



Kaira Loro 2024 | Maternity Centre in Sub-Saharan Africa

Archetype team - 19/07/2024

Νικητές Διαγωνισμού

The renowned Kaira Loro architecture competition concludes its 2024 edition with the announcement of the winners, selected by a prestigious jury composed of some of the world's most influential architects. Organized by the humanitarian organization Balouo Salo, this initiative aims to launch young architectural talents, support charity projects through competition proceeds, and develop research on humanitarian architecture aimed to improve the world and to reduce social inequalities.

This year's competition focused on designing a Maternity Centre for rural areas in Southern Senegal, offering comprehensive healthcare throughout pregnancy. Today, in fact, in Sub-Saharan Africa, over 200,000 women die annually during pregnancy and childbirth due to insufficient healthcare facilities, medical personnel, and adequate sanitation. Rural women often travel over 50 kilometers to reach hospital facilities, with prohibitive costs for transport and medical care. Furthermore, a lack of education affects more than 60% of women, impeding their ability to learn about good hygiene practices and the risks of early pregnancy and unassisted childbirth. These issues lead to six out of ten women choosing traditional home births, exposing themselves and their newborns to significant health risks. The World Health Organization (WHO) provides guidelines to improve maternal and newborn care, including promoting access to healthcare, reducing maternal and

neonatal mortality, and promoting hygienic delivery practices.

The competition sought innovative architecture models using sustainable technologies and promoting self-construction process. The design requirements included a maximum indoor surface area of 350 square meters, with specific areas such as reception, healthcare personnel spaces, examination and consultation areas, wards, labor and delivery areas, an operating area for caesarean sections, and a neonatal observation area.

The project site for this competition was any rural area of southern Senegal, where the Balouo Salo organization, founded by architect and humanitarian activist Raoul Vecchio, has been operating since 2014. This region is one of the least developed in the country, with poverty affecting about 90% of the population, only 8% having access to drinking water, and 70% living without electricity.

Additionally, 75% of women lack access to health services, and the neonatal mortality rate is the highest nationally. This situation inspired the competition's focus on finding innovative solutions for maternal healthcare.

Once again, this year, Kaira Looro is confirmed as one of the most recognized and influential architecture competitions worldwide. This edition saw exceptional participation, with around 900 teams from 112 countries, including Italy, Turkey, Poland, India, China, Mexico, Brazil, Taiwan, United States, Colombia, Greece, Spain, Morocco and France.

The competition entries were evaluated by an international jury featuring award-winning architects such as Kengo Kuma (Kengo Kuma and Associates), Benedetta Tagliabue (Benedetta Tagliabue EMBT), Agostino Ghirardelli (SBGA | Blengini Ghirardelli), Mario Cucinella (Mario Cucinella Architects), Urko Sanchez (Urko Sanchez Architects), Raul Pantaleo (TAM Associati), Tosin Oshinowo (Oshinowo Studio), Emmanuelle Moureaux (emmanuelle moureaux INC.), Saad El Kabbaj, Driss Kettani and Mohamed Amine Siana. The scientific committee included composed of Raoul Vecchio (Balouo Salo), Sebastiano D'Urso (University of Catania), Dario Distefano (Archicart), Moulaye Diebate (Balouo Salo), Grazia Nicolosi (University of Catania), among other experts in sustainable architecture and humanitarian actions.

On 9th July, the organization announced the 50 awarded projects.

The 2024's edition **winner** is young architect **Bao Gia Luong** from Vietnam, who receives €5000 and an internship at Kengo Kuma and Associates in Tokyo.

