



Drainage Report to Discharge Condition 13

**Remington Road,
Haringey, London
N15 6SR**

OUR REF: 23023

Haringey Council – Planning Service

26/05/2023

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Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By
23023	23023- Drainage Conditions Report	P01	26/05/2023	DH	DO	AS

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1. Introduction

MWP (Malachy Walsh & Partners) are working with our client Formation Group PLC, to discharge planning conditions 13 of planning reference HGY/2021/2882 that has been laid by the Planning Service following submitted planning permission. This planning permission regards the proposed re-development of land located on Remington Road, Haringey, N15 6SR.

The development comprises a central apartment block consisting of three cores, A, B and C. Cores B and C are made up of three stories, and core A consists of six stories. A row of townhouses and adjacent maisonettes provide additional units within the proposed development. The development will provide 46 new dwellings varying in size from one to four-bedroom units. The regeneration of Remington Road with a pedestrian zone in the north-east is also included.

Figure 1 shows the location of the site. The existing Network Rail railway tracks to the north can be seen along with the nearby settlements to the east, south and west.



Figure 1: Site location (Google Maps)

For the drainage design, the entire site is split into three catchments – named Parcel 01, and Parcel 02+03 (P01, P02+P03 respectively). Each parcel is designed to incorporate SuDS techniques in the form of green roofs/green areas, permeable paving, and attenuation tanks, see the proposed below-ground drainage drawing included in Appendix A showing the SuDS components around site.

Refer to Appendix A and B for the MWP Below Ground Drainage Layout and Permeable Pavement Perforated Pipe Layout showing the extent of the SuDS features that have been designed for this site.

1.1 Planning Conditions

Planning permission (Application Ref: HGY/2021/2882) was granted by Haringey Council along with a set of conditions.

Planning condition 12 (submitted on 07/12/2022) was discharged by Haringey Council on 1/2/2023, the condition stated

- 12) *The authorised development **shall not begin** until drainage works have been carried out in accordance with details to be submitted to and approved by the Local Planning Authority. This shall include drainage calculations and confirmation of rate and point of discharge from the water authority.*

*Reason: In order to ensure a satisfactory provision for drainage on site and ensure suitable drainage provision for the authorised development and comply with **Policy SI13 of the London Plan 2021, Policies SP0 and SP4 of the Haringey Local Plan 2017 and Policy DM24 of The Development Management DPD 2017***

This report aims to discharge condition 13 in relation to the site's drainage strategy, condition 13 states:

- 13) ***Prior to the occupation** of the development, management maintenance schedules, including details of who is responsible for maintenance, for each SuDS element of the development, shall be submitted to and approved in writing by the local planning authority. The SuDS shall remain in place for the lifetime of the development.*

*Reason: To manage and mitigate flood risk impact in accordance with **Policy SP5 of the Haringey Local Plan 2017 and Policy DM24 of the Haringey Development Management DPD 2017.***

2. Operation and Maintenance

During the construction phase, the main contractor will be responsible for the operation and maintenance of the drainage infrastructure, including the SuDS components around site. This responsibility will be passed on to the property owners/building management once the construction phase is complete.

As a guide, MWP has compiled a set of general operation and maintenance tasks extracted from Ciria C753. These operation and maintenance tasks must be carried out as this will ensure the effectiveness of the components and therefore reduce the risk of flooding onsite during heavy rainfall – see Appendix C for the general maintenance tasks.

It must be noted that this compilation is for general operation and maintenance tasks, for more detailed information the components manufacturer's manuals can be referred to. Section 3 below details the specific maintenance program.

A typical checklist for the maintenance of the SuDS components can be found in Appendix D.

3. Maintenance Program

- 3.1 The property manager and maintenance staff will conduct the operation and maintenance program set forth in this document. The manager will ensure that inspections and record keeping are timely and accurate and that cleaning and maintenance are performed at least on a bi-annual basis. Inspection & maintenance log forms (attached) shall include the date and the amount of the last significant storm event in excess of 1" of rain in a 24-hour period, physical conditions of the structures, depth of sediment in structures, evidence of overtopping or debris blockage and maintenance required of each structure.

Records of maintenance will be kept on file at the property manager's office and copies of inspection & maintenance log sheets indicating all work and inspections will be available to the local authority or engineers upon request.

- 3.2 All surface water management structures will be inspected two times per year, with cleaning typically occurring in April and October and possibly more often, as site conditions warrant. Concurrent with inspection and cleaning, all litter shall be picked up and removed from the parking areas, service areas, grass, landscaped and wooded areas.
- 3.3 Long-term management practices include monthly sweeping of parking areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilized during rain events and transported to the drainage system. Pavement sweeping is a highly effective source control measure for reducing pollutant loading in surface water. A regenerative air type street sweeper will be utilized to sweep site parking areas. All sweepings will be disposed of in a legal manner.
- 3.4 Ensure that drainage structures are not blocked by ice, snow, debris or trash during winter months.

Quarterly Inspections

- 3.5 Inspect catch basin inlet grates and remove any debris monthly or as determined to be reasonable based on experience with the installed systems to ensure that the catch basins are working in their intended fashion and that they are free of debris; quarterly, inspect catch basin sumps and bottom of drain manholes; if depth of sediment in sumps exceeds 50% capacity, sediment must be removed. Excessive sediment shall be removed and properly disposed by a licensed drainage cleaning company.

