



GREEN SCHOOLS / GREEN CAMPUS UPDATE NEWSLETTER

Using Energy Efficiency to Strengthen Education



May 2008

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ALLIANCE TO
SAVE ENERGY

Creating an Energy-Efficient World

WATT'S NEW

Energy Benchmarking in Hesperia and Murrieta Districts

Preliminary ENERGY STAR Ratings Looking Good

As part of the Green Schools "Model District" project, all schools in Hesperia and Murrieta School Districts have been rated for their energy performance, a strategy to assess how much energy is being used in each building comparative to other educational buildings with similar characteristics.

Rating for energy performance is the first step in the process to receive an esteemed ENERGY STAR label. Energy performance in the facilities is rated on a scale of 1–100 relative to similar buildings nationwide. A rating of 50 indicates that the building, from an energy consumption standpoint, performs better than 50% of all similar buildings nationwide, while a rating of 75 indicates that the building performs better than 75% of all similar buildings nationwide.

Buildings scoring higher than 75% are eligible for an ENERGY STAR label, while those with low scores have a large potential for saving energy and can be targeted aggressively for energy upgrades or operational improvements.

So far, nine out of twelve schools in the Murrieta District have scored at or above the 75th percentile. In Hesperia, three out of five schools are performing above 75%. In fact, Mesquite Trails Elementary School even scored a 100% rating!

Schools now are poised to be checked and verified by a qualified third party engineer for indoor air quality; once that certification is received, they will apply for the ENERGY STAR designation for their buildings.

In addition to buildings performing well, the people inside the buildings are making a difference too in reducing their schools' energy use per square foot. Over the past 2 years, Green Schools activities have been saving an average of 6% in energy use.

Sustainable Community Colleges Presentation

Harnessing Energy for Change

Last month, on April 16th and 17th Senior Program Associate Renee Lafrenz attended and presented at the National Community College Sustainability Conference in Eugene, OR sponsored by the Association for the Advancement of Sustainability in Higher Education (AASHE). Her presentation entitled "Green Campus 101: Harnessing ENERGY for Change" covered an overview of the program and project case studies; it was well received and stimulated discussion amongst attendees from California as well as other states.

Hosted by Lane Community College, this first Conference on Sustainability for Community Colleges was attended by 125 people representing 47 different colleges and other organizations from 16 different states. Twenty breakout sessions, two tours, a film, a plenary session, and a webcast of the National Wildlife Federation's Chill Out: Campus Solutions to Global Warming provided attendees with the opportunity to learn practical skills and strategies for implementing sustainability at their schools.

Other distinguished guests included Dr. Rusty Stephens, President of Wilson Community College North Carolina and Larry Eisenberg, Executive Director of Facilities from the LA Community College District.

The Alliance plans to customize the Green Campus programs for community colleges, seeking to bring the program's tools and resources to the community college audience. Our program adaptation will capitalize on the diversity of the community college student population, the career focus, and the specific skills that students need to acquire to cement activities on campus, in classrooms, and in the community. As the "community" in community college implies, a community college program would not be confined to the campus, but would also serve as a valuable resource for community engagement and efficiency.

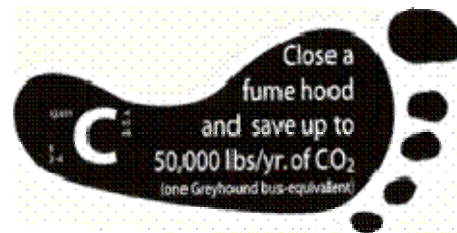
GREEN SCHOOLS & GREEN CAMPUS INNOVATIONS

Green Campus Innovations

UC Irvine Fume Hood Campaign

Interns at UC Irvine began their three-week spring quarter fume hood competition, which officially commenced on April 31. Following their initial lab audits and baseline fume hood sash height recordings, interns compiled and analyzed their data to determine which labs to include in this year's competition. Following their assessment, Samantha Kao, Alyssa Penacho, and Andrew Sata met with Environmental Health & Safety (EH&S) Physical Sciences Safety Coordinator Rama Singh to select labs to participate and coordinate outreach efforts for participating lab users.

This quarter Irvine has significantly increased the scope of the fume hood campaign, selecting eight professors in three buildings to participate in the competition - a scope representing 141 energy-guzzling fume hoods. Interns drafted a memo to lab users describing the fume hood competition goals, rules, and procedures, which Mr. Singh distributed to participants in the eight professors' labs.



To let the lab occupants know about the competition, interns created a new lab flyer highlighting lab energy saving tips and posted “Shut the Sash” stickers on fume hoods throughout the School of Physical Sciences. The stickers cleverly represent the CO2 emissions savings potential that can result from shutting fume hood sashes.

Interns intend to perform several random lab audits each week to measure fume hood sash heights and general lab energy use; this information will be compiled and compared to baseline data. The winning labs – determined as those with the maximum total reduction and percent reduction in fume hood sash height – will be rewarded with a prize luncheon and energy efficiency certificates in recognition of their efforts. Based on the increased scope of the competition, interns are hoping to achieve even greater energy savings than their previous competitions.

SLO LEED Innovation Points

Interns at Cal Poly San Luis Obispo began collaborating with LEED-EB (Existing Building) project manager Cheryl Mollan and the College of Science and Math (COSAM) to develop a plan for implementing network-based power management software in Faculty Offices East. Upon discussing efforts to improve performance and seek LEED-EB certification buildings on campus, Ms. Mollan and Mr. Elliot encouraged the interns to explore and develop LEED-EB innovation points for this project.

Innovation points are intended to capture creative ideas that normally wouldn't be considered in building designs. The network based power management project is promising because it provides the opportunity to baseline current energy use, measure changes, and report savings.

