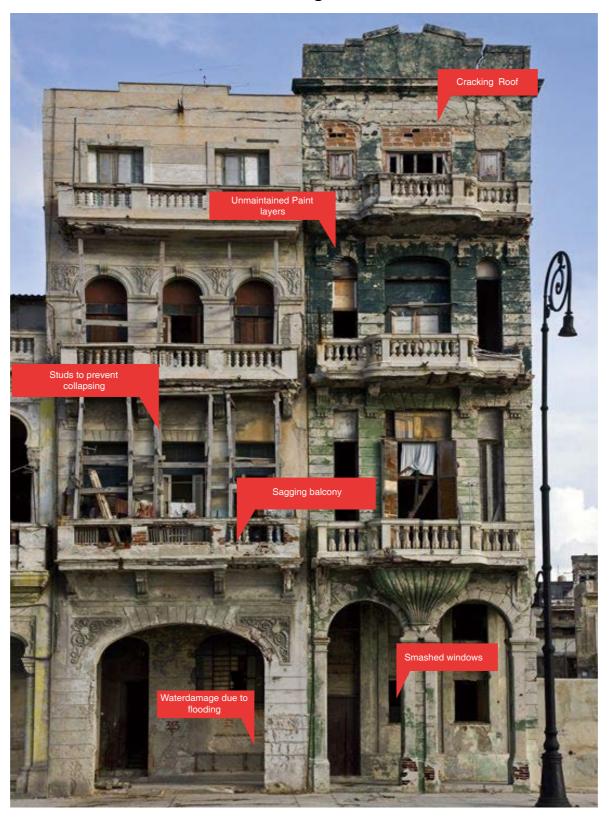








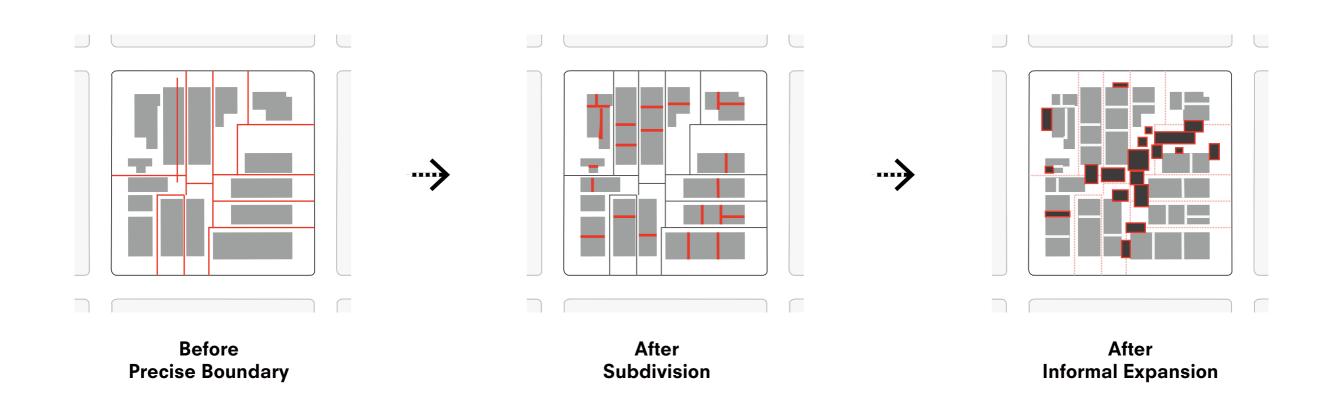
Vedado Living Condition



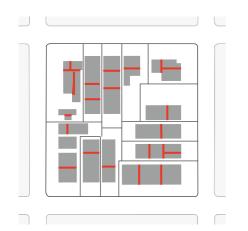
Vedado Living Condition Transformation



Vedado Living Condition Transformation



Subdivision & Multifunctional Rooms



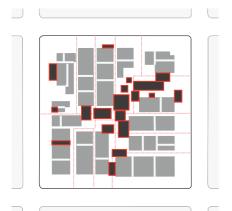


12 flats / building

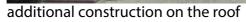


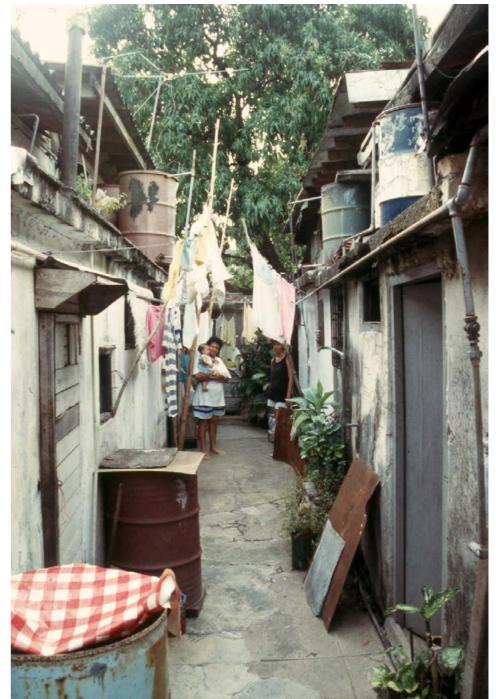
3.2 persons / living room Living room = kitchen = bedroom

Informal Expansion





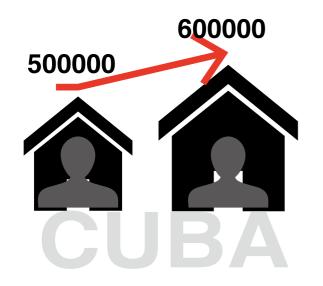




conversion of inner courtyards

Housing shortage

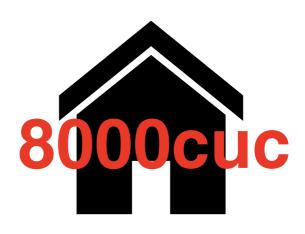
Database



Increasing shortage of houses



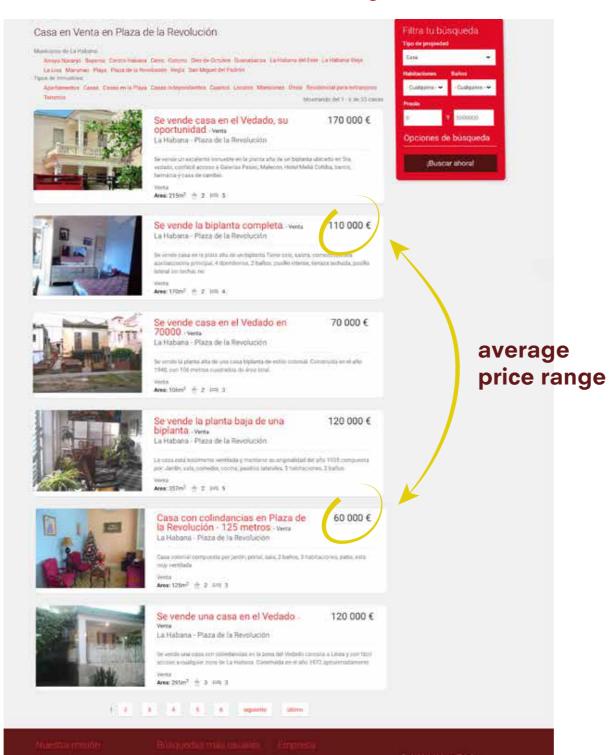
60,000 of 560000 dwellings were beyond repair and should be demolished.



The average cost of building a house in Cuba is \$8,000

Housing shortage

Unaffordable Housing Market



average salary of a cuban:

30 cuc/month

However, Shortage of building materials

Low Productivity



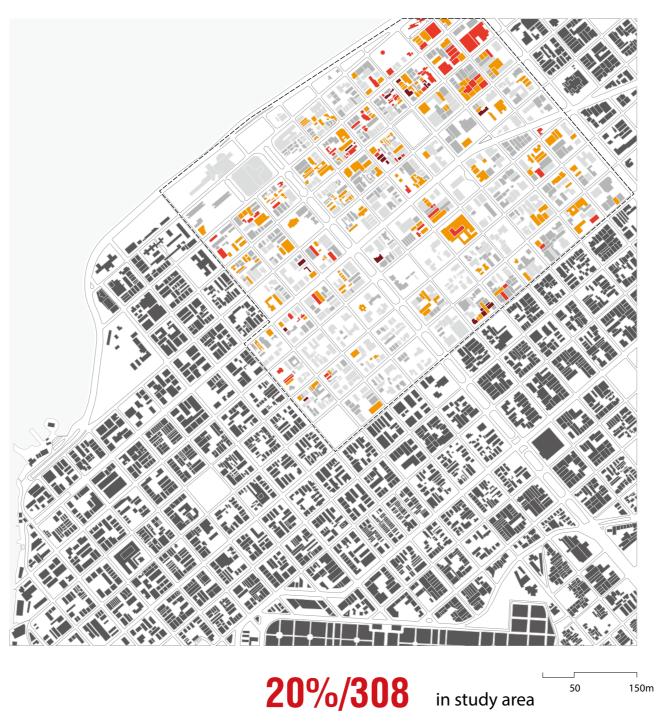
However, Shortage of building materials

Expensive price

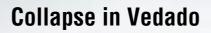




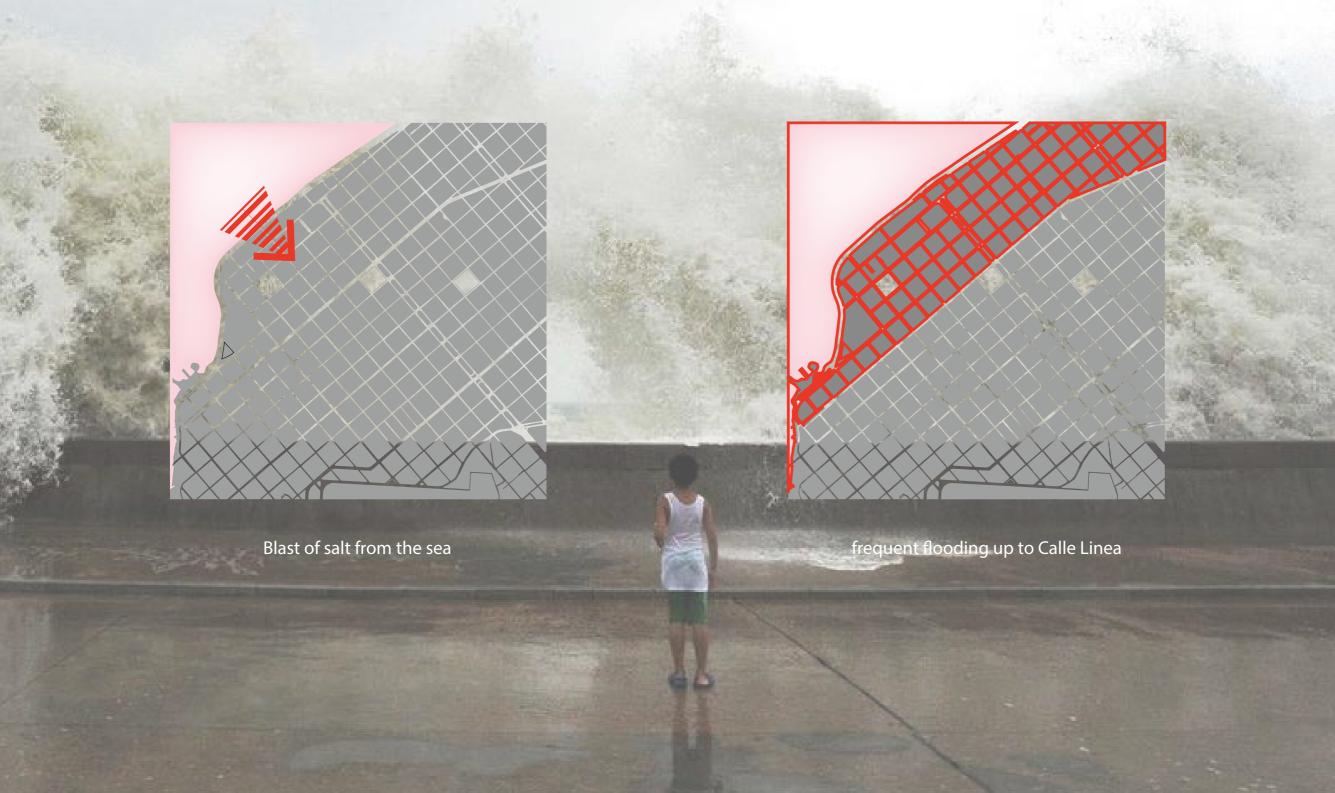
Collapse in Vedado



in very bad condition or really for demolish

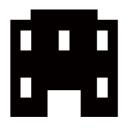


Geographic condition



Bottom-up Recycling Building Materials





abandoned builling



materials



stealing



reuse











What Can Be Recycled in Havana?

What Can Be Recycled in Havana

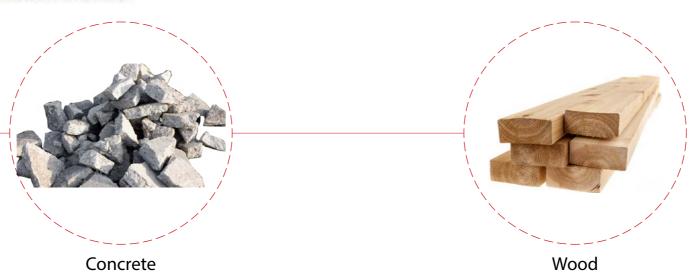
Main Building Materials

Table 6. Houses and Apartments Occupied by Permanent Residents by Period of Construction and Predominant Wall Material, 2002 Census of Cub

	All periods	<1920	1920-1933	1934-1945	1946-1958	1959-1970	1971-1981	1982-1989	1990-2002	Don'tKnow
	Percent distribution									
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Concrete	75.6	78.9	78.9	84.0	86.0	75.1	76.1	78.4	67.6	72.1
Wood	19.2	19.5	18.9	15.3	12.3	19.9	18.3	16.1	24.3	22.2
Palm bark	3.4	0.4	0.9	1.1	1.3	3.8	4.8	4.5	6.3	3.9
Adobe	1.2	1.2	0.4	0.5	0.3	1.3	1.0	1.0	1.9	1.6

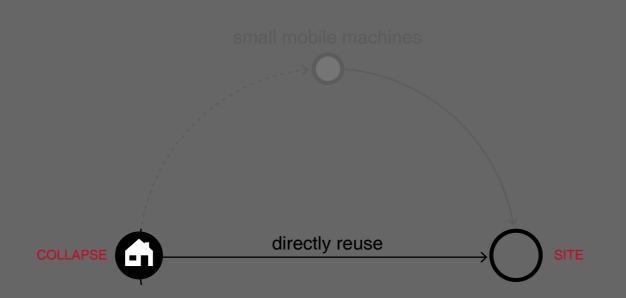
Source: Oficina Nacional de Estadísticas, 2005. Censo de Población y Viviendas — Cuba 2002. La Habana, Tabla V.7.

a. Concrete stands for "paredes de hormigón, mampostería"; Wood for "paredes de madera"; Palm bark for "paredes de yagua o tabla de palma"; and Adobe for "paredes de adobe o embarre u otro material."



