

Old Barn Inspires New House

When Chris first approached me about building his house, he showed me pictures of an old timber-frame barn that had been converted into a small, cozy home. Chris liked the open plan, the heavy timbers against bright surfaces, and the beauty of wood used simply. He also liked the home I'd built for myself and my family. Similar to my house and to the old barn in the photos he'd shown me, Chris's house would be based on the form known as the English barn (sidebar facing page).

Hidden on the hill

My first challenge was the building site. The house was to sit atop a glacial drumlin, a steep knoll that sloped down on all sides to a great salt marsh with tidal creeks and estuaries flowing to the Atlantic. The house had to be open to these views, but it also had to sit naturally and discreetly on the hilltop.

The site already had a small cottage, which would remain as a guest house. I knew the barn form would fit this historic coastal landscape, but I could not let the building dominate the site or overpower the cottage that shared the hilltop. Proper height, scale, and placement of the house would be essential.

I wanted the house to blend into the grassy slope, so I designed a 1½-story building. I also kept the house narrow. The narrow floor plan accentuates the views through the house in the open central section and lets natural light penetrate farther inside.

I'd always liked the gentle slope leading to the old doors of a barn, graded near to the

A traditional design adapts nicely to a residential site

BY ROBERT WEATHERALL



A brighter barn. The house's shape and the outside finishes are in keeping with the barn form, but the dormers and large windows add space and natural light. Photo above taken at A on floor plan; photo right taken at B.



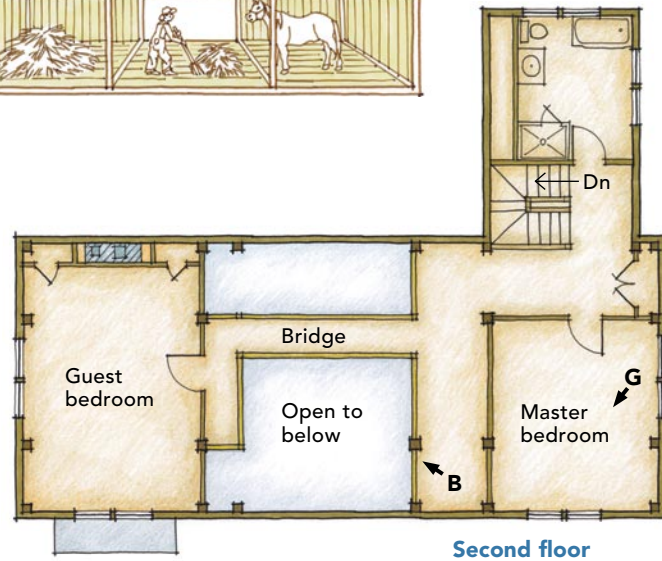
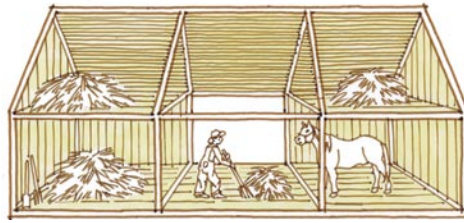


The three-bay approach

The heavy timbers are planed smooth rather than hand-hewn, but otherwise, this house frame bears a strong resemblance to the English timber-frame barn that preceded it by four centuries. The English barn was a long-established building form when settlers brought it to America in the 17th century. In the barn's common form, hand-hewn timbers composed a frame that divided the barn into three sections, or "bays" (drawing above).

