



Workers finish up the floor deck of the new 10x24-foot addition.



Plastic tarps draped over a temporary ridge kept the building dry through the long delays caused by plan changes.

Confessions of a Renovator

No one said that adding to a 100-year-old farmhouse was going to be easy, but...

by Roland Merullo

The phone rang one Tuesday late in June. It was Alex, the owner of the hundred-year-old farmhouse that I soon would be expanding by 1,000 square feet. "We've run into a problem with the excavation," he said. "Think you could take a ride over here?"

The job was 35 minutes away, and we had agreed that Alex and his wife, Andrea, would act as the general contractors. So I was surprised at the request, all the more so since I knew the solid reputations of the backhoe operator and the concrete crew. Driving there, I wondered what the problem might be. Water? Ledge? An archaeological find? If so, why call in the carpenter? I had enough to think about as it was.

Although I'd had a lot of experience working on old structures, this was my most challenging job to date: an intricately designed, two-story addition that expanded the L-shaped farmhouse in three directions, making one wing wider, longer, and taller. Included in the plans were three roofs, two porches, 20 windows of various shapes and sizes, and walls that covered the whole spectrum of framing techniques. New met old on so many surfaces that the potential for trouble was great (see Figure 1).

The problem was related to the house's age, and was twofold. First, the rubble foundation protruded well into the proposed

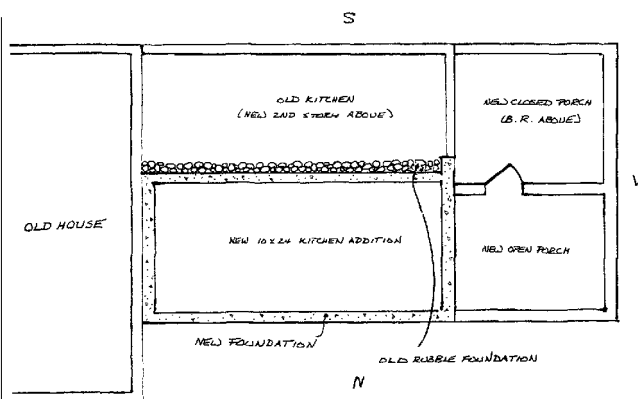


Figure 1

new cellar. Clearly, if the backhoe operator started moving those stones or digging around them, he risked an avalanche. Second, the foundation had settled unevenly, and the sill it supported, which was badly decayed in spots, rose and fell like a Vermont landscape (Figure 2). Both sill and foundation were inconsistent pieces of work—mortar here, no mortar there; double 2x4 laid flat here, 8x8 and 6x6 there.

Assembled around the partly dug hole, like mourners around a grave, were owner, architect and backhoe operator. As I joined them, we began a circular conversation:

Alex: Any ideas?

Me: No good ones.

Architect: The problem is that damn loose foundation.

Backhoe operator: Sarcastic grunt. (Long silence as we ponder.)

Me: Any ideas?

After two and a half hours of this, we came up with an acceptable scheme. Instead of pouring the south wall of the new foundation directly against the north wall of the old house as planned, the concrete crew would pour it three feet away. The floor joists would run across it, and their ends would bear on the old sill (notched or shimmed at each joist to accommodate its risings and fallings).

This approach required some sacrifice on everyone's part. The owners' new basement, which they planned to use as a workshop and storage area, would shrink by 500 cubic feet. The backhoe operator would have to remove a few of the loose stones at the base of the pyramidal foundation. The concrete crew would have a more complex job than they had bid on. And I would have to support the north wall of the old house and rebuild the rotten sections of sill—a job so odious that Alex was moved to offer his assistance.

Fixing the Sill

We began work the next day. I would have preferred to replace the whole sill, but because of the way it had bent and settled, and because of the unpredictable surface below, that would have been next to impossible. So we decided to attack it piece by



Months late and much modified, the complex addition finally takes form.



The finished project pleased the owners, but cost them dearly.

piece.

The double-2x4 middle section, which showed little decay, was left in place and soaked in preservative. But the 8x8 and 6x6 at the ends of the long wall were supported by unmortared stone, and so badly rotted they would have to be removed. Since we had to take all the weight off these sections in order to remove them anyway, and since Alex and Andrea wanted a passageway between the old basement and the new, we chose to take out the loose stones at each end of the foundation in the process.

Taking the weight off the sill was a fairly straightforward job. We accomplished it with diagonal braces from the pit to a cleat on the wall and with an ingenious end brace thought up by our architect (see photo). Each floor joist was supported individually from the crawl space. After all the weight was off the sill, we carefully removed the stones and replaced the rotted sections with a triple 2x10. This new 6x10 had good bearing on both ends, and we notched and linked it securely to the 2x4 section.

