Land rear of 23-43 Moor Lane, Gomersal, Cleckheaton, BD19 4LF

16th December 2025

PV2511-APP-92-XX-RP-C-1002 SuDS Maintenance Report

SuDS Maintenance Report

Land Rear of 23-43 Moor Lane, Gomersal

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Document history and status

Revision	Date	Description	Originator	Checked	Approved
P01	12/11/2025	First Issue	MA	-	-
P02	16/12/2025	Revised to reflect drainage plan P04, Hydro-brake maintenance schedule added, and record sheet added to appendix C.	MA	MA	AM

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1 Introduction

1.1 Terms of Reference

1.1.1 Align Property Partners have been commissioned by PPJ Developments to prepare a SuDS Maintenance report to accompany the drainage scheme for a residential development of 10 plots at land rear of 23-43 Moor Lane, Gomersal, Cleckheaton, BD19 4LF.

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 residential development 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 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 The surface water drainage system for the site comprises of a variety of SuDS aiming to reduce flood risk and enhance biodiversity. The location of the SuDS is shown in Appendix A.

1.2.2 Stormwater runoff generated from site (roofs and hard standing) will drain via gravity to the east, then south and discharge into a Yorkshire Water 300mm storm sewer on Moor Lane. Two attenuation tanks are proposed, Tank 1 at the turning head (between plots 5 and 6) and a Tank 2 near the outfall (in front of plots 9 and 10) providing combined volumes of 224m^3. A flow control chamber is proposed downstream of the tank 1 to restrict flows locally to 22l/s, and a second flow control is proposed near the outfall restricting site discharge to 3.5l/s.

1.2.3 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 Homeowners will be responsible for the maintenance of drainage serving their dwellings. They must fully understand their responsibilities outlined in this plan and be aware of any legally binding maintenance agreement. An appointed private management company will be responsible for all remainder drainage assets throughout the site.

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 Homeowners and private management company, or an appointed responsible representative.

2.2 Hydro Brake

2.2.1 A hydro-brake is a flow control manhole, which restricts the velocity of water whereby the water enters through the inlet pipe with enough energy to create a vortex in the chamber. The vortex then controls the flow to the specified discharge rate. The main parameters that effect the hydro-brake specification is the design head (m) and the specified discharge rate (l/s).

2.2.2 There are two hydro-brakes proposed for this development:

- Manhole S7 with a discharge rate of 22.0l/s and design head of 1.60m.
- Manhole S13 with a discharge rate of 3.5 l/s and a design head of 1.2m.

2.2.3 Regular inspection and maintenance will be required to ensure the long-term effectiveness of the hydro-brakes.

2.2.4 Hydro International have provided the following statement in terms of maintenance of the hydro-brake:

"Normally, little maintenance is required as there are no moving parts within the Flow Control. Experience has shown that if blockages occur, they do so at the intake, and the cause on such occasions has been due to a lack of attention to engineering detail such as approach velocities being too low, inadequate benching, or the use of units below the minimum recommended size. The Flow Control (where applicable) is fitted with a pivoting bypass door, which allows the manhole chamber to be drained down should blockage occur. The smaller conical units, below the minimum recommended size, are also supplied with rodding facilities or vortex suppressor pipes as standard."

Following installation of the Flow Control it is vitally important that any extraneous material i.e. building materials are removed from the unit and the chamber. After the system is made live, and assuming that the chamber design is satisfactory, it is recommended that each unit be inspected monthly for three months and thereafter at six monthly intervals with hose down if required.

2.2.5 A checklist for maintenance of the Hydrobrake unit(s) is provided in accordance with best practice and manufacturer guidance.

Operation and maintenance requirements for attenuation Hydrobrake Flow Control		
Maintenance schedule	*Required action*	*Typical frequency*
Regular Maintenance	Remove debris and silt from the flow control manhole and upstream catchpit chambers. Jetting may be required if build up cannot be easily removed.	Monthly for 3 months, then six-monthly
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, and overflows to ensure that they are in good condition and operating as designed	Monthly for 3 months, then six-monthly and after heavy rainfall events.

2.3 Attenuation Tank

2.3.1 Attenuation storage tanks are used to create a below ground void space for the temporary storage of surface water before use, infiltration or controlled release. Attenuation storage tanks can help reduce flow rates from a site by providing significant attenuation storage. Storage tanks do not provide any form of treatment of surface water runoff and therefore need to be combined in a "management train" with other methods that do provide suitable treatment of all relevant pollutants (coarse sediment must always be removed upstream of a storage tank).

2.3.2 The inherent flexibility in size and shape of the typical attenuation storage tank systems means that they can be tailored to suit the specific characteristics and requirements of any site.

2.3.3 Two cellular detention tanks are proposed as follows:

- Tank 1: 14m(L) x 4.5m(W) x 0.8m(D), with a volume of 50.4m^3
- Tank 2: 29m(L) x 5.0m(W) x 1.2m(D), with a volume of 174m^3

2.3.4 Details and specifications of the tank are provided in Appendix A and D.

2.3.5 Regular inspection and maintenance would be required to ensure the long-term effectiveness of the attenuation tank.

