HONEY HOUSES

WORKING TO SOLVE THE HOUSING ISSUES OF LESOTHO

PROJECT DESCRIPTION

Example of a traditional Lesotho rondavel

My primary design focus is the lack of vernacular design evolution in Maseru's architecture. Vernacular design has proven not only to provide buildings with sustainability and longevity, but also to support the communities culture.

Using a traditional Rondavel as my starting point, I evolved the key design elements into somethings that's:

Modular
Prefabricated
Uses local but cost efficient materials

Using modular units will combat the uneconomic use of land in Lesotho. Many of the smaller homes are detached, as well as being single story. This is not a sustainable model in terms of land usage. Modular units provide the dwellers with flexibility in how their home is attached to others. The community has the freedom to create its own neighbourhoods with each additional building. This avoids bringing the monotony of a westernised terrace and again encourages the bringing together of a community.

Example of Modular Architecture using a cube structure

Prefabricated parts have been chosen for a variety of reasons:

cost efficiency
Time to construct
Ease of construction
Safer construction

The ease of having a catalogued, prefab system means that each dwelling can be tailored to the customers needs quickly and with ease.

Even though the parts are prefabricated, the units still provide jobs to the local people. I have designed the units will be constructed of local materials where-ever possible.

The plan of each unit takes the shape of a hexagon, which is the core concept of my design. The shape was chosen because:

Of its similarity to a traditional rondavels shape
It tessellates
Avoids westernised 'blocks'

In addition, the internal layout and external appearance can evolve into an easily constructed, modern Rondavel, providing an architectural link to the traditional culture. The use of a hexagon rather than a circular shape is something that makes the modern rondavel work in modern conditions, meaning that the design can be easily modified and extended.

Hexagonal shapes used in nature for durability and tessellation

Using this shape will inform construction and the use of prefabrication. Each unit will include the following:

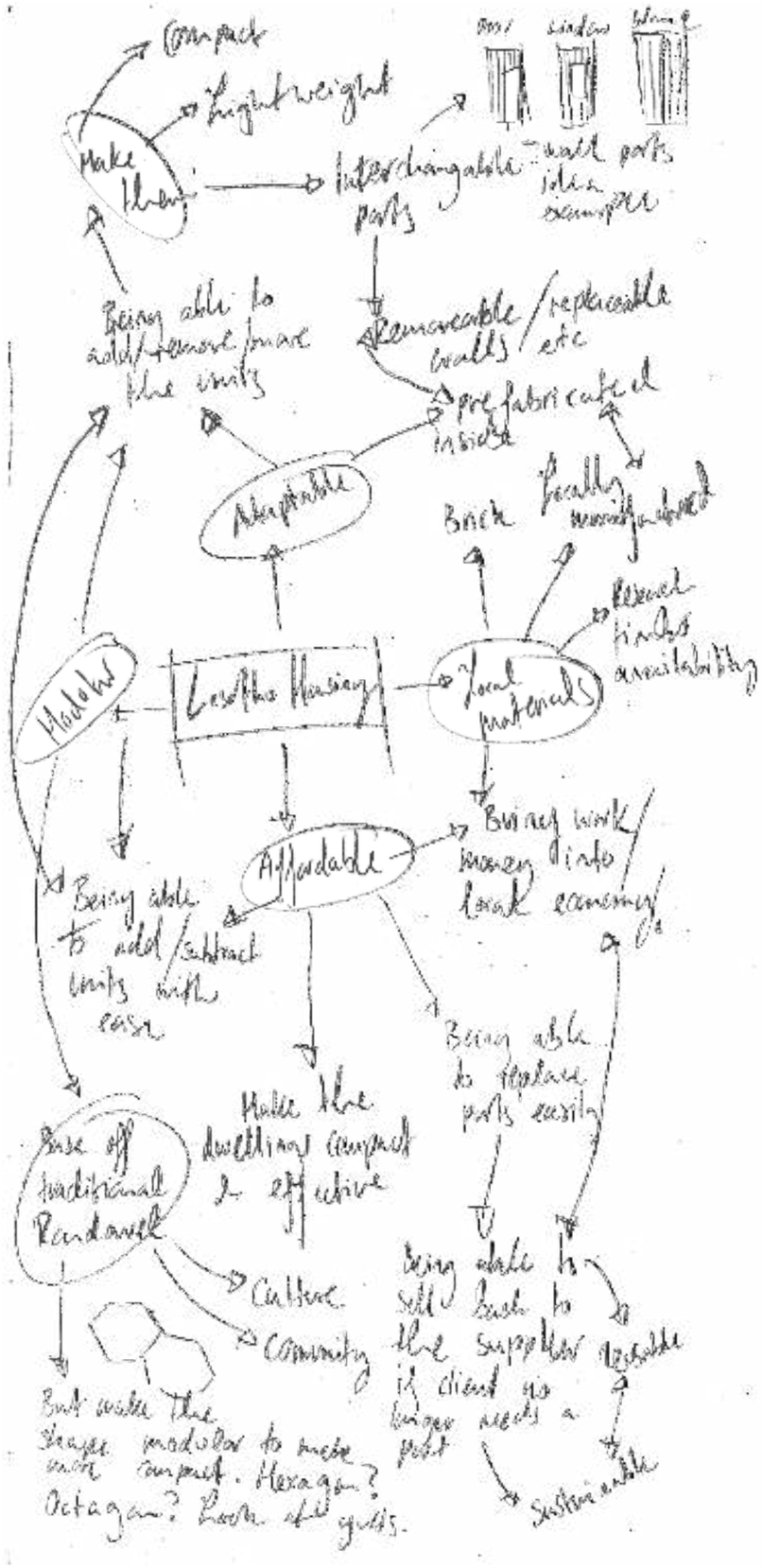
12 wall pieces
3 floor pieces
6 roof pieces
1 foundation piece

