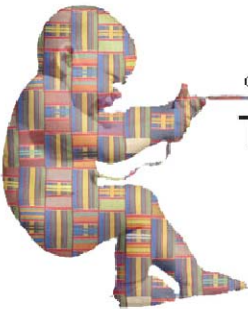


**PROJECT TITLE:**  
The **umbilical** cord

**USER NAME :**  
cmanich

**TEAM MEMBERS:**  
Jaime Prous Martín  
Melisa Rodríguez Hernández  
Clara González Manich  
Josep Maria González Barroso  
Jaume Avellaneda Díaz-Grande  
Katarina Mrkonjic

We are a group composed by teachers and students from the Barcelona Shool of Architecture, in the Technical University of Catalunya.



OS-HOUSE COMPETITION. THE TEAM

00

THE **UMBILICAL** CORD



Josep Maria González Barroso

Jaume Avellaneda Díaz-Grande

Katarina Mrkonjic

Clara González Manich

Melisa Rodríguez Hernández

Jaime Prous Martín

## THE CONCEPT

### The idea

We start from a linear element that contains the installations and serves the different areas, like **the umbilical cord**.

Facing with this unchangeable and permanent wall, dance a variable and lighter line, consisting of wooden frameworks, which enclose the space generating the "Mefie".

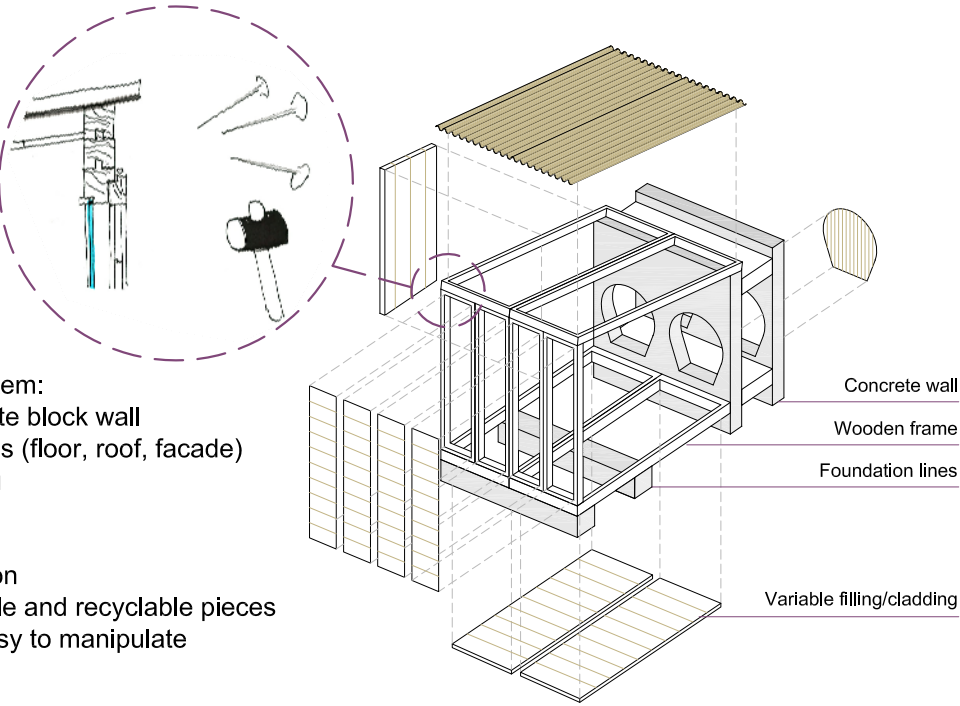
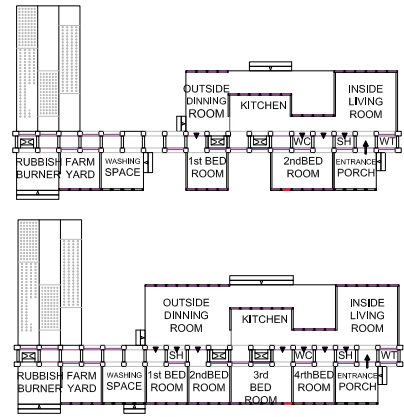
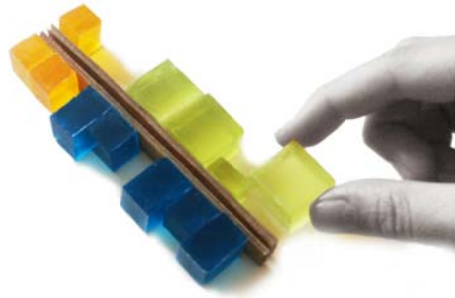
### The program

The program is divided in two parts:

- ) The garden, which begins to grow from one end of the wall
- ) The house, which begins from the other extreme

### Flexibility

The construction has great growth potential. It is very versatile and can be easily adapted to user needs, both the number of occupants and the economic capacity of the household.



## THE SYSTEM

Parts of the system:

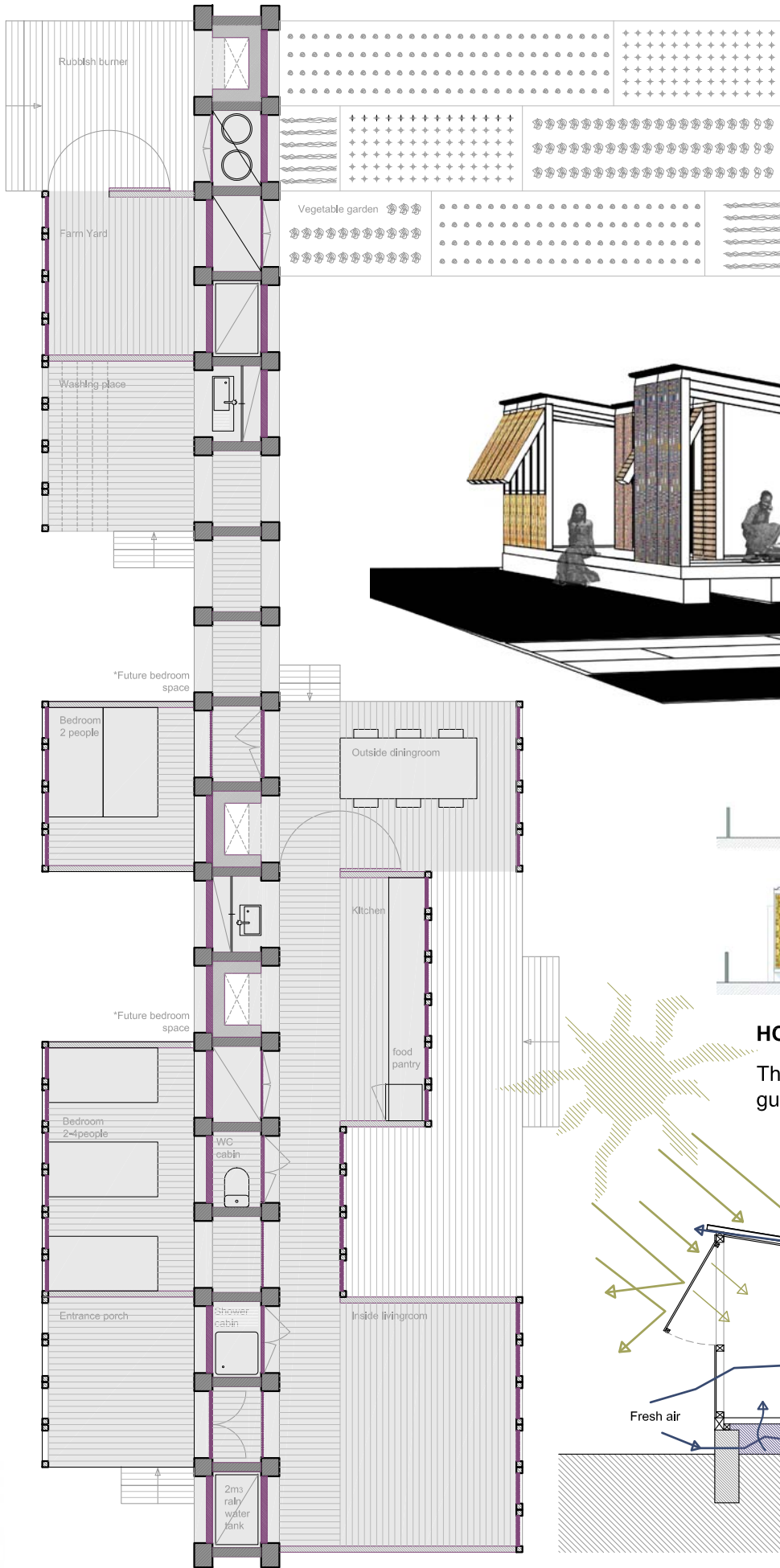
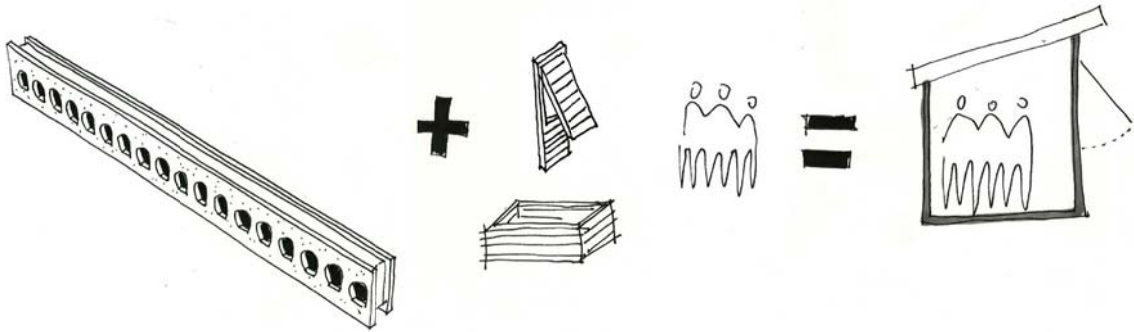
- ) Double concrete block wall
- ) Wooden frames (floor, roof, facade)
- ) Filling/cladding

Features:

- ) Dry construction
- ) Interchangeable and recyclable pieces
- ) Simple and easy to manipulate

