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## Living Green House teems with energy-efficient features, saving money over the long run

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Though often more expensive than conventional construction materials and methods in the beginning, green building practices usually save so much energy that they can erase any difference in cost over the long run.

They also represent one of the most effective ways for the average person to reduce their own individual impact on the environment, says Fred Farris, deputy director of the Virginia Living Museum, which is opening a 650-square-foot demonstration structure called the "Living Green House" on Saturday.

Here are some examples of the earth-friendly features found in the house — as well as estimates of their potential savings:

**Structural insulated panels**

Made of Styrofoam sandwiched between two layers of oriented-strand board, SIPs are 3 times stronger and 75 percent more energy efficient than conventional stud wall construction. They also can be assembled off-site, then erected with far greater speed than regular stick building.

**Insulated concrete forms**

ICF walls feature a layer of reinforced concrete poured between two expanded polystyrene foam forms. In addition to reducing heating and cooling costs by 50 percent, they can withstand hurricane-force winds and resist moisture, rot and termites.

***Geothermal HVAC***

This hybrid system pairs a conventional heat pump with a 350-foot-deep well, using the constant underground temperature of the Earth as a heat source in winter and a cooling source or heat sink in summer. It can lower heating and cooling bills by 25 to 50 percent while saving heating fuels and reducing greenhouse gas emissions.

***Evacuated tube solar hot water system***

Solar hot water systems can provide all of a home's needs for many months of the year, cutting the typical household hot water bill by as much as 95 percent. In addition to reducing greenhouse gases by 1,500 pounds annually, many systems save so much they can pay for themselves in as little as 4 to 6 years.