

# Library, Research Centre and Research Hub Complex

## ASTRONOMY SCIENCE

### New Administrative Capital City

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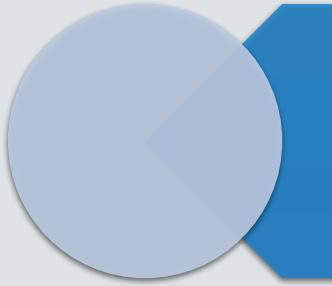
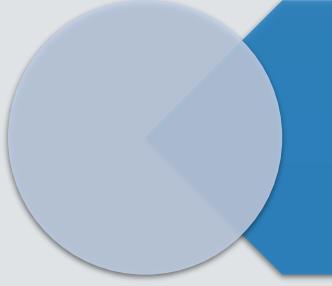
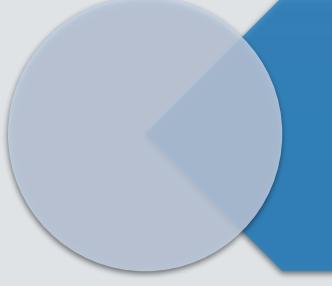
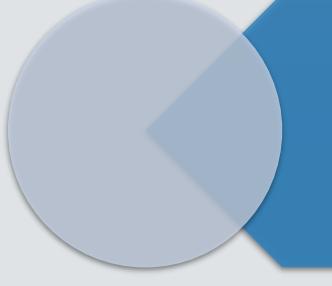
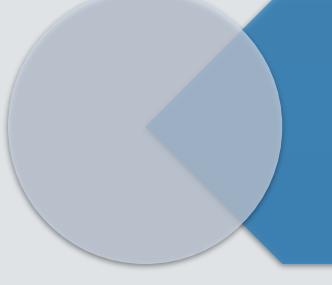
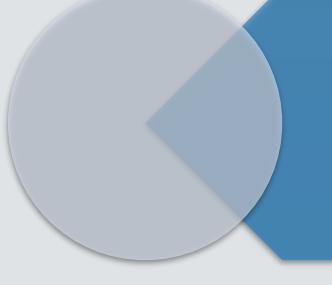
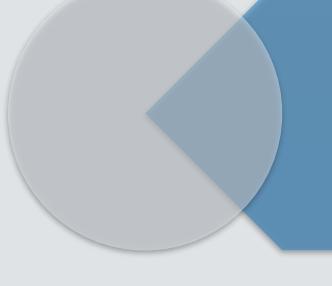
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# CONCEPTUAL FRAMEWORK

## ○ Vision:

✓ We want to encourage a **collaboration** among researchers and to create greater interactions between them in an environment that prioritizes wellness and optimizes human performance.

## ○ Mission:

The research center will be connected together to combine the **soul of synergy** between the scientists. By letting the light entering the place through **dynamic** openings .At the same time each building will contain its own mood from **Vigorous** to **Interaction** to **Enclosure**

## Concept: (Inspired from Galaxy Cluster)

✓ A galaxy cluster, or cluster of galaxies, is a structure that consists of anywhere from hundreds to thousands of galaxies that are bound together by gravity with typical masses ranging from  $10^{14}$  - $10^{15}$  solar masses. (Each building will contain different of galaxy according to It's shape)

✓ Most galaxies are not alone in the vast expanse of space, but are connected to one or more other galaxies by gravity. (That will combine the buildings together)

✓ Gravity bends the path of light, much as it affects the path of massive objects. Very massive astronomical bodies, such as **galaxies** and **galaxy clusters**, can magnify the light from more distant objects, letting astronomers observe objects that would ordinarily be too far to see. (Corridors/ Transformation from building to another)

## ○ Keywords:

- ✓ Dynamic
- ✓ Continuity
- ✓ interaction
- ✓ Vigorous
- ✓ Enclosure



Spiral Galaxies



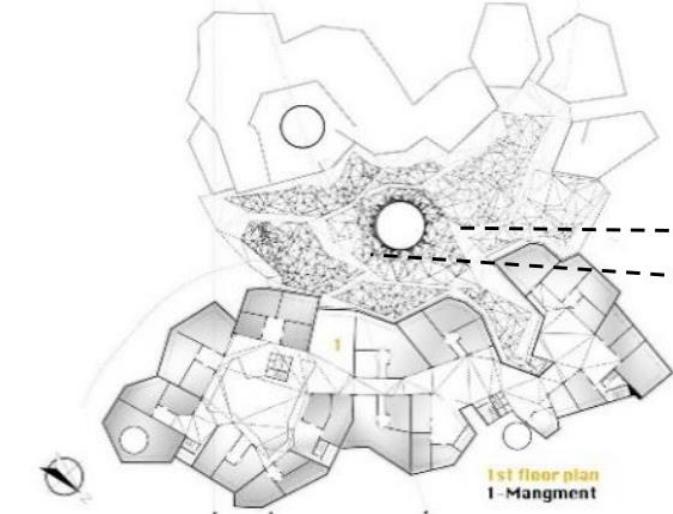
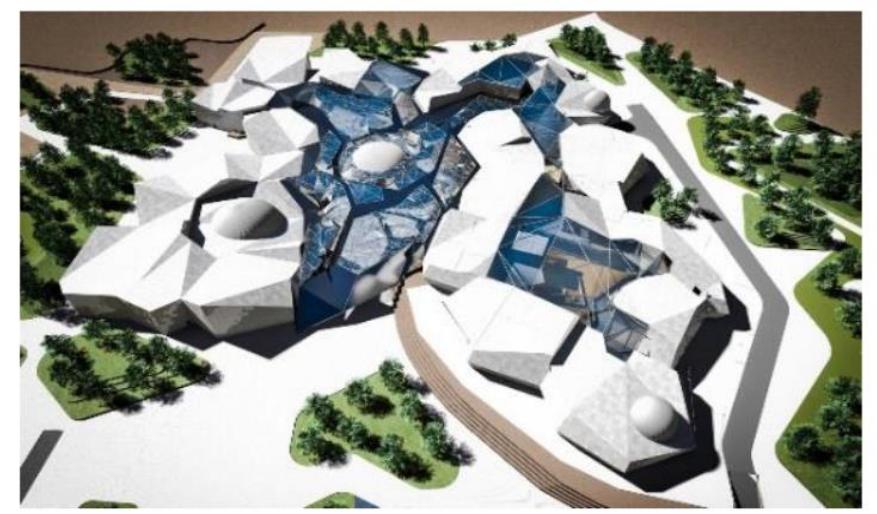
Elliptical Galaxies



Irregular Galaxies

## Space and Astronomy Research Center

- Inspired by the idea of the explosion that will create the idea of a central Space which contain the main zones (Planetarium, Gallery)



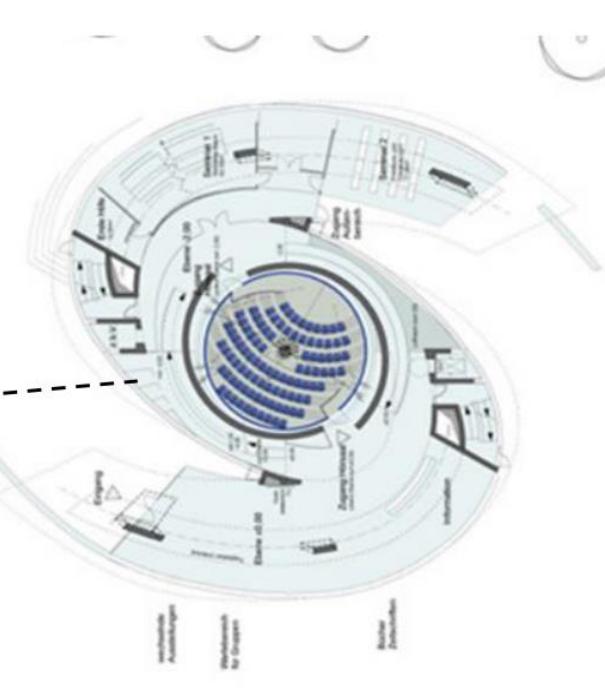
# MOOD BOARD

### Keyword:

- Unity

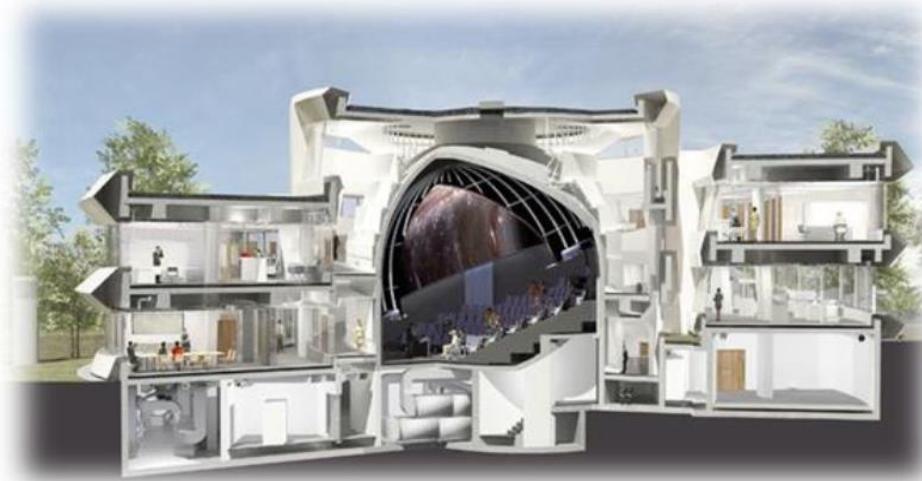
Organization of the project's components around:

- Planetarium
- Gallery



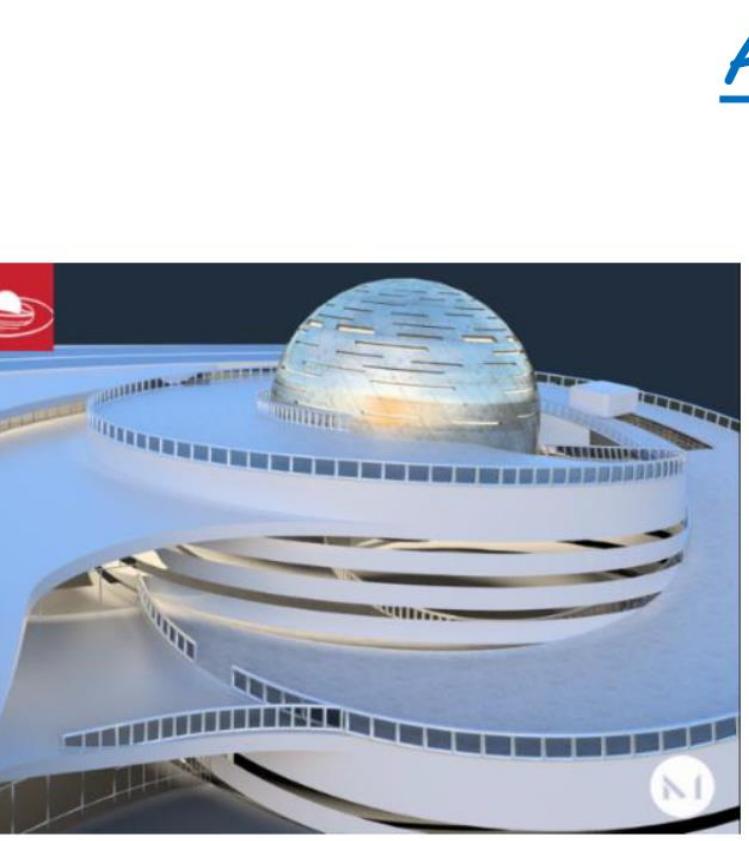
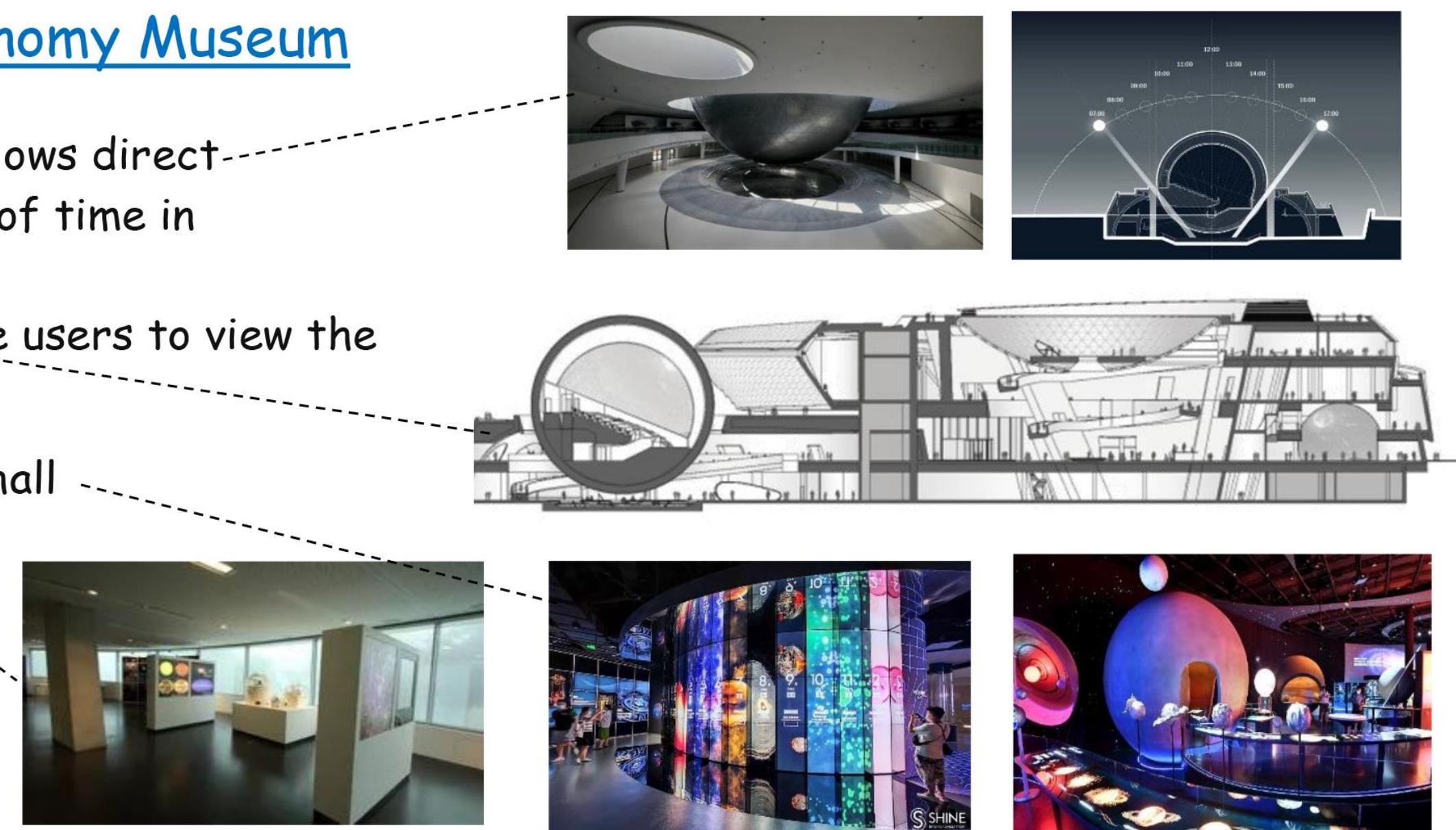
## House of Astronomy (HAUS)

