

# THE FORMER CANTEEN AS A NEW VIBRANT SPACE

LOÏC GODON

STUDIO ANNE LACATON

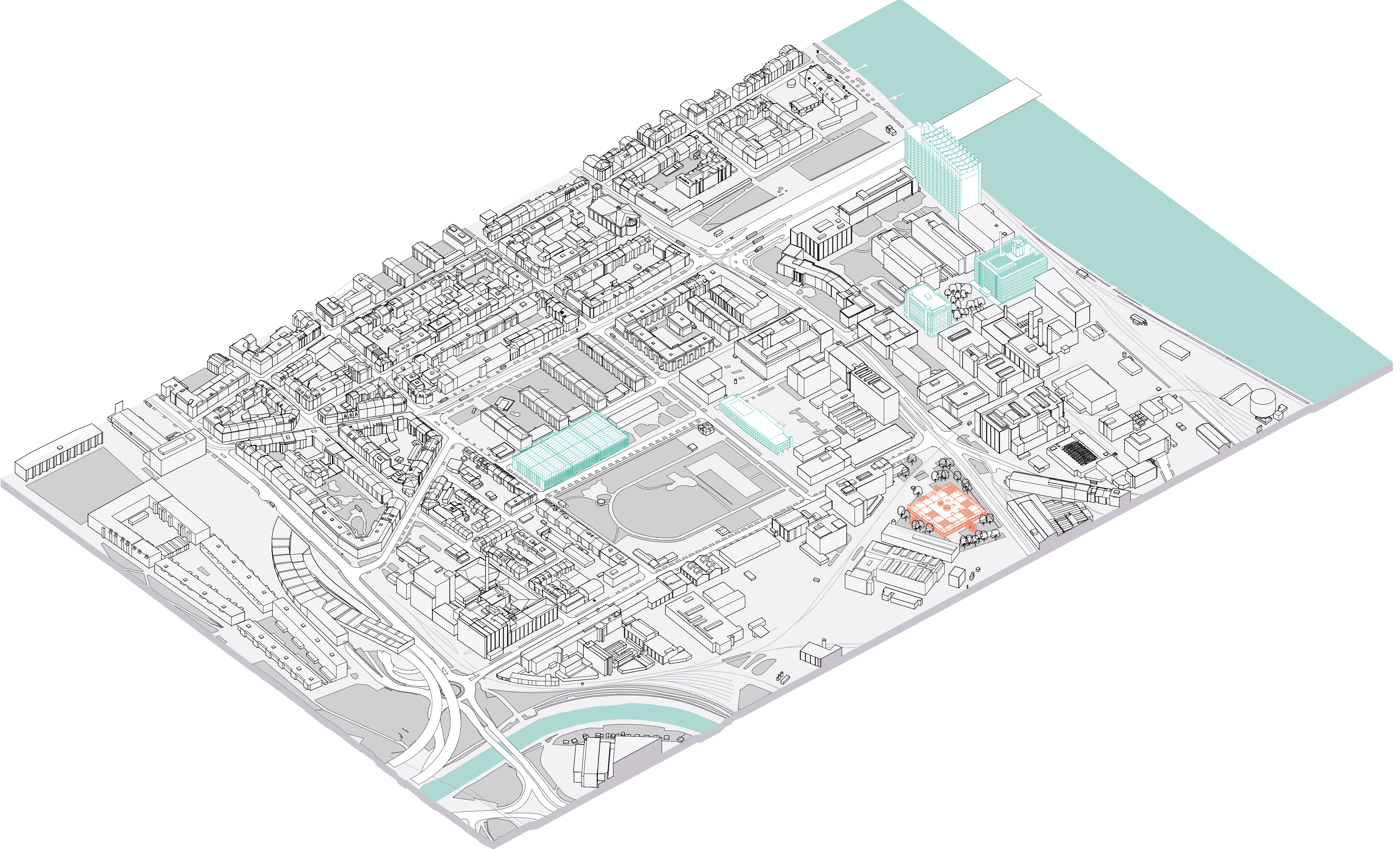
TOPIC C





Welcome







# I. EXISTING

## *URBAN*

the need of public space - climatic issues

## *BUILDING*

structure - envelope - circulation

# II. SUBTLE BUT AMBITIOUS TRANSFORMATION

## *STATEMENT*

## *STRATEGY*

step 1 - step 2

# III. A NEW VIBRANT SPACE

## *SCENARIO*



*WHEN SUBTLE CHANGES CAN REVEAL THE POTENTIAL  
OF AN EXISTING STRUCTURE AND TRANSFORM THE  
FORMER CANTEEN INTO A NEW VIBRANT AND GENER-  
OUS SPACE FOR THE INHABITANTS AND THE VISITORS,  
THIS IS WHAT THE PROJECT IS ABOUT.*



# **I. EXISTING**



# URBAN

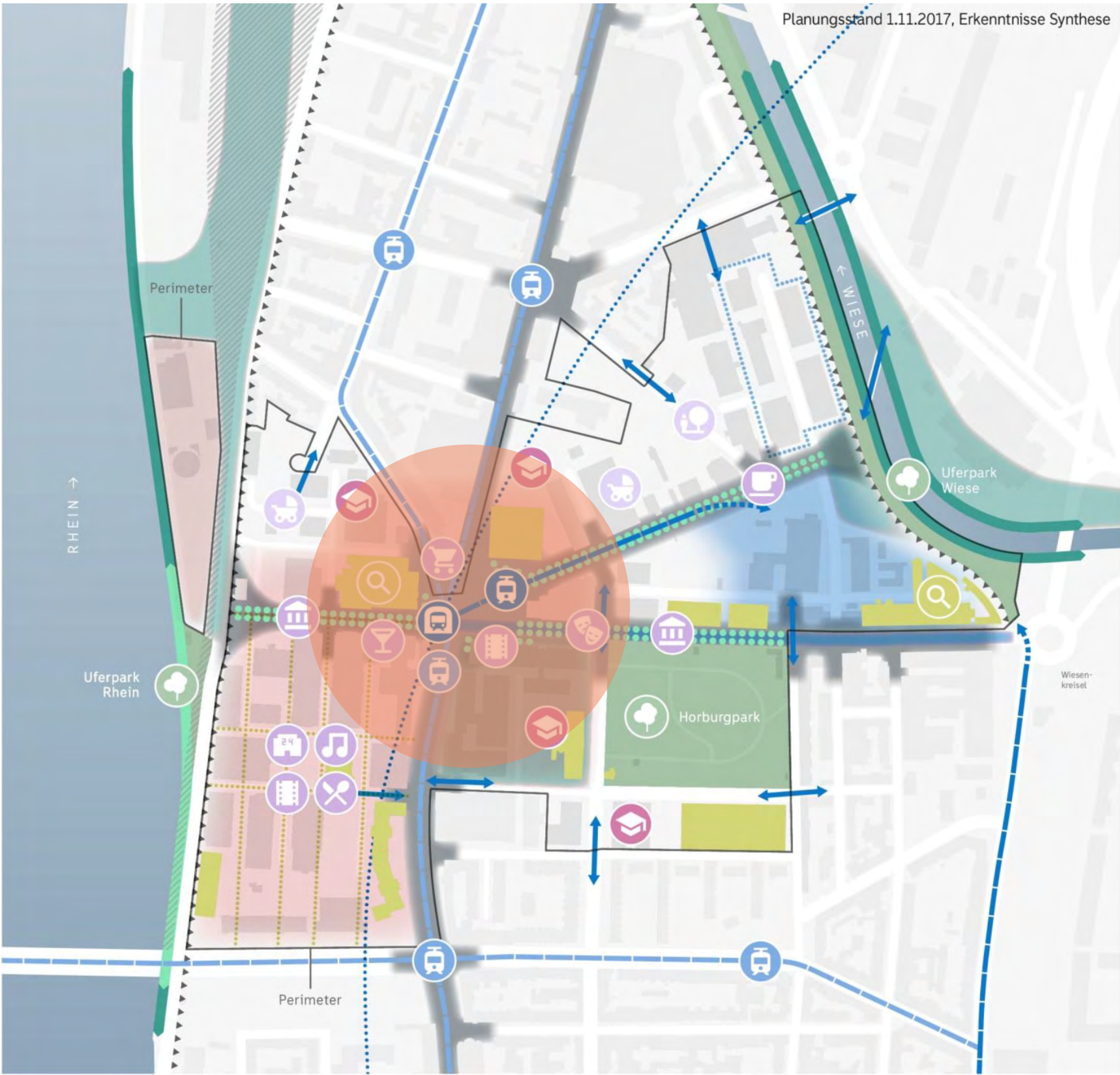
- *HOW TO ANSWER TO THE LACK OF PUBLIC SPACE*
- *HOW TO AVOID THE HEAT ISLAND ISSUE*



# THE NEED FOR PUBLIC SPACE



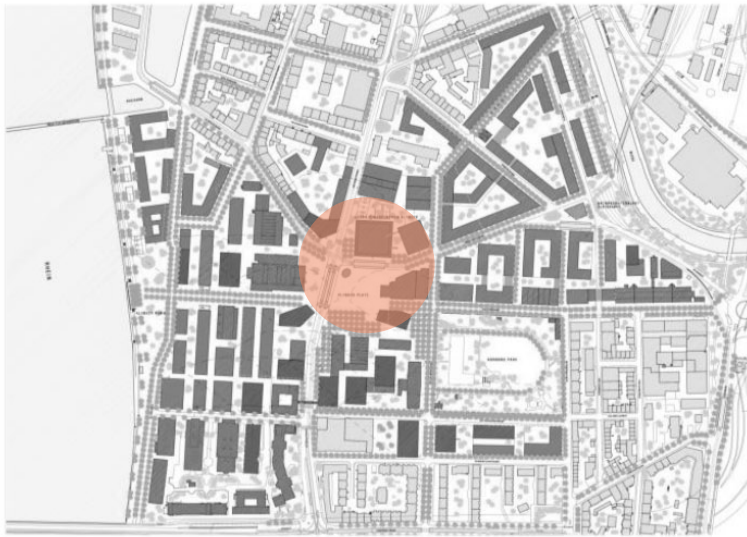
CURRENT TEST PLANNING the missing center



Synthese

- |   |  |
|---|--|
| <b>Stadtstruktur</b>                                      | <b>Historische Identität</b>                   |
| ■ Stadtachsen   | ■ Abstimmung Schutzwürdigkeit/-Schutzfähigkeit |
| ■ Verbindung Wiese-Rhein                                  | ● Pilotuntersuchungen                          |
| ▲ Räumliche Öffnung gegen Rhein- / Wiesenraum             | ●●● Orthogonale Raumstrukturen                 |
| ■ Gebiete höherer Dichte                                  | <b>Nutzung</b>                                 |
| ▲▲▲ Stadtkante  | ■ Arbeiten Zone 7                              |
| ● Öffentliche Freiräume                                   | ● Mögl. Schulstandorte                         |
| <b>Freiraum</b>   | ■ Publikumsorientierte Nutzungen               |
| ●●● Freiraumachse Ost – West                              | ● Wohnen                                       |
| ■ Abstimmung Freiraum – Bebauung / Hafenbahn / Gleisharfe | ■ Biocluster bis min. 2030                     |
| ■ Uferpromenaden neu / bestehend                          |  |
| <b>Verkehr</b>  |  |
| ■ MIV beruhigt  |  |
| ■ S-Bahn neu (unterirdisch)                               |  |
| ■ Umsteigeknoten S-Bahn/Tram neu                          |  |
| ■ Tramhaltestelle bestehend / neu                         |  |
| ■ Tram bestehend / neu                                    |  |
| ■ Quartiersvernetzung                                     |  |
| ■ Rückbau Hafenbahn                                       |  |

Planungspartner Kanton Basel-Stadt / BASF / Novartis





**PROBLEM** no central public square



I. EXISTING



**SOLUTION** the building as part of the public space



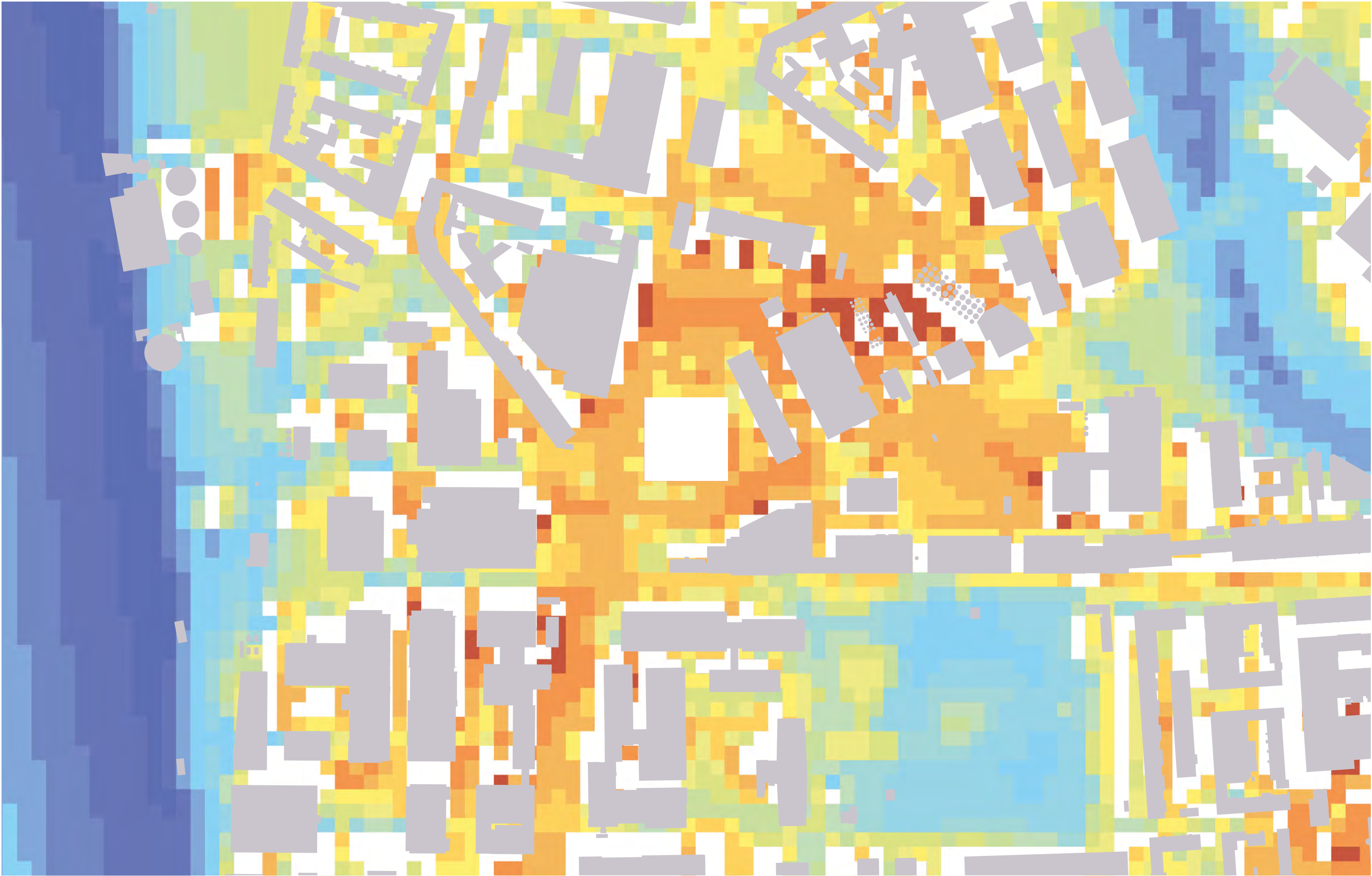
I. EXISTING



# CLIMATIC ISSUES



PROBLEM pet in 2019



PET  
= physiological  
equivalent  
temperature felt  
during the day

- < 23.0
- 23.0 - 25.9
- 26.0 - 28.9
- 29.0 - 31.9
- 32.0 - 34.9
- 35.0 - 35.9
- 36.0 - 36.9
- 37.0 - 37.9
- 38.0 - 38.9
- 39.0 - 39.9
- 40.0 - 40.9
- 41.0 - 41.9
- 42.0 - 42.9
- 43.0 - 43.9
- 44.0 - 44.9
- 45.0 - 45.9
- >= 46



PROBLEM pet in 2030



PET  
= physiological  
equivalent  
temperature felt  
during the day

- < 23.0
- 23.0 - 25.9
- 26.0 - 28.9
- 29.0 - 31.9
- 32.0 - 34.9
- 35.0 - 35.9
- 36.0 - 36.9
- 37.0 - 37.9
- 38.0 - 38.9
- 39.0 - 39.9
- 40.0 - 40.9
- 41.0 - 41.9
- 42.0 - 42.9
- 43.0 - 43.9
- 44.0 - 44.9
- 45.0 - 45.9
- >= 46



**SOLUTION** a green axis to cool the neighborhood



I. EXISTING



# BUILDING





main street

deciduous tree 16 meters high

south side

central position in the neighborhood

main entrance

secondary street

relation to the crossroad

I. EXISTING





pine tree 17 meters high

4.5 meters wide cantilever

west side

1 meter high wall

main street

EXISTING





industrial building context

fire staircase

fence

east side

lawn all around

I. EXISTING





surrounding diverse vegetation

south side

sun protection glazing

reflecting windows

main entrance

I. EXISTING

RES  
K  
...  
...  
...  
...  
...





level 1

pillar-beam structure

curtain wall hanging on beams

wide free open space

I. EXISTING





level 1

high windows

direct visual connection to the trees

great amount of natural light

J. EXISTING





level 1

south west corner

windows on every side

views on the crossroad

I. EXISTING



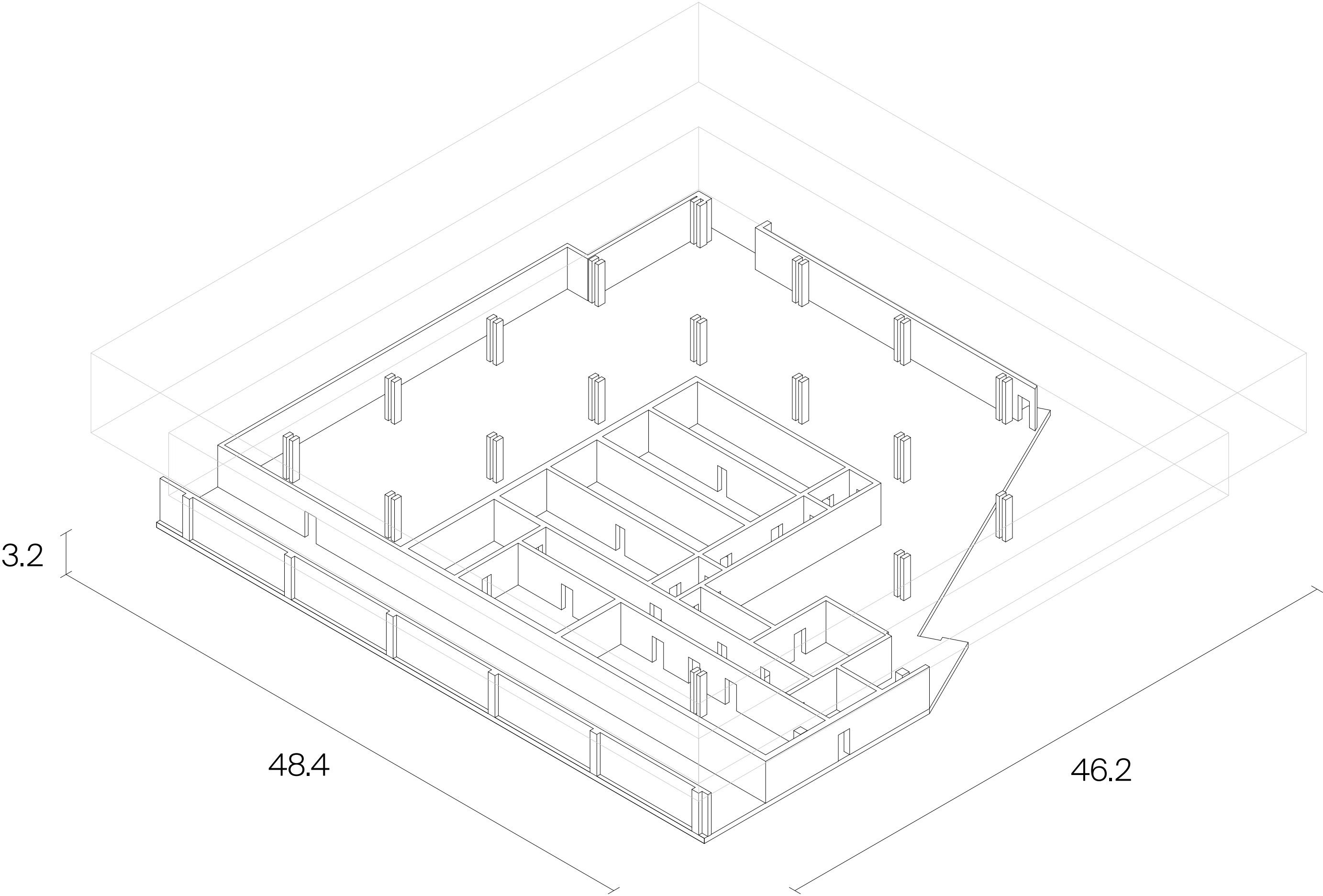
# STRUCTURE

- *REINFORCED CONCRETE PILLAR-BEAM STRUCTURE*
- *LARGE SPACE WITH HIGH CEILING*
- *FREEDOM IN THE DIVISION OF THE SPACE ITSELF*



LEVEL -1 (BASEMENT)

