



“HABITAT DESIGN IN URBAN CONTEXT”

V Ā S T U S H I L P Ā F O U N D A T I O N
I N T E R N A T I O N A L S T U D I O - 2 0 1 4

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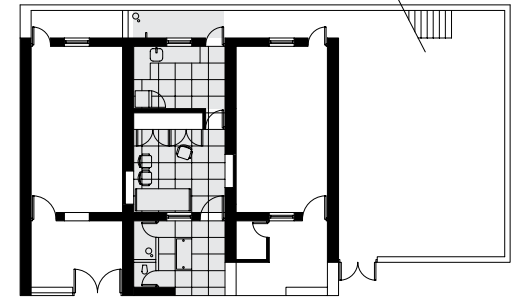
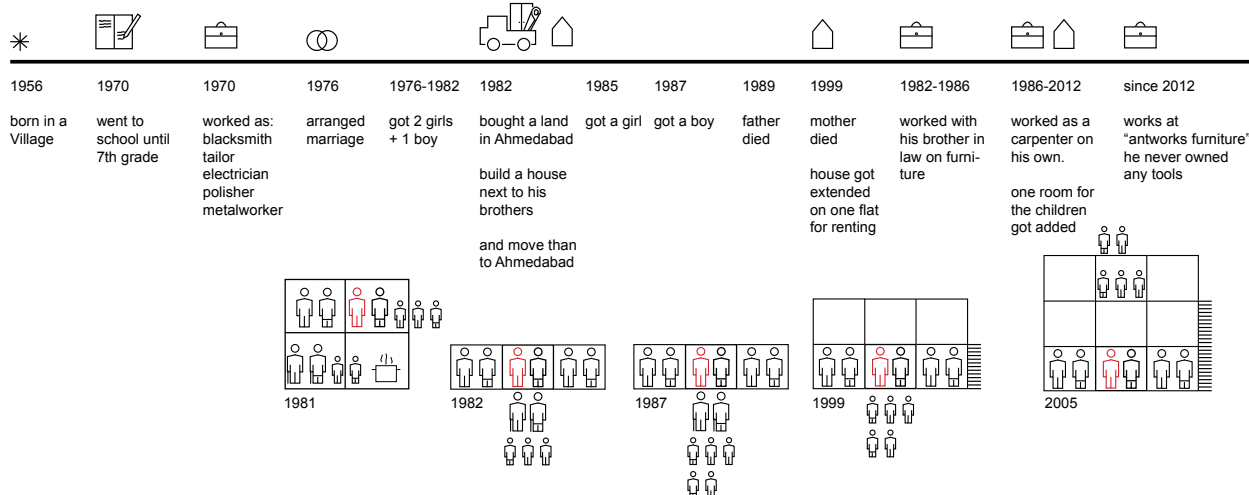


" I don't want to leave Ahmedabad people are so peacefull and always willing to help here "

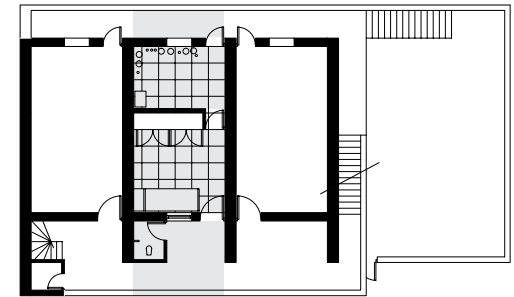
GANPAT KAKA

age: 56
profession: carpenter

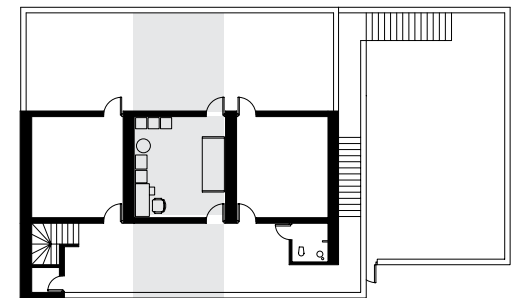
* Gamde 70 km from Ahmedabad



ground floor



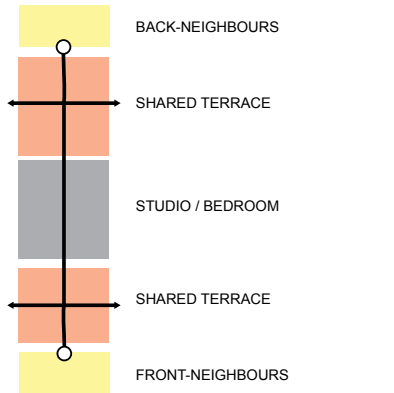
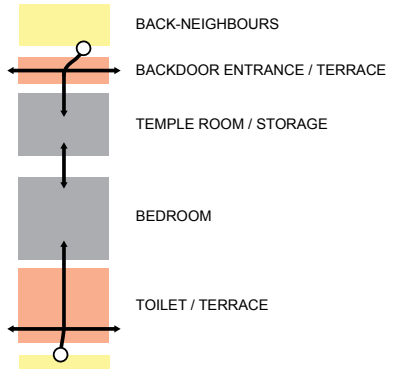
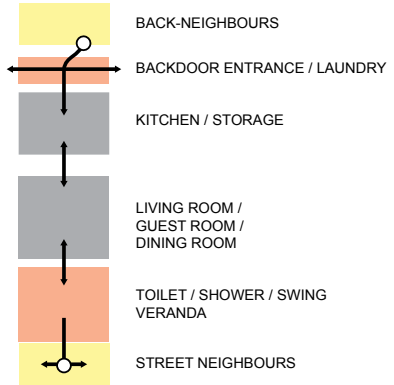
1st floor



2nd floor

0m 5m

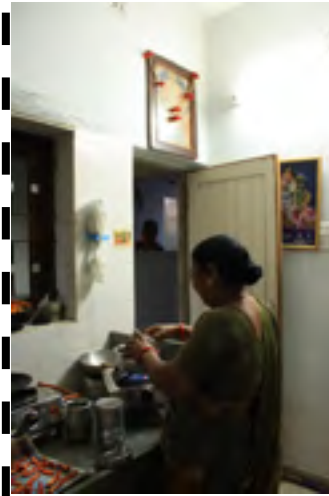
LIFE, WORK, LEISURE, FUTURE, AND MORE...



"I don't want a bigger house I rather spent my money on my children"

CONSUMPTION + COSTS

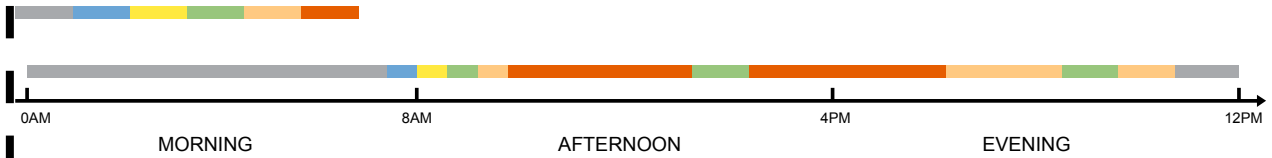
Water 200 L / Day
 Electricity 3000 Rs / Month
 250000 Rs / Year



"Rich people are busy they don't have time for their children"

What I do from Monday till Sunday

sleeping shower praying eating resting working



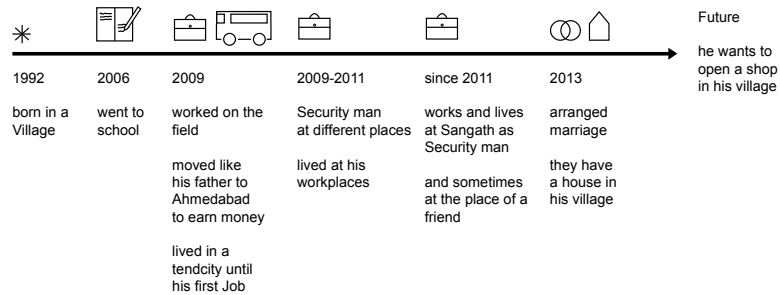
1ST INTERVIEW



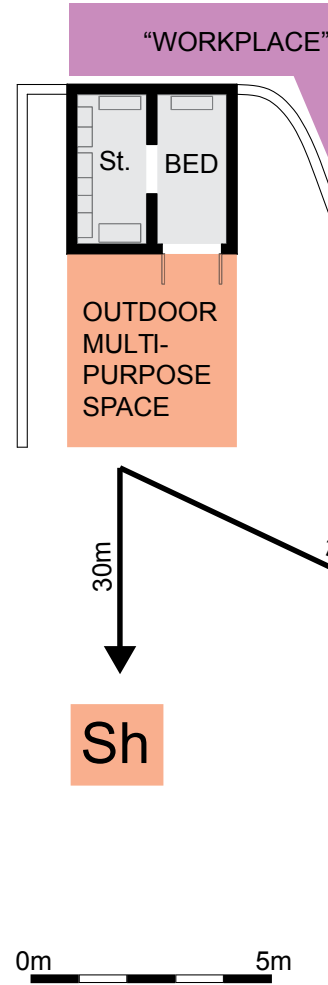
YOGESH SINGH CHAUHAN

age: 21
profession: watchmen

“ When I have earned enough money I will go back to my hometown and I will open a shop “

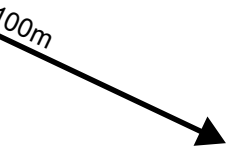
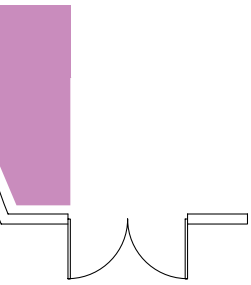


“ Today my belongings are a mobile and a bike. If I could earn a lot



LIFE, WORK, LEISURE, FUTURE, AND MORE...

of money I would by me a big house with one ore two rooms “



T

CONSUMPTION + COSTS

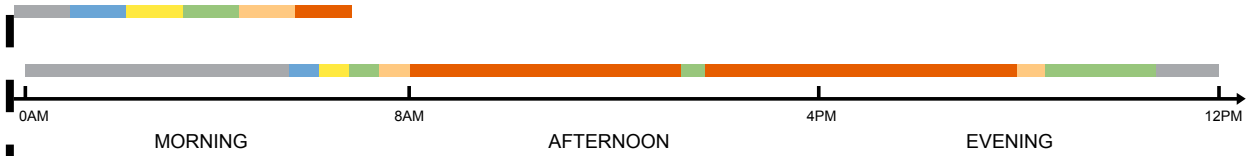
Water 50 L / Day
Electricity he doesn't know

2ND INTERVIEW



“ My daily expenditure on food is 80 Rs ”

What I do from Monday till Sunday
sleeping shower praying eating resting working

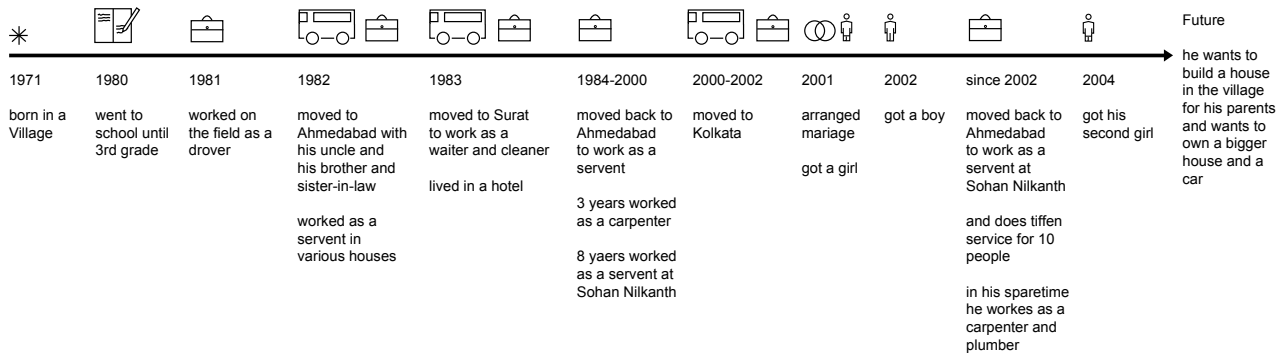
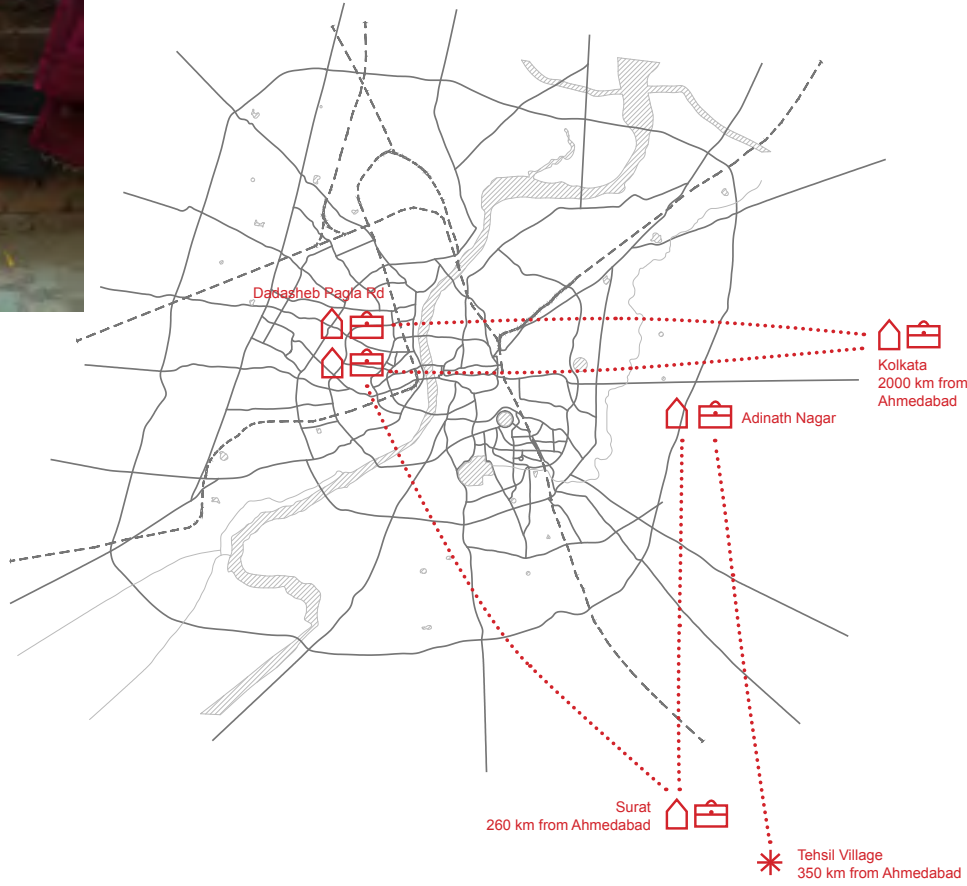




