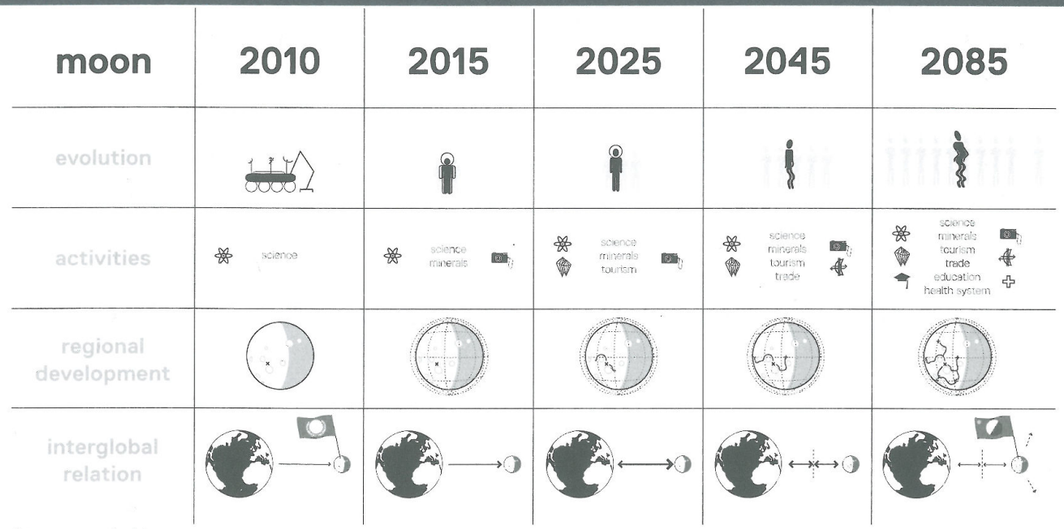
Very Dirty Realism

Must urbanism – Wouter Veldhuis, Marijn van der Linden, Leentje Sijsma, Svenja Jäger, Sanneke van Wijk

Optimism was an essential characteristic of the space race in the mid-twentieth-century as humans strove towards bigger and bolder challenges. However with the spectre of environmental catastrophe constantly looming, architecture office MUST wonder: can the Moon now act as a new kind of symbol for human restraint?



Future steps on the Moon.

An Opportunist Celestial Body

Man does not belong on the Moon. Just as the South Pole is no place for researchers, or the desert for gold prospectors or the oceans for mariners, the Moon is unfit for human life. So why do we want to go to the Moon? The prime objective is simple. If it is possible, Man will do it. However, there are other reasons for going to the Moon. *Terra luna incognita* is the territory of the explorer and pioneer pursuing new knowledge, new sources of income and adventure. The Moon is the next frontier in 3,000 years of opportunist exploitation. As not yet on the Moon, science, the extraction of raw materials and tourism are not affected by the restrictions that are in force on Earth. The opportunities seem boundless. There's money in abundance.

Yet, in view of the life-threatening environment, it would be unwise to have too many illusions about the initial quality of life on the Moon. Only those who have an 'off-shore mentality' will survive in the foul conditions and isolation. They will gradually create a new habitat, inch by inch, at the Moon's expense. Bits of the Earth will be implanted on the Moon. Capsules with oxygen, water, livable temperatures, gravity, and a regular daily rhythm will keep out the enemy – the Moon. The destructive force of lunar colonization will be great, as colonization always is.

A Dual Planet with Divided Interests

Possible planning of the Moon would entail two primary interests: those of the Earth and those of the Moon itself. The former would mean that the Moon's exploitation would not be detrimental to the Earth's ecosystem. So it is essential to retain the mass of the Moon. A second interest for the Earth relates to cultural history. Would we accept disfigurement of the Moon's appearance? Would we accept that the look of the Moon, that has been the same since time immemorial, would alter as a result of excavations or spectacular advertising?

The Moon has interests too. Intervention by humankind would irrevocably compromise the lunar system. The consequences are as yet unknown. If however, in the longer term, there were opportunities to form a community of humans on the Moon, the conditions for that human life should be safeguarded early on. In the initial stage of colonization and exploitation, depredation is inevitable. Certainly at such extreme margins of human of civilization, people will always seek out the limits of what is acceptable. If, on our own planet, it proves impossible to find equilibrium between what the Earth provides and what we human beings want, it certainly will not be possible to do so on the Moon.

