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# ARCHITECTURE+DESIGN

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SPECIAL ISSUE

## Vanguard women Indian architects



## Genesis of a Contemporary Indian Practice



**W**e started Morphogenesis in 1996 as a two-person practice working out of a tiny garage, with no certainty of how 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. It has been a fruitful, rewarding 23 years and we are now a collaborative of 190 people with offices across Delhi, Mumbai and Bengaluru. Furthermore, our work is spread across eight countries and over 50 locations. Today, Morphogenesis sees itself as an institution in perpetuity— a living, thriving ecosystem, a repository of data, information, knowledge and wisdom.

'Learning' is Morphogenesis' strongest value, and each member contributes to learning in equal measure and digital transformation has been a great enabler of optimizing our efforts to learn, document, use and share information across our studios. The result has been greater innovation in typology, scale, climate, cost and our ability to forecast and stay ahead of the curve, in everything we do. Ambition, integrity, sensitivity and synergy are the other values that drive the practice to constantly innovate, as a response to an evolving economy and the global condition.

The firm also celebrates its diversity and thrives on its high level of cultural breadth to provide that all-roundedness and innovation which is a signature of the firm's work. Along with diversity, gender balance at Morphogenesis is exemplary. Women make up 51 percent of the workforce, including at leadership level, a figure the firm is intensely proud of and is being spoken about globally. Our human resources team works hard to provide an atmosphere that makes this number possible— from working proactively towards challenging stereotypes and reducing gender bias, ensuring safety of female employees

**SONALI RASTOGI** graduated from the School of Planning and Architecture (New Delhi) and The Architectural Association (London) with a graduate diploma in Housing and Urbanism under Jorge Fiori and a second graduate diploma in Graduate Design (DRL) under Jeff Kipnis, she is the Founding Partner of Morphogenesis, one of India's leading

award-winning Architecture and Urban Design practices. Morphogenesis has been ranked yet again, for the eighth time running, among the Top 100 Architectural Design Firms worldwide by Building Design Magazine, UK in WA100 2019. The practice is the recipient of over 100 international and national awards which include being

India's first World Architecture Festival Award winners, 5 Indian Institute of Architects Awards, and Laureates of the Singapore Institute of Architects Getz Award. Her works are featured in over 750 publications, both international and national. The literature of 'History and Theory' of architecture is of profound interest to Sonali. She lectures and



Health camp



Learning and development workshops



Village - Diwali



Women's Day

working out of hours, to flexibility in working arrangements for new mothers, to celebrating all festivals with vigour, all unique in the context of an architecture practice in India. Also, the gender pay parity gap has been, and is, non-existent at Morphogenesis. It is perhaps this progressive practice philosophy with respect to knowledge, growth, enablement and

opportunity, which has made the firm a workplace of shared vision and ethos.

The firm's architectural principles are based on four distinct pillars: Sustainability, Optimisation, Uniqueness and Liveability, all of which are considered in light of celebrating identity and diversity versus visual homogeneity. We see ourselves as architectural activists in an attempt to affect change in our cities, in the buildings we dwell and ultimately, the lifestyles we adopt. All projects are conceived through a research-oriented approach to policy, planning, design, technology, and passive/low energy

writes extensively, having spoken at the Brown University Arts Symposium, Design Leadership Summit, New York and the World Architecture Festival, Bertin amongst others. Sonali has also co-authored Morphogenesis' first monograph 'Morphogenesis: The Indian Perspective, The Global Context', published by Images Australia

under their Master Architect Series. Working across a diverse canvas ranging from architecture to urban design, landscape and interior design, Sonali is passionately interested in the materiality and craft in architecture, and is deeply invested in the detail of building. A strong proponent of the arts and crafts, Sonali is 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 a council member of the Delhi Urban Arts Commission.



Retreat 2018

design and continue to carry the Morphogenesis brand of engagement and experimentation. We also believe that everyday must bring with it a challenge, and if it doesn't then we create them because at Morphogenesis there is a philosophy of trying to do something innovative and new with everything we work with. And it happens at different levels, sometimes it happens at all the way up to the master planning stage or all the way down to a singular detail. So, if a project was not a challenge then it would just be bread and butter. Having said that, this is only the beginning; there is so much more that remains to be done. What is very exciting is the potential of the times we live in today as a result of which the world's eyes are upon us and there is renewal of self-pride in all things Indian. This makes an ideal setting for even greater, faster and deeper implementation of

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VERSUS VISUAL  
HOMOGENEITY



an architecture that aims at successfully reducing the load on the environment in its construction strategy (assembly), material resource utilization (transportation), spatial allocation (area optimization) and energy consumption (passive methods) thereby relying on natural environmental resources and renewables such as daylighting, ventilation, passive methods of cooling, water recycling and access to nature. What is crucial is finding the correct sustainable urbanism, industrial and rural models for the Indian subcontinent – not something imported from industrialized nations, not exclusively dependent on globalization, but one that renders itself appropriate to our condition. In that sense, architecture is not a static profession, it is dynamic and constantly evolving and requires a very high level of commitment, individually and collectively.

