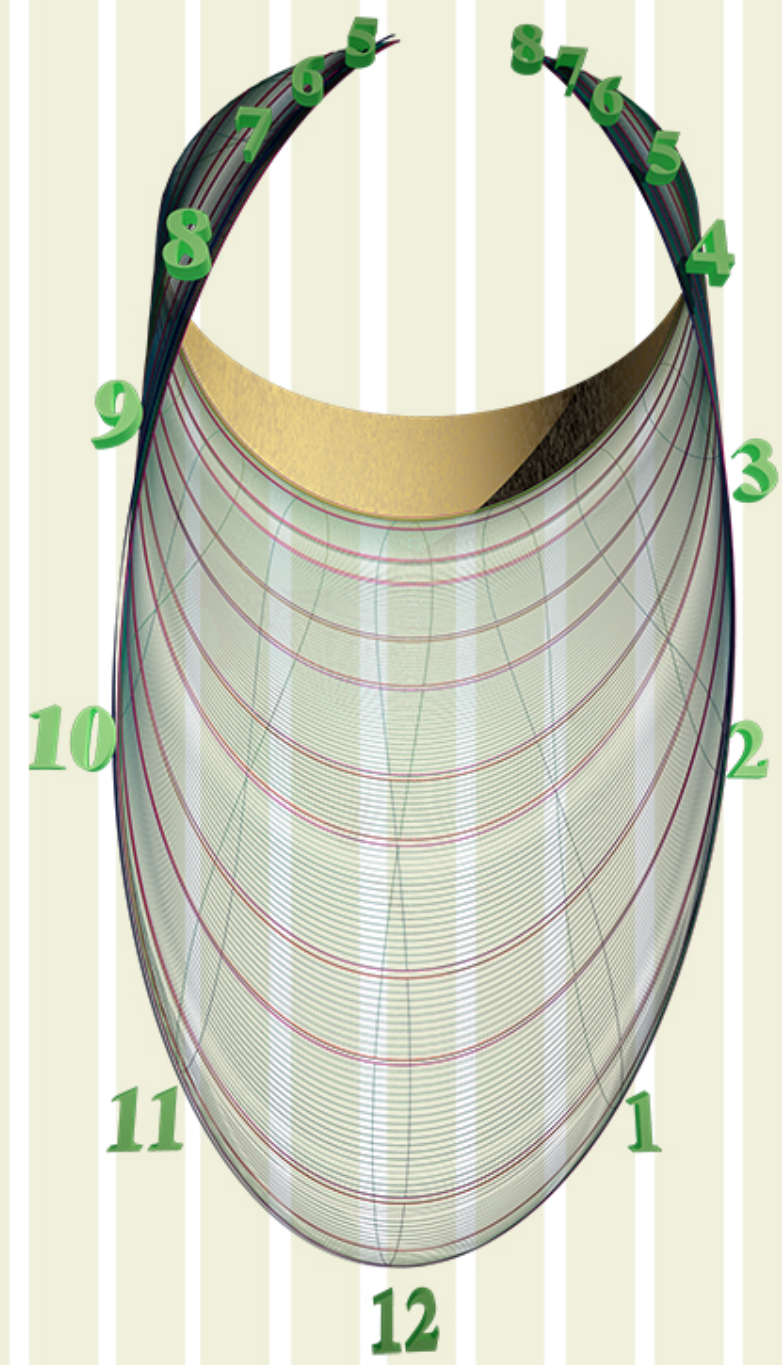
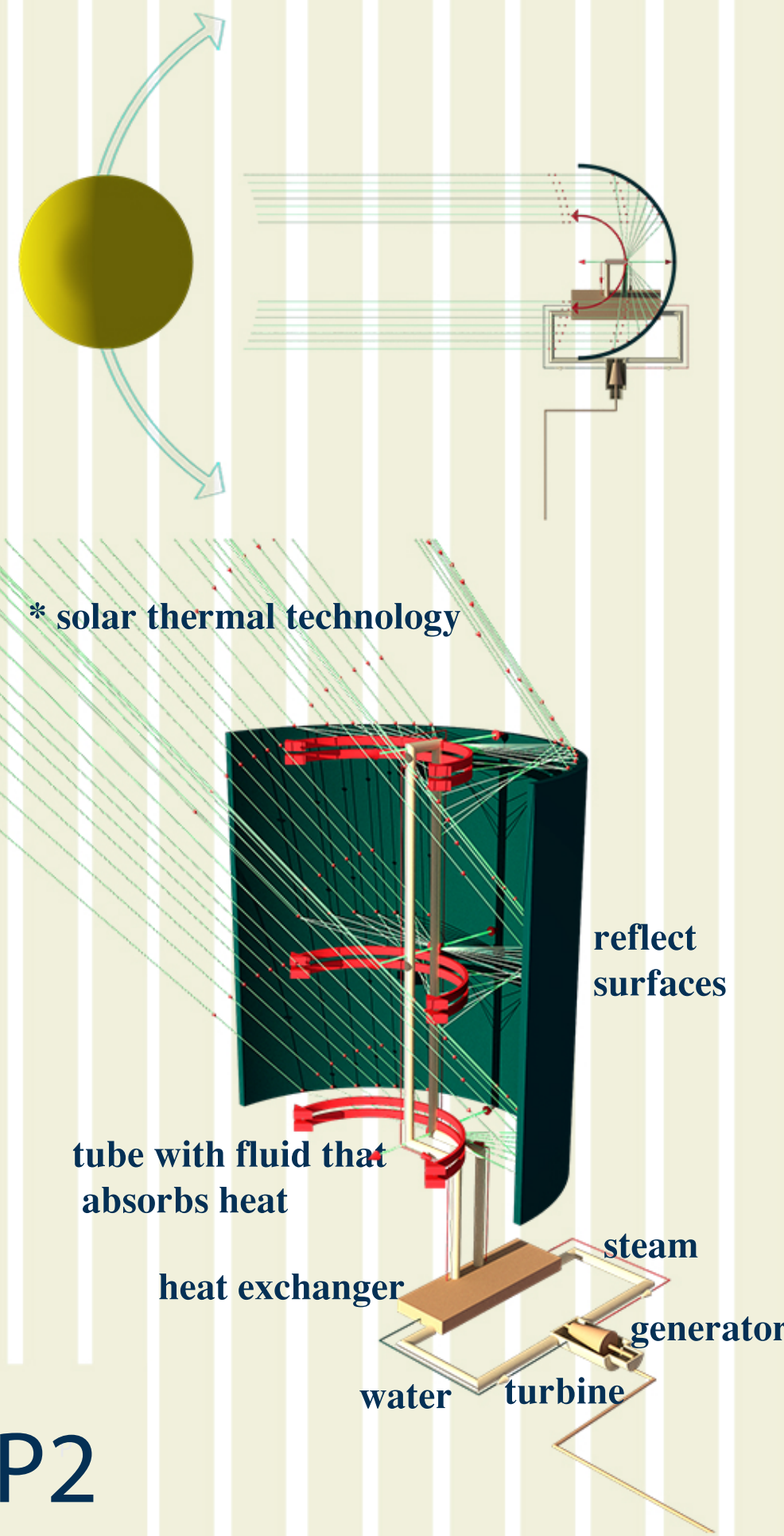


* Reasons for choosing a cylinder form:



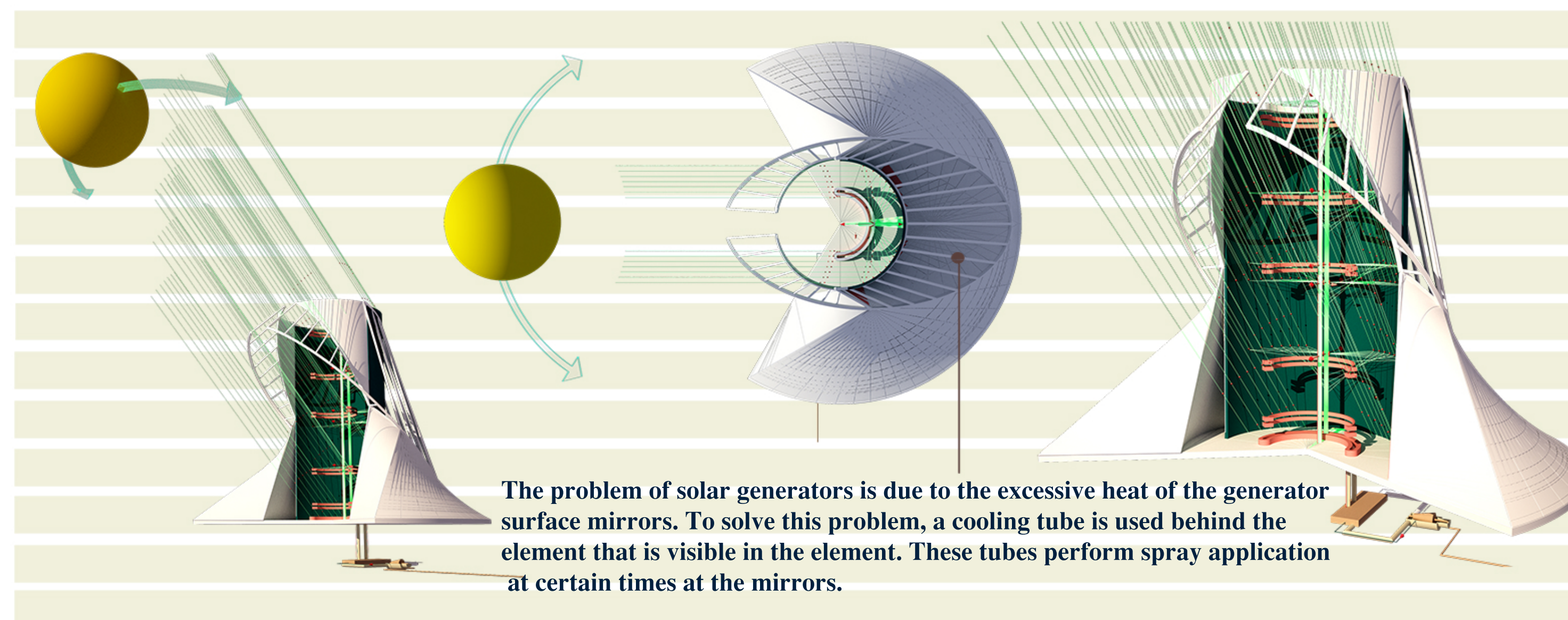
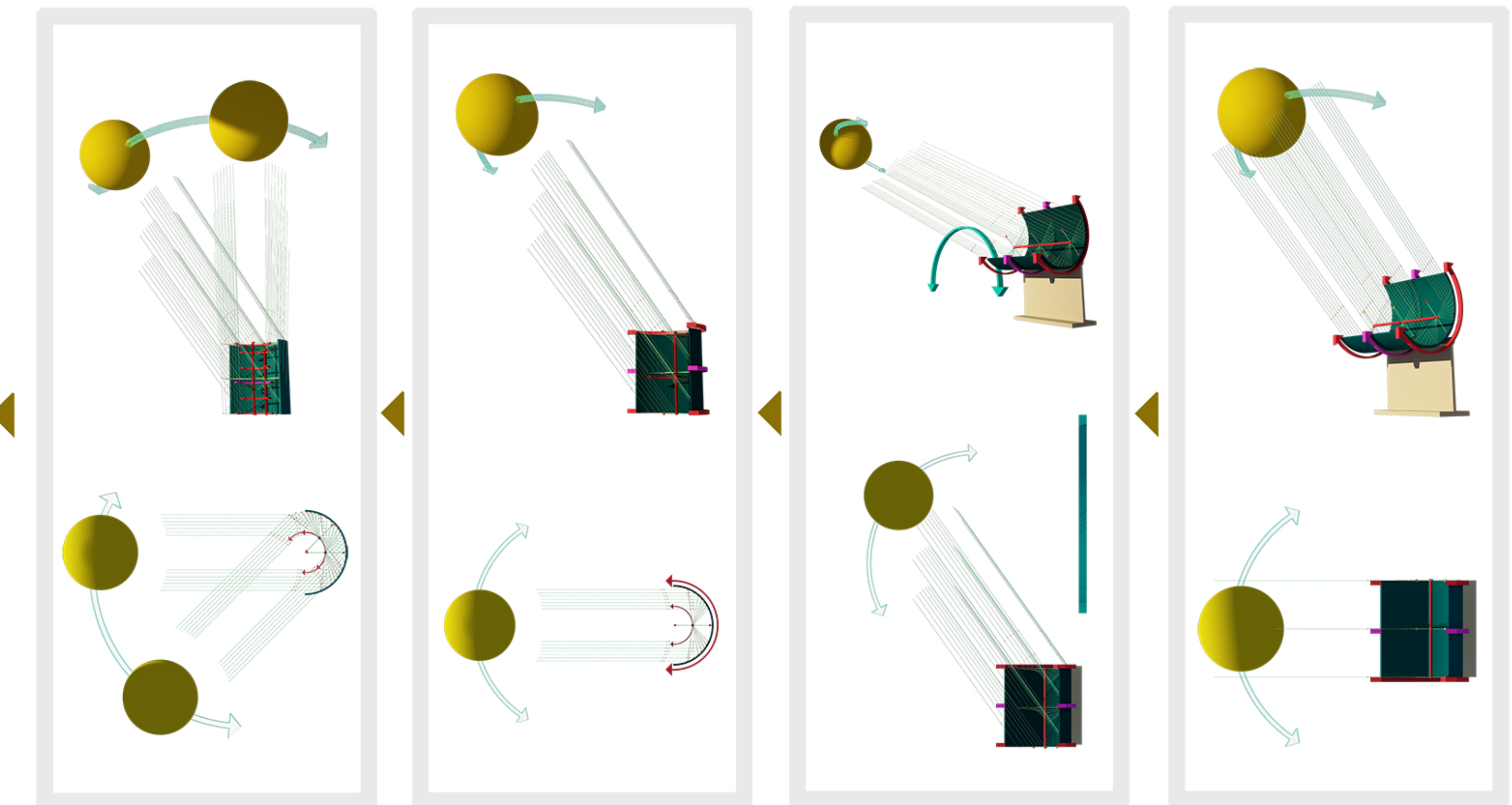
