



**THE CITY OF LOS ARENALE**  
*LA CIUDAD DE LOS ARENALES*

**HER OWN HOME**  
*SU PROPIA CASA*

JULIA GARCÍA SANJUÁN  
GRADUATION PROJECT

-23.582945632242467, -70.37612772892643

*La puerta que abre este booklet, en el Campamento Los Arenales. The door that opens this booklet, in the campamento Los Arenales.*

2024 Julia García Sanjuán

This booklet is part of academic work for the Graduation Project Her Own Home at the Technical University Delft for the MSc Architecture, Urbanism and the Built Environment. Chair for Architecture Engineering

Main Tutor: Lidy Meijers  
Second Tutor: Gilbert Koskamp  
Research Tutor: Dafne Swank



**PARTE | PART I      LOCAL | RETRACING THE HOMES**

**MATERIAL LIBRARY**

Staircases  
Doors  
Construction Elements  
Structures

**THE HOUSE OF**

Elizabeth Andrade  
Ximena  
Marta Cortés  
Jeannette and Daniela  
Blanca Idalia Arcos  
Jimena Arcos

**PARTE | PART II      NATION | HOUSING IN CHILE**

Elemental | Incremental Housing  
TECHO | Emergency Housing  
TECHO | Definitive Housing  
Pequeños Condominios | Consolida tu vivienda  
Basic Building Block  
Vertical Ghettos

**PARTE | PART III      WORLD | BUILT PROJECTS ON A NEIGHBOURHOOD SCALE**

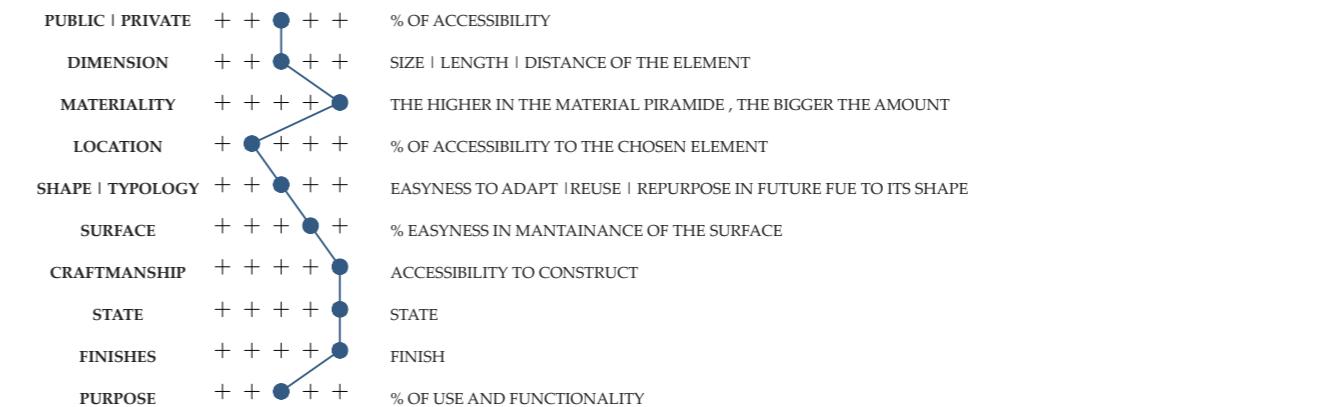
PREVI  
Barriadas de Integración  
Aranya Low Cost Housing  
Incremental Housing Belapur



**LOCAL**  
MATERIAL LIBRARY

# MATERIAL LIBRARY

PUBLIC   PRIVATE	PUBLIC	PRIVATE	X People + X Animals
DIMENSION	X m	X m <sup>2</sup>	X inhabitants / m <sup>2</sup>
MATERIALITY	CONCRETE	TIMBER	METAL
LOCATION	UNEVEN GROUND	EVEN GROUND	COMBINATION (T+M) SYNTHETIC
SHAPE   TYPOLOGY	RECTANGULAR	LINEAR, THIN	ODD SHAPE
SURFACE	ROUGH   UNTREATED COLOR	PATTERN (little elements)	SQUARED
CRAFTSMANSHIP	ANYONE	EASY TOOLS	FLAT
STATE	STABLE	USABLE	EXPERT MACHINERY
FINISHES	FINE	MEDIUM	HOLDING TOGETHER
PURPOSE	STRUCTURAL	AESTHETIC   CREATIVESTORAGE	ROUGH
			UNDER CONSTRUCTION
			HOUSING



## STAIRCASES

14



RED METAL  
Stair\_01



PUBLIC CONCRETE  
Stair\_02



CRUMBLING ALLEY  
Stair\_03



PRIVATE TIMBER  
Stair\_04



SHORT STONE  
Stair\_05



PALLET COLLAGE  
Stair\_06

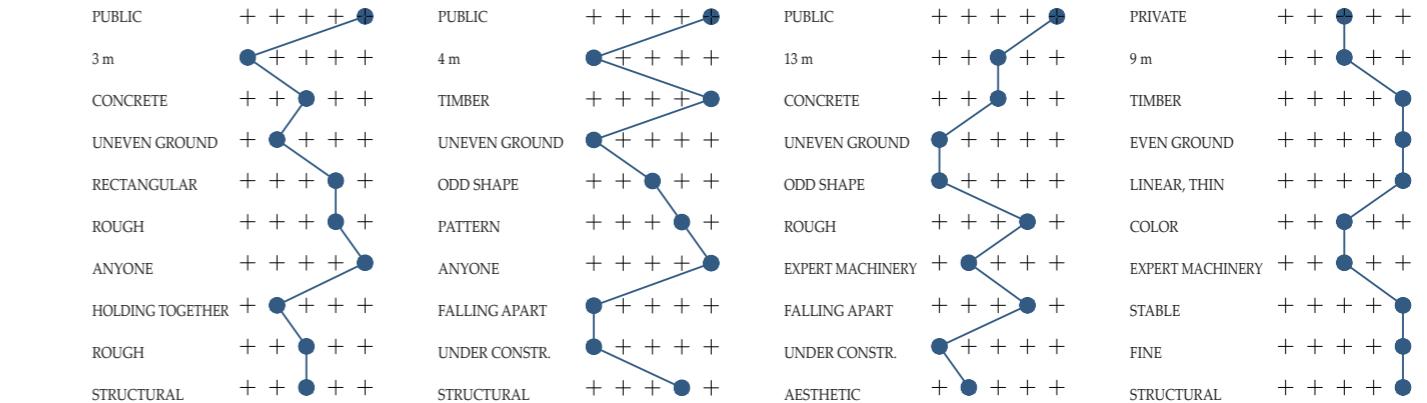
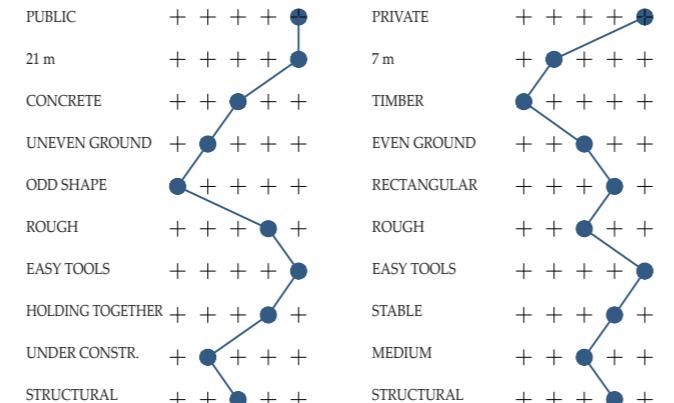
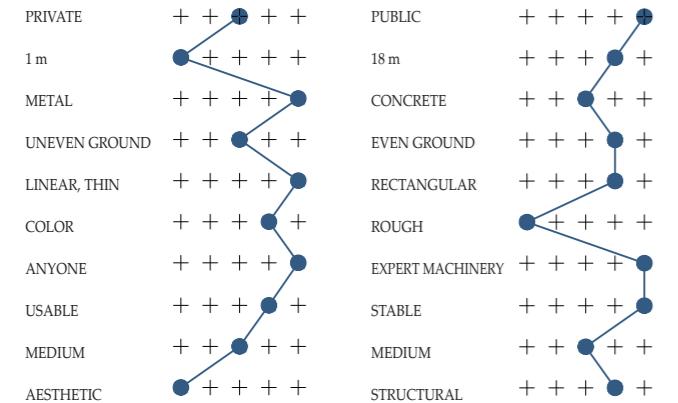


NO ENTRANCE  
Stair\_07



THE RESTAURANT  
Stair\_08

15

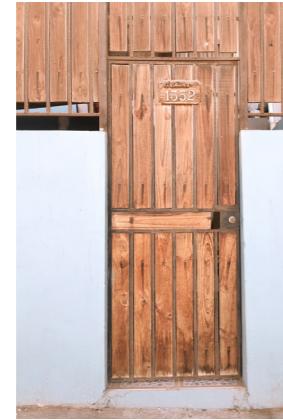


## DOORS

16



BLACK METAL  
Door\_01



WOOD IN FENCE  
Door\_02



YELLOW WOOD  
Door\_03



WHITE BOARD  
Door\_04



RED DOOR  
Door\_05



WOOD AND GLASS  
Door\_06

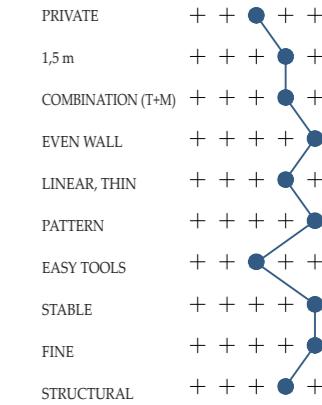
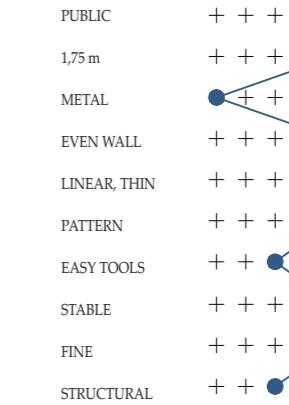
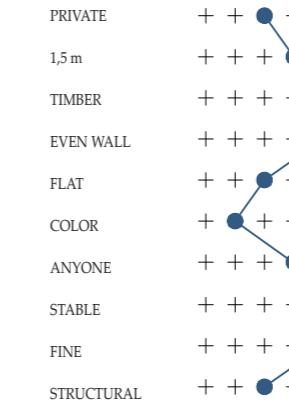
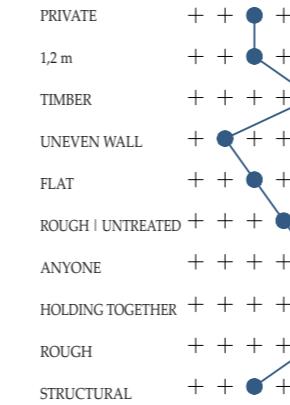
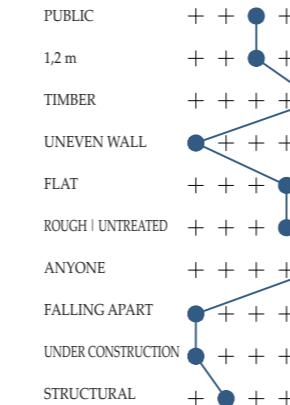
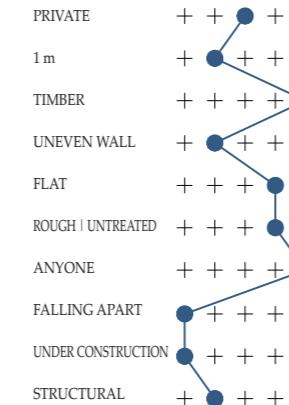
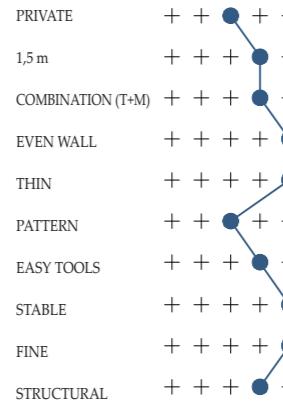
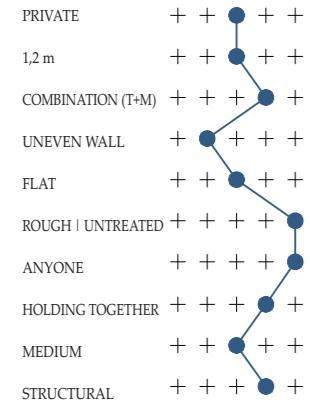


WHITE FENCE  
Door\_07

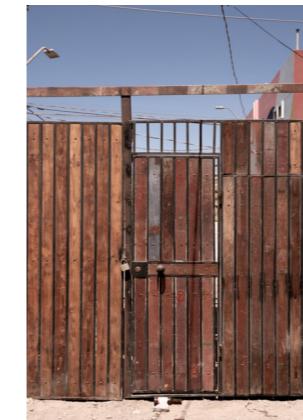


YELLOW FENCE  
Door\_08

17



## DOORS



FENCE WITH WOOD  
Door\_09



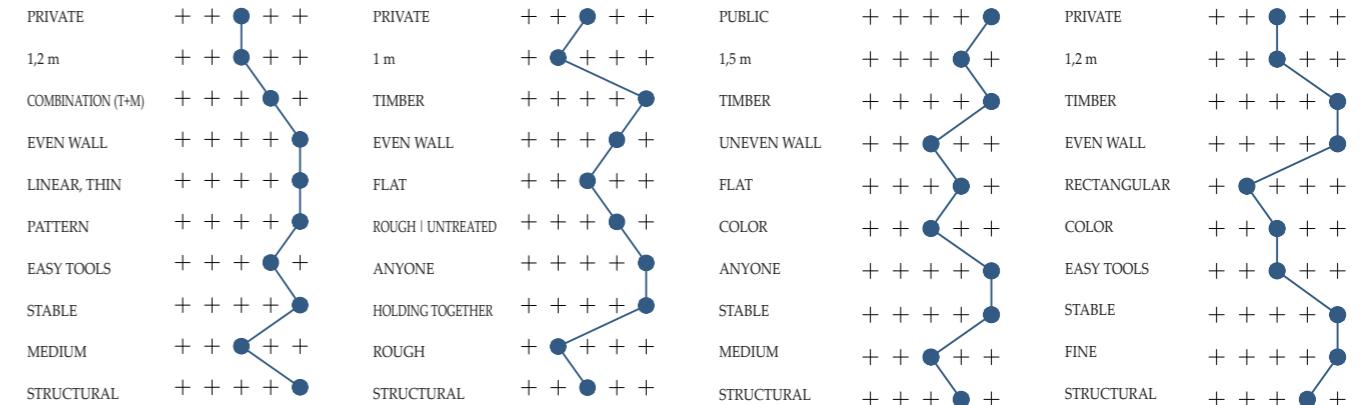
WOOD IN FRAME  
Door\_10



TAINTED TIMBER  
Door\_11



TRANSLUCID  
Door\_12



# CONSTRUCTION ELEMENTS

20



PINK PLANT POT  
Elements\_01



PLATFORM OVER THE HILL  
Elements\_02



MINIONS  
Elements\_03



WHITE PLANT POT  
Elements\_04

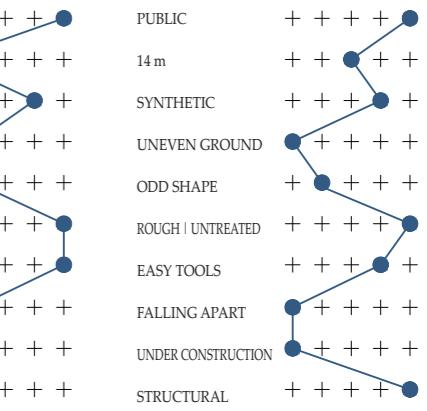
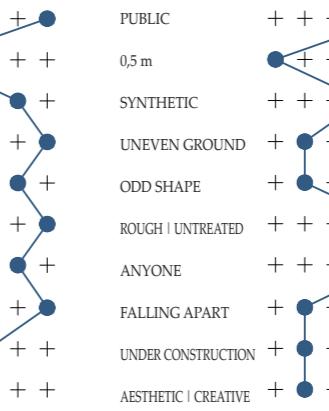
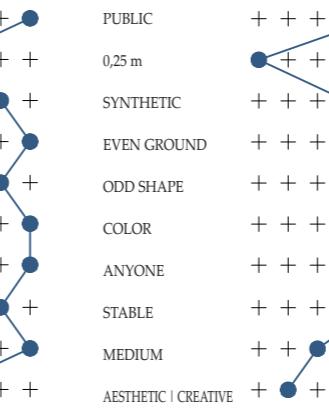
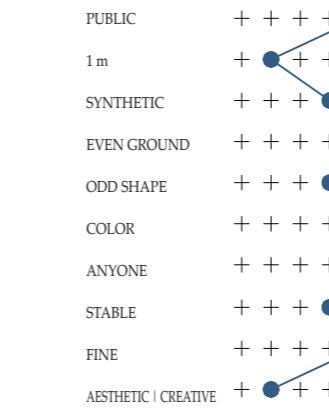
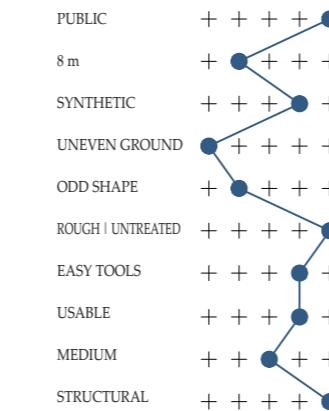
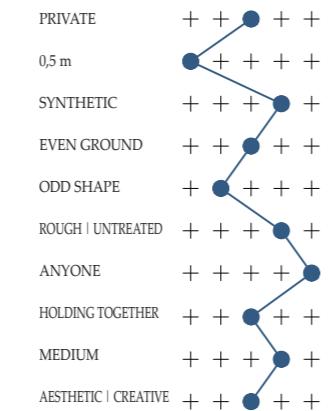


BLACK FENCE HOLDER  
Elements\_05



HOLDING THE MOUNTAIN  
Elements\_06

21

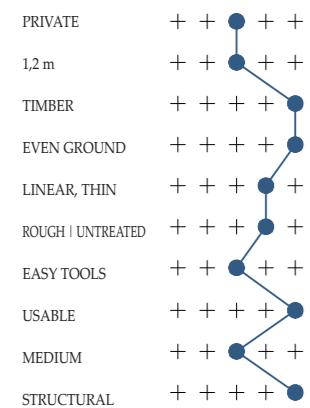


## CONSTRUCTION ELEMENTS

22



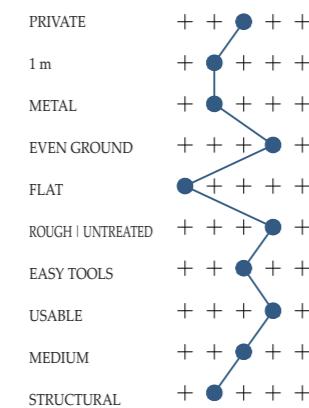
## PALLET FENCE



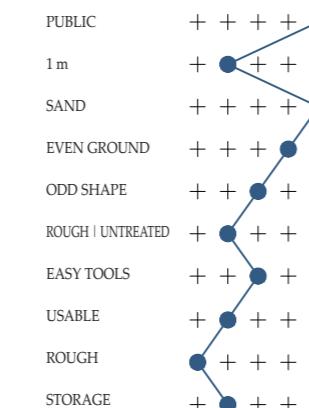
A pink building with a blue door and a small sign reading "Nº 205".

## BOARD FENCE

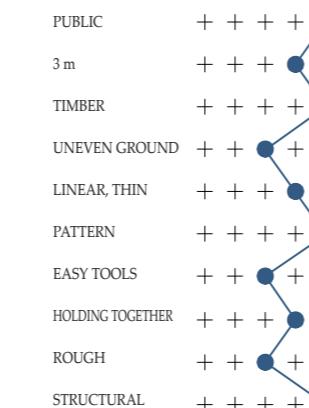
### Elements\_08



## SACKS OF SAM



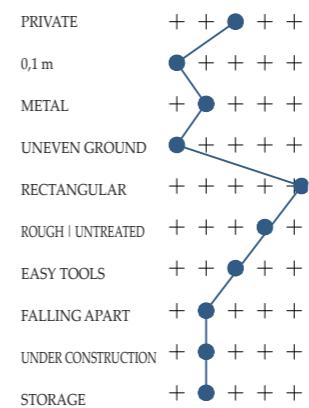
## ADDITIVE WA Elements\_10



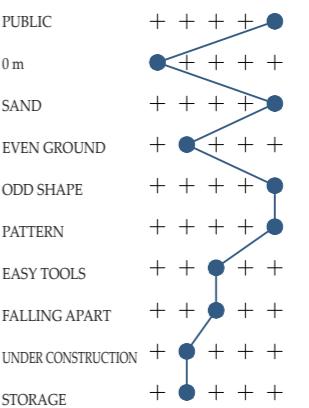
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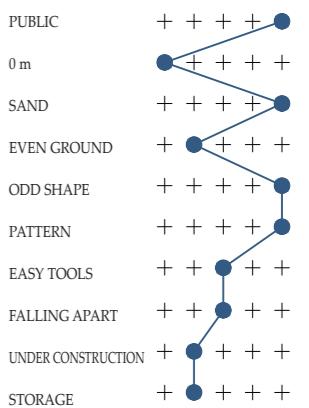
## COLLECTION



## SHREDDED BLUE TILES

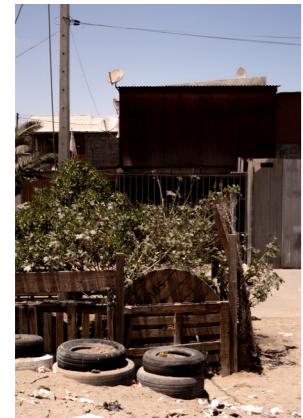


## SHREDDED RED TILES



23

## STRUCTURES



24

SMALL CANTILEVER  
Structure\_01



PALTFORM  
Structure\_02



BASIC  
Structure\_03



PILAR STRUCTURE  
Structure\_04



4 FIELD FACADE  
Structure\_05



ADDITIVE METAL CLADDING  
Structure\_06

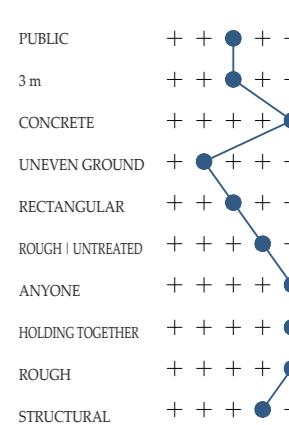
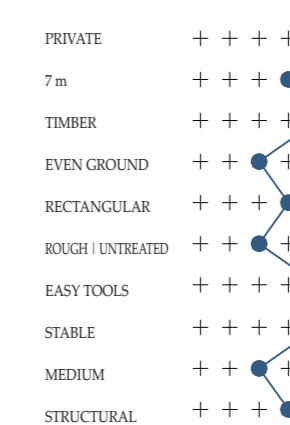
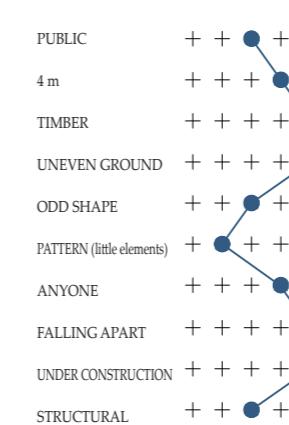
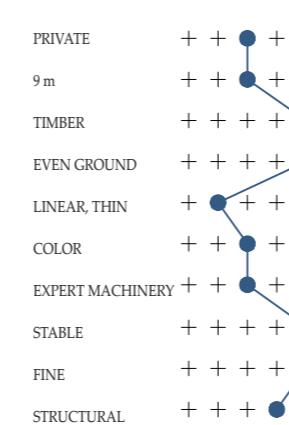
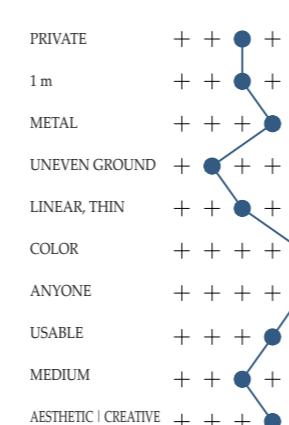
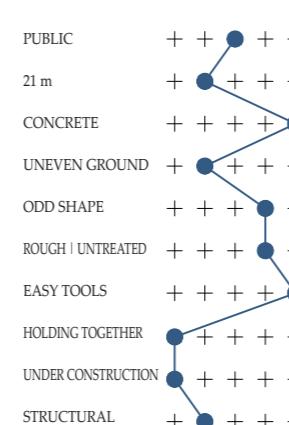
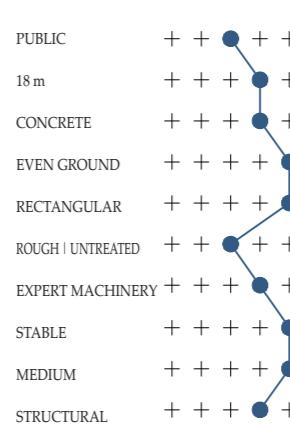
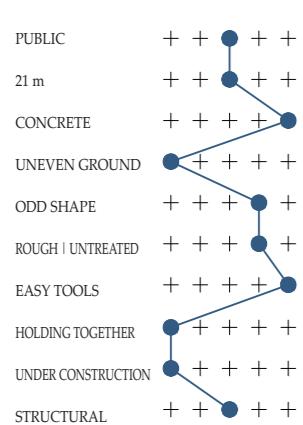


