

**DRAINAGE MAINTENANCE PLAN**

**FOR**

**PREMIER INN EXTENSION**

**WELWYN GARDEN CITY**

**AL8 6DQ**

**PREPARED FOR:**

Whitbread Group PLC

DS/P18-143/JDC  
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A Member Firm of the  
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DSP18-143/JDC	-	Whitbread Group PLC	03 May 2019	JDC

## 1. INTRODUCTION

- 1.1 On occupation of the development, this maintenance and management plan should be incorporated into the sites *“Operational and Maintenance Manual”* with the as-built drainage system operated and maintained in accordance with the requirement set out in the following section of this report to prevent a reduction in the performance of the drainage system over the lifetime of the development.
- 1.2 The Site Manager should ensure that the Maintenance Contractor tasked with carrying out any maintenance works provides a risk assessment and method statement that adopts best practice health and safety policies for maintenance personnel throughout the duration of any maintenance works. Measures may include:
- Ensure the use of safe system of work and procedures are followed.
  - Certificated operatives only to be used for all confined space entry.
  - Ensure appropriate PPE is worn at all times including the use of safety goggles, ear defenders and other relevant equipment when using high pressure jetting.
  - Do not work in weather conditions where flooding or surging is likely.
  - Erect barriers where appropriate and provide adequate lighting.
  - No operations to be carried out by operatives working alone.
  - Time maintenance to not conflict with other on-site activities.
  - Method statement to be prepared and approved prior to entry into confined space.

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## 2. MANAGEMENT & MAINTENANCE PLAN

2.1 On occupation of the development, it is recommended that each element of the as-built drainage system is maintained in accordance with the regime set out in the tables below.

*Table 1: Below Ground Drainage System - Operation and Maintenance Requirements*

Maintenance schedule	Required action	Frequency
Regular maintenance	Remove all litter and debris from external hard landscaped areas and adjacent landscaping, which may pose a risk to the performance of the system.	Monthly.
	Remove build-up of sediment / silt in catch-pits and dispose of oils / petrol residues using safe standard practices.	As required.
	Stabilise and mow adjacent landscaped areas and remove weeds.	
Remedial actions	Repair or rehabilitate inlet and outlets to ensure they are in good condition and operating as designed.	As required.
	Remediate any landscaping, which has raised to within 50mm of the level of adjacent hard landscaping.	
Monitoring	Check of all inlets / outlets for blockages or evidence of physical damage with any necessary remedial action or clearance carried out if required.	On a monthly basis for the first 3 months of operation, thereafter every 6 months & following severe rainfall events.
	Inspect all surfaces for ponding, or silt accumulation. Record areas where water is ponding for more than 48 hours and carry out any remedial work deemed necessary.	After severe storms.

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Table 2: Geocellular Storage Tanks - Operation and Maintenance Requirements

Maintenance schedule	Required action	Frequency
The following requirements should be read in conjunction with the Manufacturers Operation & Maintenance Manual included in <i>Appendix A</i> .		
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for first 3 months of operation, then every 6 months.
	Debris removal from catchment surface (where may cause risks to performance).	Monthly.
	Where rainfall infiltrates into blocks from above, check surface of filter for blockage by silt, algae or other matter. Remove and replace surface infiltration medium as necessary.	Monthly / after severe storms.
	Remove sediment from pre-treatment structures.	Annually, or as required.
Remedial actions	Repair/rehabilitation of inlets, outlet, overflows and vents.	As required.
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually and after large storms.

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Table 3: Flow Control Chamber - Operation and Maintenance Requirements

Maintenance schedule	Required action	Frequency
The following requirements should be read in conjunction with the Manufacturers Operation & Maintenance Manual included in <i>Appendix B</i> .		
Regular maintenance	Cleaning off the flow control device of any debris/ sediment	As required
Remedial Actions	Flow control device repairs.	As required
	Repair of erosion damage, or damage to chamber.	
Monitoring	Inspection of the chamber for debris and sediment build up.	Monthly for first 3 months, thereafter, every 6 months and following severe storm events.

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**APPENDIX A  
GEOCELLULAR STORAGE TANK**

## GEOLIGHT maintenance

Once received stormwater reaches the storage reservoir through one or more distribution pipes laid out on the side faces of the Geolight blocks.

These distribution pipes are covered in a trench filled with draining material requiring little compaction, like washed rolled pebbles, free from fines, and 15/25 grading.

A 10 mm mesh geogrid or GEOTextile, laid between the distribution pipe and Geolight, prevents the horizontal Geolight blocks being clogged by the draining materials.

The permeability of the supply and distribution pipe located on the periphery of the reservoir is designed to prevent any clogging of the system upstream of the stormwater drain.

This sizing is checked for each supply. It is obtained thanks to design programmes by SDS limited following testing of a size 1 reservoir in which all hydraulic configurations were studied.

These tests also made it possible to check the very good vertical and horizontal permeabilities of Geolight blocks and this general layout is usually accepted.

The choice of one of these layouts or a combination of them is according to:

- the place reserved for the reservoir
- available slopes
- hydraulic parameters (discharge)
- position of stormwater input and output systems.

The ends of feeder drains (distribution pipes) are connected to inspection chambers(manholes), acting as settling tanks and making inspection and maintenance of the whole distribution pipe possible. *The silts and sediments contained within the surface water network will remain within the distribution pipe which can be accessed for ongoing maintenance in line with the contract requirements. This means that this sediment cannot enter the crate structure of the attenuation tanks which will not require any maintenance.*

For small discharges, stormwater does not penetrate Geolight blocks, but circulates either in an appropriate bypass, or in the distribution pipe drain. This is for draining the first water which will be handled downstream if required.

When the reservoir is drained, water is drained through a distribution pipe possibly the same as the one located at the input which operates in the opposite direction. Drainage discharge is controlled by the downstream system piping.

A ventilation system consisting of a drainage geocomposite is fresh air vented in the inspection pits. It is laid out in the upper part of the distribution pipes and the general space occupied by the reservoir.

We generally recommend that the stormwater tank inspection chambers are checked periodically in conjunction with general maintenance of the underground pipe network.



**APPENDIX B**  
**FLOW CONTROL CHAMBER**

# **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 by-pass 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 supplied with roding facilities or vortex suppressor pipes as standard.

Following installation of the Hydro-Brake® Flow Control it is vitally important that any extraneous material i.e. 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 Act 1972.
- The Management of Health and Safety at Work Regulations 1992.
- The Manual Handling Operations Regulations 1992.

All published and printed by the Health and Safety Executive.