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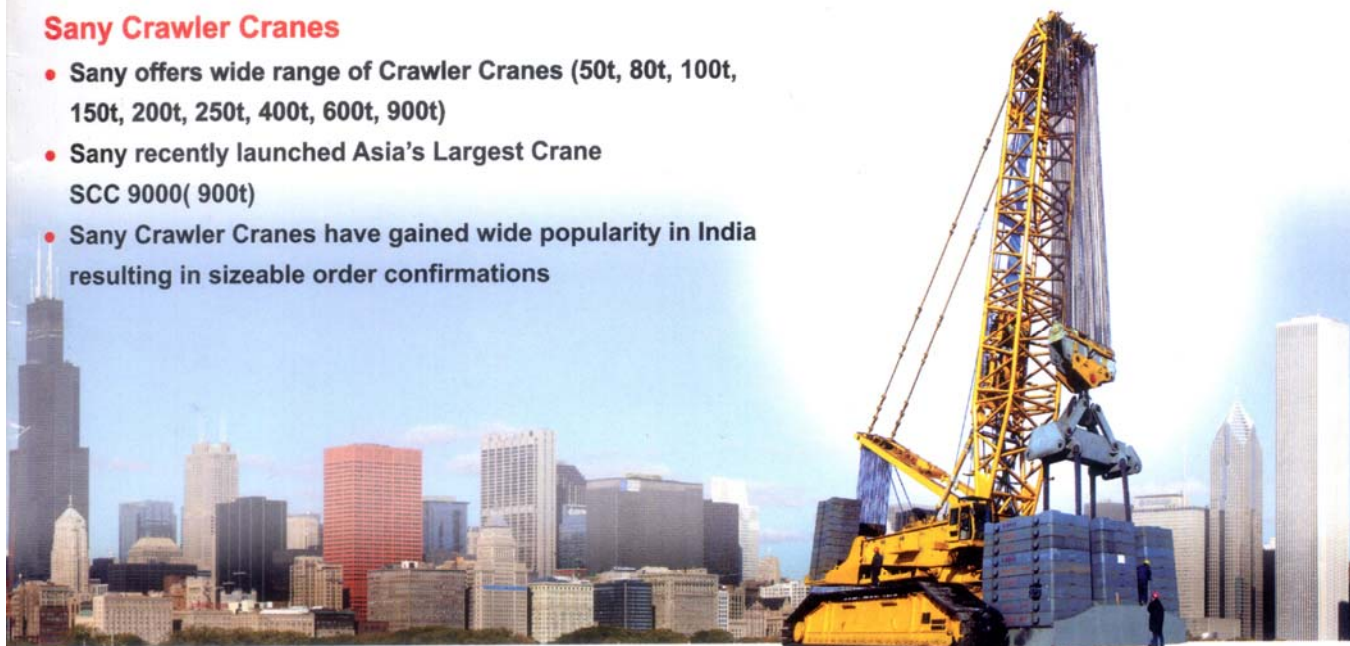


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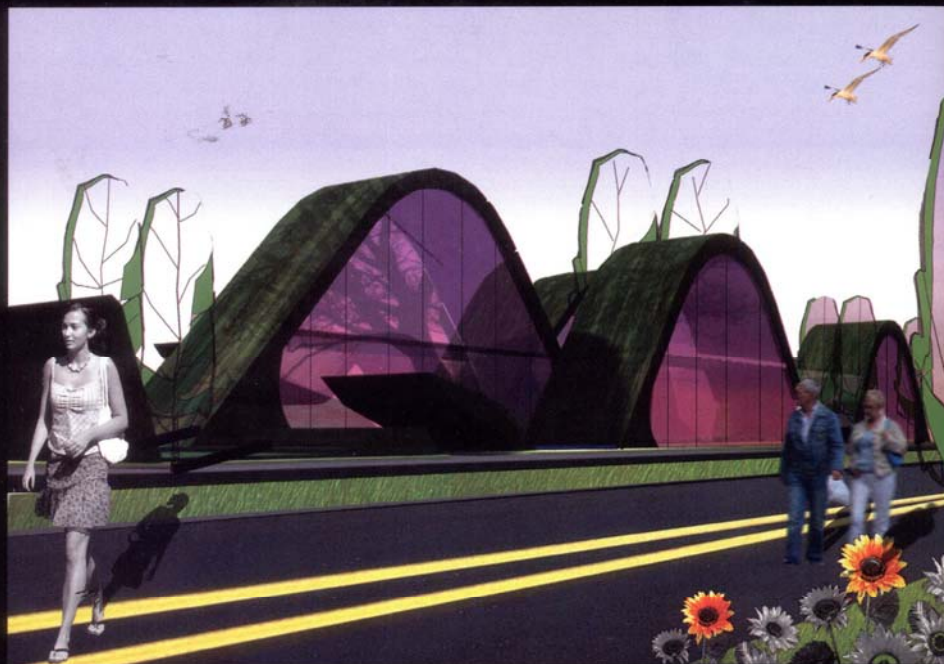


