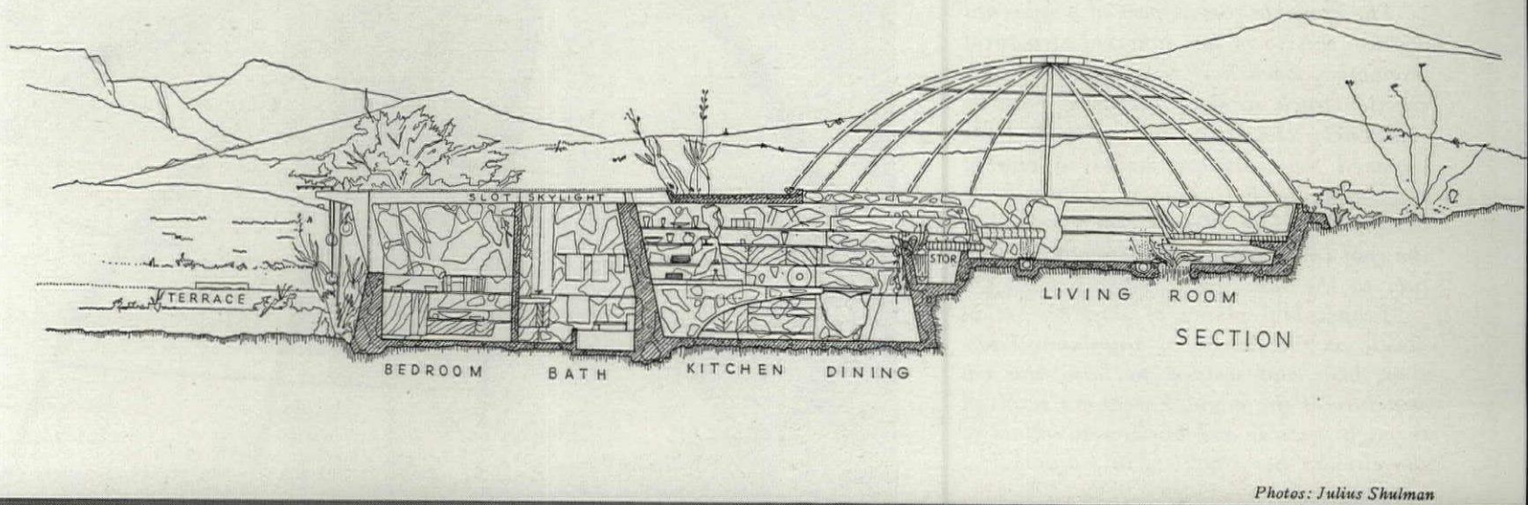
# DESERT HOUSE is roofed with a movable dome to shade it in summer, open it in winter

PAOLO SOLERI born 1920. Architectural degree from Polytechnic of Torino, Italy. One year with Frank Lloyd Wright. MARK MILLS born 1921. BS (Arch. Engineering) University of Colorado. Four years with Frank Lloyd Wright.

**SOLERI & MILLS:** *"Our problem was a small dwelling to moderate the violence of the desert at Cave Creek, Ariz. Our solution was to create two spaces of opposite character: 1) the main living space under a movable glass-domed roof, which reacts immediately to the desert's extreme changes in temperature and 2) the sleeping space carved deeply into the hillside and enclosed in masonry walls, which reacts slowly to temperature changes. Thus, a sympathetic space is always available.*

