FLOOD RISK ASSESSMENTS &
DRAINAGE STRATEGIES

40 Deyne Avenue, Prestwich, Manchester, M25 1EJ

Reference: R1092 -Rev - V2

Detailed Drainage Design

Sep-26

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Oxford Innospace, Old Music Hall, 106-108 Cowley Road, Oxford, OX4 1JE
England and Wales number 10590566

FLOOD RISK ASSESSMENTS & DRAINAGE STRATEGIES

Detailed Drainage Design

Report Limitations

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Approval

	Name	Position	Date
Prepared By:	JKC	Senior Engineer	3.9.2026
Reviewed By:	GG	Senior Engineer	4.9.2026
Approved By:	AR	Chartered Engineer	4.9.2026

Revision

Revision Number	Date Issued	Details
V1	4.9.2026	First issue
V2	21.09.2026	Second Issue, Update Proposed Outfall
-	-	-

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Introduction 1

Purpose of this report

1.1 The purpose of this statement is to accompany the detailed technical drawings and details showing the proposed Surface Water drainage system.

Scope

1.2 This Sustainable Drainage Strategy (SDS) outlines the key drainage principles and requirements for the proposed development at 40 Deyne Avenue, Prestwich, Manchester, M25 1EJ. It provides a summary of the sustainable drainage system (SuDS) design, based on the specific site conditions and relevant guidelines, including Building Regulations Approved Document Part H and CIRIA C753: The SuDS Manual 2015. As the project progresses and new information becomes available, this strategy will be updated to reflect ongoing changes and the development of the detailed design.

Site Characteristics

2.1 The site background is clearly identified through answers to the questions in table 1 below.

Table 1: Site Characteristics . See appendix B for support documentation

TOPIC	QUESTION	ANSWER
Protected species or habitat	Is the site near to designated sites and priority habitats?	No
Flood Plain	Is the site located in the flood plain?	No
Soils and Geology	Soil permeability? - See appendix B for results	No
Space constraints	Space for SuDS components?	Yes
Topography	Sited on a flat site?	No
	Sited on a steep slope (5-15%)	Yes
	Sited on a very steep slope (>15%)	No
Groundwater	Is the site at groundwater flood risk?	No
Contaminated land	Are there contaminated soils on site?	Unknown
Source Protection Zone	Is the site within a SPZ 3?	No
Runoff characteristics	Is the development in a high risk flooding area?	No

Existing and Proposed Site

2.2 The distribution of catchment areas for existing and proposed site is as per table 2 below. See appendix A for details

Table 2 : Existing and Proposed catchment areas in hectares

Description		Existing Site	Proposed Site
Impermeable Areas		0.000	0.005
Permeable Areas	Connected to Drainage	0.000	0.000
	Self Draining Areas	0.000	0.000
Areas Draining Away from drainage System		0.015	0.010
	Total Development Area	0.015	0.015

2.3 It has been assumed that the positively drained areas will have different runoff coefficients depending on the type of surface as follow:

Impermeable Surface	1.0
Permeable Surfaces	0.5
Grass Areas	0.3

Evaluation of Discharge Point

3.1 The SuDS design takes into account Building Regulations Section H3 and the National standards for sustainable drainage systems (SuDS). The aim is to discharge surface water run-off as high up the drainage hierarchy, as reasonably practicable:

1. collected for non-potable use
2. infiltrated to ground
3. discharged to an above ground surface water body
4. discharged to a surface water sewer, or another piped surface water drainage system
5. discharged to a combined sewer

3.2 The discharge point has been evaluated following the NPPG and Building regulations. The findings are in table 3 below.

Table 3: Drainage Hierarchy evaluation

1	Rain Water Harvesting	For this site, it is recommended that a water butt is installed to collect roof runoff for minor reuse, such as external cleaning or garden watering.
Infiltration Evaluation	Superficial geology classification	The British Geological Society records show that the superficial deposits are Hummocky (Moundy) Glacial Deposits, Devensian-Sand and gravel.
	Bedrock geology classification	The British Geological Society records of the site show that it is located within the Worsley Delf Rock-Sandstone.
	Landis Top Soil Infiltration	The SOILSCAPE's records of the site show that it is located within an area of freely draining soils.
	Groundwater	The British Geological Survey's flood risk susceptibility maps show that the development has limited susceptibility to ground water flooding. The risk from groundwater flood to the site is considered very low.
2	**Is infiltration feasible?**	Soakaway tests were undertaken for the site, they confirmed that infiltration is not possible. The results shows that soil conditions in general are fairly impermeable. See appendix B
3	**Is a discharge to a watercourse feasible?**	There is no watercourse near the site.
4	**Is a discharge to a surface water sewer feasible?**	There is a surface water sewer in the proximity to the site. It is possible to connect to the surface water sewer, and it is proposed to discharge into this surface water sewer.
5	**Is a discharge to a combined sewer feasible?**	There is a combined water sewer in the proximity to the site. It is possible to connect to the combined water sewer. It is not proposed to discharge into the combined water sewer.

Existing and Proposed Peak Run-off Calculations

4.1 The current site is a Greenfield. The peak runoff rate for the existing site was calculated as per table 4 and discharge rates as per table 5.

Table 4: Peak run-off rate calculation method for existing site

Method Used	Calculation Method
X	Report 124 Flood Estimation for Small Catchments method has been used to estimate the site peak flow rates
	This is a brownfield site, runoff rates are calculated in accordance with best practice simulation modelling and using the modified rational method
	This is a brownfield site where the pre-development drainage isn't known. The runoff rates are calculated using the Greenfield model with soil type 5

4.2 The runoff flow produced by the development will be controlled as per table 5.

Table 5: Runoff discharge rate control

Control Used	Description of runoff discharge
	Water will be discharged into the ground via a SuDS as described in table 6 below
	The peak discharge rate has been reduced to Greenfield Qbar flow
X	The peak discharge rate has been taken as 0.7 l/s as it is not possible to reduce it to the Greenfield Qbar rate
	The peak discharge rate has been reduced to Brownfield pre-development 1 in 1 flow
	The peak discharge rate has been reduced by 60% from the existing Brownfield pre-development 1 in 2 flow rate

Run-off flows

4.3 The size of the SuDS has been calculated for all events up to the 1 in 100 including an allowance for climate change of 45%. As per tables above, it is proposed to discharge at a rate of 0.7 l/s. See table 6 for values and appendix C for calculations.

Table 6: Peak discharge rates for SuDS

Return Period Event	Discharge Rate (l/s)			Infiltration Rate (m/hr)
	Existing Greenfield	Existing Brownfield	Proposed	
Qbar	0.01	N/A	N/A	N/A
1 in 1	0.01	N/A	0.7	N/A
1 in 2	0.01	N/A	0.7	N/A
1 in 30	0.01	N/A	0.7	N/A
1 in 30 + CC	N/A	N/A	0.7	N/A
1 in 100	0.01	N/A	0.7	N/A
1 in 100 + CC	N/A	N/A	0.7	N/A

Proposed Sustainable Drainage System

5.1 The following sustainable drainage systems have been used for this site. The drainage design uses these drainage system through out the site. See table 7 for details.

Table 7: Evaluation of SuDS and Proposed Drainage System

Most Sustainable	SuDS Technique	Feasible	Proposed	Flood Reduction	Pollution Reduction	Lanscape & Wildlife Benefit
	Living Roofs					
	Green Roof	No	No	X	X	X
	Green Blue Roof	No	No	X	X	X
	Basins and Ponds					
	Rainwater Gardens	No	No	X	X	X
	Rainwater Planters	No	No	X	X	X
	Constructed Wetlands	No	No	X	X	X
	Balancing Pond	No	No	X	X	X
	Detention Basins	No	No	X	X	X
	Retention Ponds	No	No	X	X	X
	Filters and Swales					
	Filter Strips	No	No	X	X	X
	Swales	No	No	X	X	X
	Infiltration Devices					
	Soakaways Crates	No	No	X	X	X
	Deep Boreholes	No	No	X	X	X
	Infiltration Trenches	No	No	X	X	X
	Infiltration Basin	No	No	X	X	X
	Permeable Surfaces					
	Permeable Surfaces	No	No	X	X	
	Filter Drains	No	No	X	X	
	Tanked System					
	Storage Crates	Yes	Yes	X		
	Oversized Tanks	No	No	X		
	Oversized Pipes	No	No	X		
Least Sustainable	Blue Roof	No	No	X		
	Water Harvesting	Yes	Yes	X		

5.2 The location and details of the SuDS can be seen drainage layouts in appendix D. Calculations are in appendix C.

5.3 The drainage calculations demonstrate:
- No flooding occurs for the 1 in 30 storm events.
- Any flooding for the 1 in 100 year + 45% climate change event can be safely contained on site

5.4 The proposed drainage design demonstrates that the development can be sustainably drained to comply with the requirements of the NPPF.

Management of Exceedance Flows

5.5 The drainage network has been designed to attenuate surface runoff for all events up to and including the 1% AEP + CC(1 in 100 years). However consideration has been given to what may happen when the design capacity of the surface water drainage network is exceeded. Surface water will flow to the lowest points within the site. The flood risk to the buildings would therefore remain low. See appendix D.

Maintenance and Management plan responsibility

6.1 The SuDS will be maintained by The Owner the property

Maintenance and Management plan for proposed SuDS

6.2 The maintenance and Management Plan Guidance from the SuDS Manual, CIRIA C753 (CIRIA, 2015) is to be followed for the effective maintenance of the proposed SuDS techniques outlined above. The maintenance for SuDS structures are as follow:

INLETS, OUTLETS, CONTROLS AND INSPECTION CHAMBERS	
Regular Maintenance	**Frequency**
Inlets, outlets and surface control structures	
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
Inspection chambers and below ground control chambers	
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	**Frequency**
Unpack stone in basket features and unblock or repair and repack stone as design detail as necessary.	As required
Repair physical damage if necessary.	As required

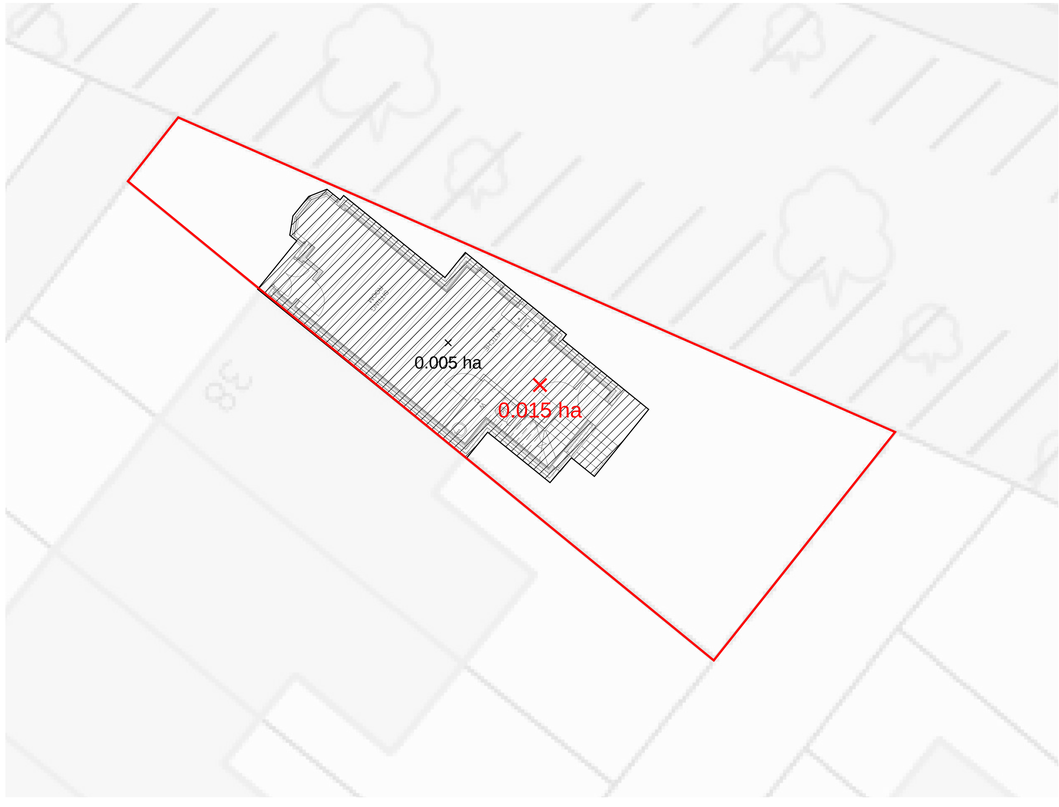
Operation and maintenance requirements for attenuation storage tanks		
Maintenance schedule	**Required action**	**Typical frequency**
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris 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

Operation and maintenance requirements for RWH systems		
Maintenance schedule	**Required action**	**Typical frequency**
Regular maintenance	Inspection of the tank for debris and sediment build-up, inlets/outlets/withdrawal devices, overflow areas, pumps, filters	Annually (and following poor performance)
	Cleaning of tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris	Annually (and following poor performance)
Occasional maintenance	Cleaning and/or replacement of any filters	Three monthly (or as required)
Remedial actions	Repair of overflow erosion damage or damage to tank	As required
	Pump repairs	As required

Appendix A



EXISTING SITE 1:100



PROPOSED SITE 1:100

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Drawing Scale Bar

Drawing scale	Line length	Drawing scale	Line length
1:5 =	0.25 metres	1:200 =	10.0 metres
1:10 =	0.5 metres	1:250 =	12.5 metres
1:20 =	1.0 metres	1:500 =	25.0 metres
1:25 =	1.25 metres	1:1000 =	50.0 metres
1:50 =	2.5 metres	1:1250 =	62.5 metres
1:100 =	5.0 metres	1:2500 =	125 metres

Measure length of line above for checking of scale

GENERAL NOTES

KEY

IMPERMEABLE AREAS

STUDY AREA

Rev	Details	Date	By	Chkd

Drawing Status:

PRELIMINARY

FLOOD RISK ASSESSMENT & DRAINAGE STRATEGIES

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Client:

Project:

