Sitework Begins for 1,000 Tsunami-Resistant Houses

Sitework has begun in Sri Lanka on construction of 1,000 homes designed to better resist the forces of a tsunami by sacrificing everything but the columns and foundation. The 400-sq-ft house can be built using materials available locally for only $1,200, says the Massachusetts Institute of Technology and Harvard University team that designed it.

The Tsunami Safe(r) Houses would allow a “powerful” ocean wave to go through the house, instead of knocking it flat, says the Cambridge, Mass.-based design team led by MIT architects, Carlo Ratti and Walter Nicolino.

The design calls for a one or two-bedroom house with four, 3-meter-wide, reinforced concrete corner columns. Bamboo or wood could form the walls between columns, creating a building core. The houses would be on concrete block or wood foundations, with the platform 1 or 2 ft above ground to allow high waters to flow underneath, say the designers, who were assisted by graduate students from Harvard’s Tsunami Design Initiative.

Simulations show the core and foundation would be able to resist water or wind force over five times greater than a traditional concrete-block Sri Lankan home, says Buro Happold, London. The structural engineer ran the simulations using a computer model developed after the region’s Dec. 26, 2004, tsunami.

The project was started by MIT’s Buddhist chaplain, Tenzin Priyadarshi, and Ratti. More than $100,000 has been raised so far to build the houses. Tenzin, working with the MIT Buddhist foundation, Prajnopaya, and the Sri Bodhiraja Foundation in Sri Lanka, will select homeowners from those who lost houses in last year’s disaster.

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