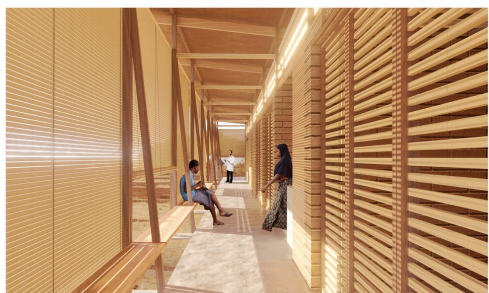
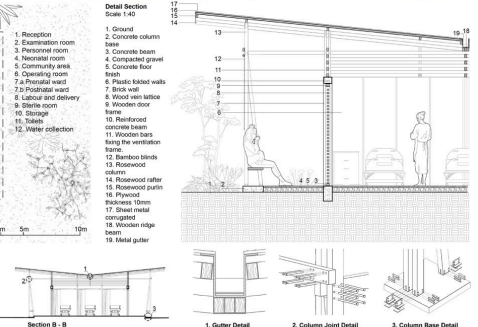
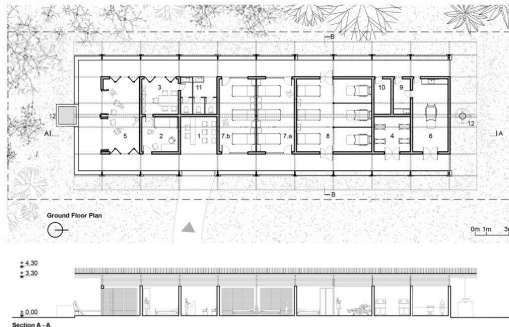
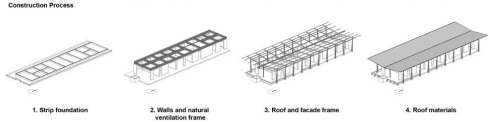
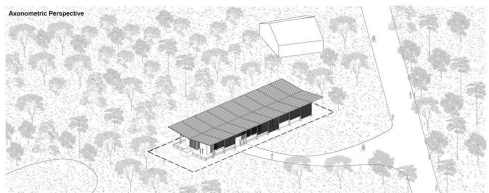
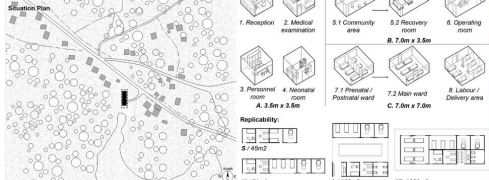


This project begins on finding the current issues and establishing design criteria to ensure the proposal meets the safety needs of women who are or will soon become mothers. Most maternal deaths stem from the lack of medical facilities to meet the local childbirth needs, causing mothers to often give birth at home. However, due to a lack of knowledge about pre- and postnatal hygiene, along with relatives who are not highly skilled, many deaths result from hemorrhagic shock or infectious diseases.

Therefore, this plan presents a model of a Maternity Center that provides a place meeting necessary conditions to ensure the health and mental well-being of the local people through three design strategies:

1. Honoring the vernacular architecture by utilizing local materials and forming a workflow that transitions from serving the community as a communal space for local residents to medical service areas.
2. Adaptability to serve as many patients as possible on the plot scale of 45m x 15m by providing two floor plans to accommodate the maximum number of beds (standard plan and bed-overload plan).
3. Scalability (choosing a modular layout of 3.5m x 3.5m so that the model can easily be expanded to different areas depending on the favorable or challenging conditions that the site or that venture is facing, applying the functions of each type of room appropriately).

From the main entrance, guests will reach the reception desk with seating available inside and benches along the site corridor. Additionally, a well-built healthy water tank are used for collecting and storing reserve water that can be supplied to the whole community. A communal space is also designed where people can gather and raise awareness about prenatal and postnatal health safety, with guidance performed by nurses and doctors.



The **second prize**, awarded to the team composed by **Kanomi Fukuoka, Ryota Oreng, Hitoshi Takahashi, Ayaka Soda, Tomohiko Hama** from Japan, includes €2000 and an internship at Benedetta Tagliabue EMBT in Barcelona.

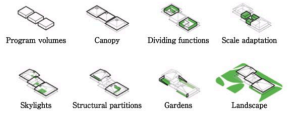


MATERNITY CENTRE

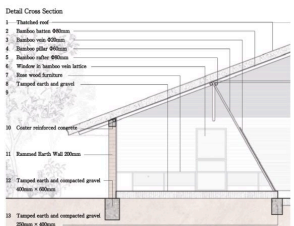
This maternity center, located in a village in Senegal, features a design inspired by the traditional forms of settlements that have existed for generations.

The three main volumes are derived from the necessary programs for the maternity center (the hall building, the ward, and the treatment building) each protected by expansive thatched roofs. Among the base volumes, the two on the sides create corridors and rooms by shifting the walls. The laterite earth walls support the roofs as load-bearing elements and enclosures.

