



Land to the rear of 354 Manchester Road, Bury

Outline Sustainable Drainage Strategy

Job Number
FRA251115

Report Date
5th August 2025

Client
Rachel Hankinson



www.thelkgroup.com

Ground Investigation | Land Remediation | Project Management



LK CONSULT

DOCUMENT QUALITY ASSURANCE

Site Address	354 Manchester Road, Bury, BL9 9NR
Report Title	Outline Sustainable Drainage Strategy
Job Number	FRA 25 1115
Client	Rachel Hankinson

Revision	0	Date of Issue	16/07/2025
Document Ref:	FRA 25 1115-SuDS-354 Manchester Road R0		
Status	Draft for Comment		
Written By	Alaika Yusaf		
Approved By	Matthew Bell		

Revision	1	Date of Issue	05/08/2025
Document Ref:	FRA 25 1115-SuDS-354 Manchester Road R1		
Status	Final for Planning		
Written By	Alaika Yusaf		
Approved By	Matthew Bell		

DISCLAIMER

This report has been prepared by LK Consult Ltd (LKC) who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant, experienced in preparing reports of a similar scope.

However, to the extent that the report is based or relies upon information contained in records, reports or other materials provided to LKC, which have not been independently produced or verified, LKC gives no warranty, representation, or assurance as to the accuracy or completeness of such information.

This report is prepared solely for the benefit of the client named above. It may not be relied upon by or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance, and regulatory approval until all invoices have been settled in full.

Those using this information in subsequent assessments or evaluations do so at their own risk.

EXECUTIVE SUMMARY

Scope and Background

This Sustainable Drainage (SuDS) Strategy has been undertaken by LK Consult Ltd (LKC) to support a planning application for the development of a single dwelling and associated car parking on land to the rear of 354 Manchester Road, Bury.

LKC has prepared this SuDS Strategy in line with the NPPF and Technical Guidance where appropriate.

Consultations

Bury Metropolitan Borough Council. – Lead Local Flood Authority (LLFA) and United Utilities (UU) have been contacted during preparation of this report.

The Environment Agency (EA) website has been utilised to assess if there are any limitations that may affect the form of SuDS that may be appropriate to this site. The records show that the site is within Flood Zone 1.

Drainage Strategy

The ground conditions beneath the site are recorded as Till, Devensian superficial deposits that mainly consist of unsorted sediment with gravel in a fine mud matrix over Pennine Lower Coal Measures Formation bedrock which have been confirmed by British Geological Survey (BGS) borehole records.

There is a slight slope towards the south- west.

The outline drainage strategy proposes that surface water runoff arising from the development will discharge into combined sewer on the northern boundary of the site.

The most effective strategy, in line with the SuDS management train, would be to have a detention facility towards the northeast corner.

The volume to be retained on site for the 1 in 100-year storm event including an allowance for climate change is 8.9m³.

The flows from the site should be restricted to an acceptable level to the Lead Local Flood Authority and the EA / UU etc.

The estimated volume can be stored within the site boundary

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
Scope and Background	ii
Consultations.....	ii
Drainage Strategy.....	ii
1. Introduction	4
1.1. Background	4
1.2. Site Details	4
2. Site Setting	5
2.1. Environmental Setting.....	5
2.2. Site and Access Levels	5
3. Consultation	7
4. Surface Water Management Strategy.....	8
4.1. Introduction	8
4.2. Sustainable Drainage Hierarchy	8
4.3. Surface Water Runoff Rates	9
4.4. Surface Water Attenuation Requirements	10
4.5. Surface Water Drainage Strategy	10
4.6. Maintenance and Management Plan.....	10
5. Conclusion	12

Figures

Figure 1 – Site Location and Boundary Plan

Figure 2 – Outline Drainage Strategy

Appendices

Appendix A – Site Information

Appendix B – Lead Local Flood Authority Consultation

Appendix C – United Utilities Information

Appendix D – Calculations

Appendix E – References

1. Introduction

1.1. Background

LKC were commissioned to carry out an outline Sustainable Drainage Strategy for land to the rear of 354 Manchester Rad, Bury. The report was undertaken in support of a future planning application to redevelop the site for residential use. The development comprises 1 No. residential unit with associated car parking and landscaping.

The report will consider the impact of the development on surface water runoff accounting for climate change. The sustainable drainage assessment in Section 4 will provide an overview of the SuDS techniques which could be considered on the site.

This outline SuDS assessment is in general accordance with the Planning Practice Guidance (PPG) March 2014¹. The sustainable drainage assessment is presented with reference to the hydrological and hydrogeological context of the development.

The site is located within the administrative boundary of Bury Council (BC). The Council adopted the Places for Everyone Joint Development Plan with effect from 21 March 2024, which sets out the framework for sustainable growth across Greater Manchester. Policy JP-S4 'Flood Risk and Water Environment' sets out the Plan's approach to flood risk and water management.

The report findings are based upon professional judgement and are summarised below. The report includes baseline data from the Environment Agency (EA), rainfall data from the Wallingford Studies and Hydrogeological information from the British Geological Survey (BGS). The assessment will summarise and refer to these datasets in the text.

Drainage on the site has been assessed by considering the following key constraints:

- Topography of the site.
- Local water features and hydrological context.
- Underlying geology, soil types and permeability.
- Layout and geometry of the proposed development based on the site plan provided by Sedgwick Associates included in Appendix A.

1.2. Site Details

A summary of the general site details is presented in Table 1-1. Plans, Drawings and Figures are provided in Appendix A. Figure 1 indicates the site location and boundary.