Having 12 prefab wall pieces gives the user a choice whether to have:

blank walls
windows
doors

It also means that small pieces of wall can be easily exchanged if the home were to be damaged or the user decided that they wanted to adjust/extend their property.

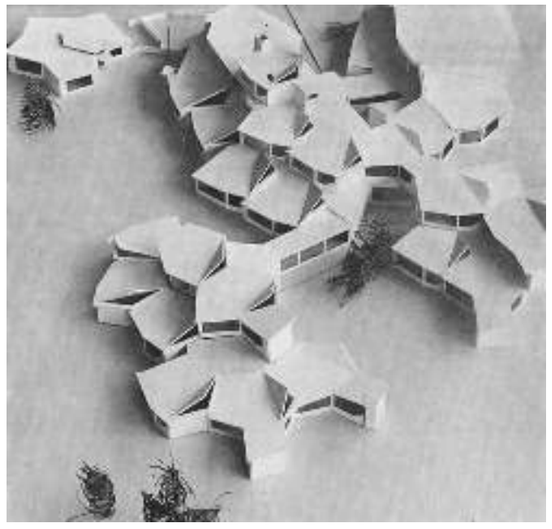
MIND MAP DEVELOPMENT



MOOD BOARD

HENK SNOEK

ZIGHIZAGHI LANDSCAPE GARDEN

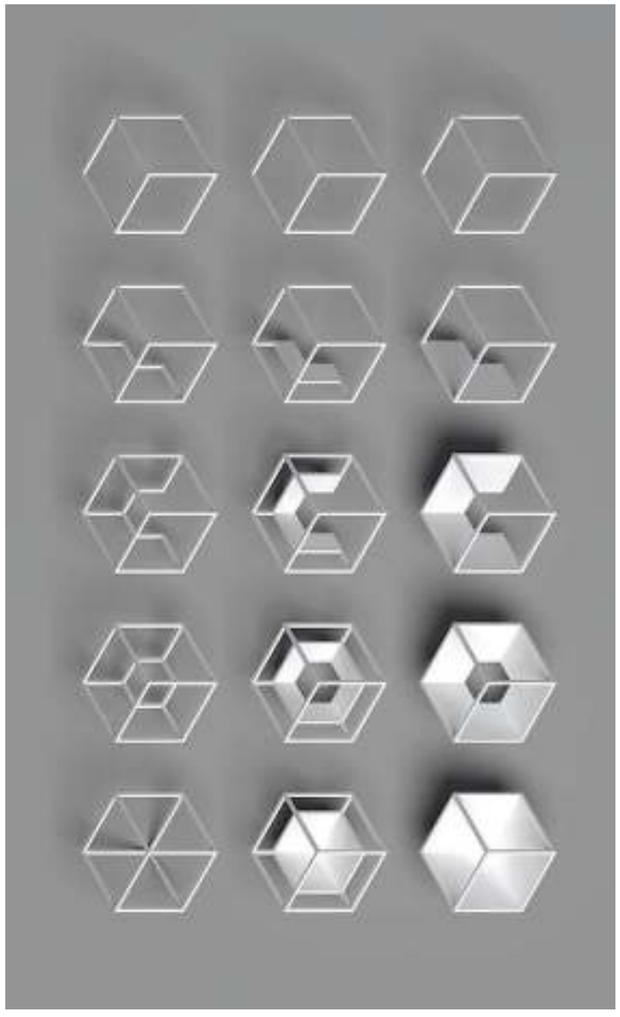


SERGIUS RUEGENBERG SCHOOL IN BERLIN

JARDIN BOTANICO COLUMBIA

BY SOU FUJIMOTO

RONDAVEL A



PIETER VAN DER DORPE

YOUTH HOSTEL BERKERWITZ

RONDAVEL B

