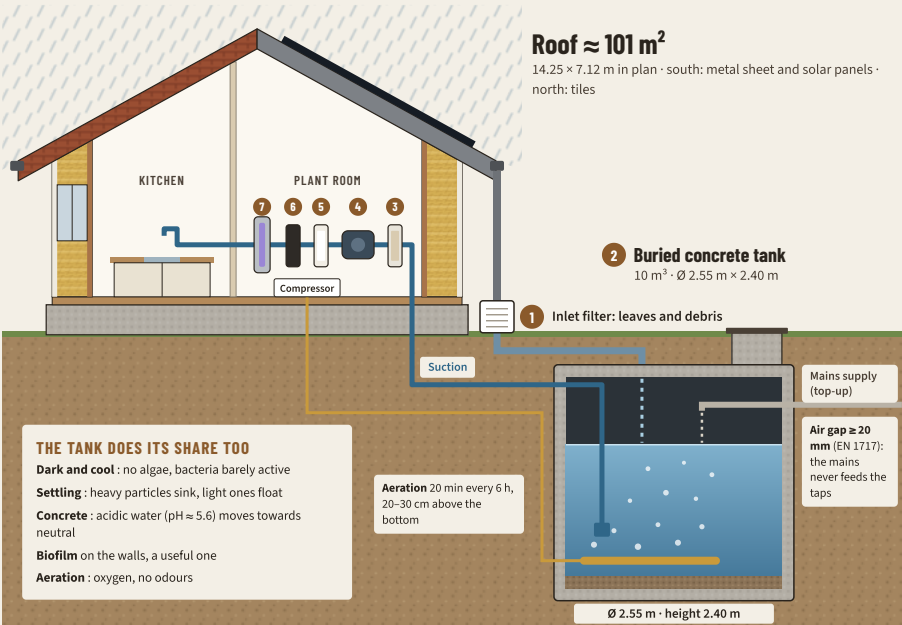


Drinking rainwater

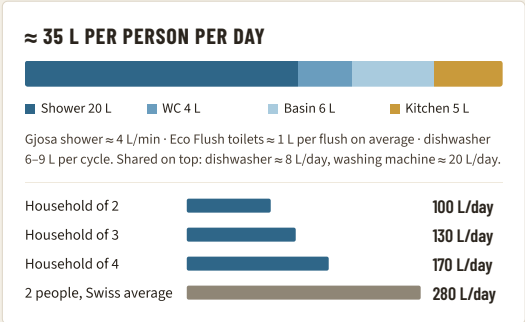
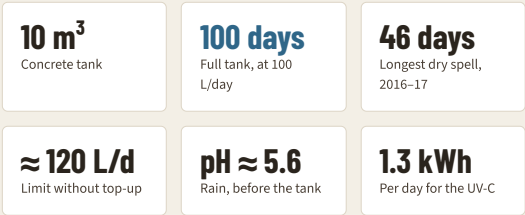
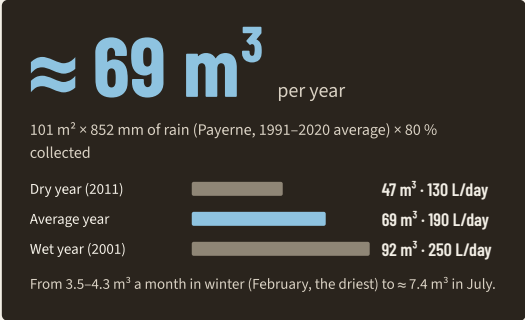
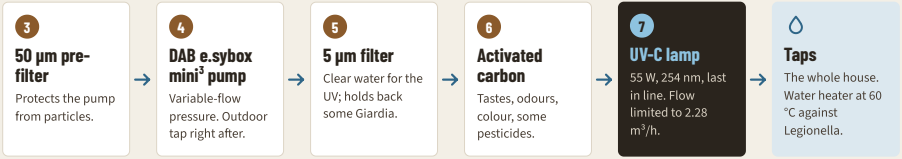
All the water in the house comes from the roof: a 10 m³ buried tank, then filters, activated carbon and a UV-C lamp. The mains supply is only used to top up the tank as a last resort.

