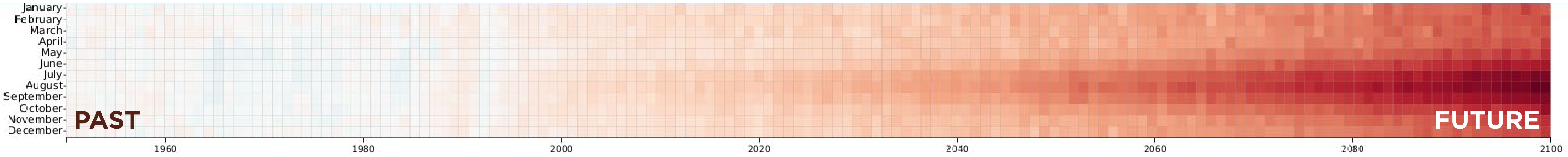
FACING HUMANITY´S GREATEST ISSUE

ADAPTABILITY AND RESILIENCE FOR FUTURE CRISIS

The commitment of contemporary architecture should be to create habitats from an **environmentally regenerative perspective,** while revitalizing the city and enhancing its memory.

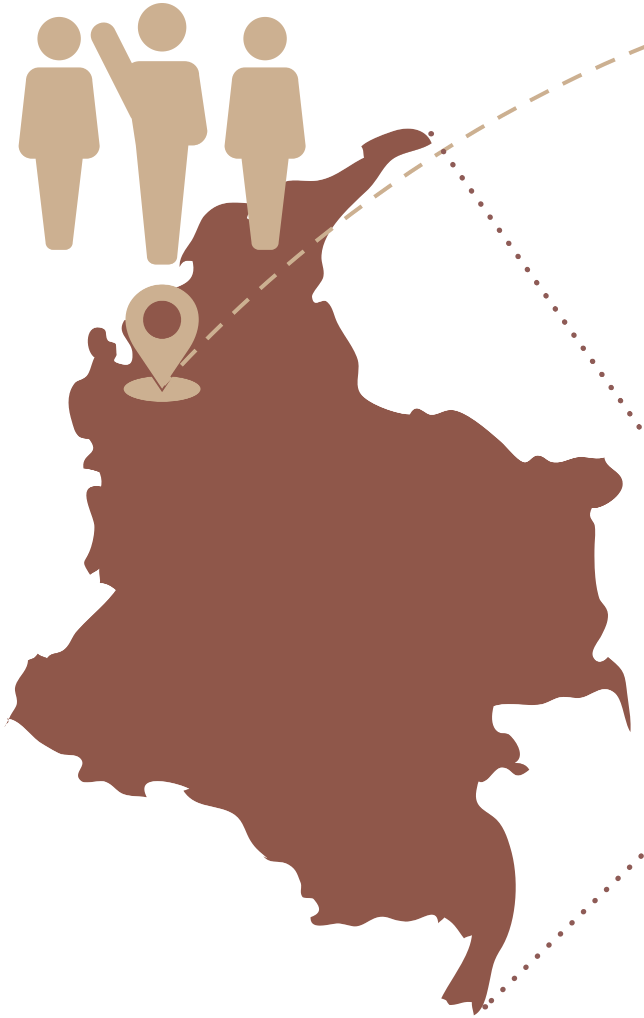
ACCORDING TO IPCC WGI INTERACTIVE ATLAS**, CLIMATE CHANGE SCENARIO FOR 2080 (SSP3)**

Medium Global Temperature will increase between **2.7° and 5.1 °**



DWELLINGS IN MEMORY,
BUILDING AN ADAPTIVE LISBON.

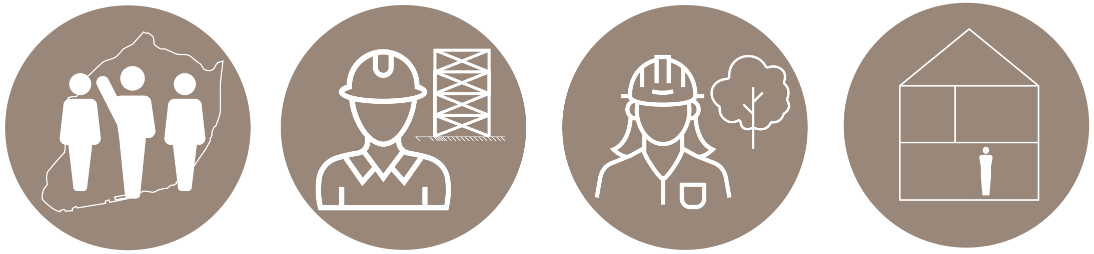
TEAM #30
COLOMBIA



WHERE IS COLOMBIA?

LISBON, PORTUGAL

LOCAL PROFESIONALS AND CITIZENS THAT HELPED US UNDERSTAND
LISBONS´S WAY OF LIVING



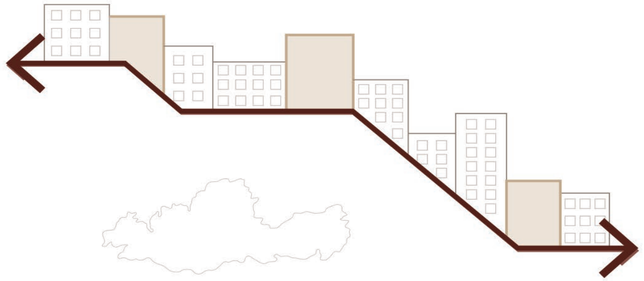
LOCALS | **STRUCTURAL** ENGINEER | **FOREST** ENGINEER | **ARCHITECTS**

AND IT´S NEEDS, PROBLEMS AND CONCERNS....

CONCEPTUALIZING THE CONEXT

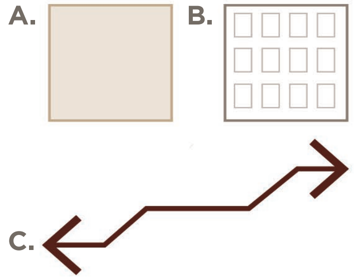
1 CITY´S CONDITION

The city unfolds through a series of streets that interwea-ve and articulate in what we call: **Dwellings of Memory**



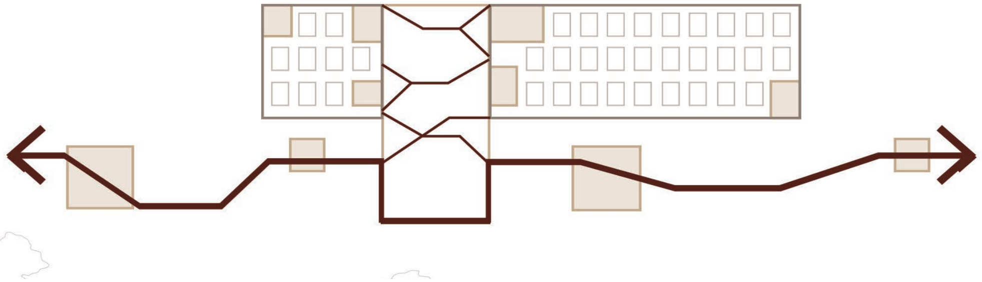
2 COMPOSITION

A. Dwellings in memory
B. Housing   C. Folds



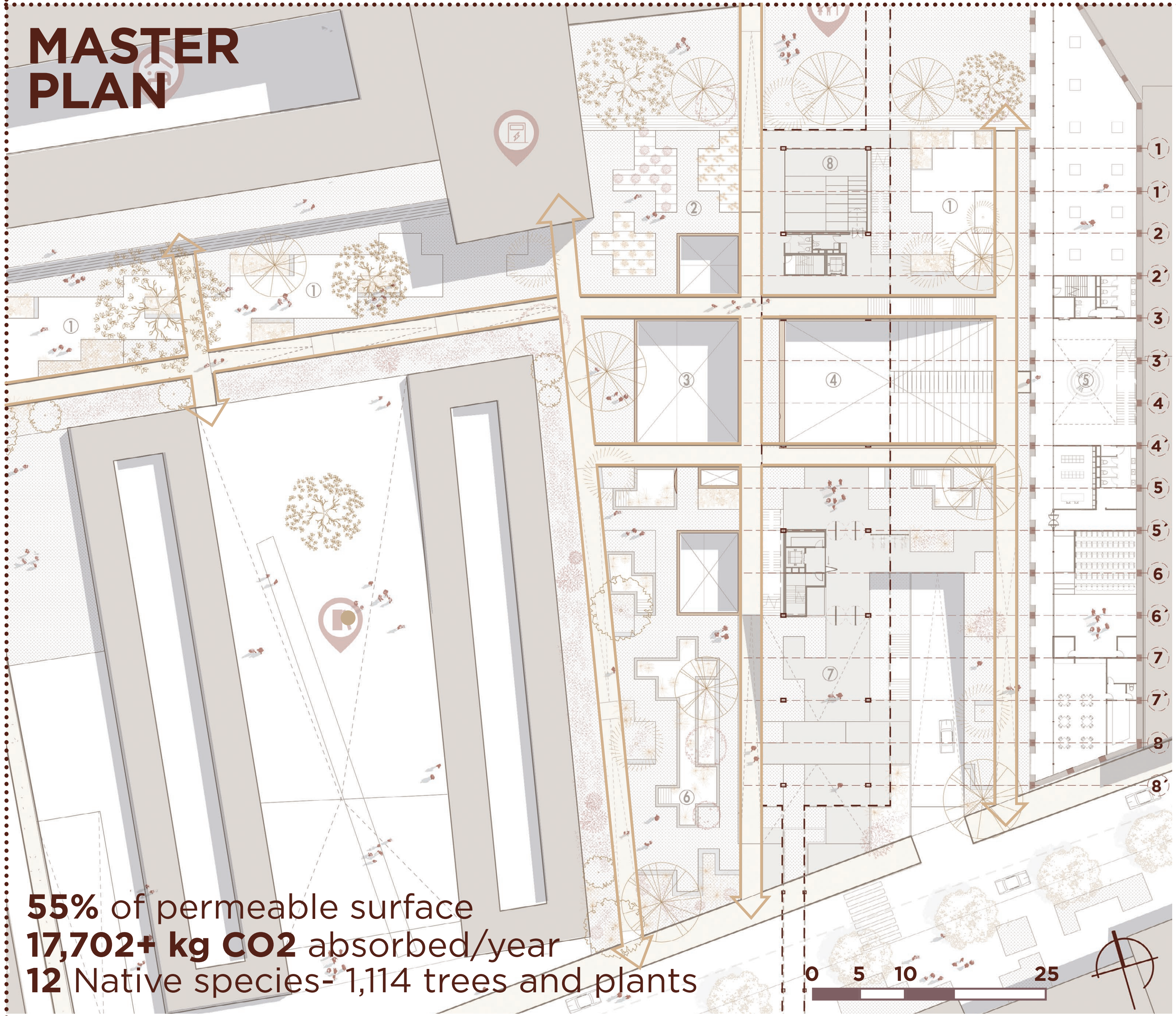
3 RE-INTERPRETATION

The project aims to generate a continuation of **Lisbon’s way of living** by the re-interpretation of its spatial condition.



ARCHITECTURE | TECHNICAL C. | CONSTRUCTION D. | PRODUCTS

MASTER PLAN



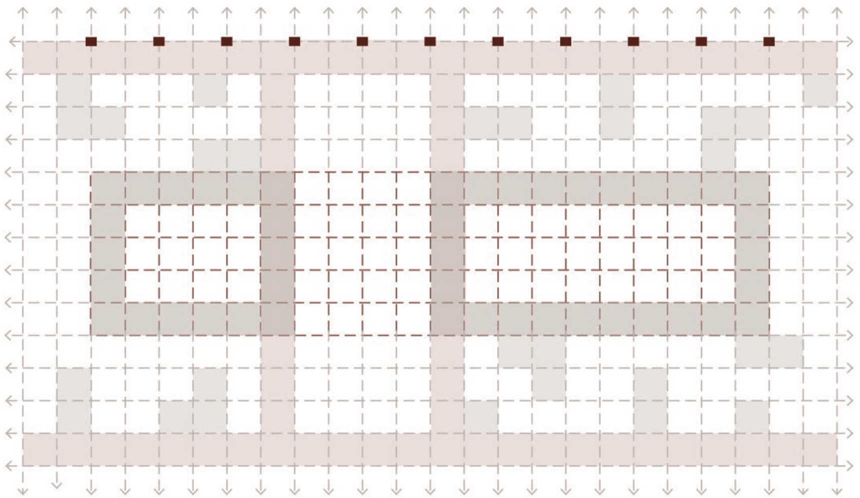
55% of permeable surface
17,702+ kg CO2 absorbed/year
12 Native species- 1,114 trees and plants