WELDED METAL  
Structure\_07



GRID FENCE  
Structure\_08

25



# STRUCTURES

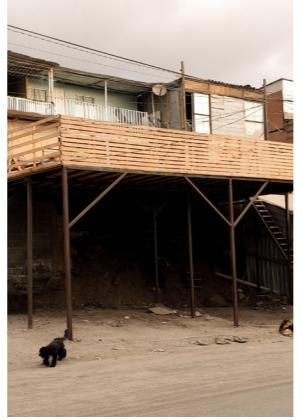
26



METAL STRUCTURE CANTILEVER  
Structure\_09



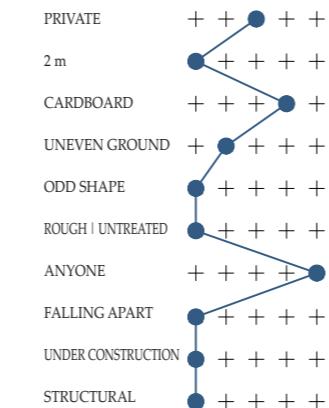
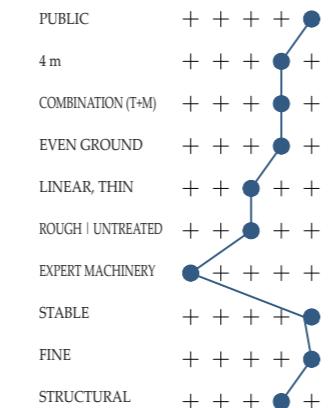
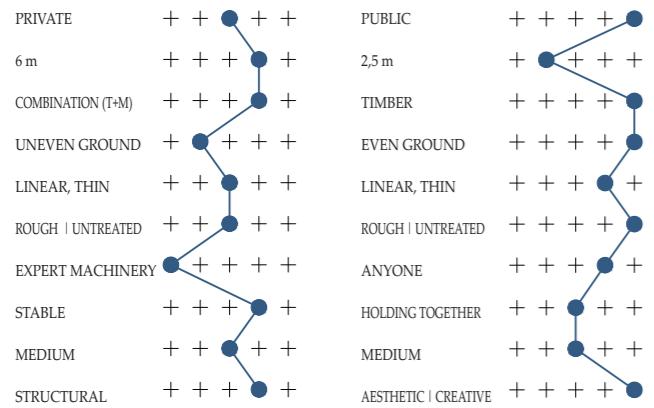
SMALL SHADING  
Structure\_10



TERRACE  
Structure\_11



CARDBOARD TENT  
Structure\_12

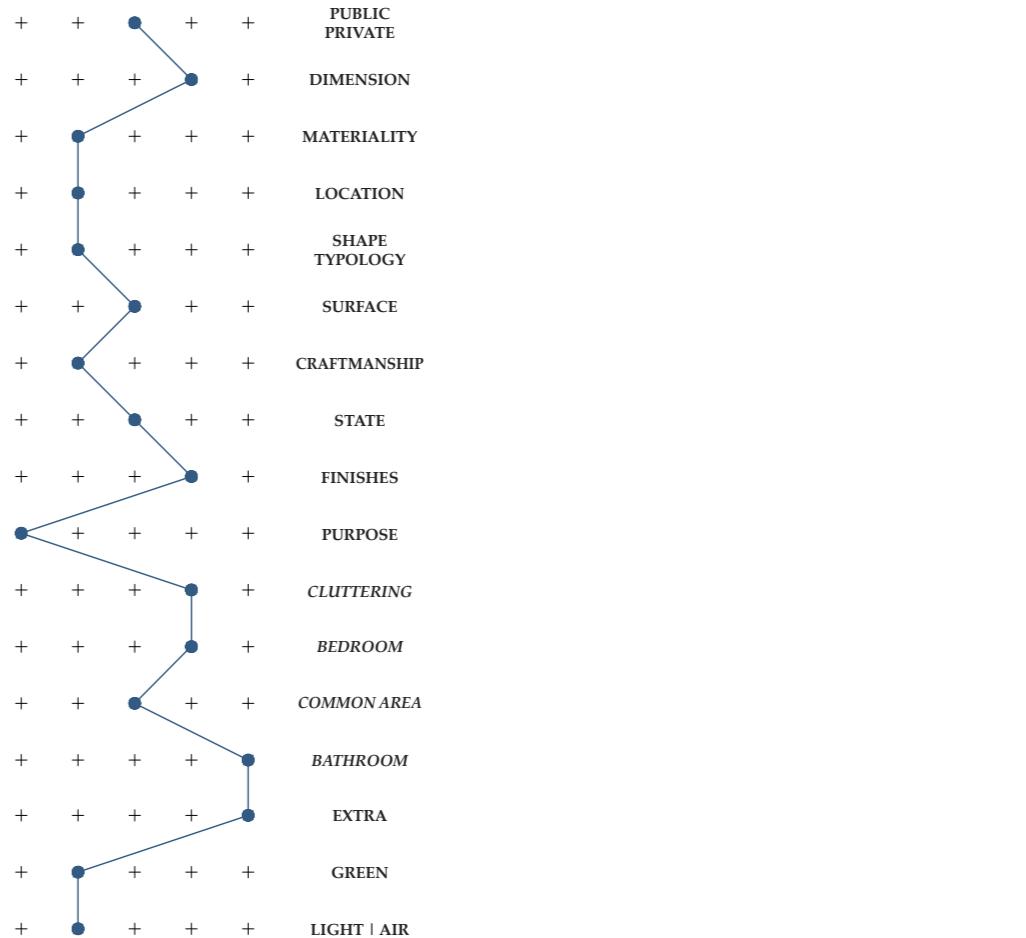




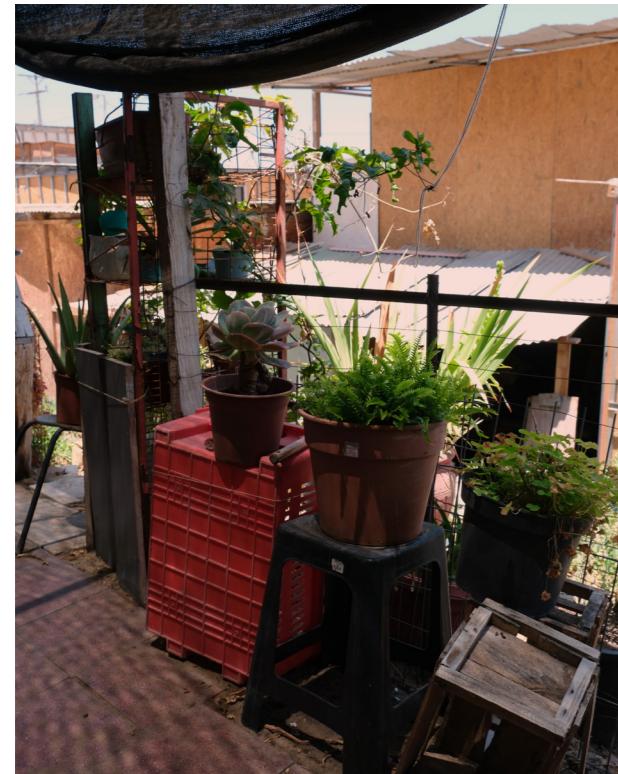
**LOCAL**  
RETRACING THE HOMES  
LEARNING FROM THESE WOMEN

# RETRACING THE HOMES

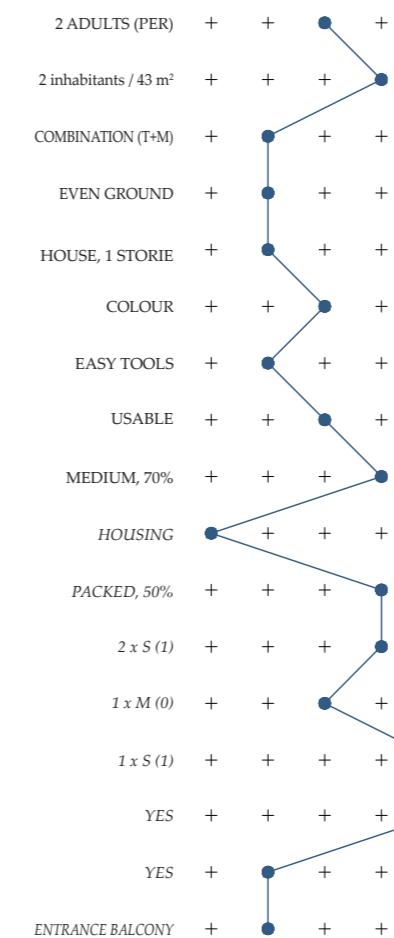
PUBLIC PRIVATE	PUBLIC	PRIVATE	X People + X Animals							
DIMENSION	X inhabitants / m <sup>2</sup>									
MATERIALITY	CONCRETE	TIMBER	METAL	COMBINATION (T+M)	SYNTHETIC	SAND				
LOCATION	UNEVEN GROUND	EVEN GROUND								
SHAPE TYPOLOGY	RECTANGULAR	LINEAR, THIN	ODD SHAPE	SQUARED	FLAT					
SURFACE	ROUGH   UNTREATED	COLOR	PATTERN (little elements)							
CRAFTMANSHIP	ANYONE	EASY TOOLS	EXPERT MACHINERY							
STATE	STABLE	USABLE	HOLDING TOGETHER	FALLING APART						
FINISHES	FINE	MEDIUM	ROUGH	UNDER CONSTRUCTION						
PURPOSE	STRUCTURAL	AESTHETIC   CREATIVE	STORAGE	HOUSING						
CLUTTERING	DUSTY	ORGANIZED	PACKED	HOARDING						
BEDROOM	X x D (W)	Amount of Rooms x S/M/L Dimension (Number of rooms without Windows)								
COMMON AREA	X x D (W)									
BATHROOM	X x D (W)									
EXTRA	X x D (W)									
GREEN	NO	YES								
LIGHT   AIR	FRONT PATIO	COURTYARD	BALCONY							



## ELIZABETH ANDRADE

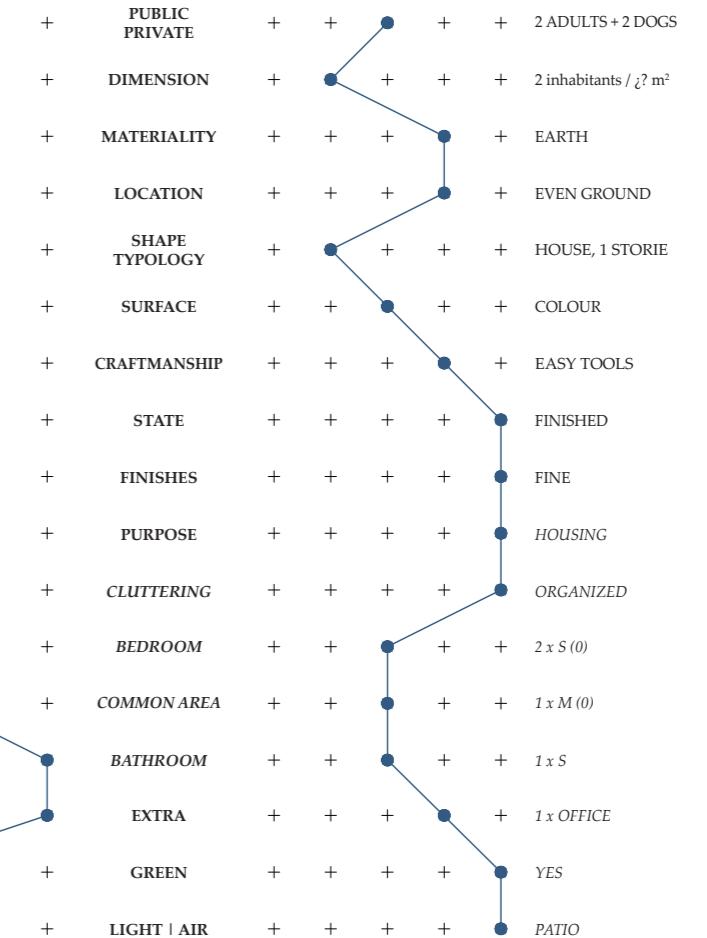


### HER CURRENT SITUATION



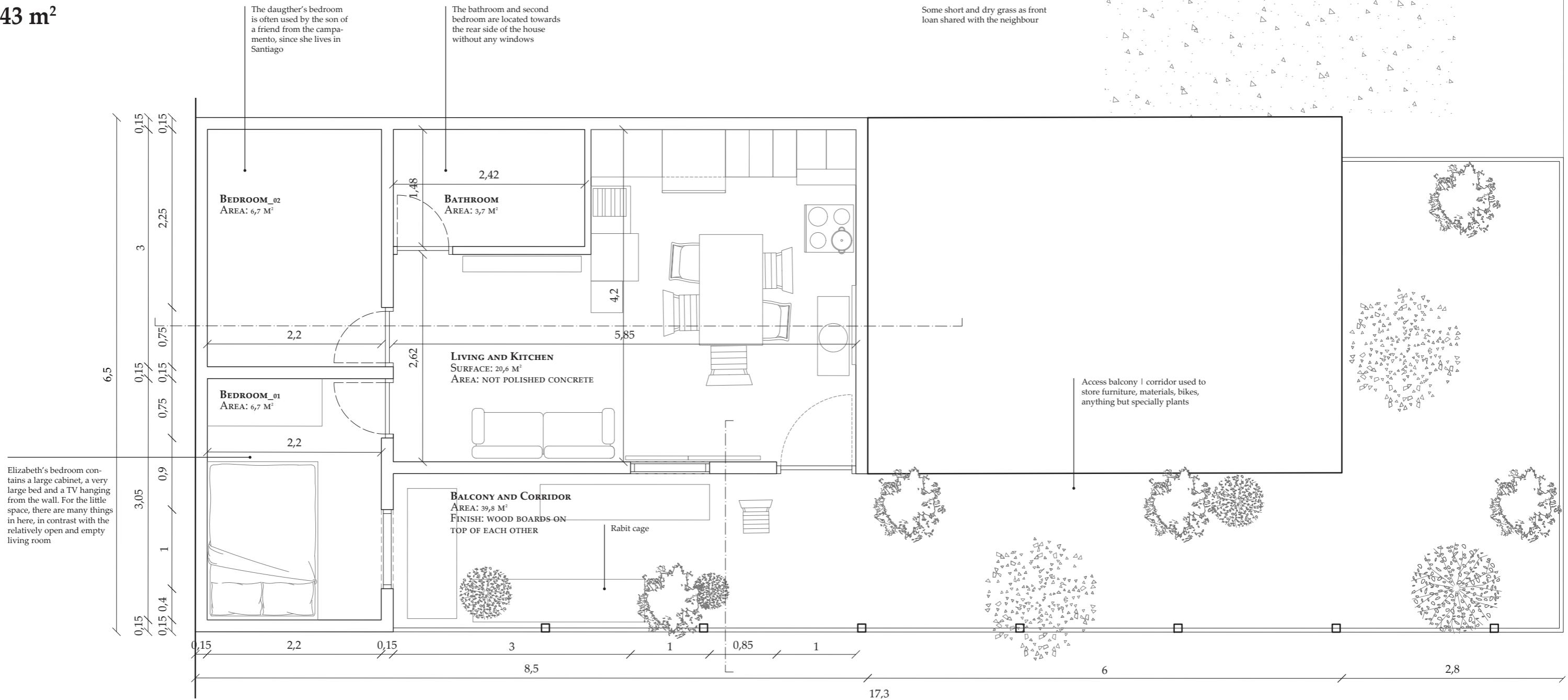
51/85

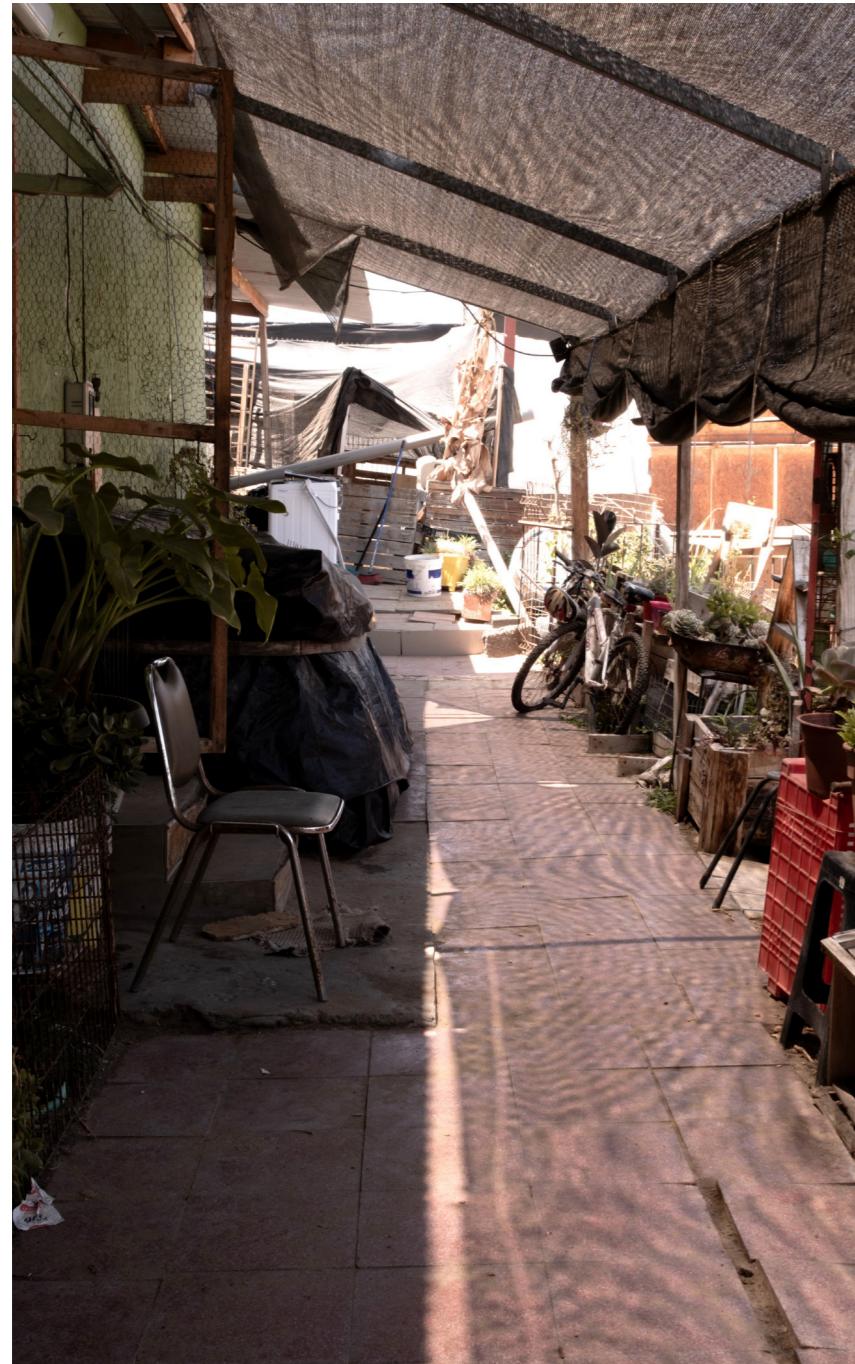
### HER FUTURE HOME



64/85

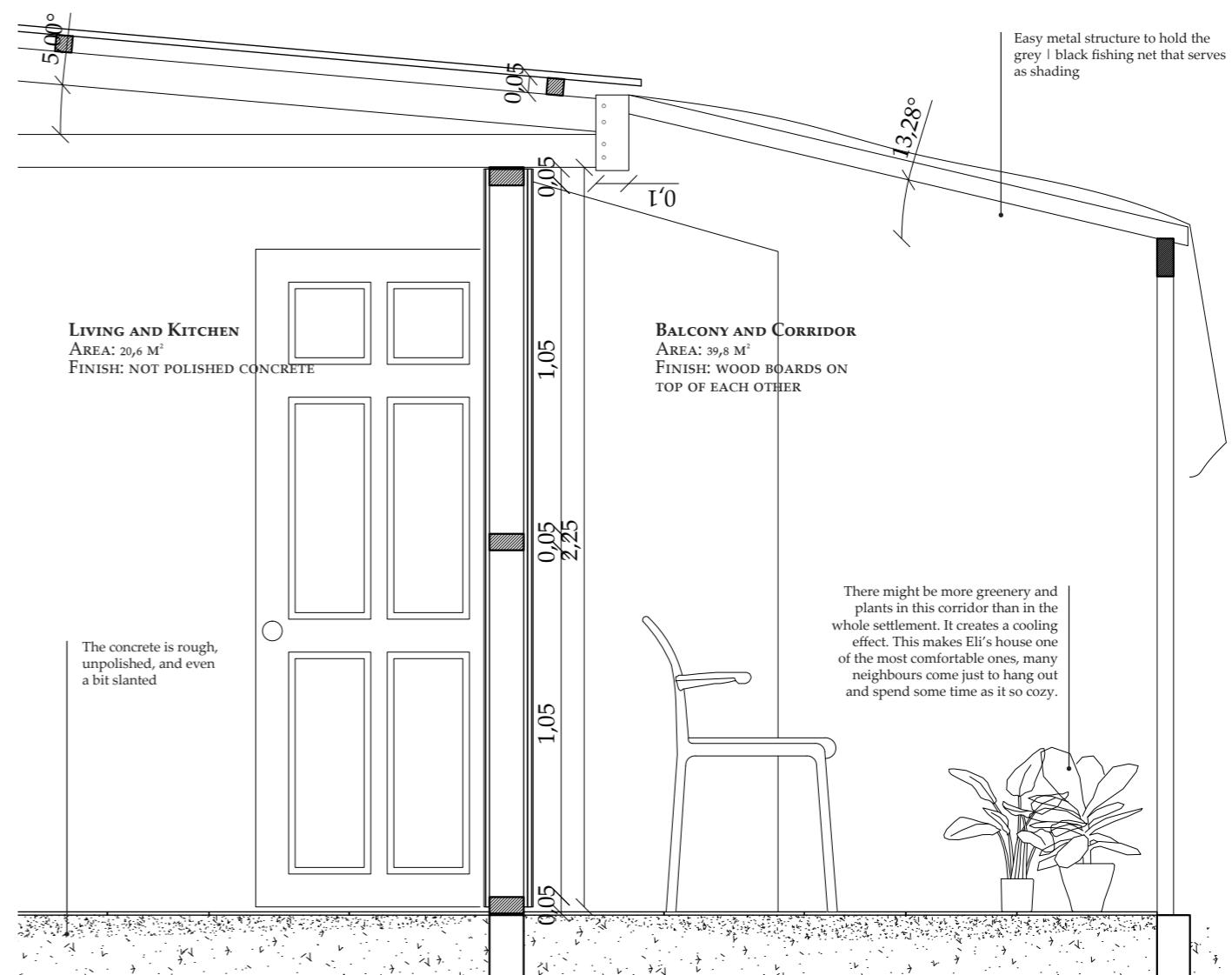
43 m<sup>2</sup>

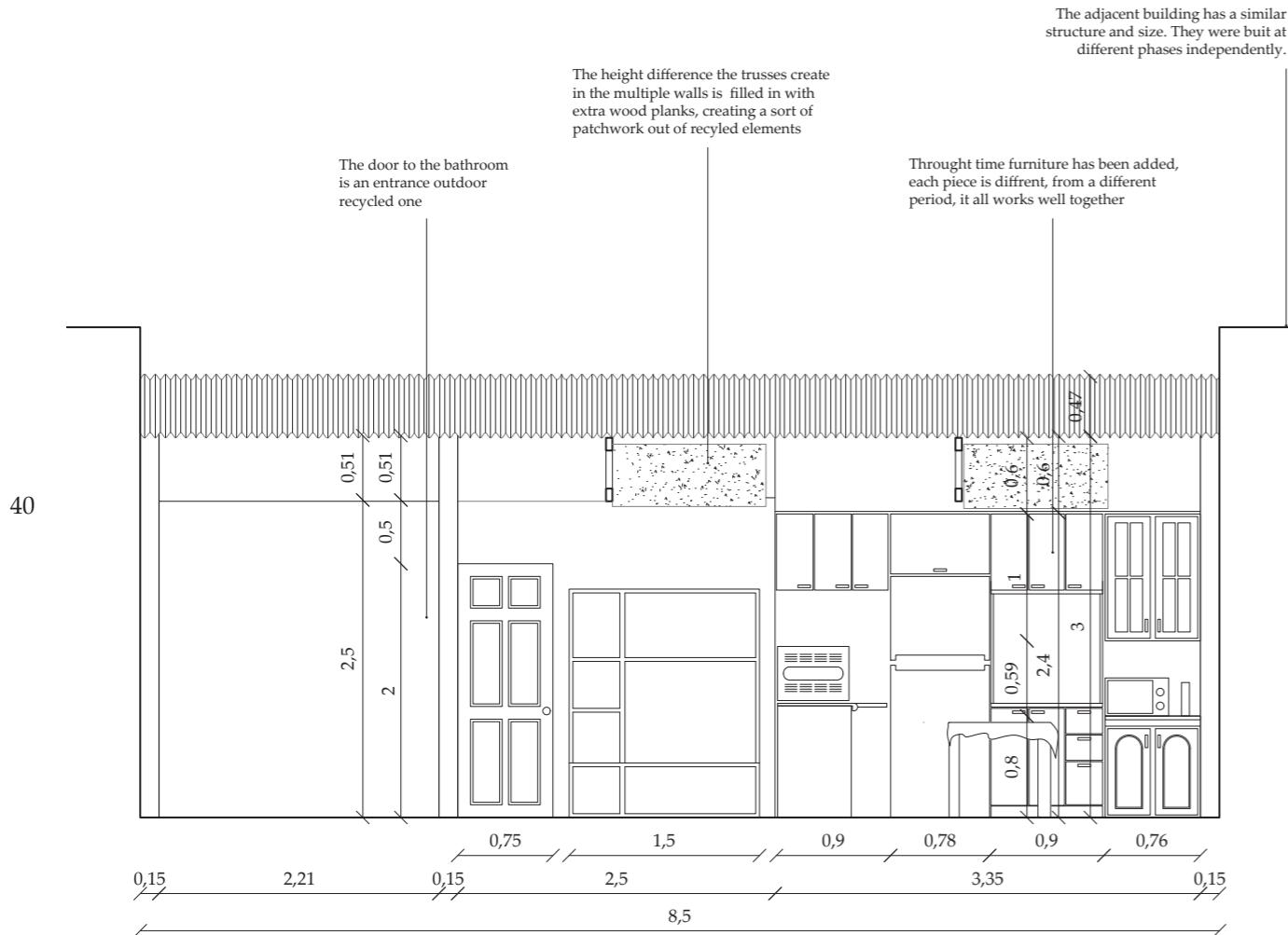




-23.58121161015053, -70.37343735235493

Casa de Elizabeth Andrade: pasillo y/o balcón que da acceso a su casa y la de sus vecinos desde el que se vislumbra el océano. Elizabeth Andrade's house: access balcony/corridor that guides towards hers and her neighbours house and from which the ocean can be viewed in the background.

