

Water Efficiency

These info pages provide tips for saving water within the home and the workplace, along with innovative ideas for saving water within the garden.



Did you know?

- Freshwater lakes, rivers, and underground aquifers hold only 2.5% of the world's water; the remaining 97.5% is saltwater oceans and seas.
- More than 5 million people die each year from diseases caused by unsafe drinking water - in developing countries 86% of illnesses are water-related.
- Leaving the tap running while you clean your teeth can use 6 litres of water!
- A tap that drips every second wastes 4 litres of water a day, that's equal to 2 large drinks bottles.
- Each person in the UK uses on average 150 litres of water every day! Most is for washing and toilet flushing.
- Agriculture is responsible for 87% of the water used globally.

Background

With two-thirds of the world's surface being covered with water, it would seem there is an adequate supply of water. However **freshwater lakes, rivers, and underground aquifers hold only 2.5% of the world's water**, by comparison the remaining 97.5% is saltwater oceans and seas.

Water availability issues and concerns are often focussed upon economically developing countries, however to view this as merely a third world problem or issue is a mistake. Even though the UK has a perceived image of a wet group of countries there is actually a water shortage, with England and Wales being categorised as 'low' in the rating scale produced by the world resource institute. Britain may be rainy but its dense population makes it the most water stressed large country in Europe. The most severe problems and challenges for the future are in the southeast and east of England, which are coping with increasing migration. There are plans to build more than 100,000 homes in the south-east by 2016 which has promoted serious doubts about whether there will be an adequate water supply for them.

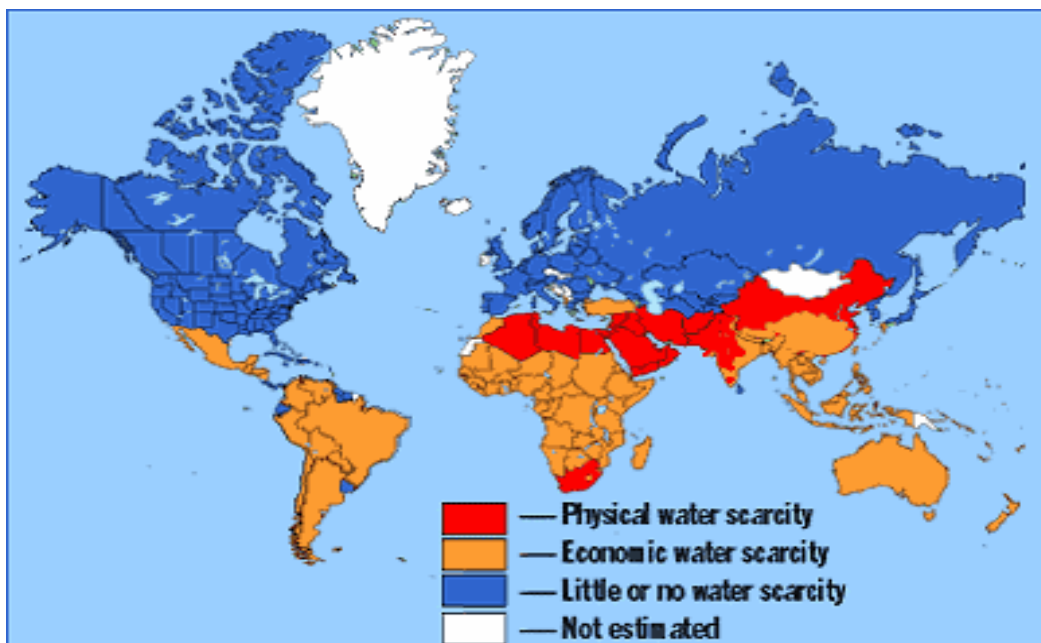
Sustainable Use of Water

Water is essential for human, animal and plant life. A sufficient supply of clean water is essential for public health. Water is essential for agricultural production, for most energy production, and for many industrial processes. However, as incomes and wealth rise so does water consumption....but,

More than one billion people, the equivalent of one-sixth of the world's population lack access to safe drinking water and one-third from groundwater.

More than 5 million people die each year from diseases caused by unsafe drinking water, in developing countries 86% of illnesses are water related.

The number of people living in water stressed countries is projected to climb from the current 470 million to a staggering 3 billion by 2025.



Map showing Global Water Scarcity

Some Water Facts

On average, a family of four flush the toilet 7,592 times a year

Water heating accounts for 19% of home energy use.

The average household water bill for 2004/5 is £249 for water and sewage; that is a 24.4% increase since 1989.

