

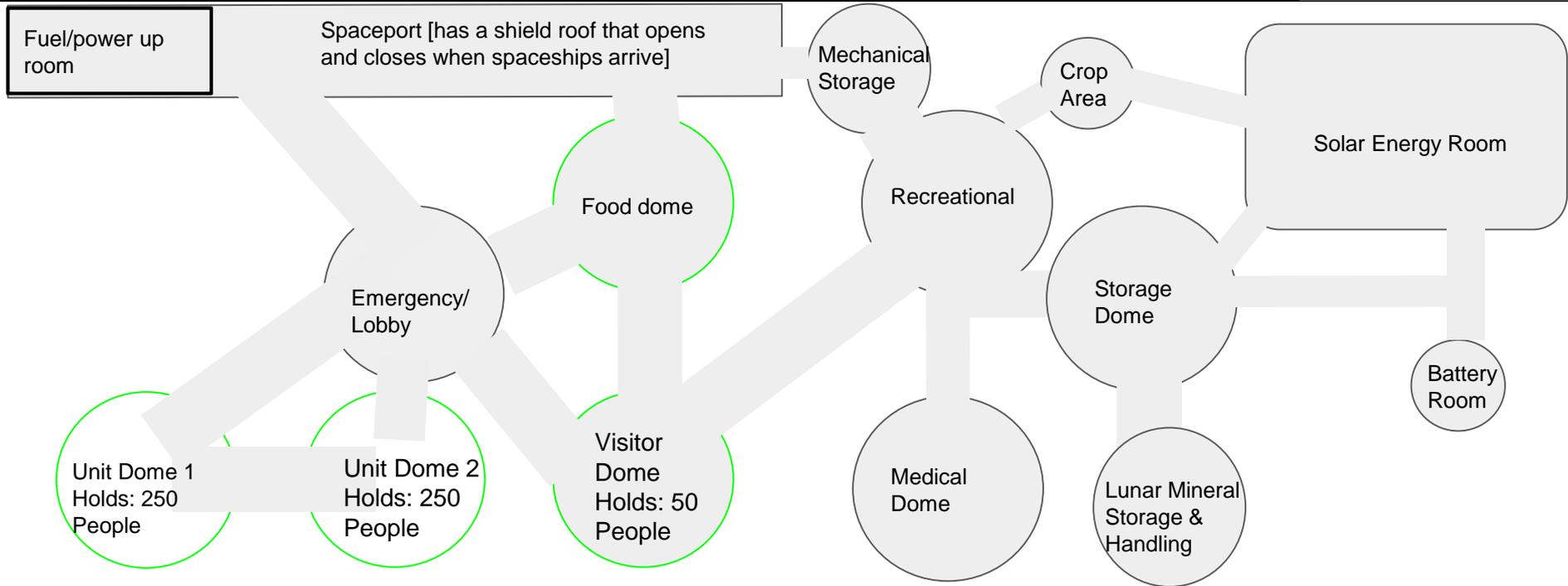
Lunar Space Habitat



CRUX Australia



Structure: Settlement Layout



Advantages of the Dome Design

- ❖ The dome is made out of 5 layers of polycarbonate plastic and is clear so inhabitants would be able to see outside
- ❖ Benefit of natural sunlight - due to this plastic dome skylight would be able to come through provide natural light
- ❖ Insulated and built from polycarbonate plastic that can withstand meteors and space debris
- ❖ Hyperloop travels in tubes that are made out of titanium leading it to be a quick and easy way of transportation
- ❖ There will be stops for the hyperloop in front of each dome for inhabitants to get off at
- ❖ Oxygen and pressure levels will be maintained electronically for the survival of living things