Location	Land to the rear of 354 Manchester Road, Bury, BL9 9NR. Centred at approximate NGR 380349, 409034.
Area	Approximately 0.11ha. (including the existing access road)
Topography	The levels within the site boundary range from 71.52m -77.19m AOD. Site is sloping down gently to the south-west.
Current Site Use	<u>Site</u> The site currently comprises dense vegetation and trees. <u>Surrounding Area/ Boundary Treatment</u> The site is situated within a broadly residential area. There is a restaurant and community centre to the south of the site. other
Proposed Development	1 No. residential property including soft landscaping and car parking. Access to the site will be retained as per the existing situation which provides access to 354a Manchester Road. The site layout plan is included as Appendix A.

Table 1-1: Summary of site details.

2. Site Setting

2.1. Environmental Setting

LKC has undertaken a review of public domain information including British Geological Survey data, Environment Agency data, historical mapping and aerial photography to provide a summary of the environmental setting of the site. This is summarised in Table 2-1 below.

Summary of the Environmental Setting			
Geology	Superficial	The development area is shown to be Till, Devensian which is described as unsorted sediment with gravel in a fine mud matrix. The access road from Manchester Road appears to be Glaciofluvial Deposits which are described as sand and gravel.	
	Bedrock	The development area and the access road is shown to be Pennine Lower Coal Measures Formation described as mudstone siltstone and sandstone The western end of the site is indicated to be underlain by the Trencherbone Rock, described as Sandstone	
	BGS Boreholes	There are no BGS Borehole logs within the immediate vicinity of the site.	
	Defra Soilscape Mapping	The eastern side of the site is soil type 17 which is described as slowly permeable seasonally wet acid loamy and clayey soils. The western side of the site is soil type 6 which is described as freely draining slightly acid loamy soils.	
Hydrogeology	Aquifer Designation	Superficial	Secondary A Aquifer.
		Bedrock	Secondary A Aquifer.
	Source Protection Zone (SPZ)	The site does not appear to be within an SPZ	
Hydrology	All adjacent and internal surface water	The River Irwell is 300m to the west of the site flowing in a southerly direction. The Irwell has defences built to the standard of protection of 100 years. The effective crest level is 70.8m AOD. The River Roch is 650m to the east of the site flowing in a southerly direction. There are raised embankments with a downstream crest level of 68.1m AOD. The design standard of protection for this defence is 5 years.	
	Flooding	Flood Zone 1.	
Flood Zone	The site is within Fluvial Flood Zone 1. Flood Zone 1: Very Low risk, with annual probability of flooding from rivers and the sea of less than 0.1% (1 in 1000).		
Site History		The site was previously associated with the garden area of 354 Manchester Road, Bury. The site comprises an undeveloped area of vegetation and trees.	

Table 2-1: Summary of the Environmental Setting.

2.2. Site and Access Levels

A Topographic Survey of the site has been undertaken by TriCAD Solutions (drawing no. TRI-4426-01, dated March 2025). The Topographic Survey, included as Appendix A, is described as follows:

The levels within the site boundary range from 71.52m -77.19m AOD.

- The south-east corner comprises dense vegetation and has levels ranging from 75.42m – 76.99m AOD.
- The south-western corner of the site has the lowest levels, ranging from 71.52m to 75.65m AOD. This area generally slopes to the south-west away from the proposed dwelling location.
- The proposed location for the dwelling has levels ranging from 75.82m – 76.17m AOD. This generally slopes towards the south-west.
- The access road slopes from 76.56m AOD in the west to 77.15m AOD to the east.

The final site levels and ground floor levels for the proposed dwellings are yet to be confirmed.

The proposed access would join Manchester Road at around 77.15m AOD.

3. Consultation

Information from all relevant consultees is summarised in Table 3-1 below.

Relevant correspondence / information is provided in Appendices B (LLFA) and C (United Utilities).

Source	Details
Bury Metropolitan Borough Council Lead Local Flood Authority (LLFA)	No information provided at the time of writing.
United Utilities (UU) Sewer Map	Public sewer records obtained from UU indicate the following sewers within the vicinity of the site: • A 150mm diameter private combined water sewer becoming 508-864mm public combined sewer, flowing from west to east along the access road initially, then flowing beneath Manchester Road to the north. • There is a 150mm public surface water sewer that connects to a 225mm combined public sewer. These sewers flow in a westerly direction within Tarn Drive. • UU maps indicate a 610mm x 914mm private surface water sewer (likely to be a culverted watercourse) to the west of the site. It appears to flow through the very south western corner of the site boundary.
United Utilities predevelopment enquiry (PDE) response	UU have confirmed that they do not hold any modelled flood risk within the vicinity of the proposed development. Asset protection: the presence of a public sewer within the development boundary requires an easement of 6m. Foul water will be allowed to drain into the public foul water/ combined sewer system. The preferred point of discharge is the 150mm foul sewer within the eastern boundary of the proposed development at an unrestricted rate. UU have recommended that the surface water should discharge into the culverted watercourse that falls within the south-western edge of the site boundary.

Table 3-1: Summary consultee information.

4. Surface Water Management Strategy

4.1. Introduction

The NPPF recognises that flood risk and other environmental damage can be managed by minimising changes in the volume and rate of surface run-off from development sites through the use of Sustainable Drainage Systems (SuDS), this being complementary to the control of development within the floodplain.

The site is located within the administrative boundary of Bury Council (BC). In March 2024, the Council adopted the Places for Everyone Joint Development Plan which sets out the framework for sustainable growth across Greater Manchester. Policy JP-S4 'Flood Risk and Water Environment' sets out the Plan's approach to flood risk and water management. Policy JP-S4 states that proposed development should achieve greenfield runoff rates unless it is demonstrated to be impracticable.

SuDS will not alleviate flooding in an area prone to flooding; however, properly designed SuDS have the potential to prevent the surface water runoff from new development worsening the flood risk. The effective disposal of surface water from development is a material planning consideration in determining proposals for the development and use of land.

