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AFAR SIDAMA

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Architect | Ethiopia

HONORABLE MENTION

Inspired by the Afar and Sidama people of Ethiopia



The prototype presented in this paper is centered on a combination of Sidama and Afar vernacular architecture. This type of architecture mainly focuses on the similarities and symmetrical nature of domed form. The Afar-Sidama prototype prominently, yet simply combines rustic elements, either integral to the architecture or as part of the decor, with modern style to create a functional and modern architecture.

AFAR

One of the most uninhabitable places in the world, Afar is located in the Rift Valley where the climate is very hot and arid. However, it displays the most unique vernacular architecture shaped by their nomadic traditions, mostly constituting of temporary shelters.. The livelihood of the people is based on cattle rearing.. The settlements are dependent on water and grazing land availability for their cattle. Once the people in these settlements have found a suitable spot, they camp in groups of two to six families. The tent, generally made of wooden frames and leather mats, is built by the women. The men build the enclosing fence around the tents and the fence for the cattle.

In order to build the tent, the women dig 15-20 cm deep holes to erect the structure/armature. The armature is composed of three types of arches. The first is the longitudinal side arches (arhina), which are erected. Next, it is followed by the transversal arches (aboli), which form the roof of the tent. Depending on the size and rigidity of the particular tent, the third row of arches (allawe) are put up. After a coherent structure has been made, the longitudinal and transversal arches are connected by threading in a small cord (maderto) of bark.

Finally, the armature is covered with three layers of overlapping mats. These mats are tied to the structure with strings of bark. A small permanent entrance (affa) with 80 cm high and 35 cm wide is located at one end. At night, it is covered with a small mat (arafayta). Wind and light come in through the entrance, and during extremely hot days, some mats are partly rolled up to let in the breeze. The interior finishing is also completed by the women. The bed, which measures 2.25 m x 1.9 m, is a rectangular frame and grid supported by vertical members. It is also used for sitting during conversation and meals.

SIDAMA

The form and structure of Sidama typology is mainly the result of the material used. Onion shape and circular plan are created through flexibility of the bamboo plant. The Sidamas prefer to do most work in groups and the construction of their homes is not an exception. A group of men who form the 'Chinancho', a crew of skilled weavers, are called on for construction of homes of the other members at any time. The people in Chinancho select a leader called Murcha to supervise the whole construction process which takes two to eight weeks. Members who do not cooperate are excluded from the group.

The traditional house division is known as 'iota'. It has 3 parts: the residential, the cooking space, and the 'arkata' for a cattle and crop store. The interior is accessed through a porch and it's divided into 'olico', living area of the people, and 'hadro,' space for cattle. The 'olico' is further divided into 'holge', parent's sleeping area, and 'bosalo', sleeping area for children and guests. The 'bosalo' is also used for storing production materials and other small items.

The interior partition separating 'holge' and 'bosalo' is made of wicker work. Upright poles of as tall as 1.7 m are stuck into the trench fairly close to each other. The next stage is the wicker work. The vertical bamboo is woven onto lean horizontal bamboo strips the roof is made simultaneously. The inner layer of the roof bamboo rafters and intermediate sticks are tied together in concentric circles using bamboo rope. The partially completed roof is then put in place supported by the central post. More vertical posts are added and tied with strong twigs and no scaffolding is necessary.

VERNACULAR ARCHITECTURAL ELEMENTS INCORPORATED IN THIS PROTOTYPE

- Domed Form
- Middle and Surrounding Courtyards
- Kitchen Patio for External Use
- Modern Functional Space Arrangements
- Entrance
- Ethiopian Vernacular Inspired Form

PROGRAM

Total Plot Area – 113 sq. m

GROUND FLOOR

Courtyard – 17 sq. m
 Main Entrance – 2 sq. m
 Guest Room – 12 sq. m
 Corridor – 12 sq. m
 Living – 11 sq. m
 Dining – 9 sq. m
 Kitchen – 12 sq. m
 Outdoor Kitchen – 8 sq. m
 Bathroom – 12 sq. m
 Store – 6 sq. m

FIRST FLOOR

Master Bedrooms – 22 sq. m
 Bedrooms – 20 sq. m
 Bathroom – 8 sq. m
 Corridor – 6 sq. m
 Balcony – 18 sq. m

BUILDING MATERIALS

Roof – Concrete arched column-beam and ring beam with roofing tiles
 Floor – Concrete floor slab with brown finish
 Walls – Mud blocks
 Foundation – Stone masonry
 Ceiling – Balcony and entrance roof – roofing tiles, bamboo

