

## Saving water at home.

### Why is it an issue locally?

Water is a precious finite resource vital for sustaining people, wildlife and the environment.

However, Tonbridge and Malling is located in one of the driest regions in the UK which has been identified as an area of water stress by the Environment Agency.

Fact: the South East of England has less water available per person than Sudan and Syria.

The demand on existing water resources such as groundwater, reservoirs, lakes and rivers will continue to grow as significant levels of new development and lifestyle changes take place locally and throughout the South East region. The effects of climate change are only likely to result in increased pressures on available water.

For these reasons, it is essential that we take action now and save water where and when we can. If you have a water meter installed, pursuing water efficiency measures will not only save water but also could potentially save you money because rainwater is free!!

### What can you do?

There are a number of measures that can be adopted most of which will cost you no or little money but just require a slight change in your usual day-to-day routine.

For more significant projects, including rainwater and greywater harvesting, capital investment is needed for effective, efficient and safe operation.

Before you progress with any significant projects, please contact the Council's Development Control Section ([planning.applications@tmbc.gov.uk](mailto:planning.applications@tmbc.gov.uk), tel: 01732 876230) and consult with the Council's Building Control Section ([building.control@tmbc.gov.uk](mailto:building.control@tmbc.gov.uk), tel: 01732 876305) for advice.

#### *Inside the home – good practice to save water*

- Turn off the tap when cleaning your teeth – a running tap wastes 6 litres of water a minute
- Fix dripping taps

- Run washing machines and dishwashers with a full load and on the economy setting
- Flushing toilets accounts for approximately a third of household water usage. Reduce this by:
  - Installing a water displacement device (eg 'hippo') in the toilet cistern – this will save water used for each flush, typically one to two litres
  - Not using the toilet for flushing away rubbish (face wipes, cotton wool balls etc) – save water and use the recycling/dustbin instead.
- Showering can use less water than having a bath unless a power shower is fitted which can potentially use more.

#### *Inside the home – replacement appliances*

When replacing washing machines and dishwashers go for a **water-efficient model**.

Be sure to check the **EU labels** on the machines – 'A' rated are the most efficient and 'G' the least. The more efficient 'A' rated machines are generally more expensive but the return in terms of reduced water and electricity bills during the lifetime of the machine means you will eventually save money in the long-run, if you have a water meter installed.

If you live in a small household (eg two or fewer people) and you don't already have one, installing a water meter could well save you money!! Please contact your water company for further information (see contact details below).

#### *Inside the home – greywater recycling*

Water from baths, showers and washbasins (not toilets) can be collected, treated and re-used for purposes other than drinking, eg flushing toilets and watering garden plants.

Untreated waste water collected from the bath, shower and washbasin can be used directly to water the garden, providing it is not stored for long before use.

For the purpose of flushing the toilet, the collected water needs to be filtered and treated before use. When the water is retained for a short period of time, the treatment required can be as little as skimming and filtering off debris.

For longer-term storage, the greywater needs to be treated either chemically (eg chlorine or bromine) or

using ultra-violet light to kill off bacterial contaminants. Most greywater systems also require regular maintenance.

Potentially, greywater systems used for flushing the toilet can save approximately a third of daily household water demand.

### **Outside the home – good practice in the garden**

Avoid watering the lawn – they can survive long dry periods providing the grass has not been cut too short.

Use organic mulches in the borders to reduce soil moisture loss and therefore the need for frequent watering.

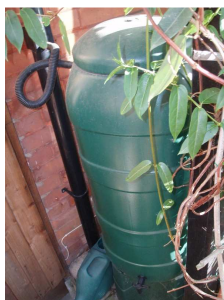
In the garden, using a watering can rather than a hose can save a considerable amount of water – a garden hose can use more water in an hour than a family of four uses in a day. Note: Gardeners using sprinklers must have a water meter fitted.

To reduce the amount of water lost through evaporation, water your garden in the cool of the early morning or evening.

### **Outside the home – rainwater harvesting**

Install a water butt and harvest rainwater to water garden plants.

A water butt, stand and tap can be bought from your local garden centre or water supply company (see details below) and fitted to the down drainpipe.



Water butt attached to down drainpipe

For larger-scale rainwater harvesting to use for the flushing of toilets as well as watering the garden, water can be stored in a tank, possibly underground.