## WHAT WE OFFER

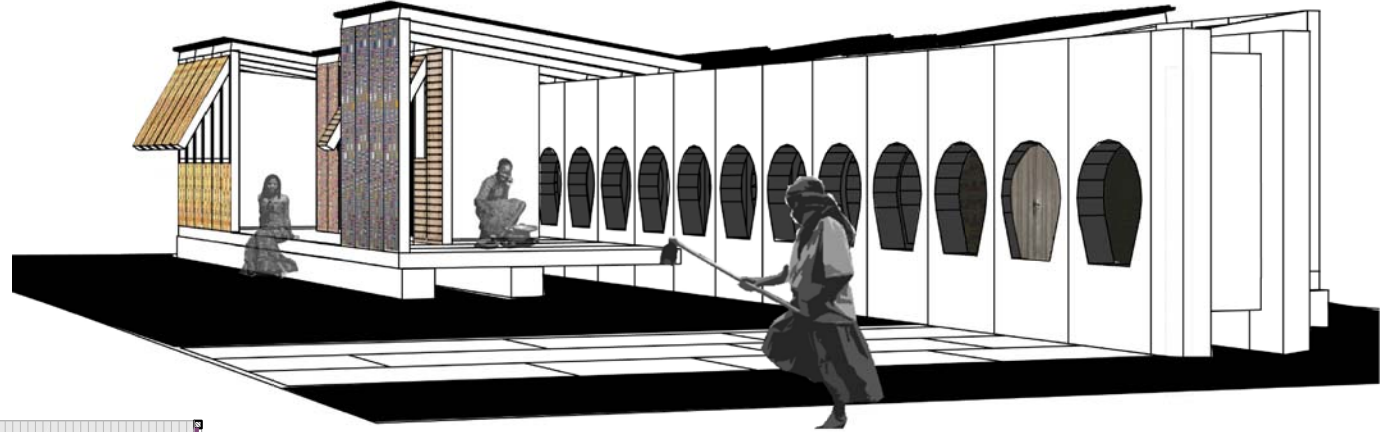
We deliver the end user a customizable house, which may be built using the pieces of the system. The aim is to use the local materials and knowledge, promoting an "industry of artisans" making unnecessary importation



THE ESSENCE OF THE CORD

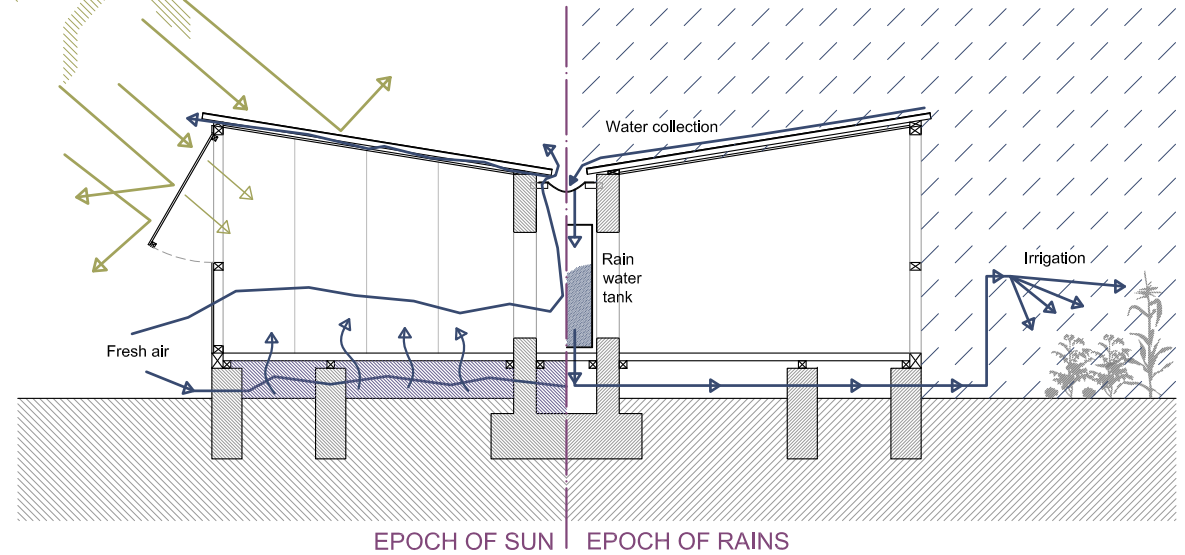
THE **UMBILICAL CORD**

01



## HOW IT WORKS

The section allows rain water collection, and creates crossed ventilation, which guarantees the thermal comfort

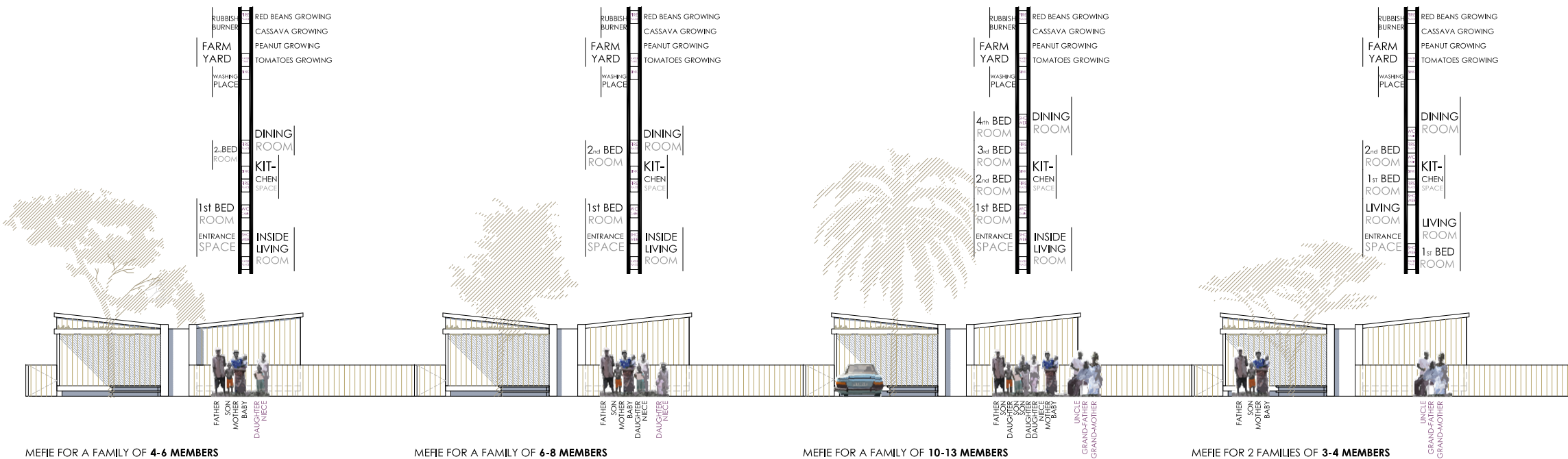








## THE UMBILICAL CORD

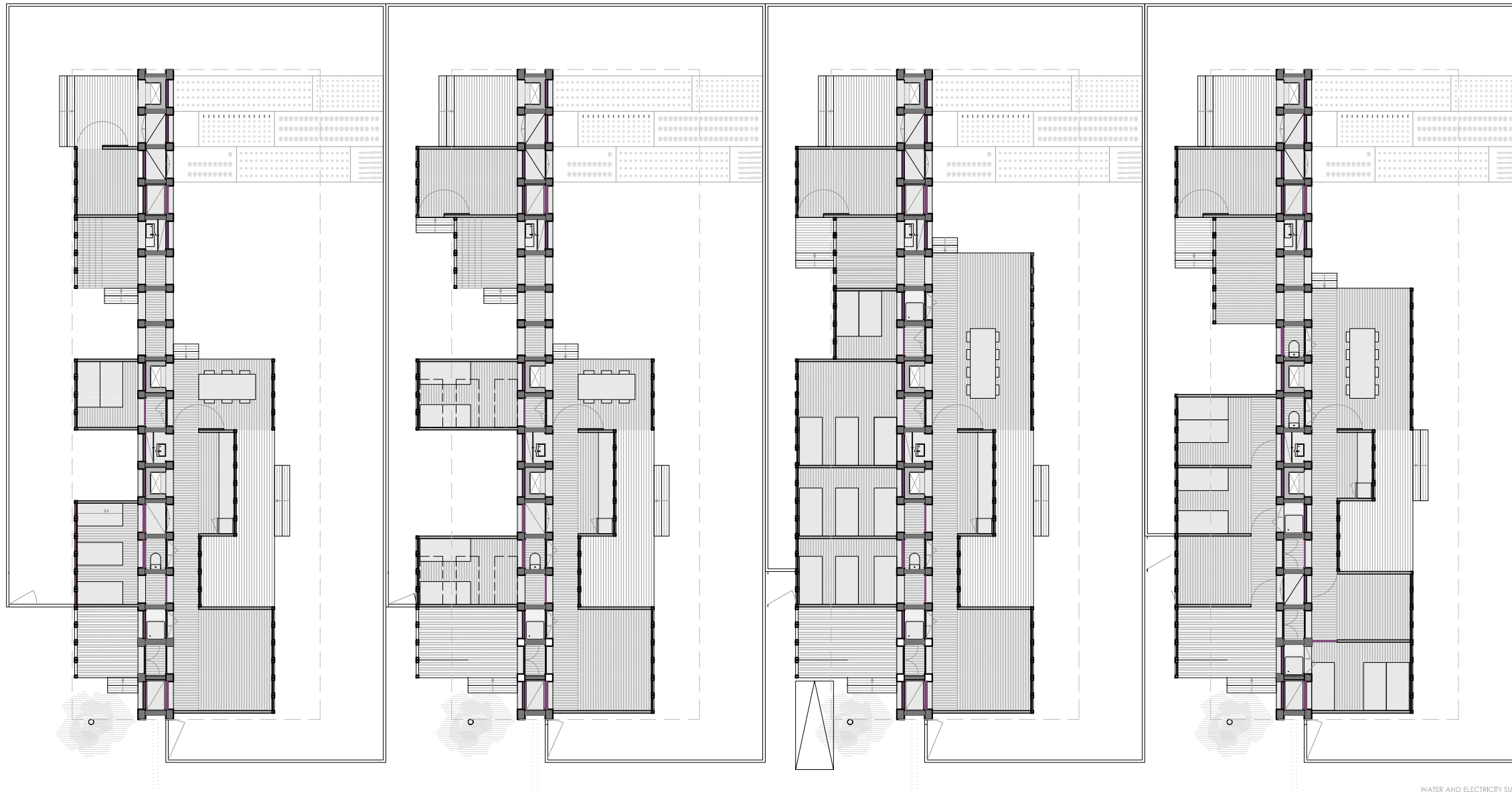


## PLOT CHARACTERISTICS

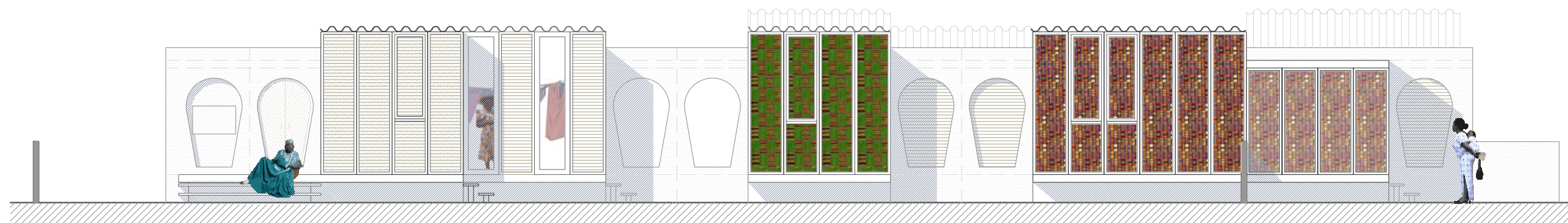
- Plot dimension: 15 x 30 m
- Maximum build area: 56% of total plot size.
- Distances: The house has been designed to fulfill the established distances to the borders (2,6 meters from the plot edge and 4,6 meters from the street). However, we propose to move the umbilical cord and give more space to the daily garden side.

