BS8515:2009: a few questions answered

What is Rainwater Harvesting?

Rainwater harvesting is a way of saving the rainwater which would normally flow off a roof and down the drain, and using it as piped water to flush toilets and for the garden watering, yard wash down, vehicle and car washing, and even for your washing machine, instead of using expensive treated drinking (potable) water.

What types of rainwater harvesting systems are there?

Un pressurised: rainwater is gravity fed from a header tank, usually in the loft to the point of use.
Pressurised: The rainwater is pumped directly from the above or under-ground tank to the required point of supply. i.e. toilet, outside tap etc.

Are there associated planning restrictions?

They are not required directly by Building Regulations, although they may be linked with the Planning Permission for the storm-water management of the site. Building Regulations do cover the installation itself, tank situation & pipe runs etc.

Will a system affect my homes eco rating?

Yes, rainwater harvesting is an important ER criterion. The Eco Homes rating system addresses all aspects of reducing potable water demand in a dwelling. Installing a rainwater harvesting system adds to the credit rating for water use.

Welcome from the combined Harvesters team

Formed early in 2006, Combined Harvesters have grown to become one of the foremost suppliers and fitters of all types of rainwater harvesting systems from simple water butts to full underground storage systems and all associated integral parts.

We, unlike a great many companies, are not affiliated with one supplier but source our products based on market trends and the specific needs of our clients.

With such a comprehensive range of products on offer, we believe our service to be second to none in the industry and one which we continually strive to improve.

Our business history is not quite so young as Combined Harvesters however, we have been in landscape construction and design for 25 years in both the domestic and commercial sectors which has given the team great knowledge and experience to bring to this blossoming sector.

When you deal with us, you are not only getting fast, friendly advice from a family owned and run company but you will get the benefit of our integrity and business skills to give you the most comprehensive system, specifically tailored to your needs within your budget.

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Is there a danger of legionella?

No, the system does not provide the conditions necessary for the cultivation of Legionella. With the water stored underground it is dark cool and is kept well oxygenated. Legionella cannot cultivate in these conditions.

How is the system maintained?

Filters should be thoroughly cleaned once a year and we recommend a full 'flushing' of the system every three years. A treatment with an anti-algaecide such as sprayguard is also recommended. A correctly designed harvesting system overflows on a regular basis to remove floating matter and the pumps are very reliable. Maintenance should only be carried out by qualified or experienced personnel. Combined harvesters have their own teams available year round to keep systems working efficiently.

How much does it cost to run a pump?

It typically takes 1.5- 2.0 kWh to pump 1 cubic meter of water (1000 litres). For a typical house using rainwater for WCs, washing machine and the garden, pumping costs are between 5-10p per week

There are 326 million cubic miles of water on earth

Save your money…save your water…save *your* environment!

The rapid expansion in companies who supply rainwater harvesting of varying quality has resulted in the publication by British standards BSI code of practice BS8515:2009.This guide has been produced to assist architects, construction companies and contractors to comply with the new standard in the same way that all systems from combined harvesters do.

