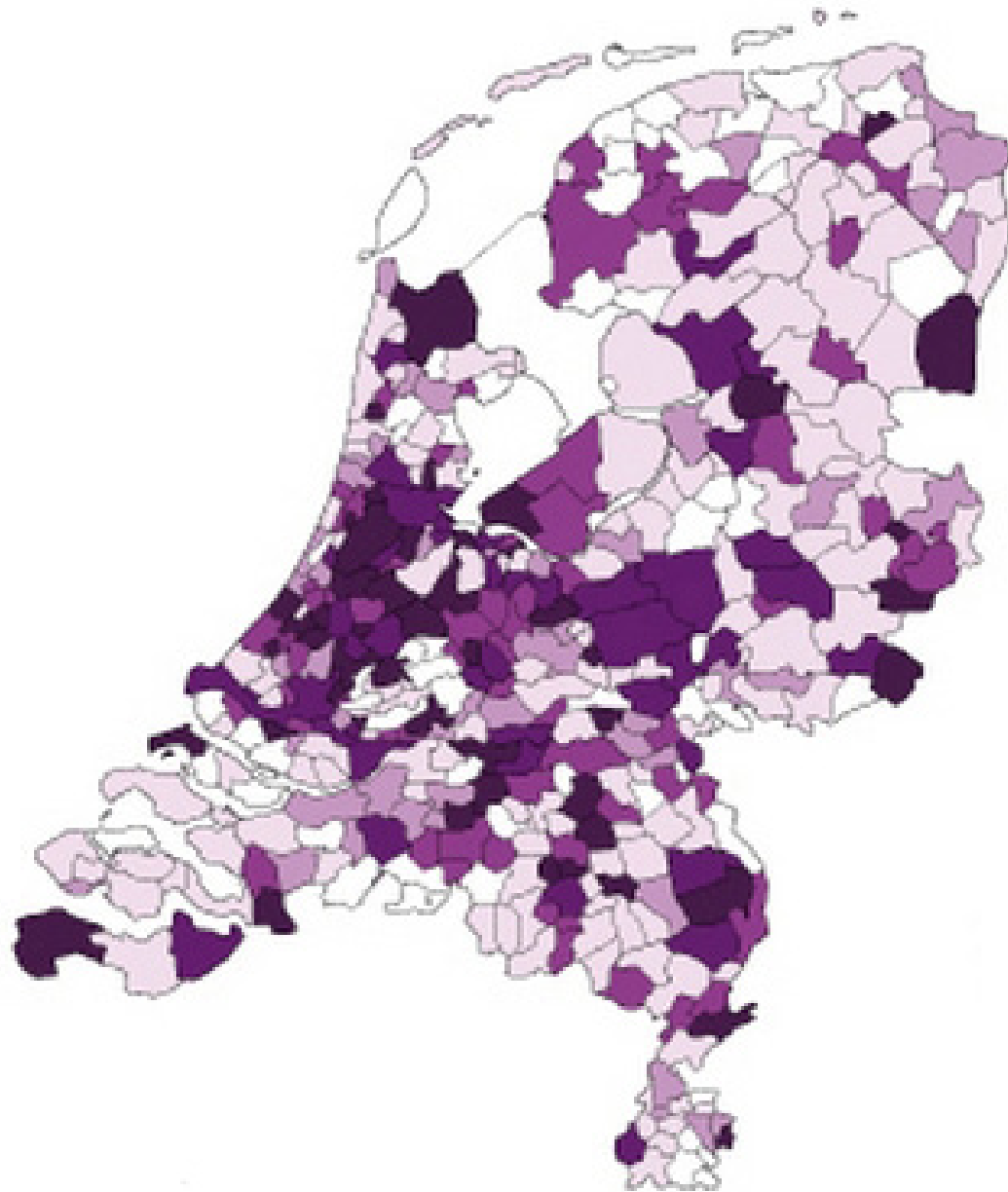
6 FLEXIBILITY



## 7 BACKGROUND

- OFFICE VACANCY
- HOUSING SHORTAGE
- NEED FOR FLEXIBILITY

# 8 OFFICE VACANCY

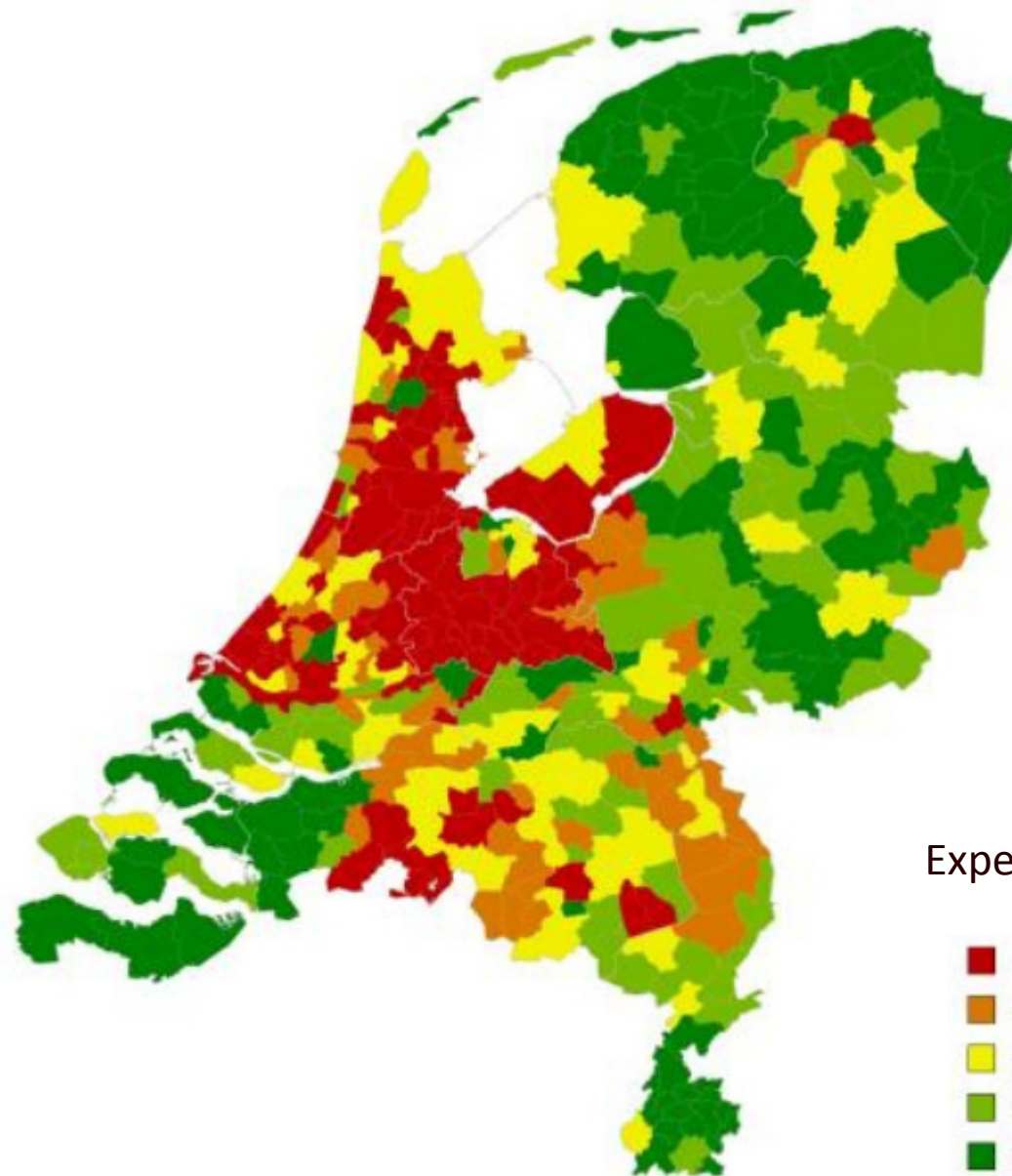


Vacancy in 2013 in %



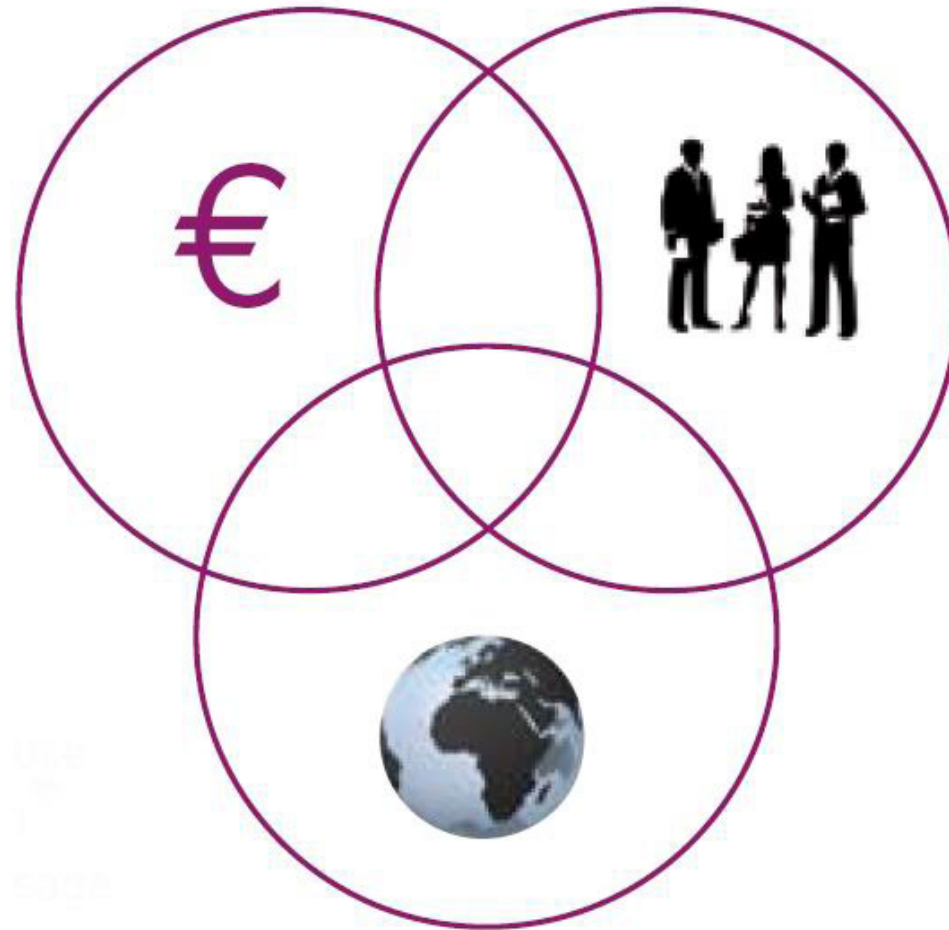


# 9 HOUSING SHORTAGE



Expected Shortage in 2020 in %

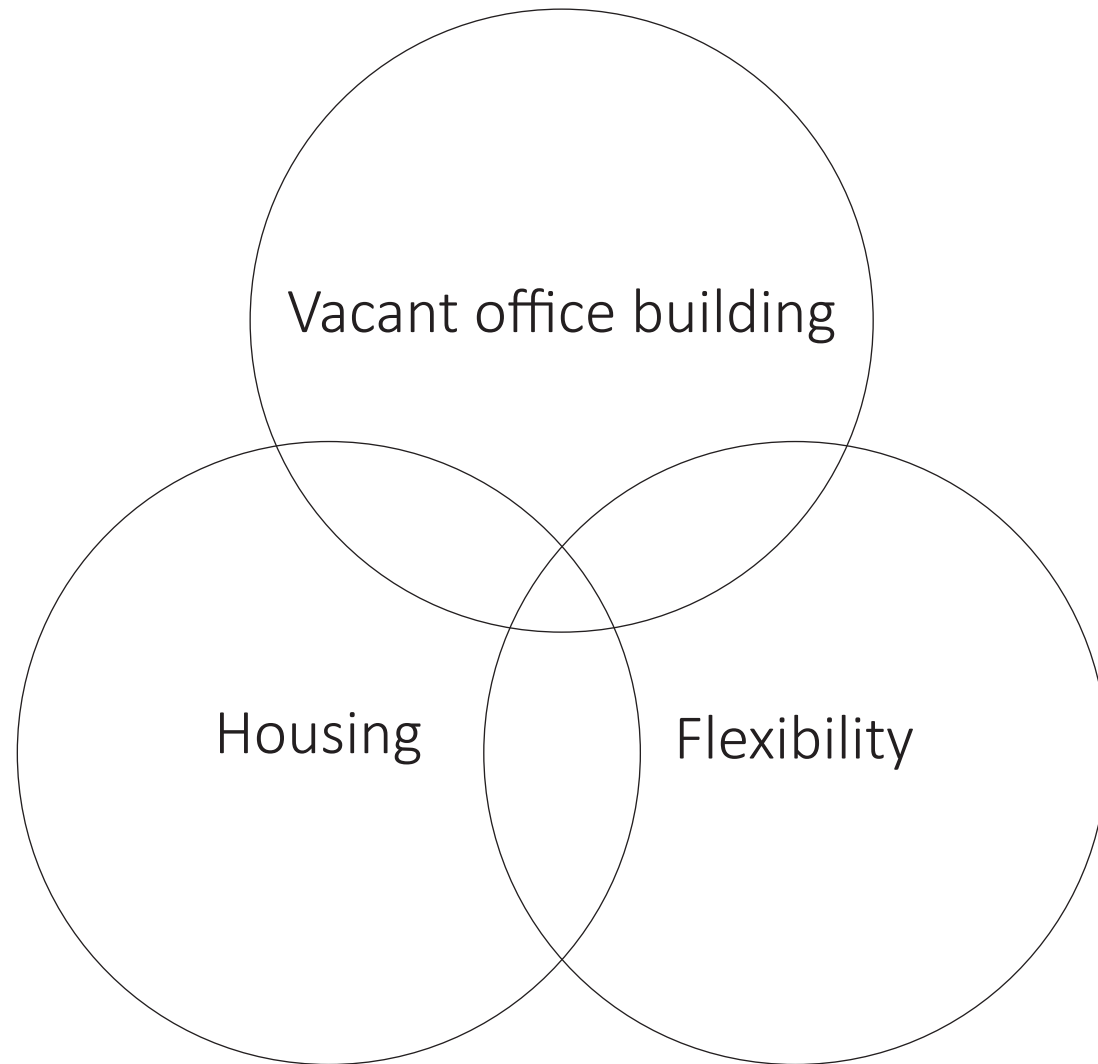
- < -4.75
- 4.75 < -3.80
- 3.80 < -2.85
- 2.85 < -1.90
- >= -1.90

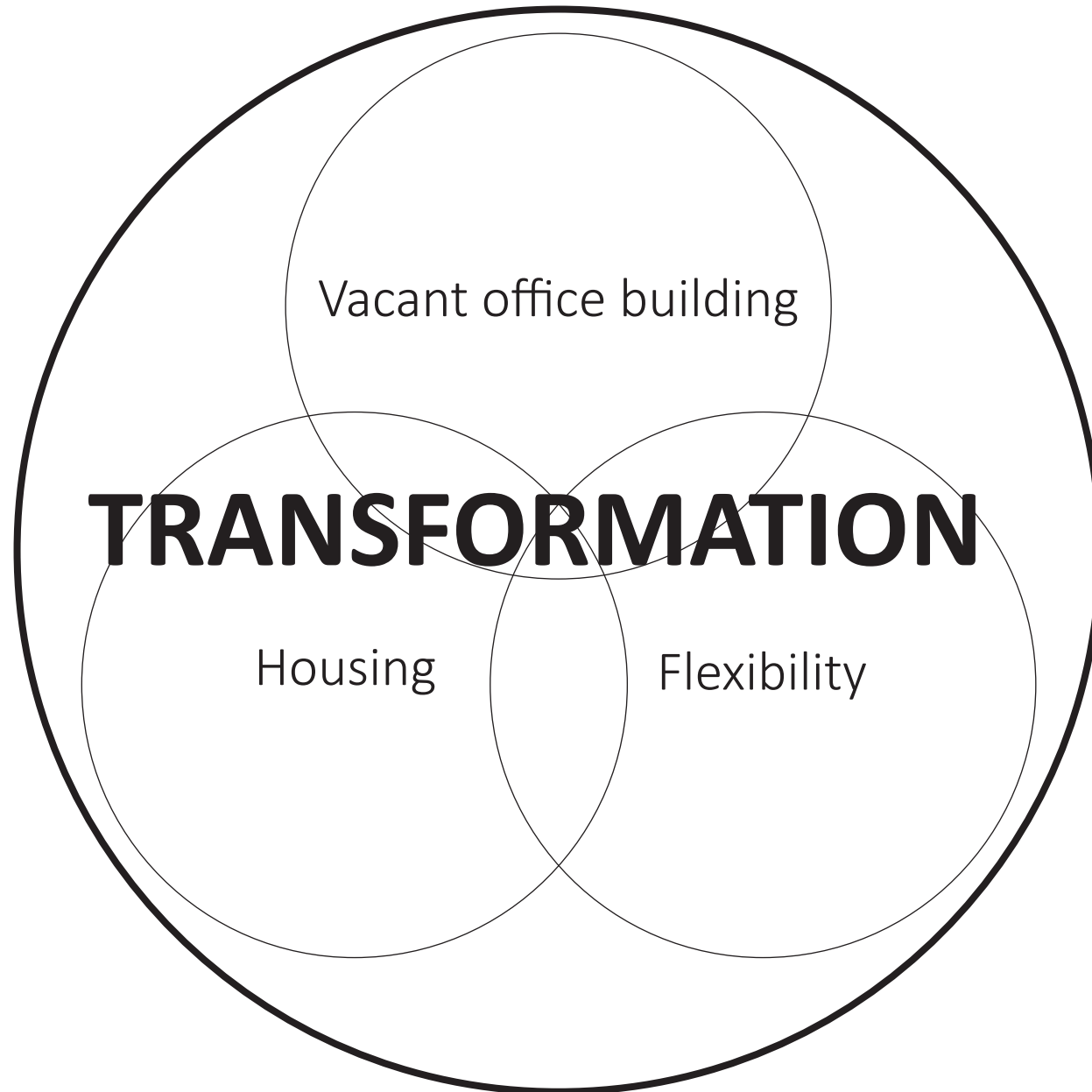


The three aspects for a sustainable environment  
in which flexibility can play a major role