- The continuity of the curved open plan

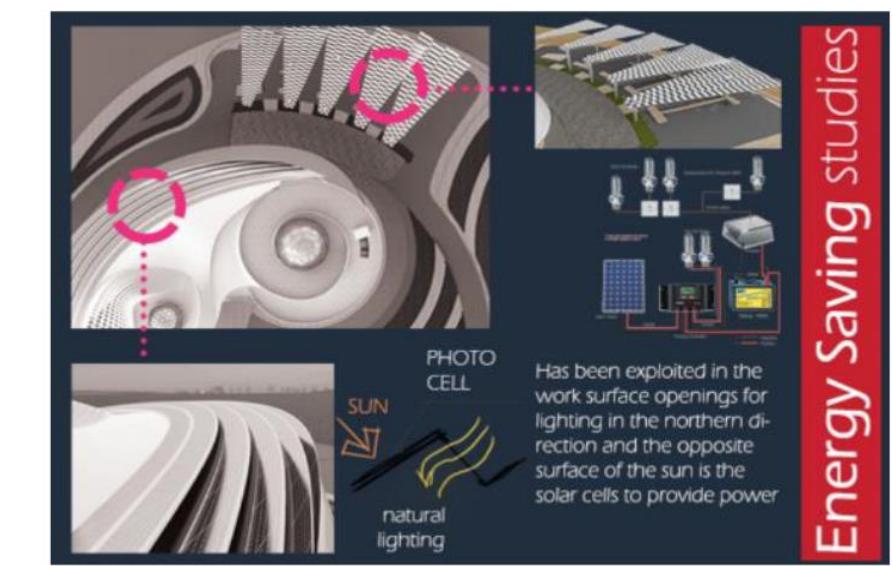


## Shanghai Astronomy Museum

- Continuous skylight around the Sphere allows direct Sunlight to enter and marks the passage of time in the building
- Staggering in the floors that will help the users to view the whole building
- The design of the gallery and exhibition hall
- Keywords:  
Continuity  
Interactive



The design of the dome Shape concept



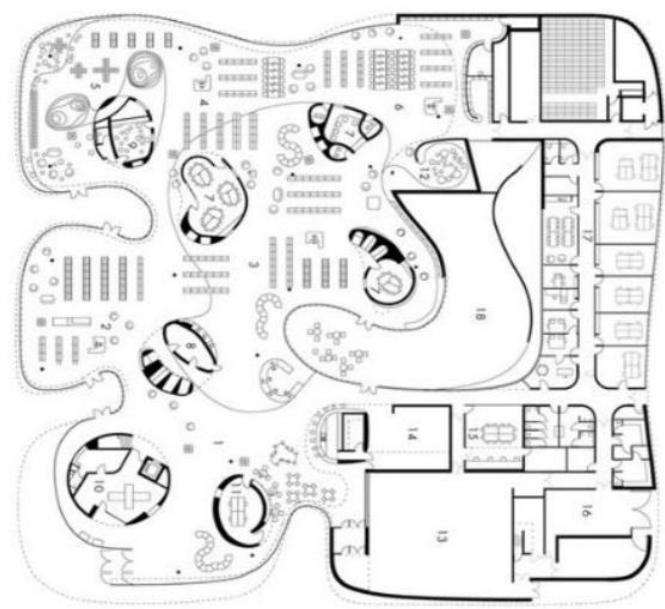
Sustainable dynamic design by letting the natural light enters the building and absorbing the sun energy to light up the place at night

- Keyword:  
Dynamic

The idea of rooftop obs. area

### Keyword: Enclosure

## Media Library in Thionville



Dynamic arrangement (Curved-open plan)

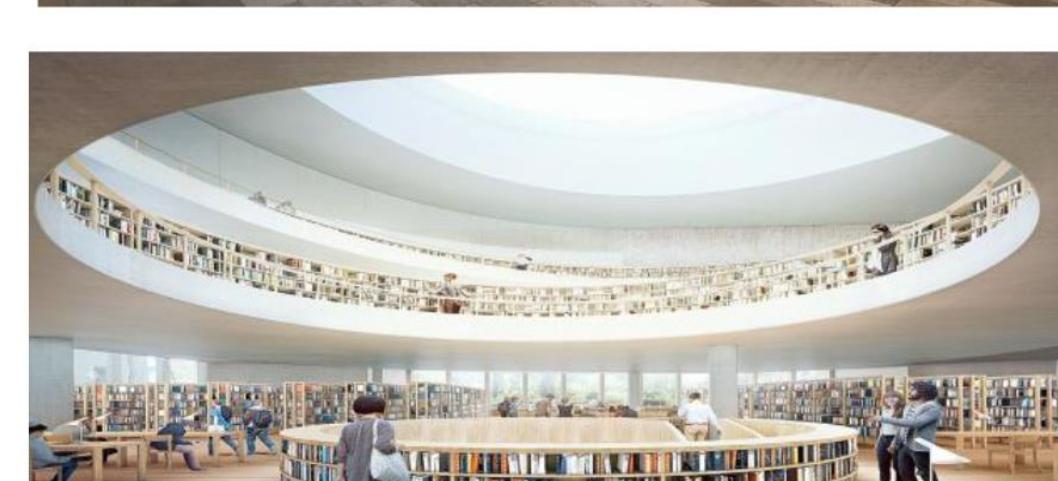
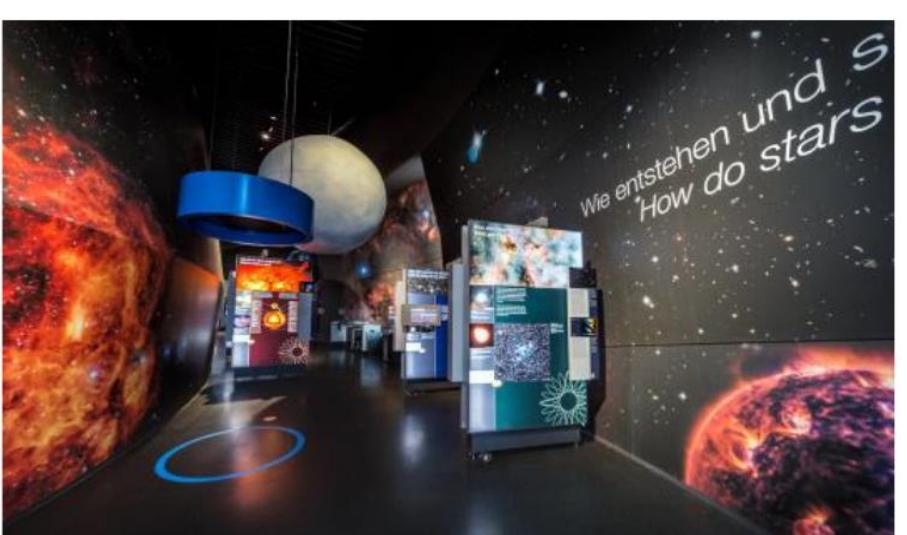
Backdrop to the Universes Creating courtyard (private space)



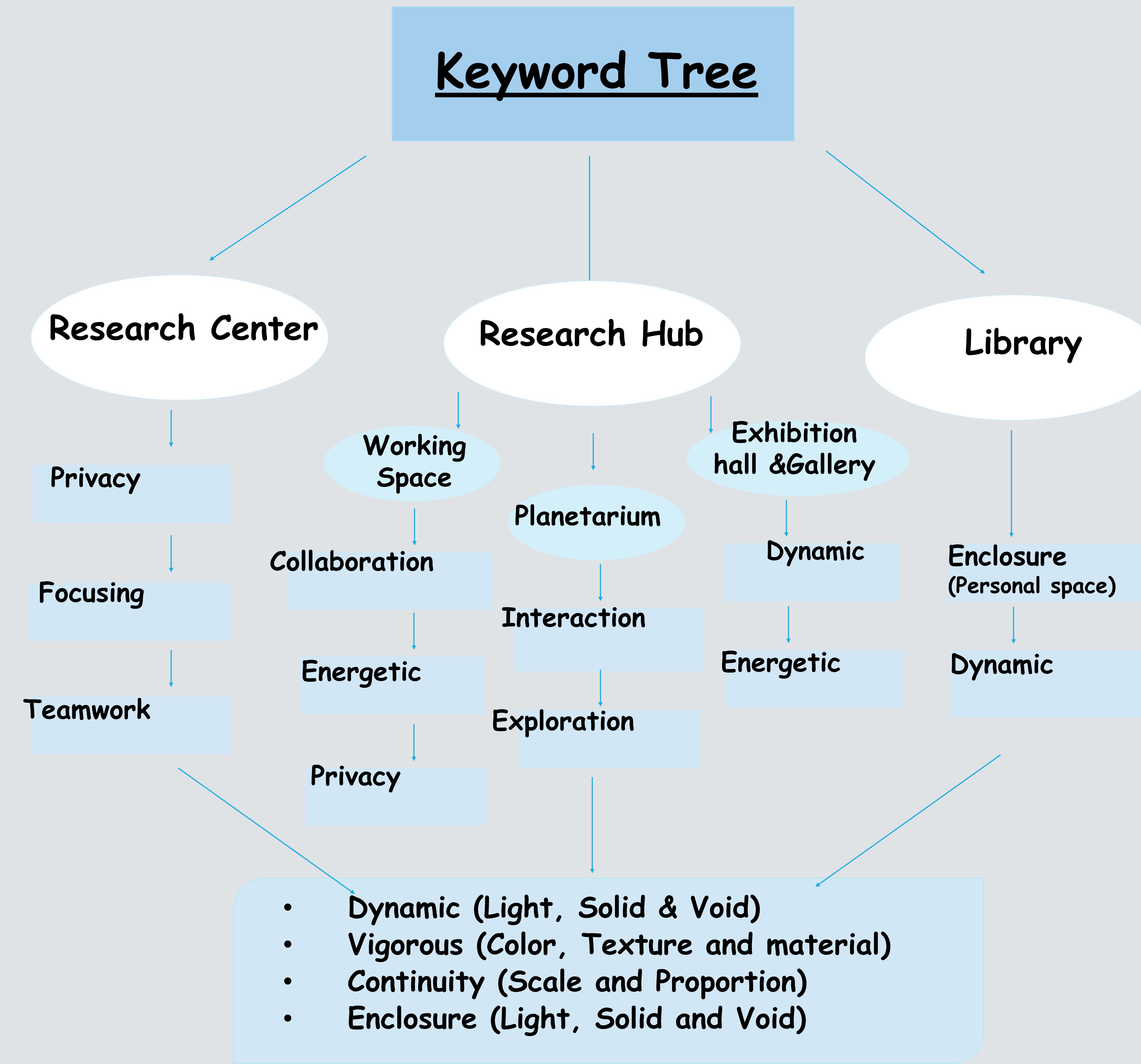
- Functionality and flexibility in the personal workspace
- Diversity in the community areas
- creating an environment that holistically supports the users in their work and well-being

