



OPERATIONS AND MAINTENANCE OF SUDS

Job No. 21047

Fole Dairy

Regular inspections and maintenance are important for the effective operation of all SUDs features.

Before the site is handed over by the contractor, all SUDs features should be inspected, cleared of any clogging and litter, tested and any failures rectified.

Listed below are the SUDs features used for this project, together with the maintenance requirements.

Attenuation storage tanks

Regular inspections and maintenance are required to ensure the effective long-term operation of the below ground attenuation system.

The table below provides guidance on the type of operation and maintenance requirement.

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 or 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
	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

Pervious Paving

Regular inspections and maintenance are required to ensure the effective long-term operation of pervious paving.

Pervious pavements need to be regularly cleaned of silt and other sediments to help preserve the infiltration capacity. Based upon experience, we would recommend sweeping at least once a year should be sufficient to maintain its infiltration rate.

It is possible to clean the surface using lightweight rotating brush cleaners combined with a power sprayer using hot water.

If the surface has been clogged, then a more specialist sweeper with water jetting may be required.

The table below provides guidance on the type of operation and maintenance requirement.

Maintenance 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 50mm 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 hours after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Drainage Channels

Like any drainage system, channel drains can get clogged up by dirt and debris over time which can lead to them becoming ineffective and not performing as efficiently as they should.

Remove the grating protecting the channel drain. You might need a screwdriver to do this depending on the type of drain you have.

Once you begin to lift the grate, you will need to be careful not to snap it, so ease the grate at various points along the length, if possible, rather than pulling solely from one end.

Clean by removing any debris such as dirt and soil by hand.

Flush out the channel to disperse the smaller remaining patches of debris.

If your channel drain is plastic, be careful not to apply too much pressure to the drain system to minimise breakage risk.

Once you have cleaned your drain, you will need to reposition the grate and apply some pressure to snap the top fitting into place.

Land Drains

The table below provides guidance on the type of operation and maintenance requirements for Land Drains.

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Remove litter and debris	Monthly (or as required)
	Cut the grass – to retain grass height within specified design range	Monthly (during growing season), or as required
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect land drain surface to identify evidence of erosion, poor vegetation growth, compaction, ponding, sedimentation and contamination (eg oils)	Monthly (at start, then half yearly)
	Inspect silt accumulation rates and establish appropriate removal frequencies	Monthly (at start, then half yearly)
Occasional maintenance	Reseed areas of poor vegetation growth; alter plant types to better suit conditions, if required	As required or if bare soil is exposed over > 10% of the land drain area
Remedial actions	Repair erosion or other damage by re-turfing or reseedling	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration and performance, break up silt deposits and prevent compaction of the soil surface	As required

Watercourse/Ditch

Regular inspection and maintenance are required to ensure the effective long term operation of swales.

The table below provides guidance on the type of operations and maintenance requirements.

Maintenance Schedule	Required Action	Typical frequency
Regular Maintenance	Removal litter and debris	Monthly (or as required)
	Cut and grass – to retain grass height within specified design range.	Monthly (during growing season)
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required.
	Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years)	Monthly (at start, then as required)
	Inspection inlets, outlets and overflows for blockages and clear if required.	Monthly
	Inspection infiltration surfaces for ponding, compaction, silt accumulation, record areas where water is ponding for > 48 hours	Monthly, or when required
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
	Inspect inlets and facility surface for silt accumulation, establish appropriate silt removal frequencies	Half yearly
Occasional Maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required or if bare soil is exposed over 10% or more of the swale treatment area
Remedial Actions	Repair erosion or other damage by re-turfing or reseedling	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required
	Remove and dispose of oils and petrol residues using safe standard practices	As required

Silt Traps

The table below provides guidance on the type of operation and maintenance requirements for Silt Traps.

Maintenance Schedule	Required Action	Typical Frequency
Monitoring	Inspect silt traps and note the rate of sediment accumulation.	Monthly in the first year, then annually

Overflows and Flood Routes

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Jet the pipes leading from overflow structures annually and check by running water through the overflow. Check free flow at next SuDS feature – inlet to watercourse.	Annually

Inlets, Outlets, Controls and inspection chambers

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inlets, outlets and surface control structures Inspect surface structures, removing obstructions and silt as necessary, Check there is no physical damage.	Monthly
	Strim vegetation 1m min surround to structures and keep hard aprons free from silt and debris.	Monthly
Regular Maintenance	Inspection chambers and below-ground control chambers Remove cover and inspect, ensuring that water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn.	Annually

Bioretention / Rainwater Garden

Bioretention system will require regular maintenance to ensure continuing operation to the design performance standard.

The treatment performance of the system is dependent on maintenance and robust management plan.

Adequate access is to be provided for all inspection and maintenance.

General maintenance can be often undertaken as part of the routine landscape maintenance.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly
Regular Maintenance	Remove litter and surface debris and weeds	Quarterly (of more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
Occasional Maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
Remedial Actions	Remove and replace filter medium and vegetation above	As required but likely to be > 20 years

Filter strips

Filter strips system will require regular maintenance to ensure continuing operation to the design performance standard.

The treatment performance of the system is dependent on maintenance and robust management plan.

Adequate access is to be provided for all inspection and maintenance.

General maintenance can be often undertaken as part of the routine landscape maintenance or specialist companies.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly (or as required)
	Cut the grass – to retain grass height within specified design range	Monthly (during growing season), or as required
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect filter strip surface to identify evidence of erosion, poor vegetation growth, compaction, ponding, sedimentation and contamination (eg oils)	Monthly (at start, then half yearly)
	Check flow spreader and filter strip surface for even gradients	Monthly (at start, then half yearly)
	Inspect gravel flow spreader upstream of filter strip for clogging	Monthly (at start, then half yearly)
	Inspect silt accumulation rates and establish appropriate removal frequencies	Monthly (at start, then half yearly)
Occasional Maintenance	Reseed areas of poor vegetation growth; alter plant types to better suit conditions, if required	As required or if bare soil is exposed over > 10% of the filter strip area.
Remedial Actions	Repair erosion or other damage by re-turfing or reseedling	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required



	Remove and dispose of oils or petrol residues using safe standard practices	As required
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Additional Notes

Porous Paving, attenuation tanks are situated to the front of the properties, unlimited access should be available for maintenance staff, plant and material.

Silt chambers and land drains to the rear can be maintained and access is available to the rear via the side of each property.

The O&M manual should have identified which property has the silt chambers to the rear.

All attenuation tanks should have access chambers for inspection and maintenance.

Details of specialist/management companies are as follows:

Adoptable sewers foul and storm, diversions and flow control chamber – To be maintained by Severn Trent Water Limited

Road Gullies – To be maintained by Staffordshire County Council

Watercourse/ Attenuation tank and all private drainage will be the land owner.

Contact Details

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