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| Goldney Avenue Warmley |
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| David Cahill |
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| DRAINAGE MAINTENANCE PLAN |

The proposed SUDS drainage sytems including the soakaways, permeable paviors and other parts of the drainage elements as listed below and shown on the drainage plan will require regular maintenance to ensure continuing operation to design performance standards as per CIRIA report C753.

The useful life and effective storage capacity of an attenuation tank component is related to the frequency of maintenance and the risk of sediment being introduced into the system.

Maintenance responsibility will be placed with an appropriate organisation with will be vetoed by Building Control and maintenance schedules will be developed as shown below.

The table below provides guidance on the type of operational and maintenance requirements that may be appropriate for attenuation tanks (extract of CIRIA report C753):

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| **Maintenance schedule** | **Required action** | **Typical frequency** |
| Regular maintenance | Inspect the risers and identify areas that are not operating correctly. If required, take remedial action | Monthly for the first three months and then every other month for the first year. Review the maintenance schedule after one year to suit |
| Remove debris from the catchment surface (where it may cause risks to performance) | Monthly |
| For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae, or other matter; remove and replace surface infiltration medium as necessary | Annually |
| Remove sediment from pre-treatment structures and/or internal forebays | Annually, or as required |
| Remedial actions | Repair/rehabilitate 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 |
| Survey inside of tank for sediment build-up and remove if necessary | Every 5 years or as required |

 maintenance requirements for soakaways

Maintenance will usually be carried out manually, although a suction tanker can be used for sediment/ debris removal for large systems. If maintenance is not undertaken for long periods, deposits can become hard-packed and require considerable effort to remove.

Replacement of the attenuation units will be necessary if the system becomes blocked with silt.

Roads and/or parking areas draining to attenuation components should be regularly swept to prevent silt being washed off the surface. This will minimise the need for maintenance.

**Soakaways, trenches and blankets:**

The table below provides guidance on the type of operational and maintenance requirements that may be appropriate for a soakaways:

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| **Maintenance schedule** | **Required action** | **Typical frequency** |
| Regular maintenance | Inspect for sediment and debris in pre-treatmentcomponents and floor of inspection tube or chamber and inside of concrete manhole rings | Annually |
| Cleaning of gutters and any filters on downpipes | Annually (or as required based on inspections) |
| Trimming any roots that may be causing blockages | Annually (or as required) |
| Occasional maintenance | Remove sediment and debris from pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings | As required, based on inspections |
| Remedial actions | Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs | As required |
| Replacement of clogged geotextile (will require reconstruction of soakaway | As required |
| Monitoring | Inspect silt traps and note rate of sediment accumulation | Monthly in the first year and then annually |
| Check soakaway to ensure emptying is occurring | Annually |

Maintenance will usually be carried out manually, although a suction tanker can be used for sediment debris removal for large systems. If maintenance is not undertaken for long periods, deposits can become hard-packed and require considerable effort to remove.

Replacement of the aggregate or geocellular units will be necessary if the system becomes blocked with silt. Effective monitoring will give information on changes in infiltration rate and provide a warning of potential failure in the long term.

Roads and/or parking areas draining to infiltration components should be regularly swept to prevent silt being washed off the surface. This will minimise the need for high maintenance.

**Permeable Paving**

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| **Maintenance schedule** | **Required Action** | **Typical Frequency** |
| Regular maintenance | Litter removal. Also removal of debris from site | Monthly |
| Inspect for evidence of poor operation and/or weed growth. If required, take remedial action.  | Three times per year, preferably 48 hrs after large storms |
| Stabilise and mow adjacent soft landscaping areas. | Three times per year |
| Inspect silt accumulation rates and establish appropriate brushing frequencies | Annually |
| Surface brushing to remove silt accretion and for aesthetics | As required |
| Removal of weeds from gaps in surfacing. Cutting of grass and removal of other ground level overhanging vegetation | Three times per year |
| Check condition of connected control structures and outlets, rodding eyes, and flow control (if present) for debris and silt. | Monthly |
| Occasional maintenance | Brushing and suction sweeping or alternatively jet washing and suction sweeping to remove silt and debris. This is particularly important during autumn with falling leaves. Replacing of lost grit/ material may be required | As required – possibly annually |
| Remedial Maintenance | Resetting of uneven blocks by lifting block area, removing bedding materials and relaying to match original design. | As required |

**Inspection chambers / Silt trap**

The table below provides guidance on the type of operational and maintenance requirements that may be appropriate for an inspection chamber/ silt trap:

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| Maintenance Schedule | Required Action | Typical Frequency |
| Regular Maintenance | Remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. | Annually (in Autumn after leaf fall)  |
| Remedial Actions | Repair physical damage if necessary | As required |

There will not be an management company associated on this development so all plot owners will be provide with this maintenance plan and made aware of their responsibilities