2.3.6 A checklist for the maintenance of the attenuation tank proposed for the site, to be used by the party responsible for their maintenance, is provided in accordance with the 2015 SuDS Manual below:

Operation and maintenance requirements for attenuation storage tanks		
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

Table 2.3 – Attenuation Tanks (CIRIA, 2015)

Appendices

Appendix A

Drainage Layout

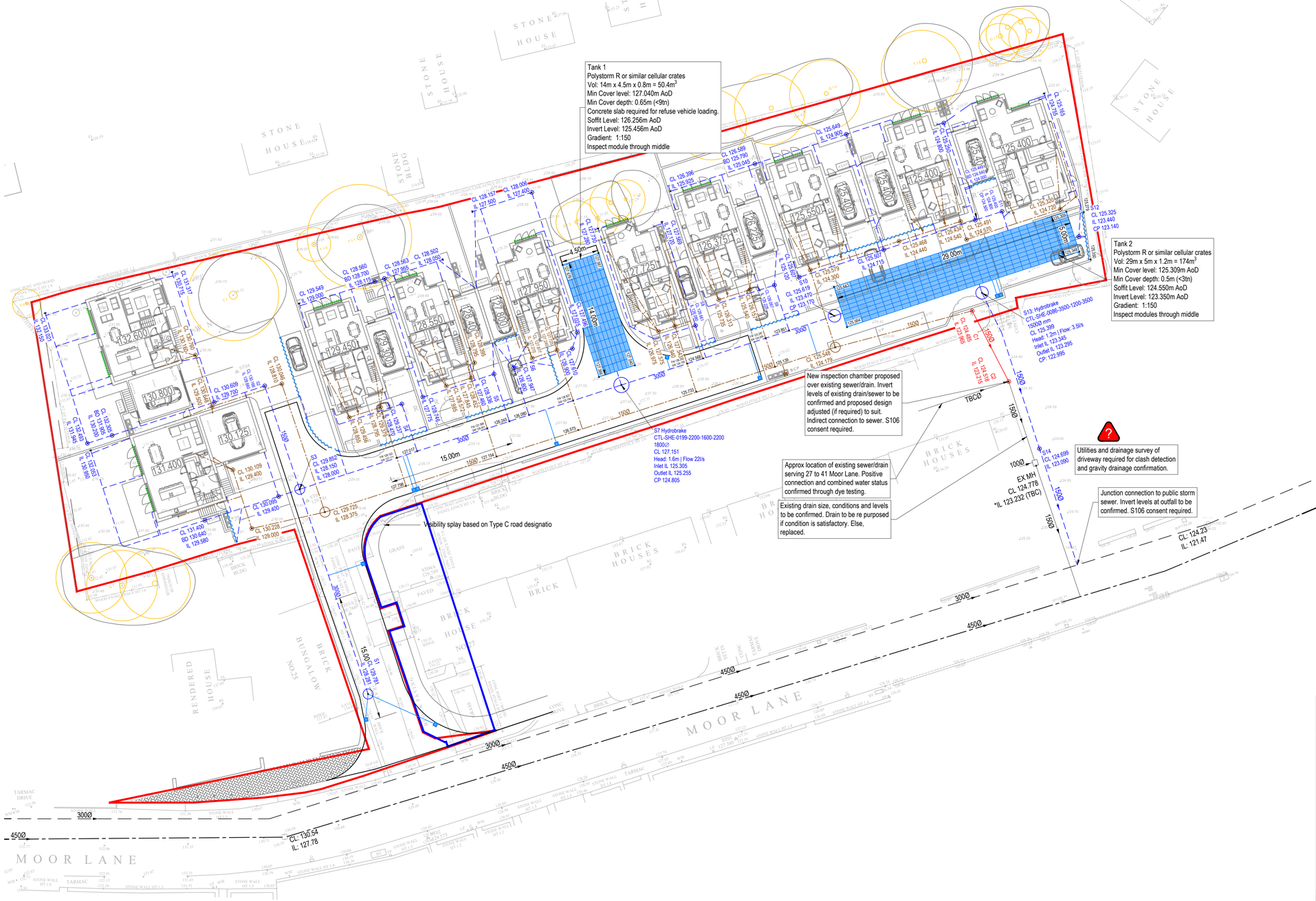
Drawing Notes

This drawing is based on the following sources of information, and must be checked and reviewed against all project information.

- Site layout by AHJ Architects ref: 2539-D-20-002 Rev C
- OS tiles contained within the site layout
- Tree Root Protection Zones contained with the site layout.
- Topographic survey by LMS Geomatics Engineering Ltd ref: LMS0221_PPJ_TS_01A
- Site entrance drawing by Bryan G Hall ref: 18-412-SKH-001 Rev K BOUND
- Existing manhole invert levels as provided by the client.

