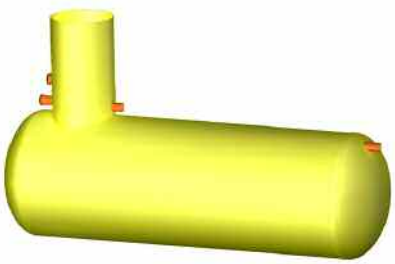
conder
ENVIRONMENTAL SOLUTIONS



the **Conderflo**™ rainwater harvesting system

Conderflo™ RWH 2-84

demand special treatment

rainwater a valuable resource

More than 97 percent of the nearly 1.4 billion cubic kilometres of water on earth is sea water – non potable water. Most of the remaining freshwater is permanently frozen in the Poles and glaciers. The remaining, freely useable freshwater amounts to only 0.3 percent of the World's total water resources.

An even bigger problem than the quantity is the quality of mains water. Increasing water pollution caused by nitrates, phosphates, pesticides and other chemical substances is making purification increasingly difficult and expensive. The freshwater reserve is being used in a permanent cycle. Today the average consumption of freshwater in the UK is 150 litres per person per day (source: Environment Agency).

But for some domestic applications the quality of highly purified potable water is not necessary. Around 50% of mains water can be replaced by untreated rainwater.

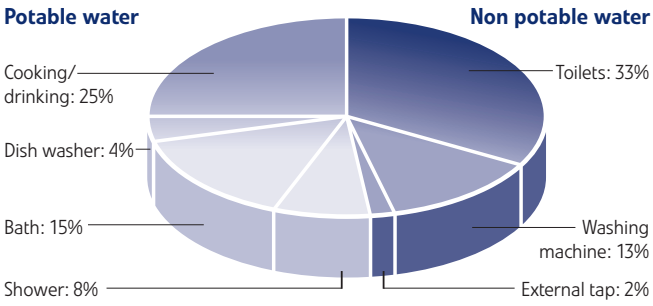
Beside the advantage that the use of rainwater is free of charge, it neither has to be purified nor transported over long distances. The two most important arguments to support the use of rainwater are as follows:

- Substitution of potable water
- Flood reduction due to decentralised rainwater retention tanks

WATER TECHNOLOGY LIST

The Water Technology List (WTL), developed and managed by Defra and the Inland Revenue, in partnership with Envirowise, offers a real incentive for industry to invest in technologies that use water sustainably, making for a win-win situation both environmentally and economically. The WTL enables businesses to claim 100% first year capital allowances on investments in rainwater harvesting products that comply with the criteria of the scheme.
Most of Conders products qualify. Look for the WTL-Logo.

VOLUME OF WATER USED PER PERSON PER DAY



Source: United Utilities

A typical household can save up to 50% mains water; in a commercial environment the saving can go up to 90%.

THREE STEPS TO A PROFESSIONAL RAINWATER TREATMENT SYSTEM

Rainwater harvesting is a simple technology and requires hardly any maintenance. No chemicals are needed to ensure water quality.

STEP 1

Filtration: The first purification stage starts before water enters the holding tank, with the aim of keeping larger dirt particles (e.g. leaves) out of the tank. The best solution is a filtration system that collects the draining water, filters it without retaining the dirt and is therefore self-cleaning.

STEP 2

The holding tank not only stores the water but also purifies it in a second biological filtration step. The tank should be able to protect the water from dirt, light and temperature. The water in the tank must be kept calm so that heavier particles can settle to the bottom and the lighter particles float to the surface. This is assured by the calmed inlet. Thanks to the floating extraction the cleanest water is always taken approximately 15cm below the water's surface. The holding tank must be specially dimensioned so that the stored rainwater overflows several times a year. Thus the floating dirt layer is disposed via the overflow siphon.

STEP 3

A pump is needed to supply the rainwater to the applications. The pump should be silent running and corrosion resistant. The installation of a mains water back-up system is required to ensure permanent readiness for service of the rainwater harvesting system. This component provides the supply of mains water into the system in the event of rainwater shortage. For easy installation and maximum operation safety our Conderflo Manager can take over the function of pump and supply unit in a single product. The pipe installation should be corrosion resistant as well. The pipe installation and water taps must be marked clearly (according to WRAS). The water taps should be detachable but secure.

