

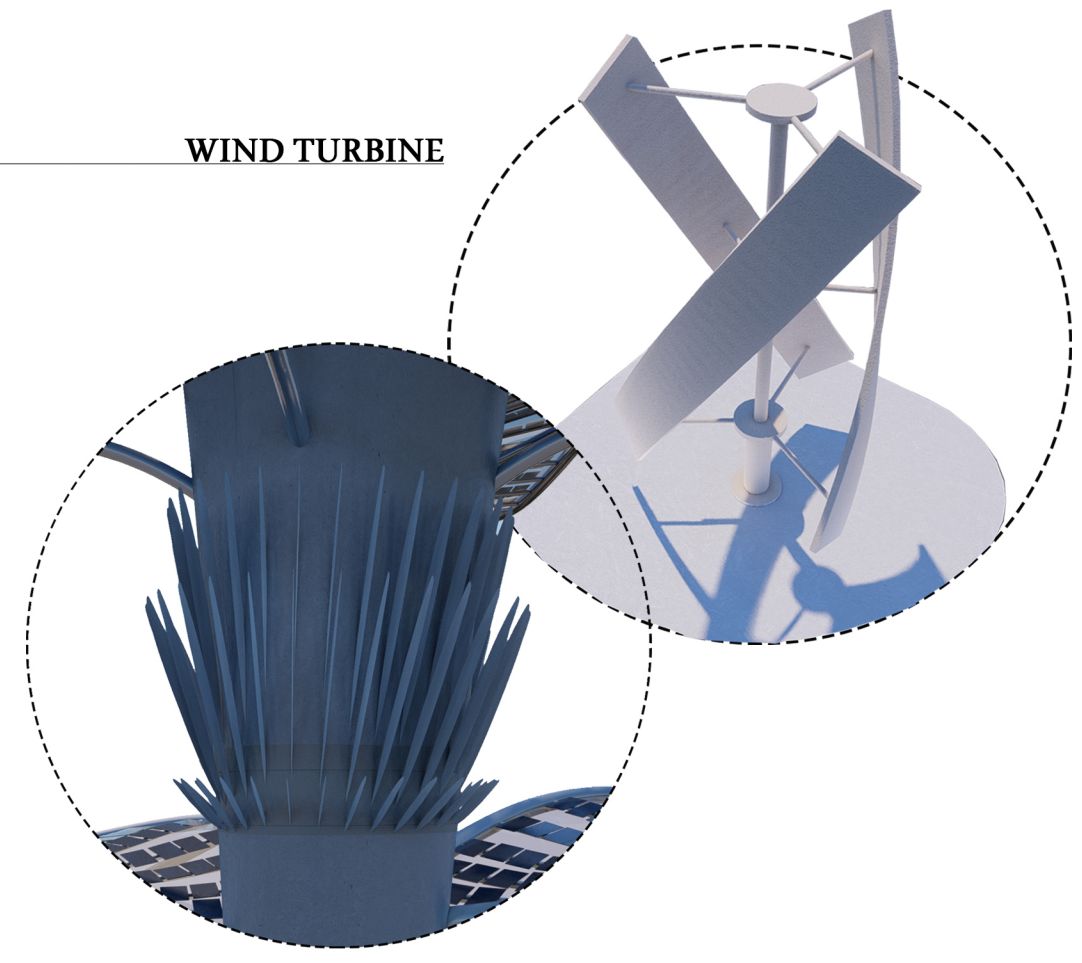


Shadows created by the leaves will provide suitable spaces for outdoor educational classes about agriculture, clean energy, etc; The land around our design can be used for agriculture and planting, and the shadows produced can be a very suitable space for people to gather, enjoy drinking a cup of coffee, have fun and spend their leisure time, which strengthens the sense of solidarity and closeness between people and improves the quality of life and communication. Also these leaves in the lower parts of the stems are intended to create a pleasant and lovely atmosphere for children and their families, which makes people more connected with this design and causes more acceptability of this system in their daily life. It also makes children interested in clean energy from an early age.

LEAF
The number of leaves varies depending on different situations.

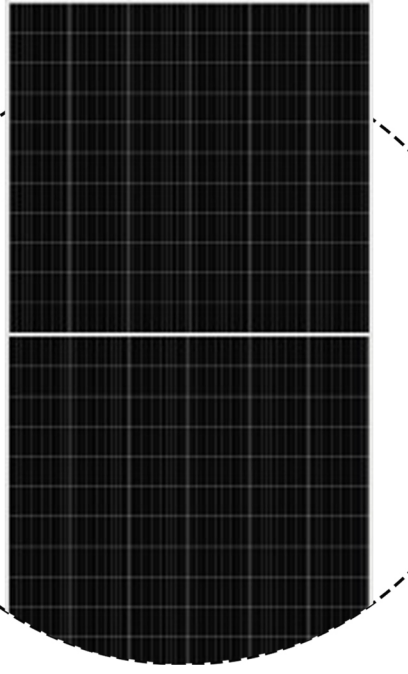
To use wind energy in this design, a combination system of rotating blades connected to a turbine with a vertical axis (VAWT) of helical type is used. This system, which consists of a vertical wind turbine with a height of 2 meters and a radius of 0.5 meters, is connected to rotating plates (joined with the blades on the stem) from its central vertical axis. Due to the blades that rotate around the body of the design with the wind, make the axis rotate and intensify the movement of the axis connected to the turbine and ultimately increase the efficiency of this turbine; According to the average wind speed of 3.2 meters per second in the region, this combined system can produce 15-Kilowatt per hour of electricity. (UN sustainable development Goal No.7)