Bi-Annual Inspections (April and October)

- 3.6 Inspect sediment depth near discharge pipes once per year or more frequently if depth of sediment exceeds $\frac{1}{4}$ of pipe diameter.
- 3.7 Accumulated sediment must be removed if the depth of sediment exceeds $\frac{1}{4}$ of pipe diameter during inspection. Excessive sediment shall be removed and properly disposed by a licensed drainage cleaning company.
- 3.8 Inspect water quality units and ponds. Accumulated sediment must be removed if depth of sediment exceeds 15% of the unit's storage capacity during either of the bi-annual inspections and at least once per year; 3. Inspect constructed surface water wetlands and remove wind-blown trash and debris. Inspect vegetation twice per year during both the growing and non-growing seasons. Remove accumulated sediment once every ten years or more often as necessary.
- 3.9 Inspect all vegetated areas and remove litter and debris as necessary. Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.
- 3.10 Inspection of trash and recycling enclosures for spillage and scattered litter must be performed on a regular basis to prevent the spread of pollutants into the surface water management system.
- 3.11 It is highly recommended that the manufacturer recommended maintenance inspection is carried out for the permeable paving system.

4. Schedule

- 4.1 The following is a general maintenance schedule that can be used as a reference by the Property Manager. This schedule includes the maintenance action to be taken and when the action is to occur.

Site Component	Action to be Taken	Timeline for Completion
Manholes/ Gullies/ Channels	Monthly inspections with Quarterly cleaning, removal of sediments, oils, and floatables	Monthly Inspection, Quarterly Cleaning
Pavement Areas	Sweeping of paved areas, disposal of sweeping in a legal manner; removal of trash and litter from pavement.	Monthly
Below Ground Attenuation tanks	Inspect in accordance to manufacturers recommendations	April & October

- 4.2 It is strictly prohibited to discharge any products or substances onto the ground surface or into any drainage structures, such as catch basin inlets, manholes, water quality units, fore bays, basin or drainage outlets.
- 4.3 Should a spill occur, immediate action steps must be implemented to contain the spill, cordon off the area, clean it up immediately and dispose of it properly to prevent an illicit discharge to the surface water management system.

5. Conclusion

In conclusion, this report has stated how the SuDS components on site should be maintained during operation. The SuDS manufacturer must be contacted/consulted for specific maintenance requirements or any further information.

Refer to the appendices of this report for further supplementary information.