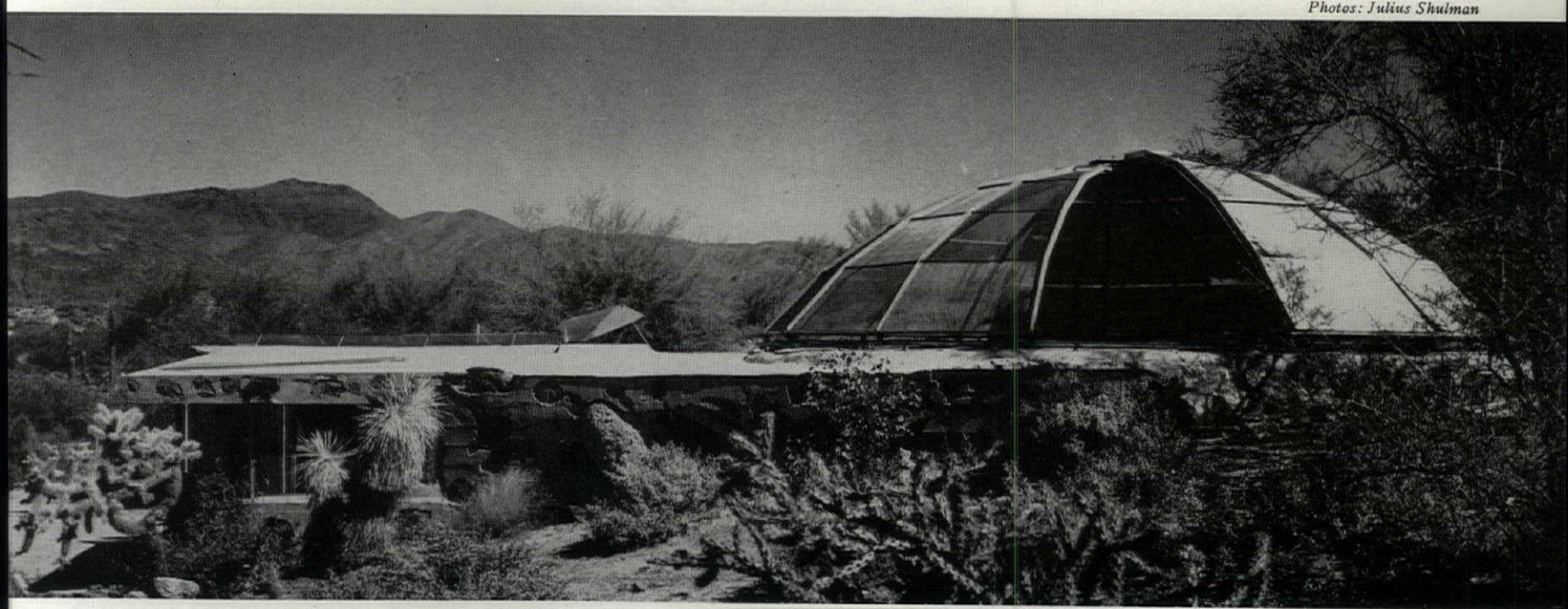
*"The roof is made of two glass-domes which may be rotated inside one another. The half-dome on the outside track is aluminum painted. In winter solar heat can be had by turning or opening these dome sections. By sunset, the masonry walls of the sleeping rooms are warmed from the sun's radiation and hold much of this warmth through the night.*

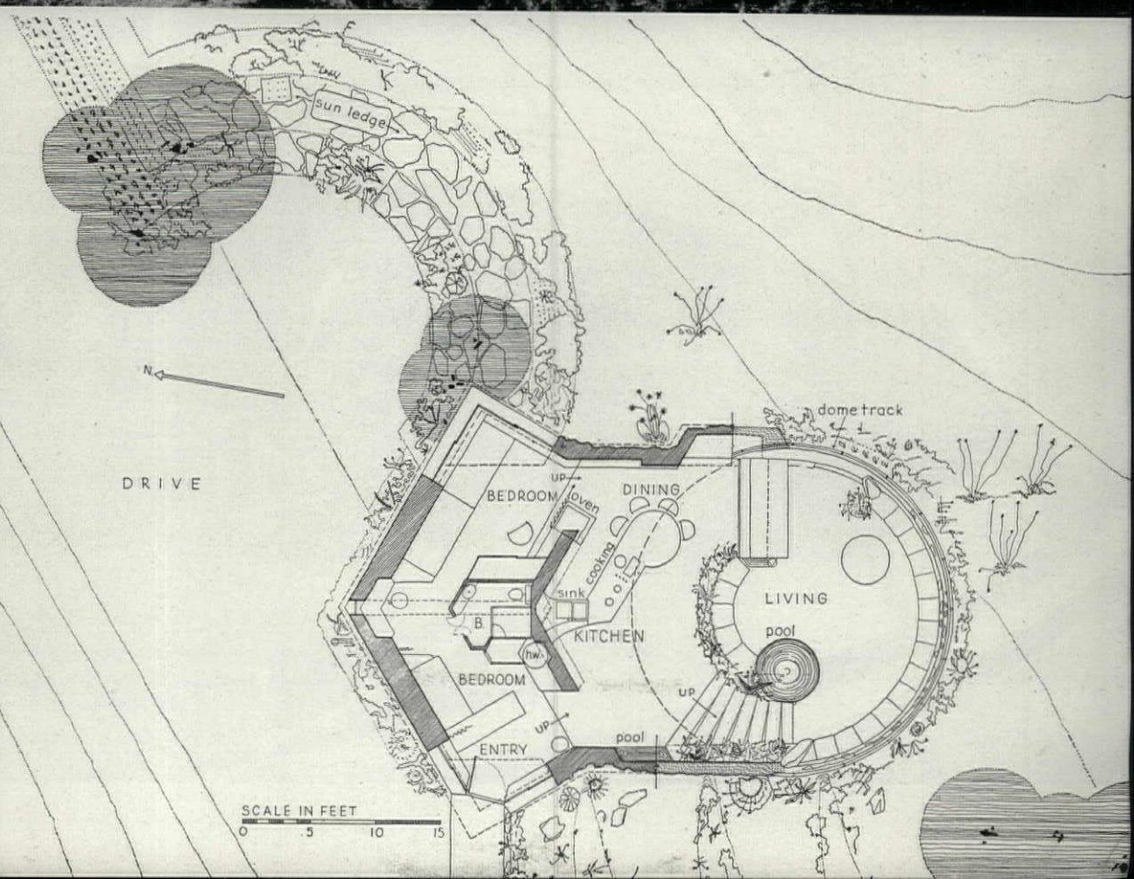
*"In summer, coolness of the masonry walled portion is augmented by a water spray on the concrete slab roof. Around the glass dome, a copper water tube cools the air with a curtain spray. Beneath the oak stair treads connecting the two parts of the house, a concrete ramp is designed as an additional evaporative surface. Water from the living room pool flows over the grooved surface of this ramp into a wall pool overflowing to exterior planting. Sum-*