glass



Titanium



polycarbonate plastic

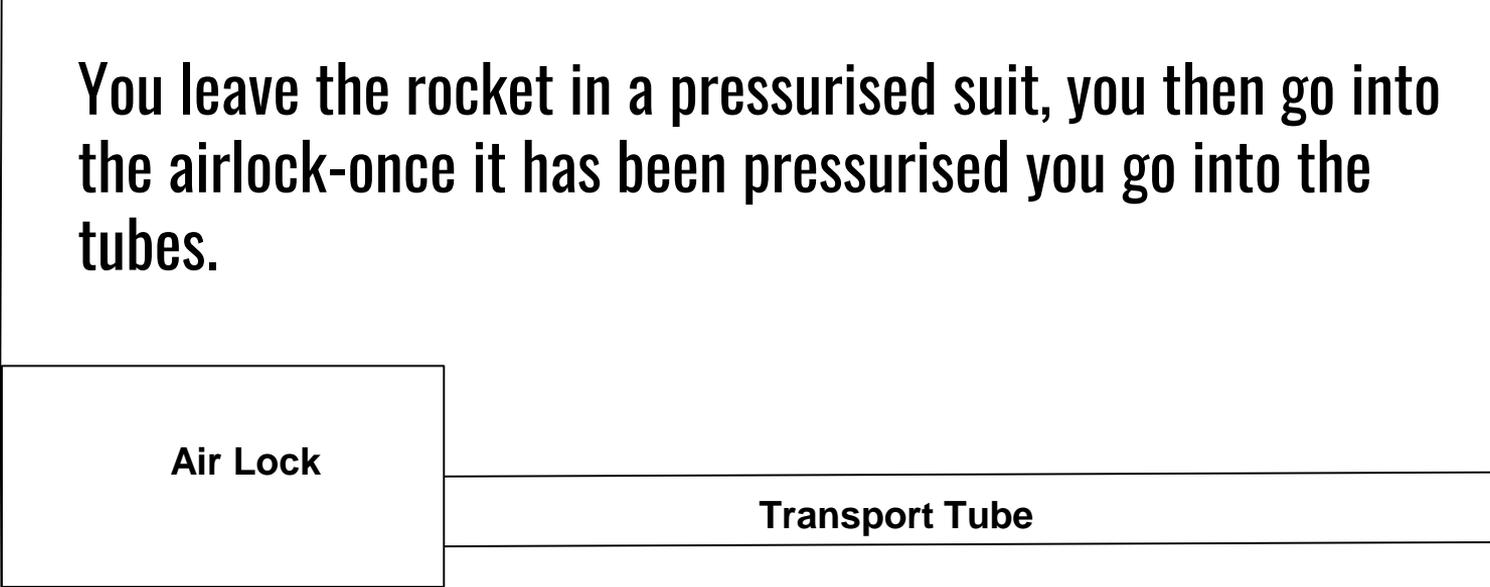
Order of leaving the rocket

You leave the rocket in a pressurised suit, you then go into the airlock-once it has been pressurised you go into the tubes.

Spaceport

Air Lock

Transport Tube



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graph LR; Spaceport --- AirLock[Air Lock]; AirLock --- TransportTube[Transport Tube];
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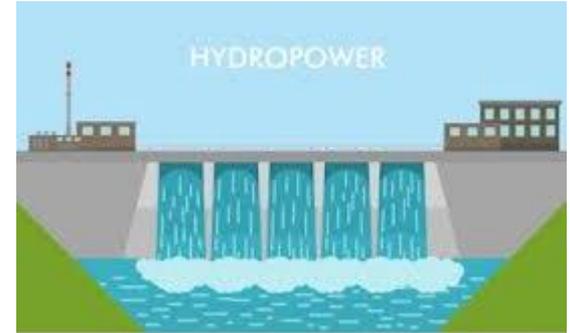
Operations: Infrastructure: Electrical Power Generation

Solar panel farms will be stored in specially designed pods that are temperature controlled that will then store the energy in the Tesla lithium ion battery available



Diesel powered backup generators can be used for power in the dark times on the moon

Hydropower can be used to generate energy on the moon with enough water leftover or spare if we have enough water on the moon.



