

Green *in* Orleans

A cobbled kitchen gets an environmentally friendly remodel.

DESIGN: **WILKINSON DESIGN FOR CONSTRUCTION**

GENERAL CONTRACTOR: **CREGG SWEENEY**

GREEN CONSULTANT: **WILLIAM CRAIG**

TEXT: **TIM WOOD**

PROFESSIONAL PHOTOGRAPHY: **PATRICK WISEMAN**

Sunlight spills through a bank of five energy-efficient windows and fills the long, narrow kitchen, splashing off the maple butcher-block counters, white bead-board cabinets and bamboo floor. Outside, a tall Leyland cypress sways in the breeze. The scene is one of harmony between nature and manmade structure, exactly the goal of “green” building.

Or in this case, green rebuilding. What was a dark, cobbled-together kitchen in an extensively renovated 1950s-era Cape overlooking Pilgrim Lake in Orleans was transformed into an environmentally friendly space through the collaboration of owner, architect and contractor, whose mutual goal was to minimize resource use and maximize energy efficiency.

“It’s been quite a collective effort,” says Pav Wilkinson of Wilkinson Design for Construction in Harwich. “That’s the key here. It’s why everybody seems so happy now.” Wilkinson

designed the kitchen, Cregg Sweeney of Orleans served as general contractor and did most of the finish carpentry, and architect William Craig of Philadelphia acted as “green” consultant.

The goal was to take an unremarkable, 204-square-foot kitchen and transform it into a bright, inviting space using natural light and sustainable, environmentally neutral materials, says Craig, who specializes in designs that follow the Leadership in Energy and Environmental Design (LEED) Green Building Rating System, developed by the U.S. Green Building Council. He also happens to be the son of the homeowner, who wanted to increase the home’s energy efficiency as well as reduce its overall impact on the environment.

Craig’s philosophy is that green design is smart design. “I really believe, by and large,” he says, “choosing green or sustainable material is better not just because they’re green, but because



From the energy-efficient windows to the bamboo flooring, this contemporary kitchen is environmentally friendly.



“Green” can be stylish, as this kitchen demonstrates with its custom cabinetry, stainless steel appliances and reused maple countertops with Fireslate insets.

they’re better.” More durable and aesthetically pleasing, the materials “perform better across the board,” he says.

WHAT MAKES IT GREEN?

Three things make this kitchen remodel green. First, whenever possible, materials from the original kitchen were reused. Second, other used or salvaged materials were incorporated when appropriate. Finally, functional elements—such as countertops and flooring—made from renewable resources or with a high content of recycled material were sought out. Energy-efficient appliances and materials with very low or no volatile organic compounds completed the environmentally friendly picture.

“We’re very, very committed to environmentally sensitive projects, whatever we’re doing,” says the owner. “We wanted this as green as possible.”

The entire room was taken down to the studs, revealing the first major challenge. The kitchen was in the original part of the structure, which was built as a cottage. A previous owner had converted the attic into a master bedroom suite, and over the years the two-by-six floor joists had sagged, in some areas as

much as two inches. In both the kitchen and the adjacent living room, the ceiling had to be jacked up and the floor joists straightened and sistered.

Before the remodel, the long, narrow galley-type kitchen, which opens onto a dining/family room on one end and a hallway on the other, was a hodgepodge of materials and styles, assembled over time by previous owners. Doors on the pantry at one end weren’t matched, and the cabinets were salvaged, apparently from a number of different sources. “We wanted to recycle some of the cabinets,” Wilkinson says, “but they were all so cobbled together, there was no way to un-cobble them.”

Jim O’Brien of Dolmen Cabinets in South Chatham crafted new bead-board cabinets using formaldehyde-free plywood and a nontoxic binder for the veneer. New doors with a matching beaded design were found for the pantry. The original maple butcher-block countertop was removed, sanded down and refinished, and half of it was reinstalled.

“Everything that we could recycle we did,” says Wilkinson. Staying close to the kitchen’s original layout and within the footprint helped facilitate that goal.

LET THERE BE NATURAL LIGHT

The original kitchen had only two windows that let in very little light. Removing the old windows and adding a bank of five larger windows followed the traditional green strategy of using natural light as a way to minimize the need for artificial light.

Anderson High Performance windows were used because of their high energy efficiency. The argon gas-filled double-pane windows use a metallic coating to restrict heat flow, deflecting heat in the summer and keeping it inside in the winter. Awning-style windows were chosen because they can be left open even when it is raining.

