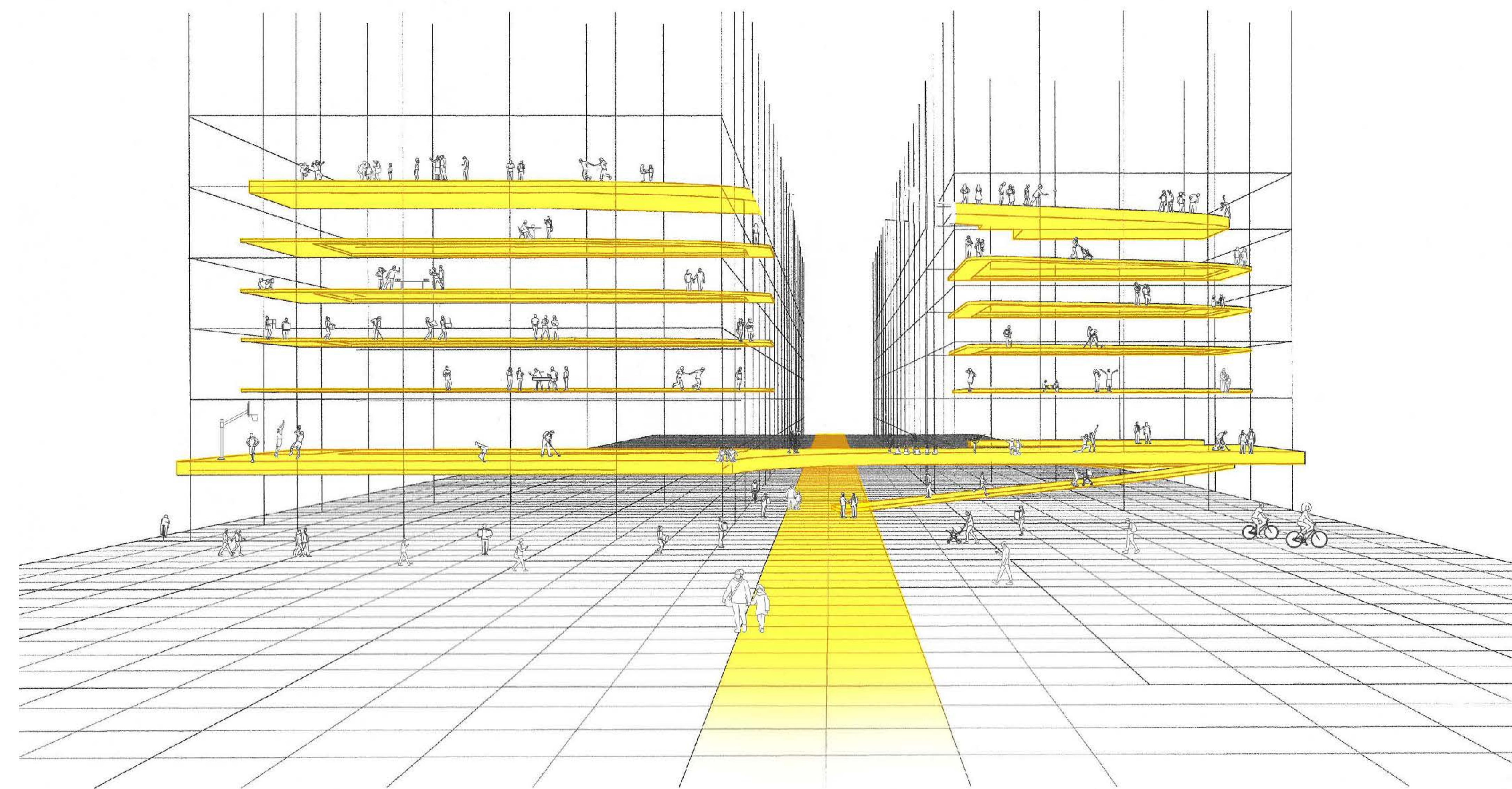


Designing For Immigration:  
User Customized Housing in Downtown Sudbury



Liam Bursey  
Reese Babcock

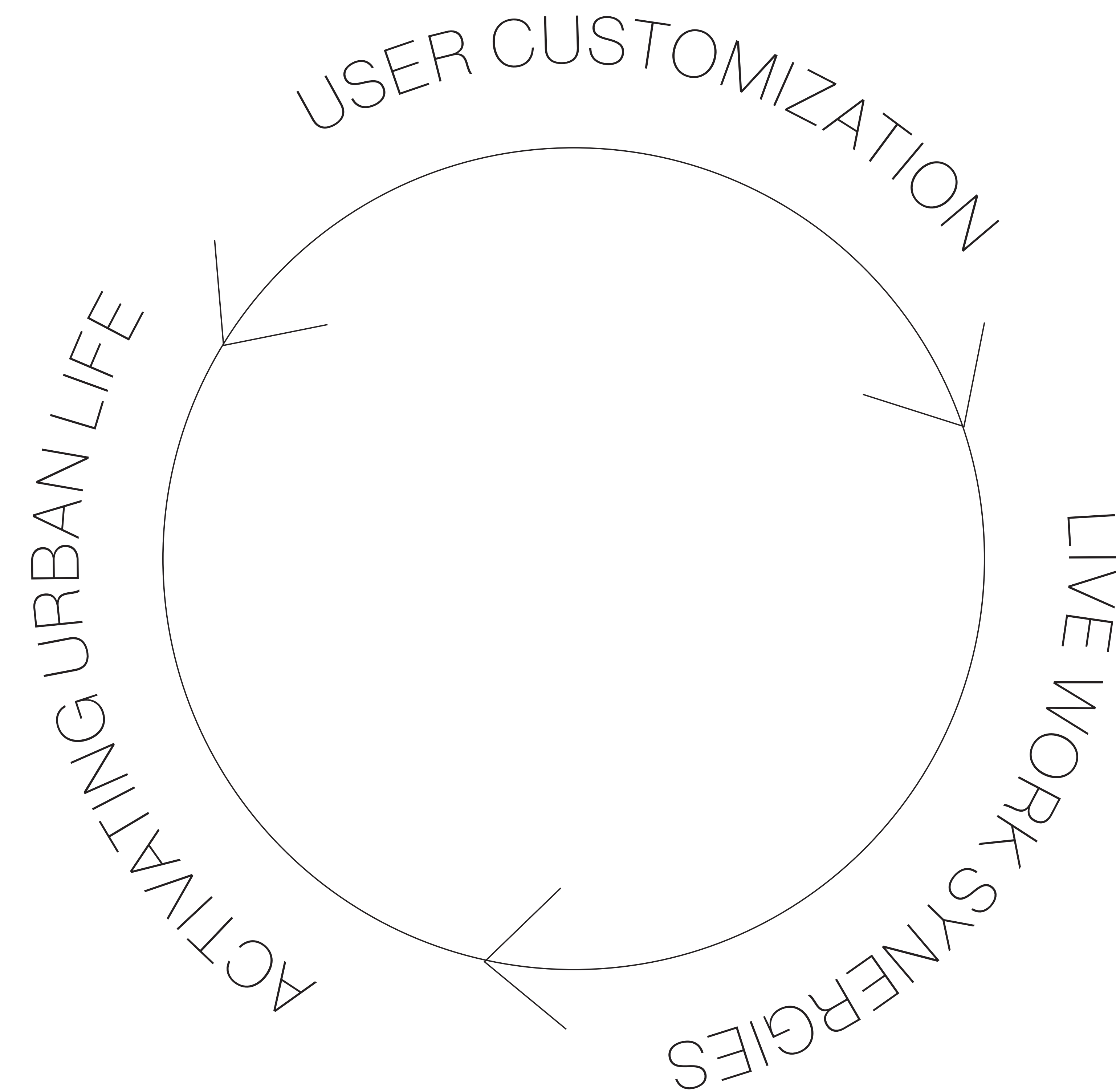


## THESIS

Providing the language rather than the narrative

This mixed-use housing complex will activate the urban life & culture in Downtown Sudbury through a framework of public space that encompasses user customization and live-work synergies. Sudbury's Downtown is missing two key demographics that are necessary to creating a safe, active, and lively community. There is a severe lack of the "missing middle" with very few families and young adults calling the area home. As a result our conceptual direction became an act of filling this void.

Immigration has been, and will continue to be, a crucial factor in Sudbury's growth as a healthy, diverse city, and we believe it is the key to filling this void in Sudbury's future. By creating co-op housing for immigrants and student housing for international as well as local students, we can re-awaken urban life in the Downtown. By offering user customization for residents and dynamic live-work synergies that bring new business and culture to the downtown, we can formulate an environment where the user will have more control in their way of living.





## SITE ANALYSIS

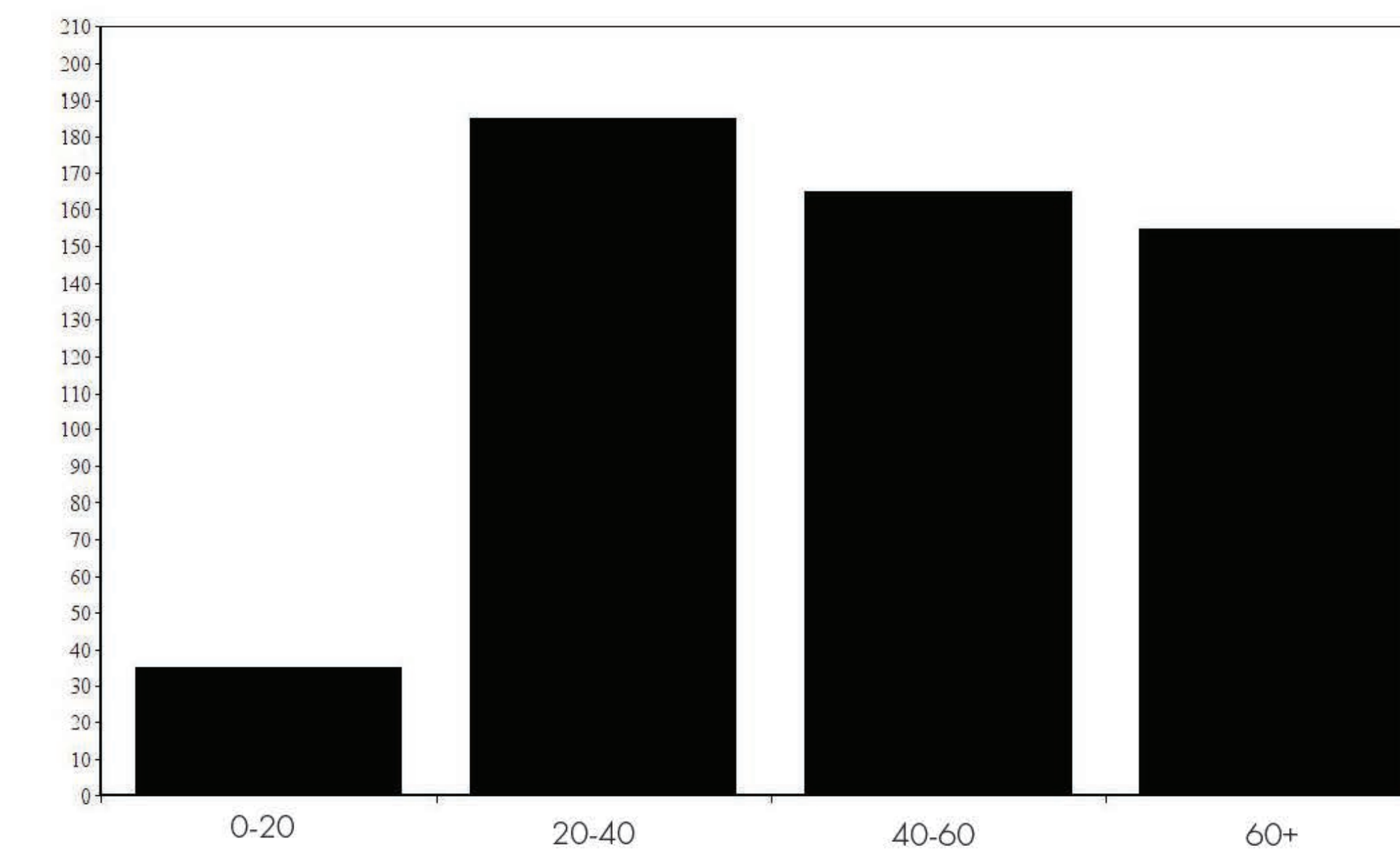
### Sudbury's missing middle

In addition to finding that Sudbury's downtown lacks diversity, families, and young adults, we also found that it was severely lacking a public realm. If this public realm can be returned it would bring new users, new cultures, and age groups to the downtown, and would allow them to transform it into a mosaic of influences that will formulate a strong community.

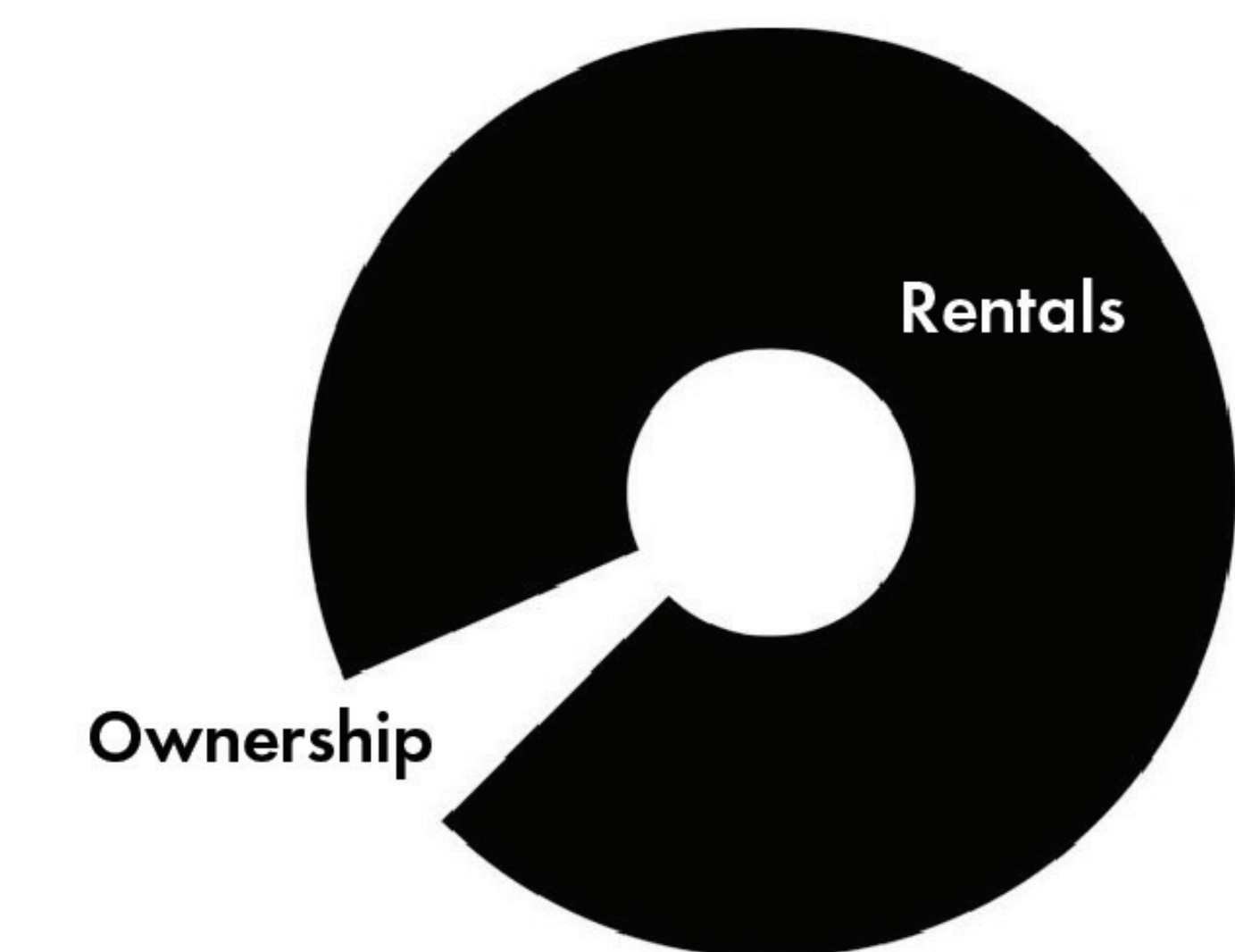
Our site analysis led us to using Old City Hall Lane as a key connector of urban life throughout the city - a through-way of public space that would bring life back to Sudbury's downtown. Our resultant urban design encompassed the full length of this laneway. Activity is directed to this crucial axis through a material narrative of a brick walkway, and all pathways lead to the housing complex, orienting it as the heart of the city.



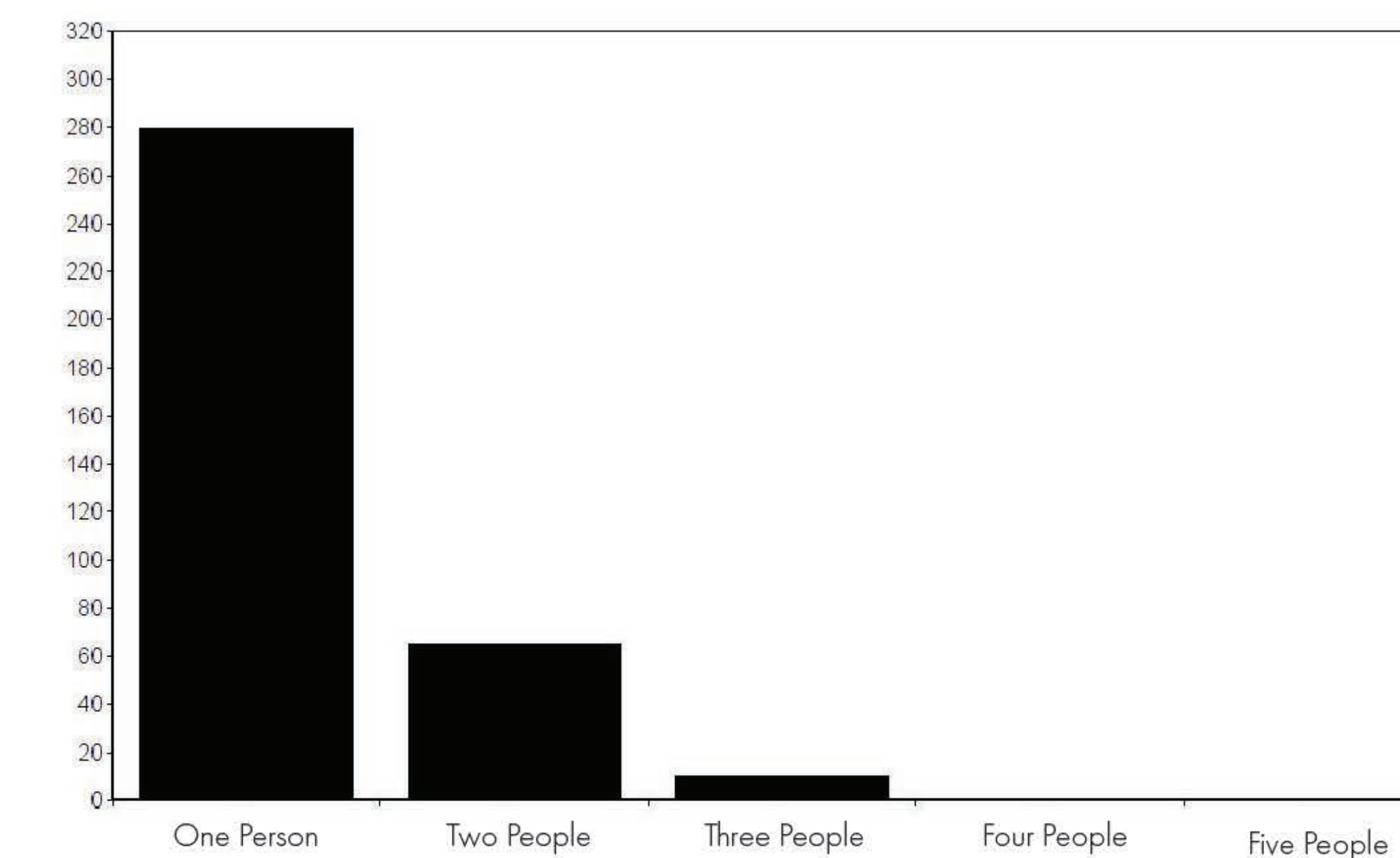
Average Age per Household, Downtown Sudbury 2016



Housing Ownership, Downtown Sudbury 2016



Occupants per Household, Downtown Sudbury 2016

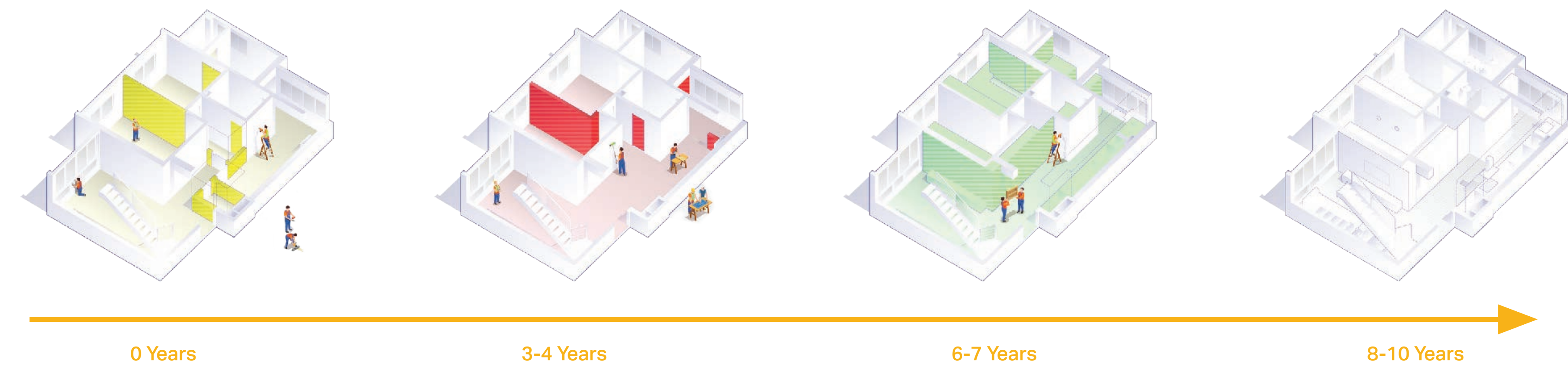




PRECEDENTS

Adaptability in existing projects

Twins Apartment - Paralelo 30



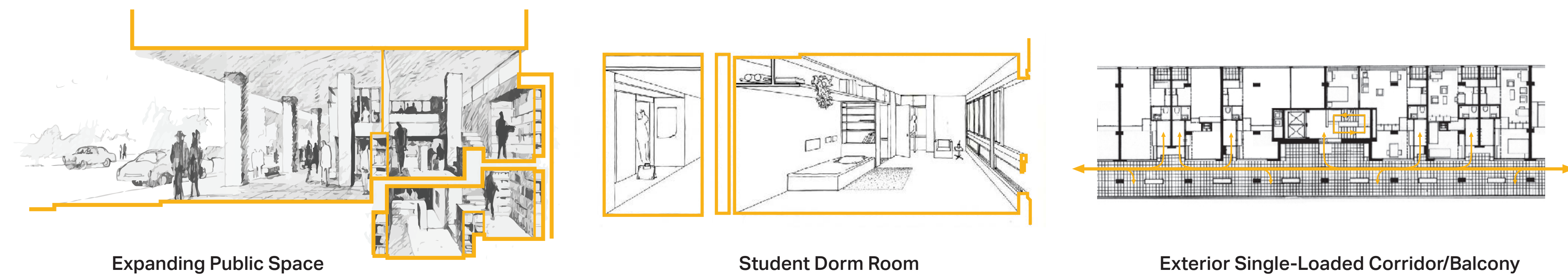
0 Years

3-4 Years

6-7 Years

8-10 Years

Student Housing Wesperstraat, Amsterdam - Herman

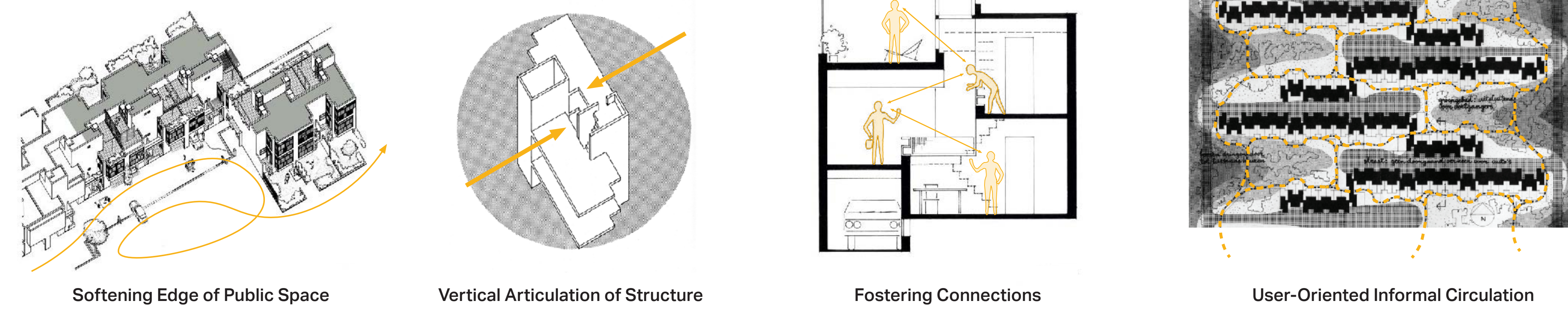


Expanding Public Space

Student Dorm Room

Exterior Single-Loaded Corridor/Balcony

Diagoon Experimental Housing - Herman Hertzberger



Softening Edge of Public Space

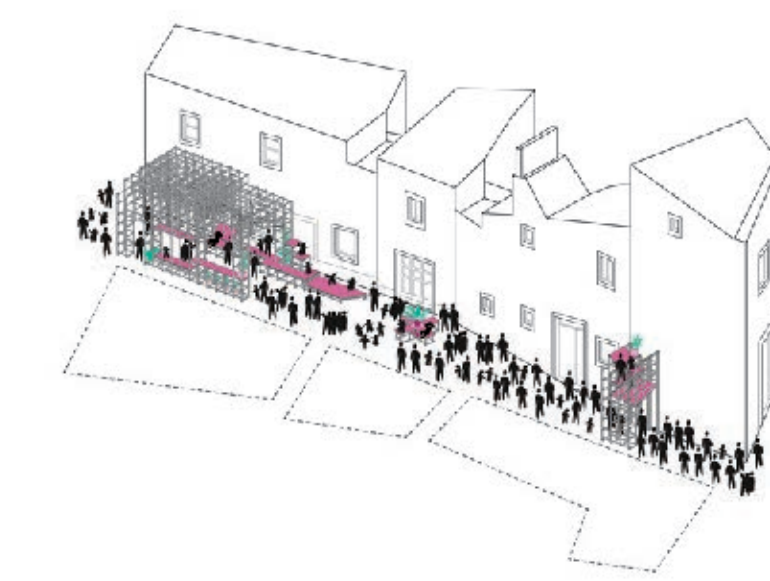
Vertical Articulation of Structure

Fostering Connections

User-Oriented Informal Circulation

HOUSING

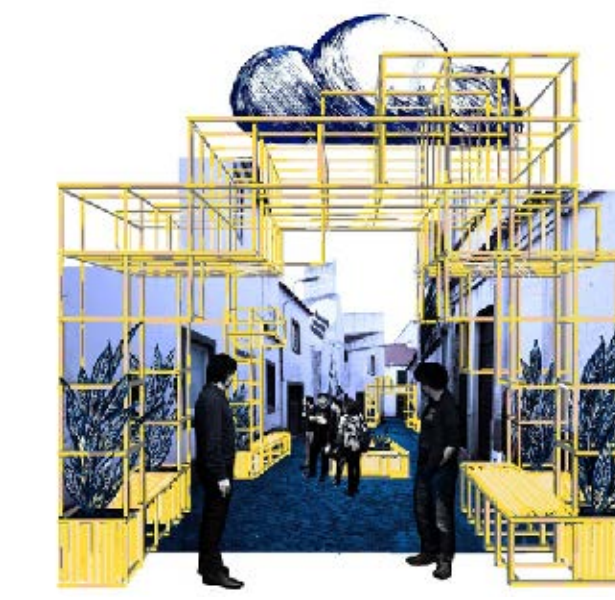
Casa do Quarteirao - Orrizontale



Creating Public Life in Alleyway

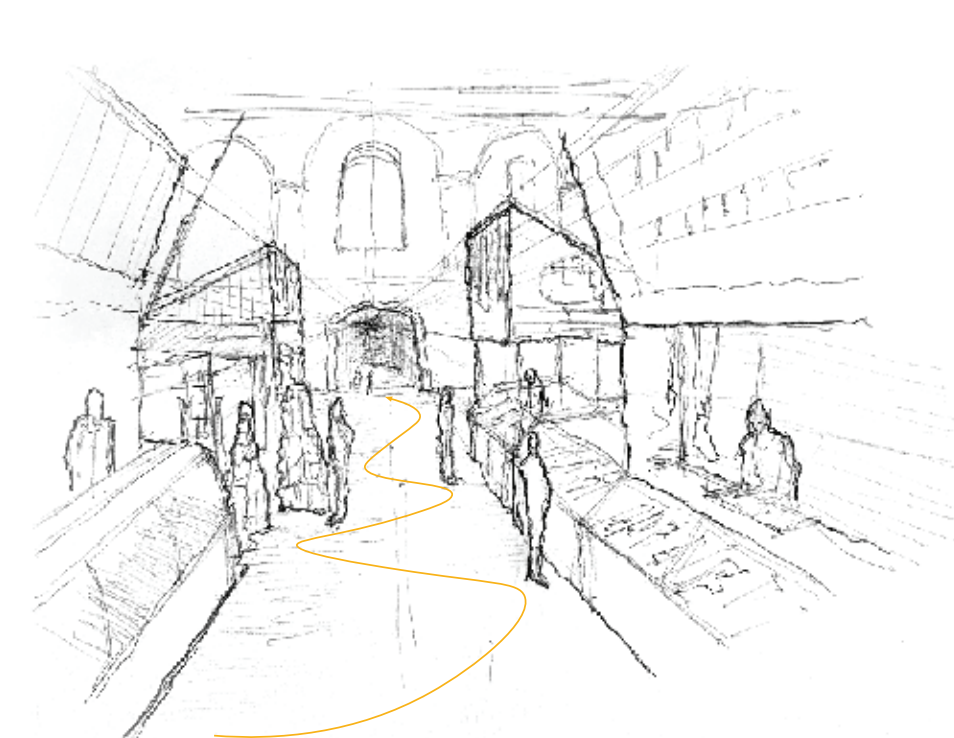


Stitching Pedestrian Routes Together

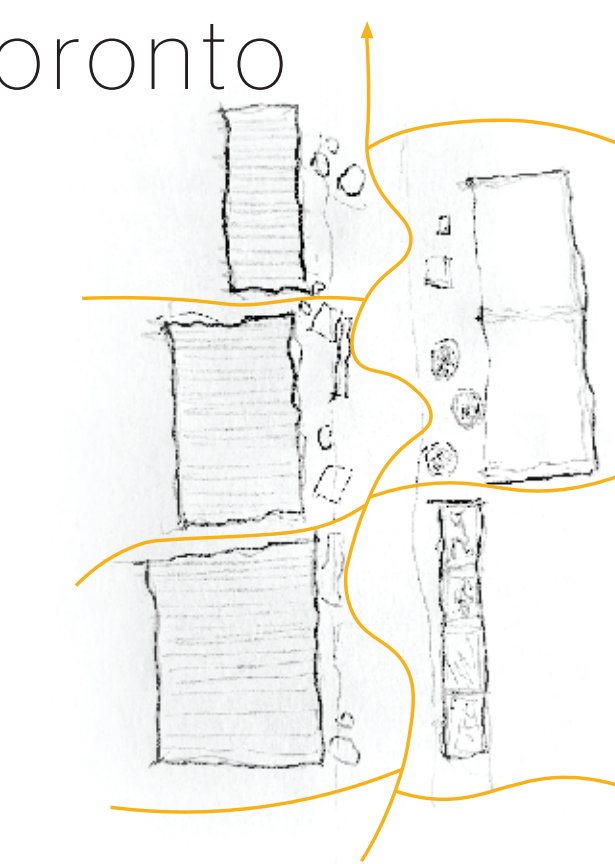


Opportunities for Creating Public Life in Underutilized Alleys

St. Lawrence Market - Toronto



Human Scale & Community Interaction

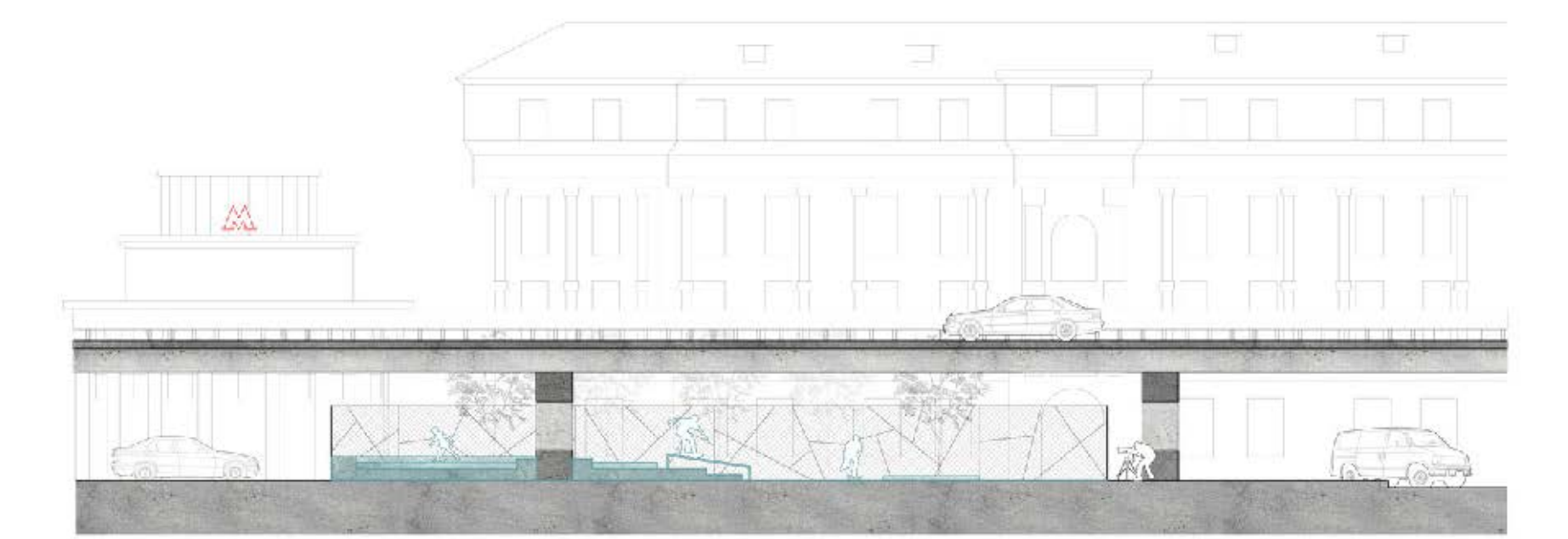
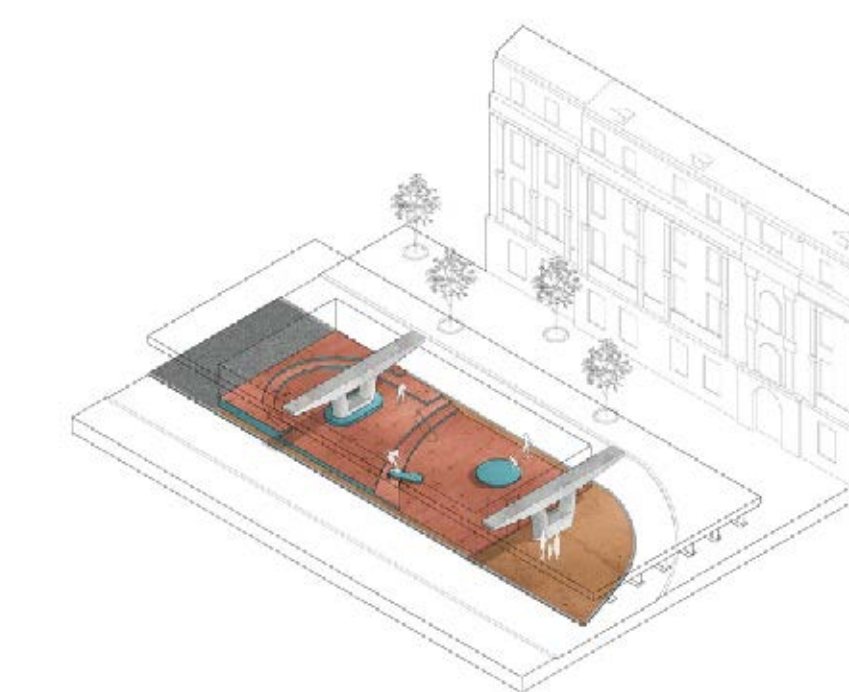


