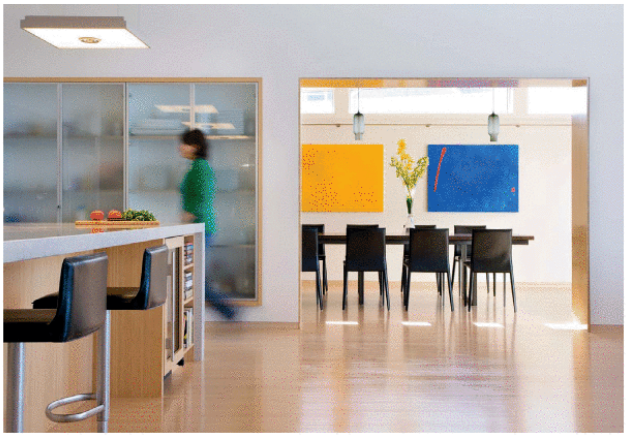
■ THE MAHOGANY DECK trimmed with concrete is a dramatic outdoor perch from which to take advantage of the exceptional view of Cape Cod Bay. The varnished maple-plywood ceilings of the interior rooms extend to the underside of the exterior overhangs, adding a buttery accent to the soaring roofline.

the *new* New World

STELLAR DESIGN AND NEW TECHNOLOGIES NET A CAPE COD HOUSE ZERO ENERGY USAGE

→ WRITTEN BY BRUCE IRVING • PHOTOGRAPHY BY ERIC ROTH
ARCHITECTURE BY ZEROENERGY DESIGN • INTERIOR DESIGN BY ELEVEN INTERIORS

There's something just right about the siting of this bold contemporary house high on a bluff overlooking Cape Cod Bay in Truro, Massachusetts — and it's not because of the truly spectacular view. Rather it is that this "zero-net-energy" building speaks to a misdeed that occurred on the beach right below it nearly four centuries ago. On November 16, 1620, Myles Standish and 15 other Pilgrims, on their second day exploring the New World, found a peculiar mound as they tromped along the sand. They dug in and discovered a basket of corn buried by the natives for use in the coming spring's planting. Realizing they had no indigenous seed, and rationalizing like crazy, the interlopers decided to take their little bounty and repay the owners, whoever they were, some other day. As far as we know, the only step they took on that score was to name the bluff above the beach Corn Hill.



Unlike that unrequited use of resources, this house only borrows what it needs, and, producing as much energy as it uses, it pays back what it owes — which is just what the homeowners, a married couple with a merged family of seven grown children, wanted. "From the first time we stood on that bluff," says the wife, "we knew we wanted to build something respectful to the site, the dune, the neighborhood — something that acquitted itself well in this world."

The house is the work of ZeroEnergy Design (ZED) of Boston, a young firm that brings three disciplines to bear on each of its projects: architecture, engineering, and financial analysis. ZED's partners, all Cornell University graduates, came together when they fielded a self-sustaining house for the 2005 Solar Decathlon, a U.S. Department of

ZEROENERGY DESIGN planned the kitchen (LEFT AND ABOVE) with an oversize island finished in bamboo to match the floors. The thick top and sides are sustainable CaesarStone. The base white-laminate cabinets on the back wall are topped with stainless steel and accented with a glass backsplash. Tall storage cabinets framed in bamboo seem to float along the wall.

THE DINING TABLE, a custom design by Eleven Interiors and built by Studio Fkia in South Boston, has an additional section that expands seating capacity from 12 to 24. When not in use, the extra piece is tucked along the wall and used as a sideboard.

Energy–sponsored competition held on the National Mall in Washington, D.C. For their Truro clients, they designed a structure that manages to be dramatic yet unobtrusive, luxurious yet free of frills, and filled with modern amenities yet minimal in its carbon footprint. "We optimize each building specifically for the given conditions," says Stephanie Horowitz, one of the architects on the project. "We consider its site, the climate, use of energy and materials, the way the owners are going to live in it, the level of energy savings they want to achieve — and how much they want to spend."

The clients, who also have a home in Boston, wanted a "modern beach house," hard-wearing, with money spent on the common areas and the master suite, and an economical treatment for the guest bedrooms. They also knew they wanted it to be "green," though exactly what that would mean wasn't clear at the start. ZED laid out energy-use alternatives on a cost-benefit spectrum, factoring in the family's planned use (weekends year-round for the husband and wife and "everybody every day" throughout the summer), and 30 years' worth of local climate and temperature data. In the end, the family decided to reach for the zero-net-energy ring.