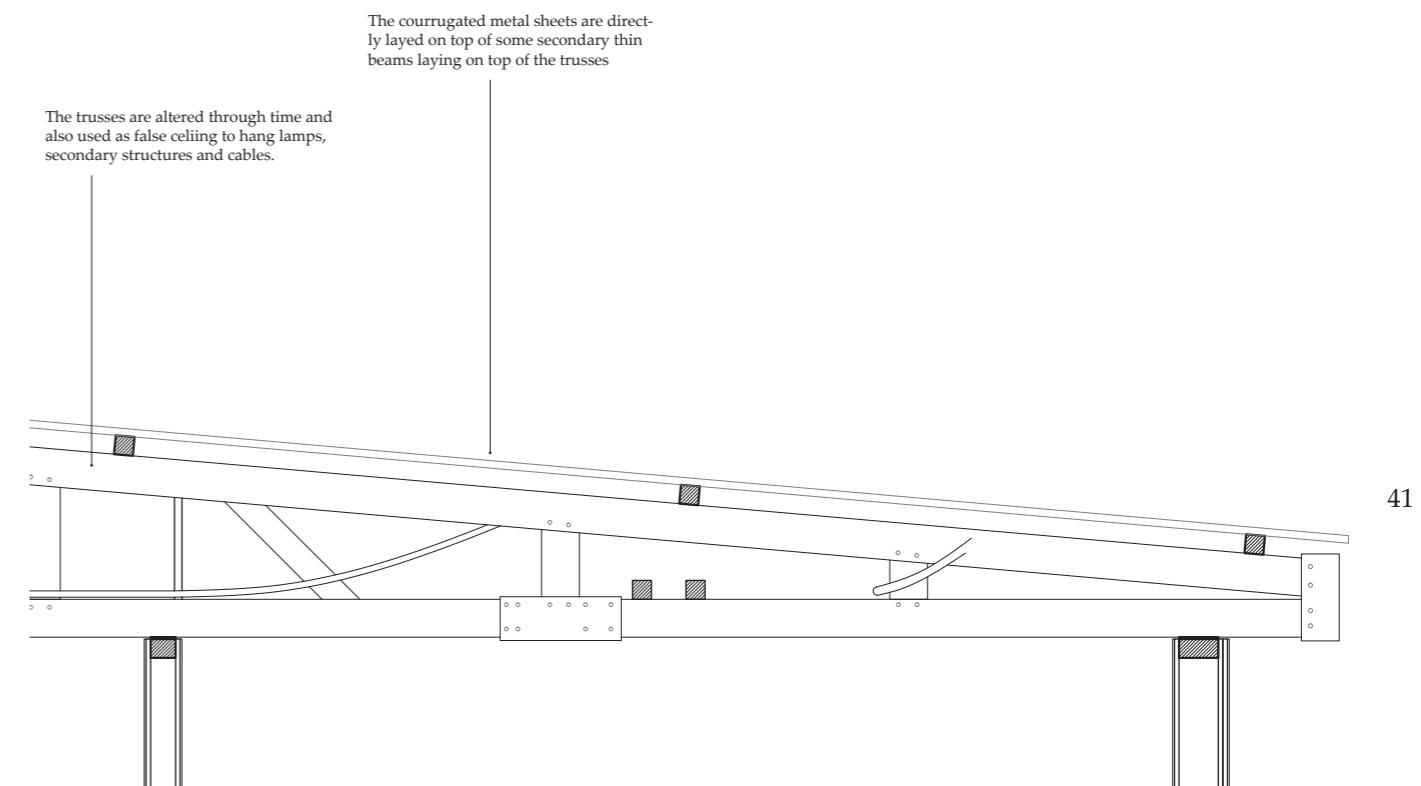




**BEDROOM\_02**  
AREA: 6,7 M<sup>2</sup>

**BATHROOM**  
AREA: 3,7 M<sup>2</sup>

**LIVING AND KITCHEN**  
AREA: 20,6 M<sup>2</sup>  
FINISH: NOT POLISHED CONCRETE



42



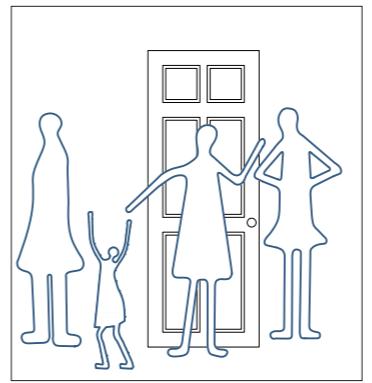
43



*Hablamos y dibujamos la futura casa de E.A. A diferencia de otras muchas declaraciones, ella no sueña con una casa de hormigón, sino de madera y barro. Quiere vivir en una casa ecológicamente sostenible. Otro punto esencial para ella es que la casa tenga mucha luz, y sobre todo buena ventilación. Ideal, es que el segundo piso tuviese vistas al mar. Para finalizar, como entiende su posición de responsabilidad como dirigenta en el campamento, sabe que la gente va a seguir llamando a su puerta. Por ello, quiere una oficina, cerca de la calle, donde directamente pueda hablar con sus vecinas, de una forma sencilla. Como dirigenta es su obligación y honor el ayudar a su comunidad. Lamentablemente no es reconocido como un trabajo remunerado. Ellas se encuentran con sus comunidades, con las autoridades, con otros campamentos, van de reunión en reunión. No trabajan, no tienen tiempo para ello. ¿De que viven entonces? E.A. como Premio Nacional de Derechos Humanos tienen una retribución. ¿Y el resto?*

We talk and sketch E.A.'s future house. Unlike many others, she doesn't dream of a concrete house but one made of wood and mud. She wants to live in an ecologically sustainable house. Another essential point for her is that the house has plenty of light and, above all, good ventilation. Ideally, the second floor would have views of the sea. Finally, understanding her responsibility as a leader in the camp, she knows that people will continue knocking on her door. Therefore, she wants an office, close to the street, where she can directly talk to her neighbors in a simple way. As a leader, it is her obligation and honor to help her community. Unfortunately, it is not recognized as a paid job. They interact with their communities, authorities, other camps, going from meeting to meeting. They don't work; they don't have time for it. How do they then make a living? E.A., as a National Human Rights Prize recipient, receives compensation. And the rest?

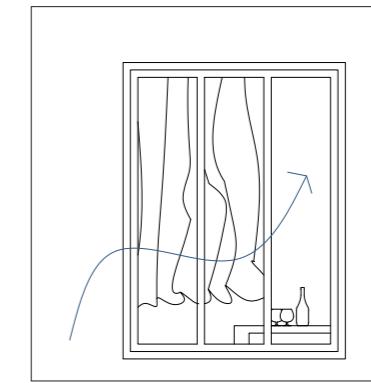
## SOFTWARE



## COMMUNITY

Her doors are always open. No matter who knocks, she welcomes them. Most of the time, her daughter's bedroom is empty, friends and others just sleep over, as her house is relatively well compared to other more unstable structures.

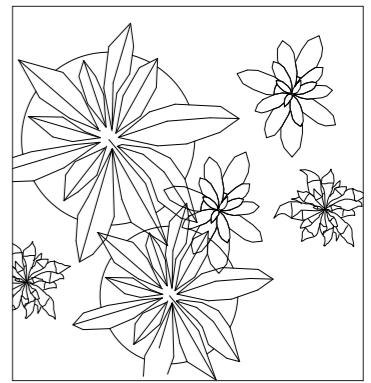
## HARDWARE



## INCREMENTALITY

Rare in informality due to overcrowding, Eli benefits from many windows located towards the ocean, from where she gets a constant fresh breeze of air.

## HARDWARE



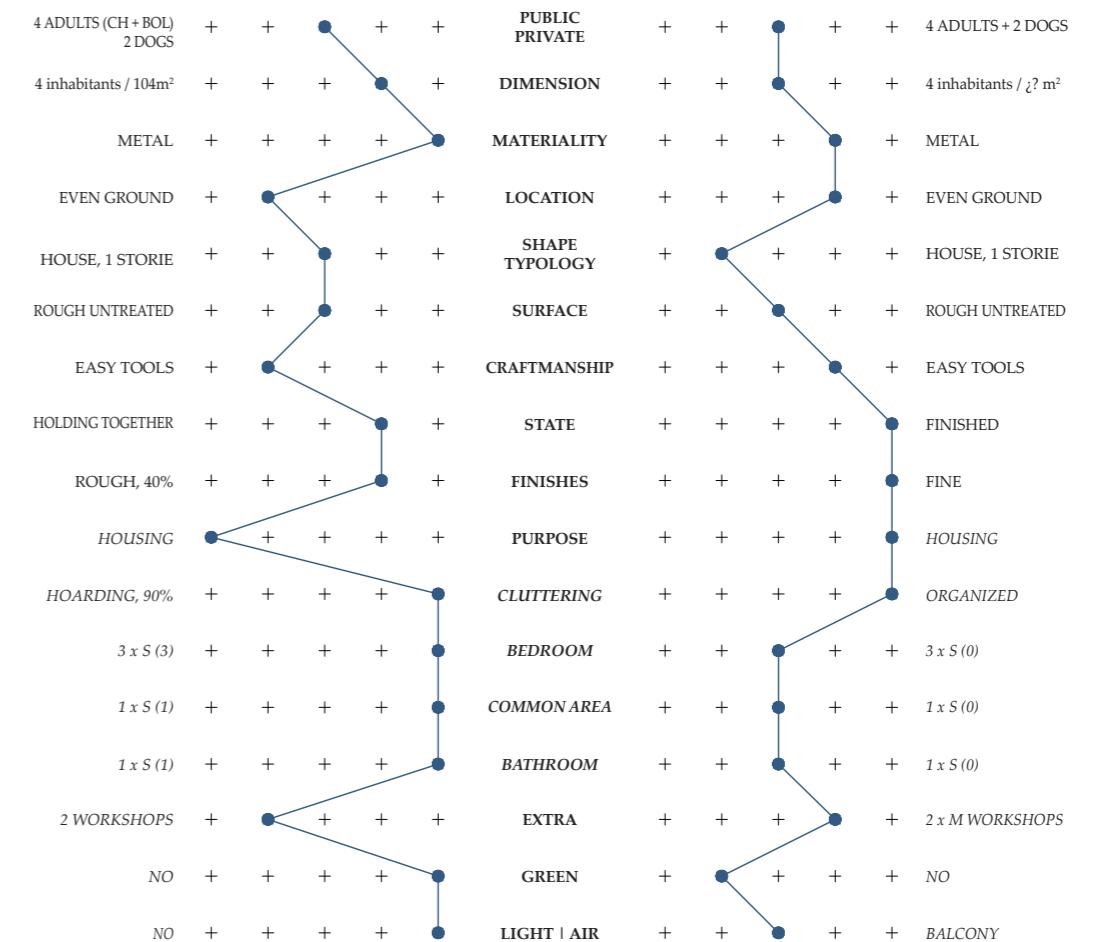
## GREENERY

Los Arenales landscape is arid, still, she has managed to create a small oasis in the access balcony, shaded by some dark textile and overfilled with plants. It transports you somewhere else and cools down the surroundings.

## XIMENA

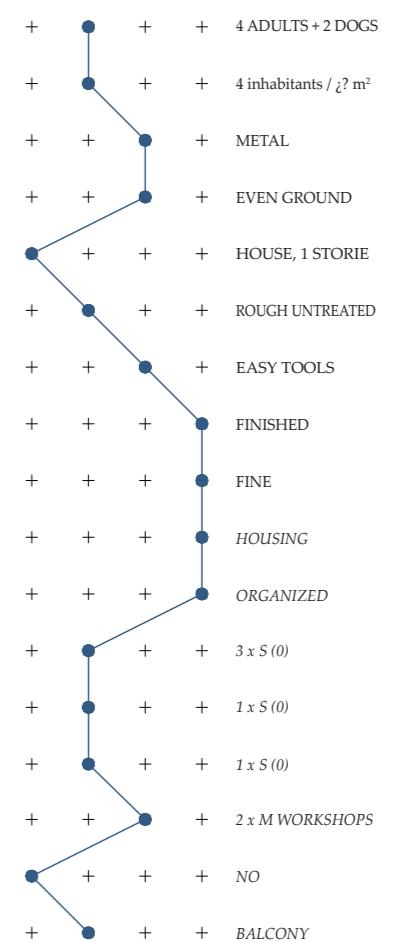


### HER CURRENT SITUATION



39/85

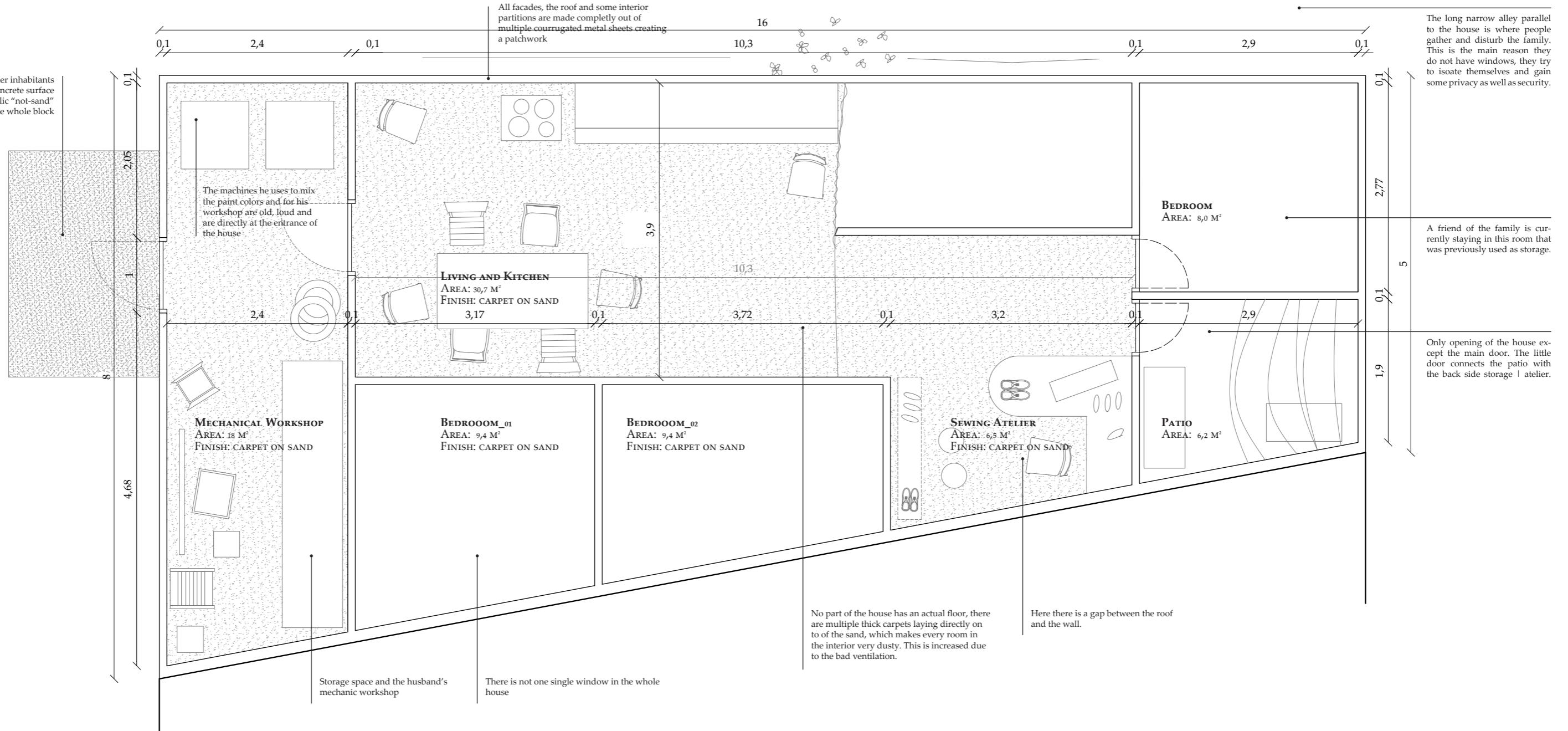
### HER FUTURE HOME



61/85

104 m<sup>2</sup>

48

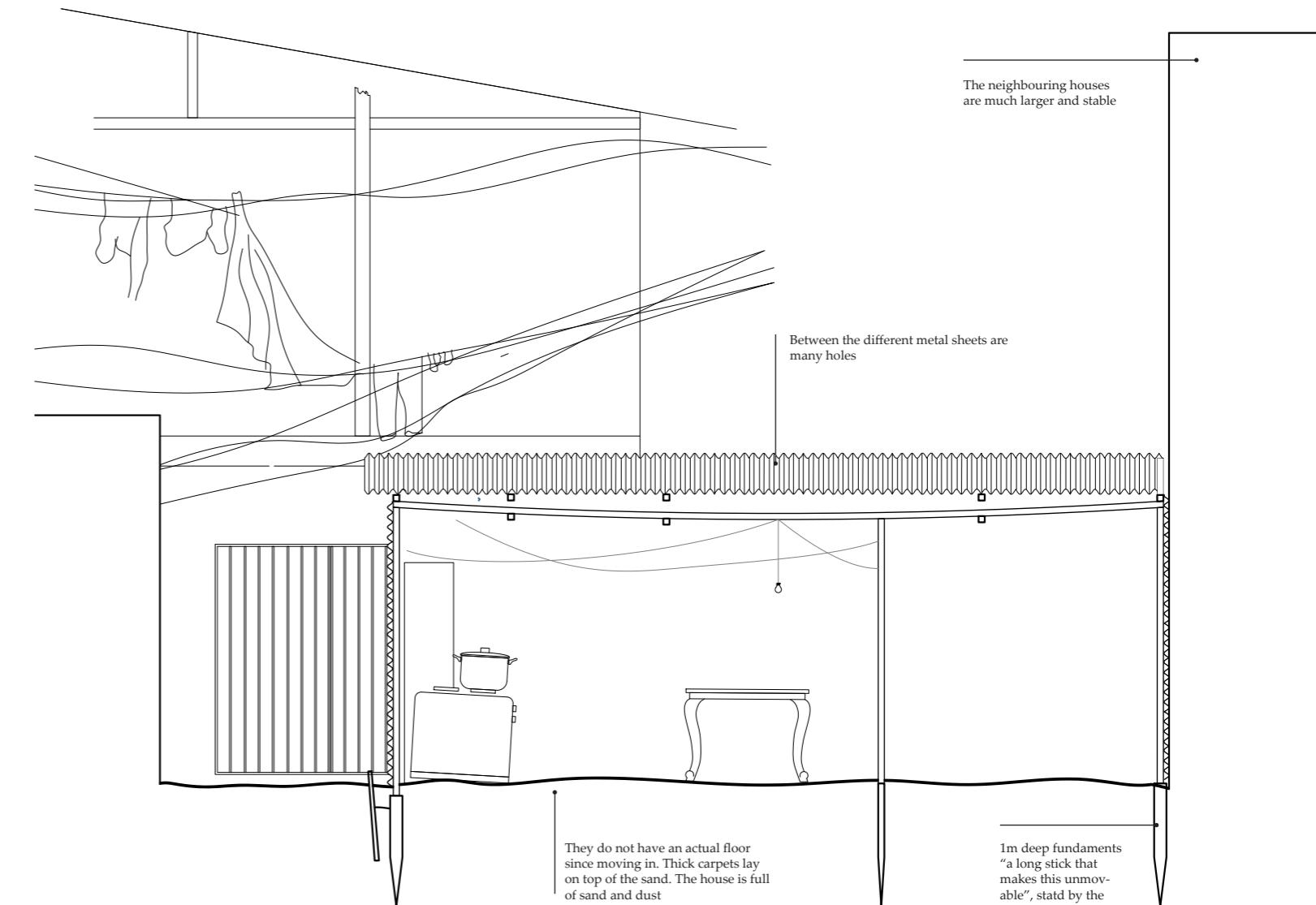


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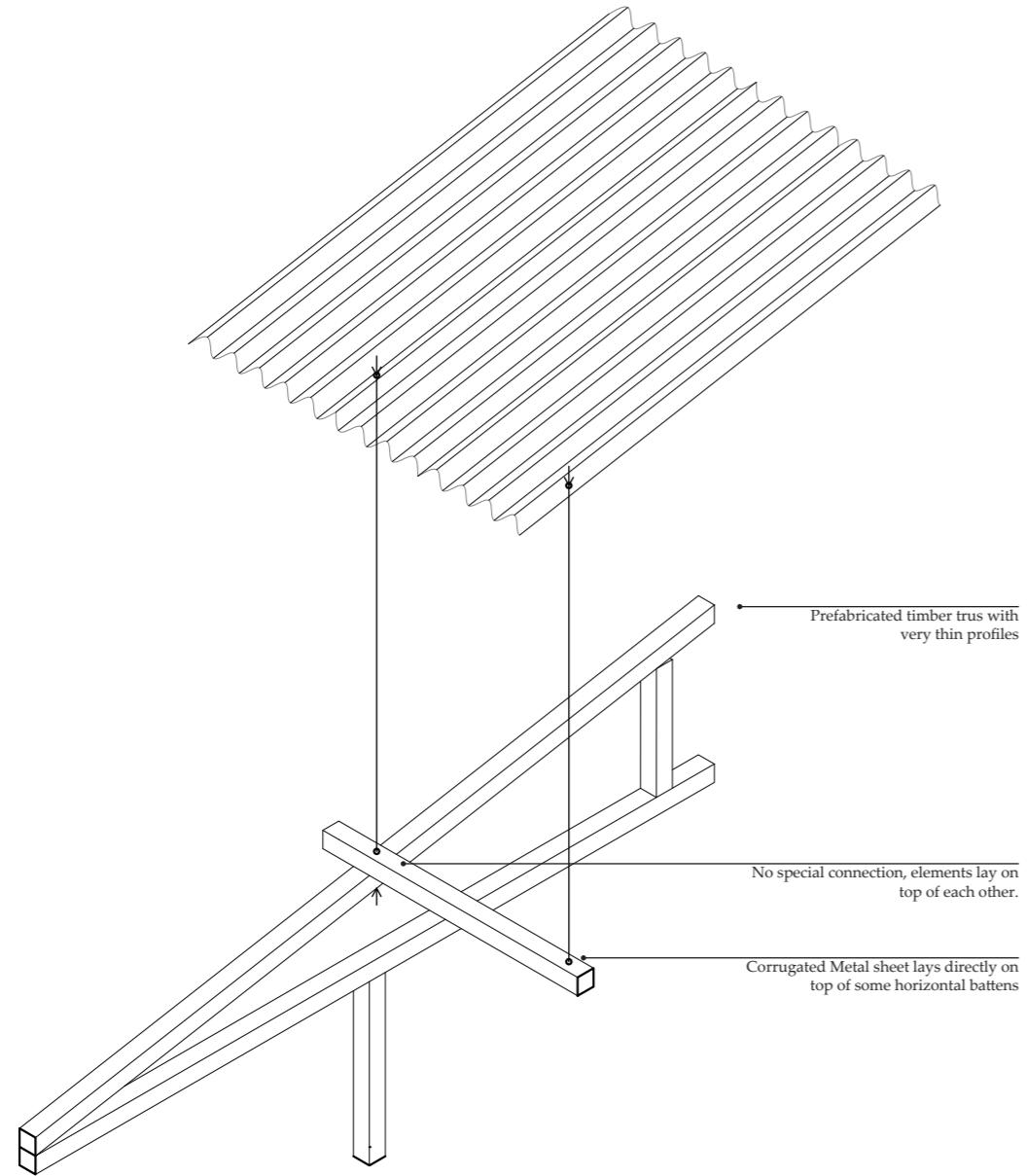


*"ESTO NO ES UNA BASURA. DEJE SU BASURA DON-  
DE CORRESPONDE. NO SEA SUCIO"*

*"THIS IS NOT A GARBAGE BIN. BRING THE GAR-  
BAGE WHERE IT BELONGS. DO NOT BE NASTY"*



52



53

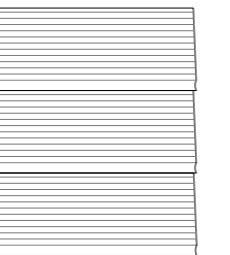
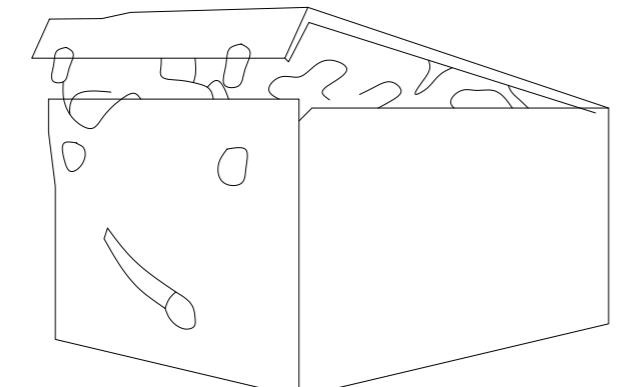
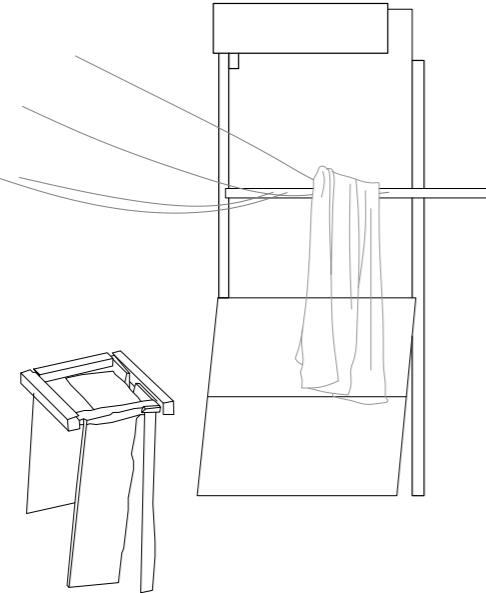
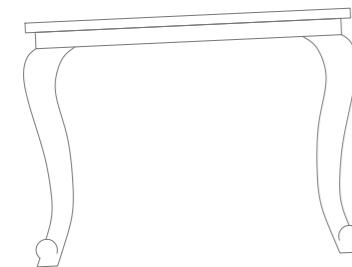
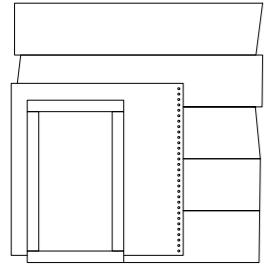


-23.58121161015053, -70.37343735235493

*Casa de Elizabeth Andrade: pasillo y/o balcón que da acceso a su casa y la de sus vecinos desde el que se vislumbra el océano. Elizabeth Andrade's house: access balcony/corridor that guides towards hers and her neighbours house and from which the ocean can be viewed in the background.*

Almost everything in this house is tilted, or slanted or crooked.