Extending into Public Domain

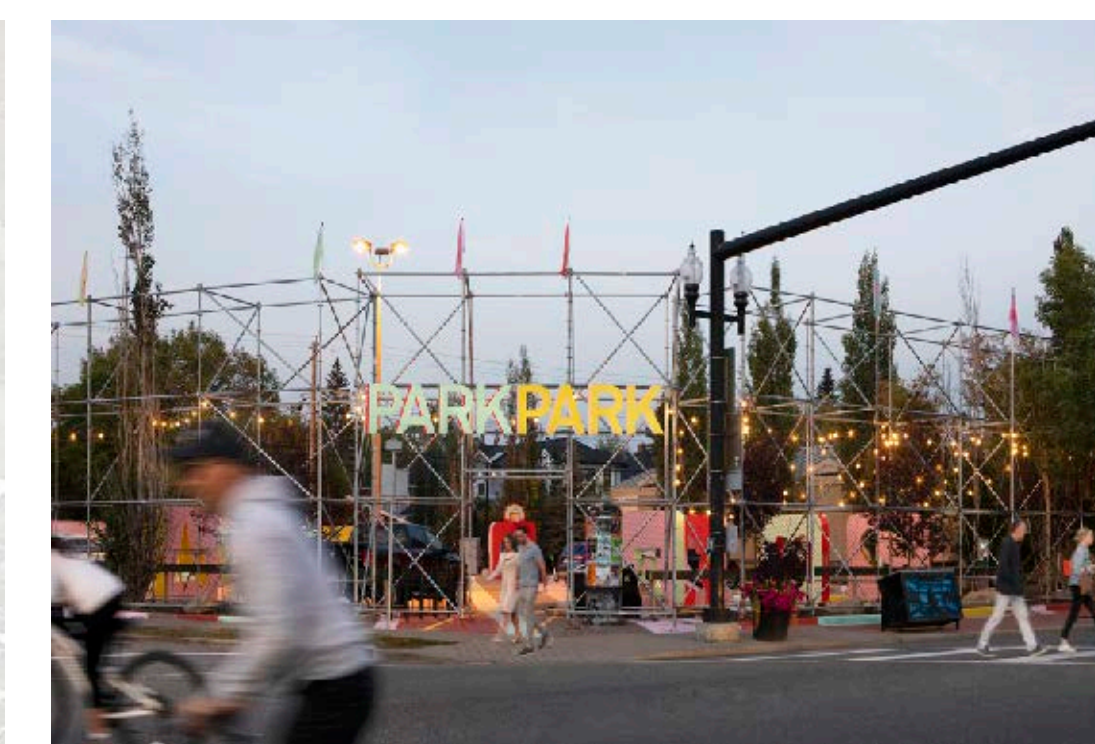


Frontage Creating Sensory Stimuli

A Skate-Spot near the Krimsky Overpass - Snohetta & KB Architects



Park Park - Public City Architecture



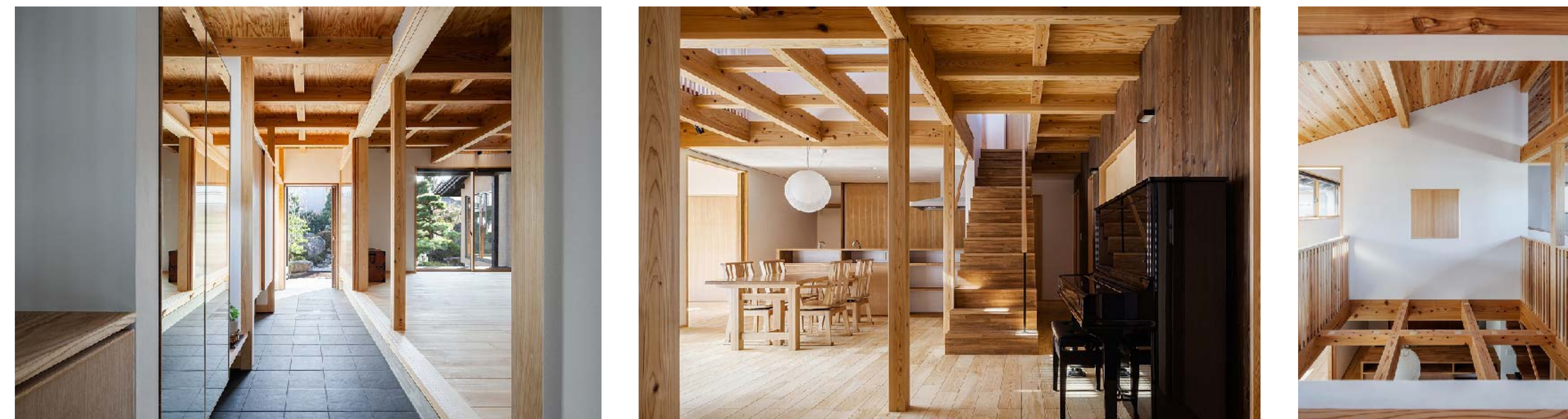
URBAN DESIGN



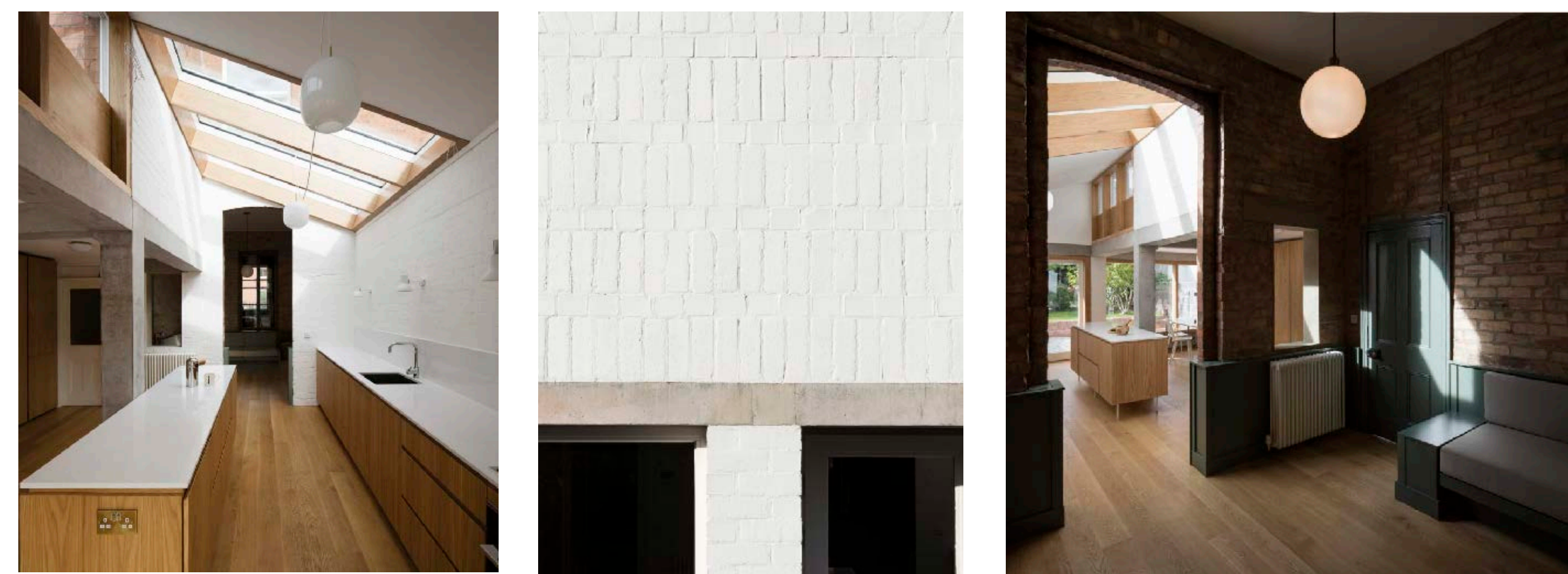
PRECEDENTS

Adaptability in existing projects

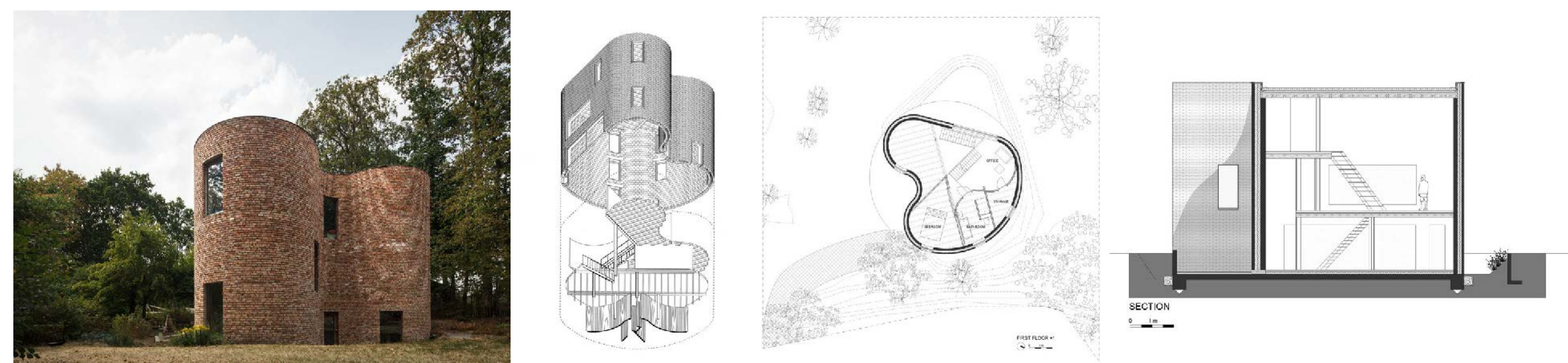
Cocoon House - Studio Aula



St. Catherines - Ryan W. Kennihan

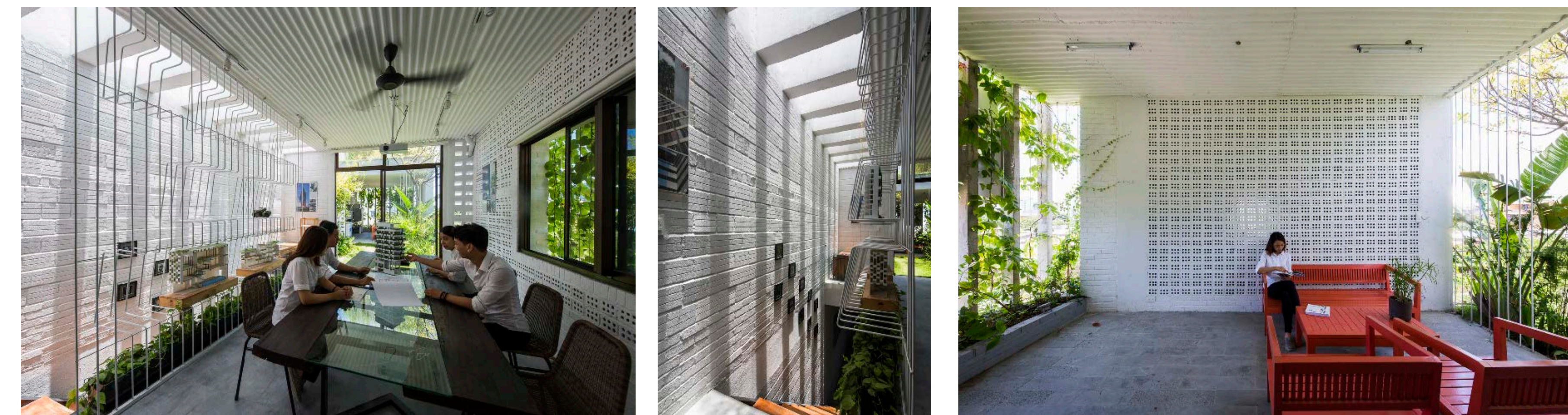


gjG House - Blaf Architekten



STRUCTURE

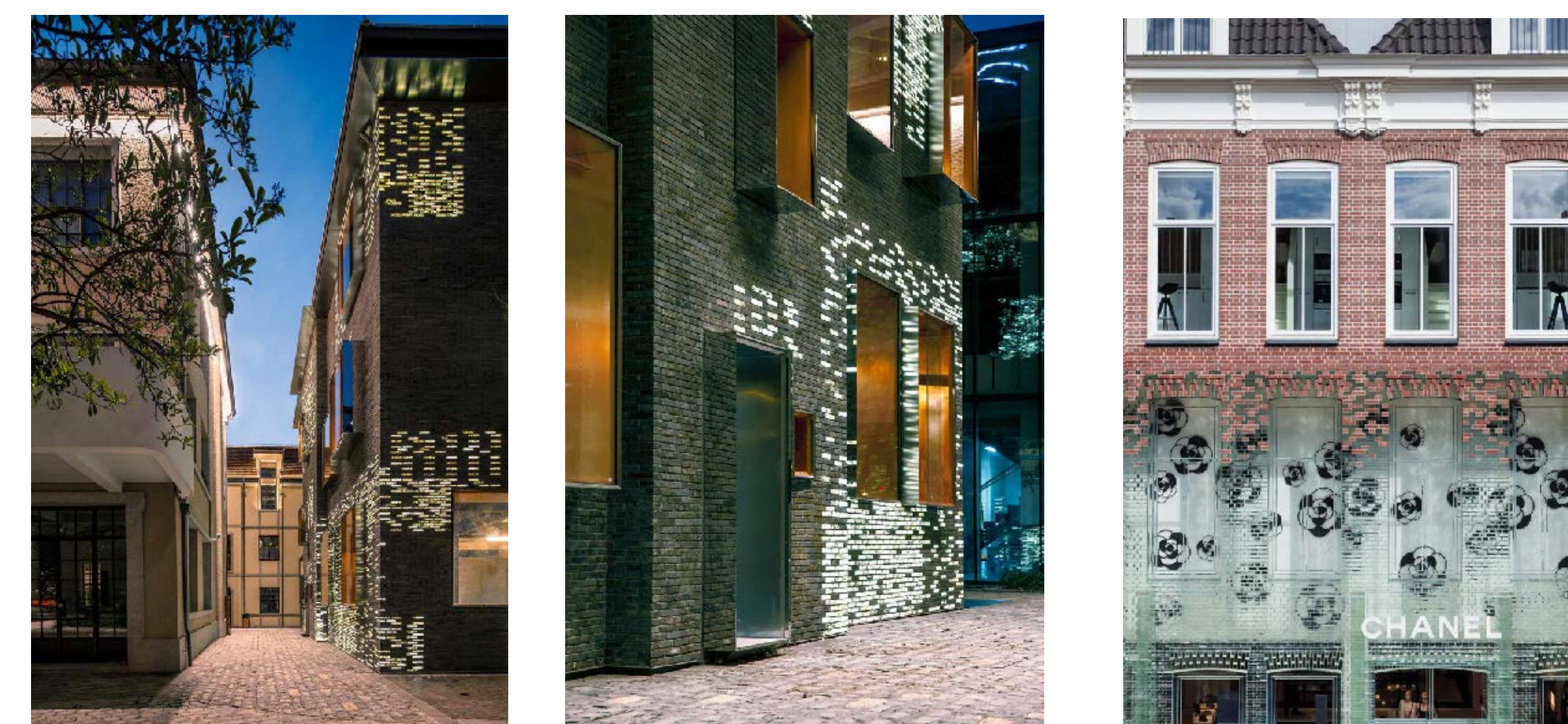
The Modern Village Office, Vietnam - Ho Khue



Optical Glass House - Hiroshi Nakamura & NAP



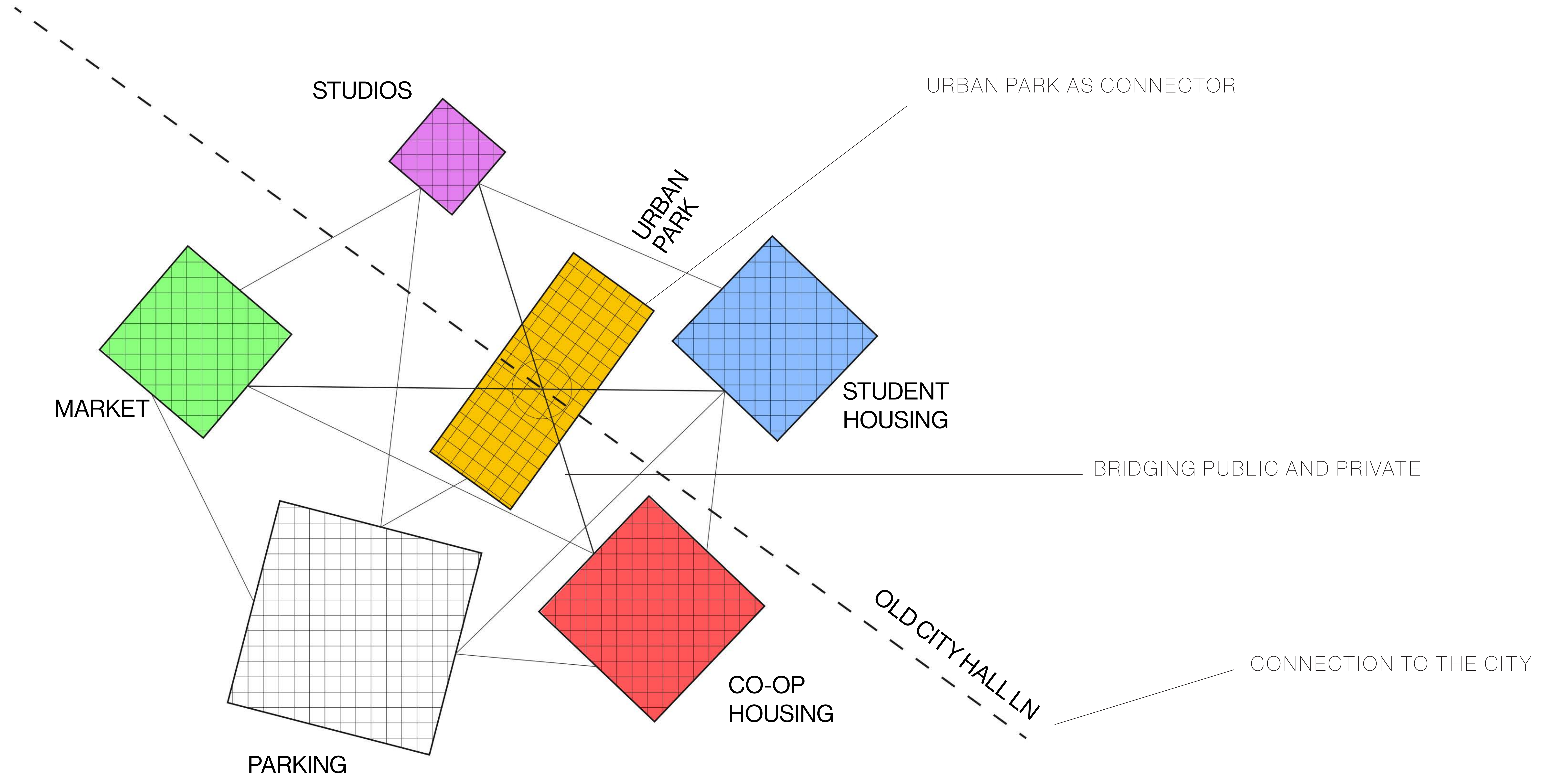
Hybrid Glass Brick Precedents



DAYLIGHTING



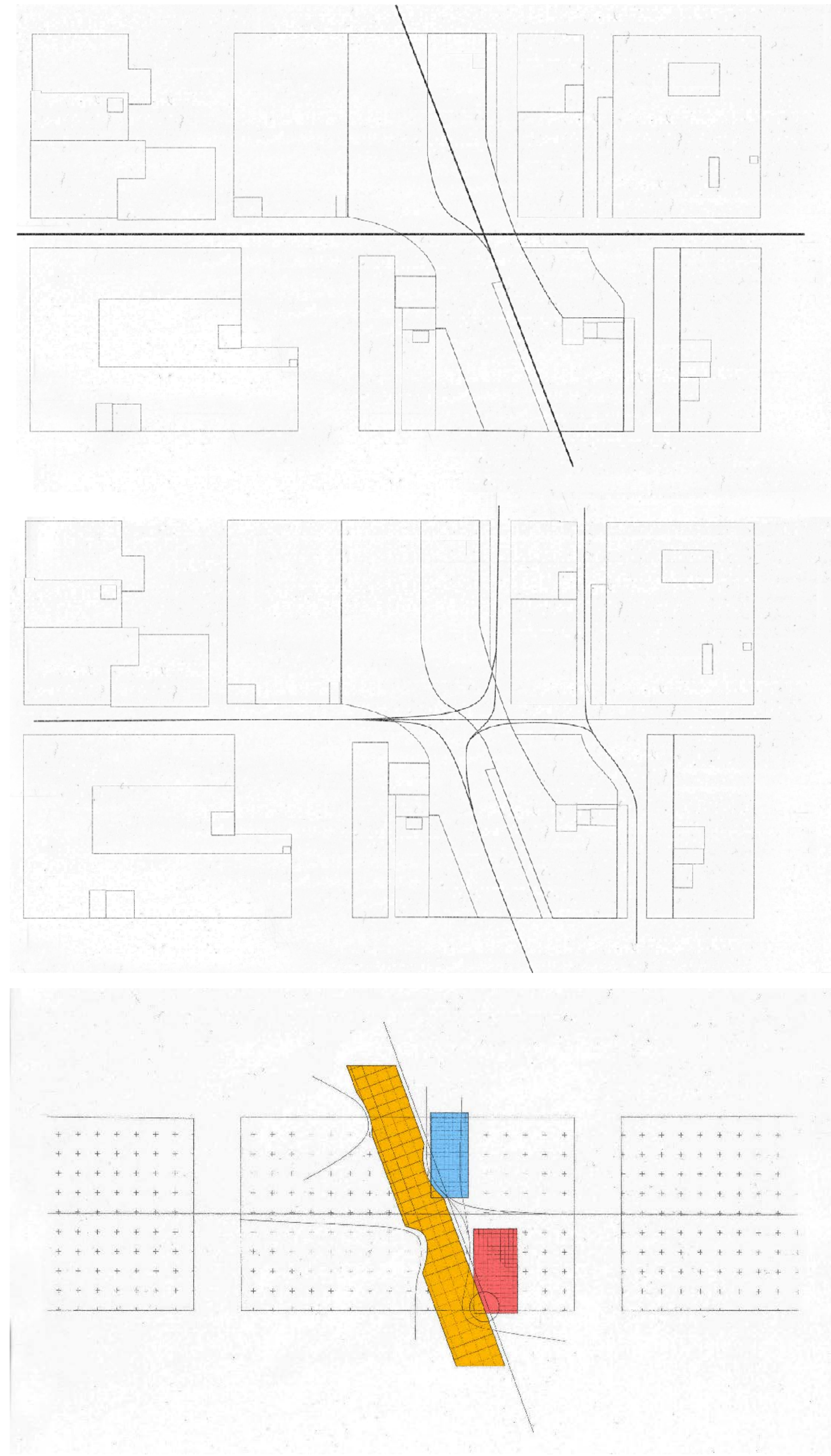
CONCEPTUAL MOVES AND PROGRAM BLOCKING



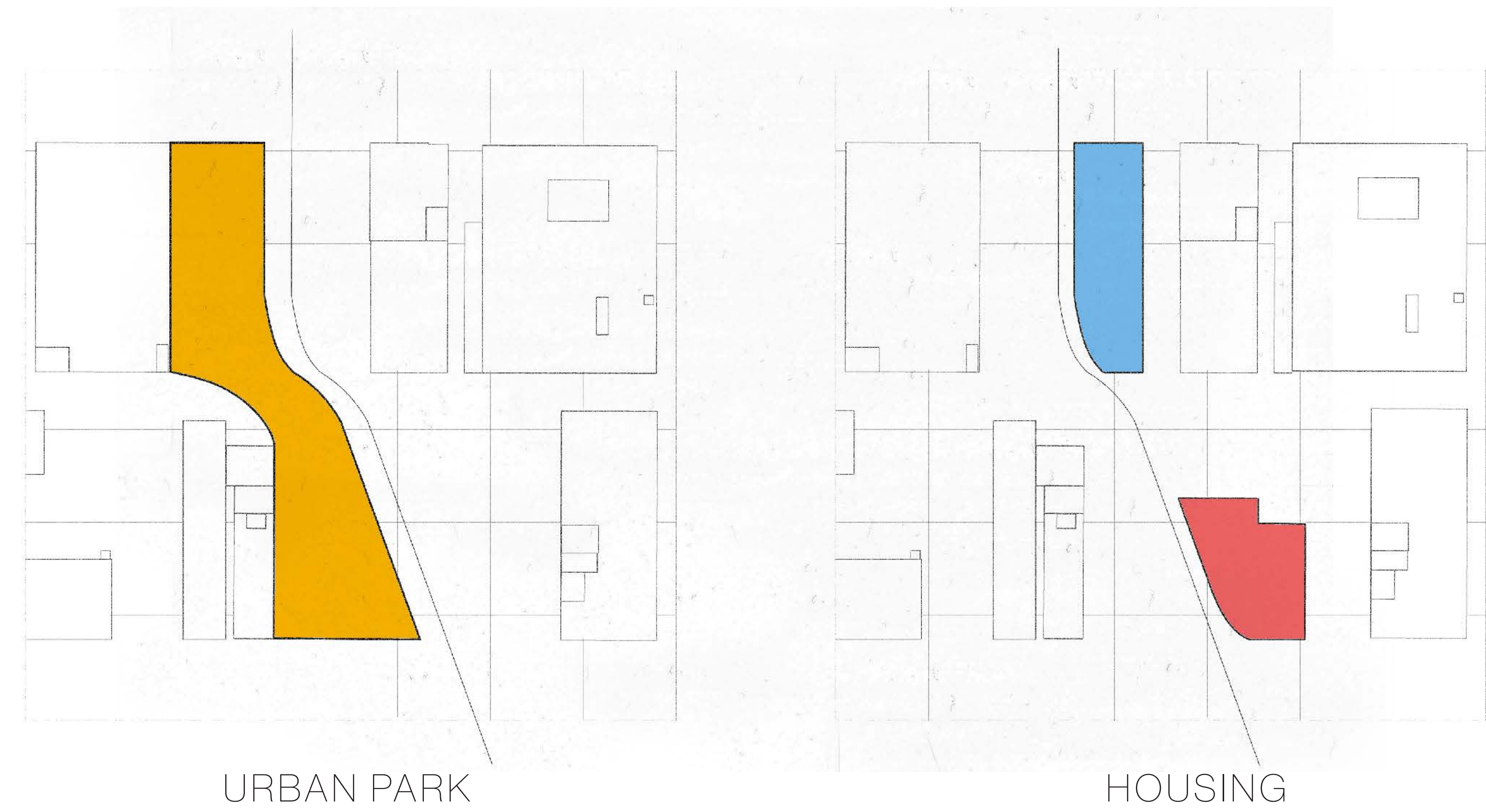
SPATIAL RELATIONSHIP DIAGRAM



CONCEPTUAL MOVES AND PROGRAM BLOCKING  
Inhabiting the Alleyway

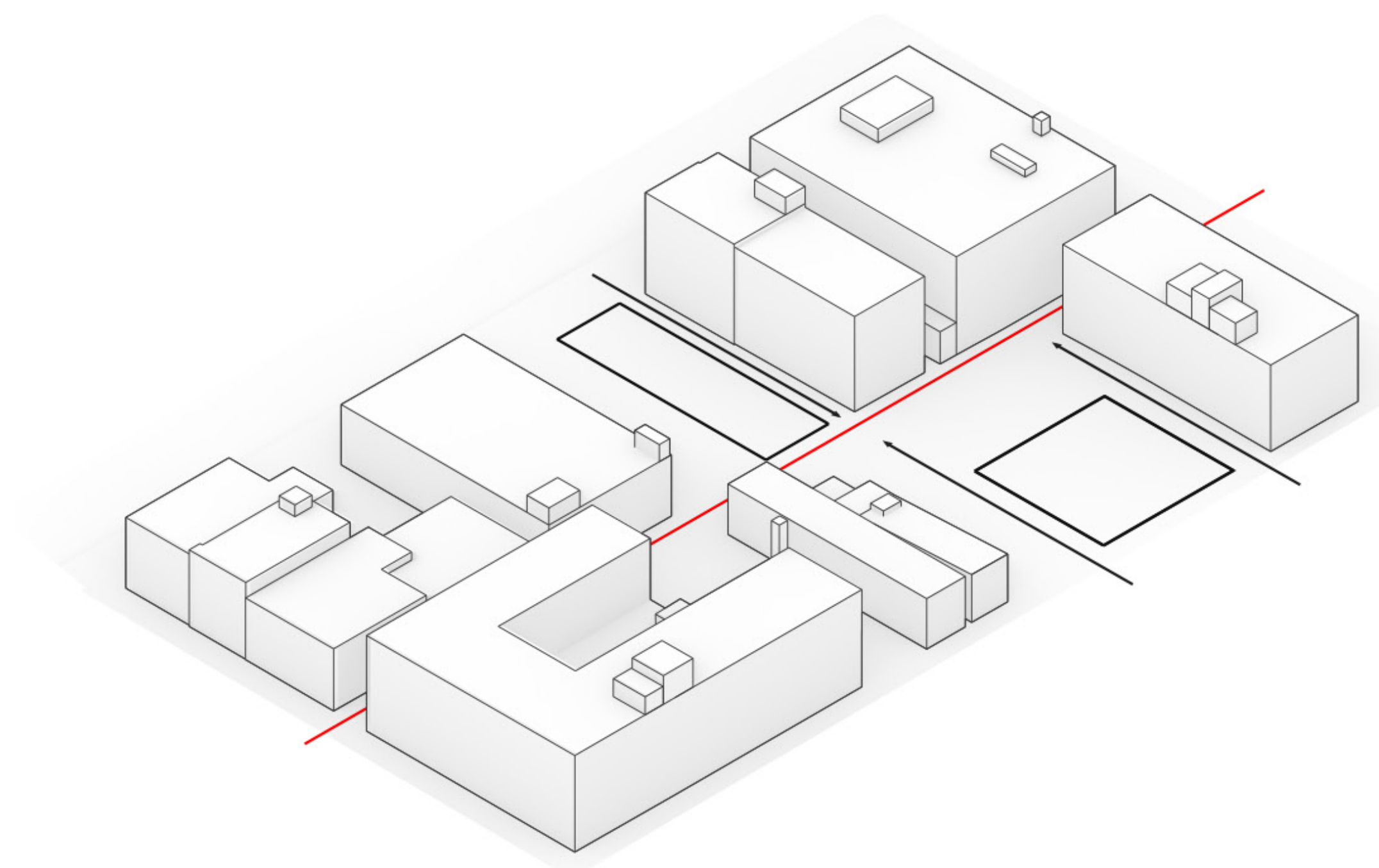


CIRCULATION THROUGH ALLEYWAY DEFINES FORMAL STRATEGY

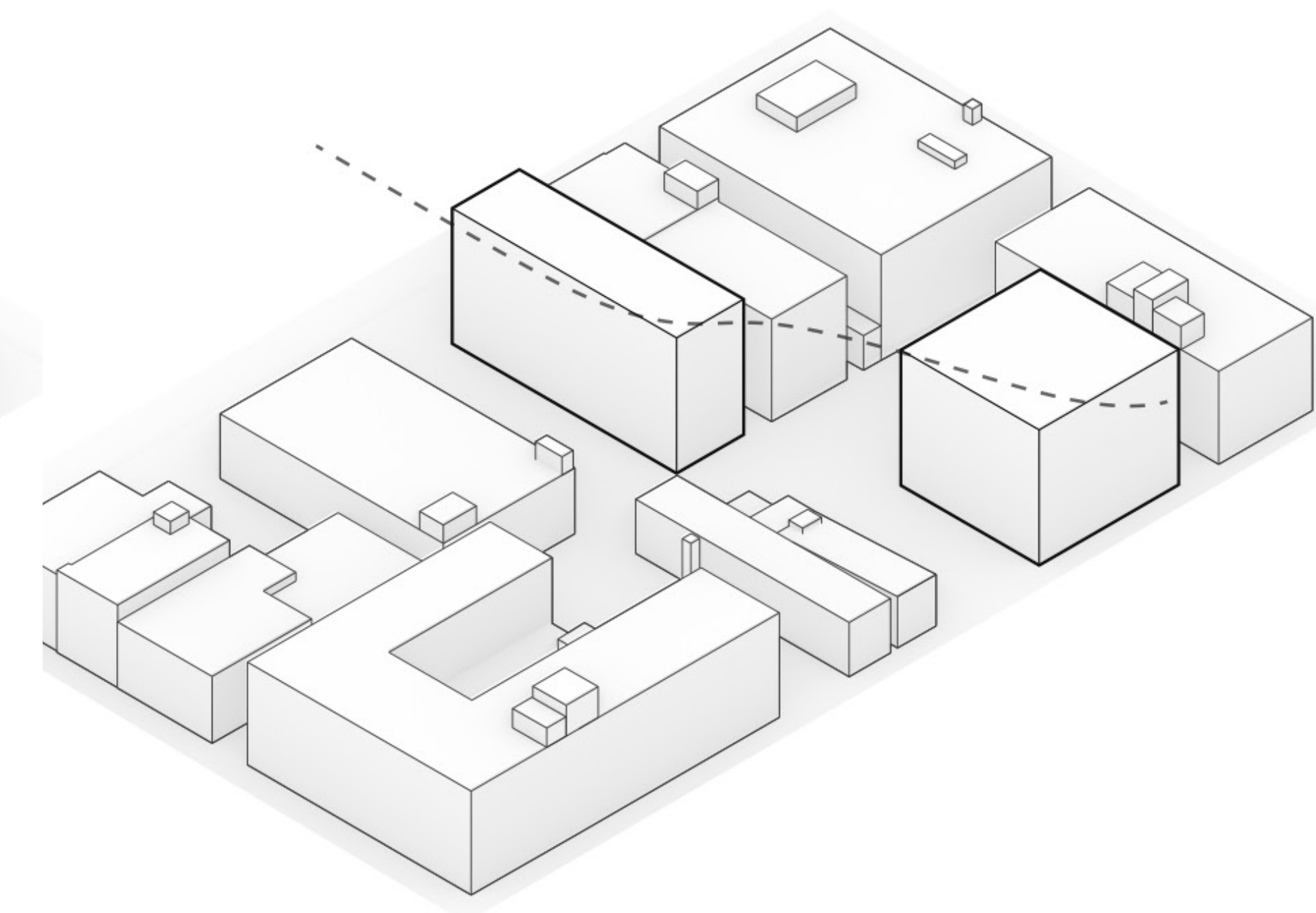




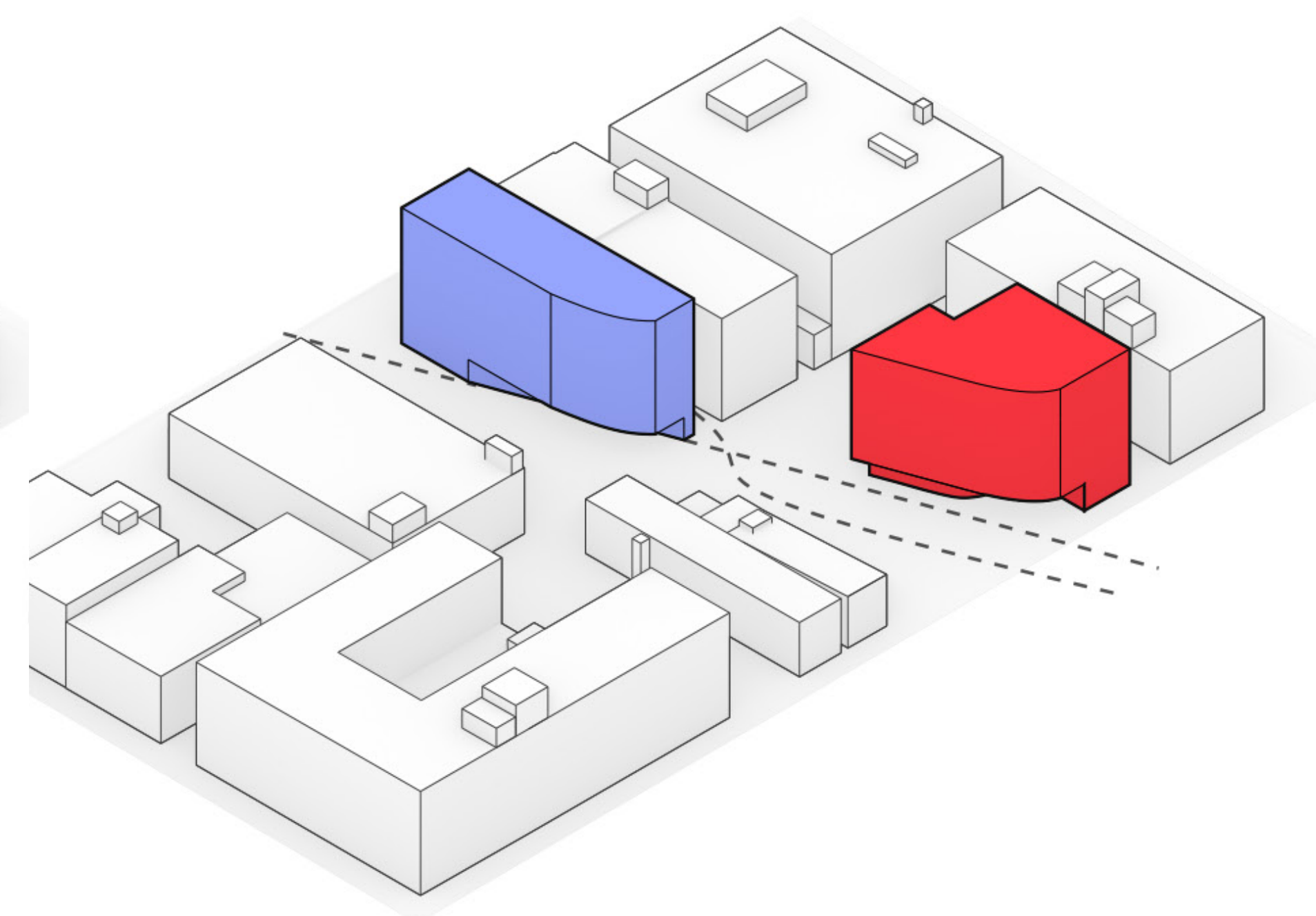
CONCEPTUAL MOVES AND PROGRAM BLOCKING  
*Inhabiting the Alleyway*