1

CURRENT GRID STRUCTURE OF **BUILDING A**

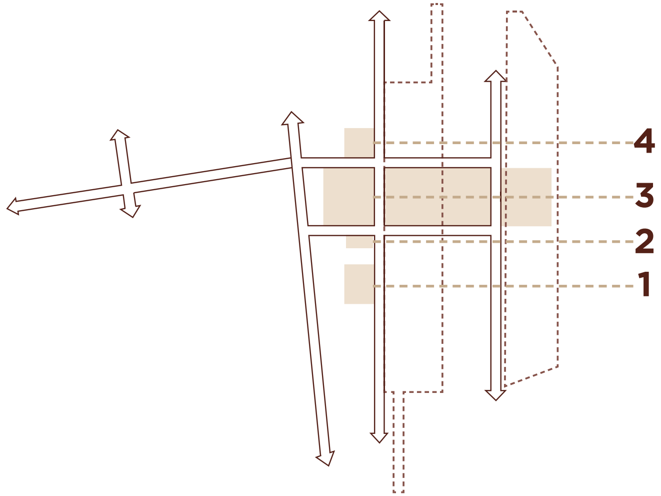
2

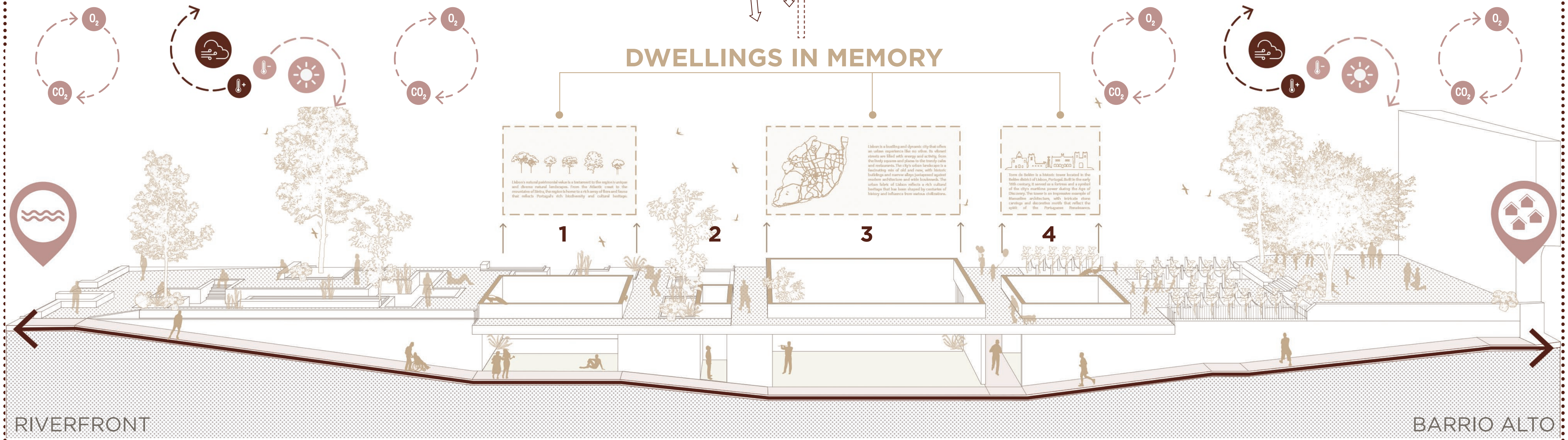
EXTENTION OF THE GRID IN ORDER TO CREATE A
MODULAR SYSTEM FOR THE 3 PROJECTS



CONNECTING

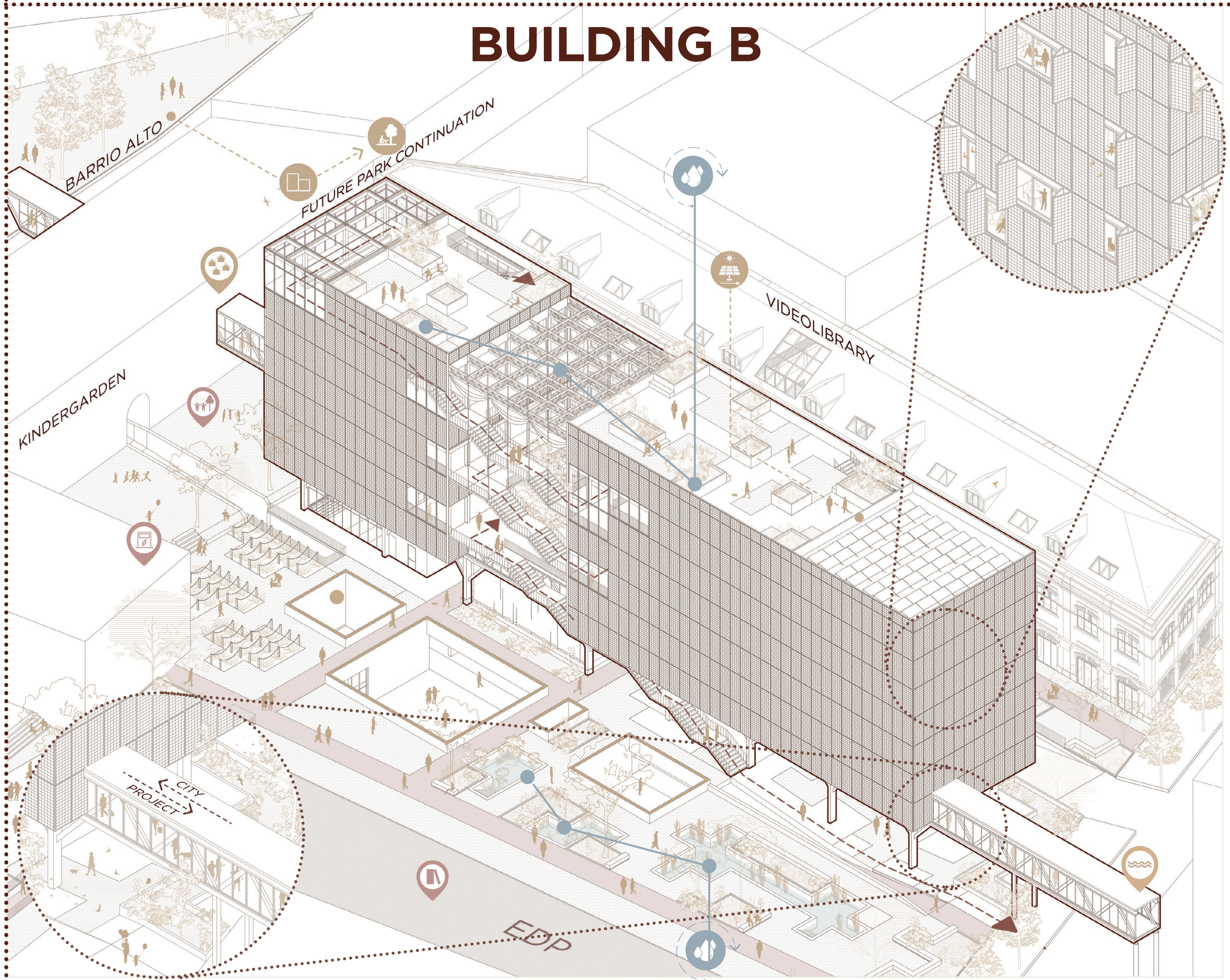
THROUGH THE MEETING OF THE
PAST, PRESENT AND FUTURE






DWELLINGS IN MEMORY
Lisbon is a bustling and dynamic city that offers an urban experience like no other. Its vibrant streets are filled with energy and activity, from the lively squares and plazas to the trendy cafes and restaurants. The city's urban landscape is a fascinating mix of old and new, with historic buil- juxtaposed against modern architecture and wide boulevards. The urban cultural heritage that has been shaped by centuries of history and influence from various civilizations.
Lisbon's natural patrimonial value is a te
diverse natural landscapes. From
the Atlantic coast to the mountains of Sin
ray of flora and fauna that reflects
Portugal's
rich

BUILDING B



64 SOLAR PANELS
40,776 KW/YEAR
SunPower® X-Series (nominal power of 400W and efficiency of 22.8%)

1,089,000 L OF RAINWATER Harvesting per year.

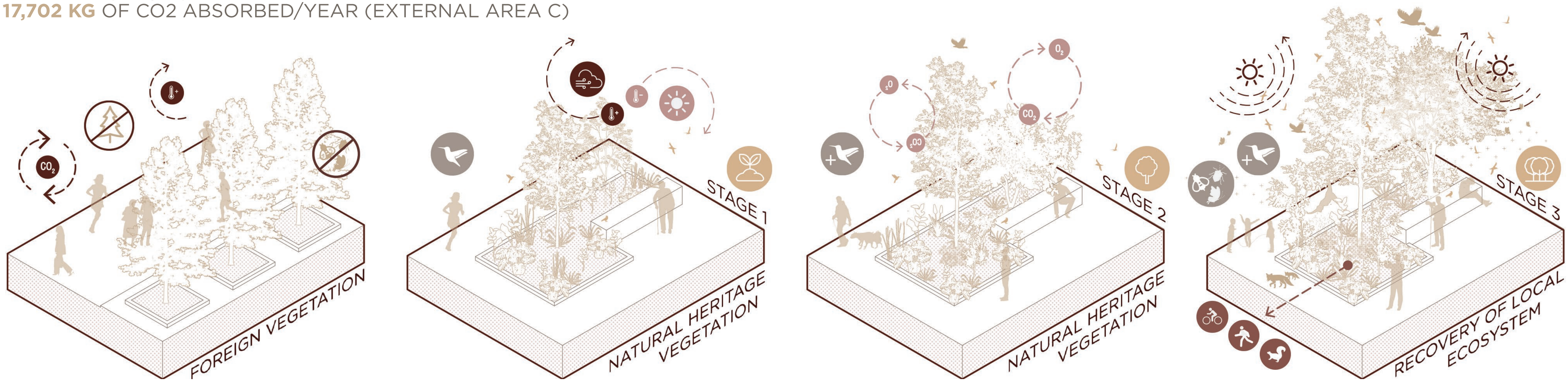
986,000 L OF RAINWATER Harvesting in year 2080 (climate change scenario SSP3)

172,58 M3 OF RECYCLED CONCRETE from **demolished building in site**

REVITALIZING LISBON´S NATURAL ECO-SYSTEM

THROUGH THE RE-INTRODUCTION OF NATIVE SPECIES

12 NATIVE SPECIES
17,702 KG OF CO2 ABSORBED/YEAR (EXTERNAL AREA C)



VEGETATION AS A MATERIAL

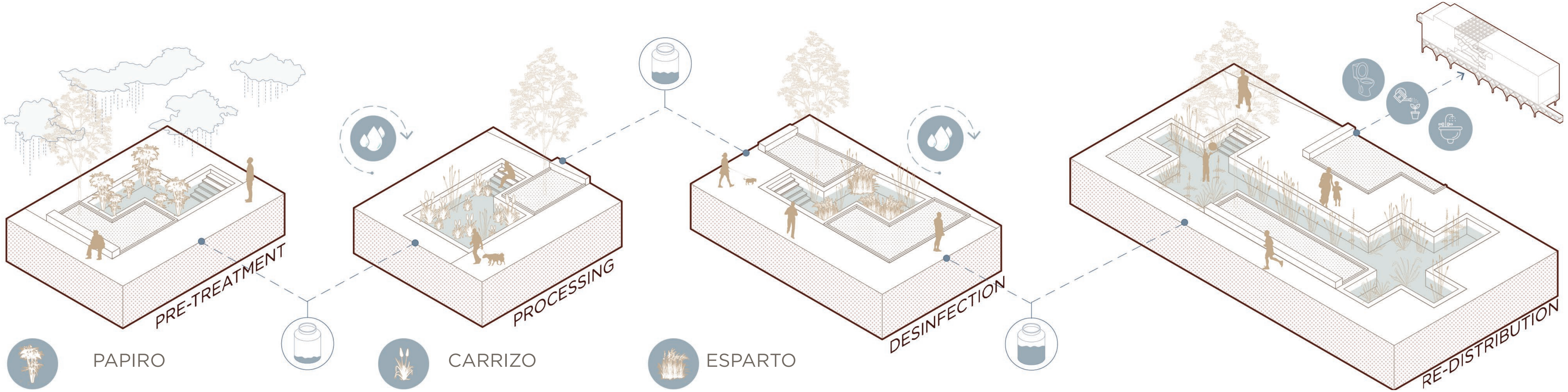
RECOVERY OF NATURAL ECOSYSTEM THROUGH LOCAL VEGETATION

ACCORDING TO A LOCAL FOREST ENGINEER, 100 YEARS AGO,
LISBON WAS INVADED BY EXOTIC SPECIES

WATER MANAGEMENT
THROUGH PHYTODEPURATION GARDENS

1,089,000 L OF RAINWATER
Harvesting per year.

