



Eco-Vat

Rainwater Harvesting from the industry leaders in sustainable Water Management Solutions

Polypipe Water Management Solutions, the established leaders in technical and bespoke rainwater harvesting solutions

Providing the tools for the management, control and re-use of rainwater.

Experience

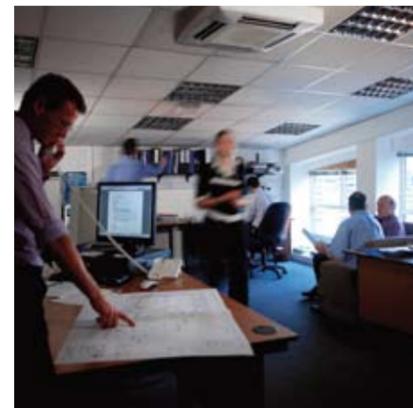
Polypipe Civils has recognised the growing importance and emphasis placed on sustainable construction methods both by the Government and the construction industry itself. To this end, Polypipe created Water Management Solutions (WMS), a specialist team housed within the Polypipe Civils business which is totally dedicated to providing innovative, future-proof and sustainable water management solutions to the UK construction industry. The WMS team includes fully qualified design engineers, civil engineers and technical support experts who all have a wealth of experience within the sustainable drainage environment, with almost 10 years experience in providing rainwater harvesting solutions alone.

Established Manufacturer

The WMS team draws on the proven manufacturing capability of Polypipe Civils, with two manufacturing sites employing over 350 people. We are therefore able to provide in-house bespoke manufacturing capabilities for our full range of rainwater harvesting solutions. We are committed to providing value engineered, tailored water management and rainwater harvesting solutions to meet site-specific requirements. We are unique in our ability to provide pre-installed filters within chambers to suit each site. Constructed off-site, pre-fabricated chambers offer quicker, easier and more cost-effective installation.

Fully UK-Considered System

Our rainwater harvesting solutions have been developed to focus solely on the UK market. All products are manufactured to offer the most cost-effective solution to maximise the re-use of rainwater in the UK. We do not supply European systems to the UK market and are committed to designing solutions calculated to UK rainfall and weather patterns. We have a clear knowledge of the environmental issues and UK government legislation surrounding rainwater harvesting through our involvement with the UK Rainwater Harvesting Association and British Water.



Contents

Rainwater Harvesting	4-5
Eco-Vat	6-7
Eco-Vat Home	8-9
Additional Options	10
Bespoke Options	11
Installation	12
Maintenance	13
Case Studies	14-15
Frequently Asked Questions	16-17
Office Tank Sizing	18
Technical Information	19

Rainwater Harvesting

Eco-Vat Systems from Polypipe WMS, providing a truly sustainable solution for rainwater recycling



Rainwater Harvesting

Individual water use has increased by 30% since 1970. Rainwater harvesting solutions collect water where it falls (rather than forcing it to drain away where it can add to flooding problems) and also reduce the demand for treated mains water by re-using the harvested rainwater for applications within a residential or commercial building, such as toilet flushing, clothes washing and commercial wash-down areas.

Legislation

As a responsible manufacturer, Polypipe is focused on building regulations and environmental legislation which drive industry development. SUDS now form an integral focus for current legislation and rainwater harvesting is an essential element of this criteria. For example, the SUDS Working Group state that it should be the first SUDS solution investigated.

Rainwater harvesting is a vital tool in

meeting the requirements for PPS25, Building Regulations Part H and the Code for Sustainable Homes. Rainwater harvesting can also be an effective tool in meeting the Blueprint for Water. This sets out a key timetable for achieving a sustainable standard of water by 2015, in order to achieve the Water Framework Directive. One key element is the reduction in water consumption by 20%, which can be effectively achieved through rainwater harvesting.

Eco-Vat

The Eco-Vat system features a storage tank which collects rainwater from roof areas ready for re-use in non-potable applications. This reduces the volume of surface water run-off on new developments on both green and brown field sites. We have successfully installed Eco-Vat on a wide range of projects, including domestic, large-scale residential, CIR, education and MoD projects.

WTL Listing



Under the Green Technology Challenge initiated by the UK Government in 2001, developers can earn tax incentives by using technologies which improve water saving and quality. Eco-Vat systems are approved as part of the Water Technology Listing (WTL) and can be used to gain a 100% first year Enhanced Capital Allowance (ECA).

