Oxford Technology Park, Langford Lane, Kidlington, Oxfordshire

SUDS Maintenance Plan

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SUSTAINABLE DRAINAGE AND LANDSCAPE MANAGEMENT PLAN FOR **Oxford Technology Park, Kidlington**

An introduction to sustainable drainage systems or SuDS

SuDS are a new environmentally friendly approach to managing rainfall that uses landscape features to deal with surface water. SuDS aim to:

- Control the flow, volume and frequency of water leaving a development area
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces
- Provide attractive surroundings for the community
- Create opportunities for wildlife

SuDS at Oxford Technology Park

The SuDS are designed to prevent flooding and control the flow of surface water using attractive landscape features. The proposed storm drainage strategy is essentially split into two separate systems. The first serving the car park hard paved areas and access road. The second serves the service yard to the rear of the buildings and building roof drainage.

- Surface water drainage system allows direct infiltration into the ground via cellular soakaways serving the building roofs ad service yard areas.
- The car park and access road drainage system includes permeable block paving which allows rain to percolate through the surface into underlying drainage layers.

Managing the SuDS

The SuDS at Oxford Technology Park have been designed for easy maintenance to comprise:

- Regular day to day care - litter collection, grass cutting and checking the inlets and outlets where water enters or leaves a SuDS feature
- Occasional tasks - managing vegetation and removing any silt that builds up in the SuDS features
- Remedial work - repairing damage where necessary

SuDS management

Permeable block paving allows water to soak into the ground while it is carried via filter drains.

ACTION:

- *Brush regularly and remove sweepings from all hard surfaces*
- *Brush and vacuum surface annually to prevent silt blockage and enhance design life.*

- *Monitor effectiveness of permeable pavement and when water does not infiltrate immediately advise Client of possible need of reinstatement of top layers or specialist cleaning.*

- *Use jet washing and suction cleaning to reinstate pavement to 90% efficiency if required.*

SuDS and Landscape Maintenance – Summary

		Frequency	Unit Rate	Total
	REGULAR MAINTENANCE			
1	LITTER MANAGEMENT			
1.1	Pick up all litter in SuDS and Landscape areas and remove from site	12 visits monthly		
2	INLETS AND OUTLETS			
2.1	Inspect monthly, remove silt from slab aprons and debris. Strim 1m round for access	12 visits monthly		
3	HARD SURFACES			
3.1	Sweep all paving regularly. Sweep and suction brush permeable paving in autumn after leaf fall.	1 visit		
	OCCASIONAL TASKS			
5	INSPECTION CHAMBERS			
5.1	Annual inspection, remove silt and check free flow	1 visit		
6	SILT MANAGEMENT			
6.1	Inspect interceptors annually for silt accumulation	1 visit		
6.2	Excavate silt, stack and dry within site confines, but outside the design profile where water flows, spread, rake and overseed	As required		
	REMEDIAL WORK			
7	Inspect SuDS system regularly to check for damage or failure. Undertake remedial work as required.	As required		

Sustainable Drainage (SuDS) features checklist

SuDS techniques include landscape features and control structures to manage runoff as it flows to site outfalls. The following lists the features which may be found on the site.

- **Permeable surfaces** as permeable block paving, porous Asphalt, gravel or free draining soils that allow rain to percolate through the surface into underlying drainage layers. They must be protected from silt, sand, compost, mulch, etc.
- **Infiltration basins, trenches, soakaways** and most of the preceding SuDS features allow water to soak into the ground.
- **Inlets and outlets structures** are often conveyance pipes protected with mesh guards. They must be free from obstruction at all times to allow free flow through the SuDS.
- **Inspection Chambers** and rodding eyes are used on bends or where pipes come together. They allow cleaning of the system if necessary.
- **Flood routes (exceedance routes)** allow water volumes exceeding the capacity of the SUDS system to escape from the site without causing damage to property. This route must be clear of obstructions at all times.

Sustainable Drainage Maintenance Specification

1.0 GENERAL REQUIREMENTS

Maintenance activities comprise • **Regular Maintenance** • **Occasional Tasks** • **Remedial Work**	**Frequency**
Generally **Litter** Collect all litter or other debris and remove from site at each site visit.	 Monthly

- **Avoid** use of weedkillers and pesticides to prevent chemical pollution
- **Avoid** de-icing agents wherever possible to allow bio-remediation of pollutants in permeable surfaces.
- **Protect** all permeable, porous and infiltration surfaces from silt, sand, mulch and other fine particles.