## 11 PROJECT DEFINITION

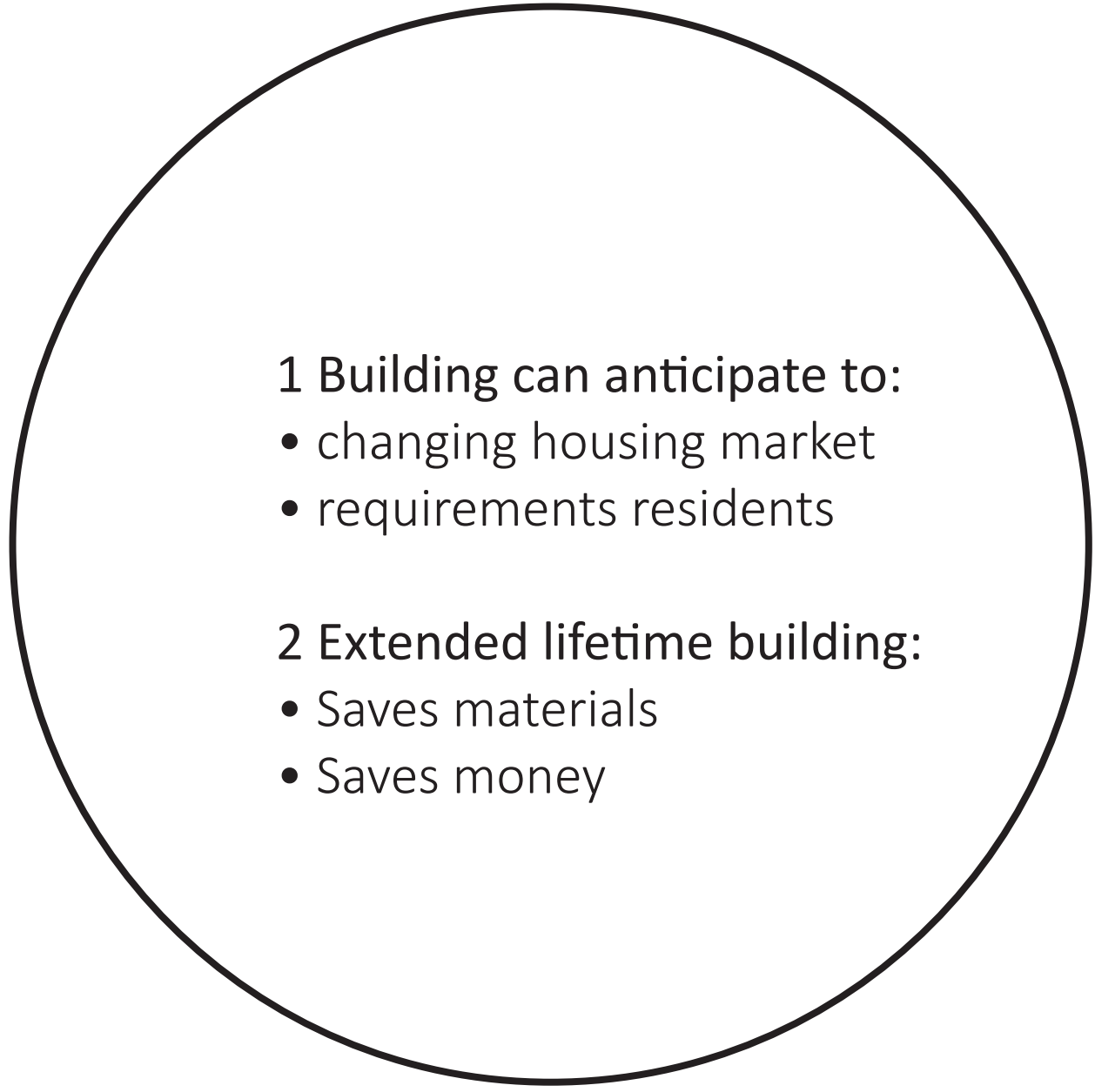
- TOPICS
- STRATEGY
- GOAL
- RELEVANCE
- CONCEPT FLEXIBILITY
- RESEARCH QUESTION
- RESEARCH
- LOAD-BEARING FAÇADES





# LAYOUT FREEDOM

- Free layout individual floorplans
  - Variable housing sizes



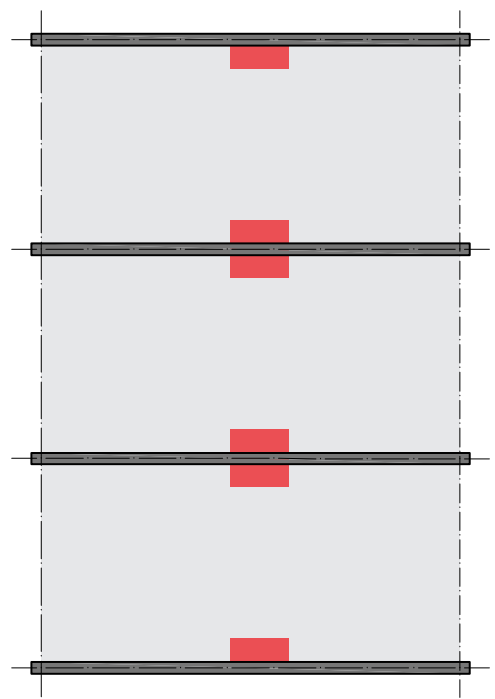
1 Building can anticipate to:

- changing housing market
- requirements residents

2 Extended lifetime building:

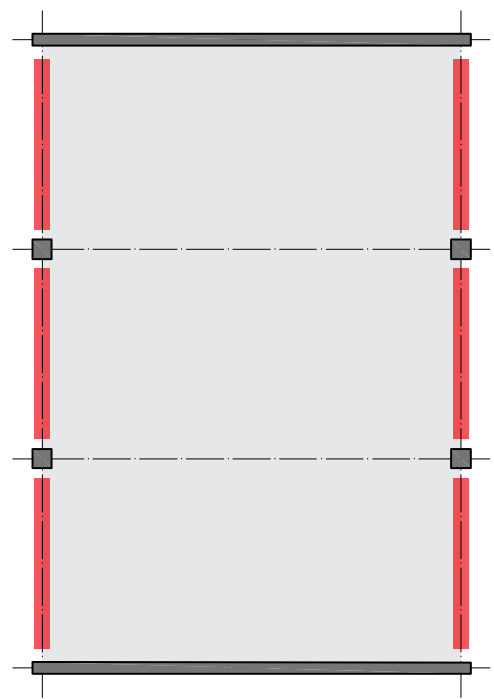
- Saves materials
- Saves money

Floorplan normal housing



X

Floorplan flexible housing



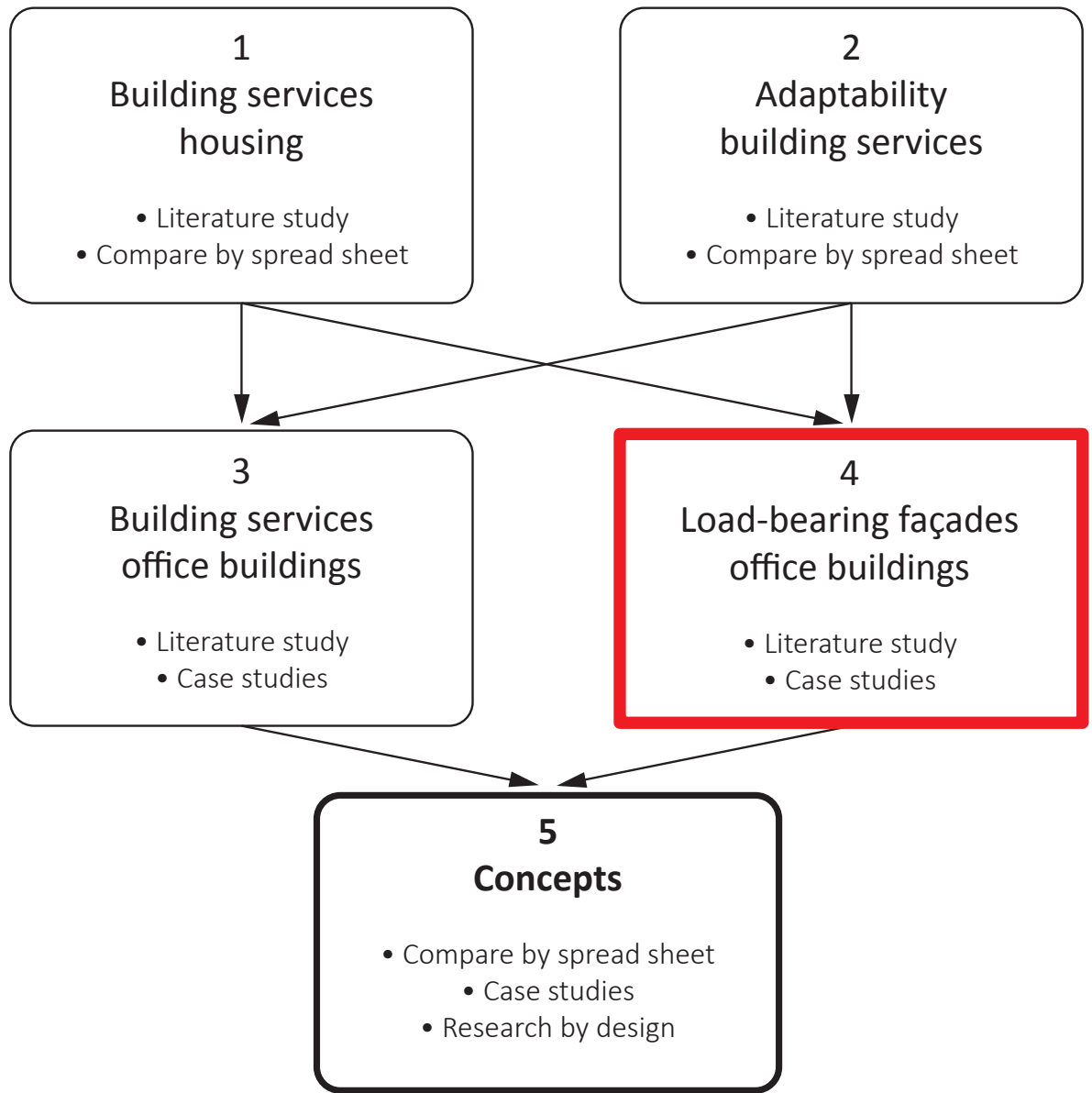
✓

Load-bearing structure  
Shafts building services



How can building services for housing in vacant office buildings:

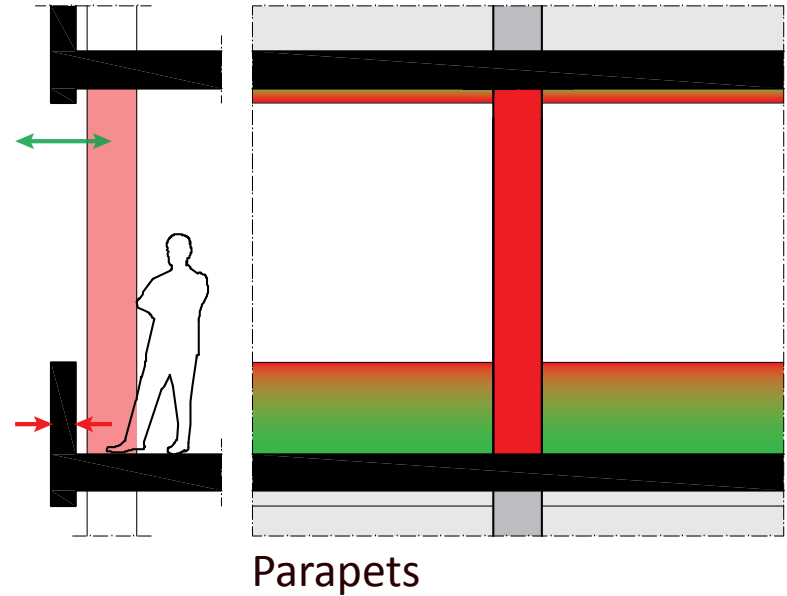
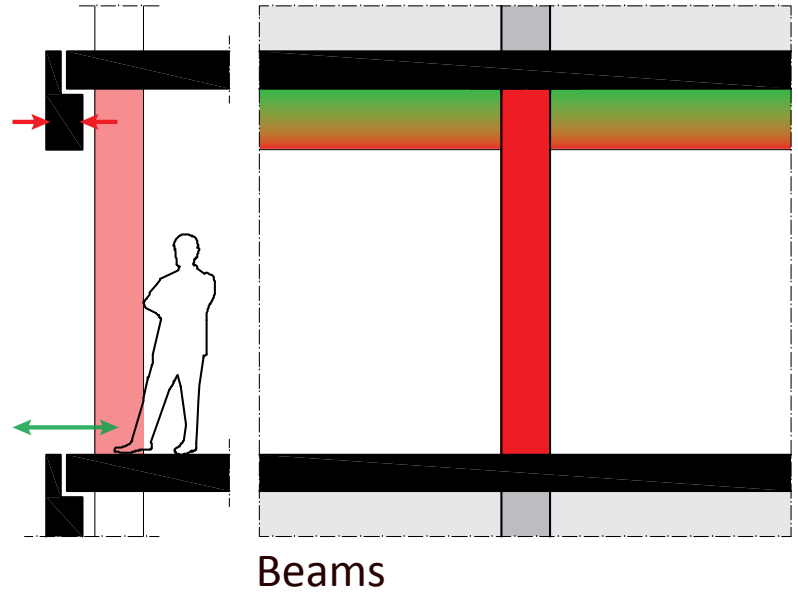
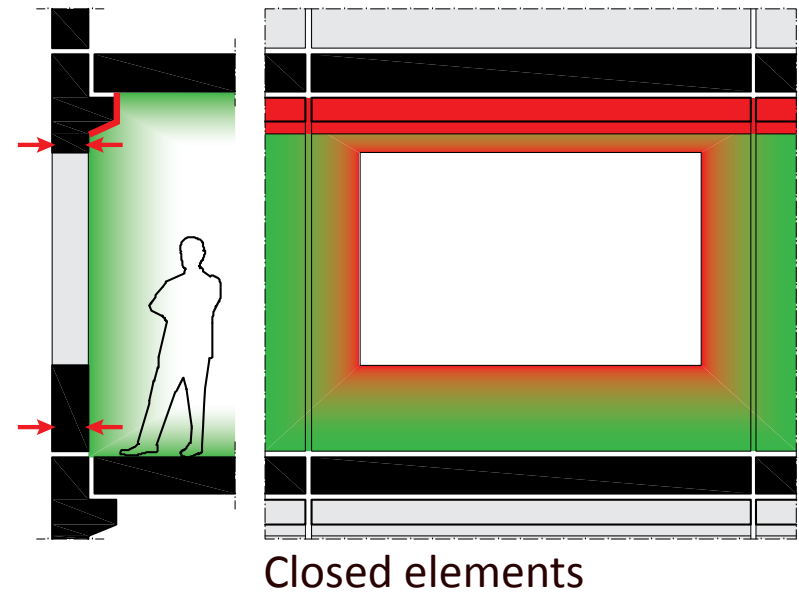
- be realized adaptable?
- make use of the existing building services?
- be merged with the existing load-bearing façades?



