

Stick-Framed Look on a Truss Budget

by Robert Gerloff, AIA

Roof trusses have almost completely replaced hand-framing in residential remodeling, and for good reason: Framing a roof with trusses saves money. There's simply no way a crew of carpenters working on site and being billed at \$50 per hour — no matter how skilled or efficient they might be — can compete on cost with factory-built trusses dropped into place by a crane.

Design thinking, however, has not kept pace with construction technology. Although modern computer-designed trusses permit almost unlimited variation, too many trussed roofs are straightforward and boring when a more satisfying effect would have been possible for little added cost.

The remodeling project pictured here, for example, involved a tiny one-bedroom cottage in a very desirable neighborhood (see Figure 1). The owners, recently married and anticipating a growing family, wanted to add a second story with three bedrooms and a bath and expand the kitchen on the main level.

The most economical way to accomplish that would have been to raise the walls to accommodate a second story topped off with a low-pitched truss roof (Figure 2). But visually that approach would leave a lot to be desired. Rather than fitting in with the surrounding houses in the older neighborhood, the resulting structure would look like a boxy pre-fab airlifted in from the outer suburbs.

One Roof, Two Truss Profiles

Instead, taking our key cue from the neighborhood, we worked out a design that includes a steep roof with



Figure 1. The new owners of this existing one-story, one-bedroom cottage wanted to add a second-story addition to accommodate a growing family. Home equity lines of credit and rapidly escalating property values make this type of project increasingly common in many established neighborhoods.

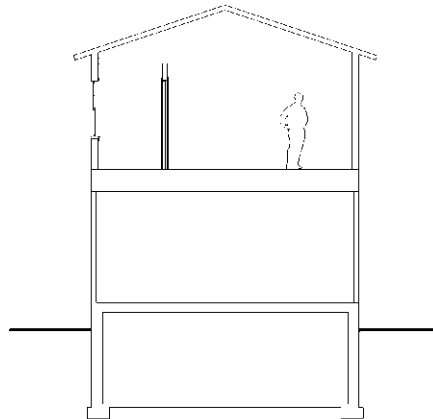


Figure 2. Extending the first-floor walls and adding a standard 4/12-pitch roof truss with an 8-foot flat ceiling provide the needed space at the lowest possible cost, but the result is visually awkward and out of place.



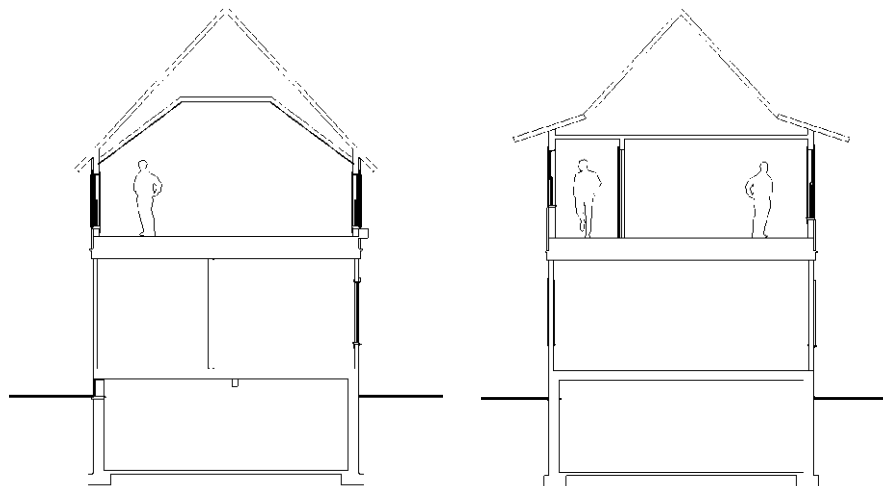


Figure 3. A little more money can buy a 13/12 roof with bedroom ceilings that start at 5 feet 6 inches before soaring to 10 feet (above left). The low spring line at the eaves creates a feeling of intimacy, while the high ceiling in the rest of the room adds flair. The lower 7-foot-6-inch ceilings created by the second truss configuration over the bathroom, stairs, and hall — which combines an upper 13/12 pitch with a lower pitch of 4/12 — make the bedrooms feel grand (above right).



Figure 4. With the addition of some appropriate details, a potentially uninteresting box becomes a simple but attractive cottage that fits in well with the surrounding neighborhood.

dormers, giving the house a more cottage-like look. And while it looks hand-framed, it was actually easy to achieve with trusses.

There are two different truss profiles: The first is a steeply pitched scissors truss over the bedrooms, which starts low before soaring to an unexpected 10-foot ceiling. The roof over the stairs, hallway, and bathroom makes use of a second, more conventional truss with a flat bottom chord and two separate pitches to create the shed-roof look (Figure 3).

CAD a Key Tool

The key to mixing truss profiles is coordination. Computer drawings allowed us to accurately calculate plate and heel heights and confirm that the roof plane will be continuous from front to back across the different truss profiles.

The cottage look is further accented by switching siding on the new second story from a horizontal lap siding to a vertical board-on-board. We also switched colors to accent the design and added some appropriate shutters, window boxes, and brackets, all accented with a separate paint color (Figure 4).

These details definitely add to the overall cost of the project, but the key component — the trusses — is still much less expensive than hand-framing the same design would be. For the extra money, the clients get a house that fits into the neighborhood and has its own curb appeal and charm.



Robert Gerloff, AIA, is an architect and writer in Minneapolis, Minn.