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ARCHITECTURE

# ELECTROCHROMIC LANDMARK

## Pennsylvania's Grove City College is merging science, engineering, and mathematics into one sustainable building

Students at Grove City College know the iconic clock tower at Rockwell Hall. Administrators were hesitant to remodel the building because they didn't want to destroy an 80-year-old school symbol. "We were concerned there might be an outcry from alumni because we were talking about replacing it," says Thomas Gregg, vice president of operations. "But they were really in favor of it and said the facility being replaced was long overdue."

**PROJECT**

**Location** Grove City, PA
**Size** 60,000 ft²
**Completed** 2013 (expected)
**Program** 2-story atrium, classrooms, existing building addition

With the approval of alumni, the school, located in Grove City, Pennsylvania, hired Philadelphia-based architecture firm Ballinger to remodel the science, engineering, and mathematics building with sustainability in mind. Grove City College initially had planned to renovate and add onto its existing science and engineering buildings, but as planning began, school officials realized they needed much more space than an addition would offer. They decided to create a new, energy-efficient, 60,000-square-foot building that would combine the science and engineering departments and facilitate a greater amount of interdisciplinary work.

During Phase I, scheduled for a 2013 completion, the existing buildings will remain in place. Phase II, which is still in the design stage, involves razing and replacing the existing science building and repurposing Grove City College's engineering building. Throughout, college officials are placing a strong emphasis on incorporating green elements into the new building's design, provided the college can afford it. "We want to do things that make economic sense for us," Gregg says. "We're very interested in reducing our energy consumption and limiting our waste stream as much as we can."

**TEAM**

**Client** Grove City College
**Architects** Ballinger

Some sustainable suggestions came from Ballinger while others came from Gregg and his team, such as the high-efficiency—and high-tech—windows used for the new building's two-story atrium. SageGlass, an electrochromic glass that uses automatic digital controls to adjust the amount of light that is let in to the building, was discovered by Gregg at facilities-development conference.

At Grove City College, the tintable glass will help minimize the effects of the bright morning sun, which filters into the east-facing atrium, and control the building's heat factor. "Whenever the sun is shining, in warmer months, we can have a higher tint level that will reject more heat," Gregg says of the system. "And in the winter months, we can limit the amount of tint to make it comfortable for people reading in the room but take in as much heat as we can acquire."

Because the standards changed during the planning process, the school ultimately decided not to apply for LEED Silver status, but it did take a few cues from its handbook. Eco-friendly features include chilled beams,

which will reduce air-handler capacity by 40 percent, enhance air quality, and reduce waste. They were suggested by Ballinger, based on an experience incorporating a similar system in a science building for a higher-education project in South Carolina. “The technology is such that water circulating in the chilled beam needs to be just above the dew point so you don’t get condensation,” Gregg says, “but it provides accurate cooling for the area where beams are located.”

**GREEN**

**Certification** Not applicable
**Windows** High-efficiency electrochromic windows with digital tint controls from SageGlass
**Energy** Super-efficient chilled-beam system, low-flow fume hoods

Low-flow fume hoods are another Earth-friendly element, designed to improve airflow and help ventilate areas where toxic or potentially hazardous fumes, gases, or vapors are present. “We didn’t go through a cost analysis,” Gregg says. “It just made sense to do it. If you can reduce your air-handling capacity and your outside-air intake—so you don’t have to heat or condition that air—it’s a no-brainer.”

Like many operations personnel, Gregg says he experienced some pushback about the initial upfront cost of the green elements, though they reduce costs over the long haul. Grove City College, however, ultimately decided to limit other features of its master plan in order to fund the sustainable additions, namely reducing its building layout by a floor, removing space allotted for future expansion, and altering some of the finishes within the building. “We definitely had some cost pressure on the project, but we looked at it holistically,” Gregg says. “Saying we can’t afford the green elements would just be foolish in the long term—we needed to incorporate them.”

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