## HOUSE FLEXIBILITY

The project has a high level of flexibility. It can grow following the wall-line, and fulfill the needs of the family group.



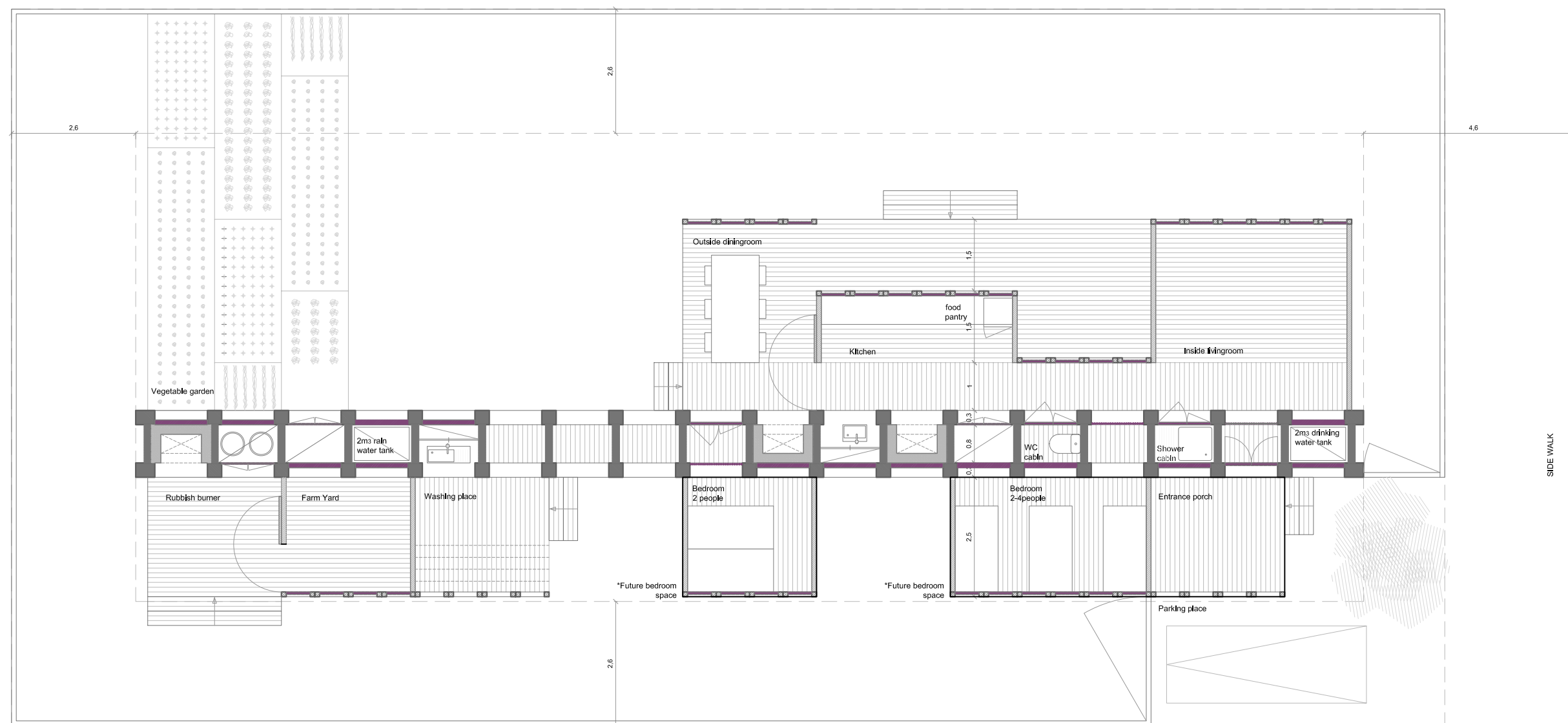
WATER AND ELECTRICITY SUPPLY



PROJECT PLANS / SCALE 1/100

04

## THE UMBILICAL CORD

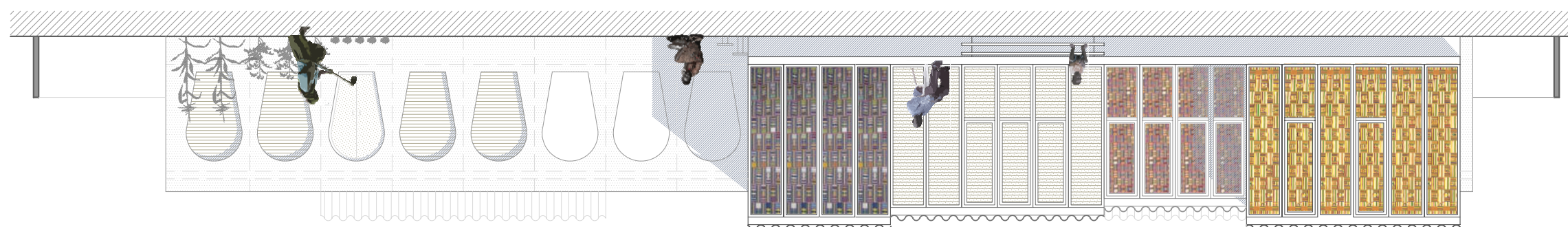


MOTHER  
SON  
FATHER  
BABY  
DAUGHTER  
NIECE

