



Energy Briefs

Helping you live energy efficiently!

Making Your Home Green

What makes a green home green? This guide will address some of the ways you can make your home both energy-efficient and environmentally friendly, saving you money and reducing your carbon footprint.



Home energy options

Tight Construction and Ducts - This is the first and arguably most important step you should take. Sealing holes and cracks in a home's "envelope" and in heating and cooling duct systems helps reduce drafts, moisture, dust, pollen and noise. A tightly sealed home improves comfort and indoor air quality while reducing utility and maintenance.

Effective Insulation - Properly installed and inspected insulation in floors, walls and attics contributes to even temperatures throughout the house, reduced energy use and increased comfort.

Efficient Heating and Cooling Equipment - In addition to using less energy to operate, energy-efficient heating and cooling systems can be quieter, reduce indoor humidity, and improve the overall comfort of the home. When properly installed into a tightly sealed home, this equipment won't have to work so hard to heat and cool the home.

Efficient Products - Use ENERGY STAR® qualified products - lighting fixtures, compact fluorescent bulbs, ventila-

tion fans, and appliances, such as refrigerators, dishwashers and washing machines - whenever possible.

Plant a Tree - Shade trees can significantly lower your cooling costs by up to 25%. In addition, properly placed trees and shrubs act as windbreaks, shielding your home from cold winds and reducing heating costs by 20%.

Green energy programs

Palmetto Clean Energy (PaCE), a 501(c)(3) non-profit organization, allows customers of South Carolina's investor-owned utilities (SCE&G, Progress Energy and Duke Energy) to buy tax-deductible blocks of green, renewable energy, such as solar, for as little as \$4 per month and have them added to South Carolina's electricity grid.

Santee Cooper GreenPower is a program similar to PaCE in that it allows customers of Santee Cooper and the electric cooperatives to purchase blocks of renewable energy. This energy is taken from the utility's landfill gas and solar projects. Contributions are reinvested into future developments of additional renewable resources and facilities.

Other green home options

High-Performance Windows - Energy-efficient windows use advanced technologies like protective coatings and improved frames to help contain heat during winter and keep it out during summer. These windows also block ultraviolet sunlight which can discolor carpets and furnishings.

Green Building Materials - A green home can be built

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using healthy, non-toxic building materials and furnishings, like low- and zero-VOC (volatile organic compound) paints and sealants and non-toxic materials like strawboard for the sub-flooring. Wood-based features should come from rapidly renewable sources like bamboo, but if tropical hardwoods are used, they should be certified by the Forest Stewardship Council. A green home can use salvaged materials like kitchen tiles or even recovered wood.

Indoor Environmental Quality - Natural daylight should reach at least 75% of the home's interior. Natural ventilation (via building orientation, operable windows, fans, wind chimneys and other strategies) should bring plentiful fresh air inside the house. The HVAC (heating, ventilation and air conditioning) system should filter all incoming air and vent stale air outside. The garage should not have any air handling equipment or return ducts, and it should have an exhaust fan.

Landscaping - Vine-covered green screens, large canopy trees and other landscaping should shade exterior walls, the driveway, patios and other "hardscape" to minimize heat gain in summer. Deciduous trees will allow the sun to warm your home in winter. Yards should be landscaped with drought-tolerant plants rather than large expanses of lawn. Native plants will generally require less water and fewer chemicals.

Building Design - The home should be oriented on its site to bring abundant natural daylight into the interior to reduce lighting requirements and to take advantage of any prevailing breezes. Windows, clerestories, skylights, light monitors, light shelves and other strategies can be used to bring daylight to the interior of the house. The exterior should have shading devices (sunshades, canopies, green screens and – best of all – trees), particularly on the southern and western facades and over windows and doors, to block hot summer sun. The roof should be light-colored and use heat-reflecting ENERGY STAR roof products. It also can be a green (landscaped) roof to reduce heat absorption.

Location - New green homes and neighborhoods shouldn't be on environmentally sensitive sites like prime farmland, wetlands and endangered species habitats. The greenest development sites are in already-developed areas. Look for compact development where the average housing density is at least six units per acre. Your home should also be within easy walking distance of public transportation – like bus lines, light rail, and subway systems – so you can leave your

car at home. A green home should also be within walking distance of parks, schools and stores. See how many errands you can carry out on a bicycle. That's healthier for you, your wallet and the environment.

Size - No matter how many green building elements go into your home, a 5,000-square-foot green home still consumes many more natural resources than a 2,000-square-foot green home. The larger home will also require more heating, air conditioning and lighting. If you really want a sustainable home, choose a smaller size.

Solar Water Heating - For most U.S. homes, 15% of total energy dollars spent are used to heat water. Today's solar-heating systems are a good alternative to heat much of the water and interior space at home. Solar-heating systems are reliable, adaptable and pollution-free.

Geothermal Heat Pumps - Warm and cool air are both distributed through ductwork, just as in a regular forced-air system. ENERGY STAR qualified geothermal heat pumps use about 40 to 60% less energy than a standard heat pump and are quieter than conventional systems.

Useful Resources

Home Builders Association of South Carolina, www.hbaofsc.com

U.S. Green Building Council, www.usgbc.org, and its South Carolina chapter, www.usgbcsc.org

Southface Energy Institute, www.southface.org

ENERGY STAR, www.energystar.gov

The Green Home Guide, www.greenhomeguide.org

EarthCraft Homes, www.earthcrafthouse.org

Local home builders associations



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