

Earl Shilton, Leicestershire

Sustainable Drainage Maintenance Schedule

January 2024

Vistry Group

1 Maintenance Responsibilities:

Maintenance of the system is the responsibility of the building operators and assign management company.

Contact details are provided below of a suitably qualified company capable of providing maintenance assistance of the drainage network designed on this site.

2 Contact Details

Company name	Vistry Group
Address	Penman House, 1 Penman Way, Grove Park, Enderby, Leicester
Post Code	LE19 1SY
Tel No.	0116 282 1100
Website	https://www.vistrygroup.co.uk/

3 Introduction

The intention is for this handbook to be used as a reference guide by adopting parties, management company or tenant responsible for the maintenance of the SuDS features within the proposed development. This handbook sets out each type of proposed SuDS features within the development and provides a schedule of how that system should be operated and maintained to ensure the surface water system operates as it was originally intended and minimise performance deterioration.

For the purposes of this manual, maintenance refers to:

- Inspections required to identify performance issues and plan appropriate maintenance needs;
- Operation and maintenance of the surface water drainage system;
- Landscape management;
- Waste management associated with contaminated silt and other waste materials resulting from maintenance.

All maintenance will need to take the protection of habitats and associated ecology into account. Maintenance regimes should be regularly assessed (i.e. once per year) to make sure that the approach is still achieving objectives in terms of drainage, landscaping, amenity and biodiversity.

4 What is Sustainable Drainage (SuDS)?

Approaches to manage surface water that takes into account water quantity (flooding), water quality (pollution), biodiversity (wildlife and plants) and amenity are collectively referred to as Sustainable Drainage Systems (SuDS). The main purpose of SuDS is to replicate the natural local drainage regime and typically manage rainfall close to where it falls. SuDS are more sustainable than traditional drainage methods because they:

- Manage runoff volumes and flow rates from hard, impermeable surfaces, reducing the impact of urbanisation on flooding;
- Provide opportunities for using runoff where it falls;
- Protect and / or enhance water quality (reducing pollution from runoff);
- Protect natural flow regimes in watercourses;
- Are sympathetic to the environment and needs of the local community;
- Provide an attractive habitat for wildlife in urban watercourses;
- Provide opportunities for evapotranspiration from vegetation and surface water;
- Encourage natural groundwater/aquifer recharge (where appropriate);

5 Sustainable drainage used on this development:

Surface water is collected through a range of drainage and SuDS elements including RWP's/water butts, Gullies, drainage channels, filter drains, swales.

Surface water attenuation is when the permitted discharge rate of rainwater leaving the site, is less than the volume of water landing on the site during heavy rainfall periods.

The water gradually builds up in a storage structure, until such time as the rain stops, and the stored water is slowly released into the public sewer network.

This flow restriction reduces the amount of water leaving site at any single point in time, which in turn reduces the effects of flooding downstream.

The size of the detention basin is designed to provide enough storage for an extreme rainfall event. That is a rainfall occurrence of 1 in 100 years, an additional allowance is also made for climate change and urban creep.

The design is then sufficient to prevent flooding occurring on the site reducing the risk to the end user.

6 Maintenance of SuDS:

Maintenance of the system is vital to the continued performance of the system. It is important that the original design intent is achieved throughout the lifespan of the development otherwise the likelihood of flooding increases as the performance of the system decreases.

Refer to the site-specific drawings contained within the Appendix to familiarise with the arrangement of SuDS features on the site.

This site consists of several components in the design of the drainage network:

1. Water butts
2. Gullies & Drainage Channels
3. Filter Drains
4. Detention Basin
5. Flow Control

Suds management & Maintenance

<u>An example of operation and maintenance requirements for a proprietary treatment system</u>		
<u>Maintenance schedule</u>	<u>Required action</u>	<u>Typical frequency</u>
<u>Routine maintenance</u>	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- indicate by system inspections or immediately following significant spill
<u>Remedial actions</u>	Replace malfunctioning parts of structures	As required
<u>Monitoring</u>	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

<u>Operation and maintenance requirements for Drainage Channels</u>		
<u>Maintenance schedule</u>	<u>Required action</u>	<u>Typical frequency</u>
<u>Regular maintenance</u>	Remove litter and debris	Monthly (or as required)
	Ensure grates are clear from silt and blockages and freely draining.	Monthly (or if ponding occurs)
	Manage other vegetation and remove nuisance plants in the vicinity	Monthly (as start, then as required)
	Inspect silt accumulation rates within outlet gully and establish appropriate removal frequencies	Monthly (at start then half yearly)
	Inspect silt accumulation rates within channel and establish appropriate removal frequencies	Monthly (at start then half yearly)
<u>Occasional maintenance</u>	Inspect for damage to grating and channels	As required
<u>Remedial actions</u>	Removal of silt from outlet gully	As required
	Jet channel to remove silt	As required
	Replace broken grates or channels	As required

Operation and maintenance requirements for detention basins		
<u>Maintenance schedule</u>	<u>Required action</u>	<u>Typical frequency</u>
<u>Regular maintenance</u>	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 banksides ,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
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets outlets and forebay	Annually (or as required)
	Manage wetland plants in outlet pool-where provided	
<u>Occasional maintenance</u>	Reseed areas of poor vegetation growth	As required
	Prune and trim and trees and remove cuttings	Every 2 years or as required
	Remove sediment from inlets, outlets, forebays and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
<u>Remedial actions</u>	Repair erosion or other damage by reseeding 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

Operation and maintenance requirements for Vortex Flow Control		
<u>Maintenance schedule</u>	<u>Required action</u>	<u>Typical frequency</u>
<u>Regular maintenance</u>	Inspect the performance of the system and advise a drainage engineer of any problems with water levels. The system should only reach full capacity during a severe storm.	First three months
	Inspect the chamber and ensure no debris is present, which may cause blockages. Remove as necessary.	Annually (and following poor performance)
	Ensure emergency by pass door release mechanism is functioning.	Annually
	Inspect sump for silt build up and clear as necessary.	Annually
<u>Occasional maintenance</u>	Following severe storms. Inspect the drainage network and ensure the system is operating as designed. In the majority of cases no overland flooding should occur. Any flooding will be an indication of blockage reducing the performance. Inspect the chambers either side of the tank for silt / blockage and remove as necessary.	As required
<u>Remedial actions</u>	Repair any damage to chamber or cover	As required

Operation and maintenance requirements for Road Gullies		
<u>Maintenance schedule</u>	<u>Required action</u>	<u>Typical frequency</u>
<u>Regular maintenance</u>	Soon after site works have completed, a large amount of build up is normally expected within the drainage system. Lift the cover to the Silt Trap Chamber and assess any silt build up. Any build up should be removed and disposed of.	First three months
	This gully pit should be emptied yearly to prevent build-up of silt blocking the outlet	Annually (and following poor performance)
<u>Occasional maintenance</u>	Inspect the chambers for silt / blockage and remove as necessary.	Annually or as required
<u>Remedial actions</u>	Repair any damage to pot or cover	As required

Appendix A:

Site Drainage Plan – Please refer to drawings 2400-102/103 Drainage Layout and 2400-106 Drainage Area plan

Appendix B:

Maintenance Log

Date	Works Undertaken	Person / Company

