70 Mauldeth Road

Outline Sustainable Drainage Strategy

Job Number	Report Date	Client
FRA 25 1016	**18th June 2025**	**Waheed Akbar**

DOCUMENT QUALITY ASSURANCE

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Client	Waheed Akbar

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Written By	Alaikah Yusaf		
Approved By	Matthew Bell		

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EXECUTIVE SUMMARY

Scope and Background

This Sustainable Drainage (SuDS) Strategy has been undertaken by LK Consult Ltd (LKC) to satisfy planning condition 12 of application reference 141006/FO/2024, the erection of an extension of an existing house located at 70 Mauldeth Road Manchester, M20 4WF.

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

Consultations

Manchester City Council – Lead Local Flood Authority (LLFA) and United Utilities 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 2 and 3. A Flood Risk Assessment was completed by a third party to support the planning application and as such does no form part of this report.

Drainage Strategy

The ground conditions beneath the site are recorded as Till, Devensian superficial deposits that mainly consist of slightly gravelly Clay over Sandstone bedrock which have been confirmed by British Geological Survey (BGS) borehole records

There is a slight slope towards the south.

The outline drainage strategy considers the use of an infiltration-based SuDS not to be feasible, based on the cohesive nature of strata beneath the site and the distance to adjacent buildings / highway, in line with Building Regs Part H requirements.

A culverted watercourse is located to the north of the site. A connection to this watercourse, given the scale and nature of the development, is not considered to be proportionate.

It is proposed that surface water runoff arising from the development will discharge into sewer within boundary of the site.

The proposed development will marginally increase the proportion of the site covered by impermeable surfaces and will therefore generate more runoff. Attenuation will be required to allow for climate change and restrictions placed upon the proposed development due to planning requirements.

The estimated volume to be retained on site for the 1 in 30-year storm event including an allowance for climate change is **0m^3**.

The estimated volume to be retained on site for the 1 in 100-year storm event including an allowance for climate change is **0.1m^3**.

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

The most effective strategy, in line with the SuDS management train, would be to have a bioretention planter adjacent to the building. 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 **1**
1.1. Background 1
1.2. Site Details 2
2. Site Setting **3**
2.1. Environmental Setting 3
2.2. Site and Access Levels 4
3. Consultation **5**
4. Sustainable Drainage Strategy **6**
4.1. Introduction 6
4.2. Sustainable Drainage Hierarchy 6
4.3. Surface Water Drainage Strategy 7
4.4. Surface Water Attenuation Requirements 8
4.5. Site Specific SuDS 8
4.6. Maintenance and Management Plan 9
5. Foul Drainage **10**
6. Conclusion **11**

Figures

Figure 1 – Site Location and Boundary Plan
Figure 2 – Outline Drainage Strategy

Appendices

Appendix A – Site Information
Appendix B – Consultee Correspondence
Appendix C – Calculations
Appendix D – References

1. Introduction

1.1. Background

LKC were commissioned to carry out an outline Sustainable Drainage Strategy for 70 Mauldeth Road. The report was undertaken to satisfy condition 12 of the planning application (ref:141006/FO/2024) for an extension of an existing house located at 70 Mauldeth Road Manchester, M20 4WF.

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 complies with the principles presented in the Draft National Standards for Sustainable Drainage Systems (Defra, 2015)[1] and the Planning Practice Guidance (PPG) March 2014[2]. The sustainable drainage assessment is presented with reference to the hydrological and hydrogeological context of the development.

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.

The site is subject to a planning approval, reference DC/086934, dated 28th July 2023, and within the Decision Notice there is a condition relating to surface water drainage, Condition 12, as follows:

Condition 12:

'Prior to the commencement of the development hereby approved, a surface water drainage layout or the development site shall be submitted for approval in writing by the City Council, as Local Planning Authority. This shall include the following:

i. Evidence of drainage hierarchy adherence.
ii. Finalised surface water drainage layout including all components, levels and connectivity.
iii. Evidence of connection approval in principle.
iv. Maintenance and management plan.'

1.2. Site Details

A summary of the general site details is presented in Table 1-1. Plans, Figure 1 shows the site location plan. Details of the site design can be found in Appendix A.

Location	70 Mauldeth Road, Manchester, M20 4WF. Centred at approximate National Grid Reference 385632E 393169N.
Area	Approximately 300m^2.
Topography	37.6 metres above ordnance datum (AOD) in the north of the site and 37.1 m AOD in the south. Site is sloping down gently to the south.
Current Site Use	Site Previous use of the site was a two-storey dwelling. The site is currently a hardstood construction site with an impervious driveway to the north and a private grassy rear garden to the south. Surrounding Area/ Boundary Treatment The site is located in a dense residential area.
Proposed Development	Erection of a two-storey dwellinghouse. Access will be from Mauldeth Road on the northern boundary. It should be noted that the site previously comprised a two-storey residential dwelling which is effectively being extended.

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	Till, Devensian	
	Bedrock	Chester Formation, described as Sandstone.	
	BGS Boreholes	There are no BGS boreholes within the immediate vicinity of the site.	
	Defra Soilscape Mapping	Slowly permeable seasonally wet acid loamy and clayey soils	
	BGS Groundwater Flooding Susceptibility	BH Ref: SJ89SE233 400m northeast. Soft to form light brown mottled silty sandy clay.	
Hydrogeology	Aquifer Designation	Bedrock	Principal Aquifer.
		Superficial	Secondary Undifferentiated Aquifer.
	Source Protection Zone (SPZ)	Site not within an SPZ.	
Hydrology	All adjacent and internal surface water	The Cringle Brook is a culverted main river that is located 300m to the north of the site. There is a culverted watercourse is located in Mauldeth road approximately 10m north of the site. There is an open channel ordinary watercourse, the Shaw Brook, 440m southwest of the site.	
	Risk Flooding from Groundwater	Limited potential for groundwater flooding to occur. According to the Long-Term Risk of Flooding service by the EA.	
Flood Zone	The site is within Fluvial Flood Zone 2 and 3. Flood Zone 3: High risk of flooding with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea. Flood Risk at the site has been assessed under separate cover by UNDA Consulting, reference 94802-NADA-MauldethRd, dated October 2024, in support of the planning application, reference 141006/FO/2024, dated 1st November 2024, and as such is not considered further in this report.		
Site History	Previous use of the site was a two-storey dwelling. The site is currently a hardstood construction site with an impervious driveway to the north and a private grassy rear garden to the south. There is no record of any ponds or watercourses within the site boundary.		

Table 2-1: Summary of the Environmental Setting.

2.2. Site and Access Levels

A topographic survey of the site was not provided, therefore opensource LiDAR levels have been extracted to OS GPS datum. The site falls 37.6 metres above ordnance datum (AOD) in the north of the site and 37.1m AOD in the south. Site is sloping down gently to the south the image below shows the Lidar undulation from north to south.

The final site levels and ground floor levels of dwellings have not yet been determined. The proposed access would join Mauldeth Road at around 37.5m AOD.

As discussed in the Flood Risk Assessment by UNDA Consulting, reference 94802-NADA-MauldethRd, dated October 2024, the proposed dwelling and extension will be set no lower than the existing dwelling.

Image 1: An image showing the LiDAR undulation from north to south for 70 Mauldeth Road.

3. Consultation

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

Relevant correspondence is provided in Appendix B (LLFA/UU).

Source	Details	
Lead Local Flood Authority (LLFA)	No information provided at the time of writing.	
	Sewer Map	UU have provided maps of public sewers within the vicinity of the site. There is a 150 (VC) mm diameter combined sewer adjacent to the northern boundary of site flowing in a westerly direction. This sewer sits within the property boundary of houses 60 – 72. Node 6110 site within the site boundary of 70 Mauldeth Road. 70 Mauldeth road has an additional 150mm combined head of system sewer located roughly in the centre east of the site boundary. There are two additional public combined sewers (825mm and 300mm diameters) that run parallel to Mauldeth road to the north of site flowing in a westerly direction. In addition, UU sewer plans indicate the presence of a 450 mm surface water culvert flowing in an east to west orientation within Mauldeth Road to the north of the site.
	Likely conditions for connecting into their sewerage system	All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80 (now 56) of the National Planning Practice Guidance. UU have requested that surface water generated by the new development discharge into the culverted watercourse in Mauldeth Road. If not feasible, United Utilities will consider a connection to the 150mm diameter public combined sewer within the development at a pass forward flow to be agreed by the Lead Local Flood Authority, that does not exceed 2l/s. UU have requested an evidence-based study to demonstrate that infiltration is not possible as per the drainage hierarchy. UU have recommended that the surface water be discharged into the culverted watercourse located in Mauldeth Road. Foul flow from this site will be allowed to drain into the public combined sewer system. UU's preferred point of discharge would be to the 150mm diameter public combined sewer within the development boundary at an unrestricted rate. UU confirmed that they did not have any record of internal or external sewer flooding of properties in the vicinity of the site as a result of overloaded sewers. UU would also request for a condition to prevent development within 3m either side of the sewer running through the site.

Table 3-1: Summary consultee information.

4. Sustainable Drainage 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.

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 Building Regulations Requirement H3[3] stipulates that rainwater from roofs and paved areas is carried away from the surface to discharge to one of the following, listed in order of priority:

- an adequate soakaway or other adequate infiltration system,
- a watercourse or, where that is not practicable,
- a sewer.

The concept of a sustainable drainage system has been incorporated into the outline drainage strategy for the study area in order to comply with the Flood and Water Management Act 2010.

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 Groundwater Source Protection Zone mapping from the EA website shows that the site is not within any identified protection zones.

A summary of the BGS superficial and bedrock aquifer descriptions and classifications supplemented by local records is shown in Table 4-1 below:

Classification	Description	Recorded Water Table Depth	Soakaway Potential
Till Devensian - Diamicton	Diamicton (unsorted sediment with gravel in a fine mud matrix)	N/A	Poor
Chester formation - sandstone	Sandstone	N/A	Limited

Table 4-1: Geological and Hydrogeological Setting.

Based on the superficial deposits beneath the site comprising clayey strata, it is considered unlikely that infiltration will be a suitable means for the disposal of surface water from the site.

In addition, based on the site setting, there is insufficient distance to traditional soakaways as the site is constrained by the proximity of the adjacent properties and roads. According to the Building

Regulations, soakaways should be located at least **5m** away from any building foundations (Building Regs part H, Para 3.25, part a).

There is a slope over the site and surrounding area which indicates that groundwater in the vicinity of the site would likely drain towards the south.

4.2.2. Watercourses

There is a culverted watercourse running adjacent to the site along Mauldeth Road that currently collects the surface water. It is located approximately 10m north of the site.

Access to the watercourse would cause significant disruption through the road and 3rd party land as well as being disproportionately costly given the scale and nature of the site.

4.2.3. Public Sewer

There is a combined sewer running through the site into Mauldeth Road. There is a head of system inspection chamber within the site boundary. The head of system is centred approximately halfway on the eastern side of the development. UU have indicated that the connection can be to Node 6110, however, it is suggested that as there is an upstream manhole with a measured depth of 0.75 m below ground level, that the connection would be to this point. This reduces the requirement for a parallel pipe adjacent to the existing pipe. This is subject to permission to connect from UU.

4.2.4. Other Sewers

By reference to the UU sewer map, there are no private connection to the public sewer within the vicinity of the land.

4.3. Surface Water Drainage Strategy

Following the assessment of the site settings and existing constraints to the development. The drainage options relating to the final discharge of surface water for this section of the site are listed in Table 4-2 in order of priority within the NPPF:

Option	Drainage Solution	Most feasible solution	Reasoning
a	Soakaway/Infiltration	N/A	Not likely to be feasible as the site is constrained by the proximity of the adjacent properties and roads. The impermeable ground conditions also make the use of infiltration unlikely.
b	Connection to Watercourse	N/A	Would require third party access, a road crossing and EA and LLFA consent. This would be disproportionately costly as well as disruptive due to the distance of the culverted watercourse from the development.
c	Discharge into a sewer	1	A connection into the 150mm diameter combined sewer within the development boundary would be possible – subject to approval from LLFA and connection consent from UU.