Capital allowances allow the costs of capital assets to be written off against a business's taxable profits. They take the place of depreciation charged in the commercial accounts. Enhanced capital allowances can reduce a tax bill by £30 for every £100 spent on the qualifying product, as well as expenditure on the provision of plant and machinery. This includes the direct cost of transportation and installation of the Eco-Vat system.

Rainwater Harvesting

Fully considered service for the residential, commercial, industrial and retail markets

Free Assessments

As part of a fully considered service, we offer free rainwater harvesting assessments. This invaluable guidance provides full details on appropriate tank sizing and system components, as well as design calculations and full cost savings.

Technical Expertise

Full site assessment and installation guidance is available from the Polypipe WMS Technical Team. For specific queries, please call 01509 615100 or email: wmstechnical@polypipe.com

Design Services

Our fully qualified design engineers can provide a value engineered solution either as a fully-specified and complete rainwater harvesting solution, or bespoke designs for individual components based on project or site-specific requirements. Consequently, Polypipe WMS offers a drawing take-off service, as well as standard detail drawings in Auto CAD or DWG format.

Commissioning Service

To ensure correct installation of the Eco-Vat tank, we offer a commissioning service of the installation, please see page 12 for further details.

Bespoke Solutions for Off-site Construction

The Polypipe WMS team benefits from access to Polypipe Civils own in-house fabrications department. Using our own products and expertise, we are able to design and fabricate any solution to meet specific site constraints. Solutions such as bespoke leaf filters, as pictured below are delivered to site pre-fabricated, reducing installation times and labour costs on-site.



The Eco-Vat system can be an important element of an integrated SUDS approach

Polypipe offers 12-month maintenance contracts

Maintenance

Polypipe offers 12-month maintenance contracts which include an annual service, free parts and labour and 48-hour call-out in the unlikely event of system failure.

Eco-Vat

Commercial, industrial, retail, large residential and public sector applications

Polypipe WMS applies unrivalled technical knowledge and expertise to design and commission large-scale applications for domestic, commercial and public sector developments. We offer flexible solutions to meet various site requirements, from bespoke filters through to manifold systems.

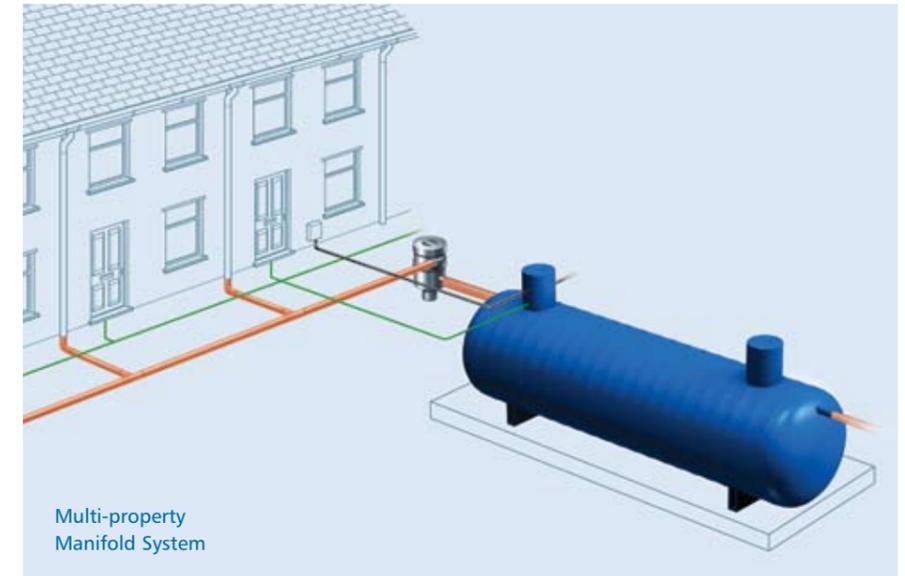


Applications

Large-scale solutions from Polypipe WMS have been installed on a wide variety of projects, from Ministry of Defence sites through to retail developments. Our team of fully-qualified designers and engineers have the technical pedigree and manufacturing capability to design solutions to meet any site requirements.

