



## INNOVATIVE WINDOW & FAÇADE PROJECTS

# STAGE EFFECTS

No more are windows and façades taken for granted or deployed merely to hide the rough surface of a building exterior. Façade and window contractors offer a glimpse into what the Indian market can expect that will make heads turn.

BY JAYASHREE KINI MENDES

It's not uncommon for passers-by to admire a good façade or window on a building. Few may understand the engineering that has gone behind that, but short of admiration they are not. In this issue, we speak to 10 window and façade companies that have executed challenging projects and one that may have won them accolades.

These are companies that have been at the forefront of adopting new technologies and materials using new products that bestow a distinctive and modern look, while being able to retain the familiar advantages of a traditional build-

ing. From brickwork and stonework to curtain walling to metallic cladding to glass and steel and tiles and stone veneer, building façades have come a long way.

Similarly, window contractors and fabricators are experimenting with new materials and assemblies that are more energy efficient. The commonly-used energy related properties of windows are U-factor, ability to control heat from solar radiation (SHGC and SC), and visible light transmittance. Most of the technologies are already available in India.

Here, Construction Week India highlights 10 companies that have worked behind the scenes to create architectural marvels.



## **GIFT CITY**

**CONTRACTOR: ALUPLEX**  
**CLIENT: LARSEN & TOUBRO**

In architecture, the façade of a building is the most important aspect from a design standpoint. It sets the tone for the rest of the building. From an engineering perspective, the façade is of great importance due to its impact on energy efficiency and functionality of the building. One such building project, where a façade created magic was the Gift Tower.

Gift Tower is located in the financial park at Gujarat, and the said glazing project was executed by Aluplex as a sub-contract to Larsen & Toubro.

The main innovative system used on the project is the "Aluplex Unitised Five Barrier 100% Water-Proof and Leak-Proof Glazing System". Here the Unitised System was designed for a windload of 2.25Kpa incorporating the integration of Aluminium Vertical Fins of very large dimensions 380mm in one aluminium profile and the challenge was extruding it without coupling two aluminium profiles.

Aluplex designed and engineered One Large Extrusion Profile that was extruded in China and thereafter fabricated/installed the same in India.

The Gift QC 1 Tower was completed in Gandhinagar, Ahmedabad, which is India's first Smart City in a record speed of seven months from the date of work order. The challenge was to manufacture and glaze and install the Unitised Panels.



## Borrowing from nature

Navin Keswani, MD and technical advisor, Aluplex India, highlights how façade glazing is getting innovative with “smart facades” and “high performance building facades” thereby converting structures into iconic statements.

**N**avin Keswani is the pioneer of the Indian façade industry and was awarded the President’s Udyog Rattan Award as early as 1985, from the President of India. The award was for meeting excellence in the design of aluminium windows. Keswani is the founder and MD of Aluplex, and has always strived to redevelop the design sphere, working in close collaboration with the best architects and renowned façade consultants from the preliminary design stage, aiming to provide them with eco-friendly, energy saving and economical façade solutions, and, thus helping them in realising their concepts. In fact, many of the systems used in the Indian façade industry today, were originally developed by Keswani and Aluplex was the first to indigenously design-engineer-manufacture Unitised System profiles in India.



Navin Keswani

### FAÇADE ENGINEERING AT ITS BEST

- A Few Innovative Façade engineering projects in Mumbai by Aluplex India.
- ICICI Bank’s façade demonstrates the use of low energy glass.
- The Building of the National Stock Exchange of India features a skylight and boasts of a complex geometry façade with low emissivity glass.
- CRISIL House features a skylight and an open atrium covered with high performance glass to permit natural sunlight to penetrate and curb air-conditioning costs.
- A Curved Elliptical Façade with media lighting adorns Century Bhavan.
- Godrej’s headquarters feature a state-of-the-art façade with bolted glazing, an atrium with an inclined roof skylight and ceramic stone panels for sun shading, appropriate lighting and energy conservation. The Architect of Godrej One is Pelli Clarke Pelli Architects of USA.

### Tell us about Aluplex and some of its works.

Aluplex started out as a small time window manufacturer in 1981, and innovation was the middle name. Slowly and steadily – the industry was growing and we were into Curtain Walls and Bolted Glazing and Cladding, and then there was no looking back. Today, with constant research and development, Aluplex has continuously improved the quality and performance of the architectural façade systems in India. For each project, we work in close collaboration with the architects from the preliminary design stage itself.

### Explain innovative terms like ‘smart facades’ and ‘high performance buildings’.

High performance Building Facades are buildings with façades that are designed, engineered, manufactured and installed to high specifications, which includes low air permeability, high water tightness, ability to withstand high wind loads, ability to cater to high deflections caused by seismic racking during earthquakes, have excellent acoustic attenuation to cut-out the external noise and most importantly from a sustainable perspective is to have a low U-value (which ensures the heat is kept out), whilst allowing natural light to enter the building, thereby reducing energy costs, and bettering the comfort of the inhabitants of the building.

Smart Facades are a new concept wherein the façade is not just a passive filter between the external and internal environment, but acts as an active component linked to the building physics and HVAC requirements of the building. In one of our projects, Aluplex has used a double-skin louver shading system that changes its form and angle of rotation based on the angle of incidence of direct sunlight such that the form is always changing based on the internal environment of the building. Additionally, we are working on a project where we are using BIPV (Building Integrated Photo Voltaics) wherein the façade glass panels are integrated with photovoltaics so the façade is not just reducing the energy consumption of the building, but is also creating energy for the building consumption. Further, we are also working on a project wherein the façade for a tall tower is incorporated with ventilators, so as to allow natural ventilation for air circulation without the need to open windows at high wind speeds.