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| NZB: DAYLIGHTING |

Adventures in Daylight Management

A few choice daylight management technologies produced create simple, yet cost-effective solutions for maximizing daylight and minimizing glare. Highly effective management techniques present end user solutions that integrate into building designs that ultimately bring net zero to the forefront.

Barbara Horwitz-Bennett has been reporting on the architectural industry for the past 15 years. She covers glazing and daylighting for *Architectural Products*, and in 2011 contributed to an important industry white paper on net-zero buildings.

From operable louvers integrated with window blinds to intelligent shading to unique perforated aluminum screens, architects are delivering a variety of creative technological solutions to maximize daylighting and limit glare. Take an interesting adaptive-reuse project for Cuningham Group Architecture's new Denver offices, for example. In this case, the architects—acting as both the designer and end user—were working with large 6-ft. by 9-ft. window openings with a large central 1970s-era bubble skylight, making it unpractical to alter the exterior façade with shading devices nor make any changes to the size of the openings. As a result, the goal was to address the challenges from inside the envelope.

"The east and the south façades were the primary focus where we needed user-managed control for both privacy and direct beam sunlight control while still allowing for view of the exterior area and sky," relates Paul Hutton, FAIA, chief sustainability officer, Cuningham Group Architecture, Denver. The original plan was to specify full-length roller shades, but after seeing Indoor Sky's Dayliter Shade product at a trade show, the architects were intrigued by the technology.

"The product offered a unique opportunity to create an upper daylight zone in the glazing that could be managed separately from the lower view pane of the opening," explains Alan Doggett, Associate AIA, LEED AP, BD+C, with the firm. With the system in place, as the soon moves throughout the day, Cuningham staff can lower the roller shade portion of the window to manage direct sunlight while leaving the upper louver portion open to continue bringing daylight into the space.

"During early morning hours or winter months when there are low sun angles, the upper louvers may be closed and easily opened when more favorable angles allow," adds Hutton. "Having multiple louvers per window is also a very simple solution, as compared to installing a deeper interior sunshade. It has allowed our staff to have direct control over their daylit environment."

As for the north and west elevations, the architects added an aerogel insulation-filled polycarbonate panel insert into the opening to manage heat transfer and diffuse the natural light source. "Since the north side faces a breezeway, where sunlight is more of an indirect source of light, the strategy there was more focused on privacy and a branding opportunity with application of translucent window film," Doggett explains.

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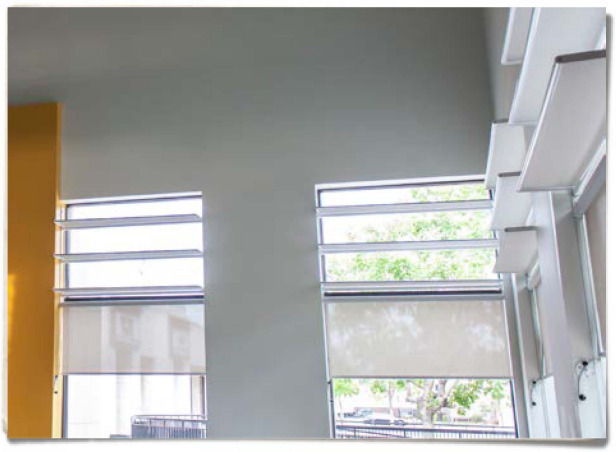

Architects are delivering a variety of creative technological solutions to maximize daylighting and limit glare, and it can be a matter of implementing simpler strategies.