# 19 LOAD-BEARING FAÇADES

- Load-bearing façades in 1/3 office buildings
- Hardly impossible to replace these façades

↓  
Challenge



Not flexible        Flexible

# CONTEXT

- CHOSEN BUILDING
- TRANSFORMATION POTENTIAL
- LOCATION
- INFRASTRUCTURE
- FACILITIES
- FLOORPLAN
- CONSTRUCTION

21 CHOSEN BUILDING



NAME  
Ringpark

LOCATION  
Amsterdam

SURFACE  
19.000m<sup>2</sup>

BUILT  
1966



**SURROUNDINGS**

- High level of longtime vacancy
- High level of housing shortage

**LOCATION**

- Edge of a park
- Required facilities <1km

**TRANSPORT**

- Good infrastructure
- Good public transport

**BUILDING**

- Load-bearing façade
- Large floor-height





24 INFRASTRUCTURE



Railway

A10

City center



Shopping

School

Sports

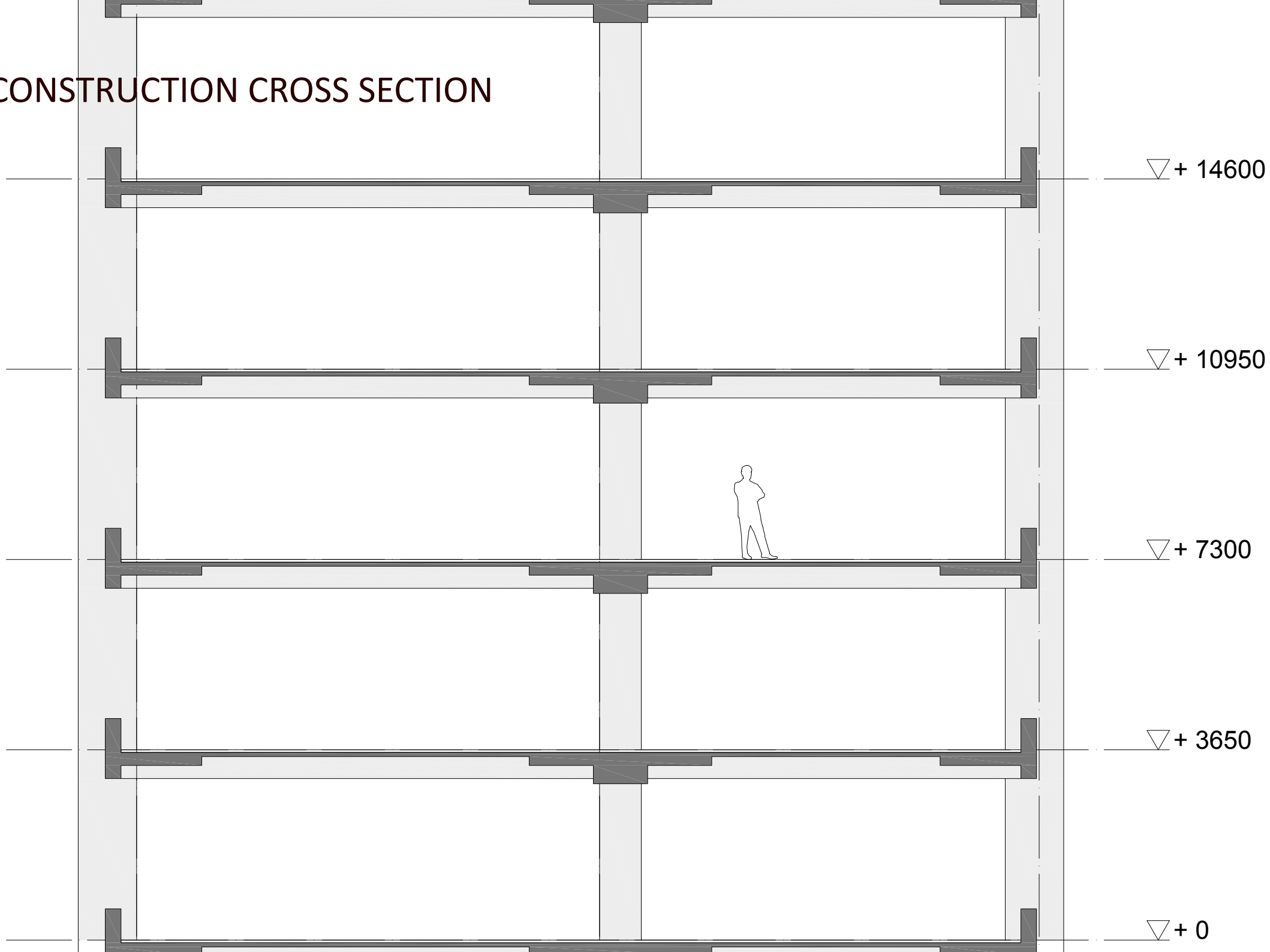


# FLOORPLAN



Orientation: East-West  
Spatial division: Corridor layout  
Elevation point: Central  
Structure: 5400-10800

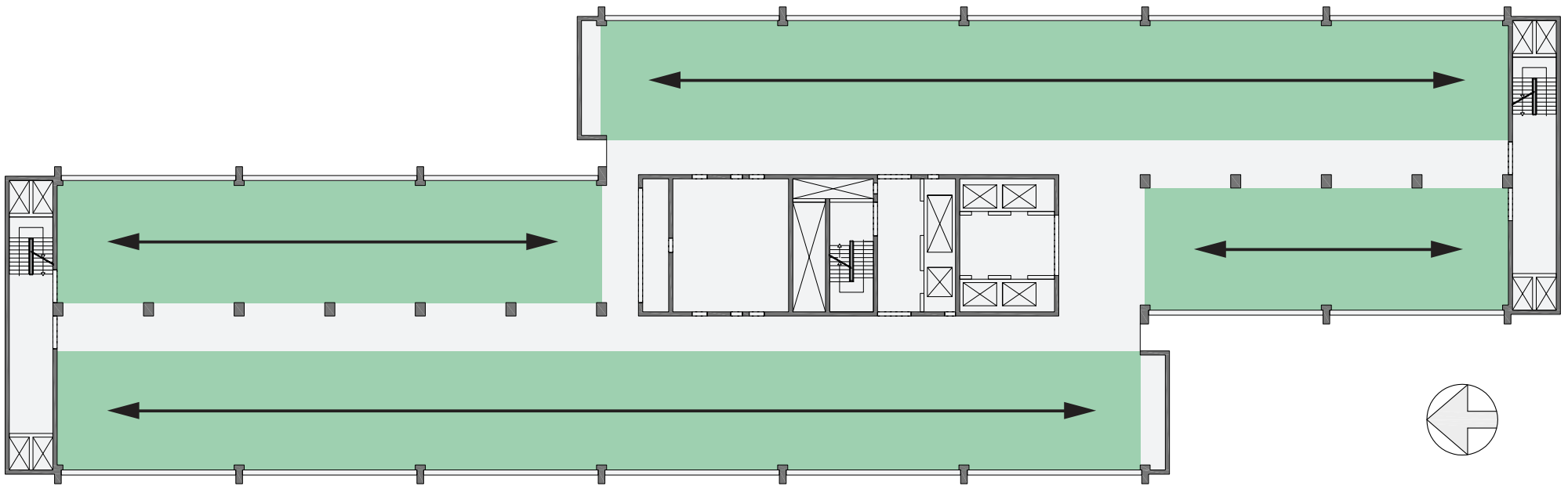
27 CONSTRUCTION CROSS SECTION





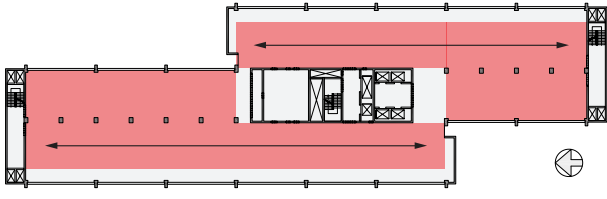
- SPATIAL DIVISION
- SHAFTS BUILDING SERVICES
- WINTER GARDEN
- VARIABLE HOUSING SIZES

# SPATIAL DIVISION



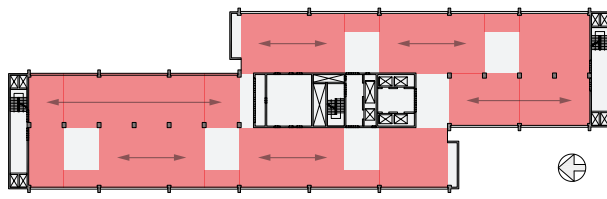
## CORRIDOR

- ✓ Flexibility
- ✓ Usability
- ✓ Fits into building structure



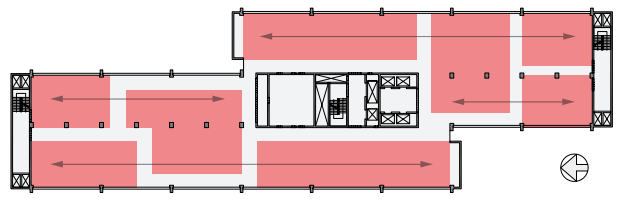
## GALLERY

- ✓ Flexibility
- ✗ Usability
- ✗ Fits into building structure



## PORCH

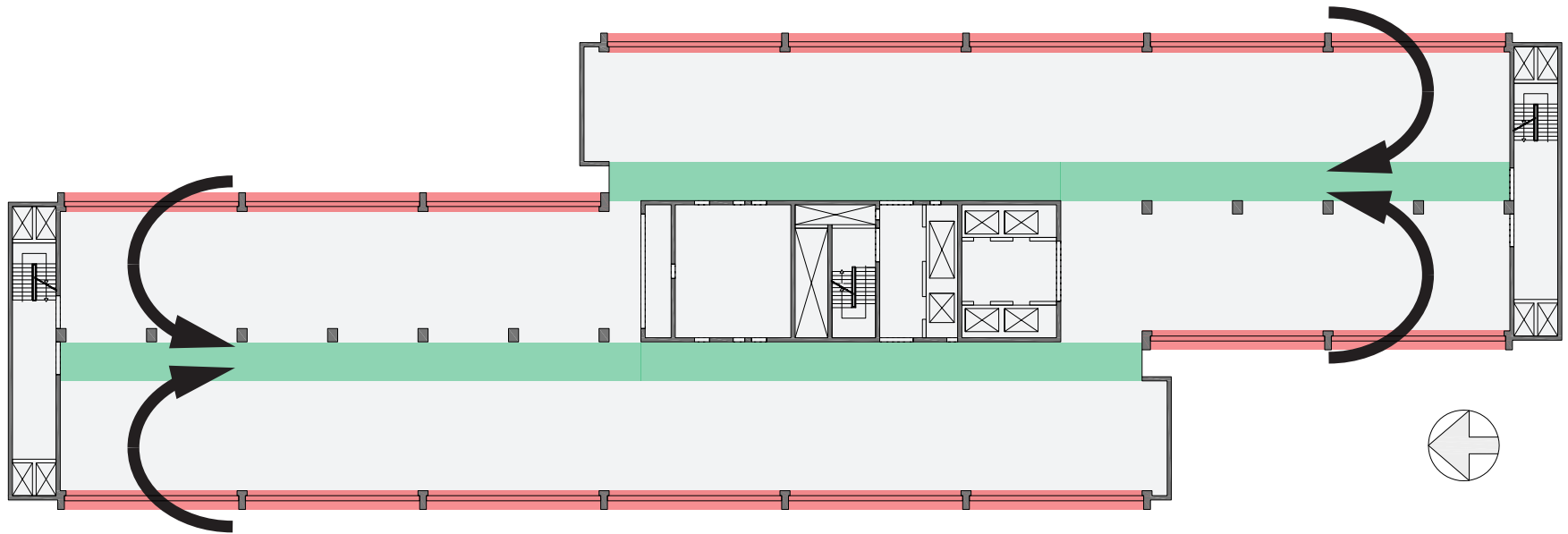
- ✗ Flexibility
- ✓ Usability
- ✗ Fits into building structure



## RANDOM

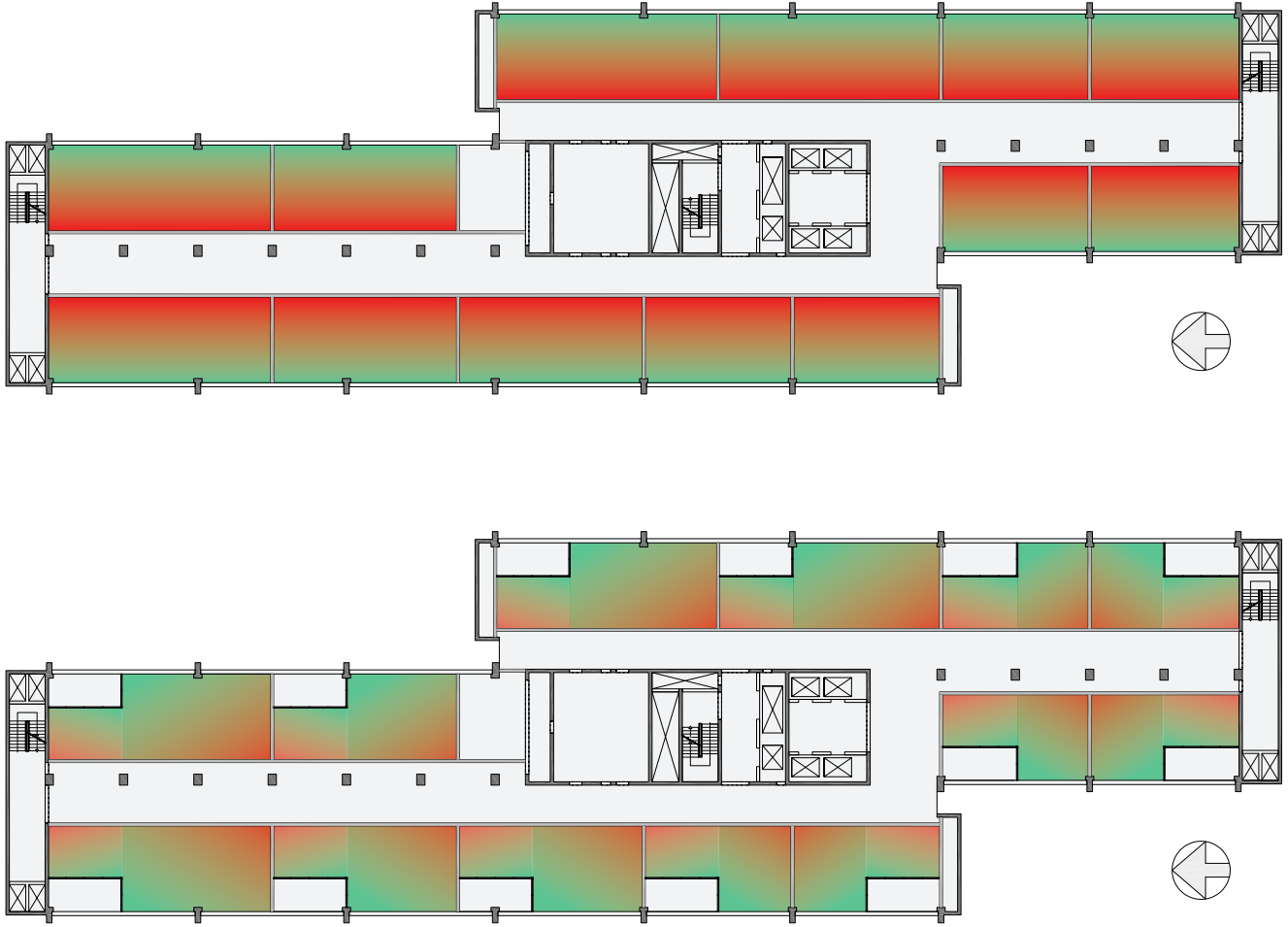
- ✓ Flexibility
- ✗ Usability
- ✓ Fits into building structure

# 31 SHAFTS BUILDING SERVICES



- ✓ More layout freedom near the façade
- ✓ Fits better into existing construction
- ✓ Better accessible

# WINTER GARDEN

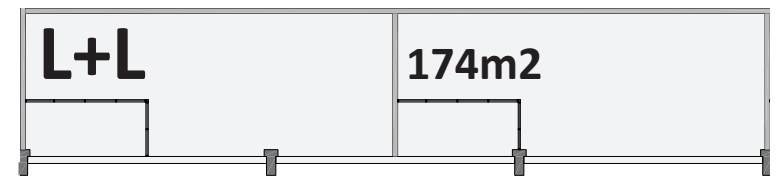
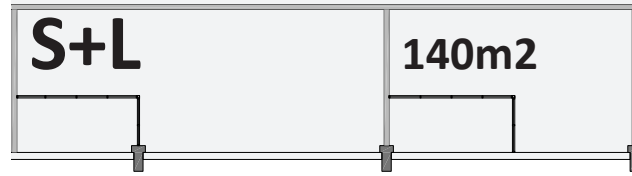
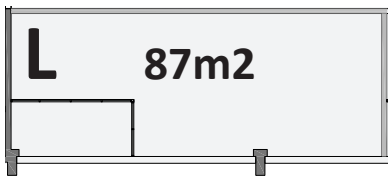
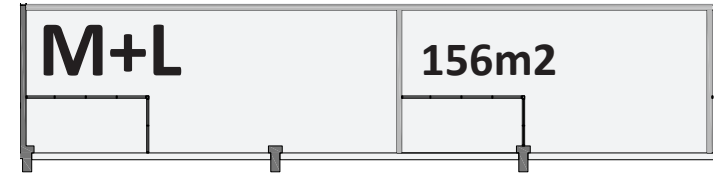
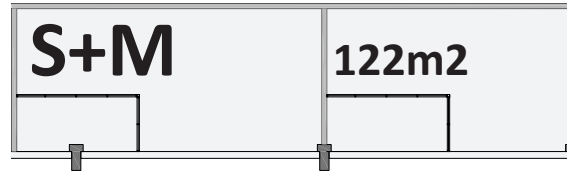
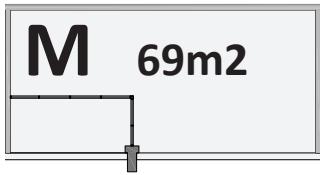
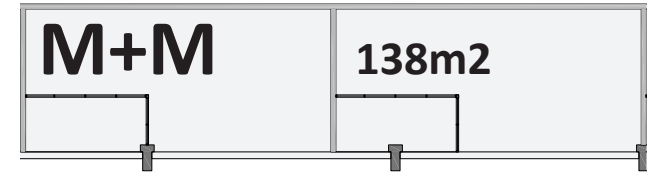
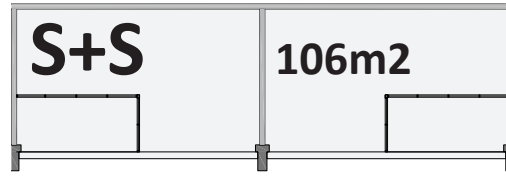
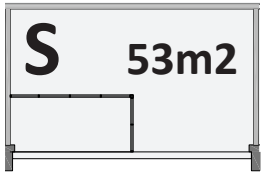


