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Architects: Manit Rastogi & Sonali Rastogi, Morphogenesis

GENESIS OF A CONTEMPORARY INDIAN ARCHITECTURE PRACTICE

ARCHITECTS: MANIT RASTOGI & SONALI RASTOGI, MORPHOGENESIS

GENESIS OF A CONTEMPORARY INDIAN ARCHITECTURE PRACTICE



It's been over two decades now that the creators and their creations are standing tall, continually expanding, and adding to the definition of contemporary Indian architecture using the best blend of local-global design – that's **MORPHOGENESIS** – an innovative practice at the forefront of thought leadership in design.

A unified vision of the architect-duo **Sonali and Mani Rastogi** to define the emerging Indian architecture led to the inception of Morphogenesis in 1996. Since then the firm has evolved into a cross-disciplinary team comprising of Architects, Interior Designers, Landscape Architects, Urban Designers, and Researchers with diverse backgrounds and specializations. With offices in New Delhi and Bengaluru, their work spans across India, SAARC Nations and South Africa, taking brand India global.

After completing their Architecture studies from School of Planning and Architecture, Delhi, Sonali and Mani proceeded to spend a long stint at The Architectural Association, London where Mani pursued his interest in the study of nature, evolution and design processes in association with **John Frazer**. He also acquired a degree in energy and Environment Studies with **Simos Yannas**. Sonali studied Housing and Urbanism with **George Fiori** and at 'The Design Lab' with **Jeff Kipnis**. Bringing together their bouquet of interests Morphogenesis was born with a vision to contribute to the definition of sustainable architecture for modern India.

Morphogenesis reinterprets India's architectural roots and consistently employs passive design solutions for a unique contextual language. Their ability to design relevant modern forms with a juxtaposition of traditional wisdom and modern tools has won them over 100 National and International accomplishments, awards and recognitions. They view their practice as a 'knowledge firm' – an architectural laboratory, looking to expand the boundaries of architecture, urbanism and environmental design in India.

In 2009, Morphogenesis became the first Indian practice to win a *World Architecture Festival (WAF) Award* and the *Laureates of Singapore Institute of Architects (SIA) Getz Award* in 2014 for their work which is "... very much rooted in the culture, climatic, social and economic conditions of India ..." cited the SIA Getz Jury.

Extremely learned and humble souls, Sonali and Mani Rastogi are among the most respected contemporary Indian architects today. Sonali is passionate about design and has a profound interest in the 'History and Theory' of architecture. She lectures and writes extensively, having spoken recently at the Brown University Arts Symposium (2017) and the Design Leadership Summit, New York (2014), amongst others. She is also the Gallantly/Dickson visiting scholar at the University of BATH, UK.

Sonali is ardently interested in the materiality and craft in architecture and is deeply invested in the detail of building. A strong proponent of the arts, she is also a founder member of *Manthan*, a platform for creative individuals who seek to share, discuss, engage with and evolve concepts and ideologies. A Fellow of the IIA (Indian Institute of Architects) and the RSA (Royal Society of Arts, UK), she also extends her impact on the built environment as council member of the Delhi Urban Arts Commission.

Sonali has co-authored with Mani Rastogi, Morphogenesis's first monograph '**Morphogenesis: The Indian Perspective | The Global Context**' published by Images Australia under their *Master Architect Series*, exemplifying the hallmarks of their 20 year journey.

In their rich architectural journey so far, never have they been exposed to calculate the volume of woods in funerals, seeing the half-burnt bodies in the rivers, talking to localites about such behaviour, and to work with NGOs' to organise, control and minimise such customs.

It was an absolute pleasure and privilege for **SURFACES REPORTER** to have Sonali Rastogi as the keynote speaker in the 4th 'The Talk of Town' series event in New Delhi on 2nd June 2018, New Delhi.

We have been seeing and following her work closely for multiple years now, and have seen her elevating the benchmarks, and strengthening the womanhood in Art, Architecture and Design. It was quite engaging for the audience to travel with her as she reminisced the journey of Morphogenesis – from a garage to a conglomerate, in her talk on '*Genesis of a Contemporary Indian practice*' with her signature flair and poise.

