

1.0 PREAMBLE

Regular inspections and maintenance of both the foul and surface water drainage systems is important to ensure the effective and efficient operation of the system and to reduce the likelihood of blockages and flooding on and off site.

Responsibility for maintaining and managing the drainage system on completion of the 12-month maintenance period will be by the landowner, through their site management company and/or tenants occupying the units. Principle contact is the landowner:

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7th Floor
50 Broadway
SW1H 0DB

This plan should be read in conjunction with the drainage design drawings and an up-to-date CCTV survey report.

The Operation and Maintenance (O&M) manuals and/or Health & Safety (H&S) files must contain copies of:

- This Drainage Maintenance Plan
- Record Copy of drainage design drawings
- Manufacturers information for ancillary items
- Post construction CCTV survey report

The post construction CCTV report acts as a physical record of the drainage system at handover, as installed running at full efficiency. Any further CCTV surveys should be inserted and replace previous where appropriate.

Sewers, manholes and drainage channels are unlikely to require maintenance other than periodic inspections, unless a blockage occurs.

2.0 DESIGN

Below ground drainpipes for both the surface and foul water networks have been designed to achieve self-cleansing velocity and in accordance with:

Approved Document H: Drainage and waste disposal
BS 8301: 1985 Code of practice for Building Drainage

3.0 GUIDANCE

If **sudden failure** occurs inspections should be carried out at the earliest opportunity by a specialist. Blockages must be cleared, and remediation works undertaken to ensure the effective operation of the drainage system.

The following should be carried out on an annual basis:

- Inspection chambers, manhole chambers and drainage channel outlets noted as **silt traps, sump pits, downstream defenders** or **filter units** must be inspected and cleared.
- **Drainage channels** and **gully's** must be inspected and cleared.

Vortex flow control (e.g. Hydrobrake) require no routine maintenance. Action is only required in the event of a blockage or suspected blockage. Inspect chamber containing unit in line with normal practice. Any debris or silt should be removed and any visible fixing bolts checked. The vortex unit can be internally inspected and cleaned out by opening the inspection/access cover on the upstream end. Be sure to replace and secure cover on completion.

The following should be carried out every two years:

- The gully traps should be plunged and thoroughly flushed out with clean water.
- Covers of inspection chambers and manholes should be removed and the sides, benching and channels cleaned.
- Main and branch drains should be rodded, jetted, and then flushed with clean water.
- Note that correct ends of rods should be used to avoid damage to pipes and them becoming detached.

Reference should be made to the manufacturer's information and maintenance requirements for recommended intervals and safe methods of cleaning for the following proprietary systems which are located on the record drawings:

- storm water storage system
- drainage channels
- petrol interceptors
- flow controls such as hydrobrakes, orifices
- downstream defenders

A full CCTV survey will also be carried out at 10 yearly intervals to assess the condition of the drainage system.

Jetting should be carried out downstream to suit the flow of effluent but should not be attempted to push through an attenuation tank, interceptor, or flow control. A vacuum tanker should be used upstream of each inlet into the tank or other ancillary item noted.

Open water features should be inspected out bi-annually:

- Piped inlets and outlets should be cleared of any obstructions either trapped within pipe, against guard grating and on apron of headwall.
- General clearance of litter
- Overgrown vegetation should be cut back, loose and decayed vegetation's removed, and evasive species treated.
- The base and side slopes, i.e. profile, should be maintained to suit level of silt build up as the works are slightly more onerous. But it is essential that any slippage of banks and build-up of base levels that cover the piped inlets and outlets are re-profiled correctly.

4.0 SAFETY

Petrol interceptors are designed to trap and store hydrocarbon contamination which may emanate from the yards and as such, should only be cleaned out by a suitable qualified and licensed specialist Contractors.

In all instances, inspection and cleaning is to be carried out by a suitable Specialist Contractor, following the guidelines given in BE EN 752 Part 7 1998 "Maintenance and Operations" and "Safe Working in Sewers and at Sewage Works", published by the National Joint Health and Safety Committee for the Water Services.

All underground and under-floor drains and manholes (including oil interceptors) represent confined spaces. Appropriate precautions will be taken before entering drains and manholes. Access will only be undertaken by appropriately trained personnel.

DETENTION BASIN		
Schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut the grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut the grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility and surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year) then annually or as required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlet pool – where provided	Annually (as set out in Chapter 23)
Occasional maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream and source control is provided)
Remedial actions	Repair erosion or other damage by re-turfing or reseed	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required

PROPRIETARY SYSTEMS		
Maintenance schedule	Required action	Typical frequency
Routine maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation	Six monthly
	Change the filter media	As recommended by manufacturer
	Remove sediment, oil, grease and floatables	As necessary – indicated by system inspections or immediately following significant spill
Remedial actions	Replace malfunctioning parts or structures	As required
Monitoring	Inspect for evidence of poor operation	Six monthly
	Inspect filter media and establish appropriate replacement frequencies	Six monthly
	Inspect sediment accumulation rates and establish appropriate removal frequencies	Monthly during first half year of operation, then every six months

ATTENUATION STORAGE		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify areas that are not operating correctly. If required, take remedial action	Annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	Remove sediment from pre-treatment structures and/or internal forbays	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 five years or as required

FILTER DRAINS		
Schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly (or as required)
	Inspect filter strip surface, inlet/outlet pipework, and control systems for blockages, clogging, standing water, and structural damages.	Monthly
	Remove sediment from pre-treatment devices	Six monthly, or as required
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods. (eg. NJUG, 2007 or BS 3998:2010)	As required
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	As required
	Clear perforated pipework of blockages	As required