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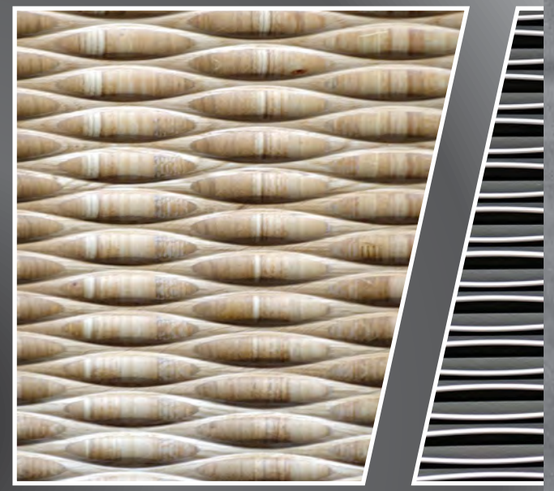

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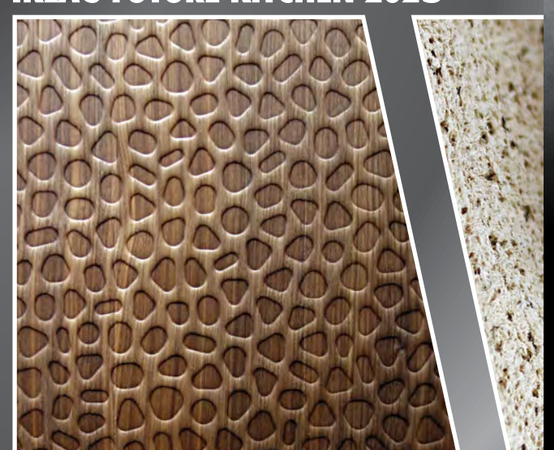


AR. MANIT RASTOGI
MORPHOGENESIS, NEW DELHI

Ar. Manit Rastogi and Ar. Sonali Rastogi are the Founding Partners of Morphogenesis, one of India's leading, award-winning Architecture and Urban Design practices. The practice has been ranked yet again, for the fourth time running, among the Top 100 Architectural Design Firms worldwide by Building Design Magazine, UK in WA100, 2015.

A Fellow of the IIA (Indian Institute of Architects) and the RSA (Royal Society of Arts, UK), Manit is an Architect-cum-teacher-cum-activist who is known for his uncompromising attitude towards sustainability that is not only evident in views but also in his works. A founder member of the Association for Development and Research of Sustainable Habitats (ADaRSH), a member of the Technical Advisory Committee of GRIHA, India's own Green rating system, Manit works closely with urban policymakers to voice and spearhead initiatives on environmental sensibility and social welfare. Being a part of many educational institutions, Manit always stresses on 'Self-learning' of the student of architecture rather than depending solely on schools. The Architects have recently been awarded Laureate of the **SIA Getz Award** (Singapore 2014) for Emergent Architecture in Asia.

In a special rendezvous with **SURFACES REPORTER®**, **Ar. Manit Rastogi** shared his views on Indian architecture, best practices in his firm, smart & sustainable cities, and more.

Today, Morphogenesis is ranked among the top 100 architectural firms of the world. When was it started and what is the vision of the firm?

When we started in 1996, the vision of the firm was clear; we didn't want to brand our work behind any 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 nineteen 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 and 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.

Other than designing beautiful buildings, you are also managing a big firm like Morphogenesis. Kindly share the challenges connected with doing justice to both.

Architecture is not just a Profession; it is a Way of Life! There is no clear distinction between your living, working, enjoying, holidaying etc. It is a hobby that one pursues continuously. Unfortunately, the biggest challenge today is modern-day distinctions between all these activities which are preventing the architects from becoming what they should be. An architect takes almost 5-10 years of his working life to fully mature and understand the nuances of the profession. However, Morphogenesis as a firm has been successful in capturing that wisdom which we have gained over the years and making it available for all, by setting up right processes thereby compressing the learning period to a greater extent. This is one key area on which every firm should work on.