Private Drainage

1. 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.
2. Building drainage shall comply with BS EN 752, 12056 and Building Regulations Part H.
3. This drawing is schematic for clarity only, positions of pipe runs and manholes may vary on site due to site conditions.
4. All low spots on hards tanding areas to have double gullies, except single driveways.
5. 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.
6. Prior to topsoiling of rear gardens, the gardens should be reworked, rotovated or decompacted to a depth of 600mm. Once this is carried out, NO PLANT to access these areas. Any further consolidation of subsoil to be reworked as necessary. Before reworking or rotovating, the Contractor is to mark all drain runs in the area.
7. Any deviations from the aforementioned and or regulatory standards may attract additional consent/approvals to the satisfaction of LPA/LLFA, Building Control and or Water Authority.
8. Inspection chambers shall be positioned minimum of 500mm behind the back of the footway.
9. Inspection chambers located within garages to have double seal bolt down covers.
10. Lateral pipes shall be 150mm (unless stated otherwise) and laid at min 1:80 or to the adopting Water Authority's requirements.
11. Inspection chambers shall be positioned minimum 100mm away from the plot boundary.
12. Drainage runs should be laid within hard standings as far as practicable.
13. Drainage runs shall be laid minimum of 5.0 metres from the rear of properties where practicable to allow for future extensions.
14. All drainage pipes (except laterals) shall be min 100mm unless otherwise stated.
15. Drainage runs shall be installed as per the following conditions:
    a. Storm water 100mm - 1:80 (1:100min).
    b. Storm water 150mm - min 1:150
    c. Foul/Combined Water 100mm - 1:80 min*
    d. Foul/Combined Water 150mm - 1:150 min**
    (*min 1 W/C, else, 1:40)
    (**min 5 W/C's, else, 1:80)
16. All connections when laid shall be plugged, protected as necessary and marked with a stake for future use.
17. Invert levels indicate lowest connection point, unless multiple values are noted for differing pipe diameters. Pipework to be installed soffit to soffit.
18. * Indicates interpolated or inferred invert/cover levels that must be checked/confirmed.
19. Where backdrop connections are proposed, BD notation indicates invert level of the back drop pipe (higher invert level). Max 1.5m backdrop where height measures between benching soffit and backdrop invert levels.
20. Back inlet gullies and catchpits (min 300mm) required where connecting to SUDs features and in areas where silt build up likely.
21. Foundations adjacent to pipe runs or manholes are to have their formation level set at or below pipe invert level.
22. 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.
23. 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.
24. Where pipes pass under buildings, unless beam & block floors are used, they are to be surrounded in concrete.
25. Finished Floor Levels (FFL's), assumed to be typically 150mm above external level. Refer to architects drawing for details.
26. All new private 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.
27. Cover and invert levels are indicative and may vary on site. In any case the following minimum cover depth to soffit of pipes without protection shall be as follows:
    a. Domestic gardens and pathways without any possibility of vehicular access - 0.35m
    b. 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
    c. 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
    d. Agricultural land and public open space - 0.9m
    e. Other highways and parking areas with unrestricted access to vehicles with a gross weight in excess of 7.5 tonnes - 1.2m
28. Where drainage does not comply with minimum cover depths, the following protection measures should be installed in accordance with Building Regulations part 'H' and good practices: -
    a. UPVC pipes - provide a concrete bridging (in addition to class 'S' bedding)
    b. 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.
29. Note: in-situ concrete used in connection with a) and b) above shall be standard mix GEN3 in accordance with BS 8500-1.
30. All existing drainage found on site during the works shall be investigated, its operational status confirmed, and the following applied:-
31. Inoperative drainage shall be cut back and pipe runs grubbed out (preferred) or filled with concrete grout.
32. 'Live' drainage shall be temporarily re-routed to allow the new drainage to be constructed.
33. 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.
34. Covers to existing chambers to be re-used shall be replaced where necessary to suit proposed development loading class. Chamber covers shall also be adjusted to suit final ground levels as necessary.
35. Where necessary, existing chambers shall be re-benched to suit new pipework arrangement.



Key

- Indicative Site Boundary
- Indicative Ownership Boundary
- XX.XXX — Finished floor level/DPC Level. Refer to architects details.
- Existing Tree RPA as per Arboricultural report. All existing trees to be removed except those in indicated as retained. All planting to be min 5m away from drainage assets, unless specialist protection provided.

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

- Existing Combined Water Drain
- New Private Combined Water Inspection Chamber 450mm dia. polypropylene up to 3000mm deep.
- New Combined Water Lateral 150Ø unless otherwise stated.

