



# GREEN SCHOOLS / GREEN CAMPUS UPDATE NEWSLETTER

Using Energy Efficiency to Strengthen Education



October/November 2008

## IN THIS ISSUE:

### WATT'S NEW

Ten Rochester City Schools Receive Energy Star Award  
Saving Energy in DC Schools Program Kicks Off  
Green Campus Sweeps Competition Once Again

### GREEN SCHOOLS & GREEN CAMPUS INNOVATIONS

Humboldt State Awarded \$130k for Energy Efficiency Projects  
UC Santa Cruz Holds Training in Spanish for Dining Hall Staff

### SCHOOL & CAMPUS RESOURCES

EE Week Carbon Calculator for Students  
Video Game Efficiency - How Much Does Play Cost?



ALLIANCE TO  
SAVE ENERGY

*Creating an Energy-Efficient World*

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## WATT'S NEW

### Ten Rochester City Schools Receive Energy Star Award

#### Green Schools among top energy performers

In these times of dwindling energy supplies and high costs, ten Rochester City schools are being recognized for conserving enough electrical energy to power 168,000 homes for two months.

The schools have received the Environmental Protection Agency's Energy Star award, presented to organizations that protect the environment through superior energy performance.

The ten schools will proudly display Energy Star plaques and flags.

The following Rochester City School District schools received the Energy Star award:

- Virgil I. Grissom School No. 7
- Francis Parker School No. 23
- Henry Hudson School No. 28
- Audubon School No. 33
- Pinnacle School No. 35
- Andrew J. Townsend School No. 39
- Frank Fowler Dow School No. 52
- Marshall High School
- The Franklin High School campus
- Wilson Commencement Academy

Last year, these schools used approximately 35% less energy than average buildings. They did so by:

- Improving and upgrading their mechanical and electrical systems
- Implementing preventive maintenance strategies on heating distribution systems
- Using precise scheduling of ventilation systems based on occupancy
- Participating in Green Schools after-school clubs known as **Green Teams** to implement energy conservation

Five of the schools being recognized with Energy Star awards are also involved in the Alliance to Save Energy's Green Schools Program. These schools did activities such as giving teachers desk lamps to use instead of turning on all of the overhead lights, buying new, efficient vacuum cleaners for custodial staff with energy savings from previous years, removing mini refrigerators, and turning off computers.

"We are pleased to receive the Energy Star designation," said James Fenton, Supervising Director of District Operations. "Using resources wisely demonstrates our commitment to responsible environmental stewardship."

In November 2004, the Rochester City School District was the first K-12 institution in New York State to earn the EPA's Leaders Award for achieving a 10% improvement in energy usage. In November 2006, RCSD received the New York State Department of Environmental Conservation's Environmental Excellence Award for Innovative Energy Conservation and Education.

Energy Star ([www.energystar.gov](http://www.energystar.gov)) is a government-backed program that helps consumers protect the environment through superior energy efficiency. In 2006, with the help of Energy Star, Americans saved \$14 billion and prevented greenhouse gas emissions equal to those emitted from over 25 million vehicles.

## Saving Energy in DC Schools Program Hits the Ground Running

### Fourteen Schools Participate in Fall Workshop

The Alliance to Save Energy kicked off its first Green Schools program in its hometown last week, bringing the Saving Energy in DC Schools (SEDS) Program to the District of Columbia.

The SEDS program, funded under the DC Public Service Commission by the Natural Gas Trust Fund and co-implemented with the District Department of the Environment's Energy Office, engage students, teachers, facilities, staff, and administrators in teaching and learning about energy efficiency while actively pursuing energy saving opportunities at school.

School representatives from a mix of fourteen public, charter, and private schools from around the District gathered for the inaugural Saving Energy in DC Schools Program fall workshop on October 23rd. These school teams are joining DC's efforts to become a leader in environmental awareness and sustainability.

The teams of school representatives, consisting of teachers, school support staff, facilities managers, maintenance staff, and/or administrators, engaged in a full day of learning about energy and planning SEDS activities for their schools and students.



