



APPA's **INSTITUTIONAL AWARDS**

Recognize Overall Excellence, Sustainability

BY ANITA BLUMENTHAL

The APPA **Award for Excellence in Facilities Management** is designed to recognize and advance excellence in the field of educational facilities, and to highlight the essential role of facilities operations in the overall institutional mission and vision. Award for Excellence nominations are evaluated in the areas of: leadership; strategic and operational planning; customer focus; information and analysis; development and management of human resources; process management; and performance results.

APPA's **Sustainability Award in Facilities Management** recognizes and advances sustainability excellence in educational facilities. Institutions receiving the award possess facilities management departments that have integrated sustainable policies and environmental stewardship practices throughout all facets of the organization and embedded them within the educational institution.

AWARD for EXCELLENCE

Weber State University

Weber State University in Ogden, Utah (WSU), serving more than 26,000 full- and part-time students, has earned APPA's highest institutional honor, the 2015 Award for Excellence in Facilities Management, having fulfilled comprehensive and rigorous criteria. Associate Vice President for Facilities and Campus Planning Kevin Hansen credits the achievement to the department's continuous and creative dedication to three pillars: providing superior customer service, working to prevent failures, and performing at the lowest reasonable cost.

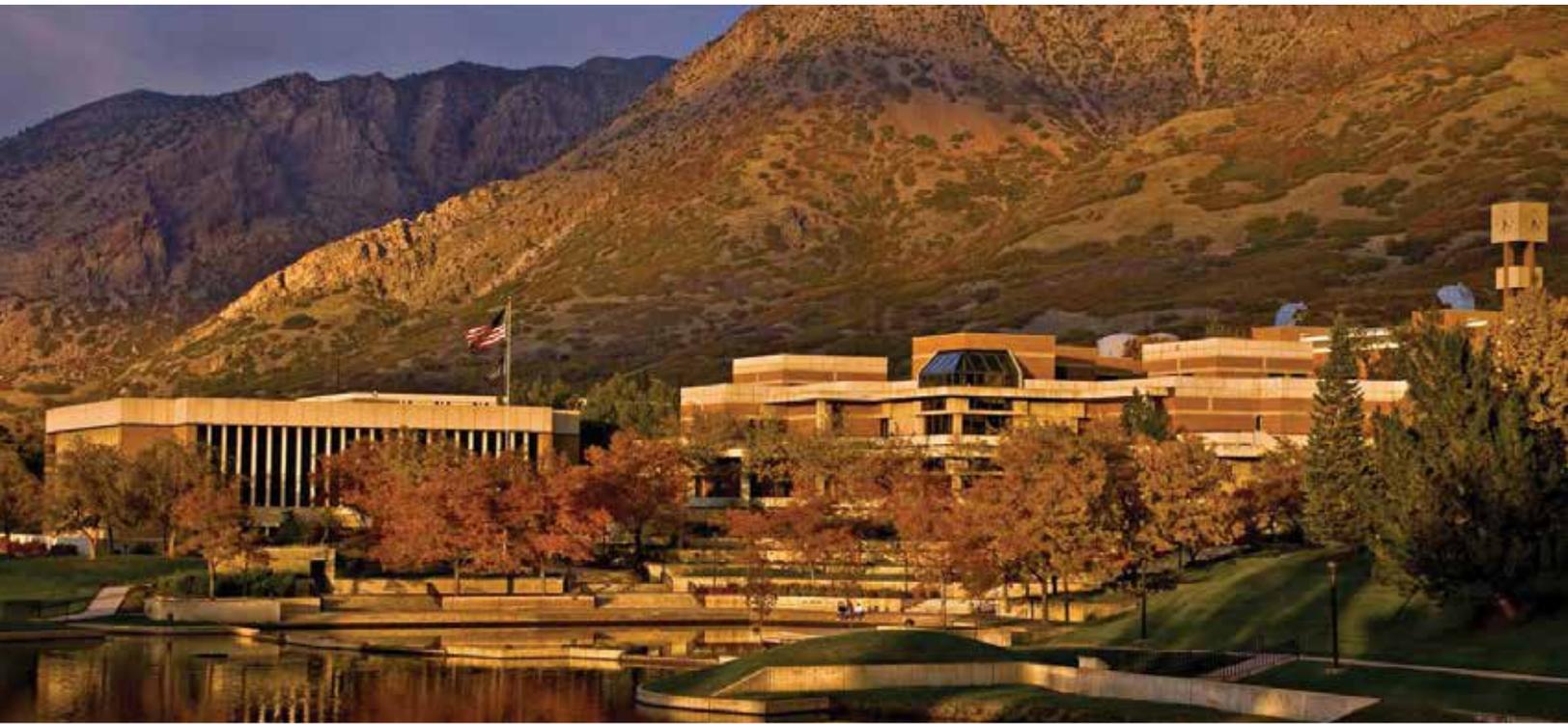
CUSTOMER SERVICE

Hansen says he and his staff are always seeking to understand customer needs and to exceed expectations. "We fight for feedback," he says, with numerous surveys, with staff attending regular meetings at every level of the university, and with cash rewards for workable suggestions to save energy.

