



Kali Natural Building Initiative
2020



www.kali-natural-buildings.com
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GOUTHAMAN FARM HOUSE

The project is situated about 2kms from the Coastline, in a lush farmland in Ramanathapuram. There were few unique challenges to the site, being below the road level, high humidity, Salty Ground water and Efflorescence (Deposition of salt on the Building surface).

Built with only local materials available within 50kms radius of the site - Mud taken from the site, Lime, stone, and wood bought from the locality. The Building has Random Rubble Stone Masonry which is stacked dry without any mortar, to raise the building above the road level.

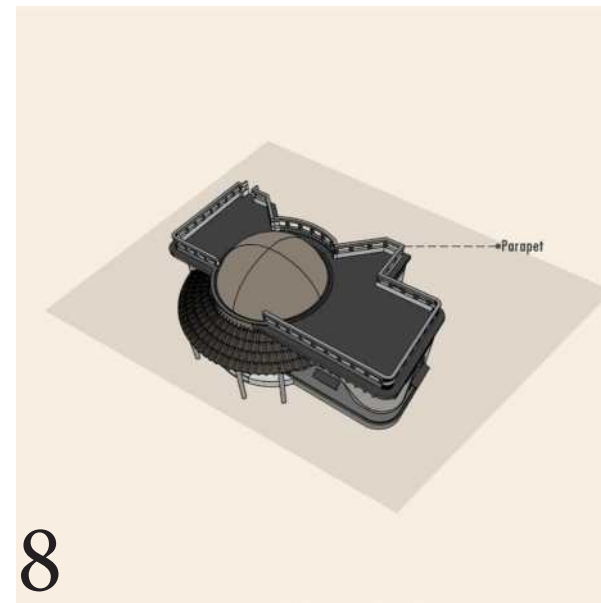
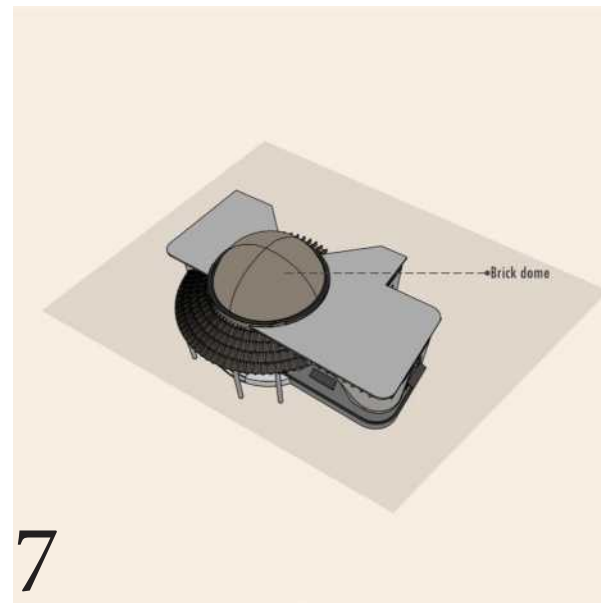
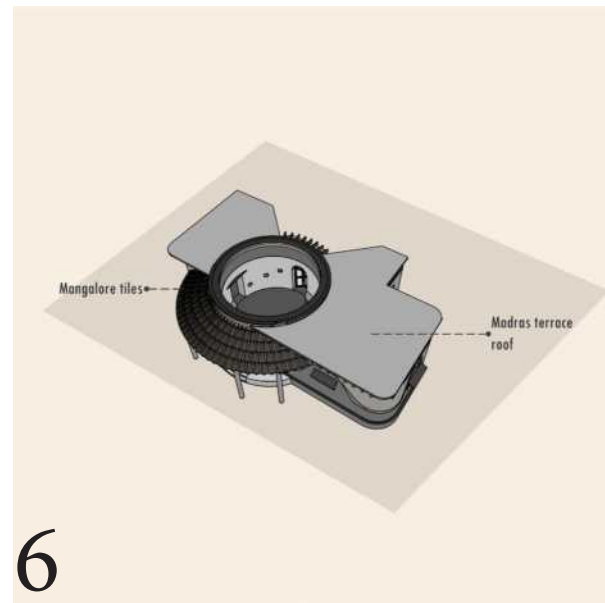
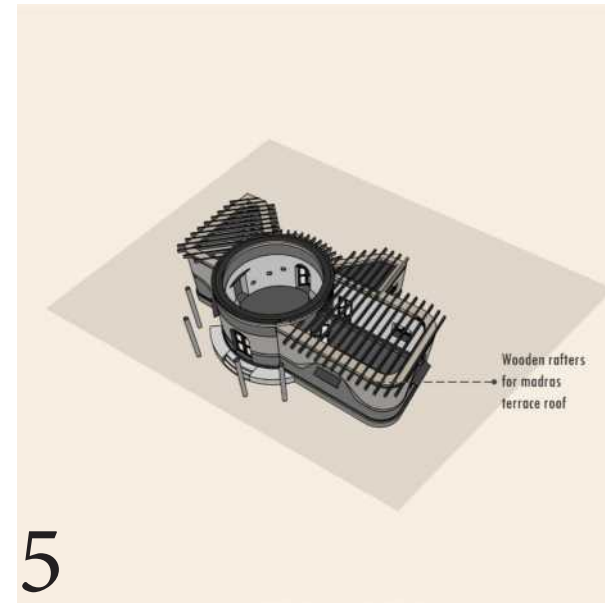
