



Powell Tolner & Associates Ltd

BELOW GROUND DRAINAGE MAINTENANCE PLAN

Project: Bedford Road, Ickleford

PTA Project Ref: 9607

Document Ref: 00061-9006-C-SPEC

Status: For Information

Revision: P02

Date: August 2022

Client: Cala Homes



Issued by

PTA
29 Red Lion Street
Chesham
Buckinghamshire
United Kingdom
HP5 1EJ
Tel: + 44 1494 772721
central@ptaconsult.co.uk

	Name	Position	Signature	Date
Prepared by:	Tom Aldridge	Project Engineer	TA	02.08.2022
Reviewed by:	Alex Herman	Director	AH	02.08.2022
For and on behalf of Powell Tolner & Associates Limited				

Revision	Date	Description	Prepared	Reviewed
P01	02.08.2022	Issued for Information	TA	AH
P02	22.11.2022	O&M Requirements for Existing Ditch Added	TA	AH

©This report is the copyright of PTA.

Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

TABLE OF CONTENTS

1	Introduction.....	1
2	Manholes, Inspection Chambers, Pipe Work, Drainage Channels & Gullies.....	2
3	Vortex Flow Control.....	3
4	Porous Paved Area	4
5	Attenuation Pond	5
6	Foul Water Pump Chamber	6
7	Existing Southern Boundary Ditch.....	7
8	Construction Stage	8

1 Introduction

Project Name: Bedford Road, Ickleford

Project Location: Burford Grange, Bedford Road, Ickleford, SG5 3XG

PTA Job Number: 9607

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 gullies, drainage channels, permeable paving, a vortex flow control, a foul water pump chamber and a pond together with connecting pipe network, manholes & inspection chambers. Refer to drawing 00061-8101-C-SW-DR to 00061-8112-C-SW-DR 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.

The drainage system's 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 Vortex Flow Control

Vortex flow controls typically rely on their geometry to create a vortex within the device to restrict the flow rate to a specified design point.

These systems have a larger cross-sectional area than that of a comparable orifice that is sized for the same design point, reducing the risk of blockage.

The product specified to be installed is a Hydrobrake SHE-0108-5640-1220-5640

Table 2 sets out the recommended maintenance actions and frequency, refer appendix A for manufacture guidance notes.

Maintenance schedule	Required action	Typical frequency
Regular Maintenance	Inspect and identify if it is not operating correctly. If required, take remedial action.	Initially monthly for 3 months, then half yearly.
Remedial Actions	Repair/rehabilitate flow control.	As required.
Monitoring	Inspect chambers for build-up of silt and debris	Half yearly

Table 2 – Operation & maintenance requirements for vortex flow controls

4 Porous Paved Area

The following Table 3 sets out the recommended maintenance actions and frequency for porous paved area. These areas should not be used as storage areas for topsoil, sand, etc without the use of a protective layer. The neglect of these areas is likely to reduce the efficiency of the means of drainage.

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 surfaces from adjacent impermeable areas as this are 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 surface.	As required
	Remedial works to any depressions, rutting and cracked 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	Inspect for evidence of poor operation and/or weed growth -if required, take remedial action	Three-monthly, 48 hours after large storms in the first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually
	Monitor inspection chambers	Annually

Table 3 – Operation & maintenance requirements for Porous Paved Area - Based on CIRIA SuDS Manual 2015

5 Attenuation Pond

The following Table 4 sets out the recommended maintenance actions and frequency for attenuation pond.

Maintenance schedule	Required action	Typical frequency
Regular Maintenance	Litter and debris removal.	Monthly
	Amenity grass 35-50mm for access, paths and visual requirements.	As required
	Grass cut to pond edges, access and overflows 75-100mm and not to exceed 150mm.	Monthly or as required.
	Wetland, meadow or rough grass cut at 50mm and remove to wildlife or compost piles.	Annually, or as required.
	Cut pond vegetation if required and no more than 30% 100mm above pond base and remove to wildlife or compost piles	Annually, or as required.
	Inspect and clear inlets, outlets and control structures	Monthly
	Remove sediment from the base of the structures	Annually
Remedial Actions	Repair or replace inlets, outlets or control structures to design detail.	As required.
Monitoring	inlets, outlets pipes and control structures	Annually
	For sediment at the base of the structures	Monthly or as required.

**Table 4 – Operation & maintenance requirements for attenuation pond
(Based on CIRIA SuDS Manual 2015)**

6 Foul Water Pump Chamber

Table 5 sets out the recommended maintenance actions and frequency for the surface water pump chamber. Manufacturer guidance/recommendations should always be used when available. The specified pump supplier is PDAS.

Maintenance schedule	Required action	Typical frequency
Regular Maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation.	Monthly for 3 months, then annually.
	Change the filter media.	As recommended by manufacturer.
	Remove sediment, oil grease and floatables.	As necessary – indicated by system inspections or immediately following significant spill.
Remedial Actions	Replace malfunctioning parts or structures.	As required.
Monitoring	Inspect for evidence of poor operation.	Biannually
	Inspect filter media and establish appropriate replacement frequencies.	Biannually
	Inspect sediment accumulation rates and establish removal frequencies.	Monthly during first half year of operation, then every six months.

Table 5 – Operation & maintenance requirements for surface water pump chambers

7 Existing Southern Boundary Ditch

The following Table 6 sets out the recommended maintenance actions and frequency for the exiting ditch on along the southern boundary.

Maintenance schedule	Required action	Typical frequency
Regular Maintenance	Remove litter and debris.	Monthly, or as required
	Cut grass – to retain height within specified 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 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
Remedial Actions	Repair erosion or other damage by re-turfing or reseeded.	As required
	Relevel uneven surfaces and reinstate levels .	As required
	Remove and dispose of oils or petrol residues using safe standard practices.	As required

Table 6 – Operation & maintenance requirements for Swales - Based on CIRIA SuDS Manual 2015

8 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.