Half a Celestial Body is Enough

It would, therefore, benefit life on Earth, as well as possible future life on the Moon, to have clear-cut agreements concerning the planning of available space. Such agreements might be set out in a 'moon appendix' of the United Nations Charter. A number of primary ordering principles should be established to channel Man's destructive forces.

Step 1

It all begins with making things measurable. It is essential to establish a standard system of coordinates with which to chart the Moon – which has actually been done in recent decades.

Step 2

Initial zoning of the Moon protects how we perceive its appearance from Earth. UNESCO lists the near side, 59% of the Moon which is always oriented towards the Earth, as the first extraterrestrial World Heritage Site. It is deemed the irreplaceable, unique property of the entire world. It is extremely important to keep it as such. If that side of the Moon is protected from large-scale interventions, it becomes a strategic reserve for possible settlement by future generations with greater technical opportunities. The side with a spectacular view of the Earth is preserved in its purest form. The far side has a less strict regime. Large-scale excavation of raw materials and far-reaching experiments are permitted on that side, as long as they do not impinge on the integrity of the celestial body.

Step 3

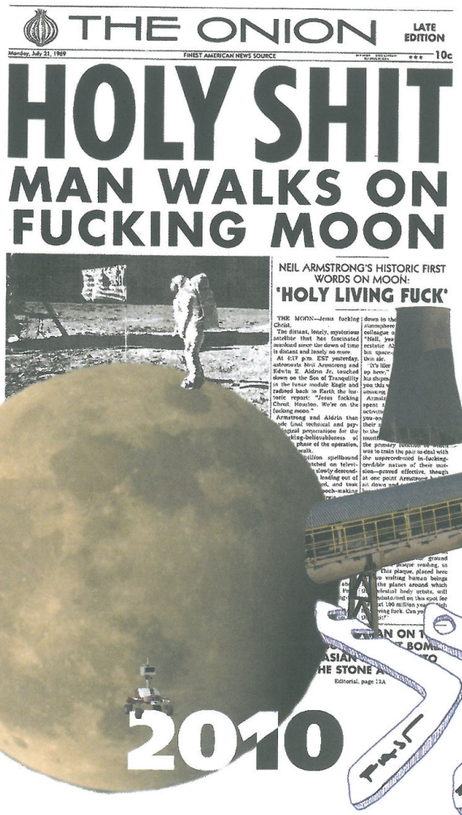
A secondary zoning secures specific economic objectives. The initial forms of economy (raw materials extraction, science and tourism) have a great deal in common, but conflicting interests as well. First and foremost, future life on the Moon will benefit from adequate protection of the major sources of life there. Possible water-collection areas, gravitation reserves and possible low-impact zones should be shielded from large-scale interventions. When raw materials are to be excavated, it is imperative to grant clearly defined concessions – and only for the far (hidden) side of the Moon. Tourism would be well served with a strict regime protecting the lunar heritage. That might include the site of the first Moon landing, the biggest crater, the most attractive crater, the deepest crater, or the crater caused by impact from the NASA satellite LCROSS in October 2009.

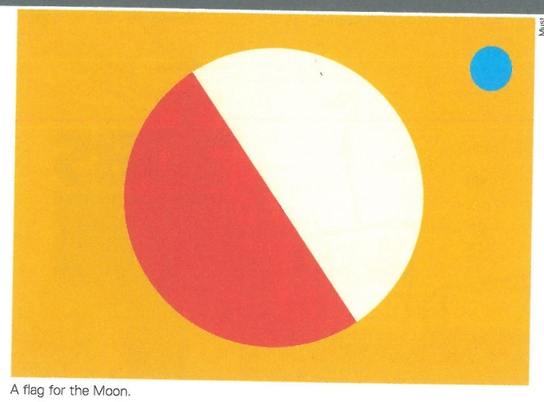
Clustered Dispersal

The first steps on the Moon were taken in the name of science. The next steps will also be aimed at scientific goals. However, in view of the huge expense of lunar travel, large multinationals might conceivably be invited for financial contributions in exchange for concessions on the Moon. The move towards an extensive, new mineral-extraction industry could soon follow. Primarily to still the undiminished hunger for raw materials on Earth, but also in order to create physical environments on the Moon itself.

The first base camps will be built by scientists, but, for practical reasons, the staff of the multinationals will be able to use them. The base camps will spawn new occupation patterns. Since life will only be possible in closed capsules, the base camps will be organized compactly. There is enough space on the Moon, but living space is a scarce commodity. People live together in close proximity. The private domain is limited to an absolute minimum. Communal and public coincide.

