UA Architect Aims to Build a Better World

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It began with a desire to help the disadvantaged.

What it turned into was the design and development of an award-winning, six-sided dwelling that can be rapidly assembled for use by refugees and communities displaced by man-made and natural disasters.

The Hex House was created by Architects for Society, a nonprofit founded by architects from across the globe, including Altaf Engineer, an assistant professor in the School of Architecture.

"We decided that we wanted to develop meaningful work that helps disadvantaged communities," Engineer said. "We had a very strong connection to these kinds of places from the beginning. Amro Sallam (AFS co-founder and board member) comes from Egypt originally. I come from India, from a city that is full of slum dwellings – Mumbai. Our colleague in the Middle East, Yousef Oqleh, is from Jordan and was able to get into the Zaatari refugee camp. He gave us insight into what the conditions are and what the refugees actually need. It's not like they don't adjust and adapt; they do, but that doesn't mean that they have dignified or equitable homes. They deserve much better."

Architects for Society, whose mission is to "enhance the built environment of disadvantaged communities through innovative architecture and design," was officially established in 2015.

In 2016, the Hex House was named the Best of the Best for visionary architecture in the German Design Council's Iconic Awards. This year, the first prototype was built and put on display during the Nobel Peace Prize Forum at Augsburg University in Minneapolis. Last month, Engineer and Sallam presented the Hex House at the Minnesota Conference on Architecture.

"The Hex House is very modular; it's something that can be flat packed, shipped efficiently on trucks, and assembled quickly on a variety of different sites. That is what a lot of emergency relief agencies desire," said Engineer, who has been talking to the Federal Emergency Management Agency about potential uses for the Hex House in the United States. The city of Minneapolis is considering Hex Houses for use as homeless shelters.

Each 506-square-foot Hex House has two bedrooms, a living room, a kitchen and a bathroom. Two or more Hex Houses can be combined to accommodate larger families, and the units can be clustered together, creating outdoor courtyards and providing a sense of community. Solar panels and rainwater cisterns ensure the Hex House isn't dependent on infrastructure.

Several volunteer architecture interns and architecture students at other universities contributed to the design of the Hex House. One of Engineer's insights was on the use of
natural light, which is a focus of his research into how architecture affects health and well-being. He is the lead author on a recently published book, "Shedding New Light on Art Museum Additions: Front Stage and Back Stage Experiences," which examines four high-profile museums and how their building additions affect both visitors and employees.

"I'm very interested not only in lighting, but also social and behavioral aspects in design," said Engineer, who joined the UA in August as an assistant professor. He also holds an appointment as a researcher in the Institute on Place and Wellbeing [4], which is a collaboration among the College of Architecture, Planning and Landscape, the College of Medicine ? Tucson and the Arizona Center for Integrative Medicine.

"I'm interested in working with not only designers, but also with physicians, psychologists, neuroscientists and other experts in human health and behavior, something that we at UA IPW are doing right now in two large-scale research projects," he said.

Working with the institute, which is led by Esther M. Sternberg [5], has been "fascinating," Engineer said.

"Architects start thinking about problems associated with spatial characteristics immediately. But professionals in these other disciplines first focus on the individual and say, "What is the individual's perception of the workplace or what is the individual's perception of work itself?" And this approach, to me, is really beneficial. We, as architects, really need to look outside our field and bring different disciplines together. I want to challenge the status quo and facilitate collaboration and innovation."

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