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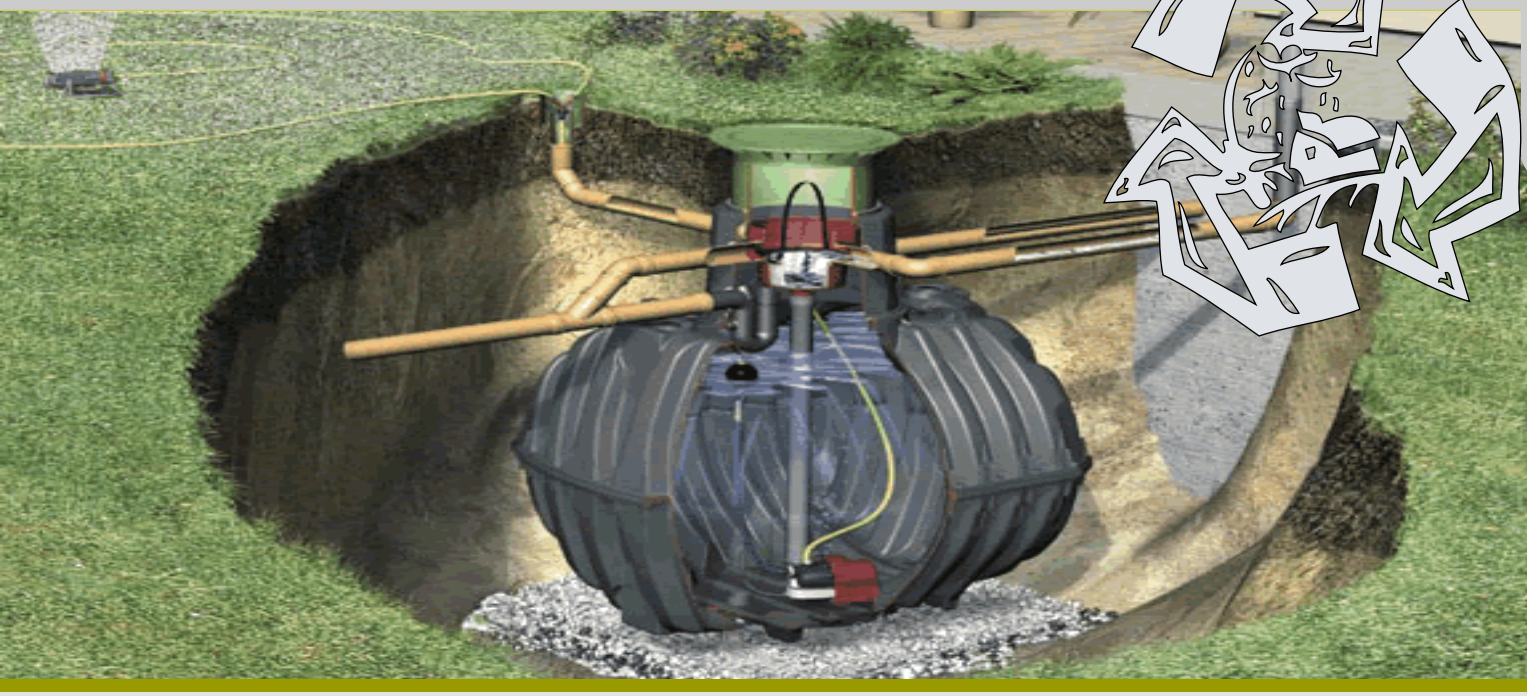

Do I need to have a water meter?

This is not generally necessary; however the absence of one will reduce you seeing the benefits of harvesting rainwater immediately.

What does BS8515:2009 cover?

BS8515 covers the design, installation, water quality, risk management and maintenance of rainwater harvesting systems. This applies to both new and retrofit properties.

What design aspects are considered to comply with BS8515?

Designs should be provided by an industry expert, amount and intensity of rainfall, type of intended applications both now and in the future will be considered. Tank size will depend upon ground conditions and surface water. All these as well as filtration requirements, end use by clients, site restrictions and other factors not necessarily covered by BS8515 will be considered when designing a system.

What is the payback period?

This figure will depend upon the rainwater that you collect and the use. A typical domestic client will see a payback between 5-10 years. Commercial clients can reduce this figure to 2-5 years.

Only 1% of the earth's water is available for drinking

What kind of pumps are used ?

Pumps can be housed either internally in the tank or mounted within a control unit fitted in a garage, plant room etc. Pumps should have run dry protection and should have a pressure switch fitted to stop hunting. Internal tank pumps need to be constantly submersed in water to prevent damage from the air, from debris or sediment that may be sucked in. An external pump or control unit should have an audible alarm to identify faults in the system, when fresh water is being used etc.

What happens when there is no rain?

In the absence of no rain, correctly designed systems will have a 'mains top up' facility. This will fill the tank with the minimum required amount of water to keep it functioning until the rain returns.

BS8515:2009: a few questions answered

Where is a system installed?

The tank should be buried under a car or vehicle park, landscaped area, garden, patio or drive, with space left for the round access cover. Most systems are designed so that they can accept cars driving over them if suitably installed. Or an above ground system can be installed next to the house or property.

Are there any grants available?

Not for domestic installations yet, although several organisations are petitioning the government for assistance. For commercial installations, there is a tax relief scheme (ECA) for suitable approved equipment on the Water Technology List.

How clean is the water?