54

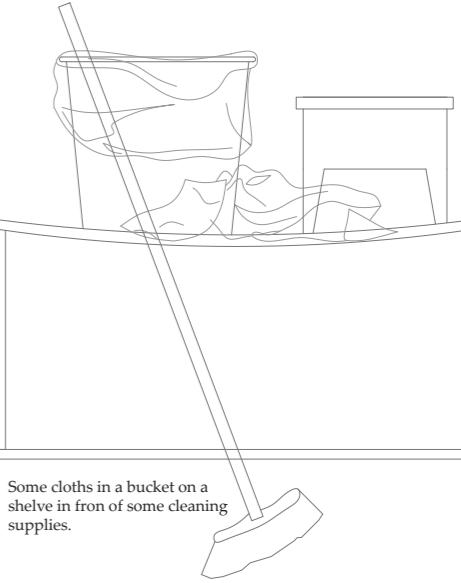
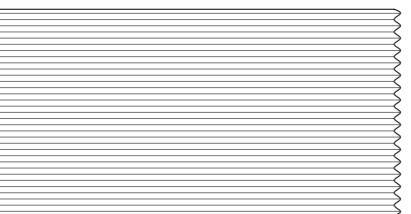


Many types of corrugated metal sheets create the outer skin of the house.

ESTO NO ES basURA  
DEJE Su basURA DONDE CORRESPONDE  
No SEa SUCIO

They themselves graffitied over their own wall.

iple reused cabinets, where some  
s are missing and some shelves are  
ked, hold the uncountable amlnt of  
gs they collect at home.



Where there is no wall, a curtain serves as a room divider, in Ximena's case, the curtain gives privacy to the bathroom.

55

X., una mujer chilena de Ariccia originalmente (I Región), llegó al campamento hace seis años, cuando la zona alta tenía menos casas construidas. Anteriormente, vivía alquilada en la ciudad, pero la dueña vendió la casa y el nuevo casero los echó. En el momento que se vieron sin casa, de la noche a la mañana y con un hijo pequeño, aceptaron el terreno. El marido se fue allí, a dormir a la intemperie, a ir montando la casa. Con sus cosas del taller construyó toda la casa, como una lata de hojalata, sin ventanas, soldada, cerrada, tenían y tienen miedo de que les roben, de lo de fuera. El primer día que durmieron ahí, en verano, no tenían ni luz, ni agua, pero lo de la luz le estresó a X. mucho. Su vecina sacó una alargadera y les pasó la luz por esa noche, al día siguiente ya lo resolverían. Por aquel entonces, solo tenían las paredes y el techo en dos de las habitaciones, ni el pasillo ni la cocina ni el baño tenían techo. Y esa misma noche, en el desierto, se pone a llover, algo que solo pasa 1 vez al año. Lo cubrieron todo con plásticos, y cenaron pan con queso, pues no podían cocinar. Estuvieron un tiempo sin techo. Durante el verano se calentaba tanto la taza del vater, que no se podían sentar. Pero también menciona que era muy bonito el ducharse al aire libre con el calor del día y el agua fría. Por la noche, admiraban las estrellas. Hasta hoy, su hogar carece de un piso adecuado, y colocaron unas alfombras por aquel 2015 para que no se llenase todo de arena y ahí siguen. La casa, aunque acogedora, está atestada de piezas y no cuenta con ventanas, solamente una puerta delantera. A pesar de que les gustaría tener más luz y espacio, consideran que mantener la casa así les brinda una mayor sensación de seguridad. Sueñan con expandirla o tener una terraza para tener más espacio, ya que se sienten un poco agobiados en su situación actual. X. se gana la vida como costurera, adaptando y creando prendas para sus clientes, principalmente mujeres colombianas que buscan ropa adaptada a sus figuras. Por otro lado, su esposo tiene un pequeño taller, aunque con limitadas herramientas y espacio.

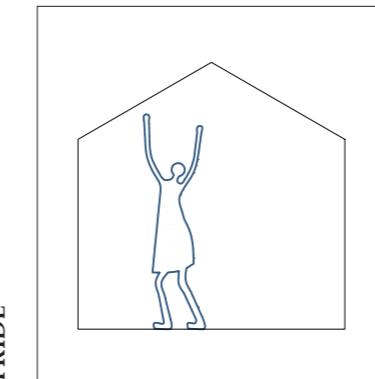
Por la mañana a X. le encantaba abrir la puerta de la casa y con su té y su desayuno mirar al mar, tranquilamente. Ahora le han construido delante, ya casi no ve el mar. Contemplan la idea de hacer un segundo piso, para ganar más espacio, pues están hasta arriba. O si eso no es posible, una pequeña terracita arriba. Esos momentos por las mañanas le dan la vida, pues de normal sus vecinos están día y noche con el parlante y música a todo volumen. Por la mañana es su momento.

X., a Chilean woman originally from Ariccia (Region I), arrived at the camp six years ago when there were fewer houses built in the higher area. Previously, she lived in a rented house in the city, but the owner sold the house, and the new landlord evicted them. The moment they found themselves without a home overnight and with a young son, they accepted the land. Her husband went there to sleep outside and started building the house. He used items from his workshop to construct the whole house, like a tin can, with no windows, welded and closed; they were and still are afraid of being robbed from the outside. The first night they slept there in the summer, they had neither light nor water. By then, they only had walls and a roof in two of the rooms; neither the hallway, the kitchen, nor the bathroom had a roof. That same night, in the desert, it started raining, something that happens only once a year. They covered everything with plastic and had bread and cheese for dinner since they could not cook. During the summer, the toilet seat heated so much that they could not sit on it. However, X. mentions that showering outdoors with the daytime heat and freezing water was beautiful. At night, they admired the stars. To this day, their home lacks proper flooring, and they placed some carpets back in 2015 to prevent sand from filling everything, and those carpets are still there. The house, although cozy, is cluttered with belongings and has no windows, only a front door. While they would like more light and space, they believe that maintaining the house this way gives them a greater sense of security. They dream of expanding it or having a terrace to gain more space since they feel a bit overwhelmed in their current situation. X. makes a living as a seamstress, adapting and creating garments for her clients, Colombian women looking for clothes tailored to their figures. On the other hand, her husband has a small workshop, albeit with limited tools and space.

In the morning, X. loved opening the front door of the house with her tea and breakfast and gazing at the sea peacefully. Now, a structure has been built in front, and she can hardly see the sea anymore. They contemplate the idea of building a second floor to gain more space since they are bursting at the seams. Or if that is not possible, a small terrace above. Those moments in the morning give her life because usually, her neighbours blast music from their speakers' day and night. In the morning, it is her time.

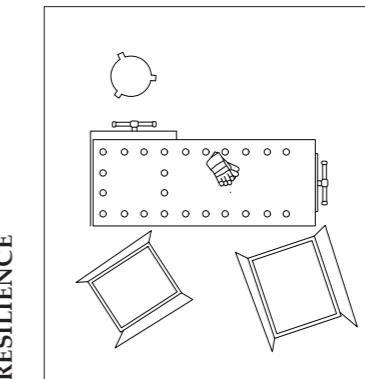
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SOFTWARE



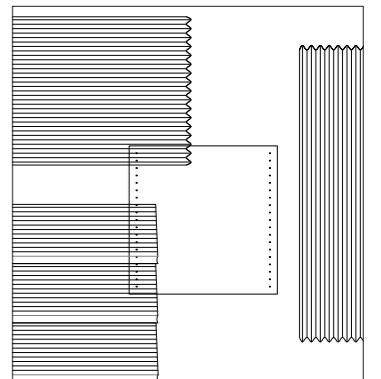
PRIDE

SOFTWARE



RESILIENCE

SOFTWARE



CREATIVITY

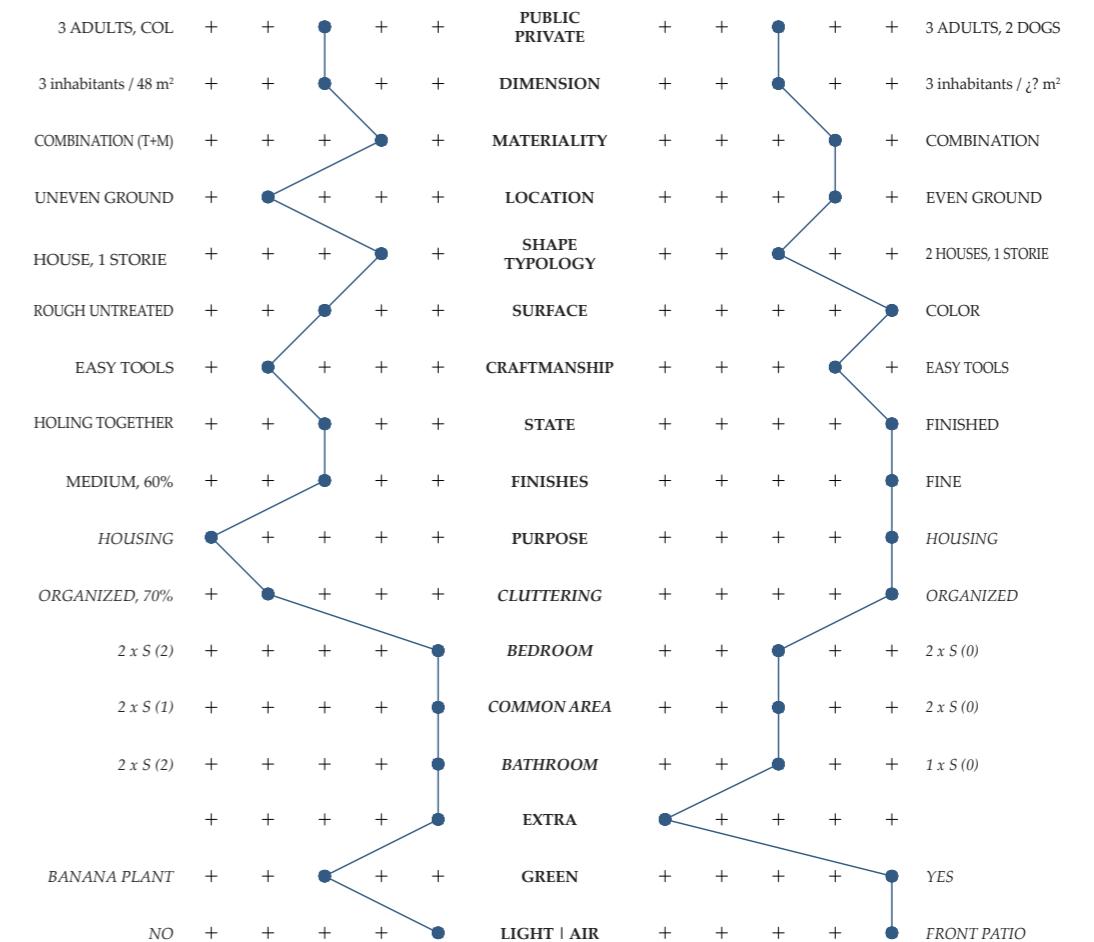
Ximena speaks about her house with an extreme pride. She acknowledges the issues and complications, still, the fact that she gets to call a place her home and that it was built by them, is more important

Their starting conditions were rough, and many years later the house is still strongly standing and they live happily in it. This house has seen them surpass many burdens and grow stronger from complications.

## JEANETTE AND DANIELA

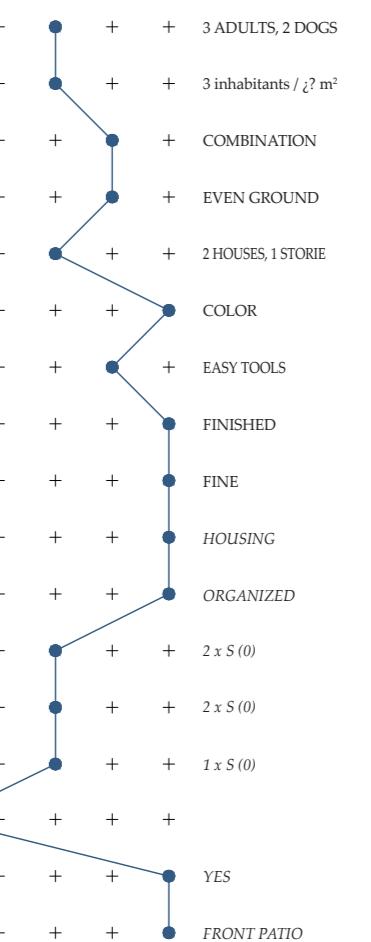


### HER CURRENT SITUATION

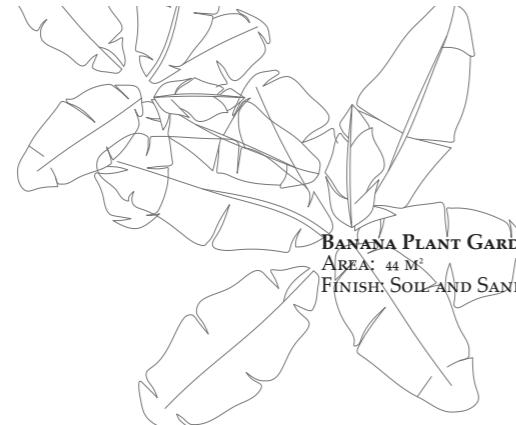


44/85

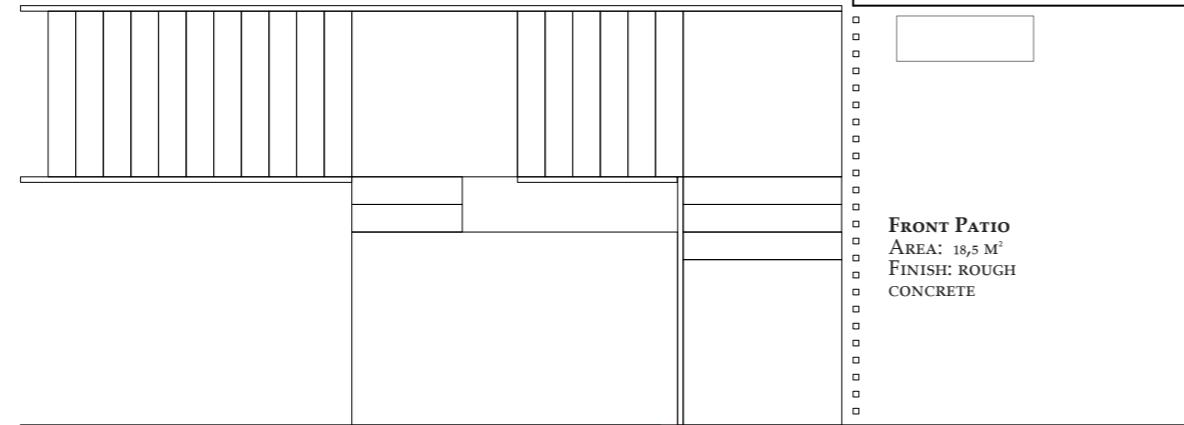
### HER FUTURE HOME



66/85

48 m<sup>2</sup>

60



**FRONT PATIO**  
AREA: 18,5 M<sup>2</sup>  
FINISH: ROUGH CONCRETE

Other family members leave in the neighbouring houses

7

5

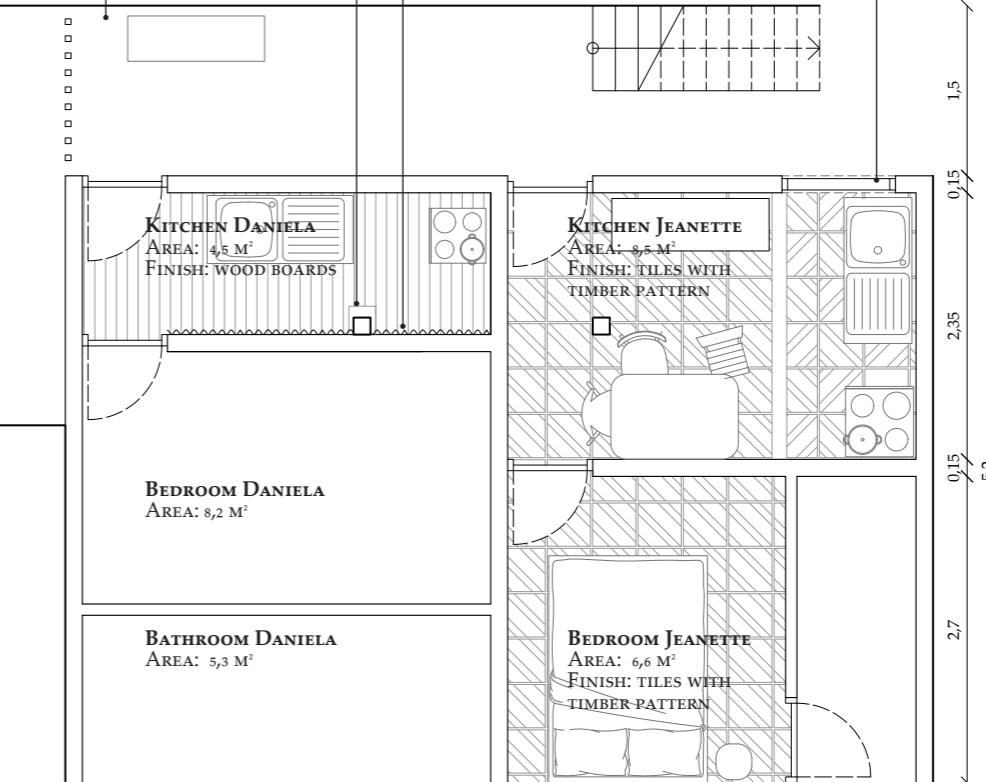
0,15 3,6 0,15 3,6 0,15  
7,65

The corridor serves as access to other family members houses that are towards the inside of the plot

They complain about animals coming in the house as there are many holes close to the structural elements

Corrugated metal sheet as inside cladding

Only window in the house that opens towards the dark corridor



**BEDROOM DANIELA**  
AREA: 8,2 M<sup>2</sup>

**BATHROOM DANIELA**  
AREA: 5,3 M<sup>2</sup>

**BEDROOM JEANETTE**  
AREA: 6,6 M<sup>2</sup>  
FINISH: TILES WITH TIMBER-PATTERN

61



Detrás del restaurante, vecinas de Jimena, donde viven más miembros de la familia Arcos. En la cocina estamos B.I.A., Je.A. (hermana de B.I.A.), D.A. (sobrina de Je.A.) y yo. Durante el breve rato que estamos todas, entran y salen varias otras primas y hermanas, hay un gran alboroto. Y es que esta noche llega al aeropuerto una Arcos más. Van a ir tres coches repletos a recogerla al aeropuerto, el gran sentimiento familiar y de cercanía es palpable aquí. D.A. trabaja en la minería, y unos 7 días en la planta en medio del desierto y otros 7 días en el campamento. Pese a tener un sueldo relativamente alto, le gustaría quedarse aquí, con su familia, con sus vecinas.

En esta casa, viven 13 personas, hay diferentes cocinas, salitas, habitaciones y pasadizos. La configuración no es la de una casa ordinaria. Se han ido añadiendo espacios y habitaciones conforme llegaban más miembros de la familia. Ellas, la familia entera, lo han ido construyendo todo, poco a poco. La última obra, cambiar el suelo de la cocina de Je.A. Aunque ha sido algo costoso, llevaba mucho tiempo en la lista de tareas, lo que vuelve a exemplificar que las colombianas se preocupan mucho por sus casas y esto se convierte en una prioridad para ellas. Aunque las relativas ampliaciones sean robustas y estén bien construidas, como siempre, carecen de luz, de ventilación y de buenos acabados. Problemáticas que ellas también nombran y verbalizan.

64

Han tenido problemas con ratones, pues las juntas del suelo tienen agujeros, pasan frío, pues el techo tiene agujeros y no ventilan, pues no tienen ventanas. Je.A. llegó cuando solo había dos cuartitos, uno de ahora reconvertido en la cocina de D.A. Atrás tenían un patio interior, ahora es la escalera al primer piso. Para acceder debido al desnivel de más de 6 metros, había una escalera de neumáticos, ahora hay toda una estructura de madera, que también lleva al restaurante. Donde está esta escalera, Je.A. plantó una gran área verde, con Bananeros como en Colombia, su país de origen. Poco a poco, se lo han ido apropiando para poner garajes o construir más accesos. Ahora solo quedan unos 10 metros cuadrados de jardín.

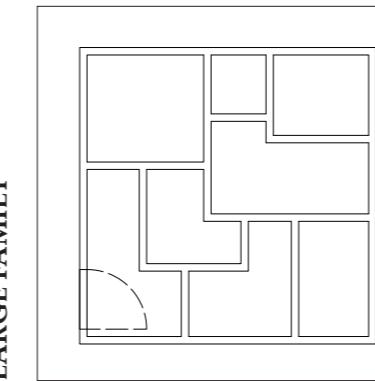
Behind the restaurant, neighbouring Jimena, where more members of the Arcos family reside. In the kitchen, there are B.I.A., Je.A. (B.I.A's sister), D.A. (Je.A's niece), and me. During the moment we are all together, several other cousins and sisters come and go; there is quite a commotion. Tonight, another Arcos family member is arriving at the airport. Three cars will go full to pick her up, highlighting the immense sense of family and closeness palpable here. D.A. works in mining, spending around 7 days at the plant in the middle of the desert and another 7 days in the camp. Despite having a relatively high salary, she would like to stay here, with her family, with her neighbours.

In this house, 13 people live together. There are different kitchens, living areas, bedrooms, and passageways. The layout is not like that of an ordinary house. Spaces and rooms have been added as more family members arrived. The entire family has been building everything, bit by bit. Their latest project was changing the flooring in Je.A's kitchen. Though it has been a costly venture, it had been on the to-do list for a long time, exemplifying how much these Colombian women care about their homes; it is a priority for them. Despite the relative expansions being sturdy and well-built, as always, they lack light, ventilation, and proper finishes. These are issues they acknowledge and verbalize.

They have had problems with mice because the floor joints have holes, they feel cold because the roof has holes, and there is no ventilation due to the absence of windows. Je.A. arrived when there were only two small rooms, one of which is now D.A's kitchen. They used to have an interior courtyard, now it is the staircase to the first floor. Due to the more than 6-meter difference in levels, there used to be a ladder made of tires; now, there is an entire wooden structure leading to the restaurant. Where this staircase is, Je.A. planted a large green area, with banana trees like in Colombia, her home country. Gradually, they have been appropriating it to add garages or build more accesses. Now, only about 10 square meters of garden remain.

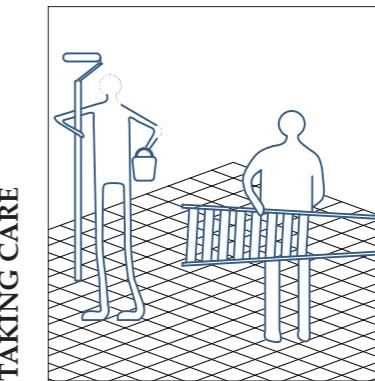
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### SOFTWARE



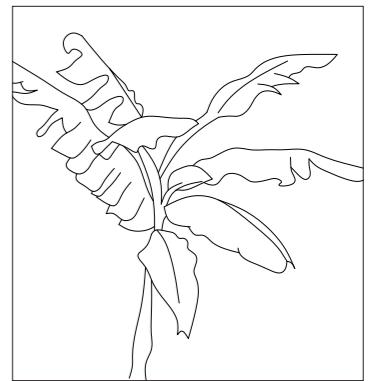
### LARGE FAMILY

### HARDWARE



### TAKING CARE

### HARDWARE



### FLOURISHING

65

The 13 inhabitants are cousins, siblings, and partners, not a close nuclear family. They share an entrance and therefore an address. Internally, the plot is subdivided and in many cases, to get to one of the homes, one must pass by others.

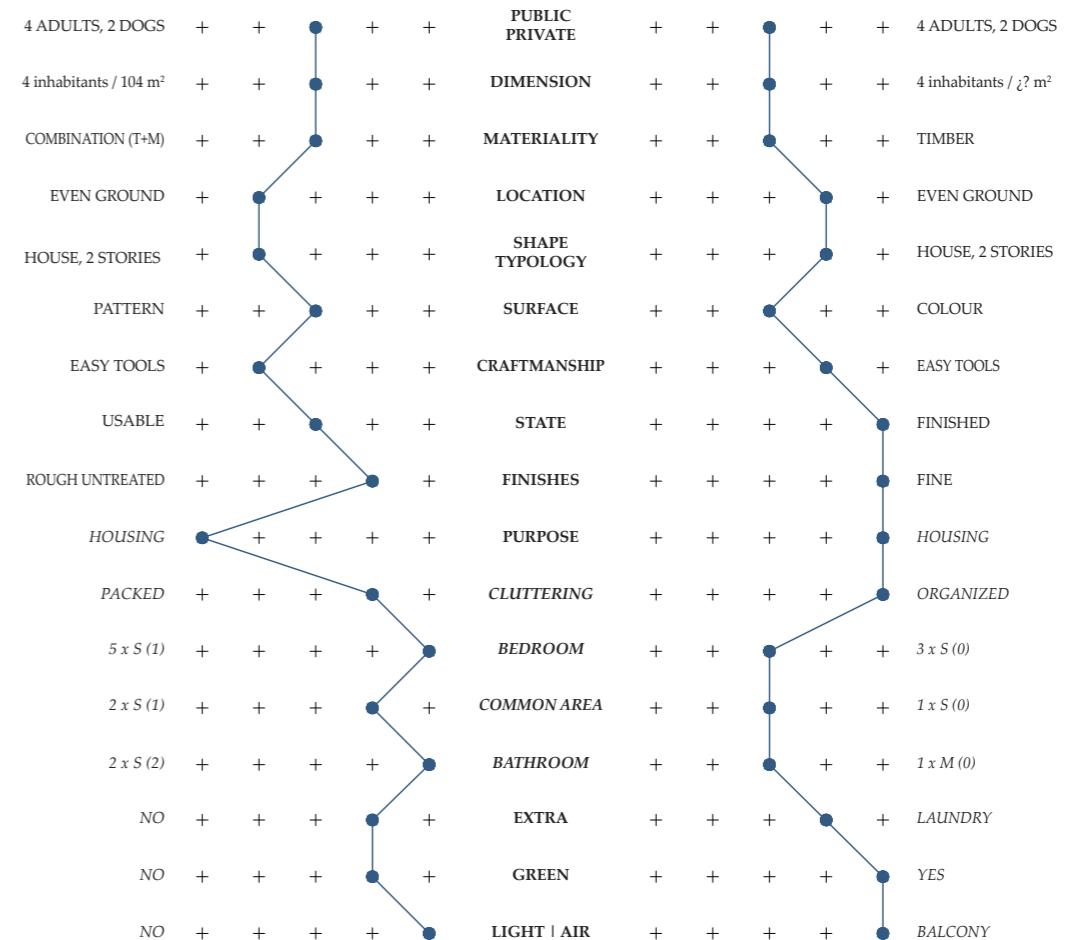
Their starting conditions were rough, and many years later the house is still strongly standing and they live happily in it. This house has seen them surpass many burdens and grow stronger from complications.

