EDUCATION

October 10, 11:45 AM - 1 PM: SEDAC Lunch and Learn
Illinois Sustainable Technology Center, Champaign. Directions.
Waiting list, call 1-800-214-7954

TOPIC: The Practical Aspects of Lighting Upgrades for Energy Efficiency Projects

Michael J. Stanch will present practical ideas for lighting upgrades under the Illinois Energy Efficiency Portfolio Standard programs administered by IL DCEO, ComEd and Ameren. Topics to be covered include effective lighting upgrade strategies, perils and pitfalls of poorly planned upgrades, budgeting for lighting upgrades and other practical ideas that will help make your lighting upgrade project a painless and fruitful process. There will be plenty of time allowed for questions and answers. Anybody interested in pursuing a lighting upgrade project is welcome to attend.

NEWS

Choosing Energy Efficient Windows

With the advent of advanced glazing systems, selection of an appropriate window has become far more complex than it used to be. It is important to remember that although windows are highly desirable elements of the building envelope, they can impact the energy consumption of a building significantly.

When selecting a window we would like to “tune” the window to the particular location it will be installed. “Tuning” involves controlling which wavelengths of energy we want to allow through the window and which ones we want to block. The solar spectrum includes ultraviolet (UV), visible and infrared (IR) electromagnetic waves. With application of Low-E films and tints, we can “tune” what amount of UV, visible and IR energy will be allowed to transfer through the glazed surfaces. By “tuning” windows we can appreciably enhance the energy performance of a building envelope.

Some important issues to consider when selecting windows are:

- NFRC rating (see right) – The National Fenestration Rating Council certifies the energy performance of windows and allows for easy comparison between window products.
- U-factor – The ability of the window assembly (meaning both the window and the frame) to transmit heat is expressed by its U-factor. The lower the U-factor, the less heat it will transfer. Look for a whole unit U-factor of 0.33 or less, which equates to an insulation R-value of 3. This will require windows be at least double pane with a Low-E coating.
- Low-E – Low emissivity coatings refer to a transparent metallic oxide coating that is applied to the glass that reflects long-wave IR heat energy while allowing shorter wavelength visible light through. In heating climates, like northern Illinois, it is preferable to have the Low-E surface on the outer surface of the inner pane. In cooling climates, like southern Illinois, it is preferable to have the Low-E surface on the inner surface of the outer pane. Additionally, there are different degrees of Low-E coatings.
- Gas fill – filling the space between the panes of glass with a low-conductance gas such as argon or krypton can further increase the energy efficiency of a window. Argon is less expensive than krypton and is typically used in windows with ½” space between the glass panes. Krypton is used for thinner gaps.
- \( V_t \) – Visible light transmittance is expressed as a number between 0 (opaque) and 1 (the amount of light that would pass through an open hole in the wall). To most people, \( V_t \) values above 60% look clear. High \( V_t \) allows more natural daylight to enter thus reducing the need for artificial light along perimeter spaces.
...more education

Online Classes are available through SEDAC and the Office of Continuing Education at UIUC:

The Architecture of Sustainability: 10 modules - individual or packaged.
Module 1: 3 AIA LUs/CEUs, $75.
Modules 2-10: 1 AIA LU/CEU, $50.
Package of 10 modules: 12 AIA LUs/CEUs, $450.

Energy Basics for Small Business.

Online Registration is continuous at www.continuinged.uiuc.edu

OTHER

Green Institute at Heartland Community College, Normal
November 13 - April 30: Building Operator Certification Level 1
October 10 and November 8: Basic Photovoltaics
October 11: Solar Domestic Hot Water Systems
November 7: Introduction to Wind Systems

EVENTS

October 18: Renewable Energy Fair, Waubonsee Community College.

November 17-18: DCEO PEER Exchange at Starved Rock.

January 7-9, 2009: MEEA Midwest Energy Solutions Conference, Chicago. Register now

NEWS

...contd.

- SHGC – Solar heat gain coefficient is the fraction of available solar heat that successfully passes through a window. In cold climates a high SHGC is desirable (SHGC ≥ 0.55) and in warm climates a low SHGC is desirable (SHGC ≤ 0.40).
- The coldest part of a multiple-glazed window is around its edges. The glazing perimeter is typically the weak spot in the thermal performance of windows. Look for “warm edge” spacers between the panes.
- Look for well insulated window frames and if aluminum, make sure it has a thermal break.

Other important issues to consider are orientation, size and shading of windows. These will be covered in an upcoming newsletter. Proper window selection is an important component to creating a high-performance building envelope. Windows have a profound impact on building energy usage and interior comfort conditions.

USEFUL LINKS

www.efficientwindows.org/
www.energystar.gov/index.cfm?c=windows_doors.pr_windows
www.nfrc.org/

CHICAGO CLIMATE ACTION PLAN

In September 2008, the City of Chicago launched a new Web site www.chicagoclimateaction.org where individuals and businesses can learn about climate change, what they can do in their daily lives to reduce emissions, and what the City is doing to protect and preserve the environment.

EEPS

Check the Ameren Illinois Utilities, ComEd, and DCEO Web sites often as the programs develop.

AMEREN ILLINOIS UTILITIES
Act On Energy Business Program

www.ActOnEnergy.net
- Standard Business Incentives
- Custom Business Incentives

COMED Smart Ideas Business Energy Solutions Programs

www.comed.com
- Prescriptive Incentives
- Custom Incentives

DCEO - www.illinoiseenergy.org
Public Sector Electric Efficiency Programs
Custom Incentive Program
Retrocommissioning Program

To participate in the Smart Energy Design Assistance program, contact us at: (800) 214-7954 or info@SEDAC.org
Smart Energy Design Assistance Center, 1 East St. Mary’s Road, Champaign, IL 61820
www.sedac.org