SECTION

*Photos: Julius Shulman*

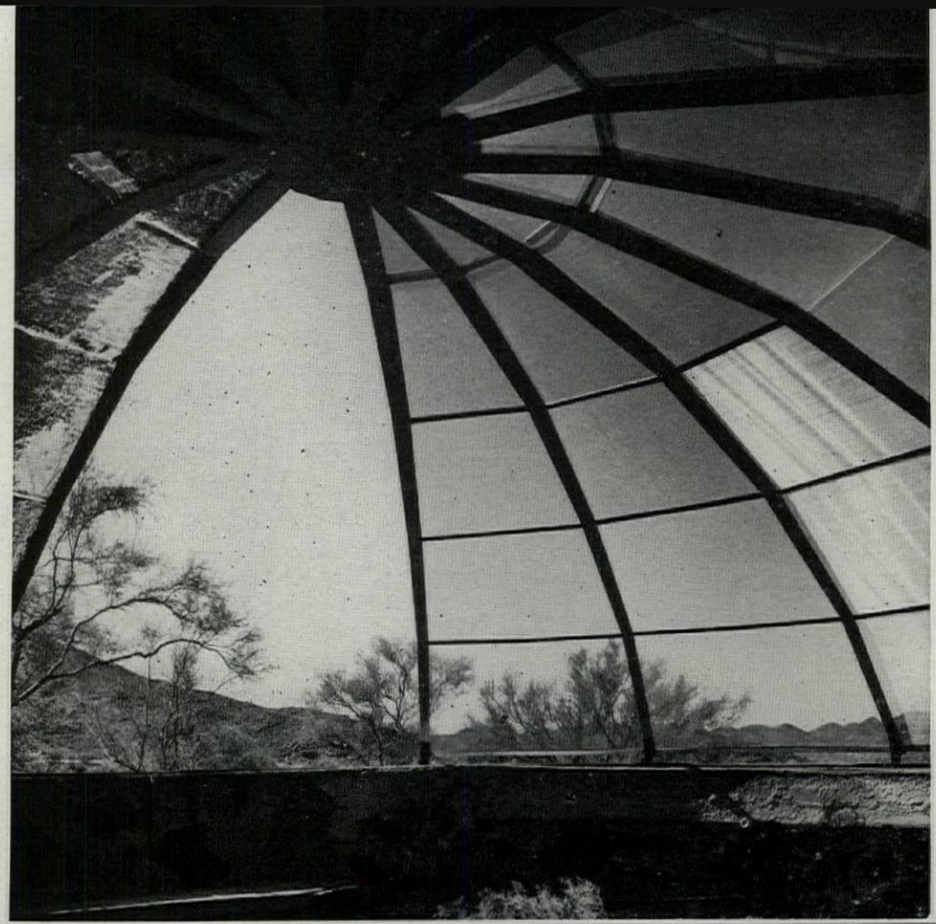




*mer evenings are comfortable under the movable roof.*

*"The movable roof is part of a spheroid because this form has inherent structural economies. Each half revolves on its own circular track so that the space may be completely closed or half opened. Four screened segments are added to one of the revolving half domes, permitting a screened opening. With a gear mechanism the roof could move automatically in relation to the sun.*

*"Trapezoidal planes of glass are set in mastic on the flanges of aluminum T-section, bent and welded to form the rib structure of the dome. Forces are resolved through vertical and horizontal rollers to the circular bar track set in masonry."*



A specially designed arch-ladder mounted on the perimeter rim makes any part of the dome surface readily accessible.

*Julius Shulman*

*Morley Baer*