ENERGY EFFICIENCY PARTNERSHIP PROGRAM BEST PRACTICE AWARDS APPLICATION FORM

Deadline: March 5, 2010

ELIGIBILITY

Applications may only be submitted by CCC, CSU, or UC faculty, students, and staff. Applications submitted by outside parties will not be considered.

Projects that have previously won best practice awards are ineligible.

Projects implemented at any point over the last five years (1/1/2005 – present) will be considered.

More details about specific award categories are included at the end of this application form.

I. CONTACT INFORMATION

Campus: California Polytechnic State University, San Luis Obispo
Department (students may leave this blank):
Contact name/title: Sarah Fleming, Alliance to Save Energy's Green Campus Program Intern
Telephone: (303) 810-6714
Fax:
Email: scflemin@calpoly.edu

II. PROJECT CATEGORY- see attached category descriptions

NEW CONSTRUCTION

___ Best Overall Sustainable Design
___ HVAC Design/Retrofit
___ Lighting Design/Retrofit

SUSTAINABLE OPERATIONS

___ Water Efficiency/Site Water Quality
___ Innovative Waste Reduction
___ Student Energy Efficiency
_X_ Student Sustainability Program

Please note that Monitoring Based Commissioning (MBCx) Awards will also be chosen. Winners in this category will be selected based on the applications already submitted to the Utility Partnership programs.

III. PROJECT/ PRACTICE INFORMATION

A. GENERAL QUESTIONS

Project/practice name: Institutionalizing Sustainability through Student Leadership
Project/practice location: California Polytechnic State University, San Luis Obispo
Implementation cost: Total cost: $127,905 ($3,705 from Green Campus budget)
Estimated *annual* energy savings (as applicable): 419,910 kWh, 944,846 gallons of water, 10,494 Therms.
Estimated *annual* energy cost savings (as applicable - please state assumptions for electricity and gas rates): Total Cost Savings: $66,659, Total Rebates Received: $49,409. Electric rate $0.11/kWh, Natural Gas rate $0.85/therm.

Description- Provide a detailed narrative describing the project or practice.

Since its inception three years ago, the Green Campus Program at California Polytechnic State University in San Luis Obispo (Cal Poly) has built relationships with a diverse cross section of campus departments, organizations, committees, student clubs, and other stakeholders working to institutionalize environmental sustainability at Cal Poly. These efforts have resulted in a variety of successful energy and water conservation projects and programs, improvements to campus events and procedures, as well as behavioral change through enhanced awareness among faculty, staff, and the student body. The Green Campus Program has infused sustainability into the student experience during new student orientation, throughout first and second year on-campus residency, and in partnership with a variety of student clubs and the Empower Poly Coalition. Furthermore, the Green Campus Program facilitates student volunteerism exemplifying Cal Poly's "Learn by Doing" philosophy, by connecting interested students with project opportunities and giving them real life experiences to understand sustainability.

The Green Campus Program impacts faculty and staff through ongoing project work with stakeholders and decision makers in University Housing, Associated Students Incorporated, the Cal Poly Corporation, Information Technology Services, Career Services, campus sustainability committees, and a variety of academic departments. As part of a new initiative, Green Campus is offering Green Certification of campus offices and departments in a program modeled after LEED that is intended to recognize department efforts to conserve energy and water, improve recycling, and reduce environmental impacts. This program has received support from the Vice President of Administration and Finance, and all departments within the division are expected to participate.

Most people's first exposure to Cal Poly occurs at Open House - the annual University showcase of academic programs, research, student projects, clubs, and activities intended for prospective students, their families, and the local community. Historically, Open House has drawn as many as 100,000 visitors to campus. The event is organized by Student Life and Leadership and utilizes many student employees and volunteers to make it a success. SOAR (Student Orientation, Advising and Registration), run by Student Life & Leadership, is a one day program occurring in August that is intended to help new incoming students prepare for University life and academic success. SOAR provides sessions on registration, academic advising, responsibilities as a student and more. In addition to incorporating

information about sustainability and tips for green living into program materials, the Green Campus Program has worked with organizers to make the event itself more sustainable. By converting all paper handouts to electronic format via USB drives, over 70,000 pages of paper are eliminated annually between SOAR and Open House combined. All food service is Zero Waste, with all waste being recycled or composted. Additionally all new students are given refillable water bottles and educated about the environmental impact of bottled water. These efforts, initially proposed by student activists, have become a fundamental part of the annual event, impacting not only new students, but their parents as well.