*(At right, teachers participate in an "oatmeal relay" to demonstrate energy loss through a system.)*

Schools heard welcome comments and encouragement from representatives from the DDOE's Energy Office that tied the schools' efforts into other Energy Office programs around the district; from Councilmember Mary Cheh's office, showing participants how the District is poised to be a leader in sustainability; and from the Office of Transformation Management at District of Columbia Public Schools that let schools know that DCPS is committed to reducing energy costs and getting accurate data for schools to use.

Teams also received lesson plans to engage their students in learning about energy, and Green Schools Tool Kits of professional-quality diagnostic tools. Everyone enjoyed using the light meters, watt meters, temperature sensors, and building stethoscopes to generate creative ideas about involving students in collecting, analyzing, and tracking energy data at their schools.

The school teams planned activities for the next few months in each of the above target goals, and will begin implementing their plans as soon as they get back to school.

### **Eight Schools Train Students to Audit Schools**

The Alliance to Save Energy is excited about the enthusiasm and innovation that came out of the workshop. Within the first month after the professional development training, **eight SEDS schools have already trained over 120 students to conduct energy audits** of their classrooms and school buildings and write reports recommending energy efficiency changes.

A diverse group of students, ranging in age from 7th - 12th grade, from Gonzaga College High School, Washington International School, Prospect Learning Center, Oyster-Adams Bilingual School, Alice Deal Middle School, Wilson Senior High School, Center City PCS, and Capital City PCS completed the trainings. [Click here to view a video](#) of the Oyster-Adams student energy auditors.

## **Green Campus Sweeps Competition Once Again**

### **Four Green Campus Schools Win California State University Poster Contest**



Green Campus Interns were featured prominently at the California State University Facilities Management Conference, with the four recognized campuses presenting to the full conference during Thursday evening's Awards Dinner.

- **CSU Chico (1st Place)** was awarded for their multifaceted office assessment program: Sustainable Consultation of Office Practices (SCOOP). With seven consultations completed to date, they estimate **potential savings of 11,817 kWh** for this ongoing project.

- **CSU San Bernardino (2nd Place)** was awarded for their large-scale energy assessment of the Santos Manuel Student Union as well as their lighting audit of Arrowhead Village. With six three-story buildings, Interns estimate **18,682 kWh of annual energy savings** for their Arrowhead Village project.
- **Humboldt State University (3rd Place)** was awarded for their upcoming stadium lighting retrofit project of the Redwood Bowl, with **potential energy savings of 24,708 kWh**, which equates to the energy usage of three US homes.
- **Cal Poly Pomona (3rd Place)** was awarded for their Parking Structure lighting audit, which a potential of **15 – 30% daily energy savings**.

As part of the conference, Green Campus Interns and Alliance staff also attended a Career Development Workshop, facilitated by CSU Chief of Plant, Energy and Utilities Len Pettis and featuring representatives from Southern California Edison, Pacific Gas & Electric, Sempra Utilities, and DMJM Harris, among others. These individuals spoke directly to the student audience about current energy issues as well as professional opportunities in the energy efficiency field.

## **GREEN SCHOOLS & GREEN CAMPUS INNOVATIONS**

### **Humboldt State Awarded \$131,838 for Energy Efficiency Projects**

#### **Intern-Driven "Bundled Projects" Will Save a Bundle of Energy**

Green Campus efficiency projects at Humboldt State University are really starting to pay off - literally. Savings projects initiated by Green Campus Interns qualify **HSU to receive \$131,828 in rebate funding** from the University of California/California State University/Investor Owned Utility Energy Efficiency Partnership.

These "bundled projects" combine energy savings from student-led network-based power management projects and monitoring-based commissioning (MBCx) of the Wildlife Science Building.

Network-based power management allows the activation of power saving features of many computers linked to the same network at the same time, and takes much less effort than manually enabling individual computers in a lab or across a campus to save energy.

Monitoring based commissioning involves the installation of energy monitoring and metering equipment at the building sub meter and system level that can give energy and facilities staff ongoing data about building performance. From there, staff will routinely "recommission" the building, making

sure that it continues to function properly - ensuring optimal building performance, reduced energy use, and improved indoor air quality, occupant comfort and productivity.