Architecture is a vast discipline; from dealing in city's master planning to a small product design, our area of working is broad. Similarly, we may be working on a high end villa and simultaneously designing a community based project. We deal with varied climates, cultures and typology, which means, we have to understand each and every business. Architecture is not an isolated profession; it is a profession where the more we understand about subjects like economics, sociology, psychology and geographies, the more informed we become, making the product even better.

How did you master the process of learning?

There is always a gap between academia and the profession with both having different pursuits. While the profession deals with the ground level realities but doesn't have time for any research, the opposites are applicable for academia. The condition is true for all, irrespective of the geographical boundaries or profession.
We learnt the understanding and disseminating of knowledge and wisdom cannot be done in a typical hierarchical structure. Instead, we need a network where every node is equitably competent to at least understand the basic concepts. In order to facilitate that, we have designed an in-house 'Knowledge Management System' which essentially captures all projects, designs etc. done till date and segregating it in what worked best and what didn't. The software is accessible to all the people associated with the firm which makes disseminating knowledge easier. Secondly, here at Morphogenesis, everyone has their own project to work on while simultaneously being a part of a review team analysing someone else's project. It not only teaches one to don various hats at one time but also let the person learn from both sides of the coin. We have designed more such systems that have helped accelerate the learning process at our firm.

> "We learnt that understanding and disseminating of knowledge and wisdom cannot be done in a typical hierarchical structure."

You are a visiting faculty of a number of educational institutes. Do you think that students of architecture in India are going in the right direction?

While it is difficult to say whether it is right or wrong, the study of architecture is certainly going in a different way. Today there are almost 350 architecture schools in India, most of which have come up within the last decade. With the limited number of resources, these schools are doing a good job. However, in today's competitive environment good is not enough; it has to be great. Therefore, the students have to take it upon themselves to make sure that they are actually learning. Students are totally dependent upon the faculty to teach, whereas they should be engaged with the architecture at large by engaging with city, attending talks, lectures, conferences even those not organized by the schools to gain the practical knowledge of the subject. Rather than sitting and blaming the environment, they should start taking the initiative of their learning onto them. There are many architects in history, who in their lives, have never attended the architecture school but are still brilliant in their work. It's only the matter of dedication which comes back to my earlier point that unlike other professions, 'Architecture is the way of life.'

How would you define 'Indian architecture' as it is perceived by the world today?

In our practice, we follow a very simple ideology, SAIL which would explain the Indian architecture in four terms:

Sustainability- India has always been a sustainable country. The architecture of the country is exemplary in terms of sustainability. We have not learnt to be sustainable to save resources; historically, our architecture has been influenced by the lack of resources. Our ancestors have created buildings that work excellent within the limited resources. There is a lot to learn from them.

Affordability- We are an extremely price and resources sensitive environment. But affordability doesn't mean that we have to deviate from achieving sustainability. We have always been surprised by the notion that, while making a green building is costlier, but you get ROI quickly. That's not the Indian Brand of sustainability! In the Indian definition, a green building is a structure that is cheap to build, affordable to run and consumes fewer resources. For a country of our size and scale, we have done exemplary work in this regard.

Identity- While every region in this country is historically, geographically, culturally, socially and linguistically different, the major cities are developing or have developed more or less on the similar identity. Fundamentally, the roots of humanity sit around identity.

Liveability- Historically, Indians live with the environment. We are very interactive with the environment. We don't like to live in a centrally air conditioned building with constant temperature maintained all the time and disconnected from the surrounding weather. It leads to sustainability and humanity defined by our social system wherein we are surrounded by relations and not live in isolation which essentially defines the roots of Indian architecture.

While you spoke about connecting indoors and outdoors, do you think that despite of immense use of HVAC, lack of space, and little awareness, our cities can still be made liveable?