- Keyword:  
Energetic

## Inspirations



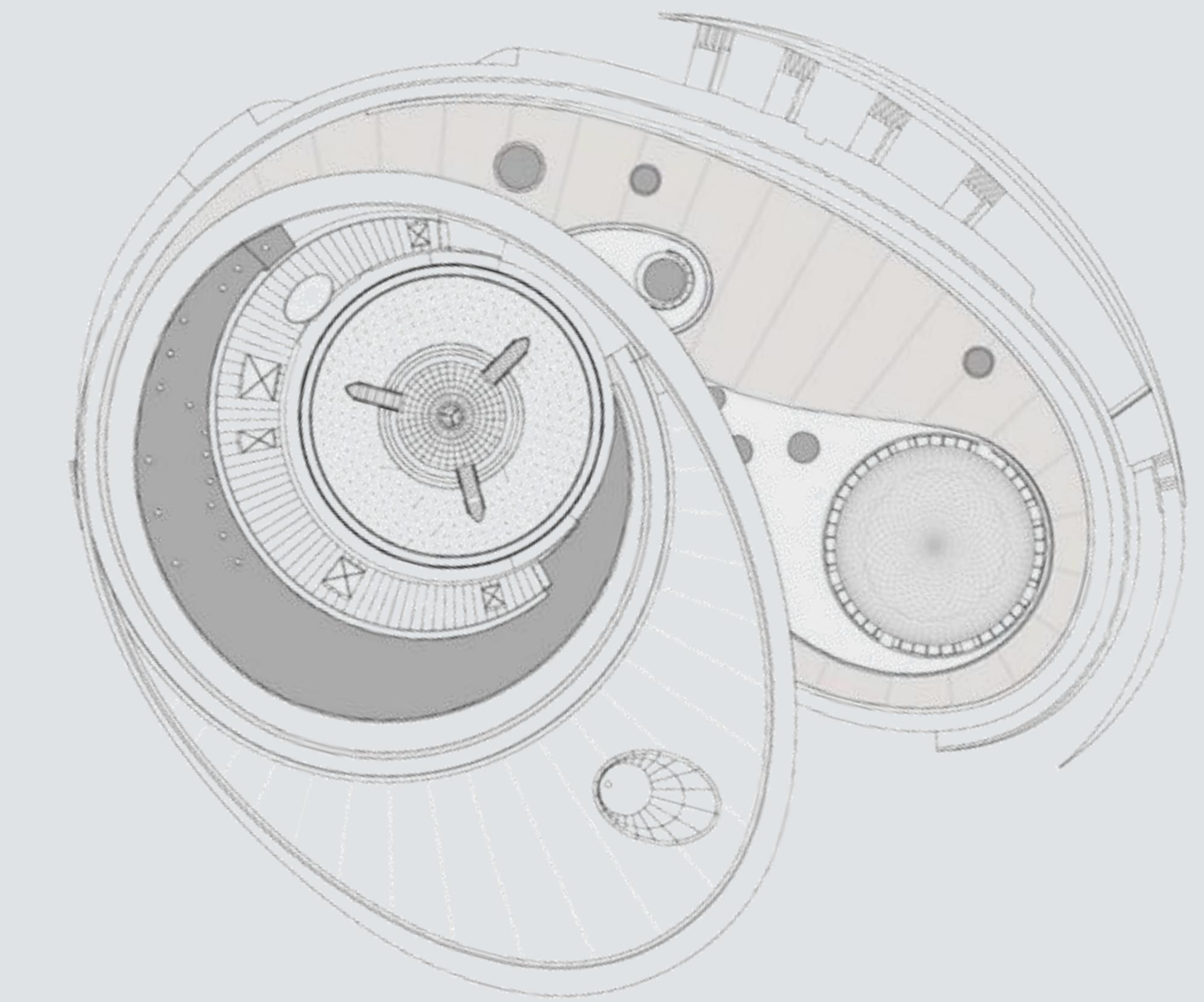
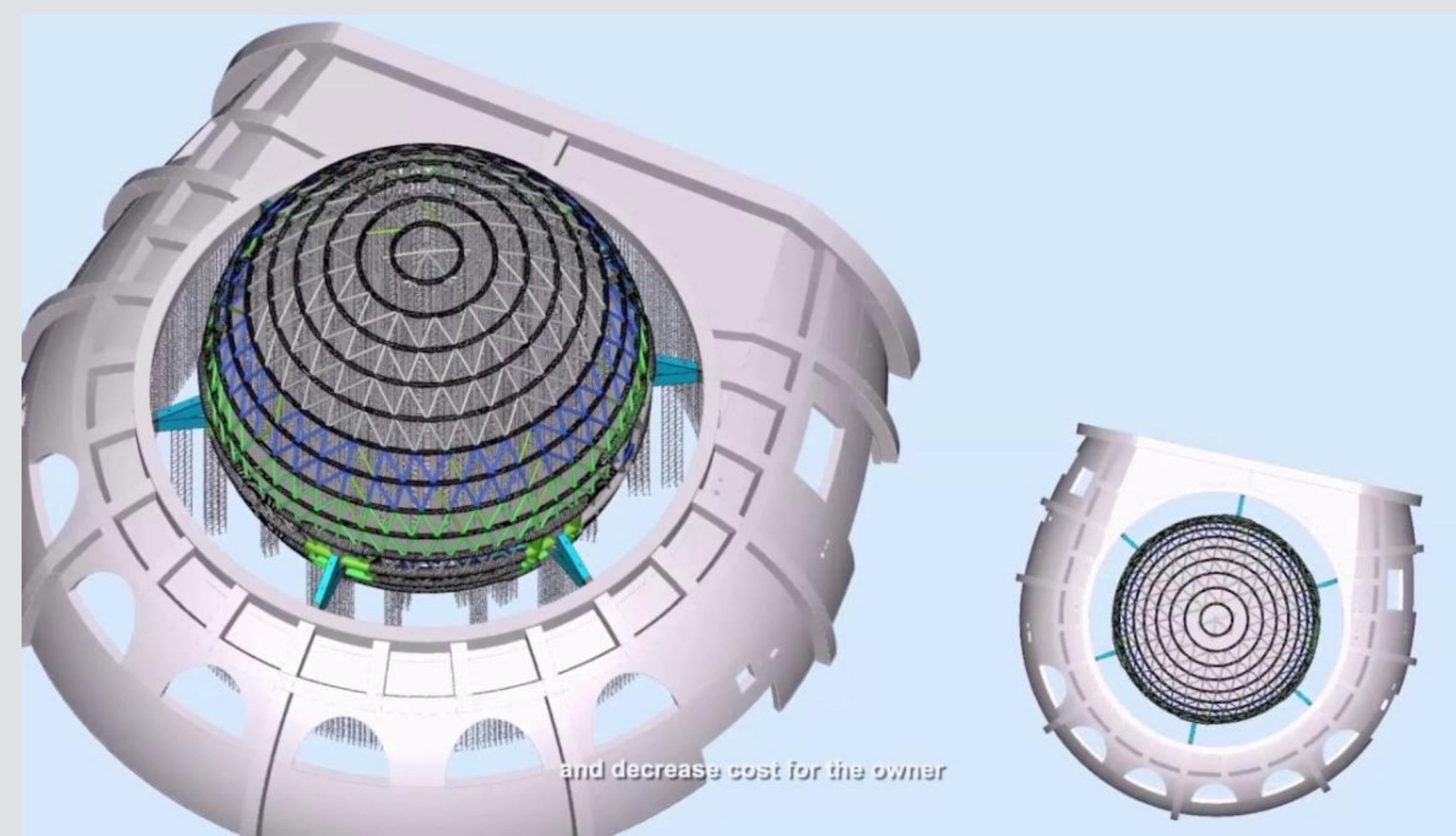
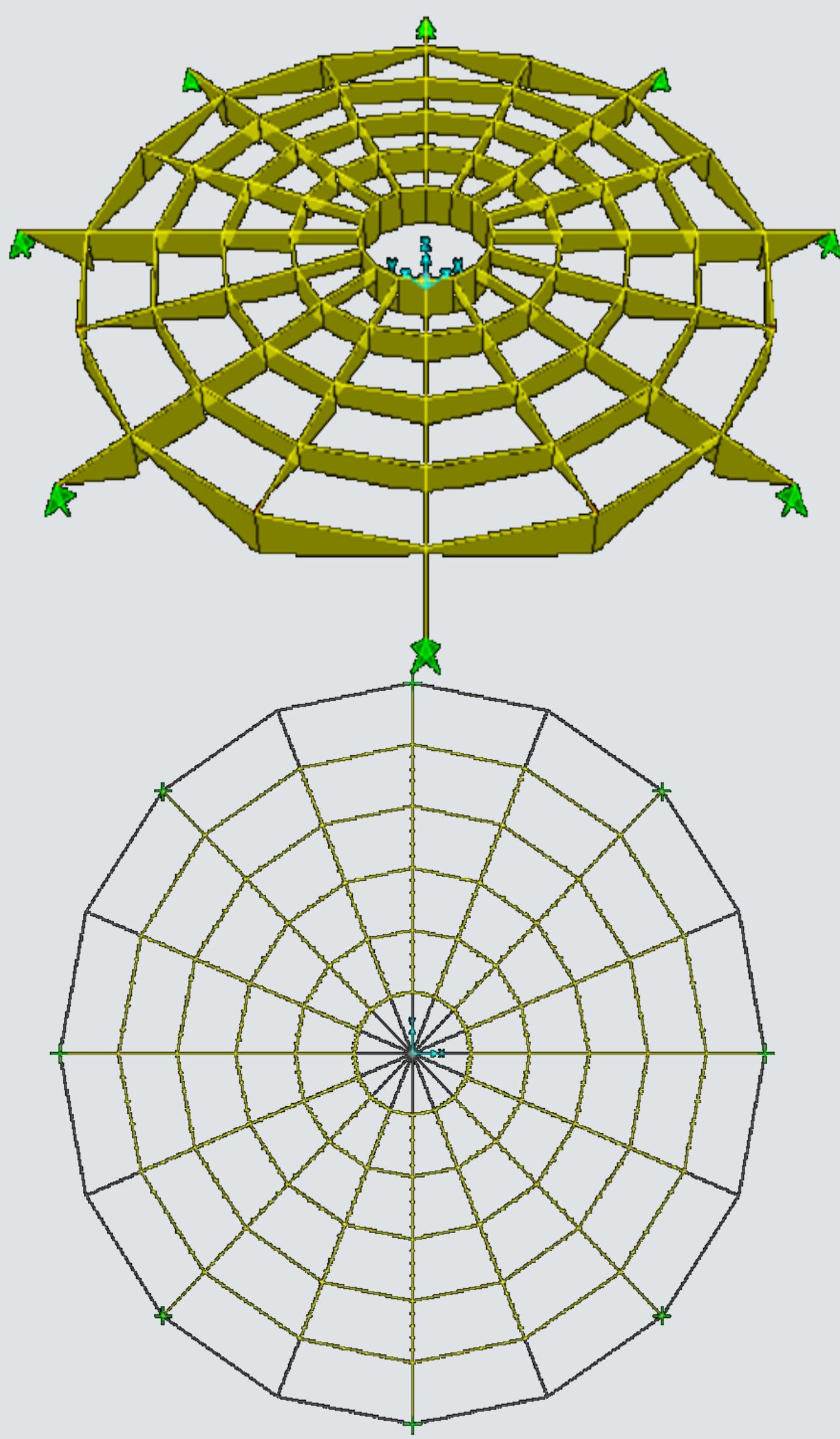
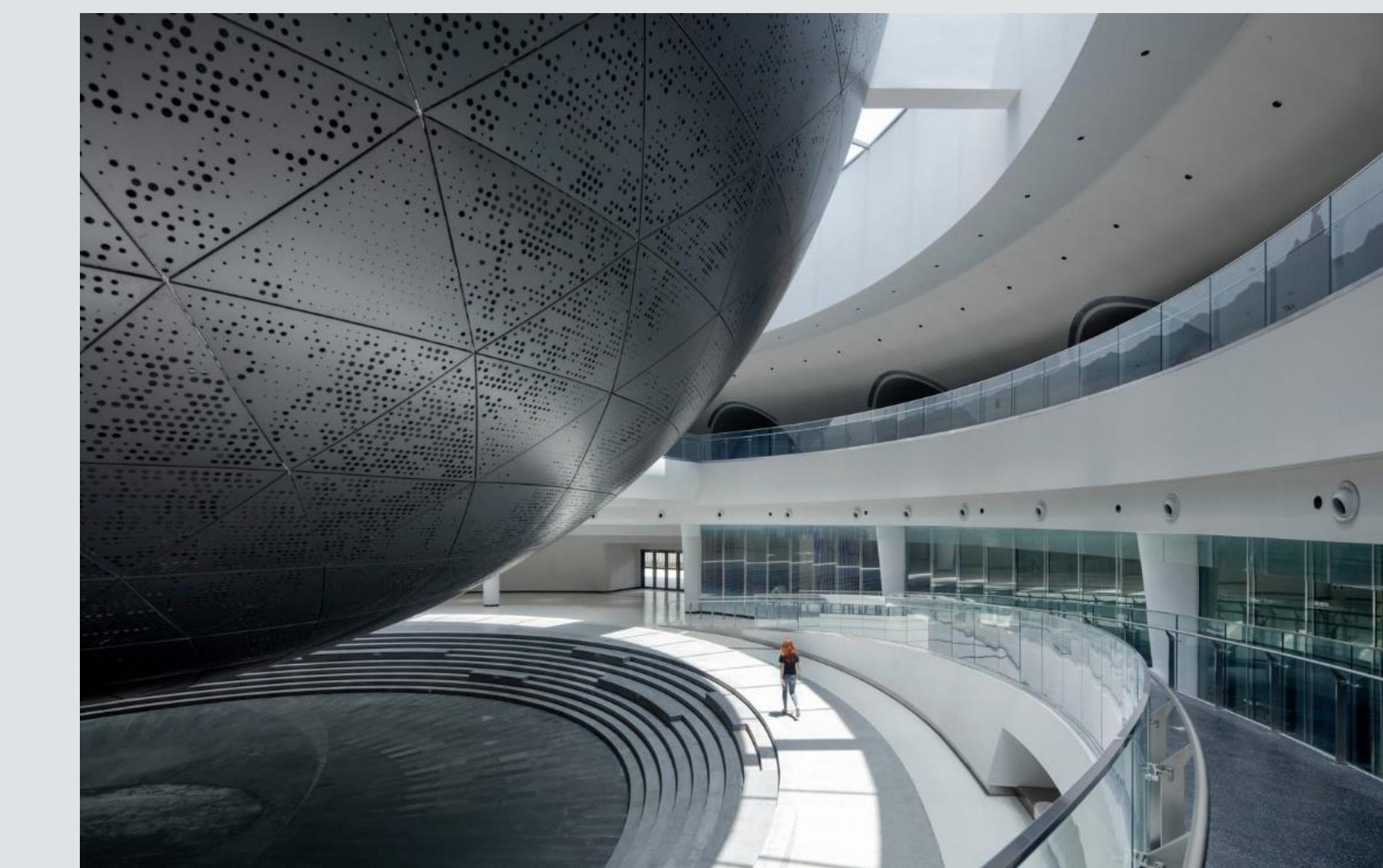
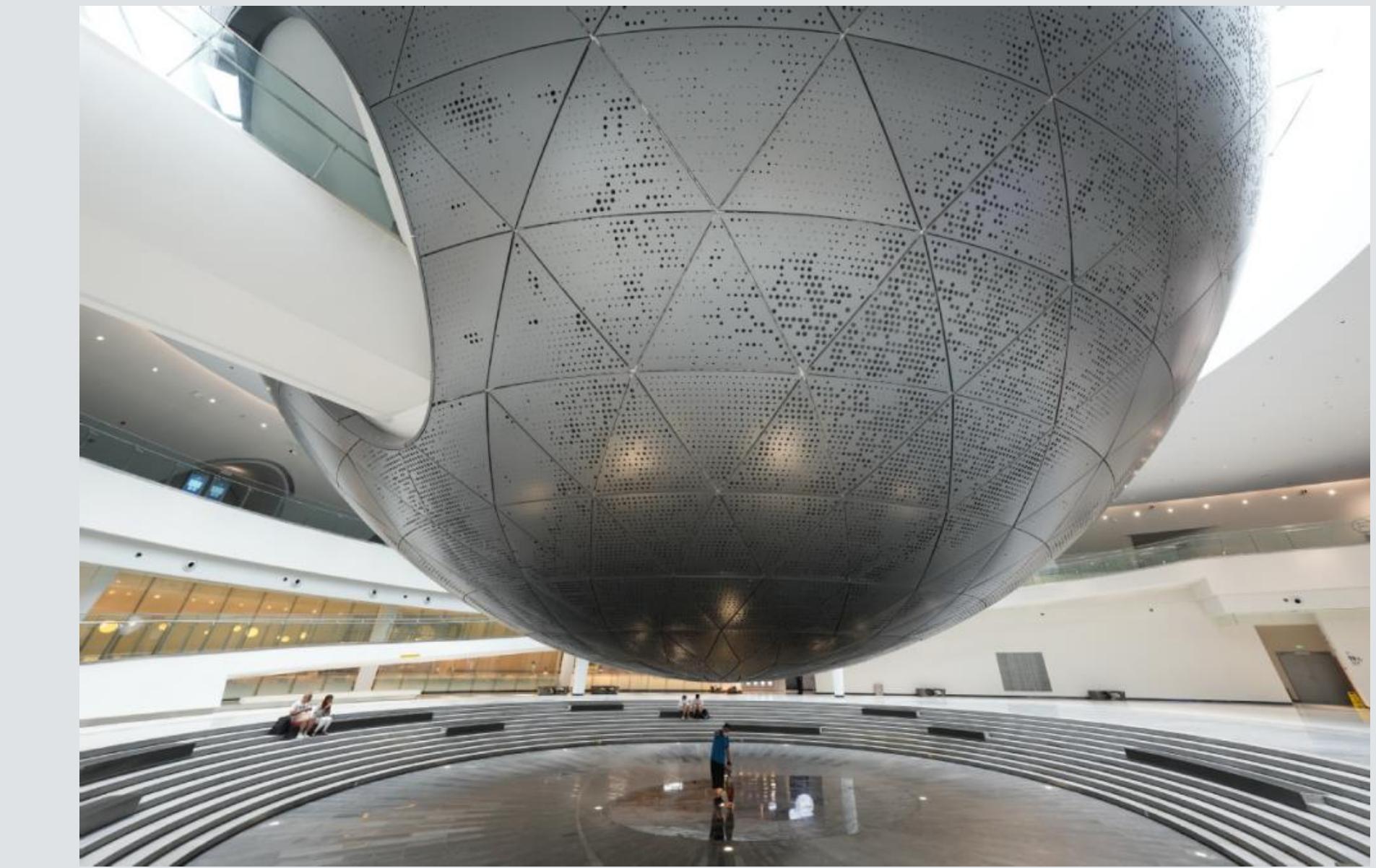
# MOOD BOARD



