



BRIGHT PLAN CIVILS

SuDS Drainage Maintenance Schedule

D2023 -THE BURROWS WEST STREET, HAVANT

1.1 Surface Water Maintenance

- 1.1.1 The proposed surface water drainage scheme will capture runoff via traditional rainwater pipe and permeable pavements and gully drainage, within shared driveway areas. This will discharge into oversize pipes with attenuation (flow controls) and hold this within a combination of permeable paving and cellular storage units. This will feed into the lower tier which will in turn discharge to the existing watercourse.
- 1.1.2 Maintenance plays an important part in the long-term performance of a surface water drainage system and will be required to ensure that it remains fully operational.
- 1.1.3 The responsibility for the maintenance of the surface water drainage system will lie with a management company appointed by the Developer who will be made aware of specific maintenance tasks to ensure that the surface water drainage system remains operational throughout its lifetime (it is recommended that this document is made available to them).

1.2 Proposed Cellular Storage

- 1.2.1 The proposed tank will require additional maintenance measures to ensure they operate as designed. Failure in carrying out this maintenance, could increase the risk of flooding. The additional measures are as follows:
- Inspection, additional clearing/cleansing of potential surface blockages will be required on an annual basis.
 - Inspection and clearance of blockages after major storm events.

1.3 Inlet, Outfall

- 1.3.1 A proposed inlet and outfall will be required for the discharge from the pond into the Flow Control Chamber and out to the boundary watercourse. It is recommended that maintenance of the inlet and outfall features and the existing watercourse is carried out to ensure conveyance off the site and prevent the risk of blockages and flooding, with measures as follows:
- Inspection, vegetation clearance and additional clearing/cleansing of potential outfall blockages will be required on an annual basis.
 - Desilting is recommended at least as follows: On completion of drainage works, Year 1, Year 3, then every 5 years.

- 1.3.2 The responsibility of the watercourse adjacent is the Developer as riparian owner, who will need to ensure the watercourse is maintained in accordance with this maintenance schedule and stipulations

by the Local Planning Authority and/or The Environment Agency.

1.4 Flow Control Chambers (HydroBrake or equivalent)

- 1.4.1 The HydroBrake flow control system is a proposed manufacturing option for use for the flow control units at the development. The system is self-activating, relying on upstream hydraulic head to generate an air-filled vortex within the centre of the casing. Once the vortex is initiated water drains down through a small opening in the back of the device at the designed restricted flow rate.
- 1.4.2 The flow control device has an emergency (i.e. blockage) release, in the form of a door situated in the front of the unit itself, this can be operated from the surface by a release cable situated just under the manhole cover which closes under its own weight and does not require any mechanism to operate. This will allow the system to drain down freely, until the blockage can be cleared.
- 1.4.3 The HydroBrake flow control chamber will require additional maintenance measures to ensure it operates as designed. The additional measures are as follows:
- The sump within the flow control chamber should be monitored for build-up of silts and should be emptied, as a minimum, on the same regime as specified for catchpits previously within this document
 - The drain down door located on the centre of the unit will require inspection and opening annually, to ensure it is operating as intended

1.5 Permeable Paving / Diffuser Units / Sub-base Drains

- 1.5.1 The areas of permeable paving are designed to allow infiltration of surface water run-off through the joints in the block paving surface course and into the subbase below. The water is then collected and discharged into the positive drainage system.
- 1.5.2 As part of the permeable paving system, diffuser units are used to discharge surface water run-off from roof areas into the sub-base, as well as forming links between areas of permeable paving. These diffuser units are small heavy-duty cellular units which allow more efficient discharge of surface water into the sub-base base of the permeable paved areas.
- 1.5.3 The areas of permeable paving will require additional maintenance measures to ensure they operate as designed. Failure in carrying out this maintenance, could increase the risk of flooding. The additional measures are as follow:
- Periodic surface sweeping to reduce silt and debris accumulation. The permeable surfaces should be swept at least every 8 to 12 weeks with additional sweeps in the autumn to clear fallen leaves
 - Removal / management of weed growth, as required. Typically, once or twice a year for regularly used areas
 - Periodic silt removal from permeable surfaces as described by the manufacturer. If any areas are showing signs of ponding, they shall be dealt with by raking out the joints and redressing. The entire surface shall be monitored and when there are signs of excessive siltation resulting in poor drainage over the whole area, the blocks shall be taken up and a replacement of bedding layer and geotextile shall be undertaken
 - Redressing of joints on the block paving as required