Operations: Food Production and Sourcing

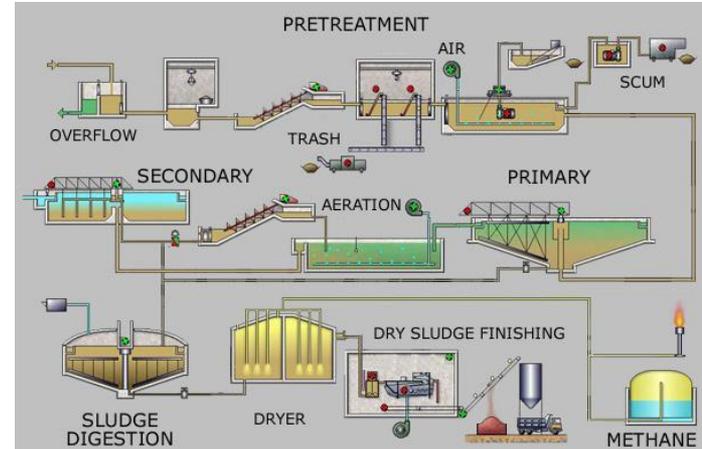
Food product	Reason for bringing this food
Canned foods e.g. beans, corn, soups	Can last a long duration and does not go out of date as fast
Chickens	Gives us meat as well as eggs to eat
Rice, pasta and noodle packets	Dried and doesn't go off easily, as well as easy to cook
Pickled or preserved food	Pickled or preserved foods don't go off easily and can stay in jars for years

When storing food there will be a kind of pantry full of cans and dried foods that don't go off



Operations: Waste

Waste like garbage and sewage can be burnt to make energy so power can be effectively sent around to each person to suit their daily needs. Waste like sewage will be tightly contained to make hydropower and then will be treated to make more drink water.

