



Not another brick in the wall

Innovative SA building method invited to prestigious US exhibition

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A South African designer has been invited to show his innovative plastic formwork technology for low-cost housing at the Smithsonian's Cooper-Hewitt National Design Museum in New York later this year.



FILL 'ER UP: A team of workers builds a house using Moladi's plastic formwork technology Picture: moladi

“RDP people we had to work with created more problems than it was worth”

Hennie Botes, who founded Port Elizabeth-based Moladi in 1986, said the invitation to participate in the exhibition is a "phenomenal achievement. Going to New York to exhibit our technology is mind-blowingly exciting".

The exhibition, which will take place from October at the UN, will feature more than 60 projects from 22 countries around the world.

The exhibition, named Design with the Other 90%: CITIES, will explore design solutions to the challenges of rapid urban growth.

About a billion people live in informal settlements around the world, and it is estimated that this number will double by 2030.

The exhibition, sponsored by the Rockefeller Foundation, will run until January next year.

Moladi uses a plastic formwork to cast cheap, high-quality walls with minimal skill. A 60m², two-bedroom house can be built in a day, said Botes.

It takes four hours to erect the formwork, with components that clip together to form a mould. When all panels are clipped together the cavity is filled with a sand and cement mix, which takes about two hours.

The mould accommodates all the fittings, including water pipes and the electrical conduit. The mix is left to dry and the mould can be removed the next day, a process that takes another two hours. No plastering is needed, and the mould can be used on the next house.

The total cost depends on the finishings used and the number of houses built, but is a third to half of that of a traditional bricks-and-cement house, said Botes.

While building a garden wall in 1986, Botes, at the time a tool and die maker, was struck by how difficult it was to lay bricks. "I was reading a business book at the time and one of the tips was to solve a problem and sell the solution. I was busy building this garden wall from bricks. Bricklayers make it look so easy, but I found it very difficult. And then you still have to plaster it, and half lands up on the floor! I just thought, there must be an easier way," said Botes.

His assignment at the time involved making moulds for plastic components, and he adapted the idea for sand and cement.

The first Moladi house was built in 1987 in Benoni.

"I never realised the importance of this house until two months ago. We built a show house in Dar es Salaam to show the Tanzanian government our technology, but housing minister was sceptical after seeing many other alternative housing technologies fail over the years. We invited them to the Benoni house to prove our track record of 25 years," he said.

The original idea was not to target the low-cost end of the market, said Botes. But, by cutting costs and streamlining the production process over the years, the technology has become more affordable, without compromising on quality, he said.

"Moladi was never designed for the 90%; it was designed for the 10%. We've managed to lower the cost to such an extent that it has now opened the door to the 90%," said Botes.

In addition to SA, Moladi houses are in Zimbabwe, Botswana, Tanzania, Namibia, Ghana, Mozambique, Mexico, Panama and Haiti.

Botes is negotiating to build a Moladi plant in India, and is looking to expand in east and west Africa.

Moladi employs about 20 people at its factory in Port Elizabeth, and trains hundreds of unskilled people in communities where new housing is being built.

Despite Moladi's international success, very few Moladi houses were built as part of the South African government's reconstruction and development programme (RDP) housing projects, which became notorious for shoddy workmanship and poor quality. An estimated R58-billion is needed to fix standing RDP houses.

Botes said Moladi had applied for RDP tenders on a few occasions in the past. "The people we were forced to work with created more problems than it was worth. Contractors were sidestepping our manual to cut costs and save money, and it affected the quality," he said.