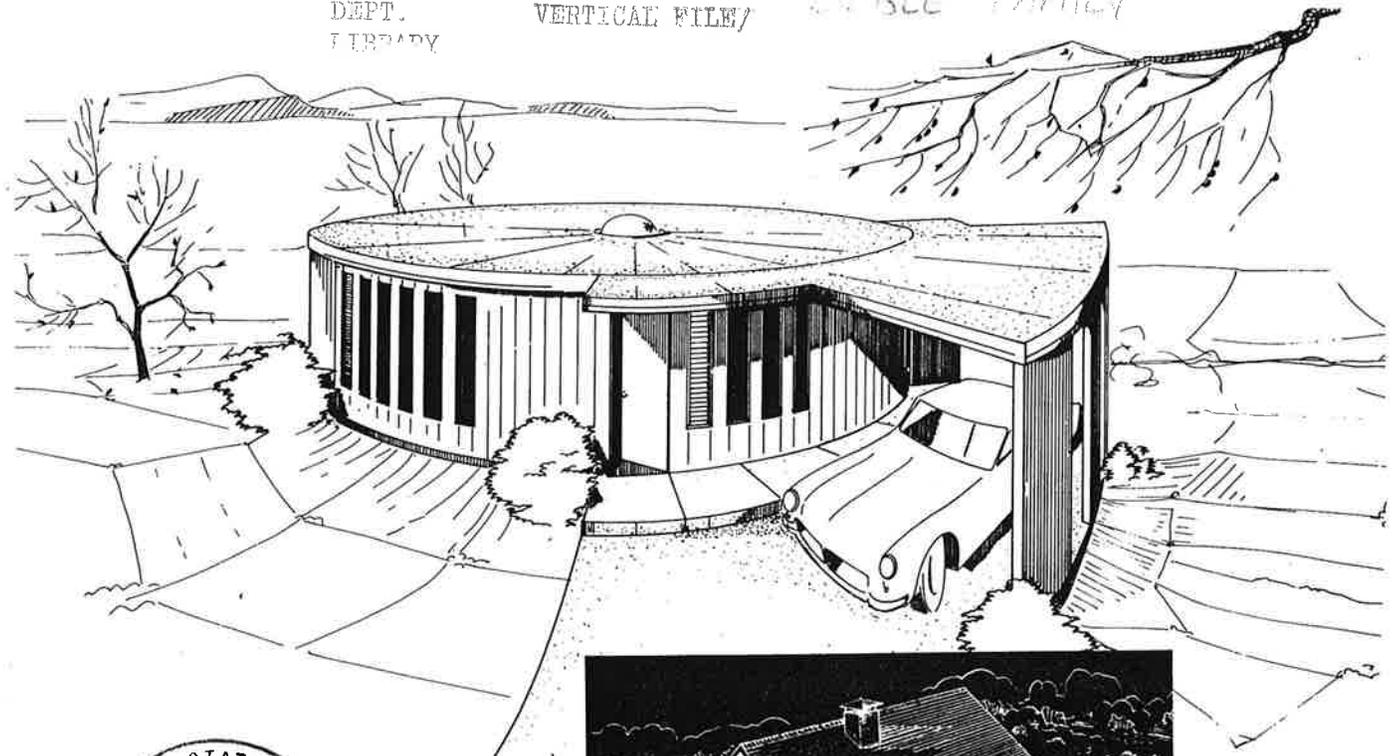


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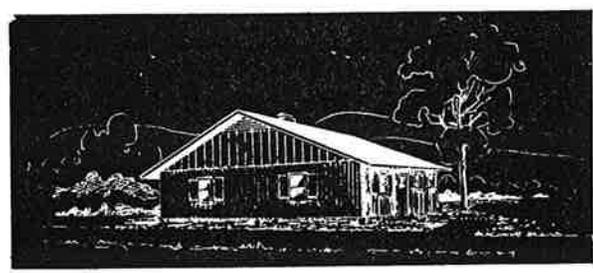
HOUSE 710
RIPLEY FAMILY