If you see the pre-colonial cities of India like Indus valley civilization, and to some extent colonial cities as well including Kolkata, Chennai and Mumbai, there was an extreme thrust to pedestrianization majorly attributed to the lack of automobiles. The development of Delhi marked a significant shift towards automobiles. Then Chandigarh was developed which despite being a brilliant piece of architecture, was also dependant more on automobiles. In the last 60 years, this has been the model of the city followed everywhere. The only democratic place that we get in a city is the road; everywhere else is a boundary enclosing the spaces, be it residential, parks etc. If the only democratic space of the city is road which is most polluted, then who is going to be outdoors? WE HAVE LOST OUR PUBLIC DOMAIN.

In the discussion for Smart Cities, we have said that we are not against the technology; we know that technology would make our city more efficient. But before making them efficient, we should make them liveable. One of the key purposes of the city is to attract great human capital. But rather than creating room for that capital, our cities are creating slums due to lack of affordability of living in the cities for these individuals.

When we talk about our indoor-outdoor relationship, there is a problem that comes from a thinking which is automobile centric where town planners believe that they can design a city like a machine and people would follow. It cannot happen. Cities are more like Bazaars where people have the freedom to movement.

We have to build our city with resilience to face threats like earthquakes. Here comes the role of technology which should help in build an environment which is conducive for human living. And we are a far cry from it.

For a Smart City environment, I must have right to fresh air, clean water, walk without the threat of being run over and killed. My city should give me all these rights without which there is no notion of even a city let alone smart city. In the absence of all these rights, we are forced to live completely indoor.

Do you believe that our existing cities can be made smart and sustainable?

Yes of course! But cities cannot be transformed overnight. However, the recent grants and decisions would surely sow the seed to at least initiate the change that will, with time, make a city smart. For instance, half of Delhi doesn't have sewage lines and all the filth finds its way to the river. With the 100 crore grant, at least a process would be started where a complete research and policies can be created and implemented to create sewage plan of the city. While our country doesn't have the dearth of intelligence, the problem is the execution owing to the multiplicity of governance and authority. We need to create a long term plan of 100 years and then simultaneously break it into smaller plans of 50 years, 10 years, 5 years, one year, one month and one week and thus start executing. This would ensure that our existing cities would become smarter in the coming future.