The accepted principles are that surface water arising from a developed area should, as far as practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

The Planning Practice guidance identifies that surface water runoff should be disposed of in the following order of preference:

1. Into the ground (infiltration);
2. To a surface water body;
3. To a surface water sewer, highway drain, or another drainage system; or
4. To a combined sewer

Suitability of different SuDS will be governed by prevailing site conditions, such as the type and scale of development, topography, ground conditions (soil permeability, ground stability, depth to water table), local hydrogeology and risk of groundwater contamination (presence of sensitive aquifers and source protection zones) etc.

4.2. Sustainable Drainage Hierarchy

4.2.1. Infiltration

The developable area is shown to be underlain by Till which is described as unsorted sediment with gravel in a fine mud matrix this is further underlain by Pennine Lower Coal Measures Formation described as mudstone siltstone and sandstone. Based on the cohesive nature of the underlying ground conditions infiltration within the development area is unlikely to be possible. It is recommended that BRE365 infiltration testing may be required to confirm this.

Whilst the access track is indicated to be underlain by Glaciofluvial deposits that may be granular in nature, the access track will remain as existing and is bordered to the north and south by neighbouring properties and as such infiltration in this is not likely to be feasible.

4.2.2. Watercourses

There are two open watercourses, the River Irwell and the River Roch, adjacent to the site, however they are 300m and 650m away from the site respectively. A connection to either watercourse would require significant engineering works across third party land. Therefore, surface water discharge into a watercourse has not been considered further.

4.2.3. Surface water sewer, highway drain, or another drainage system

There is an existing 150mm surface water sewer running adjacent to the site along Tarn Drive, flowing in a westerly direction. This sewer extends for approximately 40 metres before becoming a 225mm combined public sewer.

The drainage hierarchy prioritises connection to surface water sewers over combined systems, however, the short length of the surface water sewer and its direction of flow limit its suitability as a connection point. As a result, the most practical connection would be to the combined sewer. However, this would require engineering works across third-party land, which may introduce additional complexity and constraints. Therefore, this surface water sewer has not been considered further within this drainage strategy.

There is a 610mm by 914mm private surface water sewer (likely to be a culverted watercourse) located to the west of the site. The ownership and design features for this sewer system are not disclosed in the UU sewer plans. This system has not been confirmed as present at this stage, and it is not confirmed that it is functional. In addition, there are existing trees within the area of the culvert and as such any excavation to connect to this system would impact the root protection areas more than the connection to the combined sewer along the access road. This system has not been considered further for the disposal of surface water generated by this site.

4.2.4. To a combined sewer

There is a combined sewer through the access road to the site which joins into the 508-864mm public combined sewer to the east of the site within Manchester Road. The head of system is located within the property boundary therefore this is deemed to be the most appropriate discharge point for the surface water generated by this development subject to agreement with UU.

Information provided by the Applicant indicates that the combined sewer within the access road was constructed with a view to taking flows from an adjacent plot, which is now subject to this application.

4.3. Surface Water Runoff Rates

4.3.1. Greenfield runoff rates

As noted above, Policy JP-S4 contained within the Places for Everyone Joint Development Plan states that proposed development should achieve greenfield runoff rates unless it is demonstrated to be impracticable. The site composition has been estimated based on site plan (drawing no: C0515-dated October 2024, prepared by Equilibrium Architects) and are as follows: (Table 4-1).

Designated Areas	Plot Area (ha)
Total area (ha)	0.11
Development Area (ha)	0.08
Existing Green Infrastructure (ha)	0.08
Existing Access Road (ha)	0.03
Proposed Impermeable Area (ha)	0.02
Proposed Permeable Area (ha)	0.06

Table 4-1 Composition of site

The existing access road (0.03 ha) has been discounted from calculations as it is existing and will remain in its current form post development.

In addition, the proposed car parking area will be permeably surfaced (i.e. gravel or similar) and as such has been excluded from the calculations.

Greenfield runoff rates for the developable area (excluding the existing access road) have been calculated using the IoH124 method within Causeway Flow modelling software, the results of which are summarised in Table 4-2 below.

Return Period	Discharge Rate (l/s)
1 in 1	0.5
QBAR	0.6
1 in 30	1.1
1 in 100	1.3

Table 4-2: Greenfield discharge rates

4.4. Surface Water Attenuation Requirements

An initial Quick Storage Estimate has been undertaken using Causeway Flow modelling software to determine the attenuation that is likely to be required to achieve the proposed discharge rate of 1.0l/s. The rate has been set to 1.0l/s to provide the suitable velocity required for effective self-cleansing of the flow control. The Quick Storage Estimate indicates that between 8 – 12m³ of attenuation will be required based on a hardstanding area of 0.02ha.

Based on the development aspirations there is limited space for above ground attenuation features, therefore, it is proposed to provide the required attenuation volume within below ground geocellular storage crates situated in the northern area of the site.

4.5. Surface Water Drainage Strategy

It is proposed to restrict surface water runoff generated by the proposed development to a rate of 1.0l/s using a Hydro brake or similar flow control device. This rate represents the minimum flow level required for effective self-cleansing, during all events up to and including the 1 in 100-year plus 45% climate change event.

To achieve this rate, 8.9m³ of storage will be provided in the form of underground geocellular crate. It is proposed that the tank will have an area of 12m² at a depth of 0.8m with a porosity of 95%. A cover depth of 0.4m will typically be required. Causeway Flow Control calculations for the proposed attenuation tank are included as Appendix D. It should be noted that although it is proposed that the attenuated water discharge by gravity, a pumped outfall may be necessary to ensure effective conveyance of water into the private combined sewer. This is subject to confirmation of the level of the receiving private combined sewer.

The location of the proposed attenuation tank is shown on the preliminary drainage strategy drawing included as Figure 2; however, the final location will be subject to detailed design.