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This ground + one structure of Amenity Block, Pune, is designed to blend in with the landscape and draws inspiration from geology and how the ground folds under pressure from tectonic forces. A grassy lawn for the roof helps reduce direct heat load from the sun. Porous screens on the sides facing the water body bring in conditioned air, maximising the advantage of cool evenings.



Palace, Red Fort, Victoria Terminus and Bombay High Court. But these are all legacies of bygone eras.

Right now, what we have is a proliferation of look-alike skyscrapers and contemporary facades as an upshot of globalisation on the Indian built environment. True, there are some exceptional buildings. But where are our signature edifices? Perhaps the answer lies in the fact that our structures are driven more by functional needs, and limited by economic compulsions and even government regulations.



"The importance of façade design goes beyond style and scale. It has to respond to the immediate neighbourhood."

- Kalhan Mattoo,
Director,
PLANET 3 STUDIOS
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"In our country, the shape of a building, whether it is a roof or façade, is definitely driven by functional needs," says **architect Hafeez Contractor**. "But aesthetics also have to be put in place. Form follows function and function follows form; they are inter-related. So is economics. Yet, we have managed to develop many remarkable buildings." Contractor adds that government regulations also limit the scope of how high or how unique a building can be.

Also, until recently even customers-developers, residential owners, corporate houses were not open to experimentation. "Till a few years ago, the majority of our buildings were designed for a customer with limited comprehension," says **Kalhan Mattoo, Director, Planet 3 Studios Architecture Pvt Ltd, Mumbai**. "Now, with evolving customer sensibilities, there is a demand for more than cheap replicas of Greek orders or a poor man's version of a

maharaja's palace."

Today, a slew of architectural splendours are reportedly in the making, including Mall of India and Wipro Technologies Development Centre, both in Gurgaon; Sirsuri Technopark in Chennai; Noida Towers; a green township in Pune; and Antila, Mukesh Ambani's residence in Mumbai. Further, architectural innovations, particularly in roofs and facades, are increasingly seen in institutional and public utility spaces - probably as they also have a functional role to play in these areas.

Functional force

All said and done, in India an iconic building still needs to be more than just a remarkable roof or skin. This is why most of our roofs have remained flat so they can be used for parties and meetings, or facilities like water tanks, lift machine rooms or even solar energy panels. But that doesn't mean architects have given up on designing interesting roof shapes.

"Creating an iconic roof in a highrise residential or office building is more to do with making a statement," believes **Kiran Kapadia, Director, Kapadia Associates**, who designed the Ghansoli railway station in Navi Mumbai with a roof of stainless truss and Zincalume sheeting with Northlite glazing. "It has no functional role. But in buildings like airports and stadiums, the roof becomes integral to the entire structure mainly because you are dealing with large

1 The roof and façade of Lodha Bellissimo, Mumbai, designed by Kiran Kapadia, is shaped to reflect a sea wave. Aluminium composite panels with louvres have been used for the roof.

2 The curved sloping roof of Vasant Vilas in Mumbai provides ample ventilation and light. The roof has been created with stainless steel clad with wood.



volumes. So here you can easily combine functional and aesthetic aspects. For instance, in such large spaces you can get light and ventilation to the length and breadth of the building only through the roof. That alone gives you wide scope to create interesting roofs."

Contractor concurs, saying, "The roof is the crowning feature that no doubt determines the character of the building. I have created interesting roof designs even in residential buildings, like in the Hiranandani Complex. But yes, creating iconic roofs in buildings spread over large spans is easier as they also have a functional advantage." Contractor is the architect behind the remake of Mumbai's domestic airport terminal building, which is crafted with aluminium composite panels, glass roof and large skylights.