Two On Site Recycling Methods

Directly Reuse

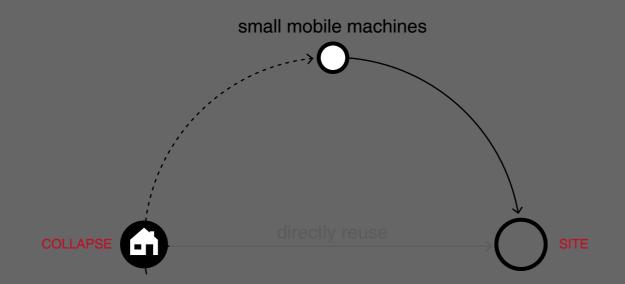






Two On Site Recycling Methods

Mobile Machines





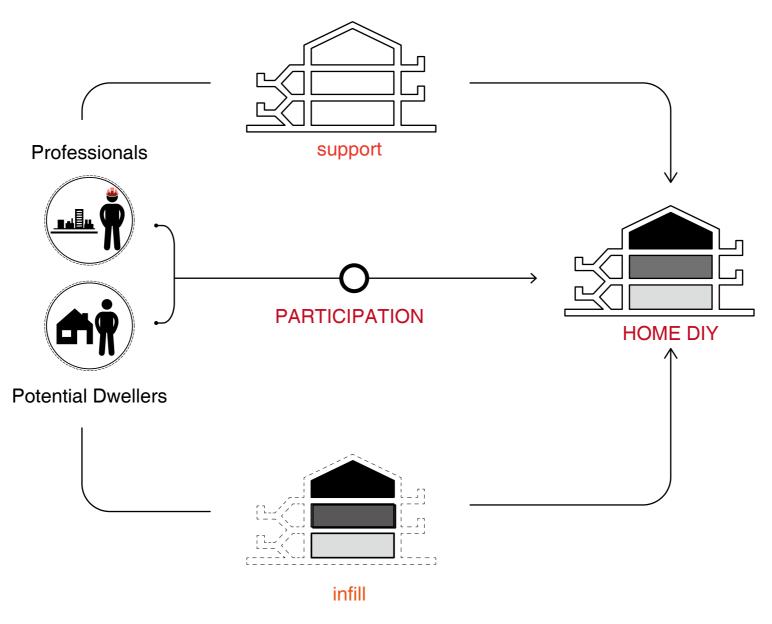
Reference of Onsite Smallscale Recycling

Low Tech/Informal Way after earthquake in China



Strategy

Make it easier for Cuban to get a home



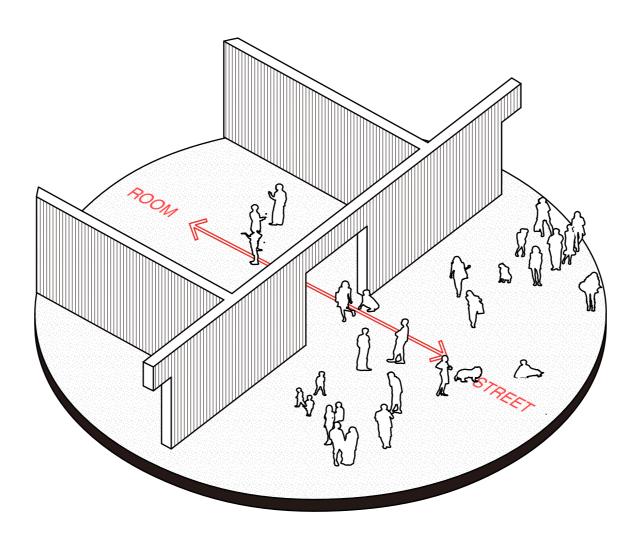
[with informal way of recycling materials]





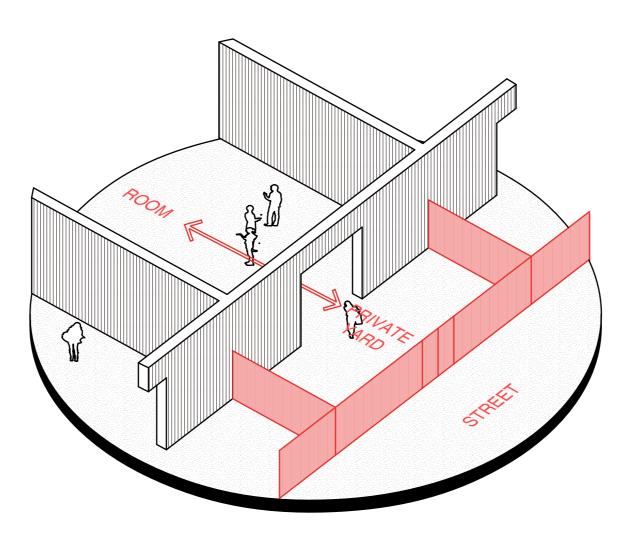


Street Typology in Central Havana

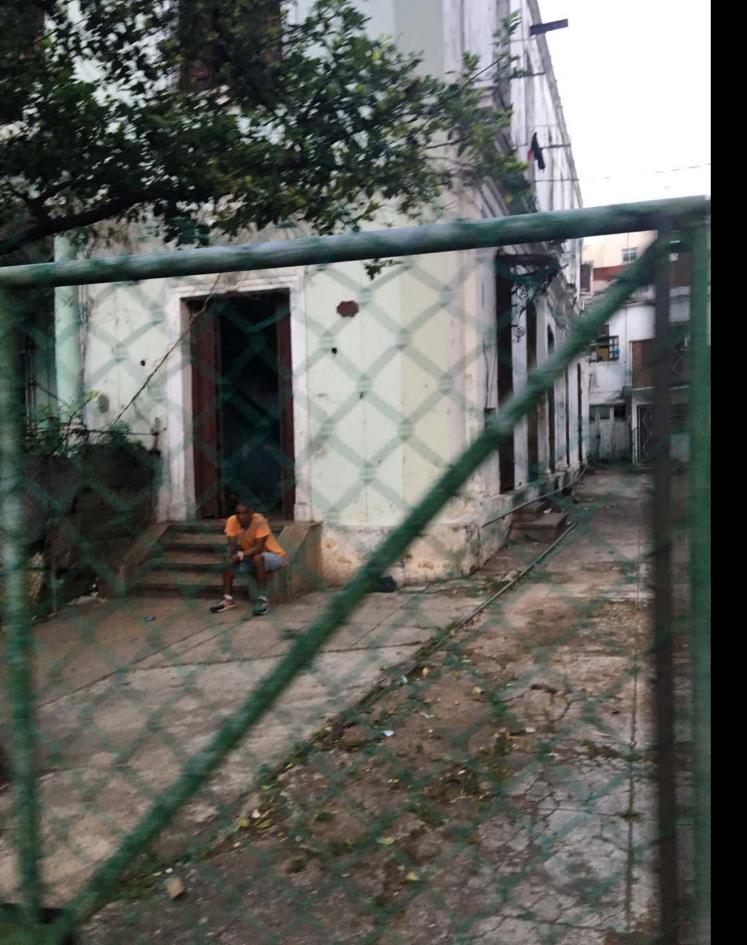


People do expand their daily life to the public space.

Street Typology in Vedado, Havana



Precise fences strictly isolate the private space from the street.



Street Typology



















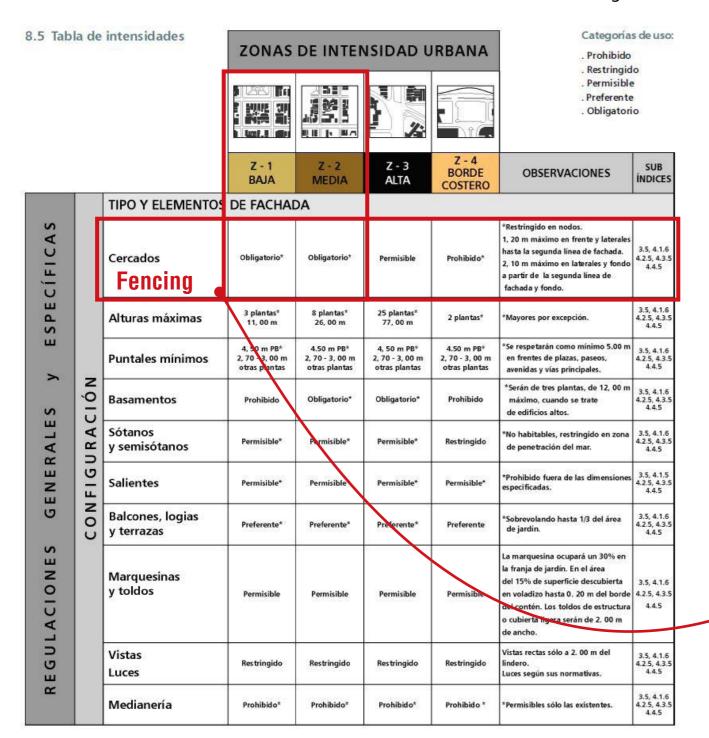
Private	Public	Private
garden 5.00	sidewalk 1.70 parterre 2.80 street 7.00	sidewalk 1.70 garden 5.00

Urban Regulation

8.5 Tabla de intensidades			ZONAS	DE INTER	Categorías de uso: . Prohibido . Restringido				
							. Permisible . Preferente . Obligatorio		
			Z - 1 BAJA	Z - 2 MEDIA	Z - 3 ALTA	Z - 4 BORDE COSTERO	OBSERVACIONES	SUB ÍNDICES	
CÍFICAS		TIPO Y ELEMENTOS	DE FACHAI	DA					
	CONFIGURACIÓN	Cercados Fencing	Obligatorio*	Obligatorio*	Permisible	Prohibido*	*Restringido en nodos. 1, 20 m máximo en frente y laterales hasta la segunda línea de fachada. 2, 10 m máximo en laterales y fondo a partir de la segunda línea de fachada y fondo.	3.5, 4.1.6	
SPE		Alturas máximas	3 plantas* 11, 00 m	8 plantas* 26, 00 m	25 plantas* 77, 00 m	2 plantas*	*Mayores por excepción.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5	
REGULACIONES GENERALES Y E		Puntales mínimos	4, 50 m PB* 2, 70 - 3, 00 m otras plantas	4.50 m PB* 2, 70 - 3, 00 m otras plantas	4, 50 m PB* 2, 70 - 3, 00 m otras plantas	4.50 m PB* 2, 70 - 3, 00 m otras plantas	*Se respetarán como mínimo 5.00 m en frentes de plazas, paseos, avenidas y vías principales.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5	
		Basamentos	Prohibido	Obligatorio*	Obligatorio*	Prohibido	*Serán de tres plantas, de 12, 00 m máximo, cuando se trate de edificios altos.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5	
		Sótanos y semisótanos	Permisible*	Permisible*	Permisible*	Restringido	*No habitables, restringido en zona de penetración del mar.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5	
		Salientes	Permisible*	Permisible*	Permisible*	Permisible*	*Prohibido fuera de las dimensiones especificadas.	3.5, 4.1.5 4.2.5, 4.3.5 4.4.5	
		0	Balcones, logias y terrazas	Preferente*	Preferente*	Preferente*	Preferente	*Sobrevolando hasta 1/3 del área de jardín.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5
		Marquesinas y toldos	Permisible	Permisible	Permisible	Permisible	La marquesina ocupará un 30% en la franja de jardín. En el área del 15% de superficie descubierta en voladizo hasta 0. 20 m del borde del contén. Los toldos de estructura o cubierta ligera serán de 2. 00 m de ancho.		
		Vistas Luces	Restringido	Restringido	Res tringido	Restringido	Vistas rectas sólo a 2. 00 m del lindero. Luces según sus normativas.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5	
		Medianería	Prohibido*	Prohibido*	Prohibido*	Prohibido *	*Permisibles sólo las existentes.	3.5, 4.1.6 4.2.5, 4.3.5 4.4.5	

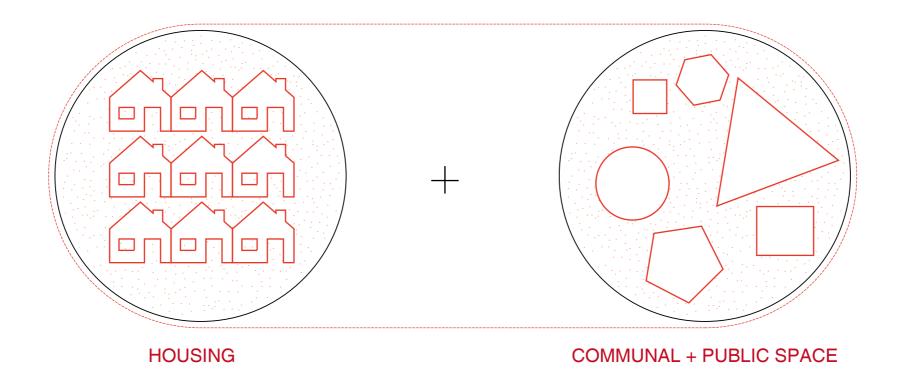


Urban Regulation





Strategy



Domestic Space



Privacy at home! Better living conditions! No chaos!



Public Space

Entertainment

What if I can play in my courtyard, not on the road!



A nice place to share knowledge would be perfect!



