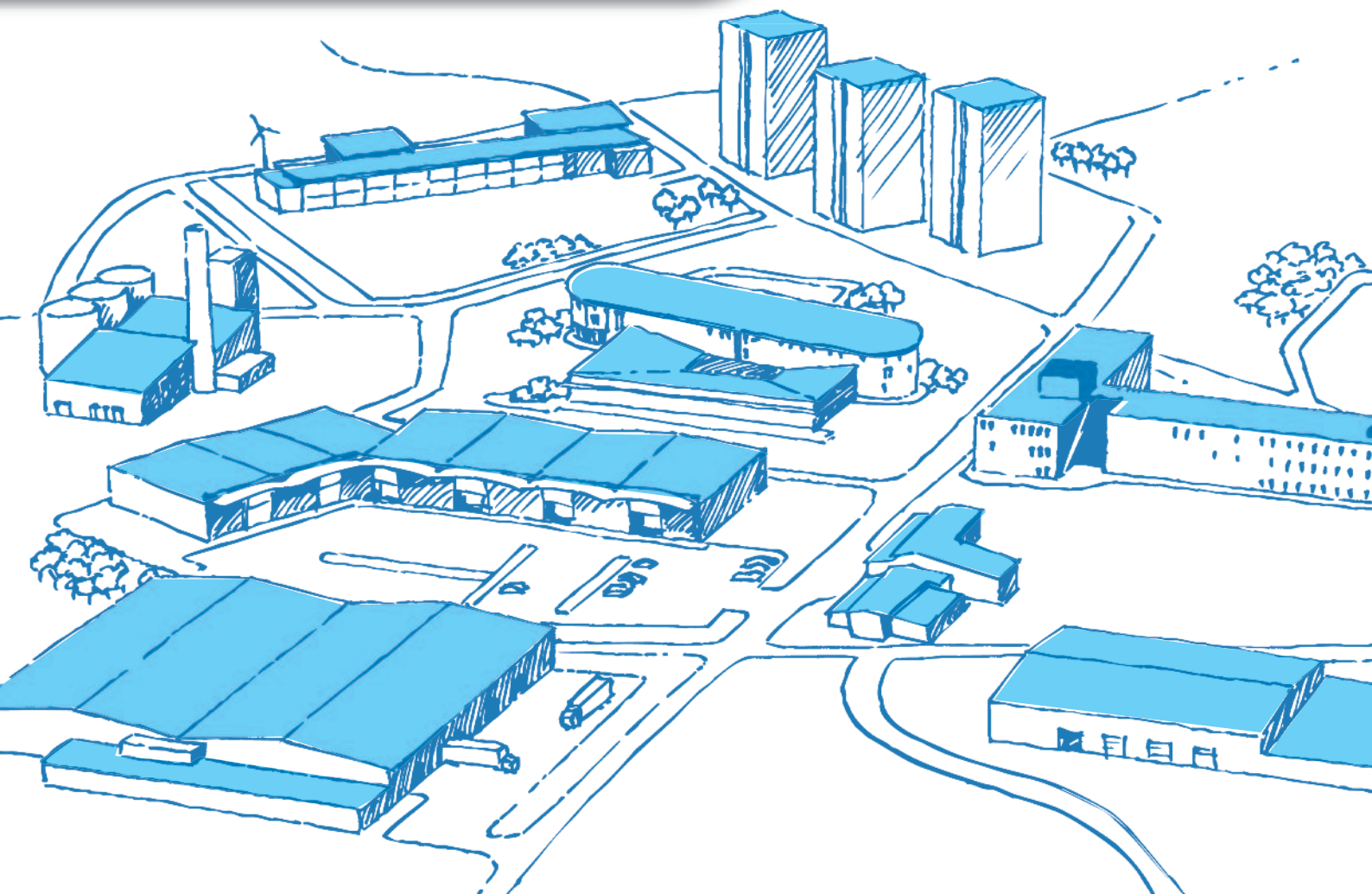


KingspanWater

Commercial Rainwater
Harvesting Systems



Often the simplest methods can be the most effective...