In the week before the beginning of Fall Quarter, the campus hosts new students at Week of Welcome (WOW), an immersive week long freshman orientation program that is the largest in the United States, as well as Fall Launch, a leadership day for incoming freshmen. During these two events students receive information about sustainability, are introduced to the many sustainability clubs on campus, and Green Campus interns perform educational outreach. Efforts include a Sustainability Jeopardy game, eco trivia, sustainable living tips, and informational handouts, all of which help to set a tone of environmental consciousness for the students during their first experiences at Cal Poly (***see Outreach Material, attached)***. Green Campus efforts during the various student orientation events created a strong foundation for the Red Brick Energy Competition, which takes place annually during the winter quarter.

The Second Annual Red Brick Energy Competition pitted the six "Red Brick" residence halls against each other for four weeks during the months of February and March, 2010, and involved 1,500 freshman residents. The winner of the competition was the hall that used the least amount of water and electricity over the four week span. Through the course of the competition, the Green Campus Program worked to educate and inspire students to conserve energy and water by changing their behavior.

Print and web content were the most effective means of reaching out to all participating residents, and many sources were implemented in doing so. Energy and water-saving fact and tip posters were placed in the laundry rooms, bathrooms, and common areas of each hall. The competition standings along with a variety of comprehensive graphs were posted on the Green Campus Program's website. These standings and charts were also posted in digital picture frames at the front desk of each hall, a major pathway in and out of the buildings. Finally, the Green Campus Program's Facebook fan page was revamped, a move that later proved to be invaluable. Within a week of advertising it to residents, the fan count grew from 7 to 236 fans. Realizing that this was the best way of communicating with students, the Green Campus Program interns began posting standings, tips, and updates on a daily basis. The fan page continues to provide a network where sustainably minded Cal Poly students can interact.

This year's Red Brick Energy Competition showed much greater savings than last year's, and it is visible that permanent change is occurring. While taking readings prior to the start of the competition, the Green Campus interns noticed this year's residents were already using noticeably less electricity and water than last year's residents. When comparing the 2009-2010 residents to the historic baseline, the numbers were not close. **See Redbrick Energy Competition History, attached.** Each class of incoming freshman seems to conserve more than their predecessors, and the Green Campus Program and

affiliates hope to sustain this behavior. The total savings for this year's Red Brick Energy Competition was 23,959 kWh, 207,926 gallons, $5,305, and 19,008 lbs of CO_2. ***See Redbrick Energy Competition Standings, attached.***

To reinforce sustainable behaviors beyond freshman year, the Green Campus Program expanded to second, third, and fourth year students in the Poly Canyon Village on-campus apartments. The first annual Poly Canyon Energy Competition included nine buildings and 2,700 students over the course of six weeks in the fall quarter. The winner of the competition was the apartment building with the lowest total cost of energy and water consumption per person. The Poly Canyon Energy Competition is the Green Campus team's biggest program to date, proving to be a success. During this first year of the competition, students were able reduce their overall usage by 16%, resulting in a total savings of 76,874 kWh, 14,619 gallons of water, 117,325 MBTU's, and $9,778.80.

The primary methods of promotion consisted of web and print materials and resident interaction. Flyers and magnets promoting the program and the upcoming competition were placed in each Poly Canyon Village apartment prior to move-in. By doing this just a few weeks before the start of the competition, students were able to get into the energy and water-saving mindset. An article was also written about the Poly Canyon Energy Competition in Cal Poly's newspaper, the Mustang Daily. ***See Mustang Daily Article, attached.*** The article can be viewed at http://mustangdaily.net/poly-canyon-energy-competition-heats-up/. Green Campus also created a video about the competition that was sent out to each resident before the commencement. This can be seen at http://www.youtube.com/watch?v=tQcdsRGLr_A.

Once the competition began, Green Campus interns worked closely with the student Community Advisors (CA's) in each apartment building. The CA's continually encouraged their residents to participate in the competition through face-to-face contact and weekly emails. Residents could also read up on the competition in their weekly newsletter, *The Village Bee*, and on the Poly Canyon Village Facebook page.

Green Campus held numerous tabling events in the Poly Canyon Village plaza, interacting with students by handing out Compact Fluorescent Lamps (CFLs) and promotional magnets, and educating students on the benefits of sustainable living. Large posters displaying energy-saving tips and a competition standings sandwich board were also utilized. Halfway through the competition the Green Campus team held an event in the Poly Canyon Village plaza called Dance in the Dark. The interns hired a DJ and handed out glow-sticks to further excite residents.

