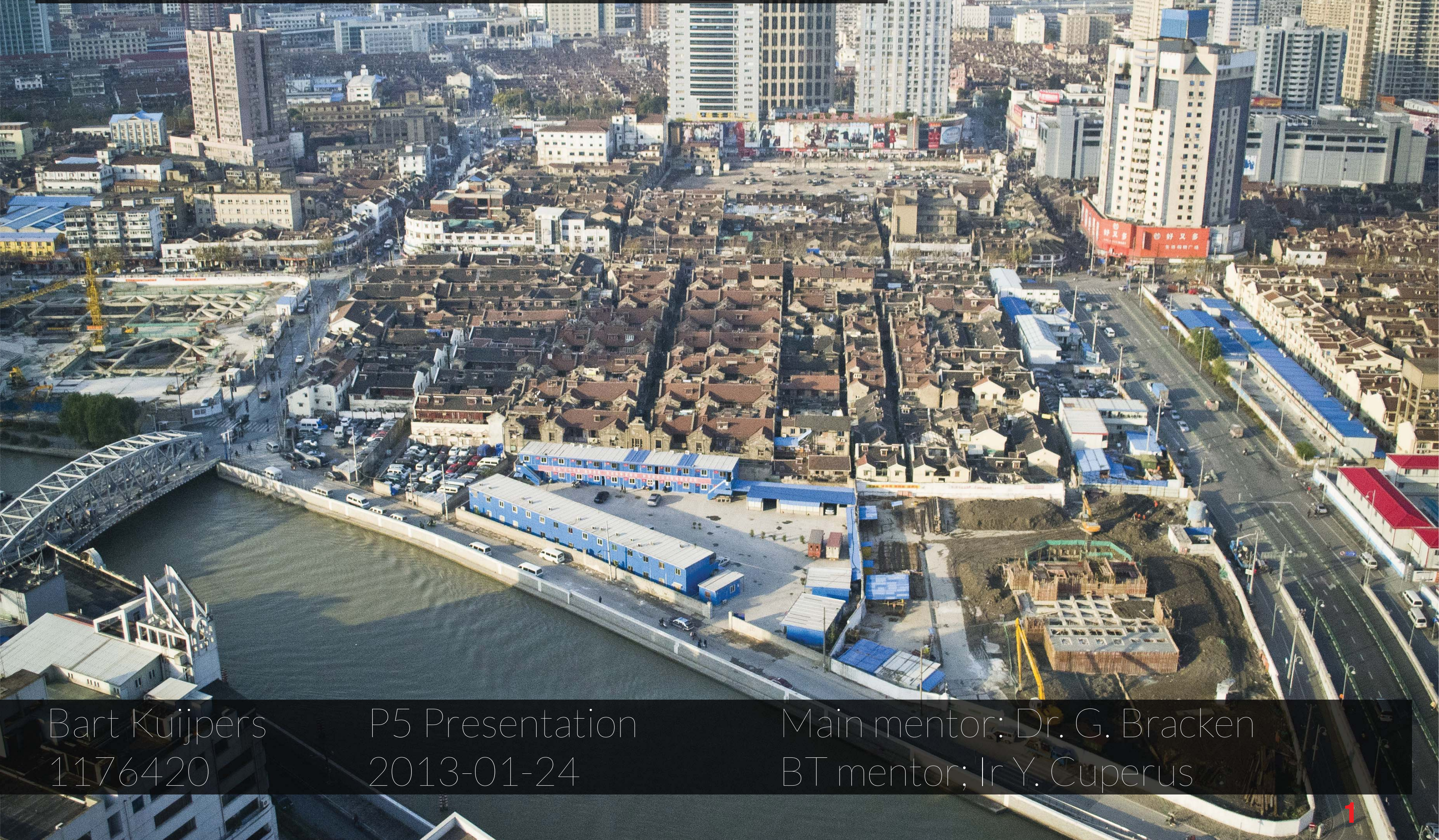


Updating Shanghai: Life from the ground up



Bart Kuijpers
1176420

P5 Presentation
2013-01-24

Main mentor: Dr. G. Bracken
BT mentor: Ir Y. Cuperus

EXPLORE YOUR FASCINATION!

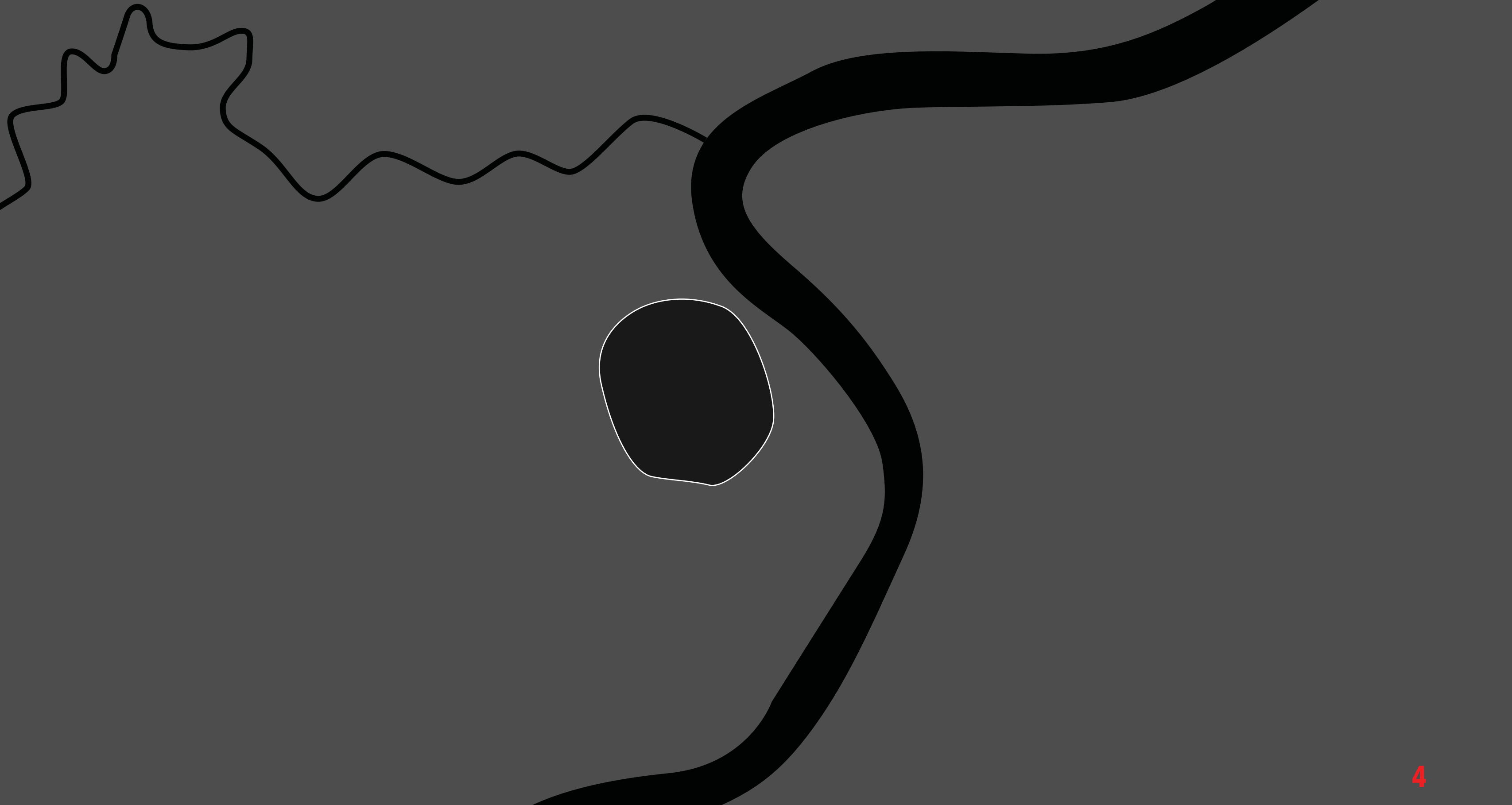


SHANGHAI

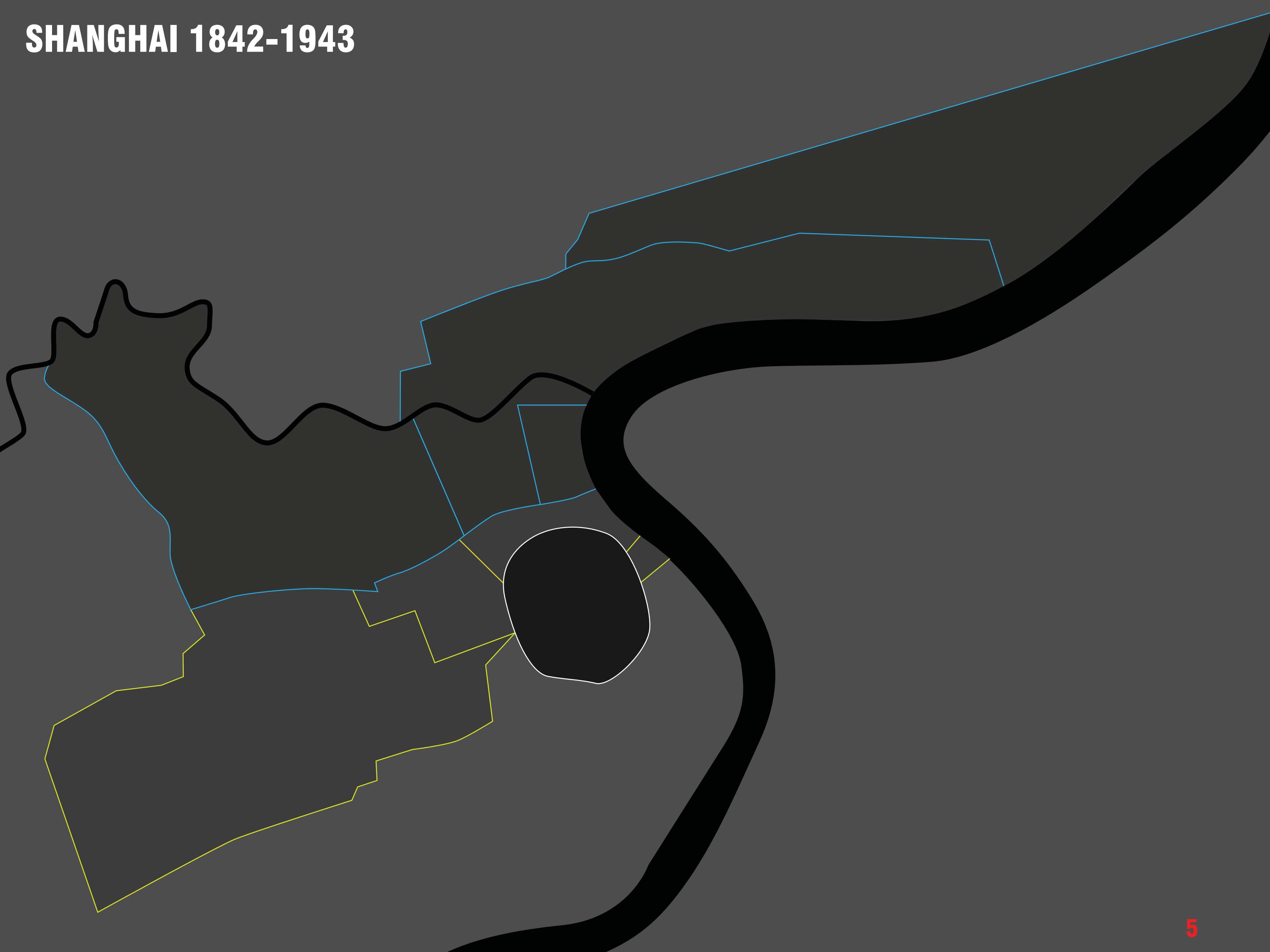
上海 = ABOVE SEA

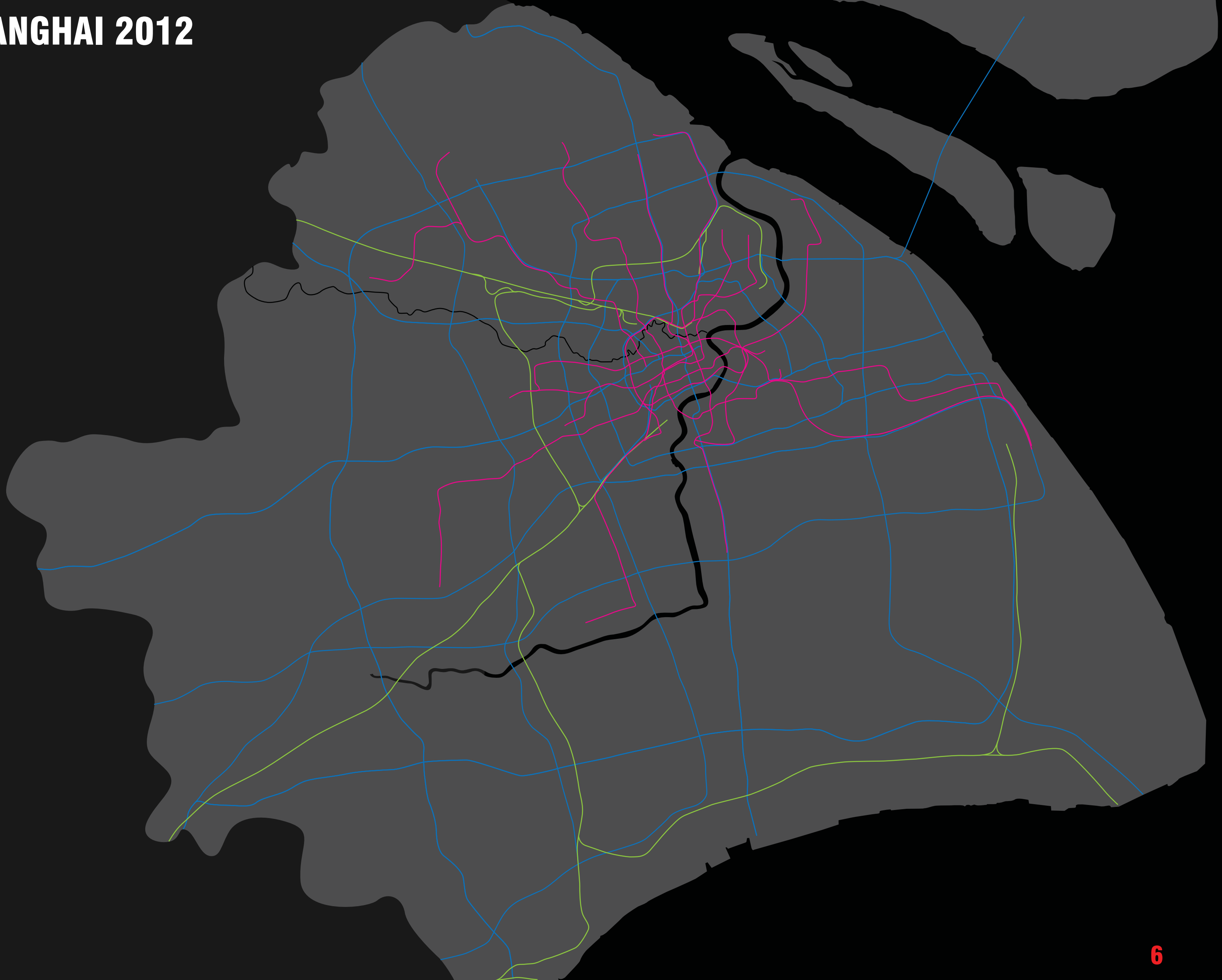


SHANGHAI 1554-1842



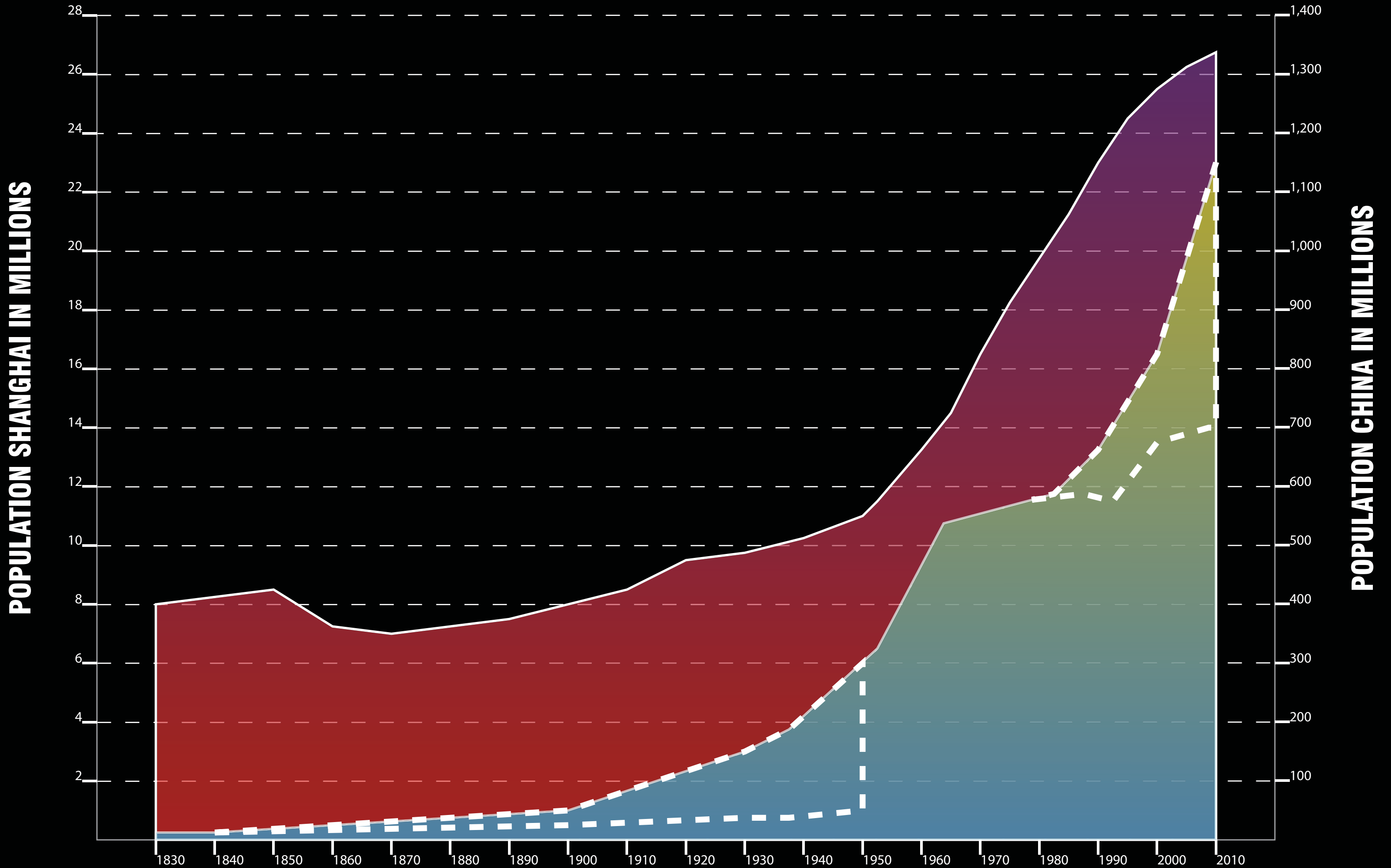
SHANGHAI 1842-1943



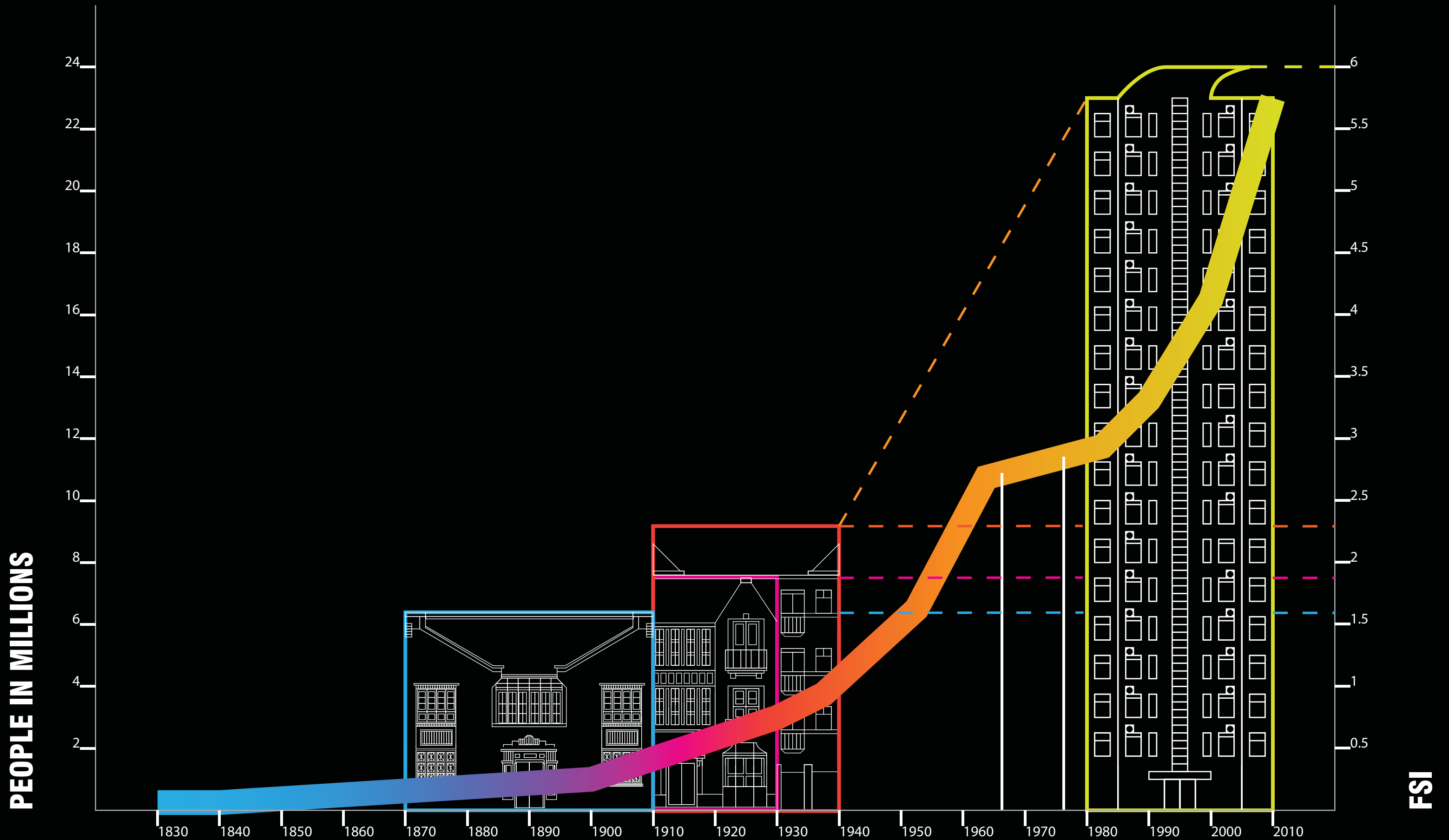


POPULATION CHINA VS SHANGHAI

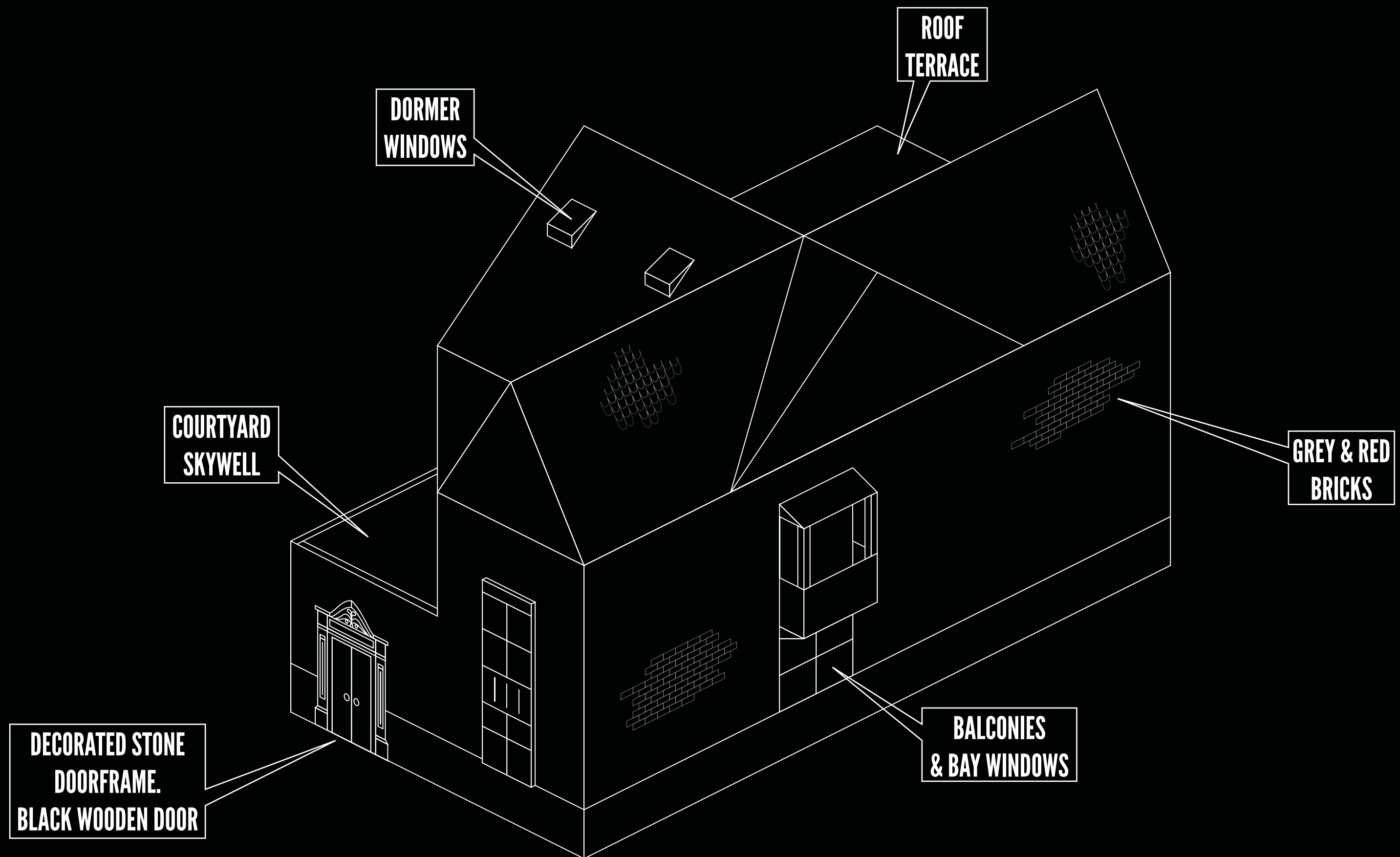
SHANGHAI CHINA FLOATING



POPULATION VS BUILDING FSI & CONSTRUCTION PERIOD



SHIKUMEN CHARACTERISTICS



SHIKUMEN = COLLABORATION

ENGLISH (TUDOR)

FRENCH (CITE)

SHANGHAI VERNACULAR

FENG SHUI

CHINESE SOCIETY

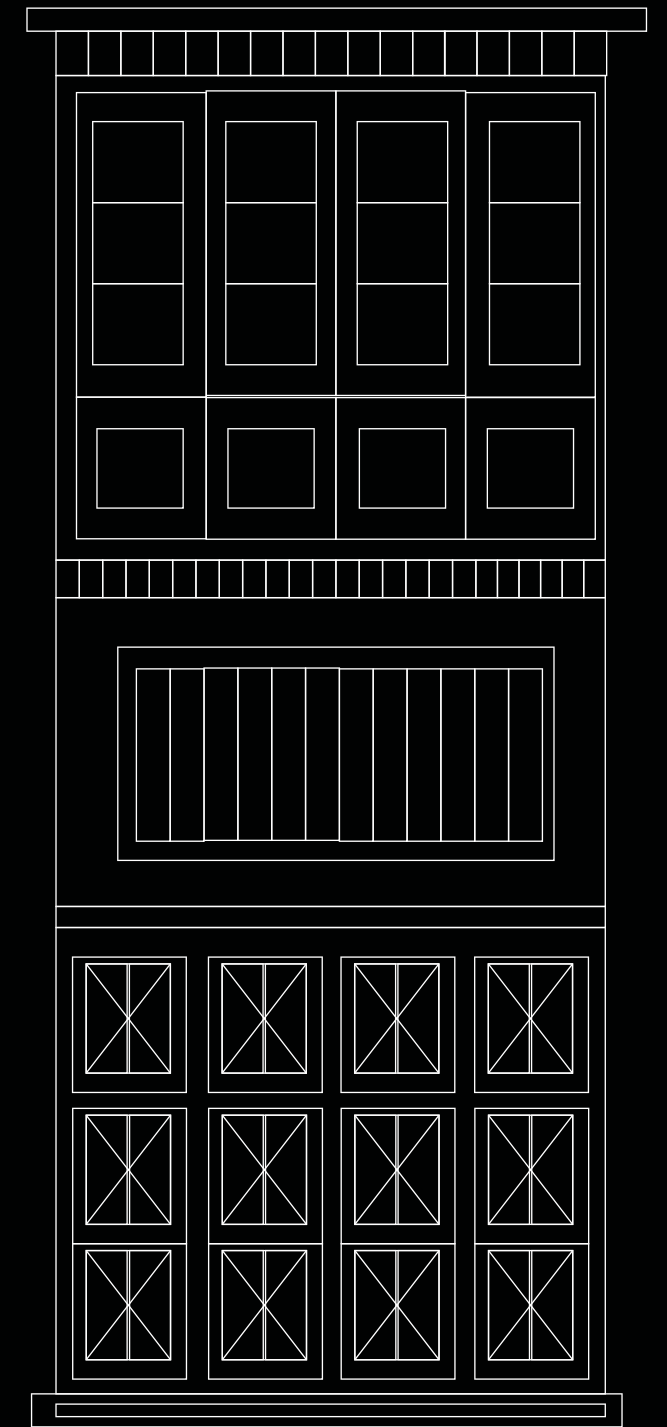
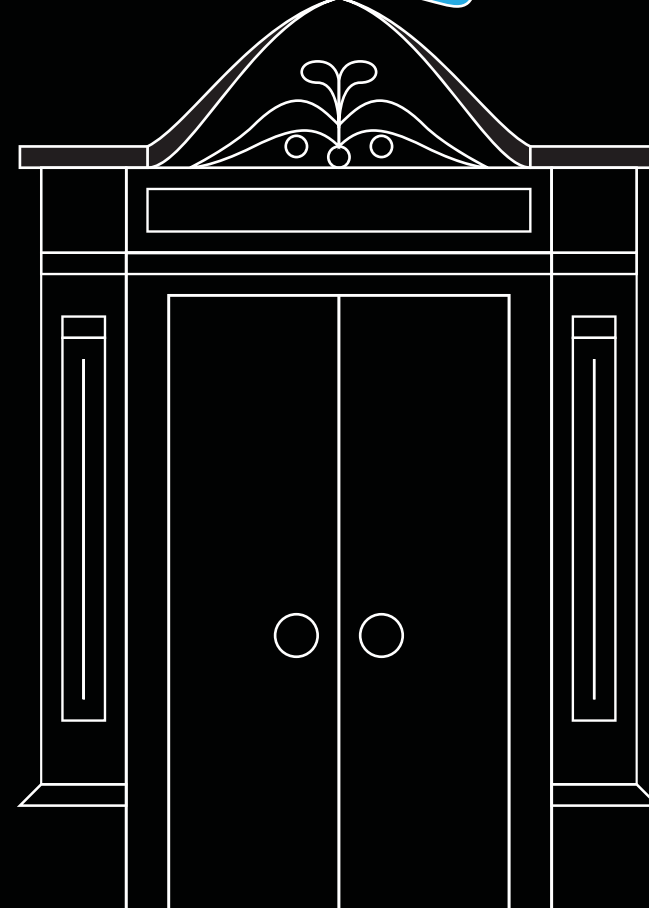
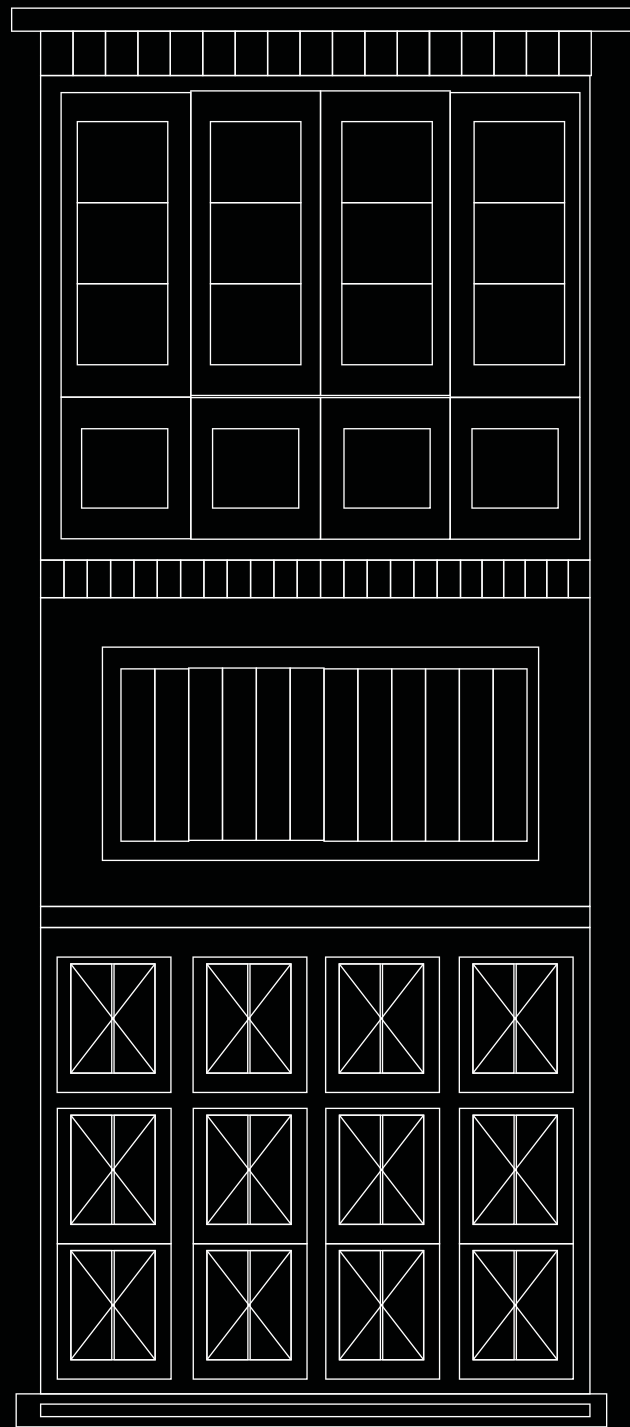
RENTAL HOUSING

MARKETS

PUBLIC FACILITIES

SMALL INDUSTRY

MAIN ALLEY



RESEARCHING THE SOCIAL STRUCTURE

- **DISTANCE IN MAN,**
ON WHICH DISTANCES DO WE INTERACT?
- **TERRITORIALITY,**
CAN WE CONTROL THE SPACES WE USE?
- **PRIVACY,**
CAN WE CHOOSE THE AMOUNT OF PEOPLE WE WANT TO ENCOUNTER?
- **ENVIRONMENTAL APPRAISAL & ASSESSMENT,**
ARE THE SPACE WE USE PLEASANT?