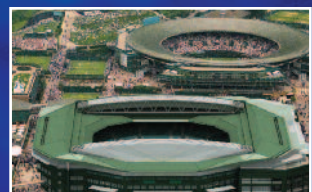
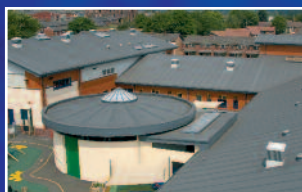
Harvesting rainwater is one of the simplest of ways in which we can live sustainably with nature. Only now is the value of water being recognised as it becomes an increasingly precious resource.

Here at KingspanWater, we have been designing and installing rainwater harvesting systems for over a decade. While we continue to follow the principles of rainwater harvesting, our systems have evolved through our knowledge, experience and the latest technology.

Water Conservation – The drivers in the UK

- BREEAM (BRE Environmental Assessment Method)
- Future Proof against water shortages
- Climate Change and Environmental Awareness
- Reduction in water costs
- Green Agenda globally
- Building differentiation

From shops, to schools, to stadiums...



Contents

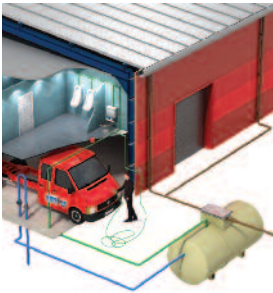
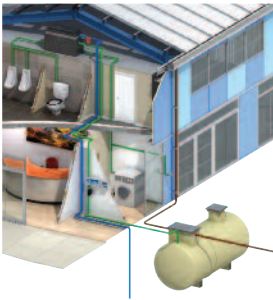
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System Choice

KingspanWater is unique in that it offers Below Ground Storage Systems and Above Ground Storage Systems, suitable for both new build and retrofit applications.

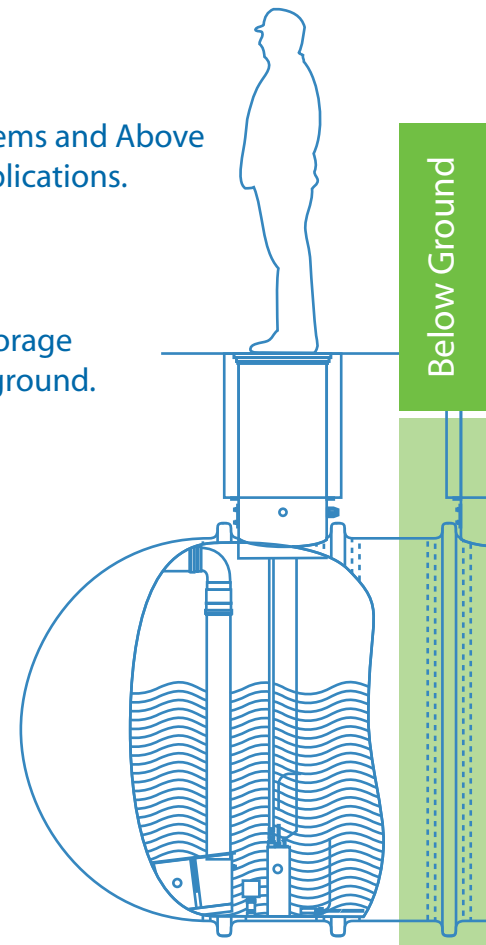
Envireau – Below Ground Storage Options



The most common and unobtrusive water storage option is to locate the harvested rain below ground.

Key benefits

- Capacities from 6,000 to 79,000 litres within a single tank
- Multiple tanks can be joined to cater for larger volumes
- Can be installed under trafficked areas (with concrete support)
- Complete packaged units delivered directly to site
- Economical volume storage



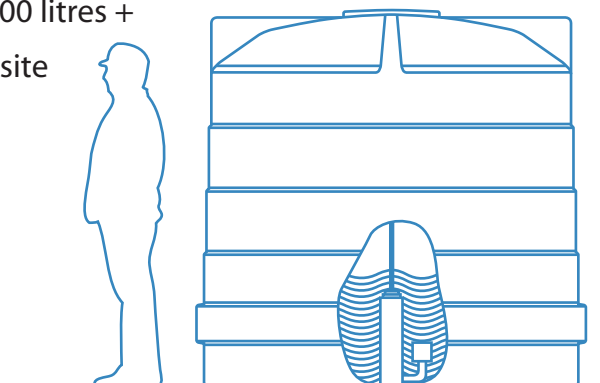
Rainstore Advanced – Above Ground Storage Options



Above ground tanks provide the quickest and simplest facility for storing harvested rainwater.

