

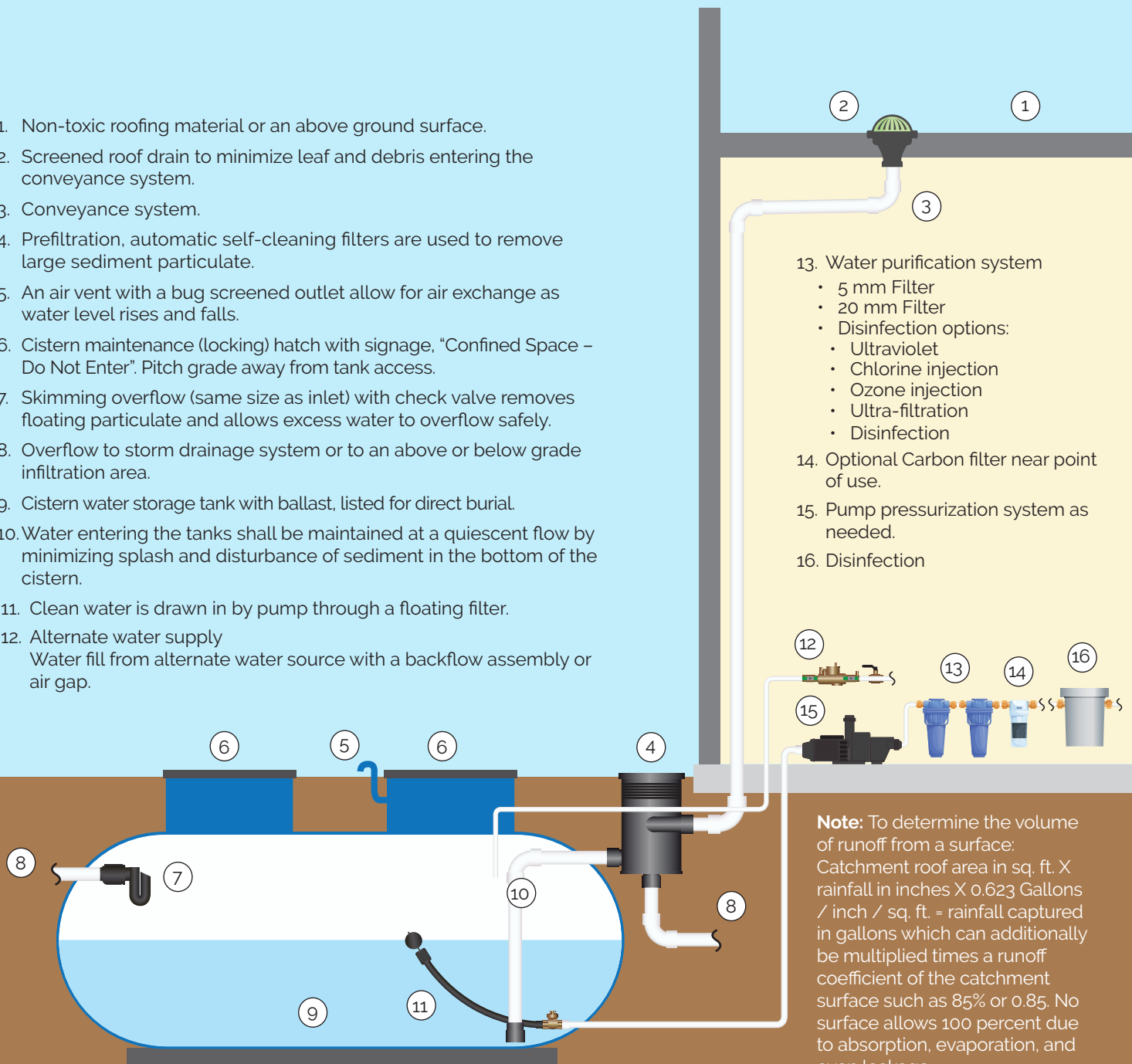
RAINWATER HARVESTING SYSTEM - COMMERCIAL

Conceptual Drawing of an Underground Tank

Potable or non-potable application, underground tank in a non-freeze application. This system design is based on ARCSA/ASPE/ANSI Standard 63 Rainwater Catchment Systems and follows the ARCSA International Rainwater Harvesting Manual.

1. Non-toxic roofing material or an above ground surface.
2. Screened roof drain to minimize leaf and debris entering the conveyance system.
3. Conveyance system.
4. Prefiltration, automatic self-cleaning filters are used to remove large sediment particulate.
5. An air vent with a bug screened outlet allow for air exchange as water level rises and falls.
6. Cistern maintenance (locking) hatch with signage, "Confined Space – Do Not Enter". Pitch grade away from tank access.
7. Skimming overflow (same size as inlet) with check valve removes floating particulate and allows excess water to overflow safely.
8. Overflow to storm drainage system or to an above or below grade infiltration area.
9. Cistern water storage tank with ballast, listed for direct burial.
10. Water entering the tanks shall be maintained at a quiescent flow by minimizing splash and disturbance of sediment in the bottom of the cistern.
11. Clean water is drawn in by pump through a floating filter.
12. Alternate water supply
Water fill from alternate water source with a backflow assembly or air gap.

13. Water purification system
 - 5 mm Filter
 - 20 mm Filter
 - Disinfection options:
 - Ultraviolet
 - Chlorine injection
 - Ozone injection
 - Ultra-filtration
 - Disinfection
14. Optional Carbon filter near point of use.
15. Pump pressurization system as needed.
16. Disinfection



Note: To determine the volume of runoff from a surface:
 Catchment roof area in sq. ft. X
 rainfall in inches X 0.623 Gallons
 / inch / sq. ft. = rainfall captured
 in gallons which can additionally
 be multiplied times a runoff
 coefficient of the catchment
 surface such as 85% or 0.85. No
 surface allows 100 percent due
 to absorption, evaporation, and
 even leakage.