

SOLAR ADOBE PLAN 1560

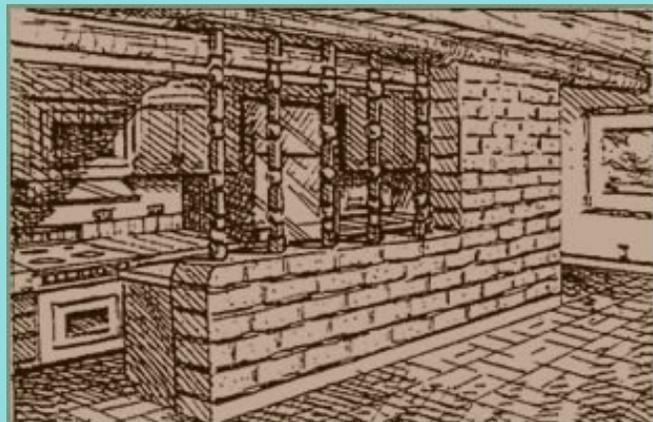


Solar Adobe House Plan 1560

Plan 1560 is a 2-bedroom, 2-bath Pueblo or "Santa Fe" style adobe, for elevations of **3800** to **7200** feet in the Southwest U.S. and in areas of 20" or less annual precipitation. It is suggested for Site types A, B, or C under the International Residential Code. It should only be used in areas of medium to cold winters. It is a solid adobe of character that can be outfitted as artistically as the builder desires. As drafted, it shows exposed vigas and deck- a traditional Southwestern ceiling. Exterior wall finish is three-coat stucco. Interior walls may be left exposed for artistic effect (and cost savings) or plastered as the builder desires. Total footprint is 1560 sq. feet (interior space & exterior walls combined, buttresses not included). Heated/cooled space is about 1240 sq. feet. The home stretches 80' 2" on an east/west axis to maximize south solar gain. North/south width is 18' at the east end, and 22' on the west, where a jog adds to the Master Bedroom.

As drafted, **Plan 1560** is suitable for a family of three. Enlarging the east-facing L.R. window into a door, adding a bedroom and bath (which can be passively solar heated) can expand it. Plans for this expansion are not included. Walls are dimensioned to the typical New Mexico adobe size, of 14" x 4" x 10". East, west and north walls are 14" thick. On the south, most walls are in glass, but also adobe, in 10" and 14" widths. Inside, a half wall of adobe with rejas (sketch) frames the Kitchen and full-height adobe walls separate the bedrooms. You may build this home using a different adobe size, but in any case, walls should not be thinner or taller than shown. .

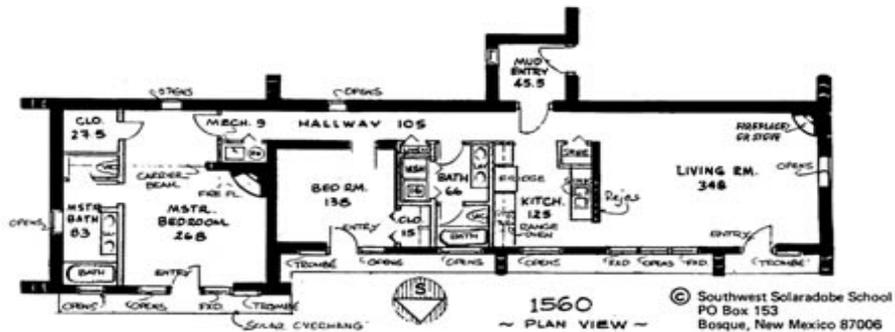
Approx. 140 sq. ft. of glass is south Direct Gain (fixed & operable windows). 48 sq. ft. in Tromb  walls (glass over 4" air space with dark-colored adobe behind) means a total of 188 sq. ft. of energy-generating south glass. Tromb  walls provide a delayed heat gain that pushes energy inside during nighttime hours. The 188 sq. ft. is about 15 % of the total heated area, within the passive solar range in Albuquerque/Prescott climate zones. In colder climates (Santa Fe, Taos, Pueblo, Flagstaff), the three doors on the south should be one-light, (simple low e) doors. This increases gain by about 40 sq. ft. (18% vs. 15%). Night-insulating blinds or drapes are a must with all Direct Gain glass and should be figured into the materials cost.



The south overhang roof extension is mandatory for the solar system to work properly. It extends

2 feet beyond the house wall in an Albuquerque climate zone (4300 degree heating days). In colder areas, (Taos, Southern Colorado), this overhang extends no more than 18". In warmer climates (Las Cruces, Benson), it projects 30"-36". Depending on location, owner lifestyle, etc., **Plan 1560's** passive solar gain provides 55-65% of the heating requirement in January in a Santa Fe climate, and 75-80% in a climate like Las Cruces, NM. Back-up heating will be required to maintain comfort levels during the colder months. A utility closet provides space for boiler and zone valves for under floor radiant heating. A wood-burning stove shows in the Living room and an adobe fireplace in the Master Bedroom. These may be switched or deleted.

During summer months, evaporative cooling is assumed. It is ground-mounted on the north side with under floor ducting. Refrigeration is an option in warmer areas. You will be able to buy a smaller unit and run it for shorter lengths of time due to the thermal benefit of the adobe walls.



The Kitchen contains 12 feet of counter space and 12 feet of upper cabinets. The sink looks out through rejas into the Living Room. A pantry is located on the Kitchen north side. The Middle Bath (66 sq. ft.) adjoins a Wash/dry facility (16 sq. ft.). A Linen Closet is accessible from the Hall. The Middle Bedroom (138 sq. ft.) has a large closet (15 sq. ft.). Trombé walls in bedrooms add privacy and furniture space. A carrier beam in the Master Bedroom supports two sets of vigas, keeping them to 20' or less (a cost saver). The Master Bedroom is ample (268 sq. ft.) as is the Master Bath (83 sq. ft.) and Walk-in Closet (27 sq. ft.). Plumbing walls are 6" wood frame construction, with closet walls of both 6" and 4" frame. Steel framing could be substituted.

Parapets hide the roof pitch, except on the south, where the roof drains over the overhang. The exposed interior wood ceiling is level. The cavity between it and the final plywood deck contains R-38 insulation. Final cover is a single layer, thermoplastic membrane, available in white or adobe tan (45 mil, UV resistant). This type of cover is cooler in summer, and avoids the problems of "hot-mop" gravel covers (the latter may be substituted, but we do not recommend it.) House corners are fortified with adobe buttresses. They add character and seismic resistance. A steel-reinforced concrete bond beam with uplift anchors is specified.

Plan 1560 comes as a set of six, 24" x 36" sheets in black on white. Sheets contain Floor Plan, Foundation Plan, Electrical Plan, Elevations, Roof Framing Plan, Wall and House Sections, Fireplace Section and miscellaneous detail drawings. Most scales are $\frac{1}{4}" = 1'0"$, with some wall sections, etc. shown at $\frac{3}{4}" = 1'0"$.

One set of **Plan 1560** sent in a tube, priority mail is \$89, or three sets for \$97. Because the prints are B&W, you may duplicate them at most "blueprint" or reproduction shops for a nominal fee.

1 set of plans
\$89



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