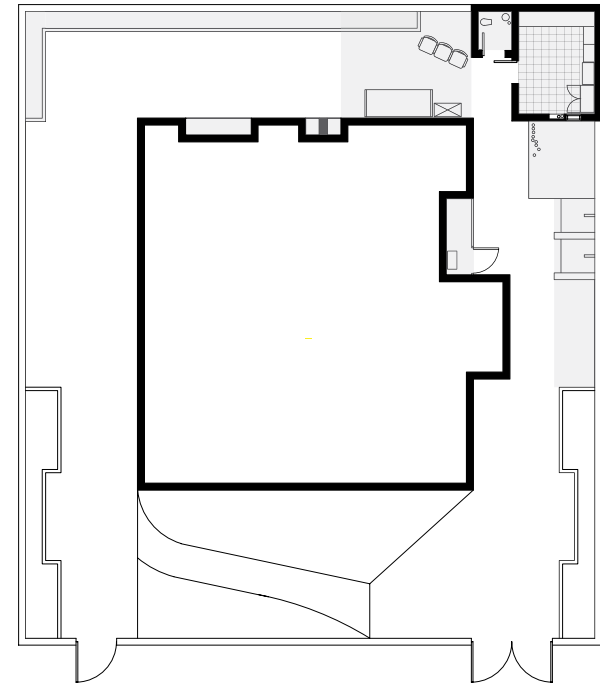
KANTU

age: 43
profession: housekeeper

“ For my first month in Ahmedabad I had no money. For my first job I didn't get payed so I had to leave it after four days “



“ I would love to have a house with a garden for my family but Because it will never be possible for me “



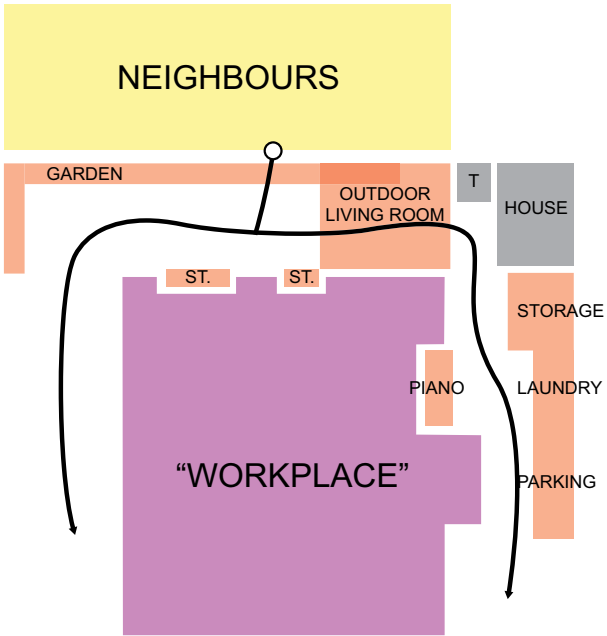
anything above that i can't even dream of.



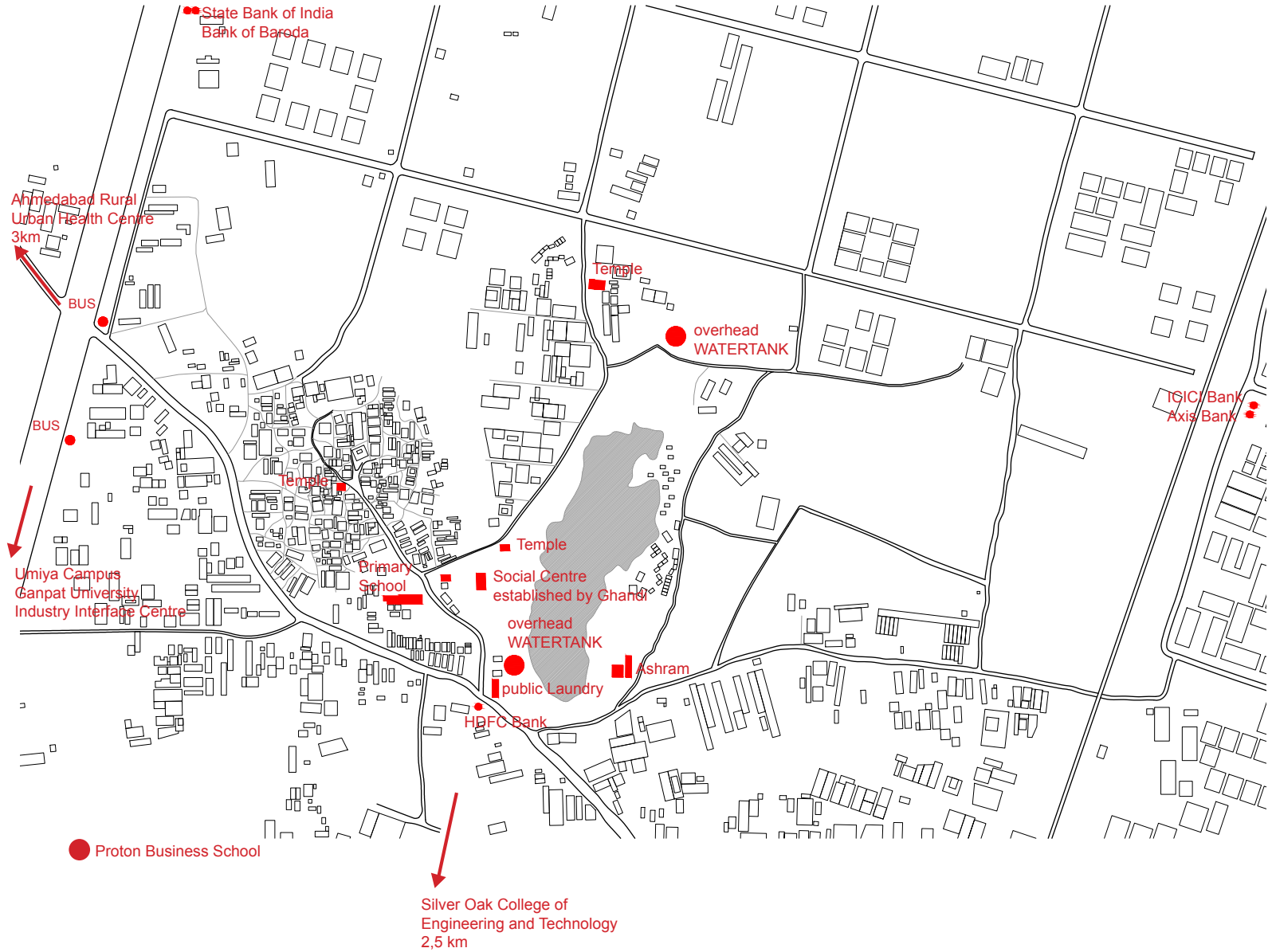
"In my freetime I like to do furniture work for a little money. I had the dream of starting my own business but I could not get the capital to start it."

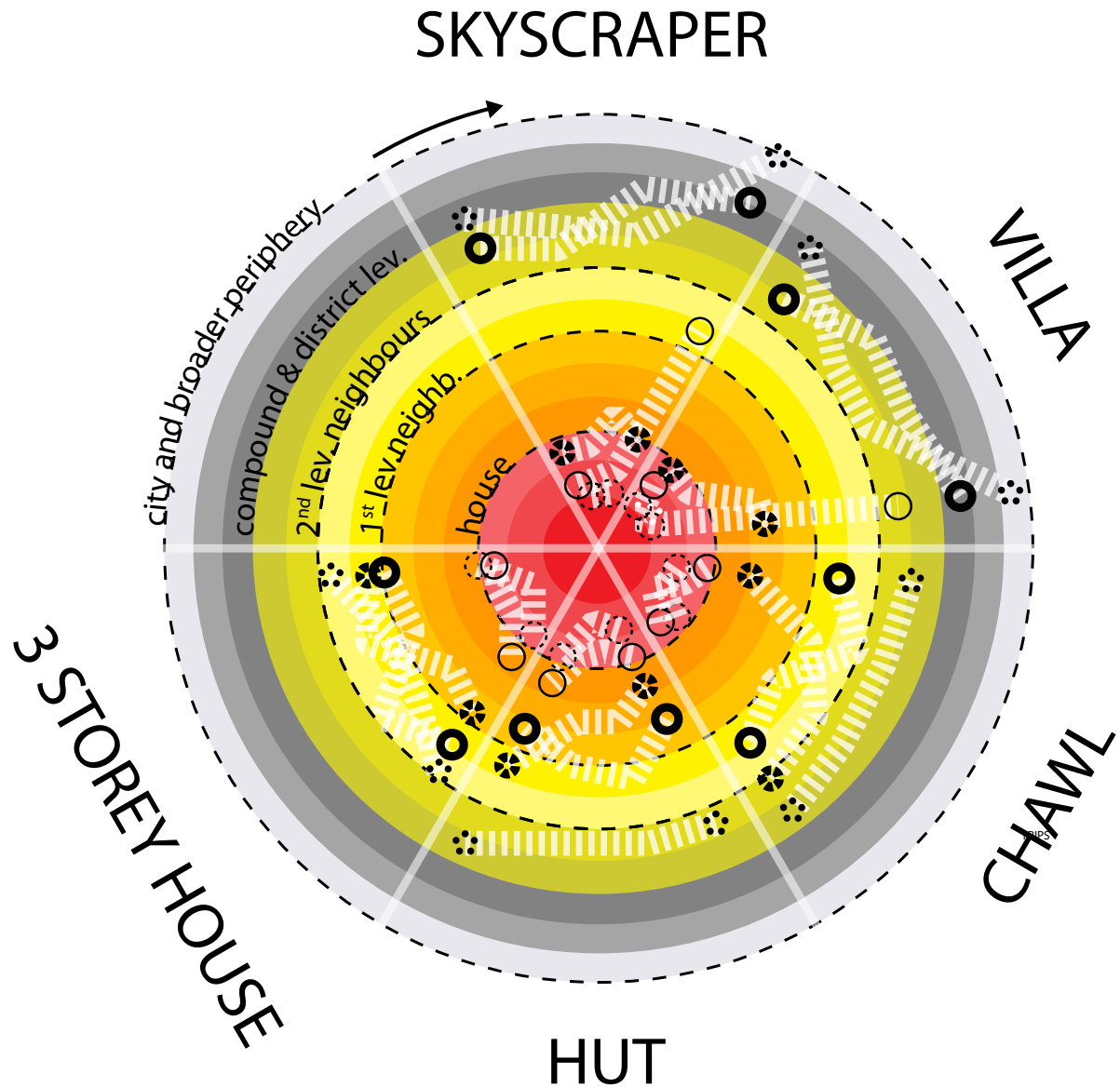
What I do from Monday till Saturday, Sunday I rest and do housework

sleeping shower praying eating resting working brings kids to school

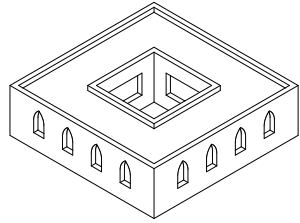


HOT SPOTS

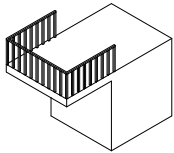
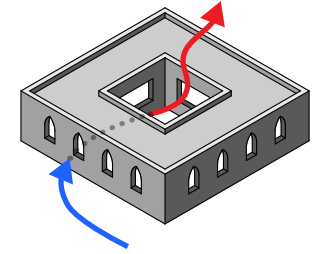




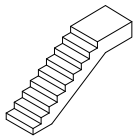
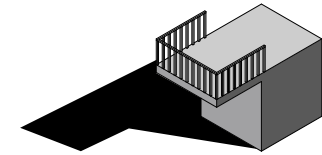
					
	SOCIAL INTERACTIONS	WEEKEND LEISURE	WEEKDAYS LEISURE	DAILY HOUSEWORK	EXCEPTIONAL EVENTS
1	CHAI BREAK	RESTAURANTS	READ NEWSPAPER	LAUNDRY	MARRIAGE
2	DINNERS	CINEMA	DINING	COOKING	FESTIVALS
3	FRIENDS' INVITATIONS	SHOPPING	WATCH TV	CLEANING	FUNERALS
4	CHATTING	SPORTS	STUDY	EVENTUAL	TRIPS



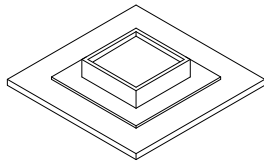
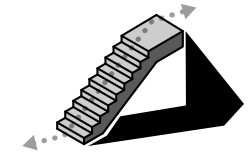
courtyard • for wind flow



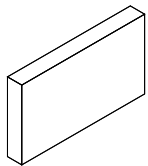
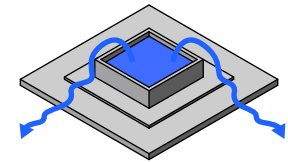
terraces/balconies • for shading



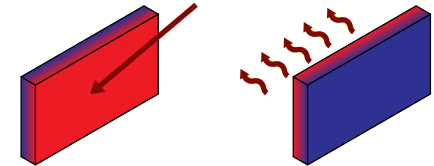
staircase • for shading (and accessibility)



