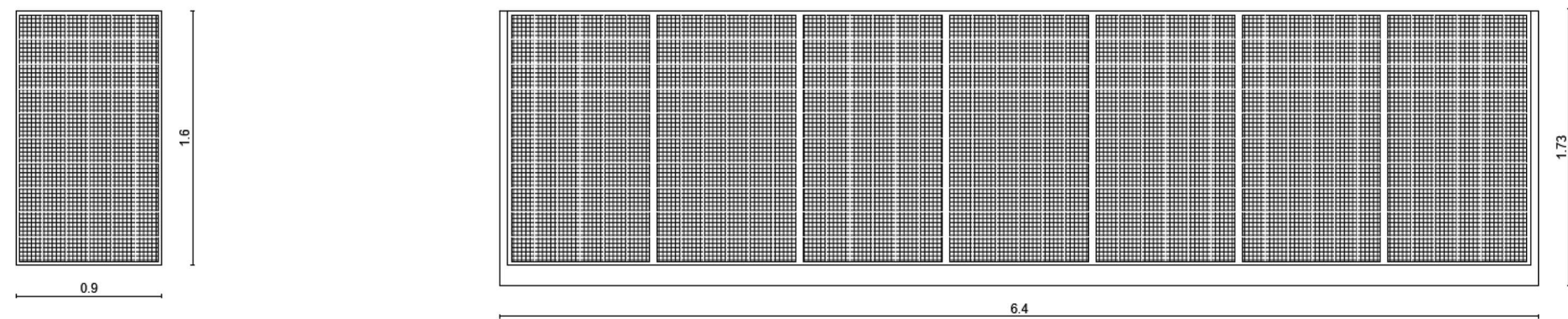


adjustable solar panels for maximum energy generation all year round



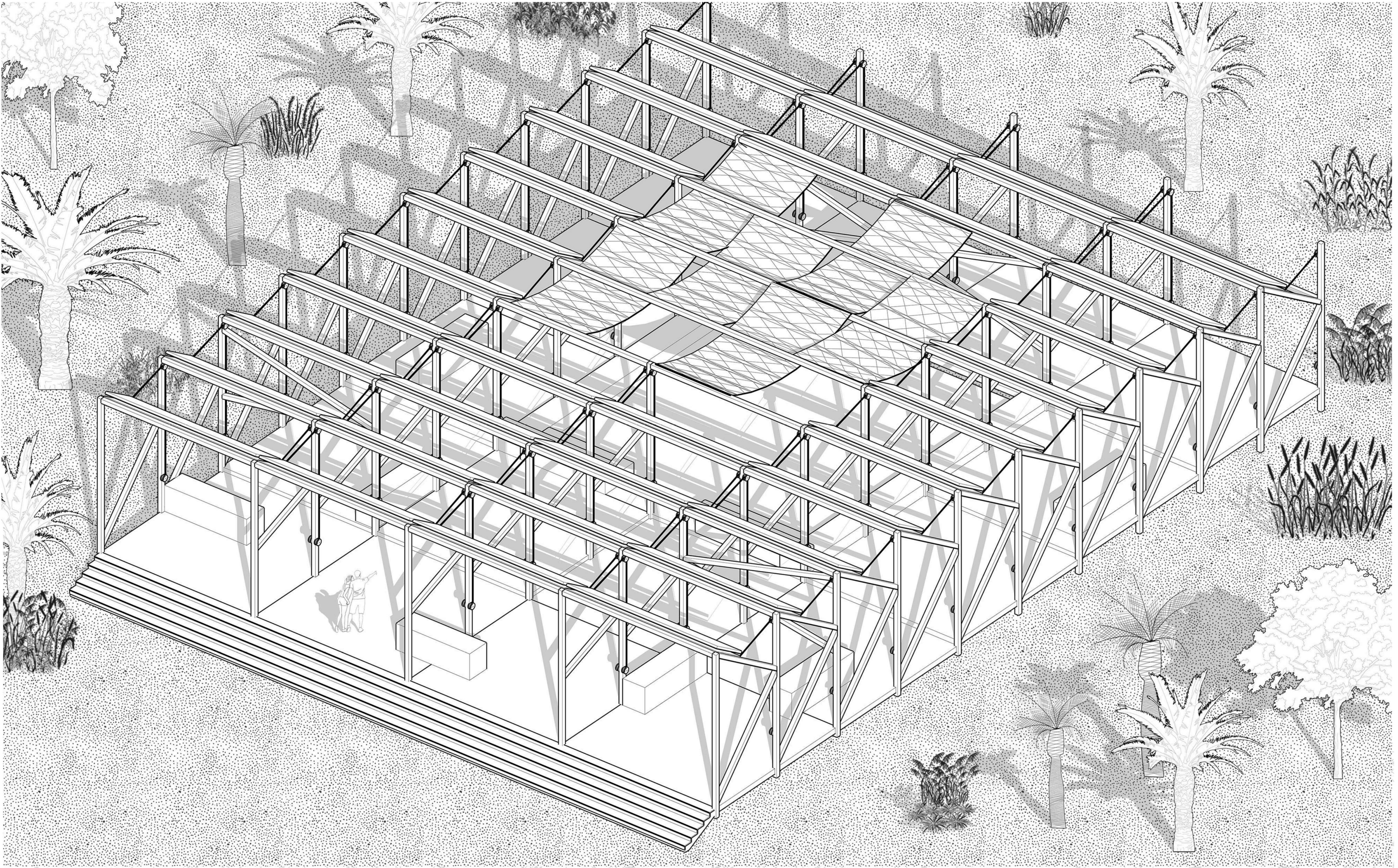
standard solar panel sizes in a modular system