Excerpts from Sonali Rastogi's speech at the SURFACES REPORTER's #TheTalkofTown event - June 2, 2018:

A purpose is born, when something hurts badly deep inside – a fanatic desire to change what offends.

It was during those formative years in London when Sonali and Mani were completing their Masters, that they both first felt the absence of "**India**" in the global architectural circuit. Internet was newly born, and the glossy magazines ruled the stands. While it was exciting for them to attend public lectures, the lack of mention of Indian Architecture was pinching. She recollected – it was in that moment when the entrepreneurial instinct first stung them and the desire to tell the world about their perception of '*futuristic architecture*' triggered – and, thus, Morphogenesis came into existence in 1996, when the two returned to India.

She shares that the mission behind the inception of their practice was clear, concise, and cohesive – to contribute their bit to elevate the Indian voice globally.

Her approach towards her projects is inspired by the evolutionary processes in nature and their belief in sustainability forms a consistent theme in her designs. By deploying passive strategies and responding to the local climate and ecology they address various parameters such as comfort, safety and livability whilst ensuring that the projects remain economically viable and globally pertinent.

There are number of eminent international and national projects which Morphogenesis has spearheaded, but there are a classic few, close to her heart, which she spoke about eagerly:



Sonali is surprised about the silence surrounding the currently under construction, global competition winner -**the Surat Diamond Bourse**. The building is set to be the world's largest single-faced office building spreading over an area of 65 lakhs square feet. She speaks enthusiastically about the unique features of the project - a building for the world's largest single community - a civic society of Saurashtra Patels. The structure is aimed at controlling 95% of the global diametric with 23 kilometres of naturally ventilated active spines connecting all towers. Overall, the extended creation when built will be setting standards for more reasons than one.

A River in Need - The Namami Gange Project a part of the Government's initiative to revive The Ganges, this project spans across 64 ghats and crematoriums along a 210 kilometre stretch from Varanasi to Allahabad. The intensity, spread, and the intelligence needed to execute such a massive venture is immense and is an architect's dream. Sonali says this is an endeavour full of challenges ranging from historical, hydrological, sustainable, and cultural contexts while dealing with erosion, rise in water levels and monsoon flooding. In their rich architectural journey so far, never have they been exposed to calculate the volume of woods in funerals, seeing the half-burnt bodies in the rivers, talking to localites about such behaviour, and to work with NGOs' to organise, control and minimise such customs. In her words it was '*gut-wrenching and depleted our souls*' while enhancing their zeal to do everything possible to get it right.

Winning the project **The Infosys Campus, Nagpur** through a competition made them shift their gears. **Mr. Narayan Murthy** who was completely engrossed in its developments wanted a '*net-zero*' model, which meant small buildings, individual stand-alone structures, little schools - all leading to defining the future of sustainability. Mr Murthy further pressed them to think different and come up with the world's most sustainable building model with 100% productive landscape while preserving the eco-system and bio-diversity giving universal access across the entire campus.

The project gave them opportunity to learn a new dimension regarding working sensibly and starting with a benchmark metric, as opposed to focussing on the established principles of the 21st century.

The British School, New Delhi is India's 5-star rated GRIHA school, reflecting the ethos of '*International School with an Indian Soul*'. The management wanted the structure to emit emotions, generate memories, and reside in the sub-conscious forever. "*It was tough, but then we nailed it precisely,*" she quipped.

Can making the Amarnath pilgrimage safer become an architectural event? Yes, it is, and that is what the team at Morphogenesis under the guidance of Sonali and Mani did - executing above the snow line. There was lot of coding, scripting and a real inclusion of parametric forms within the constraints of construction technology at such insane heights within logical constraints. A cohesive *squad-ing* with the Indian Army, dismantling the rocks with boring machines, donkeys transporting the stuff and staying in caves was all a part of the project.

Sonali has markedly debunked the myth that women can't do mainstream architecture.

Born into a family of architects, she has been seeing, touching, scribbling, and feeling architecture since the very beginning. She says - she grew up with the zeal to defy the Indian society's deeply rooted belief that women were not cut out for conventional architecture. And today, she is an inspiration for us all.

With pride in her eyes, she said, "*Today, more than 50% of our team comprises of women*".

