

# ΣΕΧΟΣ

3 E U M W B H Z

"An echo of a distant time Comes willowing across the sand And everything is green and submarine ,no one called us to the land And no one knows the where's or why's, no one crosses there alive and No one flies around the sun"  
Pink floyed

Sound echo cannot travel through space, but, Civilization echoes can. Egypt is heading up to Mars, carrying a civilization that has lasted for thousands of years, whose core was agriculture, hierarchy and construction. based on communication and cultural diversity.

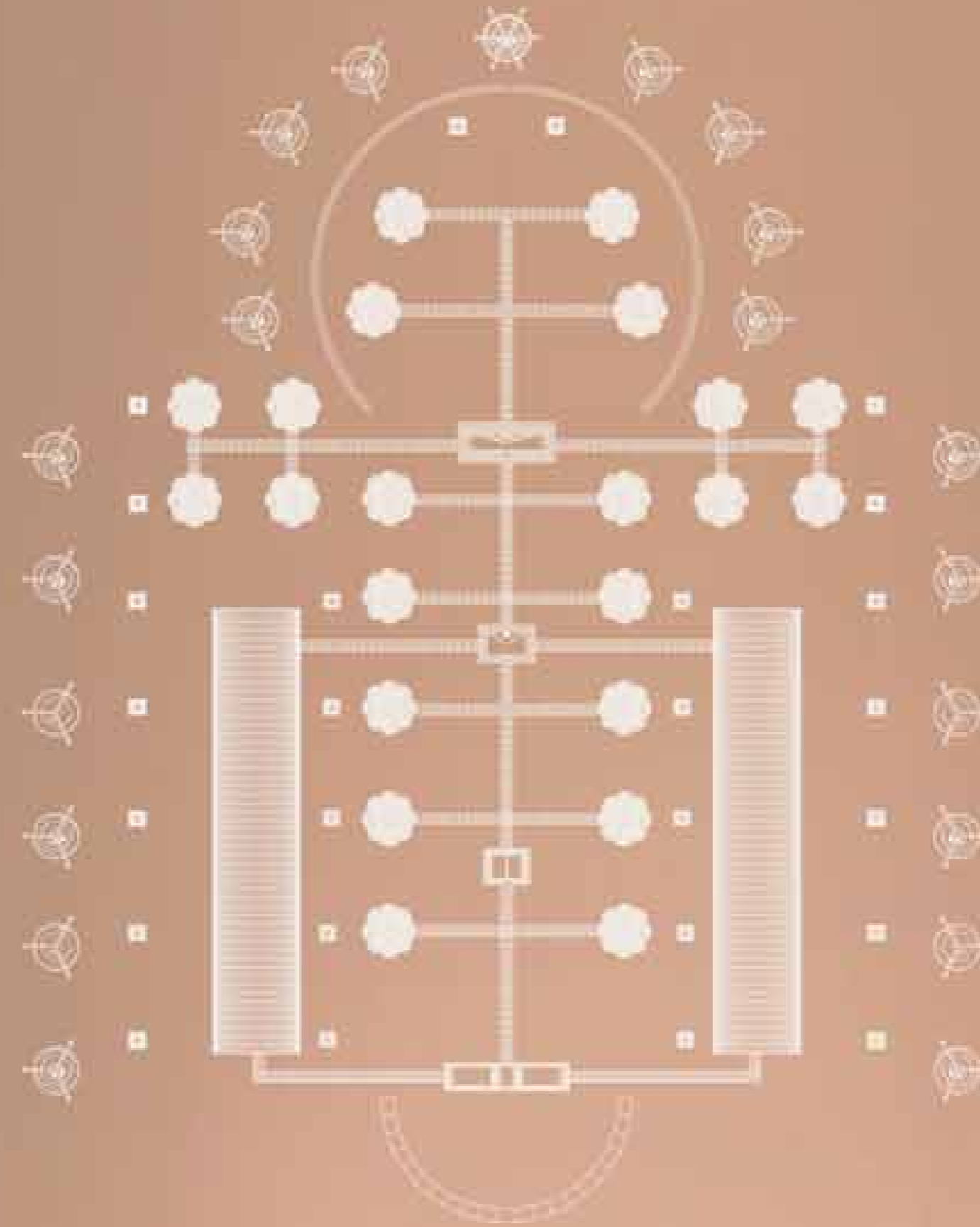
Delta, and the wide deserts. Starting with ancient egyptians, the most advanced for their morals and sciences that left thousands of questions, passing by Coptic Egypt, where the values of monotheism and subjectivity stand and to the Islamic Egypt where the principles of unity, interdependence and centralism are found.