Key Benefits of Eco-Vat

- Tank sizes from 7,500 to 120,000 litres (smaller tanks are available if required)
- Leaf filter within bespoke chambers to suit specific project
- Full technical design and support
- Gravity and pressurised system available
- Complete range of additional items such as duty standby and booster systems
- Mains water back-up
- Helps reduce your carbon footprint by lowering the volume of water from local treatment works
- Tank system supplied with filters, pumps, valves, component set and factory fitted inlet, calmed inlet and outlet connections
- Bespoke design solutions offered for any site constraint
- Robust GRP tank construction
- Filter uses first flush principle (see page 16)
- Manifold system available for multiple dwellings
- Water filtered to 110 microns



Tank Sizing

For a free tank sizing assessment, please refer to our online assessment forms at www.polypipewms.co.uk/eco-vat. Alternatively, please refer to the technical table on page 18 which provides a guide to tank sizing for office use. For specific queries, contact our Technical Team on 01509 615100.

Projects include:

- Brislington School, Bristol
- MoD, various sites
- Armondvale Shopping Centre, Livingstone
- Banbridge Leisure Centre, Banbridge
- Civic Centre, Gedling Borough Council
- IKEA, various sites

Eco-Vat Home

Domestic Rainwater Harvesting Systems

Eco-Vat Home has been created by Polypipe after intensive research and development to provide a robust and cost-effective rainwater harvesting system for the UK domestic market.



Key Benefits of Eco-Vat Home

- Able to sustain high water tables without the need for concrete surround
- Designed by civil engineers specifically for the UK market
- Based on a proven and tested product installed in 100,000's of civil engineering projects
- Comes pre-assembled, ready for installation
- Tanks are designed for a shallow overall burial, resulting in a quicker and cheaper installation
- Available as a gravity-fed or pressurised system
- Helps reduce your carbon footprint by lowering the volume of water from local treatment works
- Reduces domestic mains water usage by up to 50%
- Three stage filtration, resulting in the water being filtered to 110 microns
- Filter uses 'first flush' principle (see page 16)
- Mains water back-up
- Can be used for toilet flushing, washing machines and garden irrigation
- Rain is soft water, which reduces limescale and prolongs the lifespan of appliances
- Tank sizes available from 1500-5500 litres (Larger GRP tanks available on request)
- Only a small control panel is needed within the house, all other components are installed within the tank
- No noise from the pump as it is located within the underground tank

No need for a concrete surround

The structured wall design of Eco-Vat Home has created a system that is unique in its ability to withstand a high water table. The key benefit of Eco-Vat Home 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. Eco-Vat Home 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.

UK tank sizes for the UK market

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. Eco-Vat Home 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, Eco-Vat Home offers a wide range of tank sizes to ensure rainwater collection is maximised effectively.

Tank Sizing

For a free tank sizing assessment, view our online assessment forms at www.polypipewms.co.uk/eco-vat. For specific queries, contact the Polypipe WMS Technical Team on 01509 615100.

Projects include:

- Old Cantley Home, Doncaster
- Bellway Homes, Derbyshire
- Environ, Eco House, Leicester
- Earthship Project, Brighton

Additional Options

Building Management Connections, Booster Sets, Day Tanks, Duty Standby Pumps and UV Disinfection

Polypipe WMS is committed to finding the right solutions for specific sites and is able to offer a range of additional options to complement the standard Eco-Vat system, for both residential and commercial applications.

Header Tanks

Polypipe WMS can supply a range of header tanks to suit each application. Header tanks are used in conjunction with a gravity system and can either be connected directly to the Eco-Vat tank or connected to a booster system. Please contact the Technical Team on 01509 615100 for further details.

Booster System

A booster system consists of a GRP storage tank and booster pump to deliver non-potable water under pressure, around the building, over a large distance or to a high head. The tanks are supplied as either sectional or one-piece GRP tanks that connect directly to the Eco-Vat underground tank. Sited within the building envelope (typically in a plant room) the tank holds sufficient capacity to ensure a constant supply of non-potable water throughout the day. The booster pumps are controlled via the supplied control panel and run in sequence to increase the life of the system and give back-up in the unlikely event of one pump failure. A booster system is often required within a large scale development, typically large office blocks, retail premises or schools.

