Pooha Ecosystem

This project responds to that ancestral life necessity making the impossible possible: turning a permanent dwelling in a place with extremely unbalanced resources.

The idea took inspiration from a very simple technique of the 1800s, the Terrarium, used to carry plants in a glass container which, when closed, becomes self-sufficient for its survivals.

In our modern Terrarium, thanks to technology and a control system, we have been able to eliminate the dividing element between it and the environment in which it is theorised.

We have created a winner-friendly nuisance: you could call it a ‘pooha ecosystem’ settled into a ‘host-ecosystem’, the Nevada desert. Drawing from the latter, resources that are promptly restored and using the existing-energy sources without affecting the host-ecosystem.

We have combined existing technologies and techniques to create a Pooha ecosystem designed to provide energy, food, water to support the life of a community of 10,000 people who could live around it.

Our project will create a positive-sustainable environment that will benefit from the energy and natural resources available in the area, remaining below the natural threshold of consumption. Restoration: in this way the impact of the settlement will remain sustainable.

The Design

Pooha redesigns the future concept of settlement. It is the heart of the community that can grow and develop around it and thanks to it.

The main body consists of an inclined hole oriented to the South. It has a diameter of 25m, sectioned into the ground with a maximal depth of foundation in order to preserve balance and to have the least impact on the host-ecosystem’s terrain. We have optimised the foundation’s counter-weight needs by including a 1000m water basin that is the water source and storage. The inclination is chosen for a dual function: the first to recreate a shaded area and a shelter, the second to allow, in its exposed part, an optimal solar radiation throughout the day. The central part of the structure is a circular space of workable water panels, this is Pooha’s primary source of energy.

The main body (hole) is designed to accommodate a multi-level hydroponic glass greenhouse on its entire circumference divided into 5 parts, suitable for hosting 3 different types and cultivation techniques.