Key benefits

- Capacity from 5,000 – 40,000 litres +
- Immediate connection on site
- Portable and re-usable
- Facility to link additional tanks as required
- Tough and durable rotomoulded construction
- UV protected



Envireau – Below Ground Systems

The most common water storage option for a new build, is to locate the harvested rain below ground.

Kingspan's comprehensive range of GRP storage tanks provide an unobtrusive and secure solution for any size of building project from 6,000 litres up to 79,000 litres in a single tank. For larger capacities of water, multiple tanks may be connected together to meet storage requirements.

Need Help?

Contact the Technical Team

t - 01296 633139

e - info@kingspanwater.com

Selecting your system

Step 1 Roof Area

Determine the usable surface area on your building's roof

Step 2 Storage

Select the size of storage tank to cater for your requirements

Step 3 Header Tank

Select your header tank to manage the water dispersion

Step 4 Options

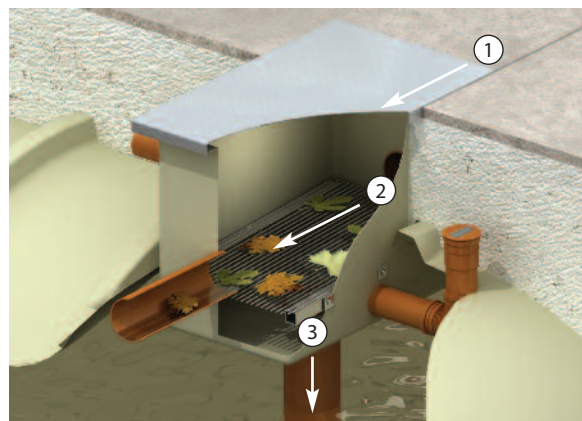
Choose your system options and maintenance packages

In-Tank Filtration

The Envireau system uses a three-stage filtration system comprising, the leaf filter, the pump filter and the 'In-line' filter.

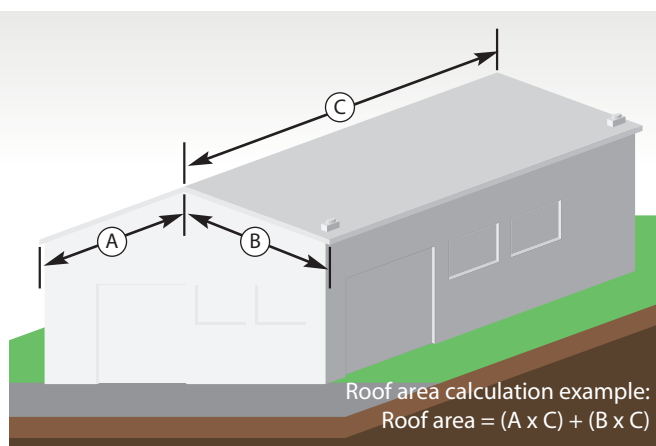
The leaf filter is located within the tank. Designed to filter out larger debris, the filter is easily accessible for maintenance via a manhole cover.

- 1 Rainwater enters filter chamber from gutter downpipe
- 2 Debris is allowed to wash across self-cleaning filter mesh
- 3 Filtered water enters storage chamber via calmed inlet



Step 1 Calculate the roof area

- 1 What is the roof area you will be harvesting rainwater from?
- 2 Proximity of downpipe and overflow drain point?
- 3 Will the installation be in a trafficked area?

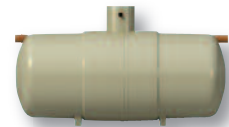


Step 2 Select the Storage Tank Capacity

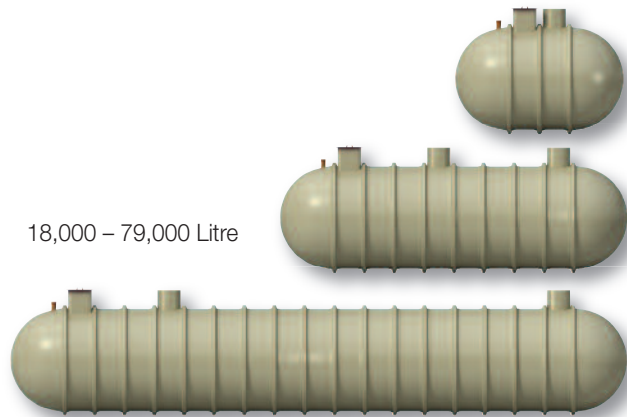
Roof Area (m ²)	Tank Model / Capacity (litres)	Tank Diameter
200	6,000	1.4
275	8,000	1.8
350	10,000	1.8
485	14,000	1.8
625	18,000	2.6
765	22,000	2.6
900	26,000	2.6
1040	30,000	2.6
1320	38,000	2.6
1460	42,000	2.6
1735	50,000	2.6
2050	59,000	2.6
2325	67,000	2.6
2745	79,000	2.6



