LUNAR HABITAT

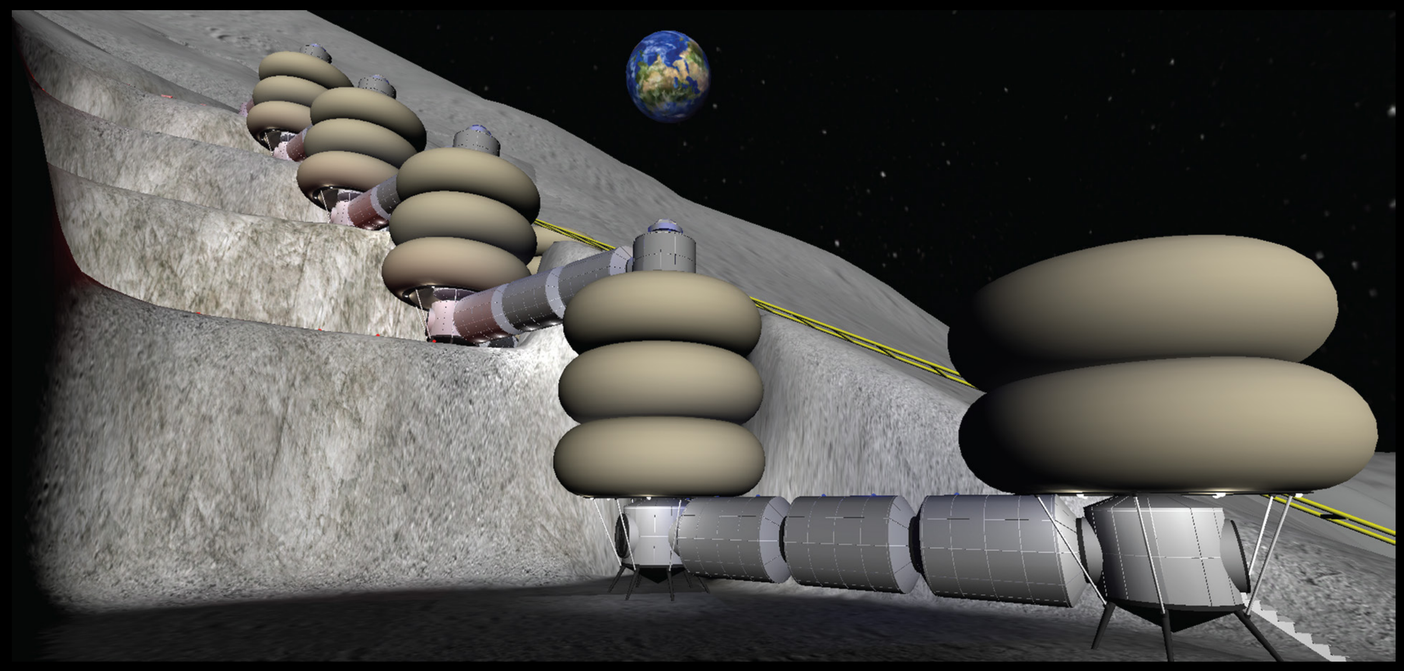
In conjunction with the Houston Museum of Natural Sciences, the Sasakawa International Center for Space Architecture (SICSA) designed a lunar base for use in an interactive virtual environment. The lunar base design consists of various aspects necessary for a successful lunar outpost including:
- Landing site
- Expanding Habitat
- Energy Generation
- Lunar Research Capabilities
- Closed Loop Life Support System

The moon base should be a feasible, near future design realization and will only consist of proven technology.