Listening to Sonali speak her heart out and take us to the lesser known facts about her and Morphogenesis's journey was heart-warming and inspiring. **SURFACES REPORTER** sincerely believes that the best is yet to come from the firm.



Sonali Rastogi's keynote speech during **Surfaces Reporter's The Talk of Town** event made us curious to know more. The questions below were the outcome of that inquisitiveness.

S We know that Morphogenesis had a modest starting. Please share the story of its beginning in a garage and how were the initial days?

We started Morphogenesis in 1996 as a two-person practice working out of a tiny garage, with no certainty of what the future would unravel for us, yet with complete clarity of purpose- to contribute to the definition of and to build a global discourse on contemporary Indian Architecture.

I believe we were fortunate to be in India at a time when there was a paradigm shift in the economy which was growing and liberalizing, because that let us experiment with the evolution of corporate offices, shopping complexes, educational institutes, etc. that were pushing the boundaries for new forms of education, holistic health facilities, IT campuses, and more. We were privileged to be the first entrants into many such typologies. All this led to the building of an innovative and contemporary Indian practice at the forefront of thought leadership in design and operational excellence. Our first project together was the **Apollo Tyres Corporate office**. We were very fortunate to have a client entrust us with a project of this magnitude. For the time of the project (1996), the technology implemented was cutting edge. There was an immense amount we learned from it. Since then, we have done projects varying across typologies, scale and thought processes – be it a 400sq. ft. single room office or cinema remodeling.

In the last 22 years, there has been immense learning, discovery and pride in terms of being the 1st ones to do something. In doing so, we have come a long way - having designed some of the world's largest buildings, 1st net zero energy enabled school, 1st Indian practice to win at the World Architecture Festival (WAF). This 'first' ethos has become synonymous with the way Morphogenesis works – in discovering and promoting Indian architecture across the world.

S As a young architecture & design firm were there any important choices you made early in your career that shaped your work and vision.

When we started in 1996, our vision for the firm was clear - we didn't want to brand our work behind any one individual, rather the focus was on the '**Morphogenesis**' brand. For us, Morphogenesis essentially means '*horizontal development of firm and responds to nature*'. In the last 22 years, we have designed how a practice should be institutionalized and how it would be continued perpetually making it a learning laboratory for the people who come to work

with us and through us. Our buildings are a by-product of this process. This process has also ensured that the organisation is equitable while simultaneously creating a learning environment. We have pursued these simple ideas and have built up what we have today. Rather than being milestone-driven, our vision is more value driven.

S Kindly tell us more about the Design Philosophy mentioned as SAIL. How is it integrated with Design management?

Ever since our inception, Morphogenesis has had a reputation of being an innovative practice at the forefront of thought leadership in design. We look at all aspects of the context and arrive at an innovative response to the physical, geographical and cultural conditions that address the user brief, and ultimately aspiration. In our practice, we follow a very simple ideology SAIL which governs the philosophy of an integrated design approach.

Sustainability- The approach of 'No is More', i.e., imagining one has no resources at one's disposal, becomes an inspiration for creating truly optimised built-spaces responding to present-day issues of stress on resources. *We build buildings that consume 75% lesser energy than certified green building benchmarks.*

Affordability- We break barriers of established price benchmarks and reduce consumption of resources through design innovation.

Identity- Our architecture is rooted in the Global and the Local, celebrating Diversity over Homogeneity.

Liveability- We design SMART architecture to build resilient communities by putting the user at the center of the design process.

At Morphogenesis, we believe that this philosophy will lead to an inclusive design - defining the new emergent Indian architecture.

“We started Morphogenesis in 1996 as a two-person practice working out of a tiny garage, with no certainty of what the future would unravel for us, yet with complete clarity of purpose- to contribute to the definition of and to build a global discourse on contemporary Indian Architecture.”



Vertica Dvivedi, Curator, The Talk of Town and Editor-in-Chief, Surfaces Reporter, felicitating the Keynote Speaker Ar Sonali Rastogi

What is your message for:

A) Young designers and architects

My advice to young prospective architects and designers would be that they should first understand that architecture and design are not just merely professions; they are a way of life! The commitment required is paramount as there is a tremendous responsibility to one-self, the environment and the society at large. If design and architecture is not your hobby, recreation, meditation, work and *mojo*, then one should try something else.

