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space collective

2007 Spring

Universität für angewandte Kunst, Wien - Architekturforschung 2, o. Univ. Prof. Greg Lynn
Guest critic: Rene Daalder



This term the studio we will be working on new horizons. We will continue to work on the design of interior volumes and design approaches to ground and floor with a double design task; a level horizon and a rotational horizon.

Inspired by Rene Daalder's spacecollective.org we will look at the architectural, landscape and urban issues of extra terrestrial design. In the tradition of NASA's suburban proposals for space colonies in the 1970s, the post-cold war international space stations, and contemporary space tourism being developed by Burt Rutan's Scaled Composites and Richard Branson's Virgin Galactic in New Mexico as well Spaceport Singapore, we will work on a link between ground and outer atmosphere, gravity and weightlessness.

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Space Colonies

In the 1970s space colonies were considered to be a viable alternative to a life restricted to planet Earth. The design of cylindrical space colonies, starting with Werner von Braun's 1954 "Marsprojekt series" and taken to the next step 2 decades later by Gerard O'Neill, would go on to inspire several architectural phenomena here on Earth, from indoor shopping malls and domed football stadiums to Earthbound ecological experiments like Biosphere 2. All along Nasa was a firm believer that in the foreseeable future humanity would begin its expansion into space by launching floating islands into orbit between the Earth and the moon. The space agency's motivation to finance the development of this initiative was their urgent concern that several global conditions — overpopulation, the greenhouse effect and the potential for a nuclear holocaust — would threaten the survival of Earth and humanity as a whole if we restricted ourselves to being a one-planet species. However, there would be several other advantages to these proposed extraterrestrial outposts as well, such as around the clock solar energy, a solution to the global population problem and the technology innovation that would inevitably result from the prototyping of new, more efficient human habitats.

The course will start off with a historical overview of space colony design — from Werner Von Braun and Gerard O'Neill's visionary proposals to Nasa's current plans for a space station on the moon and the implications of space tourism as envisioned by entrepreneurs like Virgin's Richard Branson as well as a growing number of other promoters of "personal spaceflight." The class will focus on the challenges involved in meeting the conditions presented by artificial space habitats, such as synthetic gravity, levels of oxygen pressure, transportation, etc.

Besides architectural design, we imagine the assignments to address systems for sustainable living; alternative life styles; political and cultural issues in an entirely man-made environment, potentially unencumbered by the typical layers of tradition that characterize life on Earth. Still, the question remains how many of these traditions people would opt to bring along into space. To mention a few examples, the manicured suburban landscapes featured in Nasa's original space colony designs strike us as suspiciously nostalgic; and the selection of qualified inhabitants is bound to raise considerable controversy about economic, religious and elitist criteria as well as issues of homogeneity versus diversity; people's job descriptions and leisure activities in the space colony environment; their continued relationship with the home planet; etc. Implicit in the challenge to develop new societies from the ground up is the opportunity to rethink the discourse about the current terrestrial condition, which might ultimately benefit from the design of these extra-terrestrial prototypes.

Students will be supplied with a personal web page within the SpaceCollective framework that allows them to document and develop their projects, which down the line will be featured in designated exhibition spaces. SpaceCollective would like to encourage the participants to interact with the site's growing community of members as well as a global audience of visitors, which will provide the students with additional feedback and research opportunities, adding considerable value and relevance to the project.

Rene Daalder

<http://www.spacecollective.org/courses/space-colonies/>
<http://renedaalder.com/>

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The studio will be formally and architecturally driven by ideas of ground and horizon. The first requirement is to develop a design approach based on these diverse grounds. Each student will have to design two projects simultaneously: one grounded on earth horizontally and the other floating in the donut of outer space. The first week will be an exercise to draw two sections over the figures handed out to you at the exact scale given. There is neither an explicit program nor spatial requirements for this exercise other than intuiting the next steps from the following three problems. In addition to your drawings please develop supporting ideas to pitch to us so we know where you should be working this term. Based on the results of this quick exercise and your previous work everyone will be assigned one of the following three programs:

(1)

Space station for 10 individuals including all domestic, recreational and professional spaces within a total volume of 20.000 cubic meters. A training station with all of the same spatial components in the same volume on the ground. This problem will involve the architectural development of spaces and volumes, concepts of structure, fenestration and envelope given the radical differences in view, horizon, pressure, gravity and environmental enclosure.

(2)

Space Collective headquarters for 100 individuals within a total volume of 200.000 cubic meters. A Terrestrial Collective with all of the same spatial components in the same volume on the ground. This exercise will have to address the cultural, lifestyle, technological and design issues proposed by Rene Daalder.

(3)

Planet for 10.000 people in space and a campus on earth. In addition to the issues present in problems no.1 & 2 you will need to have urban planning ideas equivalent to streets, parks, plazas, stadiums, as well as transportation and circulation systems at the urban scale.

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