

RAINWATER HARVESTING & ATTENUATION COMBINED

The underground water tank size is calculated for storm volume but also a capacity to meet the water needs for the home for toilets, washing machines and outside use however should the rainwater become low RainWater Harvesting Ltd provides mains back up solutions.

Both systems are WRAS (Water Regulations Advisory Service) approved and are accepted by all water authorities as compliant.



RAIN DIRECTOR GRAVITY FED SYSTEM



Rainwater from the underground tank is pumped up into a SMART header tank in the loft space where gravity is used to distribute to water appliances. This minimises pump wear and electrical usage. If the rainwater becomes low mains water refills into the header tank so only the smallest amount will be required. The RainDirector has other user friendly features which has been recognised with multiple awards.



- Running Costs Are Less Than 1p per Person Per Day.
- Low energy use using 6 - 8 times less electricity than other rainwater harvesting systems.
- Provides water in every situation: Low rainwater, power cut or pump failure.
- Smart user functionality.



BACK UP IN A BOX-DIRECT FEED SYSTEM



A pressure sensitive pump within the harvesting tank registers a drop in pressure by the appliance and water is directly supplied. Should the rainwater run low a measured quantity of mains water is introduced into the underground tank.



- RainVantage-Filtration Unit.
- Harvest, Hold and Controlled Release.
- 98% yield of roof rainwater.
- Self cleaning, low maintenance filter.
- Calculated release of excess water into the drainage network.

RainVantage system can be installed for garden use only or retrofitted where the sewer network is at risk of being overwhelmed. It is suitable for combining with any mains back up system which complies to BS 8515.



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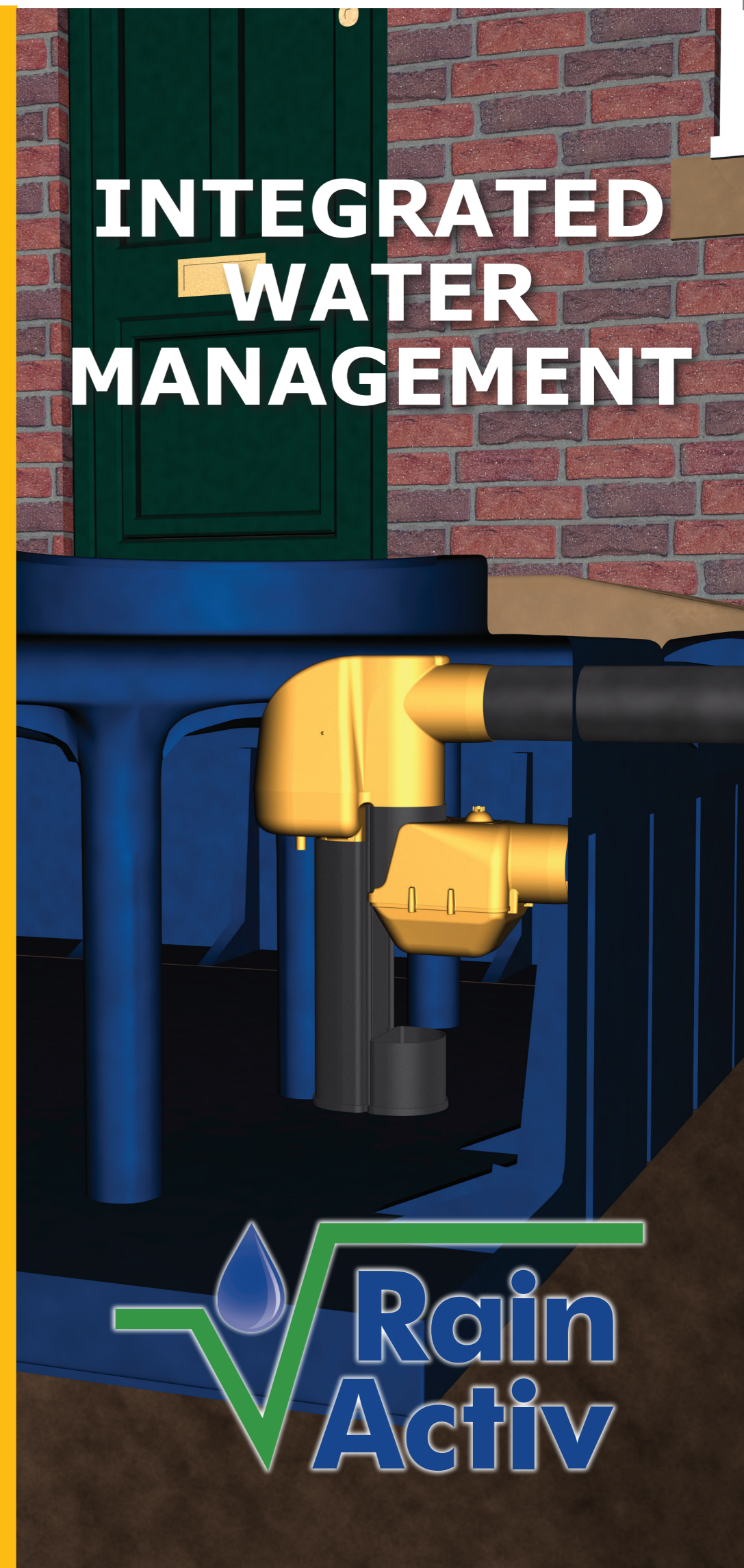
RA-EU-2016