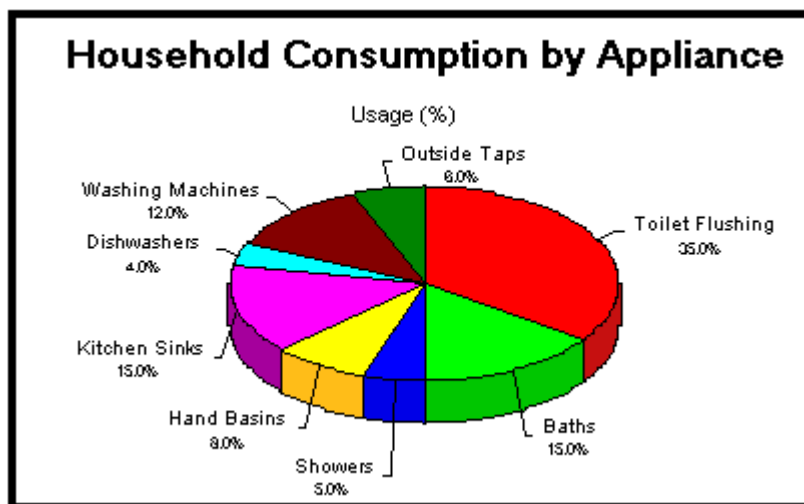
Water consumption usually drops 18-25% after a water meter is fitted

The average house uses 107,000 gallons of water per year

Household WC flushing uses up to 50 litres per day

The UK water industry has:

- *1,584 boreholes,*
- *666 reservoirs,*
- *602 river abstractions,*
- *two thirds of our water comes from surface water; and,*
- *one third from ground water*



A leaky toilet can waste up to 200 gallons of water a day.

A five-minute shower uses about one third of the water of a bath

14% of the water the typical homeowner pays for is never used

Washing Machines use 14% of the total amount of water used in the home, dishwashers and sinks use 7.7%.

Dishwashers use about 15 gallons of water per load

Cutting one minute off your shower time can save about 7,000 gallons of water per month.

Tips for Saving Water

Here are some TIPS for reducing your water usage and being more water efficient!

Saving Water in the Home

When in the Bathroom:

- ✗ Do not use the toilet as a dustbin; many objects such as razors and cotton buds are dispensed with down the toilet. These objects can cause many problems for the treatment works, as they are not designed for such objects.
- ✓ When brushing your teeth turn the tap off, this can save up to 10 litres of water.
- ✓ Rinse your mouth out with a glass of water.
- ✓ Put a plug in the sink whilst washing, this can save up to 10 litres of water.
- ✓ Try to have showers instead of baths, a shower a day costs the same as two baths a week. If you do have a bath do not fill it right to the top.
- ✗ Flushing the toilet takes up one third of the water we use everyday, only flush the toilet when it is necessary. Household toilet flushing uses up to 50 litres per day.
- ✓ A 'save a flush' device is available free from United Utilities, and can be placed in the toilet cistern; this device can save around one litre of water every time you flush. (United Utilities 0845 746 1100)

When in the Kitchen:

- ✓ Put a plug in the sink or use a bowl to wash up, don't let the water just run out of the tap.
- ✗ Do not attempt to defrost meat by putting it under a running tap, use a microwave or a fridge.
- ✓ Wait until you have a full load for the washing machine, this can save up to 70 litres of water.
- ✓ Wait until you have a full load for the dishwasher, this can save up to 30 litres of water.
- ✗ Only fill the kettle to a level you require for a brew.
- ✓ Wash Fruit and Vegetables in a bowl rather than under a running tap, and the left over water can still be used for watering plants.
- ✓ Keep a jug of water in the fridge instead of running taps till the water is cold.



When in the Garden:

- ✓ Organic mulch can be applied to your garden around your plants and on borders; this can conserve water by reducing surface evaporation and keeping down competition from weeds.
- ✓ A watering can is better than a hosepipe for watering plants, especially if it is fitted with a rose.
- ✓ To eliminate water dripping away from hanging baskets, cut the bottom off an empty plastic bottle, leaving the cap on, make a few small holes in the side and put it in the basket upside down. Simply fill this container each time you water, it will spread water more evenly and you will not spill water all over the floor.
- ✗ Do not water plants or the garden in the sun, it will scorch them and water will be lost through evaporation. Water the garden either early in the morning or late in the evening.
- ✗ Try to not use a sprinkler on the garden; the amount of water a sprinkler uses in one hour is the same as the amount of water a family of four uses in a day.
- ✓ Planting new trees and shrubs through plastic will retain their moisture, and therefore decrease the need for water.
- ✗ Do not install or use ornamental garden water features unless they recycle water.
- ✓ Sweep driveways and pavements rather than washing or hosing them.
- ✓ Buy plants that are drought tolerant, and therefore require little water.
- ✓ Let grass grow longer, as this should ensure that the grass develops a longer root system, and will therefore be less in need of extra watering.
- ✗ Do not fertilise, as this increases the need for watering.
- ✓ Group plants based on similar water needs
- ✓ When washing a car use a bucket not a hose, this will save on average 34 litres.
- ✓ Raise the lawn mower blade by at least three inches. A lawn cut higher encourages grass roots to grow deeper, shades the root system and holds soil moisture.
- ✓ Minimise turf areas; use less water demanding plantings.