Appendix A

MWP – Below Ground Drainage Layout

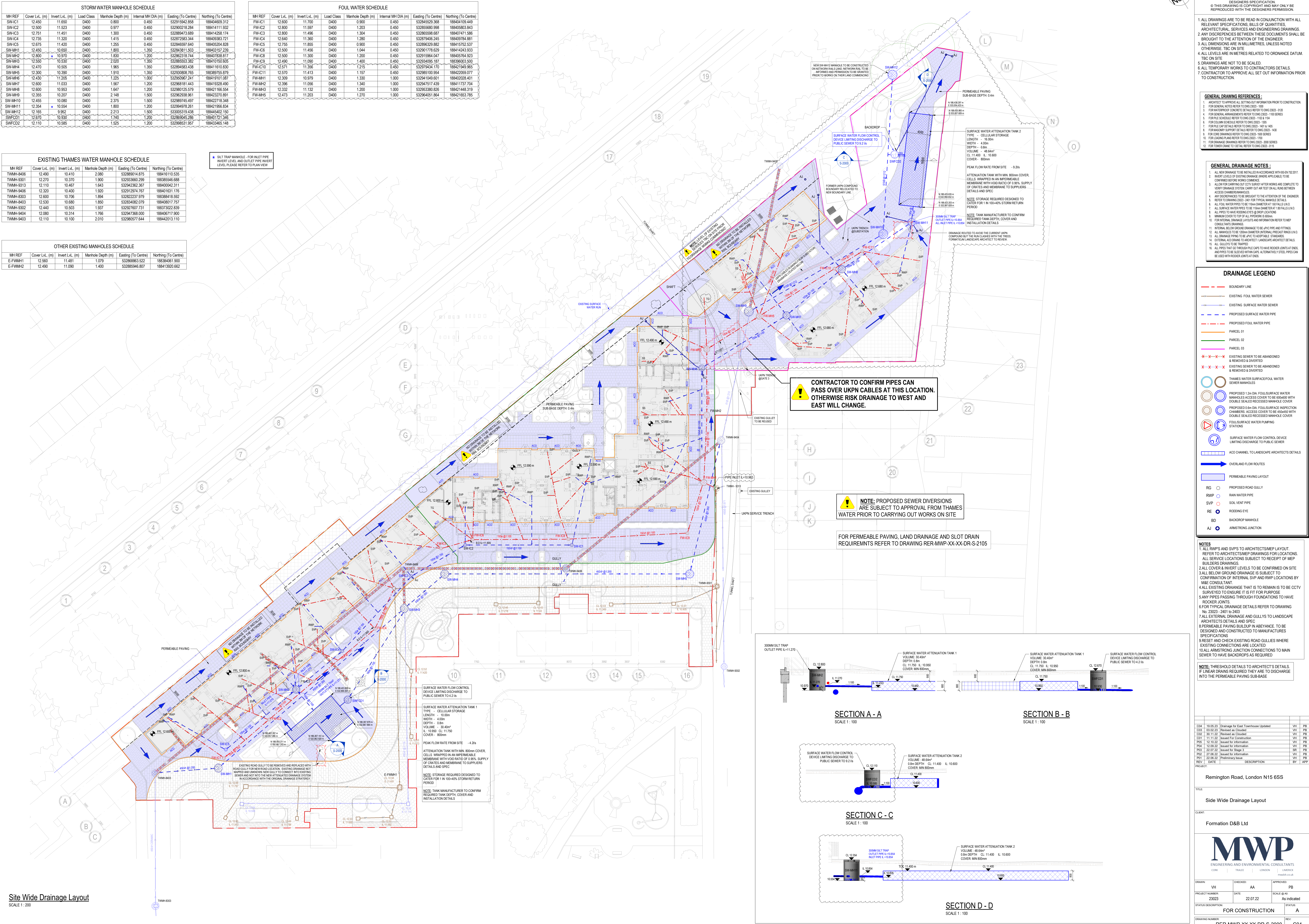
STORM WATER MANHOLE SCHEDULE							
MH REF	Cover LVL. (m)	Invert LVL. (m)	Load Class	Manhole Depth (m)	Internal MH DIA (m)	Easting (To Centre)	Northing (To Centre)
SW-HC1	12.450	11.650	D400	0.800	0.450	532915942.888	188404609.312
SW-HC2	12.500	11.523	D400	0.977	0.450	532900012.844	188414111.502
SW-HC3	12.751	11.451	D400	1.300	0.450	532899473.689	188414258.174
SW-HC4	12.735	11.320	D400	1.415	0.450	532872583.344	188409383.721
SW-HC5	12.675	11.420	D400	1.255	0.450	532846697.640	188405204.828
SW-MH1	12.450	10.950	D400	1.500	0.450	532843811.503	188403151.238
SW-MH2	12.900	10.970	D400	1.930	1.200	532862316.744	188407638.811
SW-MH3	12.550	10.530	D400	2.020	1.350	532855553.382	188410150.665
SW-MH4	12.470	10.505	D400	1.965	1.350	532894583.438	188411610.830
SW-MH5	12.300	10.350	D400	1.950	1.350	532830826.765	18839755.679
SW-MH6	12.430	11.205	D400	1.225	1.100	532852667.541	188419101.087
SW-MH7	12.600	11.033	D400	1.567	1.200	532868181.443	188419328.490
SW-MH8	12.600	10.953	D400	1.647	1.200	532880125.579	188421166.554
SW-MH9	12.355	10.207	D400	2.148	1.500	532863538.961	188423770.891
SW-MH10	12.455	10.090	D400	2.375	1.500	532869145.407	188422714.348
SW-MH11	12.354	10.554	D400	1.800	1.200	532894978.261	188421956.834
SW-MH12	12.165	9.952	D400	2.213	1.500	533005319.438	188445402.150
SW-FC01	12.670	10.930	D400	1.740	1.200	532863045.286	188401721.348
SW-FC02	12.110	10.585	D400	1.525	1.200	532865531.957	188433465.148

FOUL WATER SCHEDULE							
MH REF	Cover LVL. (m)	Invert LVL. (m)	Load Class	Manhole Depth (m)	Internal MH DIA (m)	Easting (To Centre)	Northing (To Centre)
FW-HC1	12.600	11.700	D400	0.900	0.450	532845529.368	188404109.449
FW-HC2	12.800	11.587	D400	1.213	0.450	532855580.988	188405902.543
FW-HC3	12.800	11.496	D400	1.304	0.450	532865598.687	188407471.596
FW-HC4	12.840	11.380	D400	1.280	0.450	532879306.245	188409784.881
FW-HC5	12.755	11.855	D400	0.900	0.450	532896329.882	188415752.537
FW-HC6	12.500	11.456	D400	1.044	0.450	532881778.629	188414243.553
FW-HC8	12.500	11.300	D400	1.200	0.450	532915584.047	188405784.923
FW-HC9	12.490	11.090	D400	1.400	0.450	532843095.187	188386003.500
FW-HC10	12.571	11.356	D400	1.215	0.450	532879434.170	188421949.955
FW-HC11	12.570	11.413	D400	1.157	0.450	532895100.954	188422659.077
FW-MH1	12.309	10.979	D400	1.330	1.000	532841049.601	188402028.401
FW-MH2	12.396	11.056	D400	1.340	1.000	532847517.439	188411737.704
FW-MH3	12.332	11.132	D400	1.200	1.000	532853380.826	188421448.319
FW-MH5	12.473	11.203	D400	1.270	1.000	532864051.864	188421653.785

EXISTING THAMES WATER MANHOLE SCHEDULE					
MH REF	Cover LVL. (m)	Invert LVL. (m)	Manhole Depth (m)	Easting (To Centre)	Northing (To Centre)
TWMH-9406	12.490	10.410	2.080	532886014.075	188416110.535
TWMH-9301	12.270	10.370	1.900	532933660.299	188395546.688
TWMH-9313	12.110	10.467	1.643	532942362.367	188400042.311
TWMH-9408	12.320	10.400	1.920	532912974.767	188401631.176
TWMH-9303	12.600	10.706	1.894	532822337.979	188388416.802
TWMH-9403	12.530	10.680	1.850	532834082.079	188409017.757
TWMH-9302	12.440	10.503	1.937	532927607.731	188373022.839
TWMH-9404	12.080	10.314	1.766	532947368.000	188406717.900
TWMH-9403	12.110	10.100	2.010	532865577.644	188442013.110

