

ARCHITECT and INTERIORS INDIA

Inspiration and insight for architects and interior designers

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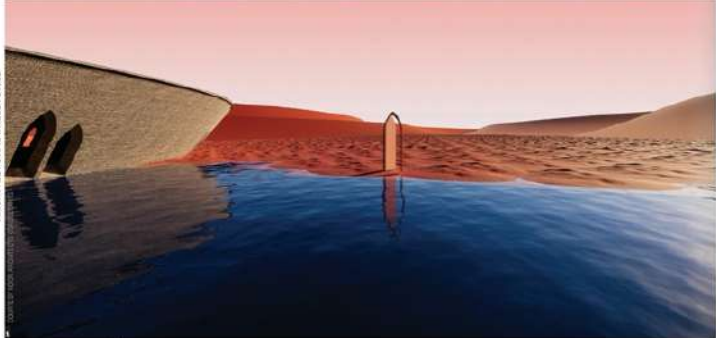
Designs

- Gayathri and Namith Architects
- Spaces & Design

A powerful partnership

Sachin Bandukwala and Melissa Smith from the mecca of architecture-Ahmedabad, have been working in tandem and making a mark with their diverse perspective to design and architecture.





ARCHITECTURAL MILESTONES 2022

AS THE NEW YEAR BEGINS, IT IS TIME TO LOOK BACK AT SOME KEY ARCHITECTURAL MILESTONES THAT DEFINED 2022. BE IT METAVERSE, SMART HOMES, OR SOLAR POWERED ARCHITECTURE, THERE IS AN EVIDENT INCLINATION TOWARDS FUTURISTIC TECH AND THIS SHIFT IS DEFINITELY HERE TO STAY.

BY BINDU GOPAL RAO

- 1. The metaverse encourages and allows for the creation, compilation and to generate a repository of ideas.
- 2. The extensive advancement in technology has evolved our lifestyles in many ways.
- 3. The trended move by Studio Lotus demonstrates how prefabrication allows developing a system that engages with our most, largely untapped repository of untapped skills.
- 4. Solar power architecture is being seen with designers who are experimenting with creative ways to incorporate these mini energy loans into buildings.



The year 2022 had several new vistas for the architecture and interiors space, even as the industry tried to come out of the shadows of the pandemic. From the metaverse to smart buildings and more, there were many defining aspects that shaped the industry. Experts weigh in.



METAVERSE
A breakthrough in design boundaries has resulted in a clean, almost monumental scale space that is encased by inclined surfaces carefully imagined and printed out of clay. The studio space of NOOR Architects Consultants is the very first architect's design studio from India (and amongst a few globally) to venture into the Metaverse. The space is also open for commissions for clients wishing to build in the Metaverse. The studio has developed a range of non-fungible tokens (NFTs) to be sold to meta visitors with digital crypto currency. Noor Dinesh Singh, Founder & Principal Architect, NOOR Architects Consultants, says, "Our practice studios in the Metaverse are a natural extension of our decade-long studio in Chandigarh. The metaverse encourages and allows for the creation, compilation and generation of a repository of ideas which may not be fully realisable in material reality as of now, but are likely to push the boundaries of design and building construction techniques. It is highly likely that the existence of these ideas would lead to engineering solutions that would allow for their construction in material reality in the very near future."

PREFABRICATION
Modular construction as a sustainable and efficient alternative to conventional building methods is making inroads using prefabrication technology. Sidhartha Talwar, Principal at Studio Lotus, says, "In today's fast-paced world, it has become

- 5. NOOR Architects Consultants have developed a range of non-fungible tokens (NFTs) to be sold to meta visitors with digital crypto currency.
- 6. Sidhartha Talwar, Principal, Studio Lotus.



imperative for architects to consider design interventions that guarantee speed, quality, and cost control but are also attentive of their impact on the environment. It is in this context that prefabrication presents itself as a possible alternative. It presents a precise waste-free method of construction by slotting together pre-engineered components manufactured off-site, making it incredibly time-efficient. Apart from this, pre-engineered solutions are also cost-efficient, minimising waste on-site. This modular practice ensures a high degree of localisation, flexibility, and reconfiguration, offering an innovative solution to the often cumbersome, slow processes of conventional construction. Prefabrication also provides India with the rare advantage of developing a system that engages with our vast, largely untapped repository of artisanal skillsets.

