

HUMAN EXPLORATION OF THE SOLAR SYSTEM SYMPOSIUM (A5)
Human Exploration of Mars (2)

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A COGNITION-BASED DESIGN APPROACH FOR A COMMUNITY HABITAT ON MARS.

Abstract

The paper presents a proposal for the design and operation of a Martian colony for 40 people that will serve as a starting point for the broader colonization of the red planet. The main scope of this project is the design and research inquiry around the qualitative elements that define and affect the notion of habitability during such an expedition. One of the prime research directives is the careful utilization of the built environment through spatial economy and psycho-spatial design techniques that also target to empower the psychological comfort of the colonists and secure their well-being. The achievement of the latter condition will dramatically increase the sustainability of such a venture, as the human factor is considered today the biggest liability in colonizing other celestial bodies. The project takes into account a wide range of existing plans for the colonization of Mars and focuses more on the qualitative elements, rather than the technical ones, as well as on the proposed social model, enriching this way the required specifications for materializing a true habitable environment. The paper is based on the collaborative work of a large interdisciplinary team of students from the Technical University of Crete and the University of Houston.