MOON BASE ELANVITAL

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A study of the growth patterns of a lunar base was the primary objective of this solution. Conceptually, the base phasing is likened to the growth of a seed. As the base expands, parts will take on more specialized functions. All the construction components are utilized in the final base layout and many serve differing purposes throughout the construction process.

The expandable shielding protection is a separate entity from the habitation modules. Compacted regolith serves as the radiation protection material and is placed above the shield infrastructure. The infrastructure loads are distributed in a pyramidal fashion to the sides and corners.

The habitation modules utilize an interior system based on tension elements. The large central membrane dome also operate under fabric tension technology. This dome is dependant on the interior pressure to maintain its shape. "Hard" habitation modules are constructed using a panel system and assembled in a circular fashion around the earlier earth manufactured modules. The information and supply system is linked with the major circulation paths along the perimeter of the base.

Interior systems are based on the open plan system and are easily adaptable for various sizes and needs. Space division is accomplished with hung fabric partitions. This system allows certain areas to become very personalized. The individual also has the ability to change their environment often if they wish to do so.

Construction of the base begins with the superstructure for the separate radiation shield since this construction is much faster than the habitat construction and the radiation shield is of such importance. Base design is analogous to a Bedouin lifestyle in which tent-like structures allow a quickly erected temporary shelter.
Base section and shield plan
Space Architecture: Lunar Base Scenarios
Accessing the communications/computer links.

Living quarters detail

Systems repair/replacement

Expansion ring section