



# Rainwater Harvesting LTD

## Frequently Asked Questions



## What is Rainwater Harvesting?

*Rainwater Harvesting is the collection and storage of rainwater that would otherwise flow down gutters into the drain.*

*Rainwater is collected from the roof, then re-used within the home and garden. This can provide substantial savings on water bills, as well as making your home more sustainable.*

## Why harvest rainwater?

According to the Environmental agency, each person in the UK uses in the region of 150 litres of drinking quality water every day.

Around half of this amount need not be drinking water.

This means water has gone through an energy and carbon intensive process of filtration, chemical treatment, and pumping from miles away, just to flush down a toilet or water the lawn.

This is clearly a waste of our resources.

By installing a rainwater harvesting system you will do more than help protect the environment;

- Reduce water bills by around 50%
- Increase chances of your planning gaining permission. (*Planners often favour environmentally friendly applications.*)
- Provide your garden with water during a hose pipe ban.
- Prevent flooding. *Rainwater harvesting acts as part of a SUDS (Sustainable Urban Drainage System)*
- Provide your home with soft, lime scale free, water for washing machines and toilets; helping to prevent breakdowns, and reducing the amount of detergent needed.



**Q: Is Rainwater safe to use within the home?**

A: Absolutely. Domestic rainwater harvesting systems filter the collected rainwater very heavily, and water is stored below ground where it stays at a constant, cool, temperature and away from light. This means it is practically impossible for any bacterial action to occur. Collected Rainwater stays perfectly clean, clear, and odourless in any properly installed and maintained system.

**Q: Will I save on my water bill if I install a rainwater harvesting system?**

A: Yes! Typically you will save around 50% on your current metered bill. If you are keen gardeners or have large water requirements, the savings can be even larger.

Depending where you are in the country, some annual water bills are now averaging over £500 per year. Some of our customers in the South East of England have reported water bills of over £850 per year.

**Q: Is rainwater better than drinking water for outdoor use?**

A: Yes! Your garden prefers rainwater to mains water because it does not contain the chemicals needed to make mains water drinking quality. Plus, when using detergents, you will need to use much less, again because there are no chemicals and the water is softer.

**Q: How will rainwater harvesting help me during a hose pipe ban?**

A: In 2012 many areas had hose pipe bans banning watering gardens and cleaning cars.

For most systems, as you have collected the water, harvested rainwater is exempt from hose pipe bans. New legislation will give water boards the right to prohibit using hose pipes for other outdoor cleaning purposes such as washing boats, patios, drives and windows, and also for filling swimming pools, ornamental ponds and hot tubs.

**Q: How does Rainwater Harvesting prevent flooding?**

A: Rainwater Harvesting acts as part of a Sustainable Urban Drainage System (SUDS.) In heavy rainfall the tank fills first, then should the rainfall continue, the tank will overflow into a soak-away. This takes stress off public storm drains.



# What can Rainwater be used for?

A rainwater harvesting system typically reduces mains water use by around 50%.

The principle uses for rainwater are;

- Toilets (around 35% water use)
- Washing Machines (around 15% water use)
- Garden/Outside use (around 5%, yet this figure can grow greatly for keen gardeners)

## **Q: What if I'm off grid? Can I use Rainwater for potable purposes such as drinking and washing?**

A: Within a normal system, rain water is classed as non-potable by UK water regulations. This means it cannot be used for applications where there is human contact (such as drinking, washing and cooking.)

If necessary, UV filtration can be used to make it drinking quality, yet this typically only economically viable where occupants are off grid and have no mains source.

## **Q: Is there a risk of legionella?**

A: NO. Legionella cannot grow without light exposure or in temperatures below 20°C. An underground rainwater harvesting tank is completely dark and water stays at a constant temperature around 4°C all year.

