The core-munal

The proposal focuses on the rural urban migration aspect that is one of the leading factors for the housing shortage in Maseru, Lesotho. This movement towards the urban center is triggered by the idea that better employment opportunities can be availed and thereby a better living standard. However, with limited employment opportunities the situation becomes direr than before. Our proposal therefore focuses on creating not just a house but also a neighborhood that can help sustain the residents in manners they cannot individually.

Inspired by the modernist notion of a core with in design aspects, the individual house and the neighborhood is designed around a central core. Within the neighborhood, it acts as a space where the residents can utilize their skill sets to produce goods (the production space) and within the house, it holds the service spaces. As per our research, some common skill sets are weaving, shoe making and dyeing.

Surrounding the production space is the space for the agricultural purposes. Maserus' soil does not hold an adequate amount of nutrients to allow crop growth. Coupled with the fact that households generally do not have enough money to purchase fertilizers, the dry waste from individual houses will be utilized to provide the necessary nutrients. One barrel is provided for every two residential units to collect the dry waste.

Ten residential units are then stacked around the production space and the agricultural space. The housing units are made up of three types. The system employed has a ground floor unit, a ground plus one and a ground plus two unit. Frame structures are to be provided for all units with the top units constructed to completion. The left over spaces beneath the ground plus one and ground plus two units are to be utilized as per need. The ground floor unit can be occupied by the elderly. The other two can be used for expecting families and larger families.

The individual unit is designed around a core that that holds the kitchen space and the bathroom space. The core allows the peripheral spaces to be easily utilized by the bedrooms and the living spaces.

The material pallete for the house includes the vernacular construction techniques for the roof - thatch and wooden rafters, recycled plastic bottles with in an MS frame for the exterior walls layered with thatch and lime and MDF panels for the interior walls.

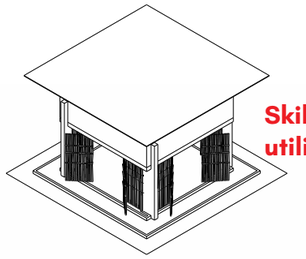
The roof structure for the house is an inverted form of the vernacular canopy roof. It is inspired by the 'ulta chatta (inverted umbrella)' used to collect rainwater. The channel collects water from the individual houses into a rain water filtration tank and then to the communal water tank.

Principles Of Design

The design follows four principles that allows the households to flourish.

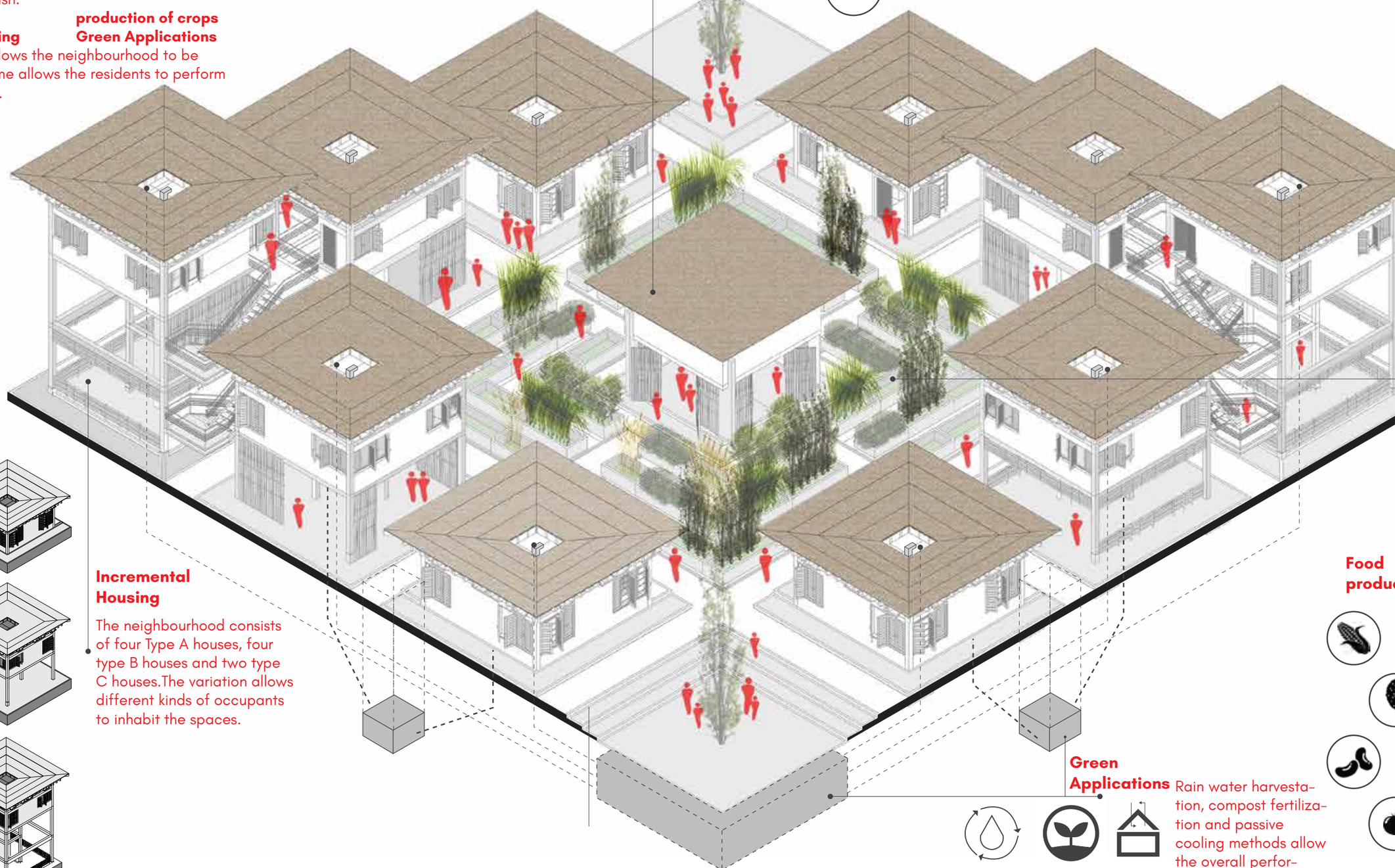
Skill utilization **production of crops**
Incremental Housing **Green Applications**

While the design allows the neighbourhood to be low-cost, the scheme allows the residents to perform productively aswell.