- Rainwater Harvesting for toilets, washing machines and outside use.
- With controlled attenuation of water collected off the roof.
- Up to 50% saving on mains supply.
- Alleviates localised flooding.
- Protects against excess water entering the water network.

FLOOD
CONTROL

INTEGRATED WATER MANAGEMENT





COMBINING THE BENEFITS OF RAINWATER HARVESTING WITH CONTROLLED ATTENUATION

Climate change, population and urban growth have all contributed to stresses in the UK water infrastructure. The result has led to both shortages of supply and severe flooding.

Since 2008 Rainwater Harvesting Ltd has been developing systems to reuse rainwater within the domestic environment. There is no requirement to flush toilets with drinking quality water and it doesn't make any sense to continue to do so.

Over the past year the engineers and designers have focused on an Integrated Water Management System.

RainActiv combines the benefits of rainwater harvesting for non-potable applications with controlled release of attenuated water into the network. Dual functionality to maintain supply and a SuDS (Sustainable Urban Drainage System) solution for the future.

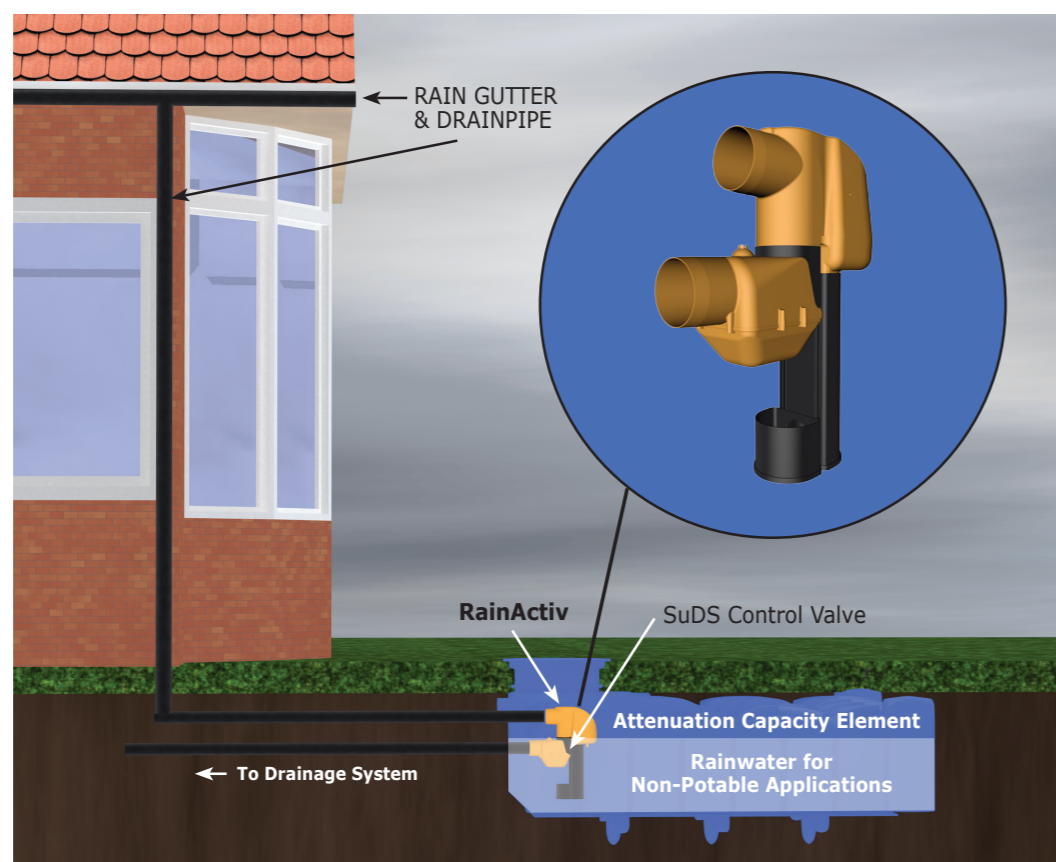
The concept is simple but the design is innovative. The outcome is an effective, affordable decentralised water management system.

HOW DOES RAINACTIV ACHIEVE THIS?

Rainwater is collected off the roof, filtered and stored in an underground tank. Without light or temperature variance's the water stays cool and fresh. It is then pumped back into the house for toilets, washing machines and outside use.

Should the rainwater become critically low RainActiv incorporates a WRAS approved mains back up system. They are designed to be simple to install and operate. Both direct and gravity fed options are available.