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

- Existing Foul Water Sewer
- New Private Foul Water Drain 100Ø unless otherwise stated.
- New Foul Water PCC Manhole 1200 dia (unless stated otherwise) up to 3000mm deep.
- New Private Foul Water Inspection Chamber 450mm dia. polypropylene up to 3000mm deep.
- New Private Foul Water Inspection Chamber 250mm dia. polypropylene up to 600mm deep.
- New Foul Yard Gully

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

- Existing Storm Water Sewer
- New Private Storm Water Drain 100Ø unless otherwise stated.
- New Storm Water PCC Manhole 1200 dia (unless stated otherwise) up to 3000mm deep.
- New Private Storm Water Inspection Chamber 450mm dia. polypropylene up to 3000mm deep. 300mm cathchpit required where CP annotated.
- New Rodding Eye
- New Road Gully
- 125.400 — Spot Elevation
- Linear ACO drain with silt bucket.
- Low threshold drain as per architectural specification.
- Polystorm R or similar approved ceullular crates with inspect module through middle

Rev	Details	Author & Date	Checked & Date	Approved & Date
P04	DRAINAGE OUTFALL REVISED FOLLOWING DYE TESTING AND CONFIRMATION OF PUBLIC SEWER. ASSOCIATED DRAINAGE ADJUSTED TO SUIT.	MA 10/12/25	-	-
P03	OUTFALL REVISED FOLLOWING DYE TESTING. TANK GEOMETRY AND ASSOCIATED DRAINAGE ADJUSTED TO SUIT.	MA 12/11/25	-	-
P02	TOPOGRAPHIC SURVEY SHOWN, GULLIES TWEAKED AND S12 CHANGED TO 1200 PCC.	MA 12/11/25	-	-
P01	FIRST ISSUE	MA 26/09/25	ZS 26/09/25	ZS 26/09/25

align PROPERTY PARTNERS

Client: PPJ Developments

Project Name: Land rear of 23-43 Moor Lane, Gomersal, Cleckheaton, BD19 4LF

Drawing Title: Drainage Plan

Purpose: S3 - For Comment

Scale	Drawn	Checked	Approved
1:250	MA	ZS	ZS
Original Size	Date	Date	Date
A1	26/09/2025	26/09/2025	26/09/2025

Drawing Number: PV2511-APP-92-XX-DR-C-2500 Rev. P04

PV2511-APP-92-XX-DR-C-2500 Drainage Plan.dwg

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Appendix B

Product and Maintenance Details

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	2.000	3.500
Flush-Flo™	0.331	2.661
Kick-Flo®	0.679	2.135
Mean Flow		2.683

This Hydro-Brake® Optimum includes:

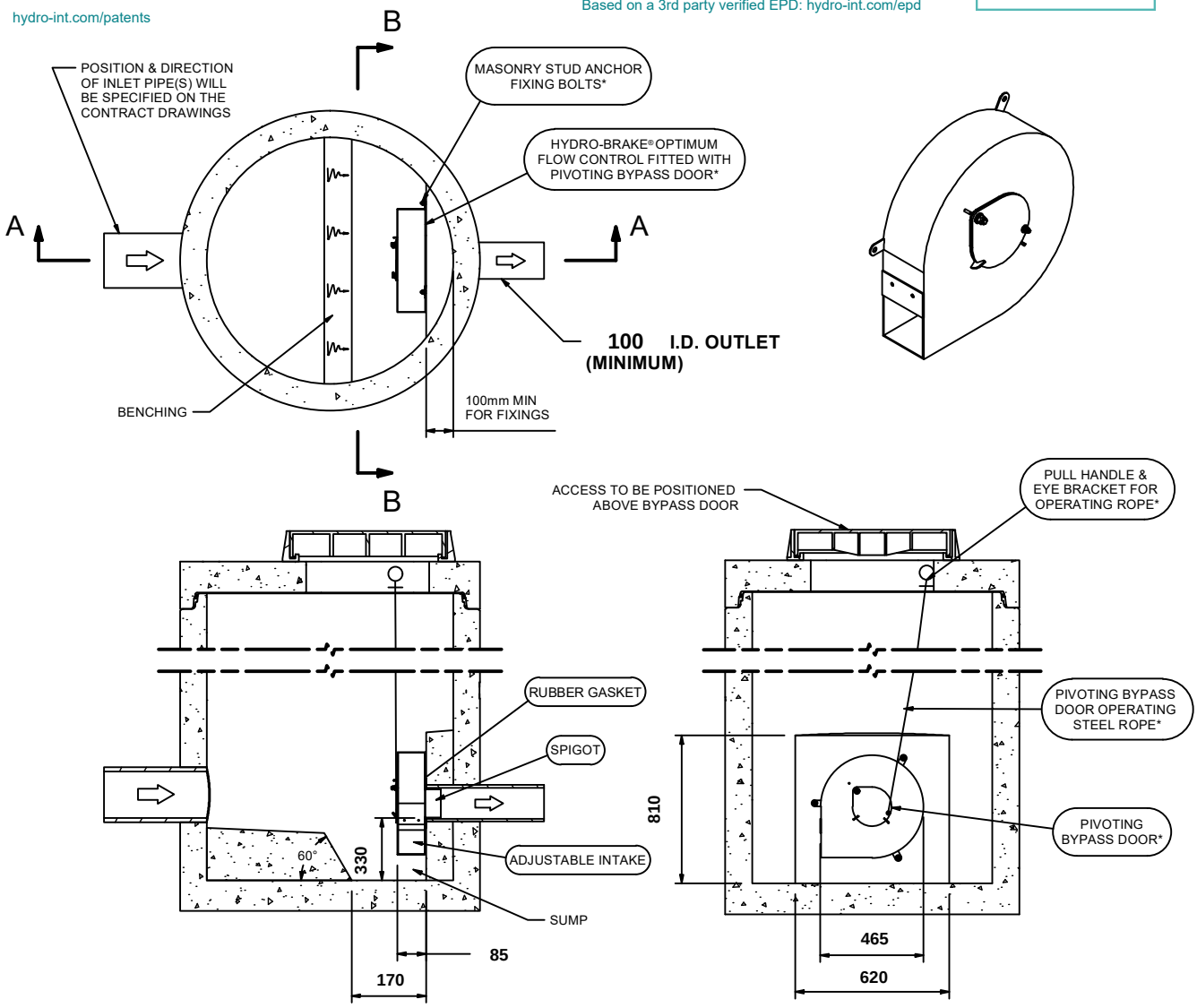
- •All in 3 mm Grade 304L stainless steel
- • Integral pivoting by-pass door allowing clear line of sight through to outlet, c/w operating rope
- • Media blasted for corrosion resistance
- • Variable flow rate post installation via adjustable inlet (if necessary)
- • Indicative Weight: 15 kg
- • Product Carbon Footprint: 49.17 kgCO2e

