The SLO
Green Scene
SLO Green Build's Quarterly Newsletter

Volume 1, Issue 2 Fall, 2006

Events

* **7-19-06 6:30-8:30**
SLOGB:Learn ~ Build ~ Save
Sands Motel - SLO
The Building Envelope and Advanced Framing
WWW.SLOGREENBUILD.ORG

* **9-20-06 6:30-8:30**
SLOGB: Learn~Build~Save
SLO County Library *Interior and Exterior Finishes*
WWW.SLOGREENBUILD.ORG

* **10-10-06 All Day**
SLO Vets Hall– Grand Ave.
Energy Summit

* **11-15-06 6:30-8:30**
SLOGB:Learn~Build ~ Save
Location TBA *Mechanical Systems, M.E.P.*
WWW.SLOGREENBUILD.ORG

Conferences

* **August 13-18, 2006**
ACEEE- En route to zero Energy Buildings Pacific Grove
WWW.ACEEE.ORG

* **August 19-20, 2006**
Solar living institute 11th annual SolFest 2006 Hopland.
WWW.SOLARLIVING.COM

* **October 20-22, 2006**
Bioneers Conference San Rafael
WWW.BIONEERS.ORG

* **November 10-12, 2006**
Green Festival San Francisco
WWW.GREENFESTIVALS.ORG

Sent your events to Events@SloGreenBuild.org

CSU Cuts Energy Consumption

California State University (CSU) system cut electricity and natural gas consumption by nearly 11.3 million kWh and 279,000 therms, respectively, across its 23 campuses in 2004-2005. CSU made these cuts by working in partnership with local utilities and CSU's student organization, Renew CSU. They upgraded lights to LED and T8 fluorescent with electronic ballasts while installing occupancy sensors in restrooms. Also educating thousands of students each year about energy efficiency with classes and contests where residence halls compete to lower energy use. New buildings are designed to Leadership in Energy and Environmental Design (LEED) standards.

Renew CSU is a campaign to promote student involvement with CSU faculty, staff and administration in collaboration with the CSU Office of the Chancellor and the

CSU Board of Trustees to implement environmentally sound practices in the CSU system.

So far the CSU leaders promise to reduce energy consumption 15% by 2010. And as of January 2006, all new capital projects are designed to outperform California's tough energy standards by at least 15%. On Sept. 21, 2005 The California State University Board of Trustees approved a revised policy on energy conservation that calls for maintaining current practices of energy conservation and further reducing energy consumption by another 15 percent.

They will develop independence from electricity grid by increasing self-generation to 50 MW, and increasing the purchase of renewable energy to 20 percent from the current 15 percent.

At Cal Poly, The Campus Sustainability Initiative teamed with the Renewable Energy Institute to educate the campus on how to save energy. Their efforts include the annual Waste Awareness Week

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Managing Construction Waste On-Site

Your construction company can save money by reducing the amount of waste produced by reusing and recycling waste materials. Costs for waste disposal drops as waste is diverted and fewer raw materials will be purchased as products are reused. Some recyclables can actually make you money. By respecting your impact on landfills you may dramatically enhance your company's image within the community.

Here are a few ways to make your onsite construction recycling program more effective.

Leadership is important to instigate an effective program. An individual or team should be responsible for crew education, setting up the site, coordinating, supervising, and tracking recycling efforts. Hire consultants when assistance is needed.

Find appropriate space to store salvaged waste and recycling bins. Choose smaller bins and more regular collection when space is limited. Plan circulation routes for convenient use and pickup.

Promote your plan and educate crews on how the materials should be separated, where the materials go and how often the materials will be collected. Include waste handling requirements in all project documents. This makes it clear from the beginning that waste prevention and recycling is expected from all crew members and subcontractors. Let the crew and subcontractors know how effective they have been. Include everyone in the process. Encourage suggestions for improving recycling methods.

Prevent contamination, even a small amount of other material in a bin of recyclables can make the entire bin unacceptable for recycling. To prevent recycling contamination: laminate posters with information describing the recycling program and post then in visible locations; clearly label the recycling bins; post lists of materials that are and are not recyclable; place recycling and trash bins near each other so that trash is not thrown in the recycling bins; conduct regular site visits to verify that bins are not contaminated; consider locating bins in a locked or supervised area to prevent contamination by the public.

Remember, Effective programs depend on one-time material handling!

By Jessica Steely

Refrigerator Running : 101

Refrigerators consume about 18% of all electricity in a typical Californian home — using more electricity than any other single household appliance. Fortunately, refrigerators have become much more efficient in the past 20 years, using 60% less electricity on average than 20-year-old models.

If you have an old, inefficient refrigerator, you may be paying $120 a year in electricity in areas with high electricity rates. A new, more efficient model will lower your electric bill and save you money, which in turn will offset the cost of purchasing a new refrigerator. Proper use and maintenance will also increase your efficiency and operating costs

Optimize Energy Performance Through Maintenance

* Clean the condenser coils at least once a year. Dirt and dust can accumulate on the condenser coils. Unplug the unit and brush or vacuum the coils to maximize performance. When was the last time you really did this, really?

