

# Eco-Friendly Campuses As Teaching Tools

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Sustainable design projects offer academic communities the opportunity to make the design and operations of their campuses part of the larger lessons of social and environmental responsibility that are integral parts of higher education. In no place is that demonstrated more clearly than in New England, with its long commitment to environmental stewardship.

A design process that engages the campus and the broader community gives students the opportunity to participate in community dialogue and a collaborative planning and design process. When Bates College encountered strong community opposition to a development at the base of Mount David in Lewiston, Maine, it framed the design process as a forum for dialogue where concerns and solutions could

be discussed openly and resolved collectively. This approach transformed a process from one that could have been adversarial to one that was collaborative.

Increasingly, college campuses are seeking ways to ensure that the campus itself and the buildings in which students live and learn reinforce the institution's commitment to sustainable design, operation and education. From a depth of more than 1,500 feet beneath its campus, the geothermal wells at Colby College in Waterville, Maine, provide a rich source of data on the dynamics of geothermal systems. The college has, in effect, created its own case study regarding these systems, as it seeks solutions to such challenges as the operation of geothermal systems during power failures and the management of excess water generated by the process. With Colby's campus serving as

a living lab, the solutions developed here will have a wider impact and establish the college as a leader in environmentally sustainable design.

Education about sustainable practices is not limited to the classroom, as the new residential village at Bates demonstrates. The complex reflects the emphasis on sustainability in the college's 2003 facilities master plan.

Lights dim in response to the amount of natural light and use motion detectors to switch off when the space is unused. A plaque in the complex's common space provides residents with information on how to be more environmentally engaged, including tips on diverting recyclables from the waste stream and reducing energy consumption. By strategically locating recycling bins, institutions make recycling a convenient and responsible alternative to throwing things away.

## How Green Are U?

*The Princeton Review* cites New England institutions on sustainability

For this year's annual publication of college rankings, *The Princeton Review* introduced a "Green Rating" that evaluates colleges and universities on their environmental policies, practices and academic offerings. It also evaluates whether students have a healthy and sustainable quality of life, how well a school is preparing students for a world defined by environmental concerns and opportunities, and how often the school implements environmentally responsible policies.

Bates College, College of the Atlantic, Harvard College, the University of New Hampshire and Yale University received perfect scores.

Some specifics:

**Bates** opened two new buildings with LEED-silver equivalence and became the first Maine school to partner with ZipCar to bring two Toyota Priuses to campus. Bates also retains 28 percent of its food budget for local, natural and organic purchases.

**College of the Atlantic** is now net-zero for carbon emissions. All electricity on campus comes from renewable hydropower, many buildings are heated with renewable wood pellets and new dorms have composting toilets, triple-paned windows and metered showers.

**Harvard** has the largest green campus organization in the world, consisting of 24 full-time professional staff and 32 part-time student employees. Harvard has committed to a 30 percent reduction of greenhouse-gas emissions (below its 2006 levels) by 2016 and established a \$12 million revolving fund to provide interest-free loans to those in the community with a green campus project.

In January 2009, the **University of New Hampshire** will become the first university in the United States to use landfill gas as its primary energy source, reducing greenhouse-gas emissions an estimated 75 percent below 1990 levels. The campus also includes an organic dairy farm and education/research center.

**Yale University** is committed to reducing its greenhouse-gas emissions by 43 percent below 1990 levels and has achieved a 17 percent reduction in the first two years of its effort. Yale uses solar, wind and geothermal energy produced on campus to reduce its dependence on fossil fuels, is building a second co-generation power plant to maximize fuel efficiency and gives incentives to employees who live near campus or carpool.

Informational plaques may alert students to the sustainable features that may not be otherwise apparent to the casual observer. In some buildings, cutaway portions of facility walls are exposed behind glass to reveal the insulating elements that lie behind the wall's surface.

### Campuses are seeking ways to ensure that the buildings in which students live and learn reinforce the institution's commitment to sustainable design, operations and education.

Interactive features such as touch-screen building dashboards provide students with real-time information on the building's energy and water use. As the inclusion of such dashboards increases in future dormitory projects, residents can be invited to work with dorm-mates to take up a dorm vs.

dorm "how low can you go?" energy use challenge.

Other approaches may be more passive, but manage to change behaviors nonetheless. Students accept concepts of water conservation by using the waterless urinals and motion-activated faucets that are provided at an

increasing rate in campus facilities. The new emphasis on locally grown produce and the composting of food waste in college and university dining halls makes a positive statement to student diners.

By taking a strategic approach to student engagement in an institution's

sustainable design and operation decisions and practices, campuses can turn their socially responsible policies into competitive advantage. When making college choices today, prospective students weigh an institution's commitment to social, economic and environmental leadership. A campus that presents students with an environmental classroom in the largest sense of the word offers them an academic community in which they can fully learn, live and engage the changing world that awaits them.

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