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Space Architecture: technical aspects, design, engineering, concepts and mission planning (1)

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THE URBAN SETTLEMENT OF OUTER SPACE

Abstract

Today we are all witnesses of a global discussion about “the Mars human exploration” and “the Mars one way”. But, before any decision about leaving our planet and settle another, the main hoop of the Martian colonization mission is systematically planning, organized and sustainable life in this very hostile environment. Urban mapping is one of the most important statements how to adapt easily and accept life in the outer space. Tendency of the future is the Earth being urbanized everywhere, from North to South Pole, from wide deserts to deep oceans, furthermore in the sky (ISS). The accommodations on the Earth are tailored to facilitate human’s life and work. Every life system is naturally envisaged as a cycle of birth, growth and death. For each part of this cycle architects design houses, hospitals, schools, workplaces as well as other living facilities to human users. Whether this experience of conformity and way of human life exigency can be moved to the outer space and be accommodated under the different environment than Earth offers? Today, it is a big challenge to mission planners and engineers to organize, build and colonize humans out of Earth. Many issues have to be fulfilled before making the first living steps in the outer space. This paper proposes architectural design related to the basic habitat requirements such as atmosphere, protection from radiation and space debris, food productions and artificial gravity. Design would evince determinate urban planning principles which can decrease psychological and physiological impact on human population out of the Earth environment conditions. The settlement design is proposed as typical exemplary model through new ideas and visions which can give an immense importance of the outer space colonization.