## **Q: Does the water discolour or smell- like a water butt in the summer?**

A: No. A properly installed and maintained system will provide clean, colourless and odourless water. As the rainwater is heavily filtered and stays at a constant, cool temperature with no light exposure there is practically no chance of any bacterial action.

Visually, there is no way to distinguish between the harvested rainwater and mains water.



**Q: Can I use a lawn sprinkler with my rainwater harvesting tank?**

A: Yes, the pump is capable of delivering output necessary to power a high pressure sprinkler. You may though, empty the tank quickly unless it has been appropriately specified for your needs. A high pressure rotating sprinkler can use 1,000 litres per hour, so even a large, underground, 3000 litre tank would be empty in 180 minutes of continuous use!

Programmable irrigation systems are recommended, in order to prevent over watering.

**Q: Can I use rainwater in my pressure washer?**

A: Yes, again, the pump has the necessary output to power most pressure cleaners.

Some cleaners use a lot of water so check the tank level before use.

**Q: Can I use rainwater to fill a swimming pool or pond?**

A: Yes. Use an underground rainwater harvesting tank, pump and filters to ensure that the water being fed to a swimming pool is well clean. The Building Regulations are interpreted differently by different council inspectors: generally it is understood that rain falls into a swimming pool anyway, so using rainwater properly filtered provides an even better quality of water.

Fish such as Koi Carp much prefer the untreated, un-chlorinated rainwater and less chemicals may be needed.

**Q: Can I collect grey water with a rainwater tank?**

A: No, grey water is waste water from the house (from basins, showers, baths, washing machine and dish washer) and the filters and pumps supplied are not designed to work with chemicals and soaps that may be in the water.

**Q: Can we use water be harvested from the drive and patio?**

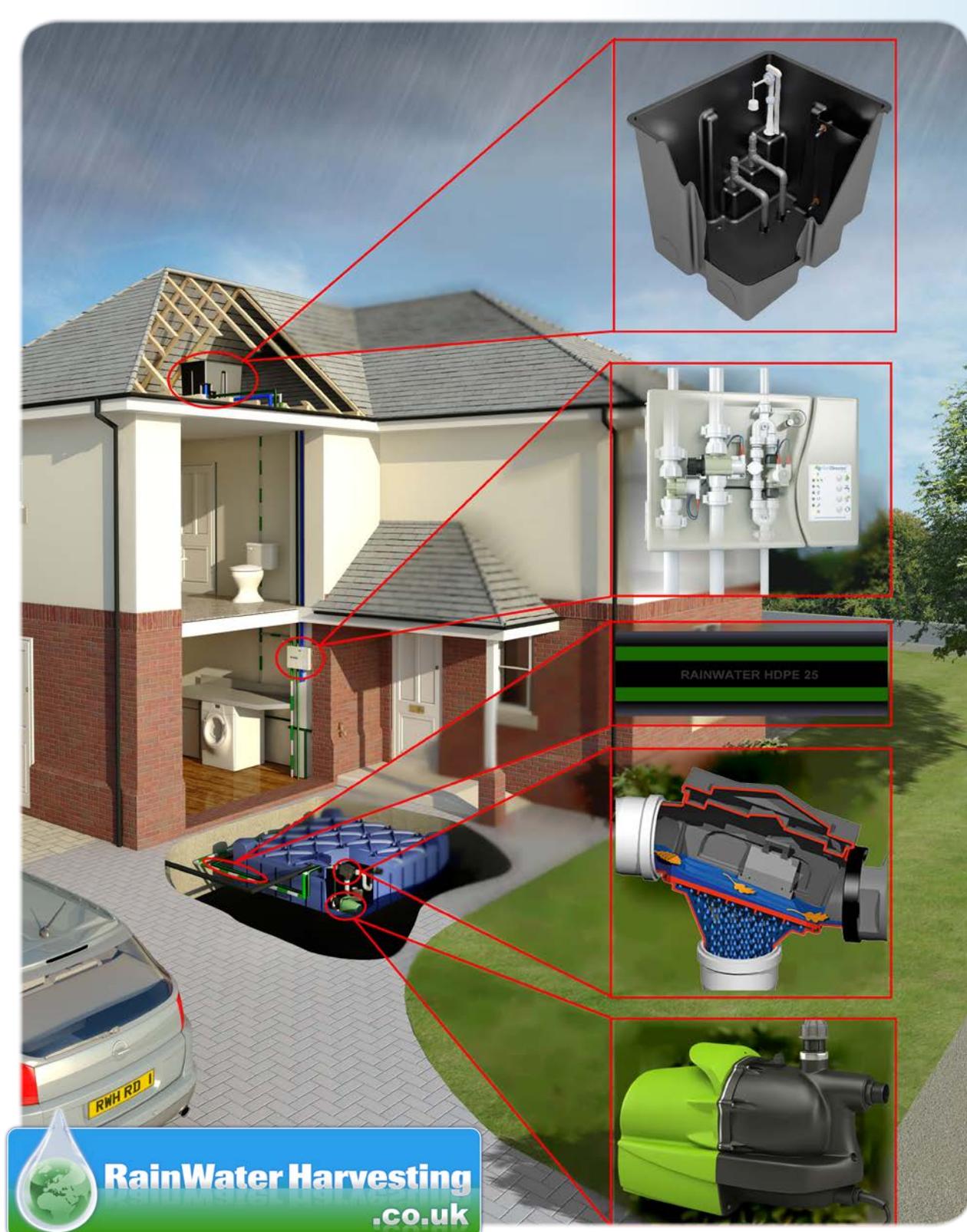
A: No, we do not recommend using water off the hard standing or patio because oil spills or other waste could enter the water destined for washing clothes and flushing toilets. There is also typically far more dirt accumulated from ground water than rainwater from a roof, clogging filters.



