



Creating a Greener Home for Energy Savings

By Tom Lienhard, PE, CEM

One of the most important investments you can make when building a new home or remodeling is to increase your home's energy efficiency. Doing so may cost more upfront, but the costs will be recovered over time through lower energy bills, a reduced carbon footprint, and could increase your home's resale value.

The **orientation** of your home on the lot can have a significant impact on energy use. South-facing windows receive the most sunlight and heat throughout the day, while north-facing windows receive the least. Also, know the direction of prevailing winds to reduce winter heating costs. Using deciduous trees, evergreens and other landscaping can naturally reduce your home's energy use.

Double- or triple-paned **windows** with low-emissivity, or low-E, glass coating will reduce infrared radiation. Consider varying the performance characteristics of windows to match your home's different exposures - a U-factor of .32 or lower for all exposures to reduce heating losses, a low solar heat gain coefficient (SHGC) for southern and western exposure to reduce cooling needs, and a high visible transmittance (VT) for northern exposures to allow light.

Insulate your home from the floors up through the walls and into the ceilings. Non-traditional insulation like structural insulated panels, insulating concrete forms and concrete block insulation offer a tighter seal, allowing your home's HVAC system to operate more efficiently. Tight seals on floors and in attic spaces will also reduce energy usage.

Heating and cooling accounts for as much as half of energy consumption of a home – that makes a **programmable thermostat** a wise investment. When used correctly, it can reduce energy costs by as much as \$160 annually.

ENERGY STAR **appliances** typically use 10 to 50 percent less energy and water than standard models.

Install **compact fluorescent light bulbs** (CFL). While they may cost a bit more to purchase, CFLs can last up to 10 times longer than incandescent bulbs -10,000 hours for a CFL compared to 1,000 hours for an incandescent bulb.

Natural gas is the cleanest burning fossil fuel and can improve a home's resale value by about 4 percent, according to the American Gas Association.

Check with your local energy provider on energy efficiency rebates they may offer. Also, state rebates and federal tax credits may be available for energy efficiency upgrades to your home.

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