ómba

Although many different religions exist, religion as a whole is a largely community-oriented aspect of society. Religion brings people together in practice, celebration, tradition, life, loss, disaster, and hope. Most are focused on helping yourself and one another to worship, to gain spiritual connection, to learn acceptance, and to be happy and at peace. A common string that connects the core values behind so many diverse beliefs is the vital concept of a community.

We have chosen to name our design the Ómba Center. The word ómba means "to be together" in Wolof, the most common language spoken in Senegal. This name captures the value of welcoming all belief systems, while commending the connecting thread of ideals between them. This concept is the essence of what it would mean to have a communal religious center – celebrating each other's differences, while finding common ground.

UNITY IN DIVERSITY

(Image 1)

As a guiding principle to our design, we have embraced the West African symbol of Unity in Diversity (locally known as Funtunfunefu-Denkyemfunefu), shown in Image 1. This symbol depicts "Siamese crocodiles" hunting for their own nourishment, while sharing the same stomach. In a community made up of multiple religions, everyone brings something different to the table. Each member will come in with a unique perspective and capability that they can share. This could be in the form of providing knowledge and education, teaching or utilizing a learned skill, or providing a specific type of produce or material good such as woven baskets or blankets. All residents of the community will have the ability to contribute to the greater whole.

FORM

The thought process behind our design takes on multiple layers, the first being the building's orientation. While analyzing the site we saw four paths moving towards the location then converging around its perimeter (See Diagram 1). Out of these four paths, two serve as major roads through the town's center, and two are less prominent, meandering back from the site's west end. Through this analysis we created a shape with four entrances, all angled so the entry façade lies perpendicular to traffic flow from each road, creating the perfect natural access points.

Next, we pulled from the visual gestures of our project's conceptual origin, the West African symbol of Unity in Diversity (see Image 1). This allowed us to further delve into the idea of having two major thresholds, which correspond with the two reptilian heads. When aligned with the site and the four access points, each head runs parallel to the main entrances from the larger roadway, while the tails link with the subtle entrances at the back of the site.

(Diagram 1)

SPACE

We wanted the design of this space to emulate the idea of welcoming, that all are encouraged to inhabit and utilize no matter where you are coming from and what your background is. In this sense, we saw the four paths previously mentioned as a way of grounding this aspect of our design. Seeing the four roads as four points of welcome, we decided to divide up the space accordingly. We wanted to focus on the idea of four thresholds into common ground, so we drew from that and created four distinct enclosures that work together to pull users into the central interactive space. Each enclosure has its larger façade facing the exterior pathway to the site, which gently angles inward to create a perspective and natural movement to the building's collective center. The central space is the most open, with an interior/ exterior flow as it is only enclosed by a layout of overlapping wood beams and greenery overhead.

SPATIAL LAYOUT - THE GOLDEN RATIO

The Golden Ratio is a number, approximately 1.618, that constantly recurs throughout our natural world. With nature conforming to such a specific standard, it isn't surprising that it has taken on a sense of divinity to many. Also known as the Divine Proportion, this number connects pure and abstract mathematics to the physical reality in which we live. It has been a factor in creating many religious spaces over thousands of years, and it is the reason behind various building proportions, heights, window arrangements, spatial layouts, and the list goes on.

As an element that has brought together so many religious spaces in the past, it made sense to use it as an informative component to our design as well. In application to our building, this model of organization influenced the form, proportion and spatial relationships within. The area of each enclosure is related to the area of its neighboring enclosure based on the Golden Ratio, starting from the largest enclosure on the northeast side of the site around clockwise to the smallest enclosure on the northwest. This relationship is described in Diagram 2. This ratio informs the highest point of each enclosure in the same way.

Largest = A

2nd Largest = B

3rd Largest = C

Smallest = D

$$\frac{A}{B} = \frac{B}{C} = \frac{C}{D} = 1.618...$$

(Diagram 2)

PROGRAM

When defining the Ómba Center through a programmatic lens, especially for a religious center, we thought about the importance of both public and private space. For a successful dynamic we felt that it was essential for there to be a balance or harmony between the two. People need to feel as though they can easily transition from a place of interaction and activity to a place of introspection and reflection.

The building is generally split up into five different spaces, that all come together cohesively as they unite in the center. The size and placement of each portion of the building

helped inform the level of interaction that would occur in that particular area. The largest enclosure to the northeast of the site is the first you see when coming from the main road. Here will be a larger place of gathering, community meetings, and group worship. The next largest enclosure, to the southeast will be designated for multiple groups to inhabit at once. Mostly open, with the exception of a few partitions, this space allows for classes, group discussions, and any type of slightly smaller congregation. As we move towards the southwest, the next enclosure we encounter is slightly smaller than the last and one of the back entryways to the site. This space will be provided with a series of moveable partitions, where spaces can be shifted and used for more private events made for smaller groups that need a more significant visual separation from each other. The next in the series is the enclosure at the northwest corner; this is the smallest and therefore the most private. The area within is split up into private family to one-person "rooms" of worship and introspection. This enclosure allows the user to have some time alone to carry out the individual rituals that they value.