Even with the arid landscape, Jeannette has planted and takes care of a couple of very vibrant banana plants that remind her of her home Colombia.

# MARTA CORTÉS



## HER CURRENT SITUATION

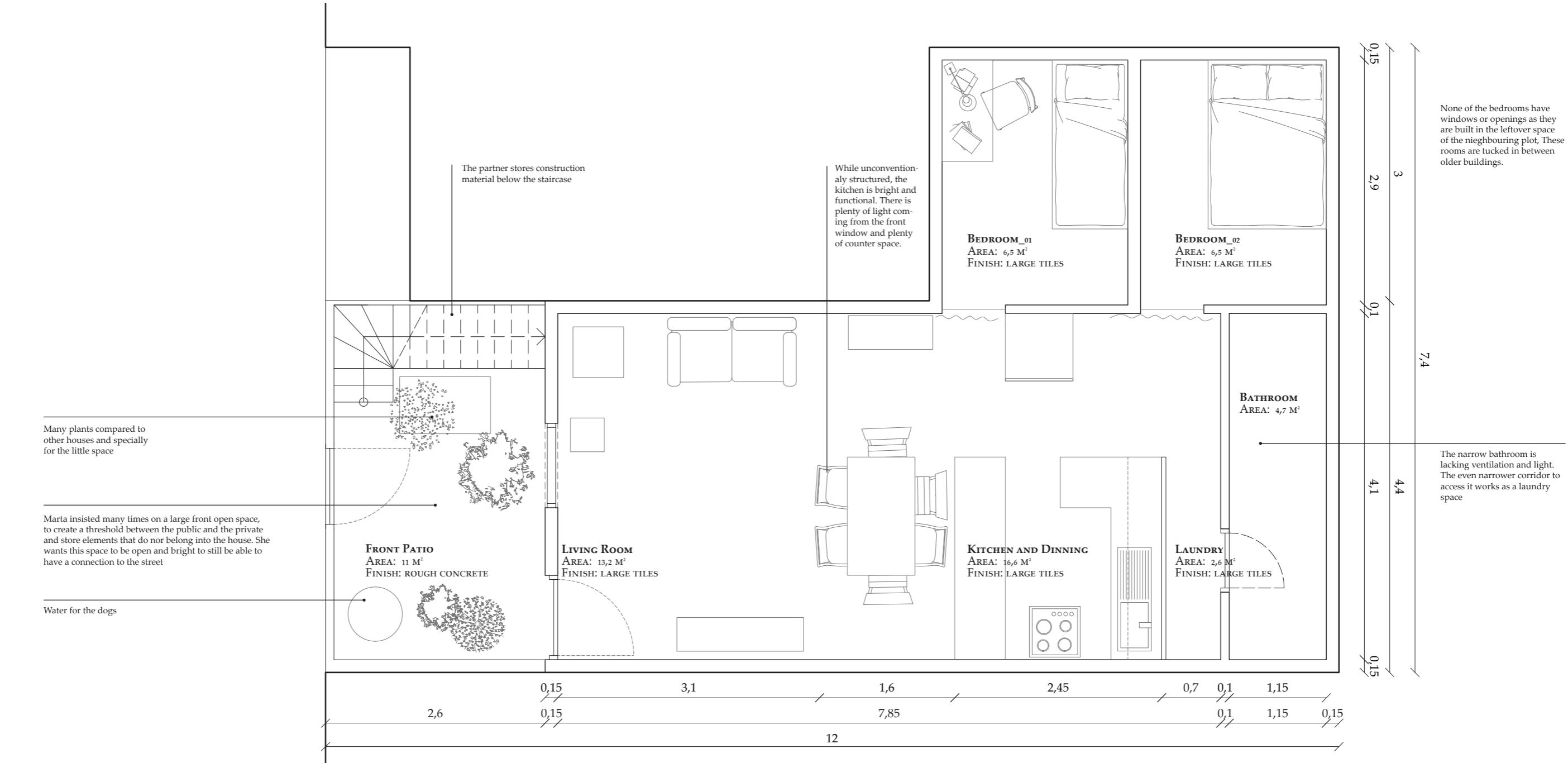


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67/85

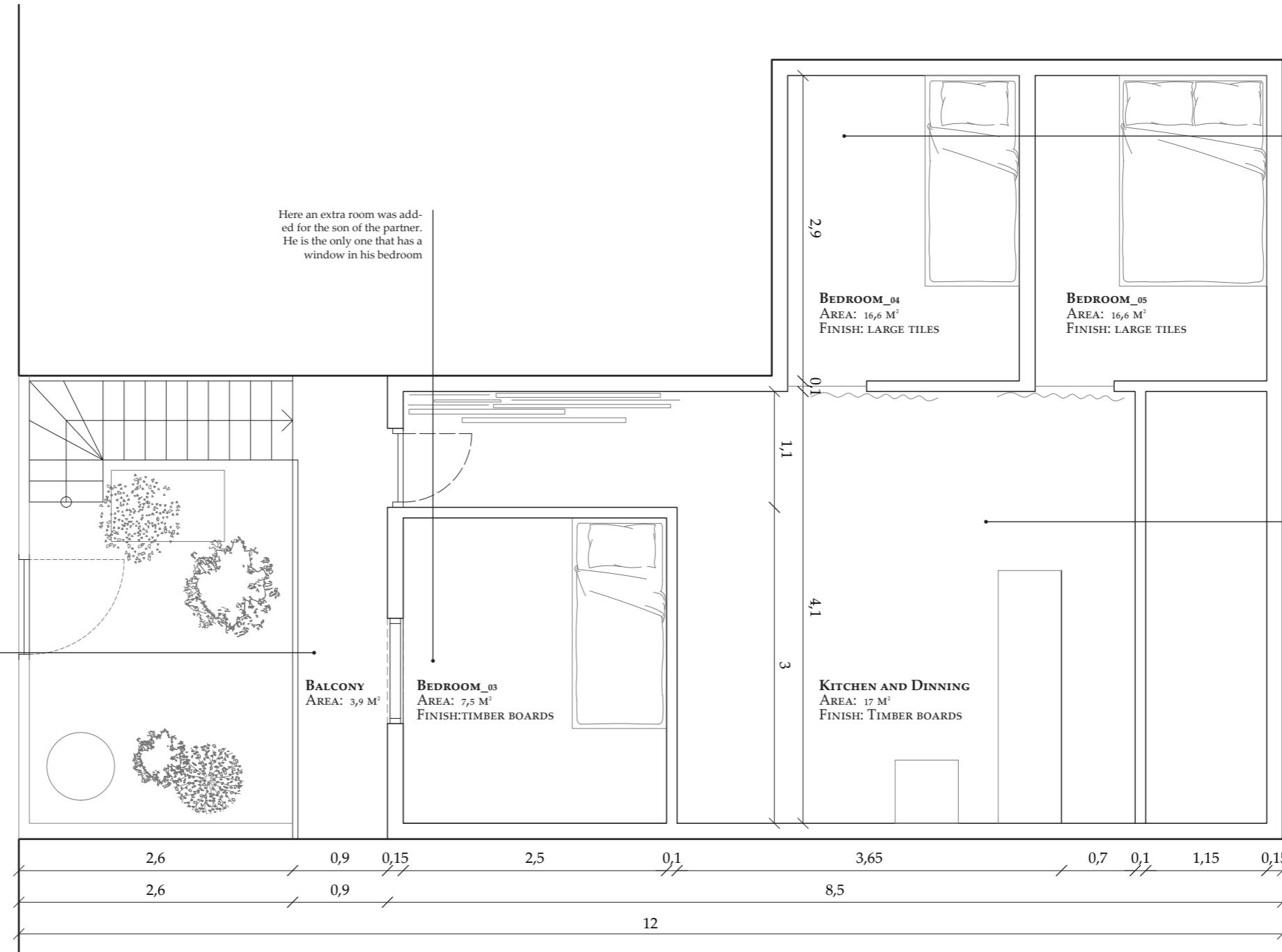
52 m<sup>2</sup>

68



52 m<sup>2</sup>

70



These rooms were rented out to some friends and families for an extra little income, currently they stand empty

71

hablo con M.C., dirigenta de Rayito de Sol, vive en Antofagasta desde hace 14 años, llegando cuando su hijo tenía 3 años y ella apenas 26. Hoy, a sus 40 años, es una mujer joven, vital, llena de energía y fuerza. Su casa, ubicada en la parte norte, cerca de la entrada Julio Monto Salamanca, era en un lote vacío cuando llegaron. Se construyó con la ayuda de su actual pareja, quien es constructor. En sí, era un lote que le pertenecía a un señor, quien lo dividió y vendió en tres partes, haciendo incluso ganancia de la necesidad de estas familias. Actualmente la casa es de material ligero y M.C. aspira a tener una estructura más resistente y robusta. Sin embargo, prioriza elementos como la luz y la ventilación en esta futura casa, aspectos de los cuales ahora carecen todas las habitaciones y la casa en general. Ella sueña con una casa que permita una mayor cantidad de luz e incluso que tenga un atrio que se pueda abrir y cerrar, algo que vio por la tele no hace mucho. Le permitió soñar. También desea un espacio exterior más amplio, incluso si eso significa sacrificar espacio en el interior de la casa. Planea tener entre 3 o 4 habitaciones, valorando estas áreas más que la sala de estar. Respecto a la cocina, le gusta la idea de poder verlo todo desde ahí, pero también desea poder cerrarla de vez en cuando. M.C. desea una casa orientada hacia afuera, conectada con la comunidad y los vecinos. Quiere poder ver quien está pasando por delante, hablar con ellas y estar conectada.

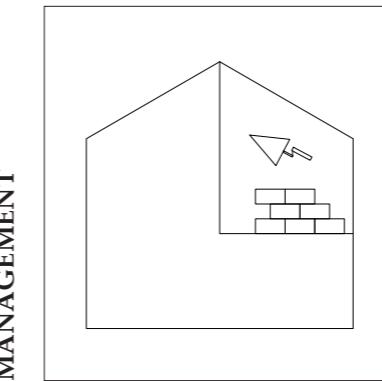
Su preferencia es por una casa de ladrillo, considerando que es más resistente que la madera. Sin embargo, le atrae la idea de integrar madera en detalles como puertas y ventanas. Valora la capacidad de modificar una casa individual, lo que le permite realizar cambios más significativos que en un apartamento. En resumen, M.C. anhela un hogar que refleje su identidad, proporcionando comodidad, funcionalidad y un sentido de comunidad, donde pueda disfrutar de los placeres de su Colombia natal, con las arepas recién hechas, como las que me acaba de ofrecer.

M.C., a leader from Rayito de Sol, has been living in Antofagasta for 14 years, arriving when her son was just 3 years old, and she was barely 26. Now, at 40, she is a vibrant, energetic woman full of vitality and strength. Her house, located in the northern part near the Julio Monto Salamanca entrance, was once an empty lot when they arrived. It was built with the help of her current partner, who happens to be a builder. Initially, it was a plot owned by a gentleman who divided and sold it in three parts, even profiting from the necessity of these families. Presently, the house is made of lightweight material, and M.C. aspires to have a more robust and sturdy structure. However, she prioritizes elements like light and ventilation in this future home, features currently lacking in all rooms and the house in general. She dreams of a house that allows more natural light, even with an atrium that can open and close, something she saw on TV not long ago. It ignited her imagination. She also desires a more extensive outdoor space, even if it means sacrificing interior space. She plans to have between 3 or 4 rooms, valuing these areas more than the living room, as she notices most people prefer to retreat to their rooms with their phones instead of staying in the living room. Regarding the kitchen, she likes the idea of being able to oversee everything but also wishes to close it off occasionally. M.C. envisions an outward-facing house, connected with the community and neighbours. She wants to see who is passing by, talk to them, and feel connected.

Her preference is for a brick house, considering it more durable than wood. However, she is drawn to the idea of incorporating wood in detail like doors and windows. She values the ability to modify an individual house, enabling more significant changes compared to an apartment. In summary, M.C. longs for a home that reflects her identity, providing comfort, functionality, and a sense of community, where she can relish the pleasures of her native Colombia, like freshly made arepas.

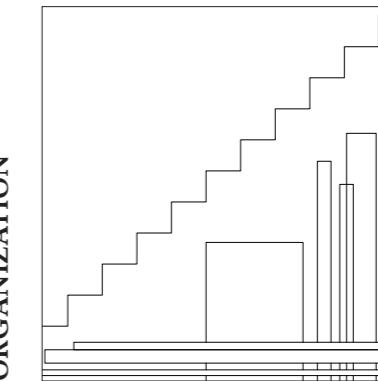
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### SOFTWARE



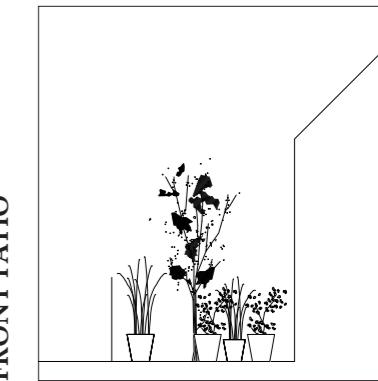
MANAGEMENT

### SOFTWARE



ORGANIZATION

### HARDWARE



FRONT PATIO

Her and her partner keep on investing and adding on the house, adding more bedrooms and a second storey. Continuing to increase the floor size.

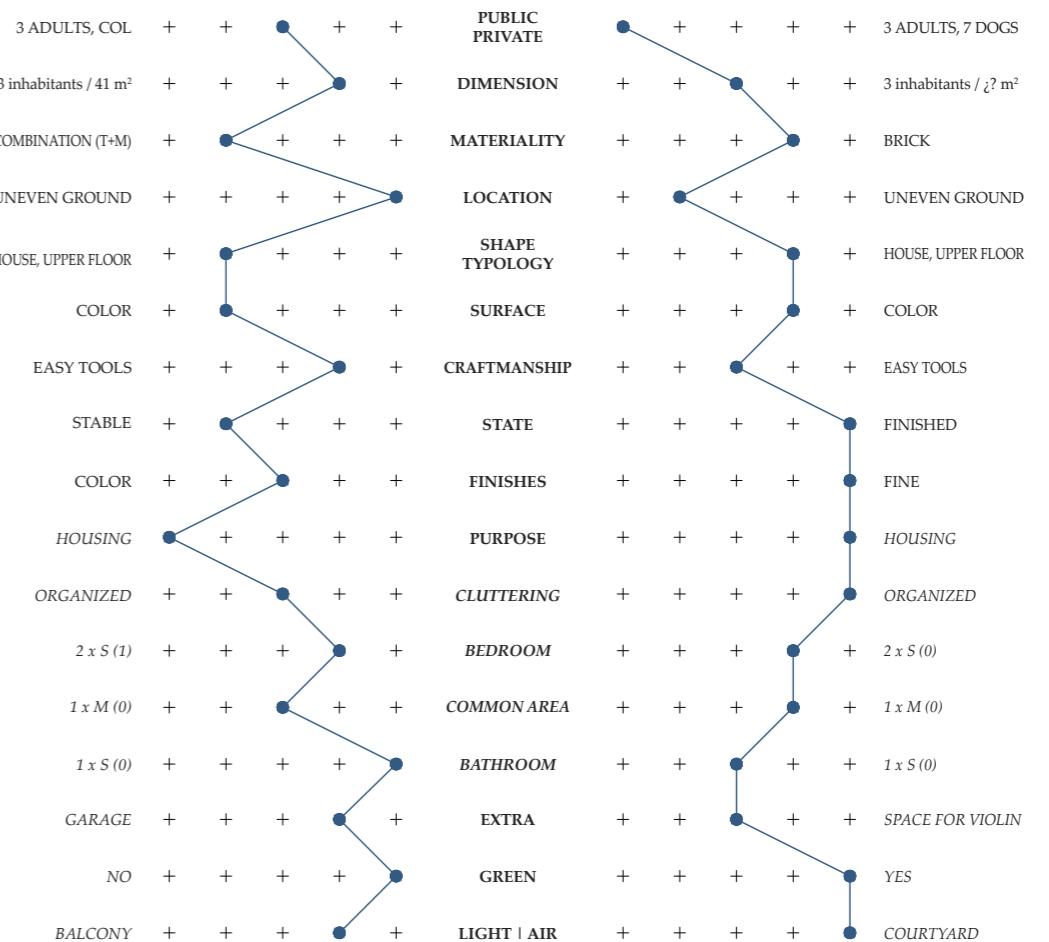
The house in general and even the construction materials that they gather below the staircase are very organized.

Although they lost a couple of square meters, Marta insisted on having a larger front patio, for the dogs and for her plants.

## B. IDALIA ARCOS

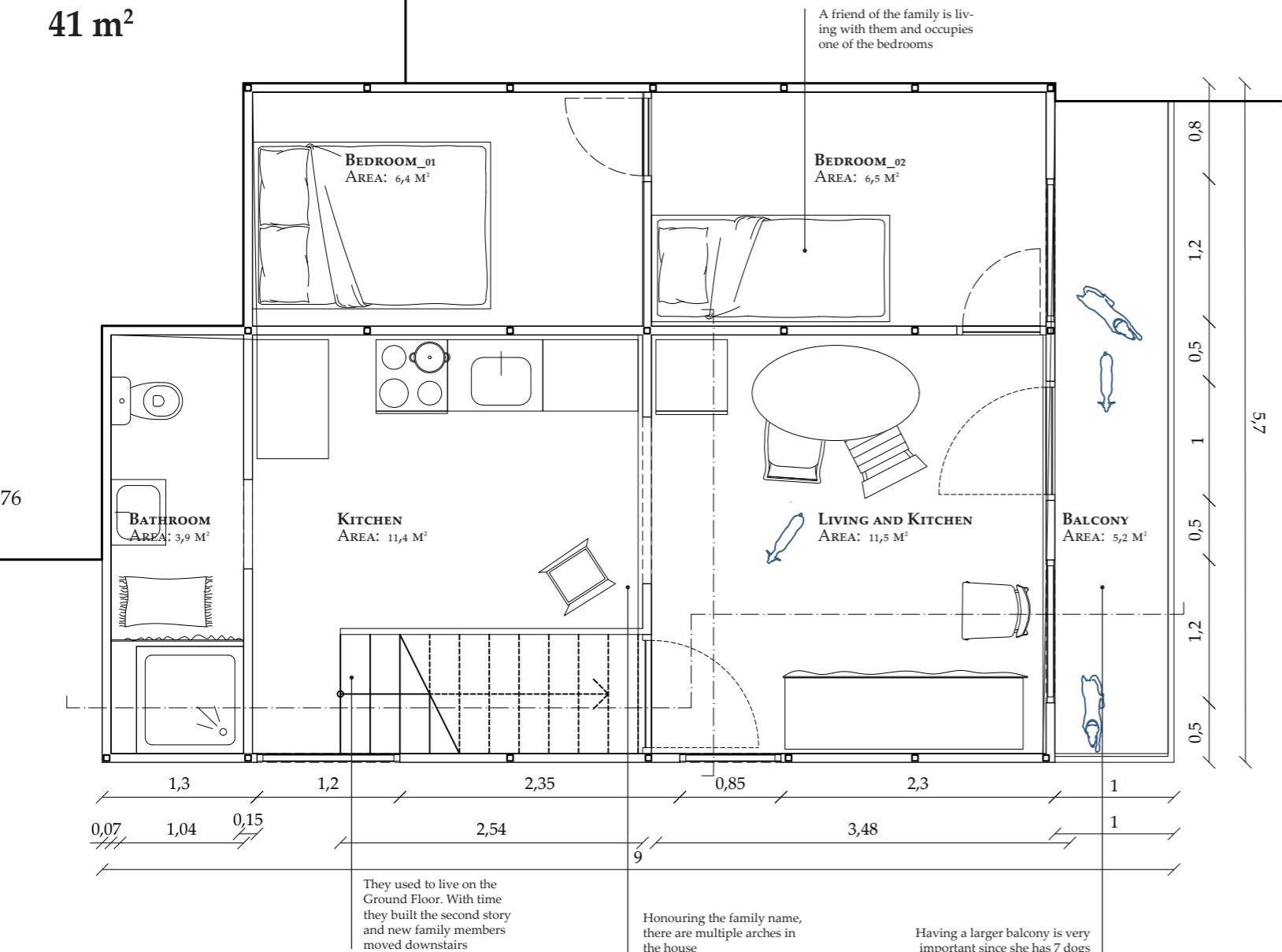


HER CURRENT SITUATION



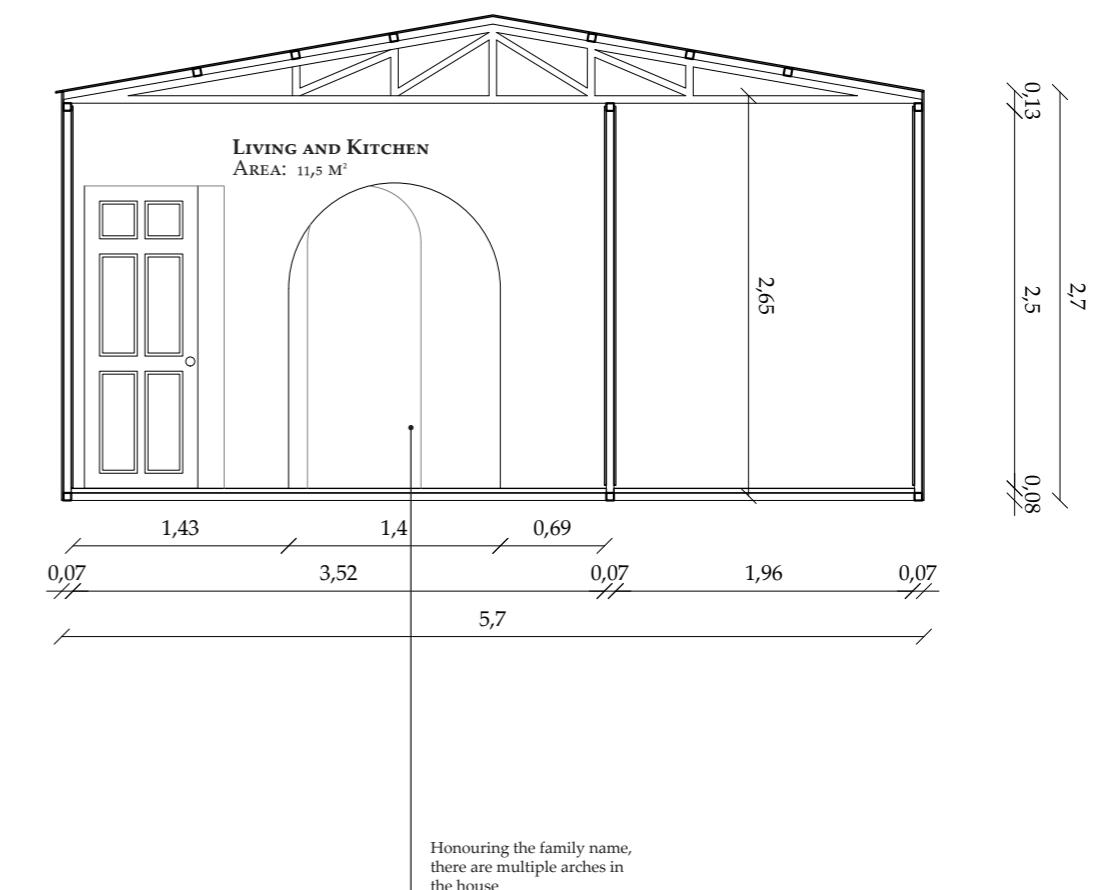
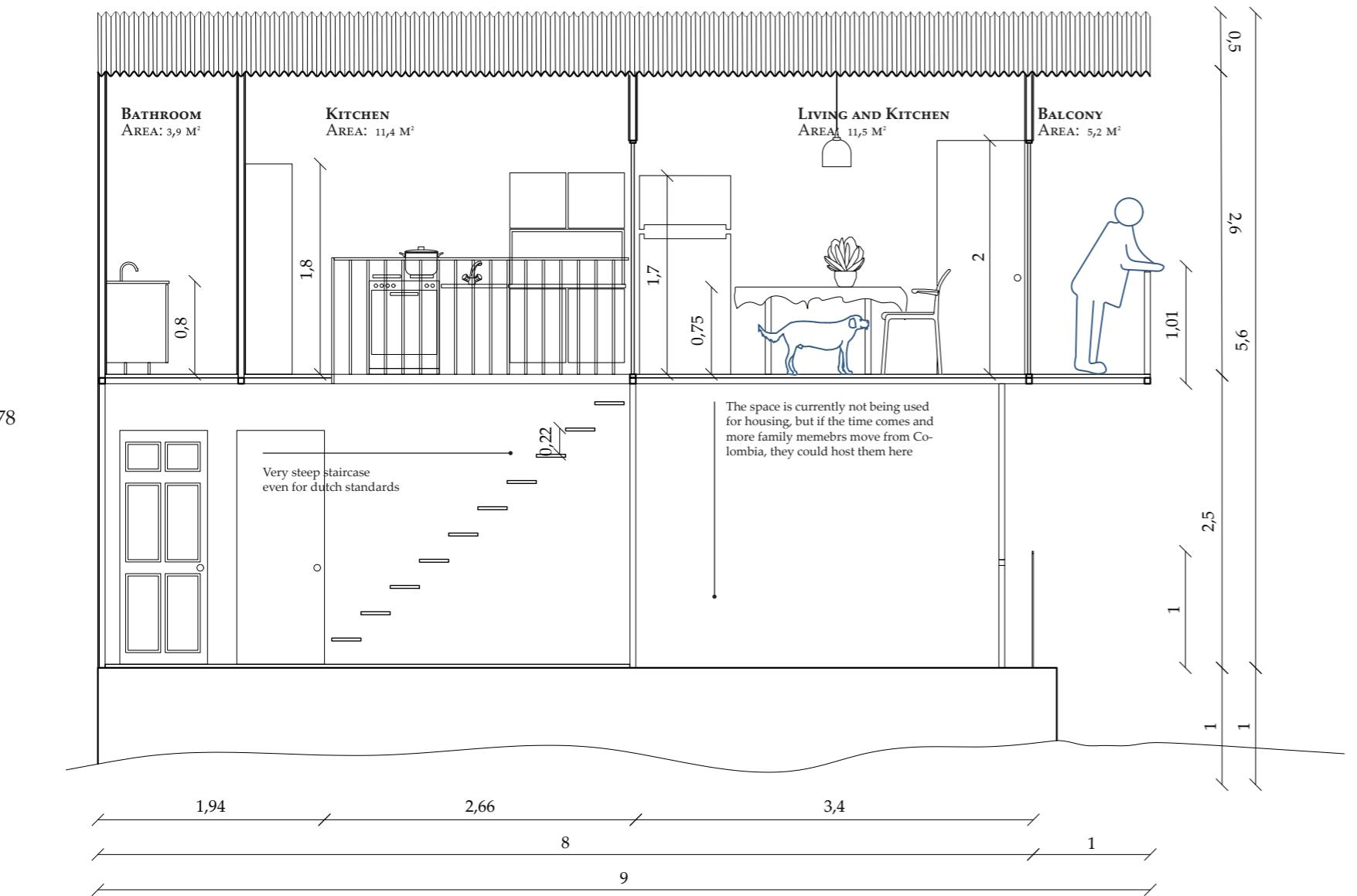
46/85

