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Verdant environs Builders go green from the foundation up *ALAN SEPINWALL FOR THE STAR-LEDGER*

Although he always considered himself a "tree hugger," Steve Needle's commitment to the environment took solid shape on Sept. 11, 2001, the day before his 40th birthday.

In the wake of the terrorist attacks in New York and Washington, the Scotch Plains **builder** remembers thinking, "We have to do anything possible to reduce our dependence on foreign oil."

He started by ordering a hybrid car online, the only way he could source one at the time. "It just hit me, that our whole economy is based on cheap energy," Needle says. "And we need to rethink the way we're all doing business. It's an obligation, a responsibility."

Needle, who started building homes when he got out of college, took a hard look at his business practices and decided it was time to build green. It's a commitment that recently earned him the National Association of Home **Builders** Green Building Program's first New Jersey certification for a home he built at Overhill Street in Westfield.

Needle, whose new homes start around \$949,000 and **go** up to \$4.5 million, incorporated the NAHB's green guidelines into everything - from the type of paint he used to the installation of water-efficient plumbing fixtures, as well as energy-efficient windows. "The first step is making the commitment, then it's a matter of making choices to back that up," he says.

While green mega-mansions are beyond the range of most mortals, the principles that Needle follows to build his homes can be applied on a smaller scale - to home remodeling and renovation projects. Determining the exact shade of green you're going for is the place to start.

"The first thing we try to do with clients is understand their true objective," says Ed Schwartz, who started his Ridgewood construction company, Green Living Solutions, in 2007.

Going green can speak to saving dollars in energy efficiency, indoor air quality, using sustainable materials and technology, and incorporating reclaimed and recycled products into the building process, for starters. "First, we need to understand the home's pre-existing conditions and take stock," he says. "There's a lot that can be done within a budget."

Schwartz, whose company follows Energy Star specs and is certified with the Building Performance Institute, offers green audits, a comprehensive evaluation of a home's energy usage, air quality, water efficiency, insulation and HVAC, and more. The process, which costs between \$1,000 and \$2,500 (depending on the size of the home), gives homeowners a baseline from which to work.

Schwartz is restoring his own home to meet the most stringent green specs. A circa 1757 Victorian in Bergen County, the home was last renovated in 1860. The project includes restoring a shuttered wing to bring the total square footage to 5,000 square feet. Close to two years in the works, he and his fiancée Julie Tung hope to be finished in early 2009.

"It's surprising how adaptable older homes are," he says. "Back 100 years ago, **builders** stayed much closer to Mother Nature than we do now. It's only been in the past 60 years ago, with the advent of modern HVAC, that we've lost our way and built in complete disregard to nature."

The project incorporates everything from reclaimed and salvaged materials to a rainwater harvesting system to optimize long-term benefits to the planet.

"If homeowners have to pick one thing to change, the biggest bang for their buck is the combination of insulation and air sealing," Schwartz says. "Most insulation is just thrown up, without regard to the science of thermo-dynamics."

"Trying to build a home that is healthy for the planet and your family, while keeping in mind your design goals and cost constraints, can be a complex equation," notes Christine Mason McCaull, co-founder of the website GoGreen Online. "Just remember, any greener choice you make is a benefit."

A few of McCaull's top considerations include the choice of building materials and picking the right sustainable energy system. She recommends asking these questions: Where does it come from? What is it made of? How long of a life will it have? How will it be disposed of?

"It's not just about using bamboo flooring," says Mike Rogers, vice president for GreenHomesAmerica, a home performance contracting company that recently opened an office in Princeton. "Health and safety come first. If you're not protecting the people inside, it's not green. The next consideration is durability, then energy efficiency. Work on the skeleton, the bones, before thinking about the finishes."

Rogers' company also performs comprehensive home audits to assess everything from air sealing, to HVAC, water usage and carbon monoxide backdrafting. "People may think they need new windows, when really, they need an improvement in insulation and air sealing. Our goal is to reduce the HVAC load on the house," he says.

And don't assume your current heating system needs to be replaced. "We take a look at the overall efficiency of the home," Rogers says.

"If what you have is operating efficiently, that's the green choice. It's not green to recycle a perfectly good product."

In 1996, when he had 20 years experience in building and developing, Sandi Wiggins felt that he was leading a double life. "I was a big outdoor person and a strong environmentalist in my private life, but when I was building skyscrapers and homes, it was business as usual," says Wiggins, who is the immediate past chairman of the U.S. Green Building Council.

He got involved with the Green Business Council and eventually founded Consilience LLC, a national real estate consultancy with a mission to build environmentally, socially and economically sustainable communities. "Whether you're a home owner or a developer, we all make thousands of choices every day. That's a mindset we have control over. That's where you start."

Wiggins, who serves on the advisory board of the Rutgers University Center for Green Building, agrees that the greening process can be intimidating. "There are so many rating systems, they come in all flavors. I've been deeply involved with the USGBC's Leadership in Energy and Environmental Design rating system, and I think it's one of the most comprehensive," he says.

First developed for commercial and institutional markets, LEED created a common language for trades and professions coming together to build green. It is also a third-party certification, "so there's no monkey business," Wiggins says. "I consider it the gold standard." The related Green Advantage Certification applies most of the commercial standards to the consumer-housing arena.

"While there's been a huge shift in the industry in the past five years, there are still not that many people highly experienced in green housing," says Wiggins, who is from the Philadelphia area. "It's important for

homeowners to educate themselves - as they most likely will not be able to find a contractor who is completely up to speed.

"A good resource is a green building supplier - Green Depot (in Newark) is one option. There's a huge body of knowledge out there to tap into. Taking that first step is where you start."

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