RONDAVEL C

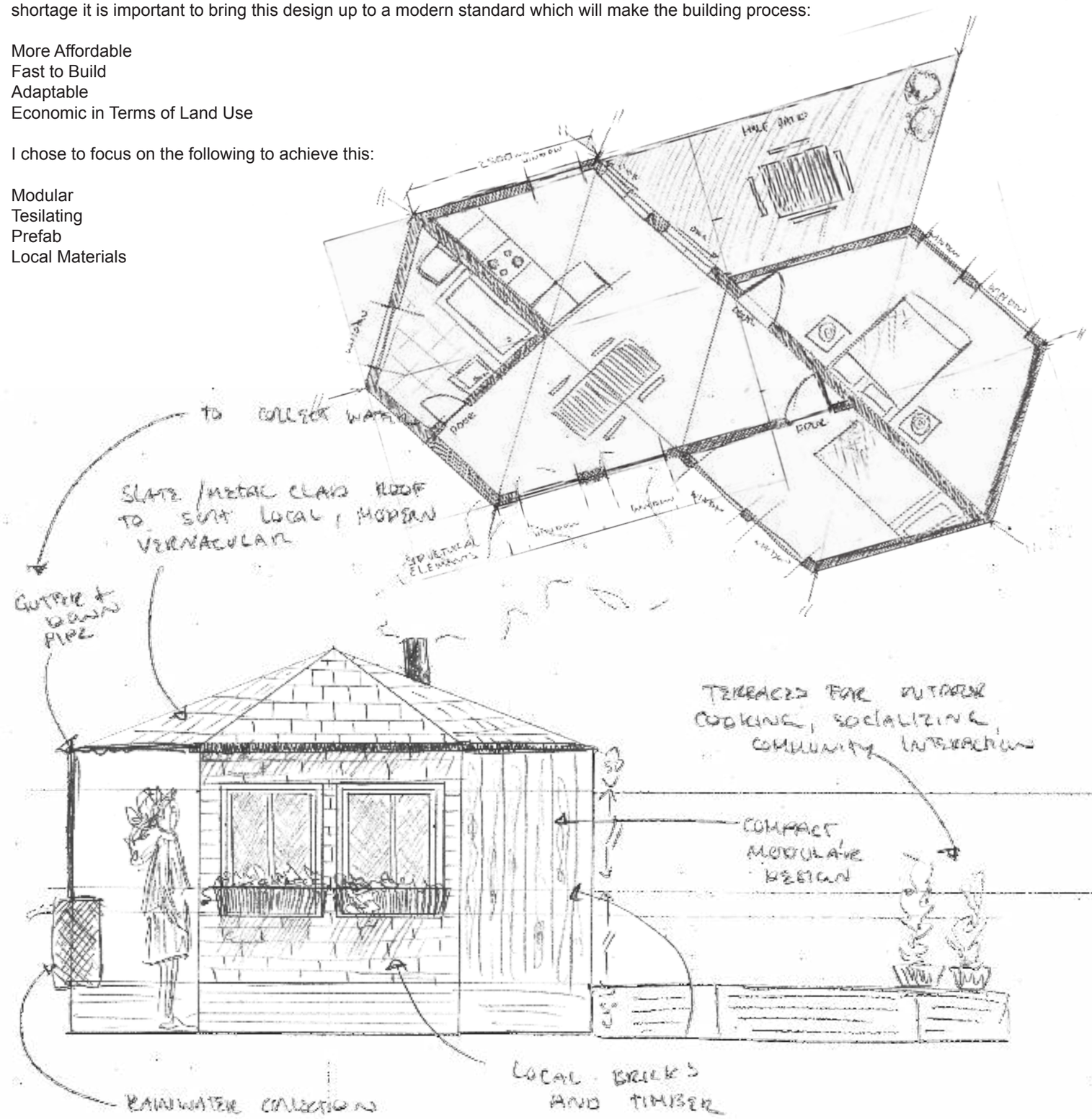
CONSTRUCTION AND DESIGN

Vernacular design proves to provide the most sustainable and long lasting designs. However, where in locations where there is a housing shortage it is important to bring this design up to a modern standard which will make the building process:

More Affordable
Fast to Build
Adaptable
Economic in Terms of Land Use

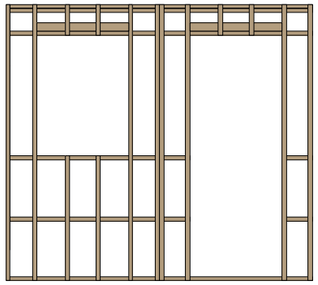
I chose to focus on the following to achieve this:

Modular
Tesilating
Prefab
Local Materials



DESIGN DEVELOPMENT SKETCHES

