



HOLDGATE
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SuDS Maintenance Report

Project

MUGA Sport Pitch
Greenhill Primary School

Project Reference

23-719

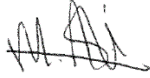
Client

For and on Behalf of
Greenhill Primary School

Date

23 January 2024

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Revision	Date	Description	Prepared	Approved
P01	16/10/23	First Issue	MA	NM
P02	23/01/24	Drainage outfall updated	MA	NM

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1. Introduction

1.1. Terms of Reference

1.1.1. Holdgate Consulting has been commissioned by Alison Richards of Greenhill Primary School to prepare a SuDS Maintenance Report to accompany the drainage scheme at Greenhill Primary School, Leeds, LS13 4JJ.

1.1.2. Sustainable Urban Drainage Systems (SuDS) are a sequence of water management practices and facilities designed to drain surface water in a manner that will provide a more sustainable approach than what has been the conventional practice. SuDS are designed to mimic natural drainage flows and typically manage rainfall close to where it falls. Benefits include the effective management of runoff from hard standing surfaces, such as pavements and driveways, by reducing the volume, frequency and flow rate of surface water runoff during extreme storm events. They provide protection and/or enhancement of water quality (reducing pollution from runoff), are sympathetic to the environment and the needs of the local community.

1.1.3. The purpose of this management plan is to demonstrate how SuDS, which have been implemented at this particular development and will be maintained in compliance with various requirements and best practice guidance, including but not limited to, the National Planning Policy Framework (NPPF) and SuDS Manual (CIRIA, 2015).

1.1.4. The management plan aims to:

- Summarise the various SuDS features used within the site;
- Establish who is responsible for the maintenance of the SuDS components.
- Set out how to maintain the incorporated SuDS components following construction.
- Ensure that all those involved in the maintenance and operation of the SuDS understand their functionality and maintenance requirements in terms of supporting long-term performance.

1.1.5. Maintenance inspections should be recorded in Appendix C of this report and ensure that the document stays up to date.



1.2. **Site Description**

- 1.2.1. Site it proposing to install a MUGA sports pitch in the school playing fields which will drain through a piped network of filter drains and discharge into the ground via shallow bore wells. Cellular crates are proposed at the outfall to provide attenuation during critical storm events.
- 1.2.2. Plans illustrating the proposed drainage to be maintained are shown in Appendix A.



2. SuDS Management and Maintenance Regime

2.1. General

- 2.1.1. The occupier(s) or an appointed management company will be responsible for the maintenance of drainage serving the MUGA pitch. They must fully understand their responsibilities outlined in this plan and be aware of any legally binding maintenance agreement.
- 2.1.2. Only trained personnel will be permitted to undertake maintenance of SuDS features. This work must be carried out in accordance with the Confined Space Regulations. To facilitate this maintenance, SuDS have been located in public open space, where possible, or where they are reasonably accessible.
- 2.1.3. Tables outlining the maintenance activities that should be undertaken for each SuDS feature, outlined in the following sections, in accordance with the SuDS Manual, CIRIA, 2015. These tables must be reviewed by the Blenheim Primary School Management or an appointed responsible representative.



2.2. Stormwater Tank

- 2.2.1. Tanks are a commonly used and cost-effective SuDS technique by providing upstream storage to attenuate storm water runoff and some settling of particulate pollutants.
- 2.2.2. Regular inspection and maintenance are required to ensure the long-term effectiveness of the tank.
- 2.2.3. A checklist for the maintenance of the stormwater tanks installed at the site, to be used by the party responsible for their maintenance, is provided in accordance with the 2015 SuDS Manual below:

Table 2.2 – Stormwater Tank (CIRIA, 2020)

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

- 2.2.4. The surface water attenuation tank will be maintained by an appointed private management company.