3D PRINTED ARCHITECTURE

3D printed construction demonstrates the potential of a fast-growing technology capable of redefining and pushing the limits of conventional architecture. "As this technique emerges as a viable solution in the AEC industry, its popularity is rapidly increasing. Besides being a faster alternative and available with lower construction costs, it can also provide housing solutions and allow countless design possibilities, among many other benefits. Thus, as architects, we must adapt to a new technological era, where efficiency has become a key factor in design and execution. The rise of 3D printing shows enormous promise in our industry. It helps reimagine building construction without limiting an architect's creativity. This opens the possibilities of architecturally innovative structures that can come to life in less time and efficiency in construction compared to conventional methods. As architects and planners around the world face tough times of uncertainty, labour and housing shortages, or other industry challenges, 3D printing is set to change building planning and execution," says Harish Chawla.

- 7. Today, most homeowners understand the importance of having multi-functional homes.
- 8. Harish Datta, CEO, Esentia Environments
- 9. In the post-pandemic world, homes are expected to play host to some new activities and functions on a day-to-day basis, in a dedicated manner.
- 11. Architects have been focusing on lowering energy loads for buildings, lighting, ventilation, heating, and cooling.
- 11. Designers today are experimenting with creative ways to integrate solar panels in buildings.



Owner, Esentia Environments. The increased viability, productivity, and optimisation of the building process can not only offer efficient housing solutions but can also become an answer to more sustainable construction.

SOLAR POWERED ARCHITECTURE

Despite the wide diversity of available solar technologies, solar energy systems are still not considered mainstream in building practice. This may be attributed to several factors, such as lack of awareness and knowledge, lack of tools supporting the design process, and lack of solar products designed for building integration. Sneha Gurjar, Director, CEM Engineers, says, "The most common use of solar power is the production of electricity through photovoltaic panels organised in farms or placed on the roofs of buildings. Often slapped onto roofs as an afterthought, solar panels have an unsightly reputation, but that's beginning to change as building designers experiment with creative ways to incorporate these mini energy farms into buildings. Architects have been focusing on lowering energy loads for buildings' lighting, ventilation, heating, and cooling for a long time. With the evolution of technology, PV systems are becoming more efficient and affordable. In addition, developments such as transparent PV glass create more architectural opportunities for integration."

MULTIFUNCTIONAL SPACES

Homes have always multi-tasked to accommodate the diverse needs of its inhabitants. However, in the post-



- 12. Prefabrication is a precise waste-free method of construction, of doing together pre-engineered components manufactured off-site which makes it incredibly time-efficient.
- 13. Nishu Desai, Principal, Nishu Architects Consultants.
- 14. Sneha Gurjar, Director, CEM Engineers.

11. Anjita Subbiah, Head of Design at Carafina Interior Designers

14. Internet-enabled home lighting, preset A/C control modes to sound recognition and operating switches on the tip of our fingers are making homes smart.

15. The world has reached new heights of a digital adaptation of a lifestyle and this is only the beginning.



multi-functional home. They are trying to add all features that they feel are a must for them at the time of floor planning itself. Architects and designers too are educating them about the new requirements. It is all about having the communication channel open with the client and explaining the changing concept of home. The designing of a home must follow the mantra of 'utility first and vanity later'. Often, clients are not clear as to what they want, they may just come up with some fancy reference pictures. It is up to the designers to study their client's lifestyle and recommend the best possible solutions. The home must first work at the functional level, the vanity factor can be brought in at any stage later," says Rishabh Kapoor, Founder & Interior Designer, Design Deconstruct

Whether it is adding a completely specked out gym, a full-fledged home office, a yoga and meditation space, or adding these features to existing rooms, they are thinking creatively and securely towards it.