The harvesting tank has a calculated capacity which allows water to be stored for both non-potable applications and further volume for excess storm water. The upper volume is the RainActiv Attenuation Capacity Element (ACE). This is calculated assuming that the rainwater storage is full. The engineering team use sophisticated software to ensure that critical storm duration criteria are met for each individual site. At the ACE level the water is directed to the overflow at a controlled rate and therefore prevents overloading the drainage system.



Careful consideration has been given to legislation including the National Planning Policy Framework, Flood and Water Management Act, National SuDS Guidance as set out in PPS25-Development and Flood Risk, Defra's R & D Technical Report W5-074/A/TR/1, Article 2 10 of the Town & County Planning Development Management Procedure (England) Order 2010.



RainVantage-Filtration Unit

THINKING INSIDE THE BOX-HARVEST, HOLD AND CONTROLLED RELEASE

- Unique C-Shape design yields 98% volume of water during intense rainfall.
- Designed for shallow dig underground rainwater harvesting tanks and other above ground applications.
- Low maintenance and self-cleaning filter.

Rainwater enters the filtration chamber via standard roof guttering and downpipes. The water is directed over the tongue and filtered of particulate by a simple mesh. During light showers water flows into the harvesting tank. During heavy storms the flow hits the back of the chamber and decelerates the water allowing a maximum yield of 98%. In intense storm conditions excess water is released into the harvesting tank by the storm relief ducts.

In normal usage a minimum amount of water containing particulate enters the downpipe to the main drain or soakaway.

Rainwater fills the lower volume of the harvesting tank and this is available to be used inside the home. During storm conditions the tank will continue to fill the Attenuation Capacity Element (ACE) upper portion. When water reaches the ACE level water will begin to discharge at a calculated trickle rate passively. It is released by the SuDS control valve.

A non-return valve prevents back flow from the drainage network.

RainVantage provides a high yield and trickle rate discharge of roof rainwater which helps prevent overwhelming of the drainage network.