2.3. Standard Drainage Components

- 2.3.1. Standard drainage components including pipes, bends junctions, inspection chambers and gullies feature in most drainage systems to a greater or lesser degree. These components invariably feature some silt trapping (sumps and traps) and access provision for maintenance purposes.
- 2.3.2. Regular inspection and maintenance are required to ensure the long-term effectiveness of these components.
- 2.3.3. A checklist for the maintenance of private drainage components installed at the site, to be used by the party responsible for their maintenance, is provided in accordance with best practice principles:

Table 2.4 – Private Drainage Components.

Private Drainage System (Curtilage)	
Regular maintenance	Frequency
To be maintained by the end user/maintenance company. Visually inspect covers to ensure they are kept clear of leaves, debris etc. Lift covers of drainage to inspect chambers for debris and build-up of silts.	Annually. No triggers other than maintenance to be carried out on a regular schedule.
Occasional tasks	Frequency
Remove leaves and debris from covers. Remove debris from inspection chambers to ensure outlets are kept clear of obstruction and ensure adequate drainage.	As required. Indicator of problem/trigger for maintenance when surcharging or flooding of drains occurs or gutters and chambers full of debris and leaves etc.
Remedial work	Frequency
Should drains be heavily blocked or damaged contact drainage maintenance company for unblocking / repair works.	As required. Indicator of problem/trigger for maintenance when drainage not functioning and unblocking pipes and chambers etc not effective.



3. Contact details and record of maintenance

Contact Details of Individual/Individuals Responsible for This Plan

In the event of concern over any matter related to SuDS, please contact:

Name:.....

Address:.....

.....

.....

Phone:.....

Email:.....

Record of Maintenance and Photographic Evidence

- 3.1.1. Please provide a record of all inspections (including all photographic evidence) in Appendix C