SMART HOMES

The extensive advancement in technology has evolved our lifestyles in more ways than we would have anticipated only until a few years ago. "Starting from internet-enabled home lighting, preset air conditioning control modes to sound recognition and operating switches through our phones, technology is enabling us to not only save power but also save time. In most cases where children can be forgotten, when an elderly person cannot walk a distance, or one is running late for work in the morning rush hours - accessing our homes on the go has enhanced our lifestyle and made it a lot more efficient considering the hectic culture today's generation thrives on. Bringing in the bright morning rays with automated blinds, having pre-heated baths before getting home after a long day at work, digital locks to secure rooms and homes and video security systems when travelling, the world has reached new heights of a digital adaptation of a lifestyle and this is only the beginning," says Anjita Subbiah, Head of Design, Carafina Interior Designers - India.



MAKING HOSPITALS SAFE

MATERIALS AND PRODUCTS USED IN HOSPITAL INTERIORS NEED TO BE NOT ONLY FUNCTIONAL BUT ALSO SERVE THE PURPOSE WITHIN A SPACE THAT IS GEARED TOWARDS HELPING PEOPLE RECOVER.

BY BINDU GOPAL RAO



1. Biofree Resin core protection from scratches and dirt and contains chemical components for easy cleaning.

2. Scratch-free, VP - Furniture Solutions, REHAU touch ink.

3. Eradic self-cleaning an activiral solution that is resistant to UV rays, chemical, scratch, stains and remove smudges quickly.

In healthcare settings, the exposed walls, hallways, and stairways are often prone to tremendous contact with people. Hence, architects and interior product companies must design these spaces keeping these considerations in mind.

TILE TALE

A hospital is a unique ecosystem and there is a range of products specially designed for various environments within the hospital. Orientbell's Anti-Static tiles are built for places like MRI rooms, operation theatres and more where an electric spark can trigger harm. These tiles conduct any static electricity generated to the ground, preventing potentially dangerous electric sparks, shocks and malfunctioning of sensitive electronic equipment. "Our Scratch-Free Forever Tiles are great for corridors and rooms. These tiles will withstand high foot traffic, spills and the moving of heavy objects such as beds and furniture. Avoiding scratches reduces the probability of creating breeding grounds for pathogens. They are stain-resistant and easy to clean. On special requests, we can make these Scratch-Free Tiles Germ-Free too. This reduces the dependence on human operators and keeps surfaces clean even between cleaning cycles, besides supplementing their efforts and keeping even the difficult-to-reach places clean and germ free. Our Activiral tiles restrict the spread of viruses on the surface and kill more than 99 per cent of

the viruses in two hours. They are made to remain safe and germ free even between cleaning cycles as microbes spread faster through multiple skin-surface contacts," says Alok Agarwal, Chief Marketing Officer, Orientbell Tiles.

FURNITURE FIX

REHAU, a German-based brand, has emerged as a top provider in the furniture market with its well-expanded product portfolio, engineering innovation, robust developmental capabilities and decentralised sales and services. "Within the range of our products, the most compatible and urban flooring solution for hospitals is RCVT (Rigid Core Vinyl) Tile, under the brand name RALFLOOR Neovest, which ensures protection from scratches and dirt and contains chemical contaminants for easy cleaning. Hospitals experience heavy footfall and by installing a RCVT flooring solution, it can protect itself from daily wear and tear as the coated layers make the flooring waterproof and durable. Flooring solutions like RCVT are anti-slip in nature and its antibacterial features prevent the growth of germs on the floor which eventually ensures health and hygiene," says Manish Arora, VP - Furniture Solutions, REHAU South Asia. He adds, "Claddings are one of the most suitable products for hospitals as they enhance the aesthetic of the exterior walls and give a positive impression to the customers while being germ-proof. Claddings are also fire-resistant, thus providing extra protection to buildings from any unforeseen situations. Also, exterior wall claddings have an average life span of 20-25 years and are considered easy to clean and maintain which make them appropriate solutions for places like hospitals."

