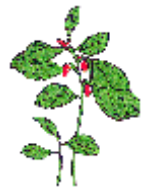




# WinterGREEN



A BIMONTHLY UPDATE ON STEVEN WINTER ASSOCIATES, INC.'S WORK IN THE REALM OF ENERGY EFFICIENCY AND SUSTAINABLE BUILDINGS

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## Greening a Forest Center



The design of the 9,050-square-foot Black Rock Forest Center for Science and Education in Cornwall, New York, resulted in a building with low environmental impact and high energy conservation -- a model of environmentally sensitive design and engineering. The project team included **Black Rock Forest Consortium** (client); **Fox and Fowle Architects**; **Gerard Associates Consulting Engineers**; and **Steven Winter Associates, Inc. (SWA)** as energy consultant. The team's overarching strategy was to create a building whose shape and envelope are inherently efficient, and to minimize heat gains from lighting and computers. (The **New York State Energy Research and Development Authority** provided support for the energy efficiency analysis.) These strategies enabled downsizing of the mechanical equipment, which in turn offset the cost of the improved walls, windows, and roof. SWA helped Fox and Fowle to identify a number of specific energy efficient strategies that minimize energy consumption while delivering thermal comfort. Building components were chosen for their contributions to overall operating efficiency, and in some instances, for their positive effects on indoor air quality. Computer analyses were conducted using DOE 2.1E, a state-of-the-art energy performance simulation program. Because energy efficiency, indoor air quality, and sustainability were central to the Forest Center's design, these strategies were integrated from the outset, rather than added in a later stage of design, as is often the case. By being on board from day one, SWA was able to work closely with other project team members to achieve a design that will yield projected annual energy savings of between 43% and 49% in comparison to a code-compliant building.

## Sustainable School Design



With an estimated 2,400 new schools needed by 2003 to serve the growing K-12 student population, and a third of existing schools in need of repair or replacement, a once-in-a-lifetime opportunity exists for communities nationwide to design high-performance schools. The **Sustainable Buildings Industry Council (SBIC)**, managed by **SWA**, is involved in this effort on several fronts. SBIC supported the "High Performance Schools Act of 1999" introduced this past October by Rep. Mark Udall (D-CO), following a Capitol Hill briefing on sustainable schools, where SBIC members made a compelling case for whole-building design. SBIC provided technical input to Rep. Udall's staff during the drafting process. SBIC is also planning a major conference later this year, targeting school board members and administrators with information on the scholastic and economic advantages of sustainable schools, and is working with state energy and education departments to update school construction manuals and to educate school planners and designers about the whole building approach. You can visit SBIC's website at: [www.SBICouncil.org](http://www.SBICouncil.org).

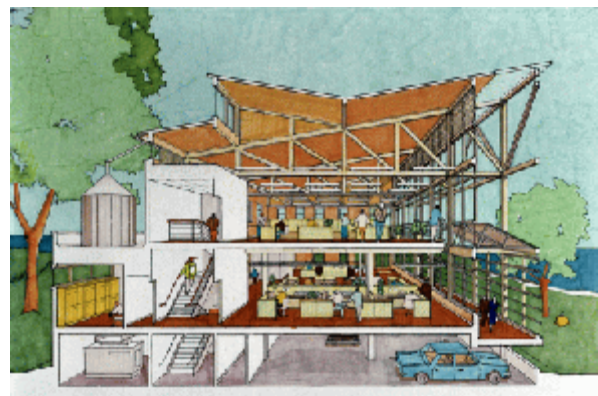
## Innovative Manufactured Home

Manufactured housing is on the verge of a market transformation, driven by new technologies and aesthetic enhancements brought into the mix by **SWA** working on the **Department of Housing and Urban Development's** Partnership for Advancing Technology in Housing (PATH) Program. The *NextGen* house, now under construction on a site in Danbury, Connecticut, is a PATH demonstration project with technical and design assistance by SWA. The emphasis is on energy and resource efficiency. The home's two-story layout and steep roof pitch clearly set it apart from most manufactured housing, known for relatively flat rooflines and single-story floorplans. The 1,800-square-foot, three-bedroom, two-bath *NextGen* home is comprised of two factory-built sections. When joined, the unfolded "half houses" become a Cape Cod style, gable-end house. The home's innovative HVAC system eliminates the furnace. Instead, a hot water heater, coupled with a fan-coil unit, handles the home's heating needs. Air distribution is achieved with inside-the-envelope ductwork. This arrangement lowers heating and cooling energy demand while reducing material and labor costs. The HVAC system is complemented by high-efficiency appliances, light fixtures, and windows, with enhanced insulation, earning *NextGen* an ENERGY STAR designation, which means that energy performance will surpass the requirements of the Model Energy Code by 30% or more. The home will be completed this month, and will be open to the public through April.

## Peer Reviews for Greener Projects

How can you broaden a building's sustainable features before it's too late to make design changes? One technique is the "peer review." **SBIC** has been conducting some peer review design assessments on behalf of both public and private clients. The process entails in-depth preliminary design analysis by SBIC members and staff with the objective of optimizing whole-building performance. One such activity was conducted for the **Chesapeake Bay Foundation**, whose new headquarters facility (section below) is under construction in Bay Ridge, Maryland. According to Chuck Foster, the Foundation's Director of Fleet and Facilities, "Though the CBF headquarters was already designed to be a sustainable, resource-efficient facility, the peer review brought all of the components – either up or down – to the same shade of green. Now, the various components and systems are more in line with one another, and will work together in a more holistic, complementary manner." The

January/February issue of *Environmental Design & Construction* carries a feature article by SWA's Will Zachmann on the process and outcomes of the CBF Peer Review. Other peer reviews have been conducted for the U.S. Customs Service border station at Sault Ste. Marie, MI and the U.S. District Courthouse project in Denver, CO.



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