# STRUCTURE SYSTEM OF PLANETARIUM

## Radial shaped 3D frames

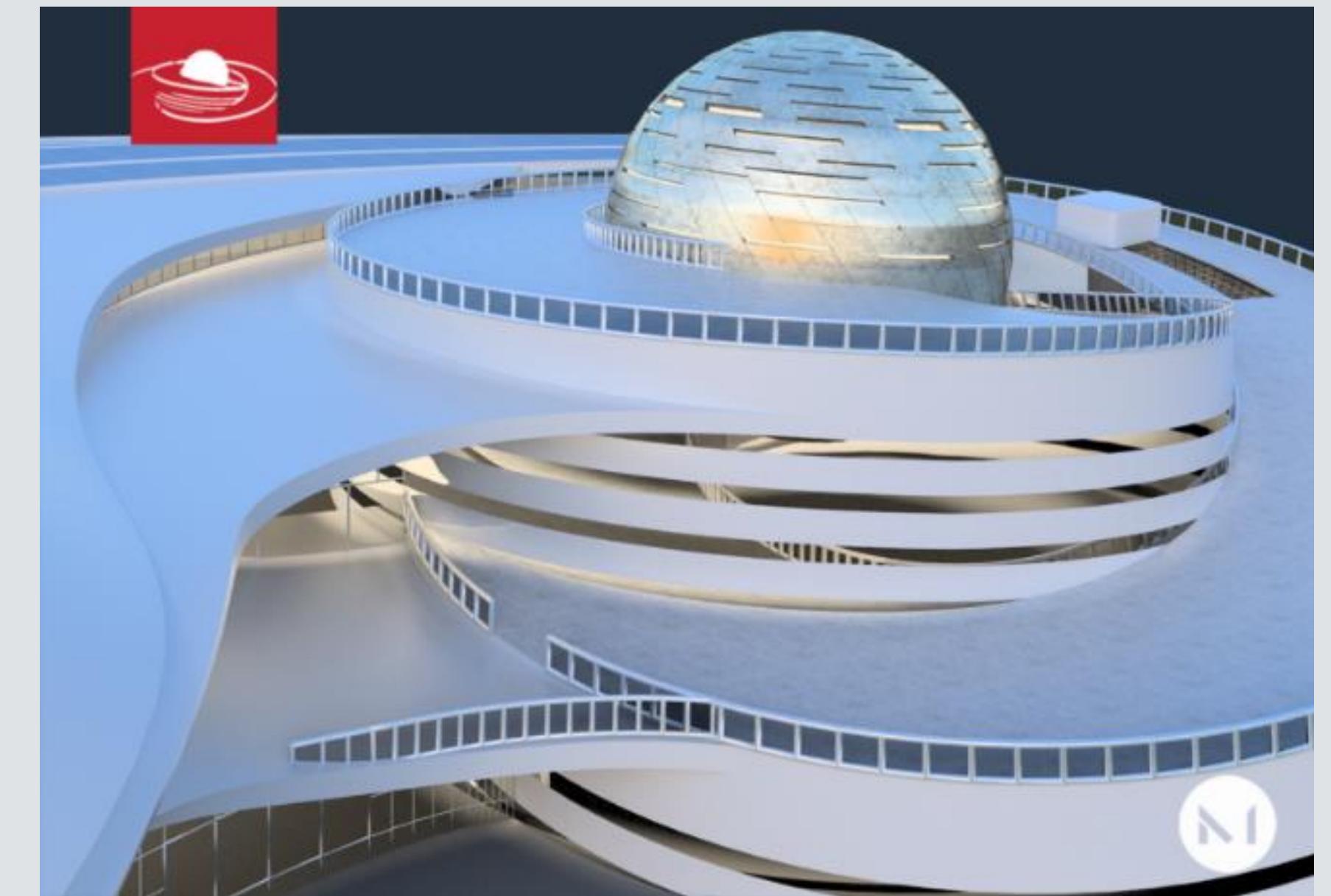
- Large cantilever structure which is rarely seen.
- It consists of a two-story two-way truss structure
- span of about 61 meters and a horizontal cantilever distance of about 36 meters.



# CONCEPT OF THE DOME SHAPE

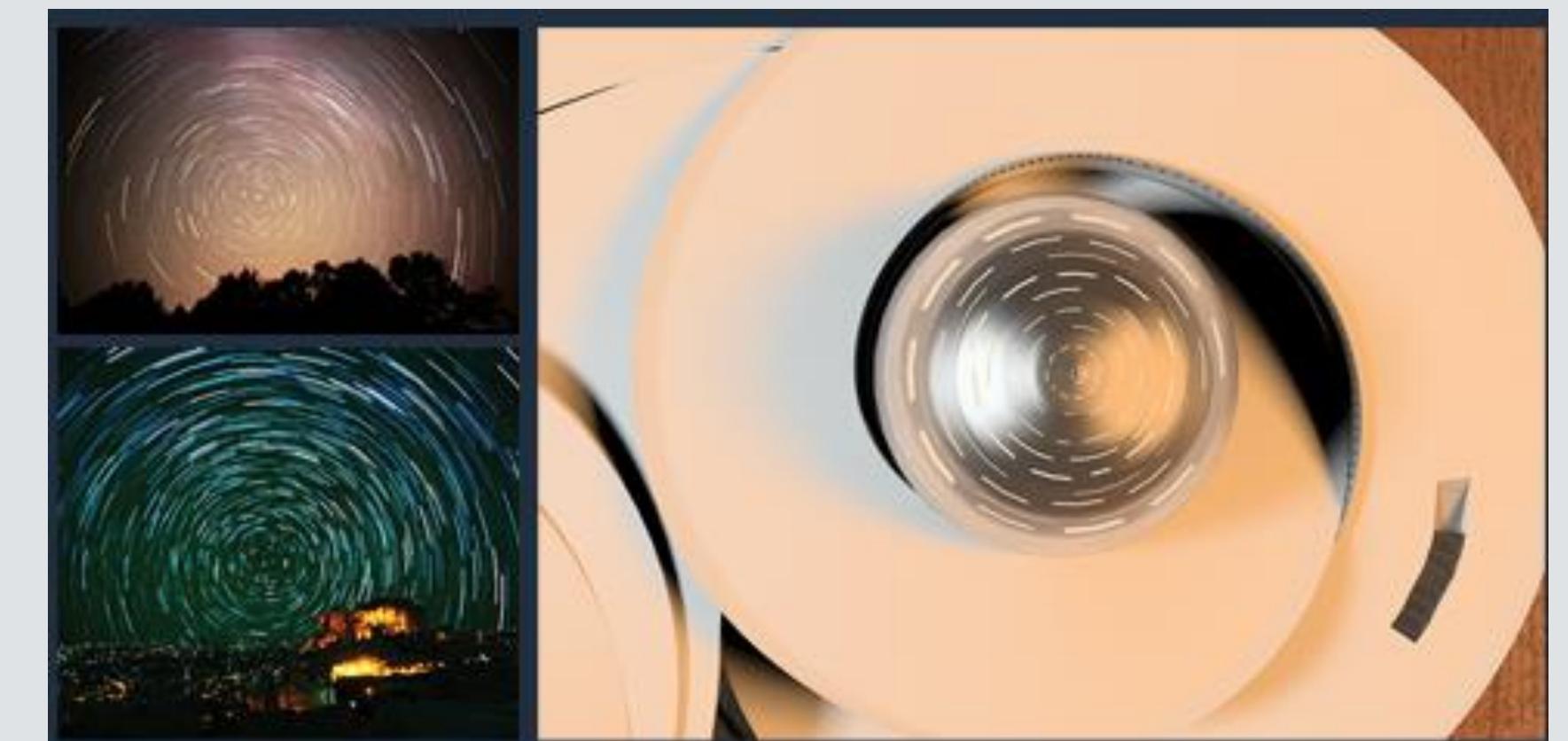
## Dome Shape Concept:

- By adding a certain system to the planetarium for people to experience and for scientists to observe and explore in different way.
- Openings found in the Dome will contain a specialized telescope to capture from deep sky Known as, Long exposure astrophotography, with standard SLR lenses that lasts for 10 mins



