



Photos: Justin Boyle

Completed in June 2010 by Green Valley Builders, this EarthCraft House at Mt. Tabor Meadows, in Blacksburg, helps teach Virginia Tech students about energy efficiency and sustainable building practices.

Virginia Tech and Green Valley Builders: *A Natural Partnership*

by Karen Adams

These days, builders who care about the environment know that it makes good sense—both for business and for the earth.

Justin Boyle of Green Valley Builders, in Blacksburg, understands this better than many people. Green Valley Builders, the construction business Boyle founded with his brother, Jason, is known for its award-winning, environmentally sustainable building practices. It may be best known for Mt. Tabor Meadows, in Blacksburg, a “green” neighborhood with homes that are energy-efficient, sustainable, durable, comfortable and low-maintenance.

When the Mt. Tabor project began in 2007, Green Valley Builders wanted to track and reduce wood waste from construction and find ways to reuse or recycle any wood that was left over. The company contacted Phil Araman, a research project leader and scientist with the U.S. Department of Agriculture’s Forest Service and an adjunct professor at Virginia Tech in the College of Natural Resources and the Environment, who had been studying wood recovery and recycling for years.

“As green builders, we’ve always tried to be conscientious in general about waste,” Boyle says. “But in this economy, the way prices are, it’s even more important.” And, he added, the homeowners like knowing that their houses were planned with conservation in mind from the first day the wood was cut. “The idea is that we’re using less, but you’re

getting more.”

Araman explains that at each construction site, the waste is collected, separated, weighed and measured to track the volume per house. “The more interesting the house is, with unusual corners and features, the more waste there is because you have to cut the wood in more ways,” Araman says.

Waste from regular, untreated two-by-fours, also called “spruce pine fir,” is taken to the Montgomery County transfer station, where it is ground into mulch. The remaining wood waste—plywood, treated wood and engineered wood such as oriented strand board (OSB)—is processed into shelving, pallets, treads, risers and other wood materials for new home construction. The partners donate most of the reconstructed shelving to Habitat for Humanity’s Restore. Green Valley Builders gets an environmental credit, and the Habitat store makes a profit from the sale to the public.

So far, 12 houses have been completed and their waste has been reused or recycled. There is waste from three more houses awaiting analysis. “We can honestly say that none of the material from these houses has gone to the landfill,” Araman says.

The project also brought in Virginia Tech’s Dan Hindman, associate professor in the Department of Wood Science and Forest Products in the College of Natural Resources and the Environment. “There’s really no such

thing as waste," Hindman says. "We talk about throwing something away, but everything we use still has to go somewhere. There's a price to pay for that, environmentally."

Now Hindman and Araman bring Virginia Tech graduate and undergraduate students, as well as area high-school students, to Mt. Tabor Meadows to tour the "EarthCraft House" homes with Green Valley Builders, see how the houses are working and even speak to the people who live in them. EarthCraft House homes are designed to be energy-efficient, safe, clean, healthful, resourceful, sustainable and environmentally sound.

"We call it our living laboratory," Hindman says. "It's very practical. This isn't just ivory-tower thinking that's removed from the real world. There are a lot of real, local problems and issues that we are working on, immediately."

Plus, he said, students learn about health and safety issues. They can see that Green Valley Builders uses many of the environmental building practices that students have learned about in the classroom, such as: non-toxic paints and sealants, which create better indoor-air quality; ductwork that is sealed during drywall installation to prevent dust from floating through the system to be breathed in later; and use of masks and goggles to protect workers from inhaling particles from concrete and wood siding.

Boyle says that having students

tour the homes and speak to homeowners is a tangible way to show them real, "green" homes that are saving natural resources and money. For example, he says, a family living in a 3,000-square-foot house in the neighborhood pays, on average, \$106 for electricity and \$20 for gas per month. Boyle explains that students compare these figures to utility costs in conventional homes.

The visits also help students if they decide to work in construction, engineering, architecture, forestry or

conservation someday, Boyle says. At the very least, he adds, it helps educate them as future homeowners and environmental stewards.

All aspects of the partnership make sense to those involved. "It makes us feel like we're a part of something important," Boyle says. "Virginia Tech has always been good for coming up with ideas, and here we can put them to use, for everybody."

For more information, call Green Valley Builders at 540-552-1004 or visit GreenValleyBuildersInc.com.



Another Mt. Tabor EarthCraft House, built in August 2008 by Green Valley Builders.

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