Week 1.2

Lunar Architecture and Infrastructure

Initial Ideas

Regina Tania Tan

Energy Mining

Leisure

tourism, excursion, retreat,…hospice?

Why do we go to the moon?

Geological research

Deep-space exploration

Deep-space observation

Engineers

Rich people, bored people

Secluded people?

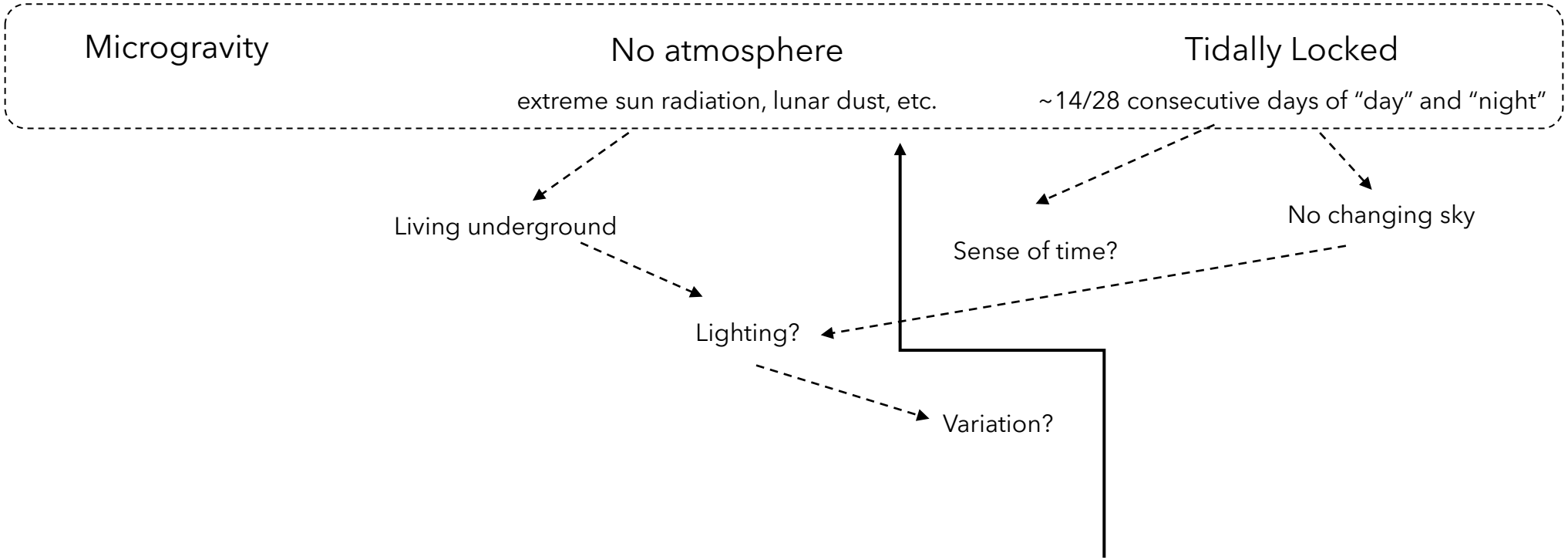
Who would go to the moon?

Scientist

Doctors, Chef, etc (support)

Researchers

How would living on the moon look like?



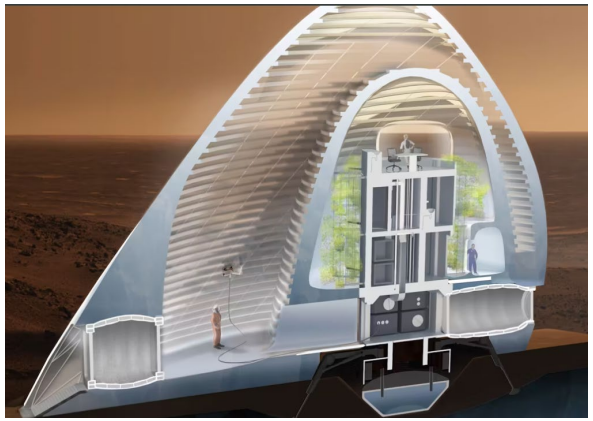
How do we connect with “nature” under the <u>circumstances</u> of living on the moon?