40 Deyne Avenue, Prestwich, Manchester, M25 1EJ

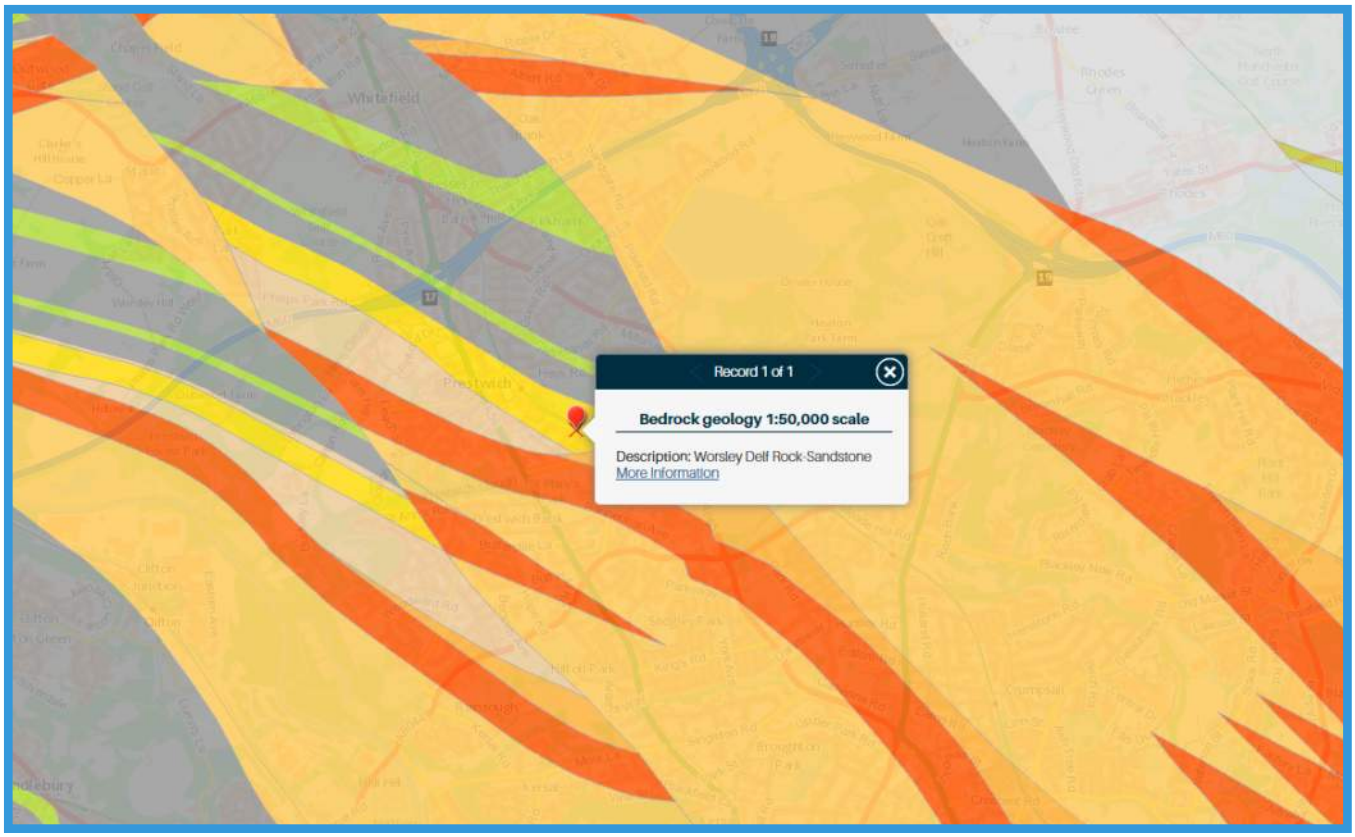
Drawing:

Existing and Proposed Areas
Permeable and Impermeable

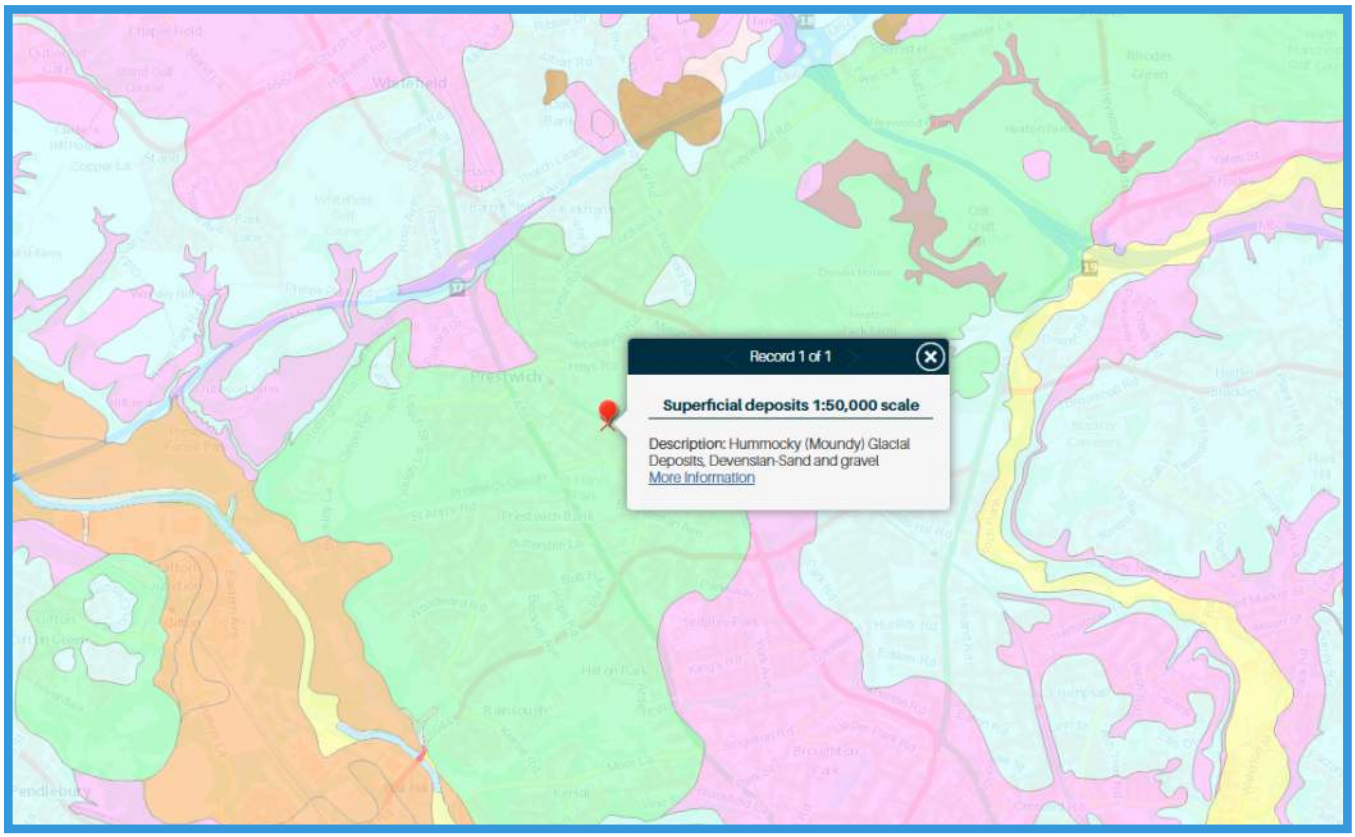
Print Size:	Project No:	Drawing No:	Revision:
A1	R1092	002	P1

Appendix B

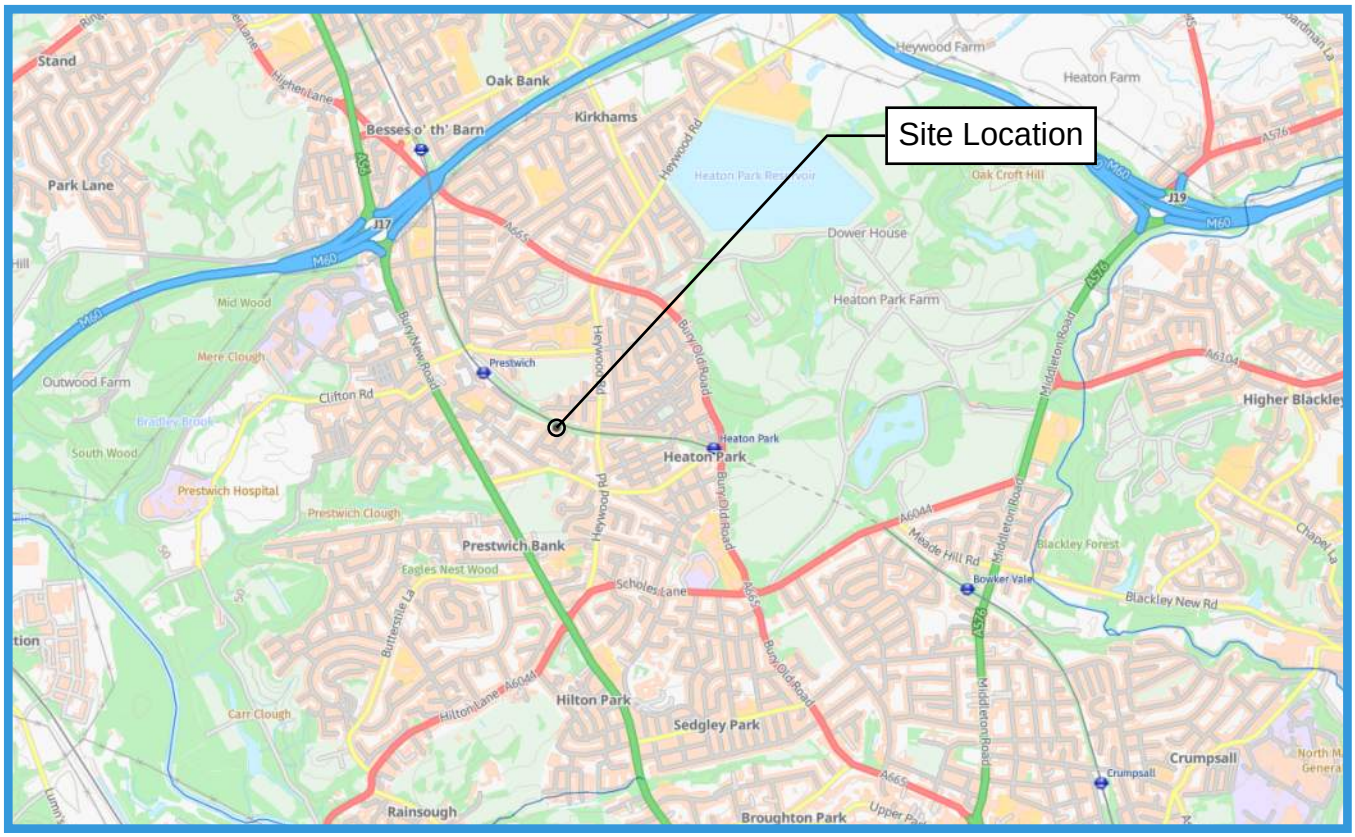
GEOLOGY - BEDROCK - Worsley Delf Rock-Sandstone



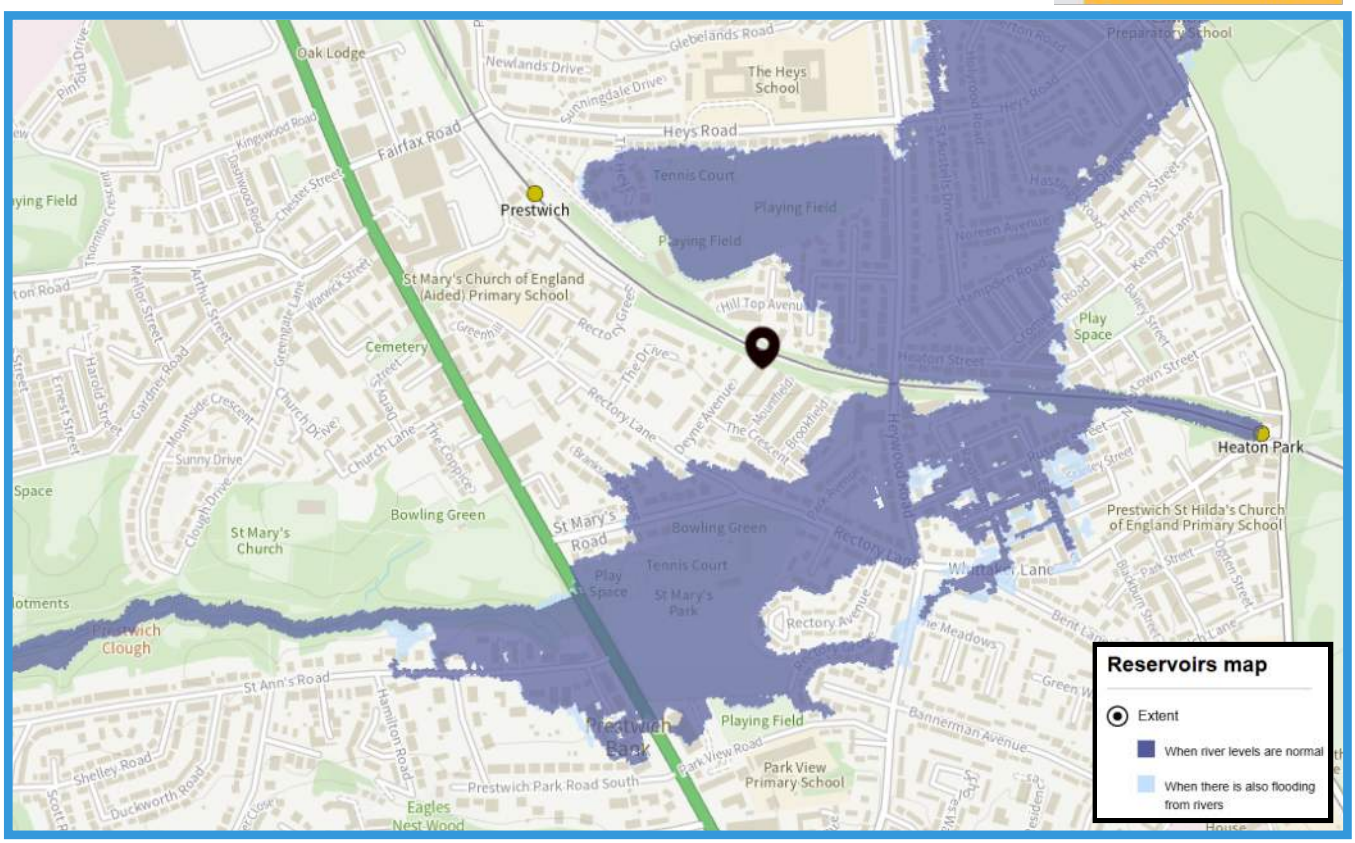
GEOLOGY - SUPERFICIAL DEPOSITS - Hummocky (Moundy) Glacial Deposits, Devensian-Sand and gravel



