

## SuDS Maintenance

A programme of Regular and occasional maintenance for each SuDS facility to be adhered to is set out below:

**TABLE 11.6** Operation and maintenance requirements for RWH systems

| Maintenance schedule   | Required action                                                                                                            | Typical frequency                         |
|------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Regular maintenance    | Inspection of the tank for debris and sediment build-up, inlets/outlets/withdrawal devices, overflow areas, pumps, filters | Annually (and following poor performance) |
|                        | Cleaning of tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris            | Annually (and following poor performance) |
| Occasional maintenance | Cleaning and/or replacement of any filters                                                                                 | Three monthly (or as required)            |
| Remedial actions       | Repair of overflow erosion damage or damage to tank                                                                        | As required                               |
|                        | Pump repairs                                                                                                               | As required                               |

**TABLE 13.2** Operation and maintenance requirements for infiltration basins

| Maintenance schedule   | Required action                                                                                                | Typical frequency                                      |
|------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Regular maintenance    | Remove litter, debris and trash                                                                                | Monthly                                                |
|                        | Cut grass – for landscaped areas 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 nuisance plants                                                             | Monthly at start, then as required                     |
| Occasional maintenance | Reseed areas of poor vegetation growth                                                                         | Annually, or as required                               |
|                        | Prune and trim trees and remove cuttings                                                                       | As required                                            |
|                        | Remove sediment from pre-treatment system when 50% full                                                        | As required                                            |
| Remedial actions       | Repair erosion or other damage by reseeding or re-turfing                                                      | As required                                            |
|                        | Realign the rip-rap                                                                                            | As required                                            |
|                        | Repair or rehabilitate inlets, outlets and overflows                                                           | As required                                            |
|                        | Rehabilitate infiltration surface using scarifying and spiking techniques if performance deteriorates          | As required                                            |
|                        | Relevel uneven surfaces and reinstate design levels                                                            | As required                                            |
| Monitoring             | Inspect inlets, outlets and overflows for blockages, and clear if required                                     | Monthly                                                |
|                        | Inspect banksides, structures, pipework etc for evidence of physical damage                                    | Monthly                                                |
|                        | Inspect inlets and pre-treatment systems for silt accumulation; establish appropriate silt removal frequencies | Half yearly                                            |
|                        | Inspect infiltration surfaces for compaction and ponding                                                       | Monthly                                                |

**TABLE 14.1** Proprietary systems classified on basis of main treatment process

| Proprietary systems                                                         | Description                                                                                                                                                                                                                                                                                                                    | Treatment processes                                                                          | Leisenring (2012) classification                                                                                                     |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Proprietary bioretention systems in concrete (or other material) structures | Filtration devices that use soils (or other filter media) and which support plants or bacterial biofilms                                                                                                                                                                                                                       | Filtration, adsorption, bioremediation                                                       | Biological filtration                                                                                                                |
| Treatment channels                                                          | Channels that are designed to collect and treat water rather than convey it along the channel; can include proprietary filter media within the channel; can include weir and baffles at intervals to trap oils and floatables                                                                                                  | Physical removal of sediment, oils and floatables; wetting and drying to promote degradation | Does not include test results for this type of system (note that there are examples in Europe that are certified by DiBT in Germany) |
| Hydrodynamic or vortex separators                                           | Structures that use gravity and centrifugal force to separate out and collect medium-sized (63 to 250 $\mu\text{m}$ ) sediments and other litter or debris; smaller particles may be able to be removed by varying the flow rate into the system                                                                               | Physical removal of sediment by gravity                                                      | Manufactured device – physical                                                                                                       |
| Proprietary filtration systems                                              | Devices that filter water by passing it through various filter media; they are constructed below ground in chambers and do not support vegetation                                                                                                                                                                              | Filtration and adsorption                                                                    | Filtration                                                                                                                           |
| Oil separators                                                              | Structures designed to separate gross amounts of oil and large size (> 250 $\mu\text{m}$ ) suspended solids from water; they do this by allowing light non-aqueous phase liquids (LNAPL) to float and large sediment particles to sink; many also have baffles, coalescers and oil skimmers to speed-up or enhance performance | Physical removal of floatables, physical removal of sediment by gravity                      | Oil/grit separators and baffle boxes                                                                                                 |
| Multi-process                                                               | Systems that include multiple treatment processes in series                                                                                                                                                                                                                                                                    | Various                                                                                      | Multi-process                                                                                                                        |