A pump needs to be installed to move the water to the point of use and a filter needs to be fitted to remove debris.



Underground water storage tank to harvest rainwater at Baldwin's Oast, West Malling

## **Who can help?**

**Department for Environment, Food and Rural Affairs** – a government department that provides tips on how to save water ([www.defra.gov.uk/environment/water/conserve/index.htm](http://www.defra.gov.uk/environment/water/conserve/index.htm), tel: 0845 933 5577)

**Waterwise** – a not-for-profit non-governmental organisation focused on decreasing water consumption in the UK ([www.waterwise.org.uk](http://www.waterwise.org.uk), tel: 0207 344 1882)

**Environment Agency** – a body responsible for protecting and improving the environment ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk), tel: 08708 506 506)

**South East Water** – a water company serving the community of Tonbridge and Malling ([www.southeastwater.co.uk](http://www.southeastwater.co.uk), tel: 0845 850 6060)

**Southern Water** - a water company serving the community of Tonbridge and Malling ([www.southernwater.co.uk](http://www.southernwater.co.uk), tel: 0800 027 6152)

**Thames Water** - a water company serving the community of Tonbridge and Malling ([www.thameswater.co.uk](http://www.thameswater.co.uk), tel: 0800 714 614)

**Kent County Council: Kent Design Guide** - This guide promotes good, sustainable design in Kent and includes an appendix on Water Efficiency ([www.kent.gov.uk](http://www.kent.gov.uk), tel: 01622 221866)

**Baldwin's Oast, West Malling** – a local property that has installed a rain water harvesting system to flush the toilets, water the garden and clean the cars. Please contact the Council for further details ([ldf@tmbc.gov.uk](mailto:ldf@tmbc.gov.uk), tel: 01732 876266)

**If you have any difficulty reading this leaflet and would like the information in another format, please call 01732 876266 or e-mail [ldf@tmbc.gov.uk](mailto:ldf@tmbc.gov.uk)**



# Sustainable Drainage Systems (SUDS).

## What are SUDS?

SUDS provide an alternative to traditional drainage techniques such as underground pipes that replicate natural drainage systems.

SUDS can control rainwater and surface water run-off, as well as potential pollution.

## What are the benefits of SUDS?

SUDS techniques can achieve many benefits. They can:

- Reduce flooding
- Protect water quality
- Recharge groundwater reserves
- Create wildlife habitats and enriching the biodiversity value of an area; and
- Provide an amenity area for people to enjoy.

## Why do we need SUDS locally?

The borough will continue to experience high levels of development, particularly in the central area of Tonbridge, in the foreseeable future.

This development can, if it is designed with significant areas of hard impermeable surfaces, result in increased water run-off and reduced infiltration of water into the ground.

Not only can this increase the risk of flooding but the contaminants picked up by the run-off (eg car oil and litter) can pollute local rivers and groundwater harming their biodiversity value and also the ability for the abstraction of safe clean water.

The major flooding event in Tonbridge back in the year 2000 and the likelihood of more intense rainfall as an expected effect of climate change mean that now, more than ever, SUDS need to be considered and integrated where practicable into the design of new developments. The draft Flood and Water Management Bill will require developers to put SUDS in place in new developments wherever practicable.

## What forms of SUDS are there?

There are several SUDS techniques that potentially can be designed into new developments:

- **Preventative Measures** – These focus on techniques aimed at preventing run-off at source, including **rainwater harvesting**, **green roofs** and **permeable surfaces**.

**Rainwater harvesting** can be as simple as installing a water butt to the down drainpipe of your property or it can involve the installation of an underground storage tank. Such measures also have the added benefit of potentially reducing your water bill (if you have a water meter installed) because the collected water can be used to water garden plants and, after filtering, used for the flushing of toilets. For further information please see the Council's 'Saving water in the home' guide (please see the Council's website: [www.tmbc.gov.uk](http://www.tmbc.gov.uk) or contact the Planning Policy Section, tel: 01732 876266 for details).

