BEST NEW HOME

This year's best new home was designed by Rafe Churchill, a third-generation master builder and a master of the new/old design aesthetic. Minus the photovoltaic array on the south-facing roof, which is necessary to reach net-zero-energy use, this home captures the essence of an early American Shaker building and achieves authenticity through simplicity.

The Architecture of Simplicity

This new zero-energy home captures the spirit of the Shakers with elegant details and a straightforward plan

Structural possibilities. *SIP walls allowed the designer to have fun in the mudroom, where exposed decorative framing, fixtures from PW Vintage Lighting, a brick floor, and a woodstove suggest a simpler time.*

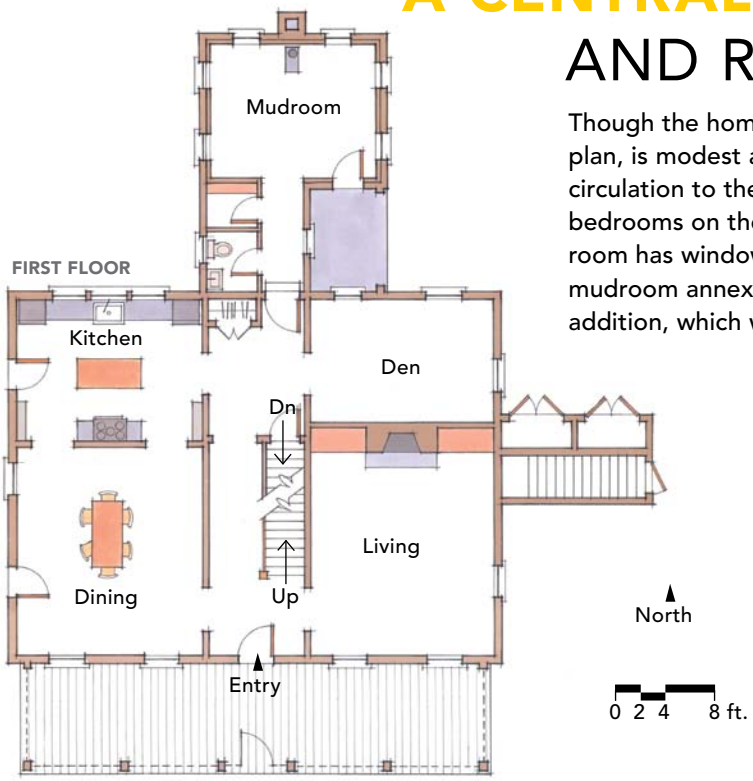
BY BRIAN PONTOLILO

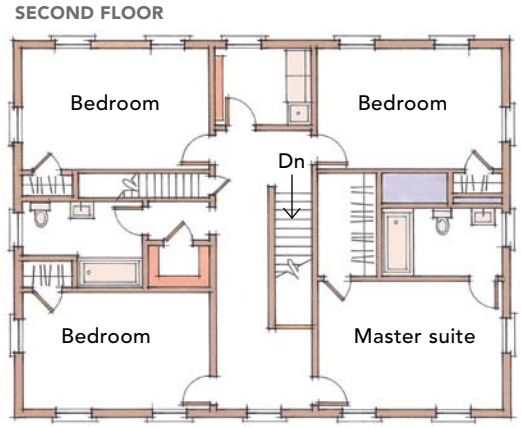
At its best, residential design has little to do with the buildings themselves and everything to do with how we experience them. Some of us understand the details that make a house special—skillful use of views and light, trim and proportions, finishes and colors. But for most of us, it's the feeling of "home" that matters—that we feel welcome when we enter and that we feel at ease as our life unfolds within the building's embrace. It was likely this living experience that Rafe Churchill's clients were pointing to when they showed up to their first meeting with a children's book titled *One Day in Maine* and asked Rafe to design and build a home inspired by it.

The book is about a young girl losing her first tooth, but in its first few pages are illustrations of a quaint home. These simple drawings led Rafe to study and pull from the modest style of Shaker architecture for this project. Yet it's not the details, colors, or floor plan that make this house worthy of celebration. Rather, it's the subtlety with which the house succeeds as a humble backdrop for family life. And it's also the fact that within this home that captures the qualities of an early American style, there hides a

A CENTRAL HALL, AND ROOM TO BREATHE

Though the home is not small, everything about it, including the floor plan, is modest and understated. The central hallways and stair provide circulation to the four living spaces on the first floor and to the four bedrooms on the second floor. Occupying a corner of the home, each room has windows on two walls for views and cross ventilation. The mudroom annex offers a functional family entrance and suggests an addition, which would have been likely on an early American home.