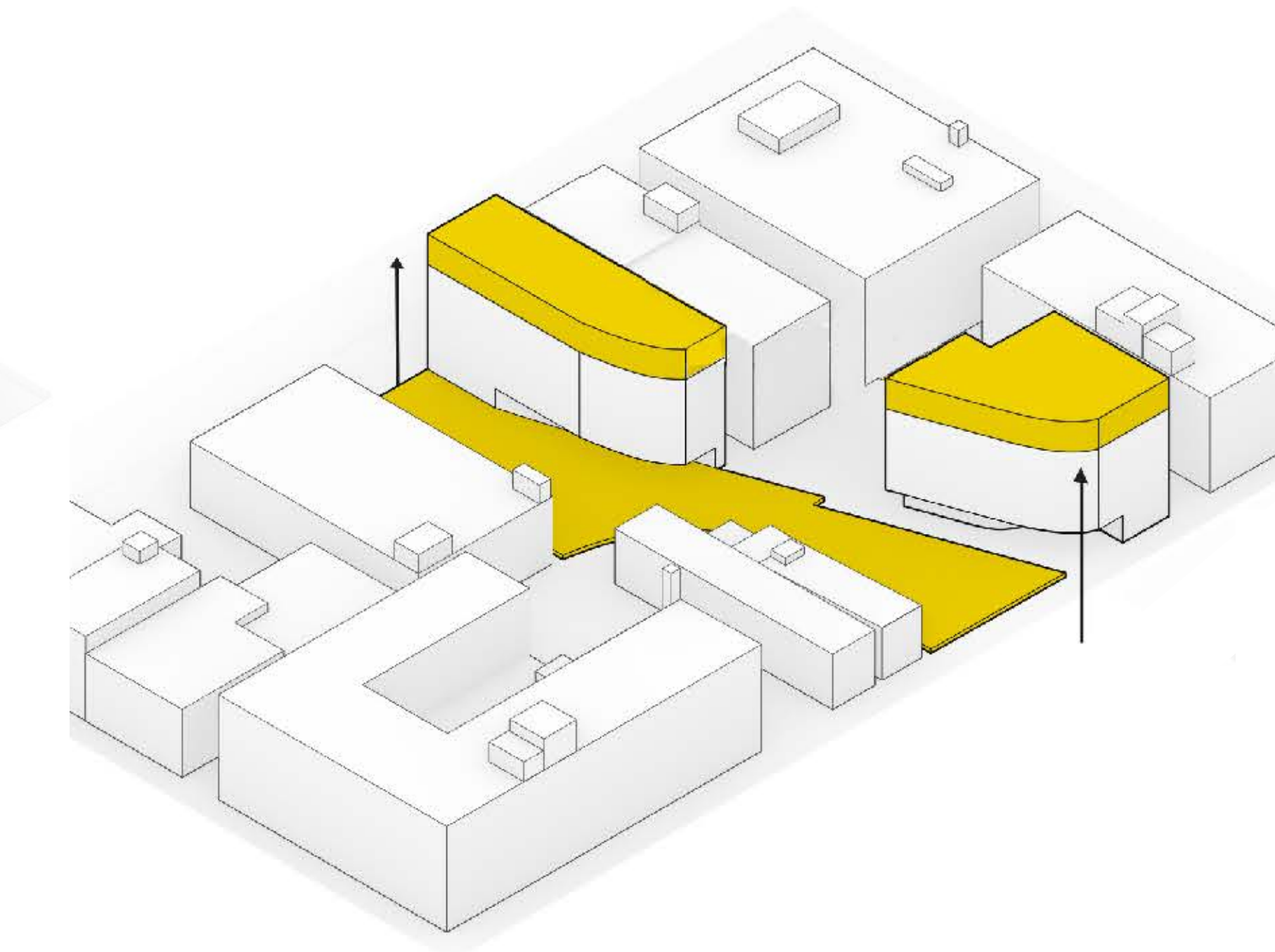
TRANSFERRING CIRCULATION  
TO CREATE INTERNAL PUBLIC  
SPACE



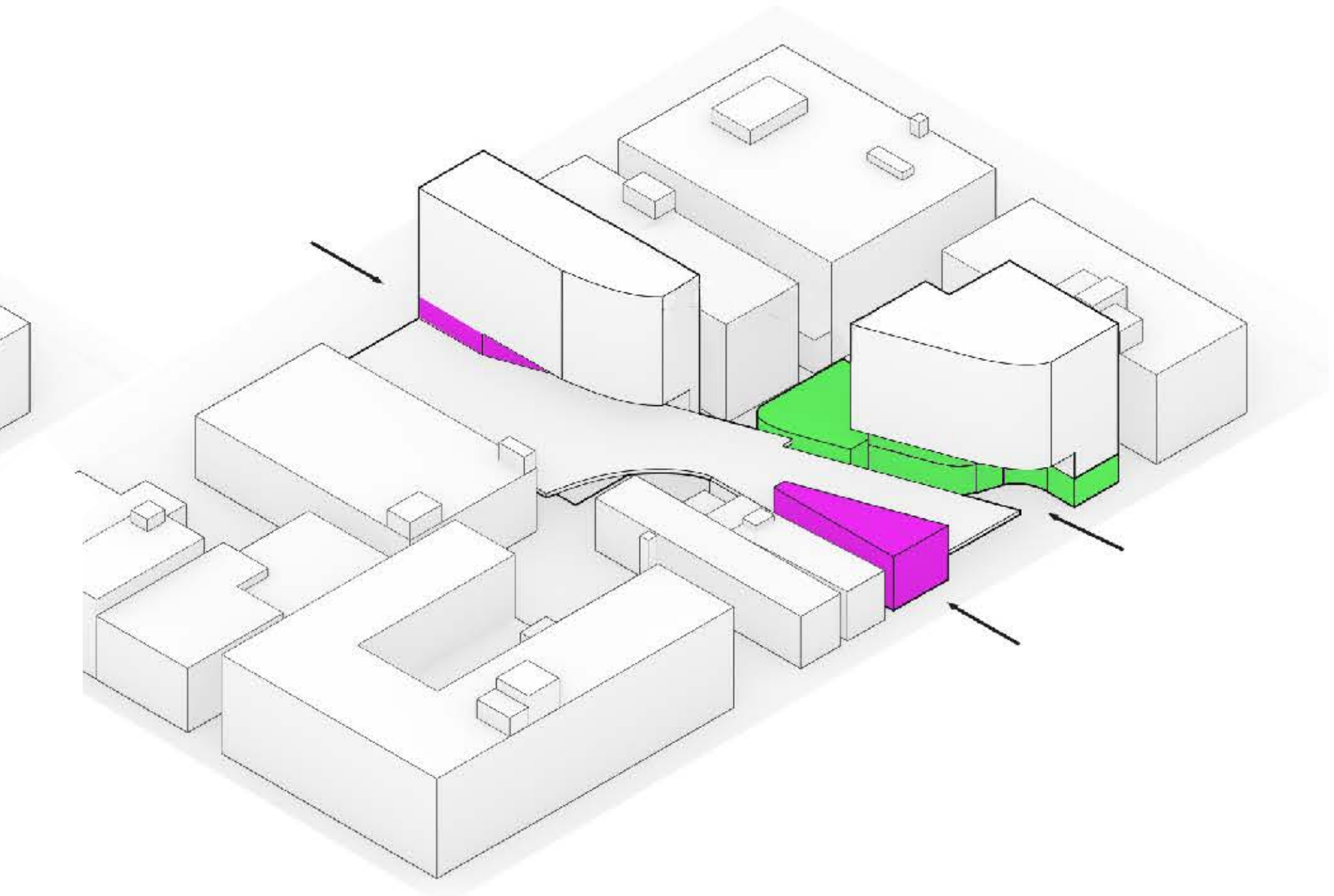
CIRCULATION DEFINES  
MASSING



CARVING BLOCKS TO  
FACILITATE ACCESS & SOLAR  
ORIENTATION



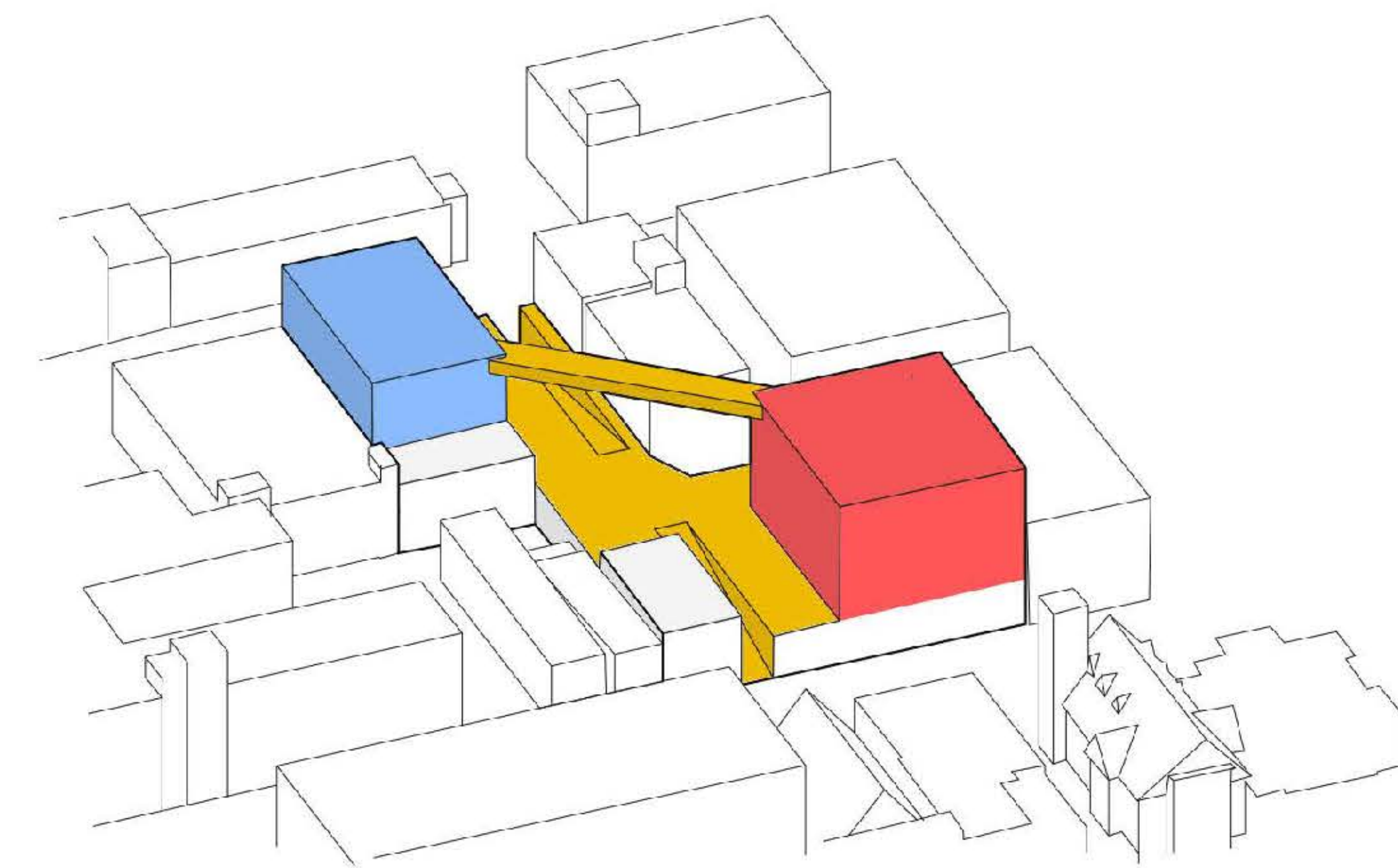
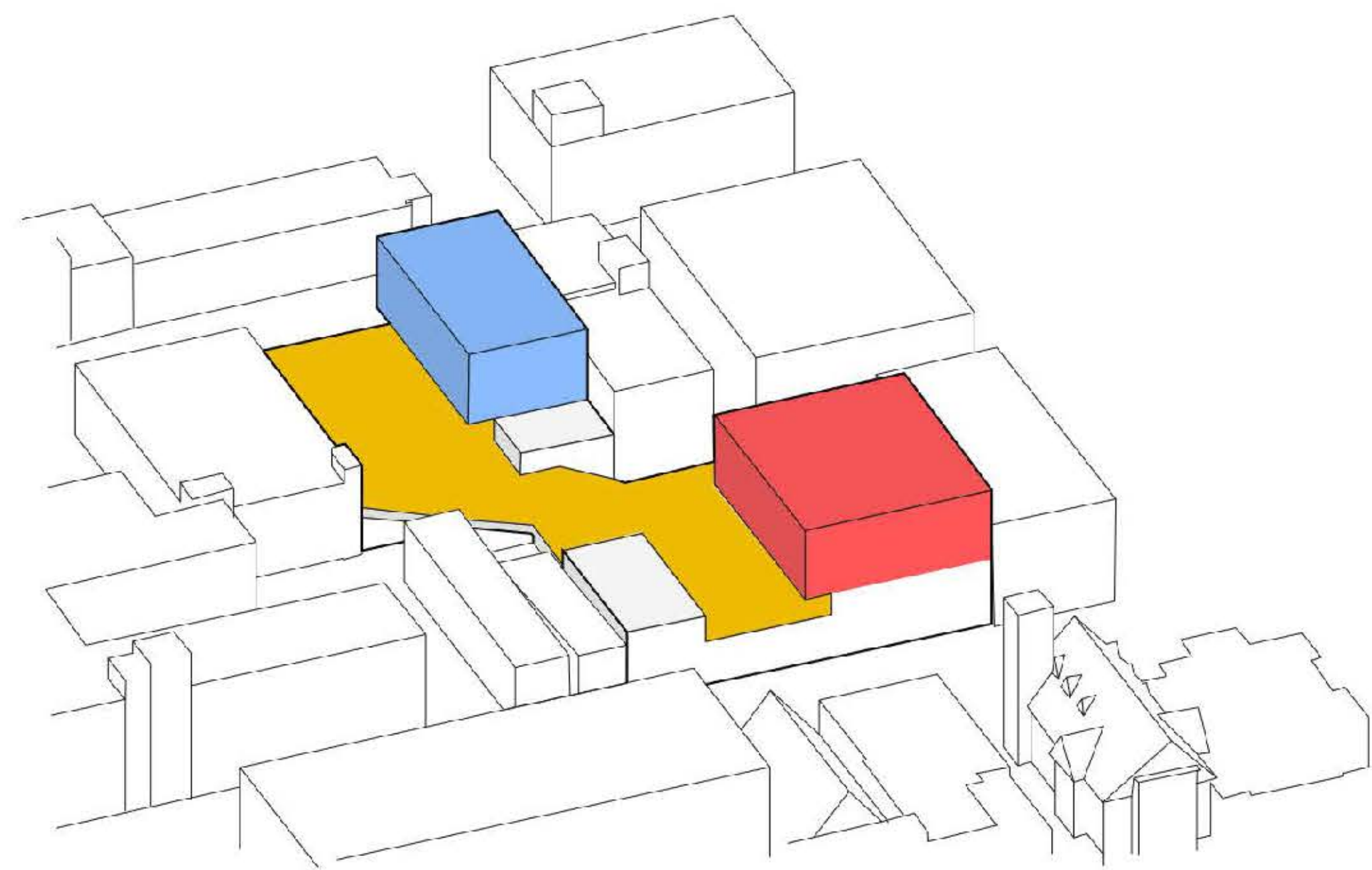
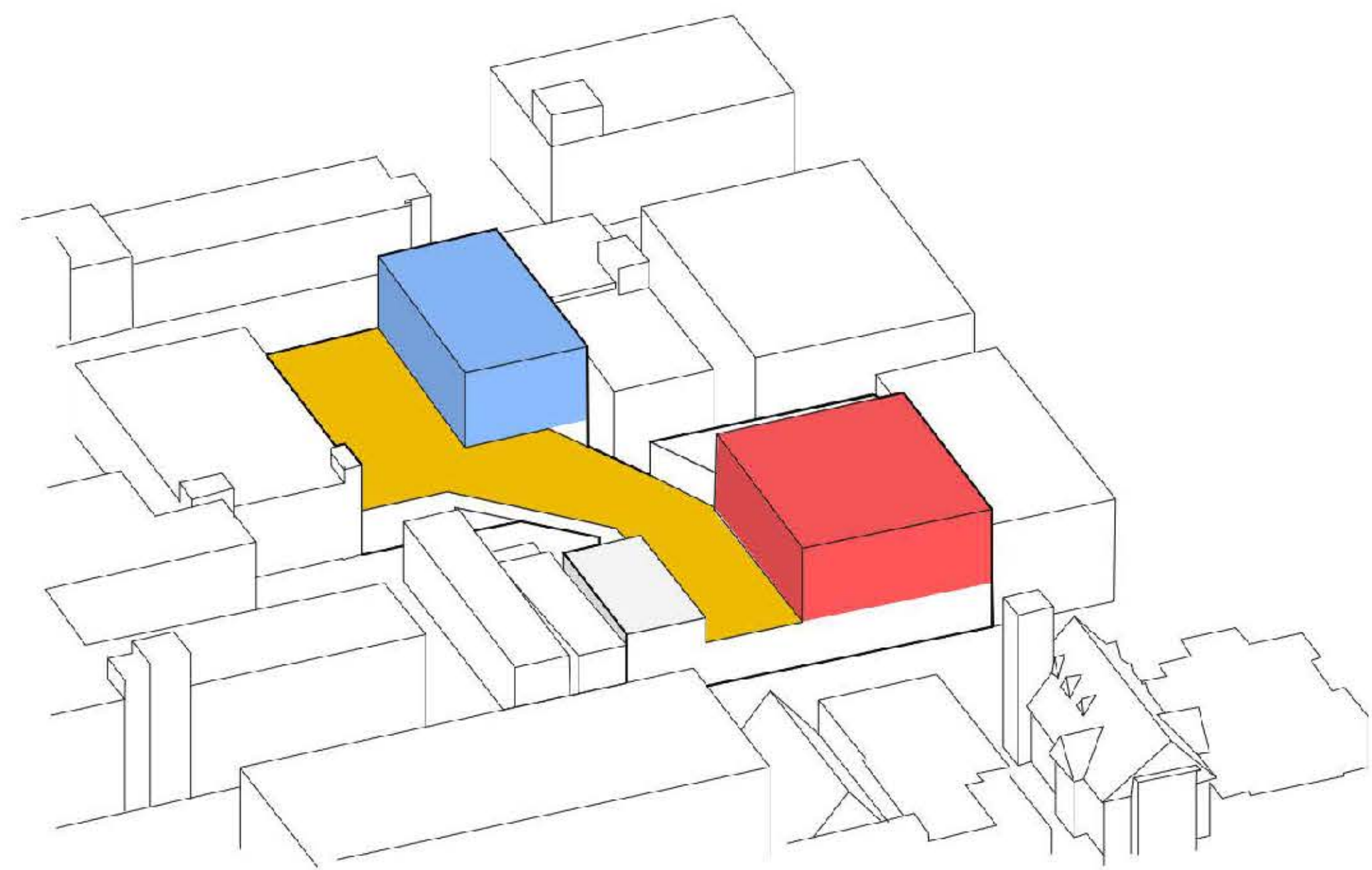
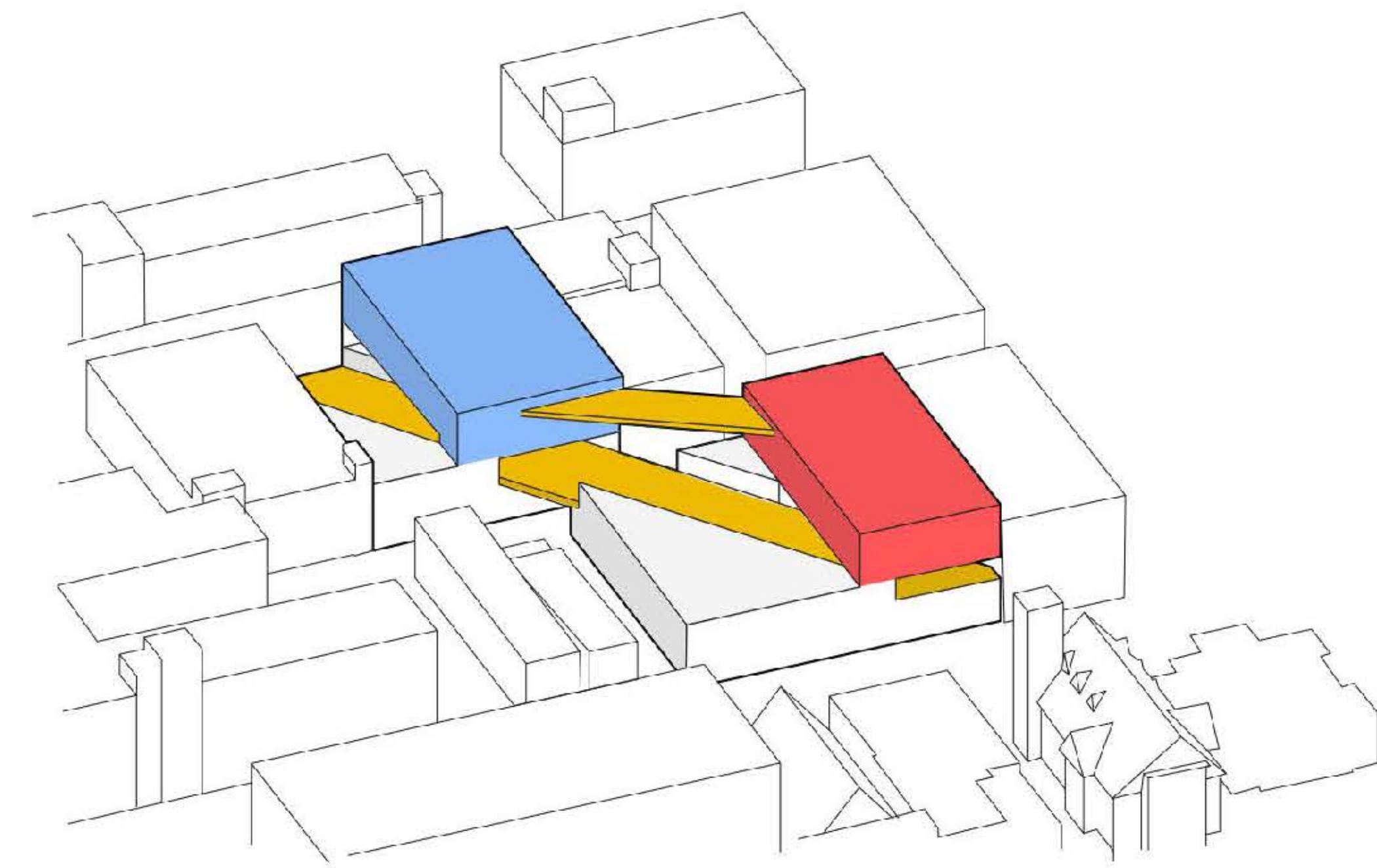
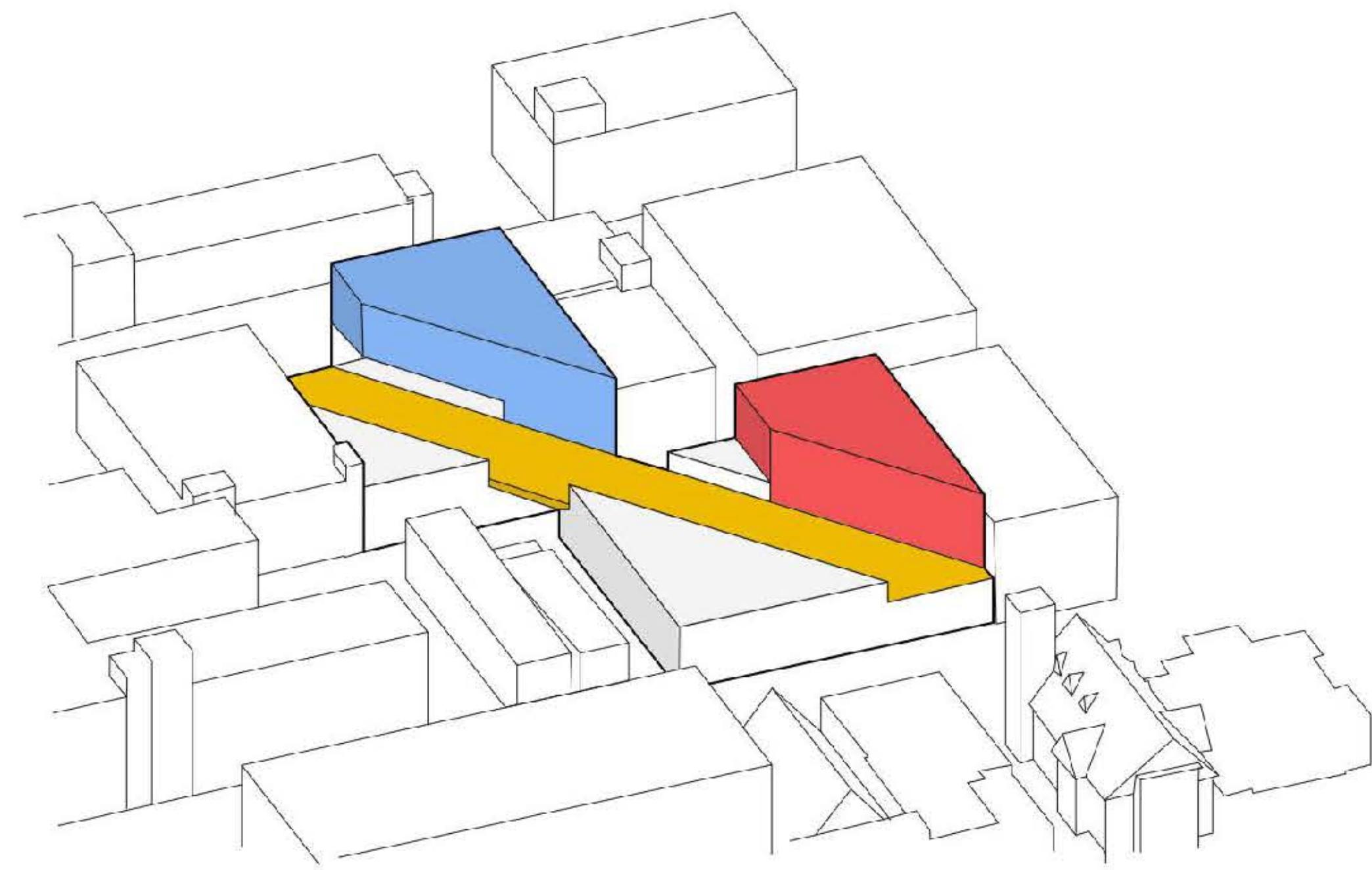
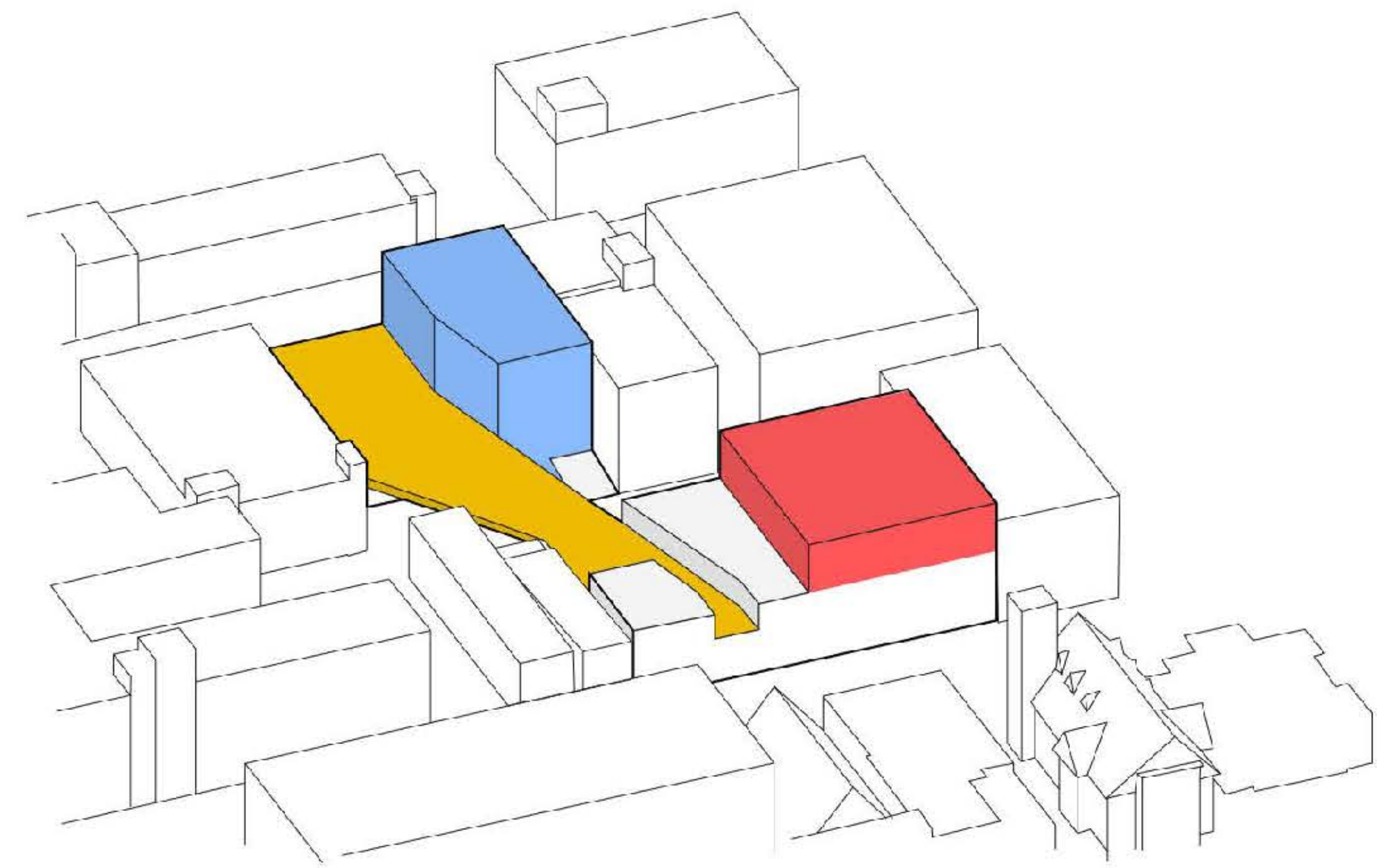
DEFINING PUBLIC AND  
PRIVATE PARK SPACE



INSERTING PUBLIC  
PROGRAM



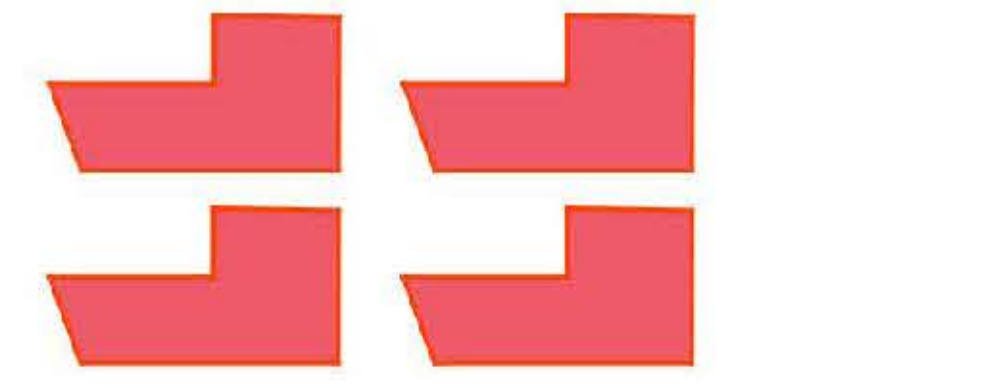

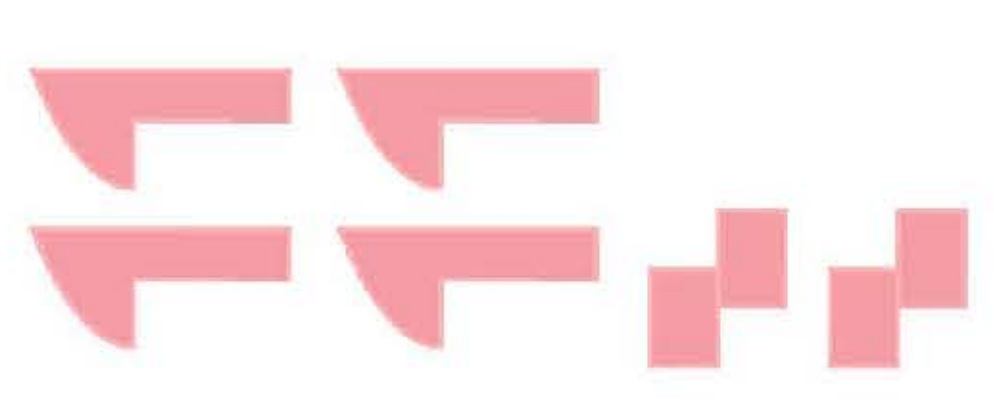
CONCEPTUAL MOVES AND PROGRAM BLOCKING  
Inhabiting the Alleyway

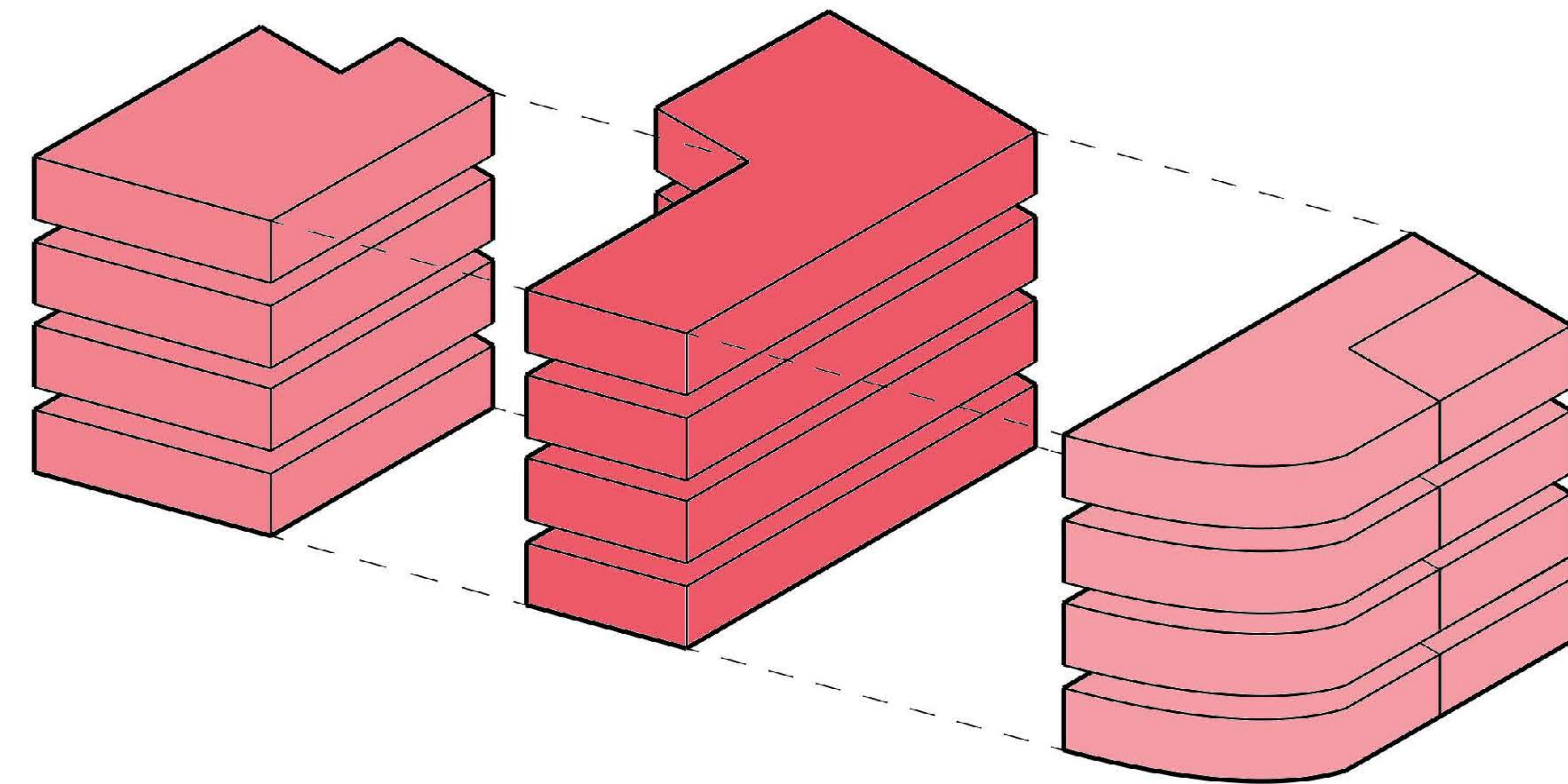


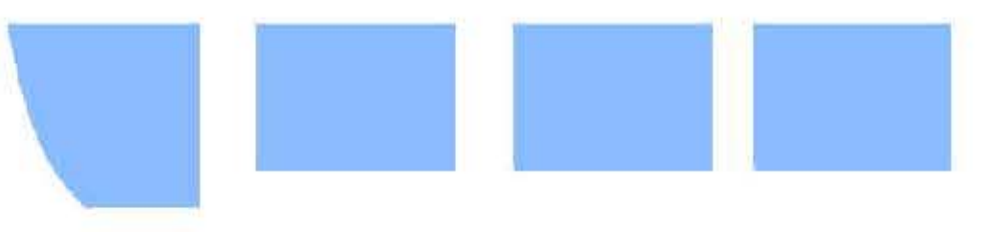
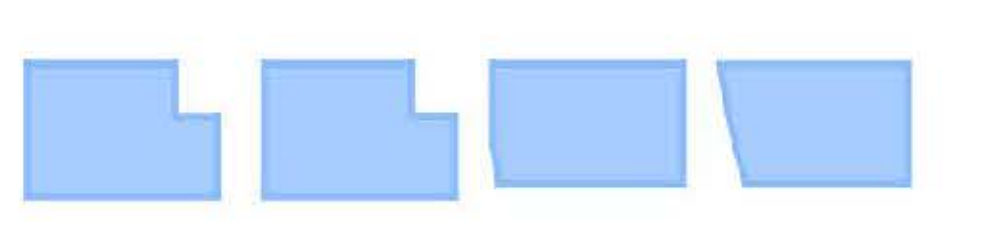

MASSING MODEL ITERATIONS

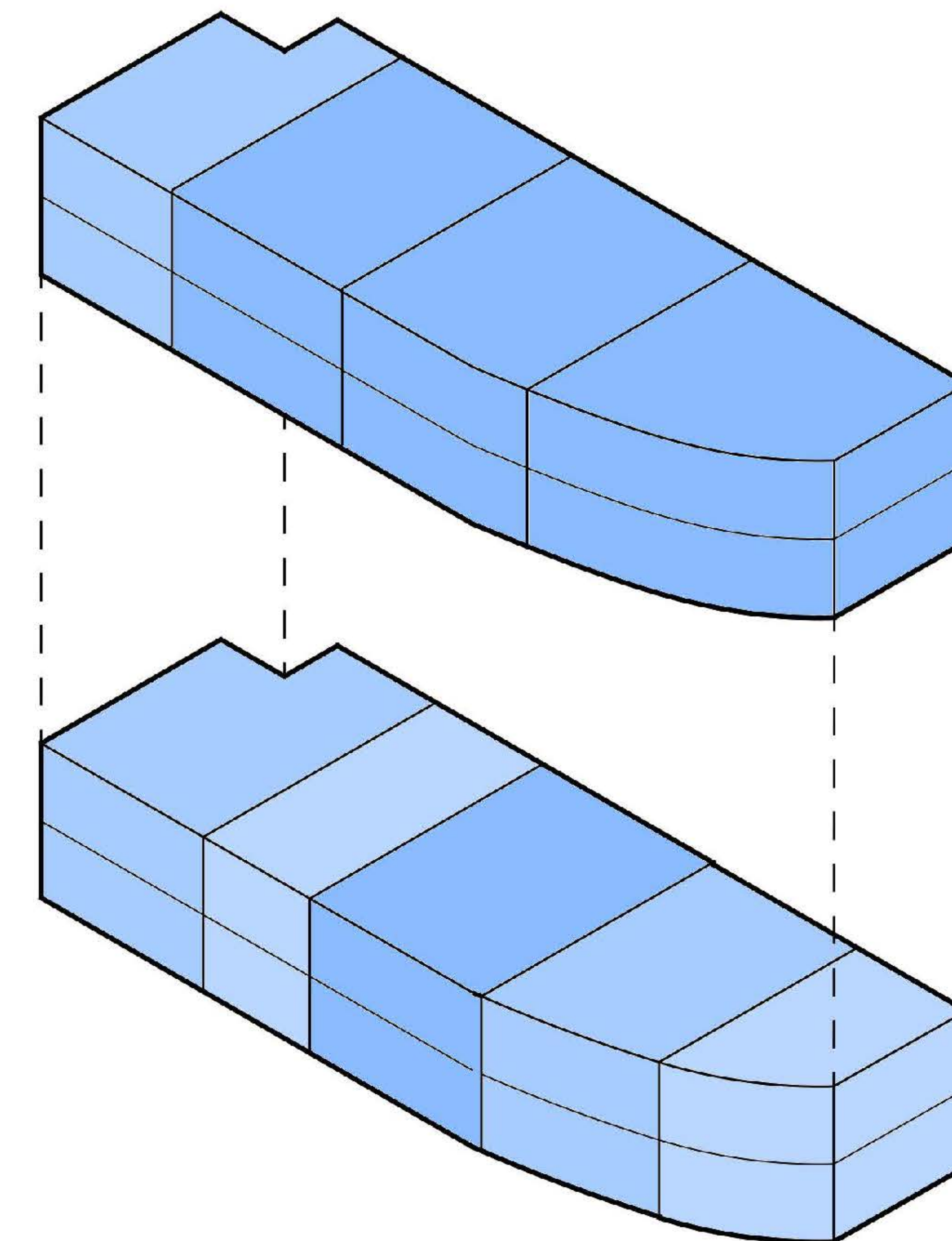


# UNIT DISTRIBUTION STRATEGY

TENURETYPE	UNITTYPE	FOOTPRINT	UNIT AREA	BEDS PER UNIT	TOTAL BEDS	OCCUPANTS PER UNIT	TOTAL OCCUPANTS
CO-OP HOUSING	LARGE		120	4	16	5	20
	MEDIUM		90	3	12	4	16
	SMALL		40	1	6	2	12



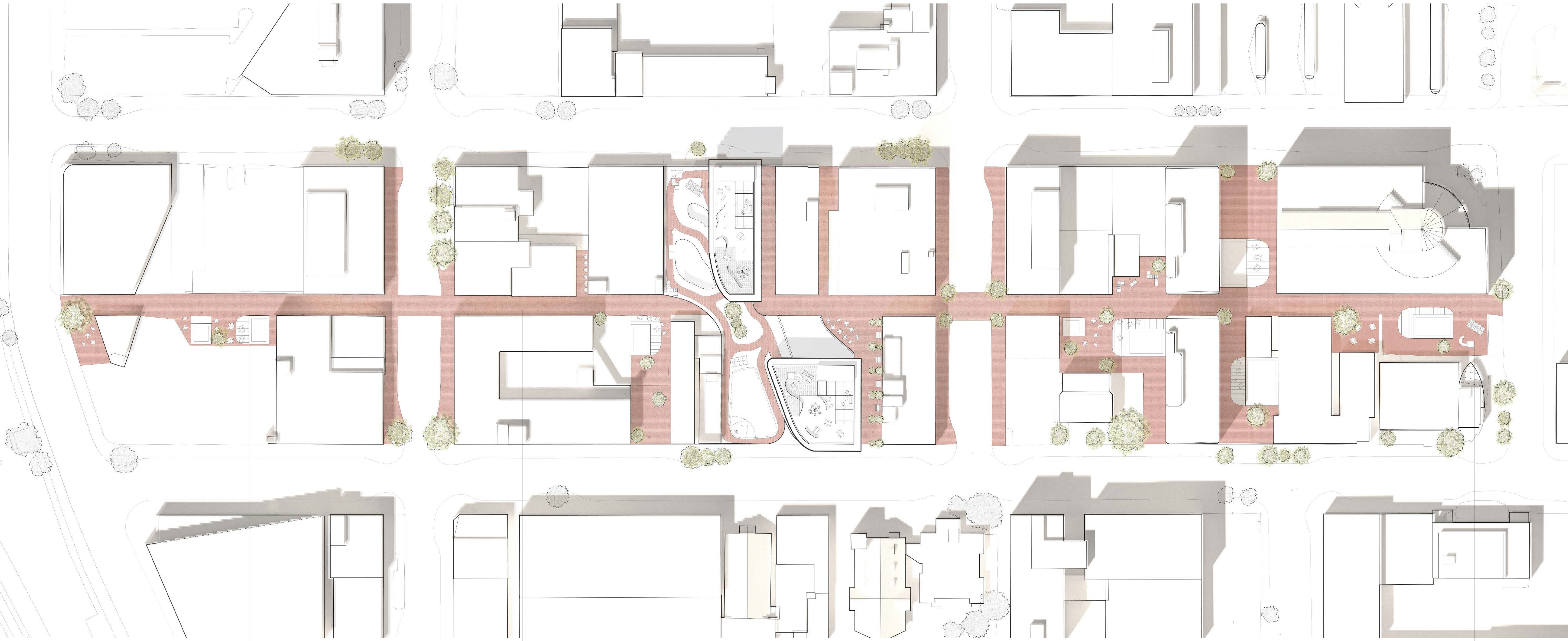
TENURETYPE	UNITTYPE	FOOTPRINT	UNIT AREA	BEDS PER UNIT	TOTAL BEDS	OCCUPANTS PER UNIT	TOTAL OCCUPANTS
STUDENT	LARGE		120	5	20	5	20
	MEDIUM		90	4	16	4	16
	SMALL		40	3	6	2	4



To design for immigrant families (especially in Sudbury's rent-exclusive downtown) providing a sense of ownership, while still making housing accessible and affordable, is of paramount importance. For this reason we will design co-operative housing, as these complexes have no outside landlord, instead the home owners form an association that governs the housing project through democratic systems. Pairing this with offering student housing that attracts young people and international students, we can curate a culture around Sudbury's downtown that hasn't existed in the past.



