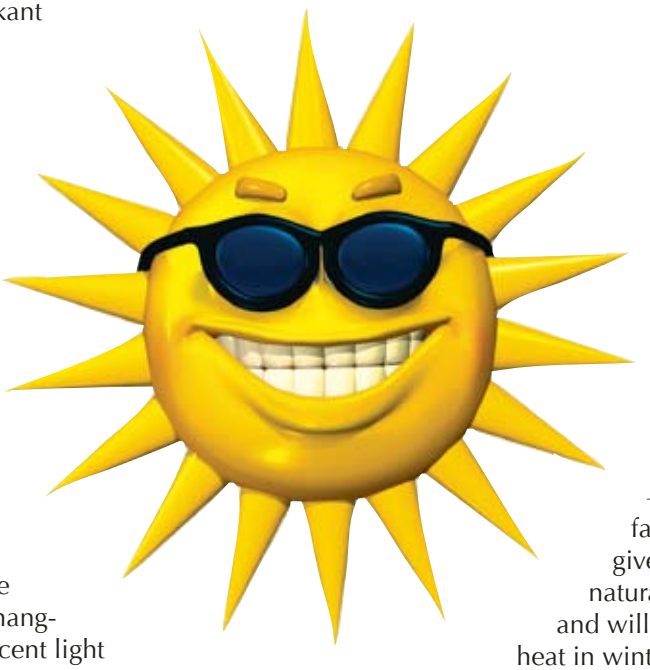
Lighten Up!

by Viji Sashikant



"If there is one thing you could change…" said the ad on the radio, and went on to explain the benefits of changing incandescent light bulbs to CFLs, such as savings for the householder and energy savings for the planet.

A radio ad promoting green living? On commercial radio? Wow,we sure have come a long way, baby! From mocking tree huggers to consciously making an impact, however small, on the environment.

CFLs have become popular because of their long life and minimal power usage. But savings alone would not be a determining factor if they did not provide excellent light quality. And that has really created the shift. CFLs are now so widely known that the acronym does not have to be elucidated. They are available everywhere – from drugstores to grocery stores.

Light is an essential and critical requirement for life. A green home needs excellent light quality during the day as well as at night. Bright daylight is an automatic mood booster. Studies show that natural light contributes to psychological and physical health by boosting energy and concentration levels.

How can you get maximum natural light in your home while reducing energy consumption? First of all, orientation of the home is important – a south-facing home gives optimum natural lighting, and will help retain heat in winter and minimize heat gain in summer. Well… you cannot change the orientation of a home after it is built, but there are things you can do.

Older homes have the advantage of having plenty of mature trees around the home to keep it cool and shady in summer. Sadly, new home subdivisions have no mature trees. In fact, all vegetation is removed and the area leveled to build the homes. You could well cook an omelet on the roof in August!

Planting trees, especially deciduous trees, on the south side of the home will let in light in winter and shield the home from the sun in summer. Shrubs and native plants around the home will also minimize heat gain in summer as will awnings, blinds and curtains.

Newer homes have large windows that let in plenty of light and are also energy-efficient. Older homes in Columbia, on the other hand, not only have small windows, but they are also single-pane windows with very little insulating capacity. Even worse, some homes have aluminum framed windows with glass slats that were, no

doubt, cheap and easy to install. Keep in mind, an inefficient window is like a hole in the wall! An unbelievable 25 percent of energy for heating and cooling offsets heat loss and gain from windows. If your home is an older one, what can you do to get plenty of light and lower energy consumption?

Digression. Small lecture on windows.

What makes a window energy efficient? Several factors contribute to a window's efficiency:

- The U-factor determines the rate of heat loss. So the lower the U-factor, the more efficient the window.
- The R-value is the insulating value. The higher the R-value, the better the efficiency.
- Low-E is a coating that is applied to the glass to reduce heat loss in winter and heat gain in summer.

New glazing technologies reduce energy costs and make homes more comfortable by moderating temperatures and eliminating drafts. Double-pane or triple-pane windows have air or gas between the layers of glass that act as insulating material. For residential use, double-pane works well.

The type of window also makes a difference. The most popular is the double-hung window, which is not really very efficient as there are always tiny gaps between the upper and lower sashes. Casement windows are better, but they are more expensive and builders seem to prefer the double hung.

Today, window frames are mostly vinyl – no more scraping, painting, water damage or potential termites. But, sadly, all these upgrades also drive up the price.

End of lecture.

So, how *do* you make an older home more energy efficient? Replacing windows is, of course, the best option. At about $200 for the window and another $100 for installation, replacing all windows may require you to win a lottery!

But you *can* improve the windows' efficiency by sealing the frames with caulk and weather stripping. If an existing window has rotted or damaged wood, cracked glass, missing putty or ill-fitting sashes, do replace it with a new energy-efficient one. Go whole hog and replace the frames, too. Ditto for doors.

In older homes, hallways and north-facing rooms may be dark and require having lights on at all times. A 100 watt bulb used for five hours a day consumes 180 kWh/year. And a room that is dark and needs artificial light all day long will use two to four lights using an additional 580-1,160 kWh/year or $63-$128 per year.

A quick, easy fix (this is my all-time favorite) with a one-time cost and zero running costs? Drum roll… solar tubes. Solar tubes are similar to skylights. A tube runs from the roof to the ceiling of a room through the attic. Light is collected at the roof level and reflected down the tube to produce a bright, natural effect. Since they maximize the amount of light provided, they can light 100 to 600 square feet of space, and can function in cloudy conditions and in winter. They cost about $500, but will last for years and years.

We have already discussed CFLs, and remember, you have promised to switch to CFLs as your old incandescent lights burn out.

Recessed ceiling lights are notorious for air leakage and thermal loss. Blowing foam insulation around the recessed cans in the attic will make them airtight.

A word on outdoor lighting. For your security, it may be essential to have powerful lights around the home. Use lights with lower wattage around the house to showcase it and add powerful motion-sensitive lights at strategic corners. Consider solar-powered lights. They have improved considerably and are ideal for walkways.

A plug for ENERGY STAR®. It's easy to save money and energy with ENERGY STAR®—qualified light bulbs and fixtures. They meet strict energy-efficiency and quality specifications, using up to 75 percent less energy and lasting up to 10 times longer than standard incandescent bulbs. Also, look for the ENERGY STAR® label to identify the most efficient windows, skylights and doors.

Small changes add up to big benefits. The number of green homes being built or retro-fitted increases every year, a testament to this generation's concern for the environment and a desire for sustainable living.

Go green!

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