

M380-FN25 REV B – BOORLEY GARDENS

SUDS OPERATION AND MAINTENANCE REQUIREMENTS

1. Introduction

- 1.1. This file note considers the text required within the Soft Landscape Management and Maintenance Plan. It is based on the text ACD Environmental Ltd have already prepared, with additional sections added to add detail as required by Eastleigh Borough Council.

2. SuDS Features (Swales and Basins)

- 2.1. The swales and SuDS basins and their associated aquatic vegetation will be monitored and managed on a non-interventionist basis annually for four years post development, although plant growth and water levels will be monitored and emergency treatment carried out if necessary. Monitoring visits and management will take place outside the breeding season. Each monitoring visit will consist of an assessment of the water level; an assessment of the health of aquatic vegetation and the need for any further aquatic planting; and an assessment of the colonisation of the swales by aquatic invertebrates.
- 2.2. Removal of vegetation from the swales and their margins should be carried out between mid-November and mid-February. Removal of vegetation should be carried out as sensitively as possible, with all operations carried out by hand or with the use of hand tools. Due care and attention should be given to avoid removing more than 50% of vegetation present in the basin in any given management year, and to avoiding carrying out vegetation removal in such a way that it might damage the basin. The removed vegetation should be kept on site for 24 hours to enable any aquatic species to move back to the water. The vegetation should then be removed from the site.
- 2.3. It is recognised that swales are dynamic functioning ecosystems, and that not all species planted are likely to perform equally well. As such it is to be expected that some species will die out between management intervals. This should not be seen as a cause for concern, provided that an overall diversity of plant species is maintained, providing suitable habitats for the associated fauna.
- 2.4. Over time it is likely that some silt and leaf-fall will accumulate in the swales. De-silting and leaf removal operations will be required on a regular basis, but that these should be carried out infrequently, as required. It is likely that this would need to take place on an approximately ten year cycle.
- 2.5. It is recommended that an annual inspection of the swales be carried out with the Local authority in June of each year, to identify any ecological (and other) problems. This would include a check for the presence of, an assessment of the vegetation in each basin, an assessment of the water level, an assessment of the requirement for management operations, an inspection of the hibernacula associated with each basin and a general assessment of the ecological value of the swales and wider site.

- 2.6. Under the Design and Construction Guidance, issued by Water UK in October 2019, which is to be read in conjunction with the Sewerage Sector Guidance published by the sewerage undertakers pursuant to the 'Code for adoption agreements for water and sewerage companies operating wholly or mainly in England' (the Code), SuDS components may be adoptable by the sewerage company. Icosa agrees with the interpretation that SuDS can be considered sewers, and are therefore adopting SuDS components (as of April 2020).
- 2.7. The SuDS components, comprising detention basins and swales, would therefore be maintained by a Sewerage Company. A 12 month functioning period would apply where the developer would be responsible for the maintenance of the SuDS components before handover to the Sewerage Company.

3. Operation and Maintenance Requirements

- 3.1. Guidance on the operation and maintenance of Sustainable Drainage Systems (SuDS) is provided in The SuDS Manual 2015 (Ciria C753). It is intended that the detention basins and swale are maintained generally in accordance with this guidance.
- 3.2. There are three categories of maintenance: regular, occasional, and remedial. In addition, remedial inspections should be undertaken as soon as possible as a result of notification of a defect by a third party, e.g. police or public. The purpose of remedial inspections is to identify obvious deficiencies which represent, or might lead to, a danger to the public and, therefore, require immediate or urgent attention.
- 3.3. Maintenance inspections must be undertaken by personnel with the minimum health, experience and, where appropriate, qualification requirements for the particular inspection type. The results of the inspections shall be recorded on Maintenance Inspection Checklists and the records saved for future reference.
- 3.4. Regular maintenance consists of basic tasks including litter and debris removal, and includes inspections and monitoring to identify potential system failures such as blockages, silt and sediment build-up, eroded or damaged areas, and condition of inlets and outlets.
- 3.5. Occasional maintenance comprises tasks that are likely to be required periodically and includes sediment removal and reseeding areas of poor vegetation growth.
- 3.6. Remedial Maintenance comprises intermittent tasks to rectify faults and includes inlet/outlet repairs, erosion repairs, and removal of oils/petrol.
- 3.7. The required actions in the event of a blockage are part of regular maintenance. For the detention basins and swales, the required action is to inspect all inlets, outlets, control chambers, and outfall headwalls, for blockages and clear if required, which is to be done on a monthly basis.
- 3.8. Guidance on the type of operation and maintenance requirements that may be appropriate for the detention basins, including required actions and typical frequency, are shown in **Table A** below, and the corresponding guidance for the swales is shown in **Table B** below. The list of activities, which is based on The SuDS Manual 2015 (CIRIA C753), is not exhaustive and some actions may not be required.
- 3.9. The Sewerage Company would be responsible for implementing the Maintenance Management Plan for the detention basins and swales, including carrying out remedial inspections and remediation, recording any actions for future reference.

Table A: Operation and maintenance requirements for detention basins

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut 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 any lifebuoys, banks, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
	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
Remedial Actions	Repair erosion or other damage by reseedling or re-turfing	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

Source: The SuDS Manual 2015 (CIRIA C753)

Table B: Operation and maintenance requirements for swales

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly, or as required
	Cut 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 inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect 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, established 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 reseed	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt depositions and prevent compaction of the soil surface	As required
	Remove build-up of sediment or 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

Source: The SuDS Manual 2015 (CIRIA C753)

4. Summary

- 4.1. This drainage section of the Management Plan describes the proposed surface water drainage scheme, and sets out details of how the scheme shall be maintained and managed after completion, including confirmation of adoption and maintenance of all drainage proposals, and the maintenance strategy, frequency of inspections and required actions in the event of a blockage.
- 4.2. The SuDS components, comprising detention basins and swales, would be maintained by a Sewerage Company.
- 4.3. The application of the maintenance schedules set out in Table A and Table B, and use of a SuDS Inspection Maintenance Checklist, would ensure there are clear arrangements in place for ongoing maintenance of the SuDS components including recording the results of inspections for future reference.