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OLDLANDS FARM - PHASE 1A (LIDL PLOT) DRAINAGE AND SUDS OPERATION & MAINTENANCE STRATEGY

DRAINAGE AND SUDS OPERATION & MAINTENANCE STRATEGY

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FOUL AND SURFACE WATER DRAINAGE PLAN

1. INTRODUCTION

1.1 General Introduction

- 1.1.1 This document considers the surface water and foul water drainage systems for the Oldlands Phase 1A (Lidl Plot) development. A layout plan of the drainage systems is shown on Ramboll drawing 1620003993-RAM-0500-01A-DR-CR-20001 which is included as Appendix 1 to this report.

This document outlines each aspect of the surface water and foul water drainage systems, a brief description, issues to be aware of and any required maintenance. This document should form part of the Operation and Maintenance Manual for the scheme. The manual is to also include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life.

- 1.1.2 The balancing pond and SUDS system will be paid for through a service charge, administered by the landlord and this will include a 'sinking fund' allowance for large expenditure items.

1.2 System Synopsis

- 1.2.1 Surface water run-off from the new building and paved areas of the site will discharge to the Oldlands Farm ditch to the northeast of the site via a new headwall outfall. A balancing pond is utilised to attenuate the site run-off prior to discharge and a hydrobrake is provided upstream of the final outfall location to limit the discharge to greenfield rates (3.7 l/sec.). The majority of the site drainage is through traditional piped drainage system and proprietary units.
- 1.2.2 Foul drainage from the new buildings will be collected in a simple gravity drainage system and connected into the existing foul drainage network at manhole ref. EX FMH13, as shown on drawing 1620003993-RAM-0500-01A-DR-CR-20001. The existing private drainage network following this leads to the foul pumping station situated to the southwest of the site.

1.3 Access

- 1.3.1 The site estate's management team will coordinate and ensure maintenance requirements are met and allow suitable access for all required maintenance outlined in this document.

1.4 Sub-catchments & Exceedance Routing

- 1.4.1 The entire catchment drains via standard carrier pipe drainage network and the balancing pond. The site has been designed to contain all flow up to and including the 1 in 100 year storm + 40% for climate change. Overland flow direction is generally towards the kerb lines / drainage points within the car parks and towards the balancing pond. As such the 100 year return period plus climate change will not prohibit access and egress.



2. ROUTINE INSPECTION AND MAINTENANCE SCHEDULE

2.1 Surface Water Drainage Components

Item No.	Item	Description	Maintenance Issues	Details of Inspection/Maintenance Activity/Plant Requirements
1.1	Gullies	Surface water is drained from impermeable areas through grated gullies located at low points and conveyed to discharge points.	Gullies can become blocked by excessive build up in silt and debris. Grating openings can become obstructed.	Inspection and maintenance at 6 month intervals. Clearing of gullies using a gully sucker to be determined upon inspection.
1.2	Catchpit/Manhole Chambers	Manholes and catchpit chambers provide rodding and jetting access to pipework.	Manholes/catchpits can become blocked by excessive build up in silt and debris.	Manhole chambers should be inspected annually and catchpit chambers should be inspected every spring and autumn after leaf fall and after heavy storm events. Silt and debris should be removed using a gully sucker if required.
1.3	Carrier Drains	Carrier drains convey surface water across junctions.	Pipes can become blocked with silt/debris.	Inspection and maintenance at 12 month intervals. Water jetting to be undertaken when required. CCTV equipment to inspect pipe runs may be needed where necessary.
1.4	Channel/Slot Drains	Surface water is drained from impermeable areas through narrow linear openings on the surface and conveyed to discharge points along a channel section.	Slot openings and channels can become congested with silt/debris.	Inspection and maintenance at 6 month intervals is required to ensure slot openings and channels are clear. Should a blockage occur, rodding or jetting from an access point will be required.
1.5	Flow control chambers and devices (i.e. hydrobrake and orifice manholes)	Manholes/catchpits containing flow control device (orifice/hydrobrake)	Manholes/catchpits can become blocked by excessive build up in silt and debris. This could cause the flow control to function incorrectly	<u>Regular Maintenance</u> Inspect and identify any areas that are not operating correctly. If required take remedial action. Monthly for 3 months, then every 6 months.

Item No.	Item	Description	Maintenance Issues	Details of Inspection/Maintenance Activity/Plant Requirements
				Operation testing and jetting of debris to bypass door/orifice opening, monthly check required. Debris removal from catchment surface that could potentially cause blockages, monthly check required. Remove sediment from control chambers and gullies as per items 1.1 and 1.2. <u>Remedial actions</u> Repair/rehabilitation of inlets, outlets, overflows and vents as required. <u>Monitoring</u> Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed. Annually and after large storm events.

2.2 Surface Water Attenuation

Item No.	Item	Maintenance Schedule	Required Actions	Typical Frequency
1.1	Balancing Pond/ Detention Basin	Regular maintenance	Remove litter and debris	Monthly
			Cut grass – for spillways and access routes	Monthly (during growing season), or as required
			Cut grass – meadows 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 water body for signs of poor water quality	Monthly (May- October)
			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)

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		Occasional Maintenance	Manage wetland plants in outlet pool – where provided	Annually (as set out in chapter 23 of CIRIA 753)
			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 (likely to be minimal requirements where effective upstream source control is provided)
		Remedial actions	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

*Also refer to CIRIA 753 SUDS Manual 2015 Table 22.1 and Table 23.1 for good practice operation and maintenance procedures

2.3 Foul Water Drainage Components

Item No.	Item	Description	Maintenance Issues	Details of Inspection/ Maintenance Activity/Plant Requirements
1.1	Foul Carrier Drains	Carrier drains convey foul water across junctions.	Pipes can become blocked particularly on bends	Inspection and maintenance at 12 month intervals. Water jetting or rodding to be undertaken when required.
1.2	Foul Manhole Chambers	Manholes chambers provide rodding and jetting access to pipework.	Unlikely to experience issues, provide access to maintain pipework.	Manhole chambers should be inspected annually, debris should be removed if required.
1.3	Foul sewer stacks/sewer vent pipes	Provide a connection between appliances within the building that emit foul waste and the foul drainage network.	Pipes can become blocked particularly on bends	Inspection and maintenance at 12 month intervals. Water jetting or rodding to be undertaken when required.

APPENDIX 1

FOUL AND SURFACE WATER DRAINAGE PLAN