Suitability for residence & Layout freedom



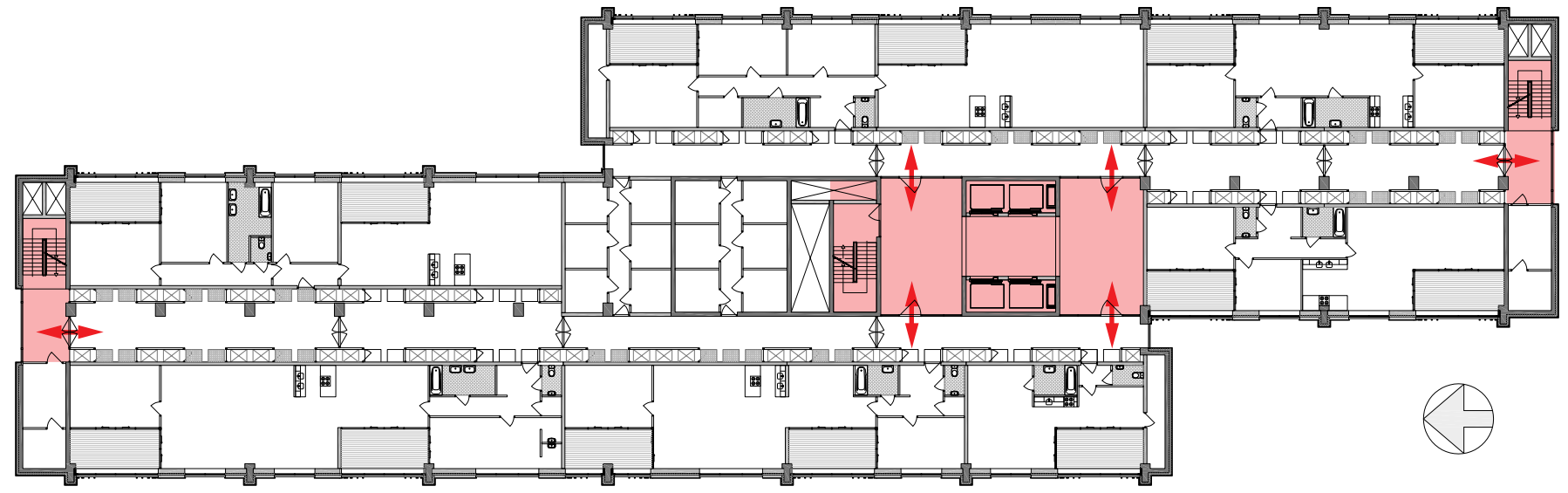


33 VARIABLE HOUSING SIZES

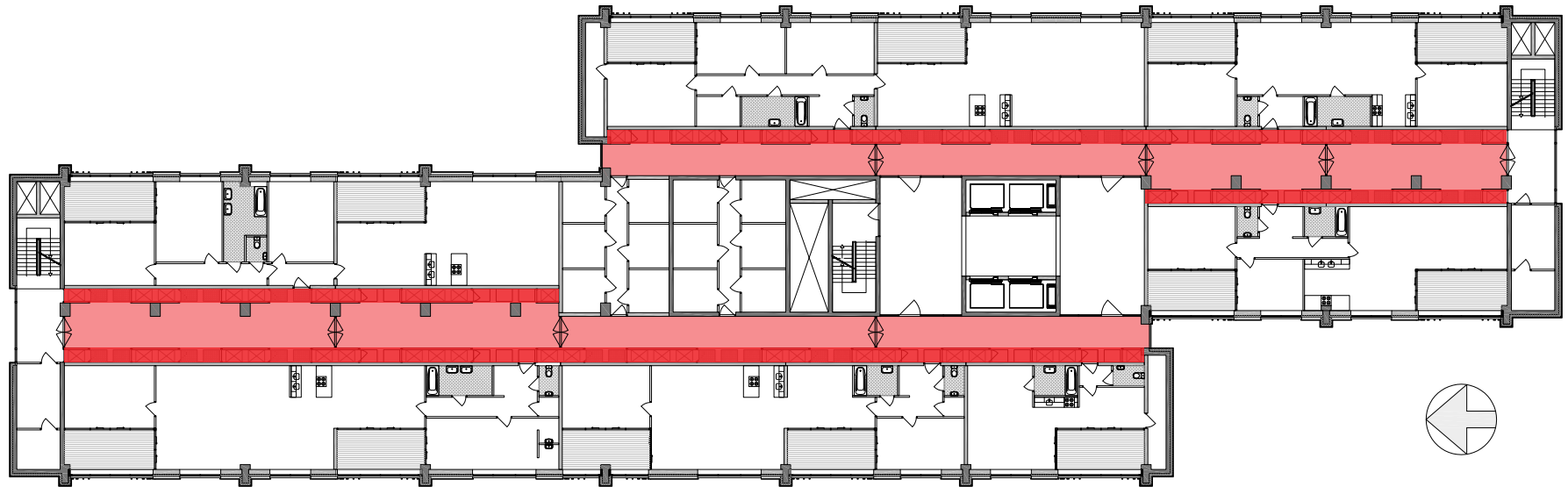


- ENTRANCE
- CORRIDOR
- HOUSING
- HOUSING TYPES
- INTERIOR

# ENTRANCE

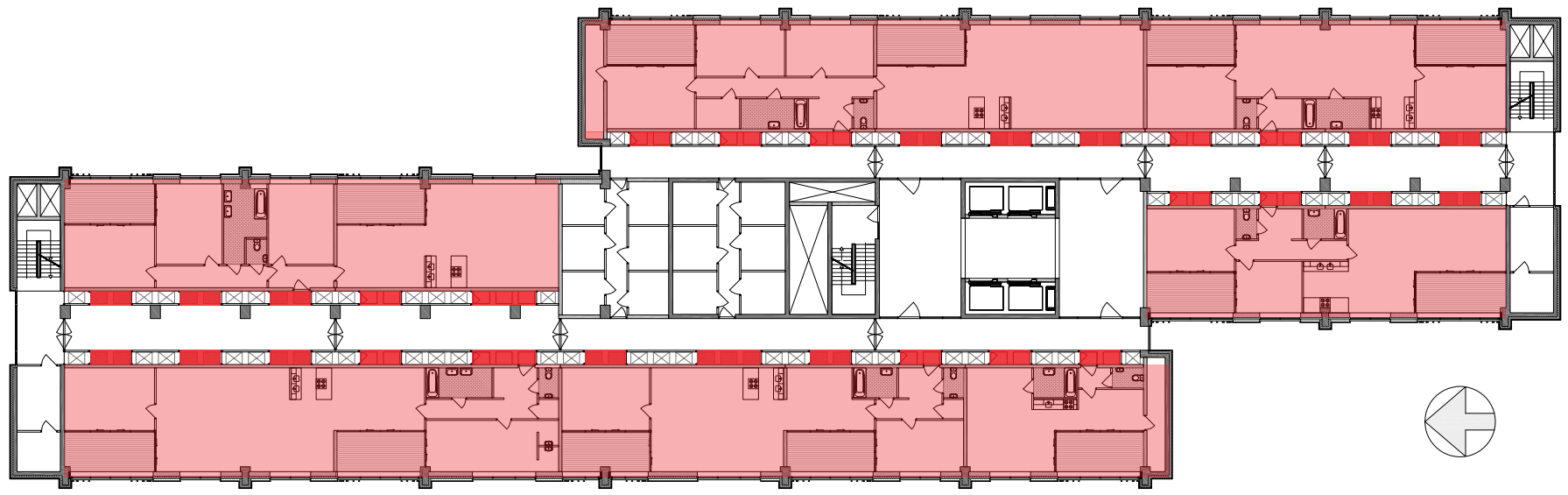


 Elevation spaces     Entrances



 Corridor

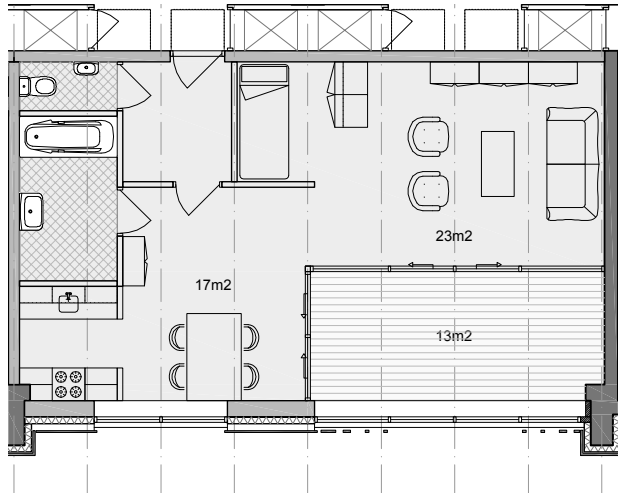
 Building Services (shafts + ventilation)



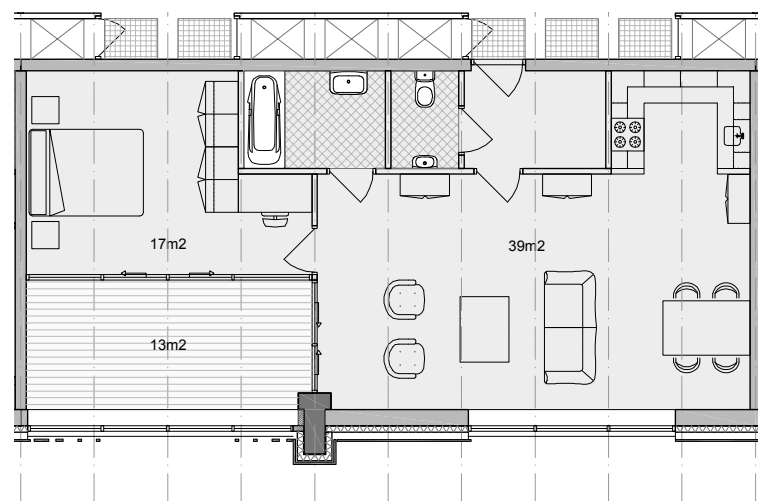
 Housing

 Space for moveable entrances

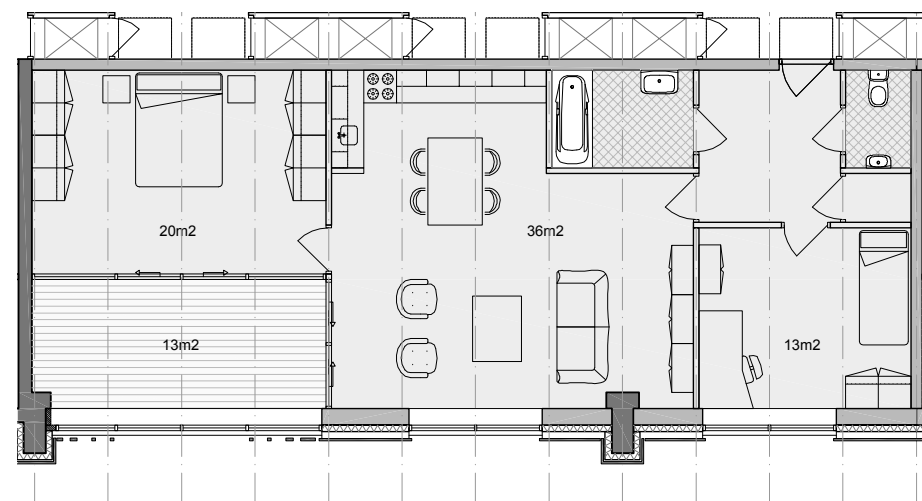
# HOUSING TYPE S



# HOUSING TYPE M

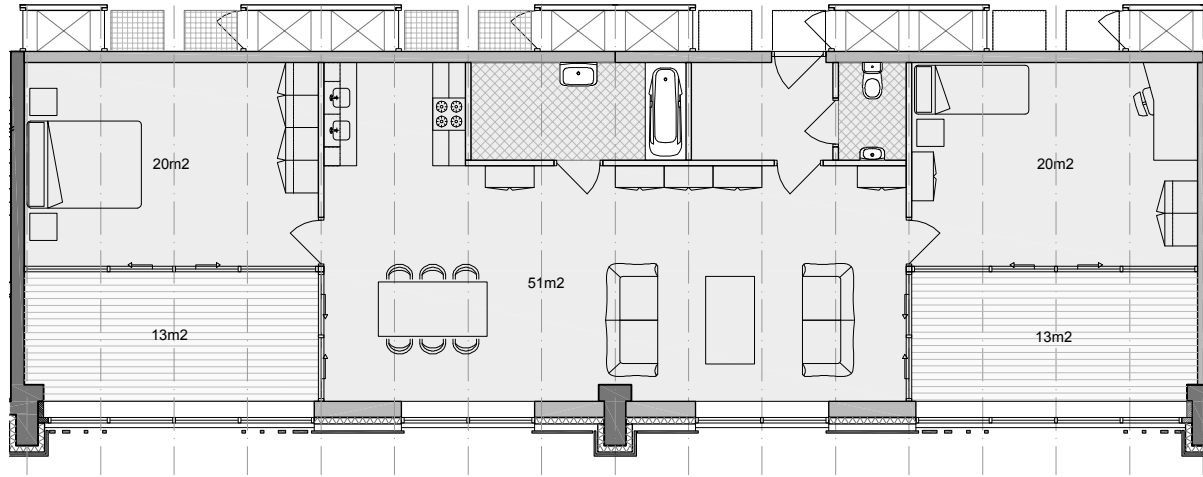


# HOUSING TYPE L

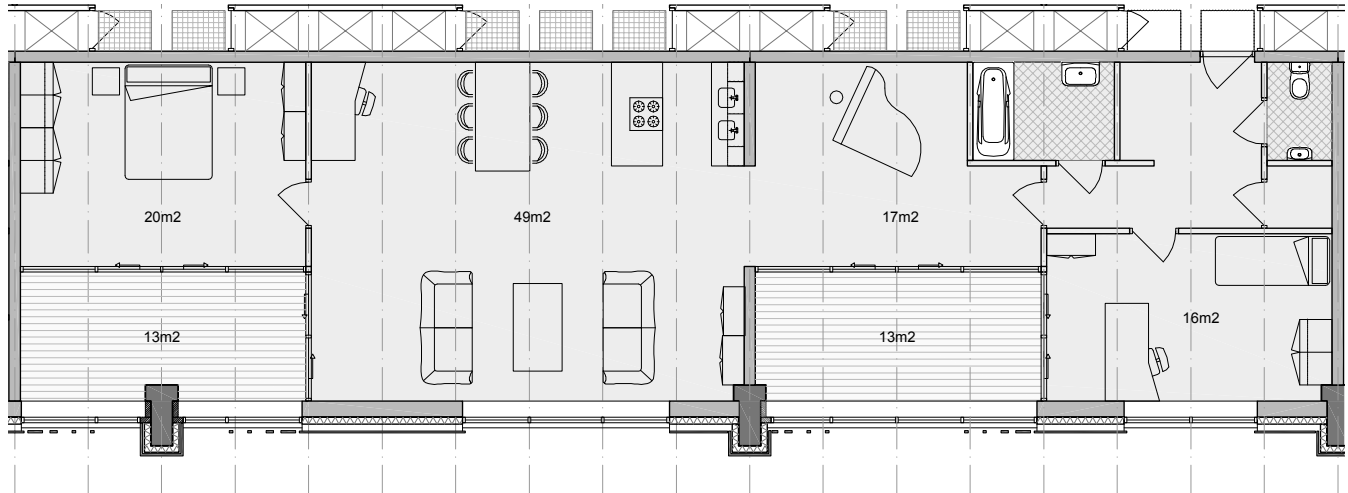




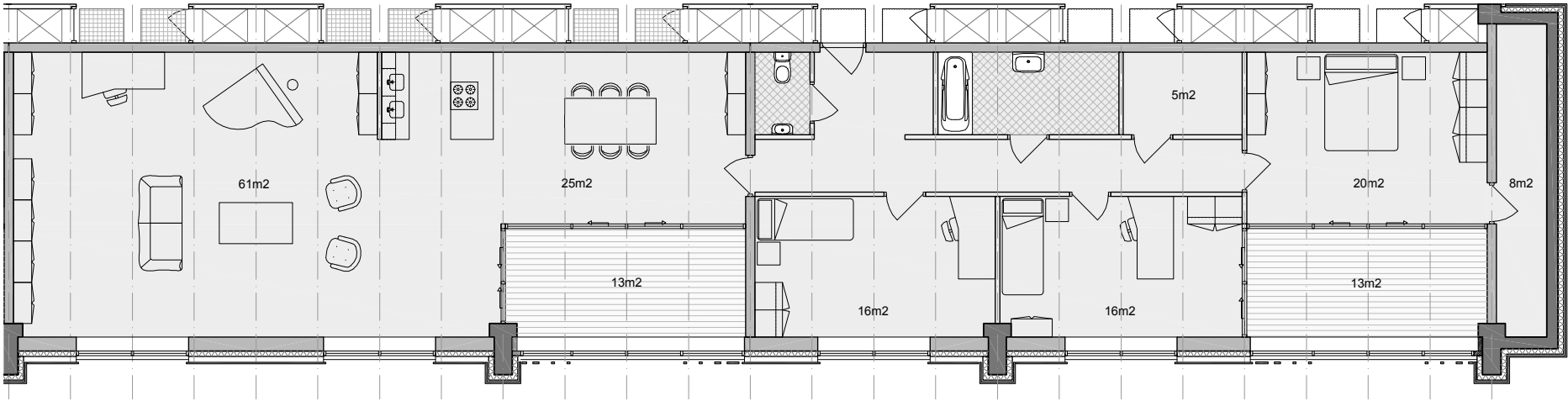
# HOUSING TYPE S+S



# HOUSING TYPE S+M



# HOUSING TYPE L+L



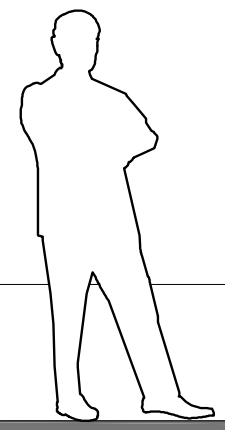
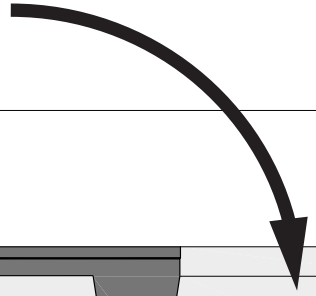