Lastly, the central portion of the project is the most public out of the five, creating the highest potential for social interaction and communal gathering. It can be described as an interior/exterior space with a slight coverage overhead, allowing for maximum pedestrian flow. Being that it is open and centrally located, this section of the building is ideal for hosting markets, trade, and general larger-scale community interaction and leisure.

SUSTAINABILITY - PASSIVE DESIGN

A number of passive design strategies were incorporated into the building design, the first being a passive cooling method. This system was incorporated through a sequence of horizontal wood slats that make up the enclosure roofs. The slats are oriented at an angle that blocks the direct heat of the sun during the hotter summer months, while allowing warmth to pass through during the cooler winter season. Regulated spacing between the slats allows for the passage of indirect natural light into each enclosed portion of the building. Thermal mass is established through the use of rammed earth to form the exterior walls. When direct sunlight hits the surface of the wall it is absorbed during the day, then released during the cooler temperatures at night. Natural ventilation is created through airflow from the higher-pressure enclosed spaces, out through the open, low-pressure center of the building. Passive shading is applied through the placement of deciduous trees surrounding the perimeter of the building, to supply areas of shade throughout the warmer hours of day.

SUSTAINABLE MATERIALS

To create a structure that reflects the context of the site, it is of high importance to complement the aesthetic of the existing conditions. Our team took this a step further by designing a building that solely sources materials that are found in or native to West Africa and can be obtained directly within the Village of Tanaf itself.

Baobab Trees - The wood of the Baobab will be used as a structural element within the building. It will provide structural support for the enclosures as columns and beams, and make up the beams within the central space. It will also make up the roofing system of each enclosure and a portion of the façade.

Palm Trees - The trunks of the palms, or a similar local tree, will provide the vertical structure in the central space. These columns will be unfinished, representing the rough exterior texture of the palm, staying true to the

natural wood source with no milling required.

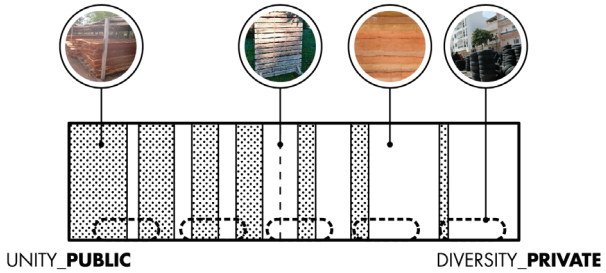
Rammed Earth – Made from Tanaf's naturally occurring laterite-filled sand banks and clay banks, this material will be a large portion of the structural and aesthetic appeal of the enclosures' exterior wall system.

Black Pepper Vine – This will be a prominent feature within the central space of the building. As this vine begins to grow, it will be coaxed to take hold and wrap around each overlapping Baobab beam to create a higher density of greenery and natural coverage above.

Existing Car Tires – These will be utilized as planters around the exterior of the building. As an existing material, they will only need to be moved to the distance to the site, then filled with soil and any native plant or shrub of choice.

FAÇADE

The exterior façade of the enclosures was created using a dual system of rammed earth and vertical wood members. The rammed earth produces an aesthetic that blends gracefully with the areas' naturally red-tinted clay banks, while the vertical laths cut from native wood combines with the local tree population to generate an ultra-contextualized visual appearance.



TYP. ELEVATION_ **EXTERIOR FACADE**

(Diagram 3)

The rammed earth, constructed and ultimately displayed in layers, is representative of the different groups and layers within the community.

The wood slats form a gradient that begins at a lower density that gradually transitions to a higher one as you move towards the buildings' center. This shift in frequency is to illustrate the shift from private to public space within the building as you move from the entrance of each enclosure towards the interactive central space.

CONSTRUCTABILITY

We looked at the architecture surrounding the site to develop a construction process that we believe has fairly similar level of difficulty to that of the existing buildings. Putting together a wood framed structure using standard wood sizes seemed feasible when compared to the buildings shown adjacent to the site. Therefore we chose mainly wood framing for our structural system, along with a rammed earth exterior wall design. Rammed earth is created through a simple process of putting together a wood formwork, layering different moist sand, clay, and earth mixtures, letting each layer dry separately, compressing, then repeating the process until the desired height is reached.