

A symbiotic relationship between LIVING and DENSITY

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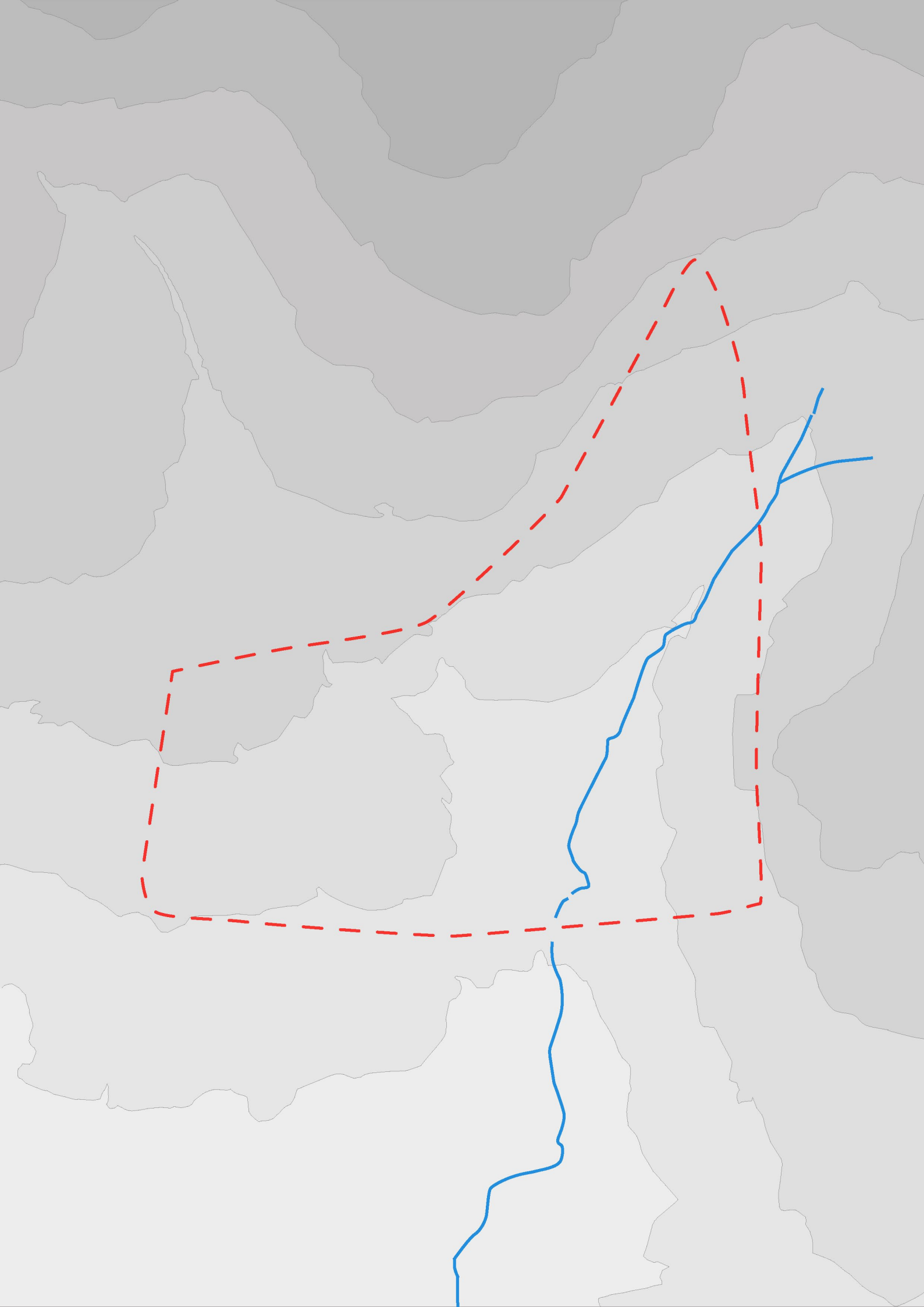


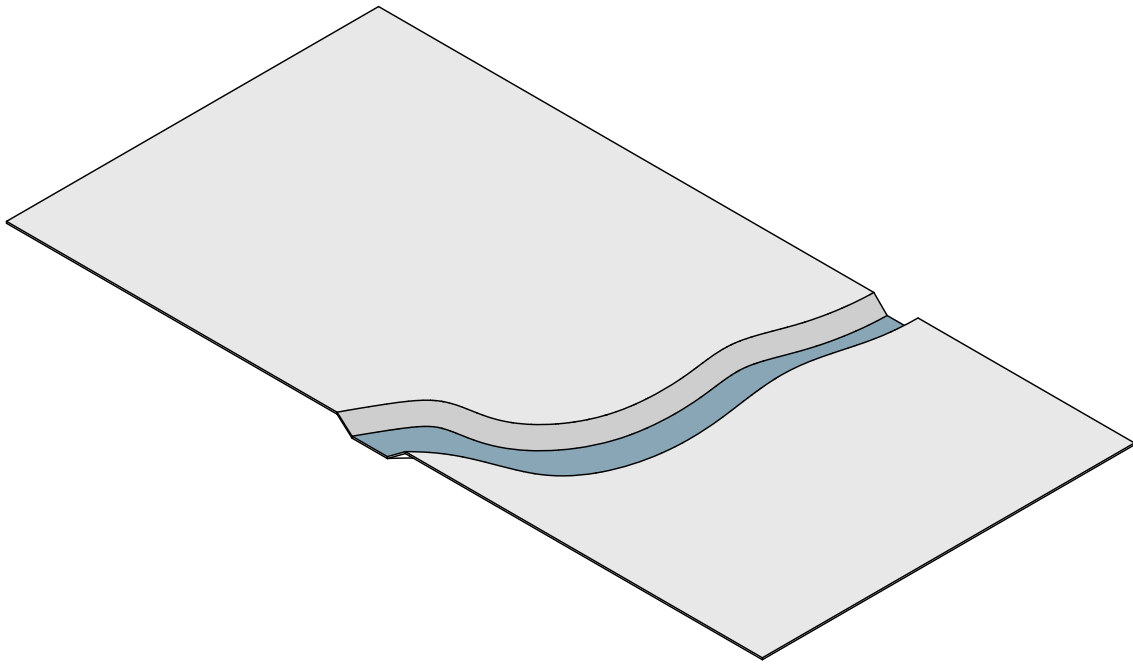
1. Introduction

Unlike many of Addis Ababa's sefers, the Geja Sefer was not formed around a royal family. The people who settled here come from Geja which is in the region of the Southern Nations, Nationalities, and People's Region and is approximately 171 km from Addis Ababa 'as the crow flies'. First settlements appear in the area at the end of the 19th century. The area gets more populated during the Italian occupation in the 1930's. By the fall of the Soviet system and the Derg Regime in 1991 the Geja Sefer is fully populated with many personal infill developments. Around 2010 a large area was cleared and developed with condominium blocks.

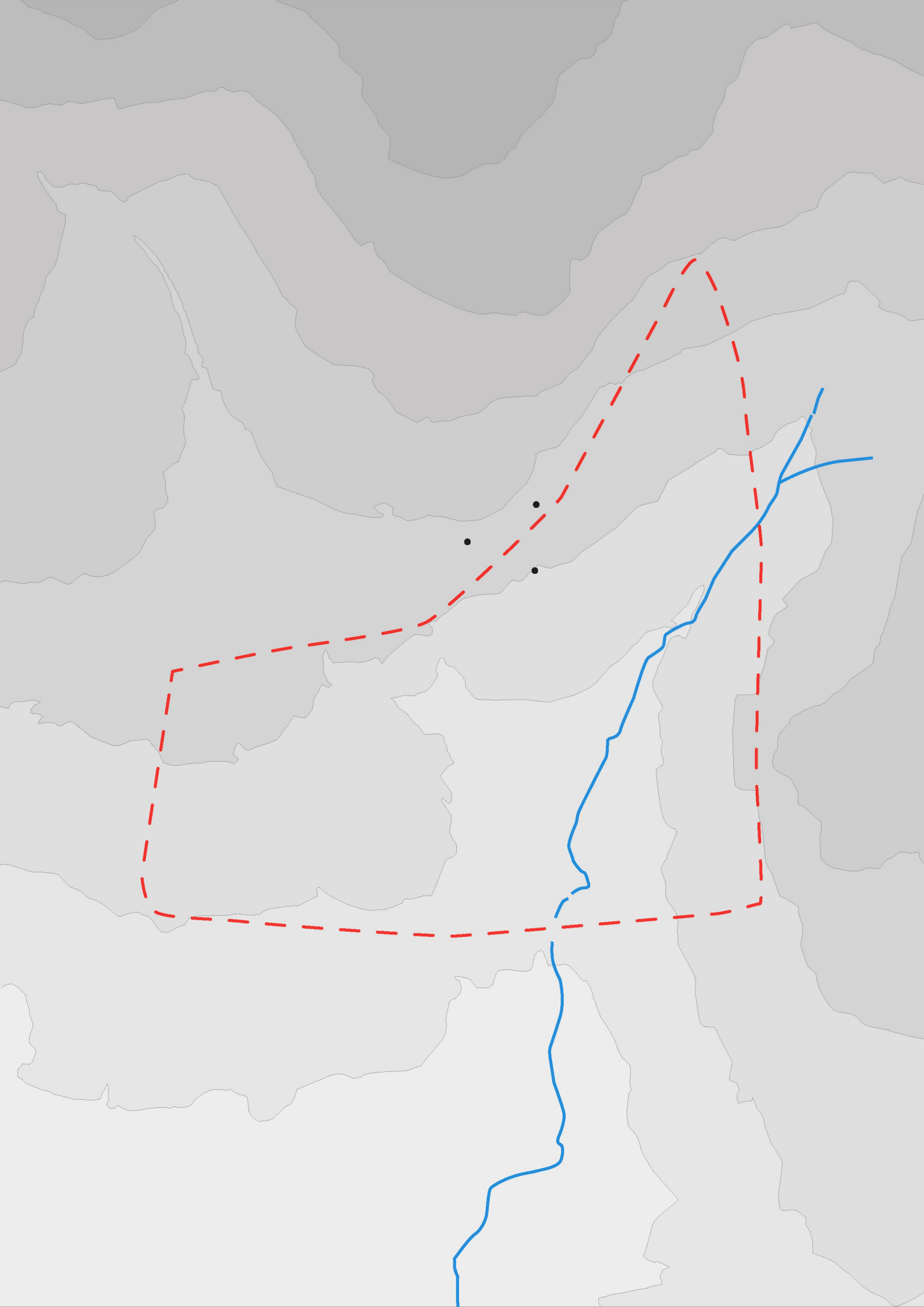
The Geja Sefer is located in Addis' sub region of Lideta. West of the Ghebi, it sits within a triangle formed by Mexico Square, Tekle Himanot Church, and the Ethiopian Institute of Architecture, Building Construction and City Development. Also located within the Geja Sefer is the Federal Supreme Court. To the North is the Merkato blocks and a large commercial area with what is known as the 'largest open air market in Africa'. To the East of the sefer is a large area of government amenities including hospitals, embassies and university buildings. For this study the focus is on a portion of the Geja Sefer area where both the traditional morphology of informal settlements as well as Italian planned blocks are present. A main street runs along the bottom of the area with small scale commercial activities and businesses including car part recycling depots. With a large area of new condominium redevelopment directly west of the focus area, it is suspected that this area could also be redeveloped in the near future. An elevated tram line runs through the Geja Sefer to the west and south of the focus area. This suggests that the land is prime real estate.

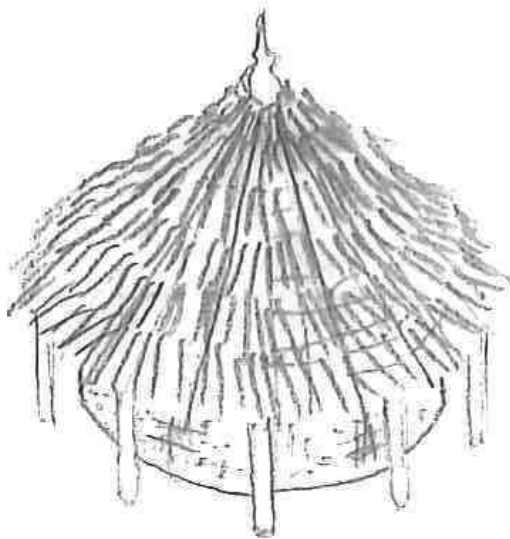
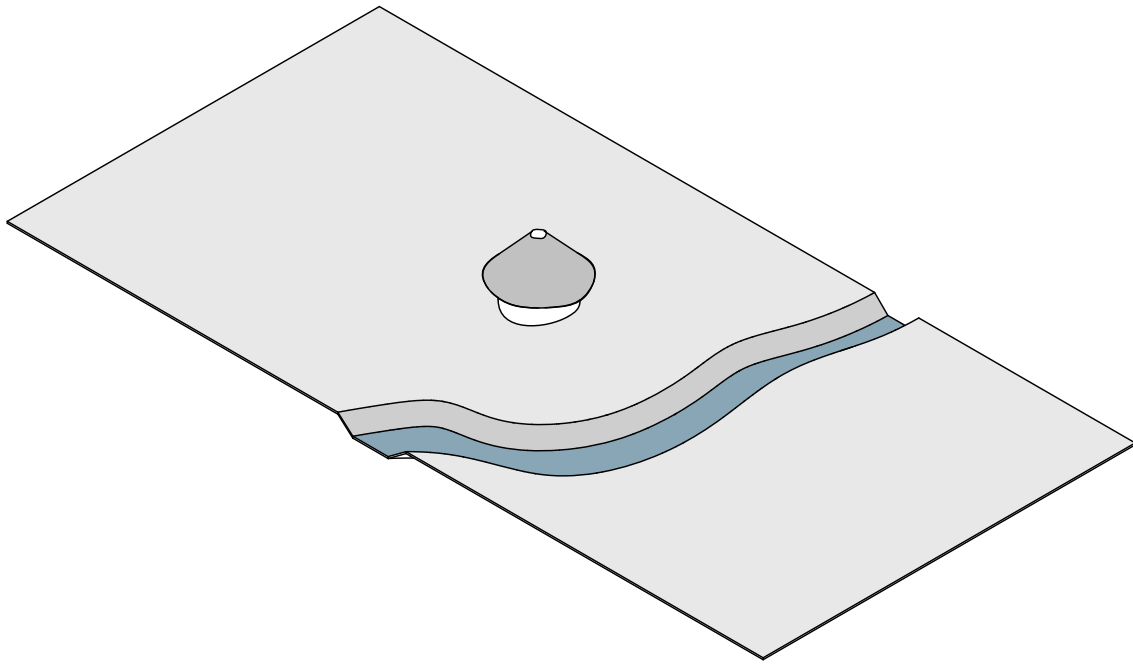
2.1 Historic Urban Transformation



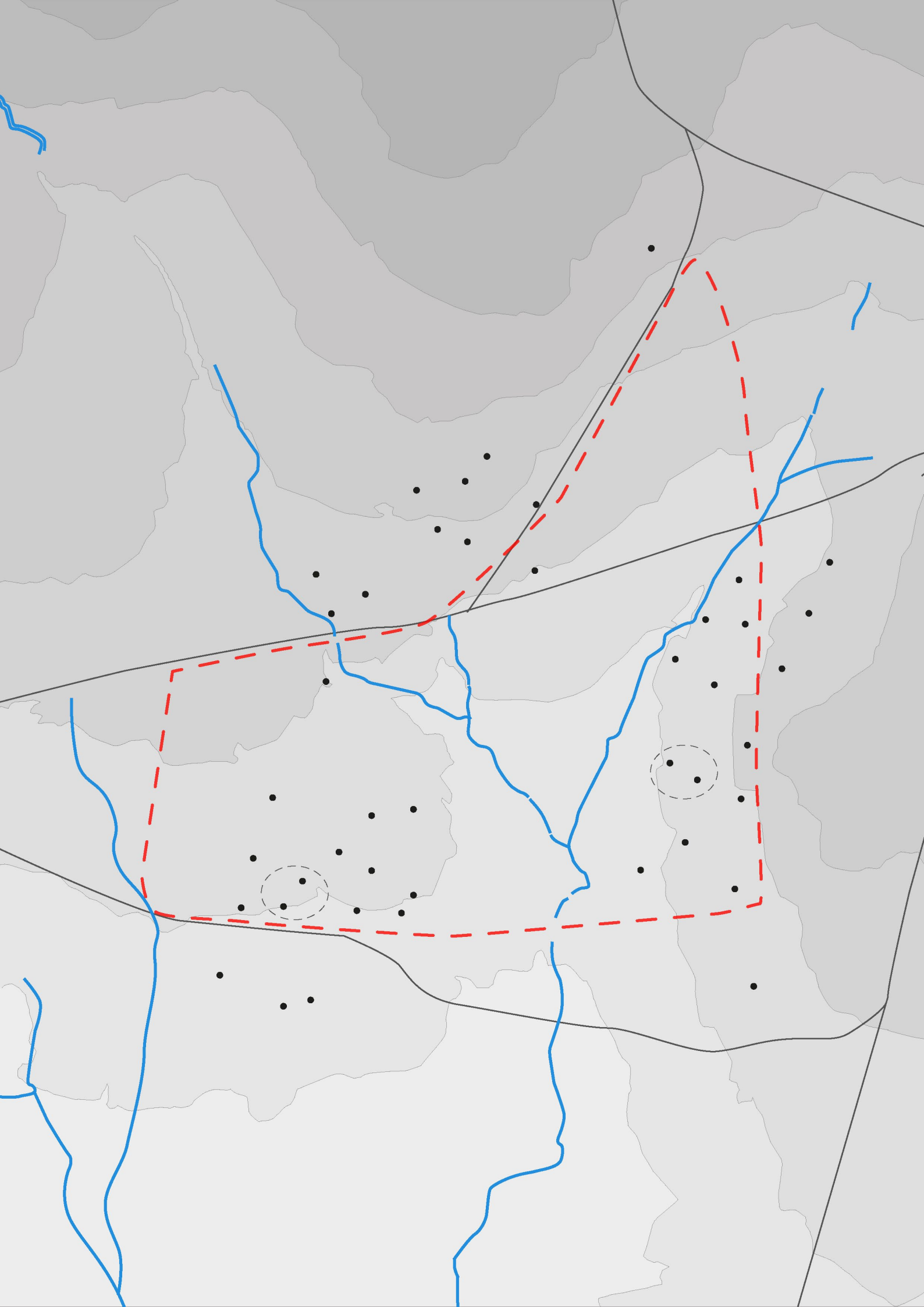


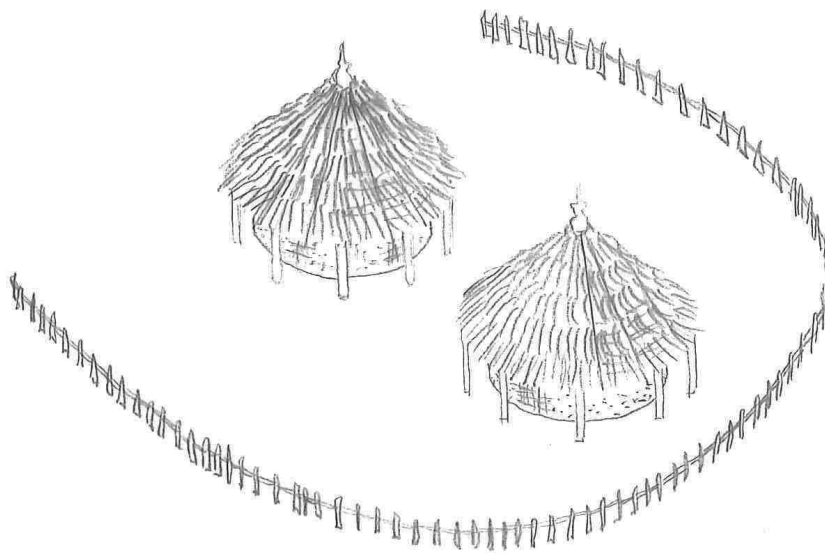
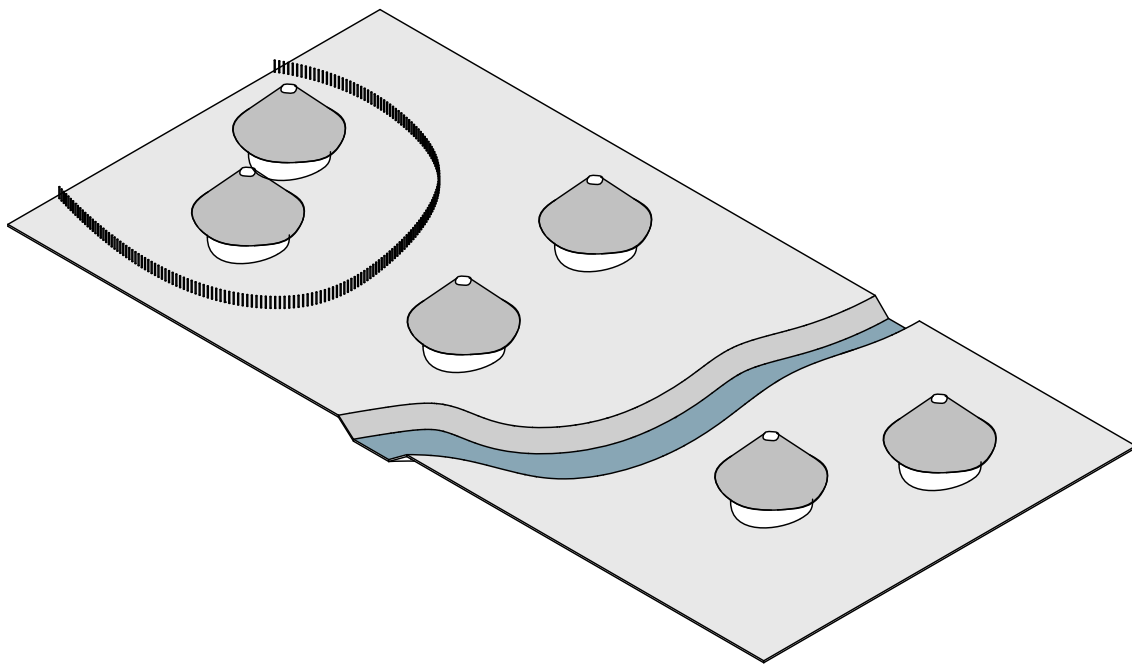
In 1868 this area is not yet part of the developed city. There is no documentation but we assume the presence of the river. In general the site slopes gradually up to the north, the highest point being the top right corner of the site and the lowest points to the south and along the river.



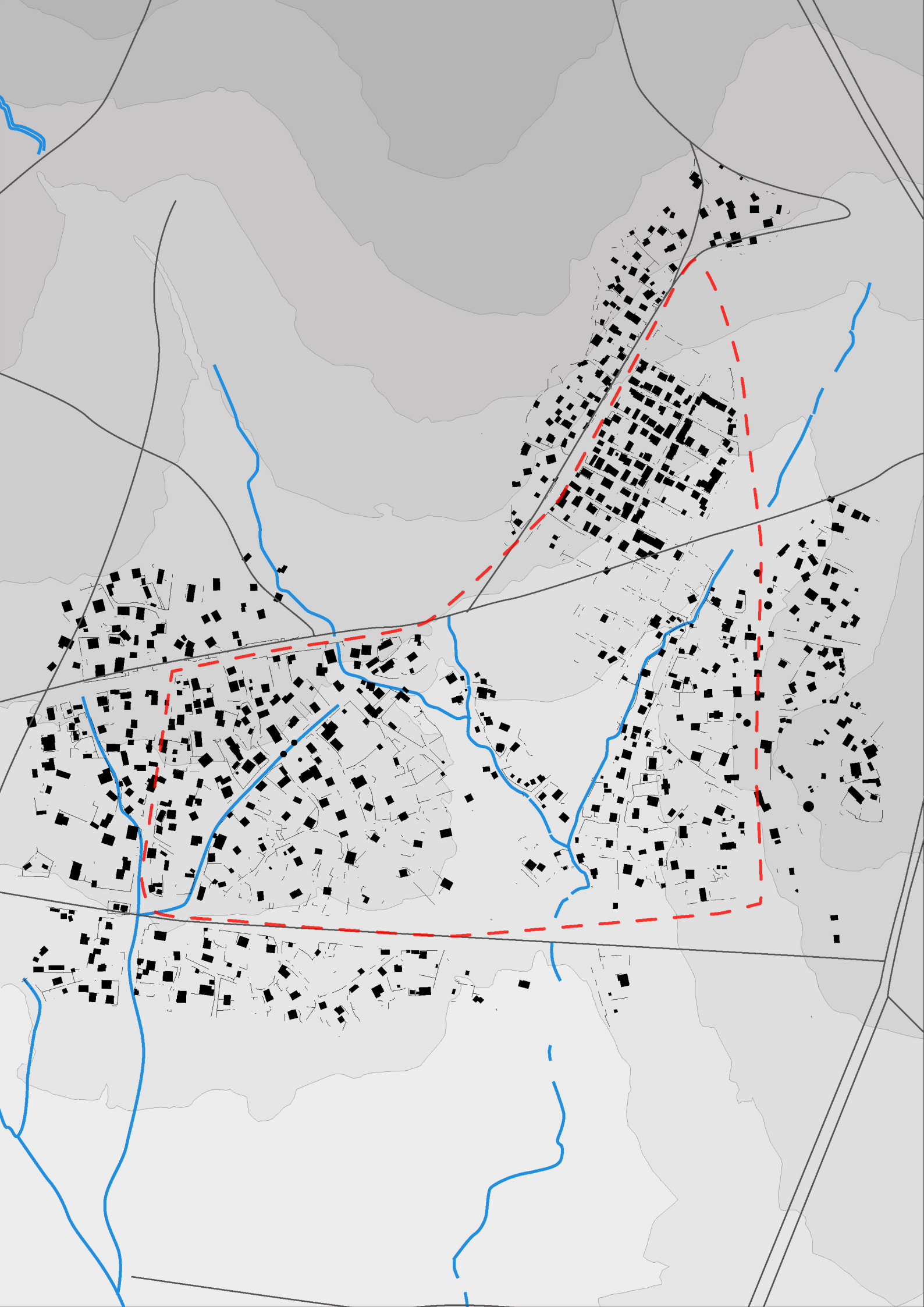


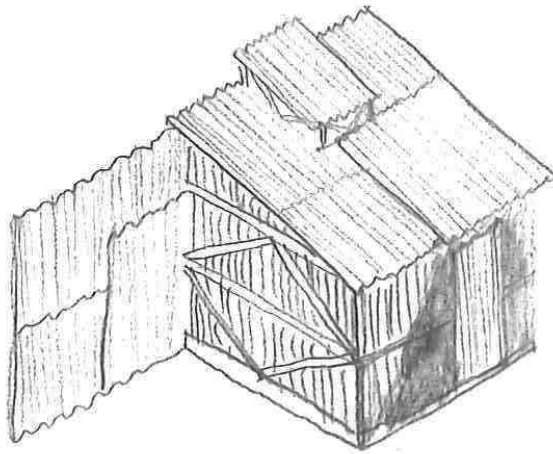
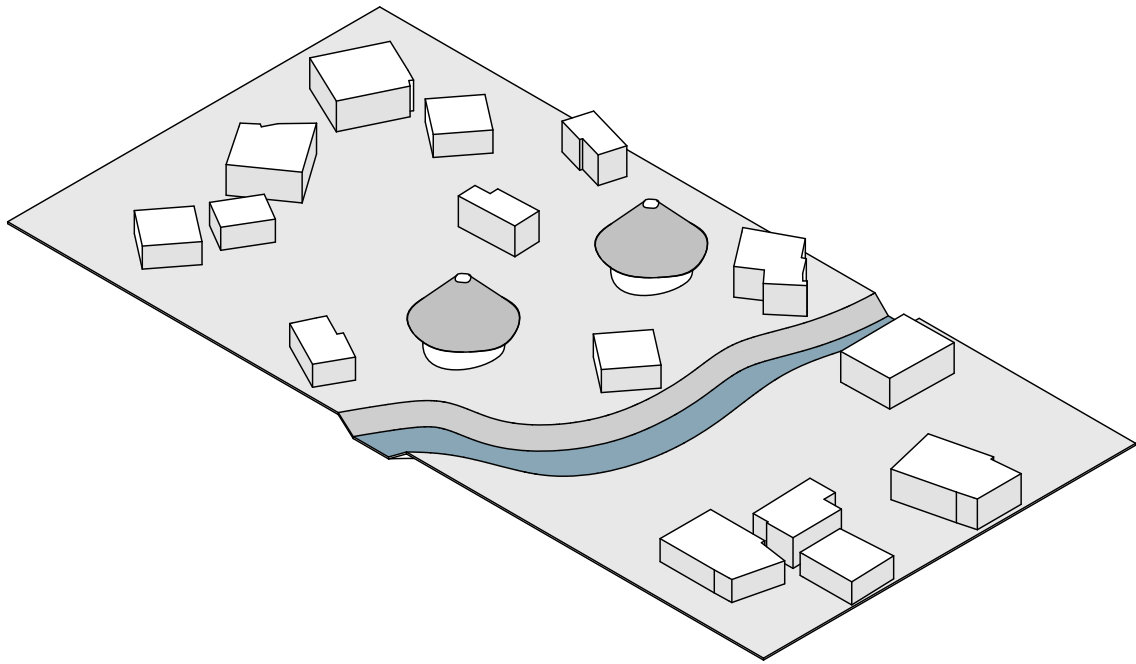
At the end of the 19th century, there are a few settlements in the form of the traditional bamboo huts plastered with *chika* on or around this site. The river was either not fully formed or not properly documented.



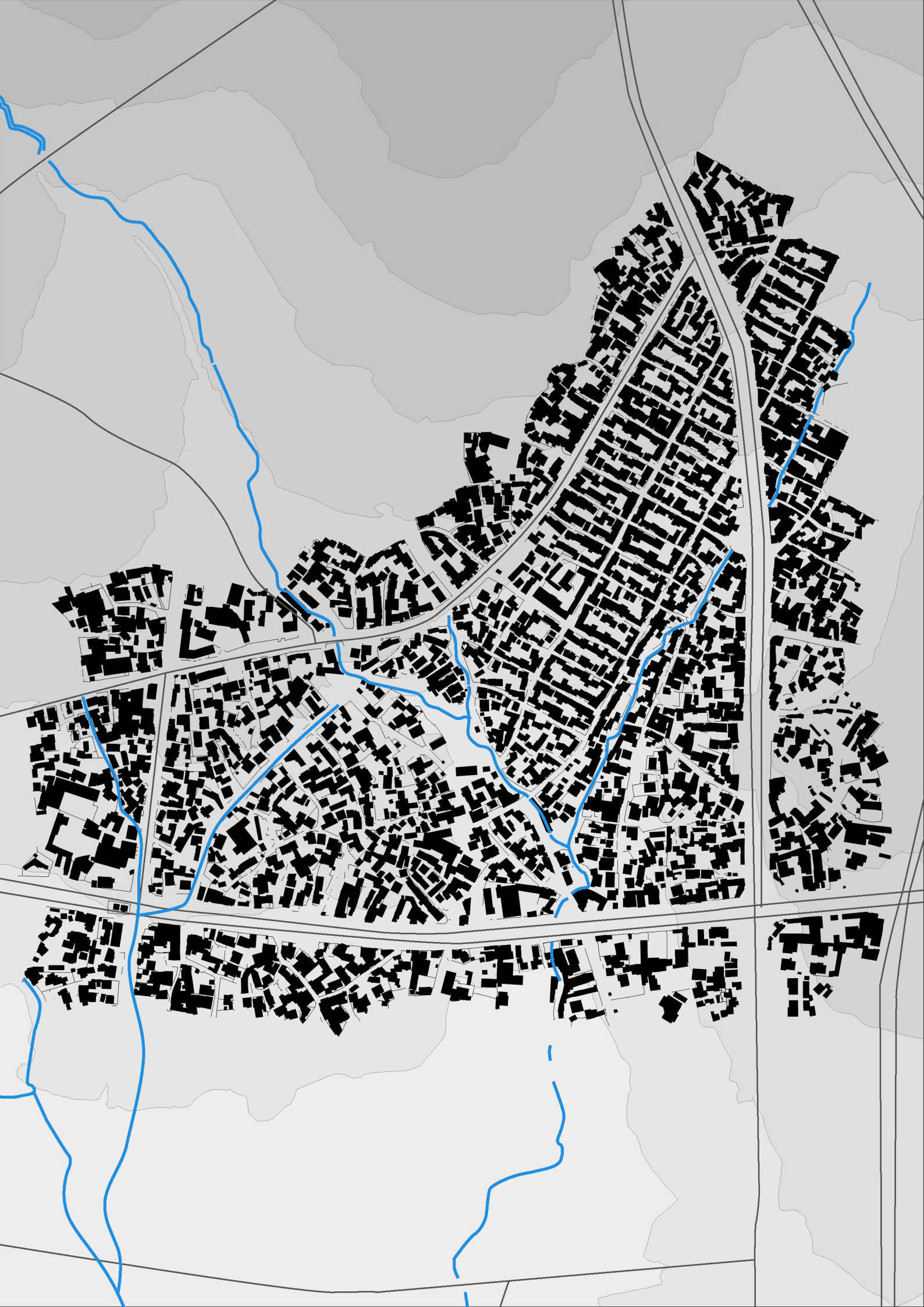


By 1912 the site is considered part of the city and is documented with more traditional settlements and some fenced in territories. Here we also see the documentation of roads, some forming the beginning of the major roads around our site and the river already dividing our site into four sections.

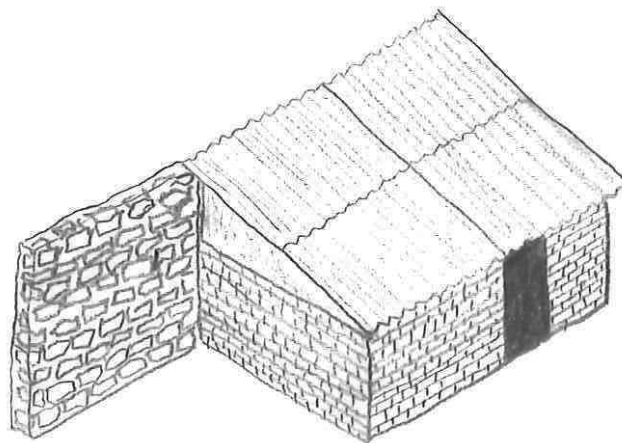
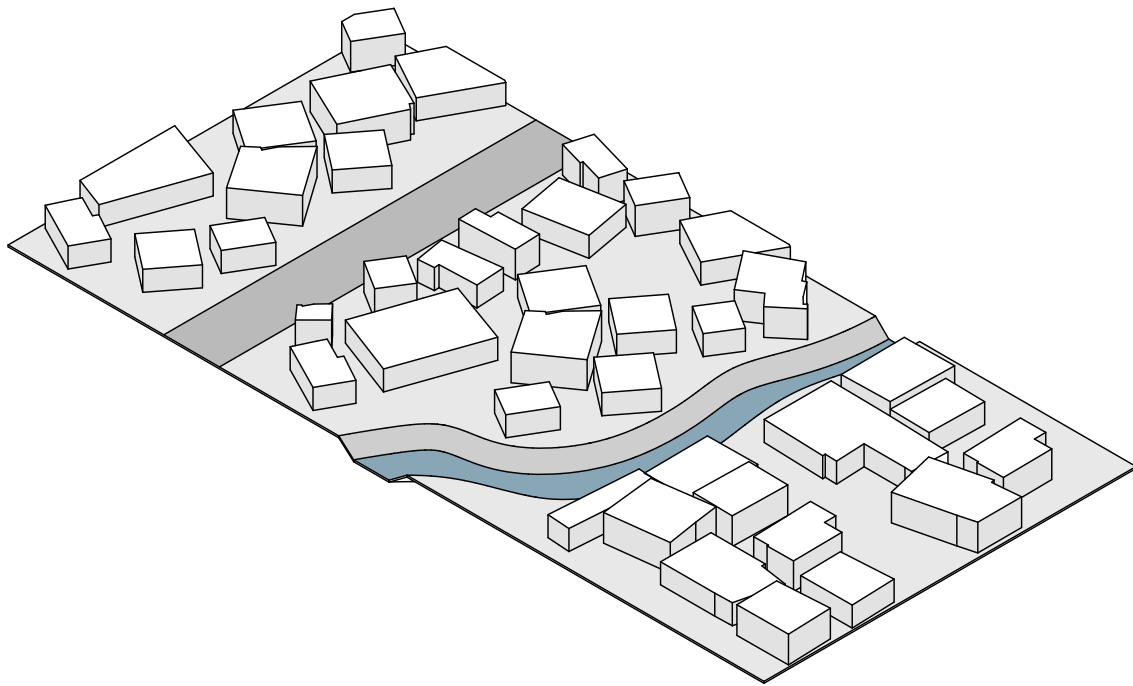




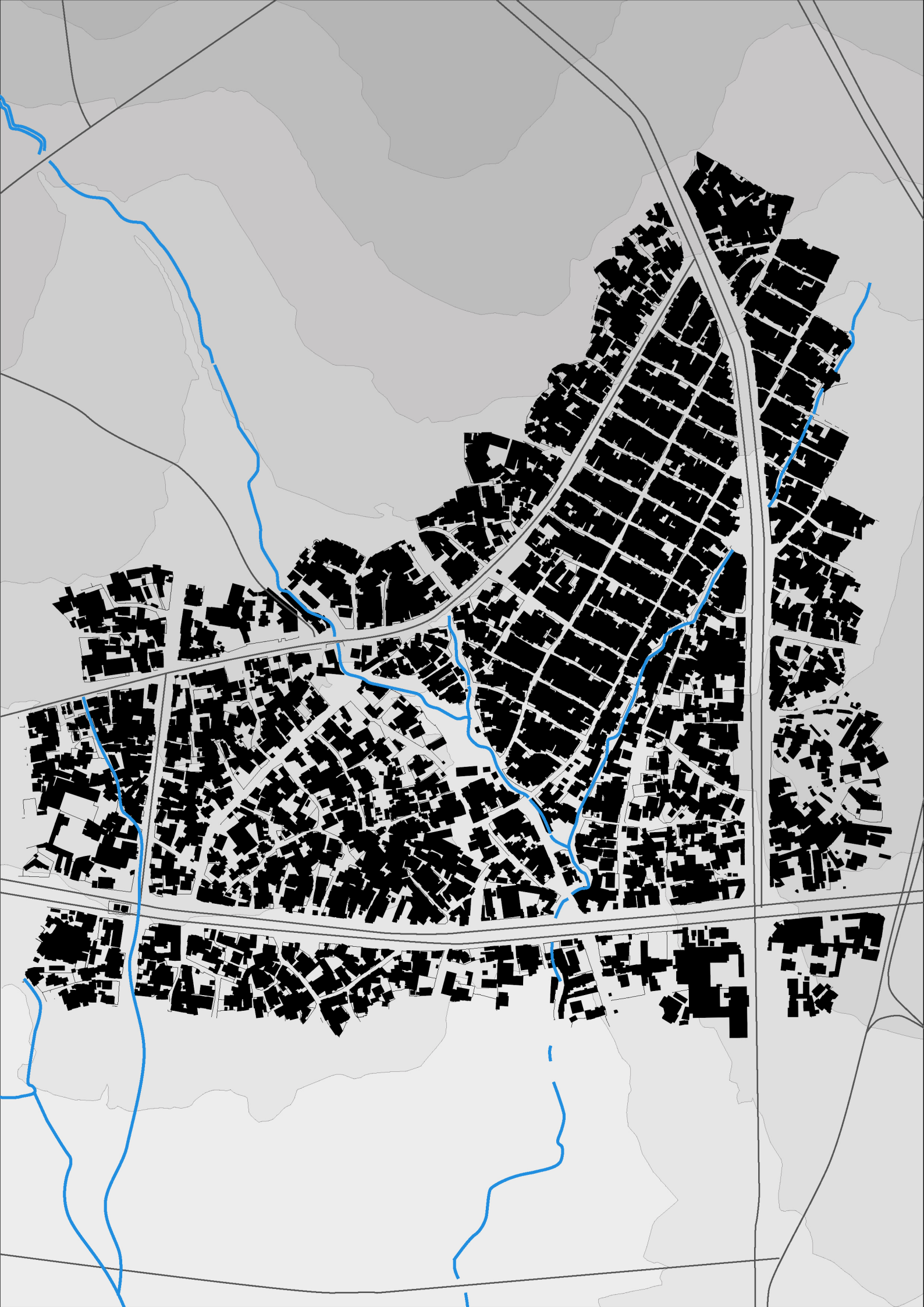
By this time the area densifies under the *Italian occupation*. In the upper right section of the site a grid pattern of housing plots is laid out between the road and the river. The rest of the site is divided into more organic plots. Some traditional huts still remain but most dwellings are wood construction of small sticks covered in a *chika* plaster and sometimes painted. Corrugated metal sheets are also used for roofing and to create borders between plots.