6,000 Litre



8,000 – 15,000 Litre



18,000 – 79,000 Litre

Full range of technical drawings and schematics available – please contact us

Step 3 Select the Header Tank (Gravity System only)

The Gravity System has a major advantage in that in the event of a power failure on site (or the rain stocks running dry) the system will automatically switch to mains water supply to ensure continuity of service.

The header tank contains two independent valves operating both the mains and rainwater supply. The system will always draw on rainwater first and pump to the required applications.



Covered (m ²)	Capacity (litres)
HTD0100	100
HTD0250	250
HTD0500	500
HTD1000	1000
HTD1500	1500
HTD2500	2500
HTD3000	3000
HTD4500	4500
HTD6000	6000

Step 4 Select Options

See page 9 for System Options and support available.

Rainstore Advanced – Above Ground Systems

Above ground tanks provide the quickest and simplest facility for storing harvested rainwater.

The free-standing tanks require no specialist installation and are manufactured from tough rotomoulded plastic. For large capacities of water, multiple tanks may be connected together to meet storage requirements.

Need Help?

Contact the Technical Team

t - 028 3836 4444

e - enquiry@kingspanwater.com

Selecting your system

Step 1 Roof Area

Determine the usable surface area on your buildings roof

Step 2 Storage

Select the size of storage tank to cater for your requirements

Step 3 Header Tank

Select your header tank to manage the water dispersion

Step 4 Options

Choose your system options and maintenance packages



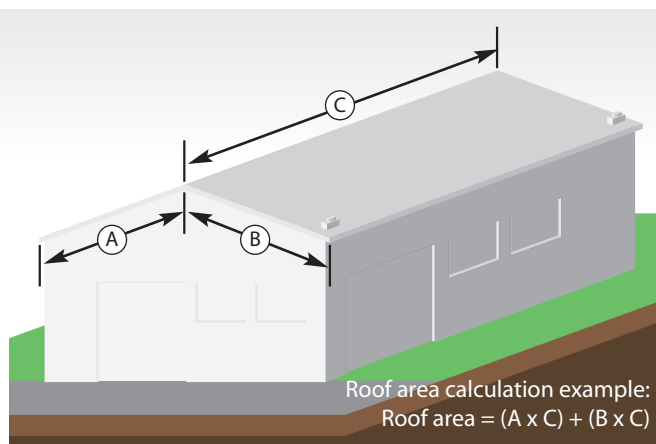
In-Tank Filtration

Rainstore uses a leaf filter integrated within the tank. The filter is accessible for maintenance via the top access cover and is easily removable for cleaning.

- 1 Rainwater enters filter chamber from gutter downpipe
- 2 Debris is caught in filter mesh
- 3 Filtered water enters storage chamber via calmed inlet

Step 1 Calculate the roof area

- 1 What is the roof area you will be harvesting rainwater from?
- 2 Proximity of downpipe and overflow drain point?
- 3 Will the installation be in a trafficked area?



Step 2 Select the Storage Tank Capacity



Single Tank



Single Tank



Multiple Tanks



Multiple Tanks

Roof Area (m ²)	450	900	1800	2700
Tank Capacity (litres)	5000	10,000	20,000	30,000
Model Ref	RSA0450	RSA0900	RSA1800	RSA2700

Full range of technical drawings and schematics available – please contact us

Step 3 Select the Header Tank (Gravity System only)

The Gravity System has a major advantage in that in the event of a power failure on site (or the rain stocks running dry) the system will automatically switch to mains water supply to ensure continuity of service.

The header tank contains two independent valves operating both the mains and rainwater supply. The system will always draw on rainwater first and pump to the required applications.