DISTANCE IN MAN

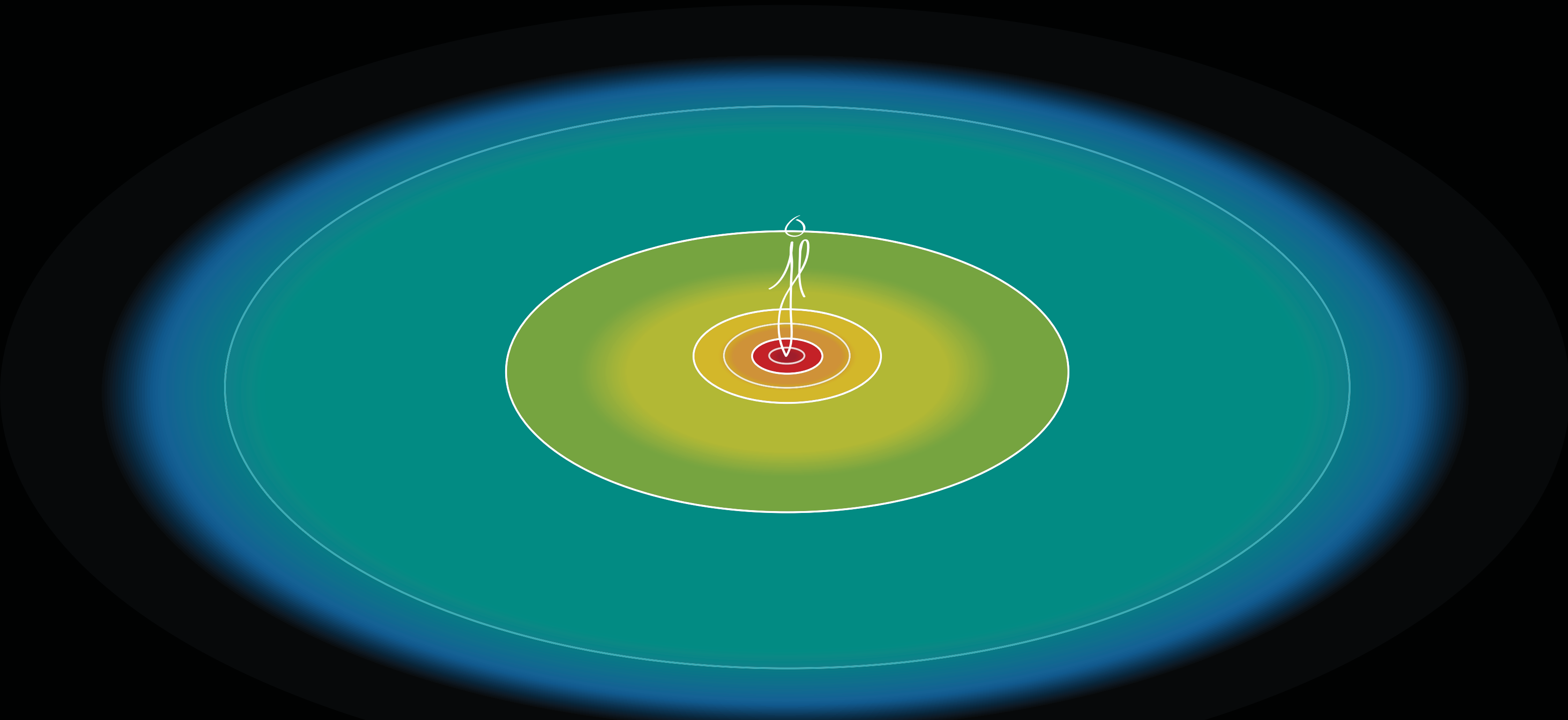
ON WHAT DISTANCE SOCIAL INTERACTION TAKES PLACE

0-0.15 m
INTIMATE CLOSE
0.15-0.45 m
INTIMATE FAR

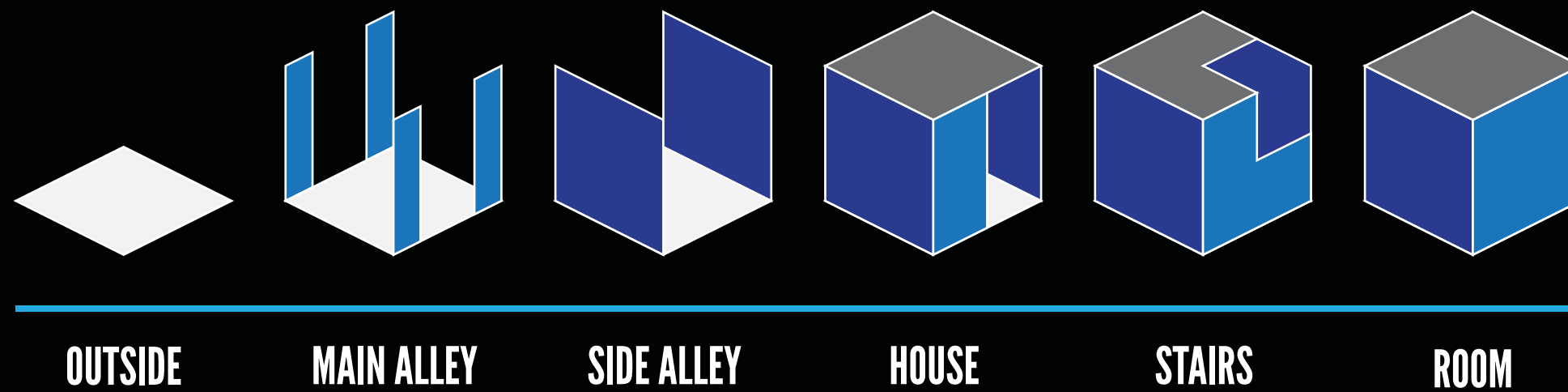
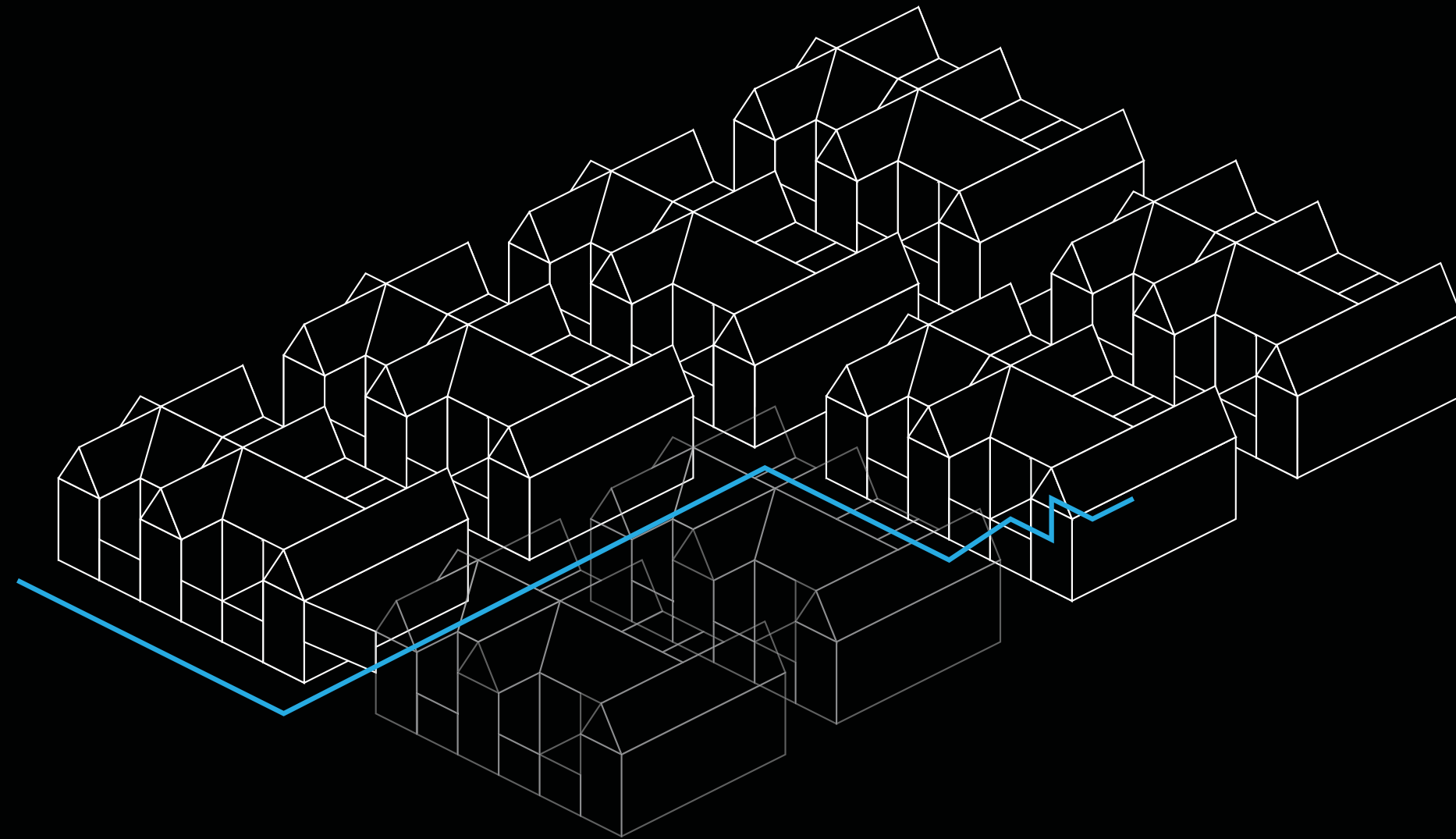
0.45-0.75 m
PERSONAL CLOSE
0.75-1.2 m
PERSONAL FAR

1.2-2.1 m
SOCIAL CLOSE
2.1-3.6 m
SOCIAL FAR

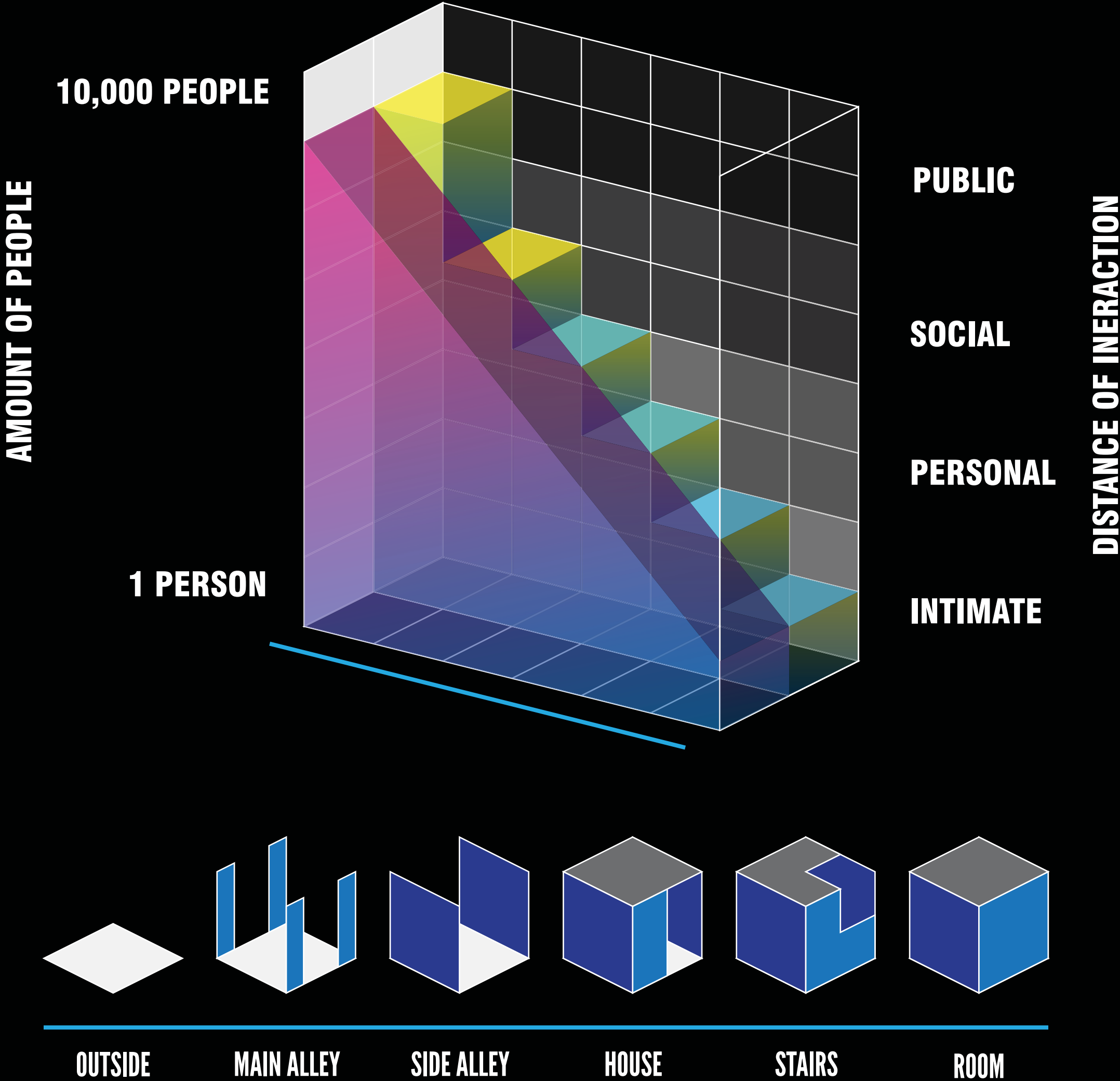
3.6-7.2 m
PUBLIC CLOSE
7.2 m
PUBLIC FAR



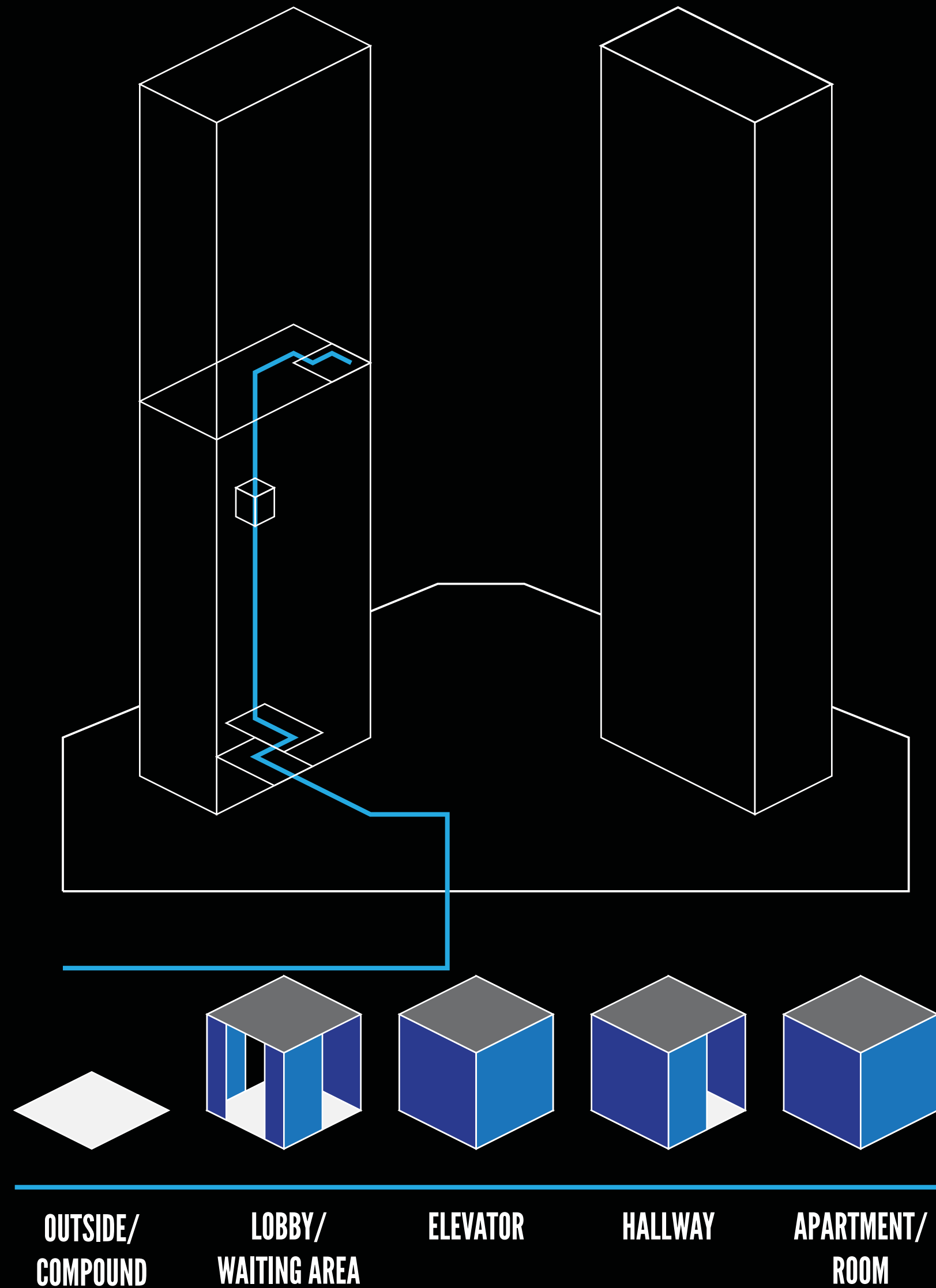
IN WHAT TYPE OF SPACE DOES THE SOCIAL INTERACTION TAKE PLACE?



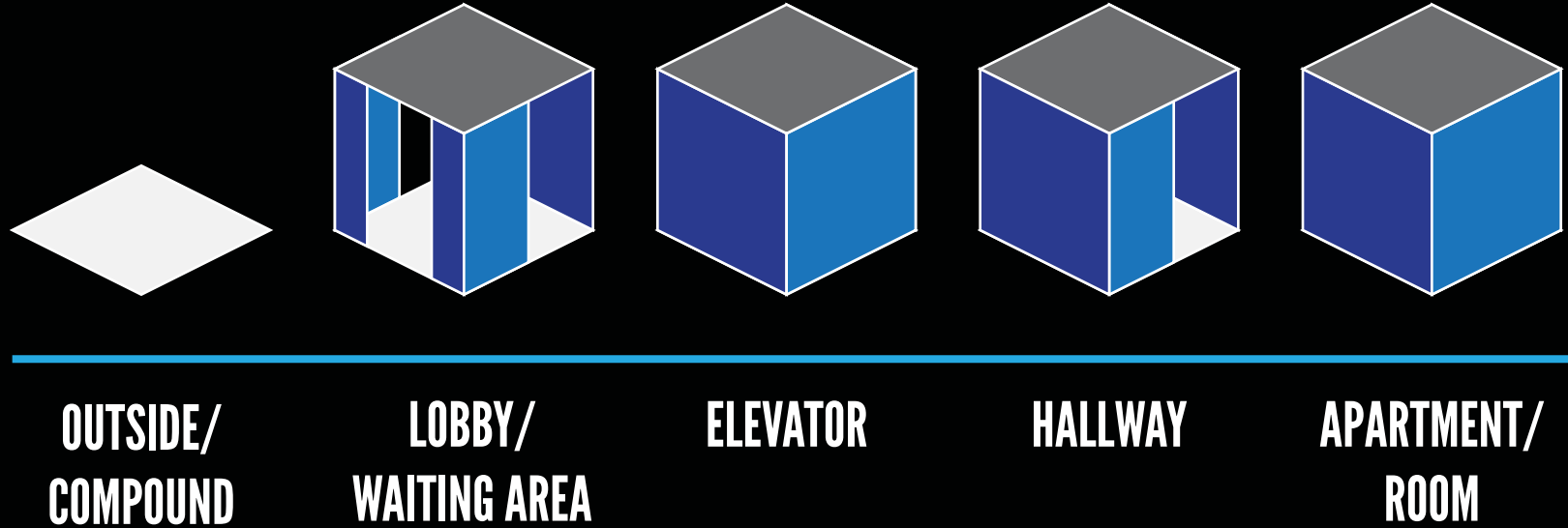
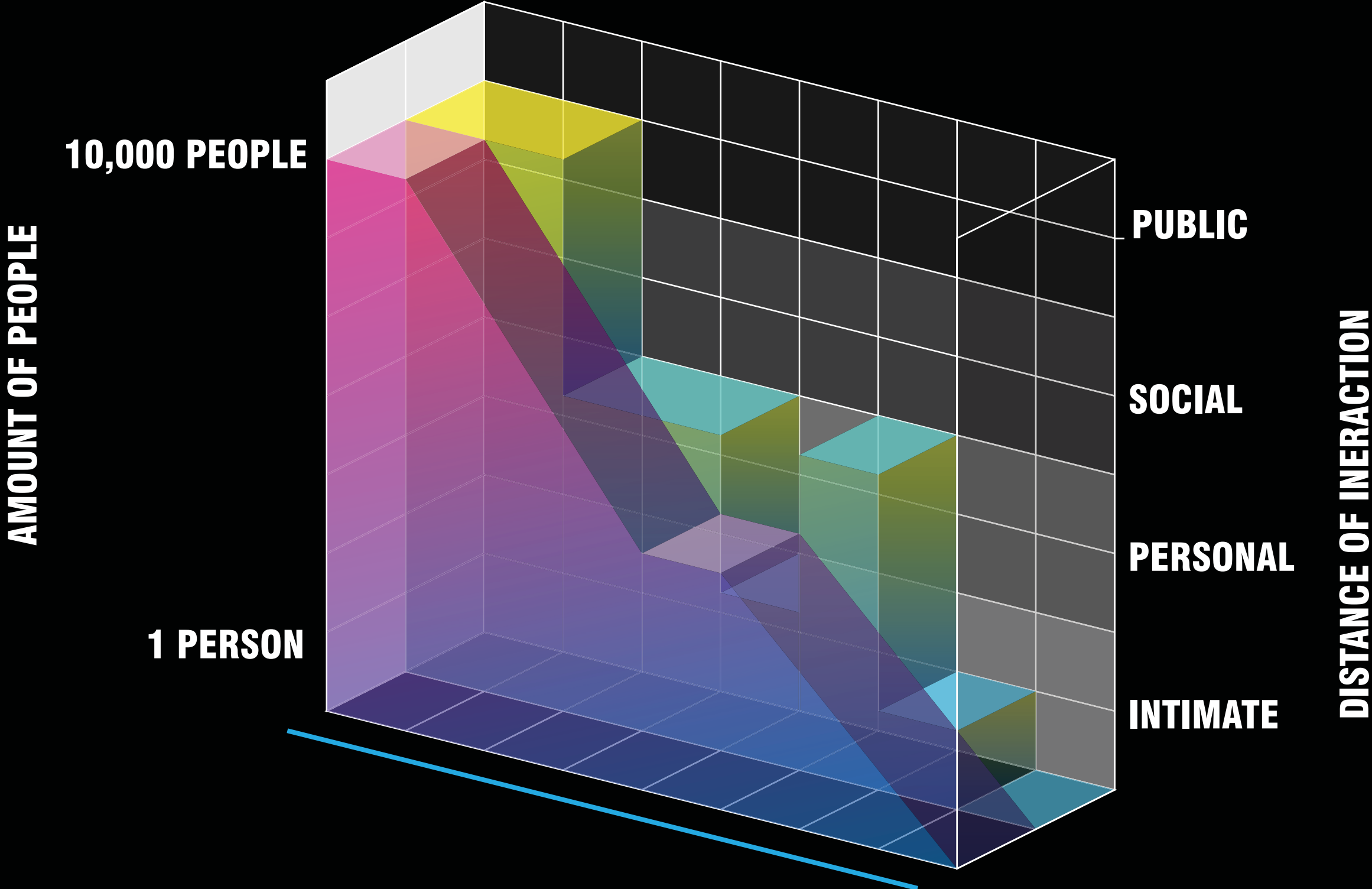
IN WHAT TYPE OF SPACE DOES THE SOCIAL INTERACTION TAKE PLACE?



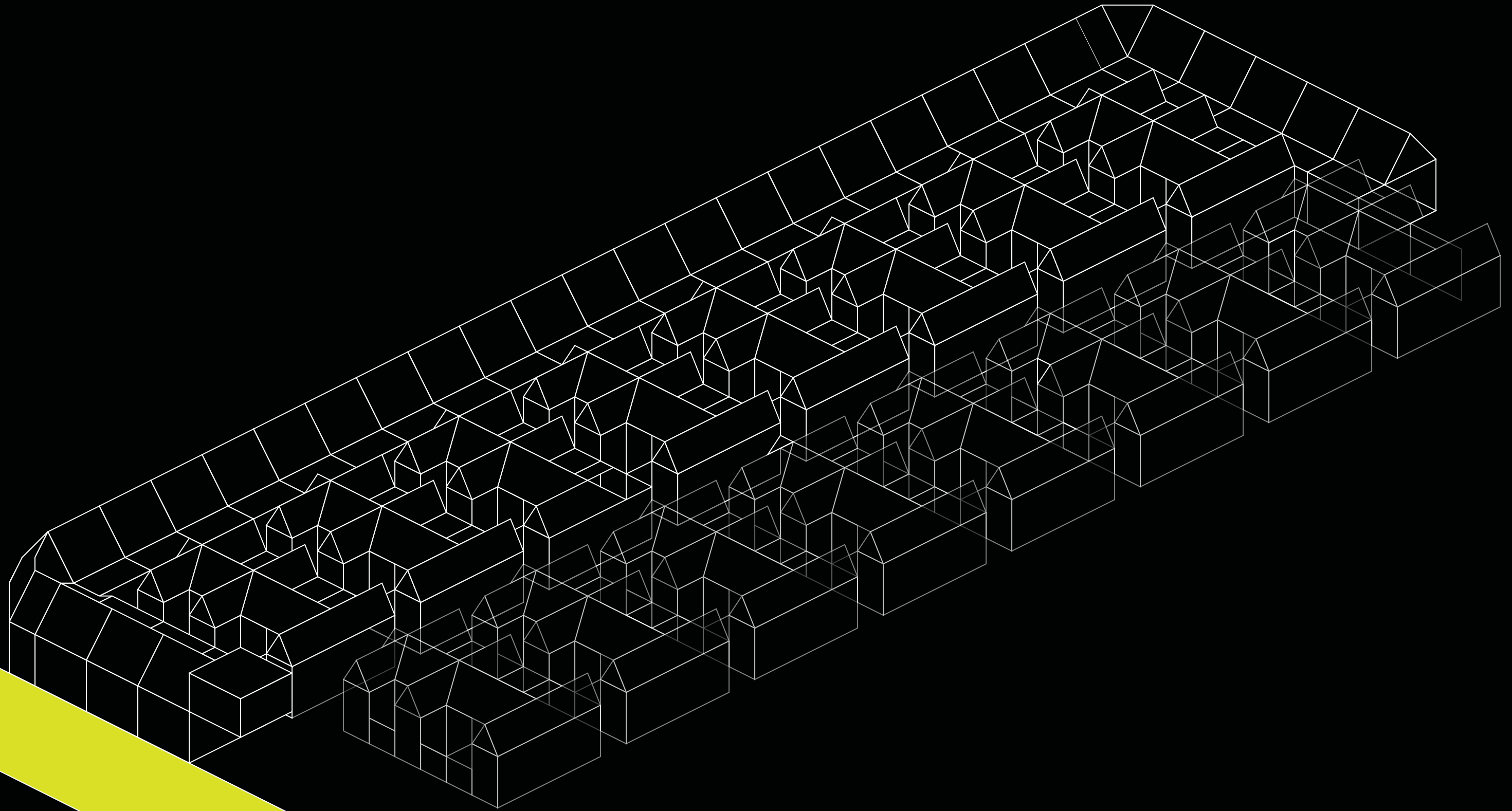
IN WHAT TYPE OF SPACE DOES THE SOCIAL INTERACTION TAKE PLACE?



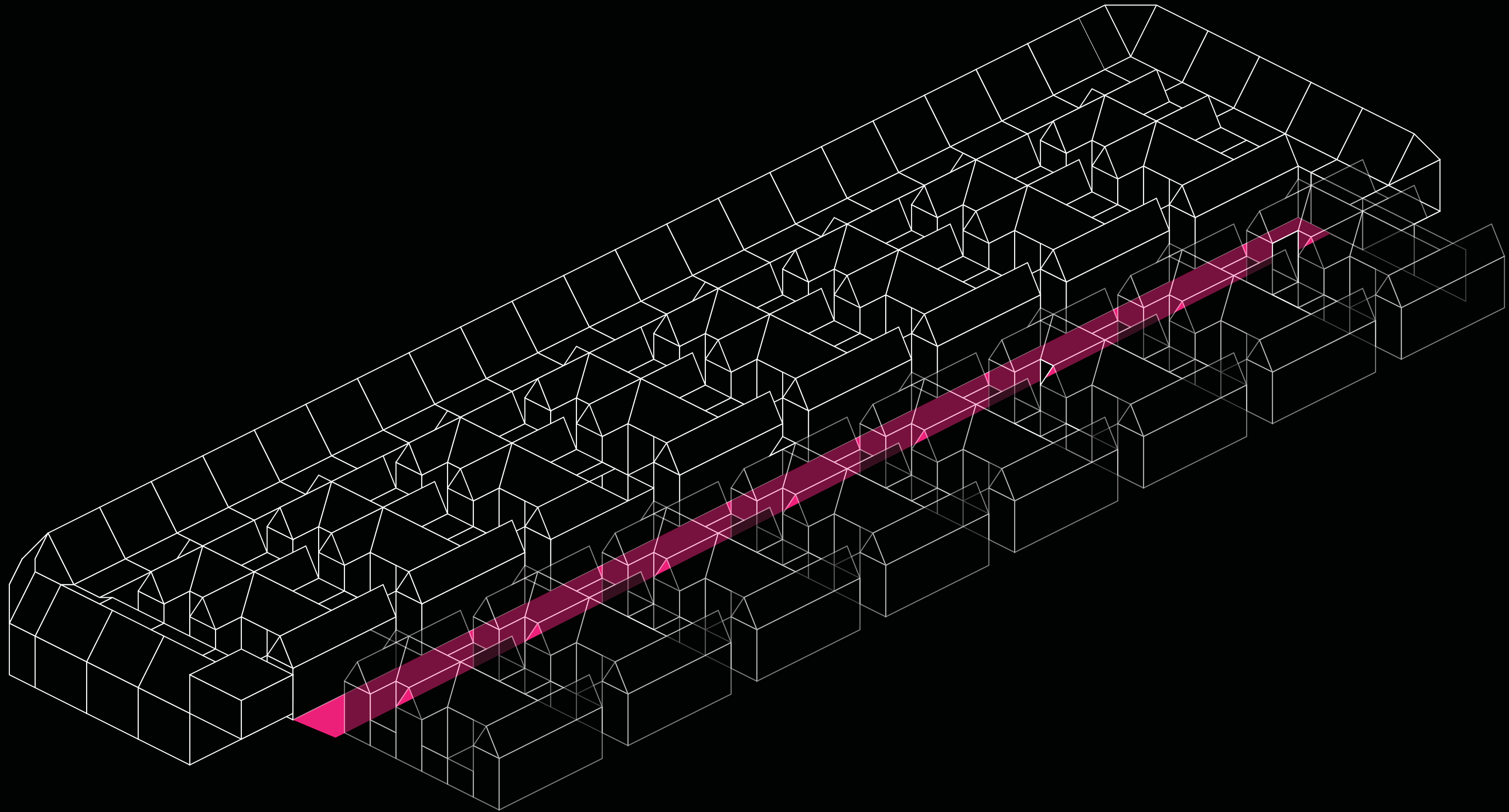
IN WHAT TYPE OF SPACE DOES THE SOCIAL INTERACTION TAKE PLACE?