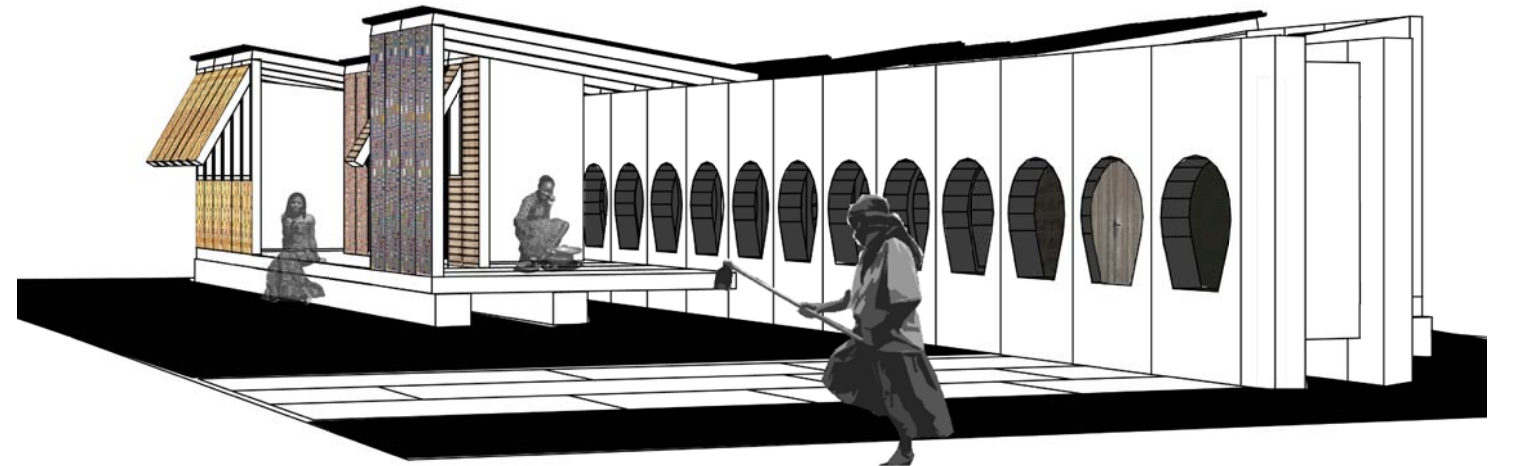
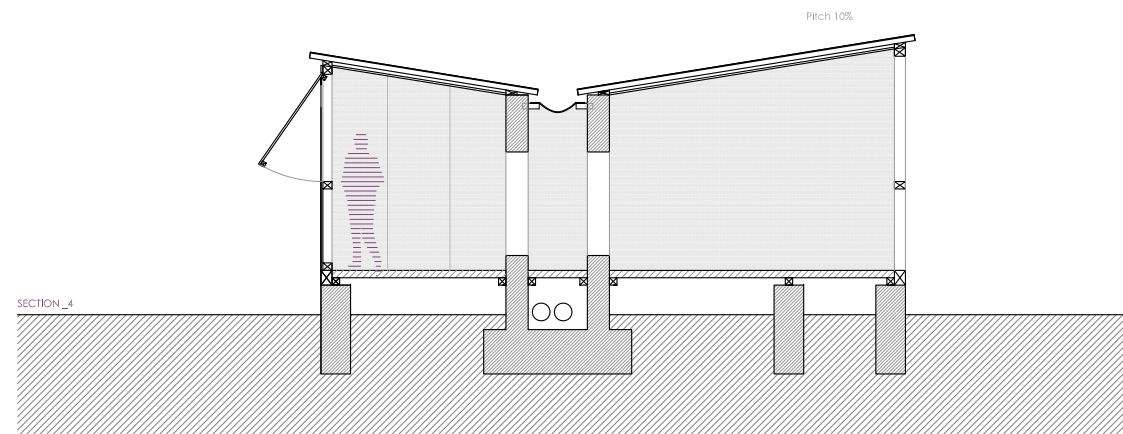
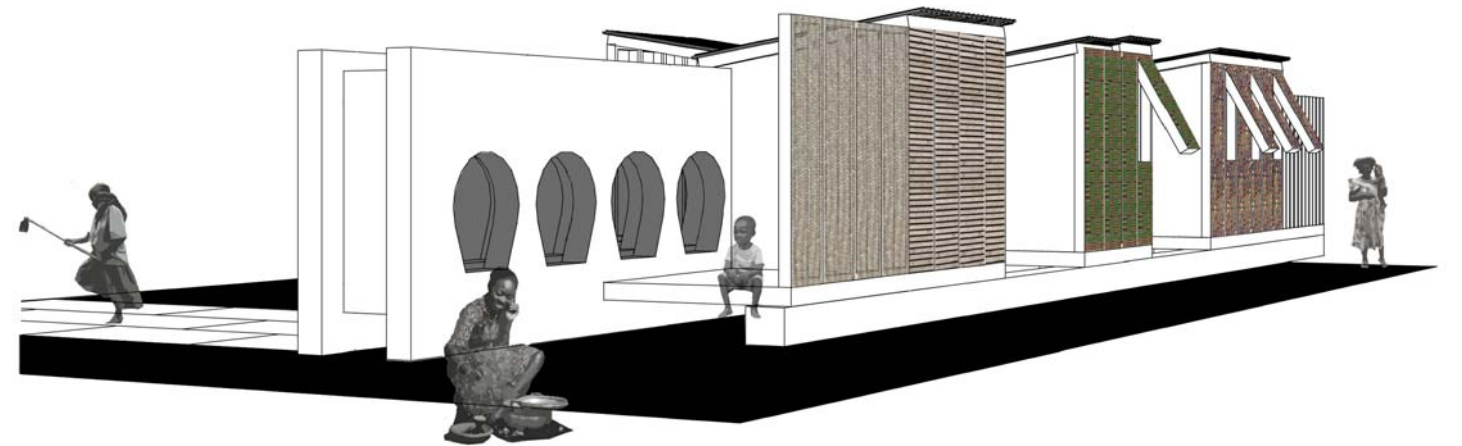
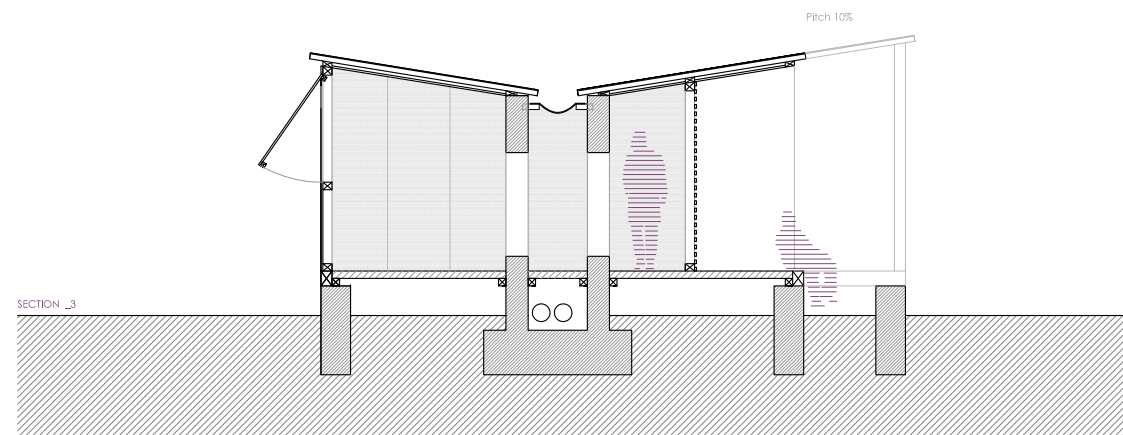
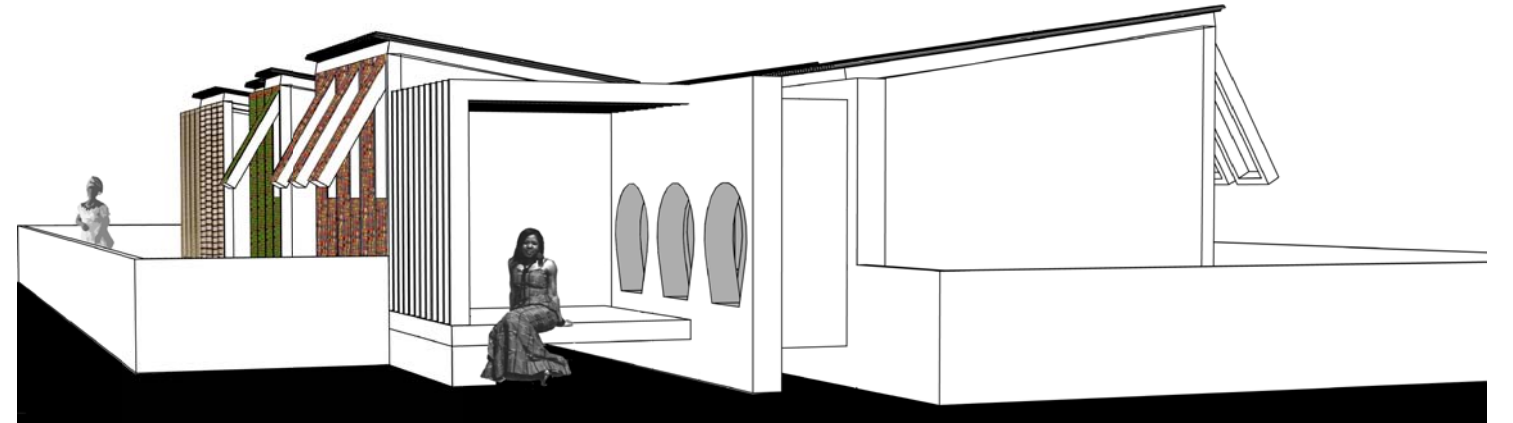
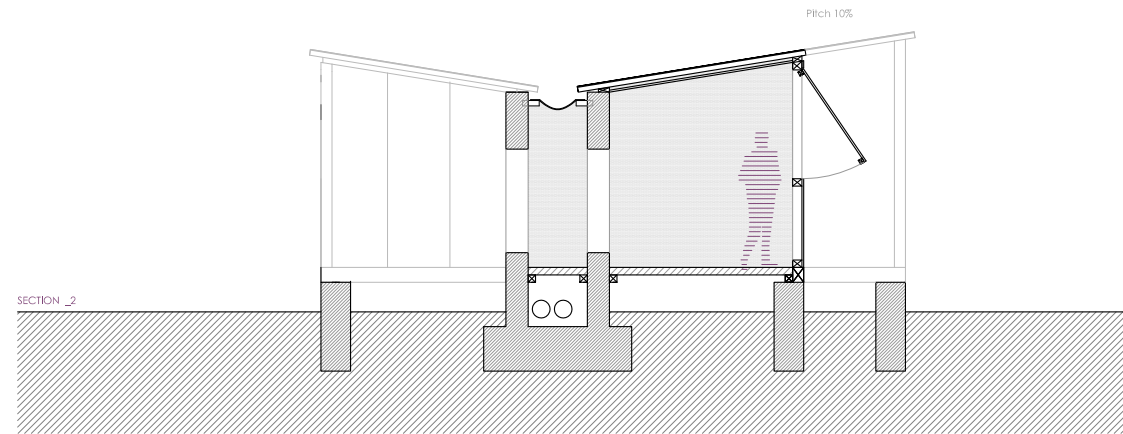
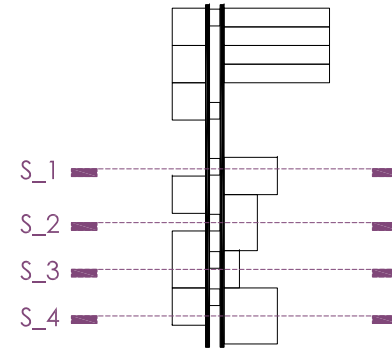
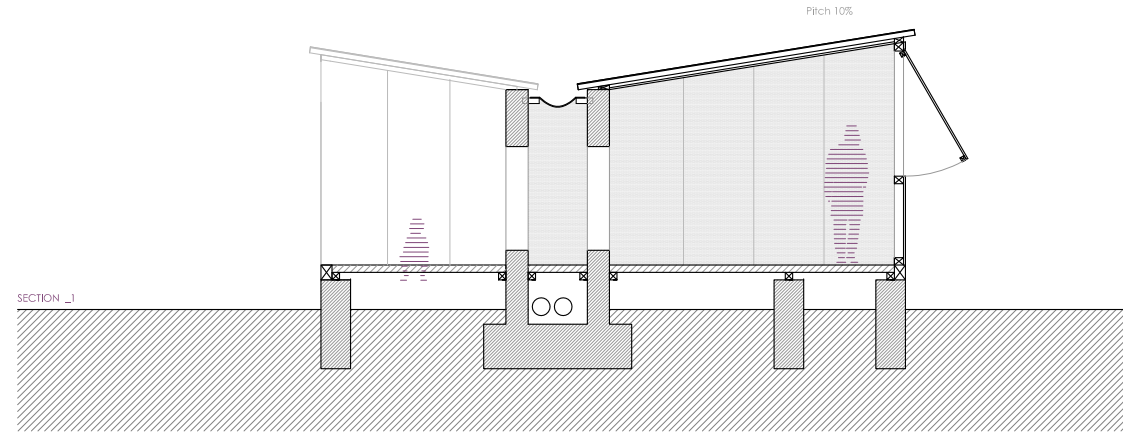
\_The house have more than 35 m\*2 of habitable area.