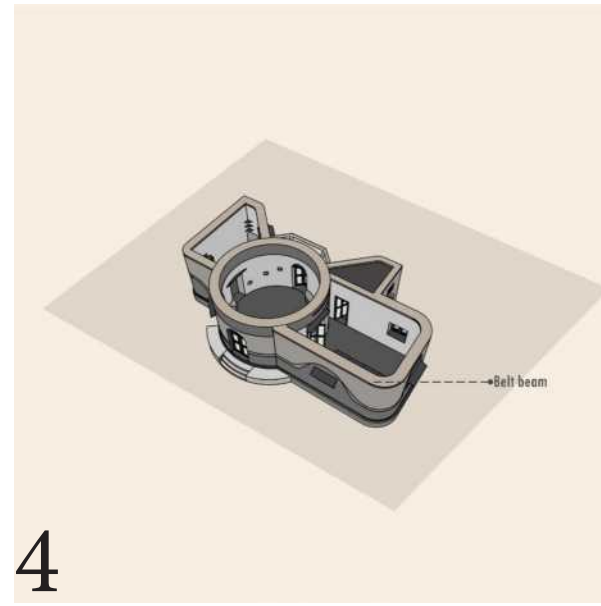
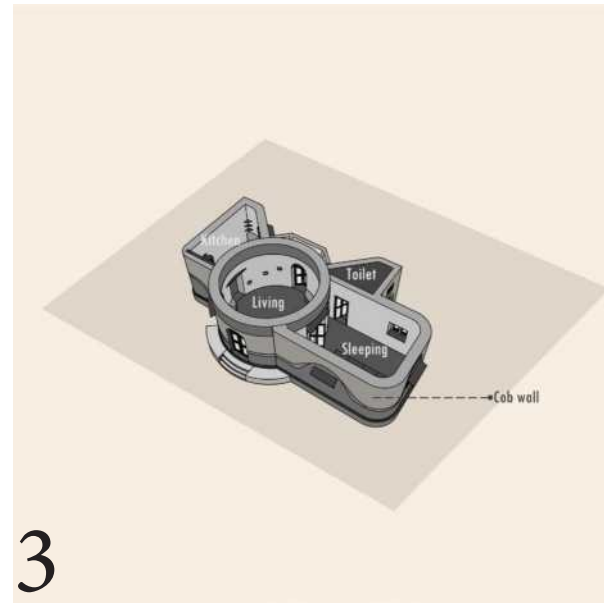
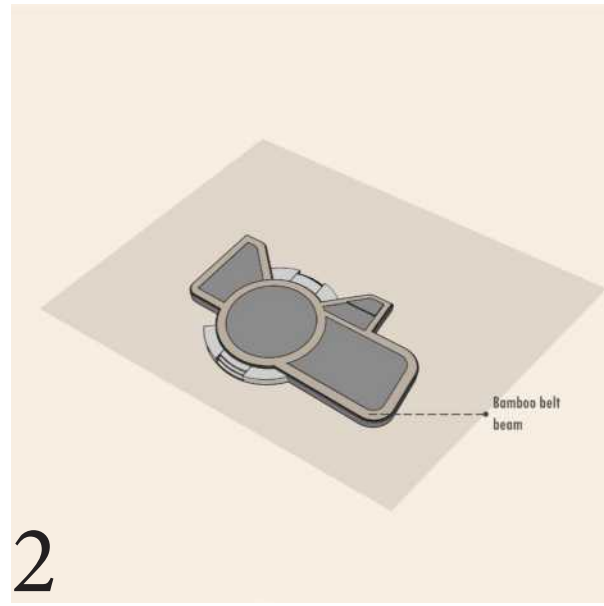
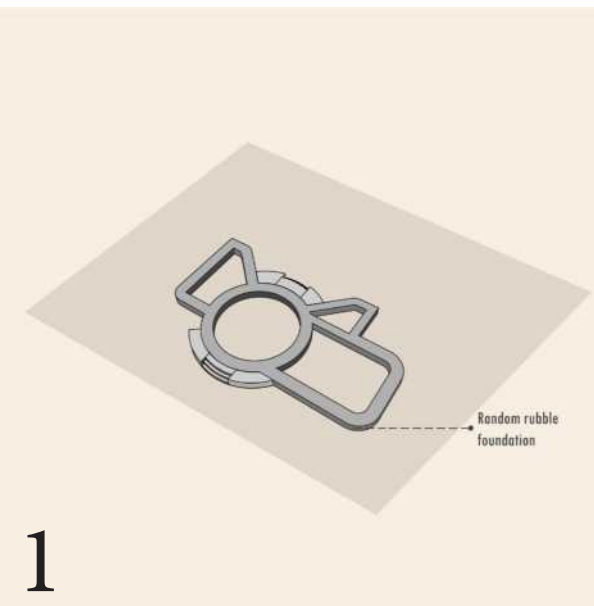
Cob walls are made with the mud harvested on-site. Doors and Windows made with old seasoned wood. Very minimal openings are provided to maintain the thermal insulation from outside and just enough ventilation to overcome the humidity.