After an extremely successful competition, the Green Campus team worked with Campus Housing to make the Poly Canyon Energy Competition an annual affair. To reward behavioral changes in both the Red Brick and Poly Canyon Village Energy Competitions, the Green Campus Program collaborated with Campus Housing to provide stainless steel water bottles to the competition winners. This prize will continue to reinforce sustainable behavior and remind students of the sustainable practices they learned through the competition. Due to the success of the competitions, University Housing has requested that they be expanded to include more students and additional buildings in the future. After the competition was over, Green Campus made a short video detailing the competition

and featuring interviews with participants in the competition. To view this video, please follow the link http://www.youtube.com/watch?v=TMQ4inlzJWU.

In addition to working with Campus Housing, the Green Campus Program has worked extensively with Campus Dining to further expand conservation across the Cal Poly Campus. In fall 2008, the Green Campus Program conducted a dishwasher audit and replacement analysis on Campus Dining's main dishwasher. After Green Campus presented their results, dining replaced a nearly fifty year old dishwasher with a new energy efficient model in spring 2009. After the first replacement, Dining asked Green Campus to expand the project and investigate the dishwasher in Vista Grande Café and the auxiliary dishwasher in the main dining complex to determine whether similar savings could be expected. In spring 2009, Green Campus interns conducted an audit on the dishwasher in Vista Grande Café, and determined that the same replacement could be done, and would yield even greater savings. Green Campus also suggested downsizing the auxiliary machine to a smaller door-type dishwasher in the main dining complex because it was infrequently used. When these findings were presented to Campus Dining in February 2010, they added the dishwasher replacement for Vista Grande to the upcoming budget and eliminated the auxiliary machine altogether because of its additional energy and water usage. Through the work with Campus Dining, the Green Campus Program has been able to achieve major energy savings, as well incorporate energy and water efficiency into Campus Dining's operational objectives.

In addition to the dish machine replacements, students from Zero Waste, The Empower Poly Coalition (a coalition of over 25 sustainably minded student clubs on campus), and the Student Organic Farm have worked with Campus Dining and Green Campus to implement more sustainable food service practices. At student request, all Styrofoam was eliminated from campus food service, and a Zero Waste option was made available for all catered events. Campus Dining also increased purchase of locally grown and organic produce and other foods.

Within the past year the Green Campus Program has expanded its outreach to include green workforce development. Working with Career Services and the Academic Senate Sustainability Committee, Green Campus interns developed a survey (attached) to evaluate sustainability efforts and environmental responsibility of businesses that recruit at Cal Poly. The businesses designated as "green employers" were recognized and showcased at the job fair for student attendees to see. The Green Campus Program is currently working with other Cal Poly students and Career Services to develop a green job fair in the spring quarter.

In addition to this effort to showcase green employers to students, the Green Campus Program has furthered its work with Career Services as well as the Empower Poly Coalition to train Cal Poly students on how to be competitive in the evolving green workforce. The Green Campus Program and Empower Poly presented a workshop on green workforce development to raise student awareness of green jobs, careers, and potential employers. In addition to this effort on the Cal Poly campus, several Green Campus Alumni have created a Green Workforce training program at the local community college, and are teaching fundamentals of energy, environment, and sustainability to young people seeking green careers as well as adults returning to school to develop new skills for the evolving green job market.

Working with a variety of groups on campus including Facility Services and a handful of Cal Poly professors, a for-credit student internship program allows students to participate in LEED documentation of both new and existing building projects. Through a connection between the Green Campus Program, Facility Services, a senior level environmental design class (Implementing Sustainable Principles, EDES 408) and the student club American Society of Heating, Refrigerating & Air Conditioning Engineers (ASHRAE), a student design team has developed a framework for students to work as volunteers on real LEED certification projects, employing the Cal Poly motto of "learn by doing". Both design consultants and contractors have shown great interest in this program, and have volunteered to work with and help teach Cal Poly students not only about LEED, but building commissioning as well. This initial group of EDES 408 students has started working on the Recreation Center Expansion project, a project that was not originally planned to be LEED certified until Green Campus Program interns and the Empower Poly Coalition rallied student opinion with an innovative marketing campaign. An effective You Tube video, along with editorial articles in the "Green Spot" section of the Mustang Daily student newspaper, resulted in an overwhelming 87% student vote in favor of requiring the building to be LEED certified. To view the Green Campus Program's video, *LEED the Way: Cal Poly,* please go to http://www.youtube.com/watch?v=8tTVgL3xrFk.