Based on a 3rd party verified EPD: hydro-int.com/epd

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 08/4596

wrc approved PT/503/0422 Valid: 01/04/2022 - 31/03/2027

hydro-int.com/patents



SECTION A-A

SECTION B-B

IMPORTANT: (oval) LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
HYDRO-BRAKE® IS A REGISTERED TRADEMARK FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE

The head/flow characteristics of this SHE-0076-3500-2000-3500 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro International A CRH COMPANY

DATE	13/11/2025 10:31
SITE	Moor Lane, Gomersal
DESIGNER	Muddasser Ali
REF	2511

SHE-0076-3500-2000-3500
Hydro-Brake® Optimum

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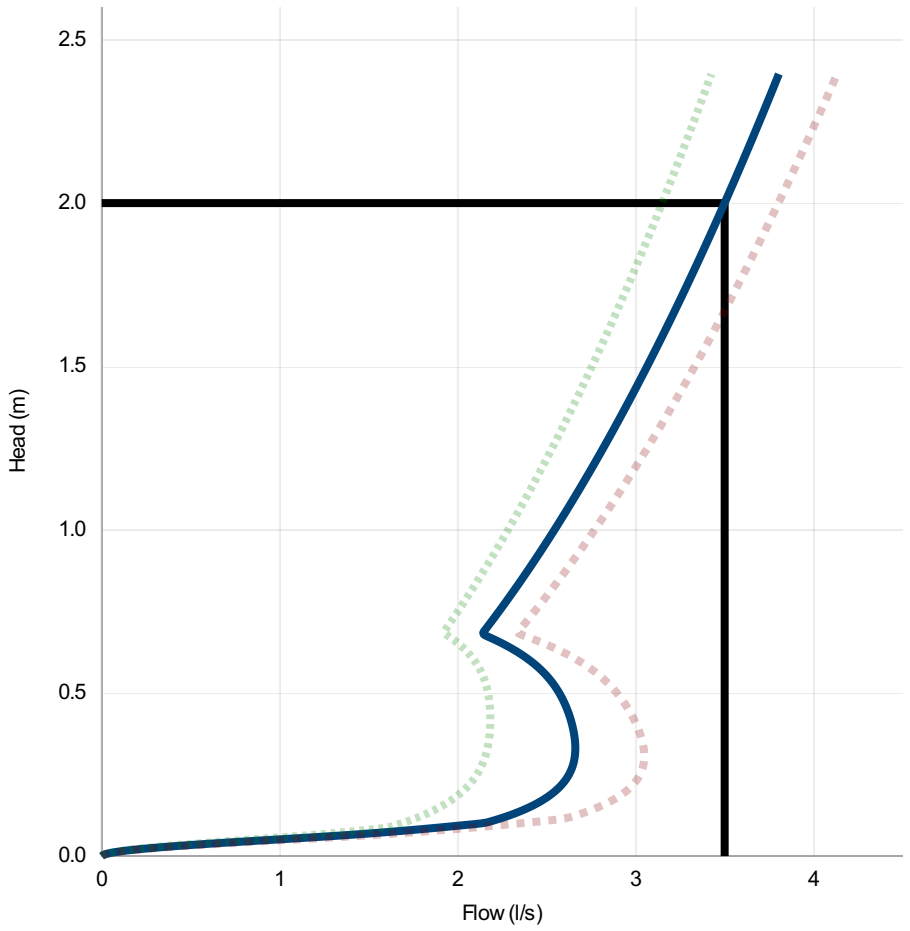
Technical Specification