B) Surfaces Reporter magazine

In this age and time, the biggest thing an editorial platform can do – is actually become the base and pave way for design discourse. I am very happy to see SURFACES REPORTER'S Initiative 'The Talk of Town' Series across multiple cities in India. By generating that kind of engagement within the architectural design community they are creating platforms that foster thought provoking discussions. At the end of the day, design only grows as much as the discourse for it grows.

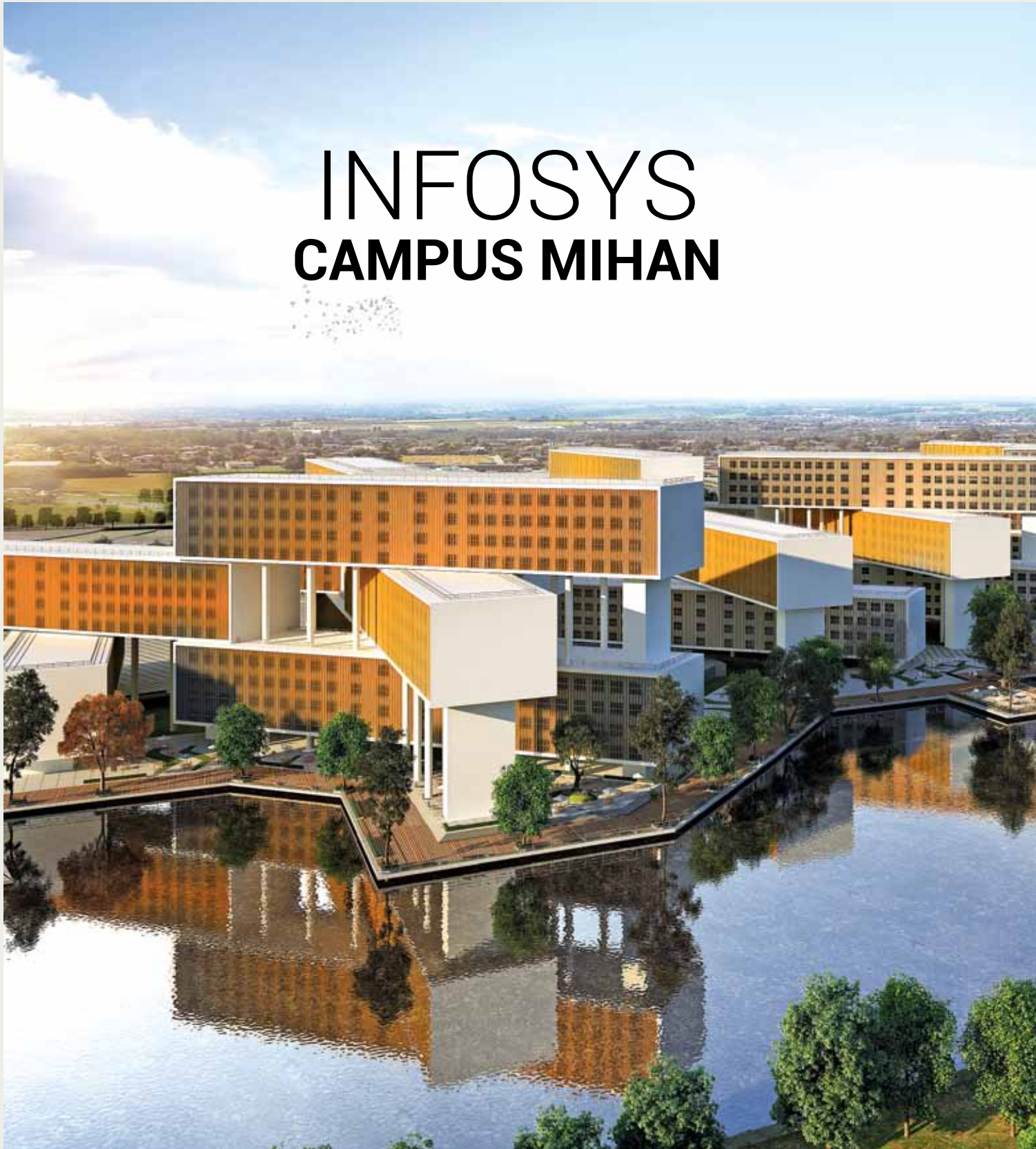
What is your mantra for work-life balance?

