

- Founded in 1955
- Employee-Owned Professional Services Firm
- Number of Employees: +/-400

- Locations:

Greenwood Village, Colorado *(Corporate Headquarters)*

Colorado Springs, Colorado

Decatur, Georgia

Duluth, Georgia

San Antonio, Texas

Washington, D.C.

Los Alamos, New Mexico

Albuquerque, New Mexico

Ottawa, Ontario, Canada

Guadalajara, Mexico

Woking, United Kingdom

Wellington, New Zealand



What We Do

- Full Service Engineering and Architecture
 - Facility Programming and Masterplanning
 - Construction Documentation and Implementation
 - High Containment Construction Experts
- Commissioning and Certification
- Operations and Maintenance
- Process Engineering
- Containment Module Design and Fabrication
- Geo-Spatial Solutions



A Systems Engineering and Operational Requirements Study for

A Mars Sample Receiving Facility

NASA/JPL 2003

NASA/CP—2002-211842



A DRAFT TEST PROTOCOL FOR DETECTING POSSIBLE BIOHAZARDS IN MARTIAN SAMPLES RETURNED TO EARTH

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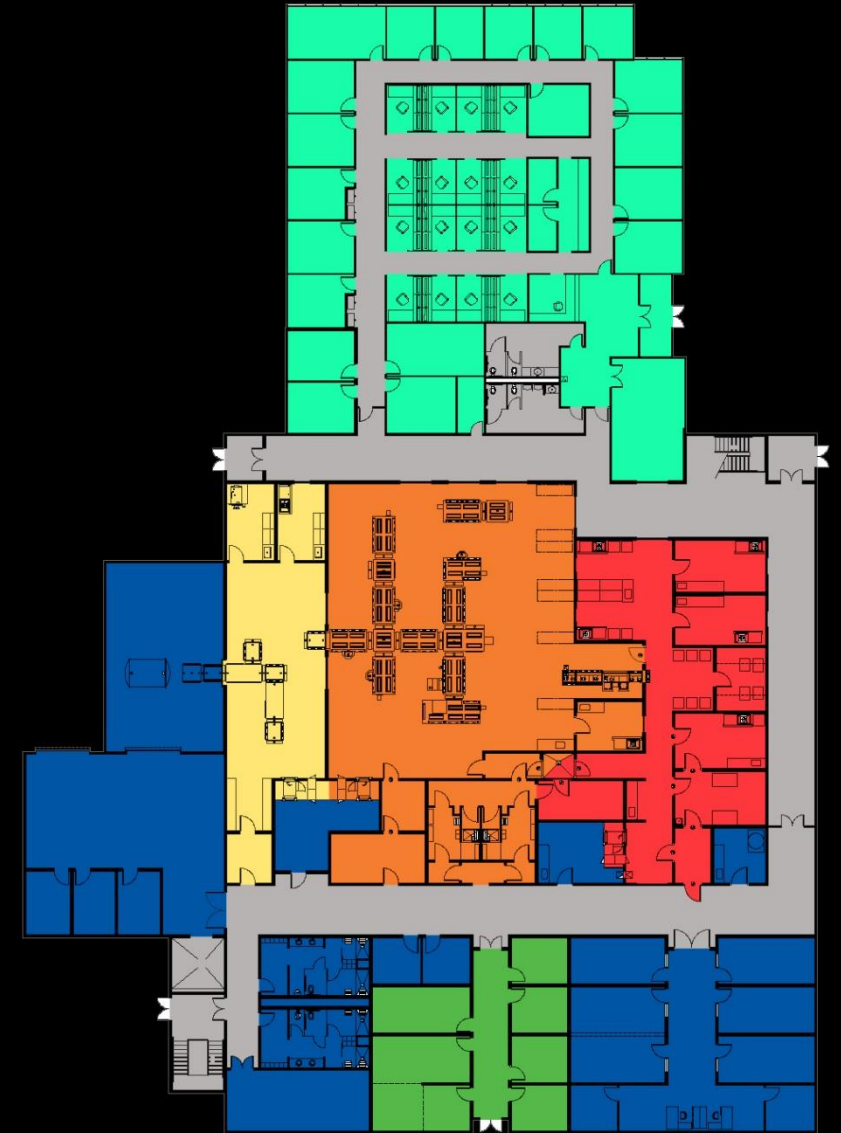
Michel Vian
CNES Headquarters

