

Holcim Awards: Acknowledgement Prize Asia Pacific Goes To A Primary Healthcare Centre, Near Dharmapuri

Holcim Group is the world's largest cement manufacturer which organizes an International award on Sustainable construction called the Holcim Awards for Sustainable Construction. The Holcim Awards 2011 for Asia Pacific were announced recently in Singapore. Four entries from India were awarded at the ceremony; one of them is the Primary healthcare centre, near Dharmapuri, Tamil Nadu, India.

This project is located in a rural area, 20km west of the town of Dharmapuri, in the state of Tamil Nadu. The Primary Healthcare Centre aims to improve healthcare in the hot and semi-arid rural region of the state and is completely sustainable in nature. This low cost budget structure serves as a community centre for providing health awareness programs to the local community.

The choice of materials with which this building has been constructed makes the healthcare centre an innovative sustainable model for comparable building tasks. The compact and small-scale building distinguishes between a high-tech medical core and a low-tech surrounding layer. The latter serves as a shaded and well-ventilated waiting and gathering space. Strong focus is laid on the efficacy of simple and local materials. The roof consists of recycled Tetra Pak containers, base walls are made of rubble stones, and shade screens are manufactured using a local variety of vetiver grass which is moistened to create an evaporative cooling effect during the severe dry tropical summer.

Rainwater is collected and used for water-efficient irrigation. The climatic concept incorporates the vegetation surrounding the building where plantings contribute to the cooling of the building and control glare and dust. Altogether this project is a perfect example of a simple and elegant design.

Comment of the Holcim Awards jury Asia Pacific

The jury recognizes the strength of the project in its sophisticated detailing. Materials are employed respecting their specific qualities. Altogether this forms a simple and elegant design. This is continued in the natural simplicity of providing gathering spaces that will be utilized for providing health awareness programs to the local community. This small-scale edifice is an outstanding example for comparable building tasks.

Project Description

Context:

Mahalir Aran Trust (MAT), a local NGO commissioned Flying Elephant Studio for the design of a Primary Healthcare Centre, at Devara Outhu Pallam, in agricultural lands of rural Tamil Nadu. The area has a mixed demography of primarily Hindu, and also Muslim and Christian communities. The region is within a hot and semi-arid tropical climatic zone with severe summers and moderate rainfall



Iype Venperampil and Rajesh Renganathan

Primary Healthcare Center, Near Dharmapuri, India

Project Data:

Project group - Building and civil engineering works
 Client - Mahalir Aran Trust & VIA Design
 Project background - Private commission
 Estimated start of construction - November 2010

Main Author:

Name - Rajesh Renganathan
 Profession - Architect
 Organization - Flying Elephant Studio
 City, country - Bangalore, India

Further author(s)

Iype Chacko Venperampil, Architect, Flying Elephant Studio, Bangalore, India



mainly from the northeast monsoon, but also from the southwest monsoon.

Concept:

Budget and scale of building dictated a compact footprint which was made linear for better day lighting and cross ventilation. A low cost stepped amphitheater-like extension at the entrance end, allows for small gatherings related to public health awareness initiatives.

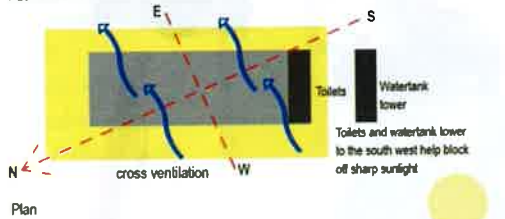
The inherent programmatic split, of core clinic functions and waiting areas are arranged as two concentric layers creating a building within a building. A generous and airy waiting verandah wraps around the core hospital. An additional outdoor layer of varied cultivated landscapes further helps create an aesthetic climatic buffer that controls glare and dust.

The double skin building concept creates a shaded climatic buffer around the clinic. This, in conjunction with excellent cross ventilation through the single banked structure, via moistened local vetiver thatch outer screens, would keep the interior cool through evaporative cooling during severe dry tropical summers. The outer cultivated layer

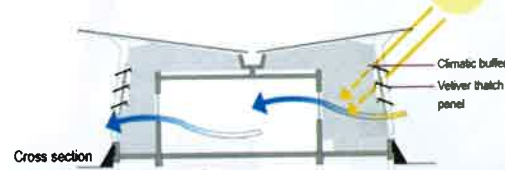


Budget and scale of building dictated a compact footprint which was made linear for better day lighting and cross ventilation. The inherent programmatic split, of core clinic functions, waiting areas and are arranged as 2 concentric layers creating a building within a building. A generous and airy waiting verandah wraps around the core hospital. An additional outdoor layer of varied cultivated landscapes further helps create an aesthetic climatic buffer that controls glare and dust.