65/85

41 m<sup>2</sup>

The bright yellow facade with dark timber window frames can be distinguished from far away





80



81



*B.I. Arcos, procedente de Colombia, llegó al campamento durante el auge del 2015, a pesar de que en un principio no había espacio disponible según la dirigenta de aquel entonces. Sin embargo, con la ayuda del familiar de un conocido de un contacto que les cedió un lote vacío en Rayito de Sol, en la zona norte, lograron establecerse. Comenzaron con la construcción de la planta baja, inicialmente con una habitación y la cocina, pero con el tiempo han ampliado su vivienda hasta contar con dos pisos para albergar a siete personas, incluyendo a B.I., su esposo, su tío, su sobrino con su pareja, y otra pareja más. Destaca su amplia y luminosa cocina, así como un balcón dedicado a sus numerosos perros. A pesar de ciertos detalles pendientes, como la falta de puerta en el baño final, se percibe el esfuerzo y el cuidado puesto en la construcción, con detalles como arcos en lugar de marcos convencionales, una curiosidad considerando que su apellido es Arcos. Construida mayormente por su esposo, quien es constructor, la casa se mantiene bien cuidada, evidenciado por pequeños detalles como un mantel de flores y una estantería ordenada. Sin embargo, el techo de chapa metálica es una preocupación, especialmente en temporadas frías, a pesar del clima generalmente cálido de la zona.*

82

*Inicialmente, carecían de servicios básicos como agua y electricidad, enfrentando dificultades en el transporte de agua y un período de cuatro meses sin luz. Aunque lograron una conexión eléctrica irregular a través de un vecino, la compañía les imponía cortes constantes hasta que, junto con otras 15 familias, pagaron por postes y una conexión estable. Similarmente, organizaron la construcción del alcantarillado, costeado entre los habitantes del campamento.*

*B.I. anhela más luz, un balcón ampliado, zonas verdes y un ambiente más acogedor en su hogar. Valora la finalización y la calidad del trabajo, enfatizando su deseo de evitar vivir en una casa inconclusa. Asimismo, apunta a mejorar la organización y almacenamiento en la cocina, ya que es el único lugar donde se percibe un ligero desorden. Además, destaca su participación en talleres de música recientes, evidenciando su interés por las artes, por lo que un lugar donde poder practicar el violín, sería ideal.*

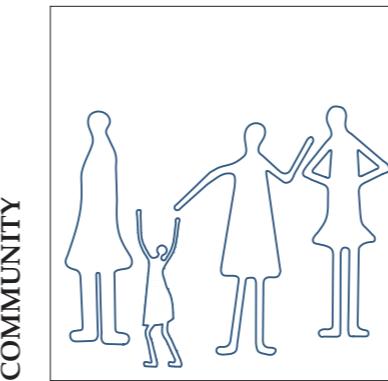
B.I. Arcos, originally from Colombia, arrived at the camp during the peak of 2015, even though there was initially no available space according to the leader at that time. However, with the help of a relative of an acquaintance who granted them an empty lot in Rayito de Sol, in the northern area, they managed to settle in. They started with the construction of the ground floor, initially with one room and the kitchen, but over time expanded their home to two floors to accommodate seven people, including B.I., her husband, uncle, nephew with his partner, and another couple. Their expansive and brightly lit kitchen stands out, as well as a balcony dedicated to their numerous dogs. Despite certain pending details, such as the lack of a door in the final bathroom, one can perceive the effort and care put into the construction, with details like arches instead of conventional frames, an interesting coincidence considering their surname is Arcos. Mostly built by her husband, who is a builder, the house is well-maintained, evident in trivial details like a floral table-cloth and an orderly shelf. However, the metal sheet roof is a concern, especially in cold seasons, despite the warm climate of the area.

Initially lacking basic services such as water and electricity, they faced challenges in water transportation and a four-month period without power. Although they managed an irregular electrical connection through a neighbour, the company constantly imposed cuts until, along with 15 other families, they paid for poles and a stable connection. Similarly, they organized the construction of the sewage system, funded by the camp inhabitants.

B.I. longs for more light, an expanded balcony, green areas, and a more inviting atmosphere in her home. She values completion and quality of work, emphasizing her desire to avoid living in an unfinished house. She aims to improve organization and storage in the kitchen, the only place where slight disorder is perceived. Furthermore, she highlights her participation in recent music workshops, revealing her interest in the arts, making a space to practice the violin ideal for her.

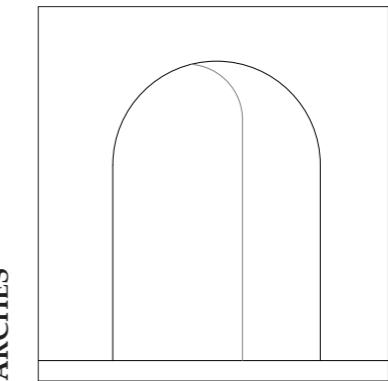
## LEARNING FROM HER VALUED BY THE AUTHOR

### SOFTWARE



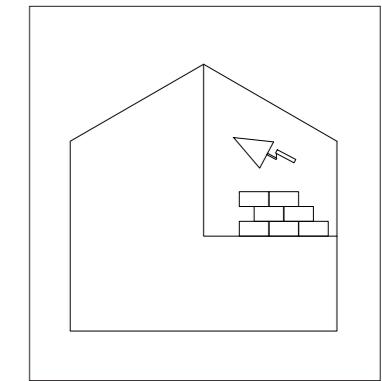
### COMMUNITY

### HARDWARE



### ARCHES

### HARDWARE



### FINISHED HOME

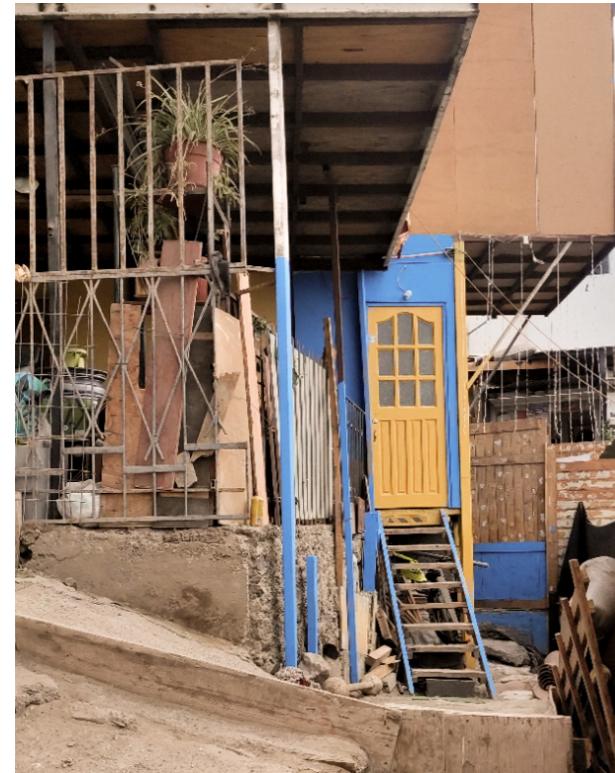
83

As the committee's leader, she managed to organize the construction of arches, an added ornament in all openings that improves the aesthetics of the house and makes it theirs.

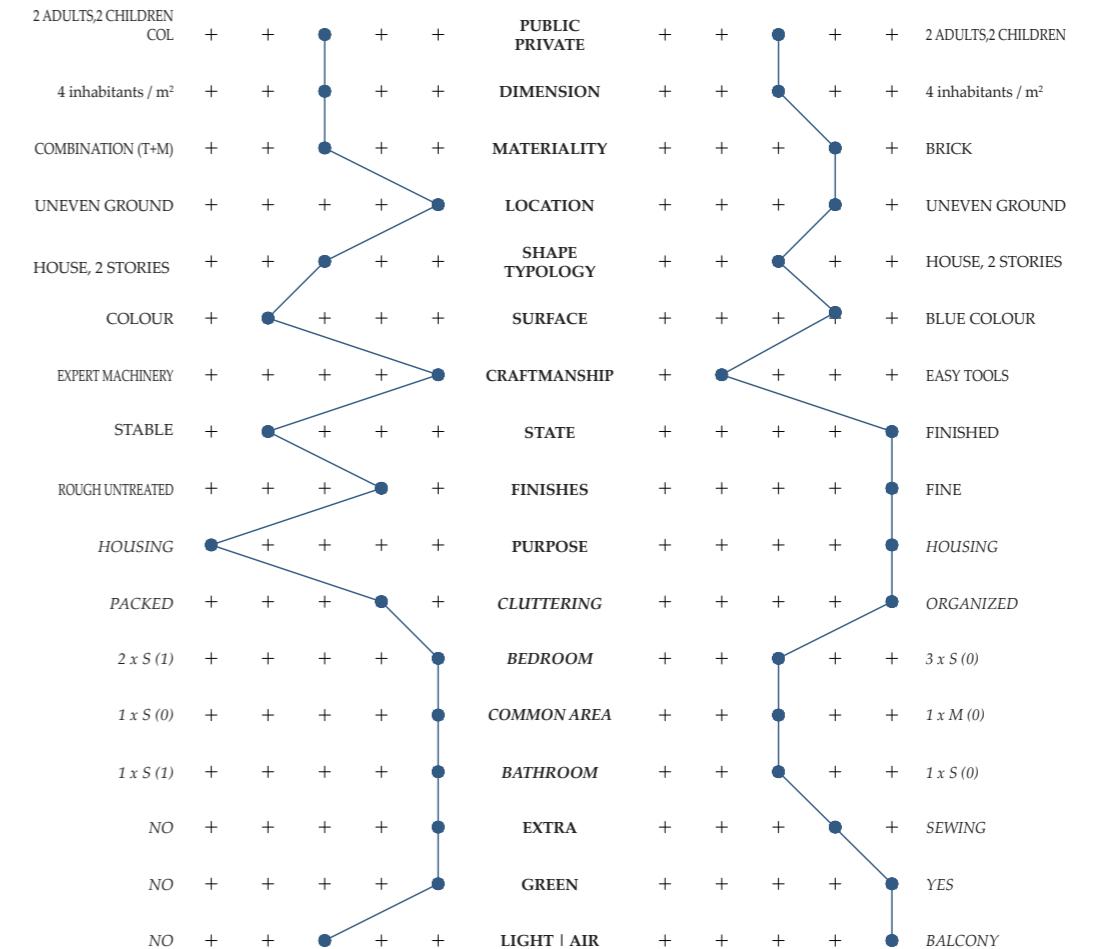
Her name translated to english, means arches, an added ornament in all openings that improves the aesthetics of the house and makes it theirs.

On the interior, the walls are nicely painted, the windows are symmetrical placed on the wall, the floor is polished and everything is organized, the house has been very nicely taken care of, details are important for B.I.A.

# JIMENA ARCOS



## HER CURRENT SITUATION

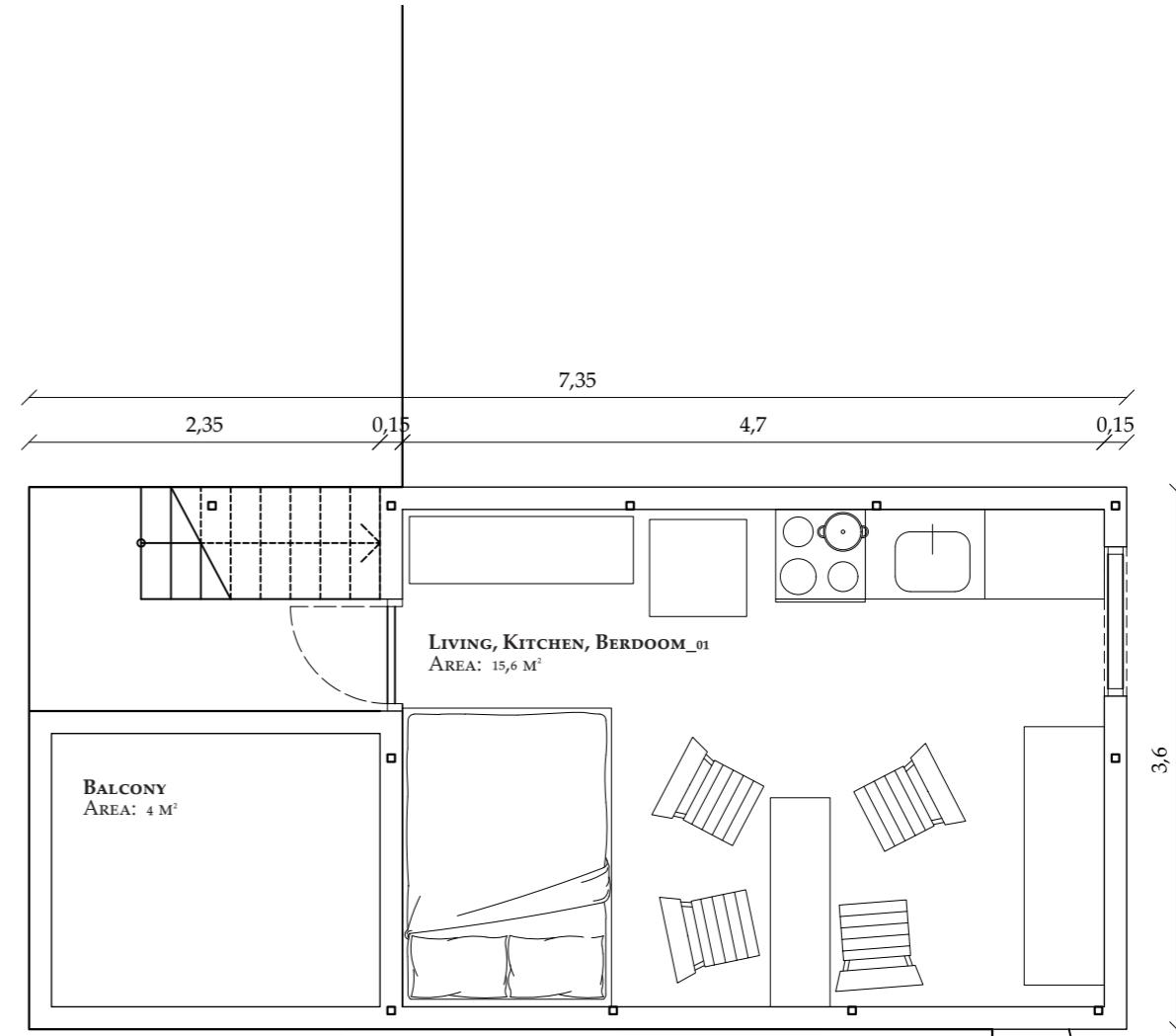


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65/85

86

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J. Arcos, hermana de B.I.A., vivía en Venezuela alrededor de 2014 con su marido y sus dos hijos, donde lamentablemente perdieron todos sus bienes. Tras regresar a Colombia para intentar reconstruir sus vidas, en 2018, B.I.A. les propuso mudarse a Chile, ofreciéndoles un lugar donde comenzar en su cuarto. El esposo de J.A. se trasladó primero, trabajando durante un año antes de que el resto de la familia llegara en 2019. Su decisión de mudarse fue motivada por la búsqueda de seguridad y oportunidades para sus hijos, buscando establecerse en un lugar más estable que Venezuela. Actualmente, él trabaja como soldador mientras que ella cuida a una mujer anciana.

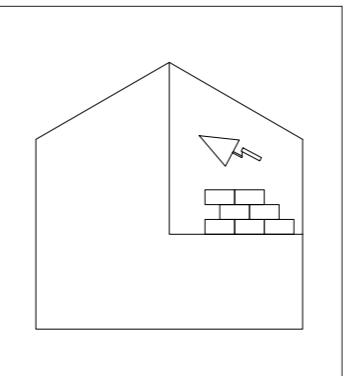
En la construcción de su hogar, él se encargó de la expansión de la casa y también ha construido la estructura del restaurante adyacente. Consideran fundamental el cuidado de los detalles y la limpieza en su hogar, priorizando la finalización y calidad del trabajo. Aunque actualmente tienen una ventana en el comedor/cocina/dormitorio, J.A. anhela tener un balcón para poder disfrutar de atardeceres y contemplar el mar, algo que tenía en el pasado. Le apasiona la costura y sueña con tener un taller, aunque prefiere priorizar la construcción de un balcón en el hogar. Además, necesitan más espacio de almacenamiento y valoran la idea de tener una casa resistente, finalizada y bien aislada para mantener el calor y evitar filtraciones. Para el suelo, prefieren baldosas, siendo el color favorito de J.A. el azul y el de su esposo, el amarillo. Disfrutan de momentos en familia, como tomar zumos de frutas recién hechos y compartir pasteles, valorando la convivencia familiar en su día a día.

J. Arcos, B.I.A.'s sister, was living in Venezuela around 2014 with her husband and two children when they tragically lost all their belongings. After returning to Colombia to try to rebuild their lives, in 2018, B.I.A. proposed they move to Chile, offering them a place to start in her room. J.A.'s husband moved first, working for a year before the rest of the family arrived in 2019. Their decision to move was driven by the pursuit of security and opportunities for their children, seeking to settle in a more stable place than Venezuela. Currently, he works as a welder while she takes care of an elderly woman.

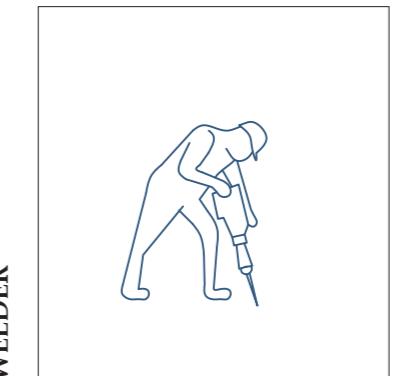
In the construction of their home, he oversaw expanding the house and built the structure of the adjacent restaurant. They consider diligence and cleanliness in their home fundamental, prioritizing the completion and quality of the work. Although they currently have a window in the dining/kitchen/bedroom area, J.A. longs for a balcony to enjoy sunsets and gaze at the sea, something she had in the past. She is enthusiastic about sewing and dreams of having a workshop, although she prefers to prioritize the construction of a balcony in their home. Additionally, they need more storage space and value the idea of having a sturdy, finished, and well-insulated house to retain heat and prevent leaks. For the flooring, they prefer tiles, with J.A.'s favourite colour being blue and her husband's being yellow. They enjoy family moments, such as having freshly made fruit juices and sharing cakes, valuing family togetherness in their daily lives.

## IMPROVING

## SOFTWARE

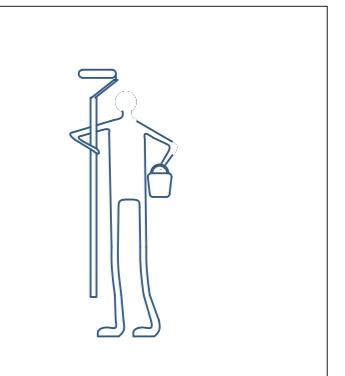


## HARDWARE



## WELDER

## HARDWARE



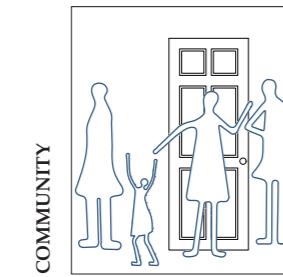
## COLOR

LEARNING FROM HER  
VALUED BY THE AUTHOR

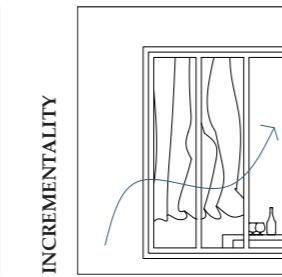
While right now they might not have the best house for their family situation, they aim and work hard to improve their situation, slowly adding more rooms and continuing to work on it.

With the husband's knowledge as a professional welder, they managed to construct a stable and strong extension of the ground floor and add a new floor upstairs.

The bright blue and yellow are visible from far away down the street. These two are their favourite colours.



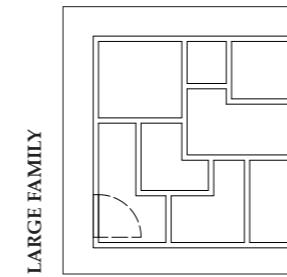
COMMUNITY



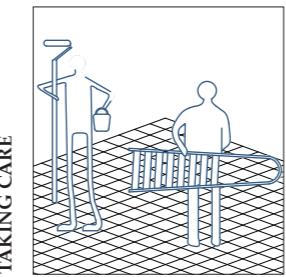
INCREMENTALITY



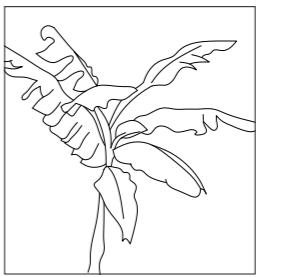
GREENERY



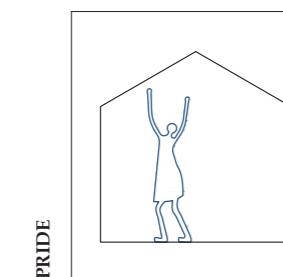
LARGE FAMILY



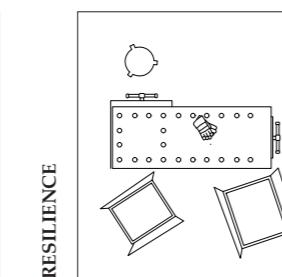
TAKING CARE



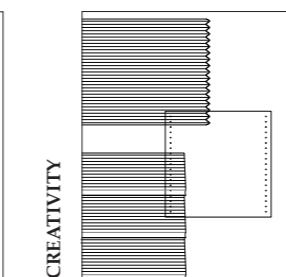
FLOURISHING



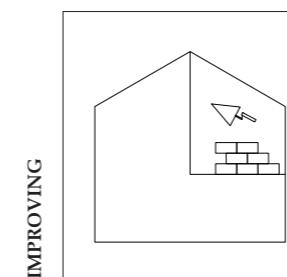
PRIDE



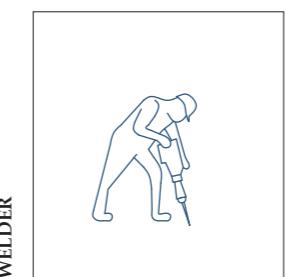
RESILIENCE



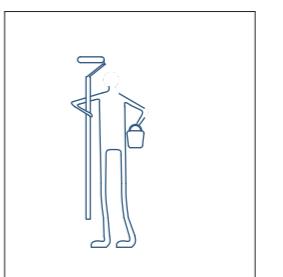
CREATIVITY



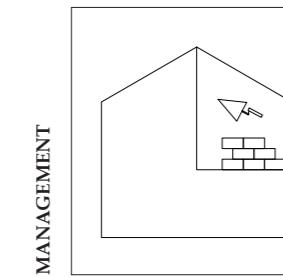
IMPROVING



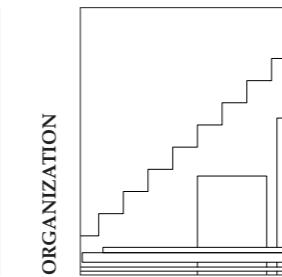
WELDER



COLOR



MANAGEMENT



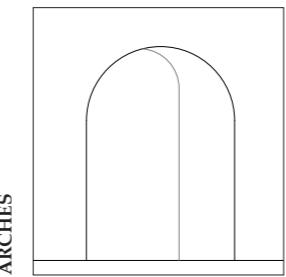
ORGANIZATION



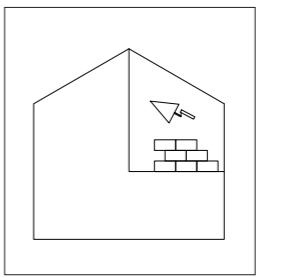
FRONT PATIO



COMMUNITY



ARCHES



FINISHED HOME

Her and her partner keep on investing and adding on the house, adding more bedrooms and a second story. Continuing to increase the floor size.

The house in general and even the construction materials that they gather below the staircase are very organized.

Although they lost a couple of square meters, Marta insisted on having a larger front patio, for the dogs and for her plants.

As the committee's leader, she managed to organize the construction of sewages and power for the adjacent families.

Her name translated to English, means arches, an added ornament in all openings that improves the aesthetics of the house and makes it theirs.

On the interior, the walls are nicely painted, the windows are symmetrically placed on the wall, the floor is polished and the everything is organized, the house has been very nicely taken care of, details are important for B.I.A.

Her doors are always open. No matter who knocks, she welcomes them. Most of the time, her daughters bedroom is empty, friends and other just sleep over, as her house is relatively well compared to other more unstable structures.

Rare in informality due to overcrowding, Eli benefits from many windows located towards the ocean, from where she gets a constant fresh breeze of air.

Los Arenales landscape is arid, still, she has managed to create a small oasis in the access balcony, shaded by some dark textile and overfilled with plants. It transports you somewhere else and cools down the surroundings.

The 13 inhabitants are cousins, siblings, and partners, not a close nuclear family. They share an entrance and therefore an address. Internally, the plot is subdivided and in many cases, to get to one of the homes, one must pass by others.