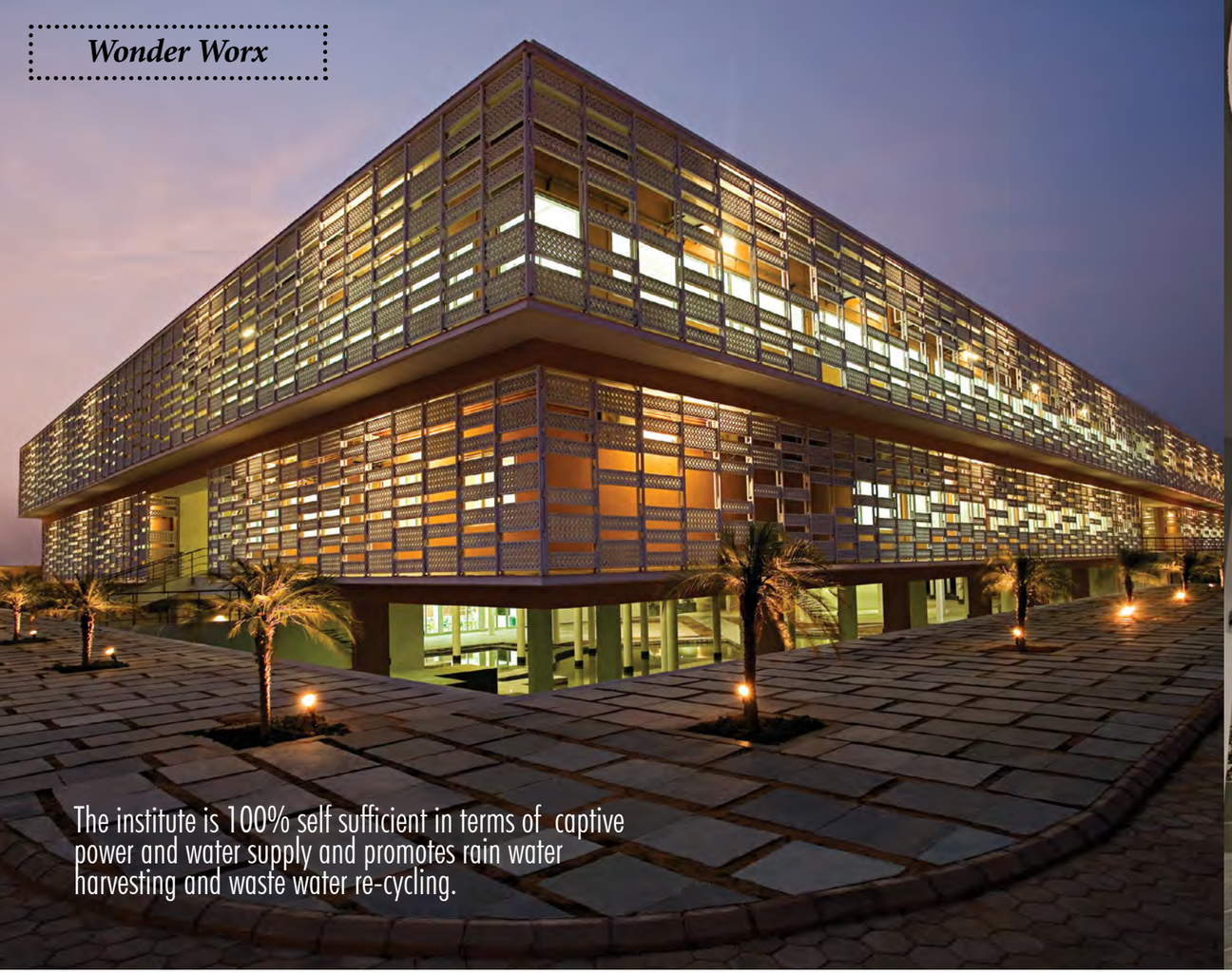
Which are the cities you believe that our Government & planners should study before embarking on the Smart city journey?

Barcelona owning to its transformation; Singapore, for changing its housing model from essentially being a slum habitat of 1950s and Chandigarh since we should also learn what worked and what didn't. However, essentially we know everything; the only part where we lack is execution. We may call expert from around the world who will tell us exactly the same things over and again but the execution has to be done by us.

What is the message to the Government or policy makers?

Though government is doing a great job, it needs to solicit more participation from the working professionals in the field. The partnership would be fundamental to do the job efficiently.

"In Architecture, there is no clear distinction between your living, working, enjoying, etc. It is a hobby that one pursues continuously. Unfortunately, the biggest challenge today is modern-day distinctions between all these activities which are preventing the architects from becoming what they should be. An architect takes almost 5-10 years of his working life to fully mature and understand the nuances of the profession. However, Morphogenesis as a firm has been successful in capturing that wisdom and making it available for all, by setting up right processes thereby compressing the learning period to a greater extent."
- Ar. Manit Rastogi



Size- 2,15,278 Sqft

PEARL ACADEMY OF FASHION, JAIPUR

The Pearl Academy of Fashion, Jaipur is a campus which by virtue of its design is geared towards creating an environmentally responsive passive habitat. The institute creates interactive spaces for a highly creative student body to work in multifunctional zones which blend the indoors with the outdoors seamlessly. The radical architecture of the institute emerges from a fusion of the rich traditional building knowledge bank and cutting edge contemporary architecture.

The institute is located in a typical hot, dry, desert type climate on the outskirts of Jaipur in the soulless Kukas industrial area, about 20 kilometers from the famous walled city. It ranks third in the top 10 fashion design institutes in India, and its design needed to represent the seriousness of its academic orientation through its formal geometry. Given the nature of an institution, budgetary constraints on the project necessitated the use of cost effective design solutions to keep within the price points set by the client and yet be able to achieve the desired functionality and effect.