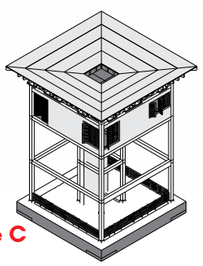
Skill utilization

Common skill sets found with in the rural areas include Weaving, shoe making and dyeing. The provided space can be used to produce these goods for selling purposes.



Type A

Type B



Type C

Incremental Housing

The neighbourhood consists of four Type A houses, four type B houses and two type C houses.The variation allows different kinds of occupants to inhabit the spaces.

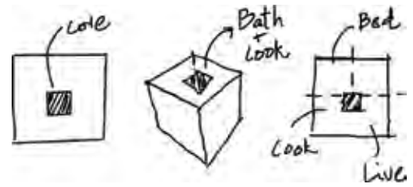
Food production

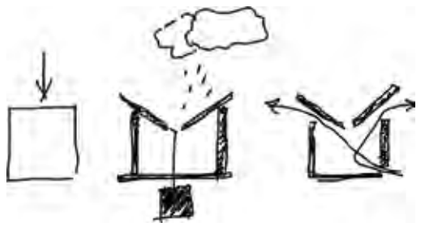
Green Applications

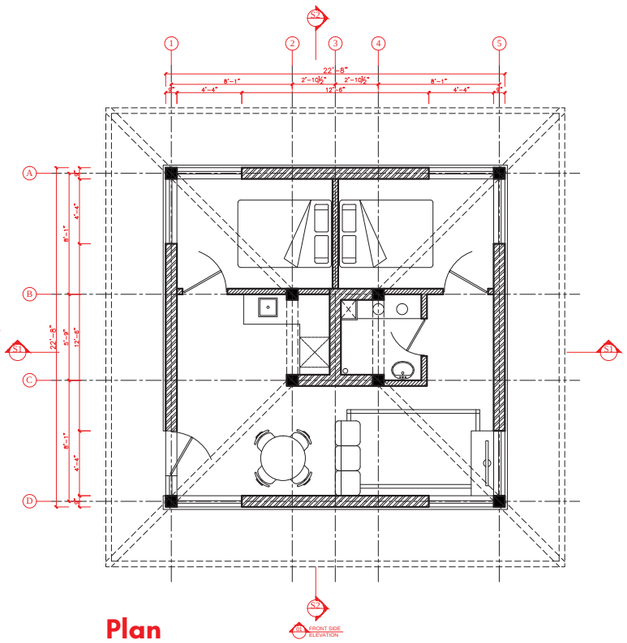
Rain water harvestation, compost fertilization and passive cooling methods allow the overall performance cost of the neighbourhood to reduce considerably.

A single House.

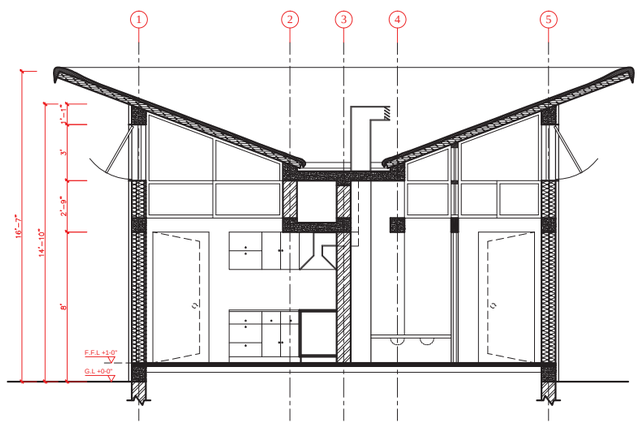
The individual unit is designed around a core that that holds the kitchen space and the bathroom space. The core allows the peripheral spaces to be easily utilized by the bed-rooms and the living spaces.
The material pallete for the house includes the vernacu-lar construction techniques for the roof - thatch and wooden rafters, recycled plastic bottles with in an MS frame for the exterior walls layered with thatch and lime and MDF panels for the interior walls.
The roof structure for the house is an inverted form of the vernacular canopy roof. It is inspired by the 'ulta chatta (inverted umbrella)' used to collect rainwater. The channel collects water from the individual houses into a rain water filtration tank and then to the com-munal water tank.