Main River Map



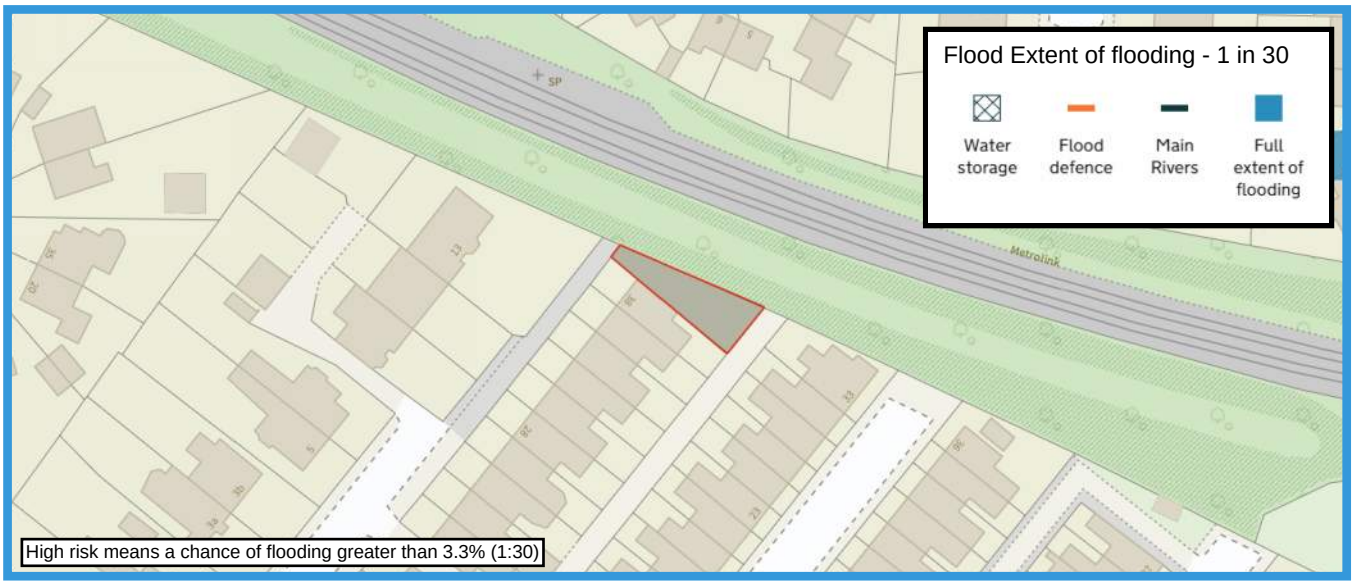
Reservoirs Map

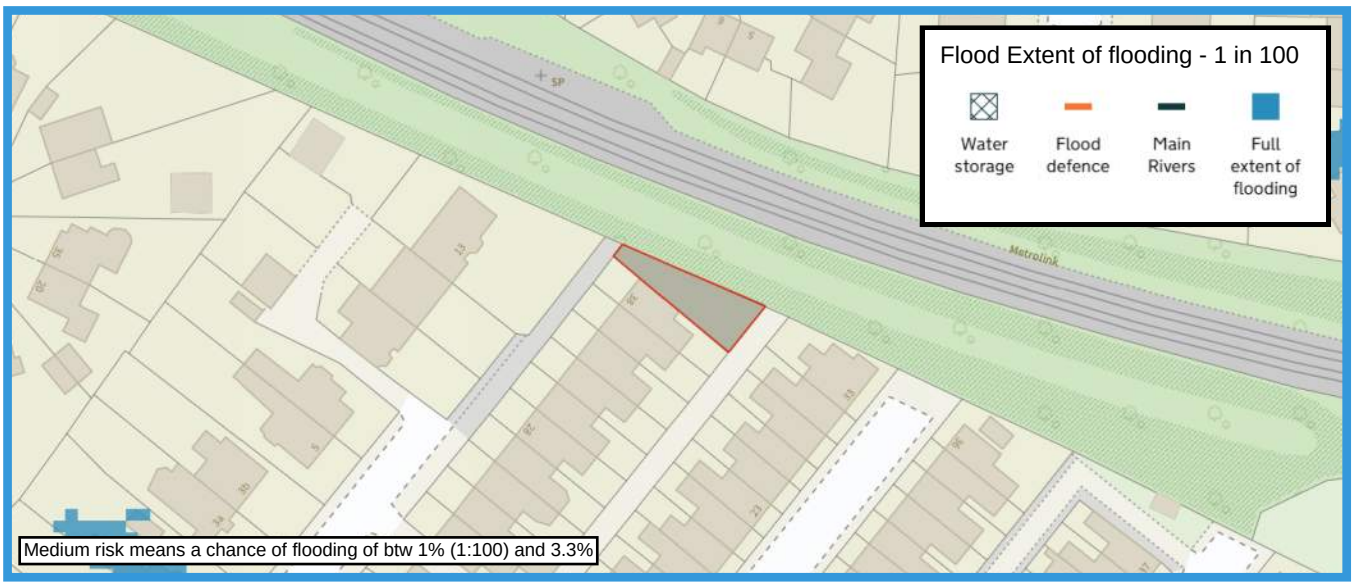


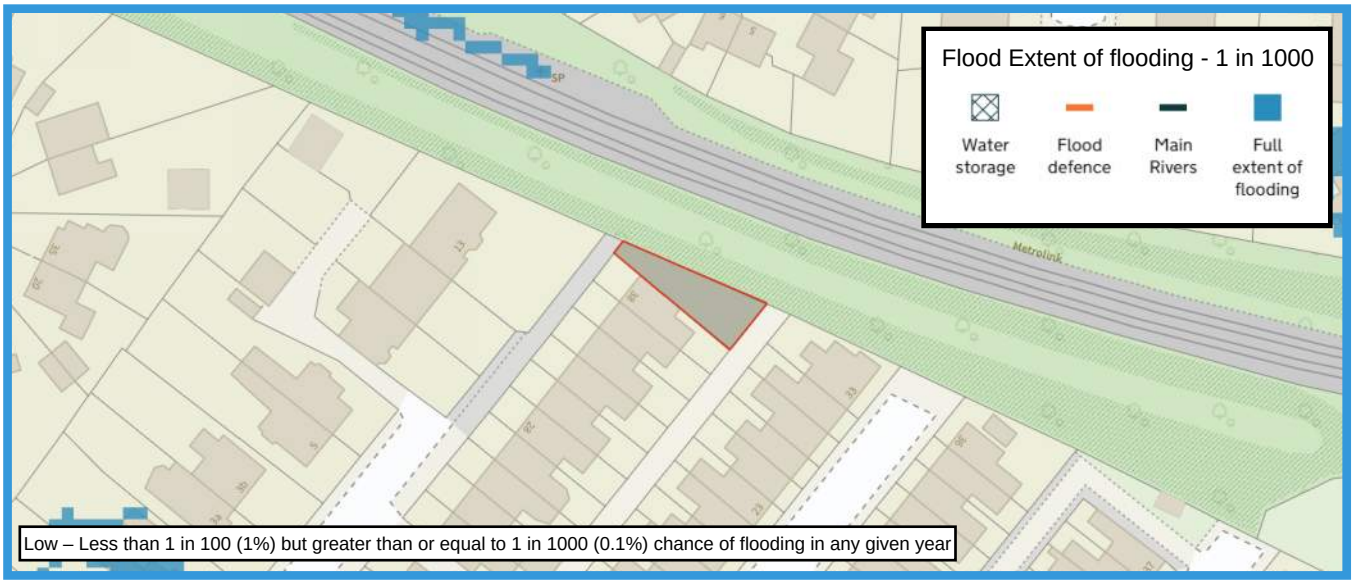
SITE SURFACE WATER FLOOD RISK

This is the EA Climate change scenarios. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.
The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used for the climate change scenarios. We have chosen long-term epochs appropriate to support long-term planning and development decisions.

EXTENT 2061 to 2125







SITE SURFACE WATER FLOOD RISK

WATER DEPTH 2061 to 2125

Surface water depth in millimetres

150 300 600 900 1200 2300

Water storage Flood defence Main Rivers







RIVER AND SEA LONG TERM CC01 FLOOD RISK MAP

*High risk means a chance of flooding greater than 3.3% (1:30)
*Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year
*Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year
*Very low – less than 1 in 1000 (0.1%) chance of flooding in any given year

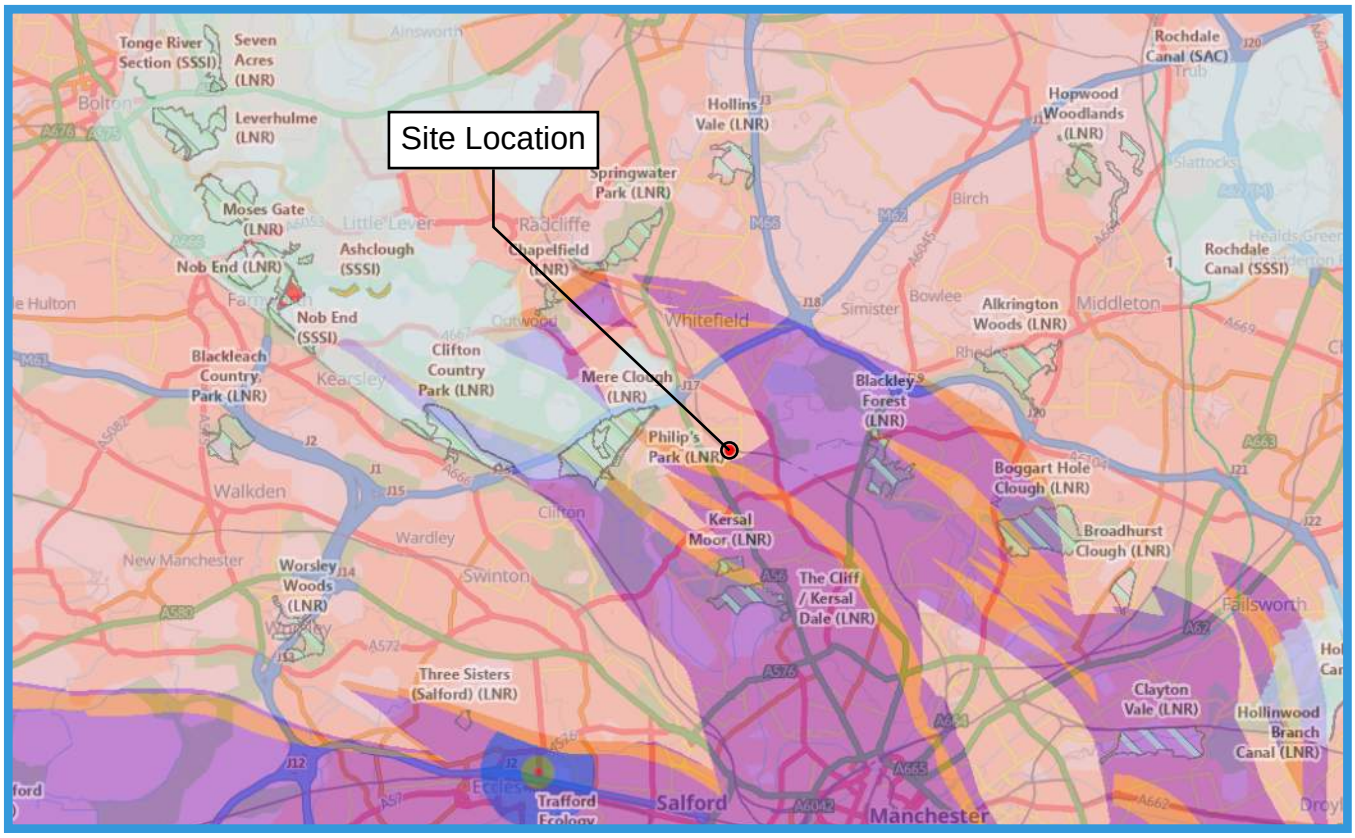


This shows the RoFRS_CC01_4band.lyr of flooding from rivers and the sea, climate change scenarios. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.
Near-term epochs and central/higher central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections:
Fluvial: central allowance - 2040-2069 ("2050s" epoch)
Coastal: higher central allowance - 2036-2065
Likelihood of defence failure unsuitable and depth info does not provide the design flood depth needed for planning approval.

DEPTH



MAGIC RESULTS



Site Check Results

Site Check Report generated on Tue Jul 21 2026

The following features have been found in your search area:

You selected the location: Centroid Grid Ref: SD81730387

Aquifer Designation Map (Superficial Drift) (England)

TYPOLOGY	Secondary A

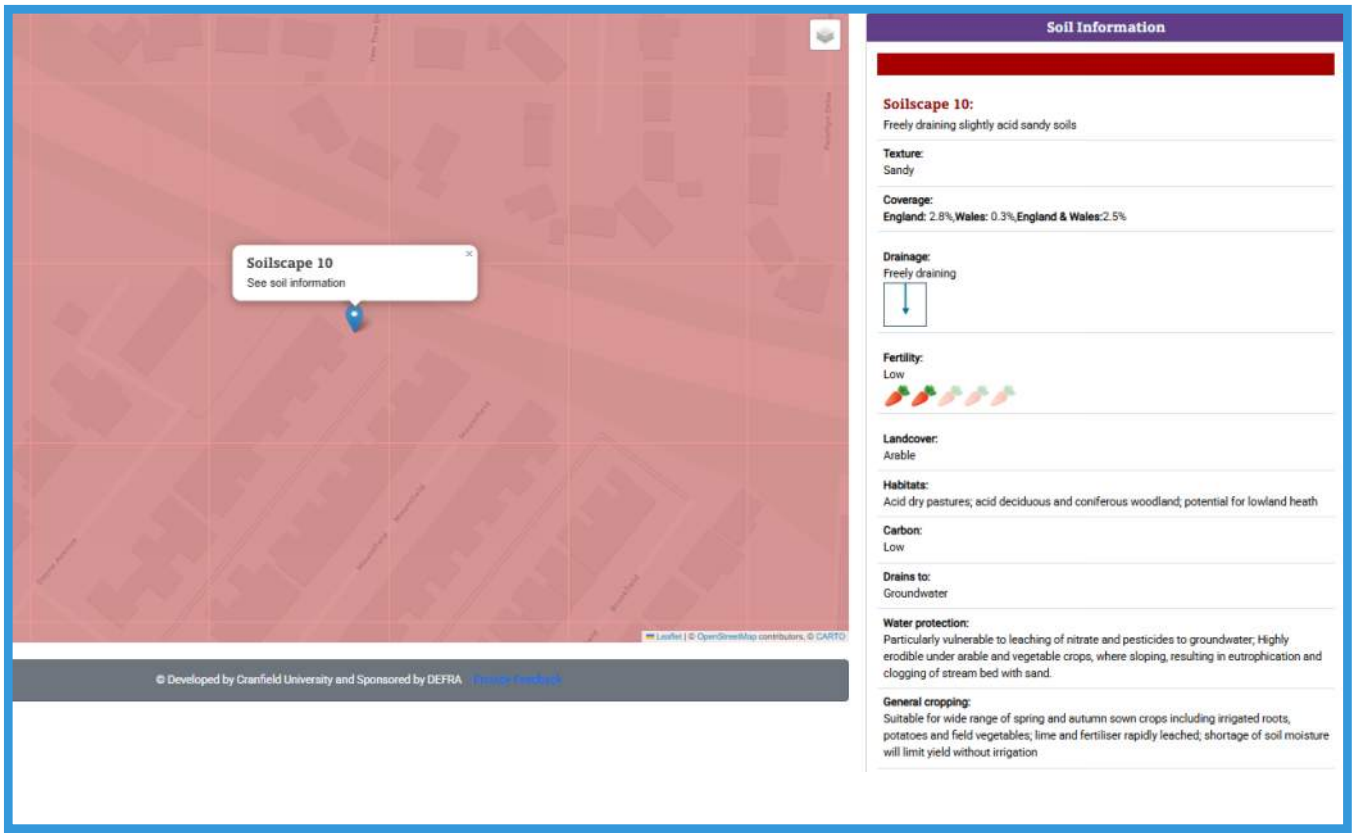
Aquifer Designation Map (Bedrock) (England)

