# WORKING DOWN UNDER:

# Basement Remodeling Tips

## Some useful tricks for making obstructions disappear into the design

by Darryl Myers

Besides moisture, the greatest challenge to finishing a basement is presented by physical obstructions — plumbing lines, ductwork, steel beams and columns, and other fixtures that get in the way. How well these elements are incorporated into the final design can make the difference between an appealing downstairs living space and, well... a basement.

### Move It If You Can

Many obstructions are easy to relocate. I try to bury electrical wires and water and gas supply lines within framed walls or joist bays. Flexible ductwork can also be run between the joists, although it must not be squeezed or bent into too tight a radius. Rigid ductwork can be modified, but I always consult an hvac contractor to determine what changes can be made without hurting the system's efficiency or shortening its life. Drain lines are easy to move as long as the slope can be maintained. When possible, I try to direct the drain to the nearest framed wall and hide it from that point on.

In truth, any obstruction can be moved, given enough money and manpower. On more than one occasion, I've even replaced the main steel girder with a flush-framed beam. Recently, I had to eliminate one of the steel Lally columns under the girder because the column fell right in the middle of what was to be a large family room. To reinforce the steel beam, I sistered a built-up Microllam beam, which was sized by an engineer (see Figure 1).


**Figure 1.** To make space for a downstairs family room, the author recently removed a column under a main steel girder and sistered a triple LVL to the girder to carry the span. An engineer provided the design.

### Bury What You Can't Move

Most of my customers don't have deep pockets, so whenever possible, I try to conceal difficult obstructions within a creative design scheme.

**Figure 2.** A powder-actuated fastening tool (left) makes quick work of fastening wood framing to steel. Construction adhesive (middle) guarantees a permanent bond by helping to cushion the connection against live load vibrations. Studs for posts (right) must be dead straight.

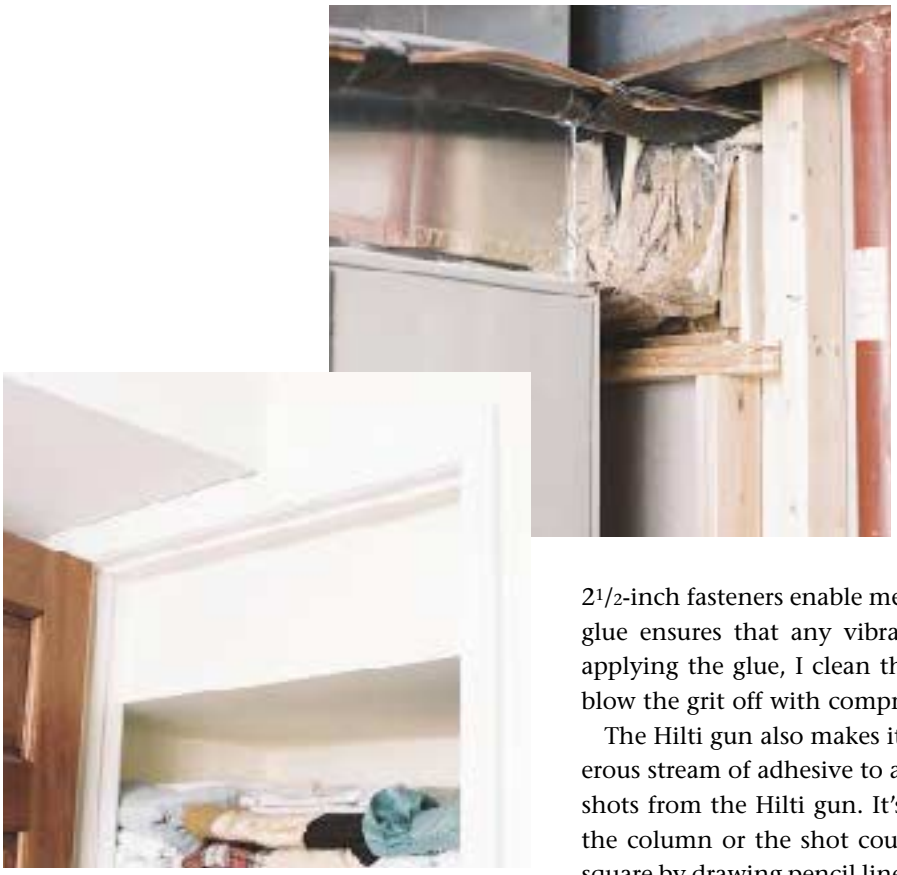

**Figure 3.** This insulated heating duct (top) was too low to permit adequate headroom, so the author hid it inside a closet. With a full-height closet door (above), no one's the wiser.

If the room layout permits, the best way to hide the girder is to frame a new partition wall underneath and bury it and the columns within the wall. If the client wants an open floor plan, then I'll box in the girder and each of the posts separately, using 2x4s and drywall.

To anchor wood framing to steel, I use a Hilti powder-actuated fastener and plenty of construction adhesive (Figure 2). The 2 1/2-inch fasteners enable me to attach framing to steel effortlessly, and the glue ensures that any vibration will not loosen the connection. Before applying the glue, I clean the surface of the beam with a wire brush and blow the grit off with compressed air.

