

WATER EYE

Continuous monitoring of building water storage tanks

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In one line: water quality is guaranteed up to a building's meter and unmeasured after it. Water Eye monitors the tank continuously, learns what is normal for that specific tank, and detects deviation early.

The problem

Water utilities treat and test water to a high standard up to a building's meter. After that point the water enters the building's own storage tank, and responsibility passes to the owner. Tanks are cleaned on a mandated schedule by accredited contractors, with nothing measuring them in between.

Rooftop tanks in summer reach temperatures that accelerate biological growth and material degradation. Sediment settles and is disturbed. Seals fail. The first indication is usually a resident noticing taste, smell or appearance — which is late. The gap is not the regulation and not the treatment; it is that nothing measures the tank between one cleaning and the next.

What the system does

- **Measures continuously.** Dissolved solids, acidity, cloudiness and temperature, sampled continuously and logged permanently rather than sampled once and forgotten.
- **Learns each tank individually.** Every tank has a different normal, shaped by its supply, its roof and how the building uses water. The system fits a statistical model to each installation from its own data and measures deviation from that learned normal, rather than from a threshold chosen in advance.
- **Identifies what kind of change occurred.** A rise in cloudiness with stable acidity is disturbed sediment. The same rise alongside drifting acidity and rising dissolved solids is a different event entirely. The pattern across sensors is what separates them.
- **Acts, then verifies.** The system chooses a response by severity — measuring more often, running a disinfection cycle, alerting the resident — then checks whether the readings recovered, and escalates when its own action did not work.

Why this supports existing regulation rather than replacing it

- **Adds condition-triggered attention on top of the mandated schedule** — when a tank deteriorates early, the responsible party knows in days rather than at the next calendar date.
- **Verifies that a completed cleaning actually restored the water**, by comparing readings after against readings before — a check that currently does not exist.
- **Produces the compliance record** — timestamped logs of tank condition and service history, in the form inspections already sample.

Status

A working prototype measures acidity and dissolved solids with sensors calibrated against reference solutions with dated records, logs continuously, and runs per-tank baseline learning on the device. A case-management platform connects the resident, a certified inspector and the responsible authority through a single case file with a full audit trail. Cloudiness and temperature sensing, a sealed unit on a custom board, and trained event classification are in development.

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