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SAKHILE

by Nicole Nomsa Moyo
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HONORABLE MENTION

Inspired by the culture of Ndebele and Zulu of South Africa



SAKHILE (WE BUILT) FEMALE

As a young Ndebele woman in a world that is ever changing and globalizing, it is through self-reflection that I know I need to take ownership of celebrating and building my culture and heritage. Sakhile, is a female Ndebele name meaning “we built”. The value of the name is deep rooted in its expression of how our African cultures have come to be. The evidence of what “we built” has been and continues to be created and conserved through storytelling, art and architecture. Sakhile is inspired by the Sub-Sahara based Ndebele and Zulu ethnic groups who traditionally lived in dome beehive shaped structures called “Huts”. The Sakhile house borrows its structural language of the indigenous huts, bridging the past and the present with a more modern, permanent, and sustainable selection of material translations and functions. Traditionally, Ndebele and Zulu tribes constructed their hut homes out of small tree trunks and branches that are placed in the ground in a circle. Construction techniques show that the branches are woven and tied with stripped bark to create a structural wall. Dry long grass is then used to thatch the roof tying the materials together. The vision of the Sakhile house is pure in its circular asymmetrical form and humble in its scale. The design is a threshold between traditional Ndebele ideologies, art, materials, modern technology, celebrations of architecture, and culture interwoven to initiate the evolution of modern African architecture.

FORM

The predominantly circular shape of the Sakhile House is of pure form. Traditionally, the shape reflects ideologies of connection to nature, physical and metaphysical experiences, universal light, and our interconnected existence to others. In the Ndebele culture most day-to-day interactions usually happen outside, however, the Sakhile House plans wish to demonstrate an internal interactive space that reflects a more modern-day culture. At the very center of the plan is the multi-functional living space. The living room is the most important feature of the house. It is open to the sky and acts as an internal courtyard that transforms as light and day-to-day functions such as family gatherings that animate the space. All the adjoining more private spaces, namely the kitchen, dining and study, and washroom and bedroom are connected to and meet at the center of the plan. The plan intentionally reflects a new architectural language with intermediate space that celebrates the importance of community and human interaction. Although the shape and architectural language of the Sakhile is borrowed from the Ndebele and Zulu tribes, the development of the design is strategically in favor of the circle, which will allow for maximum sun exposure throughout all seasons in all African countries. The modern day kitchen looks onto and engages with other spaces. The kitchen is elevated above the multi-functional living room and its open plan extends to an outdoor courtyard and entertainment patio.

MATERIALS

The materials selected for the design of the Sakhile House celebrate the visual aesthetics of sub-Saharan African identity. Materials were strongly developed on the research of Ndebele and Zulu building techniques, cost and accessibility, structural functions, and Earth tone colors. The architectural facade bridges modernity and cultural heritage. Red bricks are a popular building material in South Africa. The brick is a modern and more structurally sound clay-like material. The facade also incorporates patterns that can be found on traditional Ndebele architecture. The Sakhile house has an outlined pattern wall that acts as a “blank canvas”. This allows the owner of the home to have freedom in color selection of how they want to be represented, and that makes their home unique to others. Concrete is used for the stability of walls and the foundation. Ndebele dome construction materials are replaced with more weather-bearing and sustainable materials. Glass is used to create transparency and light, creating a relationship between internal and external environments. Most

importantly, the selection of the materials and the structural language of the house is intended for both men and women's involvement in the aesthetic design and building process.

FUNCTION

Light, Heat and Ventilation

Traditionally light has always played a role in architecture, as the effect of light can dematerialize building materials, creating life-filled tangible and intangible spaces. The bases of traditional Ndebele hut design allowed for moderate air movement but minimal internal light exposure, limiting the functions of the home during the day and at night as simply a place to rest after dark. The use of natural light not only allows the internal spaces to have a direct relationship with the environment; in addition the light works passively to heat and animate living spaces. The house membrane is punctured with window openings and vents that are inspired in shape and form from transitional Ndebele and Zulu patterns. The Gabion wall technologically and passively heats the home. The air vents allow for passive movement of air throughout the house. The thatched roof is an architectural element, which breathes and was specifically reincorporated into the design of the house to allow for cooling to occur in both dry and humid temperatures.

