

Rammed Earth Solar House Plan 1680

This plan is drafted to meet the New Mexico 2003 Earthen Building Materials Code. Also see Plan 1576 on this site, which is the "mirror plan" for this home, designed for traditional adobe or compressed earth block.

The "1680" stands for the total home "footprint, that is, including all walls, exterior and interior. The objective: a more affordable, energy-saving home with two bedrooms, two baths and several noticeably nice features. We wanted an adequate, but attractive home, without a lot of high-cost options tacked on. As a result, 1680 is drafted without vigas and exposed wood deck, and instead with a truss system, metal roof and sheetrock ceiling inside. This provides a ceiling height of about 8 feet as drafted. If a higher ceiling is desired, the rammer may set up an additional 2 feet of forming for a 10 foot ceiling. The builder may vary his/her choice of interior ceiling material or roof covering.

A list of attractive features includes:

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1. Sufficient interior mass walls of rammed earth to help moderate interior temperatures. All exterior walls are 18"thick and most interior walls are 16"thick.

2. Plenty of Direct Gain and Trombewall windows on the south, making 1680 a true passive solar design, when built as presented.

3. Two nice adobe or compressed earth block arches, set into the rammed earth walls where they can be enjoyed~ a four foot wide arch between Foyer and Livingroom and another between Kitchen and Laundry. By building the arches, the expense of doors and wood lintels are saved, while contributing to airflow in these non-private rooms.

4. An underfloor hydronic heating system.

5. An artistic, stepping half-wall of rammed earth with decorative rejas (spindles) between Livingroom and Kitchen.

6. Room for a custom tub in the Master Bath.

7. A Kitchen measuring 10' x 22' 4", with 48 sq. ft. of space for a dining table.

8. A Livingroom measuring 16' 0"x 15' 8"with a rammed earth (or adobe) fireplace in its NE corner.

9. A Master Bedroom measuring over 12' x 15' 2"with a large, walk-in closet.

10. A more than adequate closet in the Entry Foyer.

11. Five massive Rammed Earth buttresses at key exterior lateral support points. These are anti-seismic features, but they also add to the attractiveness of the home.

The second Bath serves two needs; guests as well as BR #2. This Bath has two doors, one to Bedroom #2 (BR #2 measures 10' 6" x 12' 1" + 4' 2" x 8' 7" closet), and the other to the Entry Foyer. There is also a 5' 10" x 5' 10" Utility closet off the foyer, which houses hot water tank and boiler unit, as well as the underfloor heating zone controls.

To leave your cost options open, 1680 shows simply a concrete slab floor. You might stain the concrete (including dyeing and stamping it in a tile-like pattern), or cover it with *Saltillo* or Italian tile.



Plan 1680 is drafted showing a 1" insulating wall cover on the exterior. This is a "generic" reference that could mean a 1" insulating board, covered by typical stucco finishes, or a more "organic" insulating plaster consisting of stabilizer, recycled newspaper and a hard color coat finish, or even a "furred-out" system, using Light Clay fill. If you build in an area where your walls are stabilized and you wish to "show off" the Rammed Earth "lifts", this protective layer may be omitted, providing you are not required to meet a cold weather energy code. If you are, readers should know that Plan 1680 as drafted, will pass NM's new 2003 Energy Conservation code in most climate areas of the state. Performance can be enhanced in winter areas above 6000 degree heating days with an additional insulating wall cover. Doing this will enhance the solar performance of the home.

Plan 1680 is priced at 10¢ per sq. ft. of drafted area. It comes to you in a sturdy tube at **\$168 for** one set of 8 sheets (ea. sheet is 18" x 24"), or three sets at **\$186**. As always, your order is filled and sent priority mail as soon as we receive it, with a delivery confirm sticker.

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