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October 2002

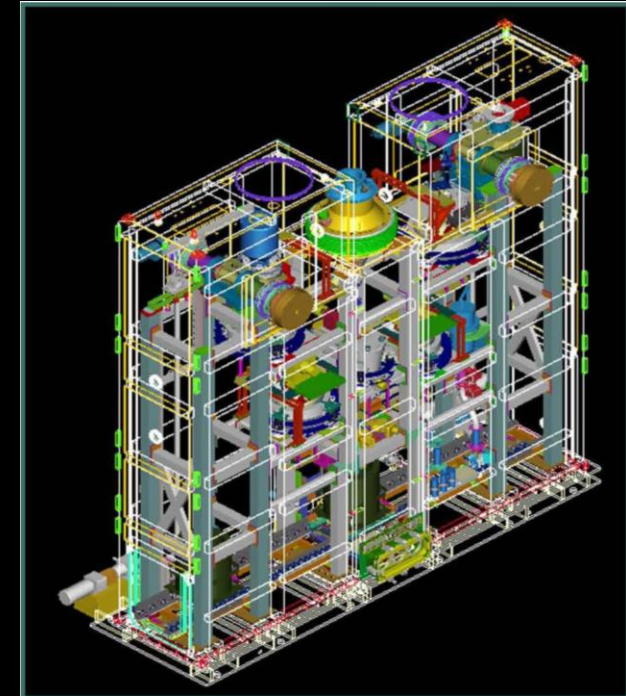
