**Flowers bloom all the way**

1. Design concept

The design inspiration comes from the characteristic of plants facing the sun, and the shape is taken from the shape of flowers. The bottom is based on circular steel pipes, and the upper part is made of solar glass panels. Multiple modular panels can be spliced together to form a solar rest area. The top of the device is designed with rainwater collection holes. Rainwater can flow into the storage device through a perforated metal slag cover, a central support column, and be filtered, disinfected, and purified for human use. In order to improve the accessibility of the equipment, a tourist route has been planned within the design area, combining multiple rest areas to provide a close-up experience and rest. While solving practical energy problems, it also promotes the development of tourism resources. In addition, considering the convenience of using local connecting ships, a ship dock will be added outside the design area to address the docking function of large ships In addition, the dock has also added seawater desalination equipment to produce fresh water using abundant seawater resources.

2、 Technical data

This device takes solving local practical problems as its starting point and mainly aims at solar power generation and freshwater collection. The device imitates the shape of a flower, with a bottom made of ø 120MM steel pipe to ensure hygiene for later use, and a SU304 stainless steel conduit added in the center. The top is composed of three quadrilateral tempered glass monocrystalline silicon solar modules, which are spliced into a large hexagon to efficiently convert electrical energy. Every ten devices are equipped with one storage battery to meet the nighttime electricity demand of the village.

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| --- | --- | --- | --- |
| Single crystal solar panel | Single area（M2） | quantity | Quantity of electricity generation （MWh） |
|  | 6.75 | Scope: 95 (can be flexibly increased or decreased according to demand) | 0.1MWh |
| Out of range: 50 | 0.05 MWh |

\*Chart calculated based on 1-hour power generation

|  |  |  |  |
| --- | --- | --- | --- |
| Rainwater collection system | Single area（M2） | quantity | Quantity of rainwater collection（M3） |
|  | 6.75 | Scope: 95 (can be flexibly increased or decreased according to demand) | 92.6M3 |
| Out of range: 50 | 48.7M3 |

\*The chart is calculated based on a rainfall of 150mm

|  |  |  |  |
| --- | --- | --- | --- |
| Seawater desalination device | Single area（M2） | quantity | Total amount of quantity dilution (L) |
|  | 1.3M2 | 26 | 670L |

\*The chart shows the calculation of 24-hour fresh water volume

3、 Prototype and Pilot Implementation Instructions

The prototype institution will be scaled and pre tested in equal proportions overseas, and after meeting the design requirements, it will be dismantled and transported in the form of components to the pilot site for on-site assembly and testing. Regarding rainwater collection and storage devices, they will be locally produced in a way that allows for large-scale procurement. All assembly work can be carried out with the participation of local residents, solving the technical requirements in the subsequent large-scale production in the simplest form.

4、 Operation and maintenance instructions

The device is designed with modularity and all specifications are standardized. It is easy to assemble with screws and power cables, and the operation process can be completed by local residents themselves. Other external devices are also standardized, such as benches and water dispensers, which can be directly fixed to the column through simple hanging parts to meet flexibility and variability. The design lifespan of the device is about 10 years, and maintenance mainly focuses on the replacement of damaged solar panels and surface rust prevention treatment of steel columns. Reduce maintenance costs in a low tech manner.

5、 Environmental Impact Assessment

Due to the issue of bottom fixation, the device needs to be partially excavated and reinforced with concrete in the area, which may cause partial damage to the local ecology. Ground platform reinforcement can be used to reduce the excavation area (refer to the ground wooden platform in the drawing); In addition, the potential influx of tourists may cause damage to the ground vegetation on site. It is recommended to plan a fixed tourist route to avoid trampling and damaging large areas of vegetation.