



UNFOLD

Inspiration and Concept

Being well-known for its inventions, including the automobile, the bicycle, as well as the tractor, Mannheim is often called the "city of inventions". The civic symbol "Mannheim Water Tower" tells a particular story of water to this city. Inspired by these unique characters, the flying artwork was designed to harvest solar energy and water which not only satisfies the irrigation of plantations in different situations but weaves renewable energy and agriculture into urban lives.

Energy Harvesting

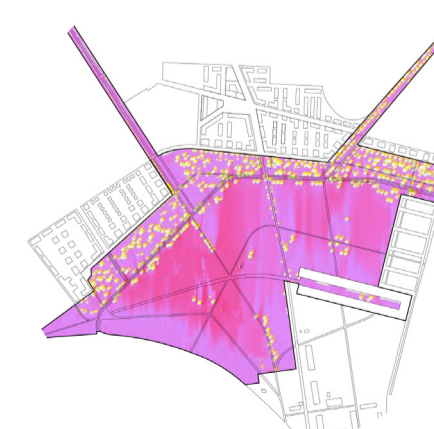
The installation is designed to harvest solar energy and water for two reasons. Firstly, solar energy is the only system to experience a significant, positive relationship in power density over time among different renewable energies. Geologically, Mannheim owns a relatively high annual solar radiation which is about 1200kwh/m2/year. Secondly, water is a unique element to Mannheim because of the history of the Mannheim Water Tower. In addition, the average annual percentage of humidity in Mannheim is more than 77% which is a great premise for harvesting water.

Components

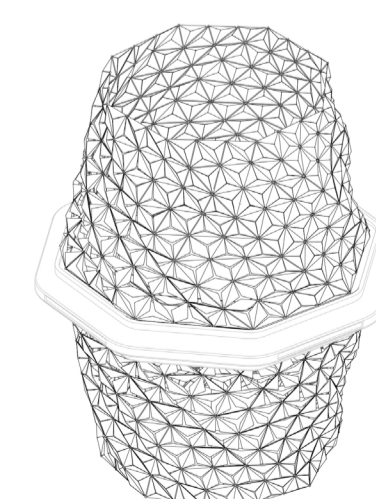
The installation is composed of the OPV (organic photo-voltaic) skin, solar-driven hygroscopic water harvesting device, as well as a blade-less drone.



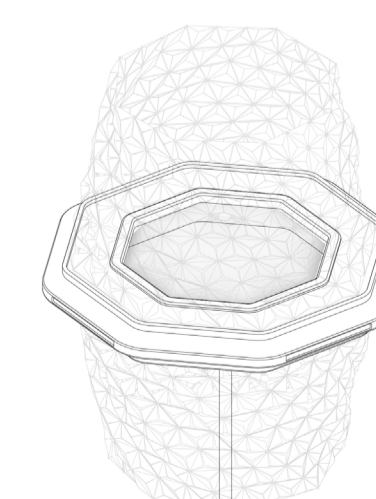
Summer Average Temperature: 41 degree



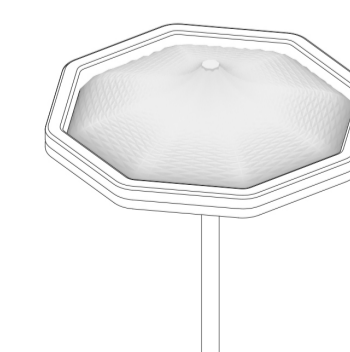
Average Sunlight Hour: 6.2 Hours



Organic Photo-voltaic Skin



Blade-less Drone



Water Harvesting Device