



Rainstream

Home and Garden

Rainstream Home and Garden

Rainstream Home and Garden has been created by Polypipe after intensive research and development to design robust and cost-effective rainwater harvesting systems for the UK domestic market.

Polypipe has almost 10 years experience in rainwater re-use and it's through our proven track record that we have been able to develop new systems specifically for the domestic market. The re-use of rainwater in can save home owners up to 50% of their annual potable water usage.

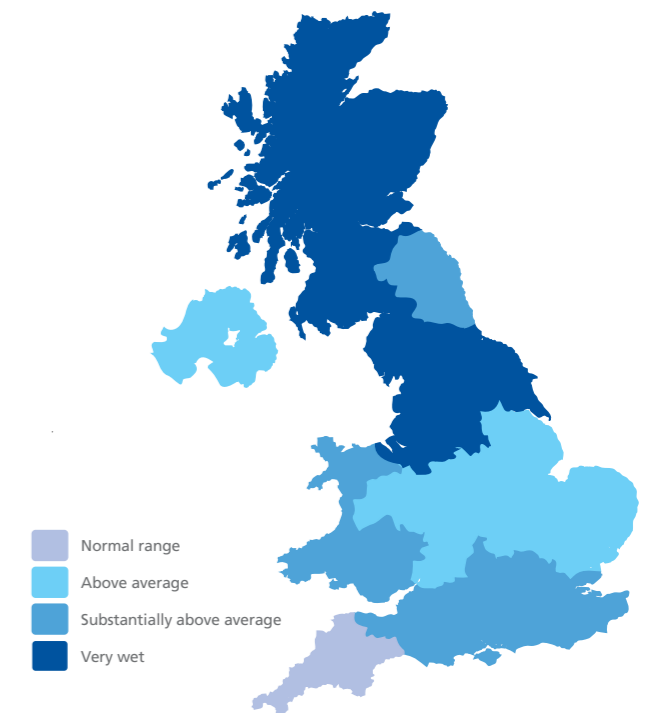


Climate Change and the environment

With average UK annual temperatures predicted to rise by up to 3.5°C over the next 70 years, climate change is already driving the need for innovative solutions to the management of rainfall and surface water. Changing rainfall patterns are likely to lead to wetter winters and drier summers, sea levels are expected to rise and extreme weather events look set to become far more commonplace.

The average person in England and Wales now uses 150 litres of water every day - almost 50% more than 25 years ago. Washing and toilet flushing account for much of this figure, with drinking, cooking, car washing and garden watering also playing large parts. Yet while continental countries such as Italy and Spain enjoy water supply capacities of on average 2,785 m³ per person, per year, England and Wales has a surprisingly low capacity of just 1,334 m³ per person. The high population densities in areas such as South East England mean that there is even less water available to each person in these regions.

Rainwater re-use solutions offer a way to address this increasingly important issue by collecting and recycling rainwater, rather than simply allowing it to drain away. This not only reduces the demand for mains water for toilet flushing, laundry, vehicle washing and irrigation purposes, but also eases the potential for flooding which can be created when rainwater deposited by extreme storms is simply left to run to ground.



Water management drivers

- Climate change
- Kyoto Agreement
- 80% Reduction in carbon emissions by 2050 (was 60%)
- Construction Industry targeted
- New Homes Sector specifically
- 25% of U.K. Carbon Emissions from Housing
- Code for Sustainable Homes

Average rainfall increase
2008 figures

Water Consumption

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Reducing Demand



Toilet flushing

Rainwater is perfect for toilet flushing - the highest consumer of water in domestic buildings. Using rainwater for this purpose can cut mains water consumption by up to 80%. Polypipe Rainstream systems incorporate a mains water backup to maintain operation if sufficient rainwater is not available.

Laundry washing

Although great efforts are made by equipment and detergent manufacturers to reduce the environmental impact of laundry washing, the actual water consumption is often overlooked. 'Soft' rainwater needs less detergent and is also beneficial to the machine as it prevents lime scale build-up - an important advantage for commercial laundries, health clubs, hotels and prisons.