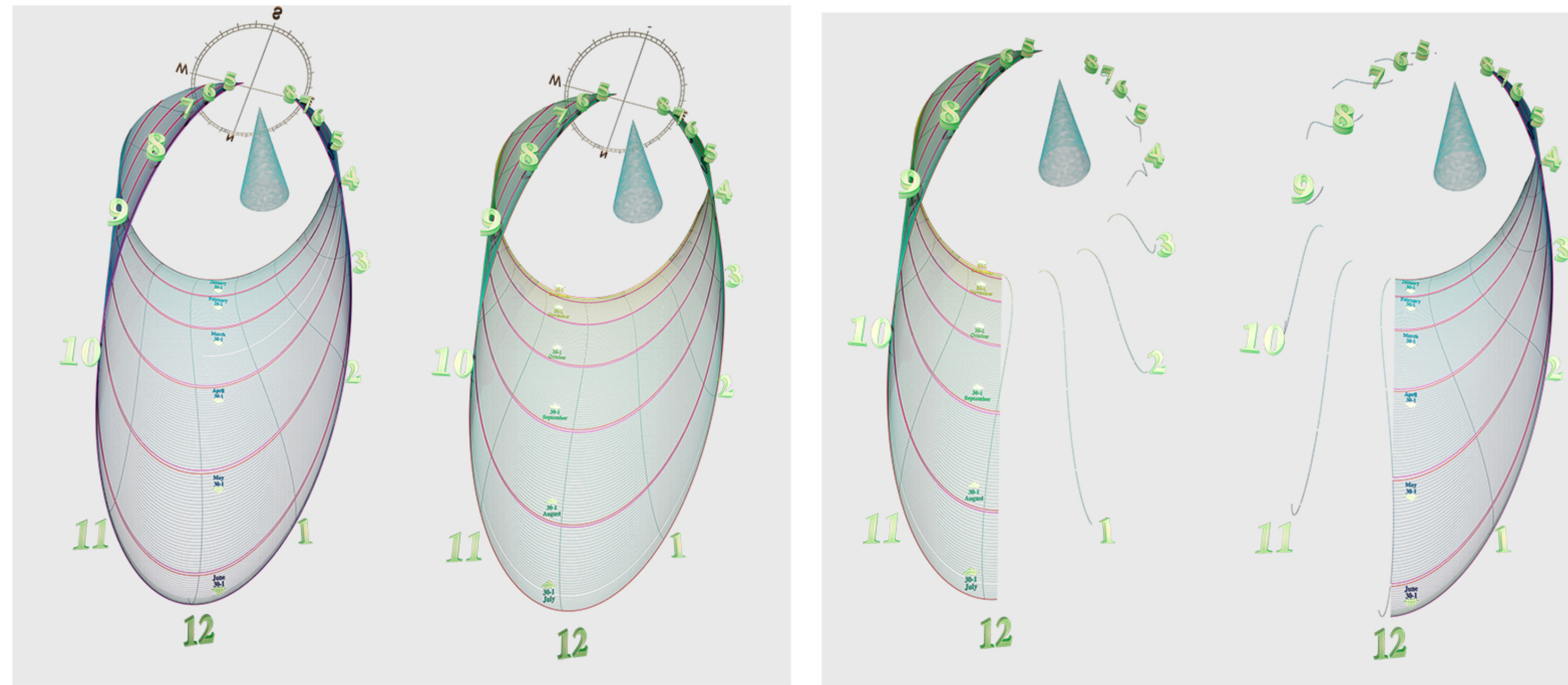
when drafting the goals of the design team, the creation of a solar generator was also considered. In the process of studies of solar generators, Solar Concentrated Power was considered as generators with high efficiency and high energy production. In these generators, the concave mirror plates are used to receive solar energy. On the other hand, the solar clock designed for the present project needs a form that has enough readability. So to achieve these two goals, the cylindrical shape was chosen. The form close to the theme of the contest is the design of the artistic element of Masdar city and the symbol of solar energy.