Assuming that the outline drainage strategy is acceptable to the Local Authority, a more detailed design can be presented and agreed with the appropriate regulatory bodies during the detailed design phase

4.6. Maintenance and Management Plan

Maintenance of proposed SuDS features will be required to ensure these remain operational over the lifetime of the proposed development. An indicative maintenance plan for the proposed SuDS and associated features is provided in Table 5-3 below. The SuDS maintenance and inspections responsibility rests with the owners or could be arranged through appointment of a site management company.

Maintenance Schedule	Required Action	Typical Frequency
Geocellular Storage Crates		
Regular Maintenance	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,	Annually

Maintenance Schedule	Required Action	Typical Frequency
	algae or other matter; remove and replace surface infiltration medium as necessary.	
	Remove sediment from pre-treatment structures and/or internal forebays	Annually or as required.
Remedial Actions	Repair/rehabilitate inlets, outlet and overflows and vents.	As required.
Monitoring	Survey inside of tank for sediment build-up and remove if necessary.	Every 5 years or as required.
	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually
Hydrobrake Flow Control		
Regular Maintenance	Inspect vegetation above and around flow control chamber and remove nuisance plants (for first 3 years)	Monthly (at start, then as required)
	Remove sediment from flow control chambers	Annually
	Flow control devices: Check for and clear obstructions	Quarterly
Remedial Actions	Repair of Penstock and flow control device	As required
Monitoring	Inspect structures for evidence of poor operation	Monthly/after large storm
	Inspect structures, flow control and pipework etc. for evidence of physical damage	Monthly/after large storm
	Inspect silt accumulation rates and establish appropriate removal frequencies	Half yearly

Table 4-3: Maintenance and management places (continued).

5. Conclusion

This SuDS Strategy has been prepared to support the future planning application for the construction of 1 No. new residential property with associated parking and landscaping. The site is currently undeveloped land that consists of vegetation and trees.

An assessment of the site settings and existing constraints in conjunction with the development proposals have resulted in the following recommendations for the safe development of the site:

It is proposed to restrict surface water runoff generated by the proposed development to a rate of 1.0/s during all events up to and including the 1 in 100 year plus 45% climate change event which represents the lowest rate for self-cleansing. Attenuation will be provided in the form of an underground storage tank that will provide a storage volume of approximately 8.9m³. Surface water runoff will discharge into the private combined sewer system that lies within the site boundary subject to confirmation by UU.

The underground tank storage will measure an area of 12m² with a depth of 0.8m with 0.4m of cover, and a porosity of 95% thereby providing more than the required 8.9m³ of attenuation.

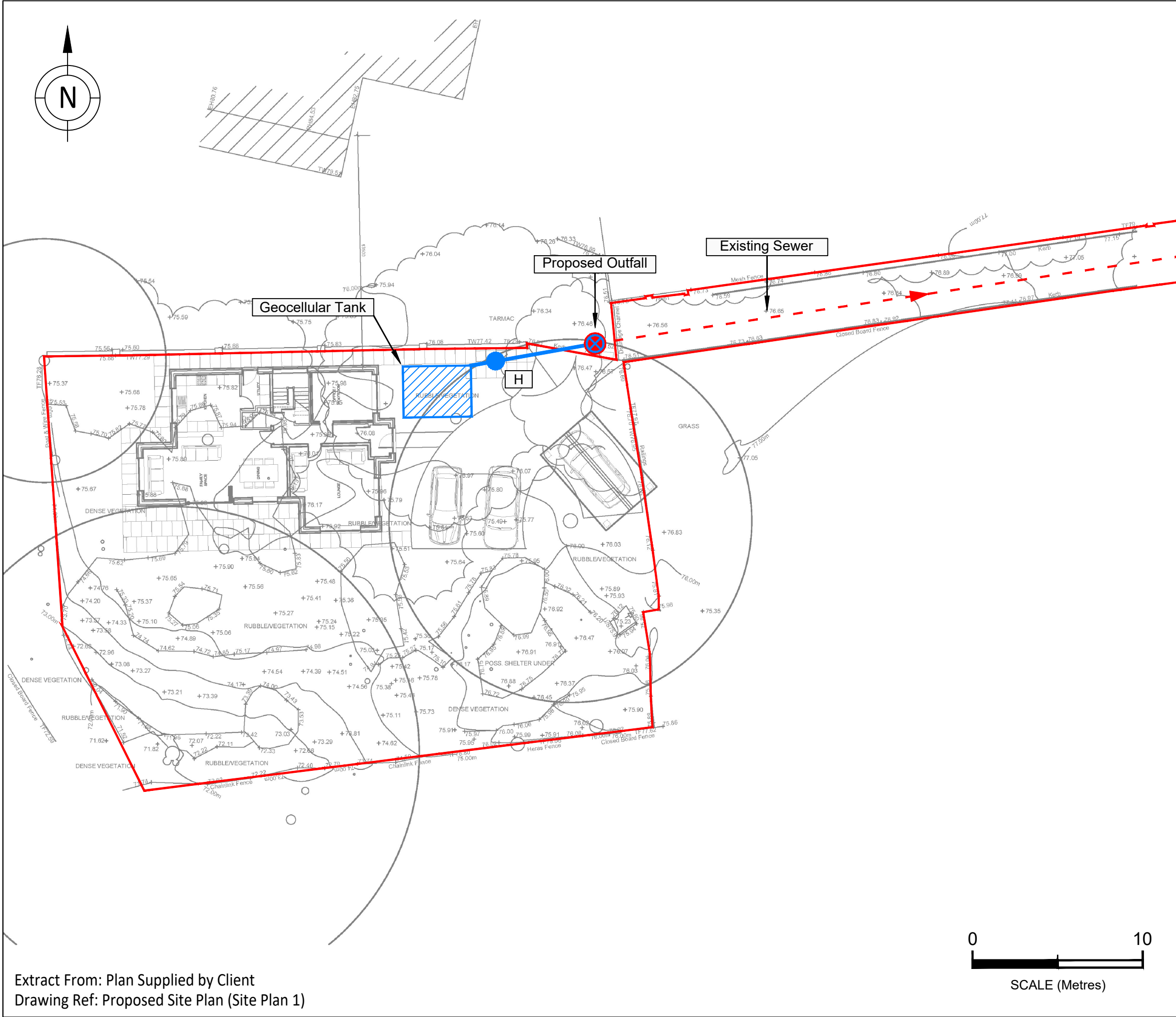
The recorded geology on site would indicate that infiltration is unlikely. This may be investigated at the detailed design stage by means of undertaking permeability testing.