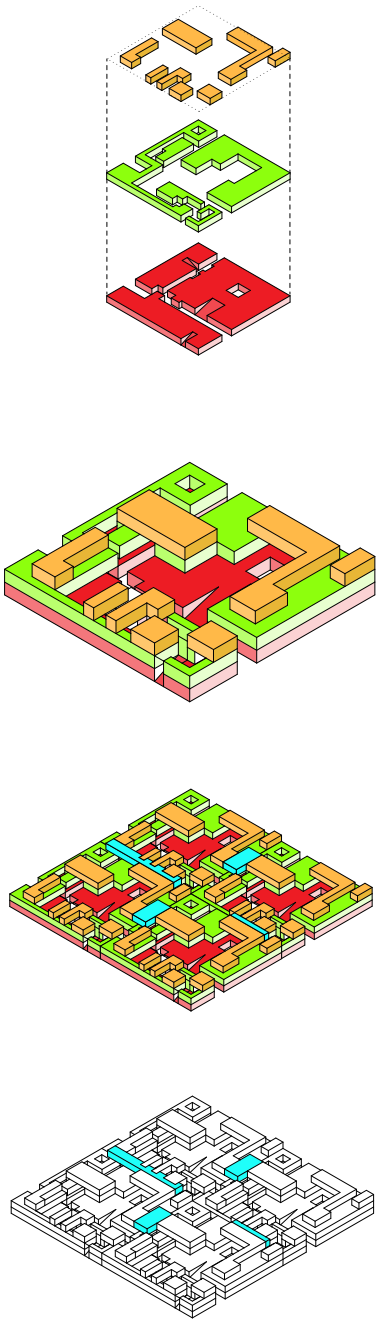
impluvium • for evaporative cooling



collector facade • for storing/releasing heat



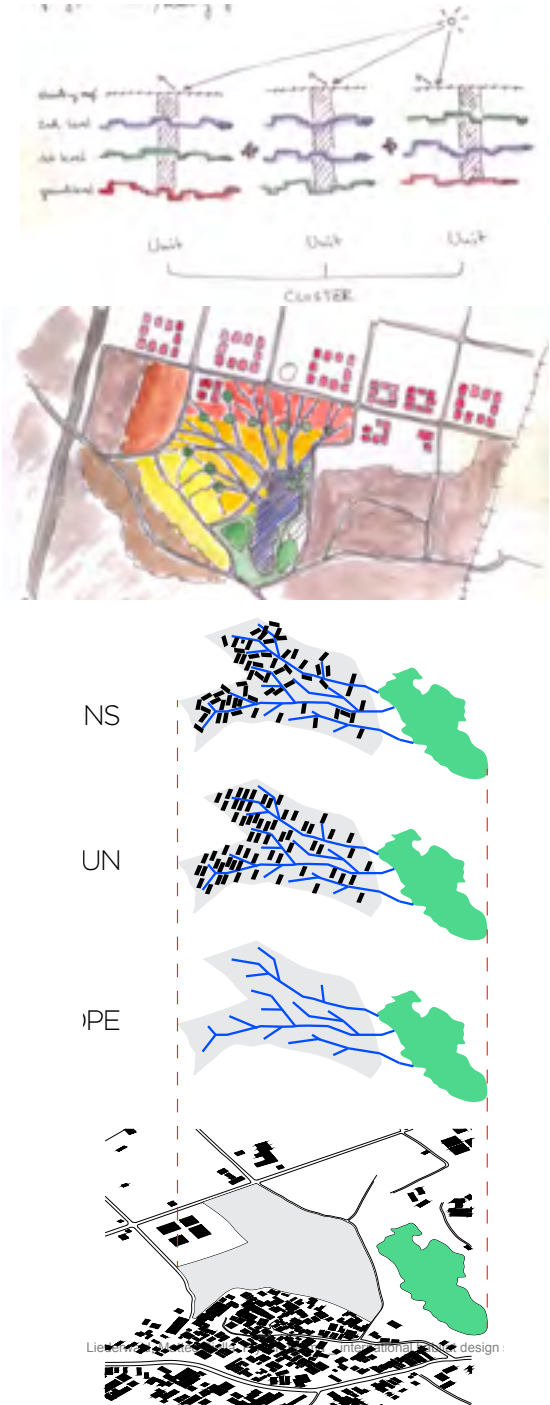
ARCHITECTURAL ELEMENTS ON WHICH WE FOCUSED



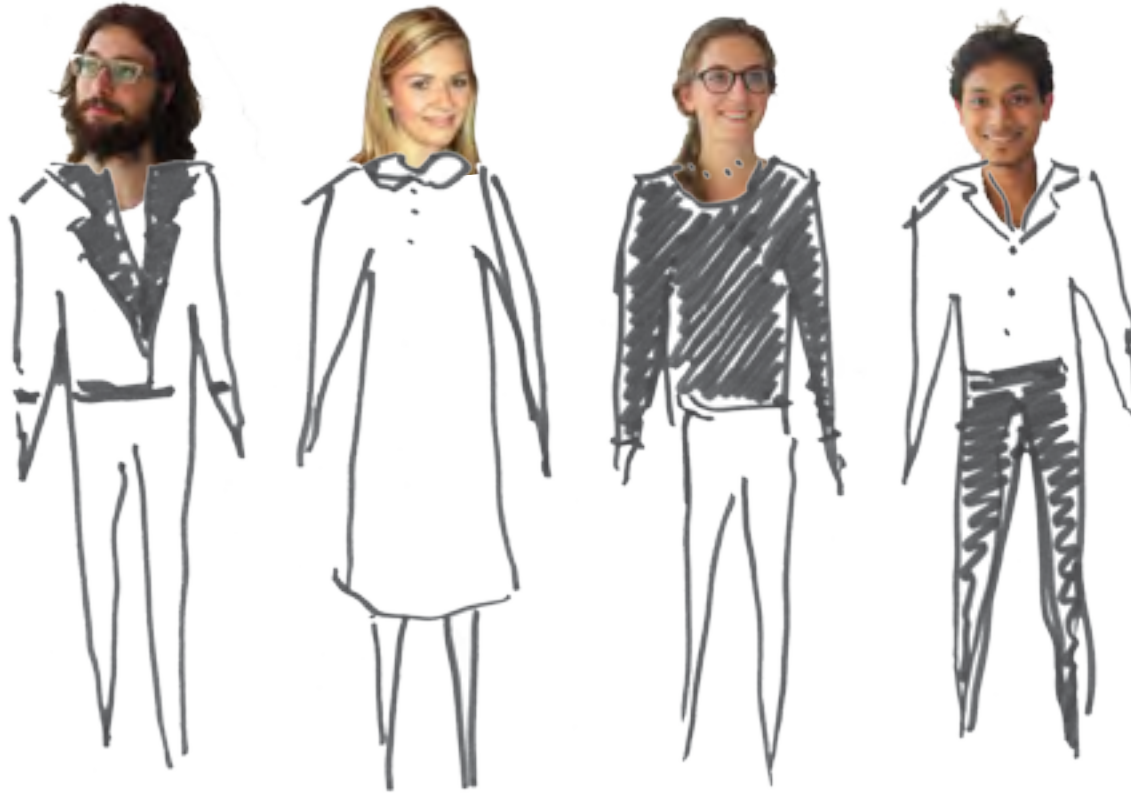
INITIAL SPECULATIONS ON UNIT



LAST SPECULATIONS ON UNIT



MASTERPLANS STUDIES

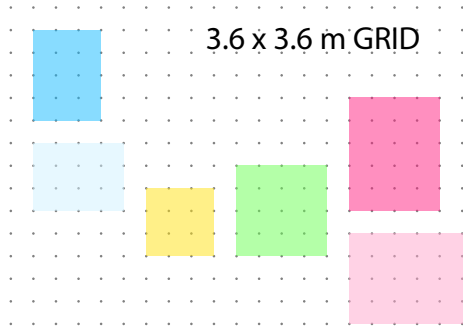


OUR JOB

- design units
- create a masterplan
- find users
- detail their personal unit
- construct the first step of the masterplan

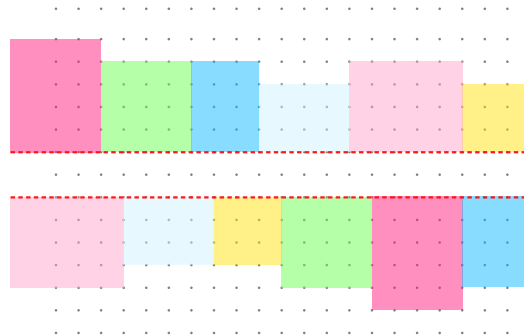
WE DEFINE OURSELVES AS ARCHITECTS & DEVELOPERS

DISPERSED ORGANIZATION



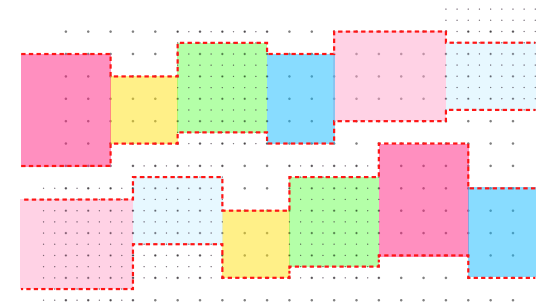
Considering wall thickness, it's proved to be a perfect grid size for the construction of housing in the indian context, according to our initial analysis

LINEAR ORGANIZATION



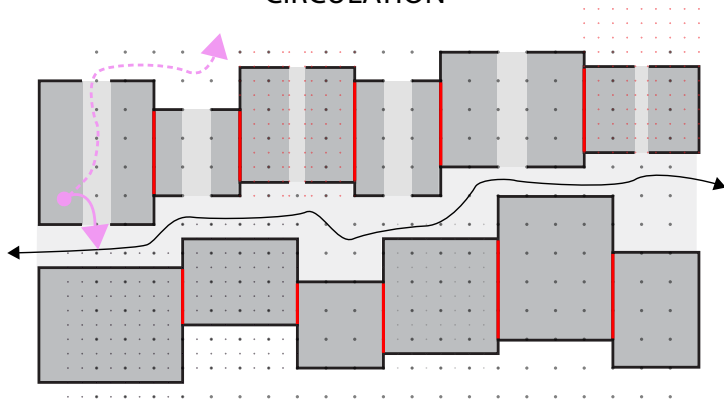
NOT HIERARCHICAL
NO ORIENTATION
FACADES ALL THE SAME
UBIQUITOUS

SUB-SCATTERING APPROACH

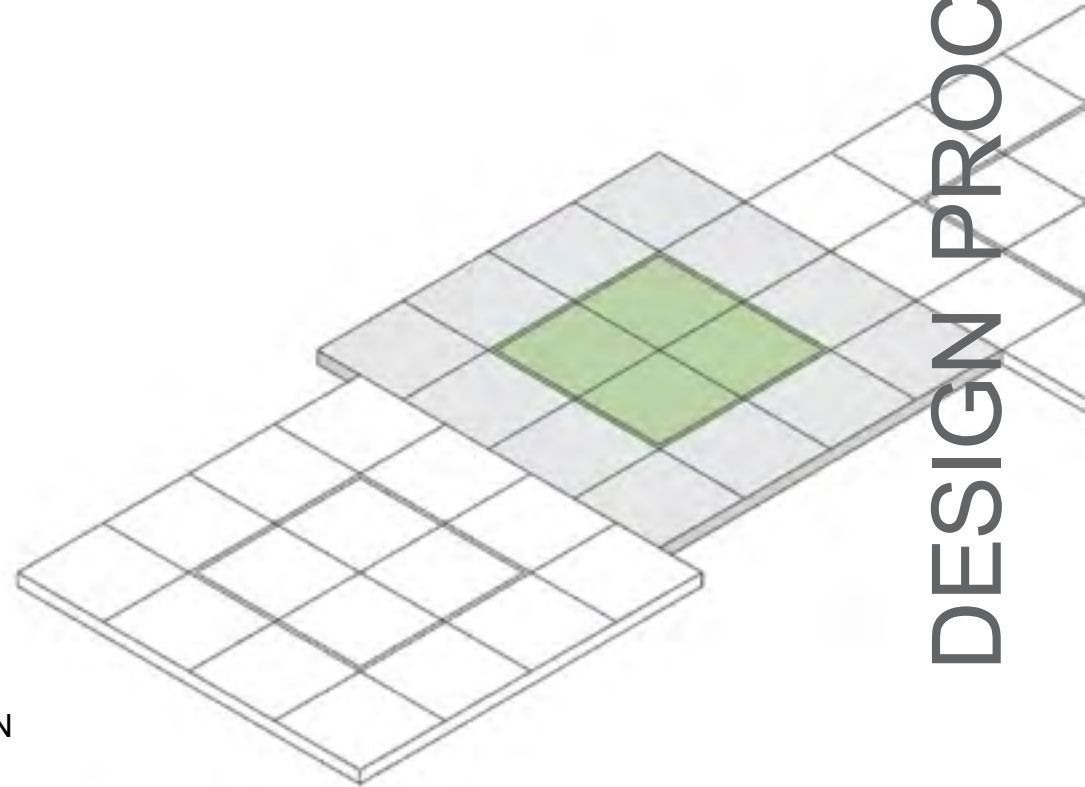


FACADE HIERARCHY
MAIN AXES
GRID-SHIFT BY HALF-UNIT

CIRCULATION

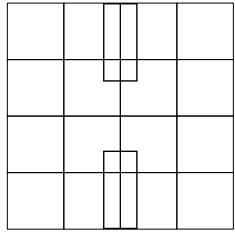


PASSANTS: CIRCULATE ON MAIN AXIS
RESIDENTS: MULTIPLE CHOICE OF CIRCULATION

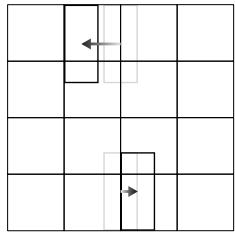


DESIGN PROCESS

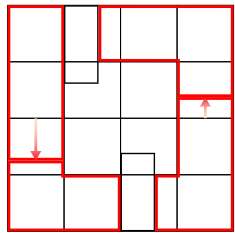
STEP 0: GRID DEFINITION AND EVOLUTION



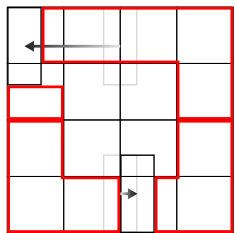
HORIZONTAL & VERTICAL CONNECTOR: STAIRCASE SHAFT
 The staircase shaft has the important role to allow good vertical extension in the future and horizontal flow of people.
 Every staircase shaft provides also a passage, connecting the inner courtyard and the exterior public space.



