The Popular Republic of Sudan is a country that, over the past twenty years, has been scourged from numerous Inter-ethnic as well as Inter-religious wars. We needed to think of a place that could accommodate prayer, as customary in any place of health-care, so we had to deal with the difficult dilemma of thinking of a space that could host the spiritual complexity of this country. Our choice was not to privilege any specific religion, but to create a space that could accommodate the prayer and meditation of all faiths. We obviously had to seriously consider the Muslim faith, which is the religion of the majority of the Sudanese, along with the religion’s rules (ablutions, separation of men and women), but we decreased the contextual impact of those rules in order not to make them appear dominant. This was made possible by concealing all symbols and elements that are specific to only one religion.
CONTAINER MEDICAL COMPOUND for THE SALAM CENTRE.

Looking at the amount of discarded containers laying around the building site of the Salam Centre we had this simple idea: to use them again in order to realize the required international staff housing compound. The Compound placed besides the Hospital, in the surroundings of the Nile river, is realized around a great courtyard full of wonderful mango trees. It consists of 90 20ft-containers for housing and 7 40ft-containers for the cafeteria. Every lodging is 20 sqm and is realized with one and a half containers; the lodging is composed of bedroom, bathroom and a small veranda on the court side.

Peculiar care has been dedicated to insulation and energy saving. The containers are insulated with a “layer system”. Inside the container 5 cm insulating panels have been placed. The outside “skin” is realized with a second insulated roof and a bamboo brise-soleil panel system. In this way the sunrays never hit the containers. An innovative air-conditioning system has been tested by using solar panels and chilling machines. This system involves a huge energy saving. Solar panels also supply hot water for the entire compound.
EMERGENCY NGO

Emergency is an independent and neutral Italian organization founded in order to provide free, high quality medical and surgical treatment to the civilian victims of war, landmines and poverty. Emergency promotes a culture of solidarity, peace and respect for human rights.

In accordance with The Universal Declaration of Human Rights (Paris, December 10th, 1948), EMERGENCY recognizes the “right to be cured” as a basic and inalienable human right.

EMERGENCY works to implement Human Rights based Health Projects, according to the principles of equality, quality and social responsibility (EQS). These principles were stated in a Manifesto for a Human rights based medicine, that was created in May 2008 at a meeting on the health sector in Africa run by EMERGENCY in Venice. There were the Ministers of health from eight African countries who were involved in the creation of this document. Thus far, the Manifesto has been undersigned by: the Central African Republic, Eritrea, Rwanda, Sierra Leone, Sudan and Uganda.

THE PROJECT

In October, 2004, in Soba, a village 20km from Khartoum, Emergency began the construction of a Regional Centre for Cardiac Surgery to provide highly specialized medical and surgical assistance to cardiac patients - in particular those with congenital malformations or cardiovascular pathologies associated with rheumatic fever - who would otherwise have no possibility of undergoing highly specialized surgery free of charge.

The Centre, operative since April 2007, is entirely run by Emergency, from both a clinical and administrative standpoint. Highly specialized international personnel provides training for local staff in order to guarantee high quality treatment and to increase the professional know-how of staff from Sudan and its neighbouring countries.

A REGIONAL CENTRE

The Centre for Cardiac Surgery will be linked to a network of Paediatric centres in neighbouring countries, where the most urgent cardiac cases can be identified and transferred to Khartoum.

In March 2009, the first Paediatric centre opened in Bangui, the capital of the Central African Republic, on a plot of land that was made available by the local government.

Serving a part of the world that has been severely tried through decades of fighting, one of the aims of the program is to improve and strengthen relationships between the countries involved through reciprocal cooperation in the public health fields.

For this reason, among others, the Centre for Cardiac Surgery is called “Salam” (“Peace”).

CITY

Soba (Khartoum) - Sudan

ACTIVITIES

Adults Cardiac Surgery, Pediatric Cardiac Surgery.

BED CAPACITY

63

FACILITIES

3 OT rooms, 15-bed Intensive Care Unit, 48-bed Patients Wards, Emergency Room, Outpatient clinics, Catheterization laboratory, Radiology and ultrasound, Laboratory and Blood Bank, Physiotherapy, Domestic services, Maintenance, Guesthouse for patients’ relatives, Pavilion for prayer and meditation.

GEOGRAPHIC LOCATION

Sudan

This content is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

Click here to view more information on the Creative Commons License.