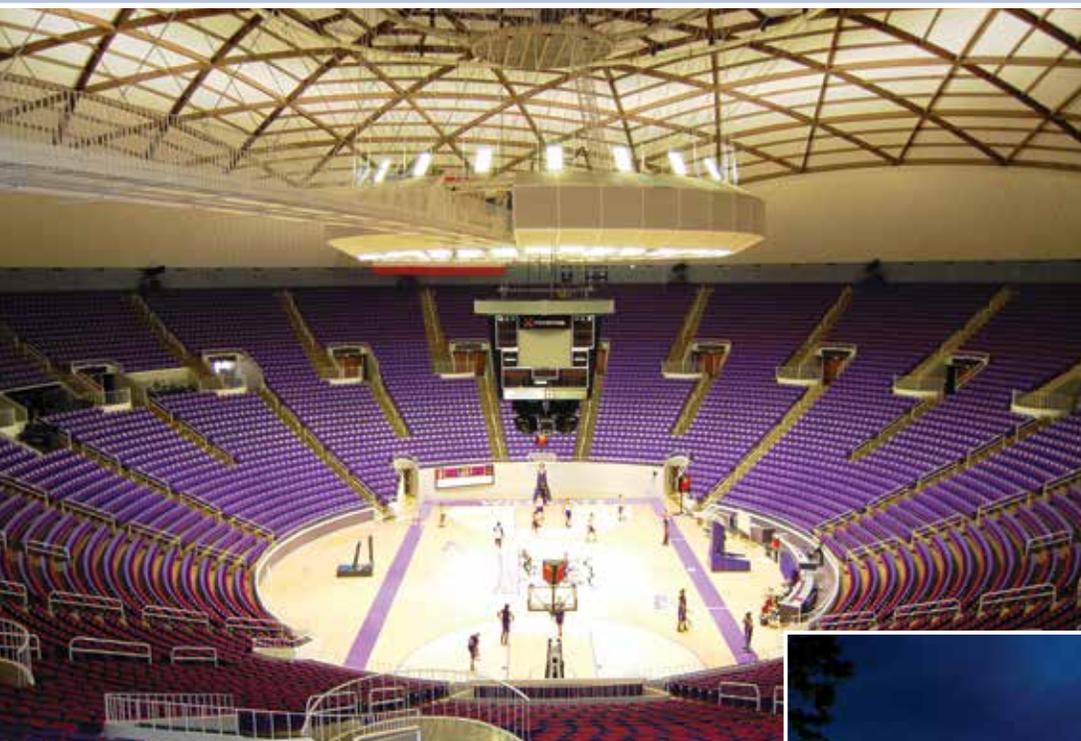
Responding to customer suggestions pays dividends all around, says Hansen. For example, the Facilities Management Department (FM) used to operate during regular work hours, even though university operation extends to 10:00 p.m. No one was onsite to respond to off-hour problems, such as water leaks. "In response to requests, we put people on a swing shift, and customers immediately saw quality improvement," reports Hansen. The surprise was that the employees liked the swing shift as well. "They had more freedom to act, and were not under the supervisor's eye, but had all the resources available for themselves (and didn't have to share)." One technician who was offered a chance to get off the swing shift didn't want to change.

Another example of how WSU made life easier for customers was a building swap. The campus is built on the side of a hill, and previously the FM building, with the key shop and business office, was out of the way, on top of the hill.

ALL IMAGES USED WITH PERMISSION FROM WEBER STATE UNIVERSITY.



Over the past decade, Weber State University has made significant improvements to the exterior grounds of campus, including building a new softball complex, installing artificial turf on the frontage road, building new water features on the Bell Tower Plaza, and installing an automated irrigation system.



Left: Weber State University has the first arena in the NCAA to have LED lighting. Some of the benefits of installing these lights include the following: lower energy costs, better quality of light, instant restart, and lower noise levels.

Below: Weber State University recently replaced all of its on-campus housing buildings with three new state-of-the-art buildings.



PHOTO BY KEVIN DILLEY OF KLIK PHOTO.