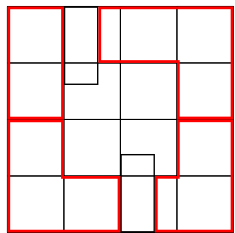
POSSIBILITY TO RE-ARRANGE ITS LOCATION
 Having 2 facing staircase shaft can create a curious communication channel from the public space on a side of the unit towards the other side, throughout the courtyard. We tried to avoid this kind of situation, in order to preserve the intimacy of the courtyard as a private space.



HOUSING DEFINITION:
 Once decided its position, housing units can be placed considering the needs of the future tenants, here it starts the negotiation on the paper. In the moment all housing blocks are "sold" and boundary are defined, construction can start.

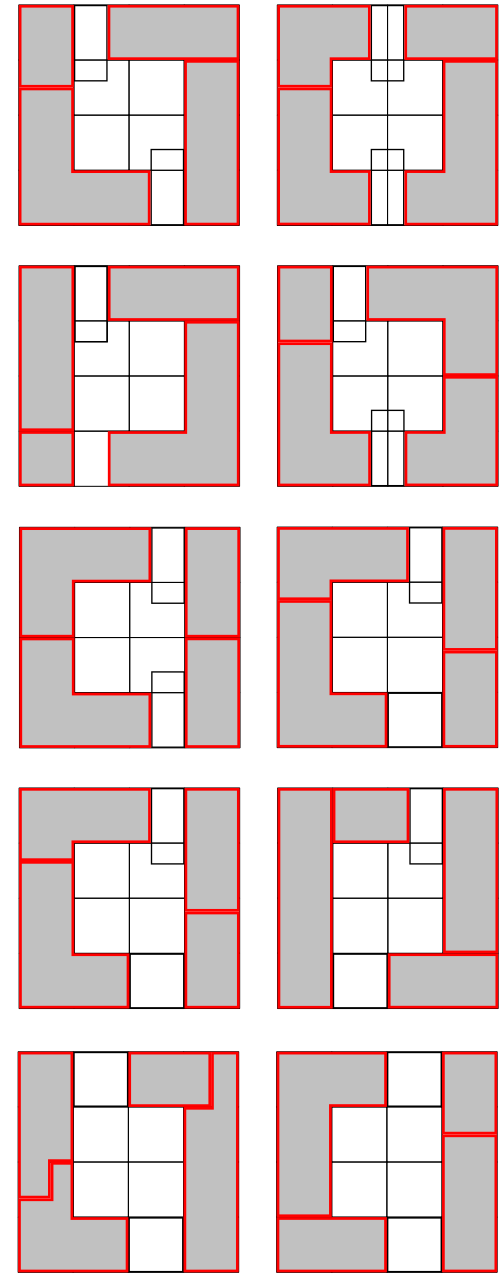


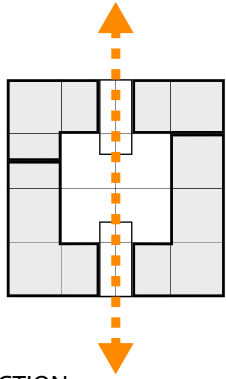
STAIRCASE LIMITS:
 Pushing the staircase too far, as shown in this example, precludes the possibility for 1 housing unit to have access on the main street, shrinking its size to the minimum, creating imbalance within the unit itself:
AVOIDABLE SITUATION



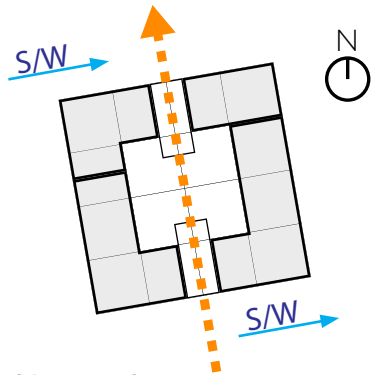
TYPICAL UNIT PATTERN (IN A 4X4 BLOCKS UNIT):
 A unit is going to provide shelter to a maximum of 4 neighbours, each of them with one direct access to the public space outside the unit and another one on the inner courtyard.
 The architectural design as a whole will stop here. Future additions, such as a 1st floor or even 2nd floor, are going to take place just when the tenants have enough money or in specific events: marriages, birth of childs, death of elders.

UNIT VARIATIONS POSSIBILITIES



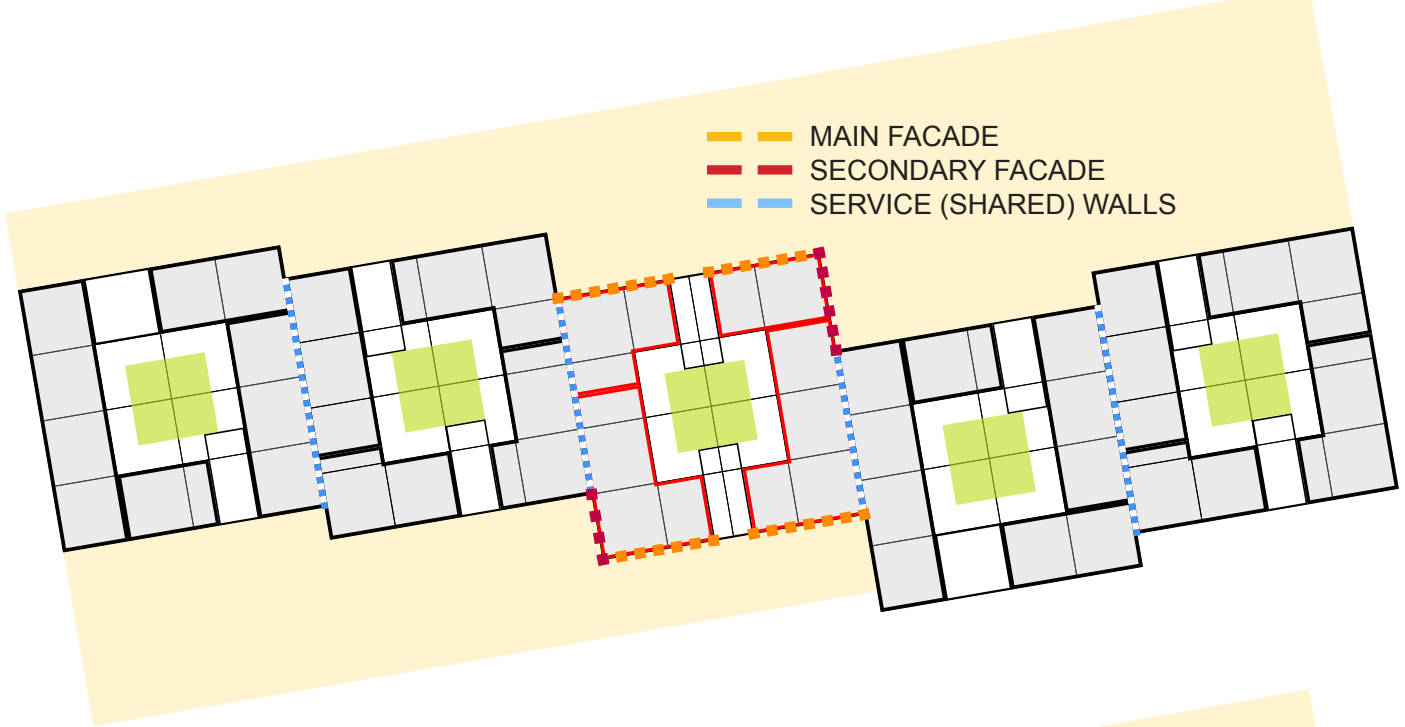


DIRECTION:
Every unit enables a possible flow path through the courtyard from the outside.

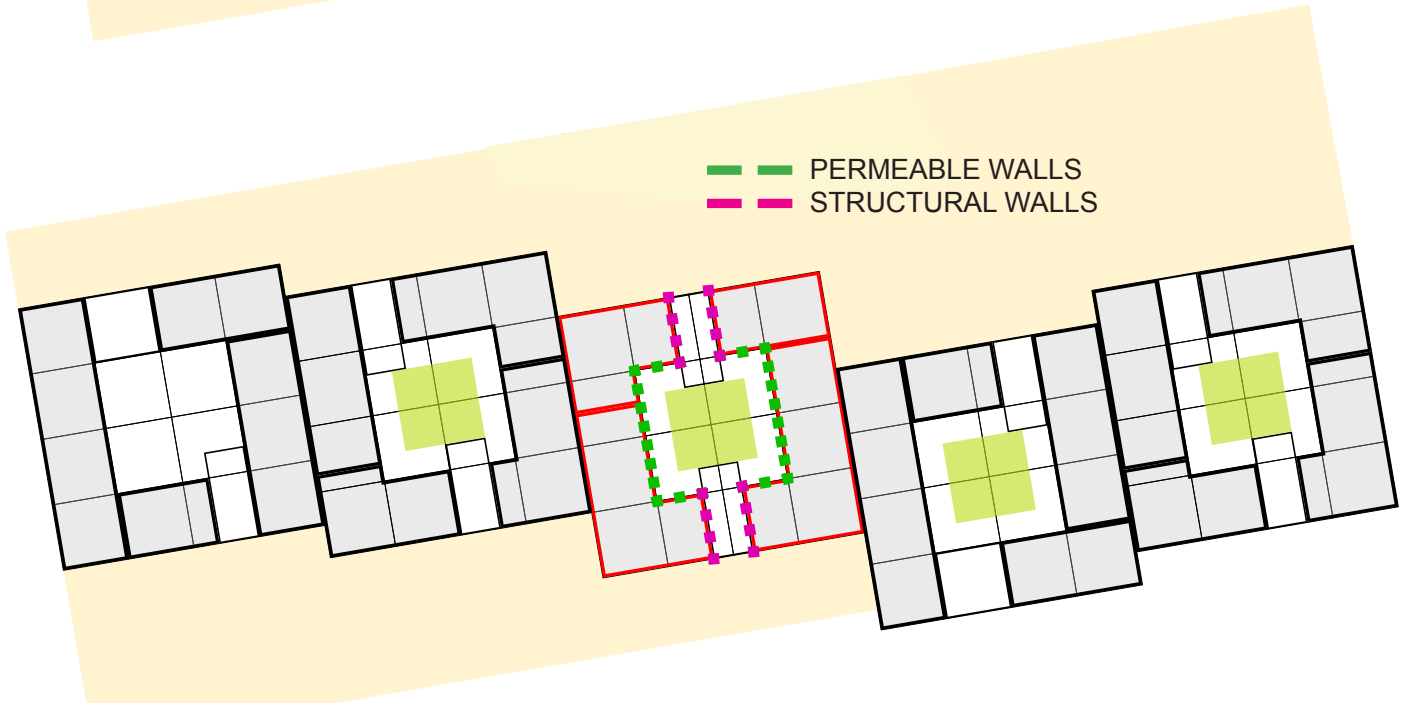


ORIENTATION:
At the same time, due to a climatical reason every unit is oriented in a certain direction, which is given by the main wind direction during the monsoon season (blowing from a south-west direction). In this way the streets in between the units have the same south-west orientation and this helps getting rid of stagnating humidity.

