



Thinking outside the big box

AN ARCHITECT'S USE of an innovative product has allowed a big-box store outside Atlanta to begin controlling daylight as if it were on a dimmer—saving the discount retailer some \$180,000 in electrical costs annually. The IntelaSun translucent daylighting panels, which are manufactured by CPI Daylighting just outside Chicago, will be featured this November in Build Boston's new Innovation Pavilion on the tradeshow floor.

"The technology is a tool, not an end in itself," says Larry Levine, BrandsMart USA's vice president of operations. "We were willing to try it because we wanted to construct a building that could be operated for less money than those that had come before it, and we decided that any technology we used had to pay for itself in five years or less."

Under the leadership of architect Ken McGee—whose firm in Daytona Beach, Florida has provided design services to the discount retailer for more than 20 years—BrandsMart pursued LEED certification for its newest building in Gwinnett County, Georgia. In the process, both the architect and client lost faith in using LEED as a real means to an energy-efficiency end.

However, the team's intensive investigation into how to bring more daylight into the 118,000-sf space to qualify for more LEED points eventually led to CPI. And Levine reports he "would use the skylights again in a heartbeat."

Although CPI has supplied daylighting products for two decades, its pioneering IntelaSun technology takes the concept to an entirely new level. The translucent 1.2-inch-thick polycarbonate glazing panels come with built-in, transparent, revolving "Rota-blade" cylinders, which can be opened and closed to control the level of light and solar heat gain like Venetian blinds. The panels also have built-in intelligent light controllers and an embedded program that senses the daylight outside the building. When the panels are in manual mode, the user selects their light-transmission property by setting the angle of the Rota-blades, which stay at the selected position until the user chooses a different angle or switches to automatic mode. In automatic mode, the user selects the desired level of light for the space, and the system maintains that level by continuously adjusting the angle of the Rota-blades and the panel's light-transmission properties according to the

sun's position and daylight conditions.

"The product allows us to turn all the lights off during the day," says Levine.

Levine estimates that in a typical showroom of the Gwinnett County store's size (of which BrandsMart has seven or eight), the electric bill averages \$32,000 to \$34,000 a month. For the showroom with the CPI daylighting panels, the electrical bills have been averaging only \$17,000 or \$18,000 a month. Although the numerous energy-saving systems installed in the project make it difficult to attribute all those savings to the CPI product, Levine says that the skylights "are likely responsible for the lion's share."

McGee, the architect, says the use of the daylighting technology has other less-quantifiable benefits.

"BrandsMart stores are about half the size of a Super Walmart store—which is to say, 50 percent of very big. Some stores stretch

200 feet in one direction, which is a long way to natural light. As a result, the stores tend to feel cavernous," says McGee. "But with these skylights, there is daylight all over the place. It adds a whole new dimension to the interior. The atmosphere has become a whole lot brighter and more cheerful, which is an enormous benefit in a sales situation."

Dan Cherney, East Coast manager for CPI Daylighting, says hopefully the discount retailer will see even further rewards for taking such an innovative approach to its operations.

"Costs are going up. Should retailers pass them along to their customers? Or is there a better way to build the box? And that's what took place here at this store outside Atlanta," says Cherney. "The next step for us is to analyze the data, because in most of the studies we've seen, spaces that have daylighting control not only save money, but see better sales."

Visit CPI Daylighting at Build Boston's Innovation Pavilion November 17 through 19; register to attend at buildboston.com. Images above courtesy CPI Daylighting.