

DOWNSIZING • An environmentally-conscious family in Woolwich, Maine, reduces its carbon footprint by living small



THE NEW HOUSE IN WOOLWICH, MAINE, IS testament to Ben Tipton and Michelle LaRoque's belief that while they cannot change their past carbon footprint, they will do everything they can to reduce their children's. Having designed and built an energy-efficient house in Hartland, Vermont, they realized they could go even smaller. Their goal was to spend less on a mortgage

and more time with their children. Most of all, they hoped to educate Mikail, 8, and Addison, 6, on what it means to be environmentally responsible citizens.

The Vermont house was a modest 2,000 square feet, but Tipton, a physician's assistant and former construction worker, believed they could live simpler by being

ARCHITECTURE: KAROLINA KAWIAKA STUDIO

EXCEPT FOR SOLAR panels, this environmentally up-to-date home could pass for a simple Maine farmhouse. Family "staycations" are centered around the pool.



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greener. LaRoque, a stay-at-home mother with a degree in counseling, made a list of their bare necessities. Together, they decided what they could live without: dishwasher, dryer, microwave oven. A wood stove and a gas range lit with a match were givens. So was solar technology to supply electricity, heat, and hot water.

Rather than an underground cave or something built of hay bales, the couple wanted an attractive, traditional-looking house that would be sellable should they ever move. Although Tipton wanted to build the house, he knew they needed the advice of an architect, whom they fortuitously found in the telephone book.

Karolina Kawiaka was able to guide the homebuilders on both design and environmental

FEWER MAJOR APPLIANCES mean the kitchen is less cluttered. Michelle LaRoque prepares snacks with Mikail, 8, and Addison, 6, at the simple steel and butcher-block worktable. Using concrete for floors and countertops kept costs down, and the tinted finishes jibe with the lively color scheme. Each cabinet pull is made from a stone.



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GOOD ENOUGH TO EAT

BEN TIPTON AND MICHELLE LAROQUE encouraged their children, Addison, 6, and Mikail, 8, to design and plant a snack garden, which became a private outdoor commissary for them. Starting with favorites such as peas, the garden begins producing in early spring and continues with a rotation of plantings throughout the season.

Growing its own food is a natural extension of the family's sustainable philosophy and helps teach valuable lessons in how to be good stewards of the land. Plus, the children love to grab their favorite treats while playing outside.

Tipton and LaRoque helped the kids site the patch between the pool and the sun-catching south side of the house, a location that makes it handy to both pick treats for immediate consumption and to bring the harvest into the kitchen for further preparation.

Last summer, the green-thumbed kids were able to enjoy a bounty of munchies, including cucumbers, beans, and cherry tomatoes. This year, there may be additional crops, although cucumbers remain a favorite of Derby, the family dog. And, of course, everything is grown using organic techniques.



issues. For starters, Kawiaka was against digging a basement: "Do not blast apart Mother Earth," she admonished. A graduate of Smith College and the architecture program at Harvard University, she teaches at Dartmouth College in Hanover, New Hampshire, and is principal of Karolina Kawiaka Studio in White River Junction, Vermont.

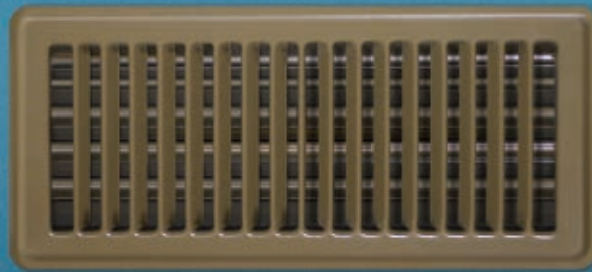
She understood that economy was more important than an aesthetic statement. For example, she recommended that Tipton and LaRoque base their home on a 20-by-30-foot stock frame from the Shelter Institute in nearby Montsweag, Maine. She suggested using recycled materials, such as the doors found at Portland Architectural Salvage in Portland, Maine, wherever possible. Like other elements in the house, the sealed Marvin windows are standard sizes. To save on both water and space, the house has but one bathroom, and that has only a shower.