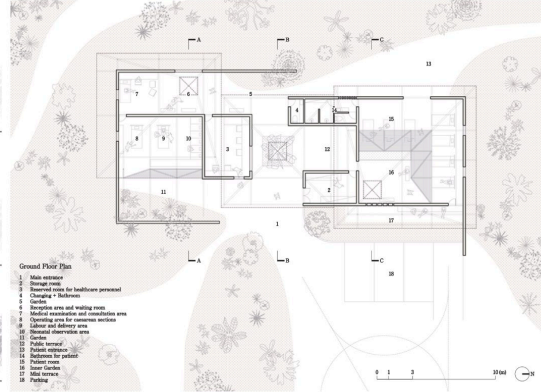
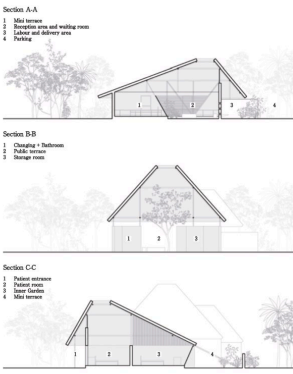
The centrally located hall building is finely divided and movable, creating a central pathway. This gently connects the relationships between each zone. Skylights installed in each roof bring more daylight into the waiting areas, halls, and rest areas, and serve as pathways for heat circulation. The intermediate walls, made of bamboo columns, beams, and bamboo vein lattices, gently divide the space. Wind and light softly pass through, protecting the bedrooms and treatment rooms, and also serve as structural supports for the roofs. The walls extended from the laterite earth walls create an enclosed garden, shielding the view from the surroundings. This garden soothes the hearts of patients and staff. The landscape planned to continue from there creates the environment between the building and its surroundings.



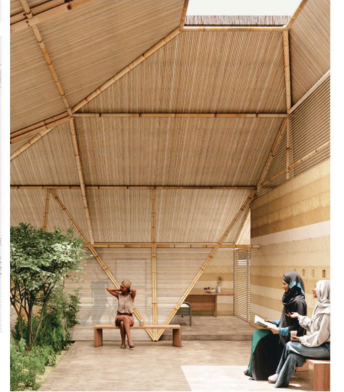
This proposed maternity center, created by combining traditional thatched roofs with modern laterite and bamboo walls, will be a nurturing space for the minds and bodies of pregnant women, their families, and the medical staff working there, unlike conventional facilities that only had the function of childbirth.



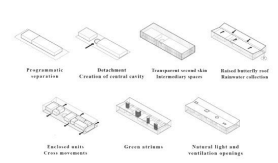
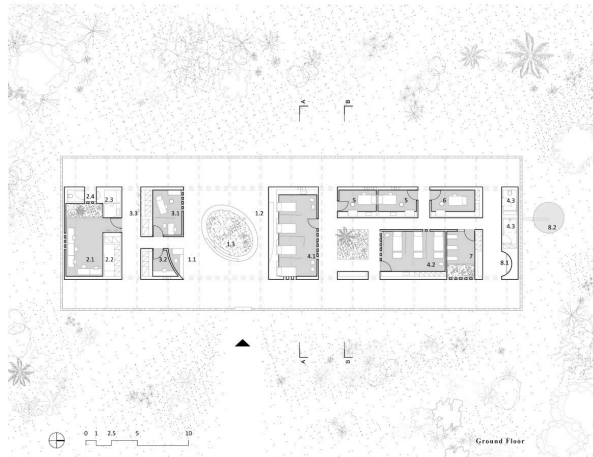
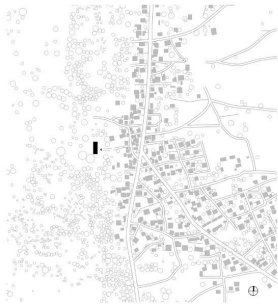
- 1 Thatched roof
- 2 Bamboo beam 900mm
- 3 Bamboo pole 900mm
- 4 Bamboo pole 900mm
- 5 Bamboo pole 900mm
- 6 Window 6 bamboo vein lattice
- 7 Bamboo wall 600mm
- 8 Tamped earth and gravel
- 9
- 10 Cluster reinforced concrete
- 11 Reinforced Earth Wall 200mm
- 12 Tamped earth and compacted ground 400mm x 400mm
- 13 Tamped earth and compacted ground 200mm x 400mm



- 1 Main entrance
- 2 Waiting area
- 3 Reception area
- 4 Changing + Treatment
- 5 Waiting area and waiting room
- 6 Waiting area
- 7 Medical examination and consultation area
- 8 Observation area for newborns
- 9 Observation area
- 10 Observation area
- 11 Public terrace
- 12 Public terrace
- 13 Public terrace



The **third prize**, awarded to **Myrto Venizelou and Olga Psarri** from Greece includes €1000 and an internship at SBGA Blengini Ghiradelli in Milan.

