

Model Remodeling

Greenovations Grow in Popularity

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Jill Jacoby's warm, cozy and environmentally sensible cottage.

We've all seen those houses. You know, the ones with the banks of solar panels, floor-to-ceiling windows and angular architecture. Splashed across the glossy pages of home decorating magazines and architectural journals, environmentally friendly homes can resemble real-life versions of those old "House of Tomorrow" cartoons. But do you really have to buy a house like that to live green?

The answer, of course, is "no." By making simple and often cost-effective modifications to existing homes (even if they're pushing 70, 80 or even 100 years old), homeowners can cut down on their energy consumption, reduce the number of toxins in their homes and shrink their environmental footprints.

Here's how three Northland residents incorporated green principles into their otherwise conventional renovation projects.



There's no place like home for Jill Jacoby, whose alternative energy choices significantly warmed up her cheerful abode.

Sealing the 1,300 square-foot chimney

For Jill Jacoby, greater energy efficiency came courtesy of softball-sized hail. The notorious storm that raked the Northland in Spring 2007 gave her roof a pounding fit for a cheap steak.

Even before the storm, the boundaries between the indoors and the outdoors at Jacoby's rustic Rice Lake Township farmhouse had grown too fluid for comfort. "In the winter, I would hear the wind blow outside and then feel a breeze inside," she chuckles.

Coupled with the invading drafts, columns of Jacoby's indoor heat rose through the poorly insulated roof to create a "chimney effect" — melting snow and forming "ice dams" that eventually rotted the siding along her dormer. The 98-year-old house was sucking her propane tank dry.

When her insurance company agreed to replace her roof, Jacoby took it as a sign and decided to upgrade her insulation and siding, as well. Conscious of her environmental footprint but also her budget, the Ph.D. student resolved to explore eco-friendly options for doing so.

Working from the bottom up, Jacoby hired a local alternative energy specialist to fill the seams on the exterior walls between her concrete foundation and her floor with nontoxic spray foam insulation. To insulate her walls, Jacoby replaced the thin tar paper she found under the original cedar siding with Tyvek, a common insulating material used by builders.

In a bizarre scheduling quirk, Jacoby's roofing company finished her new roof before she could have the attic insulated. This called for a creative solution from Dave Joice, a local insulation vendor. By drilling discrete, half-dollar-sized holes in the plaster between the studs in her upper level, Joice was able to pump insulation (made from recycled newspaper) into portions of the roof where its pitch prevented access from the attic entry.

For her exterior walls, Jacoby chose fiber cement siding over wood or vinyl because of its durability and environmental friendliness. Made from cement, ground sand, water and — in Jacoby's case — 30 percent recycled wood fiber, the siding resists water, rotting, fire and insect damage.

At \$6 per 12-foot board, the fiber cement costs more than vinyl, but involves none of the pollutants (both pre and post production) — including dioxin — that studies have linked to the latter in recent years. She also paid slightly more for installation (cutting the siding requires a special blade and additional caulk), but recouped some of the extra cost by painting the siding herself.

With one winter under her belt, Jacoby already has reason to expect some payback along with her green piece of mind. "Last time my propane guy came out, he had to put a lot less in the tank," she notes. "It's awesome."

Finishing touches, not toxins

Joanne Cirillo and Ann Watkins began their kitchen renovation with a fairly simple goal: remodel in a style consistent with their 1931 Georgian Colonial's classic character without breaking the bank.

Their obstacles included a cramped layout, scarce counter space and baseboard heat registers on two walls. While the Superior couple resolved to do as much as they could with the existing kitchen dimensions and materials, they didn't necessarily set out with a "green" kitchen in mind.

That changed when they met Julie McDonnell of ECO, a supplier of environmentally friendly interior finishes, at a local home products expo. "I was skeptical," Cirillo admits. "I wasn't sure we could afford it," she explained, assuming that ECO's materials would cost more than conventional options.

McDonnell assuaged their concerns with both in-depth knowledge and comparable cost estimates. A former employee of Minnesota's Pollution Control Agency, she had founded ECO as a local source for nontoxic and low-impact alternatives to common interior finishing products like flooring, cabinets and countertops.

"A lot of these commonly used products give off toxic substances called VOCs," explains McDonnell, referring to volatile organic compounds, which enter the air through a phenomenon called off-gassing. "These chemicals are not natural."

Often found in paints, finishes and binding agents, VOCs seriously degrade indoor air quality. One chemical commonly found in pressed wood (think cabinets and countertops) and foam carpet padding, urea formaldehyde, is a known carcinogen.



Thrifty environmental choices bring Joanne Cirillo's and Ann Watkins' kitchen to life.

Drawing on McDonnell's expertise, Cirillo and Watkins began to attack their kitchen challenges with an eye toward both greenbacks and green living.