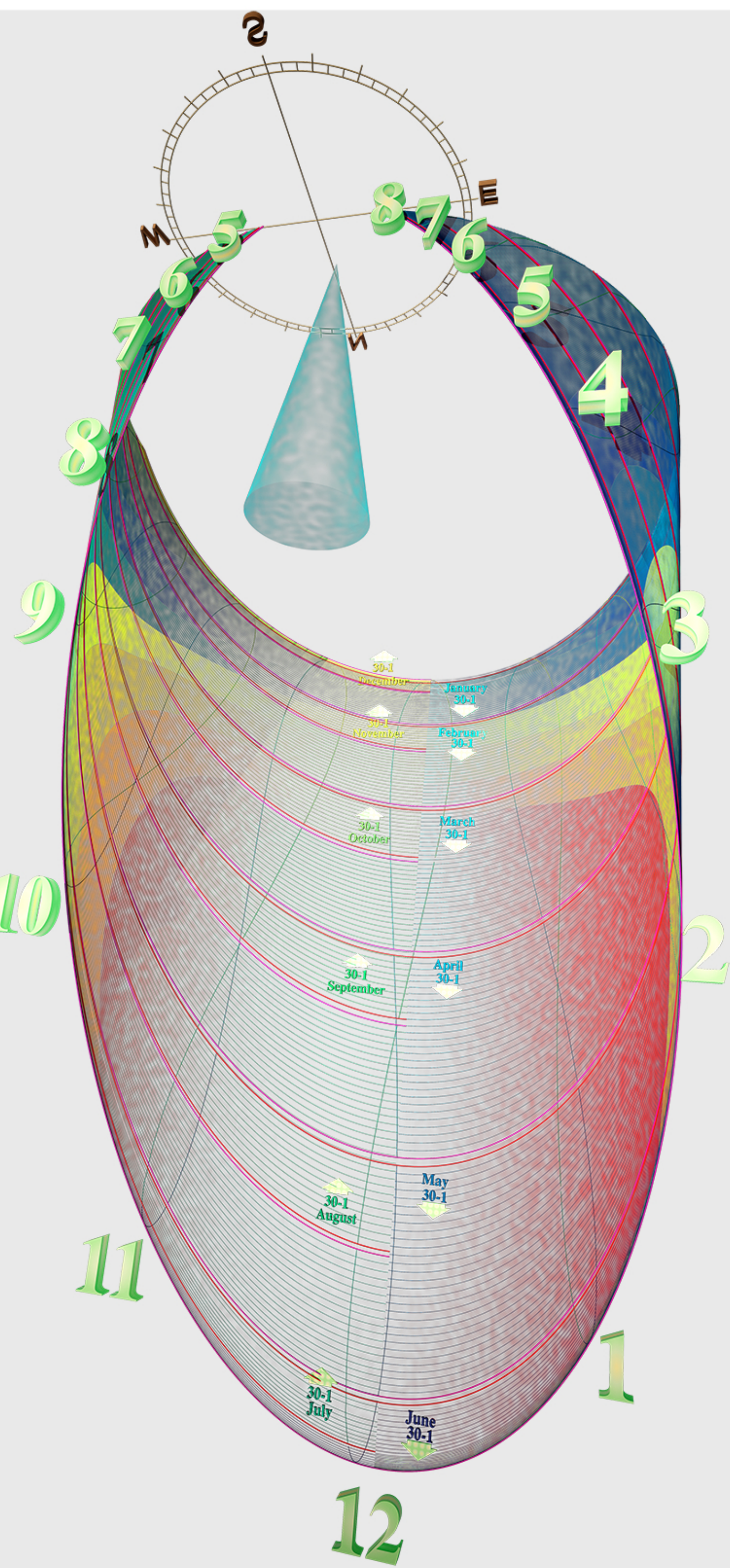
P2

Solar Generator design process

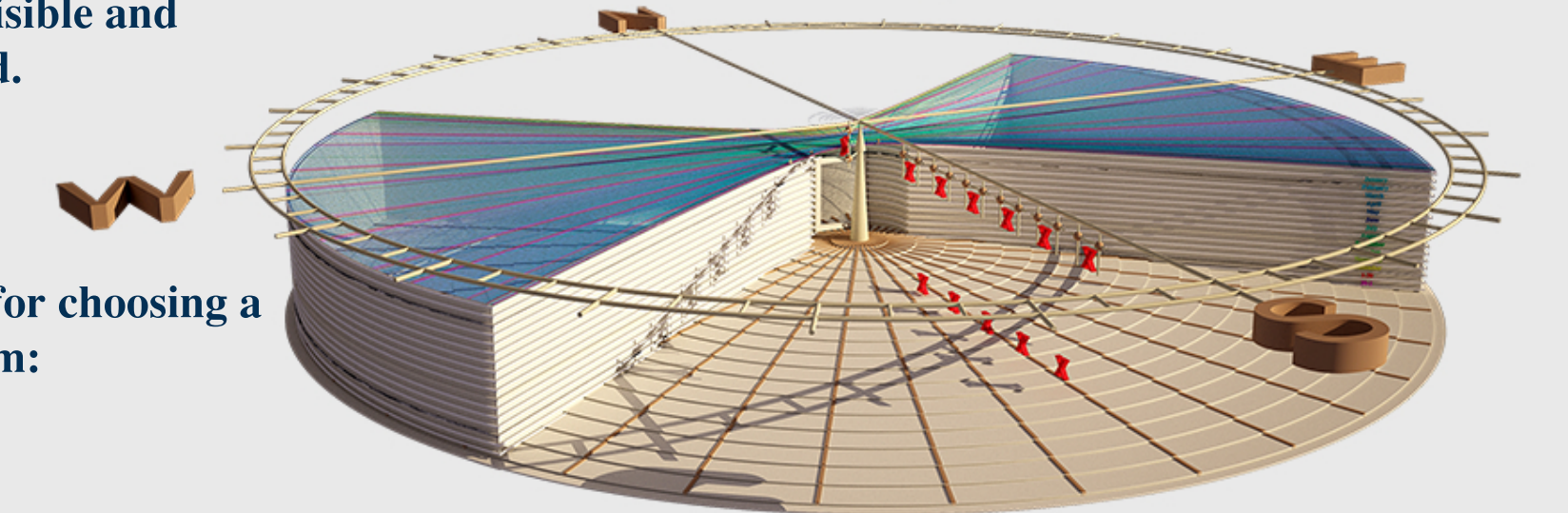
LAGI 2019 Abu Dhabi



The main challenge for the design team was the connection between the solar generator and solar clock in the element. Since for the calculation of the amount of energy received by different buildings of a building in different seasons and months of the year the Solar Conveyor is used on the Sunpath plate; therefore, in this design, these two plates have been modeled on the cylinder volume of the generator. Solar conveyor has been designed as a colored sheet of glass and Sunpath plate in a line of metal. When the observer stands in the elemental area, he sees the amount of solar energy received (through the conveyor) at a specific time (via the Sunpath chart). This smart integration featured another interesting and exciting achievement, showing the efficiency of the solar generator in different hours and months. Thus, the highest generation of generator power is produced in days of the year that is in the red zone, on the contrary, the days in the blue range are the lowest generation of generator power. The amount of energy received by the sun at a specific hour, day and month with a BTU unit is visible and can be studied.



* Reasons for choosing a Flat form:



The creation of a lively urban atmosphere was another purpose of design. This urban space should provide a platform for various activities i.e. special platforms such as architectural and urban studies. One of the drawbacks of urban design is the lack of proper use of the shadow of buildings, trees etc. in the atmosphere. The possibility of calculating the direction and size of an object's shadow for use in warm days can be a good guide for designing with different purposes(For example, shadowing trees on the bench in the hottest days of the year). Therefore, the use of a flat plate provides the main purpose of the design. It also creates an area for human presence on the site of the element, and provides a suitable place for studying and calculating the length of the shadow of objects in that area. It is easy to study and observe how the central cone shadows in a certain day and month in what direction and length of the Earth, or the maximum length of the shadow of the objects on what day and in what month falls on the earth every year. At the same time, people on the site see their presence through the solar clock available in the element.