- FLOOR INTERVENTION
- SHAFTS
- VENTILATION
- FIRE SAFETY
- HEATING
- COOLING

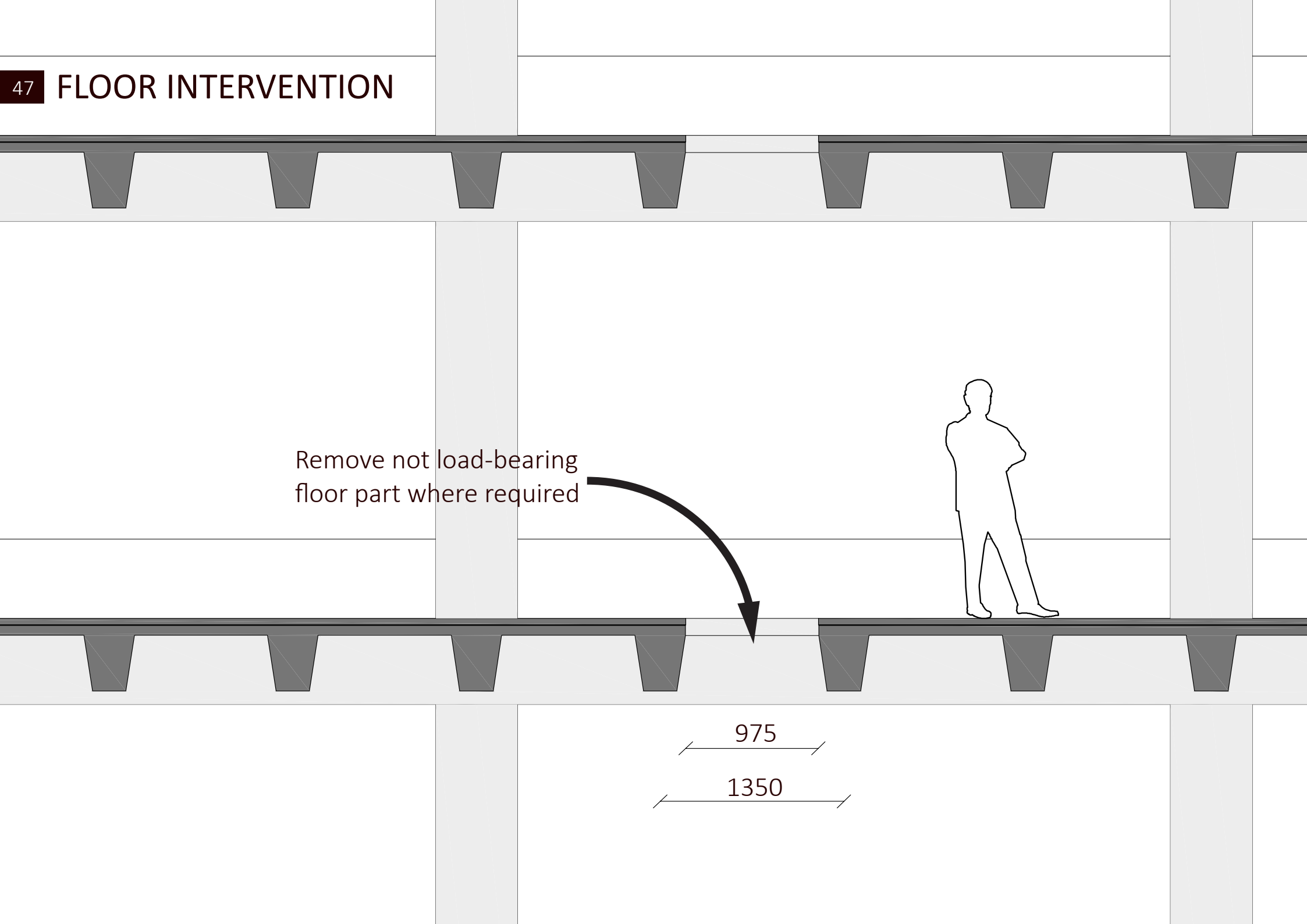
47 FLOOR INTERVENTION

Remove not load-bearing floor part where required

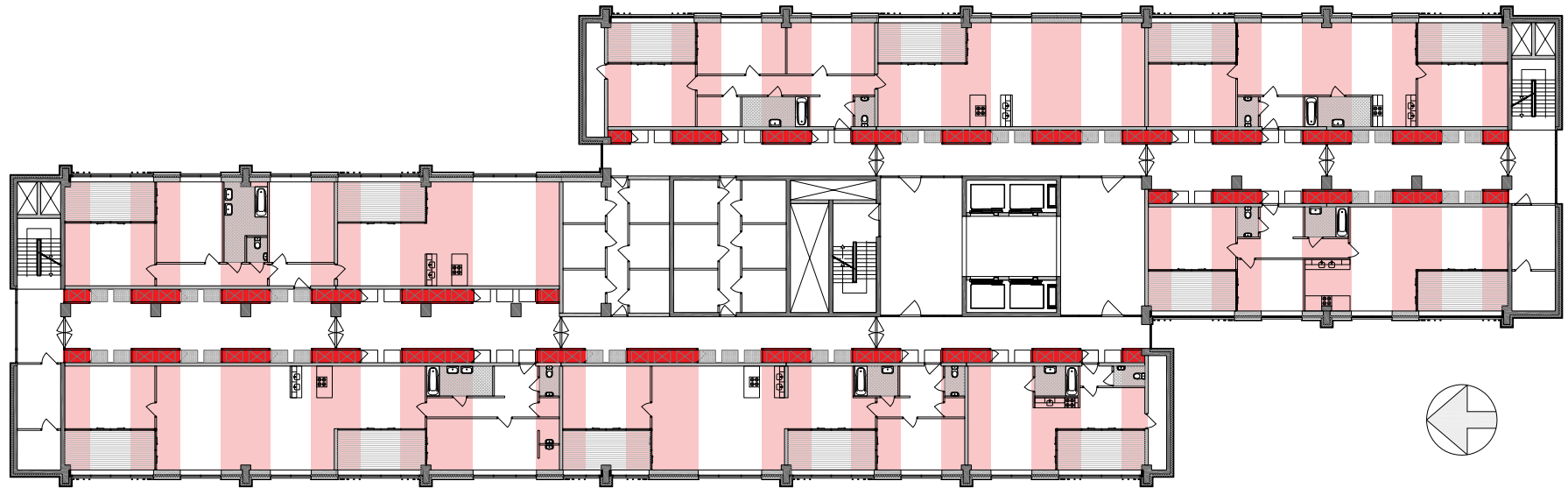



975

1350



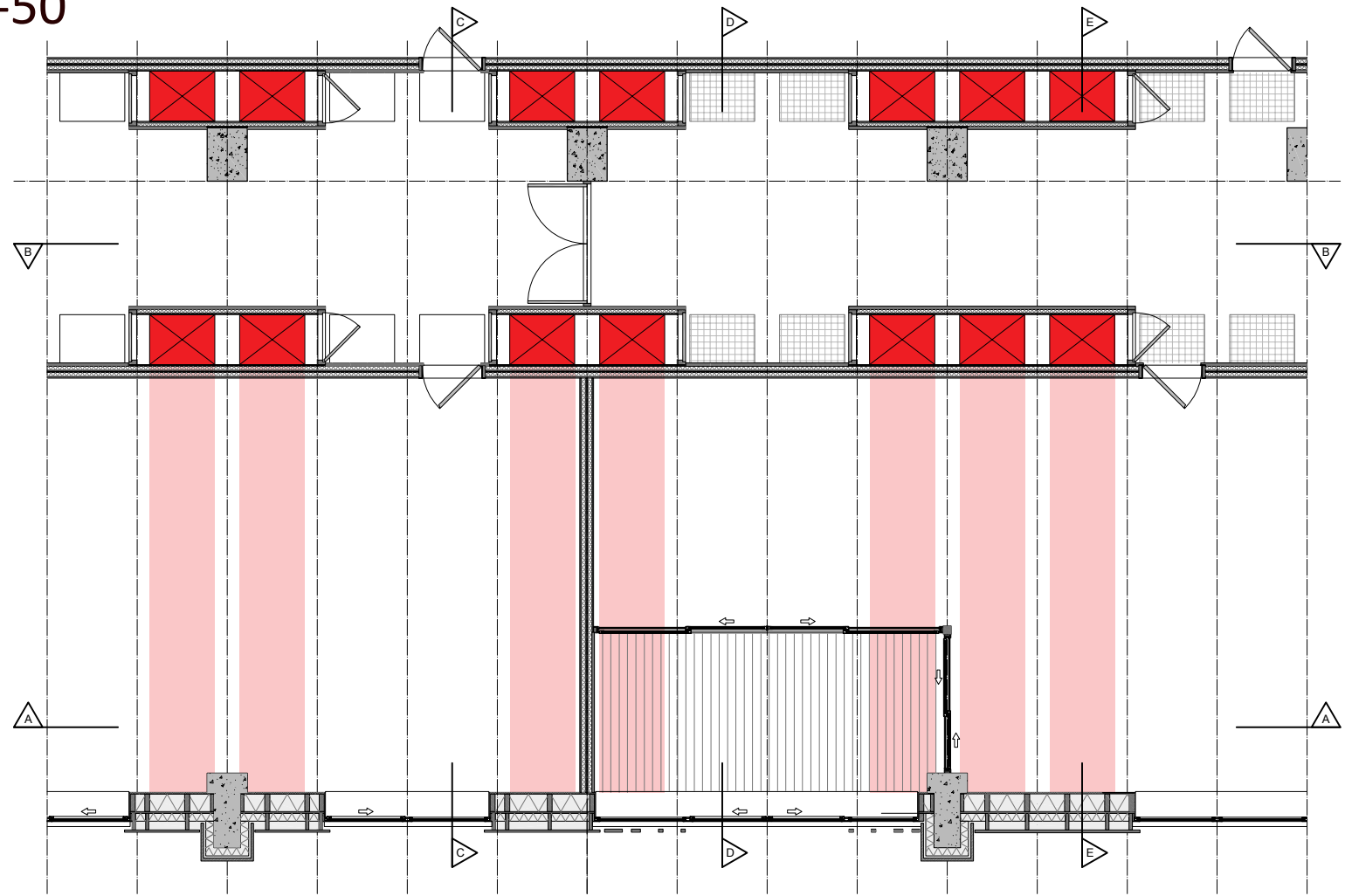
# SHAFTS 1-200



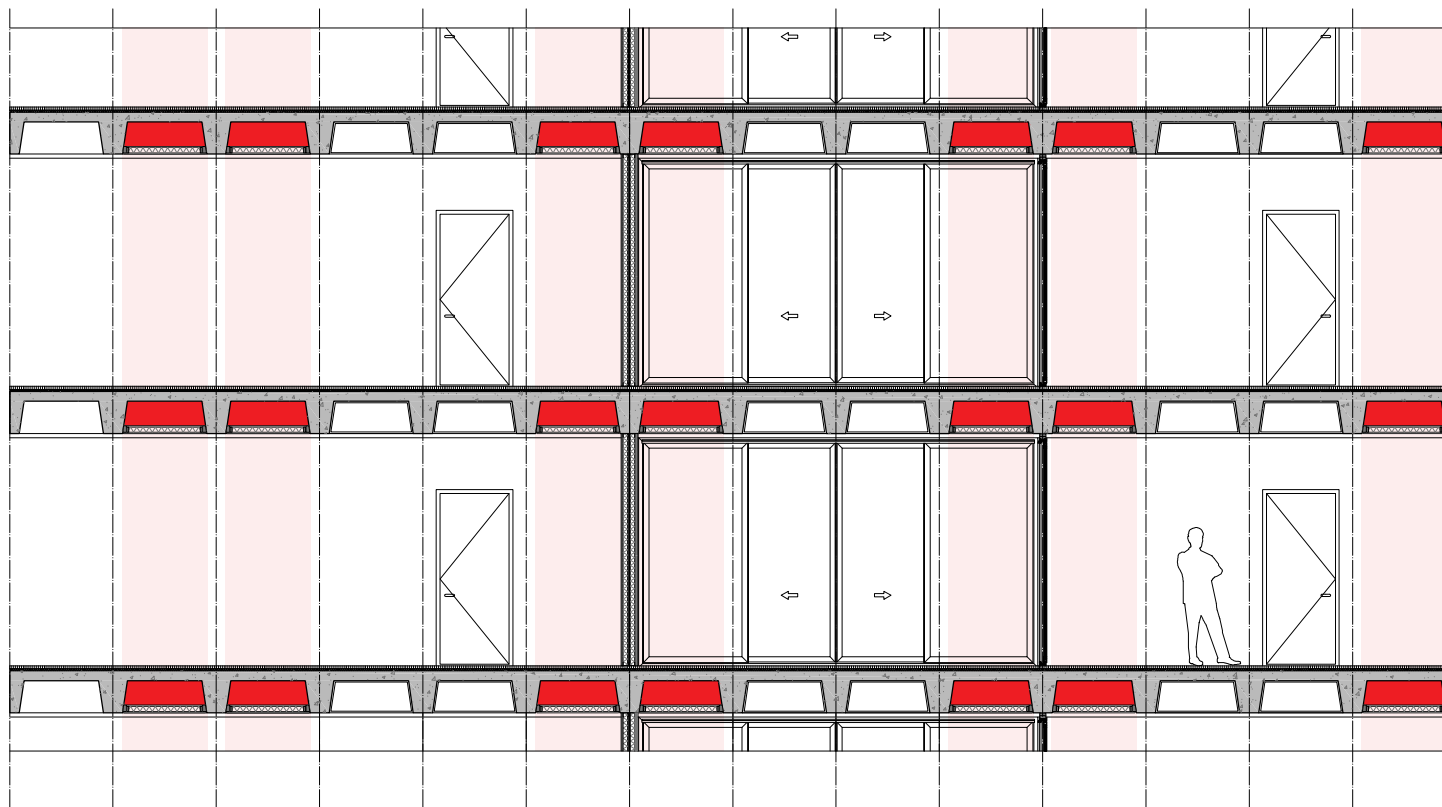
-  Vertical shafts
-  Horizontal shafts





# SHAFTS 1-50



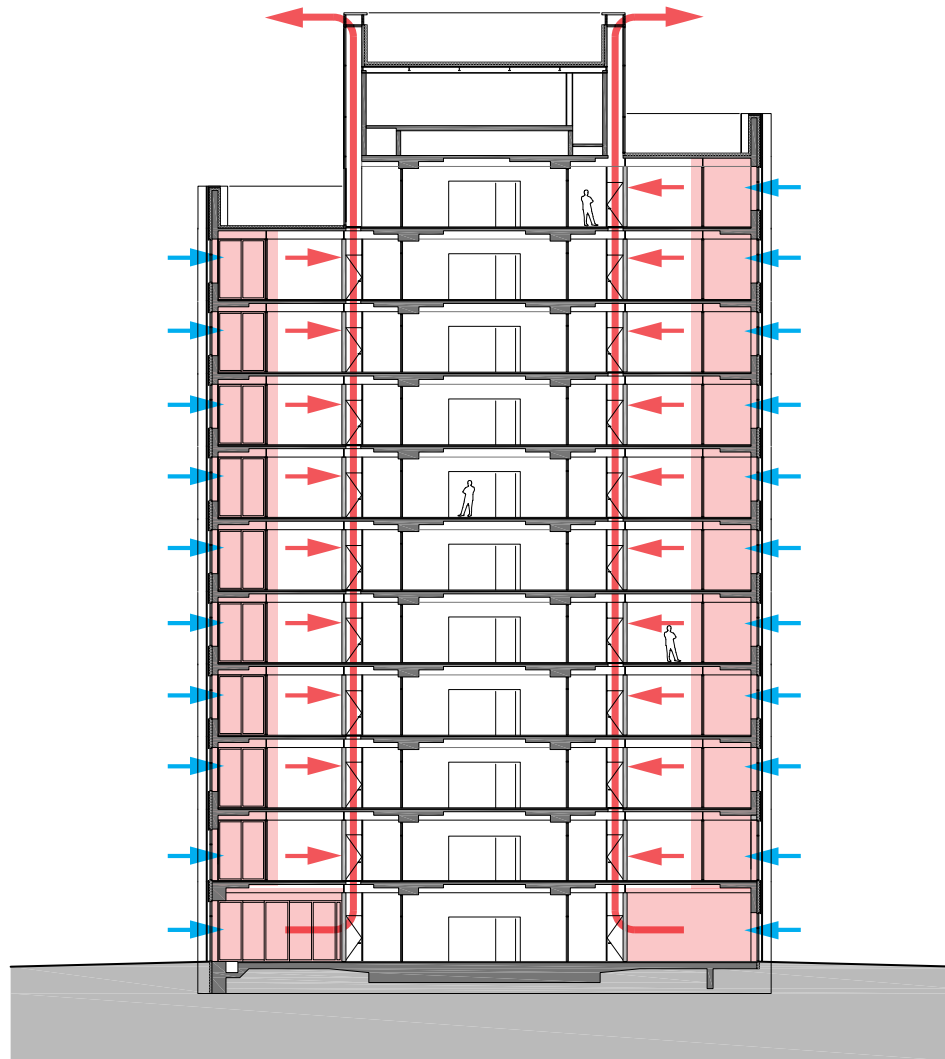
- Vertical shafts
- Horizontal shafts



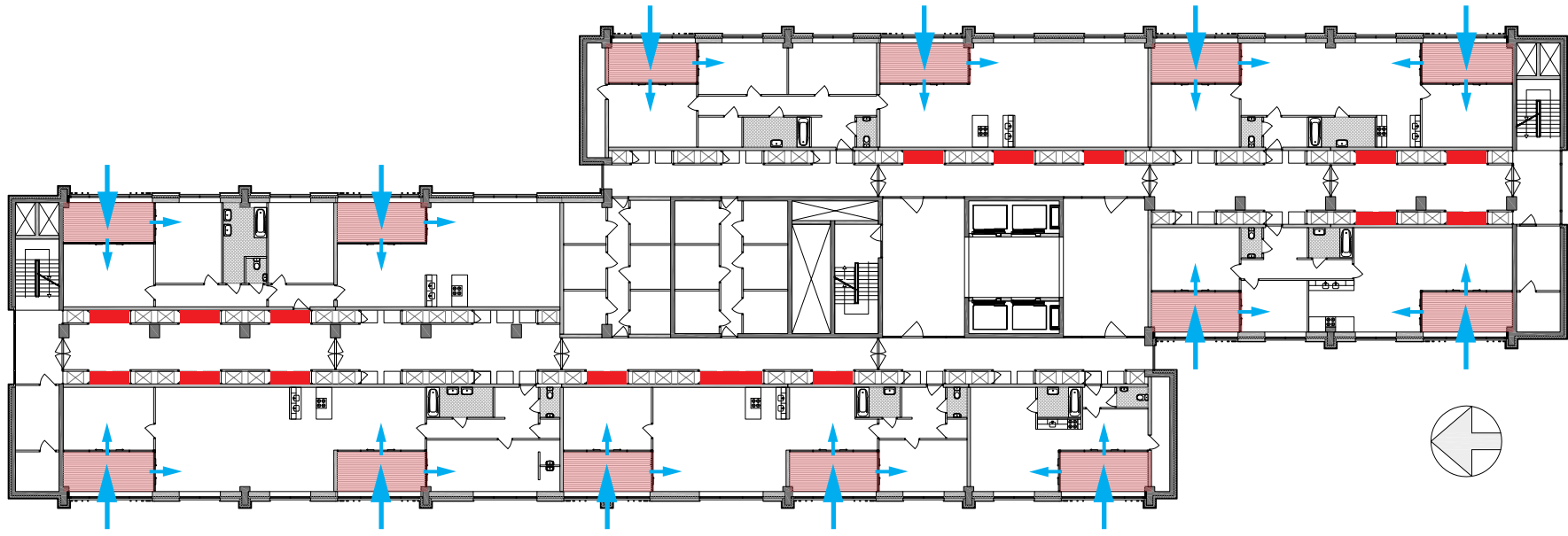
-  Vertical Shafts
-  Horizontal shafts

51 VENTILATION PRINCIPLE

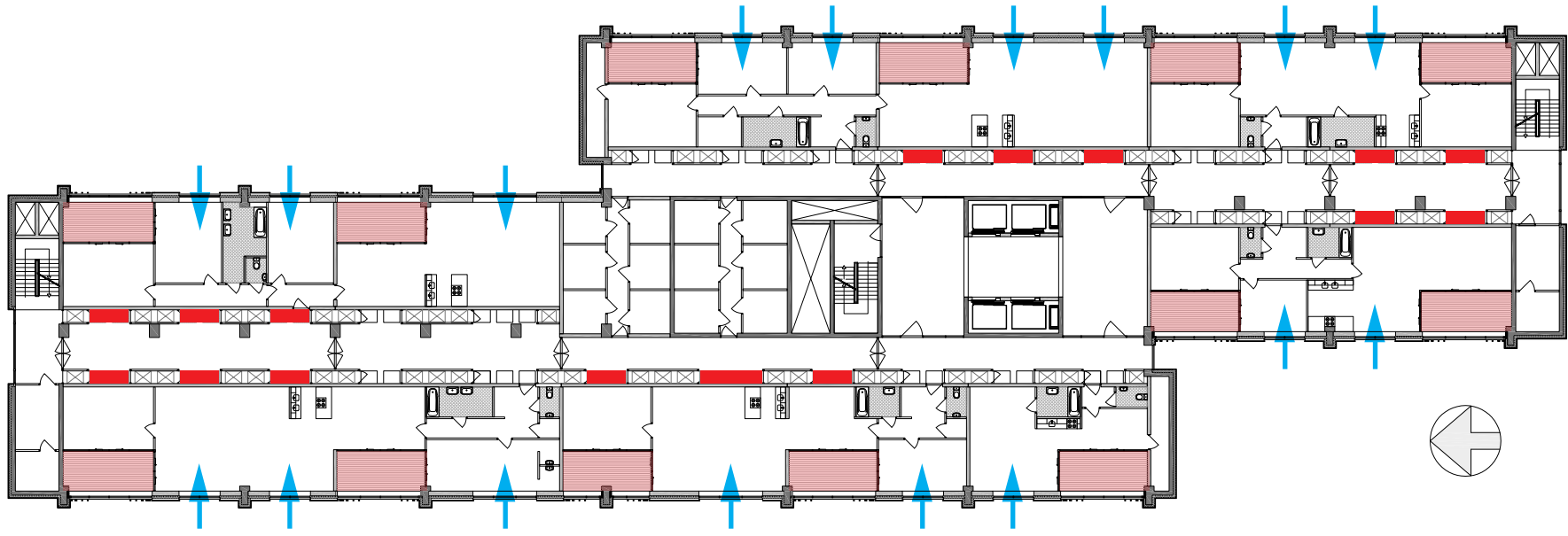
-  Fresh Air
-  Winter Garden
-  Polluted Air