TYPOLOGY	Secondary A

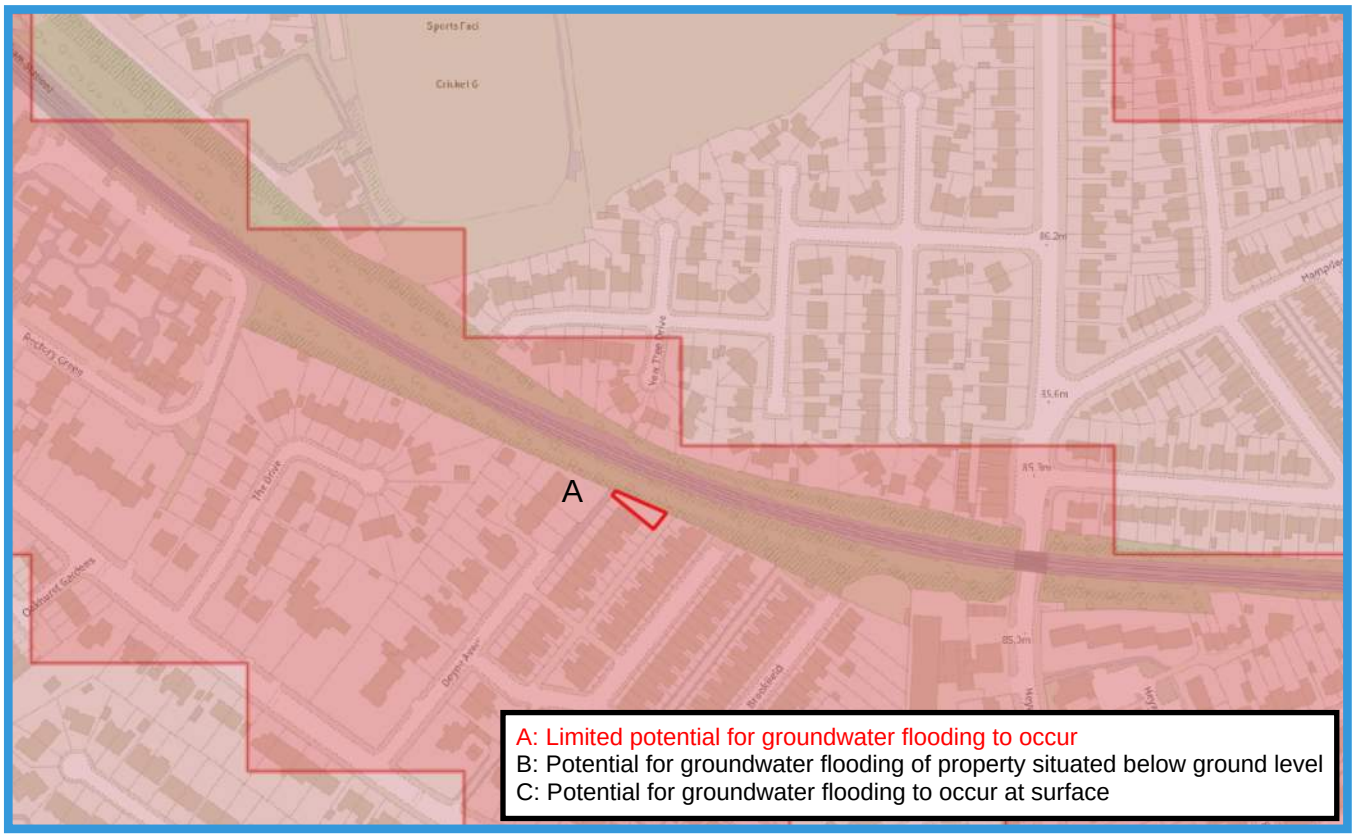
Source Protection Zones merged (England)

No Features found

SOILSCAPES MAP



GROUND WATER FLOOD RISK



Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	**381731/403870**	**21 July 2026 15:39**

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

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Environment Agency

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
381731/403870

Scale
1:2,500

Created
21 Jul 2026 15:39

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60 m

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United Utilities
Water for the North West

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Hook Norton,
OX15 5UA

FAO:

Your Ref: [R1092] 40 Deyne Avenue, Prestwich, Manchester
Our Ref: UUPS-ORD-744299
Date: 20/07/2026

Dear Sirs

Location: 38 DEYNE AVENUE, PRESTWICH, MANCHESTER, M25 1EJ

I acknowledge with thanks your request dated 16/07/2026 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. http://www.unitedutilities.com/work-near-asset.aspx .

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please contact us .

Yours Faithfully,

Karen McCormack
Property Searches Manager

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Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP

Water for the North West

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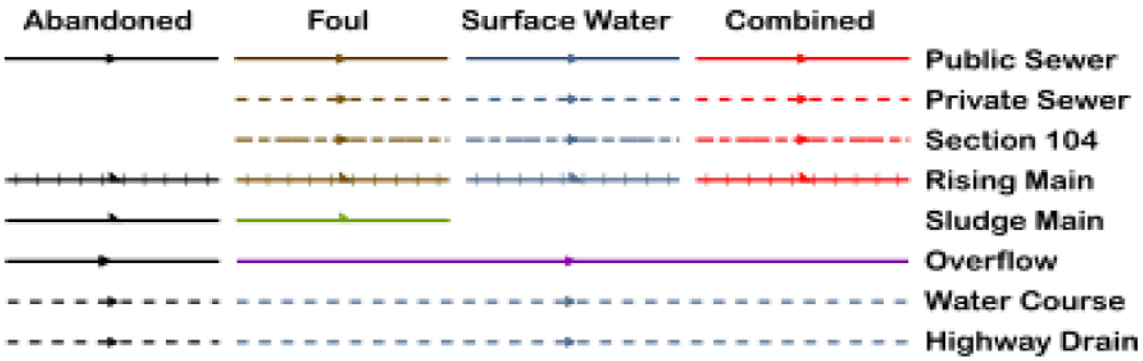
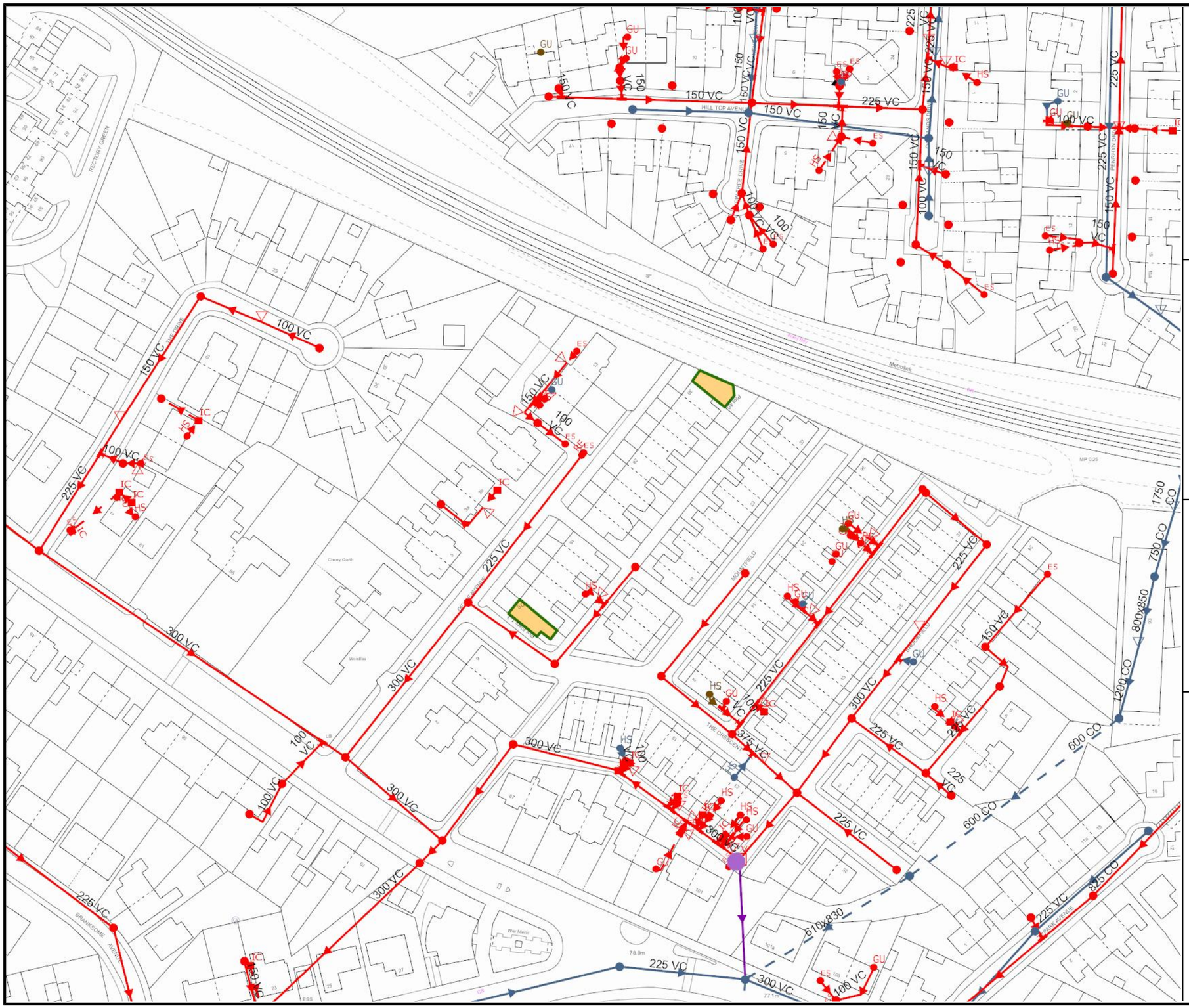
Water for the North West

Wastewater Symbology



All point assets follow the standard colour convention: red – combined, brown - foul, blue – surface water, purple - overflow

- Manhole
- HS Head of System
- ES Extent of Survey
- RE Rodding Eye
- IN Inlet
- DP Discharge Point
- HY Vortex
- PE Penstock
- WO Washout Chamber
- VA Valve
- AV Air Valve
- NRV Non Return Valve
- SO Soakaway
- GU Gully
- CA Cascade
- FM Flow Meter
- HA Hatch Box
- OI Oil Interceptor
- SM Summit
- DS Drop Shaft
- OP Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- IC Inspection Chamber
- Bifurcation Chamber
- LH Lamp Hole
- T Junction / Saddle
- CA Catchpit
- VC Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- T Network Storage Tank
- V Sewer Overflow
- WwTW Ww Treatment Works
- Ww Pumping Station
- ST Septic Tank
- CK Control Kiosk
- DNM Network Monitoring Point
- Change of Characteristic



United Utilities

Water for the North West

SEWER RECORDS

Address or Site Reference

38 DEYNE AVENUE,
PRESTWICH,
MANCHESTER,
M25 1EJ

Scale: 1:1250

Date: 20/07/2026

Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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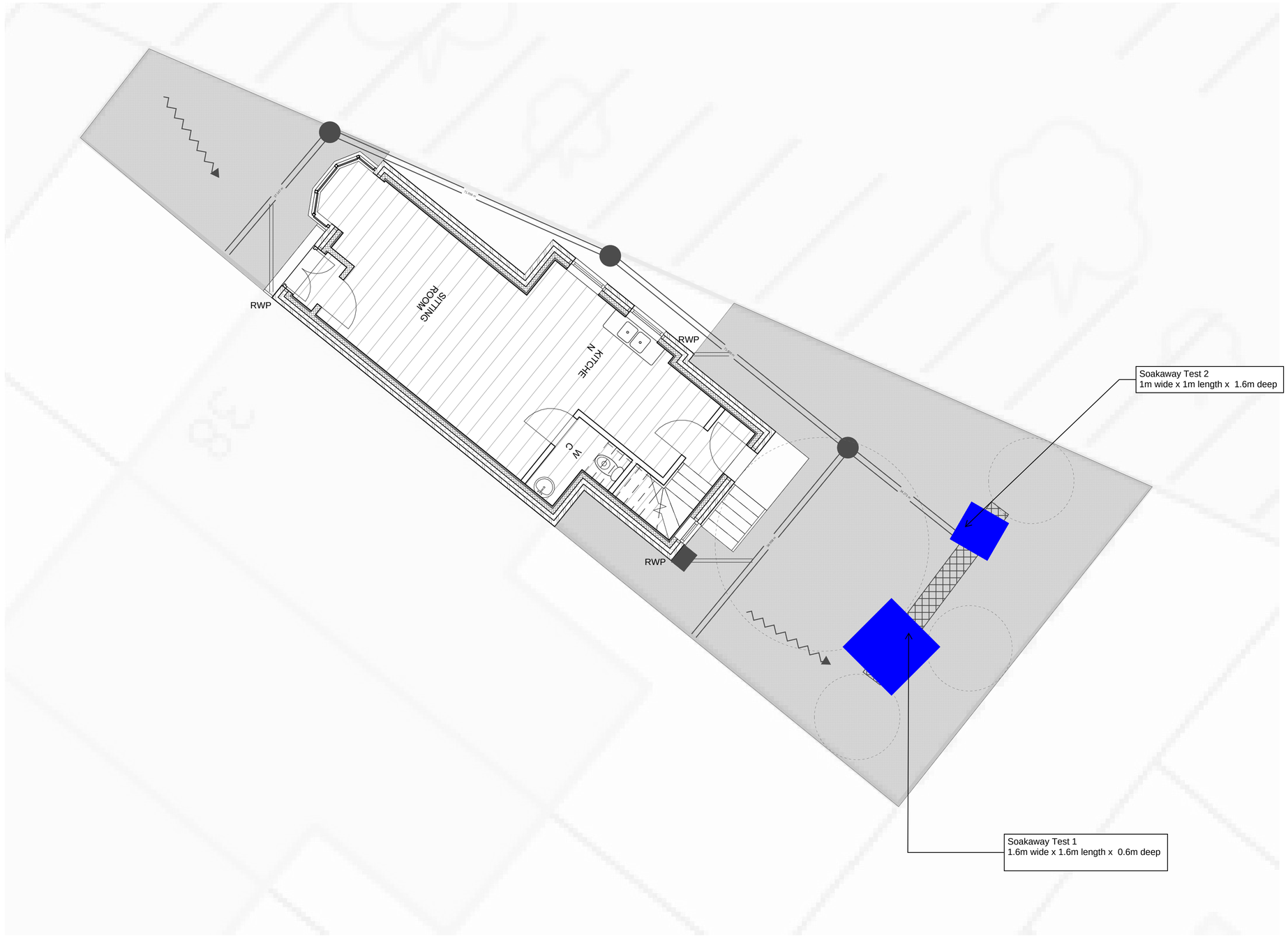


Do not scale from this drawing. Refer to figured dimensions only. RIDA Reports Ltd registered in England and Wales No. 10590566. This drawing is copyright of RIDA Reports Ltd.