The height advantage. *Perhaps uncommon in an early American house, the tall 9-ft. ceilings allow these built-ins to come to life. The fireplace and hearth carry the brick color and texture of the foundation and mudroom into the house.*

Space to dine. *The large dining room easily could accommodate built-ins or extra furniture, but the house was designed for simple living, and the interior design follows suit. The naturally finished pine floors maintain the authentic farmhouse charm.*

high-performance building assembly with a high-tech mechanical system that produces nearly all the energy the home needs.

Getting new/old right

The homes that Rafe Churchill designs and builds demonstrate his mastery of the new/old aesthetic, which he has earned through decades of experience as a remodeler in the historic towns of southern New England. Though he has drawn from the Shaker style before, he says that the owners of his house were his first clients "really interested in the Shaker experience—not only simple style, but simple living."

To research Shaker life and Shaker architecture, Rafe visited the Hancock Shaker Village in Pittsfield, Mass. There, among other things, Rafe found inspiration for the first detail that catches your attention about this home: its color. Visible from the country road a few hundred yards across a wildflower meadow, the golden siding and crisp gable are the first suggestion that something special awaits at the end of the property's long gravel drive. A large meadow, a rustic barn, a working vegetable garden, and a util-

Floor-plan drawings: Martha Garstang Hill

A colorful country kitchen. *The unadorned Shaker-style cabinetry in the kitchen is brought to life with a lively color and a combination of countertops: black granite flanking the range and natural maple on the island. Open shelves on the wall add to the country appeal.*

SPECS

Bedrooms: 4

Bathrooms: 2½

Size: 4000 sq. ft.

Completed: 2011

Location: Sharon, Conn.

Designer/builder:
Rafe Churchill, rafechurchill.com

Hallmark hallway. *The hallway's peg rail is classic Shaker style, as are the delicate, turned stairway balusters and newel. Fixtures from PW Vintage Lighting and a rotary phone add authentic style.*

itarian woodshed create an authentic farmstead experience as you approach the house.

At a closer look, the striking color seen from the street is balanced by the simple exterior details. The cedar clapboards, flat window and door casings, corner and frieze boards, and simple cornice profile are all painted the same color as the siding. Hung from the head casing with visible clips, wooden screens provide the look of 100-year-old storms over the home's traditionally styled double-hung windows. The metal roof and south-facing solar panels are the only exterior elements that suggest a modern house.

Inside the home, the interplay of simple trim and cabinetry, historic details, and bold colors continues. The walls and ceilings are finished with natural plaster and polished to reveal a handcrafted texture. The southern-pine floors downstairs have a clear, low-sheen, water-based finish. Rafe says that this finish—Naturale from Bona—is as close as you can get to an unfinished look. The floors upstairs are painted gloss white. The trim is unremarkable in profile—just basic beaded baseboard and casings and a simple cove crown. The cabinetry is also quite mod-

SIDING AND TRIM PAINT
Benjamin Moore
Yellow Oxide

DOOR AND WINDOW PAINT
Benjamin Moore
Raccoon Fur

Subtle and sophisticated. *The exterior colors and details are simple and elegant: cedar siding and trim, four-panel mahogany doors, and double-hung windows painted with an accent color. Brick veneer dresses up the foundation and the porch piers. The most sophisticated detail is perhaps the subtlest: A bevel at the top of the skirt matches the pitch of the siding.*

The perfect porch. *No country home is complete without a front porch. Here, the flooring is reclaimed ipé. The ceiling is painted a traditional blue.*

est, with inset flat-panel doors and drawer fronts. These elements stand out, however, with a total of 18 paint colors used throughout the interior.

For an authentic look and experience inside the house, Rafe used some reclaimed materials, including the bathroom sinks, and chose old-fashioned pull-string lights for the closets. He also located outlets in the baseboards, suggesting that electricity was not original to the house. For their part, the homeowners followed through with appropriate furniture and minimal decoration. Even a functional rotary telephone hangs on the wall outside the kitchen.

"Most people don't know how to do simple," said Rafe. "They overcomplicate things. These clients stayed true to their vision."

A warm and quiet building

In today's world of superinsulated slabs, double-stud walls, and the race to build the tightest high-performance home, the same may be true: We could be overcomplicating things. Rafe didn't do any energy modeling for this house or even have a blower-door test performed during construction. He drew from his experience and kept the building assembly as straightforward as possible. The floors are framed with I-joists, the walls with structural insulated panels (SIPs), and the roof with attic trusses.

Rafe's preference for SIP walls has to do with their thermal performance. The 8-in.-thick SIP walls in this house offer R-28 expanded polystyrene insulation with minimal thermal bridging and without the need for exterior foam or a complicated wall assembly. The seams are air-sealed before being covered by felt. The siding is installed over furring strips.