## Devices used:

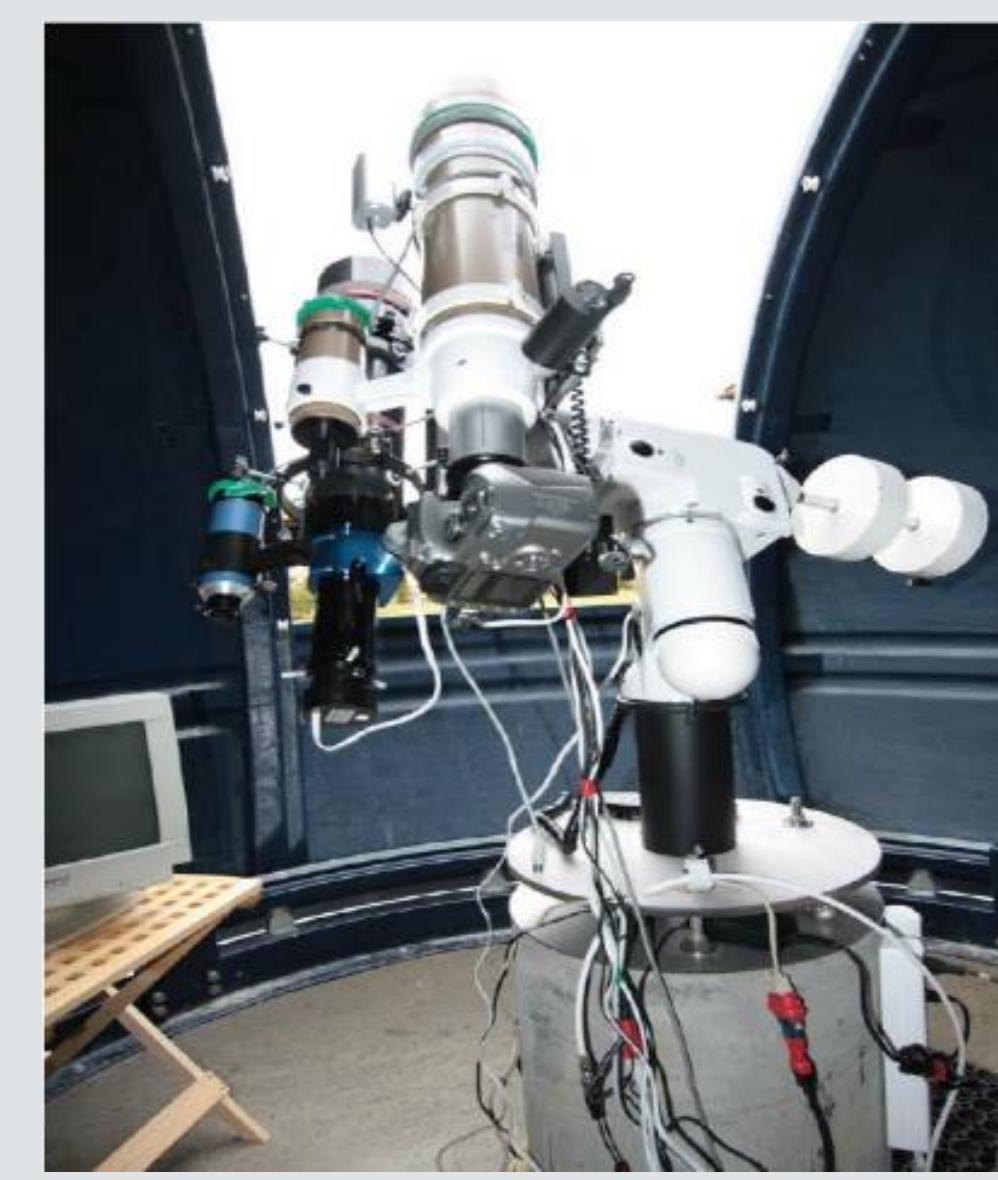
Telescope sit on an [Orion Astro view Equatorial Mount](#). As shown below, it's a standard German Equatorial Mount and does not track the night sky. Therefore in order to create long exposures of night sky objects, tracking has to be added using an motor drive.



Long-exposure astrophotography can cover everything from images lasting a minute to those lasting many hours and is usually the realm of sophisticated telescopes. In order to keep this article focused on what the typical nature photographer might be interested in exploring, the content of this article is limited to images taken with standard SLR lenses and individual exposures lasting less than ten minutes (although I will discuss stacking of images to obtain longer effective exposures).



Canon EOS XTi Guiding



Overall

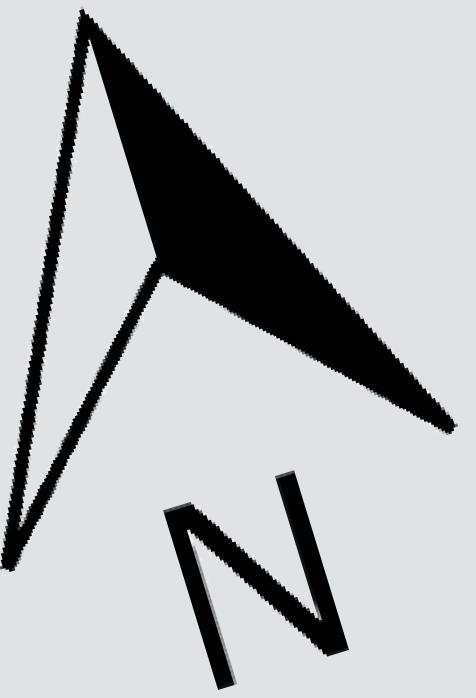


Orion EQ-3M Single-Axis  
Telescope Drive

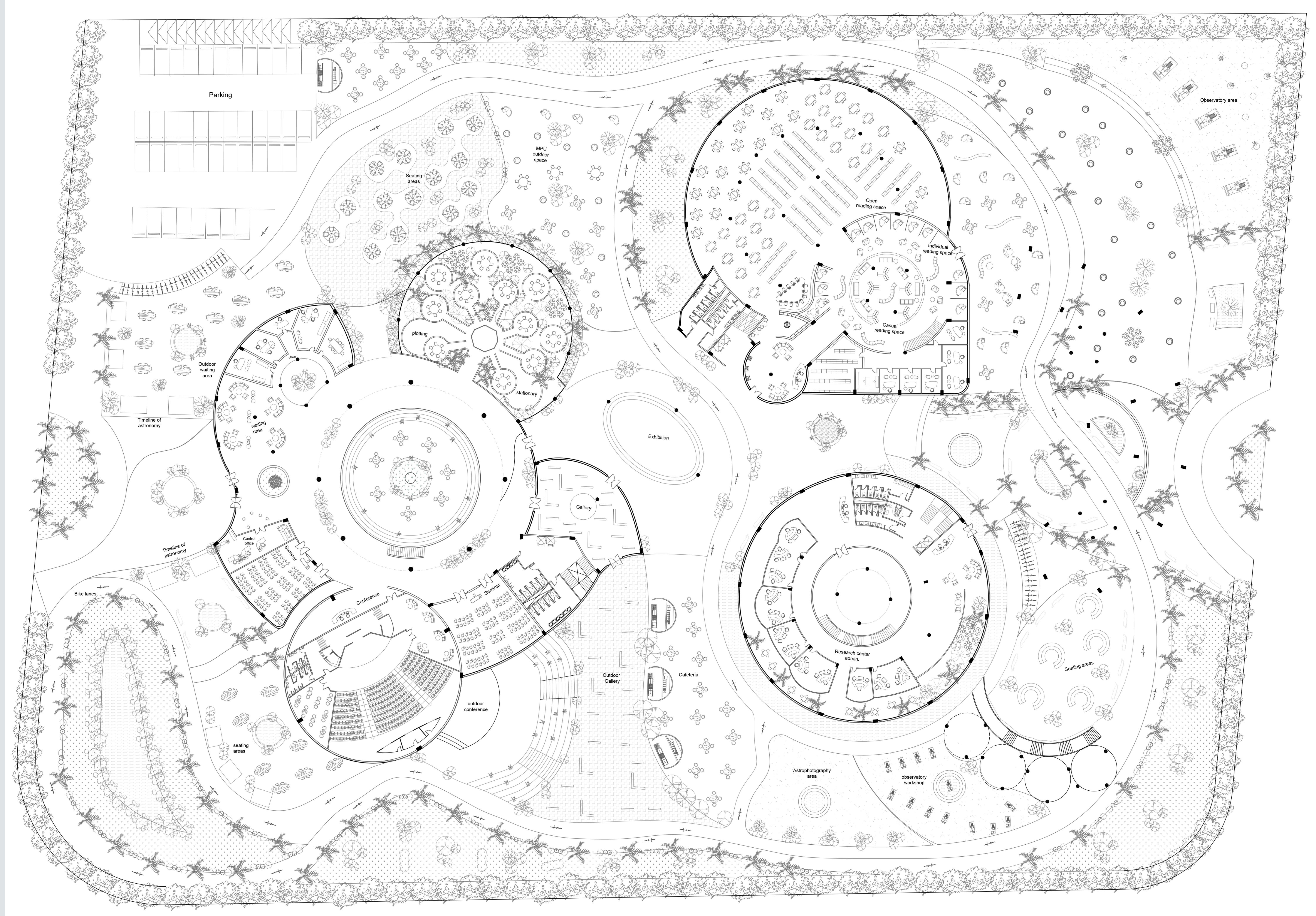


Orion Astro view Equatorial  
Mount

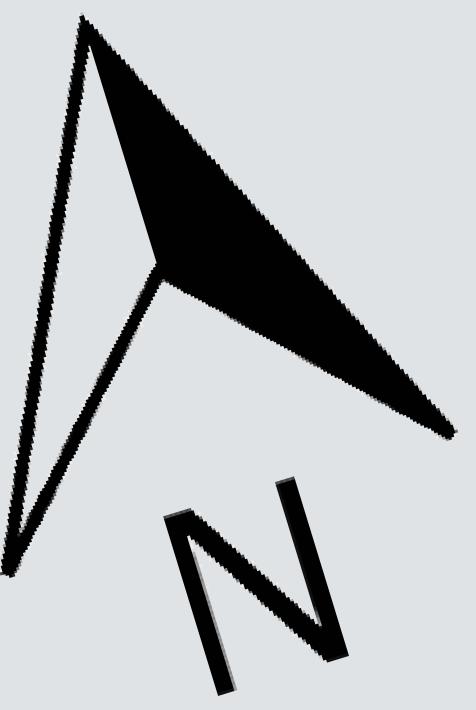
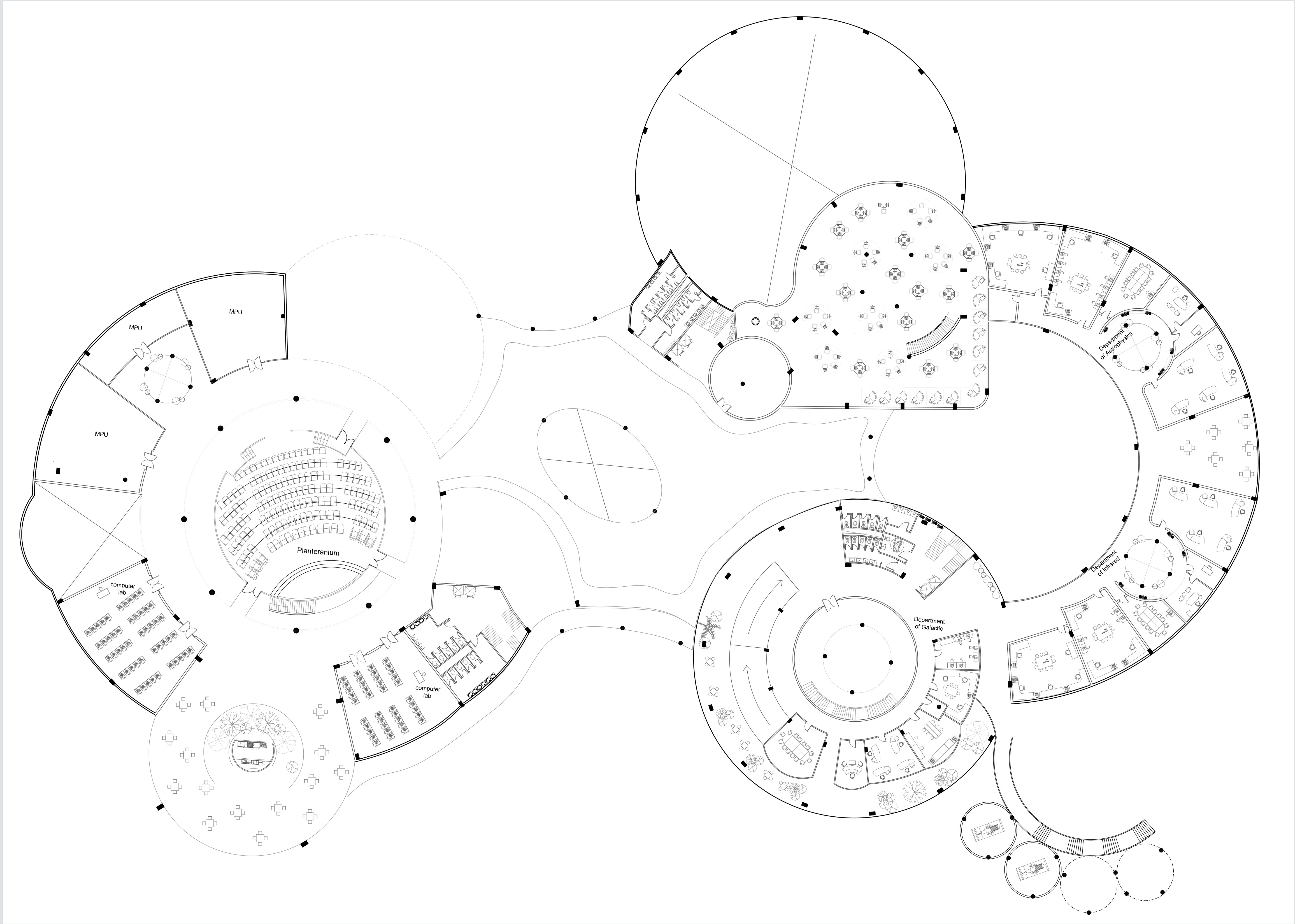
# LAYOUT