The Hilti gun also makes it easy to box in round columns. I apply a generous stream of adhesive to a straight 2x4 and pin it to the steel with a few shots from the Hilti gun. It's important to hold the gun perpendicular to the column or the shot could glance off. I ensure that the framing stays square by drawing pencil lines on the floor and on the top plate of the post.

## Making Ductwork Disappear

Building codes specify minimum headroom clearances for ceilings and beams. When I encounter a "headbanger" heating duct that can't easily be moved, one option is to hide it in a closet (Figure 3). If a duct is high enough to frame a drop-ceiling underneath and still meet code, another

**Figure 4.** This wide, well-lit hallway helps to distract attention from the lowered ceiling, which conceals a large forced-air trunk line.

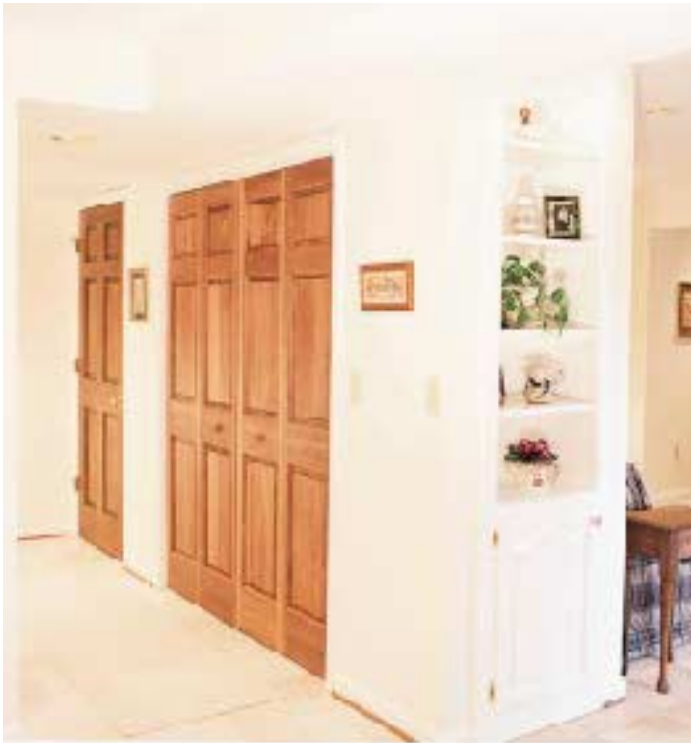

**Figure 5.** The angled table built into the corner disguises this home's water supply shutoff valve. Access is through the top.

choice is to make it part of a hallway (Figure 4). To visually "raise" the ceiling height, I'll build a 42-inch-wide hallway — any wider than that will actually make the ceiling feel lower — and install recessed lighting.

## Accent What You Can't Hide

Sometimes it's not feasible to make an obstruction completely disappear. When that's the case, I try to find a way to make it look like a feature, rather than a liability. On one recent job, for example, the water supply passed through the foundation wall into what would be the corner of the living room. The homeowners insisted they would rather send their kids to college than pay to move it, so together we designed a built-in corner table to contain the water supply and the shutoff valve (Figure 5).

Elsewhere on the same job, the girder and main heating duct ran side by side, requiring a 2-foot-wide soffit to enclose them. Rather than simply build a big drywall box and move on, I decided to incorporate this obstacle into the clients' need for storage. What I came up with was a built-in set of cabinets and shelves extending from floor to soffit (Figure 6). Installing a miniature set of recessed lights in the soffit really drove home the impression that the soffit was built to complement the cabinetry, rather than the other way around.

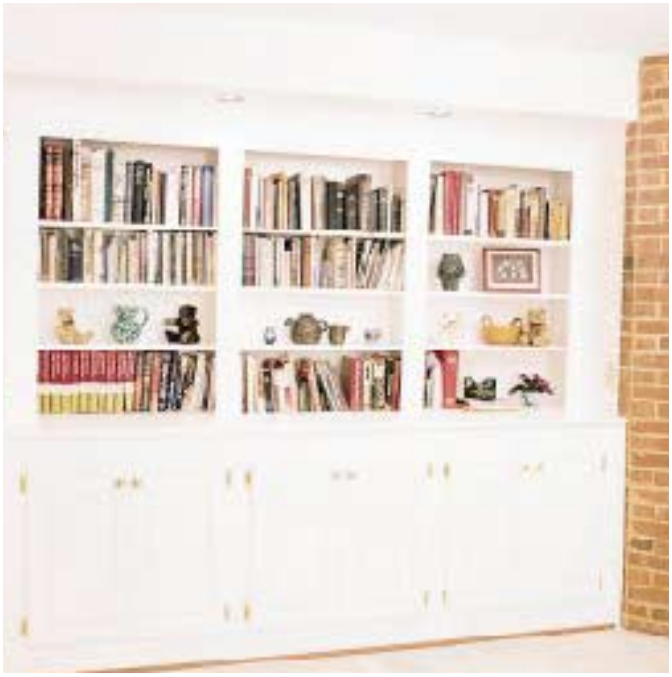

**Figure 6.** The recessed lighting soffit in front of these built-in shelves looks like it was intended to be there. It actually conceals a beam and ductwork.

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