Duty Standby Sets

Eco-Vat is supplied as standard with one pump. However, in high demand applications, a duty standby set may be required. The duty standby sets from Polypipe WMS are positioned within the Eco-Vat underground storage tanks and are typically used where there is high demand within the building. A key benefit of the duty standby set is the inclusion of two pumps which work in sequence. This increases the life of the system and gives back-up in the unlikely event of one pump failure. Available as either pressurised or gravity systems.

Above-Ground Tanks

In certain circumstances it may not be possible to bury an Eco-Vat tank, in which case we are able to offer an above-ground GRP tank. Please contact the Technical Team on 01509 615100 for details.

Sectional GRP tanks

Sectional GRP tanks are ideal for situations where the storage tank needs to be sited within the building envelope. Constructed using GRP panels which are bolted together on site, this reduces access issues into an existing building. Please contact the Technical Team on 01509 615100 for details.

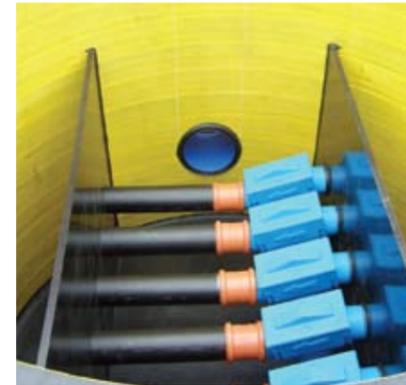
Building Management System (BMS) Connections

The Eco-Vat control panel allows easy connection to the BMS through a volt-free connection. This allows the BMS to monitor the Eco-Vat system and provide an alert in the event of a system fault.

UV Disinfection Filter

The UV disinfection filter improves water quality and is used where recycled water may come into contact with people susceptible to infection, such as the young or elderly. In this instance, we recommend a risk assessment be undertaken to ascertain the need for a UV filter. UV disinfection filters are also recommended where an aerosol is created, such as in car-wash down areas, in domestic applications with the use of pressure washers or commercial irrigation applications.

Bespoke Options



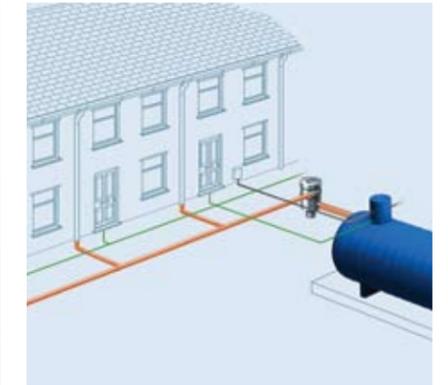
Low Invert Drop Filters

In situations where the existing drain run dictates the invert level, low invert drop leaf filters may need to be considered. Polypipe WMS is unique in its ability to offer patented bespoke low invert drop leaf filters within a prefabricated chamber. Designed to exact customer specifications the low invert drop leaf filters and chambers allow a minimum invert drop of only 66mm, enabling connection to an existing drain run.



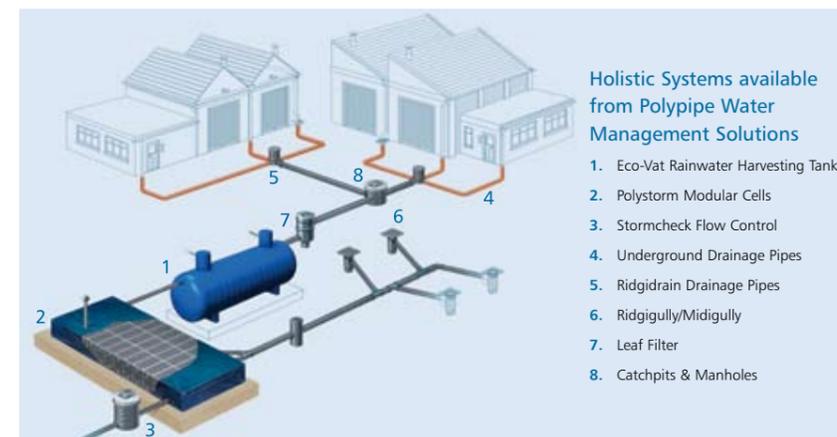
Site Specific Filter Designs - Off-site Construction

All leaf filters are installed within a prefabricated chamber to exact customer requirements unless otherwise specified. Any roof size can be catered for and we are able to create chambers up to 1800mm in diameter, resulting in a truly efficient and cost-effective solution.