An underground city for anti radiation? it had been done before ,perhaps it is time to challenge our design to an upper level, Literally.

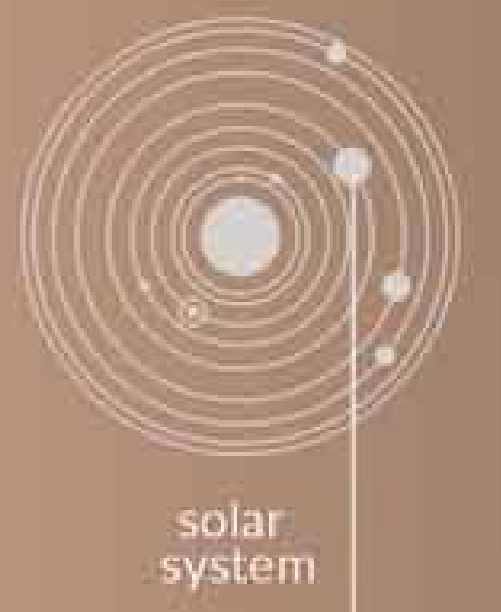
the people, the values of co-existence, co-operation, participation, accepting the other and blending the past and the future in one fell swope.

Creating a cell of the Egyptian personality. A cell that is built outside in. a self-growing Martian ecosystem that efficiently exploits its inherent resources.

Our master plan is composed of central hierarchy communal spaces -symmetrical surrounded by collective mixed-use living spaces, starting with Energy Massallas, reaching Lotus turbines, Greenhouse Souba, residential Saumaa and hierarchy Harams.