Technical System

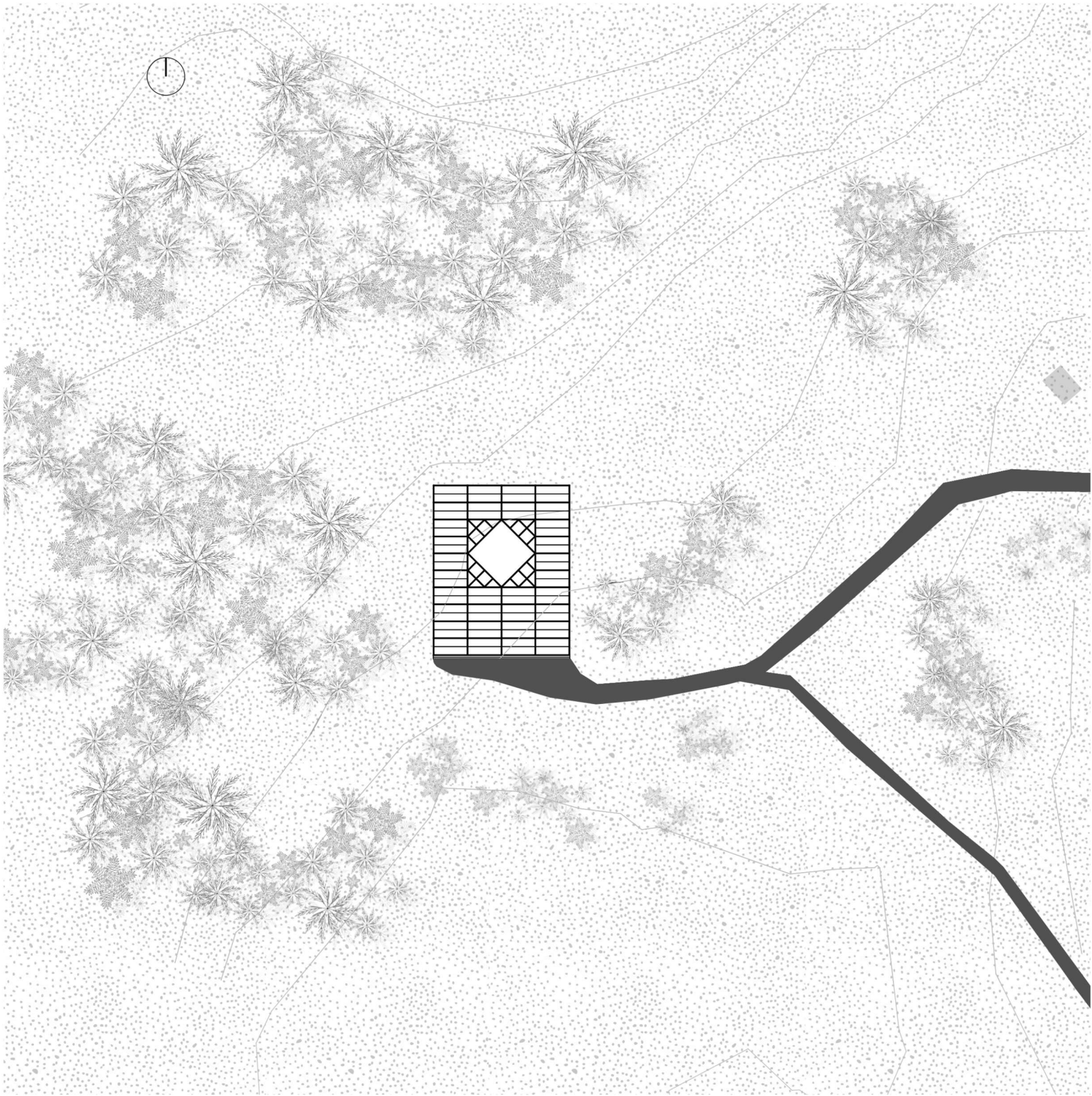
The pavilion is equipped with approximately 400 square meters of polycrystalline solar panels, each measuring 160 x 90 cm. This technology strikes a balance between cost, durability, and performance, making it suitable for Fiji's tropical climate. With an average solar irradiance of 4.5 kWh/m²/day, and accounting for 15–17% panel efficiency and system losses, the installation is expected to generate around 1,500 kWh per square meter annually - sufficient to support key infrastructure needs in Marou Village. To deliver the energy, a low-voltage underground power line made of insulated copper will be installed, ensuring minimal transmission loss and reliable delivery. Additionally, the system includes a battery unit for energy storage (either lithium-ion or deep-cycle lead-acid), to ensure uninterrupted supply during nighttime or cloudy weather conditions.

