



Powell Tolner & Associates Ltd

BELOW GROUND DRAINAGE MAINTENANCE PLAN

Project: St Albans Close, Gravesend

PTA Project Ref: 10164

Document Ref: 10164-PTA-XX-XX-SP-C-9078

Status: For Information

Revision: P02

Date: March 2026

Client: The Hill Group



Issued by

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Revision	Date	Description	Prepared	Reviewed
P01	07.04.2025	Issued for Planning	DH	AH
P02	03.03.2026	Issued for Information	DH	AH

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1 INTRODUCTION

Project Name: St Albans Close, Gravesend

Project Location: Gravesend, DA12 5SF

PTA Job Number: 10164

This document has been prepared to provide a maintenance methodology to the surface water drainage elements proposed for this development. If any discrepancies from manufactures guidance is encountered, the proprietary system guidance should be adopted.

The drainage networks are comprised of drainage channels, a cellular soakaway attenuation tank together with connecting pipe network, manholes & inspection chambers. Refer to drawing 10164-PTA-ZZ-XX-DR-9100 for the proposed drainage layout.

Any man-entry into the system and silt removal should be by trained personnel with adequate personal protective equipment. Approved safety procedures must be followed in accordance with the Health and Safety Act.

This drainage systems maintenance will be the responsibility of the project developer or by an appointed maintenance company and as such an appropriated maintenance regime should be implemented (as below).

2 Manholes, Inspection Chambers, Pipe Work, Drainage Channels & Gullies

The surface water drainage system should be inspected and maintained periodically, primarily to check for silt sedimentation within the system or ingress of any detritus or debris which would decrease system performance. Table 1 sets out the recommended maintenance actions and frequency.

Maintenance schedule	Required action	Typical frequency
Regular Maintenance	Remove manhole and chamber covers to sewers and flow control on network– inspect to ensure water is flowing freely and that the water flow route is unobstructed. Remove debris and silt as required.	Half Yearly Undertake one of these inspections after leaf fall in autumn
Occasional Maintenance	None required	
Remedial Actions	Re-line or replace pipework if unable to clear blockages by jetting.	As required
Monitoring	Inspect chambers for build-up of silt and debris	Half yearly

Table 1 – Operation & maintenance requirements for pipe network, manholes & inspection chambers, drainage channels & gullies - Based on CIRIA SuDS Manual 2015

3 Cellular Soakaway Tanks

A geocellular soakaway tank has been proposed, this will comprise of modular storage systems made with plastic units. These units can be assembled to achieve the required volume and usually on multiple layers. Generally, the units have 95% voids content and are used to create an efficient below ground structure to temporarily store surface water.

Table 2 sets out the recommended maintenance actions and frequency.

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.
	Remove sediments from pre-treatment structures and/or internal forebays.	Annually, or as required.
Remedial Actions	Repair/rehabilitate inlets, outlets, 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.

**Table 2 – Operation & maintenance requirements for attenuation storage tanks –
Based on CIRIA SuDS Manual 2015**

4 Land Drains

Land drains have been proposed, this will comprise of a trench lined with a suitable geotextile, filled with granular material. A perforated pipe will be placed near the bottom of the trench to convey runoff into the drainage network.

Table 3 sets out the recommended maintenance actions and frequency.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required)
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
	Remove sediment from pre-treatment devices	Six monthly, or as required
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (e.g. NJUG, 2007 or BS 3998:2010)	As required
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockages	As required

**Table 3 – Operation & maintenance requirements for Land drains (filter drains) –
Based on CIRIA SuDS Manual 2015**

5 CONSTRUCTION STAGE

All recently installed drainage is to be checked at least once weekly via walkover survey during the full period of construction. All excess silts and debris to be removed and disposed of appropriately. Temporary covers to be installed in order to avoid any site debris entering the newly installed chambers, linear channel drains & pipework. Excavated materials should be placed in such a manner that any instability will not result in them directly entering the drainage network.

In the temporary condition a minimum cover of 500mm of compacted Type 1 material is required over the cellular soakaway tank, to allow for construction traffic. Construction vehicles must be limited to only tracked excavators with vehicle weight not exceeding 21 tonnes. Vehicles with higher weight loads not permitted. (applicable to Wavin Aquacell Core-R – check requirements with other specified manufacturers)