Drawing Scale Bar

Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres

Measure length of line above for checking of scale

GENERAL NOTES

This drawing should be read

Rev	Details	Date	By	Ch'd

Drawing Status:

PRELIMINARY

FLOOD RISK ASSESSMENT & DRAINAGE STRATEGIES

4 Bean Acre Road, Hook Norton, Banbury, Oxfordshire
e: info@rida-reports.co.uk
t: 01608 510 121
www.rida-reports.co.uk

Client:

Project: 40 Deyne Avenue, Prestwich, Manchester, M25 1EJ

Drawing: Trial Pit Layout

Print Size:	Project No:	Drawing No:	Revision:
A1	R1092	001	P1

Geotechnical and
Geoenvironmental
Consultants

40 Home Close, Wootton, Abingdon, Oxon OX13 6DD
Tel 01865 326011
Web: www.gis-geotec.com
e-mail: info@gis-geotec.com

GROUND INVESTIGATION SERVICES (Southern) Ltd

Our Ref: S.6644

Your Ref:

27 August 2025

Yolo Estate Ltd
C/0 LDM House
46 Great Ancoats Street
Manchester
M4 5AB

Dear Sirs

PERMEABILITY INVESTIGATION: 40 DEYNE AVENUE, MANCHESTER M25 1EJ

We have completed the soil infiltration testing in respect of the above and accordingly enclose location plan, site photographs, trial pit logs and infiltration test results.

It was required to undertake a permeability investigation to establish ground and groundwater conditions underlying the site in order to determine the suitability of the ground for local soakaways drainage.

Reference to the geological map for the area indicates the site is immediately underlain by Superficial deposits represented by Hummocky (Moundy) Glacial Deposits.

PERMEABILITY SURVEY

GIS personnel attended site on the 25 and 26 August 2026 and conducted a permeability survey which comprised the following works:

- Two trial pits were excavated to depths of 0.55m (SA2), and 1.40m (SA1) which were subject to percolation testing in accordance with BRE Digest DG365 soakaway design.

The pits were inspected and described by a GIS representative and soil samples were obtained for description.

The weather was warm, dry and sunny.

All information pertaining to the excavation works above is presented in the Trial Pit Logs and with reference to the Notes and Abbreviations Sheet, presented to the rear of this report.

RESULTS OF PERMEABILITY INVESTIGATION

Before site work could commence a considerable amount of spoil heaped up in the rear garden had to be moved before personnel could access test pit positions, once cleared it was evident the site was covered in concrete which had to be broken out. This delayed the infiltration test schedule by some three hours. It was also noted open trenches had been excavated prior to GIS attendance which were

In summary, the results of the intrusive site work indicate the site is underlain by a capping of made ground overlying the Hummocky (Moundy) Glacial Deposits.

Made ground comprised a capping layer of concrete (100mm thick) overlying a topsoil remnant layer of dark brown humic clayey sand which extends down to 0.20m/0.25m depths. This overlies the Hummocky (Moundy) Glacial Deposits which consists of a mantle layer of stiff indurated sandy clay superposing at 0.80m depth firm orange brown and light grey slightly sandy clay.

Groundwater was not encountered.

Potable water was introduced into the pits via a 1000L water bowser and allowed to fall while measurements of the water surface were recorded over the period of up to 24 hours. Water levels fell very slowly and did not achieve 75% empty status in both pits. As a consequence a soil infiltration value (F) could not be determined.

Soil conditions in general are fairly impermeable, particularly the superficial deposits which is marginally porous with an estimated infiltration rate of 10^{-7}m/sec.

If it is decided ground conditions are unsuitable for local discharge of surface drainage waters then all surface water run-off from impermeable surfaces should be directed off site via the public sewer, subject to approval by the local authority/water company.

Should you have any queries with regard to the report, please do not hesitate to contact the undersigned.

For and on behalf of
Ground Investigation Services (Southern) Ltd
Yours sincerely



Martyn P Boughton (Director)

Email: martyn@gis-geotec.com

enc

Trial Pit Location Plan
Trial Pit Logs and Infiltration Test data
Site Photographs

GROUND INVESTIGATION SERVICES (Southern) Ltd

40 Home Close, Wootton, Abingdon, Oxon OX13 6DD Tel 01865 326011

CLIENT

Yolo Estates Ltd

SITE LOCATION

40 Deyne Avenue, Manchester M25 1EJ

Date: August 2026

Ground Level :

Orientation: East-west

Co-Ordinates (NGR):

TRIAL PIT

SA1

Sheet 1 of 1

Report No.

S.6644

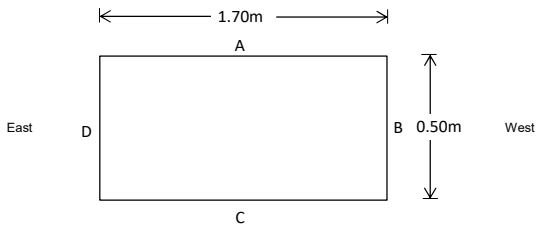
SAMPLES AND TESTS						water depth	Reduced Level	Depth (thickness)	Legend	STRATA AND DESCRIPTION
Depth metres	No.	Type	PID % v/v	Hand pen' kN/m2	HSV kN/m2	m	m (AOD)	metres		
								0.10		Concrete groundslab
								(0.10)		Dark brown humic sandy CLAY with a little gravel and fine medium roots
								0.20		**MADE GROUND**
0.25										Stiff indurated brown mottled reddish brown friable slightly sandy CLAY
0.50		D						(0.60)		
0.75		D								
								0.80		Firm orange brown and light grey slightly sandy friable CLAY with some fine roots
1.00		D						(0.60)		
1.25		D								
								1.40		**HUMMOCKY (MOUNDY) GLACIAL DEPOSITS**







Trial Pit Dimensions



Date of logging:	25 August 2026
Excavation plant:	1.5T excavator
Pit stability:	Stable
Weather:	Dry warm and sunny
Groundwater (strike):	dry
Groundwater (standing):	dry
Logged by	SD
Checked by	MPB

General Remarks:

Infiltration test conducted in accordance with BRE DG365

Scale 1:30

For explanation of symbols and abbreviations see preface to Borehole records. All depths in metres. Logged in accordance with BS5930:2015+A1:2020

GROUND INVESTIGATION SERVICES (Southern) Ltd

40 Home Close, Wootton, Abingdon, Oxon OX13 6DD Tel 01865 326011

CLIENT

Yolo Estates Ltd

SITE LOCATION

40 Deyne Avenue, Manchester M25 1EJ

Date: August 2026

Ground Level :

Orientation: East-west

Co-Ordinates (NGR):

TRIAL PIT

SA2

Sheet 1 of 1

Report No.

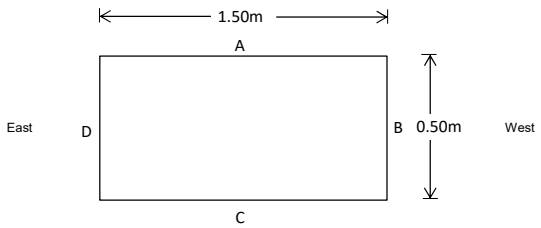
S.6644

SAMPLES AND TESTS						water depth	Reduced Level	Depth (thickness)	Legend	STRATA AND DESCRIPTION
Depth metres	No.	Type	PID % v/v	Hand pen' kN/m2	HSV kN/m2	m	m (AOD)	metres		
								0.10		Concrete groundslab
								(0.15)		Dark brown humic sandy CLAY with a little gravel and fine medium roots **MADE GROUND**
0.25		D						**0.25**		Stiff indurated brown friable slightly sandy CLAY with fine roots
								(0.15)		
								0.40		Stiff indurated light brown friable slightly sandy CLAY with fine roots and worm burrows **HUMMOCKY (MOUNDY) GLACIAL DEPOSITS**
0.50		D						(0.15)		
								0.55		





Trial Pit Dimensions



Date of logging:	25 August 2026
Excavation plant:	1.5T excavator
Pit stability:	Stable
Weather:	Dry warm and sunny
Groundwater (strike):	dry
Groundwater (standing):	dry
Logged by	SD
Checked by	MPB

General Remarks:

Infiltration test conducted in accordance with BRE DG365

Scale 1:30

For explanation of symbols and abbreviations see preface to Borehole records. All depths in metres. Logged in accordance with BS5930:2015+A1:2020

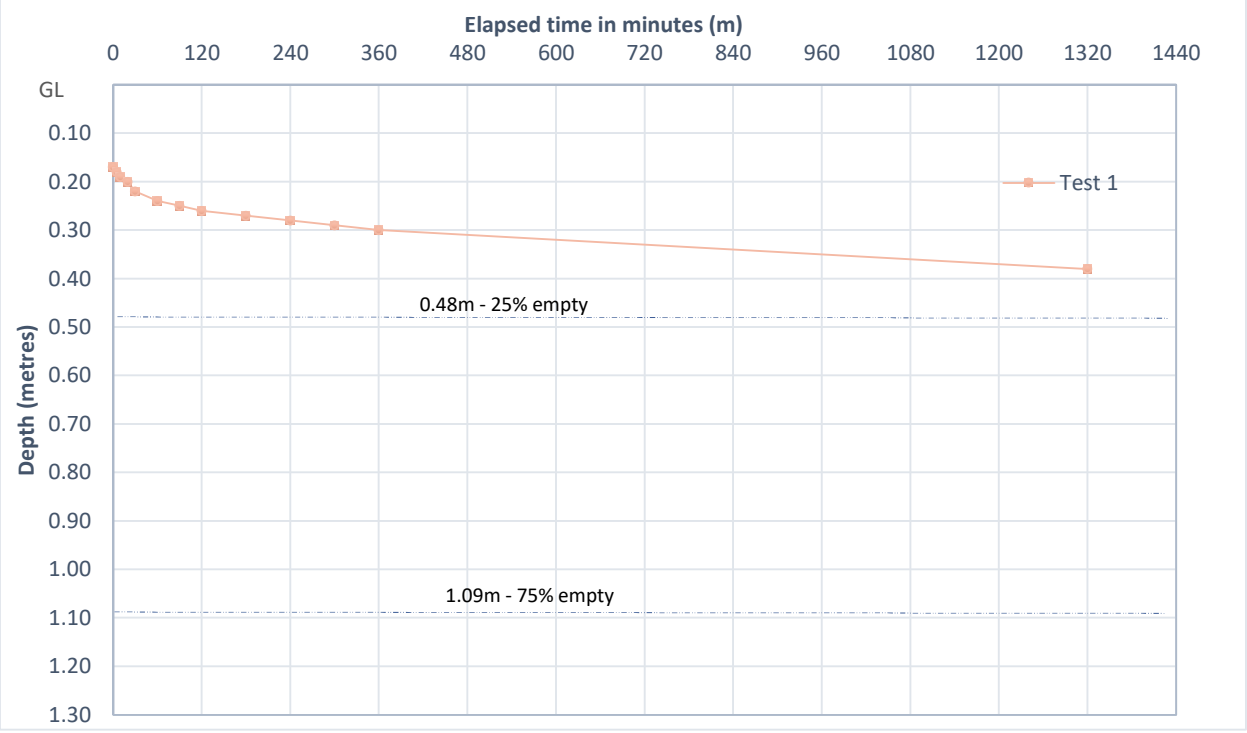
CALCULATION OF SOIL INFILTRATION RATE

Elapsed time in minutes	Depth to water (m)		
	Test 1	Test 2	Test 3
0	**0.17**		
5	**0.18**		
10	**0.19**		
20	**0.20**		
30	**0.22**		
60	**0.24**		
90	**0.25**		
120	**0.26**		
180	**0.27**		
240	**0.28**		
300	**0.29**		
360	**0.30**		
1320	**0.38**		

TRIAL PIT	**SA1**	Logged by:	S Dodd
Test No.	**1**	Checked by:	M Boughton
Groundwater Strike:	dry	Date of test	25/26 August 2026
Standing:	dry		
Weather	Warm, dry and sunny		

Soakage Trial Pit Width W_t (m) =	**0.50**
Soakage Trial Pit Length L_t (m) =	**1.70**
Total Depth from ground level D_{tb} (m) =	**1.40**
Internal Surface Area of trial pit a_{p50} (m) =	**n/a**
Storage Volume between 75-25% V_p (m) =	**n/a**
Time for water to fall from 75-25% t_p (minutes) =	**n/a**
Allowance for infiltration through soakaway base	NO/~~YES~~
Free volume in aggregate (%) =	**100**

SOIL INFILTRATION RATE* (f) = n/a*



COMMENTS: * insufficient data to calculate F value

CLIENT: **Yolo Estates Ltd**

SITE : **40 Deyne Avenue, Manchester M25 1EJ**

Date: **August 2026**

BRE DIGEST DG365: 2016

SOAKAWAY DESIGN

Ground Investigation Services (Southern) Ltd
40 Home Close, Wootton, Abingdon OX13 6DD
Tel 01865 326011

