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Operation & Maintenance Plan for Sustainable Drainage Systems

New Development - Arlecdon Parks Road, Arlecdon

Stuart Richardson

Ref: K40828.OM/002

Version	Date	Prepared By	Checked By	Approved By
Original	20 December 2023	E. Henderson	C. Abram	O. Sugden

INDEMNITIES

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1 INTRODUCTION

1.1 BACKGROUND

R. G. Parkins & Partners Ltd (RGP) has been appointed by Stuart Richardson to provide an Operation and Maintenance plan for the sustainable drainage systems (SuDS) in support of their proposals at Arlecdon Parks Road, Arlecdon, West Cumbria.

In reviewing the enclosed information, reference should be made to the latest revisions of the following RGP drawings:

- K40828-01 Proposed Site Drainage Plan
- K40828-02 Typical Drainage Construction Details 1 of 2
- K40828-03 Typical Drainage Construction Details 2 of 2

1.2 SUDS COMPONENTS

The housing development utilises a SuDS detention basin as part of the overall surface water drainage strategy for the site. The SuDS basin has been designed to provide sufficient storage for the critical duration, 1 in 100-year design storm event with a 50% allowance for the future effects of climate change and a 10% allowance for urban creep.

The basin and associated upstream/downstream below ground pipework will remain private and will be maintained by a Management Company.

2 OPERATION AND MAINTENANCE REQUIREMENTS

As with all traditional drainage systems, SuDS need to be inspected and maintained regularly to ensure that they operate correctly and efficiently. If SuDS are not properly maintained, then there is a risk that the components become overloaded during periods of prolonged heavy rainfall potentially resulting in localised flooding within the development. Recommendations for the maintenance of the SuDS components are detailed in the following section.

As part of this process it is recommended that inspection and maintenance records are retained by the Management Company to track the progressive performance of the SuDS over time. The inspection records should include the following:

- Sediment condition and depth
- Water observations (sheen, smell, etc.)
- Unscheduled maintenance needs
- Components that do not meet performance criteria and require immediate maintenance
- Common problem areas, solutions and general observations
- Aesthetic conditions

For Health and Safety reasons as well as practicality, SuDS systems should be maintained during periods of dry weather wherever possible. Adhering to the recommended maintenance regimes outlined below will minimise the risk of maintenance activities being required when a fault becomes apparent, usually during a rainfall event.

2.1 SUDS DETENTION BASIN & FLOW CONTROL CHAMBER

Detention basins are depressions used to store stormwater runoff, allowing pollutants to settle and filter out as the water gradually drains via an outfall pipe. Regular inspection and maintenance are required to ensure their effective long-term operation.

Maintenance of the detention basin will be relatively straightforward for a landscape contractor, and there should only be a small amount of extra work required for a SuDS detention basin over and above what is necessary for standard public open space.

The maintenance activities are outlined in Table 2.1 below and refer to the recommendations in The SuDS Manual (CIRIA C753), Chapter 22, Table 22.1 [1].

Generally, the Flow Control device will require little, if any maintenance and has a design life in exceedance of the upstream drainage systems. In the unlikely event that the device blocks and the flow control chamber floods, the device is fitted with a removable weir wall and high-level overflow allowing flows to pass forward in extreme circumstances and for the chamber to be drained down to access for maintenance if required.

The detention basin and flow control chamber shall be maintained by a Management Company.

Table 2.1 Operation and maintenance requirements for the SuDS detention basin

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season) or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and removal of nuisance plants	Monthly (at start and then as required)
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect banksides, structures and pipework for any evidence of physical damage	Monthly
	Inspect inlets and basin bed for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, forebays and outlet	Annually (or as required)
	Manage wetland plants in outlet pool	Annually (or as required)
Occasional maintenance	Re-seed areas of poor vegetation growth	As required
	Remove sediment from inlets, outlets and main basin when required	As required, estimated every 5 years
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Repair/rehabilitation of inlets and outlets	As required
	Re-level uneven surfaces and reinstate to design levels	As required
	Realignment of stone rip-rap or gabion mattresses	As required

3 REFERENCES

[1] CIRIA, *The SuDS Manual*, Report C753, 2015.