

ENERGY-EFFICIENT LIGHTING: AN ILLUMINATING PROSPECT

By Carol Carter

Cindy Wallace has a pal in her Morningside kitchen. Although his name is TED, Wallace calls him "my little kitchen buddy" TED, which stands for "The Energy Detective," is an energy monitor programmed to show Wallace and her husband, Richard, the kilowatts they are using at any given moment and, also, how much it costs them.

"Right now," Wallace said one recent morning, "it's showing what I've used today. It's like 26.3 kilowatts. Then, I switch it over, and it shows me that right now I'm spending 15 cents per hour.

"You can stand there and look at this little monitor, and when you turn off lights you see it go down and you see your price go down," she said. "It makes you really think."

TED probably doesn't tick off nearly as much kilowatt usage in Wallace's home as it might in another Atlanta house because hers is an EarthCraft home, which she and her husband built and moved into a year ago.

The Greater Atlanta Home Builders Association developed the EarthCraft House Program in partnership with Atlanta's Southface Energy Institute. The voluntary green building program lays out a blueprint for homes designed to reduce utility bills and protect the environment.

Lighting is one of several energy-saving features in the Wallace's home. There are compact fluorescent bulbs throughout the house, as well as LED (light-emitting diode) lights, ambient lighting, dimmers and light tubes.

Compact fluorescent light bulbs (CFLs) last about 10,000 hours compared with fewer than 1,000 hours for incandescent light bulbs. Recently, the two major drawbacks to CFLs — cost and light quality — have all but disappeared.

"The price [of CFLs] has dropped dramatically," said John Bracey, a commercial green building product services manager at Southface. "That was probably one of the biggest reasons people would not switch." Today, however, CFLs cost about \$1 to \$1.25 per bulb, and at that price, Bracey said, they pay for themselves in energy savings within about three to four months.

"They also save you money on your air conditioning," he said. "They run cooler, so



In addition to making use of as much natural light as possible, Cindy and Richard Wallace's EarthCraft home is designed with energy-saving features such as "The Energy Detective" (TED) energy monitor, top, and a light tube in one of the bathrooms, above.



you get a double benefit when you use CFLs. Incandescent bulbs are much better at producing heat than they are light."

Consumers also once objected to CFLs because of their light quality. When they first hit the market, "the light wasn't as warm as what you get out of an incandescent bulb," Bracey said, "but the technology has improved; they've made it much better."

Notes Phil Sherer of Atlanta's Masterpiece Lighting, "You can still tell a difference, but they're closing that gap."

Now that CFLs are more accepted by consumers, the next big innovation in lighting is LED lights. The under-cabinet lights in Wallace's home are LED strips, about a half-inch wide and 24 inches long. Also available are small, round LED discs that surface-mount under cabinets.

Nice as it is under the cabinet, LED lighting is beginning to show up elsewhere in the home, too.

Just ask Howell Turner and Rusty Toole, Atlanta account managers for Greenville, S.C.-based Progress Lighting, which will supply the lights for Greenhaven, an eco-decorator's show house under construction in Cobb County.

"Progress is one of the first manufacturers to come out with a decorative line of lighting products that use LEDs," Toole said.

The Progress LED line includes chandeliers, sconces, recessed lighting, exterior lights and mini-pendants — the type of lighting fixture that hangs over a breakfast bar, for example.

"Anytime you're going to have a light on for any length of time, you definitely want to go with LEDs," Turner said.

The reason, Toole said, is because an LED lamp life is a good 60,000 hours, versus an incandescent that has a life of 750 hours to 1,500 hours.

John Noel, president of Atlanta-based Energy & Environment, cautions that LED



The Wallaces also make use of energy-efficient options such as LED lights under their kitchen cabinets and this bedside switch that can be used to turn off all of the lights and fans in the house.



lighting still is expensive relative to the amount of light it produces, so he recommends using it in specialized ways. Noel recently bought a 20-foot-long strip to use for ambient light in a recreational area of his home. LEDs also are perfect for hard-to-reach fixtures, such as a spotlight 20 feet up in the air because you don't need to worry about changing it out, he said.

"The other one that's a no-brainer is LED Christmas lights," Noel said. "One, you can touch them, and they're not hot, so that reduces risk of fire. Two, they are major energy-savers. Three, they last forever."

Yet another new energy-efficient lighting option is the light tube, which has a small dome that is mounted on top of the roof. They concentrate the light and reflect it down through a tube that goes to the ceiling and into a round disc that resembles a light fixture. The end result is diffused natural light.

"The amount of light that it brings into that bathroom is absolutely amazing," Wallace said. "I would highly recommend them to anybody who is building or renovating."

One technical note from Bracey: To install a light tube, the roof should be within six feet of the ceiling. [LA](#)

Here are three more ways to maximize energy efficiency in lighting, according to John Bracey of Southface:

1. Make use of natural light as much as possible.

2. Install dimmers that manually or automatically adjust up or down as natural light decreases or increases.

3. Look for windows that have a solar heat gain coefficient (SHGC) sticker on them.



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