An extra layer of framing was added to the wall holding the windows, not for structural reasons but to allow the addition of blown insulation to increase the R factor to 30, considerably higher than the R-13 average. The higher the R value, the better the energy efficiency.

“We spent a lot of time blowing in cellulous insulation to get the R value of the floor and ceiling up to snuff,” says Wilkinson. That process was repeated in other areas of the kitchen and house, increasing the home’s overall energy efficiency. From general contractor Cregg Sweeney’s point of view, making the house tighter—a process that included upgrading the heating system—and increasing its energy efficiency was the most important green contribution. That makes the biggest difference in the long run, he says.

In the ceiling, extra-small recessed lighting had to be used because of the tight framing. Energy-efficient compact fluorescent lamps (CFL) were used for all the lighting; a new generation of CFL products allow their use in dimmable fixtures as well, which allows the owner to better control the lighting level while using significantly less electricity than conventional bulbs. Whimsical hand-blown glass shades, chosen by the owner, provide a focus of color and lighting over the counter. “These are the centerpiece,” Wilkinson says.

The original flooring was replaced by bamboo, made from fast-growing, renewable material and layered for strength. The floating floor expands and contracts with the seasons, Wilkinson

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“Fabulous” is how the owner describes the remodeled kitchen. “The lines are a lot cleaner,” she says.

points out. The biggest negative in using the material, Craig notes, is that it takes considerable energy to ship it from China.

Fireslate, a man-made material that resembles natural stone, was used as a countertop material around the sink and stove areas. Made of Portland cement, silica sand, water and fillers, Fireslate is heat resistant and also has the benefit of being manufactured locally by a company called Fireslate-2 Inc., in East Wareham. It’s also lighter than granite or other stone countertops, and its manufacture uses less energy than mining refined natural stone. Sweeney found it easy to work with and attractive. “It looks like slate,” he says.

As wonderful as it all sounds, the project wasn’t without its glitches. The 30-inch-wide Viking Dual Fuel gas convection range arrived six inches narrower than the stove that had been originally specified for the space, leaving an unexpected gap. The solution was to alter the countertop and add a six-inch spice drawer, “which the client loves,” Wilkinson says.

Remodeling green is “all in the details,” says Wilkinson. There are small touches that can have a large impact over time, such as sealing electrical outlets with gaskets and plugging up other gaps in the walls and floors, no matter how small. Energy Star appliances ensure efficient power usage; the Viking dishwasher uses just six or seven gallons of water per cycle, significantly less than most dishwashers. Water-based paints and stains were used because they contain low

Before the remodel, the long, narrow kitchen was a hodgepodge of materials and styles. Now the space is clean and uncluttered.

volatile compounds, minimizing off-gassing. Recycling bins are discreetly tucked in cabinets beneath the counter. Much of the original trim was reused, especially in areas that transition from the remodel to the original home.

“Fabulous” is how the owner describes the remodeled kitchen. “The lines are a lot cleaner,” she says. “The space seems a lot less cluttered than before.”

Small touches also provide greater convenience and efficiency, such as having drawers rather than cupboards for storage. The solution became a necessity after the windows were added to the wall where most of the cabinets had been. That also required relocating the new GE Sub-Zero refrigerator, which had been located in the middle of the wall. It was placed off to one side, making it more inconspicuous.

“It was good to be part of,” Sweeney says of the project. “It’s not every day you get an owner who’s gung-ho and willing to go for it on all these green ideas. The most important thing is owner buy-in.”

One drawback of green building is that it’s generally pricier, running from 15 to 30 percent more expensive than traditional construction, says Wilkinson. Long term, however, the savings in energy and resources more than make up for the higher upfront costs. This remodel, which also included two bathrooms and a new heating system, cost \$250,000. “As a long-term investment in the value of the house, our enjoyment and economical use of it, this will pay off over time,” the owner says.

“Green” materials are becoming easier to find for both builders and homeowners. “There’s a lot of green information out there,” Craig says. But he warns people to do their research. “As it becomes more popular, manufacturers are making some questionable claims.”

For green building resources, check out www.usgbc.org.

Project Overview

- ✘ Budget: \$92,000
- ✘ Bring harmony to a hodgepodge kitchen
- ✘ Increase energy efficiency
- ✘ Bring in more natural light
- ✘ Use environmentally friendly materials

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