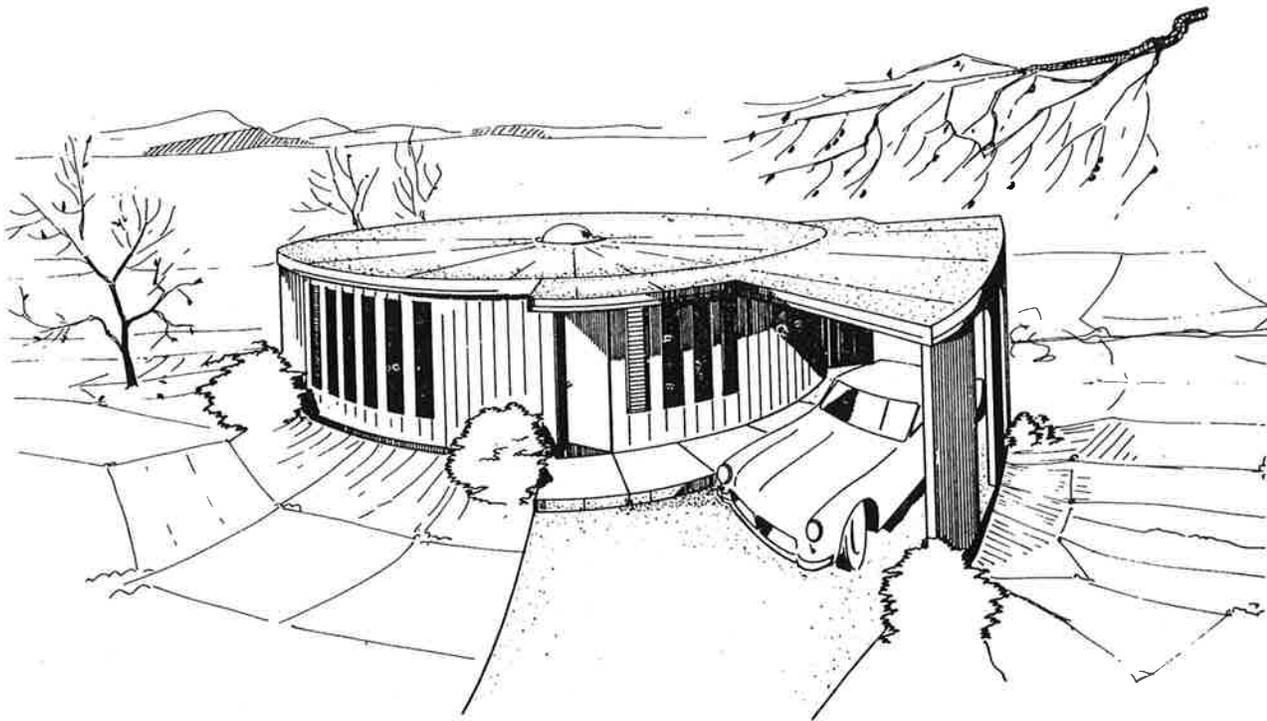
DESIGNS

**FOR
LOW-COST
WOOD HOMES**

L. O. Anderson
Harold F. Zornig



U.S. DEPARTMENT OF AGRICULTURE • Forest Service • November 1969



House Plan no. FS-SE-5

A ROUND HOUSE OF WOOD

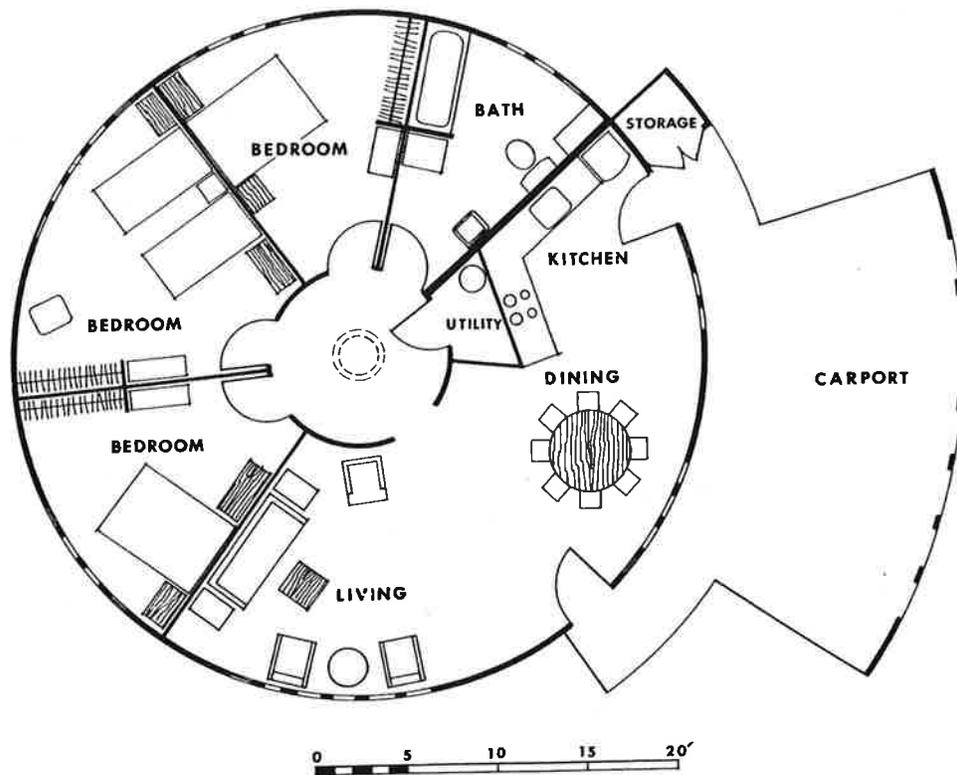
This unique design provides a three-bedroom home with 1,134 square feet of living area. It is designed for a flat site. A smaller version provides three bedrooms and a total area of 804 square feet.