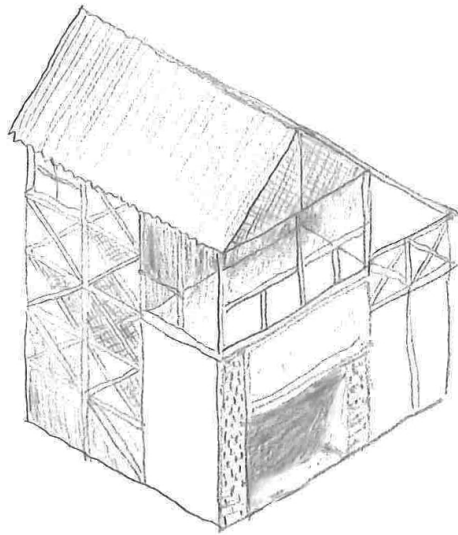
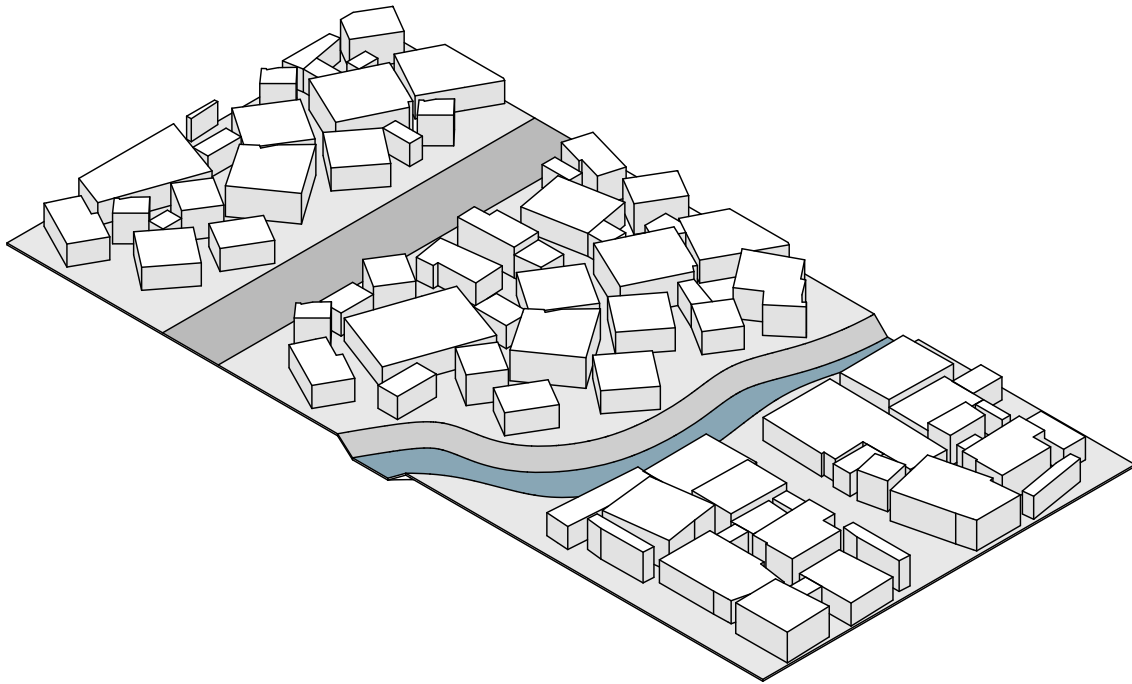
1970



By 1970 the whole site is populated and the extent of the *Italian blocks* fill that portion of the site. In addition to previous housing types it is also built of brick and stone. Some larger buildings also appear. The major roads surrounding the site are formed and the rivers are now at their most extensive stage.

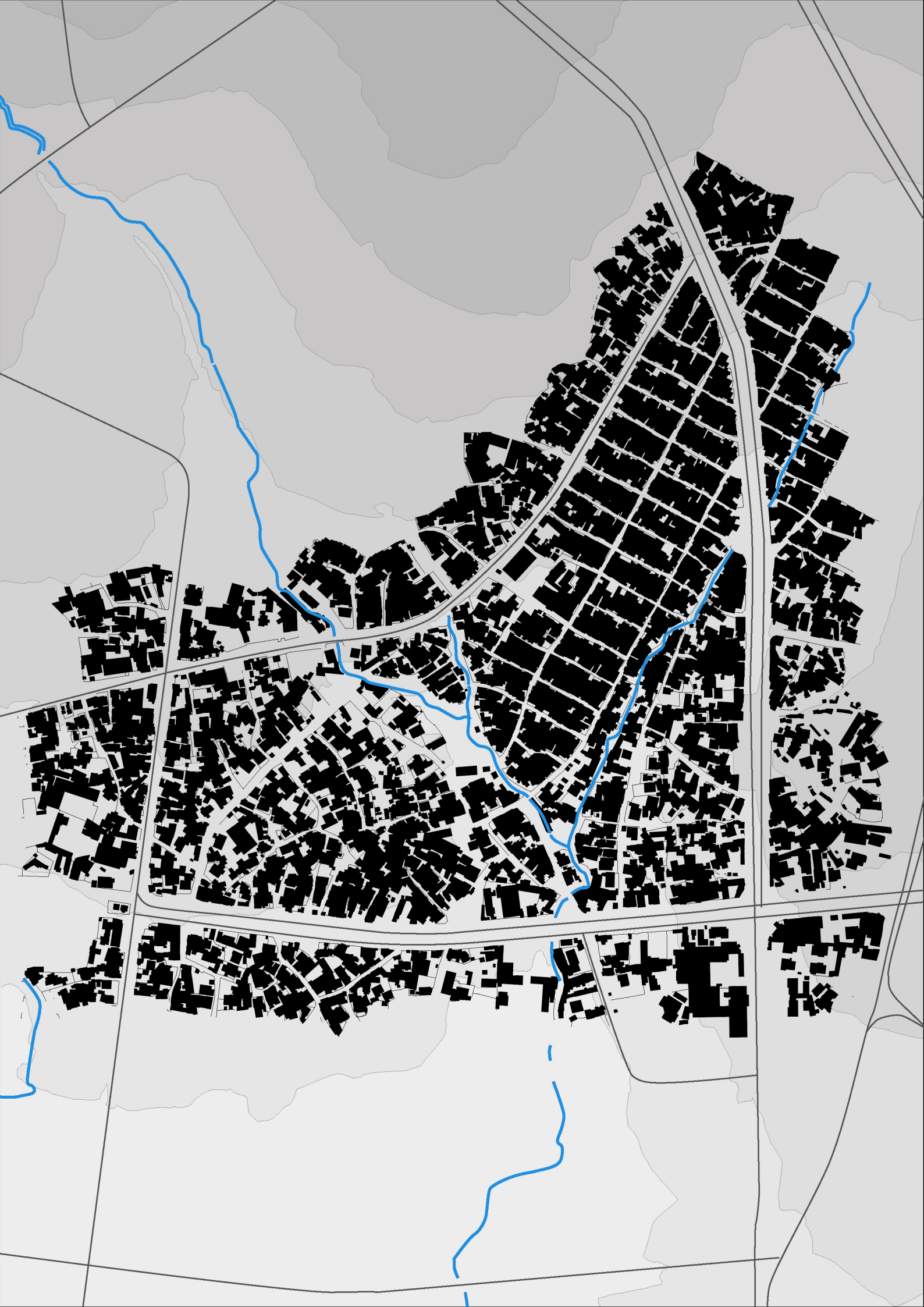


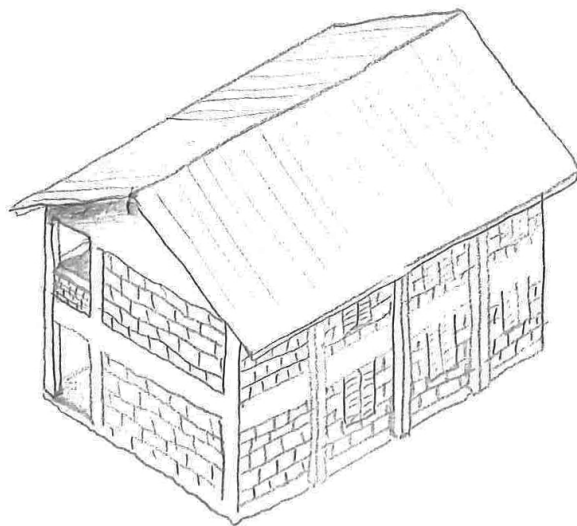
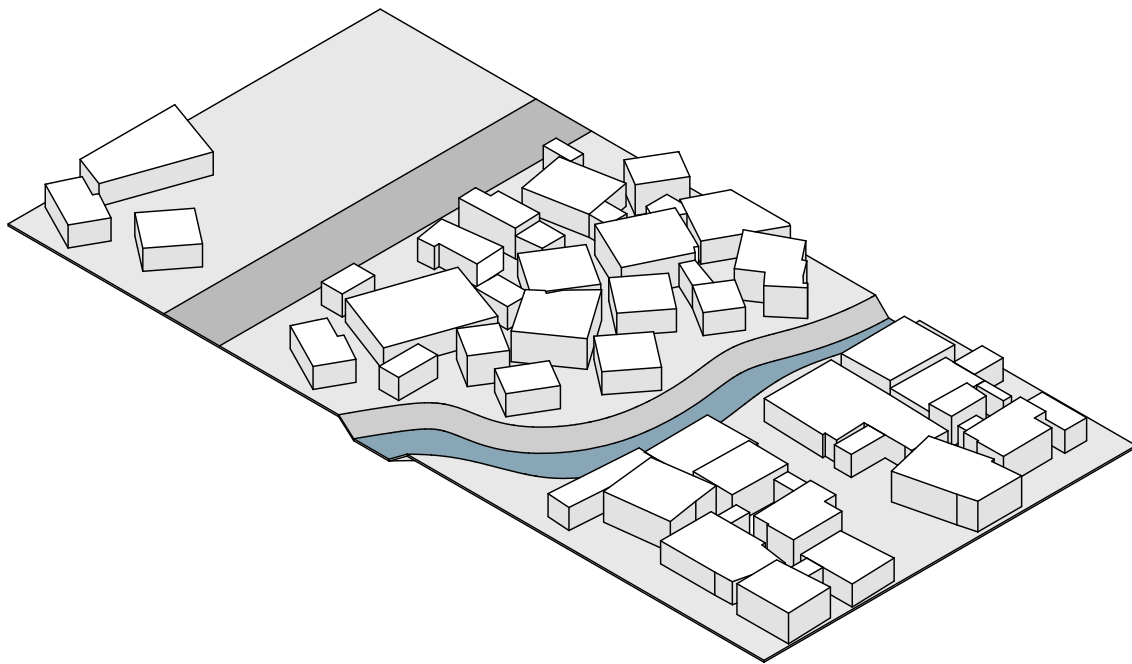
1990



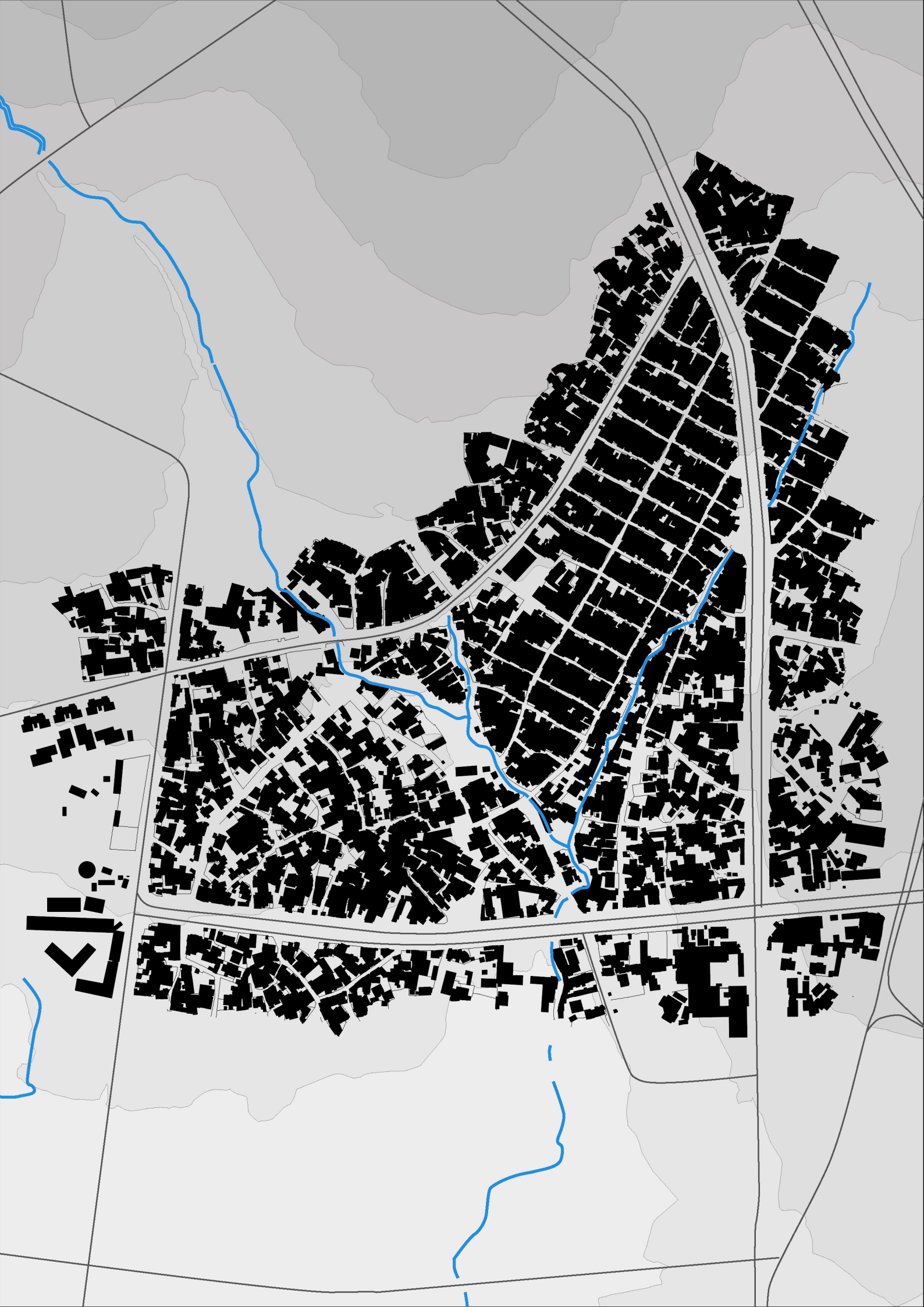
By 1990 the ground reaches its most populated stage as people build out their properties with small additions, forming narrower streets and filling in the interior of the *Italian blocks*. This created a typology of mixed construction types and very tight streets enclosed into sections by the corrugated metal sheets. This is an example of quite a complex typology using concrete, brick and a wood construction also with intricate woven slats and covered in plaster.

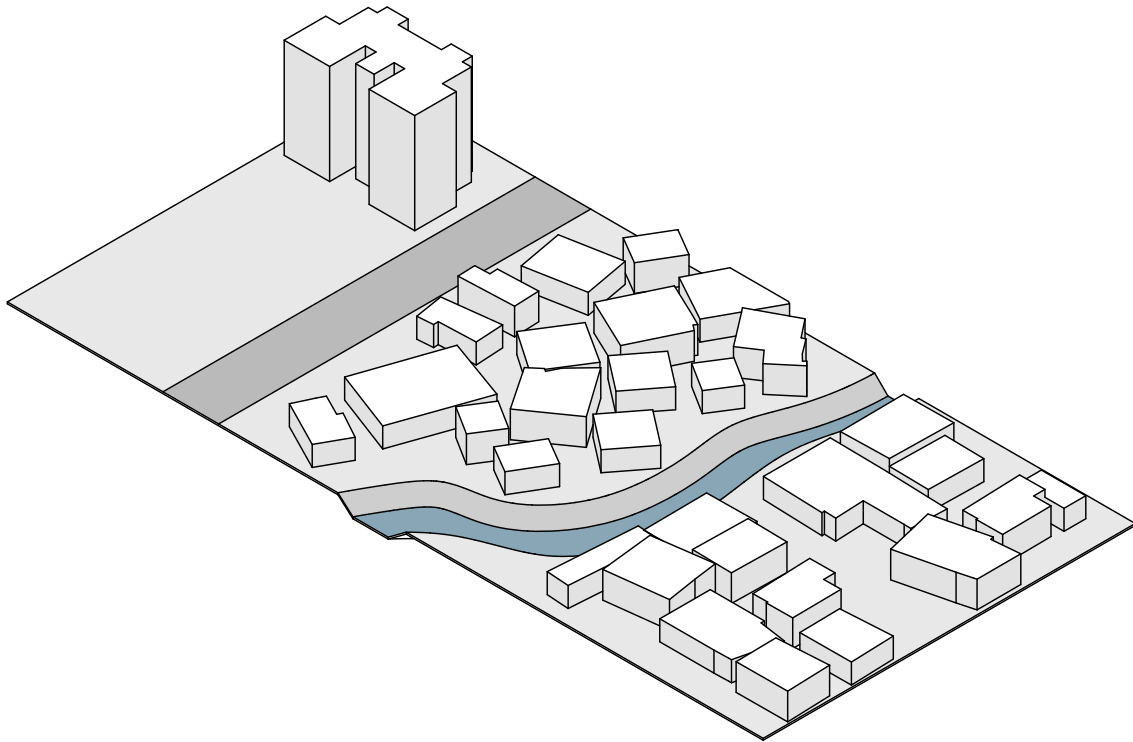
2.2 Contemporary Urban Transformation



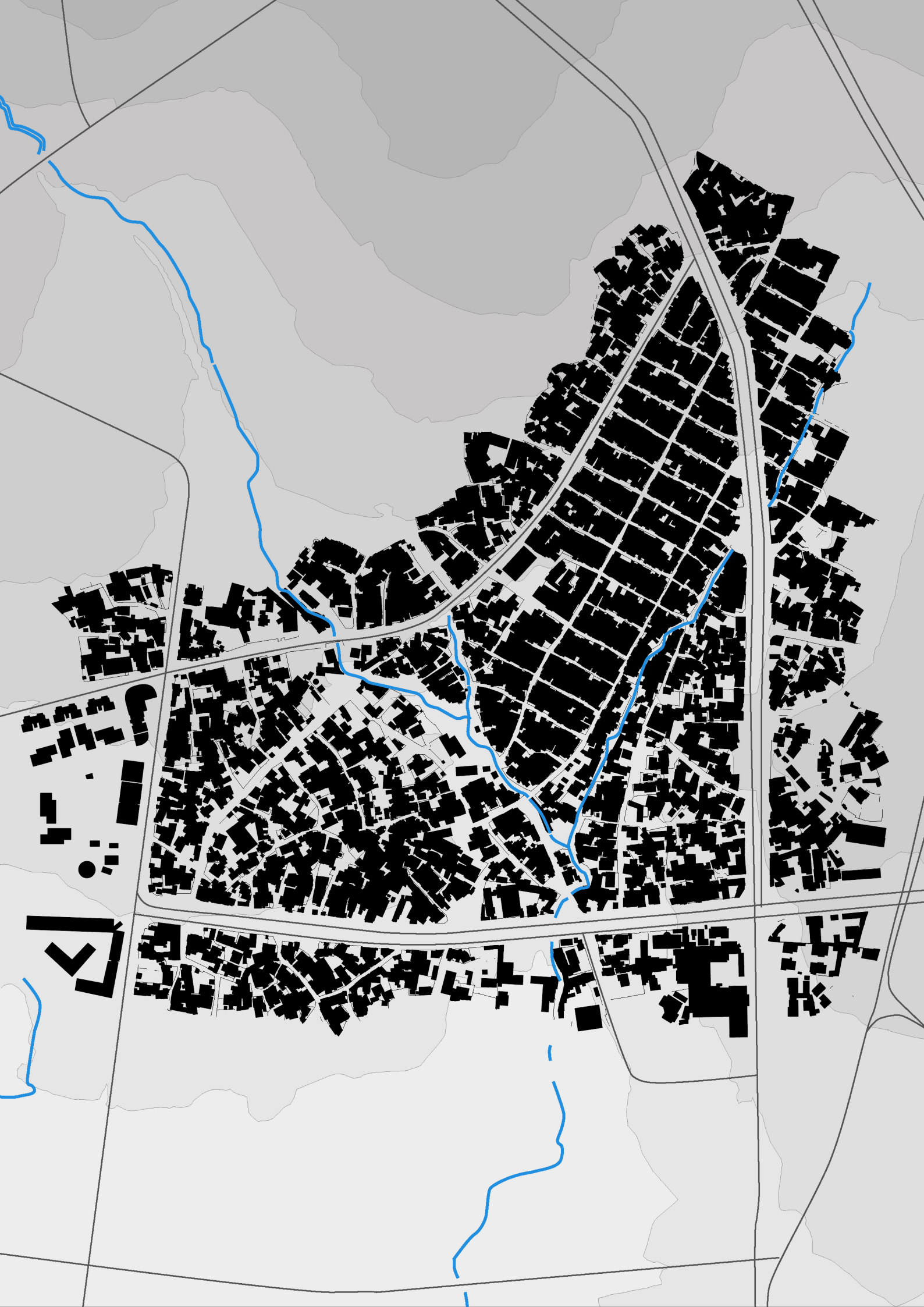


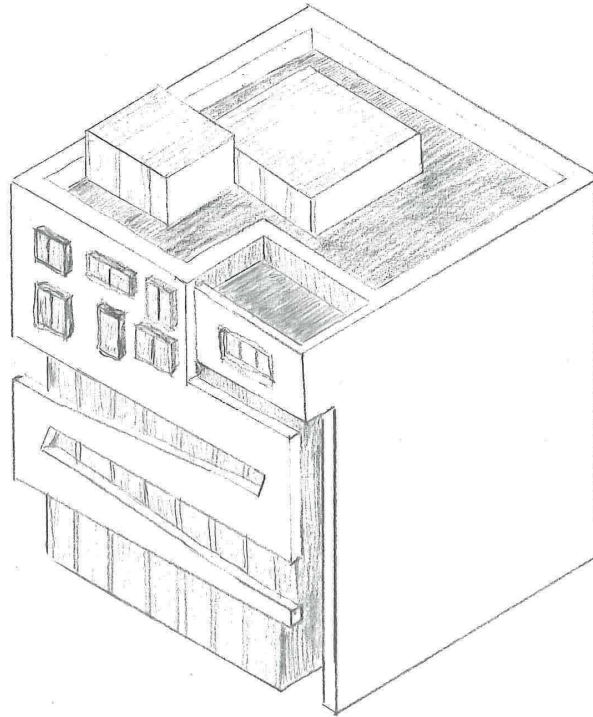
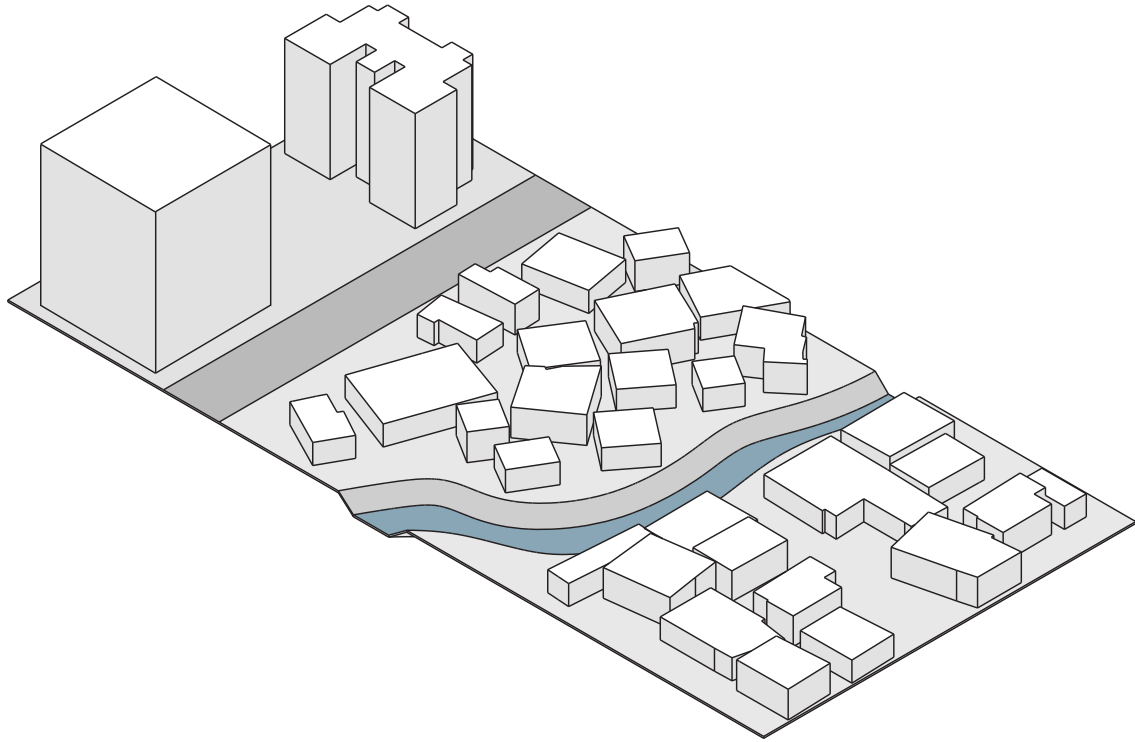
From the period of 2000 and up to the present, areas of informal sefer housing are demolished to make way for new developments. Most of this occurs to the west of our site. This is a result of the *grand housing program* in 2004 with the aim of 50,000 new housing units built each year. Larger multi-family housing types are built with concrete frame structures and concrete blocks.





In 2010 there is a rapid development of condominium blocks built west of the site in response to the *grand housing program*. During construction large temporary structures were built to produce the pre-fabricated concrete elements of the condominiums which are five to eight storeys in height. This example along the northern border of the condominium development is ground plus four storeys so an elevator is not needed and a central stair is used.





By 2014 the area of condominium blocks to the west have completed construction and commercial buildings are built around the edges of the condominiums and in this case directly adjacent to the site. The elevated light-rail system has also been built running through *Geja* sefer from the north and along its south to the east. Although not directly adjacent to this specific site it has a large impact on the whole area as it influences the value of real estate.

3.

Analysis

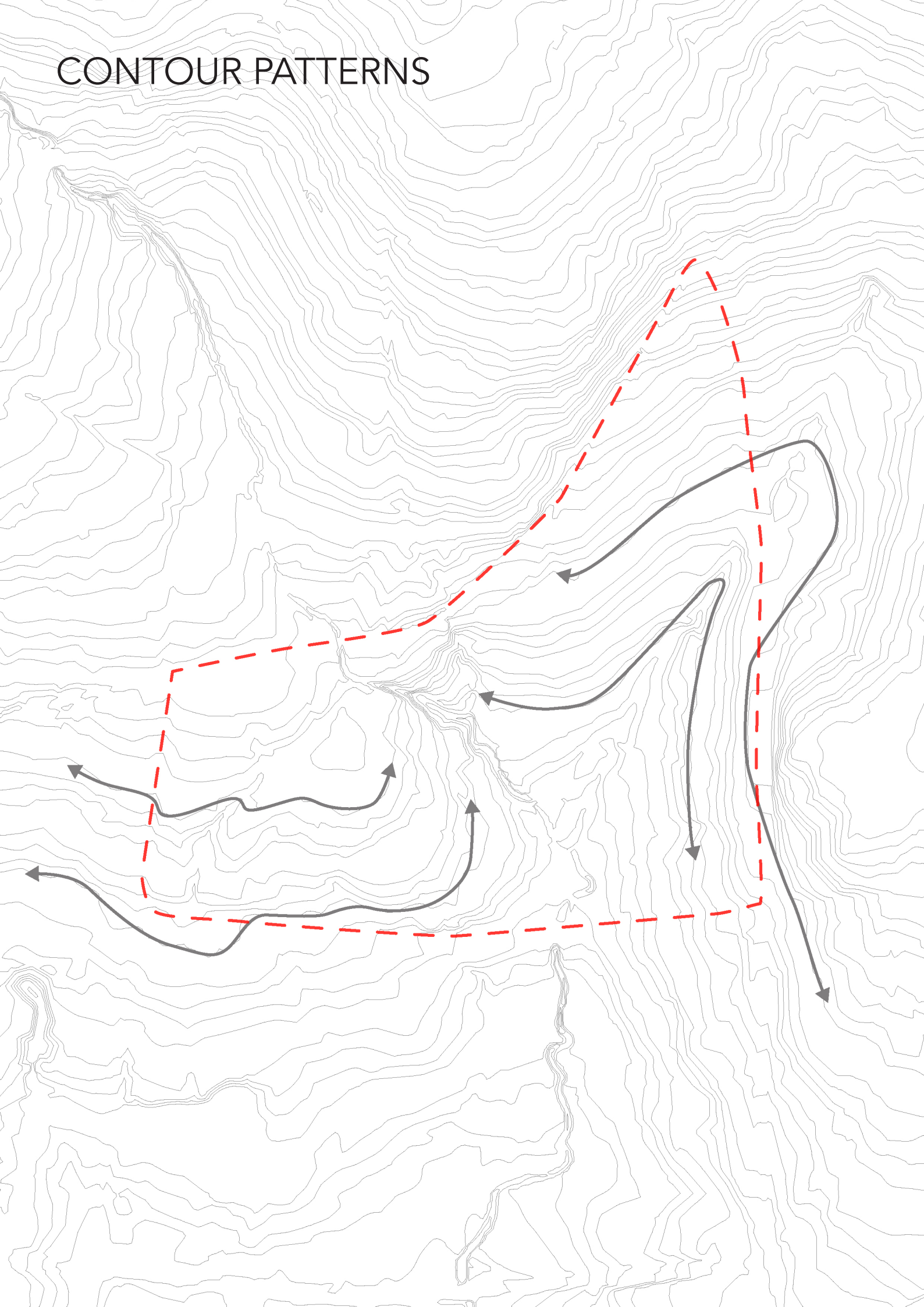
WATER (rivers and ditches)



GREEN SPACES



CONTOUR PATTERNS



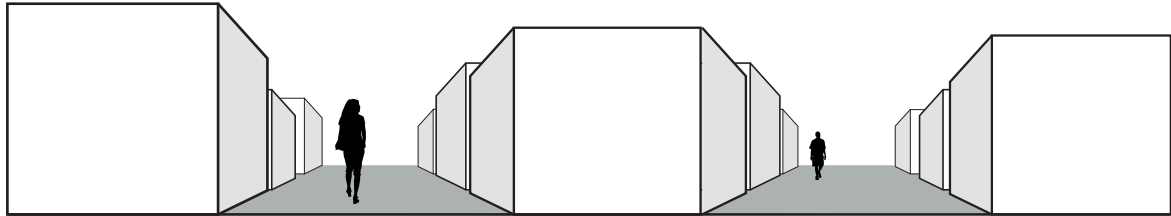
INFRASTRUCTURE



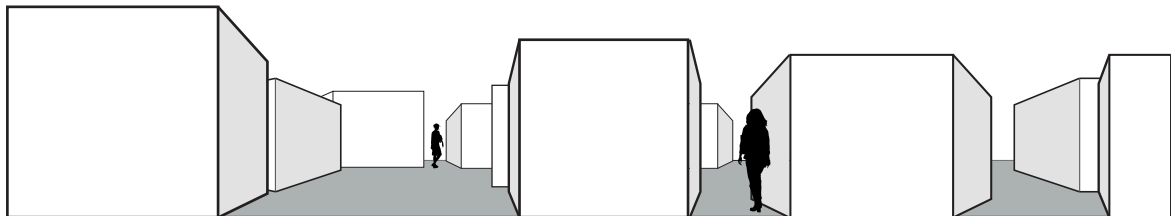
OPEN SPACES



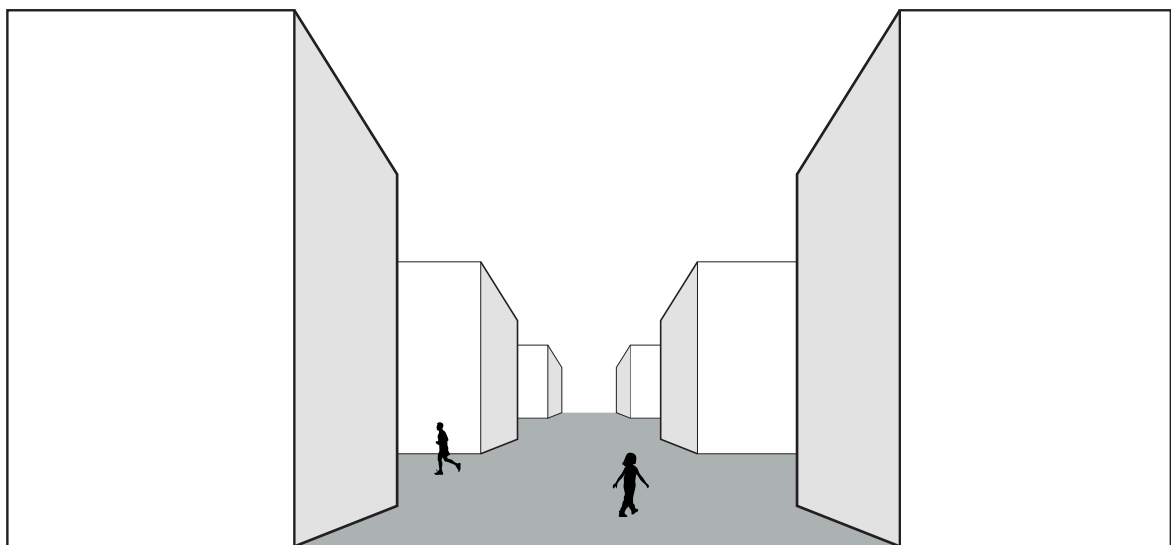
STREET PROFILES



1. Italian blocks



2. sefers



3. condominium blocks

SNAPSHOTS





1. sefers



2. sefers



3. recycling



4. Italian blocks

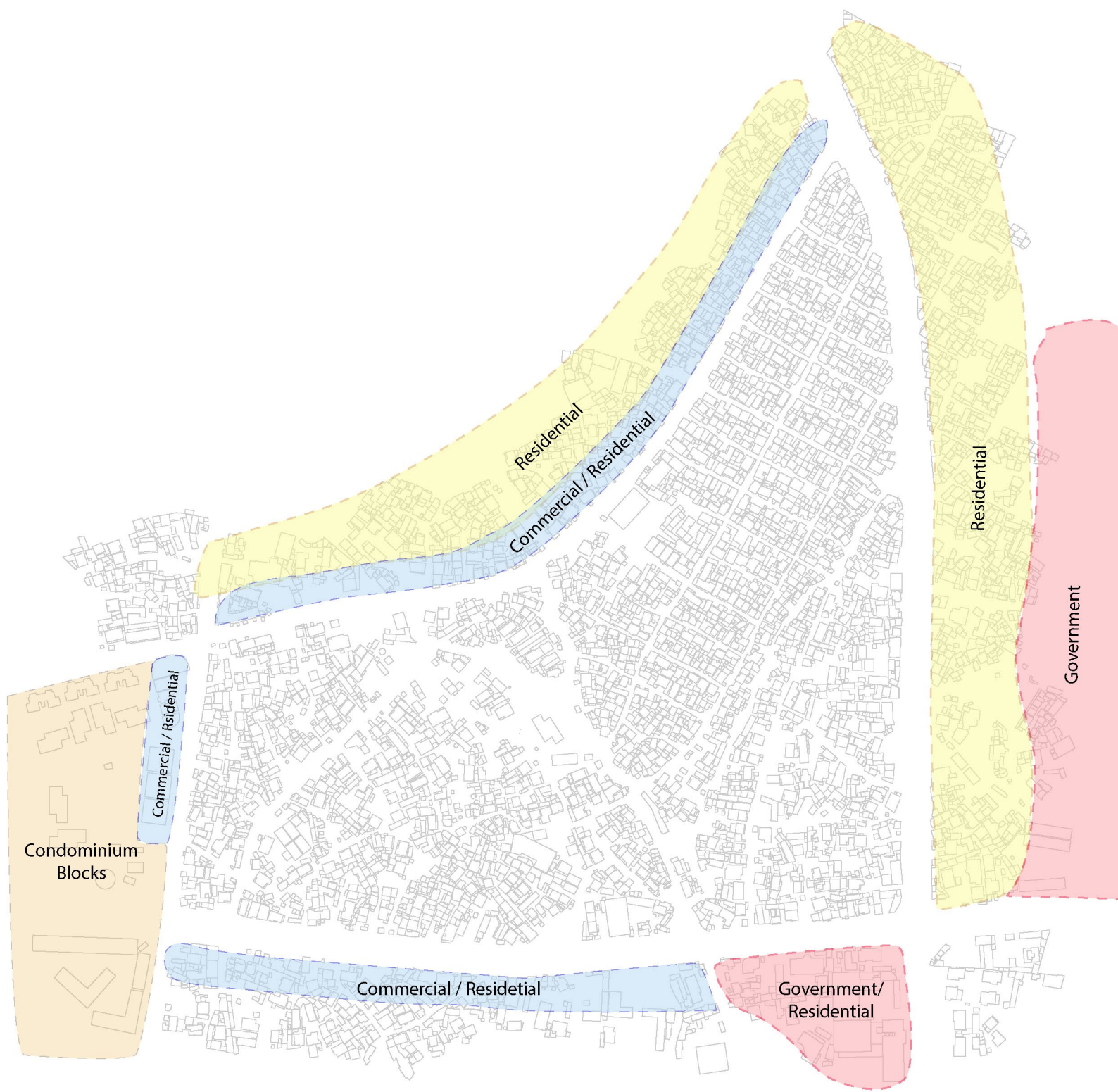


5. small businesses



6. recycling depots

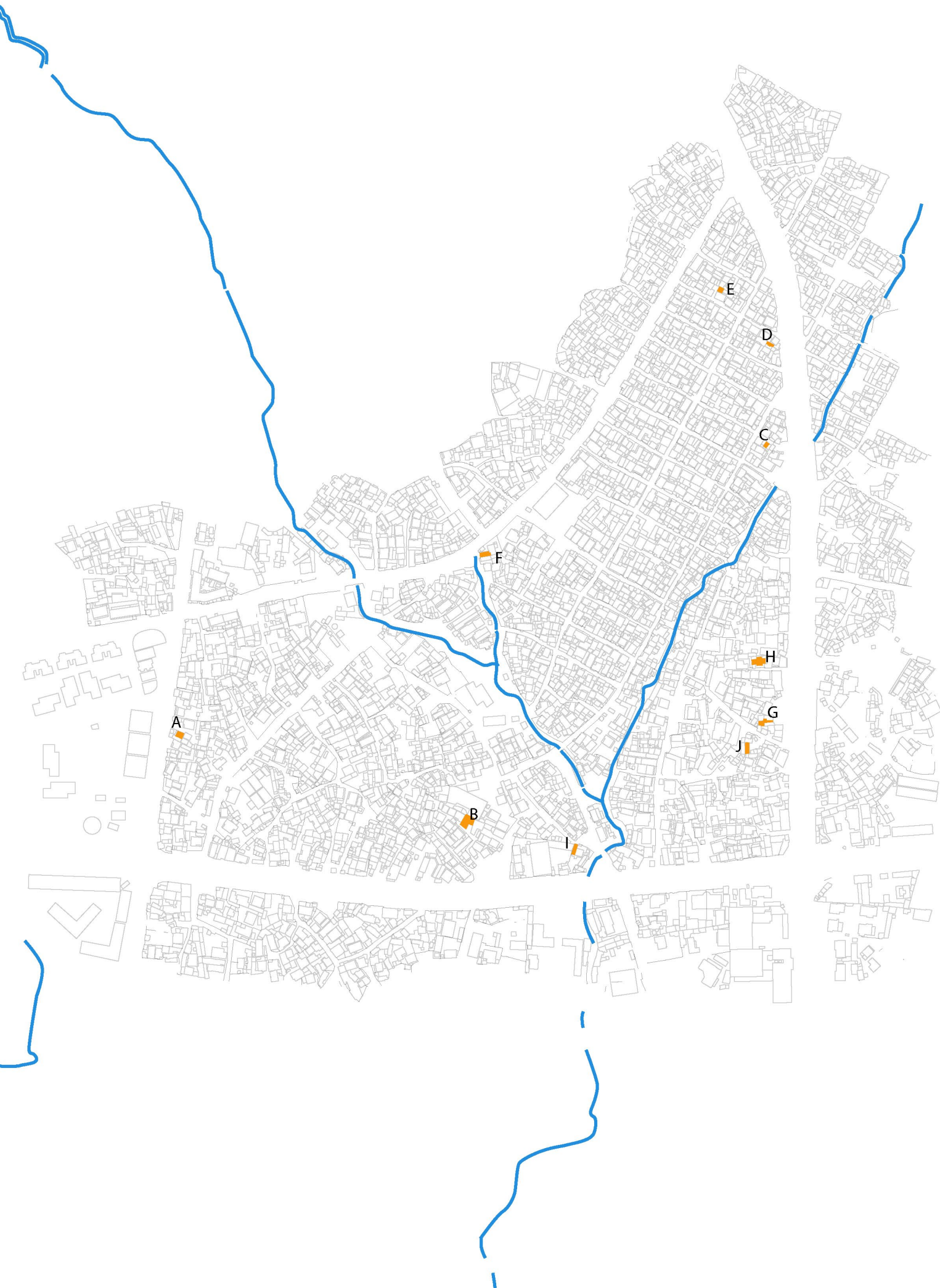
SURROUNDINGS



KEY BUILDINGS



UNIT LAYOUTS



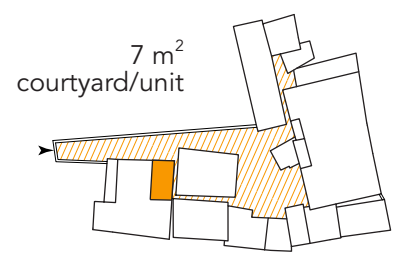
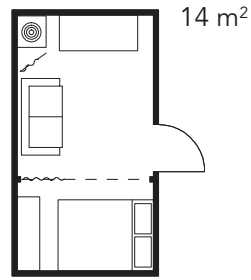
A