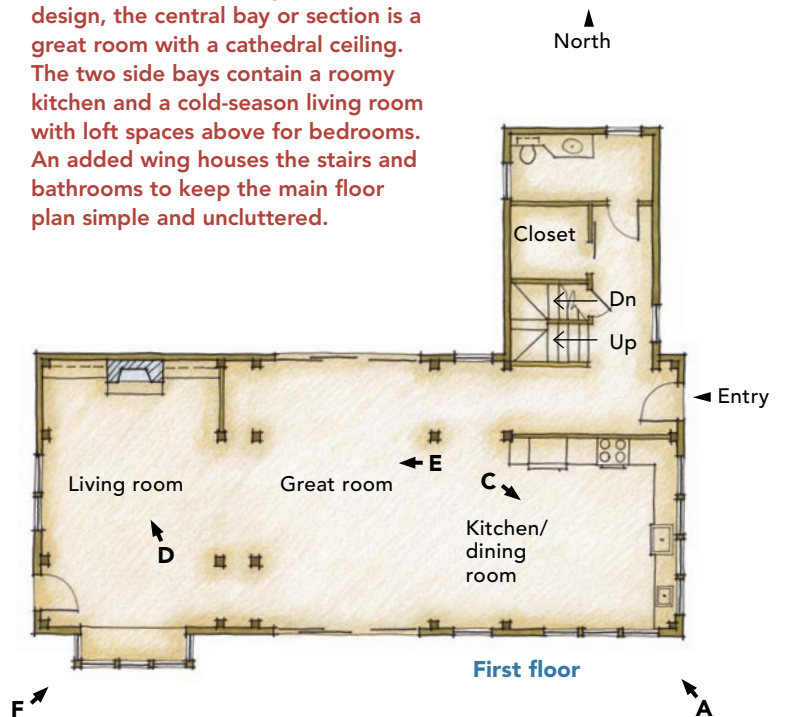
One side bay usually held animals, while the bay on the other end, the haymow, was used for hay storage. Typically, each side bay had lofts for storage above.

In the center bay, farmers processed their crops. As they threshed grain in the center, the breeze blowing through the barn would carry the feathery chaff outside. The heavier grain dropped to the floor and was caught by a board secured across the bottom of the doorway. That board became known as the threshold, a building term still used today.



An open layout equals a lofty home

In this version of an English barn design, the central bay or section is a great room with a cathedral ceiling. The two side bays contain a roomy kitchen and a cold-season living room with loft spaces above for bedrooms. An added wing houses the stairs and bathrooms to keep the main floor plan simple and uncluttered.



SPECS

Bedrooms: 2

Bathrooms: 1½

Size: 2400 sq. ft.

Cost: N/A

Completed: 2004

Location: Ipswich, Mass.

Designer/builder: Robert Weatherall

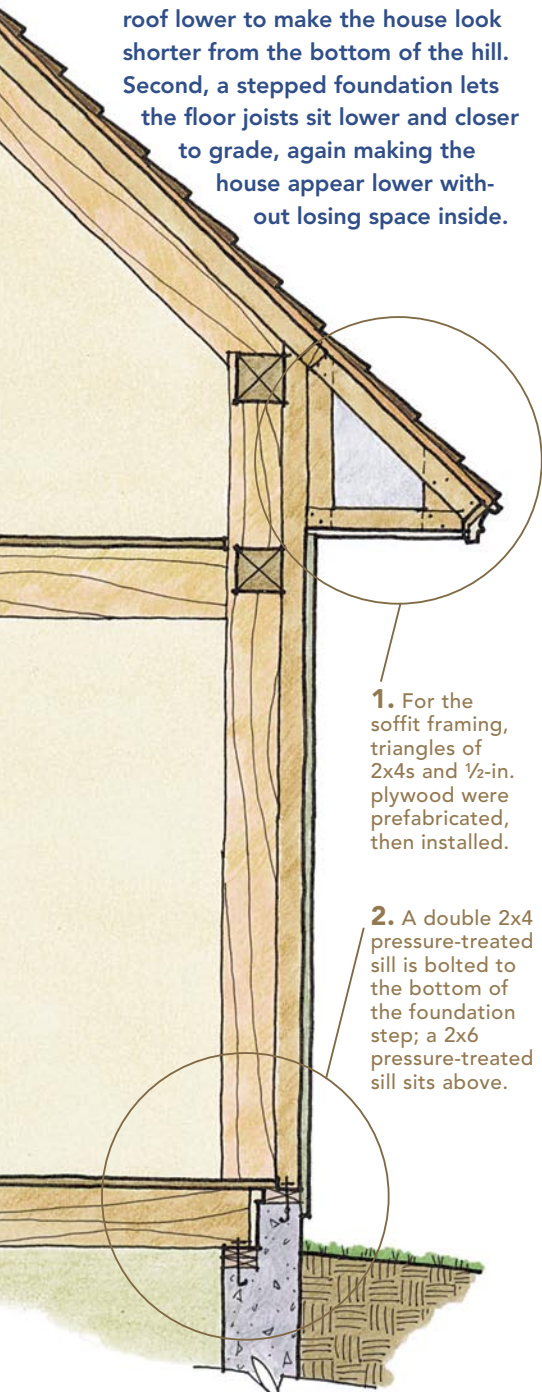
Photos taken at lettered positions.

