

Blythe Bridge
Stoke-On-Trent
Phase 2

SUDS Maintenance Plan

Project Ref: JH/13051

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SUSTAINABLE DRAINAGE AND LANDSCAPE MANAGEMENT PLAN FOR Blythe Bridge.

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 Blythe Bridge.

The SuDS are designed to prevent flooding and control the flow of surface water using attractive landscape features. The proposed storm drainage strategy serves the roof drainage, car parking, service yard and associated access roads.

- Permeable block paving which allows rain to percolate through the surface into underlying drainage layers.
- French drains to collect and filter surface water run-off.
- Surface water drainage system allows to manage runoff via cellular storage and oversized pipe work.

Managing the SuDS

The SuDS at Blythe Bridge 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

Cellular storage allows to control and manage surface runoff.

ACTION:

- *Inspect silt traps, manholes, pipework pre-treatment devices and remove sediment and debris as required.*
- *Brush and vacuum surface annually to prevent silt blockage and enhance design life.*
- *Monitor effectiveness of cellular storage system*

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	GRASS MAINTENANCE – all cuttings to wildlife piles			
2.1	Mow all grass verges, paths and amenity at 35-50mm with 75mm max. Leaving grass in situ	As required or monthly		
2.2	Mow all dry swales, dry SuDS basins and margins to low flow channels and other SuDS features at 100mm with 150mm max. Cut wet swales or basins annually as wildflower areas	4-8 visits as required Annually		
2.3	Wildflower areas strimmed to 50mm in Sept Or Wildflower areas strimmed to 50mm on 3 year rotation 30% each year	1 visit annually 1 visit annually		
3	INLETS AND OUTLETS			
3.1	Inspect monthly, remove silt from slab aprons and debris. Strim 1m round for access	12 visits monthly		
4	HARD SURFACES			
4.1	Sweep all paving regularly. Sweep and suction brush permeable paving in autumn after leaf fall.	1 visit		
	OCCASIONAL TASKS			
5	INSPECTION AND CONTROL CHAMBERS			
5.1	Annual inspection, remove silt and check free flow	1 visit		
6	SILT MANAGEMENT			
6.2	Excavate silt, stack and dry within 10m of the SuDS feature, but outside the design profile where water flows, spread, rake and overseed	As required		

7	NATIVE PLANTING			
7.1	Remove lower branches where necessary to ensure good ground cover to protect soil profile from erosion.	1 visit annually		
	REMEDIAL WORK			
8	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 that to be found on the site.

- **Cellular Storage** tanks used to manage and control surface runoff. Also, they are used to store surface water before it is discharged.
- **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.
- **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 Cellular Storage

Cellular Storage	
Regular Maintenance	Frequency
Inspect inlets, outlets and control structures and remove obstructions and silt as necessary.	Monthly
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	
Remove silt from catchpits and cellular storage	As necessary
Remedial work	Frequency
Repair inlet/outlet if necessary, removal of silt build up	As required
Repair physical damage if necessary.	As required

3.0 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

4.0 INLETS, OUTLETS, CONTROLS, FRENCH DRAINS 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. Strim vegetation 1m min. surround to structures and keep hard aprons free from silt and debris	Monthly 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

5.0 FLOOD ROUTES

- **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.

FLOOD ROUTES	
Regular Maintenance	Frequency
Flood Routes. Make visual inspection. Check route is not blocked by new fences, walls, soil or other rubbish. Remove as necessary.	Monthly

7.0 RECEIVING WATERCOURSE

St. Modwen Homes or an appointed subcontractor of St. Modwen Homes will be responsible for maintaining the SuDS features until the responsibility is transferred to an appointed management entity/agent, which will be funded through an annual service charge paid by residents on the development. It is currently the intention of St. Modwen Homes to appoint the same management entity/agent that has been appointed to manage the open space areas on Phase 1.

RECEIVING WATERCOURSE	
Regular Maintenance	Frequency
Litter Collect all litter or other debris and remove from site at each site visit.	Monthly
Remove all debris within the vicinity of the headwall.	
Occasional Tasks	Frequency
Remove silt and Sediment. Remove all sediment and silt collection.	As required, based on inspections.
Planting, Cut and maintain all grass and native planting to avoid blockage or disruption of surface water flows.	As required, based on inspections.
Remedial Work	Frequency
Reconstruct watercourse profile as required in case of failure.	As required

6.0 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.

7.0 QUERIES REGARDING A DESIGN FEATURE.

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

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