



### **Pioneering “Greenest House in Georgetown” Under Construction.**

A District couple is turning their commitment to preserving the environment into a pioneering renovation of their historic Georgetown home, with hopes of earning the highest-ever environmental rating for a remodeled residence in the city.

The project, an end-unit row house located in the 3200 block of P Street NW, showcases a blend of historic preservation and modern technology that the owners, Wendy and Malcolm Walter, believe will qualify for the highest-available “Platinum” level certification, as measured by the U.S. Green Building Council’s rigorous LEED for Homes program (*Leadership in Energy and Environmental Design*).

In the near future, the exterior of the building may end up being more historically compatible than pre-renovation, since architect Erik Hoffland preserved all of the original elements of the facade and eliminated some historically-clashing details from a 1940’s-era addition.

But it will be the components that visitors won’t see that set the project apart from all others. Architect Hoffland, working closely with general contractor Landis Construction Corporation, has incorporated every conceivable environmentally-friendly element he could fit within the home’s space limitations and the project’s budget.

Inside the walls, an insulation specialist has sprayed in a durable, soy-based foam which will minimize heat loss and reduce cold air leakage to nearly zero. For the new hot and cold water piping, the homeowners received a variance from the city’s building code to permit the use of Aquatherm™ polypropylene piping, an environmentally-friendly technology first popularized in Europe and now gaining acceptance here. The home’s hot water will be generated by two flat-plate solar collectors in a rooftop location carefully selected to be invisible from the street. All space heating and cooling will be supplied by an ultra-efficient gas furnace and electric central air conditioner. And since the house is expected to be so airtight, a special energy recovery ventilator was installed to efficiently perform a “heat exchange,” whereby the stale air being expelled from the home conditions fresh air brought in from outside.

For historic and environmental reasons, many of the original rough-sawn timbers in the 1900-era house were preserved in their present location or recycled in other areas on the site. New lumber for the renovation and a three-story rear addition is certified by the Forest Stewardship Council (*FSC*) to insure that it was grown and harvested in a sustainable manner. Even construction waste from the project is being carefully recycled under the guidance of Landis Construction’s Green Program Manager Russell

Clark, a long-time environmental professional. *“It can be a challenge sometimes,”* Clark acknowledged, *“when sub-contractors are used to just throwing away”* old materials that could find uses in other settings. *“A big part of my role is making sure that the old ways of doing things are replaced with better ways of doing things. This may not always happen on the first pass, but the project manager must be the ‘green conscience’ of the project and make sure the right things happen in the end.”*

The LEED program assigns a weighted point value to each of the environmentally-compatible features in the house and in the construction process. If, as expected, the project achieves the top LEED-Platinum rating, it will be the first such rating applied to a residential renovation in Georgetown, and one of only two in the District of Columbia.

Ms. Walter, herself an environmental and real estate specialist, and her husband, an executive with a software firm, purchased the property in 2007. Their photographs show that it had a plain, dated interior from an early-70’s renovation that they felt was unappealing and used space inefficiently. The owners hoped to add on to the rear of the structure, and to improve the layout for flow and aesthetics. Wendy Walter found architect Hoffland through SBNOW, the Sustainable Business Network of Washington, a nonprofit focused on helping businesses become “green” certified, where they had served on its Board of Directors.

Hoffland designed the house to include a modest rear addition which, while invisible from the street, will increase the home to about 3,100 square feet and five bedrooms. An open floor plan and the addition of several skylights, sun tunnels, and new windows ensure that the home will need very little artificial light during the day. When the lights do come on, they will be a mix of LED (light emitting diode) and compact fluorescents, which together

will use a fraction of the energy that a typical house with incandescent lighting would use.

Unlike some other green projects, the goal for the Walters was to design a very energy-efficient, sustainable house that fits within the surrounding architecture. *“I want people to walk into this house and to think Georgetown first, ‘green’ second”* says Hoffland. *“I want people to understand that green is not a style, it’s a philosophy. If a house can be more sustainable and use less energy than its neighbor, but without compromising the architectural integrity or style, then I’ve done my job”*

As Hoffland’s design was taking shape, the architect and homeowners sought out a contractor who would have enough environmental awareness and the inclination to be faithful to the project’s aggressive LEED standards.