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SuDS Maintenance Report

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Appendix A

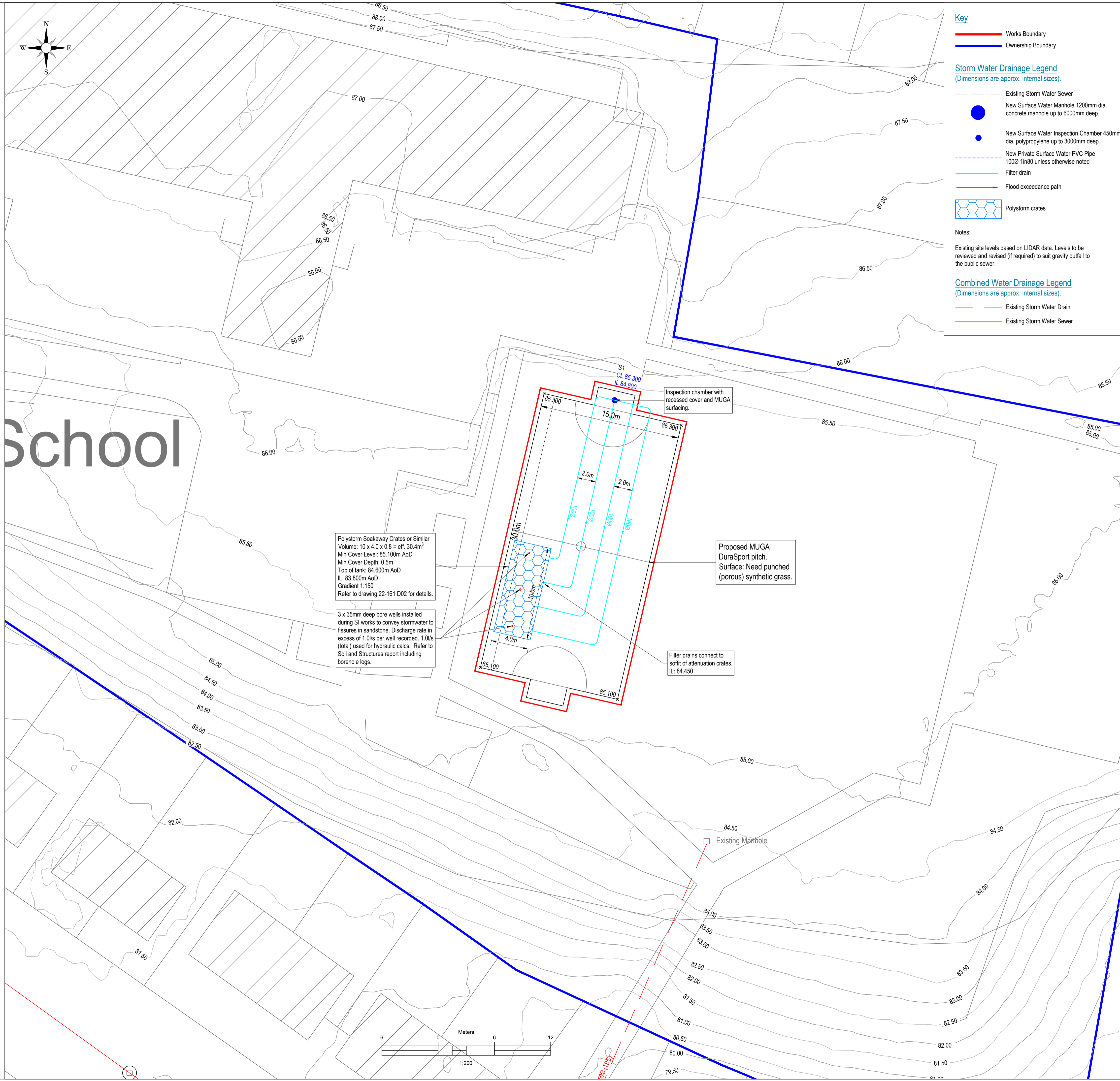
DRAINAGE PLAN

Private Drainage

- This drawing is to be read in conjunction with and checked against all other drawings, engineering details, specification and any structural, geotechnical or other specialist documents provided.
- All lateral connections for house drainage shall be 100mm unless stated otherwise and must extend a minimum of 500mm behind the back of the footpath.
- All pipes to be vitrified clay or UPVC and shall be 100mmØ laid to a fall of 1:80 unless noted otherwise or indicated by size and invert levels. All connections when laid shall be plugged, protected as necessary and marked with a stake for future use.
- Building drainage shall comply with BS 8301 1985, BS EN 752 and Building Regulations Part H. Inspection chambers located within garages to have double seal bolt down covers.
- Gully top and manhole cover specification to be in accordance with BS EN 124 and located in accordance with the intended use and loading classification as described within groups 1-6:
- This drawing is schematic for clarity only, positions of pipe runs and manholes may vary on site due to site conditions.
- Cover and invert levels are indicative and may vary on site. In any case the following minimum cover to depth of cover to the crown of pipes without protection shall be as follows:
 - Domestic gardens and pathways without any possibility of vehicular access - 0.35m
 - Domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross weight in excess of 7.5 tonnes - 0.5m
 - Domestic driveways, parking areas and narrow streets without footways (e.g Mews developments) with limited access for vehicles with a gross weight in excess of 7.5 tonnes - 0.9m
 - Agricultural land and public open space - 0.9m
 - Other highways and parking areas with unrestricted access to vehicles with a gross weight in excess of 7.5 tonnes - 1.2m

Note: any protection required where drainage does not comply with a-e above shall be as follows:-
- Vitrified clay pipes - provide a 100 mm min. thick concrete bed and surround (instead of class 'S' bedding) and a 13 mm thick compressible filler at each joint.
- UPVC pipes - provide a concrete bridging (in addition to class 'S' bedding) in accordance with appendix A15, Building Regulations part 'H'.