## What makes up a system?

We supply full, “turn key” systems including everything you need to install. A typical domestic system will include;

- Underground tank. (Including lid)
- Pressure sensitive submersible pump.
- Management system/mains backup
- Self cleaning filter (mounted within the tank)
- Rainwater Harvesting pipe (Black with 4 green stripes)
- Calmed inlet (introduces rainwater into the tank calmly- preventing any fine silt from being dispersed around the tank.)
- Overflow siphon (acts as rodent trap/odour guard to overflowing water going to soak away/drain.)
- Connections and couplers.
- Label pack.
- Instructions



## Q: What size tank do I need?

A: This depends on five factors;

- 1) Where you live (amount of rainfall a year.)
- 2) The roof area from which you can collect water to your underground tank.
- 3) The number of toilets and people in the house.
- 4) The amount of water you want for your garden.
- 5) How much drought protection you want. (We suggest 18 days)

The tank size calculator on this website will help you work out your needs and [www.RainWaterHarvesting.co.uk](http://www.RainWaterHarvesting.co.uk) will check your calculations for you on request.

It may be worth remembering we often specify the tank size on the size of the home. So if there are just 2 of you in a 5 bedroom property we tend to specify a tank that will be large enough to cater for extra people should you ever move out.

Working out how much water you're likely to use in the garden can be tricky. The best way is to assume if you're using a hosepipe or sprinkler you will use around 1000L/hour then try and work out how many hours of watering you do in a week.

As a general rule the following applications would be typical for domestic use;

1500L	1-2	occupants, very limited or no garden irrigation.
3000L	2-4	occupants, limited or no garden irrigation.
5000L	4-6	occupants, plus occasional garden irrigation.
7500L	4+	occupants, plus regular garden irrigation.
15,000L	4+	occupants plus extensive irrigation or equestrian/farmhouse.