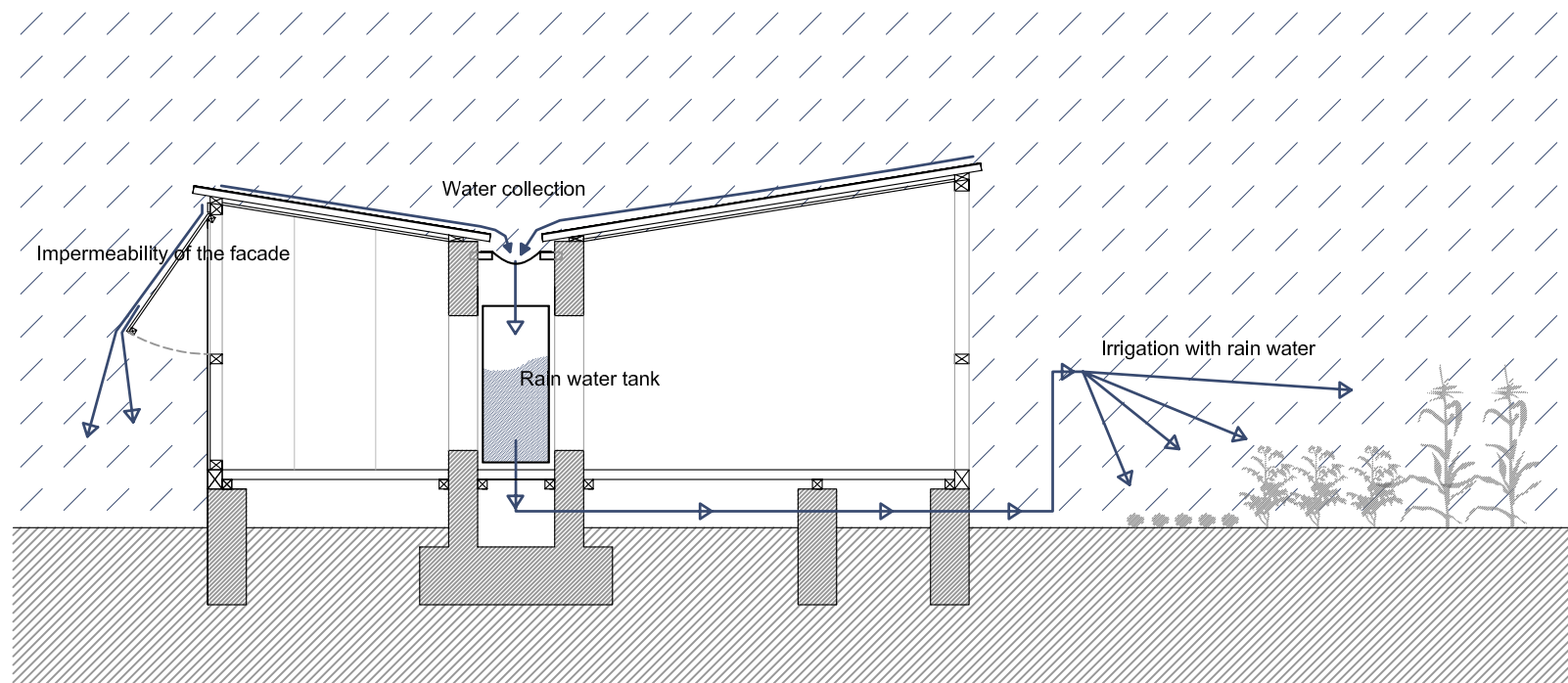
\_The program of the house is:

- 1 living room
- 2-6 sleeping rooms
- Bath and toilet (in the biggest house is possible two baths)
- 1 kintchen
- Storage space

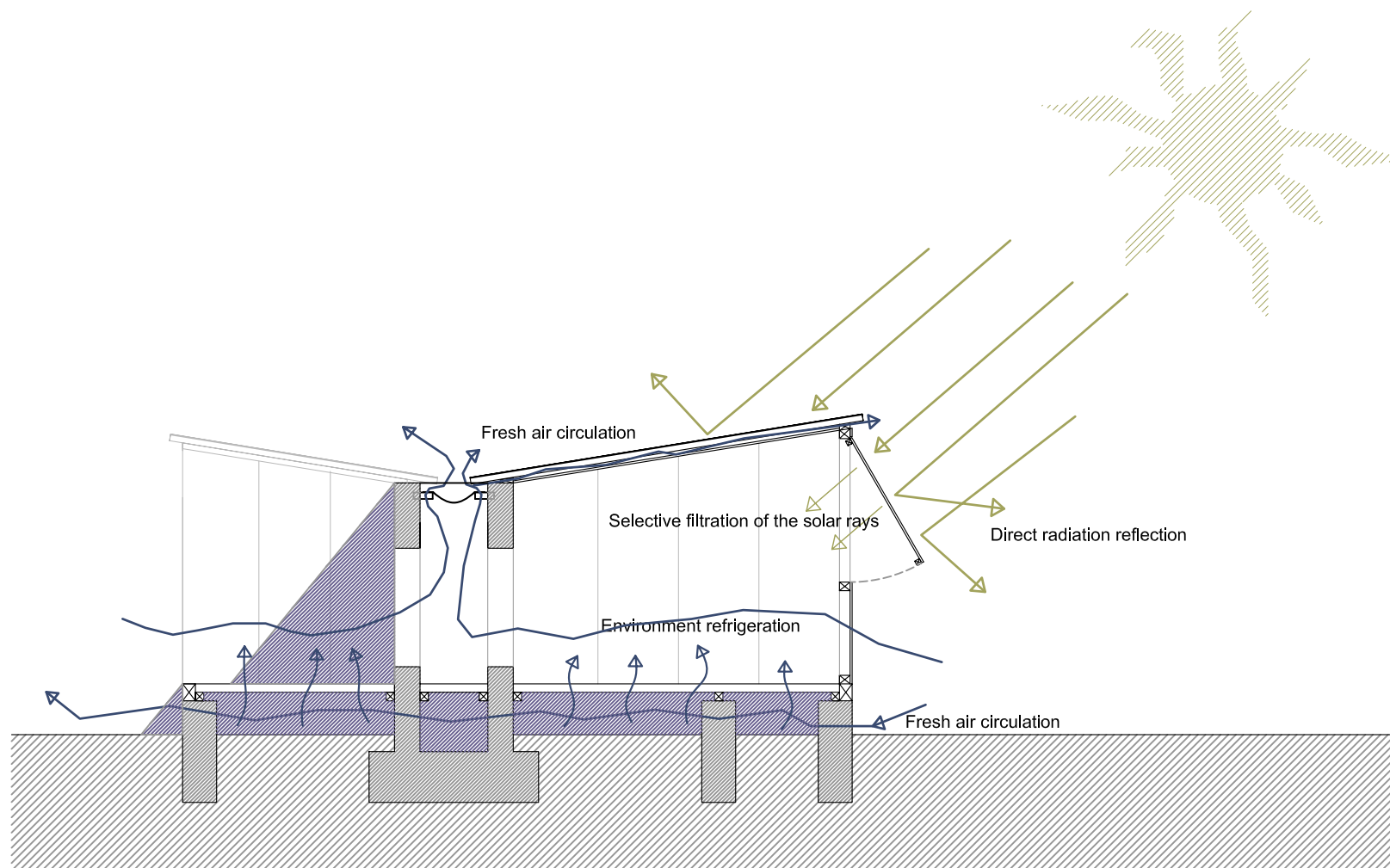




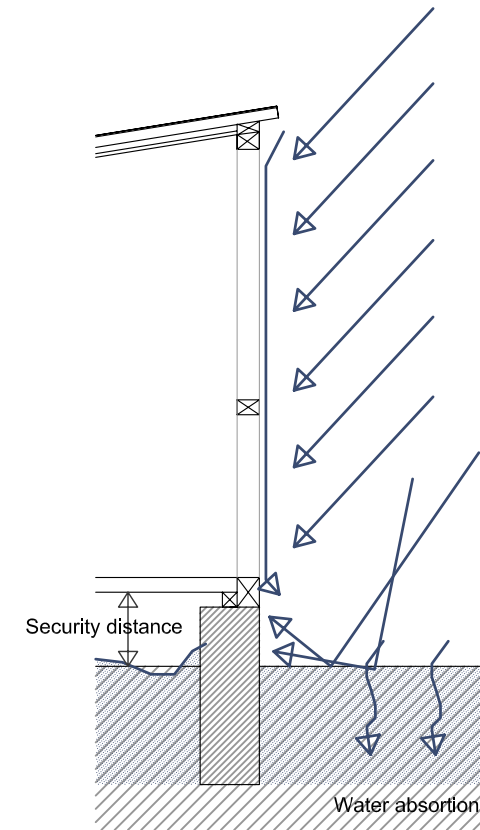




EPOCH OF RAINS



EPOCH OF SUN



The elevation of the platform from the floor guarantees that being the ground flooded, the house remains dry.

The severies prevent the rain water entrance from the outside.

The rain water is collected in a tank placed inside the central wall (the installation's cord) to be used in different tasks, as irrigation.

Solar protection is achieved by the severies, which depending on the material used can filtrate the sun rays and, sometimes, reflect them.

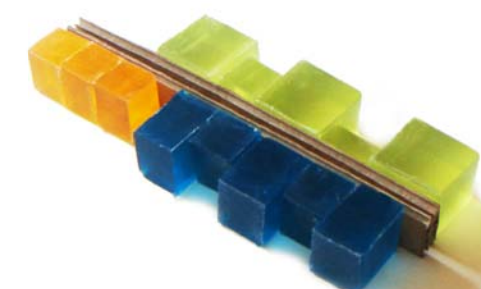
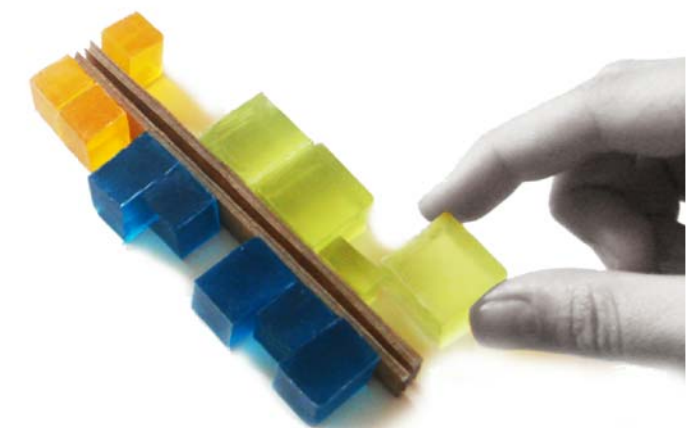
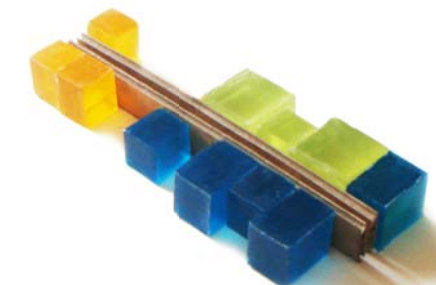
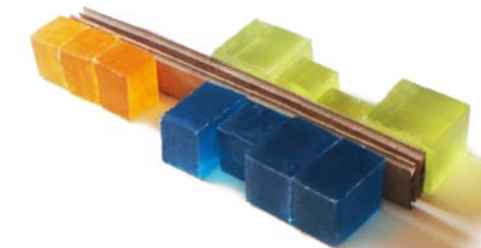
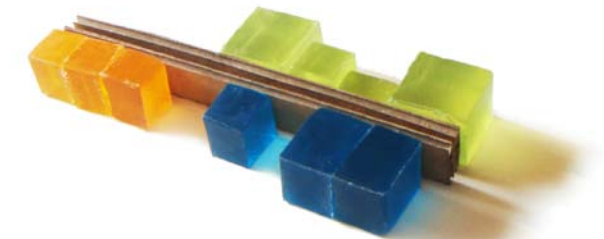
The terminal stability of the environment is achieved thanks to the possibility of fresh air circulation through the house.