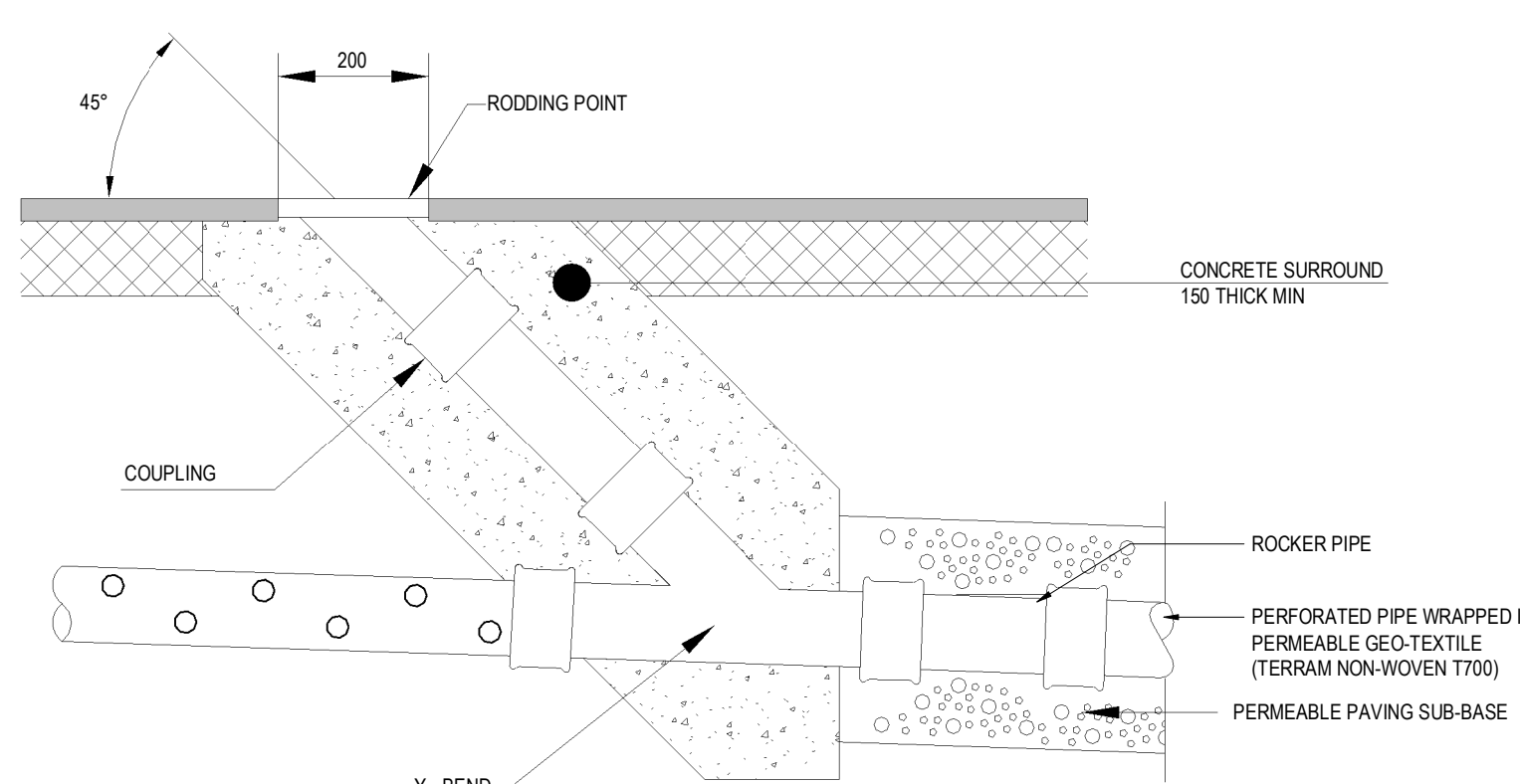
OTHER EXISTING MANHOLES SCHEDULE					
MH REF	Cover LVL. (m)	Invert LVL. (m)	Manhole Depth (m)	Easting (To Centre)	Northing (To Centre)
E-FVMM1	12.560	11.481	1.079	532868863.522	188384061.900
E-FVMM2	12.490	11.090	1.400	532885946.807	188413920.662