**Q: What else needs to be provided to install a system?**

A: Although we strive to provide everything to install a system, there are parts we simply cannot specify as they are individual to the application. These may include;

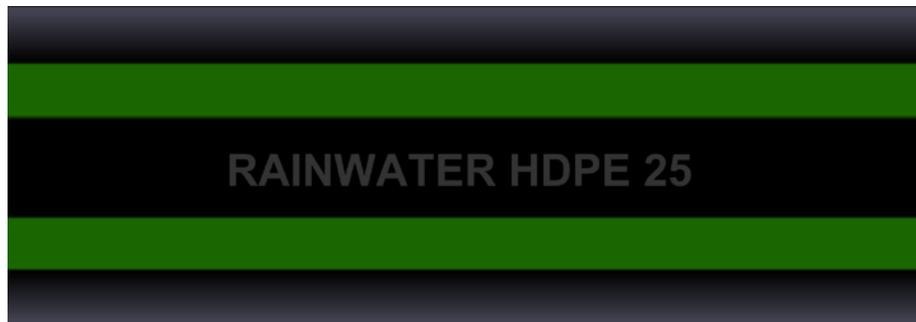
- A soak-away. (The size must be specified by building control.)
- Exterior ducting. (Standard 4" pipe from the gutters to the tank, plus services to the tank.)
- Interior pipe work. (Standard 22mm push fit pipe work.)
- An armoured cable running inside the service ducting, to power the pump.

**Q: What type of pipe should I use?**

A: Rainwater harvesting pipe (black with 4 green stripes) is mandatory for use between the tank and the home. 25m is supplied with all systems. 25mm and 32mm diameters are available, depending on how far water is needed to be pumped.

Within the home, standard push fit pipe work (such as John Guest Speedfit) can be used. 22mm diameter is used for rainwater services. Interior pipe work should be a labelled every 0.5m, using the label pack is supplied.

Taps, toilets and outlets should also be labelled using the pack supplied.



**Q: What is the best kind of pump to use?**

A: Our systems all include the Hydroforce series 3- especially designed for rainwater harvesting and manufactured by our sister company, in house, in the UK.

It has numerous features that make it suitable for rainwater harvesting, unlike a traditional water pump.

- Pressure sensitivity- The pump will start whenever it receives a drop in pressure, for example if a toilet is flushed or tap is opened. When toilet cistern is full or tap is closed the pump will automatically switch off. This means the pump starts automatically, on demand, when required.
- Submersible- The pump can be completely submersed at the bottom of the tank, allowing silent operation.
- Dry run protected- The pump has an intelligent dry run protection system, preventing damage if no water is available.
- 3.5 Bar pressure 2700L/hour flow rate. Similar or slightly higher than standard mains water pressure, allowing high pressure sprinklers, hose pipes and pressure washers to work as normal.



**Q: How much do systems cost to run?**

A: Our award winning, low energy, Rain Director gravity feed system costs less than 1p per person per day to run the system.

This equates to around £12/year for a 4 person family.

We estimate direct feed systems cost in the region of £50-60 per year to operate.

**Q: Are domestic systems noisy?**

A: No, as the pump is kept within the underground tank, systems operate silently within the home.



