An Eco Education

Colleges and universities are finding innovative ways to promote green technologies and sustainable practices, saving money and appealing to eco-conscious students through their efforts.

By Nicholas Gilewicz for MSN Local Edition

Rutgers University harvests the sun on its expansive Solar Farm.

Classes at most American colleges and universities have just started, and students there are more concerned about environmental issues than ever before. According to a 2009 Princeton Review survey of 16,000 students, 66 percent said they wanted to know about a college's environmental stances and commitments; 24 percent said that information would very likely affect their choice of schools.

Schools are listening.

"They're responding to customer demand, if you will," says Mark Orlowski, the founder and director of the **Sustainable Endowments Institute** in Cambridge, Mass. "They're trying to provide the best education to their students, and the students are interested in how robust the school's sustainability programs are."

Since 2007, the institute has published the **College Sustainability Report Card**, which now grades 330 colleges and universities on their sustainability efforts. The next report card will be released in October.

"Schools are frequently coming up with new and innovative programs, and modeling things that have come online elsewhere," Orlowski says.

Here are four steps -- some big, some small, all efficient -- that higher education institutions are taking to reduce negative environmental effects and improve their campuses and communities.

Plans for the Solar Strand at UB were developed by landscape architect Walter Hood.

Under the sun

Until recently, one main entrance to **University at Buffalo** campus in Buffalo, N.Y. has been, essentially, a muddy field. Not for long. Ground has broken for the "Solar Strand," an array of 5,000 photovoltaic (PV) panels modeled on strands of DNA and designed by an internationally renowned landscape architect, **Walter Hood**.

"Hopefully [the experience] will be nice and strange," Hood says. "Have you ever hung out underneath 5,000 PV panels? I talk a lot about hybrid space and about trying to break down these single-use spaces. They're not sustainable. I'm not taking that approach of mitigating anything about what a PV array does. Normally with our infrastructure, we keep [energy facilities] out of sight and mind."

At the "Solar Strand," scheduled to be completed in the spring of 2011, public spaces are enmeshed in the structure, with paths leading to, from and through the array. A major reason the university chose Hood to design the project was his plan to emphasize the site as a portal to the school.

"That was the gesture that was really persuasive to us," says Robert Shibley, UB's campus architect. "It puts a destination as an artifact, but more to the point, [the Solar Strand] leads to the emerging ecology of the rest of the campus," including efforts to improve and restore some of the campus's older ecological features.

Funded by a $6.5 million grant from the New York Power Authority, the Solar Strand is part of an effort to install 100 megawatts worth of arrays across New York State. Educational efforts, focused on both research and workforce development, are part of the plan, as well.

Other schools are also turning to the sun. A 1.3 megawatt array **Rutgers University** calls the "Solar Farm" generates 10 percent of all of the energy consumed by its Livingston Campus in New Brunswick, N.J. **Arizona State University** is cooling cars, reducing the heat island effect, and generating energy all at once by topping parking lots and garages with solar panels that shade out the sun, but absorb its energy.

The Recycles program at the University of Chicago keeps students free wheeling.

Travelin' right

Generating solar energy is only one way to cut emissions. Another is transportation, and some schools have taken steps to get students out of their cars and on bikes. Students, faculty and staff at **Elmhurst College** in Elmhurst, Ill. who sign a pledge not to bring a car onto campus get a free bicycle, helmet, and lock. That's right: free.

"We had pent up demand," says Mark Wakely, who manages the services offered to students and employees at Elmhurst. In 2009-2010, the program's first year, 200 people took the offer. Wakely says it helped the college deal with three issues at once: a paucity of parking; student, faculty, and staff wellness; and the school's carbon footprint.

Every year, Wakley says, "We offer a little incentive to continue. We'll give them a $25 gift certificate for a bike shop and a free tune-up to sign the agreement."

At the **University of Chicago**, students have access to a bike-share program that relies on used bicycles refurbished by **Blackstone Bicycle Works**, a nonprofit in the school's neighborhood. And students at Atlanta's **Emory University** may have the best of both worlds. They can buy discounted bikes through the school, or take part of their bike share program instead.

