

Home cheap home: Vietnam architect's quest for low-cost housing

January 25 2015

Vo Van Duong's bamboo and coconut leaf house looks much like others deep in Vietnam's Mekong Delta. But unlike them, his seemingly simple abode is designed to withstand typhoons, flooding and earthquakes—and at a cost of less than \$4,000 could herald a new wave of cheap, sustainable housing.

The natural materials on its surface belie the hi-tech internal structure of the farmer's new home, which uses steel struts and wall panels as a defence against the elements in this natural disaster-prone region.

"The new house is safer, I'm not afraid that it will collapse," the 48-year-old papaya farmer told AFP inside the house he moved into nine months ago.

Duong is testing a prototype by an award-winning Vietnamese architecture firm looking for low-cost housing solutions for communities vulnerable to climate change.

His S-House 2 was free, but if rolled-out on a wider scale could be sold for less than \$4,000.

"There was water coming down from the roof in my old house. Sometimes, when there was a strong wind, I was so afraid the house wouldn't survive," Duong said, adding his new home was the envy of his neighbours.

The eco-home is the brainchild of Vo Trong Nghia, who joins other architects around the world in trying to fill a demand for cheap and easy to assemble housing—from flat-pack refugee shelters to shipping-container homes for tsunami victims.

He says all architects have a duty to help the poor.

"What about those with low income, billions of them, how can they live?" Nghia told AFP. "They have the right to live in comfortable, functional places."

But he wants to go further, creating a home residents can take pride in.

"I don't want people to be looking at it as 'cheap houses' but as resort-quality accommodation close to nature, so (residents) can live a life of the highest quality."

Flat-pack homes

The design is still being refined by his team, who are eventually aiming to create a flat-pack home. The newest version, S-House 3, can be built by five people in three hours.

"Our goal for S-house is for the owner to construct it by themselves," said Kosuke Nishijima, a partner at the firm.

The latest design also allows for multiple houses to be tacked together, a function that could allow, for example, the construction of a storm-proof school easily transportable to remote areas or a larger family home.

Nghia has already been approached by NGOs in disaster-prone Bangladesh and the Philippines, but is not yet ready to supply the house commercially.

From saline-intrusion and flooding in the Mekong Delta to typhoons along the central coast, Vietnam is also home to communities living in high risk areas.

For decades, Vietnamese families have adapted their houses themselves, many building ad hoc mezzanines to avoid flooding.

In more recent years organisations including the Red Cross and Women's Unions, as well as local authorities, have been trying to help people develop more resilient housing.

But in order to ensure such projects are successful, "private architects' support is critical", according to Boram Kim, an urban specialist with UN-Habitat in Vietnam.

"State and local government authorities are well aware that such houses are needed for the poor, but have little technical knowledge for realising their ideas," she told AFP.

"Architects have technical knowledge for reducing the housing construction cost while making it storm proof," she said, cautioning that it was important for designers to listen to the needs of local communities.

Architect for the poor

Nghia's firm found that one of the problems facing rural Vietnamese living in traditional bamboo shacks or stilted river-bank dwellings is the costly upkeep they require to withstand increasingly extreme weather.

Although the S-House 2's outer casing of coconut leaf may need replacing every four years, the structure itself should require no expensive maintenance, said engineer Lien Phuoc Huy Phuong.

"It can last a long time, the structure is sound," he told AFP during a tour of the small building.

Despite its solid exterior, the house is spacious and airy inside, with large windows and doors to bring residents closer to nature.

"We tried to design this house with the best ventilation system, with spaces by the roof and windows for better air flow," Phuong said, pointing out strategic gaps that should reduce the need for electric fans.

Architect Nghia, who used bamboo as a key element in Vietnam's country pavilion for the 2010 World Expo in Shanghai, has long sought to incorporate natural and local materials into his work.

One of his first projects in Vietnam's Ho Chi Minh City was an ecologically-conscious take on a traditional Vietnamese tube home, known as Stacking Green house.

Built in 2011 for around \$150,000, the building is made of a series of concrete slabs and gaps filled with plants to provide privacy while still allowing plenty of air and light.

Nghia is in strong demand for high-end projects from hotels to private houses, but said the low-cost S-House is his personal obsession.

"I want to live in S-House. If my family will agree," he said.

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Citation: Home cheap home: Vietnam architect's quest for low-cost housing (2015, January 25) retrieved 27 April 2024 from

<https://phys.org/news/2015-01-home-cheap-vietnam-architect-quest.html>

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