Public Space

Service

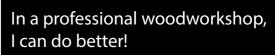






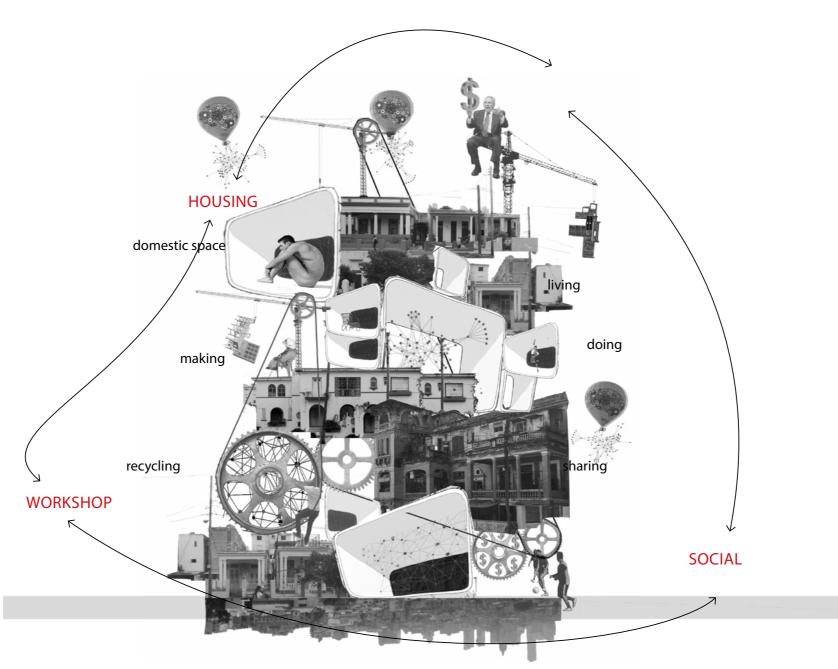








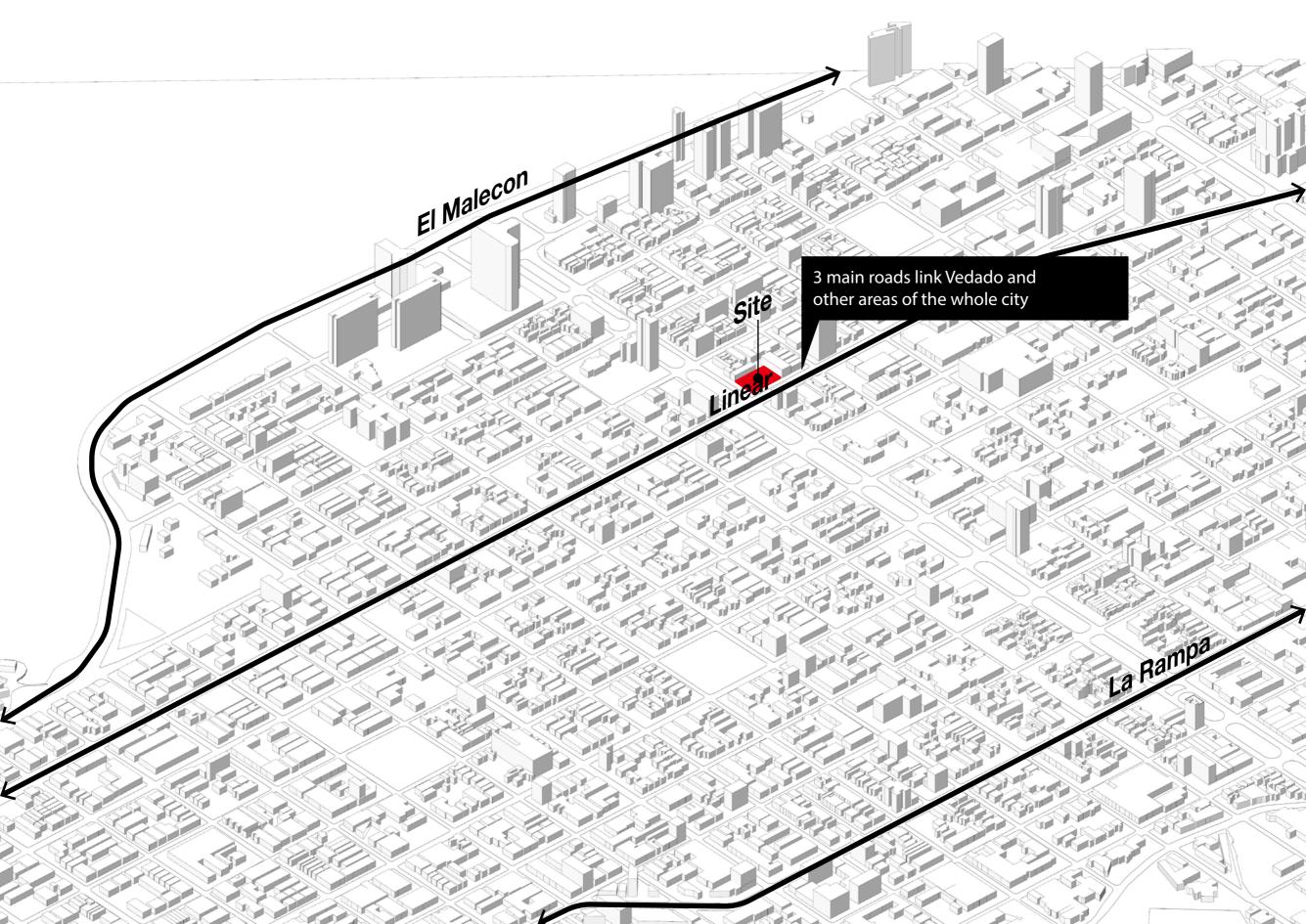
Mode of Living



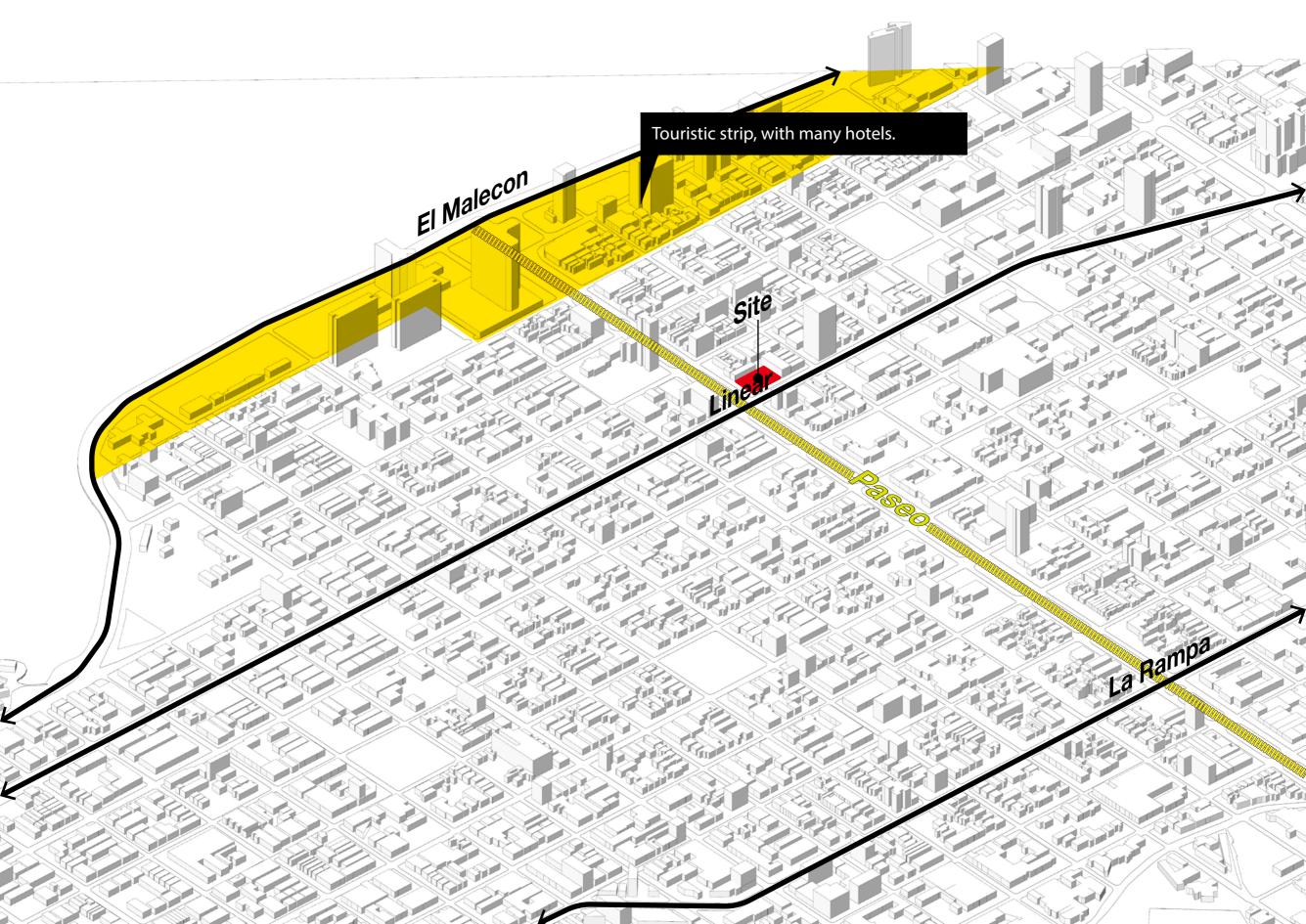
Collaboration of Programs

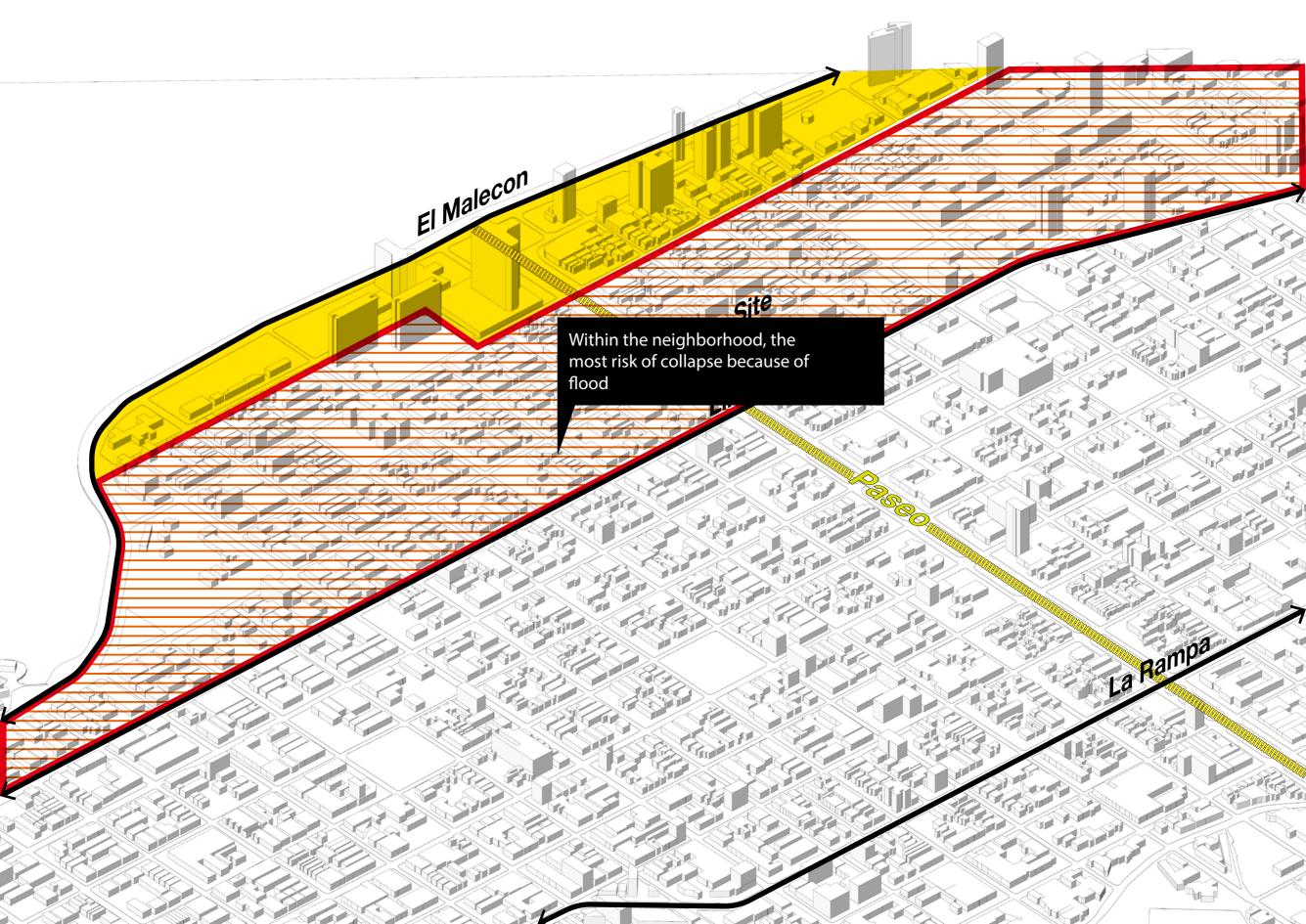


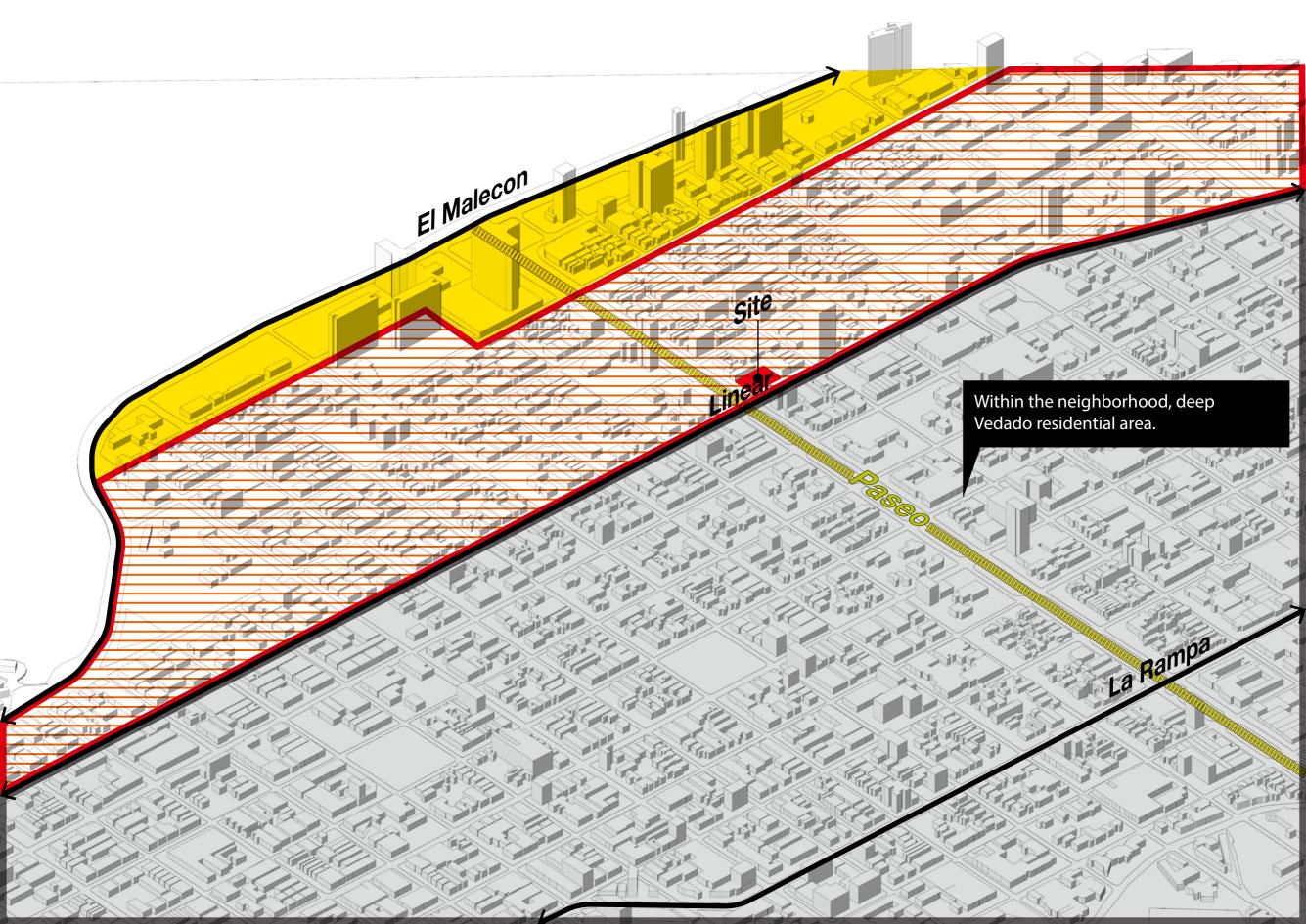


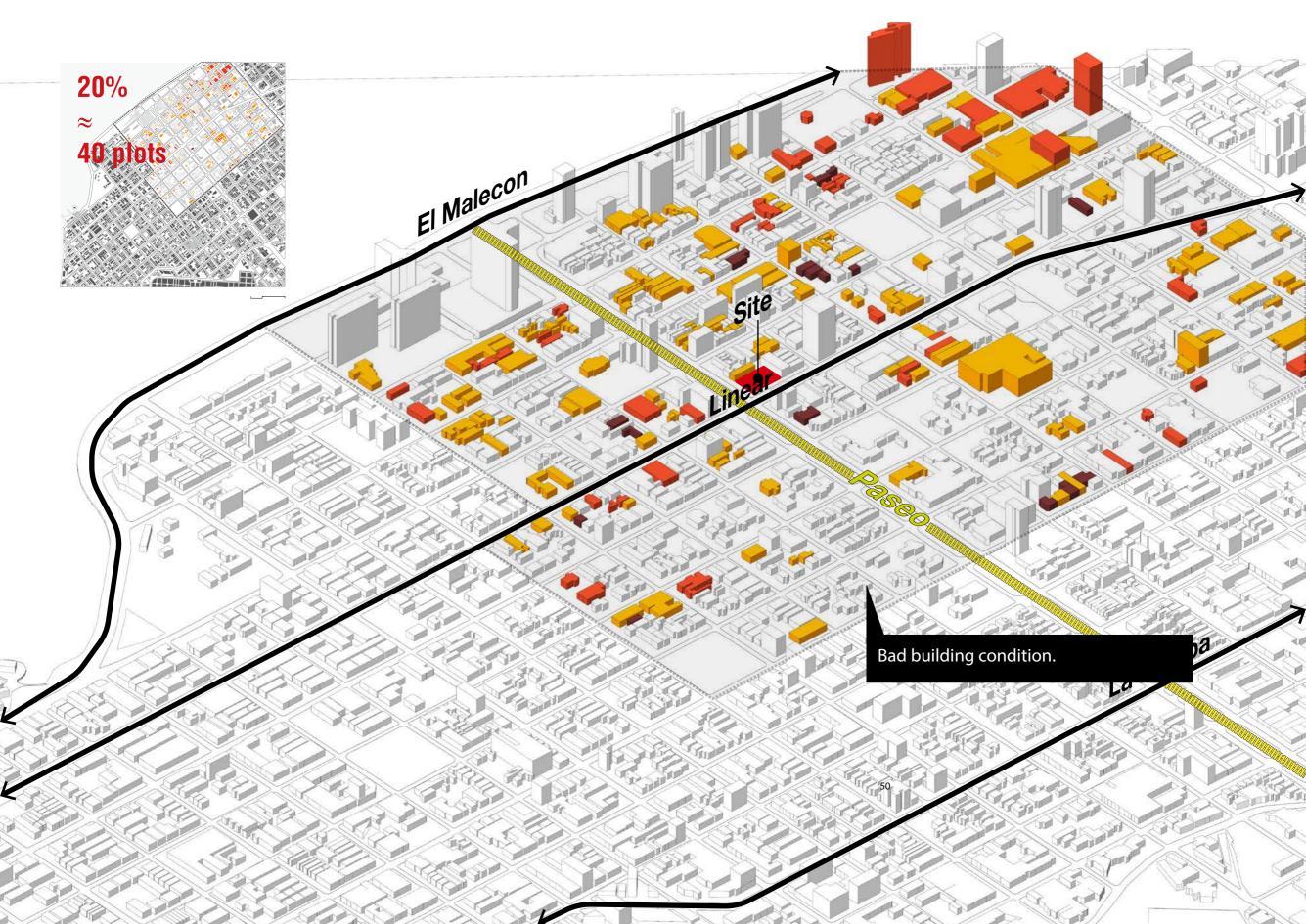


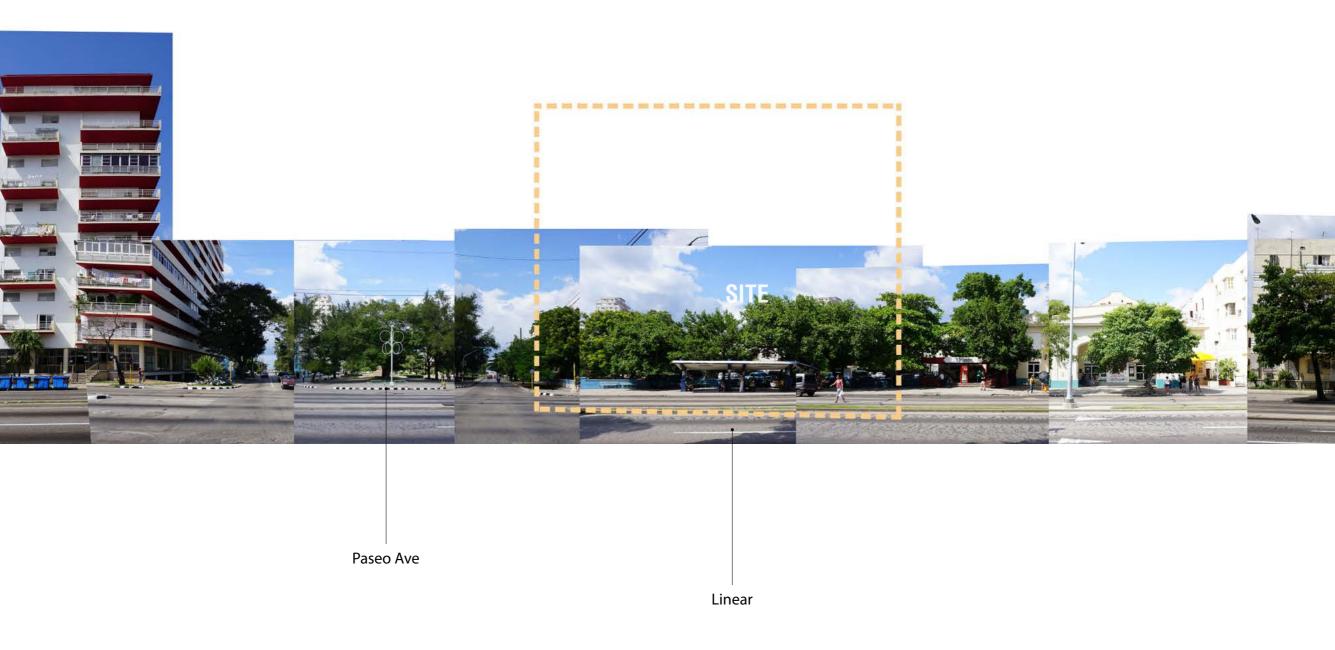






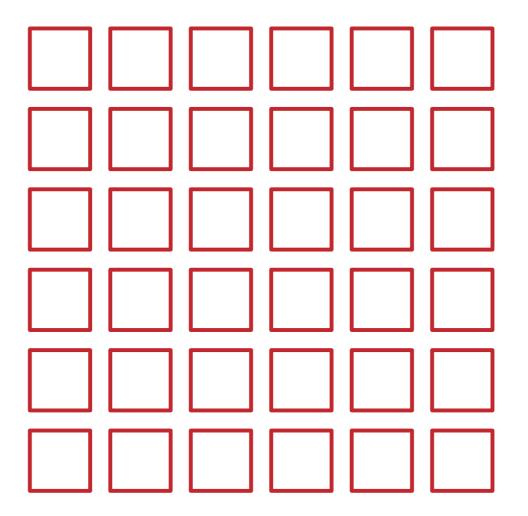




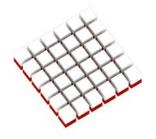




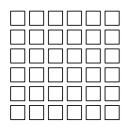




A RATIONAL AND EFFICIENT GRID

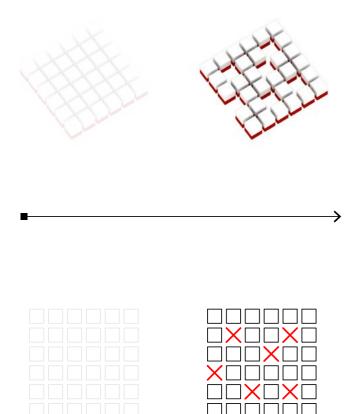






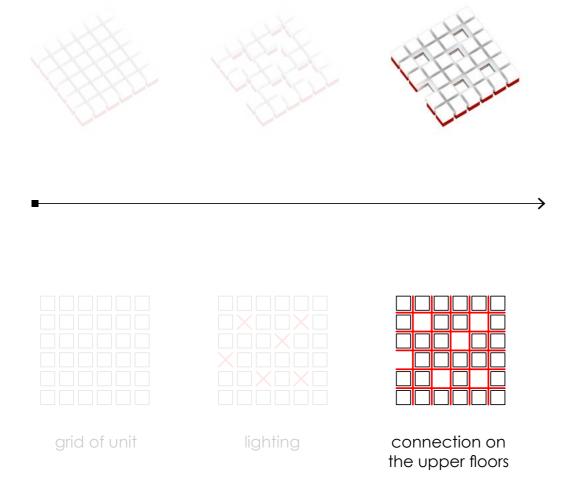
grid of unit

OPPERATION METHOD

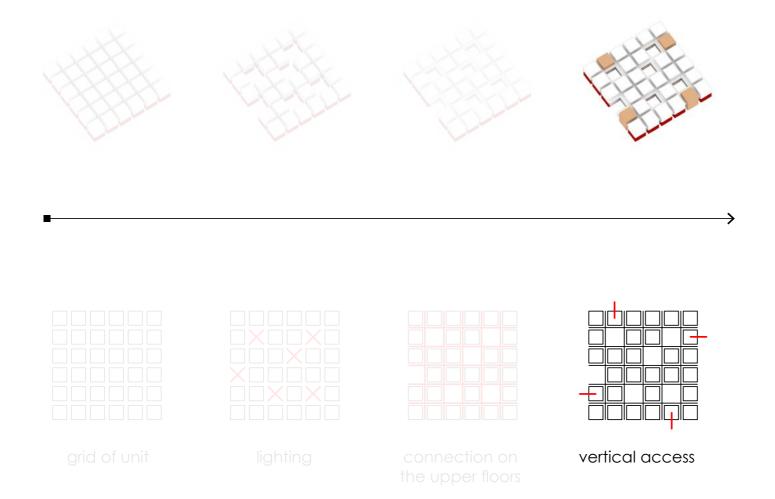


lighting

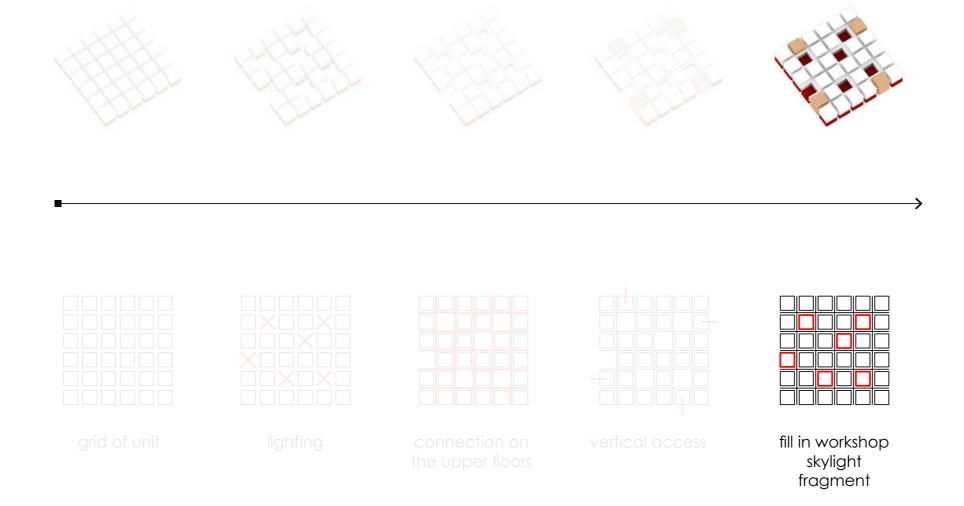
OPPERATION METHOD



OPPERATION METHOD