FROM ROOF TO TAP

schematic section · the numbers follow the water's path

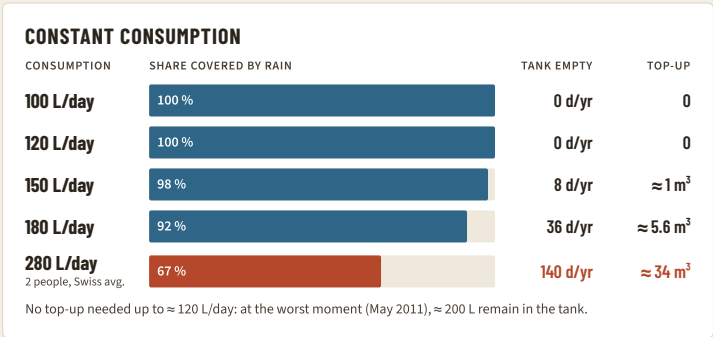


THE PLANT ROOM, STEP BY STEP

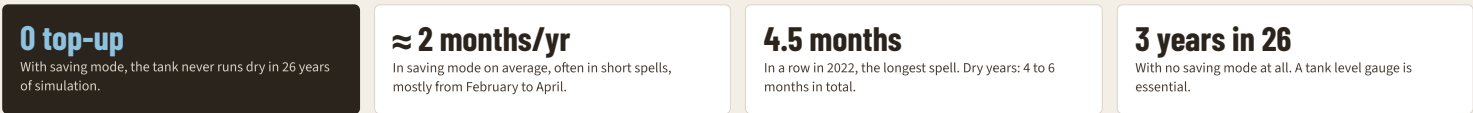
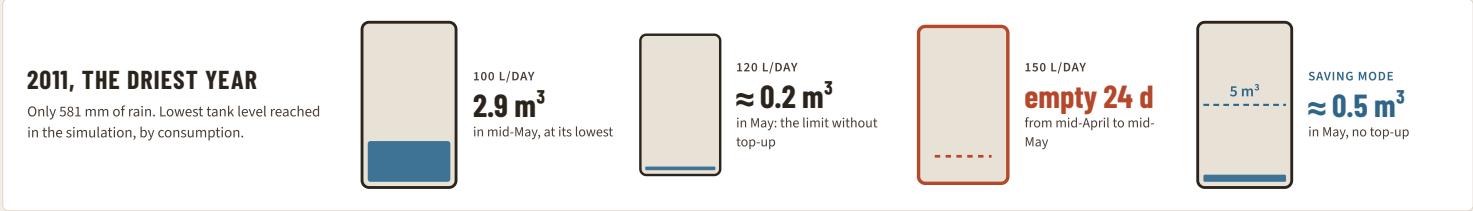
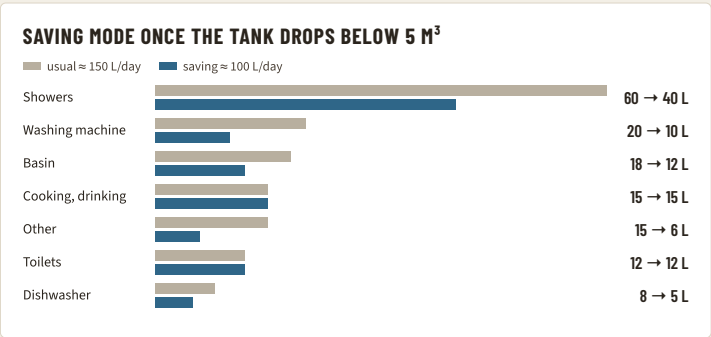


DAY-BY-DAY SIMULATION, 2000–2025

Is a 10 m³ tank enough?



Payerne rainfall data, day after day: on the left with unchanged habits, on the right with one simple rule when the tank runs low.