- Catchpits upstream of diffuser units, should be emptied and inspected on the same regime as all catchpits specified previously set out in this document

1.6 Remedial/Repair Actions

- 1.6.1 Significant storm events may cause considerable damage to SuDS and their associated components. As such, it may be necessary to inspect and carry out essential recovery works to return the feature to full working order. Resetting of uneven blocks by lifting block area, removing bedding material and relaying to match original design are all actions which may need to be undertaken.

1.7 Maintenance Regime

- 1.7.1 The drainage system has been designed to minimise maintenance requirements; however a number of key tasks will need to be undertaken so that the system remains in optimal condition. These operations are summarised in Table 1 below, along with the required frequency of works.

Drainage System feature	Proposed maintenance / remedial works	Required frequency of works
Proposed Cellular Storage	Inspection, and additional clearing/cleansing of potential surface blockages	At least once a year
	Inspection and clearance of blockages	After major storm events
Permeable Paving	Surface sweeping to reduce silt and debris accumulation.	Every 8 to 12 weeks
	Removal / management of weed growth	At least once a year
	Silt removal from permeable surfaces, possibly involving raking out of joints, redressing, removal and remedial works.	As required / to be specified by manufacturer
Inlet, Outfall	Inspection, vegetation clearance and additional clearing/cleansing of potential outfall blockages	At least once a year
	Desilting	Year 1, Year 3, then every 5 years
Catch pits, gully sumps and drains	Inspection and additional cleansing as required.	Annual
	Desilting	Year 1, Year 3, then every 5 years
Pipework	Jetting to clear blockages	As required
Flow Control Units	As specified by manufacturer	As specified by manufacturer
	Inspection and additional cleansing as required.	Annual

Table 1. Proposed Maintenance Regime

- 1.7.2 It is also recommended that the level of silt in the system is recorded at each maintenance visit to help establish a more informed regime.

- 1.7.3 In addition to the intervals above, the condition of the surface water drainage system should be assessed following significant rainfall events to ensure that silt has not washed through and been deposited in a way that could affect the operation of the system.

1.8 Accidental Spillages

- 1.8.1 It is not envisaged that any materials are to be stored onsite once the development has been completed which could cause major spills and potential pollution issues within the drainage system. If this situation alters in the future consultation with a specialist will be required in order to confirm if any upgrades to the existing system are necessary.
- 1.8.2 Minor spillages of fuels and oils from motor vehicles will be dealt with by the permeable pavements, by collecting and bio-degrading the hydrocarbons.

1.9 Construction Phasing

- 1.9.1 It is recommended that the construction of the proposed cellular storage tank, Hydro-brake and outfall connection are completed prior to the commencement of construction of the buildings and hardstanding areas. This will ensure that flows are captured and treated during and after construction. The proposed drainage system will need a complete maintenance check at the completion of the development construction and any required remedial tasks undertaken.
- 1.9.2 By constructing these drainage components first, runoff from the construction site and the hardstanding areas will travel overland into the pond. This will ensure that run-off from the site receives a level of treatment required by the SuDS manual.

1.10 Future Alterations to the Development

- 1.10.1 Any future alterations to the drainage infrastructure should be confirmed by a specialist. Where possible any future services are to avoid being located through areas of permeable paving. If new services are required to run through areas of permeable paving, services should be installed below the depth of permeable paving with the permeable system reinstalled above.

1.11 Responsibility and Adoption

- 1.11.1 The Developer will be responsible for the management and maintenance of the proposed drainage system, and will be responsible for their maintenance and repair until such time that adoption of any elements of the drainage system is agreed with the relevant authority.
- 1.11.2 The Developer is responsible for management and maintenance and this includes the entirety of the incurred costs of this ongoing work, until such time that adoption of any elements of the drainage system is agreed with the relevant authority. Should the Developer wish to recuperate costs associated with these works, they will need to agree the basis for this with individual property inhabitants.