

SOLAR GARDEN PAVILION

PROJECT OBJECTIVES

This project aims to design and build a smart, sustainable and small-scale prototype solar pavilion space for study or leisure that is powered by green energy and can be placed in public parks or gardens.

PROJECT SUMMARY

Singapore is one of the greenest cities in the world, with parks and gardens occupying 47% of all land. But people may not be deriving maximum enjoyment from these outdoor parks and gardens because of our hot and humid climate. While pavilions or shelters with cooling fans and lighting facilities are good, the high costs involved in building the structures and installing electrical cabling are prohibitive. Hence, our idea is to create a solar-powered garden pavilion with the following key features:

- An efficient solar-powered system with energy storage to supply electricity for smart cooling fans, smart lighting and charging points for mobile phones.
- A cost-effective pavilion structure design that is portable (can be deployed at flexible locations) and modular (extendable for bigger shared area coverage).
- A fun exercise-gaming system harnessing human exercise energy through stationary cycling and cranking with both legs and hands.
- Web-based facility and electrical power flows monitoring.
- Safety protections such as circuit breakers and lightning rods.

PROJECT OUTCOMES

We have designed a solar-powered pavilion prototype that provides a sheltered sitting space with air cooling, lighting and charging for mobile devices.



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