Operations and Maintenance

To ensure optimal solar energy generation, the tilt angle of the solar panels will be adjusted monthly according to a preset schedule. The required angles - ranging from 3.5° to 33.5° depending on the season - will be visibly marked on the structure to guide users. Maintenance is simplified through the use of traditional mortise-and-tenon wood joints, which allow for easy repairs and replacements. Community members will receive training to perform basic maintenance tasks, from panel adjustment to structural upkeep. The shading elements, crafted locally, not only provide protection from the sun but also reflect local culture and artistic expression. Simple furnishings like wooden benches and tables will be placed under the structure to accommodate social use during markets and gatherings.



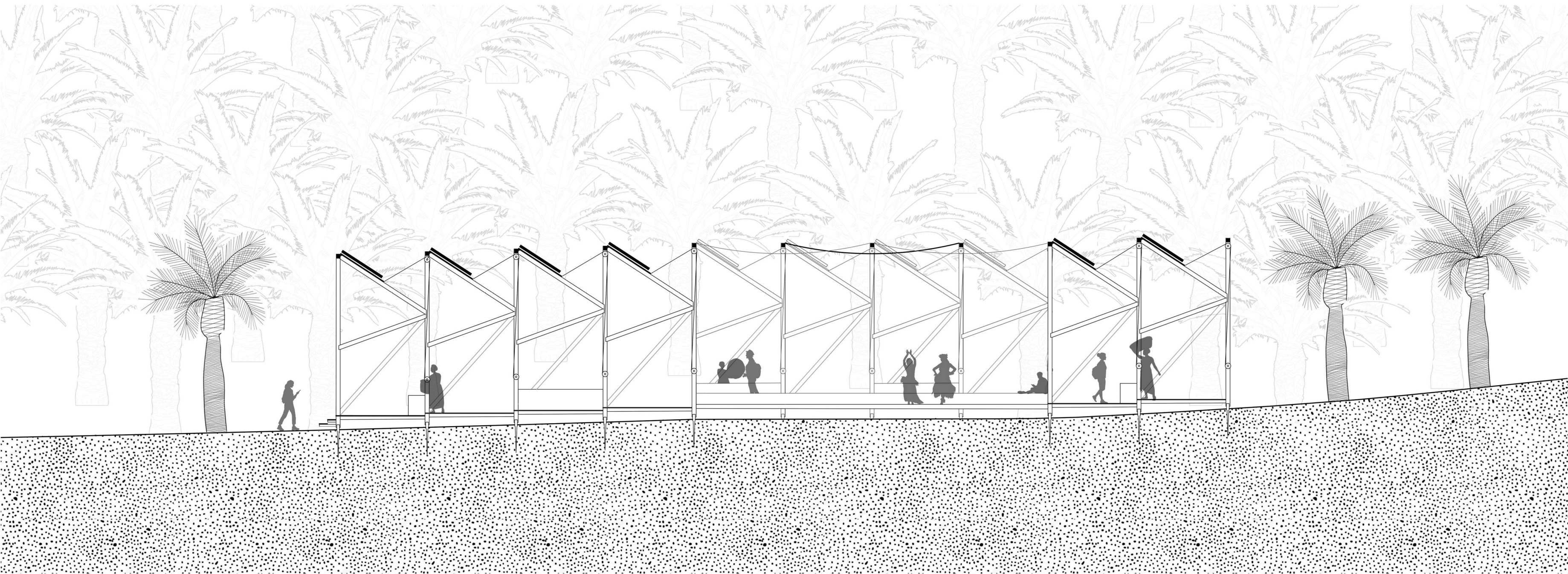
axonometric drawing



site 1:1000

Environmental Sustainability

Environmental responsibility is a cornerstone of the project. By generating renewable energy, the pavilion reduces greenhouse gas emissions and dependence on fossil fuels. The use of local coconut timber supports sustainable forestry and reduces transport-related carbon emissions. Ground screw foundations minimize soil disturbance, and the construction avoids harming local ecosystems. To reinforce this approach, local people will be trained in sustainable practices and environmental stewardship. The overall goal is to improve community resilience to climate change while preserving biodiversity and reinforcing the relationship between people and their environment.



section