The green window: The move toward sustainable design and green building

March 06, 2009 - Owners Developers & Managers

When Dorothy reaches Oz for the first time, I remember seeing the residents of the Emerald City wearing green sunglasses. This, I assume was to enhance the "emerald" effect of the great green city.

Oz, of course was an illusion as was their dubious leader: The Wizard of Oz. Today, we are about to put on our own pair of green shades and look out upon a new movement that is about to sweep the globe. The Wizard of Oz has been replaced by a man of substance in President Barack Obama who, with the hopes of millions, will lead us to a new beginning, a new awakening.

This new beginning I am referring to is the move toward sustainable design and green building. The objective of sustainable design is to create places, products, and services in a way that reduces use of nonrenewable resources, minimizes environmental impact, and relates people with the natural environment.

Green building is the implementation of design, construction, and operational strategies that reduce a building's environmental impact during both construction and operation, and that improve its occupants' health, comfort, and productivity throughout the building's life cycle.

As a window covering professional, I look out my window at my desk and wonder what would happen if I put on the green sunglasses? What would I see? How can I join in this revolution that is about to get underway?

We build homes, offices, schools, hospitals and nursing homes with windows. We have a strong need for connecting with the natural environment. It has been documented that worker productivity increases with natural daylight. School children learn better, patients feel better.

But what is the trade off for creating glass covered holes in the walls of our buildings? Of course it is the energy inefficiencies and glare issues that occur. If an office faces south, the low winter sun bakes the occupants even in the cold winter months. Homes lose precious heat from leaky windows and see their utility bills sky rocket. Our window, our connection to the outdoors is a critical area to focus upon.

In this article, I will address various areas I see as important to the contribution of window coverings in sustainable design. I will start with the concept of daylighting. Most simply, daylighting is the practice of using natural light to illuminate building spaces. Rather than relying solely on electric lighting during the day, daylighting brings indirect natural light into the building. Daylighting reduces the need for electric lighting and connects people to the outdoors, and it provides pleasing illumination at a fraction of the cost of the most efficient electric lights.

The downside to daylighting is the problem of exposing naked windows to the elements. To address this, the use of solar shades provides an excellent solution. Considerable energy can be saved by the correct specification and use of effective solar shading. These savings result from significantly

reducing the heat entering the building in the hotter months and by reducing heat loss by acting as an insulator when external temperatures start to fall. By helping to control the internal environment less artificial cooling and heating is required thereby reducing energy costs.

Effective solar shading can reduce the heat gain from the sun's radiation by between 50% and 70% and also prevents the creation of heat peaks and heat radiation. As a result often lower cooling capacity is needed. In addition high performance solar shading offers constant control over thermal comfort which is important as large fluctuations in interior climate are regarded as extremely unpleasant to building users.

The ability to look through a fabric, through the tiny holes in the weave of the cloth is determined by the openness of this weave and the quantity of light which permeates through the actual thread used in the fabric. Light entering through the thread itself is known as "diffuse light." For good vision through the fabric the amount of diffuse light must be minimized. This is because the eyes adapt to the total amount of light and too much diffuse light severely restricts the ability to see through the fabric to the outside.

Glare is determined to a large extent by the total light transmission through glazing and blinds and if this is too high this leads to eye strain and glare on monitors. If this is not done then the eyes must continually adjust to the changing light level which is a key contributor to eye strain. Controlling light transmission is often achieved by working with dark or thickly-coated shading materials.

Decorating with Fabric Contract offers the ideal solution with all its solar shade fabrics designed to neutralize glare discomfort while still preserving visual contact with the outside world. To learn more, visit www.dwfcontract.com.

Neil Gordon is the president of Decorating with Fabric, Monsey, N.Y.