Table 4-2: Drainage options.

Due to the size and nature of this development the most feasible SuDS option would be to install a raised planter box. This would enable the surface water runoff generated from the development to be directed into attenuating planter, providing water storage and sediment control.

4.4. Surface Water Attenuation Requirements

In line with restrictions from UU, the flow from this development should be limited to a discharge rate of 2 l/s.

LKC have calculated the greenfield rate for the site and based on the limited overall catchment area, the greenfield rate is extremely low. Therefore, to allow for a suitable self-cleansing velocity and as stipulated by UU, the discharge has been limited to 2 l/s.

It is estimated from the supplied plan (see Appendix A) that the site will have the following designated areas (Table 4-4).

Designated Areas	**Plot Area**
Total area	Approximately 300 m^2
Contributing Catchment	
Catchment Area	46 m^2
Impermeable Area	46 m^2 – as a result of the new built development at the site. The area of the existing dwelling and parking areas have not been included as they are existing hardstanding at the site that are already drained.

Table 4-3: Assumed plot areas.

There is an increase in impermeable area from the existing usage to the proposed. This is likely to require attenuation to reduce the proposed flow off site to a level which is acceptable to the LLFA and to UU, including an allowance for climate change.

4.4.1. Attenuation Estimate

For the contributing catchment an estimate has been produced using the development area of 46m^2 from the 300m^2 plot. The QBAR runoff calculation result is considered too low to facilitate effective self-cleansing through the pipes and increases the risk of blockages. UU have indicated that a surface water discharge level of 2 l/s will be accepted which is a favourable option.

The following attenuation has been estimated for the development:

- Attenuation storage volume: 0m^3 (1 in 30-year event + 40% Climate Change)
- Retention on site volume: 0.1m^3 (1 in 100-year + 45% Climate Change)

Calculations are included at Appendix C.

Attenuation storage aims to limit the peak rate of runoff from the development to 2 l/s runoff as required by UU.

The attenuation required for a 1 in 30-year storm event plus 40% climate change allowance, requires a storage volume of 0m^3. for the 1 in 100-year event plus 45% climate change allowance, a storage capacity 0.1m^3 will be required from on-site storage.

4.5. Site Specific SuDS

The use of attenuation SuDS are deemed to be the most feasible and practical option for the development. Figure 2 shows the Outline Drainage Strategy. A planter box will provide the required storage volume to limit peak runoff arising from the development. The volume can be stored within the planter box measuring 1 meter by 1 meter by 0.5 meters, with 30% voids and an overflow into the system. The planter box will have a total volume of 0.5m^3. Given, given the 30% voids, it will effectively store approximately 0.15m^3 of water.

The planter box should include an overflow mechanism, ensuring that any excess stormwater is safely directed into the drainage system, preventing flooding and waterlogging.

The planter box should be drained into the Head of System. This sewer has a depth of 0.75m and is closer to the extension and planter box. A connection to the sewer node 6110 would require additional pipework installation running parallel to the existing pipe work which would be onerous given the nature of the development. However, if a connection to the Head of System in unacceptable, a new pipe and connection can be made to connect the surface water to node 6110.

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

Typical maintenance schedules have been produced for the SuDS systems and have been in the table below.

Based on the development being an extension to an existing property, it is expected that the maintenance will be carried out by the homeowner or ad hoc maintenance by a homeowner appointed specialist, as required.

It should be noted that this maintenance plan is not an exclusive guidance. It is important to review and adjust the plan based on the specific detailed design and conditions of your planter box. Regular assessments and updates will ensure the plan remains effective and relevant.

Maintenance Type	**Require Action**	**Typical Frequency**
Pipes		
Regular Maintenance	Inspect for sediment and debris in or chamber and inside of concrete manhole rings	Monthly for 3 months, then annually
	Cleaning of gutters and any filters on downpipes	Monthly
	Trimming any roots that may be causing blockages	Annually
	Undertake inspection after leaf fall in autumn	Seasonally
Remedial Actions	Remove debris and silt Repair/rehabilitate inlets and outlets if there is physical damage	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation	Every 5 years or as required
	Inspect/check all inlets and outlets to ensure that they are in good condition and operating as designed	Annually
Planter Box		
Routine Maintenance	Litter Picking: Remove litter and debris. Inspection: Check inlets and outlets for blockages or damage. Watering: Ensure plants are adequately watered, especially during dry periods.	Monthly
Occasional Maintenance	Vegetation Management: Trim and manage plant growth. Silt Control: Remove accumulated silt to prevent clogging.	Annually
Remedial Maintenance	Repair Damage: Fix structural damage to the planter box. Erosion Control: Address signs of erosion around the planter. Silt Removal: Remove significant silt build-up.	As needed

Table 4.4: Maintenance plan based on CIRIA SuDS Manual 2015

5. Foul Drainage

The foul water could be discharged by gravity into the 150mm diameter combined sewer (node 6110) located within the development boundary as relative levels indicate that this will be feasible in terms of fall. The foul manhole has a depth of 1.6m which appears to be low enough to provide a suitable connection point. There are several possible alternative manholes for the connection of foul drainage from the site, which could pass into the Head of System as this is closer to the extension.

6. Conclusion

The site is currently a two-storey dwelling. The proposal is for the erection of a two-storey dwellinghouse. It should be noted that the site previously comprised a two-storey residential dwelling which is effectively being extended. Therefore, the report considers the additional hardstanding because of the new built development.

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:

The site is considered to be too constrained due to the existing topography and proximity of the adjacent properties for the use of soakaway. In addition, the existing ground conditions on site indicate that the use of infiltration SuDS for surface water disposal will not be practical.

Based on the distance of the surface watercourses to the site, discharge to such a feature is not possible. Therefore, surface water flows will be discharged to the onsite surface water sewer. Sewer plans have been obtained from UU, along with a predevelopment enquiry.

The attenuation required for a 1 in 30-year event plus 40% climate change allowance, requires a storage volume of 0m^3 and for the 1 in 100-year event plus 45% climate change allowance, a storage capacity of 0.1m^3 will be required from on-site storage as well as SuDS systems. The volume can be stored within the site boundary within the planter box.

All proposed outflow connections from the development should be agreed with the Lead Local Planning Authority and United Utilities.

Figures

Client: Waheed Akbar				Title: Site Location & Boundary Plan	LK CONSULT
Site: 70 Mauldeth Road, M20 4WF				Scale (see scale bar): 1:10,000 & 1:500 @ A4	Figure: 1	Revision:
Job No.: FRA 251016	Drawn By: AY	Checked By: MB	Drawn: April 2025		

PROPOSED GA SIDE ELEVATION 1

0 1 2 3 4 5

SCALE (Metres)

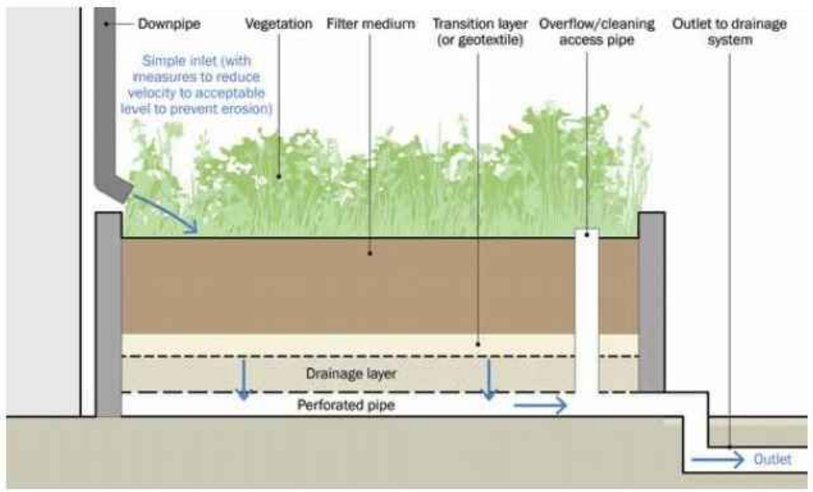
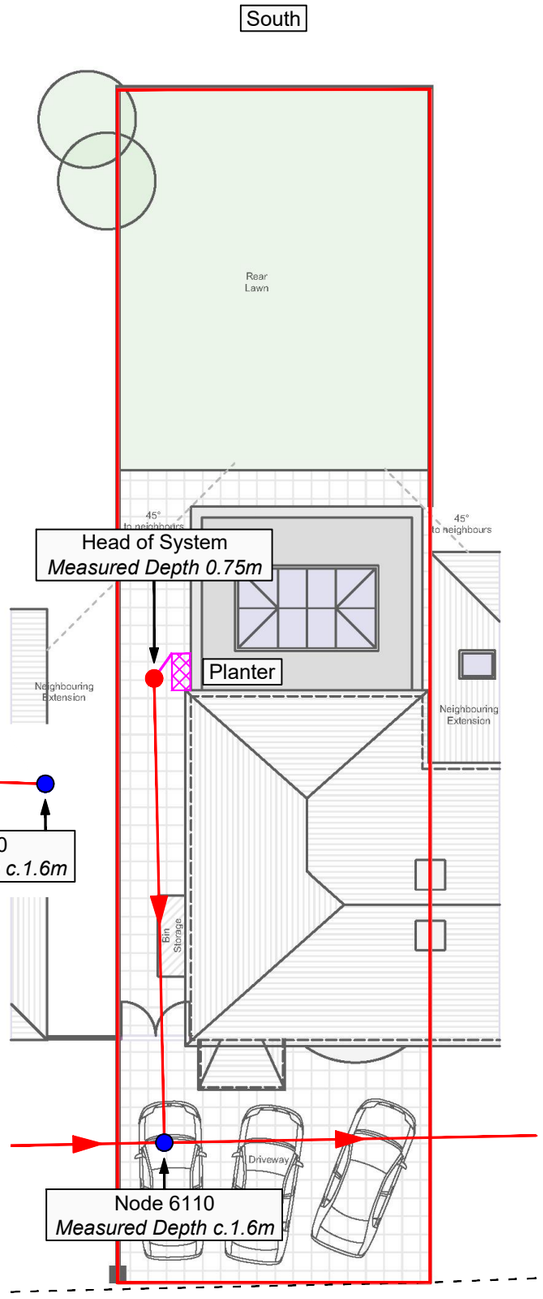


Figure 18.5 Section through a raised planter

PROPOSED GA SITE PLAN

0 5

SCALE (Metres)



Extract From: NADA Architects
Drawing Ref: Proposed GA Site Plan, No.(02)001, Rev:PL0 (20/08/2024)

KEY

- Site Boundary
- Approximate Location of United Utilities Sewer
- Existing Head of System Sewer (HS), 0.75m bgl. (United Utilities Sewer)
- Existing Combined Sewer Node (6110)
- Planter Box
- Overflow to Sewer

NOTE:

A planter box will provide the required storage volume to limit peak runoff arising from the development. The volume can be stored within the planter box measuring 1x1x0.5 metres, with 30% voids & an overflow into the system. The planter box will have a total volume of 0.5m^3. Given the 30% voids, it will effectively store approximately 0.15m^3 of stormwater.

The planter box should include an outflow mechanism, ensuring that any excess stormwater is safely directed into the drainage system, preventing flooding and waterlogging.

NOTE:

Re: Insert 'Fig 18.5 Section Through a Raised Planter', Source: CIRIA SUDS MANUAL 2015

NOTE:

Subject to Detailed Design

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.

