

Sealed Blinds from Unicel Offer Flexibility, Low Maintenance

Placement of blinds can be a dilemma—should they go on the inside or the outside of a window? The best place to put them, some argue, is *within* the glazing, where they are potentially maintenance-free, protected from dirt and possible damage. A handful of manufacturers offer this option, but the most versatile offerings come from Unicel Architectural Corp., based in Longueuil, Québec. Unicel's product, known as Vision Control, offers adjustable interpane louvers combined with any type of glazing.

Depending on the needs of a project, the extruded aluminum louvers in the Vision Control system can be fixed in place or mounted in a rack-and-pinion system for rotation by crank handle, thumb-wheel, or motor. Motorized systems can be integrated with daylight sensors or other building-automation systems. Vision Control does not offer up-and-down movement of the louvers. Unlike corded venetian blinds, which don't fully close, the Vision Control louvers interlock when closed, blocking out 99.9% of the visible light, according to Unicel specifications. Glossy white is the standard color, for good light reflectance, but other colors are available on request.

The louvers sit in a completely sealed and moisture-free 2" (51-mm) space between two panes of glass. Unicel fabricates each sealed-glass unit based on an architect's specifications, using any type of glass required for a project, including glass with low-emissivity (low-e) coatings, although it avoids soft-coat low-e, which could be scratched by the blinds. Depending on the glass specified, costs can range from \$50–\$100/ft² (\$500–\$1,000/m²) of glazing, according to Viviane Chan, marketing and sales manager at Unicel. The company ships about 5,000 units per year.

Depending on how the Vision Control system is set up and used, it can accommodate a variety of needs: shading, reflection of daylight deeper into the interior, prevention of heat gain or loss, and privacy. The large air gap in the window also gives the units good acoustical performance, with a Sound Transmission Class (STC) of 43, compared with single- or dual-pane glazing, which typically has values in the 20s.

Venetian blinds are often used in cooling seasons to reduce heat gain, but because they are located inside, their only significant benefit is glare control—the heat is already in the building. Exterior shading is ideal for blocking heat, but Unicel's interpane louvers effectively reflect heat before it comes inside, particularly in concert with a low-e coating on the outside layer of the inside light.

To test the energy benefits of Vision Control compared with standard double- and triple-glazed windows, Unicel sponsored computer modeling through the Solar Buildings Research Network, a Canadian research organization. In the simulations, which modeled conditions in Toronto and Los Angeles, Vision Control offered significant energy benefits compared with double-glazing under both heating and cooling conditions. Triple-glazing performed moderately better in heating conditions, but Vision Control performed much better in cooling conditions, particularly for south-facing façades.

Bill Dilatush of H&R Architecture specified Vision Control glazing for hallway windows to patient rooms for the Children's Hospital Denver. "We want to have visual access, and then there are times when we have to



Photo: Unicel Architectural Corp.
Vision Control louvers, shown here in a skylight at Ohzuma Gakuen University in Tokyo, Japan, are adjustable blinds sealed within the glazing units.

close that off," he described. "Blinds are always the easy solution, but you just can't keep them clean enough in an environment like that." Dilatush said that Unicel was responsive to the project's needs and added, "I was really impressed with the engineering."

There have been some reports of sealed blinds leading to excess heat being trapped in a window, leading in turn to failure of the units. According to several experts *ENB* spoke with, these problems are associated with poorly thought-out combinations of low-e coatings, or tinted glass, which tends to absorb heat. With proper design, and use of Vision Control's high emissivity blinds, thermal failure is unlikely to be a problem. The units come with a 10-year warranty, including louver operation, and all parts are made with UV-stabilized materials.

—Tristan Korthals Altes

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