URBAN DESIGN SITE PLAN  
Interconnecting the City

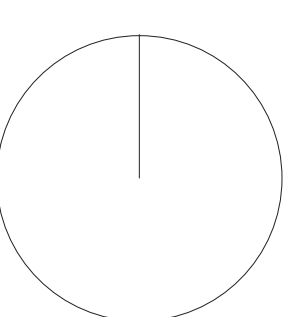


MARKET OUTLETS

BRICK MATERIAL  
NARRATIVE

CREATIVE STUDIO  
OUTLETS

URBAN PARK  
OUTLETS





SITE AXONOMETRIC  
Extending the Alleyway





GROUND FLOOR PLAN

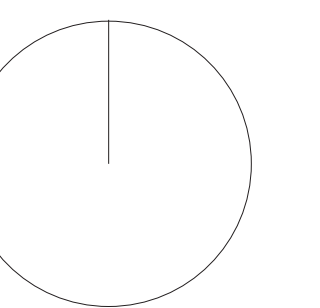
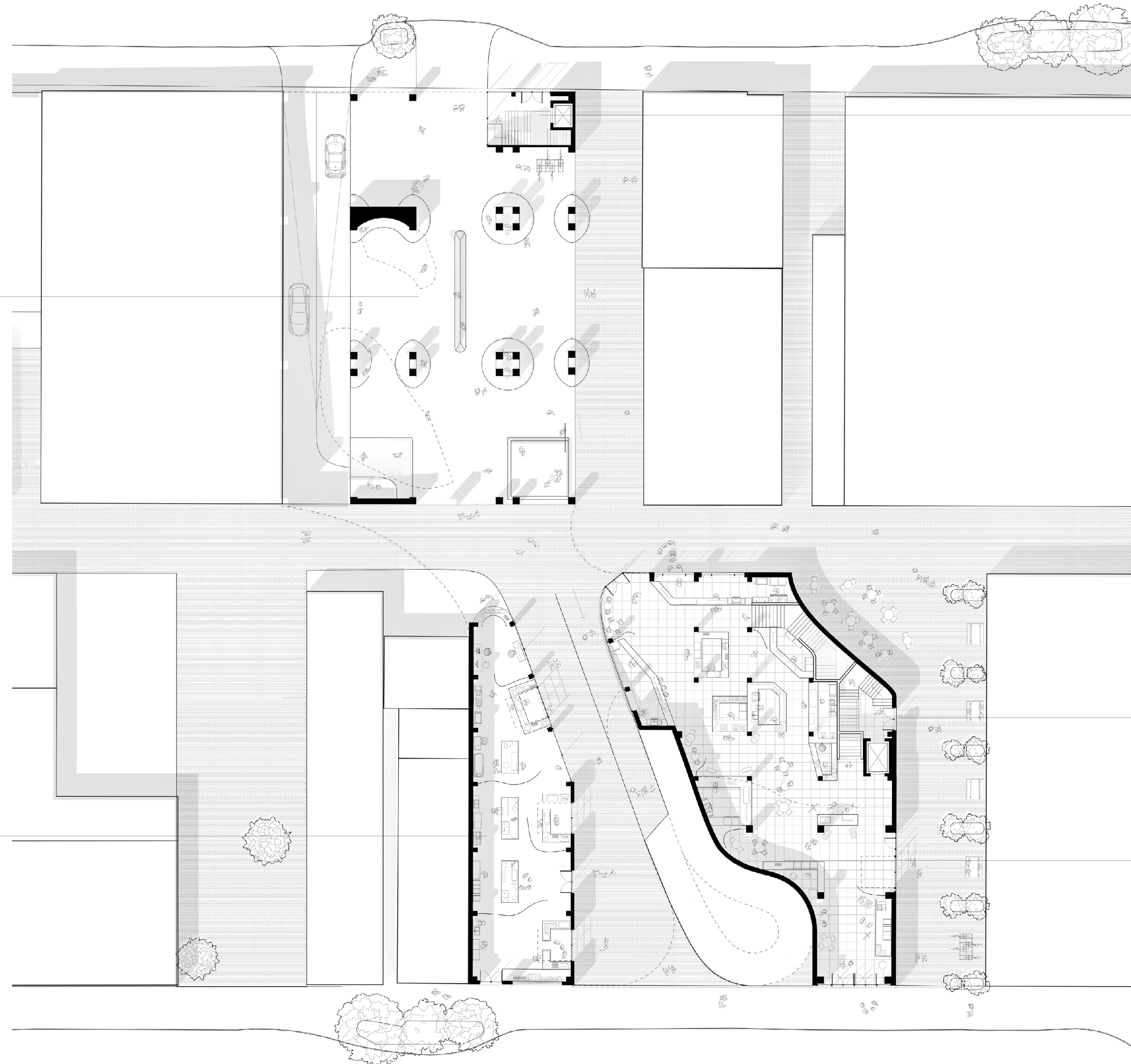
GROUND FLOOR PARKING/  
HYBRID SKATEPARK

CREATIVE STUDIOS  
(WORKSHOP)

STUDENT HOUSING  
ENTRANCE

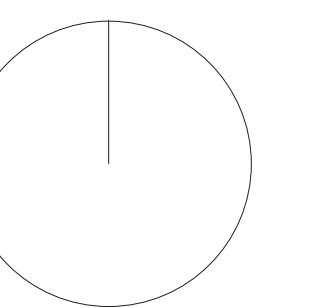
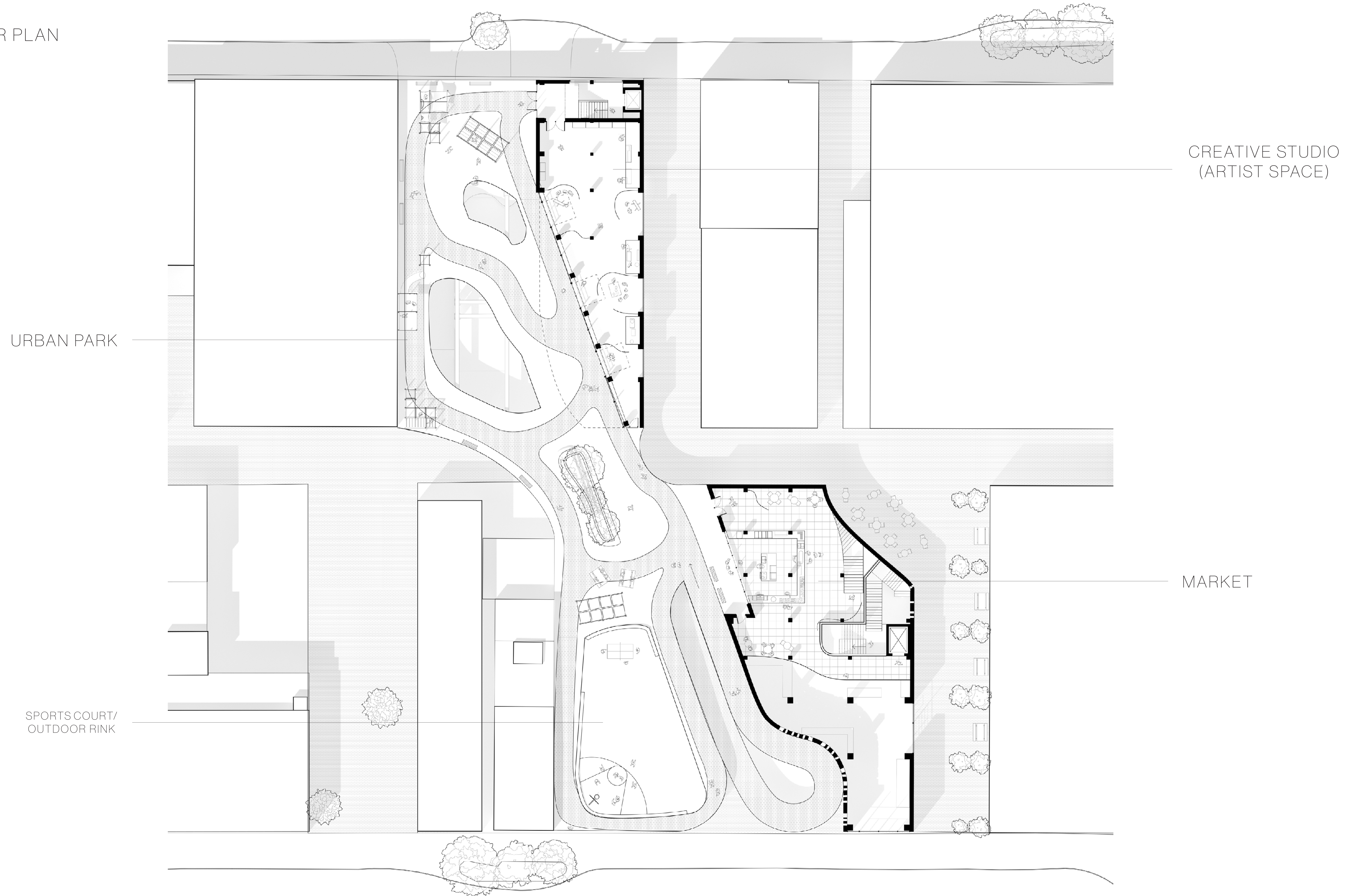
CO-OP HOUSING  
ENTRANCE

MARKET



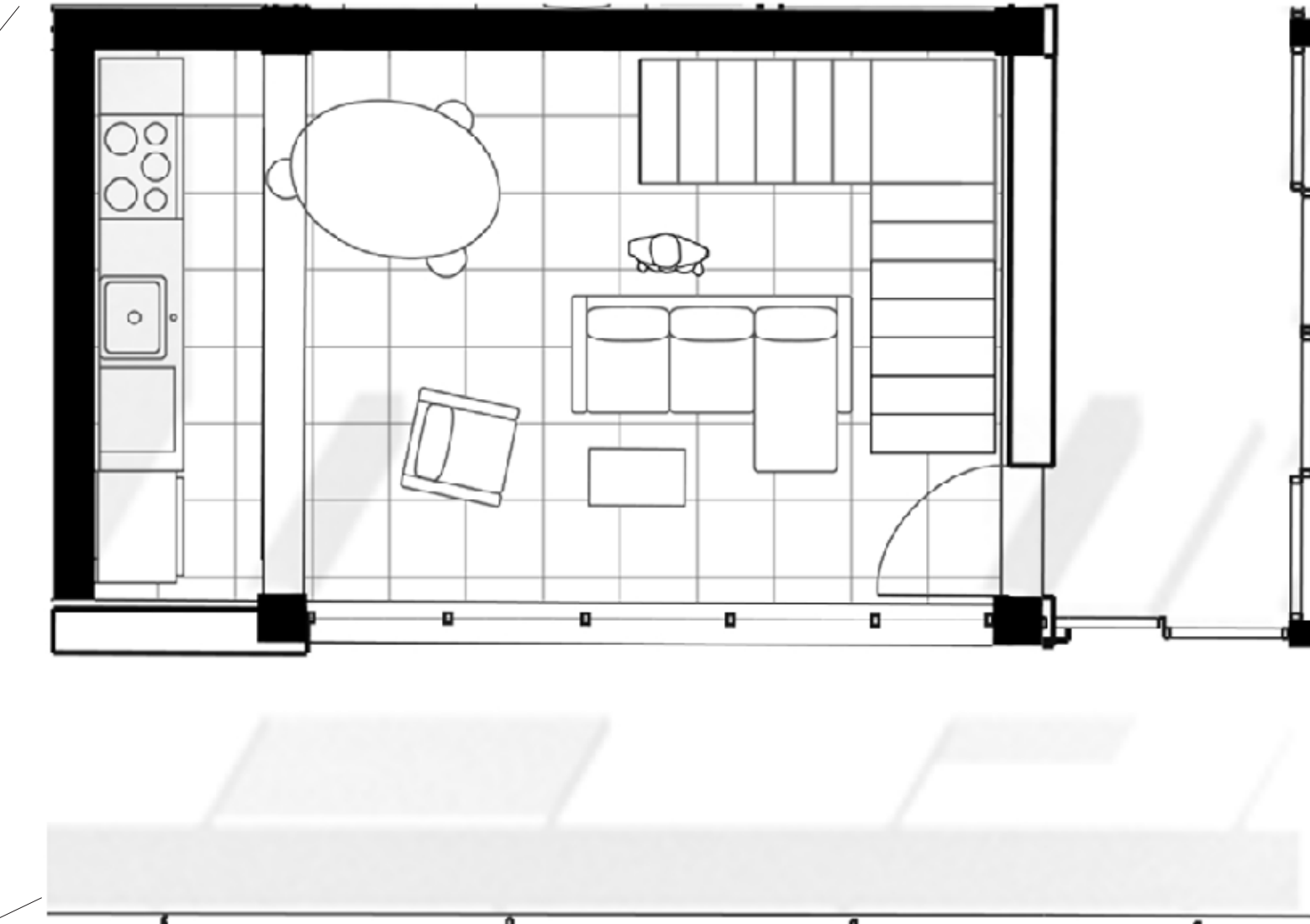
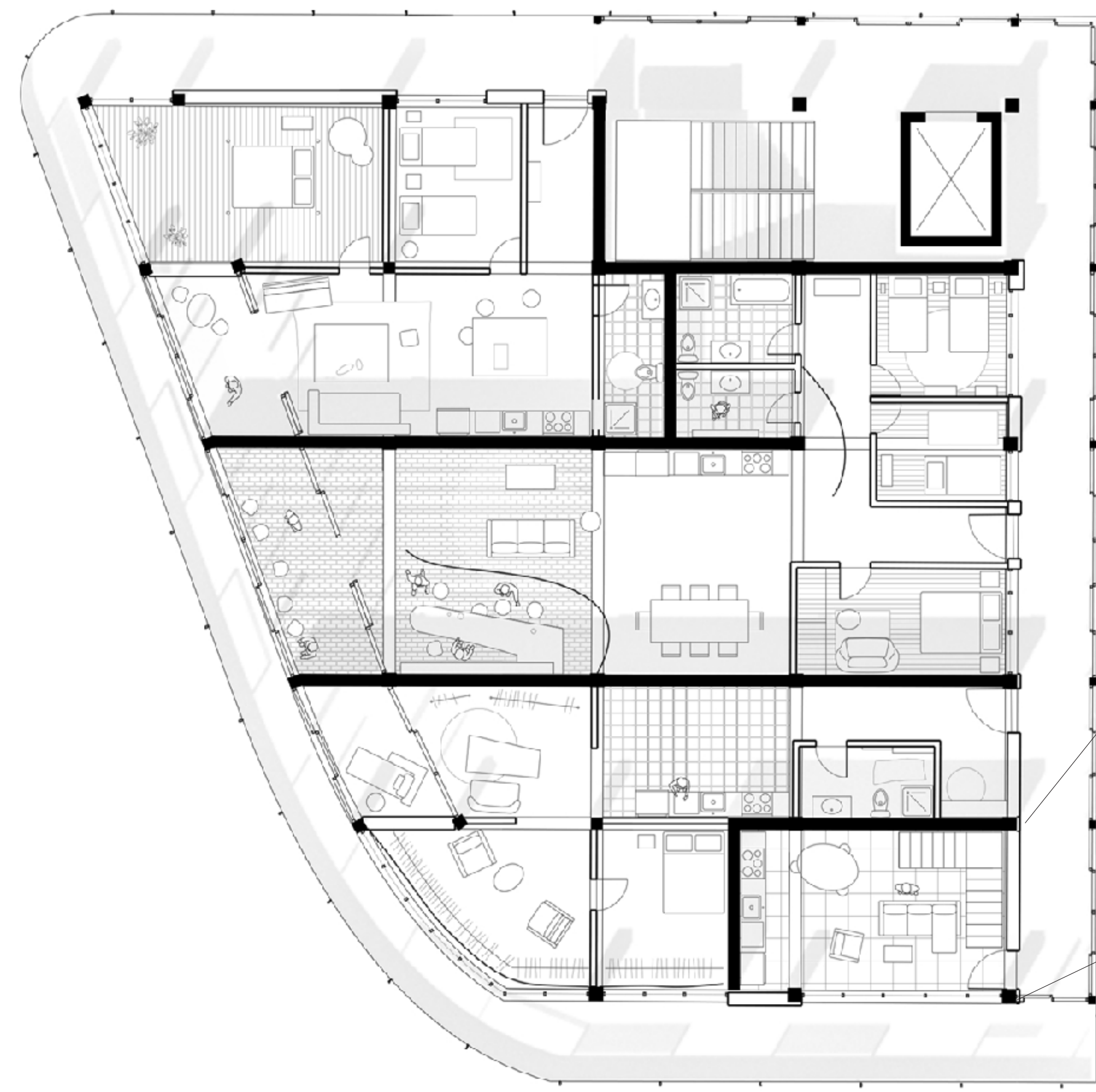


SECOND FLOOR PLAN

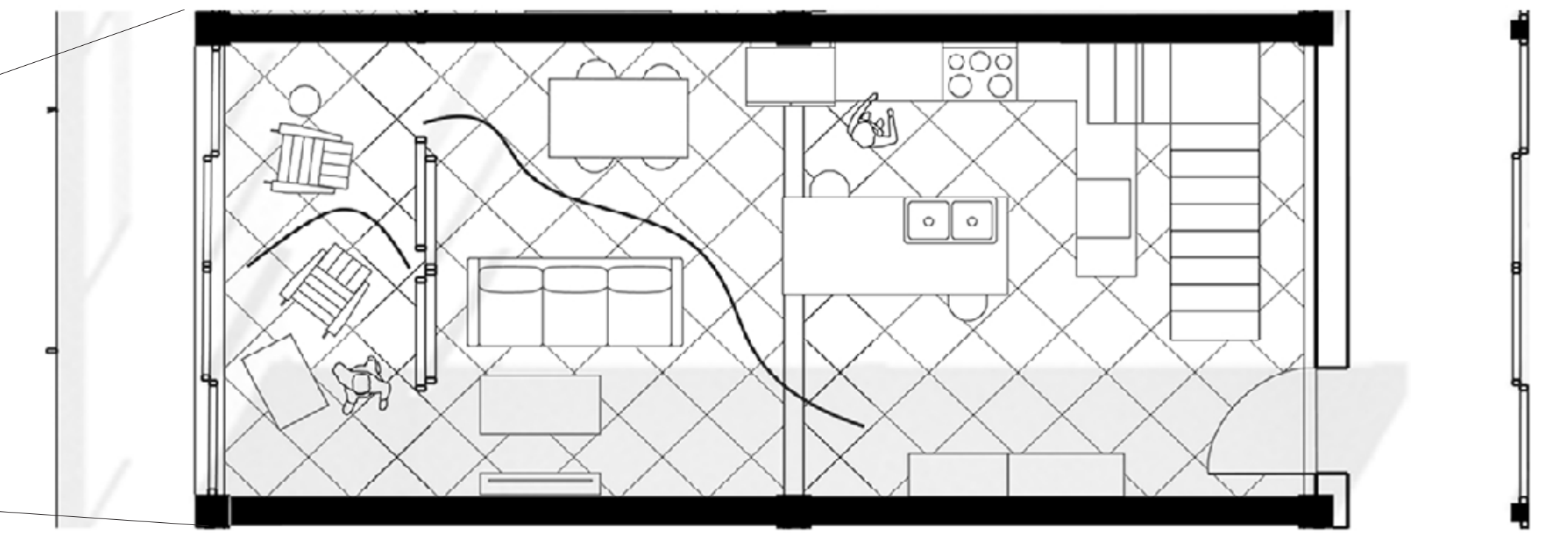
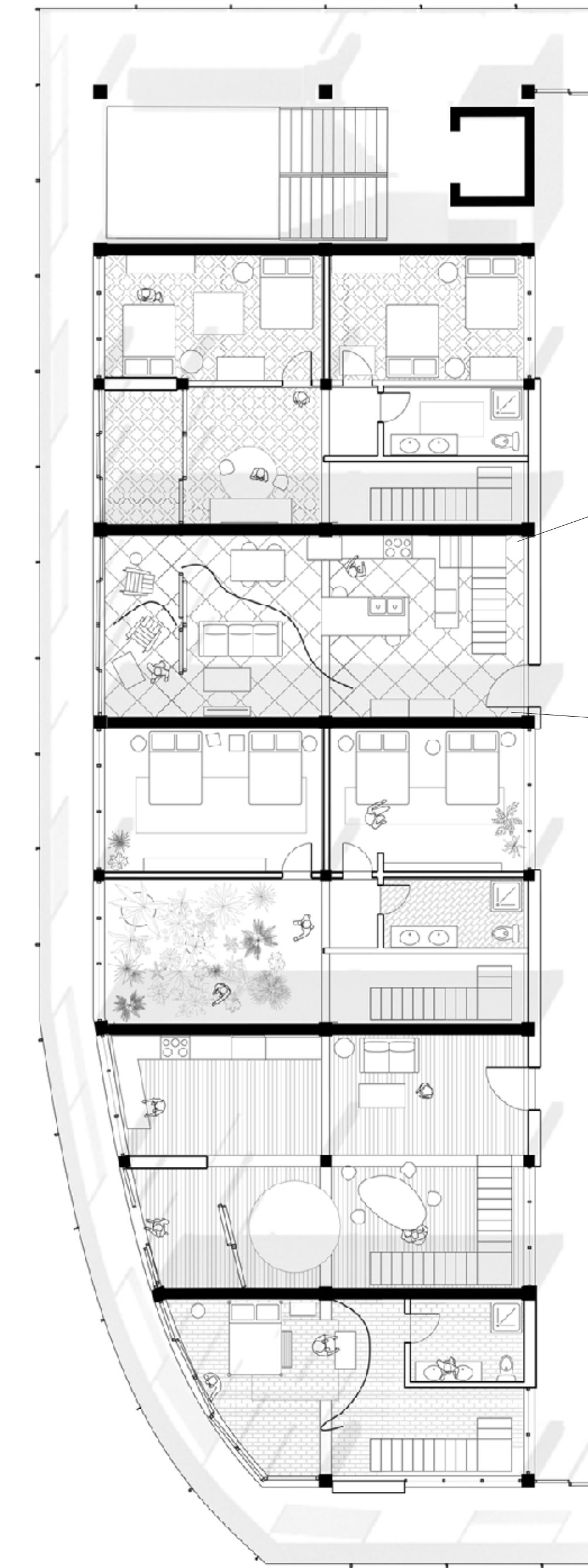




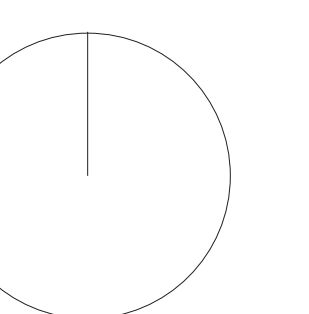
RESIDENCE LEVEL 1



SMALL UNIT - BACHELOR

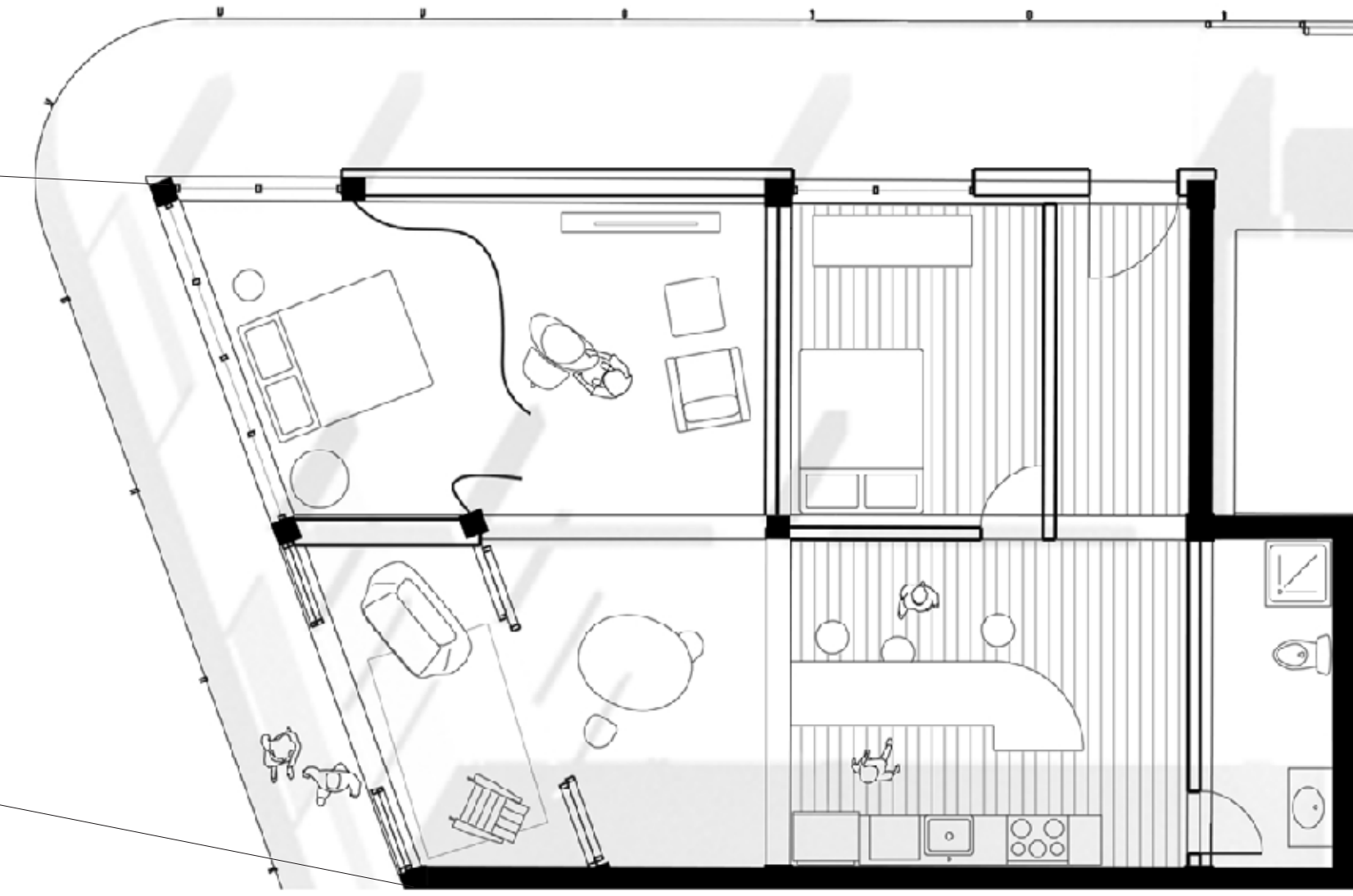
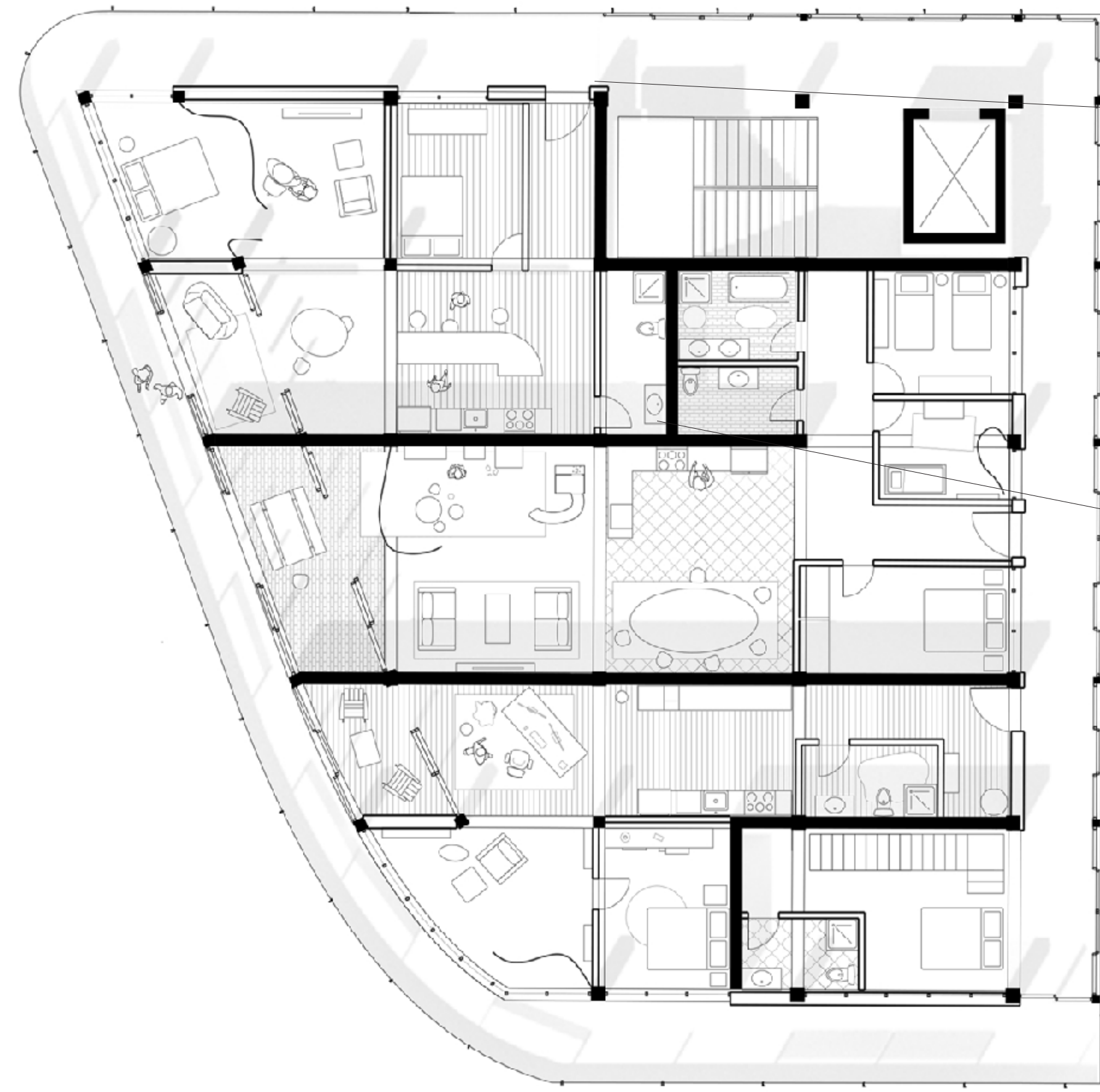


SMALL UNIT - BROTHERS

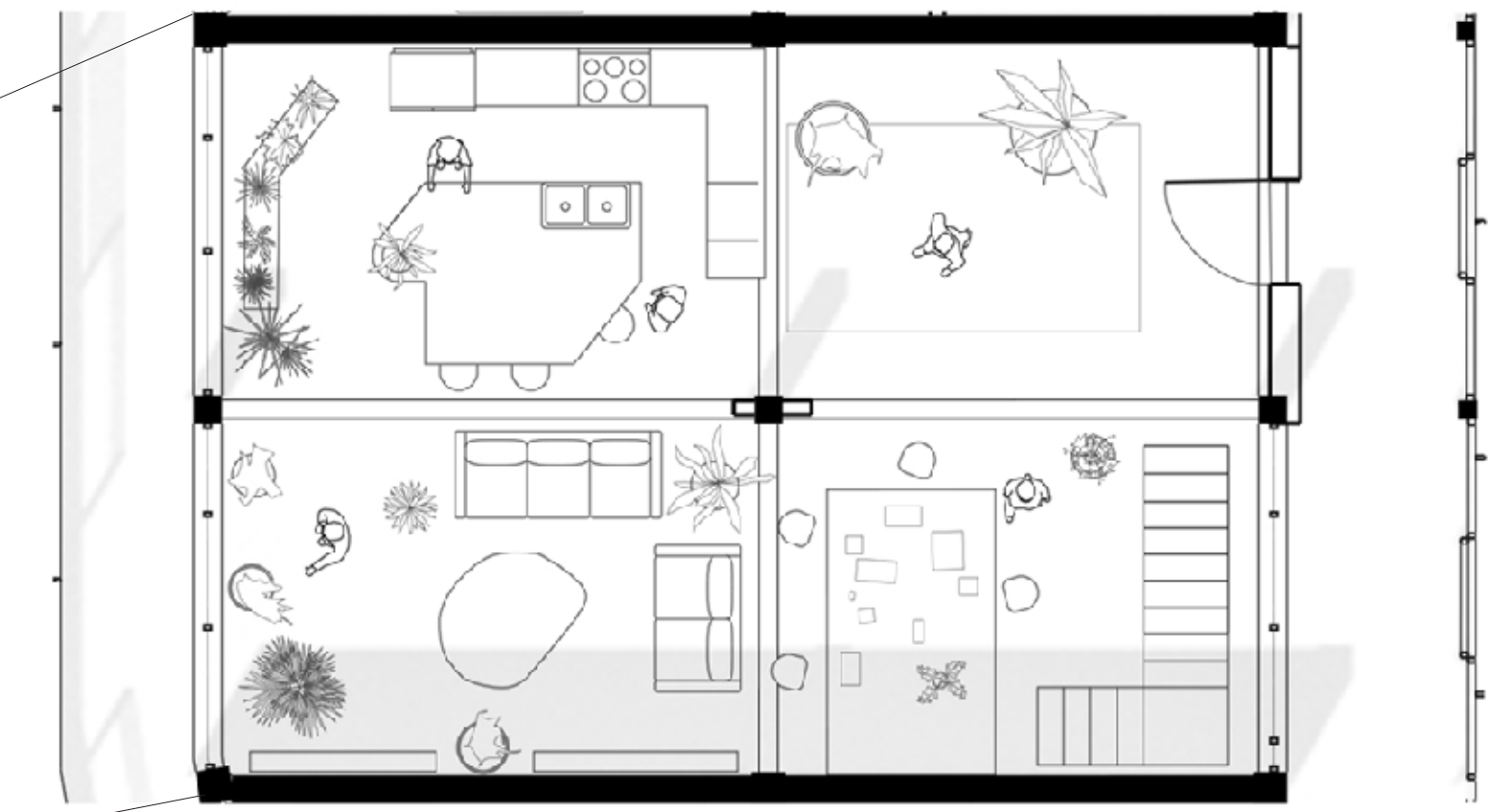
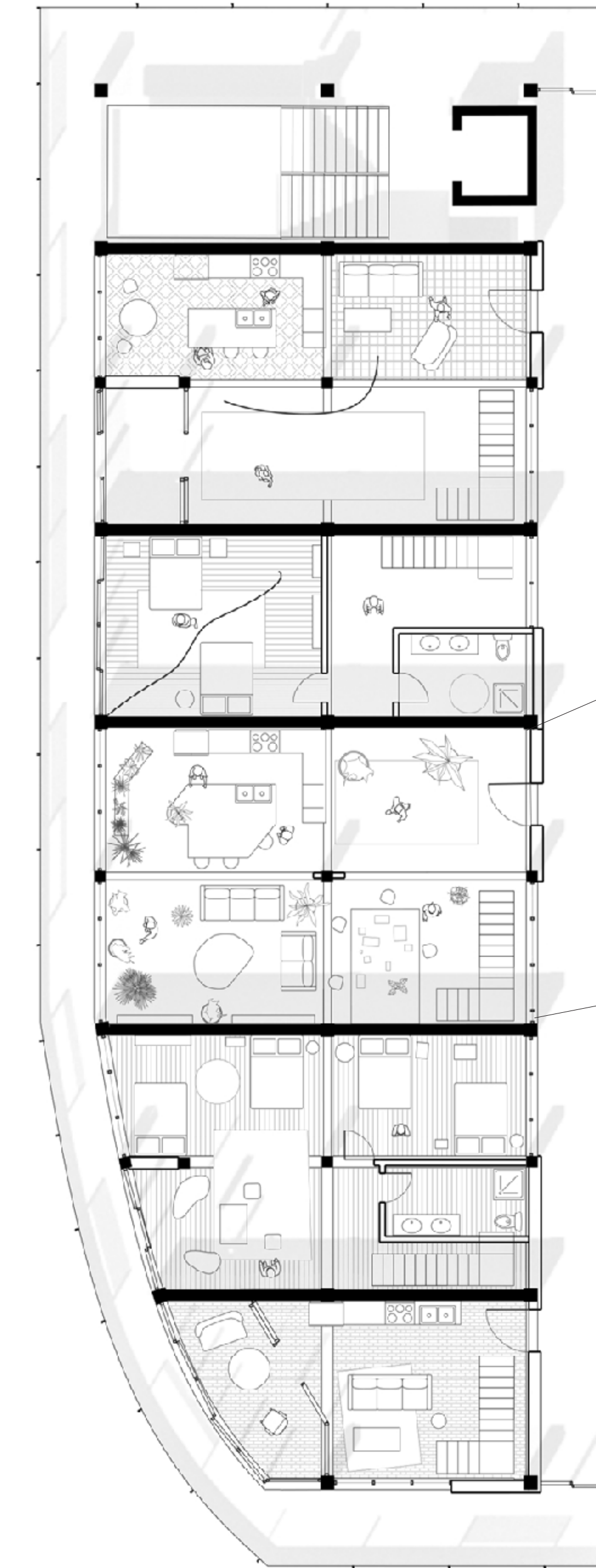




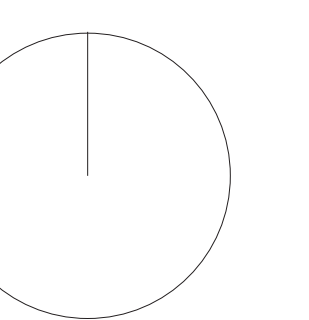
RESIDENCE LEVEL 2



MEDIUM UNIT - SMALL FAMILY

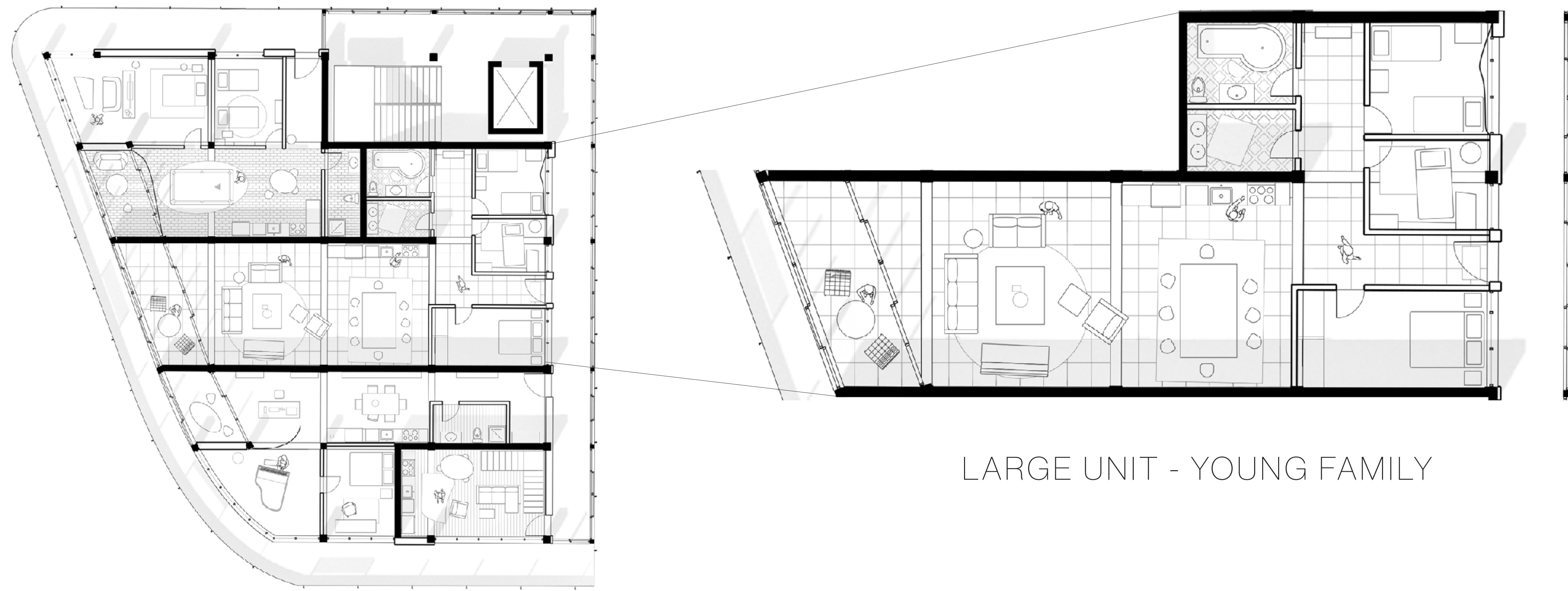


LARGE UNIT - BOTANISTS

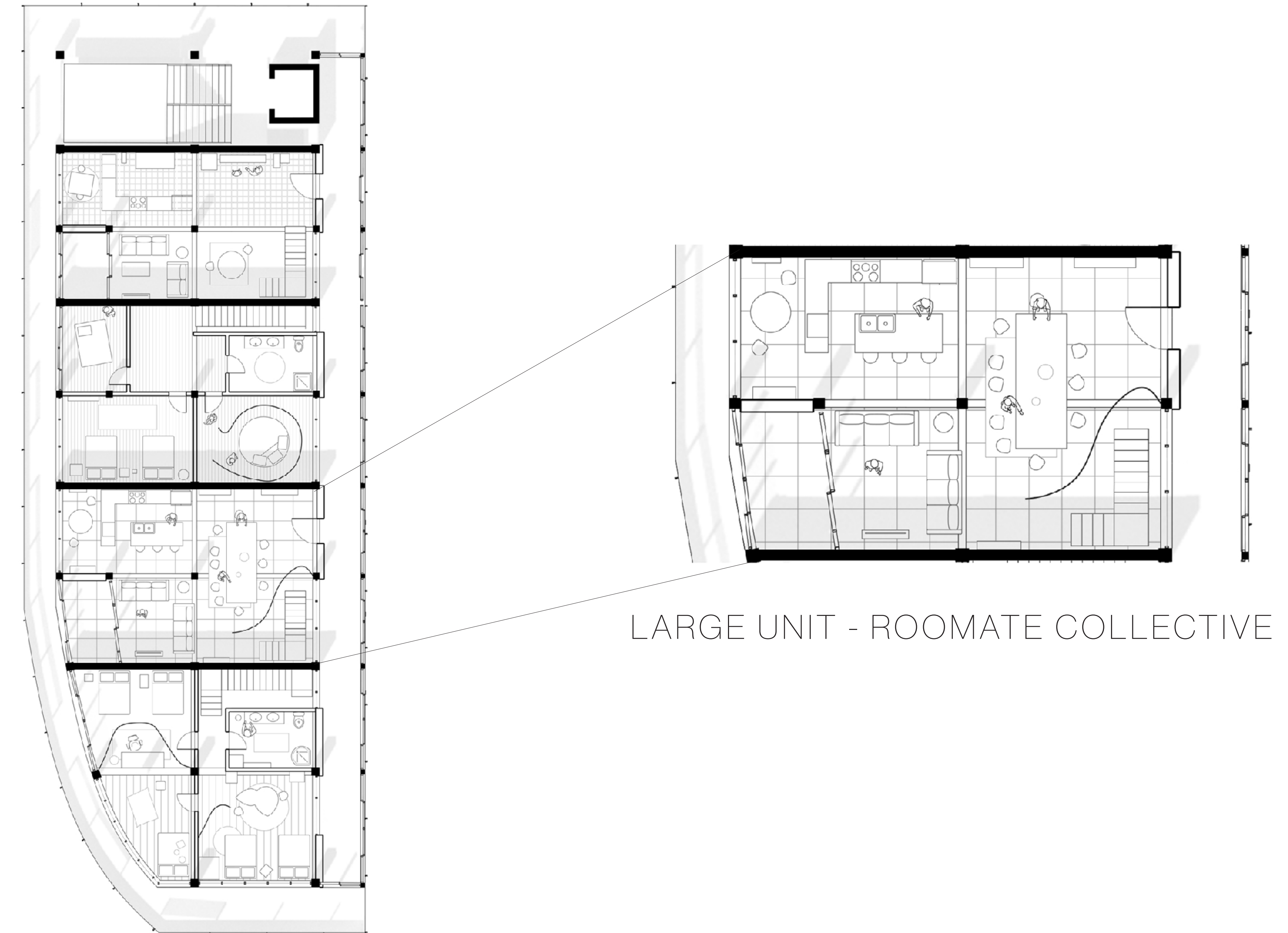




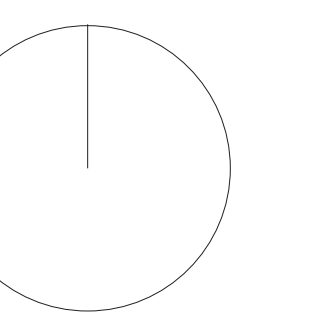
RESIDENCE LEVEL 3



LARGE UNIT - YOUNG FAMILY

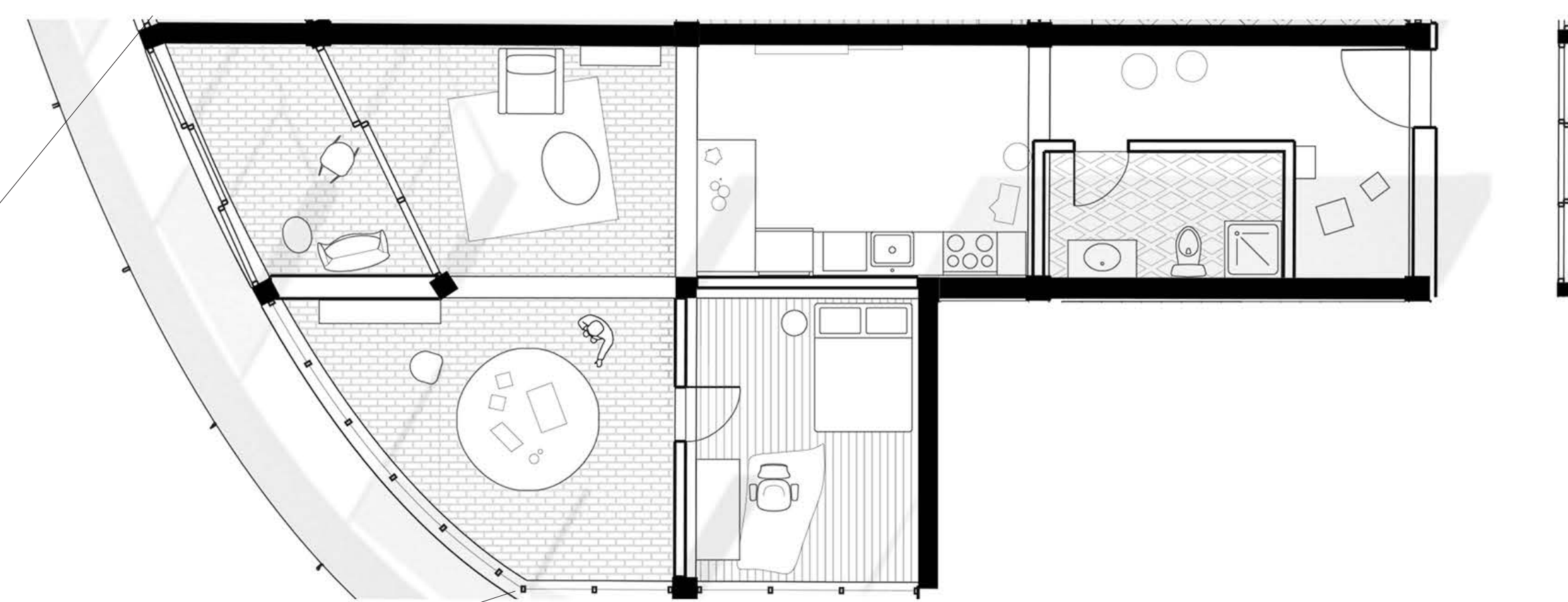
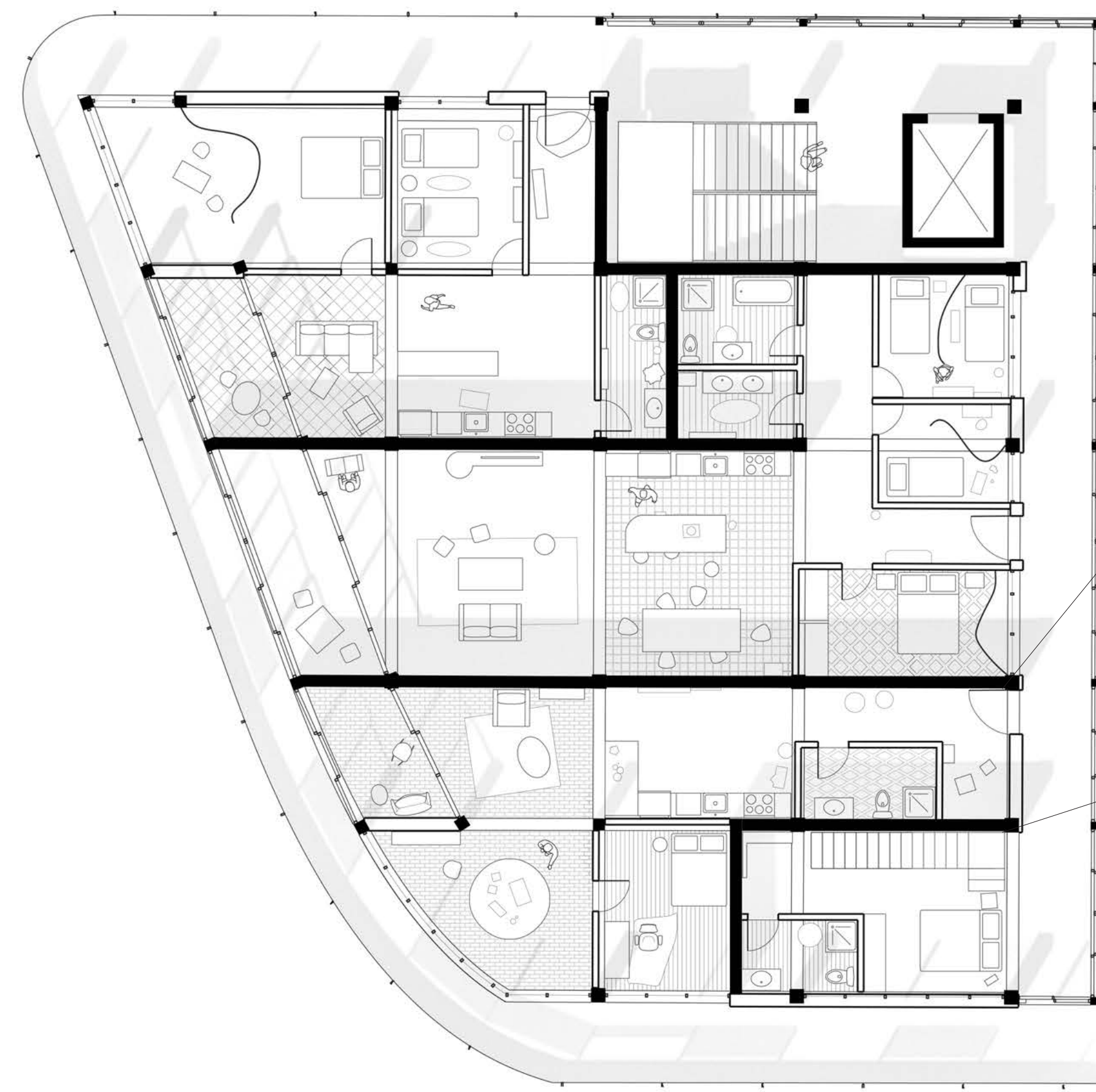