52 VENTILATION WINTER

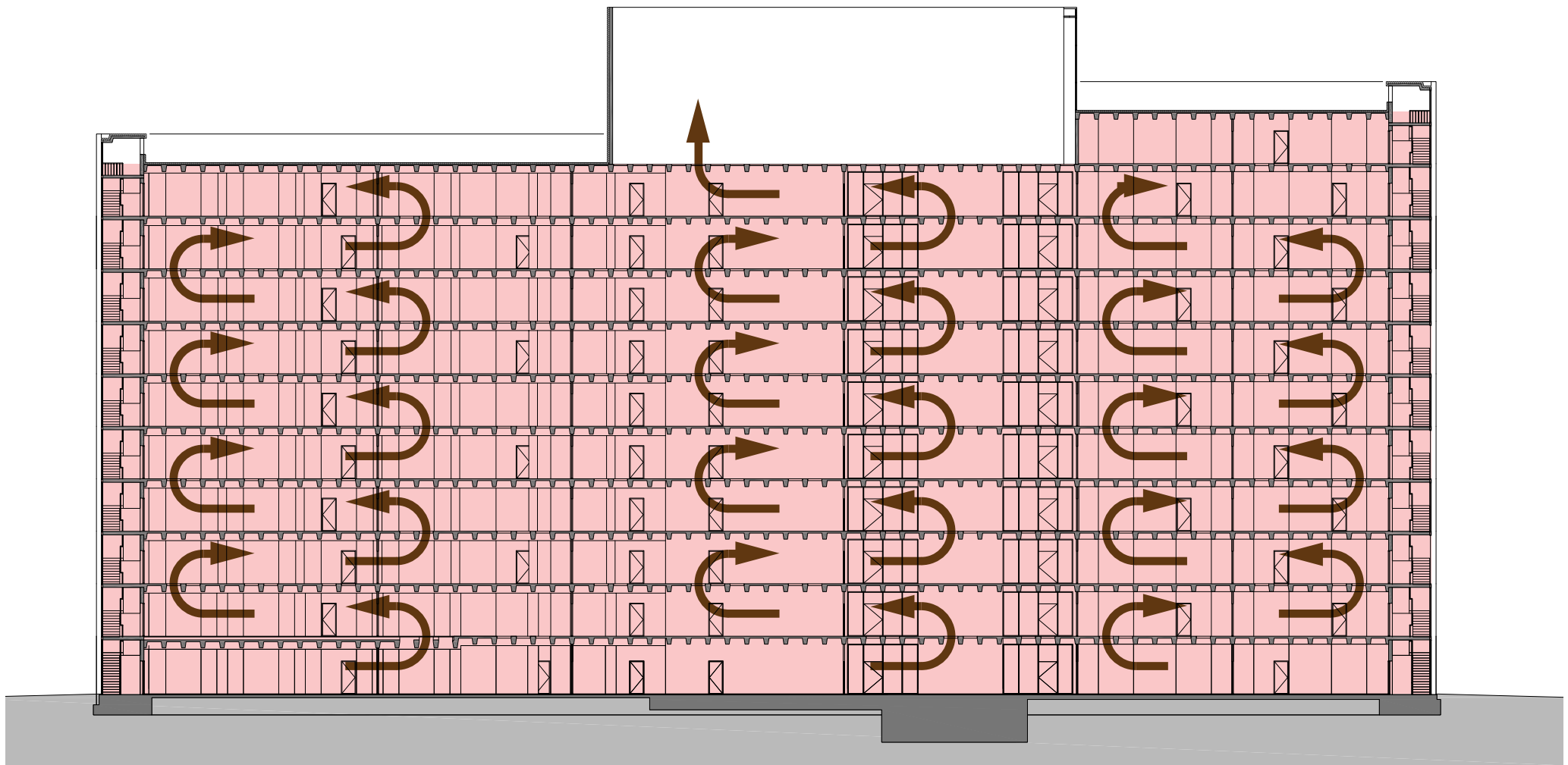


 Fresh Air       Winter Garden       Ventilation openings



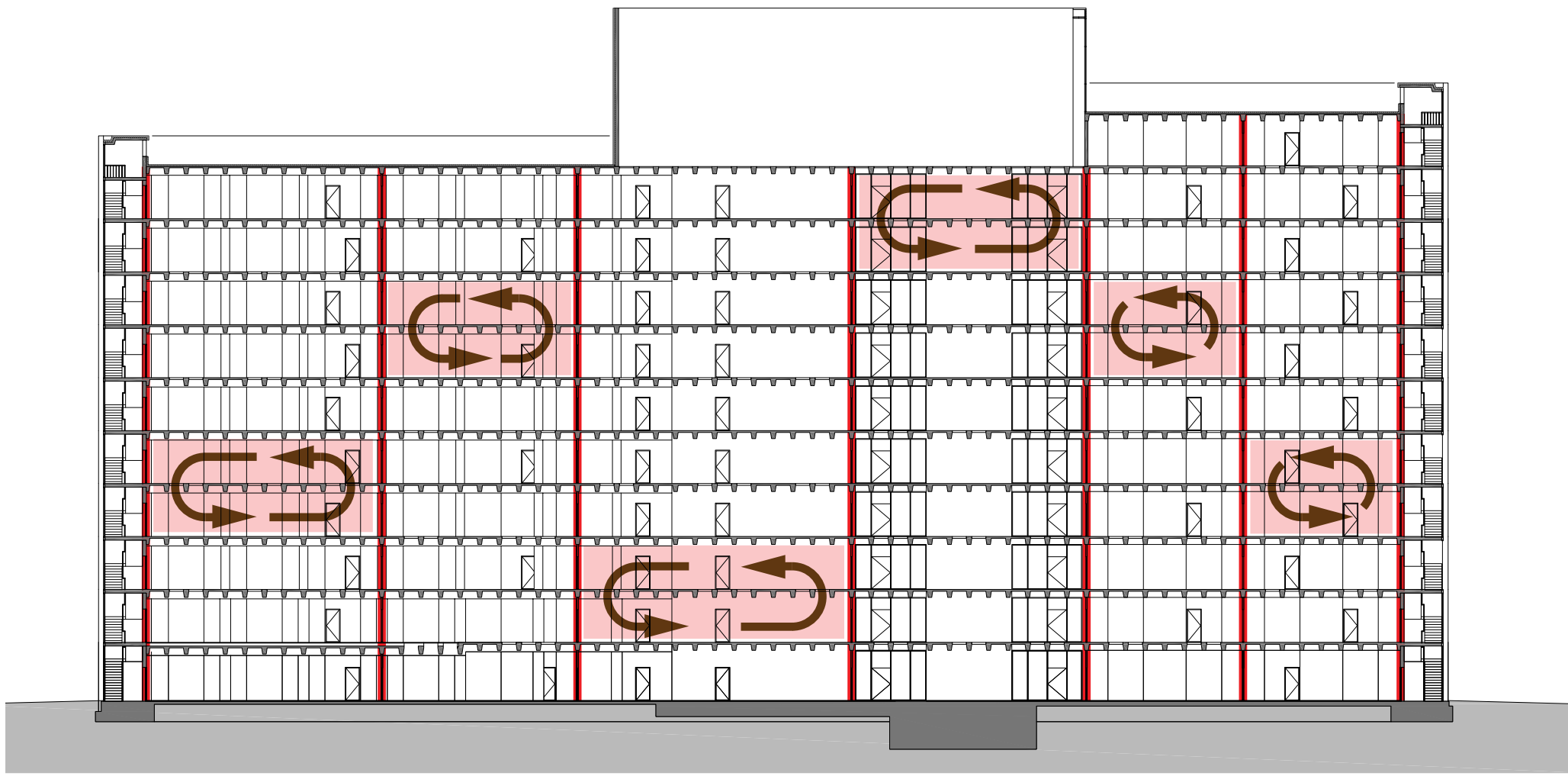
 Fresh Air

 Ventilation openings



Situation opened fire doors

➔ Smoke      ■ Compartment

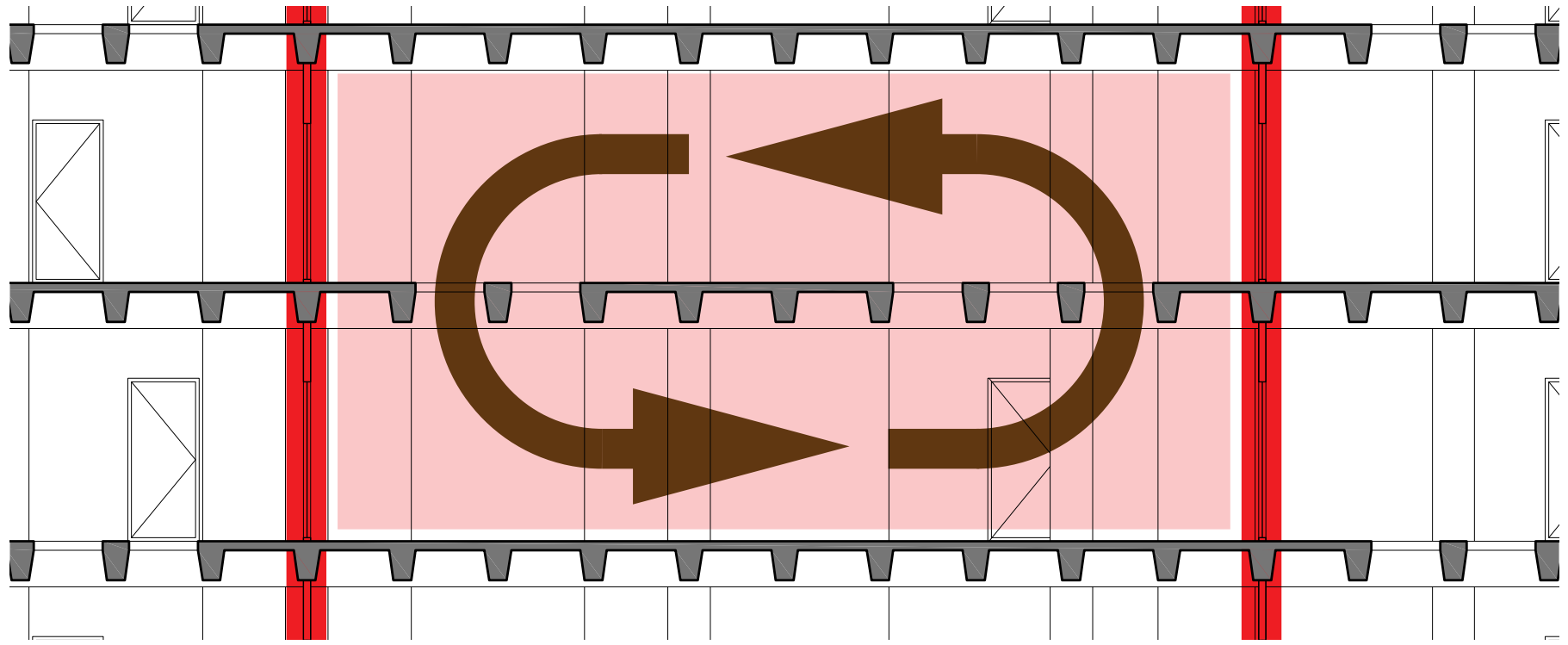


Situation closed fire doors

➔ Smoke

■ Compartment

— Fire doors



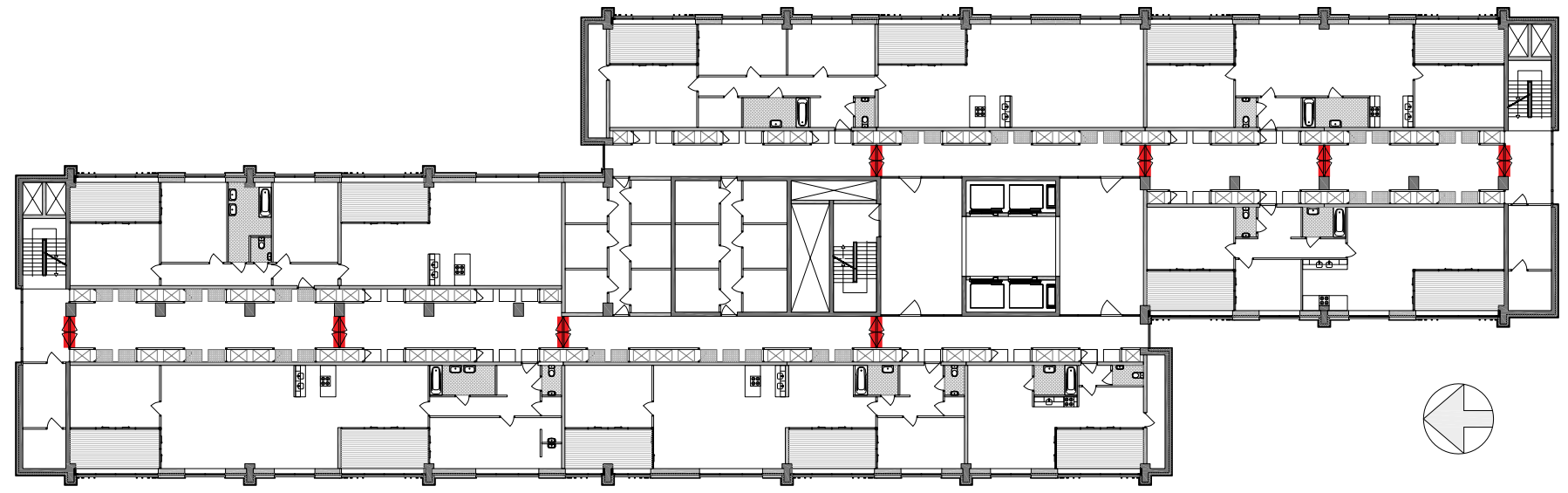
Situation closed fire doors