★ SILT TRAP MANHOLE - FOR INLET PIPE INVERT LEVEL AND OUTLET PIPE INVERT LEVEL PLEASE REFER TO PLAN VIEW

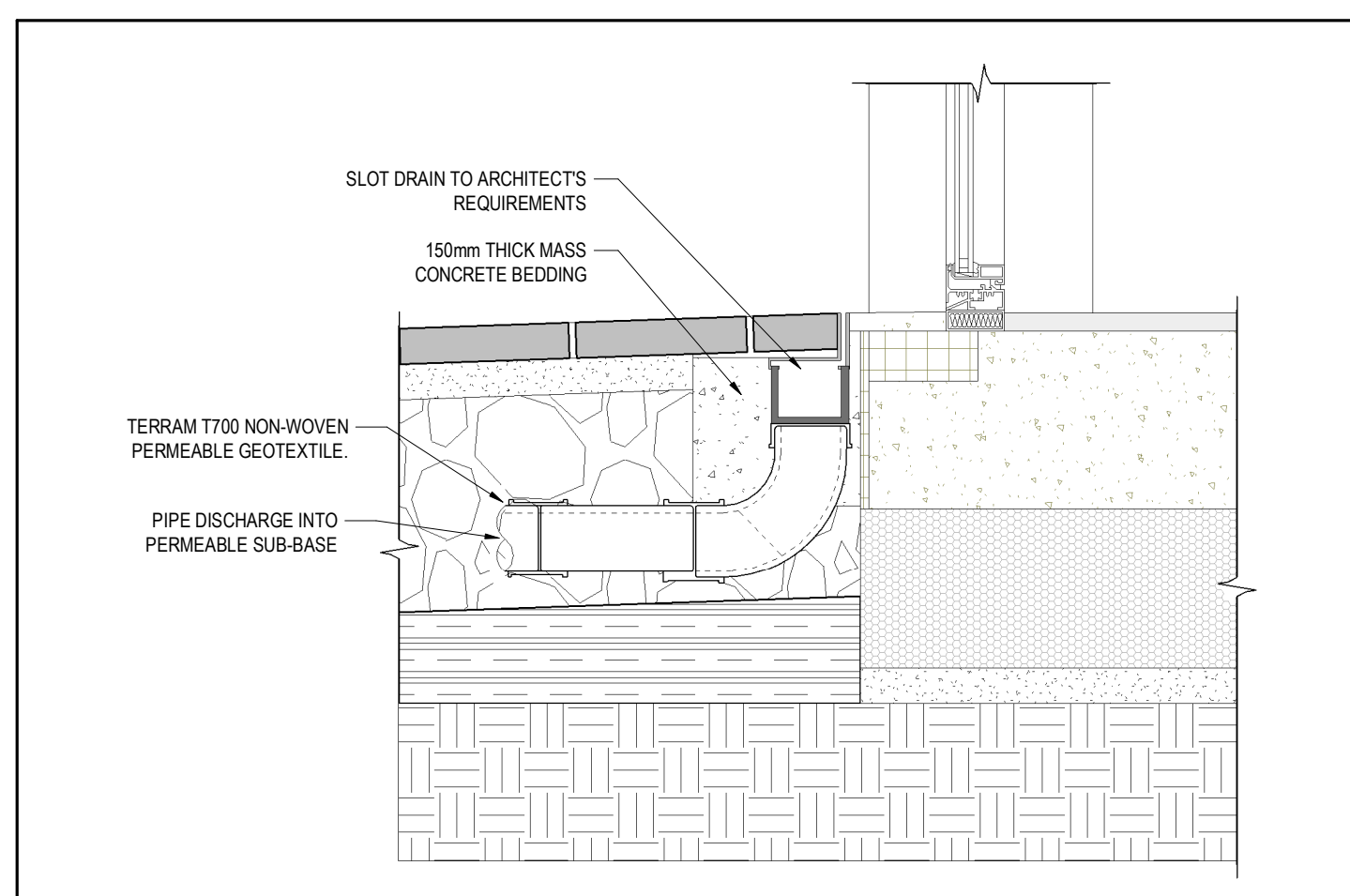
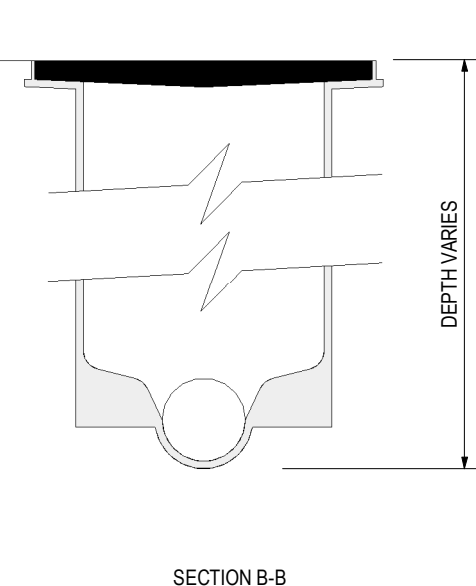