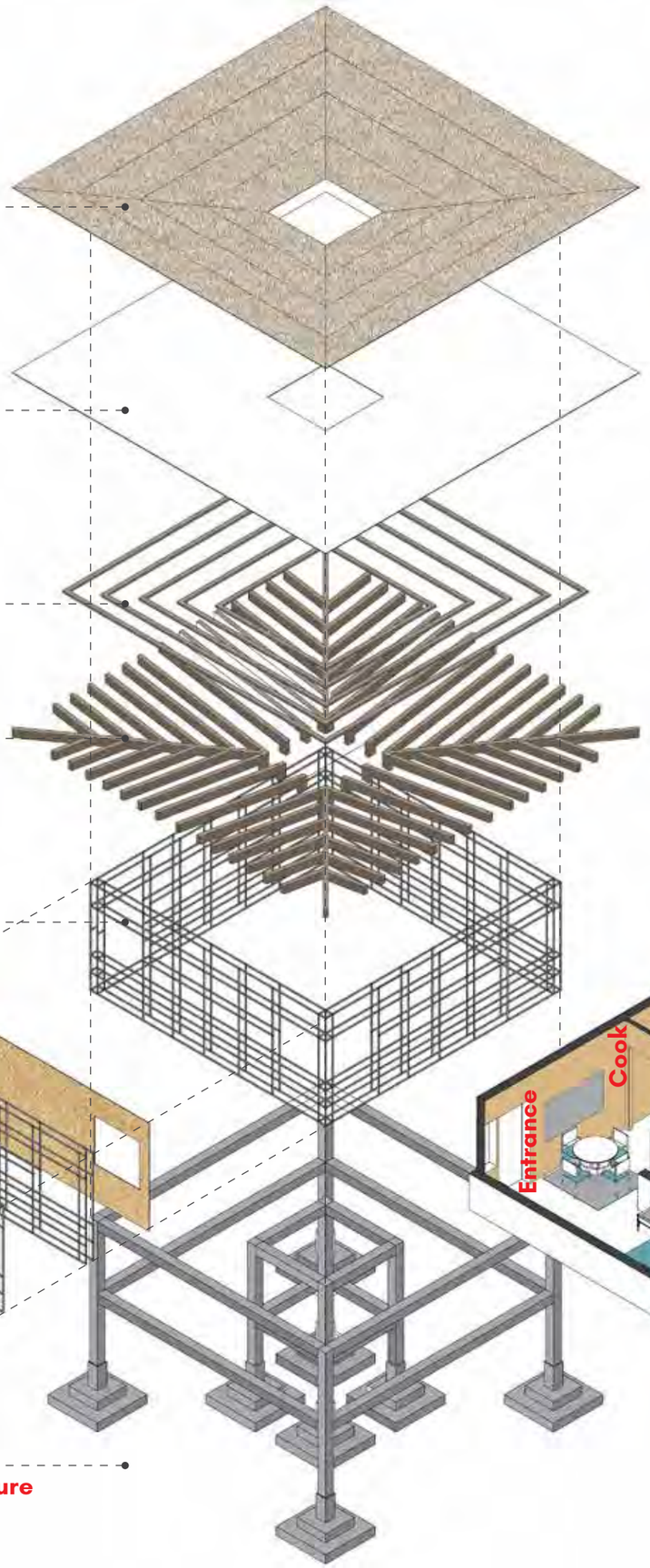




Plan



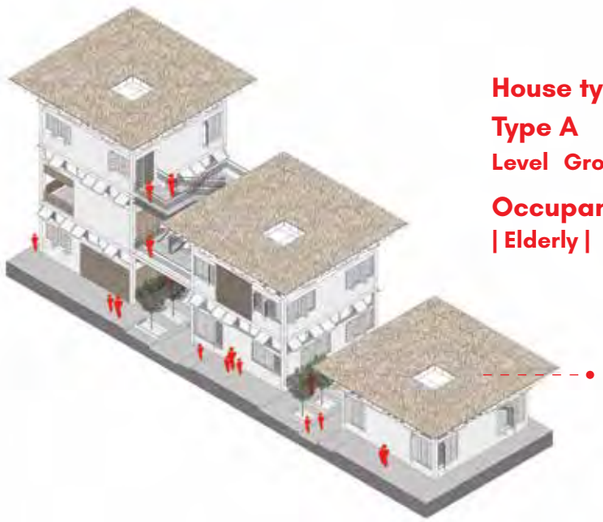
Section



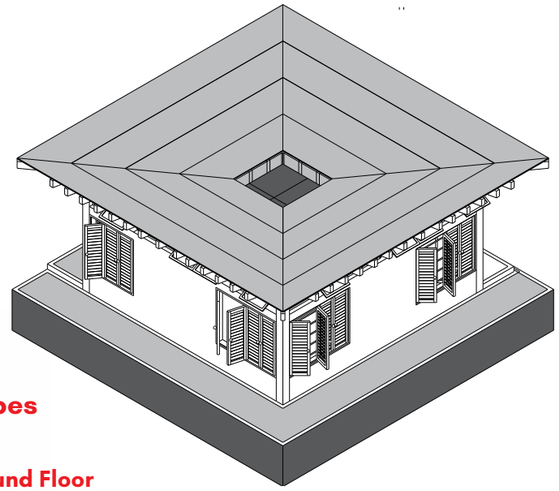
Layout

Incremental Housing.

The neighbourhood consists of four Type A houses, four type B houses and two type C houses.The variation allows different kinds of occupants to inhabit the spaces. The variation also allows the space below the house types B and C to be utilized as communal spaces for different activities



Incremental housing in its mature state would find all the levels occupied to full capacity.



House types

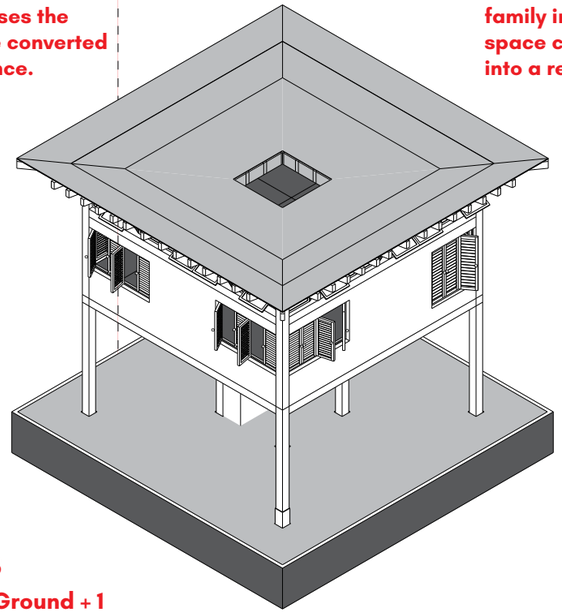
Type A

Level Ground Floor

Occupancy

| Elderly |

Space to be utilized as per need.
- once the size of the family increases the space can be converted into a residence.



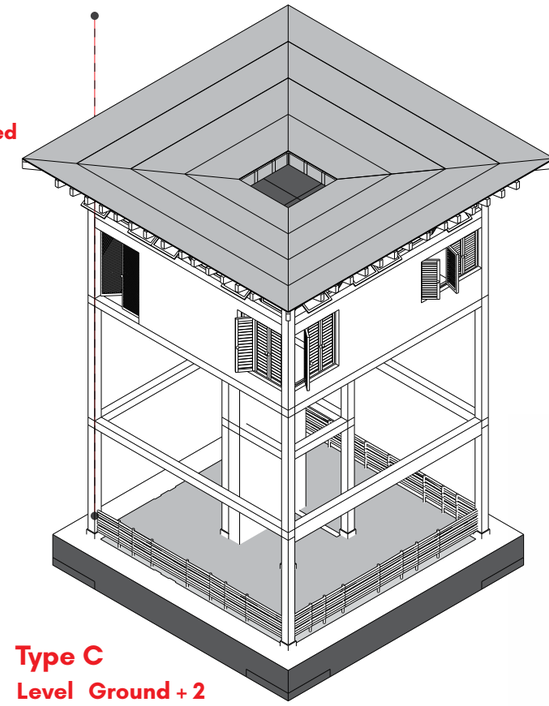
Type B

Level Ground + 1

Occupancy

| Working People |

Space to be utilized as per need.
- once the size of the family increases the space can be converted into a residence.