**TABLE 23.1** Operation and maintenance requirements for ponds and wetlands

| Maintenance schedule   | Required action                                                                                                                                                                                                                       | Typical frequency                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Regular maintenance    | Remove litter and debris                                                                                                                                                                                                              | Monthly (or as required)                                                              |
|                        | Cut the grass – public areas                                                                                                                                                                                                          | Monthly (during growing season)                                                       |
|                        | Cut the meadow grass                                                                                                                                                                                                                  | Half yearly (spring, before nesting season, and autumn)                               |
|                        | Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years)                                                                                                                                               | Monthly (at start, then as required)                                                  |
|                        | Inspect inlets, outlets, banksides, structures, pipework etc for evidence of blockage and/or physical damage                                                                                                                          | Monthly                                                                               |
|                        | Inspect water body for signs of poor water quality                                                                                                                                                                                    | Monthly (May – October)                                                               |
|                        | Inspect silt accumulation rates in any forebay and in main body of the pond and establish appropriate removal frequencies; undertake contamination testing once some build-up has occurred, to inform management and disposal options | Half yearly                                                                           |
|                        | Check any mechanical devices, eg penstocks                                                                                                                                                                                            | Half yearly                                                                           |
|                        | Hand cut submerged and emergent aquatic plants (at minimum of 0.1 m above pond base; include max 25% of pond surface)                                                                                                                 | Annually                                                                              |
|                        | Remove 25% of bank vegetation from water's edge to a minimum of 1 m above water level                                                                                                                                                 | Annually                                                                              |
|                        | Tidy all dead growth (scrub clearance) before start of growing season (Note: tree maintenance is usually part of overall landscape management contract)                                                                               | Annually                                                                              |
|                        | Remove sediment from any forebay.                                                                                                                                                                                                     | Every 1–5 years, or as required                                                       |
|                        | Remove sediment and planting from one quadrant of the main body of ponds without sediment forebays.                                                                                                                                   | Every 5 years, or as required                                                         |
| Occasional maintenance | Remove sediment from the main body of big ponds when pool volume is reduced by 20%                                                                                                                                                    | With effective pre-treatment, this will only be required rarely, eg every 25–50 years |
| Remedial actions       | Repair erosion or other damage                                                                                                                                                                                                        | As required                                                                           |
|                        | Replant, where necessary                                                                                                                                                                                                              | As required                                                                           |
|                        | Aerate pond when signs of eutrophication are detected                                                                                                                                                                                 | As required                                                                           |
|                        | Realign rip-rap or repair other damage                                                                                                                                                                                                | As required                                                                           |
|                        | Repair / rehabilitate inlets, outlets and overflows.                                                                                                                                                                                  | As required                                                                           |

SuDS maintenance methods taken from CIRA SuDS manual 2015

## Treatment Plant Maintenance

### Service checklist and maintenance

The plant must be switched off and isolated before checking the electrical components and supply.

#### General

- Check to ensure the levels in the tank are even across all chambers.
  - Regularly check to see if the primary chamber requires desludging (See section 7).
- #### Compressor
- Check to ensure all compressors are working and air hose connections are secure.
  - Annually clean the filter on the top of the compressor.
  - Annually check the diaphragms and replace if required.
  - Check the loss of pressure alarm on compressors.
  - If the compressors are housed, either in a kiosk or housing, check to ensure ventilation is adequate. NOTE: If the plant is not due to be commissioned for at least two weeks it is advisable to remove the compressor
- #### Media (Within aeration chamber)
- Ensure media is moving around the aeration chamber freely by the diffuser/diffusers.
  - Visually check to ensure adequate bio-mass growth on the media surface area. Polylok Filter (Tertiary filtration)
  - If a Polylok Filter is fitted to the plant at the outlet end (normally only on plants over 50PE) carefully lift the filter out of the casket and wash down before returning it back into the casket securely. This should be done normally once a month.
  - A high level alarm should be fitted to alert the site owner of when the filter needs cleaning.
- #### High level alarm
- ¢ If a high level alarm is fitted, check to ensure the high level alarm float switch is secure and working by lifting of the float switch by approximately 200mm.
- #### Structural
- Check to ensure the baffles are not damaged.
  - Check that all manhole cover and frames are secure and all locking nuts are in place.
- #### Electrical
- Check supply current and amps.
  - Check wiring condition and IP plugs