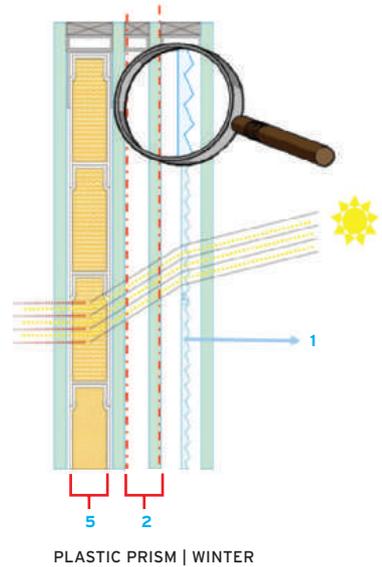


**PRODUCT FOCUS SUSTAINABLE SOLUTIONS**

We cover a sculptural wind turbine, a wall board that traps VOCs, and other unexpected green product options. RITA CATINELLA ORRELL



**New Breed of Glazing Uses Salt Hydrate PCM**

**INTRODUCED TO THE** North American market last June at the AIA show in Miami, the GlassX glazing system incorporates a salt-hydrate phase change material (PCM) that stores energy from the exterior temperature and reuses it to either heat or cool the building as needed, putting less pressure on the mechanical HVAC systems. Achieving U-values up to 0.08, GlassX is a quadruple-glazed sealed unit that is made up of three separate insulating glass units (IGUs), a prismatic solar filter that deflects high-angle sunlight, two low-E coatings, and a PCM core. "GlassX would have a similar R-value to something like concrete, which is pretty much unheard of in the glass-facade arena," says Ryan Dennett, president and C.E.O. of Greenlite Glass Systems, the exclusive distributor of GlassX in North America.

According to Dennett, GlassX not only meets but exceeds the requirements of current building-energy-code standards. "People thought at one stage that glass buildings would be a thing of the past because you were going to have to have a concrete building with little punch-out windows in it. GlassX allows you to still have that glass facade and include visionless, spandrel areas that will still let light through but will meet the new standards for heat loss in buildings." As it is translucent and not transpar-

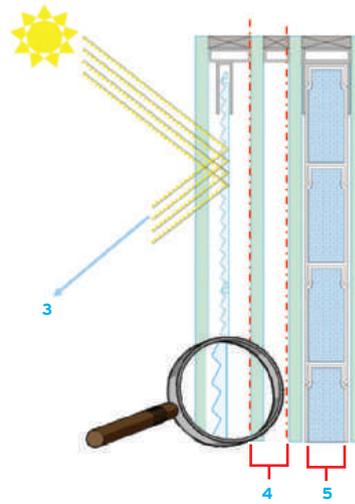
ent, in either its solid or liquid state, the glazing is better suited for spandrel and lower transom applications.

**An ice cube that doesn't melt**

The salt hydrate in the PCM is specifically formulated for the building market to melt and freeze within a narrow range that is close to room temperature. The 0.8-inch-thick section of the PCM can store as much heat as 9 inches of concrete; it will then release that constant heat at a rate of 16 to 30 BTUs over a 20-hour cycle. Depending on the usage and the amount in the building, interior temperatures can be reduced by 4 to 6 degrees in Celsius in the summer months. "You can think of the PCM as an ice cube for a building that doesn't melt," says Dennett.

Developed in Switzerland over a decade ago and used in many European buildings, the glazing is now being considered for projects in North America. In comparison to \$20 to \$30 a square foot for typical triple glazed IGUs, GlassX costs about three times as much, averaging \$60 to \$90 per square foot. "But you are looking at a payback time of five to 10 years given your up-front savings in HVAC systems and long-term energy savings," says Dennett.

One of the architecture firms currently considering GlassX for an upcoming project is SRG Partnership



- 1 HIGH TRANSMISSION OF RADIATION BY LOW ANGLES OF INCIDENCE
- 2 LOW-EMISSIVITY COATING
- 3 RETRO REFLECTION BY HIGH ANGLES OF INCIDENCE IN THE SUMMER
- 4 LOW-EMISSIVITY COATING
- 5 PHASE CHANGE MATERIAL

- 1. The facade of this senior residence facility in Switzerland designed by Dietrich Schwarz uses 1,600 square feet of GlassX.
- 2. The glazing was used as a lower transom for this Swiss residence designed by architect Felix Kuhn.

in Seattle. According to project designer Christopher Colley, SRG is possibly using the glazing for a new nursing and health-science building for Everett Community College in Washington state. While the product's newness and cost may be hurdles, particularly for publicly bid projects, Colley thinks it is an intriguing new option for spandrel glass as his firm starts to design buildings for The 2030 Challenge. "This is a product that can potentially allow us to have more design freedom and still have a very high-performing building." Greenlite Glass Systems Inc., Vancouver, B.C. [www.greenliteglass.com](http://www.greenliteglass.com) **CIRCLE 200**



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