EXTERNAL FINISHING

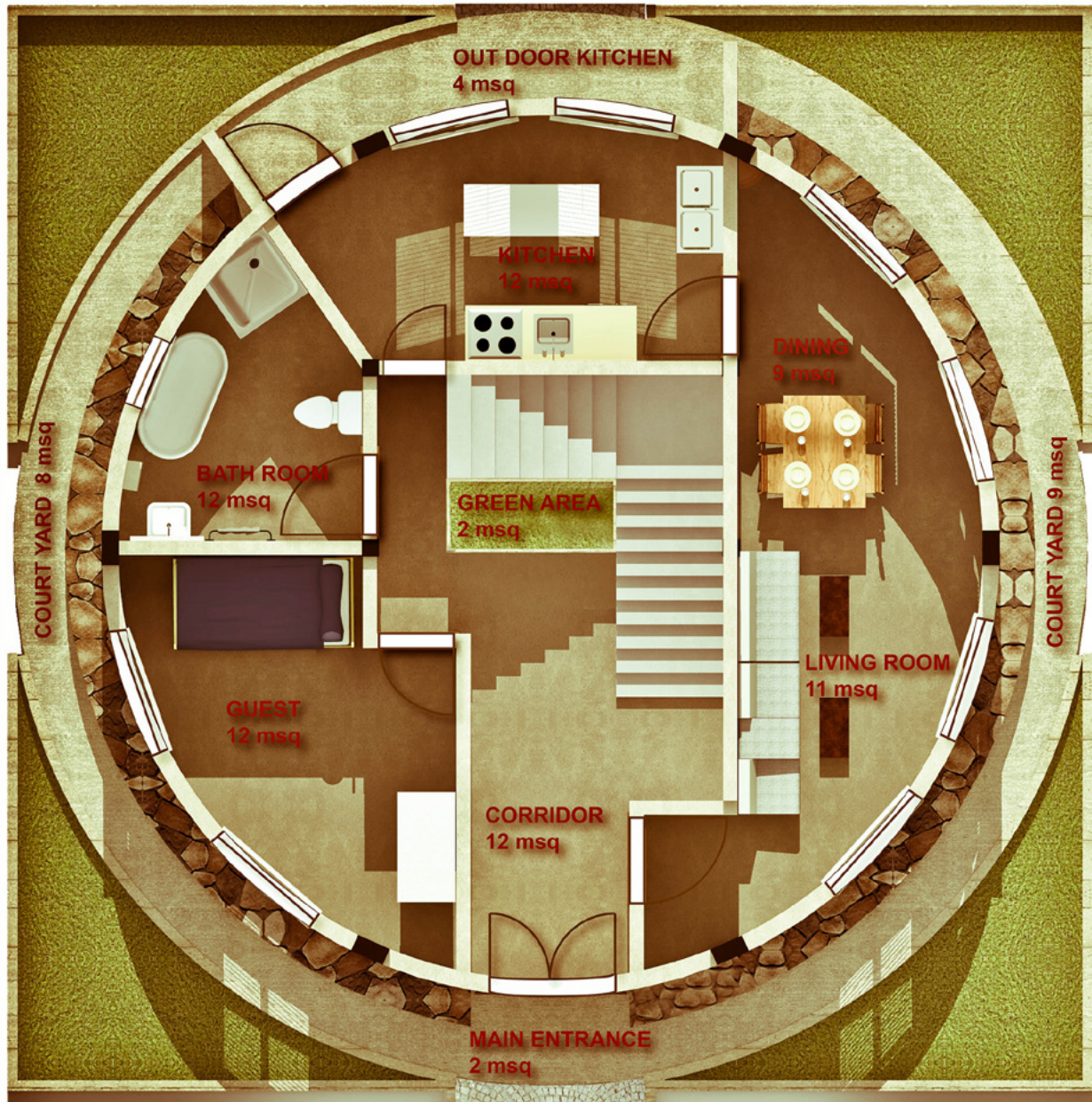
Wall finishings are African color and textures in water tight fabric
 Burned tile clay for roof's tile
 Masonry stone for foundation and sitting
 Bamboo for ceiling

VENTILATION AND AIR FLOW

Each and every space is connected with a central courtyard to facilitate cross ventilation, through stack effect into upward roof directions. The balcony's roof overhangs to prevent excessive, direct sun light on the balcony and entrance. Placed in adequate positions, this prototype also includes a recessed window which will reduce the temperature and create airflow.

This prototype is designed with the modern functional play layout in the vernacular geometrical form. It includes African ornamentation and aesthetics with durable, locally available building materials and the necessary functions and utilities of security and privacy required in modern living. Lastly, flexibility is considered in this prototype using the ground and first floor for different owners as multi-dwelling units.

GROUND FLOOR



FIRST FLOOR

