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INTERVIEW

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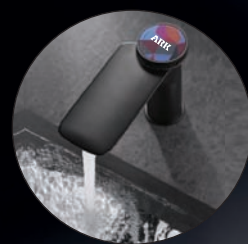
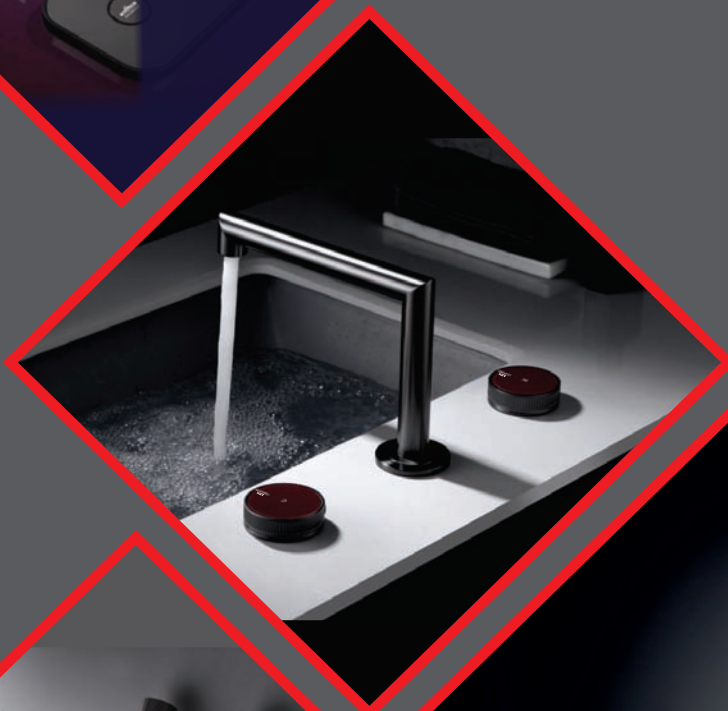


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AI AND THE FIRE IN INDIA'S BELLY



The AI conclave in France has recently been discussed more for a freshly minted Vice President's speech and the ruffled European feathers than its main topic. However, it will ultimately be remembered for the real main revelation—India's arrival on the AI scene, albeit obliquely.

As co-chair of the event, Prime Minister Narendra Modi highlighted the transformative potential of Artificial Intelligence across various sectors, underscoring its ability to redefine industries globally. He indicated that as India continues to embrace technological innovation, AI is poised to significantly reshape the architecture, construction, and design industries beyond 2025.

Currently, in architecture, AI-powered design tools, such as Autodesk's generative design software, are enabling architects to explore a broader range of creative possibilities.

Internationally, the impact is already visibly evident. For instance, in the UK, Zaha Hadid Architects used AI to design a complex, curvilinear structure by analyzing vast datasets, creating intricate designs that would have been impossible to achieve manually. In India, with the government's stated objective to give a fillip to infrastructure and construction projects, such innovations are set to make architectural practices more efficient and visually striking.

Globally, AI is also being used to streamline the design review process, reducing the time architects spend on revisions and improving the overall quality of projects.

In the construction industry, the impact is equally profound. Automation and robotics, now powered by AI, are already transforming construction sites worldwide. Drones equipped with AI are used for surveying and monitoring site progress.

These technologies not only speed up construction timelines but also improve safety by performing dangerous tasks traditionally carried out by human workers. In India, such measures are set to dramatically alter the scene. Easily, by next year, the combined influence of AI in architecture, construction, and design will substantially shape the future of urban environments worldwide. While AI enhances design decisions and productivity, concerns over job displacement and industry destabilization persist as technology adoption increases. This is a challenge and apprehension that's rife in India.

If the Prime Minister's optimism and commitment are anything to go by, and the government can address the accompanying fears as well, this technology will add fuel to the country's ambitious drive to move ahead.

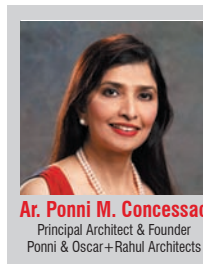
Indeed, that remains to be seen.

Anurag Yadav

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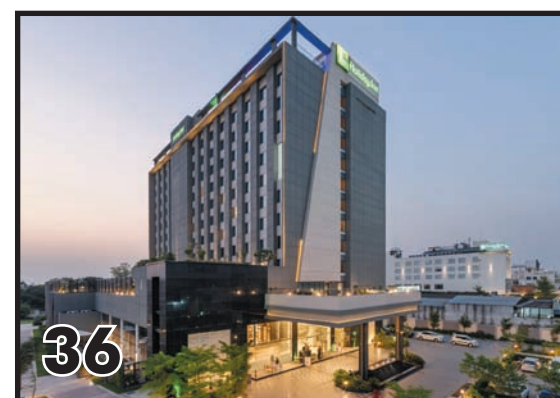
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CONTENTS

News	6
Guest Article	
The Future of Indian Architecture.....	8
Product Launch	10
Interview	
Girish Chawla, Business Head, Professional Greater India.....	11
Profile	
Ar. Natasha Kochhar, Principal Architect, LTDF.....	12
Interview	
Ar. Piyush Solanki, Principal Architect, PR Consultant.....	14
Project	
Art of Time.....	16
Guest Article	
Redefining Kitchen Spaces.....	18
Interview	
Sharmila Kumbhat, Director, K-Lite.....	20
Cover Story	
Lingel: Revolutionizing India's Fenestration industry.....	24
Guest Article	
Engineered Doors.....	29
Profile	
Sharmila Kumbhat	30
Interview	
Samir Savla, Partner, Meraki Habitats LLP.....	32
Guest Article	
The Art of Mixing Textures and Patterns.....	34
Project	
Holiday Inn.....	36
Interview	
Masanori Takeda, Executive Vice President in Charge of Overseas Businesses, Nitori Holdings Co.	38
Guest Article	
Smart Bathrooms: The Intersection of Tech and Design.....	40
AIS Windows: High-Performance UPVC & Aluminum Doors & Windows.	42



Maharashtra to develop MSRTC Land, hires Ar. Hafeez for MSRDC Bus Depot Plan

AU Staff | Mumbai

The government of Maharashtra is planning to take up the development of around 3,360 acres of land parcels owned by the Maharashtra State Road Transport Corporation (MSRTC) across the state and will be floating 150 to 160 tenders soon for the same, said Maharashtra transport minister Pratap Sarnaik.

The development of the state's MSRTC's bus depots across districts,



talukas and rural areas will be taken up on a fast-track mode, he said while

speaking at a conference organised by the realty industry body NAREDCO here.

The minister highlighted that MSRTC holds a land bank of around 3,360 acres, and architect Hafeez Contractor has been appointed to come up with a plan to develop the MSRDC bus depots. He emphasised the need to develop these land parcels and urged the realty developers operating in the state to come forward to undertake commercial or residential projects on these plots. ■

Lulu Group to expand operations in India with new shopping malls

AU Staff | Mumbai

Lulu Group International is set to expand its business in India with new shopping malls in Nagpur, Vishakhapatnam, and Ahmedabad. According to M.A. Yusuff Ali, Chairman and Managing Director of Lulu

Group International, the company is in the early stages of planning for its expansion in these cities.

"We want to be a part of India's journey towards becoming a USD 5 trillion economy under the dynamic leadership of Prime Minister

Narendra Modi," said

Ali. "We are now constructing one of the biggest shopping malls in Ahmedabad, and negotiations have started for another one in Visakhapatnam. Additionally, we are in the initial stage of architectural planning for a new project in Nagpur."

Yusuff Ali expressed gratitude towards Andhra Pradesh Chief Minister N. Chandrababu Naidu for his support in setting up shopping malls in Visakhapatnam. He also highlighted the strong partnership between India and Qatar, citing the growing economic ties between the two nations. ■



M.A. Yusuff Ali

Greenlam to participate in ID Delhi 2025 as flooring and sustainability partner

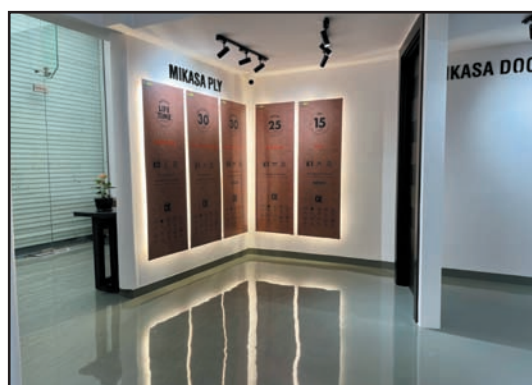
AU Staff | Mumbai

Greenlam Industries, a leading provider of integrated substrate and surface solutions, is set to participate in India Design (ID) Delhi 2025 for the fourth consecutive year according to a press release. The event, organized by Ogaan Media in collaboration with Elle Décor, will take place from 20th to 23rd February 2025, at Okhla, New Delhi.

As the official flooring and sustainability partner, Greenlam Industries will

showcase its premium collection, including Mikasa Floors, Mikasa Doors, Decowood Veneers, MikasaPly, Greenlam AFX, Greenlam Lexus Collection, and Greenlam MFC. Each product is designed to meet the highest standards of durability, aesthetics, and environmental responsibility.

"We are excited to return to India Design Delhi 2025 as the official flooring and sustainability partner," said Parul Mittal, Director of Greenlam Industries. "This year's participation holds special significance as we continue to advocate for design solutions that make a real impact. Our innovative flooring collection exemplifies our commitment to blending lasting durability, exceptional design, and eco-conscious practices." ■



Foster + Partners transforms Industrial Site into thriving Hub in Constanta, Romania

AU Staff | Mumbai

Foster + Partners has developed a comprehensive masterplan for a 38-hectare site in Constanța, Romania. The plan transforms the industrial site into a thriving “city within a city” with cultural, educational, retail, entertainment, sports, and leisure facilities, as well as public parks and botanical gardens.

“It is a great honor for us and a unique opportunity for Constanța to create a new destination,” said Stefan Behling, Head of Studio, Foster + Partners. “Greenery is woven through the masterplan, with a series of interconnected parks, gardens, and vibrant community spaces.”



Image courtesy: parametric-architecture.com

Constanța Masterplan Details: Architect: Foster + Partners, Location: Constanța, Romania, Size: 380,000 sq. meters. ■

Chaos Acquires EvolveLAB to transform AI in architecture

AU Staff | Mumbai

Chaos, a Bulgarian-founded software company, has announced its acquisition of EvolveLAB, a US-based developer of AI software for architecture, engineering, and construction professionals.

The acquisition expands Chaos' suite of technological solutions for architects and designers, covering every step of the workflow from idea generation to final visualization. EvolveLAB's AI-

based products optimize visualization, generative design, documentation, and technology interoperability in the sector.

Chaos already boasts an established portfolio of technologies for 3D visualization and animation in architecture, including Enscape, Envision, Corona, V-Ray, and Vantage. The integration of EvolveLAB's AI-powered solutions aims to strengthen Chaos' portfolio and provide innovative design and automation tools for



Image courtesy: thecursive.com

complex processes.

“EvolveLAB's tools are already widely used by professionals for innovative design and automation of complex processes. Together, we will continue to develop these technologies, offering even better opportunities for creating personalized projects,” says Stefan Seiber, CEO of Chaos. ■

Flashnet expands smart street lighting solutions in Northern Europe

AU Staff | Mumbai

Flashnet, a leading global provider of smart street lighting solutions, is strengthening its presence in Northern Europe. The company is supplying advanced lighting control systems to municipalities in Nordic countries, including Iceland.

As part of this expansion, Flashnet, in partnership with Rafal, will modernize the street lighting infrastructure in Hafnarfjörður, Iceland. The project involves the deployment of



Image courtesy: Eirpresswire

6,000 smart streetlights, aligning with Iceland's sustainability goals to reduce energy consumption and improve lighting efficiency.

Flashnet's inteliLIGHT smart

street lighting solution allows municipalities to optimize streetlight performance, reduce operational costs, and improve public safety.

Alexandru Buzatu, Chief Commercial Officer, Flashnet said, “The Nordic region's commitment to sustainability and innovation makes it a key market for Flashnet's expansion. By bringing globally proven smart lighting solutions to cities across Northern Europe, Flashnet is contributing to safer, greener, and more efficient urban environments.” ■



The Future of Indian Architecture: How 2025 Will Witness Green Building Innovations and Tech-Driven Designs

By **Nirmalya Chatterjee**, Country VP, Nemetschek Group - Indian Subcontinent

Indian architecture is gradually changing, driven by these two imperatives: Sustainability and Technological Advancement.

