

THE MUSEUM OF MODERN ART

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GEODESIC RIGID RADOME

Developed and tested by Lincoln Laboratory, M. I. T.

The Rigid Radome is one of many geodesic domes designed by Fuller or based on his theories. The Radome is built without a separate skeleton structure carrying a weatherproof enclosure; the structure and its skin are one. It is made of diamond-shaped panels of translucent plastic reinforced with fibreglass. Each panel has turned-up edges, like the rim of a pie pan. The dome is assembled simply by bolting together the rims of adjoining panels.

Because the shortest distance between two points on a sphere is an arc of a great circle (called a geodesic), all the force lines of the dome lie along great circles. This arrangement results in an equal distribution of stresses in all directions, balancing tension against compression. It also makes possible the use of light weight materials which in conventional structures would hardly be able to support their own weight. The thickness of the plastic wall on each of its triangular facets is approximately one-sixteenth of an inch. The rims (visable at the entrance and on the inside surface) are approximately one-fourth of an inch thick.

As with other Fuller domes, it is possible to assemble the entire structure, lift it off the ground by helicopter, and fly it to another site where it can be dropped in place. Because they enclose a maximum amount of space with a minimum surface, domes are the most economical shelters in terms of materials. Fuller domes are now in use as train sheds, exhibition halls, etc. They might also be adapted to make giant "houses" enclosing gardens and lakes. And, with variations of the structural principle Fuller has developed, domes might also be used to enclose whole cities on the earth or the moon.