

Project: 178 Bearwood Road

Subject: Operation and Maintenance Manual

Reference: 19721-TUM-TN-XXX-0002

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1 Introduction

The purpose of this Operation & Maintenance Manual is to detail the operation and maintenance requirements for the surface water drainage features shown in the Tumu Consulting drawings: Surface Water Drainage Layout Ref: 19721-TUM-DD-XXX-3000 A.

2 Description of Proposed Surface Water Drainage

The proposed surface water drainage will include the following key elements:

- Geocellular Attenuation Tank
- Inlets, Outlets, Pipework, and Inspection Chambers

It is proposed to drain the proposed roofs areas primarily to the lake located directly eastwards of 178 Bearwood road. If this is not acceptable to the LLFA, it is proposed to discharge surface water at a reduced rate through a shared private drain, eventually to the Thames Water Surface Sewer located in Tiffany Close.

Geocellular storage will provide attenuation to attenuate the 100 year rainfall event with a 40% allowance for climate change while discharging at a reduced rate through an orifice flow control chamber.

3 Ownership Responsibility

Operation and maintenance responsibilities for the proposed drainage serving the site are split between multiple parties. They are listed below:

- The operation and maintenance responsibilities for plot drainage belongs to each plot owner.
- The operation and maintenance of shared drainage is the responsibility of the parties who discharge to it.

4 SuDS Maintenance Regime

Maintenance for all elements of the surface water drainage strategy is outlined in more detail in the following sections. These include activity categories as defined below:

4.1 Regular Maintenance

Regular maintenance consists of basic tasks carried out to a frequent schedule, including inspections/monitoring, silt removal, vegetation management, and debris removal.

It is recommended that initially these activities for all elements of the drainage system are undertaken regularly until an appropriate frequency can be identified.

4.2 Occasional Maintenance

Occasional maintenance comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than regular tasks such as vegetation management.

4.3 Remedial Maintenance

Remedial maintenance describes the intermittent tasks that may be required to rectify faults associated with the system. The likelihood of faults can be minimised by good design, construction and regular maintenance being carried out.

Where remedial works are found to be necessary, it is likely due to site-specific characteristics or unforeseen events, therefore, timings are difficult to predict. Remedial maintenance can comprise activities such as:

- Erosion repairs.
- Infiltration surface rehabilitation.
- Replacement of blocked filter materials/fabrics.
- Construction stage sediment removal (although this activity should have been undertaken before the start of the maintenance contract).
- System rehabilitation immediately following a pollution event

5 Operation and Maintenance Tables

The tables below show the operation and maintenance requirements for the drainage components within the drainage system.

5.1 Operation and Maintenance Requirements for Geocellular Attenuation Tanks

Maintenance Schedule	Required Action	Typical 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 debris from the catchment surface (where it 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/ 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

5.2 Operation and Maintenance Requirements for Inlets, Outlets, Controls, and Inspection Chambers

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect surface structures, removing obstructions and silt as necessary. Check there is no physical damage.	Monthly
	Remove cover and inspect, ensuring water is flowing freely and that the exit route for water is unobstructed. Remove any debris and silt	Annually
	Undertake inspection after leaf fall in autumn.	
	Jet the pipes leading from overflow structures and check water is going through the overflow	Annually
Remedial Actions	Repair physical damage	As required

5.3 Operation and Maintenance Requirements for Ponds

Maintenance schedule	Required action	Typical frequency
Regular Maintenance	Remove litter and debris.	Monthly (or as required)
	Cut the grass	Monthly (during growing season)
	Inspect inlets, outlets, banksides, structures, pipework etc for evidence of blockage and/or physical damage	Monthly
	Inspect water body for signs of poor water quality	Monthly (May-October)
	Inspect silt accumulation rates in any forebay and in main body of the pond and establish appropriate removal frequencies; undertake contamination testing once some build-up has occurred, to inform management and disposal options	Half yearly
	Check any mechanical devices eg penstocks	Half yearly
	Hand cut submerged and emerged aquatic plants (at minimum of 0.1m above pond base; include max 25% of pond surface)	Annually
	Remove 25% of bank vegetation from water's edge to a minimum of 1m above water level	Annually
	Tidy all dead growth (scrub clearance) before start of growing season	Annually
	Remove sediment from any forebay	Every 1-5 years, or as required
Occasional Maintenance	Remove sediment and planting from one quadrant of the main body of ponds without sediment forebays	Every 5 years, or as required
	Remove sediment from the main body of big ponds when the pool volume is reduced by 20%	With effective pre-treatment, this will only be required rarely, every 25-50 years
	Repair erosion or other damage	As required
Remedial actions	Replant, where necessary	As required
	Aerate pond when the signs of eutrophication are detected	As required
	Realign rip-rap or repair other damage	As required
	Repair/ rehabilitate inlets, outlets and overflows.	As required