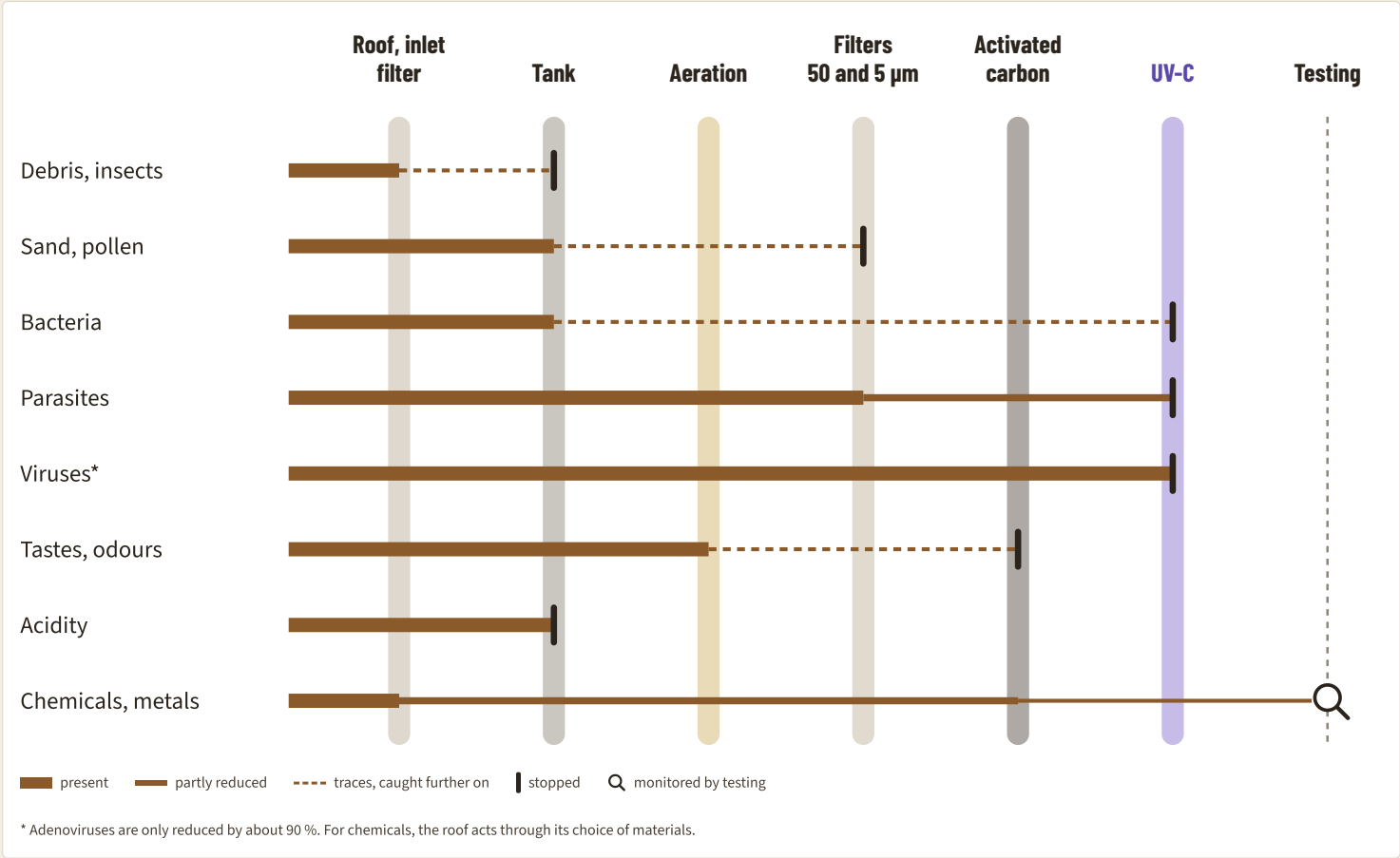
Drinking rainwater

Continued: why the treated water is safe to drink, how to maintain the system, and what the treatment does not do.

WHY THIS WATER IS SAFE TO DRINK

Barriers in series

Each step catches what the previous one lets through, on the same principle as a municipal treatment plant.



40 mJ/cm² reference UV-C dose for drinking water, at 254 nm

Inactivates over 99.99 % of pathogenic bacteria, most viruses, Giardia and Cryptosporidium. Exception: adenoviruses, reduced by about 90 %.

Quartz sleeve · flow limited to 2.28 m³/h (unit: 2.66 m³/h max.) · sensor with indicator light and audible alarm.

SWISS REQUIREMENTS (TBDV)

No *E. coli* or enterococci in 100 ml · aerobic mesophilic germs ≤ 300 per ml in the distribution network.

Tests planned every year (microbiology, pH, hardness, turbidity, metals, PFAS), results published.

MAINTENANCE

Gutters, inlet filter	Remove leaves and debris	spring, autumn
50 µm pre-filter	Rinse or replace	3 to 6 months
5 µm filter	Replace the cartridge	3 to 6 months
Activated carbon	Replace the carbon	6 to 12 months
UV-C lamp	Replace, even if it still lights; clean the quartz sleeve	every year
Aeration compressor	Drain the reservoir	every week
Tank	Check sediment, clean if needed	5 to 10 years
Water quality	Laboratory test	every year

A clogged cartridge shows up as a pressure drop at the taps.

LIMITS TO BE AWARE OF

- UV: NO CHEMISTRY, NO RESIDUAL EFFECT**

UV removes no dissolved substances and, unlike chlorine, does not protect the water afterwards: that is why the lamp comes last.
- PFAS TO MONITOR**

Present in rain all over the world. Swiss limit in preparation: 0.1 µg/L for the sum of 20 PFAS. Carbon only holds back part of them.
- LEGIONELLA**

Water heater set to 60 °C.
- VERY SOFT WATER**

No limescale, but little calcium and magnesium: diet covers those needs.

IN SHORT

- 101 m² of roof**

≈ 69 m³ collected per year on average.
- 10 m³ tank**

No top-up needed up to ≈ 120 L/day; ≈ 2.9 m³ in reserve at 100 L/day, even in 2011.
- Treatment in series**

Inlet filter, tank, aeration, pre-filter, pump, 5 µm filter, activated carbon, 55 W UV-C.
- Mains supply**

Top-up as a last resort, physically separated by an air gap.
- Limits**

No removal of dissolved substances, PFAS to monitor, regular testing essential.