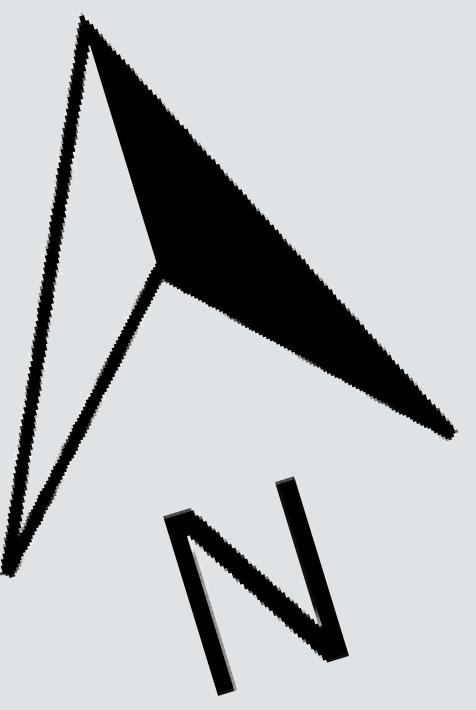
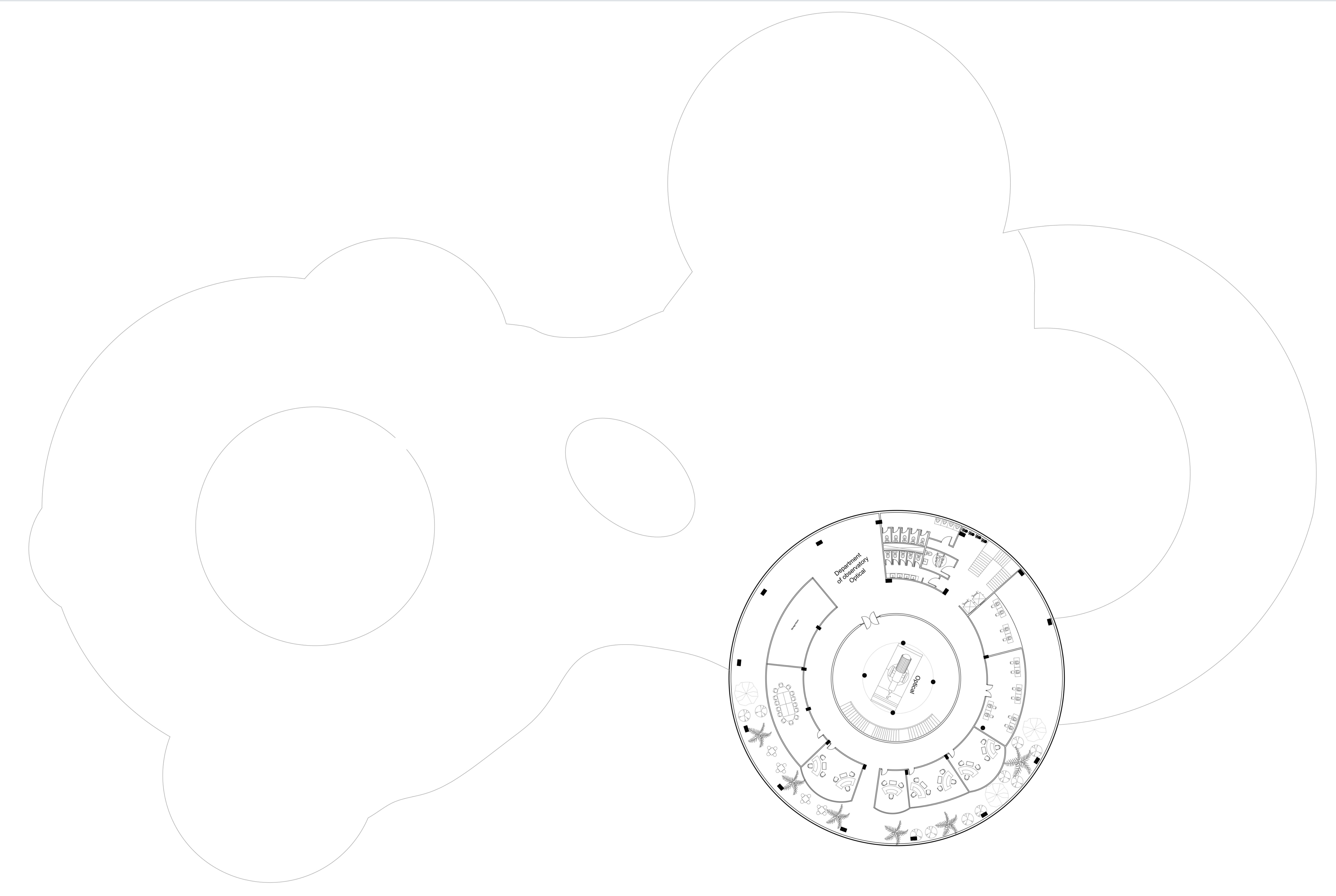
# MASTER PLAN



# FIRST FLOOR PLAN

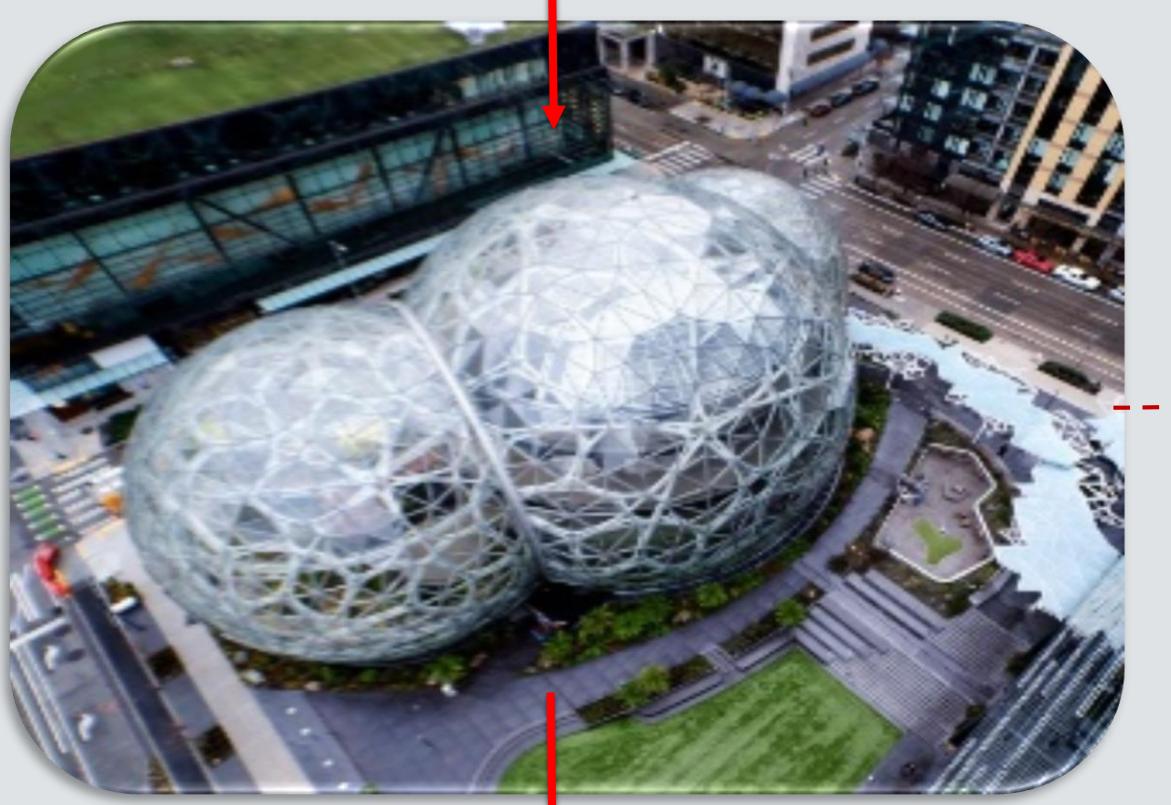


## SECOND FLOOR PLAN

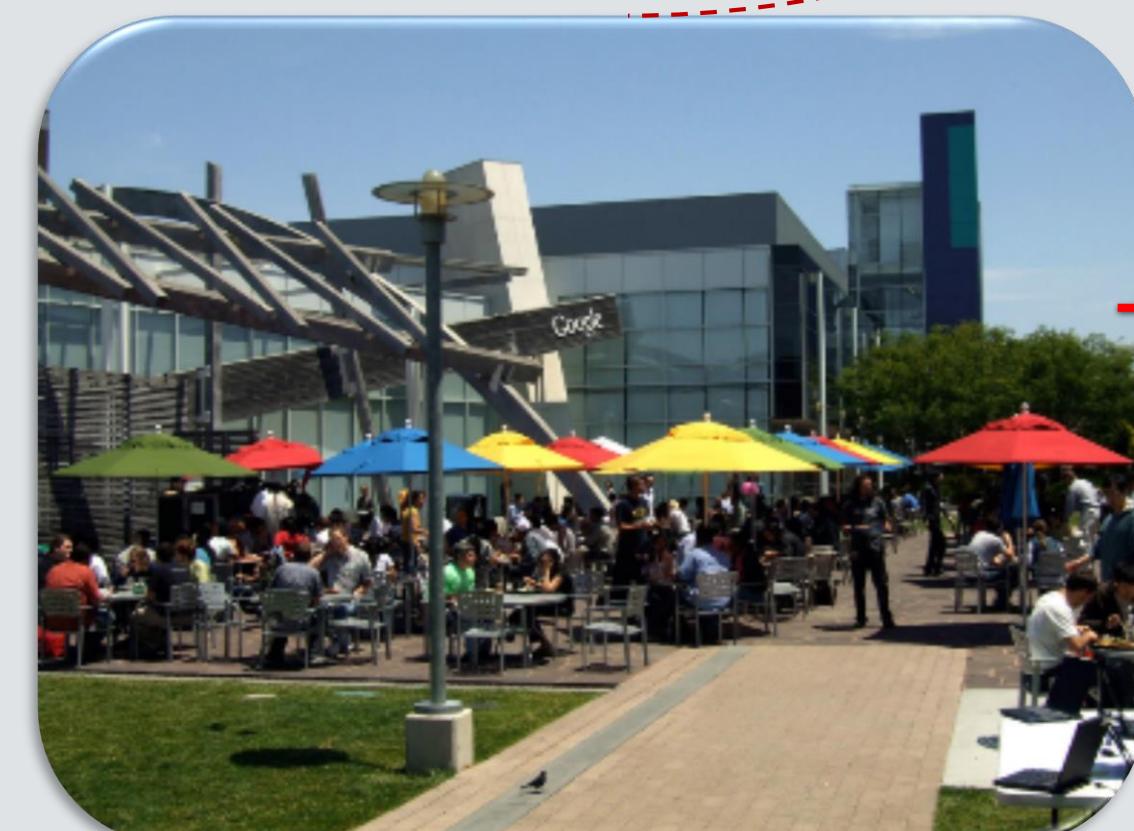
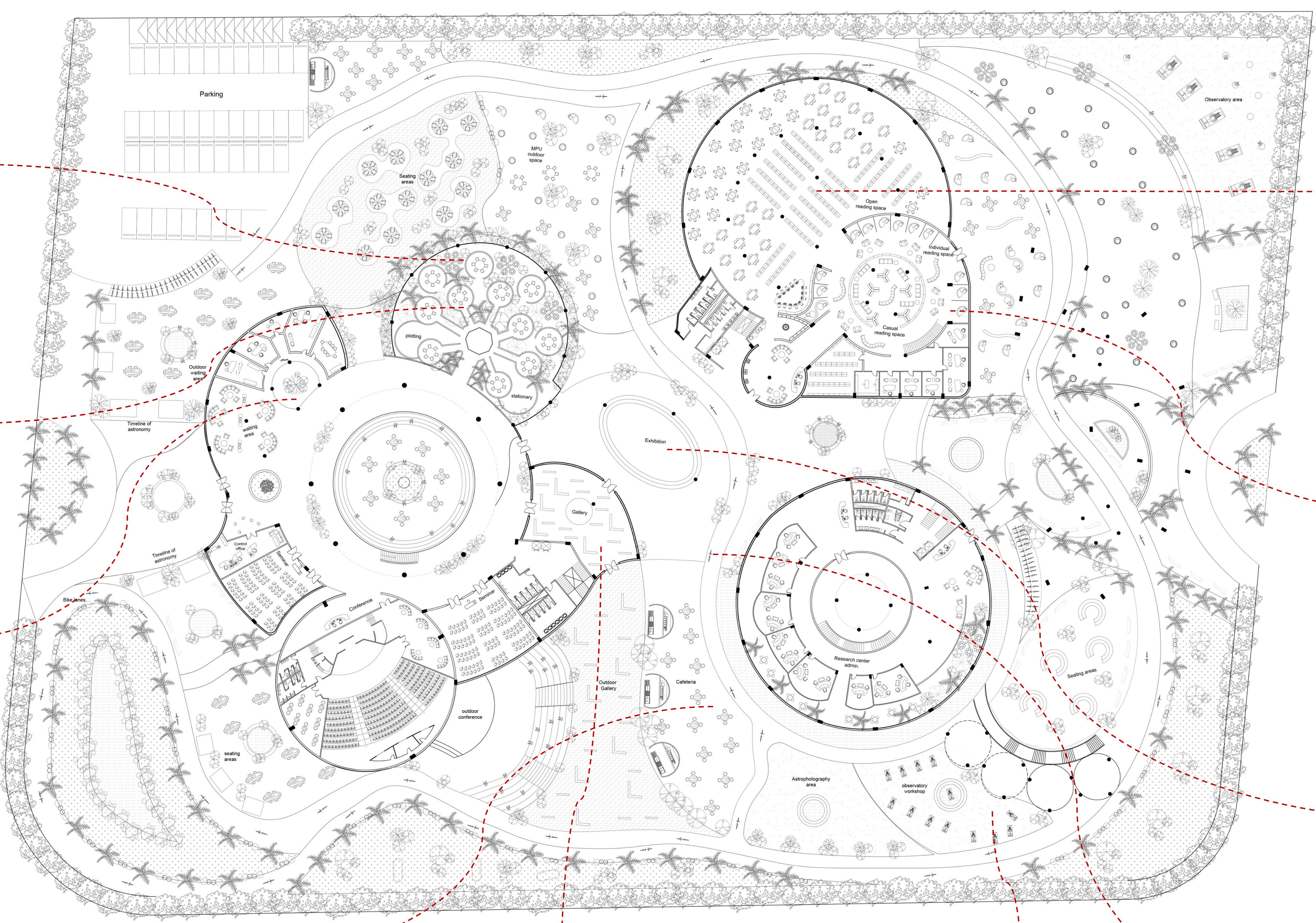