	Original Setting		Minimum Setting		Maximum Setting	
Control Point	**Head (m)**	**Flow (l/s)**	**Head (m)**	**Flow (l/s)**	**Head (m)**	**Flow (l/s)**
Primary Design	2.000	3.500	2.000	3.149	2.000	3.802
Flush-Flo™	0.331	2.661	0.419	2.183	0.306	3.048
Kick-Flo®	0.679	2.135	0.683	1.918	0.682	2.331
Mean Flow		2.683		2.357		2.954

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Head (m)	Flow (l/s)
0.000	0.000
0.069	1.494
0.138	2.354
0.207	2.564
0.276	2.646
0.345	2.660
0.414	2.637
0.483	2.588
0.552	2.501
0.621	2.349
0.690	2.150
0.759	2.244
0.828	2.335
0.897	2.421
0.966	2.504
1.034	2.584
1.103	2.662
1.172	2.737
1.241	2.809
1.310	2.880
1.379	2.948
1.448	3.015
1.517	3.080
1.586	3.144
1.655	3.206
1.724	3.267
1.793	3.327
1.862	3.386
1.931	3.443
2.000	3.499

DESIGN ADVICE

The head/flow characteristics of this SHE-0076-3500-2000-3500 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**

Hydro International
A CRH COMPANY

DATE	13/11/2025 10:31
Site	Moor Lane, Gomersal
DESIGNER	Muddasser Ali
Ref	2511

SHE-0076-3500-2000-3500

Hydro-Brake® Optimum

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Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.600	22.000
Flush-Flo™	0.476	21.998
Kick-Flo®	1.038	17.908
Mean Flow		19.019

This Hydro-Brake® Optimum includes:

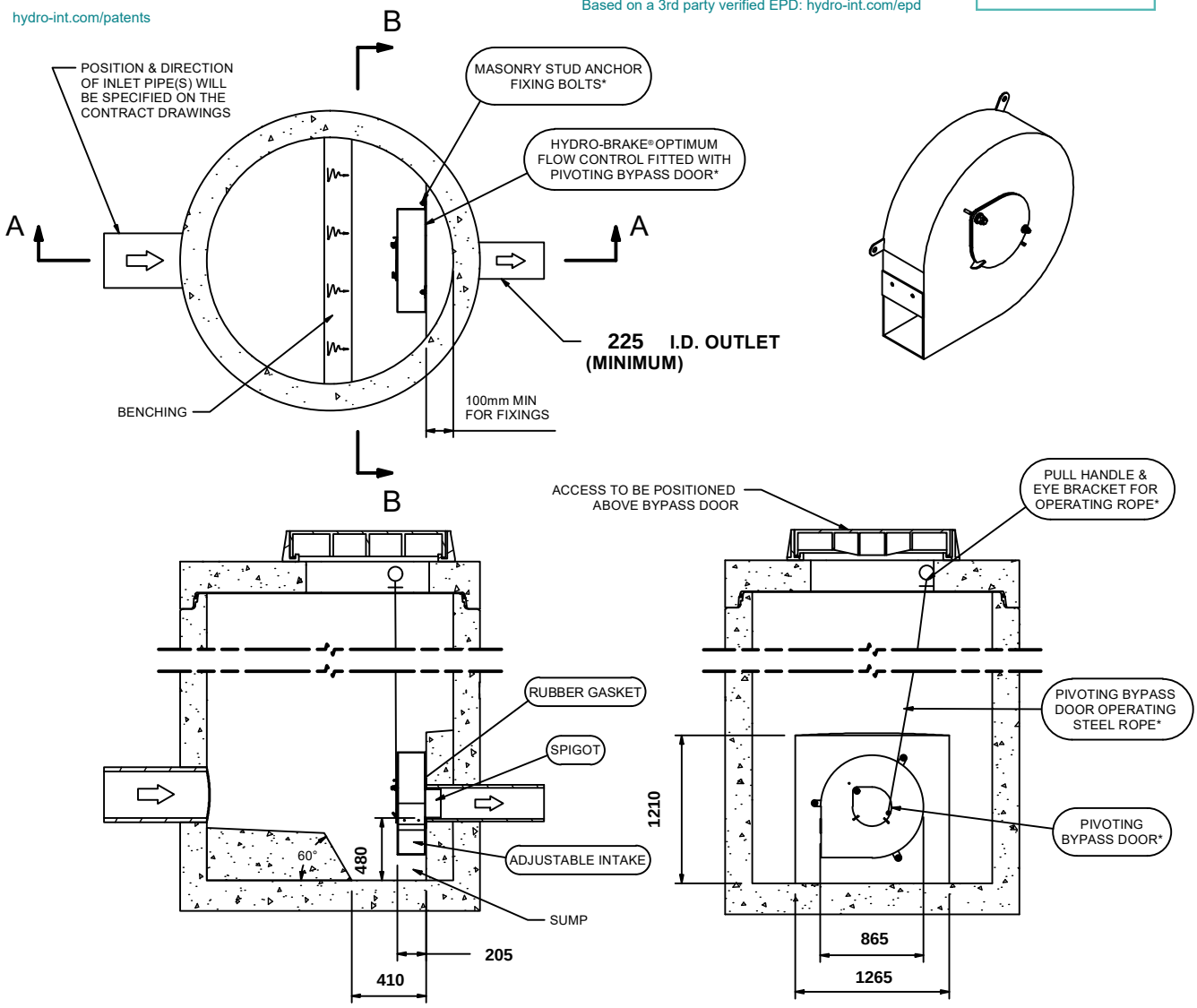
- •All in 5 mm Grade 304L stainless steel
- • Integral pivoting by-pass door allowing clear line of sight through to outlet, c/w operating rope
- • Media blasted for corrosion resistance
- • Variable flow rate post installation via adjustable inlet (if necessary)
- • Indicative Weight: 70 kg
- • Product Carbon Footprint: 311.69 kgCO2e