ORIENTATION



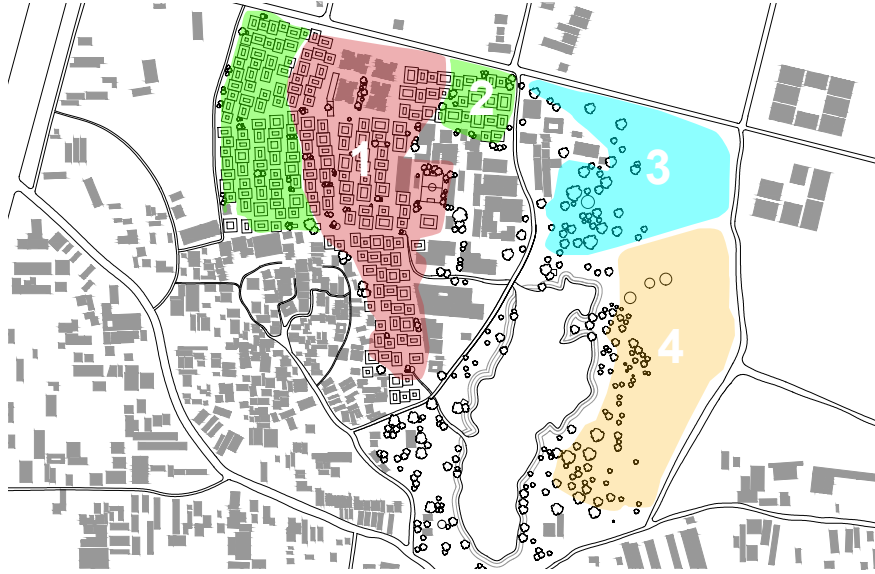
- MAIN FACADE
- SECONDARY FACADE
- SERVICE (SHARED) WALLS



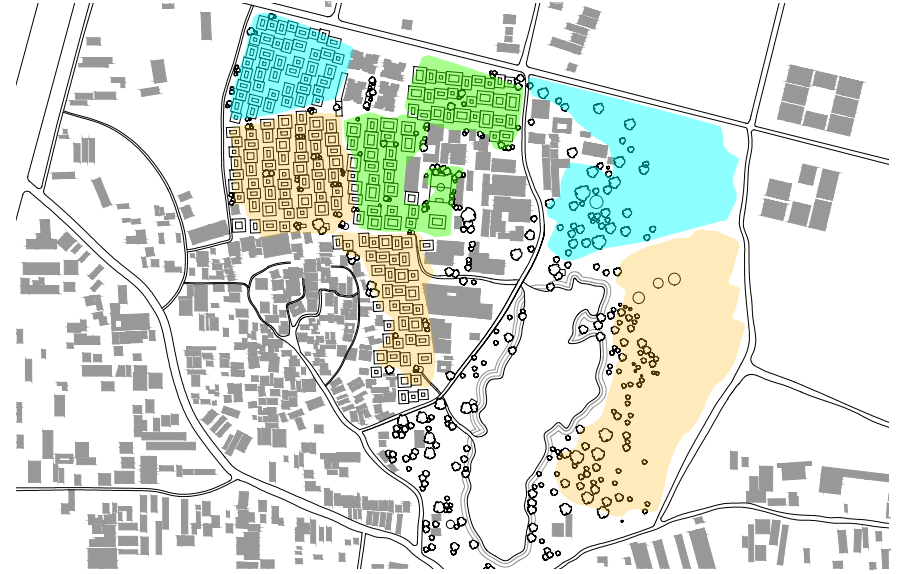
- PERMEABLE WALLS
- STRUCTURAL WALLS

FACADE ANALYSIS

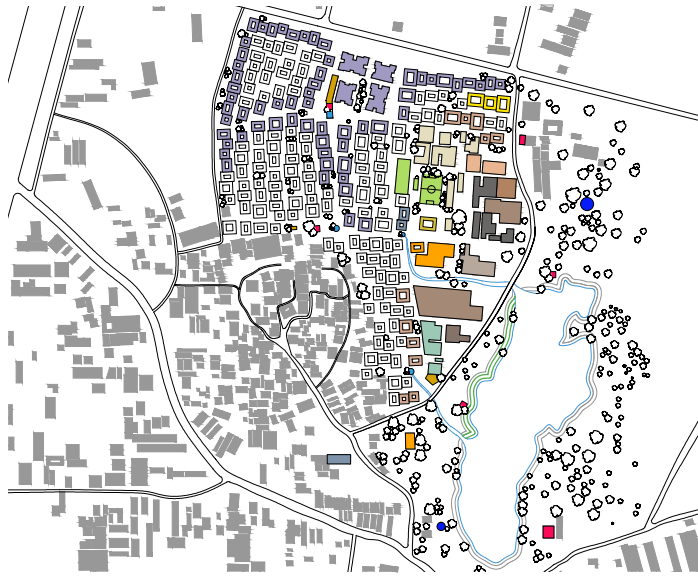
MASTERPLAN_CONSTRUCTIONSTEPS



MASTERPLAN_DENSITY



MASTERPLAN_FACILITIES



- BAZAAR
- TEMPLES
- SCHOOL
- HOSPITAL
- WATER TANKS
- COMMUNITY HALL
- SOCIAL CENTER
- OPEN AIR CINEMA
- WASTE MANAGEMENT
- WORKSHOPS
- NEW WORKSHOPS
- FEEDING GROUND
- POND
- VEGETABLE GARDEN

MASTERPLAN_GRID



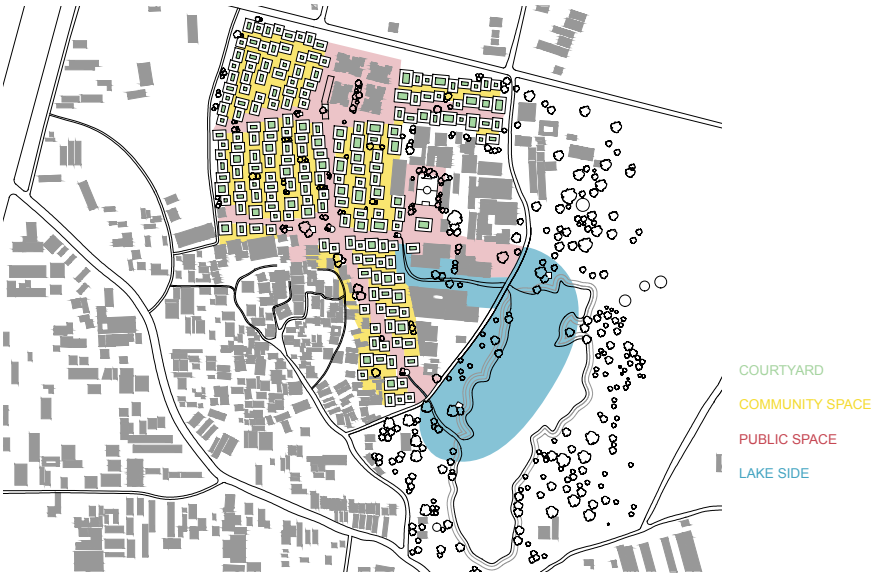
MASTERPLAN_WATERFLOW



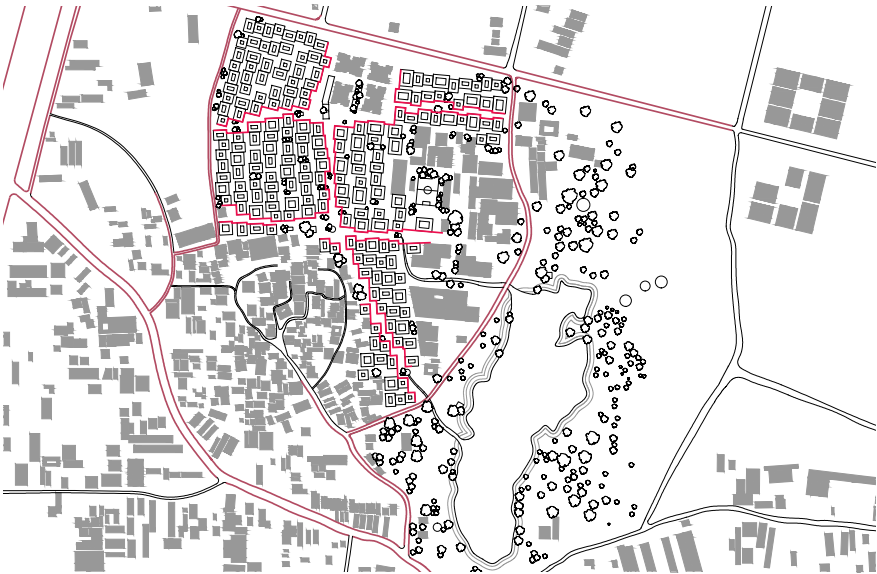
MASTERPLAN_BREATHING SPACES



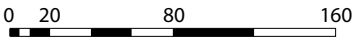
MASTERPLAN_OPEN SPACE



MASTERPLAN_STREET



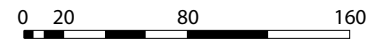
URBAN INTERVENTION: WATERFLOW, BREATHING LANES, OPENSACES, MAIN STREETS ANALYSIS



FIGURE/GROUND MASTERPLAN

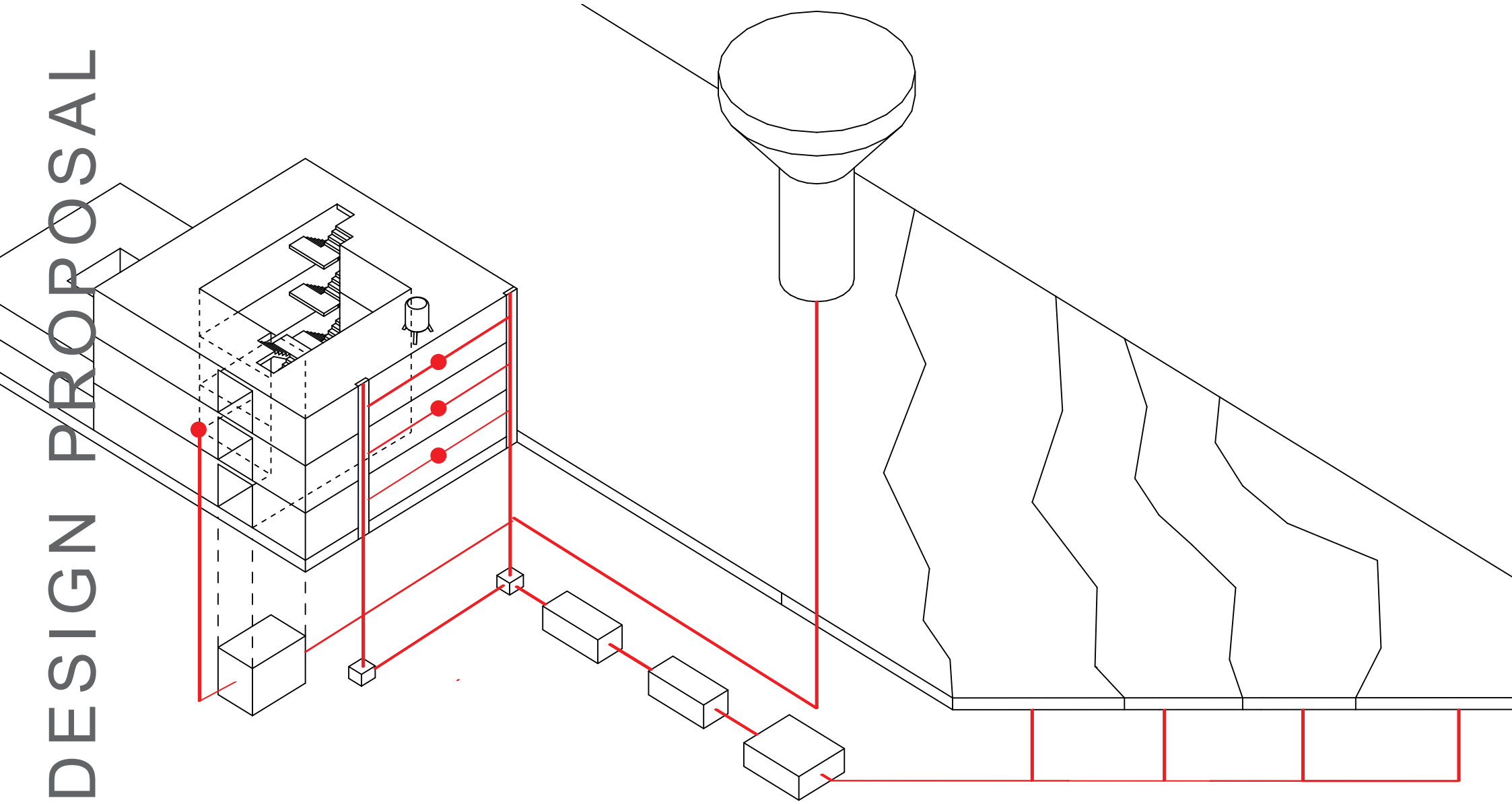


PLANIMETRIC AND VOLUMETRIC PLAN



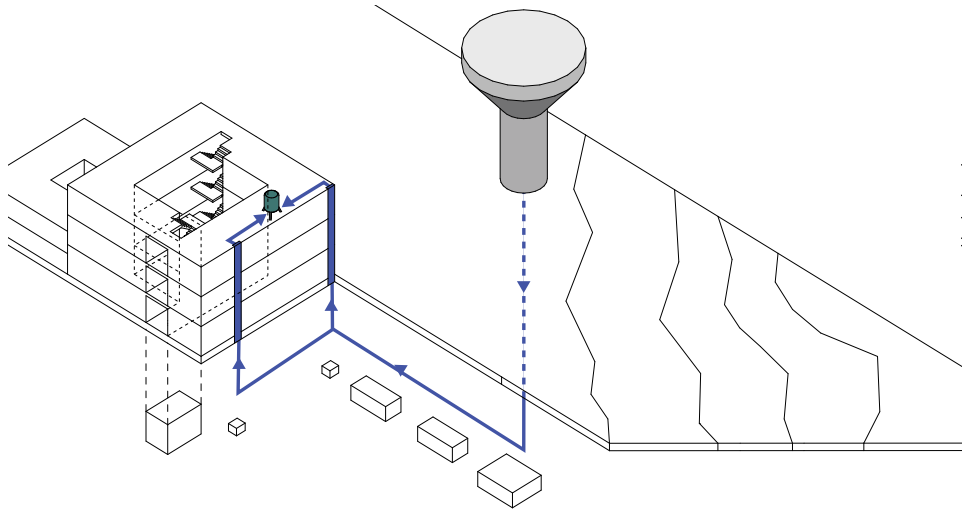
UNIT_WATER MANAGEMENT SYSTEM_CONNECTION

04 DESIGN PROPOSAL

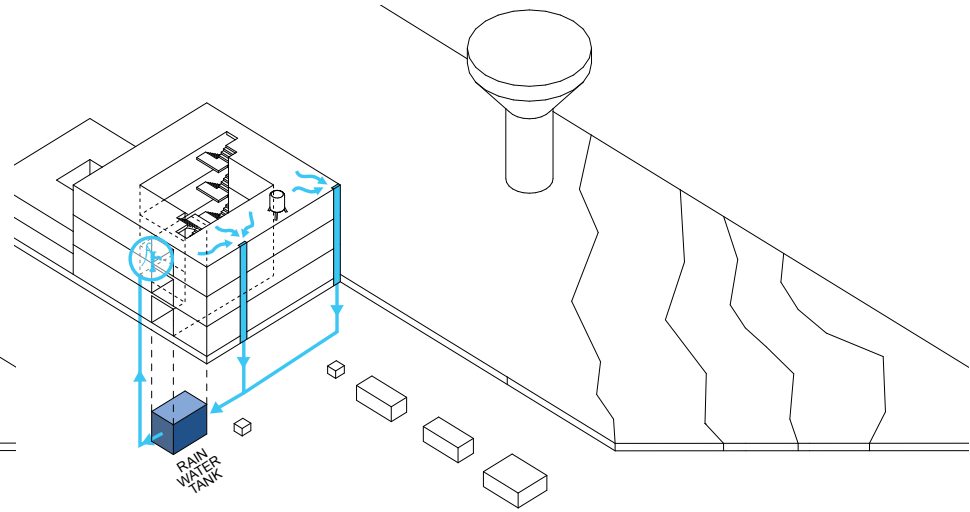


ALL CONNECTION IN REGARD TO WATER TREATMENT

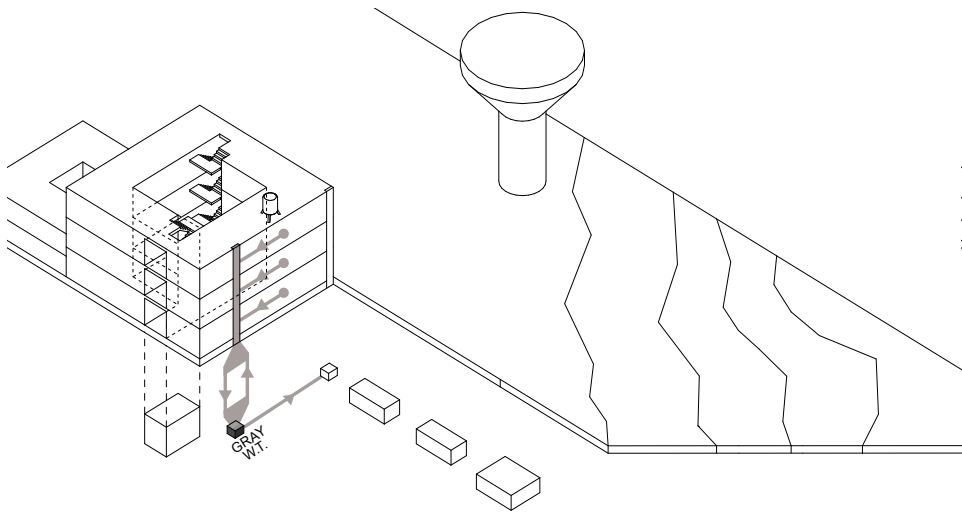
UNIT_WATER MANAGEMENT SYSTEM_GOVERNMENT SUPPLY