As Urbanisation is taking such a pace, nearly 600 million Indians shall be urban residents by 2030. What this means is that with such an unprecedented urban landscape, the construction sector witnesses immense pressure to build even smarter, greener infrastructure more sustainably. By 2025, this integration of green building innovations with technology-driven designs will define the approach to building India's cities and spaces,

setting a global benchmark for sustainable development.

Emerging Green Building Practice in India

Green building practice emphasises energy efficiency and resource conservation while ensuring harmonious relationships with the environment. They are no longer merely trends but necessities in themselves. India has already set a mark on this level, standing third in the US Green Building Council's annual list of Top 10 Countries for LEED (Leadership in Energy and Environmental Design). India's green building market is

expected to grow by over 10% of CAGR by 2025 to reach a market size of \$35-50 billion.

This growth is backed by government policies such as the Energy Conservation Building Code (ECBC) and initiatives like the Smart Cities Mission, aimed at creating sustainable urban spaces. Such frameworks encourage the adoption of green technologies, including solar panels, rainwater harvesting systems, and energy-efficient lighting, thereby reducing the carbon footprint of new constructions.

Green building materials such as



Nirmalya Chatterjee, popularly known as "NC," holds a degree in Civil Engineering and Management and boasts 25 years of experience in the BIM and construction technology sector. Throughout his career, Chatterjee has excelled in sales, marketing, business management, and corporate strategy, demonstrating expertise in go-to-market strategies and international business operations.

Before joining Nemetschek Group, Chatterjee held pivotal roles such as VP of Product Development and Business Strategy at Neilsoft, VP of the Digital Construction division at Tata Group, Country Manager for Tekla, and Executive Director of Trimble in India. In these capacities, he established new operations and expanded business across the Indian subcontinent, showcasing his ability to foster growth and innovation.

At Nemetschek, Chatterjee aims to capitalise on India's rapid economic growth and burgeoning infrastructure and construction sectors. He plans to introduce advanced Nemetschek technologies to the Indian market through tailored, localised product offerings. His objective is to deliver comprehensive, affordable BIM-enabled technology solutions that cater to the entire building lifecycle, aligning with the country's technological advancements and economic objectives.

fly ash bricks, bamboo, and recycled steel are emerging and reducing construction waste. It seems these innovations will transform the Indian built environment coupled with bettering insulation techniques and renewable integration.

Technology as an Agent of Change

As sustainability becomes the focus of the entire picture, technology seems to be the linchpin for smart efficient resilient buildings. In this regard, technologies such as BIM, 3D printing, and AI are increasingly being incorporated into architectural services in India, ensuring precision of design along with resource efficiency. For instance, BIM will entirely revolutionise architectural design and construction. It represents physical spaces digitally



and thus enables architects and engineers to work seamlessly with optimum utilization of materials and energy. By 2025, the adoption of BIM in India is expected to rise with the government mandating its use in large-scale infrastructure projects.

Besides, AI and machine learning have been allowing predictive analytics to create structures by transforming environmental conditions. For instance, architectural tools can employ AI to simulate sunlight patterns to produce optimal natural lighting along with the lowest energy consumption. Analogously, the integration of IoT enables smart buildings in which the HVAC systems, lighting, and security will communicate with each other in an optimized manner to use the resources.

Another game-changer is 3D printing, which makes construction sustainable, faster, cheaper, and less wasteful. Indian companies have also started to explore the possibility of using 3D-printed structures, which results in minimizing material waste by up to 60% more than with conventional methods.

Meeting the Challenges Ahead

While the future of architecture in India seems promising, challenges are still there. High initial costs are a barrier to the widespread adoption of green building technologies, especially in smaller cities and rural areas. There is also a need for skills in the workforce, with architects, engineers, and contractors trained in advanced tools like BIM and IoT.

Additionally, there are minimal regulations and incentives for the green

construction of specific regional areas. In light of this, it will take coordination between policymakers, the private sector, and higher educational institutions to provide an optimal ecosystem for sustainable architecture.

Being one of the biggest players globally, Nemetschek Group uniquely places the company at a great platform to fuel Indian innovations related to green buildings. Using world-class BIM software and other designing tools, architects and engineers draw more sustainable, efficient energy design plans than the world could even think.

Nemetschek focuses on collaboration throughout the entire construction lifecycle, so that every project stage, from planning to maintenance, aligns with sustainability goals. Its tools enable seamless integration of renewable energy systems, efficient material usage, and predictive maintenance, significantly reducing the environmental impact of buildings.

A Vision for 2025 and Beyond

India will adopt green building innovations and technology-driven designs in its architecture sector by 2025, establishing itself as a global leader in sustainable construction.

As the nation strives towards this vision, every green building, every innovative design, and every sustainable initiative will be one step toward a healthier, more harmonious. Now is the challenge: turn potential into practice, and ambition into achievement—a feat in which collaboration, technology, and commitment will be of great importance. ■

Petal-Inspired Laminate Dorby Decor

Inspired by the delicate beauty of flower petals, Dorby Décor Laminate brings a touch of nature's artistry into modern interiors. The intricate patterns and organic

shapes evoke the soft, flowing contours of petals, while the subtle color gradients mimic the gentle variations found in nature's blossoms.

This unique laminate design creates a tactile visual texture, adding depth and warmth to any space. Its timeless appeal strikes a perfect balance between modern aesthetics

and nature-inspired creativity, making it a statement of sophistication and refinement.

Suitable for both residential and commercial spaces, Dorby Décor Laminate seamlessly blends into a variety of design themes, enhancing the ambiance with its elegant and refined presence. With its durability and stunning aesthetics, it is the perfect choice for marrying functionality with artistic flair.



Hafele Prolock PL200 Access Control System

Hafele's Prolock electronic access control and identification system simplifies the organization of effective procedures for hotels, providing maximum convenience for guests and

operators. This innovative system replaces traditional room keys with keyless access, integrating all security needs into a stylish, energy-efficient, and reliable package.

The Prolock system offers easily scalable access points, accommodating any number of users and customizable locking plans tailored to individual requirements. Hafele's comprehensive on-site service ensures a seamless and customized access control management system.

The Prolock PL200, in particular, boasts a minimalist design and robust functionality, providing ease of use for both users and operators. Its sleek aesthetics and impressive functionality make it an ideal solution for hotels seeking to enhance their security and convenience.

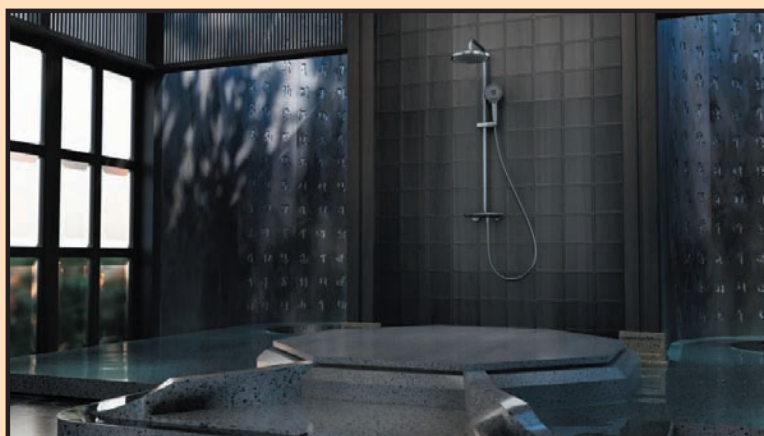


Hindware's Queo Pebble Series

Queo's Pebble Series, a brand by Hindware, redefines the bathroom experience with its beautifully designed shower system and stylish pebble-inspired faucet. Inspired by the smooth shapes of river stones, the collection's rich texture and Gun Grey Matte finish create a sense of tranquility and understated elegance according to a press release.

The Pebble Thermostatic Shower System offers the ultimate in personalized comfort. With three distinct spray modes – Pulse for an invigorating massage, Rain for a gentle flow, and Blend for a combination of both – users can tailor their shower experience to their exact needs. The dual shower heads provide complete flexibility and control, ensuring a bespoke cleansing experience. Precise thermostatic control eliminates sudden temperature fluctuations, providing a consistently comfortable and luxurious stream.

The Pebble Series also features a sleek faucet with intuitive control, allowing for easy adjustment of water flow and temperature. The push-and-turn mechanism offers effortless control, while the sleek design adds modern elegance to the bathroom.



‘We believe in creating dynamic, innovative and human-centric projects’



Leading lighting solutions company Signify is at the forefront of innovation and sustainability in India. The company hosted a two-day Light Festival in Mumbai showcasing its latest lighting innovations and solutions to industry professionals, customers, and stakeholders. During the occasion, **Girish Chawla, Head of Professional Business at Signify Greater India**, discussed the company's strategies and future of lighting in India in a conversation with **Tejaswini Paranjape**.

Q What are the key objectives for Signify's India Light Festival in Mumbai, Delhi and Bangalore?

The primary objectives for Signify's India Light Festival in Mumbai, Delhi, and Bangalore were multifaceted and aimed at highlighting Signify's dedication to innovation and sustainability within the lighting sector. These events served as a platform to showcase our cutting-edge lighting solutions that spanned various applications such as solar, retail, industrial, outdoor, facade, hospitality, and office lighting amongst others. This also serves as a platform to engage in thought-provoking panel discussions featuring industry experts across sectors to discuss the illuminating future of the industry and its evolving role in modern spaces. During the Delhi chapter, we launched industry first exclusive products like NatureConnect and held insightful roundtable discussions with top media publications. Being our marquee event India Light Festival provides a dynamic platform for industry leaders,

end-users, specifiers, and consultants to connect, collaborate, and exchange ideas.

Q What were some of the most innovative lighting solutions being showcased at the festival?

The India Light Festival served as a platform to showcase some of Signify's most innovative lighting solutions under one roof. NatureConnect, an industry-first product that recreates the benefits of natural light indoors, thereby promoting well-being. It is based on biophilic design principles and mimics the natural rhythm of sunlight, leading to improved mood, enhanced focus, better sleep quality, and a healthier circadian rhythm. Other noteworthy products included ModiFly, an energy-efficient lighting solution perfect for residential and commercial spaces; Glazeline, a high-quality, long-lasting, and elegant lighting solution; the Signify Solar Range, which uses renewable solar power to provide reliable lighting even in low sunlight conditions; and the Signify

Facade Light, which enhances building exteriors with dynamic and energy-efficient lighting options.

Q How is Signify leveraging technology like IoT and AI to enhance its lighting solutions?

At Signify, we're leveraging advanced technologies like the Internet of Things (IoT) and Artificial Intelligence (AI) to enhance our lighting solutions. We're investing 4.2% of our global sales in research and development, focusing on integrating these technologies into our products. This allows us to create more efficient, customizable, and user-friendly lighting solutions that can be integrated into smart home systems for easy control and enhanced functionality.

Q What are some of the challenges and opportunities in bringing these innovations to the Indian market?

Introducing innovative lighting solutions to the Indian market presents both significant opportunities and challenges for Signify. As a global leader in the lighting industry, Signify leverages its extensive expertise to meet the unique needs of the Indian market. The company offers a range of cutting-edge products that exemplify its commitment to innovation and sustainability. For instance, NatureConnect, which mimics natural daylight patterns to create indoor environments that boost energy levels and well-being. The Interact IoT platform enables connected LED lighting systems that deliver insights and new services through embedded sensor networks. The company's strong alignment with government initiatives and the growing demand for energy-efficient solutions further enhance its ability to bring these innovations to the Indian market. ■

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Ar. Natasha Kochhar, Associate Partner and Principal Architect at LTDF (Let's Think Design First), has always been driven by a deep sense of aesthetics and a nuanced understanding of the built environment. Her journey was shaped by a unique blend of anthropology and design, leading her to realise that good design is both human-centric and often invisible. At LTDF, she and her team take a holistic approach, balancing creativity with practicality to create spaces that resonate with people's needs.

Redefining Spaces: Ar. Natasha Kochhar's Journey to Human-Centric Design

Prasenjit Chakraborty | Mumbai

Ar. Natasha Kochhar, Associate Partner and Principal Architect at the Delhi-based firm LTDF, started her journey with a keen sense of aesthetics and subtleties in the built environment. Ar. Kochhar's love for people and a keen interest in the art of noticing led her to pursue a course in anthropology. She had an interesting revelation; people

behave and respond similarly across evolutionary phases! She also observed the power of space, having grown up in the Middle East. This keen observation led her to believe that good design is human-centric and mostly invisible. Wonder can be created and infused by keeping the user at the center of it all. Furthermore, working in a boutique design firm helped her hone her attention to detail and understand the value of customization. By following these principles, Ar. Kochhar ensured that the client's vision and design aesthetic were reflected in every project she worked on.