LARGE UNIT - ROOMATE COLLECTIVE

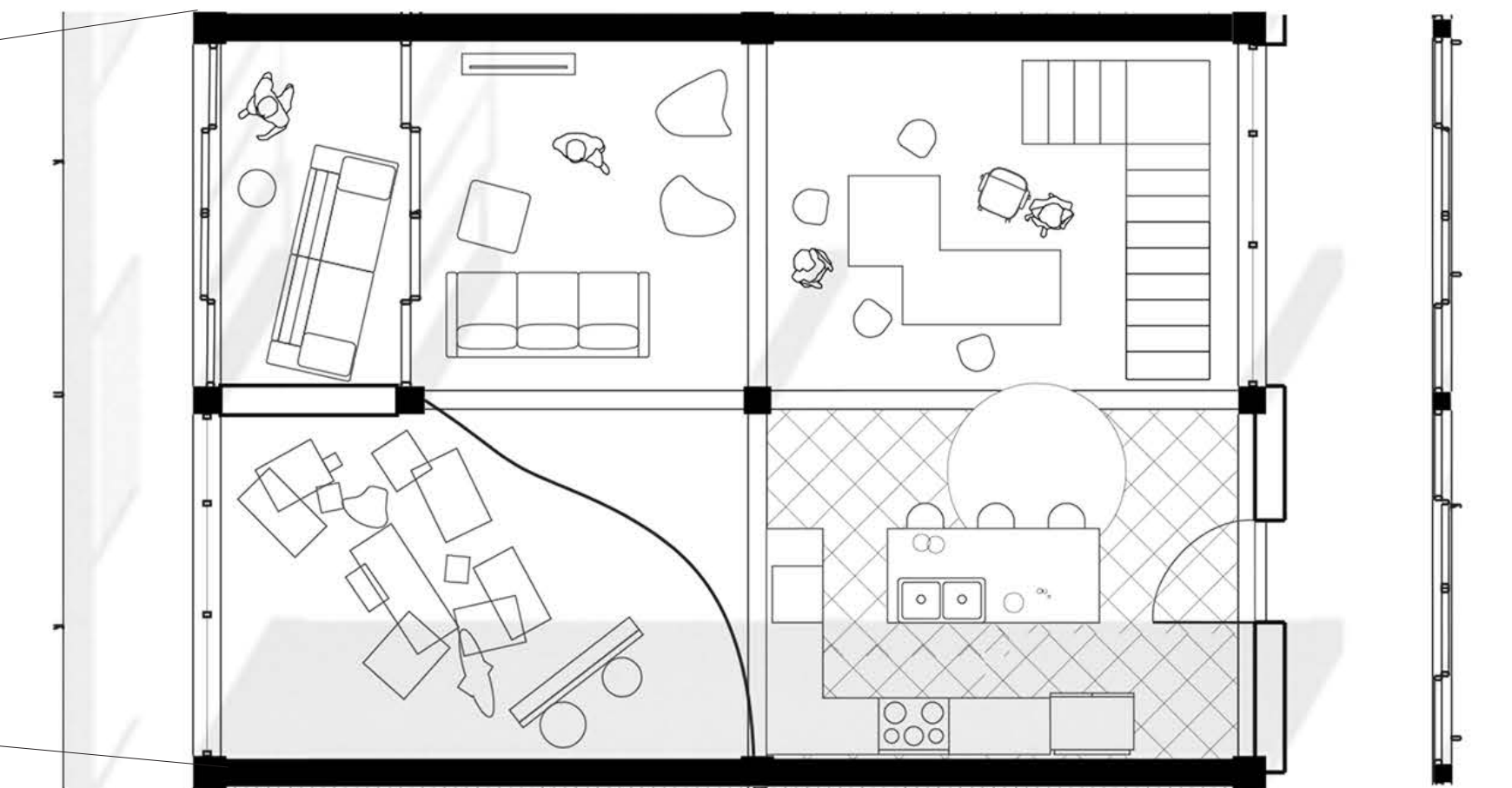
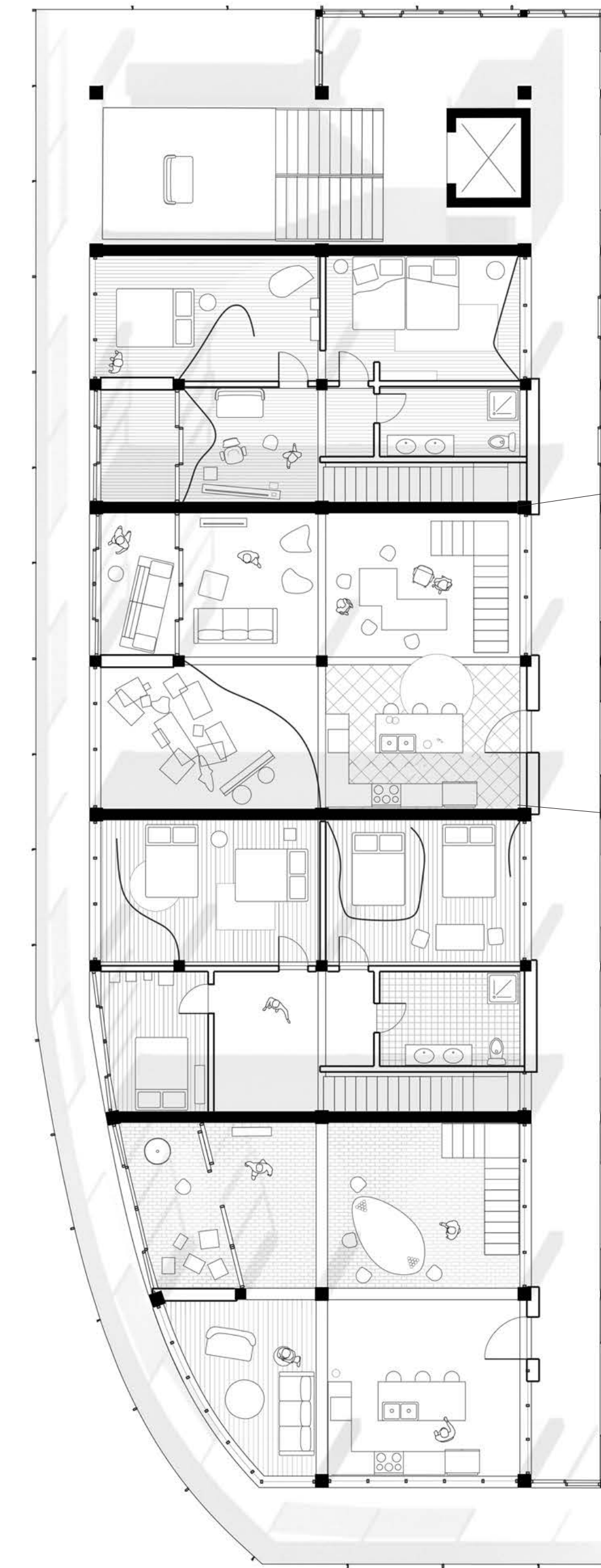




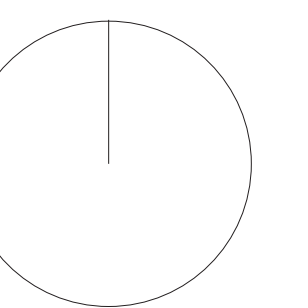
RESIDENCE LEVEL 4



SMALL UNIT - WORKAHOLIC

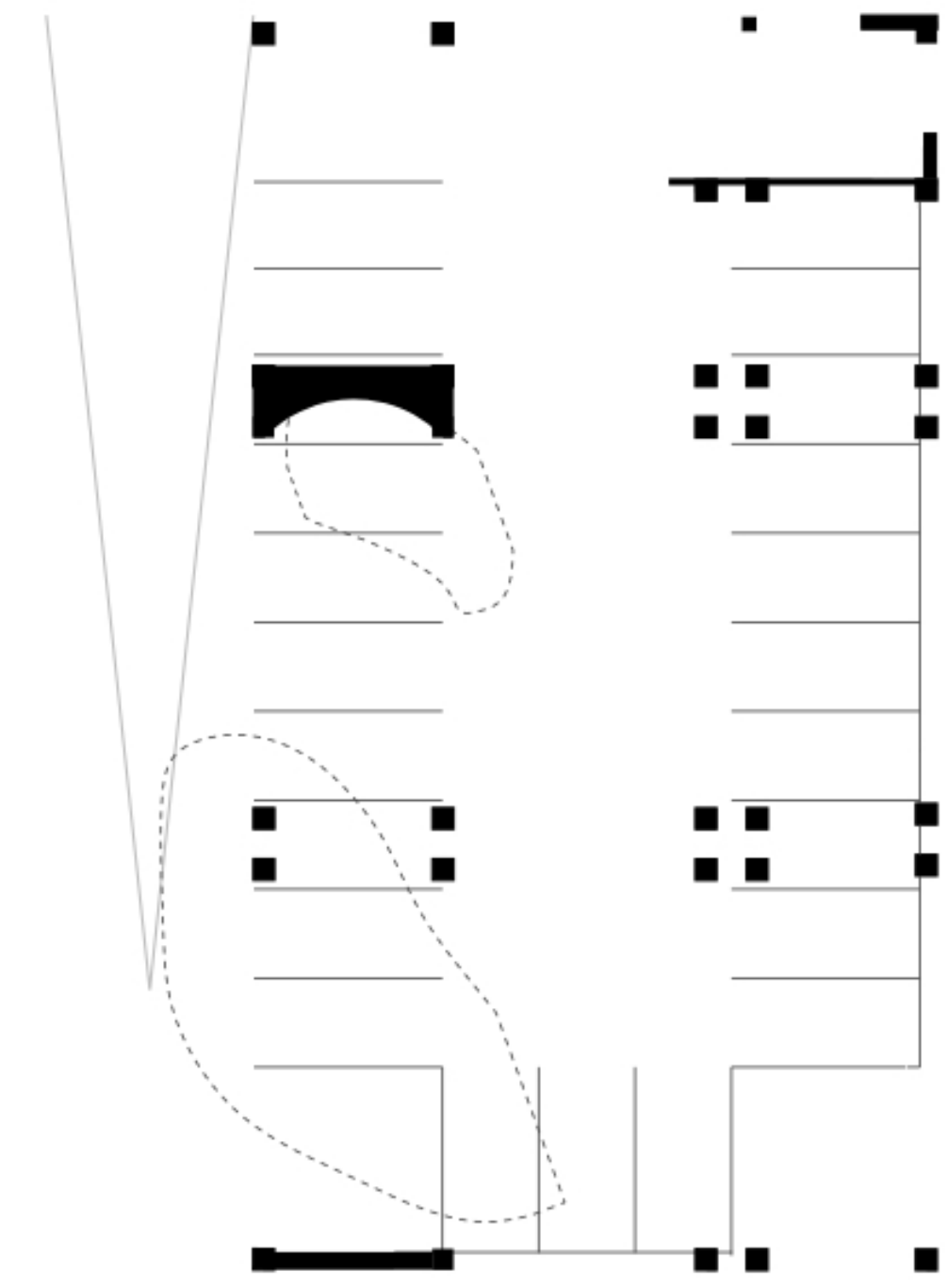


LARGE UNIT - FRATERNITY

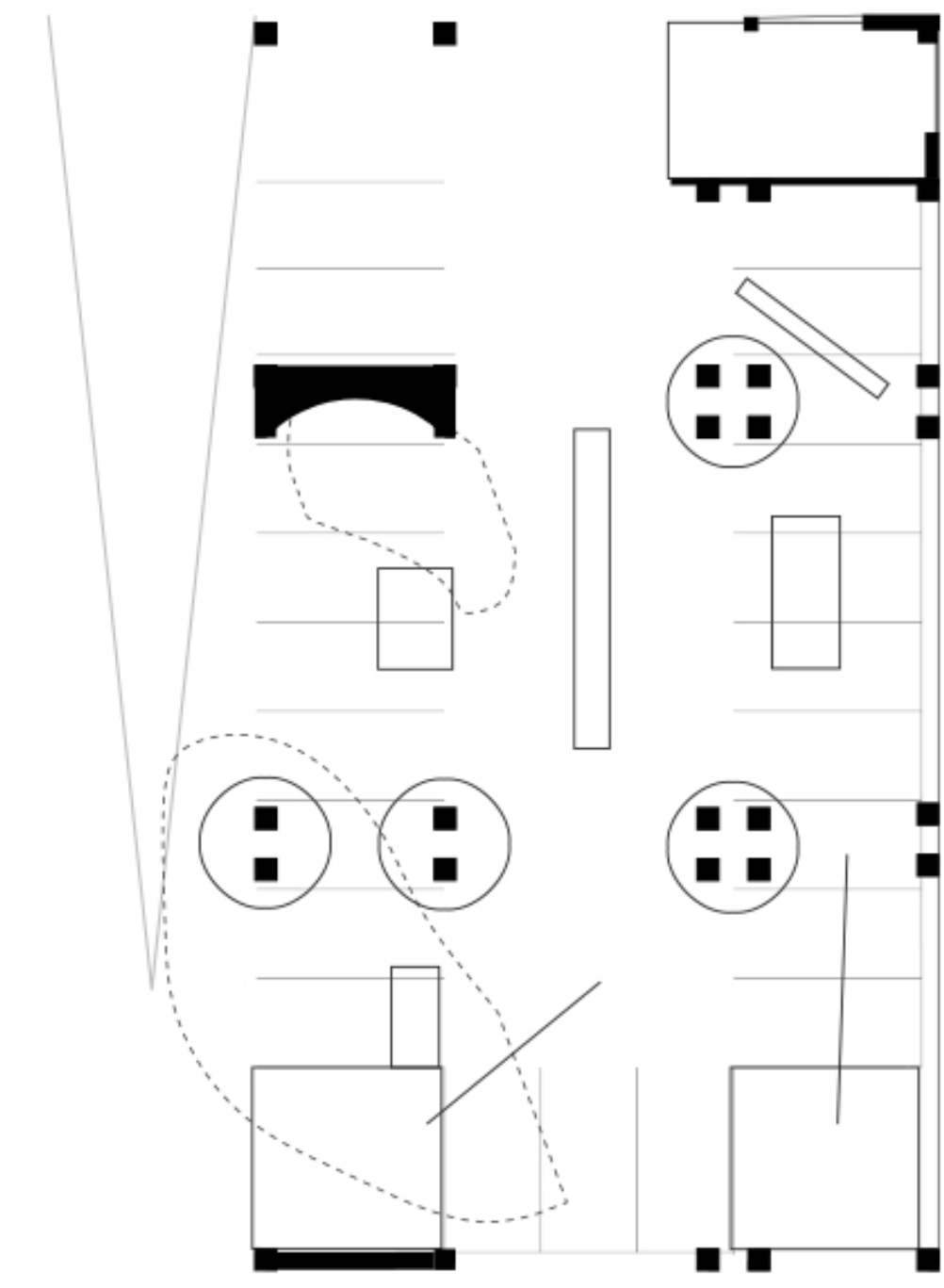




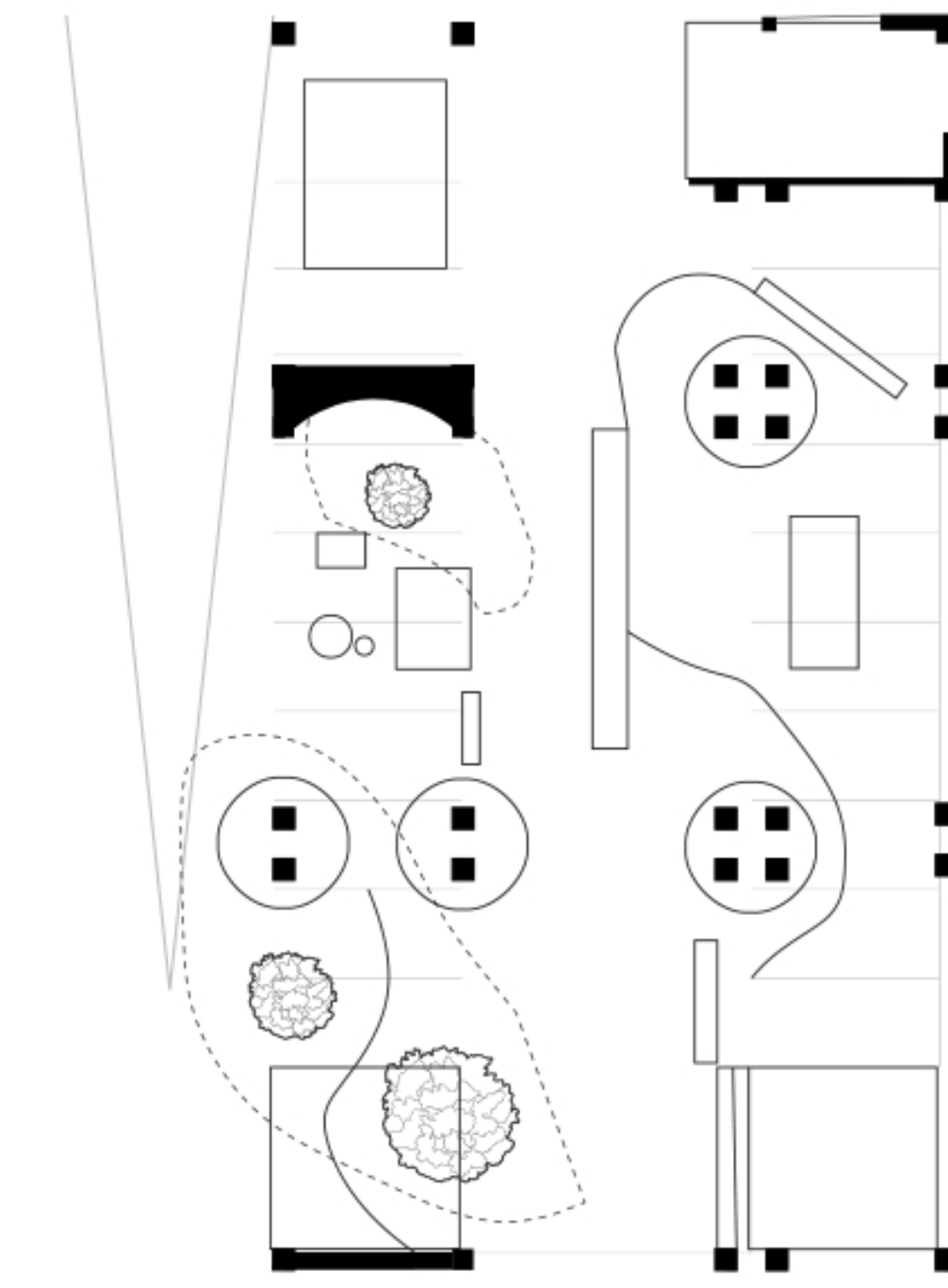
LAYOUT OPPORTUNITIES  
Adaptability through time