# Garden System GUK1

## Garden System

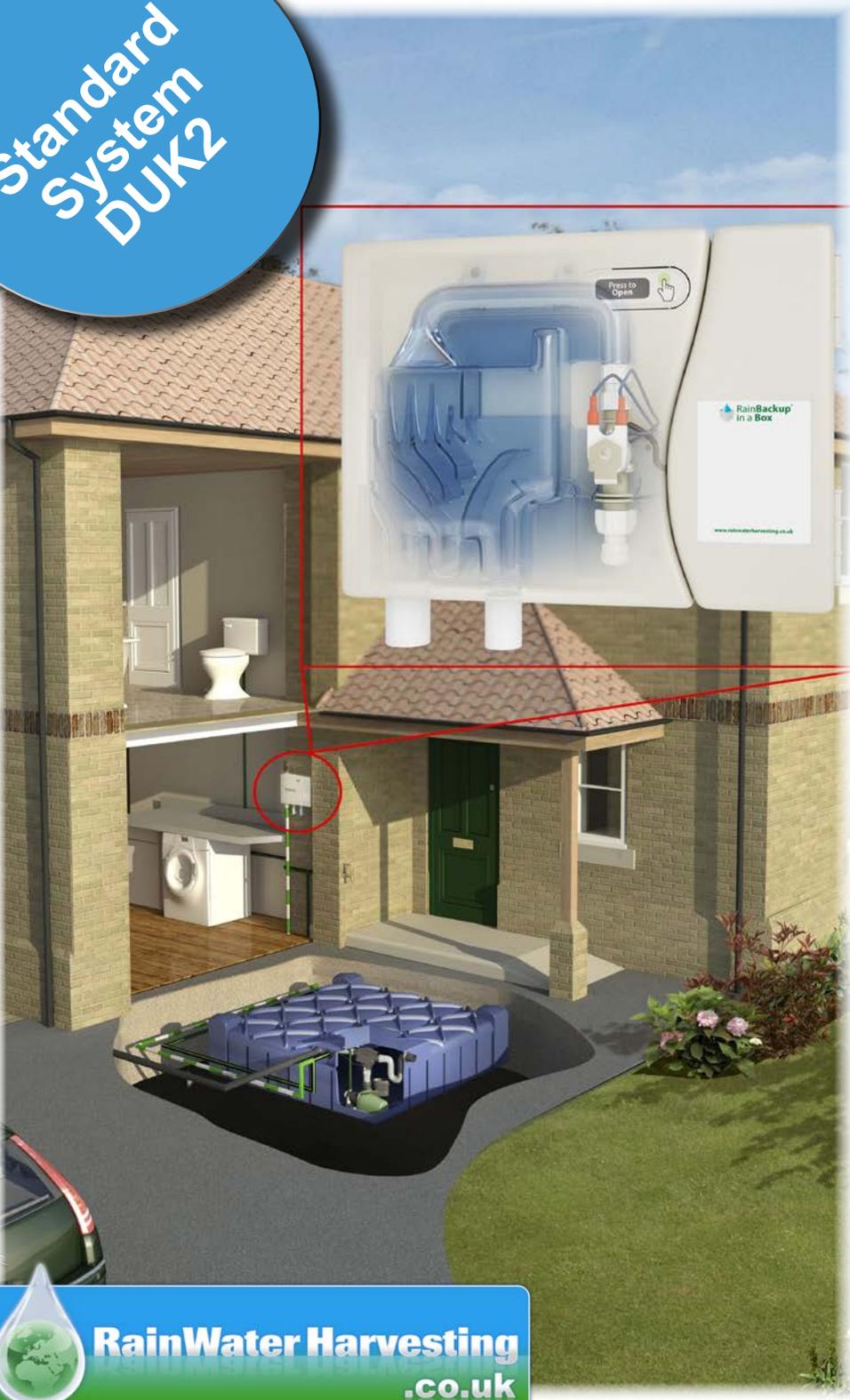
Use rainwater to water your garden to save on water bills and protect your garden during a hosepipe ban. As rainwater enters the tank, it is filtered heavily, taking out any moss or debris that may have come off the roof.

Garden systems come complete with the Hydroforce series 3 submersible pump. This means you can utilise free, untreated water for hose pipes, sprinklers, irrigation systems or even pressure washers.

The F-Line shallow dig tanks have become hugely popular due to their easy and cost effective shallow dig design. Unlike traditional, spherically shaped tanks, the F-Line range from just 1015-1415mm deep. This means the excavation is quick, safe and efficient even by hand!