College Must





Must

A flag for the Moon.

Since there is a far greater chance of a fatal meteor strike on the Moon than on Earth, it would be logical to spread investments relating to occupation of the Moon as much as possible. So the first base camps will stay small and be distributed over the entire lunar surface. Specialization is not likely to occur either. Every base camp will be fully self-sufficient. Should such camps develop with time into small settlements, the result will be an interesting pattern of highly compact communities, far removed from one another. Suburbanization is out of the question, as is the development of metropolises.

Emancipation

In a new world where people live in confined conditions in small, physically isolated communities, it will only be a matter of time before the first 'moon child' is born. Following discovery, exploration, exploitation and enjoyment, the birth of the first child will lead to the inevitable establishment of the human race on the Moon. With the many technical aids and appliances, humankind is able to adapt to life on the Moon. Generations that are born there will also adapt to the prevailing conditions, in their physical and mental make-up.

As long as science, raw materials excavation and tourism remain the chief economic motives, the Moon will be one large continent, comparable with the South Pole. Yet there is one important difference. Prohibitive transport costs mean that a self-sufficient system will soon have to be realized on the Moon. The creation of a human habitat produces a Moon-specific society. With tourism, raw materials and science as lucrative sources of income, there is a healthy economic foundation for a gradual emancipation process. The lunar community acquires its own administration, geared to Moon-related matters. Financial independence is the next step, immediately followed by the development of a lucrative trading economy. The development of knowledge and health care follow automatically. The birth of the first child is the final step in an irreversible emancipation process. The 'eighth continent' ultimately becomes an independent geo-sphere.

