

True Green

To builders, environmentally friendly means saving energy and money

By Sarah Cox

Calling a development, house or construction site "green" and actually proving it are two different things

Brothers Jason and Justin Boyle (Green Valley Builders), who are developing Mount Tabor Meadows off North Main Street in Blacksburg, said they have made sure the site as well as the houses — there will be 49 in total — goes above and beyond the Earth Craft standards to which they adhere.

"What's the first thing you think about when you think 'green'? Recycling. But on a construction site, recycling is staggering," said Steve Bodtke, an associate broker with Long & Foster — Blacksburg.

Justin Boyle pointed out that while there is a little recycling at most construction sites, they have recycled 42 percent of their construction waste. That includes emptying an 8-cubic-yard dumpster of flattened cardboard 10 times since the project began.



Justin Boyle of Green Valley Builders shows off the HVAC system in one of his Mount Tabor Meadows homes. The conduits are sealed with mastic, rendering them air tight.

They also have gained multiple points — Earth Craft certification is based on accumulated points tallied by an independent certifier — through site selection and erosion sediment and control measures.

But, pointed out Bodtke, going green has to make sense, too, "financially and ecologically," he said.

"A lot of people are doing things and claiming their greenness, based on what they have and not what it does."

In the end, the energy efficiency, green products and sustainable building techniques have to save both money and energy.

Take, for instance, the solar hot water heater, installed by Alt Energy. Bodtke said solar-heated hot water is one of the few remaining homeowner tax credits. This one, on a grey and cold day, has a back-up on-demand hot water heater for practical purposes. In one of the three houses in Mount Tabor Meadows that is now occupied (seven have been completed), there is a zoned HVAC system that is sealed with mastic to render it completely air-leak free.

Part of the Earth Craft certification involves an air blower test. Because these homes are so air tight, there must also be a means to evacuate old, bad air and bring in fresh, thus an ERV, or energy recovery ventilator, controlled by the homeowner with a switch.

Also "making sense," according to Bodtke, is spray foam insulation in the attic. This soy-bio-based insulation improves air quality by keeping out allergens, reducing or eliminating mold-causing moisture and creating an air-tight seal for greater heating and cooling efficiency. It can save up to 50 percent on those HVAC costs, he said. And, because it uses soy-based technology that replaces petroleum and utilizes soybeans, it reduces dependency on foreign oil.

Elsewhere, the houses are insulated with Evergreen cellulose insulation, which is composed of 80 percent recycled newsprint and other waste-paper products.

But it doesn't matter what's insulating a home if the space is not leak free, pointed out Bodtke. The building code requires a certain R-value, which means a certain amount of insulation, but if the air just flies right out, you're working against yourself.



This occupied home (left) in Mount Tabor Meadows has a solar panel that heats the hot water, reducing the hot water bills by up to \$40 per month. Pat Bixler (below) of Alt Energy stands in front of the solar hot water heater, which uses a back-up on-demand hot water heater on grey days.



"The envelope has to perform," said Jason Boyle. And truly green homes create that — an envelope that prevents air leaks, but also allows a healthy evacuation of bad air out and an intake of fresh air.

A solar hot water heater will begin paying for itself from day one, according to the builders. With the tax credits, and if the expense of the Alt Energy system is figured into the mortgage, the monthly payment is about \$35 to \$40; that's the savings a homeowner realizes per month in hot-water cost. After five years, when the heater is paid for and the savings really kick in.

As for the framing of the house, using 2-by-6-foot studs on 24-inch centers, two-stud corners and ladder framing allow more insulation in the walls, reduces waste and conserves natural resources. The U.S. Department of is claiming that these techniques can save \$500 per 1,200 square feet of house and three to five percent of labor costs.

"It's a commitment to go over the standard," said Bodtke.