Covered (m ²)	Capacity (litres)
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HTD1500	1500
HTD2500	2500
HTD3000	3000
HTD4500	4500
HTD6000	6000

Step 4 Select Options

See page 9 for System Options and support available.

Control and Display

(Comes as standard with Envireau System and Rainstore Advanced System)

KingspanWater's smart control makes the process of setting up the system simple and fast. The control panel also offers a multitude of monitoring functions so that management and fault-reporting (via the LCD display) is easy to do.

Control Panel

The intelligent control panel automatically self-configures the system with a set-up wizard providing installers with a step-by-step guide through the whole process.

Display Panel

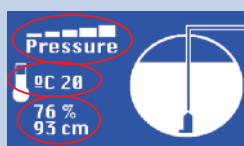
The LCD display panel gives building managers real-time operating information about the system, including an accurate measure of the amount and temperature of the water in the tank, the pump pressure, and fault reporting.

Control Panel

- 1 Power
- 2 Status
- 3 Error
- 4 Pump cable
- 5 Power cable
- 6 Solenoid cable
- 7 Display cable
- 8 Probe cable
- 9 Plumbing box (pressure transducer)



Display Panel



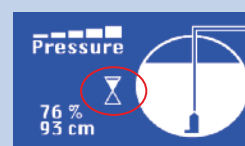
- Pump pressure indicator
- Temperature indicator
- Easy to view water levels



- Level sensor disconnection alert
- Communication alarm (if disconnected from panel)



- Pump lock out mode alert



- System learning mode symbol

System Options and Support

Monitoring and Telemetry

KingspanWater have developed a range of options to allow building owners / managers the ability to remotely view and log their system's operational data.

Real-time information is on hand, including amount of rainwater captured, mains & harvested water consumed, tank levels, and water temperature.

This scope of data can be logged over specific periods and is compatible with (BMS) Building Management Systems and associated alarm systems.

The data can be portable too – providing remote monitoring of data and remote download capabilities via any web browser onto tablets or laptops.



UV Disinfection

UV (Ultra Violet) disinfection of water is achieved by exposing the rainwater to radiation from UV light. This makes the harvested rainwater suitable for many applications that require higher levels of water quality.

This common method of disinfection works as the UV light penetrates an organism's cell walls and disrupts the cell's genetic material (DNA) making reproduction impossible.

UV systems are simple to install and require minimal maintenance or space. Improved safety, minimum service time, low operation and maintenance costs (and the absence of a chemical smell or taste in the finished water) are primary factors for selecting UV technology rather than traditional disinfection techniques.



Service and Maintenance

Like any appliance, rainwater harvesting systems benefit from periodic care and maintenance to ensure years of trouble free service.

KingspanWater systems are very low maintenance – The principle tasks involve the periodic checking of the filtration systems that capture dirt and debris from the roof area.



A scheduled maintenance service for rainwater harvesting systems is available through the Kingspan Environmental Service division. Factory trained engineers are located across the UK and Ireland and available for site visits as part of planned maintenance contract or on a one-off call out basis.

For further information visit www.kingspanenvservice.com

Case Studies

Below Ground System

Education

Creative Arts Building, University of Huddersfield

Envireau collects rainwater from the university's roof, filters it and then passes it into a 45,000 litre below ground rainwater holding tank. The water is then pumped to a high level header / break tank within the building to service toilet flushing.

Mains water is also delivered to the header / break tank independently of rainwater, providing back-up if the rainwater supply is exhausted, or if electrical power is interrupted.

The £14m Creative Arts building also incorporates solar panels and wind turbines, which, together with the KingspanWater Envireau system, is intended to achieve a 'Very Good' BREEAM (Building Research Establishment Environmental Assessment Method) rating, one of the higher marks awarded to sustainable buildings.

Client: University of Huddersfield Product: Envireau Fully Integrated Rainwater Harvesting System



Below Ground System

Office

DEFRA Offices, Northumberland

Lion House is an ultra low-emissions office building, designed and built for the Department of Environment, Food and Rural Affairs (Defra), in Alnwick, Northumberland.

From the outset, the aim was to construct a building with the highest possible BREEAM rating. That included incorporating low energy technologies, responsibly sourced materials and reduced carbon emissions. There was also the aim of minimising mains water consumption through low-water use fittings and rainwater harvesting systems.