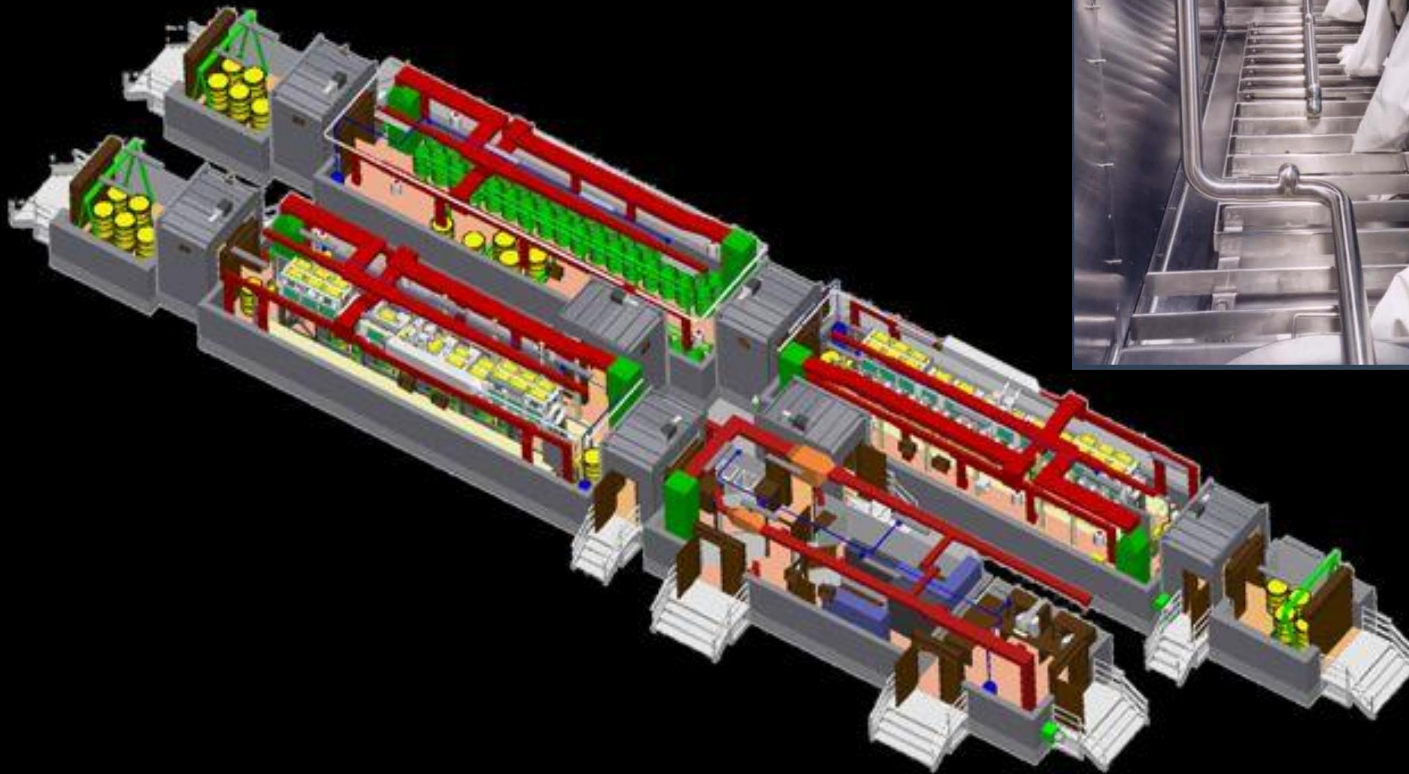
Provide a schematic design for a facility to meet the Protocols for Maximum Planetary Protection