- **Easy and cost effective tank installation, even by hand.**
- **Tank delivered in one piece with pre fitted filter, overflow and calmed inlet.**
- **No concrete required**
- **Submersible pump will service irrigation systems, sprinklers, hose pipes and pressure washers.**
- **Pressure sensitive pump works only when demanded- no switching the pump on and off.**
- **Protect your garden during a hosepipe ban.**
- **Available in 4 sizes : 1500L, 3000L, 5000L, 7500L**
- **Can be linked together for larger capacity**
- **Vehicle loading lid available**

Standard  
System  
DUK2



## Domestic Direct feed With the Rain Backup in a Box®

The same process of collecting rainwater is used as a garden system- taking rainwater from the roof, filtering the water heavily using a self cleaning filter, then storing in an underground tank.

A pressure sensitive submersible pump sits at the bottom of the tank and pumps directly to toilets, washing machines and garden taps.

When a toilet is flushed, or a washing machine draws for water, the pump registers a drop in pressure and begins pumping automatically. When the toilet cistern is full or the washing machine stops its draw for water, the pressure will build up in the pipe and the pump will automatically shut down. A simple but effective domestic rainwater harvesting system!

Should rainwater ever run low- for instance in a time of low rainfall, direct feed systems are equipped with the “Rain Backup in a Box®” management system.

A level sensor in the underground tank registers if the water level is low, then automatically triggers a solenoid valve to open, allowing around 200L of mains water to enter the tank.

- **Reduce water bills by around 50%**
- **Our most cost effective full domestic system (toilets, washing machines and garden use)**
- **Ideal for houses without room for a header tank.**
- **Simple plug and play install- even if retrofitting.**
- **Fully WRAS approved automatic mains backup unit. #1306031**

Pro  
System  
DUK4



## Domestic Gravity Feed With Rain Director®

Our gravity feed system using the Rain Director® has huge benefits over traditional systems.

Typically, the Rain Director® system uses 5-8 times less energy than a other rainwater harvesting systems. This is due to the system greatly reducing the pump cycling (stopping and starting.)

It does this by batch filling a smart header tank within the loft space then gravity feeding the appliances. The pump completely fills the header tank then is not used again until the header tank is empty. This means the pump is used just 1-2 times per day, rather than every time a toilet or appliance is used like in a typical system.

The system has further intelligence of smart user functionality and a fail safe automatic mains back-up. The system will even work whilst there is a power cut.

- **Low energy system- running costs less then 1p per person per day**
- **Provides water in every eventuality, low rainwater, pump failure, or even powercut.**
- **Smart user functionality**
- **Ensures high water quality**
- **Prevents pump wear**
- **Fully WRAS approved. #0912064**

# Installation

## **Q: Do I need a specialist Rainwater Harvesting installer?**

A: No, we have designed and manufactured systems so any competent builder should be able to install a system.

Ground workers install the tank and soak away, usually during initial excavations or when a digger is on site.

An electrician fits a waterproof connection box within the head of the tank to supply the pump.

A plumber fits interior pipe work and management system.

Full, easy to use picture based instructions are provided.

Rainwater Harvesting Ltd run regular training days, for more information see;  
[www.rainwaterharvesting.co.uk/training-days](http://www.rainwaterharvesting.co.uk/training-days)

## **Q: Should I opt for a deep dig or shallow dig tank?**

A: Our best selling tank range is our shallow dig “F-Line” range. Shallow dig tanks have a larger footprint, yet as the name suggests are much shallower- many are only around 1m in depth. By reducing the installation depth, installation is easier and more cost effective as less spoil is removed and an exact hole can be dug without ‘pitching.’ Due to their shallow depth, our F-Line range ideally suited to clay and high water-table areas. Unlike our deep dig tanks, the F-Line range arrive pre-assembled, ready to install.

F-Line tanks range from 1500-7500L without considerably increasing installation depth.

Deep dig tanks such as the Graf Carat are still suited for sites with limited access as they are delivered in two easy to manoeuvre parts.

