

Concrete in housing

Usonian Automatic: Wright's concrete masonry

Full-size house in traveling show

BY M. K. HURD



Usonian Automatic home now touring the United States was designed in 1955 by Frank Lloyd Wright. For ease in setting up and shipping, concrete masonry was realistically simulated in the 1,800-square-foot exhibit house.

The house of moderate cost is not only America's major architectural problem but the problem most difficult, if not improbable of solution, for her major architects.

These words of Frank Lloyd Wright, reexamined nearly 30 years after his death, have a surprising freshness—at a time when the news media report that the median-income family can no longer qualify to buy the median-priced home.

The Usonian house

For 20 years after the Depression Wright struggled with the problem

of low cost housing against a background, first of shortage of resources, then of rising costs. For him it was a period of continuing innovation as he sought new or different design and material combinations to produce satisfying homes for families of modest means. The smaller homes he designed at this time are collectively referred to as Usonian, derived from the term Usonia,* Wright's name for the reformed American society that he tried for the last 25 years of his life to bring about. Many of the simplifications and improvements that Usonian houses offered were later incorporated into the broad mass of

subsequent homebuilding: the carport; the ranch style home itself; the centralized, sometimes open kitchen; slabs on grade; and a larger common living space, achieved by eliminating the separate dining room.

The earlier Usonian houses were of wood or a combination of wood and brick. Designs were usually modular, often planned on grids of triangles or hexagons as well as rectangles. A few were round, and some were built on circular 1-acre

* Origins of the term are unclear. Wright attributed Usonia to Samuel Butler in the novel Erewhon, but no one today can find the word there.



Standard Usonian blocks make up the fireplace wall of the exhibit home. Dining area on the left displays Wright-designed furnishings.

plots.

About 1950 Wright designed a concrete masonry building system that he called Usonian Automatic. Automatic was used to suggest that the owner might participate in the actual construction of the home, laying or even making the blocks. Beginning in 1951 a number of these houses were constructed across the nation from California to New Hampshire. Some owners did indeed participate in building their houses (see *Concrete Construction*, May 1986, page 496), not always with the ease that Wright had anticipated.

Usonian Automatic construction

The basic concrete block of the Usonian Automatic system is 4x12x24 inches (see drawing); the corner unit is 14 inches long on each face. The blocks are laid up without mortar, with #3 reinforcing bars placed both horizontally and vertically in semicircular voids in the contacting faces. When two blocks are set in place the void in which the rebar is centered becomes a 2-inch-diameter cylinder. After one or two courses of blocks

are laid, grout is pumped or poured into the voids to embed the bars and bond the structure together. Beveled block edges form decorative grooves on the exposed face of the wall.

The basic block can be varied in many ways. Some are cast with a 5x7-inch opening for glass. Groups of these blocks form window units

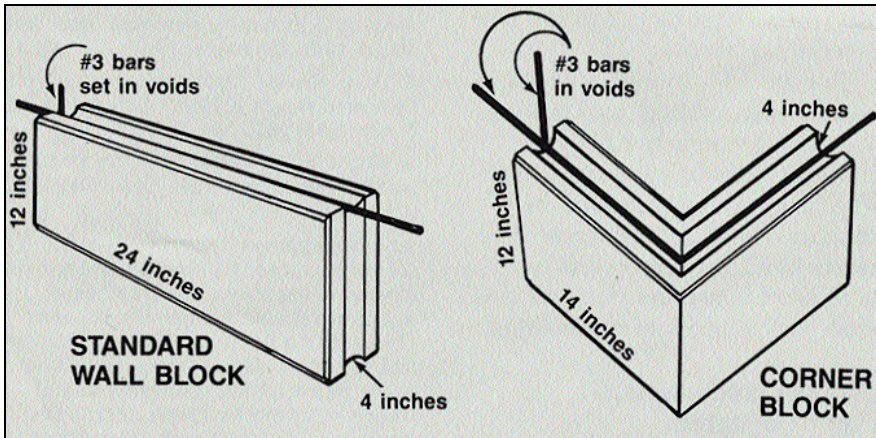
of any size desired. Others have indented panels or coffers on the surface to provide pattern in the finished wall. A corner block turned on its side or upside down becomes a roof-line ornament. Deeply coffered blocks serve as ceiling components (see photo of interior). Although a simple dwelling may be built with just a few of the block variations, one of the larger houses built in 1957 required 37 different block designs.