community representative

40 families in the compound

average five people per family

wants more personal space for families



B

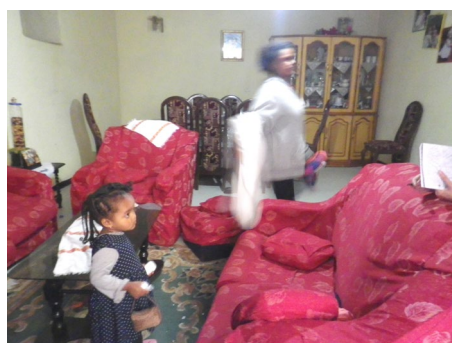
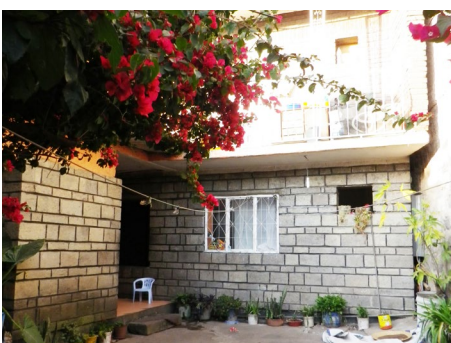
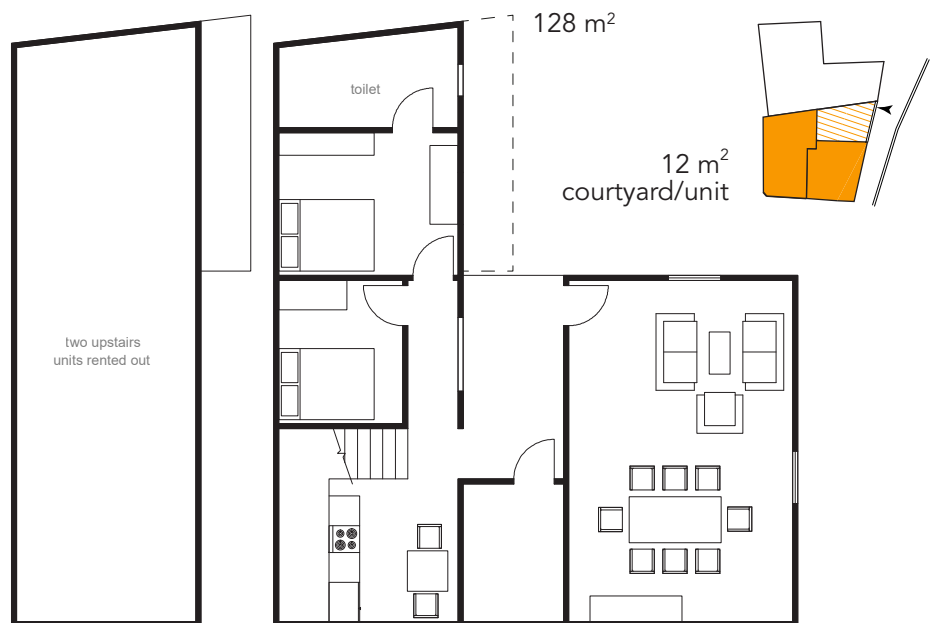
house with private garden

been there for 20 years

5 people:
housewife, a daughter and husband
(ambulance driver)

rented out one unit on the second
storey to generate income (1500 birr
per month)

a unit on the second storey rented to
sister



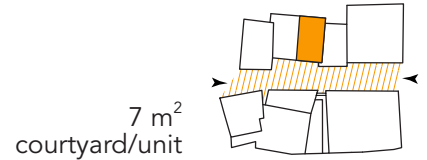
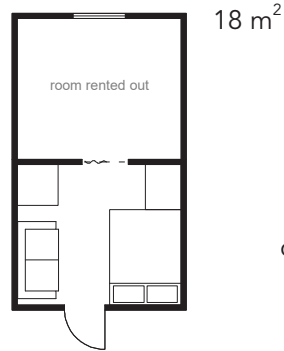
C

mother (Ganette, 45 years old) and five kids, three of the kids go to school

Tej house is next door

half of the unit is rented out for income (600 birr per month)

make envelops with recycled paper to sell



D

five people living in the house, three people live in the loft space and the parents live in the room

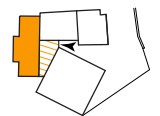
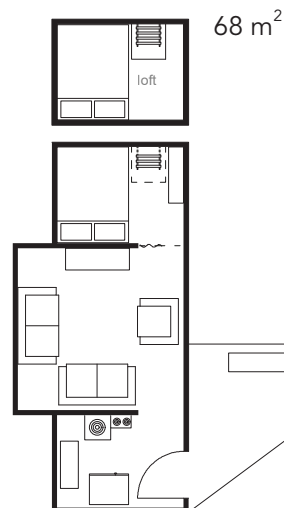
son (Joseph, 25)

- university student, studies chemical engineering
- lives in the dorm in the weekdays
- Oromo, Amara
- doesn't like living here because of lack of privacy

father

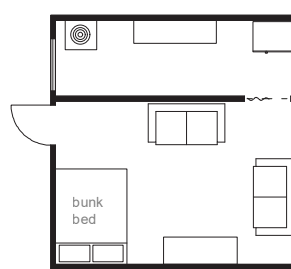
- laundry machines mechanic

mother and two daughters work

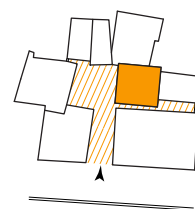


E

Yared Abera, metal worker, makes bunk beds locally
a family of three, with two daughters
likes living here



23 m²



5 m²
courtyard/unit



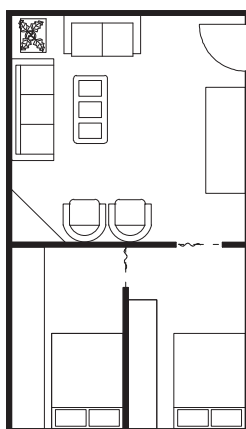
F

Assefa, technician, works for the
QATAR Embassy

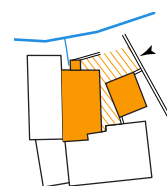
rent is 3000 birr, lived there for five
years with a family of four: one wife
(works in Black Lion Hospital), two
children (go to Churchill School)

"the neighbourhood is not safe for a
diplomat worker, but it's close to work
(Meskel Square)"

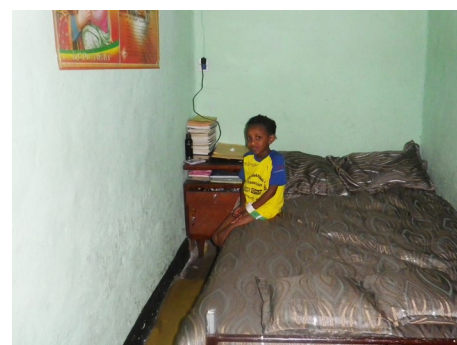
"The house isn't big enough, I would
like to have more rooms, and live
closer to Meskel Square"



55 m²



47 m²
courtyard/unit



G

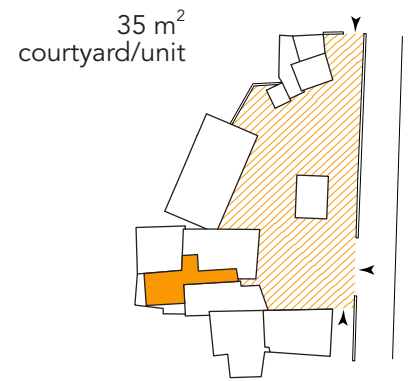
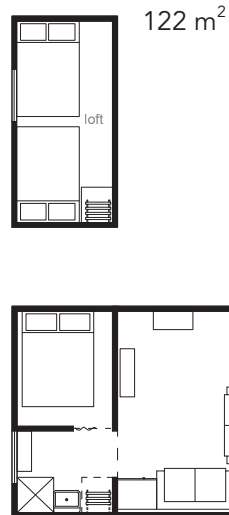
mother and father with five kids

mother works for night parking

father is an engineer

the oldest brother (20 years old) is a chauffeur

Hannah (19 years old) and Eyuyu (18 years old) are studying

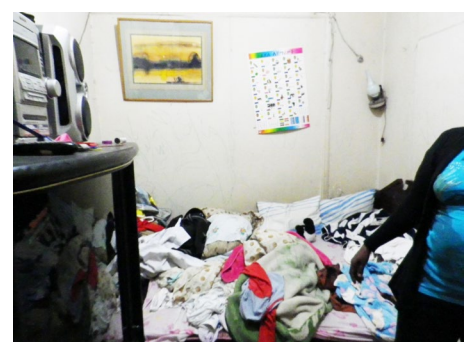
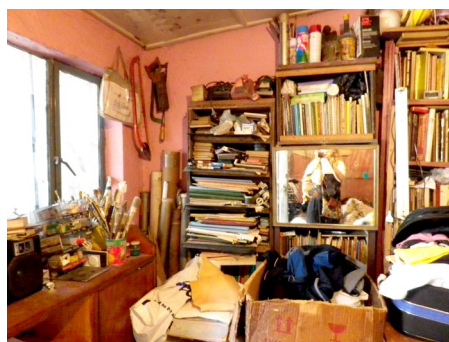
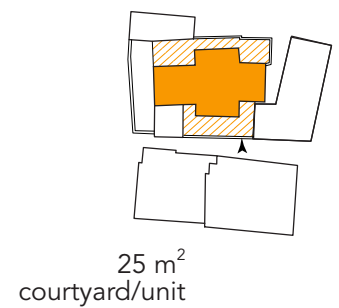
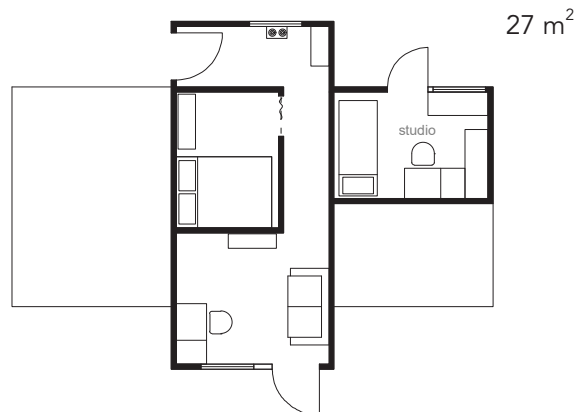


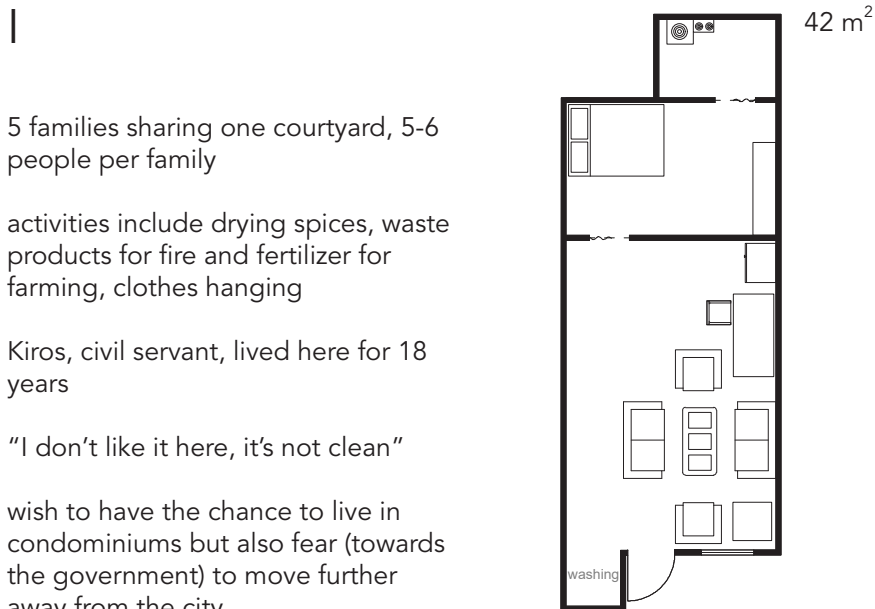
H

house with fenced entrance

husband is an art teacher with a studio in the house

a family of five including one daughter and two sons





J

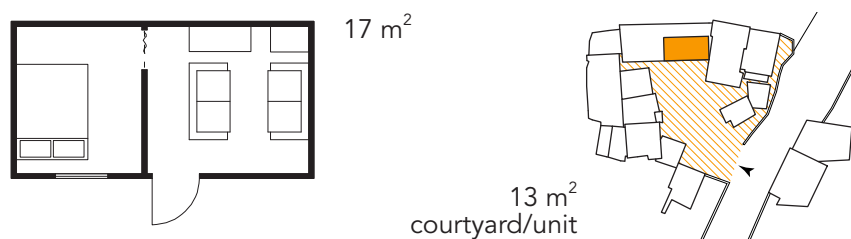
compound with five houses, average 4 people per house

Genet, 18 year old

mother does cattle breeding to generate income

monthly income of the house - 1500 birr

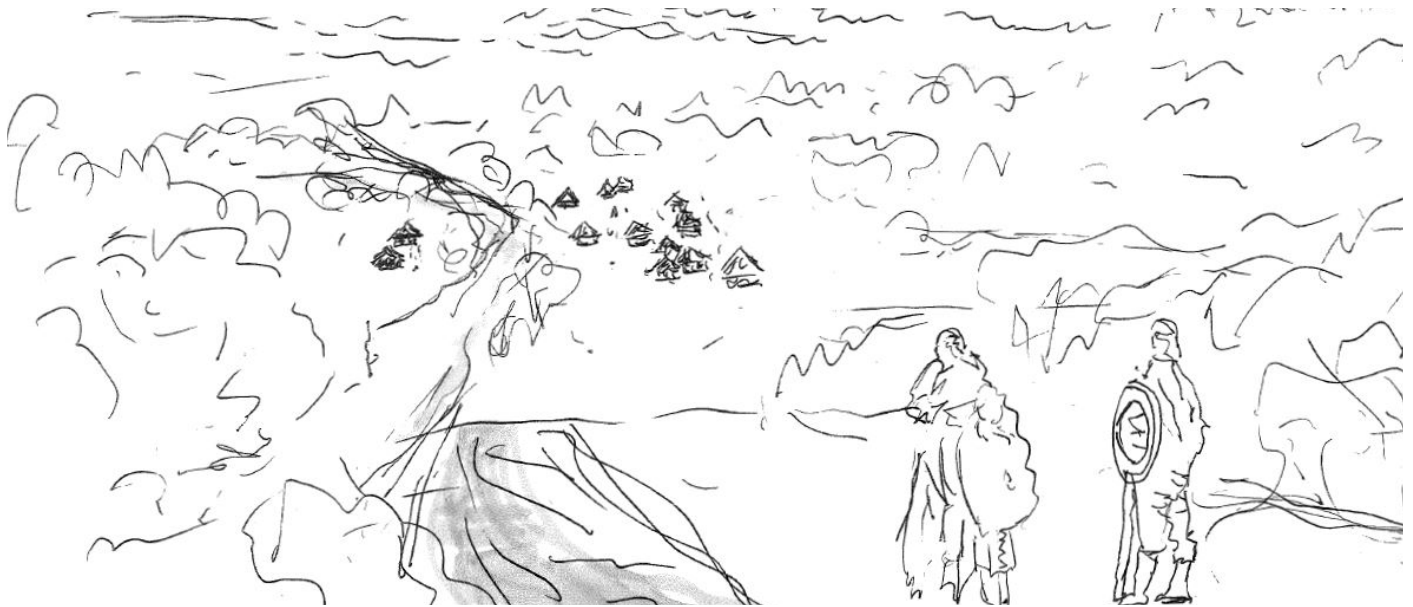
no bathroom, space is too compact, want to learn something to generate income, long for living in condominium



ATMOSPHERIC SKETCHES

Historic and Contemporary Urban Transformation

The site Geja Sefer has undergone a vast transformation in the last 100 years. Now, an important part of the city centre of Addis Ababa it is important to anticipate the continual change and address the continued development in an educated manner. Will the current typology of the sefer dwellings remain in the future? Will the whole site be developed with large condominiums? How can the area continue to densify while maintaining its developed characteristics?



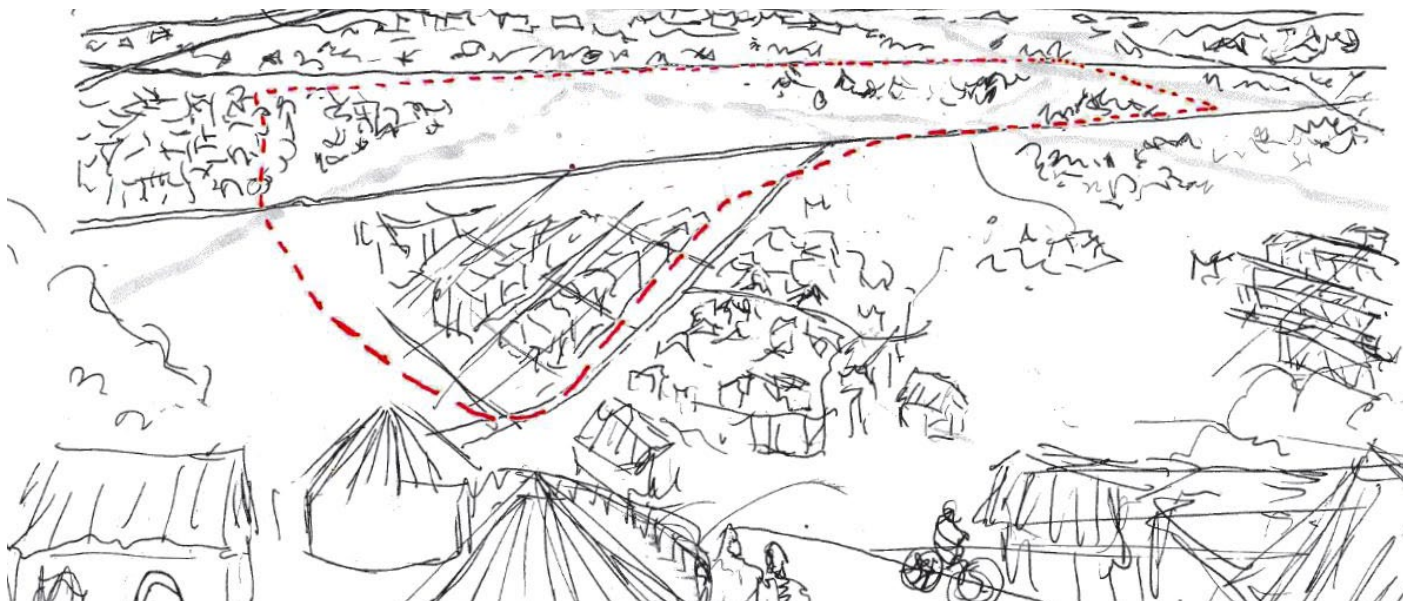
The start of settlements along the river

1897



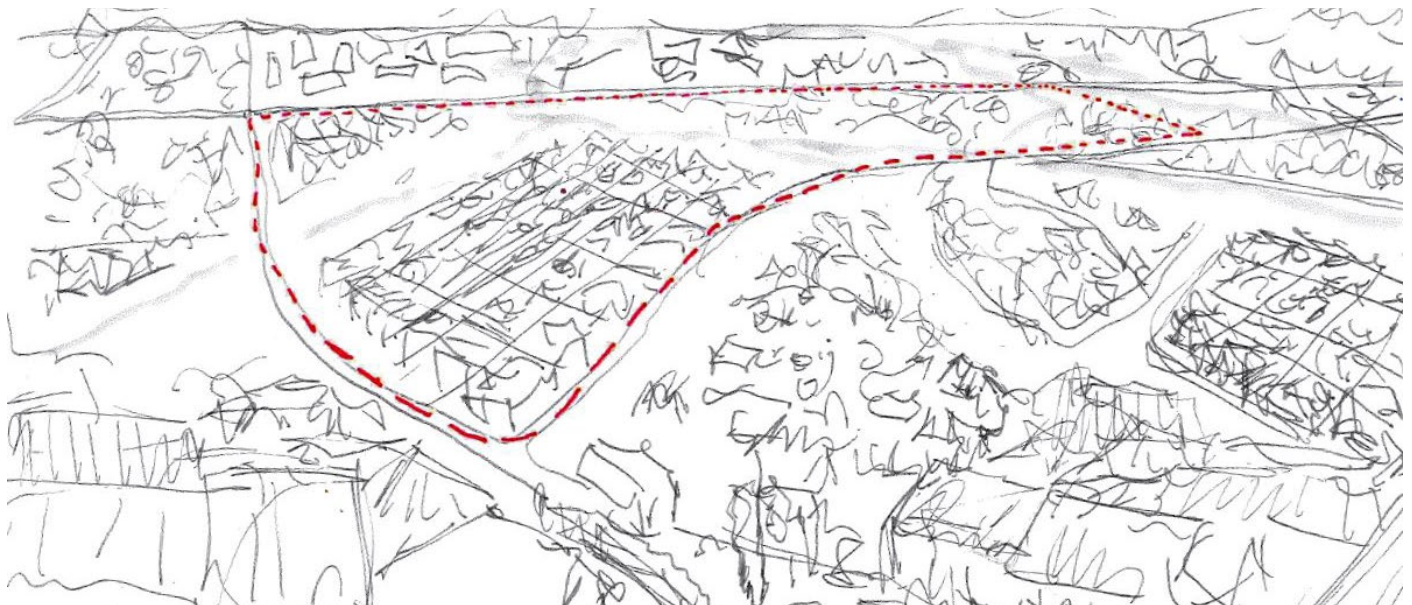
Territories sectioned off

1912



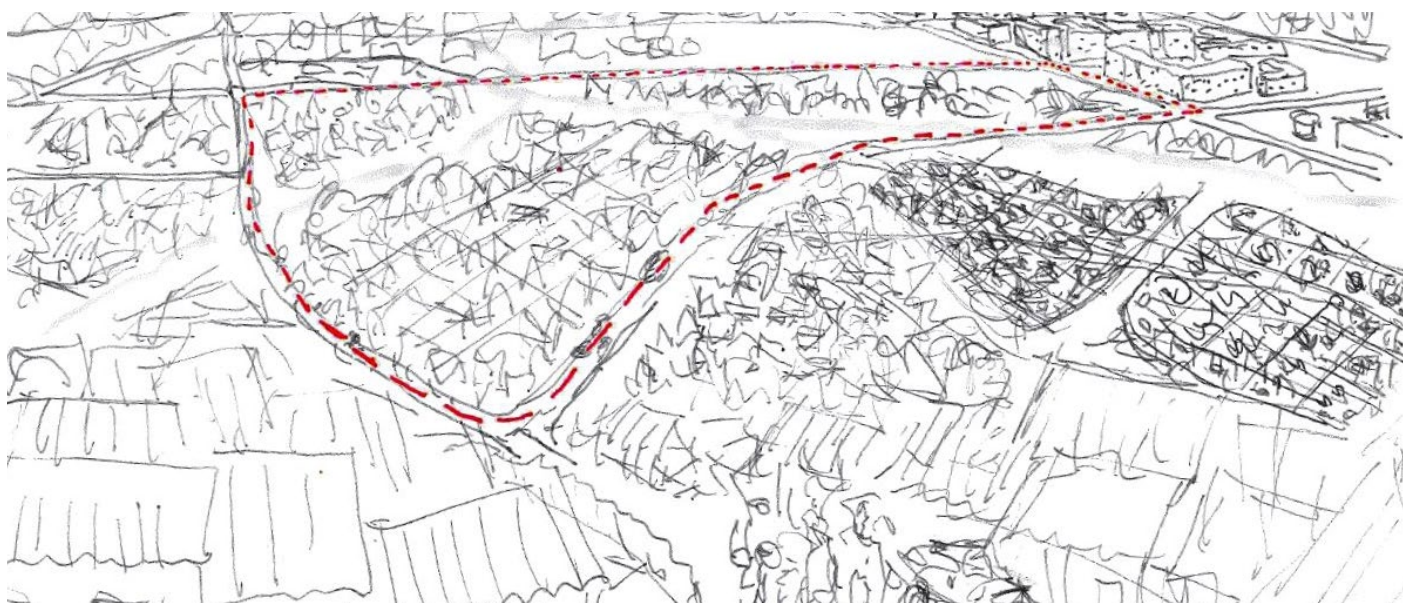
Italian occupation, grid pattern, road network

1938



and informal infill development

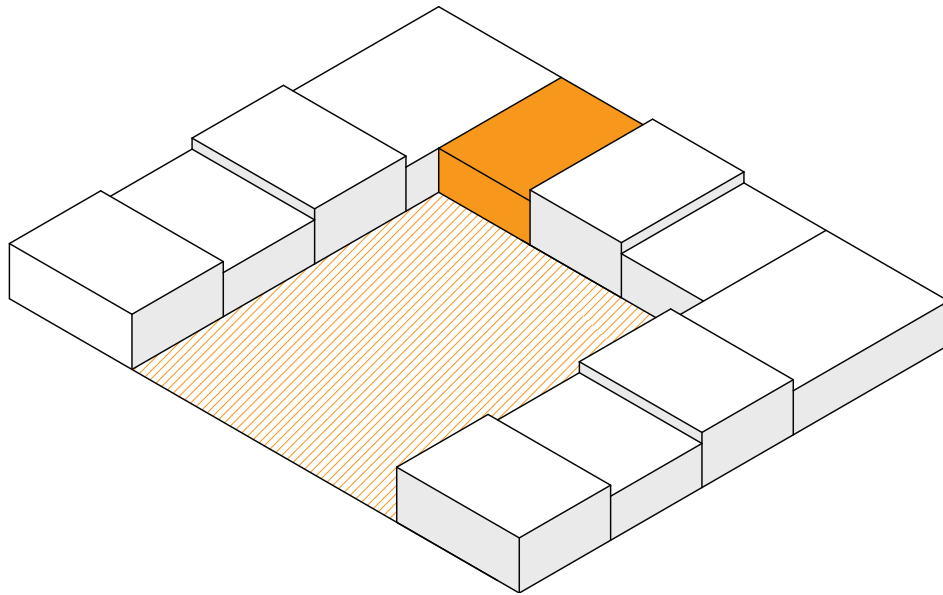
1970



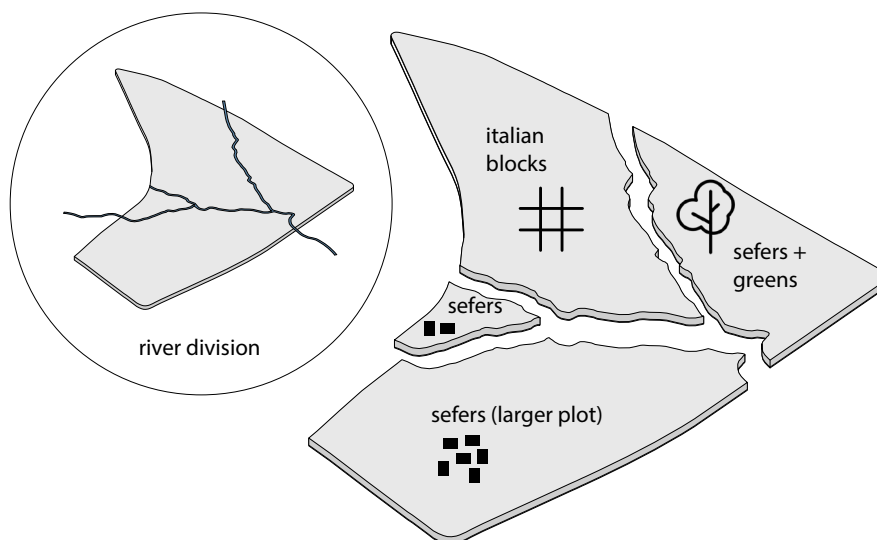
Demolition and mass areas of condominium blocks

2016

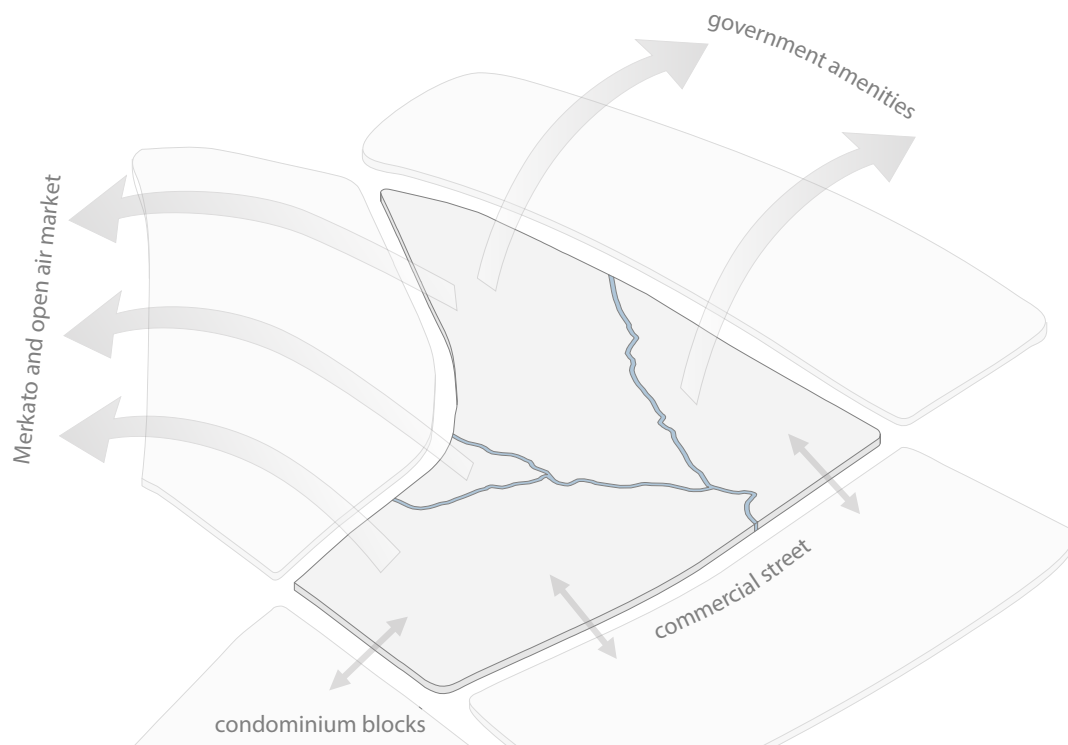
ANALYTICAL CONCLUSIONS



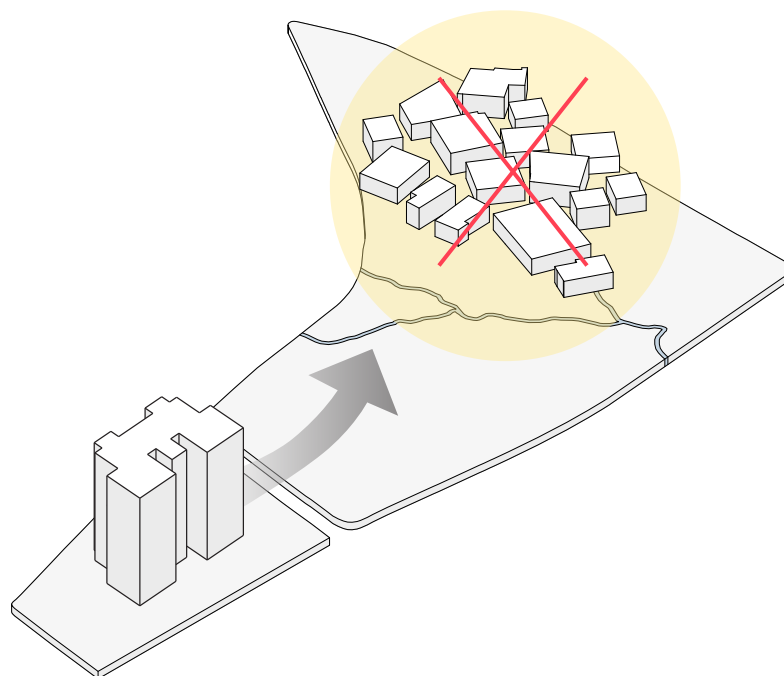
COMPOUNDS - Among selected examples of dwelling units in the Geja Sefer, this diagram represents the average. The average size of a unit is 50 sqm and the average courtyard space per unit is 18sqm. We hypothesized that most of the units in the Italian grid would face the open street and most of the units in the organic area would face a courtyard. However, it appears that both situations occur on both sides of the river



SECTIONS - The river divides the site into four sections. The most noticeable differentiation is the section of Italian blocks. Here, the grid cuts across the landscape, in line with the road and the river but against the slope of the land. The largest section appears as a traditional organic sefer with a central main road. The smallest section is more mysterious and is isolated by the river surrounding it. The last section also follows the traditional organic pattern of the sefer but appears to have more vegetation.



BORDERS - The site experiences a number of border conditions. To the west is the prominent new development of condominium blocks. To the south is a street with commercial activity with even more commercial activity further south. To the right of the site is the area of governmental amenities and university buildings. To the north is the Merkato blocks and open air market.



REDEVELOPMENT - The most influential border is the condominium blocks. It is highly anticipated that this type of development will be planned for the rest of the Geja sefer. In that sense the traditional sefer typology is at risk. The issue in the way that the development has occurred is a loss of social structure inherent in the sefer and even within each smaller section. Each area has an identity which could be lost if not properly designed for.

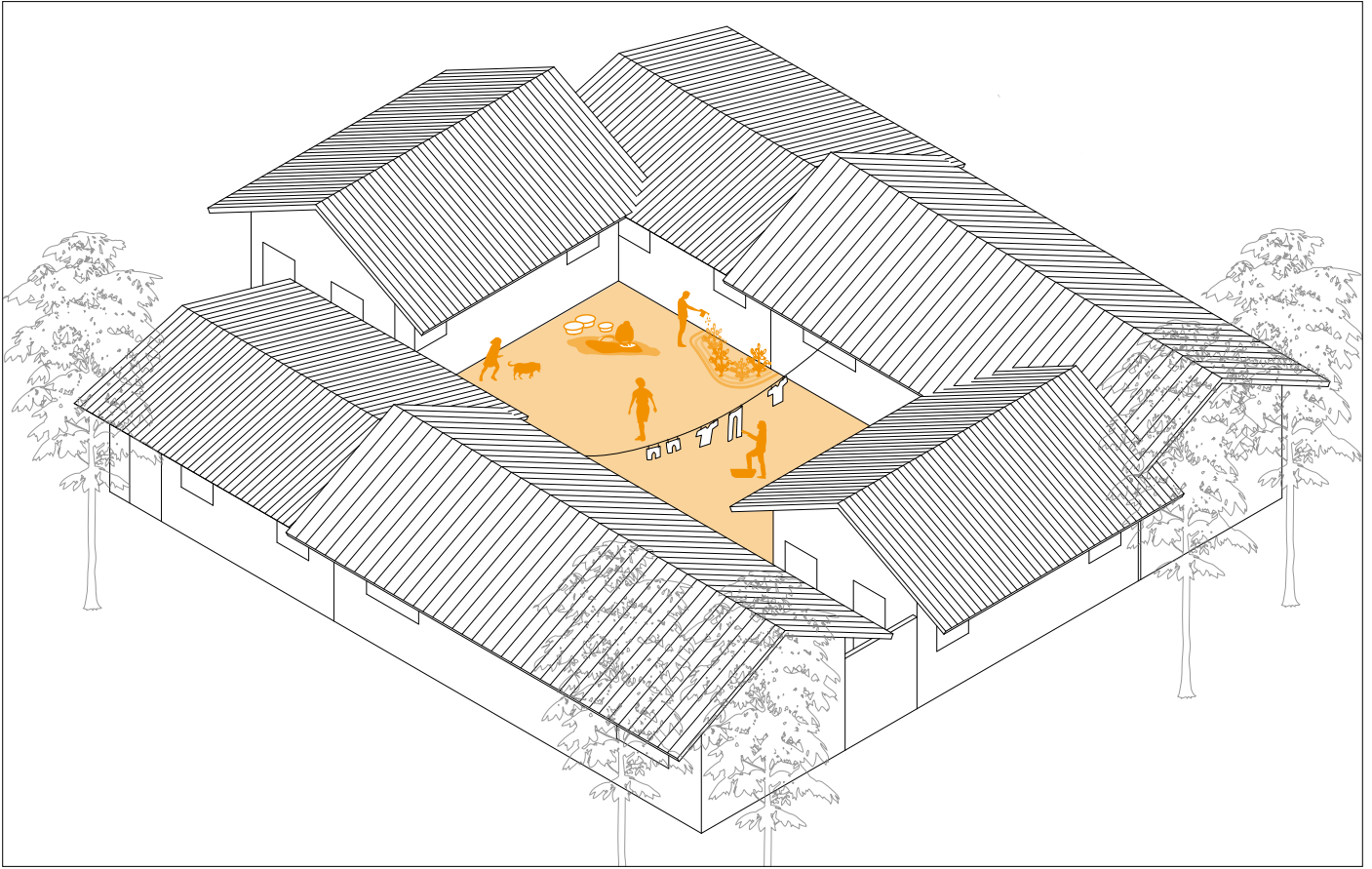
5.

Patterns

Social Spaces

There are very different social spaces between two parts of the site as they have very different morphologies. In the regular Italian grid, most of the activities take place in the main access street and inner alleys. Whereas in the more organic area, most activities take place in courtyards and leftover spaces between houses. Because the residences have very limited indoor space, there is a huge reliance on open to sky spaces for activities to take place. These activities include cooking, doing laundry, washing, playing, etc. There are also activities that take place in enclosed indoor spaces, including tej houses, coffee and tea houses and rooms for pool tables. Due to the compact and shared spaces for activities, strong social ties exist between residents of the Geja sefer.

Compound Courtyard



The neighbourhoods of the Geja Sefer are grouped into compounds of around five to ten families. These compounds are formed around an enclosed courtyard. These courtyards are used for many functions related to the home. Here you will usually find women and children. Activities include doing laundry, gardening, cooking, washing and playing. As the people of these neighbourhoods have relatively small indoor living spaces, much of the domestic activity occurs in this open to air space. These courtyards are usually not open to the public and general responsibility of the space is held by the inhabitants of the adjacent homes. These spaces are larger and more irregular shaped in the area of Geja west of the river where the urban fabric is more organic in nature and it is more likely to have leftover space between homes.