Even with the very arid landscape, Jeannette has planted and takes care of a couple of very vibrant banana plants that remind her of her home Colombia. w

Ximena speaks about her house with an extreme pride. She acknowledges the issues and complications, still, the fact that she gets to call a place her home and that it was built by them, is more important.

Their starting conditions were rough, and many years later the house is still strongly standing and they live happily in it. This house has seen them surpass many burdens and grow stronger from complications.

In very little time and with very basic materials, most of them scraps from a car mechanic workshop, Ximena and her husband created a home. The material library of this construction is uncanny.

While right now they might not have the best house for their family situation, they aim and work hard to improve their situation, slowly adding more rooms and continuing to work on it.

With the husband's knowledge as a professional welder, they managed to construct a stable and strong extension of the ground floor and add a new floor upstairs.



**NATION**  
HOUSING IN CHILE

## ELEMENTAL INCREMENTAL HOUSING

96

Elemental's projects, designed by Aravena, Iacobelli and Al-lard a key insight is solving the global housing crisis blending top-down public policies and bottom-up self-construction capabilities. The challenge of constructing affordable housing is daunting. Elemental recognized that traditional social housing projects were costly and complex, prioritizing a shift in approach. The typologies, prototypes and projects accommodate growth and change over time, while still emphasizing low-rise density without overcrowding while allowing for expansion (Aravena and Iacobelli, 2013, p. 20). The idea of incrementality was reassured, when developing the proposals and the families valued not just initial size but the potential for expansion through self-building, focusing on the square meters achievable after completion rather than instant moment. The concept of delivering one part of the house as a very basic element turned monotony into an asset, framing spontaneous construction and informality as tools for personalizing urban spaces (Aravena and Iacobelli, 2013, p. 105). In Antofagasta specifically, the community "Esperanza para el Mañana" was located on the rather north edge of the city. This project displaced them to a more centric land, one of Elemental's principles. The houses initially featured only an essential infrastructure wall with attached bathroom and kitchen, a ground-floor room, and a staircase leading to a potential second floor, that for the moment was non-existing. The mountainous terrain necessitated substantial earthwork investment, therefore a large apart of the budget was invested there. Visiting the project to this date, one can see, that spaces have been appropriated and incorporated, creating a vibrant, diverse neighbourhood. Not all expansion and regulations were respectful; for example, some houses encroached on others. Still, this project is an instructive case study, enriched by residents' critical reflections on community responsibility and neighbourhood dynamics.

LOCATION: ANTOFAGASTA, CHILE  
ARCHITECT: ALEJANDRO ARAVENA

SOFTWARE

HARDWARE

### SOME APPROPRIATION

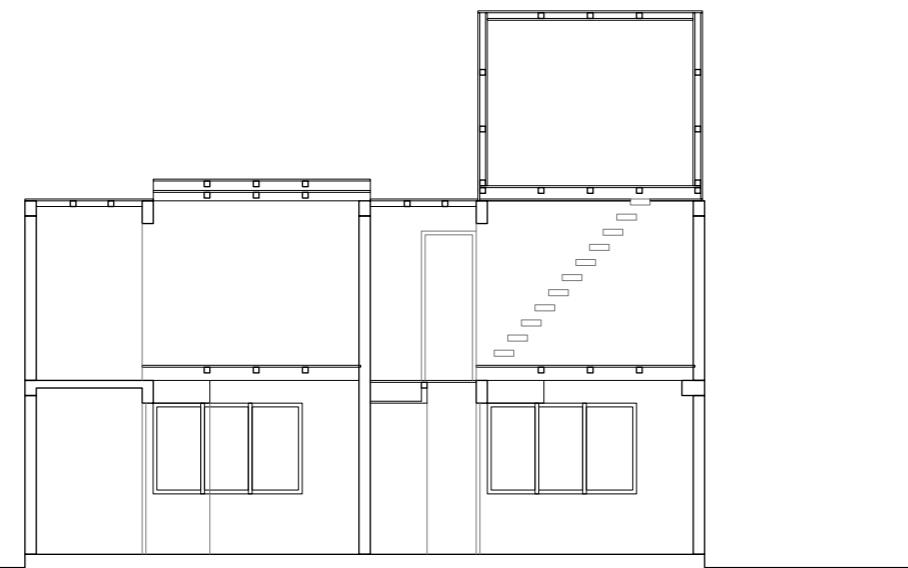
Leave freedom to appropriate while maintaining some guidelines and rules.

### INCREMENTALITY

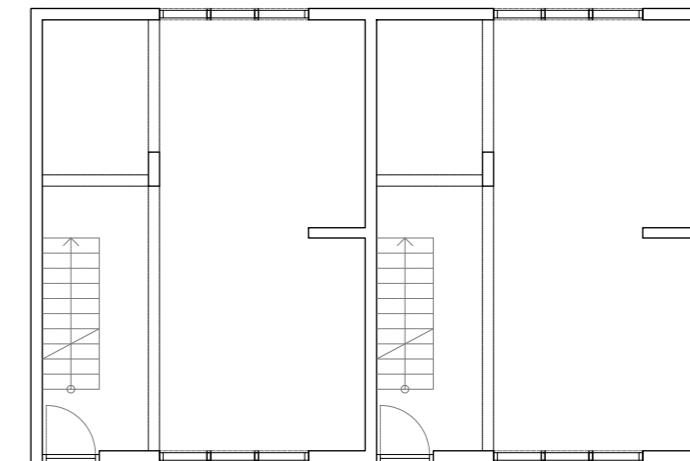
Investing in minimums at the beginning to create an economic boost out of the house and be able to increment with time.

97

98



99



## TECHO EMERGENCY HOUSING

Interestingly, the name of the association directly reflects the type of construction they provide. "Techo" in Spanish simply means "roof," emphasizing that their focus is on providing a basic shelter rather than full-fledged emergency housing. However, it's important to recognize the critical role this organization plays in emergency and disaster scenarios. For instance, following the 2010 earthquake, they constructed over 4,000 houses known as "mediaaguas" due to their distinctive shape. In Spanish, a pitched roof is called "tejado a dos aguas," but these structures only have half (media) of the roof, hence the name. They are basic, comprising four thin timber walls and a pitched metal roof, lacking services or installations. At the city level, these units are placed individually and often seem isolated, even elevated on pillar foundations. There's no cohesive urban planning, street layout, or communal spaces. From the organization's perspective, the process involves placing houses on vacant lots, without further development. The construction itself involves assembling prefabricated elements on-site by volunteers, primarily students from Santiago. According to long-term TECHO employees I interviewed, these students gain the opportunity to travel across the country while contributing to volunteer efforts. Despite having no prior construction experience or formal skills, approximately four students can complete a house in under a day.

LOCATION: CHILE



SOFTWARE

BUILDING PROCESS

Easy and fast to build. No construction knowledge is required.

101

## TECHO DEFINITIVE HOUSING

LOCATION: SANTIAGO DE CHILE

102

TECHO, an international organization, operates in multiple countries and collaborates with strategic partners such as Banco Santander and Sodimac, relying on individual donations, and public funds. Their mission is anchored in community empowerment, prioritizing the voices and needs of the residents they serve. Despite their immediate focus on providing basic shelter, TECHO recognizes the long-term necessity for permanent housing solutions. In many cases, these solutions can take up to 15 years to realize due to government subsidies and bureaucratic processes. From my personal perspective, TECHO's approach to definitive housing may draw parallels with Aravena's Elemental typology, which has proven effective in certain communities like Quinta Monroy. However, the success of such strategies can vary significantly depending on the context, as there are also examples of non-prosperous projects. The construction methods employed by TECHO involve high-intensity labour to deliver concrete structural elements, contrasting with lightweight materials used for facades and interiors. Upon delivery, inhabitants receive essential structural elements and basic installations, with the potential to expand these over time. It must be noted that there's no scope for incremental growth beyond the initial construction phase. During the initial delivery, floors, wall elements, windows, doors, internal partitions, and other interior components are left for the inhabitants to complete or install themselves. Even staircases are planned for subsequent stages, with temporary timber ladders often used initially. This approach underscores TECHO's emphasis on immediate relief coupled with the empowerment of communities to take ownership of their living spaces.

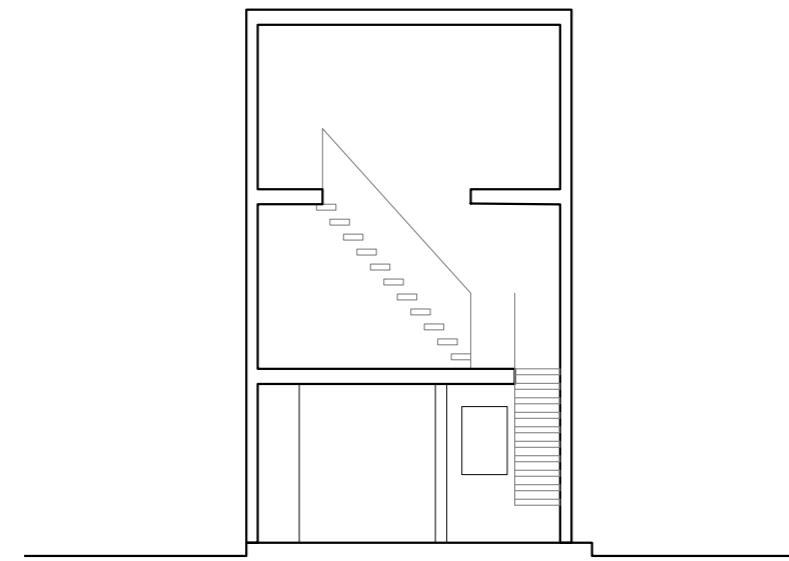
HARDWARE

BASIC UNIT

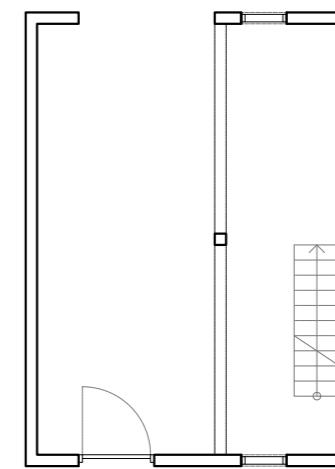
103

Dual approach of previously designed elements (in this case the concrete structure) and the space for freedom of the inhabitants (the facades and internal elements)

104



105





## CONSOLIDA TU VIVIENDA

108

Consolida tu vivienda is a private entity that has undertaken the construction of small, three-story individual buildings in the Peñalolén neighbourhood of Santiago de Chile. Their approach involves a meticulous selection process where they recruit families one by one for potential projects. Each family undergoes a detailed analysis of their circumstances, considering factors such as costs, location, and family situation to assess project feasibility. The standard design can be a bit altered, depending on their wishes. Subsequently, they apply for governmental subsidies to facilitate construction, with the final step being the families moving in after completing bureaucratic formalities. The architectural design of these houses follows a consistent typology, a long house positioned offset from three sides of the plot. Each floor is designated for a nuclear family, with a maximum of three families sharing the external front access staircase and common open areas. Despite this shared layout, each dwelling maintains individuality in terms of services and sanitary facilities, with an average apartment size of around 60 square meters. Concrete is predominantly used in construction, from load-bearing walls and ceilings to staircases and street-facing fences. Interestingly, the scale of these structures contrasts with the predominantly single-story constructions in the neighbourhood, yet their unassuming grey concrete appearance doesn't draw much attention. While there is potential for families to personalize spaces like gardens and staircases with elements and plants, the uniformity of design across all units creates a somewhat monotonous visual impression due to the limited openings and extensive concrete surfaces. Nevertheless, the Consolida tu vivienda project has proven successful and beneficial for the residents of Peñalolén, evidenced by the completion of over 35 houses with 20 more currently under construction. This initiative provides a viable housing solution that effectively integrates families into the neighbourhood while addressing their specific needs and circumstances.

LOCATION: PEÑALOLÉN

### PARTICIPATION

#### SOFTWARE

Since the start of the whole project, there is a very clear and direct connection between the client and the company.

#### SOFTWARE

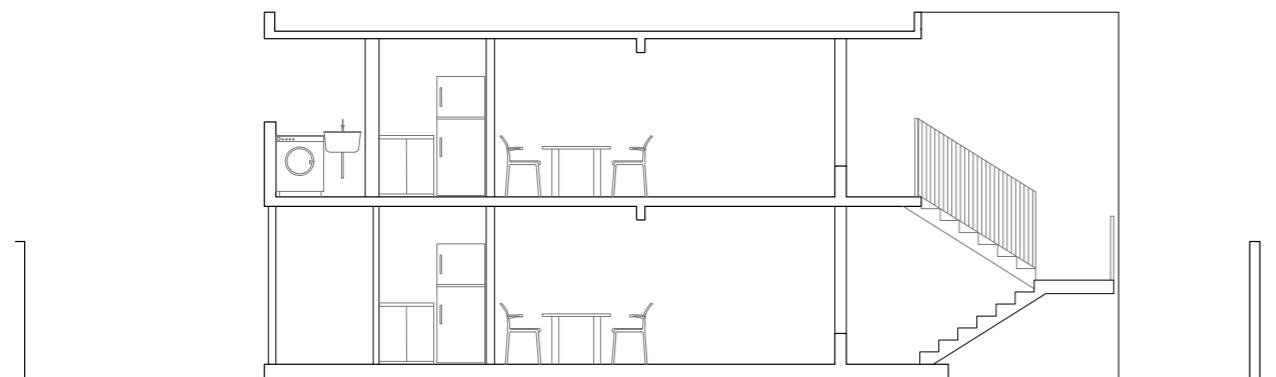
Work with public subsidies and help the client access these subsidies. The designs fit the Chilean standards and regulations.

#### HARDWARE

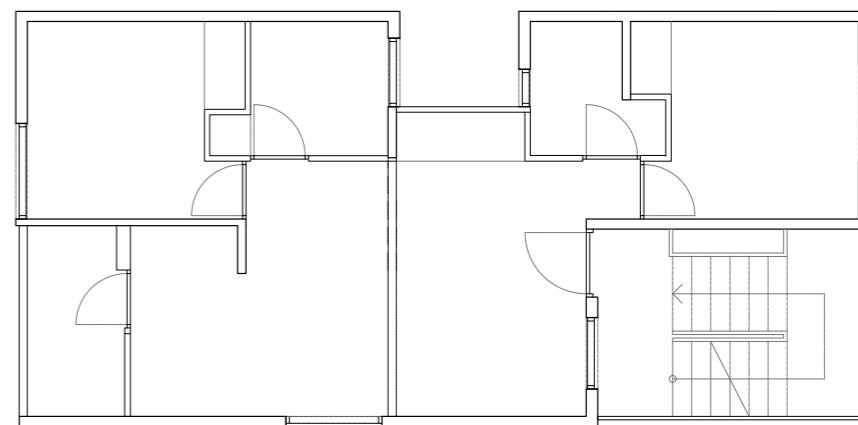
Low rise and human scale while still hosting three nuclear families within the building.

109

110



111



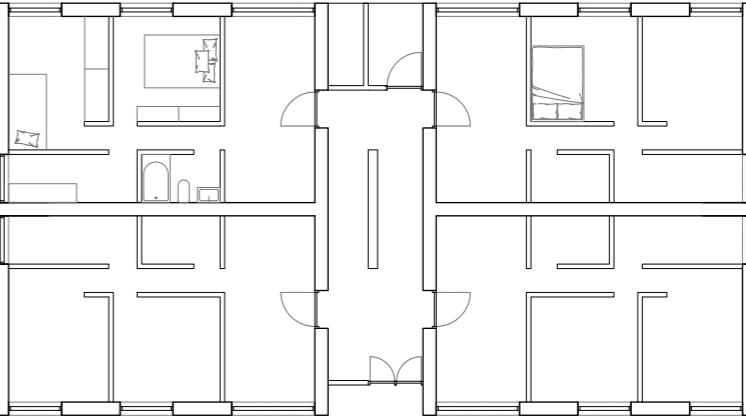
## BASIC BLOCK

In considering the prevalence of monotonous architectural typologies across diverse family and situational contexts, one notices their rapid construction using concrete, often resulting in an appearance that shows signs of neglect over time, with fading colors and an overall lack of maintenance evident. These structures typically stand in isolated settings, encircled by expansive parking lots. Despite their uniformity, these buildings manifest in various lengths and colors, incorporating different window styles. A common feature among them is a horizontal emphasis in their facades, achieved by accentuating the floor slabs externally. This architectural technique amplifies the impression of elongation, making these already lengthy buildings appear even more protracted. For pedestrians, this visual effect can induce a sense of weariness, as the elongated facade seems interminable during walks alongside them.

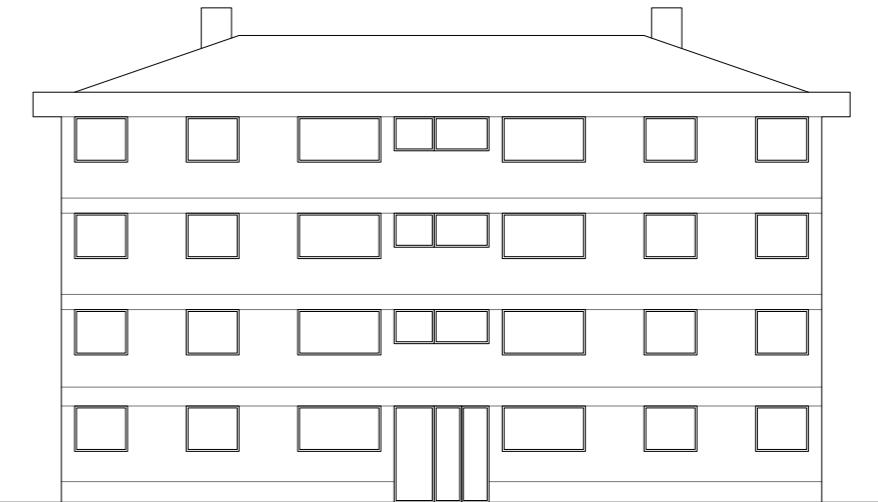
112

"Volumes placed in fields that belong to nobody, in addition to collective circulation spaces shared by too many neighbours, which present difficulties for security and maintenance, makes this typology the one that produces more social conflict. The building is inflexible and difficult to adapt or make additions. Apartments on the upper floors are about forty square meters and cannot be expanded. Still, the pressure for space is so great ad the structure due to cost constraints is calculated so close to the limit, that any minor change compromises the entire building safety" (Aravena and Iacobelli, 2013, p. 62)

LOCATION: ALL OVER CHILE



113



114



115

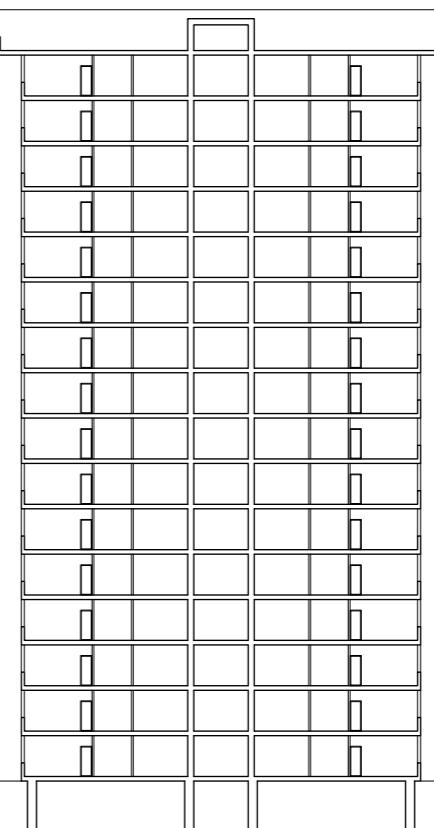
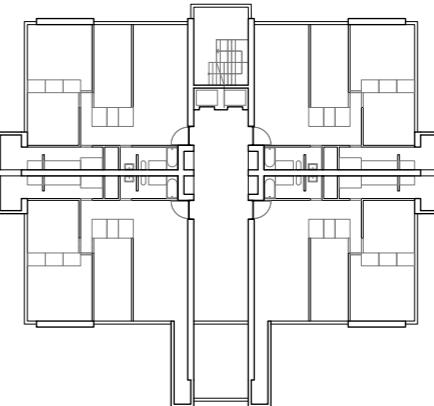


## VERTICAL GHETTOS

The massive concrete and glass structures host hundreds of thousands of people, all living on top of each other, stacked, together but anonymously separated from each other. Despite the density in the street and the enormous amount of people passing by, selling goods, laughing, screaming and driving, a sense of quiet melancholy pervades the neighbourhood. There is a thick air of fatigue and neglect. The imposing skyscrapers stand in stark contrast with the few one-story houses that remain. Electrical wires crisscross in between these. In the skyscrapers, the glass doors only open to allow residents with accreditation through, the security turnstiles limit the access. Here, the technology gives a sense of safety and elevated standard at the same time as isolation.

116 While the skyscrapers and all its fancy gadgets symbolize prosperity for some, for others it is the only dwelling they can afford. In the endless buildings, micro apartments become homes for low and middle class families that can not afford much more due to the exacerbated renting prices.

LOCATION: SANTIAGO DE CHILE



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**WORLD**  
BUILT PROJECTS ON A  
NEIGHBOURHOOD SCALE

# PREVI PERÚ

LOCATION: LIMA, PERU  
ARCHITECT: 27 NATIONAL AND INTERNATIONAL ARCHITECTURE OFFICES

In 1980, the pioneering urban development of the Belapur project commenced right next to the city center, aspiring to blend diverse socio-economic groups within a cohesive community fabric (van Andel and van Gameren, 2015, p. 64). This ambitious endeavour aimed for an overall density of 500 people per hectare, accommodating a spectrum of residents from low-income earners to middle-high class individuals. One of the innovative aspects of this project was its design philosophy centred around the concept of gradual appropriation by its inhabitants, manifested through personalized touches such as colour choices and symbolic expressions. Therefore, the name of the project: Incremental Housing, Belapur. The cardinal principles guiding this visionary initiative were incrementality, equity, malleability, open-to-sky space, disaggregation, pluralism, participation, and income generation. These were nonnegotiable and guided the project from its design phase to up to date. Over the years, this neighbourhood has transformed into a tranquil pedestrian-friendly enclave, reflecting the successful integration of its principles into everyday life. On a master plan scale and to foster diversity and break away from monotony, housing units were organized into clusters of seven homes surrounding an 8x8 meter courtyard, effectively avoiding the uniformity often associated with rowhouses. Each unit was designed to range between 45m<sup>2</sup> to 70m<sup>2</sup>, ensuring flexibility and adaptability to varying household needs. Described as a timeless exemplar of low-rise housing, this project embodies the enduring vision of its architect, evident in its enduring relevance and liveability (Correa, 2012, p. 201).

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125

## CENTRAL CORE

### SOFTWARE

In many of the proposals the kitchen and core was set central to the house to shed a light on the domestic duties.

### HARDWARE

### SIZE

While maintaining a human and rather low-rise scale, there are different variations of public spaces clustering of typologies and multiple open areas.

### HARDWARE

### PATIO

all the typologies must have a patio for ventilation and open air. Sometimes they are in the back of the house, a private element. sometimes they serve as threshold between public and private

## BARRIADAS DE INTEGRACIÓN

126

In 1961, the Peruvian government under President Manuel Prado enacted Law 13517, which initiated the development of a self-built city aimed at improving living conditions and legalizing informal settlements known as barriadas. This law was framed as a measure of public good, intending to strengthen family units, foster better work habits, and secure a decent standard of living for the populace (Ley de Remodelación, Saneamiento y Legalización de los barrios marginales, 1961, p. 8). Under this law, barriadas were given the opportunity to regularize their status. The government improved amenities and rehabilitated dwellings based on assessments by a panel of experts comprising a public health professional, urban planner, sanitary engineer, and lawyer. If a barriada was deemed irreparable, eviction became the next course of action. Additionally, the law prohibited the formation of new barriadas, offering social housing alternatives while rigorously evacuating new settlements without leniency. Residents were granted full property titles upon completing construction within seven years. The viability of a project was determined by ensuring that costs for demolition, rehabilitation, service upgrades, and house improvements did not exceed 10% of the average family income per square meter (van Andel and van Gameren, 2015, p. 43). Social housing units, known as UPIS, sometimes lacked pre-installed services to reduce costs. Instead, residents were expected to install these services when financially feasible (Ministerio de Vivienda, 1980). These units provided very basic shelters, typically comprising a single 10x4 meter room with brick party walls at the back and sides, a thin partition wall of matting and bamboo at the front, and a roof made of cane and clay (van Andel and van Gameren, 2015, p. 44). This approach aimed to balance cost-effectiveness with providing essential housing to marginalized communities, albeit with minimal amenities initially.

LOCATION: LIMA, PERÚ

SOFTWARE

SOFTWARE

SOFTWARE

SELF-BUILDING

Legalization of their informal status was the first step to work with the communities.

MANAGEMENT

Mandatory for the inhabitants to finish the house to be able to acquire the property title.

COSTS

Cost control of the whole process and adjustment of the project to each barriada, the final cost should not exceed 10% of the average monthly income

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## ARANYA LOW COST HOUSING

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The township of Aranya, located on the outskirts of Indore, was initiated by the Vastu-Shilpa Foundation with a profound vision to establish an integrated human habitat that resonated with the lifestyles and cultural backgrounds of its residents (Shekhawat, 2019, p. 43). This ambitious endeavour aimed to address housing needs while embracing incremental and affordable development, facilitated by a specific architectural vocabulary and a compact utility core (Davidson, 1995, p. 65). However, as Romi Khosla critically pointed, the Aranya project encapsulated the innocence of professional designers within its 80 demonstration houses, reflecting good intentions but acknowledging the complexities beyond mere architectural solutions in slum resettlement projects out (Roy, 2004, p. 303). Designed to accommodate 6,500 families, with 65% of them from the Economically Weaker Section (EWS), the project envisioned basic yet essential provisions such as wet rooms, kitchens, washrooms, plumbing, and a single room, which could be expanded and customized by the inhabitants over time. The layout of Aranya exhibits a strategic urban design approach, characterized by a clear hierarchy of streets and public spaces. The central spine boasts a generous width of 15 meters, ensuring a prominent thoroughfare, while pedestrian streets are narrower at 4.5 meters but still wide enough to accommodate emergency vehicles during crises (Shekhawat, 2019, p. 47). This thoughtful arrangement emphasizes both accessibility and adaptability, vital elements in fostering a sustainable and harmonious urban environment tailored to the diverse needs of its residents.