Balancing Creativity and Practicality

At LTDF, they work with a triangular focus on understanding the **WHO**—client and their culture, the **WHERE**—site context and its climate, and the **WHAT**—human aspirations. These unsaid needs and the lifecycle of the architecture or interior spaces that LTDF designs help enhance their design process. Before they develop a vision board for the project, they encourage the clients to help them not just create but also evolve as they move along the project's lifeline.

To them, the project is paramount and is a result of the people and the purpose. They are mindful of the value they are expected to create, whether it is position, profit, or personal happiness!





Overcoming the challenges

Ar. Kochhar believes that designing for oneself is perhaps the greatest challenge for any designer. Their own homes and offices often take a backseat as they prioritise clients. However, when designers invest in their own spaces, they enrich their lives, ultimately enhancing their work. The process fosters empathy, allowing them to better understand clients' struggles with execution teams. After all, it's easy to make confident decisions when working with someone else's budget, but committing to expenses for their own projects presents an entirely different challenge—one that deepens their appreciation for the design journey.

Sustainability and Innovation

At its core, architecture and interior design are driven by innovation with a purpose- to enhance human experiences. True innovation demands risk-taking, the very foundation of every visionary endeavour. Contemporary architecture extends beyond aesthetics; it is about crafting bespoke spaces that reflect individuality and purpose. In today's digital age, where imagery is readily accessible, originality is paramount. Without innovation, designs risk becoming generic, blending into an oversaturated visual landscape without impact or distinction. To create meaningful spaces, architects must push boundaries and think beyond the ordinary.

Ar. Kochhar strongly believes that sustainability, now more than ever, is not just an option but an obligation. As creators, designers must approach design with mindfulness, minimising environmental impact and ensuring that their work contributes positively to the world. Thoughtful, responsible

architecture is the way forward—a way to give back while shaping the future.

Emerging Design trend

With the rise of Gen AI, innovative materials and products will take center stage, redefining architectural possibilities. The integration of technology will shape the materials specified, but also revolutionize processes and execution, becoming the backbone of modern architecture. Most importantly, in an increasingly digital world, human experiences will remain paramount. There is no greater expression of experience than the impact of well-designed architecture and interiors, where spaces transcend function to evoke emotion, comfort, and connection. ■

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'New Technologies and AI, Transforming the Future of Architecture'



Maintaining open and transparent communication with developers to understand their needs, constraints, and expectations is key for the success of any project. Besides this, blending creativity with practicality and sustainability to create functional and inspiring spaces has been our mantra, says **Ar. Piyush Solanki, Principal Architect, P R Consultants,** in a conversation with **Prasenjit Chakraborty.**

Q Can you walk us through your design Process?

As an architect, my design process is a thoughtful and iterative journey that balances creative vision with practical considerations. Here's a walkthrough of my design process. It starts with understanding the design brief, followed by client and stakeholder meetings to grasp their needs, goals, and aspirations for the project. This is followed by site visits to analyse its conditions, climate, topography, and surrounding context. I then conduct research on local building codes, zoning regulations, and cultural influences.

During the Schematic Design Phase, I develop initial concepts, exploring different design directions and ideas. I create sketches, diagrams, and 3D models to visualize and communicate my ideas. I engage in intensive design sessions, brainstorming and refining my concepts. The design is further refined based on feedback from clients, colleagues, and experts. This stage also includes integrating technical requirements, such as structural systems, mechanical systems, and sustainability features. The final stage involves the selection of materials that meet the project's aesthetic, functional, and sustainability goals.

Q How do you balance creativity and practicality?

Throughout the design process, I balance creativity and practicality by having a detailed understanding of the design brief, embracing constraints, budget limitations, and regulatory requirements as opportunities for creative problem-solving. I work closely with clients, engineers, contractors, and other stakeholders to ensure that my design meets their needs and expectations. I engage in an iterative design process, refining my ideas and making adjustments based on feedback and new information.

I stay up-to-date with the latest

building technologies, materials, and best practices to ensure that my designs are both creative and practical. By embracing this design process and balancing creativity with practicality, I can deliver innovative, functional, and beautiful buildings that meet my clients' needs and exceed their expectations.

Q How do you approach sustainability in your design?

As an architect, I believe that sustainability is an integral part of responsible design. I adopt Sustainable Design Principles and aim to design buildings that produce as much energy as they consume, using renewable energy sources like solar, wind, and geothermal. I incorporate water-efficient systems, rainwater harvesting, and greywater reuse to minimize water consumption.

I choose materials that are sustainable, recyclable, and have low embodied energy, such as reclaimed wood, bamboo, and low-carbon concrete.

I design buildings with natural ventilation, air filtration systems, and non-toxic materials to ensure healthy indoor air quality. I aim to minimize waste during construction and occupancy by designing buildings with modular components, minimizing packaging, and incorporating recycling programs.

I optimize building orientation to maximize natural light, ventilation, and passive solar heating and cooling, while incorporating passive strategies like thermal mass, insulation, and shading to minimize reliance on mechanical systems. I add green roofs to enhance insulation, reduce stormwater runoff, and support wildlife habitats. My designs feature natural ventilation and resilience against climate change, with strategies for flood protection, drought-resistant landscaping, and extreme weather mitigation.

Q Traditional Architecture practice and demand from developers, how do you cope with the situation?

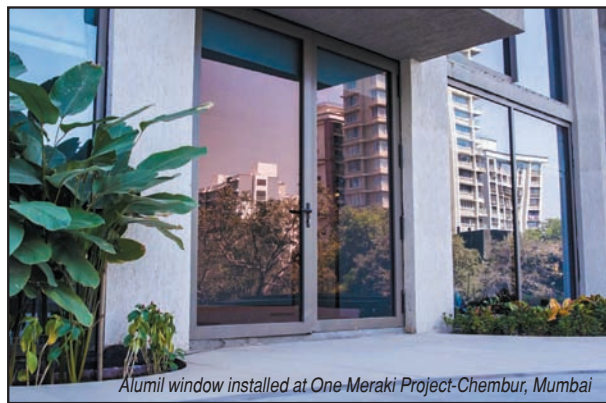
As an architect, I often face challenges in balancing traditional architecture practices with the demands of developers.

I maintain open and transparent communication with developers to understand their needs, constraints, and expectations. And conduct market research to stay informed about current trends, market conditions, and consumer preferences. I work with developers to ensure that the project is financially feasible, considering factors like construction costs, timelines, and return on investment.

In our design, I try to respect the cultural, historical, and environmental context of the project site, incorporating traditional elements and materials where appropriate. I explore innovative solutions that meet developer demands while maintaining the integrity of traditional architecture practices and prioritize sustainable design principles, ensuring that the project is environmentally responsible and resilient.

Currently, Cloud platforms are facilitating seamless collaboration among architects, engineers, contractors, and clients. AI-analysed data will inform design decisions, ensuring that projects meet performance, sustainability, and user experience goals.

With regards to new business models and skills, architects will offer data-driven services, such as building performance analysis and optimization. They will provide expertise in design technology, AI, and data analytics to clients and other stakeholders. Architects will need to continually update their skills to stay



Alumil window installed at One Meraki Project-Chembur, Mumbai

current with emerging technologies and industry trends.

Q How do you see the role of architects changing with the advent of technology and AI?

As an architect, I believe that the advent of new technologies and AI will significantly impact our profession, transforming the way we design, collaborate, and deliver projects. I see the role of architects evolving, AI-powered tools will aid architects in exploring new design possibilities, automating repetitive tasks, and enhancing creativity.

AI-driven generative design will enable architects to create multiple design options, optimizing building performance, sustainability, and user experience. Immersive technologies will revolutionize design visualization, communication, and stakeholder engagement. Algorithmic design tools will streamline complex design tasks, such as structural analysis and energy modelling. Also, AI-powered drafting tools will reduce manual labour, increasing efficiency and accuracy.

Q How do Alumil Windows help overcome several challenges when designing an upmarket residential building in Chembur, Mumbai?

Designing a residential building in Chembur with a minimalistic elevation concept posed several challenges. The client requested a clean, vertical aesthetic with no weather projections, which meant we had to find alternative solutions for sun shading and protection from rain. The absence of these elements required us to focus on high-performance windows and strategically placed structural frames to enhance both the building's visual appeal and its functionality, while maintaining structural integrity and comfort for residents.

At P R Consultants, we were tasked with designing a residential building in Chembur, utilizing the windows-as-wall concept. With flat slab, no beam technology, and the absence of traditional weather protection elements, the project presented unique challenges.

Our primary goals were to ensure ample natural light and ventilation, while also providing excellent views and thermal comfort.

After extensive research and analysis, we identified Alumil as the ideal window solution provider. Their high-performance aluminium systems offered the perfect balance of durability, thermal efficiency, and aesthetic appeal. The slim-frame design of Alumil windows allowed for maximum glass area, optimizing views and natural light, while ensuring structural integrity without additional support from beams.

Moreover, Alumil's energy-efficient glazing systems were vital in addressing the need for effective insulation, minimizing heat gain from the south and heat loss on the north side.

Alumil's solutions also addressed weather protection challenges, as their advanced sealing systems and high-quality materials ensured the windows could withstand Chembur's humid and monsoonal climate, preventing water ingress and ensuring durability. With these technical specifications, Alumil windows met our design requirements and helped realize a functional, visually appealing, and energy-efficient facade for the building, all while enhancing the residents' living experience.

As an architect, I highly recommend Alumil Windows to fellow developers due to their combination of technical reliability, cost-effectiveness, and sustainability. Alumil's products are designed with high performance, offering excellent thermal insulation, durability, and aesthetic appeal, all while being value for money. Their time-bound delivery ensures seamless integration into project schedules, keeping timelines on track. Additionally, Alumil's commitment to sustainability stands out, as they use 80% recycled aluminum in their products, contributing to environmental conservation without compromising quality. This blend of innovation, cost-efficiency, and eco-consciousness makes Alumil an ideal choice for any development. ■

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Sonali Ashar Designs Brings Art of Time's Heritage Store Back to Life, Blending Timeless Architecture with Modern Elegance

AU Staff | Mumbai

Amarchand Mansion, a historic Grade II A heritage building from 1903, stands as a beautiful example of Indo-Saracenic and Neo-Moorish architecture in Mumbai's Fort precinct, housing the luxury watch store, Art of Time. In a monumental restoration effort, Sonali Ashar Designs was tasked with reviving the space, which had fallen into neglect, restoring its grandeur while maintaining its architectural integrity. Through meticulous conservation and modern design, the interior now blends timeless elegance with luxurious modern touches, creating a stunning environment for the luxury watch brand.

Amarchand mansion, an iconic Grade II A heritage structure, built in 1903 during British colonial rule, in the Fort precinct (Mumbai), is a stunning blend of Indo Saracenic and Neo Moorish architecture housing the country's eminent names as residents and select, exclusive commercial establishments. The building houses Art of Time a luxury watch store.

Art of Time, India's leading luxury watch store, engaged Sonali Ashar Designs to bring this



interior space back to its original and scintillating glory. A towering challenge for the Principal Designer Sonali, who was confronted with a space in an utter state of neglect and disrepair. Mezzanine floors, punctured load bearing walls, boarded up windows, virtually no natural light and a labyrinth of internal walls.

Thoughtfully designed interior elements were meticulously restored using conservation techniques at every step. Detailed presentations to the Heritage Committee followed. Towering arches from imposing doorways adorned with intricate stone carvings, were brought back to life by beautifully illuminated stained-glass panels crafted expertly as per the original designs.

Buried under cement and plaster and awful laminates, emerged most gorgeous original cast iron columns! These were crafted in a foundry in England and shipped to India during the Colonial rule. The double height ceiling and the columns are by far the most striking feature of the interior. The original ceiling with its jack arches were a feast to the eyes. Guided by a conservation expert, all necessary restoration treatments were followed. Timeless design features enhance the architectural integrity of the space.

Stringent measures were taken to maintain the architectural integrity of the original design. The sprawling space is essentially divided into two. A large central atrium for the multiple luxury watch brands namely Cartier, Breguet, Blancpain, Panerai and others, a back office for



Sonali Ashar, the visionary behind Sonali Ashar Designs, has redefined interior design by seamlessly blending aesthetics, functionality, and her clients' style. Her design journey, deeply influenced by passion and precision, presents an optimal balance of artistic aura and practical sophistication. Sonali's personal style showcases modern, contemporary designs with clean lines, but her ethos as a designer aims to reflect the client's personality, tastes, and lifestyle in all projects.