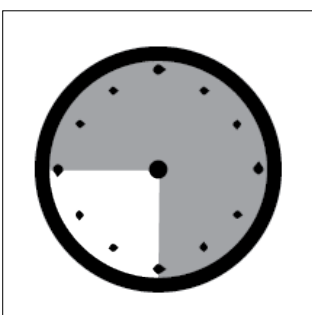
Time of Use: most of the activities in the compound courtyard take place in the day and before it gets dark, between 9am to 6pm.

Demographics: it is often a space used by women for domestic activities and socialize. When the kids return from school they also use the space to play.

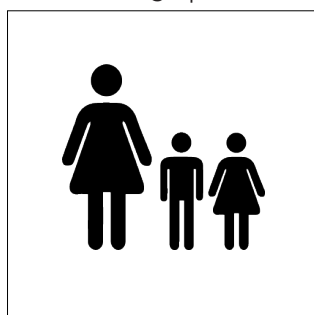
Activities: most activities take place in the compound courtyard are domestic activities including cooking, drying spices, doing laundry...etc.

Public / Private: the compound courtyard is a private space shared by the adjacent homes.

Time of Use



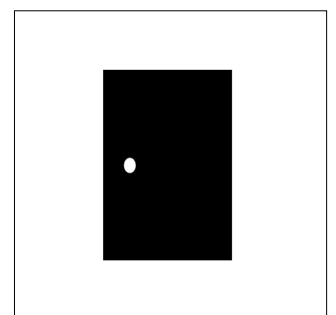
Demographics



Activities

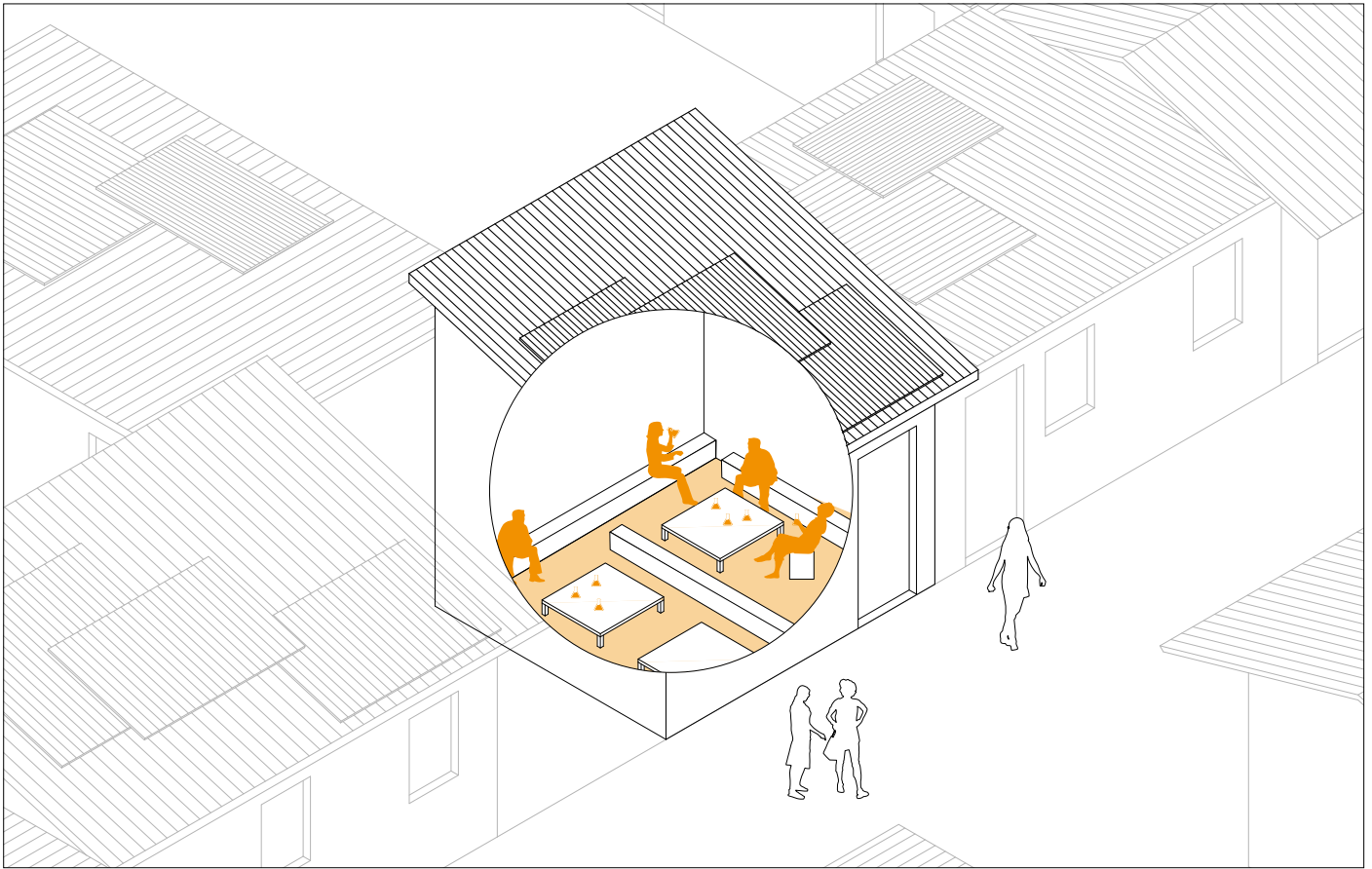


Public / Private



Social Spaces

Tej House



Often occurring, but not so evident at first glance are the Tej houses. It seems that while the women are typically hanging out in the courtyards, the men gather here for socializing and drinking the traditional honey wine, Tej. They are usually located within the same building typology of the housing and do not exhibit signage on the exterior. They are fairly dark spaces lined with benches and vary in size.

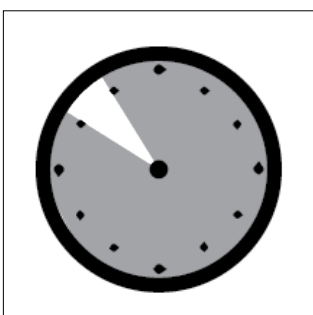
Time of Use: people gather in tej houses from late mornings to late at night

Demographics: the tej houses are usually occupied by elder men

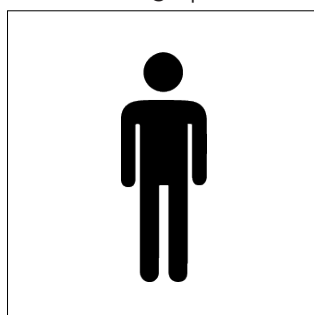
Activities: drinking tej is the main activity within tej houses, other activities like playing cards, reading newspaper, socializing...etc.

Public / Private: Although tej houses are enclosed dark spaces but it is a fairly accessible space for the residents in the neighbourhood.

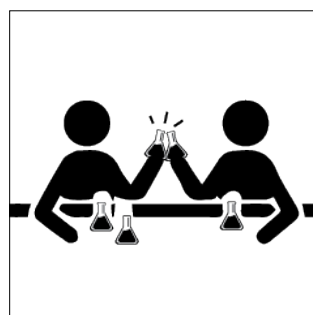
Time of Use



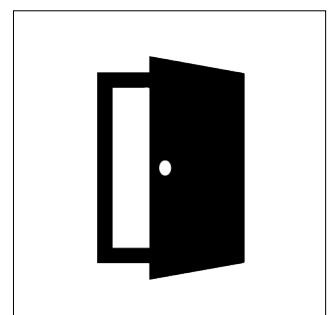
Demographics



Activities

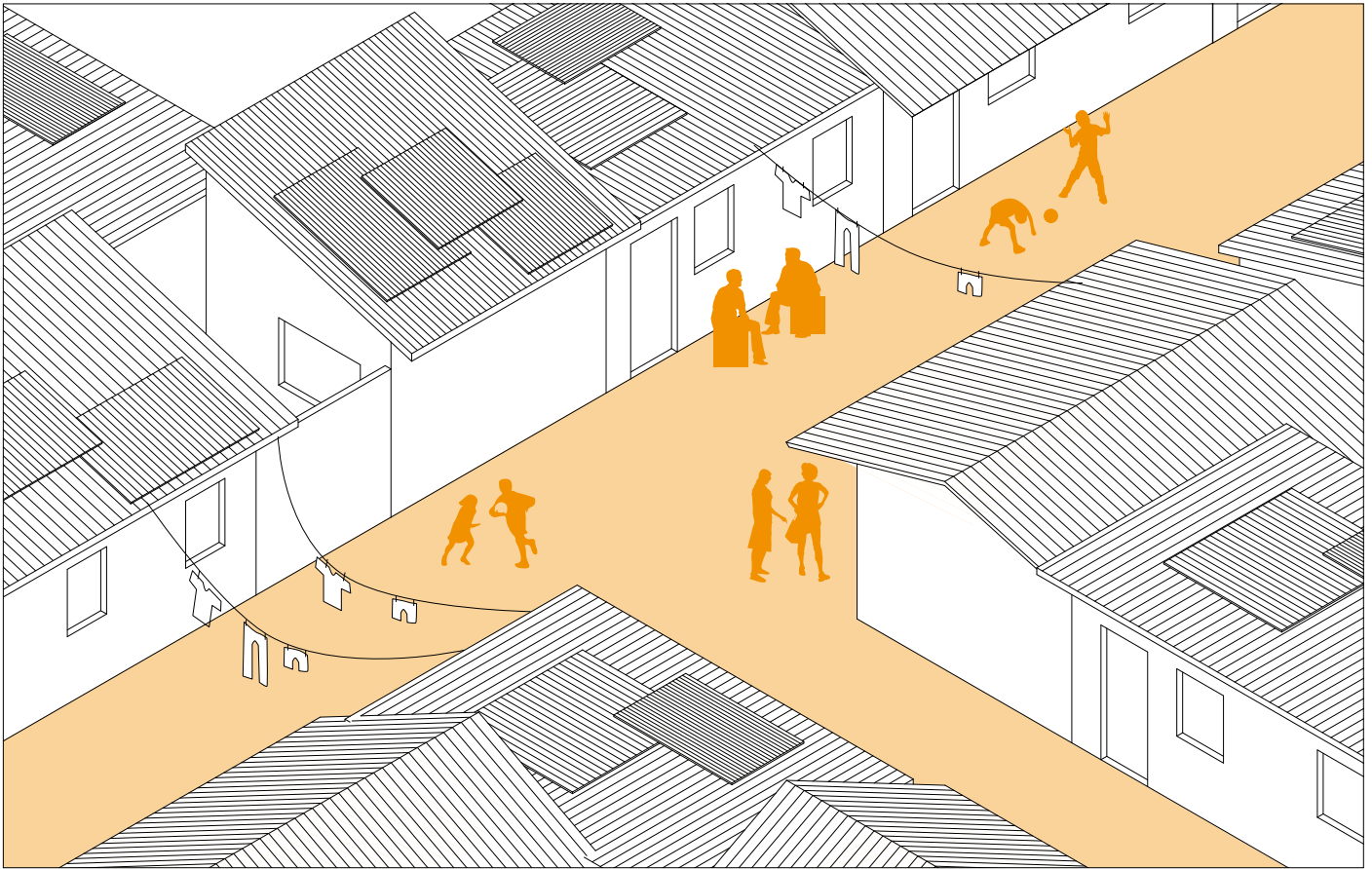


Public / Private



Social Spaces

Inner Streets



The inner streets of the Geja sefer are full of action, primarily in the grid like structure east of the river. Here, most of the daily exchanges of the community occur and many of the activities present in the courtyards exist here as well, along with income generating activities of different scales. Similar to the courtyards, activities spill out from the homes and in this case also the shops, onto the busy street. These streets are mainly for foot traffic but they are car accessible, especially around areas of service garages. The width of these streets is around five meters in the gridded area but ranges from one to ten meters where the streets flow more organically.

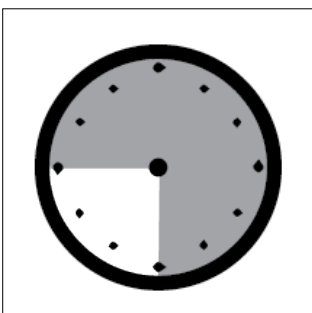
Time of Use: most of the activities in the inner streets take place in the day and before it gets dark, between 9am to 6pm.

Demographics: everyone takes part in the activities in the streets.

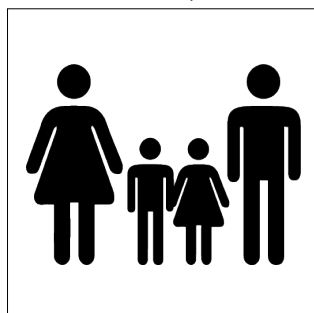
Activities: most of the activities present in the compound courtyard also take place in the inner streets. Other than that it is also a space full of shops and income and different income generating activities

Public / Private: The street can be easily accessed by the public.

Time of Use



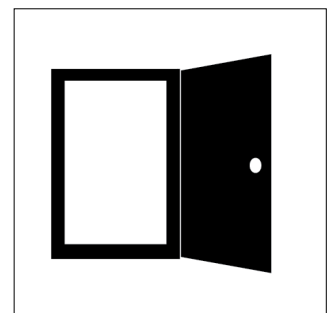
Demographics



Activities



Public / Private



Income Generation

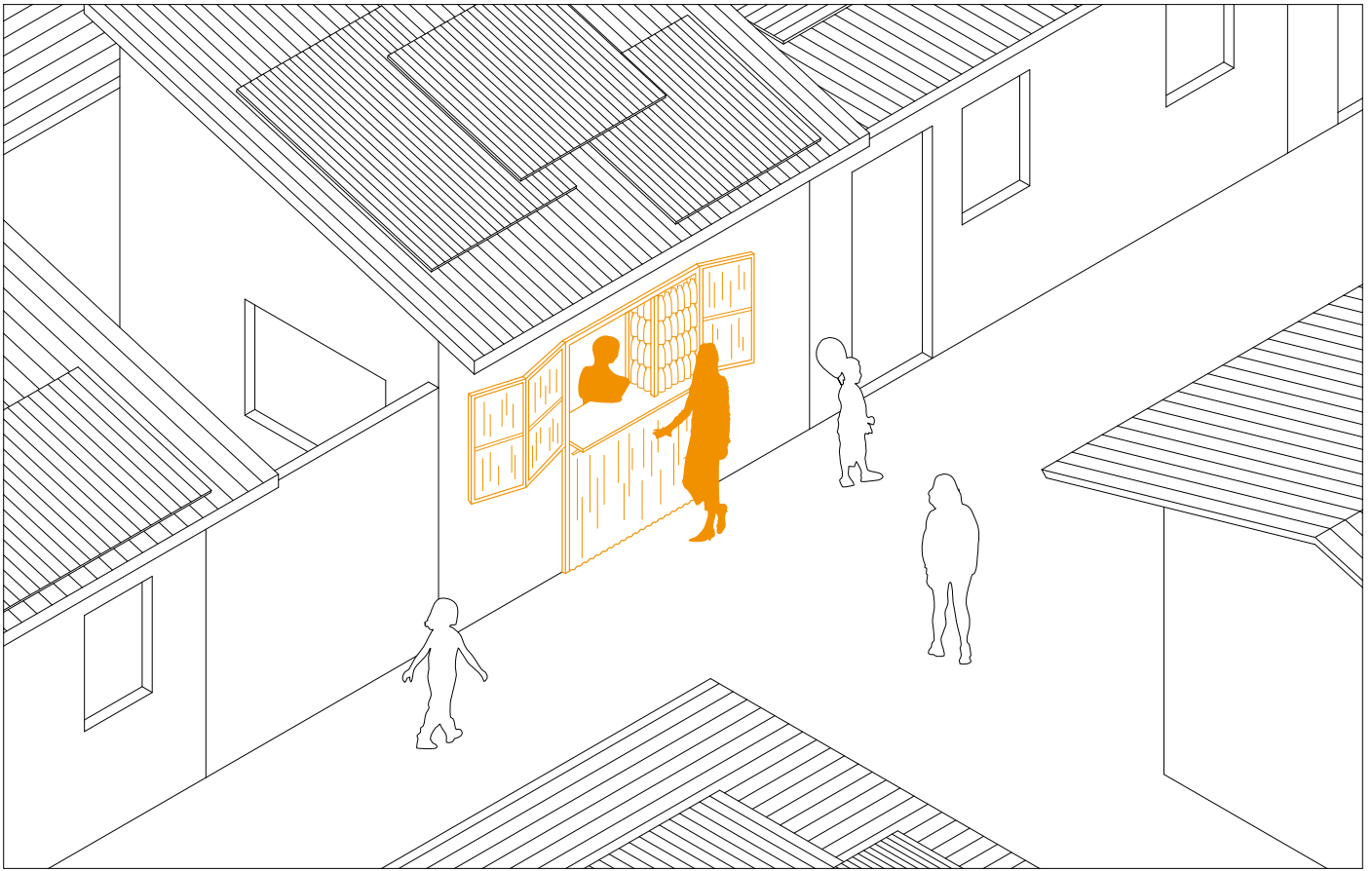
Due to the different morphologies in the sefer, different types of income generations are present. In the regular Italian grid, the predominant income generating activities are recycling, shop windows, and street stalls. In the more organic area of the site, the predominant income generating activities are car servicing stations, tire recycling, eucalyptus wood selling, shop windows, and street stalls. These differentiations are due to the larger open spaces within the more organic patterned streets. The larger access streets have more commercial activities and are very active in working hours.

These income generating activities are local businesses. They range in size and nature. Some of these businesses that recycle products either use products supplied by or supply products to Merkato.

Informality makes up the majority of the income generating activities. They are not formally registered businesses and do not have regular incomes. They rely on the spaces within the sefer to conduct their business.

Income Generation

Shop Windows



Shop windows are one of the most prevalent occurrences in the Geja sefer. Many of the daily household products and consumables can be purchased here. It seems that people of all ages work in these shops and everyone makes use of them as well. They face the inner streets and are usually connected to a home. The shop person is usually living behind the shop or nearby. They use corrugated metal sheeting and thus can be securely closed up at night.

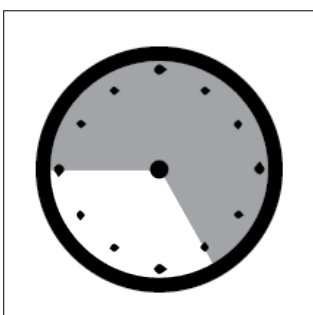
Time: shop windows often run in normal working hours, usually in the day and before it gets dark, between 9am-5pm.

Demographics: both female and male or sometimes children run shop windows

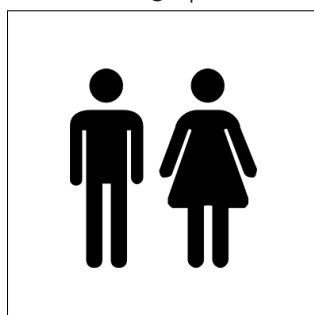
Nature of Business: shop windows are usually family businesses where the owner lives either behind the shop or nearby.

Spatial Condition: indoor with the shop window facing the streets

Time



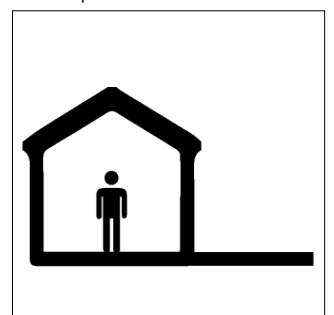
Demographics



Nature of Business

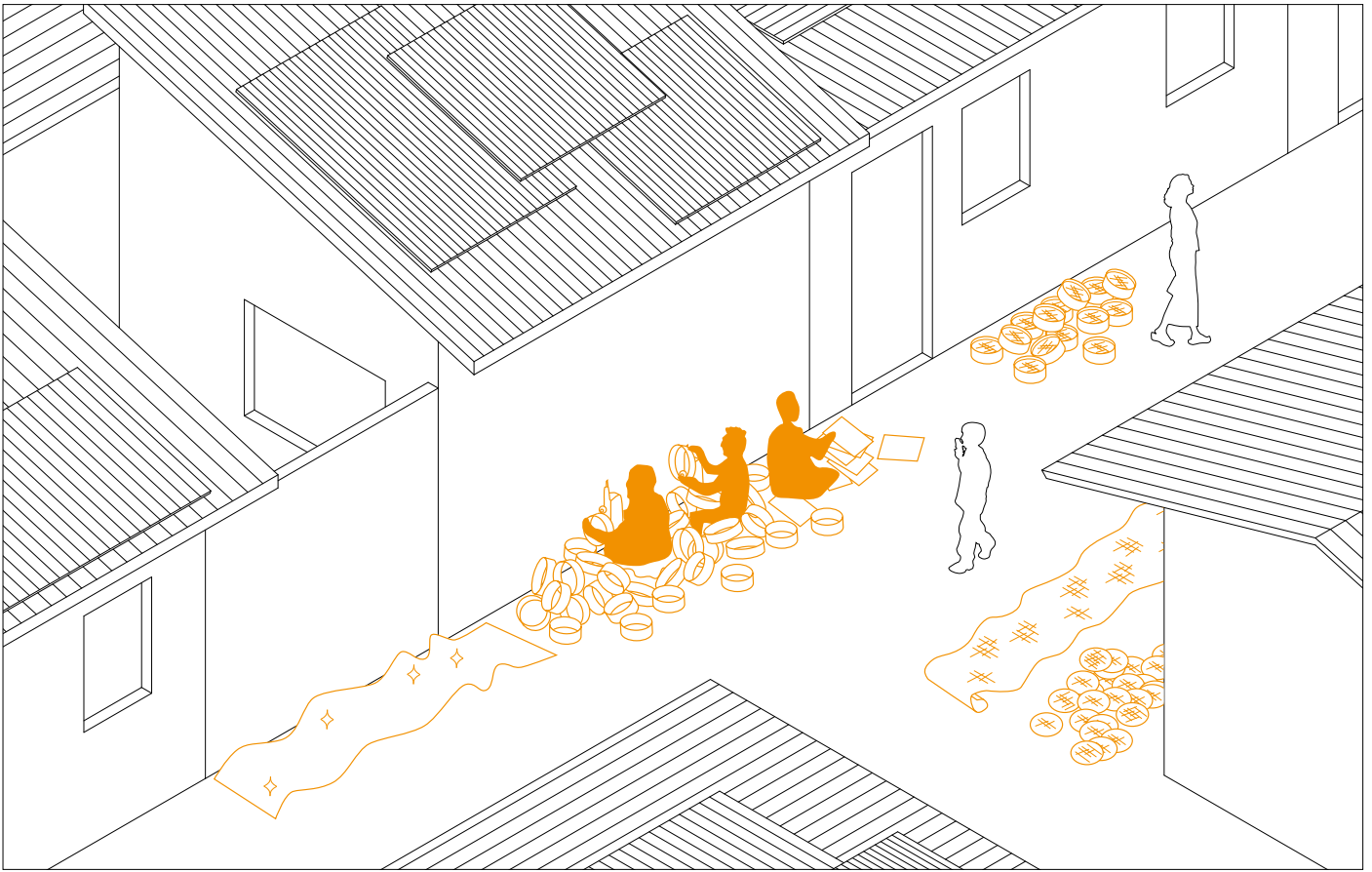


Spatial Condition



Income Generation

Recycling



One of the most special occurrences in the Geja sefer is the recycling process on the inner streets. In this process, local young males turn used oil containers into round sieves. The metal of the containers is cut into sheets and rolled into a ring using a special sieving machine. Sometimes new materials are used as well. This activity occurs on a daily basis in the sefer. The finished products are sold externally, usually in the Merkato. There is no waste in the process.

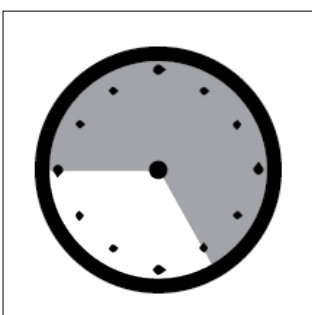
Time: normal working hours, usually in the day and before it gets dark, between 9am-5pm.

Demographics: the recycling works are done by men, usually young adults

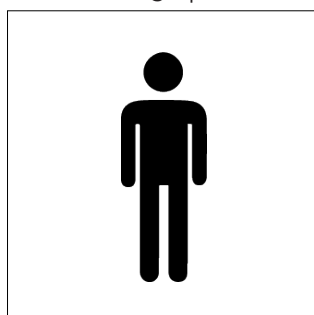
Nature of Business: instead of direct transactions, recycling is a way to generate income through production which requires certain skills and techniques.

Spatial Condition: recycling often take place outdoor, usually by the walls

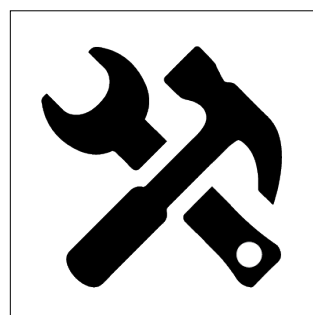
Time



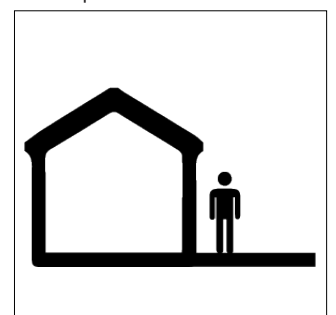
Demographics



Nature of Business

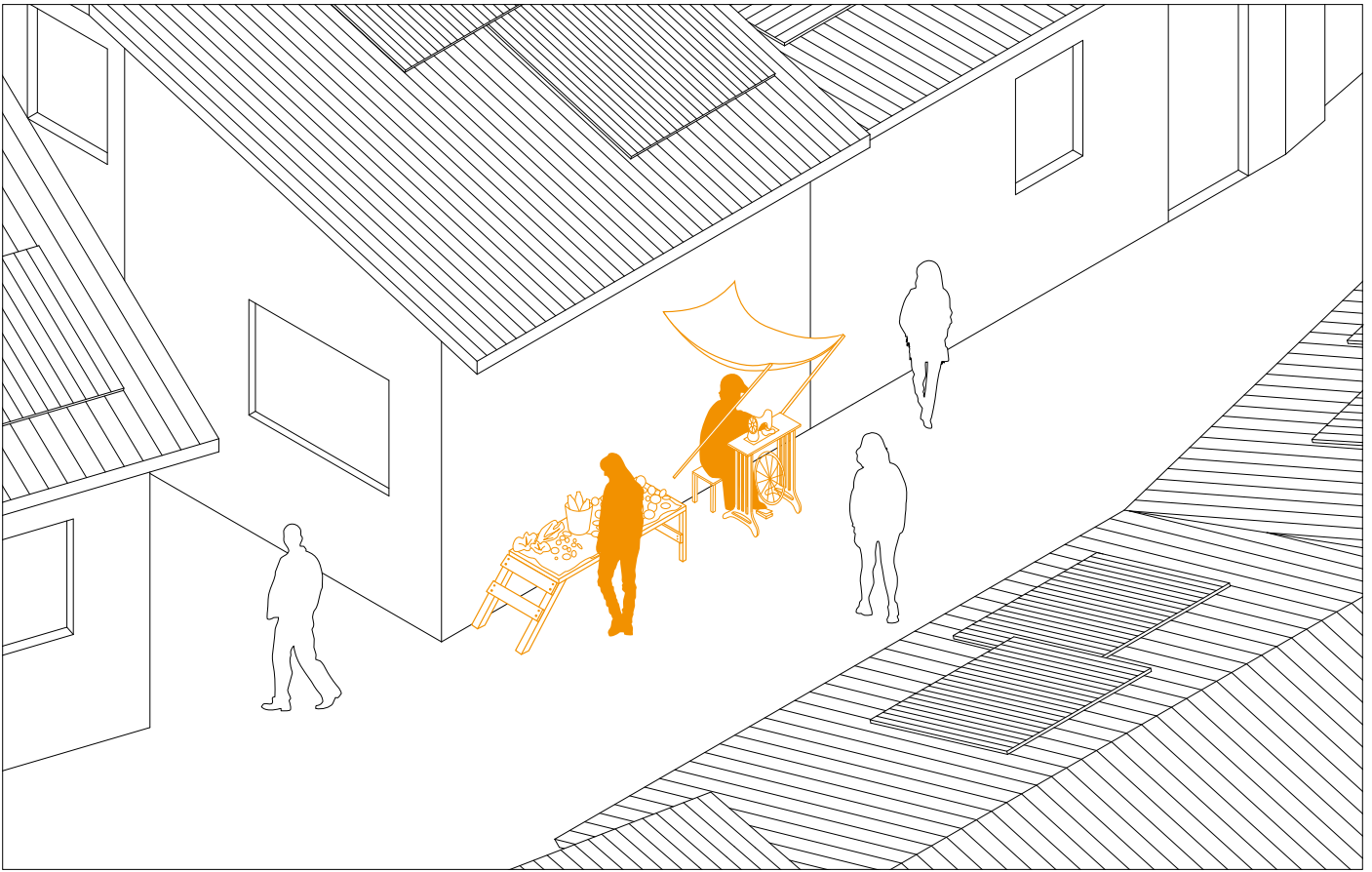


Spatial Condition



Income Generation

Street Stalls



Street stalls are present all over the Geja sefer. These stalls range in use from sewers to fruits and vegetables. The structures of these stalls are temporary and often include a temporary shading device made with eucalyptus wood and reused plastic. The owners of these stalls are usually living in the neighbourhood and set up the stalls directly outside of their homes so that they can still attend to their children. The positioning of these stalls is necessary due to the lack of central market for the neighbourhood. These economic exchanges could be considered informal in nature as they are unregistered.

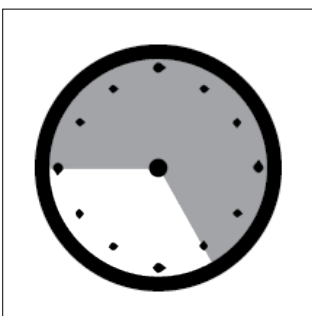
Time: normal working hours, usually in the day and before it gets dark, between 9am-5pm.

Demographics: both female and male run street stalls

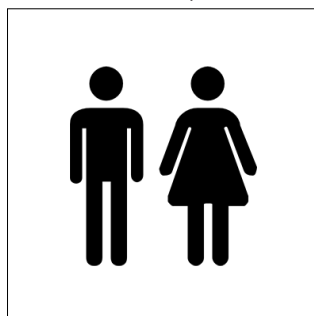
Nature of Business: street stalls generate income through direct transactions, usually through selling products such as fruits and vegetables.

Spatial Condition: street stalls are located outdoor and usually built with temporary structures as a shading device.

Time



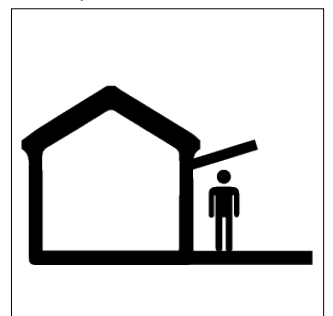
Demographics



Nature of Business



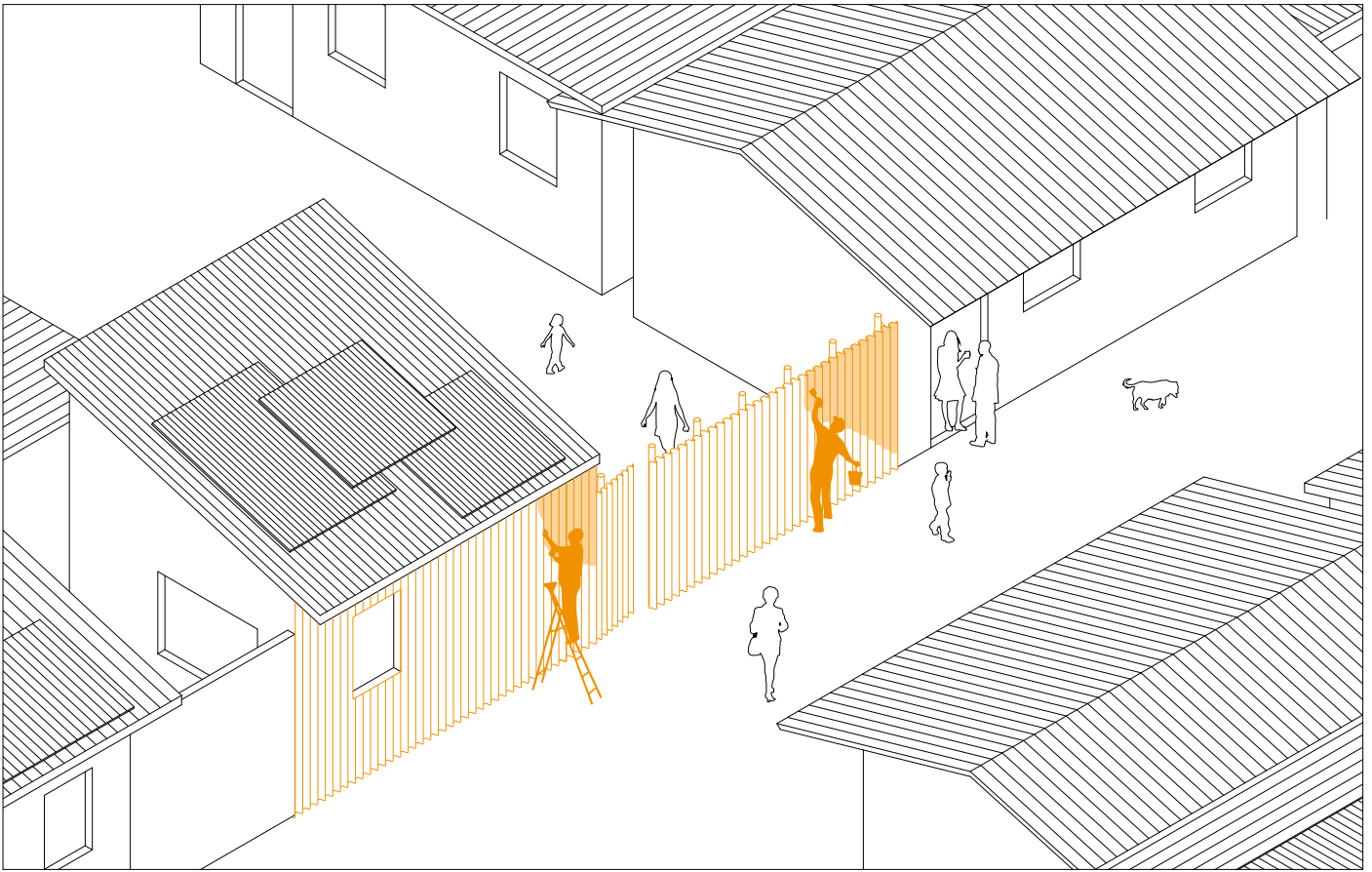
Spatial Condition



Borders

Borders are very important in the sefer as they provide the inhabitants a sense of security and privacy. Because the housing structures in the sefer are not very secure, the borders act as a tool to claim their space, as well as an added layer of security. The predominant form of borders is corrugated metal sheetings which are mainly used for walls, fences and roofs. These, as well as walls of concrete block with barbed wire or glass shards at the top are the most permanent and secure borders. Other types of borders are more permeable such as bamboo fences and foliages. Some borders are more temporary such as clothes lines and other makeshift object barriers. The river also acts as a natural border dividing the sefer physically and also avoided due to its smell. Ditches also act as a threshold between the streets and homes.

Metal Corrugated Fences



These corrugated metal walls are the most prevalent feature of the Geja sefer. Visible everywhere these walls are easy to build and serve an important function. The corrugated metal sheets are used for fences, and cladding both walls and roofs. The walls are constructed simply using eucalyptus posts for support. These walls offer a high level of privacy and security as they are neither physically or visually permeable. They often appear patchy as holes are fixed over time. Business owners and occasionally residents tend to paint the corrugated metal, providing differentiation and personality. Sometimes companies like Coca-Cola build social spaces out of this material and paint it with their logo. Generally in Geja however these walls line the inner streets and create a harmonious sea of metal.

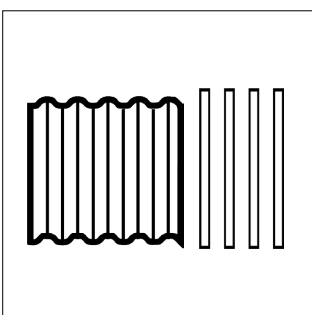
Material: corrugated metal sheets and eucalyptus posts

Temporality: as they are mainly used for walls they serve for permanent purposes and aren't often replaced.

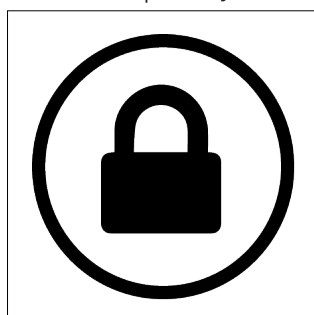
Physical Permeability: not physically permeable due to the nature of the material and its function as a wall.

Visual Permeability: not visually permeable due to the nature of the material.

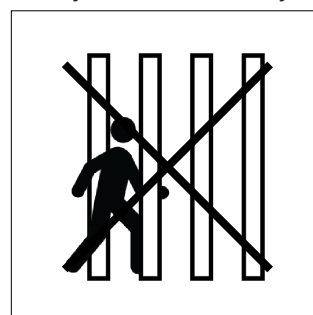
Material



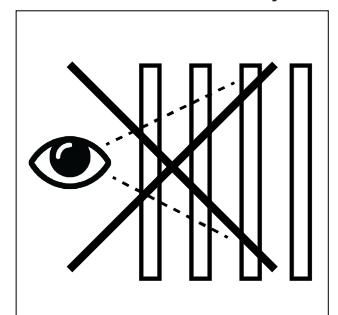
Temporality



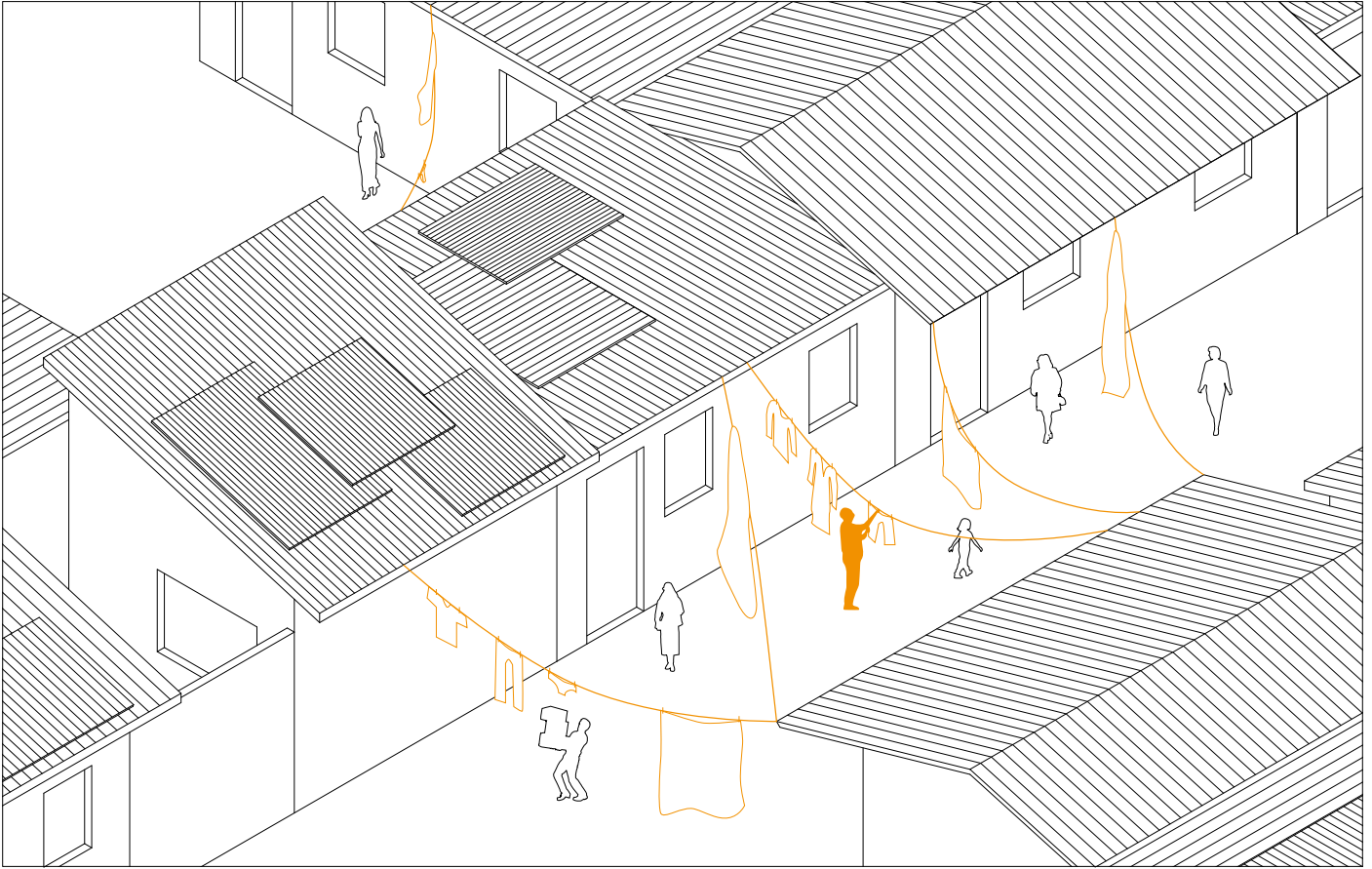
Physical Permeability



Visual Permeability



Clothes Lines



Also very prominent in the Geja sefer although temporary are the endless clothes lines stretching from one building to the next, across the inner streets. They are both visually and physically permeable, yet act as a border dividing the streets and courtyards into more manageable spaces. These borders are again an extension of activities from the home into the communal space.