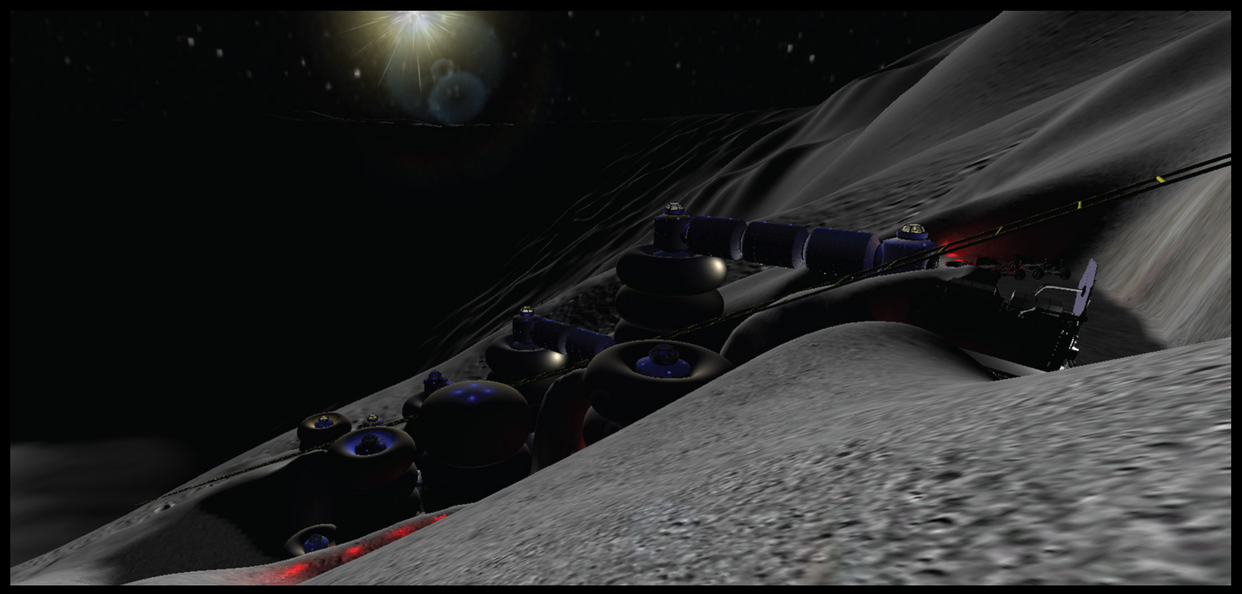
The lunar base is a combination of several elements that allow the outpost to operate and grow as a sole entity with minimum to no supporting logistic required. The settlement is nested on the rim of the Shackleton crater at 29.9 degrees south and 00.0 degrees east. The Shackleton crater is 20km in diameter, approximately 4km from rim to base, and the sides of the crater may exceed up to 35 degrees. The base of the crater is so close to the South Pole that there is a line of perpetual darkness where light never penetrates inside the crater.

The Shackleton crater provides an abundance of necessary qualifications for a self-sustainable lunar outpost. Using this site, the crew will be able to take advantage of the crater's terrain and spread its various elements in their appropriate locations along the crater's rim. The base is comprised of three main elements; the landing site, two solar farms, and the habitat.

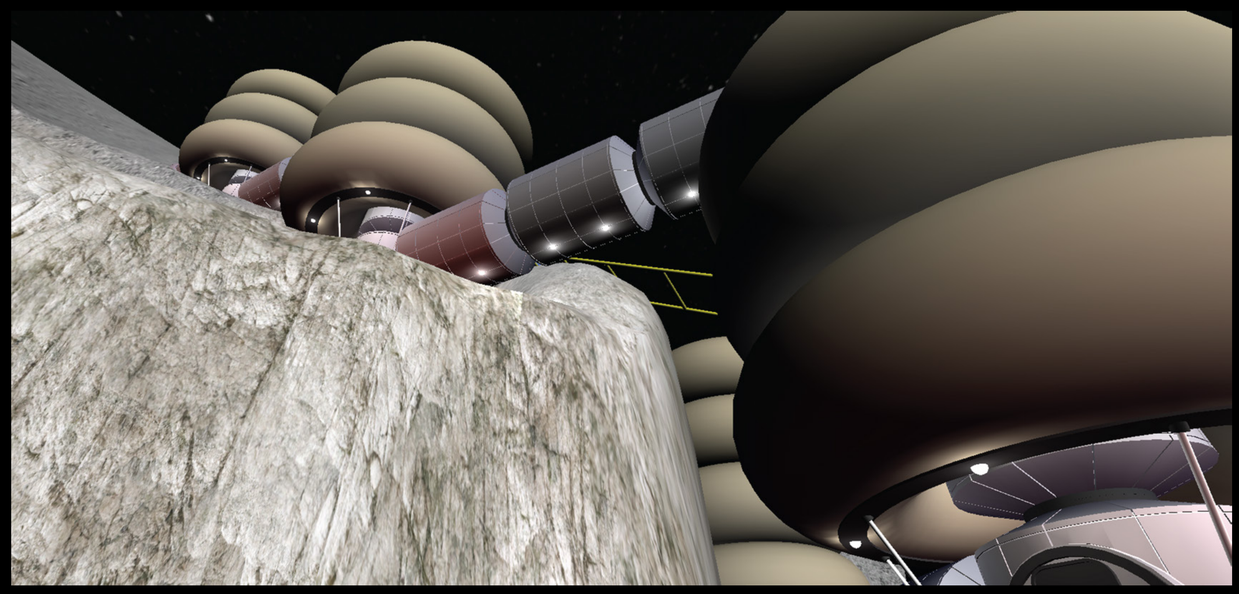
Placing this settlement along the rim of the Shackleton crater will provide for a lunar outpost that is fully self-sustainable. A closed loop system of aeroponics, oxygen regeneration systems, and water regeneration systems will provide the inhabitants with an abundance of food, H2O, and oxygen to sustain a growing outpost of 80 people on the moon.