LK CONSULT LIMITED

Client: Waheed Akbar

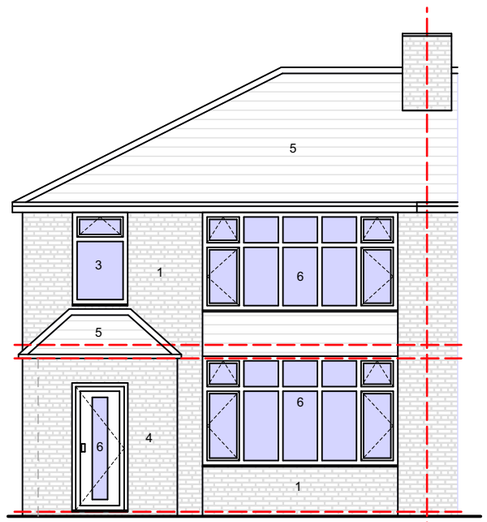
Site: 70 Mauldeth Road

Title: Outline Surface Water Drainage Strategy

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
FRA251016	See Scale Bar	2	A

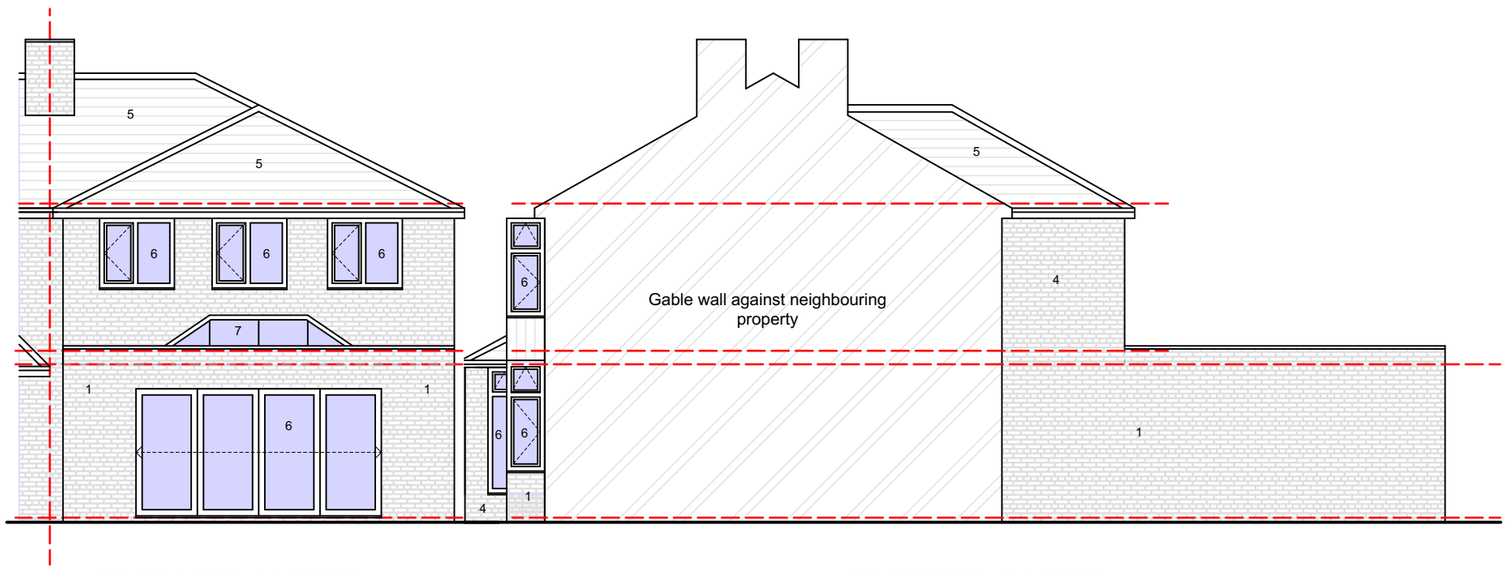
Drawn By:	Checked By:	Drawn:
AC	MB	Jun 2025

Appendix A – Site Information



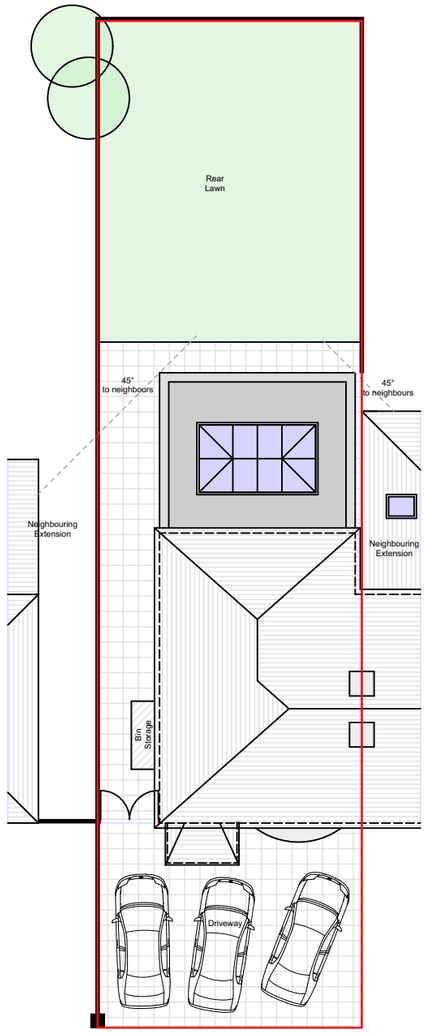
PROPOSED GA FRONT ELEVATION @1:100

PROPOSED GA SIDE ELEVATION 1 @1:100



PROPOSED GA REAR ELEVATION @1:100

PROPOSED GA SIDE ELEVATION 2 @1:100



MAULDETH ROAD

PROPOSED GA SITE PLAN @1:200

notes

This drawing is subject to a detailed building and site survey, therefore no guarantee of its accuracy can be given.
This drawing has been draughted in accordance with the clients design requirements.
All areas are approximate and are subject to a detailed building and site survey and further design development.
All dimensions should be checked prior to commencement of construction on site. Measurements should not be taken off the drawing.

All dimensions shown are in millimetres (mm).

Text Key

1. Existing facing brickwork
2. Existing terracotta pantile roof tiles
3. Existing uPVC door/window

4. Proposed facing brickwork
5. Proposed terracotta pantile roof tiles
6. Proposed uPVC door/window
7. Proposed skylight

N

SITE BOUNDARY LINE

SCALE BAR 1:100

SCALE BAR 1:200

PL0 Planning Issue 20.08.24

revisions

PLANNING

NADA Architects Ltd
169 Kingsway
Burnage
Manchester
M19 2ND
Mob: 07974 735527
E: ahmed@nadaarchitects.com
W: www.nadaarchitects.com

D - design PL - planning PT - pre-tender
T - tender P - preliminary
C - construction R - record

HABIB AKBAR

HOUSE EXTENSIONS
70 MAULDETH ROAD,
MANCHESTER, M20 4WF

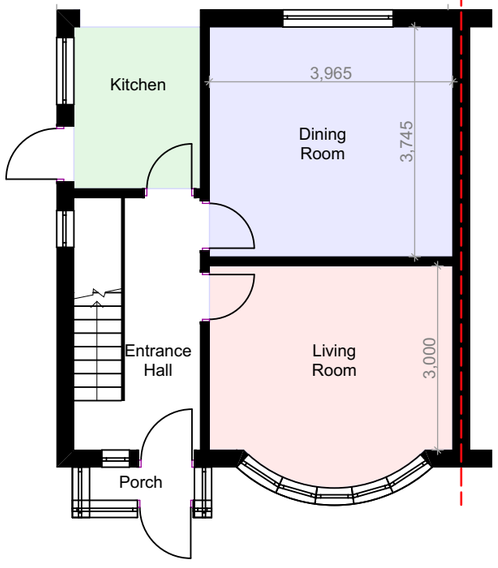
PROPOSED GA ELEVATIONS

scale	date	drawn	checked
1:100 @ A3 1:200 @ A3	20.08.24	MI	AC

job no	(category) dwg no	revision
24-1280	(02)001	PL0

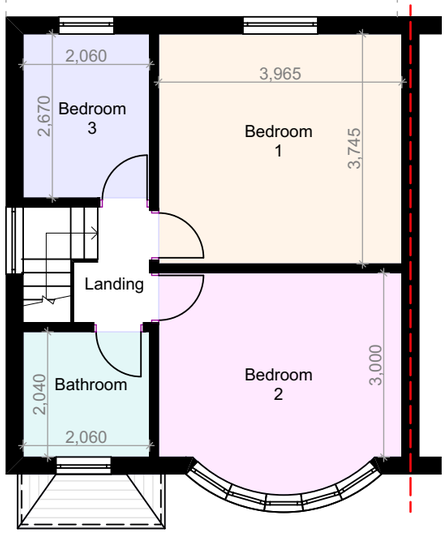
Drawing measurements shall not be obtained by scaling. Verify all dims prior to construction. Immediately report any discrepancies on this drawing to Architect. This drawing shall be read in conjunction with associated specifications and related consultant's documents.

Dashed line indicates partial wall already built from previous planning consent

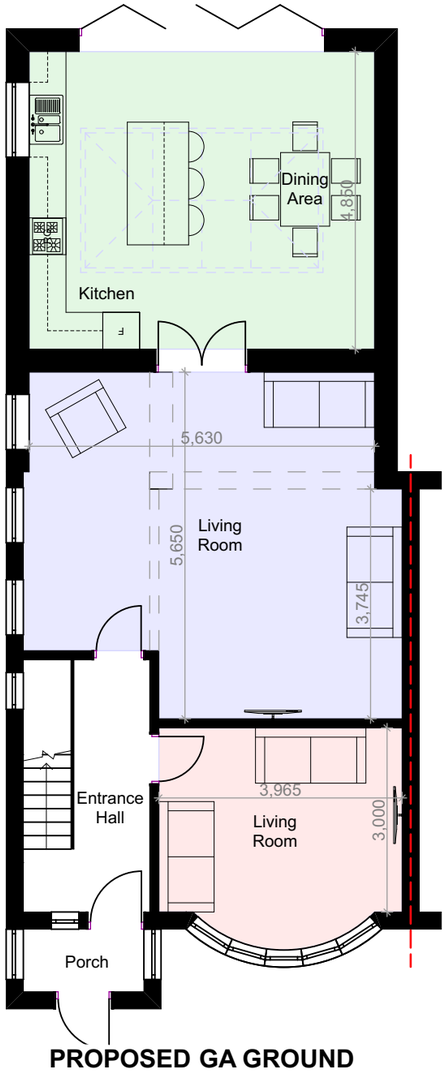


EXISTING GA GROUND FLOOR PLAN

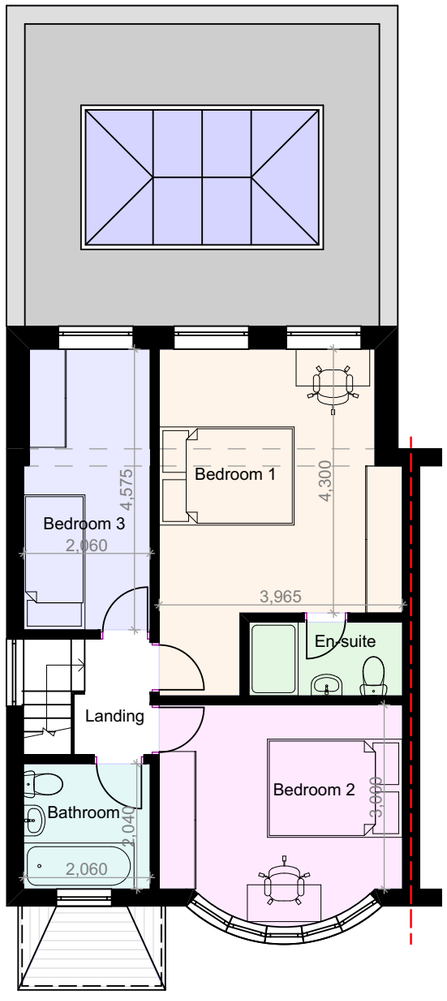
Dashed line indicates partial wall already built from previous planning consent



EXISTING GA FIRST FLOOR PLAN



PROPOSED GA GROUND FLOOR PLAN



PROPOSED GA FIRST FLOOR PLAN

notes

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All dimensions shown are in millimetres (mm).