With this program in place, present and future students will be able to participate in LEED documentation for class credit; not only on the Recreation Center Expansion Project, but on the upcoming LEED EB Certification of the Education Building, the new Center for Science, and all future projects. This will not only provide an opportunity for students to work towards their LEED AP accreditation, but will also lessen the cost of the LEED certification process to Facility Services, making LEED certification more attainable for all campus projects.

On every campus lies a huge opportunity for energy savings in the information technology field. In a partnership between Facility Services, Administration and Finance Division Network Technology Services (ANTS), Information Technology Services (ITS), the Cal Poly Corporation, and the College of Science and Mathematics, the Green Campus Program has been working to implement workstation power management software. Green Campus helped testing and evaluating several software platforms, finally selecting BigFix - a program that manages and reports on the power settings of machines across an entire network, including support for PC, Mac, and Linux. Thus far the BigFix team has completed a pilot phase of implementation on nearly 1,500 workstations, saving 300,000 kWh and $33,000 per year, and earning a rebate of over $40,000. With additional outreach and marketing by the Green Campus Program, the BigFix team is preparing to roll out the product to a much larger campus audience. Surprisingly, BigFix was found to have an impressive array of workstation and network management capabilities beyond simple energy management, winning over campus IT staff in the process. Within Admin and Finance, BigFix has already been expanded to implement an additional module due to its superior performance and cost effectiveness, allowing another software license for desktop management to be terminated, saving over $20,000 per year in license fees.

In every case above, student leaders from the Green Campus Program, the Empower Poly Coalition, student government, and the many sustainability focused clubs and departments have led the charge, lobbying to change the status quo. These discussions, with diligent

planning, hard work, and persistence on the part of students, have led to many successful projects, programs, and changes at Cal Poly. In most cases, efforts were so successful that these programs were adopted by the departments involved and made permanent. Cal Poly is fortunate to have such a dedicated student body, with the talent, ability, and desire to create sustainable solutions to real world problems. In the living laboratory of the Cal Poly campus, students are employing the "learn by doing" spirit to institutionalize sustainability through student leadership.

Relevancy to the Best Practices program- Describe the features of the project/practice that qualify it as a best practice of potential interest to other campuses (eg. replicability).

Time and time again, we have seen that a unified student voice can drive change. Rather than struggling to work within the silos of campus bureaucracy, sustainability principles and enthusiastic student activism can break down barriers, open new discussions, and connect bright young minds with real challenges and problems needing innovative solutions. When the campus is viewed as a living laboratory, students can provide new resources to academic and administrative departments alike, developing new and creative programs while supporting the educational mission of California Polytechnic University, San Luis Obispo. The University reaps the benefits of cost savings, reductions in greenhouse gas emissions and environmental footprint, and positive publicity. Students learn valuable knowledge and skills that they take into the work place. Every campus has the same challenges in the current budget situation - reduced staffing, budget cuts, unfunded mandates, and a pressing need to be more sustainable. Through student leadership and volunteerism, campuses can leverage their most valuable resource - students - to accomplish their goals while providing students with their most valuable commodity - knowledge and experience.

Design integration- If appropriate, describe the ways in which this project/practice incorporated multiple disciplines and/or stakeholders into the design process. Describe how collaboration produced sustainable solutions or improved the project's performance.

This question goes right to the heart of what has made the Green Campus Program successful at Cal Poly - outreach and relationship building. Green Campus interns are considered to be an extension of Facility Services, with the full support of the campus Energy Manager in every project undertaken. Collaboration with stakeholders is what allows Green Campus projects to gain support, achieve buy-in, and get implemented. As described above, the Green Campus Program has developed relationships with stakeholders from all across campus. Green Campus Program interns have become skilled project managers, lobbyists, and guerilla marketing agents. By reaching out to stakeholders to understand their needs, goals, and challenges, Green Campus is able to create projects and programs that support campus staff and departments in accomplishing their own goals, rather than taxing them with additional workload. Furthermore, the Green Campus Program is able to connect diverse groups that can help each other, leveraging the work and energy of many to carry ideas to fruition. These efforts build a stronger sense of community at Cal Poly, with people and departments taking ownership of projects and programs so that they are carried on and improved. Through work with University Housing and Student Life and Leadership, sustainability has become a

fundamental part of student orientation and the residential experience. Through work with Campus Dining, campus food service has become more sustainable. By working with Information Technology (IT) staff, campus computing has reduced its energy footprint while unexpectedly reducing software costs and improving IT service capabilities. Through work with Facility Services and student volunteers, more building projects can be LEED certified, and more students can achieve LEED accreditation. In working with Career Services, campus can now encourage and recognize employers that are environmentally responsible, and can help students find jobs and careers in which they can make a difference.

