

DRAINAGE/SUDS MAINTENANCE PLAN AND REGIME

JOB TITLE: Breachwood Green

JOB NO: 1050

CLIENT: Blakeney Estates



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INTRODUCTION

This document is to be issued to the individual home owners upon completion of the development, the Management Company, as well as the groundworker for his information during construction. This document has been prepared in general accord with the recommendations and guidelines provided within Ciria C697. The following relates to the private drainage elements as depicted on drawing 1050-1102.

The maintenance responsibilities will be conveyed to individual property owners under positive obligations within each title with communal areas and shared drainage systems falling under the responsibility of a management company. The drainage system comprises a traditional piped gravity network with a vortex flow restriction constructed on the outfall combined with a detention basin, and cellular storage vessel.

As well as ensuring that the drainage system is clear of debris, regular inspections will help determine whether there are performance issues within the drainage system generally.

The surface and foul water drainage systems within the development have generally been designed in accordance with Part H of the Building Regulations and BS EN 752.

Pipe sizes and gradients are designed to be self-cleansing albeit regular maintenance and inspections are required to ensure the long-term efficiency of the systems.

All works should be undertaken by suitably qualified personnel and waste removed by an appropriately registered company.

The distribution of maintenance responsibilities across the development is depicted on drawing 456-1108

The installed drainage network is depicted on drawing 456-1102 and 456-2200. These drawings are appended to this maintenance strategy document.

DURING CONSTRUCTION

Notes to the Contractor during and after construction

During construction the contractor must ensure that construction materials and general detritus do not enter the drainage system. Accumulations of surface water after rainfall are to be pumped into the public sewer system after obtaining permission from the Local Water Authority.

Silt traps are to be checked weekly during construction or after heavy rainfall. All drainage pipelines are to be subject to a CCTV survey before handover to ensure that there are no defects in the system.

REMOVAL OF DEBRIS AND CLEANING:

Before cleaning, final testing, CCTV inspection and immediately before handover, lift covers to all manholes, inspection chambers and access points. Remove wrappings, mortar droppings and any other debris. Thoroughly flush the entire installation with water to remove silt and check for blockages. Rod pipelines between access points if there is any indication that they may be obstructed.

Safely dispose of washings and any detritus without discharging them into sewers or watercourses.

Securely replace covers after cleaning and testing.

CCTV INSPECTION OF PRIVATE PIPELINES:

Carry out and record internal inspection of private SWS & FWS with CCTV/DVD recording equipment.

Provide all necessary equipment, including suitable covered accommodation for viewing monitor screen, together with personnel experienced in operation of the equipment and interpretation of the results.

Ensure that adequate intensity of illumination within pipe(s) is maintained. Provide for continual position recording, still photographs and stopping movement of the camera at any point requested by CDL.

Provide copy of DVD recording to CDL.

Obtain instructions from CDL on remedying any defects that may be revealed.

CCTV INSPECTION OF ADOPTABLE PIPELINES

Permit the Adopting Authority or its agent to provide equipment and personnel to carry out and record internal CCTV/DVD inspection of adoptable foul and surface water sewers and associated manholes after completion.

Where pipelines are under highways, all construction except for laying of the wearing course must be completed before the inspection.

Obtain instructions from CDL on remedying any defects that may be revealed.

MAINTENANCE POST COMPLETION/HANDOVER

Catchpit Manholes

These are designed with sumps to accumulate silt and debris at specific locations. These must be checked and cleaned out on a monthly basis for the first 3 months and then at six monthly intervals or after significant rainfall events. Any silts are to be removed and disposed of responsibly by a competent contractor.

Catchpit locations are shown on drawing number: 1050-1102

Manholes

All manhole covers should be lifted and visually inspected for silt, debris and signs of blockages within the drainage system. This should be undertaken on an annual basis.

Should any debris or blockages be detected, the manholes should be cleaned along with associated pipe runs which should be high pressure jetted and CCTV surveyed to verify/identify that no further remedial works are required.

Attenuation Detention Basin – Maintenance principles.

The surface water run-off from the site is proposed to be discharged to combined outfall by way of a hydrobrake with limited flow to 0.9l/s and a detention basin system with supplementary cellular storage.

The attenuation medium is designed to attenuate storm flows up to and including the 100 year return plus 40% for climatic change.

The location is shown on drawing number: 1050-1102

The drainage system is designed to minimise the accumulation of silt and debris within the sub-base. Any silt and debris will be collected within the catchpit sump prior to discharging into the porous paving sub-base.

The design life of this system is beyond 50 years.

DETENTION BASIN MAINTENANCE		
Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Litter, Debris, rubbish removal	Monthly
	Grass cutting – for landscaped and access routed	Monthly (During growing season) or as required.
	Grass Cutting 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)

	Tidy all dead growth before start of growing season	Annually or as required
	Remove all sediment from inlets, outlet and forebay	
Occasional Maintenance	Re-seed areas of poor vegetation growth.	Annually or as required
	Prune and trim trees and remove cuttings	As required
	Remove sediment from pre-treatment system (catchpits and headwall sumps) when 50% full.	As required.
Remedial Actions	Repair of erosion or other damage by re-seeding or re-turfing.	As Required
	Repair/rehabilitation of inlets/outlets	As Required
	Re-level uneven surfaces and reinstate design levels	As required
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
	Inspect banksides, structures, pipework etc for evidence physical damage	Monthly
	Inspect intlets and pre-treatment structures for silt accumulation. Establish appropriate silt removal frequencies.	Half yearly

A swale system is proposed which runs along the southern boundary along the western site boundary which will serve 2 primary functions. Firstly to protect the site from any overland pluvial flow, and secondly to provide ecological enhancement.

The table below shows the recommended maintenance procedures and recommended frequency.

Component	Regular Maintenance Activities	Occasional Maintenance	Remedial Maintenance	Monitoring
Filter Strips & Swales	- Regular grass cutting - Litter removal - Inlet & outlet cleaning (if present)	- Periodic removal of excess silt - In the event of reduced permeability (infiltration swales only), a number of techniques can be used to open the surface to encourage infiltration: - Scarifying to remove 'thatch'; - Aeration equipment to encourage water percolation; - Chisel or slitting tines, solid tines (spikes), hollow tines, and vibratory tines; - Remove and replace grass and top soil (last resort). - If silt accumulation is a problem: - Remove (reuse or compost) turf - Remove accumulated silt (subject to toxicity test) and land apply or dispose of to tip - Cultivate remaining topsoil to levels - Reuse or re-turf area to agreed levels.	The following items can often be managed out through good design. Where they are found to be necessary, this is likely due to site-specific characteristics or unforeseen events, and as such their frequency is difficult to predict: - Reinstatement of edgings to hard surfaces - Repair or relocation of damaged barriers - Reinstatement of levels & turf due to erosion by rills or gullies - Lifting turf, disposal of silt accumulation & reinstatement with new re-cycled topsoil & turf - Realignment of rip-rap or other erosion controls - Repair/rehabilitation of inlets, outlets & overflows - System rehabilitation following high silt loads discharged during a single event (see procedure in occasional maintenance).	- Regular inspections should be undertaken, particularly during the vegetation establishment period & after significant storm events to: - identify areas of erosion, scour or gullies - identify locations of silt deposits - determine the health of the vegetation & soil - identify areas of excessive waterlogging or other damage - Filter strips and swales accumulate silt naturally due to their primary position in the SUDS 'management train' sequence. The accumulation of silt occurs slowly, unless there is an unforeseen incident or badly managed construction site - In the event that swales develop a 'wet' swale character, then manage as wetland vegetation.