# SOCIAL SUSTAINABLE APPROACHES

Visual connection with nature  
(courtyard -Atrium- gardens)

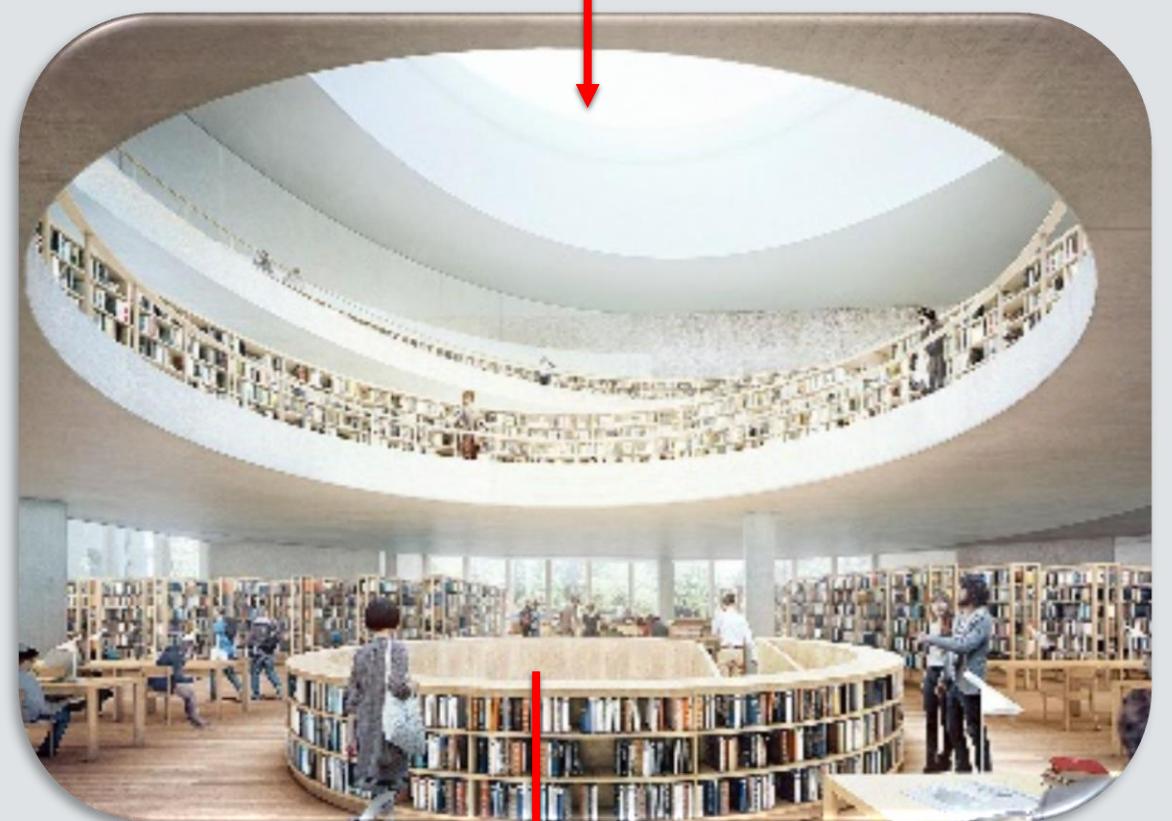


Connection with natural systems  
Interactive opportunities- shadow & light  
Thermal & air flow variability  
Covered outdoor spaces



Dynamic & Diffuse Light  
(Sky light-Dynamic lightening)

Prospect  
Mezzanine-open plan-optimize visual access

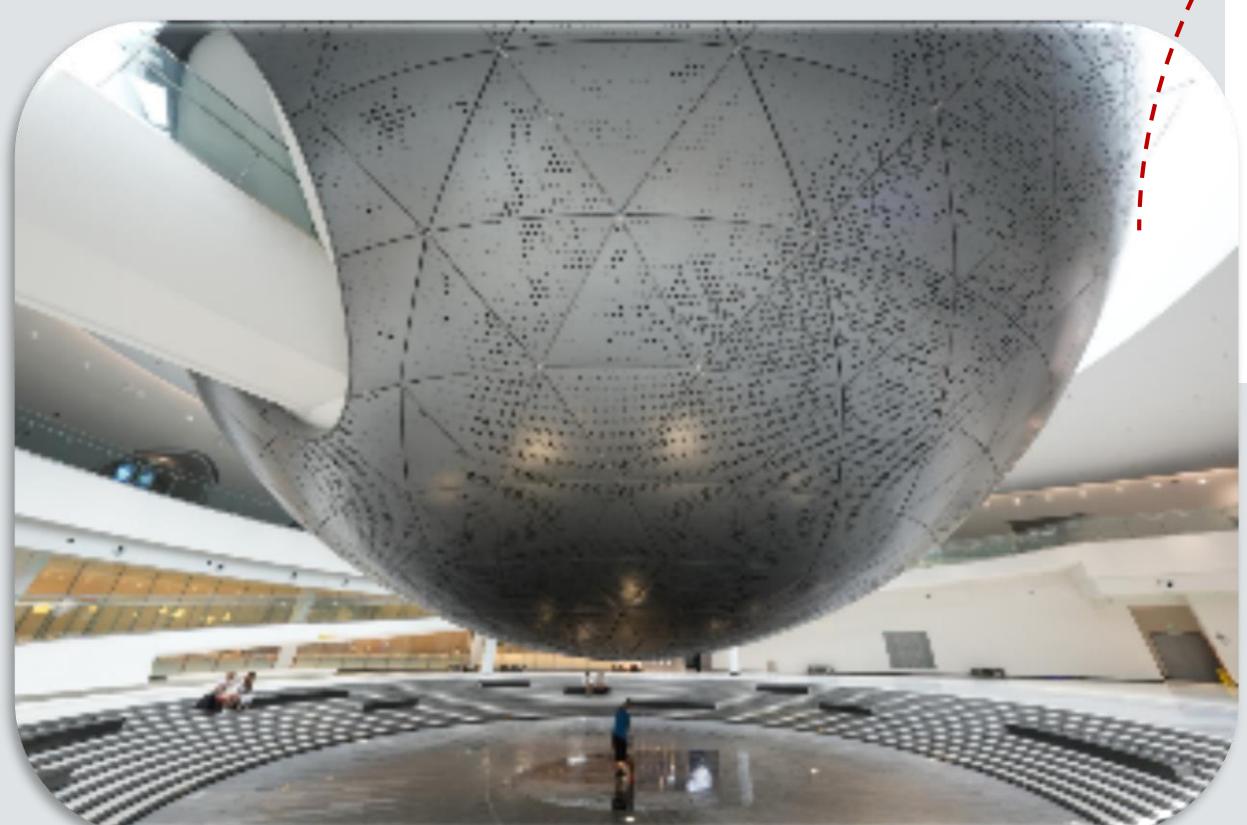


# ENVIRONMENTAL SUSTAINABLE APPROACHES

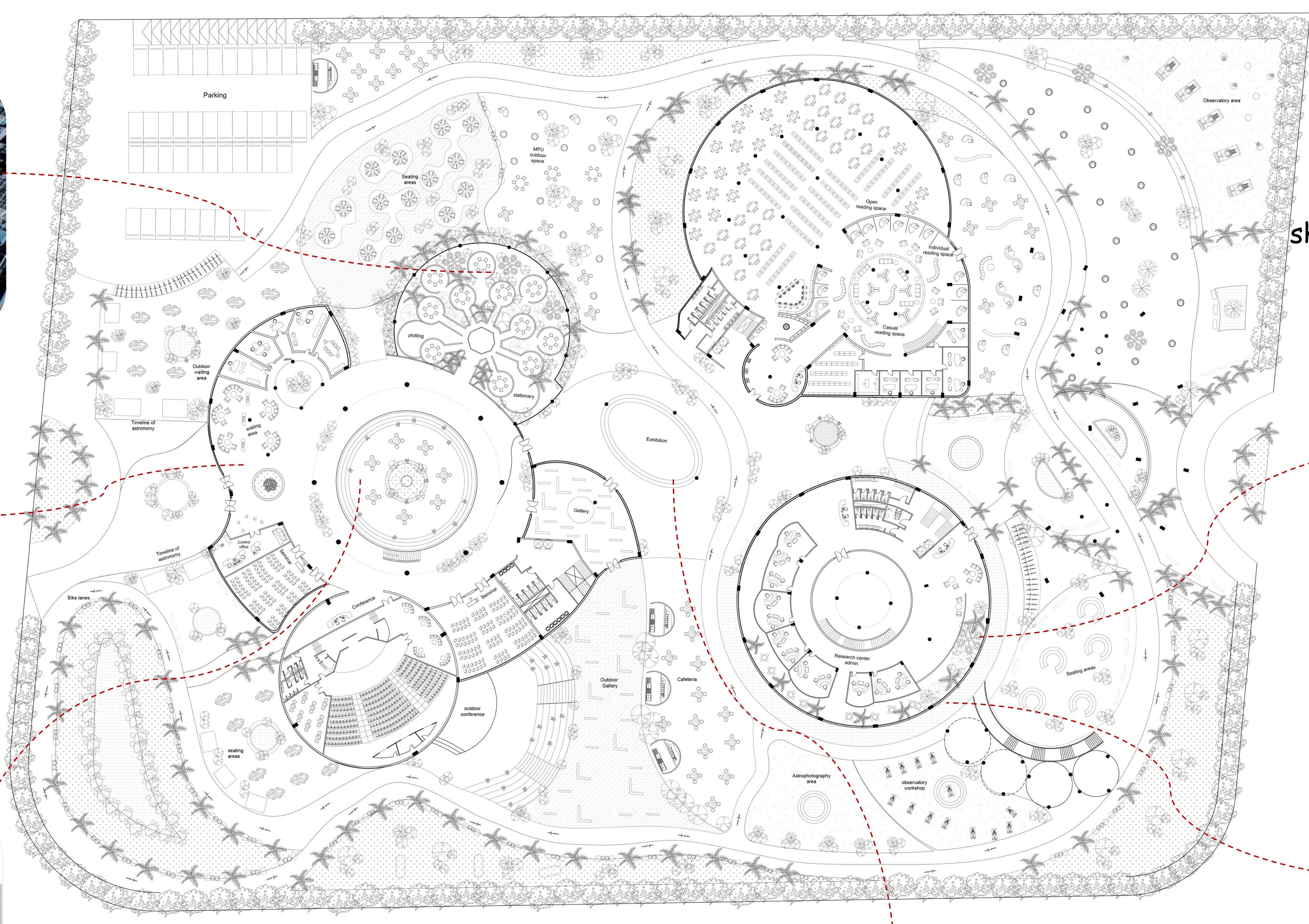
Visual connection with nature  
(courtyard -Atrium- gardens)



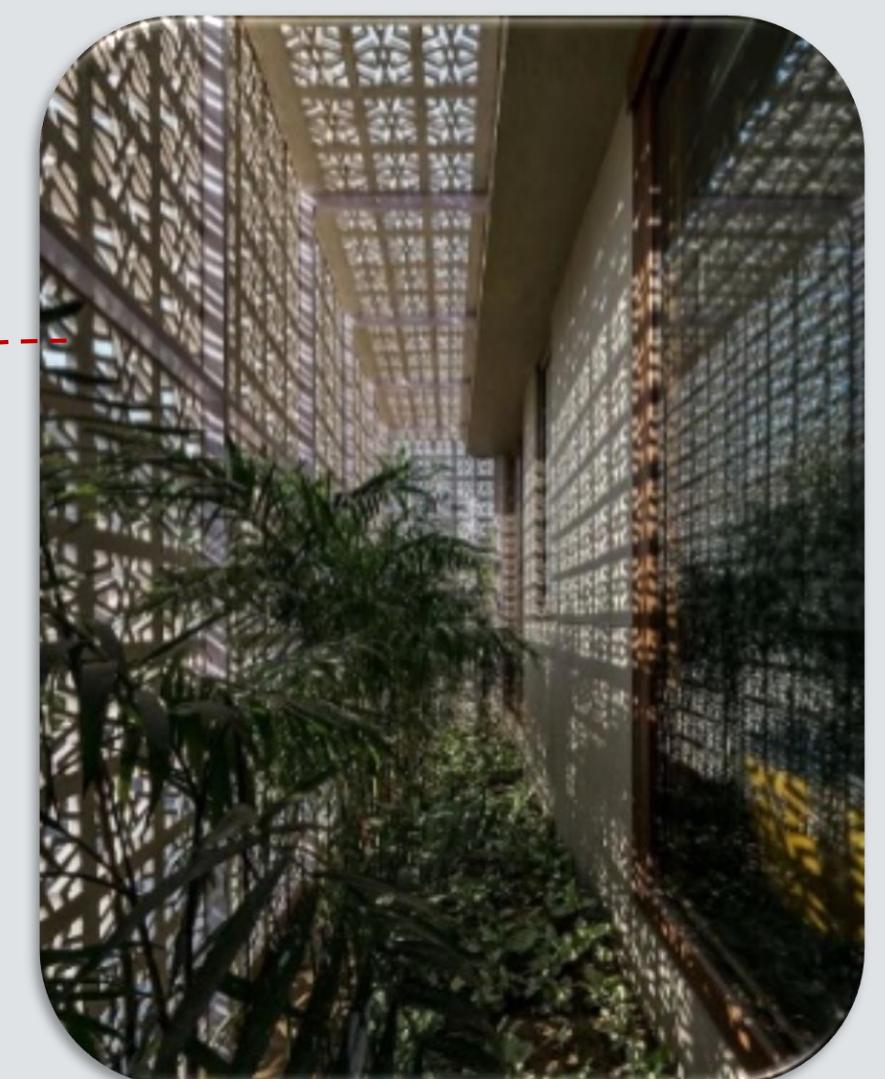
Dynamic & Diffuse Light  
(Sky light-Dynamic lightening)