* Keep cool air inside by opening the door as infrequently and as briefly as possible.

* Check the temperature to ensure that the refrigerator operates between 36°F; and 40°F and the freezer between 0°F and 5°F. Use a thermometer to check the temperature; adjust the settings if necessary. Your refrigerator may use 25% more energy if it is kept at 10°F colder than recommended.

* Turn the anti-sweat heater off when it is not needed. The anti-sweat heater helps to prevent moisture from forming on the outside of the refrigerator during hot, humid weather. The switch heats the area around the door seals to prevent condensation and adds 5 to 10% more energy to the refrigerator's overall energy consumption. Switch this feature off or choose the "energy saver" setting when the feature is not needed.

Your refrigerator may use 25% more energy if it is kept at 10°F colder than recommended.

* Check the location to ensure that the unit is not located in direct sunlight or near heat-producing appliances, such as ovens and dishwashers. Maximize air circulation around the condenser coils by making sure there is a space between the unit and the wall or cabinets. *Attention designers.*

* Defrost manual defrost freezers regularly. Ice build-up on the coils will make the compressor run longer, wasting energy.

* Keep door seal clean and in good repair. Test the seal by closing a piece of paper or dollar bill half way in the refrigerator door. If you can pull the paper out easily, the latch may need adjustment or the seal may need replacing.

New Appliance Buying Guide

* Choose the right size refrigerator for your household needs. Generally, the larger the refrigerator, the greater the energy consumption. Too large a model will waste space and energy.

* Consider buying a model with a top freezer. Top-mount freezer models use 7 to 13% less energy than side-by-side models.

* Determine if you need and will use an ice-maker and dispenser. Automatic ice-makers and through-the-door dispensers increase energy use by 14 to 20% and raise the purchase price by about $75 to $250

* Chest freezers are 9 to 22% more efficient than upright (front-loading) models because they are better insulated and allow less warm air to enter the freezer when the door is open.

** Ask for an ENERGY STAR model. Purchasing an ENERGY STAR qualified model will ensure your refrigerator is energy efficient and exceeds standard-efficiency models by at least 10%.

*The American Council for an Energy-Efficient Economy (ACEEE) is a nonprofit, 501(c)(3) organization dedicated to advancing energy efficiency as a means of promoting both economic prosperity and environmental protection.

For a list of the most efficient models, check the American Council for an Energy-Efficient Economy (ACEEE)'s Consumer Guide to Home Energy Savings at www.aceee.com or PG&E at www.fypower.com

Portland Cement Company Increasing Efficiency

California Portland Cement Company (CPCC) cut annual electricity consumption by 10% - roughly 31 million kWh - saving nearly $3 million each year. Conservation stems from a host of process improvements and equipment upgrades, including installation of a grinding mill that uses new technology to reduce energy consumption by 40% compared to older mills. CPC also partnered with the Environmental Protection Agency to develop an energy benchmarking program for other cement plants. Learn more at http://www.calportland.com .

Continued from **CSU Cuts Energy Consumption;** *Page 1*

and Earthday Celebrations, along with the publication of brochures and the "Environmental Resource Guide For Cal Poly".

They have also implement the Dairy Cogeneration Project, collecting the methane produced by the dairy unit for fuel.

Here is proof that team conservation efforts can really be effective and might help maintain our comfortable way of life for decades to come.

For more information visit 4th annual PG&E Flex Your Power Awards at fypower.org, RenewCSU.org, Refrigeration Heat Recovery, and the Campus Sustainability Initiative (CSI)

Covering the Greenroof Advantage

Greenroofs are vegetated roof covers constructed atop a roof deck. They are sometimes called eco-roofs or sky gardens. As living roofs, they contrast starkly with the average inert, hot, barren roof. The greatest potential of greenroofs lie in their capacity to cover impervious roof surfaces with living, breathing, permeable plant material. Depending on rain intensity and soil depths, greenroofs can absorb 15% to 90% of runoff, thereby considerably reducing potential pollutants from traditional impervious roofing surfaces. Plants intercept and delay rainfall runoff and the peak flow rate, alleviating combined sewer overflows, and eventually return water to the surrounding atmosphere by evaporation and transpiration. Tightly sealed impervious surfaces such as concrete and asphalt, commonly found in urban areas, greatly contribute to the ever-growing problem of the urban heat island effect. Greenroofs can reduce ambient air temperatures and increase humidity levels in the surrounding areas also providing habitat for a diversity of wildlife.

Greenroofs are attractive, healthy, and regenerative roof landscapes that can help protect our environment by diminishing development impacts on our communities. They are one sustainable design element on the palette of today's ecological designer.

San Luis Obispo Government Producing Electricity On-Site

San Luis Obispo County's new Government Center is expected to exceed California's energy standards by 37%. Energy saving innovations included low-e glazing on windows and an HVAC system with underfloor air distribution. A central cogeneration plant supplies 600-kW, roughly 40% of the electricity, and provides heating and cooling using waste heat.

