



Rainwater Harvesting

What is... Rainwater Harvesting?

Quite simply it is the collection of rainwater from a roof that is filtered, stored and then supplied on demand for use in non-potable applications such as vehicle washing, irrigation and WC's.

Rainwater harvesting is nothing new, for thousands of years it was the only way to collect and store water for use. However, in modern times with the availability of good quality mains water, it has become a practice that is rarely implemented even though the savings in water consumption and cost can be quite staggering.

Environmental changes and rising costs are now starting to focus attention on good management of water supplies, particularly in areas where annual

rainfall patterns have changed dramatically over the last decade. Rainwater harvesting is a simple technology that will become a part of all our lives within a very short timescale.

Industrial/Commercial Use

The Industrial and commercial sector offers significant opportunities to not only reduce water consumption, but to save literally thousands of pounds per year in water supply charges.

Relatively high water consumption and large roof areas offer excellent opportunities for the collection of rain water. These systems can be highly cost effective, with payback periods coming in as low as 2 – 5 years.

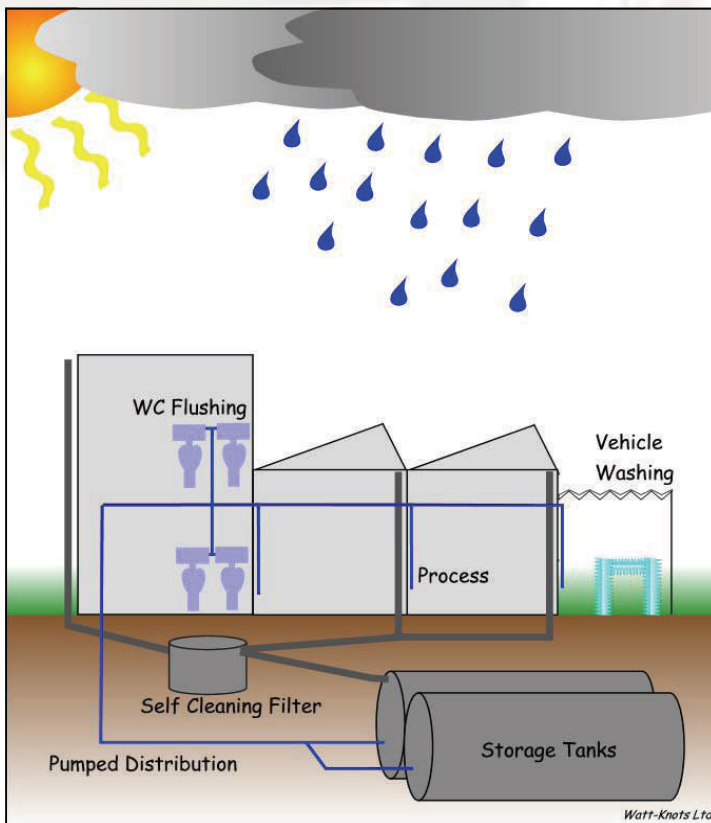
Rainwater can be used in a variety of commercial applications, with collection and storage potential simply being limited by site constraints. Typical uses for the water collected are:

- *General Cleaning*
- *Vehicle Cleaning*
- *Process Water*
- *Irrigation*
- *Toilet Flushing*

Community Use

Water is used in many different ways within our communities, often in places that are very isolated, yet we take it for granted that water will always be available.

Country parks, car parks, nature trails, sports facilities etc, are just a few examples of the places we expect water to be available, even if it is simply for the basic provision of toilet facilities.



Simplified commercial system: collection, storage and distribution.



Watt-Knots

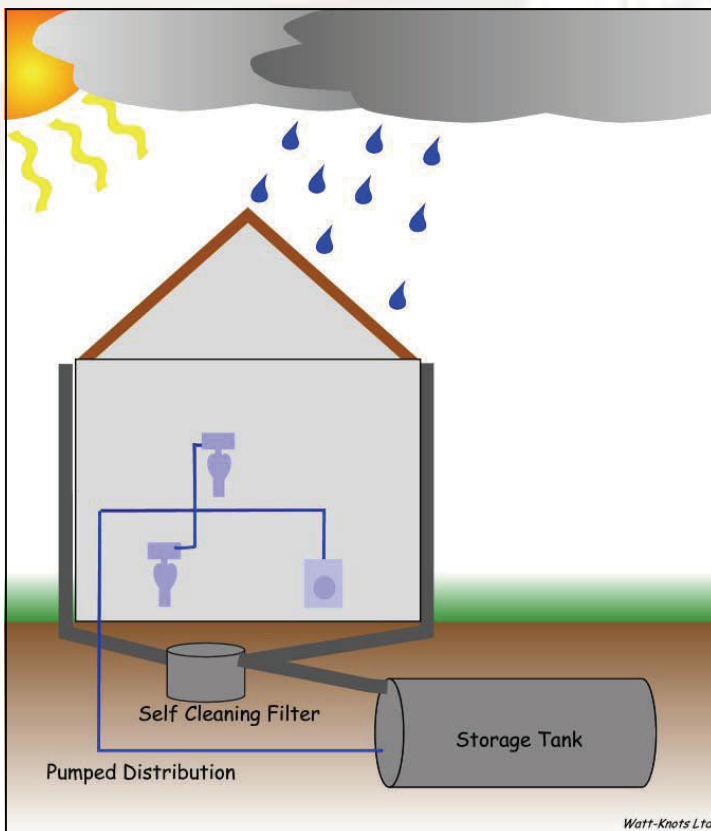
Creating Energy & Water Solutions

Domestic Use

Many homes currently make use of rainwater harvesting in its simplest form by collecting rainfall from houses, garages and green house roofs for subsequent use in the garden during dry spells. This is generally the most cost effective method that can be employed, although with water meters now becoming a requirement in most areas, it is likely that more sophisticated applications will become fairly common in our homes as water bills start to rise.

Although the collected water is filtered, it is only suitable (without further treatment) for non-potable applications. In most domestic situations this can allow mains supplied water to be reduced by up to 50%.

Due to the limited collection/consumption of water within most domestic properties the likely payback on a system is 10 – 15 years.



Simplified domestic system: collection, storage and distribution.

General Operation

Although there are a number of system manufacturers, the general concept applies to all installations. After collecting, the water is filtered and then stored until needed. The water is then pumped directly to the application or to a break tank. If the stored water level runs low, mains water continues to meet the supply until such time as rainwater is able to replenish the stored level.

System Components

Commercial systems need to be designed individually due to the variations in average rainfall, collection availability at the site and the use/demand requirements. However, they generally consist of a self-cleaning pre filter, storage tank and pumping & control system.

The Future

Water costs are likely to continue rising as the industry updates the supply network to meet modern day requirements. Supplies are also likely to become ever more erratic due to changes taking place in our environment.

Collecting rainwater makes excellent commercial sense and allows businesses and communities to take positive action in order to look after one of our most precious resources.

Rainwater harvesting offers a very cost effective solution to assist in managing our water supplies.

Watt-Knots are able to help in all stages of rainwater harvesting projects, covering initial site assessment, installation and ongoing measurement of benefits to you and the environment.

Contact us for more details.