1582 m2

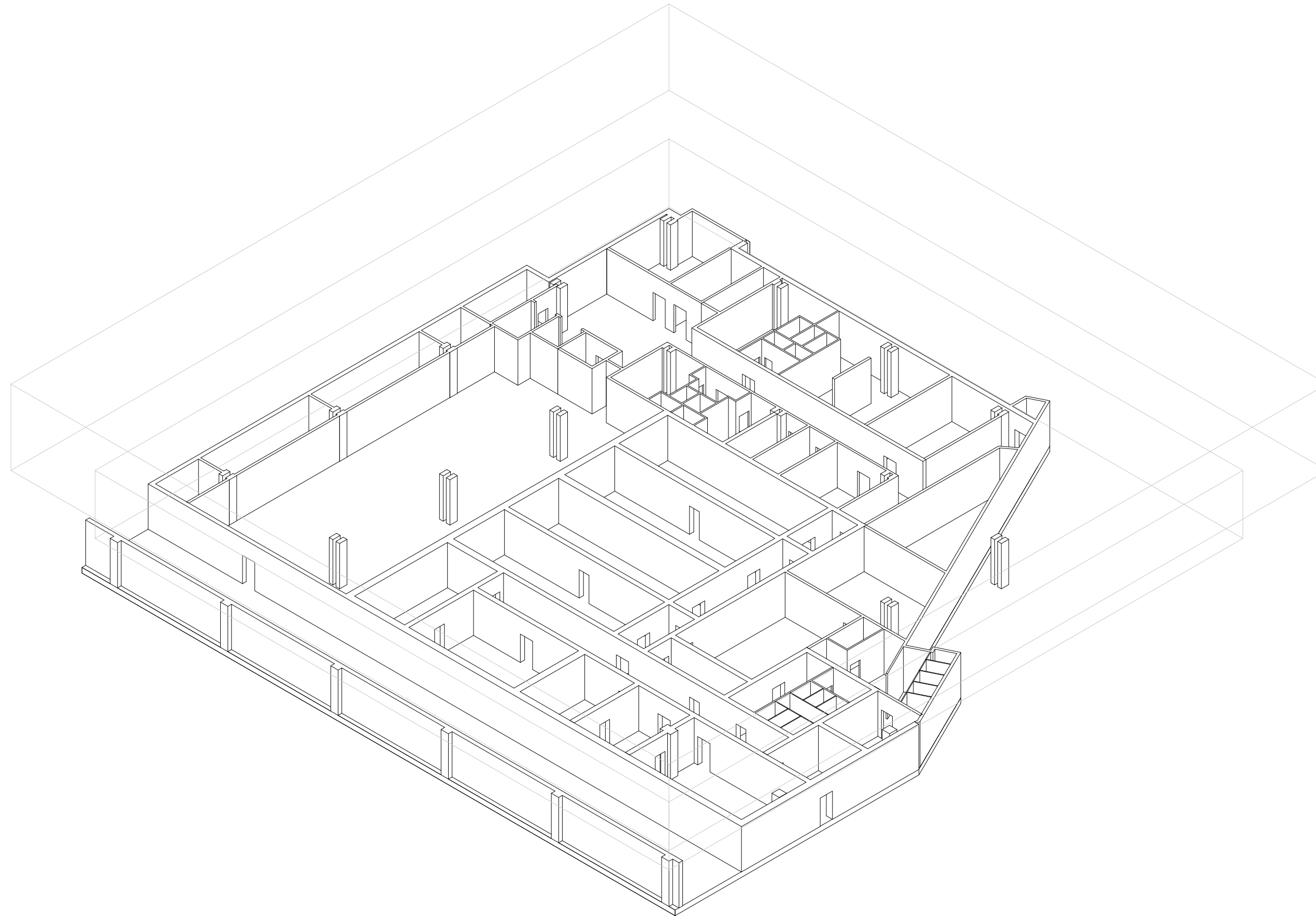


I. EXISTING



## LEVEL -1 (BASEMENT)

dividing walls

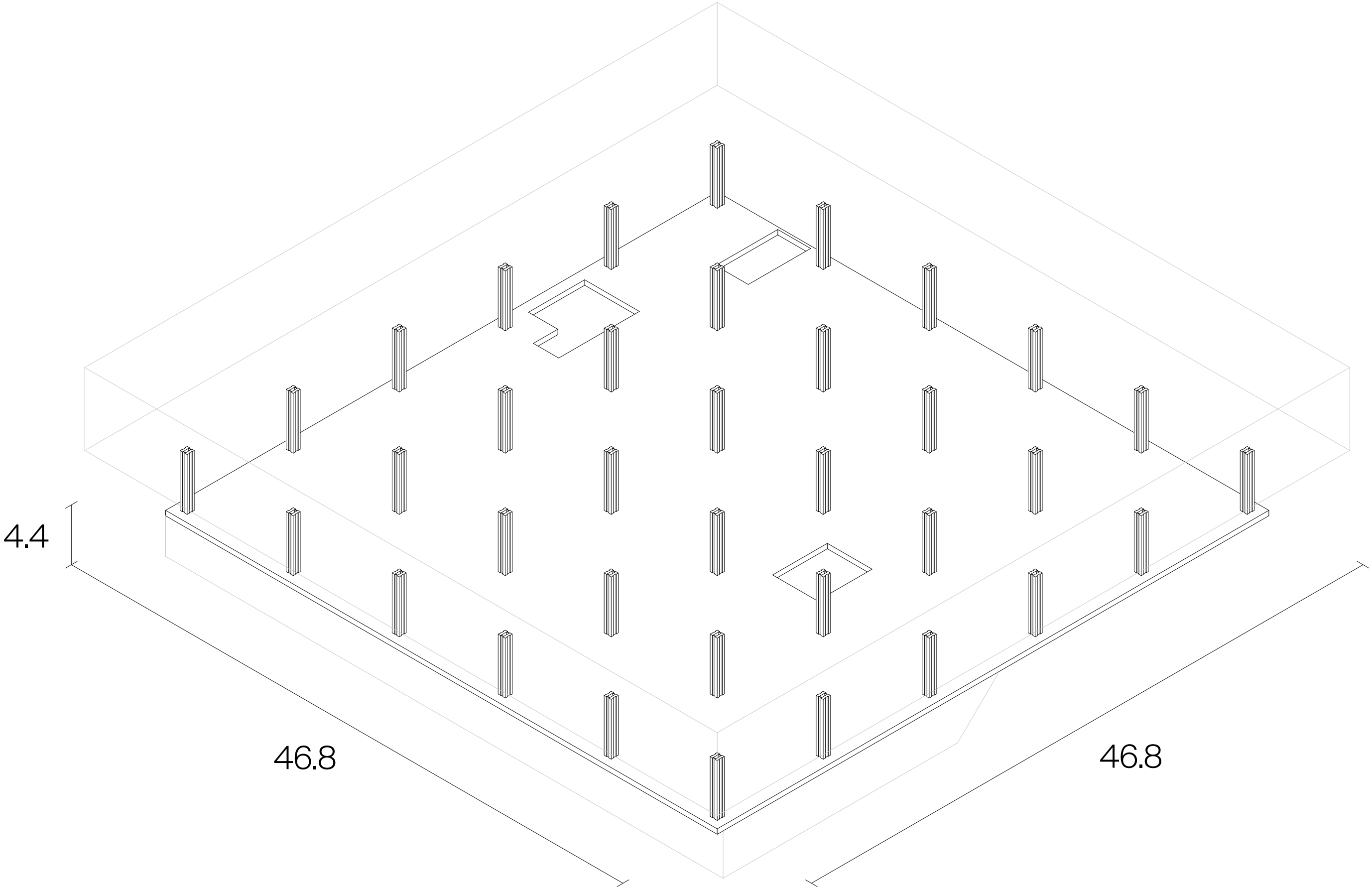


I. EXISTING



LEVEL 0

2051 m2

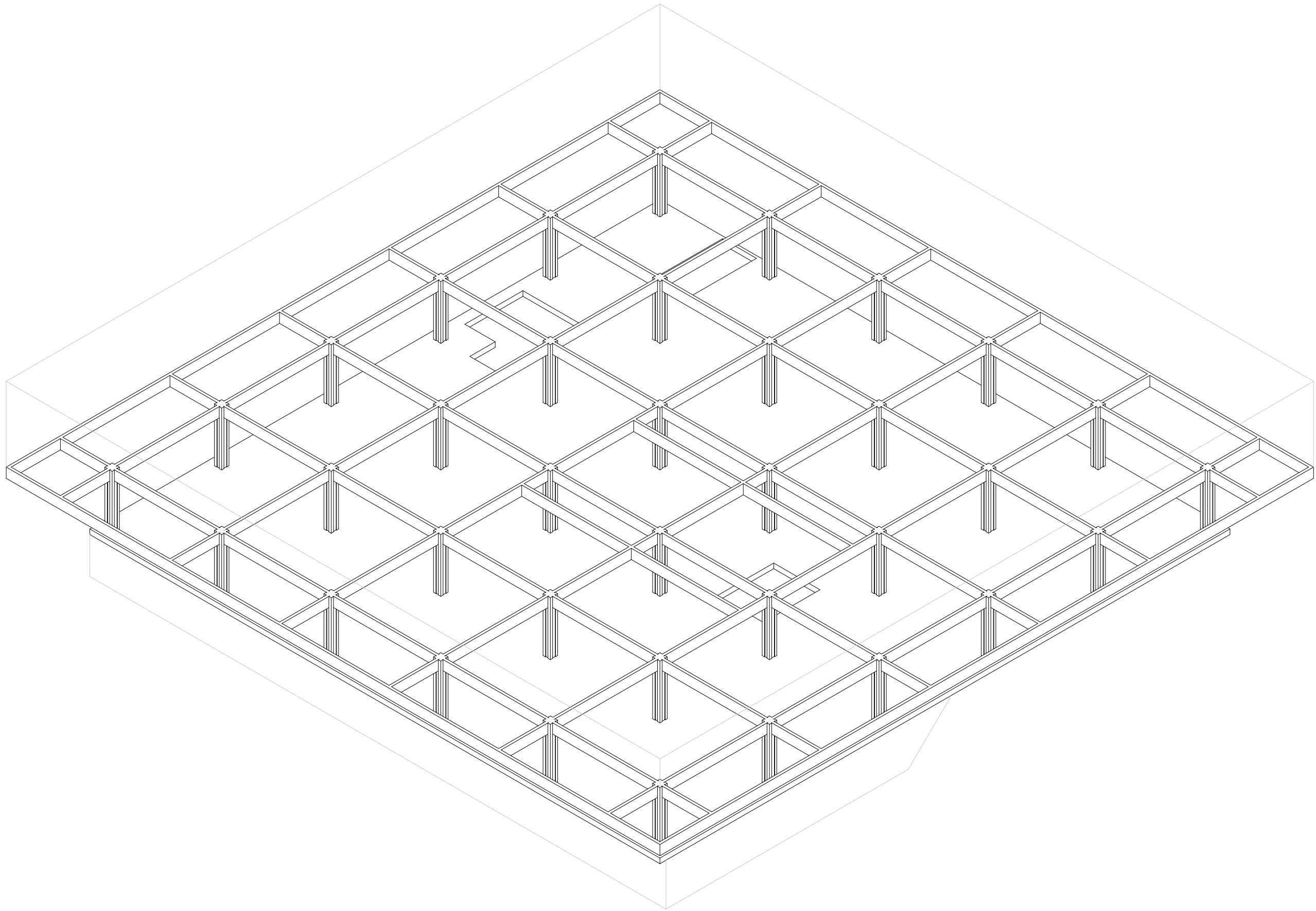


I. EXISTING



LEVEL 0

pillar-beam structure

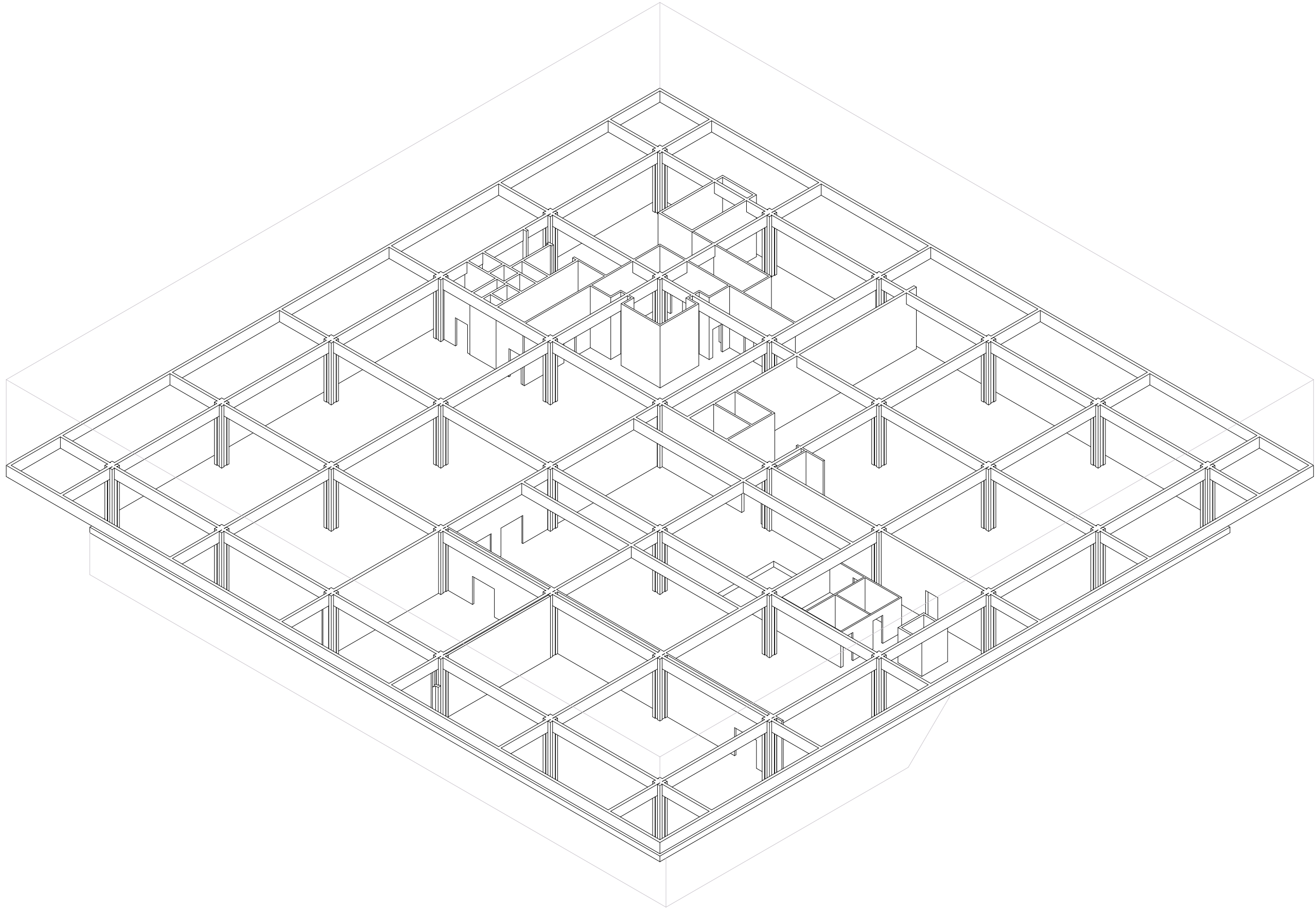


I. EXISTING



LEVEL 0

dividing walls

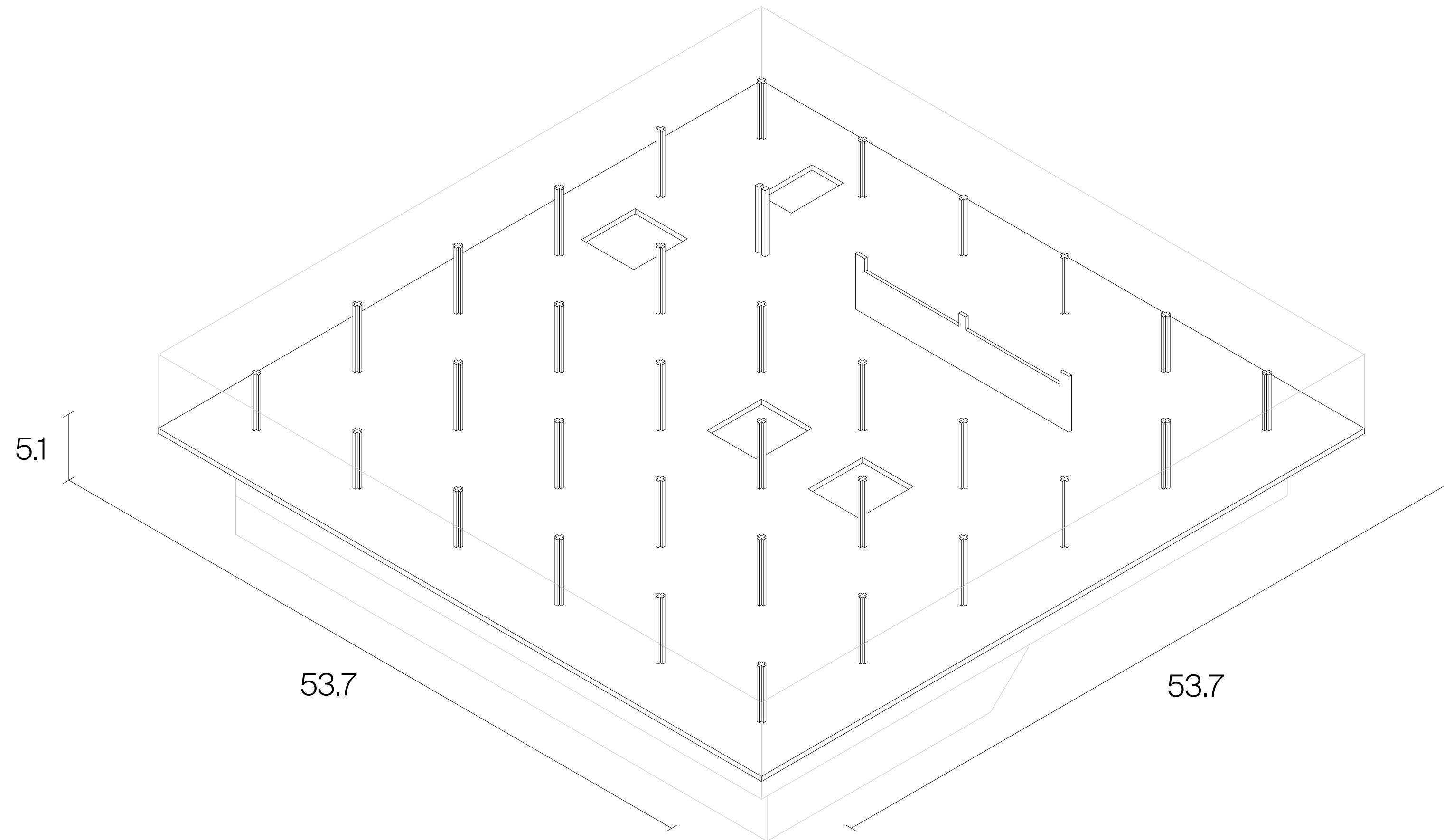


I. EXISTING



# LEVEL 1

2795 m2

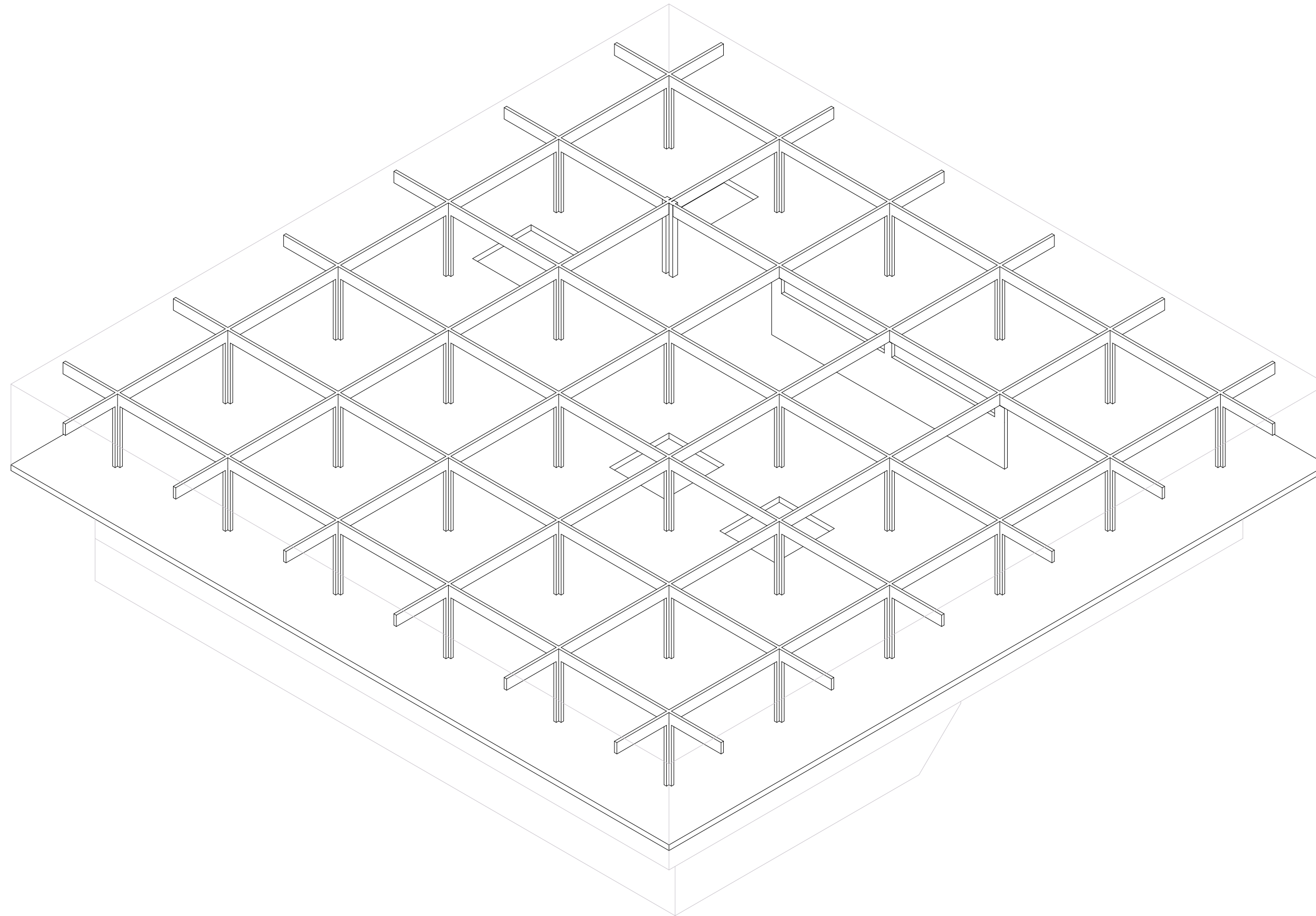


I. EXISTING



## LEVEL 1

pillar-beam structure

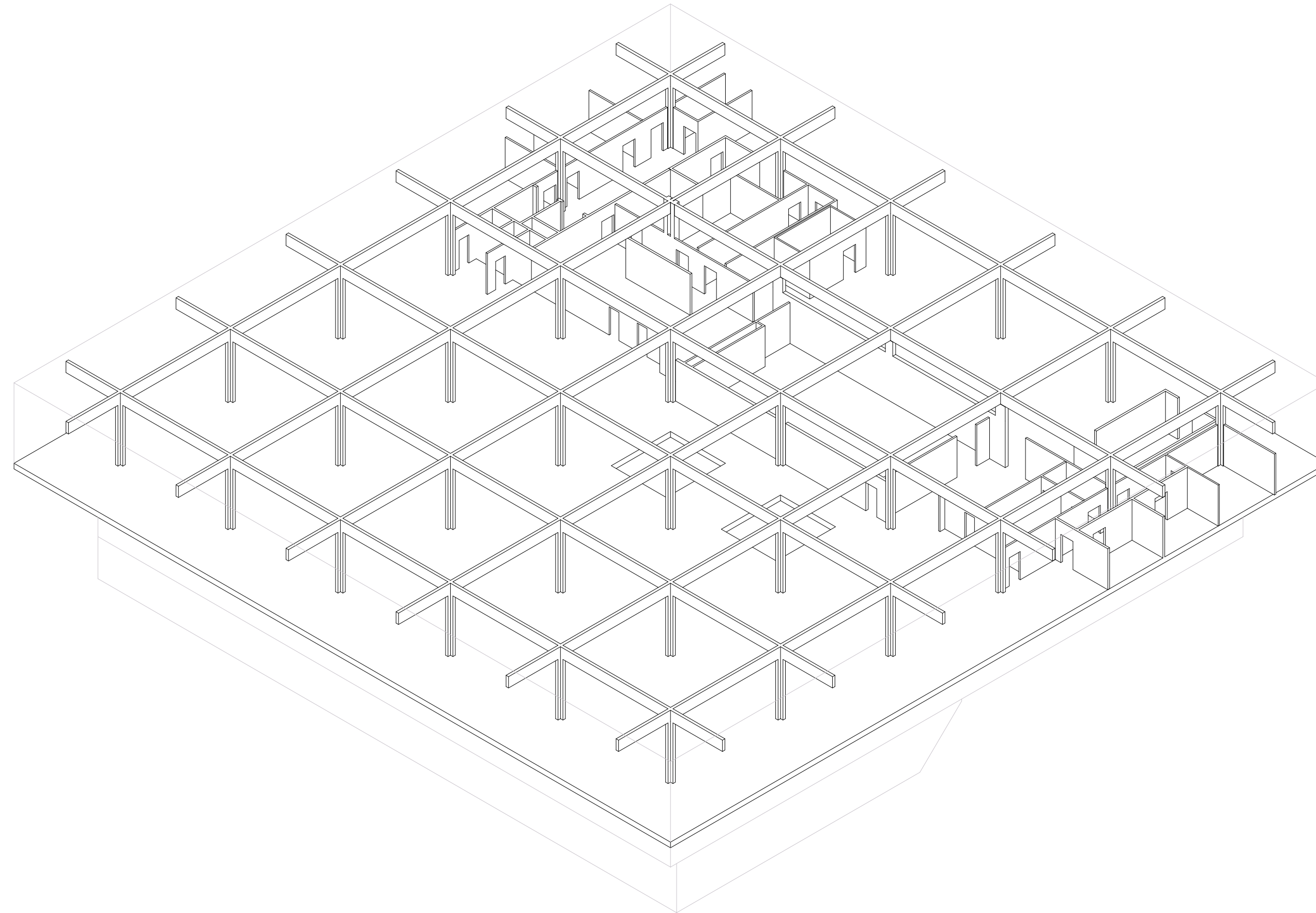


I. EXISTING



## LEVEL 1

dividing walls

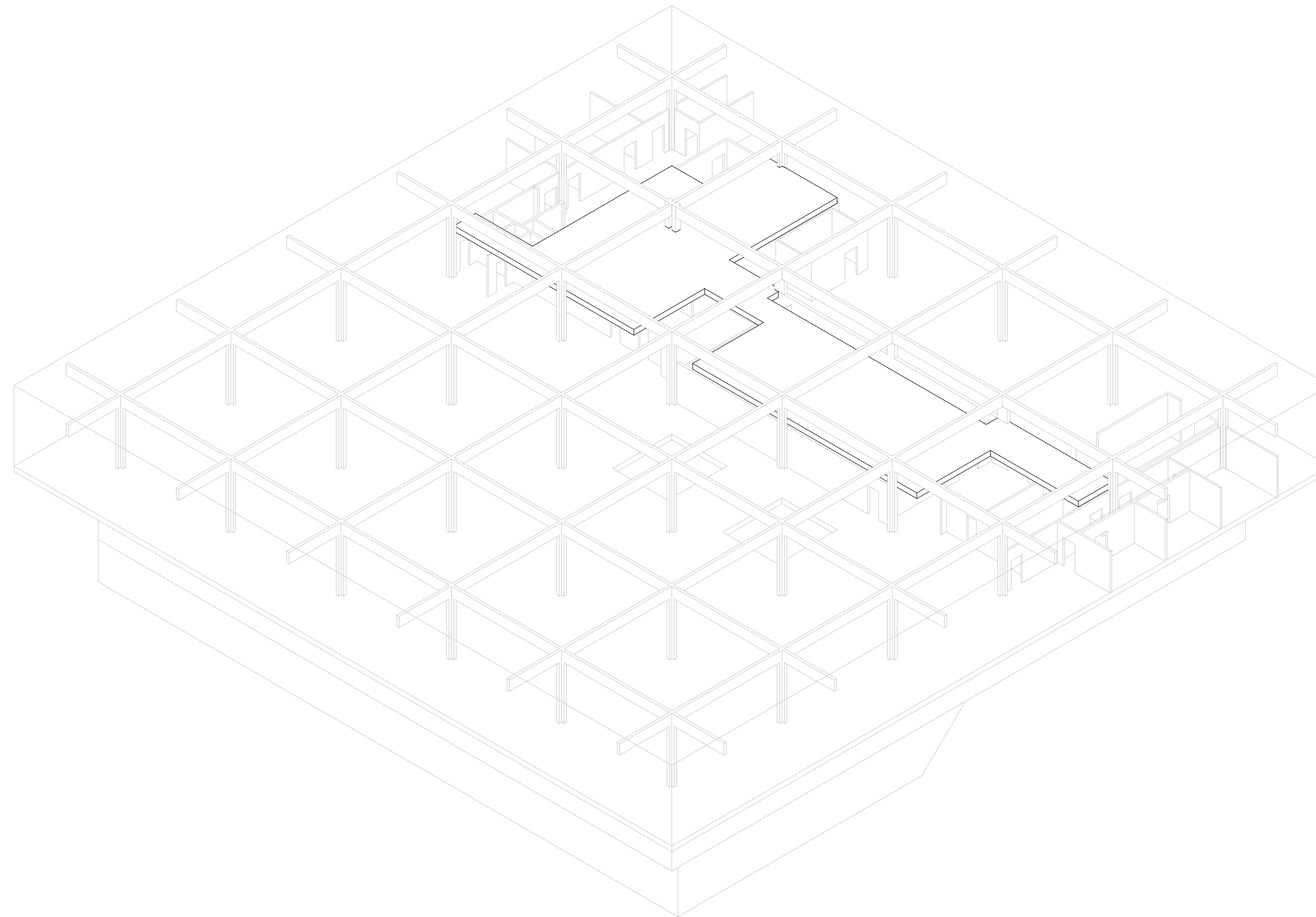


I. EXISTING



## LEVEL 1

mezzanine

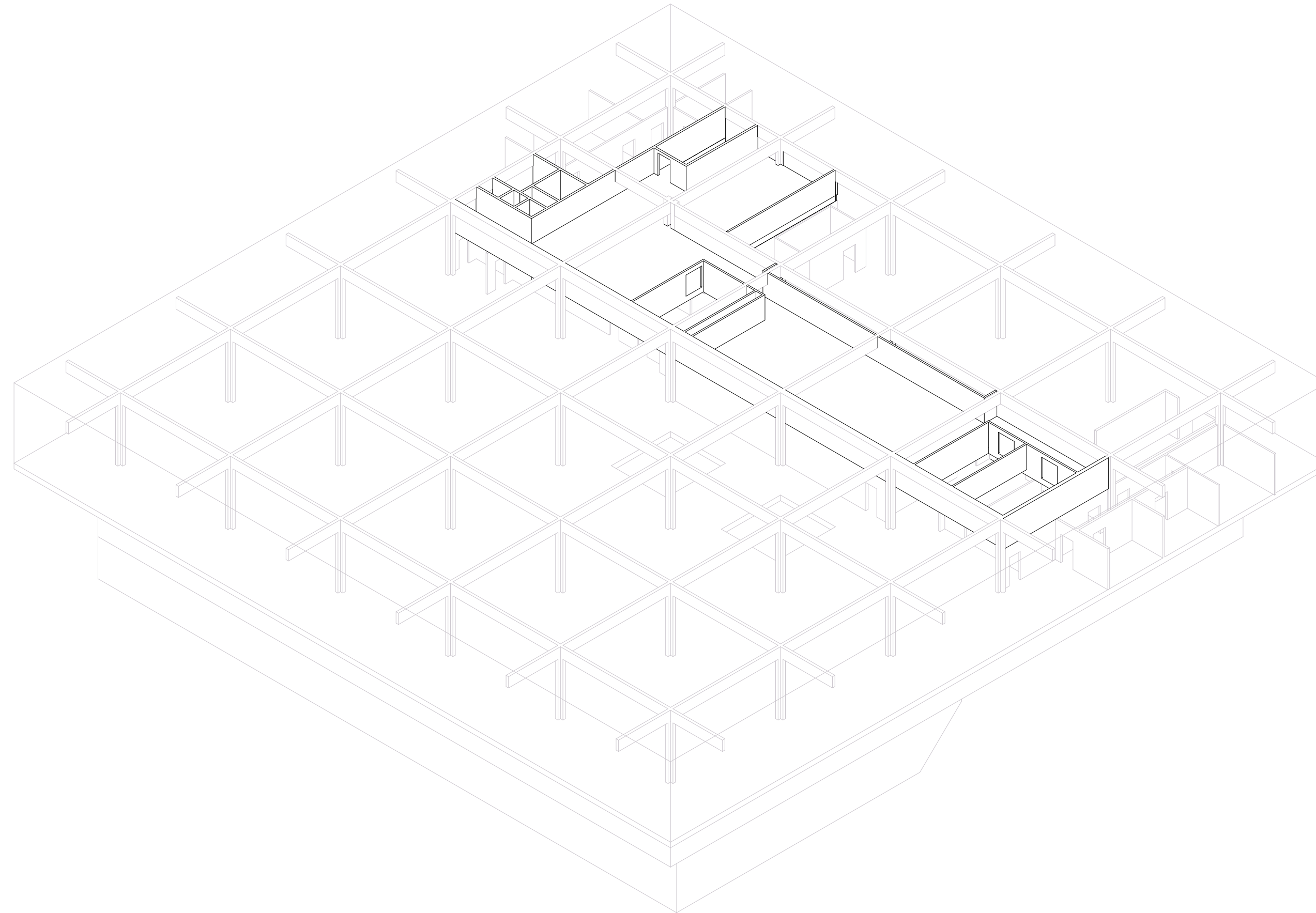


I. EXISTING



## LEVEL 1

mezzanine dividing walls

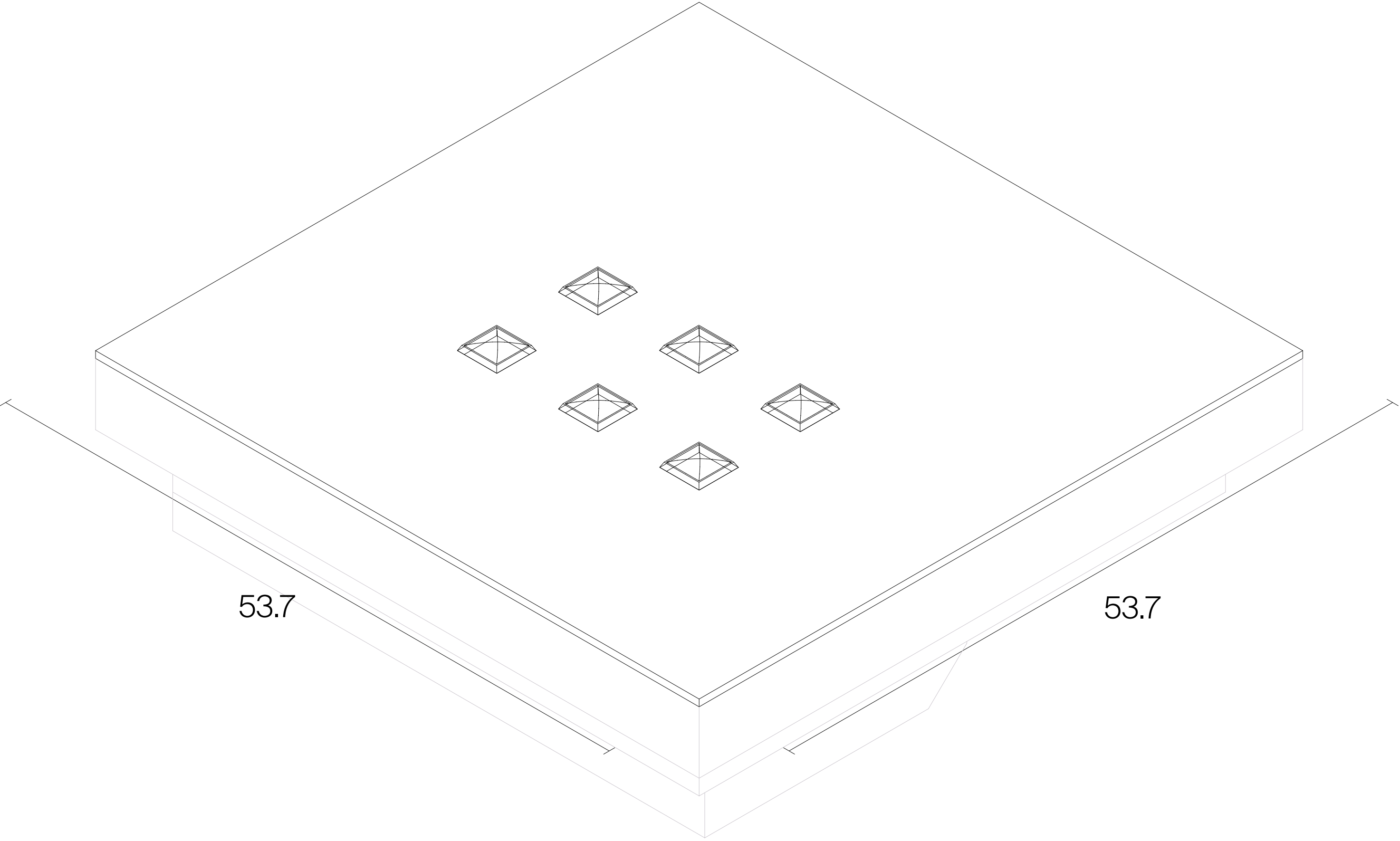


I. EXISTING



LEVEL 2 (ROOF)

2811 m2



I. EXISTING



# ENVELOPE

- *INDEPENDENT CURTAIN WALL HANGING ON THE BEAMS*
  - *FULLY TRANSPARENT ENVELOPE*
  - *GREAT NATURAL LIGHT ALL AROUND THE BUILDING*
  - *EFFICIENT GLAZING BUT AIRTIGHT, NO OPENINGS*
- *THERMOPANE GLAZING WITH ANODIZED BRONZE FRAME*



infrared stopray protection on south and west facades



LE VITRAGE ISOLANT

THERMOPANE

(MARQUE DÉPOSÉE)

1°) COUPE D'UN VITRAGE ISOLANT THERMOPANE.