It is recommended that a formal survey of the private combined water sewer is undertaken at the detailed design stage to confirm invert levels of the receiving sewer and determine the requirement for a pump.

Maintenance of proposed SuDS features will be required to ensure these remain operational over the lifetime of the proposed development.

This report is considered to represent a suitable surface water drainage strategy for the proposed development which ensures there will be no increase in downstream flood risk as a result of the scheme. It is anticipated that detailed surface water drainage design can be secured via an appropriately worded planning condition.

Figures



KEY

- Site Boundary (Assumed)
(Area = 1104.80m²/ 0.11ha)
- Geocellular Tank
(4m x 3m x 0.8m Depth With 95% Porosity)
- Proposed Connecting Pipe
- Hydrobrake (H)
(1.0l/s)
- Proposed Connection to
Existing Inspection Chamber
- Approximate Location of Existing Sewer
(United Utilities)
- Existing Private Sewer Inspection Chamber
(United Utilities)

Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information. Subject to detailed design.

LK CONSULT

Client:

Rachel Hankinson

Site:

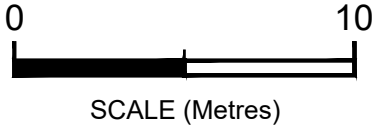
354 Manchester Road

Title:

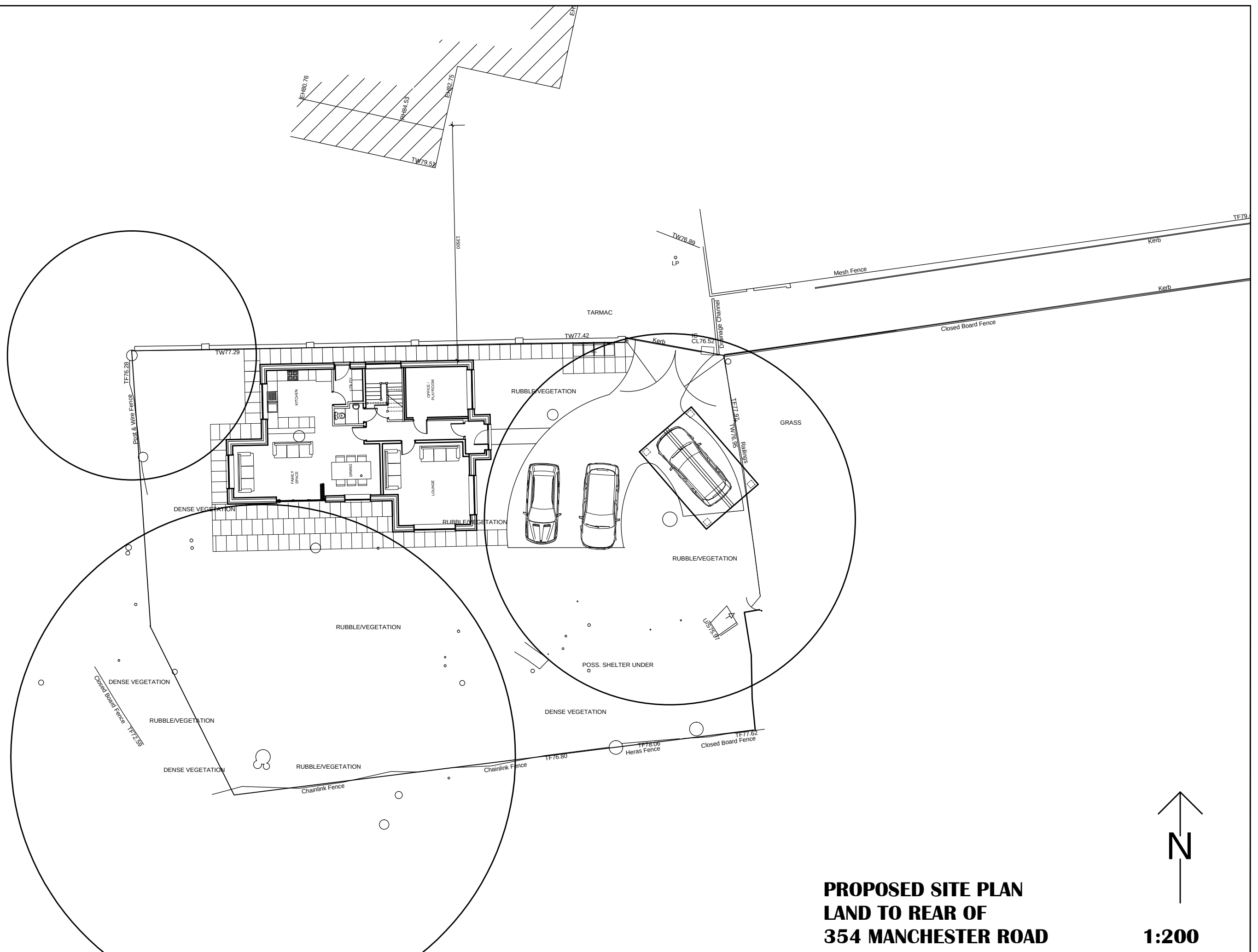
Outline Drainage Strategy

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
FRA251115	See Scale Bar	2	A
Drawn By:	Checked By:		
AC	AY	Aug 2025	

