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:

Chancerygate
12A Upper Berkeley Street,
London W1H 7QE
020 7657 1880

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
- Pump supplier contact and service agreements
- 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 PUMPS

A service contract agreement will be in place with the supplier of the package pump. Routine maintenance will form part of the agreement with provision for emergency situations. General inspections will generally include the following:

- The plant is visually checked, working tests are undertaken to ensure correct functioning of each item of equipment and minor adjustments made, as necessary.

- The level control equipment is cleaned as far as is practicable from ground level, chamber de-sludged by hand control of the pumps.

5.0 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.

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

PERVIOUS PAVEMENTS		
Schedule	**Required action**	**Typical frequency**
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually