What Goes into a Green Home?

Green Products, Systems and Technologies

Now that we've learned how building science experts look at green homes and how homebuyers think about the purchase and experience the benefits of a green home, it's time to look at how homebuilders think about building them. Figure 4.1 shows how the various features of a green home can translate into benefits for the homeowner, according to one builder. For example, a tighter building envelope lowers utility bills, results (along with other measures) in higher indoor air quality, affords greater comfort, produces a quieter home, has less air infiltration, may use recycled materials (such as cellulose fiber insulation) and is friendlier to the environment because it uses less energy to operate. You get the idea. Take a moment and consider which of the features and benefits might appeal most to you.

Let's hear from some builders as to what they see as the essential features of green homes, by taking a brief tour around the US and Canada, starting with Canada. John Gilvesy is the owner of Gentrac Building Corporation, which built the first solar-powered, ENERGY STAR home in Ontario, as part of the Wood Haven Subdivision development in Tillsonburg.

Figure 4.1. Features and benefits of a green home

Features \ Benefits	Lower Utility Bills	Higher Indoor Air Quality	Greater Comfort	Higher Energy Efficiency	Quieter Home	Less Air Infiltration	Better Moisture Control	Insect Repellent	Fire Retardant	Recycled Materials	Environment Friendly
Tighter Building Envelope	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Improved Construction Methods	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blown Cellulose Insulation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air-Sealing Measures	✓	✓	✓	✓	✓	✓	✓				
Tight Ductwork	✓	✓	✓	✓		✓	✓				✓
Low-e Windows	✓	✓	✓	✓							✓
House Wrap	✓	✓	✓	✓		✓	✓				
Engineered Wood Products										✓	✓
Solar Power (PV) System	✓										✓
Water-conserving Fixtures	✓										✓
ENERGY STAR Appliances	✓			✓							✓

Adapted from "Features and Benefits of an EarthCraft Home built by Monte Hewett Homes," Monte Hewett Homes, Atlanta, Georgia, montehewetthomes.com

Solar photovoltaics (PV) have always intrigued me…the fact that solar energy can be converted to electricity. You can envision the heat from the sun warming up water, but creating electricity from a resource that is renewable is exciting. We felt that in order to promote the growth of solar PV, it would be important for a working system to be on display. We were unaware of a working display, so we decided to not just make our homes *solar-ready* but to actually put a system in place. Realizing

Gentrac Building Corporation

Figure 4.2. The 1,530 square foot Merlot model green home, built by Gentrac Building Corporation, consists of a 785-watt Sanyo solar array. The system also has a backup power system, which can, during power interruption, supply designated essential circuits about three days worth of electricity.

the potential benefits, Carmanah Technologies and RE Source Store agreed to install the system at cost and extended the time to pay for it. The local utility also shared our excitement and agreed to contribute to the project.

When we had our official opening, conditions were ideal and the four-panel system was actually feeding electricity back into the grid. We turned off a few things, and we were able to get the meter to run backwards. Our community is not set up yet for selling electricity back into the grid but according the manufacturers, the system should serve approximately one-third of the expected electric requirements.

Gentrac designs and builds what we believe are distinctive homes. In the past, solar panels have been considered a bit of an eyesore…somewhat like TV antennas in what would otherwise be a quality, planned development. The first comments that often come from people who heard about our planned solar installation… 'How can you get away with this in a subdivision? It's going to be unsightly and the impact will be negative.' Panel and mounting bracket color, size, details, location and efficiency were all considered. When you look at the installed system, it blends in well with the roof and other materials…making it aesthetically viable. That was one of the comments at our official opening. The solar panel installation must not be unsightly so that it will be more acceptable in larger developments.[1]