The adverse climate makes it a challenge to control the micro climate within the project thus incorporating various passive climate control methods becomes a necessity and also reduces the dependence on mechanical environmental control measures which are resource hungry. **The architecture of the academy needed to be a confluence of modern adaptations of traditional Indo-Islamic architectural elements and passive cooling strategies prevalent in the hot-dry desert climate of Rajasthan such as open courtyards, water body, a step-well or baoli and jaalis (perforated stone screen)**. All these elements have been derived from their historic usages, but will manifest themselves through the built form and become an intrinsic part of the daily life of the design student.

The building is protected from the environment by a double skin which is derived from a traditional building element called the 'Jaali' which is prevalent in Rajasthani architecture. The double skin acts as a thermal buffer between the building and the surroundings. The density of the perforated outer skin has been derived using computational shadow analysis based on orientation of the façades. The outer skin sits 4 feet away from the building and reduces the direct heat gain through fenestrations, yet allowing for diffused daylight. The jaali thus, serves the function of 3 filters- air, light, and privacy.

The scheme relies on self shading sliver courts to control the temperatures of internal spaces and open stepped wells while allowing for sufficient day lighting inside studios and class rooms. Programmatic requirements enabled the conception of a whole level of functions in the underbelly which would operate in a passive environment without the employment of any mechanical means of heating and cooling. **The entire building is raised above the ground and a scooped out under belly forms a natural thermal sink which is cooled by water bodies through evaporative cooling**. The water body which is fed by the recycled water from the sewage treatment plant helps in the creation of a microclimate through evaporative cooling. The under belly which is thermally banked on all sides serves as a large student recreation and exhibition zone and forms the anchor for the entire project. During the night when the desert temperature drops this floor slowly dissipates the heat to the surroundings keeping the area thermally comfortable. This time lag suits the staggered functioning of the institute. Passive environmental design helps achieve temperatures of about 27 degree Celsius inside the building even when the outside temperatures are at 47 degree Celsius.

The materials used for construction are a mix of local stone, steel, glass, and concrete chosen keeping in mind the climatic needs of the region while retaining the progressive design intent. Energy efficiency is a prime concern and the institute is 100% self sufficient in terms of captive power and water supply and promotes rain water harvesting and waste water re-cycling through the use of a sewage treatment plant. Besides having become a very successful model for cost effective passive architecture in desert regions the design and facilities of the campus complement the ideology of the Pearl Academy of Fashion – a cutting edge design institute with a sustainable approach. The Pearl Academy of Fashion is an exemplar of an inclusive architecture which intends to accommodate all the heritage values while positioning it within the contemporary cultural and architectural paradigm.

> "Town planners believe that they can design a city like a machine and people would follow. It cannot happen."
>
> *-Ar. Manit Rastogi*

The reception is the main highlight of the entire office space with an installation of a tank wall equipped with various Harley Davidson fuel tanks.

HARLEY DAVIDSON CORPORATE OFFICE, GURGAON

Built up Area- 7,000 sq.ft
Photo- Amit Pasricha

Harley Davidson's foray into the Indian market necessitated the establishment of a marked presence of the brand which would imbibe individuality and create an office that complements the altering Indian work culture. The preliminary objective was to create an indigenous space using traditional materials to customize and personalize the office in a way that it blends into the Indian context. The workplace was intended to be more than a corporate office; as a space that would provide for multiple space utilization for various activities such as events, workshops, and parties. A training centre for the maintenance of the Harley Davidson Bikes was to be included to integrate the adventurous ethic with the working environment.

