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Ultra-Green Demonstration Home Rises in the Hamptons

Architect hopes rebuilding fire-devastated Southampton, N.Y., house to eco-friendly standards will drive stronger demand for green homes in the area.

By: [Stephani L. Miller](#)



The front elevation of the Dubins' new house in Southampton, N.Y. The house's design now reflects a mountain lodge rather than a coastal Shingle style.

Credit: Courtesy Steelbone Design Co.

The [Hamptons Green Alliance \(HGA\)](#) spent much of 2008 searching for a local project to adopt as its green demonstration house. The Bridgehampton, N.Y.-based green home building educational organization wanted to build a net-zero energy, carbon-neutral house to show homeowners in the Hamptons just how well it could be done. So when David and Sandra Dubin's family home was nearly destroyed by a fire that December, the architects they hired for their rebuilding project saw an opportunity to get in on the green action while helping the family.

"The goal for me—and I think for everybody on the team—is the learning experience: to learn how to do this the right way without making a profit the priority," says Richard Stott, AIA, LEED AP, president and founder of Southampton, N.Y.-based [Steelbone Design Co.](#) and [Flynn Stott Architects](#) and lead architect on the HGA's pet project.

The market for green-built homes in the Hamptons is very limited, according to Stott, but he believes that is changing. "I've been very interested in green building my whole career, but I have always had a difficult time getting anyone to do anything that's not tried and true or 'normal,' or anything different from what the house next door has," he says. "But I think we're about to experience a paradigm shift. People are less interested in glamour and excess and are more interested in logic and energy efficiency."

Craig Lee, AIA, principal of [Lee Architecture](#) in Sag Harbor, N.Y., and Stott's collaborator on the Dubin project, also has noticed reticence in the local market to swim with the green building tide. "Because people can afford not to be concerned about the environment here, it would be very easy to ignore the issue," Lee says. "When I've told some other contractors about this project, it's met with some skepticism. Because [green building] is so new, and because it's unfamiliar and we're in a transition period, that's a natural reaction. But once you start to educate yourself and build up a knowledge base, you start to understand that it's not only good for the environment, but good for everybody—architects, builders, clients." Lee says he plans to pursue LEED professional certification as a result of his experience with the Dubin project.



A view of the house's rear elevation. Evacuated tube collectors for a solar thermal system will be installed on the garage's skirt roof; thin-film photovoltaics laminated to the house's metal roof, along with two wind turbines mounted atop the roof ridge, will generate electricity.

Credit: Courtesy Steelbone Design Co.

David and Sandra Dubin wished to recreate their original house, with some improvements and additions, but instead of a straightforward coastal Shingle-style design, the house will now express Sandra's Canadian roots in a style more reminiscent of a mountain lodge. An 800-square-foot addition will accommodate a new living room and second-story master suite, and a bedroom has been added over the garage. But generally, the new home's design, massing, and scale bear a strong resemblance to the original.

In addition to achieving net-zero energy, carbon-neutral performance, the home also aims for LEED-Platinum certification. Some of the original structure's materials were salvageable and will be reused in the new structure; for example, old deck planks will be converted into new siding planks. The house will be superinsulated and sealed with closed- and open-cell spray foam insulation, will use a heat-recovery ventilation system, and will incorporate several renewable energy systems. A thin-film photovoltaic system integrated with the metal roof will generate up to 7 kW of electricity; two vertical wind turbines will provide nearly 5 kW of energy-generating capacity; an evacuated-tube solar thermal system will provide domestic hot water, power a desiccant system, and heat the pool; and a geothermal system will heat and cool the home.

Because the project replaces an original structure and accommodates the same five-member family, its performance can be compared to that of the old house. "We'll be able to calculate what "green" is for this structure and to see how much energy savings the family will have and what costs are associated with each green element of the house," says general contractor Tim Dalene, LEED AP, CGP, of local custom home building firm **Telemark**. (Telemark is a co-founding member of the HGA.)

In addition to the house's energy efficiency, the HGA also will calculate its carbon footprint using a methodology developed by Telemark president, co-founder, and CEO. Frank Dalene. **The International Carbon Equivalent Mechanism Attributed to Neutrality (ICEMAN)** calculates and indexes the carbon neutrality associated with the production of materials and products using guidelines established as a result of the **Kyoto Protocol**, the **Greenhouse Gas Protocol**, and other similar efforts.

"All the pieces and components in building a home have a carbon footprint, says Frank Dalene. "I developed this system ... into an indexing form, as a mathematical equation, to make it easy to calculate the embodied carbon footprint of all manufactured products." The **U.S. Department of Energy** has expressed interest in Dalene's ICEMAN methodology, and the HGA intends to use the Dubin House as a pilot program for establishing a standard for scientifically and accurately measuring a home's carbon footprint.

The Dubin House is currently in the framing phase and expected to be completed in spring 2010. Construction will be tracked on the **HGA's Web site**; progress also can be followed on Twitter at <http://twitter.com/HGAHouse>.