

VERTEBRA

A sustainable energy and water hub for the village of Marou

VERTEBRA is an autonomous architectural system designed to provide the village of Marou with clean water and renewable energy. At its core stands a bamboo hyperboloid structure — reminiscent of a spine or tree of life — that gathers, transforms, and redistributes natural resources.

The pyramid's façades are fully clad in solar panels, while wind turbines operate on the second and third floors, capturing vertical airflows. Inside the central structure, hydroturbines harness the movement of water, forming a tri-source energy system.

Rainwater is collected from the structure and surrounding drainage systems, directed into an underground reservoir. After filtration, the purified water is pumped back to the upper branch and gravity-fed throughout the village.

A secure room inside the reservoir houses a medicinal depot and a morgue, providing vital support infrastructure for the community.