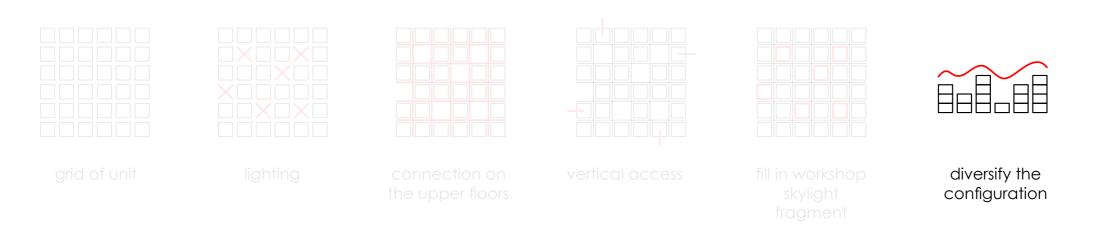


OPPERATION METHOD



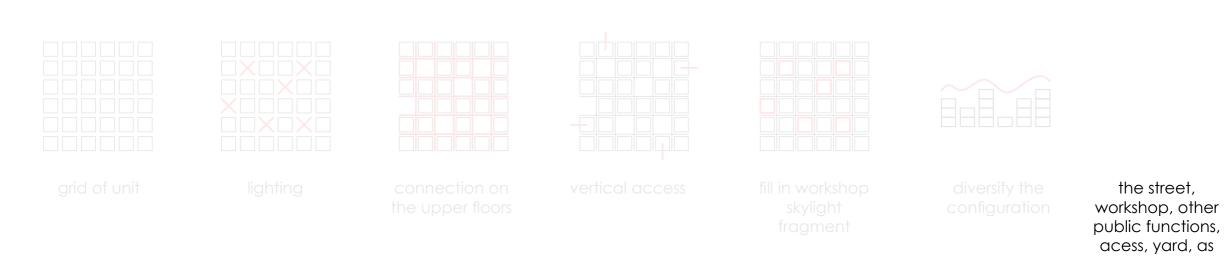
OPPERATION METHOD



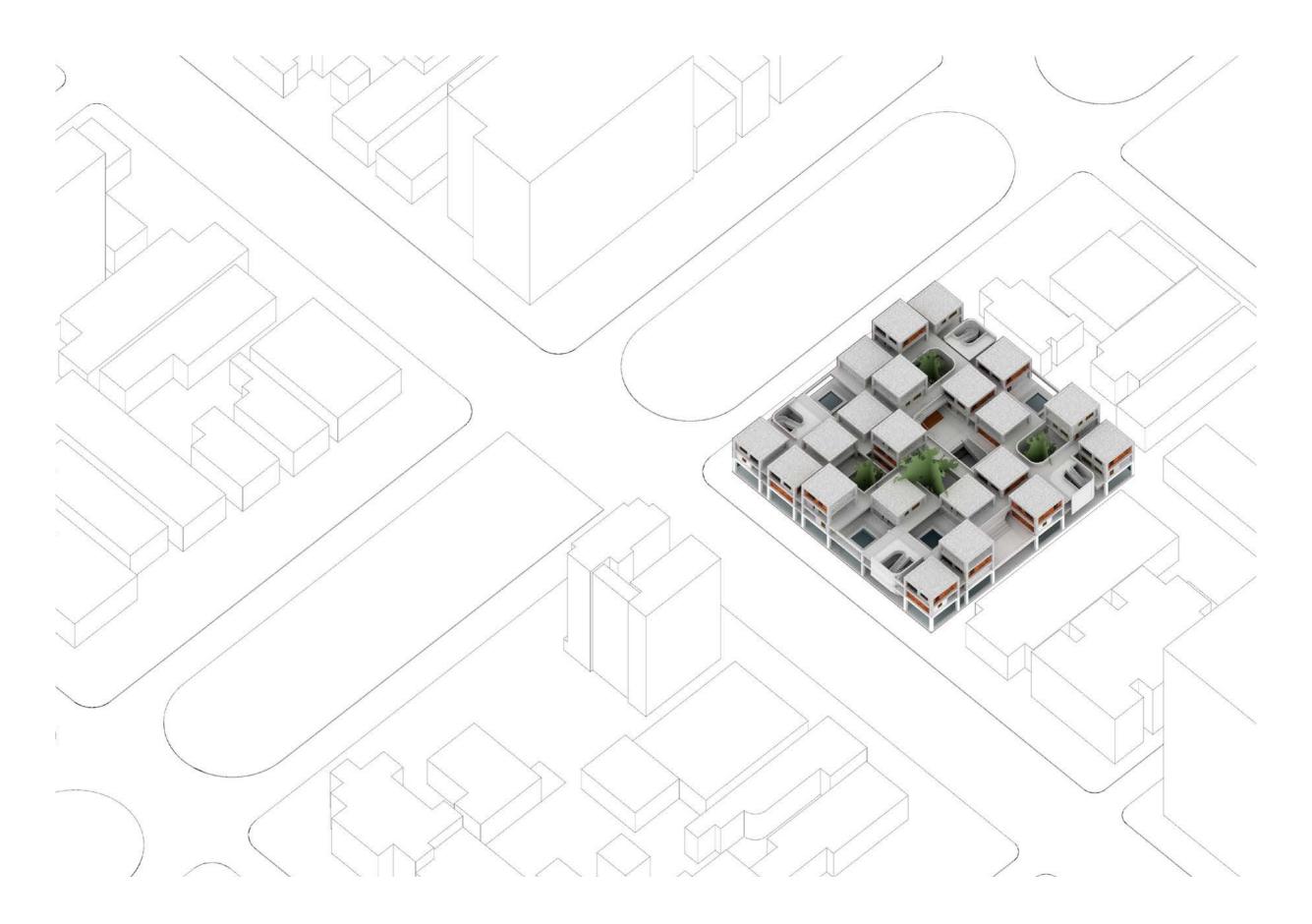


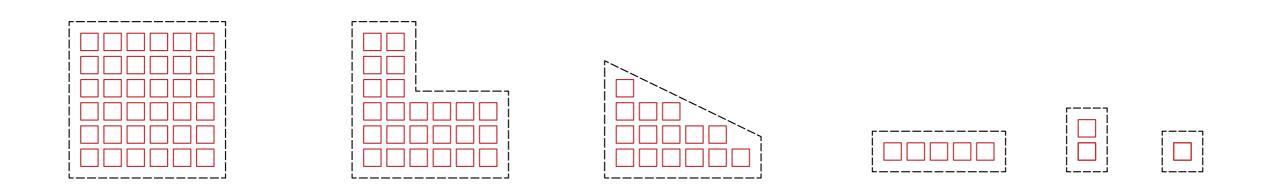
OPPERATION METHOD





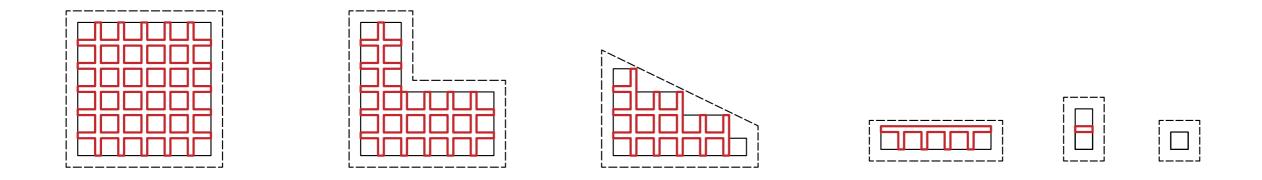
OPPERATION METHOD



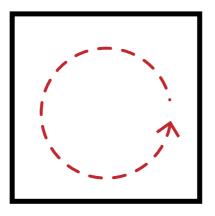


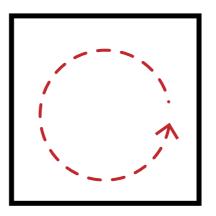
WHY THE GRID

THE ADAPITIBILITY

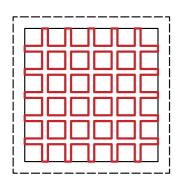


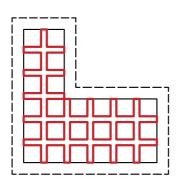
THE VOID IN BETWEEN

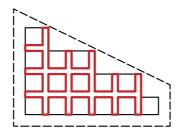




EACH FAMILY STANDS ON HIS OWN





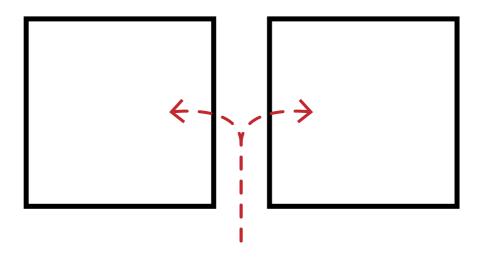




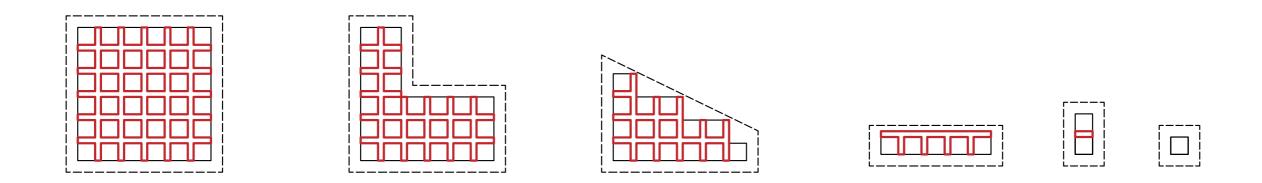




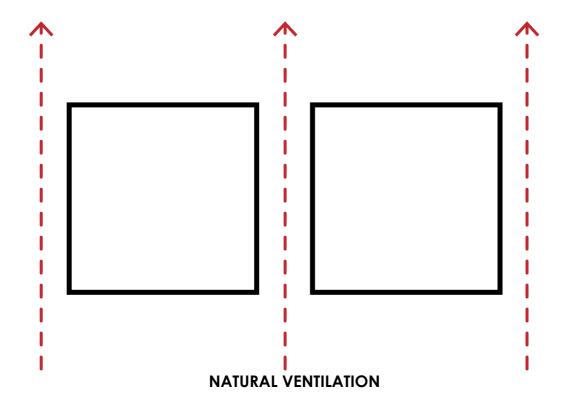
THE VOID IN BETWEEN

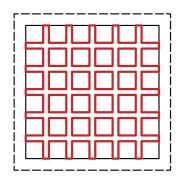


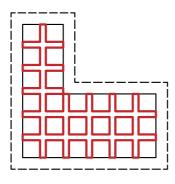
CONNECTION IN THE UPPER FLOOR