→ Smoke

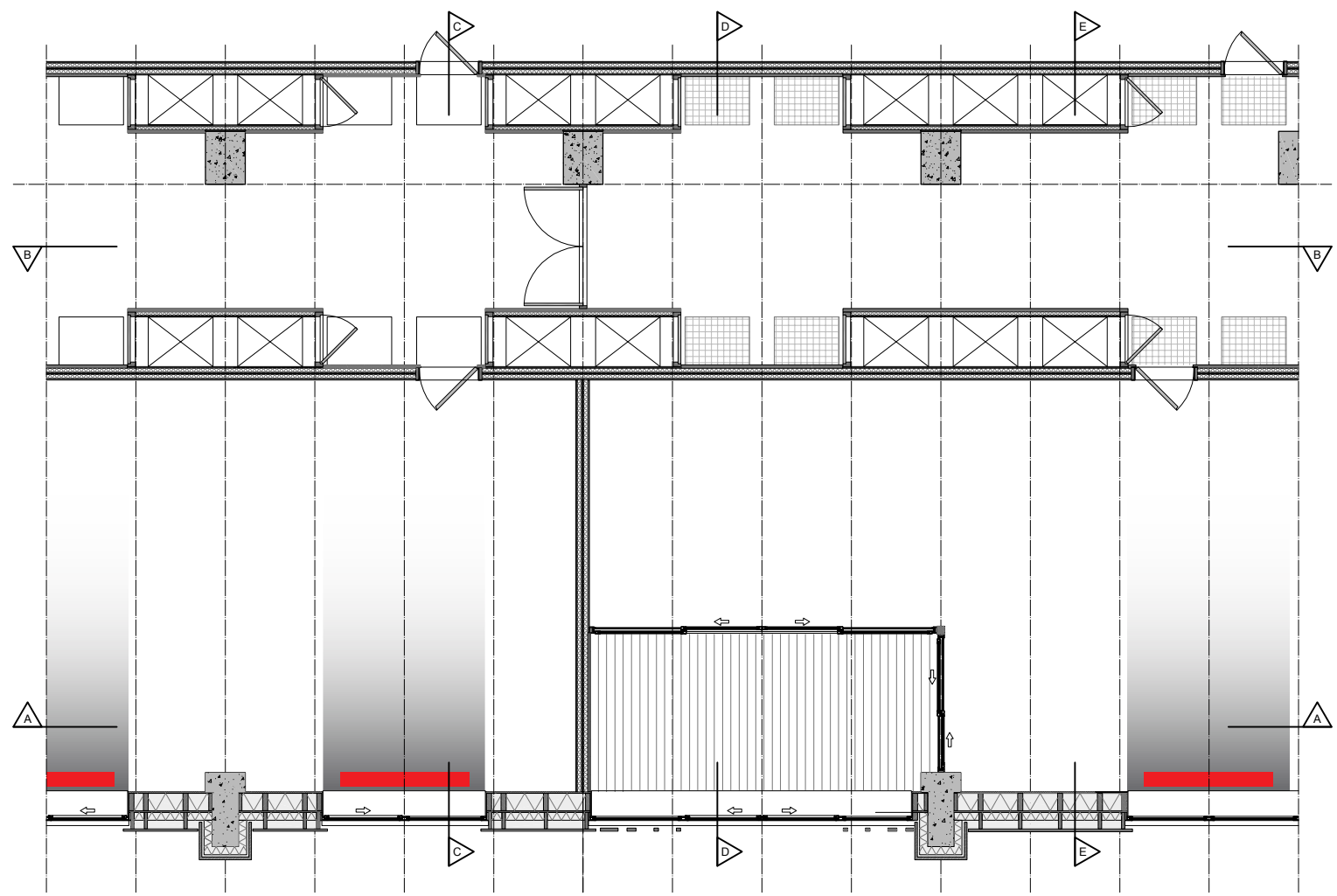
■ Compartment

■ Fire doors






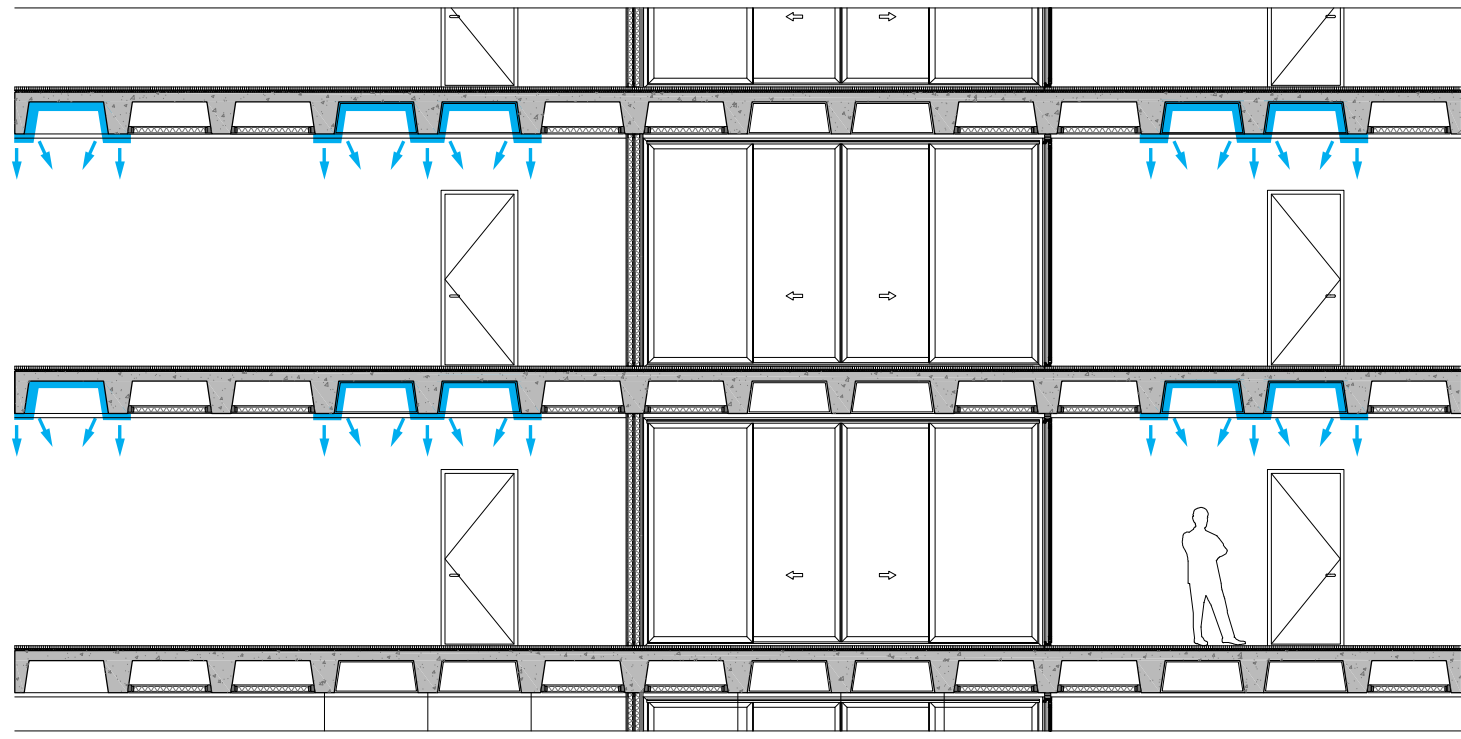
 Fire doors



Layout freedom: Possibility of placing walls



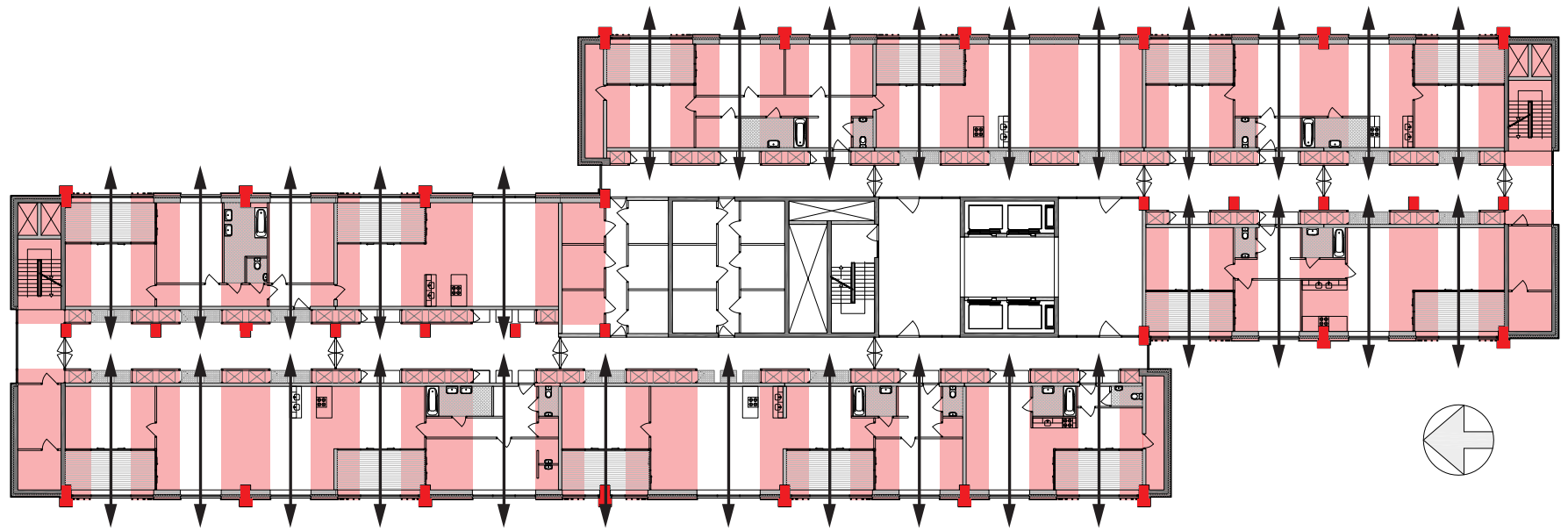
 Radiators/Convectors



 Night Ventilation

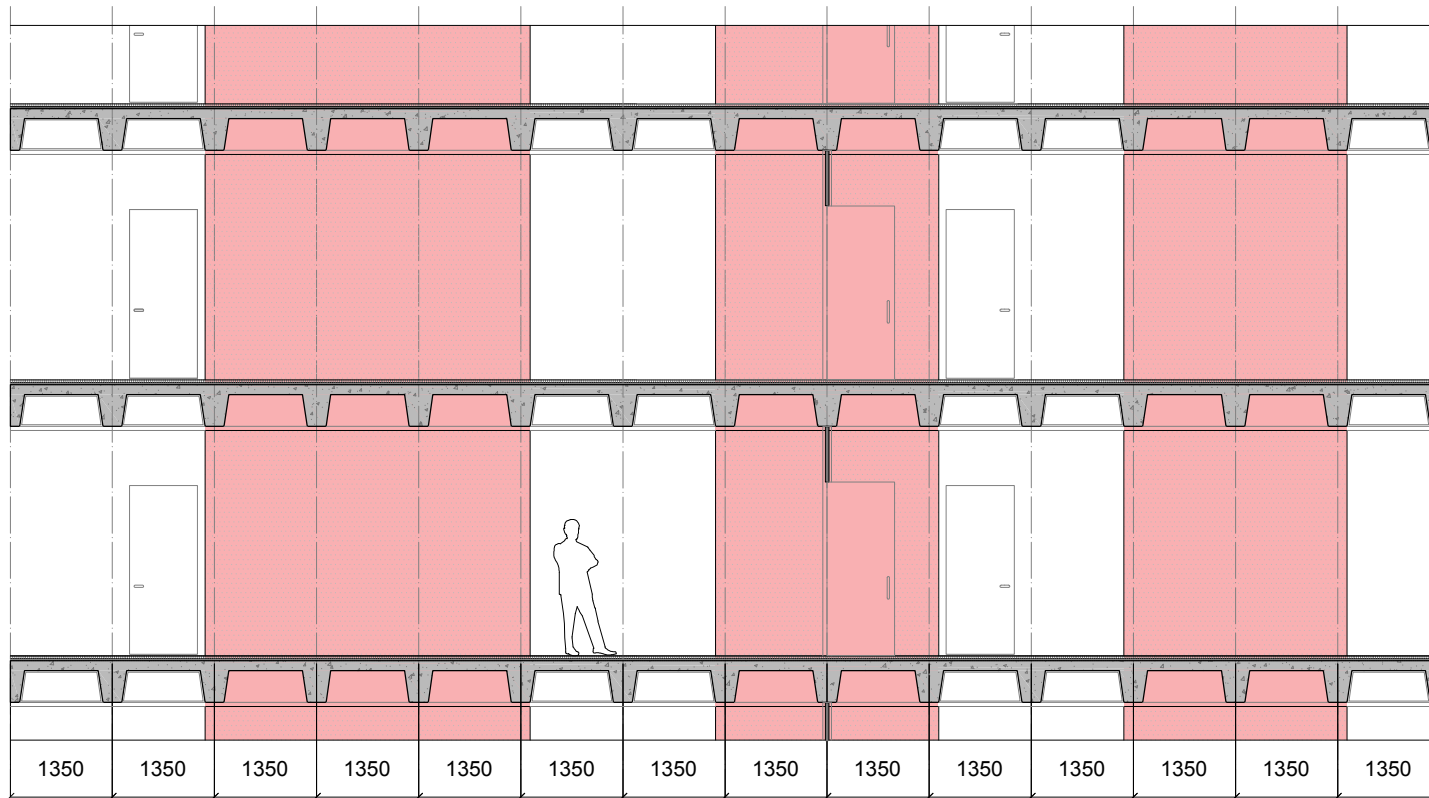
- CONCEPT MATERIALIZATION
- MATERIALIZATION CORRIDOR
- DETAILING CORRIDOR
- MATERIALIZATION FAÇADE
- DETAILING FAÇADE