2°) CARACTÉRISTIQUES.

Isolation :

L'isolation est remarquable tant au point de vue thermique qu'au point de vue acoustique.

Étanchéité :

Le joint métallique breveté « Bondermetic » réalise une véritable soudure à chaud.

Absence de condensation :

L'air déshydraté qui est introduit dans le volume empêche l'apparition de toute buée. Aucun dessiccatif chimique n'est d'ailleurs utilisé, ce qui est rendu possible par l'étanchéité absolue du volume.

Sécurité :

Les caractéristiques du joint « Bondermetic » et notamment son coefficient de dilatation très proche de celui du verre, assurent au produit le maintien indéfini de toutes ses qualités premières.

3°) AVANTAGES.

— Diminue sensiblement les frais de chauffage : la déperdition calorifique est de 50 % inférieure à celle des vitrages ordinaires.

— Permet de doubler les surfaces vitrées, à déperdition calorifique égale à celle d'un vitrage ordinaire.

— Supprime les zones froides existant à proximité des vitres ordinaires.

— Possède tous les avantages des doubles fenêtres sans aucun de leurs inconvénients. Il n'y a notamment que deux faces à nettoyer.

Le confort des immeubles se trouve donc considérablement accru.

4°) VERRES POUVANT ÊTRE INCORPORÉS DANS LE VITRAGE ISOLANT THERMOPANE.

Le Vitrage Isolant Thermopane peut être fourni :

a) En glaces polies twinées.

b) En verres à vitres.

La hauteur avec stries d'étirage horizontales est actuellement limitée en principe à 243 cm. Pour des hauteurs supérieures, veuillez consulter « GLAVER ».

c) Avec une ou deux feuilles de verres coulés.

Les verres coulés suivants sont utilisés avec le relief A L'INTERIEUR : martelé, cathédrale C. imprimé n° 2 JA, imprimé n° 72.

Les dessins ci-après, figurant dans le catalogue des verres coulés de « GLAVER », peuvent être utilisés avec le relief A L'EXTERIEUR : les numéros 3, 6, 9, 10, 11, 16, 24, 25, 27, 28, 29, 30, 31, 33, 35, 36, 37, 38, 43, 44, 50, 51, 52, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 74.

Documentation Glaver.  
Cliché Henri Matt.

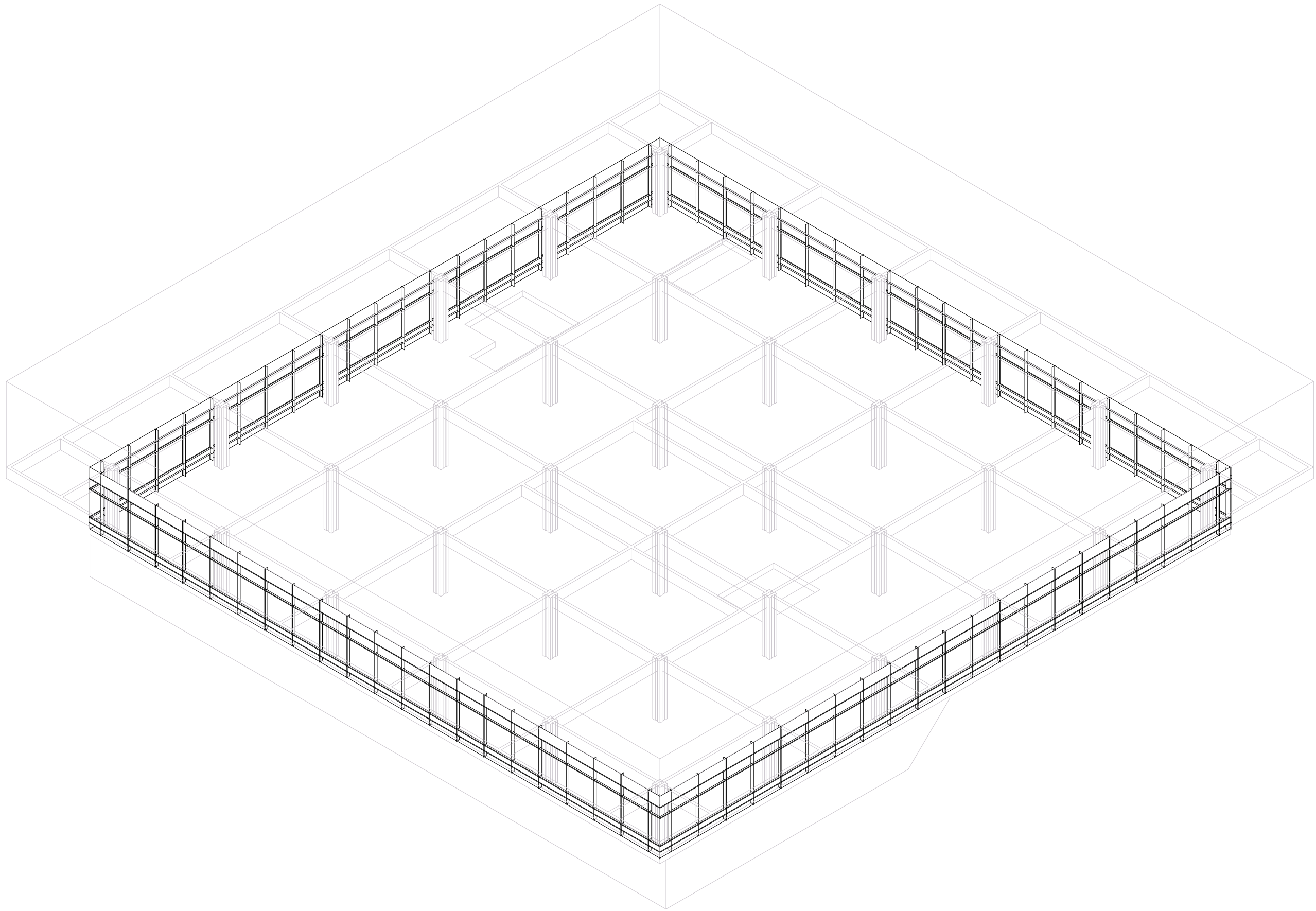
Alimentation en feuilles de verre de la chaîne de fabrication du Thermopane.

I. EXISTING



LEVEL 0

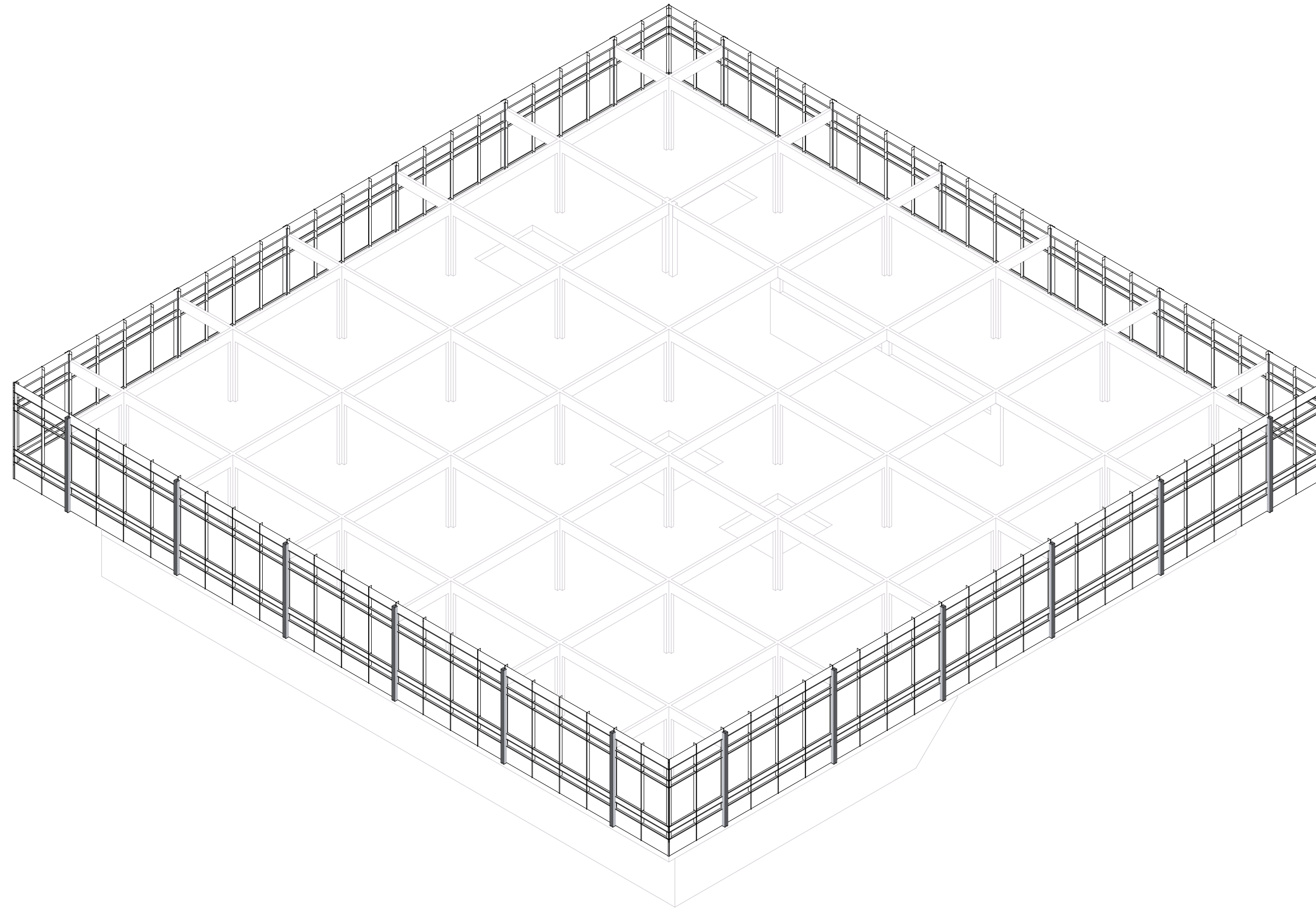
independent curtain wall all around





## LEVEL 1

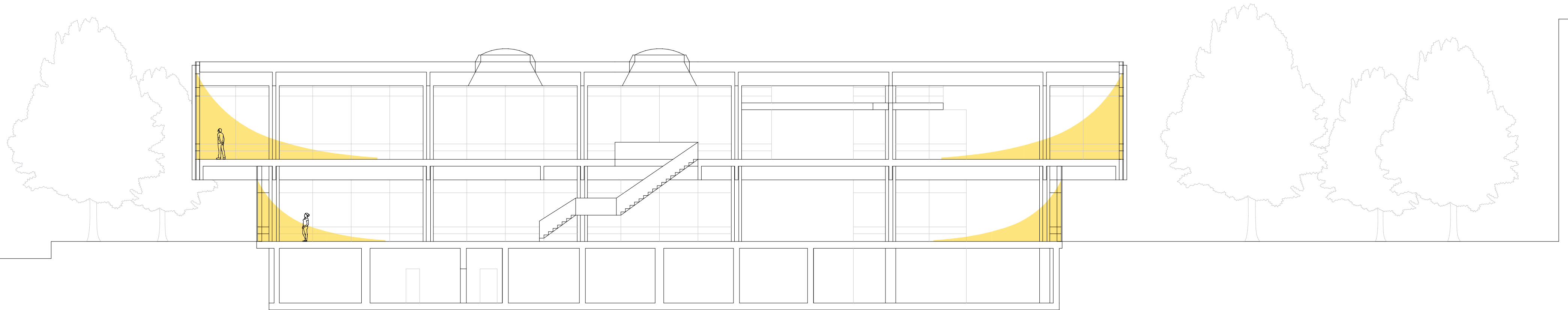
independent curtain wall all around



I. EXISTING



high windows for greater amount of natural light





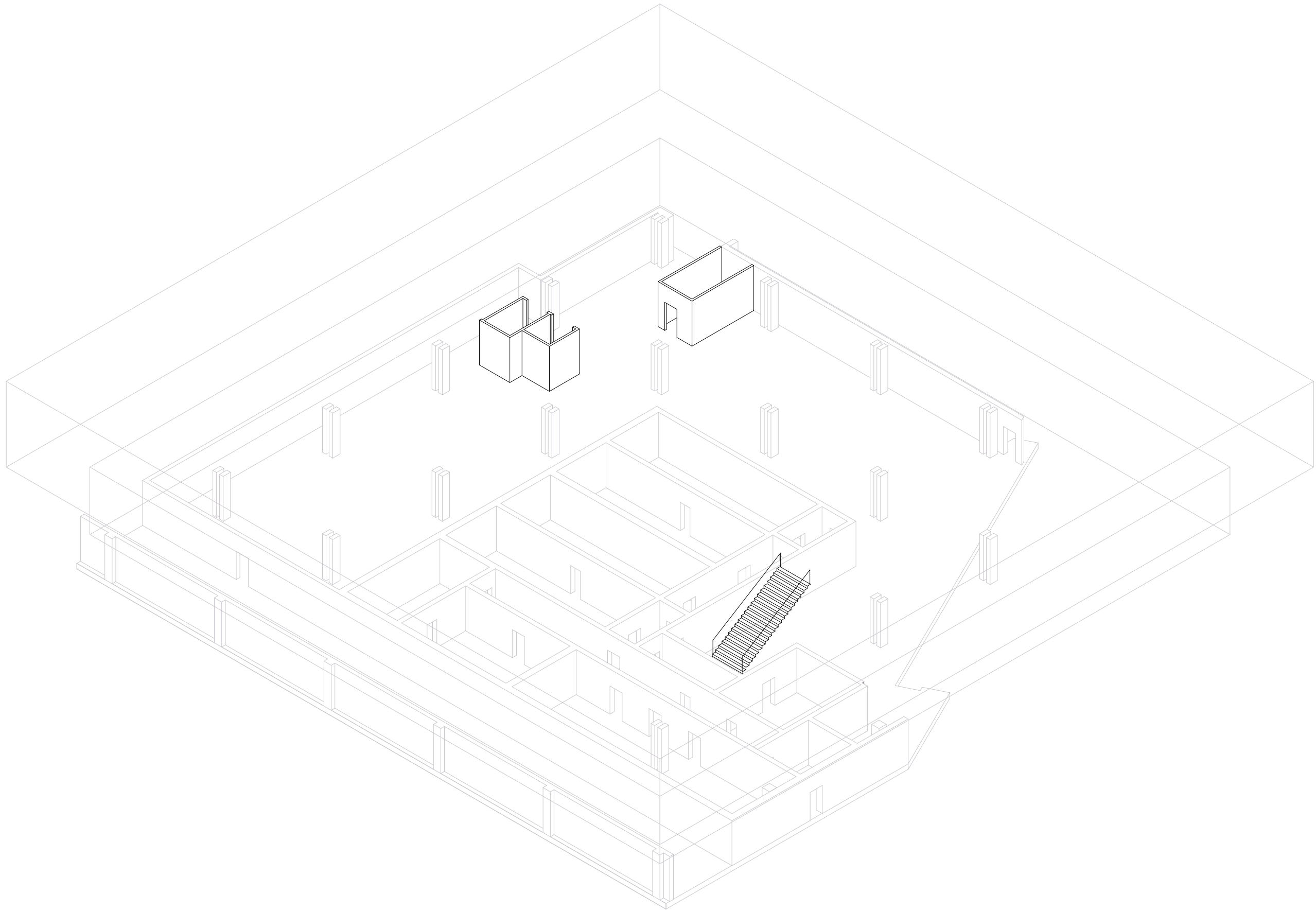
# CIRCULATION

- *2 OPEN CENTRAL STAIRCASES*
- *MAIN ENTRANCE IN THE SOUTH*
- *NORTH ENTRANCE AND ELEVATORS FOR GOODS DELIVERY*
- *3 FIRE STAIRCASES ADDED LATER*
- *NO ACCESS TO THE ROOF*



**LEVEL -1**

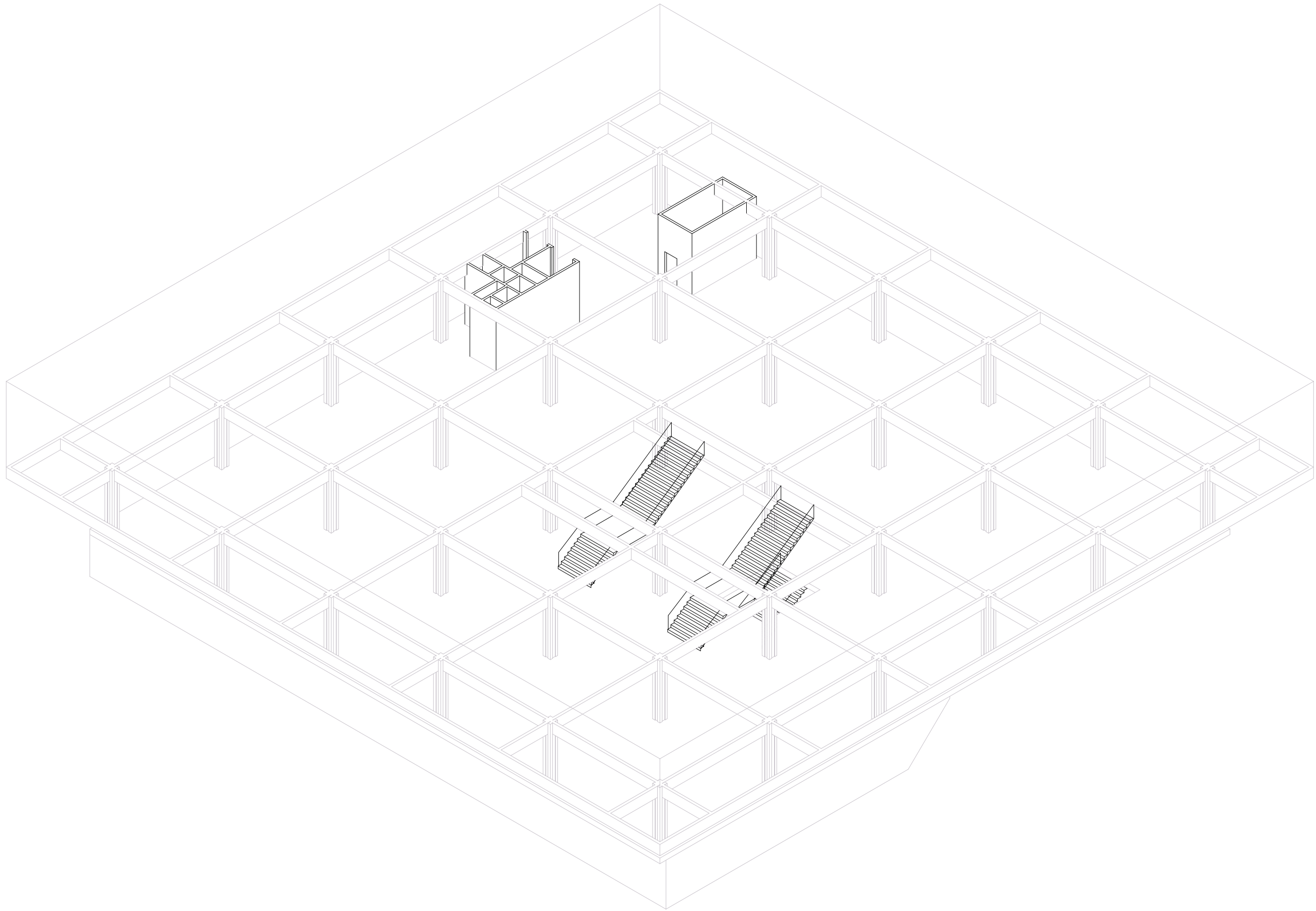
access to the storage rooms





LEVEL 0

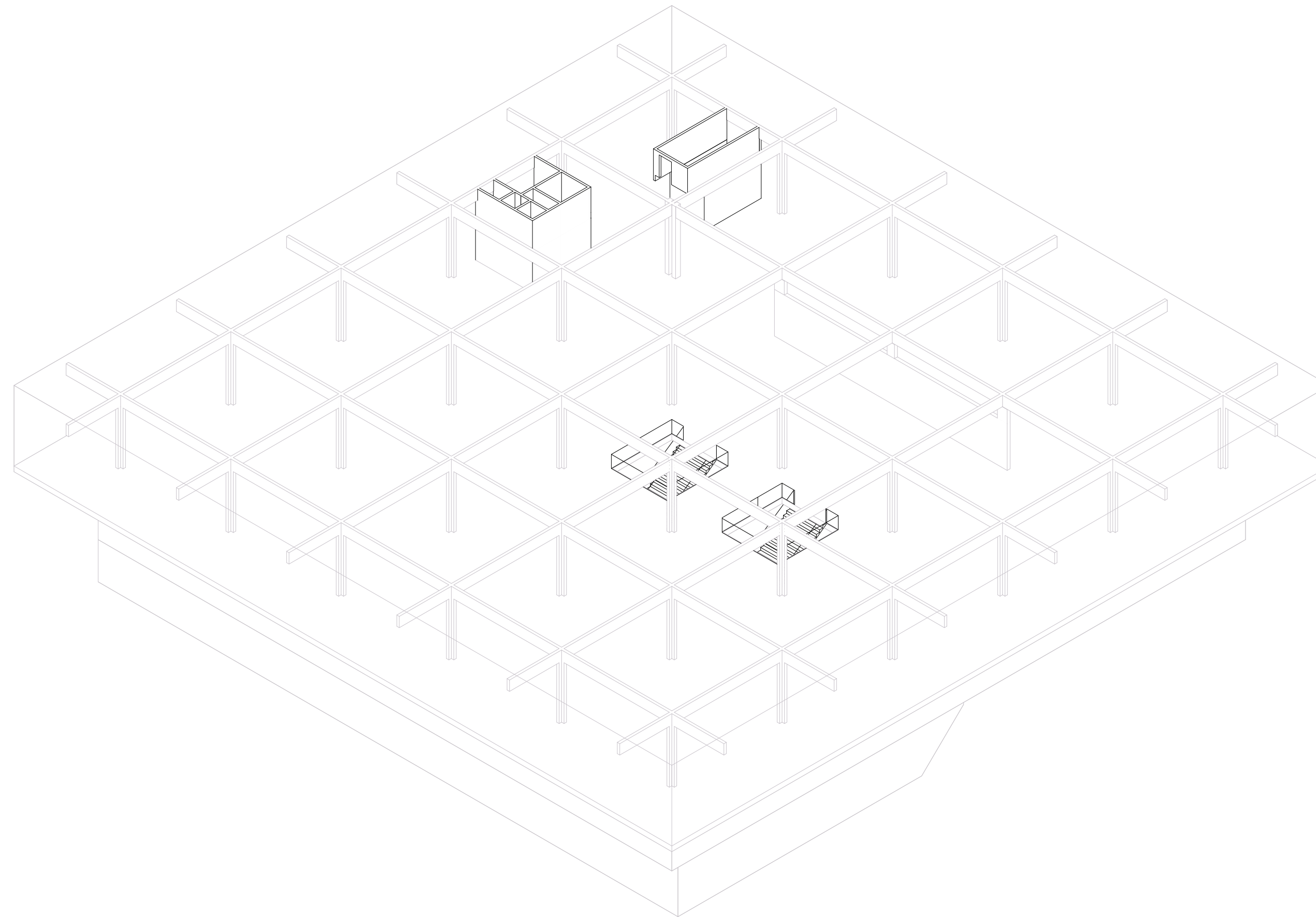
two open central staircases on the ground floor





## LEVEL 1

serving the first floor



I. EXISTING



CIRCULATION

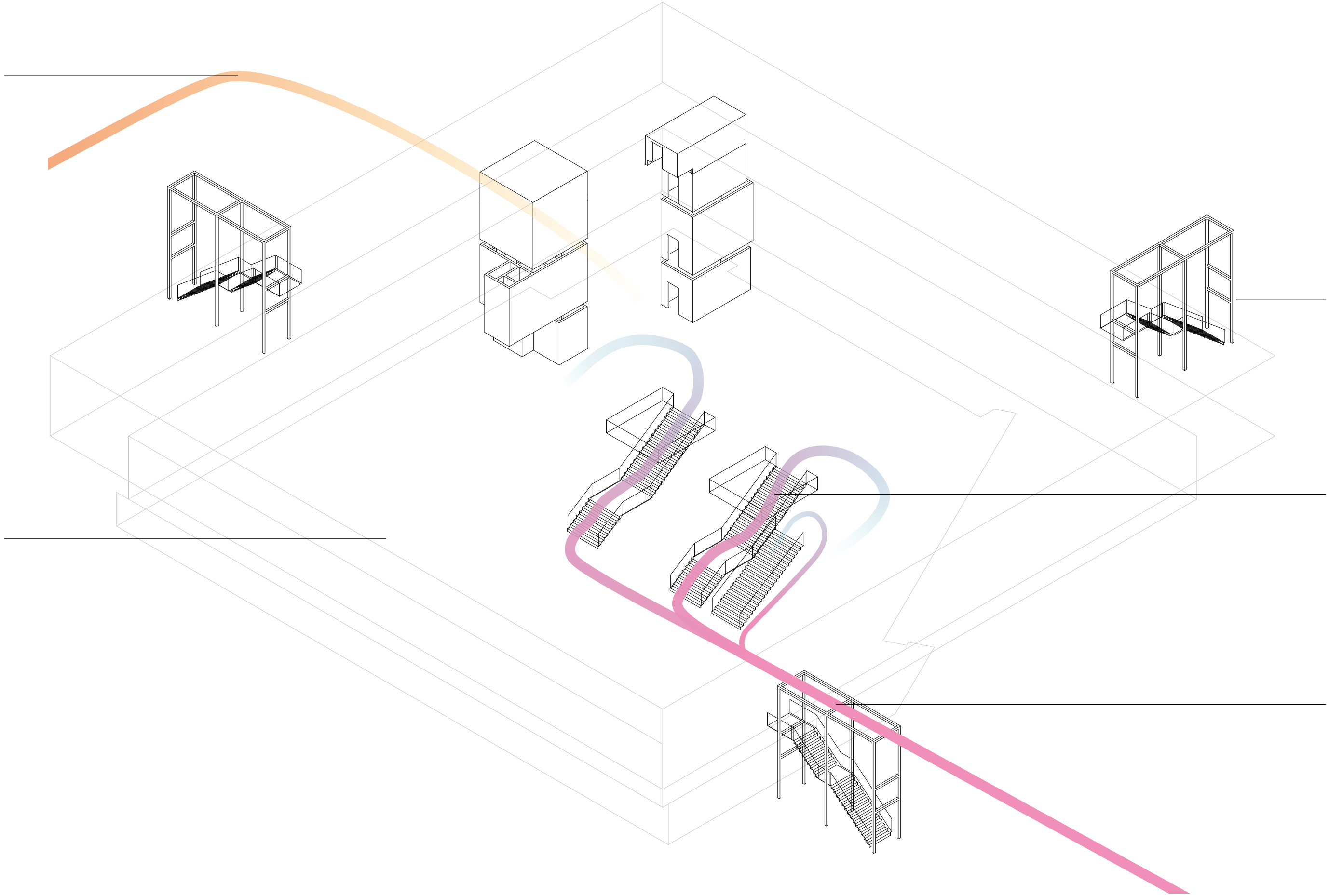
north entrance and elevators  
for goods delivery