FM's other building, containing plumbing, electrical, and HVAC shops, was in the middle of campus near the academic core. Now, the key shop and business function as well as meeting rooms are in the closer building, which has been completely renovated, and the plumbing, electrical, and HVAC shops are now on top of the hill. "Suddenly, customers can walk to us and we can do everything right here," says Hansen. "In addition, the shops at the top of the hill are configured in such a way that the employees get to know each other and work together. The synergy is remarkable."

For better customer service in custodial work, employees are assigned to teams that care for specific groups of buildings. That way, Hansen explains, staff know in detail the specific requirements of their buildings, and many have developed valuable bonds with customers they serve.

A recent initiative to eliminate gaps in service everywhere has been to add depth, organizing backup for every one-deep position, including Hansen's.

PREVENTING FAILURES

Hansen describes sweeping changes over the past dozen years to reverse an attitude of "wait-and-see-until-it-breaks." He introduced a preventive maintenance department as well as a planned maintenance program, imposed scheduling, and reduced the corrective maintenance workload to a small part of the working time. The preventive maintenance shop comprises apprentice-level people from the plumbing and HVAC shops who do low-skilled but important work.

After these changes were implemented, says Hansen, "there was a huge improvement in maintenance, quality of work, with more work done." The preventive maintenance group "found things that had been neglected, taking time to do the work more efficiently than previous craftspeople, who might have been pressed for time with a backlog of other things," he says. "Also, the apprentices uncovered issues for more experienced staff to see to."

In keeping with his practice of delegating down to develop accountability and pride, Hansen says that the lead apprentice "owns the preventive maintenance department. Given this element of control, it's amazing what they will deliver. The result has been improved customer service and reduced failure rate."

In a similar vein, landscaping has been totally revamped and divided into zones. Under broad guidelines, staff are accountable for their own zone and have a sense of ownership.

LOWEST REASONABLE COST

Project planning for lowest reasonable cost “is based on life cycle, on how to maintain the asset, and on investment over the longer term,” Hansen says. “To give just one example, we have taken out all our old steel railing. The new standard is stainless steel handrails. There is no rust, no repeated painting, and ultimately, no danger from rusted-through railings. They are four times more expensive, but it has paid off in operation and maintenance savings. Also, it makes the campus look very good.”

ENERGY AND SUSTAINABILITY—THE HOME TEAM ADVANTAGE

WSU had no energy or sustainability program when Hansen arrived 13 years ago. He saw a good opportunity but did not have the financing vehicle. Then, when America’s deep financial crisis hit, WSU started losing investment money. Where would sustainability funding come from? FM received a loan from the university endowment fund and agreed to pay 3 percent interest. With a \$5 million line of credit on a revolving fund, they executed projects themselves through their own energy and sustainability office. They reduced carbon emissions and overall energy consumption by 30 percent, while adding several hundred-thousand square feet and more students. With the energy savings (\$1.4 million in FY14 alone), FM is now funding future projects. And they repaid the loan at above-market interest.

Hansen points to a huge energy-saving project to rebuild the lighting of Dee Events Center with light-emitting diode cloud lighting. “No lighting contractors would touch the job,” he says. So WSU designed and fabricated the project themselves, and it was the first system of its kind at an NCAA university. “Now we’re looking at converting the campus to a ground source heat pump system, with individual control of each room occupied,” he says. “Innovation has achieved momentum and a life of its own.”

WSU also is taking full advantage of tracking systems, including its computerized maintenance management system. “Every year we find more uses, more value,” Hansen says. “From capital development projects down to changing light bulbs, suddenly we recognize the amount of work we need to do and are doing.”

Previously, work requests were all on paper; they went to the foreman and then—maybe—to the craftsperson. There was no accountability. Now we automatically track distribution of work, performance, and cost. Plus we have ability to project to the future and schedule work months in advance.”

Solid, clearly presented data allow FM to communicate effectively with other parts of the university, encouraging useful mutual understanding. For example, the report on year-end maintenance and construction expenses per building used to be only for internal purposes. Now it is shared with others. One recently added chart showed the amount of work that was chargeable compared to the nonchargeable amount. “When this chart was passed on to the Business School—in a form in which we were talking their language—they were shocked to see how much money we spent out of the FM budget for their building that was not passed on to them,” says Hansen. “It helps make the things we do charge for more acceptable when we are spending much more ourselves.”