Vehicle washing

Buildings with large roof areas such as distribution centres and train stations often collect more rainwater than they need for toilet flushing, with the excess being available for vehicle washing. Again, 'soft' rainwater requires less detergent and leaves a streak-free finish.

Garden use

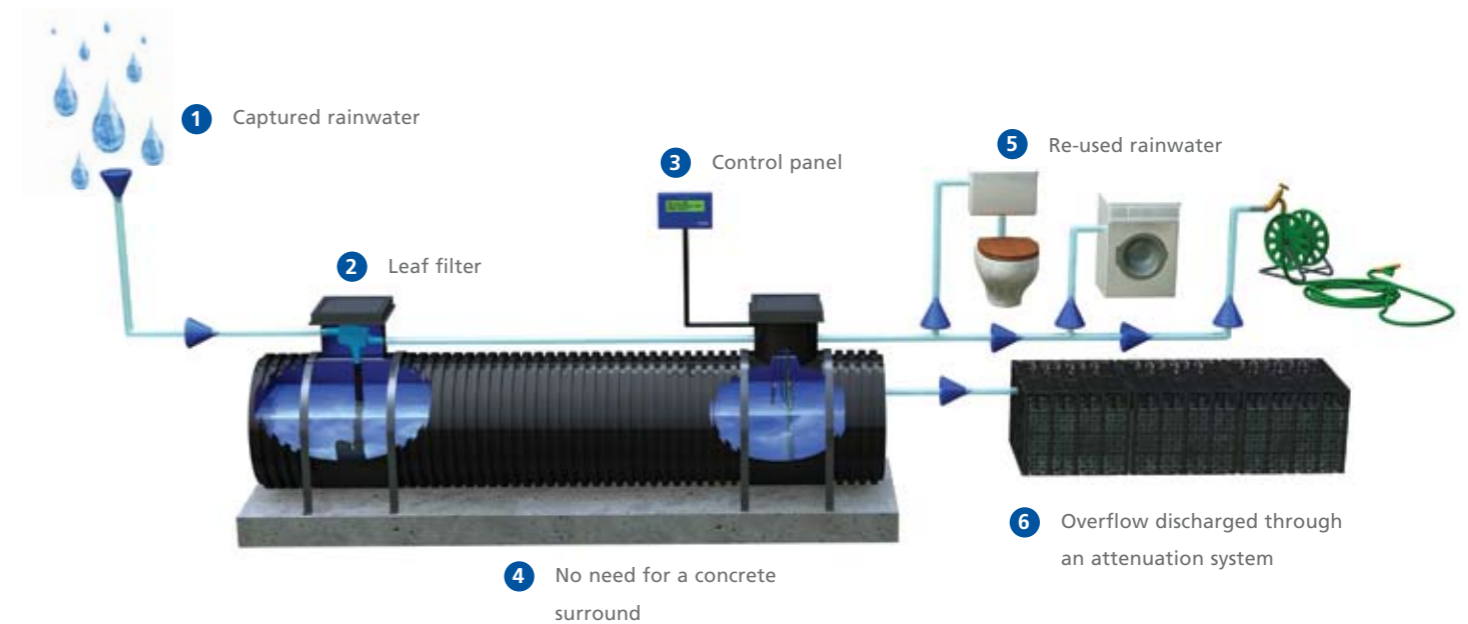
With no dehydrating chlorine or salt content, rainwater will keep grass and plants watered and healthy.

Water quality

Polypipe Terrain advises that the available water quality and intended use are carefully considered and a risk assessment completed where necessary. The company's technical team is always available to advise on such issues.

Rainstream Home

A robust and cost-effective rainwater harvesting system for house builders and home owners. Intended to maximise on rainwater re-use, Rainstream Home is Designed to accommodate UK rainfall, weather patterns and meet British standards.



The home system

The structured wall design of Rainstream Home has created a system that is unique in its ability to withstand a high water table. The key benefit of Rainstream Home and Garden is that it will never need a concrete surround in non-loaded applications, even in cases of a high water table. All that is needed is a concrete base which the tanks are strapped to.