Type C

Level Ground + 2

Occupancy

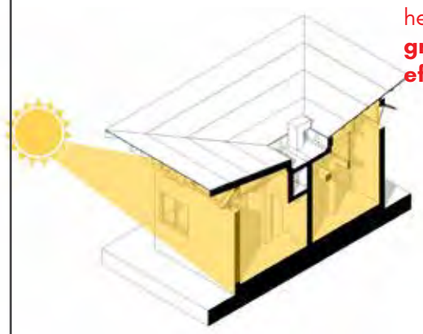
| Extended Families |

Green Applications.

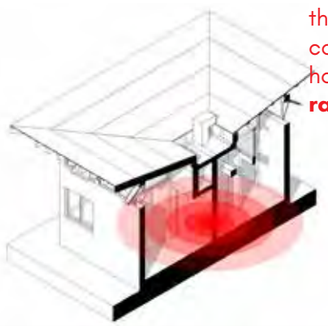
Rain water harvestation, compost fertilization and passive cooling methods allow the overall performance cost of the neighbourhood to reduce considerably.

Applications in a single house

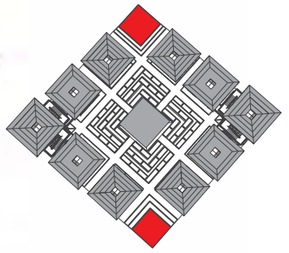
The ventilators and glass partions above lintel level cools the place through stack effect and cross ventilation in Summers and heats the space by **greenhouse effect** in winters.



Using the concept of Kanger, The cooking area at the center of the core heats up the house through **radiant energy**.

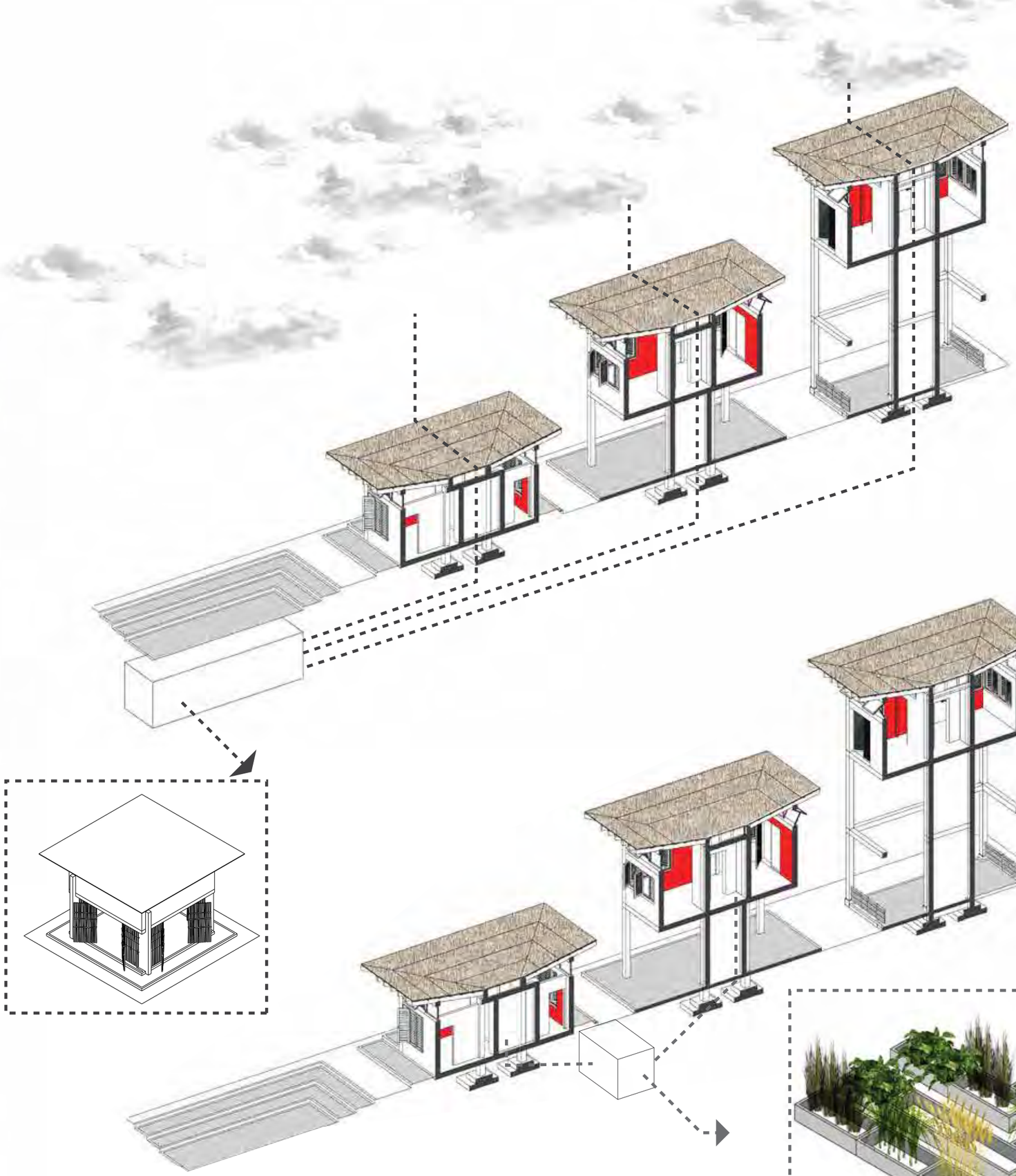


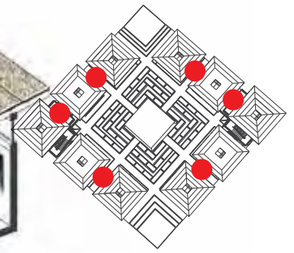
Applications in a Neighbourhood



Rain water harvestation

Water collected from indivdual houses is collected in a rain water filteration tank that is then transfered to the collective neighbourhood tank.