Manifold System

A manifold system can be a highly effective and economical way of capturing rainwater from multiple properties to be re-used for non-potable applications. Using one large GRP tank to serve multiple properties, the water is fed to each individual property on demand. Manifold systems capture rain from multiple roofs, increasing the catchment area and reducing the installation costs associated with multiple tank systems.



A manifold system is ideal for installation within:

- Large developments, where single installations are unviable
- Housing Association properties
- Multiple tenant properties
- Rural developments with communal services

Integration with full SUDS solution

Polypipe manufactures a range of sustainable drainage solutions, from modular cells to pipes, for use as soakaway or attenuation solutions. Polypipe WMS offers a fully considered and holistic approach to SUDS, focusing on system integration.

Tank Installation

Polypipe WMS offers full guidance and an installation manual for groundworkers and M&E contractors.

Eco-Vat Home Tank Installation

For the installation of Eco-Vat Home we recommend installing the tank on a concrete base, strapping the tank to this slab and encasing in a gravel surround in non-loaded applications. This ensures that even if water tables rise, or there is a high water table, the tank will not be affected. If the tank is installed in an area where there is definitely no water table present the concrete base is not required. To ensure the longevity of the system should water tables change, we recommend a concrete slab and associated strapping. Please contact us for details of installation in a loaded application.

Eco-Vat Tank Installation

For installation of our GRP tanks, Polypipe WMS recommends encasing the tank in concrete. Due to a deeper installation and the resulting risk of rising water table levels it is always recommended to install the tanks within a concrete surround, full details of which can be found in the installation guide. If there is no known water table on site, a gravel backfill can be used. If the tank is installed within a water table a super heavy duty tank must be used.

Component Installation

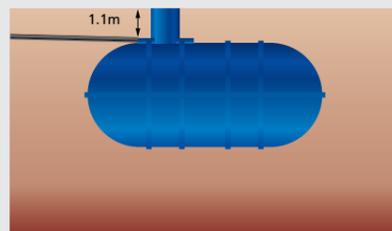
All components are supplied ready to install by the M&E contractor or on-site plumber and electrician. The system requires no specialist skills for installation and can be installed without prior knowledge of rainwater harvesting systems.

Commissioning Service

Upon installation of an Eco-Vat rainwater harvesting system, Polypipe WMS can perform a full system check of the installation. This ensures the products are installed and connected correctly to eliminate the risk of system faults or failure.

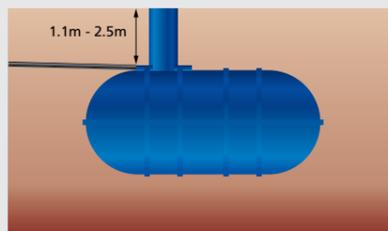
Depth of installation for Eco-Vat (GRP) tanks

The depth of tank installation for Eco-Vat needs to be considered prior to ordering, as a range of tank strengths are offered dependant on burial depth. If in doubt consult the Polypipe WMS Technical Team for guidance. This does not apply to Eco-Vat Home tanks.



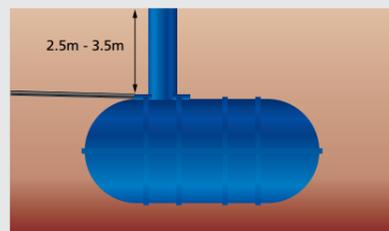
Normal

For tank burial depths up to 1.1m from ground level to invert level of inlet.



Heavy Duty

For tank burial depths between 1.1m - 2.5m from ground level to invert level of inlet.



Super Heavy Duty

For tank burial depths between 2.5m - 3.5m from ground level to invert level of inlet.

For tank burials within a water table a Super Heavy Duty tank must be selected.

Maintenance

As with all Rainwater Harvesting systems, a continual maintenance program is recommended, to ensure the continued performance of the system.

The main elements of the maintenance routine are:

Filter Cleaning

- Leaf filter - this will need cleaning bi-annually (at least after the Autumn) and requires hosing down to remove any build-up of debris and leaves
- Floating filter within tank - requires removing and cleaning every two years
- In-Line filter within building - requires removing and cleaning (under a tap) every four months

UV Disinfection Filter

This will require maintenance every six months, full details of which can be found within the Eco-Vat installation guide.