The KingspanWater team worked closely with Haden Young to configure its Envireau equipment to meet the water consumption requirements for toilet flushing for Lion House's 100 employees.

Client: Defra Estates Division Product: Envireau Fully Integrated Rainwater Harvesting System with 12,000 litre storage tank



Above Ground System

Commercial

Home Delivery Depot, North London

A major supermarket retailer converted an existing warehouse in Enfield into a 'ghost store' where a team of 300 employees pick and pack up to 10,000 online customer orders every week.

The home delivery van fleet is kept clean via the on-site jetwash bay, fed by harvested rainwater drawn from the roof covering the 96,000 sq ft site.

The retro-fit installation uses 2 x 10,000 litres above-ground tanks, fed from internal downpipes. The Rainstore system was selected for its rapid-fit benefit, plus simple integration and operational monitoring – the ideal solution to bring water sustainability into the retailer's stores and distribution hubs.

Client: Major supermarket retailer Product: 2 x 10,000 litre Rainstore Advanced storage tanks and system



Further Information and Advice

A KingspanWater Rainwater Harvesting system is not complicated technology. Likewise, our professional team aim to make the specification, purchasing and installation process equally as simple.

Next steps

Get in Touch

KingspanWater have offices located in England, Scotland and Northern Ireland. Contact us and we will connect you to a rainwater specialist to talk through your project and discuss the options available.

Meet our Staff Local to You

KingspanWater has a team of Area Sales Managers located across UK and Ireland. On hand to offer experience and knowledge of product, they provide guidance on component selection, design calculations and projected cost savings. For larger systems or unusual applications, our qualified engineers can work directly with your own project team.

Dedicated Contractor Support

Kingspan also has a team dedicated to supporting M&E contractors throughout the selection, installation and commissioning process. This close working relationship ensures that contracting teams have a direct link to precise technical advice and expertise. Queries specific to the project in hand can be swiftly answered and issues immediately resolved – saving time and avoiding delays on site.

Go Online

Visit www.kingspanwater.com and you can download our range of sector-specific inquiry forms.

These easy-to-use forms will prompt you for principle information regarding a number of variable factors – allowing either a rudimentary quote or a detailed specification to be supplied. These include the size of roof area, existing (or projected) monthly water consumption, details about the occupancy (including male / female occupancy) and number of sanitary appliances.

Information Required

Our technical team can study your building plans and present a 'best-fit' system designed to maximise the effectiveness of a rainwater system and makes best use of the available tank installation area.

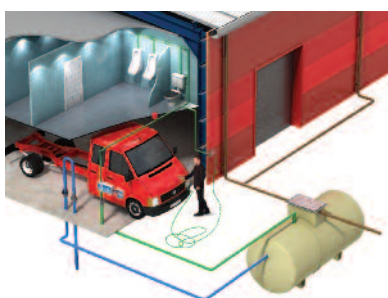
Alternatively, it may be more desirable to tailor the system to particular client criteria – for instance to supply a specific water application, interface with existing electrical / plumbing systems or a non-standard tank installation (e.g., below a carpark or similar).



KingspanWater Solutions

KingspanWater

- Domestic Envireau Fully Integrated Rainwater Harvesting Systems
- RainTrap Below Ground Storage and Delivery System
- Potable and Non-potable Water Storage Tanks
- Above Ground Rainwater Harvesting Systems for Existing Building
- Domestic Rainstore Waterbutts
- Filters, Monitoring and Accessories



Kingspan Environmental portfolio includes:



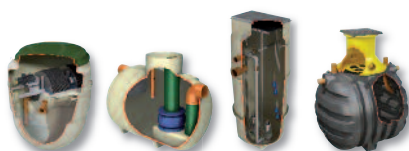
- Sewage Treatment Plants
- Package Pump Stations
- Oil / Water Separators
- Septic and Storage Tanks
- Stormwater Attenuation



- Bunded Oil and Fuel Storage
- Biofuel Storage and Dispensing
- AdBlue Storage and Dispensing
- Chemical and Water Treatment
- Spill Containment Solutions
- Recycling Banks
- Grit and Solid Fuel Containers
- Potable Water Tanks



- Domestic Tank Level Monitoring
- Industrial Tank Level Monitoring
- Tank Management Systems
- Tank Alarm Systems
- Overfill Prevention Devices
- Refrigeration Control Panels



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www.youtube.com/kingspanenvironment



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