

Solar Leaf

The “Solar Leaf” aims to address the design brief as defined by the Land Art Generator Initiative (LAGI) and the German Federal Horticulture Show (BUGA 23) to design a unique work of sustainable art that uses renewable energy technology to support sustainable human thriving, supplying clean megawatt-hours to the City of Mannheim.

The “Solar Leaf” is designed as a sustainable interactive pavilion comprising space, structure and skin that is modular, adaptable and scalable generating “clean energy” and “food.” The pavilion is visualized as a self-sustainable system that harnesses solar energy and/or grows food. It could potentially serve as a hybrid system addressing global issues such as food security and clean energy.

Solar panels are proliferated across the structural timber framework to generate clean energy. Sustainable timber is an infinitely renewable material source that is harvested responsibly from well-managed forests without damaging the surrounding environment & ecosystem.

Standard solar panels available in the market are deployed thereby reducing costs & energy related to customisation. The pavilion footprint measures 400 Sq.m and varies in height from 3m to 12m. 340 nos solar panels (0.9m x 1.5m) cover 50% of the leaf pavilion generating approx 680 KWh per day. The system is adaptable and can be reconfigured to meet the site constraints and energy requirements.

The “Solar Leaf” could perform as a singular entity or as a cluster of “Solar Leaves” scattered across the site. They could also serve as a composition of solar pavilions and/or green houses as per the demands of the site or even as singular/hybrid entities.

Based on principles of sustainable technology and inspired by systems in nature, the “Solar Leaf” creates a unique backdrop and “place” for interaction connecting nature, art & technology towards a unique collaboration respecting the earth’s resources.

The “Solar Leaf” tells us a story, the story of every “leaf” in a “forest” that contributes to the survival of an ecosystem, the story of hope and resilience in our combined effort to combat climate change and global warming.

Environmental Impact Study -

“Solar Leaf” is a modular installation, designed to be light-footed. The design can be dismantled, where the panels can be reused for kitchen gardens, larger event pavilions and outdoor pergolas.

- It has a source of harvesting clean energy and does not impact the environment in any negative way.
- It is modular in construction with prefabricated parts. It makes it easy for the installation and requires less work to be done on the site.
- It is pragmatic and has the scope of scalability.
- It uses Recycled Plywood for the construction which has positive environmental effects, including conservation of old growth forests, increased carbon storage and lower greenhouse gas emissions.