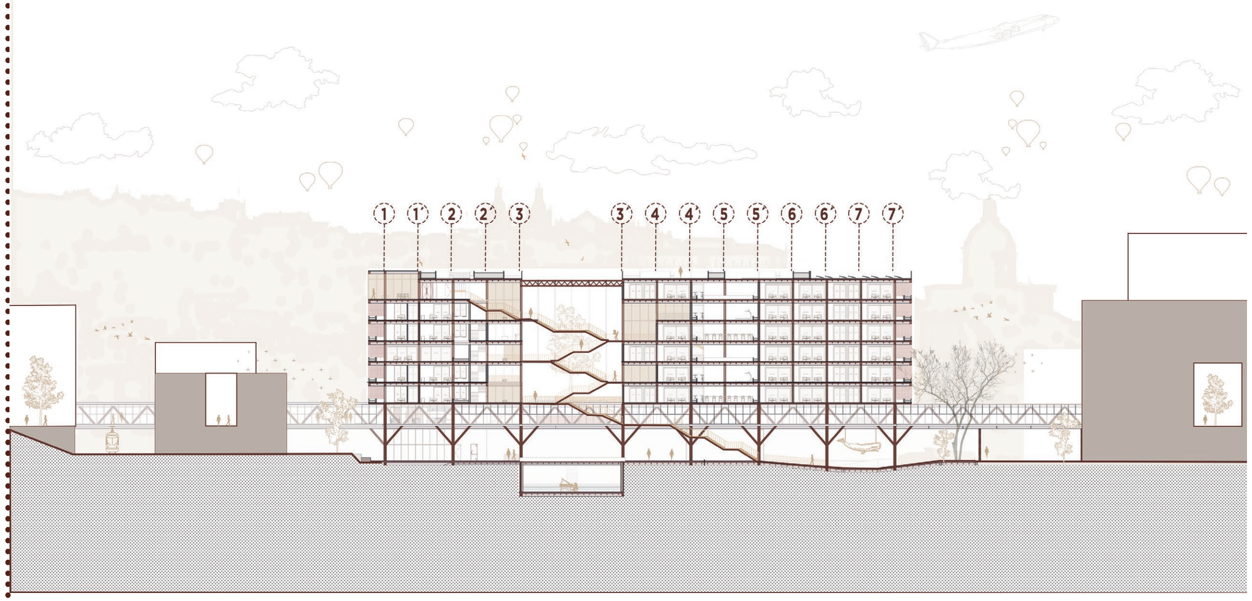
986,000 L OF RAINWATER
Harvesting in year 2080 (climate change scenario SSP3)

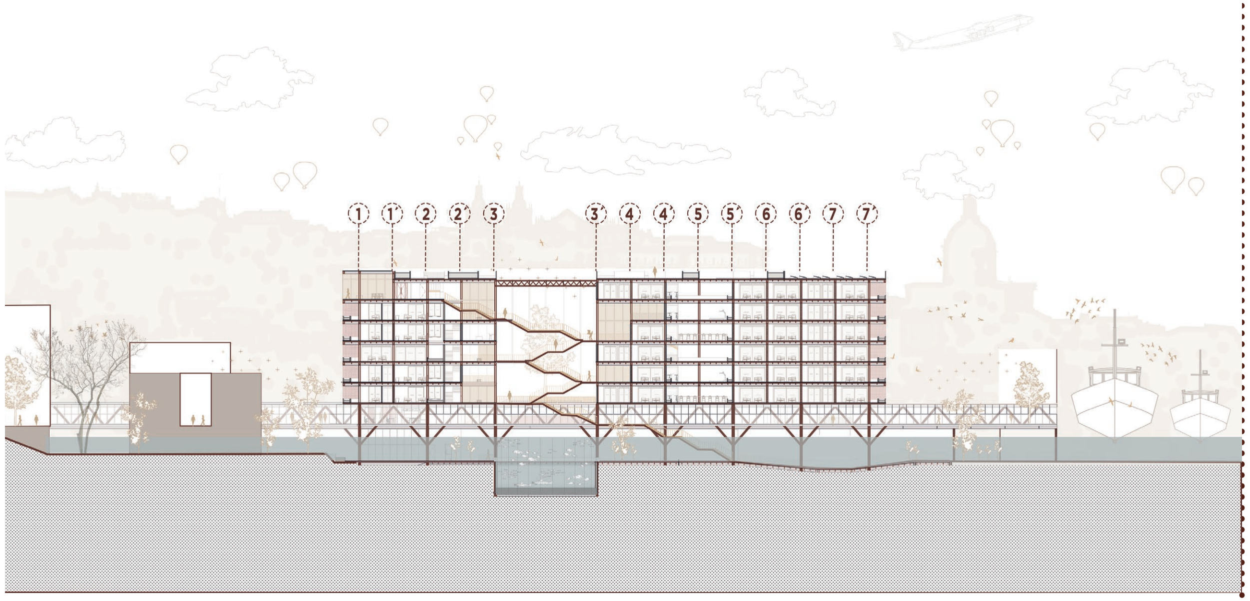


SAFE-HEAVEN FOR FUTURE CRISIS

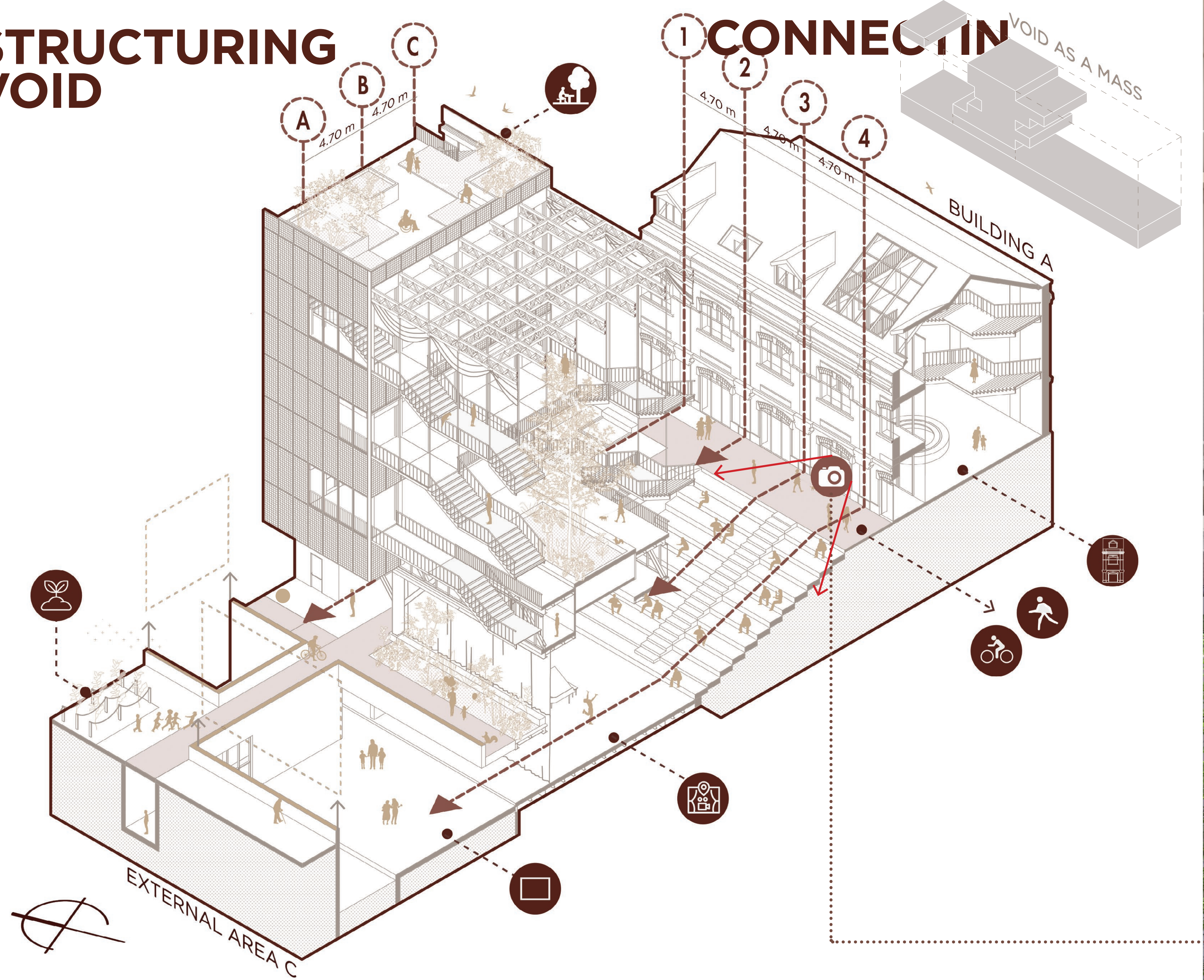
saudade da cidade

2030 • - • 2100





STRUCTURING VOID



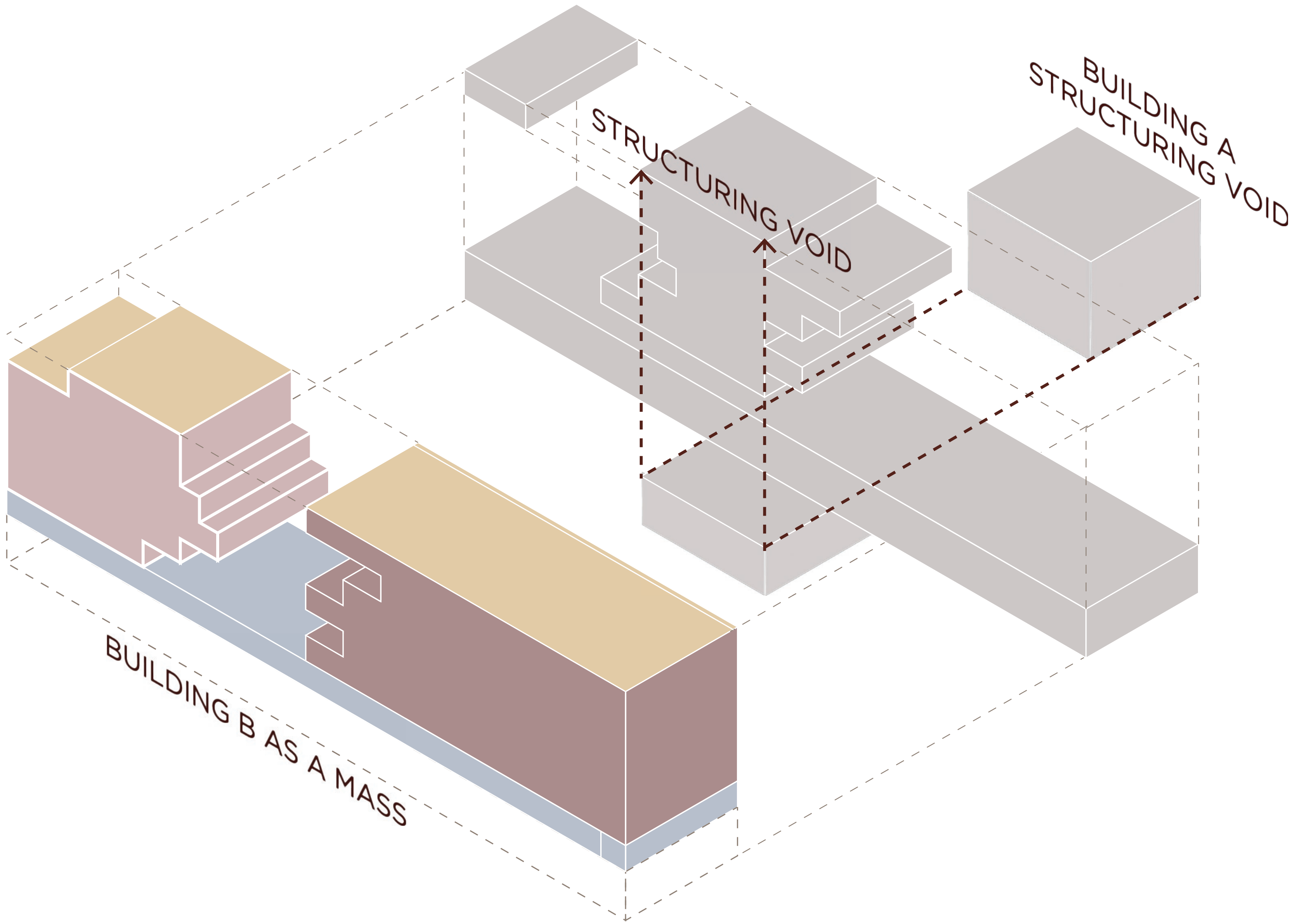
STRUCTURING VOID IN:

A

B

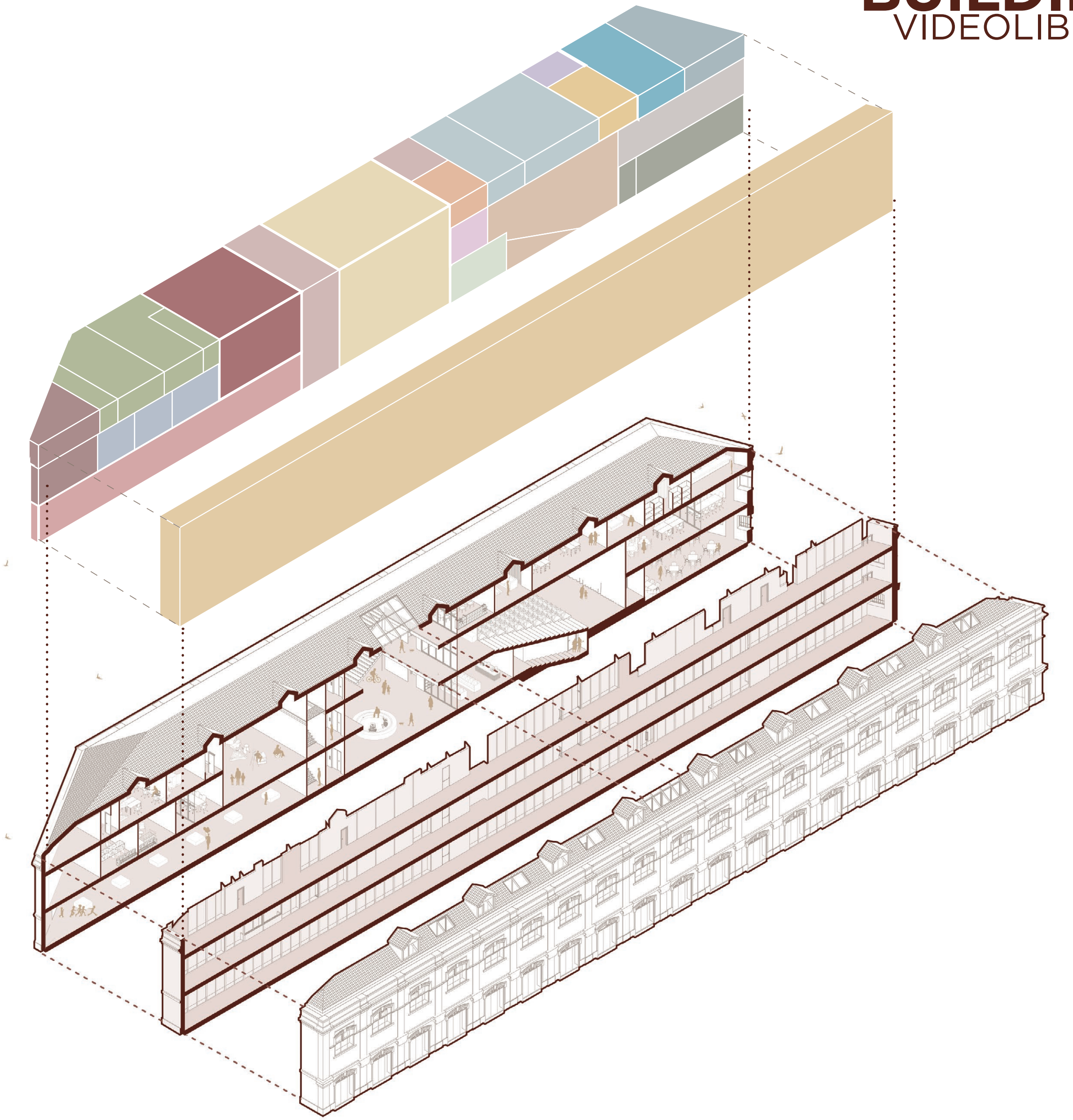
C

STRUCTURING VOID
VIDEOLIBRARY



VOID AS A MASS
PRIVATE RESIDENCES
PRIVATE RESIDENCES
PRIVATE RESIDENCES
PRIVATE RESIDENCES

BUILDING A
VIDEOLIBRARY

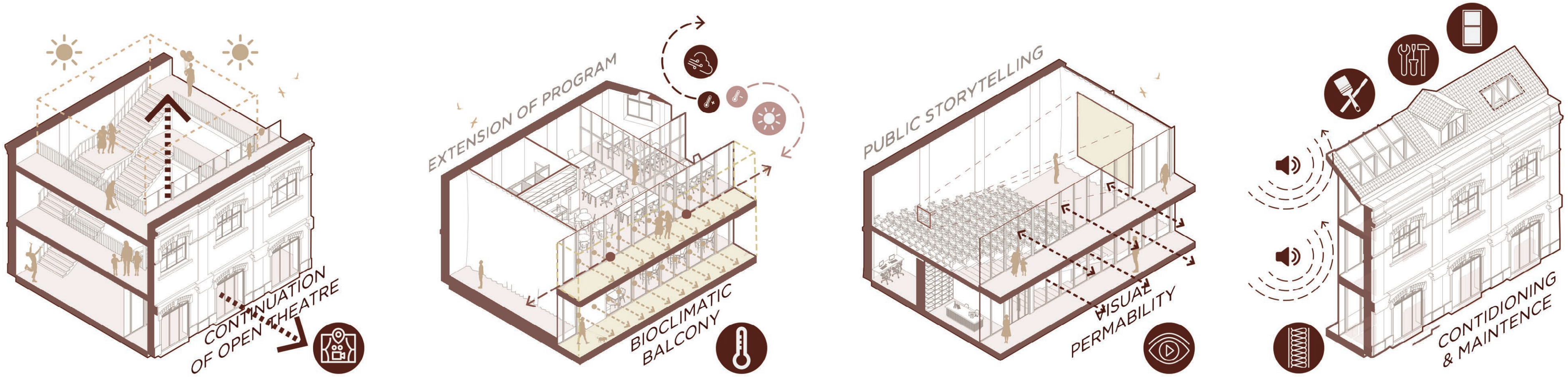


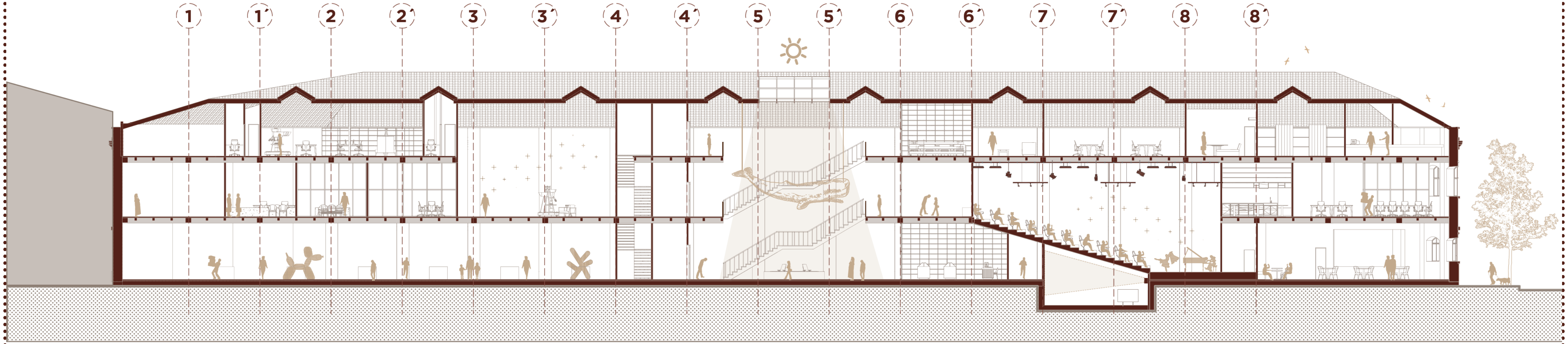
PROGRAM

1 STORAGE
2 EXIBITION ROOM
3 MEETING ROOMS
4 VIDEO AND SOUND EDITING
5 TV CYCLORAMA
6 BUILDING CORE
7 FOYER/RECEPTION
8 READING ROOM
9 SHOP
10 COLECTIVE VISIONING ROOM
11 INDIVIDUAL VISIONING ROOM
12 DESCRIPTION ROOM
13 DEPOSIT AND ARCHIVE
13 FILM COMISSION AREA
14 CAFETERIA
15 AUDITORY

BUILDING A

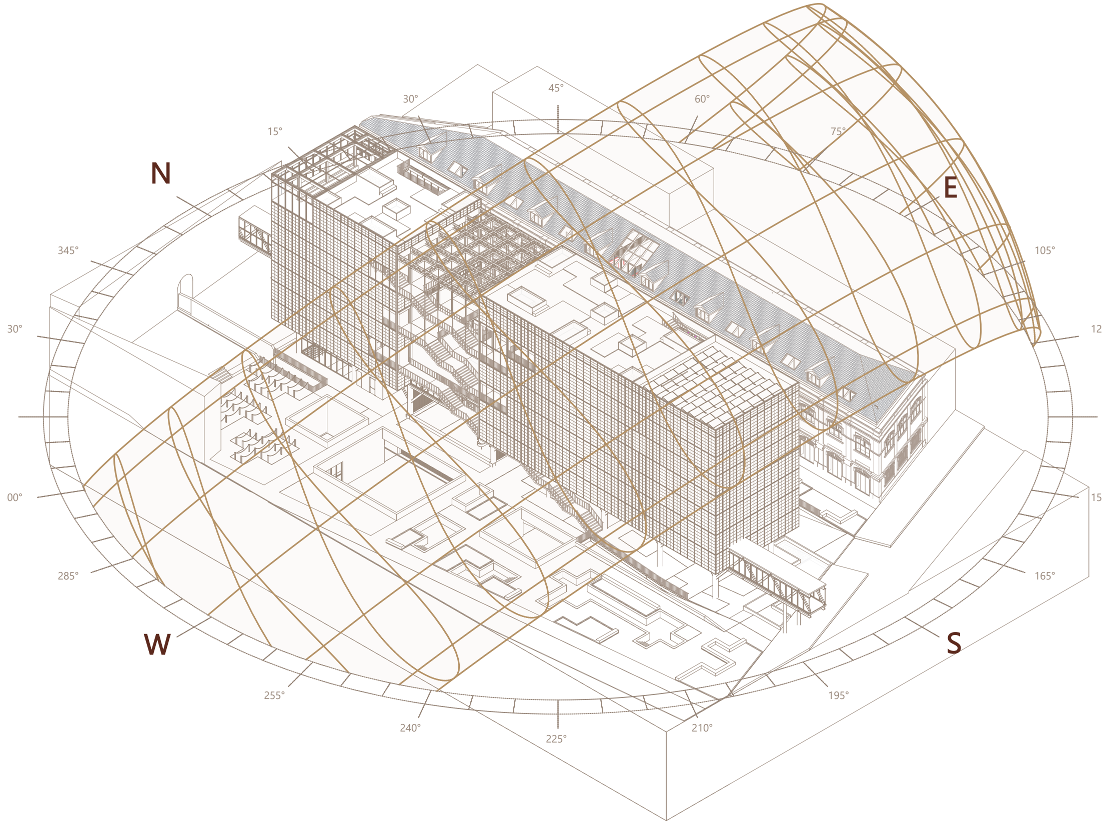
RENOVATION THROUGH
DIFFERENT STRATEGIES

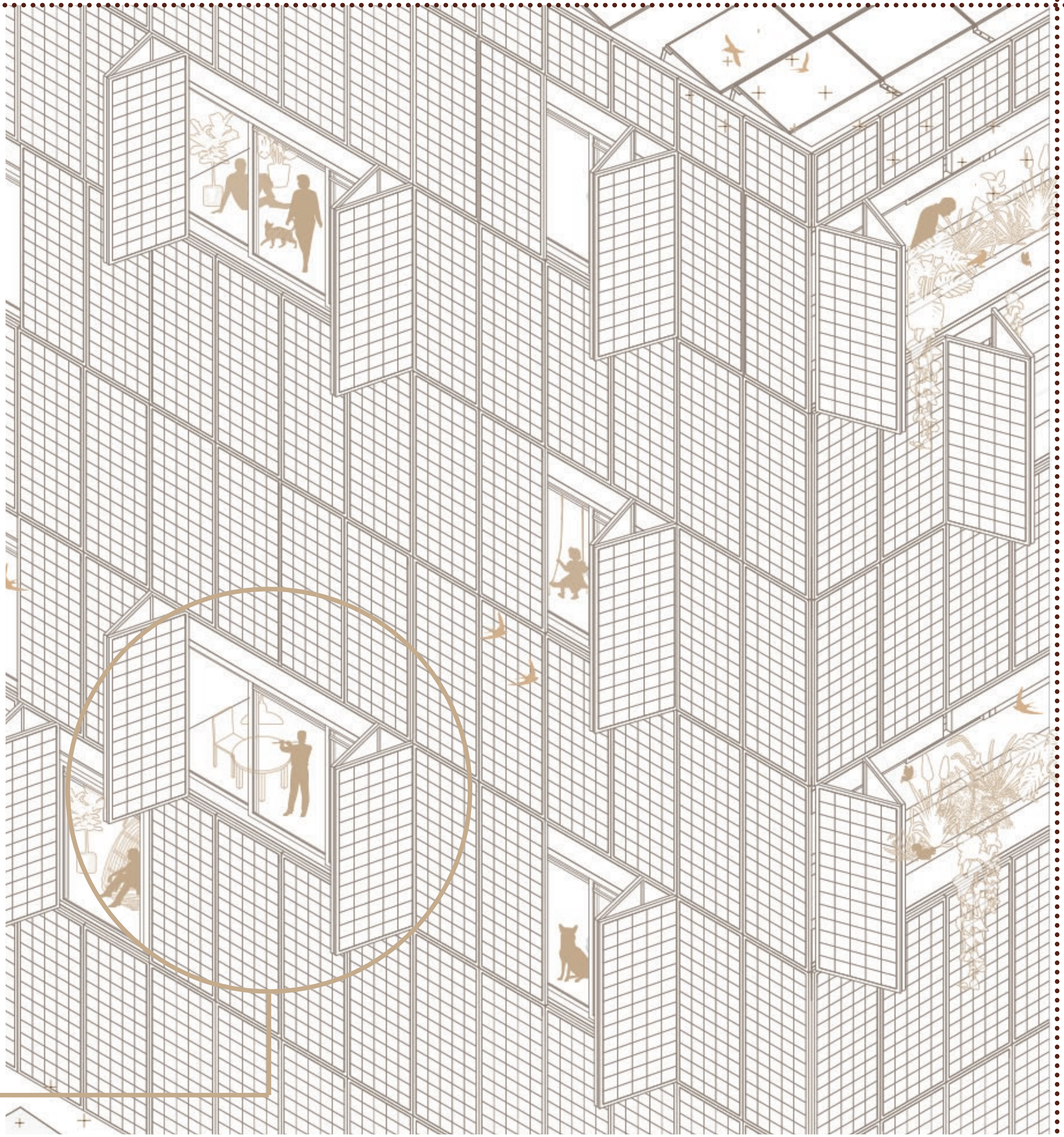




BUILDING B
HOUSING UNITS TO THE WEST

favoring natural ventilation in the summer and avoiding cold winds in the winter.