It provides a simple solution to the complex problem of rising water tables and changing weather patterns. As most systems are installed during the summer months, when water tables are at their lowest, the resulting winter rising water table is often not taken into account. Some systems are not designed to be installed within the water table and are unable to withstand the hydrostatic pressures, resulting in their collapse. Rainstream Home and Garden however has been designed by Civil Engineers to withstand these hydrostatic pressures. Further testing has taken place proving the tank's capability to withstand water pressure at a burial depth of up to 6 metres or 0.6 bar, far beyond the pressures the tank is likely to face.

The range of tank sizes offered by Polypipe has been researched and designed to meet the exact requirements of the UK market, based on research into the national average household water use and the most up-to-date MET office data. Rainstream Home and Garden tanks allow the homeowner to meet their exact requirements and therefore provide the most cost-effective and efficient solution in the market, without the need to over-specify and incur disproportionate purchasing and installation costs. If increased capacity is needed, Rainstream Home and Garden offers a wide range of tank sizes to ensure rainwater collection is maximised effectively.

Gravity-fed and pressurised systems

Polypipe offers both gravity-fed and pressurised systems. Within a gravity fed system water is pumped from the Rainstream Tank to a header tank in the loft. The water is then fed to each appliance through a gravity pipe system. Pressurised systems use a pump to feed water directly to the appliance on demand. Polypipe advises the use of gravity systems where possible to reduce the effects of pump failure in the event of a power cut.

Rainstream Garden

An ideal introductory product for 'light' rainwater harvesting irrigation requirements, typical use could be to supply rainwater to a garden tap, greenhouse sprinkle or irrigation system.



The garden system

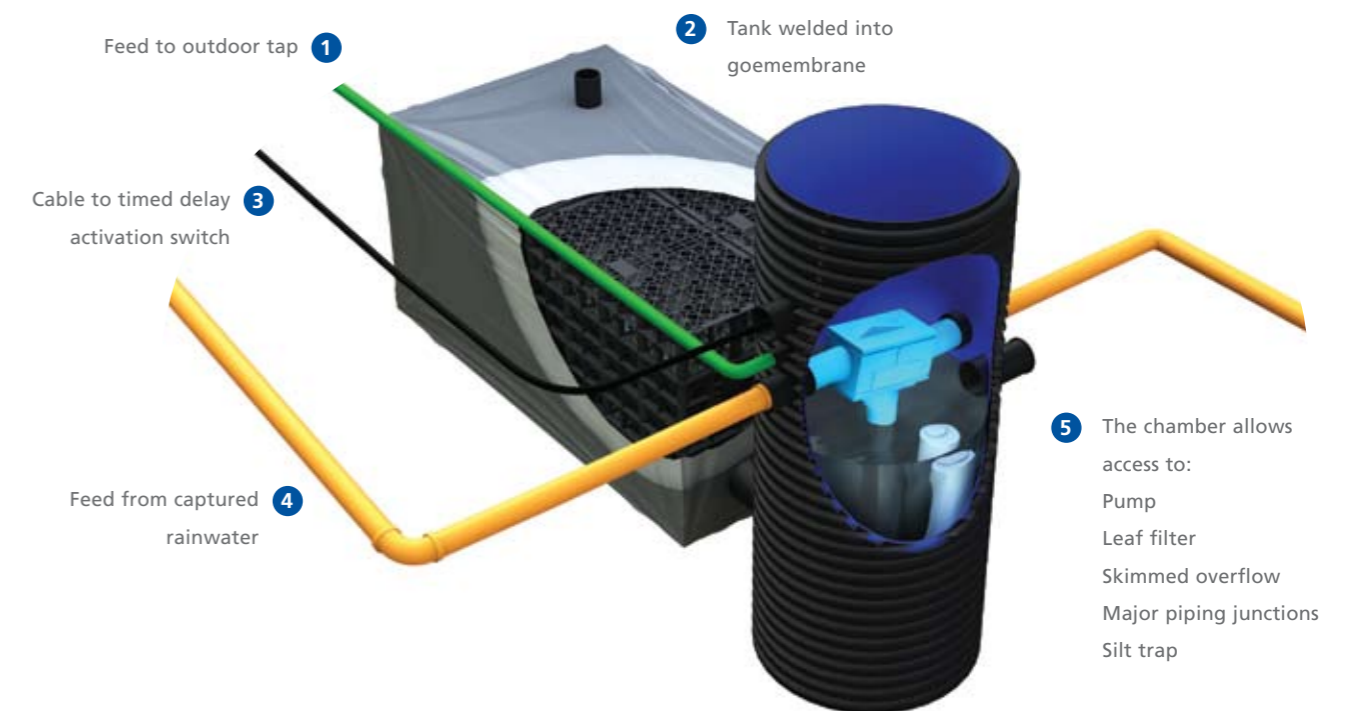
A 1500 litre capacity rainwater harvesting and irrigation system, comprising of: Leaf filter, calmed inlet, skimmed overflow, silt trap, storage tank, pump and timed delay activation switch. In its installed state the product allows the user full access to all components pump, filter, skimmed overflow, major piping junctions, and silt trap for service and system maintenance.