CLIMATIC CONCEPT

06

THE UMBILICAL CORD







DETAILS AND MATERIALS / SCALE 1:10

07

## THE UMBILICAL CORD

### MATERIALS USED IN THE PROJECT



CONCRETE



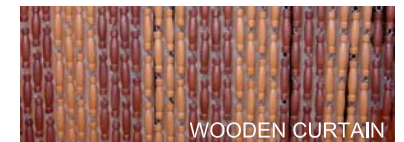
WOOD



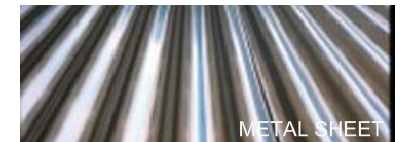
KENTE



PALM LEAFS



WOODEN CURTAIN

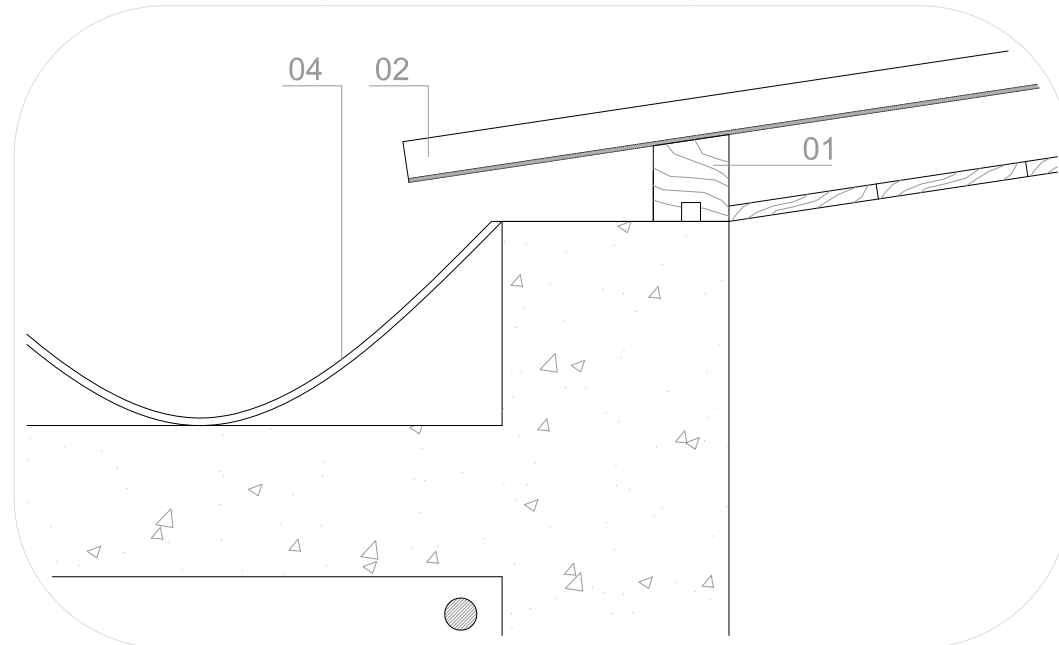


METAL SHEET

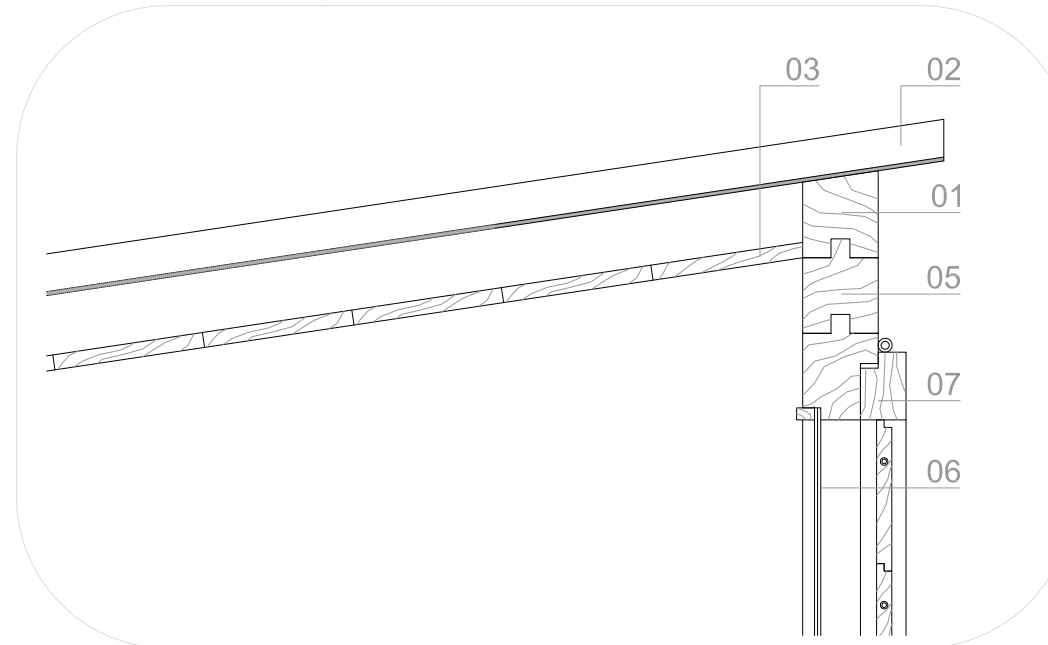
### REFERENCES

- 01.- Wooden roof frame
- 02.- Metal sheet
- 03.- Wooden strips
- 04.- Gutter
- 05.- Wooden wall frame
- 06.- Glass sheet
- 07.- Shutter with wooden slats
- 08.- Wooden floor frame
- 09.- Installations
- 10.- Foundation made of concrete block

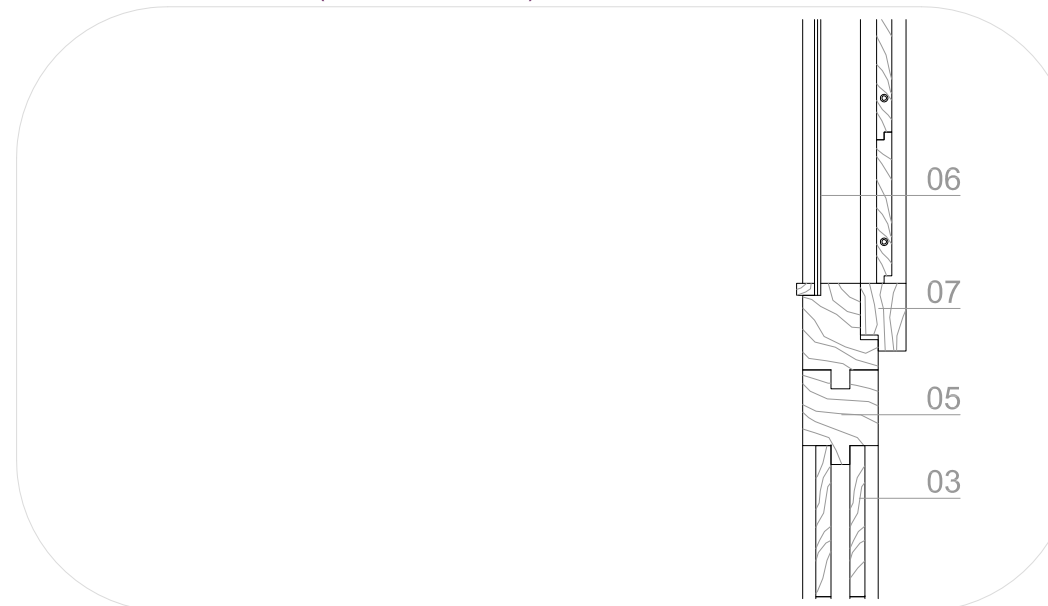
DETAIL.1 (Roof frame - concrete wall)



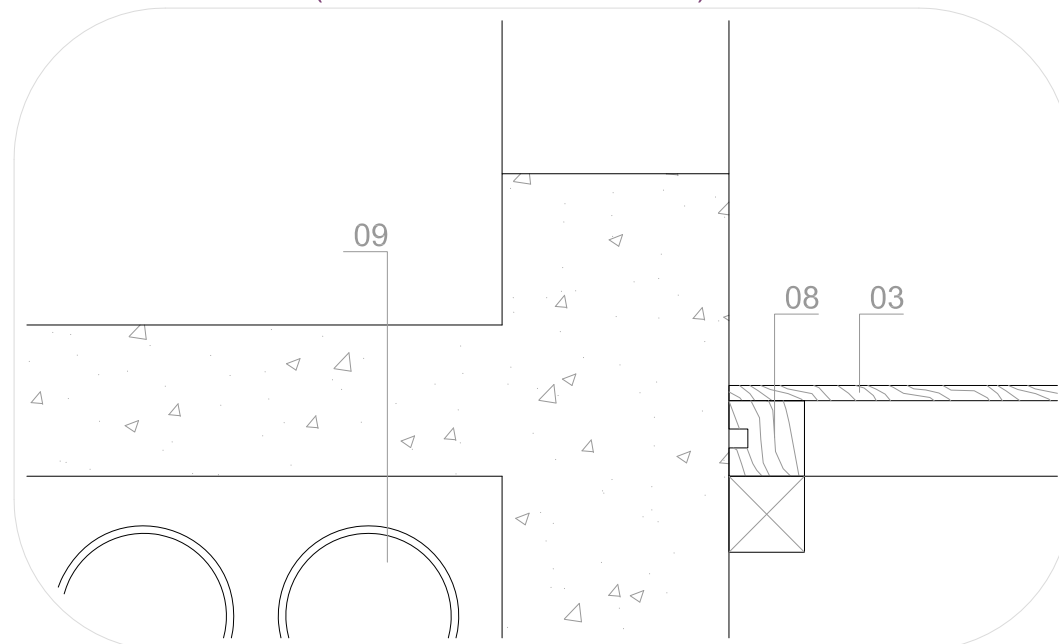
DETAIL.3 (Roof frame - wall frame)