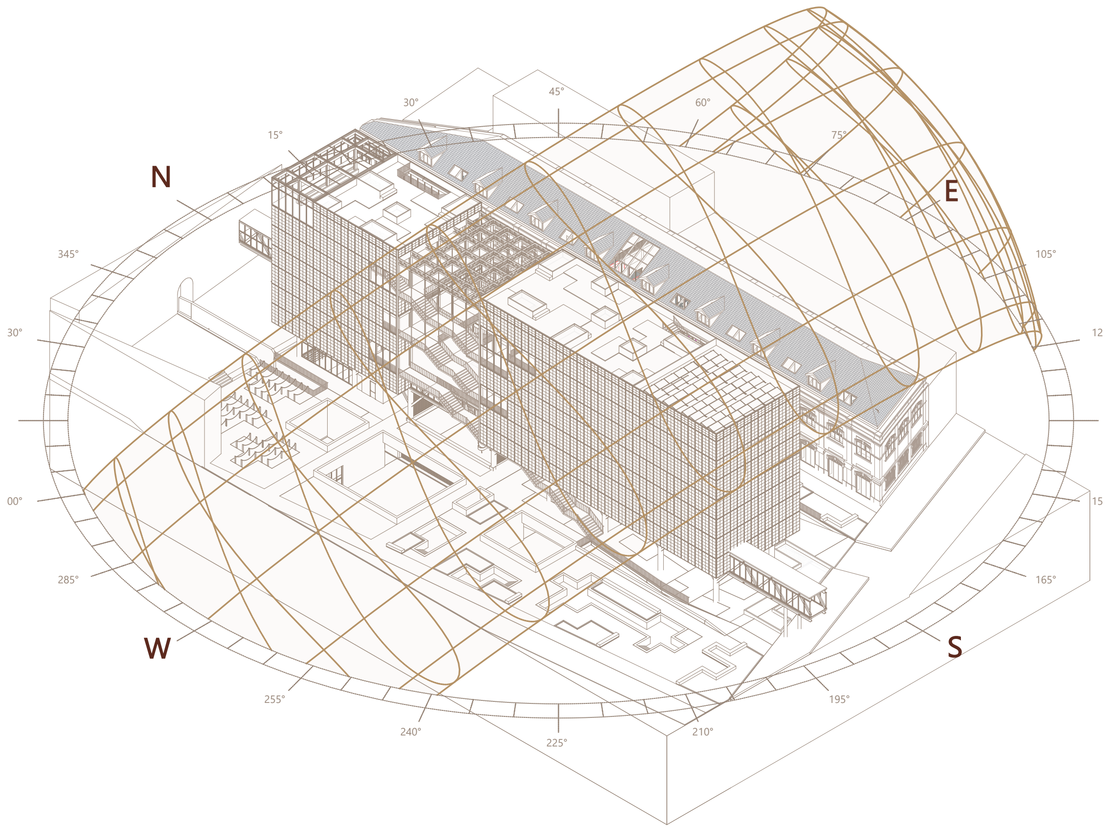


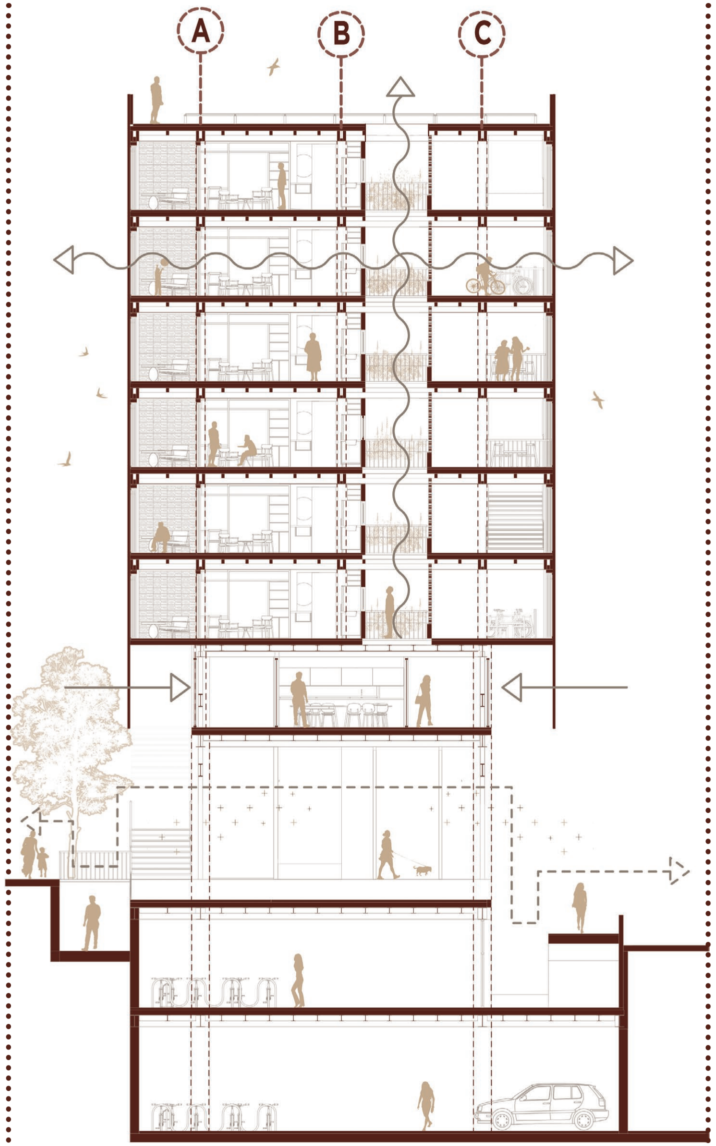


BIOCLIMATIC GALLERY

BUILDING B
HOUSING UNITS TO THE WEST

favoring natural ventilation in the summer and avoiding cold winds in the winter.

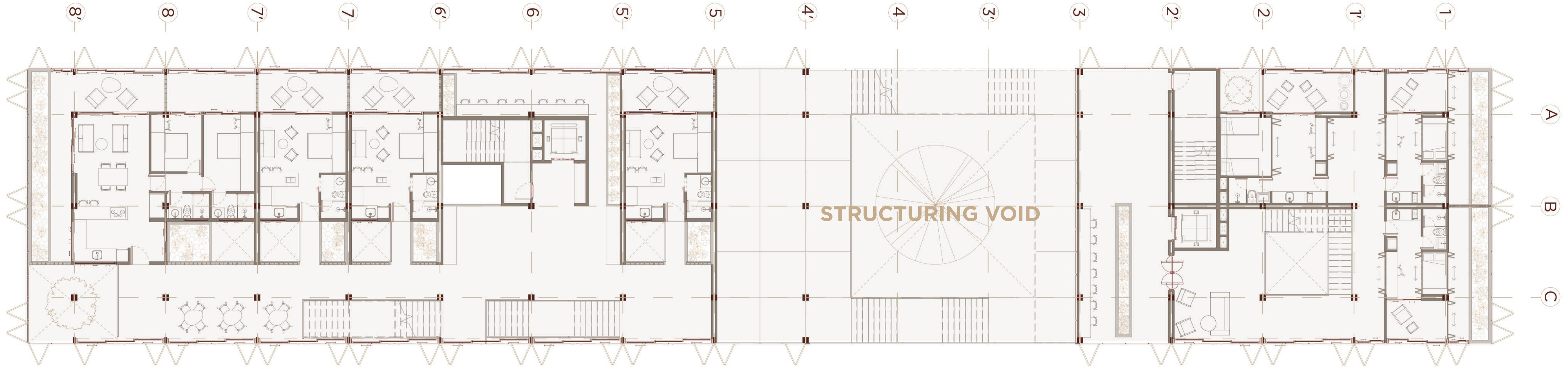


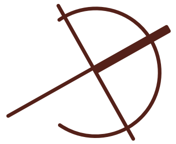


BUILDING B

BUILDING COMMUNITY DRIVEN SPACES
WHILE MAINTAINING PRIVACY

FLOOR PLAN N5

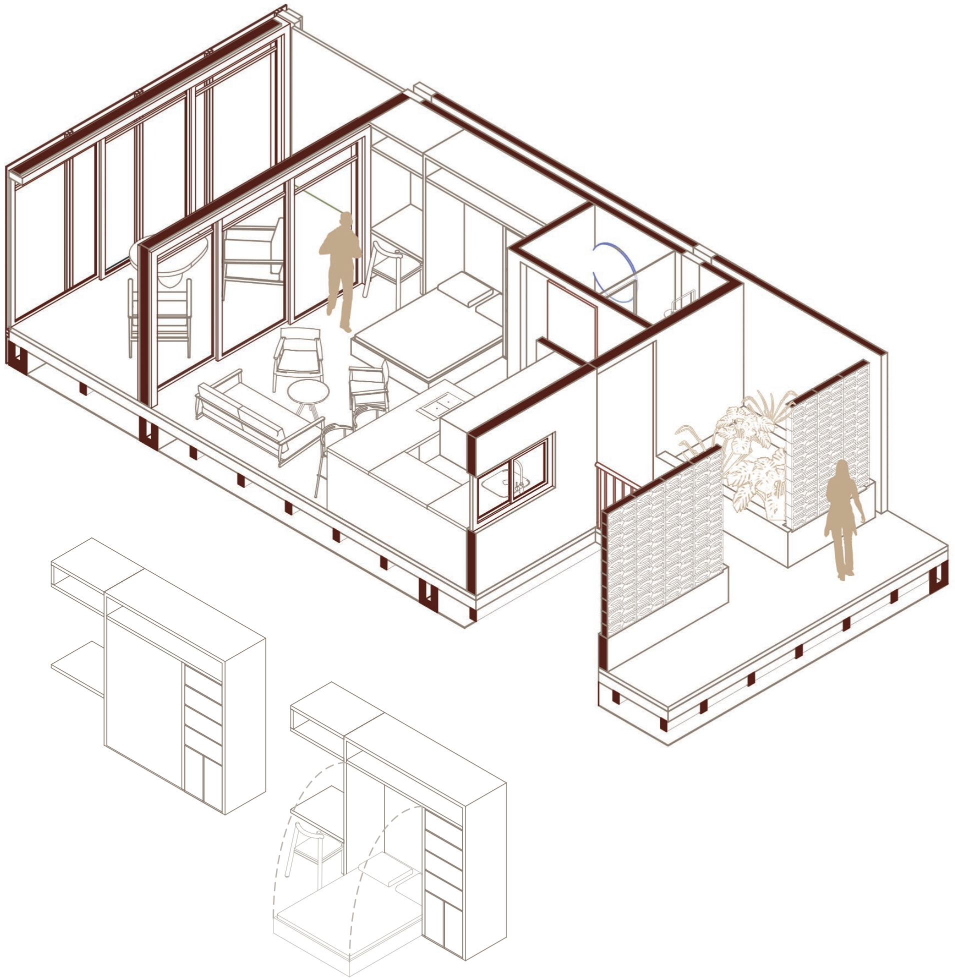




THERE IS **NO TYPICAL ORGANIZATION,** AS EACH LEVEL IS A DIRECT CONSEQUENCE OF THE **STRUCTURING VOID,** BOTH SEPARATING AND CONNECTING THE PRIVATE RESIDENCES WITH THE CO-LIVING.

