

**MIT
Technology
Review (Middle East Edition)**

A Lebanese Architect is Designing an Entire Village in Tanzania
Lebanese architect Charles Debbas uses high tech in his designs from homes, to pens to a village in Tanzania.
By Hannah Albarazi on February 18, 2016

Dalian Pre-School in China designed by Debbas Architecture

Growing up in an intentional community in Lebanon, California-based architect and product designer Charles Debbas learned that design could inspire how people live. Now, as he embarks on designing an entire village for orphans in Tanzania, that ethos is at the forefront of his work.

Debbas grew up in Mechref, Lebanon, a community located just south of Beirut, developed by his father and designed by foreign architects for the country's expatriate community. As a young boy in Mechref, Debbas lived among a cluster of modern homes that shared recreational facilities, and where families raised their children together. There, he discovered that "you can use architecture to encourage behavior."

But in the mid 1970s, his father, whom Debbas describes as a pacifist who tried to stop the civil war that would soon plague Lebanon throughout the 1980s, was assassinated. His mother had also died, and in 1978, at 17 years old, Debbas headed to the United States. He describes himself as an "early victim" of Lebanon's civil war.

Debbas joined his brother in Fresno, California, and soon enrolled at the University of California at Berkeley to follow his passion for architecture. Meanwhile back home in Lebanon, "the war was raging" and all the while he was "hoping to go back." Despite the bombings, Debbas moved back to Beirut from 1982 to 1983 to practice architecture under Jacques Liger-Belair, a well-known Belgian-born architect. He then returned to Berkeley, where he received his master's degree in architecture.

From homes to pens

His big break was in 1989, when he designed a well-received flower shop: Erfani's in Berkeley. From there, he established a small architecture firm and his career blossomed. After working on various home renovations in Northern California throughout the 1990s, Debbas became interested in product design and has been designing pens for Bic and more recently with Ferrari, where he helps design ergonomic writing implements.

When Debbas first began using 3D printing technology in 1994, while prototyping one of his ergonomic pens, it was very rudimentary and was mostly used by yacht and airline designers. Ten prototypes of his pen cost him \$30,000 and took nine months. Today, prototypes can be done in minutes and for very little money.

Debbas and his team also have independent product design endeavors on their drawing board, including a carbon-frame bicycle with electric-assisted hubs and a speedboat that runs off both electricity and fuel. His small team of architects works on projects around the world. Currently, the firm is working on a home in Dubai and a housing development in Lebanon. On top of these projects, Debbas also spends a portion of the year teaching a new generation of architects as a lecturer at Stanford University.

A village for orphans

However, his main passion today is designing an entire village from scratch in northern Tanzania, following an ethos perhaps inspired by the community in Lebanon developed by his father.

The project, done pro-bono, is a social community focused on housing and caring for orphaned children that incorporates durable, high-tech materials, solar panels, gray water recycling, compostable toilets, and sustainable materials. The modular format of the village allows for fabrication in the Republic of the Congo before shipment to Tanzania and can be adapted and reproduced around the world. Comprised of hut-like structures, the village is designed not only to last, but also have a minimal environmental footprint.

Slated to begin construction in mid-2016, the village, nestled beneath Mount Meru, will provide housing and meals for vulnerable children by 2018. "It's a lifetime commitment," Debbas says of the private donor-funded project, dubbed The Happy Childhood Village. Youth from pre-kindergarten through high school will have access to a school, hospital, gym, museum, recreational fields, social center, and for kids with disabilities, a rehabilitation center. The adolescent and adult community members will be able to make use of a trade school and an outdoor cathedral.

This project, and all of Debbas' work, aims to optimize the sensory experience. Debbas worries that as architects create more computer-designed structures, they tend to move away from the sensory experience. By example he tries to show new generations of architects that it's important to take advantage of new technology, from design to construction "but not if it means sacrificing the entire sensory experience."