Convert Your Garage or Basement Into Living Space

Q: What are some options, on a limited budget, to convert a garage or basement into an efficient room?

A: This is a common project, and probably the least expensive method to add a bedroom. Only one new wall is needed to replace the garage door, so material and labor costs will be reasonable.

The techniques to insulate a wall for converting a garage or a basement into living space are similar. It actually is easier to insulate a basement because much of the wall area is below ground level. This reduces the magnitude of temperature swings across the wall insulation.

If you plan to do the conversion project yourself, adding stud wall framing on the interior is relatively simple. Use 2-by-4, or 2-by-6 in very cold climates. The studs will not carry any weight, so they can be spaced as wide as possible to accommodate the insulation width. When built over a concrete slab or floor, use pressure-treated lumber for the footer.

The location of the vapor barrier for the insulation varies for basements and above-ground garages. For basements, moisture usually flows from the ground through the foundation into the insulation.

Attach a film vapor barrier to the wall before the studs. When using faced fiberglass batt insulation, place the facing against the foundation wall. For above-ground walls, place the vapor barrier toward the room side.

When converting a smaller garage or basement area—where maximizing usable floor space is a concern—attach narrow furring strips to the wall. Place thinner sheets of rigid foam insulation between the furring strips. Rigid foam insulation has a higher R-value per inch thickness than batt insulation.

Foam insulation must be covered by drywall to meet fire codes.

Every room must have an egress window in case of a fire. The window must have an opening at least 20 inches wide and at least 24 inches high. The window must have a mini-mum net clear opening of 5.7 square feet with a maximum sill height of 44 inches above the floor.

A good choice for bedrooms is an acrylic casement-style block window. It looks like a regular glass block window when closed to provide security and privacy. It opens with a crank like a regular casement window for ventilation and egress. It comes as a complete unit.

Many companies—often replacement window contractors—offer conversion systems for garages and basements. Fully insulated wall and ceiling panels are custom-sized to fit your specific project. The cost of these is not outrageous compared to buying all the materials and equipment to do it yourself.

Snap-in insulated fabric-covered panel systems are effective for a bedroom. They provide insulation, block moisture and are relatively sound-proof. Look for one where the panels can easily be snapped out to access the old wall or to make other changes. These systems are also good for home theaters.

Don't forget the attic area when converting a garage. Just like in any room, most heat is lost or gained through the attic. Insulate the attic to the code recommendations for your area and place the vapor barrier down toward the living area.

Especially in a bedroom, a cold floor can make you feel uncomfortable. A typical concrete garage slab or basement sucks heat out of the room. Install a breathable insulation panel over the floor and cover that with thick carpet padding and carpeting. Consider installing electric in-floor radiant heating.

A low ceiling height can be a problem with a basement conversion. To minimize the loss of headroom, insulate around the outside of the garage concrete slab. Dig down several feet and place rigid extruded polystyrene insulation panels against the sides of the slab. Make sure to use extruded, not expanded, foam panels for below-ground applications. ∎

This room has masonry wall finished with a professional wall system, which consists of pressed fiberglass panels covered with fabric. PHOTO BY OWENS CORNING

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