

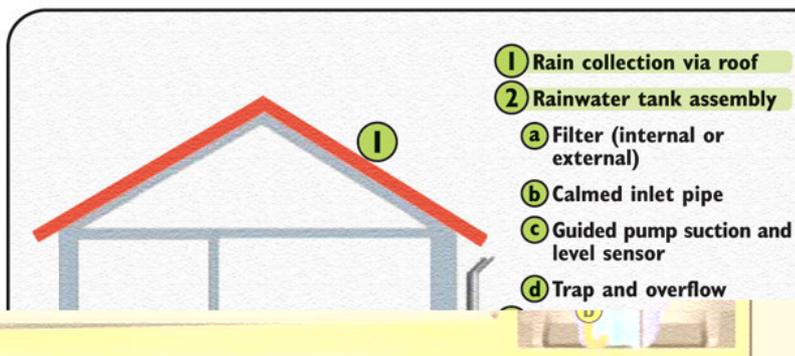
Why Do I Need Rainwater Harvesting?

Like all commodities, potable (drinking) water prices are rising and are likely to continue rising well above inflation. Users in the south east are also likely to have greater hose pipe restrictions, more frequently and especially in the summer. Add to these factors increasing public and government concerns for the preservation of the environment and you will see why more and more self builders and home renovators are installing rainwater harvesting systems. Using rainwater for non-potable applications can result in reduced water utility bills of up to 50% and in times of hosepipe bans can provide pressurised water for garden irrigation. Rainwater uses include toilet flushing, clothes washing by hand and machine, garden irrigation and vehicular washing. Solutions are available for single houses or multi-family houses with shared infrastructure services.

How Does It Work?

Rainwater is collected, usually from the roof top, via standard guttering and pipe work into an underground water tank. A filter, usually, inside the tank allows debris and dirt to flow over the top and out to the soak away or drain. The filtered water enters the tank from the bottom to minimise disturbance of the tank's water. When a tap is opened a pressure drop is detected by a sensor and starts the pump taking water from the underground tank. The pump is switched off when the tap is closed by a flow switch. If the rainwater tank is empty a sensor switch in the tank automatically switches the pump supply to mains water and the system continues. A 10L tank in the management unit provides the legal separation of the two water supplies and contingency for overflow. After the next rainfall the management unit automatically switches back to rainwater.

Private House Rainwater System



Key Benefits

- Water savings up to 50%
- Avoid hosepipe bans with a pressurised rainwater supply
- All components are pre-assembled ready for installation
- Automatic mains water switching for use during low rain
- Reduced waste water returned to the sewer
- In hard water areas rainwater provides:
 - Stain free car washing
 - More efficient laundry
- Proven German technology and design for 17 years

Key Features

- PP, PE or concrete single piece tanks
- Internal tank filter accessible from tank top
- Three stage water filtration with self cleaning filter
- Standard connections for 110mm pipes
- Adjustable tank access cover height (-8cm) and tilt ($\pm 10^\circ$)
- Installation without lifting equipment (not concrete tanks)
- Single control unit with pump, local storage and controls
- No concrete required for garden installation

What Do I Need To Think About?

Rainwater harvesting technology is simple and can be installed by self builders. Optimum installation and benefit will be achieved when the following considerations are taken into account:

Tank Location: The lowest installation and equipment costs are achieved by locating the tank in the garden where there are no vehicles and within 15m (cable distance) of the wall mounted control unit. The minimum pit depth required for the tank is 2.6m, if you have ground water higher than 2.3m you may require a concrete tank due to water pressure forcing the tank upwards. To keep the water fresh and in good condition the tank should not be too large and must overflow several times a year to removed organic material that cannot be filtered. For a single house the tank is normally 3,500L

Water Collection Piping: To capture the most rainwater all down pipes will need to be routed to the side of the house and towards the tank location with a single 110mm inlet to the tank. Using a 1 in 40 fall and the minimum depth tank pit (2.6m) the furthest downpipe can be up to 20m away from the tank. To increase this piping run distance the tank pit will need to be deeper and a longer tank turret installed.

Control Unit Location: The control unit is wall mounted, the ideal location is in a utility room either in a basement or on ground level. A mains water supply, fused spur and drain for overflow are required.

Maintenance: Provided the filter is installed and working properly, every 8-10 years the tank should be emptied, inspected internally for sediment build-up and cleaned as required. The filter can be inspected twice a year by removing the tank cover. The control unit is automatic and will notify users of its status.



How Much Water Can I Collect?

The water you can collect depends on the size of your roof, the roof cover material and the area in which you live. The amount of water you need depends on the number of people living in the household, industry accepted figures are used for each persons consumption per year. It is usual to take the lowest figure of the amount of water collectable or the amount of water likely to be used when calculating the tank size. A balanced approach is required to make sure the tank will overflow on average every three weeks, this is very important to preserve the highest water quality and purification. The shape of the tank is also important to enable pollutants, that cannot be filtered on entry to the tank, to be removed during overflow. This, third, filtering process is known as the skimmer effect and works best with a tank shaped like a flower vase or a tank with parallel vertical sides. A typical 180M² house would yield about 50m³ yr⁻¹ of rainwater and demand for four people would be around 60m³ yr⁻¹.

More Info?

1. See ecozi tank datasheet for specifications
2. See ecozi pump and control unit datasheet for specifications
3. See ecozi self build installation guide



What's in the box?

- **Underground rainwater tank pre-fitted with:**
 - Internal filter
 - Calmed inlet
 - U-bend and overflow (110mm)
 - Centrally guided pump suction
 - Water sensor with 15m of usable cable
- 15cm tank turret and cover
- Matrix rainwater manager

Options

- Turret extensions
- Tank volume status
- One way overflow valve
- Sensor cable extensions
- Non return emergency overflow valve and flexible pipe connections
- Additional pipe work labels
- House entry water pipe and sensor cable duct seal
- High load manhole cover
- Non-drinking water labels for marking pipe work

What do I need?

- 110mm pipe for ducting from tank to house entry point with pull cord
- 32mm MDPE black water pipe from tank to Matrix rain manager with 1 1/4" straight end fittings
- Straight 3/4" and 90° 1 1/4" flexible pipe ends for Matrix