



Hydro-Electric Station Using a Foggara System

Complementing the water supply project, this initiative uses gravitational water flow to generate electricity and revitalize arid regions through irrigation. Inspired by the ancient foggara system, it involves drilling a high-altitude well to harness water pressure for driving a turbine. The generated electricity supports local needs, while the water, after passing through the turbine, is directed to a permeable basin layered with gravel and sand for ground water recharge.

From this basin, a network of pipes distributes water for irrigation and ecological restoration. The project envisions a mixed plantation of fruit trees, native species, and specialized vegetation, developed with input from regional experts. This effort aims to restore biodiversity, rebuild ecological balance, and promote sustainable land use.

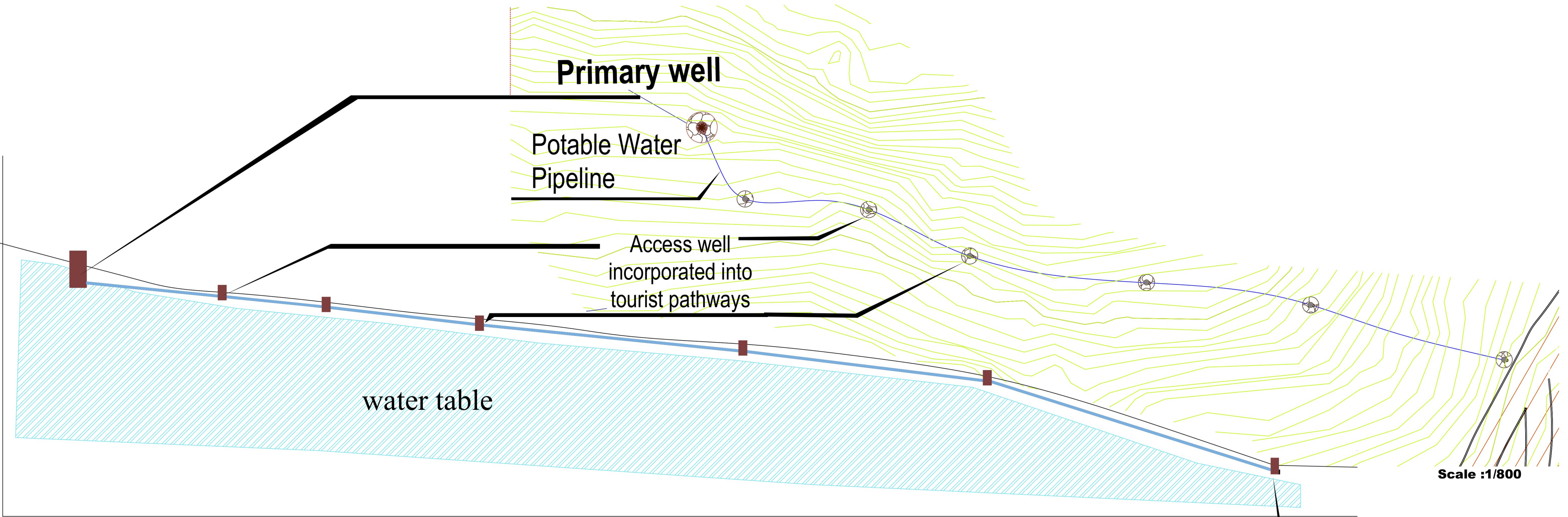
The wells

They act as refreshment stops with taps providing fresh water, turning these stations into tourist attractions.



System Advantages

The water flows exclusively through gravity, eliminating the need for pumps and reducing energy costs significantly.



Water Collection and Transportation

This project draws inspiration from traditional systems by utilizing gravity to manage water flow. A strategically placed well at an elevated altitude captures water, which flows naturally along a controlled slope via a channel with an integrated pipe. These wells, spaced 200 to 300 meters apart, serve as control points equipped with valves and pressure mechanisms. Additionally, they act as refreshment stops with taps providing fresh water, turning these stations into tourist attractions. At the end point, a distribution network efficiently delivers water to the village through flow and pressure controls.

