

Setting a high bar for energy conservation, a picturesque passive house designed by Dennis Wedlick Architect LLC breaks ground on Earth Day

With energy engineering by The Levy Partnership and financial support provided by the New York State Energy Research and Development Authority
The Hudson Passive Project's new approach to über-efficient green architecture puts it on track to become one of the most energy-efficient homes in the country

New York, New York – April 22, 2010 (EARTH DAY) – Dennis Wedlick Architect LLC (DWA) is proud to announce that it has designed a passive house, meaning a house that embodies today's highest standards for smart energy use and conservation. The state-of-the-art stone house is finely-tuned to its site and climate. In the winter, very little heat is lost and almost all of the heating requirements are provided by free solar gain through the expanse of south-facing windows. Thanks to the highly-insulated ceiling, walls, and floor that keep the house warm in the winter, little heat is gained in the summer. Remarkable for its energy performance, the barn-inspired structure will be erected in a matter of days, transformed into a stone home in a matter of months, and will achieve near zero energy consumption without the use of solar panels, wind turbines or other site energy systems. The prototype—which has been christened “The Hudson Passive Project”—will break ground in Claverack, New York on Earth Day (www.denniswedlick.com).

“Few realize that in developed nations, personal residences consume almost as much energy as industry. It's time to try something new,” said Dennis Wedlick, founder of DWA and a founding member of the Congress of Residential Architecture. “This is an opportunity for architects, developers, and suppliers to get serious about our green intentions. For me and my firm, the Hudson Passive Project was a chance to prove that significant energy conservation could be achieved through architecture alone.”

Aesthetically, this project represents a radical departure within the green architecture movement. Instead of the starkly modern design one might expect, DWA's three-bedroom house has the easy appearance of an old stone barn, inspired by the historical structures in the surrounding Hudson Valley. Inside, graceful bow-arch beams of southern pine—25 feet at their apex—frame an open, loft-like floor plan. A 23-foot tall south-facing wall of glass at one end appears to be a late addition to a century-old structure and lends the house a distinctly modern feel.

The Hudson Passive Project is the realization of the challenge DWA set itself two years ago: to design a high-performance home that was both beautiful and easy to build. To launch the Hudson Passive Project, Wedlick collaborated with Sciam Development and Bill Stratton Building Company. The Levy Partnership (TLP), an architectural and engineering firm and industry leader in green building and sustainable design, and mechanical consultants CDH Energy completed the team. As part of New York State Energy Research and Development Authority's (NYSERDA) High-Performance Residential Challenge, TLP had been tasked with working with several architects and

builders throughout the state to substantially reduce energy use through innovative envelope design. All of the homes built under the Challenge Program meet strict energy targets, but the team aimed even higher with the DWA design, strategically employing materials and construction methods that virtually eliminate the need for mechanical equipment to heat or cool the space. TLP will monitor the Hudson Passive Project's energy use and system performance for a full year.

So how does it work? The Hudson Passive Project has a simple barn-shaped structure that can be prefabricated and assembled quickly, and is so well insulated that it will require only a tenth of the heating and cooling energy of a comparably sized residence. The energy-related features, such as super-insulation levels and high-performance windows, were shaped by the stringent requirements of Passive House construction. To meet these benchmarks, the Hudson Passive Project team opted for a prefabricated wood structure set on a highly insulated foundation. The walls are made of extra-thick structural insulated panels, or SIPS, and the windows and doors are constructed with continuous thermal breaks to minimize heat transmission. Electronically-controlled insulating window shades complete the thermal package. As a result, compared to the same design built to the state building code the prototype is projected to reduce heating energy costs by about 90%, without having to rely on "active" technologies like photovoltaics or solar thermal hot water systems.

DWA's old-yet-new stone house has already created excitement in the residential building product community. Inspired by the concept and design, leading brands including Waterworks, GE, Serious Materials and Hunter Douglas—all companies that have made a significant environmental commitment—have signed on to contribute to the project. As part of the awareness and education program surrounding The Hudson Passive Project, DWA and its partners are publishing a newspaper devoted to architecture for the greater good: The > Good Home Newspaper will be available for distribution later this spring. This publication will present the thinking that led to the extreme green results of the Hudson Passive Project, and will also offer accessible action steps that the public can take to reduce our nation's dependence on fossil fuels through simple home improvements.

"During the design process, we kept coming back to the core concept: It's not the technology, it's the architecture," said Wedlick. "We want to empower industry practitioners and homeowners with the understanding that better-built, better-designed homes can be a powerful and relatively simple way to conserve our nation's resources."

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