PPL-type	Biocontainment	Cleanliness	'Ambient' Conditions	Used For:
PPL- α	Maximum (BSL-4)	Maximum	Mars-like (pristine); <i>Although at 1 atm w/inert gas environment.</i>	Incoming container and materials; some preliminary tests; sample bank/storage; some Life Detection
PPL- β	Maximum (BSL-4)	Maximum	Earth-like	Life Detection; some Physical/Chemical; TBD
PPL- γ	Maximum (BSL-4)	Moderate	Earth-like	Some Biohazard testing, some Physical/Chemical processing, and animal testing
PPL- δ	Strict BSL-3-Ag	Ambient	Earth-like	Some Biohazard testing; 'post-release' tests TBD

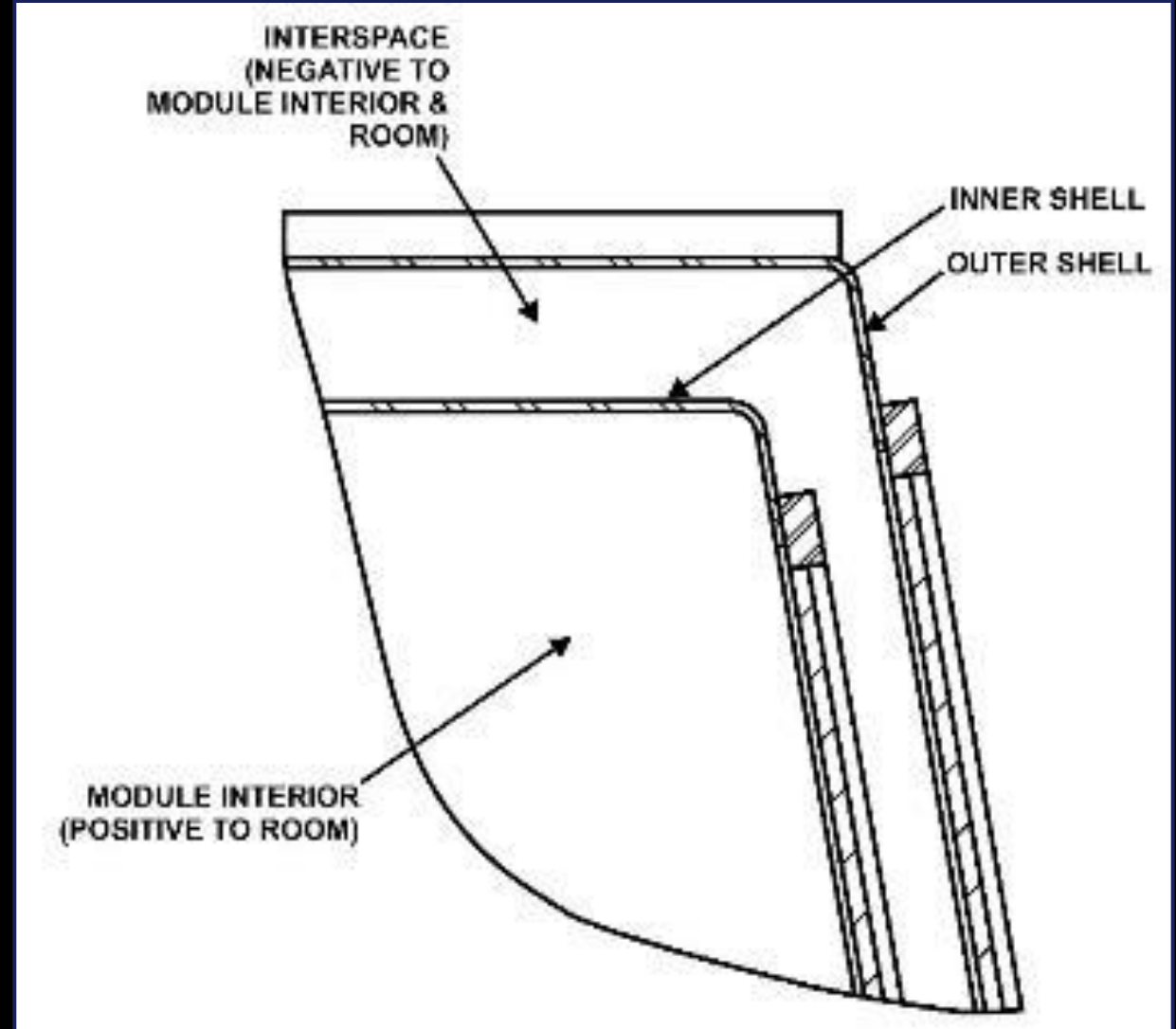
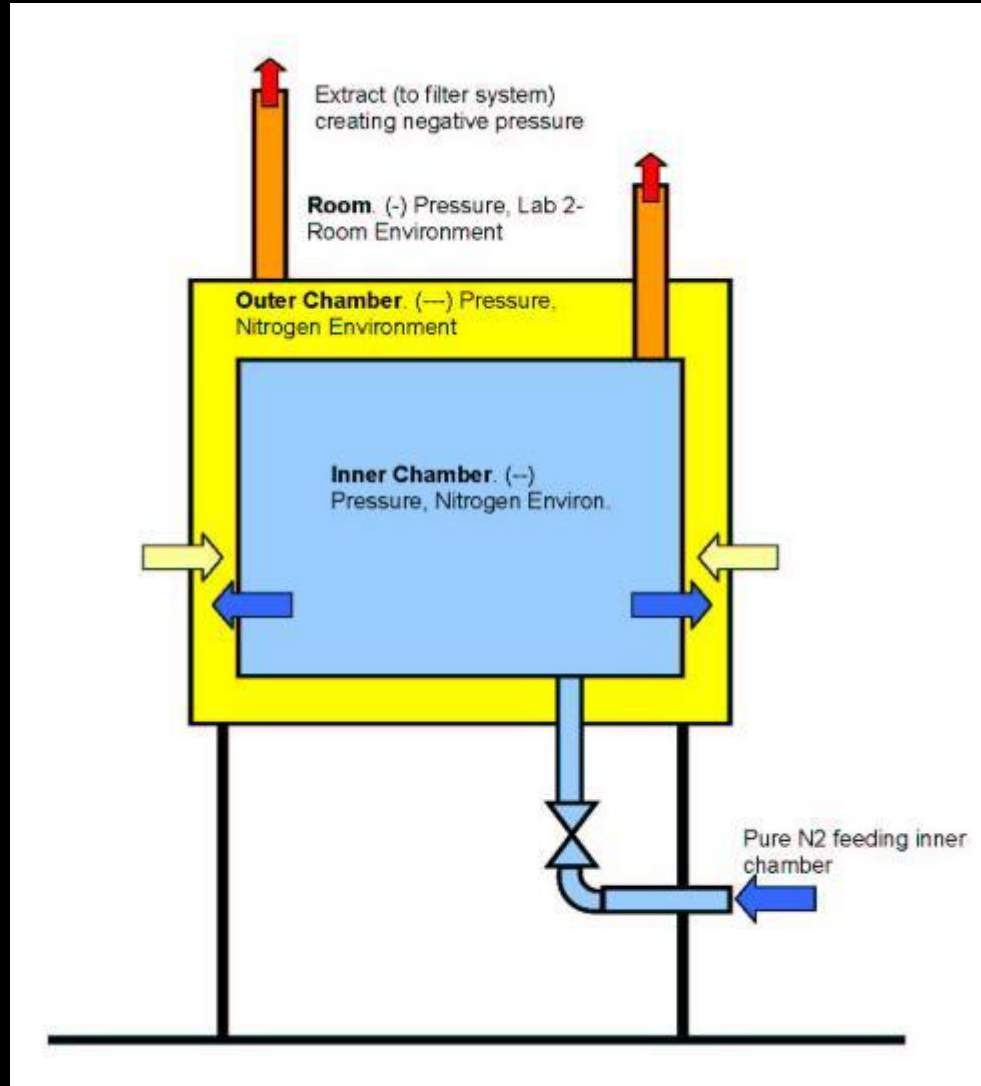