ENJOY SOFT, NATURAL WATER:

- Ideal medium for enabling plants to absorb minerals
- Better washing efficiency – 50% of detergent can be saved
- Due to the softness of the water there is no limescale buildup in the washing machine and no urinal calculus in the WC

WATER QUALITY

If a rainwater harvesting system is professionally designed and installed there is no reason for any doubts about domestic use of rainwater regarding hygiene aspects. This has been verified by several scientific reports and researches, e.g. in a long-term study by the State Hygiene Institute in Bremen, Germany. One result was that there is no difference between the quality of clothes washed with potable water or rainwater.

duplex system – the professional solution for your house

The Duplex System is the most sophisticated system. It combines all needed functions of the system in only two components: the Conderflo Manager (containing pump, mains back-up and control unit) and a GRP (glassfibre-reinforced plastic) tank with integrated filter. The Conderflo Manager controls and monitors the whole system and switches automatically to mains water in case of rainwater shortage. The system is easy to install and maintain.

Moreover it assures that only the exact needed amount of mains water is fed into the system in times of rainwater shortage.
All these aspects lead to short and long term cost savings.

SYSTEM ADVANTAGES

- High water efficiency
- High operation safety
- Easy installation
- Simple maintenance

UNDERGROUND STORAGE TANK

- Tanks with or without integrated filter made of GRP
- In sizes from 2,000 L to 84,000 L in GRP
- Larger options available on request
- All tanks are equipped with turret, lid, calmed inlet and overflow
- Car duty cover for up to 5 t also available

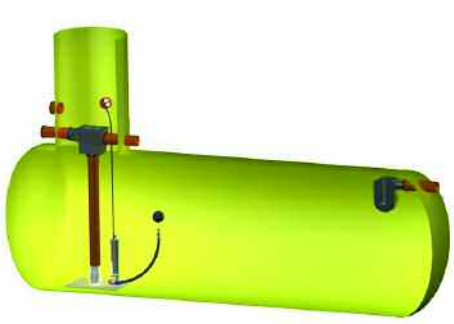
Conderflo Manager

- Central intelligence of a rainwater harvesting system: controls and maintains the whole system
- House internal and demand orientated mains water back-up
- Complies with European regulations BS EN 1717 (air gap)

simplex system

SIMPLEX DIRECT SYSTEM

The direct system can be used for domestic and small commercial applications. The system uses a submersible pump to supply the water directly to the various applications. In case of rainwater shortage the system switches automatically to mains water and supplies water into the underground tank using an AA type air gap to ensure that the pump does not run dry. A water level gauge for the underground tank can be added, if required. The major advantage of the system is its low space requirement and the high pressure that can be provided, especially for garden watering.



SIMPLEX GRAVITY SYSTEM

The gravity system can be used for domestic and commercial applications. The system uses a submersible pump to supply the water into the header tank which then feeds the water via gravity to the applications – in most cases only WC – since water pressure is limited. In the case of rainwater shortage or power failure the system switches automatically to mains water supply to ensure continuous supply. A water level gauge for the underground tank can be added, if required. The major advantage of the system is a continuous supply in the event of a power or pump failure to the applications that are fed via the header tank.

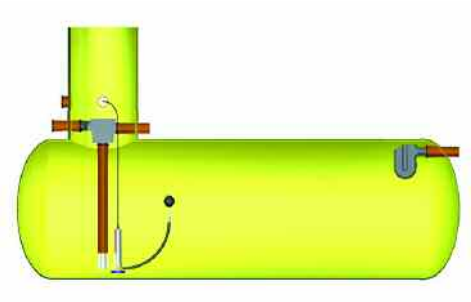
CONTROL UNIT KIT-X

- Space saving control unit with demand orientated mains back-up via the tank using an AA type air gap
- Can be used in the case of large distances between the tank and building
- Includes submersible pump with floating extraction
- Works demand orientated

commercial systems: everything from schools to airports

A Rainwater harvesting system for larger buildings, such as schools, residential buildings, offices or hotels, works in the same way as for family-houses. The only difference is the size of the components of the systems, which have to be adapted to the requirements of the project.

All commercial applications are unique to that particular site and offer significant cost savings. However careful design is required by Conder staff to ensure that the maximum capability of the roof area is utilised.



