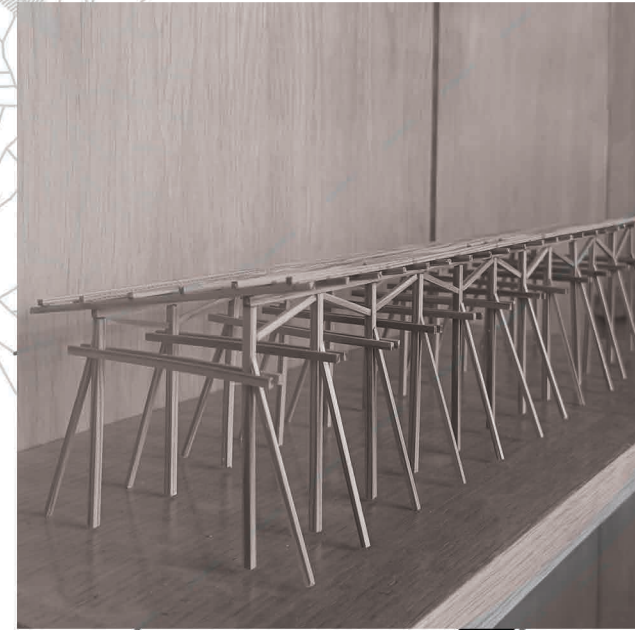
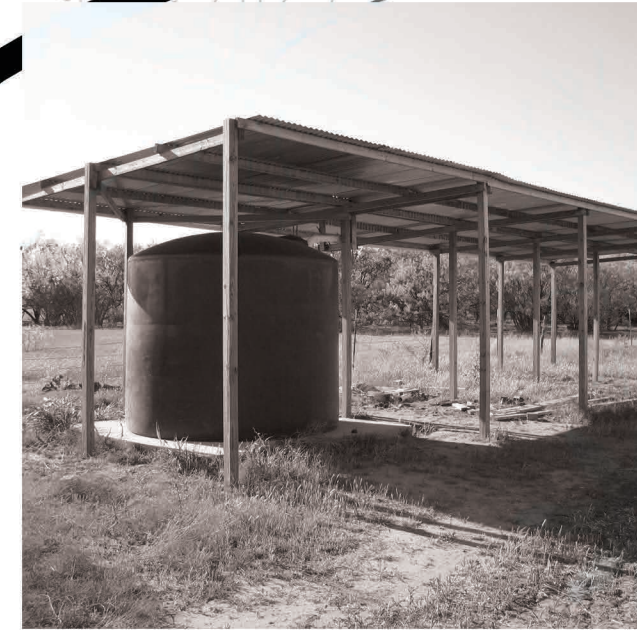




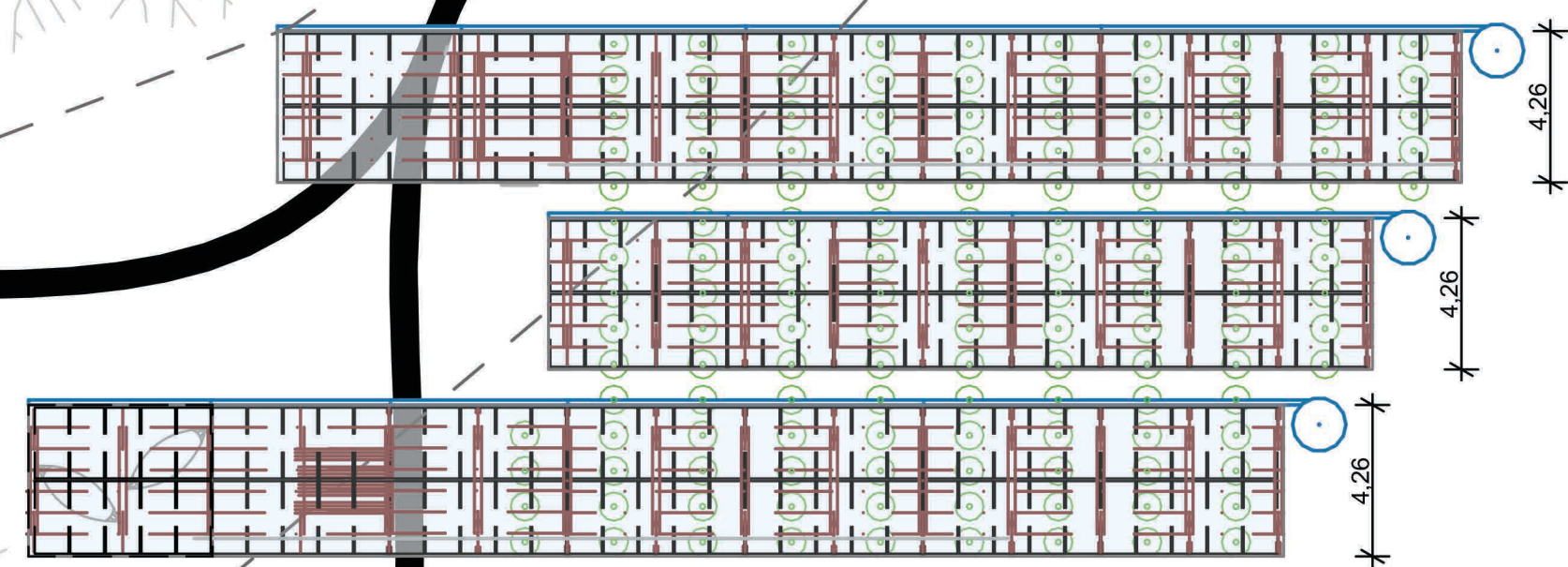
vanilla soil-based vertical farm



structure



rainwater harvestment



The solar farm is a 75 kWp mini-grid, island-powered system. Its units are 178 times 1.95 m x 2.05 m photovoltaic silicon-crystalline cells of 421 W each, mounted side by side on a support structure, facing north at an angle of 16 degrees. This technology is cost-effective and results in one of the best performing systems available.

The water draining from the solar panels is channeled into a water tank on a gravity basis. To create potable water for the workers on the vanilla farm, SODIS purification is possible.

The support structure is made of mahogany, specifically *Swietenia macrophylla* (Meliaceae). Fiji has been growing mahogany since 1910, so we use it to support local farms. Mahogany is easy to work with and has excellent finishing qualities and dimensional stability. Sands to a very fine finish and will take a good polish. Mahogany is also one of the most resistant woods to cyclones in its lifetime, making it suitable for structural use. The cross-section of the beams of the support structure is 100 mm x 150 mm, available.

To prevent damage caused by coconut balls during cyclones, metal grids will be fixed to the side walls of the structure.

Vanilla is grown on a soil-based vertical farm. It is ideal for cultivation under a solar park because it prefers a tropical climate (25-35 °C), high humidity (80-90 %) and shady bends. Out of 500 vanilla vines (here 144 vertical supports), the project area can produce roughly 1000 kg of green vanilla beans in 8-9 months, which is already optimal for commercial purposes. For the placement of the plants, circular posts with a diameter of 100-150 mm, saturated with soil and placed in a 1 m x 2.5 m grid, are ideal.

Each column contains 3-4 vanilla tubes which, creeping plants, run on a wire mesh between the vertical containers and the columns of the supporting structure. Growing vanilla requires a lot of manual labour, so local labour is useful.

