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Habitation Throughout the Solar System (1)

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THE HUMAN SENSES IN LUNAR HABITAT ARCHITECTURE

**Abstract**

The architect of a lunar habitat is challenged to create surroundings that enhance not only the physical health and work potential of people but also their psychological, social, aesthetic and spiritual well-being. In previous studies the present authors, with various collaborators, have examined ways to engage the senses of sight, sound, smell memory and taste for these purposes. We have offered ideas about visual arts and sculpture, dance in lunar gravity, the remembered scent of natural plants and the recall of peaceful symbols as stimuli. Here we intend to add in the sense of touch, including proprioceptive, kinesthetic and thermal sensing, to describe and advocate the architectural elements of a beneficial and enjoyable total sensory experience. Case studies of concepts for the Moon and also other outer space environments including Earth will serve as demonstration designs and show a range of possibilities for haptic, proprioceptive and kinesthetic experiences. Especially in environments where gravity differs from 1g, e.g. partial gravity on the Moon, the body movement, orientation and all other senses are so divergent from the ones we are normally used to. Thus they have major implications in our daily life, therefore it is essential to study and anticipate them before designing and establishing Lunar bases. This paper will explore the field of sensation of movement, touch and related cognitive aspects and will show the value of incorporating them into a design when developing outposts in space for long duration missions.