I think all working women have to be a master of time management. I definitely was NOT! I was quite the bohemian. I think life teaches you time management. A woman plays many roles other than that of a mother, a daughter, a spouse, a sister and in an Indian situation more or less the one responsible for

“I think all working women have to be a master of time management. The network of relationships that women have is the one that also comes to help in fostering our careers. My career was entirely based on my life being balanced by my family- my mother, my mother-in-law, my sister and my sister-in-law.”

house chores, extended family relationships and friendships where work-life balance is hard to achieve. However this network of relationships that women have is the one that also comes to help in fostering our careers. So, my career was entirely based on my life being balanced by my family- my mother, my mother-in-law, my sister and my sister-in-law. Often friends and neighbours pitched in and supported me in my work life. So, I don't think this balance is something one might imagine and put on a calendar waiting for it to happen. It comes out of a deeper grain of a web of social networks. And it comes with the willingness to know it's not going to be a one way give, give and give; there will be a take at some point. The give-and-take becomes part of larger life and social system beyond someone's own imagination.

INFOSYS CAMPUS MIHAN



Project Name: Infosys Campus

Typology: Institutional/Offices | **Location:** Nagpur, Maharashtra, India

Completion Year: In Progress | **Client:** Infosys | **Built-up Area:** 8,25,000 Sq.Ft. (Phase 1)

Site area: 142.0 Acres | **Climate:** Composite

T

his project is located in **Nagpur** and sits in a 'Special Economic Zone' (SEZ). SEZs are designated areas that possess special fiscal regulations different from the rest of the land with the aim of easing International trade and being conducive to foreign direct investment.

The client brief was simply 'to create the world's most sustainable office building'. Morphogenesis took this opportunity to test if a development of this scale could be net zero on water, energy and waste to landfill, with a future aim to develop a model for sustainable master-planning for larger sites. The geology of the land played a key role in the morphological evolution; Nagpur lies in seismic zone II and the soil has a high bearing capacity. The building modules or tubes are largely column free spaces that are stacked into a four floor format and are vertically connected through an atrium and a staircase. Each tube is swung at an angle of ± 22.5 degrees, this rotation in the stacking structure generates new ground at elevated levels. This dynamic morphology was a direct outcome of low seismic activity and the hydro-geological nature of the area.







The introduction of an earth sheltered, shaded and passively cooled landscape at a subterranean level integrates the different building blocks with the subterranean pedestrian circulation system. This is flanked with food courts and other public activities. These low-lying congregation spaces are shaded by the buildings on top and are thermally buffered by the surrounding land. This results in a large amount of public space being independent of mechanical cooling systems.

The plan evolved from the notion of understanding the capacity of the site; a capacity determined by functions like energy, water, geology of the land, along with essential rules of urban design pertaining to light, ventilation, and shading. Based on this a master-plan for a working population of 20,000 emerged, which is net zero on Energy, Water and Waste discharge. Radial planning is used, in response to the natural topographical condition and the Western, North-Western and South-Western wind directions specific to the region. This radial grid strategy aids in bring down the perceivable temperatures and creating a micro climate on site.

The ± 22.5 degrees North orientation stems from Nagpur's location on the Tropic of Cancer; this allows for 90% of the building to be day lit. Sixteen metre wide floor plates, solar protection strategies like façade shielding with fins, and mutual shading, prove to be effective solutions to ensure the building blocks are uniformly day-lit and completely glare-free.

The use of passive strategies though the project aids in reducing energy requirements to one fifth of the consumption of a typical office. A 12.1-hectare (30-acre) on-site solar plant

“The client brief was ‘to create the world’s most sustainable office building’. Morphogenesis checked if a development of this scale could be net zero on water, energy and waste to landfill. The final outcome is an iconic precursor for the area to be developed as a global hub of information technology.”

services this reduced requirement, resulting in zero energy from the grid. Zero water dependence is achieved by creating a reservoir on site. Designed as a lake adjoining the existing water-tank in the West, this reservoir is fed by effective rainwater surface run-offs. Efficient system design ensures water management and the recycling methods reduce the water consumption by half. Bio-degradable waste disposal is addressed by a bio-gas plant and vermicomposting.