WIND TURBINE



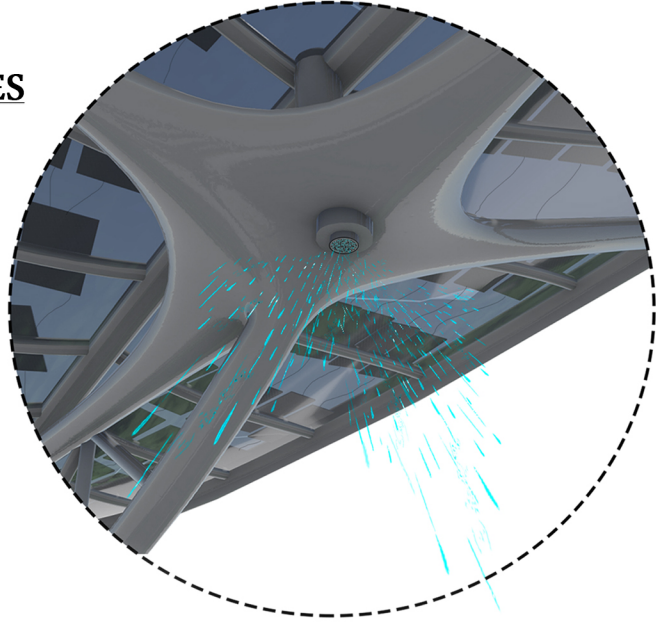
PHOTOVOLTAIC CELLS

In each leaf, there are Bifacial Photovoltaic cells of model -AXIbipremium XQ HC MT- made in Germany - with an average production of 650 ~ 670 Wp, which can produce 144.5 MW.h of electricity per leaf per year for residential scale and 294.9 MW.h per leaf per year for urban scale. (UN sustainable development Goal No.7) In each designed flower, the orientation of the cells and leaves can be changed and adjusted in the best direction to



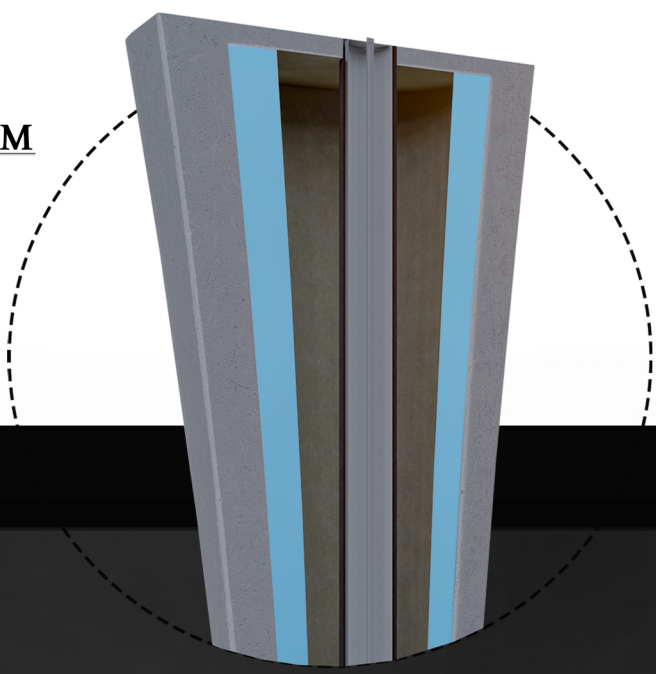
WATER PIPES

The vessels in the designed leaves, which are the supporting structures of the Photovoltaic system, have pores on their surface, through which the rainwater collected on each leaf flows to the structural pipes, and then is transferred to the main vessel. After that, the collected water is transferred to the stem (body of the designed flower) and stored in a storage that is placed inside the ground. (It is buried under the ground, which greatly reduces the energy loss based on the thermal exchange of the stem, and it is also more suitable in terms of aesthetics). Then this stored water is pumped when needed and used to irrigate crops as well as cool the air in the environment and improve the climate quality of the region. (UN sustainable development Goal No.6)