INFILTRATION TEST DATA

Report No. S.6644

Fig. 3

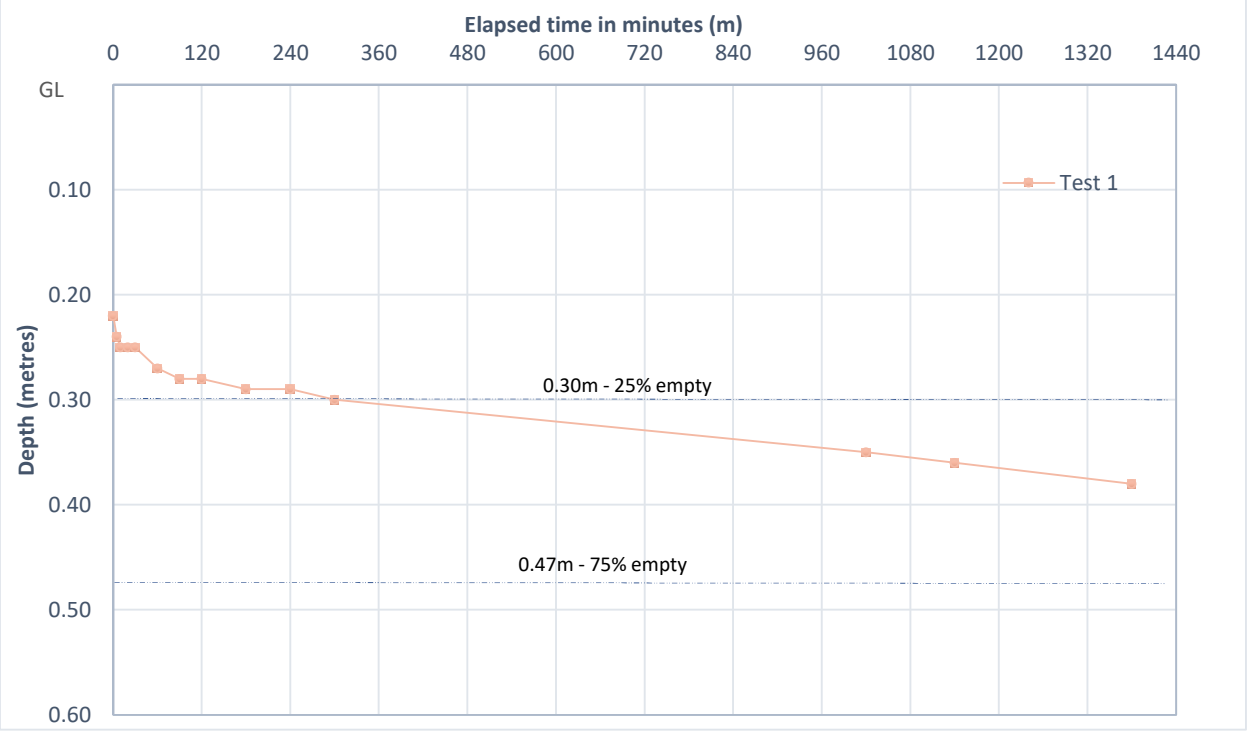
CALCULATION OF SOIL INFILTRATION RATE

Elapsed time in minutes	Depth to water (m) Test 1	Test 2	Test 3
0	**0.22**		
5	**0.24**		
10	**0.25**		
20	**0.25**		
30	**0.25**		
60	**0.27**		
90	**0.28**		
120	**0.28**		
180	**0.29**		
240	**0.29**		
300	**0.30**		
360			
1020	**0.35**		
1140	**0.36**		
1380	**0.38**		

TRIAL PIT	**SA1**	Logged by:	S Dodd
Test No.	**1**	Checked by:	M Boughton
Groundwater Strike:	dry	Date of test	25/26 August 2026
Standing:	dry		
Weather	Warm, dry and sunny		

Soakage Trial Pit Width W_t (m) =	**0.50**
Soakage Trial Pit Length L_t (m) =	**1.50**
Total Depth from ground level D_{tb} (m) =	**0.55**
Internal Surface Area of trial pit a_{p50} (m) =	**n/a**
Storage Volume between 75-25% V_p (m) =	**n/a**
Time for water to fall from 75-25% t_p (minutes) =	**n/a**
Allowance for infiltration through soakaway base	NO/~~YES~~
Free volume in aggregate (%) =	**100**

SOIL INFILTRATION RATE* (f) = n/a*



COMMENTS: * insufficient data to calculate F value

CLIENT: **Yolo Estates Ltd**

SITE : **40 Deyne Avenue, Manchester M25 1EJ**

Date: **August 2026**

BRE DIGEST DG365: 2016

SOAKAWAY DESIGN

Ground Investigation Services (Southern) Ltd
40 Home Close, Wootton, Abingdon OX13 6DD
Tel 01865 326011

INFILTRATION TEST DATA

Report No. S.6644

Fig. 4



site covered by earth spoil at test positions



After clearence of spoil reveals extensive concrete slab



Plastic pipe running parallel to gable wall of No.38



Deep trench filled with water on first morning of site attendance



Half buried pipe between SA1 and SA2



Plastic pipe running parallel to gable wall of No.38

CLIENT:	**Yolo Estates Ltd**
SITE:	**40 Deyne Avenue, Manchester M25 1EJ**
Date:	**August 2026**

Ground Investigation Services (Southern) Ltd
40 Home Close, Wootton
Abingdon OX13 6DD
Tel 01865 326011
email: info@gis-geotec.com

GIS (Southern) Ltd	**SITE PHOTOGRAPHS**	Report No. S.6644	**Fig** 5

Appendix C

Causeway	Rida Reports limited	File: 40 Deyne Avenue.pfd Network: Storm Network Mario Mora 22/07/2026	Page 1

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
Rainfall Events	Singular	Additional Storage (m³/ha)	0.0
FSR Region	England and Wales	Starting Level (m)	
M5-60 (mm)	19.000	Check Discharge Rate(s)	✓
Ratio-R	0.300	1 year (l/s)	0.0
Summer CV	1.000	2 year (l/s)	0.0
Winter CV	1.000	30 year (l/s)	0.0
Analysis Speed	Normal	100 year (l/s)	0.0
Skip Steady State	x	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.70
Greenfield Method	IH124	Growth Factor 100 year	2.08
Positively Drained Area (ha)	0.015	Betterment (%)	0
SAAR (mm)	959	QBar	0.0
Soil Index	1	Q 1 year (l/s)	0.0
SPR	0.10	Q 2 year (l/s)	0.0
Region	10	Q 30 year (l/s)	0.0
Growth Factor 1 year	0.87	Q 100 year (l/s)	0.0
Growth Factor 2 year	0.93		

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Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

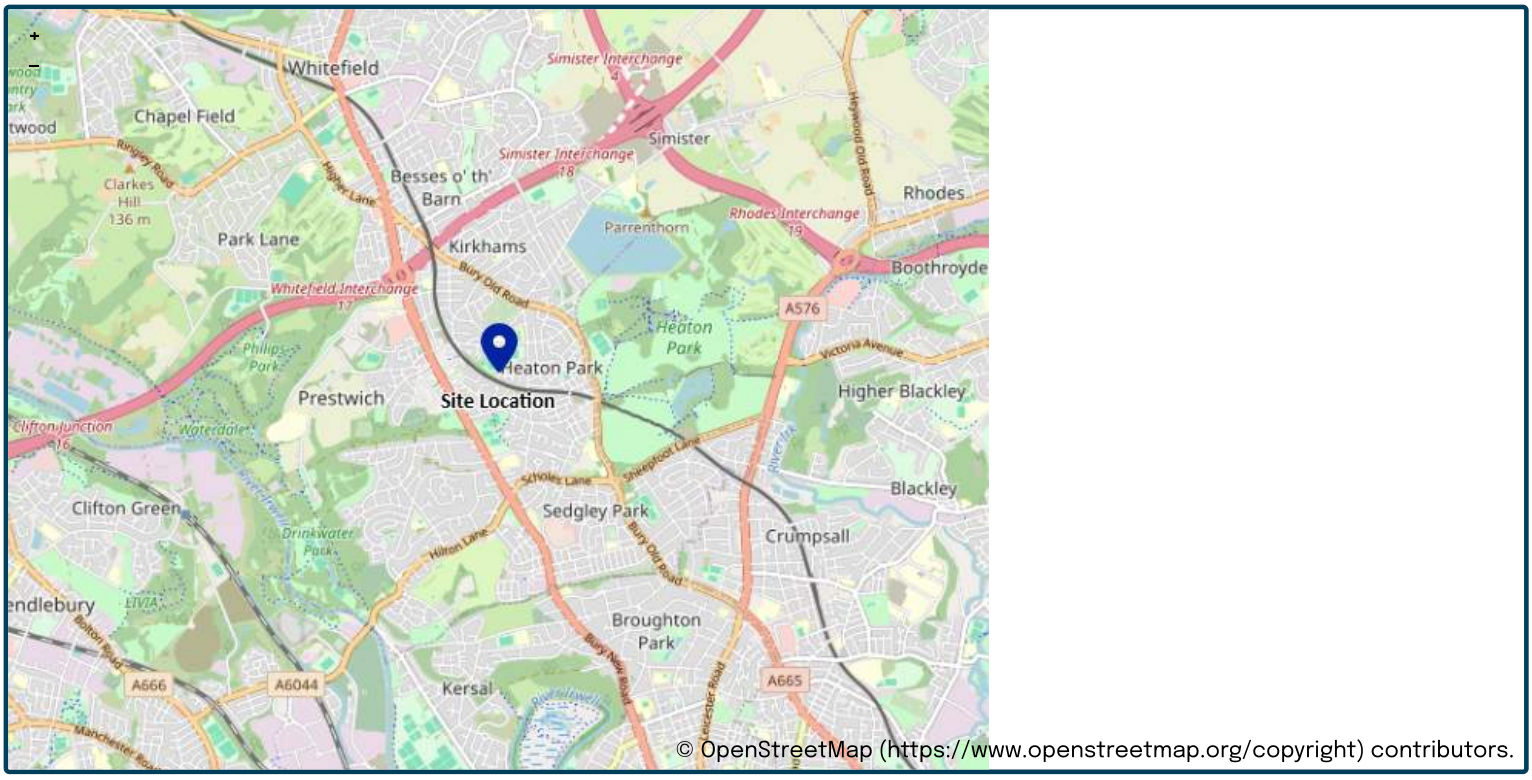
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	03/09/2026
Calculated by	
Reference	
Model version	2.2.3

Location

Site name	[R1092] 40 Deyne Avenue, Prestwich, Manchester, M25 1EJ
Site location	[R1092] 40 Deyne Avenue, Prestwich, Manchester, M25 1EJ



Site easting (British National Grid)	381689
Site northing (British National Grid)	403821

Site details

Total site area (ha)	0.015 ha

Greenfield runoff

Method

Method	IH124

IH124

	My value		Map value
SAAR (mm)	959 mm		959
How should SPR be derived?	WRAP soil type		
WRAP soil type	1		1
SPR	0.1		
QBar (IH124) (l/s)	0.01 l/s		

Growth curve factors

	My value		Map value
Hydrological region	10		10
1 year growth factor	0.87		
2 year growth factor	0.93		
10 year growth factor	1.38		
30 year growth factor	1.7		
100 year growth factor	2.08		
200 year growth factor	2.37		

Results

Method	IH124
Flow rate 1 year (l/s)	0.01 l/s
Flow rate 2 year (l/s)	0.01 l/s
Flow rate 10 years (l/s)	0.01 l/s
Flow rate 30 years (l/s)	0.01 l/s
Flow rate 100 years (l/s)	0.01 l/s
Flow rate 200 years (l/s)	0.01 l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (https://www.uksuds.com/). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (https://www.uksuds.com/terms-conditions). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Inverts
M5-60 (mm)	19.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	0.500
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	6.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
RE01	0.003	6.00	93.000	450	20.000	80.000	0.650	92.350
S01			93.000	450	23.715	79.971	0.690	92.310
S02			92.600	450	25.696	73.031	0.660	91.940
RE02	0.003	6.00	92.200	450	20.000	65.882	0.650	91.550
S03			92.200	450	25.696	65.882	0.690	91.510
Tank			91.900		25.632	62.408	1.110	90.790
Outfall			91.900	450	25.696	57.435	1.150	90.750

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	RE01	S01	3.715	0.600	92.350	92.310	0.040	92.9	150	6.06	50.0
1.001	S01	S02	7.186	0.600	92.310	91.940	0.370	19.4	150	6.11	50.0
1.002	S02	S03	7.149	0.600	91.940	91.540	0.400	17.9	150	6.16	50.0
2.000	RE02	S03	5.696	0.600	91.550	91.510	0.040	142.4	150	6.11	50.0
1.003	S03	Tank	3.474	0.600	91.540	90.790	0.750	4.6	150	6.17	50.0
1.004	Tank	Outfall	4.974	0.600	90.800	90.750	0.050	99.5	150	6.26	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.043	18.4	0.5	0.500	0.540	0.003	0.0	18	0.464
1.001	2.296	40.6	0.5	0.540	0.510	0.003	0.0	12	0.791
1.002	2.394	42.3	0.5	0.510	0.510	0.003	0.0	12	0.825
2.000	0.840	14.8	0.5	0.500	0.540	0.003	0.0	20	0.396
1.003	4.714	83.3	1.1	0.510	0.960	0.006	0.0	12	1.633
1.004	1.007	17.8	1.1	0.950	1.000	0.006	0.0	25	0.553

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	3.715	92.9	150	Circular	93.000	92.350	0.500	93.000	92.310	0.540
1.001	7.186	19.4	150	Circular	93.000	92.310	0.540	92.600	91.940	0.510
1.002	7.149	17.9	150	Circular	92.600	91.940	0.510	92.200	91.540	0.510
2.000	5.696	142.4	150	Circular	92.200	91.550	0.500	92.200	91.510	0.540
1.003	3.474	4.6	150	Circular	92.200	91.540	0.510	91.900	90.790	0.960
1.004	4.974	99.5	150	Circular	91.900	90.800	0.950	91.900	90.750	1.000

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	RE01	450	Manhole	Adoptable	S01	450	Manhole	Adoptable
1.001	S01	450	Manhole	Adoptable	S02	450	Manhole	Adoptable
1.002	S02	450	Manhole	Adoptable	S03	450	Manhole	Adoptable
2.000	RE02	450	Manhole	Adoptable	S03	450	Manhole	Adoptable
1.003	S03	450	Manhole	Adoptable	Tank		Junction	
1.004	Tank		Junction		Outfall	450	Manhole	Adoptable

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Node Tank Online Orifice Control

Flap Valve	x	Invert Level (m)	90.800	Diameter (m)	0.017
Downstream Link	1.004	Design Depth (m)	1.100	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	0.7		