SCALE BAR 1:100

PL0 Planning Issue 20.08.24

revisions

NADA Architects Ltd
169 Kingsway
Burnage
Manchester
M19 2ND
Mob: 07974 735527
E: ahmed@nadaarchitects.com
W: www.nadaarchitects.com

D - design PL - planning PT - pre-tender
T - tender P - preliminary
C - construction R - record

PLANNING

HABIB AKBAR

HOUSE EXTENSIONS
70 MAULDETH ROAD,
MANCHESTER, M20 4WF

EXISTING & PROPOSED GA FLOOR PLANS

scale	date	drawn	checked
1:100 @ A3	20.08.24	MI	AC

job no	(category) dwg no	revision
24-1280	(03)001	PL0

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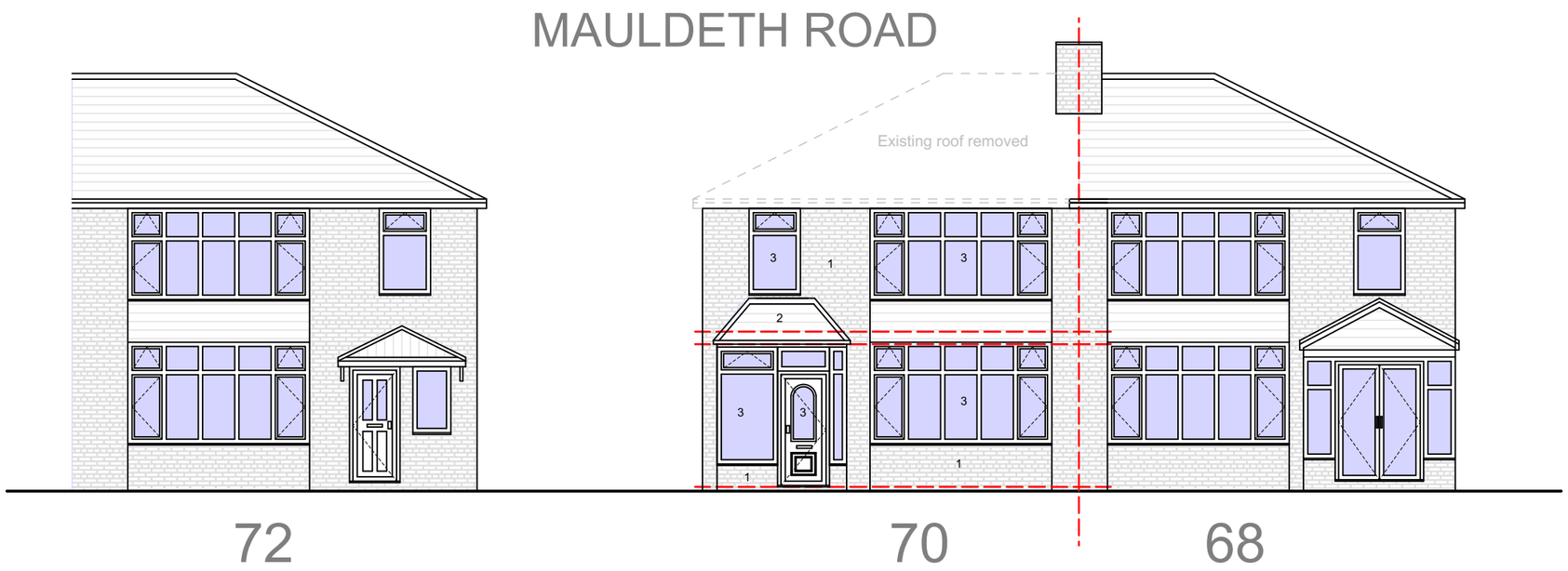
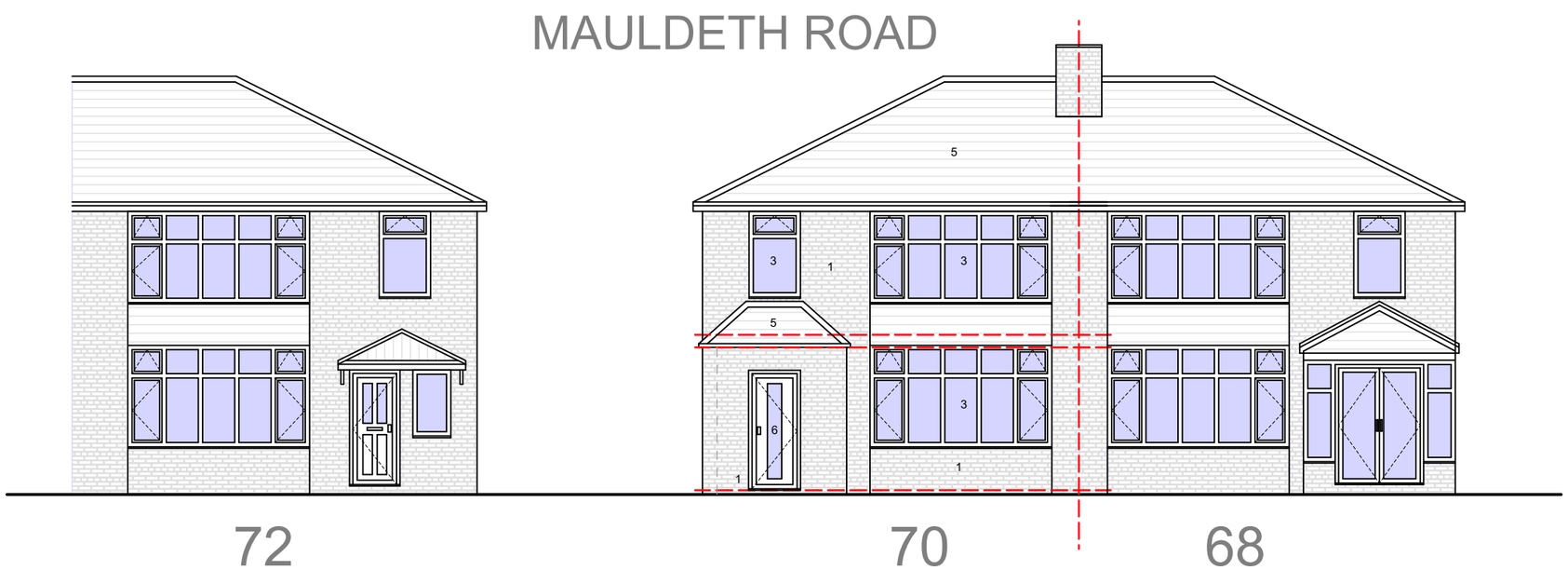


EXISTING GA STREET SCENE
ELEVATION



PROPOSED GA STREET SCENE
ELEVATION

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Text Key

1. Existing facing brickwork
2. Existing terracotta pantile roof tiles
3. Existing uPVC door/window

4. Proposed facing brickwork
5. Proposed terracotta pantile roof tiles
6. Proposed uPVC door/window
7. Proposed skylight

SCALE BAR 1:100

PL0 Planning Issue 20.08.24

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169 Kingsway
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HABIB AKBAR

HOUSE EXTENSIONS
70 MAULDETH ROAD,
MANCHESTER, M20 4WF

EXISTING & PROPOSED GA ELEVATIONS

scale	date	drawn	checked
1:100 @ A3	20.08.24	MI	AC

job no	(category) dwg no	revision
24-1280	(04)001	PL0

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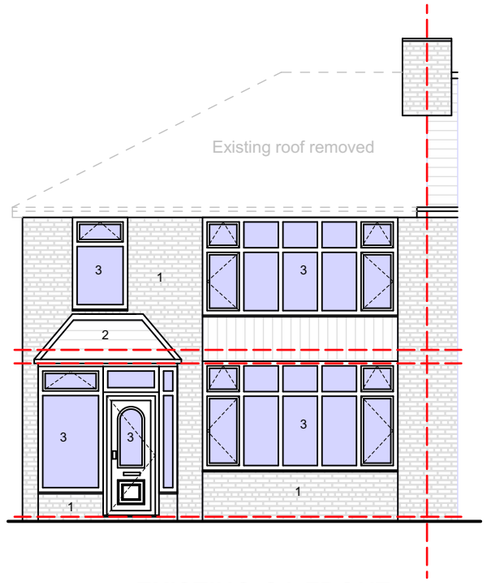
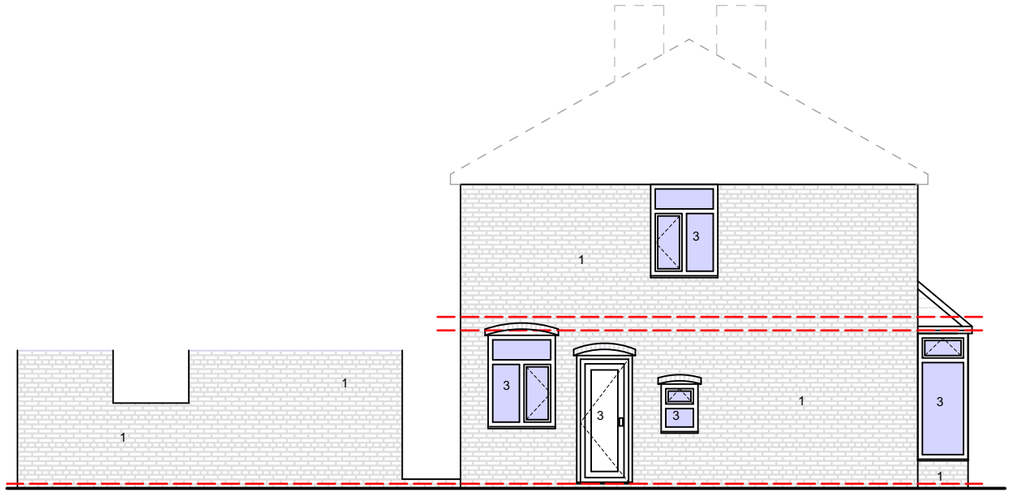
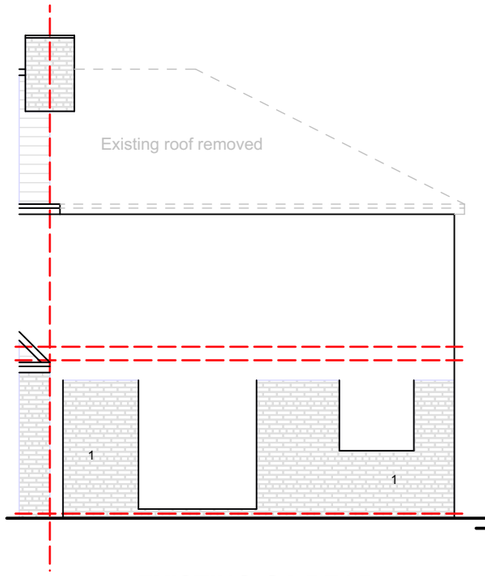