What We Do

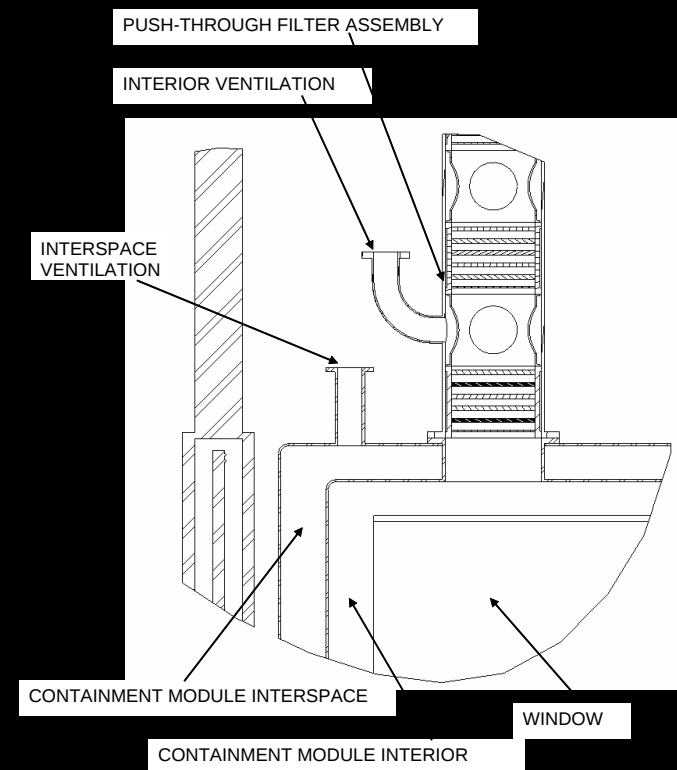
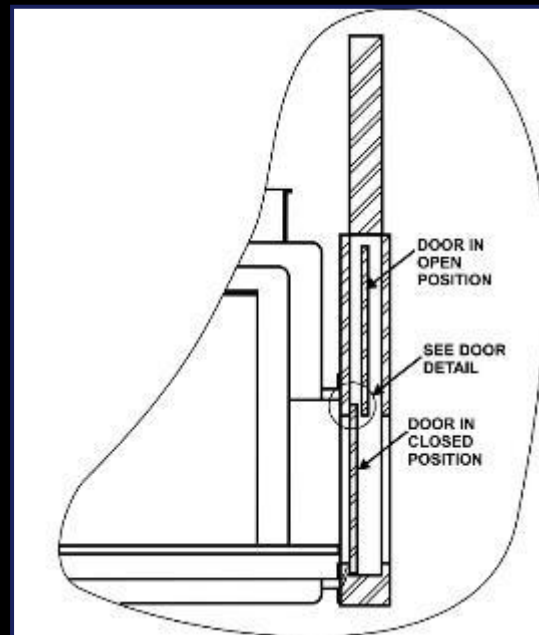
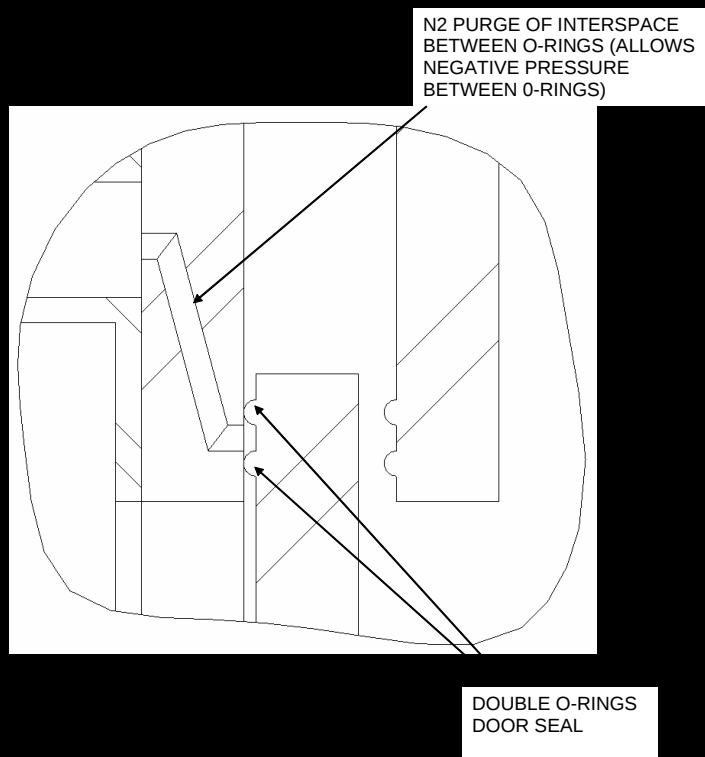
- Advanced Technology



