Q&A

Retrofitting a Window Into a Block Foundation

Q. *I need to install a basement egress window in a concrete-block foundation wall. What kind of header should I use to support the eaves wall above the new window opening, and how should I install it?*

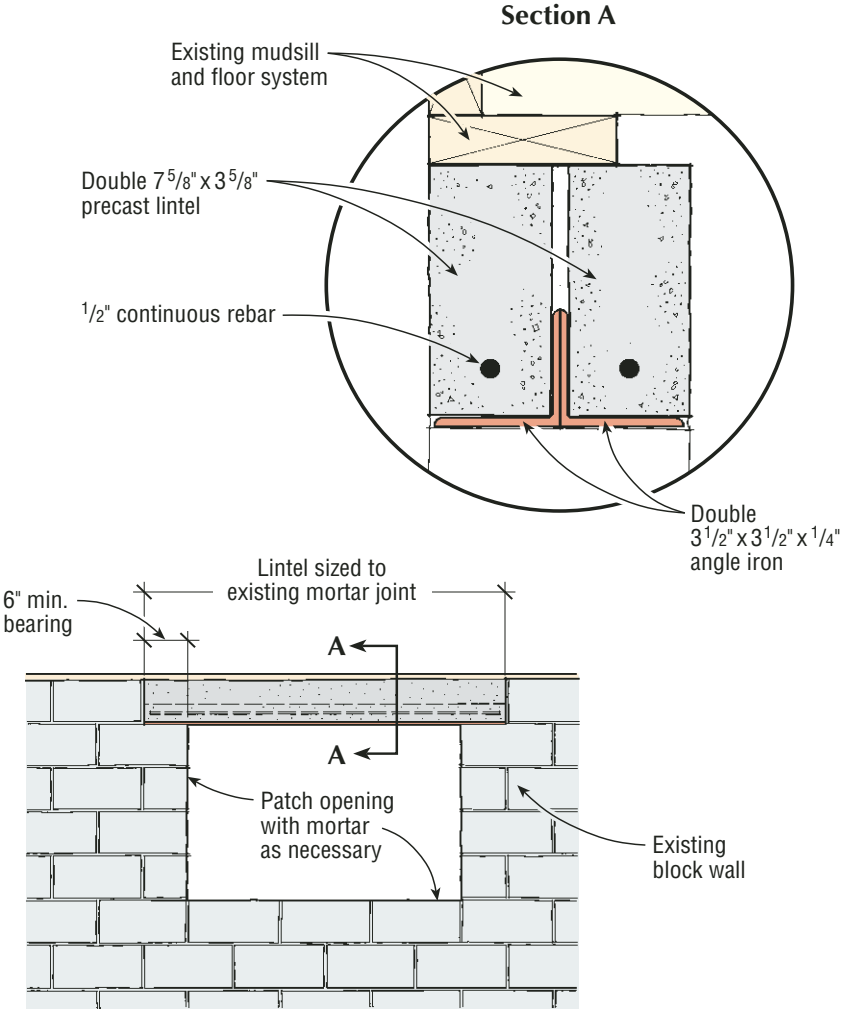
A. *Rob Corbo, a general contractor in Elizabeth, N.J., responds:* After you've double-checked the dimensions of your window to verify that it meets egress window code, I'd recommend that you also double-check the conditions around the proposed opening in the foundation.

If excavation will be required to accommodate the new window, be aware that making grade changes could introduce complications. You don't want water running toward the house, so you may need to add money to the budget to address that issue. You'll also need to temporarily support loads over the opening with a 4-by-8-inch header that's long enough to hold up the joists above the window opening plus two extra joists on each side. Install the temporary header close to the wall, but leave enough room — 2 or 3 feet should be enough — to work.

While you can build the permanent header out of concrete-filled lintel blocks supported by angle irons, an easier option is to use a precast reinforced-concrete lintel. These are available at most building yards, and will need to be sized to your specific opening and cut to length on site. Because these lintels may develop cracks over time, I like to reinforce them with angle iron as added insurance against callbacks (see illustration, right).

