

Land at Sketchley Hill House.
Rugby Road, Burbage

Sustainable Urban Drainage Systems –
Maintenance and Inspection Schedule.



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Issue
Initial issue.

Date
11.03.2025

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1.1. Sustainable Urban Drainage System - Introduction

The use of a Sustainable Urban Drainage System is required to reduce the rate and volume of storm water discharged from a new development and to ensure the quality of the water in the receiving water is not compromised by pollutants washed off the surfaces that form the impermeable catchment area.

The SuDS Manual (C753), published by CIRIA, requires the use of SuDS features to improve the water quality of the discharge via "Treatment Trains" the number and type of which are determined by the nature of the development, the sensitivity of the receiving watercourse and the Site characteristics. The pollution levels from residential roofs are classified as "very low" and from individual driveways, residential car parks, low traffic roads as "low."

In respect of the potential pollution of the receiving water course the treatment of the "first flush" event is most critical. This is the beginning of any storm event which tends to have higher concentrations of pollutants and is due to higher initial rainfall intensities, greater erosion potential and to greater availability of solids and pollutants that have built up on urban surfaces during the preceding dry weather period.

To comply with Chapter 4.3.1 there should be no run-off from the site for small rainfall events classed as less than 5mm. More than half the rainfall event fall into this category and, on natural catchment rarely produce any run-off. However, on impermeable catchments run-off tends to be generated from almost all events. The adverse impact of the "first flush" can be mitigated by using infiltration system, permeable paving and vegetated SuDS.

The SuDS systems should be designed appropriately and constructed in accordance with the drawings, specification and best site practice to ensure they operate as intended. However, it is imperative that once operating the SuDS features are inspected and maintained at suitable intervals to ensure the long-term efficiency and effectiveness of the system.

In order to ensure the operating efficiency and long-term effectiveness of the SuDS system the following schedule, in accordance with CIRIA SuDS Handbook C753, should be followed as a minimum requirement.

1.2. Attenuation tank (Cellular storage / below ground storage):

Regular inspection and maintenance are required to ensure the effective long-term operation of below ground cellular storage systems. Maintenance responsibility for a system should always be placed with a responsible organization.

Such works should be undertaken by an appropriately qualified person or body and be in accordance with CIRIA C753 Table 21.3. – (as below):

Schedule	Required action	Frequency
Regular maintenance	Inspect And identify any areas that are not operation correctly. If required, take remedial action	Monthly for three months then annually
	Remove debris from the catchment surface (where may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter. Remove and replace surface infiltration medium as necessary	Annually
	Remove sediment from pre-treatment structures and internal forebays	Annually or as required
Remedial actions	Repair / rehabilitation of inlets, outlets, overflows and vents	As required
Monitoring	Inspect / check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Maintenance plans and schedules should be monitored and adjusted to suit requirements. Appropriate safety measures should always be employed when maintaining or repairing cellular storage systems.

1.3. Hydrobrake control chamber:

Normally, little maintenance is required as there are no moving parts within the Hydrobrake. The Hydrobrake is fitted with a pivoting bypass door, which allows the manhole chamber to be drained down should blockage occur.

Schedule	Required action	Frequency

Regular maintenance	Remove any extraneous material from the unit and the chamber. Hose down and clean Hydrobrake unit	Monthly for three months then every six months Monthly for three months then every six months or as required
Monitoring	Inspect / check all inlets and bypass door to ensure that they are in good condition and operating as designed Inspect chamber for sediment build-up and remove if necessary	Annually Annually

Following installation of the Flow Control it is vitally important that any extraneous material i.e., building materials are removed from the unit and the chamber. After the system is made live, and assuming that the chamber design is satisfactory, it is recommended that each unit be inspected monthly for three months and thereafter at six monthly intervals with hose down if required. If problems are experienced the manufacturer should be contacted so that an investigation may be made.

All Hydrobrake units are typically manufactured from grade 304 or 316 Stainless Steel and both materials have an estimated life span in excess of the design life of drainage systems.

Given the nature and constraints of the site the designed drainage, access driveway and parking areas are to remain "private" and will be maintained by the end user or their appointed agent.

1.4. Water conservation

In addition to controlling the flow and volume of water discharging from a new development it is important to reduce the consumption of potable water wherever possible. It is **recommended** the proposed scheme includes the following systems / appliances to limit the amount water used:

- Dual-flush toilets (6 / 4 litres flush).
- Flow regulated or aerated shower flows limited to maximum six litres per minute.
- Kitchen sink and all hand basins tap flows limited to maximum four litres per minute.
- Dishwashers and washing machines to be A rated (European Union energy rating).
- Bath capacity maximum 140 litres (to overflow).
- Re-using water from water butts for garden irrigation.
- Bark mulch to be used in garden areas (reduced water evaporation up to 75%).

1.5. Construction phase water management

In order to contain storm water flows during the construction of the project it is recommended to construct the storm water cellular storage, control manhole and connecting pipework at the beginning of the construction process.

Consideration should be given to installing debris screens within the last manhole before discharge to the public sewer networks to prevent construction material entering. The debris screens should be regularly inspected and, when necessary, cleaned to remove any build-up of material.

Any gullies, drainage channels, manholes or catch pits should also be regularly inspected and cleaned to ensure they are operating efficiently and removing any potential pollutants / debris. Removed debris should be disposed of in an appropriate manner.