- What are the psychological necessity of living on moon? How can architecture support a good quality of living on the moon?
- How to recreate and/or amplify nature?

Materials

Ice

Working with sun radiation?

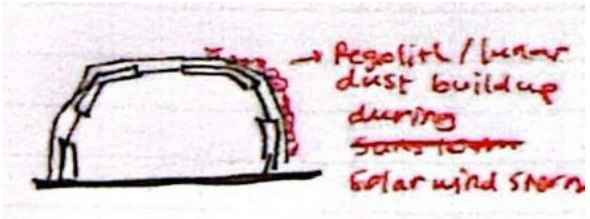


Mars Ice House, SEArch

Regolith

Glass, 3d printing,

Protective layer



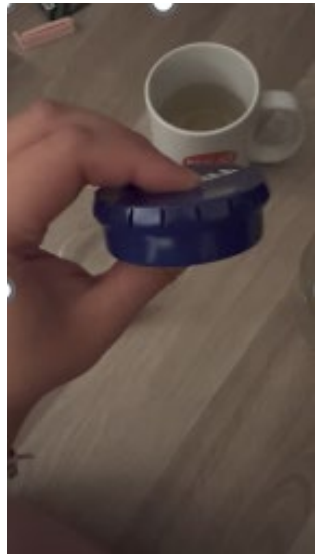
Photo/piezoelectric materials?

Energy sourced from moonquakes & sun

Mimosa pudica

Bimetal?