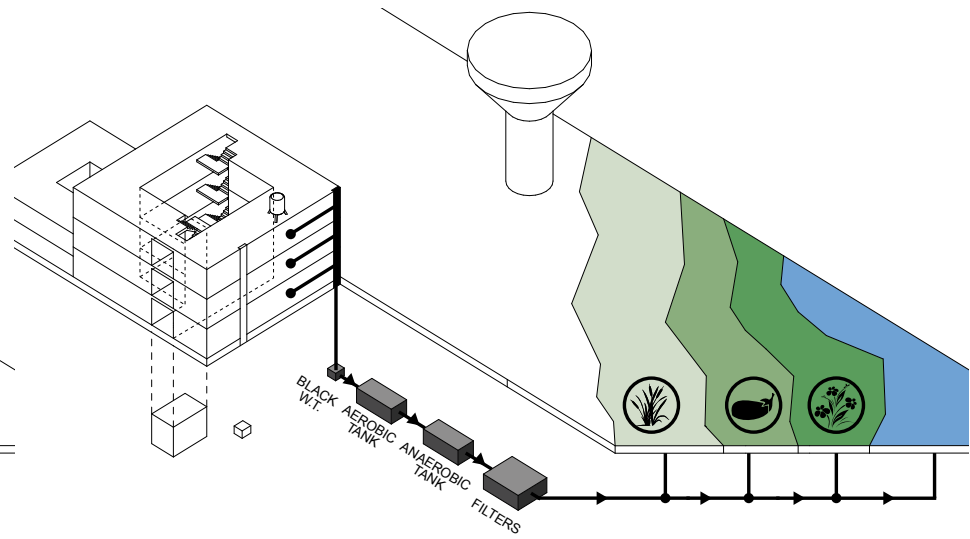
UNIT_WATER MANAGEMENT SYSTEM_RAIN WATER



UNIT_WATER MANAGEMENT SYSTEM_GRAY WATER

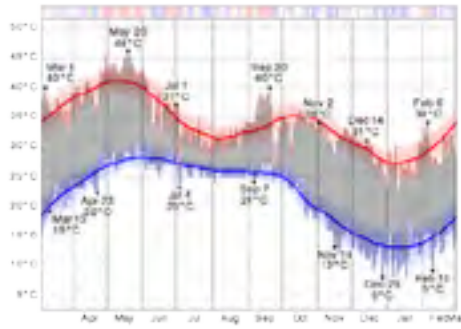


UNIT_WATER MANAGEMENT SYSTEM_BLACK WATER

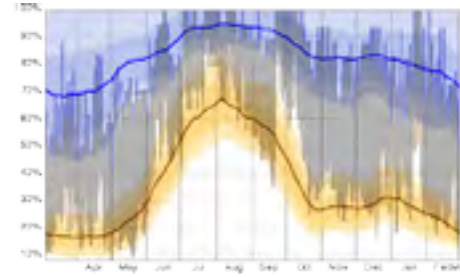


WATER MANAGEMENT SYSTEM: GOVERNMENT SUPPLY, RAIN WATER, GRAY WATER, BLACK WATER

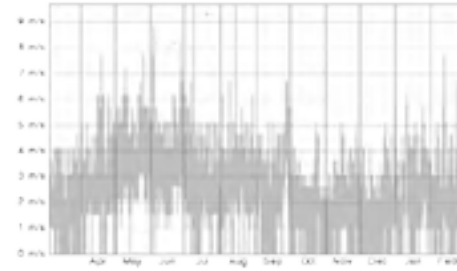
CLIMATIC CONSIDERATIONS



△ TEMPERATURE

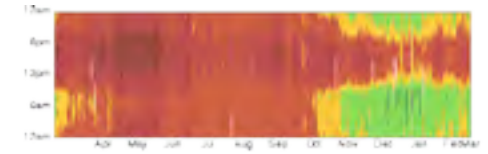


% HUMIDITY



WIND SPEED

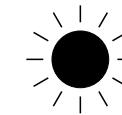
COLD IS DARK GREEN (0°C TO 10°C),
 COOL IS LIGHT GREEN (10°C TO 18°C),
 COMFORTABLE IS YELLOW (18°C TO 24°C),
 WARM IS LIGHT RED (24°C TO 29°C),
 HOT IS MEDIUM RED (29°C TO 38°C),
 SWELTERING IS DARK RED (ABOVE 38°C)



COMFORTABLE TEMPERATURES



NIGHT-TIME



DAY-TIME

<ul style="list-style-type: none"> ■ MONSOON △7° → TO LOWER HUMIDITY ■ WINTER △16° → TO GET OPTIMAL TEMP. ■ SUMMER △13° → TO LOWER TEMPERATURE ■ TRANSIT. T. △15° → TO GET OPTIMAL TEMP. 	<ul style="list-style-type: none"> → COOL DOWN BY WIND → HEAT UP BY HEAT-EXCHANGE → COOL DOWN BY WIND/HEAT-EXCHANGE → HEAT UP BY WIND/HEAT-EXCHANGE 	<ul style="list-style-type: none"> → COOL DOWN BY WIND → COOL DOWN BY WIND → COOL DOWN BY WIND/EV. COOLING → COOL DOWN BY WIND/EV. COOLING
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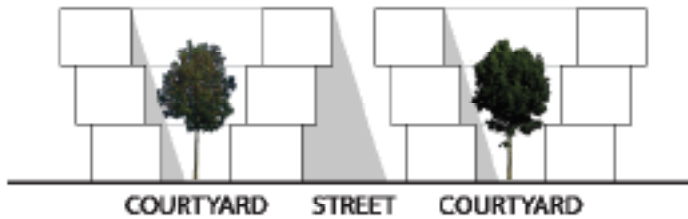
SOME IMPORTANT CLIMATIC CONSIDERATIONS

The courtyard is a holy element for indian, the energy from the earth finds it's way out in here, precluding the possibility to have a courtyard, and hence a semi-private green space is not an option for indians. whatever the price of the house, they are not going to buy it unless there's a piece of green area connected to it.

STRAIGHT EXTENSIONS



SHIFTED EXTENSIONS



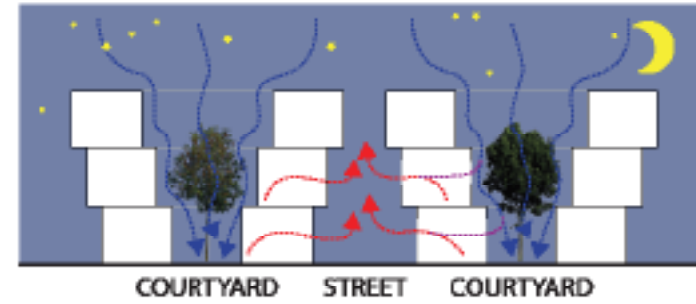
Furthermore, it's an important element from a climatic point of view. It can be used as a reservoir of cool air during the hottest summer and allows the possibility to create airflow in relation to the atmospheric pressure on the streets.

How it works is explained in the right-hand side diagrams...