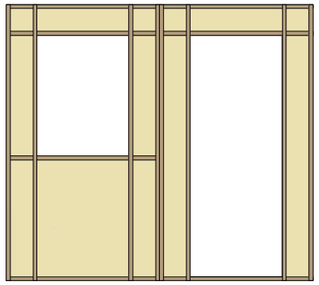
CONSTRUCTION OF EACH PREFABRICATED WALL ELEMENT



TIMBER STRUCTURE

Using a simple timber based structure makes the building:

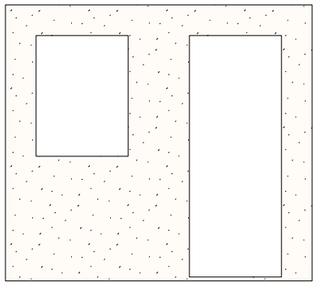
Renewable
Lightweight
Cheap
Easy to construct



HEMP INSULATION

Hemp insulation, although not often used, is:

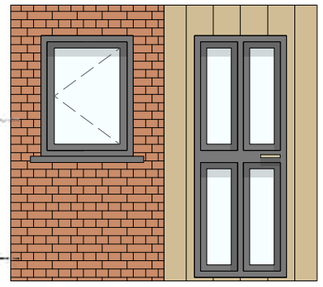
Eco friendly
Sustainable
Easy to cultivate/Fast growing
Very effective



PLASTER

A plaster finish will be applied to each wall section for a smooth finish

This will provide further insulation and easier furnishing.