House in traveling exhibit

Perhaps 10 or 20 Usonian Automatic houses have been built in the United States; they are private homes and not readily accessible, although some owners have cooperated with local schools to permit public viewing. But now comes the opportunity to experience this special concrete construction system in a full-size home filled with Wright-designed furniture. An 1,800-square-foot Usonian Automatic house, designed by Wright in 1955, has been re-created as the focal point of a traveling exhibition, "Frank Lloyd Wright: In the Realm of Ideas." The show is not a retrospective; it is an exploration of Wright ideas that are fundamentally valid and significant for building today.



Interior view of the exhibit home shows deeply coffered concrete masonry ceiling. Window wall at the right is made up of concrete block units inset with glass. Note exposed standard Usonian Automatic blocks in the wall at the left.



The basic Usonian Automatic block has a semicircular groove running around the entire block on its narrow face. Blocks are laid without mortar, but with reinforcing bars in the grooves, both horizontally and vertically. Grout poured or pumped into the cavities surrounds the rebar and unifies the construction.

Already seen in Dallas and Washington, DC, the traveling exhibit has been scheduled for six other cities in the next 2 years (see box).

To cope with problems of assembling, disassembling, and moving, the show house is not made of concrete, although it looks like it. The block construction has been simulated with a polystyrene core sandwiched between layers of laminated board material, all covered with a cementitious coating.

Usonian block system may be adapted

Organizers of the exhibition make clear that they are not presenting the Usonian Automatic house as an answer to contemporary housing problems, but only as an illustration of the untapped potential of modular construction. Critics have called the show house a splendid essay in economy of means, "feeling far grander than its 1,800 square feet because of Wright's deft manipulation of ceilings and walls, and his masterful handling of light." Complex effects are created by the rearrangement of simple elements.

As with many Wright innovations, Usonian Automatic was never patented. Its concepts are available to the industry for continuing use or adaptation to today's markets. 🏠

References

1. Sergeant, John, Frank Lloyd Wright's Usonian Houses, Watson-Guptill Publications, 1515 Broadway, New York, New York 10036, 1976, 207 pages.
2. Dillon, David, "Usonian House Anchors Disjointed Wright Exhibit," Architecture, March 1988, page 30.
3. Wright, Frank Lloyd, An Autobiography, Horizon Press, New York, New York, 1977, 620 pages.

Acknowledgment

Gerald Nordland, art historian and former director of the Milwaukee Art Museum, and Bruce Brooks Pfeiffer, director of archives for the Frank Lloyd Wright Foundation, are co-curators of "Frank Lloyd Wright: In the Realm of Ideas." Organized and circulated by the Scottsdale Arts Center Association and the Frank Lloyd Wright Foundation, the exhibition and its tour have been made possible by the support of Kohler Company and Whirlpool Corporation. The City of Scottsdale, Arizona, provided funding for the construction of the Usonian Automatic exhibit home.

WHERE TO SEE USONIAN AUTOMATIC

The schedule for "Frank Lloyd Wright: In the Realm of Ideas" is given below. In addition to the full-size Usonian Automatic house, the exhibition includes 160 displays and artifacts from other Wright designs. The National Concrete Masonry Association has also provided an accompanying freestanding section of assembled Usonian blocks showing construction details.

January-March 1989

■ CENTER FOR THE ARTS
Miami, Florida

June-September 1989

■ MUSEUM OF SCIENCE
AND INDUSTRY
Chicago, Illinois

October-December 1989

■ BELLEVUE ART MUSEUM
Bellevue, Washington

February-April 1990

■ MARIN COUNTY CIVIC
CENTER
Marin County, California

April-July 1990

■ SAN DIEGO MUSEUM OF ART
San Diego, California

December 1990-March 1991

■ SCOTTSDALE CENTER FOR
THE ARTS
Scottsdale, Arizona

For details on the exhibit schedule, contact Suzette Lucas at Taliesin West, Scottsdale, Arizona 85261; telephone 602-860-2700.

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