FLOORING SOLUTIONS

Marbles are made from purely natural materials and are safer for health purposes. "Unlike other flooring options



like Tiles or Quartz that are artificial and factory-made and made mostly from chemical components and environmentally hazardous foreign substances, marble is a natural material that offers a natural and non-toxic surface that is safer for health. Marble contains antibacterial properties that make the surface naturally resistant to bacteria compared to other similar material used for flooring. Additionally, today, special treatments are available that can be used to enhance the antibacterial properties of marble to make it practically bacteria free," says Rahul Maheshwari, Director, Marble Centre International (MCI). Classic Marble Company (CMC) has launched a collection of KalingsStone veined quartz recently. Quartz slabs are tough and non-porous and since hospitals observe heavy footfall as well as movements of stretcher trolleys, quartz is highly suited for the traffic at hospitals. KalingsStone marble is another choice. It is not just aesthetically pleasing for interiors in hospitals but is also convenient for daily usage as the products are low porous, hard, and easy to maintain. "Microban silver ion technology is the latest antibacterial measure introduced by CMC, making it the first company to launch this technology in India. CMC treated Quartz slabs have Microban silver ion technology built into them during the manufacturing process. It kills bacterial growth on the surface of the product by up to 99 per cent and reduces the risk of bacterial cross-contamination on the surface of the treated product," says Amit Shah, Managing Director, Classic Marble Company.

SANITARY CONCERNS

Choosing the ideal sanitary ware and fittings for any organisation is a matter of safety and efficiency in addition to aesthetics. Sanitary ware is an essential item in every



4. After the impact of the pandemic, various developments have been taken into account which includes antibacterial features in the flooring solution to protect the environment from germs.

5. Microban silver ion technology is the latest antibacterial measure introduced by CMC making it the first company to launch this technology in India.

6. Focus of hygiene with Hindware's touchfree flushing technology is a revolutionary new way that lets you flush with a simple wave of the hand.

7. Hindware touch free Water Sense toilets with infrared sensor allow for zero contact that ensures hygiene and saves water with automatic sensor detection.



hospital. "We have a long history of collaborating with architects and designers to develop the practical needs of hospital sanitary equipment. Consequently, we have created and polished goods for the healthcare sector that are applicable in a variety of applications and meet healthcare requirements. Our touch-free product range has great hygienic features due to its smooth appearance and functioning. When choosing products for hospitals, hygiene always



I. Siddhanta Palit, Chief Executive Officer, Jahn & Ties, Hindware Limited



matters. Sometimes, it can be challenging to find the right clinical sink, the best valves, or even the most adequate janitorial units. When keeping safe and clean is a priority, we offer the absolute best, without exception. Our touch-free range is the future of hygiene and gives a revolutionary new way that lets you flush with a simple wave of the hand, ensuring that the bathroom stays completely germ and bacteria free," says Sudhantho Pabhiraj, Chief Executive Officer, Bath & Tiles, Hindware Limited.

CLADDING MATTERS

In comparison to other industries, the healthcare industry focuses more on hygiene standards to ensure that the risks of spreading bacteria are minimal. More than the tonality of interior decor, it focuses on products that help in improving experiences and providing comfort to the patients and families who occupy those areas. "The new interior décor products that are used in hospitals in terms of flooring, furniture, walls are focused largely on comfort and easing anxieties, as well as thematic designs, different layouts, and ease of use. When a building blends into its surroundings, it appears more welcoming to visitors. To eliminate distinct boundaries and create free-flowing movement, the building's shape and colour should match its surroundings. Greenlam Clads offers revolutionary cladding solutions for interior surfacing panels that are designed to withstand harsh conditions with as little maintenance as possible. Along with our interior cladding, our laminates come with a multitude of features like fire retardancy, moisture resistance, antibacterial, antifungal, and antiviral properties, assuring a healthy and a protected lifestyle," says Parul Mittal, Director, Greenlam Industries.