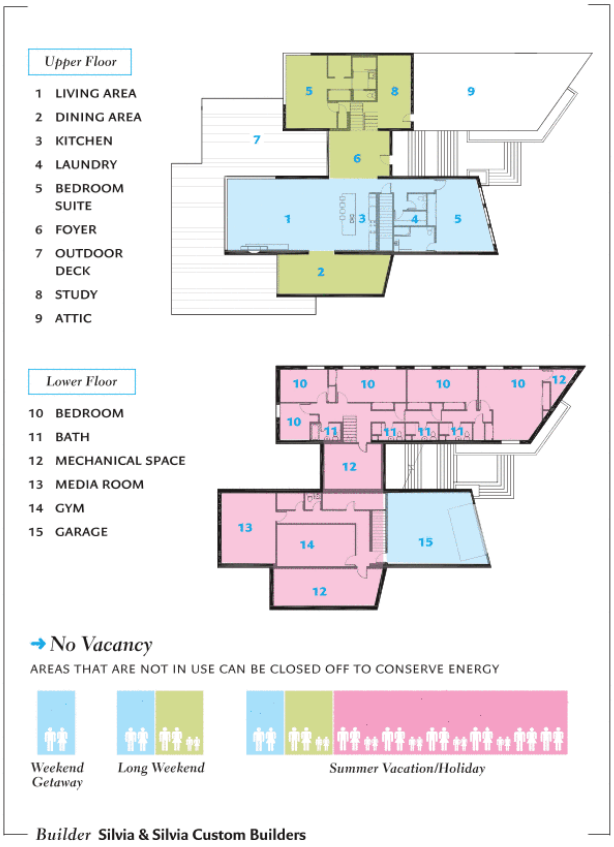
They started with the basics: super-insulation, multiple heating and air

LOW-SLUNG ITALIAN SOFAS invite kicking back after a day at the beach. Upholstered in durable microsuede, they meet the challenges of grandchildren, yet suit the sophisticated space. The painting above the Italian sandstone fireplace is by Cape Cod artist Elaine Souda.

conditioning zones, and energy-efficient appliances. Then came renewable energy in the form of a geothermal system and 12½-kilowatt photovoltaic system on the roof. To take advantage of the view, the house had to face due west on the edge of the bluff. That meant building to the strictest of hurricane codes. "The entire front of the building frame is steel," says Bey Uyeda, the other ZED architect on the project. "It can take winds of 120 miles per hour."

From the street, the building seems almost demure, two low boxes connected by an entryway, nestled into the land. Few windows pierce the shiplap cedar walls facing the road, but open the front door and, past vaulted ceiling planes, walls of glass frame a breathtaking vista of ocean meeting sky. Thanks to carefully chosen materials — floors and door casings of vertical-grain bamboo, ceilings of varnished maple plywood, Colombino Italian sandstone for the fireplace — the interior reads as a

■ **THE LOW-KEY ARRAY of photovoltaic panels by Evergreen Solar in Marlborough, Massachusetts, generates electricty for the house, and, in summer, sends excess power to the grid. The roof itself is made of seamed zinc. The narrow windows that slice the shiplap cedar siding on the side and rear facade of the building belie the expansive glass found on the waterview side.**



Builder **Silvia & Silvia Custom Builders**

clean, luminous space that allows the eye to move to the view.

The architecture is complemented by the furnishings and art, which the homeowners selected in collaboration with interior designer Michael Ferzoco of Boston's Eleven Interiors. "We had two goals," says Ferzoco. "Make it unpretentious and easy to live with — the owners wanted people to be able to wander in off the beach and not worry — and don't compete with that magnificent view." So the living room's low-slung Italian couches are covered in easy-to-clean microsuede; the color scheme — creams and beiges — reflects the dunes. "Still," Ferzoco says, "these are energetic, fun, contemporary people, so we made sure there were a few punches of color." In the dining room, three color-field canvases by artist Elaine Souda of Wellfleet, Massachusetts, are red (as in a sunset), yellow (sunshine), and blue (ocean).

FOR MORE DETAILS, SEE RESOURCES

Just off the media room in the basement, the mechanical systems quietly work away. Six 300-foot-deep wells service the geothermal heat pumps, while the rooftop solar array serves the building's electrical needs. From August 2008 until May 2009, the house produced 7,082 kilowatt-hours of power, avoiding the nearly 6 tons of carbon dioxide that conventional energy would have produced. While the house may require another 900 kilowatt-hours of energy during the off-season, come summer, it will easily make up the difference when the photovoltaic system is producing a net surplus of energy. Now that is living in a New World. ⌂