

## LIFE

## Making "Green" Homes Affordable to Blue Collar Workers

by Sue Smith-Heavenrich



(photo by Sue Smith-Heavenrich)

The first thing you notice about Susan Oliver is her smile – it reaches all the way to her eyes, suffusing her face with light and warmth. The first thing you notice about the house she designed and lives in is the windows. They fill the south-facing wall, bringing the sun and sky into her home, filling it with light and warmth.

Oliver designs and provides construction management services of commercial projects for Fagan Engineers, a civil and environmental engineering firm located in Elmira, NY. She also runs her own business, Barn-Livin' LLC, where she focuses on designing and construction management of "green" homes, including the one she lives in. Her home design has earned her an "Energy Star" rating from both New York state and the EPA.

For Oliver, designing a "green" home means finding a way to build a dwelling that

**Oliver's ... construction costs were about 70% of the cost to construct a conventional stick-built house.**

uses energy, water, and materials in a way that reduces impacts on human health and the environment. The process encompasses every phase of

building, from siting the home to design, construction, maintenance and, eventually, its deconstruction.

For the families who will live in one of Oliver's homes, "green" means that their home will be more energy-efficient, it will conserve resources, and will be more affordable to operate and maintain.

"Going green means focusing on eliminating the energy-gobblers in your life without giving up creature comforts," Oliver says. Indeed, her "green" home includes energy star dishwasher, laundry center, wireless high-speed satellite internet, a Jacuzzi, and more.

"This is the best place I've lived," Oliver says, gesturing to her spacious and airy home in the town of Ashland. The open floor plan makes her 1260 square foot home feel larger than one expects. Oliver bases her design on a traditional nineteenth century homestead barn. Like a barn, her home features 19-foot high vaulted ceilings and a sleeping

loft.

When designing green, the distance materials travel is part of the equation. Oliver incorporated locally grown wood (hemlock), recycled metal roofing, and stamped concrete flooring into her home, purchasing building materials from within a 500-mile radius.

"Most came from 100 miles or less," Oliver said.

Oliver has designed cottages, vacation homes, and primary homes for the wealthy but her heart is in creating af-



(photo by Karen Frick)

fordable, energy-saving, environmentally sustainable homes that the average blue collar worker can afford. She designs cost-savings from the ground up, with a post-frame construction and space-saving open floor plan.

The "barn" design, Oliver noted, uses about half the building materials that a conventionally built home would. At a time when "green" connotes high construction costs – most green buildings cost twice the amount as conventional construction – Oliver has found a way to build her home for less.

"I built this house cheaper than a double-wide home," Oliver chuckles. But it's no joke – her construction costs were about 70% of the cost to construct a conventional stick-built house. And Oliver's final cost includes the energy-saving appliances

Besides being economical to construct, Oliver explained, her home is energy efficient. Her heating system is in-floor radiant heat, a system that also includes a wall-hung space-saving high-efficiency boiler that generates both heat and on-demand domestic hot wa-

ter. This central heating system is comfortable during the coldest weather, Oliver noted, but there's a wood stove to provide supplemental heat during power outages.

For added thermal efficiency, Oliver used spray-on foam insulation and high efficiency windows and doors.

Oliver optimizes the use of passive solar energy by orienting her windows to face southwest and incorporating both the stamped concrete floor and an interior stone wall to act as

thermal masses. The stone surfaces collect and store heat during the day, releasing it during the cooler evenings. Oliver reported that last year she spent \$600 to heat the house for the entire year, with her thermostat set at 70 degrees.

Oliver also put careful consideration into the materials for her driveway. She chose crushed stone because the stone does not absorb heat during summer months. "It also took less energy to install and is easier to maintain than asphalt, making it green," Oliver pointed out.

Given the recent mortgage crisis and current economic climate, how does Oliver justify her dream of providing green home designs for all?

"A lot of people are scrambling to pay utilities, fill their gas tanks, and put food on the table," Oliver said. "Making green homes economical to construct, heat, and maintain, as well as making them comfortable and fun to live in, will increase the opportunity for more people." Oliver emphasized that there are no long term payback periods associated with this design. "The cost savings begin before you move in and continue throughout the years," she said.

But cost is only one factor. For Oliver, a reduced environmental impact is just as important. "We need to take a stand re-



(photo by Sue Smith-Heavenrich)

garding the environment and what it will be for our children's children," said Oliver. "This means we need to learn how to adjust our current lifestyles."

A final glance around her home clearly illustrates that it is possible to adjust one's lifestyle without giving up comfort and beauty. To learn more about Oliver's green home designs, and to catch a glimpse inside her home, visit her website at <http://www.barnlivin.com>. You may also contact Oliver by phone at 607-733-2458.

Oliver also put careful con-



(photo by Karen Frick)