Extract From: Plan Supplied by Client
Drawing Ref: Proposed Site Plan (Site Plan 1)



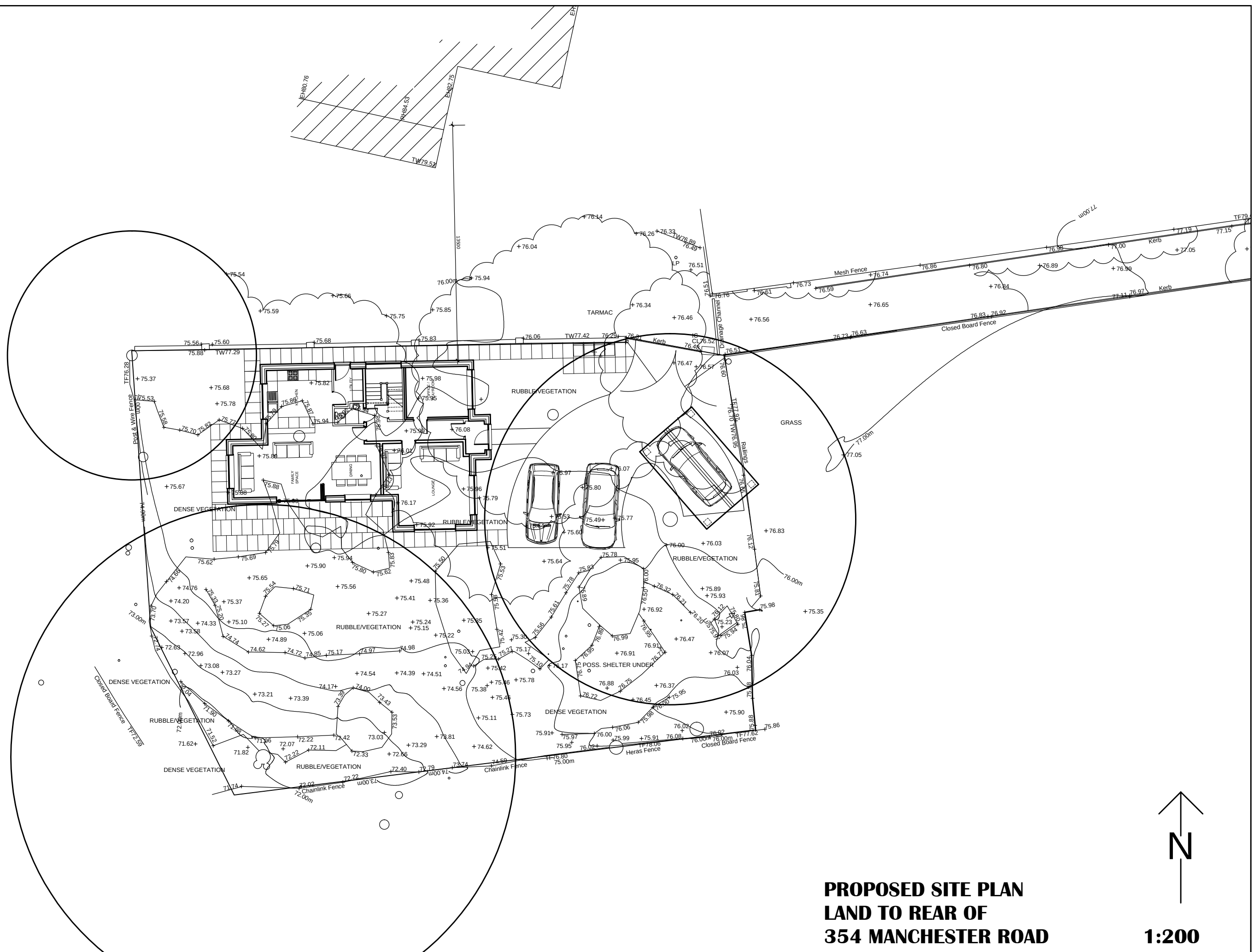
Appendix A – Site Information



**PROPOSED SITE PLAN
LAND TO REAR OF
354 MANCHESTER ROAD
BURY, BL9 9NR**



1:200



**PROPOSED SITE PLAN
LAND TO REAR OF
354 MANCHESTER ROAD
BURY, BL9 9NR**

N
1:200

Appendix B – Lead Local Flood Authority Consultation

From: Megan Peak
Sent: 24 June 2025 10:58
To: f.smith@bury.gov.uk; planning.policy@bury.gov.uk
Subject: Flood Consultation
Attachments: 01 OS location plan 01.pdf

To whom it may concern,

LK Consult Ltd. has been commissioned to undertake a Flood Risk Assessment (FRA) for a site located at 354 Manchester Road, Nearest Postcode BL9 9NR centred at approximate National Grid Reference 390398, 409078.

The area of interest appears to be within Flood Zone 2 and near flood zone 1 and 3.

The site location is attached to this email.

To complete the FRA, we would be grateful if you could supply us with the following, if available, for the vicinity of the site:

Details of any flood defences in the immediate area, including their extent, crest levels (and datum), assumed level of standard, construction and maintenance regime, as well as any other structures which may influence the local hydraulics.

Records of any historic flood events and potential sources of flooding from rivers, land drainage, groundwater, foul and surface water sewers on site and in the area.

Any restrictions applied to ordinary watercourses and sewers in the area.

Highway drainage restrictions and records.

Indications if the site is within the Critical Drainage Area.