3 fire staircases added later

2 open staircases serving level 1

no access to the roof

main entrance south





# II. SUBTLE BUT AMBITIOUS TRANSFORMATIONS

- *REVEALING THE POTENTIAL AND QUALITY OF THE EXISTING*
- *MINIMAL TRANSFORMATION FOR MAXIMAL EFFECT*
- *REUSE VS BUILD NEW*



# STRATEGY

## STEP 1

*TRANSFORMATIONS FOR  
MAXIMAL POTENTIAL AND FLEXIBILITY*

## STEP 2

*TRANSFORMATIONS FOR  
CLIMATIC ANSWER*



# STEP 1

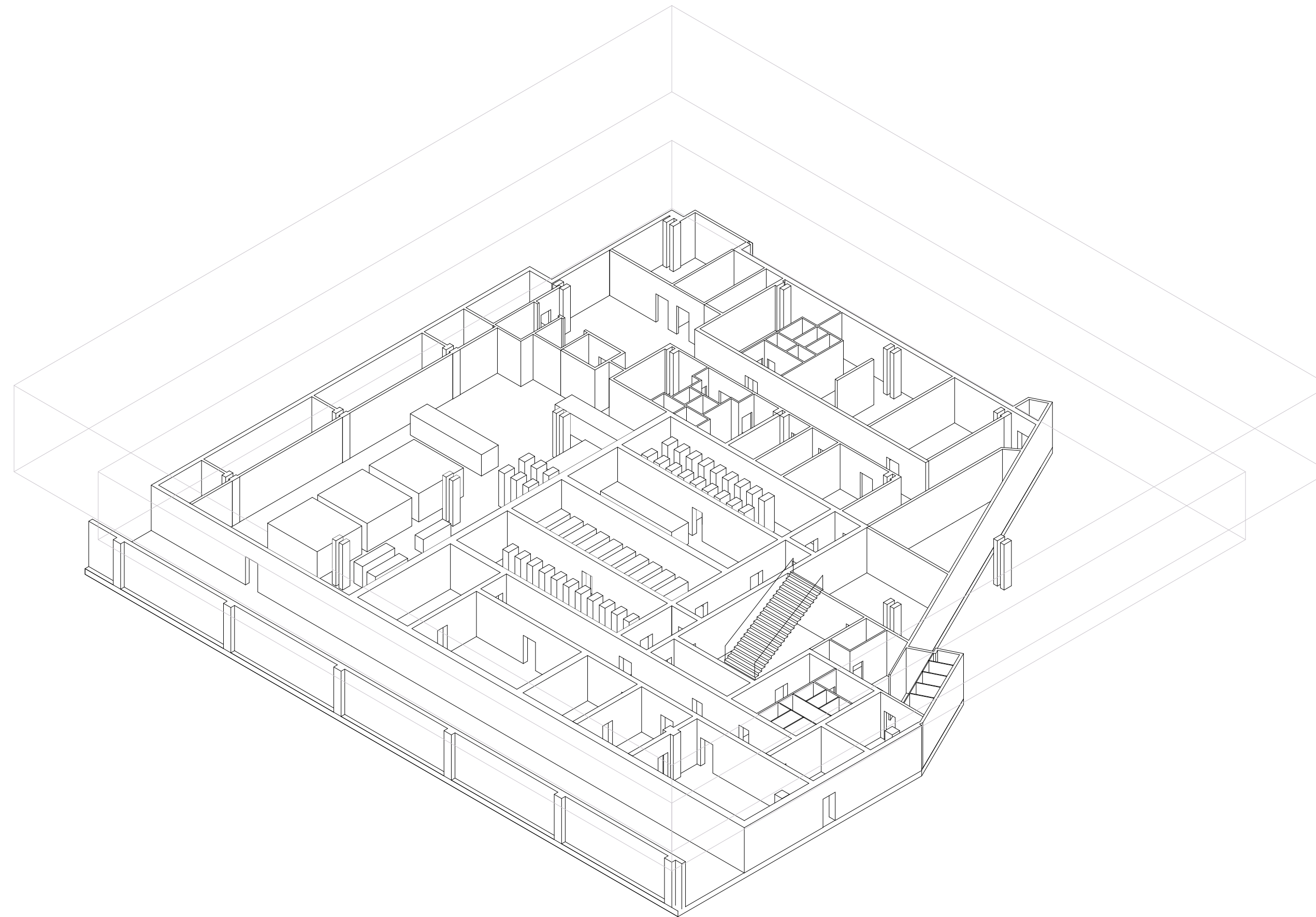
*TRANSFORMATIONS FOR  
MAXIMAL POTENTIAL AND FLEXIBILITY*

- MAXIMUM EXPLOITATION POTENTIAL*
- GREAT ADAPTABILITY AND FLEXIBILITY*
- ACCOMMODATING FUTURE NEEDS*



## LEVEL -1

before transformations



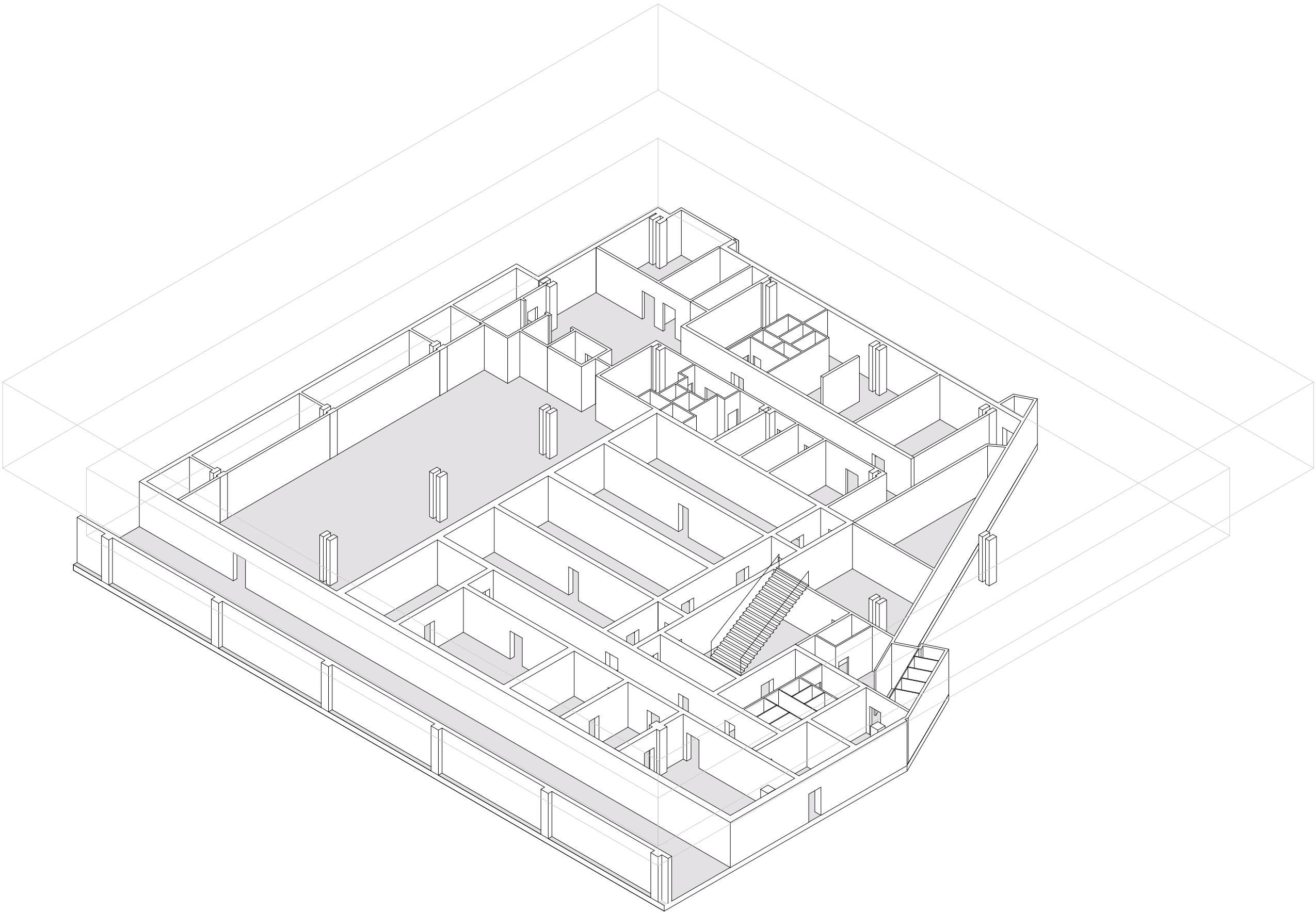
### EXISTING POTENTIAL

- storage spaces
- thick walls
- infrastructure (cloakroom, wc)
- stable temperatures



**LEVEL -1**

after transformations



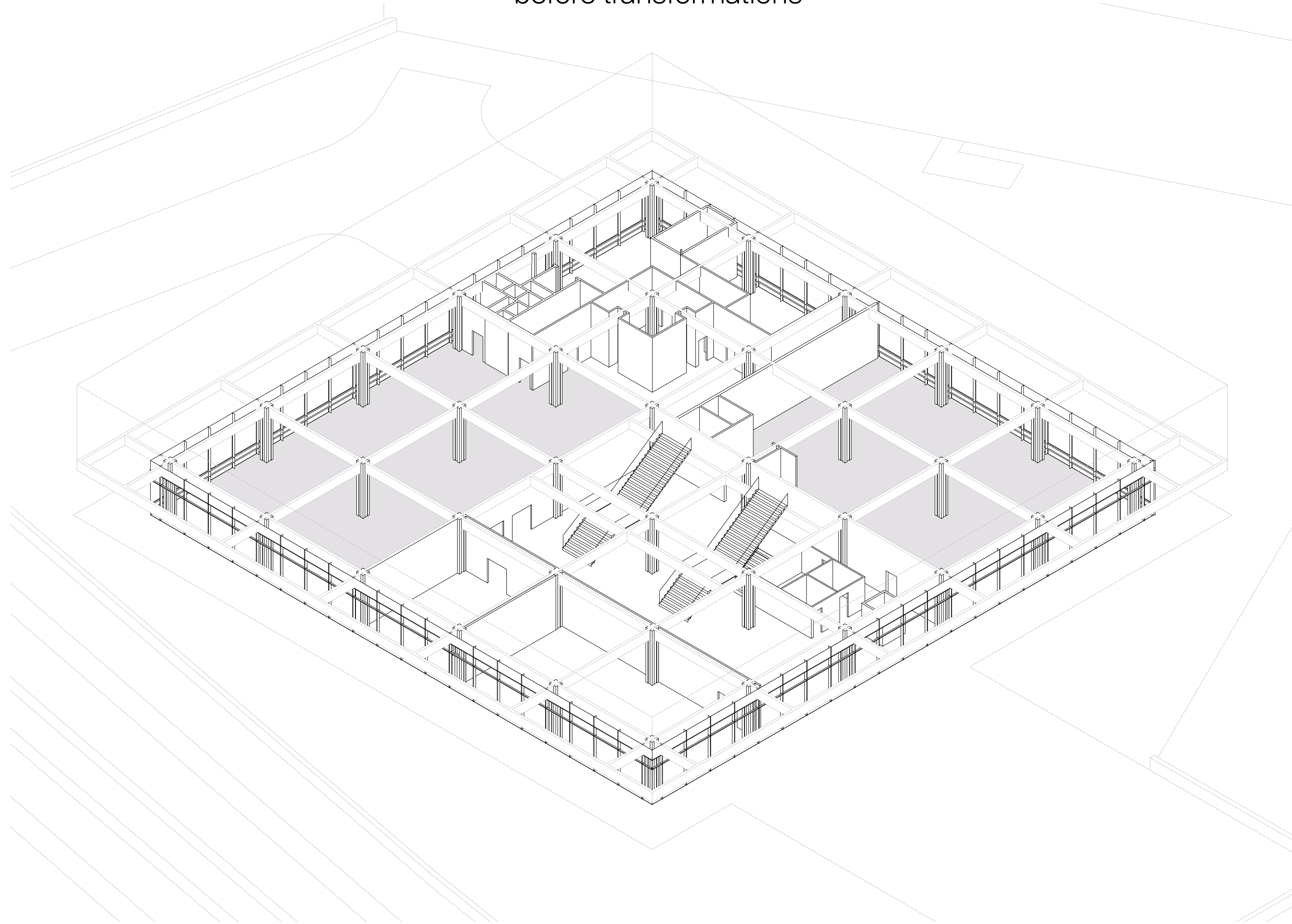
**FULL POTENTIAL**

+ 710 m2 of free surface



## LEVEL 0

before transformations



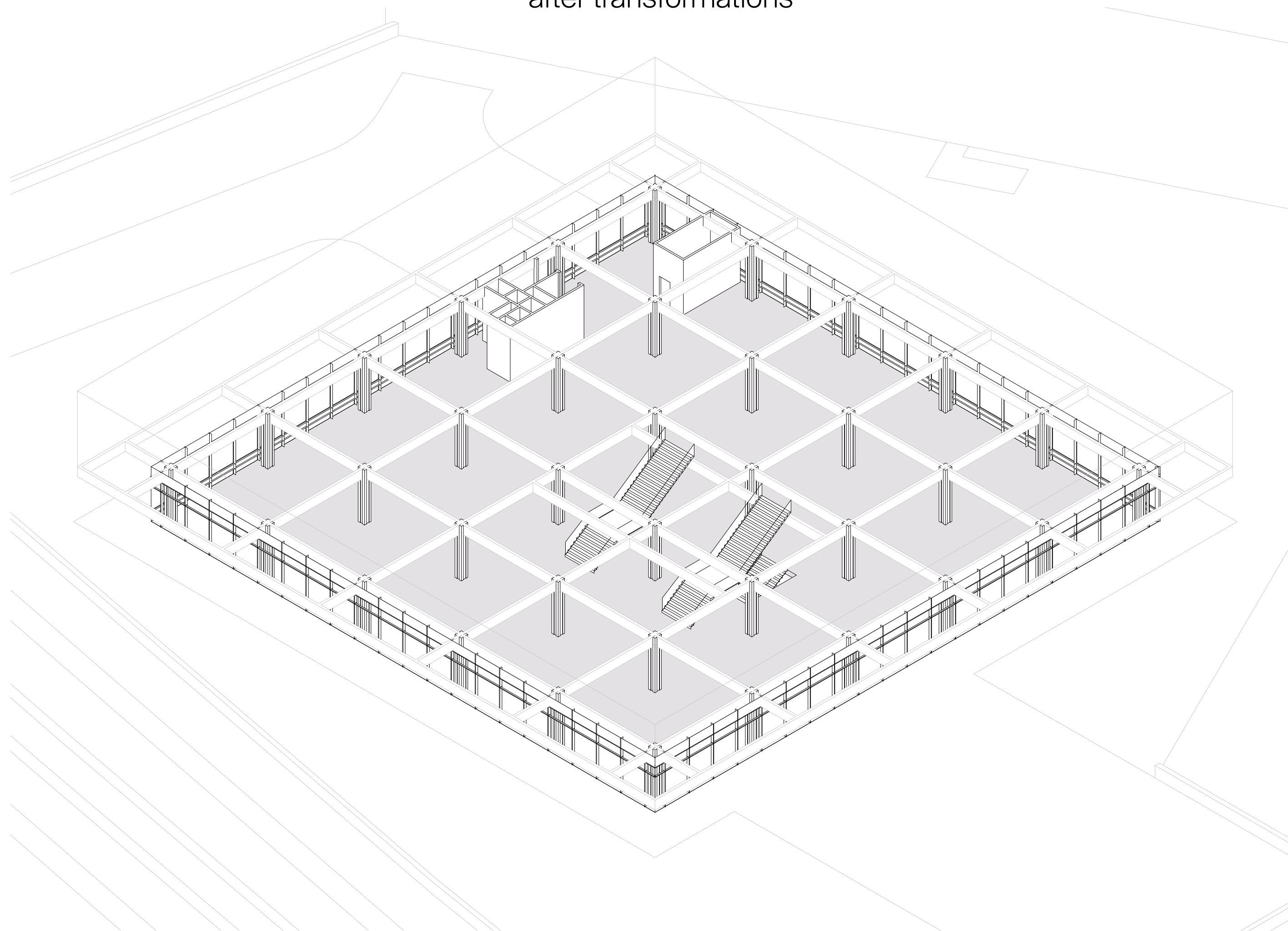
### EXISTING POTENTIAL

- open on every side
- natural light
- high ceiling
- connection to the streets



## LEVEL 0

after transformations



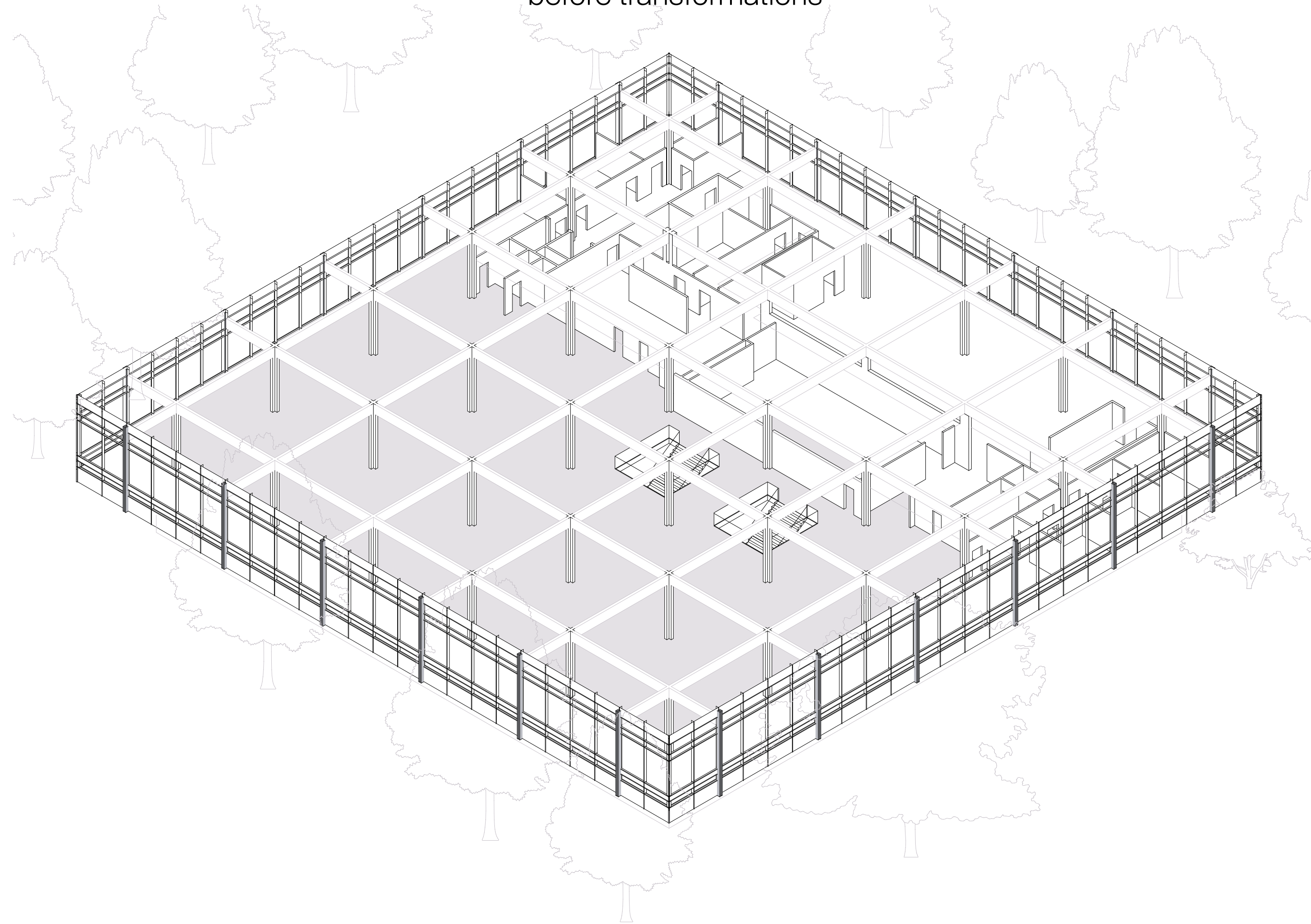
**FULL POTENTIAL**

+ 1120 m2 of usable surface



## LEVEL 1

before transformations



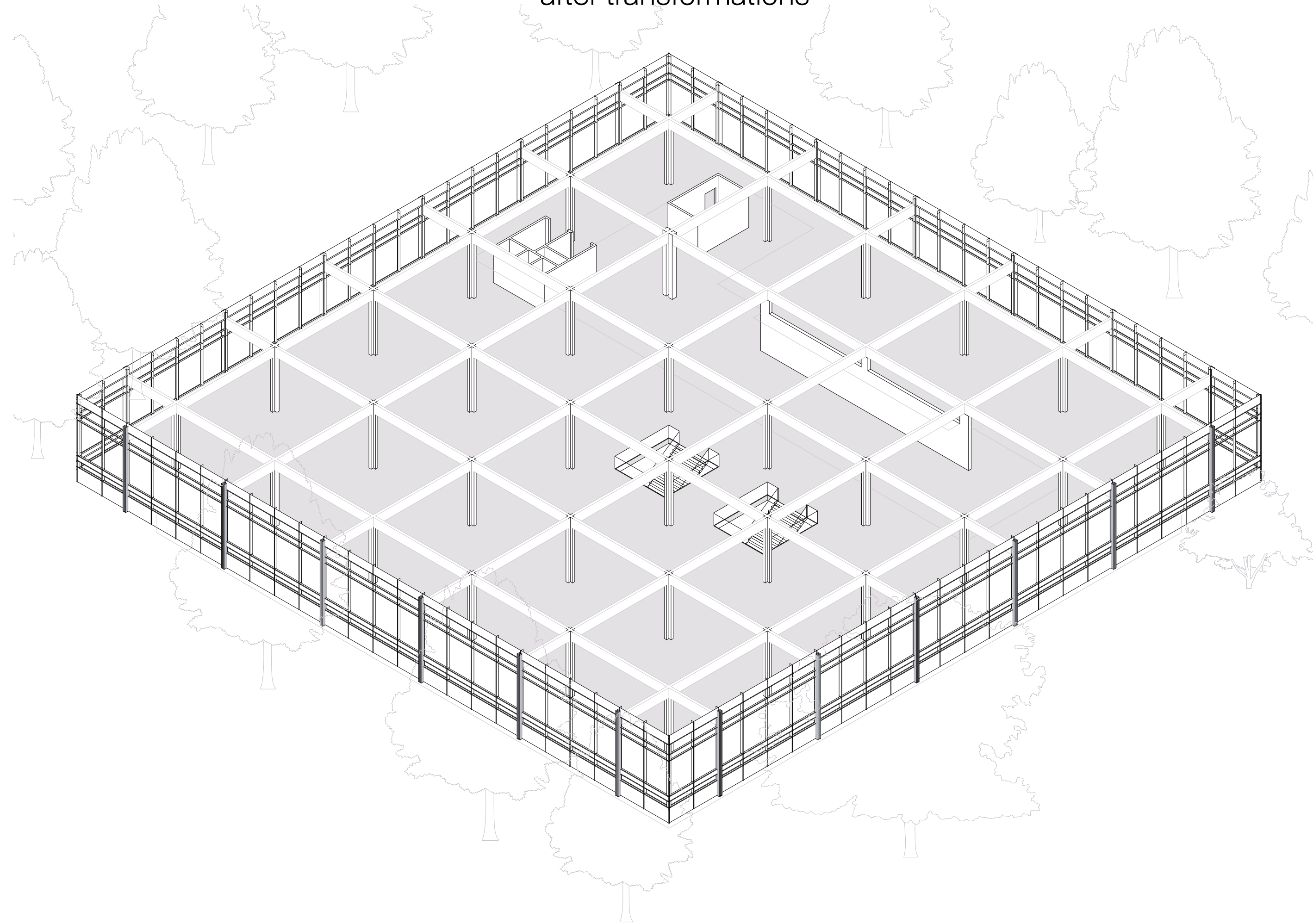
### EXISTING POTENTIAL

- open on every side
- natural light
- high windows
- high ceiling
- trees viewing
- solar gain



