

Fluids and Space Engineering Seminar

Date: Wednesday, April 4, 2018 at 13:00

Location: ZARM, Room 1730

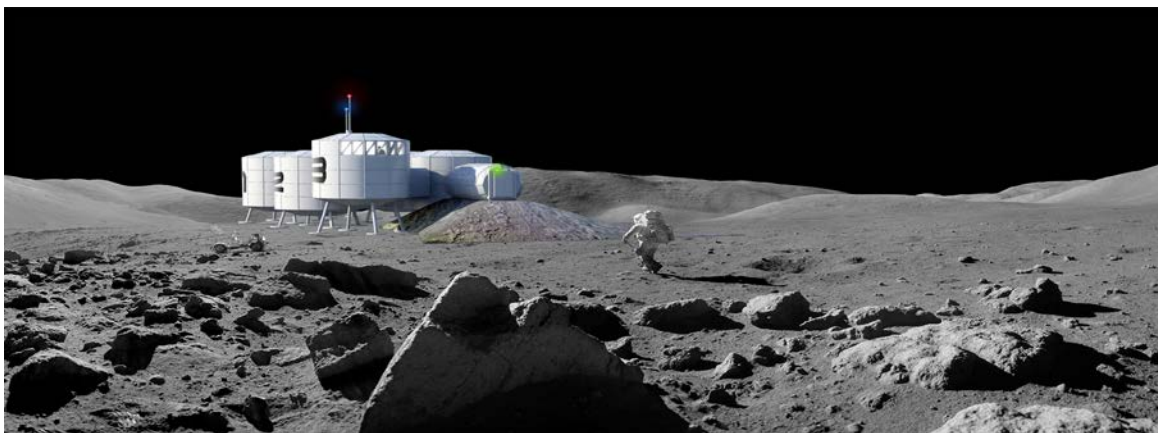
Project MaMBA – Presentation and discussion of the first conceptual design iteration

Leszek Orzechowski^a, Marlies Arnhof^b, Christiane Heinicke^c

^a Wroclaw University of Science and Technology, Poland

^b ESA/ESTEC, Noordwijk, The Netherlands

^c ZARM, University of Bremen



The project “Moon and Mars Base Analog (MaMBA)” has started at the ZARM in October 2017. The long-term goal of MaMBA is to create a functioning habitat for the Moon or Mars: so far, existing habitats have been built for terrestrial use and therefore suffer from fundamental design flaws that would render them useless on either planetary body. Instead, MaMBA is intended to be a base that is functional from a technological, architectural, psychological, and scientific standpoint.

Currently, the project is funded for 2.5 years, with the intermediate goals to (a) create the conceptual design of the base and (b) a functional laboratory that can later be integrated into a standardized module. In the seminar, the team behind MaMBA will present their first overall design iteration for the whole base as well as the first detailed design proposal for the interior of the science module planned for construction at the ZARM later this year.

Aside from structural and system design considerations, MaMBA focuses on ergonomic and flexible interior design in order to provide the best working conditions for scientists, particularly geologists and (astro-) biologists. Generally, while MaMBA is primarily an engineering project, it draws heavily from the experience of architects in livability and human factor studies.

The work presented during this seminar is ongoing. The core team of MaMBA will be present and explicitly request thoughts and critical feedback from the audience to aid in the progression to the second design stage.