Conderflo Manager

- Double booster pump station with multiple-staged, horizontal centrifugal pumps
- Internal mains water back-up using an AA type air gap (BS EN 1717)
- Max. flow rate up to 14 m3/h and max. pressure head 72 m
- Electronic control with 4-line LCD-display
- Possibility to connect second supply pump for usage of two separate storage tanks
- Available with variable speed pumps (optional)
- Exists in two versions: version B – working together with submersible pump; version E – self priming pump where unit can be placed next to tank
- Possibility of manual changeover to mains water supply
- Floating alarm contact for maintenance and alarm signals
- Mains water back-up can work with only 1 bar mains pressure
- Compact space saving unit; easy to install

Conderflo Manager 1000

Conderflo Manager 1000	30-50	40-50	50-50	30-80	40-80
max. flow rate	9m³/h	9m³/h	9m³/h	14m³/h	14m³/h
max. pressure head	42.2m	57.7m	72m	47.3m	59m
motor output	2 x 0.880 kW	2 x 1.200 kW	2 x 1.480 kW	2 x 1.200 kW	2 x 1.480 kW
power supply (1 ~ 230 V)	7.8 A	10.6 A	12.6 A	10.6 A	12.6 A

DIMENSIONS Conderflo Manager

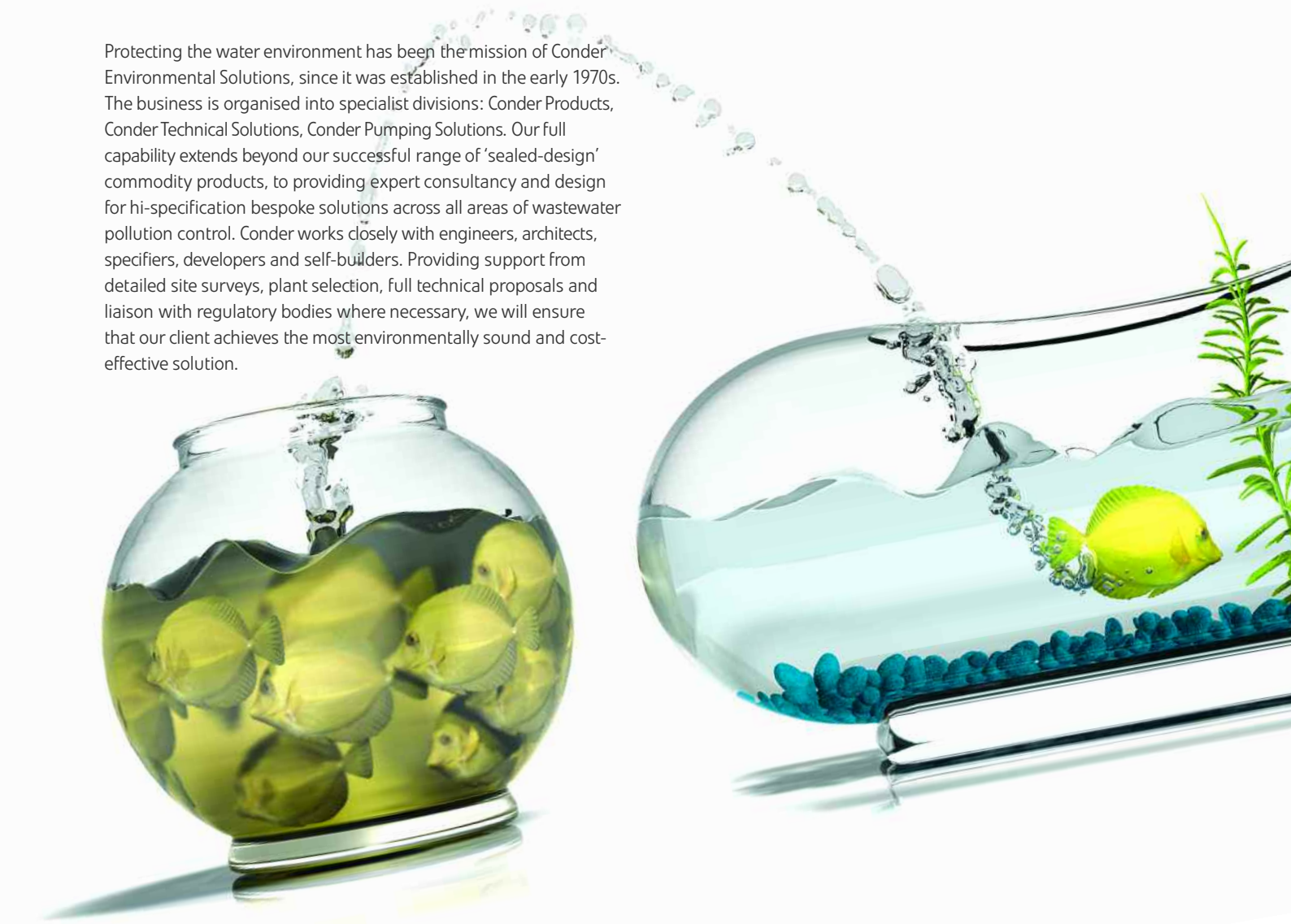
Width in mm	800
Depth in mm	725
Height in mm	1,550
Weight (empty)	150kg