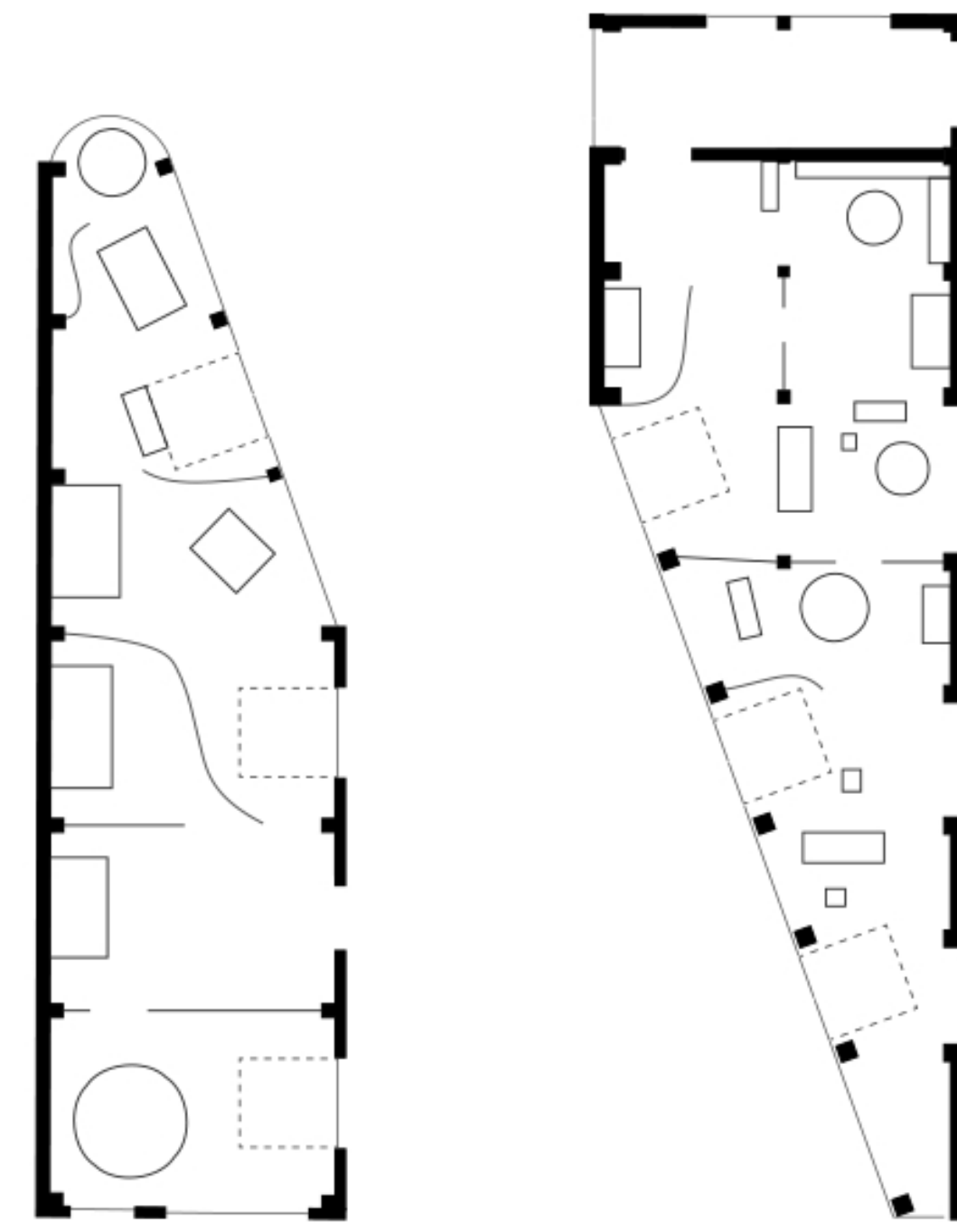
Ground Floor Parking



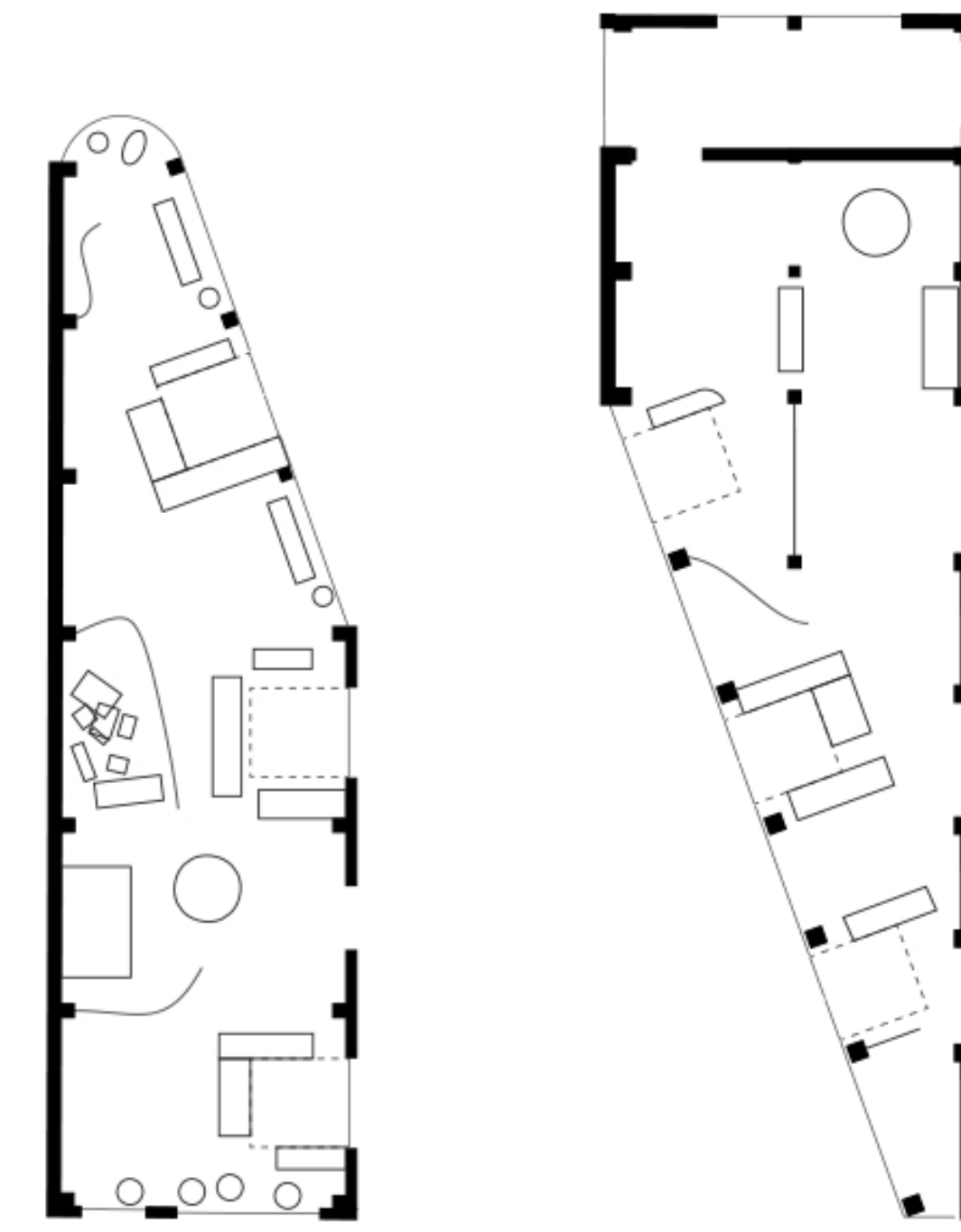
Hybrid Parking - Skatepark



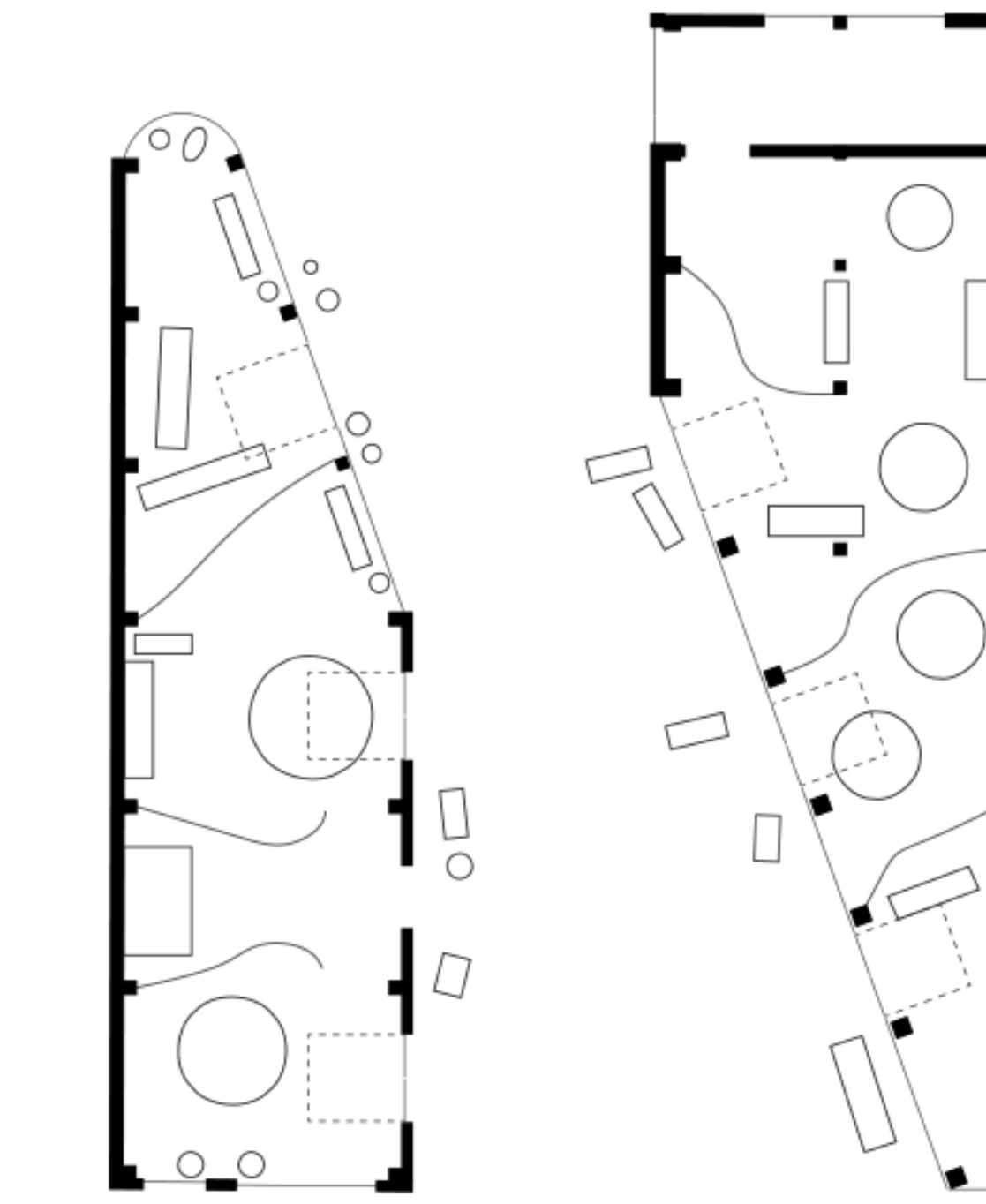
Urban Park



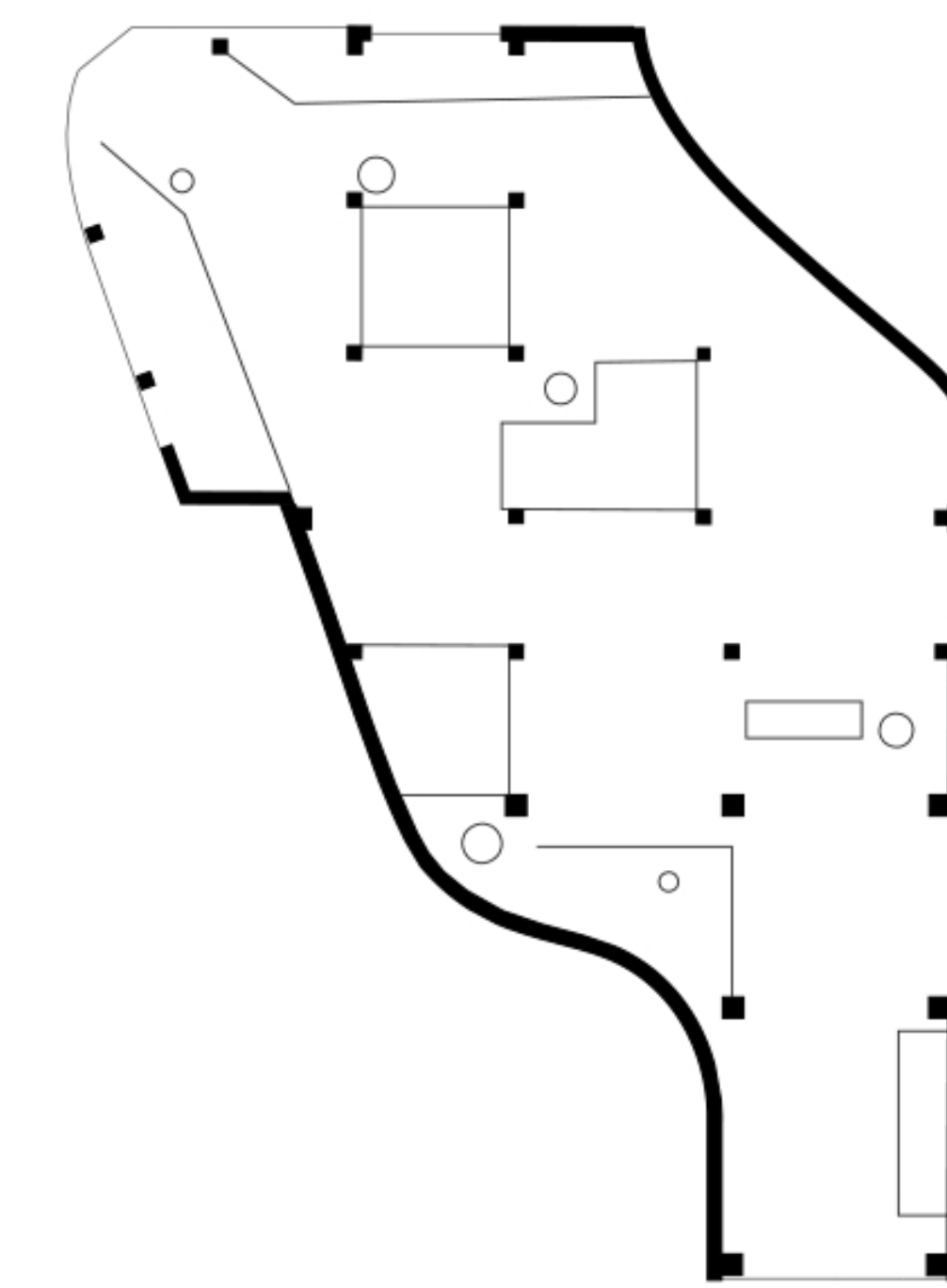
Workspace



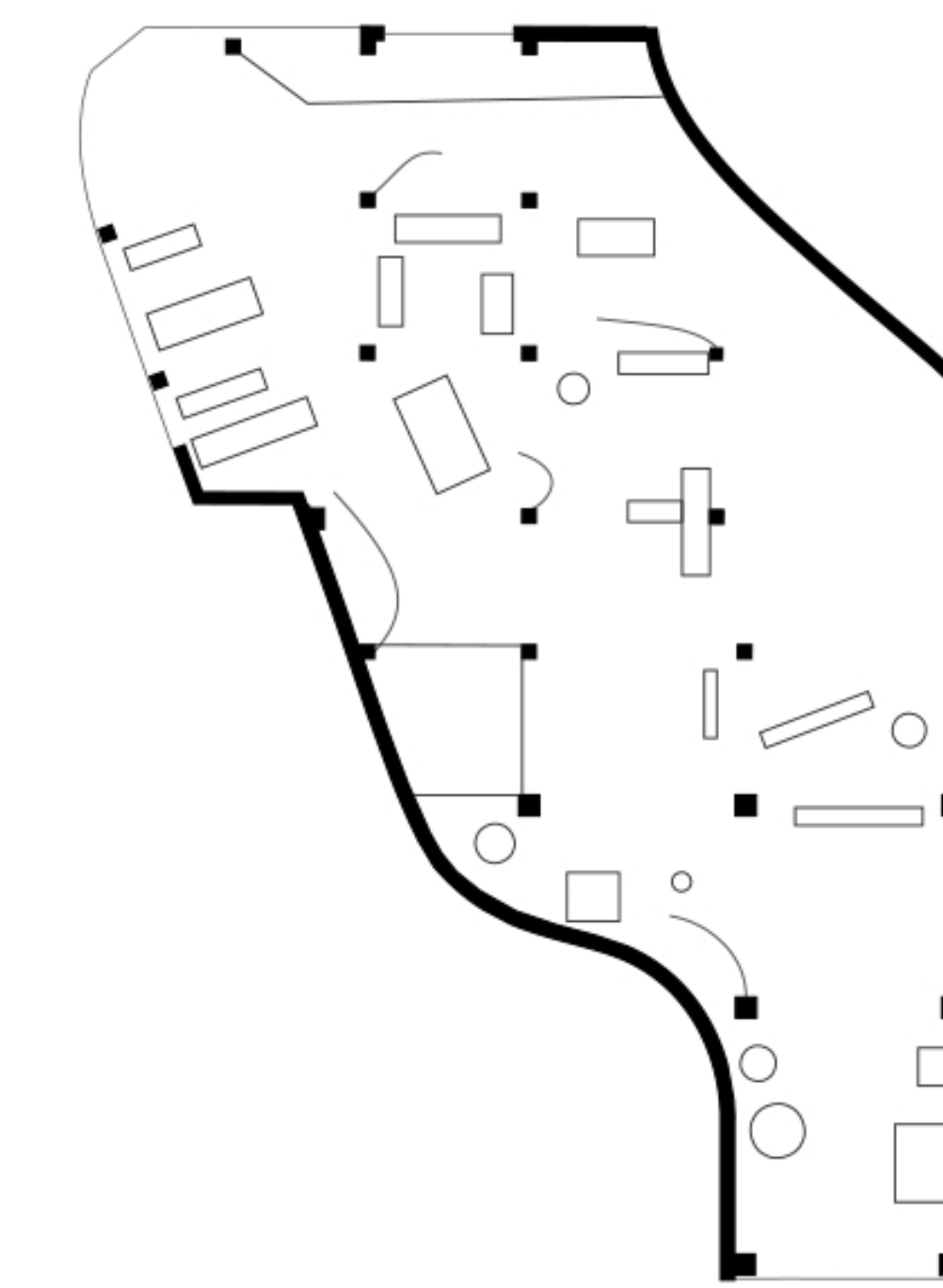
Community Market



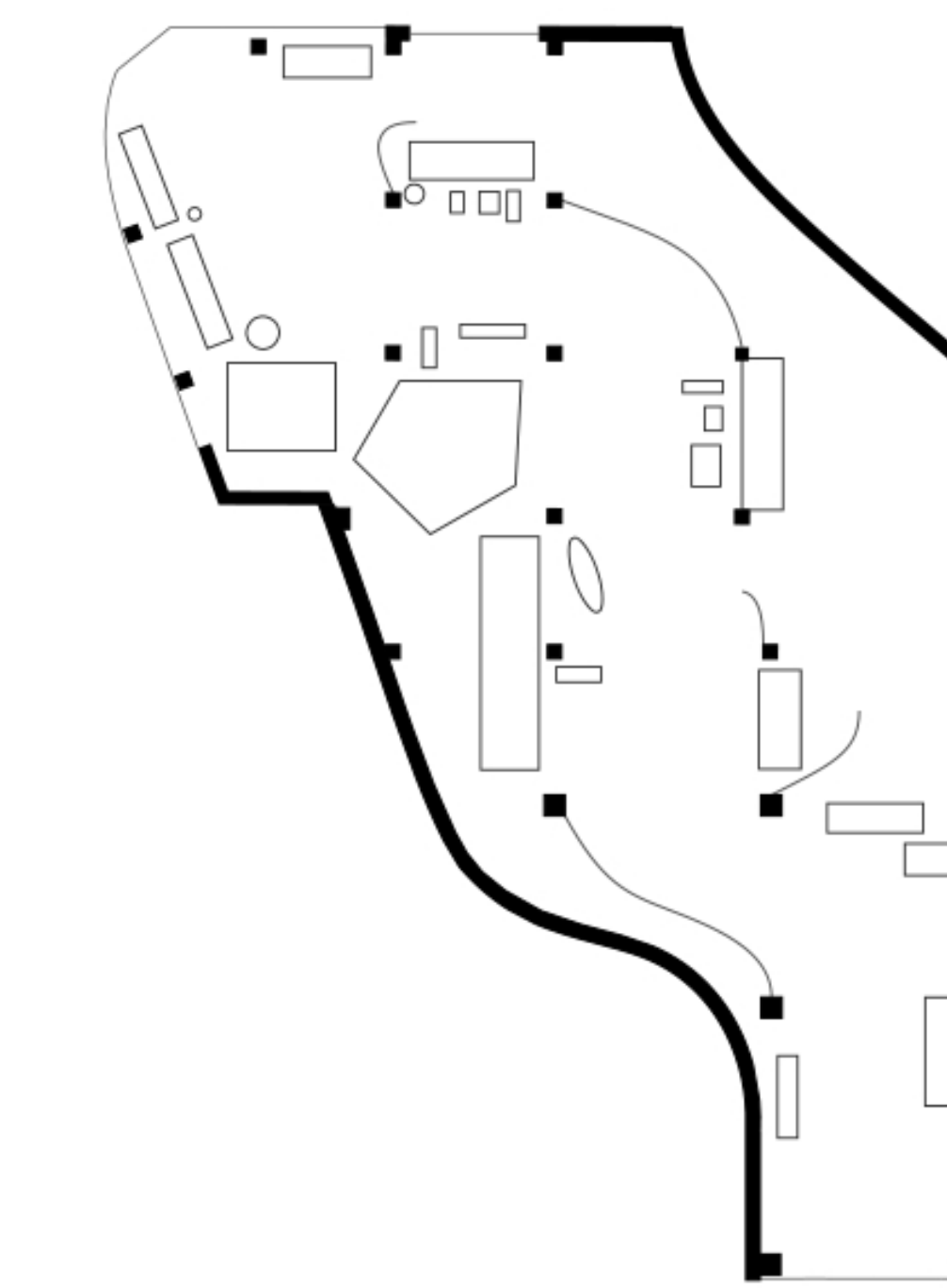
Public Display



Grocery Market



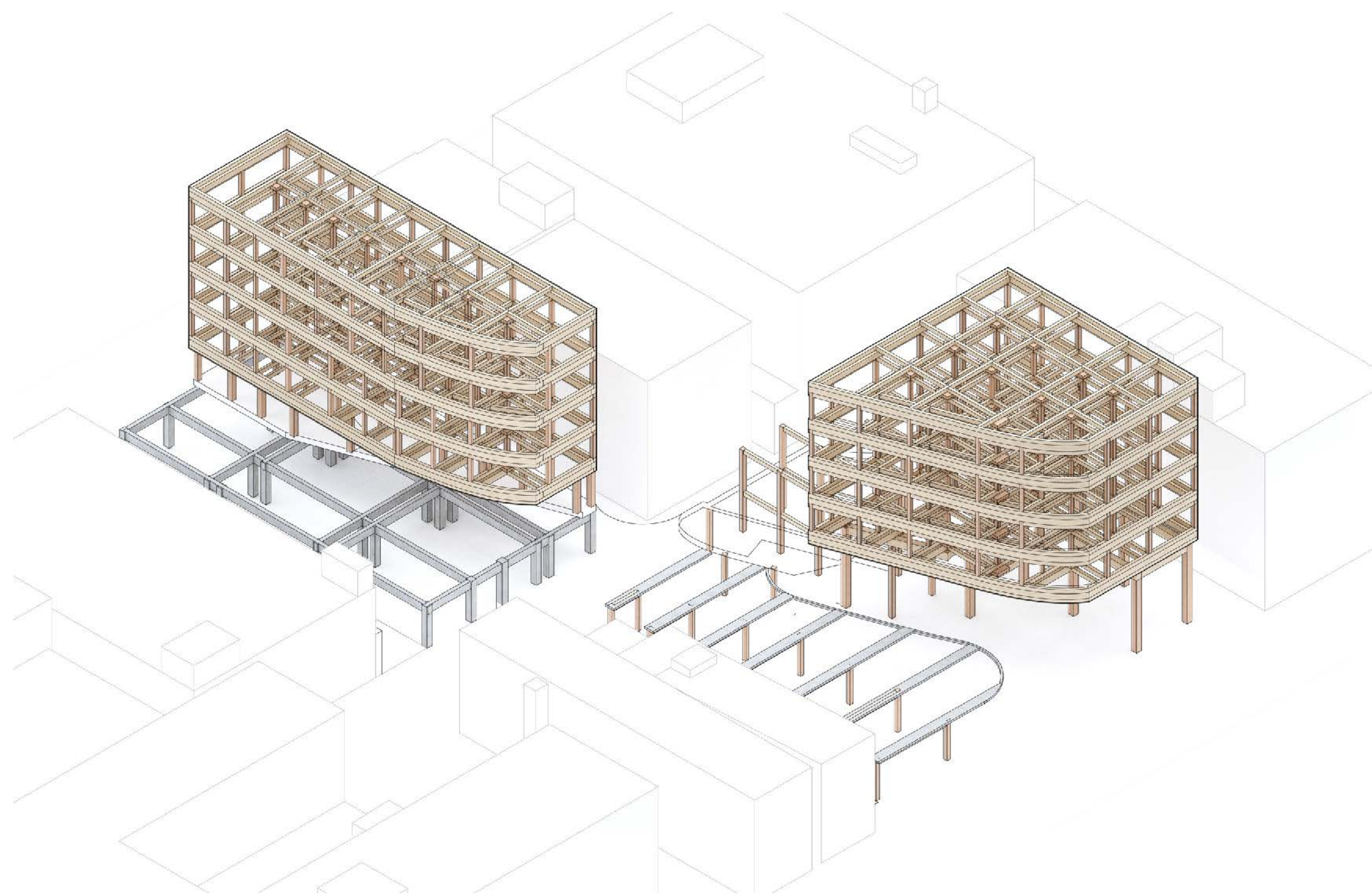
Pop-Up Vendor Market



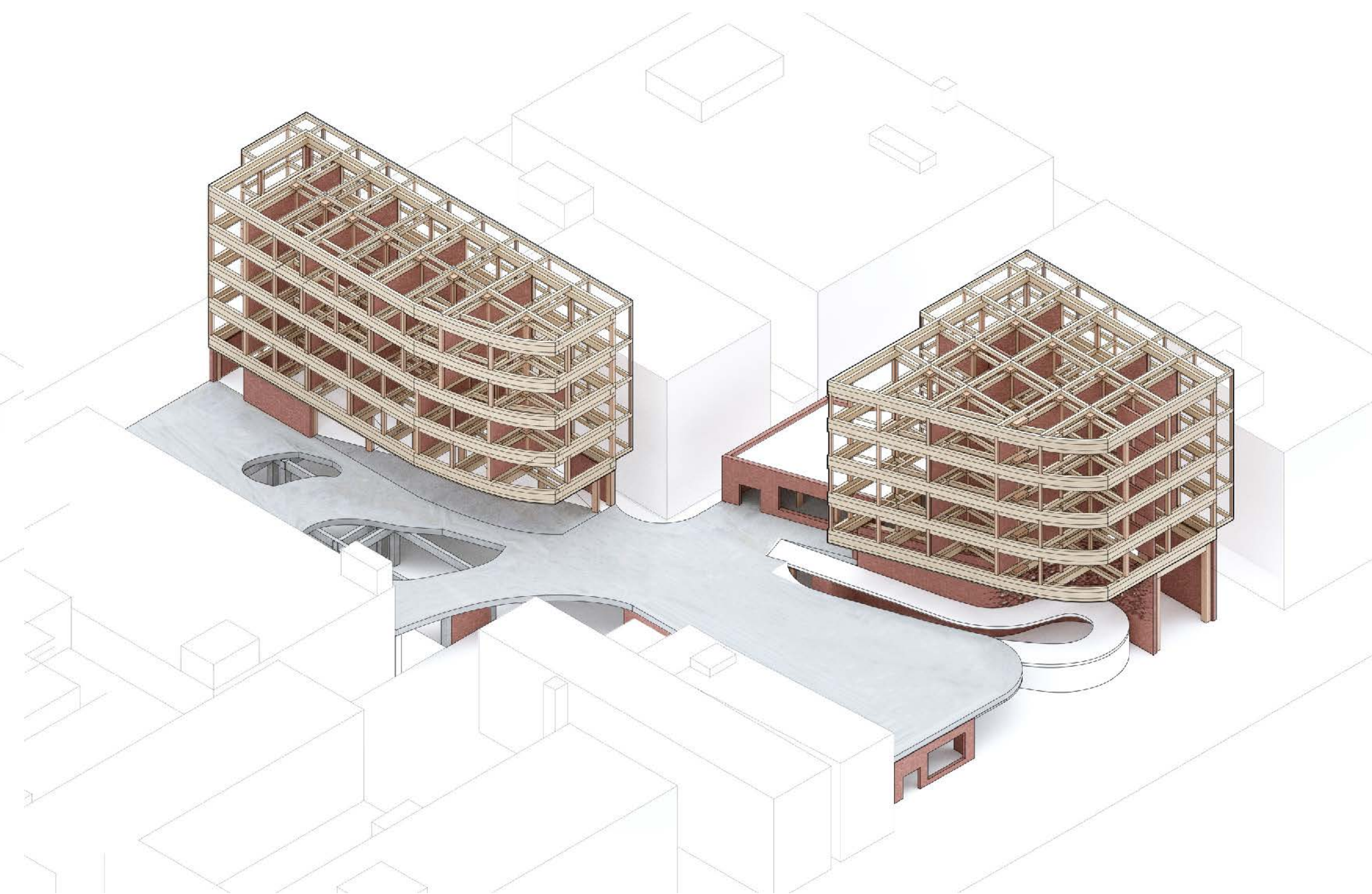
Event Market



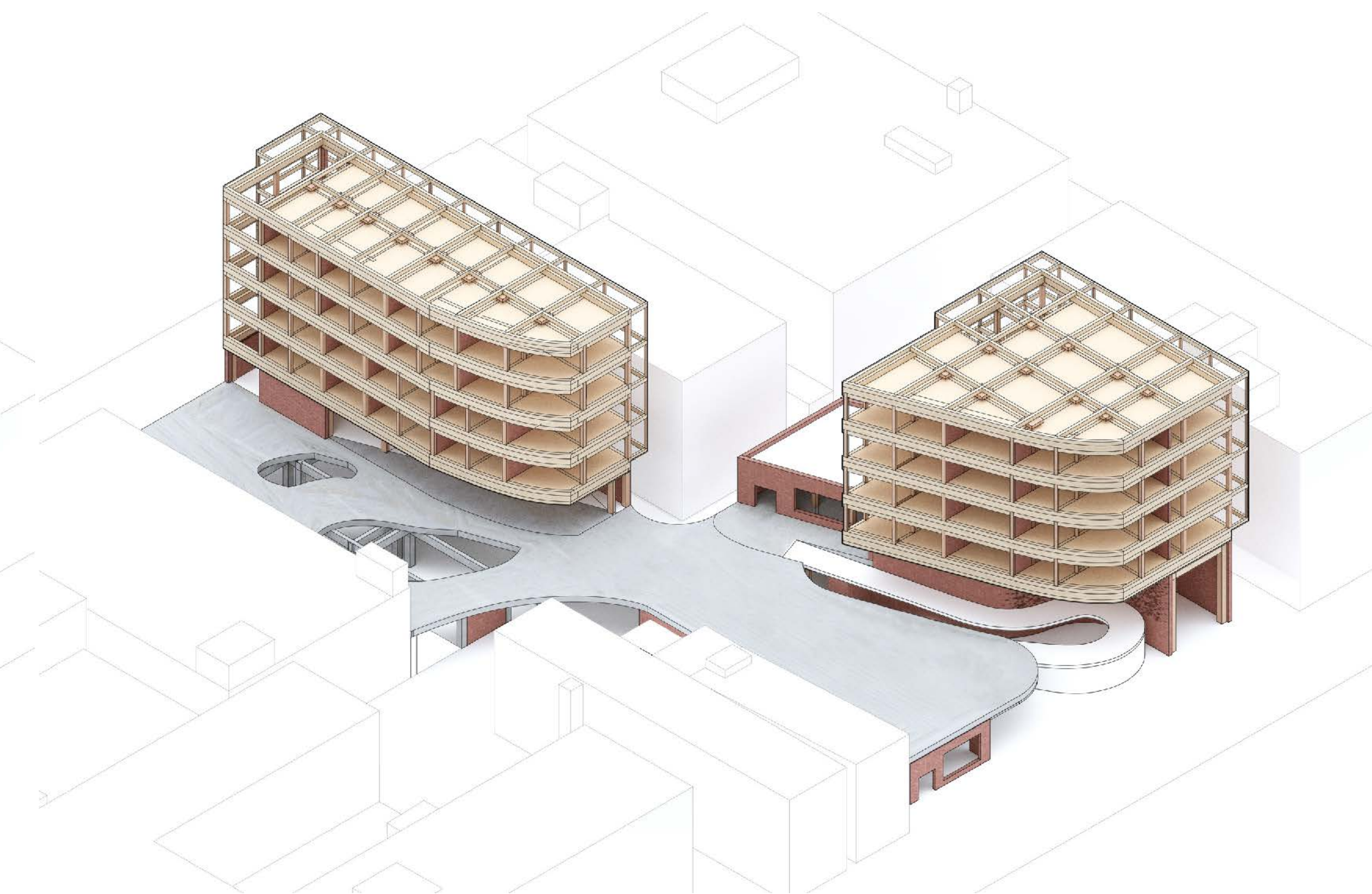
STRUCTURAL AXO  
Creating the Framework



POST AND BEAM GRID



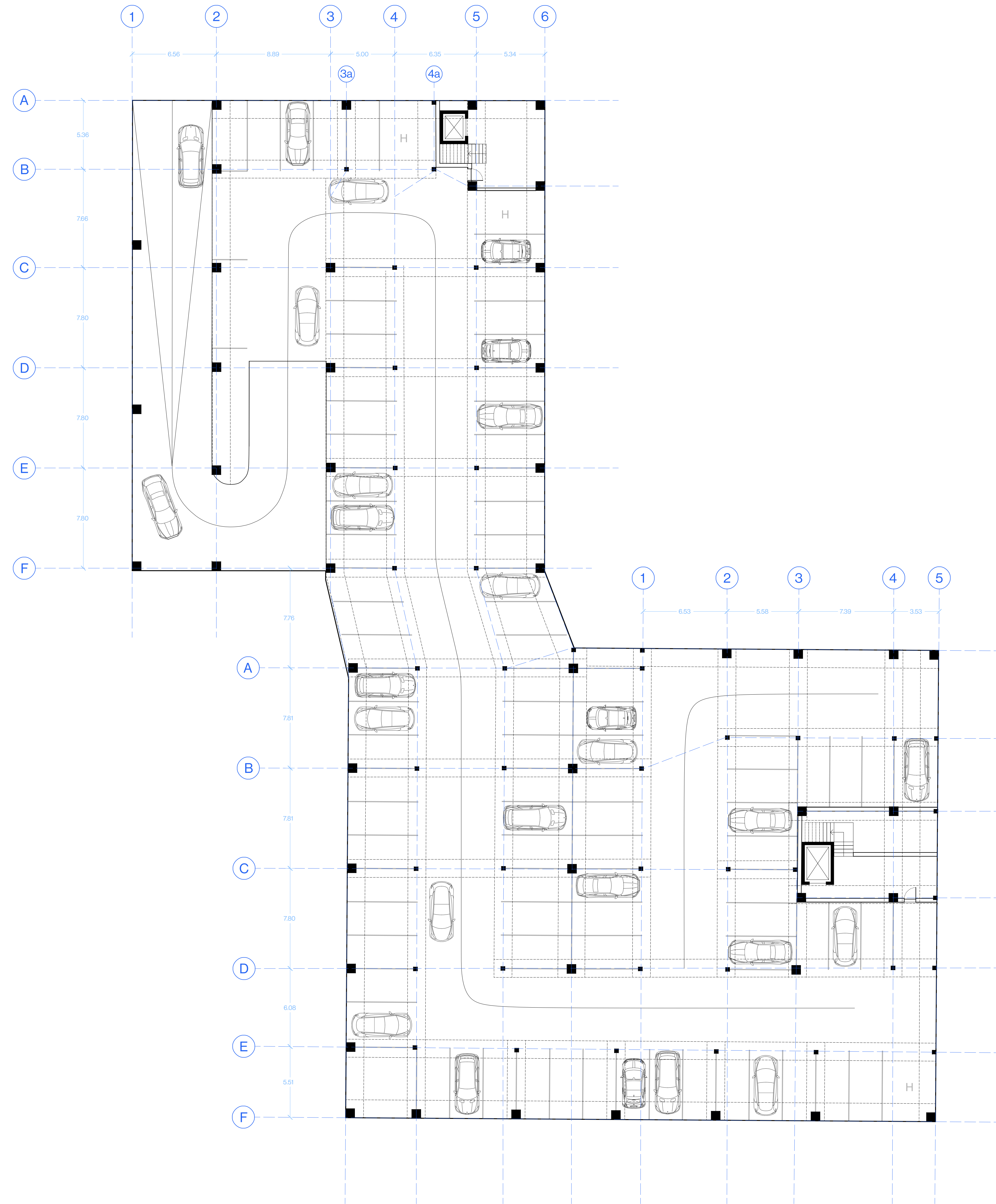
SHEAR WALLS AND CONCRETE  
SLAB



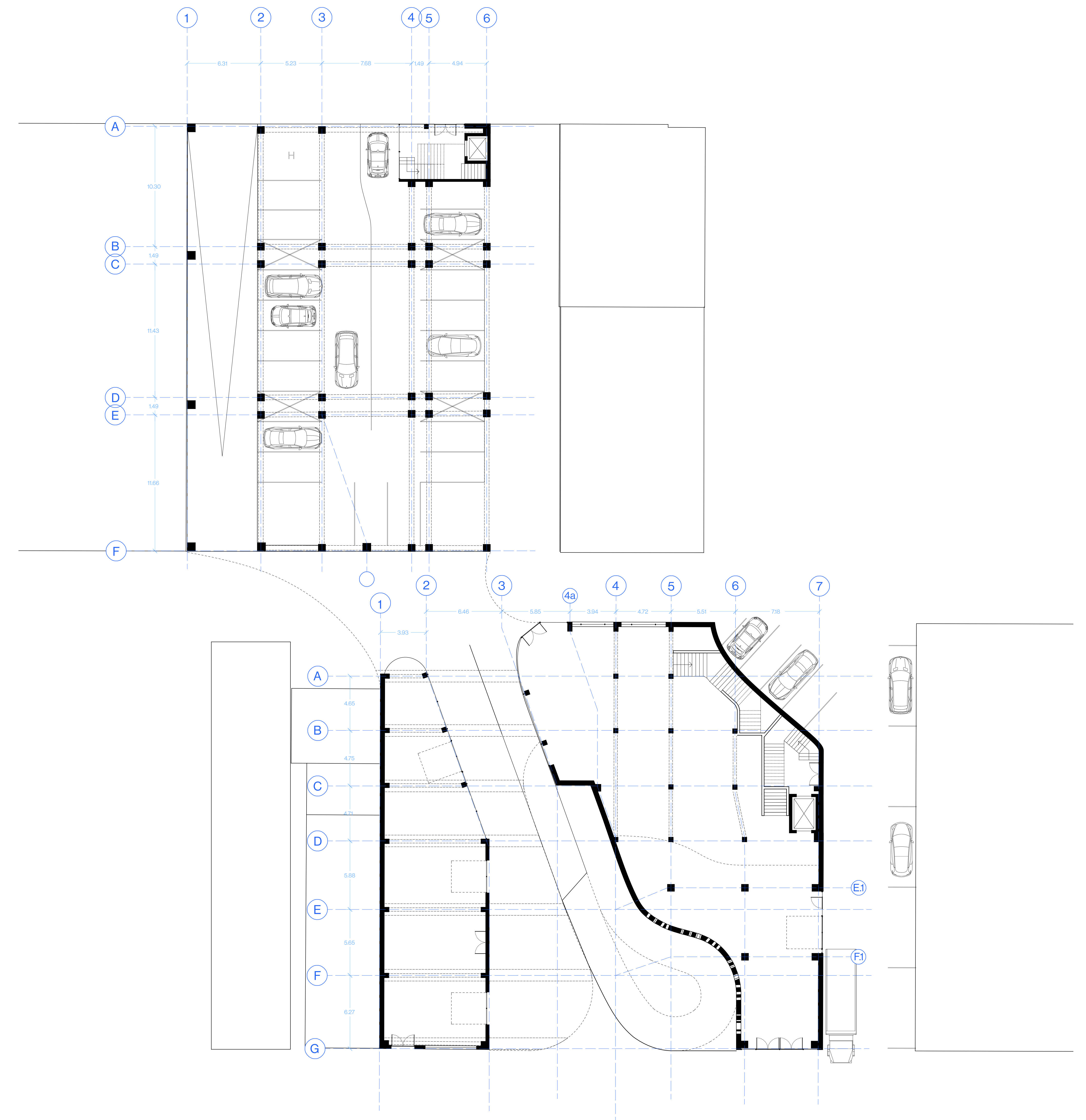
UNIT FLOOR INFILL



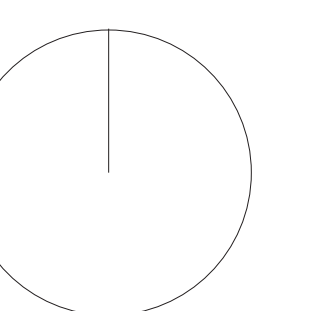
STRUCTURAL PLANS



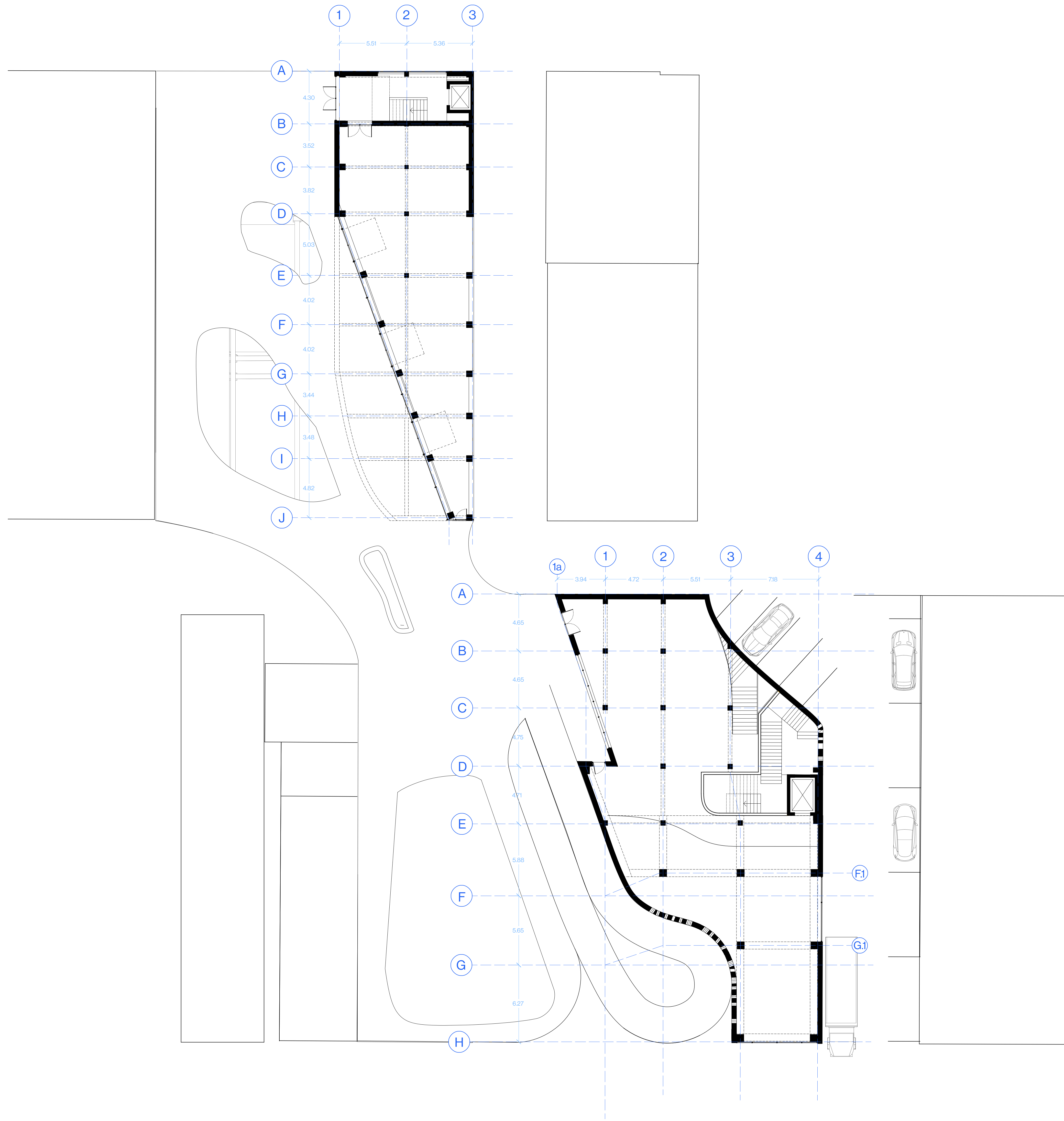
UNDERGROUND PARKING



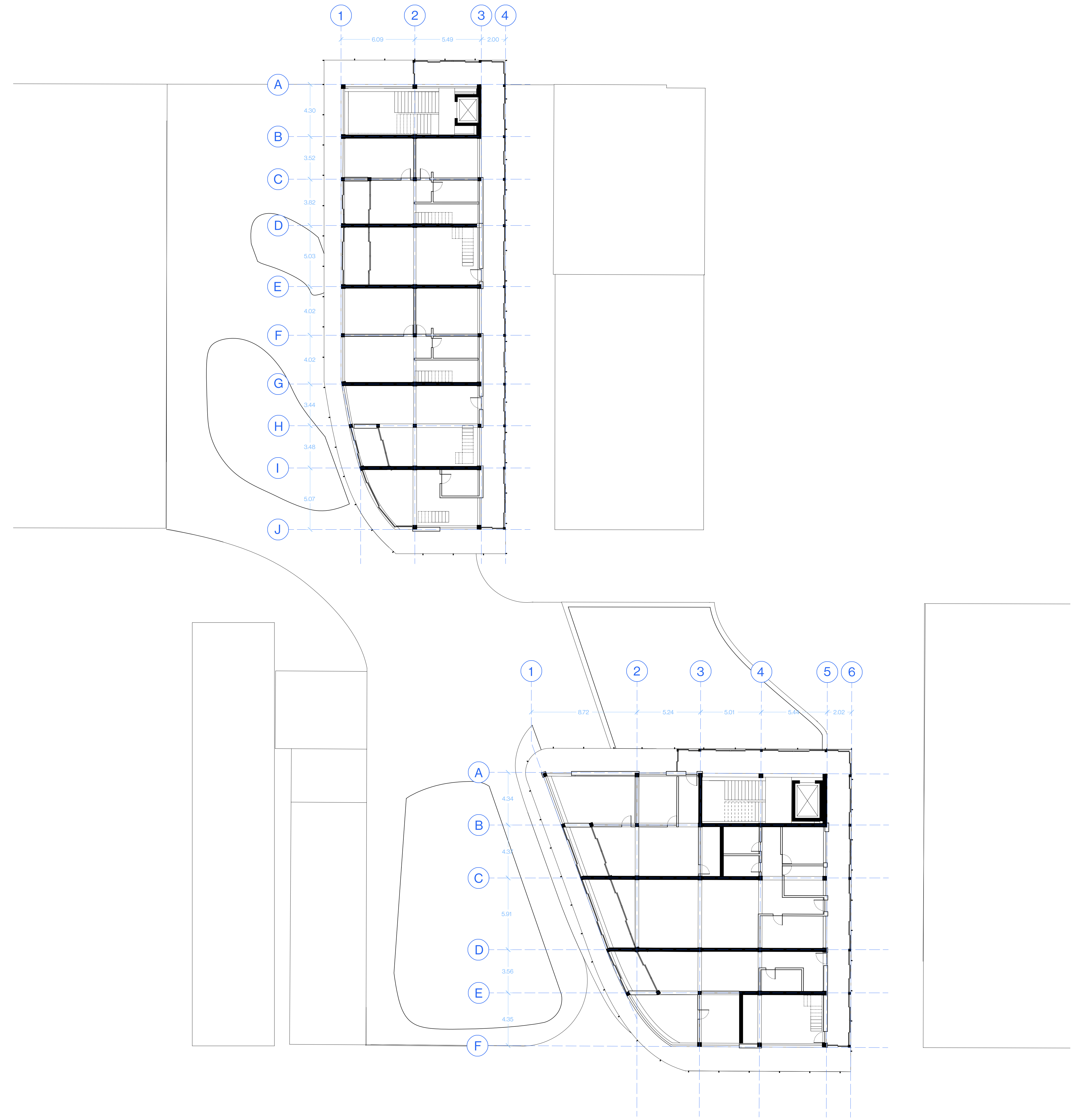
GROUND FLOOR



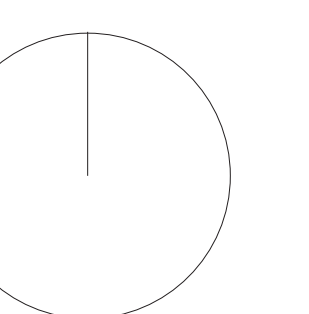




SECOND FLOOR

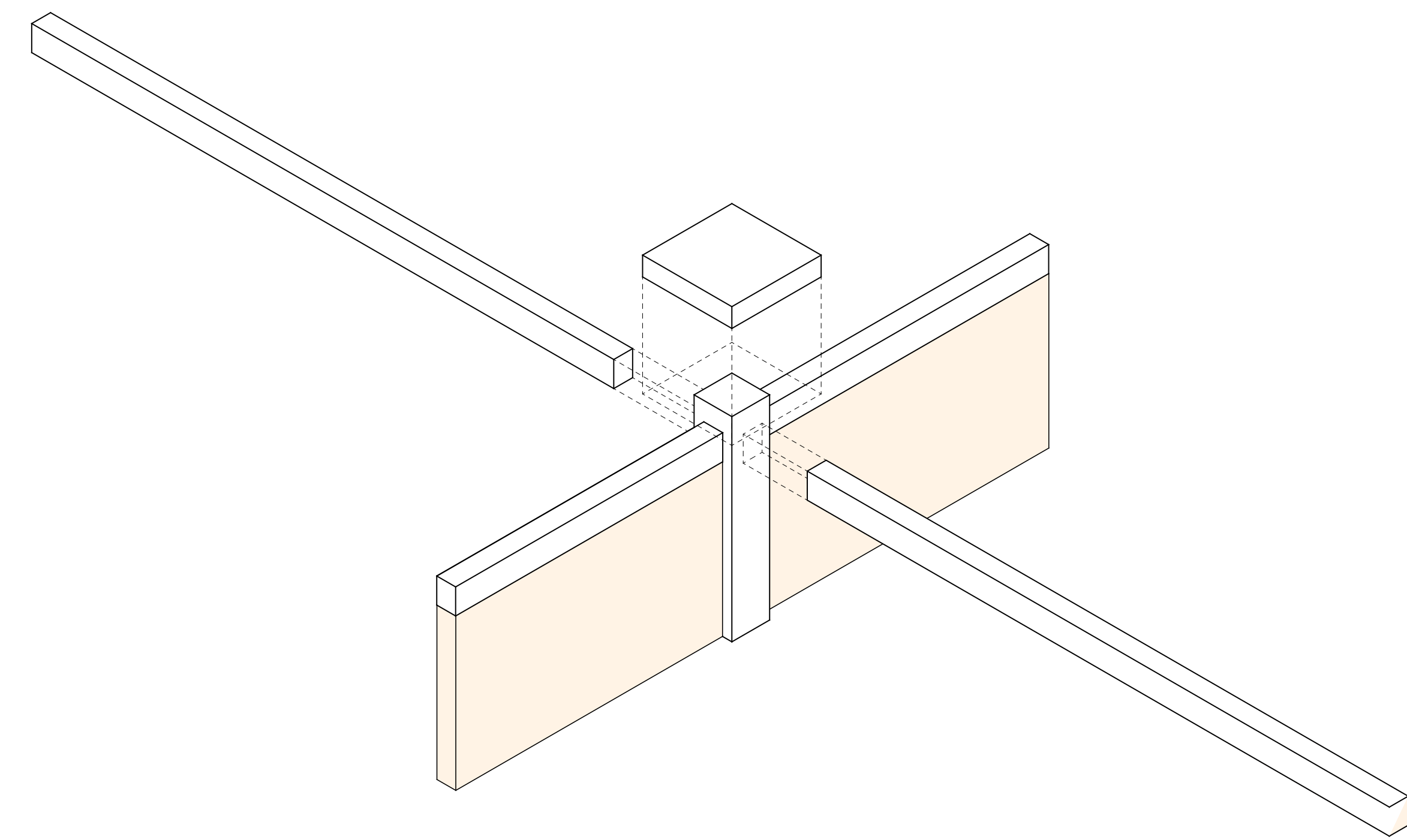


THIRD FLOOR - RESIDENTIAL

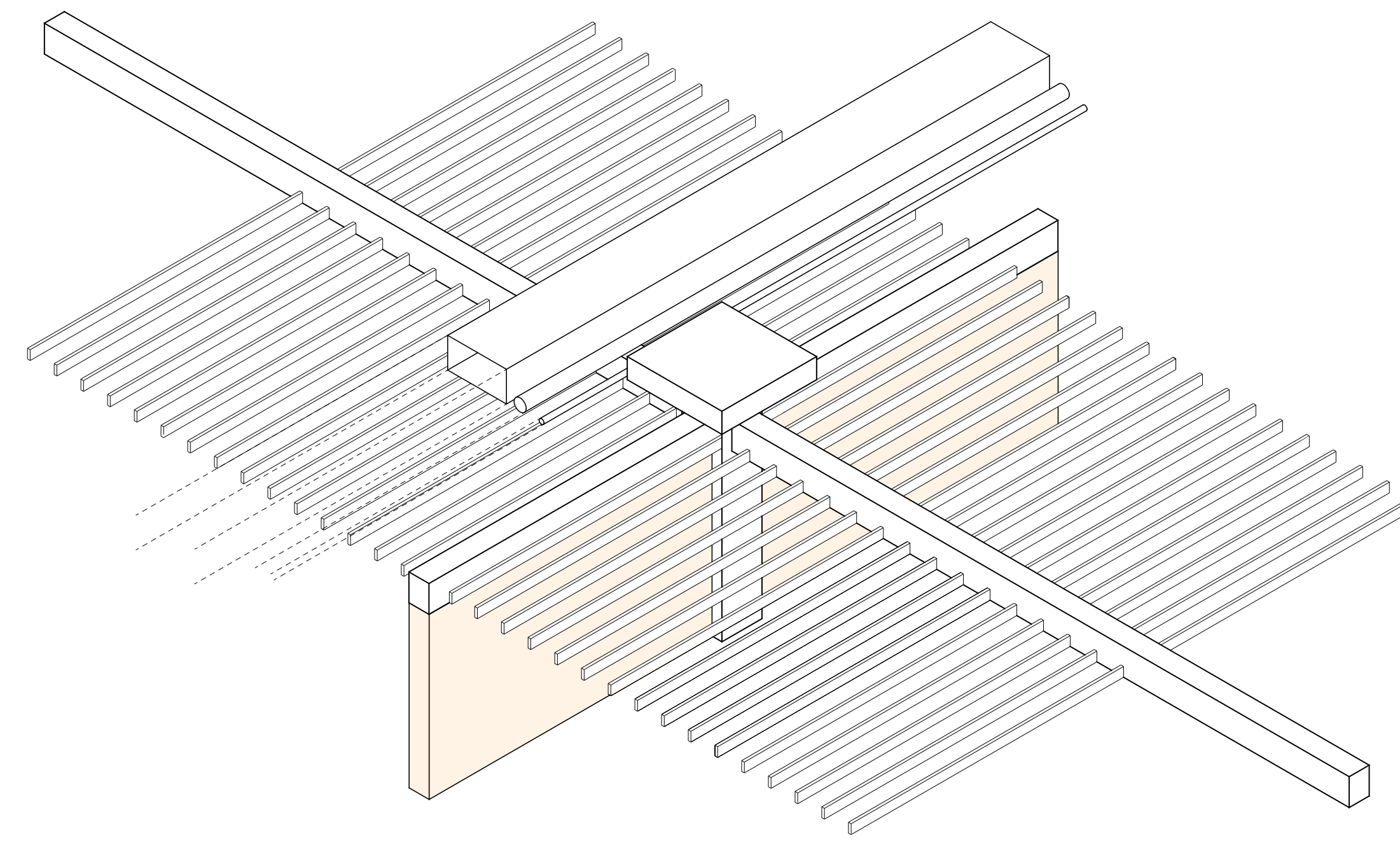




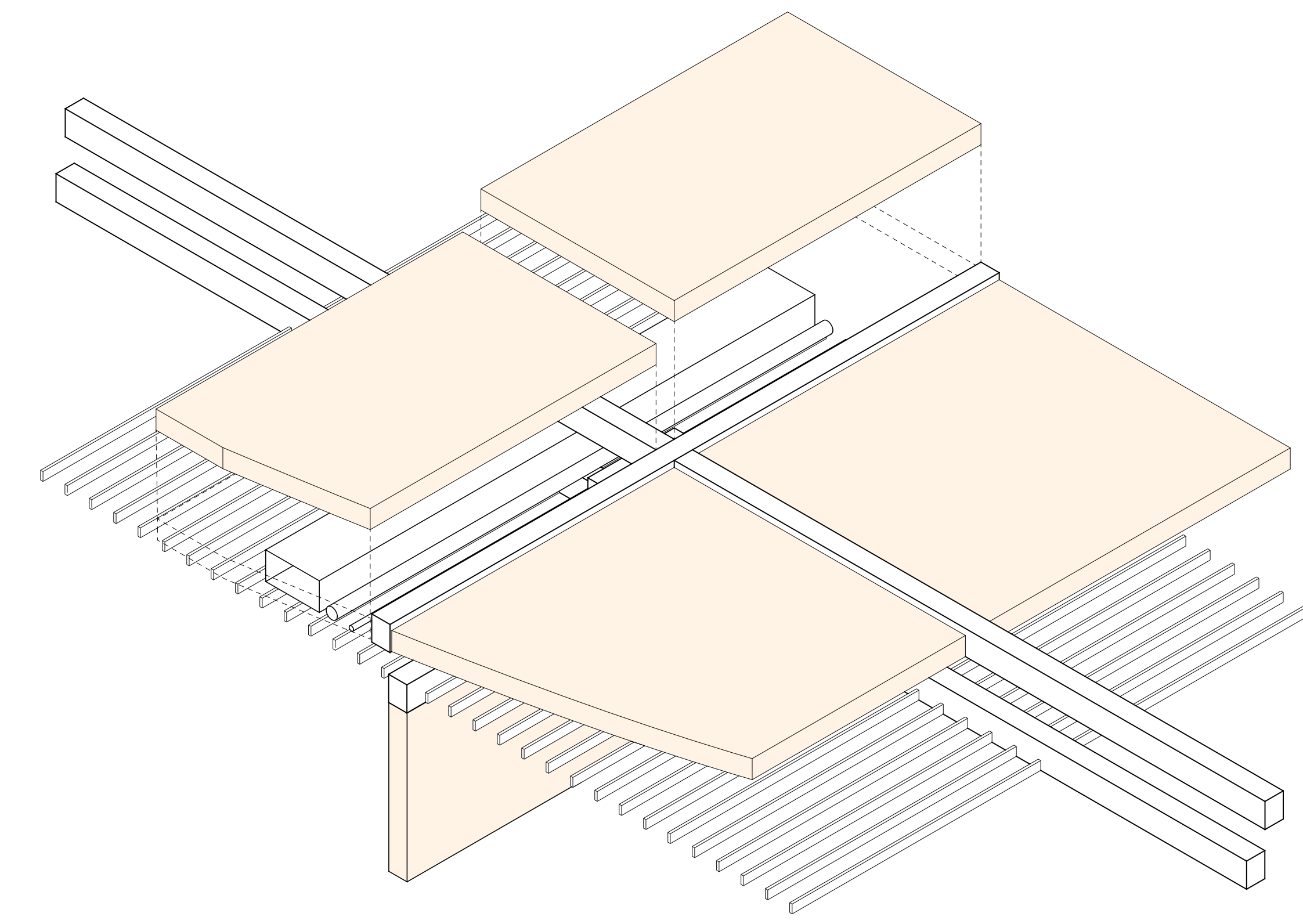
FLOOR ASSEMBLY DETAIL



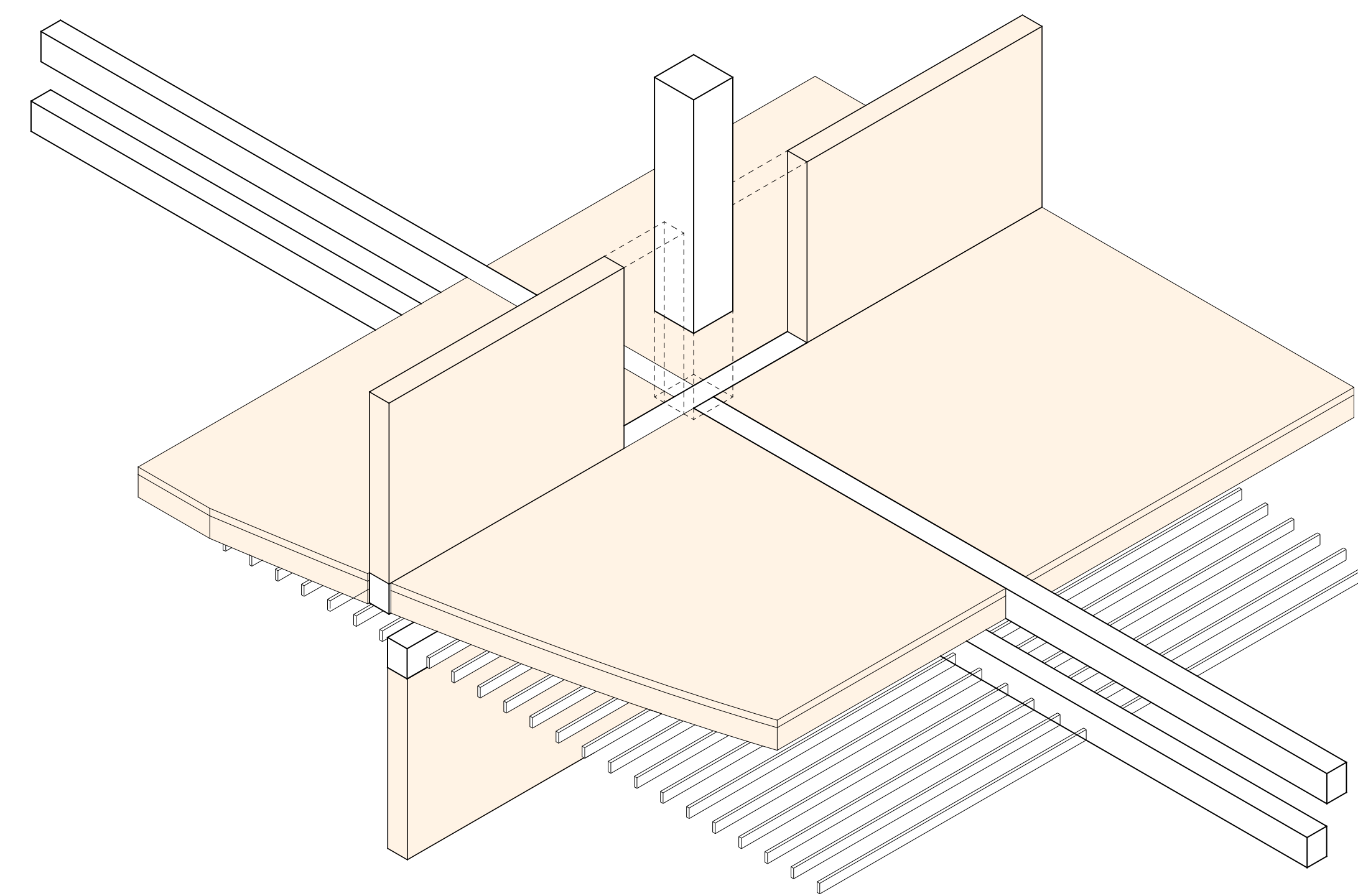
GLULAM POST AND BEAM  
ASSEMBLY WITH CLT CAPITAL



