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greener pastures 🌱 Architect Maryann Thompson designs a home in Easton, Massachusetts, that puts the environment first

Written by **EMILY SHARTAN** Photography by **CHARLES MAYER** Architecture by **MARYANN THOMPSON ARCHITECTS**



KYLA AND DON BENNETT'S OBJECTIVE WAS TO BUILD A house that would be as energy efficient and environmentally sustainable as possible.

That meant outfitting the home with a roof made of recycled tires and installing 24 solar panels to generate electricity. It also meant cladding the house with low-maintenance fiber-cement planking instead of traditional clapboard or shingle siding. And it meant designing it in a simple rectangular shape that would help keep building costs down and make it easier and less expensive to heat.

The result is a contemporary minimalist house that stands apart from the more conventional architecture in the Bennetts' Easton, Massachusetts, neighborhood. "Our house was pretty in-your-face," Kyla Bennett says, "but we wanted to show people how to do it." For the Bennetts, their 3,400-square-foot house is the embodiment of an ideal — a way to demonstrate how to incorporate green principles into everyday life — and they are happy it has attracted attention.

"Every decision was about getting the house to work," says Maryann Thompson, the Cambridge, Massachusetts, architect who designed the Bennetts' home. Kyla, an environmental lawyer, notes



THE HOME WAS SITED so that warm sunlight passing through the sliding glass doors is absorbed into the poured concrete floors, which act as a passive solar heating element in winter. The home's roof shingles may look like slate (FACING PAGE), but they are actually made from recycled synthetic materials.



All sconces and hanging pendants are made from 100 percent postindustrial recycled acrylic and use compact fluorescent bulbs. The chandelier is made from 100 percent recycled scrap aluminum. All recessed lights are LED fixtures and use 30 percent less energy than fluorescent lights.

Icynene insulation and air-sealing products provide a protective barrier against outdoor allergens and pollutants. They also prevent warm, moist air from contacting colder surfaces on outside walls, which can produce condensation that can result in mold and mildew.

The Alkemi countertop is made of recycled composite material that is at least 60 percent post-industrial scrap aluminum combined with polymeric resins. Backsplash tile is made from recycled glass.

The floor is made of concrete poured over layers of gravel and contains a radiant heat system. The kitchen table and bench are by Staples Cabinet Makers, a Plainville, Massachusetts, company that uses reclaimed and naturally air-dried wood.



Upstairs, the floors are made of Lyptus, a hybrid of *Eucalyptus grandis* and *E. urophylla* a hard wood that is grown on plantations, interspersed with stands of indigenous trees, to preserve natural habitat.

The staircase was built by a.k.a. Michelangelo Stairbuilders in North Easton, Massachusetts, using maple certified by the Forest Stewardship Council. Less than 10 percent waste wood was generated, which was then recycled.



Polymeric rubber roof shingles are designed to look and feel like slate. They are fire resistant, made from recycled synthetic materials, and have a 50-year warranty.

Solar panels and a Sunny Boy solar inverter satisfy most, if not all, electricity needs.

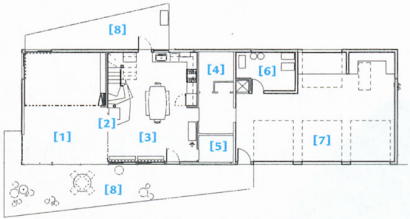
The house is sided with HardiePlank, a fiber cement board that is noncombustible, resists shrinking and swelling, is termite and pest resistant, and comes with a 50-year guarantee.

Instead of gutters, the house has Rainhandlers, a system designed by engineers at MIT to disperse water gently away from the house and prevent soil erosion.

The home's outdoor fixtures use compact fluorescent bulbs and are certified compliant with the International Dark Sky Association, which means they do not contribute to light pollution.

To minimize water run-off, no impervious materials were used in the landscaping. The driveway is local gravel and pavers form the patios. Instead of a lawn, there are native wildflowers and edible plants.