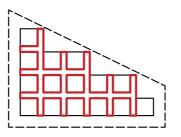


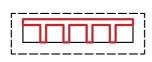
THE VOID IN BETWEEN







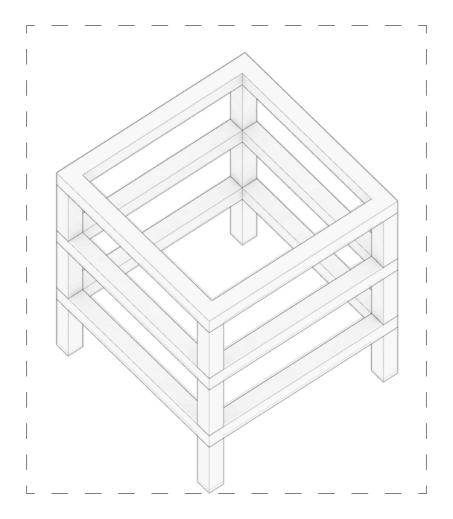




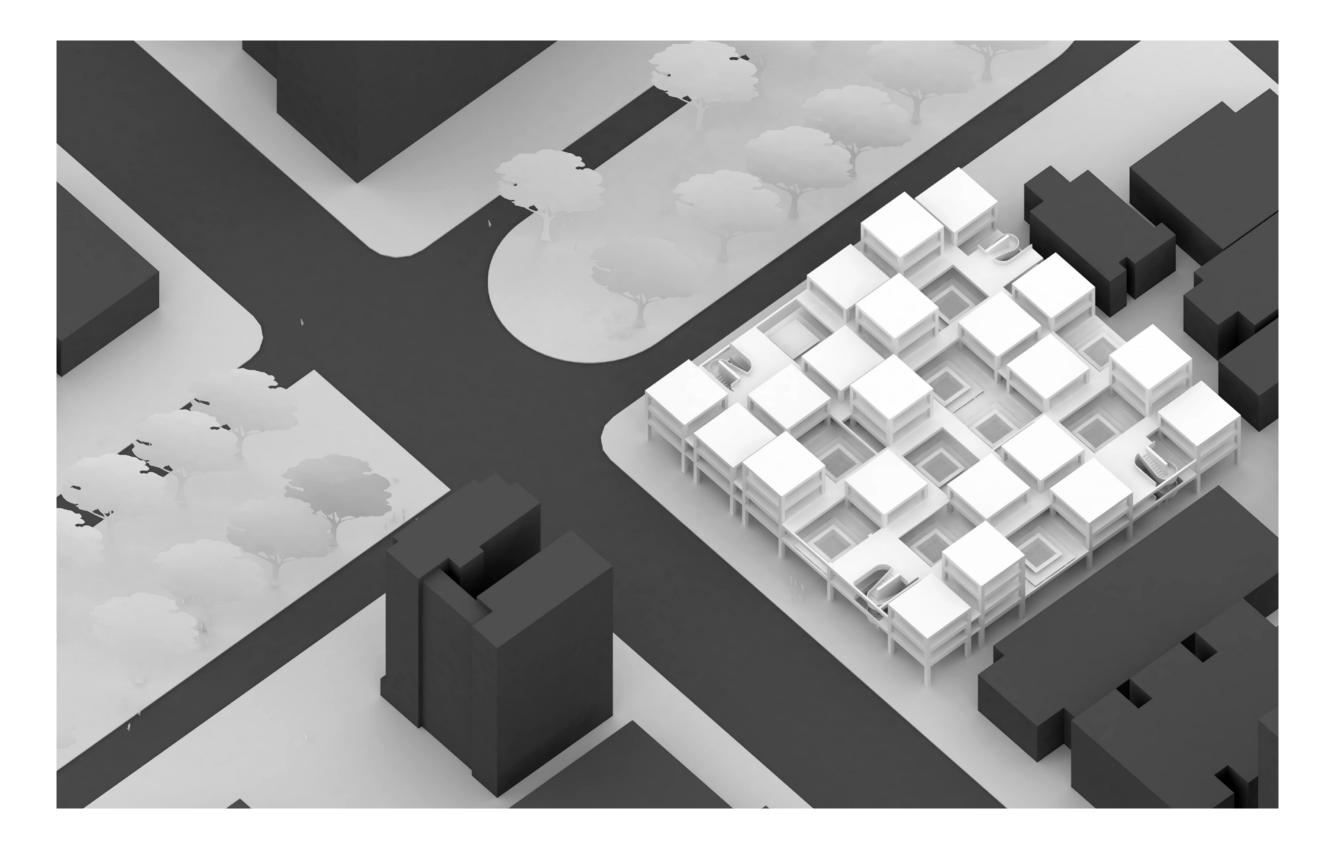


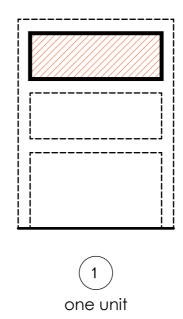


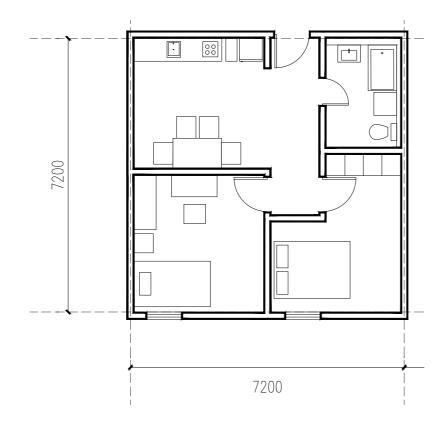
THE VOID IN BETWEEN

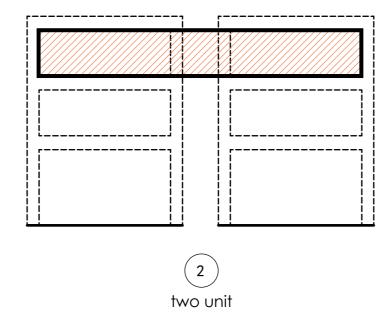


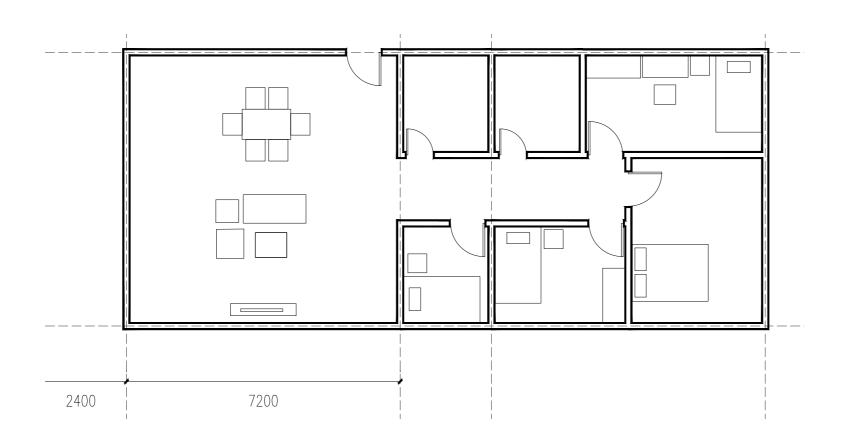
HOUSING PART

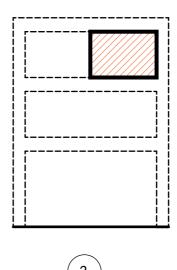






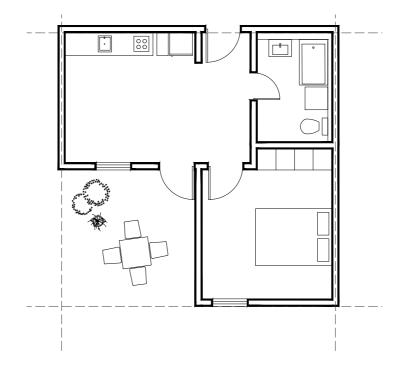


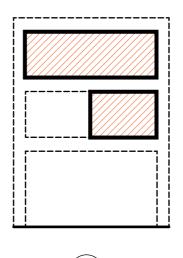




3

half-occupied



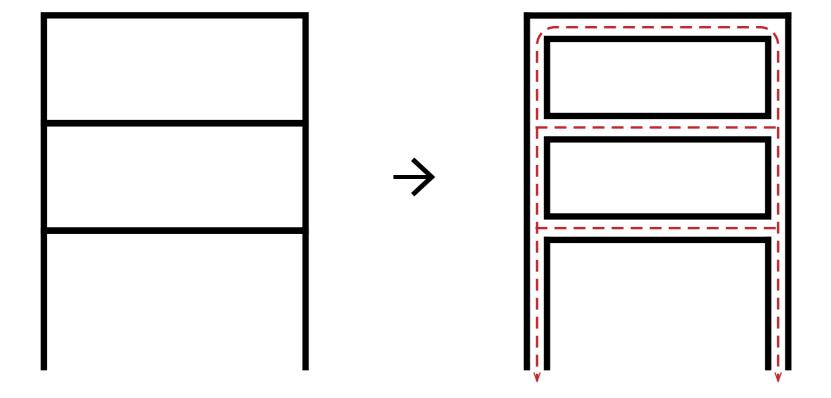


(4)

vertical 2-story unit

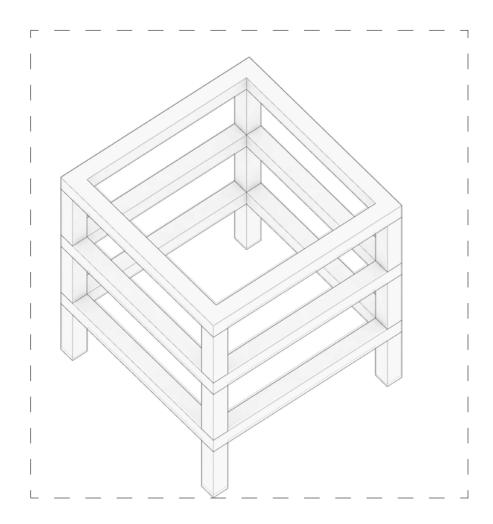


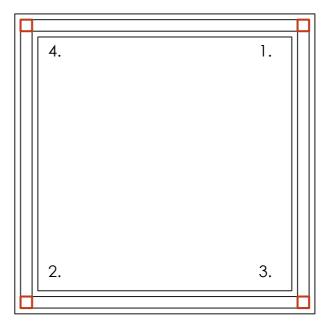




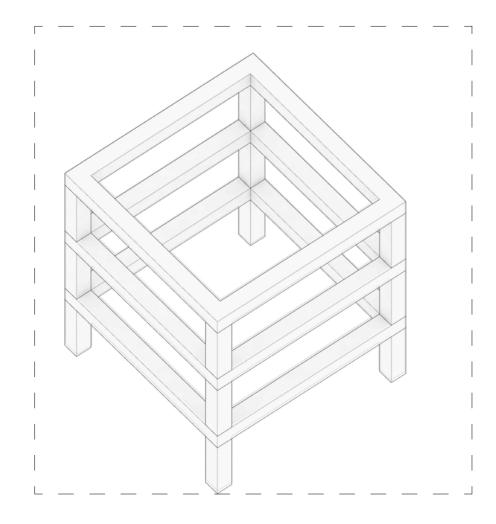
SANITARY FACILITIES' ZONE

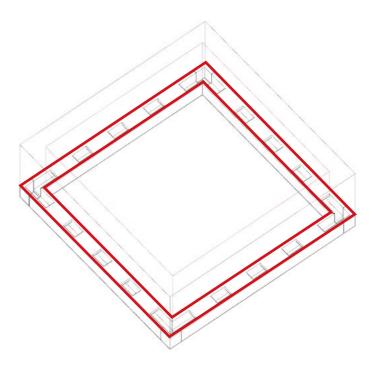
each unit functionally stands on its own