## LEVEL 1

after transformations



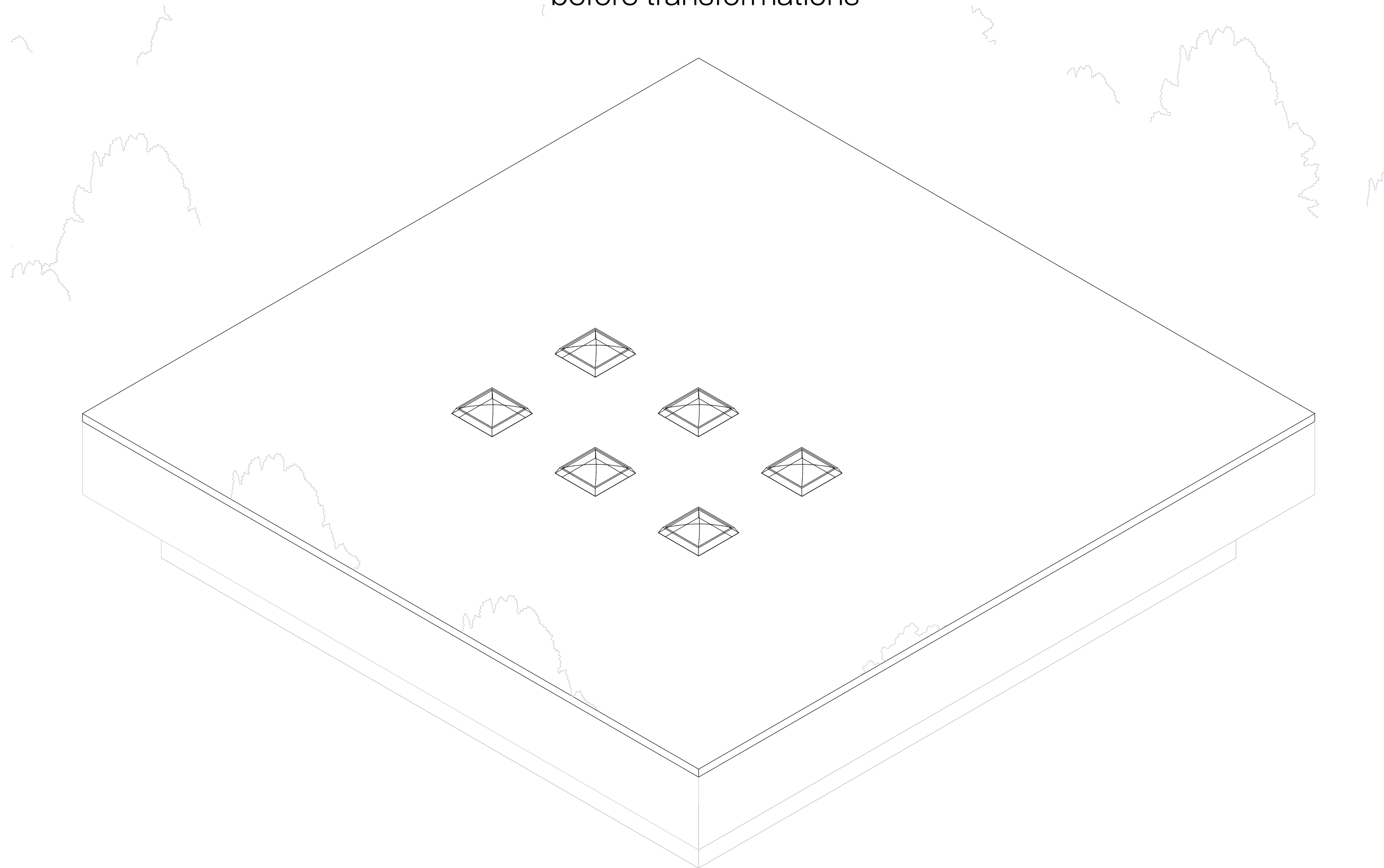
**FULL POTENTIAL**

+ 1210 m2 of usable surface



## LEVEL 2

before transformations



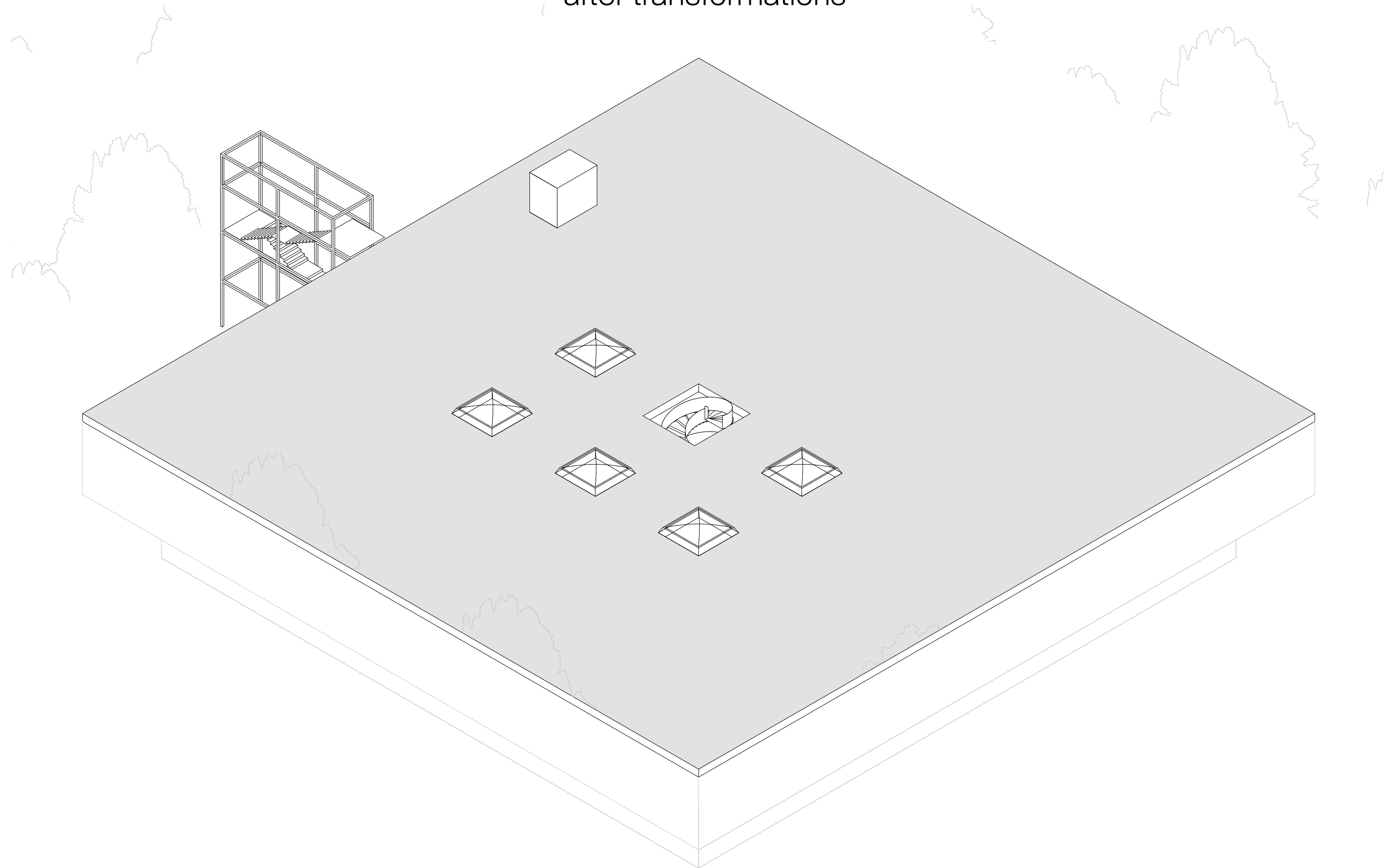
### EXISTING POTENTIAL

- large flat surface
- views on the streets
- treetop height
- connection to the sky



## LEVEL 2

after transformations



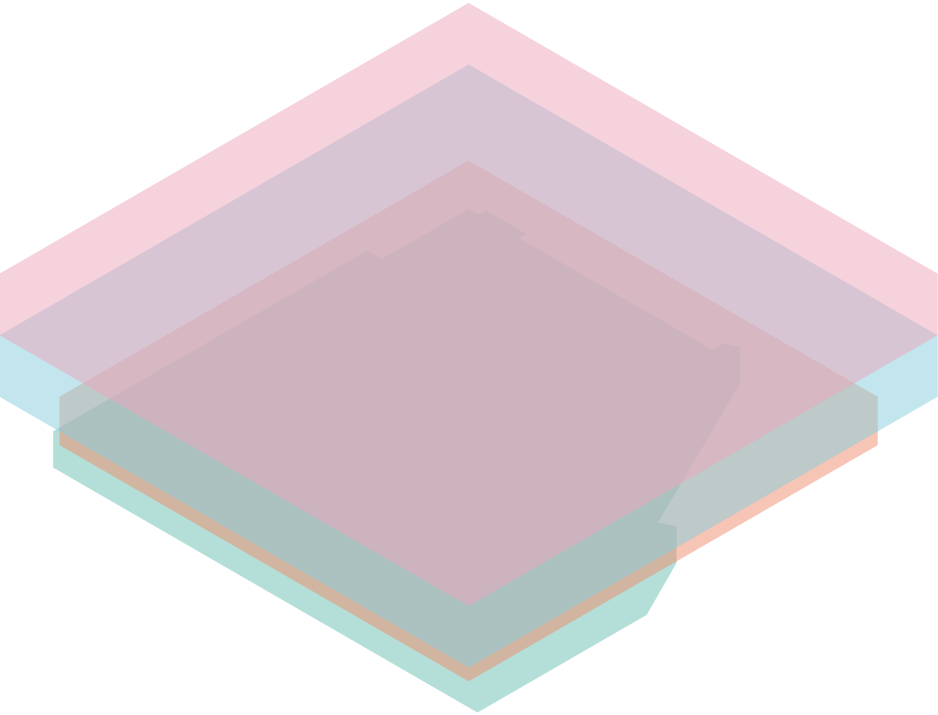
### FULL POTENTIAL

+ 2800 m2 new walkable floor  
+ access to the roof

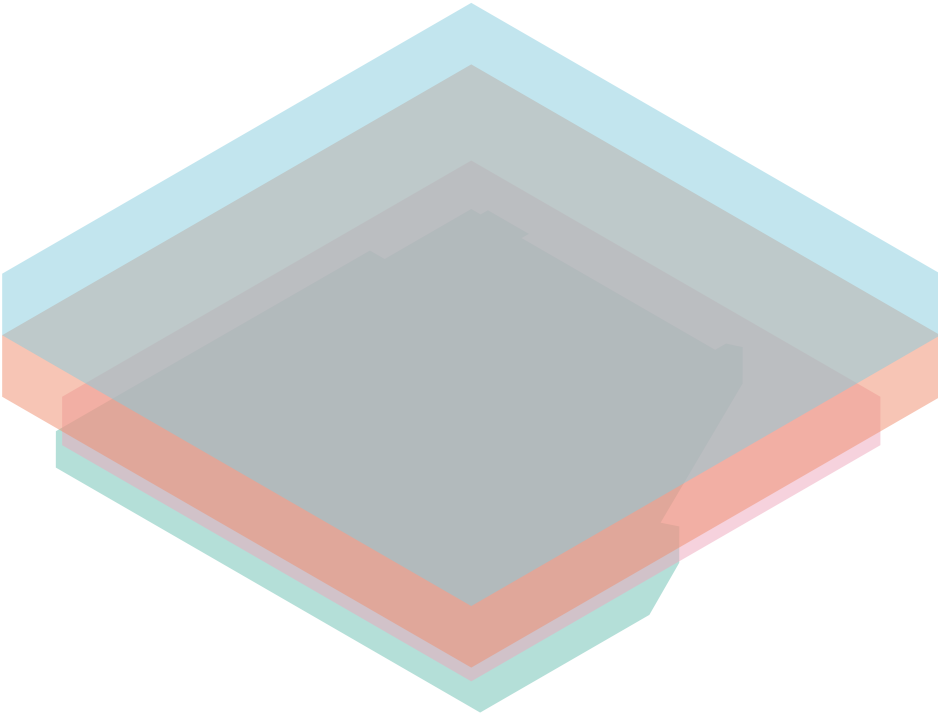


FLEXIBILITY OF USE

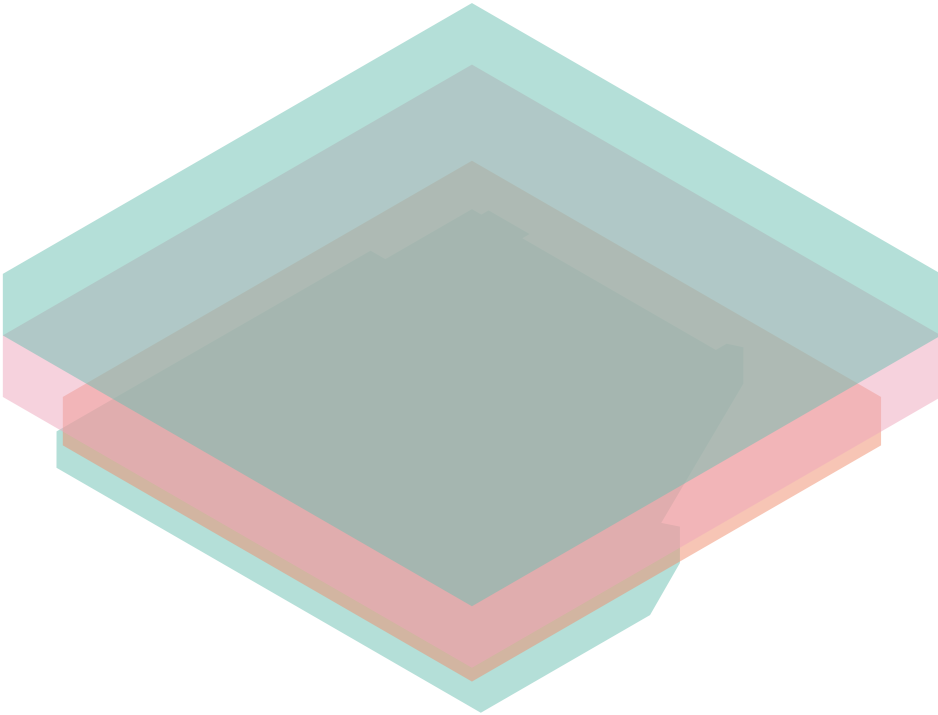
thanks to its great adaptability and various flexibility,  
the building can now accommodate the diverse future needs



- bars
- restaurant
- office
- storage



- urban farming
- school
- museum
- spa



- greenhouse
- sporthall
- coworking
- concert



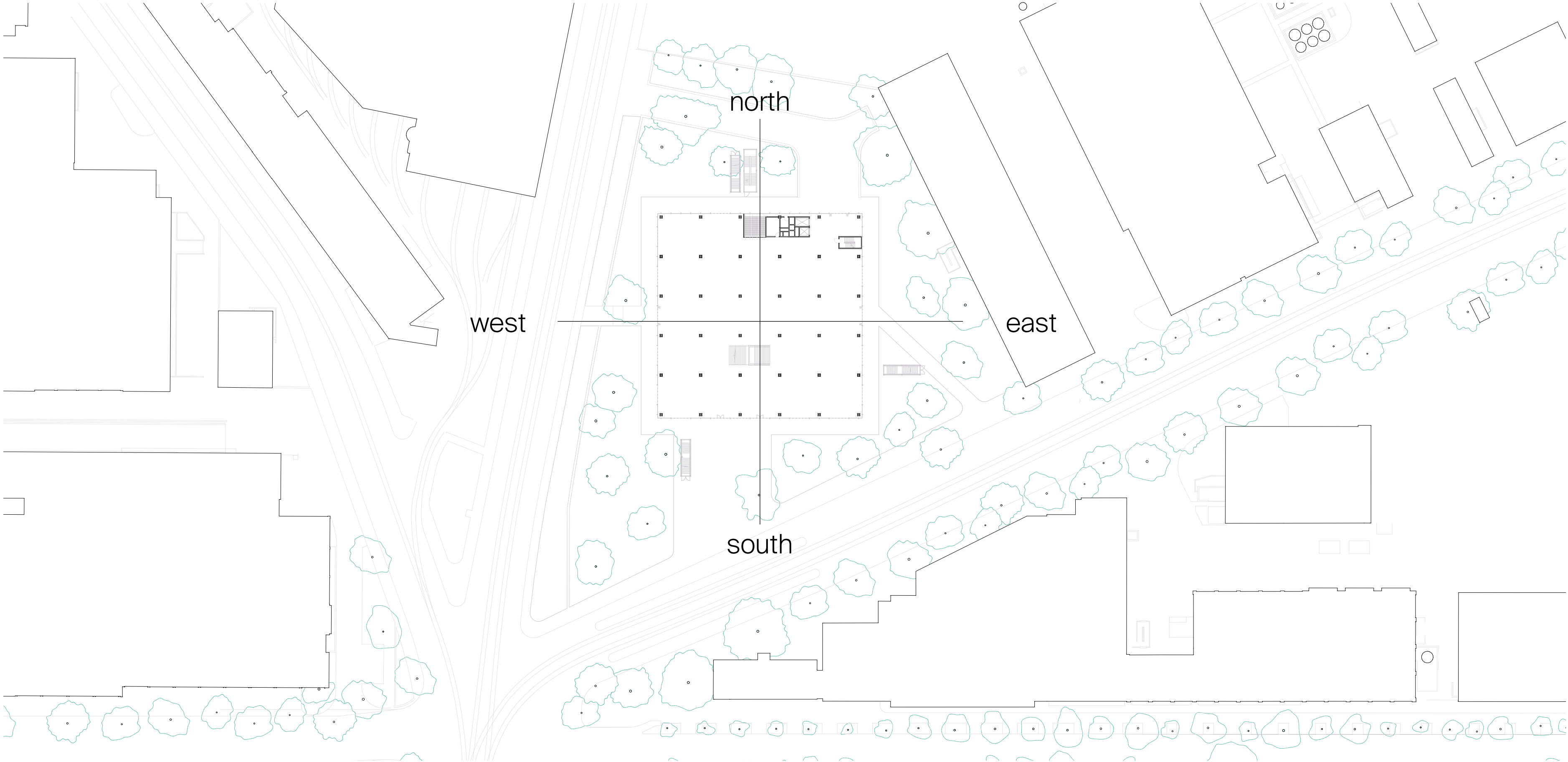
# STEP 2

*TRANSFORMATIONS FOR  
CLIMATIC ANSWER*

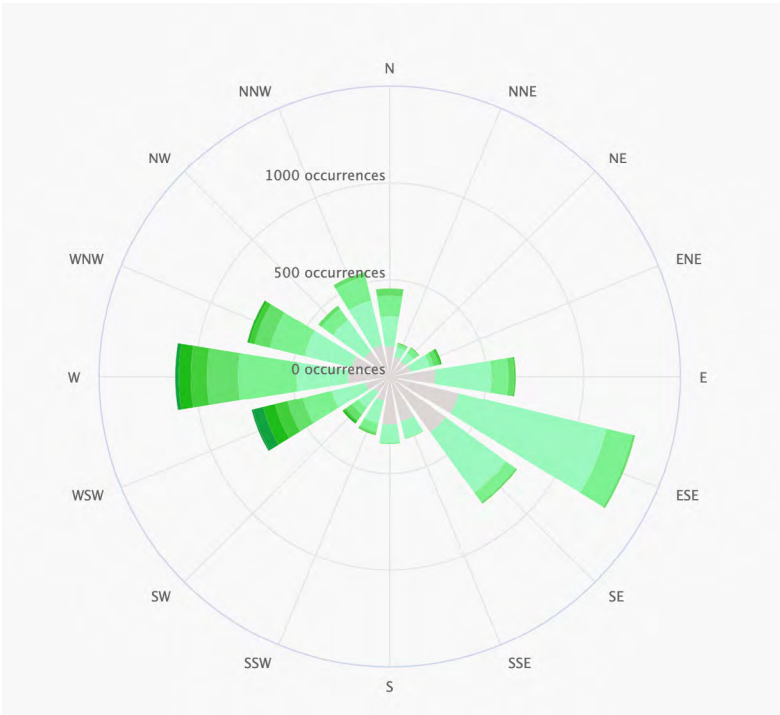
*- BIOCLIMATIC BUILDING  
- HUMAN SPECIFIC COMFORT ZONE  
VS MECHANICALLY CONTROLLED CLIMATES*