0 2 4 8 ft.



ADDING AND SUBTRACTING FOR A LOWER LOOK

Two strategies let this house nestle into the hilltop. First, an added eave and soffit detail extends the roof lower to make the house look shorter from the bottom of the hill. Second, a stepped foundation lets the floor joists sit lower and closer to grade, again making the house appear lower without losing space inside.



1. For the soffit framing, triangles of 2x4s and 1/2-in. plywood were prefabricated, then installed.

2. A double 2x4 pressure-treated sill is bolted to the bottom of the foundation step; a 2x6 pressure-treated sill sits above.



level of the threshing floor so that a wagon could roll in with little effort. For the house, I designed the foundation with a stepped top edge to hold the joists. This design places the first floor just one step above the lawn at the big central sliding doors. It also keeps the peak of the house lower without diminishing the lofty spaces inside.

We positioned the house so that the road at the foot of the hill could not be seen from the first floor. This placement also keeps the house from looming too large when viewed from below (photo top left). Other benefits include a somewhat level site for a front lawn as well as a modicum of privacy.

Mostly barn on the outside

As utilitarian buildings, barns usually have minimal eaves. Here, however, I extended the roof plane with an attached eave assem-

bly that dropped the eaves lower and added depth to the soffits (drawing left). This detail wraps around the gable ends with corner hips that are traditional on windswept coasts.

The square-edged white-pine siding is in keeping with the barn look. It is inexpensive and installs quickly. Because of the home's exposed location and pine's tendency to shrink and swell, however, I expected wind to drive rain behind this siding. So I convinced Chris to install a rain-screen wall, following the details explained in the sidebar on p. 64.

I added shed dormers, which help to open the bedrooms on the second floor. Another departure from barn tradition is the number and the size of the windows. Barn windows typically are small and few in number. To take advantage of the views and to maximize natural light inside, we opted for large windows wherever possible. In the central



Sacrificing upper cabinets for a view.

Instead of the small, spare windows usually found in a barn, this kitchen sports lots of glass on both walls to take full advantage of the vistas. Photo left taken at C on floor plan.



The warmth of wood. Clear-finished shelving complements the natural tone of the pine timber frame, while white-painted walls provide a pleasing backdrop. Photo above taken at D on floor plan.



From threshing floor to great room. In the English barn that inspired this design, the center bay was used for threshing grain (side-bar p. 61). Here, it's a lofty, light-filled space with big sliders where barn doors would have been. A pair of cambered beams spans the center bay, supporting a walkway that connects the upstairs bedrooms. Photo left taken at E on floor plan.

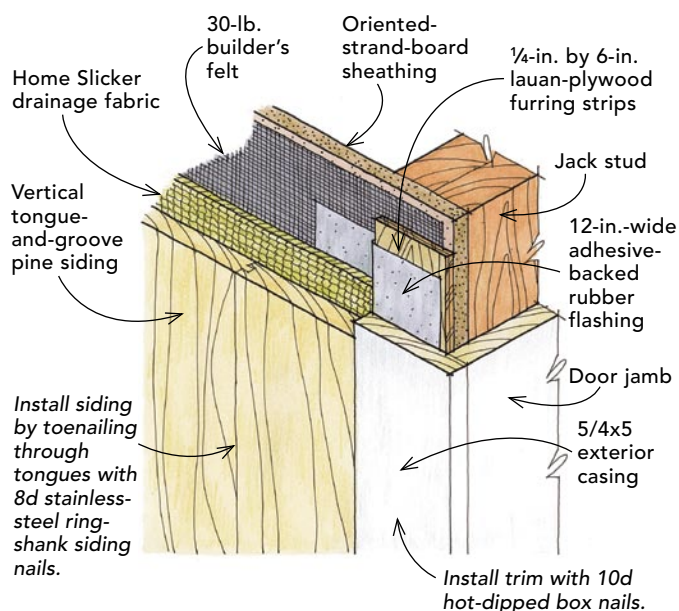
Siding lasts longer with rain-screen walls

The vertical 1x pine siding used on this house is in keeping with its barn personality and is significantly more affordable than cedar siding. However, pine doesn't have the dimensional stability and natural rot resistance that cedar does. To make the siding look good for a long time, I coated each board's sides and edges thoroughly with Cabot's exterior stain (www.cabotstain.com), and I used a rain-screen wall detail.

