

BIOSPHERE 2: An Experiment in Isolation



Can human beings live in an airtight building for 2 years with no life support except for the organisms they bring inside with them? Can they set up an ecosystem that provides for their every need and the needs of the other populations around them?

These were the big questions that Biosphere 2 was built to answer. In 1984 construction began on the world's largest isolated environment. The location was the Sonoran Desert, a short distance north of Tucson in Arizona. This part of the country experiences a high percentage of days without cloud cover. Sunshine is essential for an experimental ecosystem because it is the only energy source to sustain the humans and hundreds of other species in the closed system.

One critically important factor was sealing the 3.1-acre live-in terrarium from the outside environment. That means no gases or organisms entering or leaving the system. First a 500-ton stainless-steel liner was laid down to isolate Biosphere 2 from the earth. Then a massive glass, steel, and concrete greenhouse was constructed on the steel base to isolate Biosphere 2 from the atmosphere. The \$150 million chamber was ready for business in 1991.