The roof is a combination of Mangalore tile Thinnai (Porch), Madras terrace flat roof, and Brick Dome. Palm tree is the locally available and most durable option for wood in the area. Palm beams and rafters are being used for Madras Terrace Roof. Madras Terrace roof offers very high insulation from Summer Sun.

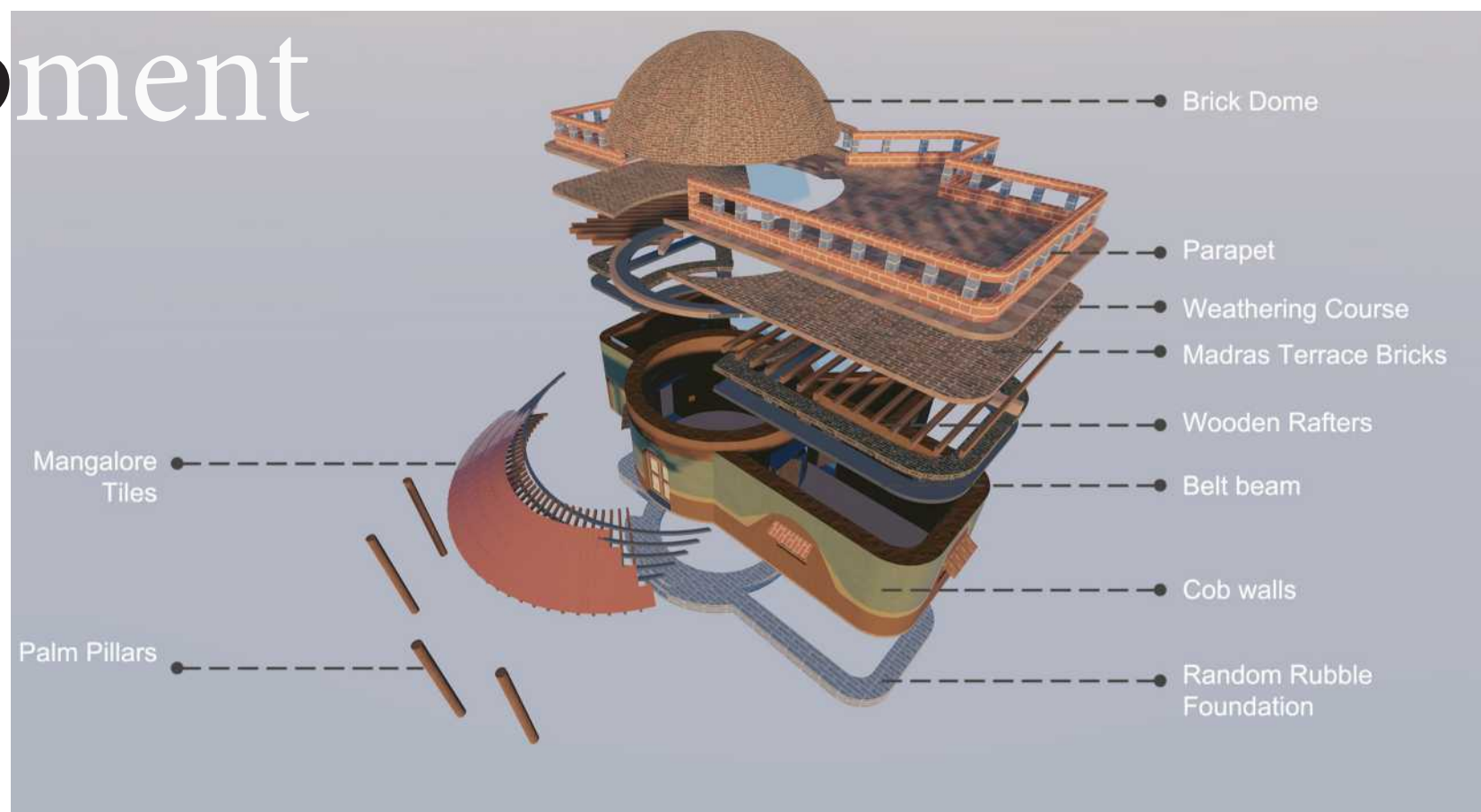


MUD
LIME
STONE
WOOD

Material used



The Development



The Brick dome helps in creating a difference in Pressure for Stack effect by letting out Hot air to rise up and escape, leaving the spaces below cool.

In such high humidity areas, its highly important to have permeable plasters. The plasters are of Mud and lime with Egg-whites and Jaggery that forms a geopolymer, would become a gel when it absorbs humidity and goes to a powder-form when dry.

The Flooring is the traditional Athangudi Flooring which is also a humectant to tackle the high humidity.