In the event of rainwater shortage the unit switches automatically to mains water supply using an AA type air gap according to BS EN 1717. The electronic control of the Conderflo Manager is the central intelligence of the rainwater harvesting system. The unit is equipped with a microprocessor that ensures control of the whole system at all times. The Conderflo Manager controls the water level inside the underground holding tank and its own break tank. It shows any malfunctions within the rainwater harvesting system by means of visual and audible signals. It reacts automatically to ensure water supply to the applications. The volt-free alarm contact enables external monitoring for possible malfunctions and maintenance alarms. The solenoid valve of the mains water back-up system is regularly opened to avoid stagnation in the mains water pipe.

If you design larger projects, we have all the components needed for your requirements. We can also help on the design, just contact us at: f. 08702 640004, www.conderproducts.com

about conder environmental solutions

Protecting the water environment has been the mission of Conder Environmental Solutions, since it was established in the early 1970s. The business is organised into specialist divisions: Conder Products, Conder Technical Solutions, Conder Pumping Solutions. Our full capability extends beyond our successful range of 'sealed-design' commodity products, to providing expert consultancy and design for hi-specification bespoke solutions across all areas of wastewater pollution control. Conder works closely with engineers, architects, specifiers, developers and self-builders. Providing support from detailed site surveys, plant selection, full technical proposals and liaison with regulatory bodies where necessary, we will ensure that our client achieves the most environmentally sound and cost-effective solution.



CONDER PRODUCTS

Our specialist commodity division offers a portfolio of products ranging from oil separators and small sewage treatment plant, to pumping stations and attenuation or storm water balancing tanks. Our Clereflo range of small-scale domestic sewage treatment plants serve 6-50 population equivalents, utilising either Activated Sludge Plant (ASP) or Submerged Aerated Filter (SAF) technology. Highly price-competitive, with minimal running costs, the Clereflo range is the low energy solution for applications where access to mains drainage is not available.

CONDER TECHNICAL SOLUTIONS

The capability of Conder's Technical Solutions division illustrates the breadth of the company's expertise and has established Conder as the authority in hi-specification projects. As a solutions provider our expertise extends across a product range that includes SAF technology unitank and modular sewage treatment systems up to 1800pe, Membrane BioReactor sewage treatment systems up to 5000pe, attenuation, engineered vessels and other specialist tanks.

CONDER PUMPING SOLUTIONS

We offer a range of water and wastewater pumping solutions for domestic, commercial and industrial applications from off the shelf packages, through to custom-built pumping solutions.

SERVICE

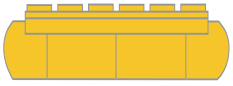
Products installed to protect the environment must be maintained and serviced regularly to ensure that they continue to operate efficiently and effectively. Failure to do this will undoubtedly lead to pollution of the water environment, which is an offence and may result in prosecution. Through a nationwide network of British Water accredited engineers, Pims Service, Conder's service partner, offers a full service and technical package which can include product support, commissioning, waste management and ongoing service and maintenance programmes.

let us make your environment
a better place to be...
demand special treatment

ASP 6-20pe Package Sewage Treatment Plant

NSAF 25-50pe

Techflo SAF 60-600pe single-stream and multi-stream up to 1800pe



MBR Membrane Technology Package Sewage Treatment Systems (up to 5000pe)

General Underground Storage Tanks

For product enquiries, specification advice, project assessments or further information, please contact the Conder team on:

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ENVIRONMENTAL SOLUTIONS

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South West Industrial Estate, Peterlee, Co Durham SR8 2RA

For nationwide service enquiries please contact:

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www.pimsgroup.co.uk

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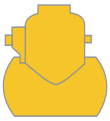
Attenuation & Storm Water Balancing



Class 1&2 Bypass & Full Retention oil/water separators

Package Pump Stations

Plus:

Double Wall Tanks
Fuel Tanks
Cesspools & Septics
Rainwater Harvesting Systems
Grease/Oil Separators
Bucket Lift Elevators
Screenpack CSOs
ConderCell Modular Storage
Above Ground Engineered Vessels
Sprinkler Tanks