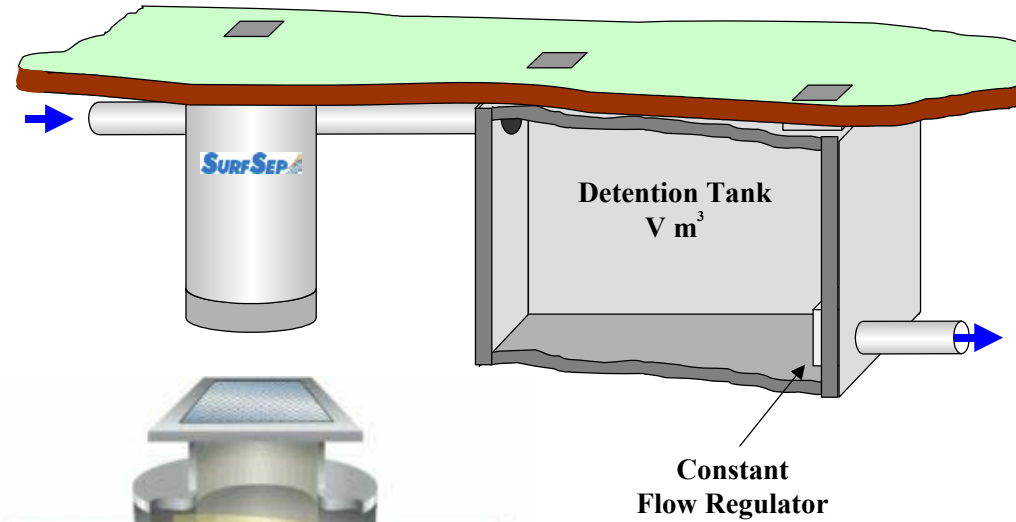


# SUDS / RETENTION



## **SURFSEP** Screening

SurfSeeps have been successfully installed in front of collection and retardation SUDS to remove grit, fine solids and debris which accumulates in the SUDS leading to potential blockage of orifices and flow regulators resulting in increased Occupational Health & Safety risk during the treatment of blockages and during the periodic cleaning operations.

## Storage

Storage can be achieved in a wide variety of ways.

The selection of the appropriate storage system is determined by the availability of construction area, depth and the cost of storage materials.

The storage volume is determined by

- the flow hydrograph from the upstream catchment
- the designated discharge rate imposed
- the type of flow control chosen.

The use of accurate float controlled regulators results in reduced storage volumes due to the extra volume of water able to be discharged at the start and end of the storm hydrograph.



**Above:**  
A large SurfSep (200 ha +) protecting a series of natural retention wetlands.

## **HYDROSLIDE** Flow Control

Flow control can be achieved in a wide variety of ways, but the most common option is through the orifice equation, whereby the head level above the orifice determines the discharge flow from the storage chamber.

A fixed orifice plate (hole of defined size in a plate) is the most simplistic, but is sized on the maximum discharge allowed and the maximum head level achievable without leading to upstream localised flooding. Due to this method of sizing the orifice is often only utilised in the centre of the hydrograph curve.

Hydraulically limited regulators such as vortex or rotational systems can be very inaccurate as they operate by disrupting the discharge flow rate as the head builds



**Left:**  
HydroSlideVN.

**Below:**  
Hydroslide Mini



## Screening

To remove

- Trash
- Sediment
- Pollutants

## Storage

- Under ground
- Above ground

## Flow Control

- Orifice
- Float controlled

# RETENTION SYSTEMS

SurfSeps have been installed in the UK, Ireland, Australia, New Zealand, Asia and the USA to remove plastics, oil, grit, fine solids, organic and inorganic debris which would otherwise accumulate in the retention system.

Removing these pollutants before they enter the retention system has the benefits of:

- Better downstream water quality for longer
- Maximising retention capacity for the long term
- Reducing maintenance frequency to a minimum
- Reduces the risk of blocking the flow regulator used
- Not requiring the destruction of the bio life when above ground retention wetland systems have filled up with sediments and pollutants after 5 to 10 years.

Standard SurfSep models are constructed from precast reinforced concrete pits with preinstalled stainless steel internals, where possible, too keep the installation time to a minimum.

Additional flyers, papers and a technical manual are available on this product.



**Above:** A SurfSep screening motorway run-off with a series of man made detention ponds in the background.

**Below:** A SurfSep installed upstream of a retention / detention pond. The water feature not only provides a visual public display but also increases the dissolved oxygen in the water and also provides good circulation of flow throughout the reed beds.



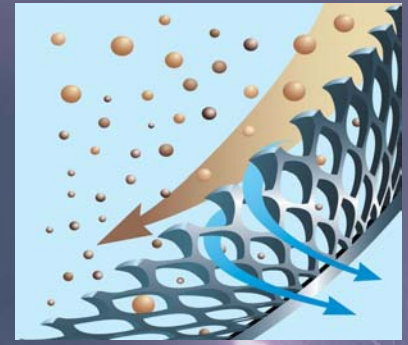
Hydroslide flow regulators have been used extensively by all the major UK water companies for many years.

The hydroslide regulators are fully open at the beginning and end of the flow hydrograph and provide constant discharge over a large variation in upstream water level.

The hydroslide only operates when the flow at the control point is greater than the set discharge rate. When this occurs the increasing water level causes the float to rise. This in turn causes the orifice to be adjusted maintaining a constant discharge.

The hydroslide regulator was developed in Germany for use in regulating sewer flows and has been used in Europe since 1984. The hydroslide comes in several configurations each with varies model sizes regulating flows from 5 L/s to in excess of 4000 L/s.

Additional flyers and papers are available on this product.



## Screening

- Proven Reliable Technology
- High Performance
- Easy Installation & Maintenance

## Storage

- Wide variety of options available

## Flow Control

- Proven Reliable Systems
- Precision Engineered

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