Interns also plan to write an innovation point for their dorm energy competitions in Poly Canyon Village, which is undergoing the LEED-NC (New Construction) Silver process. An added outcome of the innovation points will be to institutionalize these dorm energy competitions. Interns will also have the opportunity to engage academic stakeholders such as Dean of COSAM Phil Bailey and IT Technician Tom Randall, two major advocates and campus leaders in sustainability and climate change action.

Green Campus interns will be working with their stakeholders on developing the LEED innovation points over the remainder of this Quarter and into the Fall.

Green Schools Innovations

Tovashal Elementary School

Students finalized their energy recommendations this month and submitted the Tovashal Green Team's audit report, highlighting areas of energy waste and suggested behavioral and equipment changes that can help reduce school energy use.

Suggestions from the audit team consisting of students Jessica Kim, Avery Hidalgo, Shelby Amstutz, Erin Wilkins, Eddie Arballo, and Jeff Boone included: Power strips for every computer; light sensors for the library, office, computer labs, and kindergarten classrooms; door sensors for air conditioning and heating in these same rooms; reduction of personal appliances in classrooms, and purchase of a vendor miser for the coin-change machines, among others.

They came to these conclusions after extensive research showed that many classrooms were over-lit and only need about half the light that they currently use. Students also found that many classrooms have refrigerators and/or microwaves needlessly plugged in and that could be shared with others, and computers are left on during the day and oftentimes at night too.

Next steps for the Tovashal Green Team include contacting and meeting with the district Health Department officials to design an energy plan for their cafeteria that will not violate codes. They have observed that the cafeteria used a lot of energy and could be more efficient.

Sultana High School

Sultana High School students who participated in the October 2007 Student Energy Audit Training (SEAT) program presented a summary of their audit findings to the Hesperia Unified School District School Board. As a result of Sultana's presentation, District Superintendent Mark McKinney asked the team to come to the district office in May to do an energy efficiency "inventory" and offer recommendations to make the office complex "more green."

Superintendent McKinney cited the budget crisis facing CA schools as one of the reasons he wants the district office to go green. Getting rid of those energy hogs should save money for the district.

Stetson University Tracks Campus Carbon Footprint

Florida Students Inventory Emissions

Stetson University has learned the weight of its carbon footprint: 14,200 metric tons of CO₂ emissions per year. The figure reflects a 3,000-metric-ton offset due to trees planted in Central America by Alliance for International Reforestation, which has its headquarters at Stetson, but doesn't include a measure of chlorofluorocarbons (CFCs). Yet the footprint figure is the first of its kind at Stetson and it sets a baseline against which future efforts can be measured.

A greenhouse gas inventory is one of the first steps required by the American College and University Presidents Climate Commitment, a pledge that Stetson President H. Douglas Lee signed in June 2007. As a signatory, Stetson University is committed to working toward carbon neutrality.

In the spring 2008 semester, Stetson students conducted the audit as class work. They studied such items as fuel consumption, energy purchases, amount of natural gas burned on campus and fertilizer use. They surveyed the campus community about driving habits and commuter patterns, going as far as looking at mileage reimbursement forms in 213 departments on campus. Among discoveries was the fact that the university generates 556 tons of solid waste a year.

The students followed the Clean Air-Cool Planet Model, and assessed multiple greenhouse gases often characterized collectively as carbon, although each is distinct. The students looked at carbon (CO₂), methane, or natural gas (CH₄), and nitrous oxide (N₂O), and findings were normalized to CO₂ equivalents for audit purposes.

SCHOOL & CAMPUS RESOURCES

Building a New School or Renovating an Old One?

DOE's EnergySmart Schools Program Resources to Make Your School an Energy-Efficient, High-Performance Building

The Department of Energy's EnergySmart Schools program has the unbiased, practical information for those seeking to build or renovate a school energy efficiently.

States and local agencies are planning to invest more than \$60 billion in the next three years to build or renovate schools – it is a time of enormous opportunity. But how can a school district ensure that its efforts and expenditures pay in the long run? The EnergySmart Schools program encourages the nation's K-12 schools to construct new schools that are 50% better than current energy codes and to improve existing schools by 30%. To achieve these goals, the program provides great information on its website (www.energysmartschools.gov):

- “How to” advice on constructing and running an energy-efficient school--whether you are planning, designing and building, financing, or operating and maintaining a school.
- Practical tools to assist decision makers in planning:
 - Tips for overcoming financial and operational barriers.
 - How to make the case for energy efficiency or choose a building team.
 - A step-by-step plan for getting started.
 - Overviews of energy strategies and energy-efficient technologies.
- Explanations of financing options and links to websites with information about them. Profiles describing how other districts have financed energy-efficient schools.
- Case studies – What can be done, in what climate, and at what cost? See real-life stories about what other school districts have done.
- Easy-to-follow recommendations and guides for improving energy efficiency by at least 30% in different climate zones. Overviews of energy-efficient technologies and sources for additional information.

- Learn about getting the ASHRAE Advanced Energy Design Guide to K-12 School Buildings for free.
- Unbiased recommendations about operating and maintaining high performance systems and equipment – and tips on how facility managers can reduce costs with retrofitting and inexpensive changes.
- Great information for teachers and parents such as “Get Smart About Energy,” a database of over 300 energy-related lessons and activities.
- Links to over 50 energy efficiency organizations and resources.

Help Save the Planet and Win a Trip to DC

High School Students Battling Climate Change Eligible

The Weather Channel's Forecast Earth is inviting high school students to apply to be part of the Forecast Earth Summit, December 5-7, 2008, in Washington DC. Freshmen, sophomores, and juniors during the 2008-09 school year are eligible and must submit a 200-word essay outlining what they personally are doing to combat climate change, along with contact information, and a photo. For more information visit <https://www.forecastearthsummit.org>.