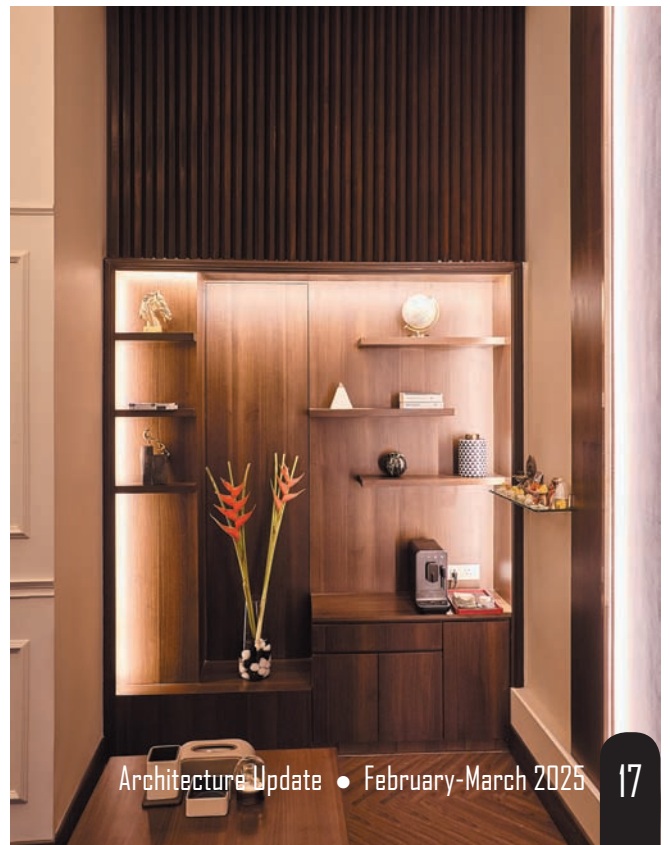
the administrative staff and a plush private lounge for the directors of Art of Time.

Accentuating the interior with thoughtfully curated furniture pieces and accessories, this neglected space transformed into an uber luxurious aesthetically brilliant interior under the impeccable design sensibilities of Sonali Ashar. Elegant wainscoting panels and superlative mood lighting sets the perfect tone for the beautiful ceiling that has been finished in champagne gold leafing that drenches the imposing majestic columns too. ■



Fact File

Name of the Firm	: Sonali Ashar Designs
Project Name	: Art of Time - Luxury watch Store
Location	: Amarchand Mansion, Fort, Mumbai 400001
Principal Designer	: Sonali Ashar
Area	: 2500 sq. ft.
Date of completion	: November 2024



Redefining Kitchen Spaces: Emerging Trends in Design for the Future

By **Shyam Motwani**, Executive Vice President & Business Head, Locks and Architectural Solutions, part of Godrej Enterprises Group

The kitchen has long served a purpose beyond mere functionality. It is the heart of modern homes—a space where practicality meets expression and innovation transforms the way people live. Trends such as compact living, technological advancements and the growing need for organization and efficiency are shaping the kitchen of the future.

With the rise of nuclear families and a younger demographic driving home-buying decisions, kitchen design is evolving to meet their needs. Modern kitchens are no longer just cooking spaces; they are multifunctional hubs

designed for efficiency.

Moreover, compact housing has brought about a paradigm shift in kitchen design. With shrinking urban spaces, the need for smart, space-saving solutions has never been more critical. Today's kitchens are designed to optimize every square inch, ensuring no space goes underutilized. Kitchen organization has been transformed with innovations such as pull-out drawers with adjustable dividers, under-sink organizers, and vertical storage systems. These solutions not only maximize storage space but also ensure easy access, making multitasking seamless. Additionally,

foldable or retractable countertops and extendable dining spaces are being incorporated to better adapt to evolving urban lifestyles.

The modern kitchen has become smarter and more intuitive—featuring touchless faucets, smart appliances controlled via mobile applications, and lighting systems that adjust based on daylight or motion sensors. Looking ahead, future kitchens will integrate AI-driven systems capable of managing inventory, suggesting recipes, and even optimizing energy consumption for greater efficiency.

Smart appliances are seamlessly blending into kitchen aesthetics,





featuring concealed fittings and sleek designs. Connectivity between devices allows users to control their kitchens from the palm of their hand, making cooking and management effortless, even for the busiest multitaskers. When it comes to kitchen design, a one-size-fits-all approach is becoming obsolete. The future belongs to modular kitchens, offering consumers unparalleled flexibility. Homeowners now seek designs tailored to their specific needs—everything from customized storage solutions for unique utensils to colour schemes that reflect personal aesthetics.

Customization is also extending to

kitchen layouts, with a growing focus on ergonomics. Designs now prioritize smooth movement flow and reduced physical exertion. Kitchen workstations are evolving to accommodate multiple users, making multi-user cooking more practical and suited to modern family dynamics.

In the Indian kitchen fittings market, rapid growth is being driven by urbanization, rising disposable incomes, and evolving consumer preferences. The demand for modular kitchens is gaining strong momentum, as more homeowners turn to professionally designed spaces that strike a balance between style and functionality.



Shyam Motwani is a seasoned professional with over 37 years of diverse experience in marketing, operations management, exports, new product and business development, and business strategy. His career spans across various industries including FMCG, consumer durables, retail, and locking solutions and devices for home and commercial/office security. With a Bachelor's degree in Mechanical Engineering and an MBA in Marketing from Bombay University, Shyam's expertise lies in branding and identity, retail, and business strategy. Throughout his career, Shyam has demonstrated a keen ability to identify emerging opportunities and anticipate changing customer needs. Under his leadership, the Locks Division at Godrej has witnessed exceptional growth, with an expanded product portfolio and impressive financial performance.

Premium and innovative fittings, such as customizable cutlery organizers, slide-out pantry units, and tailored storage and under-sink solutions, are growing rapidly. For example, SKIDO smart organizers and innovative solutions by Locks and Architectural Solutions reflect this trend. This shift indicates a move beyond basic functionality towards greater convenience, sophistication, and longevity.

Future kitchens will seamlessly integrate innovation with sustainability. Growing awareness of environmental issues is driving demand for eco-friendly materials, energy-saving appliances, and waste-minimization systems. In response, designers and manufacturers are developing sustainable products without compromising aesthetics or functionality. ■

'LEDs Revolutionised Consumer Preferences with Smart Controls and Versatile Features'



Architectural lighting design enhances a space by highlighting features, textures, and materials, while manipulating shadows. It also sets the emotional tone, using warm light for comfort and intimacy and cool light for sophistication, said **Sharmila Kumbhat, Director, K-Lite Industries Pvt Ltd.** while speaking to **Prasenjit Chakraborty.**

Q The lighting industry has seen significant advancements in both design and technology in recent years. What are some of the most exciting innovations currently shaping the future of architectural lighting?

Application of LED in architectural lighting has scaled up to a very high

level and therefore the associated demand to get (a) higher light output per watt for effective energy savings, (b) design flexibility with controllers, (c) dimming and colour options etc., have resulted in some exciting innovations in LED technology to shape the future of architectural lighting. We have already been experiencing

the smart lighting systems and the impact of Internet of Things (IoT) for intelligent controls and personalised lighting experience, application of geofencing under smart lighting controls etc., Recently 3D printing technology is finding applications for tailored solutions in each application / building as also for predictive maintenance or end of life indication.



Pride India, Balapur, Hyderabad

Q With growing concerns about energy consumption and environmental impact, how is the lighting industry addressing sustainability? What role does energy-efficient lighting play in modern architecture, and how are architects incorporating it into their designs?

Lamps from incandescent, FTL, CFL up to High Pressure lamps are very large in size compared to the tiny LED. The conventional lamps require much bigger luminaire body. Further the FTL/CFL/ high pressure lamp's manufacturing process uses mercury which are harmful to environment. LED, as a light source is the most energy efficient source compared to the earlier incandescent, FTL/CFL/ MV/ SV/ Metal Halide etc., and its life span is around 50000 burning hours.

Sustainability is mainly addressed through reduced energy consumption due to the switching over to LED on a mass scale which has already proved its worth by reduction of environmental pollution levels. Over and above the long-life span of these sources has also contributed to sustainability. By virtue of the Internet of Things (IoT), smart controllers and controllable colour changing options, the Architects can easily create comfortable and productive work spaces while minimising unnecessary lighting. Tactfully the designers also incorporate day light harvesting and utilise reflective surfaces to distribute natural light effectively.

Q As smart home technologies gain traction, how is the lighting industry integrating these systems into architectural projects? What are the challenges and opportunities in creating intelligent lighting solutions for both residential and commercial spaces?

Consequent to the development of smart lighting, the lighting industry is integrating smart lighting systems into architectural projects by incorporating connected LED fixtures, sensors, and control hubs that can be seamlessly managed through apps, allowing for customized lighting scenes, automated adjustments based on occupancy or daylight levels, and remote control, ultimately enhancing the user experience and promoting energy efficiency in both residential and

commercial spaces. The challenges in such attempts are (a) ensuring interoperability between different systems, (b) addressing privacy concerns related to data collection, and (c) designing aesthetically pleasing fixtures that integrate seamlessly with the architecture.

Q Beyond functionality, lighting has become an essential tool in architectural expression. How do you see lighting being used as a design element to enhance the aesthetics and atmosphere of a space?

In architectural lighting design, additional design elements come into play a significant role. They are mainly to highlight the architectural features bring into focus the textures and materials, manipulate shadows. The designers can also bring into play the emotional tone of a space through warm lights to create a sense of comfort and intimacy and through white cool light, feelings of sophistication and modernity. In turn, the lighting solutions are tailored to the desired mood and atmosphere.

Q How are consumer preferences shifting in terms of lighting design and functionality? Are there any emerging trends in colour temperature, smart controls, or fixture designs that architects should be aware of when specifying lighting for their projects?

Gone are the days when



AL Emadi Palace, Qatar

the clients will be happy with a good lighting level as they choose. LED has transformed the whole scenario and the preference of consumers have drastically changed due to the various options available to them through colour tuning to suit different moods and activities, smart controls etc., The emerging trend in lighting design has to address-

(a) Human-Centric Lighting: Mimicking natural daylight patterns by adjusting colour temperature throughout the day to support circadian rhythms and enhance well-being. (b) Smart Controls and Integration: Voice-activated systems, app-based control and integration with other smart home devices for personalized lighting experiences. (c) Colour Tuning: Precise control over colour temperature to switch between warm and cool tones depending on the desired ambience, (d) Minimalist Fixture Designs: Sleek, streamlined fixtures with clean lines and integrated LED technology. and (e) Natural Day Lighting: Incorporating natural light patterns and colour variations to connect occupants with the outdoors. ■

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New Parliament of India

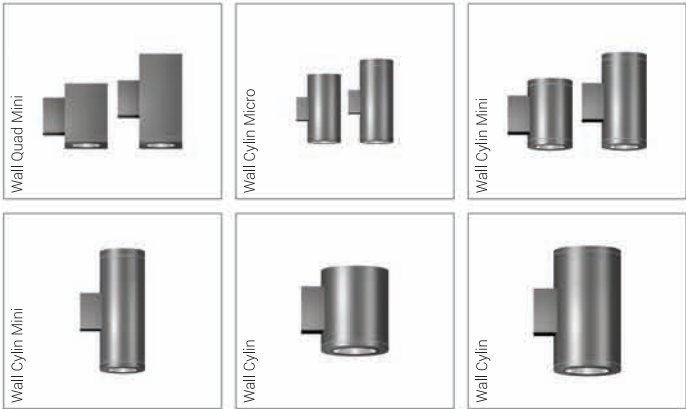
Landscape Redefined



Flood Light Series



Up Down Series



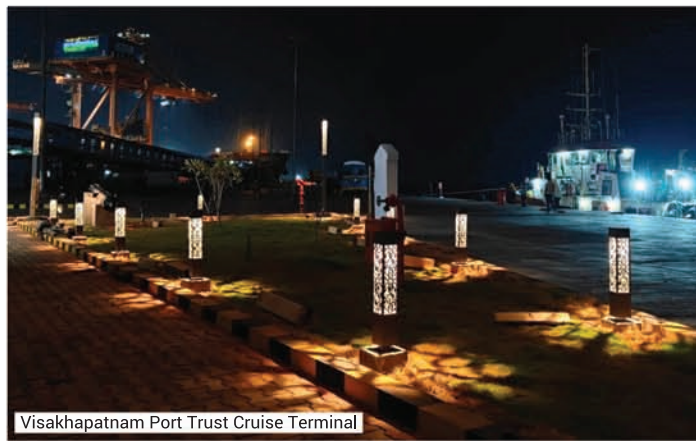
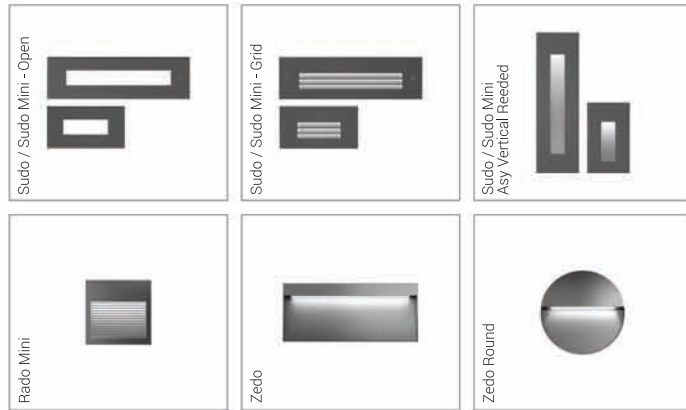
In-Ground Series



Nebula Series



Path Finder Series



Decorative Bollards



Jado Wood Bollards



Elements Series



K-LITE

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Lingel White UPVC, Chandigarh



Expanding its operations to India in 2006, Lingel has since emerged as a leader in the uPVC sector, delivering innovative, sustainable solutions. Under the leadership of **Dr. h.c. Mario Schmidt**, Lingel has transformed the Indian market with a focus on sustainability, energy efficiency, and customer-centric strategies. Today, the company is recognized for its commitment to both cutting-edge design and environmental responsibility, writes **Prasenjit Chakraborty**.