EXTERIOR RENDER

The client will have a choice of exterior render:

Timber Cladding
Locally made brickwork

FINAL PRODUCT EXAMPLE

3D MODLE

NORTH WEST PERSPECTIVE

Aerial view of example neighbourhood which shows

How elements interact

SOUTH WEST PERSPECTIVE

3D view of example neighbourhood
showing intergration of

Community
Green space
Multi functional spaces

EXAMPLE COST ANALYSIS FOR AN AVERAGE TWO COMPONENT DWELLING IN (SLS)

	BRICKS	TIMBER	JOISTS	INSULATION	PLASTER	FINISH	TILES	BATH	SINK	TOILET	COOKER	BED	CASEMENT	AMOUNT	TOTAL
1 BRICK PANEL FULL	1000		500	250	150									4	7600
1 BRICK PANEL W/DOOR	500		200	200	50									2	1900
1 BRICK PANEL W/WINDOW	750		300	225	100									4	5500
															0
1 TIMBER PANEL FULL		750	500	250	150									7	11550
1 TIMBER PANEL W/DOOR		460	200	100	50									0	0
1 TIMBER PANEL W/WINDOW		600	300	150	100									3	3450
															0
1 INTERNAL WALL A			300	150	150	100								2	1400
1 INTERNAL WALL W/DOOR A			200	75	50	50								0	0
1 INTERNAL WALL B			300	150	150	100								1	700
1 INTERNAL WALL W/DOOR B			200	75	50	50								1	375
1 INTERNAL WALL C			200	75	50	25								0	0
1 INTERNAL WALL W/ DOOR C			200	75	50	25								2	700
															0
1 UNIT FLOOR		2000	750											3	8250
1 UNIT ROOF		1500					750							1	2250
															0
WINDOW													200	7	1400
INTERNAL DOOR													150	3	450
EXTERNAL DOOR													250	2	500
BATHROOM FURNISHING								250	100	150					0
KITCHEN FURNISHING											200			1	200
BEDROOM FURNISHING												150		2	300
TOTAL FOR EXAMPLE DWELLING															46525

100 WORD STATEMENT

The project seeks to provide a vernacular design which evolved using a rondavell as it's starting point. This allows the design to conect to and embrace the culture, and in doing so encourage the community to do so as well.

Each unit is compact and modular with a flexible design. This allows the dwelling to grow and change with the people using it. Creating a structure that can be added to, or downsized means that it will never be made redundant and can be easily customised to its user.

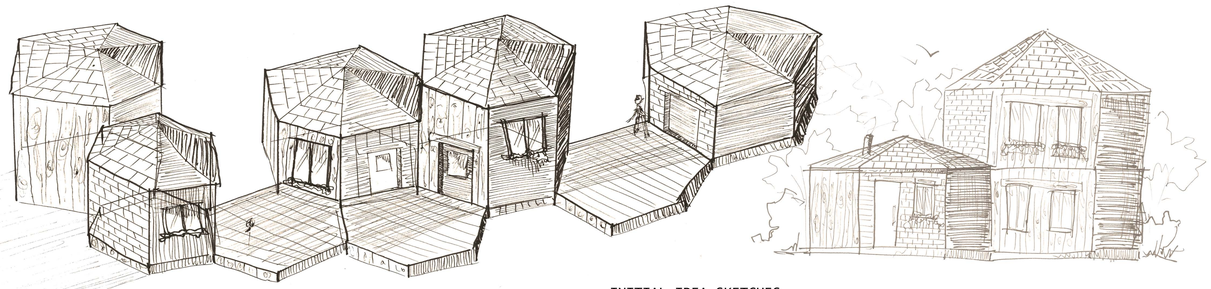
HONEY HOUSES

The design of the Honey House is built with community in mind. As seen in the drawings presented bellow, the simply tesselating, hexagonal design supports an evolving family my changing as they do. Each unit is small and affordable, with the added bonus of the user being able to grow their home at their own pace.