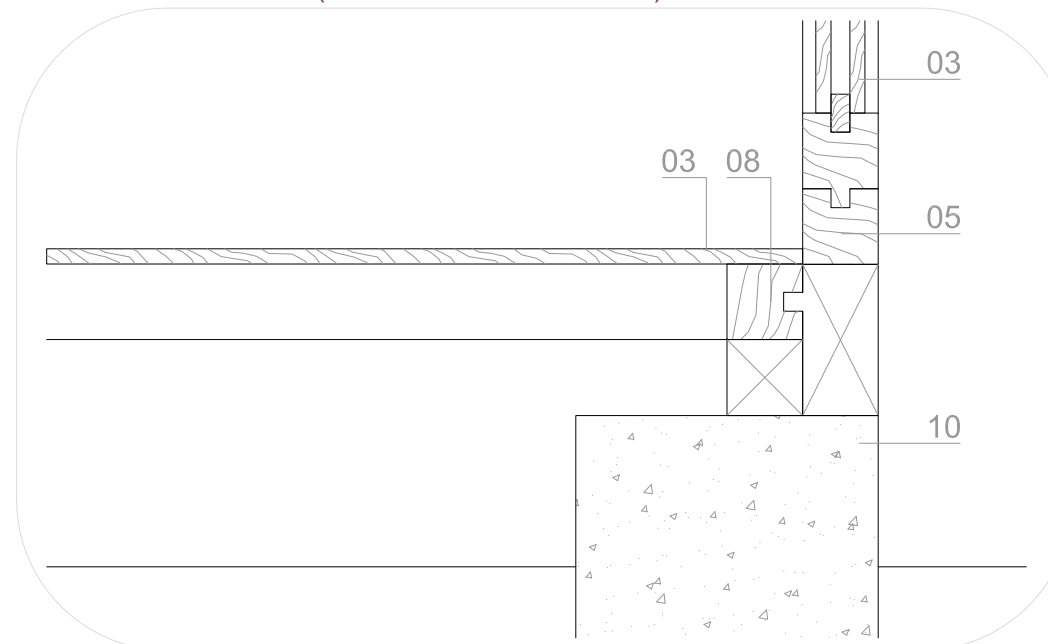
DETAIL.4 (Window frame)



DETAIL.2 (Floor frame - concrete wall)

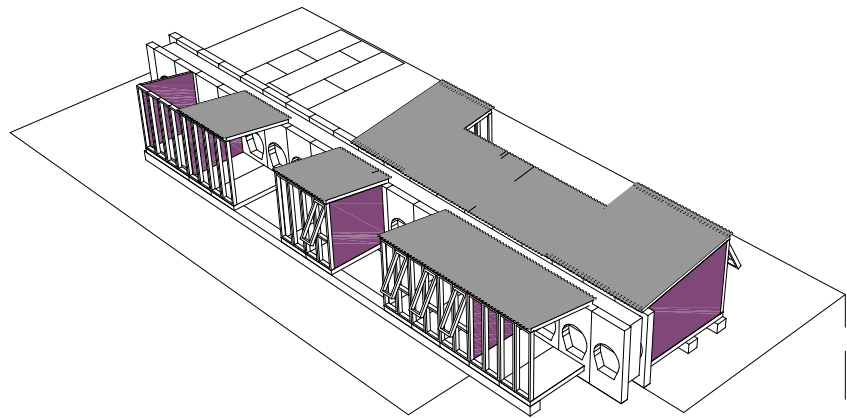


DETAIL.5 (Roof frame - wall frame)

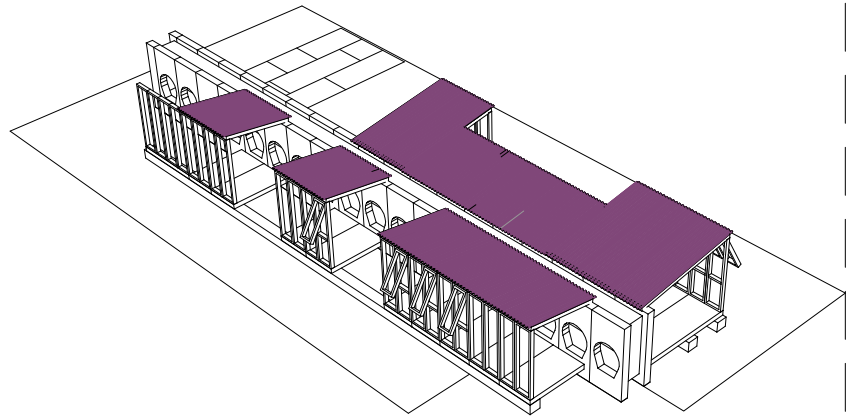




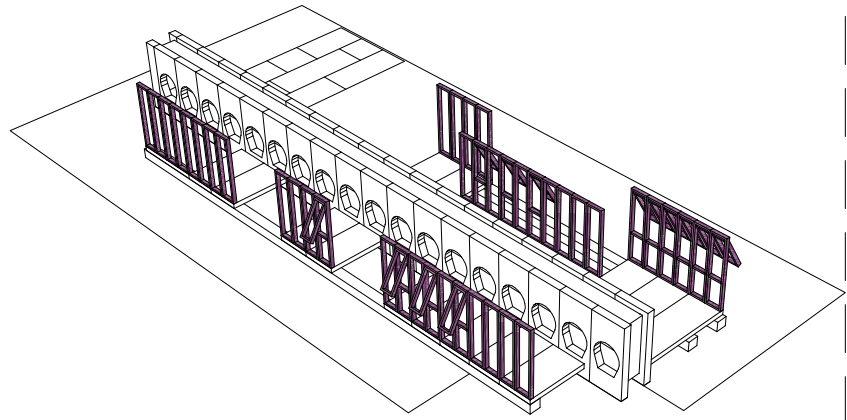
) Lids



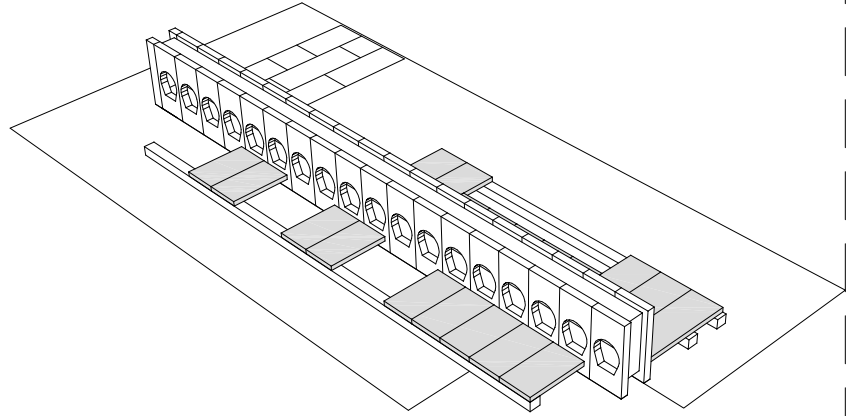
) Roof



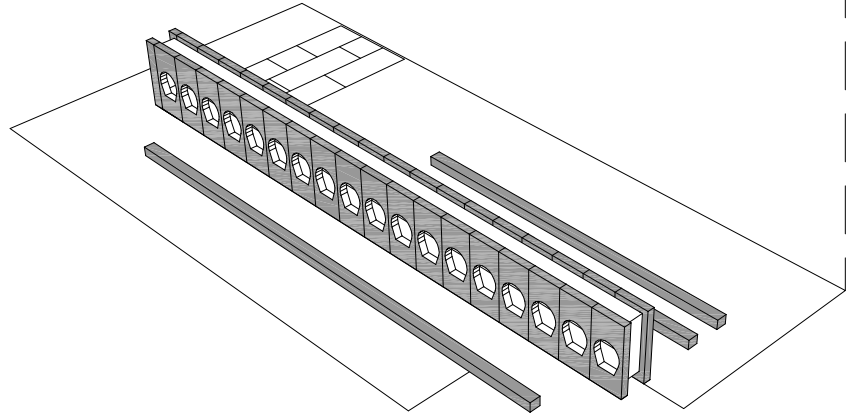
) Wooden frames



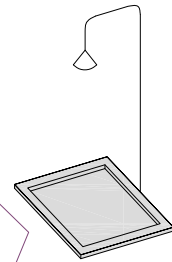
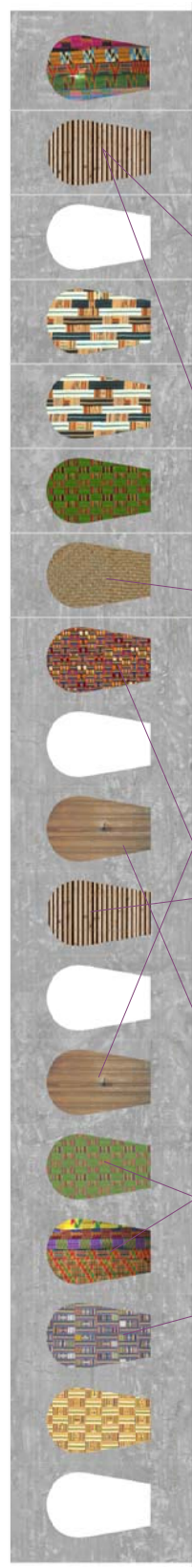
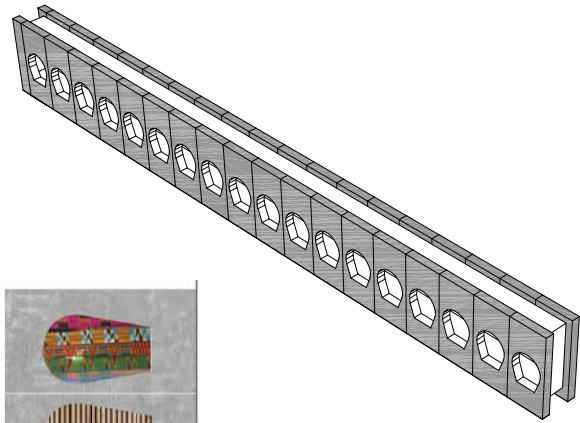
) Wooden platform



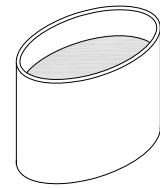
) Umbilical cord



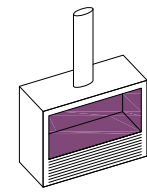
Umbilical cord:



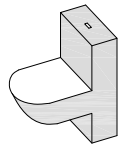
) Shower



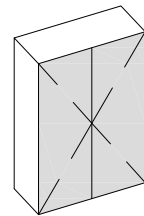
) H2O



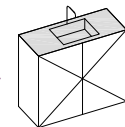
) Fireplace



) WC



) Wardrobe



) Sink

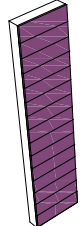
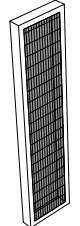
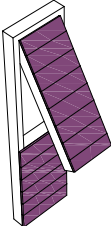

