

Under-Basement Insulation

Q. I know that it is important to insulate basement walls, but how important is it to insulate basement floors? What type of insulation is recommended under a 3- to 4-inch concrete slab?—Harold Murray, Bowie, Md.

A. Researchers at the University of Minnesota's Underground Space Center suggest that it is generally not economical to insulate under a full basement, unless one edge of the slab is close to the finish grade, as in a walk-out basement. This is particularly true in climates with significant cooling loads, where the conductive losses through the slab in the summer will be appreciated. The material choice in insulating a slab would be high-density, closed-cell rigid insulation such as extruded polystyrene. Thermally break the interior finish of the basement floor from the concrete (e.g., with wood) to increase comfort and to control condensation if it is a problem.

Mass Upstairs

Q. What is the most cost-effective way of placing thermal mass in second-story new construction? The McAdams article (*Solar Age*, 9/83) reports that an upper-story concrete slab with tile costs only \$1.50 per square foot more than plywood and carpet. Do these costs include the structural supporting members? Also, how does the cost of mass walls compare to mass floors for upper floor construction?—JA. Horton, Oak Ridge, Tenn.

A. Wootie McAdams tells us that the \$1.50-per-square-foot incremental cost compares the slab and locally-made concrete tiles to the commercial carpeting

continued



The La Vereda passive solar condominiums developed by Wayne and Susan Nichols in Santa Fe, NM., use upper-story concrete slabs and tile for thermal mass and consumer appeal.