Using inherent properties



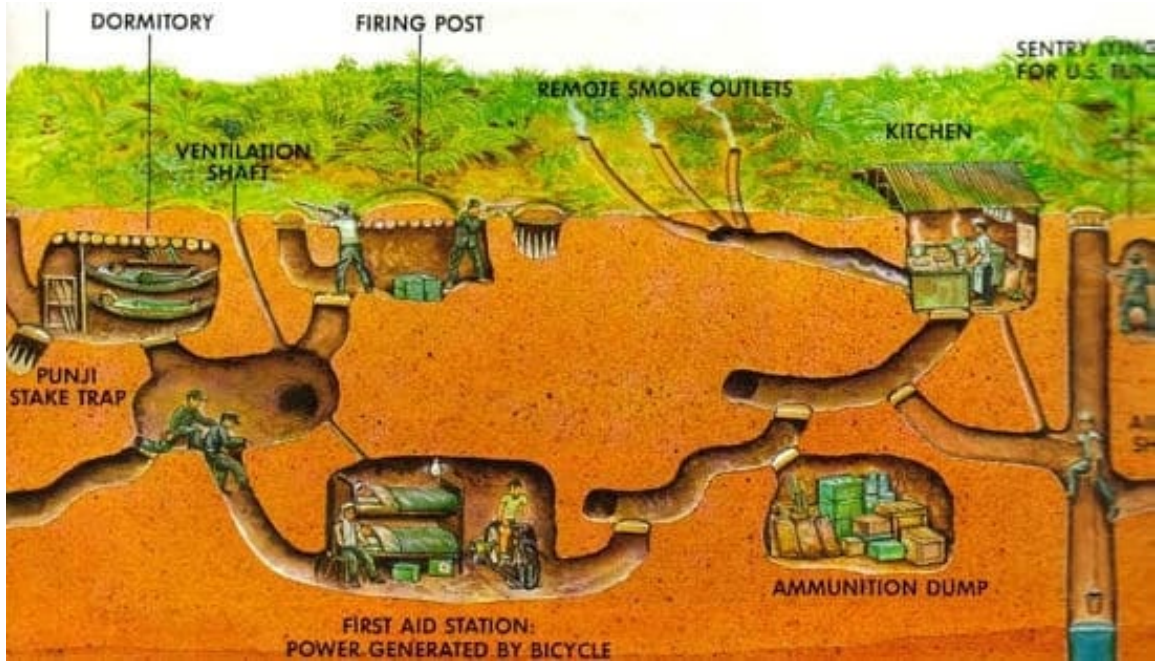
Candy can

Location


(LAVA TUBE)
UNDERGROUND
LUNAR CRATER
ABOVE GROUND
L INFLATABLE
L 3D-PRINT

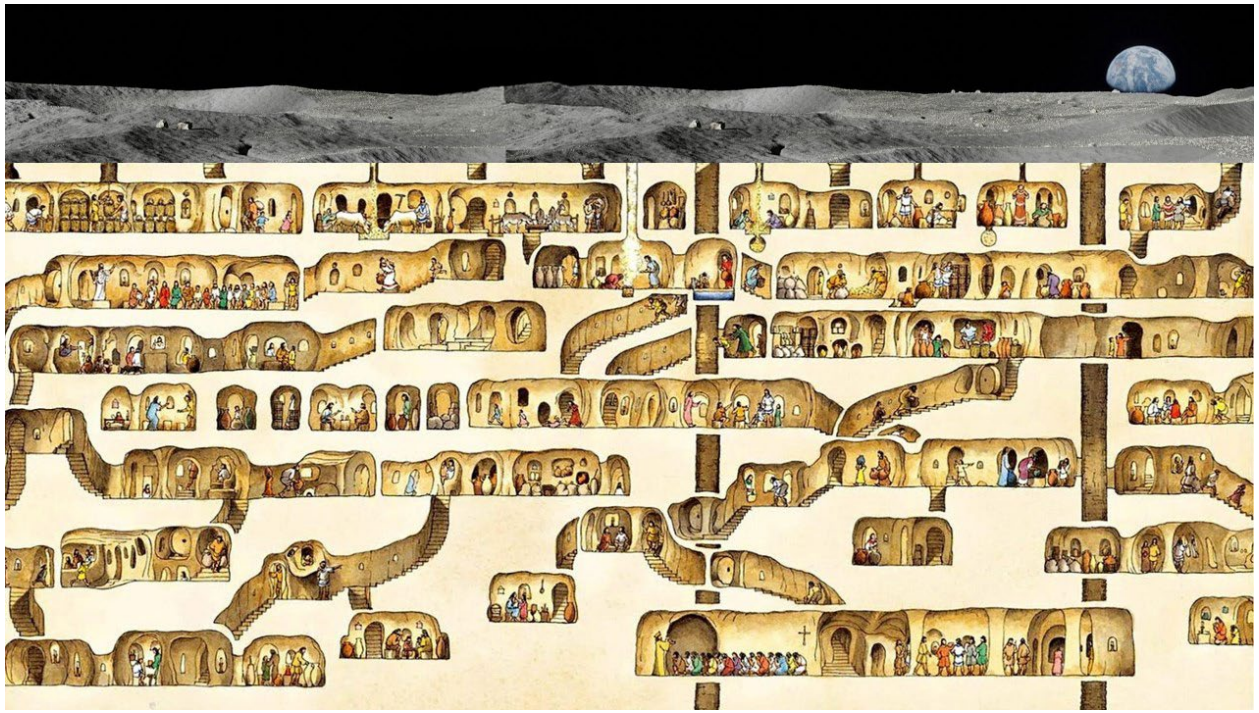
Underground / Case Studies