DESIGN DETAIL

Recent innovation in material technology such as double-charged and full body tiles, and even Vinyl, which offer



better resilience to high traffic and enhanced availability, are slowly making their way into healthcare settings, as a plausible alternative to conventional materials. "With regards to furniture, the two primary considerations pertinent in healthcare settings include selecting fabrics/upholstery that are not susceptible to infection transmission and second is the fixing attributes. For instance, fixing the cushion to the couch via magnets instead of stitching allows for a higher degree of operability, cleanliness and hence sterility. The primary criteria towards product selection in hospitals is driven by factors such as infection control which includes high degree of cleanability, resistance to dents, abrasion, and electricity, etc. Further considerations include abstaining from finishes which are VOC-emitting or require frequent maintenance," says Ravideep Singh, Associate Director, Creative Designer Architects. There is a growing body of psychological considerations in product/material selection, which have shown to render positive impacts in terms of enhancing patient experience and recovery rates. Leveraging colour theory through innovations in materials, such as in PVC, allows curating the right kind of healthcare environments from a cognitive standpoint. ■

WEBSITES

- Orientbell Tiles: www.orientbell.com
- Greenlam Industries: www.greenlamindustries.com
- Hindware Limited: www.hindware.com
- Classic Marble Company: www.classicmarble.com
- Marble Centre International: www.marblecentre.in
- REHAU: www.rehau.com/in-en
- Creative Designer Architects: www.cdarchitects.in

9. With the importance of hygiene being less highlighted in the pandemic era, here a collection of innovative design concepts that help in improving experiences and providing comfort to the patients and families who occupy those areas.

11. Using stone marble is not just aesthetically pleasing for interiors in hospitals but is also convenient for daily usage as the products are less porous, hard and easy to maintain.

HEIMTEXTIL 2023

MESSE FRANKFURT'S HEIMTEXTIL IS ALL SET TO PRESENT A GLOBAL RANGE OF PRODUCT INNOVATIONS IN TEXTILE DESIGN



An international trade fair for home and contract textiles from January 16 to 13, 2023. As the leading global trade fair, it also maps market changes with its focus themes on Interior, Architecture, Hospitality, the range of products for interior designers and hospitality experts, and on the megatrends of sustainability and healthy sleep - and is the most important trend platform for textile materials and textile design.

As a global ordering platform, Heimtextil creates global new contacts and delivers valuable content for knowledgeable textile professionals - with numerous lectures, special presentations and guided tours. It presents an industry meeting place for retailers, wholesalers, designers, furniture and bedding stores, interior decorators, interior architects, architects, hotel outfitters and many other decision makers each year. The fair ranges from decorative and furniture fabrics to textiles for the bedroom, bathroom and table, wall-paper and sun protection systems. A visit to the Heimtextil Trends provides you with a globally unique trend forecast and an insight into the popular design topics.

GUIDED TOURS, LECTURES AND LIBRARY ON INTERIOR, ARCHITECTURE AND HOSPITALITY

Under the title 'Interior, Architecture, Hospitality',



Heimtextil brings together the special range of textiles for use in the contract sector. Here, interior designers, architects and hospitality experts will find a wide selection of contract textiles and customised services.

One new highlight of Heimtextil is the LIBRARY, which showcases a specially curated selection of products from the exhibitors which have particular functional properties. It provides a library of textile materials for use by interior designers, architects and hospitality experts. As the upcoming Heimtextil LIBRARY offers the opportunity to experience the selected materials onsite.

The Messe Frankfurt Expertise Network is committed to accelerate innovation and change within the textile and fashion sector to advance the Decade of Action to deliver the Sustainable Development Goals by 2030. Supported by the Conscious Fashion and Lifestyle Network, in collaboration with the United Nations Office for Partnerships, they strive to educate and mobilise the fashion sector to action solutions for social, economic, and environmental change. Their main aim lies in integrating the Sustainable Development Goals into about 60 leading international textile trade fairs attracting more than 25,000 companies and over half a million trade visitors annually. ■



A GLASS APART

GLASS BUILDINGS ARE BECOMING POPULAR IN CONSTRUCTION DUE TO THEIR ABILITY TO BE TRANSPARENT, RECYCLABLE AND ENERGY EFFICIENT.