RESPONSE TO CLIMATE AND PROGRAM



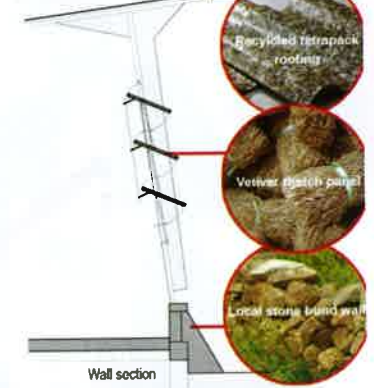
Plan



Cross section

The double skin building concept creates a shaded climatic buffer around the clinic. This, in conjunction with excellent cross ventilation through the single banked structure, via moistened local Vetiver thatch outer screens, would keep the interior cool through evaporative cooling during severe dry tropical summers.

MATERIALITY



Community engagement is also encouraged in the actual building of the project. The outer layer engages local craft skills extensively; both in the Vetiver grass thatch window panels, as well as the random rubble masonry for outer plinth retaining walls and landscape bund elements.

Design Concept

employs local agricultural practices including use of vetiver grass to prevent soil erosion and runoff at the edges of the cultivated terraces, medicinal plant patches, orchards etc. The project employs the best sustainable water management practices including both rainwater harvesting and ground water

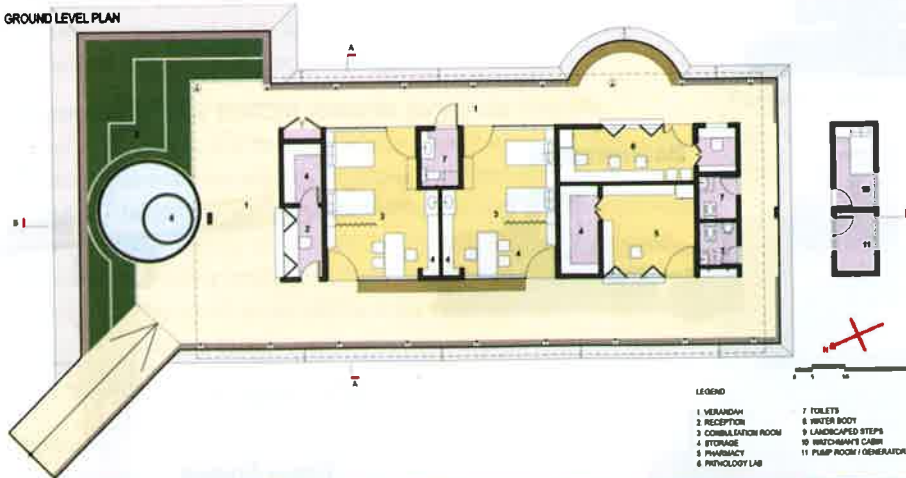
recharging and drip irrigation.

The patches of peripheral landscape will be developed along varied distinct themes recalling the five landscape types referred to in traditional Tamil Sangam poetry. Outer roof with prominent central gutter leading to rainwater collection pond gives visual aesthetic expression to water as a life giving element; also recalling folklore pertaining to name of the place, Devara Outhu Pallam, meaning God's Own Spring.

Implementation:

Community engagement is also encouraged in the actual building of the project: While the inner sterile core is technologically more advanced, and employs a few highly skilled non-local construction workers with local assistants; setting a precedent for high quality construction practices in the local region. The outer layer engages local craft skills extensively; both in the vetiver grass thatch window panels, as well as the random rubble masonry for outer plinth retaining walls and landscape bund elements.