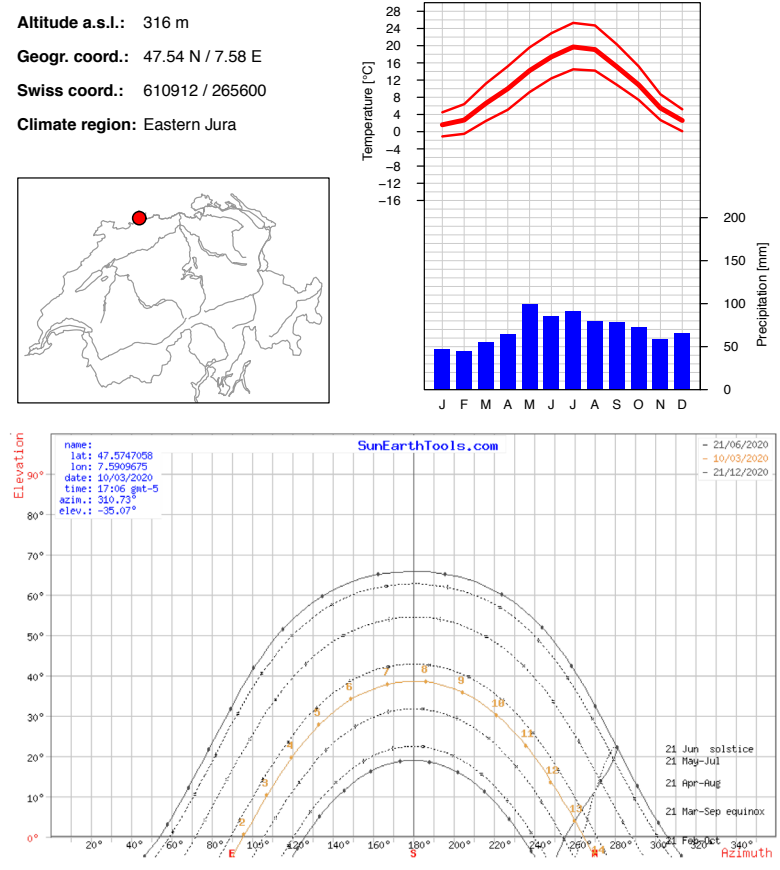
CONTEXT



wind

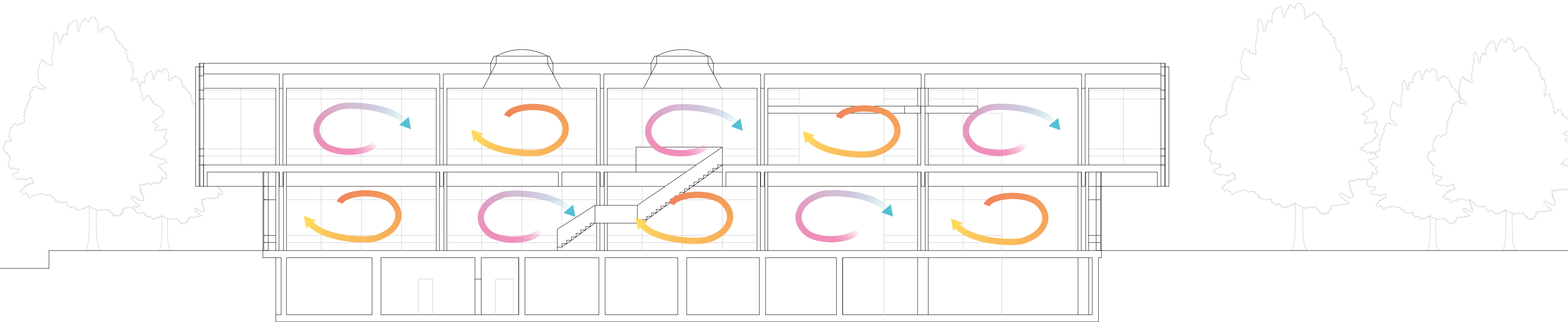


sun





PROBLEM OF THE EXISTING



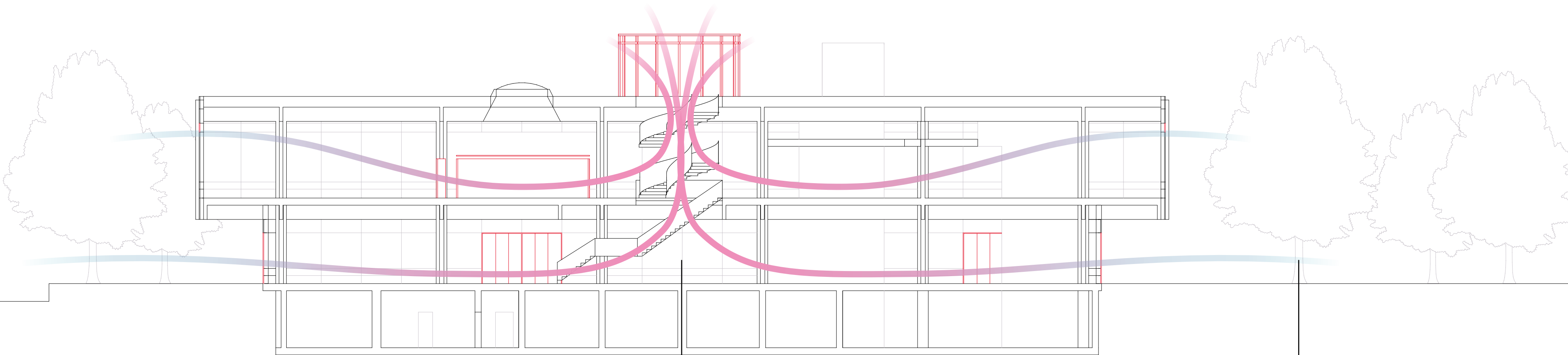
MECHANICALLY CONTROLLED CLIMATES

not sustainable  
not human comfort zone specific



VENTILATION

SOLUTION



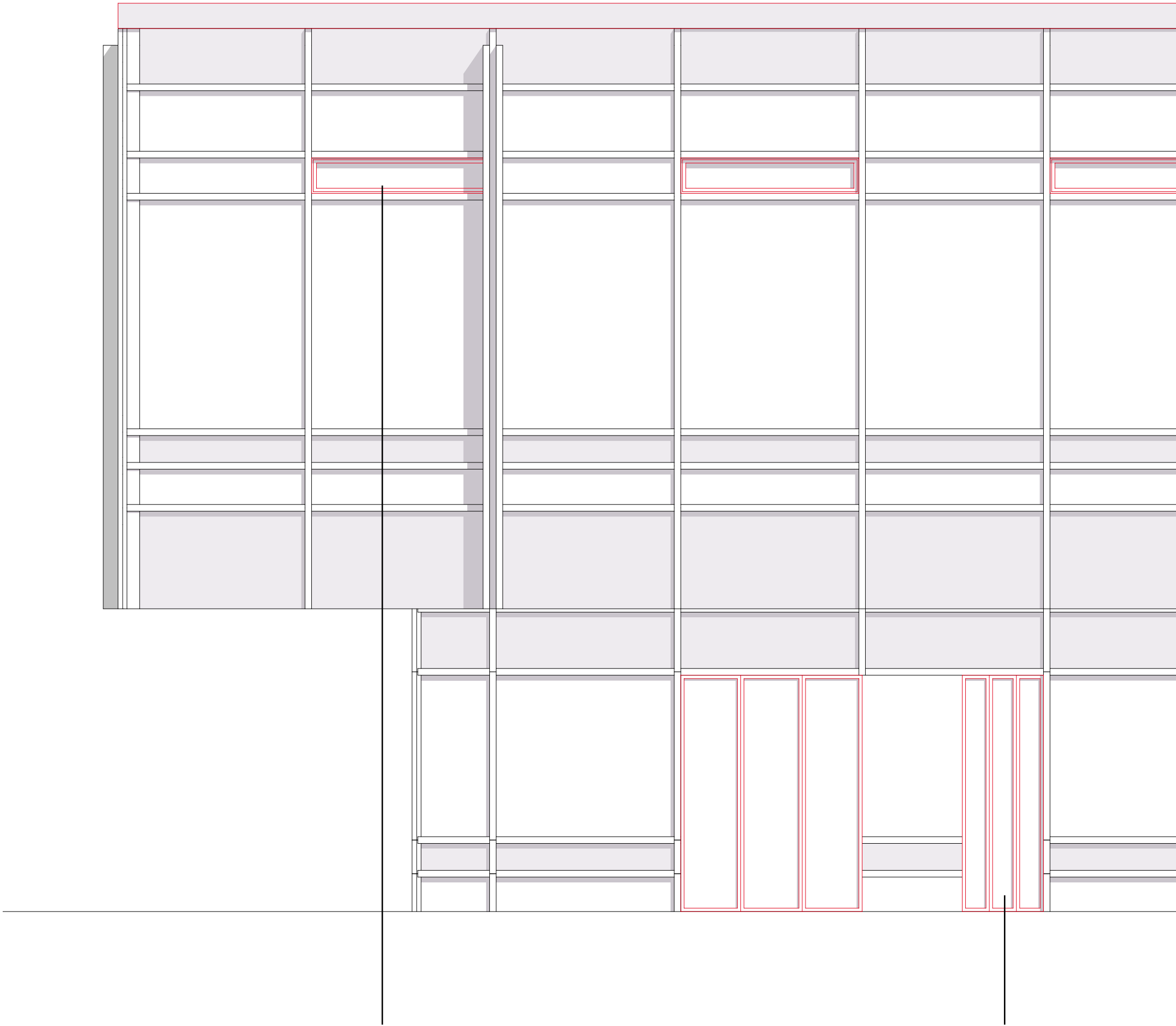
solar chimney  
+ stack effect

natural cross ventilation  
+ tree's evaporation process



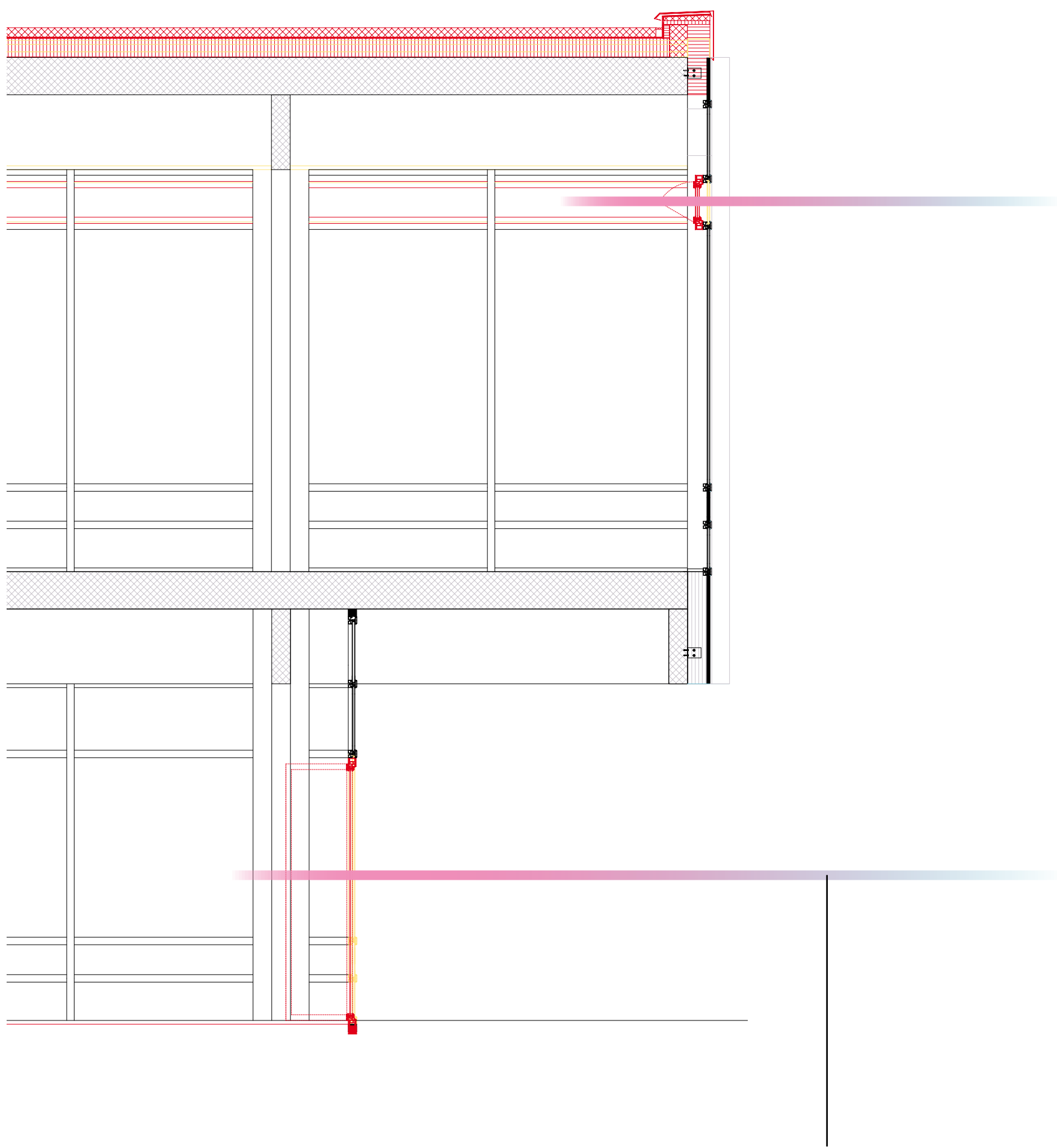
VENTILATION

NATURAL CROSS VENTILATION



new hopper windows

new sliding windows

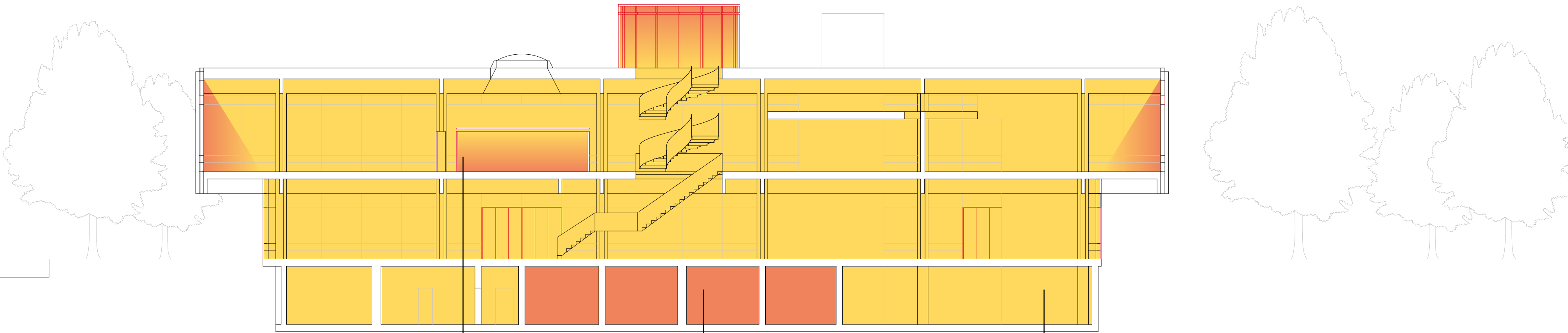


natural cross ventilation  
through new windows



HEATING

SOLUTION



**CLIMATE 1**  
heat bubble

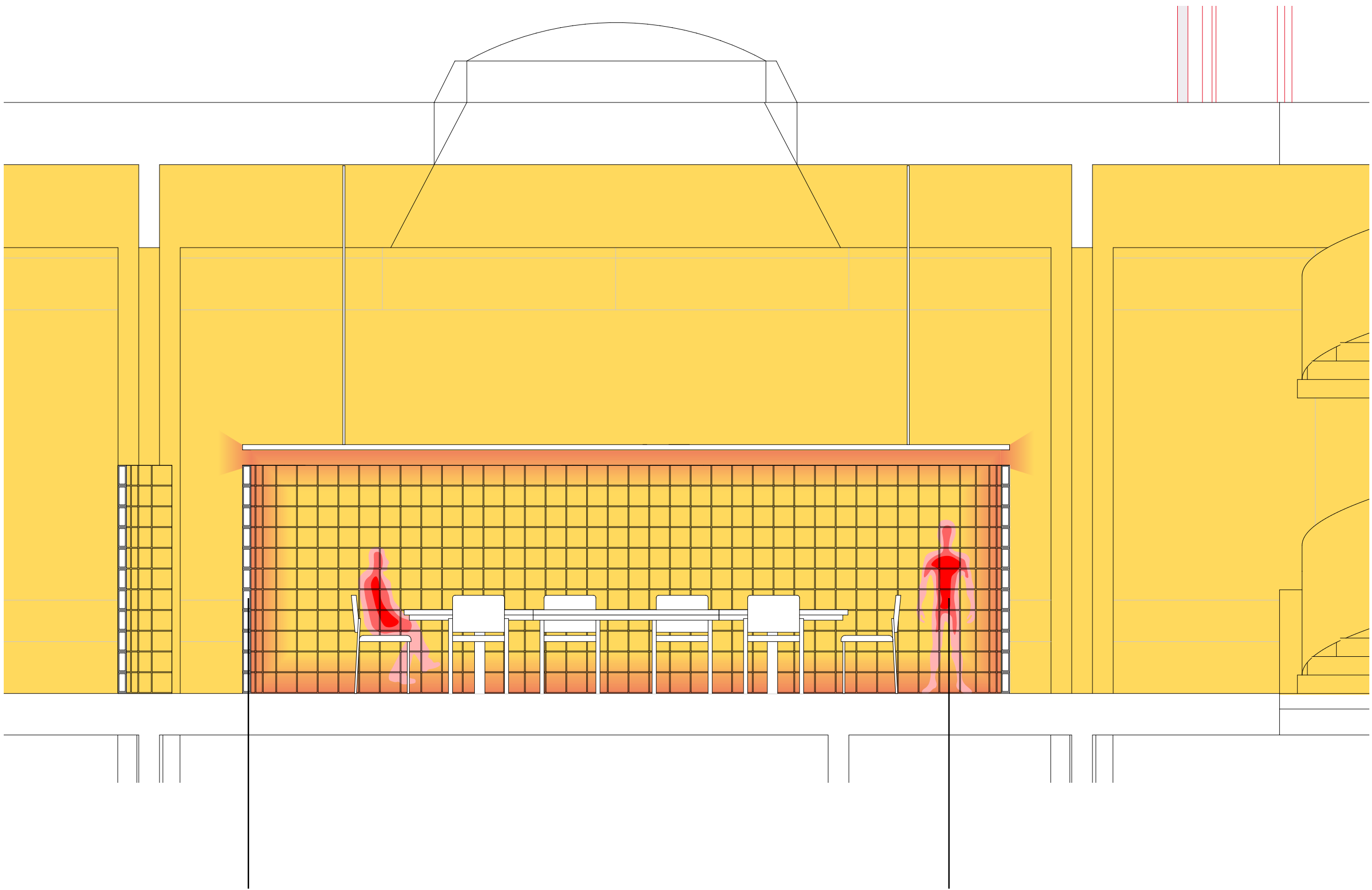
**CLIMATE 2**  
heated

**CLIMATE 3**  
temperate



HEATING

HEAT BUBBLE



HEATING BY MATERIALS CAPACITY

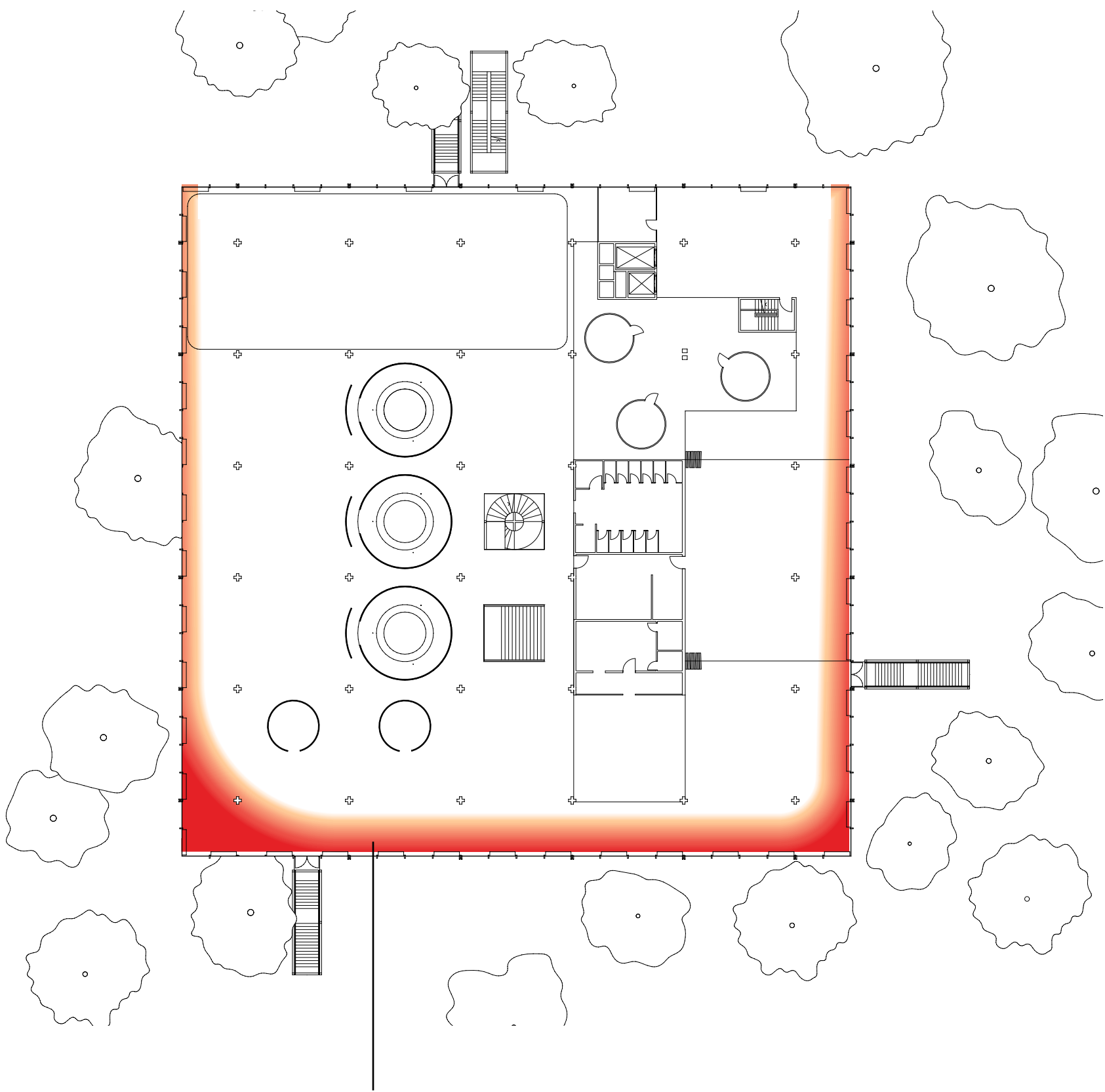
inside glass brick wall  
 $U = 2.95 \text{ w/m}^2 \text{ K}$   
heat reflection 10%  
heat radiation 32%

HEAT BY GATHERING OF PEOPLE

100W / person

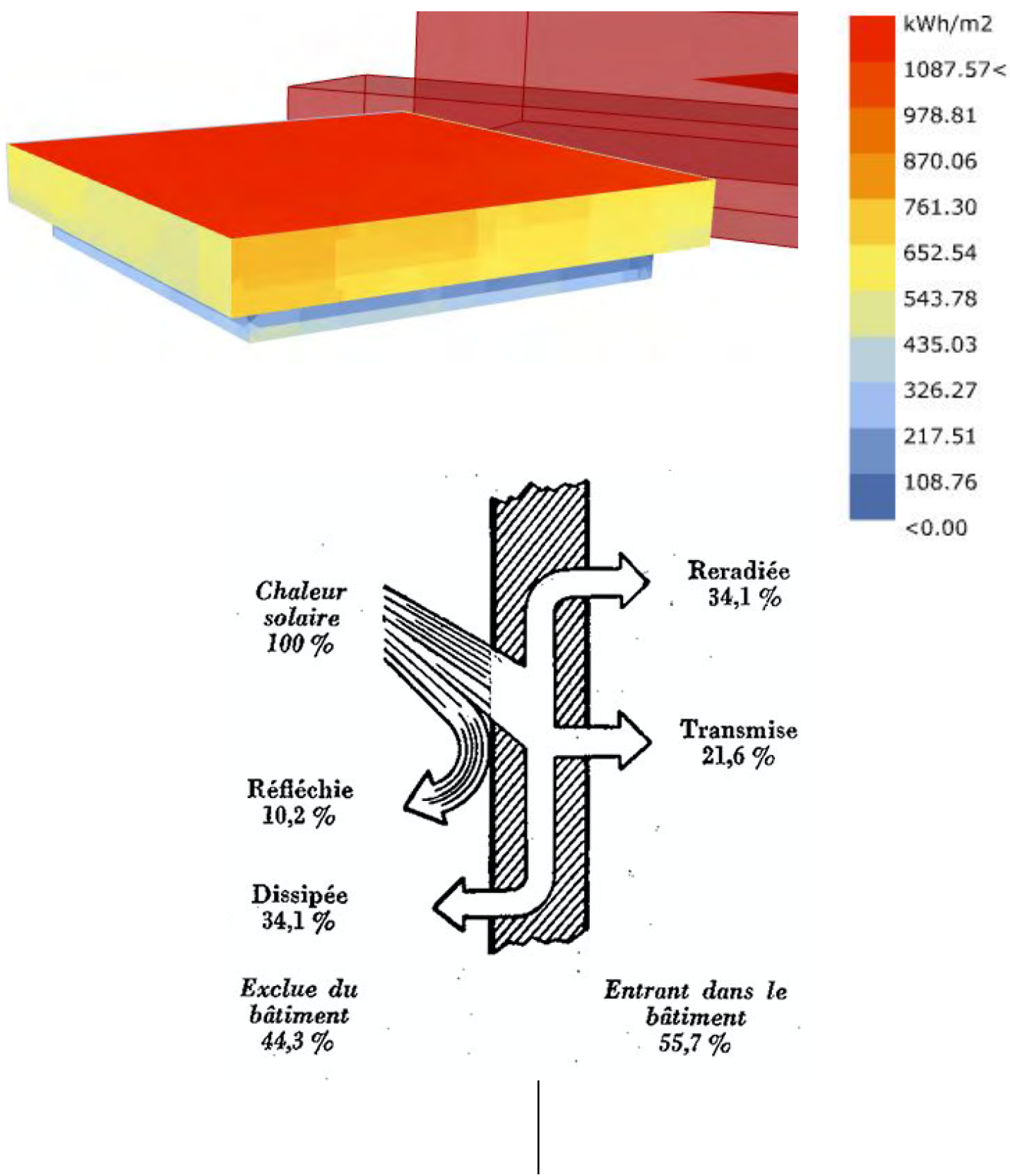


HEATING



HEATING BY NATURAL SOLAR GAIN  
on the facade and the interior floor

SOLAR HEAT

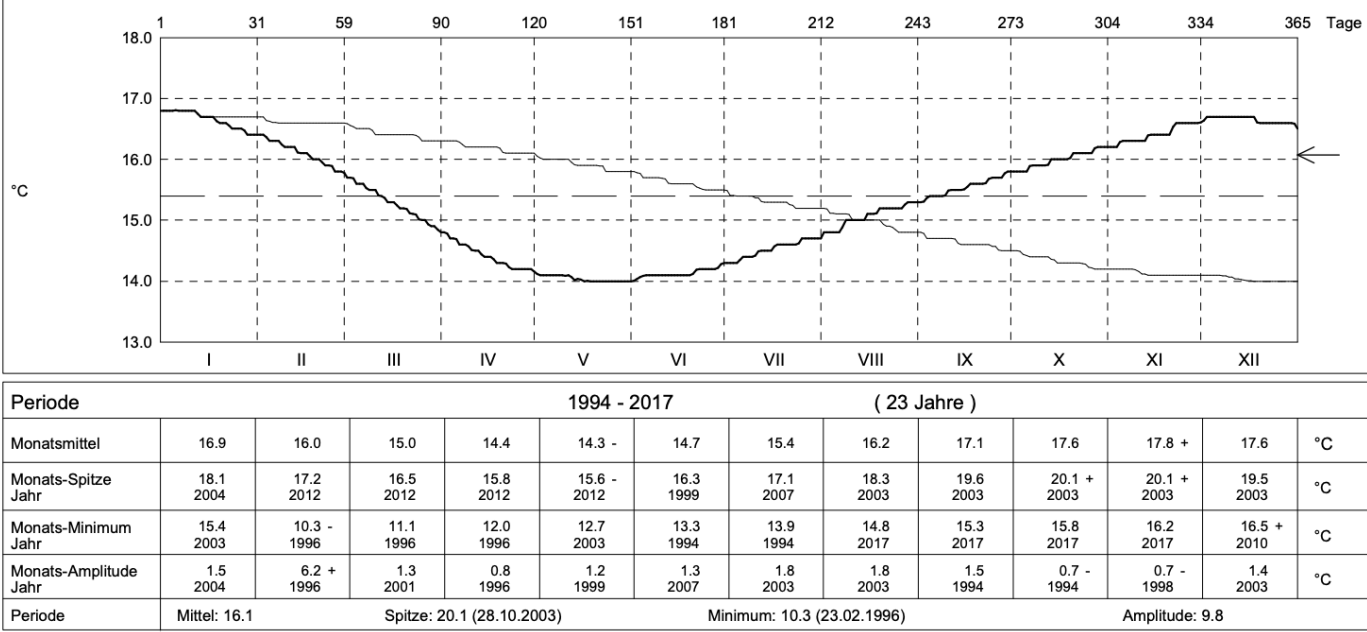
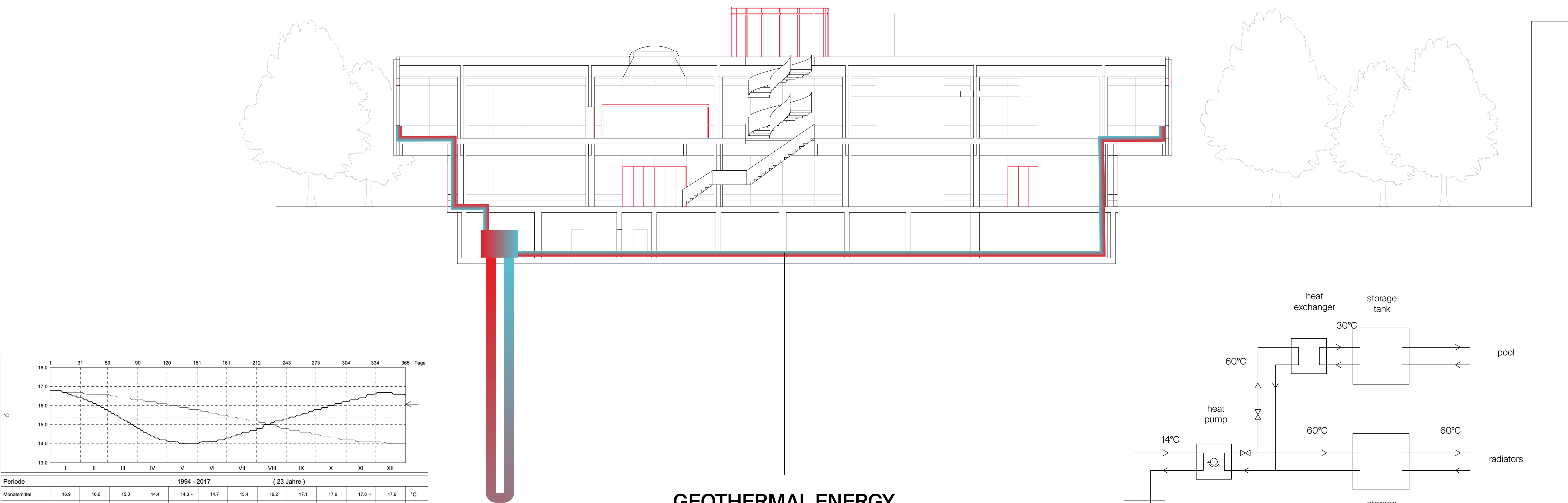


HEAT THROUGH GLAZING  
existing glazing :  
U = around 2  
total heat through glazing :  
56 %



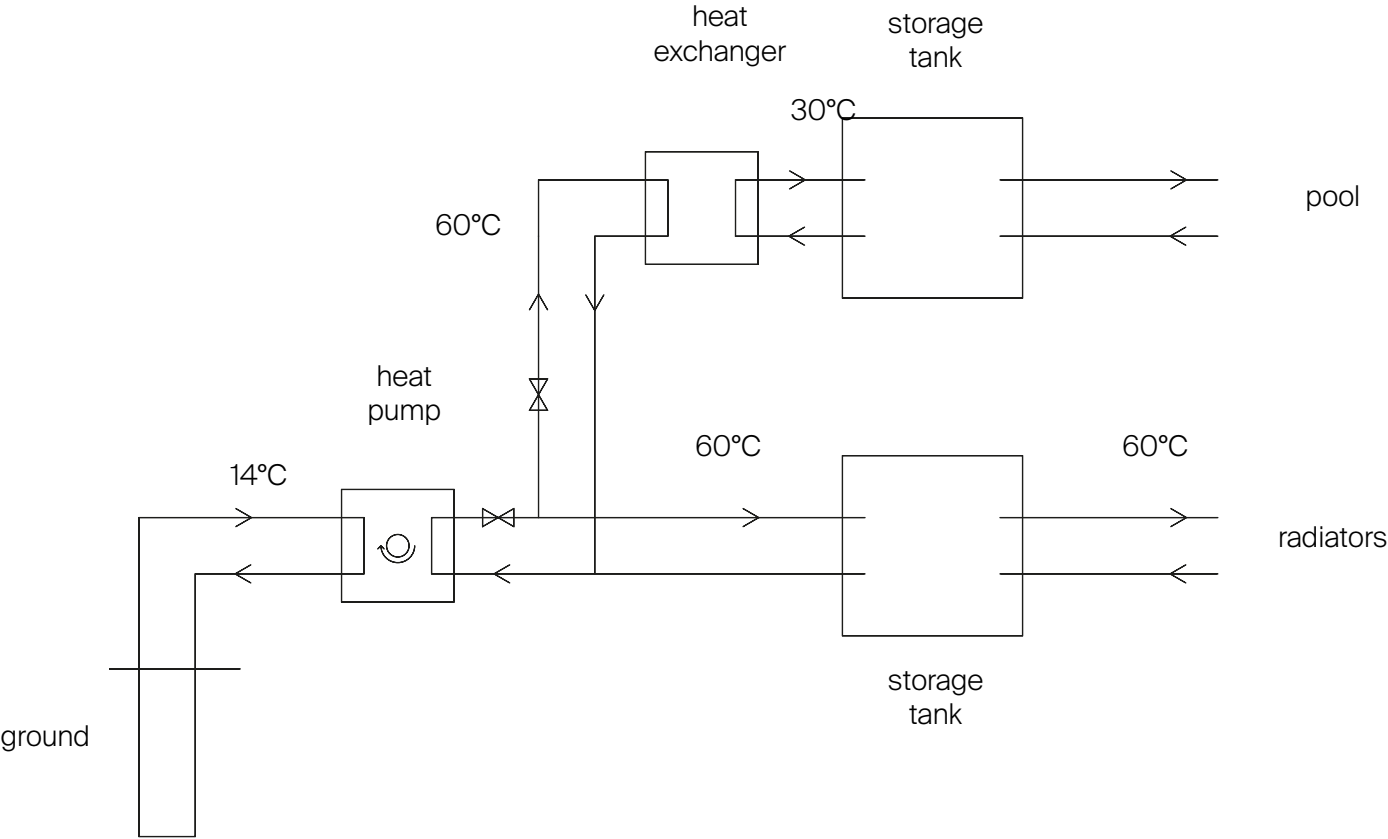
ENERGY

SOLUTION



ground water temperature

GEOTHERMAL ENERGY



hot water heating system



ENERGY REQUIREMENTS

HEATING ENERGY REQUIREMENTS

|                                       |   |
|---------------------------------------|---|
| Heat requirement @ 65 ° C (radiators) | 32.8 kWh / m2 thermal   |
| Groundwater heat pump (JAZ = 4)       |   |
| Final energy requirement:             | $32.8 \text{ kWh / m2a thermal} / 4 = 8 \text{ kWh / m2a electrical}$ |

HOT WATER ENERGY REQUIREMENTS

|                                 |   |
|---------------------------------|---|
| Heat requirement @ 65 ° C       | 171 kWh / m2 thermal  |
| Groundwater heat pump (JAZ = 3) |   |
| Final energy requirement:       | $171 \text{ kWh / m2a thermal} / 3 = 57 \text{ kWh / m2a electrical}$ |

ENERGY REQUIREMENTS DEVICES, LIGHTING, VENTILATION

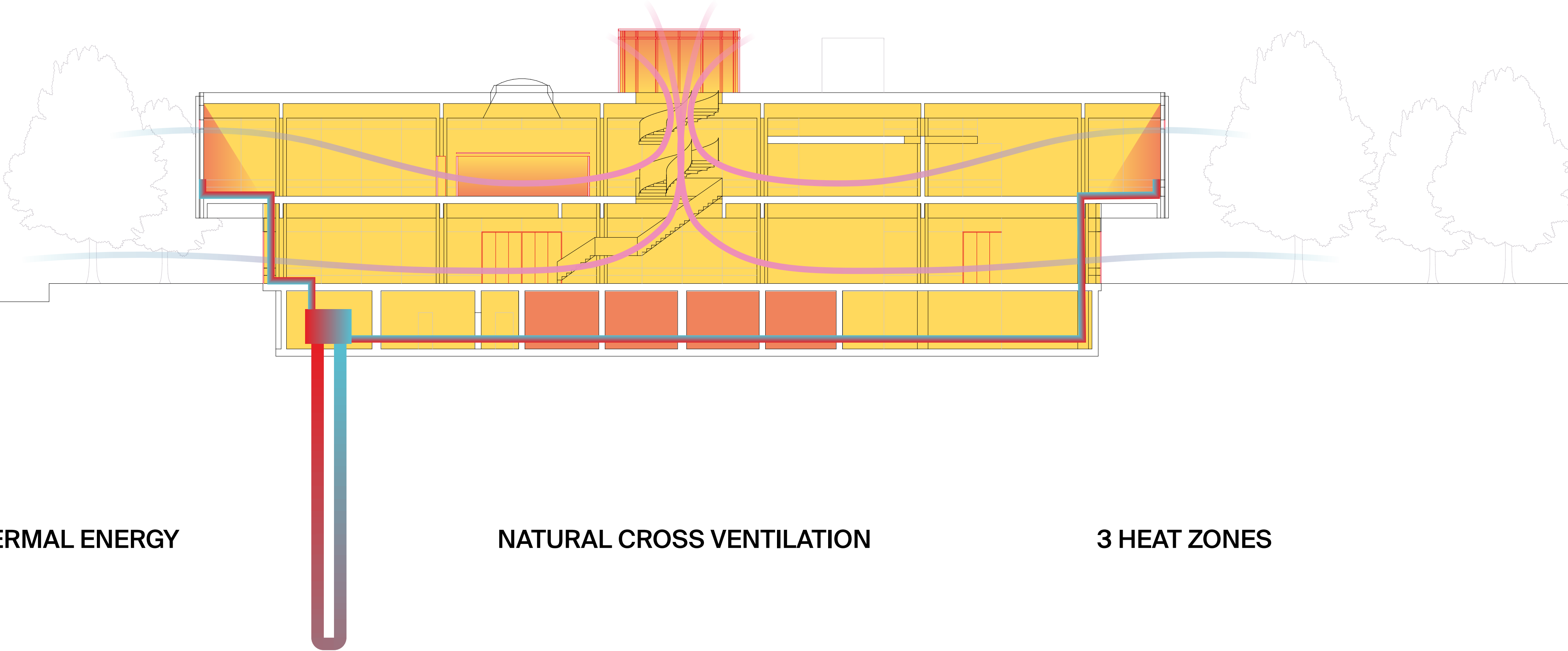
|                           |   |
|---------------------------|---|
| Final energy requirement: | $11 + 30 + 9 = 50 \text{ kWh / m2a electrical}$ |
|---------------------------|---|

|  |  |
|--|--|
| Total final energy requirement per m2 and year | <b><math>8 + 57 + 50 = 115 \text{ KWH / M2A ELECTRICAL}</math></b> |
|--|--|

|  |   |
|--|---|
| Total general                            |   |
| final energy requirement per m2 and year | $52 + 19 + 115 = 186 \text{ Wh / m2a electrical}$ |
| Total m2 of heated rooms                 | 3200 m2 heated + 3100 m2 buffer space             |
| Total final energy consumption           | <b>595200 KWH / A ELECTRICAL</b>                  |