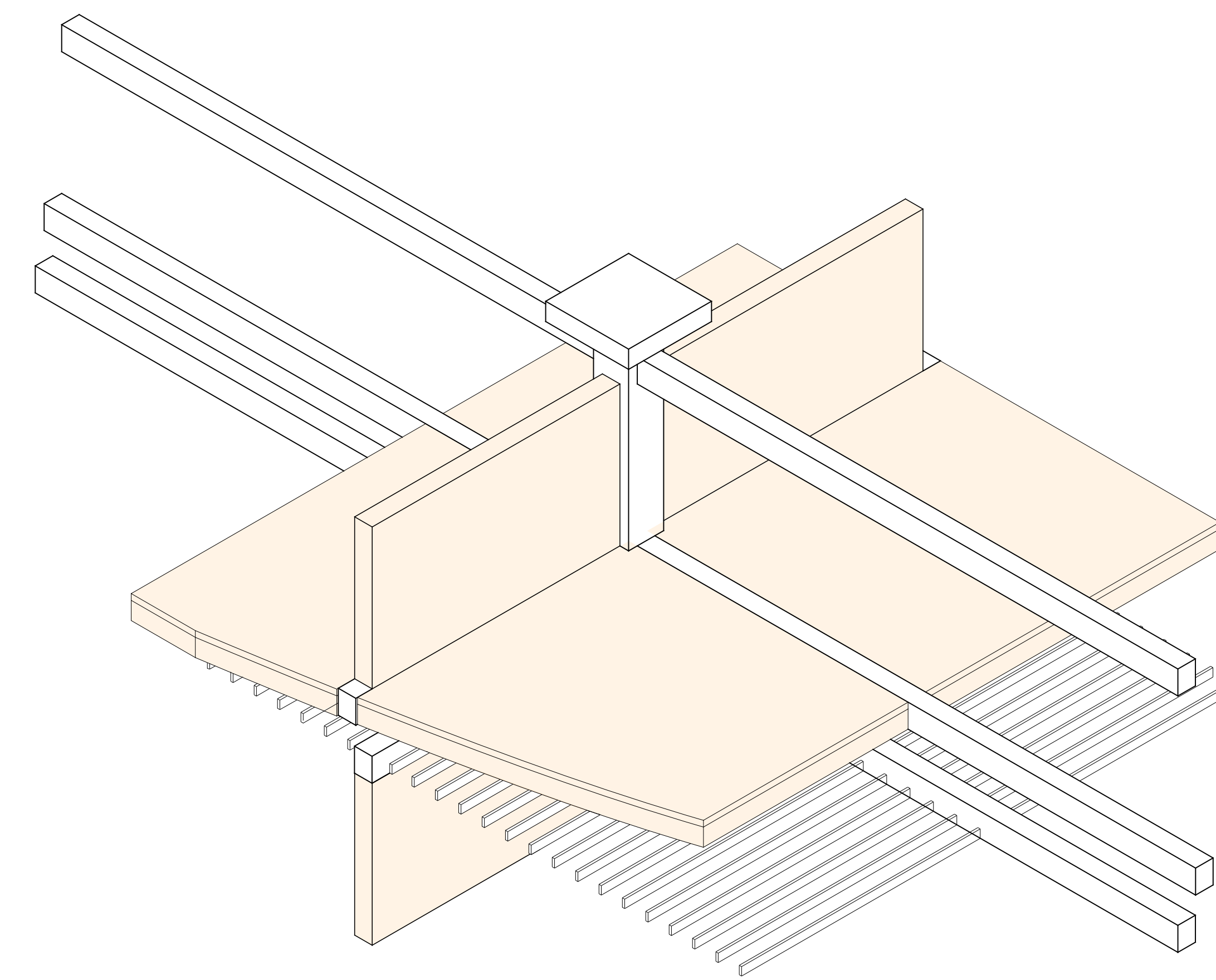
CEILING AND SYSTEMS  
INSTALLATION



FLOOR BEAMS AND CLT FLOOR  
INFILL



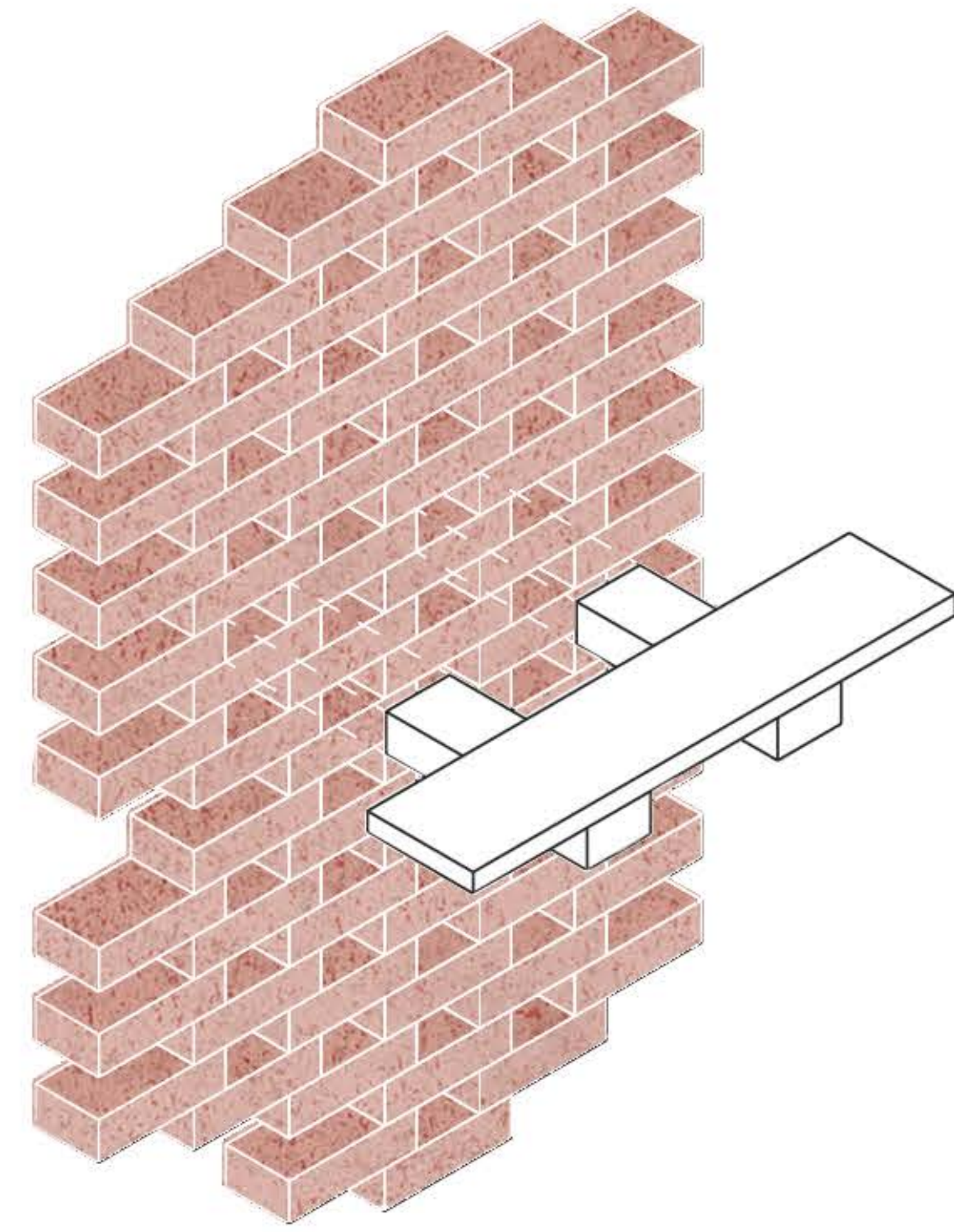
COLUMN AND SHEER WALL  
INSTALLATION



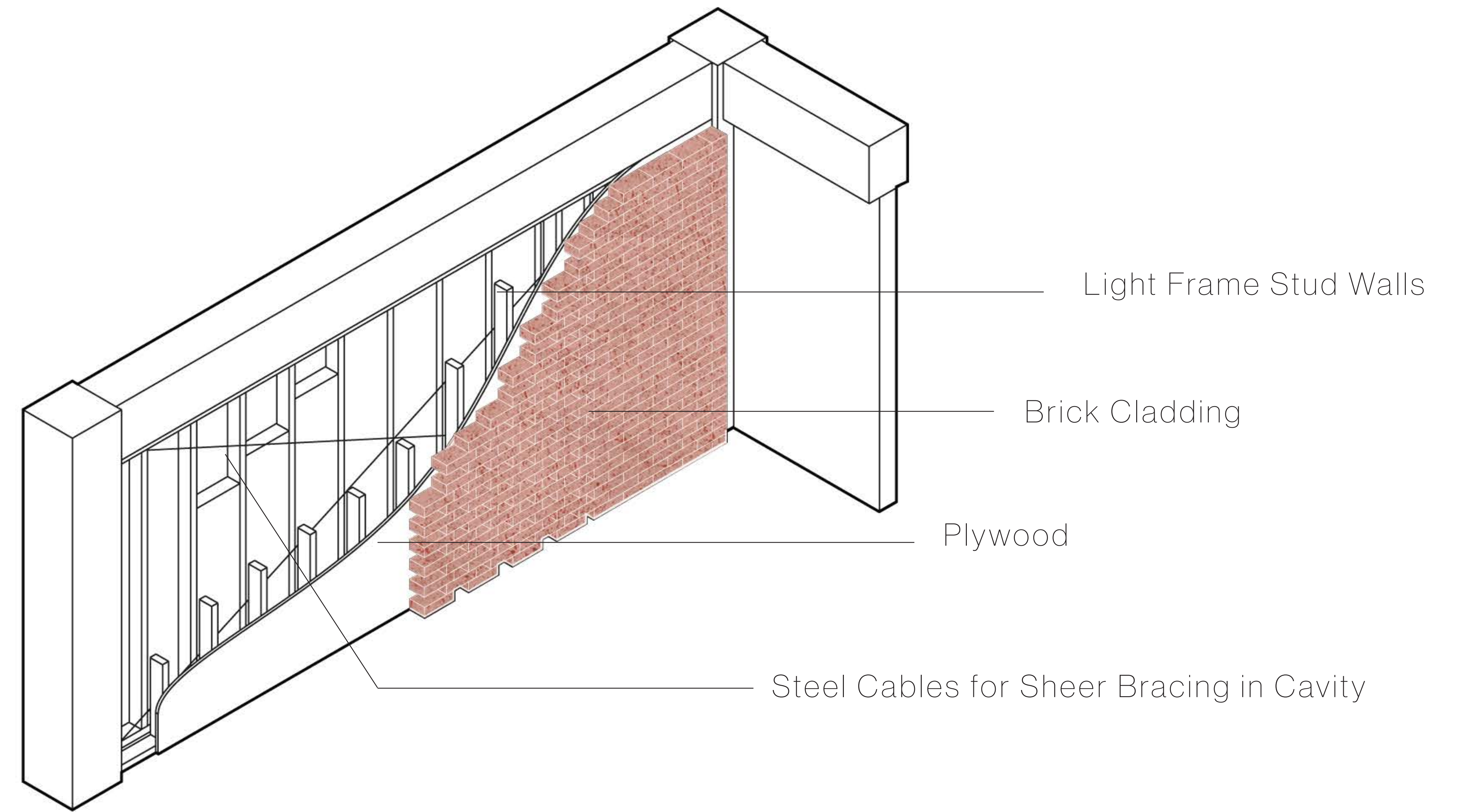
FINAL ASSEMBLY



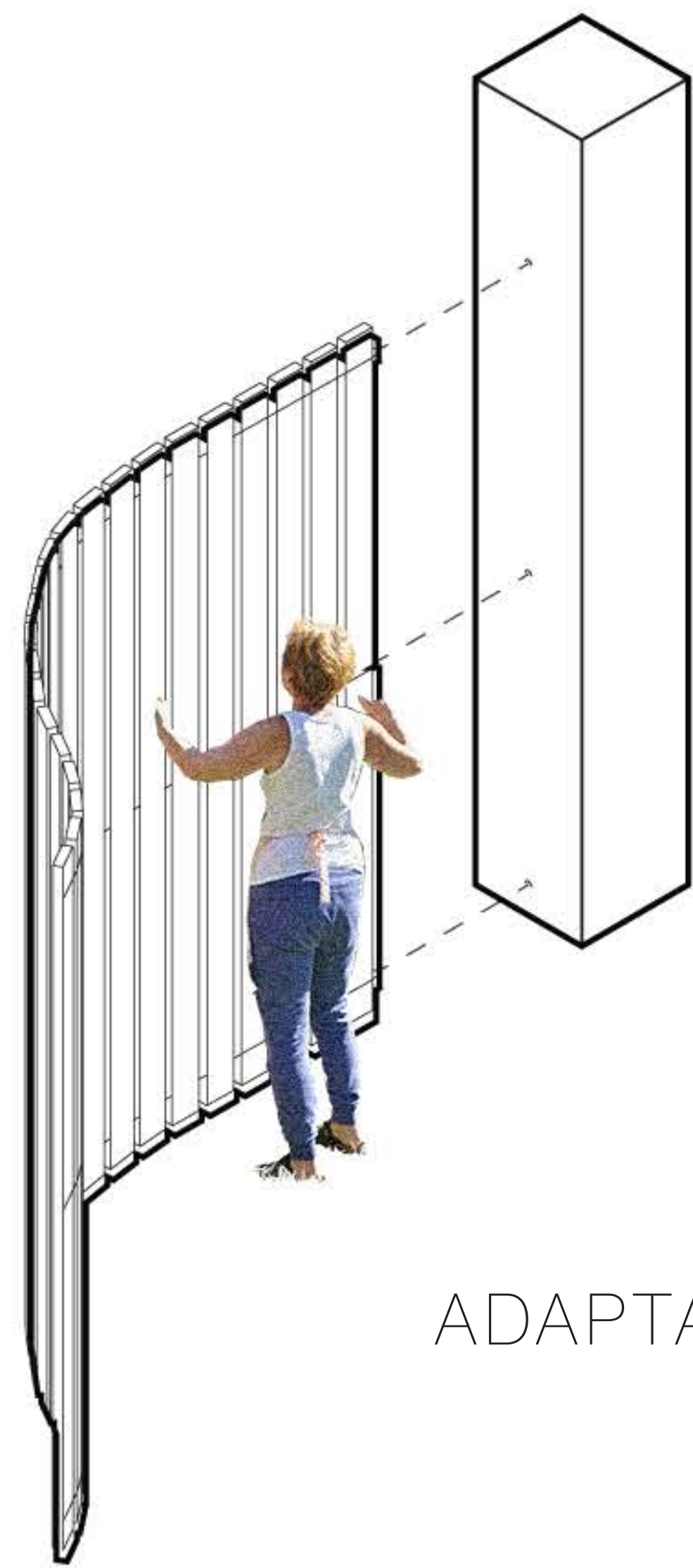
WALL ASSEMBLIES



USER CUSTOMIZATION WITHIN PERFORATED BRICK WALL



SHEER WALL SYSTEM



ADAPTABLE LIGHT CURVED WALLS

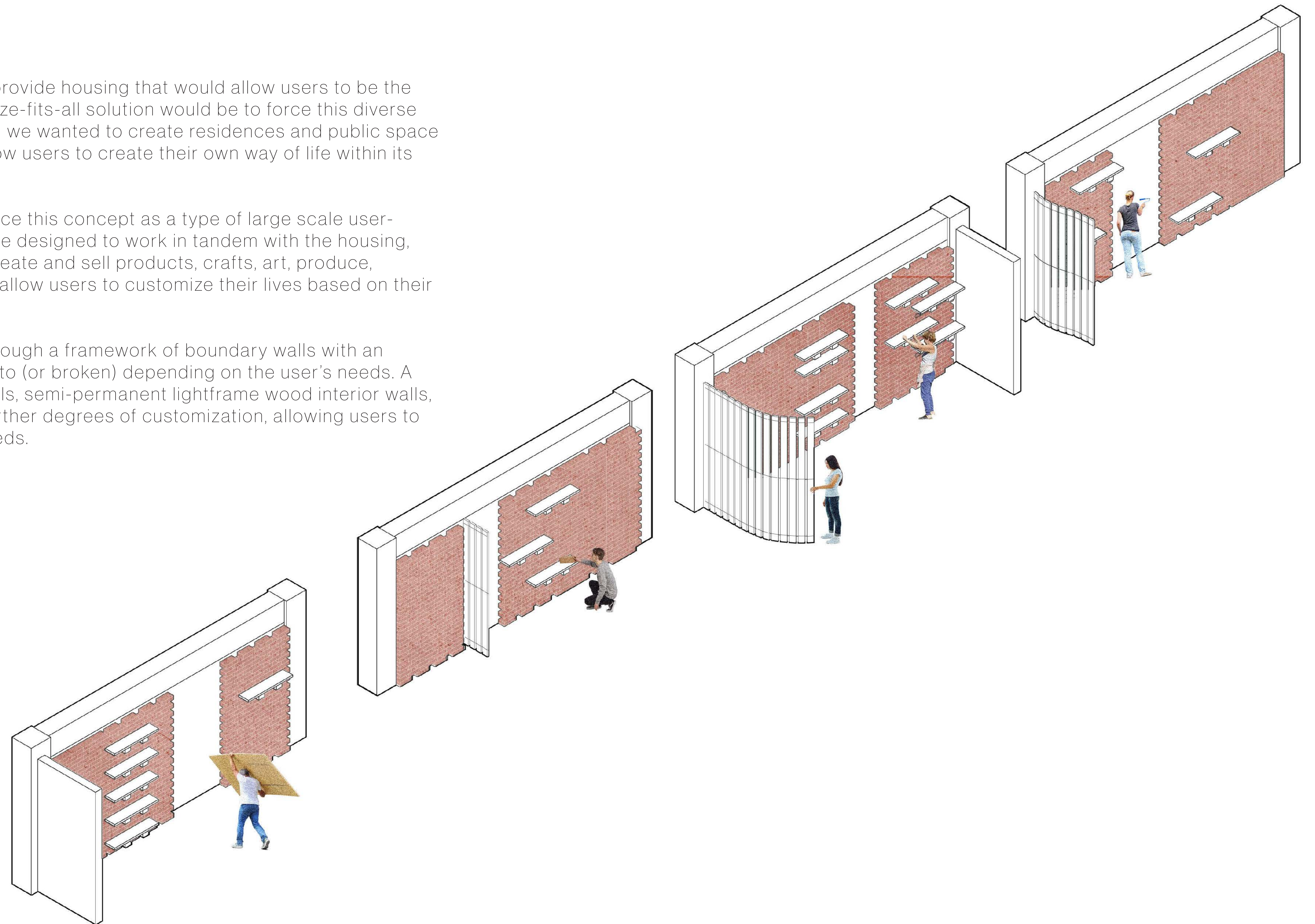


## USER CUSTOMIZATION IN UNITS

To welcome immigrants to Sudbury we strove to provide housing that would allow users to be the creators of their own narrative. To design a one-size-fits-all solution would be to force this diverse group of people into a specific way of life. Instead, we wanted to create residences and public space that is open and interpretable in many ways to allow users to create their own way of life within its framework.

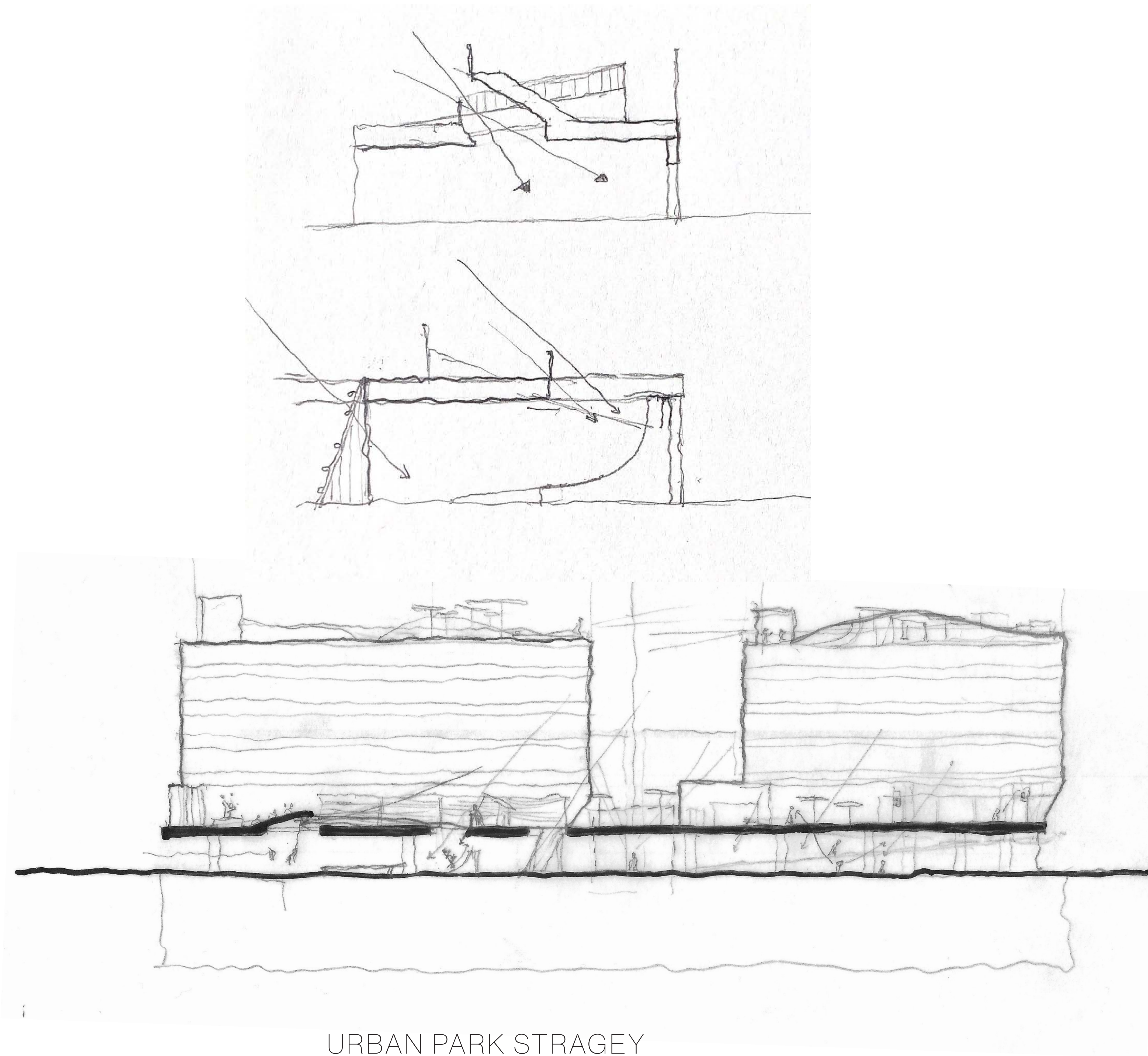
We also wanted the public programming to reinforce this concept as a type of large scale user-customization. The market and creative studios are designed to work in tandem with the housing, providing space for students and immigrants to create and sell products, crafts, art, produce, traditional cuisine, etc. These live-work synergies allow users to customize their lives based on their skills and interests.

Within the units, user customization is enacted through a framework of boundary walls with an internal structural wood grid that can be adhered to (or broken) depending on the user's needs. A material hierarchy of permanent brick exterior walls, semi-permanent lightframe wood interior walls, and impermanent malleable curved walls gives further degrees of customization, allowing users to change their space over time to adapt to their needs.