Appendix B

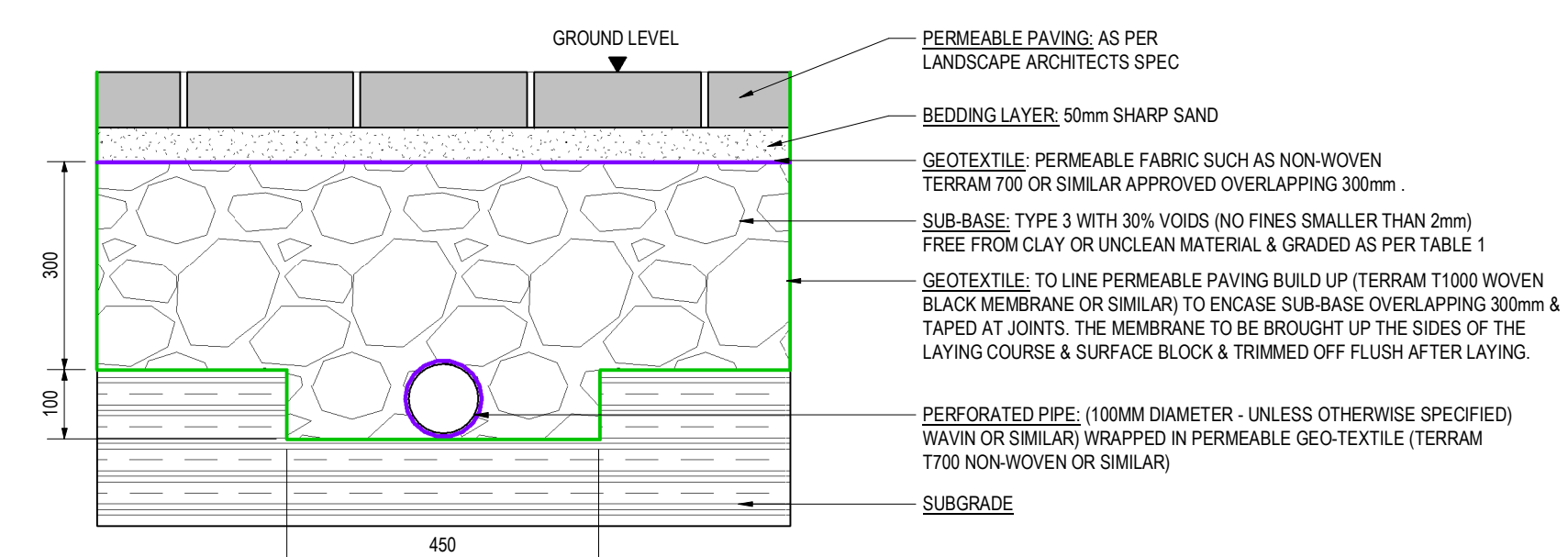
MWP – Permeable Pavement Perforated Pipe Layout



RODDING EYE (MID RUN)
SCALE 1 : 10



PERMEABLE PAVEMENT BUILD-UP (VEHICLE TRAFFICKED AREAS) - DETAIL 1
[SCALE 1:10]



PERMEABLE PAVEMENT BUILD-UP (PEDESTRIAN AREAS) - DETAIL
[SCALE 1:10]

DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS
IN ALL CASES. VERIFY DIMENSIONS ON SITE AND REPORT ANY
DISCREPANCIES TO THE DESIGNERS IMMEDIATELY.
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE
DESIGNERS SPECIFICATION.
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REPRODUCED WITH THE DESIGNERS PERMISSION.

1. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, BILLS OF QUANTITIES, ARCHITECTURAL, SERVICES AND ENGINEERING DRAWINGS.
2. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE. TBC ON SITE
4. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM. TBC ON SITE
5. DRAWINGS ARE NOT TO BE SCALED.
6. ALL TEMPORARY WORKS TO CONTRACTORS DETAILS.
7. CONTRACTOR TO APPROVE ALL SET OUT INFORMATION PRIOR TO CONSTRUCTION.

1. ARCHITECT TO APPROVE ALL SETTING-OUT INFORMATION PRIOR TO CONSTRUCTION
2. FOR GENERAL NOTES REFER TO DWG 2303 - 1000
3. FOR WATERPROOF CONCRETE DETAILS REFER TO DWG 2303 - 0120
4. FOR GENERAL ARRANGEMENTS REFER TO DWG 2303 - 1100 SERIES
5. FOR PILE SCHEDULE REFER TO DWG 2303 - 1102 & 1104 SERIES
6. FOR COLUMN SCHEDULE REFER TO DWG 2303 - 1306
7. FOR PILE CAP DETAILS REFER TO DWG 2303 - 1401 & 1405
8. FOR MASONRY SUPPORT DETAILS REFER TO DWG 2303 - 1430
9. FOR CORE DRAWINGS REFER TO DWG 2303 - 1500 SERIES
10. FOR LANDING PLANS REFER TO DWG 2303 - 1700
11. FOR FINISHES DRAWINGS REFER TO DWG 2303 - 2000 SERIES
12. FOR TOWER CORE TC1 DETAIL REFER TO DWG 2303 - 0115