SUMMER DAYLIGHT



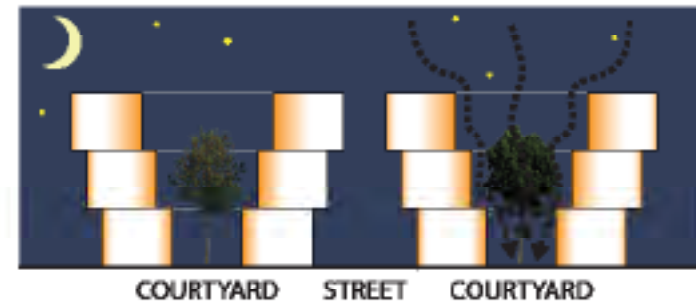
SUMMER NIGHT



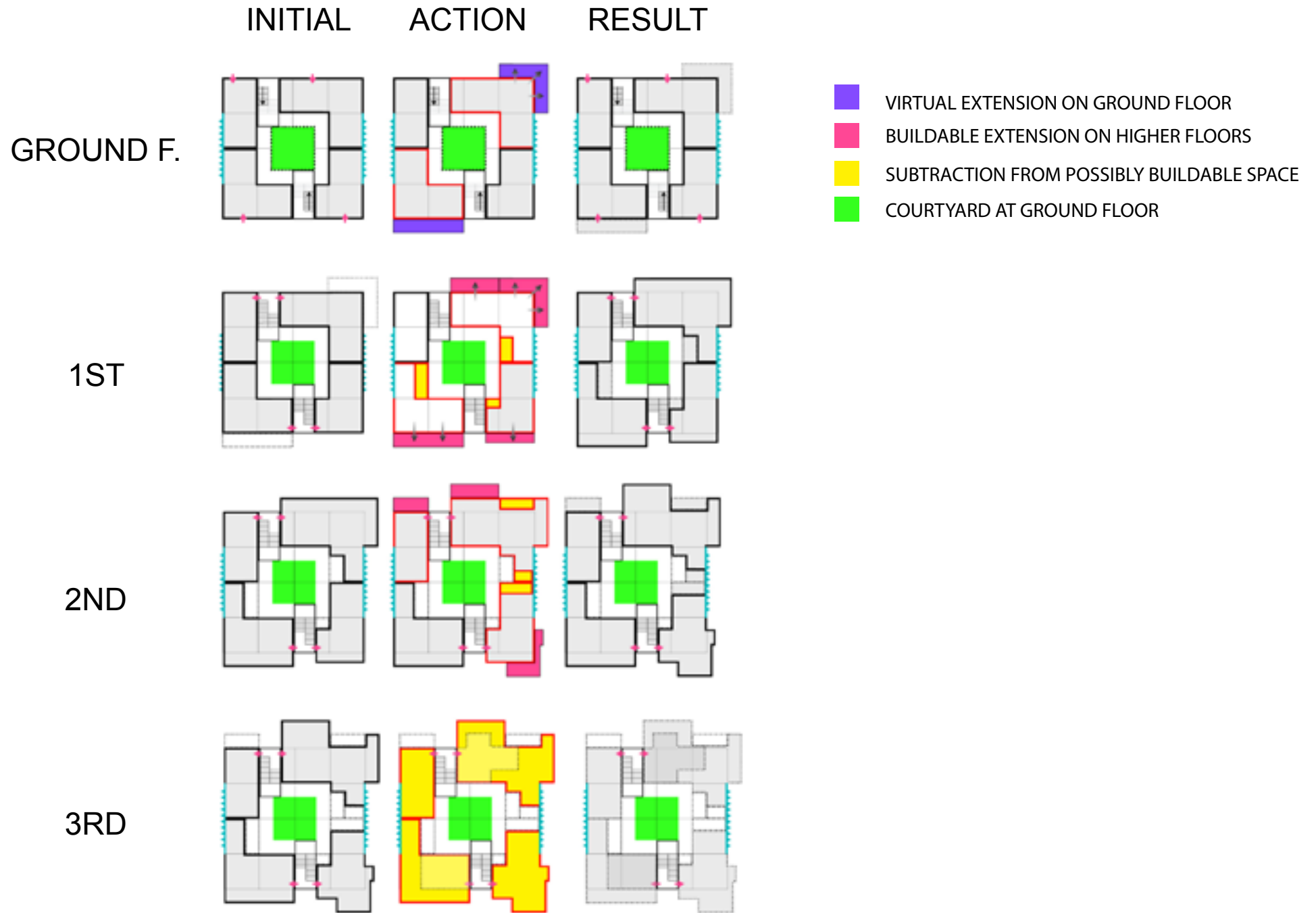
WINTER DAYLIGHT



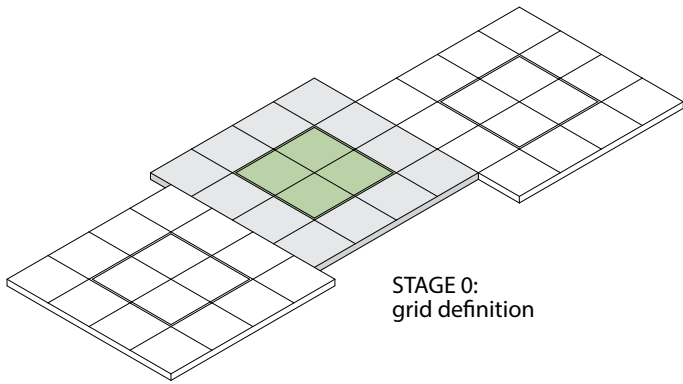
WINTER NIGHT



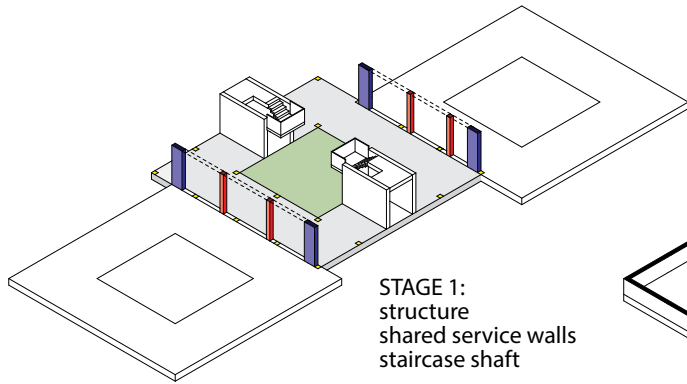
CLIMATE ANALYSIS | CLIMATE DESIGN



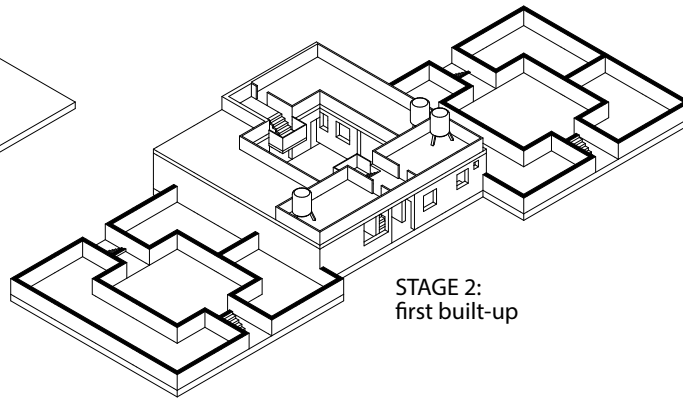
EXAMPLE OF PROGRESSIVE ADDITION FROM GROUND FLOOR SITUATION TO FINAL



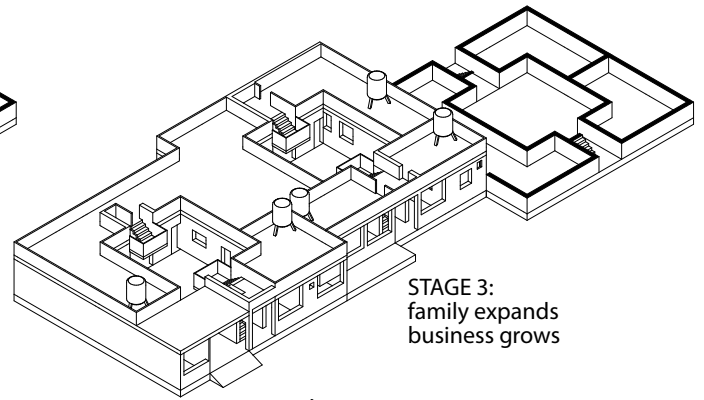
STAGE 0:
grid definition



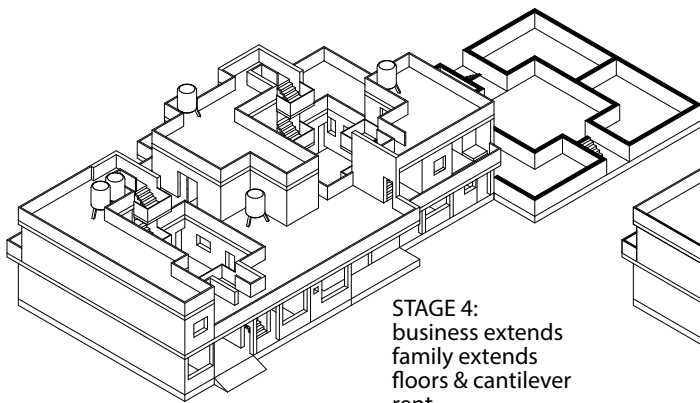
STAGE 1:
structure
shared service walls
staircase shaft



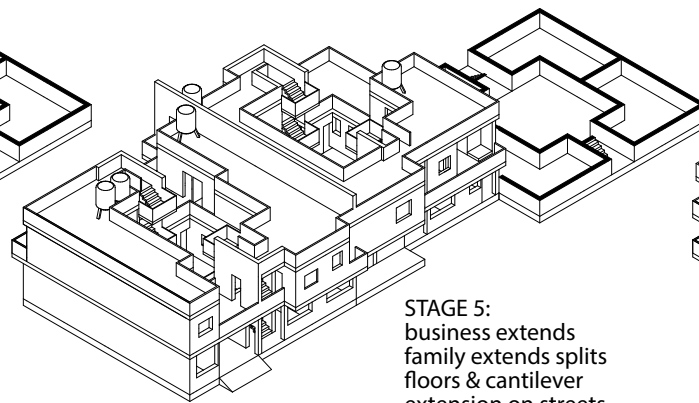
STAGE 2:
first built-up



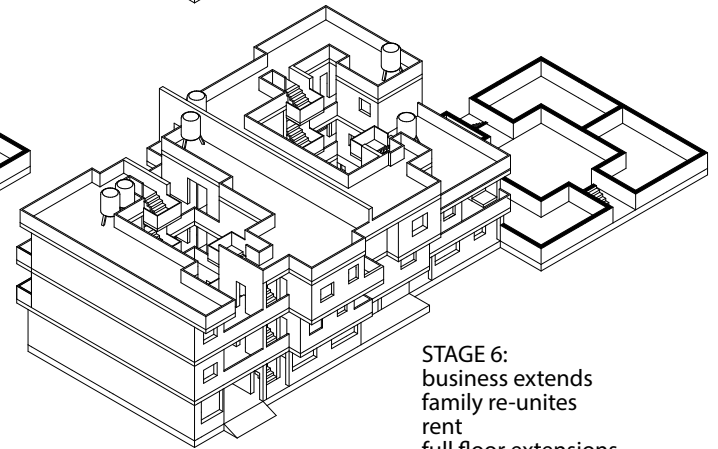
STAGE 3:
family expands
business grows



STAGE 4:
business extends
family extends
floors & cantilever
rent

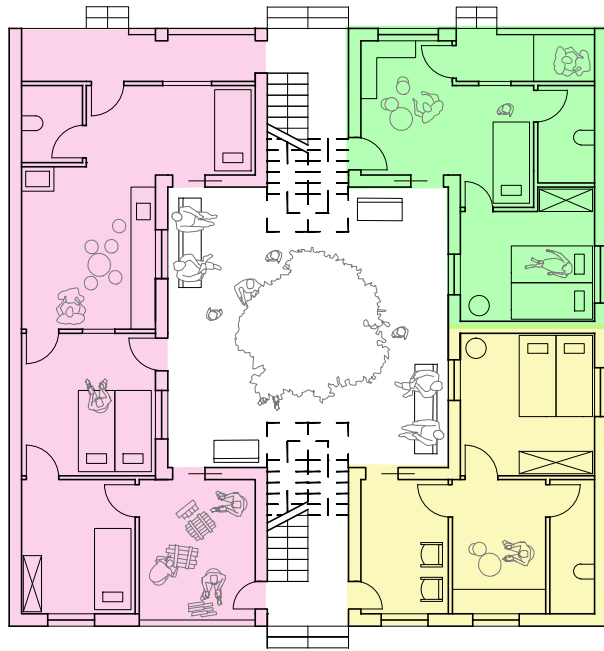


STAGE 5:
business extends
family extends splits
floors & cantilever
extension on streets



STAGE 6:
business extends
family re-unites
rent
full floor extensions

AXONOMETRIC VIEW OF SUBSEQUENTIAL ADDITION/EXTENSIONS



STAGE 2
GROUND FLOOR

Kaka and the brother make enough money. The brother is able to build his own house, establish his family and run his own activity. He's in good relationship with Kaka so the two share many parts of the house. The brother has a very big house so he decide that a part of it becomes a motorcycle parking room. He doesn't need a car and he wouldn't have money to own one.

Kantu is saving money for his future

The watchman is saving money too

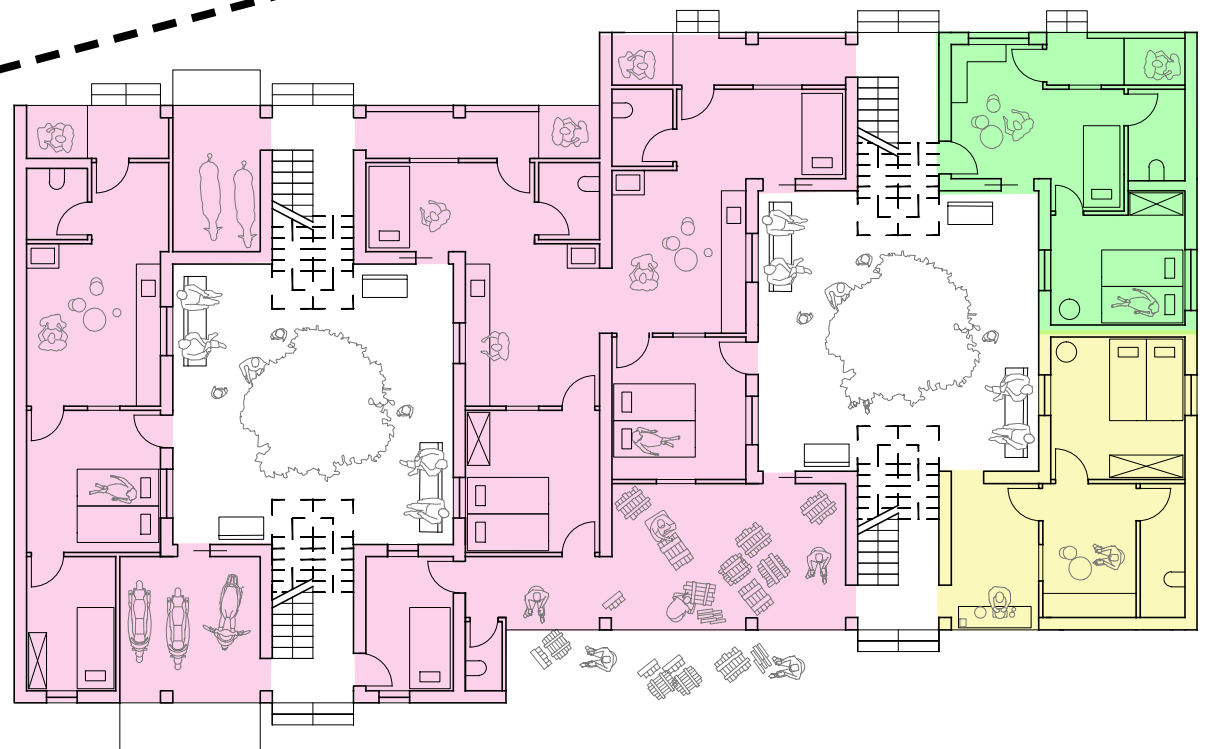
- GANPATH KAKA + brother + wife
- KANTU + brother + bhabhi + wife
- WATCHMAN (lives alone)

Kaka is a low-middle class worker. He invests a lot in his first house, together with savings of his brother. They together run a small wood workshop.

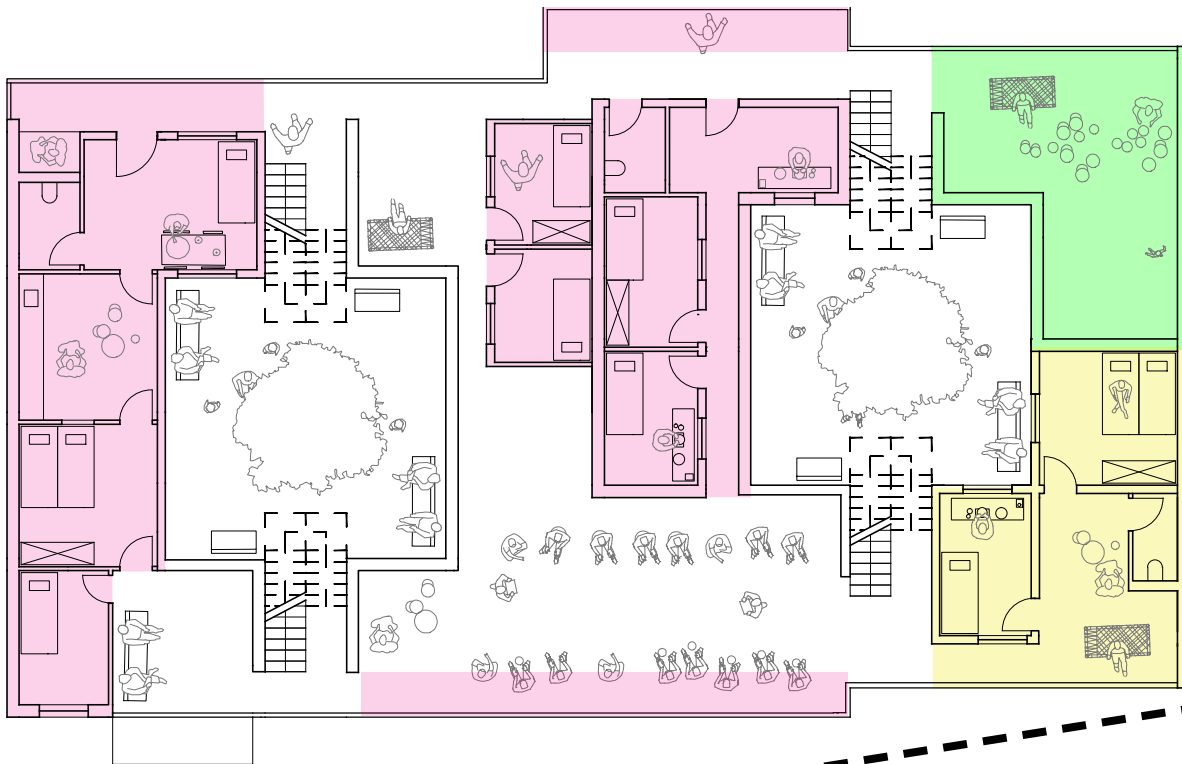
Kantu is an immigrant worker, he earns very little and work too much, his wife also contribute economically to earn some money for their future child.

The watchman is also an immigrant. His only aim is to make money, he has a wife back in his hometown. He works and send money monthly.