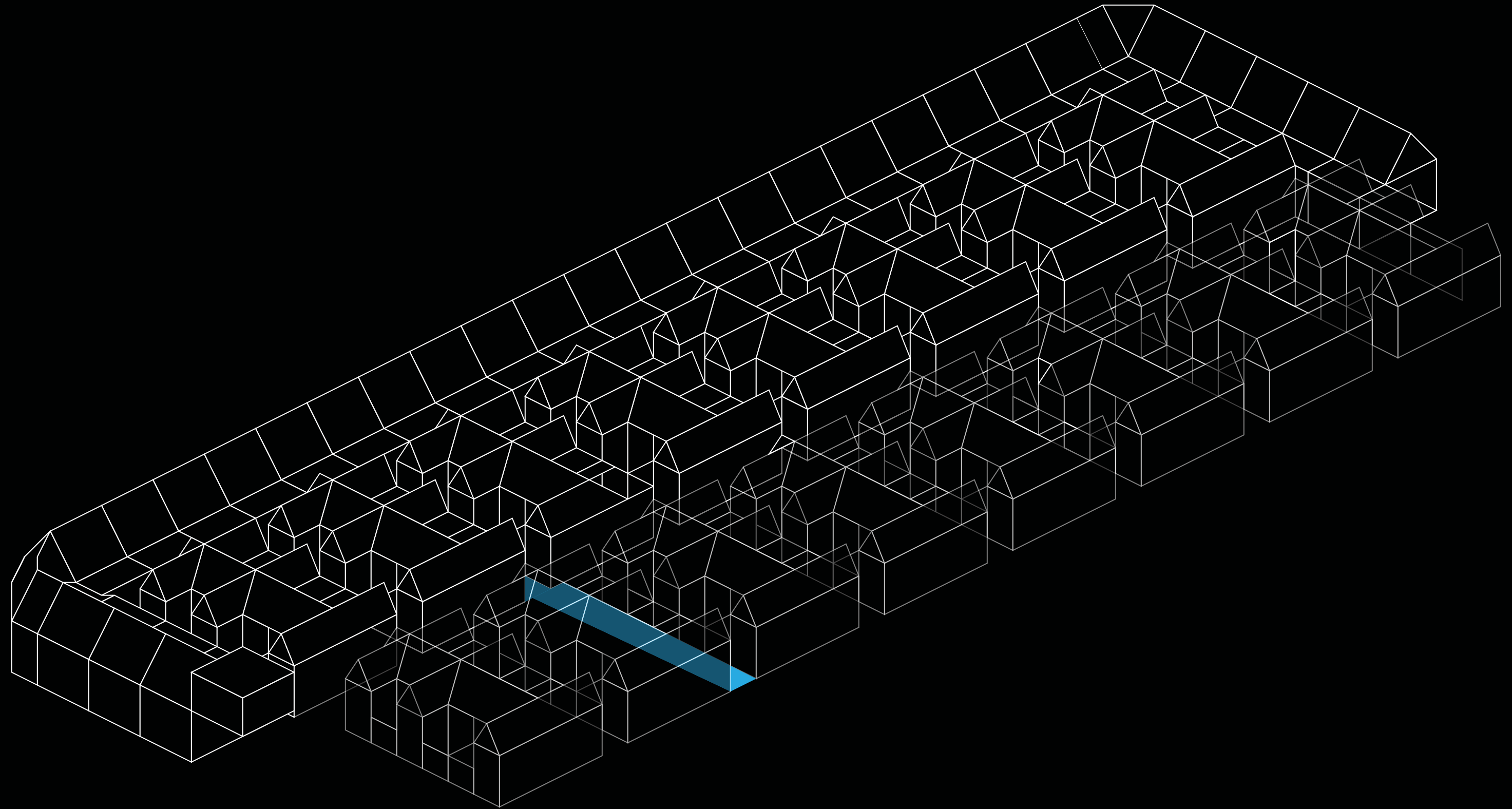
STREET- LÙ - 路 PUBLIC



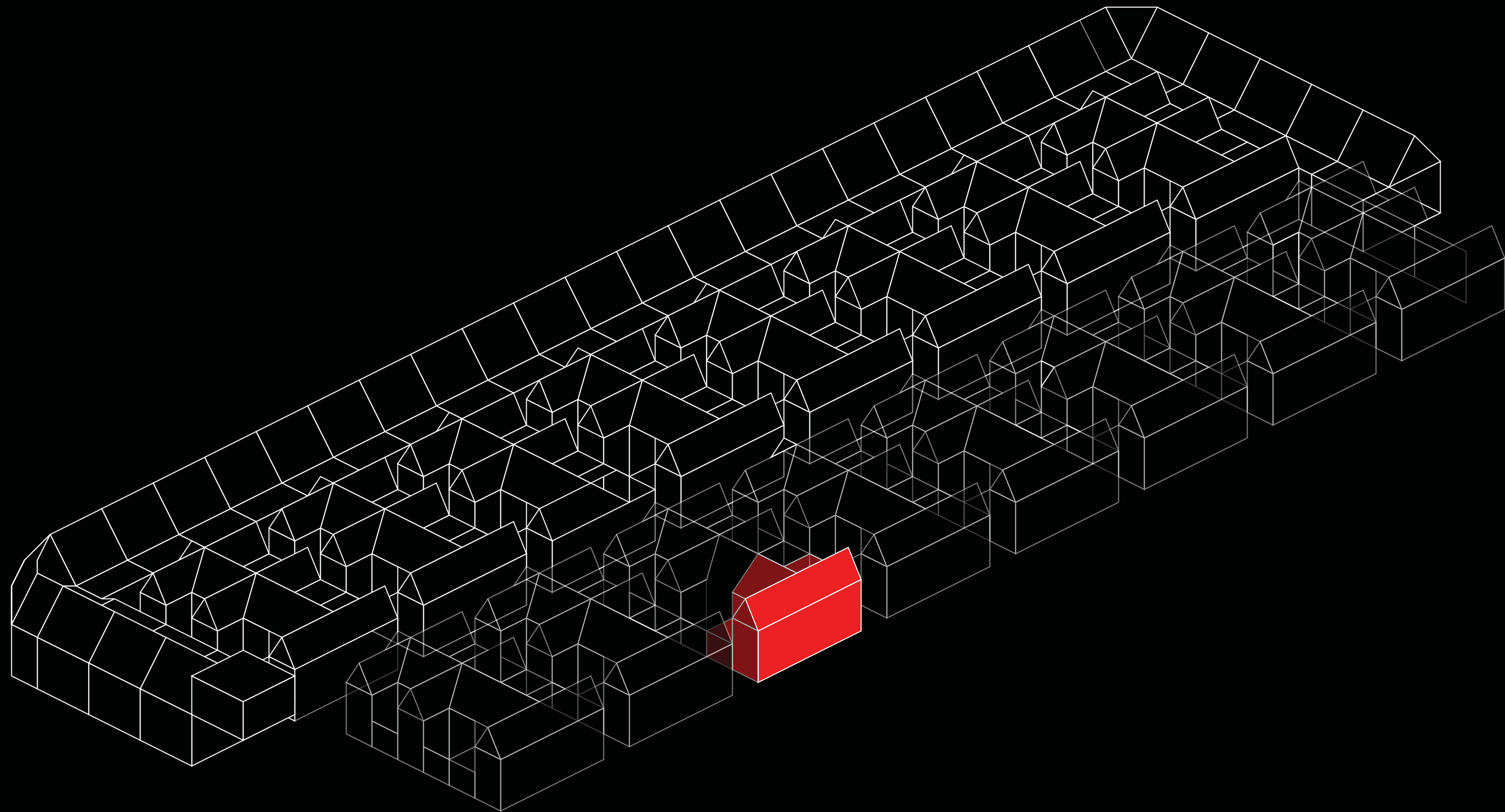
MAIN ALLEY - Lǐ - 里 SEMI-PUBLIC



SIDE ALLEY - LÒNGTÁNG - 弄堂
SEMI-PRIVATE

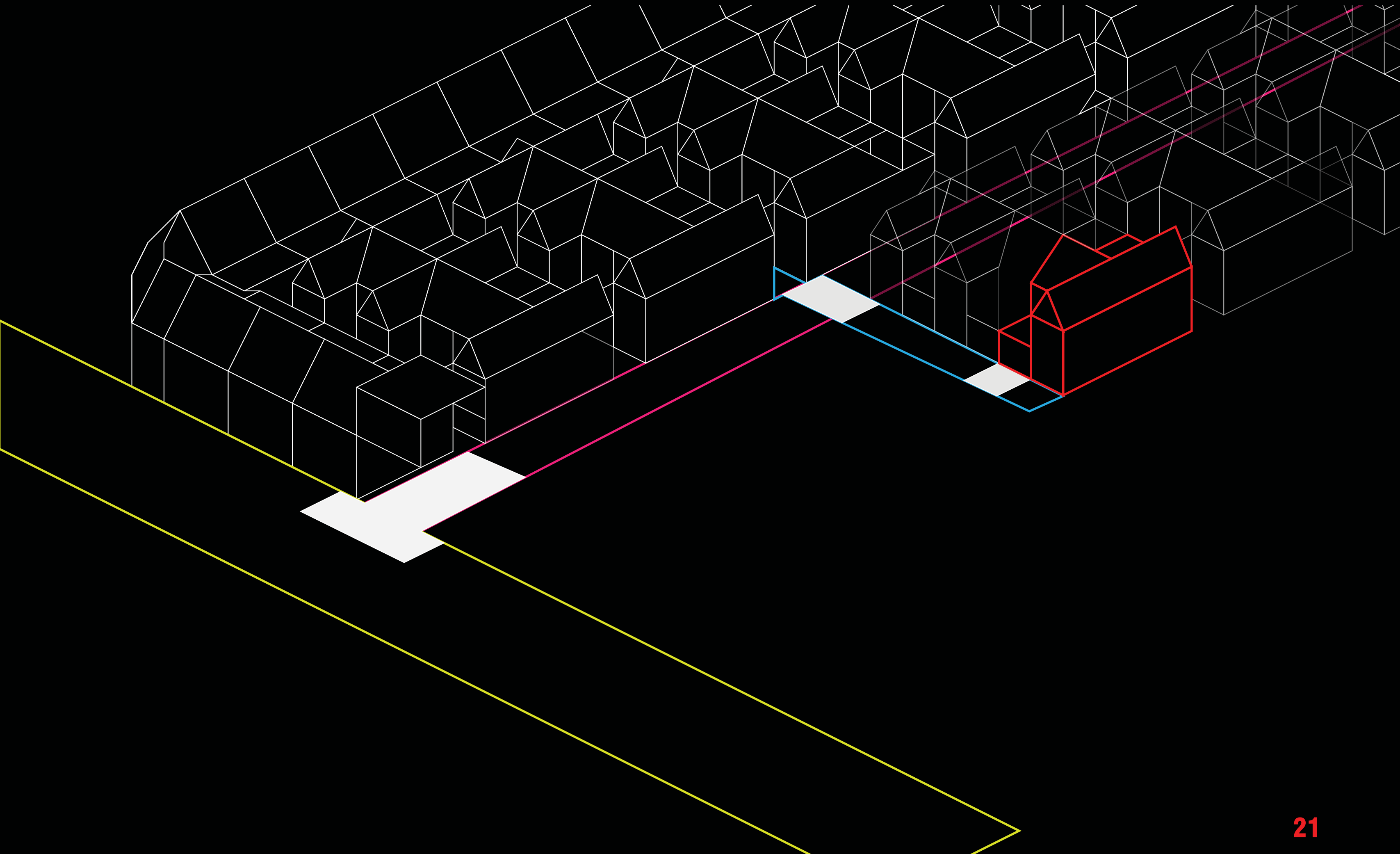


HOUSE - SHÍKÙMÉN - 石库门
PRIVATE



TRANSITION AREAS

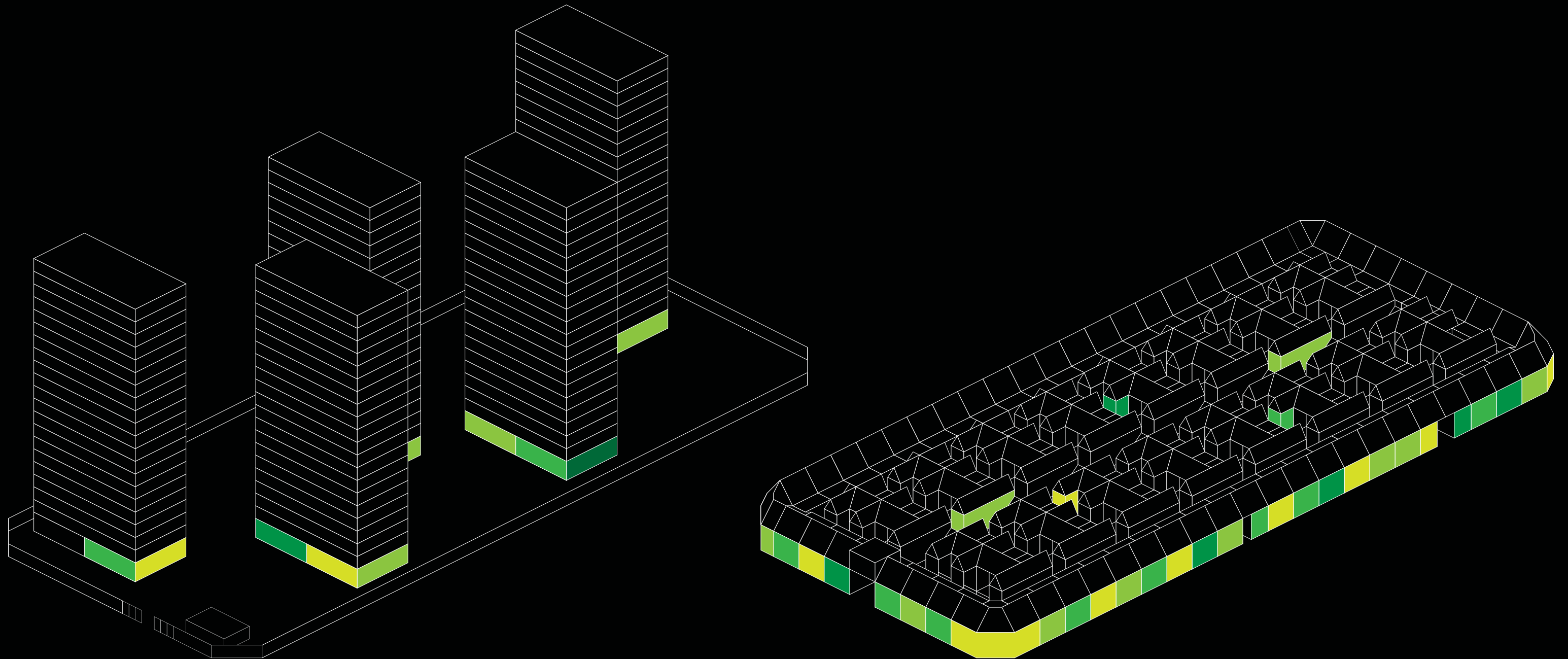
SOCIAL HOTSPOTS



FUNCTIONS WITHIN THE COMPOUND/NEIGHBORHOOD

RESIDENCES
SMALL SHOPS
FACILITIES FOR RESIDENTS

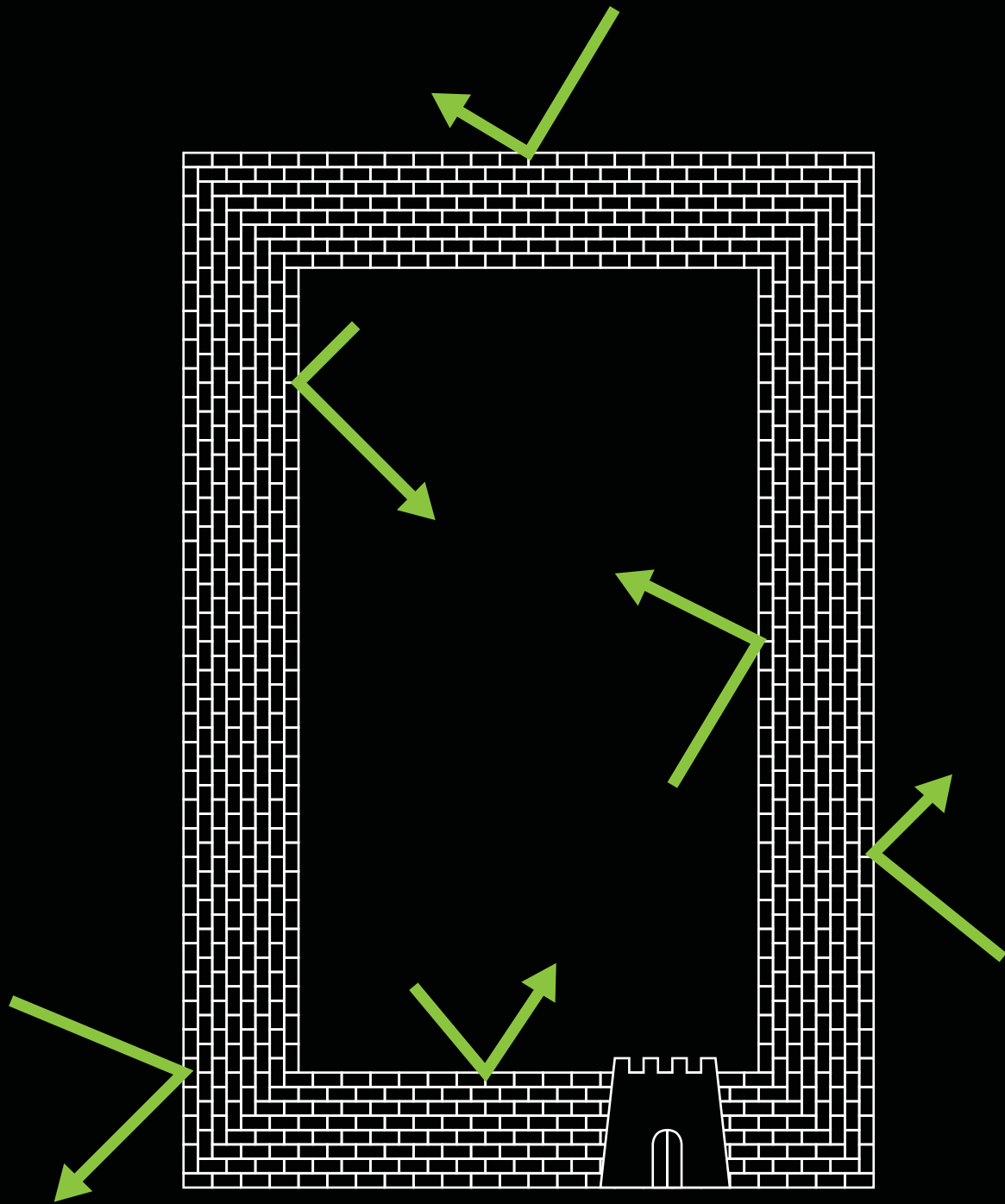
RESIDENCES
SHOP HOUSES
SMALL INDUSTRY
COMMUNAL FUNCTIONS



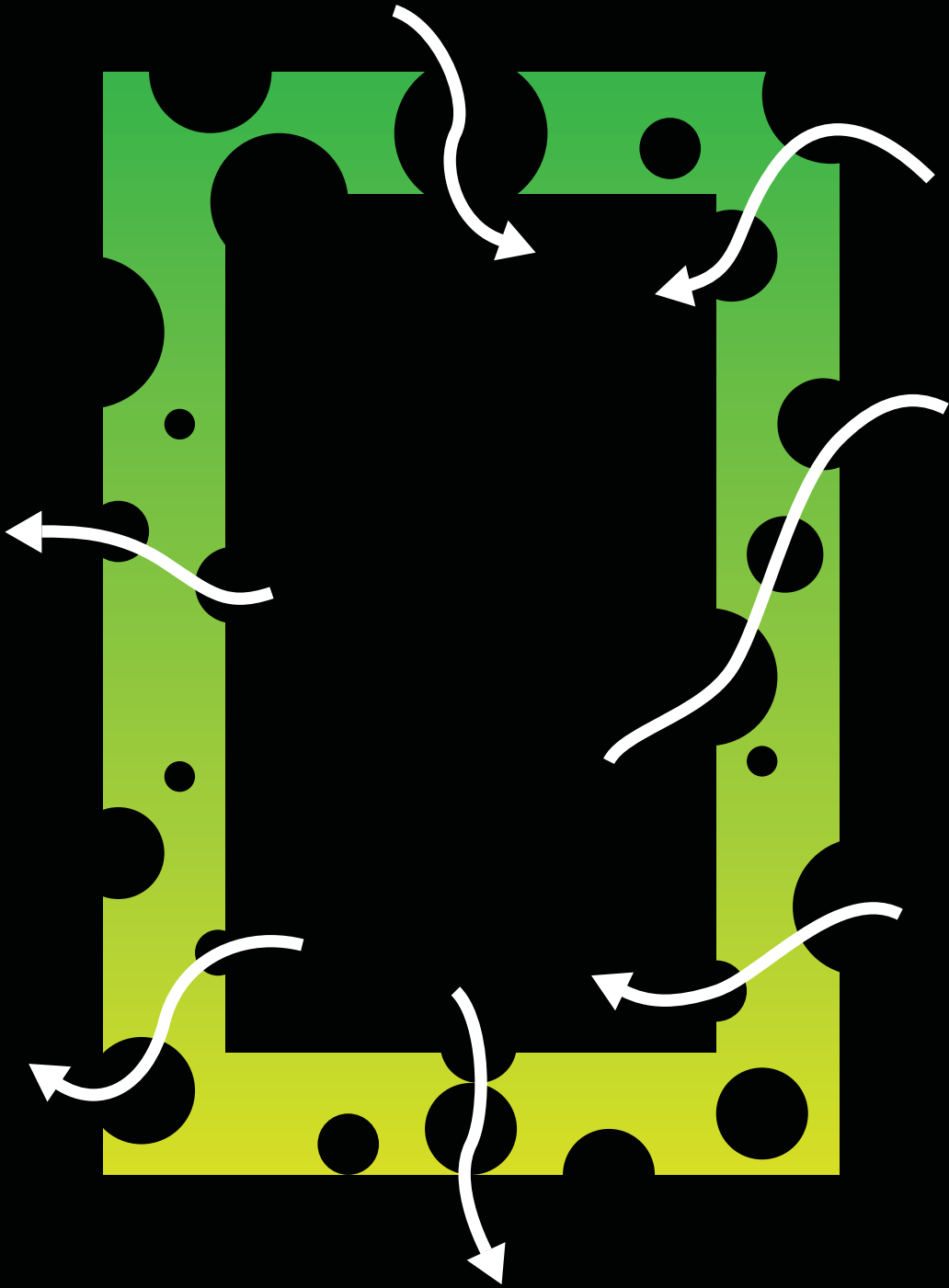


FUNCTIONS WITHIN THE COMPOUND/NEIGHBORHOOD

**CLOSED OFF FROM THE URBAN FABRIC
ONLY ACCESSIBLE FOR RESIDENTS**



**POROUS ENTITY
ACCESIBLE FOR EVERYBODY**



拆那

CHINA

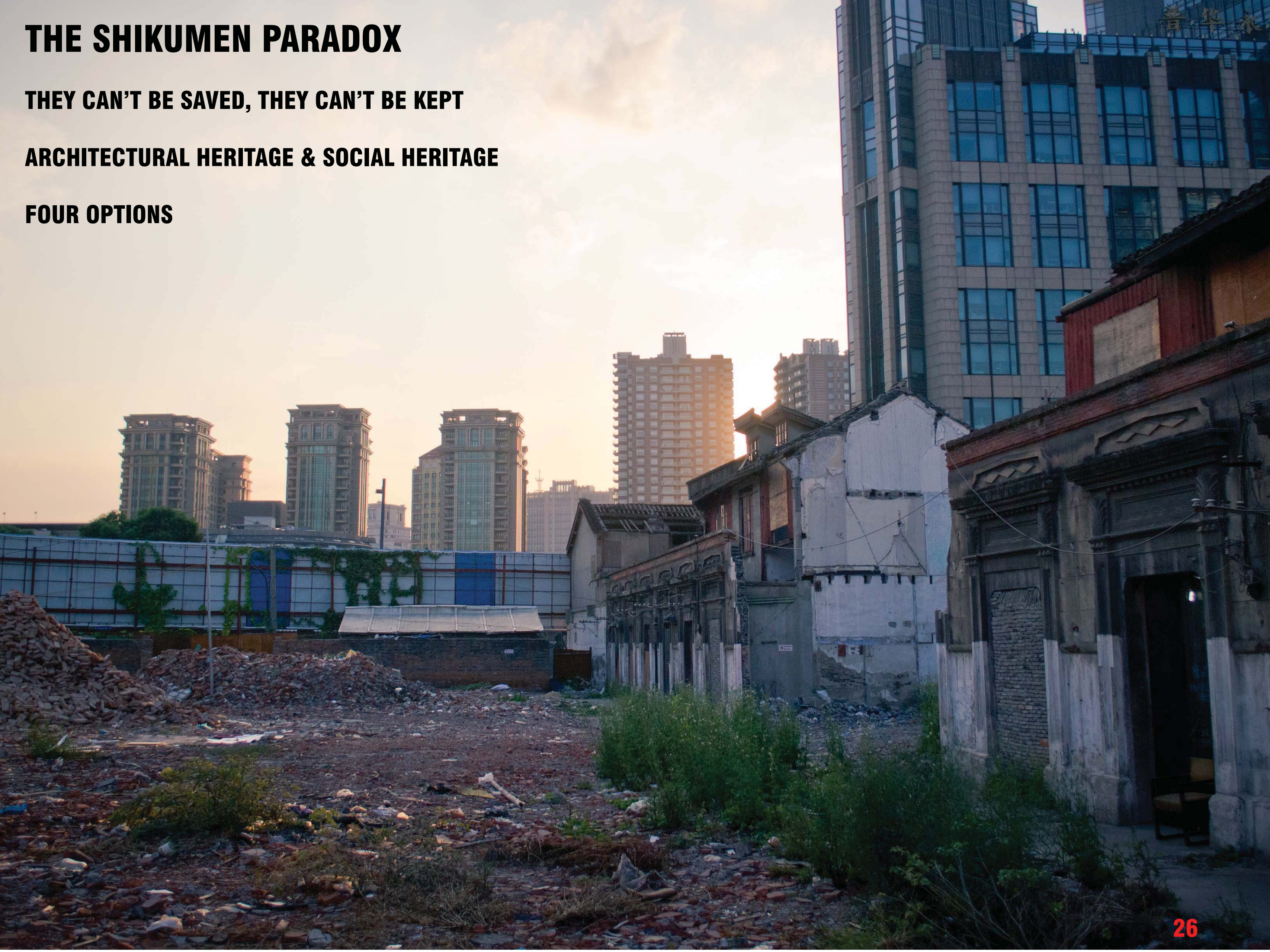


THE SHIKUMEN PARADOX

THEY CAN'T BE SAVED, THEY CAN'T BE KEPT

ARCHITECTURAL HERITAGE & SOCIAL HERITAGE

FOUR OPTIONS



1. DESTROY THE SHIKUMEN

LOSE THE BUILDINGS AS WELL AS THE SOCIAL STRUCTURE

MOST COMMON OPTION, AS IT IS HIGHLY PROFITABLE



2. DESTROY AND REBUILD

KEEP THE FAKE BUILDINGS, LOSE THE SOCIAL STRUCTURE

POPULAR HOTSPOT XINTIANDI USES THIS METHOD, AS WILL THE PROJECT LOCATION



3. RENOVATE

KEEP THE BUILDINGS, GENTRIFICATION WILL PUSH THE ORIGINAL RESIDENTS OUT

JIANYE LI, PORTMAN HOUSE, TRIED AND FAILED



4. DO NOTHING

IT WILL KEEP THE ORIGINAL RESIDENTS AND BUILDINGS, BUT WILL EVENTUALLY FALL APART AND LOSE EVERYTHING



SHANGHAI

HIGH RISE, SHIKUMEN & GREEN



PROJECT LOCATION

SHENYU LI, CHENGJI LI, YANJI LI



GOALS

**MAINTAIN & RENOVATE SHIKUMEN
KEEP THE SOCIAL STRUCTURE & ORIGINAL RESIDENTS**





3 AREA'S

SHIKUMEN, PUBLIC AREA (SHOPS & PARK), HIGH-RISE TOWER

RENOVATED SHIKUMEN INTENDED FOR NEW UPPER CLASS

HIGH-RISE TOWER FOR FORMER SHIKUMEN RESIDENTS

PUBLIC AREA ACCESSIBLE TO ALL

ORDER:

- CONSTRUCT HIGH-RISE TOWER**
- RELOCATED SHIKUMEN RESIDENTS TO TOWER**
- RENOVATE SHIKUMEN**
- SELL SHIKUMEN TO NEW CHINESE UPPER CLASS**

Client: OCT

Goals;

Create profit by redeveloping the cultural and historical valuable area on the bank of the Suzhou Creek

Requirements;

Redesign the project location within the context of the existing masterplan

500-600 Apartments

40-60 sqm per apartment

20% commercial functions



End User; Current Shikumen Residents

Description;

Working class, low budget, aging population

Value their social interaction, long time residents

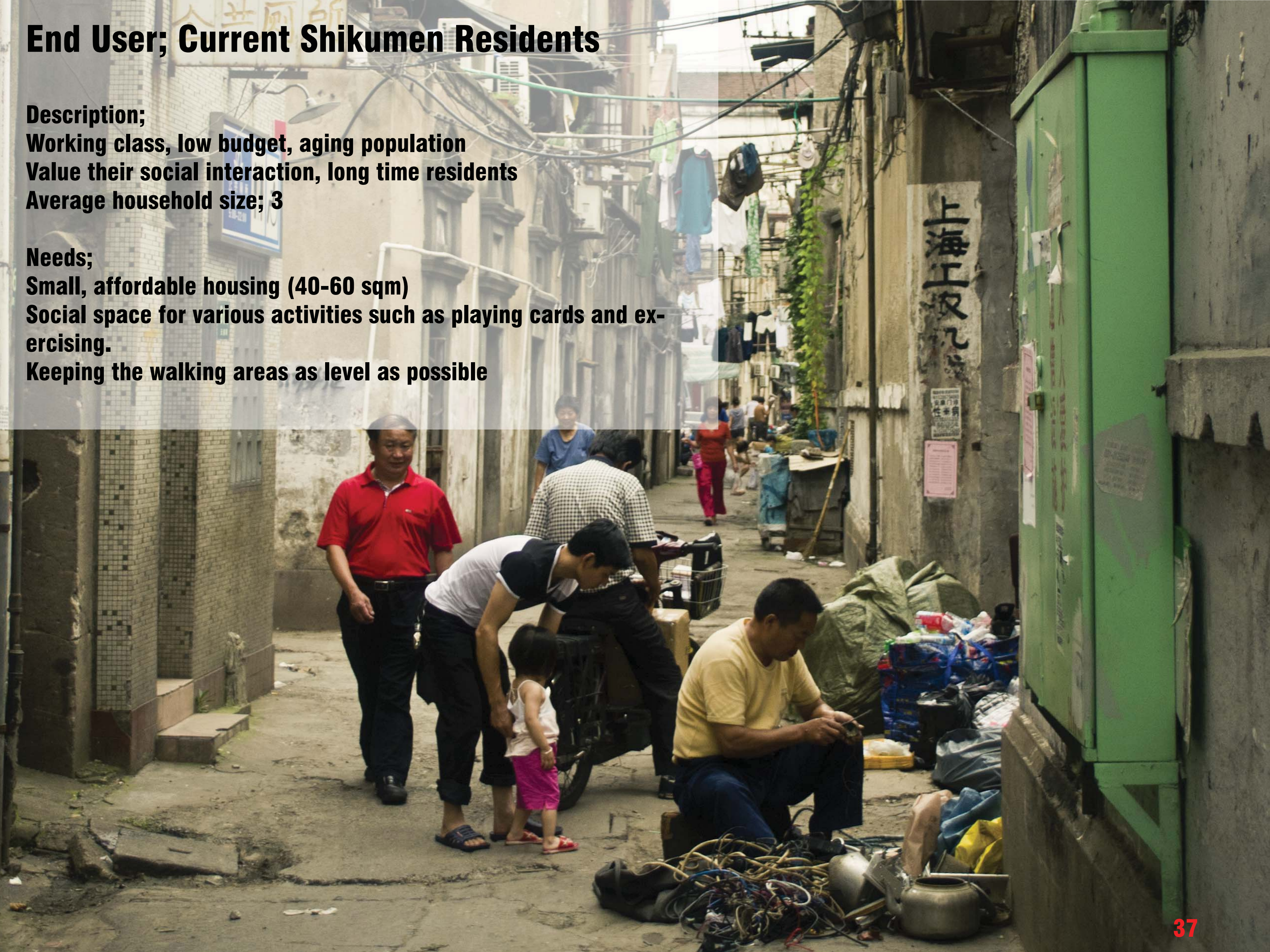
Average household size; 3

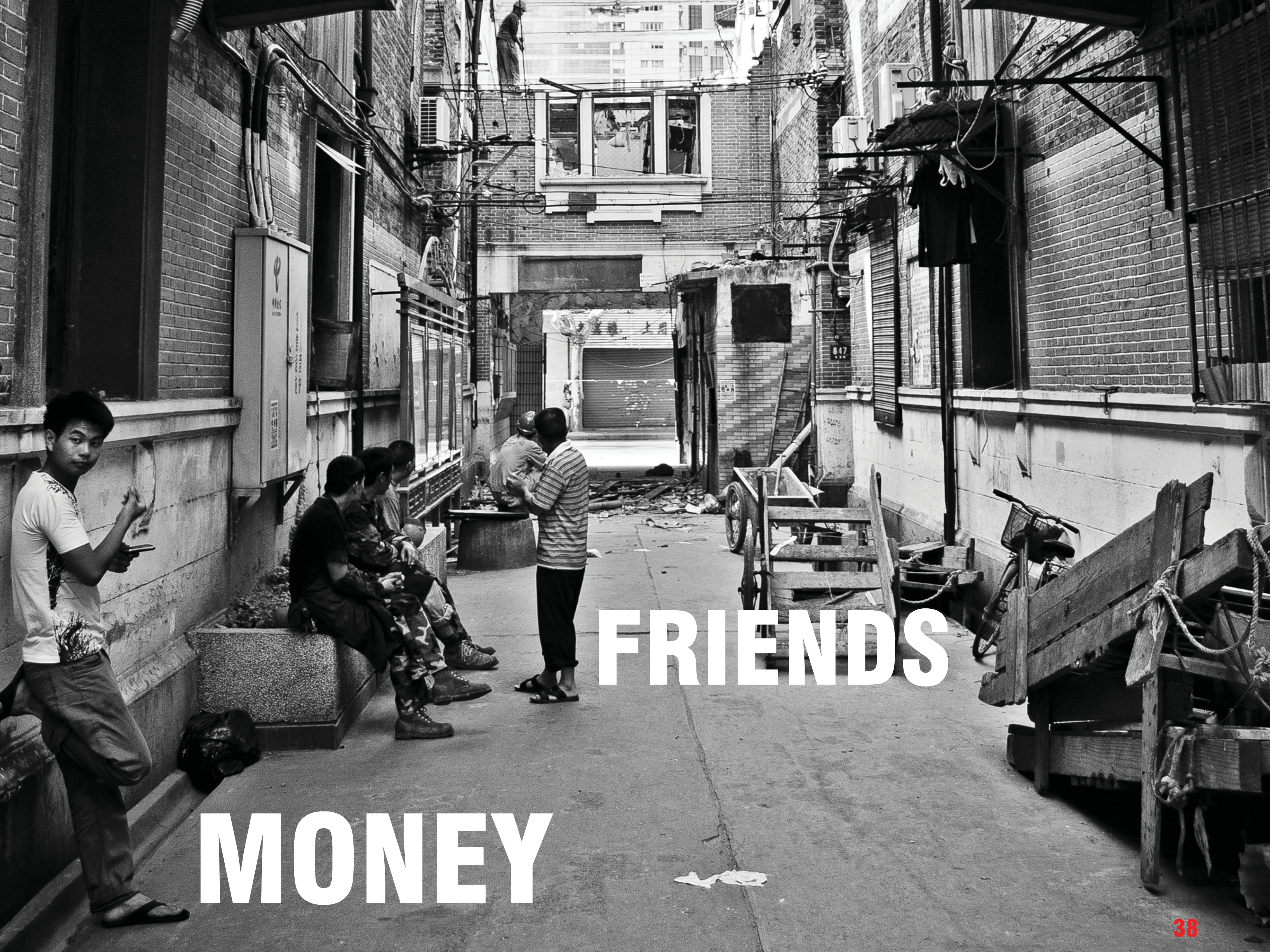
Needs;

Small, affordable housing (40-60 sqm)

Social space for various activities such as playing cards and exercising.

