

THE MUSEUM OF MODERN ART

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MUSEUM OF MODERN ART EXHIBITS PORTABLE DEFENSE HOUSING UNIT
AND BOMB SHELTER MADE FROM STEEL GRAIN BIN .

Two connecting cylinders of corrugated steel painted white--one twenty, the other fifteen feet in diameter--with segmented steel roofs that look like opened parachutes, have been rising, literally, in the sculpture garden of the Museum of Modern Art, 11 West 53 Street, during the past few days. They have now reached their full height of 12 3/4 and 11 1/4 feet. Together these units form the Dymaxion Deployment Unit invented and developed from circular steel grain bins by R. Buckminster Fuller, engineer, inventor, author, and sociological philosopher.

Shown under the auspices of the Museum's departments of Architecture and Industrial Design, the Dymaxion Deployment Unit will be opened to the public Friday, October 10, for about two months. It is the seventh of a series, successively improved, designed by Mr. Fuller. Since June the Museum has been planning to show the Unit but the Navy requisitioned the first one designated for the Museum and the Government the second, for consideration and experiment.

Because of the ease, speed and economy with which it can be manufactured, shipped, set up and demounted, the Dymaxion Deployment Unit might be used for defense housing, evacuation dwellings, army barracks, or in peace time use as beach or guest house. While not proof against a direct bomb hit, its circular corrugated surfaces deflect bomb fragments or flying debris; its steel structure is entirely fireproof; and its shape and anchor-foundation render it noncollapsible. A nearby bomb hit might cause it to bounce a few inches above its foundation, but the blast of suddenly expanded air whose devastating vacuum causes the higher pressured atmosphere within a square building to expand toward a rounded form, usually exploding in the process, would only bring into play the designed cylindrical and valving functions of the grain bin house. For similar reasons it is hurricane and earthquake proof.

Buckminster Fuller has for many years been known as a shatterer

of traditions in the fields of engineering and housing. Twelve years ago he invented the Dymaxion Car. His Dymaxion House caused furious discussion and controversy among architects because it broke all precedent and principles in conventional house building. His book Nine Chains to the Moon, published in 1938, and written in 1934, includes twenty-two prophecies regarding changes in the modern world. Some of these prophecies have already been fulfilled and others are in process.

The Dymaxion Deployment Unit shown at the Museum in its principles, structure, construction, appearance and operation climaxes Mr. Fuller's career as a tradition-shatterer. It was built from the top down, i.e., the steel segments of the roof were assembled and bolted together on the ground and raised by means of a collapsible mast extending through the ventilator opening at the top center of the roof. The roof was raised a little at a time to allow the circular segments composing the walls to be bolted on from the top down. When the wall was completed the foundation was laid: a circle of bricks flat on the ground. The bricks were not mortared but sand was used to fill the interstices. With the wall resting on the tops of the bricks the collapsible mast was removed and taken out of the house. A sectional steel floor was then bolted to the lower rim of the walls and steel anchors attached by steel guy ropes were then sunk outside the house to a depth of two feet.

Used as a barracks or dormitory, the Dymaxion Deployment Unit at the Museum could house a maximum of twelve persons in single cots; double-decker cots would, of course, double the number. As shown at the Museum, however, with dividing curtains and full household furniture and equipment, the unit would be a comfortable and complete home for a family of six.

Within the larger cylinder the space is divided at will like the sections of an orange into two bedrooms and a living room by voluminous curtains which hang from the sides and from the vaulted parachute roof and meet in the center. The curtains can also be tied back so that the entire space may be used as one. Half the smaller attached cylinder is divided into prefabricated bathroom and kitchen. The other half is a bedroom. Light and ventilation come through fourteen porthole windows and a round ventilator at the top of each cylinder. Shelves, hooks, lighting equipment and plumbing facilities are built-in features. Very little additional furniture is required,

all of which is of modern lightweight metal-and-composition construction. The house, which is entirely demountable, can be manufactured at the rate of a thousand a day, at \$1,500 each including all fixtures. Shipping, setting up, and demounting require a minimum of space, weight and unskilled man-hours.

Mr. Fuller describes his Unit as follows:

"Here is a 20' x 12' bin conversion which involves few basic manufacturing changes, all of which have been arranged for mass production. The Dymaxion Deployment Unit is fireproof, vermin and termite-proof and water tight throughout. Round houses, like oil tanks or eggs, need no structural members other than their enclosing shell. Round houses retain interior temperatures 200% more efficiently than cubical houses. The round house is also the perfect shape for efficient air conditioning and for radiant heating. The round house is the easiest to camouflage from the air as it coincides with nature-forms such as trees and hillocks. The ventilator may support camouflage netting or shading screen. Translucent plastic water-tight ventilator panels let in light from above. But all panels may be closed for blackout without interrupting air circulation. The whole unit constitutes a scientific solution of atmospheric control by thermodynamic and airodynamic technique, as with stratosphere planes, rather than by heavy walls. This enables midget heating units to maintain ideal temperatures.

"This scientific approach adds up to a safer, more comfortable dwelling unit of but a fraction the weight of other dwellings of equal cubical content, even the most recent of prefabricated panel structures. The lightest of the latter weighs twenty-five tons; the traditional four-room frame house runs almost twice that weight, while comparable brick and masonry houses run into hundreds of tons. This latest twin-cylinder Dymaxion, completely furnished ready to live in, weighs only four tons. Multiply the difference between these figures by the two to five hundred thousand dwelling units a year built in this country and the measurable savings in manufacture, transportation, and assemblage become important not only to a defense effort but to a peace projecting economy.

"The Dymaxion House is simply an attitude and interpretive principle--a principle of doing the most with the least in consideration of a mobilizing, integrating society necessitous of breaking its exploitability through science."