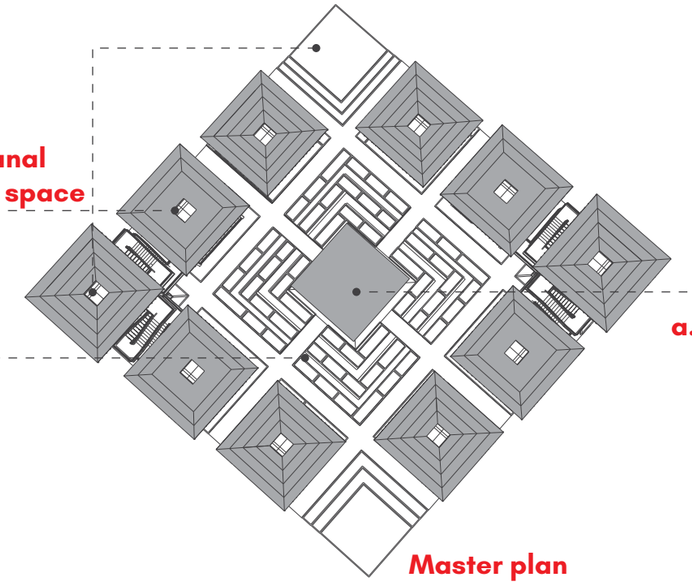


Compost Fertilization

Dry waste from the residential units is collected and used to fertilize crops.

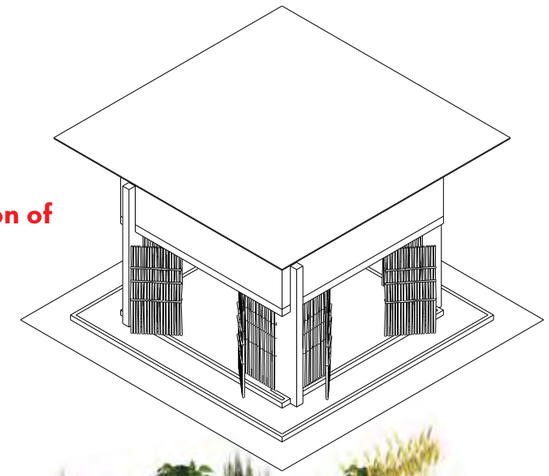
Production and exchange space.

Common skill sets found with in the rural areas include Weaving, shoe making and dyeing. The provided space can be used to produce these goods for selling purposes.

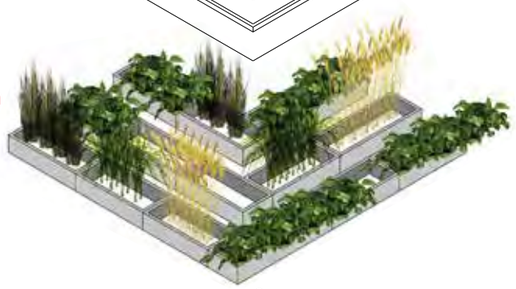


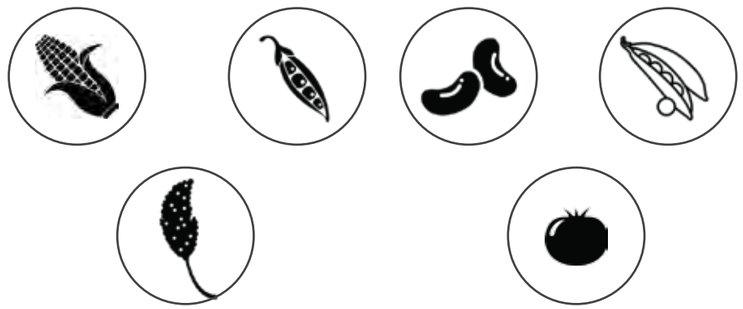
Master plan

a. utilization of skillsets

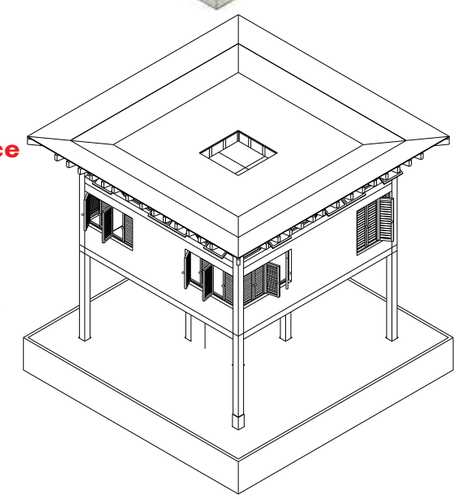


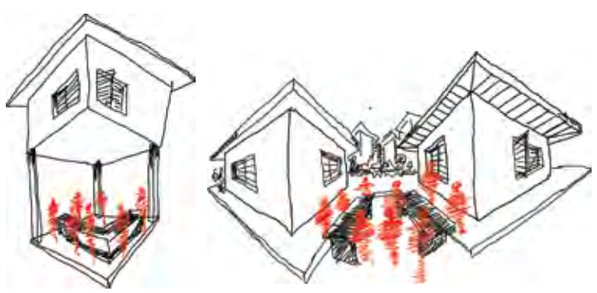
b. Production of crops





c. Communal market space





THE CORE-MUNAL

The proposal focuses on the rural urban migration aspect that is one of the leading factors for the housing shortage in Maseru, Lesotho. This movement towards the urban center is triggered by the idea that better employment opportunities can be availed and thereby a better living standard. However, with limited employment opportunities the situation becomes direr than before. Our proposal therefore focuses on creating not just a house but also a neighborhood that can help sustain the residents in manners they cannot individually.

Inspired by Lesotho's traditional communal geometries, the community and the house is designed around a supportive core – where the residents can produce food and manufacture goods to establish a self-sustainable community.

To reduce the running cost of the house and by extension the community, green aspects are incorporated – from rainwater harvesting, passive cooling methodologies, compost fertilization, recycled plastic for insulation purposes. The proposal actively looks at living as a sustainable communal activity.