In order to create an interactive working atmosphere, the office space was conceived to be a single, unified, significant space with compact enclosures that would open up and transform into gathering spaces. The overall design intent has been kept minimalistic and contemporary, to focus on the blend of the brand identity and the work ethos. **The reception is the main highlight of the entire office space with an installation of a tank wall equipped with various Harley Davidson fuel tanks**, painted by special artists. To add an informal nature to the space, lounge seating is accommodated. In addition to this, **a graphic wall with inscriptions of the notions and ideologies of biking and adventure run along the reception area and along the corridor.**

The wall has been fitted with black lacquer modules with bookshelves for the informal casual beat within the official environment, making it employee-friendly. A few Harley Davidson bikes are set up on display along the circulation space to complete the ambience to augment the office space with the notion of adventure. **Perforated jaalis**, a traditional Indian embellishment, derived from the abstraction of the Harley Davidson shield, are used to segregate the multiplicity of the nature of the office spaces and creating a transparent vista which also enables an open workspace where privacy is not a major concern. Most of the detailing in design, both minute and large, has been inspired from motorcycles and biking. **The handles for the toilet doors are the actual handles of the Harley Davidson bikes, the table in the pantry space has a set of supports that resemble the side stands of a bike, and the rear view mirrors of a motorcycle are exploited for signage**.

Basic and simplistic materials such as **cement board and textured granite** are used in combination with the Harley Davidson colour palette (orange, black, and grey) to give a constant, singular, contemporary character to the office space. Overall, the office sets the atmosphere of a contemporary workplace that is unique in design and inimitable in expression while symbolizing the advent of innovation in corporate offices in India.

"Students are totally dependent upon the faculty to teach, whereas they should be engaged with the architecture at large by engaging with city, attending talks, lectures, conferences even those not organized by the schools to gain the practical knowledge of the subject."

-Ar. Manit Rastogi

Crisp clear planes are articulated with materials: stone, wood, concrete which are simply striated or set in interlocking patterns. They come alive when light hits the different horizontal surfaces.

N85 RESIDENCE, DELHI

The house as a platform has been used to investigate two issues central to design today; the family as a social unit and the environment. The lifestyle of the Indian family has changed in the age of global travel and internet media with new spatial needs and notions of comfort. Often, local resources are at odds with shifts in lifestyle. The designers demonstrate that it is possible to meet challenges of lifestyle and the environment with creative panache.

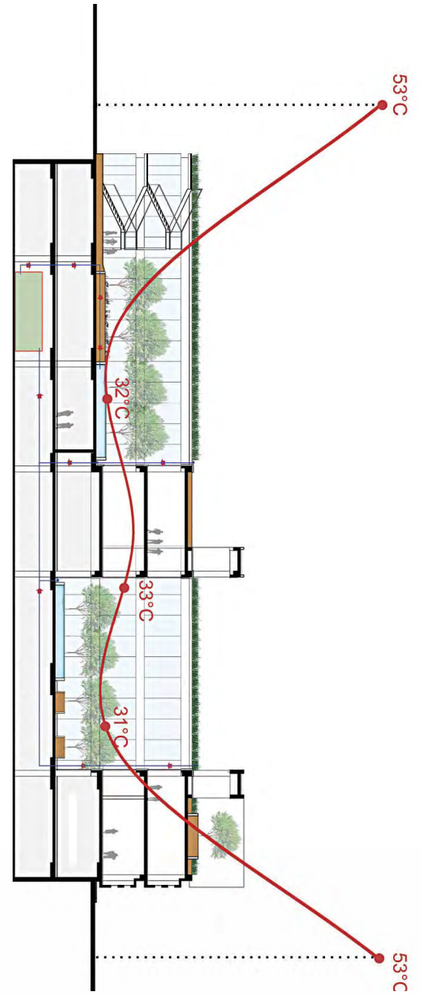
The house sets about to create its own terrain, a veritable oasis, within its inscribed territory. The forecourt is landscaped with gracious steps and pools. Crisp clear planes are articulated with materials: stone, wood, concrete which are simply striated or set in interlocking patterns. They come alive when light hits the different horizontal surfaces. Transparency is achieved not only by glass, but a combination of water, reflection, and modulated lighting. At night the house appears magical, glowing like a lantern and allowing glimpses of activity within. This residence multitasks as a house for three generations of a family and their many visitors, a busy workspace, and on occasion a cultural hub. The house can be identified by overlapping spatial categories split into three levels: the private domain of the nuclear family (bedrooms and breakfast room), the shared inter-generational spaces such as the family room, kitchen and dining areas, and the fluid public domain of the lobby and living spaces. The public domain is activated each time the house opens its doors for **"Manthan,"** a cultural event that promotes an energetic exchange of ideas between various creative disciplines.

