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Author: Mr. Kumar Biswajit Debnath
Southeast University, Bangladesh

LIVING BEYOND EARTH: THE ARCHITECTURAL FEATURES OF HUMAN HABITATS IN
EXTREME ENVIRONMENTS OF SPACE AND OTHER PLANETARY SURFACES**Abstract**

Earth is the only habitable planet for life form. Life started to develop on earth approximately 4.5 billion years ago. But human beings appeared on earth about 2.5 million years ago. For a good future of mankind it is important to ensure the food safety; energy safety; safety from global warming, sea level rise, another ice age, asteroids and other space component which can create partial or full mass destruction on earth. According to known facts we are alone in the solar system. But there are planets which can be developed into habitable human colonies.

Living outside the earth is a challenge to human kind whether in space or in a distant planet. In micro or less gravity environment we are neither adopted nor comfortable for many issues like temperature, air pressure, dryness, radiation etc. To make those habitats livable, an architect can contribute by designing an efficient and comfortable functional space to accommodate the researches. This study will help to understand the architectural attributes of International Space Station and other ongoing different design concepts of human habitation modules or colonies which will contribute in determining the architectural features which should be considered while designing the outer space or other planetary surface human habitats. The main focus of this study is the architectural features of the interior space which influences the psycho-physiological well-being of the researchers.

In terms of humancentered design logic, in long duration space missions, colors, light and interior decor must have among their purposes: psycho-physiological well-being, orientation, and supportiveness for all activities. It is therefore necessary to recall, through stimulating elements, the “normality” in confined artificial environments. Physical and psychological conditions can be improved featuring variety and natural variations occurring in time according to the principle of natural design. The architects can organize these confined spaces in an effective space. For these reason the need for their involvement stemmed from the push to extend space mission durations and address the needs of astronauts including but beyond minimum survival needs.

In the future the space will be human kind’s main destination for energy, habitation, tourism, industries etc. These features will help to increase the efficiency of the astronauts and decrease the effect of long term space missions. It is therefore necessary to design a better environment with the use of color, light, art and activities spaces which will create an adaptive space within a confined artificial environment.