STAGE 3
GROUND FLOOR



EXTENSION: STAGE 2 & 3



Kaka and the brother are having lots of child, their houses aren't big enough and also have enough money at this stage to build a 1st floor on which will take place individual rooms for every child. Furthermore they want to have a big shared terrace where kids can play and they can even sleep all together during hot summer nights.

Kantu has now a small business with his wife, he's making more and more money. He needs storage space and he's using the rooftop. Unfortunately for him, he's not yet economically able to build an extension as Kaka did.

The watchman spent all the money he made to extend and subrent the 1st floor to some stranger just to have more money.

STAGE 4

1ST FLOOR

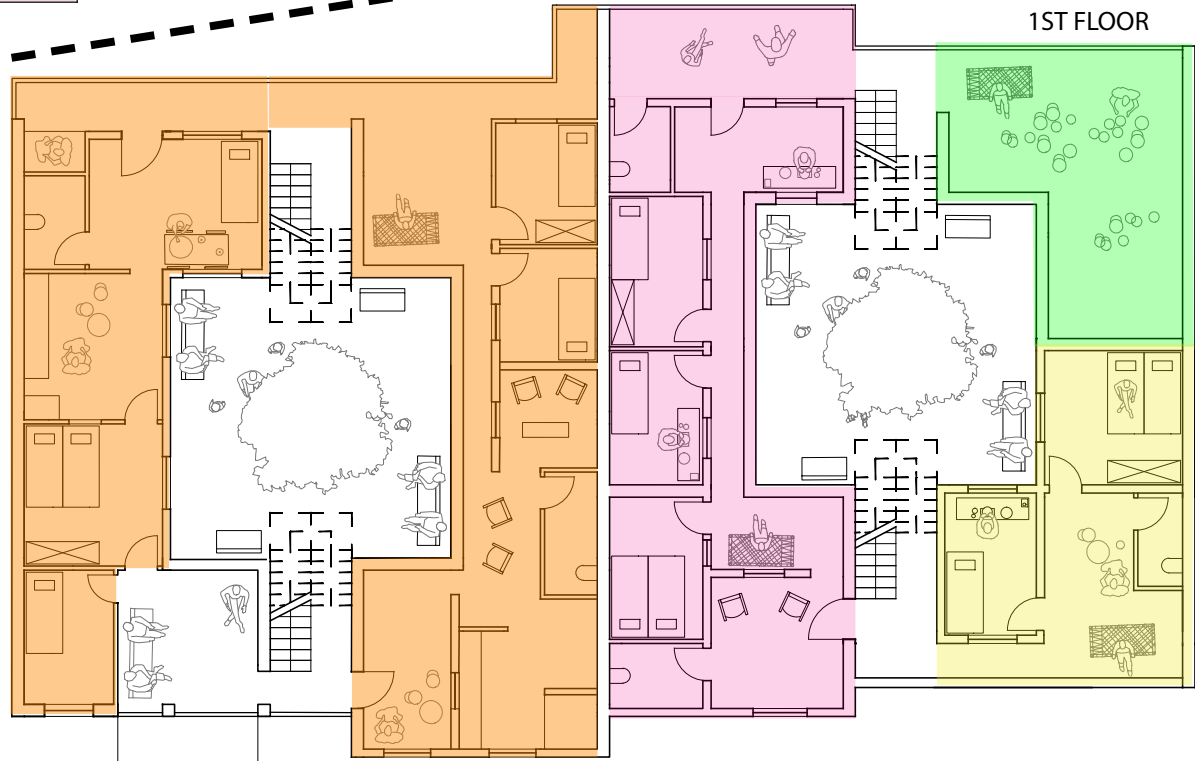
As expected, more money brings trouble. For some reason Kaka and the brother had a very deep argument which could only be solved through a break between their lives. They decide together to split up and to build a dividing wall. Now everybody is limited by a boundary and they both decide to build up other rooms for undisclosed future purposes.

■ KAKA'S BROTHER + WIFE + 3 CHILDS

Kantu's business grow even more, he's almost ready to extend

The watchman is earning a lot on money now.

EXTENSION: STAGE 4 & 5

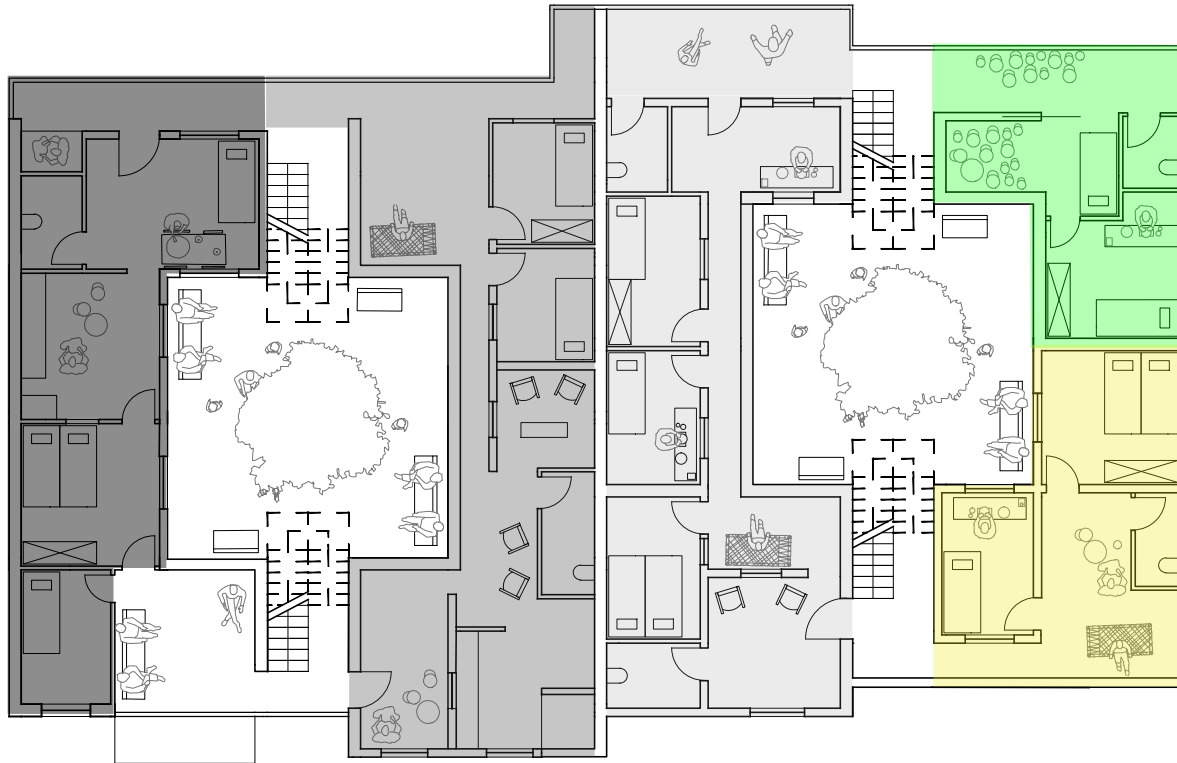


STAGE 5

1ST FLOOR

STAGE 6

2ND FLOOR



- SON OF KAKA'S BROTHER + WIFE
- COUSIN ON RENT
- DAUGHTER OF KAKA'S BROTHER + HUSBAND + 1 CHILD

Finally the kids are grown up and "ready" for marriage.

They are going to leave the parent's house, leaving also lot of unused space which both Kaka and the brother decide to subrent.

Some son has not enough money to go out and establish his own family, he's then forced to stay and build his house at the top of the previous extension, adding a final 2nd floor.

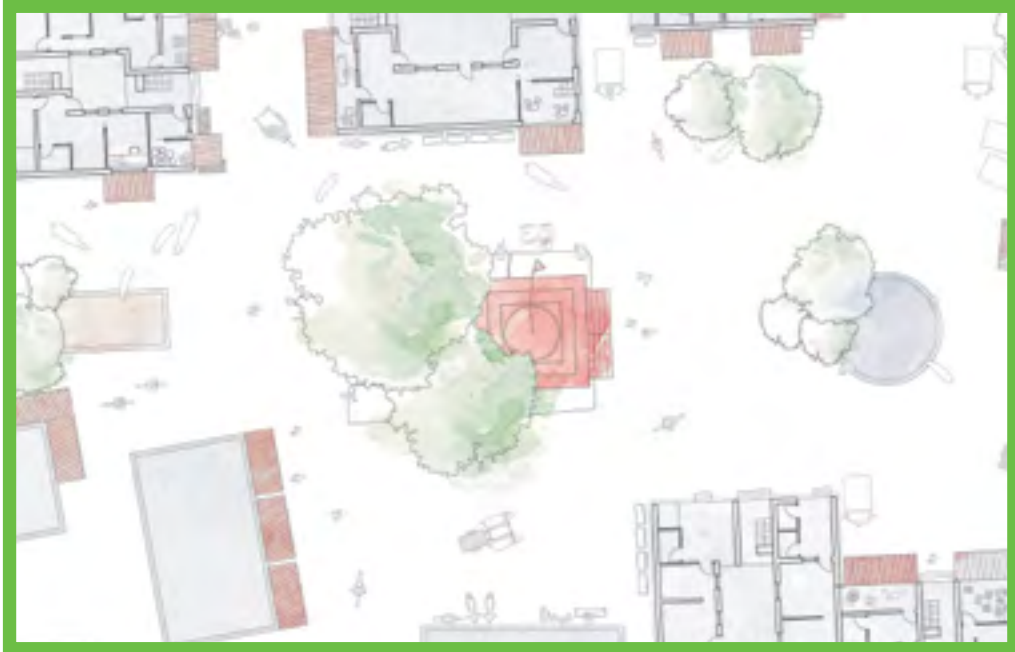
Since the extension was almost full, Kaka's brother decide also to build a floor just to give it on rent to a beloved cousin.

Kantu is finally able to extend his house, he has lot of money. He builds 2 floors together, and reconsider the distribution of the spaces inside the house. The second floor is used both for storage and as study room. Ground floor and first floor can now host individual functions.

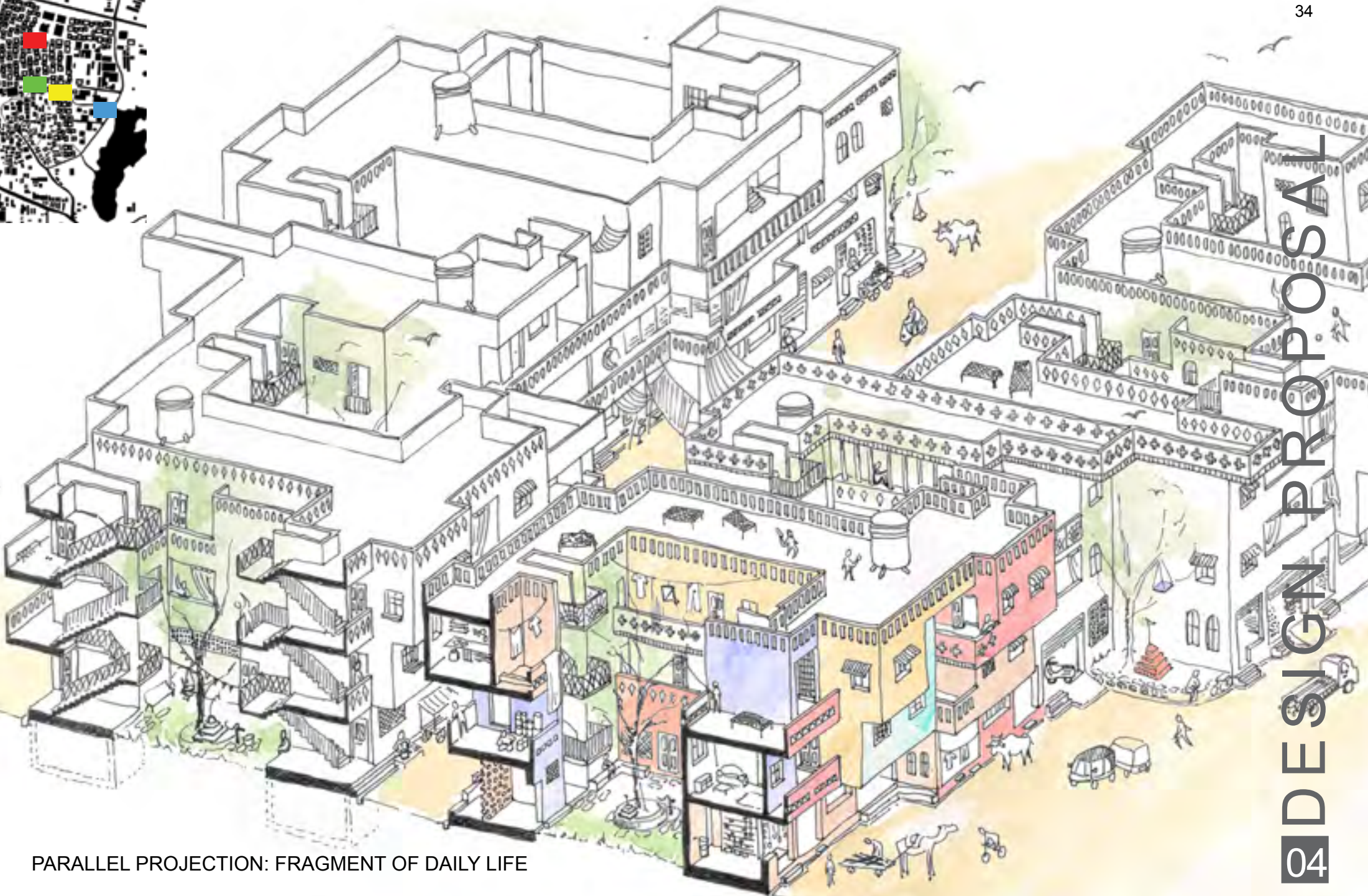
The watchman is finally able to go back to his hometown, but somehow he fall in love with Ahmedabad and asks his wife and children to come and live together in his (at this stage) big house.

EXTENSION: STAGE 6 (FINAL)

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CLOSE-UP SCENERIES. FRAGMENTS OF DAILY LIFE IN OUR NEW INTERVENTION



PARALLEL PROJECTION: FRAGMENT OF DAILY LIFE

04 DESIGN PROPOSAL