NEW LIFE FOR AN OLD PORCH

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In the Third Lake Ridge Historic District in Madison, Wisc., front porches are a prominent architectural feature of many of the homes, which were built between the 1850s and the 1920s. This particular Victorian-style home dates to 1899, and the porch (like many in this neighborhood) suffered from shallow footings, rotten floor boards, and roof leaks. My employer, TDS Custom Construction, a 30+ year-old design/build firm located a few blocks away from the district, was hired to restore the porch as well as design and build a single-car garage for the property that would stylistically complement the original house.

I was the lead carpenter on the project, which still had a variety of unknowns when we started our work. For example, we knew that we would need to pour new footings and rebuild the floor system, but we didn't know the extent to which the roof system had been damaged as a result of the old footings' sinking. Because the existing finished ceiling of the porch was in good shape, we wanted to save it and the roof framing, if possible. But it was obvious that something was going on with the roof framing based on a soft spot and obvious mid-roof sag.

We started by temporarily posting under each corner of the sagging roof using screw jacks to try and level it **(A).** The porch was nearly 2 inches out of level from left to right, and one of our biggest concerns was the connection to the house as we began to jack the corner up to level the roof line. To help with any stress or settling that might occur because of this, we built a temporary shoring wall under the roof right against the house. Next, we removed a few sections of skip sheathing near the peak of the porch roof to see how it was fastened to the house and discovered that the roof rafters and ceiling joists were only toenailed to the existing siding with 10d nails (the porch wasn't original to the house). As the porch framing settled, the rafters had pulled away from the house **(B).**

We corrected this by adding a ledger screwed directly into the stud wall, and then refastening the rafters to this ledger after we jacked the roof up. The ceiling joists were still well-fastened to the rafters, so we simply added a few 4-inch-long structural screws to reinforce those connections. Then we posted the rafters to the ceiling joists, which were supported by our temporary wall below.

We had to cut back the rafters so they were no longer nailed to the house and wouldn't pinch as we jacked the roof up. With the roof system shored up and everything cut back, we were able to easily use the screw jacks to lift the roof to level. We then cut the rafters back further so we could slide a 2x6 ledger in. We screwed the ledger into the studs and screwed the rafters to it.

Removing the railings was straightforward. We blocked under them so they wouldn't fall or pinch as we began cutting them free. We went slow and used a ton of sharp multitool blades to cut all the caulk and nails free. We brought the railings to our shop to sand and woodepoxy the tops and any cracks or flaws.

While our painting contractor worked on the railings in our shop, we went about building the new porch floor system and adding the posts that would support the repaired roof system. This part of the project followed standard deck framing practices, though we framed the joists parallel with the front of the house to allow for easy installation of the tongue-and-groove Douglas fir porch flooring running perpendicular to—and sloped slightly away from—the house **(C, D).**

When we reinstalled the columns after completing the porch flooring, we added a lot of blocking so that when we reinstalled the railings, we would have plenty of meat to grab **(E).** We tried to predrill and use screws in inconspicuous locations (the undersides of the top and bottoms, toe screws through the sides facing the house, and so on). We then filled the holes with wood epoxy, sanded once more, and primed everything.

After completing the porch restoration, we started on the garage build. The garage, designed by TDS Custom Construction director of design Christi Weber, is a single-car garage with a workspace area in the back and an attic for storage. The foundation of poured concrete frost walls and the standard wood-stud framing with attic trusses are typical of current construction methods. The exterior finishes—2 3⁄4-inch exposure cedar siding, trim details to match the house, and carriage house–style door—are what tie the garage to the historic district **(F).**

Working on homes in historic districts presents both challenges and opportunities for interesting, creative problem-solving work. Matching and preserving the historic details possessed by these homes while repairing failing parts of the structure are key to making a project like this successful. Adding in a new-construction build component like a garage gave us carpenters in the field and our associated building trades a well-rounded project to execute.

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