Street network

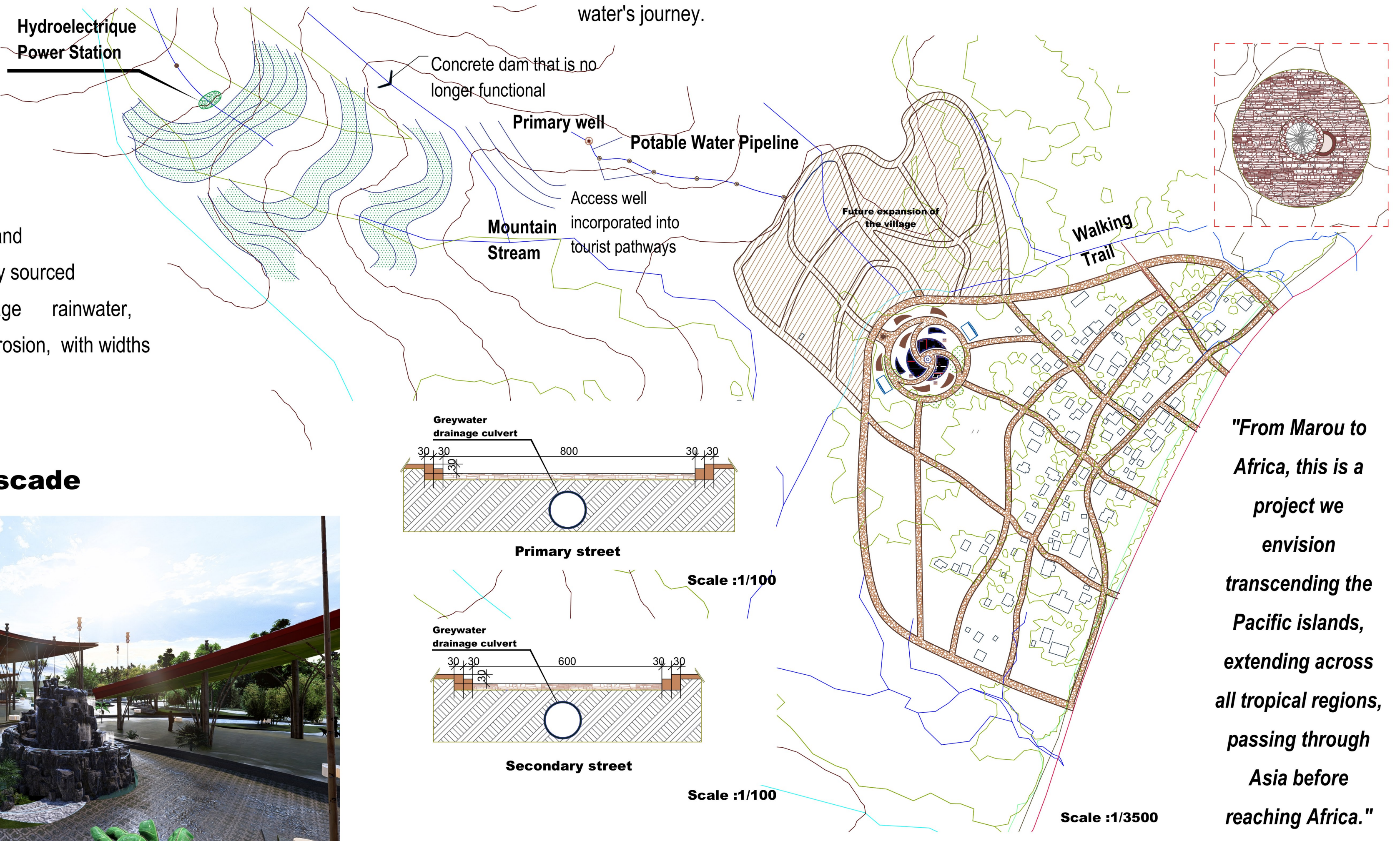
A multifunctional pathway network will delineate residential zones and public spaces. Built with locally sourced stone, these paths manage rainwater, support traffic, and resist erosion, with widths of 6 to 8 meters.

Convergence cascade



Potable Water Supply Network Inspired by the Fouggaras

The foggara is an ingenious system that harnesses gravity to transport ground water without the need for mechanical pumping. Used in North Africa for millennia, this method is valued not only for its practicality but also for the curiosity it arouses among tourists, who are drawn to the wells that punctuate the water's journey.



"From Marou to Africa, this is a project we envision transcending the Pacific islands, extending across all tropical regions, passing through Asia before reaching Africa."