THE BIOCLIMATIC MACHINE



GEOHERMAL ENERGY

NATURAL CROSS VENTILATION

3 HEAT ZONES

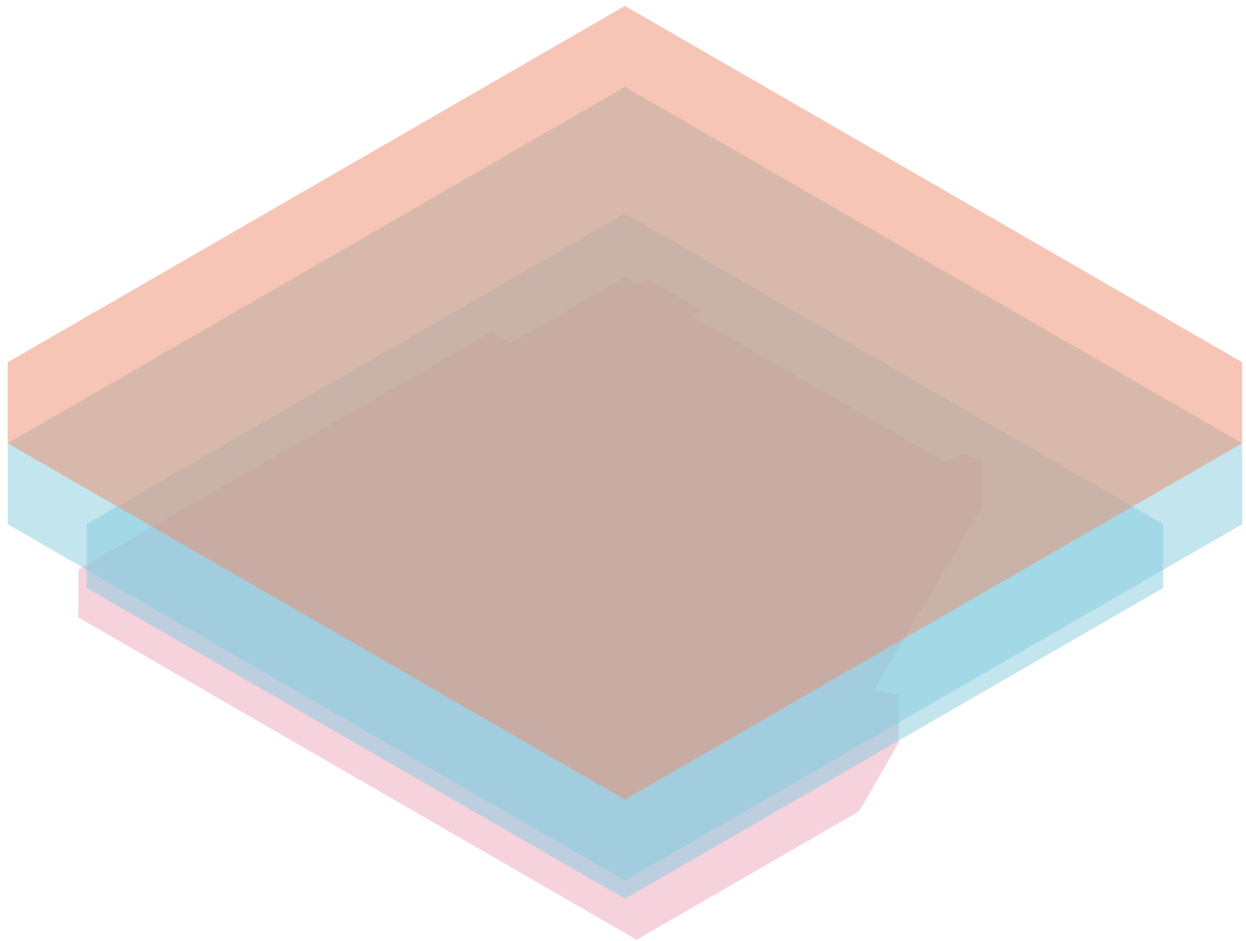


# III. A NEW VIBRANT SPACE

- *TAKING ADVANTAGE OF THE INHERENT QUALITIES*
- *CREATING SPACES THAT MEET CURRENT NEEDS*
  - *MINIMAL INTERVENTIONS TO KEEP  
BUILDING'S MAXIMUM POTENTIAL OPERATING*