Sound like a mess? It was even worse than it sounds, since no two sections of the sill or

No two sections of the sill or foundation were alike. Even the joists varied, from relatively new 2x8s to ancient tree trunks. It took two of us five days of work, but at the end we had a durable sill and the forms were in place. I hoped that the worst was behind us.

foundation were alike. Even the floor joists varied—from relatively new 2x8s in some places to ancient tree trunks in others. It took the two of us five days of painstaking work, but at the end we had a durable sill and the forms were in place. (And, by doing this grunt work together, Alex and I had opened a channel of communication which was to serve us well during the course of the job.) I hoped that the worst was behind us.

Not-So-Smooth Sailing

Once the joists were in place, the 10x24-foot deck went on quickly and smoothly. For about half a day it looked as if we would be entering smooth waters.

The next step was to frame the new downstairs walls and the two porches—basic carpentry. Downstairs were three large windows, all roughly five feet square. In the architect's drawing, they seemed nicely in proportion to the house and wall, and Andrea looked forward to the added light in what had been a typically gloomy, if quaint, New England kitchen.

After the early five-day delay, everyone was anxious to see progress. I told Alex and Andrea that wall framing would be a satisfying phase of the job: things happened quickly and the room would begin to take shape. Having confidently shared that insight, I went out onto the deck, measured, marked, cut, and started driving 16d nails.

Half an hour later, it was conference time again. The plans called for 76" walls. They also called for both the floor and ceiling of the new half of the kitchen to meet the floor and ceiling of the old. Problem: The old kitchen had a 6'9" ceiling. Solution: Build a 6'9" wall and lower the windows.

The owners didn't mind having the windows closer to the floor, so this was a minor headache compared with problem number one...or so we thought. We soon realized that changing the dimensions of this wall had many repercussions. For example, the windows on the porch had to be lowered to

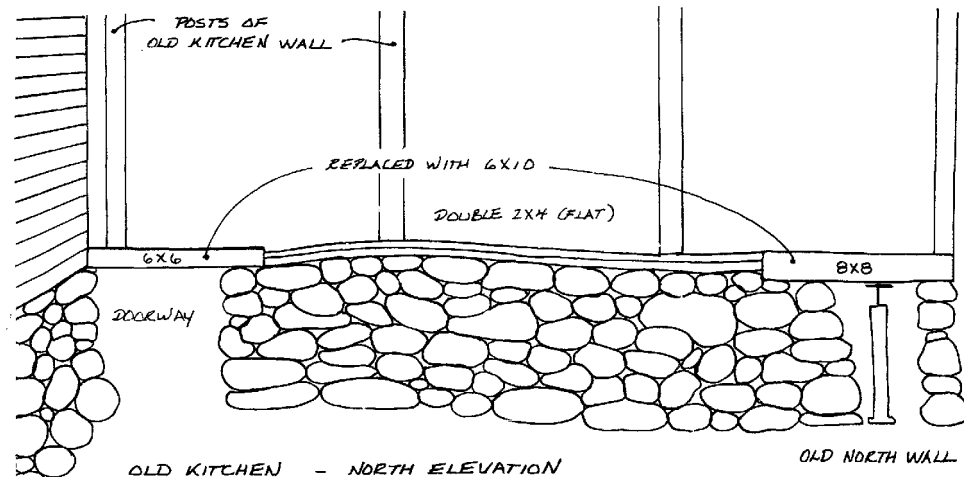


Figure 2

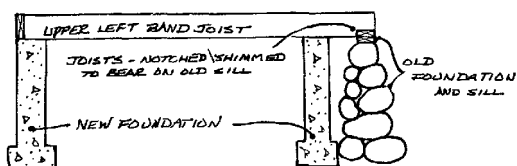
maintain the original lines. But this changed their relationship to the front door, which couldn't be lowered.

Also, if the pitch were to be kept at 2/12, the lower roof would intersect the new upstairs wall at a different place. This would affect the amount of wall and chimney that would be exposed, change the relationship between the dormer and the roof it looked out on, and double the width of the trim board beneath it.

All problems have solutions, though, and I knew we would find them. We changed the pitch of the roof, did some creative door and window trimming, and so on. But now the job had assumed a new personality, and Alex and Andrea got their first inkling that we might go way over budget on our cost-plus contract. I took on—not always gracefully—the mind-expanding task of compensating ad infinitum for oversights in the plans. Even simple tasks such as trimming a porch became doubly complicated.

In part, I blamed myself. I had assumed all I would have to do was read the plans with the usual amount of forethought, measure, and swing a hammer. And, like many young carpenters, I overly respected the profession of architecture and hadn't looked at the plans critically enough.

