

# Sustainability

## *Ideas for training the next generation of American workers*

In the 20th century, Los Angeles built its reputation as a city of golden excess, enshrouded in smog and traversed by freeways. In the 21st century, the Los Angeles Community College District (LACCD) is helping the City of Angels fashion a new reputation—one of sustainable living.

From 2001, when the district's board first passed a \$1.2 billion ballot to build Leadership in Energy and Environmental Design (LEED)-certified buildings, to the 2008 passage of a \$3.5 billion bond, LACCD has been at the vanguard of higher education sustainability. The district has built or is building more than 90 new facilities that meet or exceed LEED standards. As a Clinton Climate Initiative partner and model for other college campuses, all aspects of sustainability have been sewn into campus planning and process. The campus lawn was converted to a botanic garden with native plants, which has reduced water consumption by 70 percent. Purchasing practices were changed to incorporate manufacturers that use environmentally friendly production methods. Building exteriors were altered to create and store energy, and to require fewer cleaning products, further reducing LACCD's carbon footprint.

LACCD has worked to earn its reputation as one of the greenest campuses in the country. A large part of that success can be attributed to the efforts of Larry Eisenberg, executive director of facilities, planning, and development since 2003. "I've been sustainability-oriented for

most of my career," says Eisenberg. "When I came here, I was lucky to have money to spend, a policy in place, and top-down direction."

### Forward Thinking

Eisenberg was so far ahead of the curve when he first started pushing sustainability at LACCD that few people in the industry had ever heard of "green" buildings or LEED certification. Because he could not find sustainable furniture, Eisenberg put out special requests. Two national manufacturers changed factories to accommodate his needs. He later developed specifications for sustainable carpeting, resulting in another manufacturer switching factories to accommodate

the college (sustainable carpet is now that company's best-selling product, he says).

But Eisenberg wasn't finished. Two years ago, his team discovered a coating made of titanium dioxide that, when sprayed on the outside of a building, creates an invisible layer of harmless gas that repels dirt. "We sprayed it on a sensitive building 18 months ago. It looks as clean today as when we sprayed it—even the windows," he says. The plan is to spray each of LACCD's 450 buildings.

Ultimately, Eisenberg's goal is for LACCD to achieve complete energy independence. His renewable-energy program calls for the integration of several alternative-energy sources. Already, workers have installed some 10,000 solar



BY ELLEN ULLMAN



*(above) CCCD students and faculty install a solar hot water panel; (below) CCCC students take pond samples for evaluation.*

### In the Wind

As one of a handful of community colleges offering wind-energy technology workforce training, Mesalands Community College in Tucumcari, N.M., was thrilled when 28 students completed its one-year certificate program last year. Returning students will start working toward their associate degree. “The wind industry needs degreed individuals to fill upper-level management ranks,” says Jim Morgan, director of the college’s



North American Wind Research and Training Center. “A degree will serve these students well in terms of career opportunities and advancement.”

Because there is no standardized curriculum in wind technology, Mesalands works with industry advisers—domestic and international—to identify workforce needs. An advisory panel of 12 companies meets quarterly to review courses and keep faculty updated on industry movement.

What truly defines Mesalands’ training program is an emphasis on hands-on practice and industry collaboration. “Our students helped commission and build our wind turbine last December,” says Morgan. “It’s an experience most technicians will never get.” Earlier this year, the school formed a partnership with Sandia National Laboratories to develop wind-energy technology. The relationship marked the first collaboration of this magnitude between a national laboratory and a two-year college, he says.

In February, New Mexico voters approved \$7 million for a new wind-energy training center. The building will feature an amphitheater lecture hall, multimedia capabilities for performing simulations, and a large garage to display wind turbine parts.

As the school continues to improve its program—for example, offering online courses in renewable energy—the number of students is projected to grow. There are 70 students enrolled in the program this

panels; that number is expected to reach more than 200,000. LACCD also has embraced fuel-cell technology, is installing small wind turbines appropriate for urban locations, and is experimenting with geothermal heat-exchange systems to capture natural energy.