Node Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	90.790
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	44

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	3.5	3.5	0.400	3.5	6.2	0.401	0.0	6.2

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	94.406	26.714	2 year 960 minute winter	6.317	2.511
1 year 15 minute winter	66.250	26.714	2 year 1440 minute summer	7.151	1.917
1 year 30 minute summer	64.140	18.149	2 year 1440 minute winter	4.806	1.917
1 year 30 minute winter	45.010	18.149	30 year 15 minute summer	230.915	65.341
1 year 60 minute summer	45.726	12.084	30 year 15 minute winter	162.045	65.341
1 year 60 minute winter	30.379	12.084	30 year 30 minute summer	157.653	44.610
1 year 120 minute summer	30.007	7.930	30 year 30 minute winter	110.634	44.610
1 year 120 minute winter	19.936	7.930	30 year 60 minute summer	110.635	29.238
1 year 180 minute summer	24.016	6.180	30 year 60 minute winter	73.503	29.238
1 year 180 minute winter	15.611	6.180	30 year 120 minute summer	70.347	18.591
1 year 240 minute summer	19.566	5.171	30 year 120 minute winter	46.737	18.591
1 year 240 minute winter	12.999	5.171	30 year 180 minute summer	54.717	14.081
1 year 360 minute summer	15.469	3.981	30 year 180 minute winter	35.568	14.081
1 year 360 minute winter	10.055	3.981	30 year 240 minute summer	43.507	11.497
1 year 480 minute summer	12.512	3.307	30 year 240 minute winter	28.905	11.497
1 year 480 minute winter	8.313	3.307	30 year 360 minute summer	33.582	8.642
1 year 600 minute summer	10.471	2.864	30 year 360 minute winter	21.829	8.642
1 year 600 minute winter	7.154	2.864	30 year 480 minute summer	26.663	7.046
1 year 720 minute summer	9.504	2.547	30 year 480 minute winter	17.714	7.046
1 year 720 minute winter	6.387	2.547	30 year 600 minute summer	21.972	6.010
1 year 960 minute summer	8.044	2.118	30 year 600 minute winter	15.013	6.010
1 year 960 minute winter	5.328	2.118	30 year 720 minute summer	19.682	5.275
1 year 1440 minute summer	6.088	1.632	30 year 720 minute winter	13.227	5.275
1 year 1440 minute winter	4.091	1.632	30 year 960 minute summer	16.292	4.290
2 year 15 minute summer	122.180	34.573	30 year 960 minute winter	10.792	4.290
2 year 15 minute winter	85.741	34.573	30 year 1440 minute summer	11.942	3.201
2 year 30 minute summer	82.782	23.424	30 year 1440 minute winter	8.026	3.201
2 year 30 minute winter	58.093	23.424	30 year +40% CC 15 minute summer	323.280	91.477
2 year 60 minute summer	58.092	15.352	30 year +40% CC 15 minute winter	226.863	91.477
2 year 60 minute winter	38.595	15.352	30 year +40% CC 30 minute summer	220.714	62.455
2 year 120 minute summer	37.396	9.883	30 year +40% CC 30 minute winter	154.887	62.455
2 year 120 minute winter	24.845	9.883	30 year +40% CC 60 minute summer	154.889	40.933
2 year 180 minute summer	29.556	7.606	30 year +40% CC 60 minute winter	102.904	40.933
2 year 180 minute winter	19.212	7.606	30 year +40% CC 120 minute summer	98.486	26.027
2 year 240 minute summer	23.866	6.307	30 year +40% CC 120 minute winter	65.432	26.027
2 year 240 minute winter	15.856	6.307	30 year +40% CC 180 minute summer	76.604	19.713
2 year 360 minute summer	18.731	4.820	30 year +40% CC 180 minute winter	49.795	19.713
2 year 360 minute winter	12.175	4.820	30 year +40% CC 240 minute summer	60.909	16.096
2 year 480 minute summer	15.065	3.981	30 year +40% CC 240 minute winter	40.467	16.096
2 year 480 minute winter	10.009	3.981	30 year +40% CC 360 minute summer	47.014	12.098
2 year 600 minute summer	12.548	3.432	30 year +40% CC 360 minute winter	30.561	12.098
2 year 600 minute winter	8.573	3.432	30 year +40% CC 480 minute summer	37.329	9.865
2 year 720 minute summer	11.344	3.040	30 year +40% CC 480 minute winter	24.800	9.865
2 year 720 minute winter	7.624	3.040	30 year +40% CC 600 minute summer	30.761	8.414
2 year 960 minute summer	9.536	2.511	30 year +40% CC 600 minute winter	21.018	8.414

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year +40% CC 720 minute summer	27.554	7.385
30 year +40% CC 720 minute winter	18.518	7.385
30 year +40% CC 960 minute summer	22.808	6.006
30 year +40% CC 960 minute winter	15.109	6.006
30 year +40% CC 1440 minute summer	16.719	4.481
30 year +40% CC 1440 minute winter	11.236	4.481
100 year 15 minute summer	298.075	84.345
100 year 15 minute winter	209.176	84.345
100 year 30 minute summer	205.713	58.210
100 year 30 minute winter	144.360	58.210
100 year 60 minute summer	145.356	38.413
100 year 60 minute winter	96.571	38.413
100 year 120 minute summer	92.445	24.431
100 year 120 minute winter	61.418	24.431
100 year 180 minute summer	71.566	18.416
100 year 180 minute winter	46.520	18.416
100 year 240 minute summer	56.568	14.949
100 year 240 minute winter	37.583	14.949
100 year 360 minute summer	43.347	11.155
100 year 360 minute winter	28.177	11.155
100 year 480 minute summer	34.224	9.044
100 year 480 minute winter	22.738	9.044
100 year 600 minute summer	28.072	7.678
100 year 600 minute winter	19.181	7.678
100 year 720 minute summer	25.045	6.712
100 year 720 minute winter	16.832	6.712
100 year 960 minute summer	20.594	5.423
100 year 960 minute winter	13.642	5.423
100 year 1440 minute summer	14.942	4.005
100 year 1440 minute winter	10.042	4.005
100 year +45% CC 15 minute summer	432.209	122.300
100 year +45% CC 15 minute winter	303.305	122.300
100 year +45% CC 30 minute summer	298.284	84.404
100 year +45% CC 30 minute winter	209.322	84.404
100 year +45% CC 60 minute summer	210.766	55.699
100 year +45% CC 60 minute winter	140.028	55.699
100 year +45% CC 120 minute summer	134.045	35.424
100 year +45% CC 120 minute winter	89.057	35.424
100 year +45% CC 180 minute summer	103.770	26.704
100 year +45% CC 180 minute winter	67.453	26.704
100 year +45% CC 240 minute summer	82.024	21.677
100 year +45% CC 240 minute winter	54.495	21.677
100 year +45% CC 360 minute summer	62.854	16.174
100 year +45% CC 360 minute winter	40.856	16.174
100 year +45% CC 480 minute summer	49.625	13.114
100 year +45% CC 480 minute winter	32.969	13.114
100 year +45% CC 600 minute summer	40.705	11.134
100 year +45% CC 600 minute winter	27.812	11.134
100 year +45% CC 720 minute summer	36.316	9.733
100 year +45% CC 720 minute winter	24.406	9.733
100 year +45% CC 960 minute summer	29.861	7.863
100 year +45% CC 960 minute winter	19.780	7.863
100 year +45% CC 1440 minute summer	21.666	5.807
100 year +45% CC 1440 minute winter	14.561	5.807

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Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	RE01	20	92.366	0.016	0.4	0.0026	0.0000	OK
30 minute summer	S01	20	92.321	0.011	0.4	0.0017	0.0000	OK
30 minute summer	S02	20	91.951	0.011	0.4	0.0017	0.0000	OK
30 minute summer	RE02	20	91.567	0.017	0.4	0.0027	0.0000	OK
30 minute summer	S03	20	91.550	0.040	0.8	0.0064	0.0000	OK
180 minute summer	Tank	120	90.905	0.115	0.4	0.3822	0.0000	OK
15 minute summer	Outfall	1	90.750	0.000	0.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	RE01	1.000	S01	0.4	0.510	0.022	0.0030	
30 minute summer	S01	1.001	S02	0.4	0.731	0.010	0.0039	
30 minute summer	S02	1.002	S03	0.4	0.746	0.009	0.0038	
30 minute summer	RE02	2.000	S03	0.4	0.321	0.027	0.0140	
30 minute summer	S03	1.003	Tank	0.8	1.272	0.010	0.0235	
180 minute summer	Tank	Orifice	Outfall	0.2				0.8

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Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE01	12	92.368	0.018	0.5	0.0029	0.0000	OK
30 minute summer	S01	20	92.322	0.012	0.5	0.0019	0.0000	OK
30 minute summer	S02	20	91.952	0.012	0.5	0.0019	0.0000	OK
30 minute summer	RE02	20	91.569	0.019	0.5	0.0030	0.0000	OK
30 minute summer	S03	20	91.552	0.042	1.0	0.0066	0.0000	OK
60 minute winter	Tank	46	90.943	0.153	0.6	0.5075	0.0000	OK
15 minute summer	Outfall	1	90.750	0.000	0.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	RE01	1.000	S01	0.5	0.545	0.027	0.0035	
30 minute summer	S01	1.001	S02	0.5	0.782	0.012	0.0046	
30 minute summer	S02	1.002	S03	0.5	0.798	0.012	0.0045	
30 minute summer	RE02	2.000	S03	0.5	0.321	0.034	0.0150	
30 minute summer	S03	1.003	Tank	1.0	1.272	0.012	0.0299	
60 minute winter	Tank	Orifice	Outfall	0.2				0.9

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Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	RE01	19	92.375	0.025	1.0	0.0040	0.0000	OK
15 minute winter	S01	11	92.327	0.017	1.0	0.0027	0.0000	OK
15 minute summer	S02	11	91.956	0.016	1.0	0.0026	0.0000	OK
30 minute summer	RE02	19	91.576	0.026	1.0	0.0042	0.0000	OK
30 minute summer	S03	19	91.556	0.046	2.0	0.0073	0.0000	OK
120 minute summer	Tank	82	91.125	0.335	1.2	1.1138	0.0000	SURCHARGED
15 minute summer	Outfall	1	90.750	0.000	0.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	RE01	1.000	S01	1.0	0.667	0.054	0.0056	
15 minute winter	S01	1.001	S02	1.0	0.958	0.025	0.0075	
15 minute summer	S02	1.002	S03	1.0	0.983	0.024	0.0073	
30 minute summer	RE02	2.000	S03	1.0	0.321	0.067	0.0190	
30 minute summer	S03	1.003	Tank	2.0	1.597	0.024	0.0323	
120 minute summer	Tank	Orifice	Outfall	0.3				2.4

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Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	RE01	19	92.380	0.030	1.4	0.0048	0.0000	OK
30 minute summer	S01	19	92.330	0.020	1.4	0.0031	0.0000	OK
15 minute winter	S02	11	91.959	0.019	1.4	0.0031	0.0000	OK
30 minute summer	RE02	19	91.581	0.031	1.4	0.0049	0.0000	OK
15 minute winter	S03	11	91.559	0.049	2.8	0.0078	0.0000	OK
120 minute summer	Tank	80	91.459	0.669	1.6	1.3317	0.0000	SURCHARGED
15 minute summer	Outfall	1	90.750	0.000	0.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	RE01	1.000	S01	1.4	0.735	0.076	0.0072	
30 minute summer	S01	1.001	S02	1.4	1.055	0.035	0.0095	
15 minute winter	S02	1.002	S03	1.4	1.085	0.033	0.0092	
30 minute summer	RE02	2.000	S03	1.4	0.373	0.094	0.0216	
15 minute winter	S03	1.003	Tank	2.8	2.113	0.034	0.0328	
120 minute summer	Tank	Orifice	Outfall	0.5				3.1

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Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	RE01	19	92.379	0.029	1.3	0.0046	0.0000	OK
30 minute summer	S01	19	92.329	0.019	1.3	0.0030	0.0000	OK
15 minute winter	S02	11	91.959	0.019	1.3	0.0029	0.0000	OK
30 minute summer	RE02	19	91.580	0.030	1.3	0.0048	0.0000	OK
15 minute winter	S03	11	91.558	0.048	2.6	0.0077	0.0000	OK
120 minute summer	Tank	80	91.376	0.586	1.4	1.3317	0.0000	SURCHARGED
15 minute summer	Outfall	1	90.750	0.000	0.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	RE01	1.000	S01	1.3	0.720	0.071	0.0068	
30 minute summer	S01	1.001	S02	1.3	1.032	0.032	0.0091	
15 minute winter	S02	1.002	S03	1.3	1.061	0.031	0.0088	
30 minute summer	RE02	2.000	S03	1.3	0.357	0.088	0.0210	
15 minute winter	S03	1.003	Tank	2.6	2.113	0.031	0.0325	
120 minute summer	Tank	Orifice	Outfall	0.5				3.0

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE01	11	92.385	0.035	1.9	0.0056	0.0000	OK
15 minute summer	S01	11	92.333	0.023	1.9	0.0036	0.0000	OK
15 minute summer	S02	11	91.962	0.022	1.9	0.0035	0.0000	OK
180 minute summer	RE02	116	91.754	0.204	0.8	0.0324	0.0000	SURCHARGED
180 minute summer	S03	116	91.754	0.244	1.9	0.0387	0.0000	SURCHARGED
180 minute summer	Tank	116	91.754	0.964	1.6	1.3317	0.0000	FLOOD RISK
15 minute summer	Outfall	1	90.750	0.000	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	RE01	1.000	S01	1.9	0.801	0.103	0.0089	
15 minute summer	S01	1.001	S02	1.9	1.150	0.047	0.0119	
15 minute summer	S02	1.002	S03	1.9	1.186	0.045	0.0115	
180 minute summer	RE02	2.000	S03	0.9	0.304	0.060	0.1003	
180 minute summer	S03	1.003	Tank	1.6	1.533	0.019	0.0612	
180 minute summer	Tank	Orifice	Outfall	0.6				4.9

Approval Settings

Node Size	x	Crossings	x	Surcharged Depth	x	Discharge Volume	x
Node Losses	x	Cover Depth	x	Flooding	x	First Flush	x
Link Size	x	Backdrops	x	Time to Half Empty	✓	Water Quality	x
Link Length	x	Full Bore Velocity	x	Return Period (years)	10		
Coordinates	x	Proportional Velocity	x	Discharge Rates	x		

