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INTERIOR DESIGN AND ERGONOMIC STUDIES OF SCIENCE MODULE FOR THE MOON AND
MARS BASE ANALOG (MAMBA)

Abstract

MaMBA – the Moon and Mars Base Analog – is a habitat being developed at the ZARM in Bremen, Germany. It is intended to serve as a habitat prototype that could actually function beyond Earth. Aside from structural and system design considerations MaMBA focuses heavily also on ergonomic and flexible interior design in order to provide best working conditions for scientists. At this stage of the project designers are conducting analysis and conceptual work for geological and biological laboratory located in scientific module.

Nowadays there are only few analog platforms that deals mainly with ergonomic, and laboratory design. Most of analog habitats focuses on human factor studies by isolating the crew in closed spaces superficially arranged to cover all functionalities of potential future habitats e.g. crew quarters, laboratories, storage, airlock ect.

Putting stress on in-depth analysis of those functionalities allow the designers and engineers get closer of proposing prototype that is functional both from system engineering angle as well as from user perspective and by extension boost livability of those spaces in human factor studies.

Architects are working in close cooperation with scientist on workflow and adaptability of workspace for different types of equipment and experiments. Designers will present a proposal of architectural layout as well as analysis of use existing and proposed racking systems for storage and scientific equipment. analysis and interior design concept will be presented along with workflow and ergonomic diagrams, as well as adaptability diagrams.

Keywords: analog habitat, Moon, design, prototype, ergonomics, interior design