The site, 6 acres of woods just across the Kennebec River from Bath, was also part of the energy-saving equation. Wood for the house was

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1. The exposed frame gives Michelle LaRoque and Ben Tilton's Woolwich home the casual air of a summer cabin. 2. A screened-in porch extends the living space outdoors in warm weather. 3. A recycled door is mounted with barn-door hardware, so that it easily slides open and closed. 4. Metal light fixtures offer a no-nonsense decorative aesthetic. 5. The second floor is open to the living room below, making the small house feel large and airy.



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obtained right there — a sawyer with a portable sawmill spent two days harvesting and milling the lumber. Additional cut trees feed the wood stove; the cleared land became a vegetable garden.

As construction time equals money, the house was designed to be built rapidly. The site was cleared in May of 2008 and the frame was erected in June. Sheetrock and structural insulated panels went up, and friends came around for a siding party. The house was enclosed in within 10 days, and the family took up residence that September, with the finish work done by Thanksgiving.

Except for the solar panels, the house looks like a contemporary version of a no-nonsense 19th-century Maine farmhouse with its

The average American family has a carbon footprint of more than 20 tons a year; this clan now produces a quarter of that.

45-degree standing-seam metal roof and vertical wood siding. Inside, the exposed frame sets the tone of a comfortable camp in the woods. An open kitchen, dining area, and living room wrap around the central chimney and staircase.

Tipton fashioned a tinted concrete sink in the ground-floor bathroom, the base of which is a piece of oak harvested on the property (total cost: \$12 for a bag of Sakrete). He also poured the concrete kitchen counters. Radiant heat makes for warm concrete floors. Upstairs, there are two bedrooms snuggled beneath the sheltering eaves. The children now share a room that can eventually be divided.

Working with Kawiaka, the owners achieved their program: a 1,200-square-foot minimal house that cost \$225,000, excluding the land. The price tag included \$34,000 for solar heat and hot water systems, and the house is already paying dividends in low energy usage. Rated at 25 to 30 R, the well-insulated house will use 25 gallons of propane



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WHAT EVOKES a New England summer more than a screened porch overlooking a meadow at the edge of the woods? Barefoot children, who have been actively involved in the building of their home, complete the picture.

and a cord or so of wood in a year; the house produces nearly all the electricity it needs. The average American family has a carbon footprint of more than 20 tons a year; this clan now produces a quarter of that.

Having a swimming pool seems at odds with building a house whose stated goal is living simply. Yet Tipton and LaRoque wanted their kids to have fun. As their dad noted, "Construction of the pool cost a whole lot less than flying the four of us somewhere for a vacation." Besides, the pool acts a "solar dump zone" in the summer — the family recently added a third rack of solar tubes, which gave them significantly more heat and hot water last winter, but that means a surplus of heat in the warm months. Ever the careful energy auditor, Tipton proudly points out, "Even with the pool, our house costs us 96 cents a day to run. That is our complete energy use!"

The house is small, but satisfies its owners' desire for ecologically responsible family living in an intimate relationship to the earth. Says Tipton, "It perfectly meets how we want to live our lives." □

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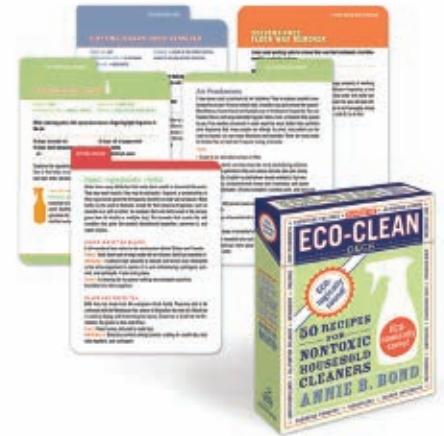
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Mix It Up • This handy deck of recipe cards (\$15, Potter Style) deserves a spot on the kitchen counter — even though the formulas are for easy-to-mix household cleaners, not Grandma's chocolate chip cookies. Author Annie Berthold-Bond shows how to turn nontoxic ingredients into homemade laundry detergent, furniture polish, and even insect repellent.

FRESHLY PAINTED

Many interior paints purport to be low-VOC (short for "volatile organic compound" which vaporize and can be poisonous), but few are able to push that claim beyond the base color. Tints have invariably contained VOCs, and the rule of thumb was the darker the color, the higher the chemical count. Freshaire paint (about \$35 a gallon; freshairechoice.com) is now available in a rainbow of 66 shades made with tints that are VOC-free, including several lovely shades of green.

