

In kinship WITH THE PAST

With a new monograph to celebrate 20 years of their practice, Mani and Sonali Rastogi of leading architectural firm Morphogenesis look forward to breaking new ground

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The Pearl Academy building in Jaipur is protected from the elements by an outer skin, an intricate series of *jaalis* or perforated lattice ubiquitous in traditional Indo-Islamic architecture. The density of the *jaali* facade comes from a technique of shadow analysis and the orientation of the building. A distance of 4ft between the *jaali* and the peripheral building wall allows for a buffer space, which checks the direct heat and produces a lovely dappled effect. The roof is insulated with inverted earthen pots, a common in traditional architecture.

Designed by Delhi-based architecture firm Morphogenesis in 2008, the academy's central recreation area is where the students meet, organize events, performances and exhibitions. The average temperature here is a comfortable 29 degrees Celsius. Not because it is air-conditioned, but because it is sunk a few metres into the earth. "When you dig into earth about 3-4m down, like in a *baoli* (step-well), the temperature at that point is equal to the average temperature of the region," explains Mani Rastogi of Morphogenesis, who runs the architecture firm along with his wife Sonali.

"We spread the whole building out as a *chhatra*, like a tree, put a *baoli* underneath, *matkas* on the top and *jaalis* on the side. It's 46 degrees Celsius outside, we get 29 degrees inside, without air-conditioning. All of this traditional knowledge was sitting there, we just drew from it,"



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says Mani, without going into the details of the computational analysis required. To consider Mani and Sonali's body of work is to see vivid, inventive adaptations of such traditional typologies made relevant and meaningful to today's living conditions. Last month, a monograph on their architectural practice, *Morphogenesis: The Indian Perspective. The Global Context*, was published by Images Publishing, a global publishing house focused on architecture and design. It commemorates their two-decade-long journey and was the result of an award they won in 2014: SIA-Getz, the Singapore-based architectural prize given to Asian architects every two years for exemplary work. This award requires every laureate to document his/her work in the form of a book.

In Mumbai to receive the AD50 award—instituted by the *Architectural*

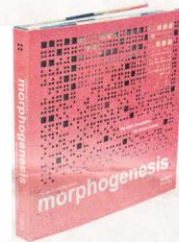
Digest magazine—Mani spoke to *Lounge* about the way his firm's projects synergize traditional knowledge with future tech. "If you look at old forts or palaces, they are always cooler inside than out. There was no air-conditioning or electricity. They usually have a solid perimeter to cut down the heat gain. They would design to keep the west sun out, create water bodies for a cooling effect, and courtyards to provide adequate sunlight. All of this was done not to save the planet or to tackle climate change, but because we were sensible at one point of time, till we realized how to tap energy sources and began using it all up," says Mani.

Mani met Sonali at the School of Planning and Architecture in Delhi in the late 1980s. They were in their early 20s, India was on the brink of liberalization, and academia was tinted with a "Nehruvian construct of socialism". "We weren't

(clockwise, from top) A rendering of the under-construction Infosys campus in Nagpur; the central recreation area in Pearl Academy, Jaipur; Sonali and Mani Rastogi at their New Delhi office, Morphogenesis; and Artisan House in New Delhi.



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studying malls or corporate structures, but thinking of urban housing, bazaars, etc.," says Mani. The couple went on to do their masters at Architectural Association, one of the oldest architecture schools in London; the alumni includes several architects of significance—Nicholas Grimshaw, Rem Koolhaas, Geoffrey Bawa and Zaha Hadid. Between the two, they studied sustainable environmental design, urban housing and Artificial Intelligence (AI) in architecture. In 1996, they returned to Delhi, took up a 10x10ft mezzanine space above the garage in Mani's parents' house, bought two drafting boards and a personal computer—and that was the beginning of Morphogenesis.

Perhaps a natural consequence of this educational background was their introduction of research as a tool of design when they set up their practice. The lab, called Amorphous, tests materials and processes, studies historical works of design and architecture and uses the information to create simulation models. "How does a *baoli* work? Why is it that when you step inside a fort, there is always a breeze? Those designs were perfected over thousands of years, we get a

few days. So the idea is to build computational models around these, and then find a way to carry them forward," he says.

Twenty years is not a terribly long time in the life of an architectural firm. Morphogenesis, however, exhibits an agility and applied common sense in the way it negotiates contradictions: how to be ecologically light but provide modern-day conveniences, how to build in a global context yet draw from traditional construction practices. The projects that the couple take on are illustrative of this duality. They have been pushing for the Delhi Nullah project for nine years and researching ways to restore the Capital's traditional sewage network. They took on Artisan House, a private residence in New Delhi built in 2015, as a project because it gave them an opportunity to learn and draw from the skills of artisans. "Everything in the house is handcrafted: inlay, stonework, brick patterns, furniture, even rainwater pipes. That's how construction was traditionally done till modernity stripped the artisan of his capacity and reduced craft to a souvenir," says Mani.

In one of their works-in-progress, the Infosys campus coming up in Nagpur, they have applied a "net zero on energy, water and waste to landfill" philosophy. "It's a reverse calculation. If you build on a certain piece of land, what's the carrying capacity of that land? How much rain does that land get and how much of it can be harvested? Then we calculate how many people can be supported on that land with that much resource and how much we need to build accordingly," says Mani. Can it be done? "Yes, we think so. We're currently working on seven projects that are based on this formula."

Such a reverse calculation and a shift forward in the way we consider resources, how we build and how we live—Morphogenesis is pivoted between making the most of the past for the sake of the future.

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