

Operation & Maintenance Plan for Sustainable Drainage Systems

Proposed Housing Development, Land at Scalegill Road, Moor
Row

Washington Homes Ltd

Ref: K40461.OM/002

Version	Date	Prepared By	Checked By	Approved By
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1 INTRODUCTION

1.1 BACKGROUND

R. G. Parkins & Partners Ltd (RGP) has been appointed by Washington Homes Ltd to provide an Operation and Maintenance plan for surface water drainage systems for a proposed housing development at Scalegill Road, Moor Row.

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

- K40461-01 & 02 Highways and External Levels plan
- K40461-03 Highways Longitudinal Sections
- K40461-04 & 05 External Works Plan
- K40461-20 & 21 Proposed Drainage Plan
- K40461-22 Basin and Headwall Details
- K40461-23 Typical Drainage Details

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. The basin and associated upstream / downstream below ground pipework will be offered for adoptions under a S104 agreement.

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 is 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 and refer to the recommendations in The SuDS Manual (CIRIA C753), Chapter 22, Table 22.1 ^[1].

The detention basin and flow control chamber shall be offered for adoption under a S104 Agreement and will therefore be maintained by UU. In addition to the recommended maintenance requirements, Hydro International Ltd also provides guidance for the operation and maintenance of their flow control devices, a copy of which is included in Appendix A. Generally, the Hydrobrake 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 pivoting by-pass door which can be accessed and opened from ground level via a pull handle and operating steel rope. This will allow the chamber to be drained down to provide access for maintenance.

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 remove 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.

APPENDIX A: MAINTENANCE REQUIREMENTS FOR HYDRO-
BRAKE

HYDRO-BRAKE® FLOW CONTROL MAINTENANCE AND SAFETY DATA SHEET

MAINTENANCE

Normally, little maintenance is required as there are no moving parts within the Hydro-Brake® Flow Control. Experience has shown that if blockages occur they do so at the intake, and the cause on such occasions has been due to a lack of attention to engineering detail such as approach velocities being too low, inadequate benching, or the use of units below the minimum recommended size. Hydro-Brake® Flow Controls are fitted with a pivoting bypass door, which allows the manhole chamber to be drained down should blockages occur. The smaller type conical units, below the minimum recommended size, are also available with rodding facilities or vortex suppressor pipes as optional extras.

Following installation of the Hydro-Brake® Flow Control it is vitally important that any extraneous material ie. building materials are removed from the unit and the chamber. After the system is made live, and assuming that the chamber design is satisfactory, it is recommended that each unit be inspected monthly for three months and thereafter at six monthly intervals with hose down if required. If problems are experienced please do not hesitate to contact the company so that an investigation may be made.

Hydro-Brake® Flow Controls are typically manufactured from grade 304 Stainless Steel which has an estimated life span in excess of the design life of drainage systems.

COSHH

Hydro-Brake® Flow Controls are manufactured from Stainless Steel, which is not regarded as hazardous to health and exhibits no chemical hazard when used under normal circumstances for the stated applications.

MANUAL HANDLING

The handling of Hydro-Brake® Flow Controls should be in accordance with current legislation and regulations:

- The Health and Safety at Work etc. Act 1974.
- The Management of Health and Safety at Work Regulations 1999 (amended 2003).
- The Manual Handling Operations Regulations 1992 (amended 2002).

All published and printed by the Health and Safety Executive.

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