Connection with natural systems  
Interactive opportunities- shadow &light



Dynamic & Diffuse Light  
(Sky light-Dynamic lightening)  
Thermal & air flow variability  
shadow and shade- Green wall- window glazing



Presence of water

# ENVIRONMENTAL SUSTAINABLE APPROACHES

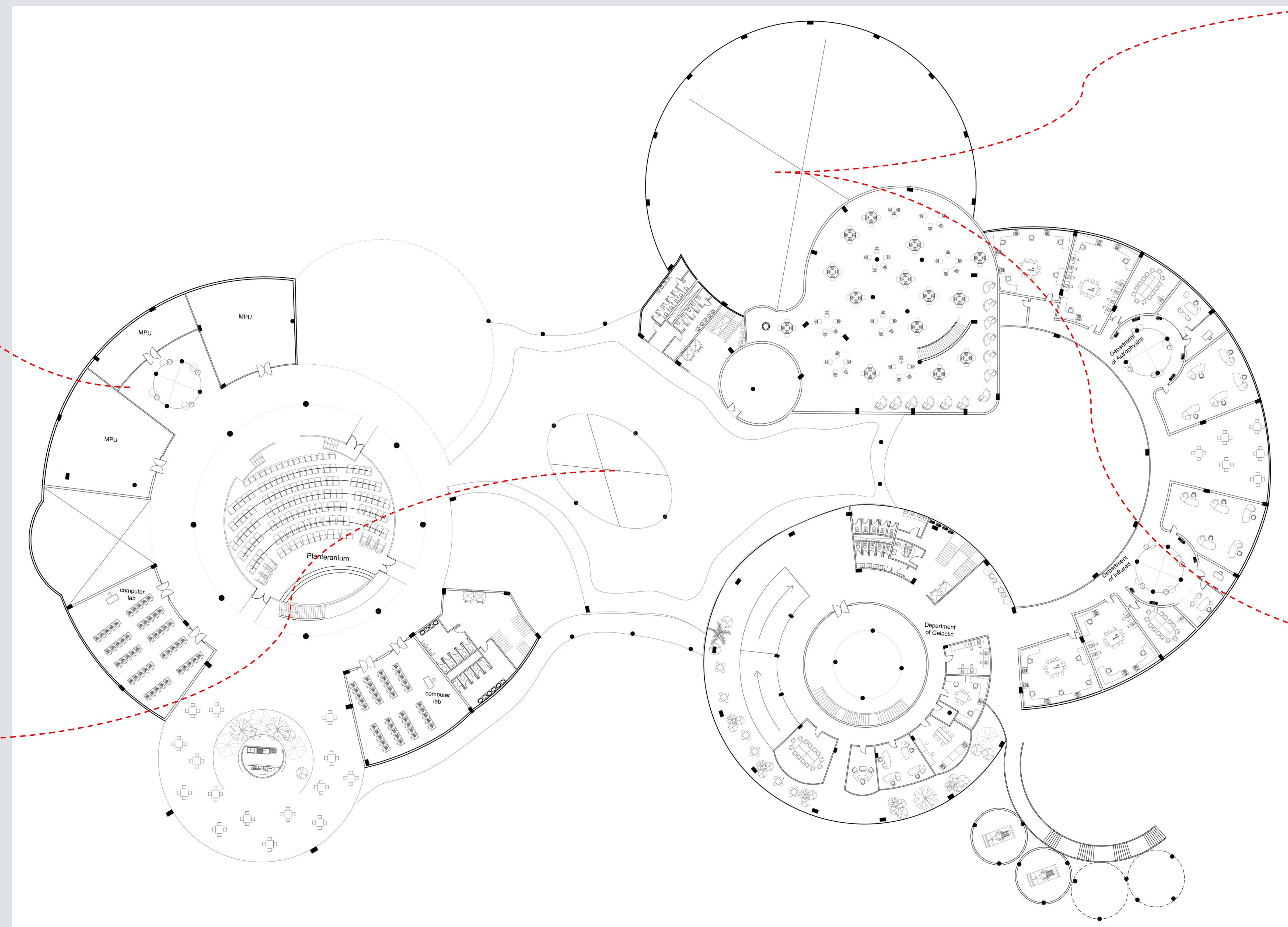
Visual connection with nature  
(courtyard -Atrium- gardens)



Connection with natural systems  
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Connection with natural systems  
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Dynamic & Diffuse Light  
(Sky light-Dynamic lightening)

Prospect  
Mezzanine-open plan-optimize visual access



## EXTERIOR SHOTS



## EXTERIOR SHOTS



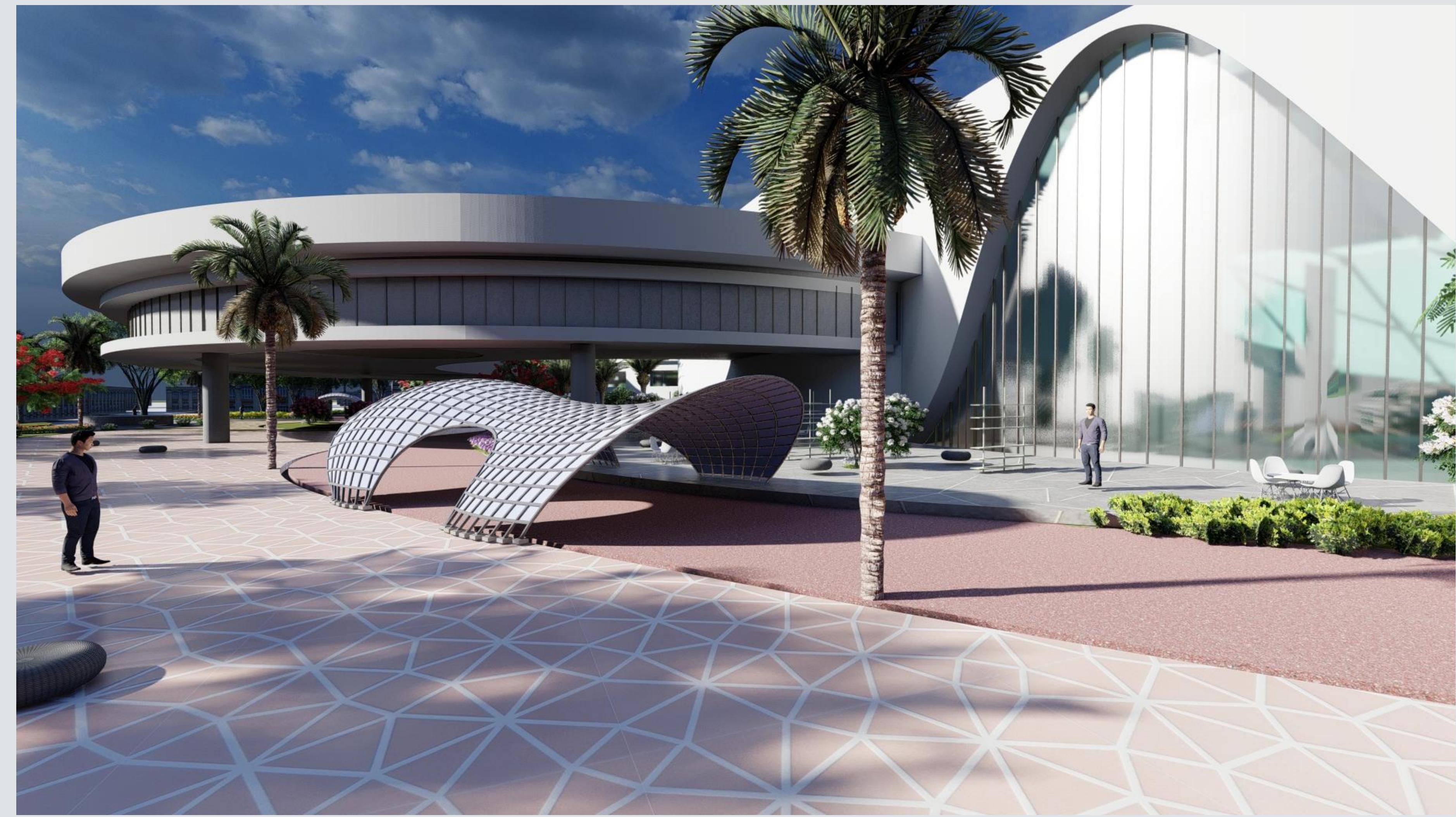
## EXTERIOR SHOTS



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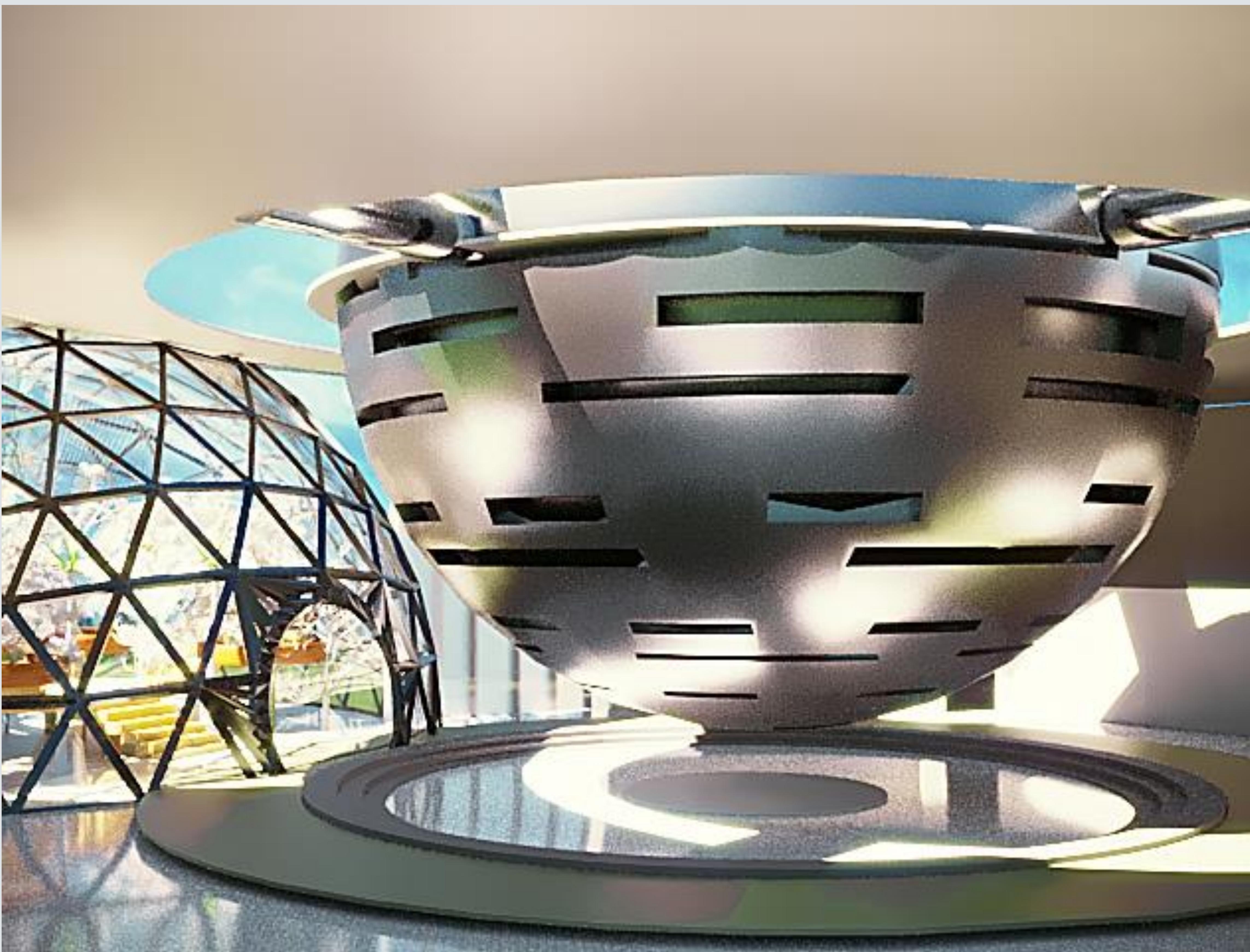
## EXTERIOR SHOTS



## EXTERIOR SHOTS



## INTERIOR SHOTS



Planetarium

## INTERIOR SHOTS



Working Space



## INTERIOR SHOTS



Library