Keeping the walking areas as level as possible





FRIENDS

MONEY

SHENYU LI TO SONGJIANG

RESIDENTS RELOCATION



MATERIAL PUBLIC AREA

WOODEN FACADE PANELS AND PLANTS



MATERIAL SHIKUMEN

RENOVATE WITH THE EXISTING TRADITIONAL GREY AND ORANGE BRICK

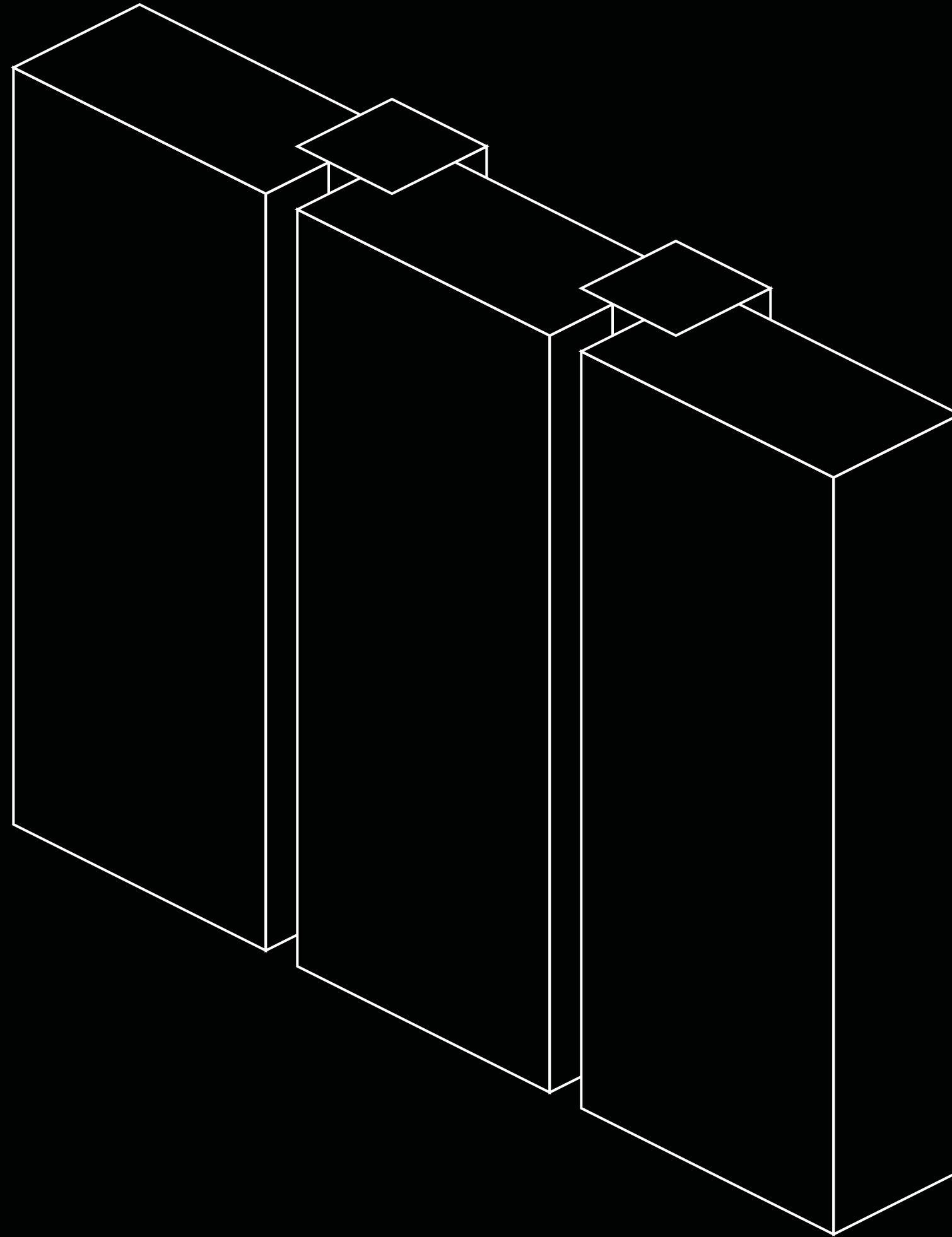


MATERIAL TOWER

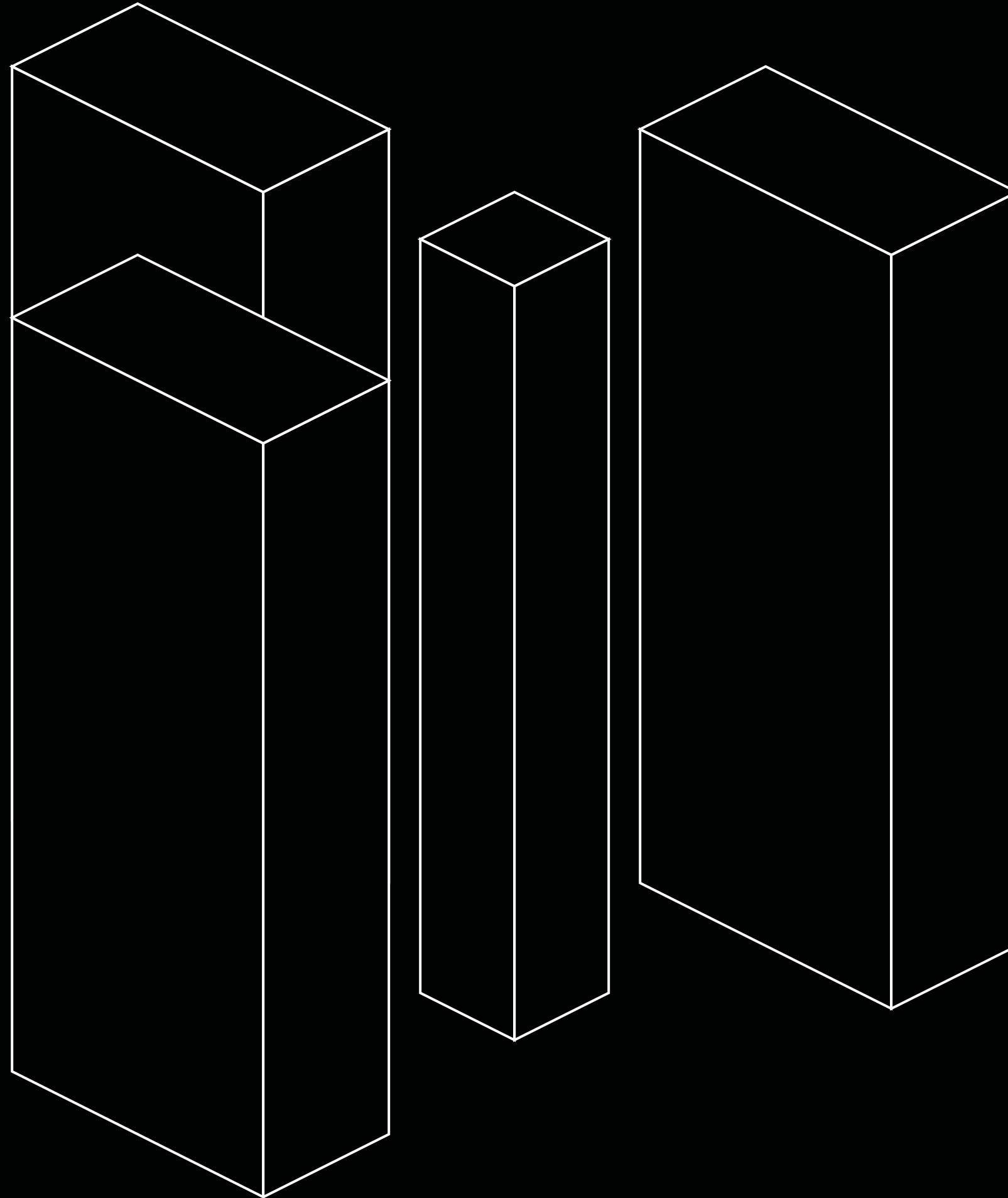
WHITE CONCRETE
GLASS



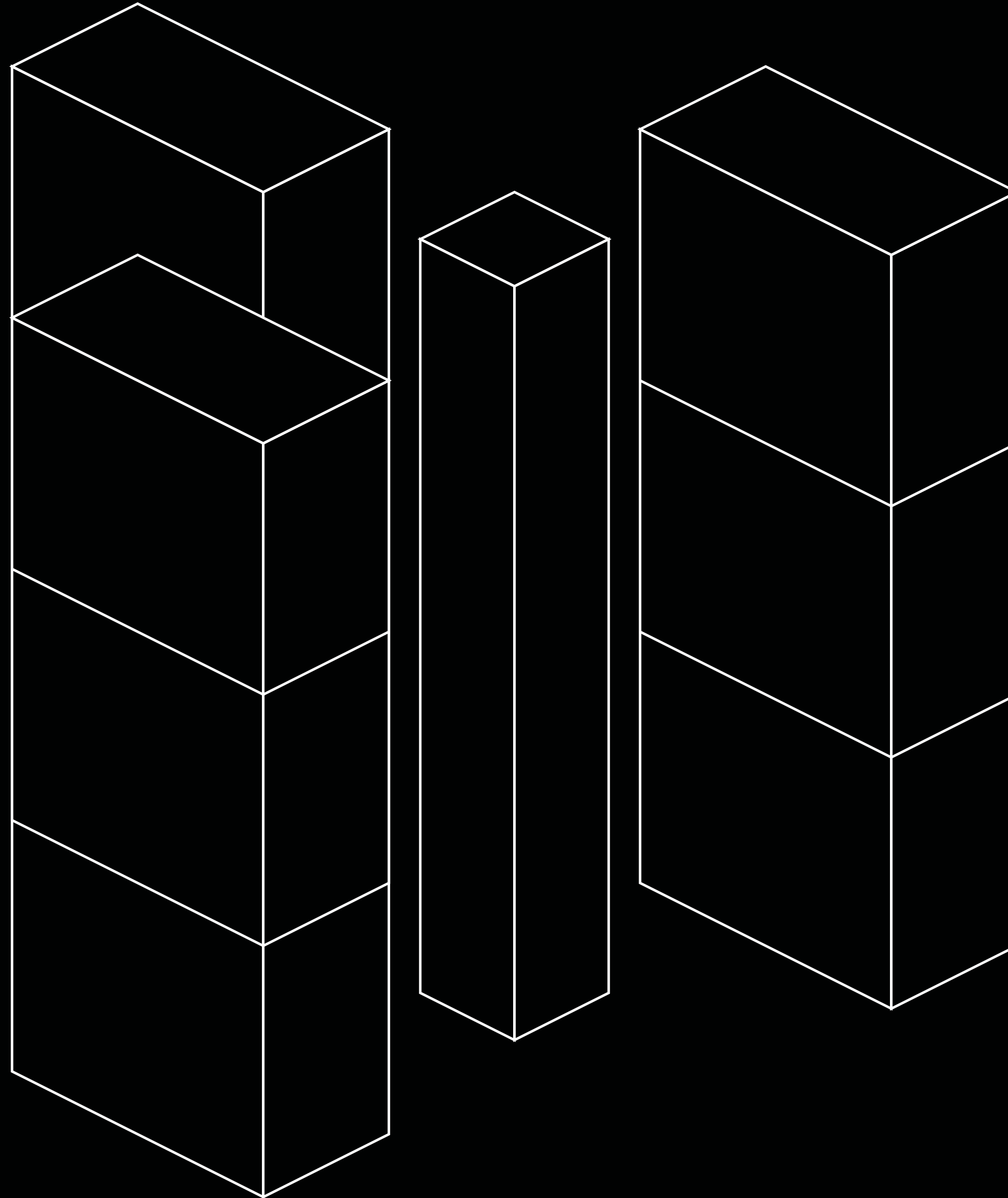
STANDARD HIGH RISE SLAB



SEPARATE SLABS AROUND CENTRAL CORE



DIVIDE HORIZONTALLY INTO 3 LAYERS



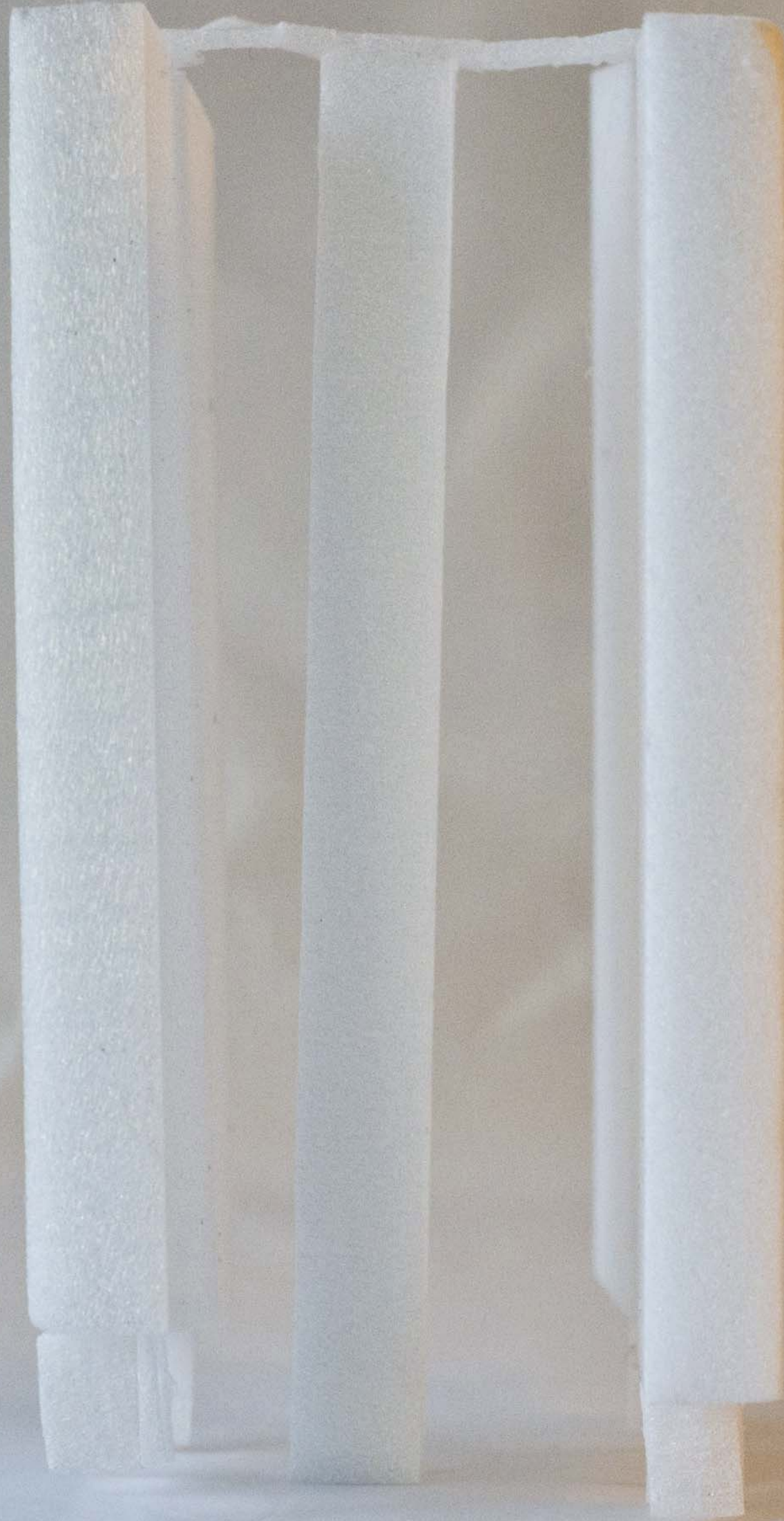
MAKE THE RELATIONSHIP HORIZONTAL INSTEAD OF VERTICAL



EARLY MODEL

3 SLABS

OPPOSITE OF EACH OTHER
CENTRAL CORE

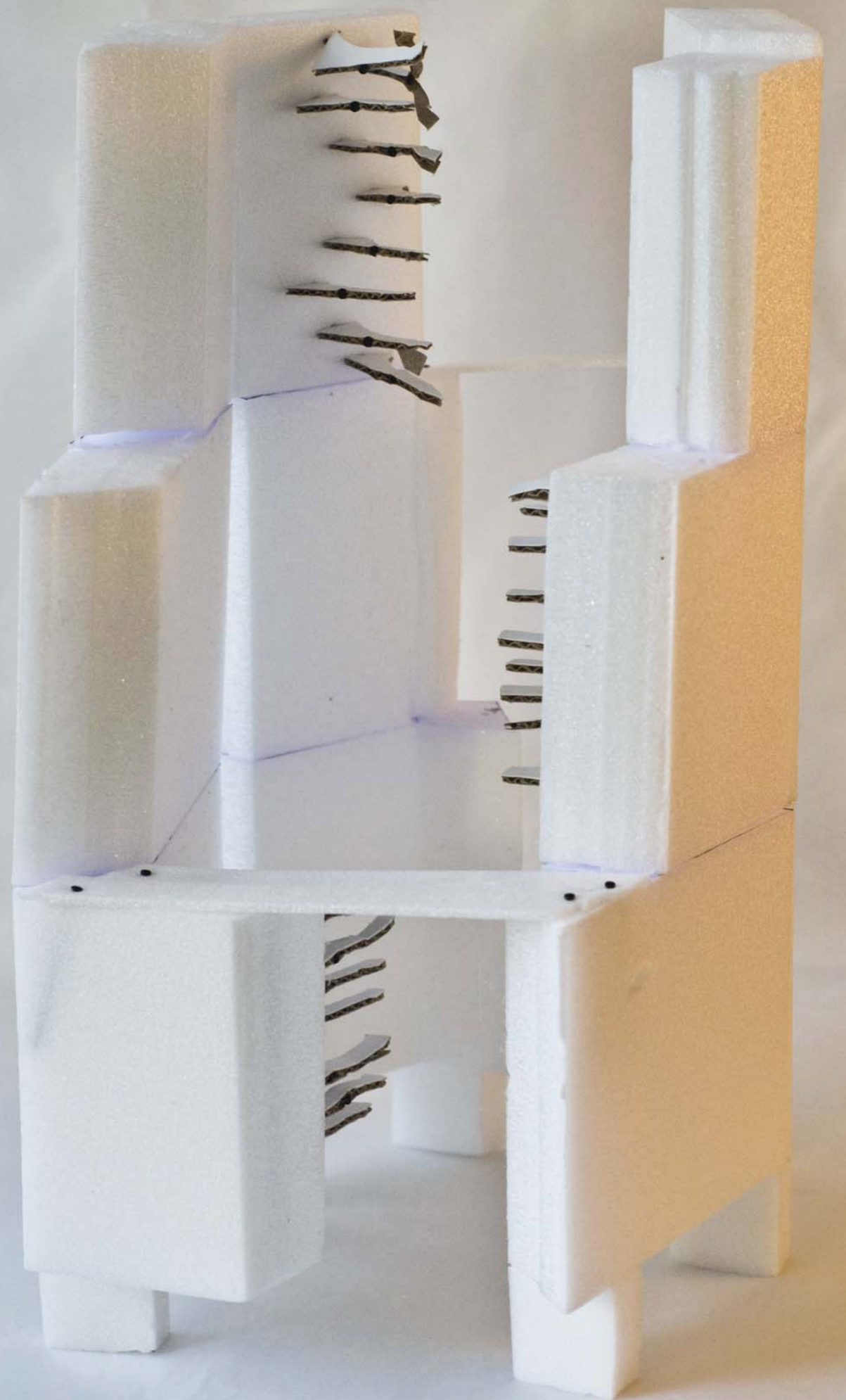
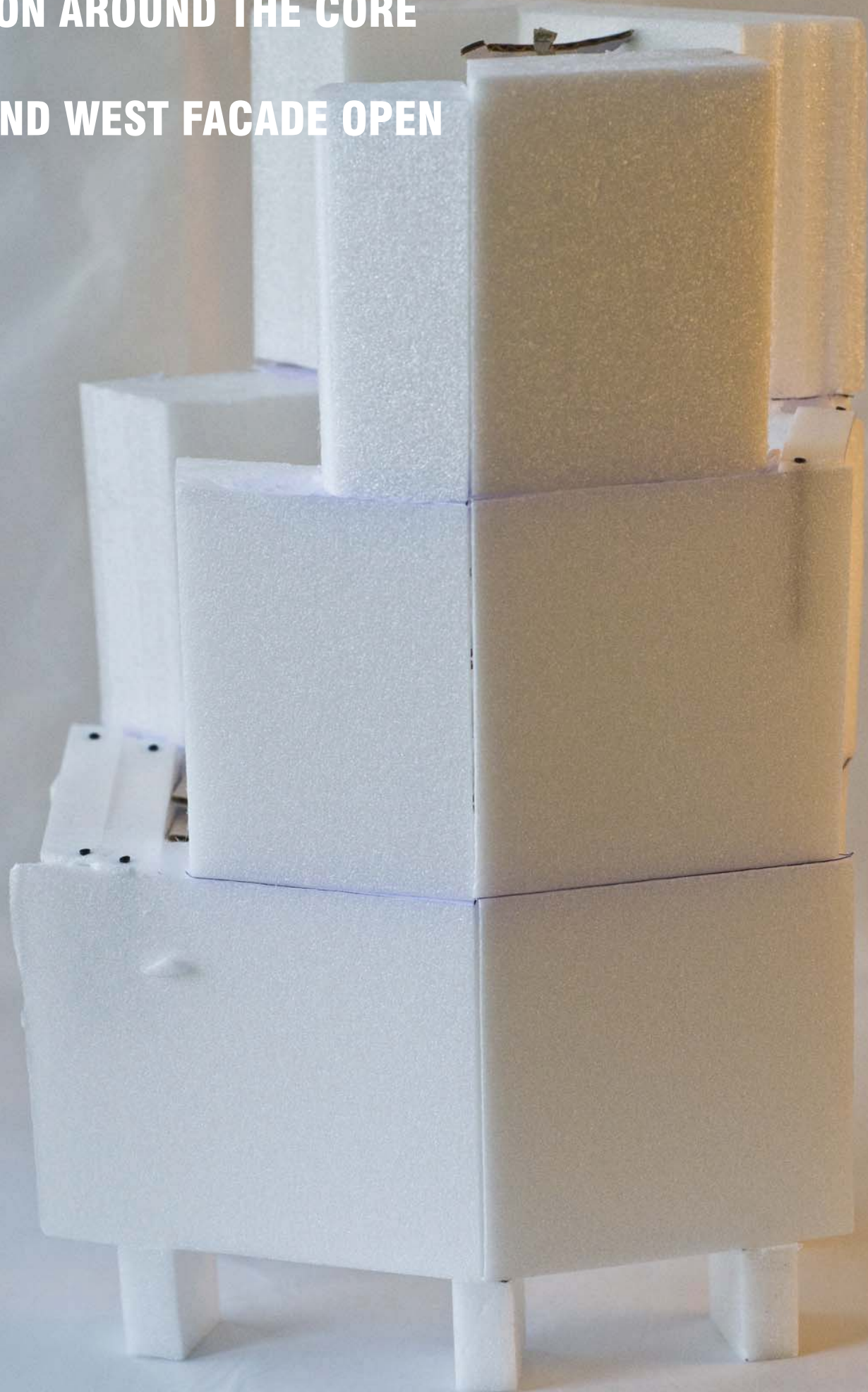


P3 MODEL

2 SLABS

HEXAGON AROUND THE CORE

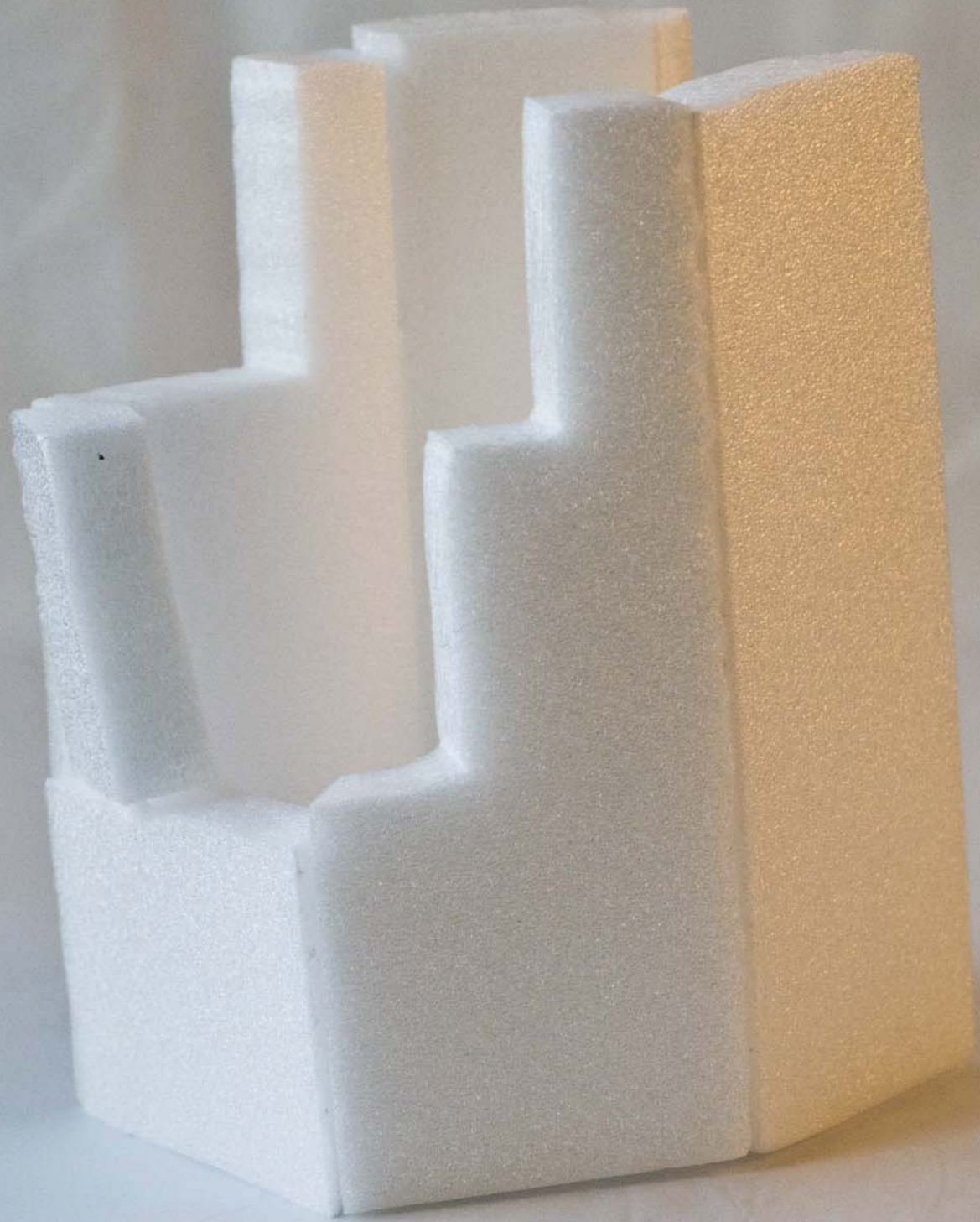
EAST AND WEST FACADE OPEN



FORM STUDIES

TWO BUILDINGS BECOME ONE

SLABS GROWN TOGETHER



FORM STUDIES

IT SEEMS THE SUPERFORM IS CREATED BY CUTTING AWAY PARTS OF THE HEXAGON

IN THE PROCESS, IT WAS CREATED BY ADDITION TO THE SLABS



DESIGN APPROACH

CONSTRUCTED AROUND A SERIES OF SCALE MODELS BASED ON THE DISTANCES AND INTERACTION FOUND IN THE SHIKUMEN

WORKING FROM OUTSIDE IN; THE ROUTE FROM PUBLIC TO PRIVATE



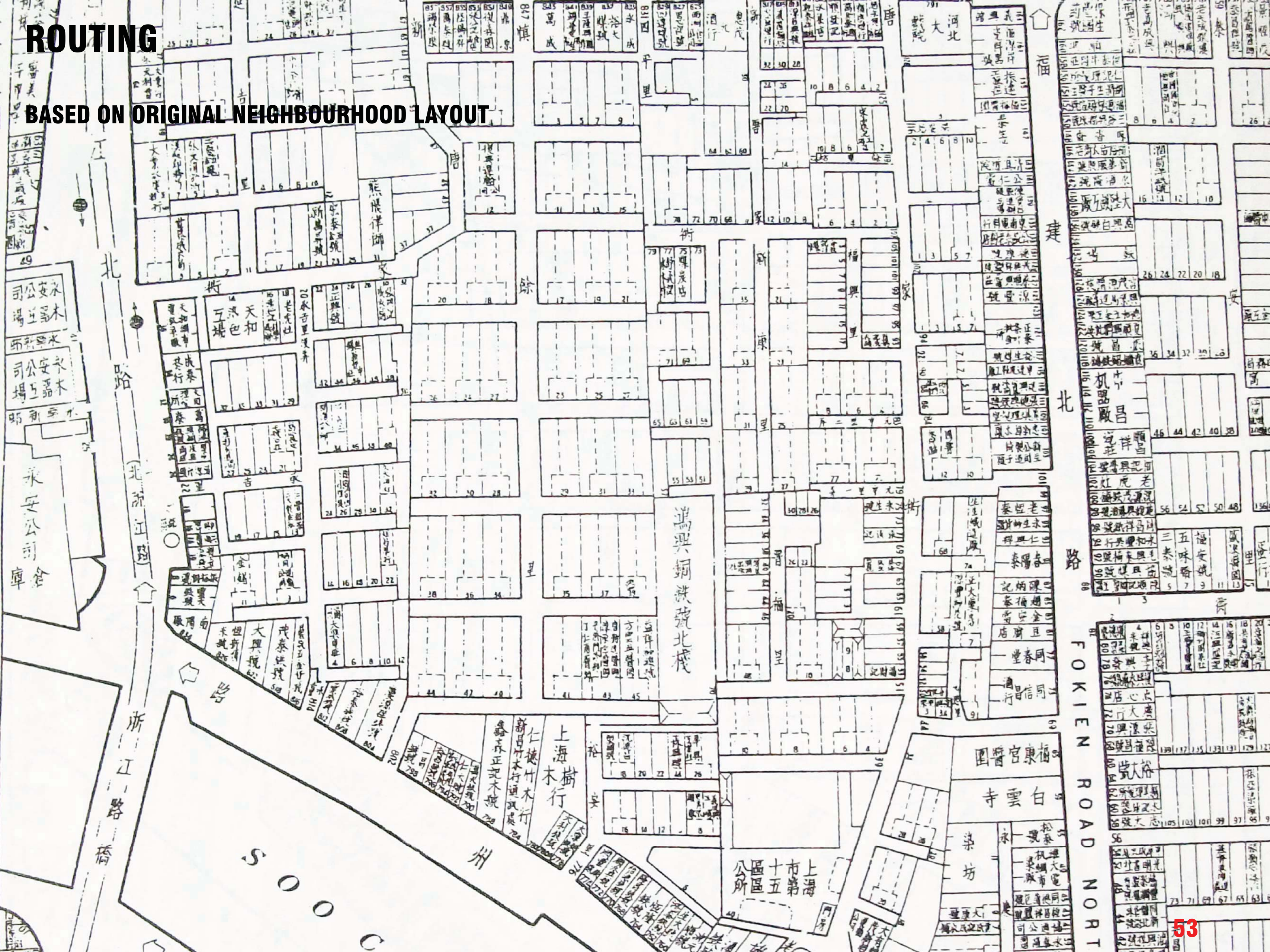
DESIGN

YÙJING GONGYÙ, 玉井公寓
JADE WELL APARTMENTS



ROUTING

BASED ON ORIGINAL NEIGHBOURHOOD LAYOUT



GROUND FLOOR

3 LEVELS; PATHS, GREEN, SOCIAL SPACE

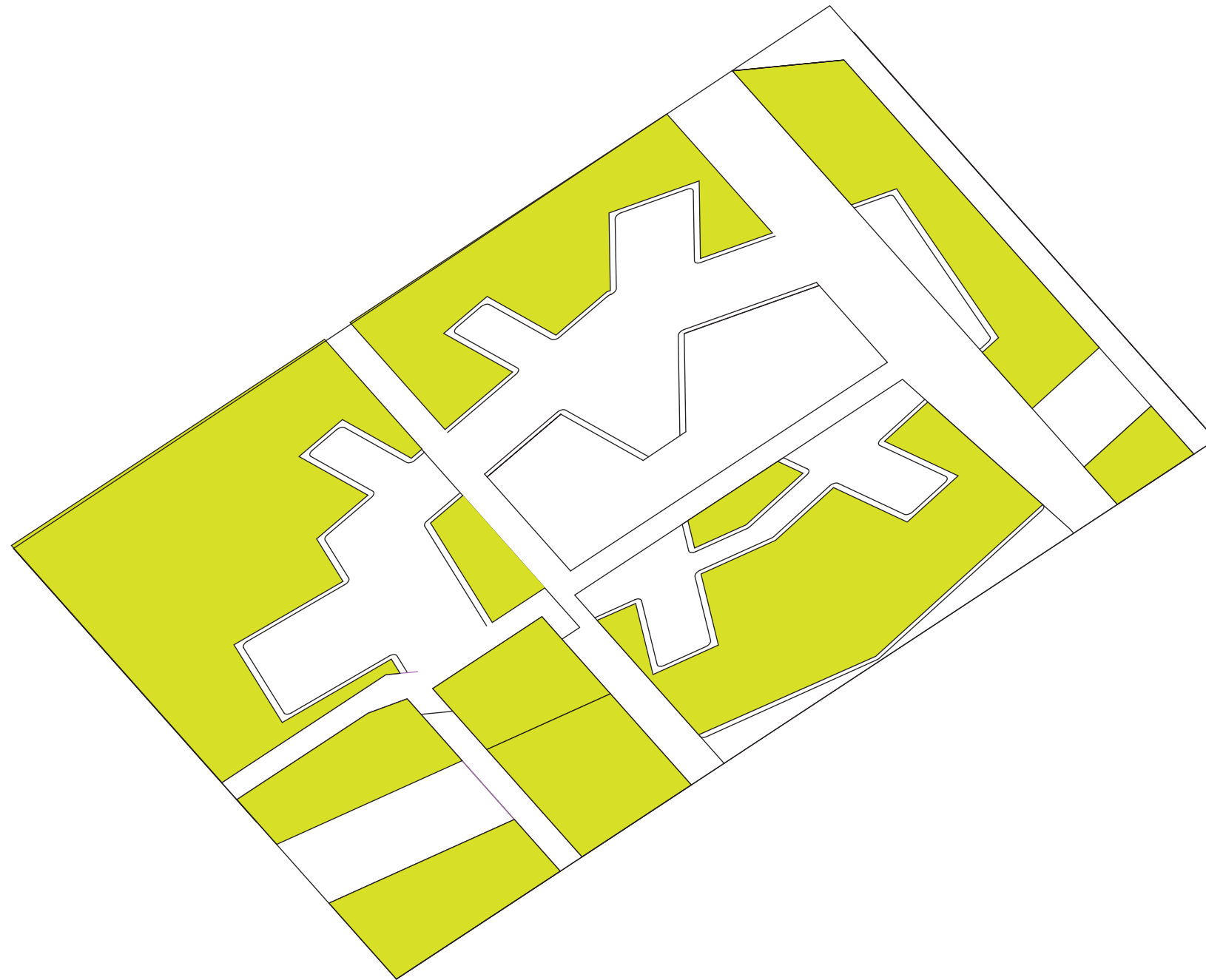
-1 SOCIAL SPACE
0 PATHS
+1 GREEN AREAS



GROUND FLOOR

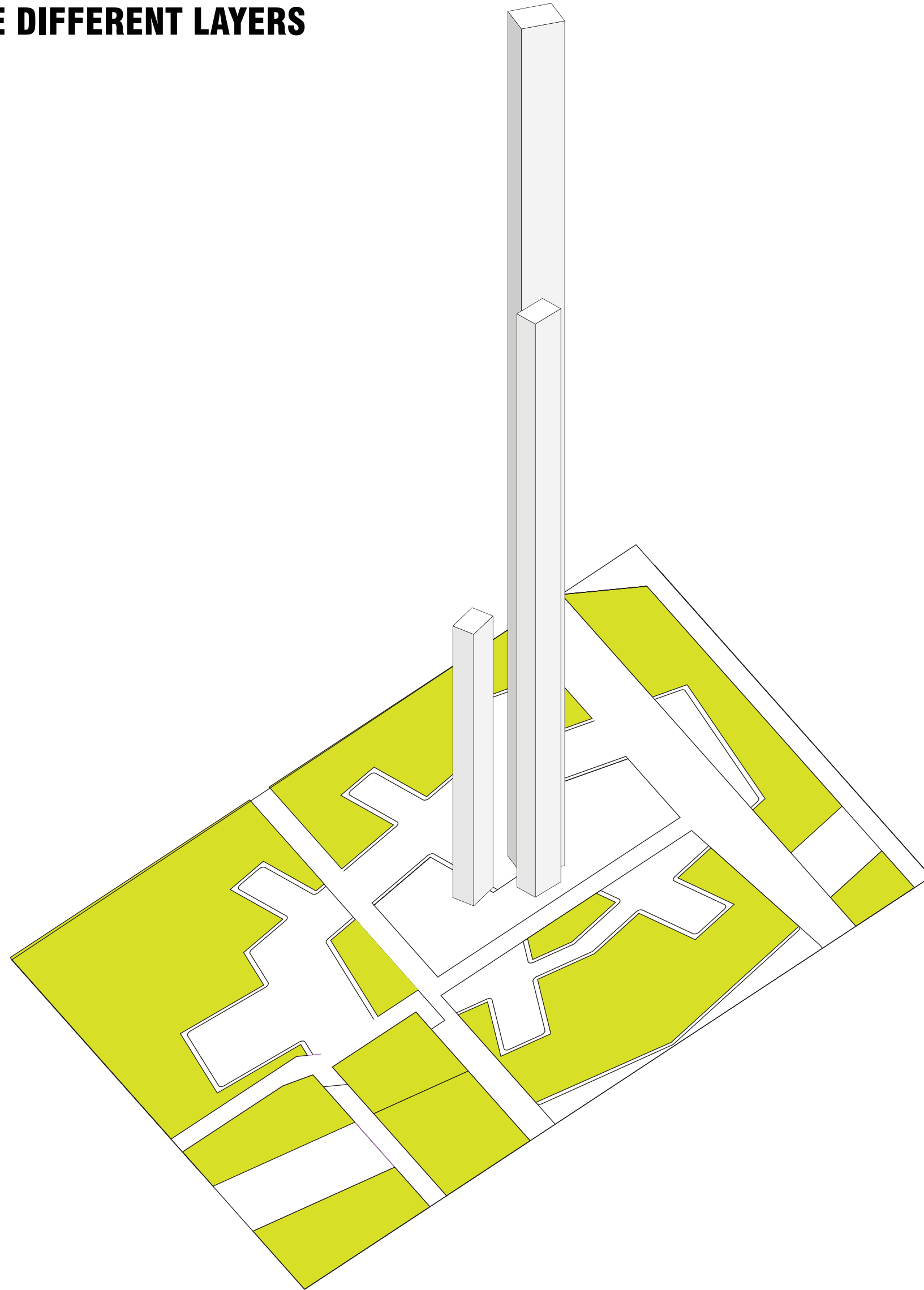
PATHS OF DIFFERENT FUNCTIONS CROSSING

SOCIAL SPACES AND GREEN SPACES IN BETWEEN



ELEVATORS

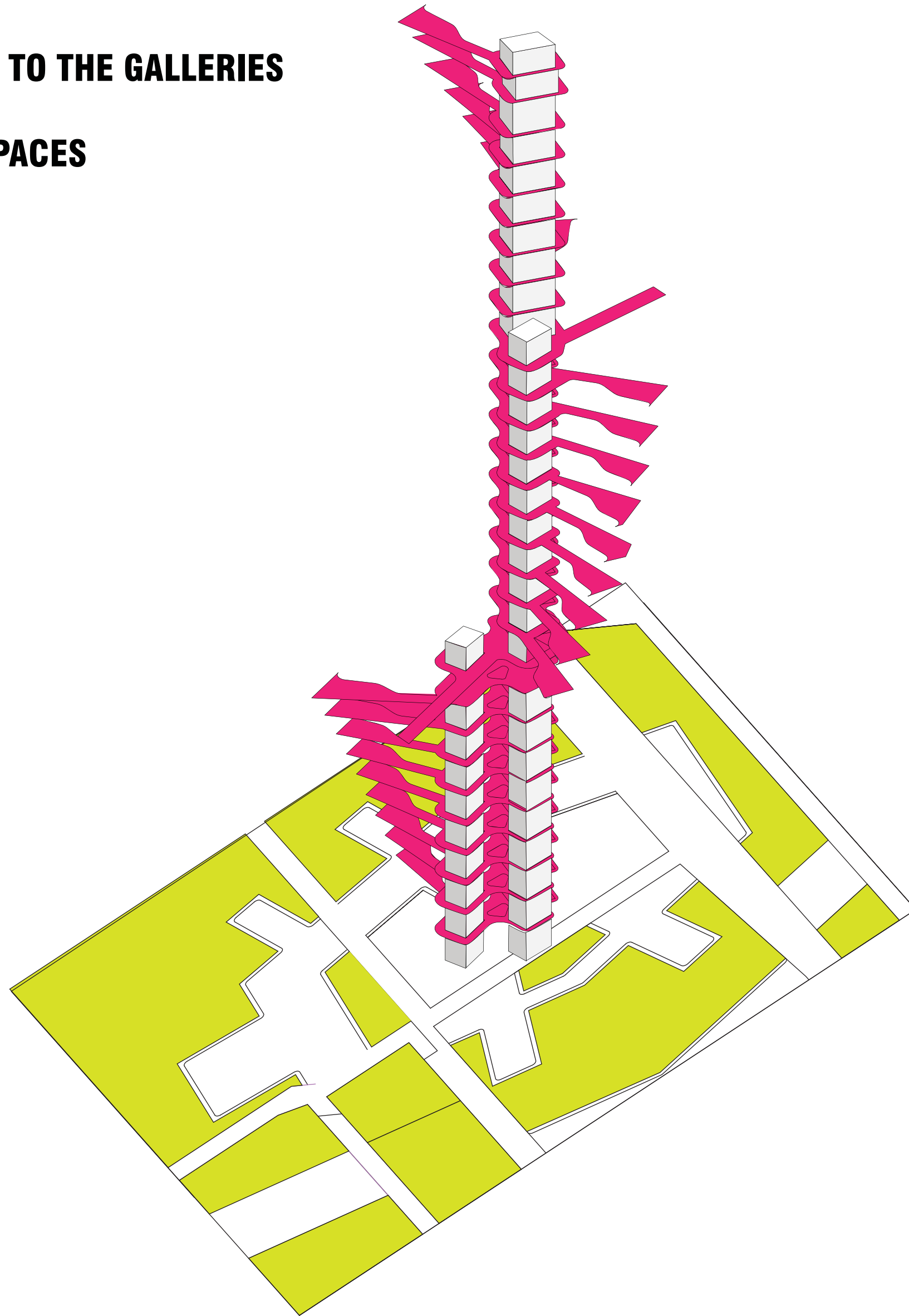
**SEPARATE ELEVATOR FOR THE DIFFERENT LAYERS
OF THE BUILDING**



BRIDGES

CONNECTING THE ELEVATORS TO THE GALLERIES

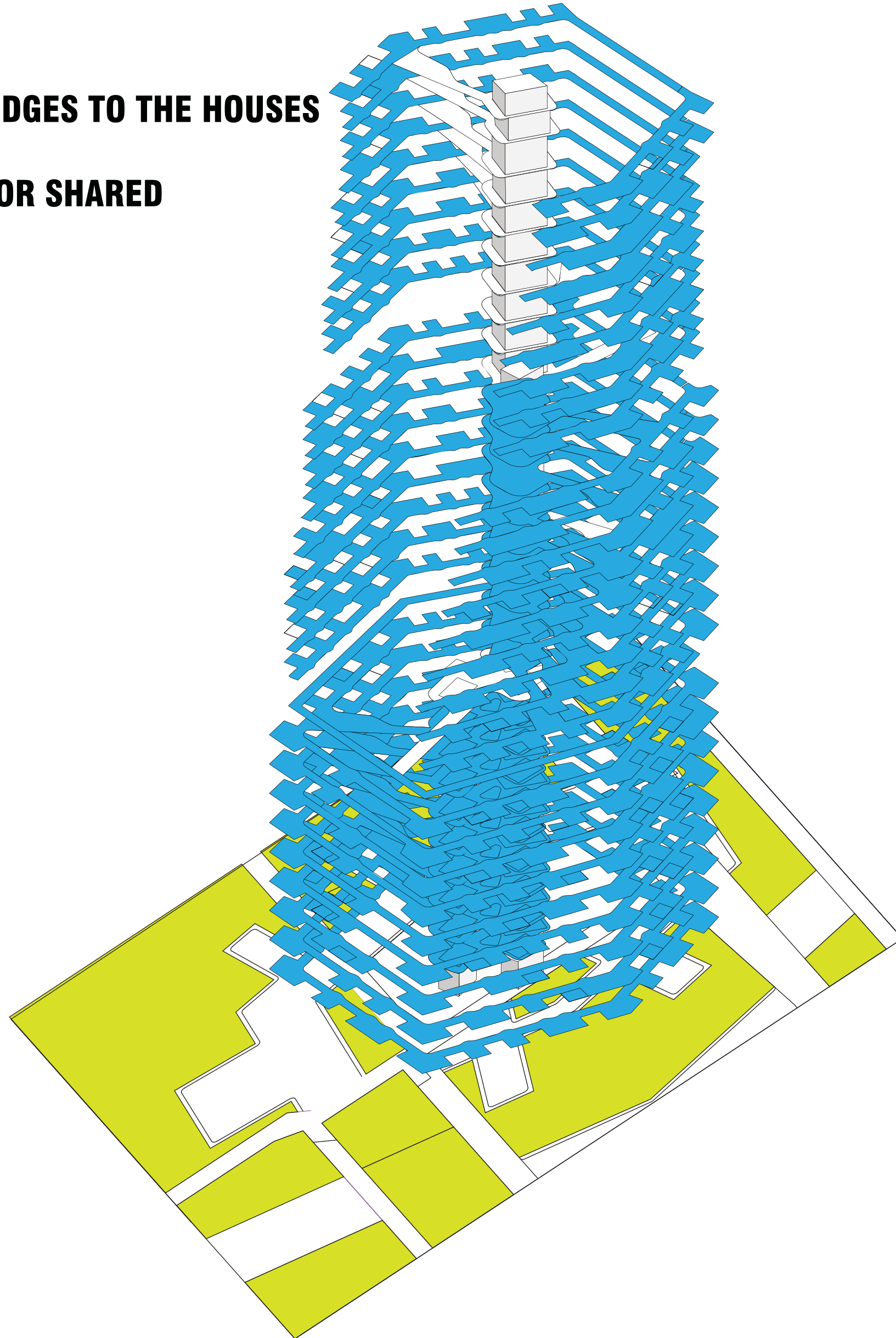
ALSO FUNCTION AS SOCIAL SPACES



GALLERIES

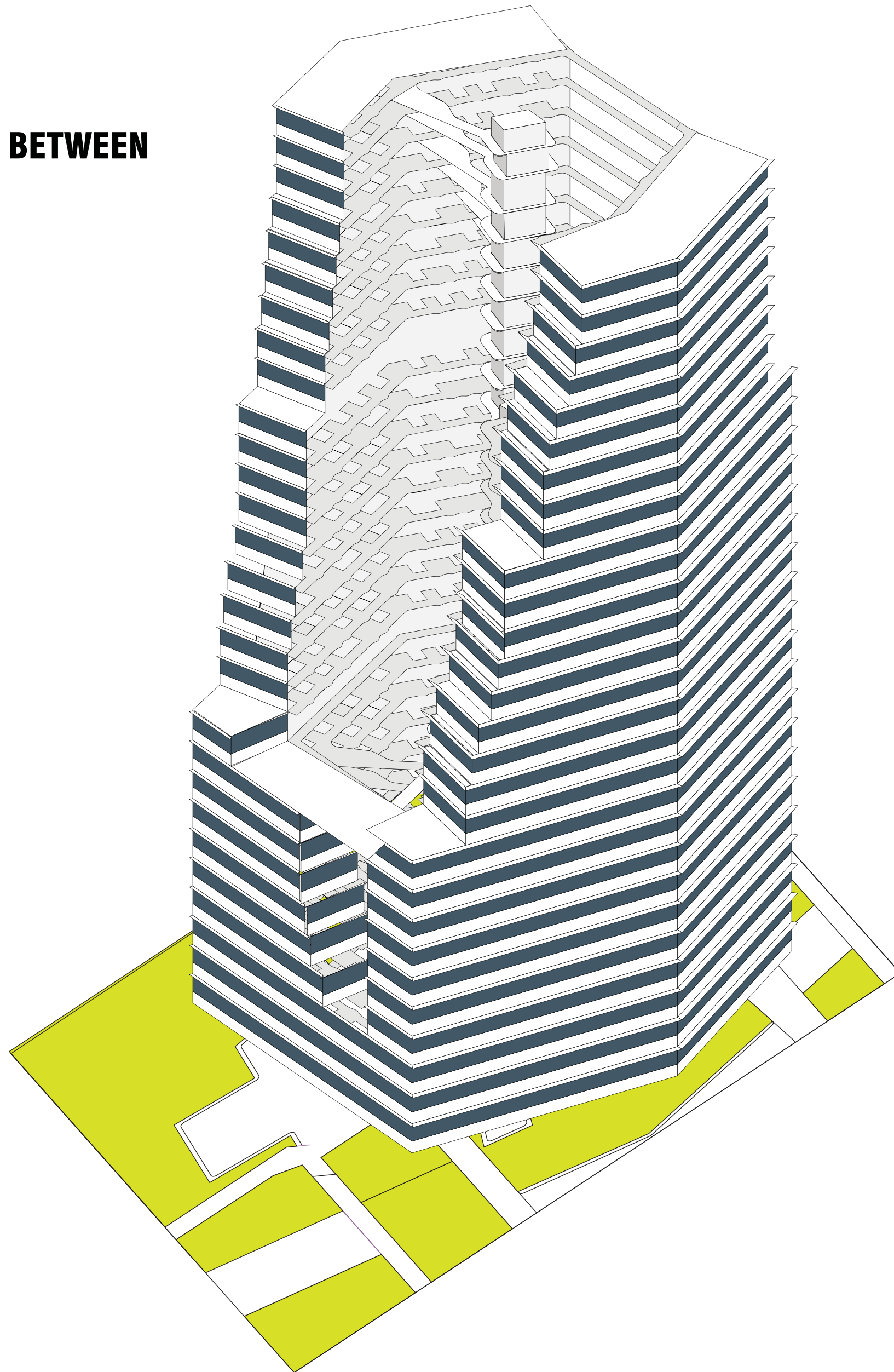
GALLERIES CONNECT THE BRIDGES TO THE HOUSES