- FIRST FLOOR**
- 1 LIVING ROOM
 - 2 PELLET STOVE
 - 3 KITCHEN
 - 4 PANTRY
 - 5 BATHROOM
 - 6 UTILITIES CLOSET
 - 7 GARAGE
 - 8 TERRACES



- SECOND FLOOR**
- 1 MASTER BATH
 - 2 MASTER BED
 - 3 LAUNDRY
 - 4 FAMILY ROOM
 - 5 BEDROOMS
 - 6 BATHROOMS
 - 7 STORAGE/ATTIC ACCESS



DESIGN DECISIONS
Going Green

Maryann Thompson has always felt a need to help protect the planet's resources. She recalls developing a strong connection to nature as a child, and later, an equally strong concern about the effect that human actions could have on the earth.

"I have a deep motivation to not tread really heavily," she says. She brings that motivation to her work as an architect. Her firm,



Maryann Thompson Architects in Cambridge, Massachusetts, is known for its commitment to sustainable design. Some of her current projects include converting an old warehouse near New York's Brooklyn Bridge into an exercise facility, building a park pavilion in Toronto that is outfitted with solar panels that will provide additional electricity to the city, and converting a firehouse in Belmont, Massachusetts, into a residence.

To bring the principles of sustainability to her building design, Maryann Thompson follows these tenets:

INCORPORATE TECHNOLOGY Thompson's projects have included everything from solar panels to geothermal heat to "green" roofs covered in plants that help both cool and insulate, depending on the season.

BALANCE FORM AND FUNCTION While Thompson's designs are usually contemporary in style, she says strategies that benefit the planet do not have to look out-of-the-ordinary. Simply situating a building so it takes advantage of the sun in different seasons can reduce a homeowner's use of fossil fuels for heating and cooling. Her first project to incorporate this strategy was a school she designed in Hadley, Massachusetts, nearly 20 years ago.

EDUCATE CLIENTS Thompson acknowledges that architecture is ultimately a "service industry" and that clients have to be on board with the idea of sustainable design if they truly want to reduce the impact their homes have on the earth's resources. "It needs to be important to them," she says. With sustainable technologies becoming more streamlined and homeowners becoming more knowledgeable, Thompson is excited about the future of green design. "You can really take a house off the grid," she says.

that skeptical visitors are often charmed by the home's warm, inviting interior. The open-concept first floor combines a comfortable family living space with the kitchen and dining area. Heat is provided in part by a stove that burns pellets made of sawdust, and many of the fixtures — energy-efficient appliances, a kitchen countertop made of recycled scrap metal fashioned to look like granite, a backsplash made of recycled glass — were chosen for their environmental friendliness.

However, it may be the home's less obvious features that are the most impressive. The nectarine-colored ground floor, for example, is made of concrete poured over layers of gravel. In winter, that feature acts as a passive solar heating element, absorbing heat from sunlight that passes through a wall of floor-to-ceiling south-facing windows. In summer, when the sun is higher, the deep overhang of the asymmetric roof helps block the windows from direct sunlight, so the house stays cool. In addition, a radiant-floor heating system can supplement the pellet stove in the evenings and on sunless days.

Upstairs, the eco-sensitive mission is enhanced by Lyptus flooring, a sturdy eucalyptus hybrid considered sustainable because it grows quickly (14 to 16 years to maturity), and bedroom walls plastered with clay tinted with a natural dye. Because the clay breathes, the walls help control moisture in the house. The shower floor in the master bathroom is made of smooth natural stones, and a Japanese soaking tub uses less water than a traditional bathtub.

The house, which is shared by the Bennetts' two teenagers, was partially inspired by a family cabin in Vermont, a retreat that is off the grid. Though the Easton house still uses some electricity and gas heat, the Bennetts' utility bills are about one-third what they were in their previous home.

Last year, the Bennetts' house was one of the first in the state to be certified under the US Green Building Council's Leadership in Energy and Environmental Design, or LEED, program, which rates homes based on their energy efficiency and use of sustainable resources. Across the country, 400 homes, including about 20 in Massachusetts, have been LEED-certified, and there are an additional 10,300 in the pipeline.

In part, the Bennetts stuck to a minimalist design to keep costs down, but they also love the elegance of what they have built. "It's very simple," Kyla says. "It's certainly not typical of New England and this area." ■

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