Derinkuyu, Turkey



Cu Chi Tunnels, Vietnam

Underground / Visualization



Derinkuyu on the Moon

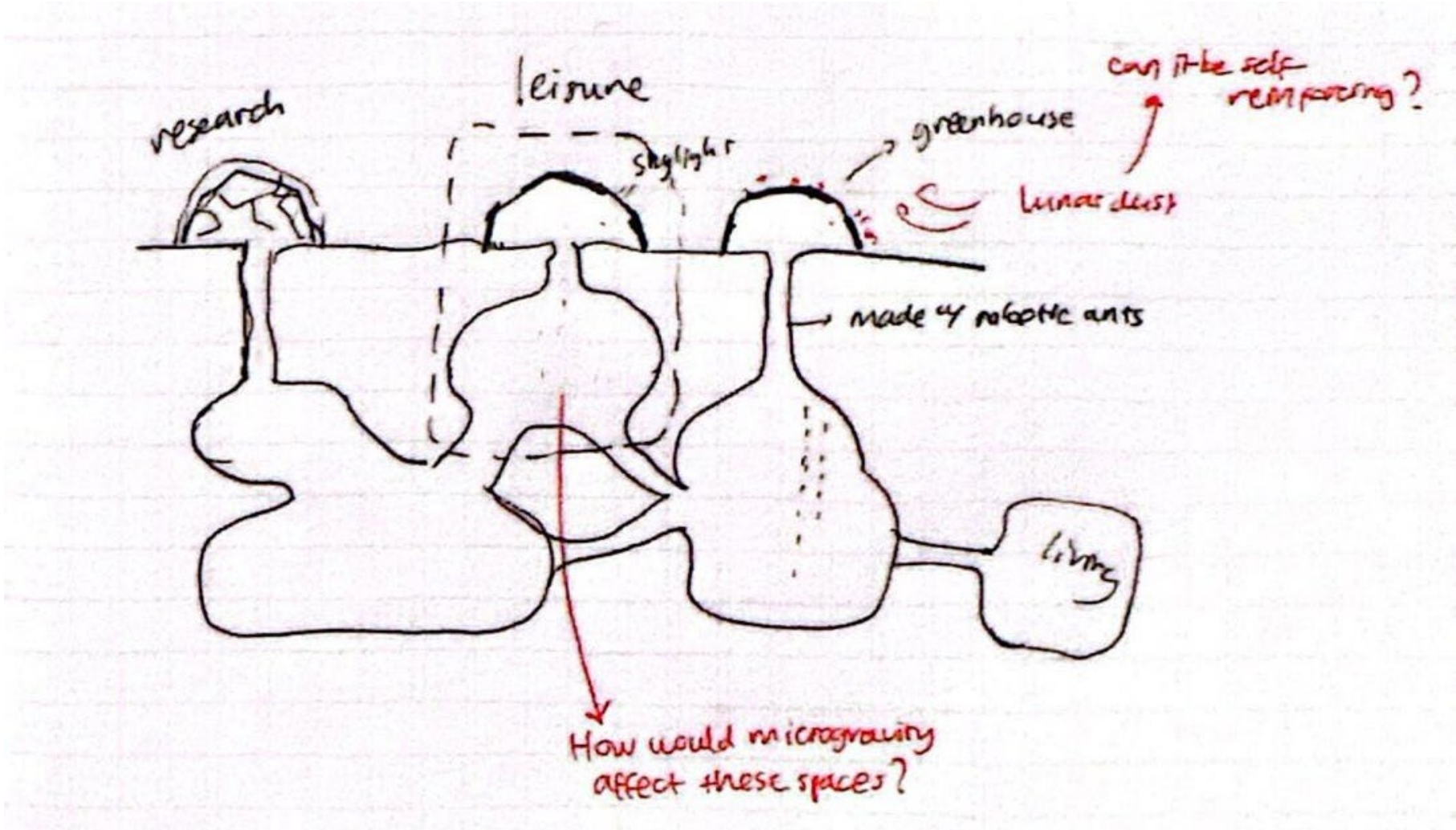
Interior / Visualization / Controlled environment

Shopping Malls

Program

Library archive?