One navigates the complex program of the house through a series of spatial episodes that are expressed via volumes. These episodes are distributed across the house, revealed at chosen moments: when descending steps cascade to subterranean offices or rooms and furniture framed by large picture windows. Moving through the house, it is immediately clear that the central space is the fulcrum of the project. The ceiling is dotted by circular skylights with an interior garden below, a green sanctuary within the house. A lap pool fed by harvested rain water runs the length of the terrace on the second floor.

Environmental design plays an integral role in achieving a network of green and open spaces. The house is imagined as a porous object whereby air movement and visual connectivity permeate into the built form. **The planning, orientation, structure and materiality of the house respond to the essential passive energy efficient techniques suitable to the Delhi climate.** It incorporates high thermal mass in the west, earth damping for the basement studios, landscape buffers on the south, and high performance surfaces on the east and a large cavity on the barrel roof as well as the lap pool which helps with heat absorption on the top terraces. The courtyard concept has been radically re-interpreted and along with landscape, earth, daylight simulators and carbon-dioxide sensors. There is an entire eco-system living and growing in the heart of the house.

"Fresh air, clean water, walking without the threat of being run over and killed - these are the basic rights my City should give, without which there is no notion of even a city, let alone smart city."

-Ar. Manit Rastogi



CORPORATE OFFICE FOR INDIA GLYCOLS, NOIDA

Photographers: Andre J Fanthome | Edmund Sumner | Dave Ten Hoope
Built-up Area 3,91,000 sq ft

The office design for the corporate office for India Glycols embodies the issues concerning the workplace today, and explores the paradigm of the office space as a social activity. Sited in a non-contextual suburban area of Delhi, the setting led to the development of an introverted scheme that would address environmental and socio-economic issues from first principles.

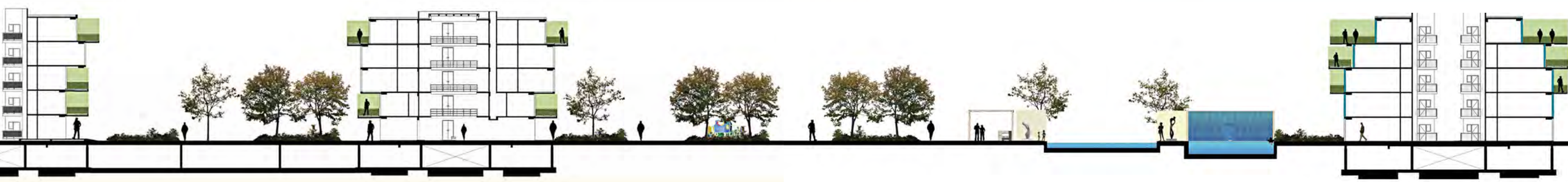
As is the nature of most custom designed corporate developments, the building had to exemplify the identity and corporate ideology of equity and transparency in the workplace as an integral part of the architectural vocabulary. Conceived as a solid perimeter scheme with a more fluid interior, the morphology blurs the interface between the inside and outside. The site surroundings and context along with an optimum enclosed square volume enabled a built form with minimum exposed surface area. **The built form configured of 8m wide office bays optimizes the natural day lighting and helps to define the programmatic requirements of the office**. A stacking system is used to generate a variety of open spaces; courtyards, verandahs, terraces, green roofs, etc. that help to structure the office spaces. A central spine traversing the built volume serves as the common activity zone, with other departments branching out. The design's conceptual strength comes from the spatial organization which creates overlaps between the exterior and the interior and between the various programmatic requirements, hence creating a vibrant and creative work environment.

