

## A timber-frame dream

BY ERIC FOERTSCH

MAKE IT AFFORDABLE BY FINDING A COMPANY THAT RECYCLES OLD BARNES



For 15 years I dreamed of building the perfect shop. After making do with space in cramped, dark garages and basements, I wanted a workspace that was bright and inspiring. When we moved from New York to Connecticut, I had my chance.

Designing my ideal shop building consumed the first few months of 2004. I made lists, read books and magazines, drew on 15 years of experience, and made dozens of layouts on graph paper.

I kept asking myself if the shop building would create a positive, a neutral, or a negative value for the property. In the end, I decided that a building made with conventional framing would be a neutral addition at best, but a properly executed timber-frame structure would be a positive—especially from inside, where it would be obvious that this was no ordinary structure. A timber-frame shop also would fit in with the neighborhood and would be adaptable for other uses.

Hardwood floors, wainscoting, and finished walls between the exposed post-and-beam structure give the shop the bright and inspiring appearance I've

***It just looks old.*** This 24-ft. by 36-ft. shop dates from mid-2005. It was made to resemble a 19th-century barn, using post-and-beam construction. Inside, the massive timbers dominate. Arranging the tablesaw island and other machines for maximum efficiency took weeks of planning.



craved. If the next owner doesn't need a shop, the building will work as office space or as a studio.

In my experience, building a timber-frame structure involves about as much time and expense as a conventional stick-frame building. The biggest drawback to timber framing is the extra time needed to get building permits and find a reputable, affordable timber framer. Timber framers don't use graded lumber, so a building inspector may require a structural engineer to provide a set of plans that include all the necessary load and span calculations.

Setback requirements for local zoning restricted me to a 24-ft. by 36-ft. structure. With its second-floor loft, the building has 1,500 sq. ft. of floor space. That's large enough to satisfy my main requirement: being able to work with plywood sheets anywhere in the shop. Still, I couldn't make space for a finishing room or a dedicated place to dry wood.

Before I could proceed, I had to gain the building inspector's approval. I used Tedd Benson's book *Building the Timber Frame House* (Fireside, 1981) to provide tables, charts, and stress calculations for every joint and beam. It helped to

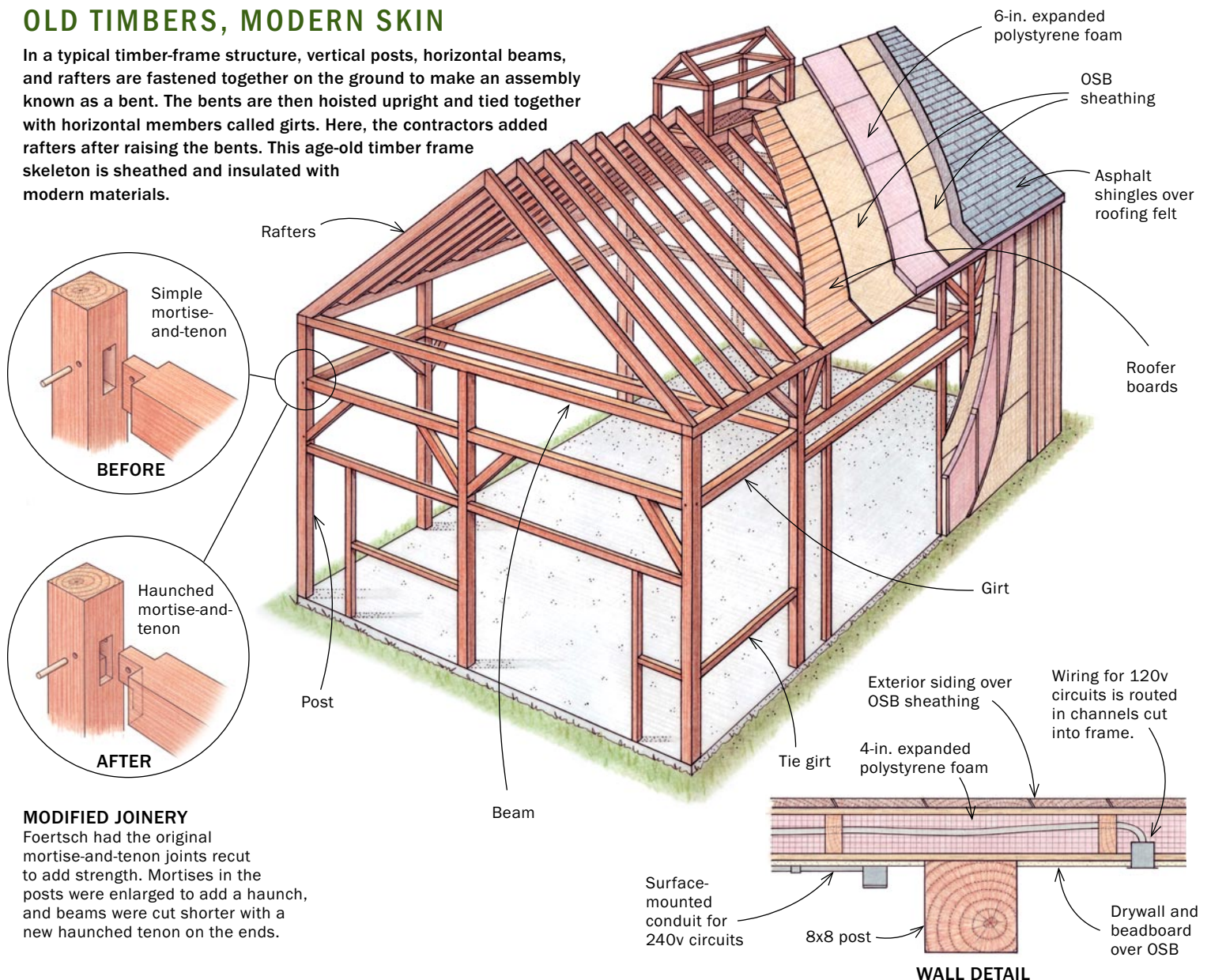
over-engineer the design. If you're not up to dealing with the local building department, be sure that the timber-framing contractor you hire can obtain needed permits and variances.