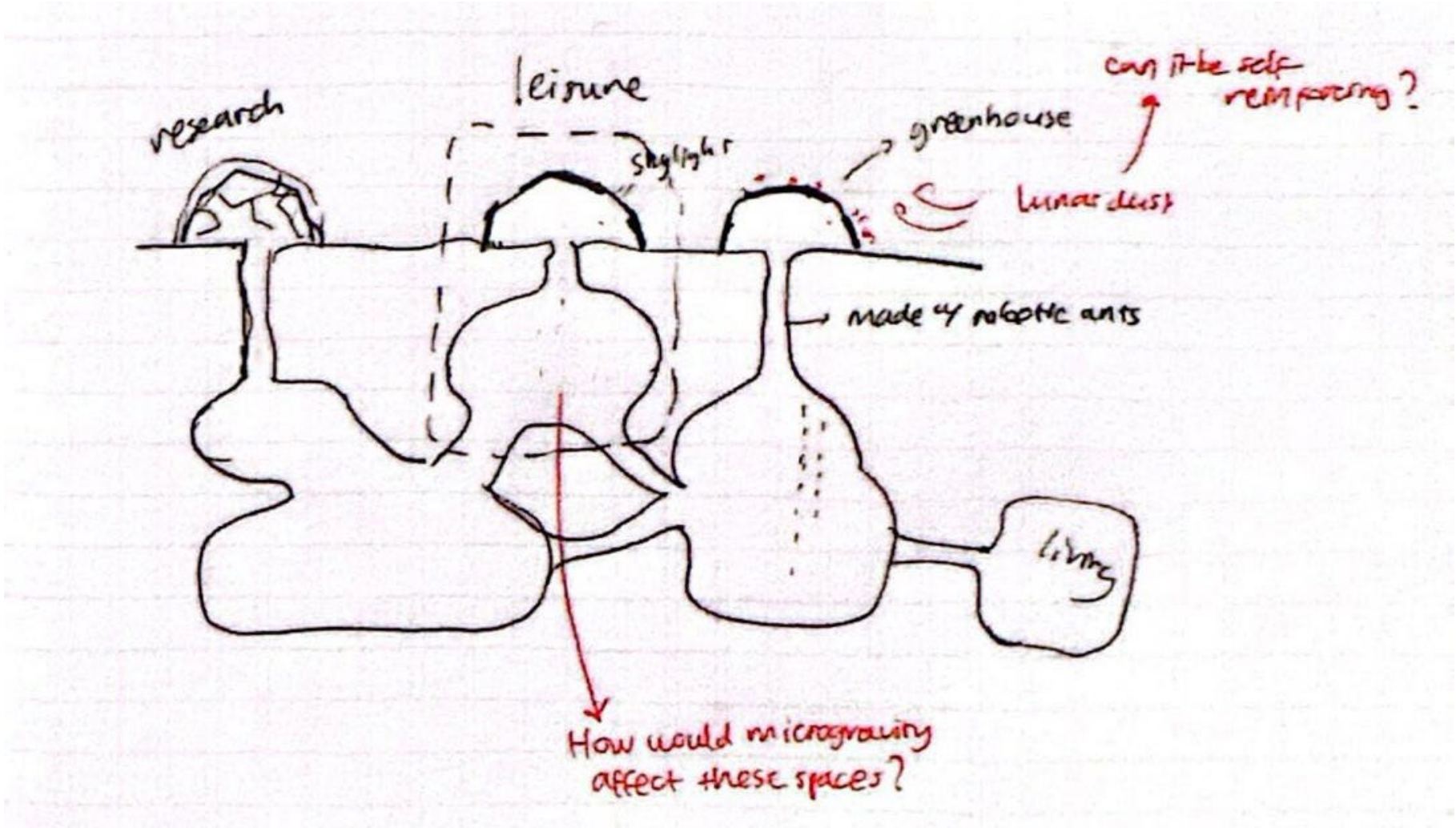
Leisure spaces?



Self-sustaining / Case Studies

Biosphere 2

Construction



Ant-robots?

Research Question:

How do we connect with “nature” under the circumstances of living on the moon?

- What are the psychological necessity of living on moon? How can architecture support a good quality of living on the moon?
- How to recreate and/or amplify nature?
- How to represent “nature” in the underground lunar settlement?

KEY ASPECTS

Accessible

Researchers
+their **family**

Comfort for all &
psychological well-being

Critical

Restarting habitation
- What are the basic needs of civilization?

Fun

What are the added value? How is living on moon a positively different experience?
- Working with nature of moon → "How can architecture support or elevate the quality of lunar climate?"

Change the way of living

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Change the way of living

Civilization Restart

on the event where Earth fails…

Research Question:

How could moon serve as a starting point for civilization?

- What are the basic needs of civilization and how to contain them?
- How to create a self-sufficient compound that is viable to host life as if on Earth?
- What are the kind of architecture needed? What building would be the “starting ground?”