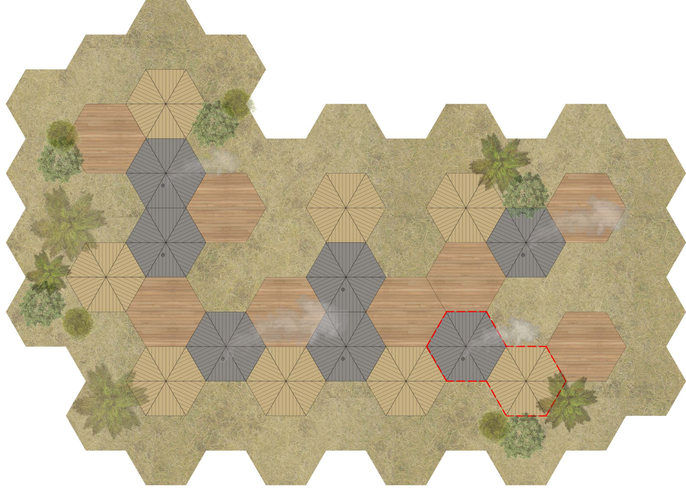
The unit componants will be made off site, and than assembled quickly and easily to help families in need of homes fast. The ease of assembly also means that building work will be less strenuous, making it safer and easier to learn how to construct a Honey House.

Although the componants will be made off site, the intention is that they are constructed in Lesotho using local materials and practices such as brick making to boost the local economy and support the existing local buisness.

Each home will have the option of being fitted with a large rain water collection system, providing the user with free, clean water to use as they please.



INITIAL IDEA SKETCHES



SITE ROOF PLAN SCALE 1.200

NORTH EAST ELEVATION SCALE 1:100

SOUTH EAST ELEVATION SCALE 1:100

SECTION ONE SCALE 1.100

SECTION TWO SCALE 1.100

SECTION THREE SCALE 1.100

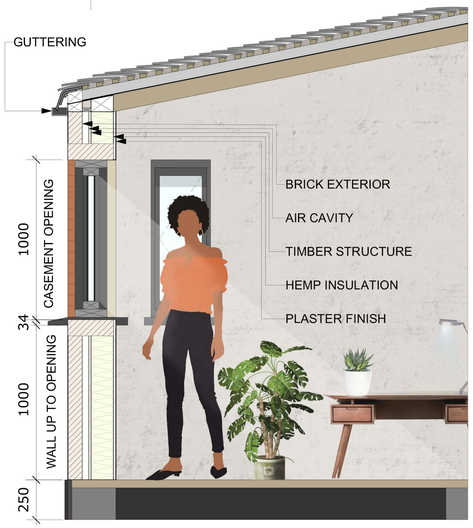
SECTION FOUR SCALE 1.100

NORTH WEST ELEVATION SCALE 1:100

SECTION FIVE SCALE 1.100

SECTION SIX SCALE 1.100

SOUTH WEST ELEVATION SCALE 1:100



FLOOR-WALL-ROOF (WITH WINDOWS) DETAIL 1:20

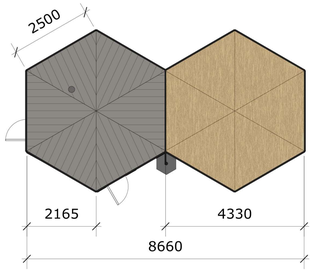
FIRST FLOOR BALCONY RENDERED PERSPECTIVE

SITE NORTH ELEVATION SCALE 1.200

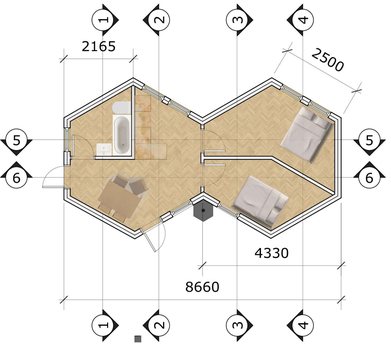
SITE EAST ELEVATION SCALE 1.200

SITE SOUTH ELEVATION SCALE 1.200

SITE WEST ELEVATION SCALE 1.200



BASIC DWELLING ROOF PLAN SCALE 1.100



BASIC DWELLING FLOOR PLAN SCALE 1.100

25 PERSON DWELLING NEIGHBOURHOOD RENDERED PERSPECTIVE

SITE GROUND FLOOR PLAN SCALE 1.200

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