Material: clothes lines

Temporality: clothes lines are temporary borders as they will be taken down by households once they're dried

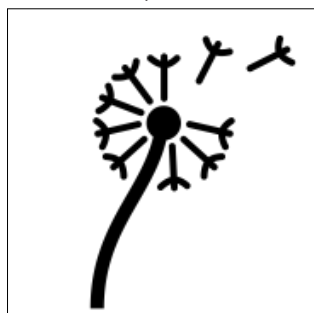
Physical Permeability: they are physically permeable as people can still walk pass it.

Visual Permeability: they are visually permeable they don't really block what's behind.

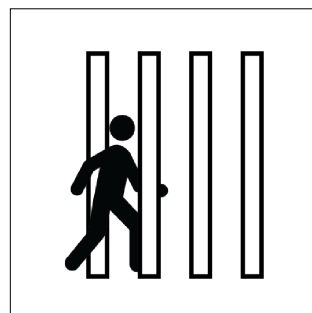
Material



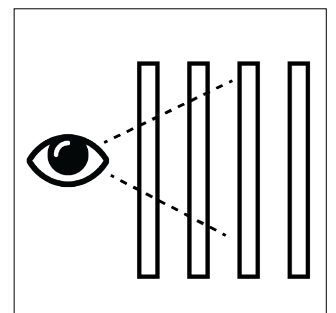
Temporality



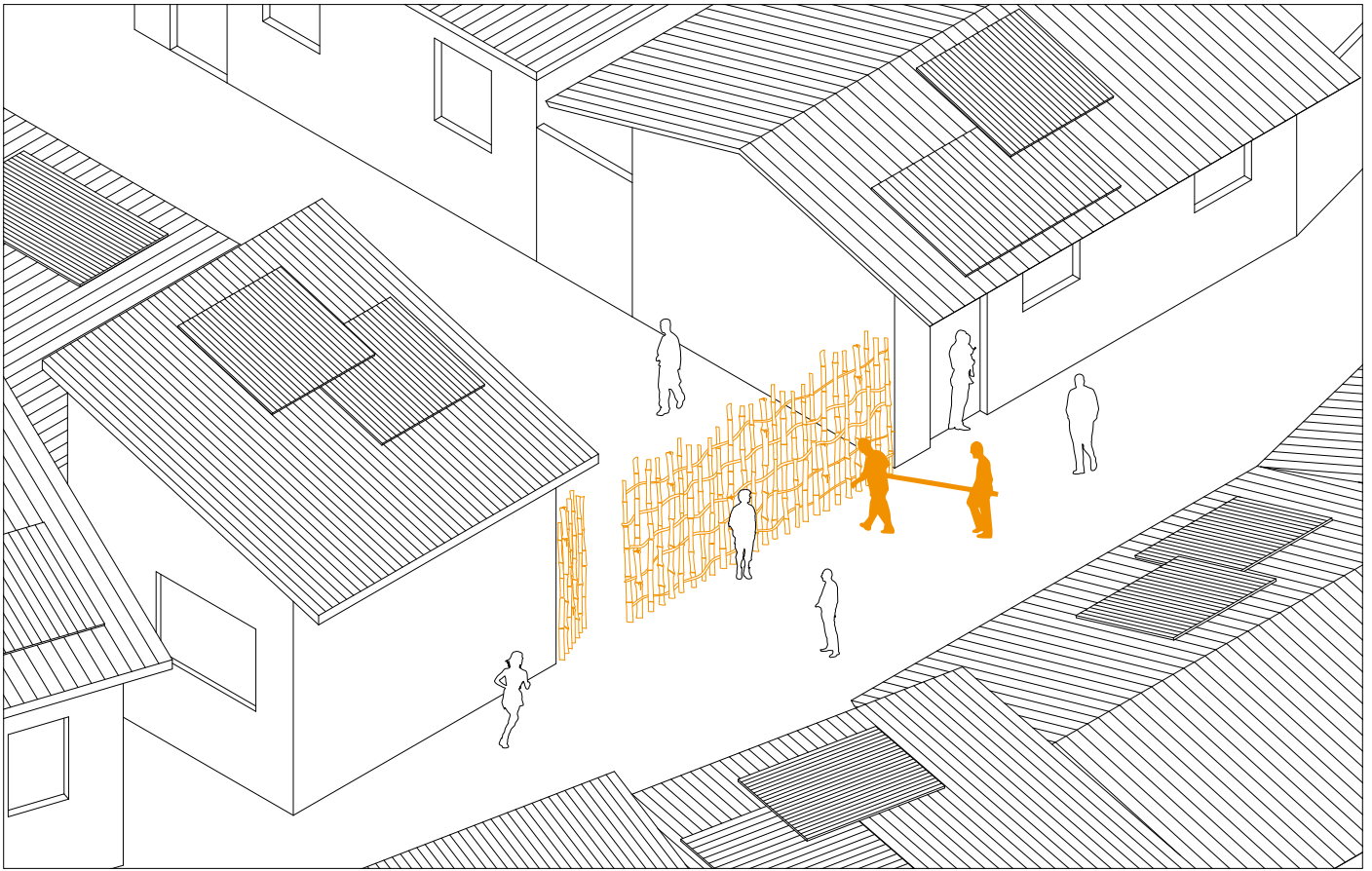
Physical Permeability



Visual Permeability



Bamboo Fences



Luckily for the inhabitants of the Geja sefer, there is a series of rivers bounty-full with a crop of small bamboo plants. These plants are used for quickly and economically building fences. Fences are very important for the people of the sefer in order to denote place, ownership and security. The bamboo fences act as a physical border but are not as secure as other options. For this reason most inhabitants prefer other methods of enclosure regardless of the fact that these more visually permeable borders are more inviting in appearance. The privacy level when using this method as fencing is not high enough but it is also widely used for demarcating the borders of personal gardens.

Material: small bamboo plants

Temporality: the bamboo fences are semi-permanent as they are used to create physical borders but are not as secure other options due to the nature of the material used.

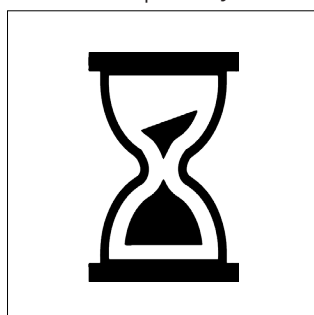
Physical Permeability: as they are used as physical borders, bamboo fences are not physically permeable.

Visual Permeability: due to the way they are built, there are gaps between bamboo sticks which allow visual permeability.

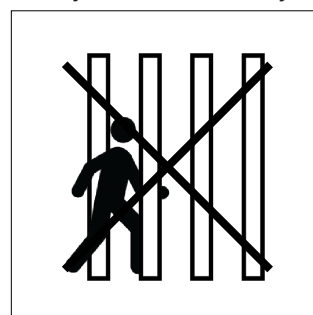
Material



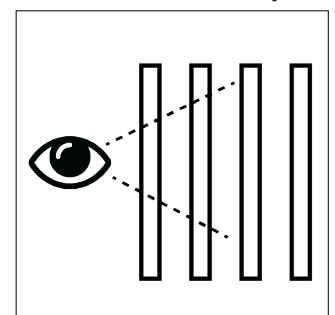
Temporality



Physical Permeability



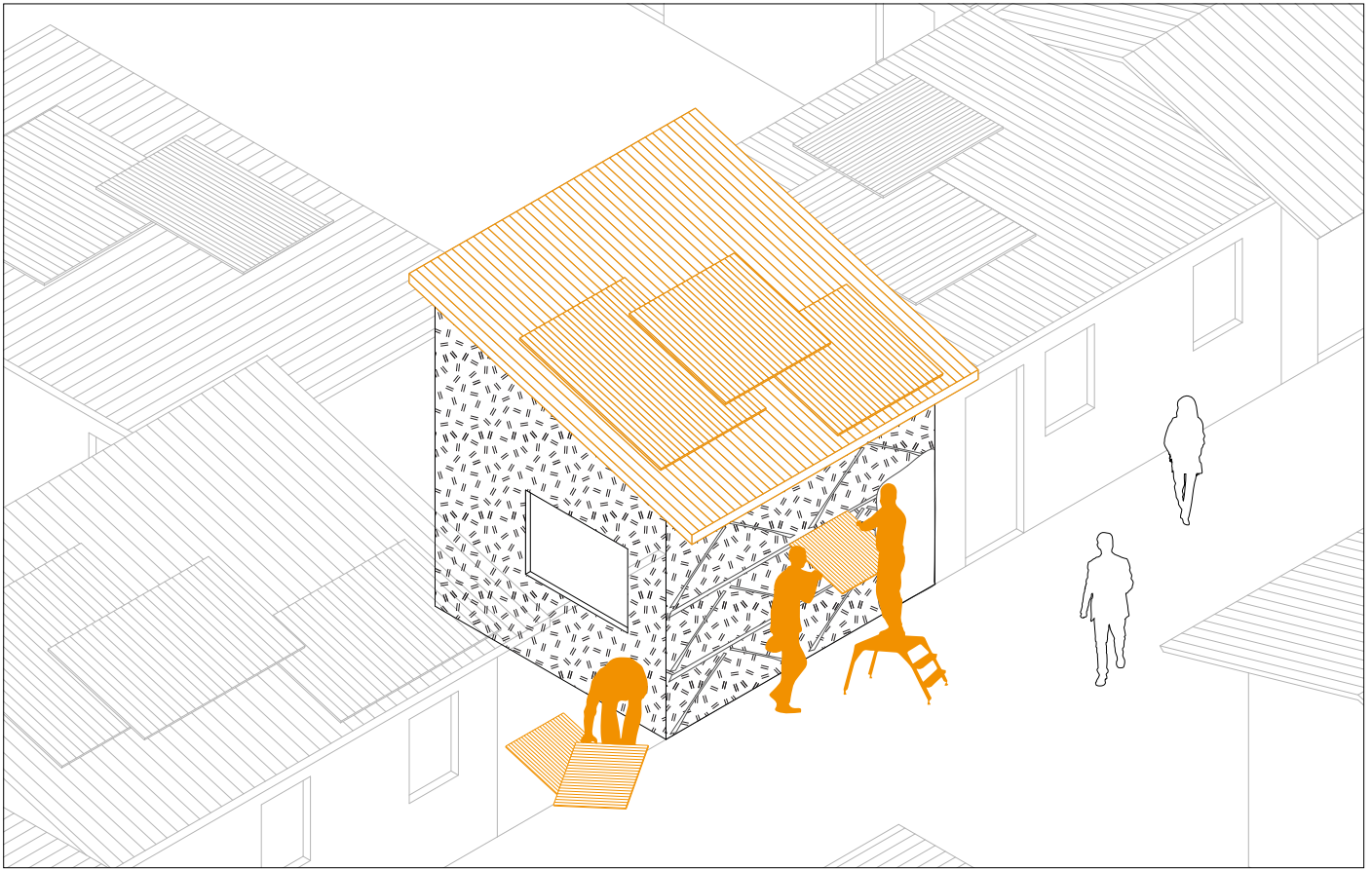
Visual Permeability



Building Techniques

The permanence of building techniques depends on the one who is constructing it. For individual households, the predominant building techniques are chika construction with eucalyptus frame, corrugated metal roofs and clad with plaster and metal. For more expensive houses, public facilities and larger commercial buildings, more permanent building techniques are applied. These are mostly constructed with concrete blocks made on site with light aggregate. The facilities are built by non profit organizations. The stone paving throughout the site was built by the government to improve the infrastructure which includes the ditches. There is more money spent on the pavings in the Italian grid area as the planning was more regulated.

Corrugated Metal Sheet Roofing



Corrugated metal sheets are almost always used for roofing for the houses in Geja sefer. It is done by combining multiple corrugated metal sheets and fixing it above the walls. This material is cheap and can be found easily throughout Addis Ababa which makes it the most economical choice. The inhabitants themselves usually build these houses and expand the spaces over time.

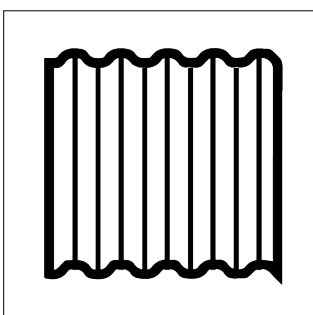
Material: corrugated metal sheets

Builder: the roofs are usually built by house owners

Construction: this technique doesn't require too much time and relatively cheap in cost.

Function: protection from the elements

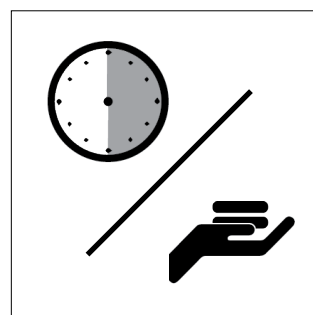
Material



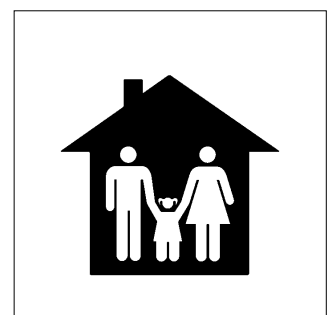
Builder



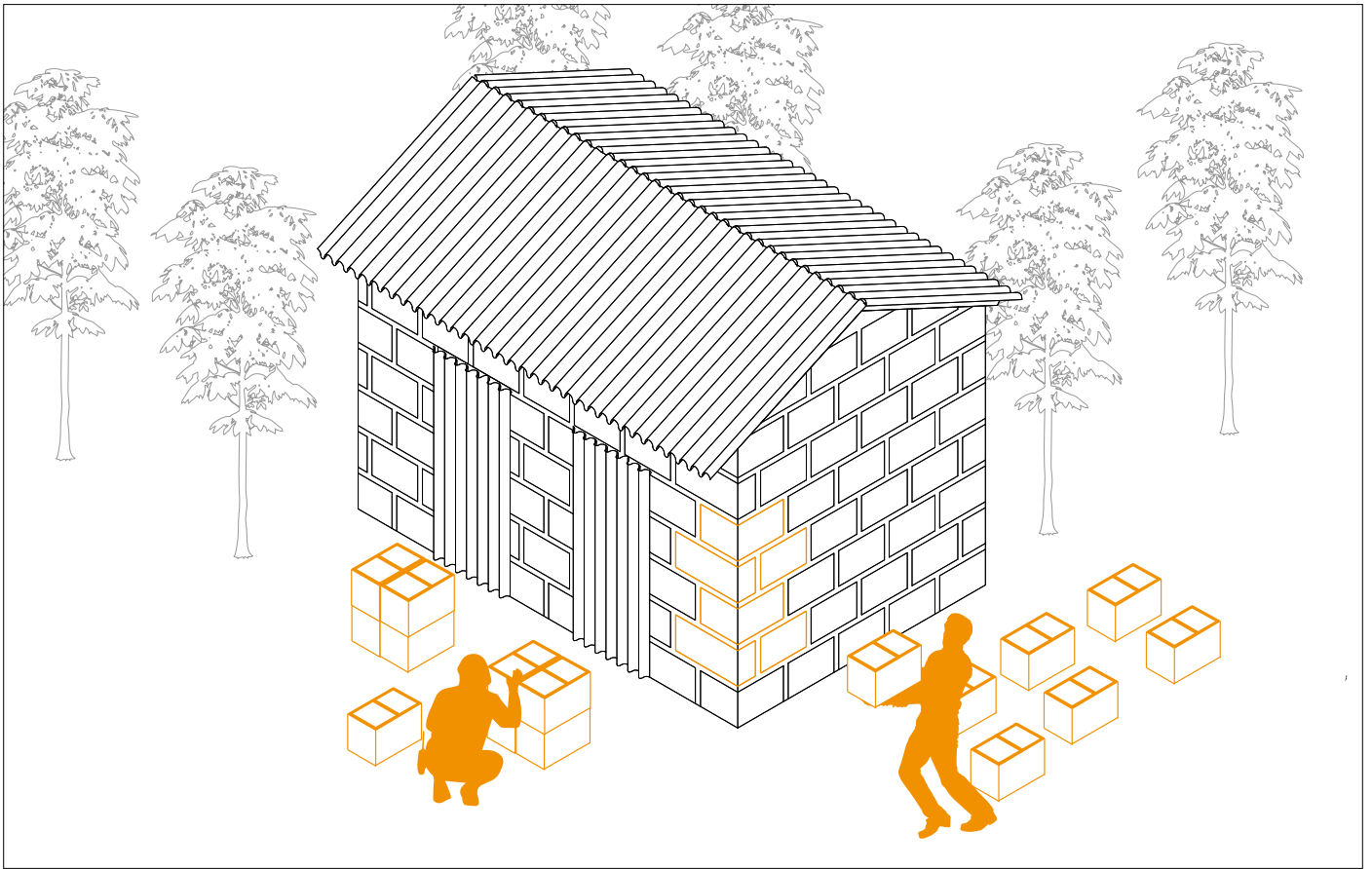
Construction Time & Cost



Function



Concrete Block Shared Facilities



There are facilities spread throughout the site which have been built by non-profit organizations using concrete block construction. The concrete blocks used are light yet durable. These structures are roofed with corrugated metal sheeting.

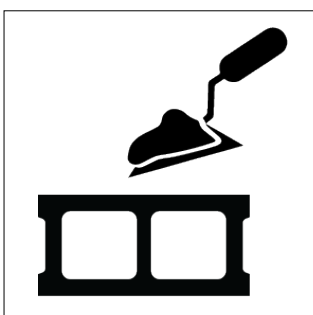
Material: concrete blocks and aggregates (metal corrugated sheets for roofs)

Builder: facilities are built by non profit organizations for the community

Construction Time & Cost: usually cost more money but less time consuming to built as they are supported by the non profit organizations.

Function: public facilities such as water stands and toilets.

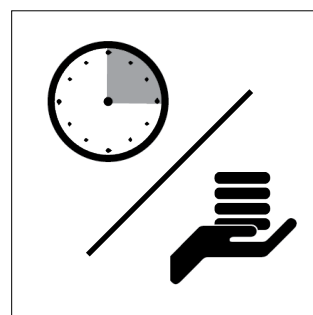
Material



Builder



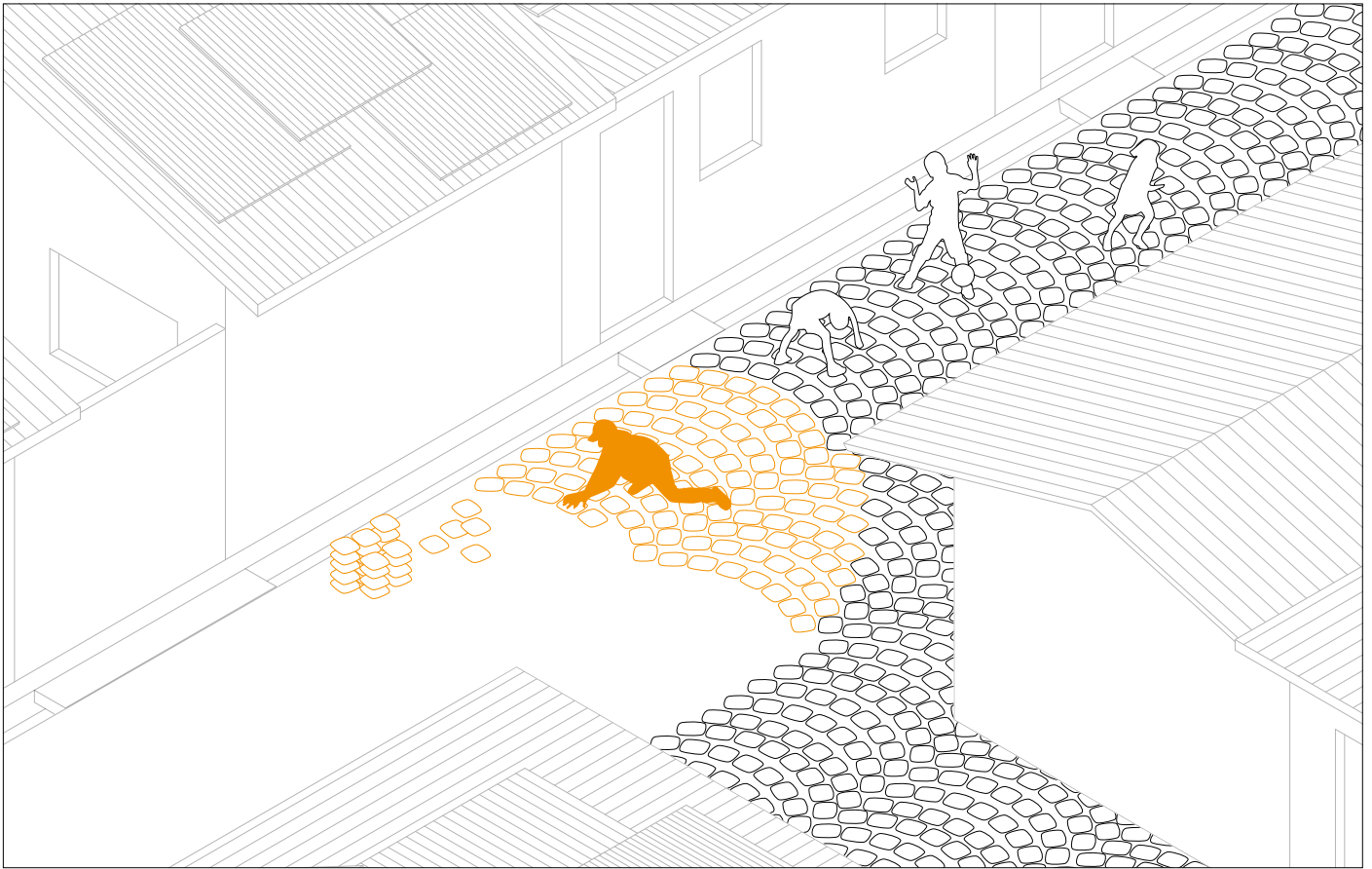
Construction Time & Cost



Function



Stone Paving



The inner streets of the Geja sefer have been stone paved by the city. This work is extensive and quite beautiful in some areas. Drainage ditches which lead to the river are usually included in this system of infrastructure.

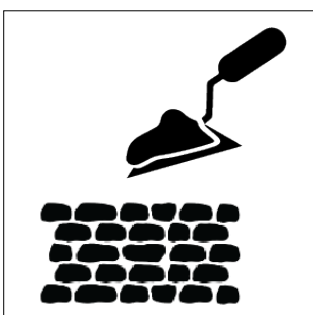
Material: stone and aggregates.

Builder: stone paving is planned and done by the government

Construction Time & Cost: the process of building stone pavements is very time consuming and costly.

Function: infrastructure improvement for the community, including drainage ditches

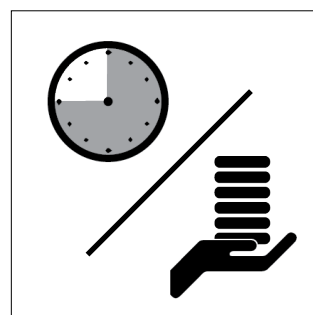
Material



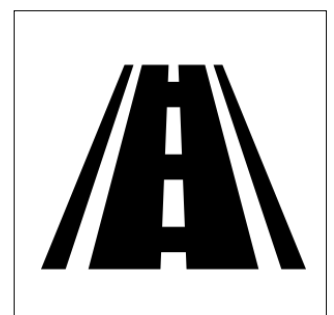
Builder



Construction Time & Cost



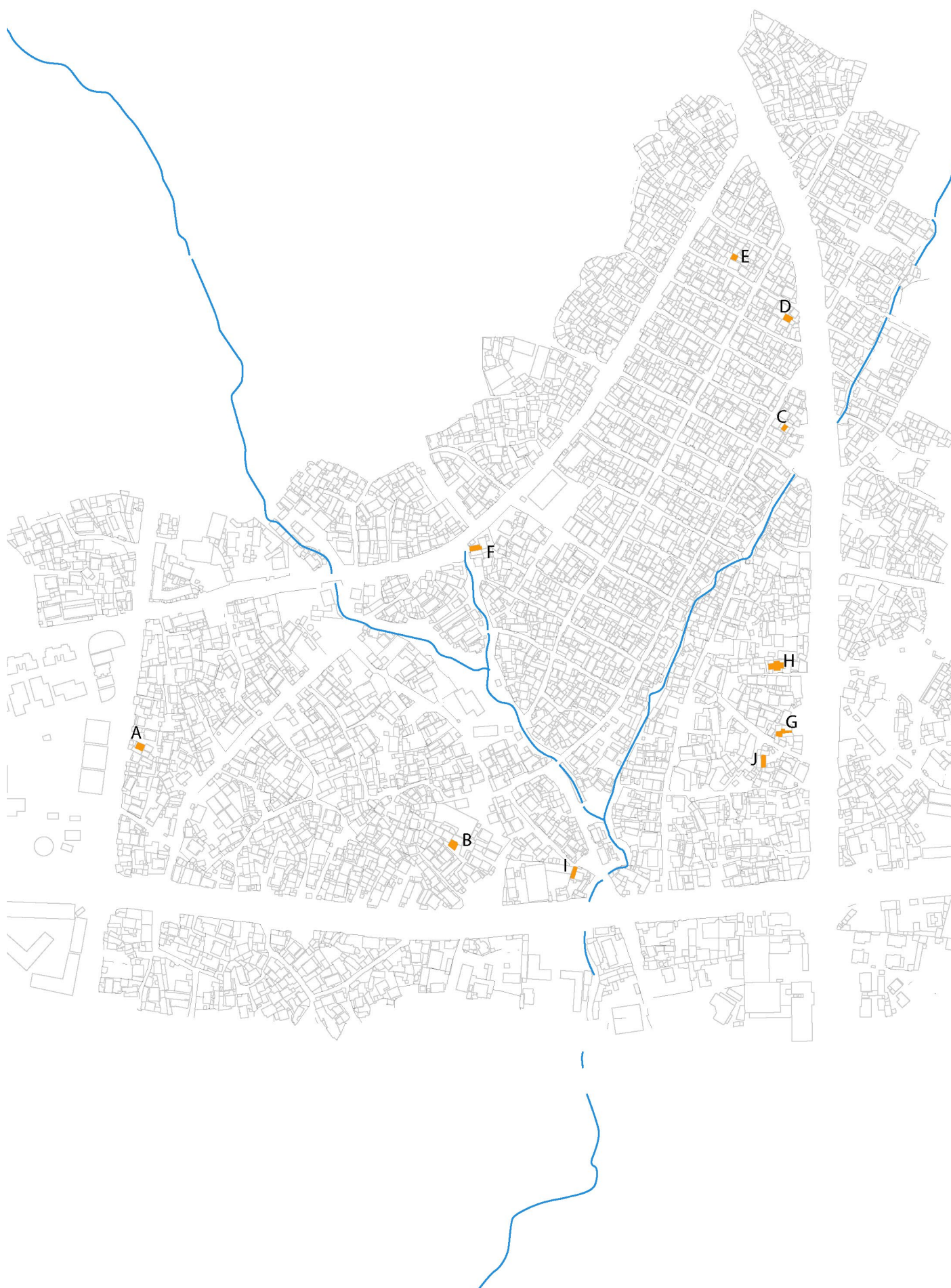
Function










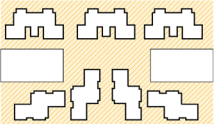






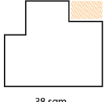

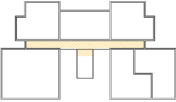
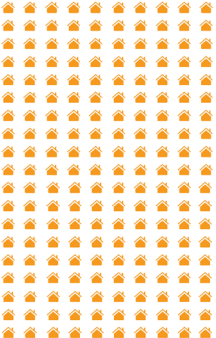






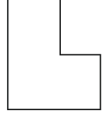


6.

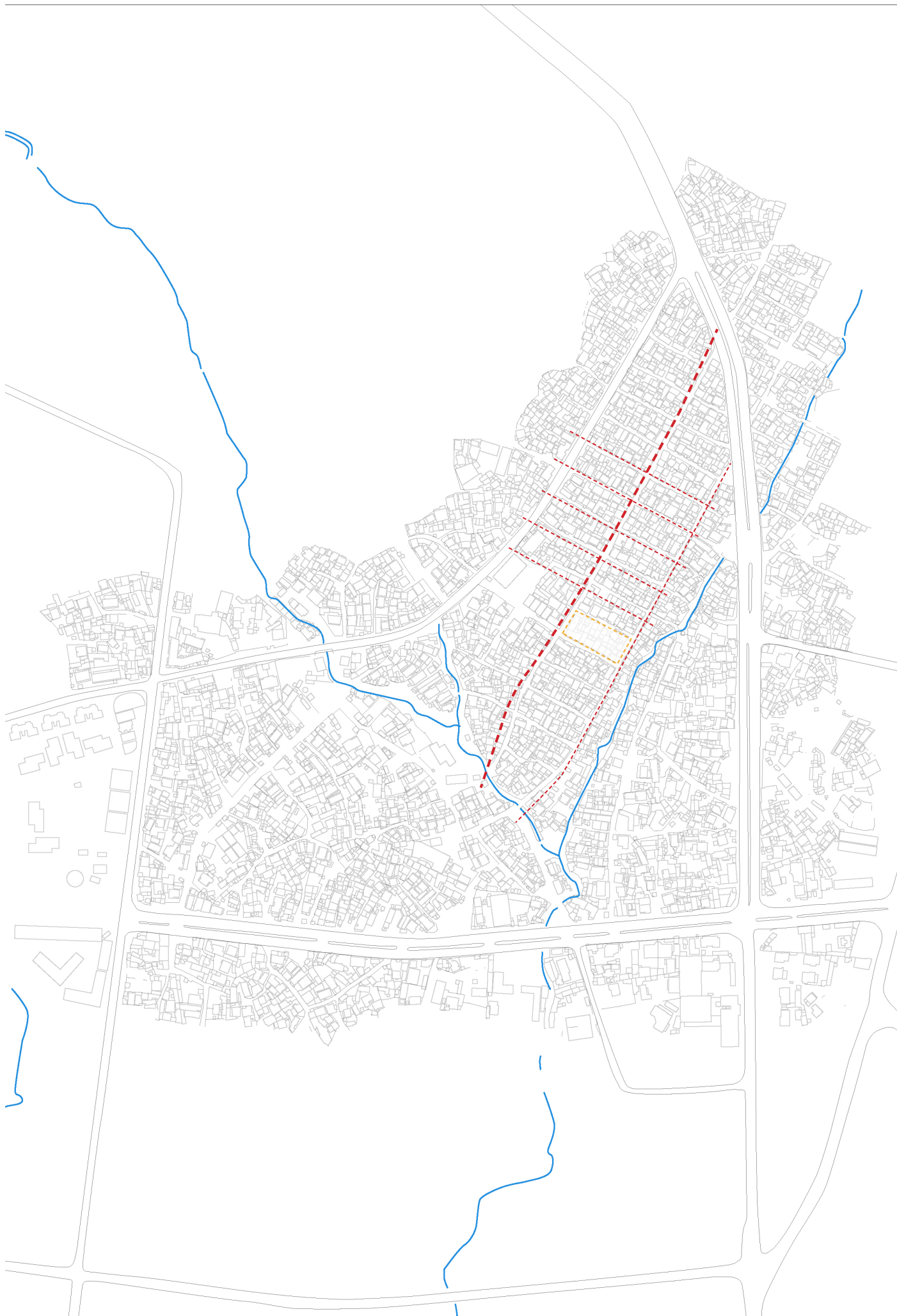
Design

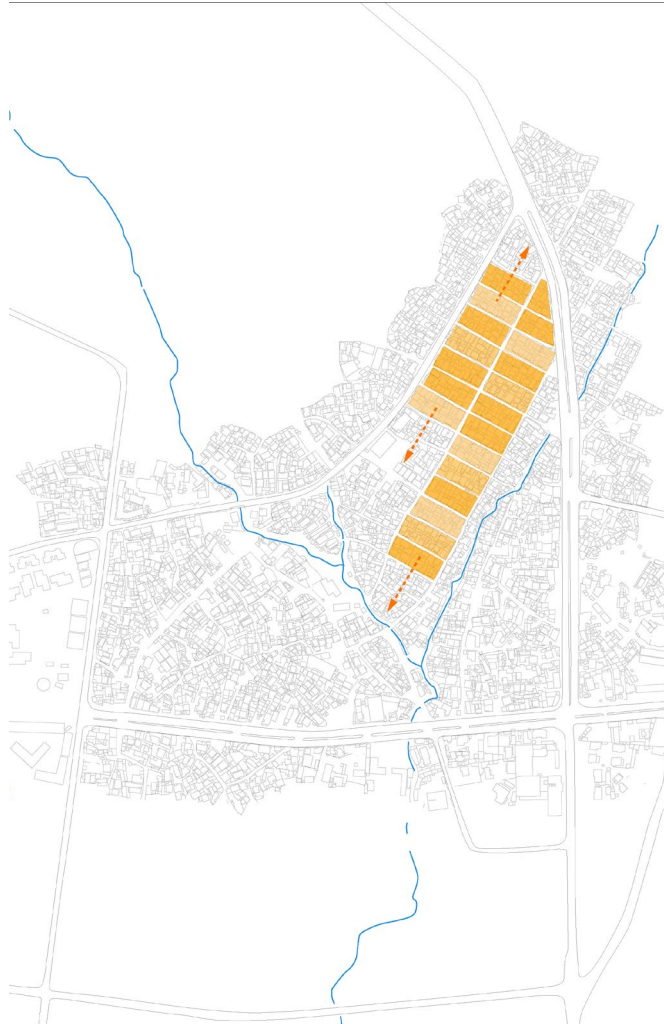
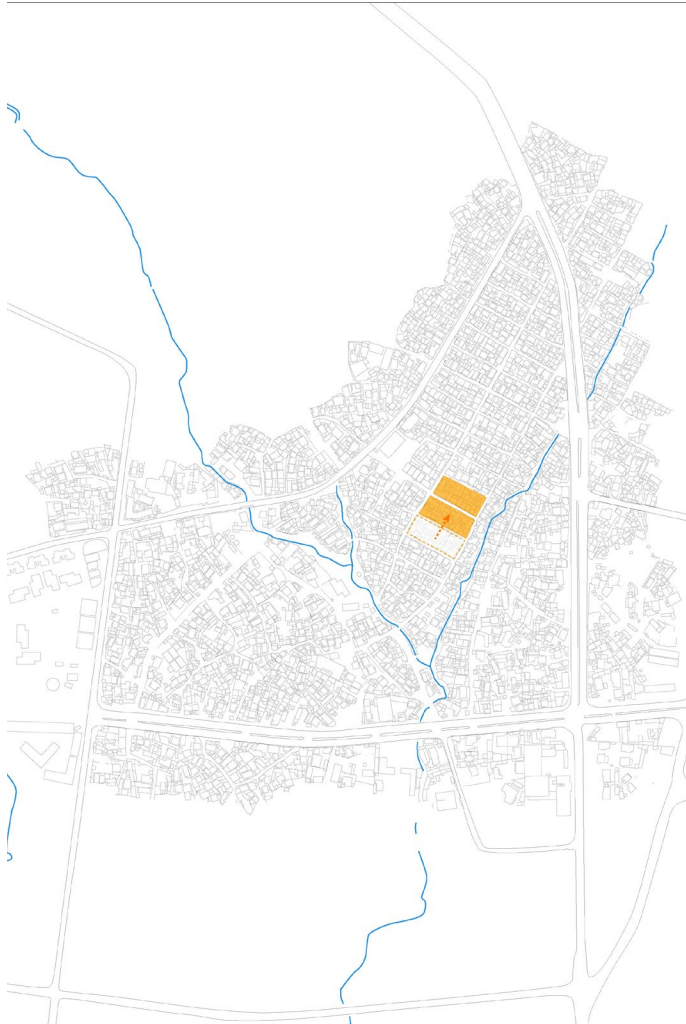
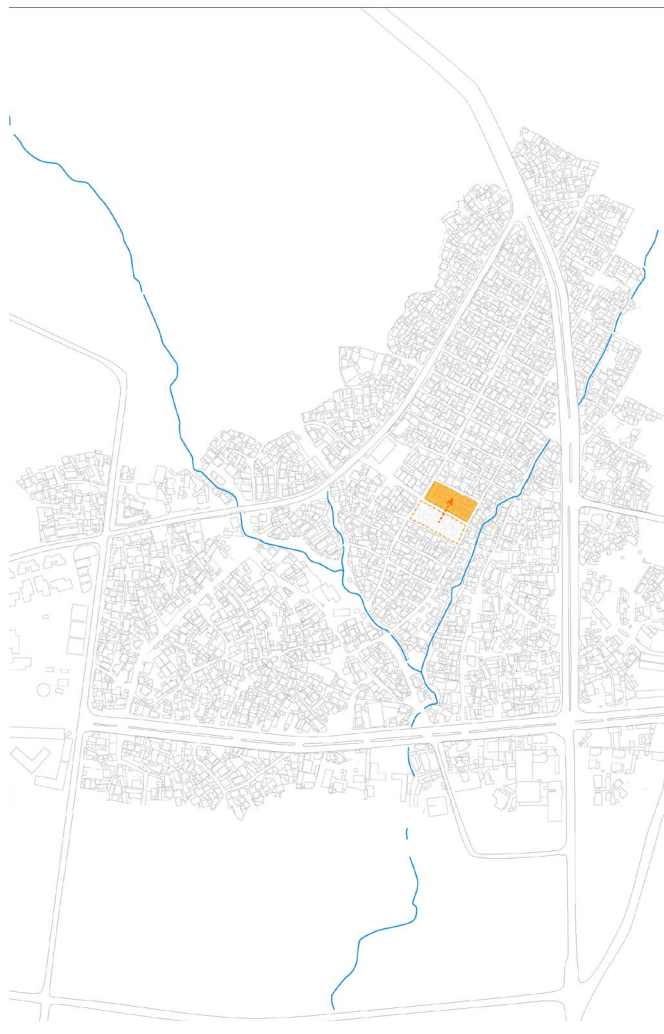


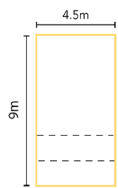


	UNIT'S ASSOCIATION TO OPEN-TO-SKY SPACE	ACCESS	SPATIAL CONDITION	OPEN-TO-SKY SPACE	NO. OF HOMES	OPEN-TO-SKY SPACE PER HOME	ACTIVITIES	ELEMENTS
A		 unit: 14 sqm	 compound courtyard	 178 sqm	 25 homes	7.12 sqm/home		 plants/vegetations canopy/storage
B		 unit: 128 sqm	 private courtyard	 36 sqm	 3 homes	12 sqm/home		 plants, trees clothes line chairs mops, buckets dog
C		 unit: 18 sqm	 alley	 84 sqm	 12 homes	7 sqm/home		 stacked tires plastic containers
D		 unit: 68 sqm	 private courtyard	 14 sqm	 1 home	14 sqm/home		 plastic buckets plastic containers cupboard wooden boards
E		 unit: 23 sqm	 compound courtyard	 71 sqm	 13 homes	5 sqm/home		 plastic buckets
F		 unit: 55 sqm	 private courtyard	 47 sqm	 1 home	47 sqm/home		 plants storage water tap plastic containers
G		 unit: 35 sqm	 open-to-street courtyard	 348 sqm	 10 homes	34.8 sqm/home		 plants plastic containers
H		 unit: 27 sqm	 private courtyard	 75 sqm	 3 homes	25 sqm/home		 tires plastic buckets plastic containers
I		 unit: 42 sqm	 private courtyard	 156 sqm	 10 homes	15.6 sqm/home		 tires plastic buckets plastic containers
J		 unit: 17 sqm	 open-to-street courtyard	 160 sqm	 12 homes	13.3 sqm/home		 tires plastic buckets trays
		42.7 sqm	 central open-to-street street/alley	117 sqm	9 homes	18 sqm/home	 90% - laundry drying/washing 60% - drying spices 60% - chatting 40% - kids playing 40% - washing 30% - cooking 20% - gardening 10% - furniture making	 10% - coffee ceremony 10% - waste collection 10% - playing cards

LIDETA	EST. UNIT LAYOUT	SPECULATED NO. OF PEOPLE/ AREA PER PERSON	PRIVATE OPEN-TO-SKY SPACE	COMPOUNDS	BLOCKS
A	 49 sqm <small>*Source: Monica Lelovici</small>	 16.3 sqm/person x2	3 sqm/home	 363 sqm	
B	 54 sqm <small>*Source: Monica Lelovici</small>	 18 sqm/person	0 sqm/home	 32 sqm	 G + 4 9084 sqm
C	 34 sqm <small>*Source: Monica Lelovici</small>	 25.5 sqm/person	0 sqm/home	 5 homes	 5159 sqm
D	 88 sqm <small>*Source: Monica Lelovici</small>	 22 sqm/person	2.3 sqm/home	6.4 sqm/home	
E	 38 sqm	 19 sqm/person x2	3 sqm/home	 370 sqm	
F	 41 sqm	 17 sqm/person	0 sqm/home	 30 sqm	
G	 78 sqm	 19.5 sqm/person	3 sqm/home	 6 homes	190 homes
H	 45 sqm	 18.75 sqm/person x2	0 sqm/home	5 sqm/home	
	53.4 sqm	 19.1 sqm/person	1.6 sqm/home	5.8 sqm/home	27 sqm/home 200 units/hectare







S



living: 33.75m²
shop: 6.75m² (40.5)

M

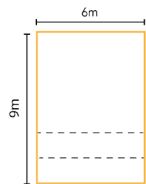


living: 33.75m²
OTS space: 6.75m² (40.5)

L



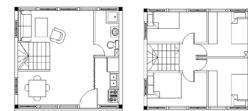
living: 54m²
OTS space: 6.75m² (60.75)



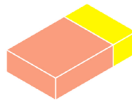
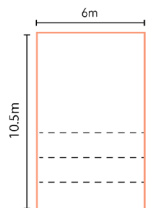
living: 45m²
shop: 9m² (54)



living: 45m²
OTS space: 9m² (54)



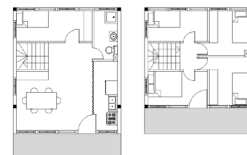
living: 72m²
OTS space: 9m² (81)



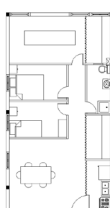
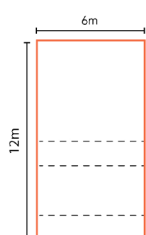
living: 45m²
shop: 18m² (63)



living: 54m²
OTS space: 9m² (63)



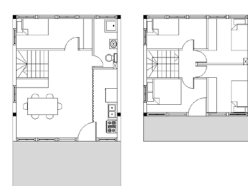
living: 81m²
OTS space: 18m² (81)



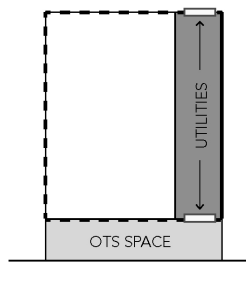
living: 54m²
shop: 18m² (72)



living: 63m²
OTS space: 9m² (72)

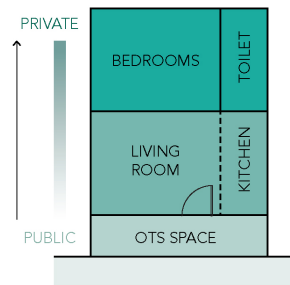


living: 81m²
OTS space: 27m² (108)



- utilities on one side, each pushed towards the periphery for natural ventilation

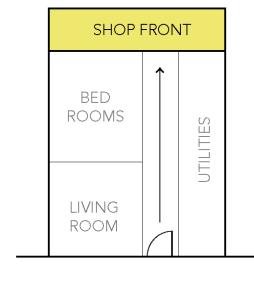
- utilities' side being the solid wall that connects to other units, allowing openings on the opposite side (three openable sides in total)



- functions in the unit follows the level of privacy: kitchen and living room towards the courtyard side; toilet and bedrooms are positioned towards the back of the unit

- use of curtain as the division of kitchen, allows flexibility in living space

- entrance positioned next to kitchen; closer relationships between the kitchen and the OTS space



- (despite the relationship between kitchen and OTS space,) position of entrance also relates to the circulation within the unit.