master plan



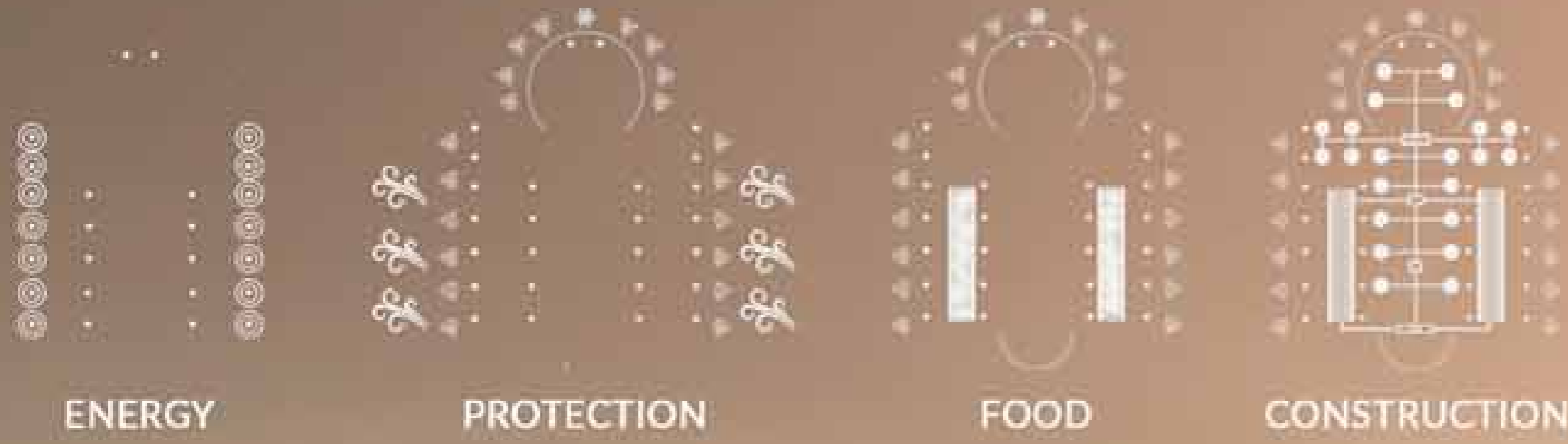
solar system



mars planet



layout



ENERGY

PROTECTION

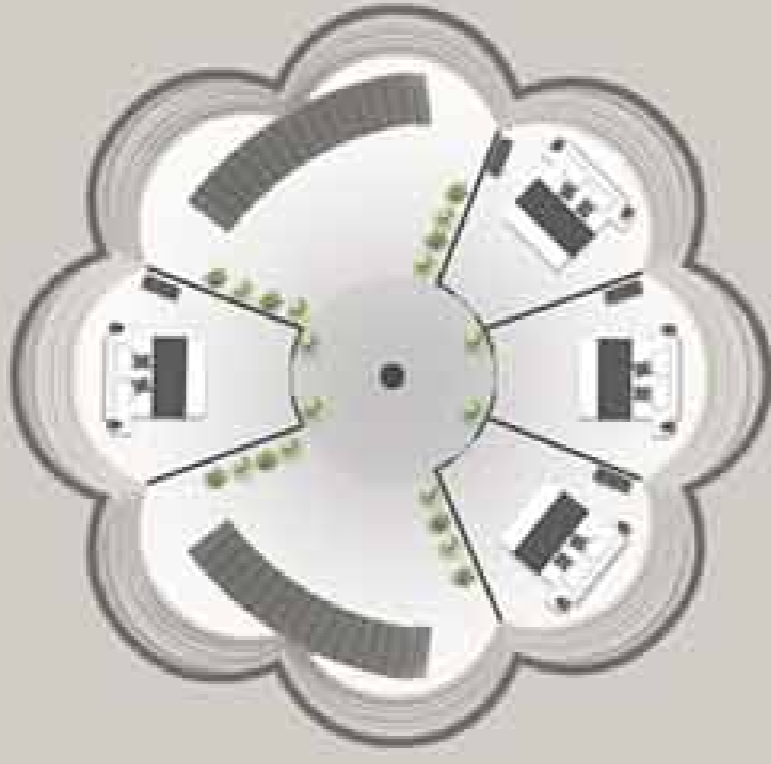
FOOD

CONSTRUCTION

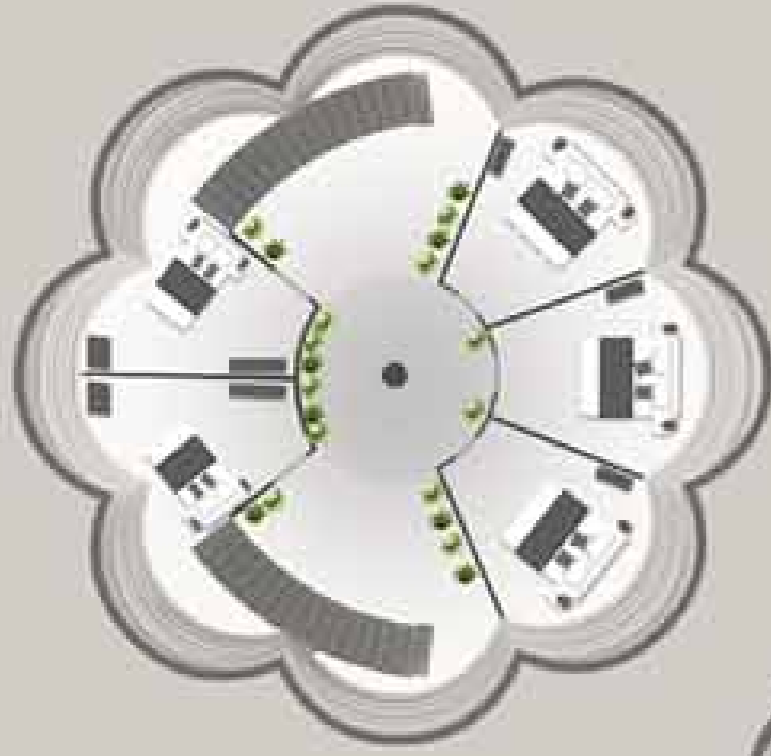




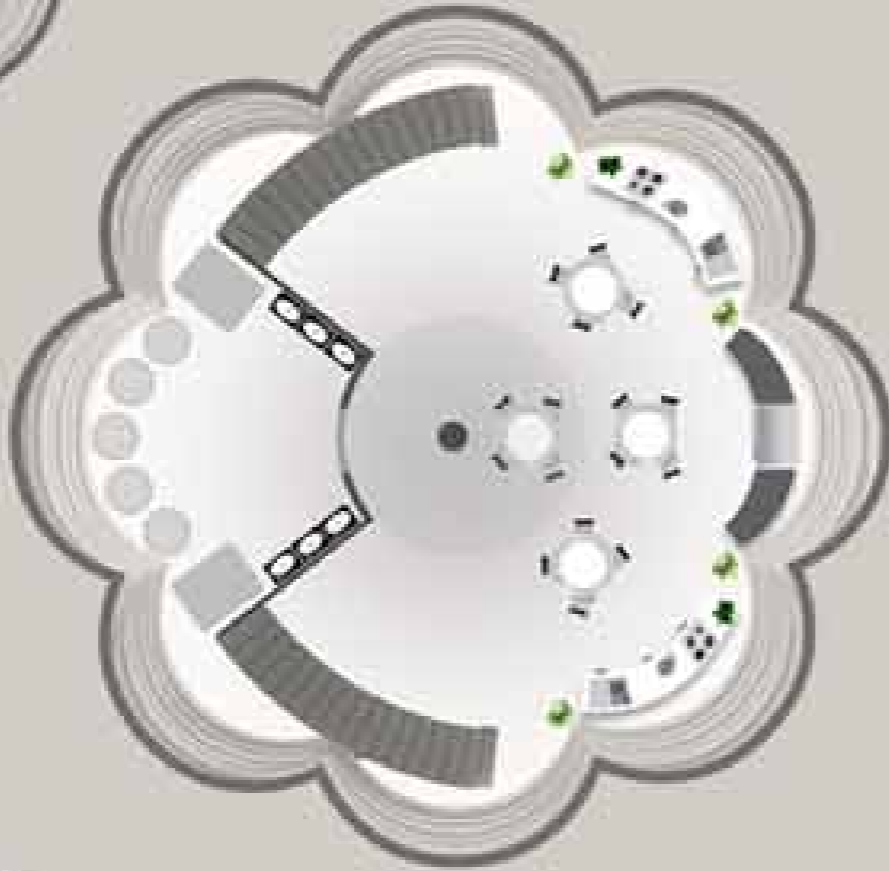
ground floor  
storage and air lock



first floor  
bedrooms



second floor  
bedrooms



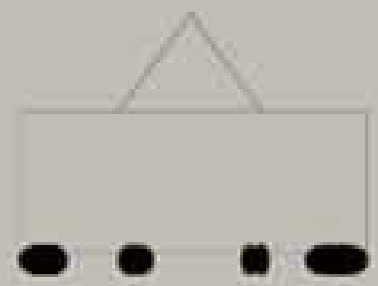
third floor  
kitchen and baths



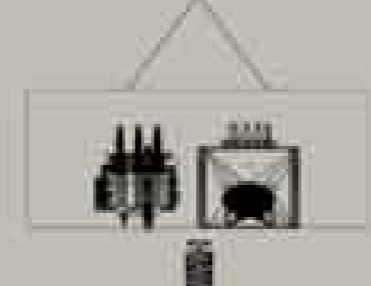
forth floor  
living area



main section



Phase 1  
During the transportation mode the vehicle will stop at the specified spot where water is founded as the structure is self expanding with several pneumatic pods and self expanding structure



Phase 2  
An inner drilling arm will start digging inside the soil to fix the base to during the self expansion of the structure with decompression pump force that inflates to start receive the heated water from the ground inside a low atomic weight reinforced double faced plastic shell works as an efficient shield for lonizing cosmic radiation



Phase 3  
Massala Pods structure starts to harvest energy from dust particles: High voltage transformer is storing electric energy in batterie. Static electricity is caused by the triboelectric effect, which happens when two materia electrons migrate from one surface to the other, depending on their relative capacitance. Mars ho with its highly insulating regolith, low atmospheric pressure, cold temperatures and extremely dry conditions has the potential to build-up tremendous electrostatic charge. In these otherwise extreme conditions lies a hidden potential for energy

Phase 4  
once Massalla is charged, a motor within it starts to generate artificial magnetic fields that establish atmospheric equilibrium safe from radiation to enable 3d printing robots to start work safely, and At this time the siphoning pipes unravel and reach Martian regolith or the ice deposits these extensions can pump an support each esidential unit with water to be used and stored in tanks below

Phase 5: water is pumped through pipes beneath the ground that contain mechanical turbines that generates electric energy for emergency cases