Lingel

L

ingel is a German company specializing in the manufacture of high-quality doors and windows. Established in 1959 in Ellwangen, Germany, by Karl Lingel, the company has grown to become one of Europe's leading manufacturers in the fenestration industry. The story of Lingel with respect to India is an interesting one. In 2005, Lingel sought experts to launch their uPVC window operations in

Revolutionizing India's Fenestration Industry with Innovation and Sustainability



Lingel Factory ariel view

India, and Dr. h.c. Mario Schmidt joined the company. Currently, Dr. h.c. Mario Schmidt is the Managing Director for Germany and India. In 2006, he moved to India and established the business here. Looking back, Dr. h.c. Mario Schmidt confidently states that both the company and he are truly 'made for each other.' Today, it has emerged as one of the best companies in the area of fenestration in India.

After completing his education in mechanical sciences, Dr. h.c. Mario Schmidt was in search of new opportunities. In 1994, a factory manufacturing windows opened in his hometown of Saxony, Germany. Intrigued by the industry and eager to learn more about the manufacturing process and its many aspects, he began working there. This marked the beginning of his journey and long-standing association with the window industry.

"Three decades is a really long time and I have loved the journey from being the youngest plant head to the Managing Director for Germany and India. The journey wasn't without challenges. uPVC was a nascent product, and we had to work tirelessly to create awareness about its benefits," recalled Dr. h.c. Mario Schmidt.

He also appreciated the efforts of UWDMA and the collective push from the industry, noting that they have

reached a stage where uPVC is now widely understood and appreciated.

In 2017, the company launched their Lingel Aluminium 6.0, marking a significant milestone in its journey.

This segment has seen tremendous growth, with projects completed not only across India but also in Nepal and Dubai. "We've expanded into many pockets of India, opened numerous experience centers, and strengthened our presence through a growing network of channel partners. Moreover, the shift from our old manufacturing facility to the new, eco-friendly unit in Rewari symbolizes our commitment to innovation, sustainability, and scalability as we continue to grow and serve a broader market," he said.

Innovative Solutions for Sustainable Architecture

The sustainability discourse in India's building industry has evolved over the previous decade, particularly in the uPVC sector. Lingel has been at the forefront of environmental initiatives since 2011. As the construction sector embraces more sustainable methods, one issue remains- what exactly does sustainability mean? According to Dr. h.c. Mario Schmidt, sustainability is more than just a marketing term; it necessitates an extensive understanding of the materials, energy use, and product lifespan and its recycling. "This is especially true in the uPVC window sector, which has attracted criticism for its reliance on crude oil-based ingredients for production. The challenge is to relook at the demand for energy-efficient, long-lasting, and cost-effective solutions for environmental sustainability," he added.

In India, uPVC has gained popularity because of its energy efficiency, low maintenance requirements, and long lifespan, making it the preferred material for window profiles. However, the sustainability of uPVC is still being debated. Unlike aluminium, which can be recycled forever without losing quality, uPVC recycling is difficult. When uPVC windows are recycled, the



Lingel wood project

material cannot be restored to its original quality, making its environmental impact questionable. Using virgin materials in production raises problems because it is based on crude oil extraction, which is resource-intensive and adds to carbon emissions.

However, advancements in the uPVC sector are addressing these challenges. "In Europe, especially Germany the industry is forced through government norms of using large recycled components in uPVC window profiles. While the outside skin is composed of virgin material to preserve the product's appearance and longevity, the inner core is frequently constructed of recycled PVC. This technology greatly reduces the requirement for fresh crude oil, reducing the carbon footprint of manufacturing uPVC windows. However, this technique is still in its early stage in India, owing to gaps in consumer awareness and a lack of governmental regulations supporting the use of recycled materials," pointed out Dr. h.c. Mario Schmidt.

Despite the rising demand for sustainable construction materials, the Indian market prefers products built entirely from virgin materials. This presents a barrier to sustainable development since several consumers are unaware that uPVC windows built from recycled components can function just as well as those made from new materials and may even be more ecologically friendly. "However, the transition to more recycled PVC depends on educating both consumers and manufacturers and government cooperation to enforce recycling standards," exhorted Dr. h.c. Mario Schmidt.

Lingel actively contributes to this transition by measuring their products' carbon footprints and cooperating with non-governmental organisations (NGOs) to offset emissions through tree-planting projects. Lingel also supports and welcomes this starting stage of incorporating more recycled content into their uPVC window products. "We would like to be the pioneer following this European design model, and gradually educate the market on the environmental benefits of these materials. While the move to fully sustainable uPVC products may take some time, initiatives like these are critical to bringing the industry forward," he said.

However, the path to widespread sustainable development in India's uPVC industry is not without obstacles. In contrast to Europe, where energy principles and minimum recyclable content standards are in place, India lacks such legislation, making it harder to ensure that sustainable practices are widely followed.



Goa Project - Ar. Amit Sardesai

Implementing certifications for uPVC window profiles, similar to energy-efficiency star ratings for windows, may provide essential incentives to promote the change. This would help manufacturers align with sustainability goals while creating a more transparent and consumer-friendly market.

Lingel's Role in Shaping Modern Window Design

Lingel Windows has its expertise in customizing the most unique products for its customers.

UPVC, Aluminium, Oak wood, Timber and a wide range of addons to cater to the customers' needs. Lingel's expertise lies in residential-individual projects—flats, houses, villas, apartments, duplexes, and small, medium, and large housing projects, as well as commercial offices, hotels, hospitals, and resorts.

The company's wide range of products include:

- High-end timber or wooden windows
- The Glass Conservatory
- Window Sill
- Venetian Blinds



Goa Project - Ar. Amit Sardesai



Lingel Project: Residence of Ar. Aarti Golcha

Roller shutters can be operated manually or automatically.

Lingel has released a gamut of new products, including snow white-colored windows. The product consists of white foil on the white uPVC surface, making it appear the whitest of the whites. Given the colour, the company has ensured the cleaning process is easy and effective. "Aluminum System 6.0, launched in 2017, is, in our opinion, the most aesthetic aluminium system available in India," claimed Dr. h.c. Mario Schmidt. As the design is similar to that of a wooden or uPVC window, one can use the complete uPVC hardware range. The options available are entrance doors, sliding and folding solutions, casement opening windows, lifts, and slides.

The company also offers a thermal broken high-end aluminum solution through their system Hueck, providing optimal heat insulation. These windows are produced in Germany, with the final product imported.

Their Oakwood (timber) windows, also made in Germany, are renowned for their texture and classic appearance.

"We have also launched our finest product, which is the perfect combination of glazing and hardware, the Lingel Panzer Glazing (LPG) and Lingel Safety Box (LSB)," said Dr. h.c. Mario Schmidt.

Lingel recently launched five new products:

1. Motorized skylight
2. Roof window
3. Top Hung Roof window
4. New handle selection
5. New powder coating finish

The company has also recently started with modular kitchen, internal partitions and wardrobes for Delhi/NCR regions.

Envisioning the Future: The Road Ahead for Business and Industry

There are many firsts associated with the company, and it rightfully considers itself a trendsetter. Lingel was the first company in India to introduce the double-shutter window back in 2008/2009, where the glass shutters open outward and the mesh shutter opens inward. In addition, it was the first company to introduce an integrated grill provision. Not only are the windows supplied with inbuilt grill security, but by 2010, the company also began making the first glass houses and glass conservatories. LPG glazing and the LSB (Lingel Safe Box) are results of intensive R&D during and after the pandemic.

"We have also created the largest aluminum system that India has ever seen, which is well-adapted by both our potential and existing customers. Regarding R&D in our company, the continuous exchange of information about the latest technology with our German head office has been one of the key factors driving our success. As a result, many products available in Europe can be adapted to meet Indian needs, such as glass houses and conservatories," said Dr. h.c. Mario Schmidt.

"We have modified our products to fit the budget that Indian consumers would be interested in, making them more affordable. This allows us to create a wide market for unique products like glass conservatories, window sills, and many others," he said.

Prioritizing Customer-Centric Strategies for the Future

For over six decades, Lingel has been catering to customers in Germany and Europe. In India, their journey has been tremendous over the past 18 years in terms of growth and expansion.

"We see ourselves not just growing in the number of customers we cater to but also with the number of innovations that makes us a market leader. We believe that customers should always have enough options to fulfil their fenestration requirements. Almost 60 to 70 % of our customers are reference customers and so we can very proudly say that our customers trust us making our journey in the country a very fruitful one," proudly said Dr. h.c. Mario Schmidt.

Over the last 19 years in India, the company has catered to various landmark projects, and the execution of these projects has helped them win many industry awards. No doubt, Lingel has been a very responsible brand over the years, ensuring that the environment is always taken care of. Campaigns to reduce the carbon footprint and educating the youth with skills have all been part of their efforts.

"Lingel Training Academy ensures that our team is fully skilled. Our specialized trainers are from Germany. This training is provided to the team to ensure that customers receive accurate information about the products," concluded Dr. h.c. Mario Schmidt. ■

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Engineered Doors: The Vanguard of Modern Door Manufacturing

By Nitin Vaze

A

revolution in door manufacturing is quietly taking place. Trending are the engineered doors certified under IS 2191 part 2: 2022, the industry is on the brink of significant transformation. The long-standing belief in the inherent superiority of solid timber-infill doors is being challenged by these innovative alternatives.

The doors adhere to four distinct standards tailored to various materials and applications:

- IS 2202 (Part 1): 2023: Wooden Flush Door Shutters (Solid Core Type with Plywood Face Panels).
- IS 2202 (Part 2): 2022: Wooden Flush Door Shutters (Solid Core Type with Particle Board, High Density Fibre Board, Medium Density Fibre Board, and Fibre Hardboard Face Panels).
- IS 2191 (Part 1): 2022: Wooden Flush Door Shutters (Cellular, Hollow, and Tubular Core Type with Plywood Face Panels).
- IS 2191 (Part 2): 2022: Wooden Flush Door Shutters (Cellular, Hollow, and Tubular Core Type with Particle Board, High Density Fibre Board, Medium Density Fibre Board, and Fibre Hardboard Face Panels).

Despite the variations in their construction, the performance criteria for these doors remain consistent, effectively debunking the myth that solid timber doors are superior. These flush door shutters can be classified into two grades: BWP (Boiling Water Proof) Grade, suitable for both humid and dry locations, and MR (Moisture Resistance) Grade, recommended for dry locations only.

By February 28, 2025, all flush doors will be required to display the ISI mark, ensuring they meet mandatory quality control standards. The rigorous Type Tests they must undergo include dimensions and squareness tests, general flatness and local planeness tests and a series of other assessments like impact indentation, flexure, edge loading,

Engineered doors offer numerous advantages: no need to source quality wood, season timber, or apply chemical treatments. They reduce energy and labour costs, boost production efficiency, and deliver superior finishes. Made from eco-friendly, sustainable materials like sawmill waste, these doors also provide enhanced acoustic performance and stability.



shock resistance, buckling resistance, slamming, misuse, varying humidity, end immersion, knife, glue adhesion and screw withdrawal resistance tests.

The Acceptance Tests further ensure the doors' quality and durability through assessments such as dimensions and squareness tests, general flatness and local planeness tests, slamming tests, end immersion tests, knife tests and glue adhesion tests. The advantages for manufacturing engineered doors are numerous. There's no longer a need to search for quality wood, season timber or perform chemical treatments. Energy costs during production are minimized,

labour costs are reduced and production efficiency is increased, all while achieving a superior finish. Moreover, these doors are eco-friendly and sustainable, utilizing high content engineered materials, including sawmill waste and shavings. Additionally, the engineered doors have better acoustic and stability features.