Note: in-situ concrete used in connection with a) and b) above shall be standard mix GEN3 in accordance with BS 5328.
- Drainage runs should be laid at a minimum of 5.0 metres from the rear of properties where practicable to allow for future extensions
- Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.
- All branch drains, or connections, are to discharge to the collectors obliquely, and in the direction of the main flow.
- Finished Floor Levels (FFL's), assumed to be typically a minimum of 150mm above finished ground level outside, refer to architects drawing for details.
- All new private shallow 225mm diameter surface water and foul inspection chambers and rodding eyes shown without cover levels (CL) shall be assumed to be at external ground level, and invert levels (IL) are to be typically between 450 and 600mm below CL, subject to the length of the internal house connections.
- All low spots on hardstanding areas to have double gullies.
- Prior to topsoiling of rear gardens, the gardens should be reworked, rotated or decompacted to a depth of 600mm. Once this is carried **NO PLANT to access these areas**, any further consolidation of subsoil to be reworked as necessary. Before reworking or rotating the Contractor is to mark all drain runs in the area.
- Pipe bedding to be Class 'S' Bedding (100mm granular bed and surround).
- Excavations for manholes, pipe runs etc located within a 45 degree load distribution splay from any adjoining existing foundations, are to be adequately supported for the duration of the works and building drainage protected.
- Foundations adjacent to pipe runs or manholes are to have their formation level set above the invert level no higher than the equivalent of the horizontal distance between the pipe/excavation trench and the foundation, minus 500 mm.
- Where excavations for pipe runs are parallel and in close proximity to each other and/or other service trenches, the contractor shall ensure that adequate safety measures, including temporary shoring, are provided in line with current Health & Safety Legislation and good practice. Particular attention is to be paid to adjacent trenches of differing invert levels.
- All existing drainage found on site during the works shall be investigated, its operational status confirmed, and the following applied:-
 - Inoperative drainage shall be cut back and pipe runs filled with concrete grout.
 - 'Live' drainage shall be temporarily re-routed to allow the new drainage to be constructed.
- Where existing drainage is to be re-used including road, building and external drainage systems, the contractor shall ensure that all chambers and drainage runs are cleaned, de-silted and made good.
- Covers to existing chambers to be re-used shall be replaced where necessary to suit proposed development loading class, see note 5. Chamber covers shall also be adjusted to suit final ground levels as necessary.
- Where necessary, existing chambers shall be re-benched to suit new pipework arrangement.



Key

- Works Boundary
- Ownership Boundary

Storm Water Drainage Legend
(Dimensions are approx. internal sizes)

- Existing Storm Water Sewer
- New Surface Water Manhole 1200mm dia. concrete manhole up to 6000mm deep.
- New Surface Water Inspection Chamber 450mm dia. polypropylene up to 3000mm deep.
- New Private Surface Water PVC Pipe 100Ø 1in80 unless otherwise noted
- Filter drain
- Flood exceedance path
- Polystorm crates

Notes:

Existing site levels based on LIDAR data. Levels to be reviewed and revised (if required) to suit gravity outfall to the public sewer.

Combined Water Drainage Legend
(Dimensions are approx. internal sizes)

- Existing Storm Water Drain
- Existing Storm Water Sewer

General Notes

- Do not scale from this drawing.
- Only figured dimensions are to be relied upon.
- All dimensions in millimetres unless otherwise noted. All levels in metres unless noted otherwise.
- This drawing is to be read in conjunction with relevant architectural, engineering and specialist drawings and specifications.
- Any discrepancies noted on site are to be reported to the engineer immediately.
- Where this drawing has been issued in electronic format, Holdgate Consulting do not accept responsibility for any inaccuracies in the electronic data (including third party content used for reference), which should be checked against the paper (or pdf) drawing issue. Copyright reserved. This drawing may only be used for the client and location noted in the project title. It may not be copied or disclosed to any third party without the prior written consent from Holdgate Consulting.
- This drawing should only be used for construction if the drawing status is "Construction". Holdgate Consulting takes no responsibility for construction works undertaken to drawings that are not marked with this status.

P02	23/01/2024	Drainage outfall revised to soakaway.	MA / MA / MA
P01	16/10/2023	First issue	MA / MA / MA
Rev	Date	Description	Draw/Chk/App'd

Status

Comment / Review

Project Title **Greehill Primary School, Gamble Hill Drive, Leeds, LS13 4JJ**

Drawing Title **Drainage Plan**

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Job No.	23-719	Scale @ A1	As Shown
Drawing No.	D01	Revision	P02



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Appendix B

MAINTENANCE DETAILS

Maintenance

Like any conventional drainage system, sustainable drainage systems (SuDS) should be inspected regularly and correctly maintained to ensure optimum performance.