1. ALL NEW DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH BS EN 752:2017.
2. INVERT LEVELS OF EXISTING DRAINAGE (WHERE APPLICABLE) TO BE CONFIRMED BEFORE WORKING.
3. LOW CARRYING ABILITY CITY SURF AND PAVED AREAS ARE COMPLETELY TO FOLLOW DRAINAGE SYSTEM CARRY OUT AFTER WORK ON ALL RUNS BETWEEN ACCESS CHAMBERS/CHASIS.
4. ALL PRECISEMENTS TO BE MADE TO DRAW TO THE ATTENTION OF THE ENGINEER.
5. REFER TO DRAWING 2222-3401 FOR TYPICAL MANHOLE DETAILS.
6. ALL FOLL WATER PIPES TO BE 150mm diameter AT 145 FALLS UNO.
7. ALL SURFACE WATER PIPES TO BE 150mm DIAMETER AT 145 FALLS UNO.
8. ALL PIPES TO HAVE RIGID JOINTS AND 300mm COVERINGS.
9. MINIMUM COVER TO TOP OF ALL PIPEWORK IS 600mm.
10. FOR INTERNAL DRAINAGE LAYOUTS AND INFORMATION REFER TO MEP CONSULTANTS DRAWINGS.
11. ALL NEW BELOW GROUND DRAINAGE TO BE 1/2 PVC PIPE AND FITTINGS.
12. ALL MANHOLES TO BE 1200mm DIAMETER INTERNAL PRECAST BRICKS UNO.
13. ALL DRAINAGE PIPING TO BE TO ACCEPT STANDARD STANDARDS.
14. ALL DRAINAGE TO BE TO ACCEPT LANDSCAPE ARCHITECT DETAILS.
15. ALL GULLIES TO BE TRAPPED.
16. ALL PIPES THAT GO THROUGH PLCE CAPS THAT ROCKER JOINTS AT ENDS, AND PIPES TO BE SLEEVED WITH CAPS. ALTERNATIVELY STEEL PIPES CAN BE COVERED.

 BOUNDARY LINE
 PARCEL 01
 PARCEL 02
 PARCEL 03
 PERMEABLE PAVING IN TRAFFICED AREAS
 (BUILT UP AS PER DETAIL 1)
 PERMEABLE PAVING IN PEDESTRIAN AREAS
 (BUILT UP AS PER DETAIL 2)
 ACO CHANNEL TO LANDSCAPE ARCHITECTS DETAILS
 DIRECTION OF PROPOSED PIPE FALL
 CONNECTION FROM PERMEABLE PAVING INTO
 MAIN DRAINAGE
 AJ ARMSTRONG JUNCTION
 RE RIDDING EYE

- BS 7533-1:2009 AND CIRIA 753 (THE SDIS MANUAL).
2. CONCRETE BLOCKS AND CURBS FOR LANDSCAPE ARCHITECTS SPECIFICATION
3. FOUR FOOTING BLOCKS SHALL BE CAST IN PLACE AND BLOCK PERMITS PAVING TO BE LAID IN A HERRINGBONE PATTERN.
4. BEDDING LAYING COURSE IN ACCORDANCE WITH BS 7533-1:2009.
5. CURB TESTS TO BE CARRIED OUT PRIOR TO THE INSTALLATION OF PERFORATED PAVING SUB-BASE. RESULTS TO DETERMINE FINAL BUILD-UP PERMISSIBLE PAVING.
6. HIGRA OR AC LAYER TO BE USED WHERE CONSTRUCTION TRAFFIC COULD COMPACT SUB-BASE.
7. PERFORATED PAVING TO BE PERFORATED PAVING AS PER DRAWING C2923-2/10.
8. PERFORATED PAVING TO BE WRAPPED IN GEO-TEXTILE (TERRAM 770 NO. WOVEN OR SIMILAR)
9. PERFORATED PAVING MAY BE Laid FLAT WHERE THE GROUND DOES NOT FALL TOWARDS OUTLET. HOWEVER MUST NOT BE INSTALLED WITH A NEGATIVE SLOPE OR BE FREE FROM UNDULATIONS.
10. RIDGING EYES/INSPECTION CHAMBERS TO BE INSTALLED TO ALLOW CLEANING ACCESS INTO PERFORATED PAVING AT SUITABLE LOCATIONS.

NOTE:
CBR OF SUBGRADE NOT TO BE LESS THAN 2.5%

DETAILS BASED ON SUBGRADE CBR
OF 2.5% OR GREATER. CBR TESTS
TO BE CARRIED OUT TO CONFIRM.

C02	18.05.23	Drainage for East Townhouse Updated		VH
C01	30.11.22	Issued for Construction		VH
P02	12.10.22	Issued for information		VH
P01	12.09.22	Issued for information		VH
REV	DATE	DESCRIPTION		BY

Remington Road, London N15 6SS

TITLE:	
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Permeable Paving Perforated Pipe Layout

CLIENT: Formation D&B Ltd

NOTE

MWP

ENGINEERING AND ENVIRONMENTAL CONSULTANTS

DRAWN: VH			CHECKED: DH			APPROVED: PB		
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PROJECT NUMBER: 23023	DATE: 08/26/22	SCALE @ A0: As indicated
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STATUS DESCRIPTION:	STATUS:
FOR CONSTRUCTION	A

DRAWING NUMBER:	RER-MWP-XX-XX-DR-S-2105	REV:	C02
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Appendix C

Operation and Maintenance of SuDS Components

Operation and Maintenance of Pipes, Manholes & Gully's

Maintenance Period	Maintenance Task	Frequency
Regular Maintenance	Cleaning of gutters and filters on downpipes and bruising/sweeping of leaves debris that may cause blockages in gullies.	Annually
	Inspect for sediment and debris in pre-treatment components (i.e. catch pits and gully silt traps), and inside manhole rings.	Annually (or as required)
Occasional Maintenance	Remove sediment/debris from pre-treatment components (i.e. catchpits).	As required, based on regular inspections
Remedial Actions	Trimming of roots that may be causing blockage and patch repair of pipework that has cracked or deformed.	As required
	Repair/rehabilitate manhole and gully inlets and outlets.	As required
Monitoring	Inspect silt traps and note the rate of sediment accumulation	Monthly in 1 st year, then annually
	Check to ensure gullies and manholes are emptying fully.	Annually