61 CONCEPT MATERIALISATION



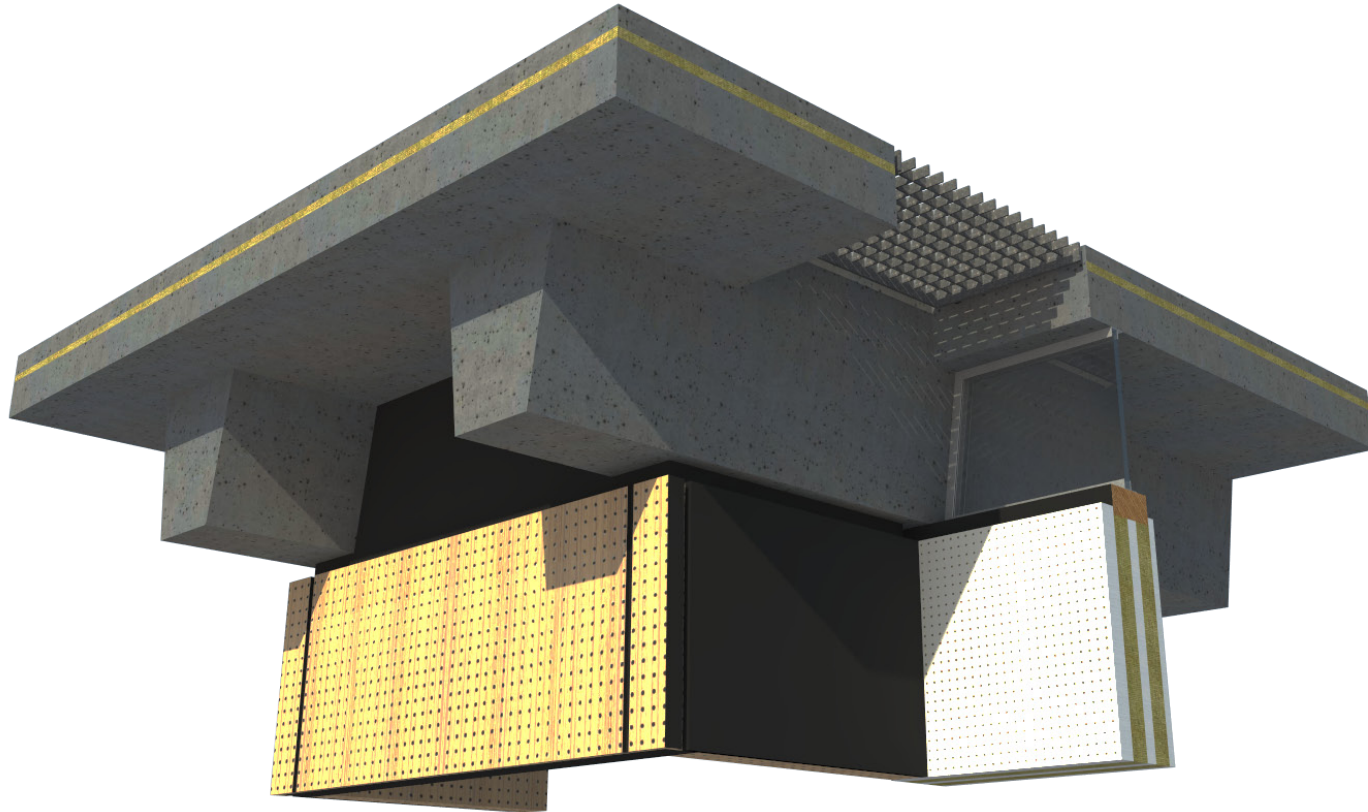
 Closed zones       Open zones       Construction

62 MATERIALISATION CORRIDOR

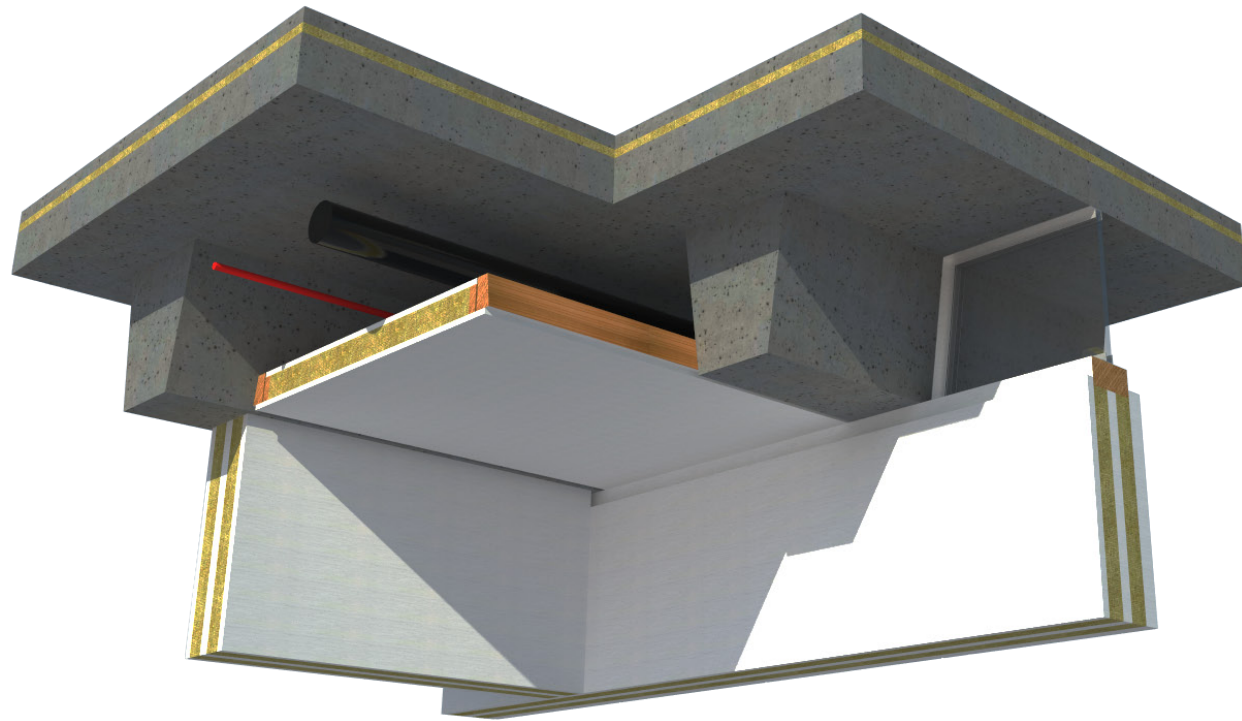


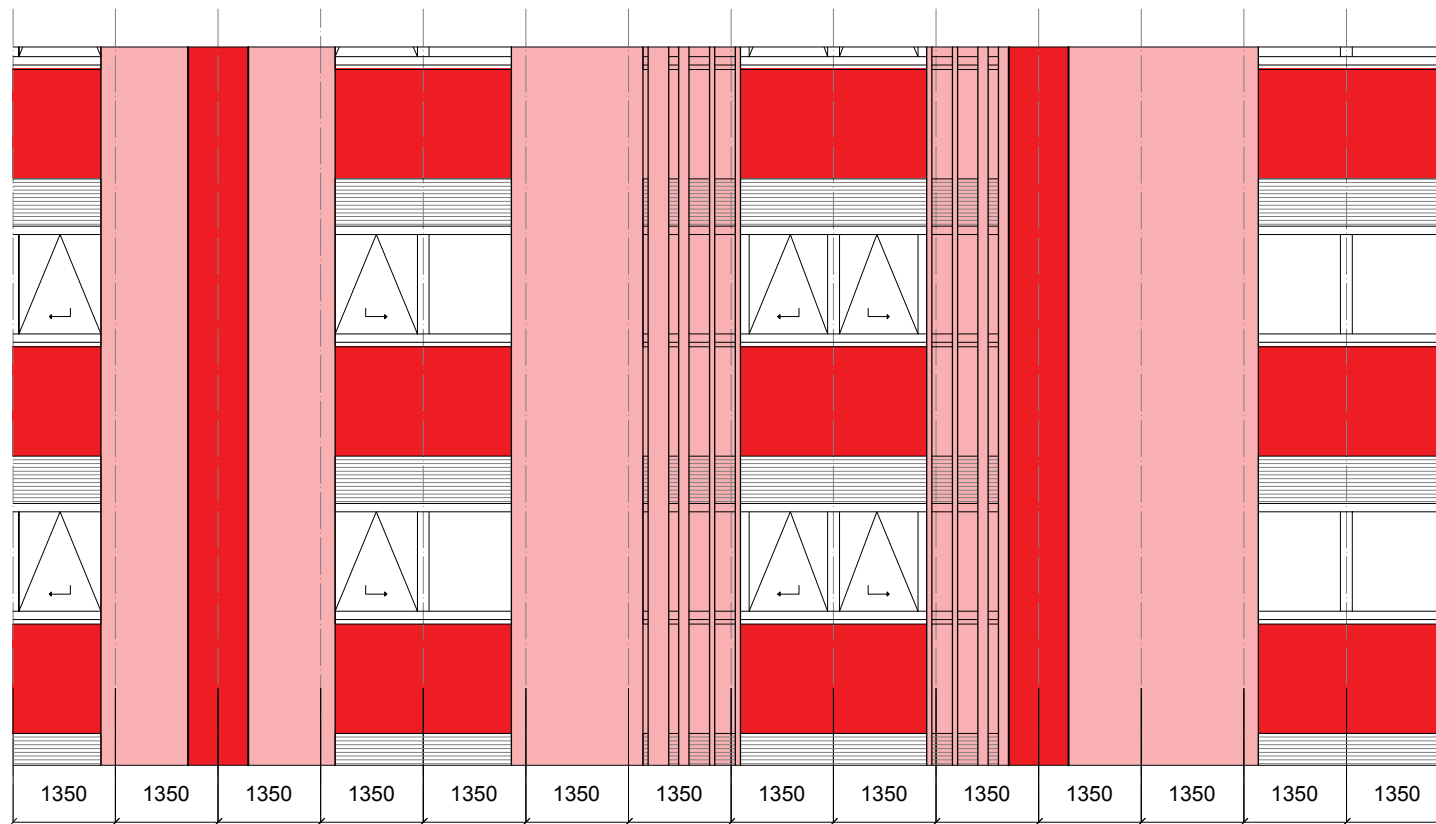
 Closed zones





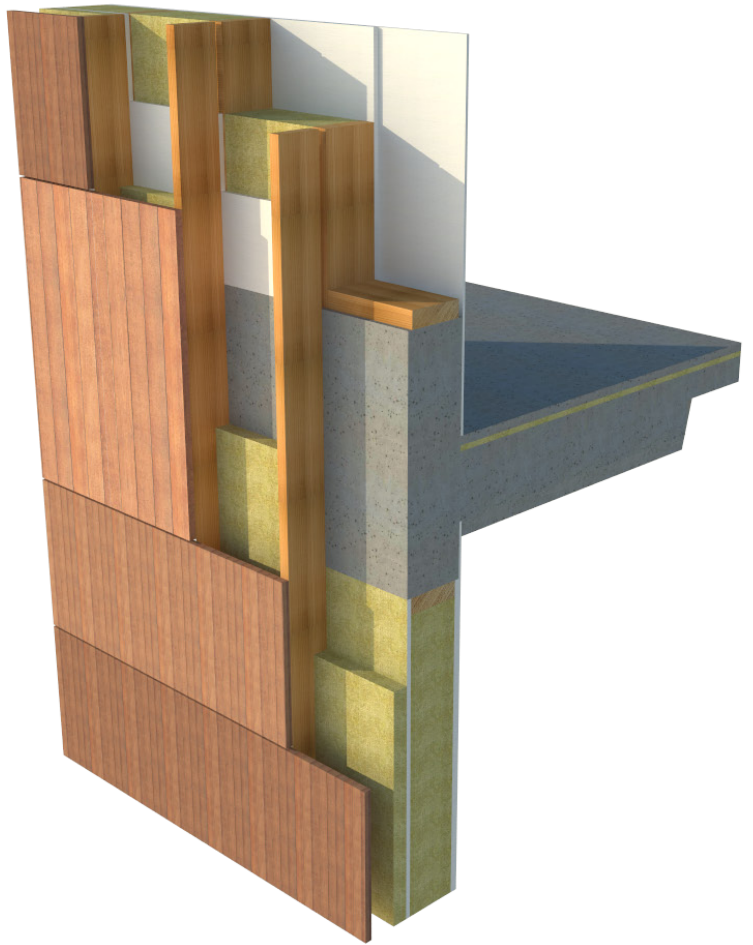
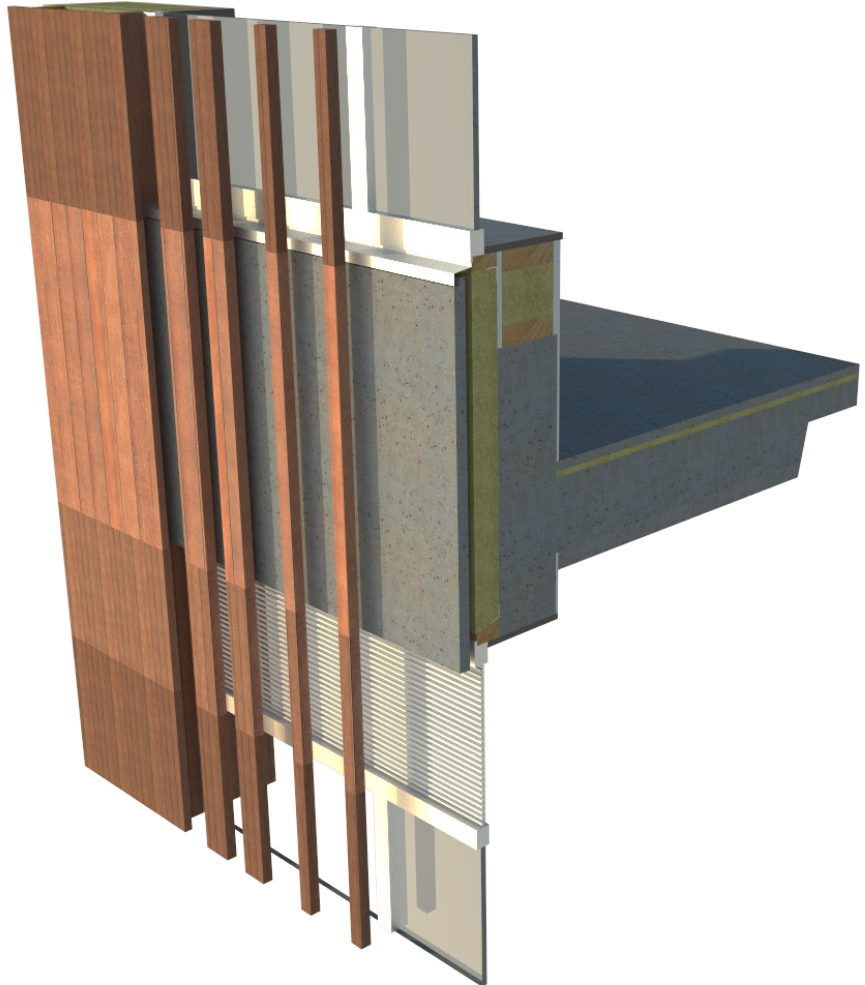






Closed zones      Construction





## GOALS

- 1 Transformation office building into housing
- 2 Free layout individual floorplans
- 3 Variable housing sizes

## SOLUTIONS

- 1 Using column structure office building: - Floor free of load-bearing walls
- 2 Vertical shafts in the corridor: - Floor free of shafts
- 3 Horizontal shafts between floorbeams: - More layout freedom bathroom, toilet, kitchen
- 4 Winter garden: - More layout freedom residential areas

**THANK YOU FOR YOUR ATTENTION!**