BOQ FOR A SINGLE UNIT "CORE-MUNAL"

TOTAL COVERED AREA 517 SFT

CIVIL WORKS | STRUCTURE

JOB	QUANTITY	RATE (PKR)	TOTAL (PKR)
RCC Columns	56 CFT	500 / CFT	28000
RCC Beams	174.6 CFT	450 / CFT	78570
RCC Slab	27 CFT	450 / CFT	12150
			GRAND TOTAL 118720 PKR
			GRAND TOTAL 848 USD

ARCHITECTURE WORKS

JOB	QUANTITY	RATE (PKR)	TOTAL (PKR)
Carpentry | MDF WALLS| Cabinetry	1134 SFT	2000 / 32 SFT	70875
UPVC Doors	4	1400 / PC	5600
			GRAND TOTAL 76475 PKR
			GRAND TOTAL 546 USD

METAL WORKS

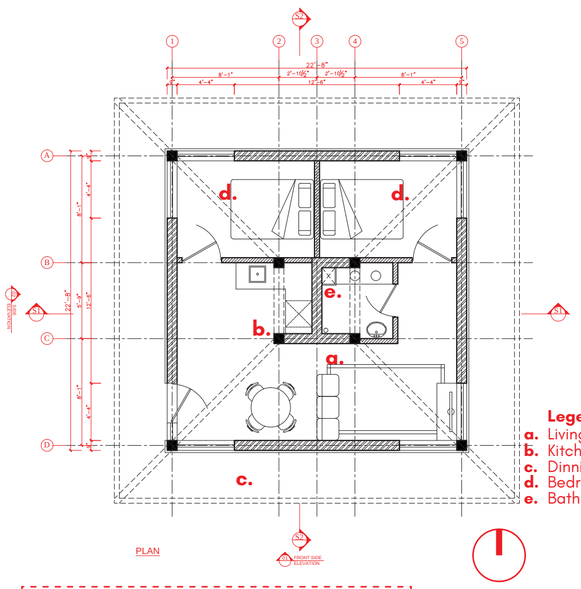
JOB	QUANTITY	RATE (PKR)	TOTAL (PKR)
MS Single glazed Windows	1280 SFT	120 / SFT	153600
1" Hollow Pipe MS Frame	1700 RFT	100 / RFT	170000
			GRAND TOTAL 323600 PKR
			GRAND TOTAL 2300 USD

PLUMBING

JOB	QUANTITY	RATE (PKR)	TOTAL (PKR)
20mm DIA Water Supply pipe	8 RFT	198 / RFT	1600
UPVC Drainage Pipe	1	5000 / pc	5000
P-Trap Connection	2	24 / pc	48
110 mm DIA Roof Drainage Pipe	1	5000	5000
			GRAND TOTAL 11648 PKR
			GRAND TOTAL 83 USD

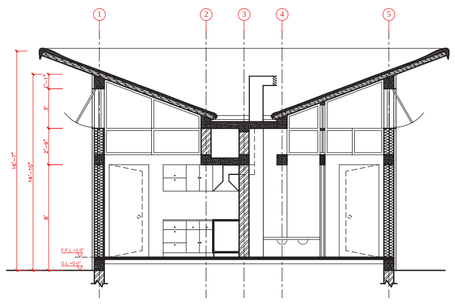
TOTAL COST FOR CONSTRUCTION 530442 PKR

TOTAL COST FOR CONSTRUCTION 3777 USD

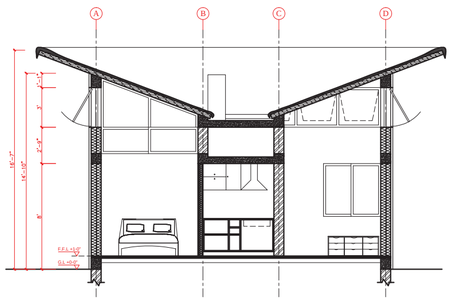


PLAN

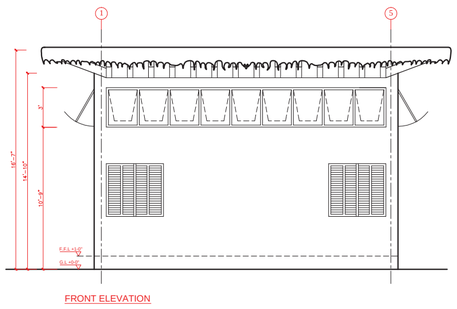
Legend
- **a.** Living Room
- **b.** Kitchen
- **c.** Dinning space
- **d.** Bedroom
- **e.** Bathroom