It is this very commitment that drives the changing nature of our practice in response to the changing nature of issues pervading society. Therefore, our vision stays the same, yet the tools keep evolving, where experience adds to thought and the canvases grow larger. Also, with all these years behind us, we shoulder a responsibility as thought leaders, which sit in a wider realm than the architecture that comes out of Morphogenesis. We push advocacy and education with our efforts on sustainable urbanism. Just as we could not have predicted where these past 23 years would take us, we cannot foresee with any certainty what the future holds. What we do know is that the vision stays the same and the opportunity is immense to contribute towards the sustainable growth of this region through our work! ✚

*The project aims to be an exemplar for integrating high density architecture along with sustainable design...*

**PROJECT** Surat Diamond Bourse, Surat **ARCHITECTS** Morphogenesis, New Delhi

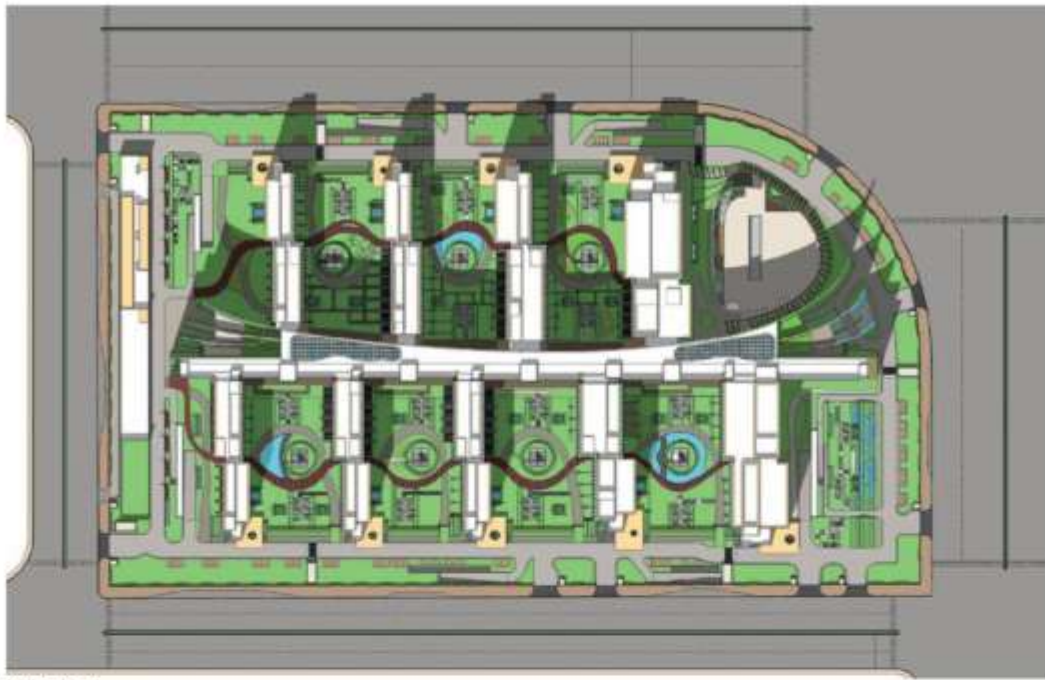
India gives shine to 75% of the rough diamonds sold globally, with Surat being the capital of this trade. Over 90% of the world's diamond pieces are cut in Surat, contributing to about 80% of the Indian annual diamond export. At present, Bharat Diamond Bourse located in Bandra Kurla Complex, Mumbai, serves as the sole diamond trading hub for India. Due to inadequate suitable office spaces in the BDB, most of the traders and merchants conduct business from the BDB. Diamond merchants from Surat travel to Mumbai daily to conduct business. Whilst Surat is well-known for its diamond manufacturing sector and is home to many of the largest polishing factories, the city does not have a well-structured trading base.