1500 litres of rainwater storage comes from eight Polystorm lite cells which are supplied wrapped and welded into a geomembrane for water tight storage and a geotextile fleece for light protection during installation. The chamber supplied is ready for

installation with the silt trap, leaf filter, calmed inlet, overflow socket connection, rainwater inlet socket, pumped water pressure outlet connection fitting and outlet to tank socket connection fitted.

Also supplied ready for installation is eight Polystorm cells pre-wrapped in a geomembrane and geotextile to be connected to the chamber with inlet and ventilation socket fitted.

Surface water enters the chamber via the rainwater inlet. It is then filtrated though a PF1 leaf filter; waste travels through a waste outlet while filtrated water travels vertically down and back up through a calmed inlet.



The filtrated rainwater remains in the chamber until a predetermined level, where thereafter it flows into the connected Polystorm storage tank. This process minimizes the amount of silt build up in the tank as all rainwater initially enters the chamber; any silt therefore remains in the accessible chamber where it can be removed during maintenance and doesn't enter the Polystorm tank where it would be somewhat harder to access. The timed delay switch has a sufficient IP66 rating so it can safely be mounted indoor or outdoor to suit the users' convenience. When pressed the system activates and the pump begins to prime and build sufficient pressure between the outlet and pump: recommended delay setting is 20 minutes. The pump has a built in pressure drop sensor so only 'pumps' when the tap (or other suitable outlet) is opened.

The pump gathers stored rainwater through a secondary filter subsequently prolonging the pumps life and pumps to the plumbed outlet.

The pump and calmed inlet sit on a ledge creating a silt collection sump. The calmed inlet insures that any silt in the tank is not disturbed; the offset level ensures any silt that is not removed by the initial filtration will relocate harmlessly to the bottom of the chamber where it can be removed during periodic maintenance of the system.

As all major components are located within a 600mm diameter chamber the space required for installation is minimal. The design of the chamber is such that all the components are accessible via the chamber; for example in the event of a blockage in the leaf filter, easy access can be gained through the cover to clean and renew if necessary the filter/blockage, it also makes periodic servicing of filters and desiltation easier on the user as it all takes place within the chamber.



Benefits to the home owner and the environment

Water Savings

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Reduced Water Bills

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Softer Water

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Ecological System

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Reduced Flooding

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More Sustainable

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Associated Products

Drainage and piping systems

Polypipe's unique range of drainage and piping products allow roof to re-use systems to be created for any type of project.

Rainwater gutter systems

The various guttering products available from Polypipe enable the creation of bespoke guttering systems that maximise rainwater capture efficiency. They include half-round, square section, deep, high and ogee extra capacity profiles, plus complementary products such as spacers, adaptors, brackets, rafter arms and connectors.

Attenuation and soakaway

Polypipe provides a variety of pipeline or modular cell based solutions for attenuation or soakaway applications, depending on the requirements of the project. Ridgistorm-XL provides a large diameter pipe and storage solutions for any scale of rainwater re-use project. Designed as a bespoke solution for each project, Ridgistorm-XL is the most advanced large diameter plastic pipe system available in the UK. The Polystorm range of modular cells offer a sustainable and adaptable solution for any attenuation or soakaway project. Polystorm cells can be constructed to accommodate all types of ground conditions, planning requirements and design considerations.

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Polypipe Building Products

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