The bundled projects are estimated to save the university 512,790 kWh a year and 14,626 therms a year, equivalent to an annual energy cost savings of \$59,454 and the reduction of 253 metric tons of CO<sub>2</sub>. Project implementation is expected to occur soon, using the rebate money they've been awarded and according to the project plan that Green Campus Interns helped to develop over the last 5 to 6 months.

## UC Santa Cruz Holds Training in Spanish for Dining Staff

### Energy Education for Non-English Speakers

Seeing a need to bridge a language barrier among dining hall staff, Interns at UC Santa Cruz arranged for a Spanish language training for dining hall employees. Approximately 90% of the staff speak only Spanish and a few staff members are bilingual. Interns Katie Landeros, Lara White, and Sean Higbee gave four 45-minute long water efficiency workshops to a total of **67 Food Service Workers at UCSC**.

The goal of the training was to inform staff of a "Stage 2" water emergency, which requires that specific measures be taken to conserve water, and subsequent energy it takes to heat and pump water to the campus which sits atop a hill, in the dining halls. One example is thawing a frozen product in the refrigerator, which saves approximately 225 gallons of water compared to thawing the frozen product under running water.

Interns worked with a translator throughout the training to ensure that all information was understood and the training was divided into three parts. The first part was an introduction. The second part was a scavenger hunt in which staff members received a series of questions and worked in teams to find the methods they can employ on the job to help save water and energy. Around the dining hall, they found items with attached descriptions, such as an aerator which limits the amount of water let out of a faucet and mixes the water with air to maximize efficiency. Finally, the Interns reviewed the scavenger hunt and went on to part three, a 'jeopardy' game in which staff members applied what they had learned in friendly competition and were quizzed on methods and technologies to use in the dining halls to save water and energy.

When asked why saving water was important to them, one participant answered, "Because where I grew up, there isn't clean running water." Another answered, "We need to conserve water because the population is growing and the amount of freshwater is not."

Overall Interns received positive feedback from staff who appreciated the information being presented in their native language.

## SCHOOL & CAMPUS RESOURCES

### EE Week Carbon Calculator for Students

#### Students Can Assess Carbon Footprints

National Environmental Education Week offers a carbon calculator specifically designed for students. Built by Zerofootprint, the EE Week Carbon Calculator encourages students, classrooms, and entire schools to measure and manage their own carbon footprints while developing creative ways to curb their carbon output and slow climate change.

Visit <http://zerofootprint.net/youth/new> to access the calculator.

### Video Game Efficiency - How Much Does Play Cost?

#### Could Your Gaming Console Be Using More Energy than Your Refrigerator?

A new report out from the Natural Resources Defense Council (NRDC) finds that video games, a much overlooked energy user in homes, may actually be using significant amounts of energy and money to power.

This first ever comprehensive study on the energy use of video game consoles found that they consumed an estimated 16 billion kilowatt-hours per year -- roughly equal to the annual electricity use of the city of San Diego. More than 40% of all households in the United States contain at least one video game console.

Through the incorporation of more user-friendly power management features, we could save approximately 11 billion kWh of electricity per year, cut our nation's electricity bill by more than \$1 billion per year, and avoid emissions of more than 7 million tons of CO<sub>2</sub> each year.

Surprisingly, energy use varied significantly among the popular consoles on the market today. The Sony Playstation 3 and Microsoft's Xbox 360 use as much as nine times more energy than the Nintendo Wii. When turned off after play, the consoles use a thrifty \$12, \$11, and \$3 of energy per year, respectively. However, if left on continuously, the Playstation 3 can use \$134 a year, the Xbox 360 \$103 a year, and the Nintendo Wii \$10 a year.

To put those numbers in perspective, A Sony PlayStation 3 or Microsoft Xbox 360 left on 24 hours per day, seven days per week will consume as much electricity each year as two new refrigerators.

The study only underlines the importance of ingraining good energy conservation habits in the populations using these systems - usually young people - to save energy, money, and resources! To read the full report, visit: <http://www.nrdc.org/energy/consoles/contents.asp>.