These challenges prompted various diamantaires to establish a new bourse in Surat. This new international diamond bourse will echuse the diamond exchanges in Mumbai, Israel and Belgium in terms of scale and activity further enabling the currently fragmented and unorganised diamond trading and polishing industry in India to organise itself in one place. It is also set to reduce the travel time for the merchants and provide them with affordable office spaces, thus addressing the daily problems of many small and medium level merchants who are often seen trading in the open landscaped courts and the corridors of BDB. It will further enable them to deal directly with their buyers by bringing all activities of cutting, polishing, manufacturing and trading under one roof.

This project is currently under construction on the National Highway in Surat, amidst the DREAM City (Diamond Research and Mercantile City) – an upcoming business district comprising of offices,





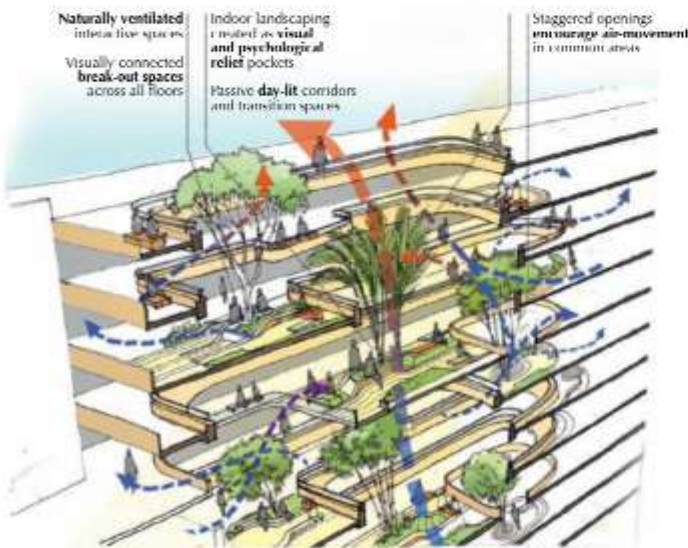


 SITE PLAN

residential areas and allied facilities. With an eye on providing a facilitating business environment to complement the diamond industry of the region, the project will be spread across 35.5 acres of land, with a total built-up area of 620,000sq m, making it the single largest office building in the world. It will consist of 4,500 offices varying in sizes from 28sq m to 7000sq

m, thus resulting in affordable spaces for all.

Given the scale of the development, the primary challenge was to enable easy navigation for large volumes of people within the trading-time constraints. Functional proximities were governed by optimising travel distances from the site entrance to the farthest possible module within seven minutes.



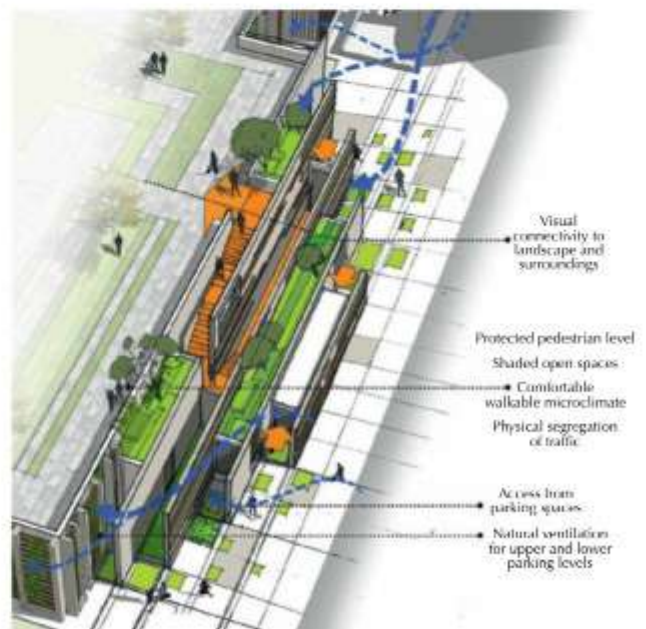
Naturally ventilated  
inter-floor spaces  
Visually connected  
break-out spaces  
across all floors

Indoor landscaping  
created as visual  
and psychological  
relief pockets

Passive day-lit  
corridors  
and transition spaces

Staggered openings  
encourage air-movement  
in common areas

CENTRAL ATRIUM DETAIL



Visual  
connectivity to  
landscape and  
surroundings

Protected pedestrian level  
Shaded open spaces  
Comfortable  
walkable microclimate  
Physical segregation  
of traffic