Exclusions:

- Maintenance of rainwater harvesting chambers, pumps, etc.

2.0 PERMEABLE SURFACES

- **Permeable surfaces** including permeable block paving, porous asphalt, gravel or free draining soils that allow rain to percolate through the surface into underlying drainage layers. They must be protected from silt, sand, compost, mulch, etc. Permeable block paving and porous asphalt can be cleaned by suction brushing.

PERMEABLE AND POROUS SURFACES	
Regular Maintenance	**Frequency**
Cleaning Brush regularly and remove sweepings from all hard surfaces	Monthly
Occasional Tasks	**Frequency**
Permeable Pavements. Brush and vacuum surface once a year to prevent silt blockage and enhance design life.	Annually
Remedial Work	**Frequency**
Monitor effectiveness of permeable pavement and when water does not infiltrate immediately advise Client of possible need for reinstatement of top layers or specialist cleaning. Recent experience suggests jet washing and suction cleaning will substantially reinstate pavement to 90% efficiency.	As required

3.0 INLETS, OUTLETS, CONTROLS, AND INSPECTION CHAMBERS

- **Inlets and outlets structures** may be surface structures or conveyance pipes with guards or headwalls. They must be free from obstruction at all times.
- **SuDS flow control structures** can be protected orifices, slots weirs or other controls at or near the surface to be accessible and easy to maintain. They may be in baskets, in small chambers or in the open.
- **Inspection Chambers** and rodding eyes are used on bends or where pipes come together and allow cleaning of the system if necessary. They should be designed out of the system where possible.

INLETS, OUTLETS, CONTROLS AND INSPECTION CHAMBERS	
Regular Maintenance	**Frequency**
Inlets, outlets and surface control structures	
Inspect surface structures removing obstructions and silt as necessary. Check there is no physical damage.	Monthly
Strim vegetation 1m min. surround to structures and keep hard aprons free from silt and debris	Monthly
Inspection chambers and below ground control chambers	
Remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn	Annually
Occasional Maintenance	
Check topsoil levels are 20mm above edges of baskets and chambers to avoid mower damage	As necessary
Remedial work	**Frequency**
Unpack stone in basket features and unblock or repair and repack stone as design detail as necessary.	As required
Repair physical damage if necessary.	As required

4.0 OVERFLOWS AND FLOOD ROUTES

- **Overflows** are overland across weirs, through gratings or within chambers and must be kept clear at all times to protect areas from flooding. They allow onward flow when part of the SuDS system is blocked.
- **Flood routes (exceedance routes)** allow water volumes that exceed the capacity of the SuDS system to pass through or round the site without causing damage to property. These routes must be clear of obstructions at all times.

OVERFLOWS AND FLOOD ROUTES	
Regular Maintenance	**Frequency**
Overflows. Jet pipes leading from overflow structures annually and check by running water through the overflow. Check free flow at next SUDS feature – inlet to basin or chamber.	Annually
Overflows. Remove any accumulated grass cuttings or other debris on top of grass weirs or stone filled baskets overflows.	Monthly
Flood Routes. Make visual inspection. Check route is not blocked by new fences, walls, soil or other rubbish. Remove as necessary.	Monthly
Remedial	**Frequency**
Overflows. If overflow is not clear then dismantle structure and reassemble to design detail.	As required

5.0 SPILLAGE – EMERGENCY ACTION

Most spillages on development sites are of compounds that do not pose a serious risk to the environment if they enter the drainage in a slow and controlled manner with time available for natural breakdown in a treatment system. Therefore small spillages of oil, milk or other known organic substances should be removed where possible using soak mats as recommended by the Environment Agency with residual spillage allowed to bio-remediate in the drainage system.

In the event of a serious spillage, either by volume or of unknown or toxic compounds, then isolate the spillage with soil, turf or fabric and block outlet pipes from chamber(s) downstream of the spillage with a bung(s). (A bung for blocking pipes may be made by wrapping soil or turf in a plastic sheet or close woven fabric.)

Contact the Environment Agency immediately.

6.0 QUERIES REGARDING A DESIGN FEATURE.

In the event of a concern or failure of a SuDS design feature contact The Baynham Meikle Partnership.

8 Meadow Road, Edgbaston, Brimingham B17 8BU

Tel: (0121) 434 4100

Email admin@bm-p.co.uk