EACH HOUSE HAS A PRIVATE OR SHARED COURTYARD

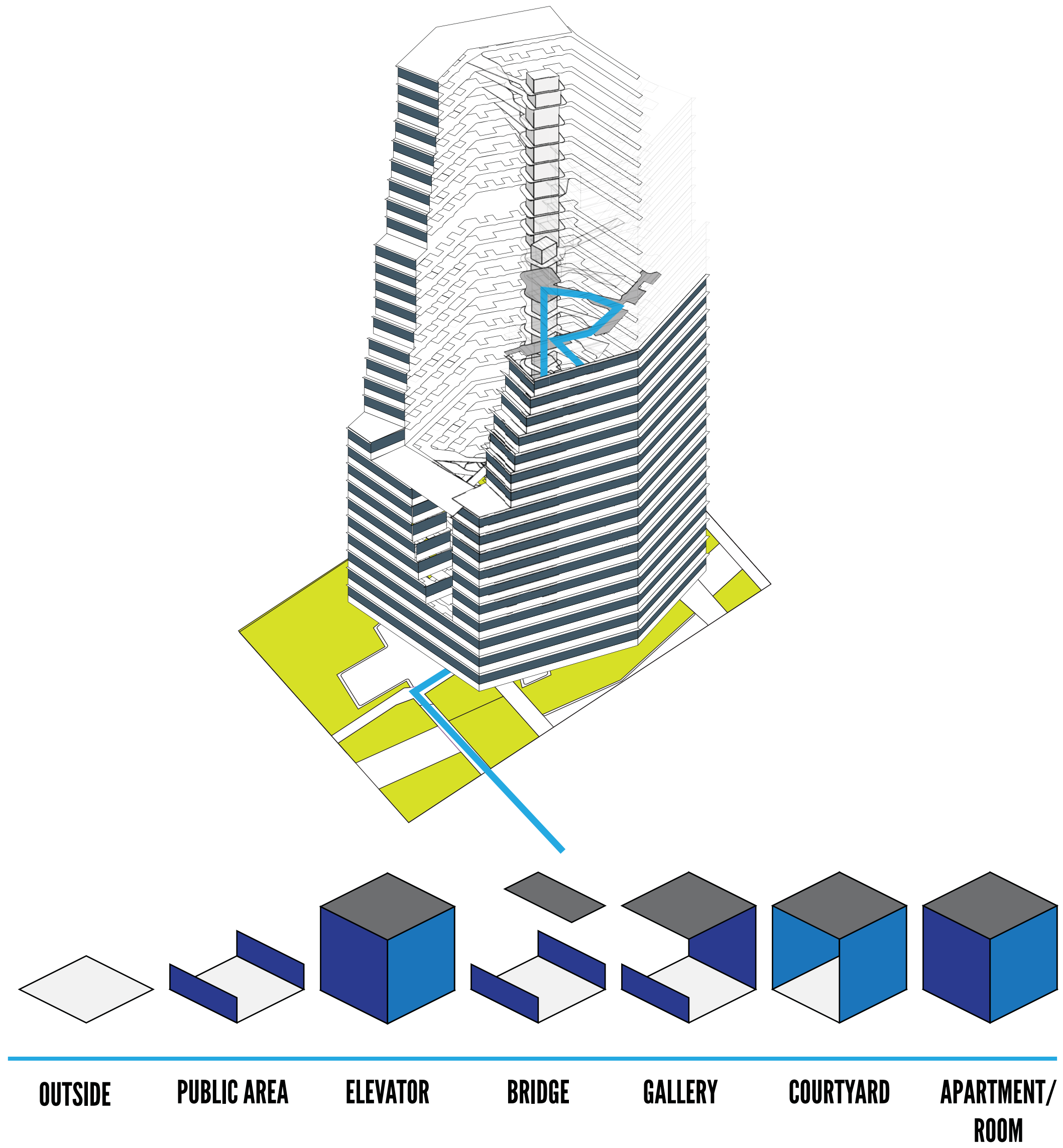


APARTMENTS

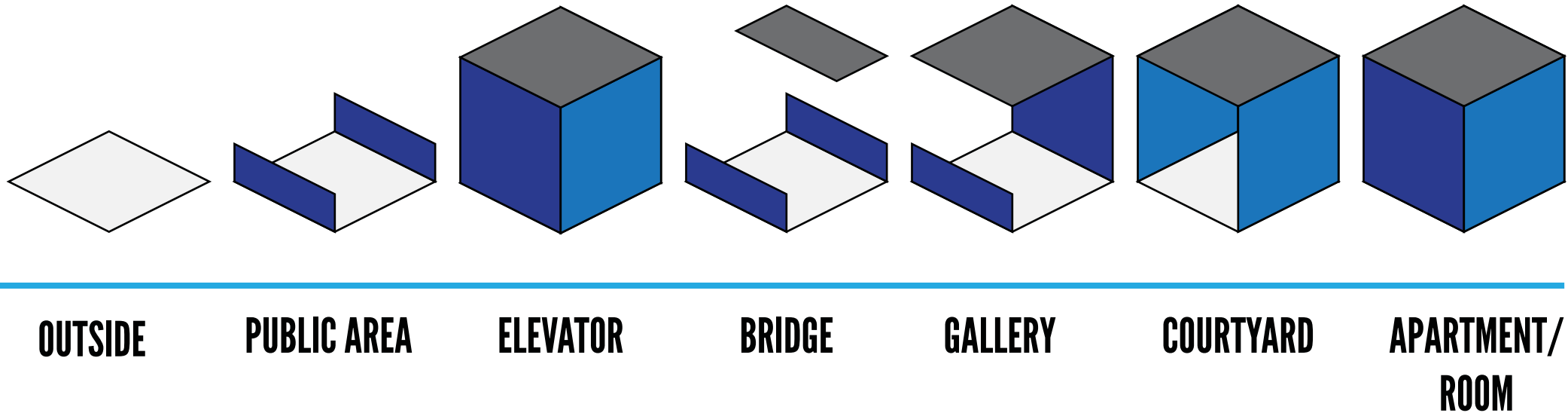
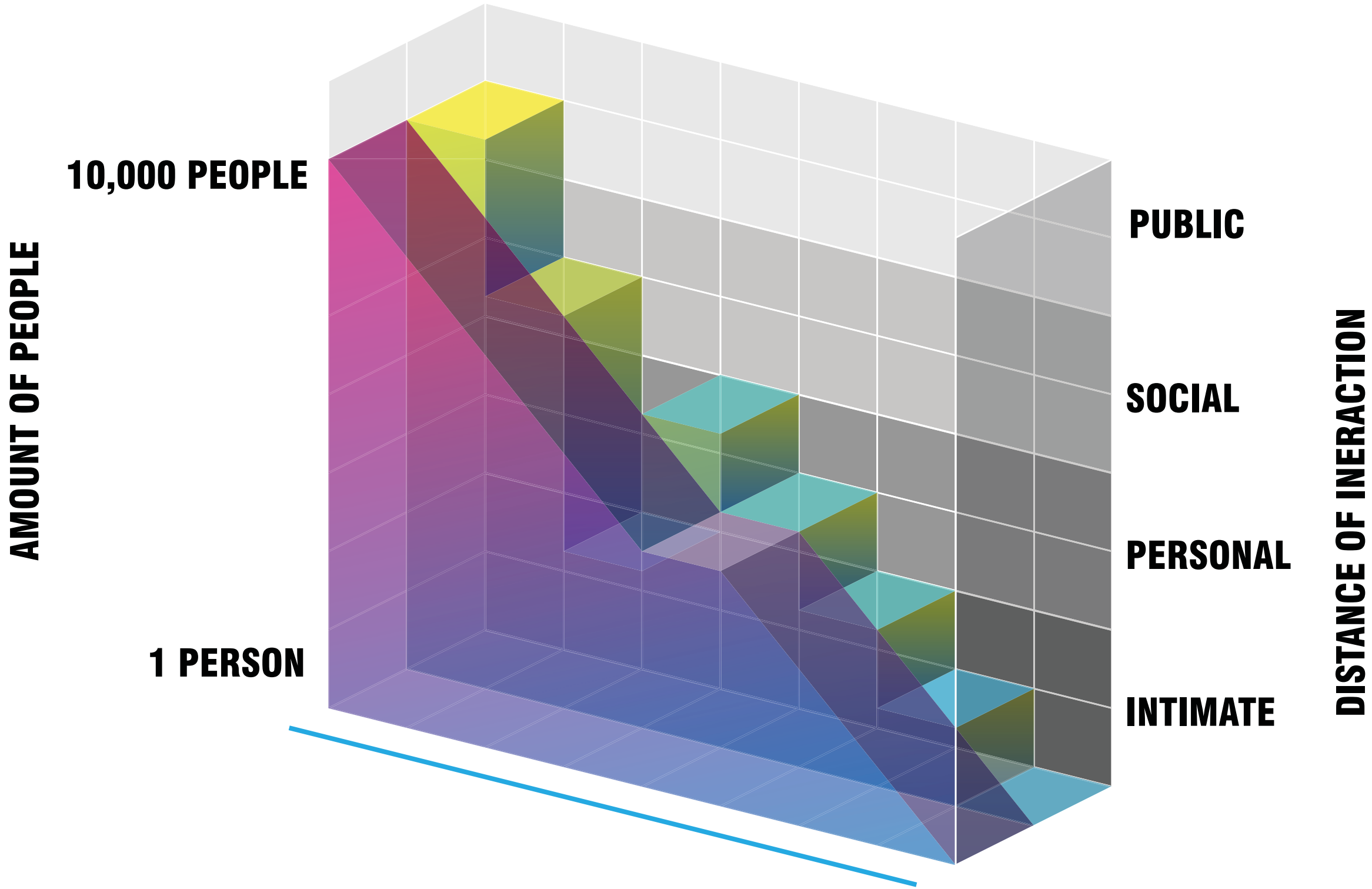
**625 APARTMENTS, MAJORITY BETWEEN
40 AND 60 SQUARE METERS**



IN WHAT TYPE OF SPACE DOES THE SOCIAL INTERACTION TAKE PLACE?



IN WHAT TYPE OF SPACE DOES THE SOCIAL INTERACTION TAKE PLACE?



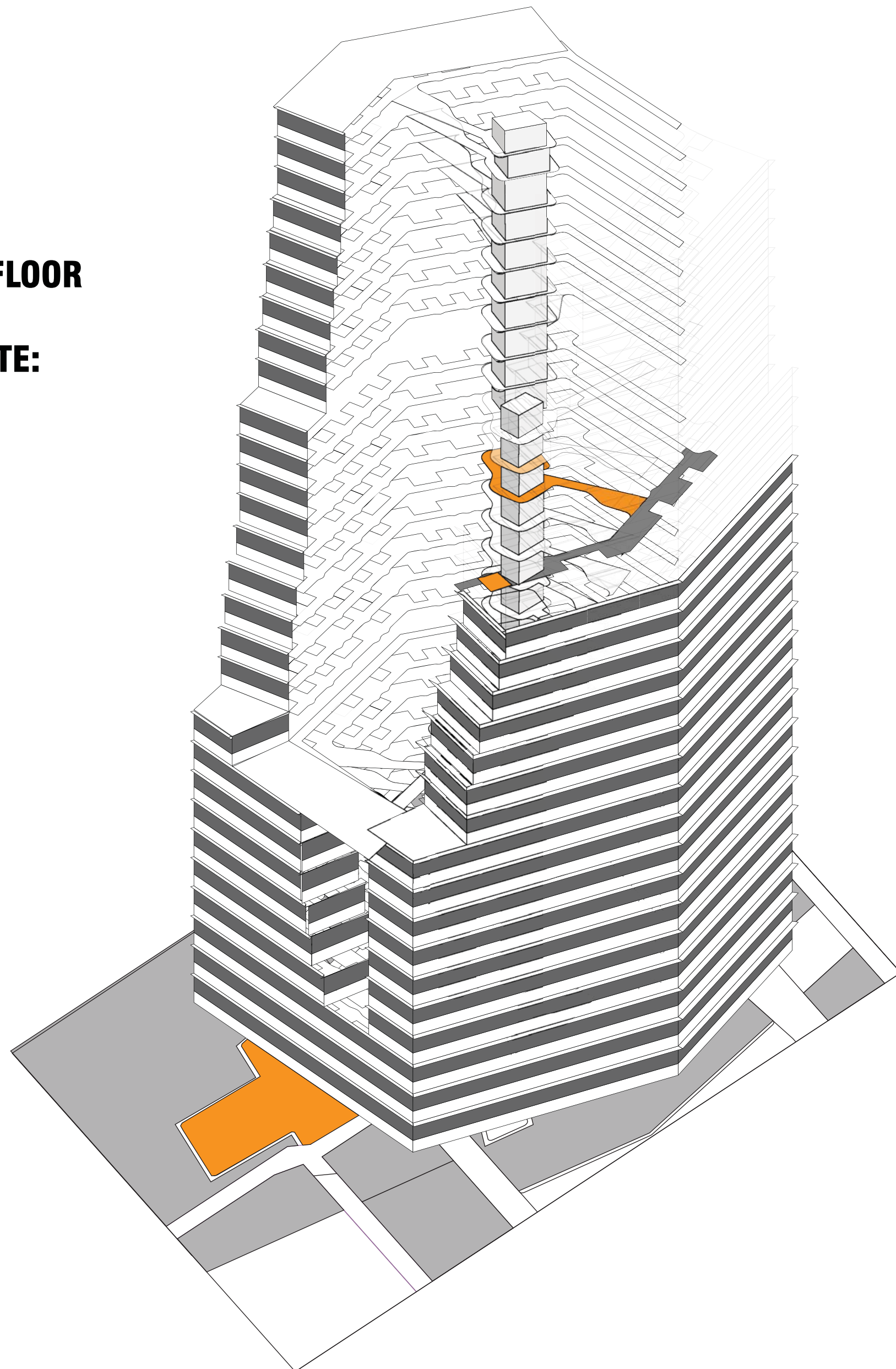
TRANSITION ZONES

SOCIAL HOTSPOTS

**PUBLIC TO SEMI-PUBLIC:
SOCIAL SPACES ON GROUND FLOOR**

**SEMI-PUBLIC TO SEMI-PRIVATE:
BRIDGES**

**SEMI-PRIVATE TO PRIVATE:
COURTYARDS**



APARTMENTS

625 APARTMENTS IN TOTAL

BOTTOM ALLEY 261 APARTMENTS

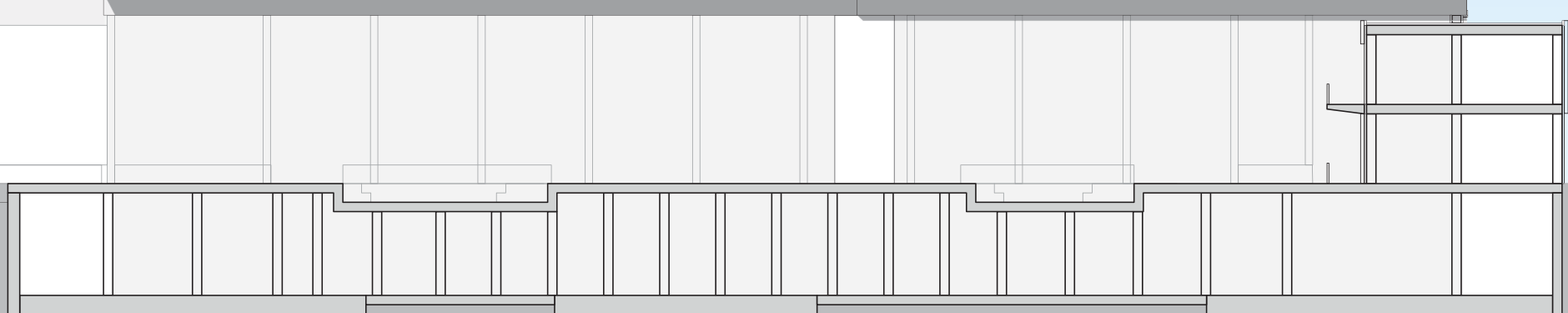
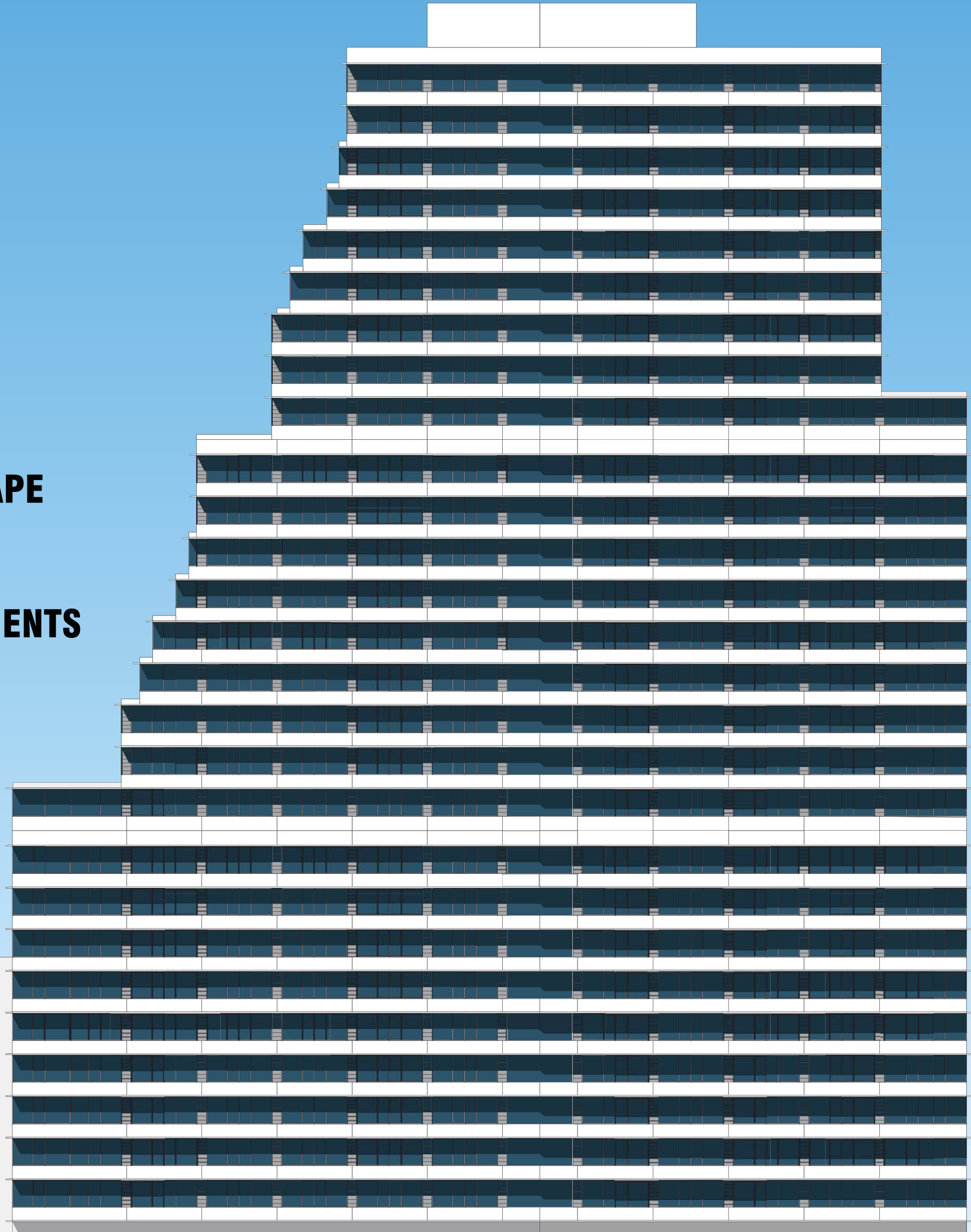
MIDDLE ALLEY 220 APARTMENTS

BOTTOM ALLEY 144 APARTMENTS

THE CONFIGURATION CHANGES AS THE SHAPE CHANGES

BOTTOM ALLEY HAS MORE FAMILY APARTMENTS

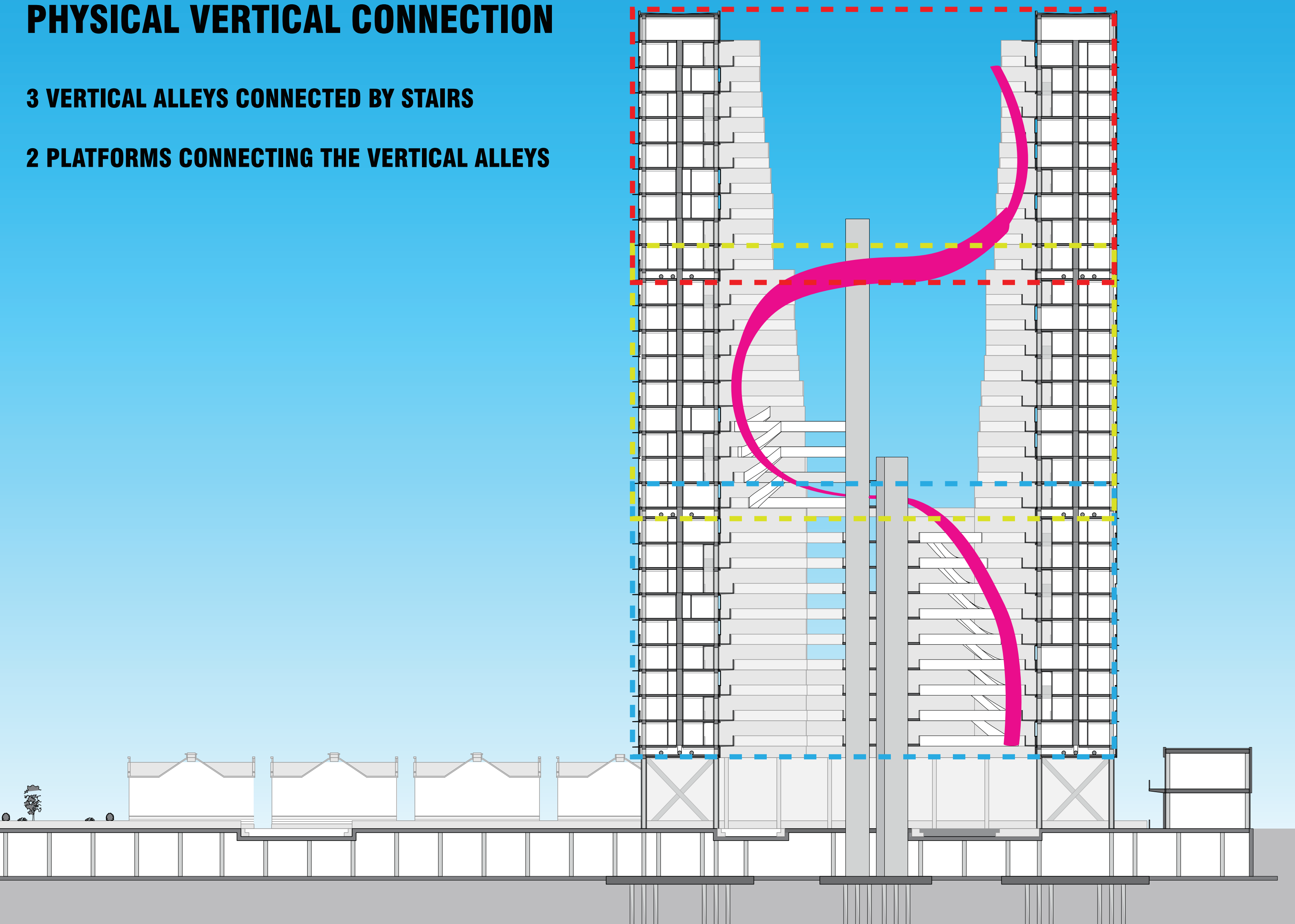
TOP LAYER HAS MORE SINGLE BEDROOM APARTMENTS



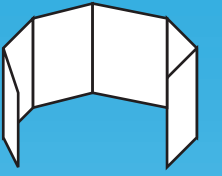
PHYSICAL VERTICAL CONNECTION

3 VERTICAL ALLEYS CONNECTED BY STAIRS

2 PLATFORMS CONNECTING THE VERTICAL ALLEYS

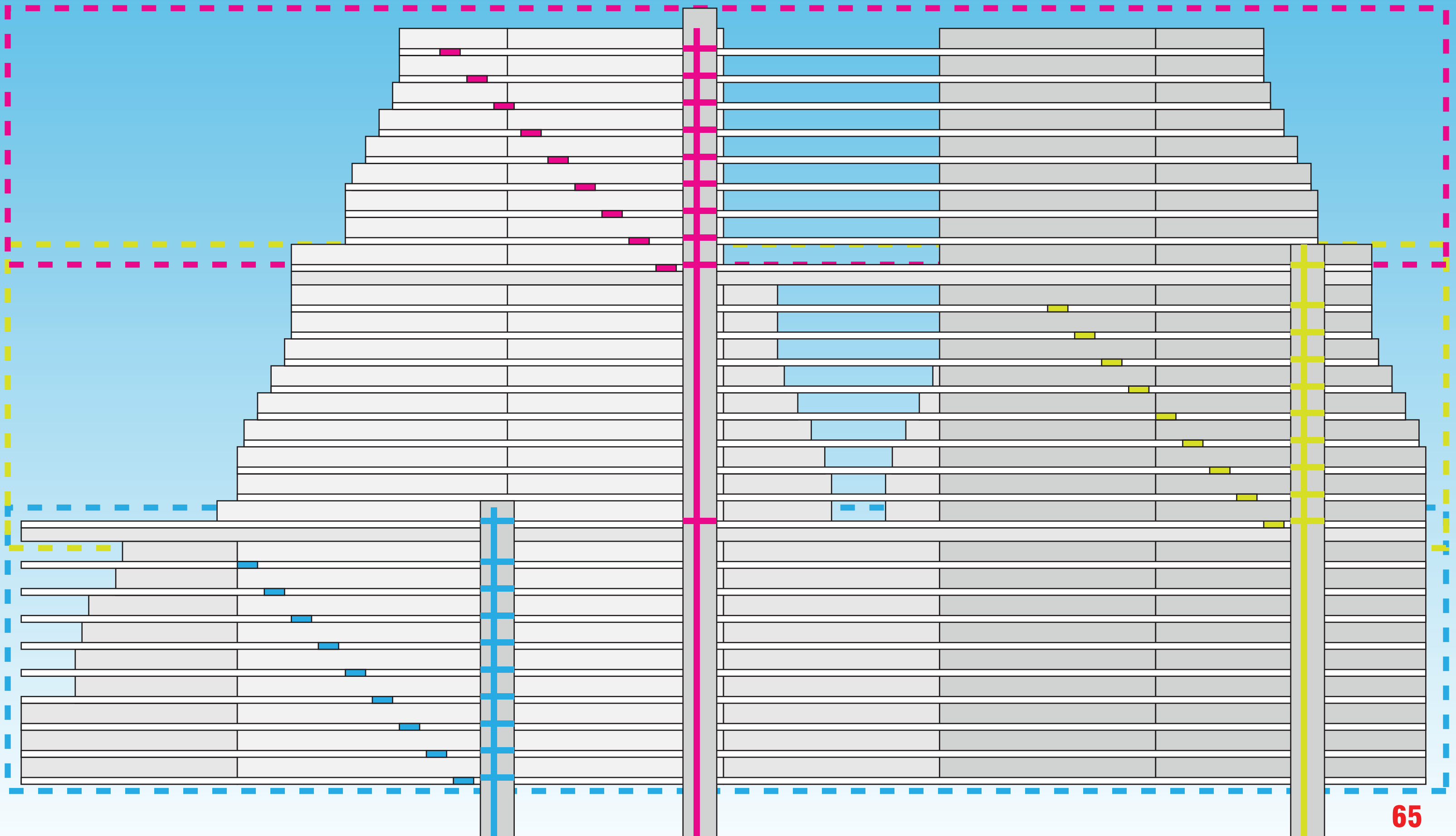


ELEVATOR SYSTEM



EACH OF THE THREE LAYERS HAS A SEPARATE ELEVATOR CORE

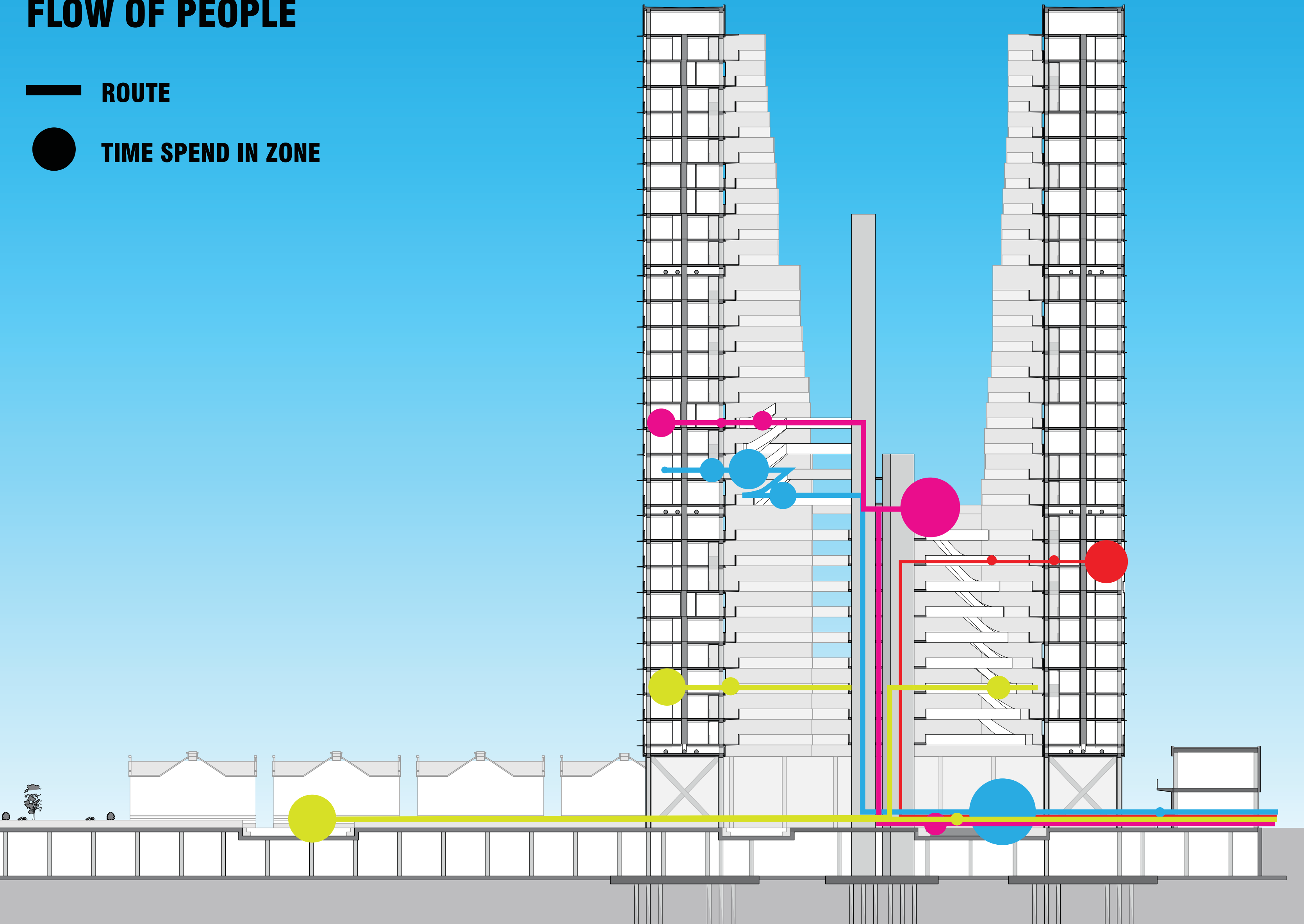
REDUCING THE AMOUNT OF DIFFERENT PEOPLE YOU CAN ENCOUNTER DURING THE AWKWARD ELEVATOR MOMENT



FLOW OF PEOPLE

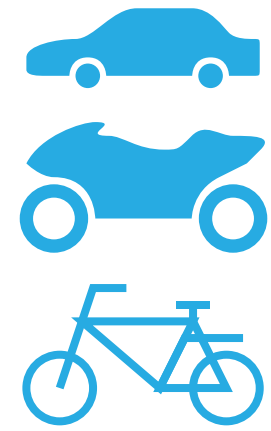
— ROUTE

● TIME SPEND IN ZONE

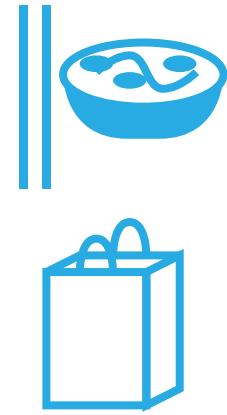


WHAT KIND OF ACTIVITIES TAKE PLACE?

