

Fitting New Stairs Into a Tight Space

BY ROB CORBO

Clients in Hoboken, N.J., contacted me last year and requested assistance in creating a new floor plan for their home that was more elderly friendly. The home was originally constructed in 1910 as a two-family with each unit comprising two floors: One unit occupied the basement and the first floor, while the second unit occupied the second and third floors. A renovation decades ago connected the first floor to the upper two floors and created a separate basement apartment. Since then, the homeowners had lived on the upper three floors, while they rented out the basement apartment.

The clients wanted to return to the original layout of two residences, each with two floors. To avoid the stair climb to the second and third floors, they would move into the lower residence, and, in time, their daughter and her family would occupy the upper one. To make the lower apartment elderly friendly, they wanted to install a new stairway and elevator from the first floor to the basement as part of the overall renovation.

Jerry Schubert, a local architect, was contracted to provide a set

of drawings for the renovation. He worked with the client to determine the best location for the stairway and elevator. It was decided that we would frame for the elevator, but the elevator unit would be installed later. Until then, the first-floor portion of the elevator shaft would serve as a closet. Plans were approved by zoning and building, and we pulled permits and got to work.

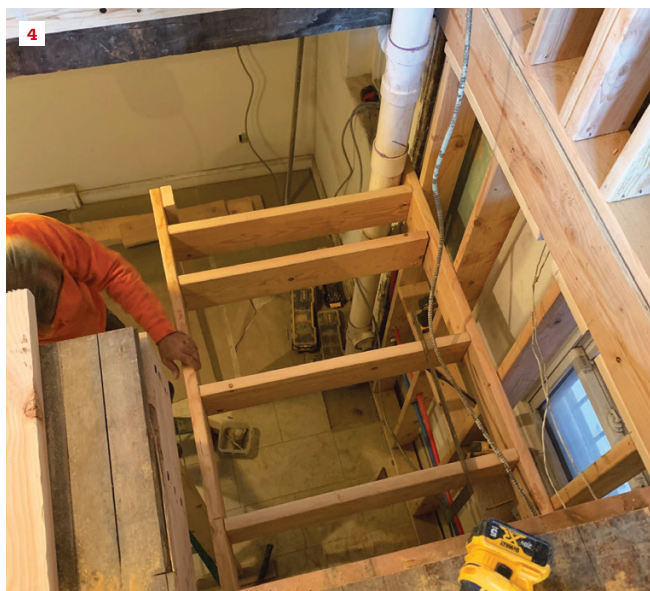
When we lifted the subfloor, we found the original stairway joist framing, or a portion of it, that connected the basement and the first floor. From the opening that we discovered, we could not determine the original design or stair run, at least not one that would meet today's codes. However, we did determine that we would be able to incorporate the original framing into the new winder staircase framing specified in the plans.

The photos and captions that follow explain the steps we went through to fit a safe and legal winder stair into the space.

Rob Corbo is a building contractor based in Elizabeth, N.J., specializing in high-quality gut rehabs and renovations of inner-city residences.



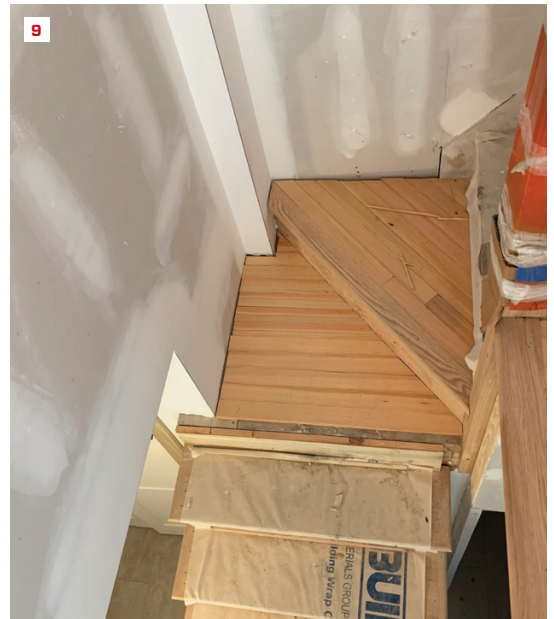
At the outset of the job, the crew began demolition around a plumbing chase, where waste, water, and heat piping would have to be rerouted around the new stair opening (1). As the subfloor was removed, the crew discovered a box-out in the floor from the original straight run of stairs. To make a legal stair, however, they would have to widen and lengthen the floor opening, as well as turn the corner to create an L-shaped opening for a winder (2).



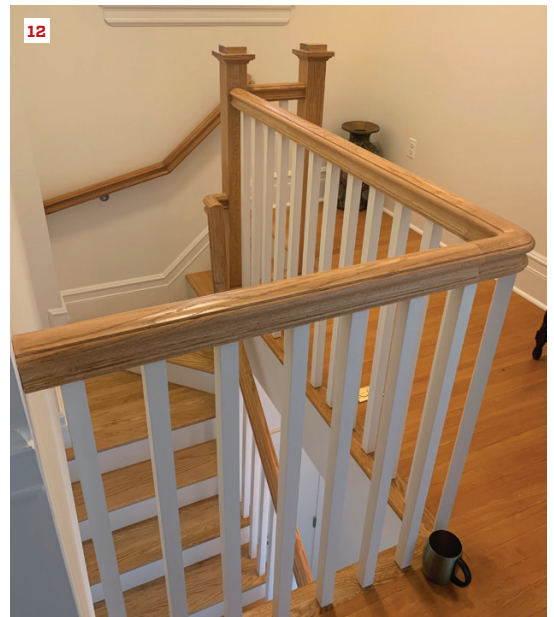
With the new stair opening defined, the exterior wall was furred out to accommodate the water and heating service lines. This required burying an existing basement window that faced a narrow alley (3). The first step in building the rough carriage was to frame the landing, which would become the first winder (4).



One of the code challenges with the stair was to create a continuous handrail on the right-hand side of the stairway as you walk up. JP, a carpenter with Passaic Stairs, worked out the distance the lower run of stairs needed to be offset to accommodate the handrail (5), which needed room to gooseneck up to a let-in newel at the stairwell's corner and connect at this newel to the short rail for the top three steps; that rail then tied into the top newel post on the second-floor guard (see photos, facing page). As the lower flight of stairs was installed, the offset was obvious (6). The rail for the left-hand side of the stairs would die into the lower ceiling. To meet headroom requirements, this offset had to be less than 4 $\frac{3}{4}$ inches (measured from the handrail to the outside corner of the floor opening). To complete the landing, JP notched the first newel (7)—a complex notch that picks up the landing on the bottom, as well as the corner of the floor opening at midheight—which rises to the same height as the top newel.



The stair structure ties in with closets at left and right **(8)**—essential to the client’s demands. Here, you can see from above the two winder treads **(9)**—the lower one is the landing, with the second winder tread on top of it. By code, the smallest dimension of a winder tread must be 6 inches at the handrail line (with a newel or balusters acting as a guard to keep someone from stepping on a tread area less than this) and 10 inches at the walk line 12 inches away.



The minimum 4 3/4-inch headroom requirement is met where the left handrail intersects the ceiling **(10)**. Headroom between the ceiling at the edge of the floor opening and the stair directly below is also adequate **(11)**; this height must be at least 6 feet 8 inches. The finish stair from the second floor **(12)** shows the continuity of the handrail. Code allows the handrail to be interrupted at a newel for winders, as it is here, where the newel rises to the upper-floor guardrail height.