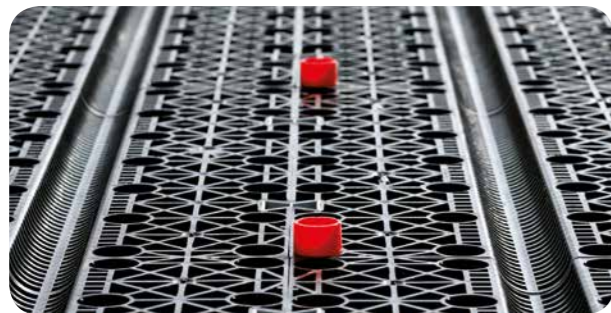
Maintenance plan

This should be initiated by the drafting of routine maintenance plans to suit the site installation. A pre-handover inspection should be carried out and the Permavoid system cleaned prior to final handover.

Routine inspection and maintenance should include:

- Inspection of systems
- Removal of silts
- Decanting of oils and hydrocarbons
- Channel jetting
- Water sampling and testing at point of discharge (if required)

Excess silt/debris held within Permachannel and gullies should be cleared manually or with a vacuum tank. We do not recommend pressure led cleaning.



Routine maintenance

Permachannel

For Permachannel the following routine maintenance procedures are required:

- 3 monthly inspections of channels for signs of blockage and oil spillage
- Remove litter and blockages as required
- Every 12 months inspect all chambers for silt and oil build up
- Every 12 months sweep external surfaces
- Remove silt as required but at least every year
- Records of inspections and maintenance undertaken should be kept by the client

Permaceptor

For Permaceptors the following routine maintenance procedures are required:

- 3 monthly inspections of road/yard gullies for signs of blockage and oil spillage
- Remove litter and blockages as required
- Every 6 months inspect all Permaceptors for silt and oil build up
- Every 12 months sweep external surfaces
- Records of inspections and maintenance undertaken should be kept by the client

Accidental spillages

If accidental spillages occur of oil or other substances that can cause water pollution, they must be dealt with immediately. An example of this is if a car sump fails and there is large spillage of oil on the car park or road surfaces. A spillage kit appropriate to the size of the car park should be kept by the site caretaker. This should include absorbent pads, socks and rain seals.

As soon as a spillage is identified, the drain inlets in that area should be covered to prevent pollution entering the system. The pollution should then be cleared from the road or car park surface. The local channel system and/or Permaceptor receiving the spillage should be emptied of all pollution that has entered.

The Permachannels and Permaceptors should prevent any significant pollution entering the rest of the drainage system. The Environment Agency should be informed of the spillage and the appropriate actions should be taken.

General design details

The Permavoid range of products can be used individually or linked together to provide unique and flexible water management solutions.

The following typical design details highlight a range of solutions available. These drawings are available on the Polypipe website at www.polypipe.com/toolbox. Individual projects may require tailored solutions that are not detailed. For more information please contact our Technical Team on +44 (0) 1509 615100.

Typical permeable pavements

Figure 8.1.1: Sub-base infiltration detail (drawing no. PV_SD_IN_PP_001)

(For illustration purposes, we have shown a permeable block paving system. For Permeable asphalt a 40mm surface course and 80mm binder course are recommended)