Policies that may relate to Sustainable Drainage Systems (SuDS).

If you have any queries, please do not hesitate to get in touch.

We are, of course, happy to pay your reasonable charge for this service. Please let me know by return what information is available, what the charge will be, and we will pay the relevant fees by debit card as soon as possible.

Any advice or recommendations you may have regarding the potential discharges from the development of this site would also be appreciated.

We will be in contact with all other relevant authorities to get a more complete understanding of the issues in the area.

Regards

Megan Peak

Operations Assistant

m.peak@thelkgroup.com

07872 812 584



Ground
Investigation

Land Remediation

Project
Management

Trust us to move
your
project forward
[Find out more](#) >>>

Appendix C – United Utilities Information

LKGroup**Unit 29
Eton Hill Road,
Radcliffe,
m26 2zs****FAO:****How to contact us:****United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP****Telephone: 0370 7510101****E-mail: propertysearches@uuplc.co.uk****Your Ref: FRA251115 Manchester Road
Our Ref: UUPS-ORD-660385
Date: 25/06/2025****Dear Sirs****Location: 354 MANCHESTER ROAD, BURY, BL9 9NR**

I acknowledge with thanks your request dated 24/06/2025 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

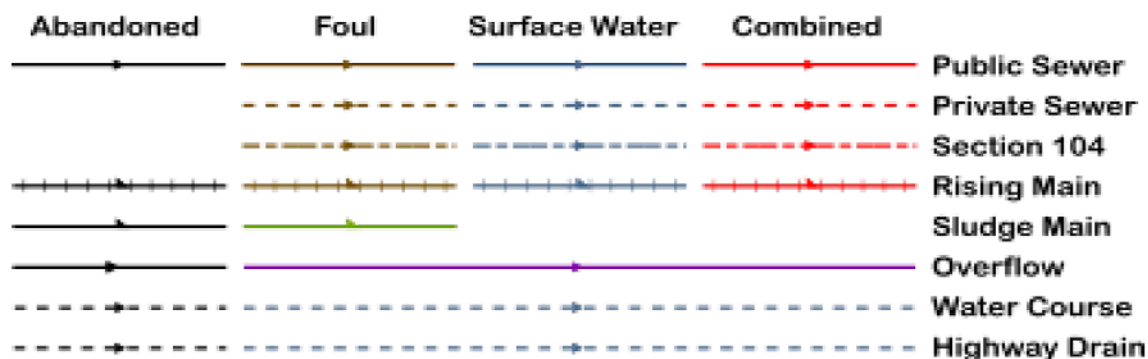
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

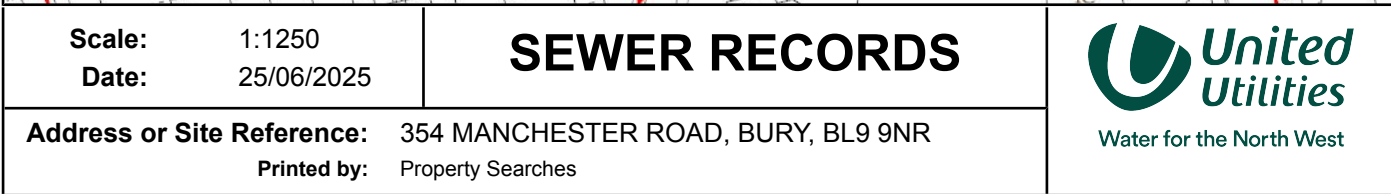
- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

Wastewater Symbolology



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

Manhole	Side Entry Manhole
Head of System	Outfall
Extent of Survey	Screen Chamber
Rodding Eye	Inspection Chamber
Inlet	Bifurcation Chamber
Discharge Point	Lamp Hole
Vortex	T Junction / Saddle
Penstock	Catchpit
Washout Chamber	Valve Chamber
Valve	Vent Column
Air Valve	Vortex Chamber
Non Return Valve	Penstock Chamber
Soakaway	Network Storage Tank
Gully	Sewer Overflow
Cascade	Ww Treatment Works
Flow Meter	Ww Pumping Station
Hatch Box	Septic Tank
Oil Interceptor	Control Kiosk
Summit	DNM Network Monitoring Point
Drop Shaft	Change of Characteristic
Orifice Plate	



Crown copyright and database rights 2025 Ordnance Survey 0000813445. Unauthorised reproduction will infringe these copyrights.

United Utilities Grasmere House, 2nd Floor
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

18th July 2025

Dear **Matthew**,

Pre-Development Enquiry for **354 Manchester Road, Bury, BL9 9NR** UU Reference Number: **07828611**

We have assessed your application based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your strategy will need review by other authorities as part of the planning process. We advise conducting necessary site investigations to confirm viability of your proposals.

Modelled Flood Risk [Please see the image at the end of this letter for details](#)

I can confirm that we do not have modelled flood risk within the vicinity of the proposed development.

Please note that our modelling data is indicative, and only representative of the 1:100year storm event.

[Please see comment 2 of the attached guidance sheet](#)

Asset Protection

1. According to our public sewer records, there are public sewers located within your site boundary. This requires an easement of **6m**. If you cannot achieve the required clearance, you may wish to consider diverting and or abandoning the public sewer.

[Please see comment 3 of the attached guidance sheet and Working Near Our Pipelines Guidance document](#)

Foul Water

Foul flow from this site will be allowed to drain into the public foul water/combined sewer system.

Our preferred point of discharge would be to the 150mm diameter public foul sewer within the Eastern Boundary of your proposed development at an unrestricted rate.

Manhole reference SD80094006, **Grid reference** 380430 x 409051

[Please see the images at the end of this letter for clarification](#)

Follow the National Planning Policy Guidance drainage hierarchy and Provide evidence for discounting higher options before considering public sewer discharge. Consult the Lead Local Flood Authority regarding surface water concerns.