However, facades of buildings are not driven by functional needs alone though it does play a major role. There are facades that make an architectural statement and there are those that are eco-sensitive, climate-sensitive, and even both. "A façade is essentially the public face of a building," explains Mattoo. "Functionally and aesthetically it has to serve the intended purpose. For a recent project, we designed a skin that breathes effectively, ensuring that the building core remains aerated. That was a design necessity. However, the importance of façade design goes beyond style and scale. It has to respond to the immediate neighbourhood. Many get it wrong in differing too much."

Kapadia, who has played around with some roofs purely for aesthetic reasons, is

still strongly driven by functional aspects. "We look at eco-sensitive aspects like lighting, heat, ventilation and energy efficiency," he elaborates. "As natural light is important, we try to get it more from the north rather than the south as we also gain a lot of heat from the south. So, in office buildings we locate all office spaces on the north side and spaces that require limited light like toilets on the south. Of course, aesthetics is important but environmental factors drive us as a starting point."

Materials matter

Yet another driving force behind all new architectural forms is the array of new roofing and cladding materials available in the market, such as colour-coated steel sheets, fibre cement sheets, Teflon-coated fabrics, polycarbonate, glass, and aluminium composite panels. Innovation is the order of the day. For instance, the Building Materials & Technology Promotion Council (BMTPC) and Indian Plywood Industries Research & Training Institute (IPIRTI) have jointly developed a technology for manufacturing bamboo mat corrugated sheets, considered eco-friendly, energy-efficient and cost-effective for roofing. Produced at a pilot-scale facility, they are being used in several demonstration buildings. "There is no dearth of materials available," says Kapadia. "Today you even get fabric that allows light to come in but keeps the rain out! It is the architect's exposure and knowledge that makes the difference."

But everybody is not ready to experiment with new materials, in Mattoo's view. "We are so entrenched in heavy,



"Aesthetics is important but environmental factors drive us as a starting point."

- Kiran Kapadia,
Director,
KAPADIA ASSOCIATES



Vidyalankar Polytechnic, Mumbai, is an adapted ground + one industrial shed. The façade was developed after studying students and faculty needs - they wanted a visually arresting, iconic makeover of the old shed. Graphic forms clad the structure in the form of rapid brushstrokes. Even within the limited palette of ACP finishes, solid colours have been interspersed with some mirror-finish reflective surfaces.

opaque and solid RCC slabs that the lightness of contemporary materials and technology is finding only gradual acceptance," he rues. Mattoo is currently experimenting with multi-wall polycarbonate panels, glass-reinforced concrete screens, laser-cut sheet metal, bent glass, live grass and Teflon-coated fabrics for his projects.

sophisticated tools of assessment to minimise wastage of material and labour resources," Mattoo says. "Thus, seemingly complex designs are modular, repetitive and simple to create. I'm not saying that iconic designs always come cheap. But to close our minds to design possibilities only on the basis of some unsubstantiated numbers should be questioned. A capable



National Institute of Fashion Technology, Navi Mumbai, already had an existing facility but needed major extensions spread over 20,000 sq m. The outstanding feature of the architectural form is the curved metal roof. Steel elements feature extensively in the built environment. The entry to the campus is through a grand entrance plaza with a large metal roof porch.

Cost control

Having said that, iconic designs - for aesthetic or functional reasons - certainly don't come cheap. And that is no doubt a controlling factor in the whole process.

However, Mattoo maintains that the cost of the product is not always a function of design complexity. "We use

designer should be able to work with any reasonable budget."

True enough. What's more, even cost is assuming less importance in today's global competitive market where every architect is trying to outdo the other in the quest for the next standout design. May their tribe increase!



The tail of the seahorse was dramatised and curled to become out-of-scale embroidery patterns cut out in cement asbestos sheets, painted in the company's brand colours. With this design, the space acquired a degree of freshness and appeal.