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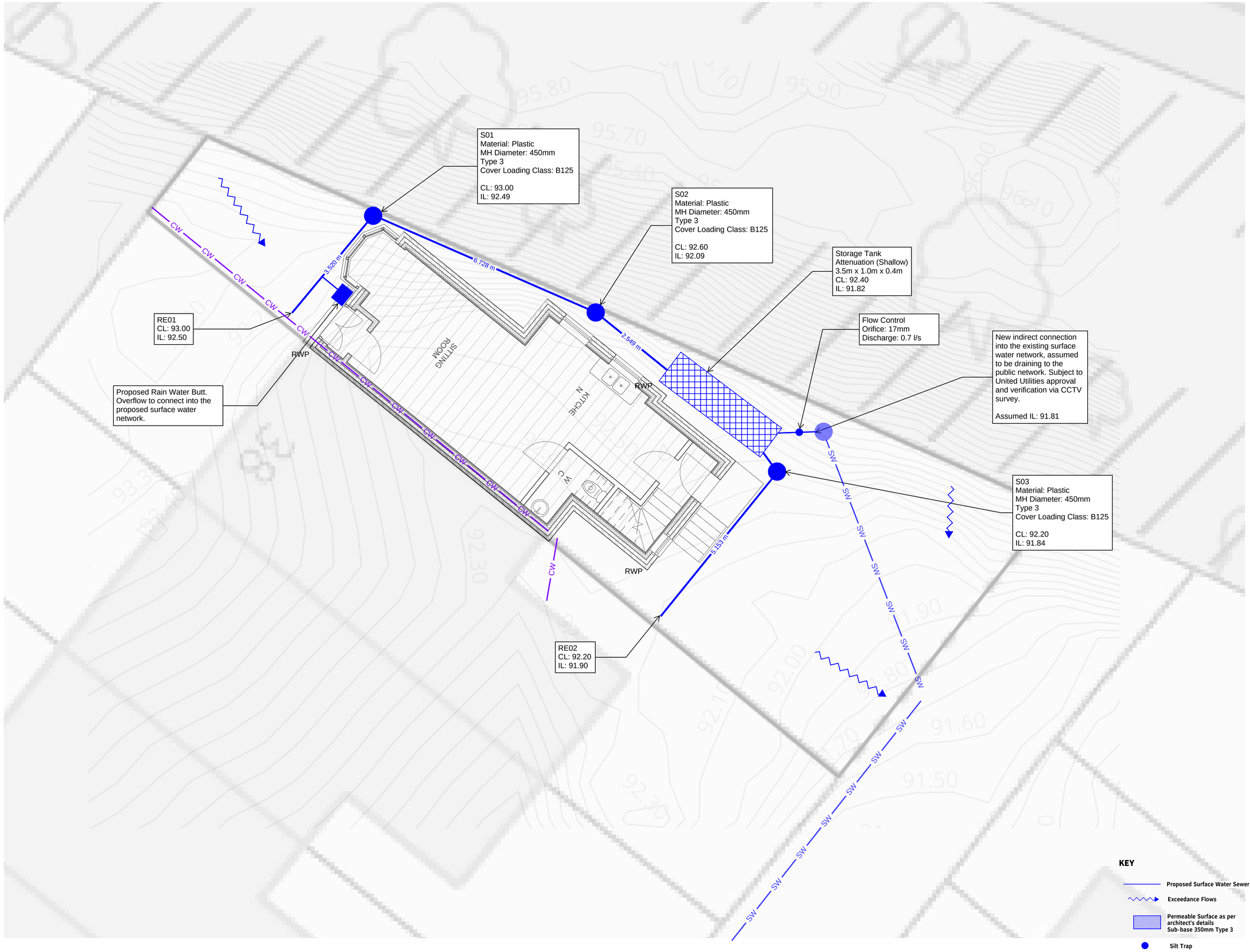
Appendix D

Do not scale from this drawing. Refer to figured dimensions only. RIDA Reports Ltd registered in England and Wales No. 10590566. This drawing is copyright of RIDA Reports Ltd.

Drawing Scale Bar

Drawing scale	Line length	Drawing scale	Line length
1:5 =	0.25 metres	1:200 =	10.0 metres
1:10 =	0.5 metres	1:250 =	12.5 metres
1:20 =	1.0 metres	1:500 =	25.0 metres
1:25 =	1.25 metres	1:1000 =	50.0 metres
1:50 =	2.5 metres	1:1250 =	62.5 metres
1:100 =	5.0 metres	1:2500 =	125 metres

Measure length of line above for checking of scale



GENERAL NOTES

1. All dimensions are in millimetres and levels in m AOD unless stated otherwise.

2. Do not scale. If in any doubt, consult Engineer.

3. Read in conjunction with the architects and engineers schedule drawings.

4. Check inverts and sizes of existing pipes prior to the commencement of any work. Report any discrepancies to the engineer and await instructions.

5. The location of services is shown as indicative. This drawing should be read in conjunction with the utilities drawings. No warranty to their accuracy can be given. The contractor shall take all necessary measures to satisfy himself as to the location of the existing services and connection points. Excavation should be undertaken in compliance with HSG47.

6. Concrete structures design sulphate class and ACEC concrete class unknown.

7. Pipework to be 110mm Thermoplastics U-PVC (Polypipe or similar) installed at levels marked on this drawing UNO. Pipe bedding should be class Z in pipes within 1.5m of the building or shallower than 700mm below ground level. For all other areas the pipe bedding should be class S.

8. Joints and fittings for gravity sewers shall comply with the relevant provisions of BS EN 1401-1, BS EN 1852 and BS EN 12666-1. Pipes shall have a limit of 6% deformation. Pipes shall be SN8 ring stiffness and stamped accordingly. Pipe sections shall not be longer than 3m.

9. Plastic chambers and rings, including demarcation chambers,shall comply with BS EN 3598-1 or BS EN 13598-2 as appropriate.

10. Inspection chamber covers and frames shall comply with the relevant provisions of BS EN 124 and should be double sealed.

11. All inspection chamber covers shall be the non-ventilating type and shall have closed keyways.

12. Testing of pipelines should be as follow:

Gravity Pipework: Air pipe testing. Pipework should withstand a pressure of 100mm water gauge and this should not fall by more than 25mm in a 5minute period. However where traps or gullies are connected they should withstand a pressure of 50mm water gauge and this should not fall by more than 12mm in a 5minute period. It is recommended that pipework installations are tested in sections rather than waiting to complete in one operation.

13. Manhole covers to be set square to the building. Covers of existing manholes to be adjusted to match final ground levels.

14. Granular Bedding for pipes shall be constructed by spreading and compacting granular bedding material over the full width of the pipe trench. After the pipes have been laid, additional granular material shall, if required, be placed and compacted equally on each side of the pipes and, where practicable, this shall be done in sequence with the removal of the trench supports.

15. The proposed dwelling shall be provided with a rainwater butt with a minimum storage capacity of 260 litres. The water butt shall be connected to a roof downpipe (with an appropriate diverter and an overflow returning to the drainage system) and positioned to allow safe access and routine use by the occupants.

Rev	Details	Date	By	Chkd

Drawing Status:

PRELIMINARY

FLOOD RISK ASSESSMENT & DRAINAGE STRATEGIES

4 Bean Acre Road, Hook Norton, Banbury, Oxfordshire
e: info@rida-reports.co.uk
t: 01608 510 121
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Client:

Project:

40 Deyne Avenue, Prestwich, Manchester, M25 1EJ

Drawing:

Proposed Drainage Strategy

Print Size:	Scale:	Project No:	Drawing No:	Revision:
A1	**1:50**	**R1092**	**003**	P1

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Drawing Scale Bar

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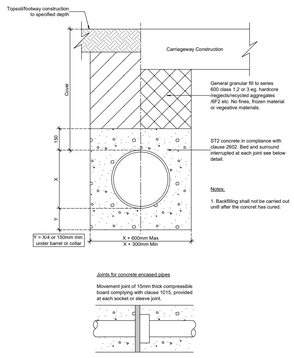
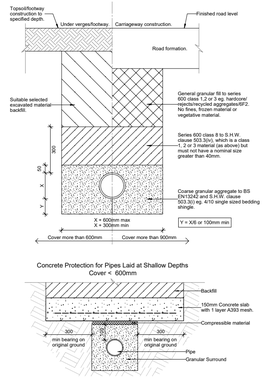
1:20 =	1.0 metres	1:500 =	25.0 metres
1:25 =	1.25 metres	1:1000 =	50.0 metres
1:50 =	2.5 metres	1:1250 =	62.5 metres
1:100 =	5.0 metres	1:2500 =	125 metres

Measure length of line above for checking of scale

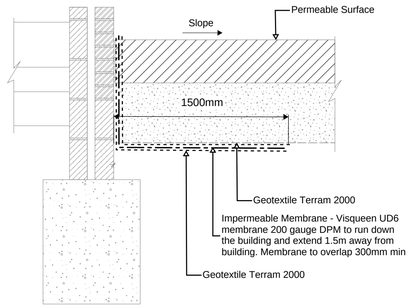
GENERAL NOTES



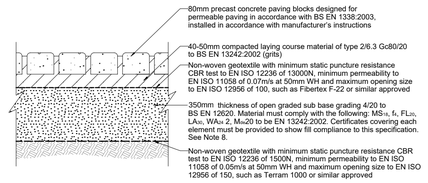
Pipe Bedding Detail Type Z



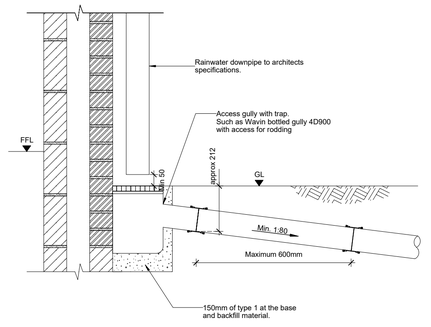
Pipe Bedding Detail Type S



Permeable Surface Against Building



Permeable Paving - Infiltration

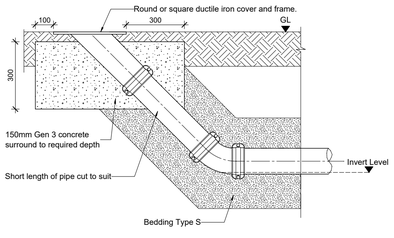


NOTES:

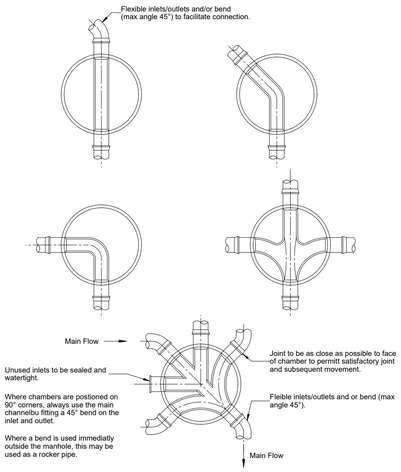
1. This details shows the standard generic arrangement.

2. The pipe and connector details will be different for each manufacturer of the components. They are to be in installed in accordance with the manufacturers recommendations.

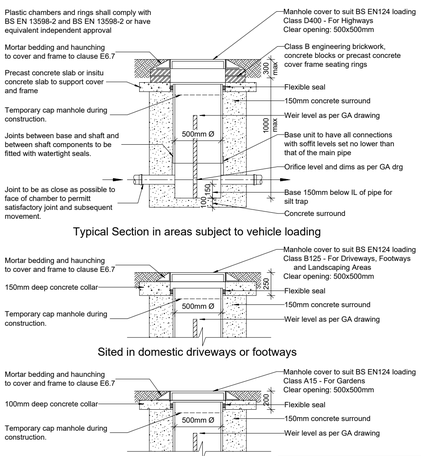
8250 - External Rainwater (High Level)



External Rodding Eye Detail

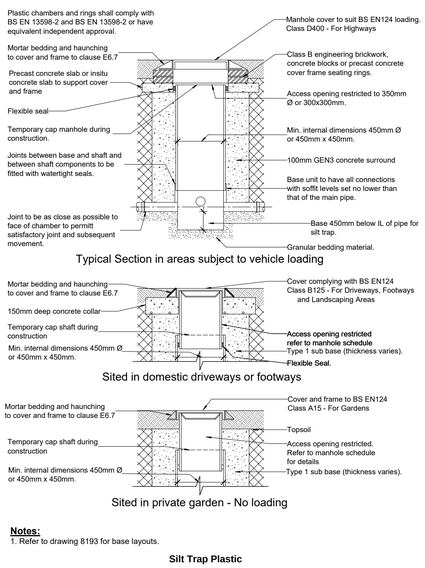


Chamber Type 3 Base Layouts



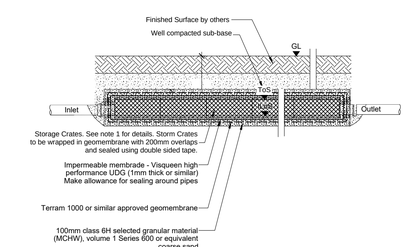
NOTES:
1. Refer to GA drg for pipe layout.
2. Chamber can be fabricated by Selel Environmental UK.

Flow Control -Orifice Plate - Plastic - Type 3



Notes:
1. Refer to drawing 8193 for base layouts.

Silt Trap Plastic



NOTES:

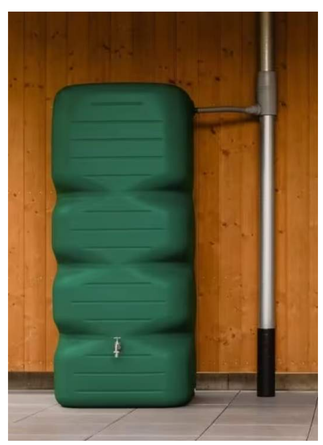
1. Permeable modular to be used as follow: The use depends on the depth given on the GA drawing.
Polystorm Xtra PSM3 - 210mm depth x 500mm wide x 1000mm length, 800Kn/m2, Void 94%
Permavoid 85 - 85mm depth x 354mm wide x 708mm length, 700Kn/m2, Void 92%
Permavoid 150- 150mm depth x 354mm wide x 708mm length, 700 Kn/m2 , Void 95%

2. Dimensions as applicable to the manufacturers recommendations for given storage requirement UNO.

3. Air Vents should be provided as per suppliers recommendations

4. See GA drgs for pipe sizes and layout and IL, ILoS, ToS, GL levels.

Cellular Attenuation System - Shallow Installation



Rainwater Butt

Rev	Details	Date	By	Ch'd

Drawing Status:

PRELIMINARY

RIDA
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Client:

Project:

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Drawing:

Standard Details

Print Size:	Scale:	Project No:	Drawing No:	Revision:
A1	NTS	R1092	006	P1