

Drainage Maintenance & Management Plan

1.0 OWNERSHIP & MAINTENANCE RESPONSIBILITIES

The drainage features will be cared for by the Estate Management Company which will be set up by the developer to administer the site-wide infrastructure. This includes:

- Permeable Pavings
- SDS tank
- Control Chambers
- Associated manholes / piped systems

The following sections set out schedules detailing the maintenance requirements for each of the main drainage items used within the scheme. The Estate Management Company will undertake the inspections and maintenance activities in accordance with these schedules.

Additional reference should be made to currently established best practice and guidance documents such as: The SuDS Manual (CIRIA C753, 2015) and other resources available at the susdrain website (www.susdrain.org).

This Drainage Management and Maintenance Plan (DMMP) should be considered a live document: The frequency of maintenance intervals may need to be increased or decreased based on the observed performance of the drainage systems over time. Changes should be agreed with the drainage authority and recorded and dated in the Plan.

2.0 CONTAMINATION OR DILUTION OF SPILLAGE

The Environment Agency would prefer all spillages on any highway to be contained to prevent any downstream contamination. However, this cannot always be achieved, depending on the nature of the spillage. In all circumstances involving the spillage of substances on the highway it is important that the Environment Agency are notified as soon as possible so that they can provide advice and take appropriate action.

Prompt action following a spillage can prevent or reduce its effects, whilst inappropriate action may cause or worsen the pollution effects. In the design of the drainage on this site, a number of measures have been put in place to prevent any pollution entering the groundwater such as permeable paving. The permeable paving sub-base is lined with a geotextile fabric.

In the event of a spillage on site it is the responsibility of the Management Company's staff to clear up any spillage before it enters the drainage system. The primary method of dealing with any spillage of Hydrocarbons should be to use sand to soak up the leak and prevent any Hydrocarbons entering the drainage system. Once sand has been contaminated it should not be washed into the drainage system but disposed of by a Licensed Contractor.

Environment Agency – Emergency Contact Number

In the event of a spillage the Environment Agency should be contacted to notify the event and seek advice. The Environment Agency Incident Hotline is **0800 80 70 60 (Freephone 24hrs)**.

3.0 HEALTH AND SAFETY

All those responsible for and involved in the maintenance of the site drainage systems should be safety conscious and comply with the relevant health and safety legislation. This includes:

- The Health and Safety at Work etc Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Workplace (Health, Safety and Welfare) Regulations 1992

The Estate Management Company is responsible for suitable risk assessment and management to ensure safe working conditions and practices. Measures to protect potential visitors also need to be considered.

Specialist contractors used should work to industry guidelines and be able to demonstrate safe working practices.

Employers have a duty to employees to inform them about the risks of their work environment and to decrease the risk as far as reasonably practicable. Appropriate personal protective equipment (PPE) should be provided and policies implemented based on risk assessment.

Operatives should be trained for working near water. Risks of contaminated water should be considered. Checking for open cuts and using nitrile gloves, waterproof plasters etc is advised.

Entry of pipes, chambers, tanks and culverts should be avoided wherever possible. Work should be carried out from the surface using appropriate equipment. In the event that entry cannot be avoided to perform a critical task, the required safety training, protection measures and precautions must be implemented prior to entry. Lone working should never be attempted.

For further information refer to Section 36 of The SuDS Manual (CIRIA C753).

4.0 SURFACE WATER DRAINAGE

Pipes, Chambers, Sewers, Gullies and Silt Pits

Inspection Frequency: Annually.

Maintenance Requirements: Carry out visual check of all inspection chambers, manholes and the outfall to ensure all pipes are clear and free flowing. If not, clean out by rodding or jetting.

The following maintenance requirements for all SUDS features below are taken from CIRIA C753 (The SuDS Manual).

Schedule	Action	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action. Especially outfall manhole to pond with hydrobrake.	6 monthly
	Common yard & car park & other hard standing areas to be swept clear of debris, to prevent possibility of blockages to the receiving drainage systems.	Weekly
	Debris removal from gullies & silt pits, channel drains (where may cause risks to performance).	6 monthly - after autumn leaf fall, or as required based on observations
	Lift and inspect receiving manholes to check for blockages.	Monthly
Remedial Actions	Repair any damaged gully gratings or silt pit covers.	As required
	Replace / fix any loose channel drain covers.	As required
Monitoring	Carry out full CCTV survey to confirm ongoing integrity of all drains. Inspect all gullies and silt pits & drainage channels during the survey.	10 yearly intervals

In all instances, inspection and cleaning should be carried out only by a specialist contractor and in accordance with the guidelines given in 'Safe Working in Sewers and at Sewage Works' published by National Joint Health and Safety Committee for the Water Services.

Regular inspection and maintenance is required to ensure the effective long-term operation of private drains, manholes, gullies & silt pits.

Prior to construction: a CCTV survey to be carried out on all existing sewer systems (not being demolished as part of the scheme) and any downstream receiving systems, prior to connection with adopted sewers.

Post Completion: a CCTV survey to be carried out on all new and retained existing drainage systems and any downstream receiving systems, prior to connection with adopted sewers.

The report will be used to prove the integrity of the as-built drainage system prior to issue of practical completion certificate and will be handed over to the Client & Management Company for future reference.

Permeable Pavements

Inspection Frequency and Maintenance Requirements: as per table below.

Schedule	Action	Frequency
Regular Maintenance	Standard road sweeper	Annually after autumn leaf fall
Occasional Maintenance	Weed removal	Annually
Remedial Actions	Remediate adjacent landscaping to original levels	As required
	Paving repairs including replenishment of lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10-15 years or as required if infiltration is reduced by clogging
Monitoring	Initial inspection	Mostly for first three months
	Inspection for evidence of poor operation and/or weed growth	Quarterly, 48 hrs after storms in first 6 months
	Inspection for silt accumulation to establish sweeping frequencies	Annually
	Monitor inspection chambers	Annually

Safety information is set out in Section 3.

SuDS Attenuation Tanks

Schedule	Action	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
Remedial Actions	Repair/rehabilitate inlets, outlet, 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

To be inspected & checked for blockage **6 monthly** and jetted/cleared if necessary.

A CCTV Drainage Survey of the perforated pipe should be carried out every **5 Years** and any of blockage/silt build up should be jet washed or removed.

5.0 FOUL DRAINAGE

Sewage Treatment Plant – to be maintained in accordance with Manufacturer's Guidelines.

General Network:

Pipes/Chambers/Manholes

Inspection Frequency: 5 Yearly (gravity system)

Maintenance Requirements: Visual inspection of chambers & manholes should be completed on a 5 Yearly basis and any signs of blockage / waste build up should be jet washed or removed by a Licensed Effluent Disposal Contractor.

A CCTV Drainage Survey should be completed every 10 Years and any blockage/waste build up should be jet washed / removed by a Licensed Effluent Disposal Contractor.