The rainwater is filtered as it enters the storage tank, to remove particles and other matter. It is kept in the dark and kept oxygenated to discourage algal growth, and properly designed systems are designed with calming inlets, which ensure that any sediment at the bottom of the tank does not get stirred up. The water is not drinking water fit for humans.

How do you stop debris from entering the system?

A filter is fitted along with a 'calming inlet'. The filter has to meet strict criteria covering its weather resistancy, accessibility and efficiency.

Germany currently installs rain harvesting systems at a rate of 50,000 a year

Is it only for new builds?

No systems can easily be retro-fitted.

Is rainwater harvesting suitable for work as well as at home?

Yes, in schools, hospitals, offices, commercial premises, rainwater can typically be used for toilets, vehicle washing, yard wash down and watering plant pots/gardens.

Can it be used when there is a hosepipe ban?

It is possible to use a hosepipe connected to a rainwater tank, provided that the tank is not connected to a mains water supply. Many people are doing this already by using a water butt.

Is it only for houses?

No, bungalows and commercial premises are also very suitable, the only limitation is the area of the roof to capture rain, in fact commercial and industrial buildings can make the largest savings.

BS8515:2009: a few questions answered

Does the tank need an overflow?

Yes, the overflow needs to be the same diameter or even larger than the inlet, it must also be fitted with back flow prevention. Overflows are important as a tank should be the correct size so as to overflow at least twice a year to 'flush the system'.

How much would this save on water bills?

Depending on your normal usage, it can save 30 to 50% for the domestic user and 80% for the commercial user of the treated drinking water from the mains. Having metered water is the best way of appreciating the difference.

So, why should people buy Rainwater Harvesting systems?

To save on water bills and show they use water, an increasingly precious resource, responsibly to make a difference to our environment.

How does rainwater harvesting work?

A storage tank is fitted to your storm water drain from your roof, and falling rain enters the tank through a filter which removes leaves and other matter. The storage tank is usually buried under car or vehicle parks, a garden or under the entrance access or drive, and contains a pump which pumps the rainwater to the building where it is piped to the toilets, and to the outside taps. Above ground tanks are also available.

It is estimated that between 14 and 17 per cent more water will be needed for irrigation by 2030 to feed the world's growing population

How much rainwater does a system collect?

This depends on the area and angle of your roof, and your rainfall. Averages of 100,000 litres per household are commonly quoted, much more for large roofed commercial buildings.

Is the tank covered by BS8515:2009?

Yes, all tanks are covered. They need to be water tight, discourage microbial growth, avoid stagnation and thereby legionella .Tanks need to be suitably load bearing and need to resist floatation.
Pipes to and from the tank need to be clearly marked, rainwater pipes can be green or black (not blue) .Special marker tape can be purchased to show piping on a scan.

How much water can a system save?

Depending on your normal usage, it can save 30 to 50% of the treated drinking water from the mains in houses and up to and up to 80% of the treated drinking water in a business or commercial building.

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What can you use the water for?

Filtered, untreated rainwater should only be used for non- drinking or bathing purposes: toilet flushing, gardens and vehicle or yard wash downs.

Could rainwater get into my drinking supply?

Not in a properly designed system, the pipe work is entirely separate and should be identified as non-potable. BS8515:2009 stipulates that backflow prevention should be fitted upstream of or at a point where any two systems meet. This form of back flow prevention must be of type AA or AB Air gap conforming to BS13076 and BS EN13077.

Do I need a big roof area to make it worthwhile?

No, most domestic roofs are more than adequate, but the bigger and flatter the roof area, the more rain will be captured, and the more the rainwater will substitute for treated mains water.

Can a roof affect the efficiency of a system?

Yes, all these need to be free-draining and suitable to stop debris from entering the system. Other roofs such as green roofs etc absorb water and results in less run off and more colouration.

A litre of water weighs 1.01 kilograms

Save your water… …save your money… save *your* environment.

This guide has been produced to assist professionals who are interested in the specifications of rainwater harvesting systems. Enabling them to make an informed choice of supplier based on the criteria set down in BS8515:2009. At Combined Harvesters Ltd we are committed to a long term approach to the supply of all rainwater harvesting and storm water management products, ensuring quality throughout the chain.