LOCATION: ARANYA, INDORE, INDIA  
ARCHITECT: BALKRISHNA DOSHI

### COMMUNITY

#### SOFTWARE

Importance of local lifestyle and cultural background of the residents

#### HARDWARE

Incrementality and customization to be developed over time by each inhabitant

### PUBLIC

Hierarchical organization of streets and public spaces

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## INCREMENTAL HOUSING BELAPUR

LOCATION: BELAPUR, INDIA  
ARCHITECT: CHARLES CORREA

In 1980, the pioneering urban development of the Belapur project commenced right next to the city center, aspiring to blend diverse socio-economic groups within a cohesive community fabric (van Andel and van Gameren, 2015, p. 64). This ambitious endeavour aimed for an overall density of 500 people per hectare, accommodating a spectrum of residents from low-income earners to middle-high class individuals. One of the innovative aspects of this project was its design philosophy centred around the concept of gradual appropriation by its inhabitants, manifested through personalized touches such as colour choices and symbolic expressions. Therefore, the name of the project: Incremental Housing, Belapur. The cardinal principles guiding this visionary initiative were incrementality, equity, malleability, open-to-sky space, disaggregation, pluralism, participation, and income generation. These were nonnegotiable and guided the project from its design phase to up to date. Over the years, this neighbourhood has transformed into a tranquil pedestrian-friendly enclave, reflecting the successful integration of its principles into everyday life. On a master plan scale and to foster diversity and break away from monotony, housing units were organized into clusters of seven homes surrounding an 8x8 meter courtyard, effectively avoiding the uniformity often associated with rowhouses. Each unit was designed to range between 45m<sup>2</sup> to 70m<sup>2</sup>, ensuring flexibility and adaptability to varying household needs. Described as a timeless exemplar of low-rise housing, this project embodies the enduring vision of its architect, evident in its enduring relevance and liveability (Correa, 2012, p. 201).

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SOFTWARE

HARDWARE

GUIDELINES

LOW-RISE

Very strict non-negotiable guidelines to ensure the quality of the project in the future

Rather small houses, to be able to ensure access to the sky, open spaces and flexibility

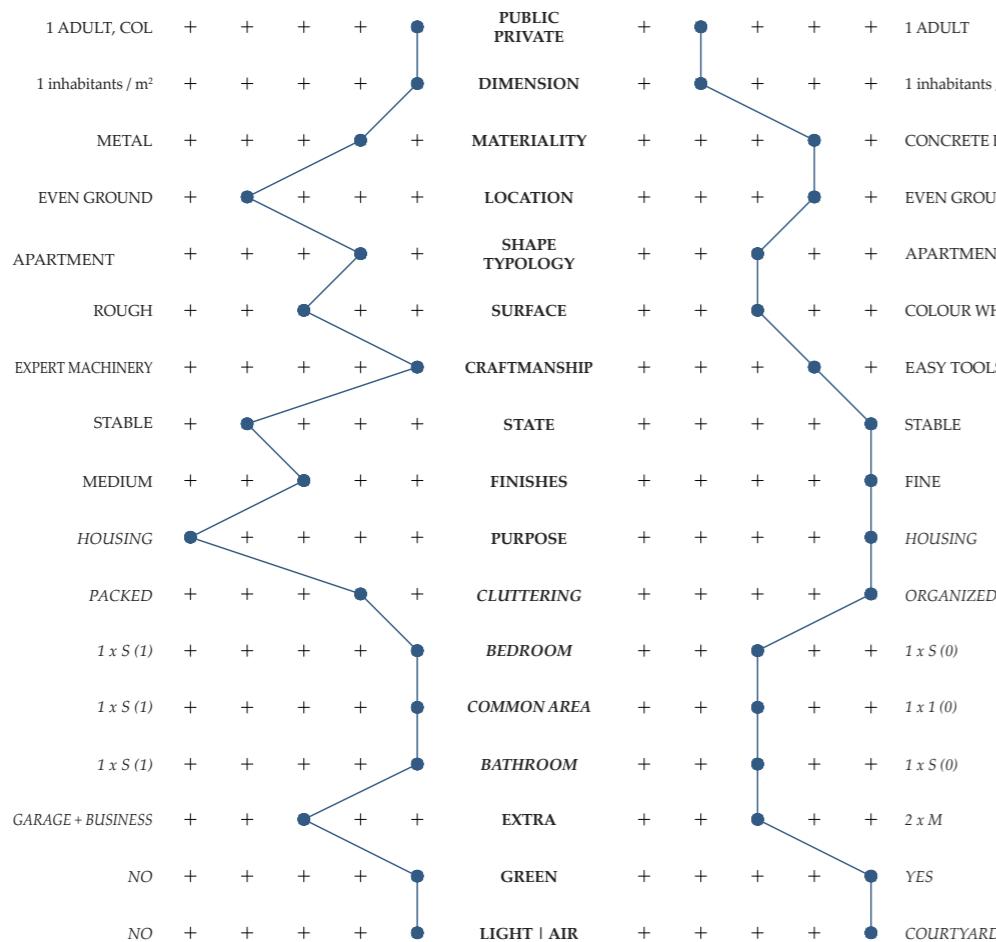






## BLANCA ARCOS

### HER CURRENT SITUATION



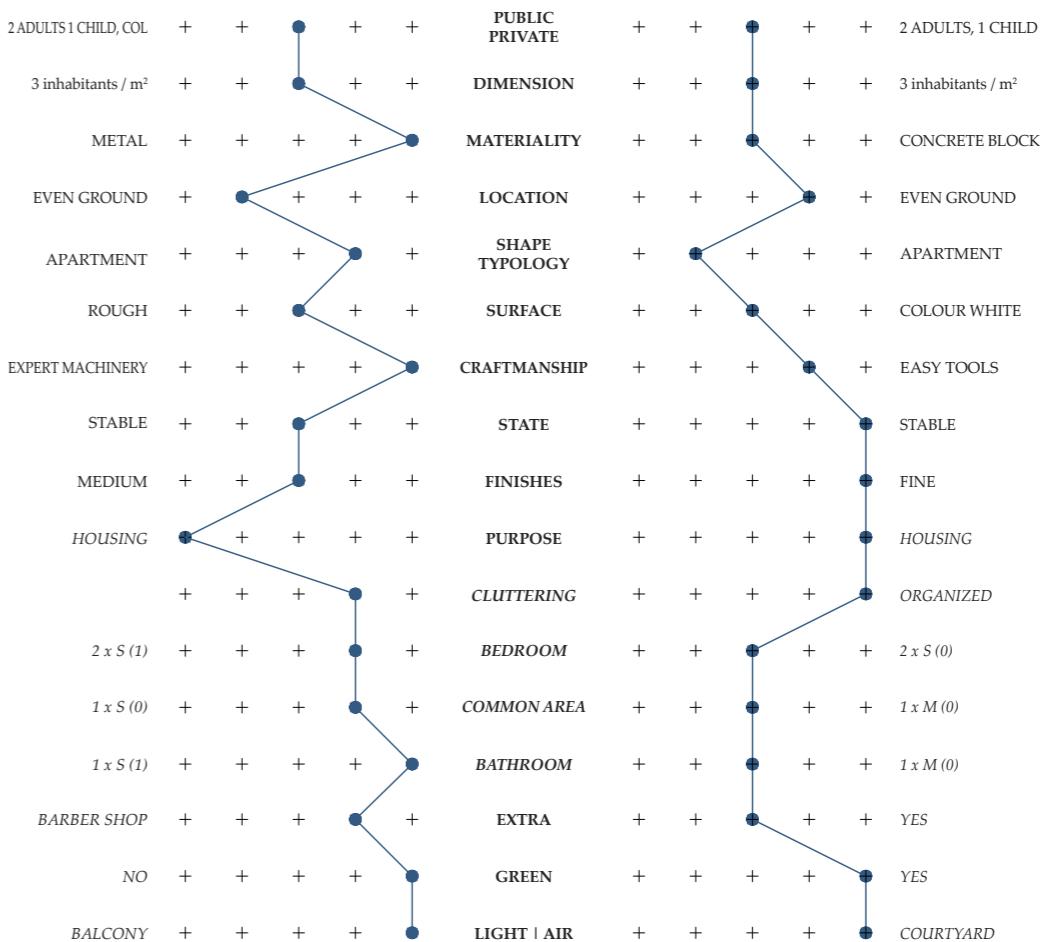
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### HER FUTURE HOME



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### HER CURRENT SITUATION



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## CARME AND SALOMÉ

### HER FUTURE HOME



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HER DATA

NARRATED BY HER

El edificio de tres plantas lo comparten varias familias. Carme y Salomé vivían antes en la planta baja, donde su pareja tiene la peluquería. Ahora se han mudado a la primera planta. Los otros apartamentos los alquilaban a diferentes familias, pero ahora tan solo hay Arcos. Se sienten más seguras así, pues para acceder a los pisos superiores hay que atravesar la planta baja. La escalera que lo comunica todo está al fondo. En total cada apartamento son unos 10 metros de largo y 5/6 de ancho, no muy grande, para albergar a las 8 personas aproximadamente que viven ahí. La casa la han construido entre ellos, poco a poco añadiendo los pisos. La estructura de hierro la construyó alguien de fuera que contrataron, es decir, se nota que les importa su casa, y aunque sea caro, van a invertir en ella para que esté bien hecha. Pese a ser una construcción estable, carece de luz y ventilación. Solo pudiéndose abrir por la fachada delantera, en la planta baja, solo se encuentra la apertura de la puerta, no hay ninguna otra ventana en ninguna otra habitación. En los pisos superiores pudieron poner unos balconcitos, y el salón comedor también goza de una ventana. Preferiría tener un patio interior, y los balcones que den hacia atrás, así sería más privado. Le gusta estar con sus vecinos, el gusta la comunidad, es la razón por la que quiere quedarse aquí, en Los Arenales. Y al mismo tiempo, quiere privacidad. No quiere mucho, a lo mejor una cocina más grande, pues le gusta cocinar. Sin embargo, no pide nada en especial. Nada grandioso ni complicado, quiere un buen hogar para su familia.

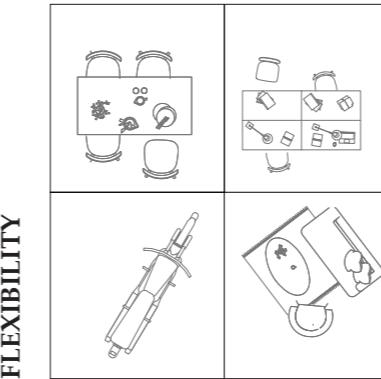
En la misma casa vive B.Arcos, que llega de trabajar mientras hablo con C. Le gusta vivir aquí, con sus vecinos y sobre todo con su extensa familia. Eso sí, desearía un poco más de tranquilidad y de privacidad. Su prioridad en un futuro idílico también es muy sobria y sencilla. Pone énfasis en tener más luz natural, una cocina más funcional, más plantas, lo que conllevaría un patio interior, y, sobre todo, conseguir que no entre tanto polvo en la casa. Ya que las calles son de arena, todo se mete para dentro, dejando las estancias sucias y haciendo las tareas del hogar más arduas. Por la puerta se entra a la casa, entra el polvo, pero también entra el aire y la luz. Es mucho más que una simple puerta. A ambos lados de ella están la peluquería del hijo de B.A. y el garaje de B.A. Las estancias de la casa se encuentran detrás, más escondidas.

Several families share this three-storey building. Carme and Salomé used to reside on the ground floor, where her partner runs a salon. Now they have shifted to the first floor. The other apartments used to be rented to different families, but now, only some Arcos remain. They feel safer this way since accessing the upper floors requires traversing the ground floor. The staircase that connects everything lies at the back. Each apartment is roughly 10 meters long and 5/6 meters wide, not too large to accommodate the approximately eight people living there. They have constructed the house among themselves, gradually adding the floors. An outsider they hired constructed the iron structure, indicating their care for their home. Despite its stability, it lacks light and ventilation. Only the front facade opens on the ground floor; there is only the door opening, no other windows in any other room. They managed to add tiny balconies on the upper floors, and the dining room also boasts a window. Carme would prefer an inner courtyard and balconies facing the rear for more privacy. Yet, she enjoys being with her neighbours; she likes the community, which is why she wants to stay here in Los Arenales. According to C., the house must be cosy, well-made, but secure. She does not ask for much, just a larger kitchen because she loves to cook. However, she does not request anything special. Nothing grand or complicated, just a delightful home for her family.

In the same house lives B.Arcos, who arrives from work while I speak with C. She enjoys living here, with her neighbours and, above all, her extensive family. However, she wishes for a bit more tranquillity and privacy. Her priority in an ideal future is also modest and simple. She emphasises having more natural light, a more functional kitchen, more plants - which would entail an interior patio - and, most importantly, finding a way to keep so much dust from entering the house. Since the streets are sandy, everything gets inside, leaving the rooms dirty and household chores more difficult. Through the door comes dust, but also air and light. It is much more than just a simple door. On both sides of it are B.A's son's hairdressing salon and B.A's garage. The rooms of the house are hidden further back.

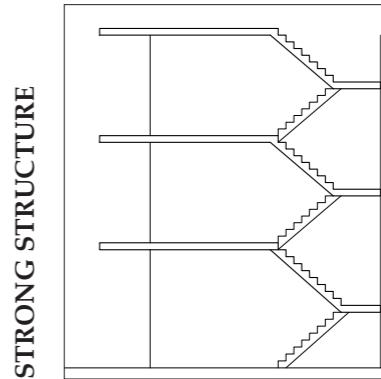
## LEARNING FROM HER VALUED BY THE AUTHOR

### SOFTWARE



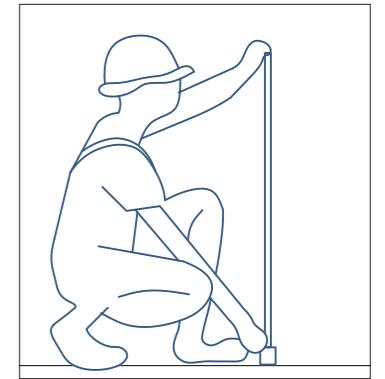
### FLEXIBILITY

### HARDWARE



### STRONG STRUCTURE

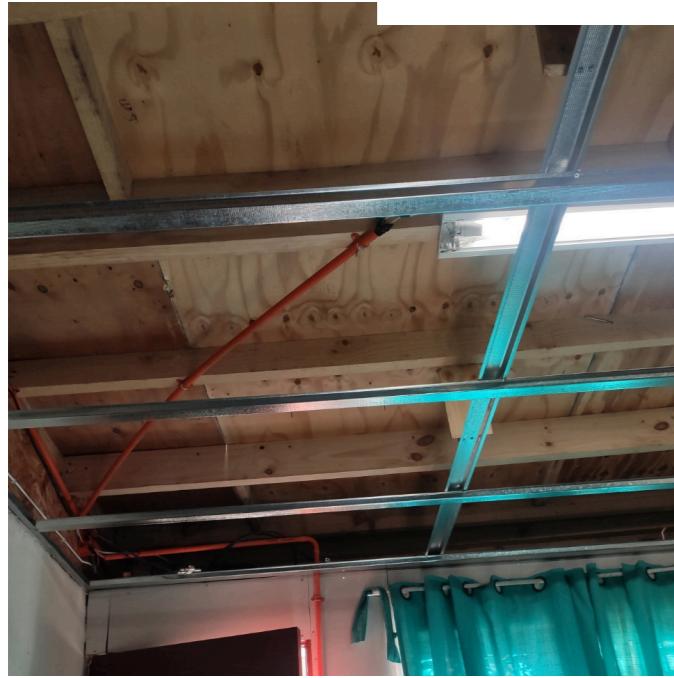
### HARDWARE



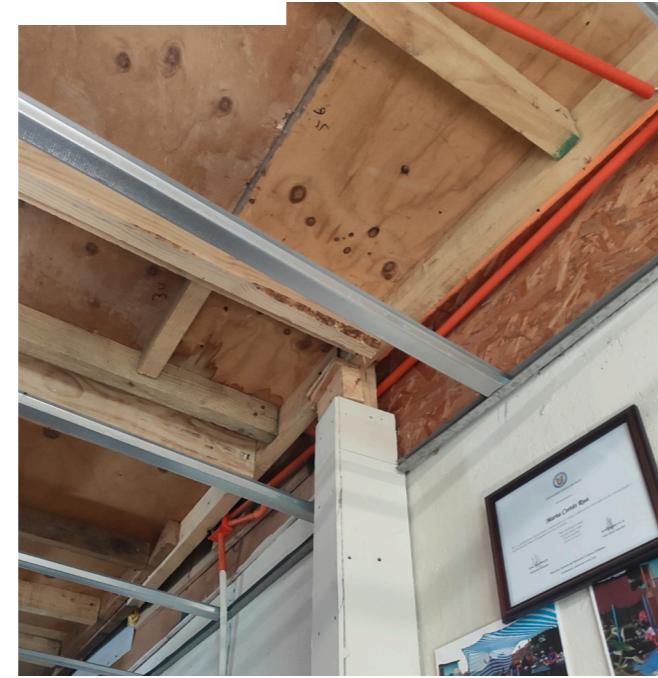
### COLLABORATION

Through time, this building has seen many people and many families. They have adapted the rooms, change the layout and even move between floors.

the impressive building consists of three stories, rare for the site, where 3 families cohabit vertically.



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DETAILS OF STRUCTURES



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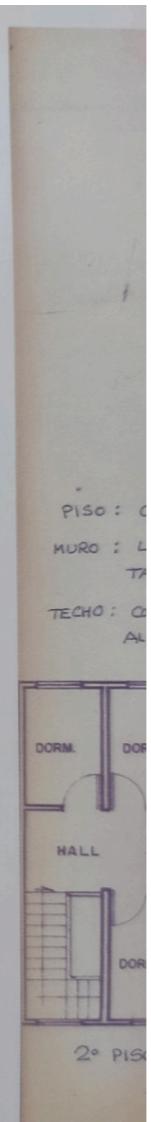
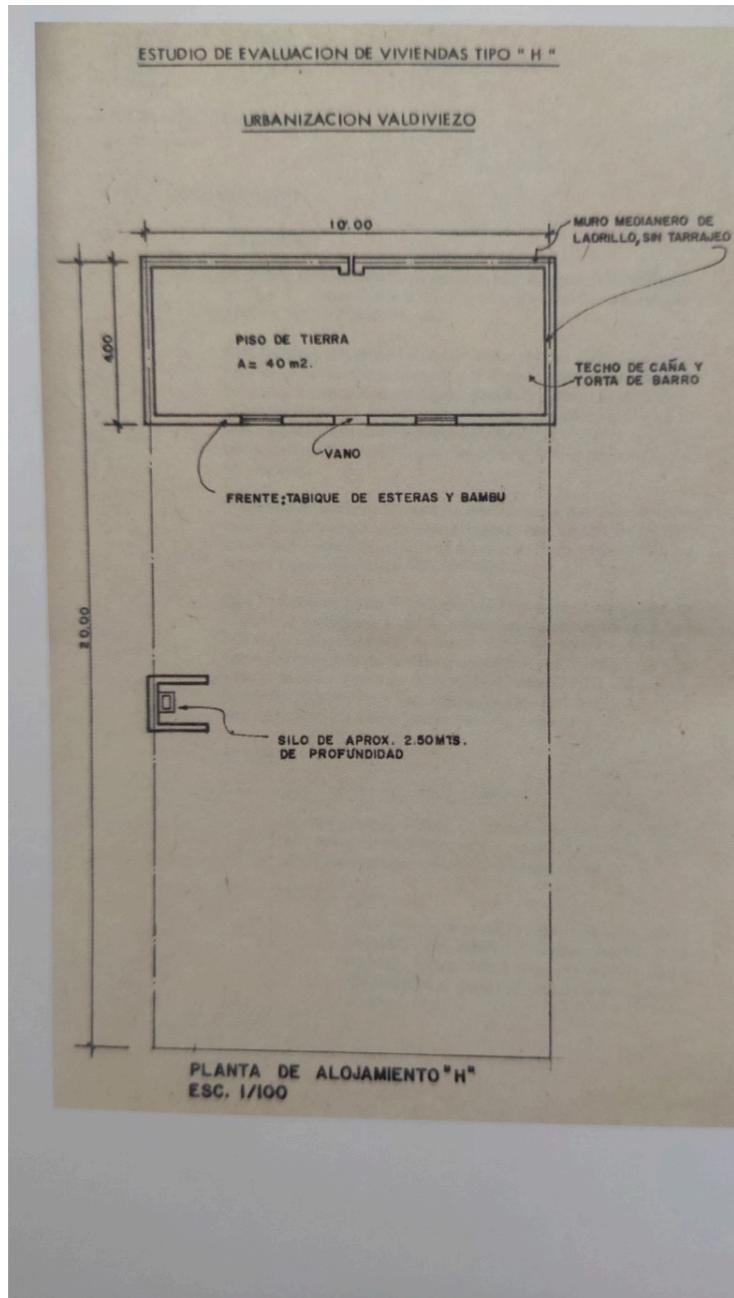


6. ALDO VAN EYCK: THE VILLEGAS FAMILY

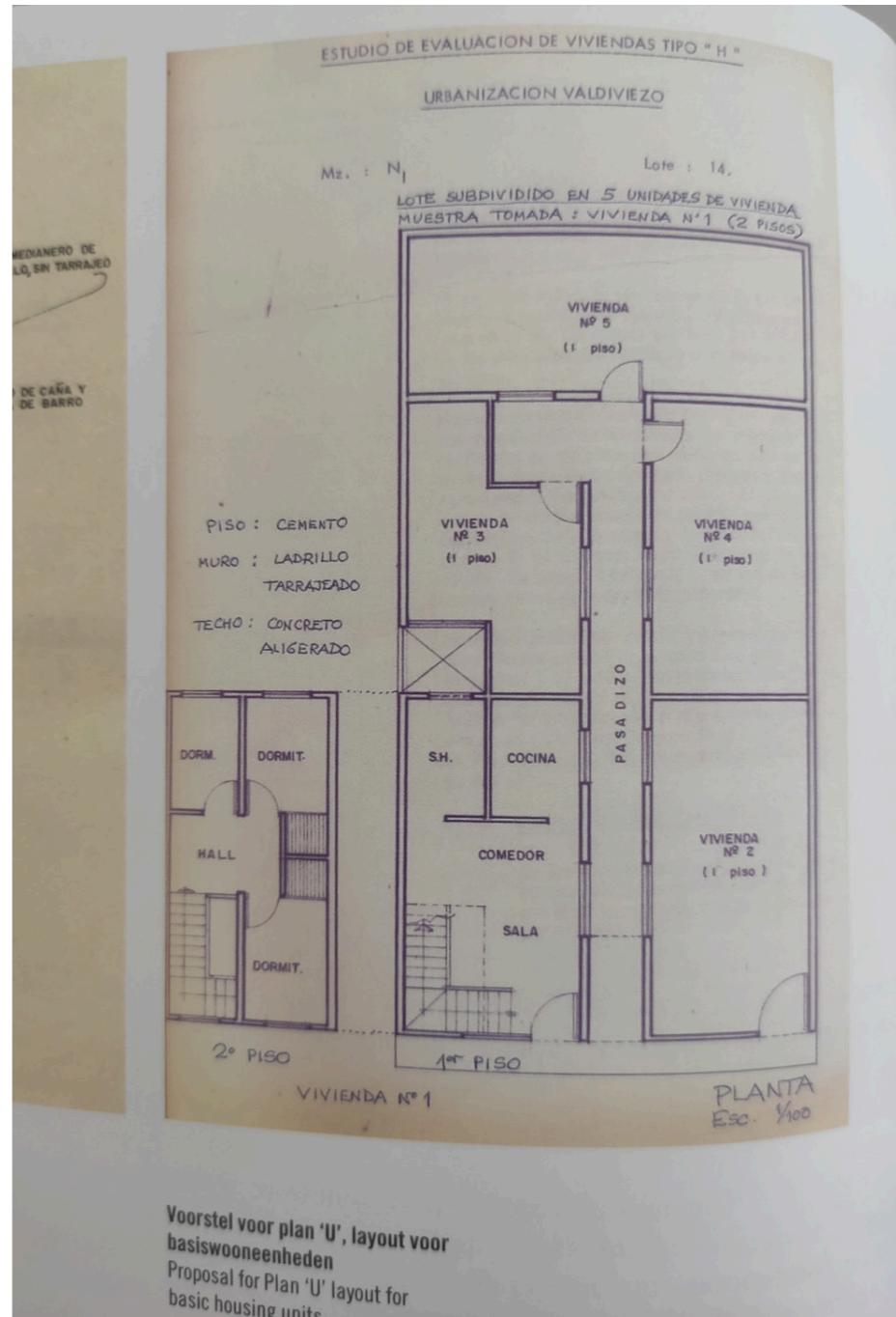
10. CHRISTOPHER ALEXANDER: SEÑORA TERESA'S FAMILY



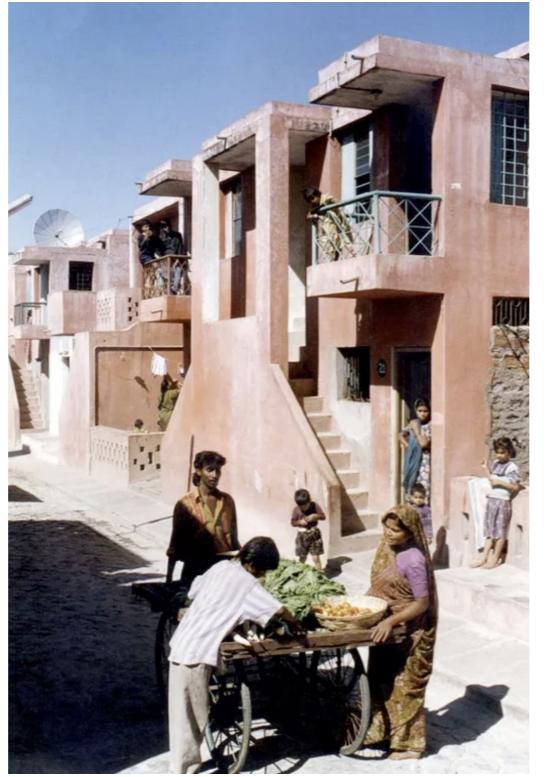
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Voorstel voor  
basiswooneenheden  
Proposal for Plan  
"H"



Voorstel voor plan 'U', layout voor  
basiswooneenheden  
Proposal for Plan 'U' layout for  
basic housing units



Aranya: 1983-86