Our architect had a well-deserved good reputation. But on this job there were lapses in judgment, some of which I did not see until we started raising walls. These lapses—not drawing everything to scale, not leaving sufficient space for casing on the inside of the dormer window, designing collar ties that obstructed light from a sunrise window, failing to note the height of existing ceilings—were to plague us until the project was completed.



KITCHEN ADDITION - WEST SECTION ELEVATION

A Kitchen-Ceiling Nightmare

The third problem was the most frustrating and expensive one we encountered in the six-month course of the job. This one I had seen ahead of time. At our first meeting in the architect's office, I asked about the kit-

Me: What's there now?
Architect: Old pine 6x6s.
Me: What's the span?
Architect: About 12 feet.
Me: What's the spacing?
Architect: About three feet.
Me: And that's going to support a

Not one to use words when gestures will do, a portly neighbor jumped up and down on the tongue-and-groove boards directly above the architect, who had assured me that the kitchen ceiling would support the additional load. I heard screams downstairs....

chen ceiling. We would be removing the roof from this wing of the house and building two bedrooms, closets, and a full bath where once had stood a little-used attic. Would the current framing of the kitchen ceiling support that additional load? The architect assured me it would.

bedroom?

Architect: I want you to add two layers of 3/4-inch plywood. That should do it.

And so we cleaned out the attic, removed the old roof and got ready to frame the walls when a portly neighbor stopped by. It so happened that the architect had also dropped in and was sipping lemonade in the kitchen.

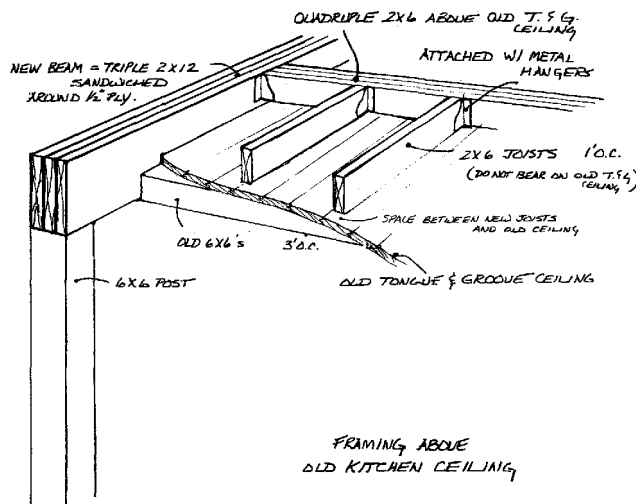
Not one to use words when gestures will do, this neighbor brought his ample belly up to the roofless second floor and jumped up and down on the tongue-and-groove boards directly above the architect's head. I heard screams. (Later, Andrea told me that the old beams had given a foot in mid-span.)

Powwow number three was convened. Solution: By a complex system of weight distribution (see drawing at left), the new floor would be framed so that the beams would bear almost no weight. (The owners liked the rustic look of the hand-hewn beams, so completely rebuilding the ceiling was not an option.) The cost? Comfortably into four figures.

Raising the floor eight inches again changed the dormer, ridgepole height, window placement and trim.

Weather & Other Woes

These three major problems caused many delays which, in turn, kept us working outside into early January—and the cold, of course, slowed things further. Also, since the kitchen was without a watertight roof for much longer than we'd planned, we spent an inordinate amount of time draping plastic tarps over a temporary ridgepole and secur-



FRAMING ABOVE OLD KITCHEN CEILING



The new west elevation pleases the eye with traditional lines.

ing them against thunderstorms and Hurricane Gloria. Inside, we encountered the more routine woes of any old-house project: uneven floors and unpredictable studs, some rot, and the frustration of fitting what is level, plumb and square to what "has character."

The addition ended up costing \$60,000, exactly double what the owners had expected to spend. They are quite pleased with the new space, but, as Alex says, "As much as I love the old house and our land, if I'd known at the outset what I know now, I would have been sorely tempted to sell and build something new."

Lessons Learned

Measured by customer satisfaction at the end of the job, the addition is a success. But while the work was in progress, the owners and I experienced so much stress that I am moved to offer a few general guidelines to anyone planning a similar project:

1. Expect anything. Especially when making major structural changes, do not assume

anything until you see the work area fully exposed.

2. Remember that plan changes made early in the job will have multiple ramifications.

3. When building on top of an existing room, use a large crew to get the new structure closed in as soon as possible. Pre-assemble the framing if feasible.

4. Design old and new to meet in as few places as possible.

5. Remember that architects are only human.

As of this writing, all parties involved in the job remain on speaking terms, although each is a little wiser about renovations. As for me, when I am next approached with a nice-looking set of plans for adding to a hundred-year-old house, I will remember what Rocco Trimarchi, a retired master builder, told me when he saw the plans: "Rol, if I were you, I wouldn't touch a job like that." ■

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