Based on a 3rd party verified EPD: hydro-int.com/epd

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wrc approved PT/503/0422 Valid: 01/04/2022 - 31/03/2027

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SECTION A-A

SECTION B-B

IMPORTANT: ⬭ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
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HYDRO-BRAKE® IS A REGISTERED TRADEMARK FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE

The head/flow characteristics of this SHE-0199-2200-1600-2200 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

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DATE	13/11/2025 10:28
SITE	Moor Lane, Gomersal
DESIGNER	Muddasser Ali
REF	2511

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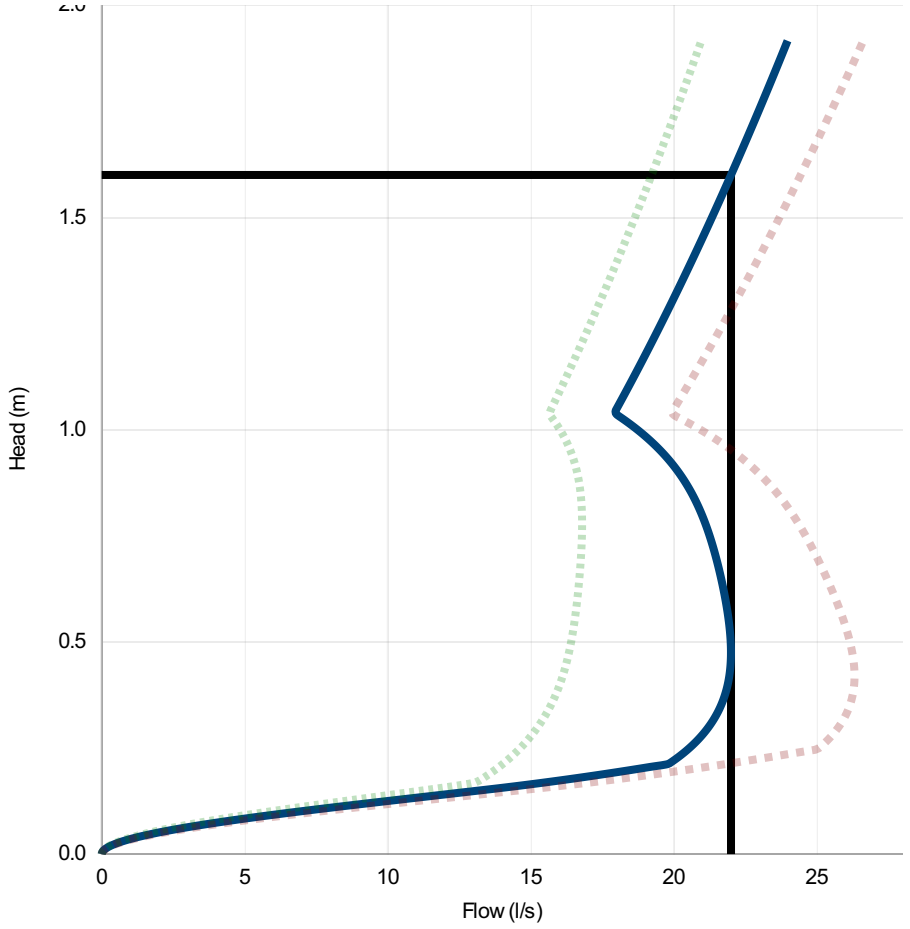
Technical Specification