As the outside of the campus goes green, instructors are finding ways to tie these advances to the learning that goes on inside. “We want to have a great lab to teach the skills needed for the new green jobs of the future,” says Eisenberg. LACCD professors have incorporated sustainability lessons into various disciplines and are in the process of creating a sustainability course of study. New classes on campus prepare workers to become energy auditors, “green” manufacturers, and “green” installers. The hope is that workers, such as plumbers, carpenters, and electricians, will use these skills to tap into emerging green-building markets.

LACCD is not alone in its efforts. Across the country, community colleges have prioritized sustainability in aspects of operations, business, and curricula.

“In the past year, we have seen a significant increase in community colleges joining the Association for the Advancement of Sustainability in Higher Education and in their various activities in sustainability,” says Paul Rowland, executive director of AASHE. “A number of community colleges have taken a leadership role in developing training for ‘green’ jobs and have broadened nondegree curricula.”

year, and the incoming freshman class is already at full capacity. "With the new facility, the turbine in place, and our continual improvement, I think this program will blow everyone out of the water," says John Hail Jr., an instructor and director of wind energy technology at the college.

## Efficiency, Partnership

Conservation and smarter resource planning are other ways some colleges are making inroads to sustainability. When Dan Gallagher, executive director of information technology for Cape Cod Community College in West Barnstable, Mass., arrived in 2005, every department in the college had its own stable of printers and copiers, for a total of 300 different machines.

"Between these printers and the copy center, we were printing about 6 million pages a year," estimates Gallagher. He soon began monitoring usage and restricting students to a print limit of 150 pages per semester (students can pay \$10 for an additional 150 pages). It might seem like a small exercise in conservation, but thanks to these efforts alone, Gallagher says, the college has managed to save \$50,000 a year in materials costs.

Gallagher next resolved to reduce the number of printers and copiers on campus by half. He rolled out large multifunction copiers first and recently delivered 40 multifunction machines with print/copy/scan capabilities, all of which are now shared by several departments. Not only are the new machines more efficient, they allow users to scan and e-mail documents rather than printing them.

Cape Cod's technology department is just one facet of the college that is operating with an eye toward conservation. Administrators on every corner of the campus are making efforts to sharpen the school's environmental conscience.

"Often, the best way to get started is to work together," says John Lebica, CCCC's vice president for facilities management and sustainability.

*Aspiring wind-energy technicians enjoy hands-on training atop the wind turbine at Mesalands Community College in New Mexico.*

## Money-Saving Tips

Going green is all the buzz on college campuses. But, like any investment, the transition comes with its share of costs. Mary Graham, vice president of the Perkinson campus of Mississippi Gulf Coast College, offers the following advice on how to go green without going broke.

### Start with an energy management

**plan.** Call your local power company or search online for "energy management" to find companies that will assess your campus and make recommendations. Graham's plan saved more than \$6 million in energy bills.

**Do a walkabout.** Walk through every office and class after hours to see how many red buttons are on. Then ask people to turn electronics off at night. "All those little appliances—monitors, printers, even pencil sharpeners—draw energy if they're left on," she says.

**Automate computer processes.** Graham's IT department programmed the college's computers to perform updates and backups at 6 a.m. instead of in the middle of the night, when rates are highest.

**Shift class schedules.** "We've moved all of our evening classes into one building so we don't use separate locations during peak energy hours," she says.

**Be creative about financing.** "One idea is to finance the front end and pay it off with the energy savings you'll accrue."

**Don't do everything at once.** Make a master plan and start with the projects that make the most financial sense.



*Gardens are a focal point at the Los Angeles City College Center for Child & Family Studies.*

When it came time to build a new technology building, for instance, the college partnered with the Division of Capital Asset Management, the state agency responsible for major public construction. The Lyndon P. Lorusso Applied Technology Center became Massachusetts' first LEED-certified building.