Tank Cleaning

Tanks should be inspected every two years, however it is unlikely any maintenance is required.

Pump Maintenance

The pump will need inspecting every two years

Maintenance Contracts

Polypipe WMS offers 12-month maintenance contracts which include an annual service, free parts and labour and rapid callout in the unlikely event of system failure.



Full maintenance details are contained in the Eco-Vat installation manual available from Polypipe WMS. To request your copy please call 01509 615100 or email wmsenquiries@polypipe.com

What Next?

Contact Polypipe WMS for an assessment. We can then direct you to the right tank sizing, advise on technical aspects of your project and provide the details on where to place an order to secure your Eco-Vat system.

Case Studies

Polypipe WMS Supplies 100,000 Litre Rainwater Harvesting Solution For Bristol PFI College

A bespoke 100,000 litre Eco-Vat tank and leaf filter were supplied by the Polypipe WMS team to Brislington Enterprise College in Bristol as part of the Building Schools for the Future PFI. Installed to cope with rainwater from the school's 5,000 square metre roof area, the tank will store and filter rainwater before it is used for toilet flushing within the new development, providing a sustainable method of reusing rainwater.

Working alongside contractor Skanska, several alterations were made to the standard Eco-Vat system to produce one of the largest tanks of its kind, including the supply of additional inlets on-site to suit the project requirements.

Eco-Vat rainwater harvesting tanks reduce mains water consumption, providing increased cost savings on water bills. It is calculated that the Eco-Vat system installed at Brislington Enterprise College will save the Local Authority over £10,400 per annum.

The site of the new college building is on sandstone rock, which enabled the tank to be installed without the need for temporary support. The tank itself was installed in a six metre deep hole and placed into position using an 80-tonne crane to cope with the tank's 11 metre x 3.3 metre dimensions.



Polypipe WMS Undertakes Largest Rainwater Harvesting Contract With Ministry of Defence

The Polypipe WMS team were approached by the Ministry of Defence to supply a rainwater harvesting solution for the largest rainwater harvesting contract ever signed in the UK. Working in close partnership with the main contractor, Aspire Defence, Polypipe WMS will supply 150 of its Eco-Vat rainwater harvesting tanks over the next seven years as part of a redevelopment of various sites across the UK. Over 42,000 litres of capacity have been installed on the site at Tidworth, which would save the Ministry of Defence approximately £1,500 annually through the reduction in mains water consumption.

Polypipe WMS redesigned the original Eco-Vat system to fulfil the requirements of Aspire Defence. These modifications included a filter which was redesigned to reduce invert loss on the existing drain run allowing for connection with a shallow main drain. This filter was delivered to site pre-fabricated within a chamber, bringing increased time savings to Aspire. The flexibility of the Eco-Vat system was an important factor for Aspire.



Earthship Project

The Polypipe WMS team donated a full rainwater harvesting solution for the recently opened Brighton Earthship Low Carbon project. Since being installed on the project in July 2003, the four Eco-Vat Rainwater Harvesting tanks, each with a 20,000 litre capacity, have harvested over 50,000 litres of rainwater per year, giving a total mains water saving of over 150,000 litres.

As an 'off-grid' building, materials with low embodied carbon were used in the construction of the Earthship, with the thermal mass of the walls controlling the heating and cooling of the building.

Through the use of the Eco-Vat rainwater harvesting system the Earthship project and Low Carbon Trust received a commendation from the Environment Agency at the 2007 Water Efficiency Awards, in the Inspiring Change and Construction & Renovation categories.

Frequently Asked Questions

How do you size a tank?

Tanks are sized on a two-week demand period, which, according to the MET office, is the average period the UK experiences without rainfall. Free assessments are available through the Polypipe WMS Technical Department on 01509 615100, or by visiting www.polypipewms.co.uk/eco-vat to download an assessment form. It is essential to have details of the site location, roof area, proposed applications, number of appliances and number of people within the building. For office use, please refer to the Technical Table on page 18.

Where does the tank have to be positioned? - What is the minimum/maximum distance from the building?