## **Q: Where should the tank be?**

A: Tanks are best situated 2-10m from the home at a convenient to a point where the downpipes from all four sides of the building can be brought together in one 110mm drain pipe. This is usually the lowest point in the grounds if there is any slope.

Your architect or builder will help you find the best place for your tank.



**Q: Can tanks be installed under a patio or driveway?**

A: Yes- the tanks are exceptionally strong so can be driven over by cars. You will though, need to upgrade to an optional metal lid.

The tanks are not designed to carry the weight of heavy goods vehicles.

**Q: Where do management units need to be positioned?**

A: Both our management systems use a small white box that is best situated within a utility room or similar. The management units do not need regularly checking- so inside a cupboard is quite normal so they are out the way.

**Q: How much should installation cost?**

A: Obviously this depends entirely on the application. As an estimate, if installed efficiently, in a newbuild home, a cost in the region of £800-1200 would be typical.



# Maintenance

## **Q: Does the filter require emptying?**

A: The filters used in domestic systems are self cleaning. Situated inside the tank, the filter removes any leaves or debris from the roof, allowing the clean water to enter the underground tank.

The debris remaining is flushed into the overflow, and is discarded into the soak-away once the tank eventually does overflow in a heavy rainfall period.

Due to its self cleaning function, typically the filter will only require one visual check per year.

## **Q: Does the filter remove 100% of sediment from the stored water?**

A: No, even though the filters clean the water heavily, a small amount of very fine silt still gets through. Most tanks accumulate a millimetre or two a year, but there are 3 further devices in our kits which ensure clean rainwater in the home.

1. The calmed inlet prevents arriving water from disturbing and silt.
2. The siphon on the overflow skims floating debris of the surface of the water
3. The pump's inlet has a fine strainer and is raised from the floor of the tank, preventing it from drawing any fine silt from the floor of the tank.

## **Q: Should I clean the sediment out?**

A: Most tank manufacturers recommend the tank is cleaned around once every 10 years. Cleaning requires pressure washing the interior walls then removing the water with a dirty water pump.



## Guarantees and service

**Q: How long are systems guaranteed?**

A: Our F-Line tanks are guaranteed for 25 years. All other products are (such as pumps and management systems) are guaranteed for 2 years.

**Q: Do you have a technical support team?**

A: Yes! We have a professional, full time technical support team. Extensive telephone support is provided to assist installations and technical issues.

**Q: Can technicians come to my site?**

A: Yes, this can either be built into the price if you require a commissioning visit, or can be arranged upon request.

**Q: How long do orders take to arrive?**

A: As we hold everything ex stock, in our 65,000 sq ft warehouse, we normally supply systems within 3-5 working days.

**Q: Is Rainwater Harvesting Ltd just a re seller?**

A: No, we design, develop and manufacture many products such as our award winning Rain Director and Backup in a Box management systems. Our sister company Hydroforce Pumps Ltd manufactures the submersible pump used in most systems.



# Learn more, videos, interact



**What is Rainwater Harvesting?**  
*Everything you need to know in a short (7 min) video.*



[www.facebook.com/rainwaterharvesting.co.uk](http://www.facebook.com/rainwaterharvesting.co.uk)



[@Watersavings](https://twitter.com/Watersavings)



[www.linkedin.com/company/rainwater-harvesting-ltd](http://www.linkedin.com/company/rainwater-harvesting-ltd)



