

Introducing environmentally friendly construction techniques for post-conflict housing and community infrastructure.

October 2014, Killinochchi, Sri Lanka. The United Nations Human Settlements Programme (UN-Habitat) celebrated United Nations day in Killinochchi with a training programme on mud concrete technology, a new, environmentally friendly construction method introduced by a team from University of Moratuwa. The training programme was aimed at UN-Habitat technical staff and local masons to introduce this technique as a low-cost alternative to using cement concrete blocks in housing and infrastructure reconstruction programmes.



Experts from the Civil Engineering Department of the University of Moratuwa, Dr. (Eng.) Rangika Halwatura and Arch. Lakmini Ranasinghe conducted the training programme for approximately 60 participants, including “hands-on” training of the construction of mud concrete blocks and walls.

Mud concrete technology is both cost effective and environmentally friendly. Having been subjected to rigorous laboratory and field testing, it is proven to be of good strength with the ability to withstand extreme weather conditions.



Mud concrete blocks can be manufactured at household level, using available gravel and soil mixed with cement (about 5% - 8%). The selection of appropriate soil is important in preparing high quality blocks. Soil containing gravel, commonly found in the North, is considered suitable. However, the composition of native soil can be adjusted by adding gravel, sand or clay to reach the suitable proportion.

Curing of the mud concrete blocks is not necessary as the soil mix contains sufficient water to harden the cement. After keeping the blocks under a polythene sheet for about

a week, they are ready to be used to build walls. Placing the blocks on a hard, level surface ensures a smooth surface while mould oil or grease mixed with diesel is applied to the mould to reduce friction when removing the block.

The mortar mix used to build the walls also consists of a mix of clay, sand and cement. A mix of one part of cement, 3 parts of sand and 3 parts of soil is recommended to produce the mortar. Fair-faced wall construction technology in order to ensure a uniform mortar thickness and a smooth finish.

Houses built with mud concrete blocks offer improved thermal comfort over those built using cement blocks or burnt bricks. Other advantages of using this technique includes reduced consumption of cement and sand, and the ability to produce the blocks by unskilled persons without the need of a machine.

