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Project brief: Electrical Engineering Internship with Firefly Bali (Kupu Kupu Barong)

Subject discipline: Electrical Engineering

Organization background

Firefly Bali is an eco hotel that has been running for over eight years. Recently featured on Netflix, it is consistently ranked as one of the top destinations in Bali on AirBnB. Firefly has two locations in Ubud, Bali and is looking to open a third in a remote location. The properties are built with reclaimed materials such as wood and stone.

The organization wanted to create a hydroturbine prototype that could be offered as a community development project to supply electricity to nearby farms, helping illuminate walkways and provide additional electricity to support the communities where it operates.

These types of micro hydro turbines customized for rural Indonesia can provide power to hard-to-reach areas. The goal would be to use irrigation canals, rivers or natural waterfalls to generate electricity and determine a way to store it before it can be distributed. Firefly sites are near rivers and extensive irrigation systems governed by an autonomous organization, known as a Subak.

Internship activities:

- Research and design a hydroturbine to generate electricity.
- Work with local specialists in civil engineering, mechanical engineering, environmental engineering and other specialists to identify the key risks and opportunities for the project.
- Assist with the development of feasibility studies for different designs.
- Work with the team to identify the optimal location for the turbine.
- Assist with collecting data and gathering information to support design decisions.
- Identify electrical components required.
- Oversee testing of electrical components.
- Oversee the development of a working prototype and supervise local staff as required.