FROM THE STREET TO THE APARTMENT



OUTSIDE



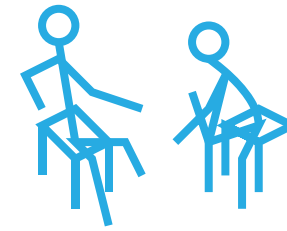
LOBBY



ELEVATOR



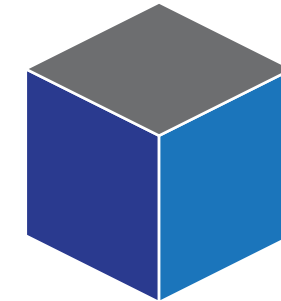
BRIDGE



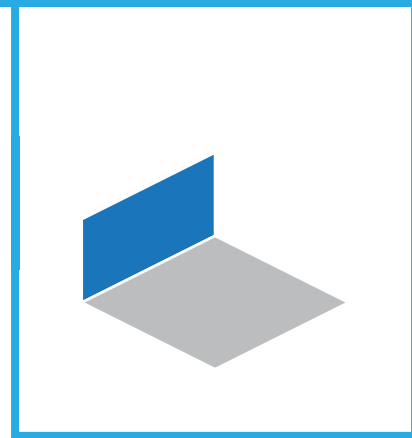
COURTYARD



LIVING ROOM



BED ROOM



FUNCTIONS

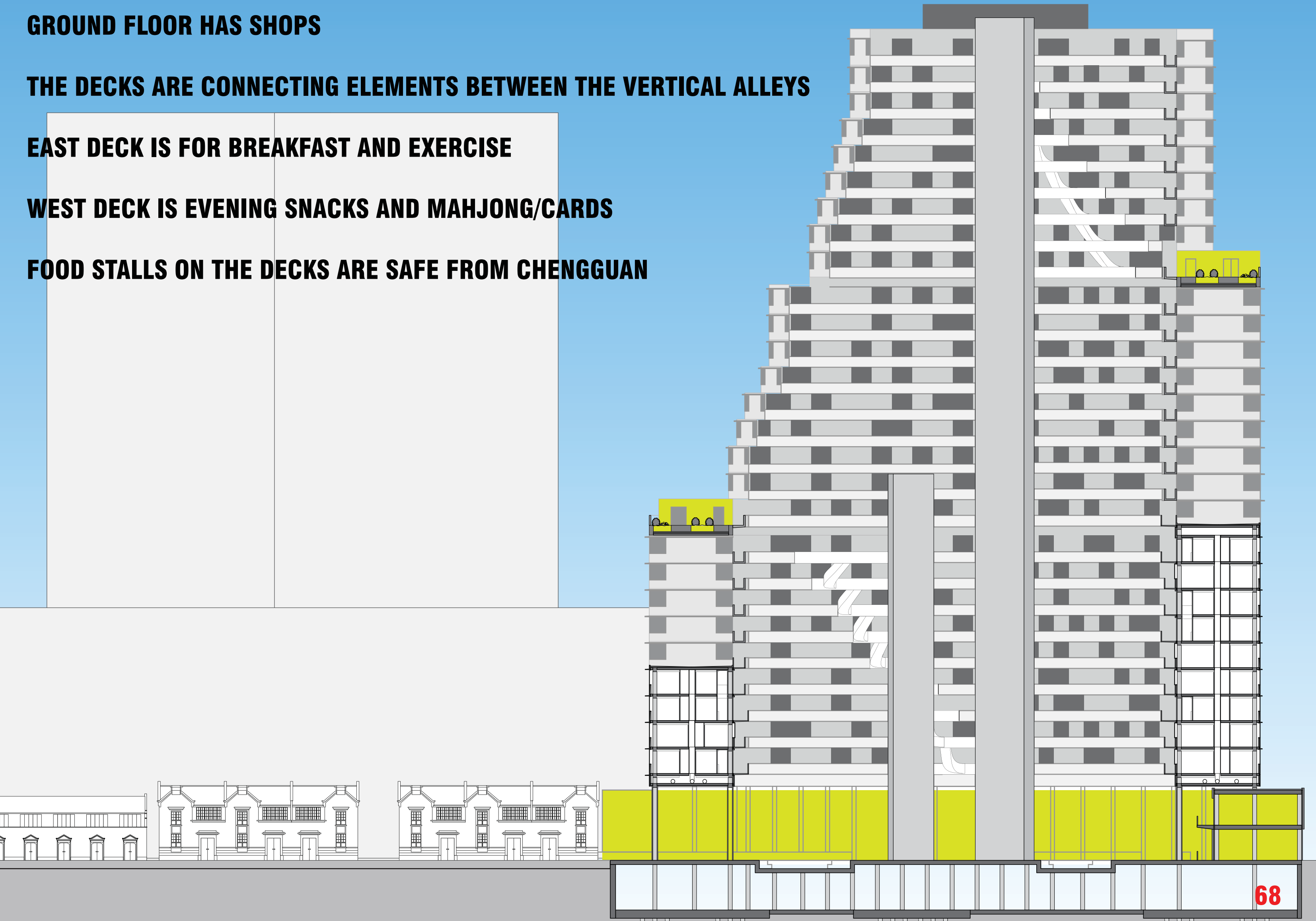
GROUND FLOOR HAS SHOPS

THE DECKS ARE CONNECTING ELEMENTS BETWEEN THE VERTICAL ALLEYS

EAST DECK IS FOR BREAKFAST AND EXERCISE

WEST DECK IS EVENING SNACKS AND MAHJONG/CARDS

FOOD STALLS ON THE DECKS ARE SAFE FROM CHENGGUAN



DECKS

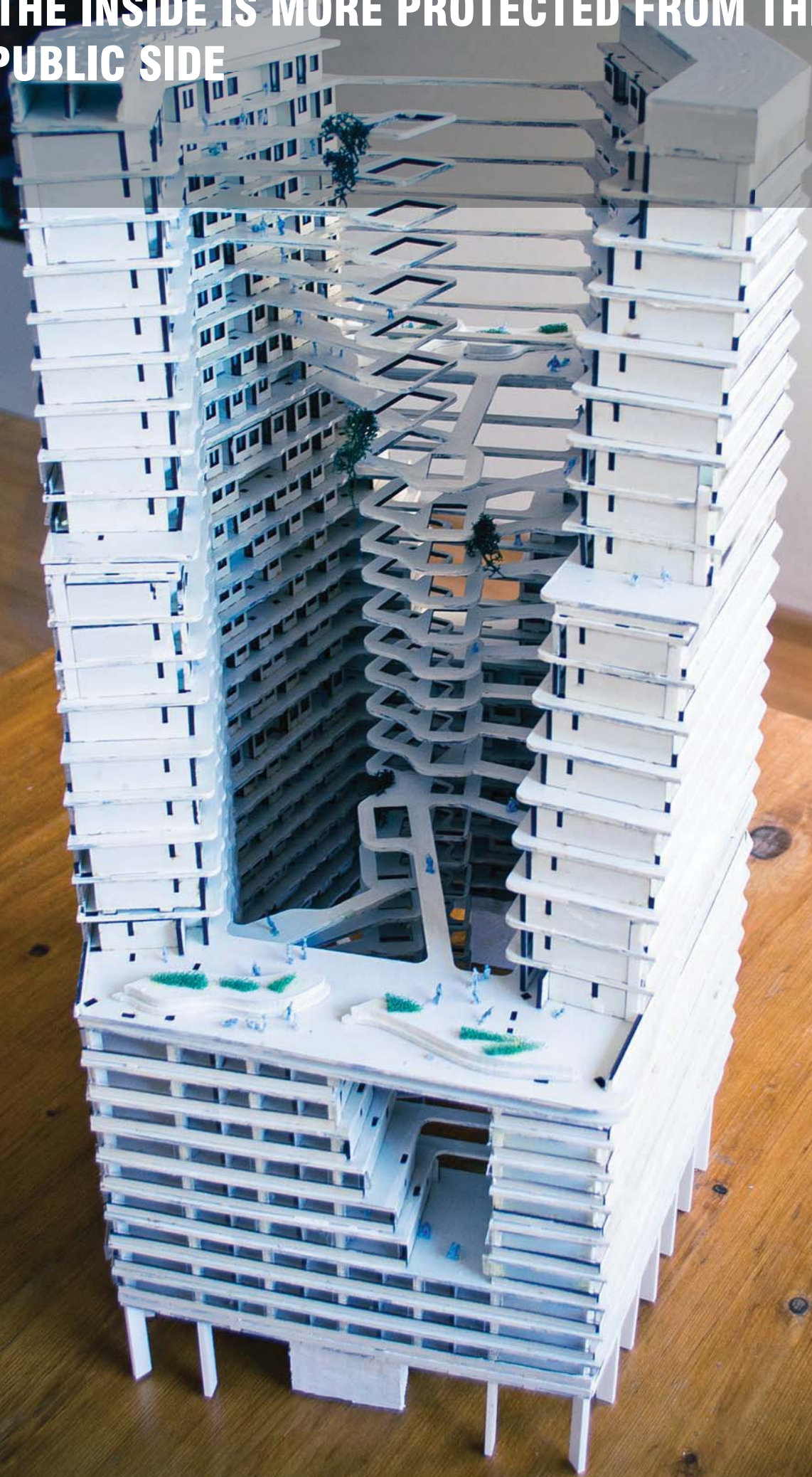
SEMI-PUBLIC ELEVATED SPACE WITH SMALL COMMERCIAL FUNCTIONS

CONNECTING ELEMENT BETWEEN TWO VERTICAL ALLEYS



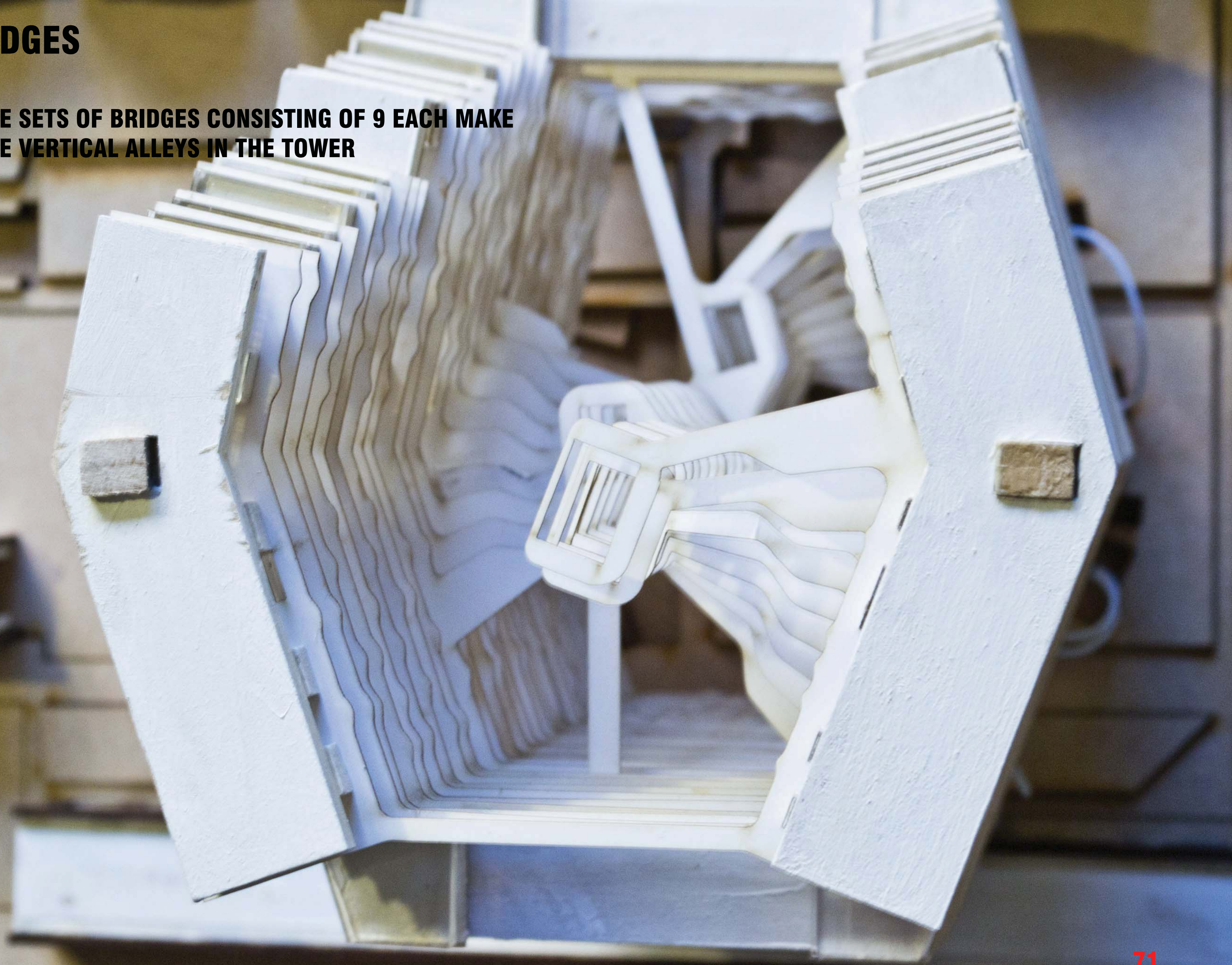
OPENNESS

THE TOWER IS OPEN TOWARDS THE SHIKUMEN
WHILE THE INSIDE IS MORE PROTECTED FROM THE OTHER,
MORE PUBLIC SIDE



BRIDGES

**THREE SETS OF BRIDGES CONSISTING OF 9 EACH MAKE
THREE VERTICAL ALLEYS IN THE TOWER**



BRIDGES

SOCIAL SPACE FOR EACH FLOOR
VISUAL CONNECTION BRIDGES ON THE FRONT
PHYSICAL CONNECTION IN THE BACK



GALLERIES

**CONNECT THE BRIDGES TO THE APARTMENTS
EACH APARTMENT HAS OWN OR SHARED COURTYARD**



风水

FĒNG SHUǐ

GEOMANCY, AN EARLY FORM OF ENVIRONMENTALISM

WORK WITH THE ENVIRONMENT, NOT AGAINST IT

**DUE TO FENG SHUI GUIDELINES, ALMOST EVERY
BUILDING IN CHINA IS SOUTH FACING**

FENG SHUI, BA GUA

50-60 M²
SINGLE OR DOUBLE BEDROOM

50-60 M²
SINGLE OR DOUBLE BEDROOM

WEALTH

GOOD MARRIAGE

50-60 M²
DOUBLE BEDROOM

GOOD FAMILY

CHILDREN FAME

55-65 M²
DOUBLE BEDROOM

35-40 M²
SINGLE BEDROOM

SCHOLARS

40-50 M²
SINGLE BEDROOM

BUSINESS

WEALTH
Hip
Green/PURPLE/Red

FAME
Fire
Eye
South
Red

**RELATIONSHIPS/
MARRIAGE
MOTHER**
Organs
Red/PINK/White

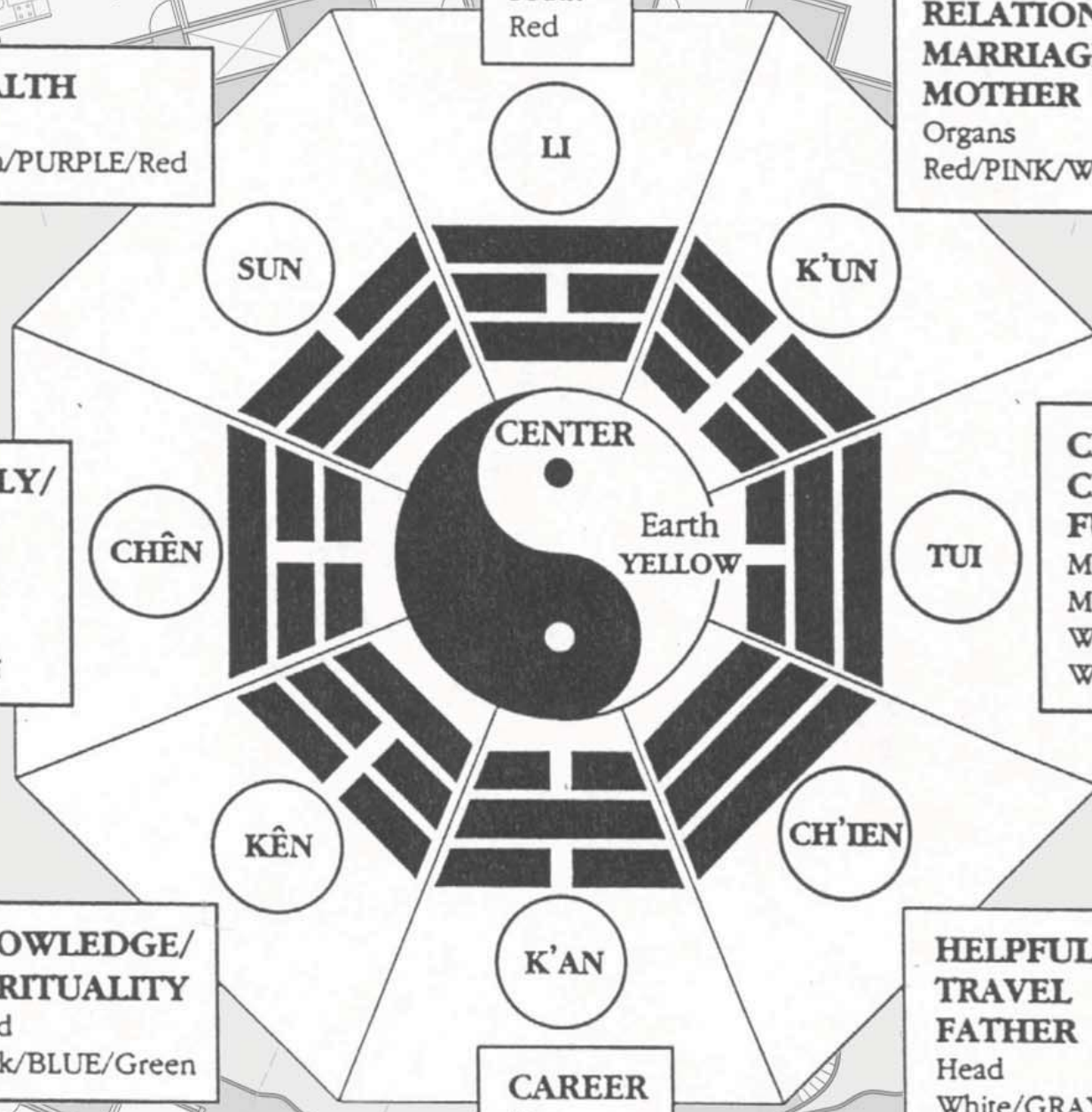
**FAMILY/
PAST**
Wood
Foot
East
GREEN

**CHILDREN/
CREATIVITY
FUTURE**
Metal
Mouth
West
WHITE

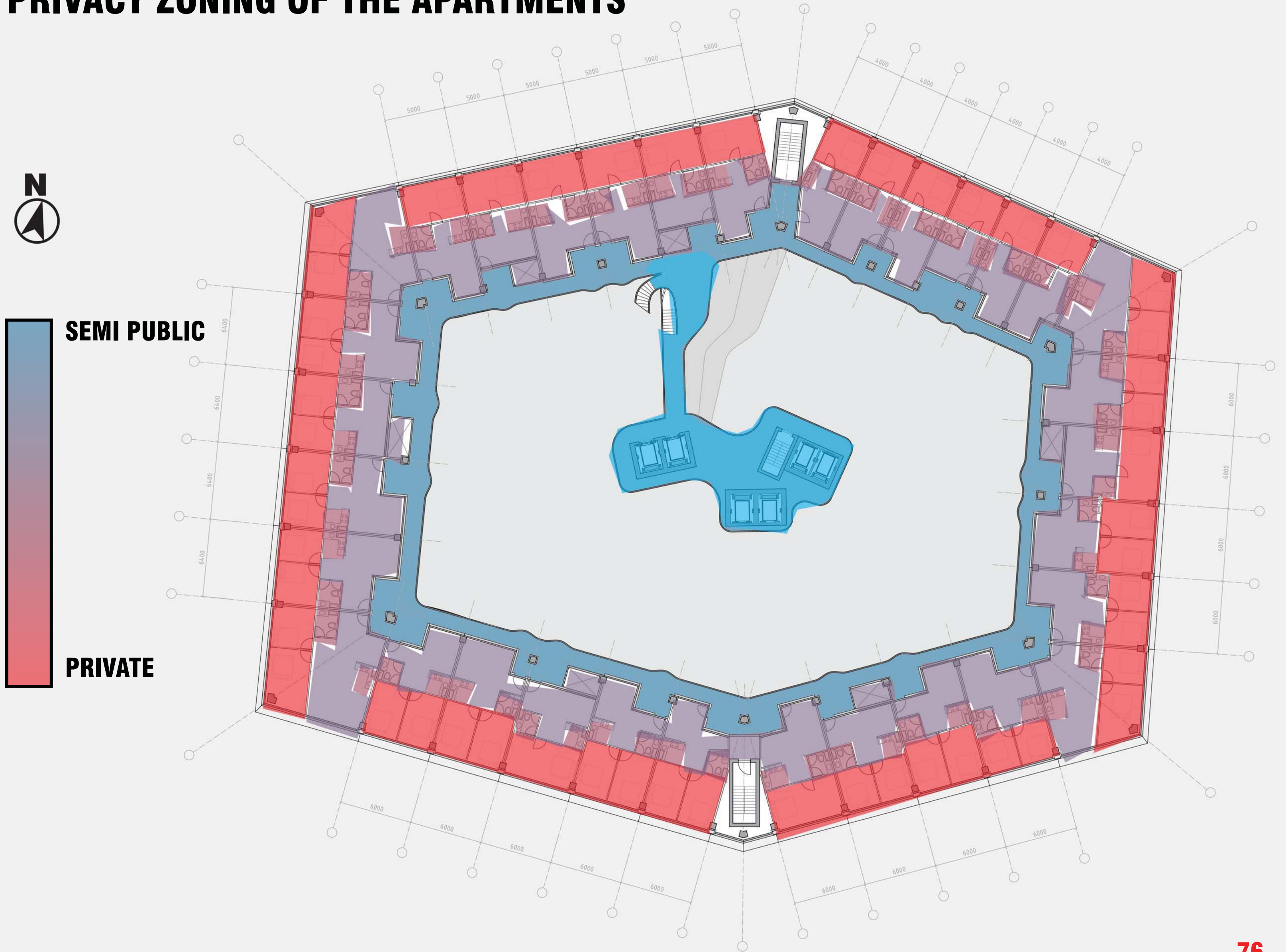
**KNOWLEDGE/
SPIRITUALITY**
Hand
Black/BLUE/Green

**HELPFUL PEOPLE/
TRAVEL
FATHER**
Head
White/GRAY/Black

CAREER
Water
Ear
North
BLACK



PRIVACY ZONING OF THE APARTMENTS



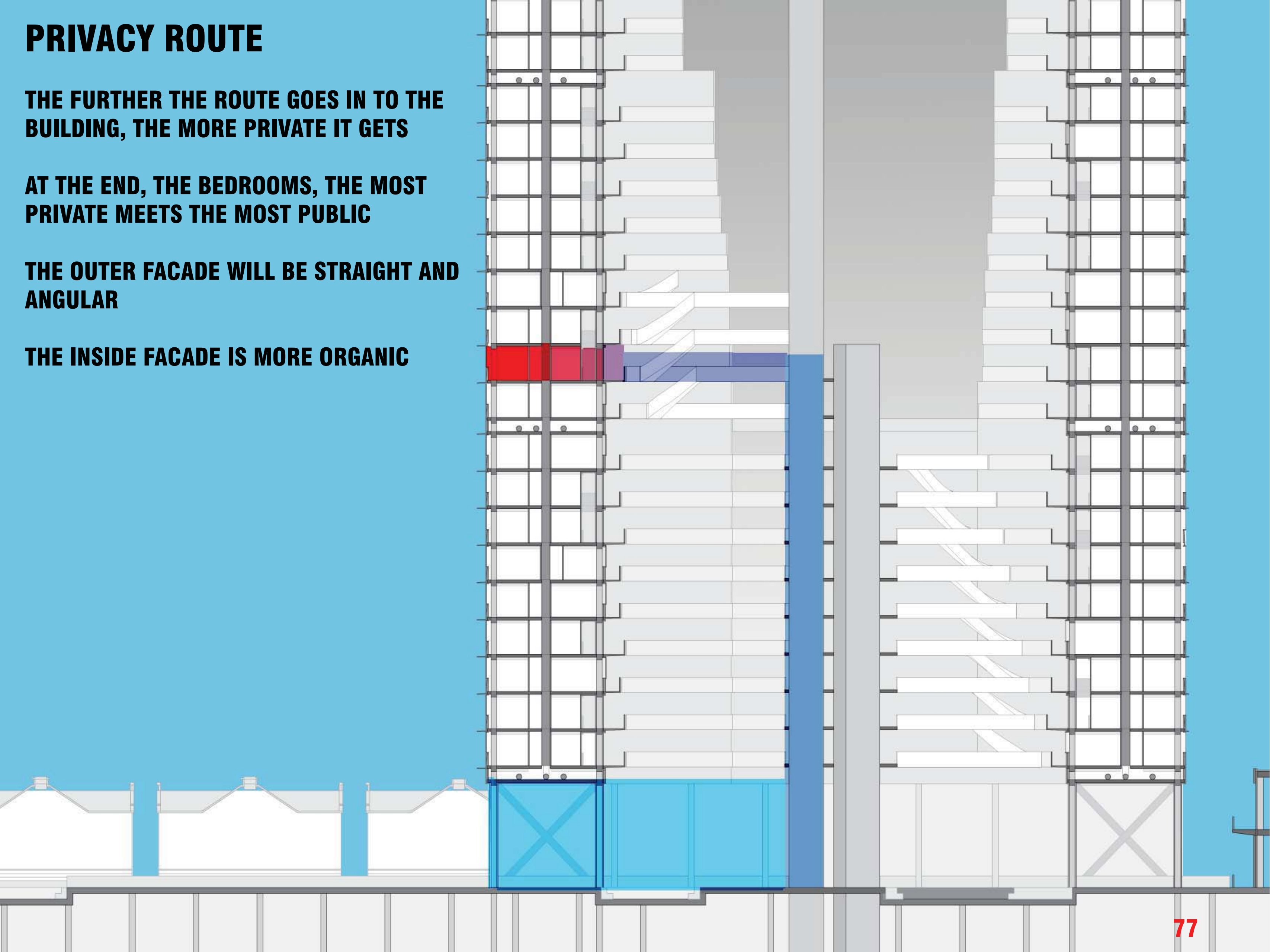
PRIVACY ROUTE

THE FURTHER THE ROUTE GOES IN TO THE BUILDING, THE MORE PRIVATE IT GETS

AT THE END, THE BEDROOMS, THE MOST PRIVATE MEETS THE MOST PUBLIC

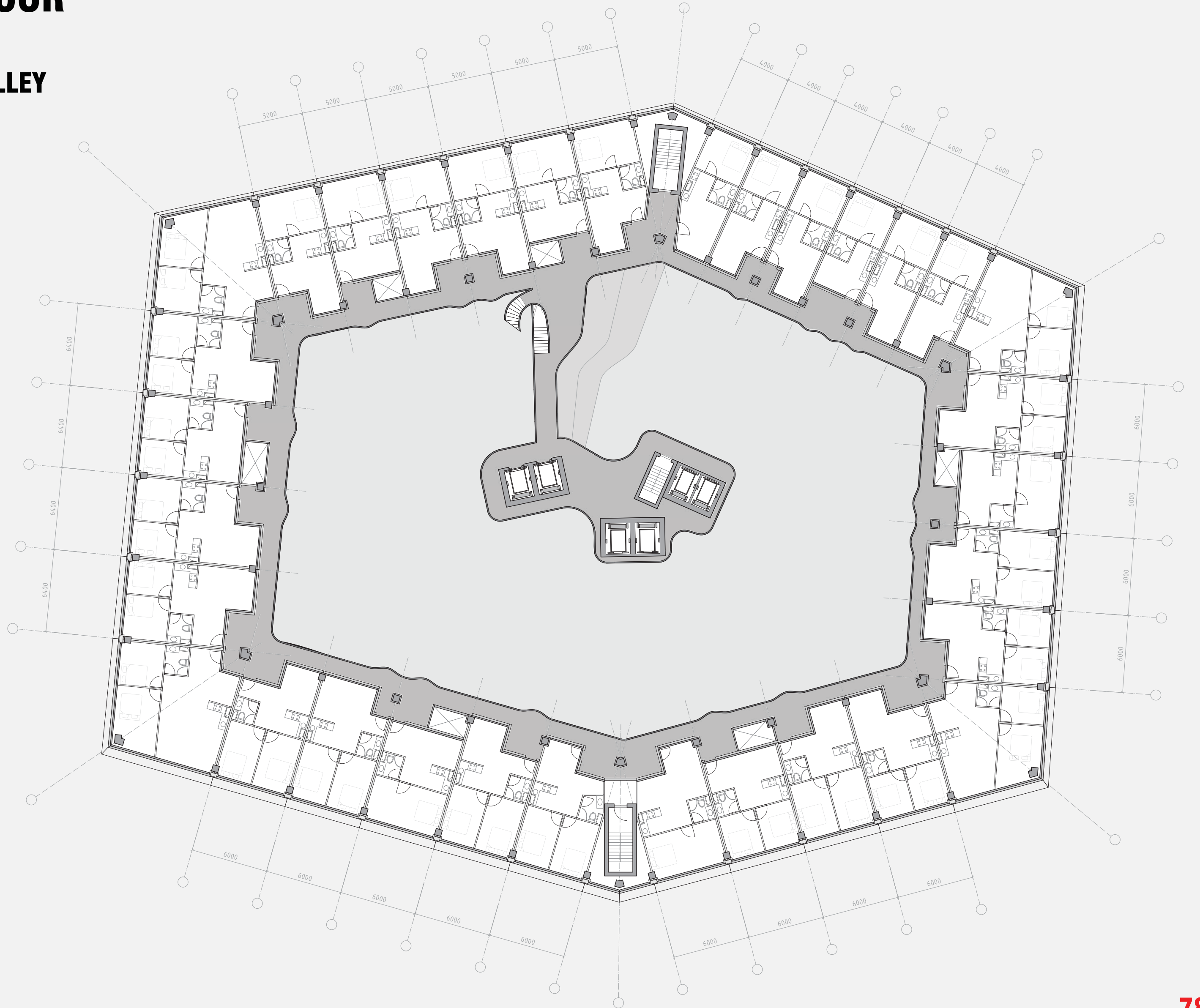
THE OUTER FACADE WILL BE STRAIGHT AND ANGULAR

