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UCT team helping to build a solar powered house for international competition

Three University of Cape Town (UCT) lecturers are part of the only team representing sub-Saharan Africa in an international competition to design and build a fully functional, modular, net-zero-energy house in Stellenbosch. The competition, Solar Decathlon, takes place in Morocco next year.

Solar Decathlon challenges teams to design and build a “green” house of between 55 and 110 square metres, powered by only solar energy and equipped with technically-advanced building and energy technologies. This should be done using local ingenuity, craftsmanship and materials.

UCT senior lecturers Mike Louw and Kevin Fellingham (School of Architecture, Planning & Geomatics), and Dr Dyllon Randall (Department of Civil Engineering), have been brought on board [Team Mahali](#) – based at Stellenbosch University’s Sustainability Institute – for their design skills and knowledge of innovative waste-water systems respectively.

Louw commented: “Part of the design theme is inspired by the central place of the tree in African culture: a place of meeting, education and important community decision-making. The house has been designed for conditions in Morocco but also for other African contexts.”

Locally available and recycled materials have been used as far as possible.

The latter area of the structure is being led by former and current students in the Faculty of Engineering & the Built Environment – Gordon Rae, Muven Naidoo and Elouise Pretorius, with input from Randall.

Rae, Naidoo and Pretorius are implementing a wide range of sustainable water practice and technology into the house, ranging from composting toilets and grey-water systems to advanced water management and monitoring, as well as rainwater harvesting.

The house will be built in Stellenbosch, then dismantled and shipped to Morocco for reassembly on the test sites in Mohammed VI Green City in Benguerir. During the final phase of the competition, the house will be open to the public.

"We're merging very hi-tech digital design manufacturing with traditional crafting in the making of an identity for the house," Louw explained.

The design phase of the project is due mid-November after which the team moves on to completing construction documentation.

Although [Team Mahali](#) has \$50 000 (just over R700 000) in seed funding from the Moroccan government, they still need to raise R3 million and are looking for funders and donations of furniture and energy-efficient household appliances from retailers.

This project investigated the potential for upskilling and job creation on the building side, using people outside academia. For example, local craftswomen will be employed to supply a large proportion of the building's components.

Two members of [Team Mahali](#) recently cycled 1 000km across Morocco to raise funds. They have also launched a crowd-funding campaign.

ENDS

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