Operation and Maintenance of Attenuation Storage Tanks

Maintenance Period	Maintenance Task	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 risk to performance).	Monthly
	For systems where rainfall infiltrates into the tank from above, check the surface of the filter for blockage by sediment, algae or other matter; remove and replace the surface infiltration medium as necessary.	Annually
	Remove the sediment from the pre-treatment structure and/or internal forebays.	Annually, or as required
Remedial Work	Repair/rehabilitate inlets, outlets, and overflows to ensure that they are in good condition and operating as designed.	Annually
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are all in good condition and operating as designed.	Annually
	Survey the inside of the tank for sediment build-up and remove it if necessary.	Every 5 years or as required.

Operation and Maintenance of Flow Control Devices

Maintenance Period	Maintenance Task	Frequency
Before Start	Removal of any inappropriate material from within the chambers and disposal of off-site	At start
Regular Maintenance	Removal of debris (which could include) leaves, rubbish, and branches from areas served by the drainage (where it may cause risk to performance).	Monthly or as required.
Remedial Work	For blockages resulting in flooded manhole chambers, drain down the manhole chamber and unblock.	As required.
Monitoring	Inspect the unit and hose it down if required	Monthly at the start for three months, then six monthly

Operation and Maintenance of Green/Blue Roofs

Maintenance Period	Maintenance Task	Frequency
Regular inspections	Inspect all components including soil substrate, vegetation, drains, irrigation systems (if applicable), membranes and roof structure for proper operation, the integrity of waterproofing and structural stability.	Annually and after severe storms
	Inspect soil substrate for evidence of erosion channels and identify any sediment sources.	Annually and after severe storms
	Inspect drain inlets to ensure unrestricted runoff from the drainage layer to the conveyance or roof drain system.	Annually and after severe storms
	Inspect the underside of the roof for evidence of leakage.	Annually and after severe storms
Regular Maintenance	Remove debris and litter to prevent clogging of inlet drains and interference with plant growth.	Six monthly and annually or as required
	During establishment (ie year one), replace dead plants as required.	Monthly (but usually the responsibility of the manufacturer)
	Post establishment, replace dead plants as required (where >5% of coverage).	Annually (in autumn)
	Remove fallen leaves and debris from deciduous plant foliage.	Six monthly or as required
	Remove nuisance and invasive vegetation, including weeds.	Six monthly or as required
	Mow grasses, prune shrubs and manage other plantings (if appropriate) as required – clippings should be removed and not allowed to accumulate.	Six monthly or as required
Remedial Actions	If erosion channels are evident, these should be stabilised with extra soil substrate similar to the original material, and sources of erosion damage should be identified and controlled.	As required
	If the drain inlet has settled, cracked or moved, investigate and repair it as appropriate.	As required

Operation and Maintenance of Permeable Paving

Maintenance Period	Maintenance Task	Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over the whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto the pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional Maintenance	Stabilise and mow contributing adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rattling and cracked or broken blocks considered detrimental to the structural performance or a hazard to users and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
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, 48 h after large storms in the first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Appendix D

Typical SuDS Maintenance Inspection Checklist

SuDS maintenance inspection checklist

General information			
Site ID			
Site location and co-ordinates (GIS if appropriate)			
Elements forming the SuDS scheme		Approved drawing reference(s)	
Inspection frequency		Approved specification reference	
Type of development		Specific purpose of any parts of the scheme (eg biodiversity, wildlife and visual aspects)	

Inspection date:								
	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date Completed
General inspection items								
Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance?								
Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?								
Have any health and safety risks been identified to either the public or maintenance operatives?								
Is there any deterioration in the surface of permeable or porous surfaces (eg rutting, spreading of blocks or signs of ponding water)?								
Silt/sediment accumulation								

SuDS maintenance inspection checklist

	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date Completed
Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains or infiltration basins and within proprietary devices)? If yes, state depth (mm) and extent. Is removal required? If yes, state waste disposal requirements and confirm that all waste management requirements have been complied with (consult environmental regulator)								
Is surface clogging visible (potentially problematic where water has to soak into the underlying construction or ground (eg underdrained swale or infiltration basin)?								
Does permeable or porous surfacing require sweeping to remove silt?								
System blockages and litter build-up								
Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?								
Is there any evidence of any other clogging or blockage of outlets or drainage paths?								
Vegetation								
Is the vegetation condition satisfactory (density, weed growth, coverage etc)? (Check against approved planting regime.)								
Does any part of the system require weeding, pruning or mowing? (Check against maintenance frequency stated in approved design.)								

SuDS maintenance inspection checklist

	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date Completed
Is there any evidence of invasive species becoming established? If yes, state action required								
Infrastructure								
Are any check dams or weirs in good condition?								
Is there evidence of any accidental damage to the system (eg wheel ruts?)								
Is there any evidence of cross-connections or other unauthorised inflows?								
Is there any evidence of tampering with the flow controls?								
Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects? (Specify.)								
Other observations								
Information appended (eg photos)								
Suitability of current maintenance regime								
Continue as current								
Increase maintenance								
Decrease maintenance								
Next inspection								
Proposed date for next inspection								