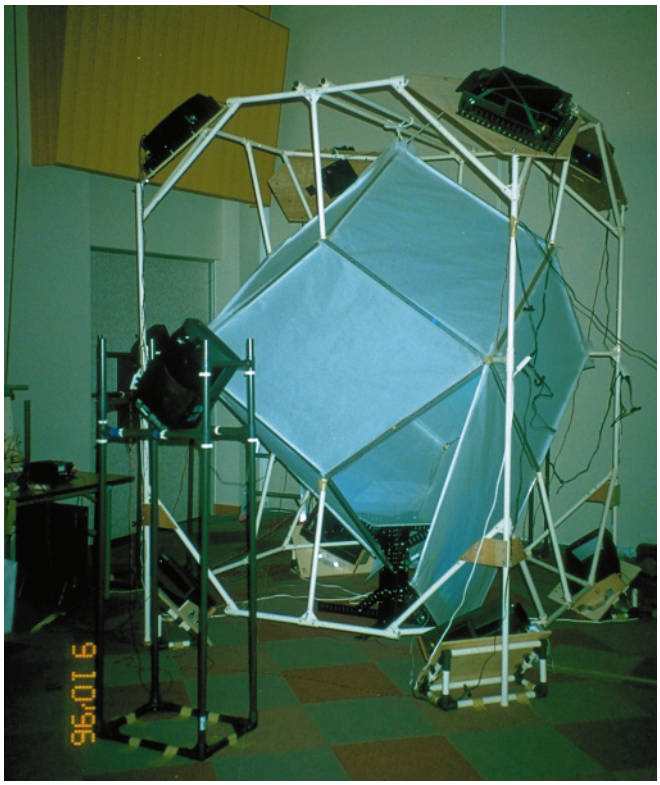
Visual immersion plays an important role in virtual environments. A head-mounted-display (HMD) provides full solid-angle views of virtual space. However, the HMD's optical system limits its field of view. One alternative display system is a large screen. Another alternative is a dome screen or a cubic screen. But those alternatives require large theater-like spaces, which restricts their general use for computer-human interaction. Moreover, existing configurations of large-screen systems do not provide full solid-angle perspectives around the viewer.

In Garnet Vision, the emphasis is on how to build a full solid-angle display in a limited space. Two criteria were established to optimize space utilization:

1 Pixel efficiency (how many pixels are projected on each polygon of a polyhedral screen).

2 Space efficiency (the ratio of displayed polyhedra to overall dead volume of the rear-projection screen).

Thorough examination of these criteria led to selection of a rhombic dodecahedron. The dodecahedron screen, in which a viewer can stand, was built with 12 projectors in a space the size of a normal room. Each projector also has a speaker that generates sound.



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