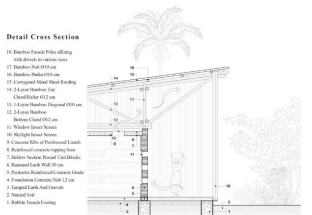
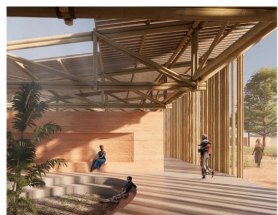
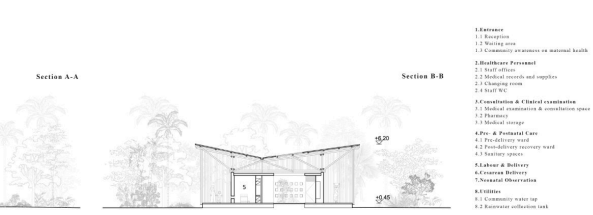
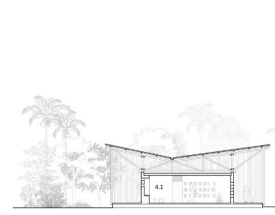
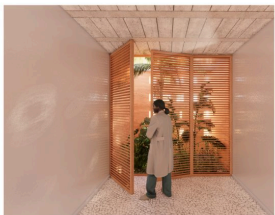


Located in Dikhobaya village, in the Sakhine region of Casamance, a Maternity Center will be built raising awareness and ensuring access to maternal and newborn care in a sheltered and hygienic environment.

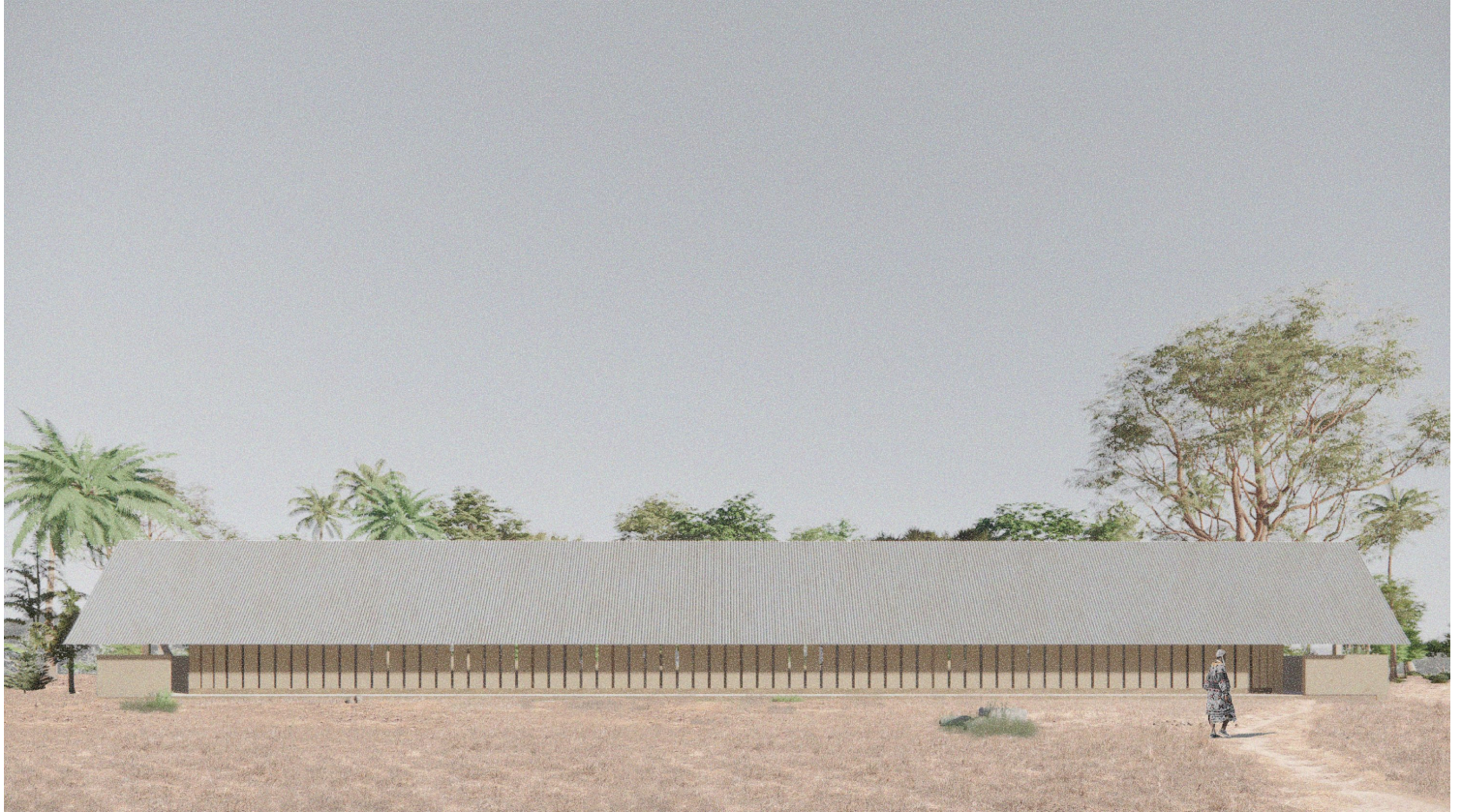
The proposal aims to create a serene and nurturing atmosphere, providing an alternative to the prevalent enclosed and rigid maternity centers found in the southern region of Senegal. The care facility is divided into six sections in order to create a central cavity, a walkway courtyard, situated at the main entrance. Its elliptical design signifies a spatial distinction from the introverted rectangular volumes on both sides of the maternity center. Within each section, smaller medical units combine to form a composite. These units, built out of locally sourced concrete masonry with embedded small openings, are designed with the highest levels of hygiene and ventilation.

