

FACILITIES  
MANAGEMENT  
CONFERENCE  
2014

BPA Winning  
Campus:

California State University,  
Sacramento

Project Name:

Sustainable Technology  
Optimization Research  
Center (STORC)

Budget:

\$18,000

Key Contributors:

Dr. Ming-Tung "Mike" Lee

Dr. Mike Christensen

Schedule:

The space for the center  
was renovated in fall 2013;  
STORC opened in January  
2014

## BEST PRACTICE AWARD CATEGORY: SUSTAINABILITY

### What makes this project a Best Practice Award Winner?

1. **Innovative:** Very few campuses have a center like this, providing resources such as equipment, space, and staff support for class and independent research projects.
2. **Cost Savings:** N/A
3. **Process Improvement:** The center provides a central place on campus for students, faculty, and staff to collaborate on sustainability project development and research.
4. **Replicated on Other Campuses: Y/N; Why?** Yes, this is a model that any of the CSU campuses could replicate.
5. **Contribution to Success of the Campus: Y/N; Why?** Yes,  
[www.csus.edu/aba2/newsletters/spring2014/behindthescenes.html](http://www.csus.edu/aba2/newsletters/spring2014/behindthescenes.html)  
[www.csus.edu/sacstatenews/Articles/2014/06/STORCtour06-18-14.html](http://www.csus.edu/sacstatenews/Articles/2014/06/STORCtour06-18-14.html)
6. **Other Criteria?** This project is a successful example of how campuses can support hands-on learning in the area of sustainability. It brings together students, faculty, staff and the local community.

### Project Description

STORC's primary purpose is to provide a common location for outdoor integrated technology research. Conceived, supported and constructed by Risk Management Services and Facilities Management, STORC has become a bridge connecting campus operational sustainability goals with innovative academic outcomes, strengthening the engagement of faculty and students with the university as a whole, particularly in areas of waste management, safety and compliance. STORC currently hosts ten sustainable projects in various stages of operation from wind aerators and space heaters to water and storm water purification and treatment.



STORC projects promote "upcycling," the conversion of discarded materials for new practical uses. For instance, STORC collects cooking oil from campus eateries for conversion into bio-diesel fuel to power Facilities Management vehicles and grows Aquaponic greens for consumption, soon to be available through campus eateries. Food waste

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from the eateries is composted to grow worms to feed fish. A multi-disciplinary approach such as STORC's promotes the viability of projects. For example, involving engineering in the design of Aquaponics increases efficiency as well as effectiveness, so that cost factors are considered along with viability.

STORC promotes understanding among administrative and academic principals, strengthening teamwork toward achievement of university sustainability goals. STORC participants hail from: biology, chemistry, economics, engineering, family and consumer sciences-nutrition, sociology, and the child care center that provides food waste for projects and engages STORC as a sustainability learning center for its children. Other active participants include University Enterprises, Inc., Associated Students, Inc., information technology resources and the faculty senate. Broad publicity continues to attract visitors and collaborators to the Center.

STORC has expanded its reach into the community. For instance, one project is partnering to construct student projects in local high school facilities, and another involves education in sustainable food production for low-income populations. The excitement generated by STORC promises to reinforce the reputation of Sacramento State as a leader in the sustainability arena. Not only does the unique character of STORC offer research and educational opportunities for students and faculty, it also supports practical solutions and a team-based

approach to campus' operational sustainability goals, and graduates with innovative mindsets for incorporating sustainable living into the community.

STORC's fundamental purpose is to encourage multi-disciplinary interaction in developing, designing and constructing sustainable technologies. As a practical, multi-disciplinary center for learning, STORC captures synergies that enhance research and learning outcomes. The power of STORC's multi-disciplinary approach is demonstrated in one case by a solar heat exchanger developed by one researcher that will be used to moderate the water temperature of the fish tank used in the multi-trophic



food production system.

STORC projects are focused on solutions for a broad range of California's water, energy and food issues. Stormwater treatment and water filtering projects support Proposition 84 to "protect state water resources that are vital to the public health, the state's economy and the environment through control of water pollution and contamination." Moreover, Aquaponic projects support water conservation, an important consideration in the context of droughts, water shortages and intensified water demands.