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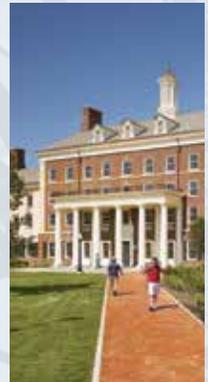
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SUSTAINABILITY AWARDS

Recognize Achievement/Initiative

APPA's 2015 Sustainability Award in Facilities Management went to **Slippery Rock University** (SRU) of Pennsylvania and the **San Diego Community College District** (SDCCD) of California. Both institutions fulfilled rigorous criteria developed by APPA from guidelines created by the Association for the Advancement of Sustainability in Higher Education. But they pursue their policies and goals in response to very different environments and with initiatives that address their own particular challenges.

Slippery Rock University

At SRU, located in northwestern Pennsylvania and having an enrollment of more than 8,500 students, sustainability is a top priority embedded in the university's strategic plan. The university's Office of Sustainability, which reports directly to the president, is co-located with the Facilities and Planning Department (F&P), improving coordination. F&P staff are deeply involved in numerous campus sustainability initiatives. Since the base year, 2005, SRU has seen a 40 percent improvement in campus energy efficiency and a 25 percent reduction in energy use, despite a 10 percent increase in student enrollment and 32 percent increase in building square footage. Coal use has dropped by 63 percent

and greenhouse gas emissions by 26 percent. Utility metering has spread from six buildings eight years ago to all 35 buildings today.

SRU offers undergraduate and graduate sustainability-related degrees and is home to the Robert A. Macoskey Center for Sustainable Systems Education and Research. Extensive outreach programs to the community include mentoring local businesses to become more energy efficient. In 2016, the university will use an Environmental Protection Agency grant to conduct environmental education summer camps involving 20 local school districts. The program will provide seed money for campers to implement environmental projects in their home communities.

On campus, Chief Facilities Officer Scott Albert reports that F&P's scrap metal recycling program has recycled more than 1 million pounds from construction and maintenance activities,

avoiding \$20,000 in landfill costs and generating \$100,000 in revenue to reinvest in grounds operations. Throughout the university, F&P not only insists on Green Seal certified cleaning products, but has also switched hand soap to Green Seal certified foaming soap, a move that has reduced soap usage and saves \$3,000-\$5,000 a year.

Over the past six years, SRU has received nearly \$300,000 in sustainability-related grants. "It's easier to sell a new concept when it doesn't impact the operating budget," says Albert. Thanks to one grant, F&P recently purchased a propane-powered zero-turn mower, which uses 13 percent less fuel than the gas-powered machines and requires

One of many green rooftop projects at SRU.





This propane powered ZTR mower requires less maintenance than the gas-powered ZTRs.

less maintenance. Another grant bought a biodiesel processor that uses cooking oil from the dining halls. “Many of our grants came from the SRU Green Fund, an internal program started via a student referendum,” Albert says. “Each semester Campus Administration sets aside \$5 per student to go toward funding grant applications for sustainability projects. Students, faculty, and staff can apply for the funding. I have been fortunate to have great success submitting applications to this program.”

But sometimes selling a new concept is less about budget than about attitudes. Paul Scanlon, special assistant to the president for sustainability planning and operations, explains that one major achievement was having the entire faculty and administration agree to a set-point temperature throughout the campus—75 degrees in summer and 67 degrees in winter. “It’s hard for people to give up control over the temperature of their offices,” he says, “but the set point...saves an estimated \$125,000 a year.”

Water conservation, pollution avoidance, and smart irrigation combine at SRU, where a system of natural streams and retention ponds minimize stormwater overflows and sedimentation carryover into the stormwater system. When SRU was asked to install an irrigation system that did not use town water, the university’s comprehensive response resulted in an irrigation system that uses no potable water at all. For example, runoff from a large spring on campus (which used go into the storm sewer system) is now directed into holding tanks to irrigate athletic fields. Greywater is treated and then distributed to an outdoor aquatic planting area and eventually to a meadow.

SRU has a special sustainability/stewardship challenge: Of its 600 acres, 151 are designated as Bartramian Audubon Society Wildlife Sanctuaries. One problem the university faced, says Scanlon, was that different campus groups were making



A joint project by students and the facilities planning department, the Green Bus Shelter is made up primarily of recycled materials, and has a green roof.



Residence halls typically participate in RecycleMania each year.

their own hiking and biking trails through protected wetland areas without understanding the environmental impacts of their activities. SRU took several initiatives to solve this problem and to expand understanding of the environment, while maintaining environmentally benign hiking and biking trails for recreational use.

The university created a causeway of geotextile fabric and aggregate stone to make a path just above the wetlands, so people can walk over and not through them. Also, it created a land use request form through which all uses of SRU grounds must be approved by the president. These requests are handled by the Office of Sustainability.

