Practical Solutions: Water Conservation

Case Study
September 28th, 2009

On August 25th, over twenty participants attended the first in a series of workshops exploring practical and affordable techniques for sustainable living. This effort builds on the ReUse Center tradition of teaching the public on how to use salvaged building materials. In this renewed effort, achieving general energy and water savings was the focus. The data and feedback collected pre and post workshop from this cross-section of interest groups was invaluable in examining the scope of opportunity for environmental impact from low and no cost conservation measures.

Program: Guest Speaker Vicki Carey began the program outlining how resource depletion poses a global challenge while reassuring the group that low cost measures taken at the level of a household or community are indeed the first, critical steps in taking control of these issues. Diana McKeown (Coordinator for the Metro Region of Clean Energy Resource Teams) highlighted the range of effortless measures that could lead to a big overall impact and offered an overview of the public resources held by the Green Institute.

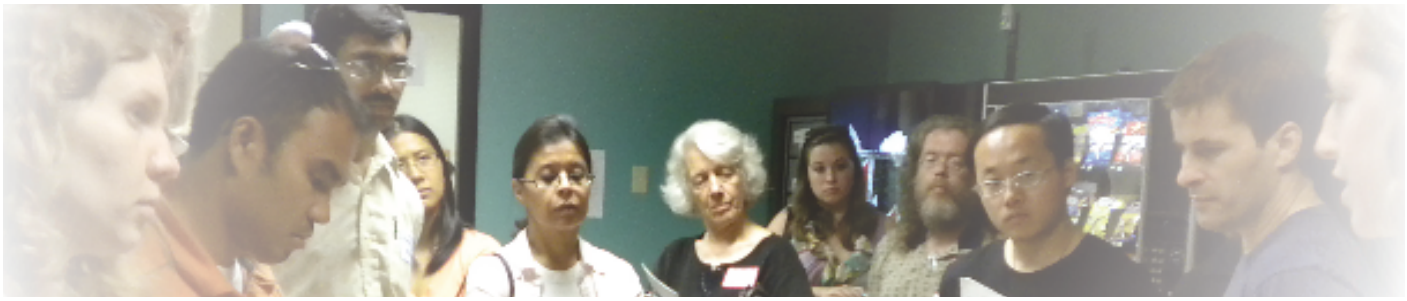
In what was nominated as the most popular segment, Green Institute Interns demonstrated how to measure the water flow of showerhead fixtures and faucets, how to use a portable energy consumption meter to log the electrical draw of household appliances and, finally, how to observe and eliminate idle electrical current (commonly referred to as phantom load) with the use of a smart power strip.

Impact: Represented in the audience were government officials, homeowners, landlords, renters, building professionals and academia residing within Minneapolis and Saint Paul. More than half of the workshop participants asserted that – prior to the workshop - they had already undertaken steps toward improving the resource efficiency of their home.

These primarily included:

- Replacing incandescent light bulbs with compact fluorescent lights;
- Washing clothes in cold water;
- Applying caulking and weather stripping; and
- Installing window insulation film

While the pool of participants clearly included concerned citizens, only one indicated use of a low-flow showerhead fixture. Exit surveys confirmed, however, the intention of half of the total participants of installing one -- as well as other specific commitments made equivalent to saving 1,020 kWh of electricity and 221 therms of natural gas per year, and offsetting a minimum of four tons of carbon dioxide emissions per year. (Lifetime savings are even more staggering - amounting to 15,300 kWh and 1,392 therms and 42 tons of CO2)



The table below demonstrates other low cost measures with low market penetration and unrealized potential for energy savings and environmental impact.

Market Penetration Opportunity Conservation Measures (Source: Navigant)		
Measure	Current Market Penetration	Energy Savings
CFL	2% (based on replacement of total number of bulbs in house)	39 kWh/year
Wash Clothes in Cold Water	1%	192 therms/year
Caulking and Weather-stripping	5%	72 therms/year
Window Insulation Film	5% (max. possible penetration is 30%)	29 therms/year
Low Flow Showerhead	28%	21 therms/year
Faucet Aerator	28%	9 therms/year
Smart Surge Strip	data not available	170 kWh/year

Obstacles: Under-insulated structures were overwhelmingly cast as perceived sources of energy waste, followed by inefficient appliances and mechanicals.

Participants identified money as the single most important obstacle to saving energy in their home. Time and

motivation among household members were also cited as barriers to undertaking a concerted effort for controlling energy demand within the household of workshop participants.

Justified by the low capital cost and the undeniable cumulative savings potential, these obstacles must be addressed. Directing education and outreach to different interest groups and incorporating affordability and convenience in program delivery will be key in realizing and tracking savings from low and no cost conservation measures.

*The workshop was carried out as a collaborative effort amongst various Green Institute Staff and the donated time and expertise of Vicki Carey, City of Minneapolis Permit Compliance Officer and Veteran Energy Auditor. Funding for the workshop and effort came from the City of Minneapolis Climate Innovation Grant, the Department of Energy and the Department of Commerce.

Handouts included conservation measures according to their impact, cost and ease of implementation as well as a guide to reading and understanding a City of Minneapolis water bill.

Up Next: The Green Institute will host a workshop that bridges on Winterizing Strategies on Thursday, October 22nd at 6:30 PM. To RSVP, contact Agatha Vaaler (avaaler@greeninstitute or 612.278.7142).