

EARTH BASED TECHNOLOGIES

INTRODUCTION ON EARTH BASED TECHNOLOGIES

This research aims to make extensive use of raw earth as the main building material, thereby using a local resource, which can help developing technologies that are energy saving, eco-friendly and sustainable. The main research and development is focussed on minimising the use of steel, cement and reinforced cement concrete (RCC).

Most of the technologies developed are mastered and the present research is focussed on alternative stabilizers to cement and alternative waterproofing with stabilized earth, composed of soil, sand, cement, lime, alum and tannin.

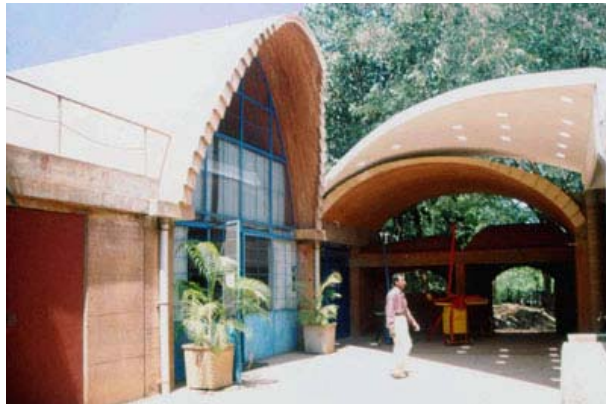
The following technologies have been mastered and are disseminated since years:

- Stabilised rammed earth foundations with 5 % cement
- Stabilised rammed earth walls with 5 % cement, rammed manually
- Composite plinth – step plinth with CSEB, plinth beam with reinforced concrete cast in U shaped CSEB
- Composite columns – Round hollow CSEB with reinforced cement concrete
- Composite beams and lintels – U shaped CSEB with reinforced cement concrete
- Wide variety of compressed stabilised earth blocks (17 moulds are presently available for producing about 75 different types of blocks)
- Various vaults with compressed stabilised earth blocks
- Stabilized earth mortars and plasters

The following technologies are still under research and they will be disseminated only once mastered:

- Composite blocks (earth, fibres and stabilizer)
- Alternative stabilizers to cement (“homeopathic” milk of lime and alum)
- Alternative water proofing with stabilized earth (soil, sand, cement, lime, alum and tannin from the juice of a seed)

TRAINING CENTRE OF THE AUROVILLE EARTH INSTITUTE



Training centre of the Auroville Earth institute

To date, the main synthesis of this research on appropriate building technologies based on stabilised earth is implemented in the campus the Auroville Earth Institute. This building is entirely constructed right from the foundations to the waterproofing with stabilised earth.

The foundations and walls were made with stabilised rammed earth with 5 % cement. The roofs were done with various catenary vaults, which were built with CSEB, by using the “Free-spanning” technique. The flooring was as well done with CSEB tiles stabilised with 5 % cement. The stabilised earth waterproofing was made with three coats of various mixes of soil, sand, cement, lime, alum and tannin.