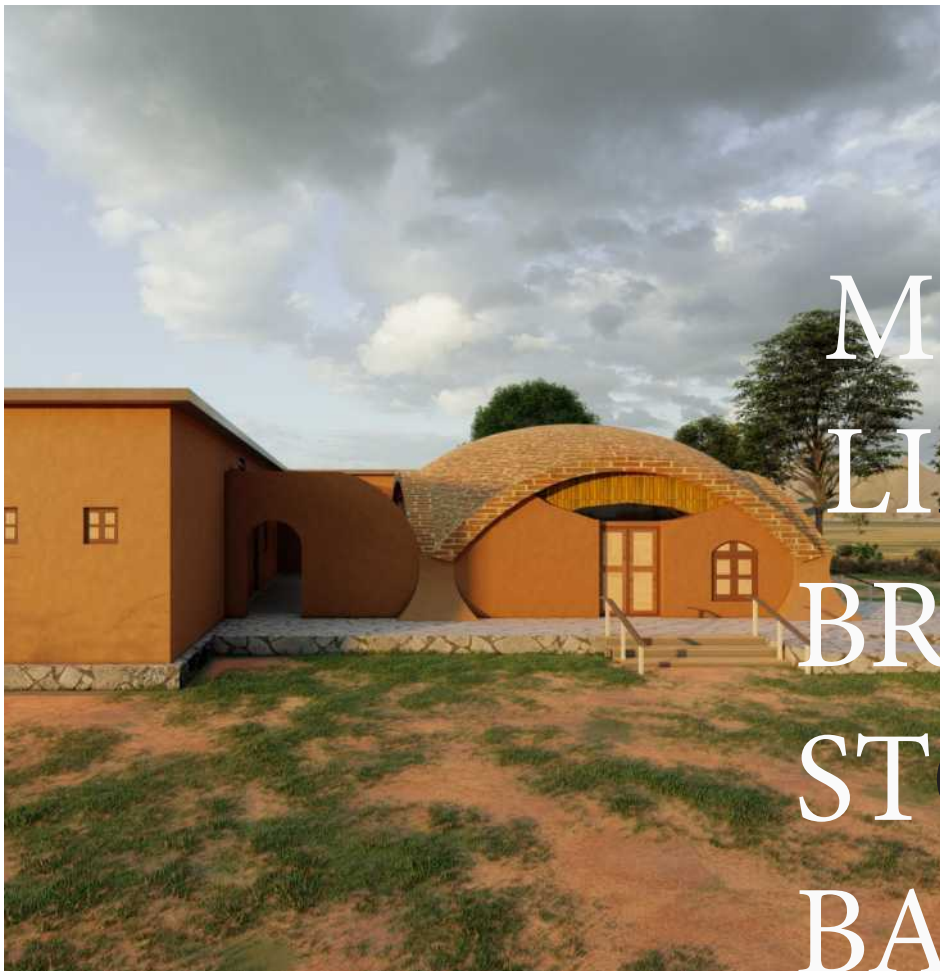


The project aims to create a Community Building that brings people together for causes of Sustainable way of Living. The building is symbolic to the community of Podhigai Solai in the way it portrays Natural Locally available materials, Local Craftsmanship and Ingenious design all executed without creating any harm to the environment.

This community building consists of a classroom, male and female dormitories, a kitchen, dining spaces and an admin area. The courtyard along the common corridor lets in daylight to the interior spaces. The courtyard also helps hot air to rise up and for better ventilation and light.

The windows are provided on top of the rooms for hot air to escape out. The sill level windows are kept on opposite walls for better cross ventilation. The foundation of the building is made of random rubble with mud and lime mortar and the belt beam at plinth level is made with vedhar bamboo and Lime-Surkhi.

The walls are made up of 1.5” cob wall and plastered with mud and lime. Filler slabs are used in the ceiling which makes the interior aesthetically pleasing at low cost. The dome roof which is made of exposed bricks makes the building look majestic in the exterior.