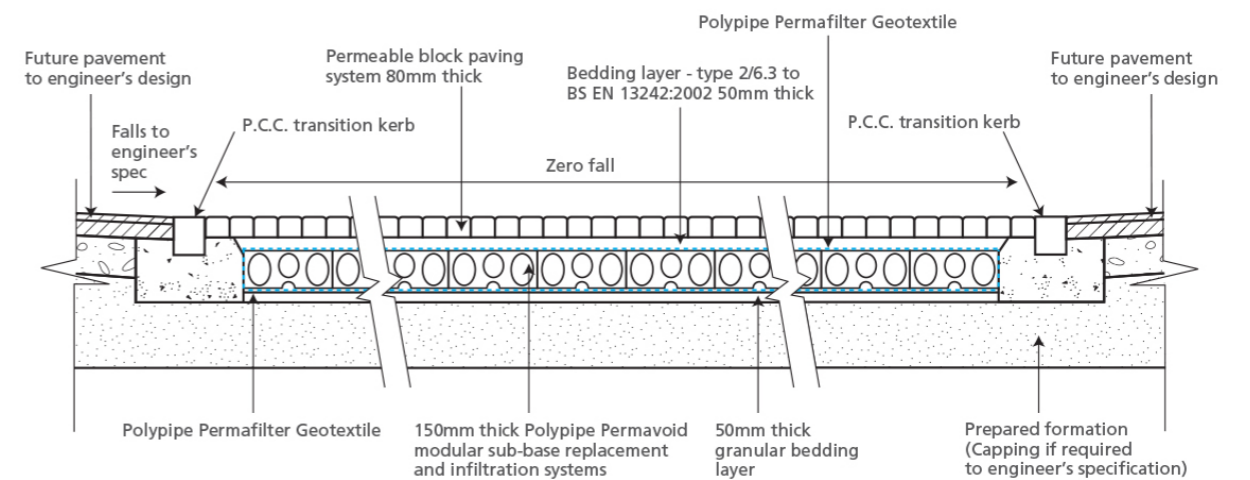
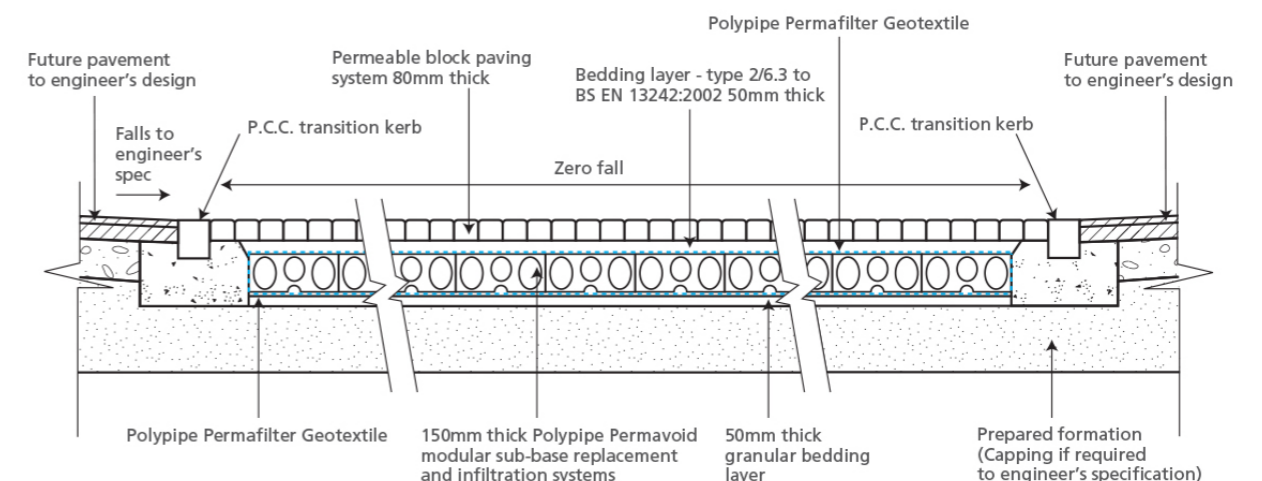


Figure 8.1.2: Permavoid permeable pavement sub-base attenuation detail (drawing no. PV_SD_AT_PP_001)

(For illustration purposes, we have shown a permeable block paving system. For Permeable asphalt a 40mm surface course and 80mm binder course are recommended)





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APPENDIX C
RECORD OF MAINTENANCE
(SAMPLE PROFORMA ENCLOSED)

