

# KingspanWater Rainwater Harvesting

## A Guide for Installers



*Sustainable, Reliable, Affordable*



**The popularity of rainwater harvesting systems has grown rapidly in recent years, mainly because conservation of water stocks is now a priority for architects, builders and developers in order to achieve an excellence rating against criteria set by BREEAM and The Code for Sustainable Homes.**

And there is further legislation covering rainwater harvesting in the pipeline: the latest Building Regulations G were introduced in October 2009, aiming to introduce into Building Regulations for the first time, a water efficiency standard of 125 litres per person, per day for new homes. It will also clarify where greywater and harvested rainwater can be safely used.

Coupled with this, rainwater harvesting systems are now becoming a necessity for gaining planning permission in some areas of the UK that could be at risk of flooding, or where the mains water simply cannot support demand and requires back up.

As a consequence, specifiers are now incorporating rainwater harvesting into new design projects. Most mechanical and electrical (M&E) consultants now see rainwater harvesting as a routine addition to their new projects.

## Rainwater Harvesting Systems

The operating principles for UK rainwater harvesting equipment are broadly the same.

Once the rainwater has been collected from roof of the building, usually via the guttering, it is filtered before entering either an above or below ground rainwater holding tank. Holding tank sizes will be dictated either by the calculation method shown in British Standard BS 8515:2009, or in line with the BREEAM requirement pertinent to the particular project.

The mechanical aspect of the project is then designed to meet the requirements of the building project on a site-specific basis.

While there are a number of different options available to the mechanical designer, the system can broadly be configured in one of three different ways.

### Gravity System

This system is designed to pump the collected rainwater from the main holding tank to a high level header/break tank within the building. The tank will then service the non-potable appliances as per normal.

Mains water back-up is also delivered to the header/break tank, independently of rainwater, but these systems are configured to introduce mains water only if rainwater supplies are exhausted or if electrical power is interrupted.

Assuming that a high level header tank can be installed, this would generally be the preferred option.

### Direct System

In a direct system, the rainwater is delivered directly from the main holding tank to the point of use. In this instance, and following water regulation requirements, the mains water backup would be directed straight into the main holding tank.

### Booster System

Booster systems are a combination of both gravity and direct systems. Here, the collected rainwater is delivered from the main holding tank to a surface-mounted break tank and booster system. This option gives the combined benefits of both the direct system (particularly useful in larger applications) and the gravity system, in that the mains water back-up is directed to the break tank.

# KingspanWater Rainwater Harvesting

## A Guide for Installers

---

### Installation of Rainwater Harvesting Equipment

Installation should always be undertaken by a qualified plumber and should be a relatively simple task. For example, with Envireau the non-standard, specialist parts are supplied in the package; any other required components are industry-standard fittings and pipework.

In order to ensure that all trades who are involved with the installation are fully briefed (from ground works through to final commissioning) we recommend having an on-site, preinstallation consultation – check with your supplier, but this is something that comes as standard (and FOC) with KingspanWater equipment.

You should be aware that rainwater harvesting equipment brings with it new levels of Water Regulations requirements which are vital to protect the public water supply.

For further information and advice, we recommend going to the Water Regulations Advisory Service (WRAS) website ([www.wras.co.uk](http://www.wras.co.uk)).

Many of the regulations revolve around two principle requirements for rainwater harvesting equipment to comply with:

- 1 Marking and colour coding of the plumbing. A vital component of the installation as this will ensure that pipes carrying rainwater are not tapped into in future to satisfy potable water requirements
- 2 The requirement for an air gap in the system, which is necessary to avoid any crosscontamination between the rain and mains water supplies

The correctly specified equipment will be designed to work in harmony with the rest of the building's plumbing system. Envireau, for example, is manufactured in the UK and Ireland therefore will comply, when installed according to our simple-to-follow specification.

Commercial users should familiarise themselves with the requirements of HSE booklet ISBN 9780717617726.

### Maintenance

Much of the maintenance will be simply a visual checking of the system, with very little mechanical input. As a guide:

- 1 All rainwater harvesting equipment will have at least three filters spread through the system. The main pre-tank filter should self-cleanse during normal working conditions however we advise a visual check every six months to ensure that no debris has become trapped
- 2 The pump filter and control panel filter in standard equipment only require visual inspection periodically to ensure no blockages

We supply a full maintenance manual with Envireau and, assuming a qualified person is on site, a service should only take a couple of hours.

For more information, contact the **KingspanWater Technical Advisory Service** on: **+44 (0) 1296 633139**, or visit our website [www.kingspanwater.com](http://www.kingspanwater.com).

*KingspanWater offers innovative products for rainwater harvesting and greywater recycling to meet the demands of modern building projects. KingspanWater, a brand of products supplied by Kingspan Environmental, manufactures Envireau and Raintrap rainwater harvesting systems. All are available at builders merchants nationwide.*

November 2010

Accredited to  
**BS EN ISO 9001: 2008**  
**BS OHSAS 18001: 2007**



**envirowise**  
Practical Environmental Advice for Business



**KingspanWater**

UK: College Road North, Aston Clinton, Aylesbury, Buckinghamshire HP22 5EW  
Sales Hotline Tel: +44 (0) 1296 633000 Fax: +44 (0) 1296 633001  
Email: [info@kingspanwater.com](mailto:info@kingspanwater.com)

180 Gilford Road, Portadown, Co. Armagh, Northern Ireland, BT63 5LF  
Sales Hotline Tel: +44 (0) 28 3836 4444 Tel: +44 (0) 28 3836 4400 Fax: +44 (0) 28 3836 4445  
Email: [enquiry@kingspanwater.com](mailto:enquiry@kingspanwater.com)

Visit our website [www.kingspanwater.com](http://www.kingspanwater.com), or our company website [www.kingspanenv.com](http://www.kingspanenv.com)