THE INSIDE FACADE IS MORE ORGANIC



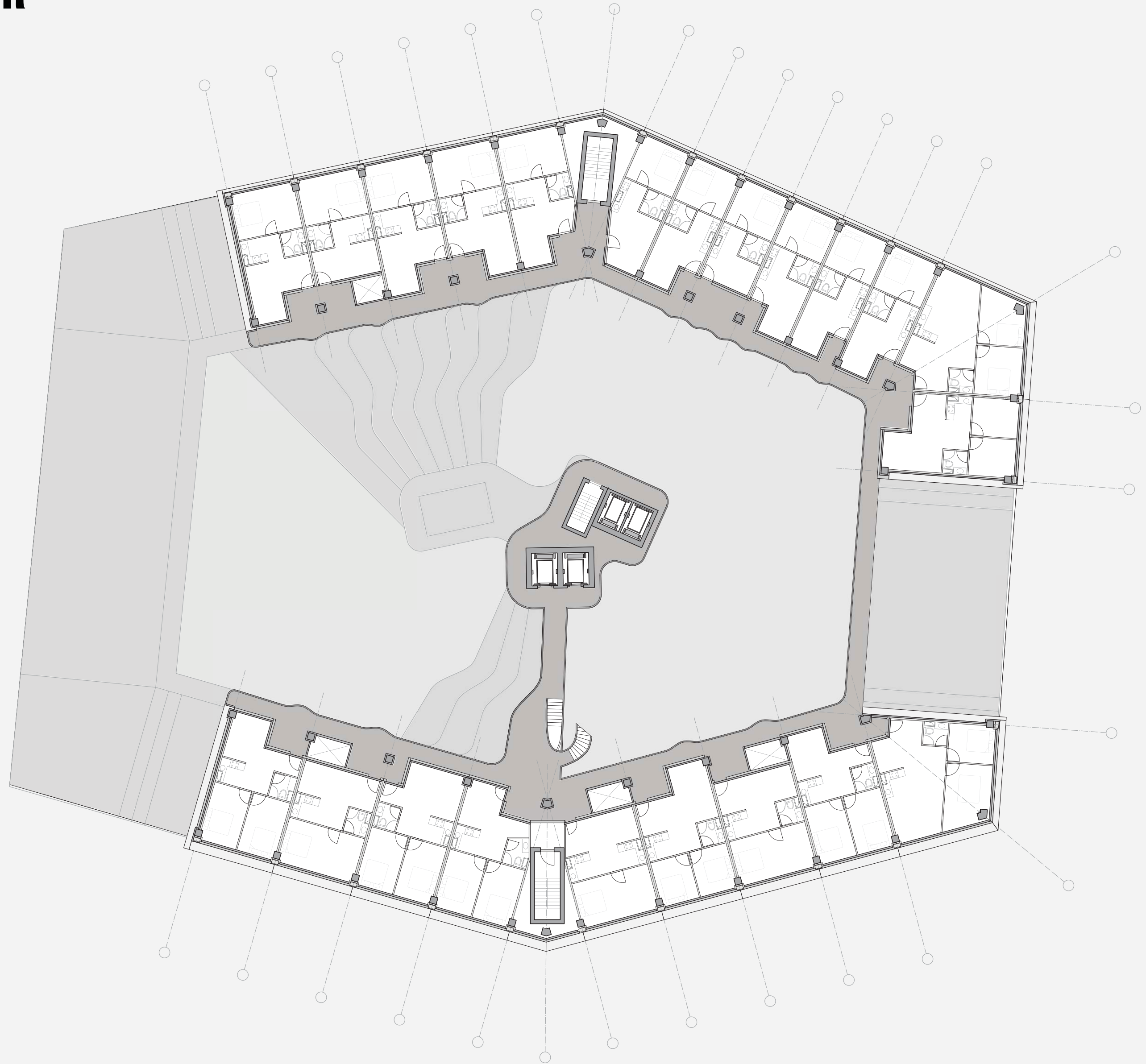
3RD FLOOR

BOTTOM ALLEY



13TH FLOOR

MIDDLE ALLEY

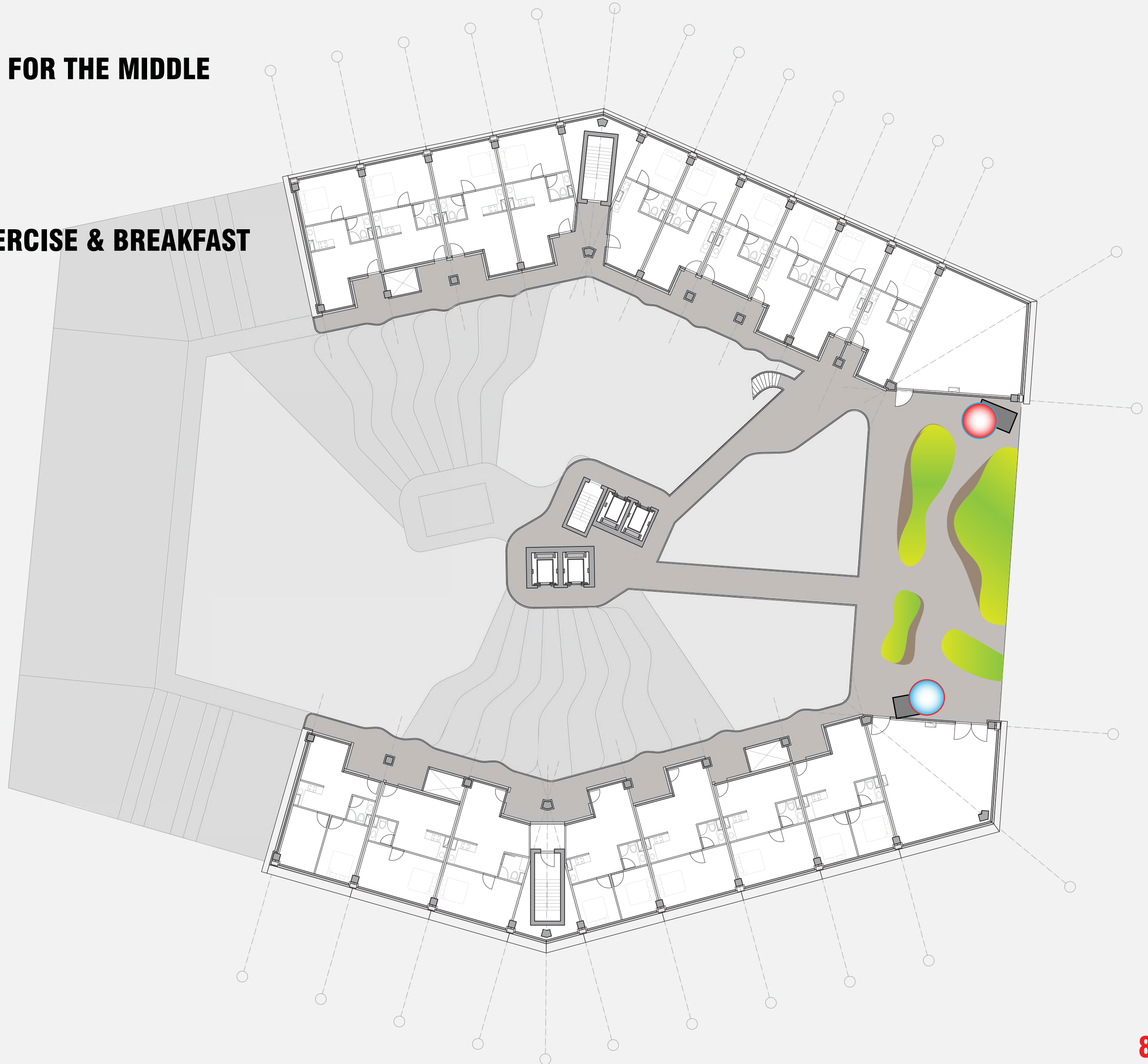


19TH FLOOR

**CONNECTING FLOOR FOR THE MIDDLE
AND TOP ALLEY**

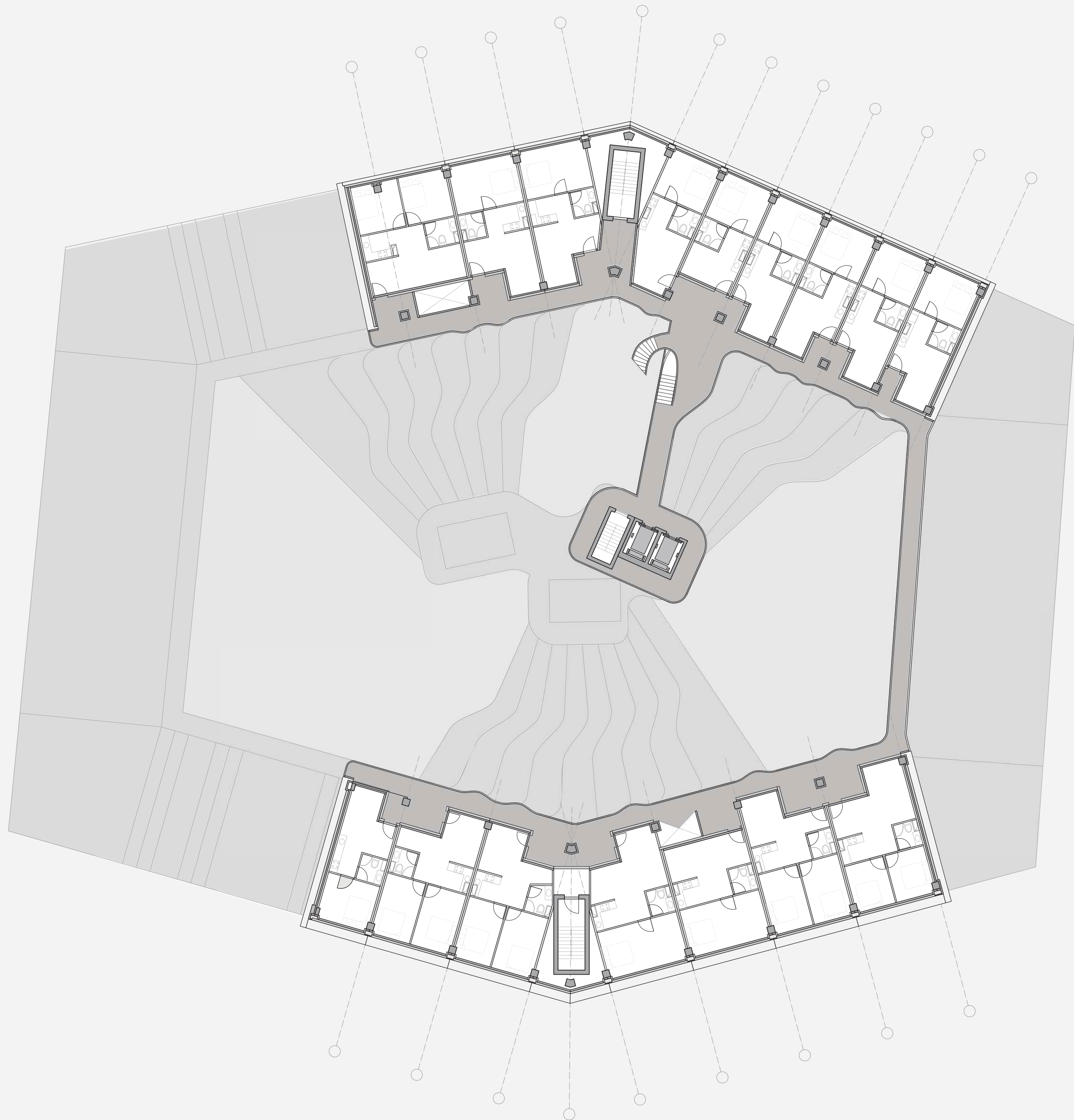
EAST DECK

MORNING AREA; EXERCISE & BREAKFAST



24TH FLOOR

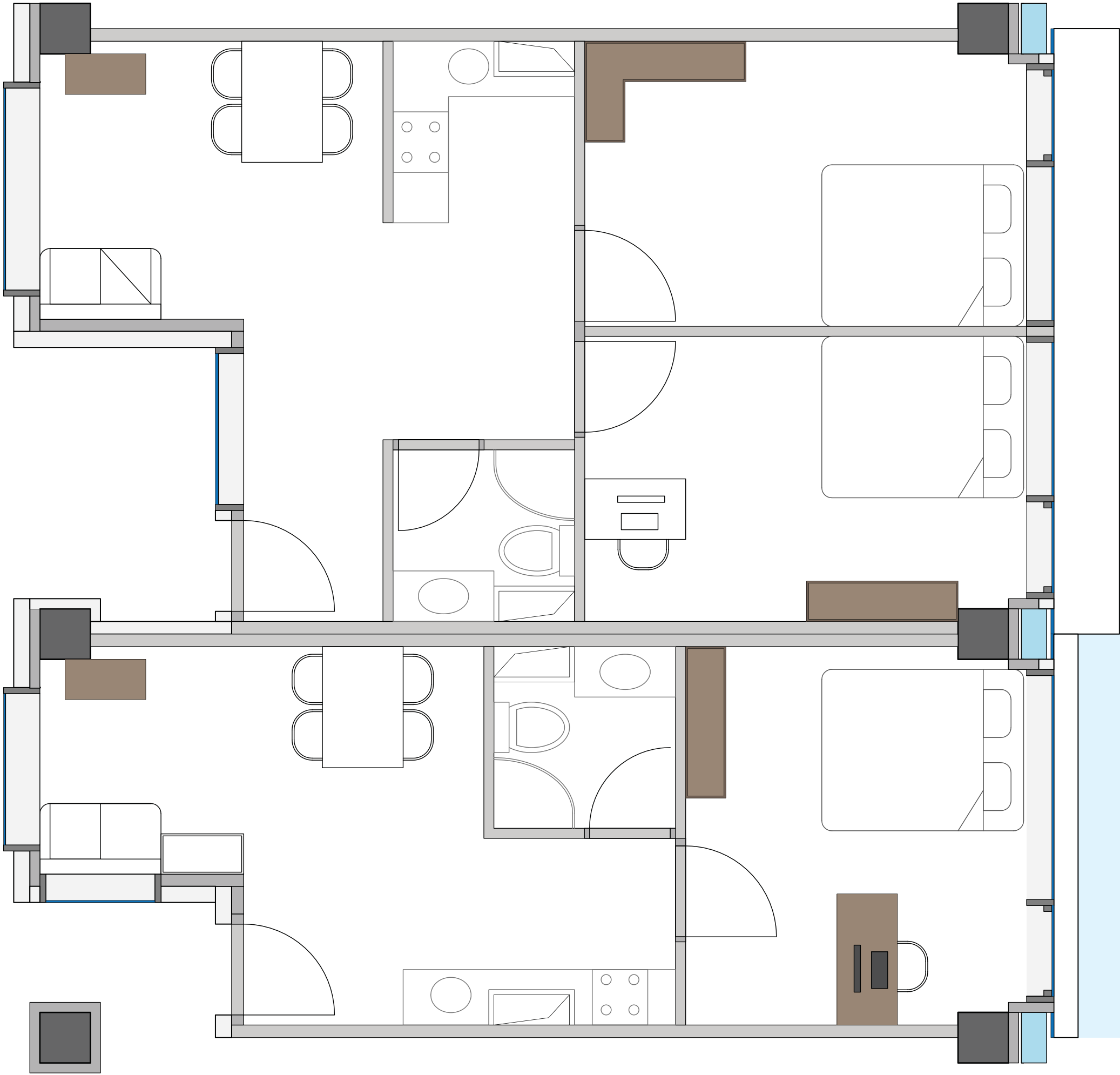
TOP ALLEY



APARTMENTS

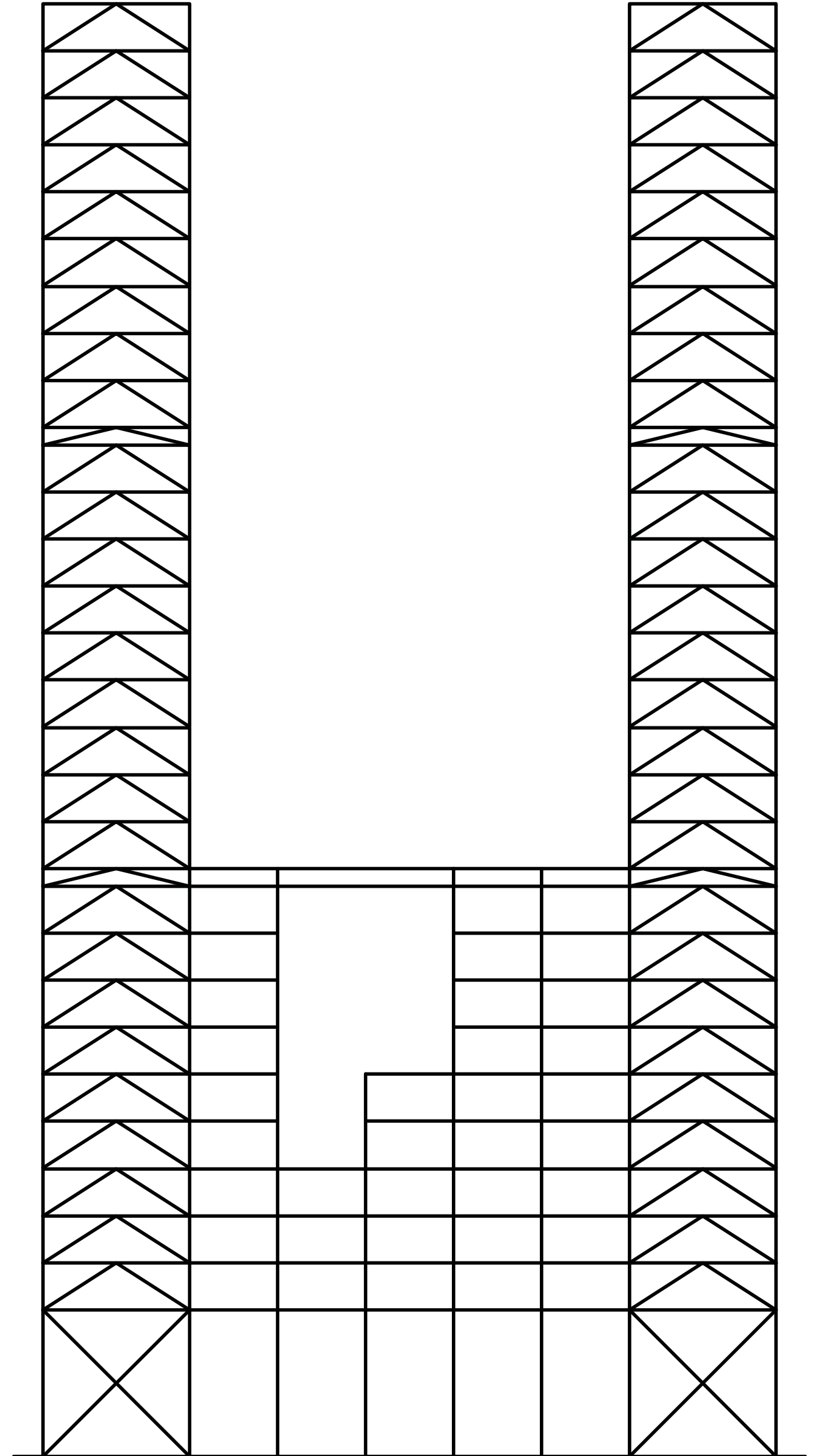
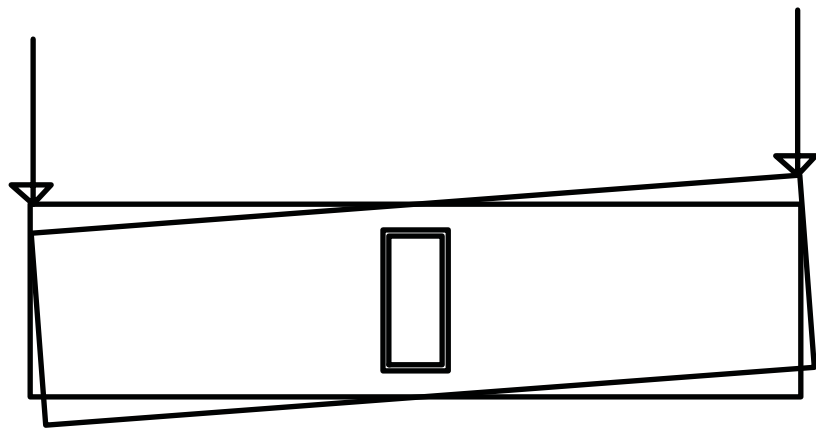
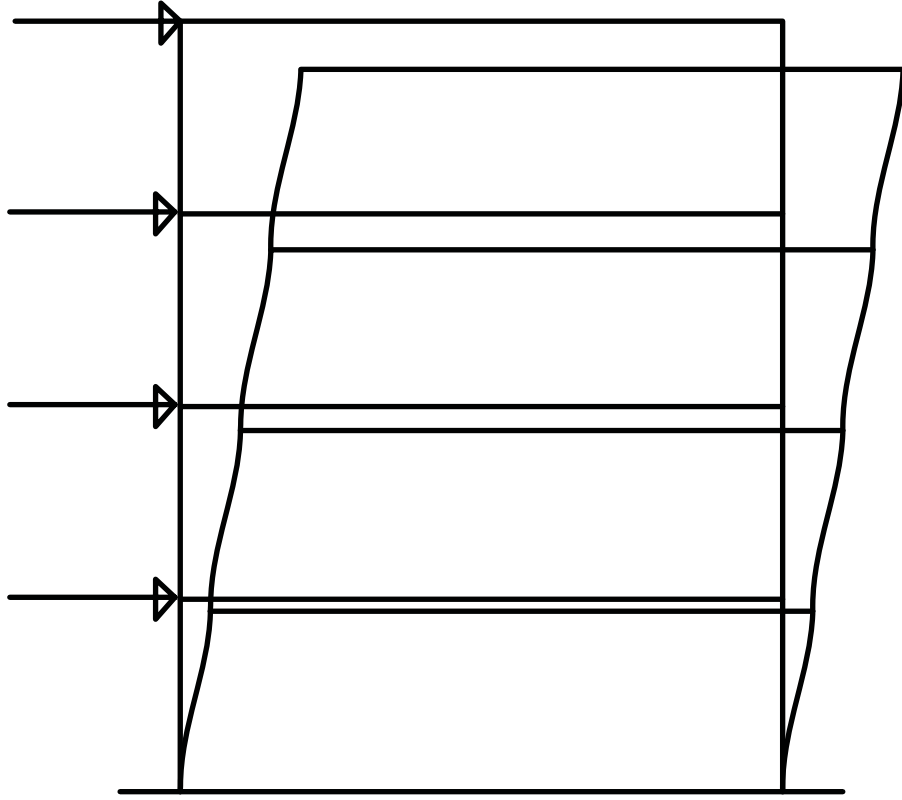
**54 M2
TWO BEDROOM
SOUTH FACING
PRIVATE COURTYARD**

**38 M2
SINGLE BEDROOM
NORTH FACING
SHARED COURTYARD**



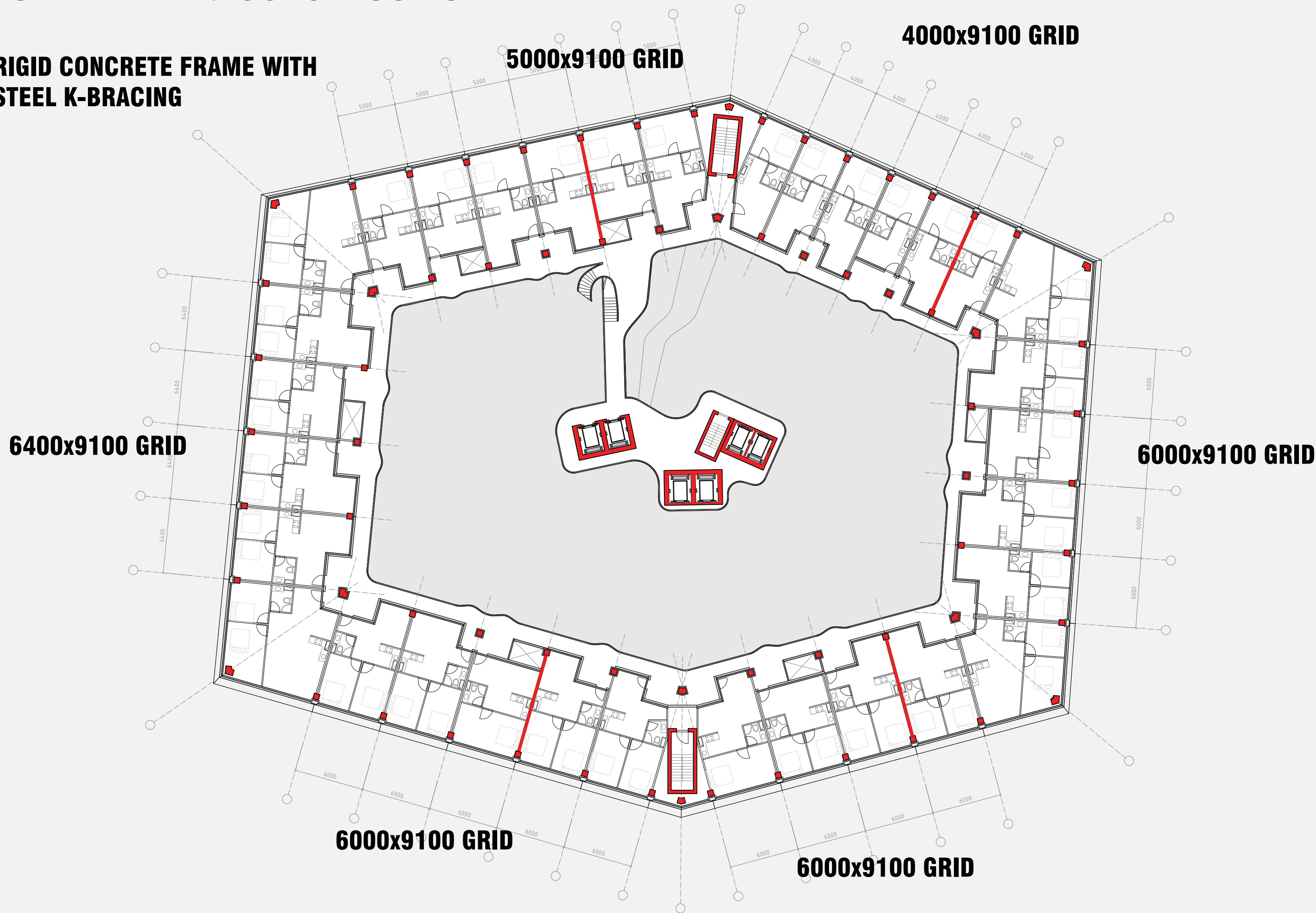
LOAD BEARING CONSTRUCTION

WHILE A RIGID FRAME POSSIBLY COULD BE STABLE ENOUGH
K-BRACING HAS BEEN ADDED TO COUNTER TORSION AND HORIZONTAL
DEFORMATION



LOAD BEARING CONSTRUCTION

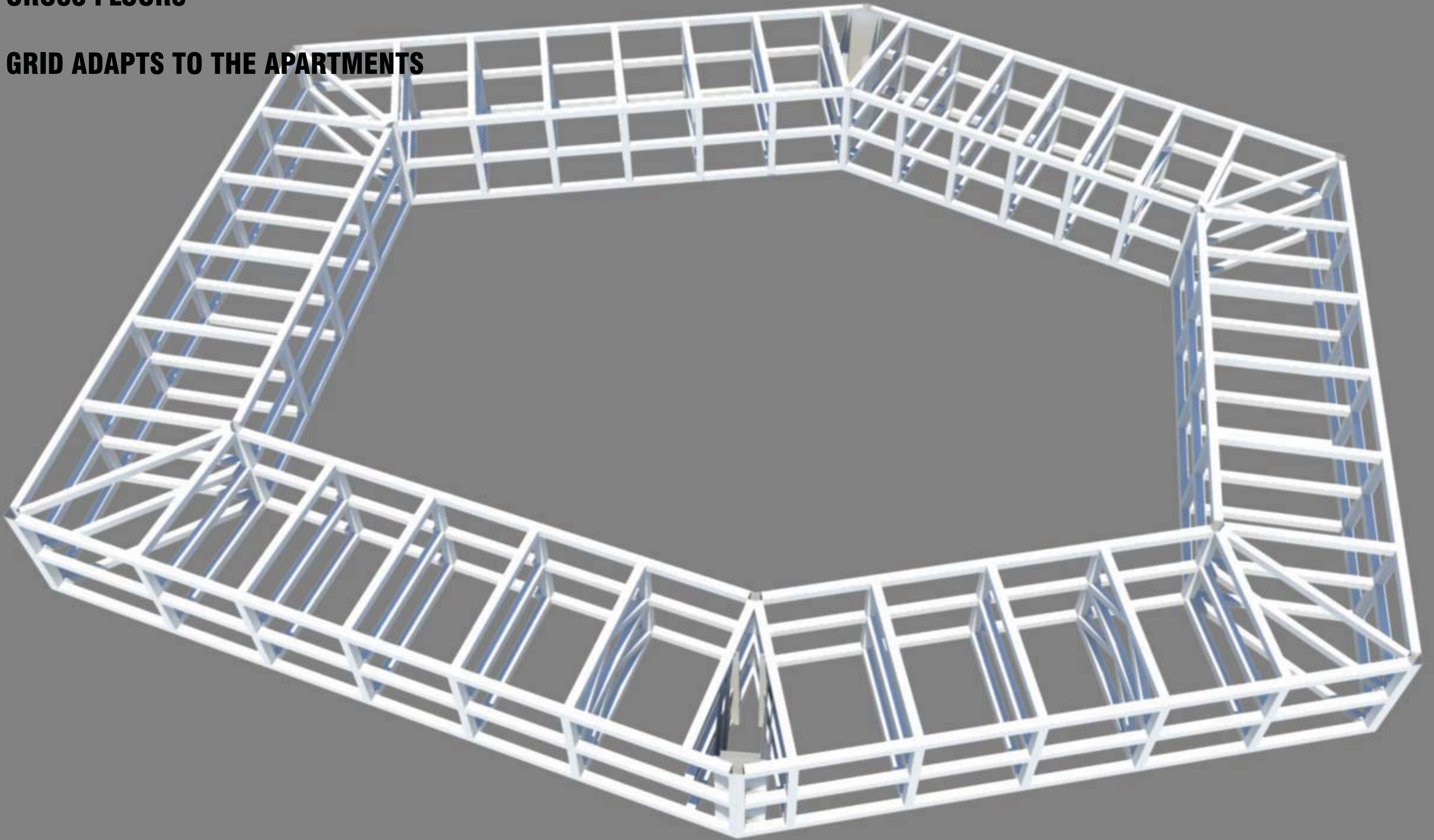
**RIGID CONCRETE FRAME WITH
STEEL K-BRACING**



3D RIGID FRAME

CROSS FLOORS

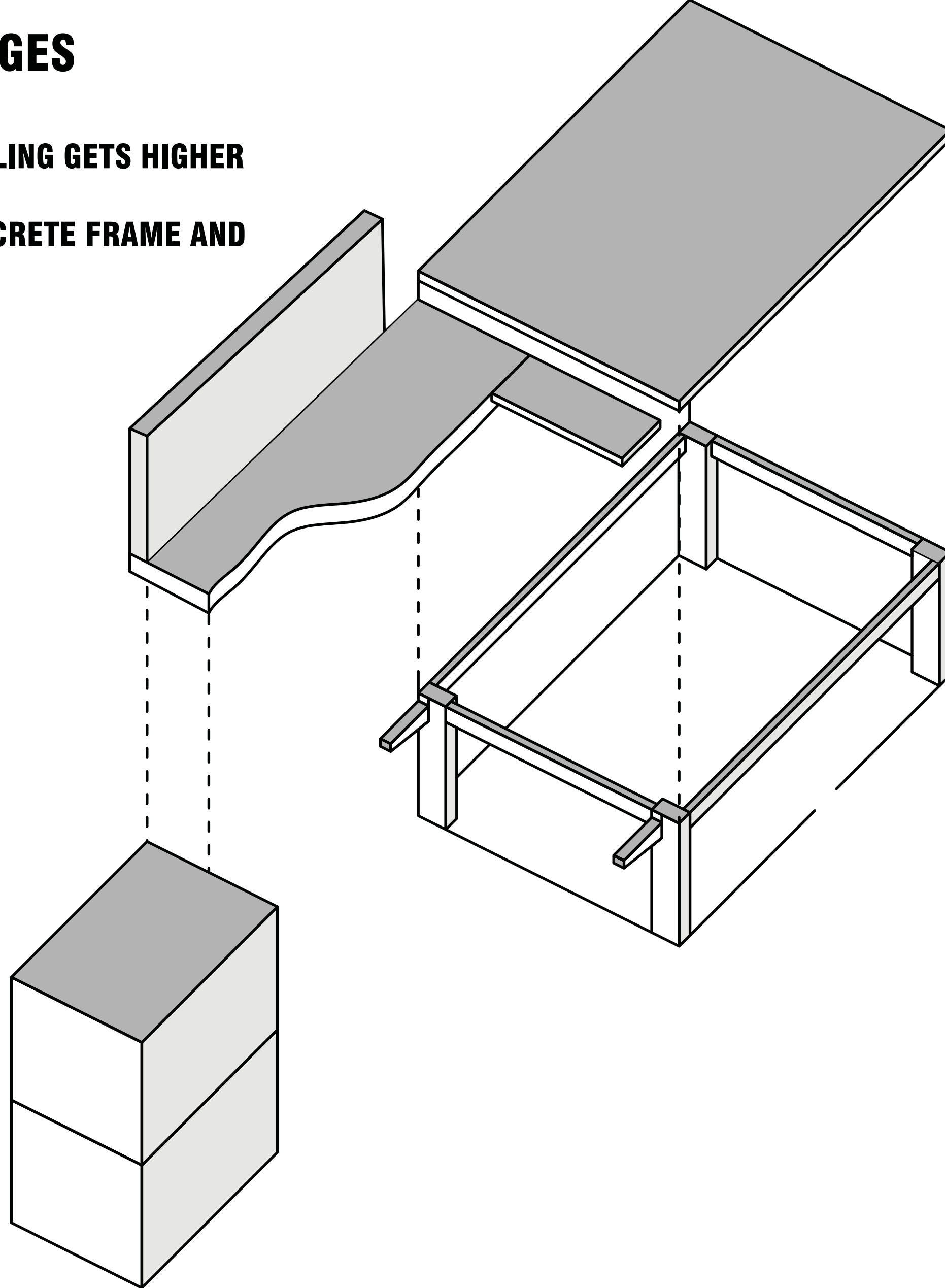
GRID ADAPTS TO THE APARTMENTS



CONSTRUCTION BRIDGES

IF LENGTH INCREASES, THE RAILING GETS HIGHER

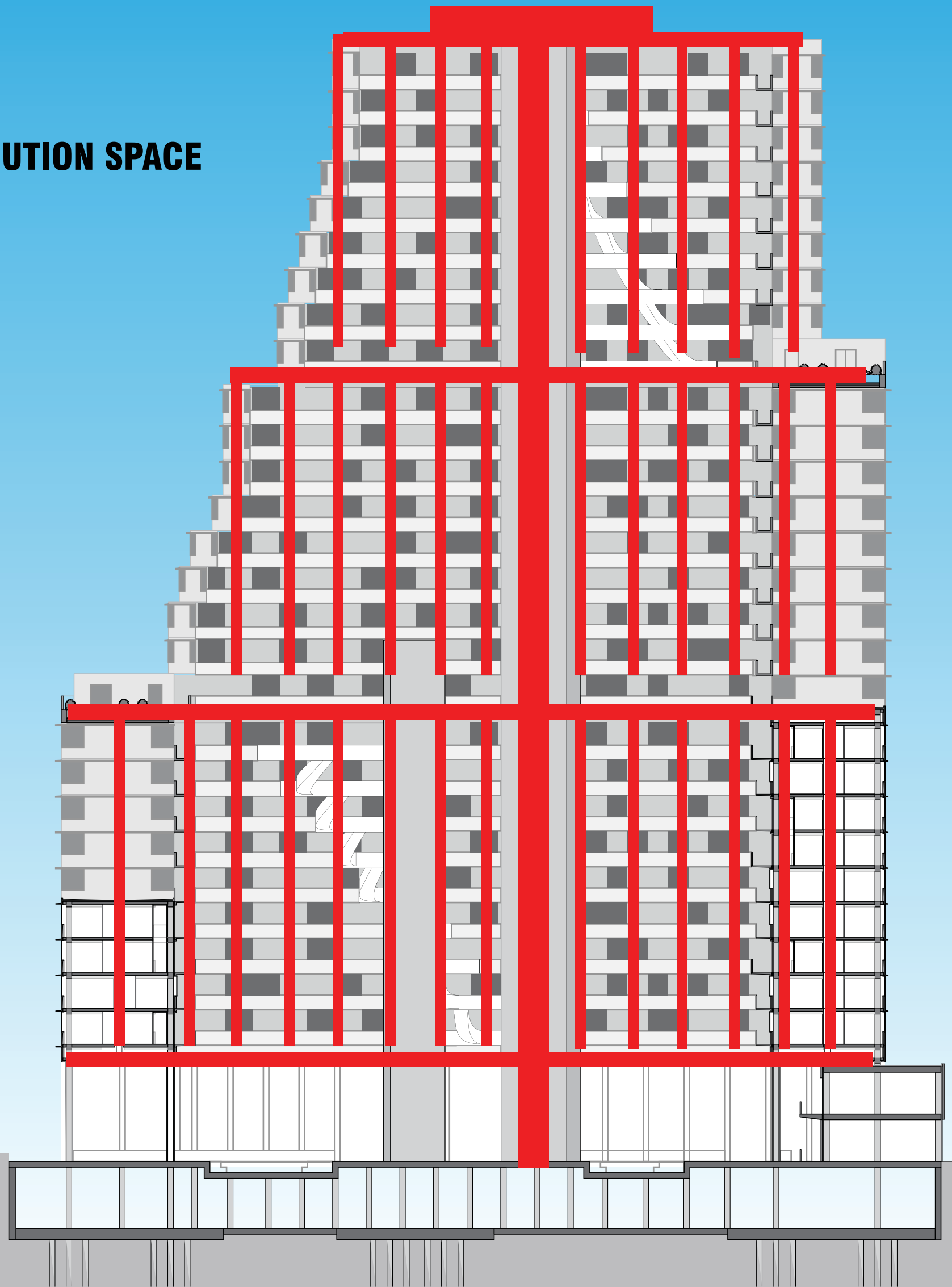
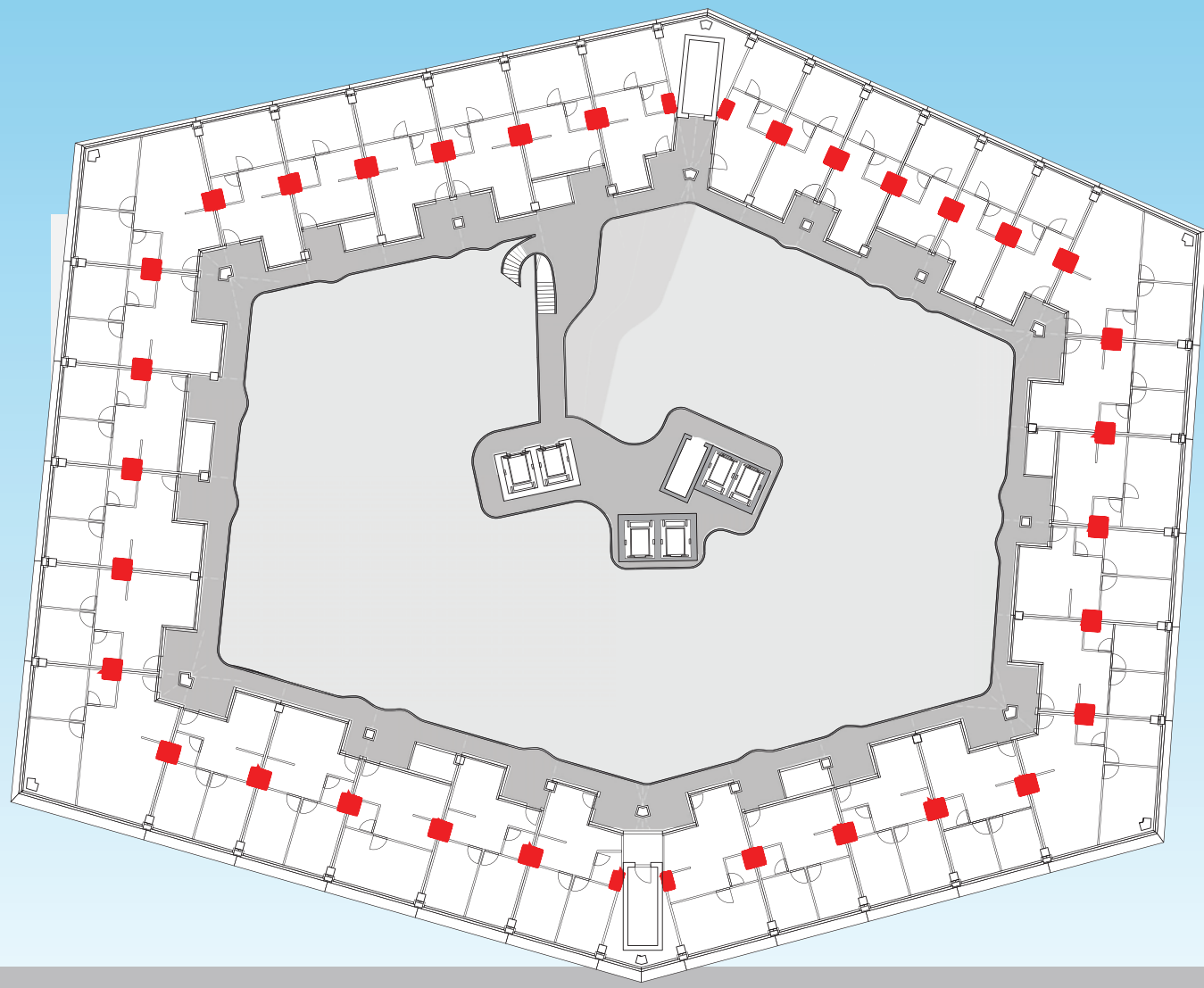
SUPPORTED ON THE RIGID CONCRETE FRAME AND
CENTRAL CORE