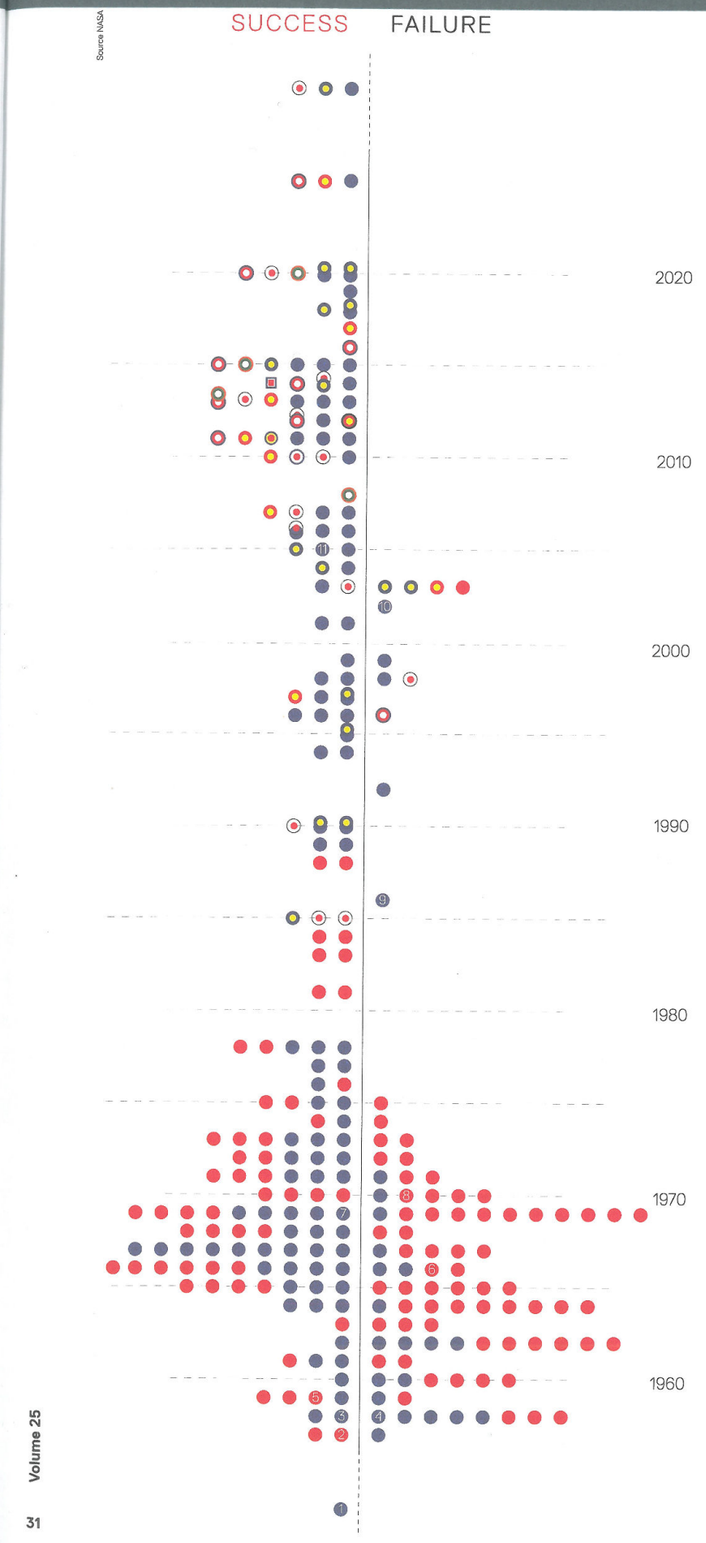
The Risk of a New Civilization

Man, driven by curiosity, took the first steps on the Moon. The Moon, influenced by money, will develop into a celestial body with its own human civilization. A new society conditioned by existing limitations and technological possibilities. The conditions for that life will initially be regulated from Earth, with the zoning of the Moon as an example. However, because of the great distance, life will rapidly come about with its own conditions. Common civilization, having conquered all continents, will continue its triumphal march across the Moon.

But what are the consequences for Earth? Its equilibrium has already been disrupted by the same common civilization. Our life on Earth is under threat. If we tackle the Moon with comparable opportunism, the consequences could be far greater. What happens when the delicate balance between the Moon and Earth is upset? How can we restore the movement of the tides if it changes? And what perspectives can we offer someone who is born on the Moon? Can such a person, with a 'moon body' have a dignified life if he/she is unable to go to Earth on account of that physical constitution?

The possible occupation of the Moon is in fact a 'flight forward'. Perhaps the Moon should be seen as Man's ultimate challenge to discipline himself and put things right on our own planet. So the Moon is the supreme challenge, a mental training in resisting the temptation of colonization and exploitation. When we consider the consequences of possible occupation of the Moon, we must conclude that there is only one conceivable, ultimate ordering principle: do not set foot on the Moon. To leave it alone is the highest form of ordering. It is an ordering form that has had no chance on Earth – to achieve an inviolable piece of wilderness, the basis for all life on Earth.

Source NASA



Space Race

Simon Pennec

The challenge to rocket into space holds on to a positive spin because as more nations have entered the race, the more successful missions have been. Looking beyond 2010, however, will new and difficult missions to uncharted depths of the universe see a shift in the game?

1. V2 rocket (1946) was the first vehicle to reach 62 miles from the Earth's surface (boundary of space).
2. Sputnik 1 was the first Earth-orbiting artificial satellite. The unanticipated announcement of Sputnik 1's success precipitated the Sputnik crisis in the United States and ignited the Space Race within the Cold War.
3. Explorer 1 was the first Earth satellite of the United States as part of the program for the International Geophysical Year and in response to the launch of the Soviet satellite Sputnik 1.
4. Pionneer 1 mission failed due to a launch vehicle malfunction, the spacecraft attained only a ballistic trajectory and never reached the Moon. However, it did return data on the near-Earth space environment.
5. Vostok 1 was the first human spaceflight, taking into space Yuri Gagarin, a cosmonaut from the Soviet Union.
6. Venera 3 was built and launched by the Soviet Union to explore the surface of Venus. The probe crash-landed on Venus on March 1, 1966 becoming the first spacecraft to land on another planet's surface.
7. The Apollo 11 space flight landed the first humans on Earth's Moon on July 20, 1969.
8. The crew of Soyuz 11, Georgi Dobrovolski, Viktor Patsayev and Vladislav Volkov, were killed after undocking from space station Salyut 1 after a three-week stay.
9. The Space Shuttle Challenger disaster occurred on January 28, 1986, when Space Shuttle Challenger broke apart 73 seconds into its flight, leading to the deaths of its seven crew members.
10. The Space Shuttle Columbia was lost as it re-entered after a two-week mission. Damage to the shuttle's thermal protection system (TPS) led to structural failure in the shuttle's left wing and, ultimately, the spacecraft broke apart and killed all seven astronauts.
11. Deep Impact was designed to study the composition of the comet interior of 9P/Tempel, by releasing an impactor into the comet.