

**TWEDDELL
& SLATER**

CONSULTING
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**PROPOSED NEW HOUSING DEVELOPMENT
MORSBY PARKS - CUMBRIA**

**OPERATION AND MAINTENANCE PLAN
SURFACE WATER DRAINAGE SYSTEM**

July 1st, 2021

DIRECTORS

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1. INTRODUCTION

It is proposed that the surface water system on site will be unadopted by United Utilities therefore will be under the maintenance and management of the developer. This will include the actual detention pond which will be under the maintenance and management of the developer.

Volume Control

The detention basin has been designed such that it will not be surcharged in events up to 100 years recurrence. The discharge rate is to be restricted by a Hydro brake controlling the discharge rate to 8.1 l/s.

Structural Integrity

The proposed surface water drainage systems has been designed to Building Regulations to ensure the structural integrity under the anticipated loading conditions over the design life. This includes the cover to pipes that has been designed in accordance with the manufacture's requirements and specification.

2.0 GENERAL DRAINAGE SYSTEM

MAINTENANCE SCHEDULE	REQUIRED ACTION	RECOMMENDED FREQUENCY
Ongoing Monitoring	Inspect/check all upstream drainage inlets, outlets, vents and gullies to ensure that they are in good condition and operating as designed.	Annually and after large storm events
Remedial Actions	Repair/rehabilitation of inlets, outlets, overflows and vents. Removal of oil and grease. Replacement of malfunctioning parts.	As required

3.0 DETENTION BASIN

MAINTENANCE SCHEDULE	REQUIRED ACTION	RECOMMENDED FREQUENCY
Ongoing Monitoring /Maintenance Basin	Inspect and identify any areas upstream and downstream of the basin that are not operating correctly (i.e. road gullies, interceptor, filter drains). If required, take remedial action.	Monthly for first three months, then six monthly thereafter.
	Remove debris from basin (may cause risks to performance).	Monthly for first three months, then six monthly thereafter (and after large storm events).
	Visual inspection of basin, De-silt as required. A maintenance track will be installed right around the pond. Excavator to be used to remove sediment with care not to damage the base of the pond. Access via maintenance strip and 1 in 4 side slopes.	Monthly for first three months, then six monthly thereafter (and after large storm events).
	Remove sediment from interceptor, chambers, road gullies and jet associated pipework.	Annually, or as required.

4.0 HYDRO BRAKE CHAMBER

MAINTENANCE SCHEDULE	REQUIRED ACTION	RECOMMENDED FREQUENCY
Ongoing Monitoring/Maintenance – Hydro Brake Chamber	The hydro brake control is to be applied by Hydro International and their recommendations for maintenance are appended to this report. Ongoing monitoring to inspect chamber for blockages.	Inspect monthly for 3 months and thereafter at 6 monthly intervals.
Ongoing Monitoring General Drainage System	Inspect/check all upstream drainage inlets, outlets, vents and gullies to ensure that they are in good condition and operating as designed.	Annually and after large storm events
Remedial Actions	Repair/rehabilitation of inlets, outlets, overflows and vents. Removal of oil and grease. Replacement of malfunctioning parts.	As required

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