Turn a Window Into a Door

Q: *In my dining room I have an old, wide window in a brick veneer wall. I want to replace it with a sliding glass door. Does this make energy sense? If so, how do I make this improvement?*

A: Your home improvement plan does make energy sense, but only if you select an efficient sliding glass door and install it properly. I made this improvement to my kitchen last year. The overall efficiency of an airtight sliding glass door can be better than an insulated partial wall with a large inefficient window above it. My double horizontal slider window had double-pane glass, but the gap seal failed on one panel and all of the weather-stripping was worn out, creating air leaks.

An installed sliding glass door with only interior trim still needed.

Although homes are built differently, you generally will find a lot of reinforcing lumber framing around window openings. This is great for structural strength, but leads to inefficient thermal bridges and leaves little room for insulation. Once I removed the dry wall, I found the sill plate had not been sealed properly and air was leaking in at the bottom of the wall.

I selected a high-efficiency sliding glass door made by Thermal Industries (www.thermalindustries.com). It uses a steel-reinforced vinyl frame and triple-pane glass panels. Two of the glass panes have a low-emissivity coating and dense krypton inert gas between them. This provides a high insulation level and cuts down on noise. Always select a door that is Energy Star-qualified and meets federal energy tax credit requirements.

Another option is double-swinging French patio doors. If you have clearance for swinging doors, these are more efficient. Swinging doors close on compression weather-stripping, so they seal better over the long term than a seal on sliding glass doors. When you open both swinging doors, there is more open area for natural ventilation.

Spend a few extra dollars and rent a large masonry saw to cut through the brick wall in one pass from outdoors. Wear a good N95 breathing mask whenever you cut masonry.

With a brick veneer wall, the width of the brick and the total wall framing thickness will be about twice the width of the sliding glass door frame. The installer recommended positioning the door out on the brick to create a more stable door base. Indoors, this also recesses the door, making it easier to install tight thermal drapes during winter.

Cut straight down from the existing window opening. You will have to build out the interior opening with studs to the same width as the brick, but this is still easier than resizing the entire opening. This leaves a gap between the new studs and the brick that must be insulated.

I used Great Stuff low-expansion foam, but fiberglass is also effective. Once the foam is sprayed in and expands, the insulation was covered with ¾-inch pressure treated plywood. Thermal Industries had custom-sized the door to fit in this final opening size with about one-half inch overall clearance. Make sure to use shims for all screws and don't over tighten them. The framing on a large door can easily be pulled out of balance during installation without supportive shims.

My door frame was placed over pressure-treated lumber trimmed with aluminum flashing to raise it because I mistakenly cut the brick too low. Whether you install a door over lumber, brick, or a precast sill, liberally apply silicone caulk between the bottom of the door frame and the base to prevent leaks. There are weep vents in the door track to prevent water collection.

To see all of the project photos and details, visit www.dulley.com/newdoor. ■

To ask a question, write to **James Dulley**, Energy Report, 6906 Royalgreen Dr., Cincinnati, Ohio 45244, or check his Web page, **www.dulley.com**.