SELECTED SCENARIO



multi-uses space

contemporary library

event space

spa



# LEVEL -1

*SPA + STORAGE*

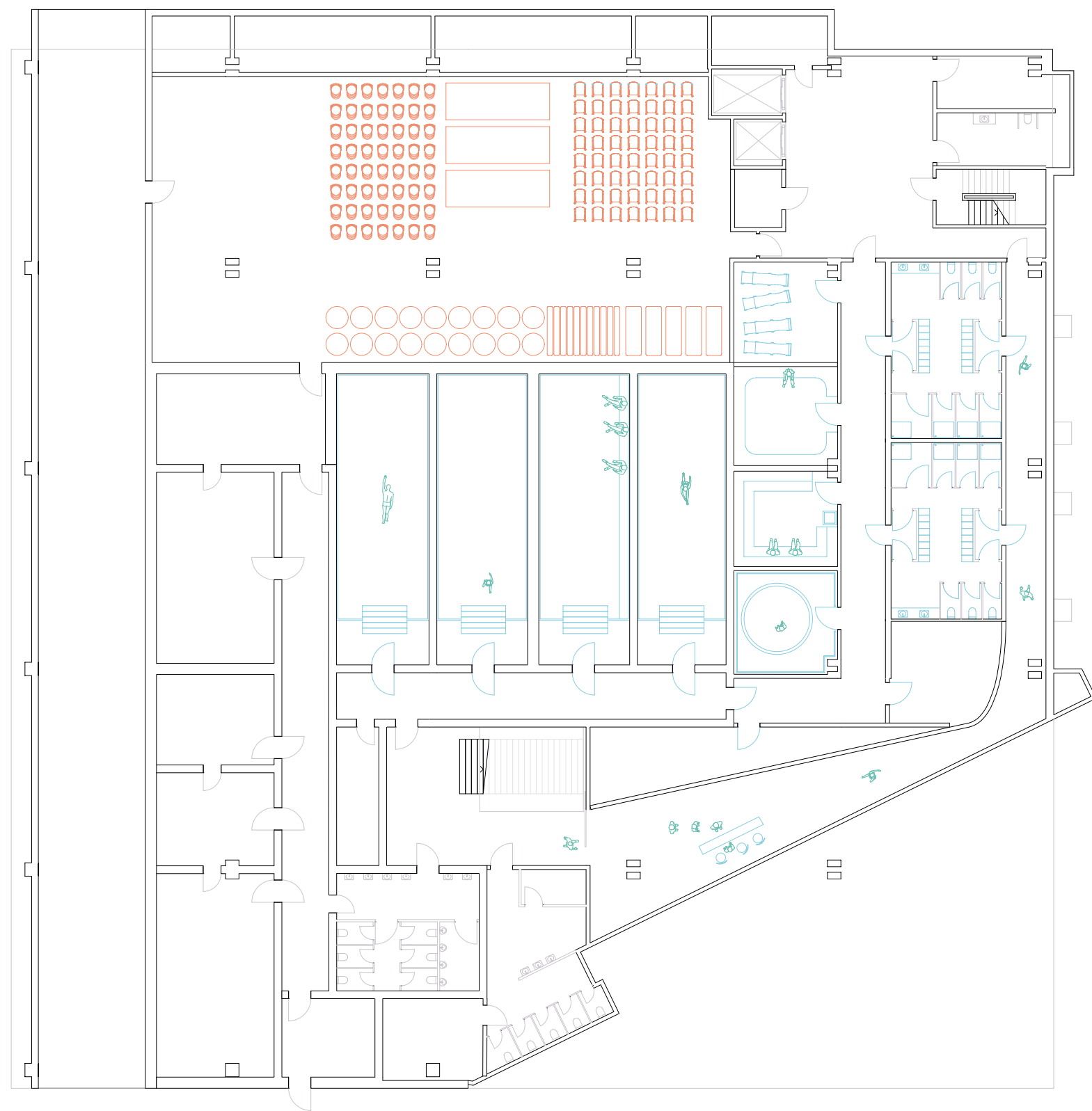




## TRANSFORMATIONS

addition of basins  
changing rooms refurbishment  
reception counter





## QUALITIES ADDED

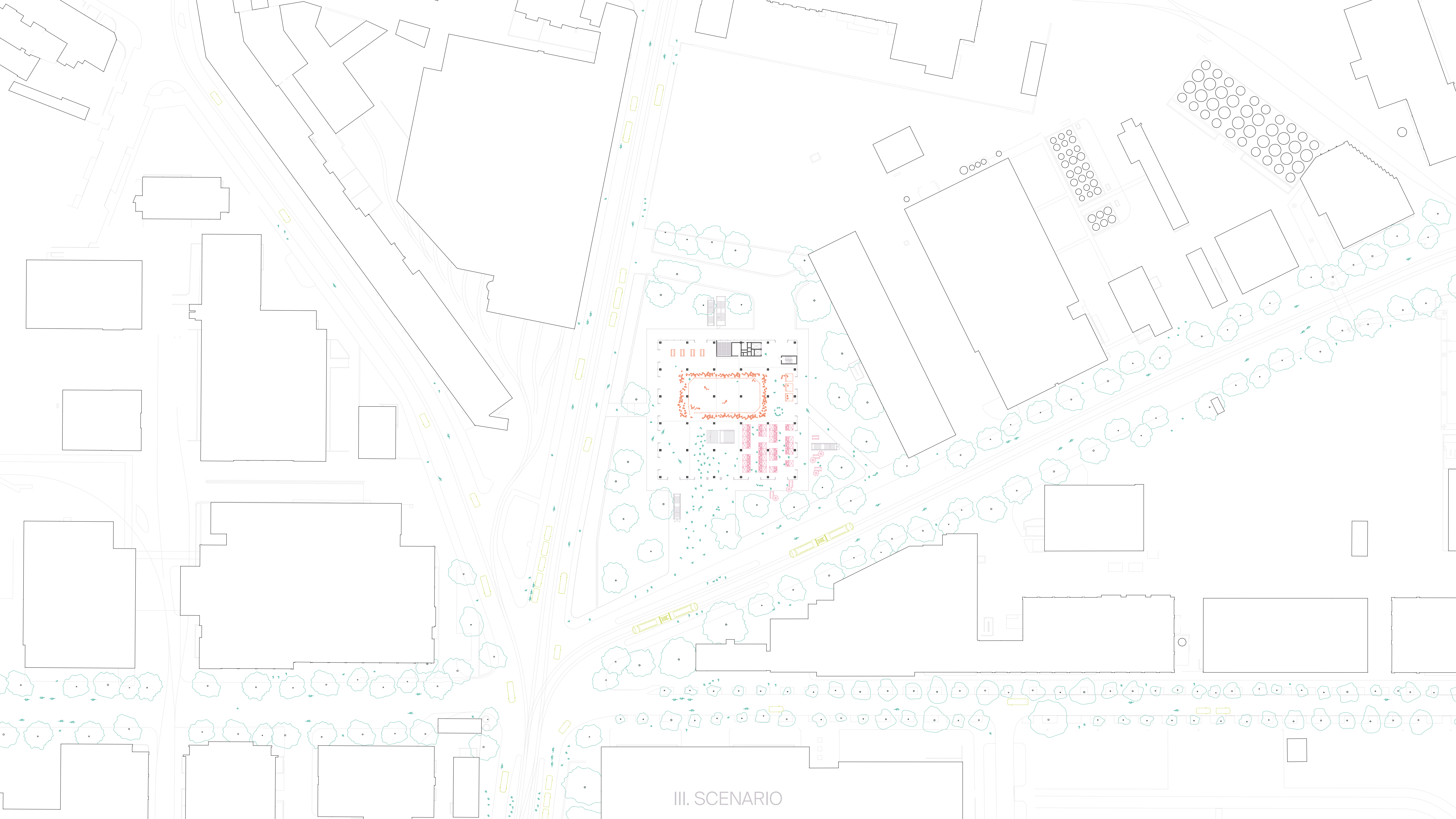
storage space  
additional function



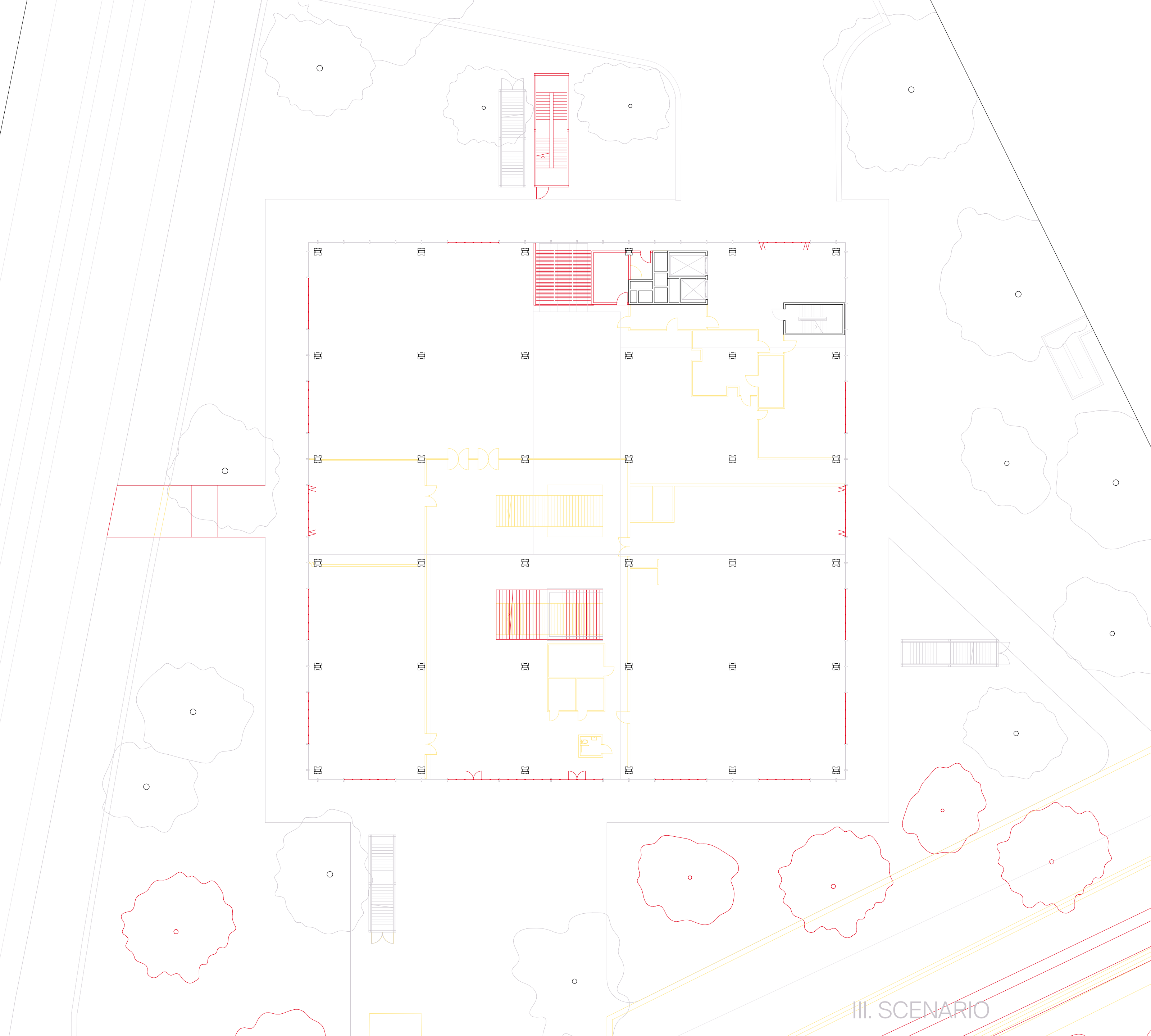
# LEVEL 0

*EVENT SPACE + PUBLIC SQUARE*





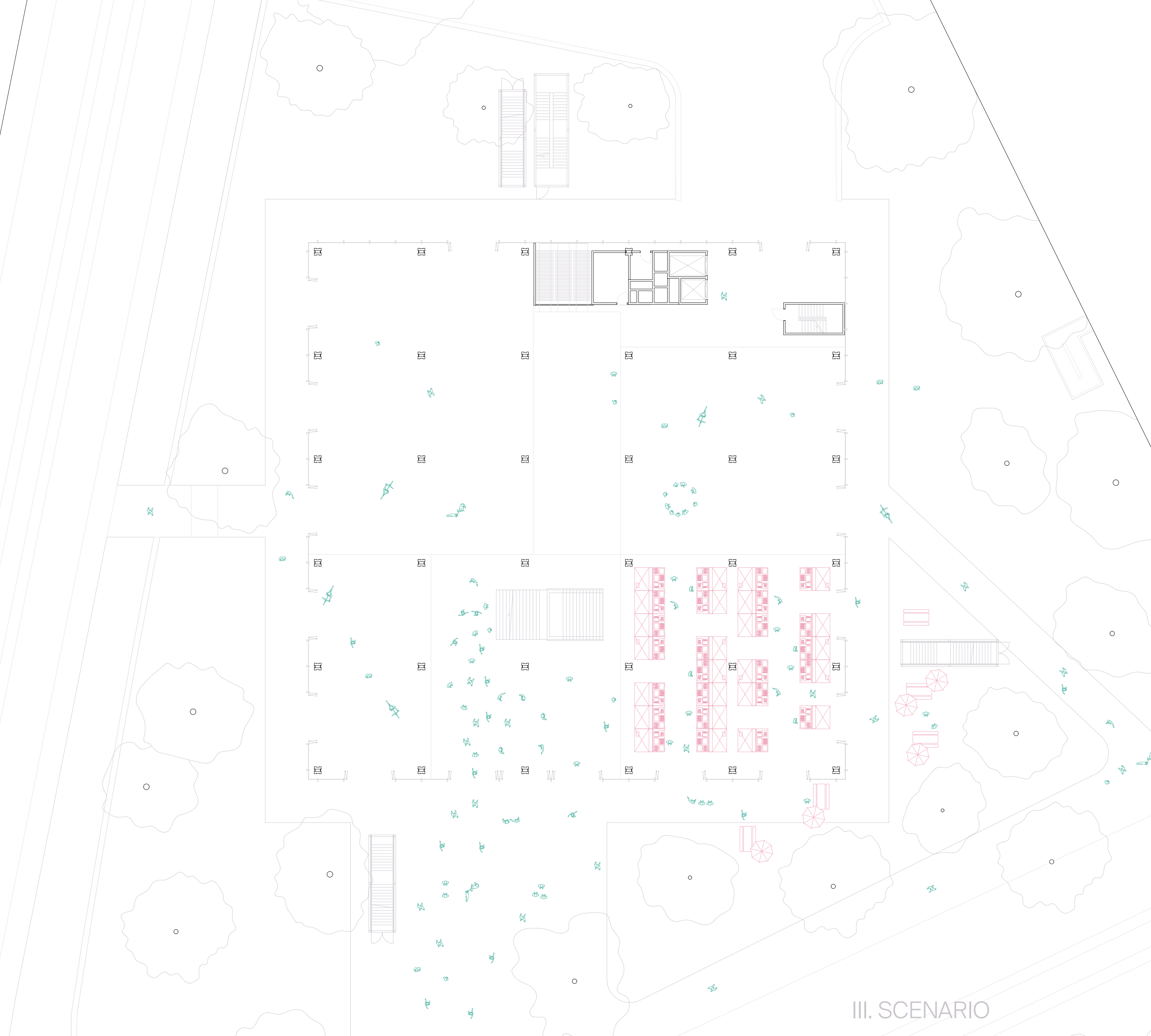




# TRANSFORMATIONS

rails system for movable walls  
bigger entrance  
larger central staircase





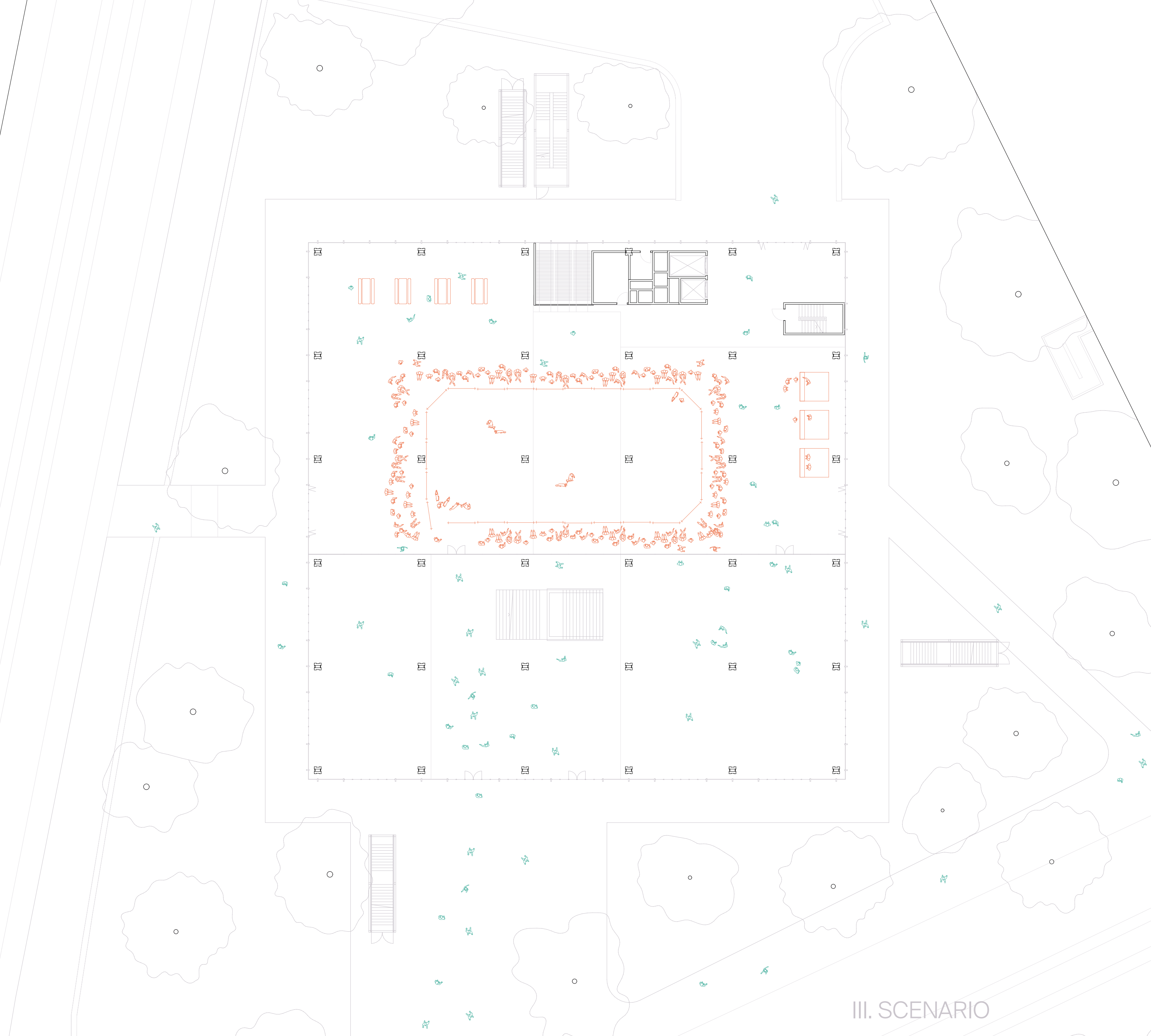
III. SCENARIO

**QUALITIES ADDED**

- generosity of space
- flexibility of use
- direct relation to outside

summer



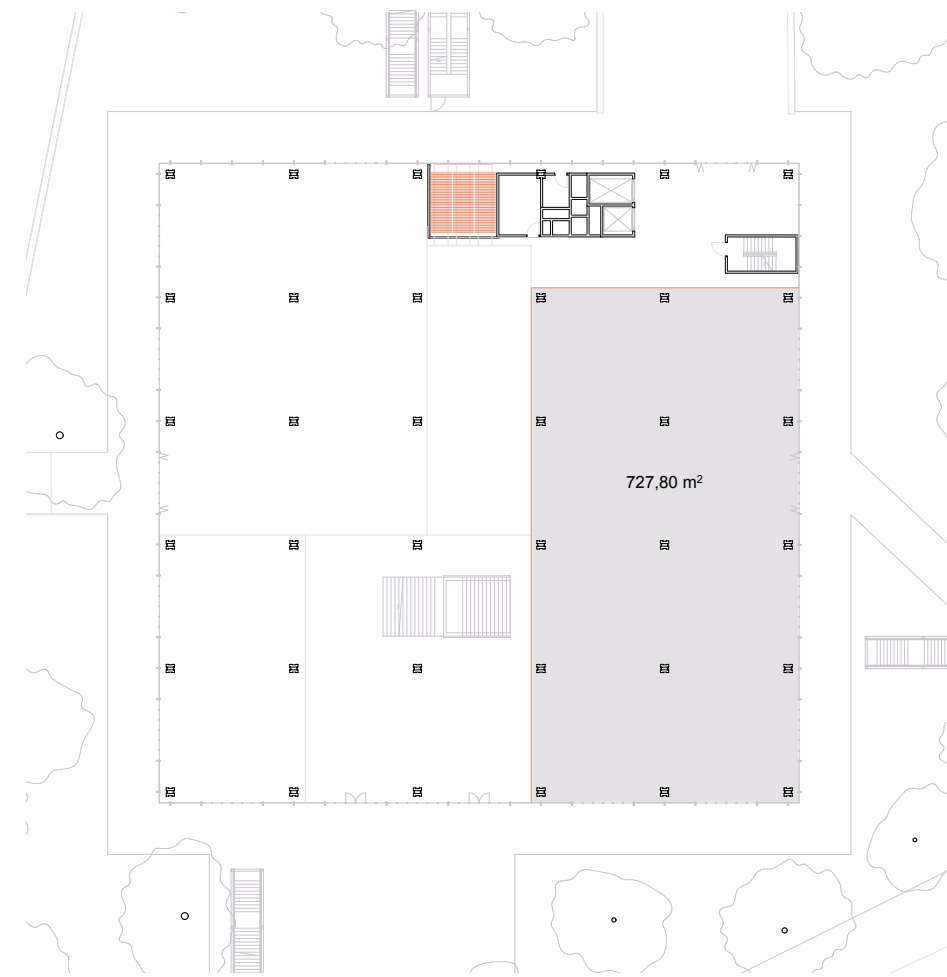
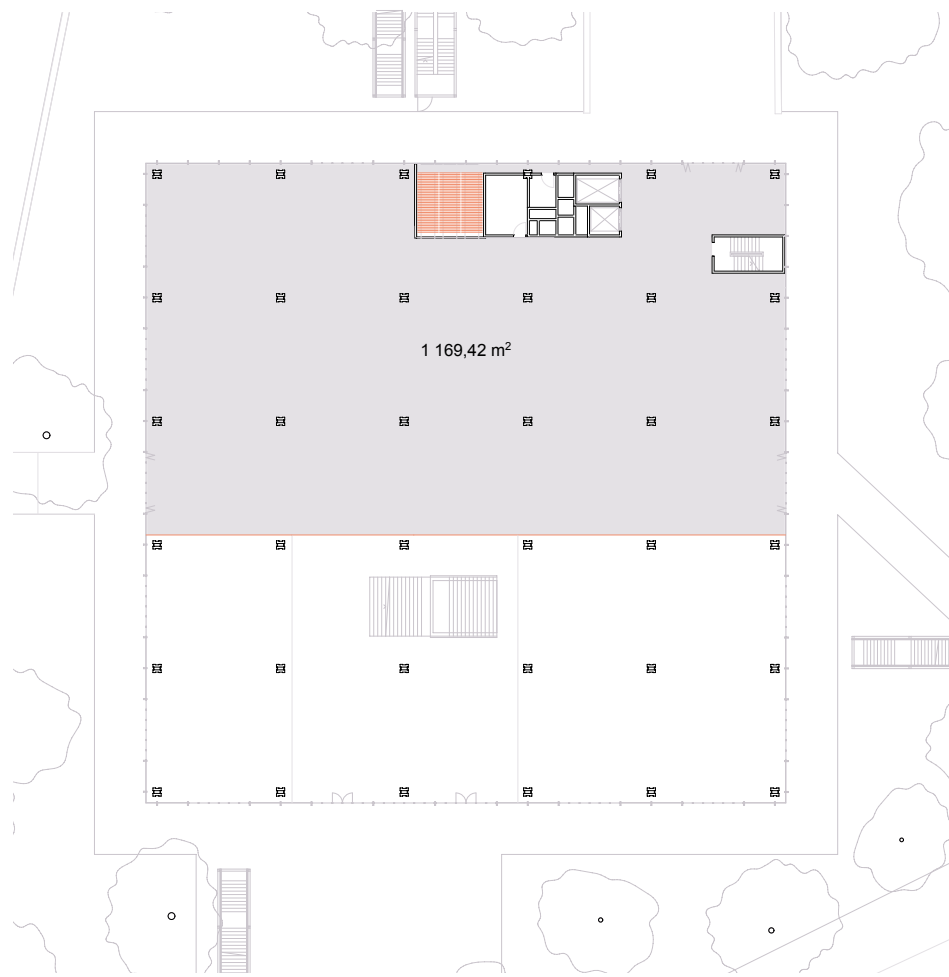
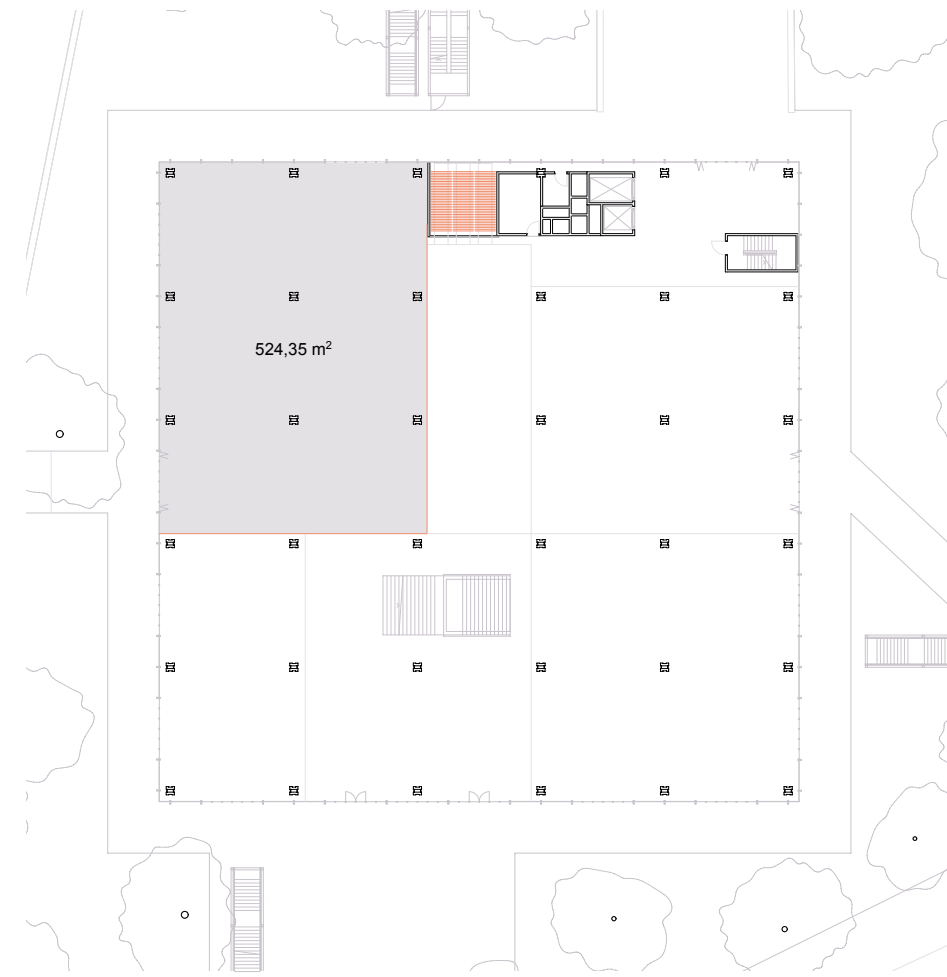
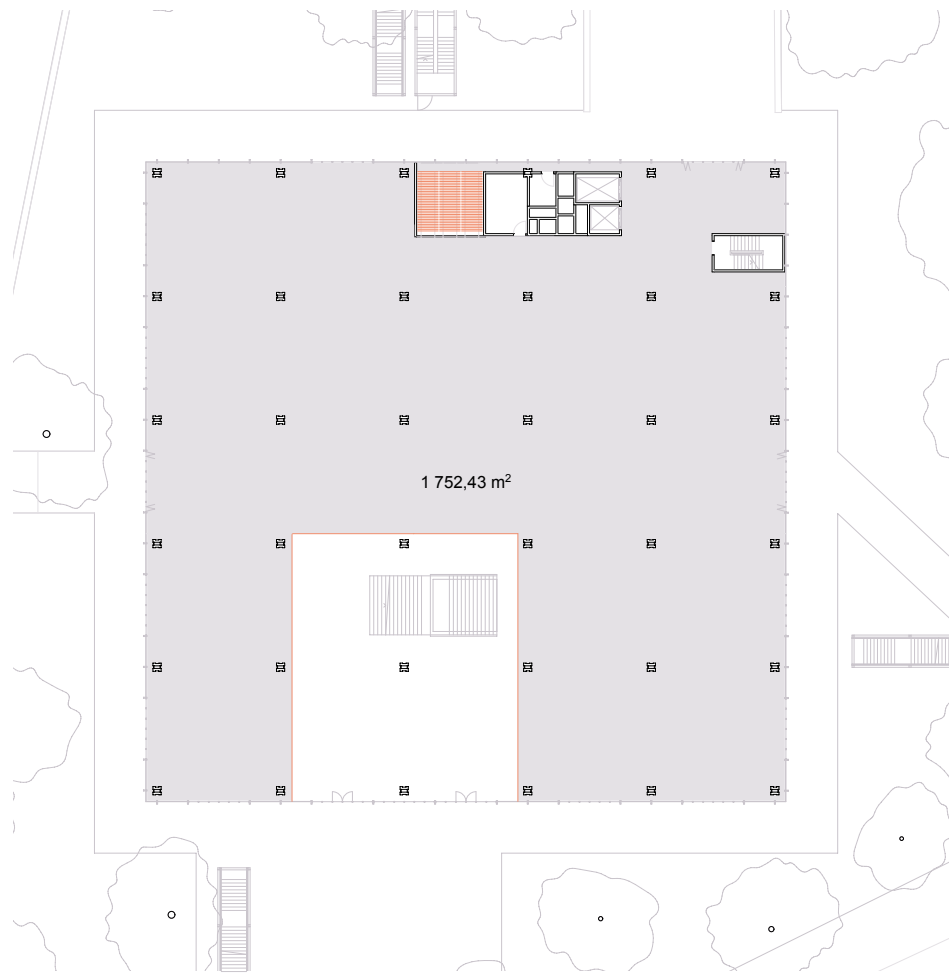


## QUALITIES ADDED

generosity of space  
flexibility of use  
direct relation to outside

winter





## FLEXIBILITY OF USE

the movable walls create a variety of possibilities



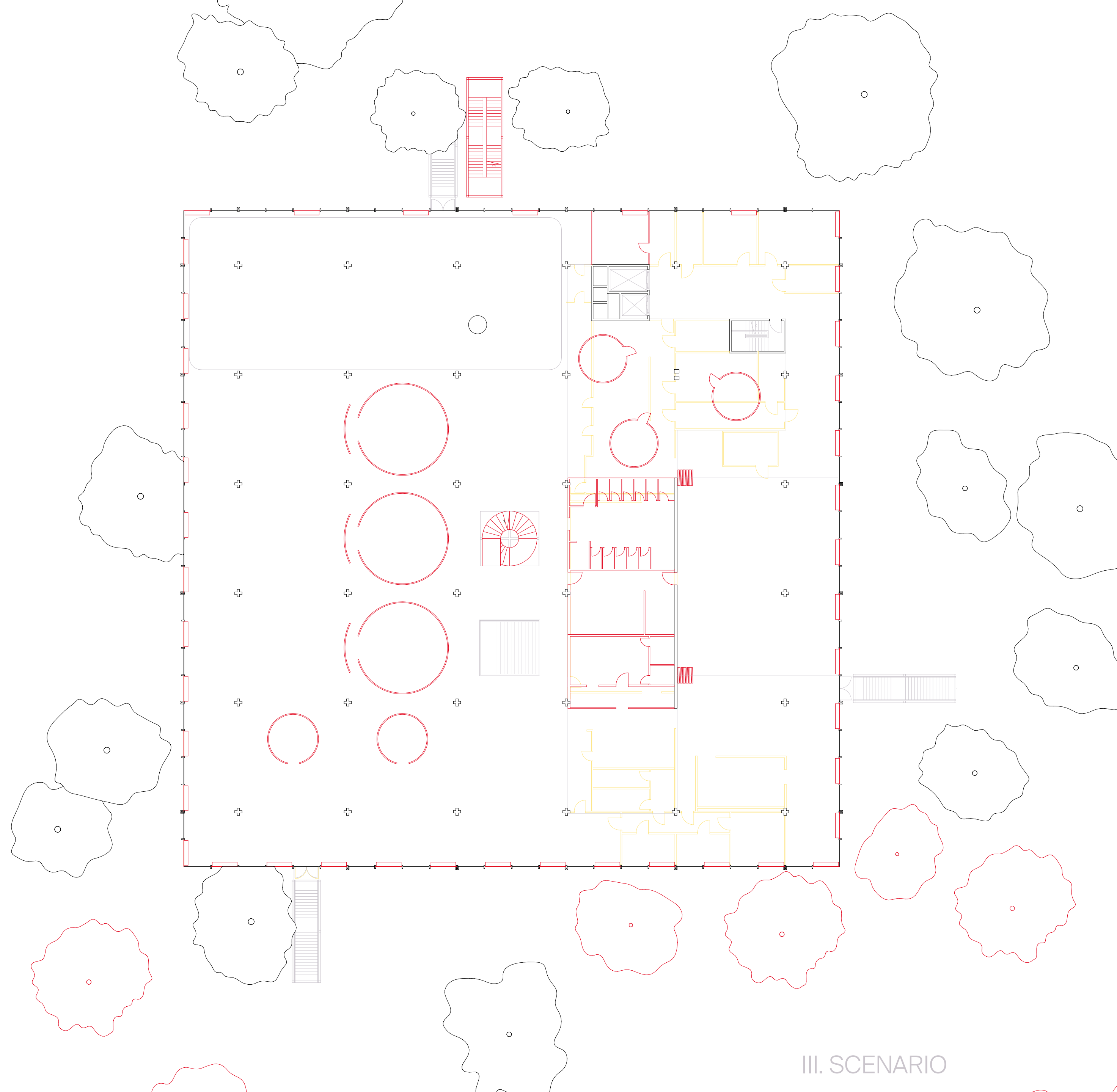




# LEVEL 1

*LIBRARY, BOOKSHOP, READING SPACE,  
CONFERENCE ROOMS, CAFÉ  
+ FLEXIBLE SPACE (LECTURE, EXHIBITION, SHOW,...)*

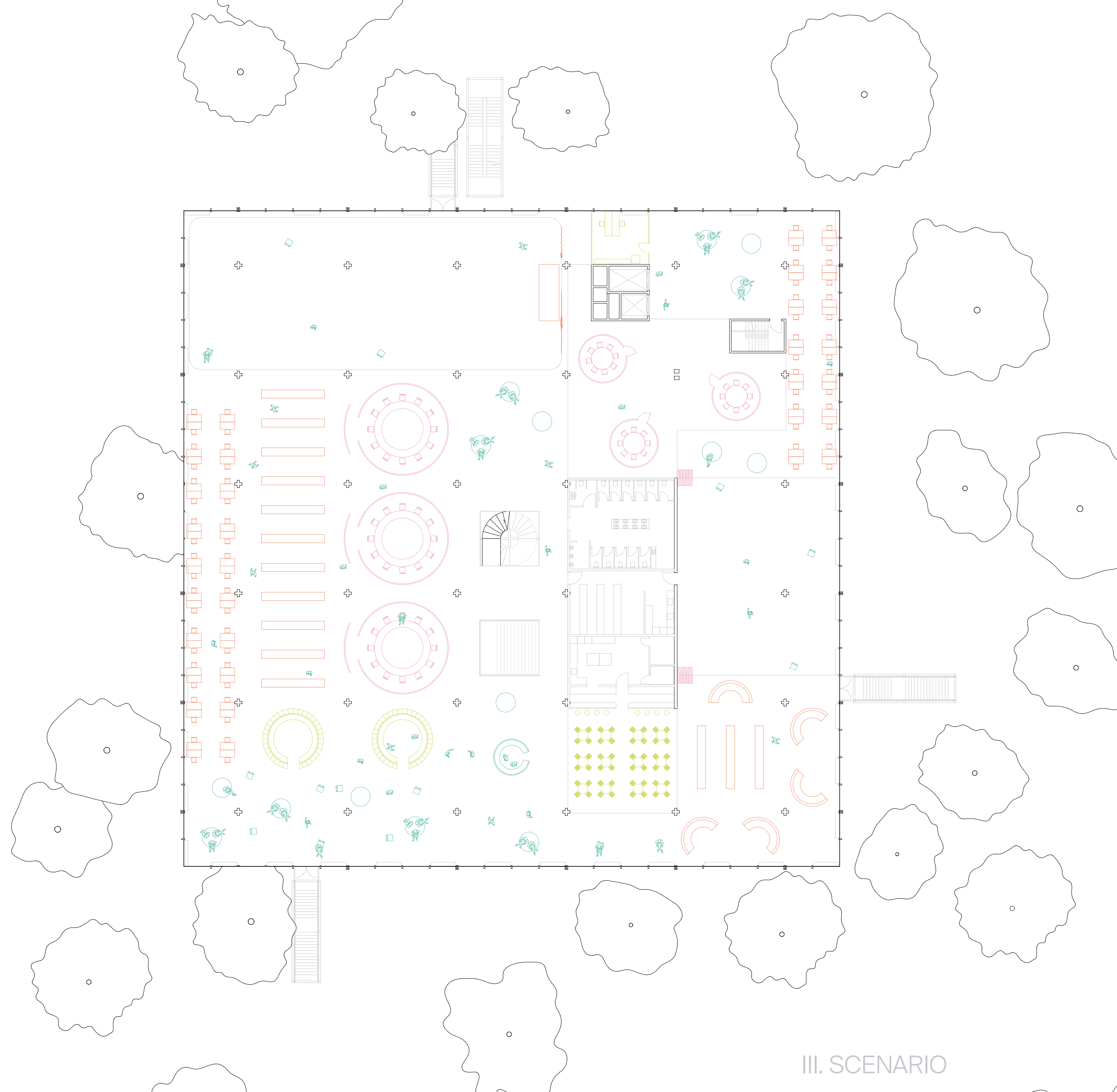




## TRANSFORMATIONS

division of space  
(furniture, curtain, folding wall)  
toilet  
access





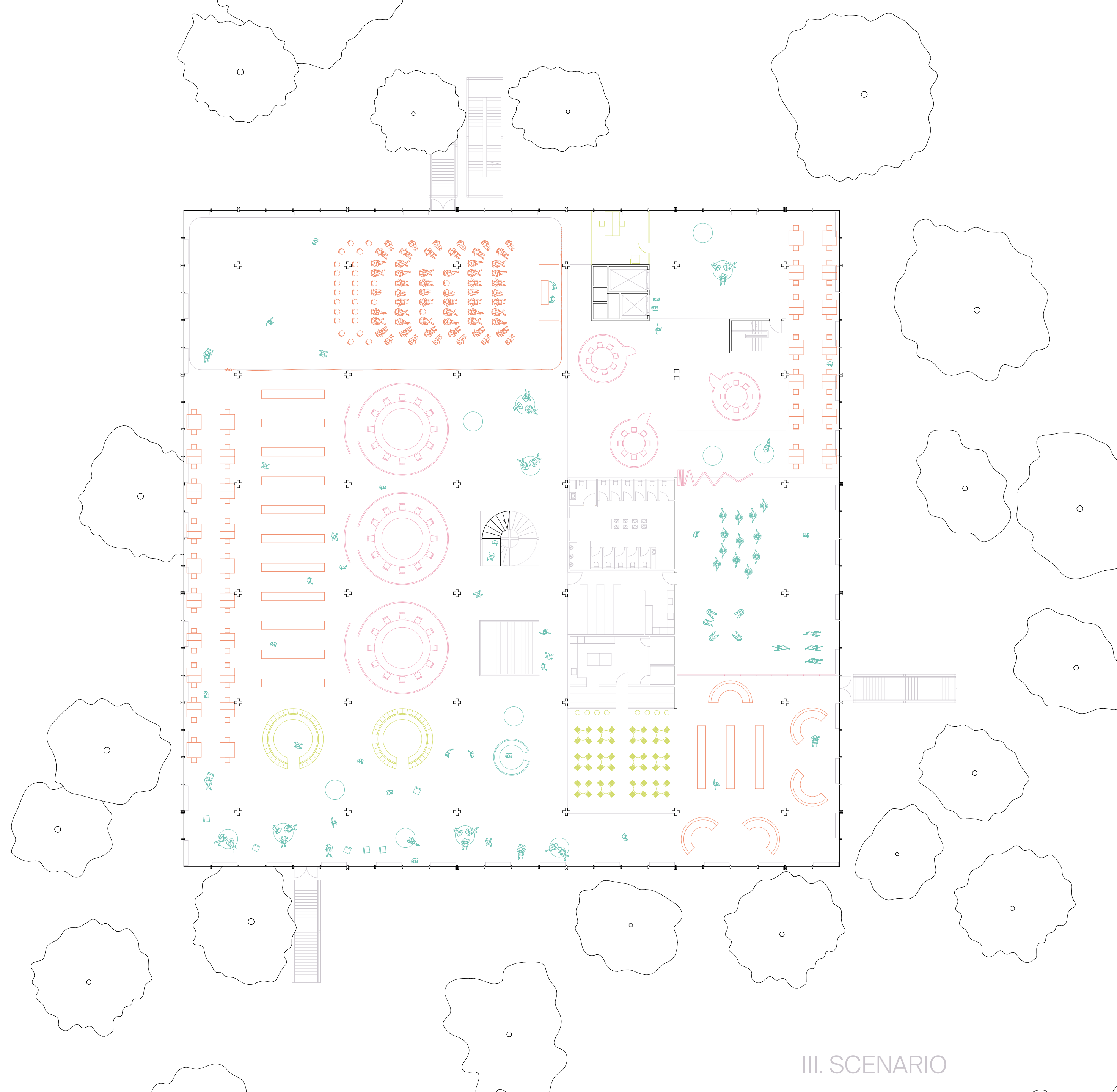
### III. SCENARIO

#### QUALITIES ADDED

one open space  
different sound/intimacy environments  
spaciousness  
diversity of use  
flexibility

flexible space a





## QUALITIES ADDED

one open space  
different sound/intimacy environments  
spaciousness  
diversity of use  
flexibility

flexible space b



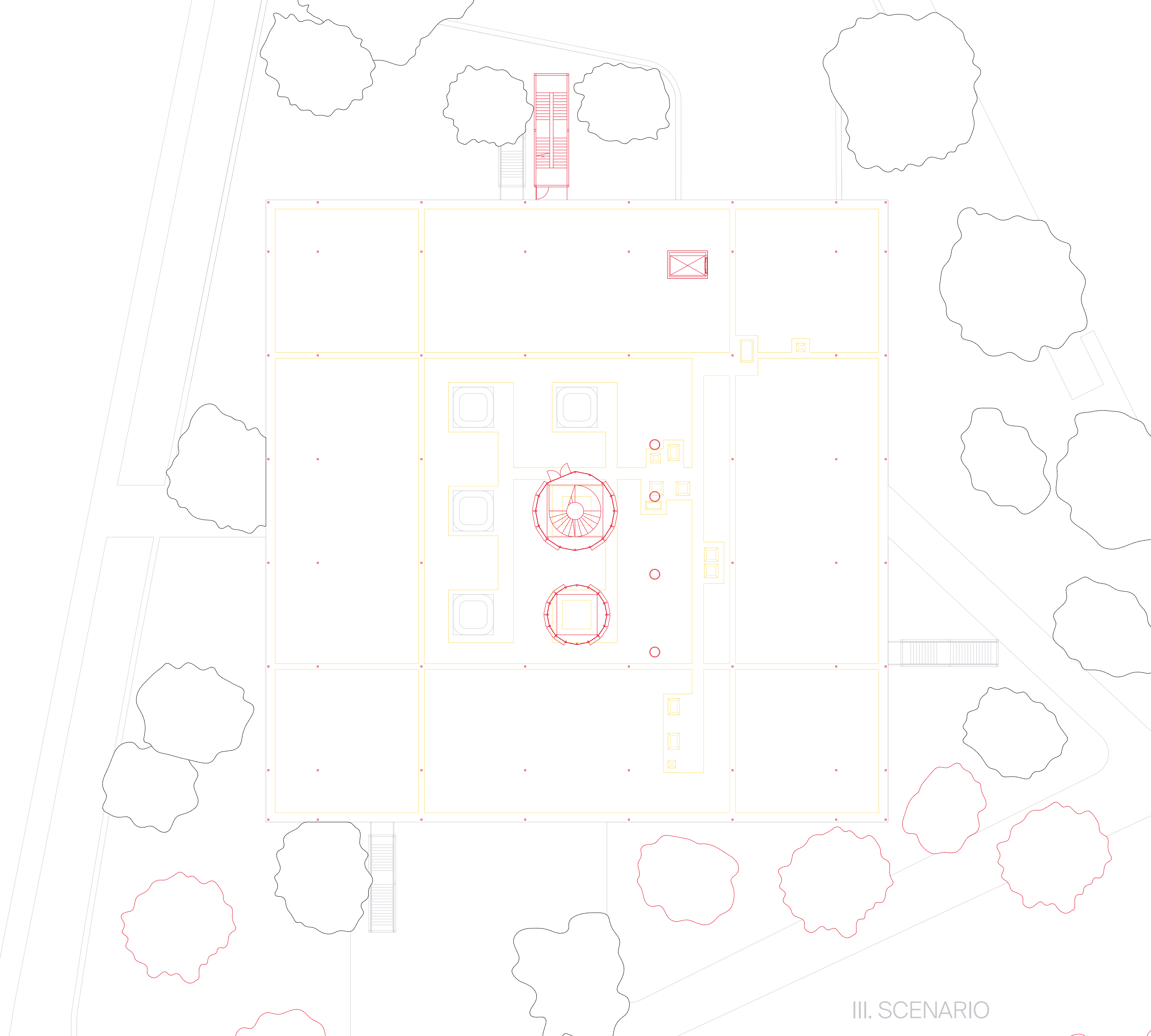




# LEVEL 2

*OPEN PLATFORM FOR DIVERSE USES  
(OPEN AIR CINEMA, GARDEN, BAR, YOGA LESSON, ...)*

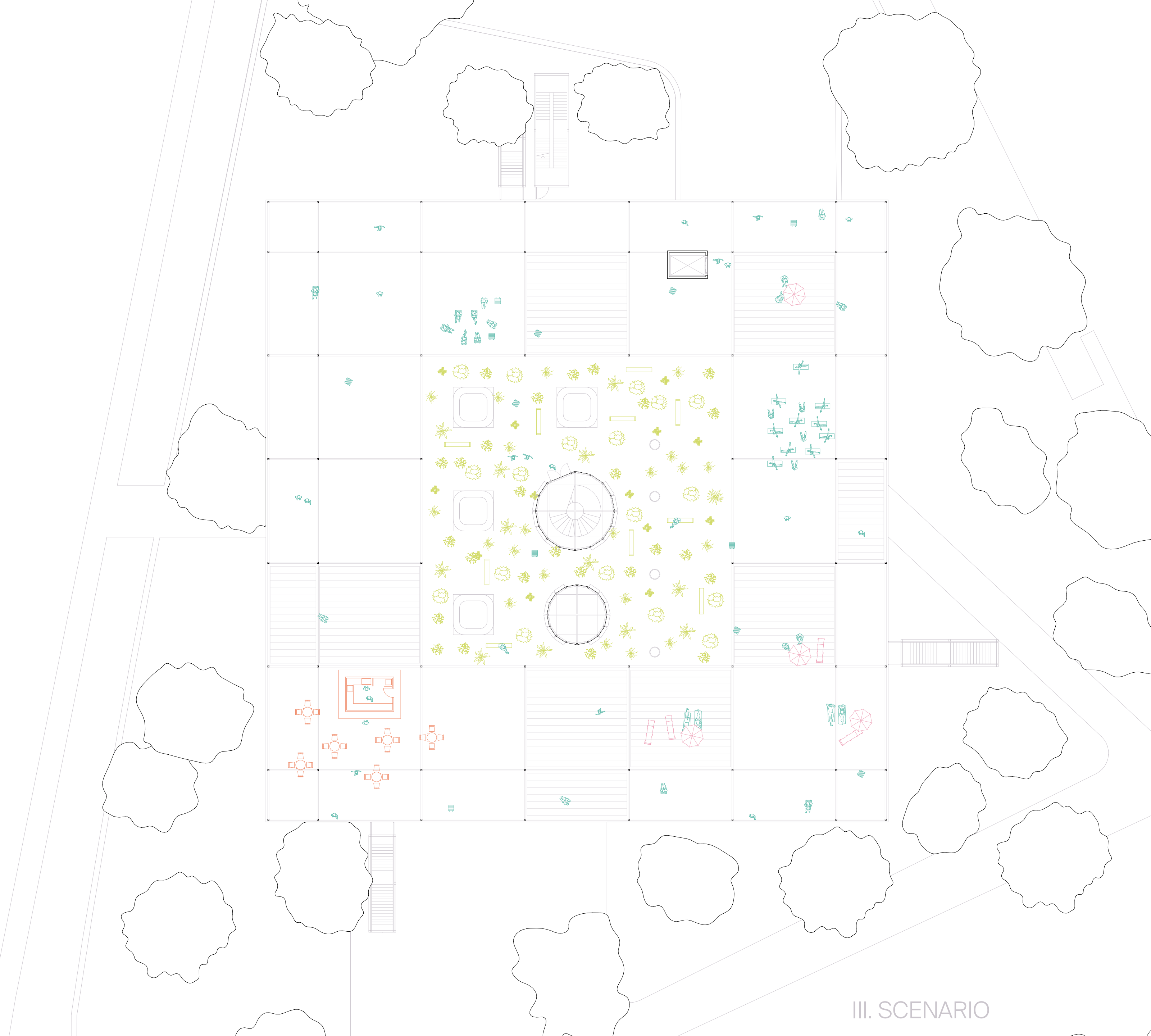




## TRANSFORMATIONS

light structure  
fabric  
plants

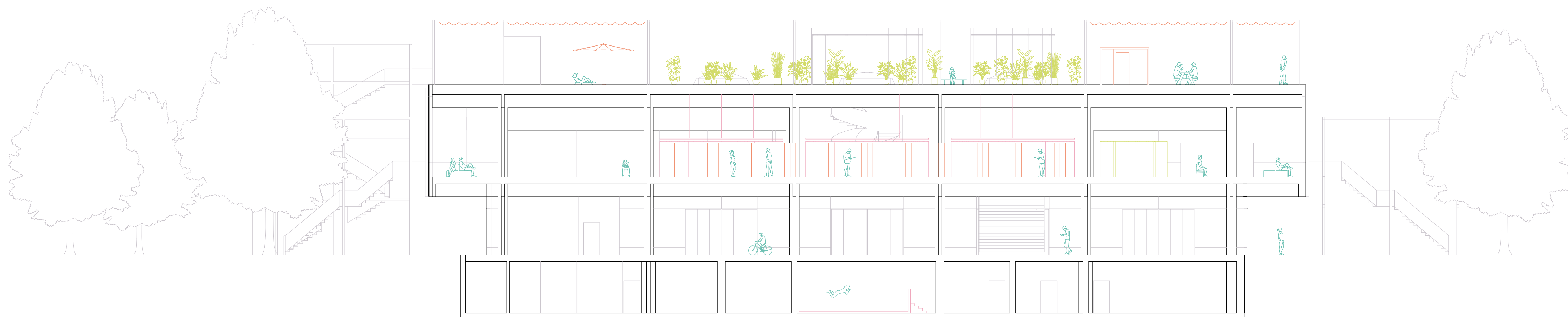




**QUALITIES ADDED**

new usable surface  
protection from the sun  
views on the city











*HIGH QUALITY BAUKULTUR REQUIRES STRIKING THE RIGHT BALANCE BETWEEN CULTURAL, SOCIAL, ECONOMIC, ENVIRONMENTAL, AND TECHNICAL ASPECTS OF PLANNING, DESIGN, BUILDING, AND ADAPTIVE REUSE, IN THE PUBLIC INTEREST FOR THE COMMON GOOD.*

*KOENRAAD VAN CLEEMPOEL*