

Mars Exploration (3)
Mars Exploration (2) (2)

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MARS SCIENCE CITY – ENVISIONING A SETTLEMENT ON THE RED PLANET

Abstract

In the frame of the 2020 Mars Science City design studio at the Vienna University of Technology, master students have developed hypothetical scenarios for a future prototypical scientific city and further elaborated one part in detail. The first task for the students was to look far into the future and imagine what a city on Mars would be like: “How do you think people will live in about 100 years on another planet? What will they take with them from Earth, and what would they want to see totally different?” The student teams then developed a conceptual vision of this city. In parallel they researched and worked on the environmental, technical and social challenges of getting to and being on Mars. The studio was supported by several space experts that have accompanied the studio with theme-specific lectures and workshops. Relevant themes included in the architectural design are: versatility and flexibility of space, Life cycle and renewable materials, power, food and water cycle, climate and energy design, construction phases and adaptation, as well as culture and heritage among others. The second part of the studio was to identify the major challenges and / or characteristics based on their vision. “What would be needed to start the settlement in order to become the city you have imagined?” This was the most challenging part for the student’s teams, and became the starting point for the individual architectural solutions of the near-term project on Mars. The main part of the paper discusses the different typologies of settlements that have been developed for the concept of a scientific city on Mars, as well as key challenges and proposed solutions. Selected projects are detailed through plans, sections, and diagrams.