This shift towards engineered doors also aligns seamlessly with the growing trend of modular wooden furniture.

As the modular furniture market expands, the need for versatile, high-quality components becomes critical. Engineered doors, with their superior finishes and adaptability, fit perfectly into this landscape, offering both aesthetic appeal and functional reliability.

Engineered doors represent not just a technological advancement but a sustainable and efficient solution for the future of door manufacturing. By embracing modern materials and standards, the industry can look forward to a future of innovation, productivity, and quality assurance.

NEW PRODUCT MANUALS RELEASED BY BIS FOR DOOR INDUSTRY

The Bureau of Indian Standards (BIS) has very recently published in Jan 2025, Revised Product Manuals for IS 2202 Part 1:2023, IS 2202 Part 2:2022 and IS 2191 Part 2:2022

Download from the latest product manuals for IS 2202 Part 1:2023, IS 2202 Part 2:2022 and IS 2191 Part 2:2022 by giving the reference of IS # in search option.

<https://www.bis.gov.in/product-certification/product-specific-information-2/product-manualsmk/>

Door manufacturers can study the revisions in detail and to apply for BIS license as per the provisions of Revised Product Manuals.

Deadline to obtain ISI marking for Flush Doors remains unchanged 28.2.2025. ■



Ratan Tata with Sharmila Kumbhat

In the ever-evolving business landscape, few leaders shine as brightly as **Sharmila Kumbhat**, **Director of K-Lite Industries Pvt. Ltd.** A pioneer in the lighting industry, she has successfully combined innovation with social empowerment. Her journey from a young entrepreneur to a visionary leader is a testament to her resilience and passion for excellence. With a focus on both technological advancement and empowering women in business, Sharmila is driving K-Lite toward a future of smart, sustainable lighting solutions.

Sharmila Kumbhat: A Changemaker Redefining India's Lighting Industry and Empowering Future Leaders

AU Staff | Mumbai

In the rapidly evolving world of business, few individuals stand out as beacons of both industry transformation and social empowerment. Sharmila Kumbhat, Director of K-Lite Industries Pvt. Ltd., Chennai, is one such figure—a visionary leader who has left an indelible mark on the lighting industry while breaking barriers for women in business. Her story is one of perseverance, innovation, and an unyielding commitment to excellence, with a journey that spans continents and industries, all driven by her passion for transforming the world around her.

EARLY BEGINNINGS: A DETERMINED PATH TO SUCCESS

Sharmila began her business journey at sixteen, working in Metal Craft, a fabrication unit, where she honed her technical and leadership skills. At nineteen, she earned the prestigious "Best Female Entrepreneur Award" from the Chief Minister of Tamil Nadu, marking a significant milestone in her career. Keen to expand her knowledge, Sharmila pursued design studies in New York. During her decade in the U.S., she founded and

operated two successful export-oriented companies, gaining deep insights into global business dynamics. Driven by a desire to contribute to India, she returned to Chennai to join her family business, K-Lite Industries, a leading manufacturer of luminaires and decorative poles. Sharmila introduced innovative design concepts and streamlined operations, transforming K-Lite into a modern, system-driven entity. Her emphasis on quality, modularity, and design excellence not



Chambal Riverfront, Kota, Rajasthan



Parliament of India

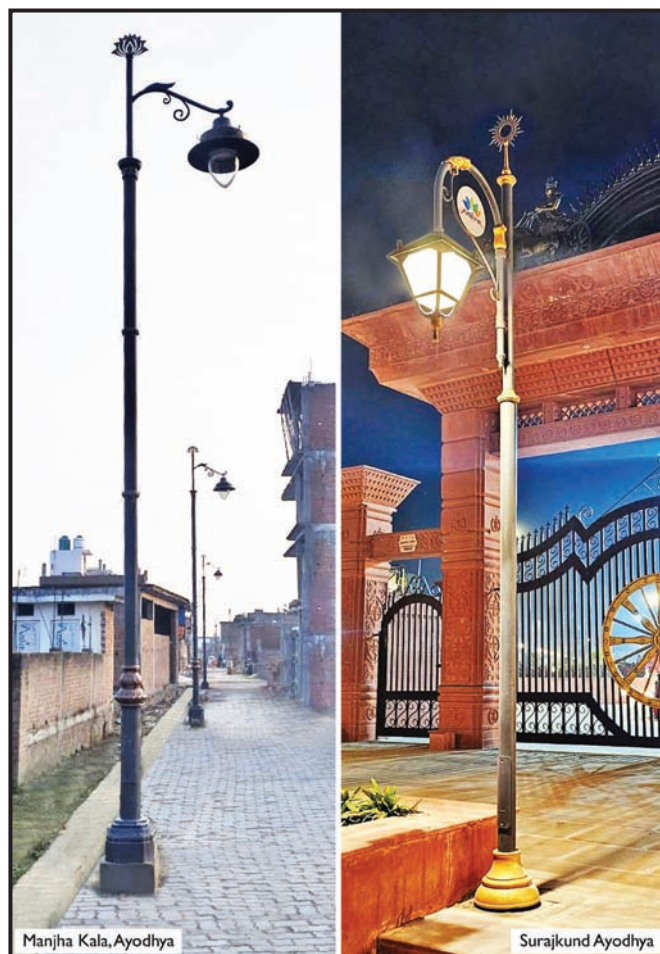
only strengthened the company's position in India but also expanded its global footprint. Under her leadership, K-Lite has supplied custom lighting solutions to prestigious projects, including the Indian Parliament area, the Parliament complex in Cairo, and renowned religious sites like the Golden Temple in Amritsar, Ayodhya, and Varanasi. Her journey reflects her ability to blend design with innovation, driving K-Lite's success both locally and internationally. A cherished memory of hers is spending time with Ratan Tata, whose leadership and values profoundly impacted her.

A CHAMPION OF INNOVATION: SHAPING THE FUTURE OF SMART LIGHTING

Sharmila's visionary approach to business, led her to focus on smart lighting solutions, which are increasingly important as cities around the world move toward energy-efficient and intelligent lighting systems. Recognizing the role that lighting plays in urban planning and smart city development, she led K-Lite's expansion into this space. Her leadership resulted in the creation of K-Lite Europe in London, which serves the growing European market with advanced lighting solutions. This expansion has positioned K-Lite as a leader in smart lighting, catering to the evolving needs of modern urban environments. Collaborating with international designers and consultants, Sharmila continues to push the boundaries of what lighting can achieve. Her philosophy of "taking one step at a time and giving the best" has guided K-Lite's growth, ensuring the company to stay at the forefront of innovation while maintaining sustainable business practices.

EMPOWERING WOMEN: A VISIONARY LEADER WITH A COMMITMENT TO EQUALITY

Sharmila's impact extends beyond the success of K-Lite. She is a passionate advocate for women's empowerment and believes in creating equal opportunities for everyone. At K-Lite, over 50% of the workforce is female, which is remarkable in an industry traditionally dominated by men. Her commitment to fostering an inclusive work environment stems from her belief that everyone has unique strengths and potential. She leads with a



Manjha Kala, Ayodhya

Surajkund Ayodhya

collaborative and empowering style, encouraging her team to embrace creativity and innovation. Her own journey, marked by resilience and determination, serves as an inspiration to women across industries. By breaking barriers in a male-dominated sector, she has shown that, women can, not only succeed but also lead in highly competitive industries. Sharmila actively mentors young professionals, both within and outside her organization. Her leadership has become a beacon of hope for women aspiring to break into entrepreneurship and business leadership.

A VISION FOR THE FUTURE: LEADING WITH PURPOSE AND PASSION

As she continues to lead K-Lite, Sharmila remains committed to innovation, excellence, and empowerment. Her vision for the future is clear - create lighting solutions that not only meet today's needs but also anticipate tomorrow's demands. Her work in smart city lighting, sustainable design, and global expansion has positioned K-Lite as a leader in next generation lighting solutions. Yet, what truly sets her apart is her unwavering commitment to empowering others and promoting diversity.

In a constantly evolving world, Sharmila's leadership is a reminder of what can be achieved through determination, vision, and a focus on both business and social progress. As she continues to expand her horizons, Sharmila remains a guiding force in the lighting industry and a role model for aspiring businesswomen worldwide. ■

‘We Create Aspirational yet Attainable Luxury Living Spaces’



Samir Savla, Partner, Meraki Habitats LLP, shares his insights on the evolving landscape of high-end living in India, in an exclusive interview with **Architecture Update**. He focuses on the intersection of innovation, design, and functionality in his projects. Highlighting the importance of premium features such as Alumil’s cutting-edge window solutions, he explains how his team is creating bespoke spaces that make luxury living both aspirational and attainable.

Q What inspired you to start Meraki Habitats LLP? And how has your vision evolved over the 15-plus years in the real estate industry?

As a child, I was always fascinated by buildings and dreamt of becoming an architect. My passion for shaping skylines and living spaces led me to become a developer—the next closest avenue to fulfilling that dream. As a developer, I have the ability to create more than just structures; I can shape how people experience and interact with their surroundings. The spaces we build influence the way people live, spend their time, and create lasting memories.

As my journey in real estate has evolved, so has my vision. Beyond just building structures, my focus has shifted to thinking beyond the ordinary—creating spaces that are not only functional and beautiful but also ahead of their time. This forward-thinking approach continues to drive Meraki Habitats LLP, shaping environments that redefine the way

people live and experience their surroundings.

Q How do you ensure the seamless integration of aesthetics, functionality, and long-term value in the projects you develop?

At Meraki Habitats LLP, we ensure the seamless integration of aesthetics, functionality, and long-term value by adopting a holistic approach to design and development. Every project begins with a deep understanding of the evolving needs and aspirations of our residents. We collaborate with top architects, designers, and engineers to craft spaces that are not only visually stunning but also highly functional and sustainable.

Our focus extends beyond just building homes; we create environments that enhance the quality of life. Thoughtful spatial planning, premium materials, and innovative construction techniques ensure durability and timeless appeal.

Ultimately, our goal is to create

living spaces that are aesthetically inspiring, practical for daily life, and a valuable asset for generations to come.

Q With your extensive experience in land acquisition and regulatory approvals, how do you navigate the complexities of Mumbai’s real estate market?

Navigating Mumbai’s dynamic real estate market requires deep industry knowledge, strategic planning, and strong regulatory expertise. With extensive experience in land acquisition and approvals, we conduct thorough due diligence to ensure compliance with zoning laws and environmental regulations.

By collaborating with legal experts and government authorities, we streamline approvals, mitigate risks, and accelerate project timelines. Our proactive approach, ethical practices, and ability to anticipate policy changes help us adapt to market dynamics. By combining experience with foresight, we continue to deliver sustainable,

future-ready developments that align with both market demands and regulatory requirements.

Q What are the unique features and amenities of this project in Chembur?

Our Chembur project offers a unique blend of luxury, functionality, and modern conveniences. Key features include:

- Beamless slabs with floor-to-ceiling windows for expansive interiors
- Suspended rooftop pool with glass bottom, 275 ft. above ground
- 40-metre swimming pool on an expansive podium
- State-of-the-art fitness center, spa, and wellness spaces
- Indoor/outdoor entertainment spaces, including a 15-seat movie theatre
- Exclusive lifestyle amenities, such as a cafeteria, laundromat, and business centre
- 30,000 sq. ft. landscaped gardens with Zen garden, hammock lounge, and more
- Double-height grand entrance lobby for a luxurious arrival experience

Q How do you foresee the luxury real estate market evolving in the next few years?

The luxury real estate market is set for strong growth, driven by rising earnings and evolving aspirations. Buyers now seek more than just a home—they desire an elevated lifestyle with world-class amenities, smart design, and seamless indoor-outdoor living.

Features like beamless slabs, floor-to-ceiling windows, rooftop sky pools, and private lounges are becoming highly desirable. Gated community living is also a key priority, offering security, privacy, and convenience. As developers, our focus is on creating spaces that not only meet but exceed these evolving expectations, making luxury living both aspirational and attainable.

Q What made you choose Alumil?

Our decision to choose Alumil was driven by their innovative design



solutions, particularly their freely moving shutters that glide effortlessly. This exceptional operational ease, combined with striking aesthetics and reliable performance, aligned perfectly with our project requirements.

Q What is the highlight / USP of the windows that are installed?

The standout feature of the installed windows is their smooth and effortless movement. This design element ensures that the windows operate with precision and ease, enhancing user convenience without compromising on sleek aesthetics and acoustic performance. These windows not only maximize natural light but also offer a dynamic operational experience, making them both functional and visually appealing.

Q What was the challenge in the project pertaining to the window systems and how did you overcome it?