This design is one of several produced under a research program currently underway at the Southeastern Forest Experiment Station, Forest Service, U.S. Department of Agriculture. The objective of this program is to develop designs and techniques that will lead to the more efficient use of wood and wood products in housing for low-income families in both rural and urban areas.

General Background

Round homes are an efficient means of providing housing space. In this design, interior walls are spaced radially from a central atrium hall. The design permits good arrangements of rooms and furniture. It includes a number of experimental features that are being evaluated in the laboratory and in full-size prototypes built under the auspices of the Experimental Housing Program of the Federal Housing Administration.

AREA = 1134 sq. ft.



It is estimated the round house will cost about half as much as a conventional house with an equal amount of floor space. The house should be easy to build and suitable for self-help programs.

Floor System

A circular concrete slab is placed within a low brick foundation wall. The perimeter insulation and vapor barrier are conventional. Where needed, the soil is treated or poisoned to prevent attack by termites and other insects. A preservative-treated wood member is fixed around the edge of the slab. The ends of the exterior plank walls are nailed to this member.

Partition Walls

The interior partition walls are particleboard panels located under the roof beams and fitted into slots in 2x2

members at the vertical joints. The panels can be moved to alternate locations to provide two, three, or four bedrooms. Closet shelving and sidewalls serve to stiffen the particleboard walls. The walls may be finished with conventional wall paints or with natural finishes, either pigmented or clear.

Roof System

The roof system, which is essentially flat, consists of radially placed 4x6 beams, rough sawn or finished, inserted into slots cut in the tops of the perimeter planks and those around the atrium. The beams are covered with 1x6 tongue-and-grooved lumber decking in a herringbone pattern. The lower surface of the decking and the exposed beams are finished with natural stains. The roof surface of the decking is covered with a 1-inch layer of foamed-in-place rigid polyurethane insulation (2 pounds per cubic foot). The polyurethane is then

overlaid with one or two coats of aluminum-filled asphalt emulsion, or a roof paint of similar quality. When thus protected, the foam provides thermal insulation, a good seal against moisture, and roofing in one operation. A clear plastic dome may be placed over the atrium hall, if natural illumination is desired.

Mechanical Systems

Heating is provided either with electric baseboard units, or with a furnace located in the utility room. If a furnace is used, a heat duct carries warm air to a plenum chamber created by dropping the ceiling in the atrium hall. Openings through the plank wall carry warm air to each room. A minimum of sheet metal work is required. Electrical outlets around the exterior walls and along the interior partitions are provided in a wood baseboard-raceway system. A water heater is installed in the utility room. Some of these features are illustrated in the sketch of the atrium wall section.