T0 TYPOLOGY

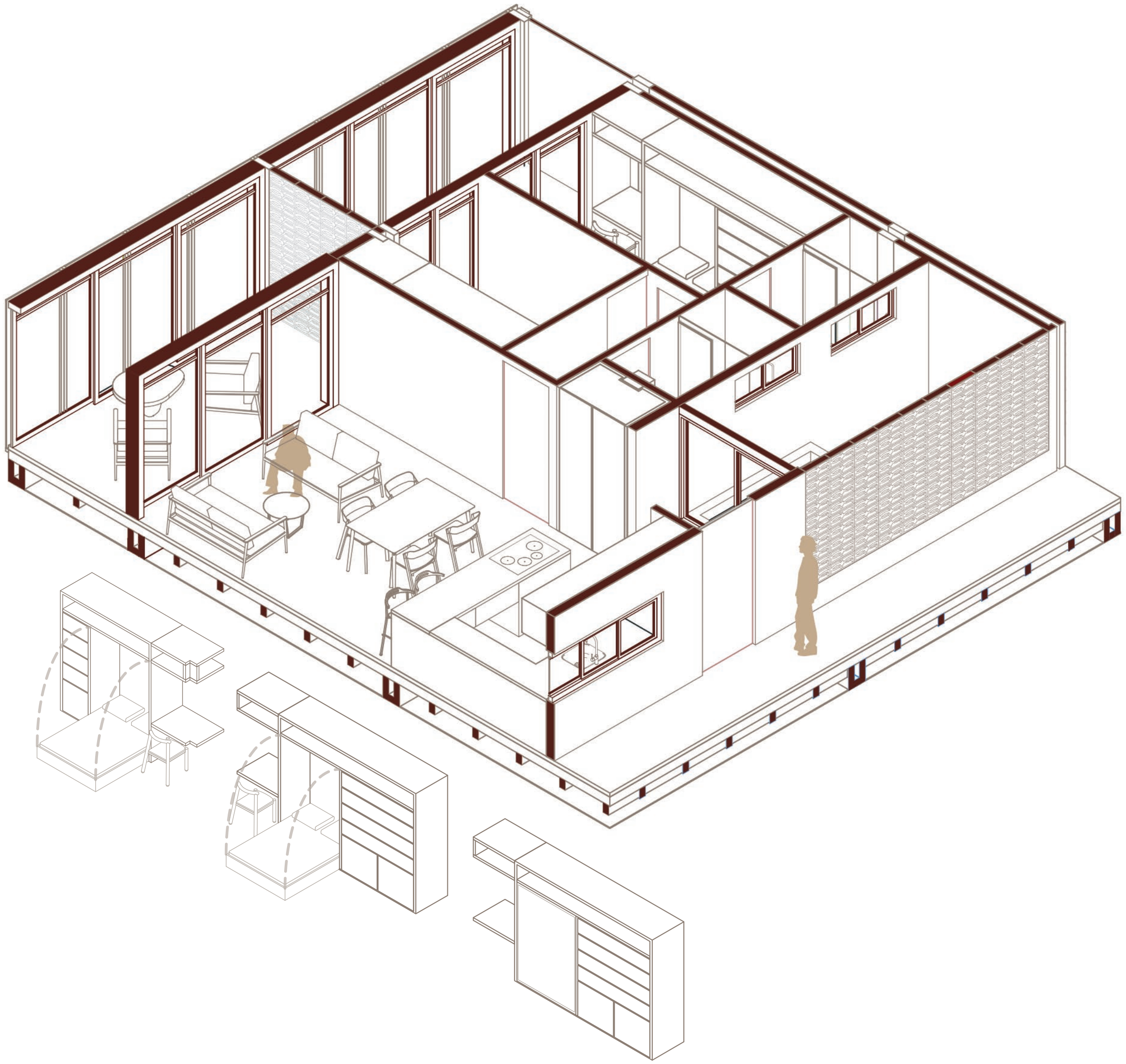
AS LISBON´S REAL ESTATE NAMES EACH TYPOLOGY



FLEXIBLE FURNITURE ALLOWING PROGRAMATIC FLEXIBILITY

T2 TYPOLOGY

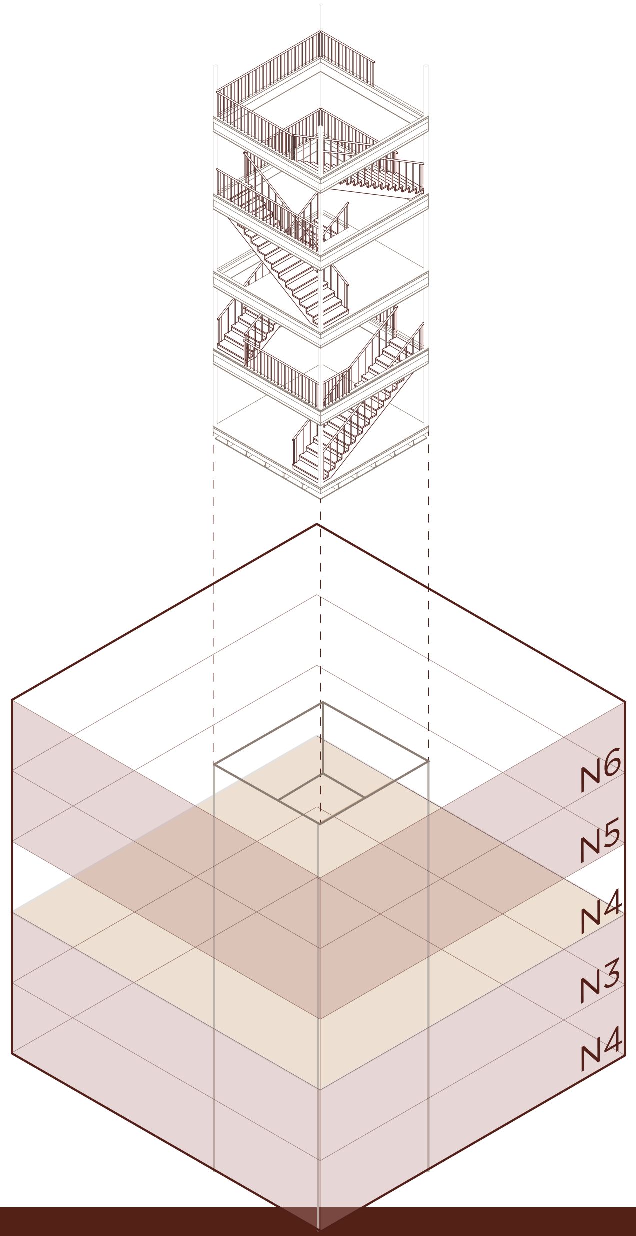
AS LISBON´S REAL ESTATE NAMES EACH TYPOLOGY



T0 TYPOLOGY

T2 TYPOLOGY

CO-LIVING
FUNCITONING AS A DYNAMIC HOUSE

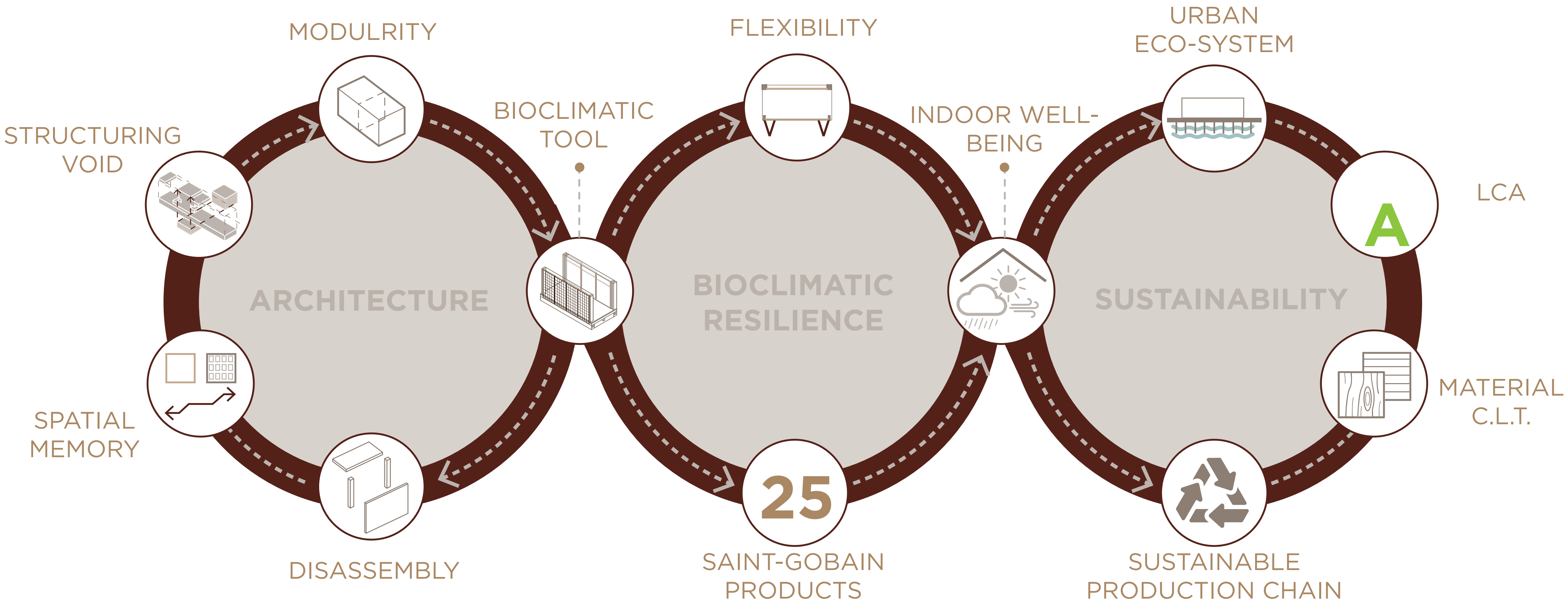


DYNAMIC VOID CIRCULATION

LIVING UNITS

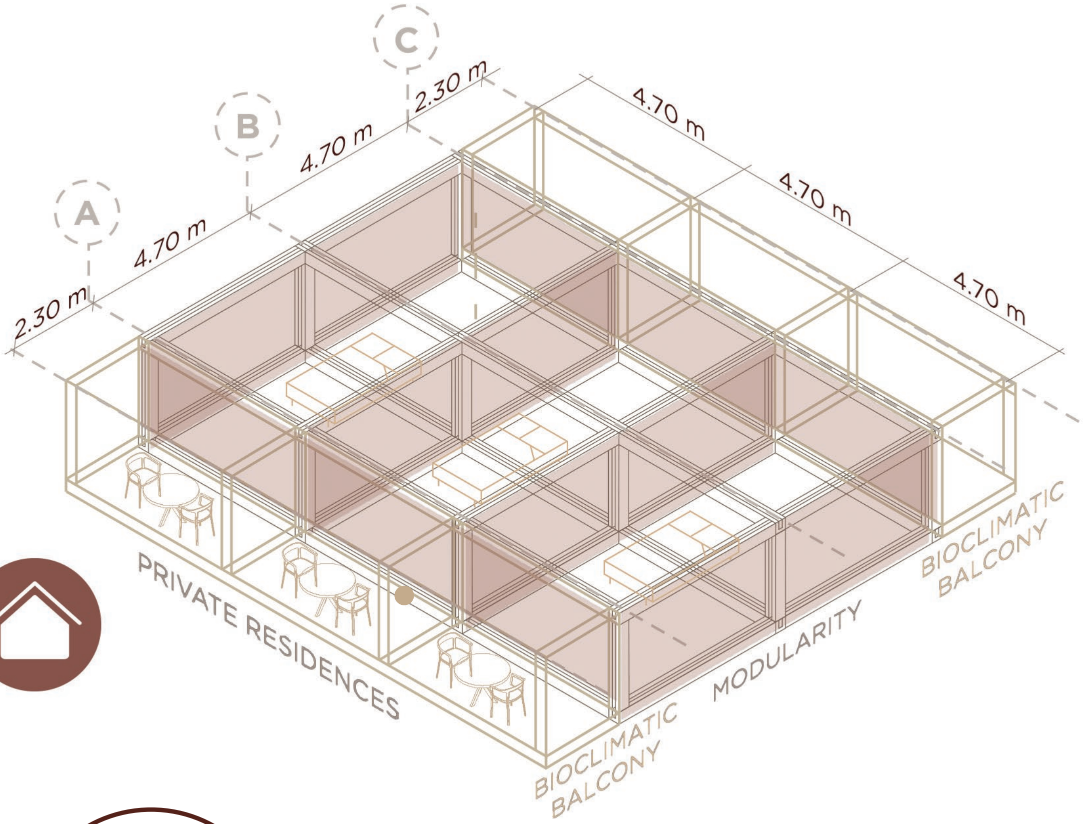
COMMON FLOOR

AN HOLISTIC APROACH



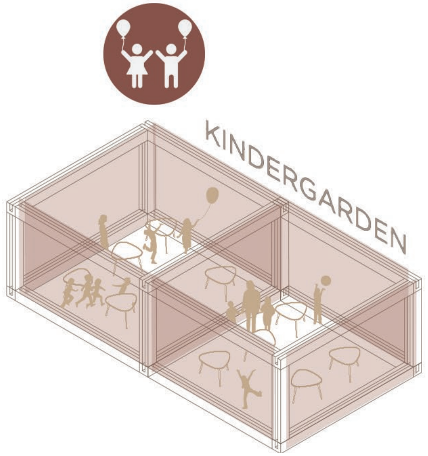
ADAPTABILITY

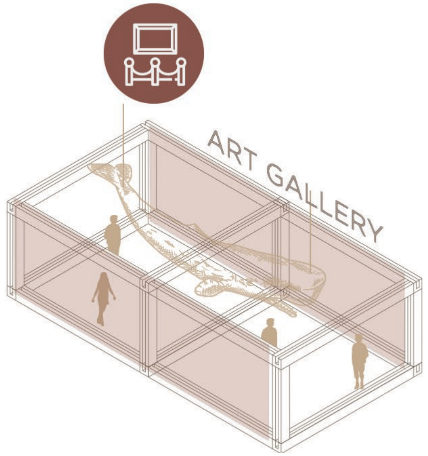
MODULARITY - DEMOUNTABLE WALLS - BIOCLIMATIC GALLERY

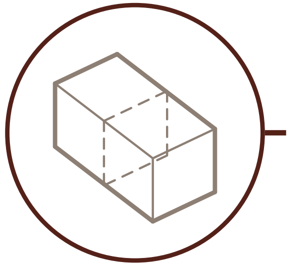


CAN CHANGE PROGRAM WHILE MAINTAINING COMFORT

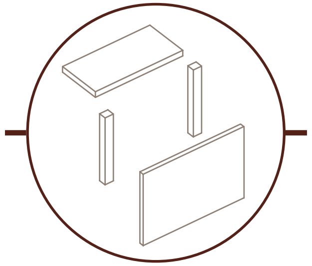
Serving the needs of an evolving **city, user and climate**







MODULARITY AND DISSASEMBLY ALLOW...

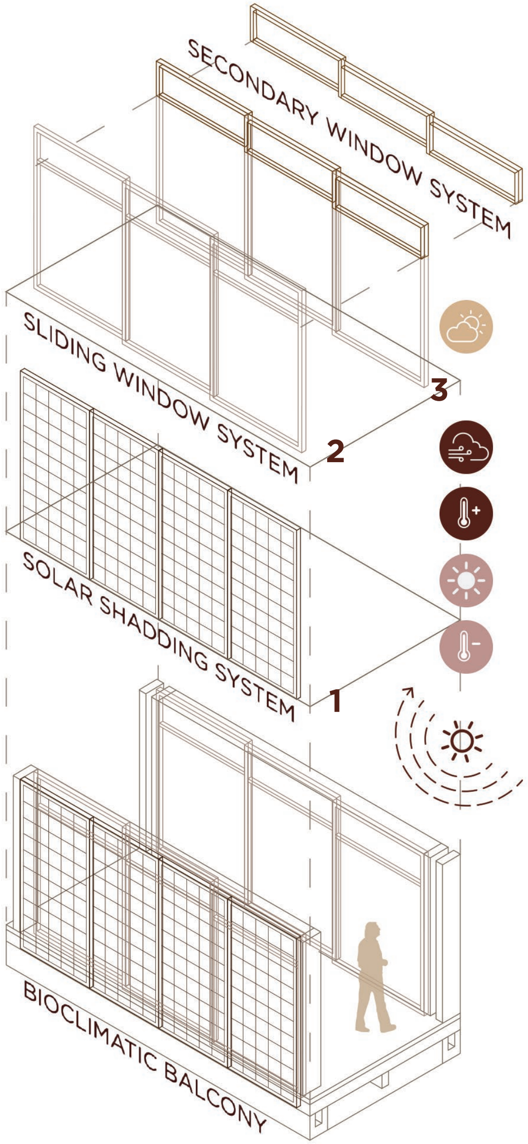


PROGRAMATIC FLEXIBILITY

RE-INTERPRETATION OF THE GALLERY AS AN

INNOVATIVE BIOCLIMATIC TOOL

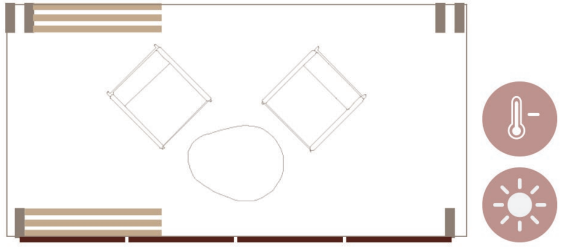
COMPOSED OF 4 **FLEXIBLE SYSTEMS,** ALLOWING **384 DIFFERENT** CONFIGURATIONS



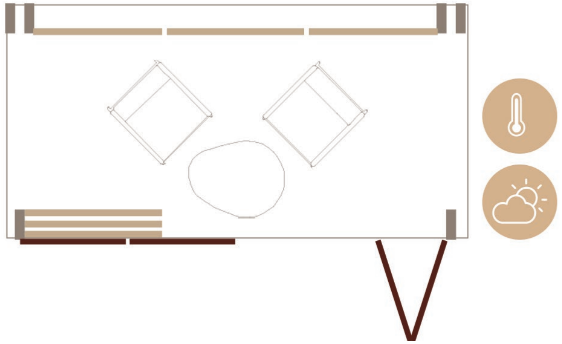
ADAPTING ITSELF TO **EACH SEASON,** AND TO

EACH USER´S OWN COMFORT.

