

## TECHNOLOGY TRANSFER TO TANZANIA – 2<sup>ND</sup> PART

Satprem Maini, director of the Auroville Earth Institute, conducted in August 2009 at Karatu the first part of the technology transfer with the training of block makers on the Auram Press 3000. At that time he conceived also the library of Ganako secondary school which was supposed to be the first building to be built at Karatu with the technologies developed by the Auroville Earth Institute.

The second step of this technology transfer has been the construction of the library, during the 1<sup>st</sup> November to the 21<sup>st</sup> December 2009. Satprem went again there to train the team of Dunia Architecture / Bricks for life and Mr. Cristo Mabilat, an experienced engineer from Auroville came along to help for the site management and the ferrocement works. Mr. Cristo Mabilat, who is a board's member of the Auroville Earth Institute, has a long building experience in Auroville and in the world. Especially his vast experience with ferrocement works was very valuable for this construction site.

This library of 335 m<sup>2</sup> was designed to be earthquake resistant with the technologies developed by the Auroville Earth Institute, as Karatu is in the Rift Valley which is earthquake prone. Foundations were done with stabilised rammed earth. The superstructure of the library was built with reinforced masonry composed of compressed stabilised earth blocks, vertical reinforced concrete members and 5 composite ring beams (U shape CSEB and reinforced concrete). The roof of the veranda was done with ferrocement cast in situ.

The beginning of the superstructure was delayed as the foundations took a long time. The construction site was further delayed and the main roof of the library could not be completed before the departure of Cristo and Satprem. This roof was conceived with four hyperbolic paraboloid shapes and was meant to be cast in situ with ferrocement. Only the reinforcement bars and chicken were laid on one quarter of the roof. The local team was trained to lay these bars and mesh and they are supposed to go on for the three other parts of the roof. Mr. Cristo Mabilat is supposed to go back in February 2010 to supervise casting the ferrocement and complete the roof.

The construction of the library of Ganako School is the first step for the transfer of technologies developed by the Auroville Earth Institute. It has been a successful event and 70 people were trained: 1 engineer, Mr. Douglas Ommanney – 1 supervisor, Mr. David Suddy – 35 masons and 33 workers. The local partners and authorities were very enthusiastic with the project and the construction site attracted many visitors.

This programme was sponsored by the project "Bricks for Life" created and financed by Mr. Alberto Navarro, a Spanish citizen, resident in USA. Mr. Alberto Navarro is a dedicated man who wants to help the development of Karatu and in order to achieve his goal he came first to the Auroville Earth Institute, to get trained in June / July 2008. The project "Bricks for Life" that he created, aims at poverty reduction in Karatu district through the achievement of access to vocational training for youth out of the standard education system, SES (primary, secondary, high school) and the creation of a Community, Cultural and Learning Centre as a vocational training centre for youth and entertainment centre for local population and visitors.



*Mr. Alberto Navarro supervising the rammed earth foundations*



*Precasting composite lintels*



*Eng. Douglas Ommanney supervising the plinth beam*



*Ladies masons under training*



*Preparing the composite beam of the sill*



*Completing the cross arches*



*Laying the composite lintels*



*Eng. Cristo Mabilat preparing the chicken mesh for the veranda*



*Casting the ferrocement of the veranda*



*Laying the chicken mesh of the hyperbolic paraboloid roof*



*Building after 7 weeks of work*



*Team of trainees*