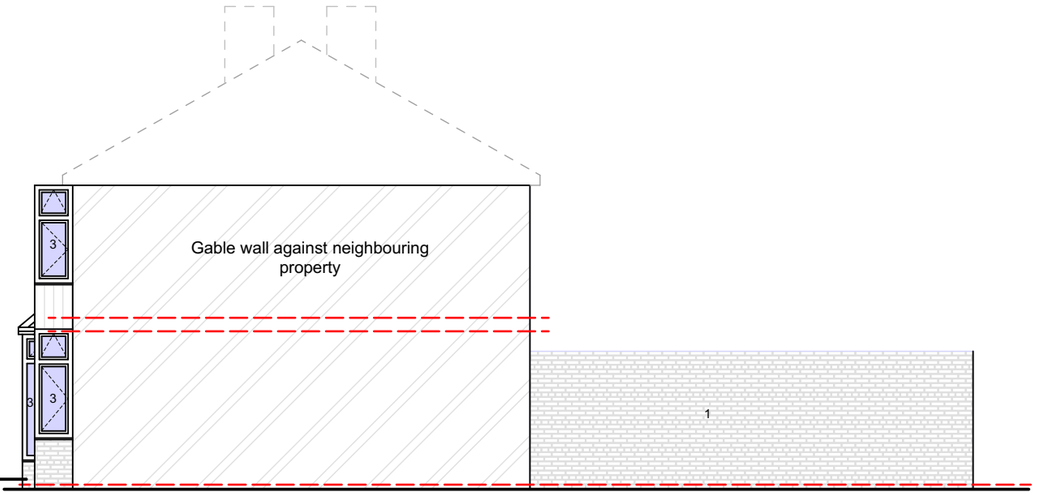
EXISTING GA FRONT ELEVATION @1:100



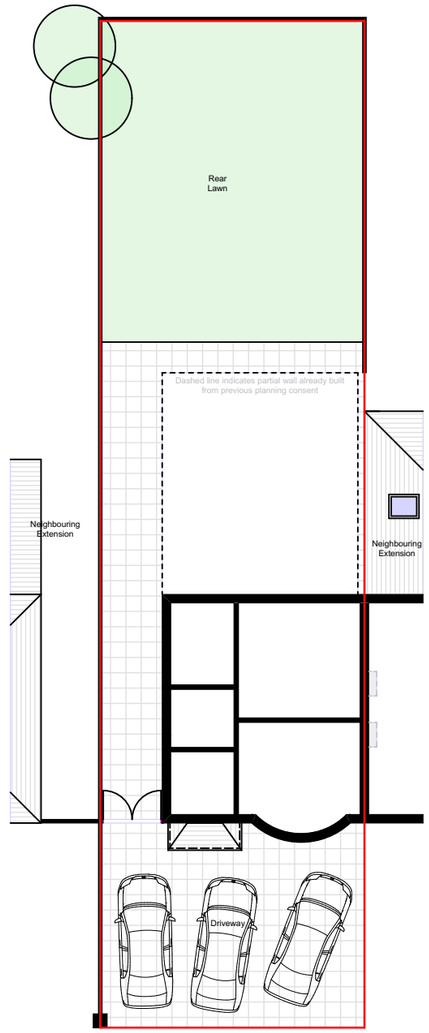
EXISTING GA SIDE ELEVATION 1 @1:100



EXISTING GA REAR ELEVATION @1:100



EXISTING GA SIDE ELEVATION 2 @1:100



MAULDETH ROAD

EXISTING GA SITE PLAN @1:200

notes

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5. Proposed terracotta pantile roof tiles
6. Proposed uPVC door/window
7. Proposed skylight

N

SITE BOUNDARY LINE

SCALE BAR 1:100

SCALE BAR 1:200

PL0 Planning Issue 20.08.24

revisions

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HOUSE EXTENSIONS
70 MAULDETH ROAD,
MANCHESTER, M20 4WF

EXISTING GA ELEVATIONS

scale	date	drawn	checked
1:100 @ A3 1:200 @ A3	20.08.24	MI	AC

job no	(category) dwg no	revision
24-1280	(01)001	PL0

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Appendix B – Consultee Correspondence

Outlook

Automatic reply: FRA251016 , 70 Mauldeth road

From Flood Risk Management <floodriskmanagement@manchester.gov.uk>
Date Mon 2025-03-10 11:20 AM
To Alaika Yusaf <a.yusaf@thelkgroup.com>

Thank you for contacting Flood Risk Management Team (LLFA). Your enquiry has been received and will be processed as below.

Service Response Times:

Planning Consultation:

New planning notifications from planning@manchester.gov.uk – 21 days

Reviews of further CDN submission via Planning Officer – 14 days

Pre-Application advice requested by Planning Officer – 14 days

Land Drainage Consent:

Decision in statutory 2 month time frame

All Other Enquiries:

21 days target timescale

Kind Regards,

Flood Risk Management Team (LLFA)

floodriskmanagement@manchester.gov.uk

Highways Service

Neighbourhoods Directorate

Manchester City Council

PO Box 532

Town Hall

Manchester

M60 2LA

Web: http://www.manchester.gov.uk

****
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed.
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This footnote also confirms that this email message has been swept for the presence of computer viruses.
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Water for the North West

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

LKGroup

Unit 29
Eton Hill Road,
Radcliffe,
m26 2zs

FAO:

Your Ref: FRA251016
Our Ref: UUPS-ORD-638188
Date: 13/03/2025

Dear Sirs

Location: 70 MAULDETH ROAD, MANCHESTER, M20 4WF

I acknowledge with thanks your request dated 10/03/2025 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

United Utilities Water Limited
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

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.

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

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
8101	38.61	CO	35.64	225			VC	17.12125	
4000	37.48	CO	33.6	450			VC	113.3578	1 in 276
5301	37.37	CO	34.85	300			VC	58.00862	1 in 223
8329		CO		150			VC	16.09947	
3010		CO		100			VC	3.217647	
7332		CO		150			VC	2.635056	
8322		CO		150			VC	4.491817	
3301	36.22	CO	0	375			VC	38.32842	
6302	37.7	CO	34.31	300			VC	118.277	1 in 141
8303	38.48	CO	36.74	150			VC	4	
3011		CO		100			VC	15.41821	
3409		CO		100			VC	6.679519	
5201	37.29	CO	34.58	300			VC	63.03174	1 in 197
3915		CO	0				PVC	5.159782	1 in
6001	37.57	CO	35.69	300			VC	87.36704	1 in 141
9320		CO		225			VC	7.922094	
3916		CO		0			PVC	11.10247	1 in
6800	38.16	CO	35.32	300			VC	79.1012	1 in 240
7302	40.01	CO	37.89	225			VC	35.90265	1 in 17
3200	36.26	CO	34.18	225			VC	30.52868	1 in 127
5402	37.2	CO	34.44	300			VC	93.63085	1 in 98
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7409		CO	0	150			VC	31.43515	
8017		CO		150			VC	7.589977	
6200	37.78	CO	36.38	300			VC	30.59412	1 in 52
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5108		CO	0	150			VC	5.462914	
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8327		CO		150			VC	10.57895	
8418		CO		150			VC	21.63348	
3000	37	CO	34.11	300			VC	79.15807	1 in 226
3001	37.21	CO	33.19	450			VC	109.1146	1 in 242
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8900	38.56	CO	0	375			VC	92.96236	
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7226		CO		150			VC	7.838704	
5105		CO		100			VC	10.15899	
6205		CO		100			VC	9.683665	
9306	38.91	SW	35.8	300			VC	63.1803	1 in 186
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8323		CO		150			VC	8.456702	
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8419		CO		150			VC	14.31506	
7400	38.52	CO	35.85	300			VC	105.019	1 in 184
3005		CO	0				PVC	8.113264	1 in
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6901	37.92	CO	34.96	300			VC	67.06713	1 in 216
4311		SW		100			VC	6.489469	
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8205	38.35	CO	34.63	600			BR	2.236068	
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7104		CO		150			VC	29.73833	
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7217		CO	0	150			VC	5.263817	
8331		CO		150			VC	4.505426	
7004		CO		150			VC	15.82266	
5000	37.1	CO	34.6	300			VC	84.48077	1 in 126
4402	36.62	CO	33.38	300			VC	70.45566	1 in 271
4003		CO	34	300			VC	7.133096	1 in 357
3141		CO		150			VC	6.798997	
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7241		CO		150			VC	2.357304	
7000	37.99	CO	35.26	225			VC	62.03225	1 in 119
3916		CO	0				PVC	5.584853	1 in
8206	38.35	CO	34.65	825			CO	66.37017	1 in 302
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4203		CO		150			VC	17.31582	
7002	38.06	CO	34.83	300			VC	57.07889	1 in 238
6006		CO		225			VC	13.34589	
8102	38.93	CO	36.15	225			VC	21.18962	1 in 42
8337		CO		150			VC	3.945754	
8318		CO		225			VC	8.651294	
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8405	38.75	CO	36.43	225			VC	49.6488	1 in 236
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4007		CO		100			VC	12.07373	
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3210		CO		150			VC	3.736539	
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7314		CO		100			VC	14.65236	
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7330		CO		225			VC	10.25205	
7337		CO		150			VC	8.105562	
3919		CO		150			VC	2.391438	
3004		CO	0				PVC	16.6098	1 in
7103	37.95	CO	34.71	300			VC	54.08327	
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7244		SW		150			VC	5.202665	
8422		CO		225			VC	20.57925	
3019		CO	0				PVC	2.318522	1 in
5015		CO		150			VC	7.055411	
6110		CO	0	150			VC	16.60513	
6304	38.04	CO	34.66	300			VC	57.07889	1 in 168
7417		CO		0			VC	9.350564	
8317		CO		225			VC	5.485515	
7416		CO		0			VC	11.88277	
8228		CO		150			VC	2.988305	
8901	38.45	CO	35.94	300			VC	81.0987	1 in 73
5900	37.49	CO	34	300			VC	13	37.49
9002	39.16	CO	36.49	300			VC	37.12654	1 in 36
4200	36.9	CO	33.07	825			CO	118.8697	1 in 253
6100	37.37	CO	33.48	825			CO	44.04543	1 in 245
6420		CO		100			VC	7.933536	
7202	38.25	CO	34.91	300			VC	43.17406	
5102	37.25	CO	33.92	300			VC	9.055386	
5100	37.25	CO	33.29	825			CO	105.4751	1 in 502
6109		CO	0	150			VC	18.34517	
8334		SW		150			VC	7.873431	
7907		CO		150			VC	14.03158	
3802	36.71	CO	34.93	300			VC	161.0799	1 in 107
7205	37.78	CO	36.32	225			VC	29.6145	1 in 110
3101	36.42	CO	34.13	300			VC	85.58621	1 in 186
4805		CO		150			VC	13.5662	
5901	37.52	CO	34.25	300			VC	64.07027	1 in 267
6004		CO		150			VC	10.61882	
8420		CO		150			VC	19.92048	
8801	38.67	CO	0	225			VC	54.03703	
8201	38.77	CO	35.03	300			VC	7.615773	1 in 381
8301	38.37	CO	35.71	300			VC	20.44715	1 in 136
5003		CO		150			VC	14.92296	
7449		CO		150			VC	29.50562	
6301	37.64	CO	34.4	225			VC	5.09902	
8000	38.33	CO	34.93	450			VC	109.9597	
8008		CO		150			VC	6.762969	
5300	37.01	CO	34.6	300			VC	47.04253	1 in 174
9220		CO		150			VC	9.337057	
5101	37.25	CO	33.47	675			BR	14.03567	
8339		CO		150			VC	11.20676	
3302	36.28	CO	33.61	225			VC	10.5672	
8109		FO		150			VC	2.09184	
7303	38	CO	35.82	225			VC	32.01562	1 in 82
4205		CO		150			VC	5.669991	
6462		CO		100			VC	1.801404	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
7219		SW	0	150			VC	8.227898	
7101		CO		100			VC	13.25066	
4011		CO		150			VC	13.95873	
9221		CO		150			VC	20.94322	
7210		SW	0	150			VC	15.05041	
8225		CO		150			VC	10.87302	
6202		CO		100			VC	3.183265	
3201	36.47	CO	34.56	150			VC	28.63564	1 in 95
6300	38.05	CO	0	300			VC	9.728657	
6463		CO		100			VC	13.50032	
7201	38.15	CO	35.38	300			VC	36.79792	
6000	37.39	CO	35.05	300			VC	81.3941	1 in 118
8200	38.84	CO	35.45	300			VC	29.01724	1 in 107
7906		CO		150			VC	12.10924	
4803		CO		150			VC	15.89335	
6449		CO	0	150			VC	9.365737	
6103	37.5	CO	33.77	675			BR	99.02182	1 in 341
7908		CO		150			VC	8.939379	
9411	39.05	CO	36.35	300			VC	31.06445	1 in 124
3804		CO		100			VC	5.733347	
4903		CO		150			VC	9.865413	
8203	38.5	CO	34.9	825			CO	8.944272	1 in 298
6111		CO	0	150			VC	16.67437	
8316		CO		225			VC	6.558774	
6206		CO		100			VC	4.641269	
7100	37.79	CO	0	300			VC	4.472136	
3204	36.42	CO	32.61	650			BR	29.83287	1 in 229
3920		CO		150			VC	6.610887	
8338		CO		150			VC	4.752192	
8330		CO		150			VC	12.44177	
7214		SW	0	150			VC	2.947141	
3123		CO		100			VC	7.474754	
3012		CO		100			VC	11.64025	
3006		CO		0			PVC	7.400569	1 in
6220		CO		225			VC	10.90749	
8007		CO		150			VC	15.2421	
8218		CO		150			VC	2.377196	
4102	36.21	CO	33.41	300			VC	91.86991	
8308	38.42	CO	35.56	300			VC	60.55003	1 in 242
6002		CO		150			VC	15.92979	
8211		CO		225			VC	11.77614	
7419		CO	0	150			VC	13.75912	
7327		CO		150			VC	7.284311	
6908		CO		300			VC	16.88571	
6205	38.55	CO	34.86	825			CO	19.20937	1 in 175
7901		CO		150			VC	15.63125	
8328		CO		150			VC	31.23554	
4100	36.97	CO	33.18	675			BR	117.9517	1 in 211
7303	36.39	CO	35.27	300			VC	70.83079	
8229		CO		150			VC	5.986754	
6802	37.72	CO	34.97	300			VC	63.03174	1 in 217
7420		CO		0			VC	4.361861	
3211		CO		150			VC	4.794123	
7425		CO		0			UN	23.97941	
3203	36.25	CO	32.46	675			BR	73.24616	1 in 293
3202	36.33	CO	32.59	825			CO	103.5809	1 in 280
3926		CO		0			UN	13.08873	1 in
3925		CO		0			UN	10.30246	
8230		CO		150			VC	8.221278	
7333		CO		150			VC	9.43479	
3008		CO		0			UN	4.877304	1 in
3811		CO		0			UN	11.53797	1 in
4017		CO		100			VC	7.519213	