Energy consciousness dictates the internal spatial and programmatic composition through a series of open and semi-open spaces. Instead of an overlay of an environmental layer, passive design techniques are employed throughout the scheme and take into consideration the importance and relevance of energy conscious design within the modern work culture. Solar exclusion is achieved by means of a solid external perimeter, which only permits diffused daylight into the office environs. The reliance on artificial lighting is substantially reduced as courtyards are created to increase natural light levels on the floor plates. **The courtyards help to keep the solar ingress out and control the temperatures of a multitude of spaces throughout the building while also allowing for sufficient day lighting into the workspaces. External spaces are tempered using courtyards and terrace gardens that facilitate thermal insulation.** Shaded outer façade with air cavity construction, very small slit windows on the outside, courtyards with microclimate controls (shading and mist gardens, water bodies and plantations) all aid in reducing the solar ingress. Green roofs and terrace gardens also provide a high level of thermal insulation. Water bodies aid in evaporative cooling thereby reducing dependence on artificial means of cooling and also create a microcosm of the civic environment rich with the potential for social transactions.

The underlying principle was that 'The work place should manifest itself as a more flexible and integral part of an employee's life rather than a separate entity of specified hours of confinement.' Rhythmic articulation of volumes and spaces generates a scheme that is a radical departure from the structured differentiated spaces of the traditional office and the monotony of the open plan halls that have dominated office planning. The IGL campus makes a cultural statement through the importance and relevance of energy conscious design within the contemporary Indian work culture paradigm.

> "While making a green building is costlier, but you get ROI quickly. That's not the Indian Brand of sustainability! In the Indian definition, a green building is a structure that is cheap to build, affordable to run and consumes fewer resources."
>
> *-Ar. Manit Rastogi*

Size- 4,30,000 sq ft | 5.4 Acres



MARBLE ARCH, CHANDIGARH

Marble Arch is a housing development located in Chandigarh on a 5.4 acre site along the periphery of the city. The project's objective is to develop a new prototype for housing in Chandigarh as an entity to address issues of livability, spatial configuration, environmental and social issues, while shifting away from the archetypal morphology of high specification residential modules and equipment crammed into an undersized apartment.

The clients brief called for the generation of maximum built-up area for residential accommodation within the imposed controls and yet construct a favorable communal environment. The spatial planning is generated by creating a pedestrian field for the apartments in the centre of the site by isolating all vehicular movement to the periphery. The pedestrian field is then laid out with strips of defined functions of residential facilities, services, and recreation areas flowing from the east to the west, which allows all apartments to be developed in alignment with optimum north-south orientation to allow for natural daylight and ventilation. The built volumes of the residential strips are sculpted with a play of volumes to provide terraces/open areas at all levels and generate an interface with the open areas. The service areas of all apartments are kept along the service strip which gets broken up into service courtyards. As per the development control norms, Basement Parking is contained within the building periphery, dictating the configuration of the development in the form of linear strips.

The development has been configured as a set of 9 blocks of 5 storeys each with 4 apartments to a level with service courtyards straddled as buffers within- 168 units which are a combination of 3/ 4 bedroom apartments, and penthouses on the top floors. Along with these dwelling units, ancillary facilities like a health club, gymnasium, amphitheatre, swimming pool, tot lots, basketball court, and social activity spaces are provided within the development.

Each block within the development has an atrium lobby to provide a sense of community. Given the fact that this is a low-rise development, the opportunity to provide terraces on each level to be able to establish a relationship with the ground level has been fully utilized. A unique Scale is achieved with regards to contemporary housing in Chandigarh which establishes a crucial relationship between heights, the distance between any 2 blocks and the landscape.

The design employs the use of grids being superimposed on the entire scheme both in the case of buildings, where it gets subdivided to generate spaces within the apartments as well as onto the landscape by way of pedestrian linkages and green areas.

"If the only democratic space of the city is road which is most polluted, then who is going to be outdoor?"

-Ar. Manit Rastogi