Water

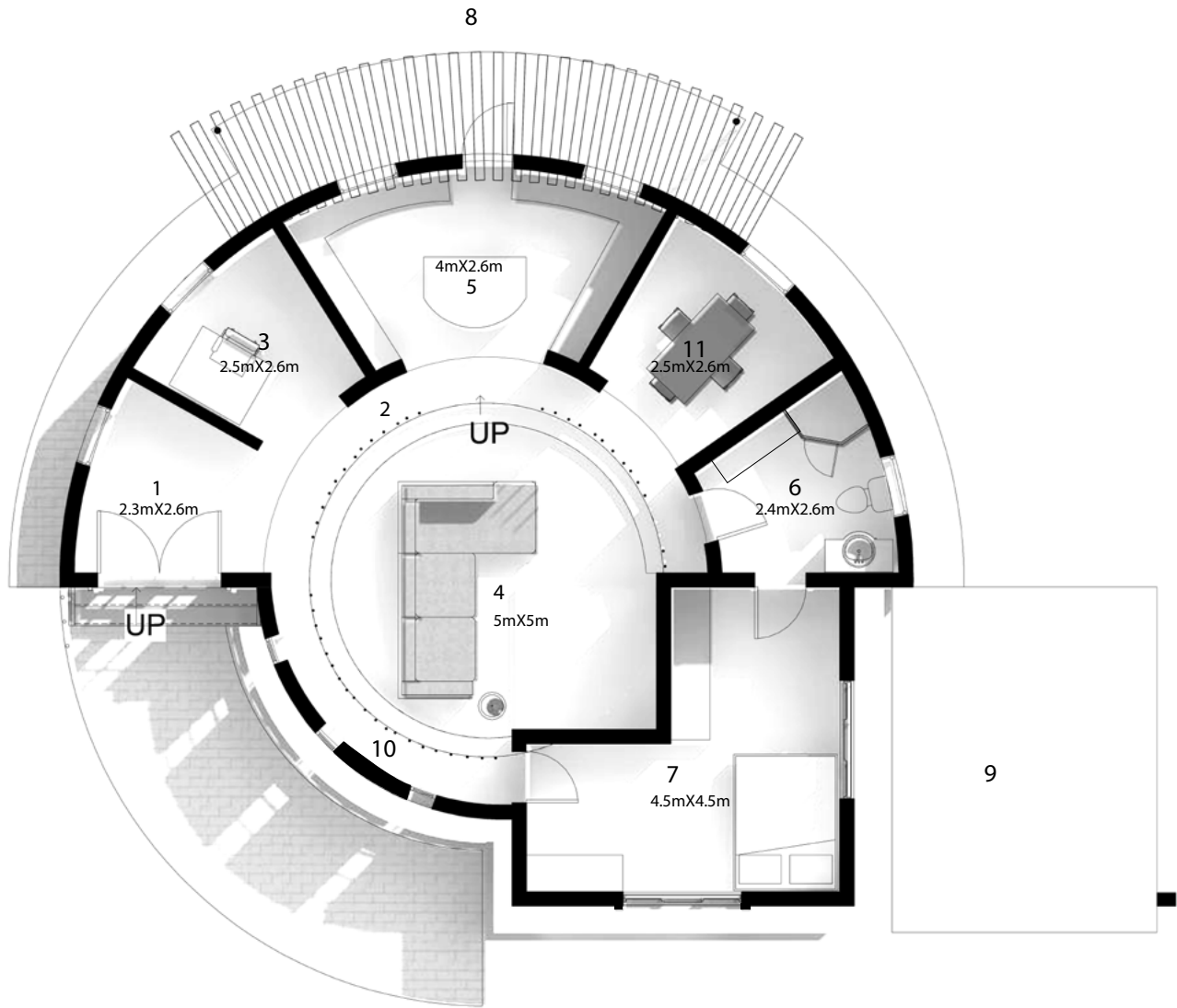
Developing countries have growing urban populations. Cities are becoming desired places to live. However, the speed at which the population growth is happening makes it difficult for governments and municipalities to deliver water as a basic human right and need. As architects, we have the ability to have a positive impact on all communities by insuring homes have alternative sources of water collection and storage. It is my proposal that by law all houses have a rainwater cistern connected to the roof as seen in the Sakhile design. Water is sacred in all cultures and societies. This, along with the entire integrity and design of the house, is fundamental to improving the livelihoods of all communities.

SYSTEMS

- Light: The Gabion wall is heated by the sun. The heat is then transferred into internal living space. This is a great architectural feature, especially in winter.
- Ventilation (Wall Vents): Inspired by Ndebele pattern and allows for passive and natural movement of hot and cold air.
- Heat: The Gabion wall is heated by the sun. The heat is then transferred into internal living space. This is a great architectural feature, especially in winter.
- Ventilation (Roof): Modern advancement of traditionally thatched roof "breaths" and ventilates the internal atmosphere.
- Rainwater Cistern: Harvests rain from the roof and stores water for on-site usage.

MATERIALS

- Exterior: Concrete foundation, brick, thatched roof, and stone veneer
- Interior: Wood and concrete



SAKHILE HOUSE FLOOR PLAN

TOTAL SURFACE AREA: 112 METERS SQUARED

- 1. ENTRANCE
- 2. COLONNADED PASSAGE
- 3. STUDY/ CAN BE CONVERTED INTO AN ADDITIONAL ROOM
- 4. INDOOR COURTYARD / LIVING SPACE
- 5. KITCHEN
- 6. WASHROOM
- 7. BEDROOM
- 8. OUTDOOR COOKING SPACE AND PATIO
- 9. UNCOVERED GARAGE
- 10. PLANTERS
- 11. DINNING ROOM