Double Containment Module Ventilation



Double Shell Containment Module



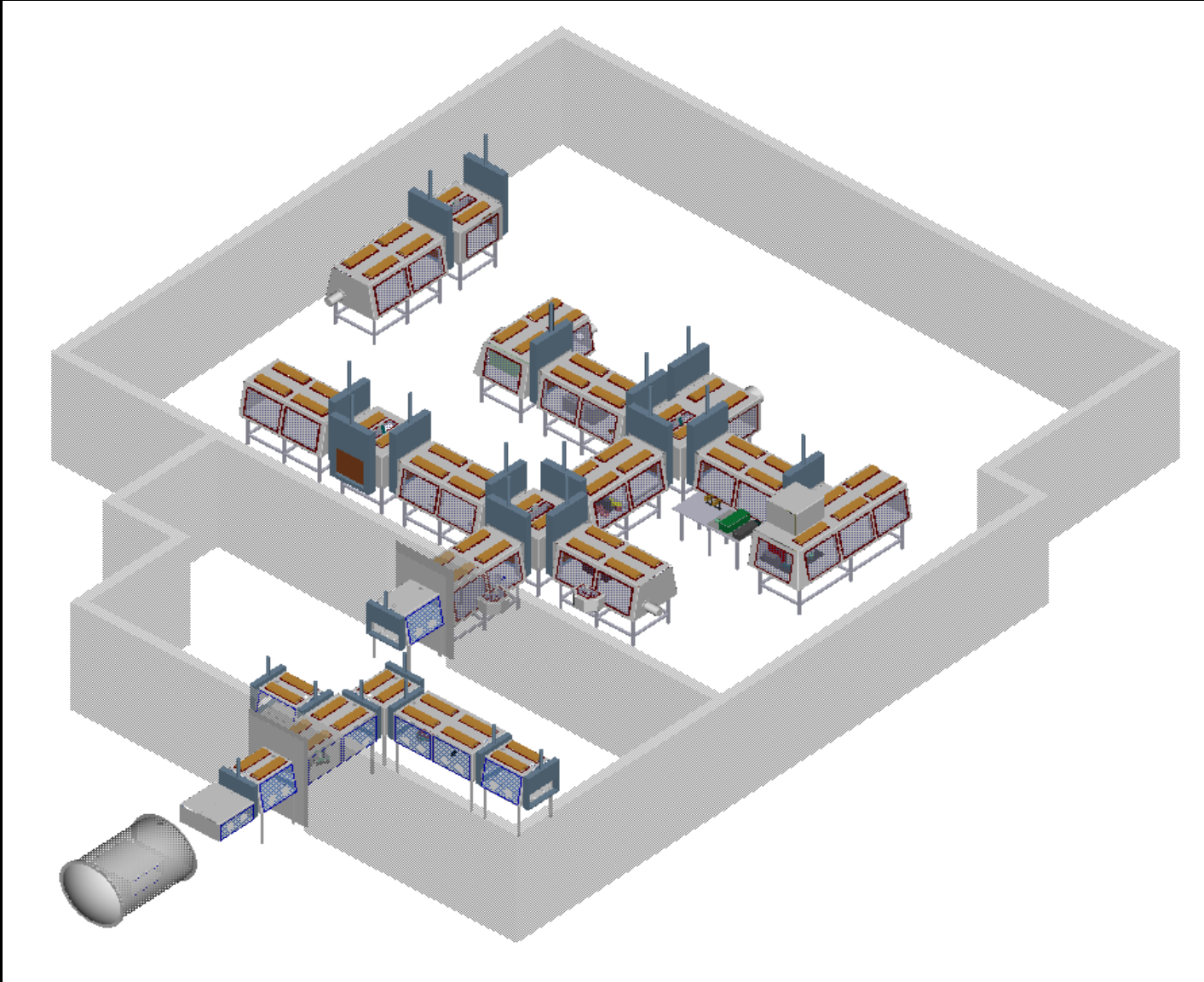
Doors

- Dual O-rings with Nitrogen purge to maintain negative shell pressure, enclosed door plate

Filters

- Standard construction techniques
- Some special materials





Planning Dates – MSR Mission

- Launch of Mission from Earth in late 2013
- Samples Arrive at Earth mid 2016
- Facility to Receive Samples Must Be Commissioned and Tested By late 2014

Main issues foreseen for the building of such a facility....

....Science and Technology may move faster than
any facility can keep up with

*He who loves practice without theory is
like the sailor who boards ship without a
rudder and compass and never knows
where he may cast.*

Leonardo da Vinci

