

BEST

EARTH BUILDER

Vinu Daniel, of Wallmakers

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Wallmakers' Chuzhi house, in Shoolagiri, in the Indian state of Tamil Nadu, is built using scavenged and discarded local materials, including mud bricks, glass bottles and reclaimed wood





Above and opposite, built on a rocky site using a camouflage construction technique that blends it into the landscape, the Chuzhi house is formed from a series of precast composite beams that spiral up to a flat, polygonal glass roof

Born in Dubai to parents of South Indian origin, Vinu Daniel was always expected to pursue a career in something mainstream, such as law or medicine. ‘Certainly anything but Carnatic music,’ jests Daniel of his childhood love for the arts and, in particular, the form of South Indian classical music. In a bid to reconcile his passions and his family’s hopes, Daniel moved to India for university, enrolling for a degree in architecture at the College of Engineering Trivandrum in Kerala. ‘I got into architecture, thinking that it would be a creative space where I could express myself. But within a year or two, I became disillusioned by the pedagogical framework of the curriculum,’ he says. It was a chance encounter with eminent British-Indian architect Laurie Baker in his fourth year of university that reshaped his world view.

That meeting with Baker served as the watershed moment for Daniel’s career, prompting him to ponder where nature should end and built form should begin. ‘I was inspired by the idea that buildings should coexist with nature. Baker also told me something very profound about a meeting he once had with Mahatma Gandhi:

that the real people we should be building for are the ones in need, the “ordinary” people in villages and congested catchments,’ says Daniel. ‘But the most important thing Gandhi told him, and one that has stayed with me, is that the ideal house in the ideal village should be built using materials found within a five-mile radius.’

Driven by a desire to expand on this concept, and intrigued by the idea of using earth as a building material, Daniel founded Kerala-based architecture studio Wallmakers in 2007. ‘Sadly, today, less than one-third of the world’s population lives in buildings made of earth, even though it is a far more sustainable and durable alternative to cement. I knew I wanted to change that narrative and commit to reusing materials that had already made an environmental impact.’

One of his latest projects is a new dwelling – named Chuzhi after the Malayalam word for ‘whirlpool’ – that is located in the Sanctity Ferme gated eco-living community in Tamil Nadu. The owner of the house gave little brief beyond wanting a two-bedroom residence. ‘The house as such is hidden beneath the earth,’ says Daniel. ‘It’s our first subterranean build, but it’s also our



first attempt at building directly on to a rock face. We used a camouflage construction technique to blend the home into the landscape and keep it from hindering the natural beauty of its surroundings.' He gestures to the swirling walls, which are, in fact, precast beams, fashioned from debris, earth and discarded plastic bottles, which spiral up to parlay into a perfectly flat, polygonal glass roof.

True to Daniel's Gandhian ethos, Chuzhi also stars other scavenged discarded materials: the floor is made from reclaimed wood, and mud was the material of choice for the construction. Although the house has no elevation, the roof masquerades as a charming seating area, with the trees for company. 'The idea was to leave the foliage and surroundings true to their original form without compromising the comfort of the owners,' says Daniel, who was given pretty much carte blanche to transform this tricky, rocky site with two mature trees into a contemporary home.

The architect considers himself a disciple of the site, a philosophy he inherited from French architect Satprem Maini at the Auroville Earth Institute (located in the experimental Indian

township of Auroville), where he moved in 2005 after graduating university. 'There I learned about Nubian techniques and vault making. I also worked on some rehabilitation projects in tsunami-stricken areas of Tamil Nadu,' he recalls. The series of experiences inspired an epiphany: 'When I saw the calamity around me, it felt like a sin to be sitting in an air-conditioned office.' At a time when his peers were opting for steady jobs at established firms, Daniel knew his calling lay in reimagining waste. He named Wallmakers after its maiden project: a compound wall built with mud bricks and discarded beer bottles.

Over the years, Daniel has built up his own repertoire of techniques, most notably his now-patented debris wall and shuttered debris wall systems. The shuttered debris technique is most evident in Shikhara, a residence that he and his team completed a few years ago. The site's soil was riddled with pebbles and debris, making it unsuitable for upcycling into mud bricks. The solution? Upcycling the stones – some as wide as 70mm – into the cement and soil formula. 'In India, discarded plastic and construction debris are commonplace.

This is precious waste. I look at it all as newly minted material because, who knows, this is all we may have in the future,' he says.

In another project, the Pirouette House, he used a variation of Baker's rat trap bond masonry technique. In doing so, he arranged the bricks vertically, rather than horizontally, to create wall cavities designed to augment thermal efficiency, reduce total brick volume and conceal service ducts and structural members, leading to 40 per cent less cement consumption and 30 per cent less steel consumption.

Unsurprisingly, Daniel's contributions have been recognised on the global stage; in 2022, he was awarded the Royal Academy Dorfman Award, a prestigious accolade offered once a year to a practice that is reimagining the future of architecture. The judging panel praised the studio's 'energy, creativity and willingness to take risks while achieving sustainable buildings that exist harmoniously within the landscapes and ecologies in which they are erected'. And yet, for the architect, there is a long way to go in honing his craft. The site, he says, is his biggest teacher, and he, its biggest disciple. ✨ wallmakers.org