Mechanical Electrical and Plumbing systems were placed within the plenum formed between the floor slabs and raised access floors, increasing efficiency by up to 30%. The thermal mass of the concrete slabs assist in regulating building temperature.

In 2003, the San Luis Obispo County Board of Supervisors approved a $2.4 million project that gave the county the ability for on-site generation of electricity. The Gas Co., which serves most of Central and Southern California, awarded San Luis Obispo County more than $500,000 as an incentive to install that new cogeneration system.

Close to 2/3 of the energy used to create electricity in most centralized power plants becomes heat and transmission losses. That means only 1/3 of the potential energy is delivered to the user. San Luis Obispo has chosen to increase their efficiency by addressing both of those issues with their on site Cogeneration system.

Cogeneration is an energy-efficient, environmentally-friendly method of producing electricity (power) and steam and/or hot water at the same time, in one process, with

one fuel. Fuels used in cogeneration include natural gas, fuel oil, propane, bio-mass, bio-waste, or wood waste. More and more companies are finding cogeneration the best way to provide power and thermal energy for their on-site energy requirements due to the numerous advantages and benefits.

The San Luis Obispo Government Building, located at 1087 Santa Rosa Street in San Luis Obispo, was designed by Simpson Gumpertz and Heger.

This 97,000 square foot cast-in-place concrete office building siting over 64,000 square feet of subterranean parking, broke ground in November, 2002.

The objective was to build a cogeneration system that would convert natural gas to electricity for use by the courthouse, administration building and planned government center. The system was designed to utilize the waste heat produced in the energy generation process to offset boiler usage and create chilled water for building cooling with an absorption chiller. The project was delivered with the help of Thoma Electric, Smith Electrical and American Mechanical Contractors as subcontractors. These firms worked under the supervision of Aircon to implement the electrical design and portions of the mechanical design.

Project components include: Three 200kw cogeneration units- 45 distribution subpanels- 2000 amp, 480 volt Service feed from the County of SLO's Cogeneration Power Plant with 12 distribution transformers. And one 150-ton absorption chiller system.

A forward looking group of the leaders of San Luis Obispo are helping to incorporate the future in today's buildings. This system is estimated to save between $200,000 and $357,000 per year with an expected payback in 5-7 years. (Follow up report to come)

Sources for this article include: Aircon Energy-www.airconenergy.com, PG&E Flex your power; EcoGeneration Solutions, LLC Cogeneration TechnologiesSM, info@cogeneration.net , Telegram Tribune, Smith Electric

SLO Green Build

Learn ~ Build ~ Save

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www.SLOGreenBuild.org

SLO Green Build, your local non profit organization is dedicated to minimize construction-related waste, create healthier, more durable buildings, reduce operating costs, and support local manufacturers and suppliers.

We work to educate the public and encourage local government to provide incentives for efficient, healthy construction practice.

Look for **Learn~Build~Save;** A green building educational series designed to inform all genres of people how to create affordable, efficient, healthy homes.

Want to get involved? Volunteer with SLO Green Build today. Positions are available for all interests, aptitudes and level of involvement. Come enjoy the company of other individuals who believe in a beautiful future for the Central Coast.

Check out The Green Building Guidelines, an educational publication, to explore affordable methods of green design and construction practical in this climate. A master checklist is also included to help you quantify how efficient and healthy your project will be. A free copy of the guidelines is included with membership. They are $5.00 each for nonmembers or can be downloaded from SLO Green Build's website for free.

Thank You SLO Green Build Municipal Partners:

Arroyo Grande ~ Morro Bay ~ San Luis Obispo ~ Pismo Beach

The leaders above have generously pledged their support to SLO Green Build's mission, promising a comfortable and healthy future for the Central Coast. With each city's support and contributions of $2000, SLO Green Build has been able to continually develop our education methods, targeting the Homeowner, Builder, Designer, Government, Agent, Lender, Vendor and Engineer operating within our great county.

Watch for SLO Green Build Information Kiosks coming this fall to a planning department near you!

Become a SLO Green Build Member Today

- **Cypress $30** ($10 Senior/Student) I*ncludes your copy of the Green Building Guidelines*
- **Manzanita $100** *plus Website listing*
- **Bay Laurel $200** *plus brochures at events*
- **Madrone** $500** *plus listing on our web site*
- **Coastal Live Oak $1000** *Plus mention on radio & TV*
- **Sycamore $3000** *plus listing/logo on kiosks located throughout SLO County*
- **Redwood $5000** *Plus display table at our events*

**Volunteer hours may be applied to the Madrone level .

Annual Membership Application Form

YES! I support *SLO Green Build*. Enclosed is my check for $_____.
*For Manzanita level and above, please indicate if this is a ____Donation (501c3) or a ____Business Deduction

Name_____Profession_____

Company name_____

Address_____City_____Zip_____

Email:_____Phone_____

Please make your check payable to: **ECOSLO/SLOGB**
Mail to: ***SLO Green Build 7900 El Camino Real Atascadero, CA 93422***
Business members will be asked to sign a SLO Green Build "Commitment to Green Business Practices" Agreement prior to being on the website resource listing.

Thank you for supporting green building in San Luis Obispo County