Client

EMERGENCY

Life Support for civilian war victims

Project team

studiotamasassociati

Architecture in comunicazione per il sociale

03 - Additional Panel

Aga Khan Award for Architecture

3956 . SUD
THE “SALAM” CENTRE

The Salam Centre structure includes:

- the HOSPITAL blocks (surgical, diagnostic and wards); an administration area; a technical area; a service area; a GUEST-HOUSE for relatives of patients coming from outside Khartoum; housing up to 50 people; a MEDITATION PAVILION for patients of all creeds and religions; a MEDICAL COMPOUND made of container-houses.

- Project Team: tamassociati (Raul Pantaleo, Massimo Lepore, Simone Sfriso), Sebastiano Crescini con Pietro Parrino e Gino Strada
- Program coordinator: Rossella Miccio, Pietro Parrino.
- Feasibility project: Gino Strada, Emiliano Cinelli, Fabrizio Fariano, Andrea Cioffi
- mechanical/services engineering: Studio Pasqualini e Jean Paul Riviere con Nicola Zoppi
- Structural engineering: Francesco Steffinongo
- Operating Theatre design: Franco Bietti
- Site engineer: Roberto Crestan con Alessandro Giacomello.
The hospital’s courtyard is a world of its own: an ideal separation between the internal microcosm—bound, protected and protective—dominated by the symbolic figure of the trees, and the external macrocosm—hostile and scorched—that calls for protection.

The hospital’s buildings, that “embrace” the courtyard, have been designed in the form of a pavilion. Their reduced height inspires in patients and hospital staff a sense of “homeliness” that is also present in many details and that attempts to reduce the idea of being hospitalised. This is a philosophy that aims to create a cozy space where patients can feel as fully-fledged “subjects” with a right to an often missing respect, rather than mere “objects” of care.

The design of the structure tries to mitigate the sensation of feeling lost and away from home so typical of hospitals.
SERVICES: Laundry, Ironing, Kitchen, Library, Conference and Teaching room, Children's Playroom, Storage areas, Cafeteria.

MAIN ENTRANCE

GUEST HOUSE for relatives of patients coming from outside Khartoum, housing up to 50 people.

06 - Additional Panel
Aga Khan Award for Architecture
3956.SUD
THE BEST POSSIBLE TECHNOLOGY

To build a first-rate Centre for cardiac surgery in a climate such as Sudan’s, with temperatures above 40 degrees Celsius most of the year and frequent sandstorms, the structure must be designed sand-proof, and heat-proof.

In a country with very low levels of technology and with harsh climate conditions, the key features of the work were simplicity and innovativeness. Contrary to the practice of providing “third world” structures for “third world” countries, it was thus possible to prove that with innovation and low-cost technology we have guaranteed the same standards of efficient health care as in any other Western health care centre.

AGAINST HEAT

The desert climate represented a problem in setting up a structure such as the Salam Centre, requiring for clinical reasons indoor temperatures of 18 to 24 °C. The Salam Centre’s external walls are built with multiple bricks’ layers interspersed with paneled, insulated air chambers, for a total thickness of about 60 cm. The windows are equipped with double glasses covered with sun-screening films. The land around the Salam Centre has been extensively planted with trees and hedges, and the walkways around the building screened by panels of intertwined vegetable fibers, employing a traditional technique used by the locals to build their beds.

AGAINST DUST

To filter the huge quantity of sand and dust that fill the air in the region, a 60 metres long “sand trap” was built in the basement, taking advantage of simple mechanical principles.

The air, sucked in from outside, is forced through this underground labyrinth-shaped tunnel. As the air hits the walls and looses speed, most of the sand and dust are removed and the air starts to cool down. The air is then “washed” and cleaned by vaporized water, flushing away the smallest particles. By this process the air, 9°C cooler than the outside temperature, is ready to enter the Air Treatment Units and eventually the ventilation and conditioning systems.

Every hour, the Salam Centre necessitates circulating 28,000 cubic meters of cold air. This has been achieved by a system employing 288 vacuum-sealed solar collectors (for a total surface of 900 sqm) producing 3,600 kWh with zero CO2 emission, an amount of energy that would otherwise require burning 335 kg of gasoline per hour.

AGAINST HEAT

Every solar collector houses copper tubing to circulate water; copper pipes are lodged inside vacuum-chambered glass tubes, allowing the sun to heat the water by irradiation, without heat dispersion. The water running through the pipes constitutes the vector fluid transferring heat to a 50 cubic metres reservoir, where water is stored at a temperature around 90 °C.

The transformation of heat into cooling power takes place in 2 absorption chillers, where the circulating hot water heats up a solution of Lithium bromide. By reaching the gaseous state, Lithium bromide removes heat and water cools down to 7 °C. This cold water is then circulating in the Air Treatment Units (ATU), cooling air to the desired temperatures.