



ENGINEERING

**Future Management & Maintenance
Arrangement for SuDS for
the Proposed Residential Development
on Land off Malting Lane, Braughing, Hertfordshire
SG11 2QZ**

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1 SuDS at Malting Lane, Braughing, Hertfordshire, SG11 2QZ;

SUDS are engineered solutions that aim to mimic natural drainage processes. They help to reduce pollution of watercourses and localised flooding, as well as providing amenity benefit and biodiversity. The following lists of features are to be provided as part of the proposed development on Land off Malting Lane, Braughing, Hertfordshire.

- **Cellular Soakaway** are designed to store stormwater prior to infiltration.
- **Permeable surfaces** such as permeable block paving allow rain water to percolate through the pervious surface into the voided construction below, this allows for cleaning, storage and release through infiltration. They must be protected from silt, sand, compost, mulch, etc.
- **Inspection Chambers** are used on bends or where pipes come together. They allow cleaning of the system if necessary.

2 Responsibilities of SuDS at Land off Malting Lane, Braughing, Hertfordshire, SG11 2QZ –

Private SuDS – SuDS located within the property’s boundaries will be the responsibility of the property owner and include:

- Private Drainage
- Cellular Soakaway
- Permeable Paving

The property owner(s) will be made aware of their maintenance responsibilities and the maintenance plan will be provided to them.

3 Key Factors to be Considered During Maintenance -

- Undesirable plants – all efforts should be made to prevent drains becoming blocked and the growth of unintentional vegetation which could be detrimental to the intentional plant regime, biodiversity aims and the building fabric.
- Regular site attendance for litter collection, grass cutting and checking of inlets, outlets and control structures.
- Occasional visits to brush permeable pavement, remove silt from source control features and manage wetland vegetation.
- Drain heads and outlets – all drainage points must be checked every year and cleared out if necessary, to ensure optimum performance.

4 SuDS and Landscaping Maintenance – Summary -

	REGULAR MAINTENANCE	Frequency	Unit Rate	Total
1	LITTER MANAGEMENT			
1.1	Pick up litter in SuDS and remove from site.	12 visits monthly		
2	INLET AND OUTLETS			
2.1	Inspect monthly, remove silt from slab aprons and debris. Strim 1m round for access.	monthly visits		
3	HARD SURFACES			
3.1	Sweep all paving regularly. Sweep and suction brush permeable paving in autumn after leaf fall.	1 visit		
	OCCASIONAL TASKS			
4	INSPECTION CHAMBERS			
4.1	Annual inspection, remove silt and check free flow.	1 visit		
	REMEDIAL WORK			
5	Inspect SuDS system regularly to check for damage or failure. Undertake remedial work as required.	As required		

5 Maintenance Specification -

5.1 GENERAL REQUIREMENTS

Maintenance activities comprise <ul style="list-style-type: none">• 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.

5.2 Cellular Storm Soakaway

Cellular Soakaway systems will require regular maintenance to ensure continuing operation to design performance standard.

Cellular storage systems store surface water prior to discharge via infiltration. To ensure the effective long-term operation of below ground storage systems regular inspection and maintenance is required by checking the upstream silt trap is proving effective.

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

CRATE STRUCTURES	
Regular Maintenance	Frequency
Inspect for sediment and debris in pre-treatment components 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 inspection
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
Remedial Actions	
Reconstruct cellular storage and/or replace or clean void fill, if performance deteriorates or failure occurs	As Required
Replacement of clogged geotextile (will require reconstruction of cellular storage)	As Required
Monitoring	
Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually
Check cellular storage to ensure emptying is occurring	Annually

5.3 INLETS, OUTLETS, CONTROLS, AND INSPECTION CHAMBERS

- **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.

INSPECTION CHAMBERS	
Regular Maintenance	Frequency
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
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	
Repair physical damage if necessary.	As required

5.4 PERMEABLE SURFACES

Permeable Paving/Gravel combines hardstanding with SuDs and is designed to allow rainfall to percolate immediately through the surface near to where the raindrop lands. The water flows into a specially prepared sub-base, where the voids between the stones act as a temporary reservoir. Maintenance of the pavement is carried out to ensure the infiltration of the paving is not compromised as follow;

- A visual inspection of the paving should be carried out on a regular basis. This will confirm the effectiveness of the agitation maintenance due to variations between sites and allow any refinement of the regular agitation activity if necessary.
- The paving should be agitated (ie - brushed, vacuumed, etc) at least twice a year. This is to ensure no vegetation of any sort is allowed to grow and develop in the joints. Ideally, this activity should be carried out in the spring and autumn seasons.
- The paving should be inspected after any heavy precipitation to ensure no displacement of any organic matter onto the surface of the pavement.
- Where non-infiltration systems have been employed, the inspection of the outfalls should be undertaken initially on a twice-yearly basis.
- Weed growth – when sedimentation occurs in areas of permeable paving then there is the potential for weed growth, this will typically occur where there are overhanging trees or soft landscaping slopes down on to the paving or in areas which do not receive over run from vehicles particularly frequently. Weeds can be removed from the surface through the application of weed killers. Glyphosate based weed killers are the most common for general purpose use, they are most effective on grasses and perennial weeds with non-woody stems. Weeds should be sprayed when they are actively growing so that the Glyphosate will go down to the root and kill the weed completely.

PERMEABLE AND POROUS SURFACES	
Regular Maintenance	Frequency
Brushing and vacuuming (standard cosmetic sweep over whole surface)	Paving - Twice a year, in spring and after autumn leaf fall, or reduced frequency as required, based on site specific observations of clogging or manufactures recommendations.
Occasional Tasks	Frequency
Stabilise and mow contributing adjacent areas	As Required
Removal of weeds or management using glyphosate applied directly to weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Work	Frequency
Remediate any landscaping which, through vegetation maintenance or soil slip has been raised to within 50mm of the level of paving.	As Required
Remedial work to any depressions or rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users	As Required
Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required
Monitoring	
Initial inspection	Monthly for three months after installation
Inspect for evidence of poor operation and or weed growth – if required take remedial action	Three – monthly, 18 hours after large storm in first six months
Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
Monitor inspection chambers	Annually

5.5 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.