Infosys sets out to establish new context in ‘the middle of nowhere’ for future projects here in this location and act as an iconic precursor for the area to be developed as a global hub of information technology.



THE BRITISH SCHOOL, NEW DELHI

An International education with an Indian soul

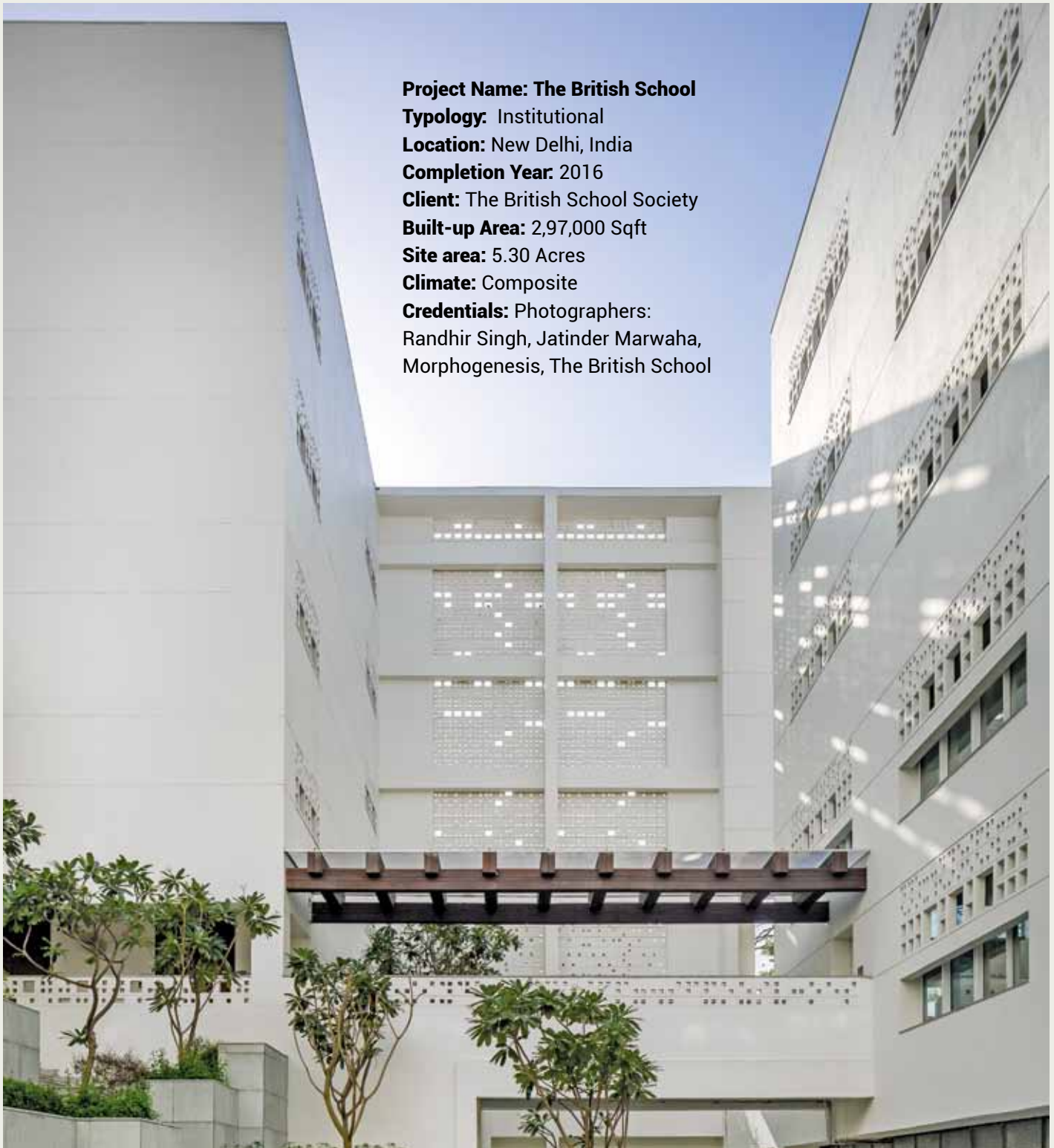
Morphogenesis' design vision for The British School in New Delhi, found inspiration in the school's tagline- 'An International education with an Indian soul'. With this project, Morphogenesis set out to provide a strong cultural context to the international format of education this institution provides. Located centrally in Delhi, space itself was a constraint. Its population of 650 students was to be doubled to 1300. The principal challenge was to construct the new building on the existing site without disrupting the day to day running of the school. The only constructible space available enveloped the existing premises, presenting construction,