The first course of block below the mudsill will house the lintel, which should extend roughly 6 inches in either direction past the window's rough opening. Using a level, mark the lintel and window roughs on the foundation wall, aligned if possible with existing mortar joints. The outline will resemble a rather fat T. Using a masonry drill held as level as possible, drill through the wall at all six corners to mark your roughs on the exterior wall of the foundation. Use a circular saw or a grinder equipped with a masonry or diamond blade to score the wall on the interior and exterior markings. This will create plenty of dust, so be sure to protect yourself and the room.

Once the wall has been scored, start to chip away, starting in the center of



When cutting an opening in an existing block wall, try to align it with existing mortar joints, and size the new lintel so that it is supported by at least 6 inches of block on either side. Though structurally unnecessary, a pair of angle irons provides extra support that helps eliminate minor cracking in doubled-up precast lintels (Section A).

the opening and working toward the perimeter. We use a rotary hammer but always have a 3-pound lump hammer and cold chisel close at hand; we periodically remove the debris underfoot to keep the work area clean.

Once you've opened up the wall, you'll have a number of partial concrete blocks that will need to be filled or replaced. Repair the opening as required, adding wire mesh to the cavities to give your mortar something to hold on to. Finally, install the lintel, shimming or jacking it flush to the sill and packing the bearing shelves you've created underneath with mortar.

Once the lintel is secure and the mortar has set, you can go ahead and remove the temporary header and posts, apply stucco as required, and install the window.

Setting a Toilet Over Tile

Q. *What is the proper technique for setting a toilet on an irregular tiled floor?*

A. *Terry Love, a plumbing contractor in Bellevue, Wash., responds:* Most floors are a little uneven — with tile floors being the worst — so toilets often need to be shimmed when they're set. I like to set the toilet down first without wax to get a better idea of where the high and low spots are. Then, when I set the toilet, I use either a wax seal, which works well with older cast-iron and lead DWV systems, or the Fluidmaster Wax-Free Bowl Gasket (Fluidmaster, 949/728-2000, www.fluidmaster.com), which seems to work best with newer plastic waste lines.

To shim the toilet, I generally use cedar door shims because they have a more gradual taper than the plastic ones I've seen. I try to shim from back to front so that the front of the bowl is touching the floor, and from side to side so that the toilet is level. Shims usually end up at the back of the bowl, where they're held in place by the weight of the toilet. After the toilet bolts have been snugged up, I caulk at the front of the bowl, from bolt to bolt, for sanitary purposes. If a leak develops only around the gasket, it's better to know about it than to conceal it behind a continuous bead of caulk, so I leave off the caulk around the back.

Will Carpet Stifle a Radiant Slab?

Q. *I'm finishing a basement room for customers who want to put carpet over the radiant slab. I'm concerned the carpet will insulate off some of the heat, but I can't talk them out of it. The slab is 4 to 5 inches thick, and the 1/2-inch PEX tubing is laid out on 12-inch centers, with 1 1/2 inches of styrofoam insulation under the slab and around its edges. The slab is at least 5 feet below grade; local frost depth is 48 inches. Is there a type of carpet and pad that would allow more heat to radiate into the room? Will the carpet cause heat to be lost into the ground?*

A. *John Siegenthaler, a consulting engineer specializing in hydronic heating system design in Holland Patent, N.Y., responds:* There are many successful radiant heating installations where carpet is placed over a concrete slab. For best performance, use a low-pile commercial-grade level loop carpet bonded directly to the top of the slab, which will provide low thermal resistance to upward heat flow. If a pad must be used, it should be a low-resistance slab rubber pad approximately 1/4 inch thick, which will add about 0.31 to the upward R-value of the carpet (avoid polyurethane pads because of their higher R-value). Given the tube spacing you have, and the fact that basement heating loads are typically low, adding the slab rubber pad will likely raise the required circuit water temperature about 5°F.

Got a question?

Send it to Q&A, *JLC*, 186 Allen Brook Lane, Williston, VT 05495; or e-mail to jlc-editorial@hanleywood.com.