MUD
LIME
BRICK
STONE
BAMBOO



Material used

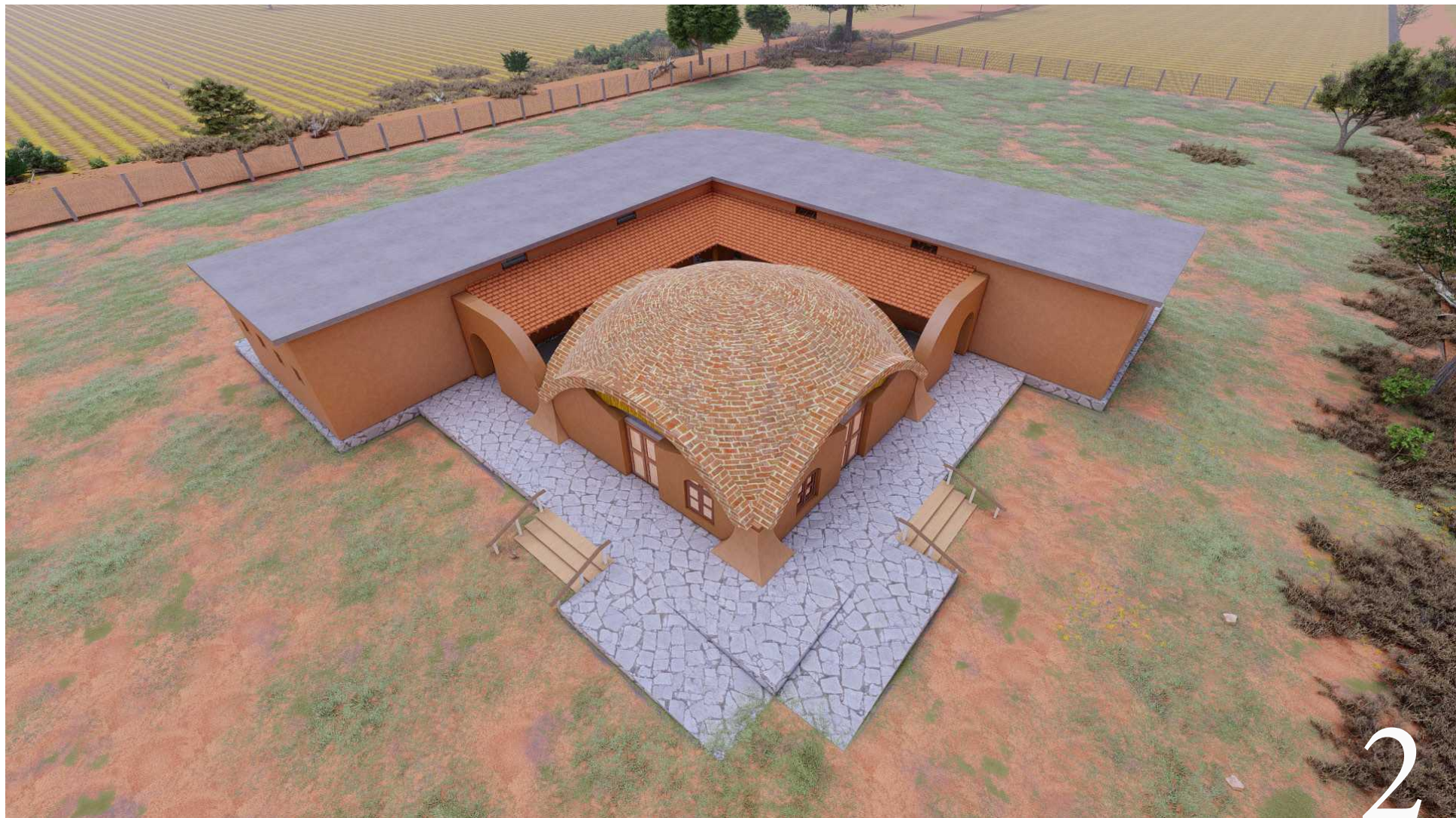


A
Structure
for
a

community



1



2



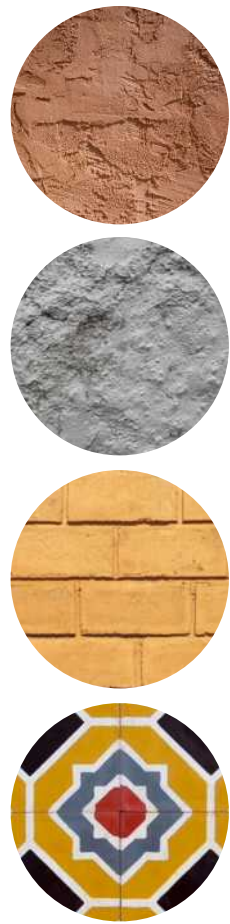
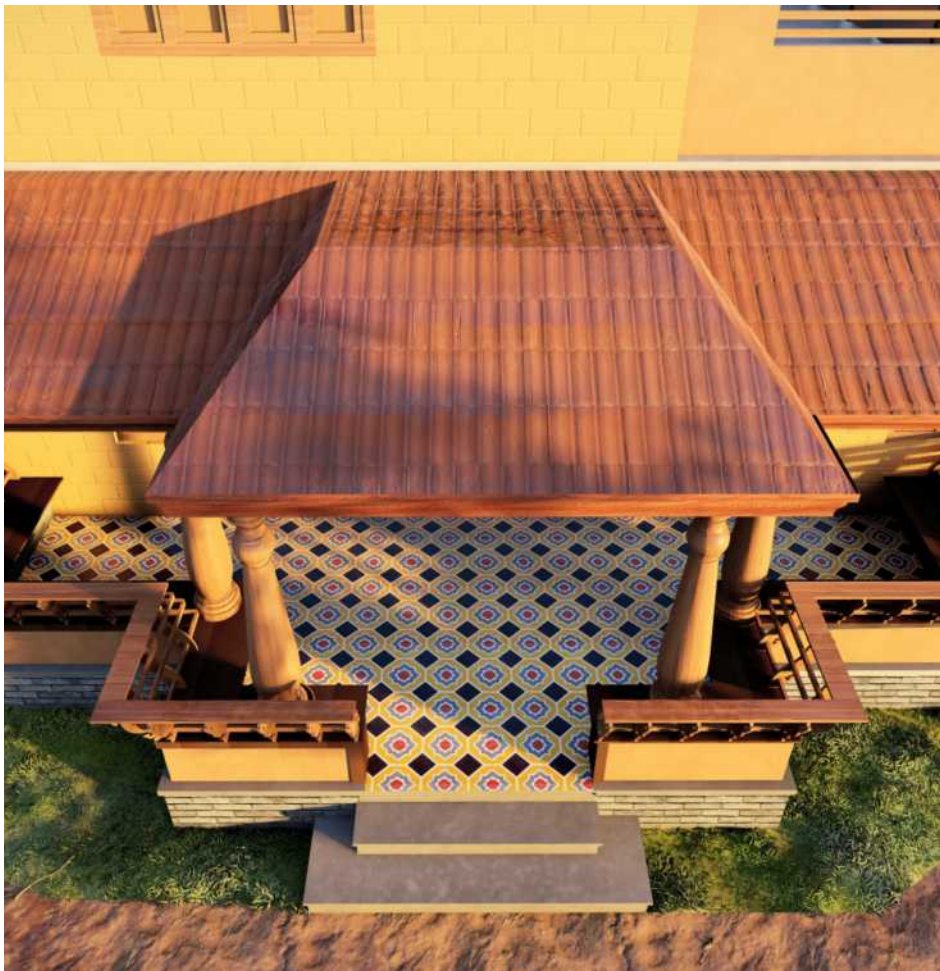
COURTYARD HOUSE

Located amidst a private farm in Dharmapuri district of Tamil Nadu , the Courtyard house welcomes the users with its Thinnai space. The thinnai space is well defined with the wooden seating element . Moving inside, the first step on the house is kept over the surface of Athangudi cement tiles with a carpet like pattern on it.

With further movement, the door opens to an interior which has the courtyard as a focal element. A tulasi planter is kept in the centre of the courtyard to get the direct sunlight. The day-light from the courtyard fills the Living room, Puja area, Dining area and the passage around the courtyard with natural lighting .

This 40’ by 40’ East facing house consists of three bedrooms which are zoned in the west . Except the bedrooms and the store room, all other areas are visually connected with the open-plan concept. This “wall-less” concept also ensures barrier free light movement in the common interior spaces, therefore reducing the usage of artificial lights in daytime .

The palette used in this Courtyard house comprise of materials with Earthy tones such as - Mud and Lime plastered walls, Terracotta tiles and red oxide finishes. Pigmented lime plasters help to define the niches in the walls.



Material used
MUD
LIME
CSEB
CEMENTB



The Courtyard.

The Courtyard house is thus created in such a way which is less harm to the environment with its material usage and also with the spatial planning - Eco-Friendly indeed !!