phasing and Health & Safety challenges. A strategic approach to phasing was adopted in the form of Phase-I comprising of a perimeter block to transfer and accommodate existing operations. Phase-II, being built on the vacated footprint of the old school, houses additional classrooms, laboratories, sports facilities, arts wing and a performing arts Centre.

The unusually diverse student population with over 55 nationalities led Morphogenesis to evolve a socio-culturally inclusive process of detailing the brief. A series of workshops with various stakeholders such as academicians and student class representatives, 3 to 18 years of age, was set up. This approach acknowledged diversity and aimed to create an environment that would foster social cohesion.







Project Name: The British School
Typology: Institutional
Location: New Delhi, India
Completion Year: 2016
Client: The British School Society
Built-up Area: 2,97,000 Sqft
Site area: 5.30 Acres
Climate: Composite
Credentials: Photographers:
Randhir Singh, Jatinder Marwaha,
Morphogenesis, The British School

One amongst many interesting outcomes of this collaboration was the notion of semi-enclosed breakout spaces that are liberally scattered around the school and are constantly being transformed in the way they are occupied. This was a response to the multicultural personality of the school and its strong social agenda, whereby a number of lateral activities take place in a typical school day. These breakout spaces have been consciously placed along transition areas, such that the activities they facilitate become an integral part of the student experience, enhancing their holistic socio-cultural awareness and demonstrating the school's outreach philosophy at the same time. The multi-functional nature of these spaces helped in optimizing the built up space of this urban school.

Two key design strategies were deployed to optimise resource. One was to minimise reliance on mechanical systems. Morphogenesis advocated that 50% of the school be non-air-conditioned with traditional passive methods used to temper the environment and optimize energy consumption, creating an environmentally experiential learning environment. The second strategy was that of planning the school as a system of courtyards scaled such that majority of them are in shade throughout the year, thus making them effective not only as transition spaces but as extended learning environments. Internal courtyards, chajjas (deep overhangs) and verandahs provide opportunities for students to engage with the environment and nature. Taking inspiration from



“Its population of 650 students was to be doubled to 1300. The principal challenge was to construct the new building on the existing site without disrupting the day to day running of the school.”



traditional chaupals (outdoor gathering spaces) in India, some congregation spaces are designed to sit in the shade of mature trees. Protecting old trees, creating bioswales, rain gardens and a visible rainwater harvesting system, consciously illustrate demonstrative sustainability. Care has been taken to protect all existing trees and the student community has played an active role in the transplantation process.

The design of The British School in New Delhi enriches the learning experience of its highly diverse student population by providing a contextual richness to their passage through education in India.

A river in need: THE GANGES

Sustainable restoration of a historic interface between the space of human habitation and the space of water.

