



Sustainability News & Tips

Moving toward sustainability at work, at home, and in your community

ORNL PEOPLE LIVING SUSTAINABLY: Building a Sustainable Home

Kathryn Cogar, of ORNL's HR Directorate, and her husband, Graham Walford, have incorporated principles of sustainability in their own home. Their 2,400 square foot home near Rockwood was designed to be comfortable, energy-efficient, handicapped-accessible, require minimal maintenance, and fall within the average cost for typical home construction. Walford, a physicist, installed sensors and used thermal imaging to determine how well the energy-saving measures were working.



The house has special systems such as a self-ventilating, insulated roof, an insulated concrete slab and walls, gray water and rainwater reuse, and an air-thermal mass heat exchanger to provide fresh air of moderate temperature for the house. Plans include adding a greenhouse/atrium and a garage. Solar hot water, photovoltaics, and other additions will be considered once the owners understand how well the existing measures are operating.

Cogar and Walford have this advice for others considering a similar project: (1) do your research and become knowledgeable, (2) plan, plan, and plan some more, and (3) choose your contractor carefully. More information and photographs of this house are can be found [here](#) on the Sustainable Campus Initiative web site.

What are you doing to move toward sustainability? We will feature an example in each issue describing your efforts and their results. Share with the ORNL community the lessons you've learned.

Did you miss Jeff Christian's "Sustainability at Home" seminar?

The video and slides from Jeff's talk, "A Very Comfortable, Energy-Efficient Home—How You Can Make It Happen," are available on this [page](#) of the Sustainability at ORNL website.

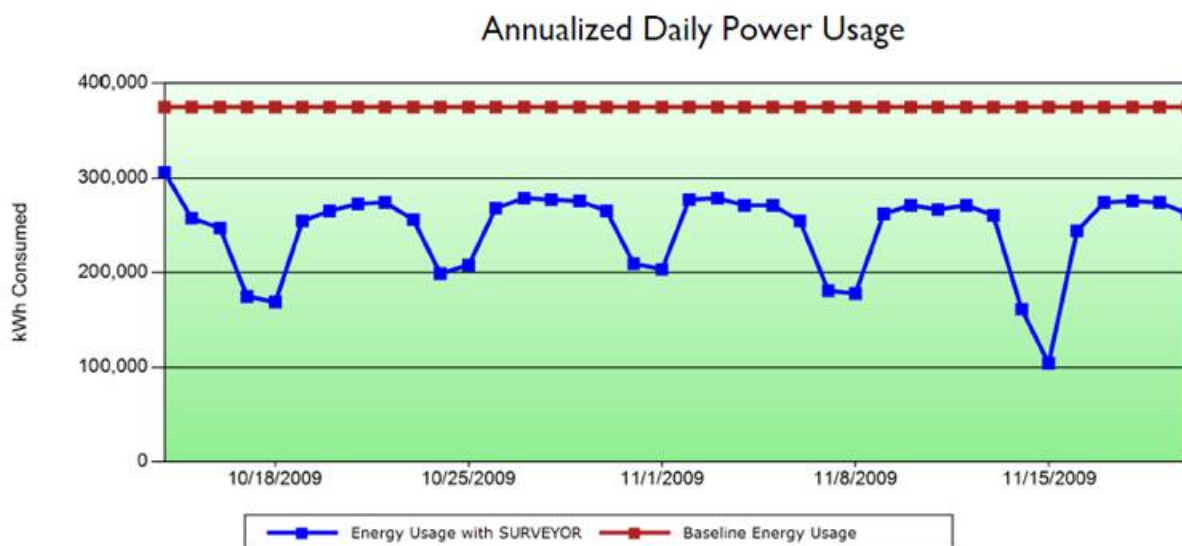
SUSTAINABILITY TIP: Use and Recycle Compact Fluorescent Bulbs

Compact fluorescent light (CFL) bulbs use up to 75% less electricity than equivalent incandescent bulbs. They last much longer and reduce greenhouse gas emissions significantly. CFLs contain tiny amounts of mercury sealed inside the glass. Because electricity generation is the largest single source of mercury in the environment, energy-efficient CFLs contribute [less mercury](#) to the environment than would incandescents. Nevertheless, the mercury content means that CFLs require special care when they burn out. They can be disposed of as hazardous waste or recycled. Most Tennessee counties designate hazardous household waste collection days; Knox County has a permanent [collection center](#). Used compact fluorescent bulbs can also be taken to the return desk at [Home Depot](#) stores to be recycled.

MOVING TOWARD A SUSTAINABLE CAMPUS: Green IT Shows Energy Savings

Last fall, volunteers were recruited by ORNL's Green IT program to test the Verdiem Surveyor Power Management software application. The purpose of this testing was to determine if power settings could be managed on Windows desktop computers and reduce energy consumption. A primary consideration during this testing was the reduction of energy consumption without creating difficulties or associated issues for users. About 65 computers were in the pilot program. The software controls were also used on 310 computers in the F&O organization and on most computers in Buildings 3147 and 3156.

After energy use was measured for several weeks, the modified power settings were applied and the consumption was compared. The results indicate that our testing was successful. Overall, computers with the power management application installed and power settings turned averaged 284 kWh/year, a 34.1% savings over the baseline energy consumption. More [metrics](#) can be found on the [Green IT site](#).



Energy consumption is extrapolated to a population of 450 PCs based on actual measurements.



Van Baxter, of ORNL's Whole-Building and Community Group, describes testing capabilities in the Building Equipment Laboratory in Building 3144.

COMMUNITY SUSTAINABLY: Maryville College Students Visit ORNL

About 60 students from Maryville College visited on January 14 to learn about sustainable building practices. The group attended Jeff Christian's lecture, "A Very Comfortable, Energy-Efficient Home—How You Can Make It Happen," visited the Building Technology Research and Integration Center (BTRIC), and toured the [energy-efficient homes](#) being constructed by the [ZEBRAAlliance](#) in Oak Ridge.

Sustainability News & Tips is produced by the Sustainable Campus Initiative and posted on ORNL's Sustainable Campus web site (<http://sustainability-ornl.org>). Editors are Marti Salk (574-7315) and Kathy Gant (574-5816). E-mail announcements, news, and suggestions to sustainablecampus@ornl.gov. If your co-workers and colleagues don't have ready access to e-mail or the web, please feel free to print out *Sustainability News & Tips* and post it.