air lock



daily market



medical unit life support



research and educational center

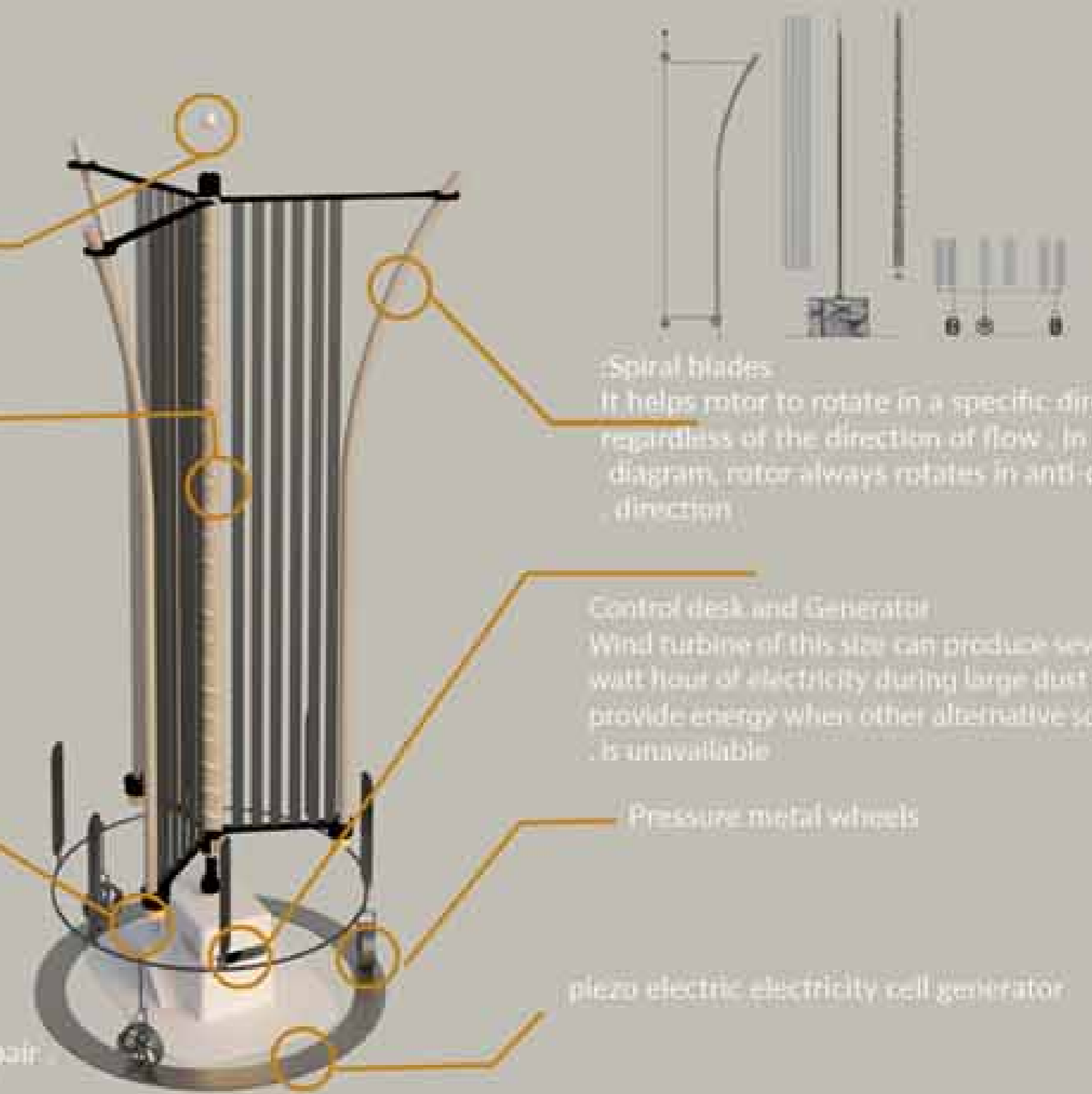


## LOTUS

Lightning rod  
Martian dust storms are electrified and cause lightning. The tall turbines are prone to these lightning. To protect it, "lightning rod" is used to

Magnus rotor  
Specially designed to rotate in high speed wind. Slightly tapered. Wind speed increases with increase in height. As Magnus force owind speed. Cross-section decreases with increase in height to facilitate even distribution of force on rotor

Energy station  
Station can be built under the turbine which encloses the control room, generator and transformers. It is a insulated pressurized cabin separated from atmosphere. Martians can dwell inside it under controlled temperature and pressure. As the important components are close to ground, repair and maintenance is easy



Spiral blades  
It helps rotor to rotate in a specific direction regardless of the direction of flow. In the given diagram, rotor always rotates in anti-clockwise direction

Control desk and Generator  
Wind turbine of this size can produce several Giga watt hour of electricity during large dust storms and provide energy when other alternative source like solar is unavailable

