

FENESTRATION FOR VILLAS

In contemporary villa architecture, the use of new-age materials in windows and fenestration is driven by the need for durability, sustainability, and sleek design.

Bindu Gopal Rao



PHOTO COURTESY ALUK INDIA



Windows and fenestration are integral to the aesthetic, emotional, and practical aspects of a space, shaping how it is experienced and enjoyed. Photo courtesy: Oria Fenestrations



Large-format windows like floor-to-ceiling sliders are becoming the hallmark of contemporary villas, offering unobstructed views and an abundance of natural light.

Fenestration is a crucial element of any new age architecture, shaping both the interior atmosphere and the exterior aesthetics. Homeowners and architects are favouring larger, uninterrupted glass panes to blur the boundaries between indoor and outdoor spaces. This not only maximises natural light but also creates a seamless connection with nature, offering panoramic views. Clean lines and minimal framing (example, frameless glass systems) are favoured to create a sleek, modern look that emphasises views rather than the window structure. Most of the architects today are looking at minimalistic flushed window systems in which all the frames of the windows are concealed and flushed with the interiors of the houses. "There's a growing preference for oversized windows that maximise natural light and create seamless connections between indoor and outdoor spaces. Clients have been looking out for 6 metre-7 metre openings of a single panel of glass which can be motorised and connected to the home automation of the house so the windows can be operated with remote systems. To enhance comfort and control light, integrated shading devices like louvres, external screens, or operable shading systems are being designed alongside windows. Currently using blinds in between the DGU glasses and having larger size mosquito meshes and blinds are the common requirements in every project," says Amit Jawahar Hemrajani, Director, ORIA Fenestrations.



PHOTO COURTESY: GEETA ALUMINIUM COMPANY

Innovations in aluminium fenestration are transforming modern architecture, with sleek, minimalistic frames, vertical sliding windows, and other contemporary designs that enhance both functionality and visual appeal.

THE RIGHT CHOICE

Architects consider factors such as max size available, section thickness (sleek), functionality, aesthetics and design style, thermal break, high DB reduction, security and privacy, higher wind load capacity, cost and budget, air/water tightness to avoid leakages, and choice of materials with focus on sustainability when choosing fenestration. Amit explains, "We have executed a facade system for a high-end residence which is completely bullet proof where the client's safety had to be taken at utmost priority. In one of the projects, the client wanted the glass to change its opacity depending on the timings of the day to make it comfortable for the people inside. For a luxurious penthouse owned by a top industrialist, we have designed a system for accommodating a single glass panel of 8.5 metre in width and 3.5 metre height, with a weight of 2,500 Kgs. It is a one-of-a-kind glass to be ever manufactured and executed globally. It was a challenging project for ORIA as we had to use 74 mm thick glasses."

MATERIAL MIX

Aluminium is the material of choice in contemporary villa design due to its durability, lightweight nature, and the ability to create ultra-slim frames for larger



Amit Jawahar Hemrajani, Director, ORIA Fenestrations.

glass panes. "The glazing itself plays a critical role — double or triple-glazed windows with low-E coatings, laminated glass for safety, and acoustic insulation are highly preferred in high-end villas. Good quality glazing also helps reduce heat gain, cutting down on energy consumption while maintaining indoor comfort. Furthermore, we see greater interest in



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High-performance glazing options, such as triple glazing and low-E coatings, are being used to improve thermal performance and reduce energy consumption.