To recapture additional floor and counter space on the two walls left bare on account of the baseboard heat, the couple hired a craftsman to build a series of open-faced shelves above both stretches of the heating registers. This design not only enables the heat to rise through the openings — preserving energy efficiency — but also creates additional counter space along the tops.

Cirillo and Watkins chose marmoleum for these new counter tops and for the floor. Composed of linseed oil, wood flour and other natural substances, the material grows more durable with age and requires nothing but soap and water for cleaning. It also emits fewer toxins than vinyl or laminate counters made with pressed wood.

To replace their existing counter top, they went with PaperStone, a material made from recycled paper and bonded with a cashew

nut-hull resin. Durable and similar in appearance to soap stone, this material generates a smaller environmental footprint than granite and other mined stone.

"Despite these substitutions, the projects costs remained largely in line with a conventional renovation. "At each point, I looked at the numbers and thought, 'Oh, we can do this,'" Cirillo assures. Their only "splurge": handmade recycled glass tiles for the backsplash.

Of course, they made some trade-offs along the way. They decided to keep the existing cabinets and sink, split the counter top surface between the marmoleum and PaperStone, and limit the backsplash coverage to the PaperStone portion of the counter top.

In the end, Cirillo and Watkins expect to bring the project in at around \$15K, which is on the low end of the average kitchen remodel range. "I feel good about the products we used," said Cirillo. "We're going to have something we're proud of and that looks more expensive than it actually was."



Countertops and backsplash are made from environmentally thoughtful materials with plenty of style and color.

Seven simple steps for Green Renovating...

1. Get a home energy audit.

"Going green begins with energy efficiency — not bamboo floors," counsels Michelle LeBeau of Dubuich's Women in Construction. Home energy audits measure how much energy your house uses and identify opportunities for increased efficiency. You can schedule one through your local utility company or through a private inspector — or conduct one yourself using an online resource.

2. Maximize your architecture.

The great thing about old houses is that many were designed to make the most of solar energy in the first place. Use shades, blinds and awnings to adjust the amount of sunlight coming into the house with the seasons. Build additions and other structural features to capture the same benefits.

3. Ditch the carpet.

"You know that new carpet smell?" asks Julie McDonnell of Eco Home Finishing. "It comes from the chemicals it's giving off." Over its lifetime, carpet exchanges those chemicals for dust and other particles — making life tough for asthma and allergy sufferers. "I've heard that carpet comes out five times heavier than it is when it goes in," McDonnell says.

4. Avoid VOCs.

Found in a variety of paints, solvents, finishes and adhesives, volatile organic compounds enter the air through a process called "off-gassing" and can pose significant health hazards. Look for products that offer low- or no-VOC alternatives.

5. Recycle and reuse.

In addition to shopping home improvement stores for materials, look up local salvage companies. They can be a great source for reclaimed wood, doors and antique fixtures that fit the style of older homes. Or, take a second look at materials in your own home and consider how to reuse them with a little elbow grease.

6. Take your time.

Going green doesn't have to be a massive project. In fact, replacing everything in your home at once can create a lot of waste. Instead, remodel rooms and replace appliances according to need. When the opportunity arises, explore green alternatives to the items you're replacing.

7. Save your receipts.

Come tax time, you could qualify for federal and/or state tax credits for energy-efficient purchases and upgrades. Check online at energystar.gov and at your state government's Web site.

Right-sizing the footprint for the shoe

Across town, Christal McIntyre knew she was taking on a project when she purchased a tiny two-bedroom bungalow in Billings Park. Built in 1927, the house harbored an octopus furnace in its basement, sketchy electrical work in its walls and hideous shag carpet throughout the Superior home.

Rather than trying to expand the house's square footage and ramp up the its energy capacity, McIntyre decided to play to the bungalow's strengths by keeping her consumption footprint small.

With her sons grown and gone, McIntyre realized that the house would rarely need to accommodate more than her and her husband at any given time. With this in mind, she purchased a three-quarter-size refrigerator and a slim dishwasher (both energy efficient), both of which opened up space for cabinetry in the tiny corner kitchen.

For hot water, she replaced the old tank with an ultra-efficient Stibel-Eltron "instant-on" heating system, which easily meets the demands of two people. To reduce water use, she researched low-flow toilets and showerheads to find models with the perfect balance of efficiency and effectiveness.



Christal McIntyre's Billings Park bungalow is a study in making smart and efficient use of small spaces.

"I spent two months looking for the toilet," she admits. "It uses slightly under a gallon, which is just enough to clear the system when it flushes."

Finally, she replaced the old octopus furnace with a new high-efficiency forced-air unit — relying on the southern exposure and triple-pane windows installed by the previous owner (the octopus had no fan) to capture passive solar heat and light. While the attic could provide an additional floor of living space, McIntyre keeps it closed up to conserve energy. footprint — both of which fit her current needs to a green "L."



A small, but deep sink uses space efficiently in a kitchen with limited square footage.