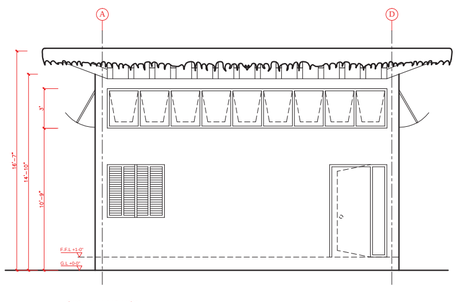
SECTION S-1



SECTION S-2



FRONT ELEVATION



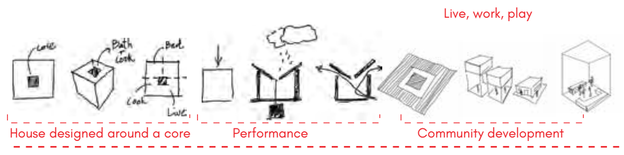
SIDE ELEVATION

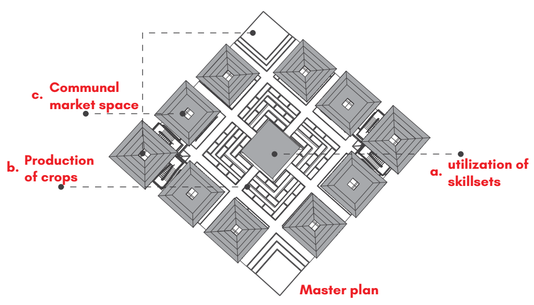
A Core-munal

The project focuses on the rural-urban migration aspect which aggravates the housing crisis and by extension deteriorates the living standards of people. Our proposal therefore focuses on creating not just a house but also a neighborhood that can help sustain the residents in manners they cannot individually.
Inspired by Lesotho's traditional communal geometries, the community and the house is designed around a supportive core. Within the neighborhood, it acts as a space where the residents can utilize their skill sets to produce goods (the production space- As per our research, some common skill sets are weaving, shoe making and dyeing) and within the house, it holds the service spaces.
Surrounding the production space is the space for the agricultural purposes. Maserus' soil does not hold an adequate amount of nutrients to allow crop growth. Coupled with the fact that households generally do not have enough money to purchase fertilizers, the dry waste from individual houses will be utilized to provide the necessary nutrients. One barrel is provided for every two residential units to collect the dry waste.
Ten residential units are then stacked around the production space and the agricultural space. The housing units are made up of three types. The system employed has a ground floor unit, a ground plus one and a ground plus two unit. Frame structures are to be provided for all units with the top units constructed to completion. The left over spaces beneath the ground plus one and ground plus two units are to be utilized as per need. The ground floor unit can be occupied by the elderly. The other two can be used for expecting families and larger families.

Passive heating and cooling

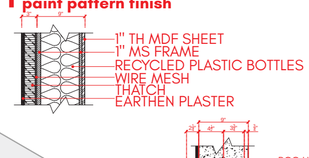
Process

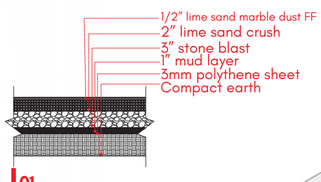




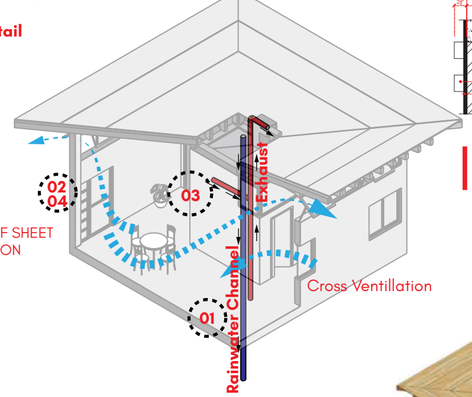
Details

02 External walls with paint pattern finish



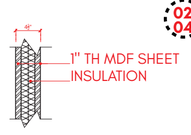


01 Flooring Detail



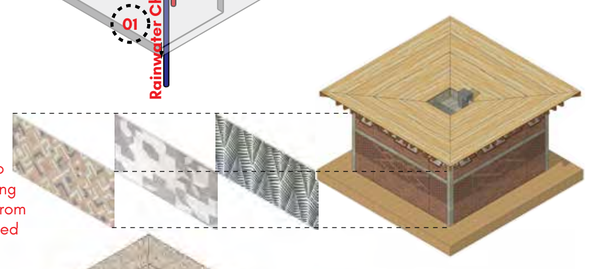
04 External walls with brick & earthen plaster finish

03 Internal Walls



Identity

In order to allow a sense of ownership and idenity - the residents are encouraged to design the facades according to their own preferences - from brick arrangements to painted facades.



Type C

Ground + 2 unit.
Occupants: Larger families.

Type B

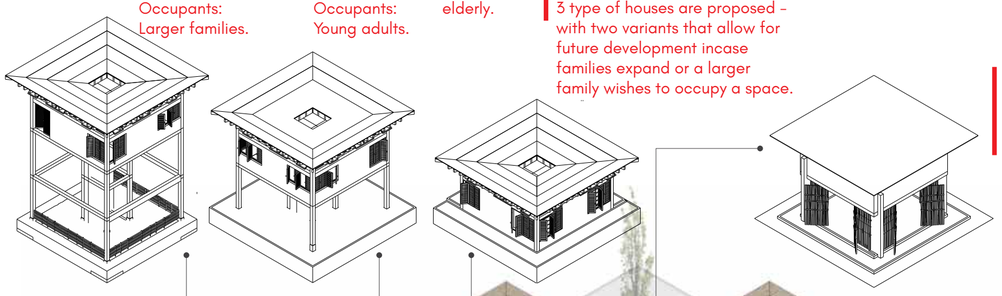
Ground + 1 unit.
Occupants: Young adults.

Type A

Ground unit.
Occupants: elderly.

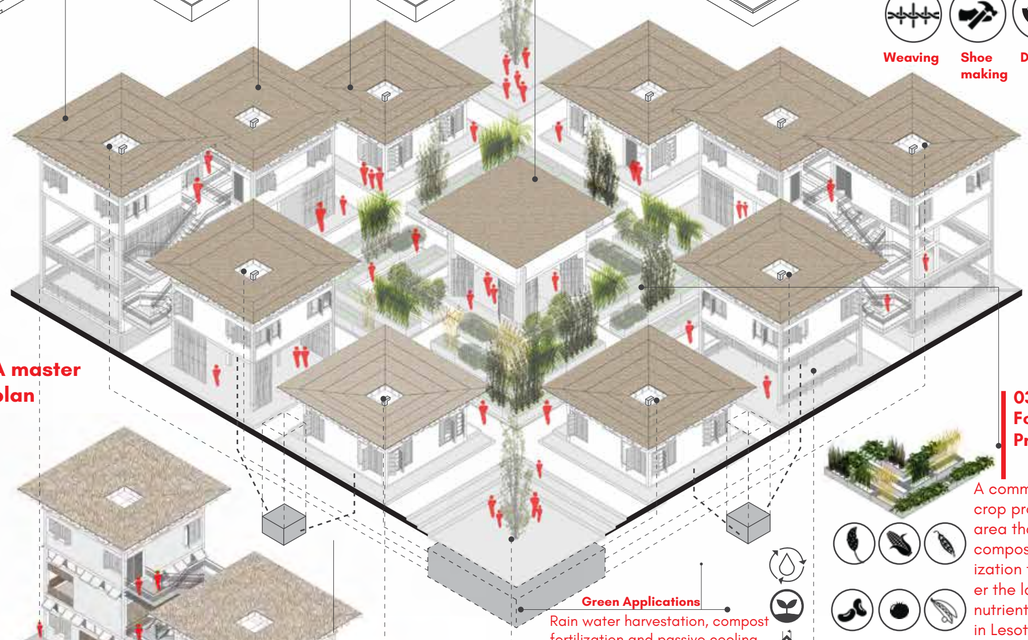
01 Incremental Housing

3 type of houses are proposed - with two variants that allow for future development incase families expand or a larger family wishes to occupy a space.