Seahorse Building Products I

Architect: Kalhan Mattoo

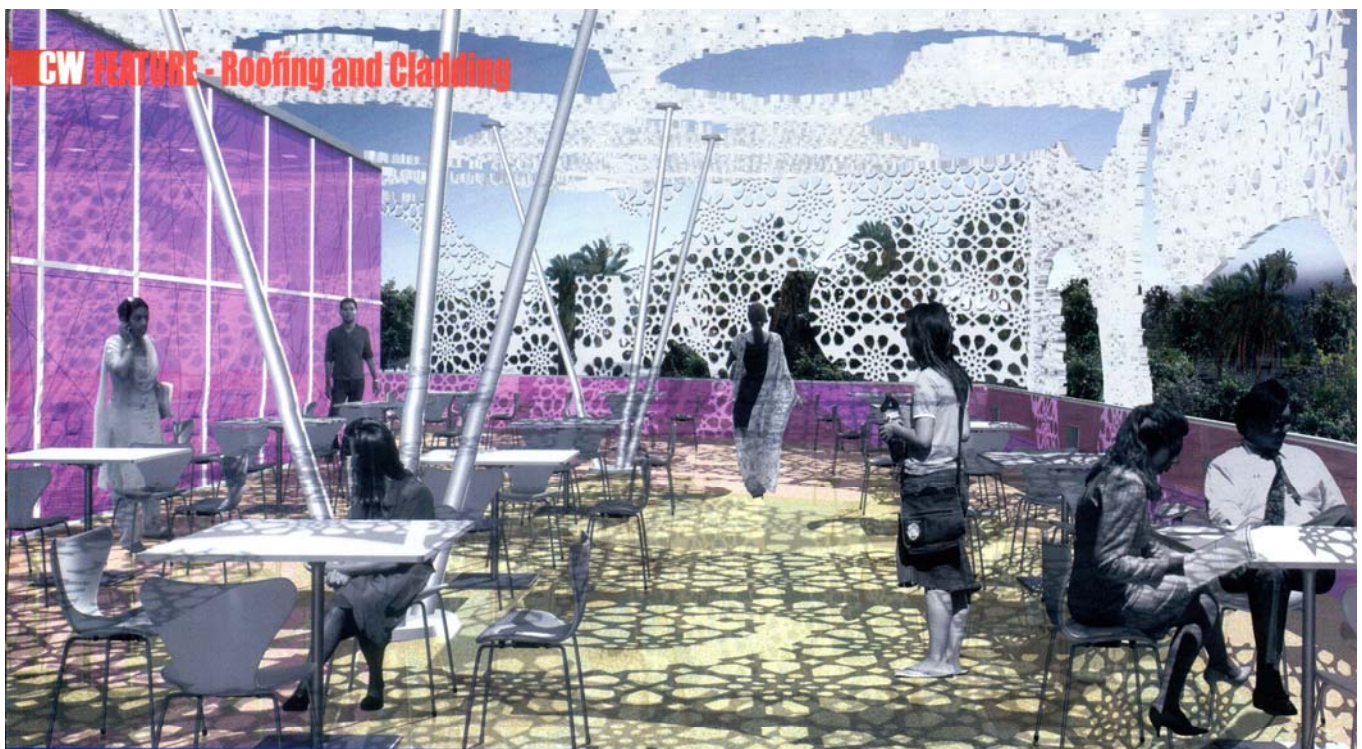
Structure details

Pre-existing industrial warehouses adapted to suit retail conditions.

Project highlights

- A couple of adjoining halls, one of them 50 feet high - bereft of any redeeming features in the interior and the cavernous halls' barren exterior - presented a unique challenge
- We drew inspiration from the brand logo, specifically the tail of the sea horse and projected it on to the facade.
- In its dramatic avatar, the tail curled to become out of scale embroidery patterns cut-out in cement asbestos sheets, painted in brand colours. With this design the space acquired a degree of freshness and appeal.
- Cement-based sheets, easy to cut and install and take weathering quite well, were a natural choice.





Food Court, Pune

Architect: Kalhan Mattoo

Project status : Ongoing Design

Structural details

Ground + two spread over a 15,000 sq ft standalone building at the International Biotech Park, Hingewadi, Pune.

Project highlights

- We researched local historical references, studied the immediate climatic conditions and hit upon a uniquely Indian solution for the project - a *jali*.
- A *jali* is a geometrically patterned, carved screen. It is porous and in hot climate allows filtered light and ventilation to pass through. In Pune, many abodes of local rajas had these screens. In an age of industrially produced building materials and technology, *jalis* still evoke craftsmanship and the luxury of a bygone era. We interpreted it in a thoroughly contemporary context.
- The glass building was clad with an external skin of patterned *jali*, an exact reproduction of a local palace window. Punctured with large cut-outs the shape of which was obtained again from local craft and design sources the external screen is a unique take on local design references.
- The *jali* skin wraps around the building, maintaining a requisite distance from the glass inside, carries on to the terrace area where it provides partial shade over outdoor seating. The shape and the form, cast fascinating shadow patterns on the terrace.
- We anticipate this construct to reduce energy consumption in the building by reducing direct glare.
- We plan to cast components of this *jali* in glass reinforced concrete and anchor it to the building with steel supports. Currently we are in the process of refining details and building technology to achieve this.

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