Partnerships have played a large part in the college's environmental makeover.

CCCC's new wind turbine, which promises to shoulder the college's demand for electricity by year's end, is the result of a partnership with the Massachusetts Technology Collaborative.





To determine how best to convert 80 percent of its mowed lawns into environmentally friendly meadows, CCCC joined up with local nonprofit MassWildlife. “We get credit for not mowing,” laughs Lebica. “It saves money and time, and there’s no noise pollution or exhaust.”

The college also is working to build two small hydrogen fuel cells through a partnership with local power manufacturer Acumentrics, the U.S. Department of Energy, and state environmental offices.

CCCC even sends its environmental waste to a local farm for composting. “We’ve turned recycling on its head and are now doing single-stream recycling,” says Lebica. “Everything is commingled except for food and Styrofoam.”

Lebica encourages institutions to look for help from outside partners, and he says finding help is easier than some might think. “There are people waiting for a call from someone who wants to do an innovative project,” he says. “We could not have pulled off any of these projects by ourselves.”

### Training for Tomorrow

When Javid Mohtasham joined Oregon’s Mt. Hood Community College (MHCC) in 1993, his first order of business was to replace the college’s moribund Hazardous Materials Management program with updated sustainability classes. Two years later, Mohtasham, now the director of MHCC’s Sustainability, Health & Safety Program, introduced a nine-month LEED-certification course. He also created the state’s first bio-diesel training lab.

*Students can study and relax in the S. Mark Taper Foundation Life Science Botanic Garden at Los Angeles Pierce College.*

“Sustainability is a chic and sexy concept, but we must do more than buy organic food, recycle, and write blogs,” says Mohtasham. “We have to make sure people’s work environments are healthy and safe.”

Mohtasham’s program prepares students for five professional certifications, including Associate in Risk Management (ARM), Certified Industrial Hygienist

(CIH), and Certified Safety Professional (CSP). “No other college offers this many options to this many students at this many levels,” he says. “It’s our area’s best-kept secret.”

Hudson Valley Community College (HVCC) in New York is another college committed to training students for careers in emerging technologies.

Through a partnership with the New York State Energy Research and Development Authority, HVCC provides courses and certification for students in photovoltaic energy production. The college in June received nearly \$2 million in grants from the U.S. Department of Labor to expand its suite of community-based job training programs, with a focus on renewable energy.

Columbus State Community College (CSCC) in Ohio is also committed to preparing students for sustainability careers. “I head up an associate degree program called Environmental Science, Safety and Health Technology,” says instructor Jeff Bates. “We’re preparing people for jobs in water treatment and waste. It’s not necessarily what we think of as ‘green,’ but people need to learn how to take care of these things.”

CSCC faculty integrate sustainability into such courses as geology, biology, and chemistry, helping to increase student awareness, regardless of their field of study. Says Bates, “It’s time everyone learned to do the right thing.”

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## Green Resources

**Energy Star** ([www.energystar.gov](http://www.energystar.gov)):

Plug your inventory into the energy savings calculator and start saving.

**Green Collar Job Market & Educational Opportunities at Columbus State Community College**

([www.greenenergyohio.org/page.cfm?pageID=2312](http://www.greenenergyohio.org/page.cfm?pageID=2312)) Instructive PowerPoint.

**LACCD Builds Green**

([www.laccdbuildsgreen.org](http://www.laccdbuildsgreen.org)): Abundant resources, including sample contracts and RFPs. “Take my contracts, replace my name with yours, and use them,” says LACCD’s Larry Eisenberg.

**Mt. Hood Community College’s Environmental Health and Safety Program**

([home.earthlink.net/~ehsprogram](http://home.earthlink.net/~ehsprogram)): Course descriptions, online resources, and more.