02 Skill utilization

To utilize the skill sets they already own and use it for financial stability - a space is provided.



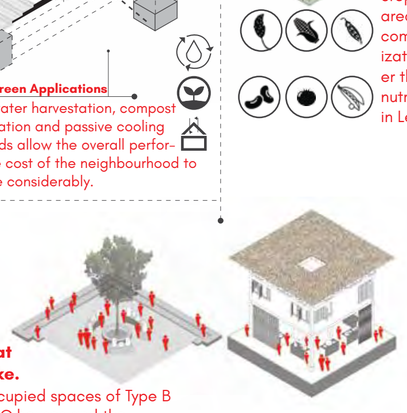
A master plan

03 Food Production

A communal crop production area that utilizes compost fertilization to counter the lack of nutrients found in Lesothos soil.

Green Applications

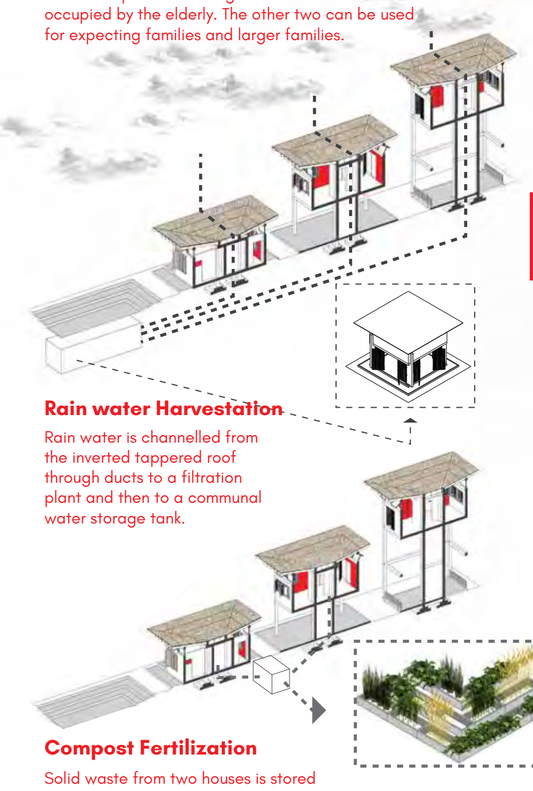
Rain water harvestation, compost fertilization and passive cooling methods allow the overall performance cost of the neighbourhood to reduce considerably.



04 Sell what you make.

The unoccupied spaces of Type B and type C houses and the courtyards can be utilized for the function of selling the produced goods - crops and products alike.

Incremental housing in its mature state would find all the levels occupied to full capacity.



Rain water Harvestation

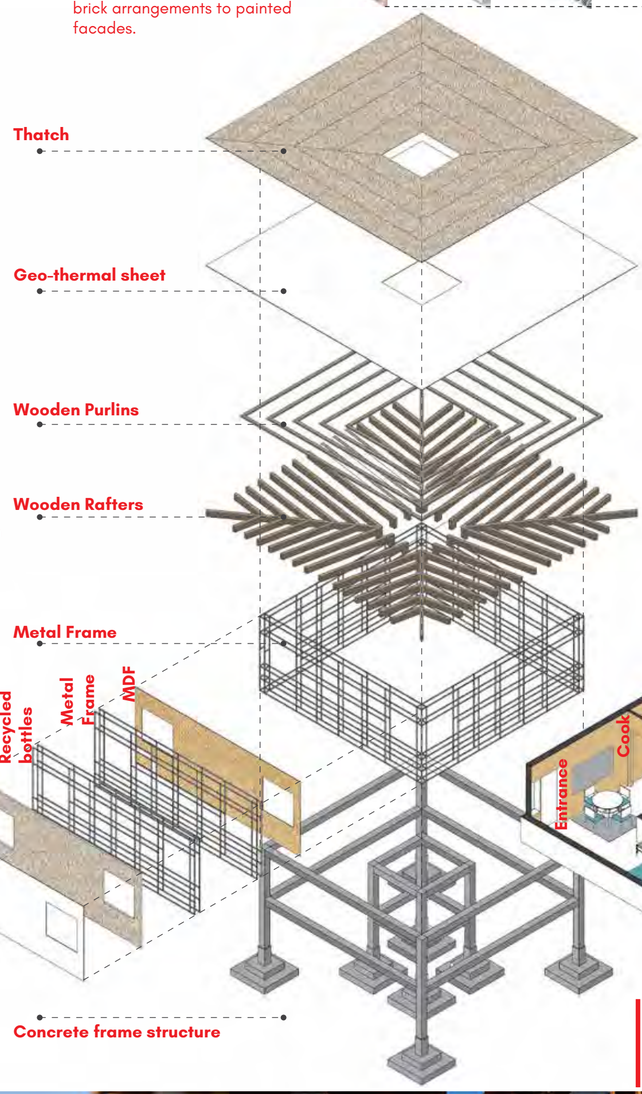
Rain water is channelled from the inverted tappered roof through ducts to a filtration plant and then to a communal water storage tank.

Compost Fertilization

Solid waste from two houses is stored in a compost tank. The waste is then used as a fertilizer for the crops that feed the small community.

A single unit

The individual unit is designed around a core that that holds the kitchen space and the bathroom space. The core allows the peripheral spaces to be easily utilized by the bedrooms and the living spaces.
The material pallete for the house includes the vernacular construction techniques for the roof - thatch and wooden rafters, recycled plastic bottles with in an MS frame for the exterior walls layered with thatch and lime and MDF panels for the interior walls.
The roof structure for the house is an inverted form of the vernacular canopy roof. It is inspired by the 'ulta chatta (inverted umbrella)' used to collect rainwater. The channel collects water from the individual houses into a rain water filtration tank and then to the communal water tank.



Explode Axonometric Single unit