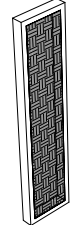
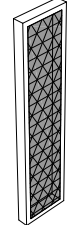
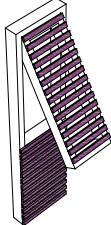
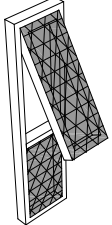



THE PARTS OF THE PUZZEL

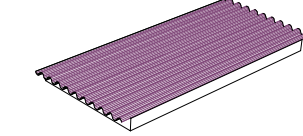
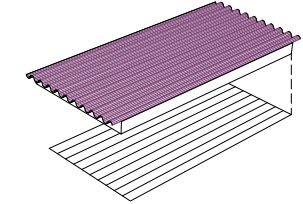
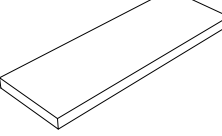
THE UMBILICAL CORD

08

Matrix of the vertical filling

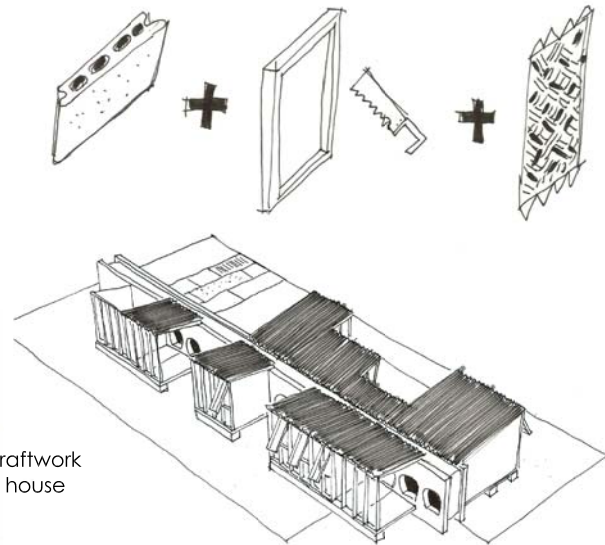
Light gradient	Fixed	Openable
Opacity	 ) Wooden boards  ) Dense tissue	 ) wooden boards
Translucency	 ) Wood lattice  ) Dense tissue  ) Palm leaves	 ) Wood lattice  ) Dense tissue
Transparency	 ) Basic frame	

Matrix of the horizontal filling

Character	Roof	Platform
Open	 ) metal sheet	
Closed	 ) metal sheet + tissue	 ) wooden floor

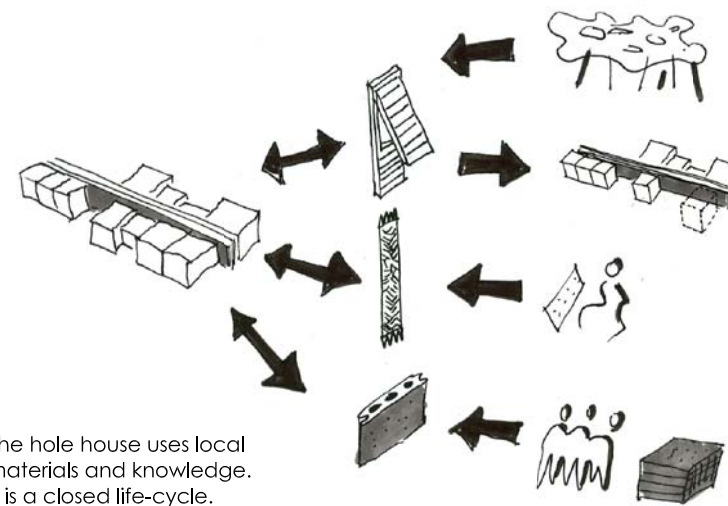


# 01 LOCALLY EMBEDDED



The local craftwork shapes the house

# 02 LOCALLY EMBEDDED



The hole house uses local materials and knowledge. It is a closed life-cycle.

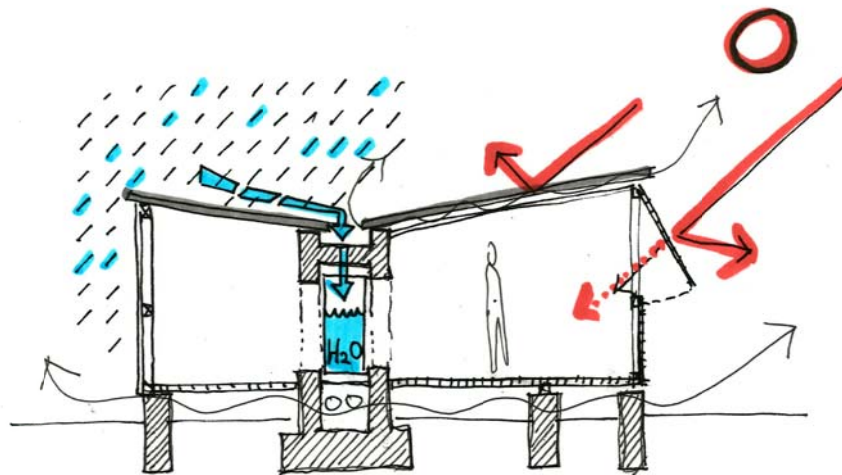


OS - HOUSE DESIGN PRINCIPLES

# 09

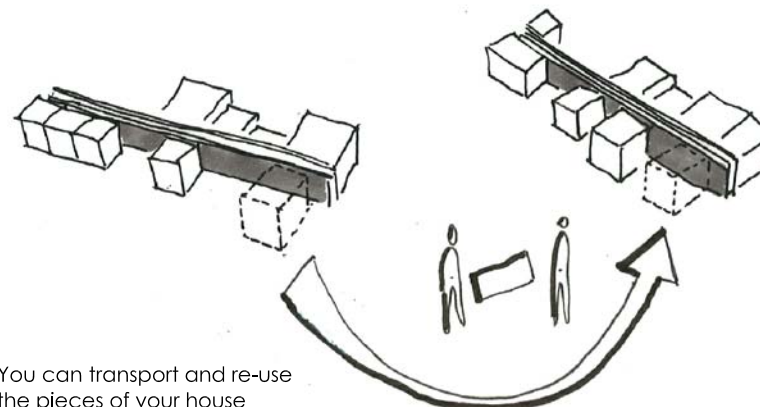
## THE UMBILICAL CORD

# 03 CLIMATE



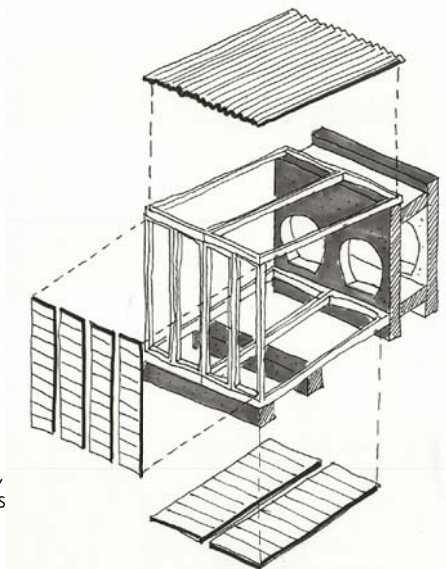
The house is the result of the local climate

# 04 SIZE



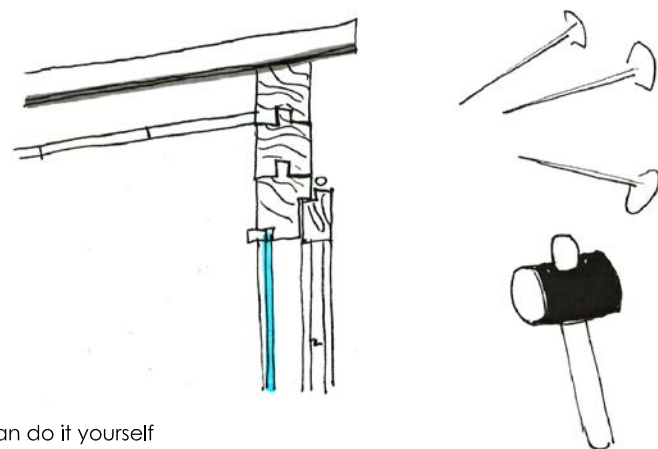
You can transport and re-use the pieces of your house

# 05 STRUCTURE



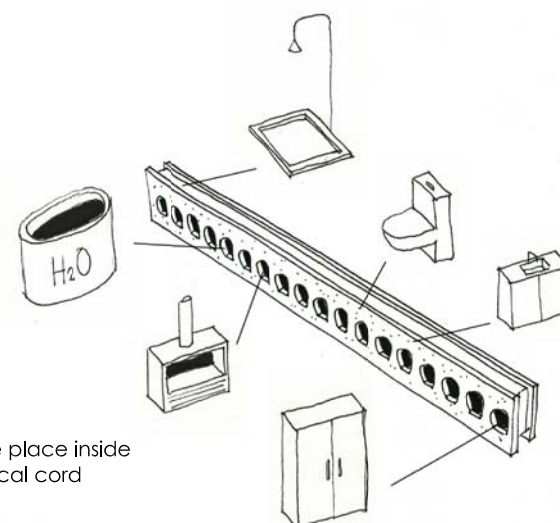
Facade and structure, two different elements

# 06 CONNECTIONS



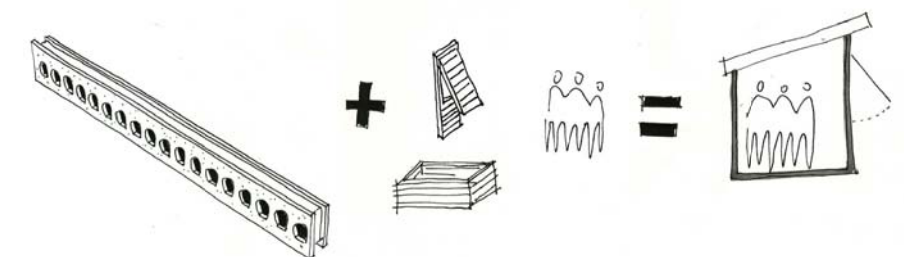
You can do it yourself

# 07 INSTALLATIONS : the umbilical cord



All can be place inside the umbilical cord

# 08 OPEN SOURCE SHARE



Little pieces of Ghana make my house