A major challenge was the absence of a weather shed for the windows, which raised concerns about water protection. To overcome this, we independently engineered a waterproof sub seal. This innovative solution effectively addresses water infiltration issues, ensuring robust protection while maintaining the overall design integrity of the window systems.

Q Any word of appreciation for Alumil / What would you like to say about the installed systems?

We are extremely grateful for Alumil's dedication and support throughout the project. Their commitment to quality, innovative approach, and proactive technical assistance not only helped us navigate challenges but also elevated the overall quality of the installation. The resulting systems exceed our expectations and truly embody the excellence we sought for this project.

Q What's the role of windows and facade in the real estate market?

Windows and façades are crucial in real estate, impacting a building's visual appeal and functionality. They contribute to aesthetic value, comfort, and security through features like effortlessly moving shutters, modern design, and superior acoustic properties.

Q What was the solution given by Alumil for the project?

Alumil provided a bespoke window solution that directly addressed the project's unique challenges. Their system delivered effortless gliding shutters, seamlessly integrated with the overall façade design, and featured an elegant, modern finish. This tailored approach ensured that all performance criteria were met while significantly enhancing the building's aesthetic appeal. ■



The Art of Mixing Textures and Patterns in Interior Design

By Tushar Verma, EVP, REHAU

Interior design is not just about picking a colour palette or arranging furniture; it is an intricate art form that relies heavily on the interplay of textures and patterns to create depth, character, and cohesion in a space. This article delves into the art of harmonizing textures and patterns to elevate your interiors, offering practical tips and creative insights.

Understanding Textures and Patterns

- Texture refers to the tactile quality of a surface. It can be soft, rough, smooth, shiny, or matte.
- Patterns involve repeated decorative elements such as

stripes, florals, geometrics, or abstract designs.

When combined thoughtfully, textures and patterns can add layers of complexity and sophistication to a space.

Key Principles of Mixing Textures and Patterns

1. **Start with a Base:** Begin with a neutral foundation to ground the design. Choose a primary colour or material, such as a soft grey wall or a wooden floor that sets the tone for the rest of the room. This base serves as a canvas on which textures and patterns can stand out without clashing.

2. **Create Balance:** Mixing textures and patterns requires a fine balance. Pair bold patterns with subtle textures or vice versa. For instance, a vibrant patterned rug can be balanced with a plush, solid-coloured sofa, ensuring no element overpowers the other.

3. **Layer Textures for Depth:** Layering is the secret to creating a rich and inviting space. Combine materials like velvet, linen, and leather for a cozy look, or pair sleek glass and metal with natural wood for a modern aesthetic. Adding a tactile element, such as a chunky knit throw or a textured wallpaper, enhances the sensory appeal.

How to Incorporate Textures and Patterns

Creating a harmonious balance of textures and patterns can amplify the depth and aesthetic appeal of your home. Whether through furniture, walls, or accessories, here's how you can thoughtfully integrate these elements:

1. Furniture and Upholstery: Redefining Textural Elegance

Experiment with upholstery fabrics to add layers of texture. For example, pairing a velvet armchair with a woven ottoman introduces a beautiful contrast between soft and rustic textures. Patterns can also be introduced through throw pillows or upholstered accent chairs, which lend a cohesive, dynamic look to your space.

2. Walls and Ceilings: Texture with a Twist

Walls and ceilings can serve as bold canvases for textures and patterns. Consider using natural marble patterns inspired by Mono-Marmoreal to create elegant and timeless surfaces that exude luxury. These patterns, combined with mineral solid surfaces, add a seamless and sophisticated texture to

walls, countertops, or even decorative panels. Laminated wall panels, textured wallpapers, or exposed materials like brick further expand your options for introducing dimension. For ceilings, decorative beams or coffered paneling can bring depth and visual interest to the upper expanse of the room.

3. Accessories and Accents: Subtle Details, Big Impact

Cushions, curtains, and decorative pieces like ceramic vases or metallic frames are perfect for including textures and patterns subtly. A woven pendant lamp, for example, adds earthy texture to a room, while metallic accessories or textured ceramics can complement the overall decor.

Mixing Styles for an Eclectic Look

Blending textures and patterns is particularly essential in crafting an eclectic design style, which thrives on harmoniously juxtaposing elements from different eras and cultures. For instance, pairing bohemian textiles like macramé or kilims with modern, minimalist furniture creates an intriguing visual contrast. Similarly, combining rustic wood textures with sleek metallic finishes can lend a contemporary farmhouse vibe.

To further upscale such spaces, imbuing RCVT (Rigid Core Vinyl Tile) surfaces provides a practical yet stylish solution. These surfaces enhance durability with a wear layer resistant to scratches and corrosion, while also boasting a printed layer that offers diverse patterns and designs, adding an aesthetic touch to any setting.

Why It Matters

Well, having textures and patterns in interior design isn't just about aesthetics anymore. Instead, it's about storytelling. Textures evoke feelings — coziness, luxury, or serenity — while patterns inject personality and energy. Together, they create spaces that feel alive, dynamic, and deeply personal.



Tushar Verma, with his extensive experience and strategic vision, plays a pivotal role in driving REHAU's growth trajectory across India and the SEA region. Tushar Verma, an alumnus of Indian Institute of Management, Kolkata holds a postgraduate degree from NIILM-CMS. Over the years, he has honed his leadership and management skills through key roles with renowned organizations like Kohler, Fisher & Paykel, Grohe, American Standard, HSIL & Pergo. His journey reflects a rich blend of expertise, strategic insight, and a passion for driving excellence, all of which he now brings to his role at REHAU. His appointment aligns with REHAU's emphasis to further strengthen its leadership team and deliver impactful solutions in the building and interior solutions space.

For example, a Scandinavian-inspired living room might use soft, textured throws and cushions paired with geometric patterned rugs to achieve a cozy yet minimalist ambiance. Conversely, a bold Art Deco-inspired room might combine glossy finishes, rich velvet textures, and striking patterns like chevrons or sunbursts.

Conclusion

Mixing textures and patterns is an art that requires a blend of creativity and discipline. By following these principles and experimenting with different combinations, you can design interiors that are not only visually stunning but also emotionally resonant. Right from a minimalistic approach or an eclectic mix, the thoughtful interplay of textures and patterns can transform any space into a masterpiece of design. ■

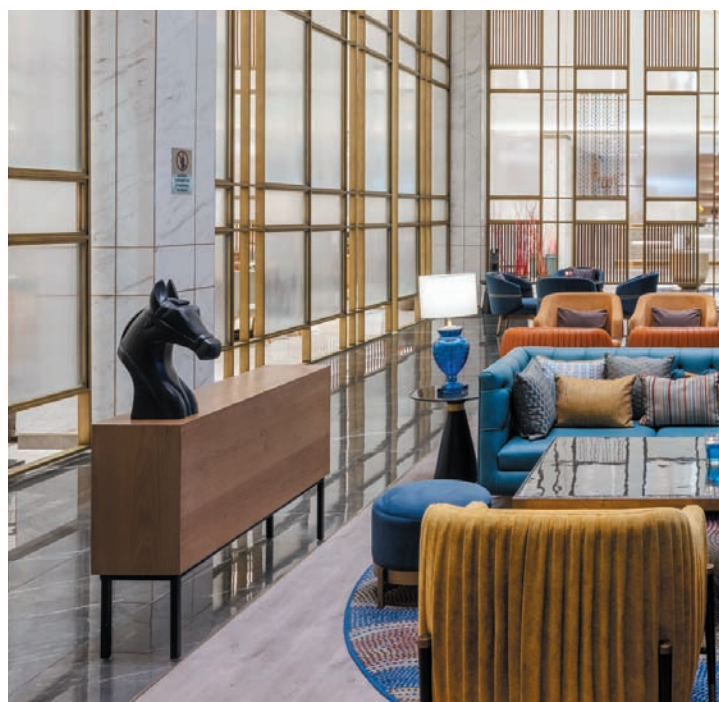




Designer's Group Infuses Holiday Inn with Lucknow's Heritage

In the heart of Lucknow, a city steeped in cultural richness, Designers Group designed a contemporary hospitality space that seamlessly combines functionality with aesthetic appeal. The Holiday Inn Lucknow embodies a harmonious balance where practicality meets sophistication, reflecting the city's rich heritage while catering to the needs of modern travellers.

The interior design brief from the brand emphasized the creation of striking and modern public areas, while the guest rooms were to be kept simple and comfortable. Italian marble flooring in the main lobby creates a striking visual statement, beautifully complemented by a refined reception desk set against a stylish backdrop. Central lounge seating, adorned with vibrant upholstery, introduces a lively energy to the space, while the semi-covered bar features intricately designed metal screens that offer privacy without feeling enclosed.



The Holiday Inn Lucknow, designed by Designers Group, is a contemporary hospitality space that seamlessly blends functionality with aesthetic appeal. Located in the heart of Lucknow, this 850 sq.m. project embodies a harmonious balance of practicality and sophistication, reflecting the city's rich heritage while catering to modern travellers.



PROJECT FOCUS



The expansive layout of the dining area is thoughtfully designed, featuring a central island counter with a buffet, seamlessly paired with an open show kitchen that encourages interaction with dining patrons. This openness extends to the pre-function and banquet areas, where PU-finished doors lend a sophisticated, upmarket feel. Careful planning ensures a seamless flow between these public spaces, avoiding abrupt transitions as guests move throughout the property.

In the guestrooms, a minimalist yet comfortable design philosophy prevails. Subtle touches, such as custom-designed carpets and graphic patterns inspired by Lucknow's cultural heritage, provide a sense of place without overwhelming the neutral palette. This harmonious balance ensures an inviting and culturally enriched experience for guests.

A standout feature of the property is the strategic planning that places all public areas on a single floor, optimizing efficiency while fostering a seamless sense of connectivity and continuity between spaces. The use of materials like antique brass-finished metal, ribbed glass, and vibrant fabrics elevates the aesthetic, striking a balance between luxury and approachability. Metal screens serve a dual purpose, adding visual interest while functioning as subtle yet effective spatial dividers. Through this project, Designers Group has demonstrated a dedication to excellence, crafting a space that not only caters to modern sensibilities but also sets a benchmark in design, serving as a testament to the evolving landscape of hospitality in Lucknow. ■

Fact File

Name Of Project	: Holiday Inn
Name Of Design Firm	: Designers Group
Location	: Lucknow
Typology	: Hospitality
Area	: 850 sq.m. (200 rooms)
Date Of Completion	: December 2022
Principal Interior Designer	: Khözema Chitalwala
Photography Credits	: Prashant Bhat
Design Team	: Hemendra J Kanojiya (Associate Designer)

‘Our top priority is to resolve customer dissatisfaction, complaints, and daily inconveniences’



Q Nitori has made significant strides in expanding its presence internationally. Can you share some insights into the strategies that have worked well for Nitori's global expansion, and how do you adapt to different regional markets?

For Nitori's international expansion, we have adopted a strategic and phased approach. We began our international expansion with our entry into Taiwan and subsequently moved into Southeast Asia. This phased method helped us to gain a better understanding of the regional markets and differences in consumer preference while establishing a robust supply chain network. I must say, this approach has enabled us to offer competitive prices to our customers.

In addition, our efforts to adapt to local culture and through market research helped us fine-tune our product offerings and marketing strategies according to varying regional and customer sentiments.

Q Sustainability is an important topic in the furniture industry today. How is Nitori addressing sustainability in its product lines and supply chain, and what initiatives are in place to reduce the brand's environmental footprint?

Today's consumers are more conscious about the products they buy and are keen to learn about their environmental impact before any purchase. To appreciate this sentiment and to cater to this shift in consumer behaviour,

To cater to the diverse demand, we have curated 8,000 stock-keeping units for our Mumbai store, surpassing the total available in all other Asian countries, says **Masanori Takeda, Executive Vice President in Charge of Overseas Businesses and General Manager, Nitori Holdings Co.** in a conversation with **Prasenjit Chakraborty.**





Nitori has been working on several sustainable initiatives. Our goal is to make our customers feel at ease when they shop at Nitori and assure them their decision is helping reduce the environmental burden. Some of our sustainability initiatives include promoting the recycling of our product packaging and reducing and reusing glass from recycled materials such as PET bottles to help lower the impact on the environment. Our efforts to offer sustainable home furnishings resonate with our eco-conscious customers with high-quality taste, allowing us to establish a unique bond with them.

Q India presents a unique market with its growing middle class and diverse consumer preferences. What specific strategies has Nitori adapted to cater to the Indian market, and how does it differentiate from other furniture brands in India?

A report by UBS Securities stated that India's household consumption doubled over the past decade, reaching USD 2.1 trillion in 2023, and would make the nation the world's third-largest consumer market by 2026. This prospect makes India a key market for Nitori's future growth and expansion goals.