There are no building regulations concerning the position of an Eco-Vat system, therefore our guidelines are based on the building regulations for septic tanks, which state that a tank must be positioned at least 5 metres from a building. The maximum distance that a tank can be positioned from a building is 100 metres.

What is the burial depth of an Eco-Vat tank?

Eco-Vat and Eco-Vat Home have a burial depth of up to 3.5m. Please refer to page 12 for further details on tank selection.

Can the tank be buried lower than the water table?

Yes, however Eco-Vat Home must be strapped to a concrete base. Eco-Vat on the other hand will need to be ordered as a super heavy duty tank and will need to be encased in concrete.

Does the tank have to be encased in concrete?

Eco-Vat Home does not need a concrete surround in non-loaded applications. The tank should be positioned on a concrete slab and strapped to this base. This tank has been designed to withstand the hydrostatic pressures from the water table.

Eco-Vat however should be encased in concrete, unless there is definitely no water table present, in which case a gravel surround can be used. However, Polypipe WMS always recommends a concrete surround for our GRP tanks to ensure the tank is protected from any possible movement in the water table.

What is the 'first flush' principle?

The first flush principle is based on the initial rainfall in a storm washing the roof before the water is allowed into the storage tank. This principle is an important element of a rainwater harvesting system and ensures any debris or organic matter is prevented from entering the tank from the roof.

Can the system be connected to syphonic drainage?

Yes, the Eco-Vat system is ideal for this, as all roof water can be directed to one outlet which is connected to the Eco-Vat tank, therefore reducing additional pipework and groundwork costs. Polypipe Terrain (a division of Polypipe) is able to supply a complete system for syphonic drainage. Please contact Polypipe Terrain for further information on 08452 700886.

How high can you pump the water from the tank?

In order to obtain the most efficient system, the maximum height recommended is 15 metres on the standard pump. Larger pumps can be supplied if necessary.

Do Polypipe offer a gravity or pressurised system?

Polypipe WMS offer both gravity-fed and pressurised systems. Within a gravity-fed system, water is pumped from the Eco-Vat tank to a header tank which then feeds each appliance. Pressurised systems pump water directly from the Eco-Vat tank to each appliance on demand. Polypipe WMS advise the use of a gravity system where possible to reduce the effects of pump failure in the event of a power cut.

Where does the mains water back-up feed into?

For a gravity system the mains water back-up is fed directly into the header tank. For a pressurised system the mains back-up is fed directly into the underground storage tank and controlled to allow for a small amount of water to be fed into the tank.

What pressure is the water delivered at?

The water pressure delivered into the building is 2.5 bar.

Is the water clean?

The main aim of any rainwater harvesting system is to produce non-potable water that is clean, clear and odourless. Three stages of filtration take place to ensure the water is clean and clear prior to it reaching any non-potable appliance.

Is there an audible alarm on the system?

Yes, the Eco-Vat pressurised system comes with an audible alarm to warn of a problem with the solenoid valve, where mains water is being pumped into the tank unnecessarily. The system is also easily connected to the Building Management System for further monitoring.

How much energy does the pump use?

The pump uses £0.03/m³.

How does the system get delivered to site?

The tank and leaf filter will be delivered to site ready for installation. The components will be packaged separately and it is essential that the contractor stores them in a dry, safe and secure area. It is also the contractor's responsibility to ensure suitable lifting equipment is on-site to take delivery of the tank. Please contact Polypipe WMS on 01509 615100 to discuss your exact requirements.

What guarantee does Polypipe offer?

Polypipe offers a 2-year guarantee from point of sale on all component parts, excluding the tank. As a responsible manufacturer with the scale and support of Polypipe Group, Polypipe is on-hand to provide continued assistance and technical support.



What maintenance is required?

Regular maintenance is vital to prolong system performance and lifespan. Please refer to page 13 for details of the maintenance routine.

What if I have a problem - what do I do?

Polypipe WMS has its own team of engineers, who are on hand to respond quickly to any queries you may have concerning your Eco-Vat system. In the first instance please make contact with Polypipe WMS on 01509 615100 and our Technical Team may be able to address your query over the phone. Otherwise an engineer can be on-site to assist you.

