AIA/COTE TOP TEN GREEN PROJECTS 2008

Garthwaite Center for Science & Art

Location: Weston, MA **Architect:** Architerra, Inc.

SUSTAINABILITY SNAPSHOT

- Percent of total building area that is daylit: **90**
- Percent of building that can be ventilated or cooled with operable windows: **90**
- Precipitation managed on site: **100**
- EPA Energy Reduction:
- Percent total energy savings: **38**
- Lighting Load after Controls (W/sf): **0.67**

Overview

The Garthwaite Center at the Cambridge School of Weston houses laboratory classrooms for biology, chemistry, and physics; lab prep rooms; faculty offices; meeting space; a science display atrium; a large community gathering gallery; a small, secure art gallery; an integrated studies classroom; independent study space; and a campus data center.

In addition to focusing on its environmental goals, the project team had to contend with space and budgetary requirements. The site consisted of sloping bedrock, and the school wanted to preserve existing trees. In addition, the building had to accommodate all-school art shows, blend in with the existing campus, and create a popular student space on campus.

Jury Comments:

"This fits its context and has a subtle strength about it." **– Marvin Malecha**

"There is a lot of education here; this is a true teaching tool. The students participated in the design of the building. They treat all their wastewater, and these strategies are integrated into the pedagogy. There are only three small spaces that are conditioned in this building; all other spaces are naturally ventilated." **– Rebecca Henn**

"At first, this seemed very straightforward, but the interior views really illustrated the continuity between the interior and exterior spaces." **– Susan Rodriguez**

"This was a relatively simple building that one could have easily passed by at first glance, but grew on you and become more impressive the deeper you looked at it. There is a strong connection between the interior and exterior environments, and the extensive green strategies were made clearly visible so that the building itself became a teaching tool." **– Gail Brager**

Primary Design Team Members

Ellen Watts
Dan Arons
Dan Bernstein
Cambridge School of Weston
Marc Rosenbaum, P.E.
Anthony Consigli
Terry Louderback
Edward Allen
Paul Carey
Peter Richardson
Jose Alminana
Mark Haley

Sustainable Design Intent & Innovation

The project team's environmental goals included preserving as many trees as possible to maintain the wooded setting of the campus. The building was designed to integrate with the site, with floor levels arranged to mimic the hillside they sit on. The partial green roof manages stormwater, lowers heating and cooling loads, and shades the building from solar heat gain with overhangs.

The building is oriented to the south to take advantage of daylighting and passive solar heating opportunities. A heavy timber frame was left exposed to minimize finishing. In addition, several of the building's systems were left exposed to offer teaching opportunities; an enthalpy heat wheel, wood pellet boiler, and toilet composters can all be seen by students.

Full project profile:
www.aiatopten.org/hpb/overview.cfm?ProjectID=985

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