Access from  
parking spaces  
Natural ventilation  
for upper and lower  
parking levels

PODIUM DETAIL

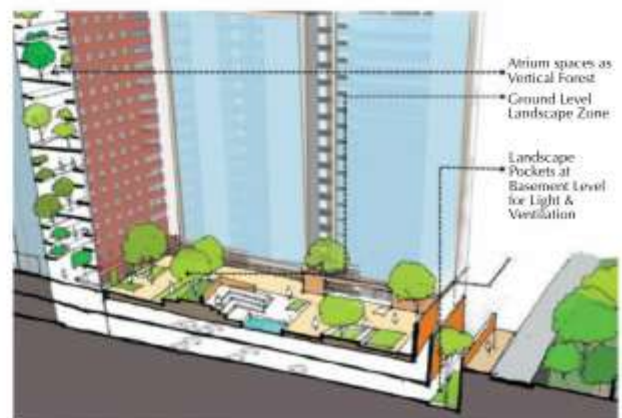


All vertical circulation nodes such as staircases and elevators across each floor have been placed within one-minute walking distances of each other. This enables over 65,000 people daily to reach their respective offices in less than seven minutes from the point of entry into the complex.

The design strategy employed by the architects is one quite similar to that of an airport terminal, resulting in walkable corridors across all 15 floors. The complex will consist of multiple entry and exit points along the edge of the site to distribute peak hour traffic and enhance accessibility. Furthermore, separate entrances for services and customs will aid in reducing traffic congestion and ensure seamless movement of approximately 10,000 vehicles each day. The building is planned along a central axis aligned with the prevalent wind direction. The north-south oriented towers provide glare-free daylit offices accommodating functions of trading and selling of diamonds, customs, etc. The central spine is used for interconnection between the towers on every level which are designed as an interactive hub comprising of break-out spaces, green atriums and a host of visual experiences that encourage social cohesion and community engagement. The building form aims at maximising the potential of self-shading, thereby reducing dependency on mechanical forms of cooling. The use of dense vegetation within the building not only has psychological advantage but also improves the indoor air quality whereas outdoor spaces have been designed in nine landscaped courts

that provide thermal comfort.

The project represents an innovative approach to low-cost architecture designed with maximum spatial efficiency. Modular structural grids align efficient parking layouts, saving 25 per cent of the construction area. The naturally lit workspaces allow for flexible interiors, keeping in consideration any future changes in user requirements. The design of the two basements have structural innovations that help avoid the need for pile foundation, which would be typical in this area, thereby bringing the cost down. The firm's design employs passive strategies integrating solar control, air movement, orientation and creation of a productive microclimate. A combination of materials with high thermal mass



LANDSCAPE





PODIUM EDGE

and high porosity in relevant areas results in low external heat gains and therefore lower cooling loads. Hybrid climate-systems integrate strategies for natural ventilation, dedicated outdoor air distribution systems combined with heat-recovery wheel and passive dehumidification wheel will be used to supply fresh air. The building has been pre-certified IGBC Platinum and will feature rainwater harvesting systems, photovoltaic power generation, a grey water system, local construction materials, amongst other such efficient systems. A 600kW rooftop solar plant will generate up to 900MW of the annual energy demand, largely contributing to the net-zero targets. Integrated HVAC systems involving radiant floor cooling and natural ventilation have been provided to achieve an efficiency of 7000sq ft/TR, consuming less than 1.0kW/TR of energy. Elevated airspeed strategies further enable higher thermostat temperatures without compromising thermal comfort. The transition from offices at approximately 24°C has been consciously raised to about 26°C in lift lobbies and common areas, and a further 30°C in the central spine.

The project is a shared vision of one community to

make Surat the world's largest hub for the diamond industry. It aims to be an exemplar for integrating high density architecture along with sustainable design. The bourse shall form the heart of the central business district and act as an incubator by attracting regional development with allied civic amenities such as hospitals, sports complexes, five-star hotels, convention centres and educational institutes. Currently, the diamond industry in Gujarat employs more than seven lakh people with majority based in Surat. Once completed, the Surat Diamond Bourse is estimated to provide employment opportunities to lakhs of people and generate tourism in the area, thus boosting economy of the region. ✚

## FACTFILE

**Client:** Surat Diamond Bourse

**Consultants:** Structural & Civil – Jw Consultants  
Llp; Mep & Hvac – Accom - Pmc Masters

**Built-up area:** 65,00,000sq ft | 35 Acre

**Year of completion:** Under construction