LEGEND

Abandoned · Foul · Surface Water · Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

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

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

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

70 MAULDETH ROAD,
MANCHESTER,
M20 4WF

Scale: 1:1250 **Date:** 13/03/2025

Sheet: 1 of 1

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

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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Pre Development Enquiry Guidance

Version 1 (September 24)

(This document should be read in conjunction with PDE response letter)

United Utilities
Water for the North West

Comment no.	Technical Guidance
General Guidance	
1	**Sewer Access** If your investigations require access to our public sewer network, we ask that you contact our network engineers with a request for an access certificate via our main contact telephone number 0345 6723 723 or refer to the link below: https://www.unitedutilities.com/builders-developers/working-near-our-assets/ **Sewer Adoption Under S104** If you intend to offer sewers for adoption, design per current Design and Construction and local practices which have now replaced Sewers for Adoption 6th Edition.. **S104 Pre-Design Assessment** We recommend submitting a pre-design assessment. This is a free service to discuss the high level design and potential challenges. Please see link to application form in guidance sheet. **Adoption of Sewers** • Designs must comply with current Design & Construction Guidance. • S104 1b Pre-design assessment, and S104 for adoption of new sewers applications can be found at Sewer adoptions - United Utilities • Submit pre-design assessment to SewerAdoptions@uuplc.co.uk. • No construction should commence until detailed design is approved in writing. **Sewer Connections:** • Formal S106 application required for sewer connections. Application details available at: www.unitedutilities.com/builders-developers/wastewater-services/sewer-connections/ **Water Assets** • Contact DeveloperServicesWater@uuplc.co.uk regarding clean water assets on site. • Further information: Water pre-development - United Utilities **Additional Considerations** • Land drainage, overland flows, and track drainage are not accepted into public sewer network. **Useful Resources:** • Codes for Adoption: www.water.org.uk/technical-guidance/developers-services/codes-for-adoption/ • Design & Construction Guidance: www.water.org.uk/sewerage-sector-guidance-approved-documents/ • United Utilities website: www.unitedutilities.com/builders-developers/ **Contact Information:** • Main contact number: 0345 6723 723 • Sewer Adoptions and Pre-Development: SewerAdoptions@uuplc.co.uk
2	**Flooding Events** Please note that United Utilities Water Limited (UUW) can only record and check flooding events which are reported to us, and we must comply with our Regulators instructions on the qualification of flooding events. Our response does not include: • any sewer flooding events caused by blockages or collapses which are the result of third-party actions, natural events, or other actions over which UUW has no control and not a facet of sewer capacity; or • any historical sewer flooding events that have been resolved from investment in our infrastructure.

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	Further consideration. • For low-lying sites, care should be taken to ensure that the property is not at increased risk of flooding. It could affect the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme. • Consult Lead Local Flood Authority (LLFA) for surface water drainage concerns. • Check Environment Agency guidelines if site is in a Groundwater Source Protection Zone.
3	**Asset Protection** • Due to the accuracy of the records and the public sewer transfer legislation in 2011, not all public sewers are shown on our records. We ask that you proceed with caution and conduct adequate site investigation works. If any uncharted sewers are identified while conducting your investigation, we ask that you contact United Utilities at the earliest opportunity so that we can offer guidance and update our records. • Obtain asset data records before planning development United Utilities - Property Search : • Please be aware that any proposed diversion may require modelling. This process may take up to 6 months to reach an acceptable design. • Maintain minimum easement in line with our easement local practice, unless there is a formal easement in place, in which case the specified easement width would apply. easement-local-practice.pdf (unitedutilities.com) • Contact United Utilities for guidance on work near assets or if diversion is necessary.
4	**Surface Water Drainage Hierarchy** Follow the hierarchy as per National Planning Practice Guidance: **1.** Infiltration **2.** Discharge to waterbody **3.** Discharge to surface water sewer or highway drain **4.** Discharge to combined sewer (last resort) For guidance, The Northwest SuDS Pro-Forma provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted. The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area). The Local Planning Authority are the determining authority for any application for planning permission and the appropriate authority for determining the cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities. **SuDS (Sustainable Drainage Systems)** • Prioritise multi-functional SuDS in accordance with national planning policy. • Design SuDS components as per CIRIA SuDS Manual (C753). • Consult the North West SuDS Pro-Forma for required evidence at each stage of the drainage hierarchy. **Infiltration** Surface water runoff generated from this development should discharge to the ground via infiltration system where feasible. A detailed evidence-based feasibility assessment must be carried out in line with Chapter 25 of the CIRIA SuDS Manual 2015 to determine whether infiltration is a suitable method of surface water disposal. Particular attention must be paid to Ground Water Source Protection Zones to ensure that the risk of pollution to these valuable resources is not compromised. Details can be obtained from the government website: https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs#find-groundwater-spzs If your site is in a Groundwater Source Protection Zone, you should have regard to the Environment Agency's approach to Groundwater Protection. Information on this is available via the link below: https://www.gov.uk/government/publications/groundwater-protection-position-statements Please note that such a location could have implications for the principle of your development and the need for additional mitigating measures to protect the groundwater environment and public water supply in the detailed design of your site. **Surface Water Discharge Rates** Please note the given discharge rate is based on the site area believed to be developed. If there are significant areas of the site that will not be developed, the discharge rate should be reduced accordingly.
5	Please note that this guidance is current as of the date of issue. Always check for the most up-to-date regulations and guidelines when planning your development.

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

Response Date: 22/03/2025

Dear LK

Pre-Development Enquiry for 70 Mauldeth Road Manchester M20 4WF

UU Reference Number: 07211016

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

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

According to our public sewer records, there are public sewers located within your site boundary. This requires an easement of **3m.** 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 combined sewer system.

Our preferred point of discharge would be to the 150mm combined sewer located within your proposed development at an unrestricted rate.

Manhole reference SJ85936110, **Grid reference** 385634, 393173

Please see the images below for clarification

Surface Water

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

Please see comment **4** within the guidance sheet

Infiltration

Please see comment **4** within the guidance sheet

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 north of the site boundary.

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.

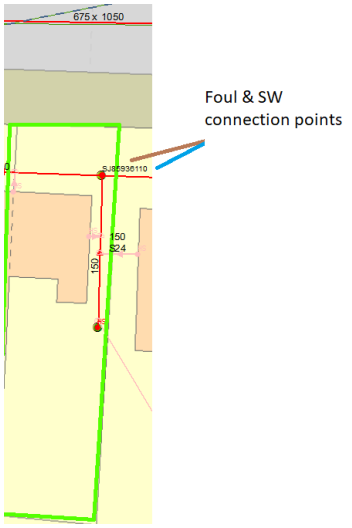
Public Sewer

United Utilities will consider a connection to the 150mm diameter public combined sewer within the development at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities requests that any agreed rate does not exceed **2**l/s.

Manhole reference SJ85936110, **Grid reference** 385634, 393173

Please see images below for clarification

Site Images



Appendix C – Calculations

MasterDrain SW

The LK Group

www.thelkgroup.com

Eton Business Park,
Eton Hill Road,
Radcliffe M26 2ZS
Tel: 0161 763 7200
email: m.jones@thelkgroup.com

Job No. FRA251016			
Sheet no. 1			
Date 02/04/25			
Project 70 Mauldeth Road, M20 4WF	By AY	Checked	Reviewed
Title 30yr + 40%cc			

Data:-

FSR Hydrology:-

Location = 70 Mauldeth Road
M5-60 (mm) = 18
Soil index = 0.30
Return period = 30
UCWI = 86.0

Grid reference = SJ3526
r = 0.37
SAAR (mm/yr) = 800
WRAP = 2
Climate change = 40

i) Very permeable soils with shallow ground water;
ii) Permeable soils over rock or fragipan, commonly on slopes in western Britain associated with smaller areas of less permeable wet soils; The layer is low in organic matter, mottled and (fragipan - a natural subsurface horizon having a higher bulk density than the solum above. Seemingly cemented when dry but showing moderate to weak brittleness when moist. Slowly or very slowly permeable to water. It is found in profiles of either cultivated or virgin soils but not in calcareous material).
iii) Moderately permeable soils, some with slowly permeable subsoils.

Runoff factor (RF) = 76.0, calculated from:-

Runoff factor = (0.829*PIMP)+(25*SOIL)+(0.078*UCWI)-20.7
where
PIMP = Impervious Area*100/(Impervious Area+Pervious Area)
UCWI = Calculated value for Wetness Index

Design data:-

Imperv. area = 46 m²
Total area (TA) = 46 m²
Allowed discharge rate = 2.000 l/s
Additional flow = 0.00 l/s

Pervious area = 0 m²
Equiv area = 35 m² (TA x RF).
Areal reduction factor = 1.000
Climate change factor = 40

Calculated data:-

Time to max = 1.0 mins
Rainfall at max = 232.37 mm/hr
Pipeline storage = 0.0 m³
Offline storage = 0.0 m³

Calculated storage volume = 0.0 m³
Allowed discharge rate = 2.000 l/s
Available MH storage = 0.0 m³

Fixed 6 hour data:-

Rainfall event = 6 hours
Rainfall rate = 10.00 mm/hr

Calculated storage volume = 0.0 m³
Allowed discharge rate = 2.000 l/s

Rainfall intensities calculated using the Wallingford Procedure

Storage lengths for initial calculation (x 1.1, 1.2, 1.3 or 1.5 as above if required) :-

Diam	Len	Diam	Len
100	2.0	1125	0.0
150	0.9	1200	0.0
225	0.4	1275	0.0
300	0.2	1350	0.0
375	0.1	1425	0.0
450	0.1	1500	0.0
525	0.1	1575	0.0
600	0.1	1650	0.0
675	0.0	1725	0.0
750	0.0	1800	0.0
825	0.0	1875	0.0
900	0.0	1950	0.0
975	0.0	2025	0.0
1050	0.0	2100	0.0

Ovoid	Len
400 x 600	0.1
600 x 900	0.0
800 x 1200	0.0

Box culvert	Len
500 x 500	0.1
500 x 750	0.0
500 x 1000	0.0
750 x 1000	0.0
750 x 1200	0.0
750 x 1500	0.0
1000 x 1000	0.0
1000 x 1200	0.0
1000 x 1500	0.0
1000 x 1800	0.0
1000 x 2000	0.0
1500 x 1500	0.0
1500 x 1800	0.0
1500 x 2000	0.0