In addition, SRU created a series of GIS (geographic information system) map layers of the campus grounds, which allowed staff to create a “Sustainable Features Campus Map” to educate the public. Wetlands delineation maps, also showing other natural environments to be protected, are used to coordinate all on-campus land uses and avoid damaging sensitive environments.

ALL IMAGES COURTESY OF SLIPPERY ROCK UNIVERSITY.



San Diego Continuing Education North City Campus

San Diego Community College District (SDCCD)

The SDCCD serves approximately 130,000 students annually through three separate community colleges in California—San Diego City College, San Diego Mesa College, and San Diego Miramar College—plus seven continuing education campuses. Some approaches to sustainability are unique to a particular campus, while others are district-wide. Sustainability is integrated into policies, procedures, employee participation, and educational initiatives. The district's numerous sustainability-related courses vary from solar energy use at one campus to heavy-duty advanced transportation at another.

The district received its greatest boost toward sustainability when construction bond programs were passed in 2002 and 2006, totaling more than \$1.6 billion for new state-of-the-art facilities, major renovations, and district-wide infrastructure projects. The SDCCD Board of Trustees established a green building policy to govern all construction projects; all eligible projects aim for at least a LEED Silver certification. “The district is on track to have 43 LEED-certified buildings,” says SDCCD Construction Manager Ryan Murphy.

Murphy says that in one building there is a cutting-edge passive ventilation system that disengages the air conditioning system when windows are opened. Other structures, like the Social and Behavioral Science building at San Diego Mesa College, are designed so that daylight is available in up to 90 percent of the space, reducing the need for artificial lighting.

The LEED Platinum police station at San Diego Miramar College has a heat chimney to conserve energy and regulate

temperature: Louvres in the tower's upper level allow warm air to rise by convection and escape to the outside. At the same time, cooler air is drawn in through vents on the lower level, replacing warm air with cooler air even after the sun has gone down.

In addition to smart technology and elementary science, designers have used orientation of buildings to reduce energy use, particularly air conditioning. One building located on a campus several miles inland is positioned beside a canyon so the coastal breeze that runs up the canyon can enter the windows.

Up to 50 percent of project materials used in the district are obtained locally, with extensive use of recycled and natural materials. Linoleum, a natural material for flooring, has made a comeback. One building has terrazzo flooring made with 100 percent post-consumer glass. Elsewhere, countertops are made of recycled newspaper.

“A thermal energy storage unit at San Diego Miramar College is five stories tall and 50 feet in diameter and holds 1 million gallons of water,” says Murphy. “It is filled with chilled water at night when energy rates are lowest and is available to the campus buildings during peak hours.” The tank is equivalent to the campus's entire cooling load for six hours. The estimated energy cost savings over 30 years is approximately \$13 million.

Lots of sun and a serious scarcity of water mean that sustainability projects focus on solar energy and water conservation. The district has a solar panel system that totals 2.4 megawatts, including a district-owned vertical solar array that is the largest of its kind in the country. So far, the SDCCD's solar installations have generated 19.7 million kWh, saving about \$700,000.



Above: San Diego Mesa College Math+Science Building.



Above: Thermal Energy Storage Tank at San Diego Miramar College.



Left: Photovoltaics at the San Diego Community College District Headquarters.

ALL IMAGES USED WITH PERMISSION FROM THE SAN DIEGO COMMUNITY COLLEGE DISTRICT (SDCCD)

The SDCCD piloted the Calsense smart irrigation system several years ago, has aligned its landscaping (including xeriscaping) with the area's dry, Mediterranean-type climate and various area microclimates, and irrigates certain sites with reclaimed water. These strategies have saved tens of millions of gallons of water a year, compared to the old days of using fescue grass. Among the district's stormwater management systems is a natural filtration basin six feet deep, covering about 6,500 square feet under a central plaza at San Diego City College. San Diego Miramar College has an underground detention basin with a 6-million-gallon capacity to filter stormwater and remove pollutants before diverting it into the local stormwater system.

Systems are in place to monitor and measure all the HVAC, lighting, irrigation, alarms, security, and energy management districtwide. Many of the systems have controls that can be accessed remotely. The next step, says Murphy, is to enable the controls not only to alert facilities management when a system is out of compliance, but also to make adjustments to correct these problems. ☎

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Award Application Deadline is November 30, 2015

Applications and nominations for all 2016 APPA awards, including the Award for Excellence and Sustainability Award, must be submitted online by November 30, 2015. To view eligibility requirements, criteria, and past recipients, go to www.appa.org/membershipawards. Good luck!