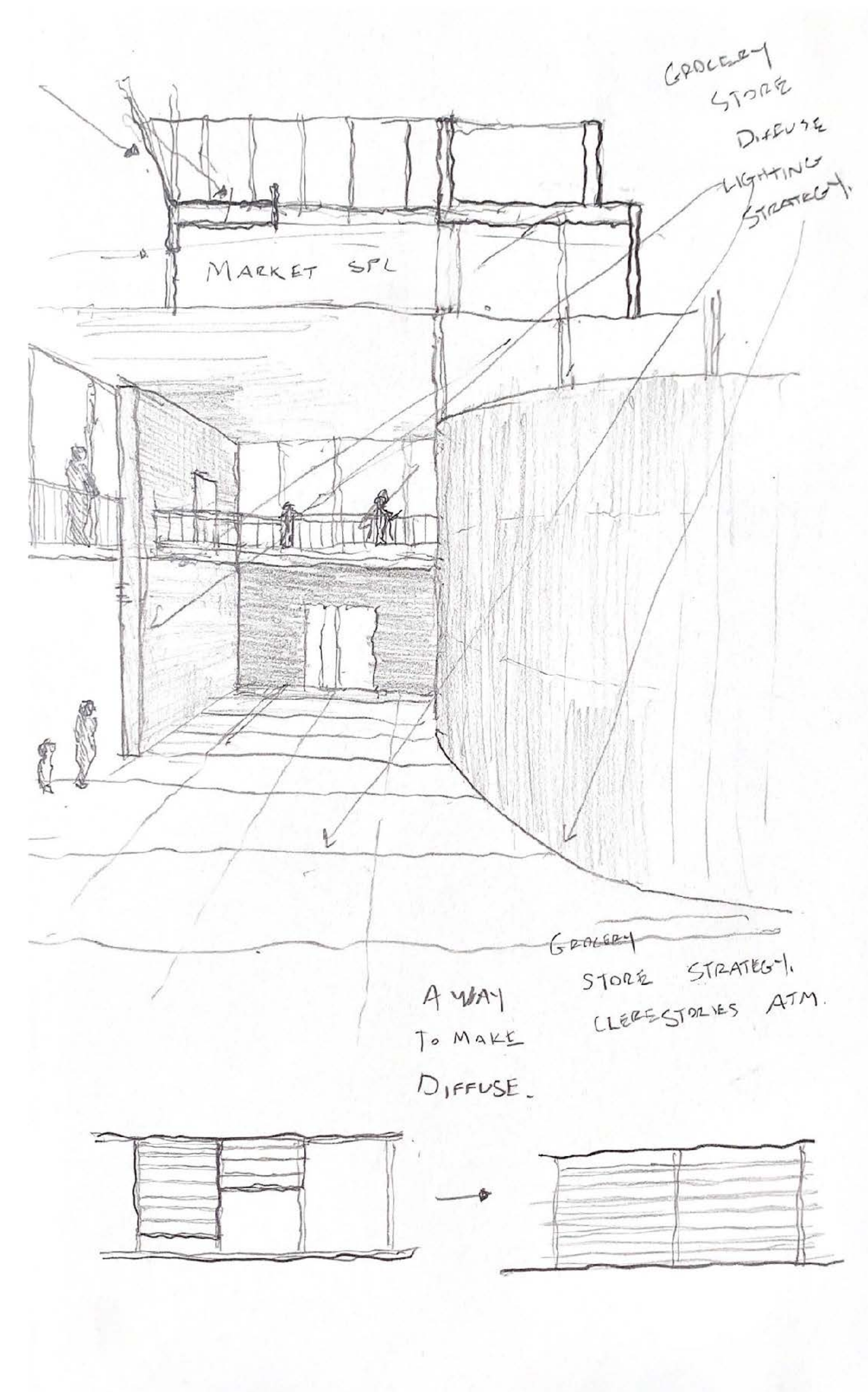




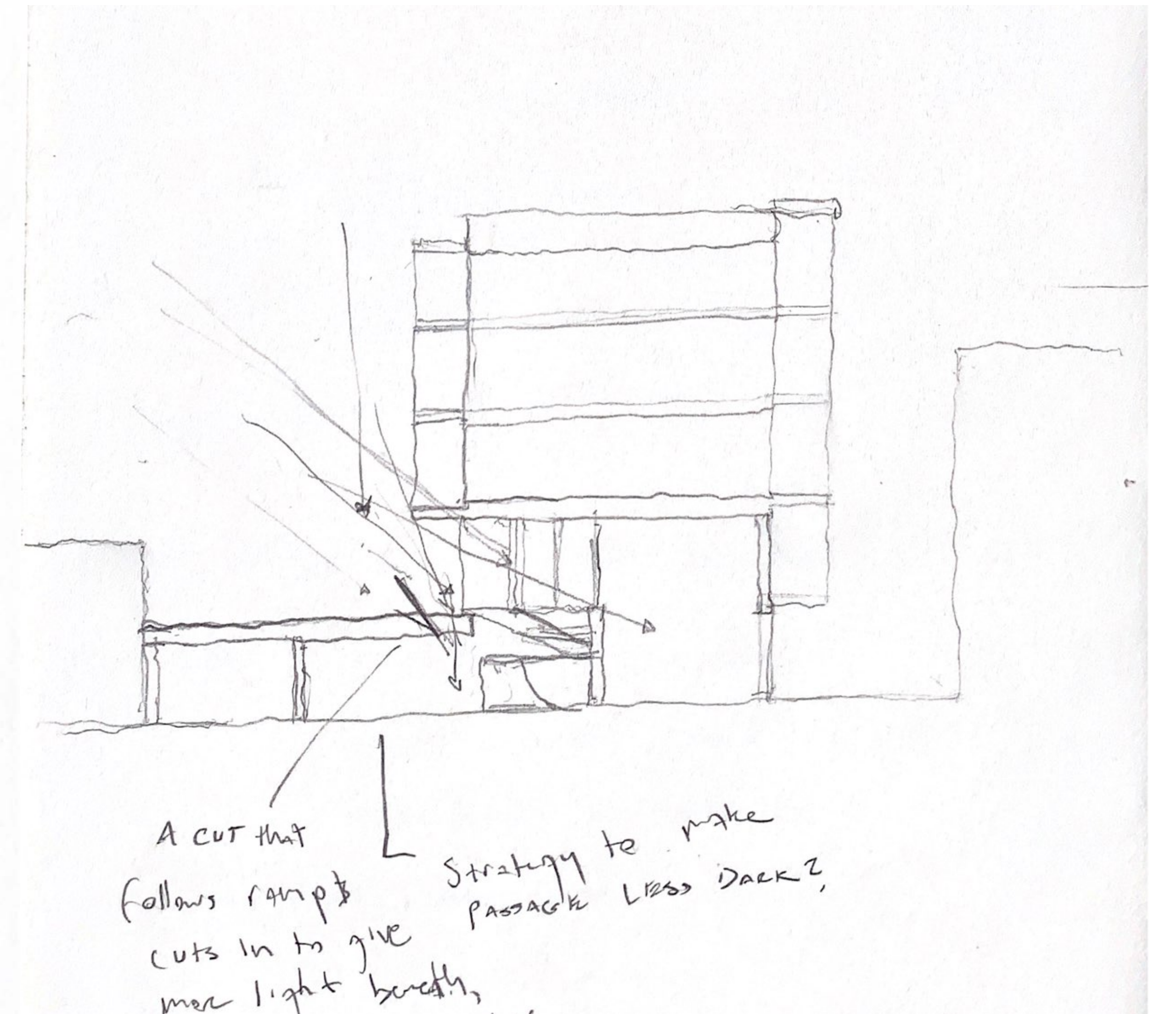
DAYLIGHTING STRATEGY



URBAN PARK STRATEGY

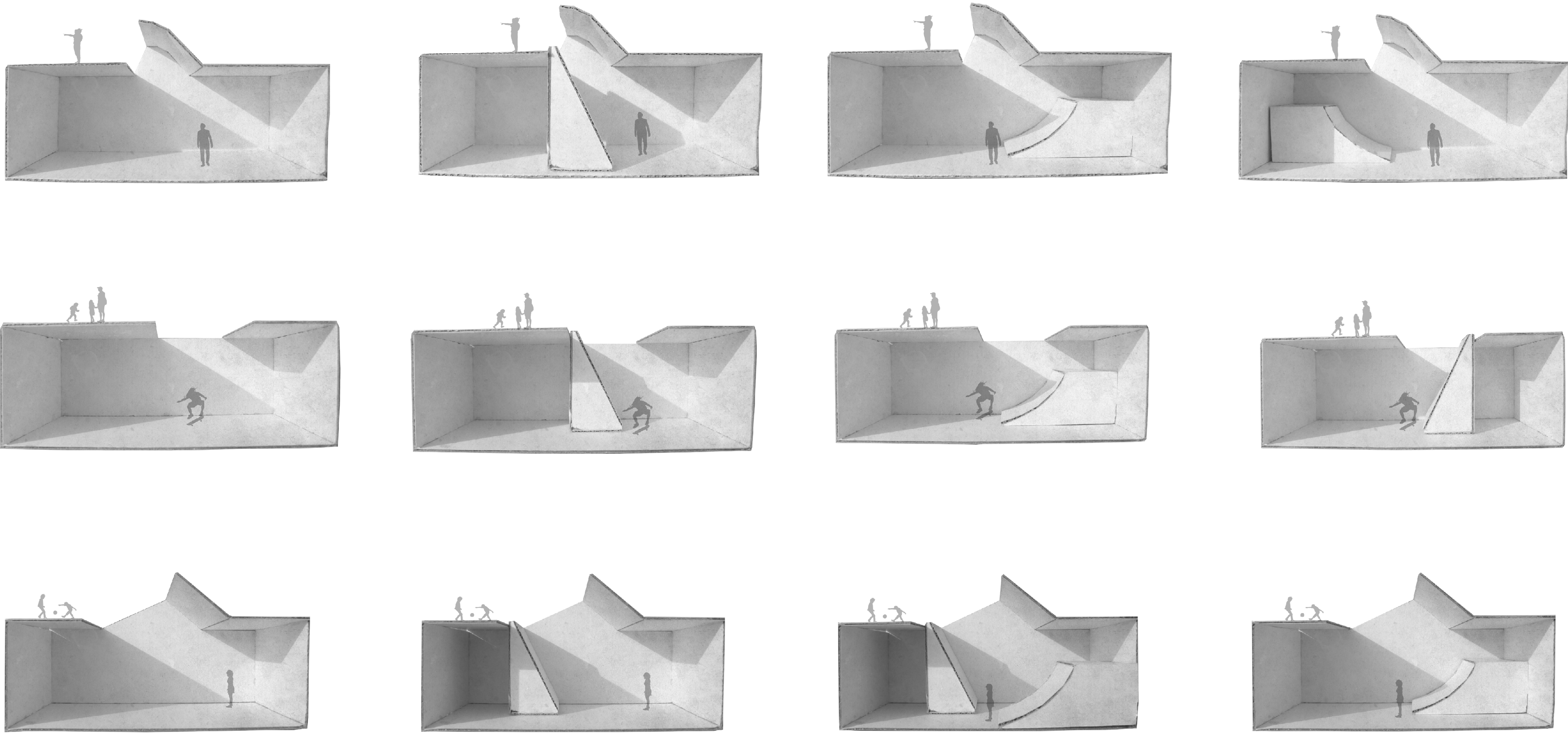


MARKET STRATEGY



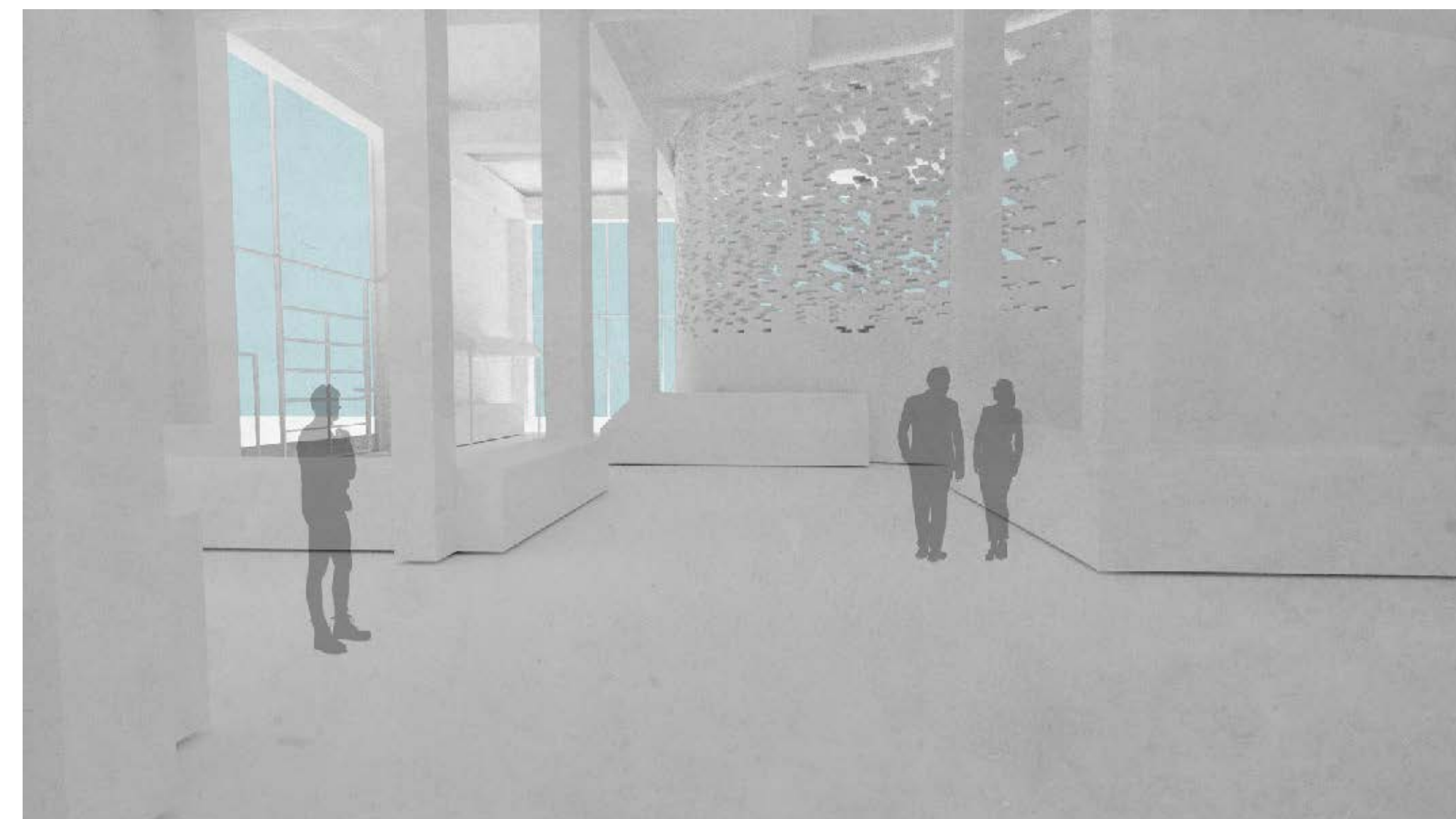
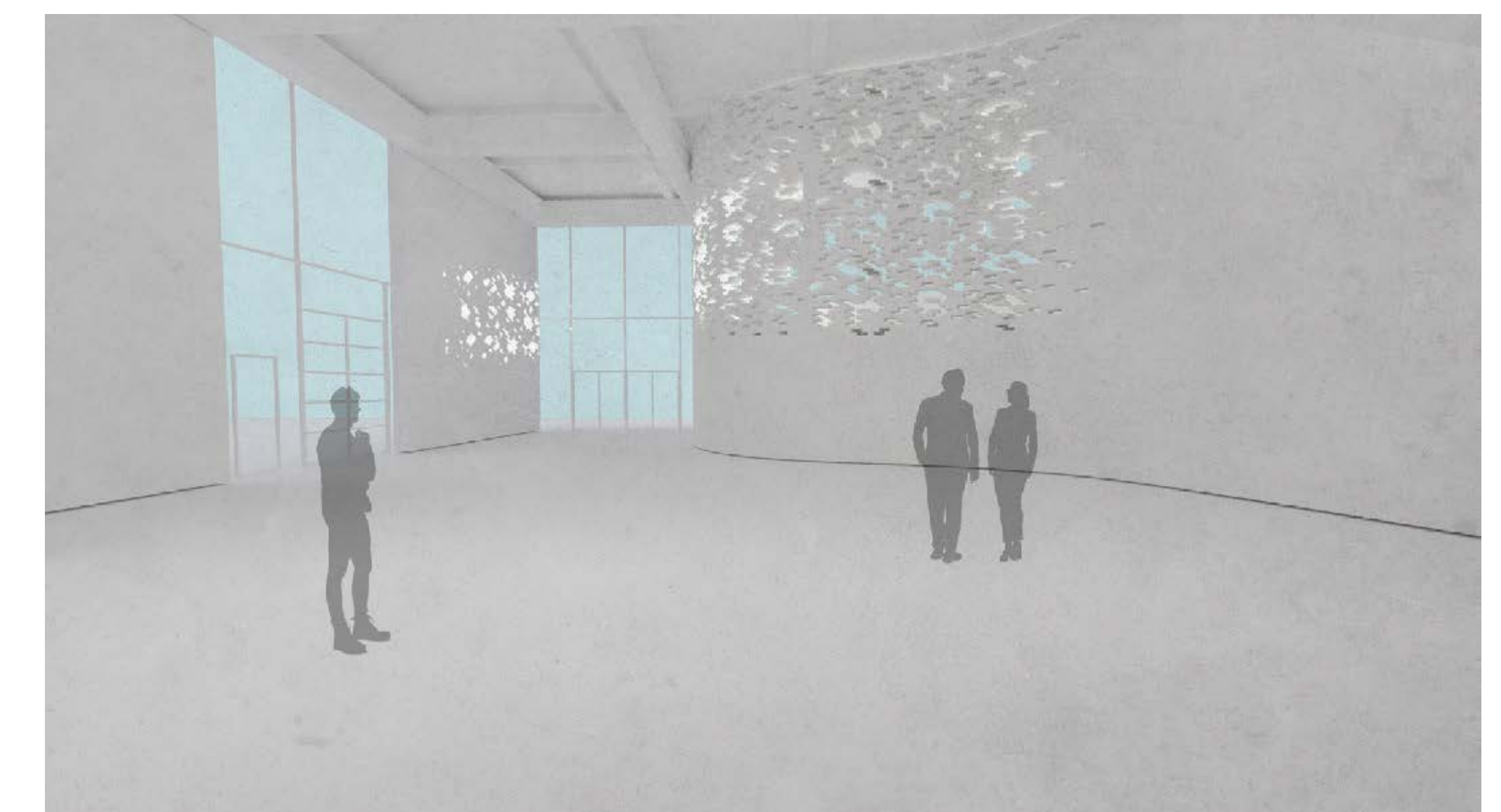
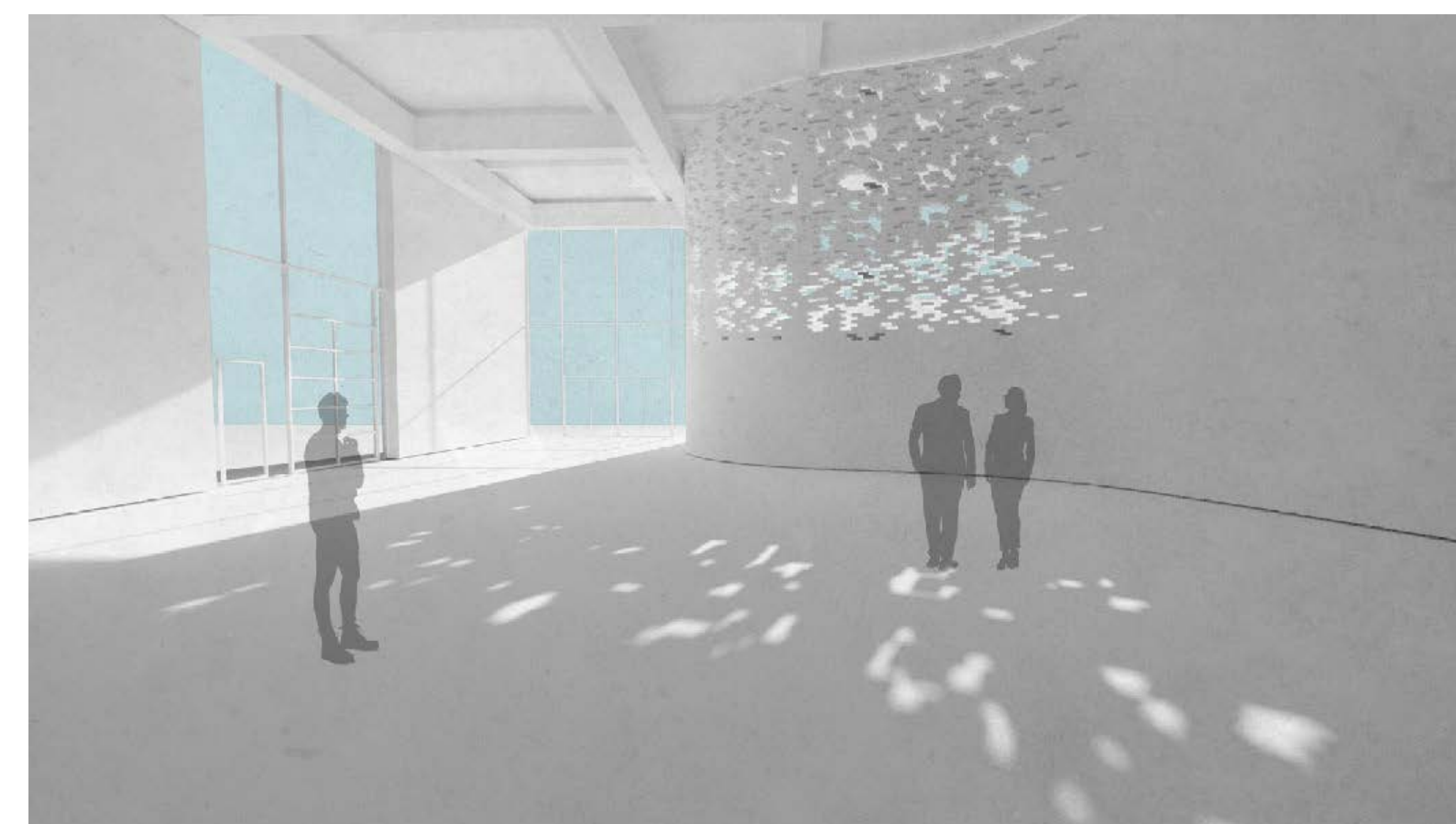
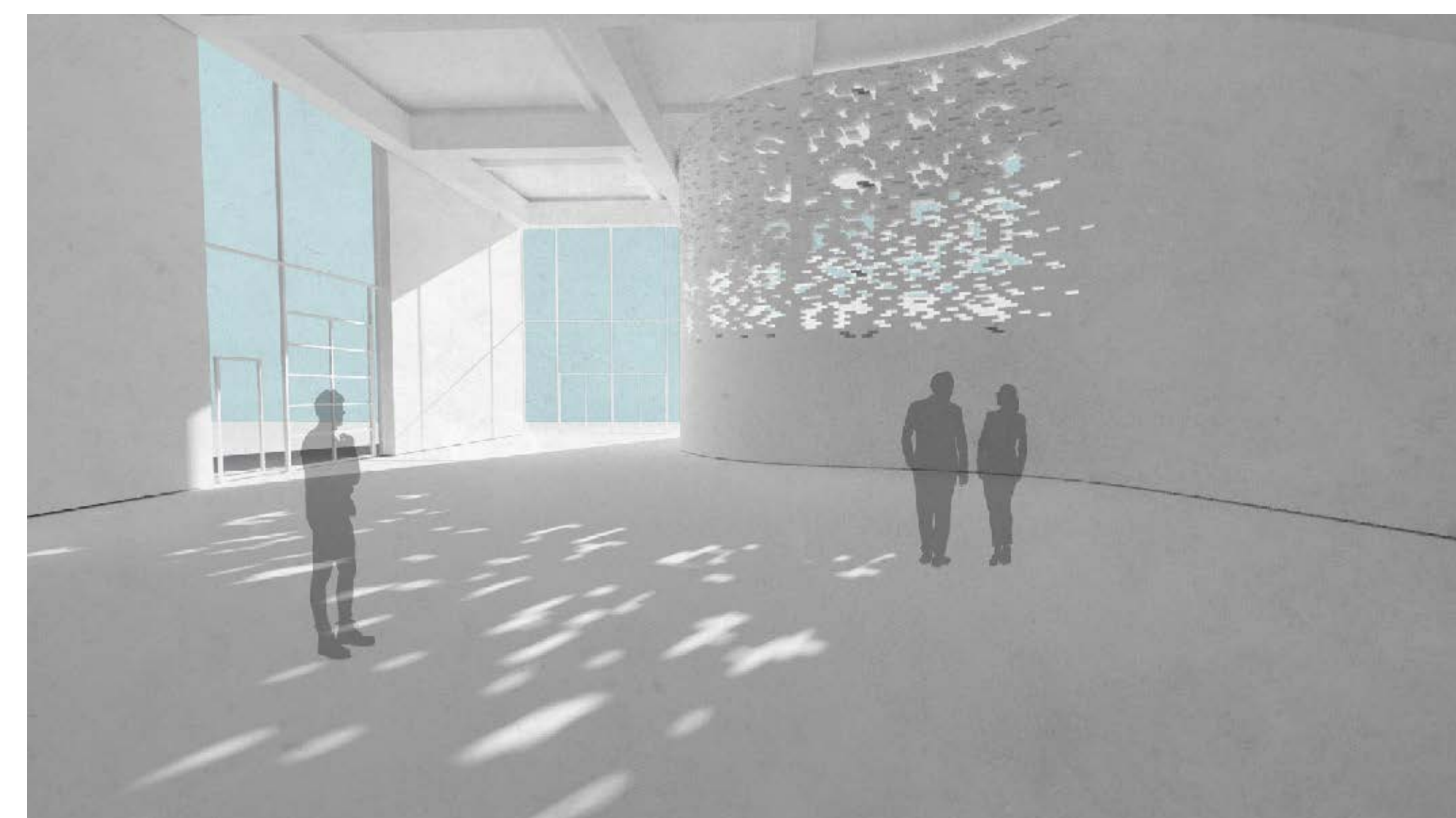
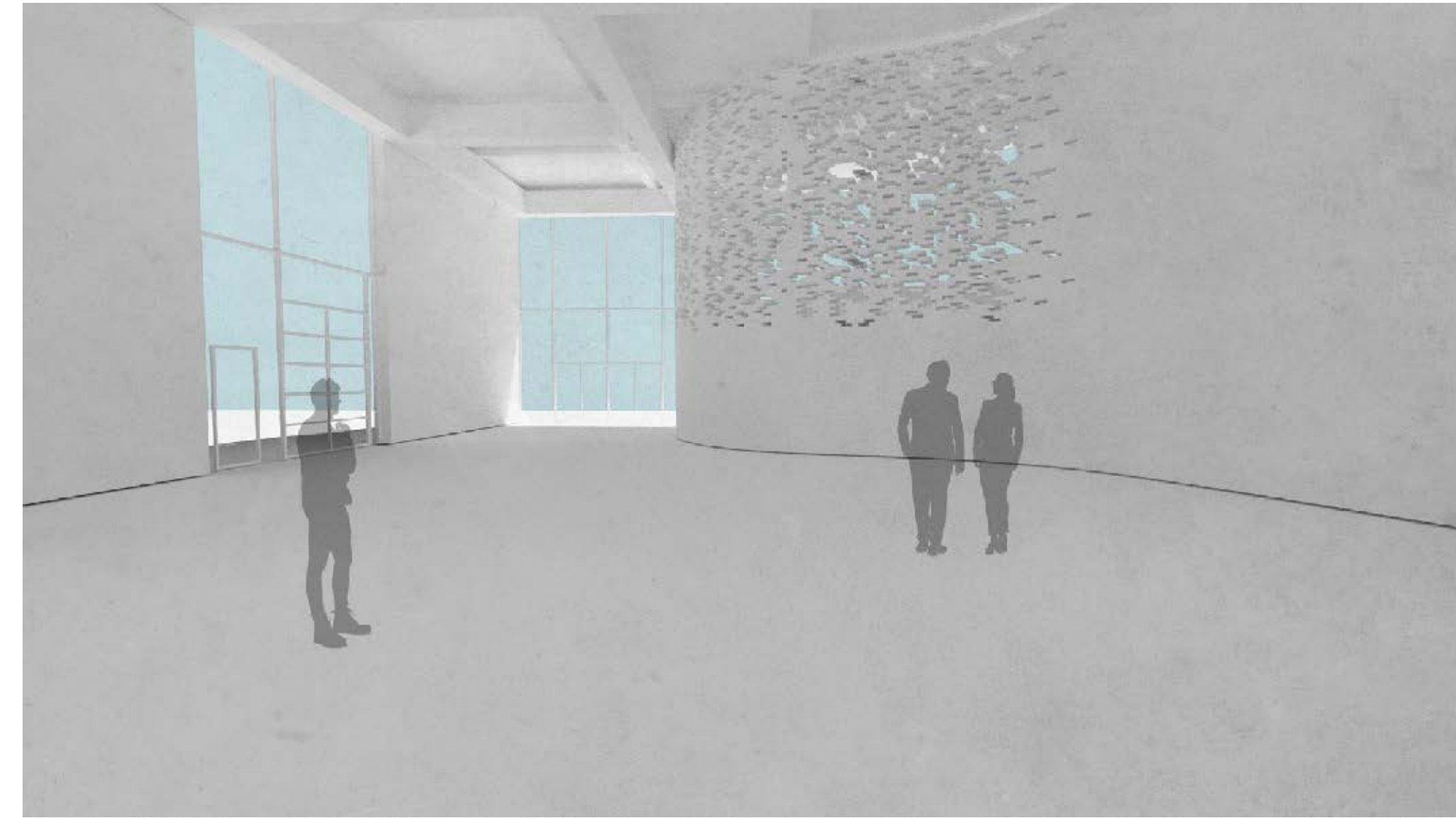


PHYSICAL MODEL - DAYLIGHTING IN URBAN PARK





DIGITAL MODEL - DAYLIGHTING IN MARKET



SUMMER SOLSTICE - NOON

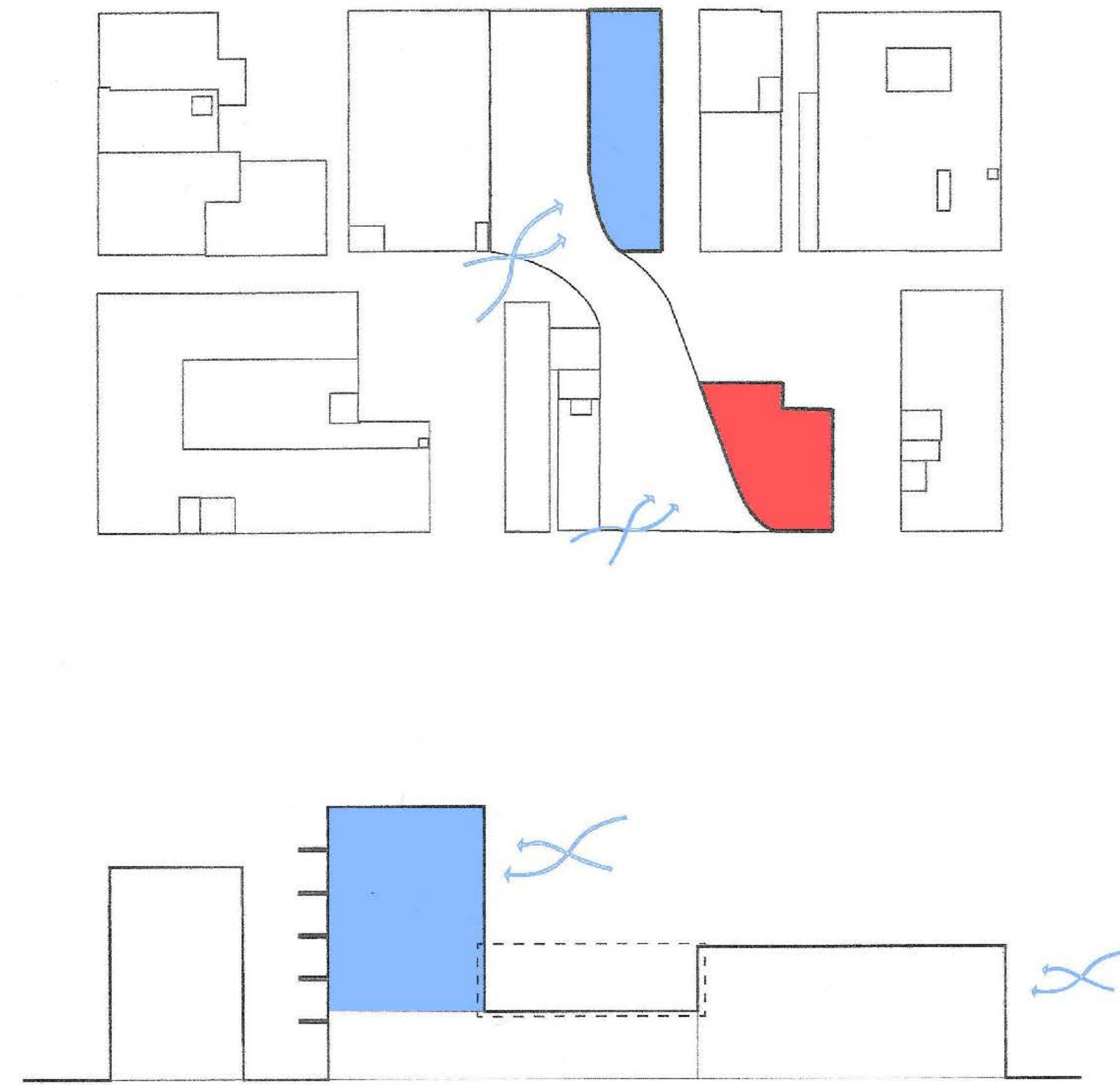
FALL - SUNSET

WINTER SOLSTICE - NOON

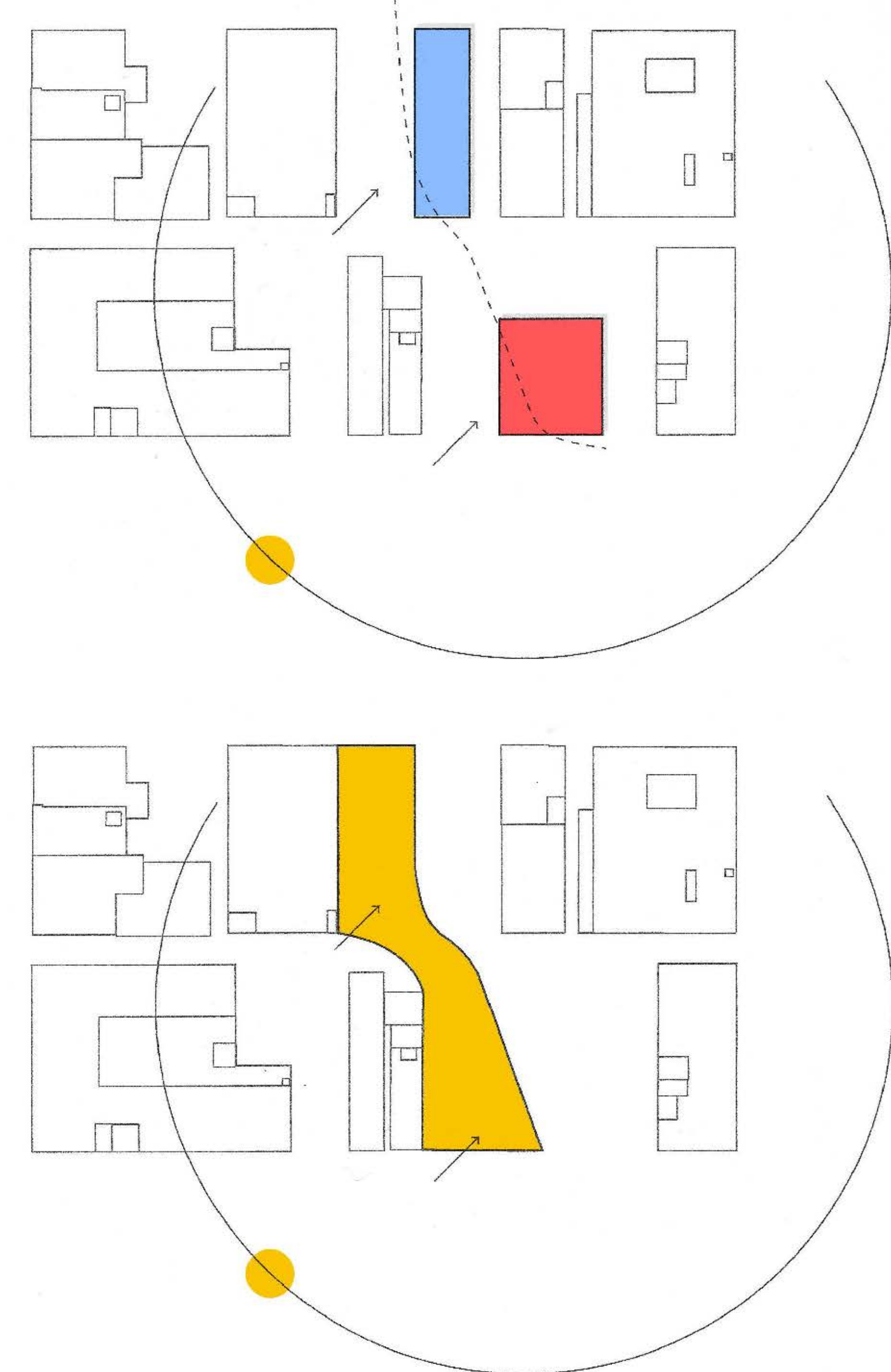
SPRING - SUNSET



PASSIVE STRATEGIES

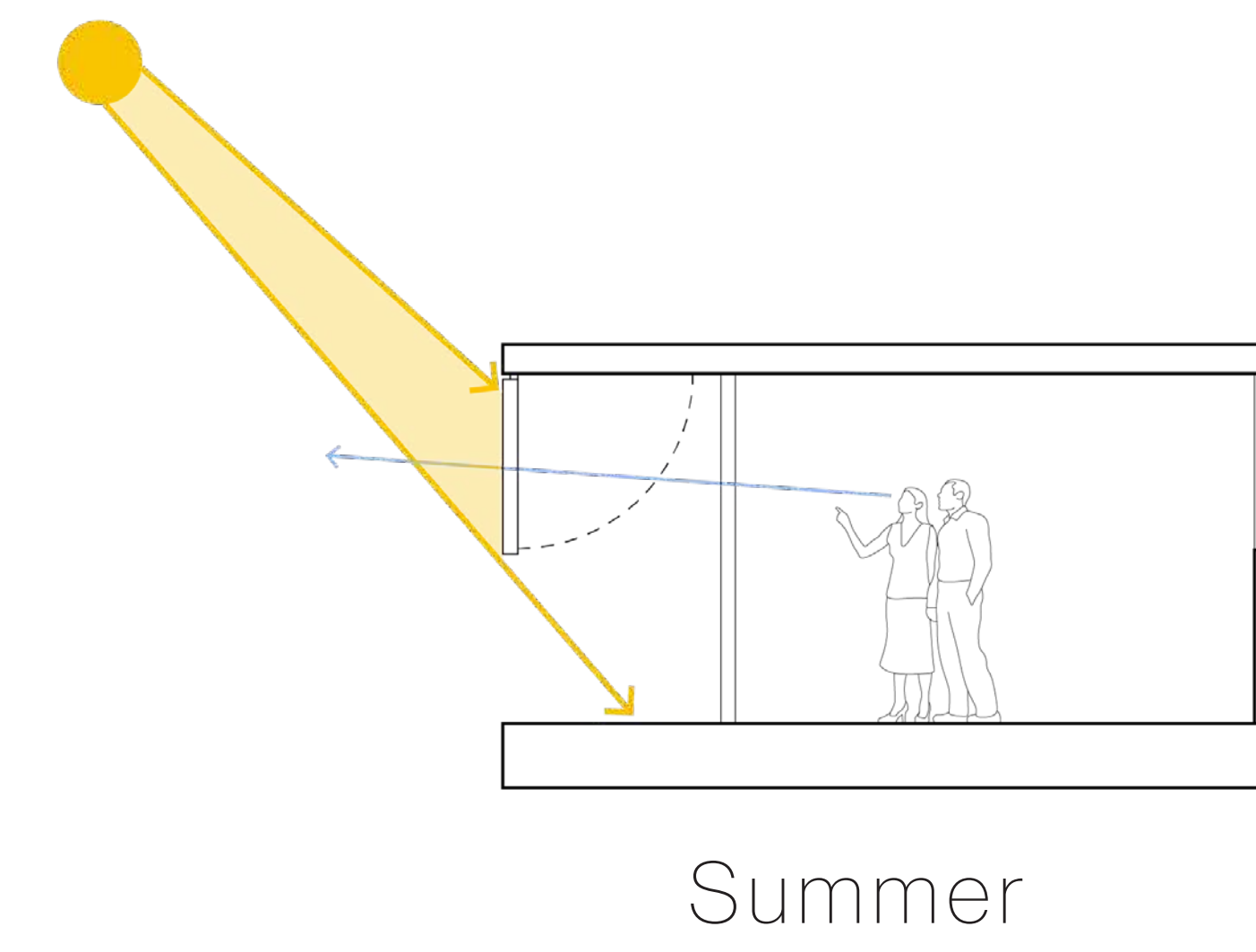


PREVAILING WIND PROTECTION AND INTEGRATION

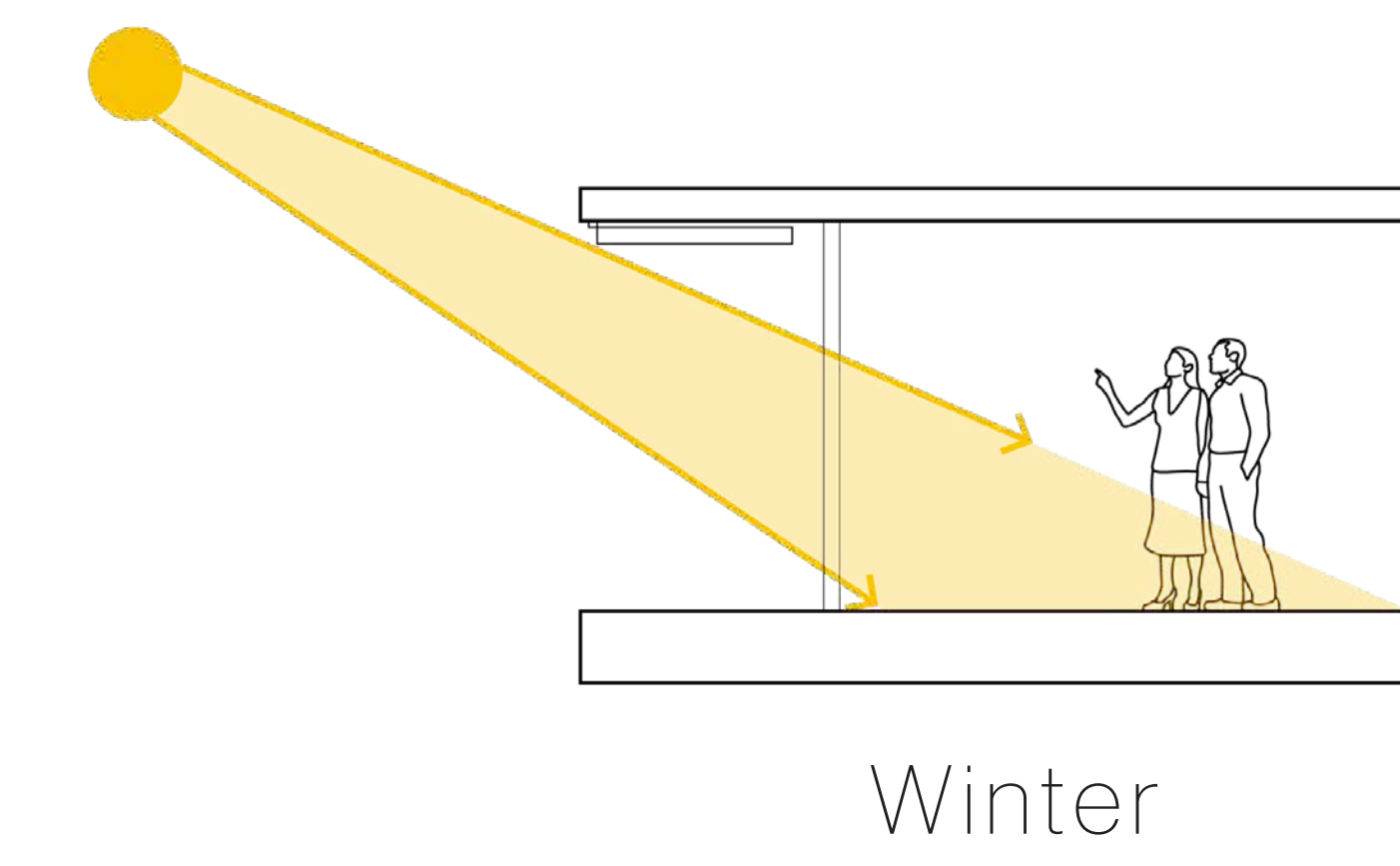


SOLAR EXPOSURE

SOLAR SHADING

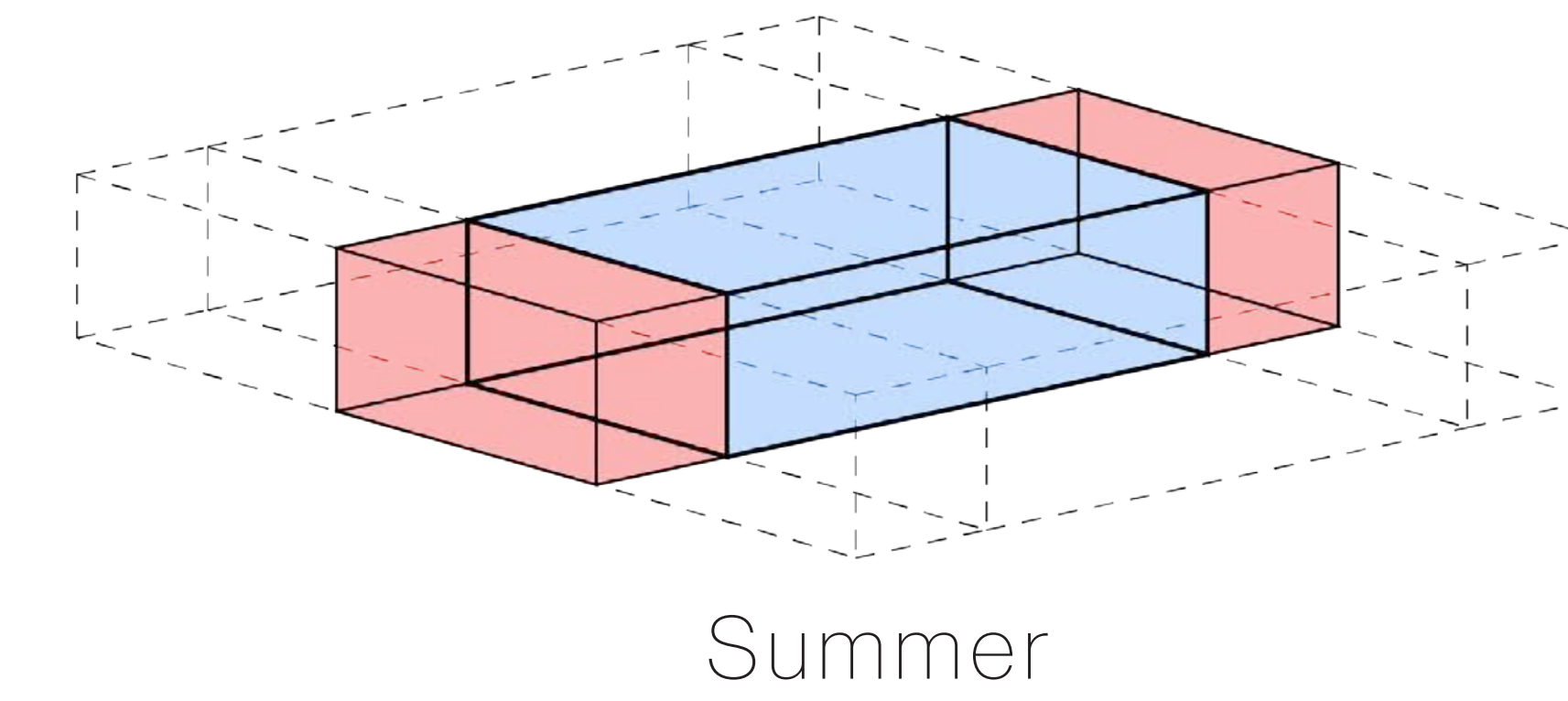


Summer

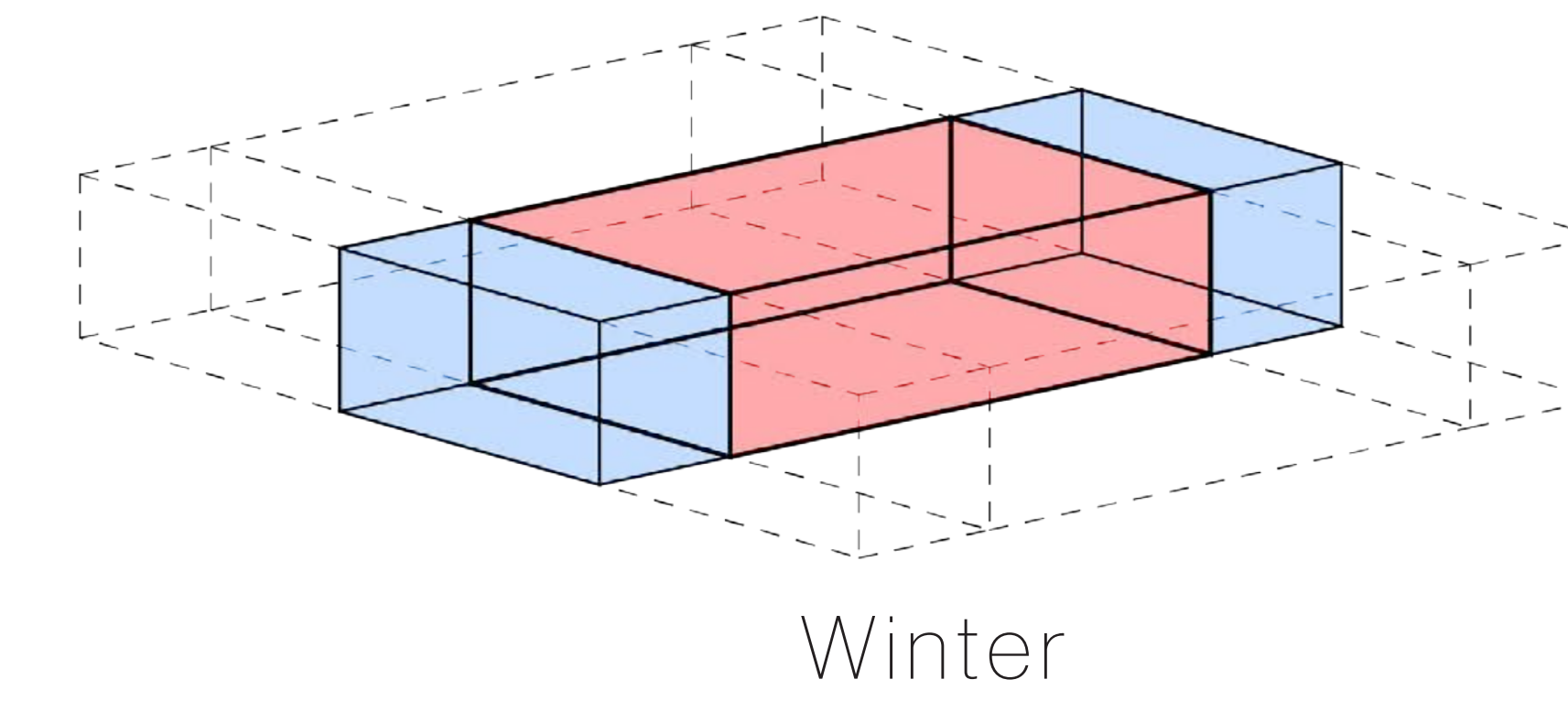


Winter

THERMAL BUFFER ZONES

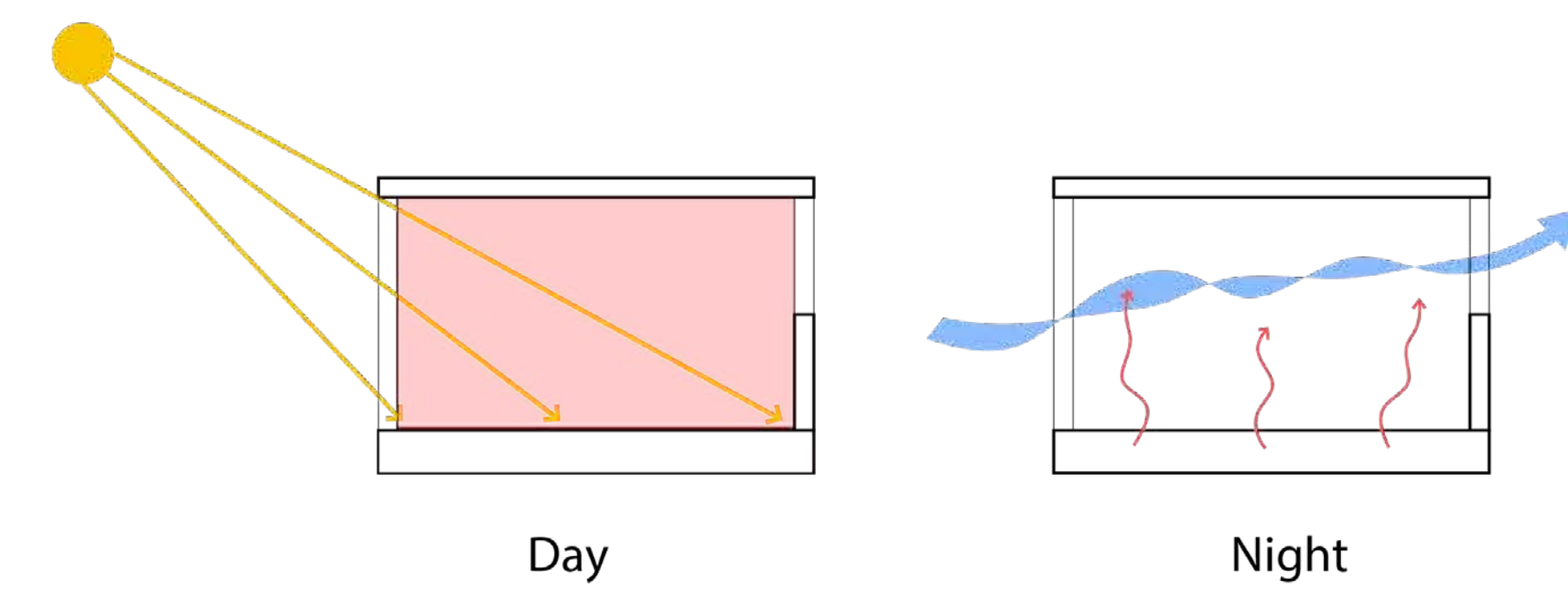


Summer



Winter

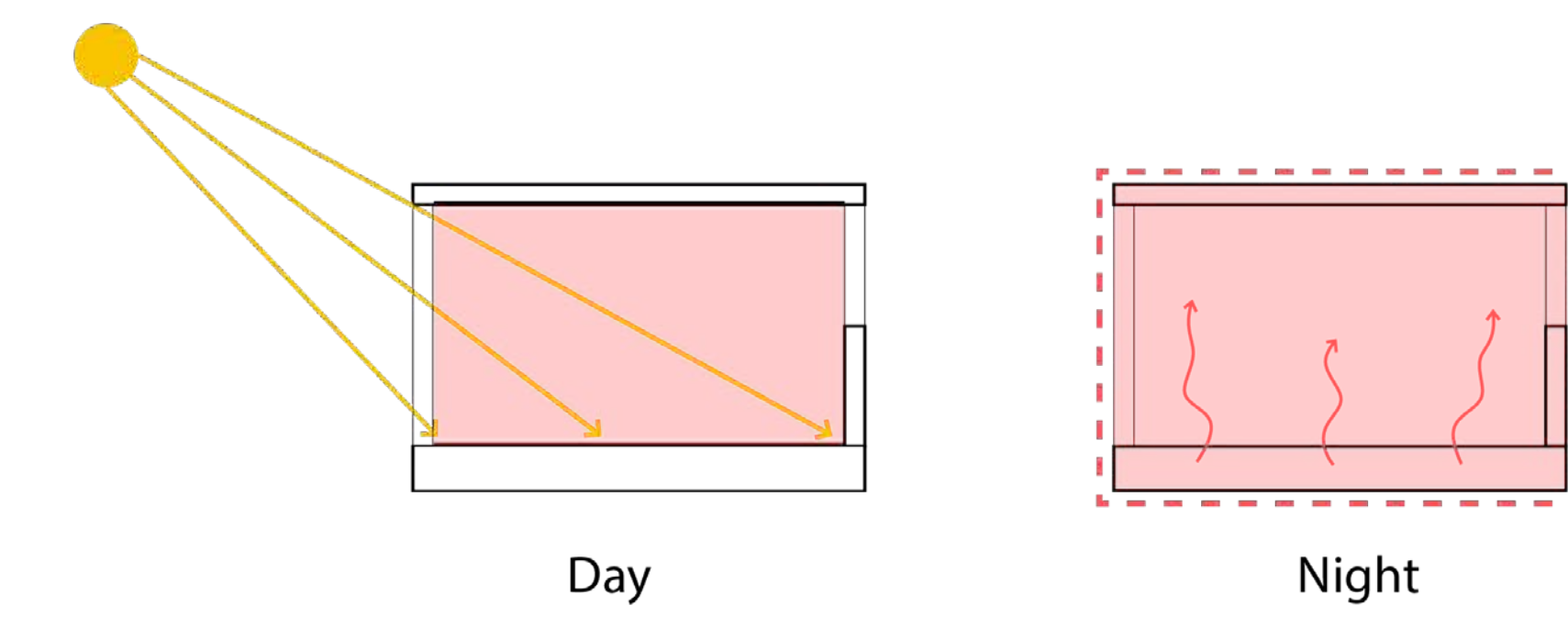
THERMAL MASS



Day

Night

Summer - Evacuation

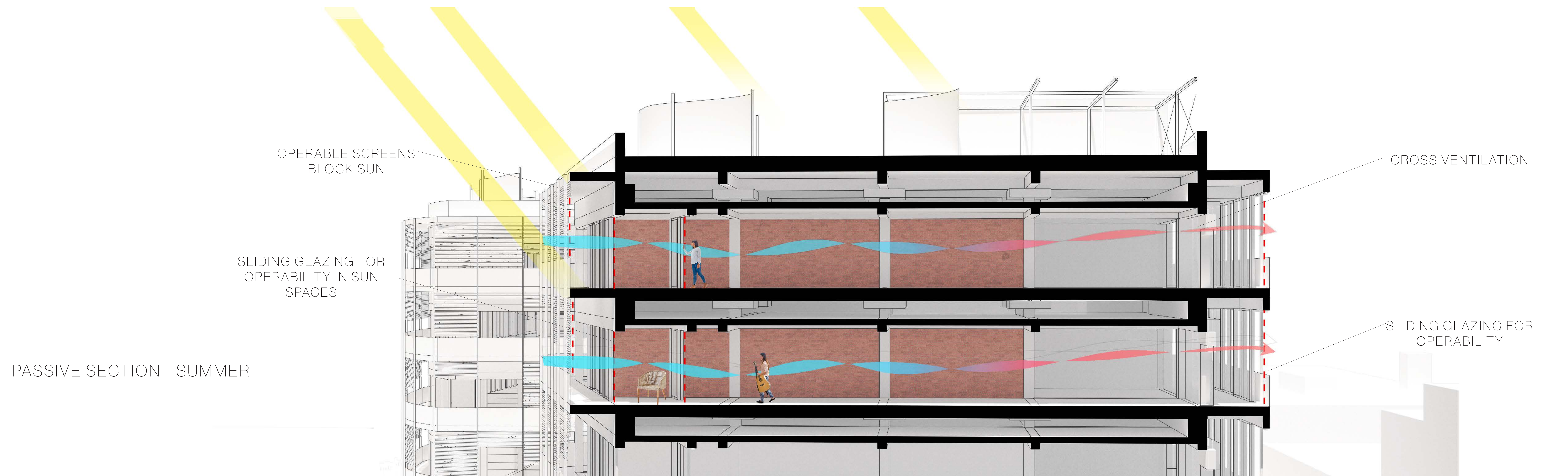


Day

Night

Winter - Conservation









LARCH ST. ELEVATION



CEDAR ST. ELEVATION





SITE SECTION





MARKET INTERIOR





URBAN PARK - WINTER





LARCH STREET ENTRANCE





GROUND FLOOR PARKING - SKATEPARK USE