BY BINDU GOPAL RAO

1. Glass helps make a building green and full of light and is also energy efficient.
2. Kamlesh Krupani, Director and Principal Architect, Purple Leaf Design Studios.
3. When compared with other building materials, glass clearly stands out as an eco-friendly alternative.
4. Since water is a crucial element, glass should be used to maximize natural lighting and views of the location with minimum heat gain.

When compared with other building materials, glass clearly stands out as an eco-friendly alternative and this is probably why the material is finding favour with architects and interiors alike.

NOVEL NUANCES
The use of glass in buildings is often dictated by the type of climate around the building. In warmer climatic conditions, high-performance glazing is used which keeps the temperature cool and helps minimise the use of air conditioning. During winters, coated glasses are handy as they retain the heat inside the building, thus protecting against chilly weather. In the past few decades, the use of glass in buildings has remarkably increased. As a result, several transparent buildings have been constructed, in which the materials have almost disappeared. Ar. Kamlesh Krupani, Director and Principal Architect, Purple Leaf Design Studios Pvt. Ltd., says, "Despite high standards,

construction costs must not get out of hand. Large expanses of glass façades provide enormous possibilities because glass combined with steel allows filigree shapes in building skins. In general, glass is considered a dominant construction material in modern architecture these days as it makes a visual statement, while offering multiple technical functionalities at the same time." It may or may not be a coincidence that glass thrives with class. All glass façades are synonymous with a clean, chic look, leaving viewers with a feeling of seeing something that is a cut above the rest.

STAY SAFE
For motivational reasons, most office complexes are increasingly going for oversized glasses and low iron glasses, which provide a clear outside view even from the edges of the windows. It instantly creates a connection between the residents/occupants and the outside environment. Husain Jehur, Founder and Creative Head,



4. The use of glass in buildings is more often than not, dictated by the type of climate around the building.
5. Husain Jehur, Founder and Creative Head, HusainJehur.com



6. Anil Khanna, Design Principal, AHA

7. Aflon tower's double glazed facade provides a high degree of thermal and acoustic comfort

8. Maintainability changes from stone cladding at the entry level to dichroic glazing



Makemyhouse.com says, "Safety measures are becoming very much non-negotiable for everyone, and this is where laminated glasses play an important role. If there is any breakage, the glass remains within the window frame and does not spill down on the road. These glass types play a big role in reducing noise pollution too, as any sounds coming from inside the building remain there. More than 95 per cent of UV rays are blocked when this glass type is used." When carrying out cleaning of such buildings, one should always use soft and non-abrasive cleaning cloth and an authentic glass cleaning liquid. Make sure all internal and external joints are well sealed. Double-check the measurements of such glass by proper fitting.

SELECTION CUES

Considering the prevalence of the material, it is imperative to understand its properties and be aware of available options. "Look for the material's Solar Heat Gain Coefficient (SHGC) which reflects the amount of direct heat that is let in. The lower the value, the lower the direct heat gain. Although solar control glass is more expensive than clear glass, sensible architecture with adequate shading of glass is a cost-effective alternative to prevent direct heat gain," says Kripiani. Another factor to look for while selecting glass is its U-Value, which reflects its insulating property. The lower the U-value, the better the insulation. Having said that, the U-value of glass (even double glass) is much higher than the U-value of any other wall material as the former is a poor insulator. "A good glass building should be extremely relevant, climatically



responsive and eco-conscious. Selective permeability is crucial and smart glass is already in steady use in modern buildings, which can alter its levels of transparency to allow sufficient daylight at different times of day or prevent rays from penetrating the surface to minimise overheating. This type of glass also allows for greater privacy, making it ideal for healthcare and hospitality architecture," says MK Leung, Director of Sustainability, Ronald Lu & Partners, and Chief Behaviourist for Behave.

