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PRINCIPLES OF PUBLIC SPACE CONSTRUCTION IN THE STRUCTURE OF THE NEXT
GENERATIONS OF MANNED SPACE STATIONS

Abstract

As space exploration progresses, the development of manned space stations (SS) leads to an inevitable increase in their crew from 10..20 to 50..100 people. Fundamentally new, quantitatively and qualitatively complex, the crew composition will require designing in the SS structure a system of various types of public space for individual groups and entire communities of various purposes and sizes, united by staying in the common station space. To determine the principles of public space construction, it is logical to use the experience accumulated by world architecture. In the traditional culture the public space is built as a centric structure. The center of public space is always marked by a particularly sacralized semantic object: a hearth, an altar, a table, etc. Such a semantic center fixes the base of the vertical axis of public space, around which the entire Existence of each particular community turned. Human society, as a rule, has a hierarchical structure. Accordingly, a hierarchy of types of public space was built from the common room in the apartment to the central square of the city. The problem of building a public space at the present stage of society's development remains one of the most important topic. For example, the topic of coliving and coworking is actively developing and rethinking. In this aspect, the problem of SS public space building appears not only as the next design task, but also as a full-fledged part of significant world civilization trend. The development of the manned spacecraft's can be represented as the stages of habitats deployment: the pilot's cabin as the simplest shelter; an orbiter as a single multifunctional space; an orbital complex as a system consisting of specialized spaces: working, residential, etc. It is obvious that the formation and development of a specialized public space should take place at the next stage. The first, but rather obvious signs of the formation of such a space in the SS modules can be observed today. For proposed new SS design, which is based on orthogonal ring layout the examples are presented showing how a hierarchical system of building a public space. Such hierarchy consist of local zones as part of the simplest living and working space; specially allocated space as part of a developed residential or working block of premises; as a central extensive multifunctional public space at the whole station level.