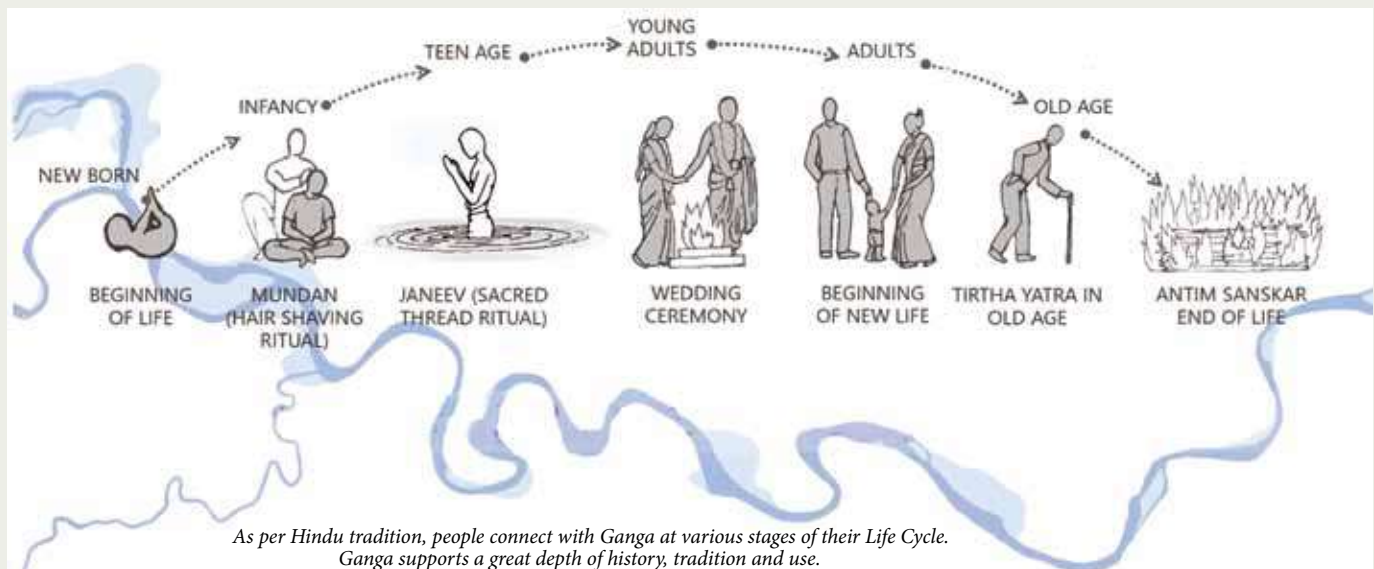
Main design interventions included introducing informal temporary retail, segregated platforms for discourse and cremation, organised spaces for social gathering and rituals, and the use of solar panels.



AN INTEGRATED CONSERVATION PROPOSAL FOR GANGA RIVERFRONT

With a twin objective of the effective abatement of pollution, conservation and rejuvenation of the national river **Ganga**; the project addresses scouring of the river banks, flooding as well as many cultural concerns. With increasing densification of Indian towns and cities, there is greater need for space required for urban interaction, community building and for public engagement. **Morphogenesis** aims to turn the city inside out by sustainable development of this riverside urban frontage.





SAVING THE RIVER

As architects and advocates for this *'River in Need'*, to design in an environmentally contextual & culturally sustainable way, one has to recognize that the ultimate goal to close the circle of life around the Ganges is to become one with the river.

There has to be a sensitive handling of all the various rituals that the Ganges is part of. It is as important to anoint a newborn as it is to place the ashes of the dead in there. The cycle has been studied- where people will gather, where they will wait, where they will be mourning and where there will be celebration. All these need to coexist in a culturally sensitive manner.

WHY THE GANGA IS DYING

1.1 mn ltrs of human excrements is discharged into the Ganga every minute

140-200 tonnes of incompletely cremated bodies dumped in the river every year

15,000 tonnes of ash released into the river every year

REDESIGNING THE GHATS

Looking at rejuvenating the usage of the river, a prime design concern has been dealing with the erosion of the river bank, which is addressed by researching and redesigning traditional vernacular learning of the way the water edge was treated, such as the ghats lent themselves to stabilizing the river edge along with providing the interface for human and water engagement.

TURNING THE CITY INSIDE OUT

The design incorporates informal, popup temporary retail to activate the ghats constantly and prevent further pollution. Sectionally the ghats are organized according to flood levels, with bathing platforms at the lowest followed by ritual space, gathering space and public amenities at the safe zone. Thus, different levels have been created for different activities. These ghats when redeveloped will not only serve their traditional ritualistic purposes but also function as urban spaces for discourse and dissemination of knowledge. In that vein these spaces are designed to be Wi-Fi enabled, and in keeping with sustainability metrics, they will almost entirely run with solar power.