Bike programs are a very visible, if small-scale, way to reduce emissions. But harvesting efficiencies from less sexy systems already in place can have a large impact as well. Power plants at all **University of California** campuses must now use cogeneration facilities to capture the energy of previously wasted heat.

And back at the **University at Buffalo**, the chilled-water plant is always 55 degrees Fahrenheit. By using the plant as a source of heat in the winter, and as a cooling source on hotter days, temperature differentials are markedly reduced -- saving energy and money. These are taxpayer-supported public universities, after all.

Sustainable and organic farming practices are on the curriculum at Warren Wilson College.

Fresh off the farm

"I think local food in the dining halls has been very popular, shifting away from the one-stop supplier model that schools used to use," Mark Orlowski, of the Sustainable Endowments Institute, says. His own alma mater, **Williams College**, along with two other New England schools, **Smith College** and **Wesleyan University**, use exclusively local dairy products, yielding cheaper and better-tasting food.

Margo Flood, the executive director of the Environmental Leadership Center at **Warren Wilson College** in Asheville, N.C., says that land stewardship and farming play a major role there.

"This land is so diverse," Flood says, "that there's a tremendous stewardship responsibility. We steward and model a way of life that's not archaic by any means, and was common in this region up until the 1950s when small farms still flourished."

Since its 1894 founding, Wilson College has operated a full-scale farm. In the mid-1990s, it made the decision to take the garden and farm fully organic. According to Chase Hubbard, the school's farm manager, its five-acre garden generates between seven and 10 percent of vegetables served in dining halls, and its 350-acre farm provides all of the unprocessed beef and pork, 10,000 pounds worth every year. Another 25,000 to 30,000 pounds are sold to Asheville and surrounding communities.

As a part of the school's mission to educate students through academics, service learning, and work, the farm is entirely staffed by students, some continue to contribute to the community after graduation. Since Warren Wilson first brought grass-fed beef to campus, Hubbard says, "there are 15 to 20 local producers who do this. The largest is run by Warren Wilson graduates, **Hickory Nut Gap Farm**, a husband and wife team who both worked in the farm program."

Penn State's Trash to Treasure program saves thousands of dollars a school year.

Waste not, want not

Move-in day at most American colleges is a call for consumption - new furniture, clothes, school supplies get bought by thousands of students. But on move-out day, when students have more than will fit in the car or are moving across the country for a job, tons of things are left behind.

According to Al Matyasovsky, the supervisor of central support services at the main campus of **Pennsylvania State University**, move-out creates about 200 tons of waste over only two days.

Ten years ago, Matyasovsky helped create "Trash to Treasure," Penn State's solution to keep some of that waste out of the landfill. The program takes goods -- from clothes to furniture to microwaves -- donated by students who are leaving campus for what's essentially a giant yard sale. About 60 of those 200 tons of waste are laid out on over 400 tables in Beaver Stadium. By 7:30 a.m. on the day of the sale, over 1,000 people line up for an early crack at the merchandise. Proceeds from the sale reach over $50,000 each year and are donated to the local branch of the United Way.

David Manos, Penn State's assistant director of housing, says one item in particular got under the skin of his predecessor, Fraser Grigor.

"The final straw for him," Manos says, "was seeing a set of golf clubs going to the landfill."

One similar project, PennMOVES at the **University of Pennsylvania** hosts a large sale at the campus ice rink, with proceeds going to organizations in the university's West Philadelphia neighborhood, via the United Way.

"It's a very good way to marry Penn's sense of civic and social responsibility with its commitment to climate action plan," says Marie Witt, the university's vice president for business services.

Programs have been replicated elsewhere such as **Notre Dame**, **Swarthmore College** and the **University of Indiana**.

At Penn State, Matyasovsky says there are immediate savings -- both financial and environmental.

"We have to take stuff 102 miles from Penn State to put it in a landfill," Matyasovsky says. Over the course of the program, he's saved $63,000 in landfill tip fees, and eliminated the emissions that 60 round-trip truck trips would have generated.

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