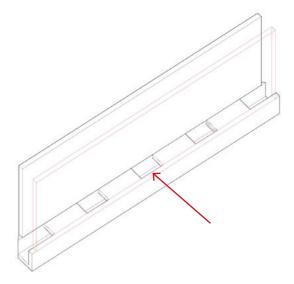
wet zone - sewage & water supply
 dry zone - electricity
 flexible zone for future change



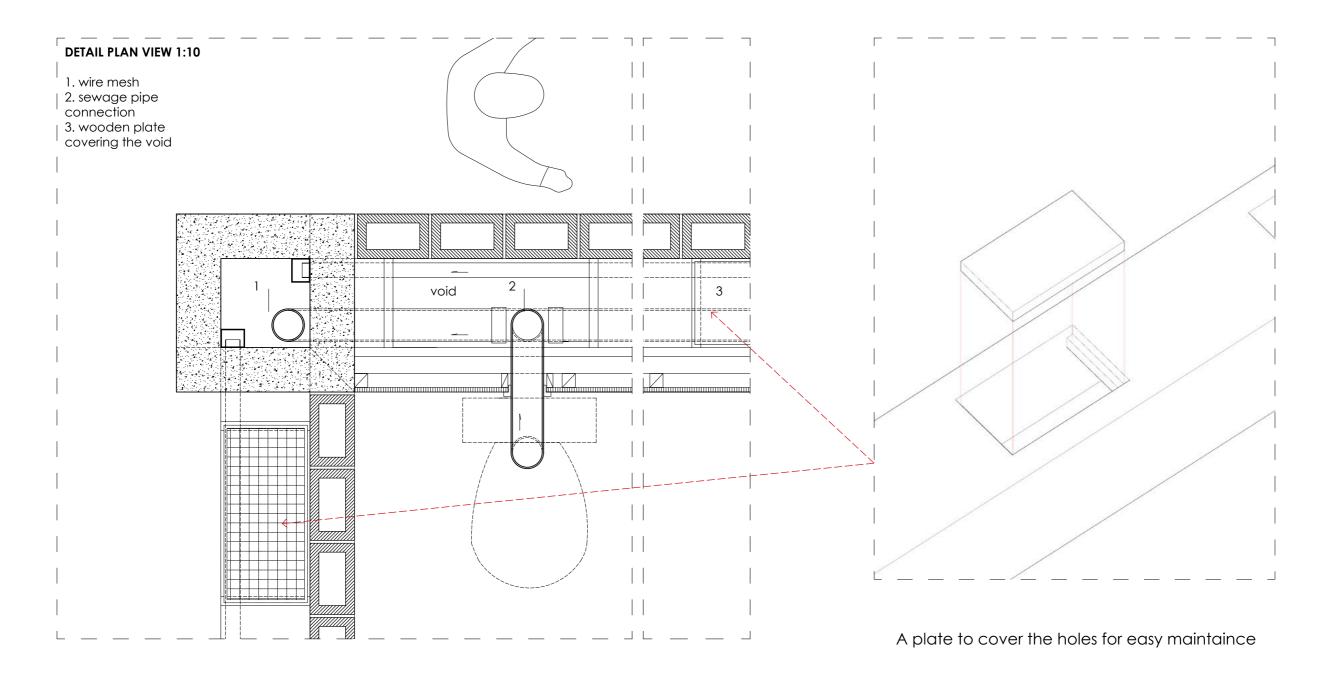


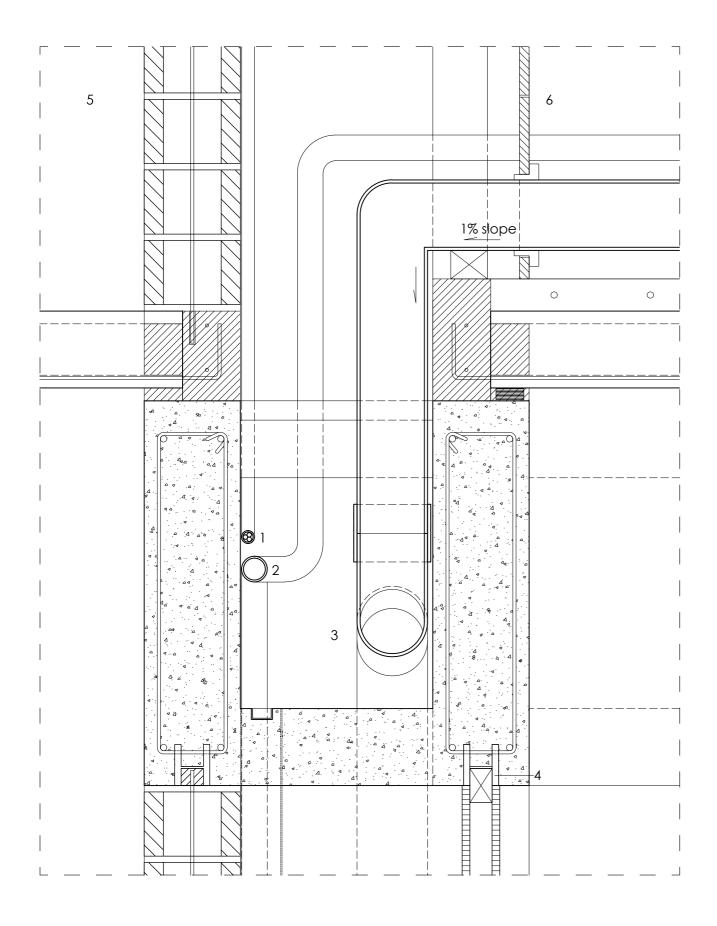
The outside ring in the unit as sanitary space

DETAIL PLAN VIEW 1:10 1. wire mesh 2. sewage pipe connection 3. wooden plate covering the void



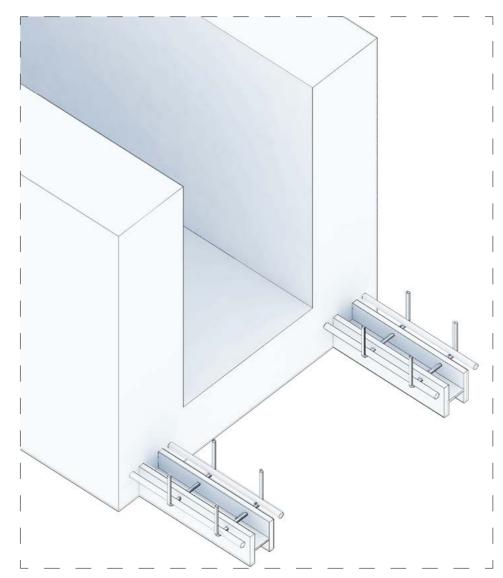
Management of the pipes through the inner wall



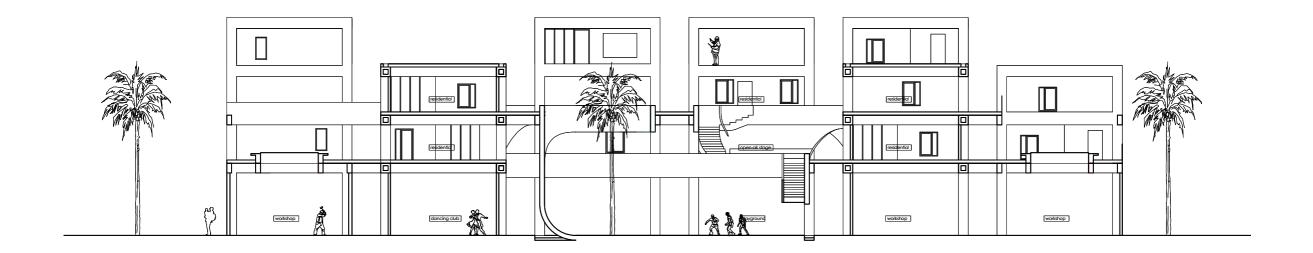


DETAIL BEAM CONNECTION

- 1. Electricity
- 2. Water supply
- 3. Sewage water
- 4. metal precast in beam
- 5. outside wall made by cement block
- 6. inner wooden wall



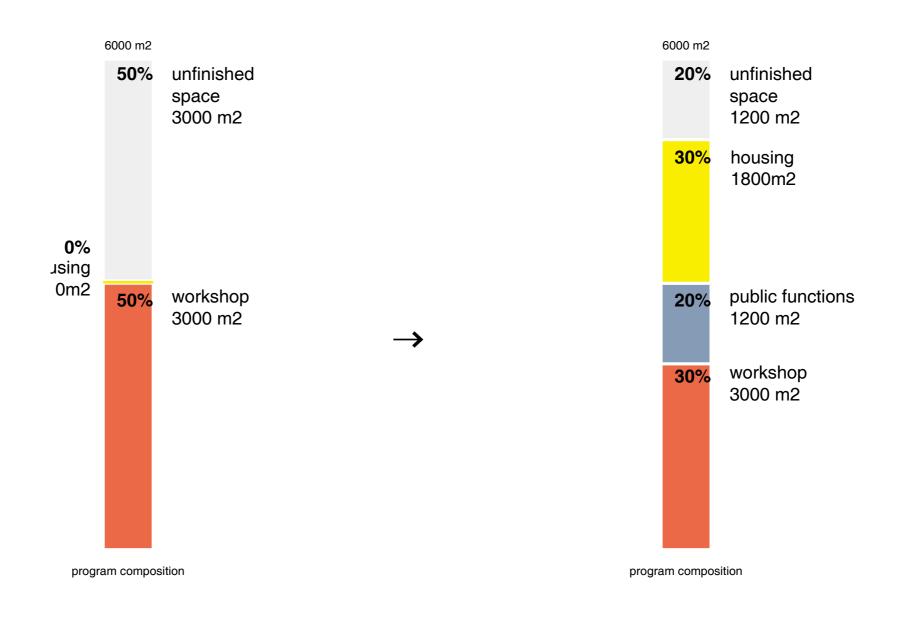




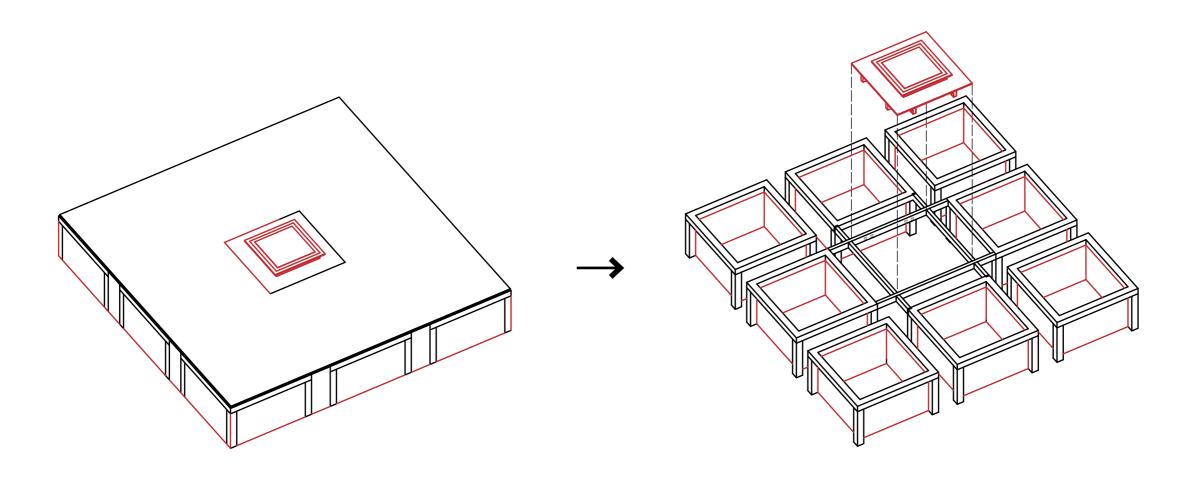


PUBLIC PART

PHASING
FROM INTERIOR WORKSHOP TO OUTDOOR VOID



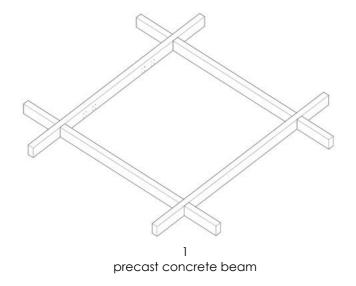
FROM INTERIOR WORKSHOP TO OUTDOOR VOID

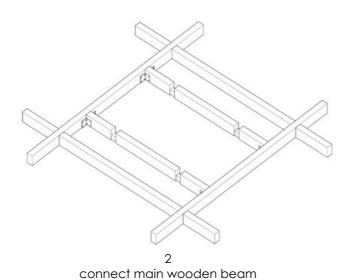


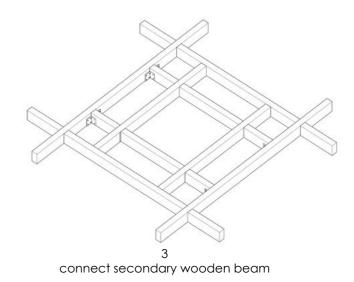
A whole free interior space

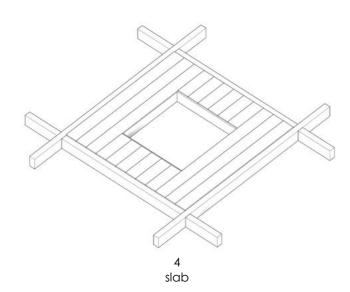
each unit stands on its own on ground level