A second-skin facade made of bamboo poles wraps around the building, compressing existing services into shaded intermediary spaces in order to screen privacy, safety and thermal comfort for healthcare personnel, pregnant women and newborns. The walkway courtyards are covered by a platform not covered by a waterproofing battery roof that protects the building's core from heat and damaging rain and allows for the natural ventilation of the lower space. The roof design is made to facilitate effective rainwater harvesting, which could then be filtered and stored in the sanitation system. Small green atriums are introduced to the building's core to improve air microclimate, fostering respiratory and designed with the highest levels of hygiene and ventilation.

The proposed design promotes an integrated, environmentally sustainable, and functional healthcare institution that is not enclosed, but rather protected and inviting while meeting high hygiene and sanitary standards. In such a place, women use feel safe and comfortable to ask for advice, get tested, give birth and even educate themselves on maternal issues that potentially affect them.



Two **honorable mentions** were awarded, one chosen by Kengo Kuma and the other by Balouo Salo, to **Wei Yuan, Wei Bai, Sicheng Liu, Ziye Pan, Wu Yang Jiang** from China and to **Karl William Binlin-Dadie, Axel Rossi, Harrif Danon** from France, respectively.



Special mentions went to teams from Italy, Poland, France and Malesya. Additionally, 20 other finalists and 20 projects included in the Top 50 were recognized. All awarded projects will also be published in the official book of the competition, shared with the competition's Global Media Partners as well as institutional partners, providing maximum visibility to emerging architectural talents worldwide.







As every year, all competition proceeds are entirely donated to Balouo Salo's charity projects aimed to improve living conditions of disadvantaged rural communities in Africa. Indeed, Kaira Loro is the world's only non-profit architecture competition, supporting numerous charitable projects that have improved the lives of tens of thousands of people, focusing on public health, education, and access to drinking water. Currently, Balouo Salo is constructing the winning projects from the 2021 and 2022 Kaira Loro editions: the Centre to fight malnutrition and a Women's Training Centre, designed by Ziyu Guo from China and Juan Pablo Isabella Lopez from Colombia.

To participate in the next edition of Kaira Loro, you will need to wait until the end of 2024, when the 2025 edition will be announced, with registrations opening as usual in January. The theme of the new competition has not yet been published, but it promises to be of great interest. In the coming weeks, the competition will announce new award-winning architects who will join the jury, adding even more value to this unique initiative in the world. The 2025 edition will once again be an opportunity to delve deeper into the theme of sustainability and the role of architecture in improving the living conditions of communities and risk and reducing social inequalities.