However, given the unique market and diverse consumer preferences, we had to make sure we covered all our bases. So, we spared no effort to make our debut store look and feel welcoming. We stocked up on products quite similar to what we sell in Japan, particularly in the hot and humid regions. To cater to the diverse demand, we curated 8,000

stock-keeping units for our Mumbai store, more than what we have for the rest of the Asian countries.

Keeping in mind India's growing middle-class population, we planned to bring high-quality products at affordable prices, which also gives us an edge over our competition. Additionally, we are working to strengthen our partnerships with the supplier network, which will help us source products nationwide and maintain costs and quality. This way we are trying to provide customers in India with high-consistency quality at affordable rates.

We have also appointed a team from Japan to train the Indian staff and help them understand and adapt to Nitori's ideologies and way of doing things. This particular team began residing in India 6 months before our store opened and helped recruit and train Indian employees.

Q With furniture being such a personal choice, how does Nitori customize its products and offerings to suit cultural preferences in different regions, including India, where interior design styles can vary greatly?

I completely agree that furniture is a personal choice that needs special consideration. This is why at Nitori, we develop products that align with the cultural preferences prevalent in different regions. In this regard, our approach to market research and understanding consumer preferences has been crucial. Currently, our Mumbai store has over 8,000 SKUs. This vast selection of products further

helps ensure we have something for everyone.

To further help consumers find their best fit, we are extending to other cities whose climates closely mimic Japan's temperament. This will help us offer customers products that are better suited to their needs. Additionally, we aim to open several smaller outlets focused on home fashion to offer tailored access to furniture and home decor items. These approaches aim to bridge the difference between cultural preferences and interior needs.

Q As technology advances, the role of AI and smart home integration in furniture design is increasing. How is Nitori leveraging technology in its product development to meet the needs of tech-savvy consumers?

Currently, our team is considering multiple options on how to integrate AI and account for smart home specs in our furniture design. However, at this moment we do not have any concrete details that we can share.

Q The global furniture market is highly competitive, especially with new entrants and established players. How does Nitori ensure its value proposition remains strong, and what do you see as the key factors for continued success in such a competitive environment?

At Nitori, we place a strong emphasis on in-house manufacturing. This approach enables us to establish a system that allows for improvements beyond what specialized manufacturers with decades of experience can achieve. As a result, we are able to pass those benefits on to our customers in the form of competitive pricing. For us, the most important thing is to address and resolve the dissatisfaction, complaints, and inconveniences in our customers' daily lives. This customer-centric approach helps us ensure their satisfaction. Moving forward, we will focus on developing and expanding products that can be enjoyed in coordination with furniture and interior decor. ■

prasenjit.chakraborty@safronsynergies.in

Smart Bathrooms: The Intersection of Tech and Design

By **Ramesh Baliga**, Group CEO, Acquaviva Bathrooms

In India, bathrooms are undergoing a transformation, evolving from purely functional spaces to hubs of luxury, technology, and sustainability. The rise of smart home technologies has extended to bathrooms, offering solutions that cater to convenience, eco-consciousness, and modern aesthetics. With rapid urbanization and increasing disposable incomes, India is embracing this revolution, making smart bathrooms an essential part of contemporary living.

The Indian Smart Bathroom Market

India's smart bathroom market is growing rapidly as part of the broader smart home ecosystem, which is projected to reach ₹79,000 crore by 2027, growing at a compound annual growth rate (CAGR) of 19.6%. Major cities like Mumbai, Delhi, and Bengaluru are leading this trend, with an increasing demand for automated bathroom solutions in luxury apartments and commercial spaces. Local and global brands are competing to capture the market with innovative products that balance design, functionality, and sustainability. In residential spaces, smart bathrooms



are no longer confined to premium homes. Developers in tier-2 cities are also adopting these technologies, incorporating features like motion-

sensor lighting and water-saving fixtures to attract a broader audience.

Technology Redefining Bathrooms

Smart bathrooms integrate advanced technologies to enhance everyday experiences. Automated faucets with motion sensors minimize water usage, while toilets with features like auto-flush, seat warmers, and deodorizing functions add both hygiene and comfort. Smart showers allow users to preset water temperature and duration, ensuring a personalized experience. Smart mirrors are a rising trend, with built-in displays offering updates on weather, news, or traffic while users get ready. Some advanced models also include health-monitoring features like body composition analysis, a growing need in India's health-conscious urban



***Bantwal Ramesh Baliga** is a seasoned industry expert with over 37 years of experience in the building materials sector. As the Group CEO of Acquaviva, he brings extensive expertise in manufacturing, sales, marketing, research and development. A post-graduate in Mechanical Engineering, Baliga has held senior positions at esteemed organizations including Jaquar & Co. Ltd, Villeroy & Boch, and Watertec.*

population. Entertainment features, such as integrated speakers and waterproof screens, are also becoming common, transforming bathrooms into personalized relaxation zones.

Sustainability and Smart Bathrooms in India

Sustainability is a critical factor in India's adoption of smart bathroom technologies. With the country facing severe water scarcity, these innovations play a vital role. Traditional toilets in India use up to 12 liters of water per flush, whereas smart toilets can operate on just 4-6 liters, saving billions of liters annually. Similarly, smart showers can reduce water consumption by up to 50% through real-time usage tracking and misting features. Motion-sensing faucets, which automatically shut off when not in use, reduce wastage by up to 70%. These technologies align with the government's Jal Shakti Abhiyan and Swachh Bharat initiatives, promoting efficient resource usage. Solar-powered water heaters and greywater recycling systems are also gaining traction in urban areas, making smart bathrooms a critical part of India's sustainability efforts.

Design Meets Functionality

Smart bathrooms in India emphasize minimalism and functionality. Wall-mounted fixtures, concealed

plumbing, and frameless shower enclosures are increasingly popular, blending seamlessly with the technology they house. Materials like matte black finishes and brushed stainless steel add sophistication, catering to the aesthetic preferences of Indian homeowners. Manufacturers are tailoring products for the Indian market by addressing challenges like high humidity. Features such as anti-fog smart mirrors and corrosion-resistant fixtures enhance durability and functionality in local conditions.

Real-World Applications in India

The hospitality sector has embraced smart bathroom technologies, setting trends for residential and commercial spaces. Hotels like ITC Grand Chola and The Leela Palace use eco-friendly fixtures, app-controlled lighting, and personalized showers to offer guests luxury and sustainability. In the residential segment, luxury developers are incorporating smart bathroom features as standard in premium projects. These include app-controlled fixtures and energy-efficient lighting, catering to the growing demand for tech-enabled homes in cities like Bengaluru, Pune, and Hyderabad.

Challenges to Adoption

Despite its advantages, the adoption of smart bathrooms in India faces hurdles. The high cost of entry-level smart products—such as toilets priced at ₹50,000 or more—makes them inaccessible to a large segment of the population. Lack of awareness about the long-term benefits of smart solutions further slows their acceptance, especially in smaller towns and rural areas. Privacy and data security concerns are another issue, as IoT-enabled devices collect and transmit user data. Addressing these challenges through affordable products, consumer education, and robust data protection measures will be crucial for sustained growth.



The Road Ahead

The future of smart bathrooms in India is promising, with innovations aligning with the country's focus on technology and sustainability. AI-enabled systems that learn user preferences for lighting, water temperature, and shower settings are likely to become mainstream. Advanced health-monitoring features in mirrors and toilets could provide real-time data, aiding preventive healthcare in urban India. Additionally, self-cleaning tiles and fixtures using nanotechnology coatings could reduce maintenance efforts, a key consideration for Indian households. Integration with renewable energy sources like solar water heaters and the adoption of water recycling systems will further strengthen their appeal to eco-conscious consumers.

Conclusion

Smart bathrooms are a perfect blend of technology, design, and sustainability, catering to India's evolving needs for convenience and environmental responsibility. From water-saving fixtures to health-monitoring systems, these innovations are reshaping urban lifestyles while addressing pressing concerns like water scarcity and energy conservation. As costs decrease and awareness grows, smart bathrooms will likely move beyond luxury homes to become a standard feature in modern Indian living spaces. By investing in these solutions, homeowners not only enhance their daily routines but also contribute to a sustainable and technology-driven future. ■



AIS Windows: High-Performance UPVC & Aluminum Doors & Windows

By **Naveen Karki**, Business Head- AIS Windows



In the ever-evolving construction and renovation landscape in India, the demand for innovative, efficient, and sustainable solutions has never been higher. Homeowners and builders alike are constantly seeking materials that offer durability, low maintenance, and aesthetic appeal. Amidst this growing demand, UPVC & Aluminium doors and windows have emerged as a game-changer, offering unparalleled benefits over traditional materials. As one of the pioneering players in the UPVC & Aluminium space, AIS Windows, a division of Asahi India Glass, stands at the forefront of innovation and quality in engineered window solutions. The company's mission is to transform living spaces with advanced door and window solutions that provide acoustic comfort, security, durability, anti-air pollution and energy efficiency.

"The UPVC & Aluminium doors and windows sector in India has witnessed robust growth, outpacing traditional materials like wood and steel", says Naveen Karki, Business Head at AIS Windows. "With an estimated market size of INR 25,000 crore, only a fraction of this market is organized, leaving significant opportunities for expansion."

UPVC & Aluminum Offerings

However, despite its growth trajectory, many consumers are still unaware of the benefits offered by UPVC as well as aluminum systems over conventional materials like wood and steel. Issues such as moisture absorption in wood during monsoons and high maintenance costs persist, underscoring the need for extensive awareness campaigns and educational initiatives. "We are currently organizing many awareness sessions in architecture colleges and conducting webinars for architects, interior designers, and influencers," says Karki. These initiatives aim to educate the market about the superior qualities of UPVC and aluminum doors and windows, emphasizing their durability, low maintenance, and enhanced performance.

Specializing in both UPVC and aluminum substrates, AIS Windows offers a wide array of products tailored for diverse architectural needs. From standard casement and sliding windows to specialized solutions like slide-and-fold and lift-and-slide doors and windows, the company ensures every product meets stringent quality and performance standards. "Recognizing that the majority of window solutions involve significant glass components, we leverage advanced glass technologies to enhance sound insulation, energy efficiency, and security", explains Karki

Digitization for Customer Satisfaction

At the core of the company's operations is a commitment to transparency, reliability, and technological integration. From initial inquiry to final installation, AIS Windows employs a digitally-driven approach to streamline processes and enhance

customer experience. The moment a customer engages with the company—whether through a call center, a dealer, or a salesperson—the entire journey is digitized. This digitized 'window journey' ensures seamless communication and efficiency, covering every stage, including inquiry handling, lead generation, quotation, order finalization, and manufacturing.

Quality assurance remains paramount at AIS Windows, drawing from best practices established in its automotive division. Rigorous quality checks at every stage, from material intake to manufacturing processes and pre-dispatch inspections, ensure that only superior products reach customers, enhancing reliability and reinforces the company's reputation as a trusted provider in the industry.

Currently, AIS Windows is in the process of implementing a manufacturing execution system (MES) to further improve visibility and control over production. This system will enable real-time tracking of orders through various stages of production, ensuring timely delivery and high-quality output. Another innovative step is the digitization of the measurement and survey process, eliminating errors and improving accuracy, increasing overall operational efficiency.

Cost-effective Solutions without Compromising on Quality

AIS Windows continues to invest in R&D to drive innovation and affordability in its product offerings without compromising on quality. Whether designing specialized windows for kitchens or enhancing UPVC formulations for better performance, the company's R&D endeavors are geared towards advancing the boundaries of window technology in India. From standard casement and sliding windows to specialized solutions like slide-and-fold and lift-and-slide doors and windows, the company ensures every product meets stringent quality and performance standards. "For example, in areas like kitchens and bathrooms, where ventilation and moisture control are critical, we have developed specialized window solutions that address these specific needs", adds Karki. "In addition to working on new uPVC formulations that promise enhanced durability and performance, we are expanding the range of surface finishes available for aluminum windows to ensure greater choice and longevity."

Expanding across Manufacturing, Sales, and Service Domains

Starting its journey in 2012 with a modest 25,000 square feet factory and quadrupling in size five years later, AIS Windows plans to expand its manufacturing capabilities with a new facility in Bengaluru, slated to commence operations in the coming fiscal year. The introduction of aluminum products and venturing into adjacent markets, like shower enclosures, facades, and railings, have added to the company's competitive edge. Today, the company is on track to surpass INR 100 crore in revenue, a testament to its strategic vision and operational excellence. ■

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Quadra Series Directors Table



Directors Table 1



Directors Table 2



Directors Table 4



Quadra Series Directors Table 5



Discussion Table 2





Windows
uPVC & Aluminium

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Protection



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Resistant



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of Shades



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