Infiltration

Waterbody

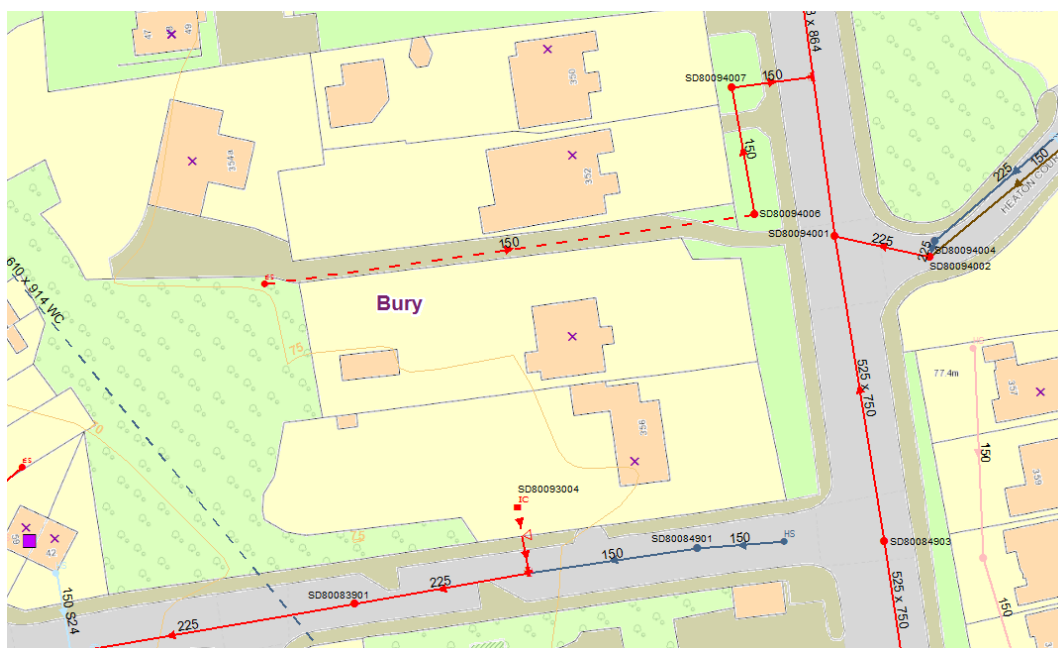
If an evidence-based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the **culverted watercourse** located in the site boundary of the proposed site.

We would encourage you to engage with any third-party landowner and riparian owner to agree access and discharge rights to the water body if this is not in your ownership.

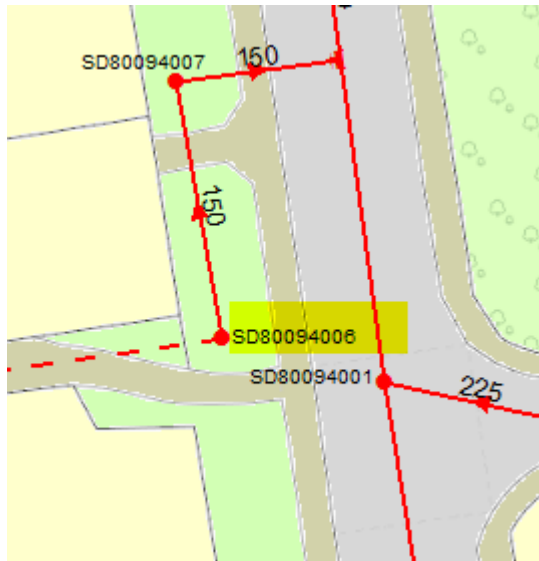
Public Sewer

No connection to the public sewer will be permitted as this time, due to the presence of a culverted watercourse on site.

Site Images



Foul point of connection



Appendix D - Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.020	100.000	28.146	57.119	1.200

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	1 year (l/s)	0.5
Rainfall Events	Singular	Drain Down Time (mins)	1440	30 year (l/s)	1.1
Summer CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	1.3
Winter CV	1.000	Starting Level (m)		Check Discharge Volume	x
Analysis Speed	Normal	Check Discharge Rate(s)	✓		

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 %)
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)	0.080	Betterment (%)	0
SAAR (mm)	1050	QBar	0.6
Soil Index	4	Q 1 year (l/s)	0.5
SPR	0.47	Q 30 year (l/s)	1.1
Region	10	Q 100 year (l/s)	1.3
Growth Factor 1 year	0.87		

Node Depth/Area 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	98.800	Product Number	CTL-SHE-0049-1000-0800-1000
Design Depth (m)	0.800	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	98.800
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	85



The LK Group
FRA251115
354 Manchester Road

File: FRA251115 Calculations.pfd
Network: Storm Network
AY
15/07/2025

Page 2

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	12.0	12.0	0.800	12.0	21.8	0.801	0.0	21.8

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
60 minute winter	Depth/Area 1	60	99.582	0.782	8.0	8.9128	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
60 minute winter	Depth/Area 1	Hydro-Brake®	1.0	11.7

Appendix E - References

¹ Ministry of Housing, Communities and Local Government, February 2024, “Planning practice guidance”.

Based across the UK with
offices in Manchester, Liverpool,
Swindon and Glasgow.

Manchester (Head Office)

Unit 29
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

0161 763 7200
info@thelkgroup.com

Manchester (Ancoats Office)

84 Silk Street
Ancoats
Manchester
M4 6BJ

0161 763 7200
info@thelkgroup.com

Glasgow

Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

0141 773 6269
info@thelkgroup.com

Swindon

39 Bowman House Business Centre
Bowman Court
Whitehill Lane
Royal Wootton Bassett
Swindon
SN4 7DB

01793 987390
info@thelkgroup.com



LK GROUP