

# THE MUSEUM OF MODERN ART

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## INTRODUCTORY LABEL

### STRUCTURES BY BUCKMINSTER FULLER

The structures you see here demonstrate some principles of design developed by Richard Buckminster Fuller. The plastic dome is manufactured for use as a radar station or exhibition pavilion, but the gold-colored aluminum octet truss and the aluminum mast are not actual buildings. They have been made for this exhibition to further illustrate the strength and lightness possible through Fuller's engineering.

Buckminster Fuller is an engineer, mathematician and philosopher whose work is based on an analysis of the principles of structure as found in nature. His ideas are not merely isolated solutions to specific problems; they are aspects of what Fuller calls comprehensive design.

The function of comprehensive design, in Fuller's view, is to isolate from the dynamic universe of energy and experience all the local patterns that can be turned to men's advantage; in order to increase all possible advantages for all men -- everywhere. To describe whatever contributes toward the maximum mastery of the universe, Fuller evolved the word Dymaxion (from dynamic, maximum, and ion). All of his designs for shelter, utilities, and transportation are part of his world plan for abundance.

But if man is to master the universe he must learn to make use of all the fundamental behaviour phenomena nature demonstrates, as for example in the structure of atomic particles. Most of Fuller's designs are geometric systems developed from such fundamental building blocks of physics as tetrahedrons (pyramids with four sides including the base), octahedrons (eight-sided figures), and icosahedrons (twenty-sided figures).

It is this system of "building blocks" that constitutes Fuller's startling leap in replacing habits of thought that are centuries old. Most buildings reflect our nearly automatic assumption that a right angle is equivalent to stability, both physically and psychologically. Yet we have all observed the necessary introduction of diagonals -- of lateral bracing -- to stiffen right-angled structures. What Fuller has done may be described -- in greatly simplified terms -- as the transformation of structure into nothing but lateral bracing. The "structure" has disappeared. In its place Fuller builds very large diagrams of the lines of force by which atomic particles -- matter itself -- seem to adhere.

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Obviously Fuller does not think of himself as a designer, architect, or engineer as those terms are usually understood. He believes that the designer's real responsibility no longer is the creation of individual buildings or objects, but rather that it is now the interrelating of physics, mathematics, and the well-being of the race.

Although he is not directly concerned with esthetics, Fuller is quite aware that many of his designs are extraordinarily beautiful. But he observes that their beauty is incidental, because each of his designs is merely a local pattern embodying pure principle -- and it is our recognition of the principle, however incomplete, that makes the pattern so pleasing to us.

Arthur Drexler