The LK Group
www.thelkgroup.com
Eton Business Park,
Eton Hill Road,
Radcliffe M26 2ZS
Tel: 0161 763 7200
email: m.jones@thelkgroup.com

Job No.	FRA251016
Sheet no.	2
Date	02/04/25

MasterDrain SW

Project	70 Mauldeth Road, M20 4WF	By	AY
Title	30yr + 40%cc	Checked	
		Reviewed	

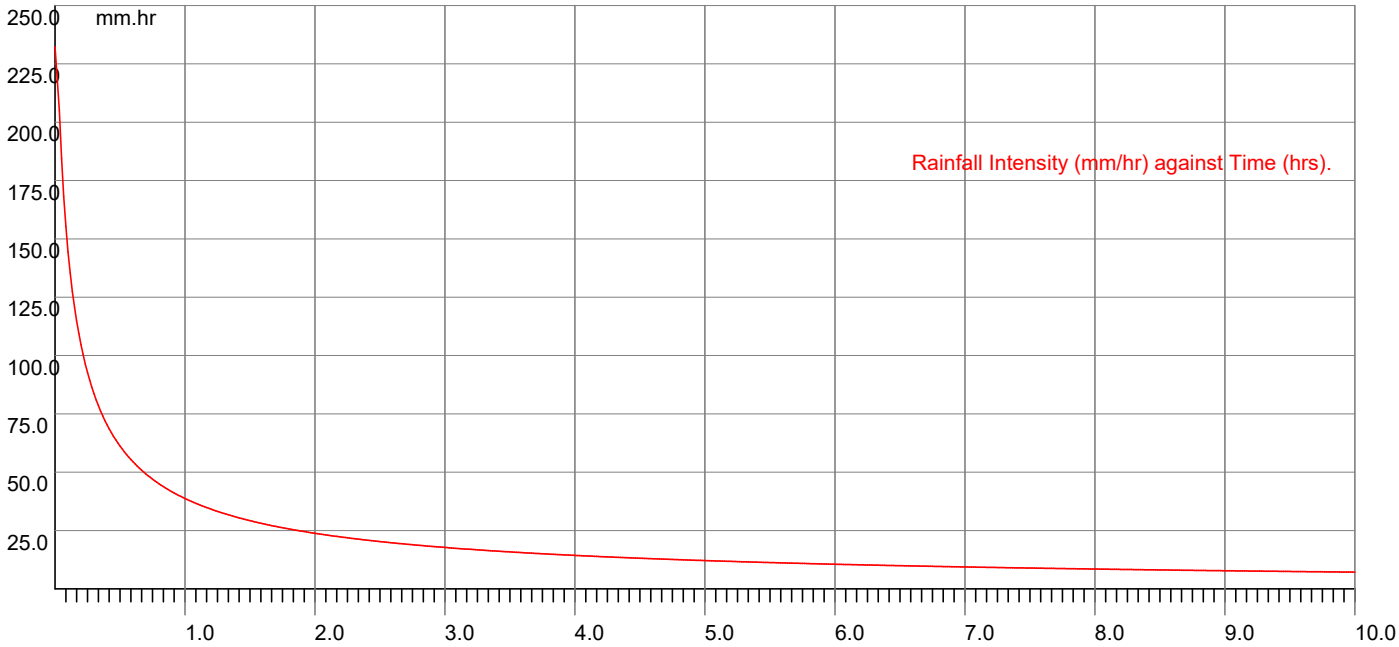
Data:-

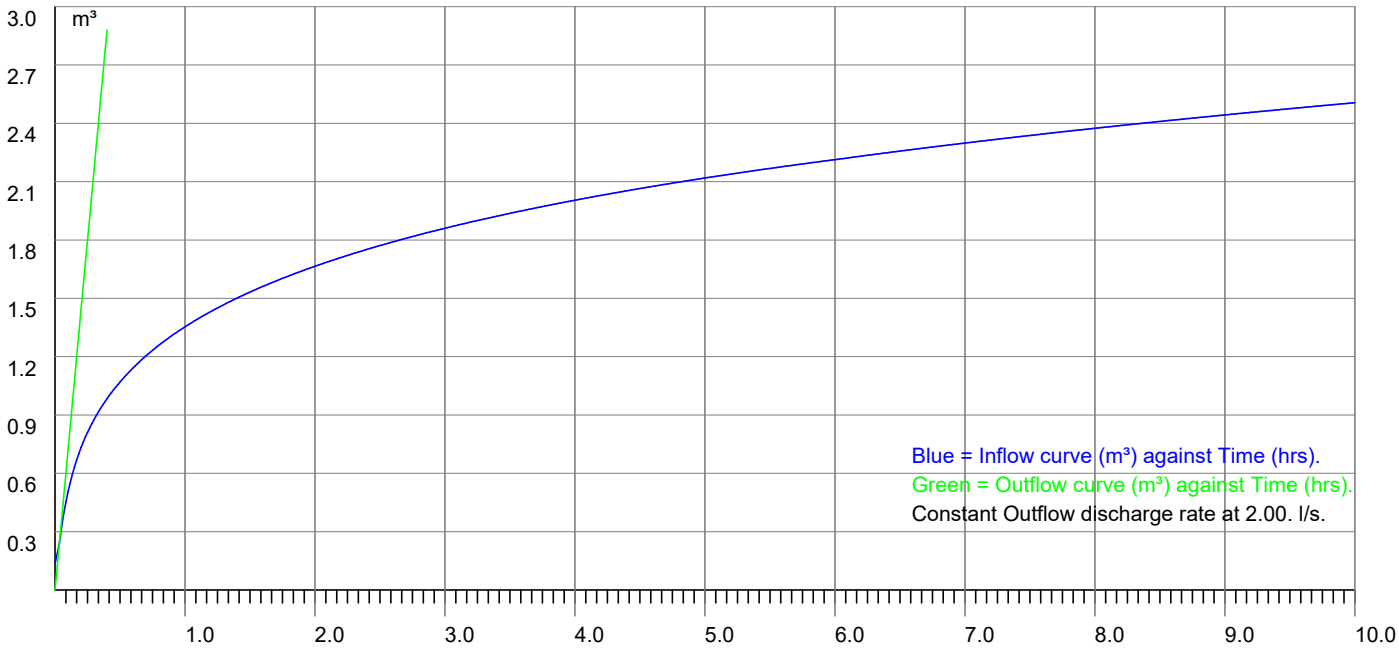
Time (mins)	Rain mm/hr	Inflow (m3)	Outflow (m3)	Balance (m3)
10	115.0	0.668	1.200	0.000
20	79.0	0.915	2.400	0.000
30	61.0	1.070	3.600	0.000
40	51.0	1.184	4.800	0.000
50	44.0	1.276	6.000	0.000
60	39.0	1.353	7.200	0.000
70	35.0	1.420	8.400	0.000
80	32.0	1.479	9.600	0.000
90	29.0	1.532	10.800	0.000
100	27.0	1.580	12.000	0.000
110	25.0	1.624	13.200	0.000
120	24.0	1.665	14.400	0.000
130	22.0	1.703	15.600	0.000
140	21.0	1.738	16.800	0.000
150	20.0	1.771	18.000	0.000
160	19.0	1.803	19.200	0.000
170	18.0	1.832	20.400	0.000
180	18.0	1.860	21.600	0.000
190	17.0	1.887	22.800	0.000
200	16.0	1.913	24.000	0.000
210	16.0	1.937	25.200	0.000
220	15.0	1.961	26.400	0.000
230	15.0	1.983	27.600	0.000
240	14.0	2.005	28.800	0.000
250	14.0	2.025	30.000	0.000
260	14.0	2.045	31.200	0.000
270	13.0	2.065	32.400	0.000
280	13.0	2.083	33.600	0.000
290	12.0	2.101	34.800	0.000
300	12.0	2.119	36.000	0.000
310	12.0	2.136	37.200	0.000
320	12.0	2.152	38.400	0.000
330	11.0	2.168	39.600	0.000
340	11.0	2.184	40.800	0.000
350	11.0	2.199	42.000	0.000
360	11.0	2.213	43.200	0.000
370	10.0	2.228	44.400	0.000
380	10.0	2.243	45.600	0.000
390	10.0	2.257	46.800	0.000
400	10.0	2.271	48.000	0.000
410	10.0	2.285	49.200	0.000
420	9.0	2.299	50.400	0.000
430	9.0	2.312	51.600	0.000
440	9.0	2.325	52.800	0.000
450	9.0	2.338	54.000	0.000
460	9.0	2.350	55.200	0.000
470	9.0	2.362	56.400	0.000
480	8.0	2.375	57.600	0.000
490	8.0	2.386	58.800	0.000
500	8.0	2.398	60.000	0.000
510	8.0	2.410	61.200	0.000
520	8.0	2.421	62.400	0.000
530	8.0	2.432	63.600	0.000
540	8.0	2.443	64.800	0.000
550	8.0	2.454	66.000	0.000
560	8.0	2.465	67.200	0.000
570	7.0	2.475	68.400	0.000
580	7.0	2.486	69.600	0.000
590	7.0	2.496	70.800	0.000
600	7.0	2.506	72.000	0.000

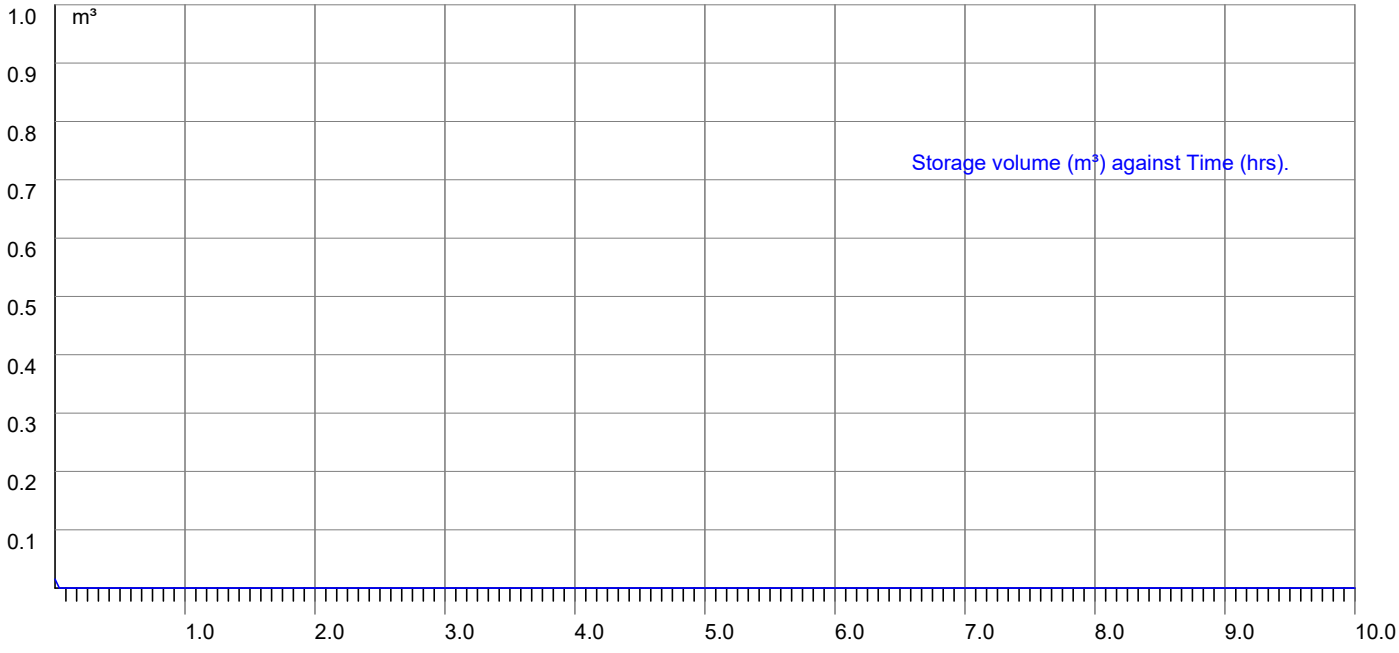
Storage volume (m^3) = 0.0 m^3

MasterDrain SW

The LK Group www.thelkgroup.com	Eton Business Park, Eton Hill Road, Radcliffe M26 2ZS Tel: 0161 763 7200 email: m.jones@thelkgroup.com	Job No. FRA251016 Sheet no. 3 Date 02/04/25	
Project 70 Mauldeth Road, M20 4WF		By AY	Checked / Reviewed
Title 30yr + 40%cc			







