

30th IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Space Architecture: Habitats, Habitability, and Bases (1A)

Author: Mr. Zachary Taylor
United States

A CASE FOR THE SPACE BATHROOM

Abstract

The concept of the 'bathroom' in space habitats has typically been applied with only the most fundamental human requirements in mind, resulting in unpleasant, uninspiring, or even brutal areas to perform tasks intrinsic to our physiological health and overall mortality. Bathrooms are one of the few zones crew are afforded visual privacy, and due to the demands surrounding grooming, bathing, and waste elimination, require the most sensitive and intimate hardware our bodies must directly interface with on the entire ship.

Many cultures on Earth have independently developed their own customs, social taboos, syntaxes, and hardware regarding their attitudes for an idealized performance of self-hygiene. Because of these drivers, how these spaces looked and the tools used within them have varied wildly throughout human history. There already exist various concepts of bodily elimination and sanitation to inform what future hygiene stations and toilet closets can potentially adopt - less of a dreaded necessity and more of a integral and regenerative ritual of living in space.

As the space industry pushes for a more permanent human presence outside Earth, examinations of how design implementations can simultaneously improve the sanitary and cultural considerations of these spaces should be contemplated.

The focus of this paper examines our hygienic needs from these subsequent viewpoints: our essential physiological demands; the performative patterns and postures of carrying out these actions; methodologies for operating these fundamental activities; and prospective design applications to better facilitate these needs for future bathrooms in microgravity environments. These topics will be supported by schematic drawings and research from anthropometric and architectural sources designed for use both on and off Earth.