The key ingredient in this rain-screen wall is a "three-dimensional" drainage fabric called Home Slicker, manufac-



Home Slicker



tured by Benjamin Obdyke (www.benjaminobdyke.com). Home Slicker has a Brillo-pad-like appearance, but it's made of plastic and comes in rolls that are 39 in. wide and 46½ ft. long, about enough fabric to cover 150 sq. ft. A roll costs about \$90.

I start the siding installation by covering the exterior sheathing with 30-lb. felt. Then I use ¼-in. plywood furring strips around window and door openings to provide backing for the 5/4 exterior casing. For extra moisture protection around windows and doors, I cover the

strips and the adjacent 30-lb. felt with adhesive-backed rubber flashing (Vycor, manufactured by W.R. Grace; www.wna.graceconstruction.com).

Despite its prickly appearance, Home Slicker is easy to work with. It can be rolled out horizontally (take care not to overlap the seams), cut with a sharp utility knife, and stapled to sheathing with a hammer tacker. A good installation technique for Home Slicker is to tack down one end and have someone else stretch out a length of the material while you tack it in place.

section of the house, large three-panel sliding doors replace the wagon-size doors that would have opened to the threshing floor.

Breezes, views, and alligators

Inside the house, the three-bay English-barn lineage is apparent and adapts nicely to its residential role (floor plans, p. 61). The barn's expansive central bay becomes the great

room. Large sliding doors on both sides allow natural light to flood this central space, and in warmer months, they provide the cross ventilation that open barn doors afforded the threshing floor. The wide sliders also create a transparency through the house, letting you see easily to the miles of views beyond.

Chris opted to keep the floor plan mostly open to the side bays on the first floor.

On the east side, a spacious kitchen and dining area enjoys a panoramic view via large windows on both walls (photo p. 62). On the west side, part of the bay wall is framed in to form an alcove, where a fireplace is the centerpiece of a cozy, intimate living area (photo right, p. 63).

On the second floor, the master and guest bedrooms flank the central bay; a bridge over the great room connects the two. The bedroom shed dormers help to overcome the sense of confinement that can accompany upstairs spaces in a 1½-story house, and they provide the best views. One main rafter had to be cut short for each dormer. As a purely whimsical and decorative note, one of my crew members, Huw, carved the two truncated rafter tails into stylized alligator snouts (photos facing page).

I included a secondary set of posts and beams on both sides of the central section. On the west side, they form a landing for the bridge as well as for the door to the guest bedroom. On the east side, this wide secondary bay creates an office nook overlooking the great room.

Practical and expandable

The design of an English barn is almost modular, making it easily expandable. As a 17th-century farmer became more prosperous, it was simple to add more bays or wings to the barn.

For Chris's house, we added a small wing off the east bay of the frame. Putting this space at the back of the house helped to minimize the visual scale. We controlled costs by building this wing with conventional platform framing instead of a timber frame. The wing houses the stairway as well as a bathroom for each floor.

Here in Ipswich, Mass., local zoning regulations specified that Chris's new house had to be connected physically to the old cottage, technically turning both houses into a single two-family home. The old cottage had a cold north shoulder turned to the new house, which faced the sun, so we united the two buildings with a curved arbor. Paired with an undulating fence at its back and wisteria climbing above, the shady arbor is a great place to sit and look out over the marshes. □

Robert Weatherall designs and builds homes in Ipswich, Mass. Photos by Roe A. Osborn.



Shedding light on the master bedroom. Shed dormers built into each of the bedrooms let in natural light and distant views while opening up what is usually confining upstairs space in a 1½-story house (photo above taken at F on floor plan; photo left taken at G). A craftsman turned shortened rafter tails into smiling alligators (photo below).