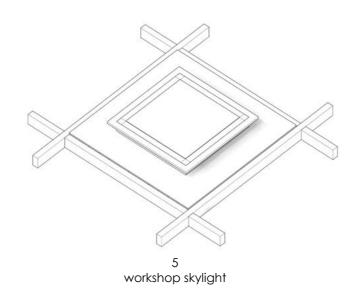
FROM INTERIOR WORKSHOP TO OUTDOOR VOID

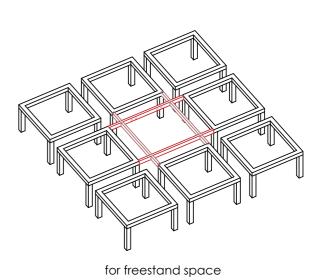


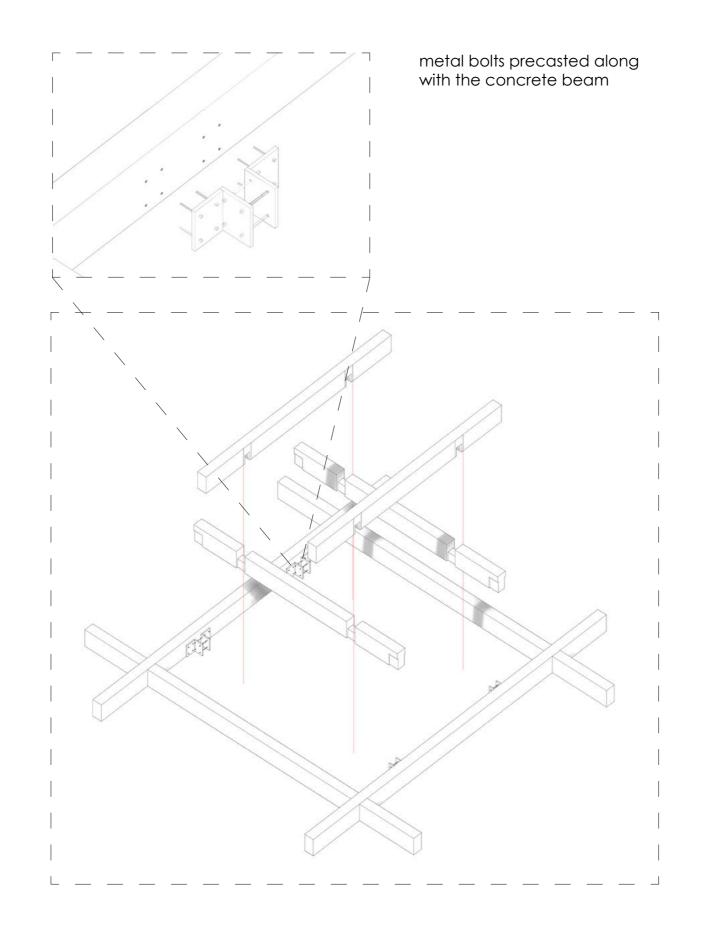




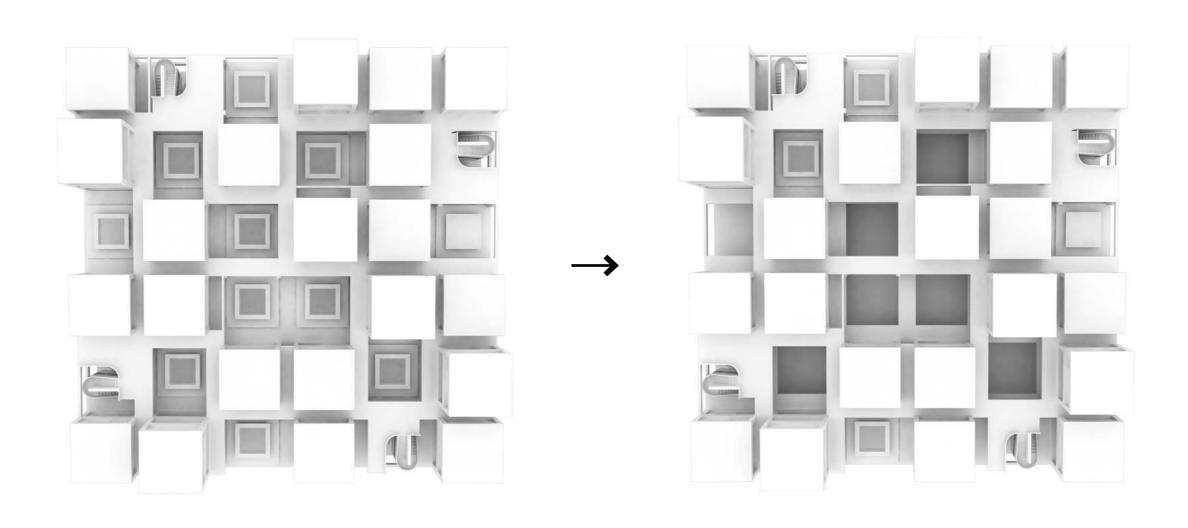






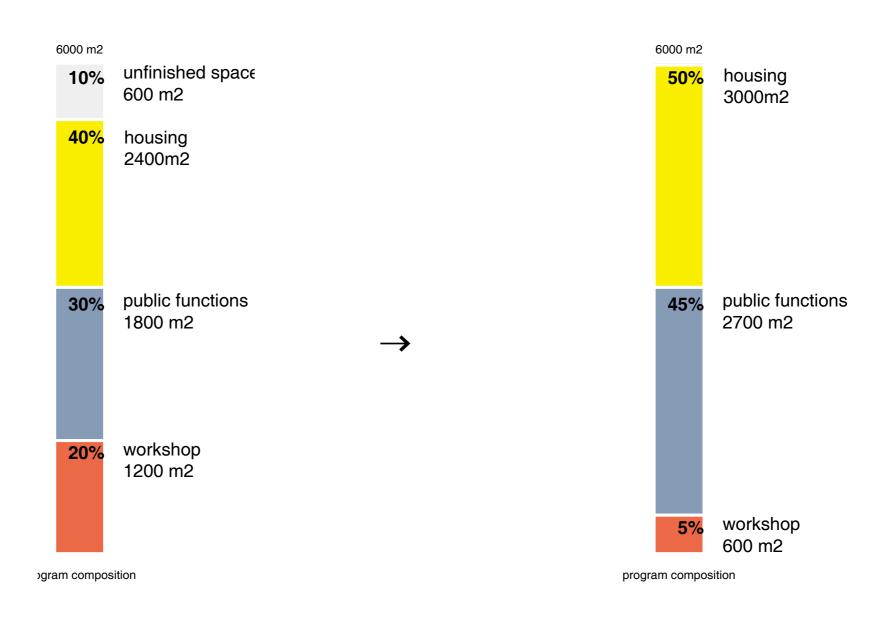


PHASING FROM INTERIOR WORKSHOP TO OUTDOOR VOID

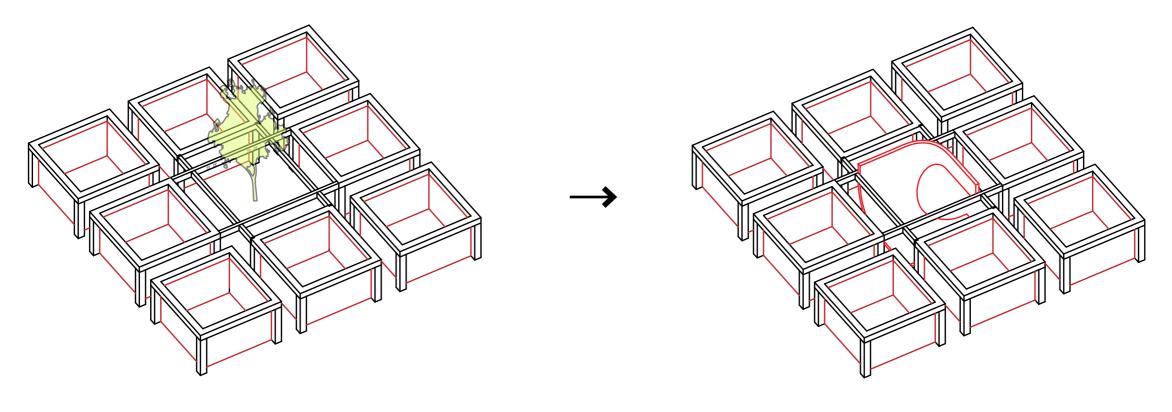


PHASING

FROM VOID TO ARCHITECT'S INTERVENTION



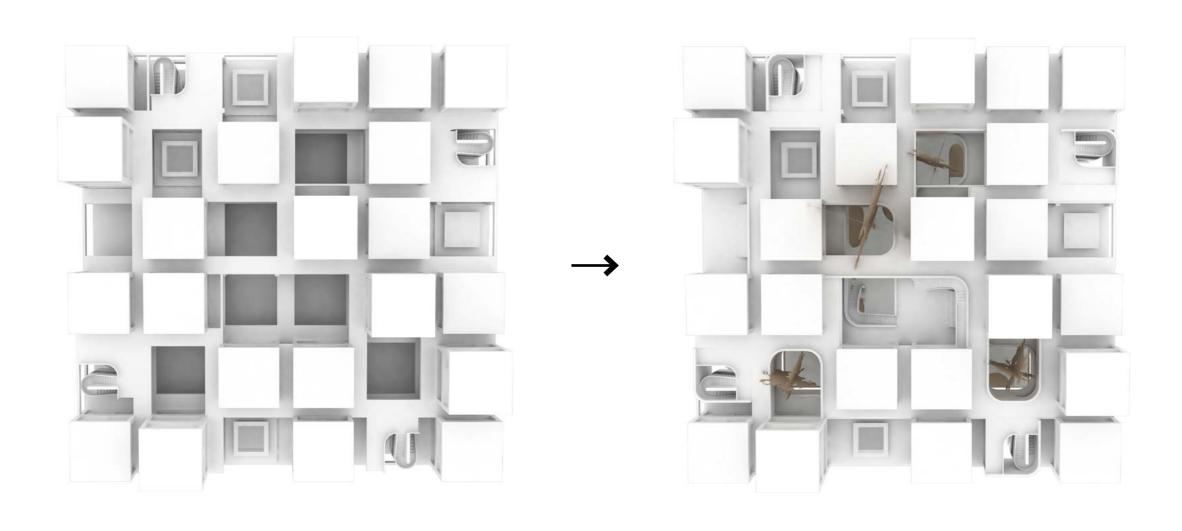
FROM VOID TO ARCHITECT'S INTERVENTION

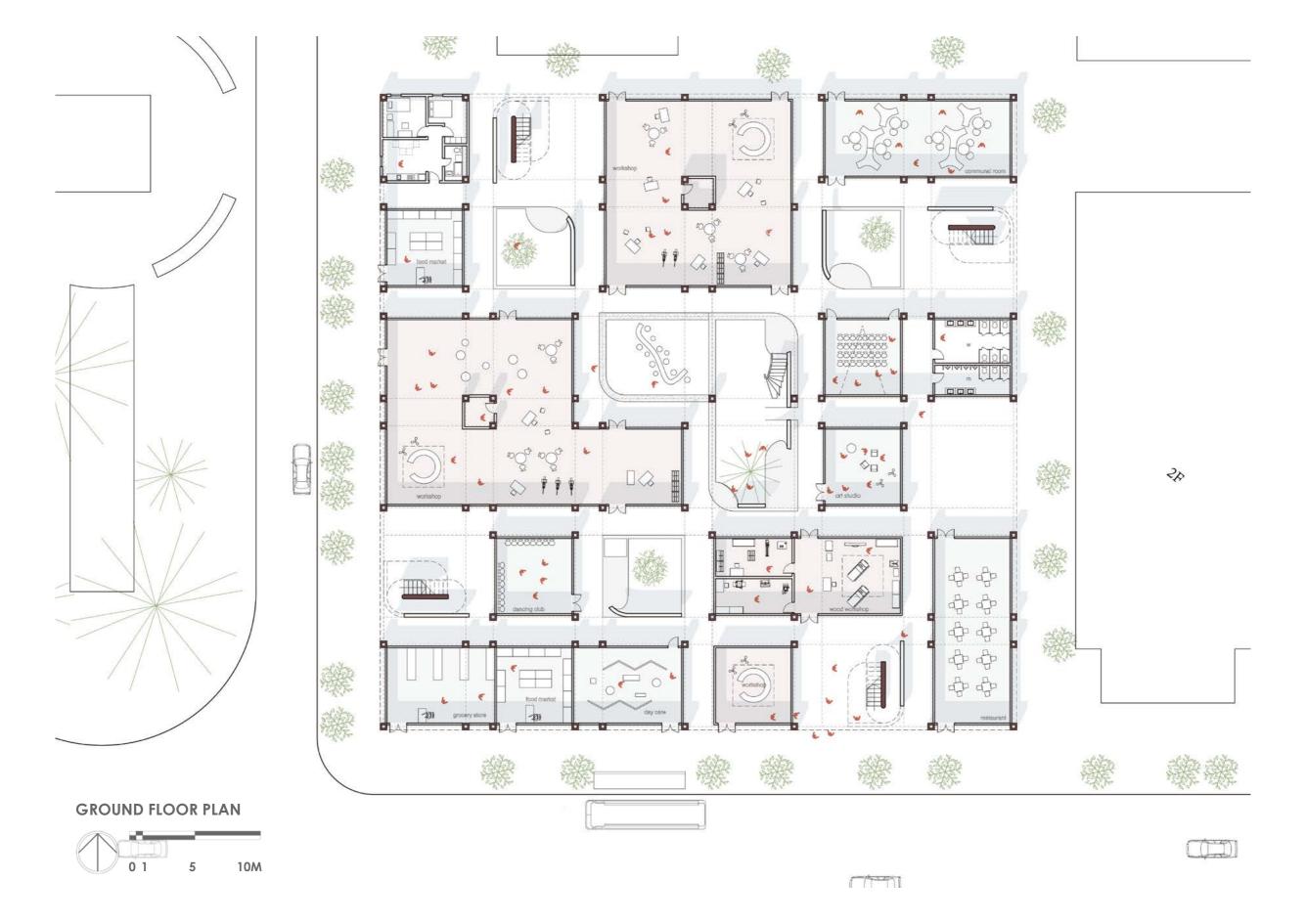


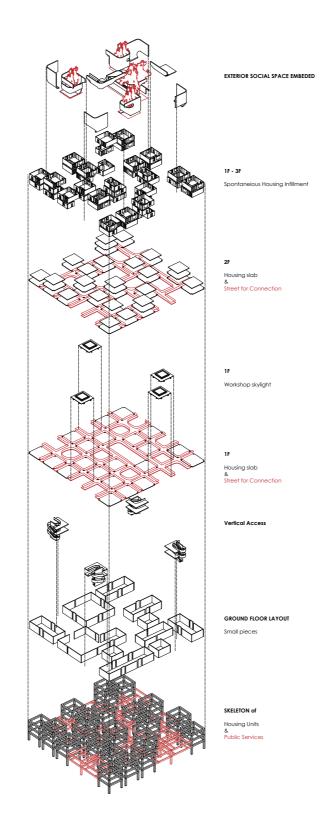
rigid and static exterior void

stimulate social life through reshaping space

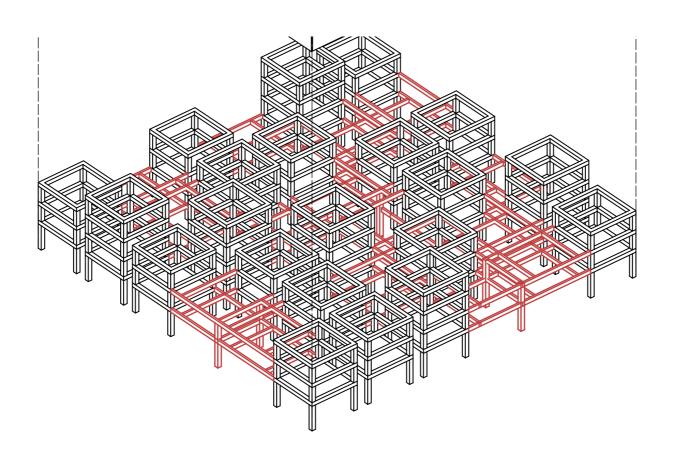
FROM VOID TO ARCHITECT'S INTERVENTION





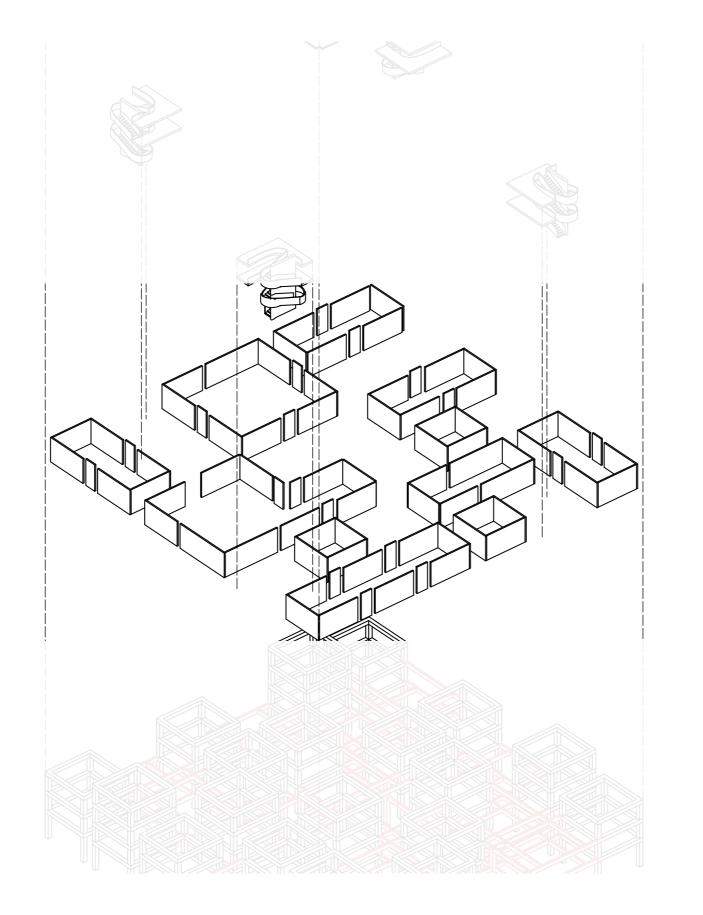


AXO DURING EVOLVING PROCESS



SKELETON of

Housing Units & Public Services



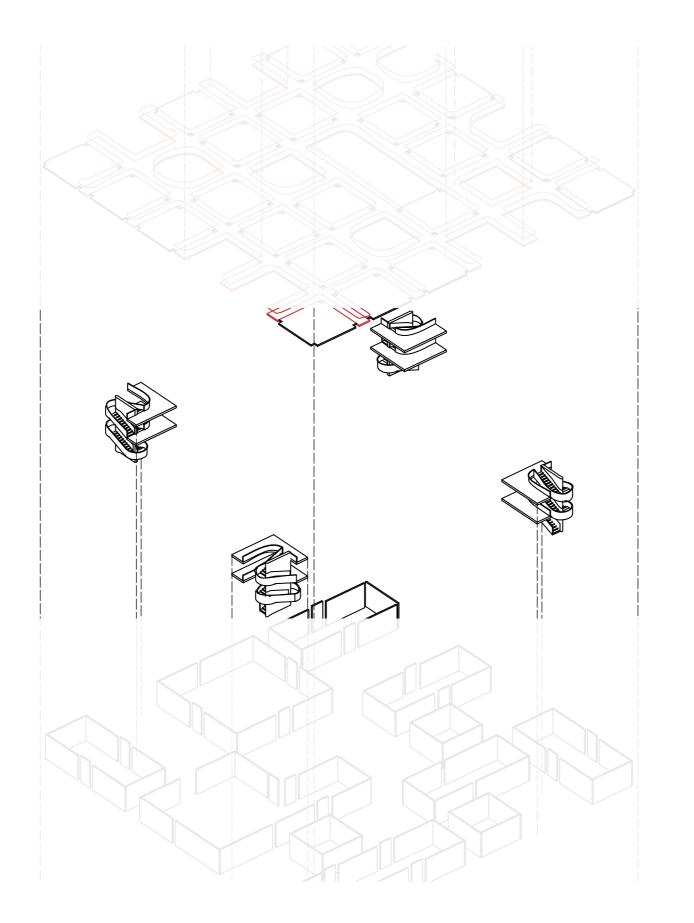