- clear circulation and relationship to the access of the shop front

OVERALL:

12 units types (unit size/living space ranges from 33m²-81m²)

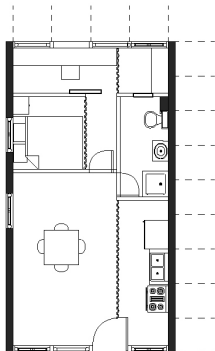
average unit size: 55m²

all units have 6.75m²-27m² (shop or OTS space) for expansion if wanted (ranges from 40.5m²-108m²)

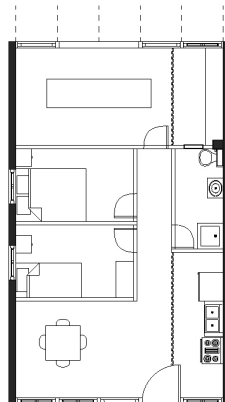
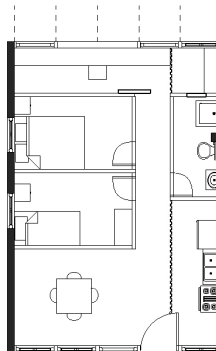
at maximum expansion, average unit size is: 69m²

1.125

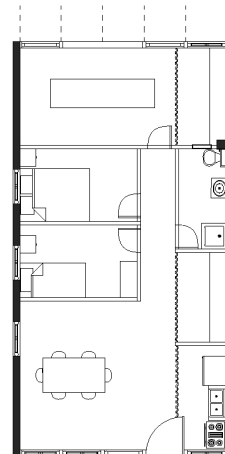
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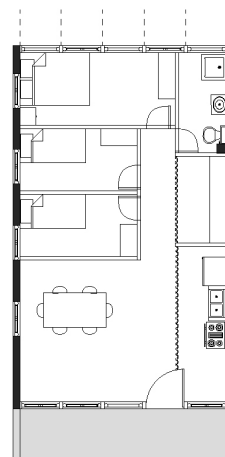
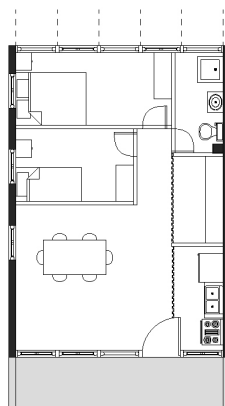
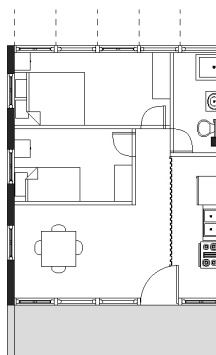
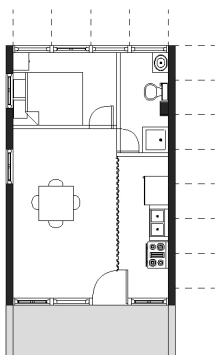
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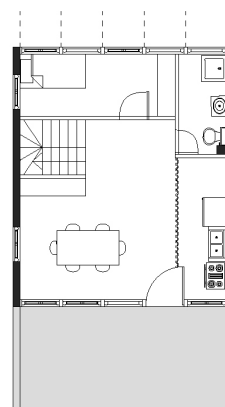
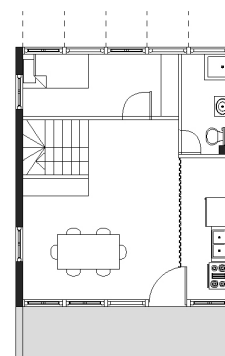
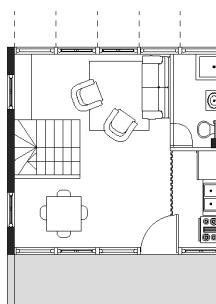
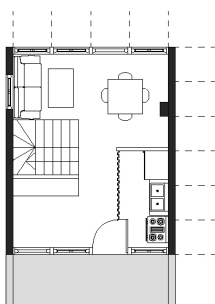
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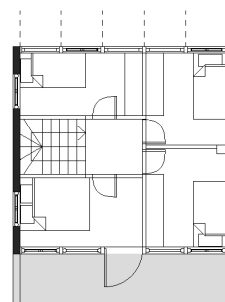
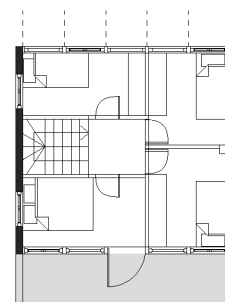
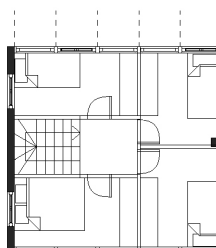
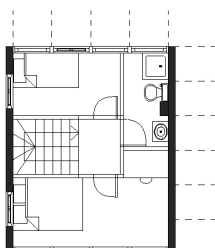
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2F

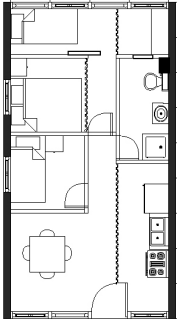


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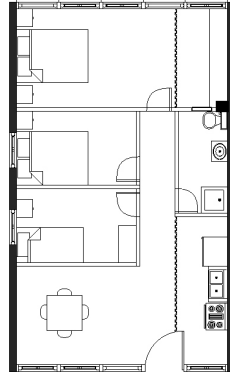
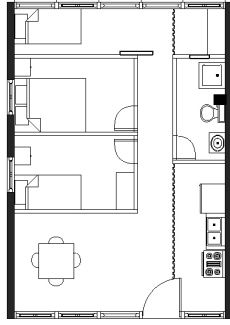


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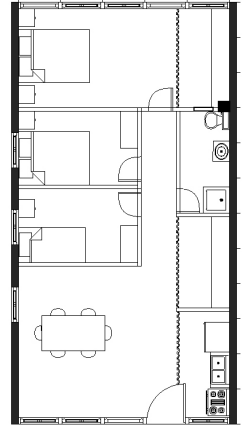
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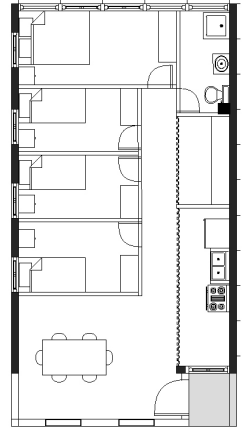
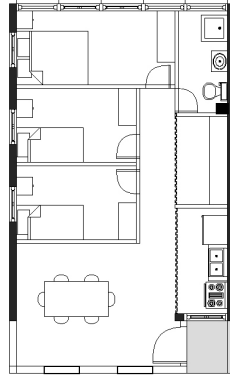
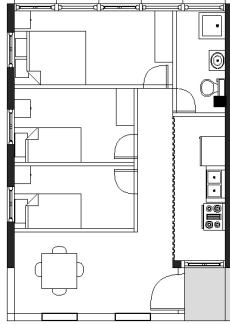
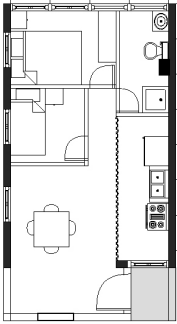
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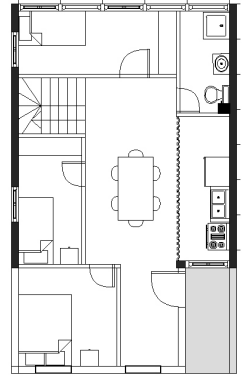
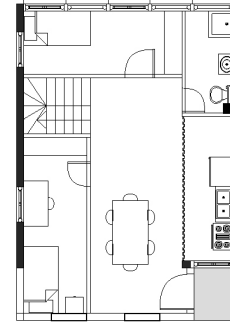
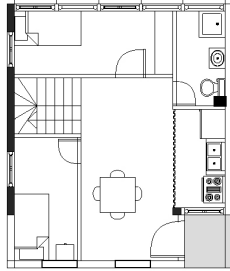
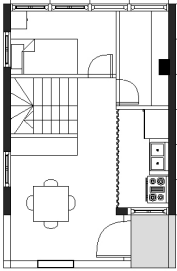
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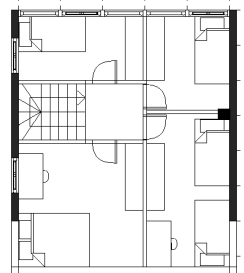
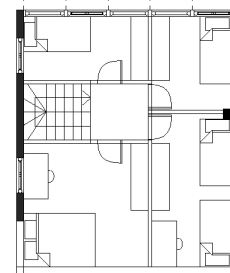
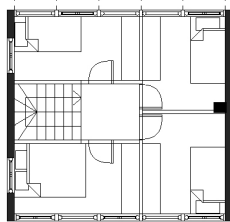
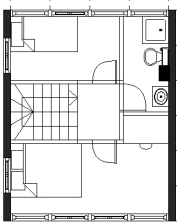
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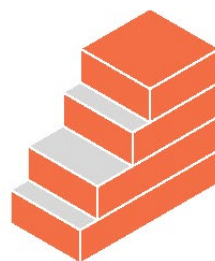
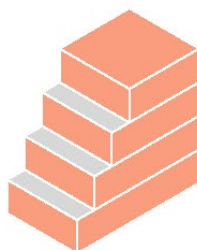
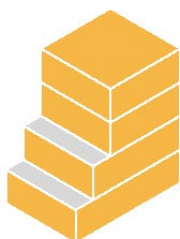


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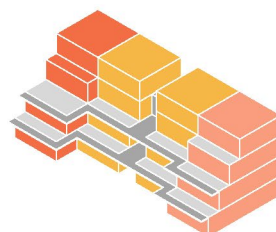
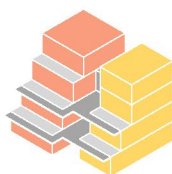
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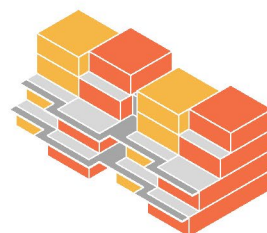
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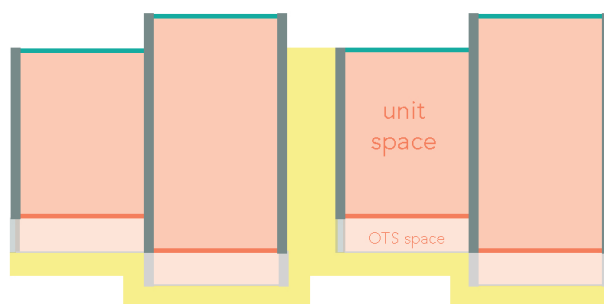
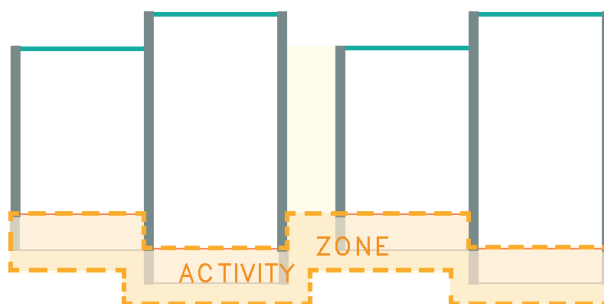
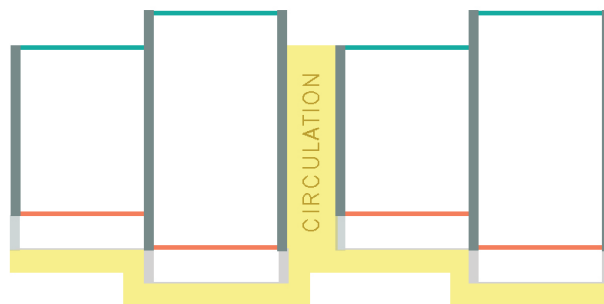
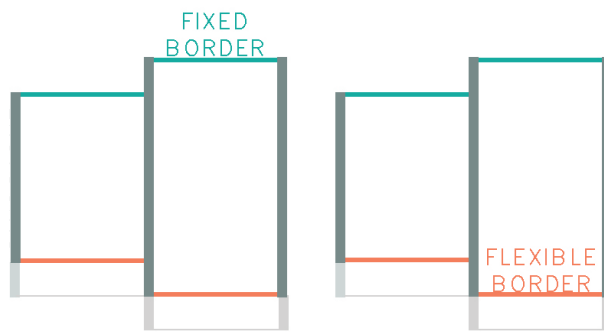
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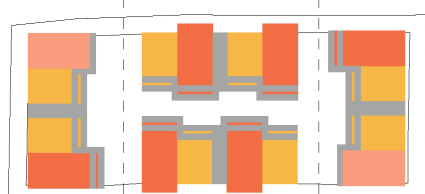
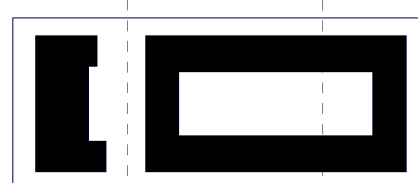
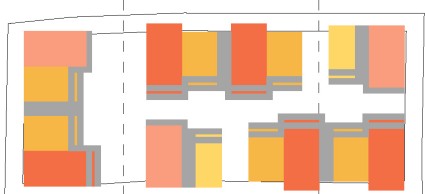
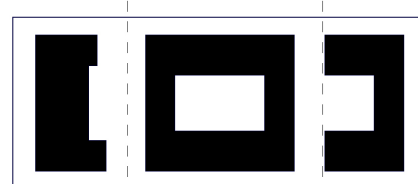
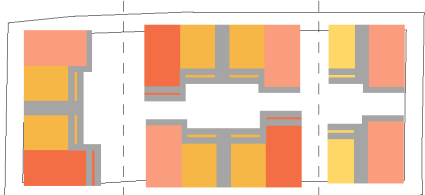
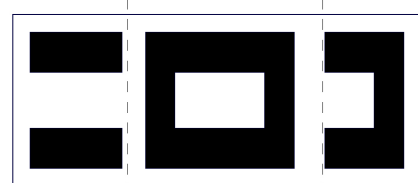
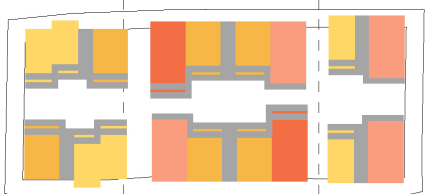
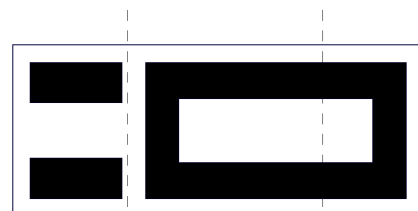
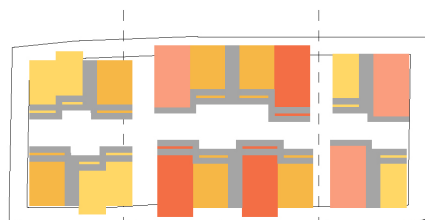


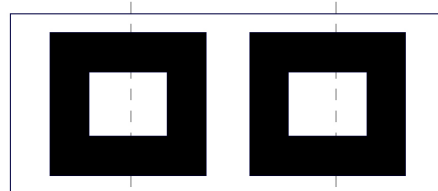
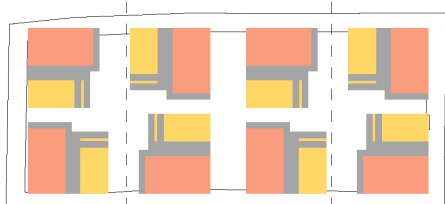
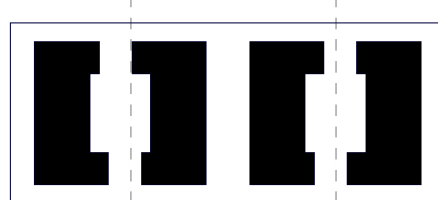
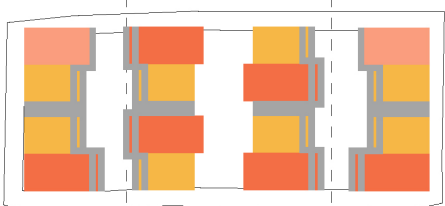
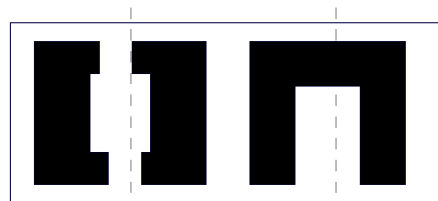
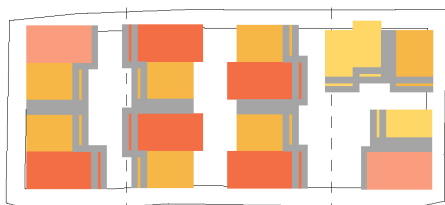
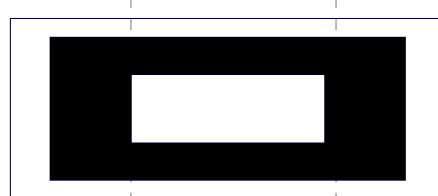
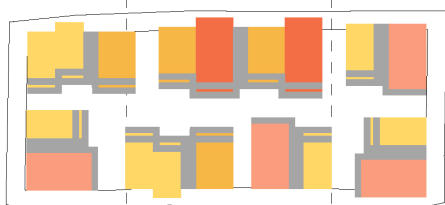
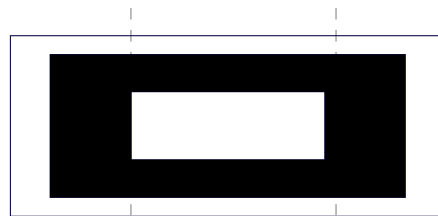
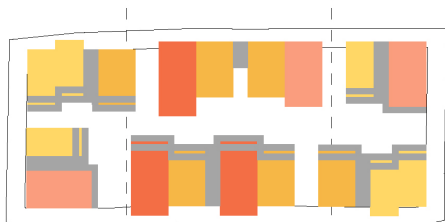
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SET D

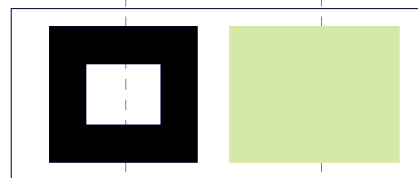
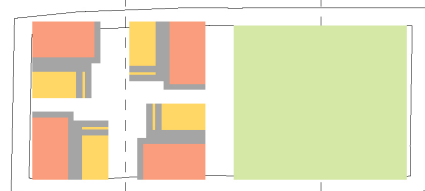
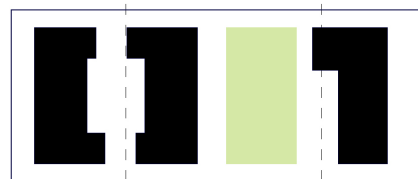
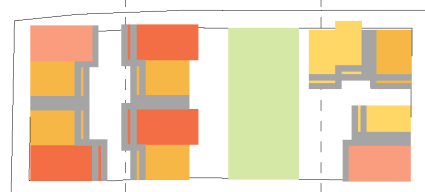
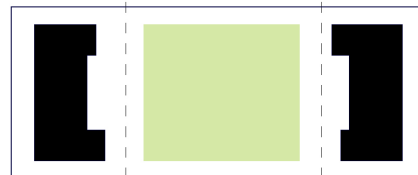
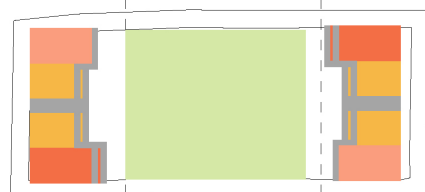
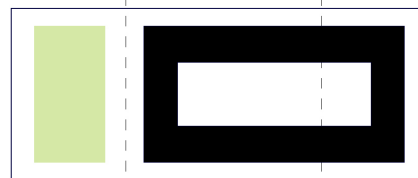
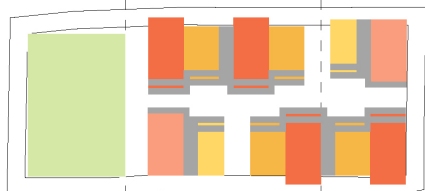
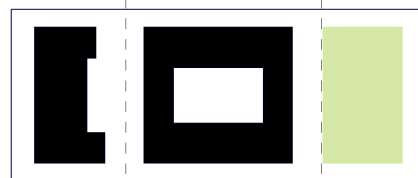
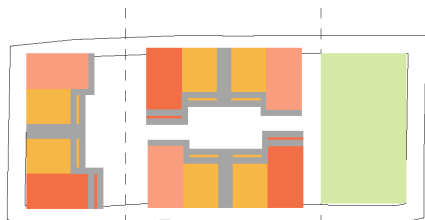














