

W01371 Drainage Statement – Bradley Hotel, East Preston

Surface Water

Infiltration tests have been conducted on site by Combined Services (DW) in October 2016. The test conducted indicated an infiltration rate of 8.74×10^{-5} m/s.

It is proposed sustainable drainage solutions will be utilised on site with surface water from the buildings discharging to cellular crate soakaways located in the rear gardens of the dwellings, a minimum of 5m from the buildings. Surface water from the driveways and access road will discharge to 3 no. soakaways located below the access road. The use of 3 no. soakaways means surface water infiltration will be spread over a broad area, thus matching the natural situation.

The sustainable drainage solutions have been designed using current Microdrainage software. The design is based on a 1 in 100 year storm event plus 30% allowance for climate change. The design has been checked for FSR rainfall.

Drawing W01371-200 indicates the required sizes for the soakaways and provision of trapped gullies and silt traps.

Maintenance

This section sets out the inspection and maintenance requirements for long term management of the development's surface water drainage system. This work is to be undertaken by a private maintenance company.

All those responsible for maintenance should take appropriate health, safety and welfare precautions for all activities including lone working, if relevant, and risk assessments should always be undertaken. The site's infrastructure Health and Safety File should be consulted before carrying out any works either inside or outside of the development's boundary and information regarding the location of existing utilities passed on to operatives.

The requirements of the Health and Safety at Work Act 1974 and The Construction (Design and Management) Regulations 2015 should be adhered to and any residual risks identified in the Health and Safety File should be managed and information passed on to maintenance operatives through task specific risk assessments.

There are three types of maintenance activities associated with surface water drainage systems.

The SuDS Manual, CIRIA C753, defines these as:

- Regular Maintenance – *'basic tasks undertaken on a frequent and predictable schedule' including vegetation management, litter and debris removal, and inspections.'*
- Occasional Maintenance – *'tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the routine tasks (sediment removal is an example).'*
- Remedial Maintenance – *'intermittent tasks that may be required to rectify faults associated with the system, although the likelihood of faults can be minimised by good design. Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events, and as such timings are difficult to predict.'*

Operation and Maintenance Activity	SuDs Component	
	Piped Network / Inspection Chambers	Cellular / Modular Storage
<i>Regular Maintenance</i>		
Inspection	■	■
Litter and debris removal	■	□
Grass cutting		□
Weed and invasive plant control		
<i>Occasional Maintenance</i>		
Sediment management	■	■
Vacuum sweeping and brushing		
<i>Remedial Maintenance</i>		
Structure rehabilitation/repair	□	□
Infiltration surface reconditioning		
■ Will be required □ May be required		
Extract from The SuDs Manual Table 32.1 : Typical key SuDs components operation and maintenance activities		

Piped Network/Chambers Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any features that are not operating correctly. If required take remedial action	Monthly for three months, then six monthly
	Debris removal from catchment surface / gratings (where may cause risks to performance)	Monthly (and after large storms)
	Remove sediment from trapped sumps, manholes and catchpits.	Annually or as required
Remedial Maintenance	Repair / rehabilitation of gratings, inlets and outlets	As required
Monitoring	Inspect / check all gratings, trapped sumps, manholes and catchpits to ensure that they are in good condition and operating as designed	Annually and after large storm events
Structure Rehabilitation / Repair	Regular Maintenance and Monitoring to identify if repair and / or replacement of features or pipework is required.	As required

Cellular Storage Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any features that are not operating correctly. If required take remedial action	Monthly for three months, then annually.
	Remove debris from catchment surface (where may cause risks to performance)	Monthly
	Remove debris from catchment surface (where may cause risks to performance)	Annually or as required
Remedial Maintenance	Repair / rehabilitate inlets, outlets, 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 storm events
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required
Structure Rehabilitation / Repair	Regular Maintenance and Monitoring to identify if repair and / or replacement of storage units is required.	As required

The SuDS Manual Table 21.3: Operation and maintenance requirements for attenuation storage tanks

Ian Llewellyn MEng CEng MICE MStructE
W01371
May 2017