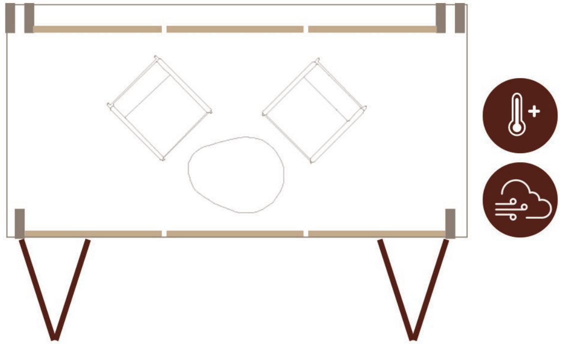
SUMMER SCENARIO EXAMPLE



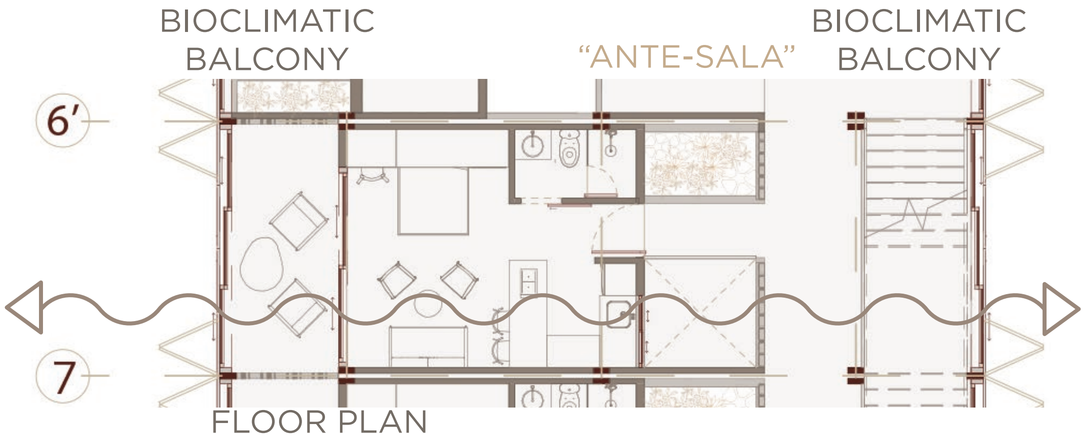
SPRING/AUTUM SCENARIO EXAMPLE

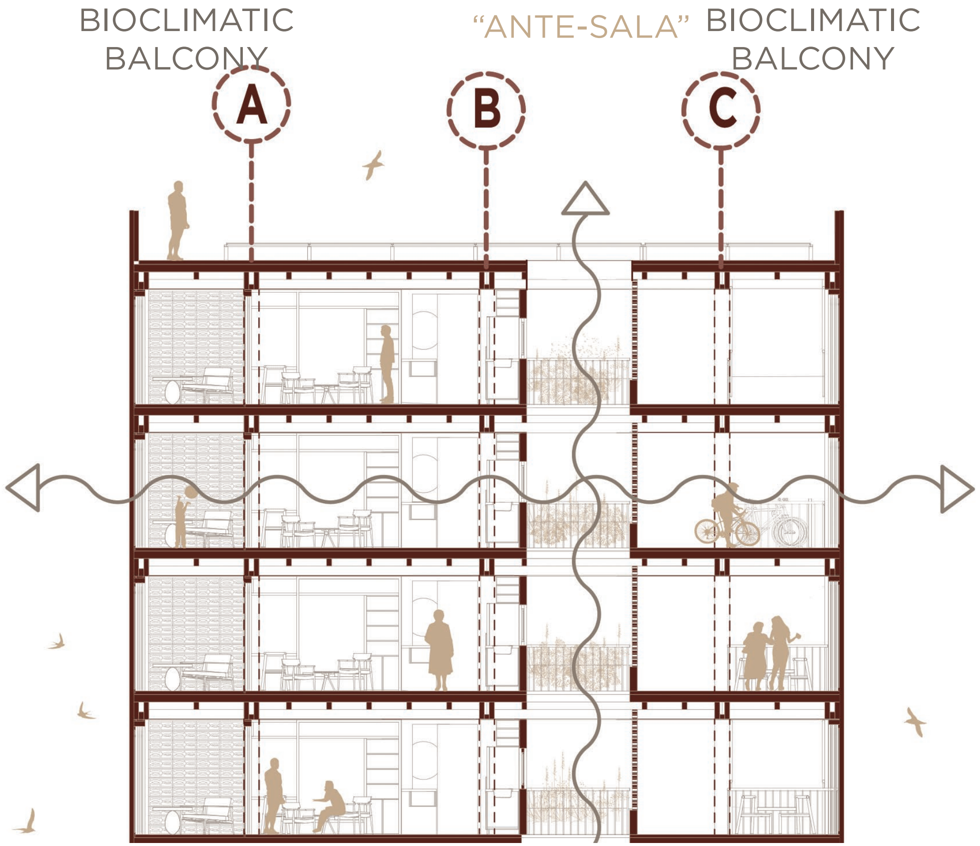


WINTER SCENARIO EXAMPLE



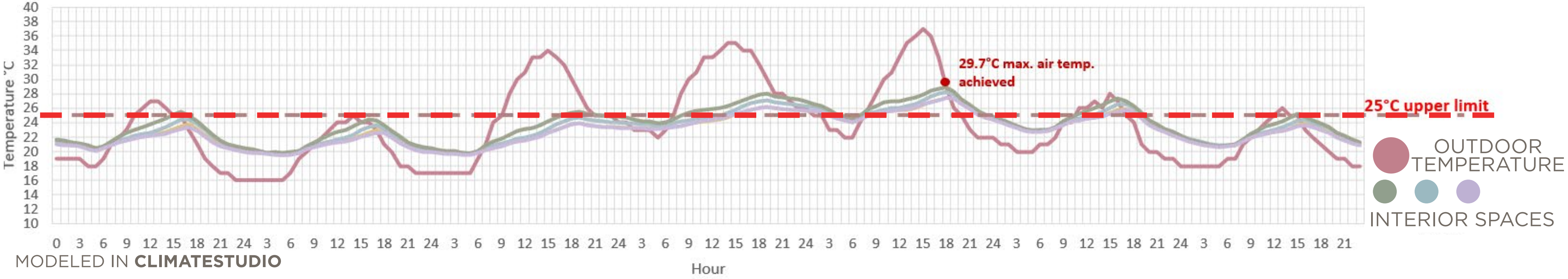
EXCLUSIVE TO THE MARKET
CROSS VENTILATION





WARMEST WEEK OF CURRENT WEATHER

Outdoor Air Temperature vs Indoor Operative Temperature 2020 (Jun 22th - June 28th)

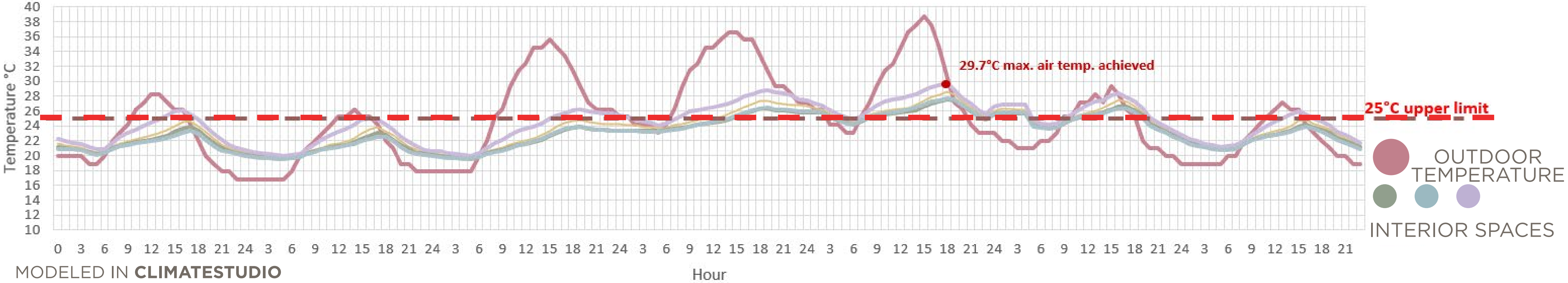


MODELED IN **CLIMATESTUDIO**

97% OF THE TIME, TEMPERATURE STAYS **BELOW 25 °**

WARMEST WEEK OF 2080 IN THE WORST CLIMATE CHANGE SCENARIO (SSP3)

Outdoor Air Temperature vs Indoor Operative Temperature (Jun 22th - June 28th) - 2080 Under SSP3 climate change scenario

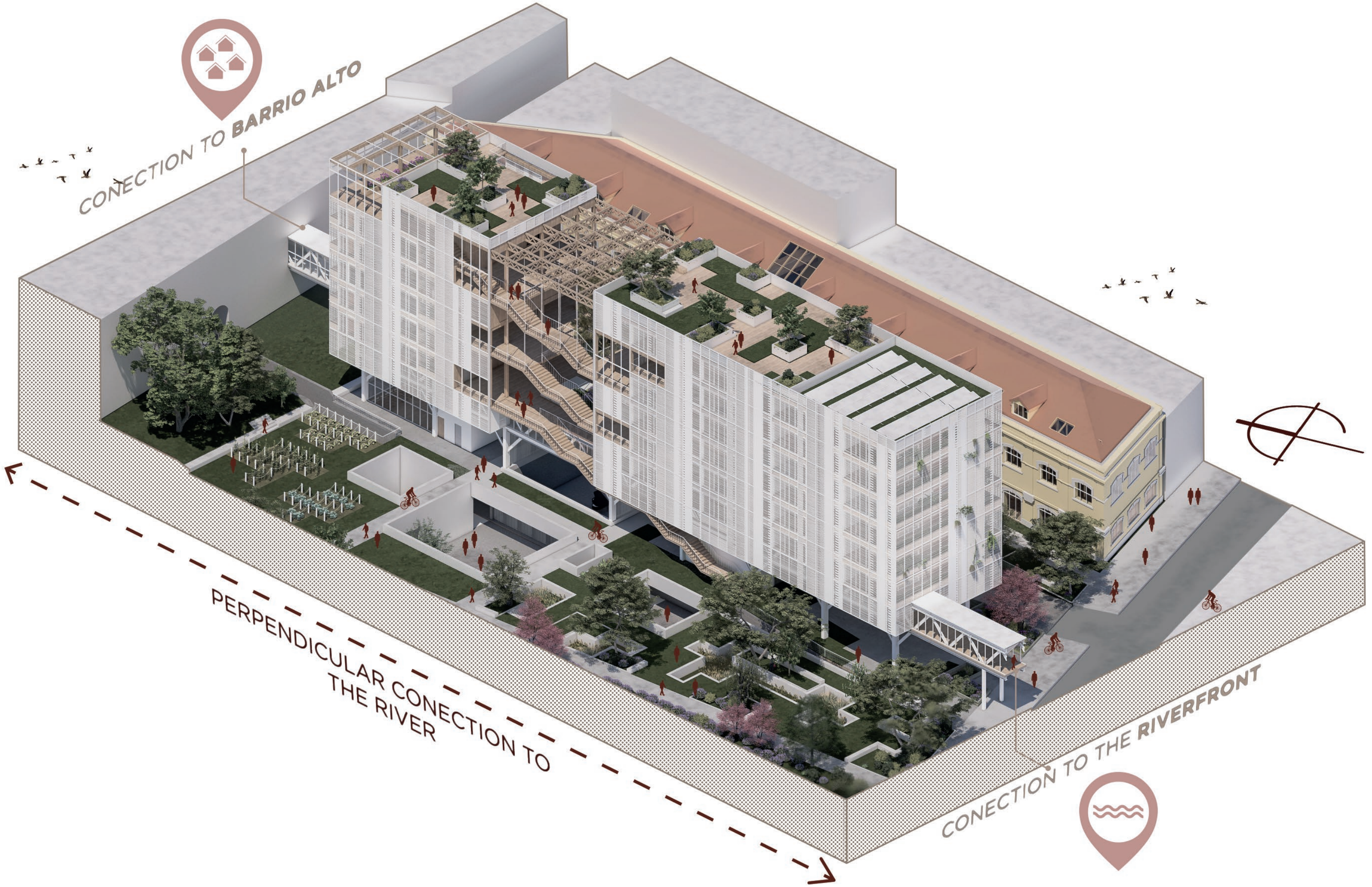


MODELED IN **CLIMATESTUDIO**

94% OF THE TIME, TEMPERATURE STAYS **BELOW 25 °**

WITHOUT Air conditioning or heating systems

DESING PRINCIPLES
FOR **EMBODIED CARBON REDUCTION** WERE IMPLEMENTED



Cradle to grave (A1-A4, B4-B5, C1-C4)		kg CO_2e/m
(< 230)	A	217
(230-340)	B	
(340-450)	C	
(450-560)	D	
(560-670)	E	
(670-780)	F	
(> 780)	G	