**The Rain Director<sup>®</sup>**  
*A more in depth look at our flagship low energy system.*

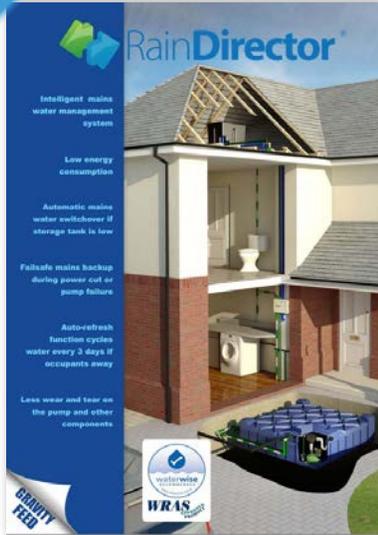


**The Rain Backup in a Box<sup>®</sup>**  
*More about direct feed systems and how they work*

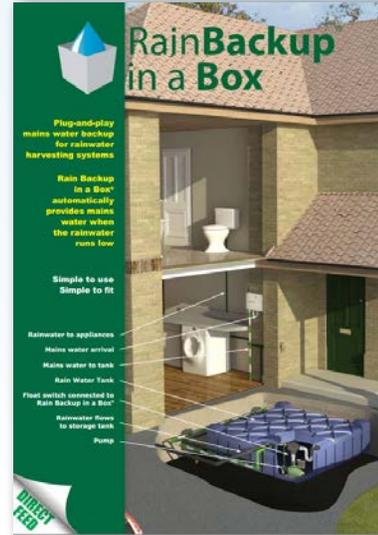




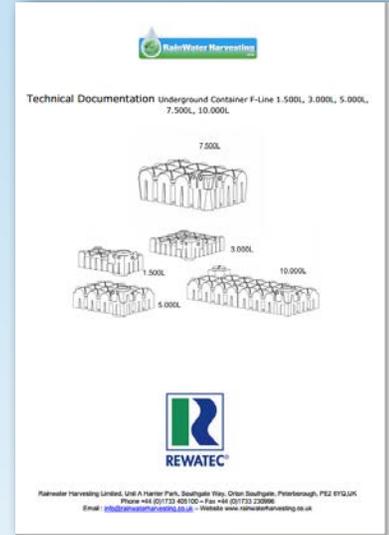
# Installation guides and brochures



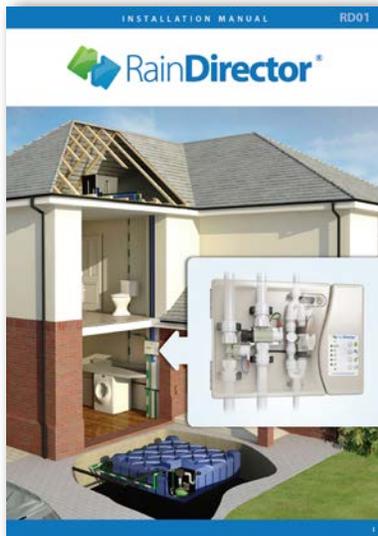
Rain Director®  
Brochure



Rain Backup  
in a Box®  
Brochure



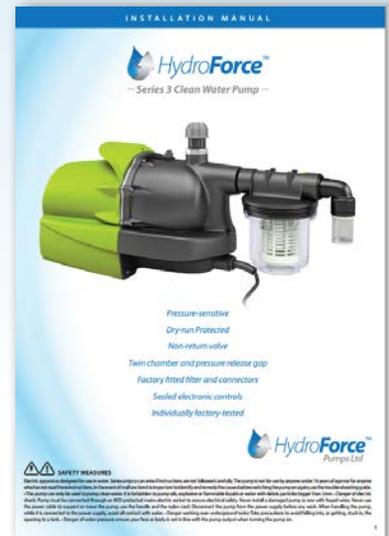
F-Line tank  
installation  
guide



Rain Director®  
installation  
guide



Rain Backup  
in a Box®  
Installation  
guide.



HydroForce™  
pump  
installation  
guide



# Contact us

**[www.rainwaterharvesting.co.uk](http://www.rainwaterharvesting.co.uk)**

*-Our Webshop*

**[www.rainwater-harvesting.co.uk](http://www.rainwater-harvesting.co.uk)**

*-Our information hub and trade site.*

**[info@rainwaterharvesting.co.uk](mailto:info@rainwaterharvesting.co.uk)**

*-Please email anytime with questions.*

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