DOMESTIC ACTIVITIES



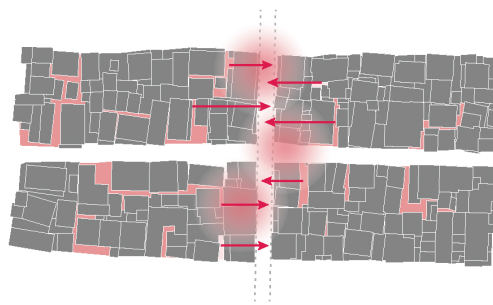
PUBLIC AMENITIES & RECREATIONS



FAMILY BUSINESSES



PRODUCTION POINTS



MAIN STREET

WASHING



GATHERING



DOING LAUNDRY



CHILDREN PLAYING



DRYING SPICES

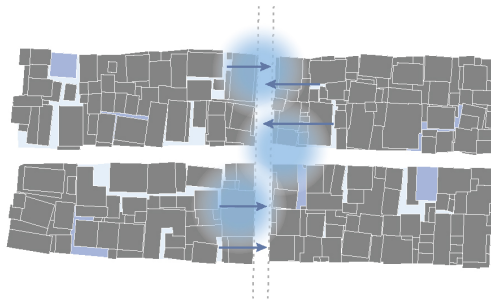


PLANTING



DOMESTIC ACTIVITIES





MAIN STREET & SMALL
LEFTOVER SPACE

WATER STATION & PUBLIC TOILET



SCHOOL



RECREATION CENTRE & FACILITIES



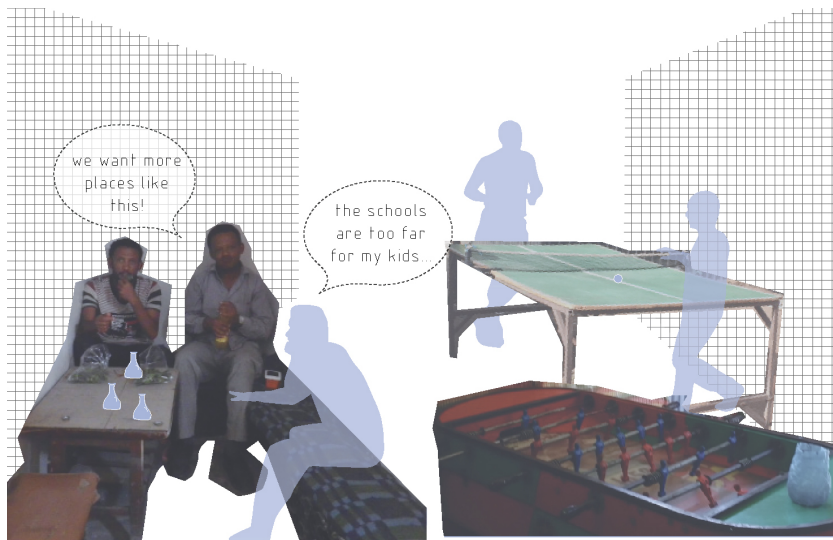
TEMPORARY SHELTER FOR CEREMONIES



GAME STATION



MOVIE ROOM & TEJ HOUSE





MAIN STREET & SMALL
LEFTOVER SPACE

SHOPS



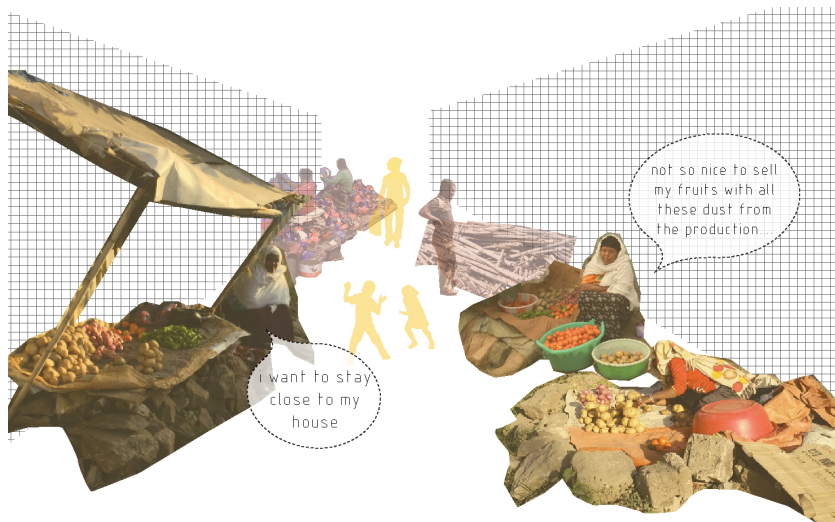
TEMPORARY STRUCTURE

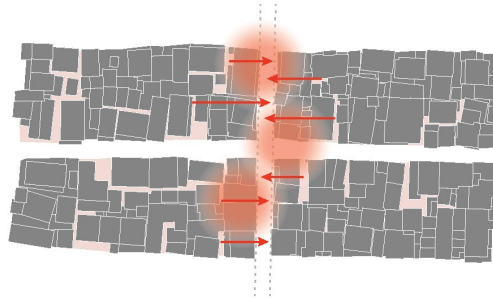


STREET VENDORS



SHOP WINDOWS





MAIN STREET

MATERIAL SORTING



CAR REPAIR



RECYCLING



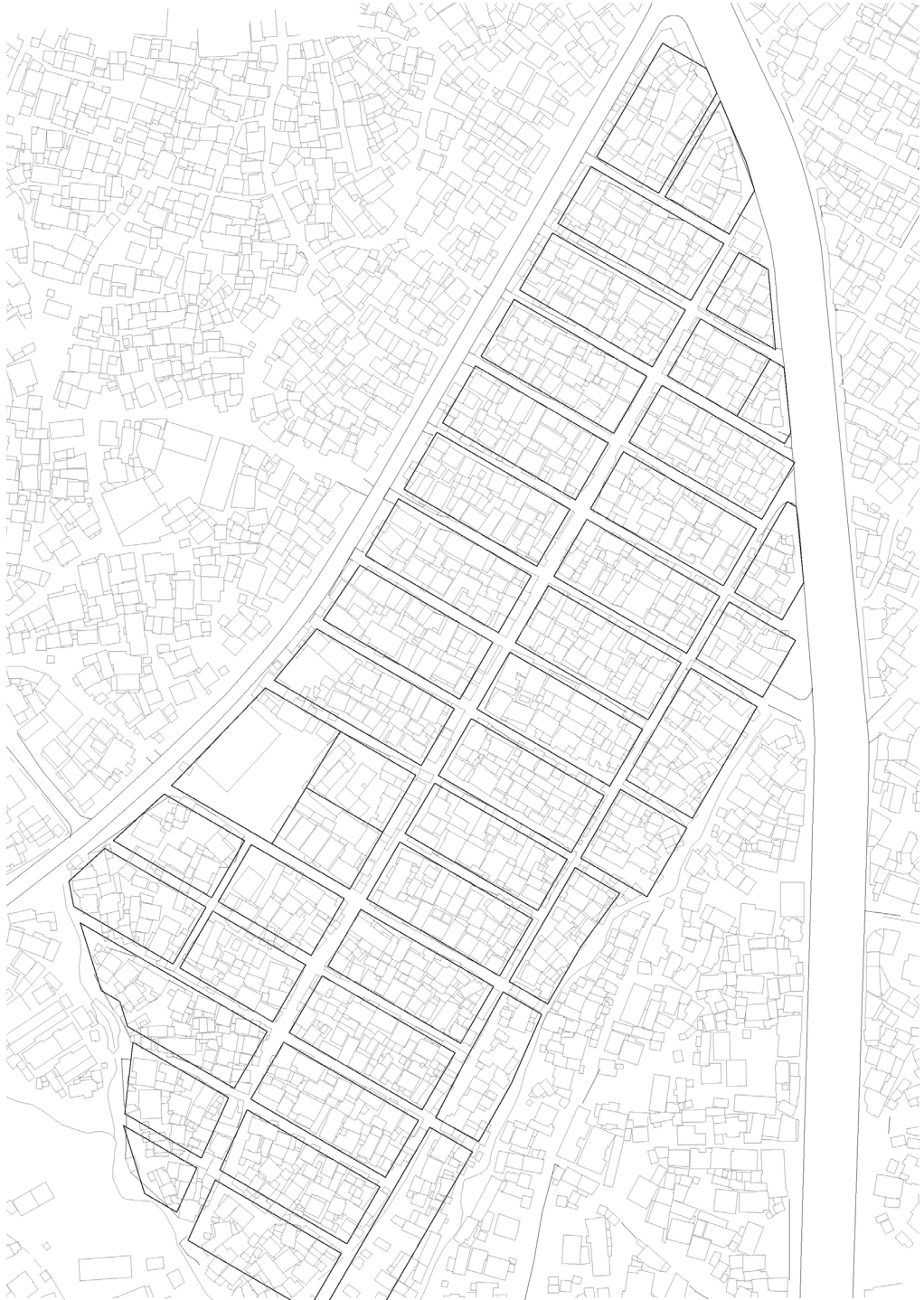
PRODUCTION & WAREHOUSES

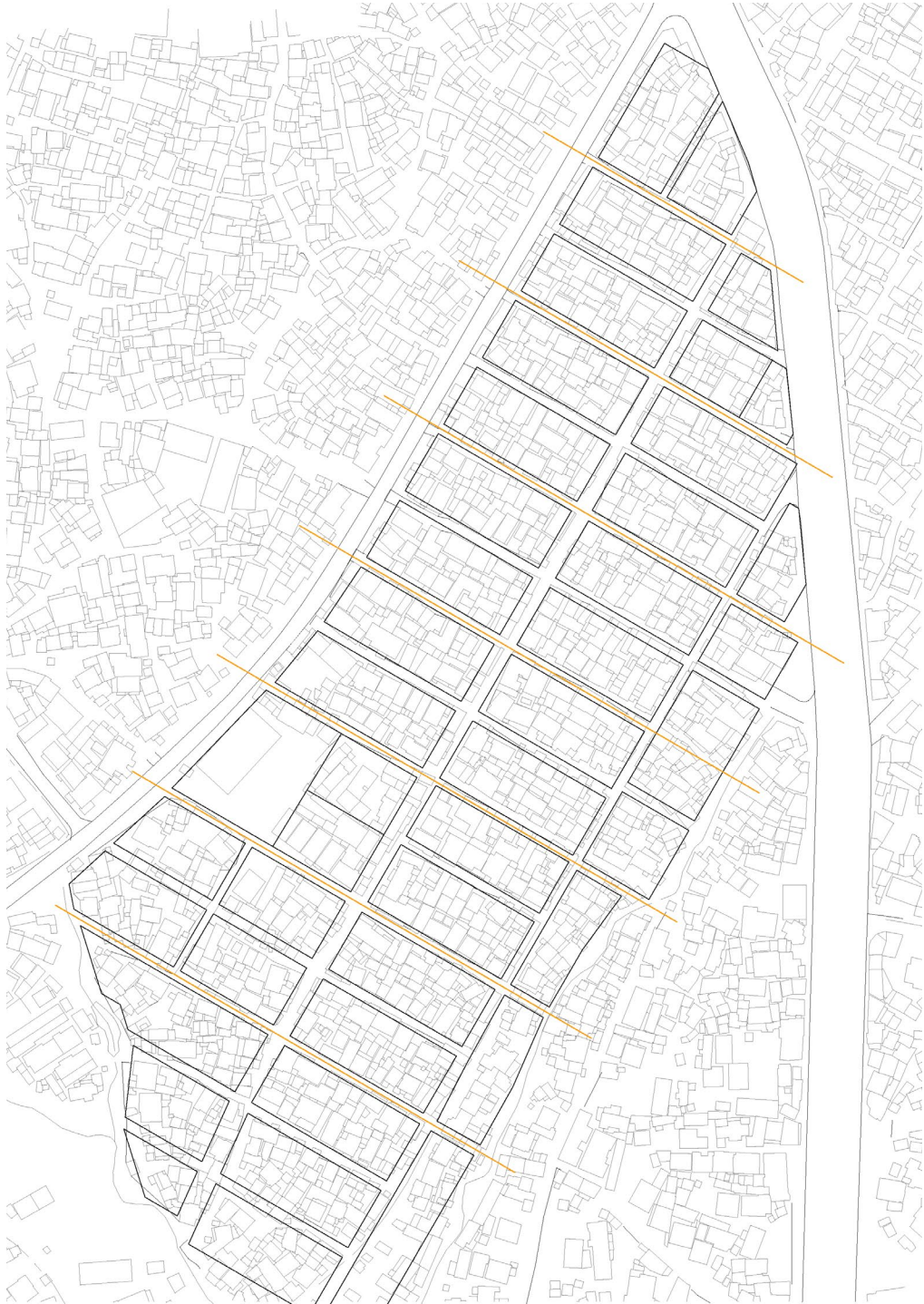


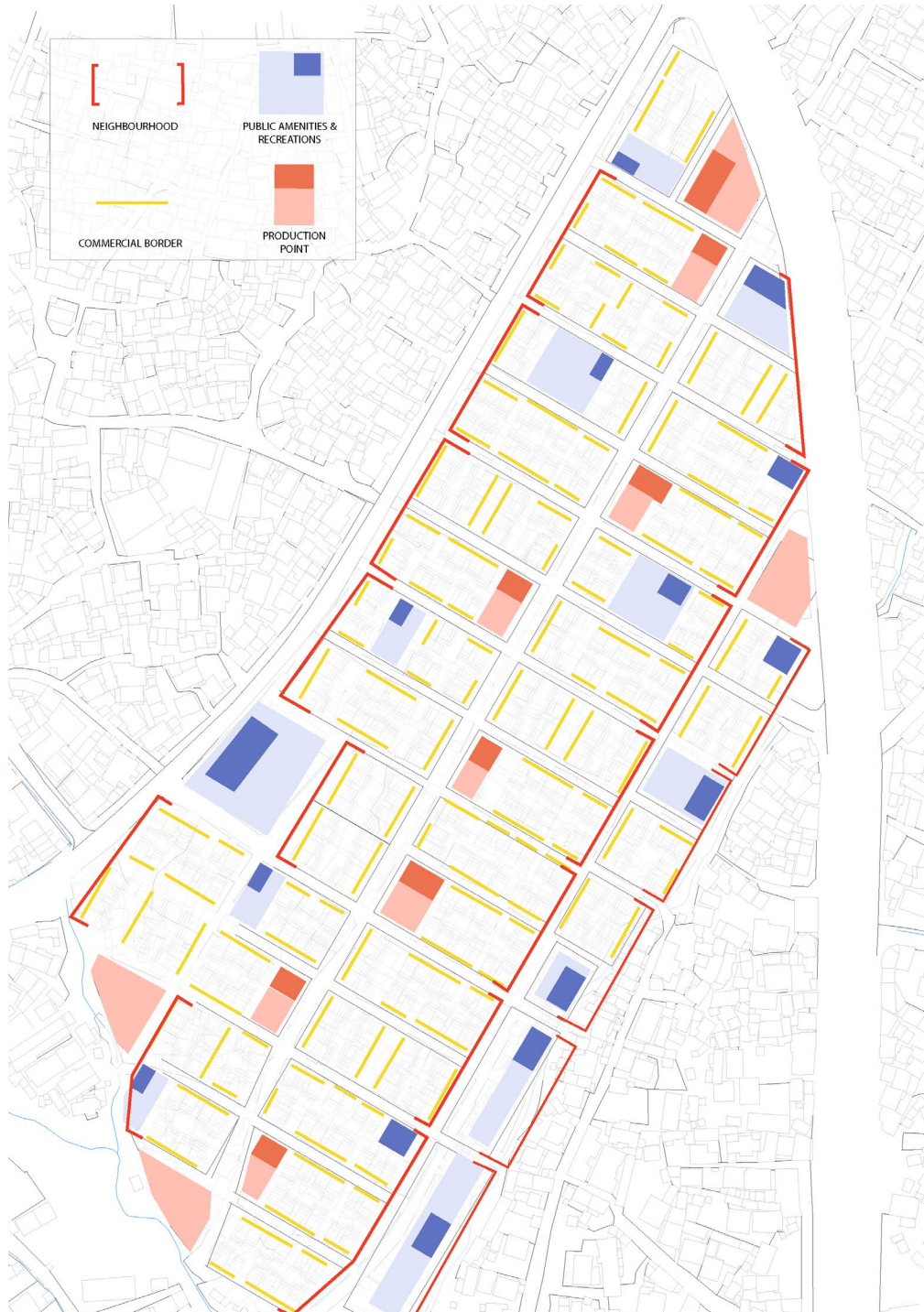
PRODUCTION POINTS

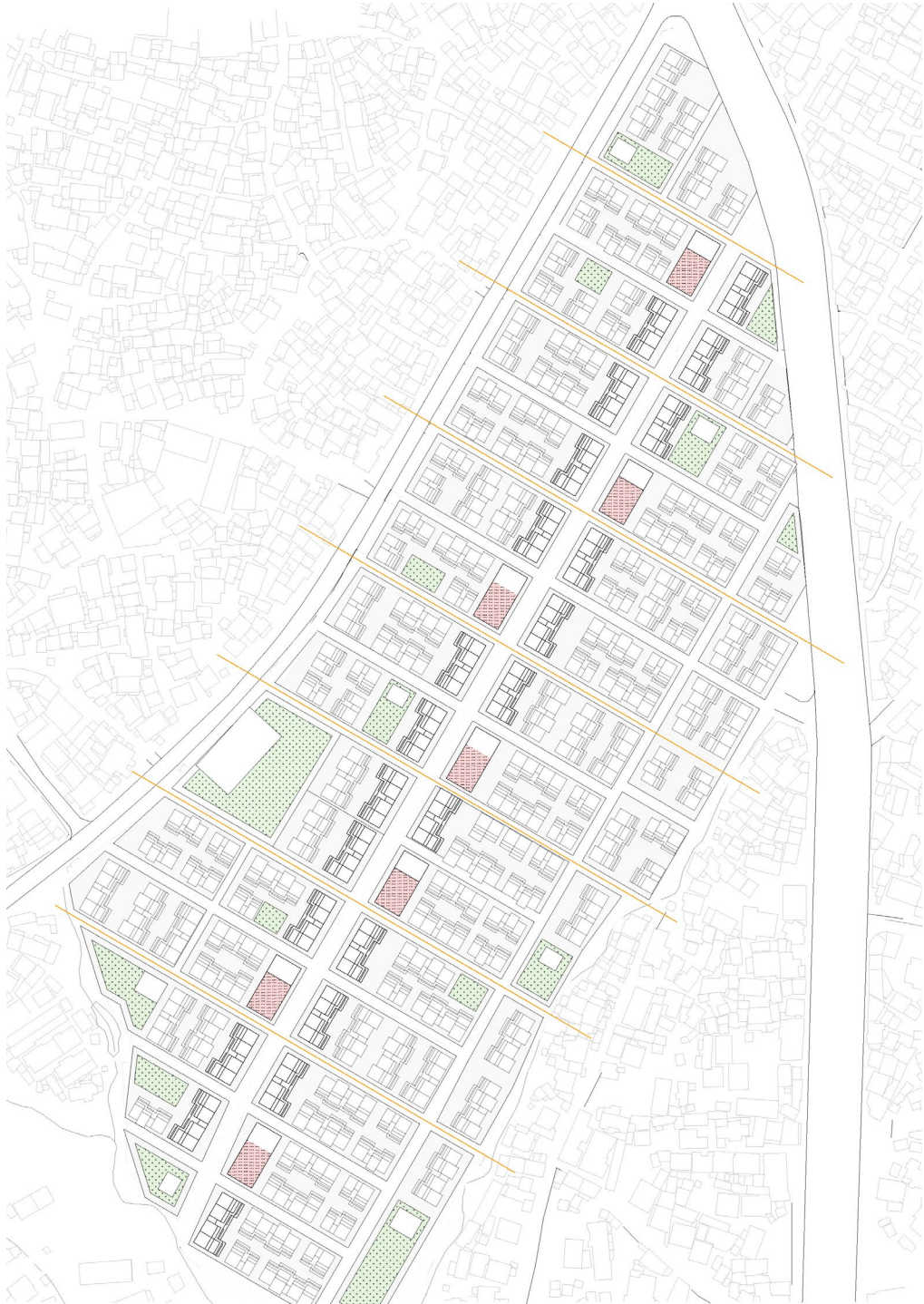


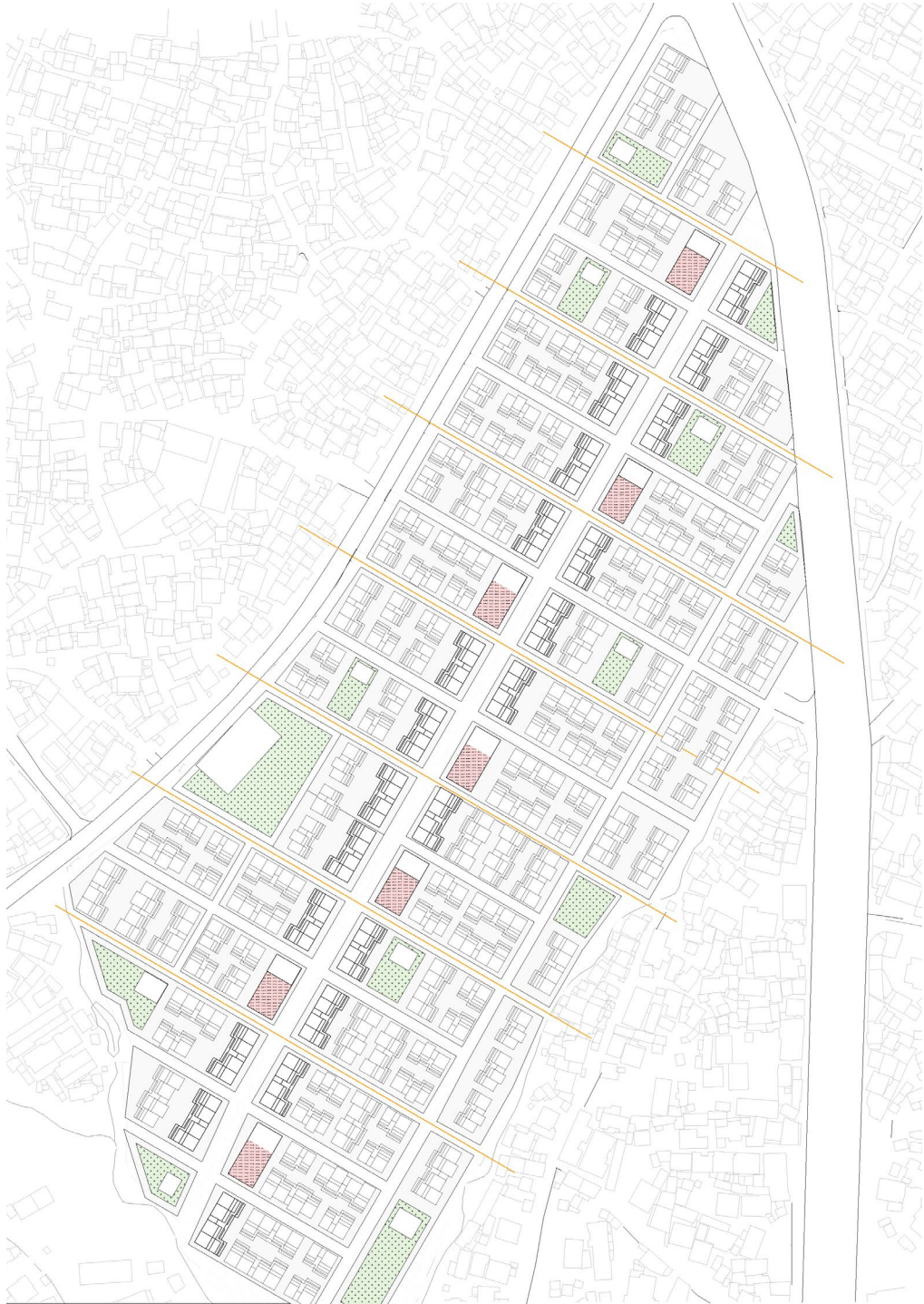


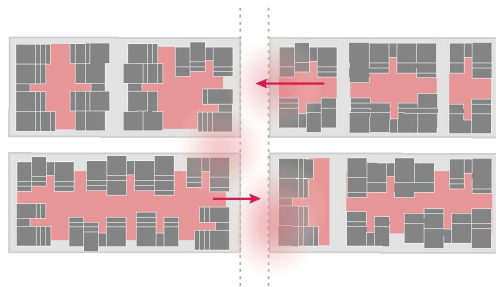




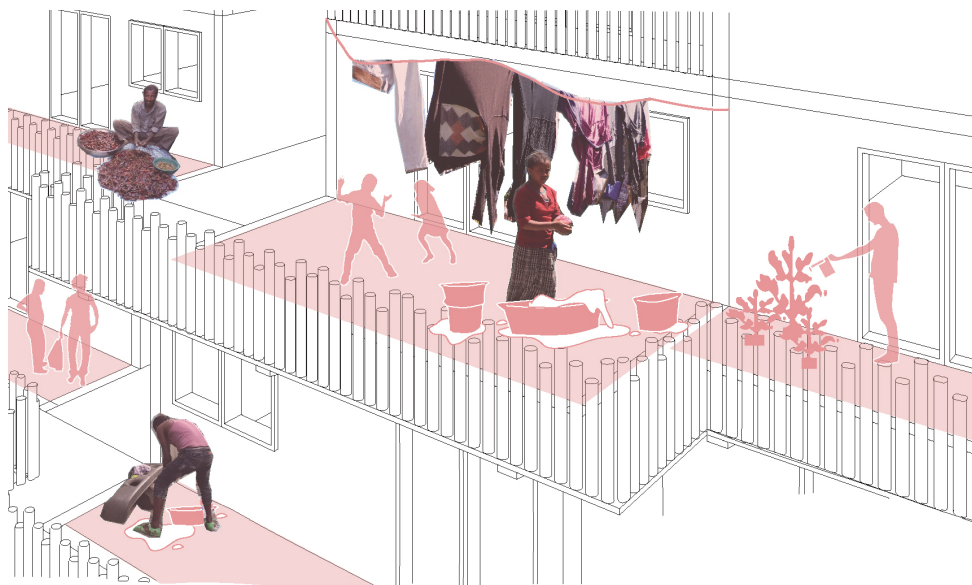




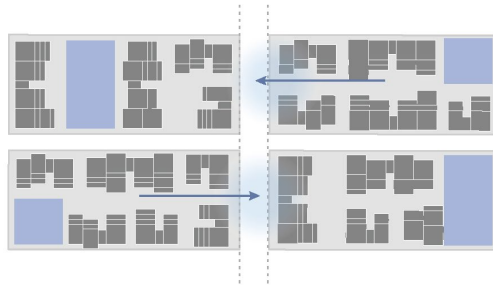




CLUSTER COURTYARD



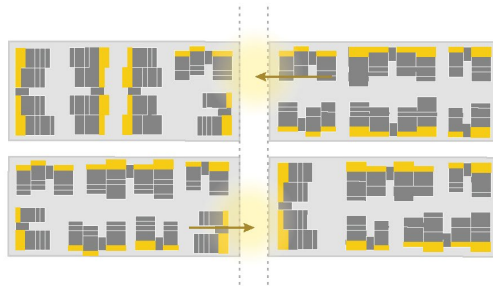
private open space (as well as internal courtyard for domestic activities)



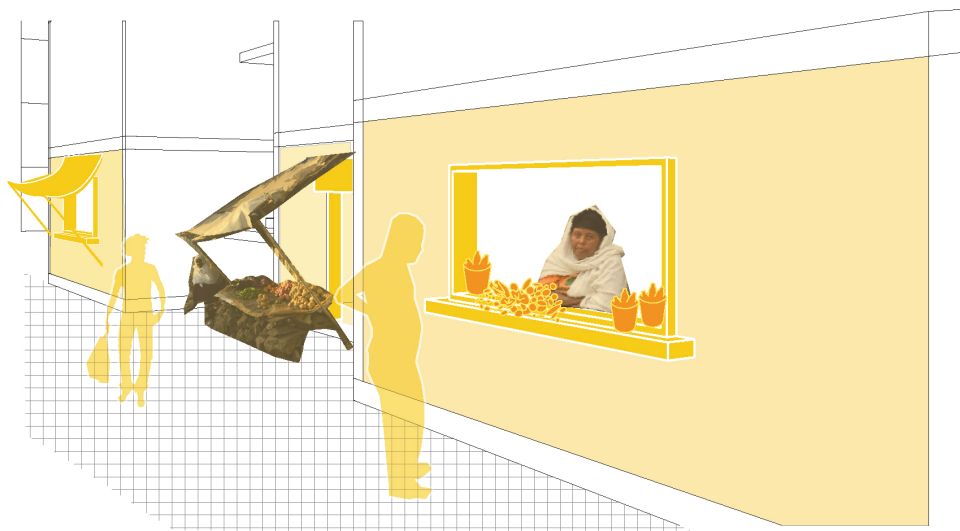
COMMUNAL AREAS



spaces between neighborhoods opened up for public amenities and recreations



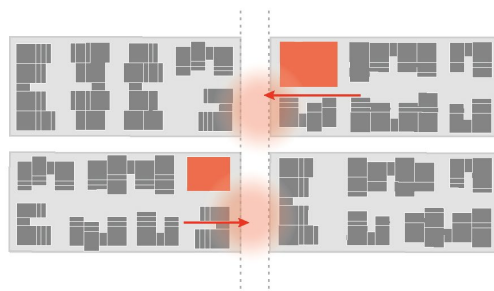
COMMERCIAL BORDER



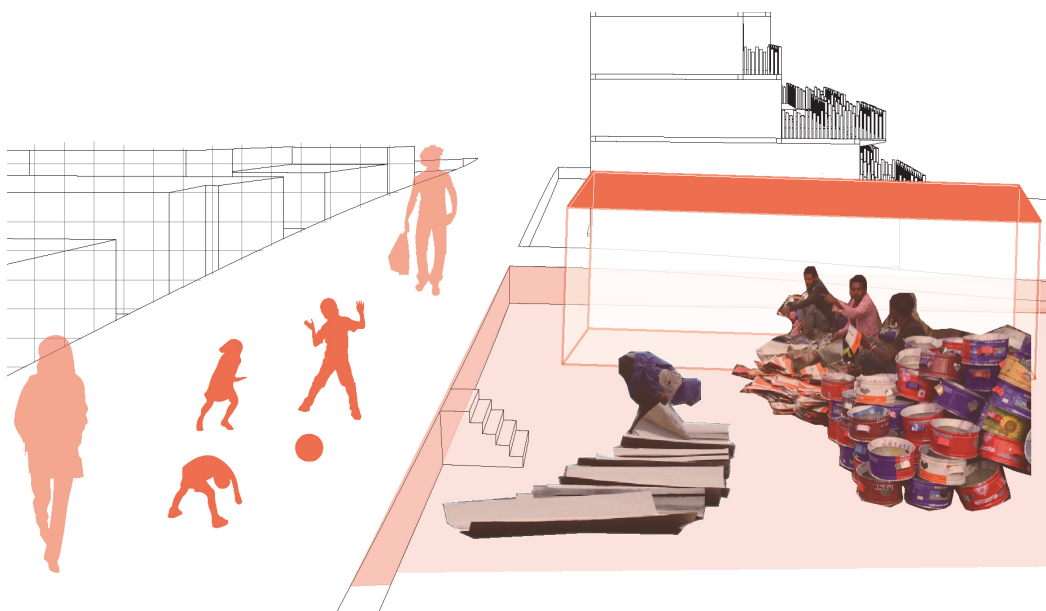
individual units with shop front



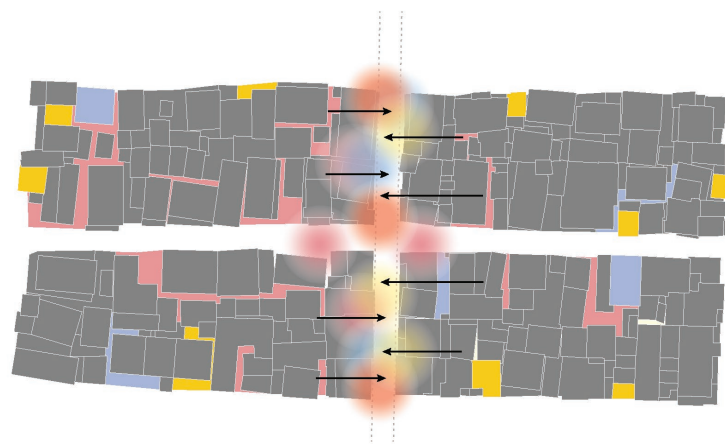
PRODUCTION POINTS



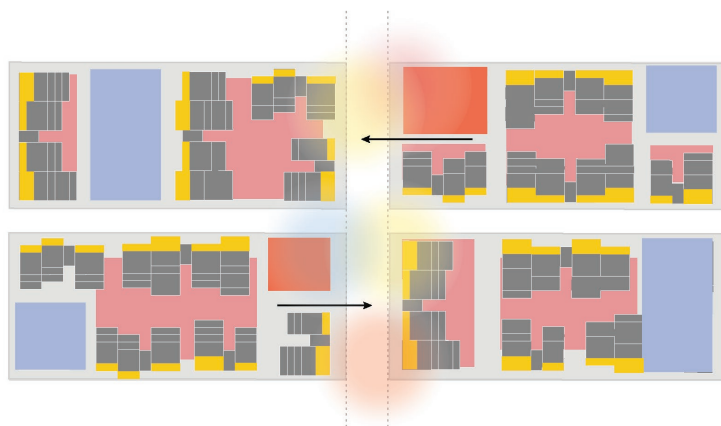
STREETSIDE HUBS



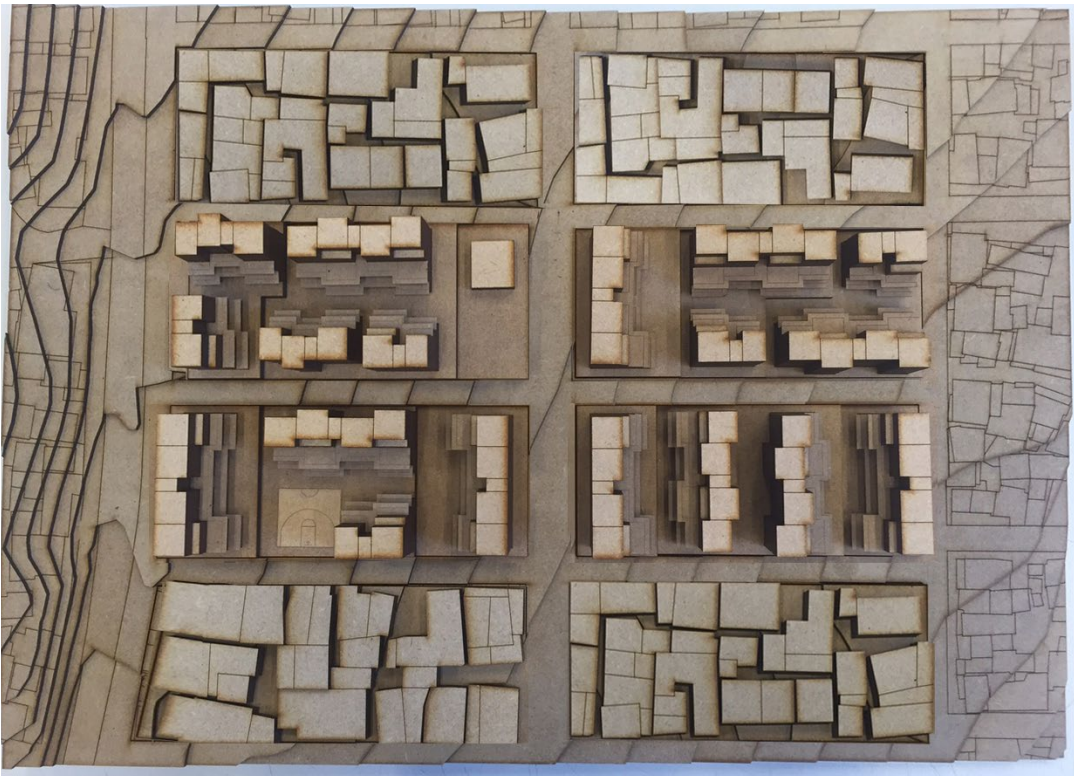
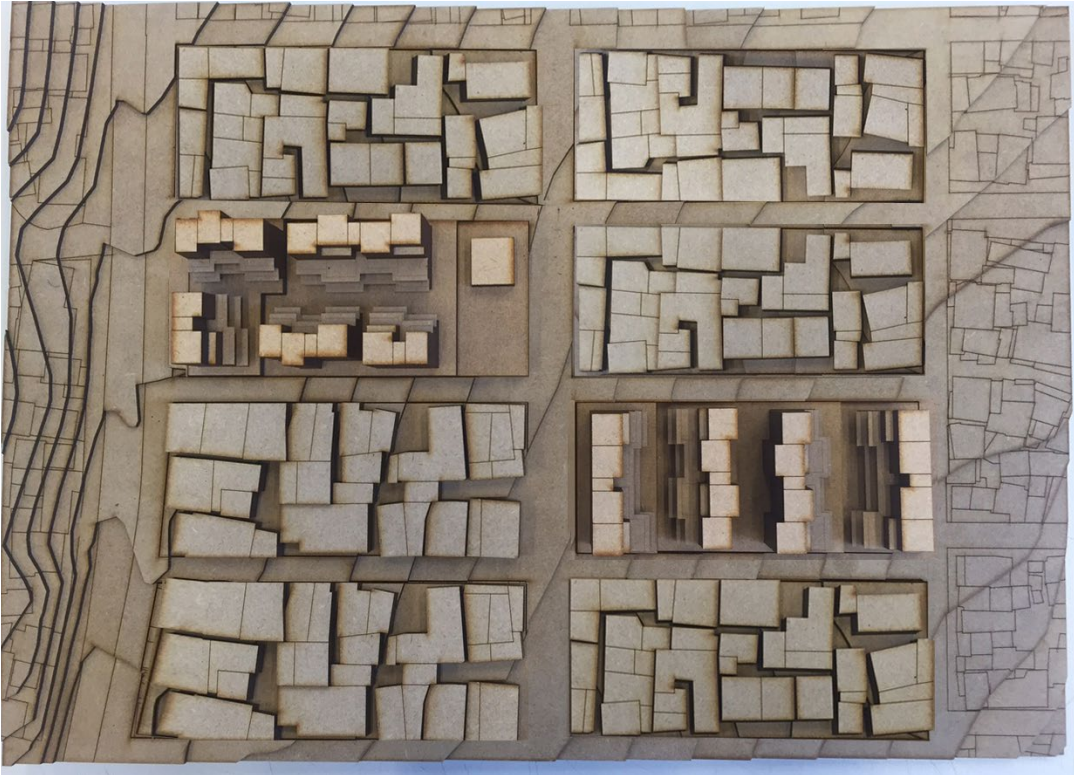
production spaces attached to the main street but leveled down for a safer environment

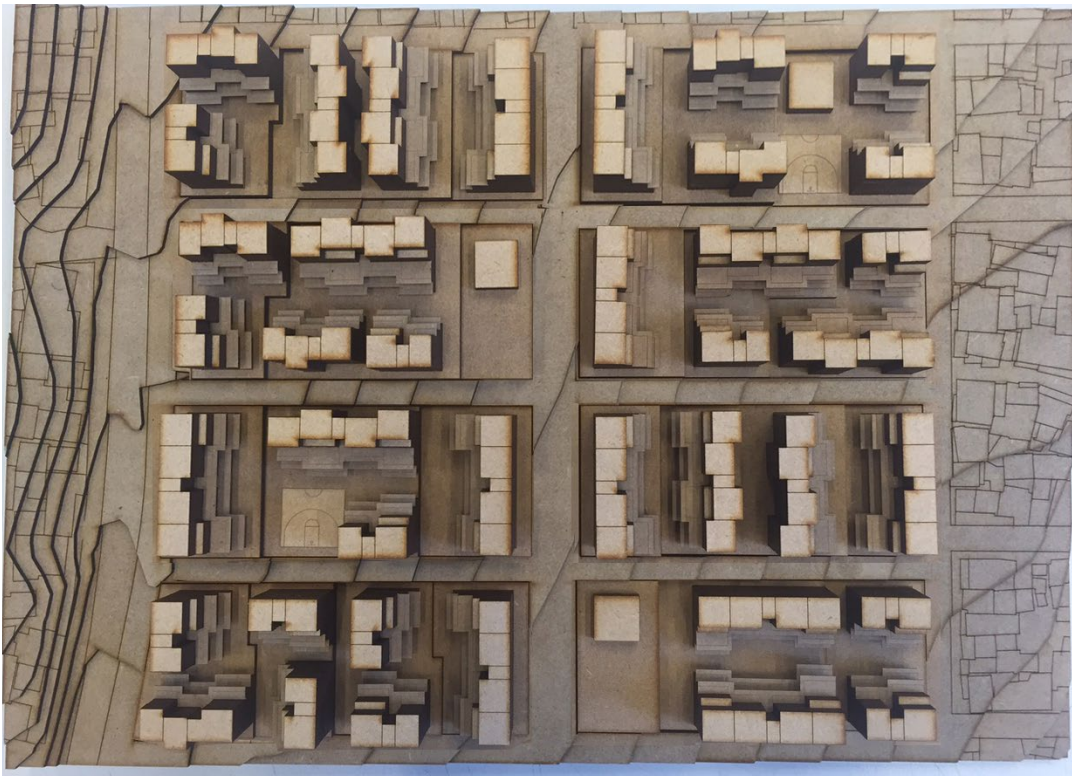
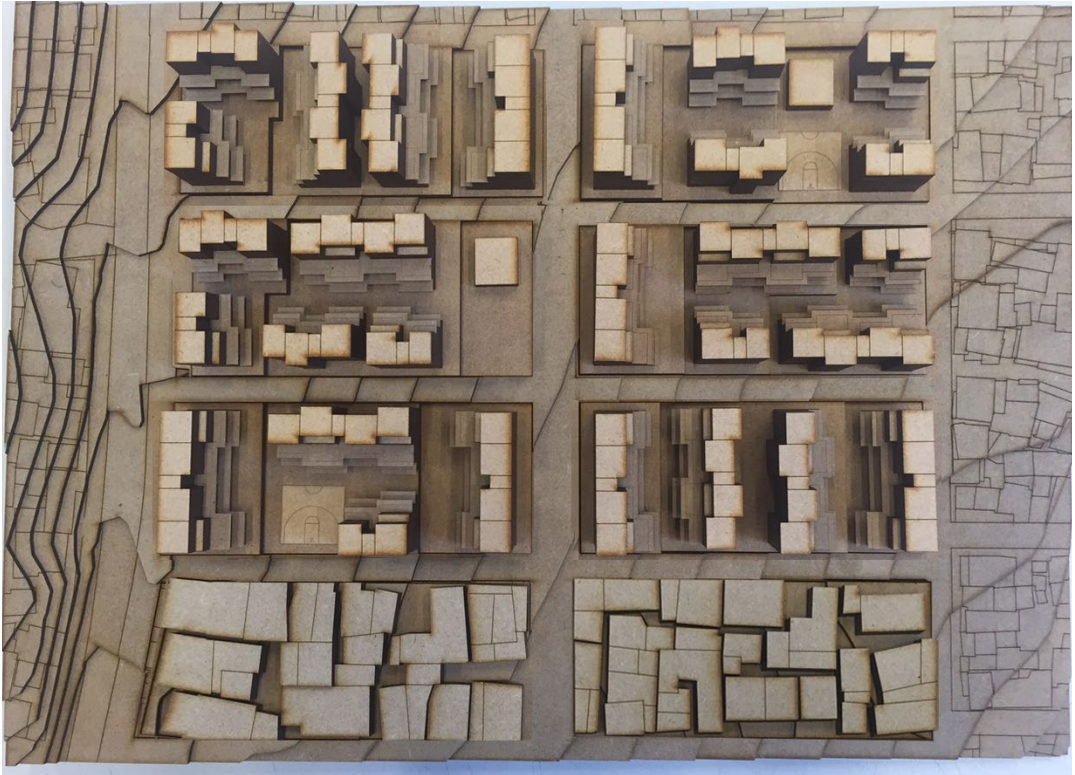


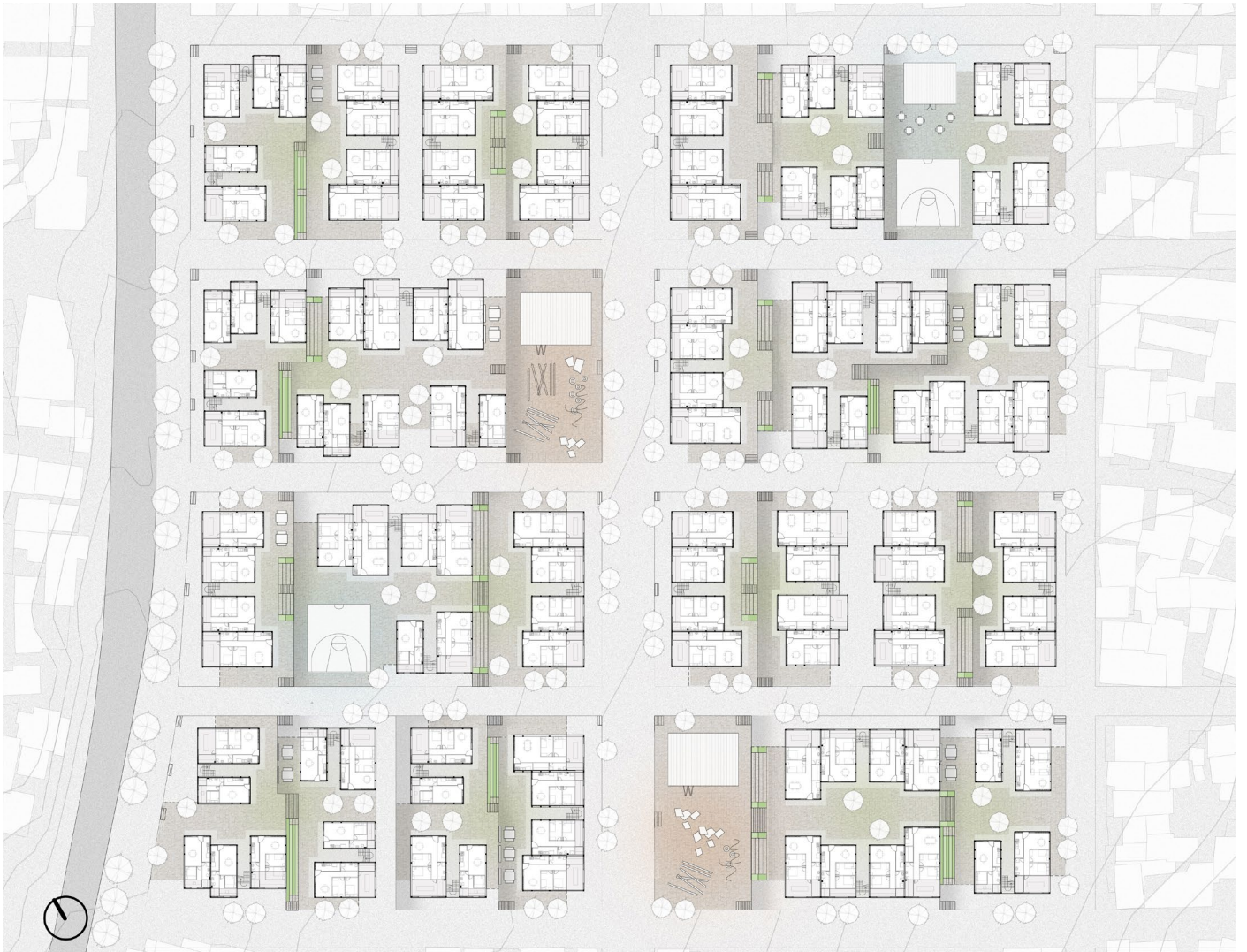
BEFORE



AFTER



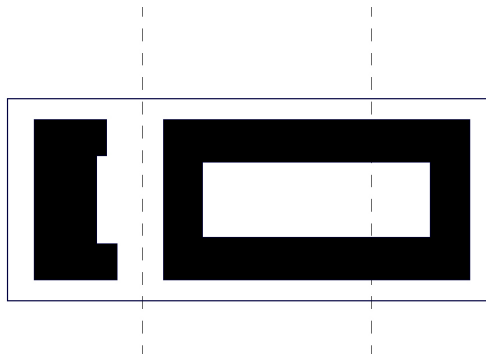
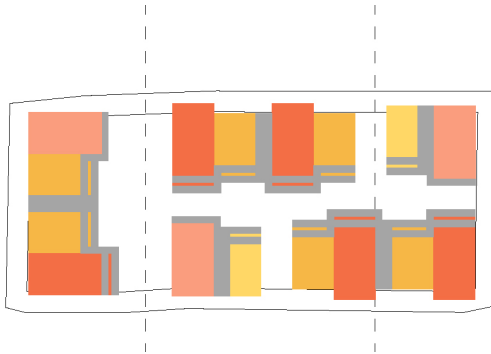






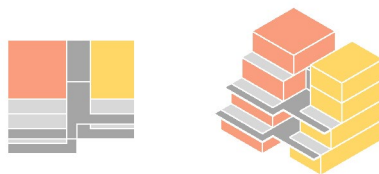


48 units
229 units per
hectare
original: aprox 30 units
143 units per hectare

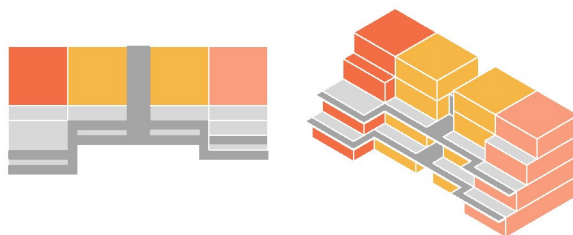


average: 51 units
243 units per hectare

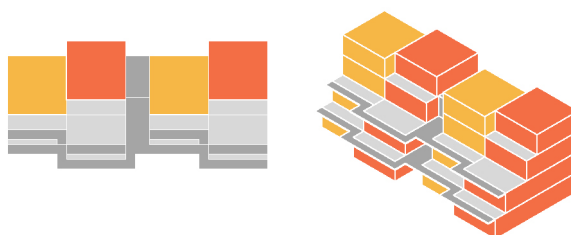
SET A

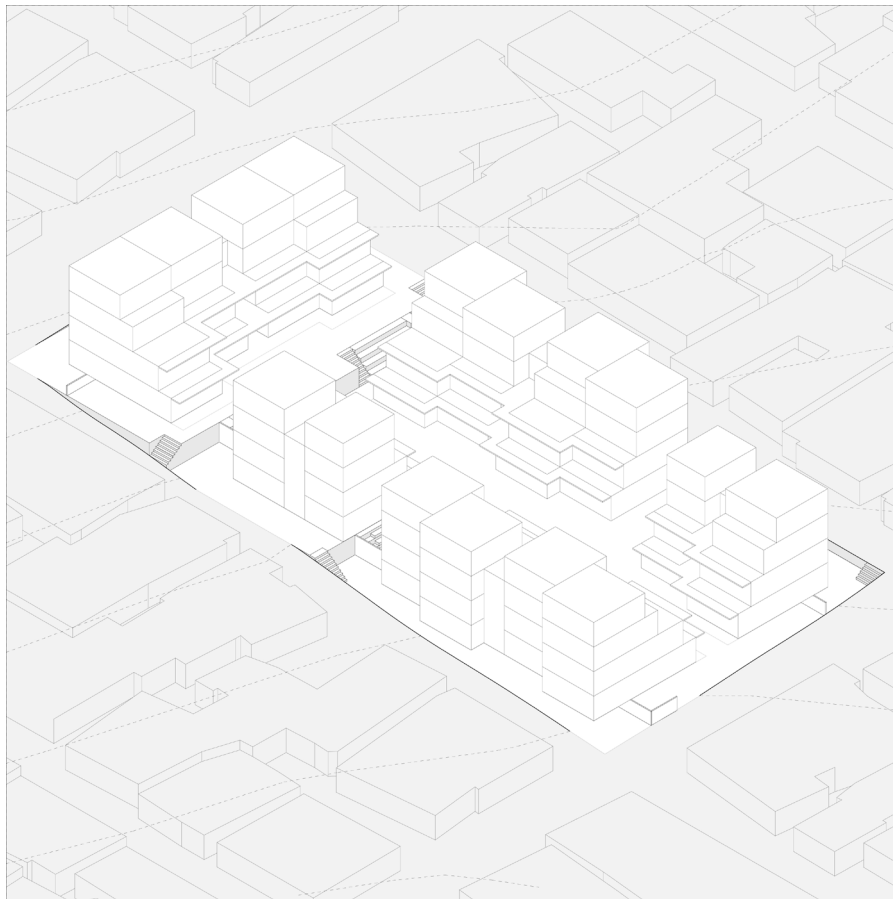
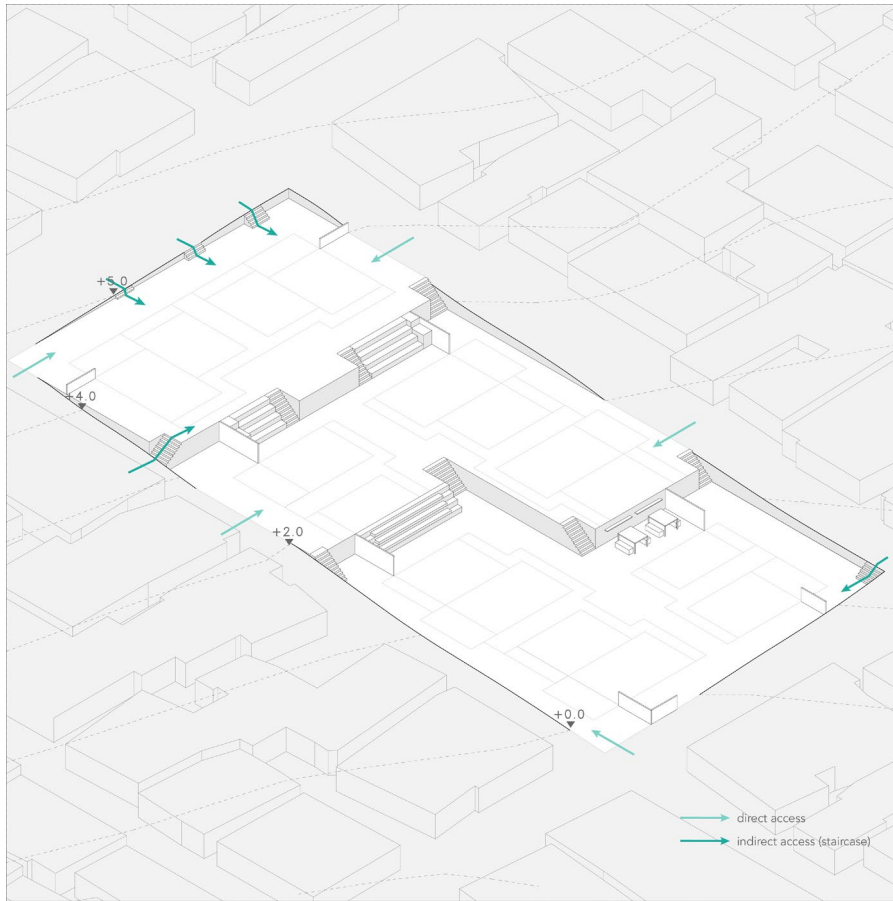