Saving Water at Work

Here are some top tips for saving water within the workplace.

The first key step towards reducing water loss is identifying where your business is using water:

Offices	= Washroom / Toilet
Staff Canteen	= Food Prep / Washing up / Cleaning
Factory	= Factory Processes / Cleaning / Rinsing / Cooling
Boiler Room	= Rising Steam / Water Treatment
Dispatch	= Washing Delivery Vehicle.

General Management Practices:

- Designate a water efficiency coordinator
- Develop a mission statement and plan.
- Educate and Involve employees, water saving awareness training.
- Inform client and service suppliers that water efficiency is a priority.

When at work:

- ✓ Install high efficiency toilets.
- ✓ Install faucet aerators and showerheads.
- ✓ Install high pressure, low volume nozzles on spray washers.
- ✓ Install Urine flush control, these controls ensure cisterns flush by the minimum frequency required.

“Instillation of infrared flush control devices in 2,000 buildings reduced a large telecommunications company’s water consumption by over 1 million cubic meters per year” (envirowise)

Urinals can also be a source of water loss, but this depends upon quality and how they are fitted. **Urinals make up 20% of office water use**, and if urinal controls are not fitted then this level of water loss will increase. If no controls are fitted then the system continues to flush the urinals on 24 hour a day 7 days a week cycle. This means in a standard 40-hour week 76% of the flushing occurs when no one is there.

- ✓ Install self-closing taps, this will help avoid taps being left on by mistake.
- ✓ Install spray taps; these can save up to 50% in water consumption.
- ✓ Install reduced flush toilets. Replacing a 9 litre flush toilet with a dual flush toilet with 3 and 6 litre flushes, can save up to half the water used for wc flushes.
- ✓ Install waterless and vacuum toilets.
- ✓ Introduce tamper prevention, attempts to eliminate unauthorised valve operations.
- ✓ Check for leaks and spills on a regular basis.
- ✓ Locate areas within your business were water re-use can take place, look for opportunities for utilising grey water.

The big splash campaign is an initiative from Envirowise, which is funded by the DTI and defra. It is aimed at encouraging **you** to reduce water. Companies across the UK are being asked to **make money** by saving water!

See: <http://www.envirowise.gov.uk/envirowisev3.nsf/key/splash> to get your share of £10 million just by saving water!

Here are some ideas for saving water at Home and Work

Checking for a Leak

A slow dripping tap can waste a litre of water a day; a faster drip can waste three or four litres an hour. Fit new washers or ball valves in cisterns which are over-flowing.

To check if your toilet is suffering from a leak, add food colouring to the tank water and do not flush, after 30 minutes check the toilet and if the water colouring appears in the bowl, the toilet is leaking. United Utilities have set up a phone line (0800 330 033) to call if you have a leak in your house. This will hopefully reduce the amount of water lost each year due to leaks.

Rainwater Harvester

Roofs and driveways can be used for this kind of scheme, and can provide up to 100m³ per annum depending on the size of the roof or driveway. The water that is harvested can be used in a variety of different ways such as flushing the toilet. This scheme is one that could be used both at home and at work. Rainwater re-use can be used for toilets, gardens, and washing machines, and can save up to 50% of household water use.

Using Grey Water

The use of "grey water" can save up to 18,000 litres of water a year per person, 32% of household daily use. A third of household water is used for flushing the toilet; this water only requires very minimal levels of cleaning to make it suitable for WC flushing.

Insulation

Insulating pipes should ensure that a pipe does not freeze and split during cold months.

Water Meters

If water meters are fitted they offer the possibility to reduce water use in the home and at work. Nearly a quarter of homes have water meters, and on average they cut water use by between 10-15% and in some cases by 1/5.

Further Information

The UK Governments' perspective, through these DEFRA pages:

<http://www.defra.gov.uk/environment/water/conserve/>

See the website on the Wise Use of Water from the Wildlife Trusts:

<http://www.waterpolicyteam.org/General/EntryPage.htm>

Envirowise offers UK businesses advice and support on practical ways to increase profits, minimise waste and reduce environmental impacts. The link below focuses on water minimisation:

<http://www.envirowise.gov.uk/envirowisev3.nsf/key/DSUR5YHJNF>

See Thames Waters' wonderful WATERWISE website for more details on how to be water efficient

<http://www.thameswateruk.co.uk/waterwise/>

For global information, see Oxfams excellent resources for school use:

<http://www.oxfam.org.uk/coolplanet/water/causes/>