Exterior Wall System

Exterior walls consist of rough-sawn 2x8 softwood planks, placed on end around the slab and joined with hardboard splines inserted in slots in the plank edges. To minimize dimensional changes in service, moisture content of the planks should be no more than 12 to 16 percent when they are installed. A fascia board is fitted

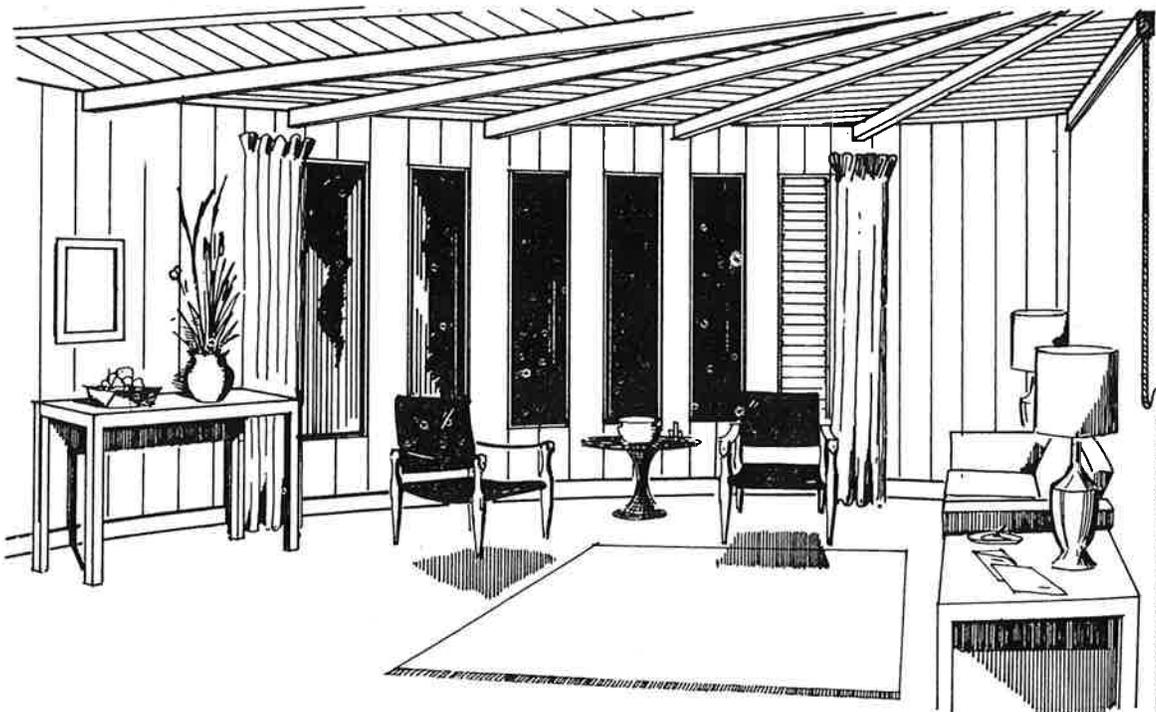
around the edge of the roof. The wall of the atrium hall is of similar plank construction. Exterior wall surfaces are finished with a pigmented natural finish containing a preservative and water repellent. This attractive finish is easy to apply and maintain and it has good durability. Interior wall surfaces are finished with pigmented or natural stains.

Window System

Sections of two adjacent planks are omitted at appropriate locations in the exterior wall, and fixed glass panels are fitted into the openings, framed with a simple wood frame, and properly sealed. Ventilation is provided by a system of vertically sliding hardboard panels. As an alternate method, single-hung aluminum windows are fitted into the plank openings.

Carport

The extended roof over the carport is supported by another plank wall, with appropriate openings. The roofline is also extended over exterior doors by cantilevering interior roof beams out beyond the exterior walls.



Additional Information

The Housing Research Unit of the Southeastern Forest Experiment Station is not an architectural design agency. It has developed this and other designs primarily to illustrate new and effective ways to use wood and wood products more efficiently in house construction.

Two prototype homes of this design have been built by a commercial contractor and are now occupied in Eastern North Carolina. Experience gained in construction of these homes was incorporated in the revised plans now available. Various room arrangements, door and window placement, and interior details can be varied, because the interior walls are all nonbearing. Other construction details must be followed closely, however, because they affect structural strength and performance. Experienced builders can generally modify the plans and specifications satisfactorily. Although the design was intended primarily for warmer southern climates, some modification and insulation of the exterior walls should make the house suitable for northern climates.

Certain experimental features may not meet all requirements of some building codes. Prospective builders should confer with local code officials to determine the applicability of the design for the particular area in which the house is to be built.

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Southeastern Forest Experiment Station*