GROUND LEVEL PLAN



ELEVATION



Plan And Elevation

Relevance To Target Issues

Innovation And Transferability - Progress

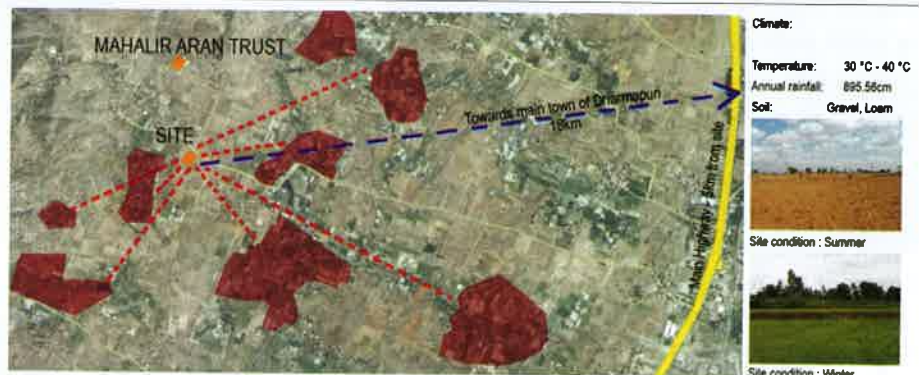
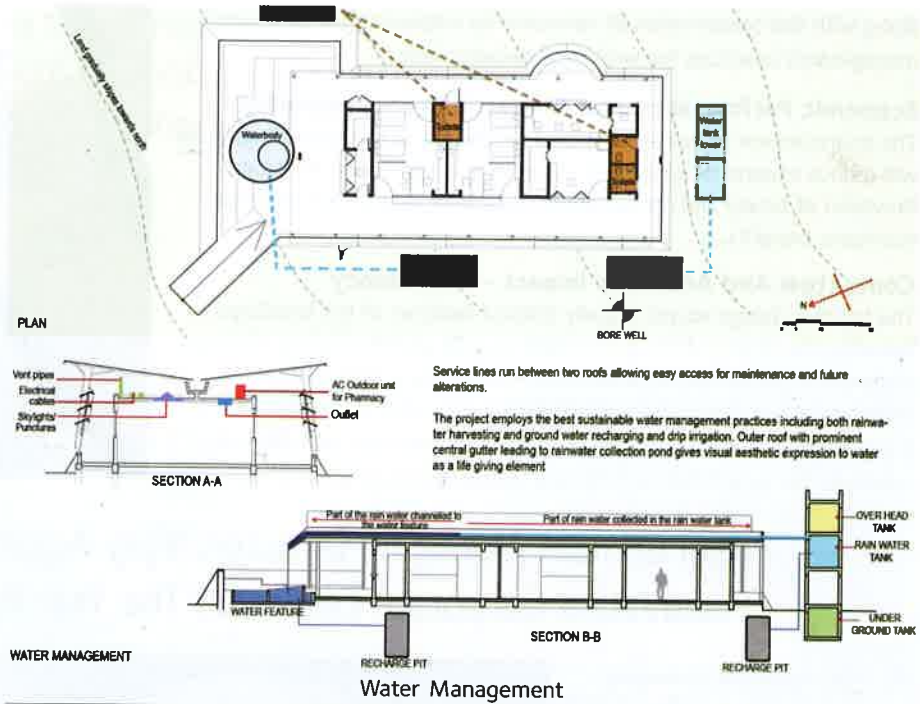
The concept of having a layered double enclosure building within a building is introduced for the first time in this particular building type and local context. The outer layer incorporates sustainable materials such as the recycled Tetra Pak corrugated roofing sheet, and the unique local porous vetiver grass thatch panels which are moistened to lower the interior temperature by evaporative cooling. The innovative design concept will serve as a prototype for replication across the region.

Ethical Standards And Social Equity - People

The outer vetiver thatch screen and random rubble retaining plinth walls and bunds employ local craft skills. The more technically challenging sterile inner building would be executed by highly skilled trained construction labor with local assistants, setting precedents for best practice to the local craftsmen. The project itself would employ local nurses and serve the primary health needs, including propagating government-directed rural health schemes, of local villages. The structure acts as a gathering space for the delivery of public health awareness programs.

Environmental Quality And Resource Efficiency - Planet

The strong climatic response of the design minimizes energy consumption for cooling



The project is set in the terraced agricultural landscape of rural Dharmapuri District in Tamil Nadu, southern India ; dotted with small villages. The nearest urban centre, is Dharmapuri town, some 20 odd kilometers away. The area has a mixed demography of primarily Hindu and also Muslim and Christian communities. The region is within a hot and semi-tropical climatic zone with severe summers and moderate rainfall mainly from the northeast monsoon, but also from the southwest.



along with the conservation of rainwater by employing the best water management practices for landscape development.

Economic Performance And Compatibility - Prosperity

The improvement of access to critical healthcare at the local village level will reduce expenditure currently incurred in urban center hospitals. Provision of timely and competent medical intervention has immense economic benefits.

Contextual And Aesthetic Impact - Proficiency

The building design adapts visually distinct features of the landscape including the stone rubble bund retaining walls and the variety of thatch screens. Landscape development is conceived along lines of five landscape types illustrated in the Tamil Sangam poetry tradition of the local region. The articulated water spout and collection pool element relates to the local folklore of Devara Outhu Pallam as God's Own Spring.