Load management- If appropriate, describe how the project/practice provides on-peak electricity demand reduction, or demand response capability.

B. DEPENDENT QUESTIONS- This section contains questions that are relevant ONLY for certain awards. If the award you are submitting under is listed, please address the question that follows.

Best Overall Sustainable Design:
Please describe the design of the building envelope, focusing on its effect on the facility's overall energy-efficiency.

Water Efficiency/Site Water Quality:
Please provide an estimate of the annual amount of water saved or treated.

Best Overall Sustainable Design; HVAC Design; HVAC Retrofit; Lighting Design/ Retrofit; and Water Efficiency/ Site Water Quality, if applicable:
Please describe how the project/practice has been received by building occupants. Describe what has been met with satisfaction or dissatisfaction, and why.

Student Sustainability Award & Student Energy Efficiency, if applicable:
Describe project results, other than energy savings, that demonstrate its impact on your campus.

Answered above.

A student group may submit a single application for up to three discrete projects.

IV. ADDITIONAL INFORMATION

Please provide any additional information necessary to assist the selection team in understanding and evaluating the project. Supplemental information in the form of photos, drawings, etc. may be submitted.

If you are submitting in the Best Overall Sustainable Design category, you must submit several pictures of the project for the selection committee to adequately evaluate the building design.

V. SUBMISSION DIRECTIONS

Please submit proposals (electronic transmission only) by March 5, 2010 to:

Andy Coghlan
Sustainability Specialist
University of California, Office of the President
Email: andrew.coghlan@ucop.edu
Phone: 510.987.0119

Please visit the CA Higher Education Sustainability Conference webpage (http://2010higheredsustainabilityconference.org) for information about this year's conference.

UC/CSU/CCC SUSTAINABILITY CONFERENCE 2010
Hosted by LA Community College District at LA Trade-Technical College
June 20th -23rd

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PROJECT CATEGORIES

NEW CONSTRUCTION/MAJOR REHABILITATION

1. **Best Overall Sustainable Design -** This category is for best overall sustainable design for a new building or major building renovation. The building should show outstanding implementation of sustainability principles and energy efficiency

measures. The building design must have been completed between January 1, 2005 and January 1, 2010. Building must not be a previous recipient of an Energy Efficiency Partnership Program award.

2. **HVAC Design/Retrofit -** Projects in this category should demonstrate leadership in HVAC equipment selection, distribution system design, and controls specification. Laboratory designs and retrofits are included in this category. Examples include: appropriate equipment sizing; energy efficient equipment selection; maximizing the benefits of local climate; air distribution system innovation; and fume hood control innovation.

3. **Lighting Design/ Retrofit -** Projects in this category should demonstrate leadership in a new design or retrofit of lighting delivery systems and lighting control systems. Examples include: energy efficient fixture selection and deployment; utilization of daylighting technologies; and use of advanced lighting control technologies.

SUSTAINABLE OPERATIONS

1. **Water Efficiency/ Site Water Quality -** This category highlights outstanding water efficiency projects that have measurable and documented savings. Additionally, projects that significantly improve or protect site water quality may submit under this category. Water efficiency applicants with documentation or calculations of associated energy savings will be given special consideration throughout the review process. Examples of water quality projects include bioswales and riparian zone restoration.

2. **Innovative Waste Reduction Programs -** This award will spotlight a program, organization, or group that has demonstrated significant leadership in waste reduction and recycling efforts. Award candidates in this category should be engaged in campus-wide programs that seek to leverage student, staff, faculty, and community interest and commitment to reduce waste and increase recycling. Programs should be able to demonstrate innovative strategies and programs in reducing waste while maximizing their collections of recyclables to lead the campus to achieve zero waste goals.

3. **Student Energy Efficiency -** This award will spotlight a program, organization, or group that has demonstrated real leadership in student-led energy efficiency and conservation efforts. Award candidates will be engaged in campus activities that seek to leverage student interest and commitment to sustainability in order to increase energy awareness on campus; realize environmentally-friendly campus policies and commitments; and involve students in efficiency activities that compliment their campus' goals and that result in measurable energy savings.

4. **Student Sustainability Programs -** This award will highlight a program, organization, or group that has demonstrated real leadership in student-led environmental sustainability efforts. Award candidates will be engaged in campus activities that seek to leverage student interest and commitment to sustainability.