They found what they were looking for in a District-based remodeling firm owned by Swarthmore-educated Ethan Landis and his architect-brother Chris. The Landis’s, again working with Clark, had won a finalist award from the National Association of the Remodeling Industry’s metro-Washington chapter for best “green” renovation of 2007, on a Northwest residence. While acknowledging the inevitable budgetary and design challenges of major home remodeling, Hoffland, Clark, and Landis have worked successfully as a team with the homeowners, united by a larger vision that they hope will inspire other environmentally-conscious homeowners.

The home’s soy-based foam insulation, installed by Springfield-based NOVA Insulation, was initially more expensive than other types of insulation. It will pay for itself over time, since it will be far better at reducing heating costs and especially drafts and cold air, which would otherwise leak through the loose clapboard siding on the front of the wood-framed structure. Combined with other features of the design, it is

expected to reduce the home's energy consumption by more than forty percent.

The Aquatherm™ (formerly Fusiotherm) polypropylene piping was heat-welded in place by two Landis plumbers who obtained special certification in the new technology. The plastic pipes themselves are manufactured in a bright green color mimicking its environmental theme, and are 100 percent recyclable. Although the piping technology was too new to be adopted by the District's current building codes, the city has almost completed an overhaul of those codes that would permit the use of polypropylene piping in homes. The new codes were recently approved by the DC Council and are awaiting Mayor Fenty's signature.

Fenty, who met with the team early on in the project, encouraged the District's Department of Consumer and Regulatory Affairs to give green building projects special consideration during the review of building permit applications. The DCRA responded in this case by assigning a "development ambassador" to the project to shepherd it through the numerous technical and code reviews.

Construction on the project recently passed early phases of inspection and is expected to be finished in February of 2009. The homeowners and the remodeling team hope to include the mayor in a ribbon-cutting ceremony to inaugurate the newly-remodeled home at that time.

The home will feature both reclaimed heart-pine and bamboo flooring, new bathrooms featuring high-recycled-content tile, stone from local quarries, and low-flow toilets, and some new and expanded bedrooms in the rear addition that have EnergyStar-rated windows made by JELD-WEN.

Leaving no stone unturned, environmentally speaking, Mary Pat Rowan, the project's landscape architect, was able to provide a design that captures a portion of the runoff (*diverting it from public wastewater systems*) and that incorporates native plants that will require no additional watering

beyond expected rainfall. *"Ultimately we turned a turf-and-concrete backyard into a beautiful native sanctuary, with a variety of drought-tolerant native trees and plants, along with a Pennsylvania flagstone patio and rustic stepping stones, which have a higher reflectance component and are sourced locally."* says Rowan.

\* \* \* \* \*

**Landis Construction Corporation** – was formed in 1990 by brothers Christopher and Ethan Landis to meet the growing needs of families living in established urban neighborhoods in the Washington Metropolitan area. Their family business has just celebrated its nineteenth year as a Design/Build firm specializing in renovations of residential properties.

**Eric Hoffland, Architect** – Principal Erik Hoffland has been practicing in the District since 1999 after completing his architectural degree at Carnegie-Mellon University. A LEED Accredited Professional, he started his own practice in 2007, focusing on sustainable residential commercial and retail architecture. He hopes the Walter Residence will serve as a catalyst for more sustainable building in the region.

**Wendy Walter** is the founder of W.K. Walter & Co., an industry leader in the art of sustainable real estate practices. As one of the first EcoBrokers® in Washington and a certified LEED Accredited Professional, Ms. Walter helps buyers and sellers find homes that are cost-effective, healthy, and comfortable.

**Walter Residence Trade Partners**

**NOVA Insulation** (*spray foam*)  
Springfield VA  
703-371-2000

**R. W. Kibbler Roofing**  
Hyattsville MD  
301-864-1007

**BMC Heating & Air Conditioning**  
Silver Spring, MD  
301-680-5300

**Eastern Stair Builders**  
Jessup, MD  
410-792-0200

**Chesapeake Solar**  
Jessup MD  
443-733-1221

**Smitty's Building Supply**  
(exterior windows and doors)  
Alexandria VA  
703-780-7800

**M & M Appliances**  
Washington DC  
202-882-7100

**Asa Foss**  
Everyday Green  
(L.E.E.D. rater)  
202-213-6984

**ITBS** (*3<sup>rd</sup> party inspectors*)  
Washington DC  
202-223-3859

**Nature Neutral**  
(materials supplier)  
Charlottesville, VA  
434-975-2002

**Four Brothers Carpenters**  
Washington DC  
202-423-8703