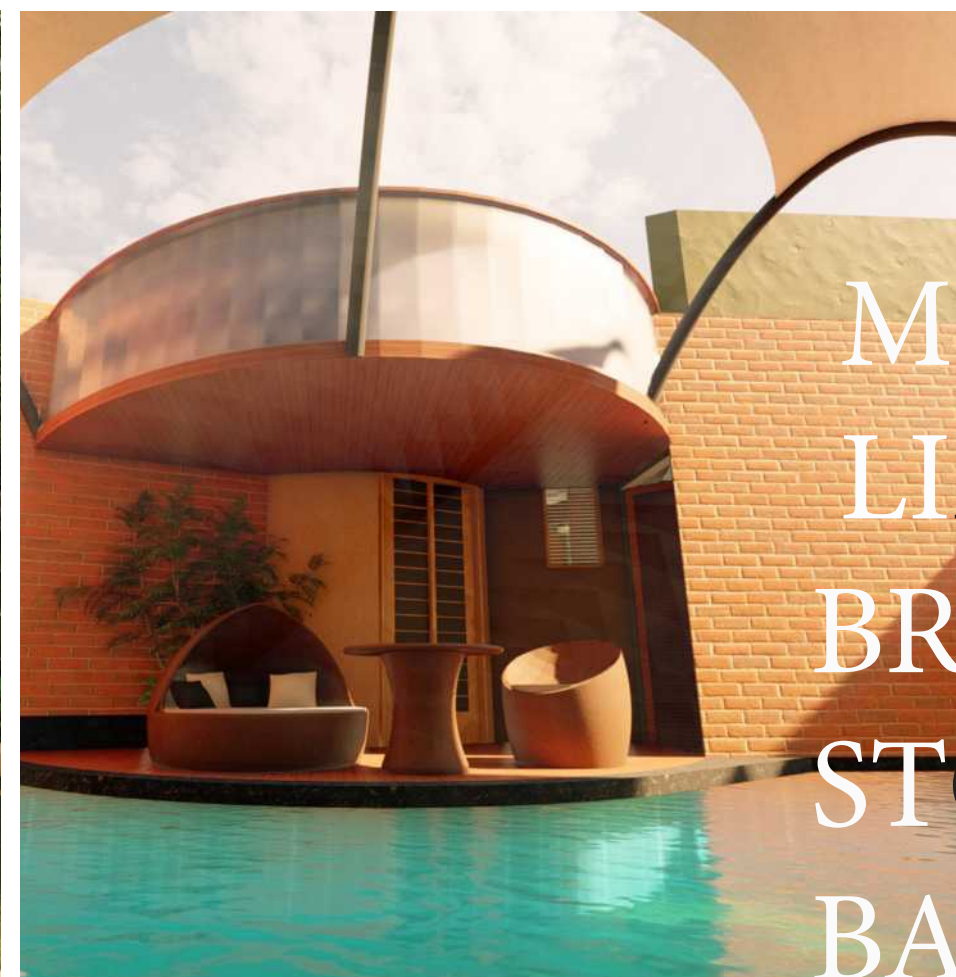
BOATCLUB GETAWAY

Surrounded by urban structures, this mud made farm house evolved as a result of the client’s desire to build an eco-friendly house. This house is made of cob walls which are curved gives a look of nature inspired massing. This mud house fits well to the site elements such as well defined landscape and the waterbodies present.

The clear cut pathways lead to multiple exciting yet calm destinations such as a Buddha statue, a pond with gazebo and a cattle shed. All these spaces are accompanied with a tranquil feel with the green cover everywhere.

The landscape is designed in such a way that it goes well with the built structures. The trees and bushes are planted sensibly to create interesting vistas wherever possible .

The pond is located at the corner of the site with a gazebo in the centre. With the right zoning , the gazebo offers a private outdoor space with steps connected to the pond. The thatched roof cattle shed make home for farm animals overlooking the pond .



MUD
LIME
BRICK
STONE
BAMBOO



Material used



from **KALI**

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