10 m Concrete Water Tower 5,000 L

AOFS Reference Implementation: 10 m Concrete Water Tower with 5,000 L nylon tank. Designed for **simple, off-the-shelf steel construction** using locally available materials.

This blueprint is **non-normative** and intended as a **practical, low-tech reference** for smallholder farms, NGOs, or off-grid installations.

Functional Purpose

- Store 5,000 L of water in a tank elevated ~10 m for gravity-fed irrigation
- Provide a higher-head water source for farms requiring greater pressure
- Integrate optionally with AOFS Field Controllers for water level monitoring

Structural Concept

- 10 m high **simple reinforced concrete frame tower**
- Supports a **standard 5,000 L nylon tank** (locally available)
- Open-top tank for inspection and filling
- Integrated Ladder for maintenance
- Tank is secured to the tower by being fully enclosed by a brick wall
- Designed to be **assembled with basic tools and local labor**

Hydraulic Layout

- Tank outlet feeds irrigation zones by gravity
- Isolation valve allows manual control
- Overflow routed safely to drainage or secondary container
- Optional integration with a small pump for secondary irrigation zones

Safety Considerations

- Ladder and hatch should be used carefully
- Ladder should be protected from being accessed by children
- Ensure the foundation is anchored down to the bedrock
- Ensure good quality concrete and enough reinforcing steel of acceptable quality
- Overflow and basic manual valve operation prevent flooding

Manual Operation Pathways

- Tank filling and irrigation can be done manually if electronics fail
- Paper-based logs or measurement sheets supported

Controller Integration Points

- Optional water level sensor for Field Controller logging
- AOFS control can read tank level for irrigation scheduling
- Controller can enforce a minimum water level to ensure the tank remains gravity-stable against wind forces
- Manual bypass always available — irrigation continues even if electronics are offline

Versioning Note

- This design is **simple and locally adjustable**, so traditional versioning does not really apply
- Builders may adapt frame dimensions, tank placement, or assembly method according to available steel, tools, and skills

- Basic stability and functional operation should be maintained