	Original Setting		Minimum Setting		Maximum Setting	
Control Point	**Head (m)**	**Flow (l/s)**	**Head (m)**	**Flow (l/s)**	**Head (m)**	**Flow (l/s)**
Primary Design	1.600	22.000	1.600	19.226	1.600	24.434
Flush-Flo™	0.476	21.998	0.778	16.794	0.420	26.318
Kick-Flo®	1.038	17.908	1.035	15.620	1.036	19.888
Mean Flow		19.019		15.442		21.772

BBA APPROVAL INSPECTION TESTING CERTIFICATION
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Head (m)	Flow (l/s)
0.000	0.000
0.055	2.312
0.110	8.117
0.166	15.113
0.221	19.998
0.276	20.933
0.331	21.512
0.386	21.836
0.441	21.978
0.497	21.991
0.552	21.917
0.607	21.785
0.662	21.612
0.717	21.400
0.772	21.137
0.828	20.796
0.883	20.338
0.938	19.709
0.993	18.852
1.048	17.993
1.103	18.436
1.159	18.868
1.214	19.290
1.269	19.701
1.324	20.104
1.379	20.498
1.434	20.885
1.490	21.263
1.545	21.635
1.600	22.000

DESIGN ADVICE

The head/flow characteristics of this SHE-0199-2200-1600-2200 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**

Hydro International
A CRH COMPANY

DATE	13/11/2025 10:28
Site	Moor Lane, Gomersal
DESIGNER	Muddasser Ali
Ref	2511

SHE-0199-2200-1600-2200

Hydro-Brake® Optimum

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Maintenance

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

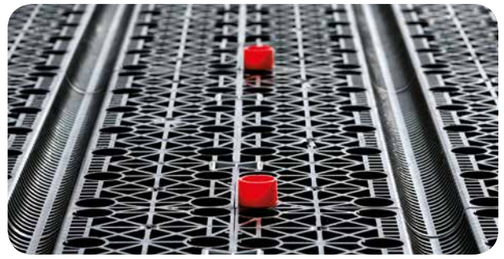
Maintenance plan

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)

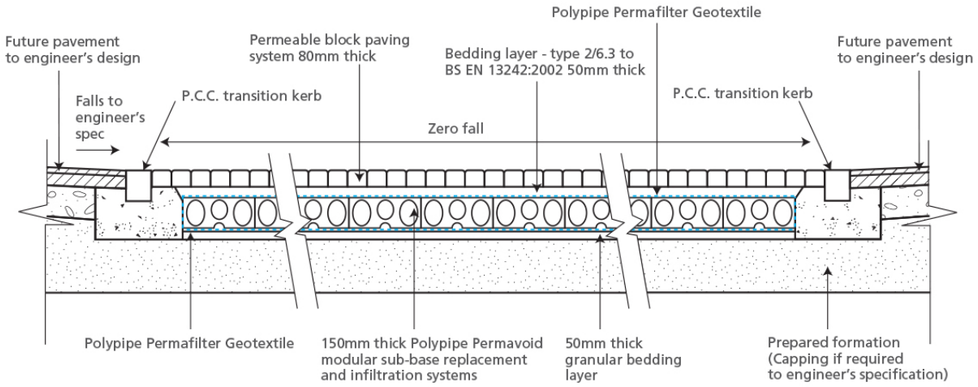
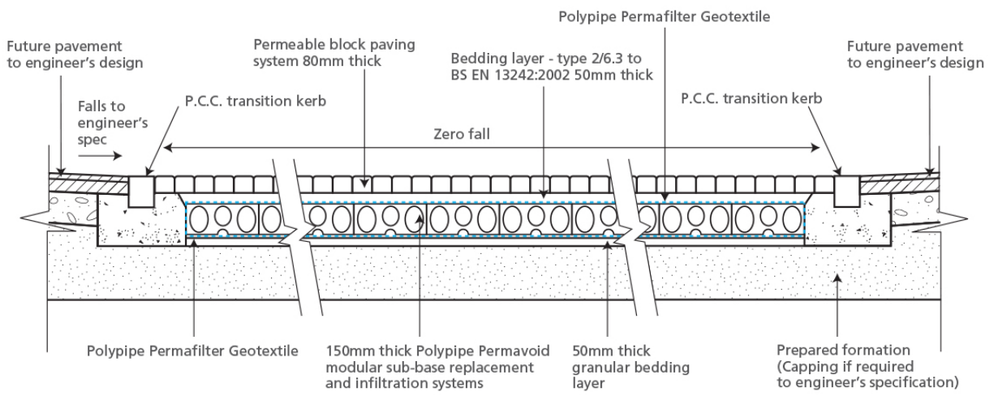


Figure 8.1.2: Permavoid permeable pavement sub-base attenuation detail (drawing no. PV_SD_AT_PP_001)

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



CAD drawings are also available on the website toolbox

Appendix C

Record of Maintenance

DRAINAGE
MAINTENANCE LOG

FACILITY NAME: **LOCATION:**

DATE	SERVICED BY WHOM	TYPE OF SERVICE (rodding, jetting, repair, etc.)	SERVICE COMMENTS (problems, observations, etc.)