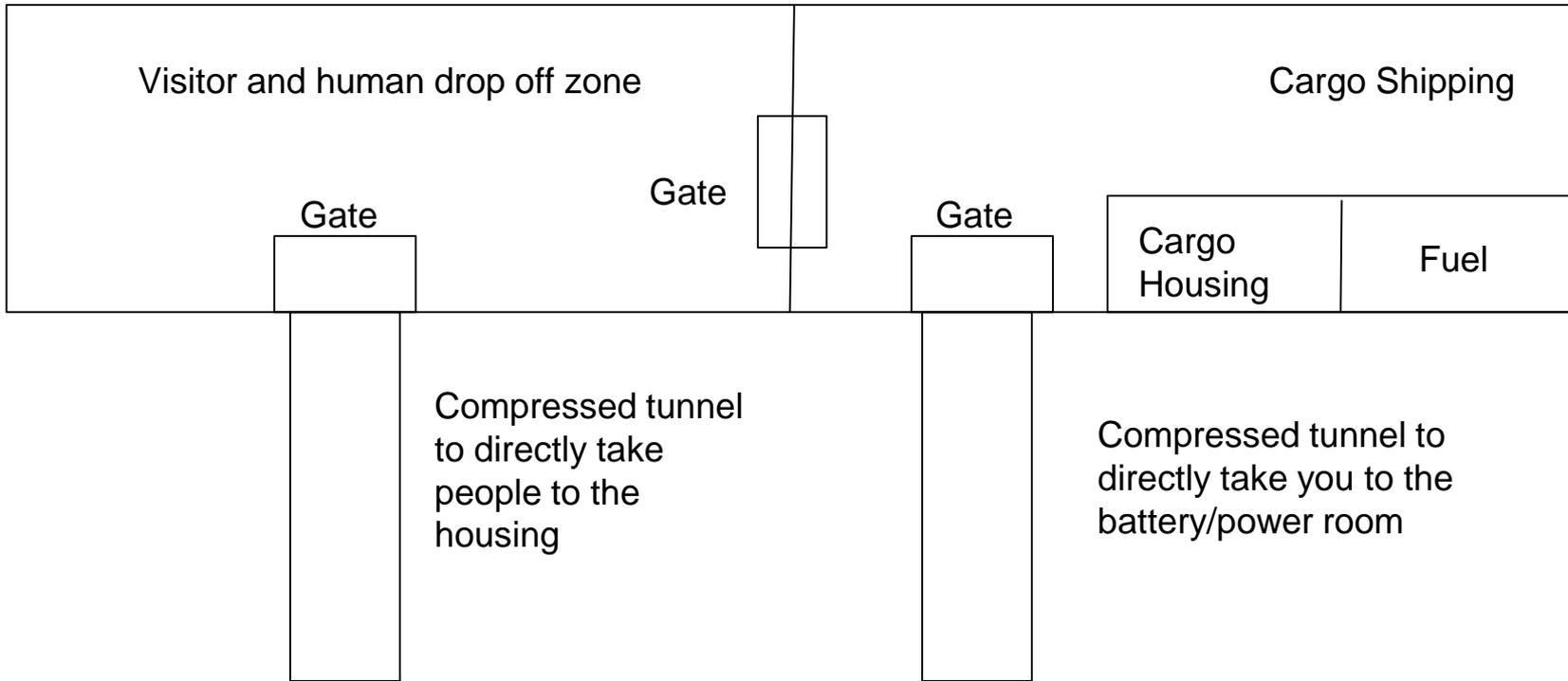


Operations: Water Production

Water can potentially be mined from the surface of the moon which can be safe to drink when treated, water can also be made by recycling things like shower water, urine and sweat. NASA has even used people's breath to make it. It can also be made by mixing hydrogen and oxygen which makes a chemical reaction which makes water.



Operations: Cargo housing

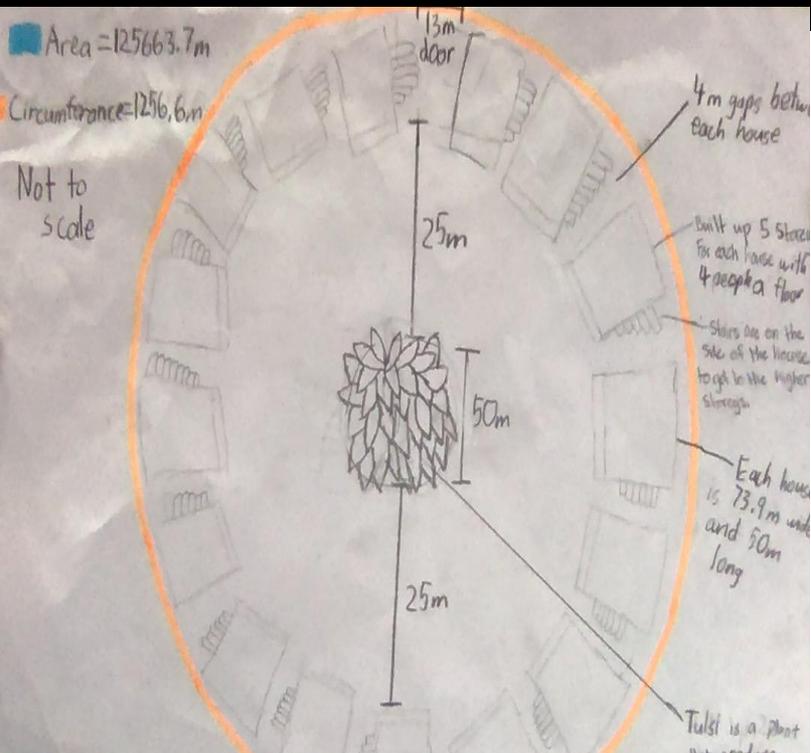


Human Factors:

In all houses we have the basic things you need to run the facility or else it wouldn't operate properly. In each house we have put 4 beds in the rooms with either 3 or 4 people in them.