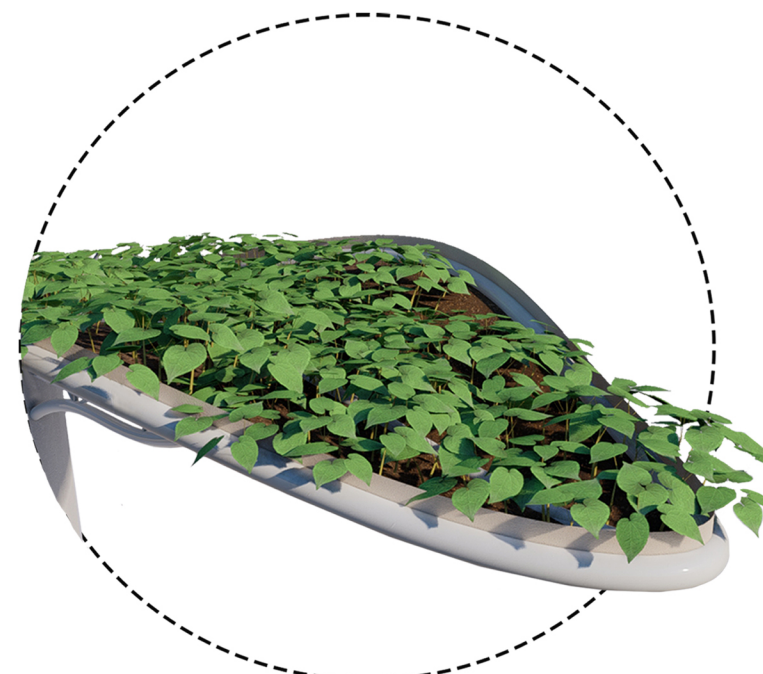
STEM

Inner layers, which consist of Hempcrete shell, pipes for directing water into the ground, a pipe for transferring energy to the battery, and insulation layer.



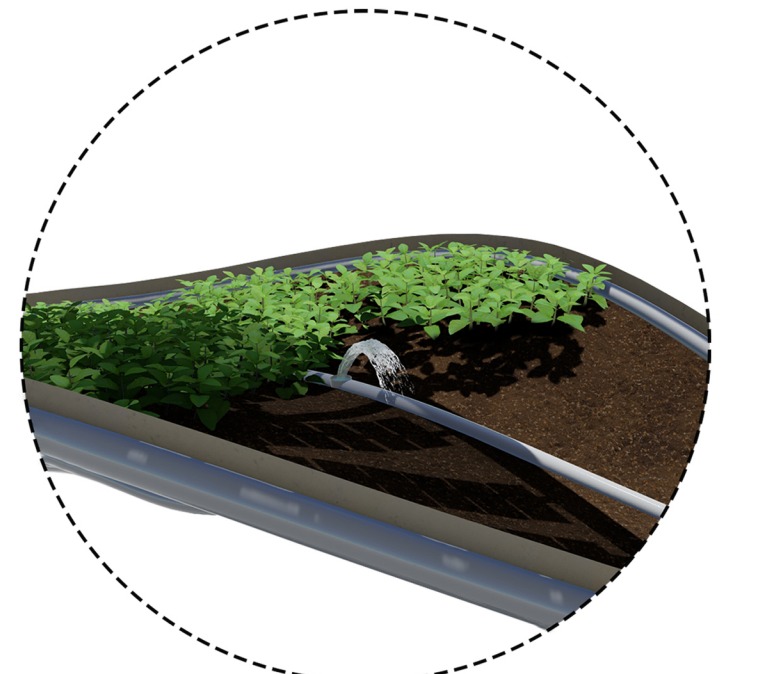
AGRICULTURAL ZONE

The considered agricultural land use and the possibility that each leaf can be rented like an agricultural land provides the possibility of connecting people from any social and financial class with this design (UN sustainable development Goal No.2). Due to the high value of agricultural land and the lack of land for agriculture caused by the daily increase in population, the need for agriculture (agricultural towers) is quite evident. Therefore, these leaves give us a suitable opportunity for vertical agriculture. Also, the robotic system in industrial agriculture and the use of ladders in traditional agriculture provide farmers the proper access to these leaves; This type of using the leaves helps greatly in increasing the amount of food production to reduce the level of world poverty.



WATER PIPES

For better irrigation, there has been pipes to irrigate the plants or, splash water in order to make a comfortable atmosphere.



BATTERY

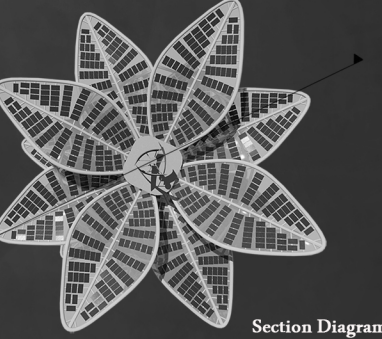
Which stores energy for lightning or other purposes.

WATER STORAGE

Water storage where the rain water will be collected and can be used later in different activities.



Technical Description



Section Diagram