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Architecture for humans in space: design, engineering, concepts and mission planning (1)

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SANCTUARIES IN THE SKY.

A COMPARATIVE ANALYSIS OF RELIGIOUS- AND SPACE ARCHITECTURE.

Abstract

Many Astronauts have described spiritual, even religious experiences during their missions in outer space. Frank White coined the term “Overview Effect” to describe these experiences. While the Overview Effect was not due to mission architecture as such but rather the experience of seeing our planet Earth as a whole, space architecture is part of its origins. Without windows in spacecraft, no astronaut could ever have seen the Earth as a whole. Space-architecture is thus responsible for more than just providing a safe environment, it is also responsible for providing a nurturing environment. Space-architecture is also a discipline that designs self-contained spaces that are not part of Earth.

Another example of this kind of architecture is religious architecture. While space-stations are literally in the sky, monasteries and churches try to embody ideas of the heavens in a secluded way on planet Earth. Embodying religious and theological thought in architecture - literally setting it in stone - has a long history. This history encompasses the layout of cities, towns and other macro-structures as well as the internal structure and architecture of decidedly religious buildings.

This, however, is never without a normative bias. Certain aspects are perceived as more valuable, more worthy than other aspects. They are allocated more resources, a nicer spot or more space. Certain tasks, symbols or spaces are at the center of architecture, others are represented on the sidelines. This paper aims at giving some examples of problems and chances of religious architectural decisions and their possible impact on space architecture, be it on a macro or a micro level. Whether a space-station or a future space-habitat should be compared to the topology of a city or the architecture of a monastery or church will be discussed and the consequences analyzed.

One obvious example concerning the above-mentioned overview-effect is the Cupola-Module on the ISS. It was not intended as a prime spot for spiritual experience, but since it has been added to the ISS it has become the place for Astronauts to spend their spare-time and experience the overview-effect. The paper will compare the community of astronauts on the ISS with different types of religious communities and their choices of architectural design. Special attention will be paid to measures of community-building, co-habitation, and also self-containment. This will serve to give some ideas for future space-architecture projects and the world-view and sense of community embedded in their design.