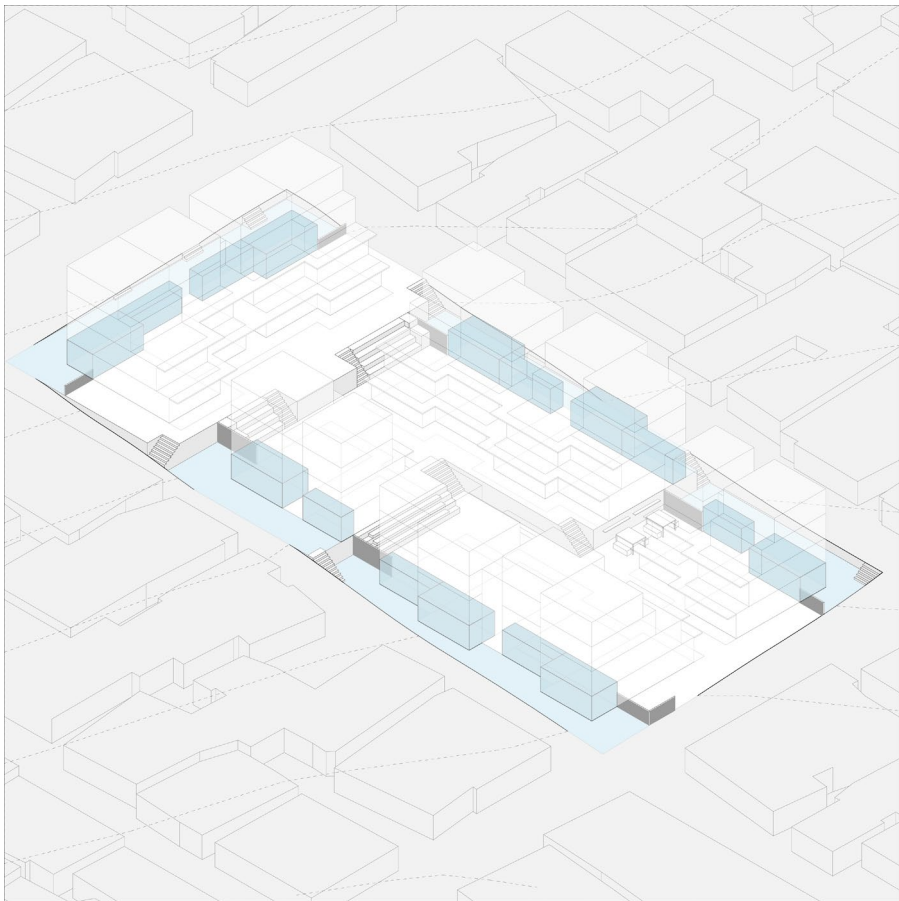
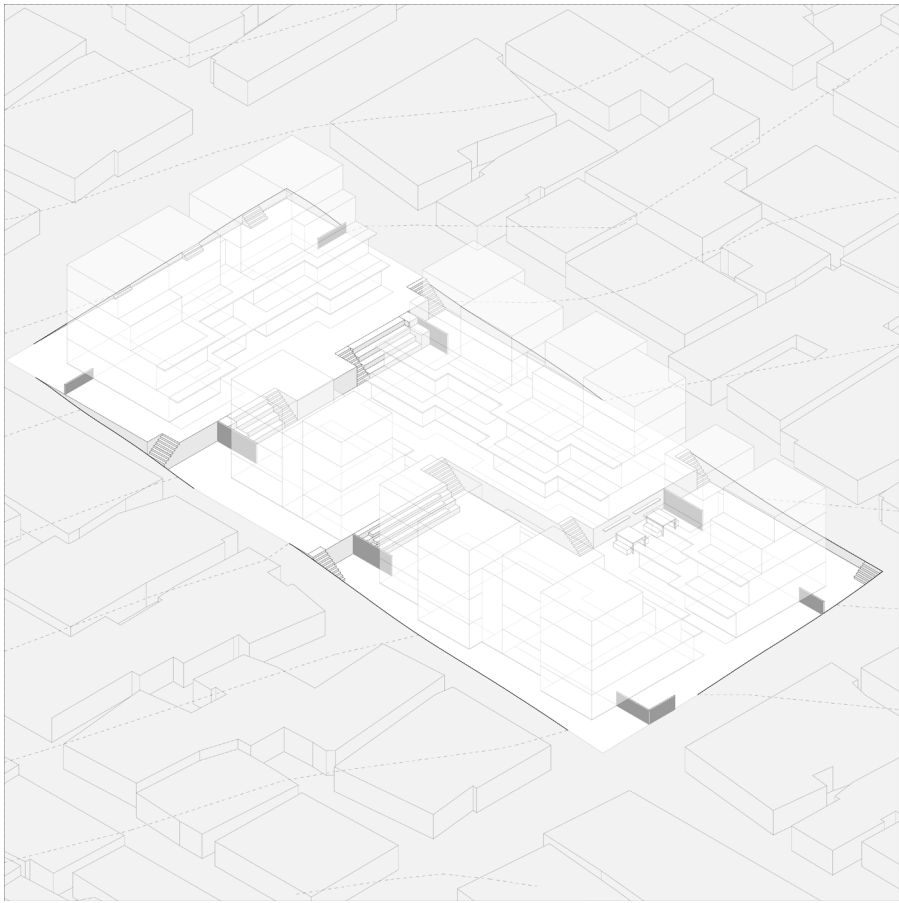
SET B

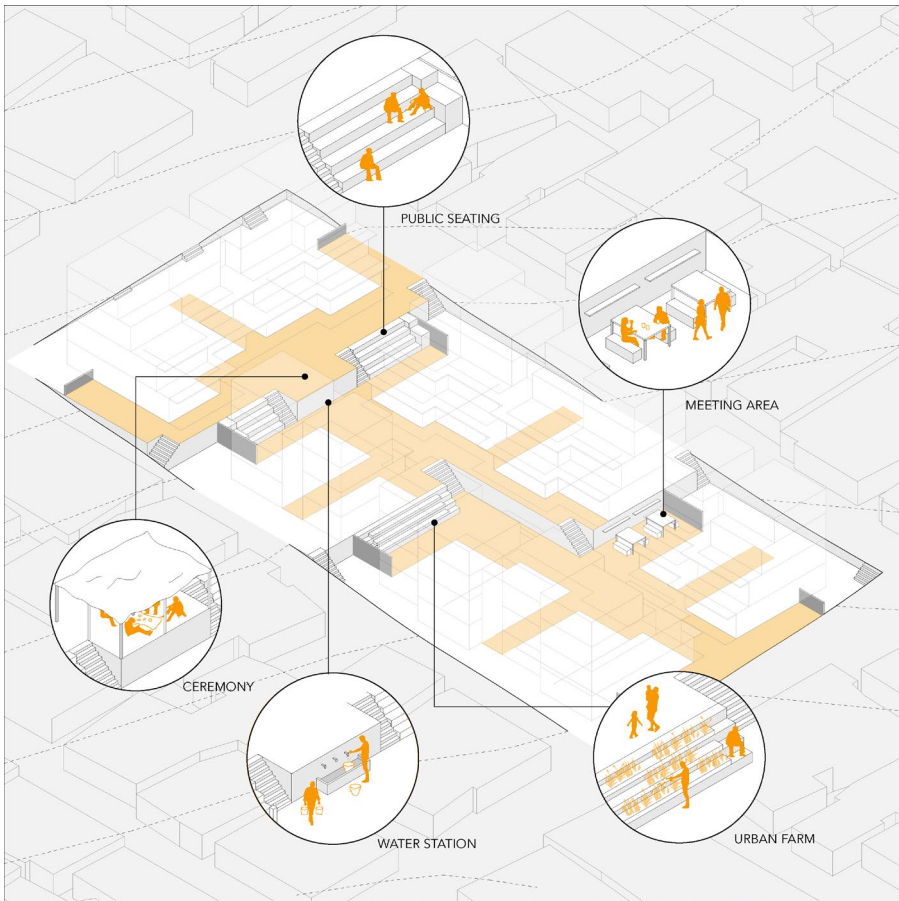


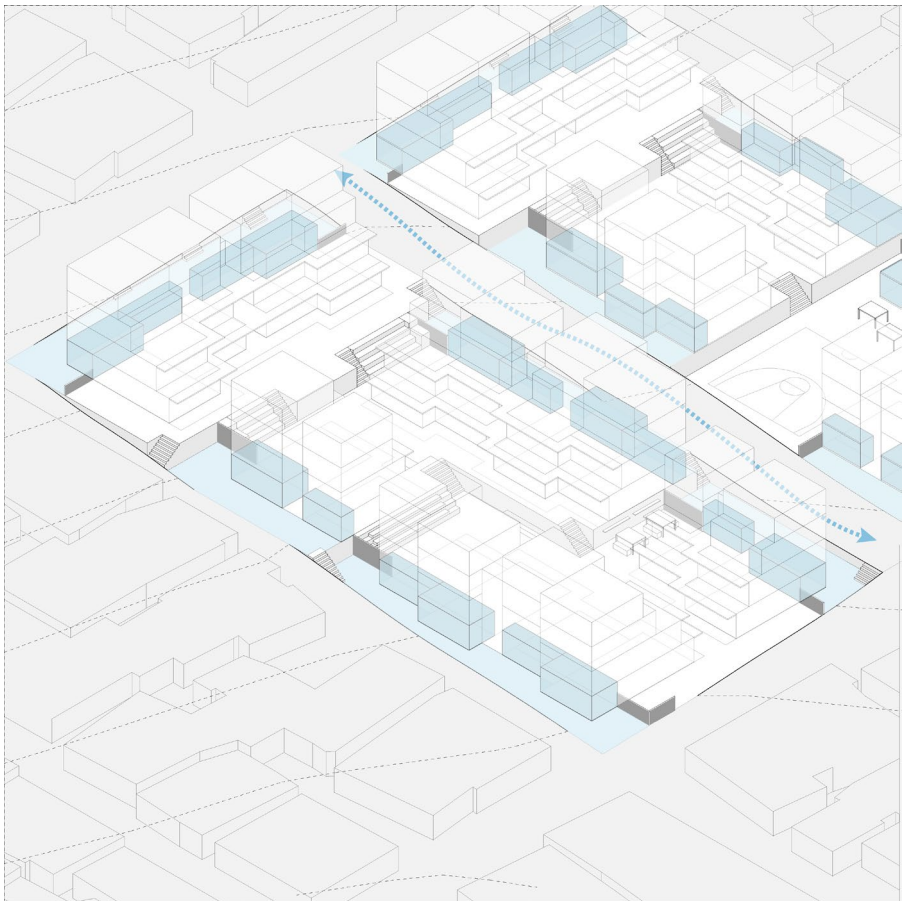
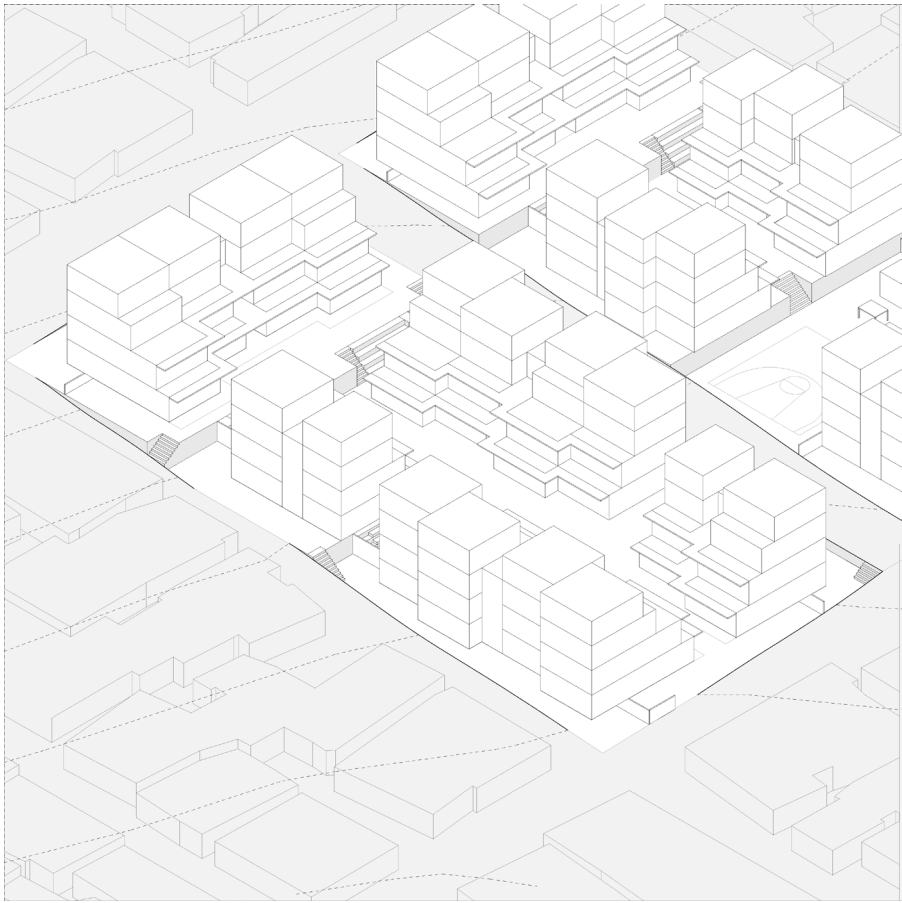
SET D















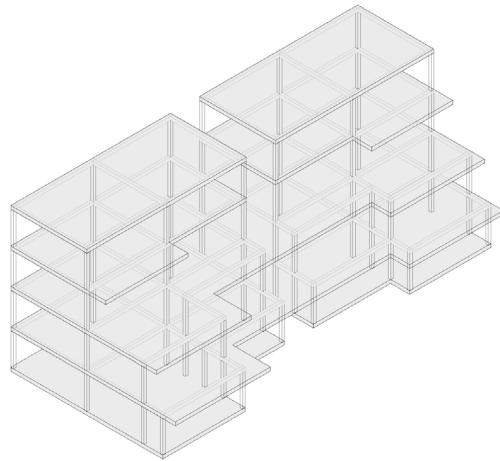
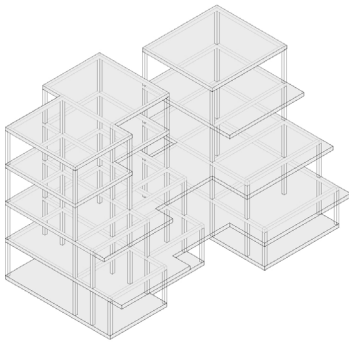
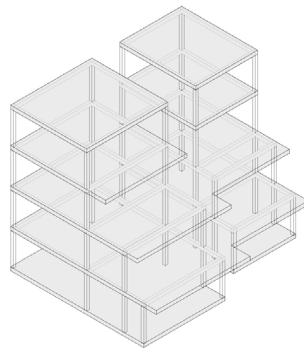
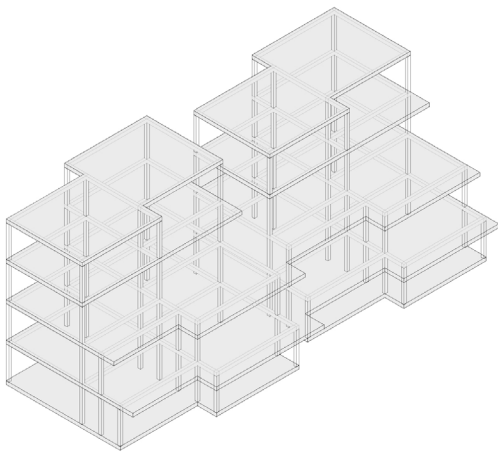




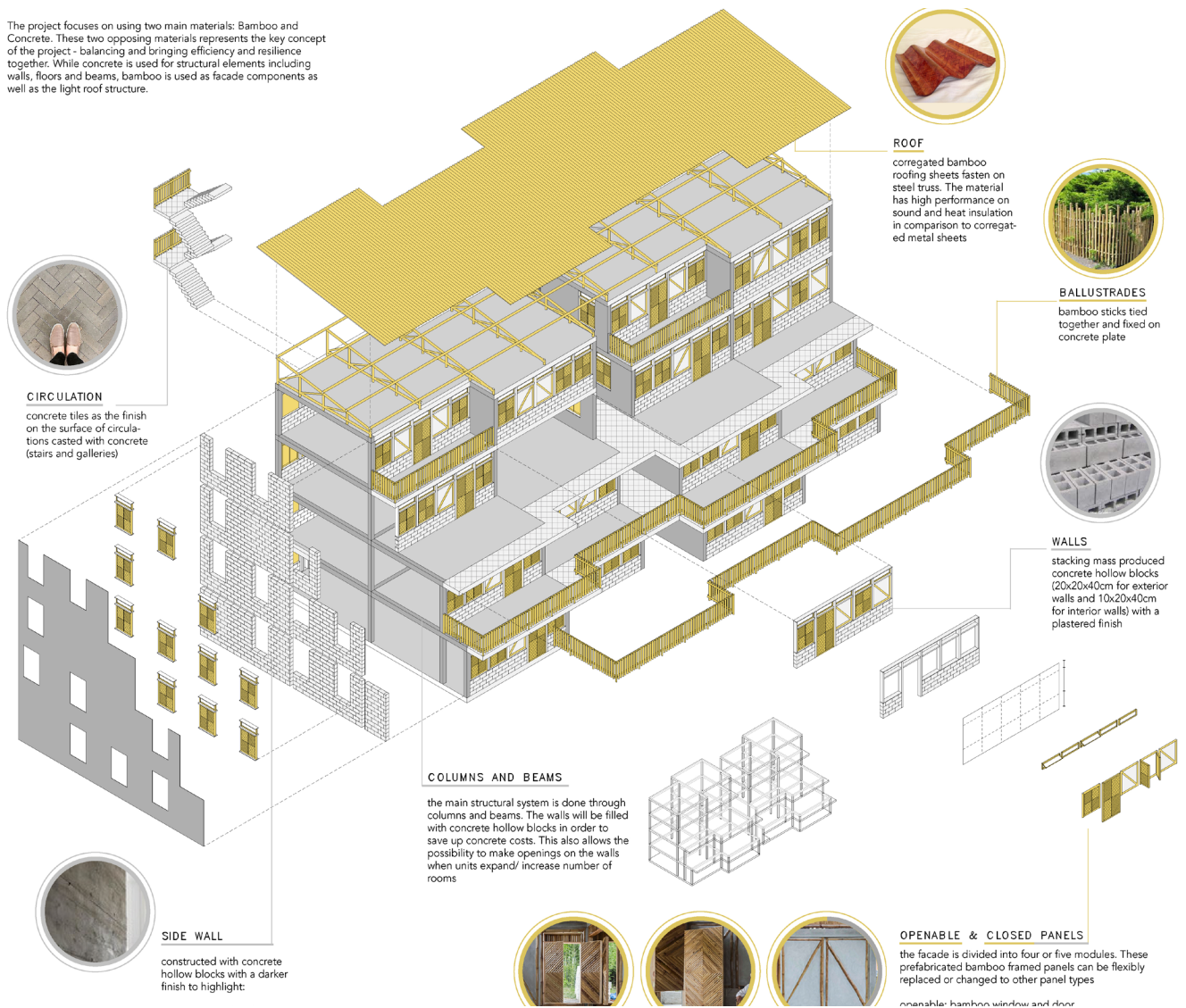


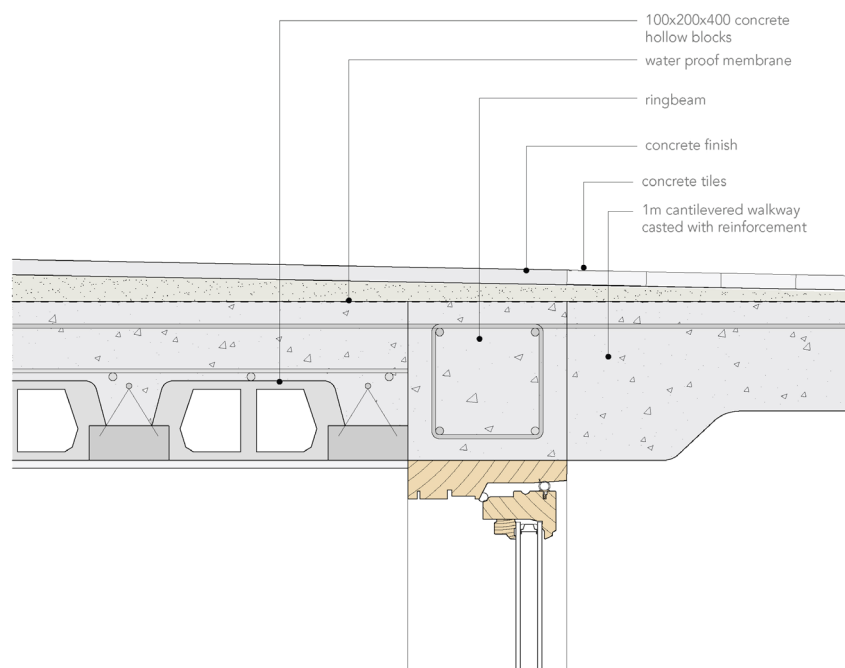
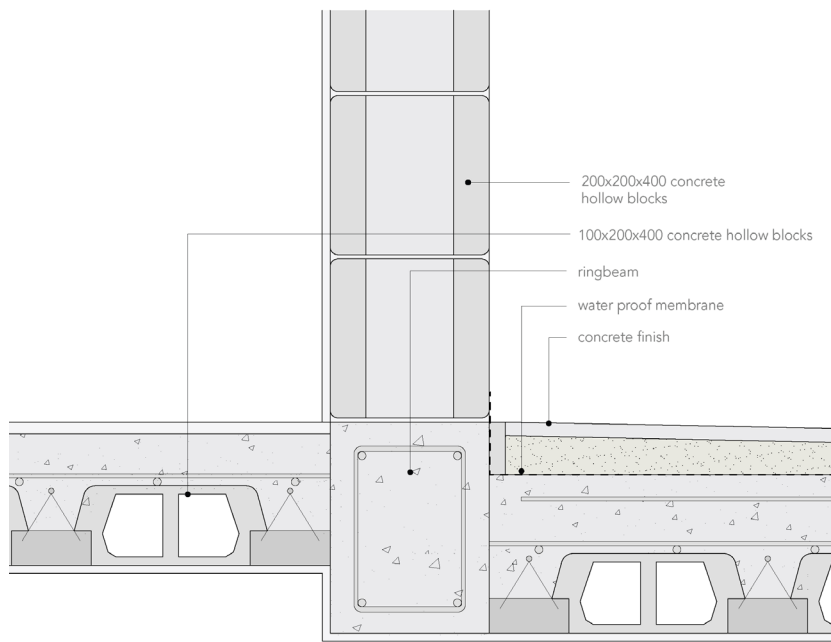


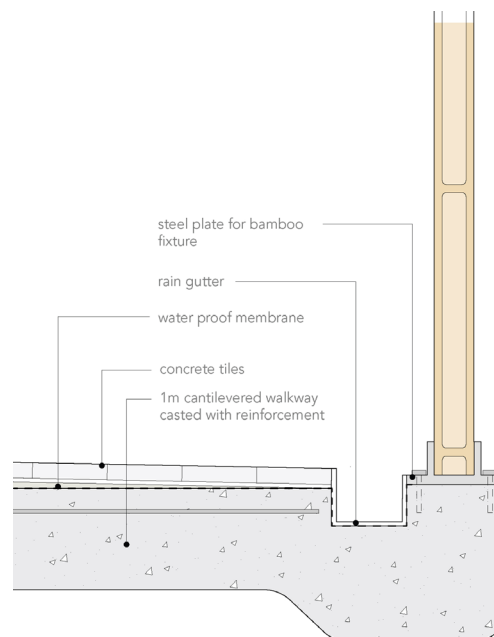
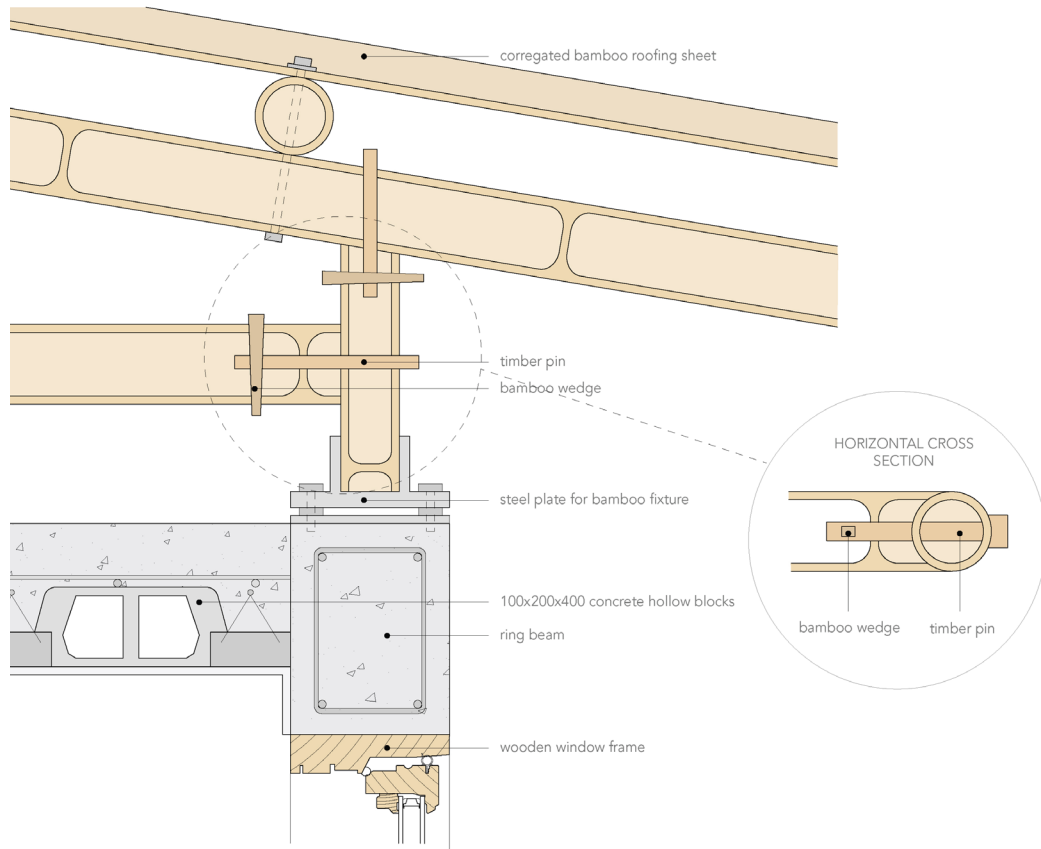


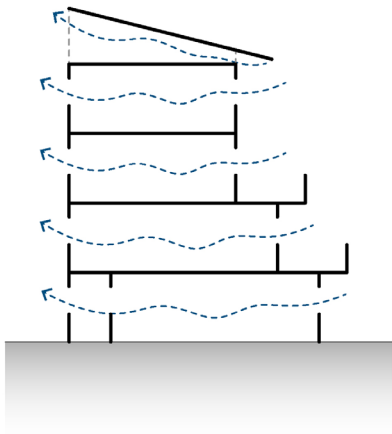


The project focuses on using two main materials: Bamboo and Concrete. These two opposing materials represents the key concept of the project - balancing and bringing efficiency and resilience together. While concrete is used for structural elements including walls, floors and beams, bamboo is used as facade components as well as the light roof structure.

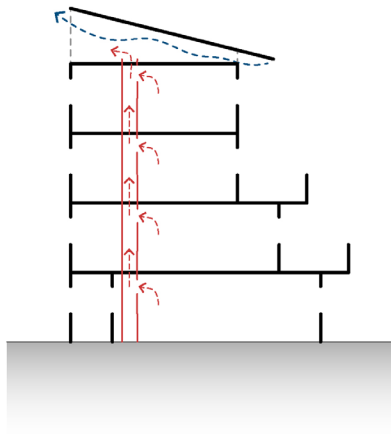




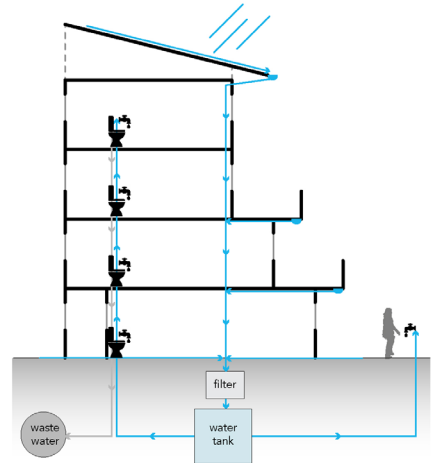




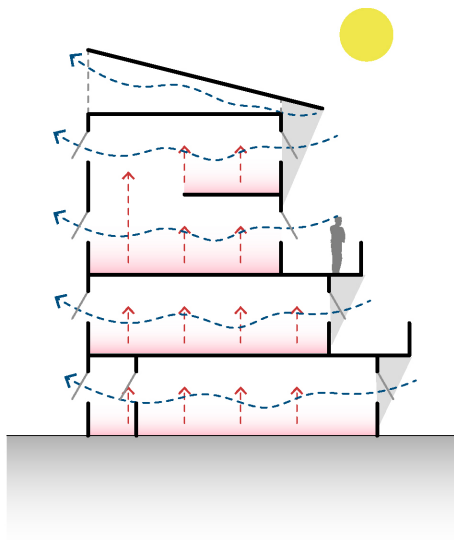
NATURAL
VENTILATION



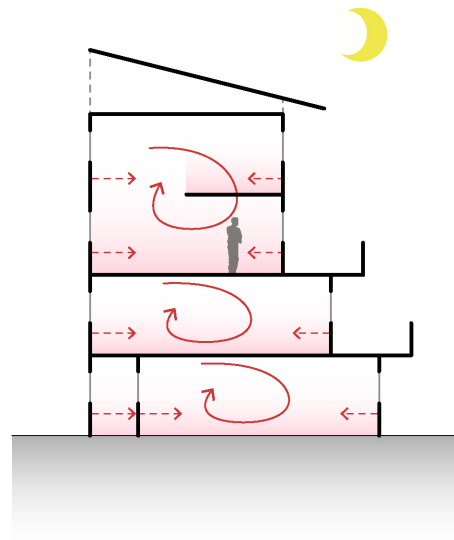
EXHAUST AIR
SHAFT



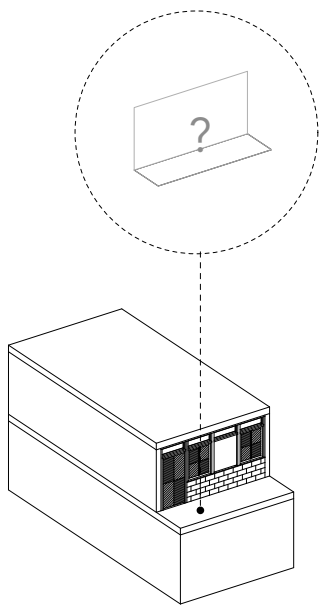
WATER
MANAGEMENT



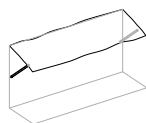
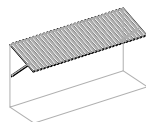
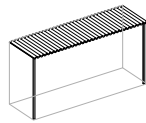
DAY



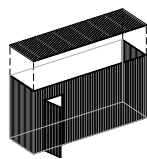
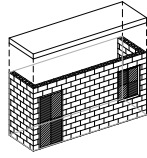
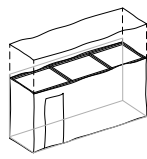
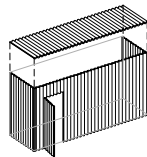
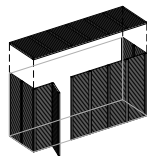
NIGHT



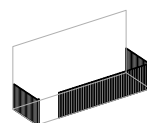
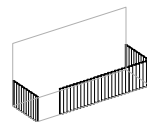
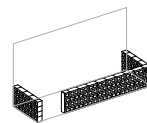
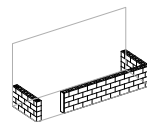
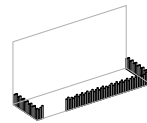
COVER



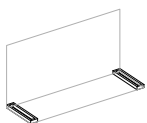
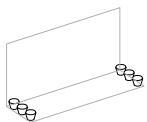
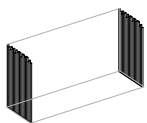
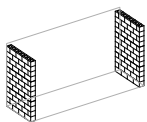
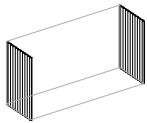
WITHOUT COVER

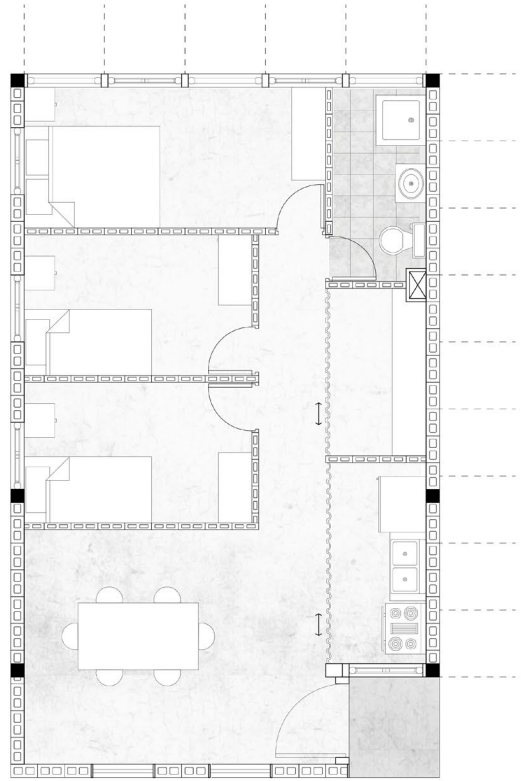
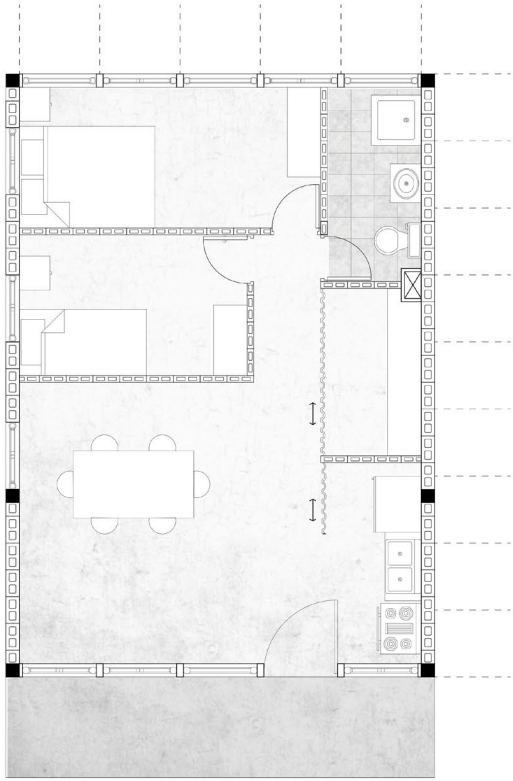


PARAPET



BORDER



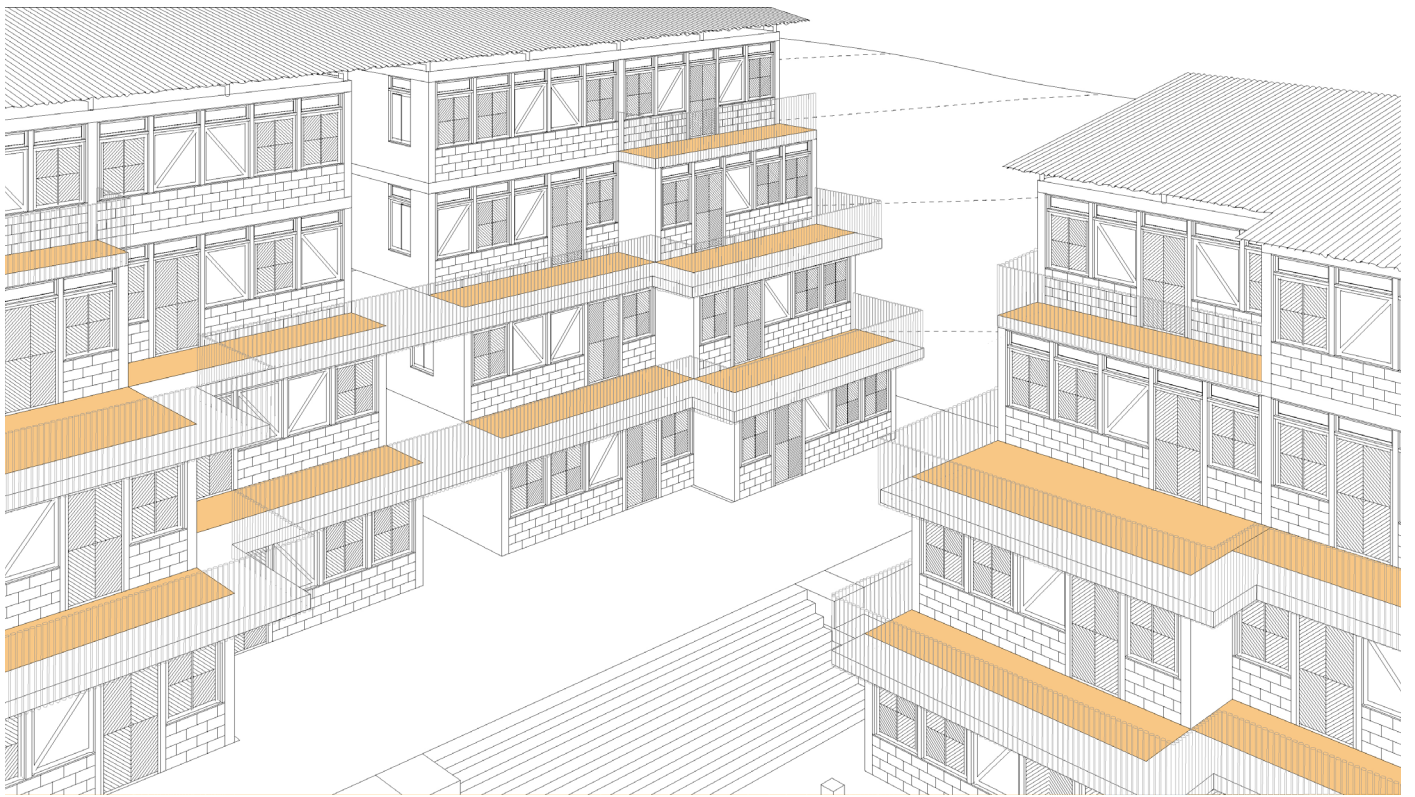
























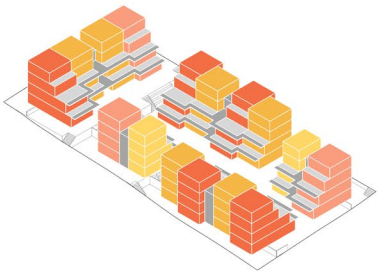






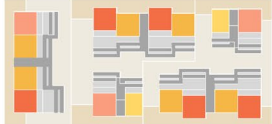






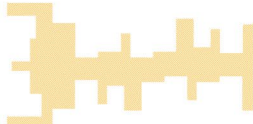









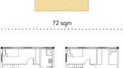






2025



2020

DESIGN COMPONENTS	UNIT	UNIT LAYOUT	SPECULATED NO. OF PEOPLE/ AREA PER PERSON	PRIVATE OPEN-TO-SKY SPACE/POSSIBLE EXPAN- SION SPACE	SETS	CLUSTER
A	A1	 40.5 sqm	 20.25 sqm/person	6.75 sqm/home	SET A	
	A2	 40.5 sqm	 20.25 sqm/person	6.75 sqm/home		
	A3	 40.75 sqm	 25.5 sqm/person	6.75 sqm/home		
B	B1	 54 sqm	 18 sqm/person	9 sqm/home	SET B	
	B2	 54 sqm	 18 sqm/person	9 sqm/home		
	B3	 81 sqm	 16.2 sqm/person	9 sqm/home		
C	C1	 63 sqm	 21 sqm/person	18 sqm/home	SET C	
	C2	 63 sqm	 21 sqm/person	9 sqm/home		
	C3	 81 sqm	 13.5 sqm/person	18 sqm/home		
D	D1	 72 sqm	 24 sqm/person	18 sqm/home	SET D	
	D2	 72 sqm	 24 sqm/person	9 sqm/home		
	D3	 108 sqm	 18 sqm/person	27 sqm/home		
		65.8 sqm	 20 sqm/person	12.2 sqm/home		243 units/phase