Pressure metal wheels

piezo electric electricity cell generator

## Massalla

magnetic rotor

transformer that transforms vibrations into electricity double ETPB inflatable pod plastic pag

inner drilling arm

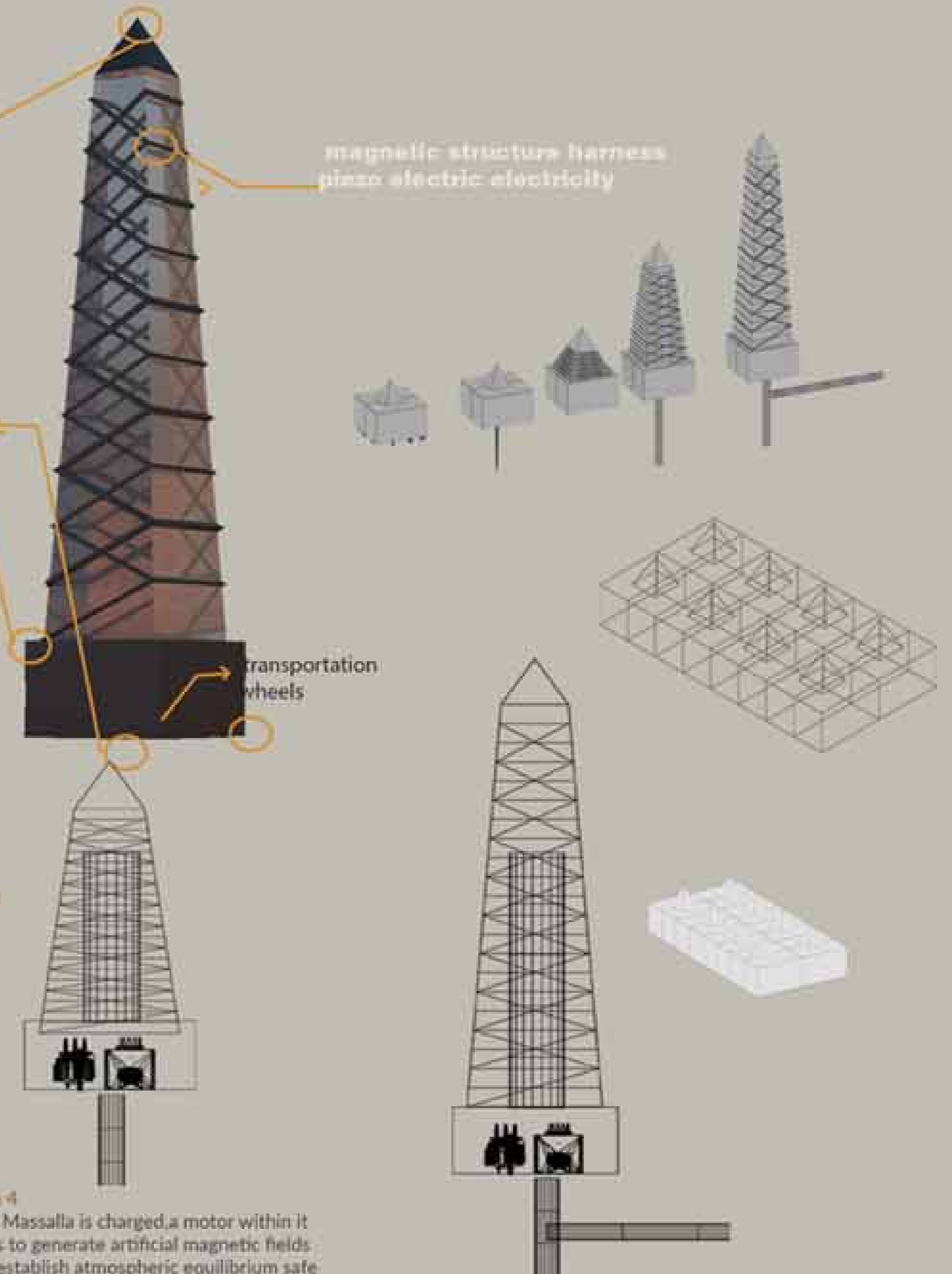
inner drilling arm to fix the structure to the ground

electric motor generates magnetic fields

### Massalla

Massalla "Obelisk" - An inflatable structure with a motor and high voltage transformer is the primary energy generator unit that generates electrostatic energy, heats up the subterranean ice and captures the moisture from the water gas that is released, supports each esidential unit with water and generates magnetic fields work as a shield against cosmic radiation and sun rays allow to minimize the degree of radiation received by colonizers to the Earth level

Massalla is stacked up in efficient geometric ensures that 30 unit fit into one load then launched with 3d printing robots to mars, it operates due to several stages



magnetic structure harness piezo electric electricity

transportation wheels