DESIGN FOR **LONGEVITY**

SOIL/ WATER MANAGMENT

OPTIMIZED BUILDING SHAPE

LOW CARBON STRUCTURAL MATERIALS

REDUCE FLOOR SLAB SIZE THROUGH **PERMEABLE DESIGN**

DESIGN FOR **ADAPTABILITY** - SOCIAL AND CLIMATIC

LONG LIVE ROOFING AND WINDOWS

RESULTS

MODELED IN **CLIMATESTUDIO**

Thermal confort:
Energy demand for heating per space **< 15kw7m**
Our project : 7,5 kwh/m2

Acoustic confort:
Requested in walls: **>58 dB between walls**
Requested in walls: **>45 dB within**
Requested in floor slabs: **<45 dB**
Our project in walls : >58 dB between walls
Our project in walls : 47 dB withtin
Our project in floor slabs : 33 dB between and within

Indoor Air Quality:
Requested: **30 m3/h per person**
Our project : at least **230 m3/ per person**

Natural Daylight
Requested: **Min 60%**
Our project: 99,4%

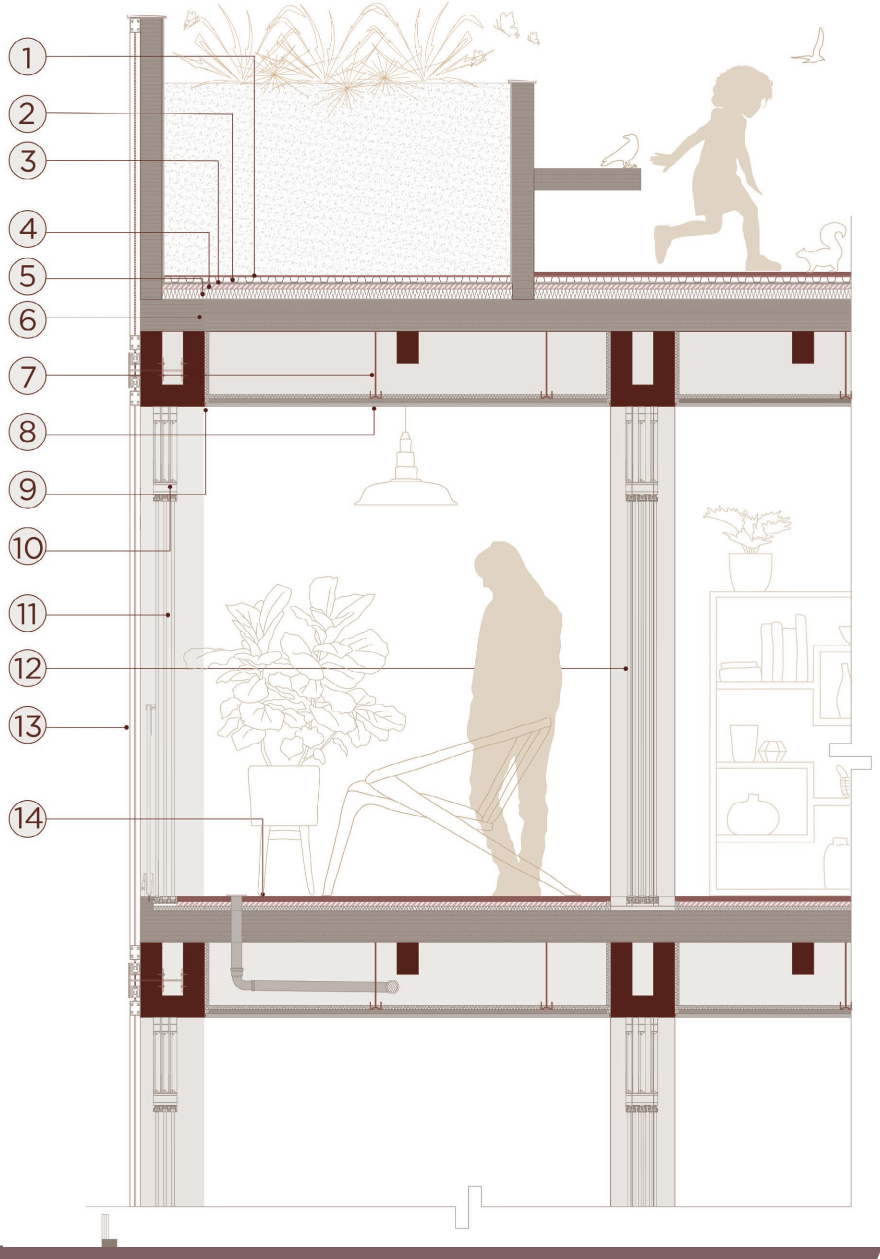
U-value Value Roof:
Requested: **< 0,15 W/m2K**
Our project: 0,5 W/m2K

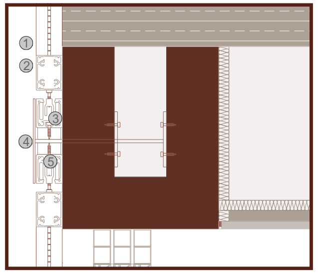
U-value External Walls:
Requested: **< 0,2 W/m2K**
Our project: 0,18 W/m2K

U-value Windows
Requested: **< 0,9 W/m2K**
Our project: 0,8 W/m2K

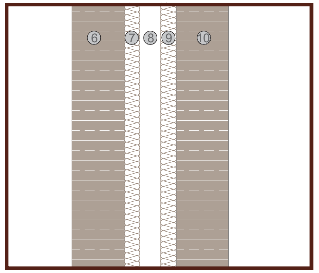
CONSTRUCTION DETAILS

OF BIOCLIMATIC CROSS-SECTION

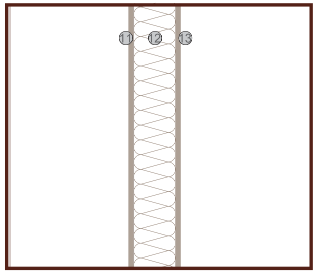




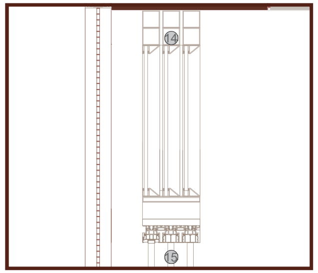
FACADE/SHADING SYSTEM



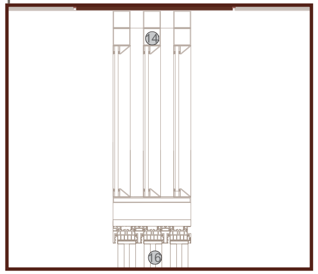
EXTERIOR WALLS



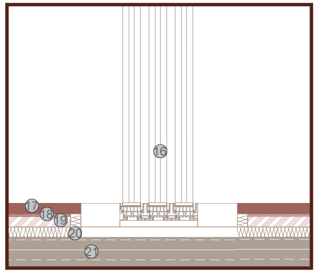
PARTITION WALLS



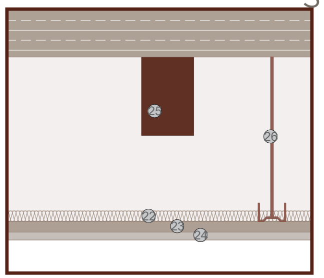
EXTERIOR WINDOW SYSTEM



INTERIOR (1) WINDOW SYSTEM

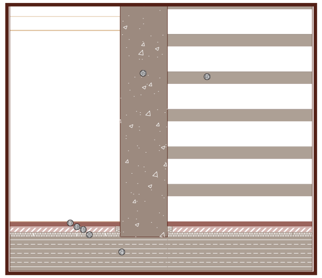


INTERIOR (2) WINDOW SYSTEM

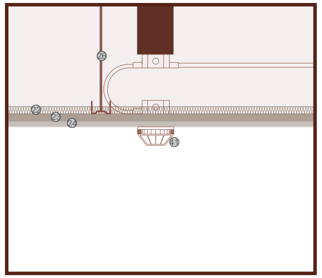


FLOOR SLAB AND CLT JOIST

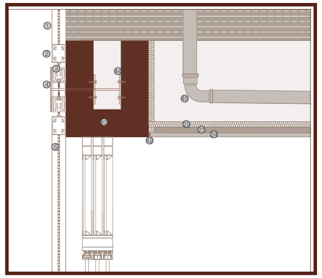
COMFORT THROUGH THESE SOLUTIONS.



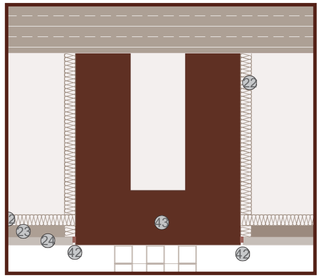
FIRE SAFETY STAIRS



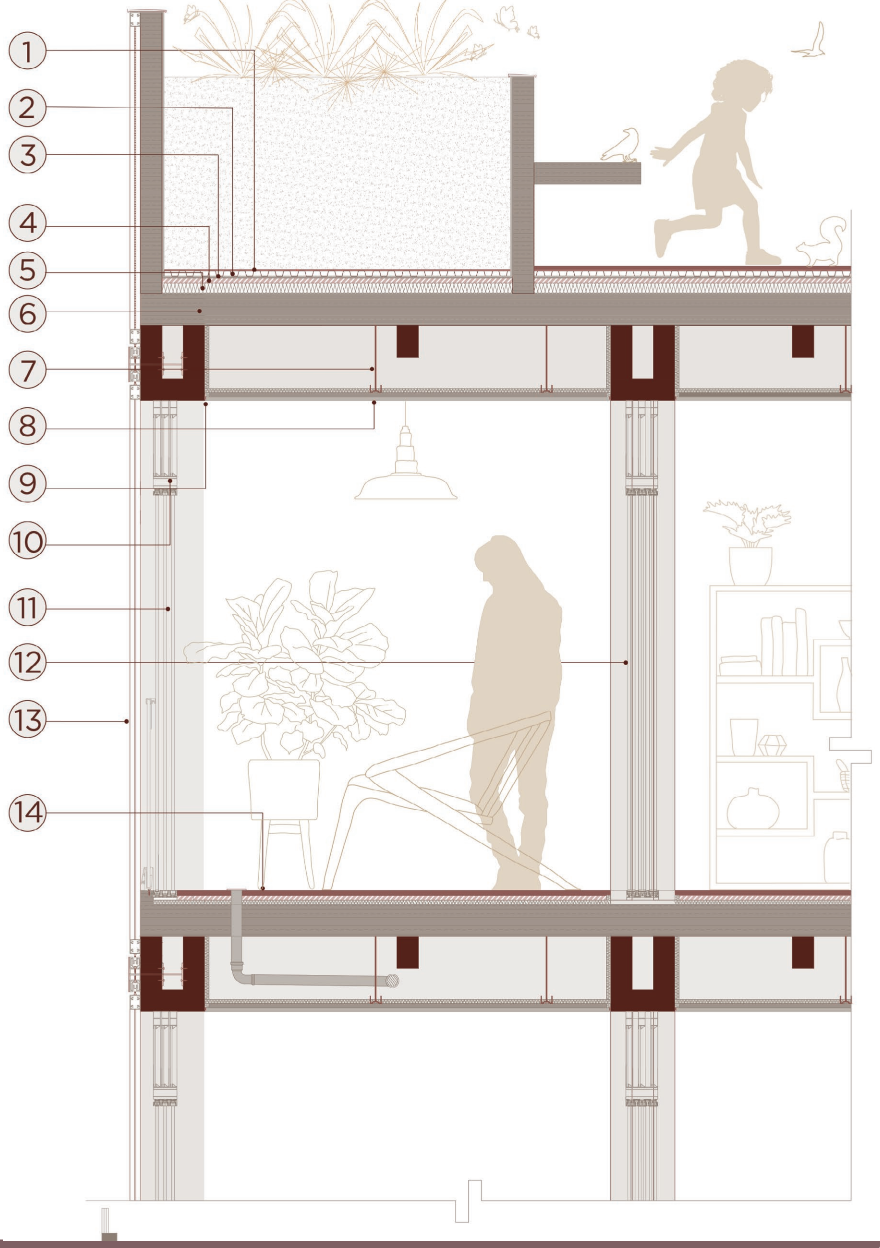
SMOKE AND FLAME DETECTOR



AIR TIGHTNESS & MOISTURE MANA-GEMENT



ACOUSTIC AND THERMAL BRIDGES



BRANDS
BY SAINT-GOBAIN

Ecophon SAINT-GOBAIN

PAM SAINT-GOBAIN

placo SAINT-GOBAIN

weber SAINT-GOBAIN

isover SAINT-GOBAIN

SAINT-GOBAIN

PRODUCTS
IMPLEMENTED IN OUR PROJECT

25+

LOCALS | STRUCTURAL ENGINEER | FOREST ENGINEER | ARCHITECTS

ALL FROM LISBON, PORTUGAL

WE CONCLUDED
5 PRINCIPLES

TO FACE ADAPTABILITY
AND RESILIENCE FOR
FUTURE CRISIS

5 PRINCIPLES

1 MODULARITY

2 DISASSEMBLY

3 ARCHITECTURAL IDENTITY

4 PROXIMITY URBANISM

5 VEGETATION AS A MATERIAL