## Getting real

Internet research turned up companies that would build a brand-new timber frame, but they were way too expensive—about \$45,000 just for materials. That's three times the cost of conventional stick framing. My best option seemed to be a company that could dismantle, repair, and reassemble

## OLD TIMBERS, MODERN SKIN

In a typical timber-frame structure, vertical posts, horizontal beams, and rafters are fastened together on the ground to make an assembly known as a bent. The bents are then hoisted upright and tied together with horizontal members called girts. Here, the contractors added rafters after raising the bents. This age-old timber frame skeleton is sheathed and insulated with modern materials.



### MODIFIED JOINERY

Foertsch had the original mortise-and-tenon joints recut to add strength. Mortises in the posts were enlarged to add a haunch, and beams were cut shorter with a new haunched tenon on the ends.



a timber frame on my property. Their prices came closest to fitting my budget.

That led me to Jesse Benedict of Benedict Antique Lumber and Stone, in New Milford, Pa. Benedict had a hundred-year-old barn that could be modified to meet my needs by cutting a foot off each main beam. And, to stay on the good side of the building inspector, I had Benedict recut the post-and-beam joints to make them haunched mortises, thereby strengthening each joint.

### **Barn raising**

In early May, Benedict and his four-man crew arrived with a flatbed truck hauling the components for the basic frame. Rafters, roofing lumber, and sheathing filled another two trucks.

The men raised each of the 1,000-lb. post-and-beam assemblies (known as bents) by hand, pulling it upright with ropes. Then, balancing themselves on the 8-in.-wide beams like trapeze artists, they attached the rafters. That part of the barn raising took them only three days; they needed another month to sheathe the walls and roof with plywood,

oriented strand board, and rigid foam. Over the rough sheathing on the interior, I attached beadboard wainscot panels 4 ft. high. A large beam called a tie girt hides the seam between the beadboard and the wallboard that runs to the ceiling.

The shop cost me about \$35,000 in all, about what a comparable conventional building would cost in my area.

### **Finishing touches**

I didn't limit my recycling to the post-and-beam structure. The 11 double-hung windows came from a contractor tearing down a nearby house. Windows in the roof cupola are salvaged French doors turned sideways. The beech hardwood floor came from a company auctioning offcuts and seconds online. I also turned to the Internet for the porcelain barn lamps that supply most of the lighting.

I still have to finish the second-story loft and add window trim and a few other details. But from the outside, the building looks just like a 19th-century barn. And my wife says the space inside is already nicer than our house. □

### **Lots of storage.**

*The shop has more than 20 ft. of drawers and cabinets along one wall (above), with more built into the workbench and tablesaw island. Upstairs, a loft provides ample storage for wood and assorted odds and ends (right).*