**Green roofs** can vary from low growing mosses to a wildflower mix and even shrubs. There are several layers that make-up a green roof: the roof structure itself, waterproofing, drainage, filter fabric, growing medium and then finally the



Green Roof

Image courtesy of the Energy Saving Trust

vegetation layer. Green roofs can perform a number of beneficial roles as well as controlling the run-off of surface water at its source. Established green roofs can help moderate temperatures of buildings, thus preventing the need for mechanical heating and/or cooling systems and saving you money on your energy bills. They can also act as carbon sinks and release oxygen into the air thereby improving local air quality. Finally they can perform a vital biodiversity role of providing a habitat for small flora and fauna to flourish.

**Permeable surfaces** (eg pavements, driveways, footpaths, car parking areas and access roads)

can, depending on the local ground and soil conditions, allow rainwater to drain away into the ground. Porous surfaces that can be used include permeable concrete blocks, crushed stone or porous asphalt.

- **Swales and Basins** – Swales are grassed shallow depressions that provide temporary storage of run-off surface water before it naturally filters back into the ground. Basins are designed to hold more significant storm run-off for a few hours before allowing it to infiltrate into the ground. Outside storm periods basins are often dry.
- **Infiltration Techniques** – These techniques allow water to drain directly into the ground, depending on the local ground and soil conditions, and include **infiltration trenches** and **filter drains**.

**Infiltration trenches** effectively create an underground reservoir by allowing stormwater to enter a shallow excavated trench filled with stone before infiltrating into the ground. The lifespan of the trenches can be extended by pre-treating the stormwater using a filter strip.

**Filter drains** are similar structures through which a perforated pipe runs. This pipe allows for the storage and filtration of stormwater. Pollutants are removed by absorption, filtering and microbial decomposition in the surrounding soil.

- **Ponds and Wetlands** – Ponds and wetlands are intended to hold more water in storm conditions than basins, thereby enhancing flood storage capacity. They can potentially provide a haven for wildlife and also act as a visual amenity for local residents.



Drainage Pond

Image Courtesy  
of the  
Construction  
Industry  
Research and  
Information  
Association

## What issues do you need to consider?

**Local ground water** and **soil conditions** need to be investigated because these will determine what SUDS techniques are appropriate. For example, if soil permeability is low, there is little point introducing filtration systems. Instead, consideration should be given to preventative measures such as rainwater harvesting and green roofs.

The **existing public sewerage system** also needs to be taken into account. It is important that there is capacity in the existing system to cope with the excess surface water infiltration, otherwise surcharging and wastewater flooding of properties could occur.

The **long-term management and maintenance** of SUDS also needs to be established and agreed early in the process of designing a new development. The draft Flood and Water Management Bill will require new SUDS to be adopted and maintained by county and unitary local authorities, which for Tonbridge and Malling is Kent County Council.

At the design stage of your development, please contact the Council's Development Control Section ([planning.applications@tmbc.gov.uk](mailto:planning.applications@tmbc.gov.uk), tel: 01732 876230) and consult with the Council's Building Control Section ([building.control@tmbc.gov.uk](mailto:building.control@tmbc.gov.uk), tel: 01732 876305) for further advice.

## Who can help?

**Environment Agency** – a body responsible for protecting and improving the environment ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk), tel: 08708 506 506)

**Construction Industry Research Information Association (CIRIA)** – an association which provides guidance, advice support and training on SUDS ([www.ciria.org](http://www.ciria.org), tel: 0207 549 3300)

**Livingroofs.org** – Independent UK resource for green roof information ([www.livingroofs.org](http://www.livingroofs.org))

**South East Water** – a water company serving the community of Tonbridge and Malling ([www.southeastwater.co.uk](http://www.southeastwater.co.uk), tel: 0845 850 6060)

**Southern Water** - a water company serving the community of Tonbridge and Malling ([www.southernwater.co.uk](http://www.southernwater.co.uk), tel: 0800 027 6152)

**Thames Water** - a water company serving the community of Tonbridge and Malling ([www.thameswater.co.uk](http://www.thameswater.co.uk), tel: 0800 714 614)

### **Kent County Council: Kent Design Guide**

This guide promotes good, sustainable design in Kent and includes a section on Sustainable Drainage Systems ([www.kent.gov.uk](http://www.kent.gov.uk), tel: 01622 221866)

**If you have any difficulty reading this leaflet and would like the information in another format, please call 01732 876266 or e-mail [ldf@tmbc.gov.uk](mailto:ldf@tmbc.gov.uk)**