Archive Library

/Backup: a copy of everything on Earth

Raw Material

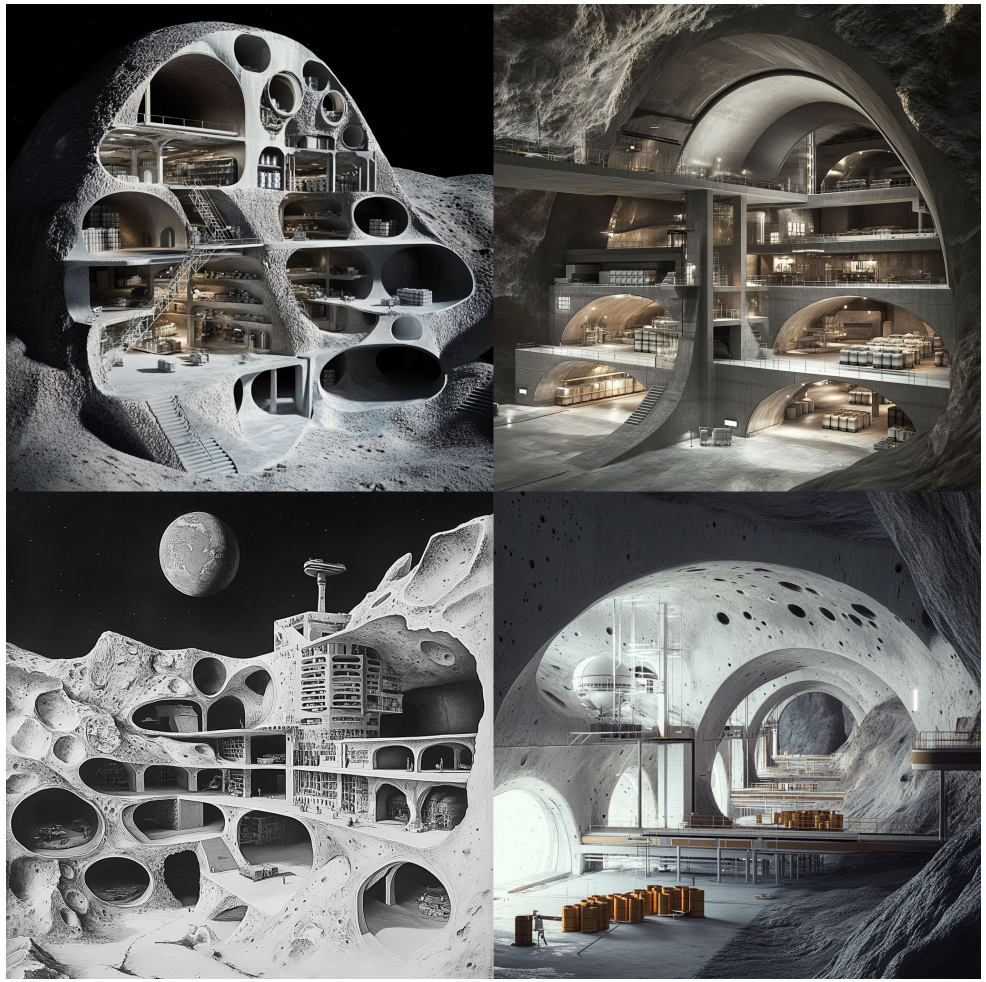
Plant Species

DNA Storage

etc..

How to protect? How to contain? How to transport and how to maintain?

Civilization Restart / Archive Library / Visualization



futuristic raw material storage facility within an underground human civilization compound on the moon, voronoi structure. Separated rooms are connected via tunnel like Derinkuyu underground city. Section view showing both underground and upper ground architecture

Generated with Midjourney

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Change the way of living

Change the way of living & possible spaces

Low gravity

Floating Spaces

Different movement of water

Absence of air

Controlled audio spaces

High radiation

Abundant energy for controlled environment

14/14 day & night

Change work life balance

Extreme temperature

Energy generation & preservation

Agriculture

Moonquakes

Deployable, easy to move structures