The trusses create usable attic space for storage and mechanicals and were easily insulated to R-40 with open-cell spray polyurethane foam. The roof was sheathed and covered with felt, furred out with strapping to create a vent space, and sheathed again before the roofers applied metal-roof underlayment and standing-seam panels.

The basement is insulated to R-20 with rigid foam on both sides of the concrete walls. The floor assemblies and all interior walls are insulated with recycled denim, a sound-deadening measure.

The house took nine months to build, and Rafe says that getting a dry, heatable structure up quickly is part of making any build

Photos facing page: courtesy of the Hancock Shaker Village, Pittsfield, Mass.

go smoothly. Building with these structural components lends a big hand to that effort.

The mechanicals are out of sight

The common entrance to this house is not the front door, but a back entry that opens into a mudroom. The open-stud walls, exposed rafters, brick floor, and woodstove in this mudroom conjure a past day of farm chores and wood heating. The real heating system is nowhere in sight in the mudroom, however, or anywhere else in the house.

The first and second floors have hydronic, in-floor radiant heat. The absence of baseboard heaters helps to maintain the home's simplicity. A visit to the basement, though, reveals a sophisticated mechanical system.

Two geothermal heat pumps, each paired with a hot-water storage tank, provide both the radiant heat and the home's potable hot water. Geothermal heating also means that there is no boiler or furnace burning fossil fuels on-site or disturbing the home's restful atmosphere.

Instead of air-conditioning, the home stays cool in the summer with a powerful whole-house fan in the attic and positive cross ventilation in all rooms. For fresh air, there are heat-recovery ventilators to serve each floor. The bath fans are also ducted through this fresh-air supply, and each floor has a dedicated humidifier to keep humidity levels up during winter. The kitchen's range hood has a dedicated makeup-air supply that is preheated by an in-line electric coil.

This all-electric system is powered by a 10kw net-metered solar array. The pool's heating is the only draw not being covered by on-site energy production.

The home also has two plumbing systems. The first is a conventional system for potable water, which is supplied by a well. The second is a rainwater system that provides water for the toilets, irrigation, and the pool.

A home built to last

The Shakers' values of simplicity and their contributions to architecture, construction, and craft were inspired by the community's beliefs. The care with which they built was an expression of those beliefs. Perhaps this is why their buildings still stand and their furniture is still replicated. Rafe shares these values in many ways.

"The most sustainable thing we can do," he says, "is build durable homes and maintain them well." Rafe believes first and foremost in using quality materials and in hiring quality craftspeople. "A house has to be built well," he explains, "no matter what materials you use—or you will be building it over again soon."

With that intention, this new home is sure to make a great old house someday. □

Brian Pontolilo is design editor. Photos by John Gruen, except where noted.

Building with the care of prayer


The brethren's shop at the Hancock Shaker Museum

The Shakers are a religious order that originated in England in the 1700s. On August 6, 1774, Mother Ann Lee—a prominent Shaker leader—and a small group of followers landed in New York City and soon moved north to a swampy parcel of land near Albany. Here, the first Shaker settlement began to take shape. By 1793, there were nearly a dozen Shaker settlements throughout New England. It was on these settlements that the Shaker style emerged.

At the heart of these communities was the meetinghouse, often the first building in a new Shaker village. Typically wood-framed, white-clapboard buildings with gambrel roofs and abundant double-hung windows, most meetinghouses had a large, open first floor for worship and dance. The second floor was divided into separate residences for men and women. The minimalism of these buildings was born of the Shaker ideal of purposeful simplicity but also out of necessity, as a fledgling community often had limited resources.


The meetinghouse at the Hancock Shaker Museum

"If Shaker buildings seem familiar to us," says Shawn Hartley Hancock of the Hancock Shaker Museum in Pittsfield, Mass., "it's because their communities grew up around the existing homes and farms of the first converts, reflecting the timber-frame construction, gambrel roofs, and clapboard siding of Anglo-Dutch architecture."

As the communities grew, the original elements of design were largely maintained. Some details did become more interesting: More colors were used, and brick and stone were sometimes substituted for the traditional wood exteriors. Other details were simplified further: Straightforward gables often replaced the original gambrel roofs. Interiors remained strictly functional, as did their furnishings.

"Shaker buildings reflect impressive forethought," says Hancock. "Barrel roof designs were used to shed snow and rain. Deep plaster cove cornices minimized heat loss through the attic. For ease of maintenance, gable roofs over exterior doors often had no supports. The ubiquitous Shaker built-in cupboards and peg rails allowed rooms to be cleaned and organized easily, while interior windows allowed light deep into large rooms."

Shakers dedicated their life to worship. They approached their work as a spiritual act. Putting the care of prayer into all that they did explains the high quality and durability of Shaker buildings, furniture, and goods.

For more information, visit hancockshakervillage.org.