Vertical Access

GROUND FLOOR LAYOUT

Small pieces

SKELETON of

Housing Units & Public Services



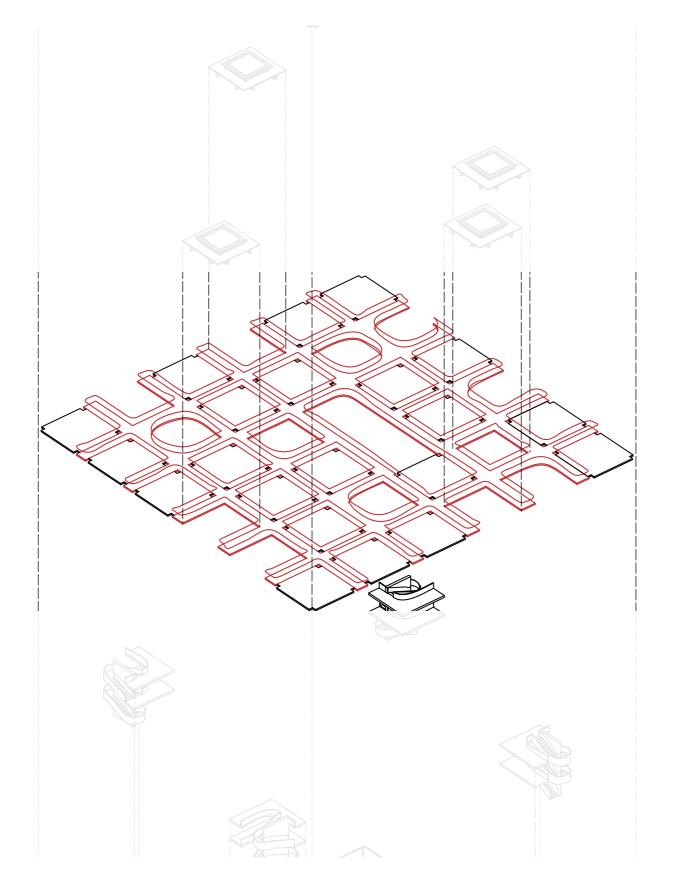
1F

Housing slab
&
Street for Connection

Vertical Access

GROUND FLOOR LAYOUT

Small pieces



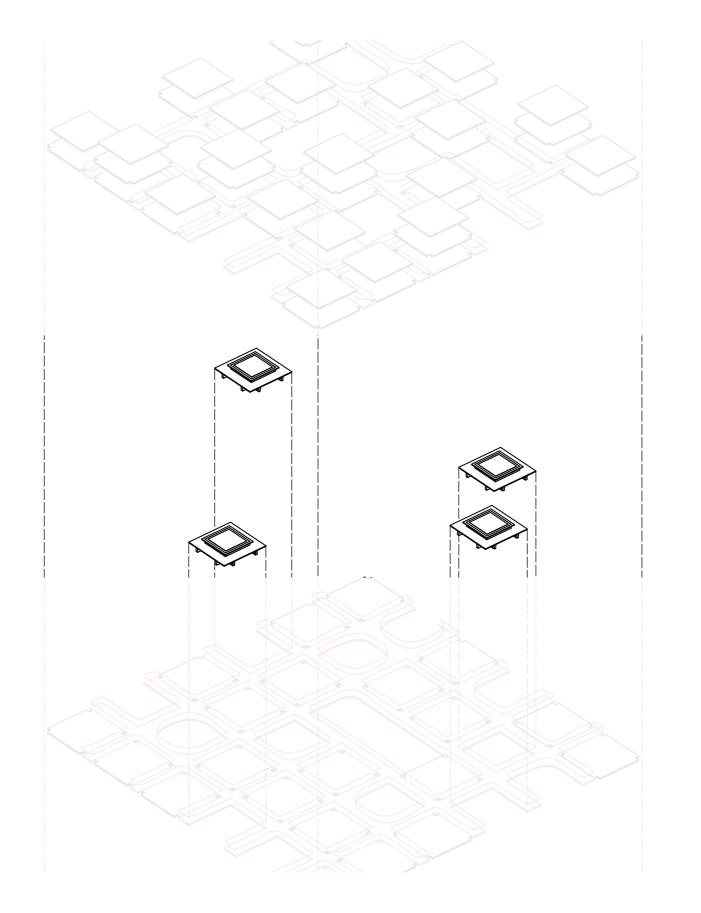
1F

Workshop skylight

1F

Housing slab & Street for Connection

Vertical Access



2F

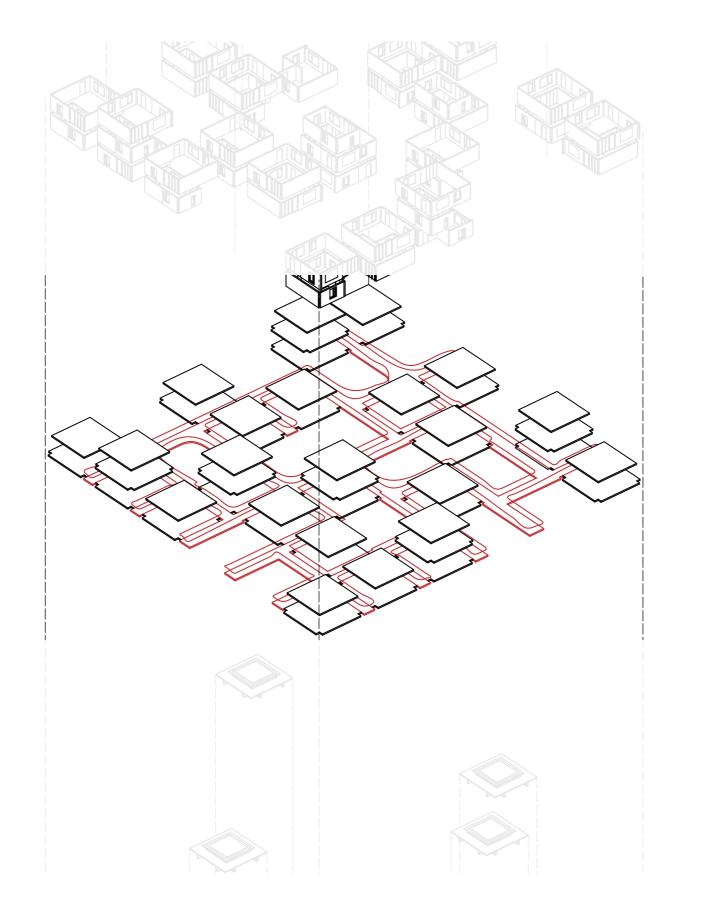
Housing slab & Street for Connection

1F

Workshop skylight

1F

Housing slab & Street for Connection



1F - 3F

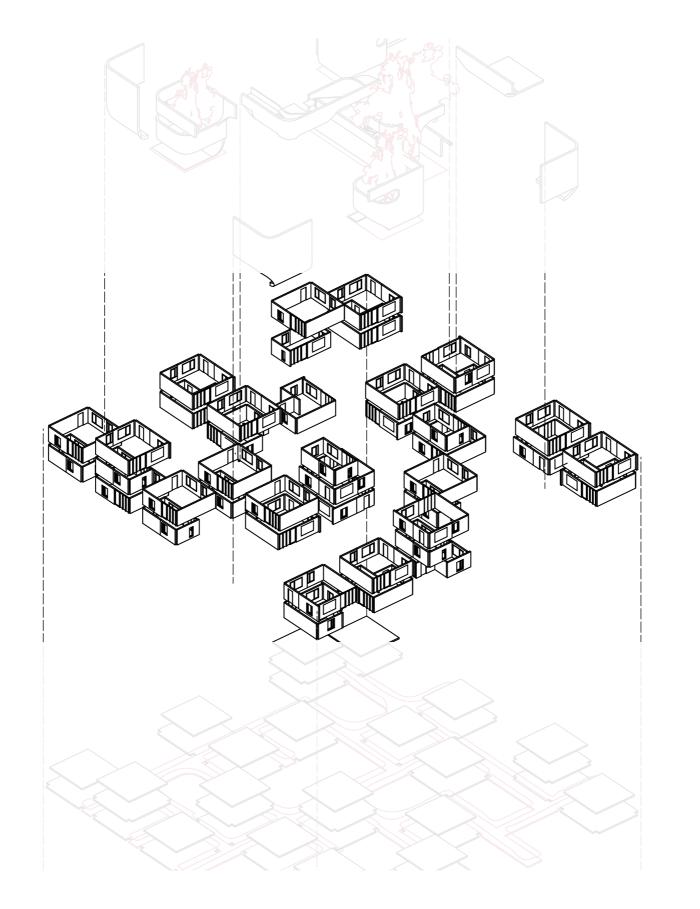
Spontaneious Housing Infillment

2F

Housing slab & Street for Connection

1 F

Workshop skylight



1F - 3F

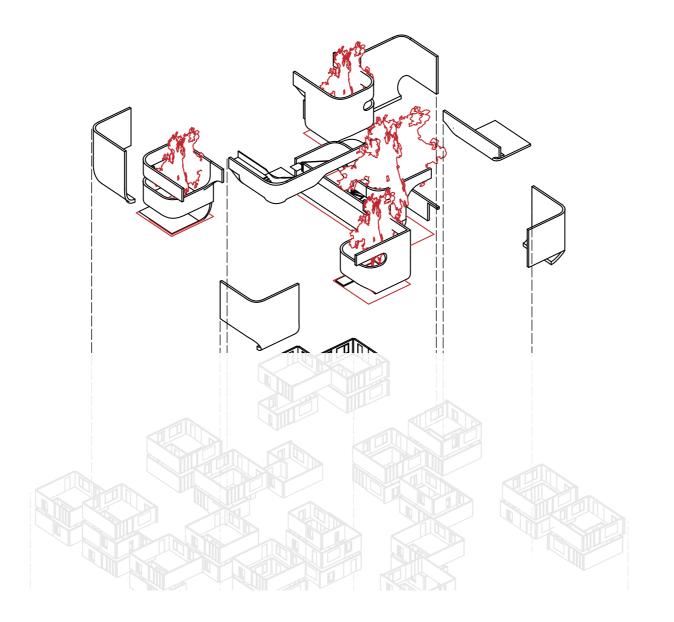
Spontaneious Housing Infillment

2F

Housing slab

2

Street for Connection



EXTERIOR SOCIAL SPACE EMBEDED

1F - 3F

Spontaneious Housing Infillment