Human Factors: Diagrams

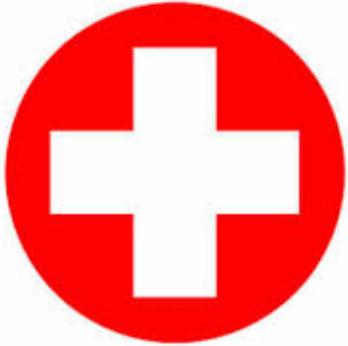


In all domes we have the basic things you need to run the facility or else it wouldn't operate properly. In each house we have put 3 or 4 people in with their own bedroom for comfort.

We chose to add a community gym so we can get our bones strong and prevent osteoporosis and to keep yourself fit and not become obese.

Human Factors:

Hospitals: We chose a hospital so we can stay healthy and cure any illnesses that someone may catch or any injuries.



Human Factors: Activities

Activities are important so the people don't get bored when visiting the moon. Activities such as soccer, golf or head soccer.

So for instance, soccer. There are many ways to play for example if there is 500 people this will mean to make 2 teams of 11 players so you might be wondering what will the other people do the can play other mini games like head soccer or golf so we can rotate the games around.

Another reason why it's important is because it helps with a disease called osteoporosis, were bones deteriorate. Ways to cure osteoporosis is doing Physical exercise like activities or going to the gym.



Human Factors: What Is In Each Room

In each room we have added what is necessary to make it livable.

Bedroom- Beds, Couches, Cupboards to store valuables, tables and chairs, toilet, sink, shower, cutlery and a kitchen sink.

Hospital- hospital beds, Medicines, Seats, Necessary Medical Equipment, (gym can help with osteoporosis)

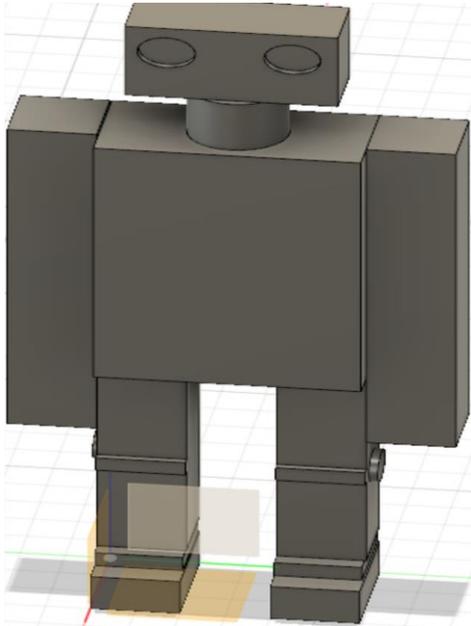
Gym- Treadmill, Dumbbells, Bench Press, Machine Fly.

Automation:

Robots will be used to take care of most jobs outside of homes. This is to make living on the moon easier and more efficient. So more people are encouraged to come and live on the moon. This will attract a higher population to fill our limit of 500+ 50 visitors.



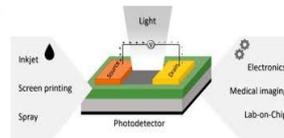
Cleaning Automation:



Robots will be used to clean our homes. For example mopping and cleaning is going to be done by small, smart, automatic robots. There will also be a robot maid that can do things the robot cleaners cant like; fixing broken items, dusting, pick up toys off the floor, pack away the dishes, throw the garbage out this will be controlled

Automation: Internet and Communication

Communication: Radio waves can be used to communicate, astronauts have used this to send and access information. People can also use social media and normal modern communication technologies. Integrated communication technologies, is a microphone and earphones built into the suit, this can be used if there is no oxygen in the area.



Internet: A laser beams uses an infrared light to transmit data in coded pulses, then the pulses get converted to electrical pulses using a photodetector. Networking to the ISS is provided via a satellite network, at a speed of around 10 mbps down and 3 mbps up.

The use of rovers



Rovers will be sent to the moon to create hydrogen, water & oxygen. There is belief that underneath the moon rocks there is a source of water. So the rovers will bring back the minerals/moon rocks and will squeeze the rocks in order to extract the hydrogen, water & oxygen that is believed to be either in or under the dirt.

Flow chart

