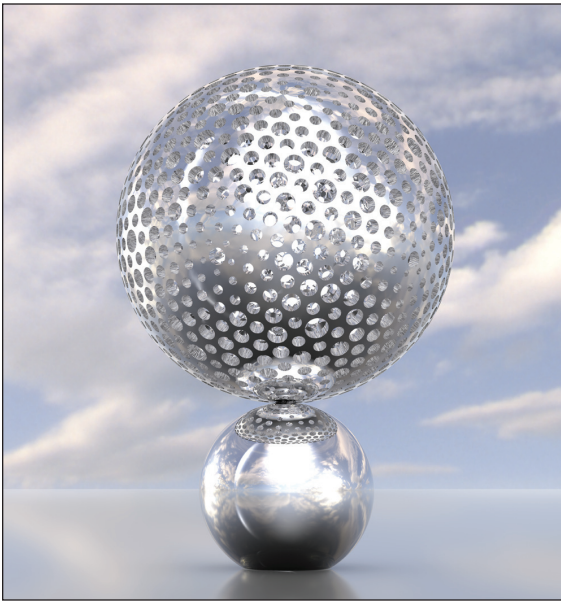


THE BUCKMINSTER FULLER CHALLENGE

The Buckminster Fuller Challenge Prize Sculpture: OmniOculi



The OmniOculi will be presented to Dr. John Todd, the winner of the first Buckminster Fuller Challenge along with a check for \$100,000 at the prize conferring ceremony on June 23rd, 2008 at the Center for Architecture, New York City

Artist's Statement: "Bucky loved to enlighten. His talks and writings overflow with original connections between math and nature. Nature was the model for his conceptions. He proposed a comprehensive view of the universe as an integrated whole.

When asked to conceive a sculpture to represent the Buckminster Fuller Challenge, I knew I wanted it to be as loaded with Fuller's thinking as possible. The sculpture formed rapidly in my mind. Shape, spherical, because Bucky elucidated spheres perhaps more than anyone; geodesic patterning, because that's the special geometry with which he meant to emulate nature's behavior.

Bucky liked to remind us that on all scales there are always an inside and an outside co-existing. It came to me to highly perforate the surface of the sphere so one could see the inside at the same time as the outside. The perforations would be located at the vertices of a high order geodesic dome. The vertices would be open viewports like the fly's eye domes. I then thought it would be revealing if select vertex holes could be of particular sizes to represent the vertices of as many of the regular polyhedrons as possible, such as the five platonics, the archimedians and in particular the sixty carbon atoms of the buckminsterfullerene molecule, all neatly circumscribed and superimposed on the same geodesic pattern.

Bucky made original discoveries about the transformability of one elemental shape into another as manifest in his 'jitterbug' model. I asked Joe Clinton, who is a master of geometry in general and geodesics in particular, if he could design such a complex pattern. What seemed like only a day later he had built a virtual prototype on his computer. Rapidly the pattern evolved into a beautiful flowing, slightly pinwheeling geodesic array comprised of sixteen graduated hole sizes marking the many circumscribed polyhedrons. Joe's twist to the geodesic pattern makes allusions to patterns of nature from micro radiolaria through flowers to spiral galaxies.

This sculpture is also an interactive optical instrument. The concave inside is mirror-polished so it produces in its center a hovering aerial real image while it infinitely re-reflects the incoming light. The outside surface is also mirror reflective so it is omni-directionally visually alive with its changing surroundings.

To hold the geodesic sphere in the air I chose a mirror-polished sphere exactly one half its diameter. That means the surface area of the large sphere is exactly four times the surface of the small sphere and the volume is of the large sphere holds the volume of eight of the small spheres. Surface increases by the square, volume by the cube. This doubling relationship Bucky observed has a subtle connection to Newton's inverse square law of gravity: halving the distance increases the attraction four times.

The geodesic sphere is held by a hidden shaft seated in ball-bearings inset in the smaller sphere. This enables the geodesic sphere to be rotated or spun. The top half of the geodesic sphere is held in place by magnets so it can be removed occasionally for dusting the internal mirror."

Title: OmniOculi
Material: 2024 aluminum (w/magnets and ball bearings)
Dimensions: 8 inch diameter sphere above 4 inch diameter sphere

Sculpture concept and design: Tom Shannon, tomshannon.com
Geodesic concept design: Joseph Clinton
Engineering, machining: Bluechip Engineering
Computer Rendering: Jonah Tobias, 1Q.com

About the Artist:

One of Tom Shannon's early sculptures was included in the Machine Show at the Museum of Modern Art in 1969. Since then his sculptures have been included in international exhibitions at such places as Centre Pompidou, the Venice Biennale, the Whitney Museum, and the National Galleries in Paris. Recently Shannon created the levitated TED Prize.