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Space Architecture: Habitats, Habitability, and Bases (1)

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## TECHNOLOGIES ON A TRANSPARENT RESTROOM COULD BE USED FOR LUNAR HABITATS

**Abstract**

Considering how to live on the Moon, one of the most common ideas would be to build a base in a lunar lava tube or other underground location. This is to protect ourselves from the severe conditions that are different from those on Earth, such as space radiation, extreme temperature changes and the impact of micrometeorites hitting the moon's surface. However, would it really be worth going out into space and living in an artificial underground space? If we were to live on the Moon, we would like to enjoy the glow of the blue Earth and the beautiful wide-open view of space to the full, without hiding underground. In addition, controlling the amount of light obtained from the outside can be important for maintaining the ecosystem within the lunar habitat. The control of light intensity affects human biological rhythms and the growth of plants and animals and be involved in the amount of electricity generated to operate the residences on the Moon. It means that living spaces on the Moon ground are required where the outside can be seen only when necessary. To create the desired living space for residents in the lunar city, this paper will discuss the possibility of applying the design and technology behind the existing transparent restroom in Tokyo, Japan, to lunar habitats. The transparent restroom can be seen through when unoccupied, but not when someone is in and locking. It can control the transparency of the glass walls.