Technical Table

Office tank sizing

The table below gives an indication of tank sizing for a typical office. The table is based on the average office water consumption of 50 litres per person, per day, which is equal to 31 litres of non-potable demand. The table can be used to give an approximate tank sizing based on the

building occupancy and its associated demand. The information below is a guide only and Polypipe WMS recommends a full assessment must be carried out for individual sites. Please visit www.polypipewms.co.uk/eco-vat to download an assessment form.

Tank Size calculations for office use			
Number of People	Tank Size	Number of People	Tank Size
1-4	1500	65-70	30000
5-6	2500	71-85	36000
7-8	3000	86-94	40000
9-11	4500	95-105	45000
12-14	5500	106-117	50000
15-18	7500	118-126	54000
19-21	9000	127-140	60000
22-24	10000	141-152	65000
25-28	12000	153-165	70000
29-32	13600	166-186	80000
33-36	15000	187-211	90000
37-43	18000	212-232	100000
44-48	20000	233-260	110000
49-54	22500	261-300	120000
55-64	27000	300+	Please contact Polypipe WMS for further information as we can provide tanks up to 300,000 ltr

The above is a guide only. A full assessment must be undertaken prior to ordering.



Technical Information

Tanks

1,500 - 5,500 litres net capacity Structured Wall Tank.

7,000 - 120,000 litres net capacity GRP fabricated tank.

Inlet & Overflow Outlet

- Storage tank capacity <15,000 litres
Polypipe EN1401 110mm Ø drainage pipe.
- Storage tank capacity ≥18,000 litres
Polypipe EN1401 160mm Ø drainage pipe.

Mains Connector

The Eco-Vat tank is supplied complete with a 25mm compression fitting to connect to 25mm Ø MDPE pipe.

Service Plate

Mild steel powder coated 'lift out' service plate, consisting of:

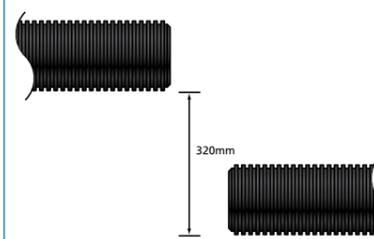
- Pressure switch
- Non-return valve
- Pressure vessel (pressure system only)

Control Display Unit

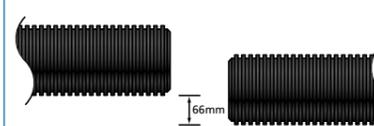
- Manual and automatic control
- Run Counter

Invert Drop

Standard Leaf Filters



Low Invert Drop Filters



Pump

Stainless steel submersible pressure pump,

Capacity :-

up to 4.8m³/hour
up to 1.25ltr/second
up to 37 metres head

Max. temperature handling :-

up to 55°C

Outer Casing :-

Stainless steel grade 304S15

Impeller & Shaft :-

Stainless steel grade 304S15

Bearings :-

Deep groove ball bearings greased for life.

Performance Range :-

Head (metres)	Capacity	
	m ³ /Hour	Litres/Sec
10	4.8	1.25
15	4.2	1.17
20	3.6	1.00
25	2.9	0.80
30	1.8	0.50
35	0.6	0.17

Filters

The Eco-Vat system is complete with a three phase filtration system.

- Leaf filter
- Floating filter
- 'In line' filter (within the premises) to 110 microns
- Optional UV disinfection unit for increased water quality (cost option)



Printed on 100% recyclable chlorine-free paper. All inks used on this brochure are vegetable based.

All descriptions and illustrations in this publication are intended for guidance only and shall not constitute a "sale by description". All dimensions given are nominal and Polypipe Civils Limited may modify and change the information, products and specifications from time to time for a variety of reasons, without prior notice. The information in this Product Guide is provided 'as is' on 19th November 2007. Updates will not be issued automatically. This information is not intended to have any legal effect, whether by way of advice, representation or warranty (express or implied). We accept no liability whatsoever (to the extent permitted by law) if you place any reliance on this Product Guide and you must do so at your own risk.

Water Management Solutions

The solutions, technology, service, support, technical expertise, the leaders within the industry

Polypipe Civils
Head Office, Union Works
Bishop Meadow Road
Loughborough
Leicestershire LE11 5RE

Tel: 01509 615100
Fax: 01509 610215
Email: wmsenquiries@polypipe.com
www.polypipewms.com