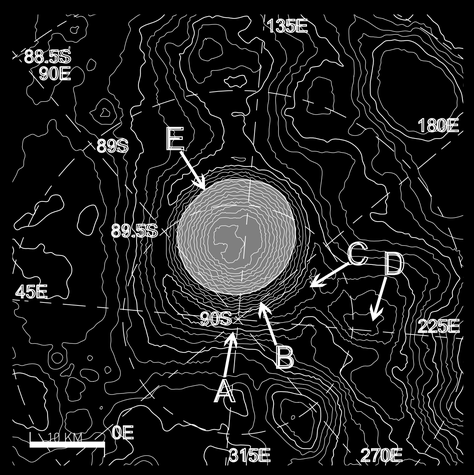
VIEW TO THE CHAIN OF HABITATS AND SUPPORTING FACILITIES ON STEPS OF THE CRATER SLOPE



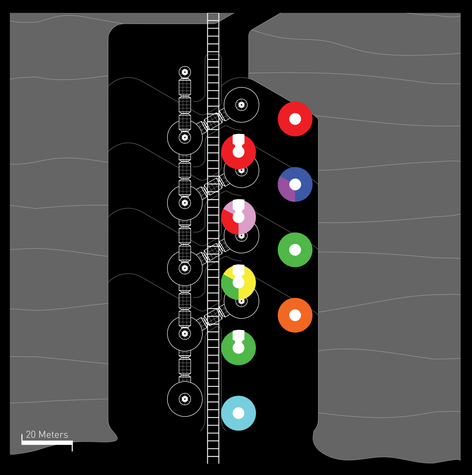
VIEW DOWN TO THE BASE FROM THE RIM OF THE CRATER



PERSPECTIVE VIEW FROM THE BOTTOM MODULE TO THE CONNECTING ELEMENTS

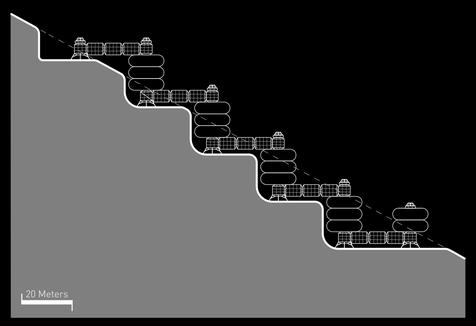


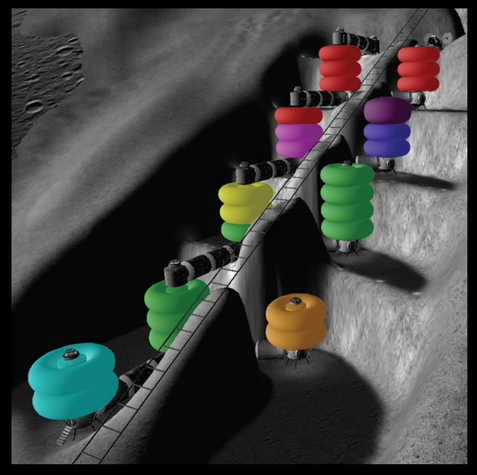
SITE LAYOUT WHERE: (A) LANDING SITE; (B) HABITAT SITE; (C) SOLAR ARRAY FARM ONE; (D) SOLAR ARRAY FARM TWO; (E) LINE OF PERPETUAL DARKNESS INSIDE SHACKLETON CRATER



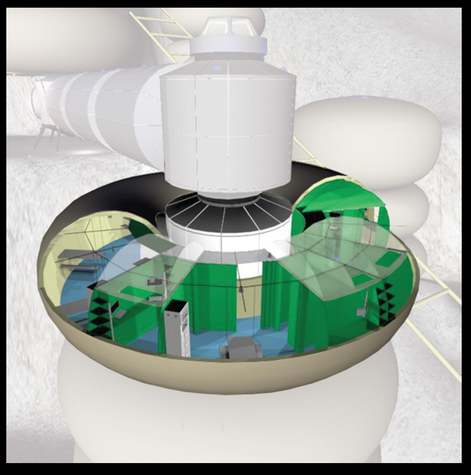
AERIAL PLAN OF THE BASE

CUT AWAY VIEW OF THE HABITAT ELEVATION SHOWING THE CORE MODULES.





BASE FUNCTIONAL ELEMENTS
RED - CREW QUARTERS; MAGENTA - DINING;
BLUE - FITNESS; PURPLE - RECREATIONAL;
YELLOW - MEDICAL; GREEN - AQUAPONICS;
ORANGE - RESEARCH;LIGHT BLUE - COMMAND CONTROL



LIVING QUARTERS