TREND CHECK

With more innovations and the novelty of glass being one of the only facade finish gradually wearing off and with

the way architecture in India is moving forward, there is a newfound realisation that buildings that are made for cosmopolitan India must be an amalgamation of the best that technology has to offer, while at the same time staying true to the context and materials that this country is uniquely known for. Amit Khanna, Design Principal, Amit Khanna Design Associates, says, "Usage of integrated photo-voltaic panels has presented new possibilities to harness solar energy in tall buildings. This provides for a terrace space for other activities and inherent shade to the building facade. Glass has made its way into photo-voltaic technology, integrated digital user interface systems, structural glass for walls and floors and so on." Anand



9. Glass being used for its intended purpose, especially on facades, combined with innovative materials like clinker tiles and wooden exterior cladding.

10. The design and the glass manufacturing technologies have to interconnect to think about the quality of vision we design from the indoors.

11. Anand Sharma, Founder of Parthenon Design Nexus International





Sharma, Founder & Partner, Design Forum International, adds, "The trend we are seeing now is glass being used for its intended purpose, especially on facades, combined with innovative materials like slim tiles and wooden exterior cladding. Effectively, the newer facades being seen currently are more responsive to climate and context alike. We have usually witnessed glass being considered only with respect to how it will look from the outside. It is high time that while designing buildings, we also keep in mind what views we provide from the inside. Thus, both the design and the glass manufacturing fraternities must take note to think about the quality of visions we design from the indoors, while up until now, the embellishments on windows and facades have taken precedence over everything else."

SMART TAKE

Different types of glass are employed for various purposes that include ceramic glass on facades, lacquered glass for interior purposes, coloured glasses as partitions, and laminated glasses for floorings. "Glass is also getting smarter because incorporating glass in building networks allows for interactive facades that produce both indoor and outdoor effects. When connected to control technology systems, glass becomes the "media and control center" that can regulate a variety of functions in the building. Concepts like lift and slide systems and slim windows are becoming an increasing trend in today's homes in terms of glazing systems. Today, architectural trends have been moving more towards low-reflective and highly transparent, neutral-looking glasses. The trends noticed are the ability to convert flat glass to shapes that allow free-form dynamic surfaces with geometric complexity and the possibility of integrating other

elements like metal screens, LEDs, or Photovoltaics into a conventional flat glass. Methodologies such as unitised glazing have facilitated the easy execution of glass elements," says Sumit Dhawan, the Principal Architect of Cityspace' 82.

FUTURE PERFECT

Rapid development in glazing technology and its incorporation into structural glazing systems have resulted in huge steps forward in terms of the construction of glass buildings. It is not just that glass has a leading role to play in aesthetics, but it is also vital to a building's energy performance and user comfort. "Advanced glass technology has allowed architects to specify a range of high-performance products that enhance the building envelope, from triple-silver Low-e coatings that can be incorporated into triple-glazed insulating glass units (IGUs) that improve energy efficiency to interlayers that offer structural integrity, sound insulation, and security properties. As emerging technology continues to develop, this material might offer intriguing possibilities of functionalities and usage," adds Dhawan. A sensible and well thought out selection of glass for our buildings will not only keep us comfortable indoors, but also benefit the environment by reducing the need for air-conditioning.

WEBSITES

- Purple Leaf Design Studios Pvt. Ltd.: www.plds.co.in
- Make My House: www.makemyhouse.com
- Amit Khanna Design Associates: www.akda.in
- Design Forum International: www.designforuminternational.com
- Cityspace' 82: www.cityspace82.com
- Ronald Lu & Partners: www.rlp.asia/en

12. Orientation of the building vis-a-vis the sun path movement should contribute to intelligent use of the material.

13. Sumit Dhawan, Principal Architect, Cityspace' 82