INSTALLATIONS - SHAFTS

EACH APARTMENT HAS 2 SHAFTS

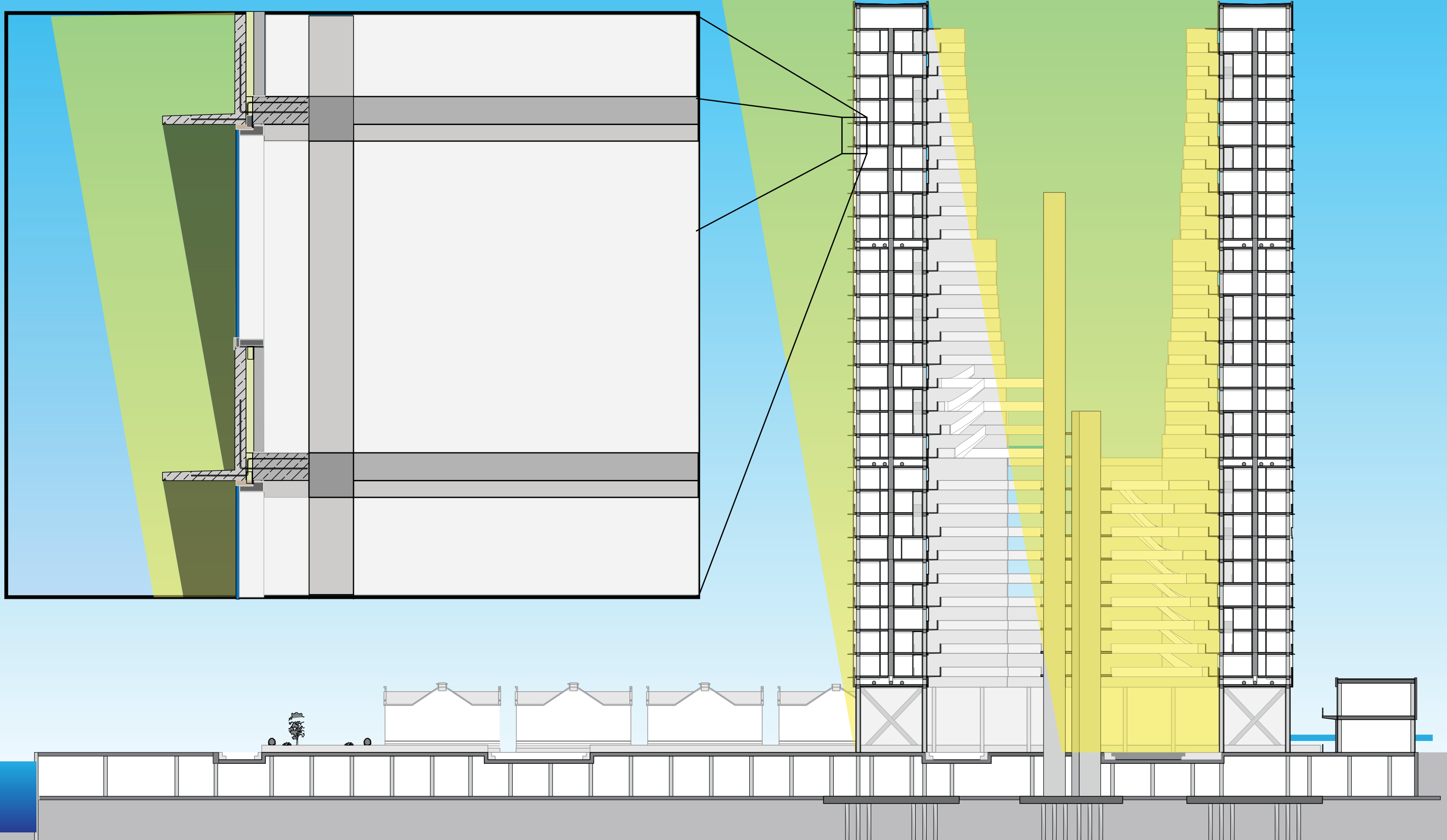
BETWEEN EACH OF THE 3 LAYERS A HORIZONTAL DISTRIBUTION SPACE



DAYLIGHT

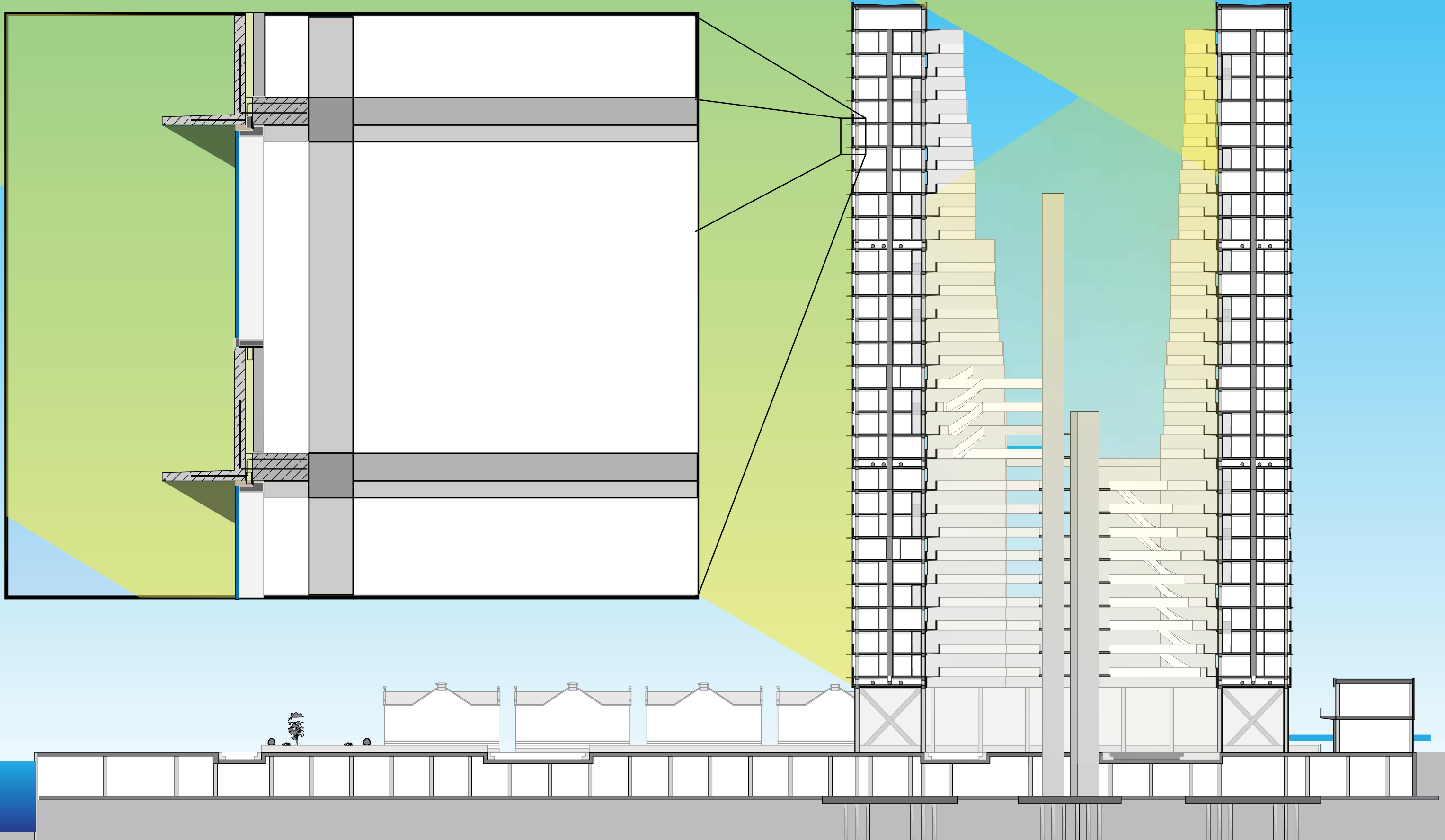
SHANGHAI'S LATITUDE IS 31 DEGREES

IN SUMMER, THE HIGHEST POINT OF THE SUN IS 82 DEGREES



DAYLIGHT

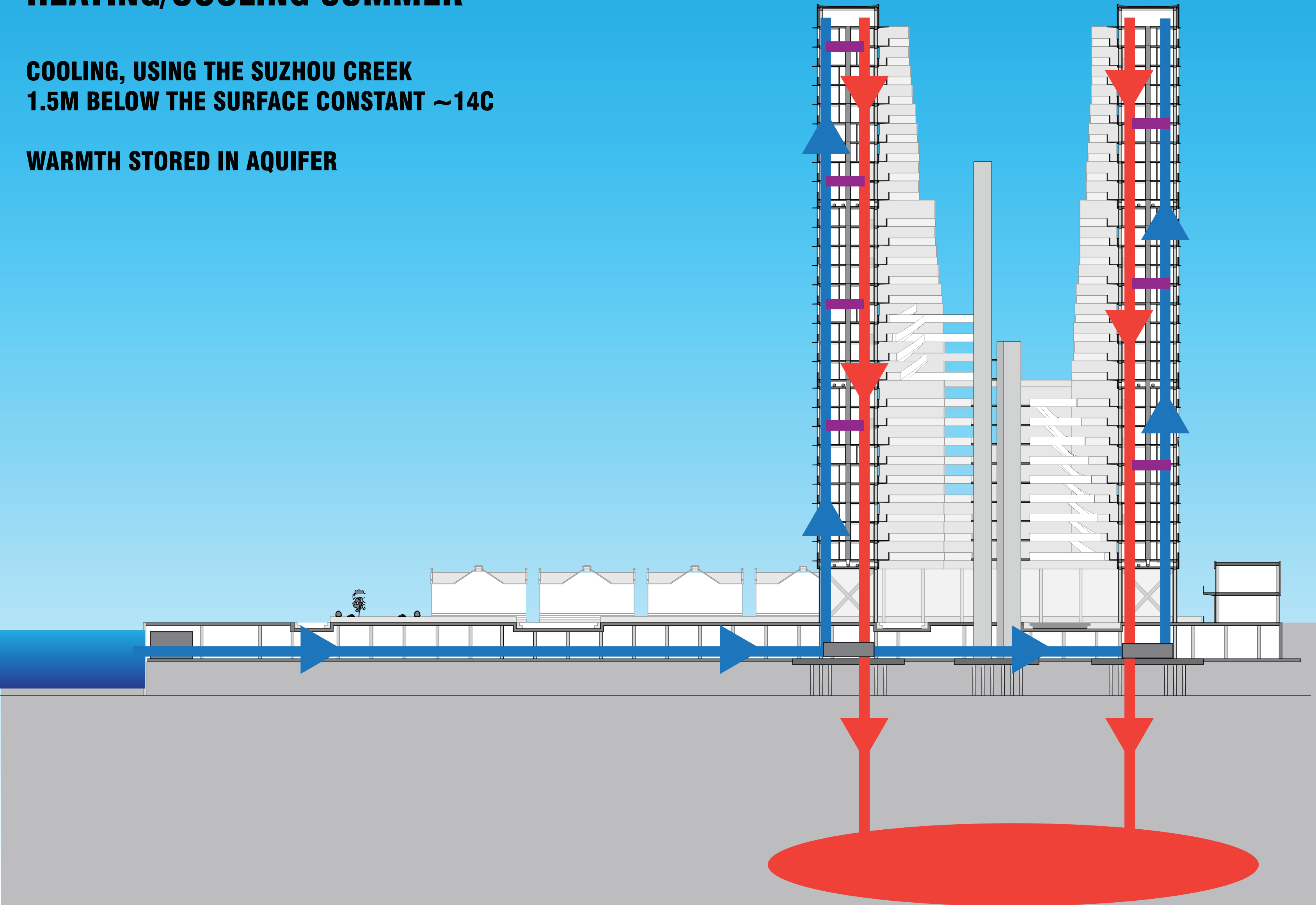
... AND 32 DEGREES IN THE WINTER



HEATING/COOLING SUMMER

COOLING, USING THE SUZHOU CREEK
1.5M BELOW THE SURFACE CONSTANT ~14C

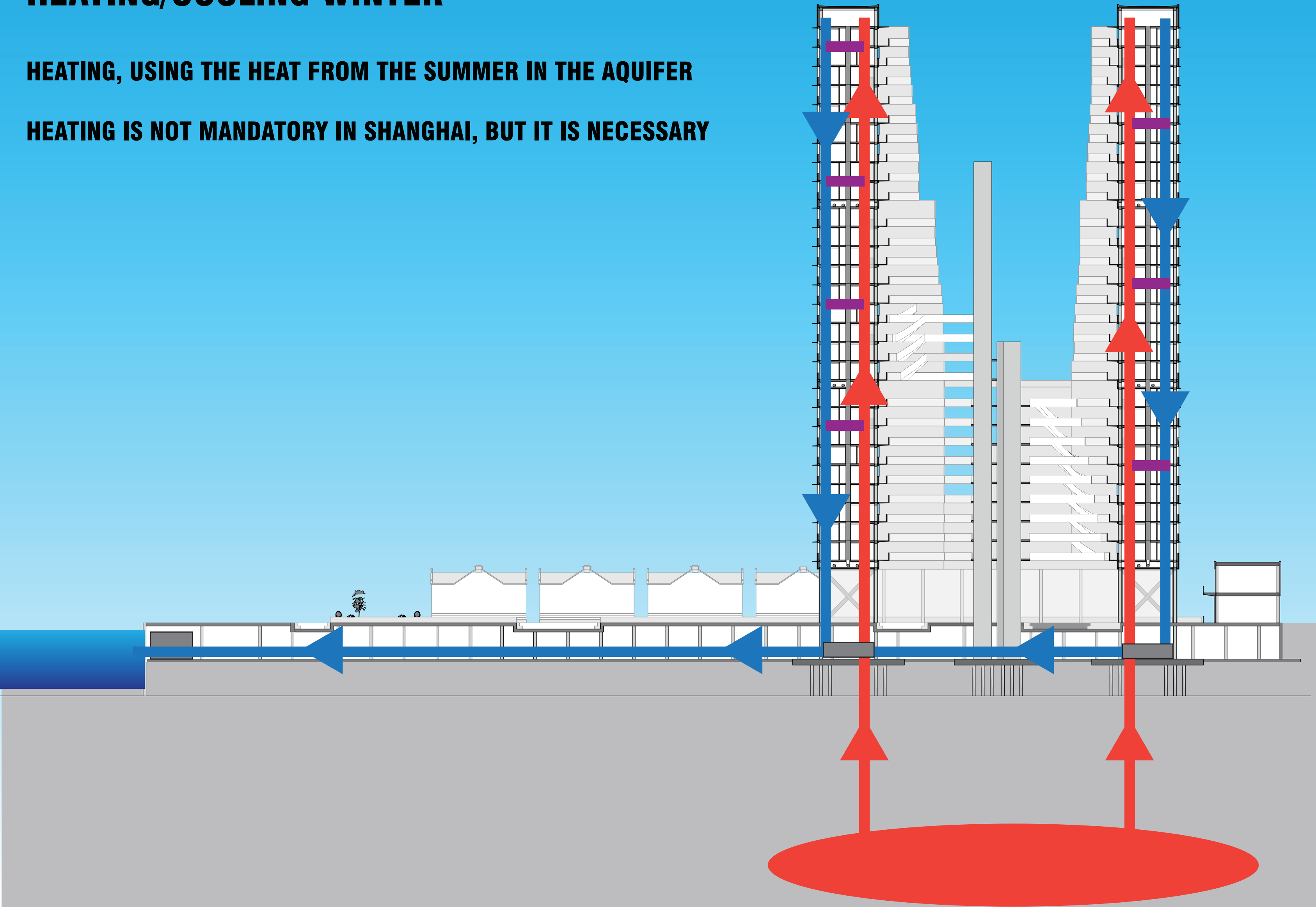
WARMTH STORED IN AQUIFER



HEATING/COOLING WINTER

HEATING, USING THE HEAT FROM THE SUMMER IN THE AQUIFER

HEATING IS NOT MANDATORY IN SHANGHAI, BUT IT IS NECESSARY



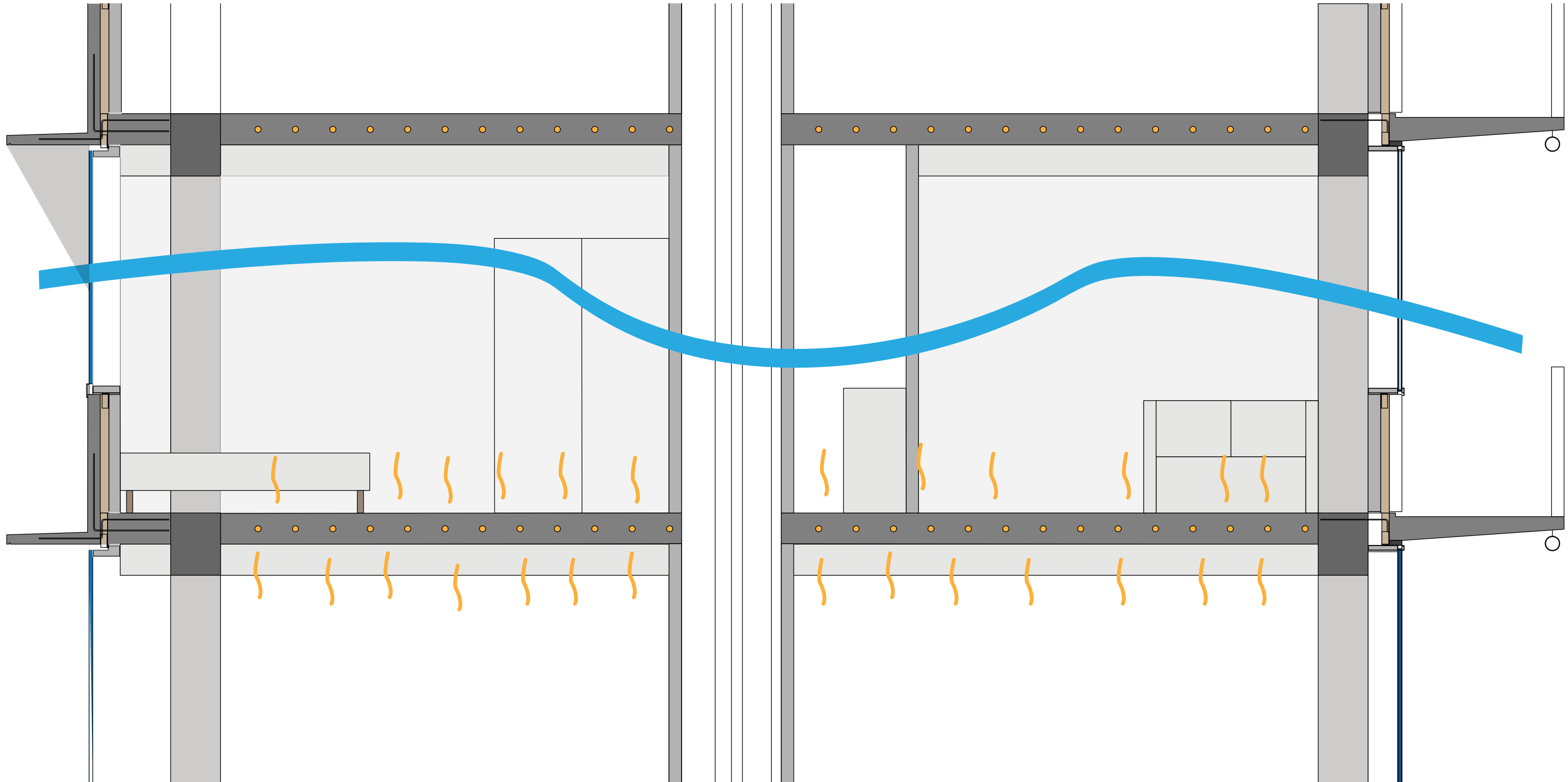
INDOOR CLIMATE

OUTSIDE SOLAR SHADING

NATURAL CROSS VENTILATION

FLOOR HEATING/COOLING

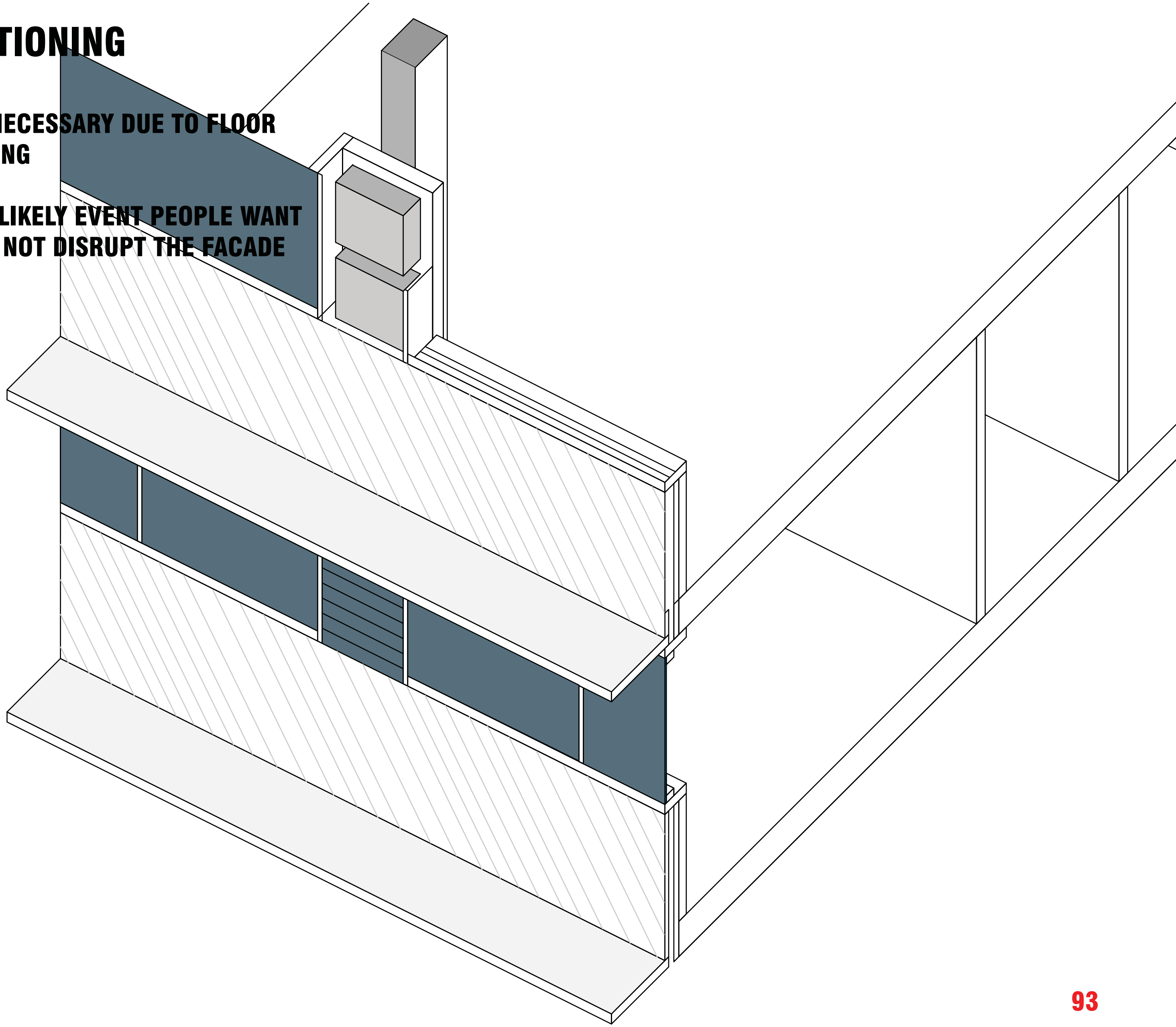
POSSIBILITY FOR AIRCO UNIT IN FACADE



AIRCONDITIONING

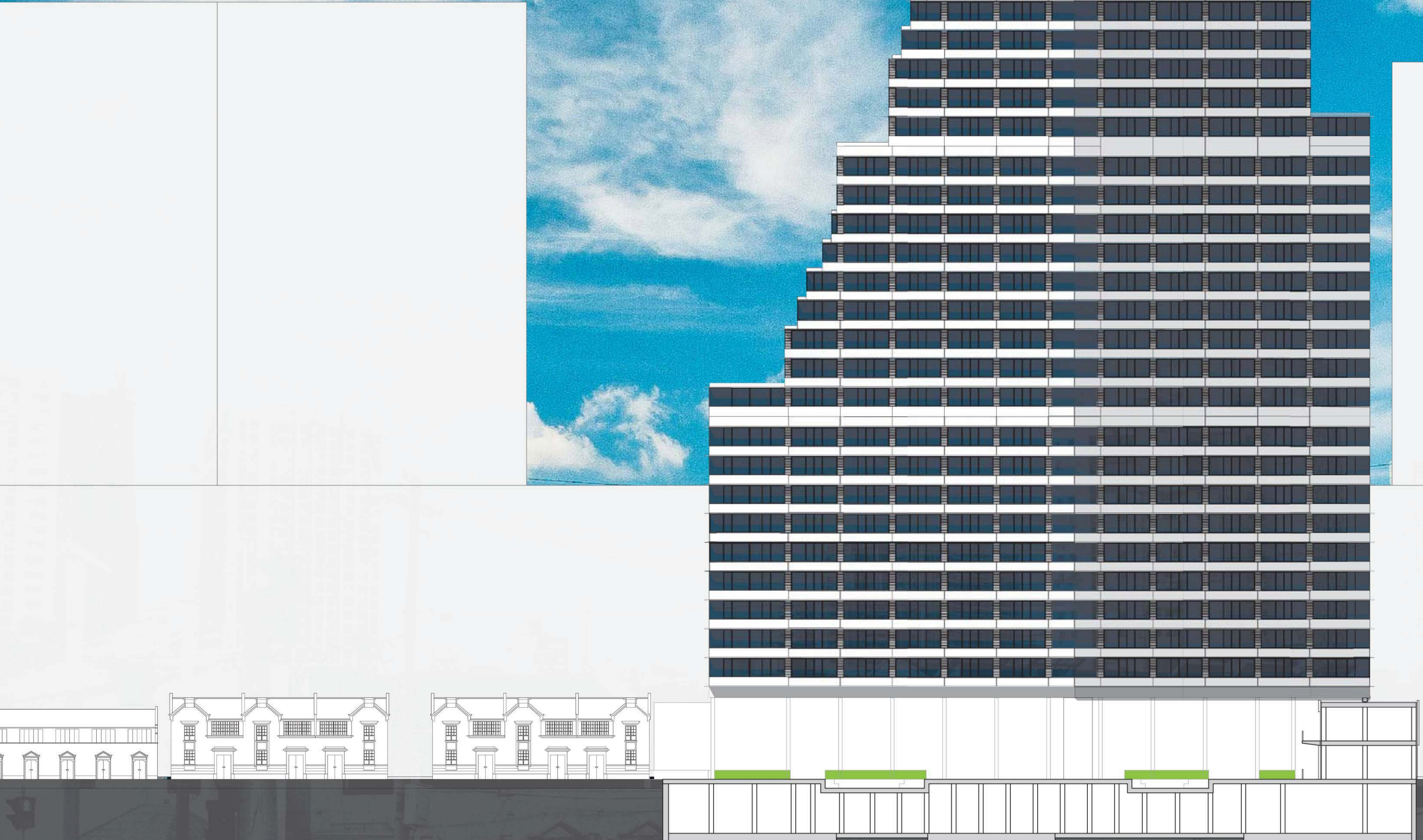
AIRCO IS NOT NECESSARY DUE TO FLOOR HEATING/COOLING

IN THE HIGHLY LIKELY EVENT PEOPLE WANT AIRCO, IT WILL NOT DISRUPT THE FACADE



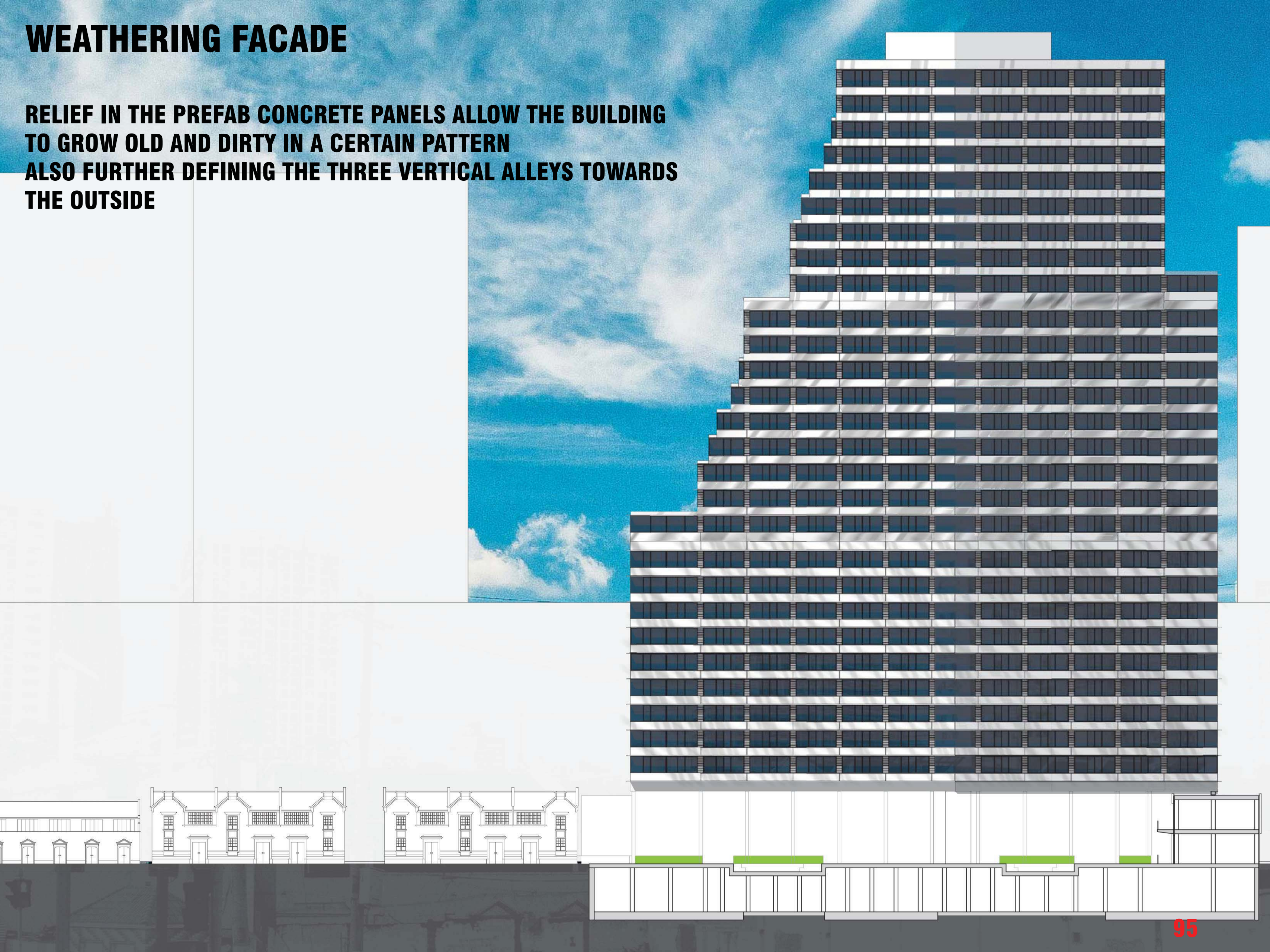
WEATHERING FACADE

WHILE THE BUILDING STARTS AGE, THE PRISTINE WHITE FACADE WILL TURN TO “SHANGHAI GREY”



WEATHERING FACADE

**RELIEF IN THE PREFAB CONCRETE PANELS ALLOW THE BUILDING TO GROW OLD AND DIRTY IN A CERTAIN PATTERN
ALSO FURTHER DEFINING THE THREE VERTICAL ALLEYS TOWARDS THE OUTSIDE**

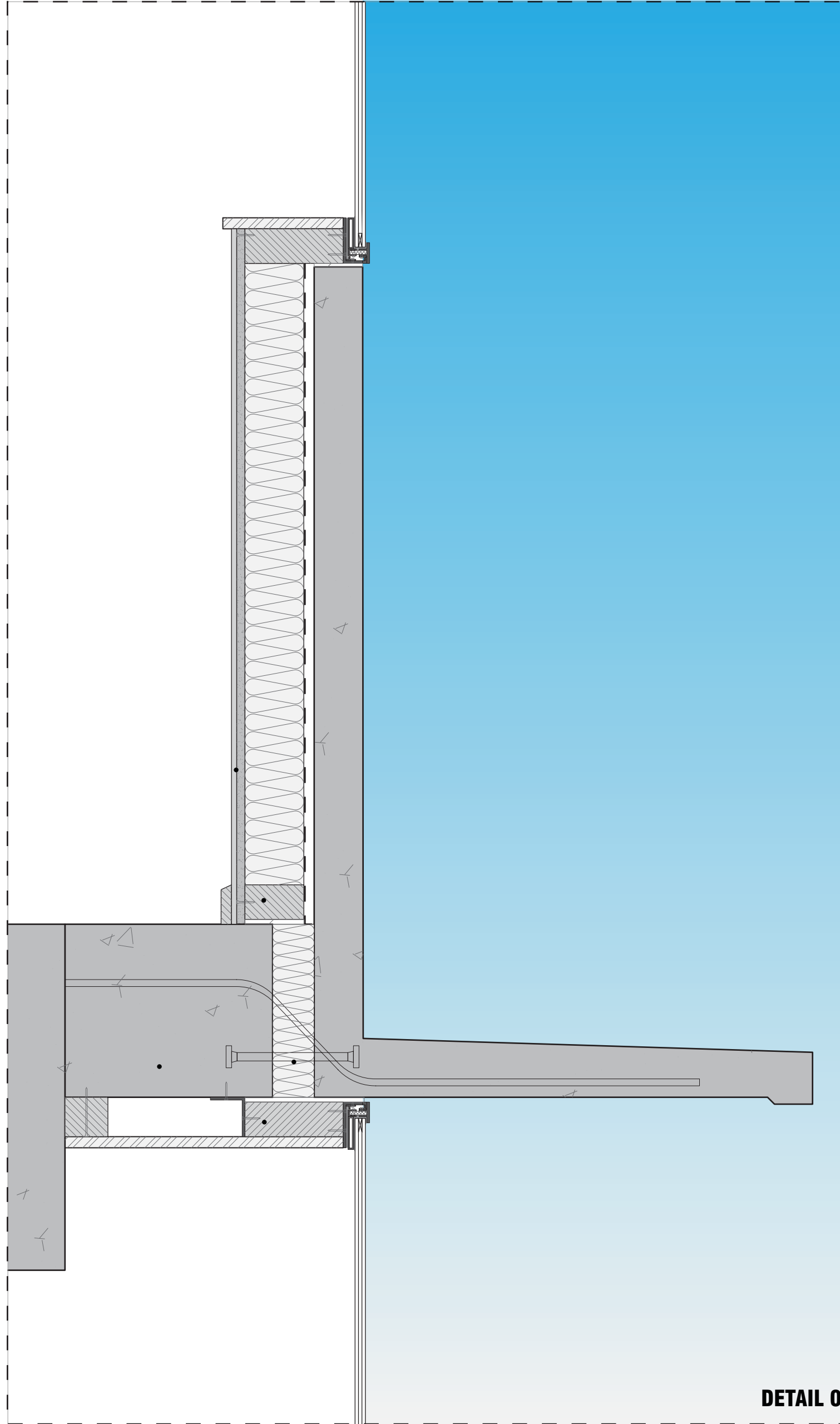


DETAIL

**PREFAB CONCRETE FACADE
ELEMENTS PROVIDE SOLAR SHADING**

**GLASS IN LINE WITH THE PREFAB
ELEMENTS, HARD BORDER BETWEEN
PUBLIC AND PRIVATE**

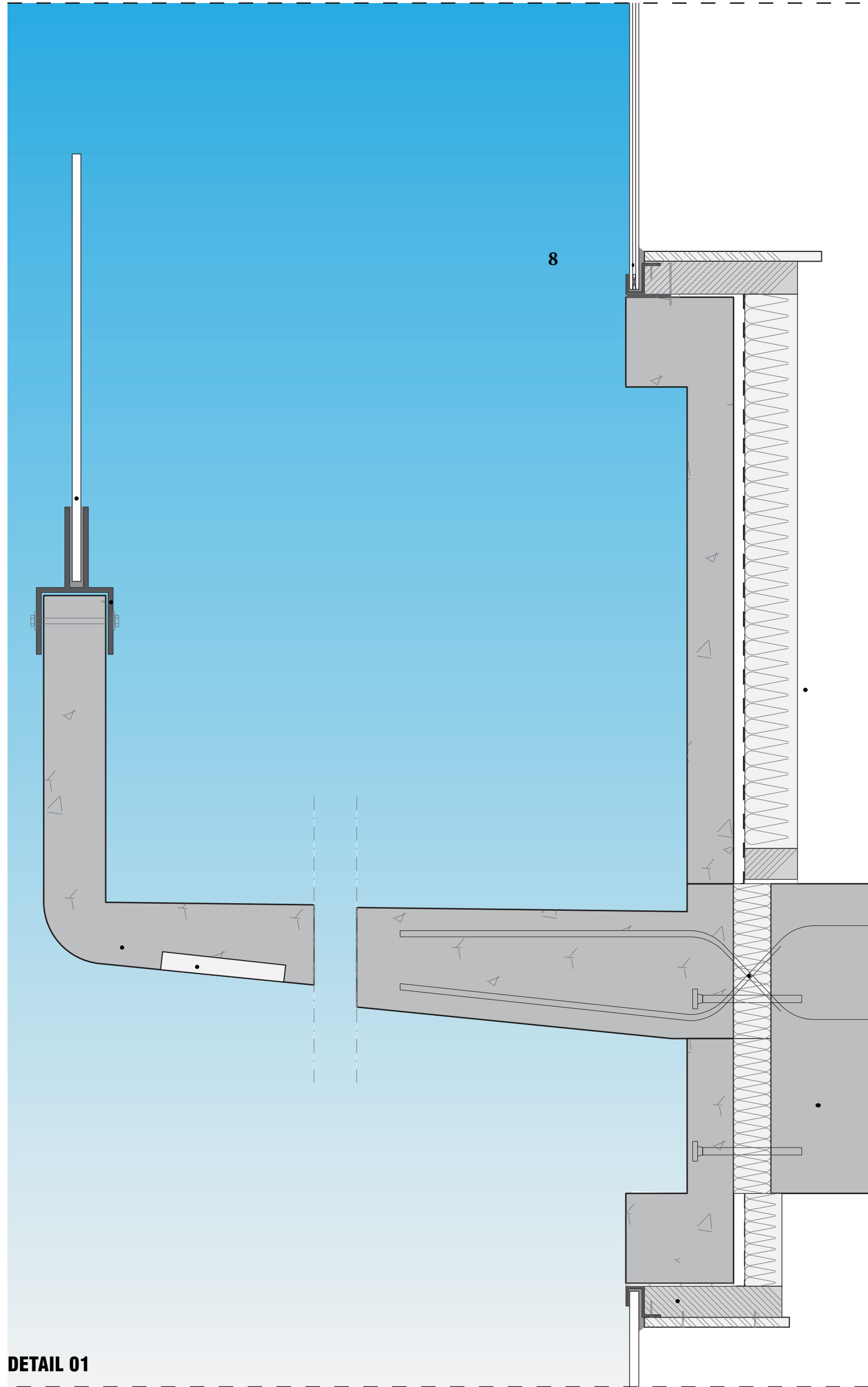
**PREFAB ELEMENTS ARE ENGRAVED
TO AGE MORE BEAUTIFUL**



DETAIL

**BAYWINDOWS SLIGHTLY FADE OUTSIDE-INSIDE
BARRIER**

**RAILING CHANGES ACCORDING TO THE INNER
FACADE, EXTRA SPACE WHEN THERE IS A
COURTYAD**





**THANK YOU
QUESTIONS?**