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Cape Argus (South Africa)

Cape architect wins top award for his unique sandbag house

By Lynette Johns

A Cape architect and his team have won an international award for a sandbag home that could help ease the country's housing crisis.

Cape Town based MMA architects won R800 000 in an international design competition, beating innovations like a non-turbine, wind-powered generator, and a "dry" toilet which collects human waste and converts it to fertiliser.

The house was designed for a Design Indaba project.

The house, in Freedom Park, Mitchells Plain, was erected using eco-build technologies. A timber frame, reinforced with metal inlays, is filled with thousands of sandbags as in-fill for the walls. The bags simply rest on each other, and are not cemented together like bricks.

The sandbag walls are then covered in chicken wire and plastered. Piping and wiring are routed through the timber uprights.

The two-bedroomed, double-storey house, with its verandahs and balcony, stands out like a beacon in the informal settlement on the outskirts of Tafelsig.

MMA director Luyanda Mpahlwa has no idea who nominated them for the award. He says he was very surprised when he discovered they had been shortlisted for the Curry Stone Design prize for humanitarian innovation from the University of Kentucky College of Design, during the IdeaFestival in Louisville last month.

The local design initiative was part of the development of Freedom Park by Irish billionaire Niall Mellon, who is building 490 houses there. The brief was to design a house which would cost no more than R50 000 - the government subsidy.

"Our main challenge was to reduce the costs of the house. We recognised that conventional building methods and materials were not going to achieve results and so alternative, more affordable building methods were required," Mpahlwa said.

"This was difficult, given the dominance of bricks and mortar as the 'accepted' way of building in South Africa."

After extensive research they came across Eco-Beam, which uses the sandbag system. The firm then designed the eye-catching house, with its balcony that can be turned into another room, and screeded floors.

Sandbags are good insulators of temperature and sound, and resist water penetration. Construction costs are much cheaper as the community can help build the houses because little skill is required to lay the bags.

"This unique system is suited to mass production and will provide excellent job opportunities and skills development for the local community of Freedom Park," said Mpahlwa. "It is locally produced, simple to construct and favours unskilled labour, including women.

"In terms of cost saving, no bricks lie around the site, thus eliminating 'site-clearing', which is a major cost factor on any site. The loss of building materials through wastage and theft is also reduced drastically."

The architectural firm has made a name for itself designing schools and the new South African embassies in Berlin, Germany and Addis Ababa, Ethiopia. It is also involved in revamping the parliamentary precinct and a staff housing project for Old Mutual, which will be a "green" development.

The company, like many architectural firms, had never designed a low-cost house before its eco-home. "This is the smallest project we have ever done; it gave us some headaches but it also gave us the most recognition," said Mpahlwa.

He said although the provision of mass housing was being driven by the government, it was largely being delivered by developers.

"It is therefore fair to say the non-involvement of architects and urban planning professionals in the housing delivery process has been to its detriment, and has led to the neglect of urban quality of life.

"We feel the professional bodies involved in the built environment need to be involved in this critical area."

Mpahlwa, a former freedom fighter, spent six years in prison, from 1980 to 1986 and on his release went into exile in Germany where he completed his master's degree in architecture.