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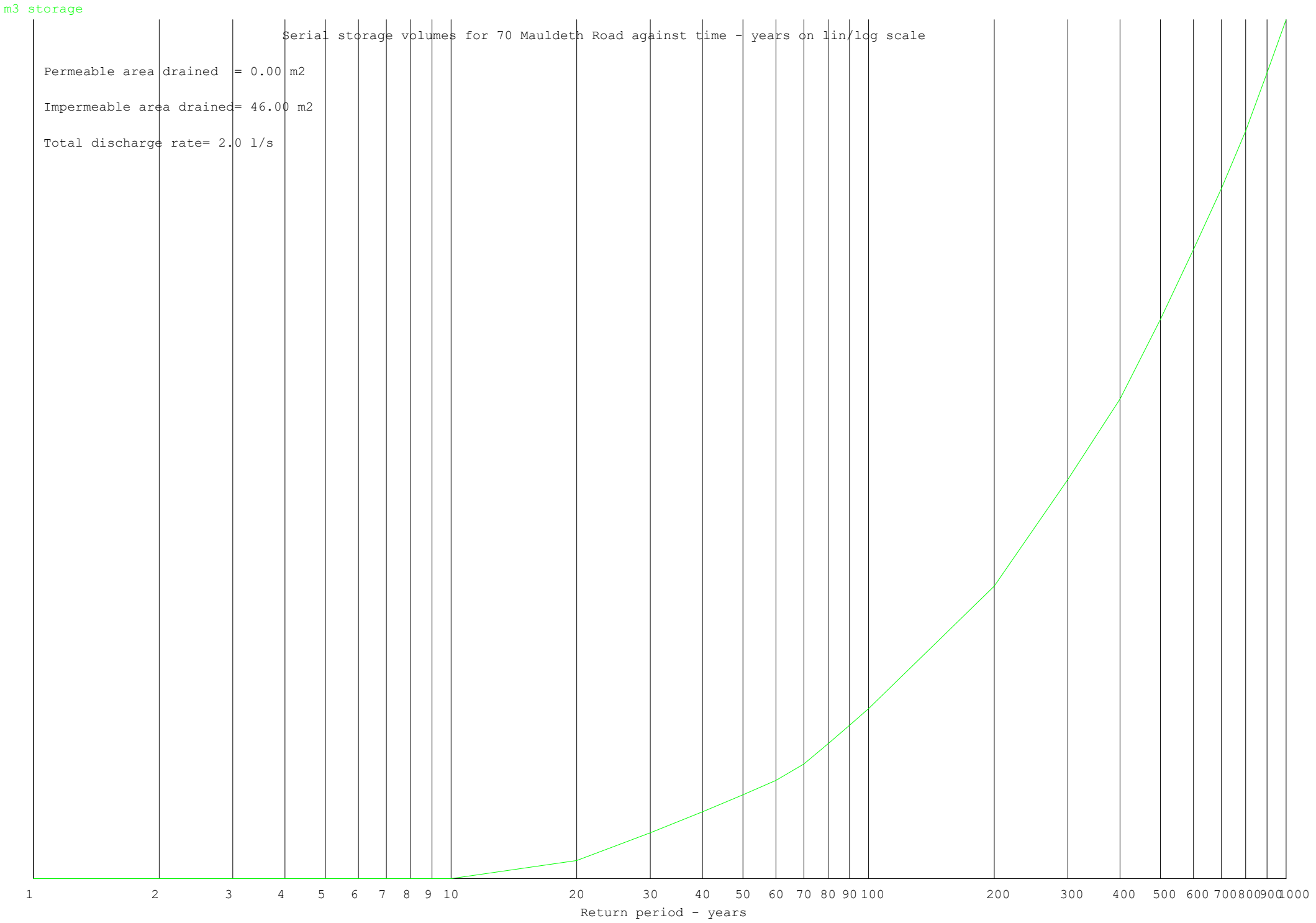
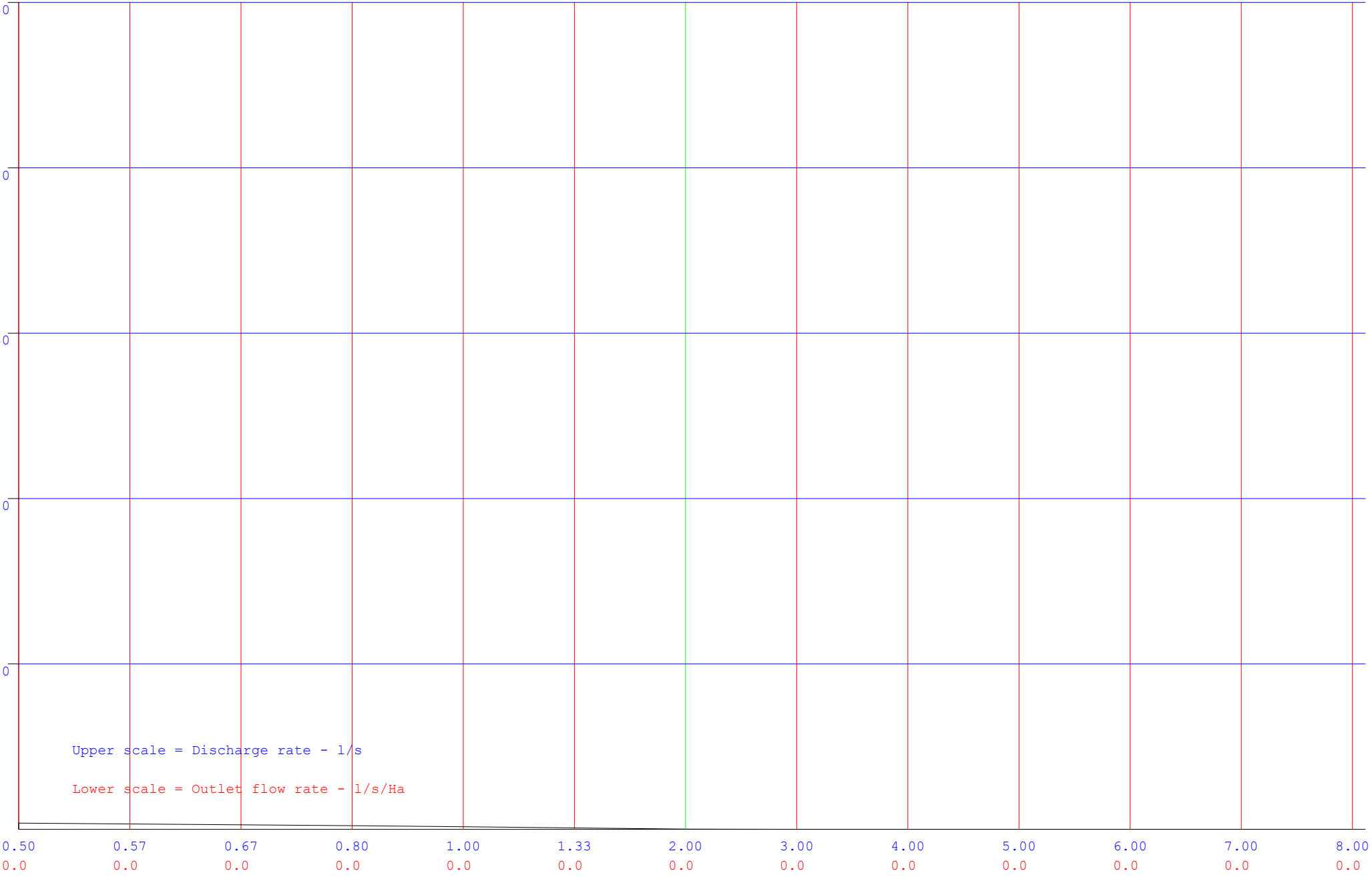

m3 storage
Serial storage volumes for 70 Mauldeth Road against time - years on lin/log scale
Permeable area drained = 0.00 m2
Impermeable area drained= 46.00 m2
Total discharge rate= 2.0 l/s
1
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
90
100
200
300
400
500
600
700
800
900
1000
Return period - years

Storage volumes for 70 Mauldeth Road against varying discharge rates

m3 storage

Design discharge rate= 2.0



MasterDrain SW

The LK Group

www.thelkgroup.com

Eton Business Park,
Eton Hill Road,
Radcliffe M26 2ZS
Tel: 0161 763 7200
email: m.jones@thelkgroup.com

Job No. FRA251016			
Sheet no. 1			
Date 02/04/25			
Project 70 Mauldeth Road, M20 4WF	By AY	Checked	Reviewed
Title 100yr + 45%cc			

Data:-

FSR Hydrology:-

Location = 70 Mauldeth Road
M5-60 (mm) = 18
Soil index = 0.30
Return period = 100
UCWI = 86.0

Grid reference = SJ3526
r = 0.37
SAAR (mm/yr) = 800
WRAP = 2
Climate change = 45

i) Very permeable soils with shallow ground water;
ii) Permeable soils over rock or fragipan, commonly on slopes in western Britain associated with smaller areas of less permeable wet soils; The layer is low in organic matter, mottled and (fragipan - a natural subsurface horizon having a higher bulk density than the solum above. Seemingly cemented when dry but showing moderate to weak brittleness when moist. Slowly or very slowly permeable to water. It is found in profiles of either cultivated or virgin soils but not in calcareous material).
iii) Moderately permeable soils, some with slowly permeable subsoils.

Runoff factor (RF) = 76.0, calculated from:-

Runoff factor = (0.829*PIMP)+(25*SOIL)+(0.078*UCWI)-20.7
where
PIMP = Impervious Area*100/(Impervious Area+Pervious Area)
UCWI = Calculated value for Wetness Index

Design data:-

Imperv. area = 46 m²
Total area (TA) = 46 m²
Allowed discharge rate = 2.000 l/s
Additional flow = 0.00 l/s

Pervious area = 0 m²
Equiv area = 35 m² (TA x RF).
Areal reduction factor = 1.000
Climate change factor = 45

Calculated data:-

Time to max = 2.0 mins
Rainfall at max = 264.00 mm/hr
Pipeline storage = 0.0 m³
Offline storage = 0.0 m³

Calculated storage volume = 0.1 m³
Allowed discharge rate = 2.000 l/s
Available MH storage = 0.0 m³

Fixed 6 hour data:-

Rainfall event = 6 hours
Rainfall rate = 14.00 mm/hr

Calculated storage volume = 0.0 m³
Allowed discharge rate = 2.000 l/s

Rainfall intensities calculated using the Wallingford Procedure

Storage lengths for initial calculation (x 1.1, 1.2, 1.3 or 1.5 as above if required) :-

Diam	Len	Diam	Len
100	8.6	1125	0.1
150	3.8	1200	0.1
225	1.7	1275	0.1
300	1.0	1350	0.0
375	0.6	1425	0.0
450	0.4	1500	0.0
525	0.3	1575	0.0
600	0.2	1650	0.0
675	0.2	1725	0.0
750	0.2	1800	0.0
825	0.1	1875	0.0
900	0.1	1950	0.0
975	0.1	2025	0.0
1050	0.1	2100	0.0

Ovoid	Len
400 x 600	0.4
600 x 900	0.2
800 x 1200	0.1

Box culvert	Len
500 x 500	0.3
500 x 750	0.2
500 x 1000	0.1
750 x 1000	0.1
750 x 1200	0.1
750 x 1500	0.1
1000 x 1000	0.1
1000 x 1200	0.1
1000 x 1500	0.0
1000 x 1800	0.0
1000 x 2000	0.0
1500 x 1500	0.0
1500 x 1800	0.0
1500 x 2000	0.0

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Job No.	FRA251016
Sheet no.	2
Date	02/04/25

MasterDrain SW

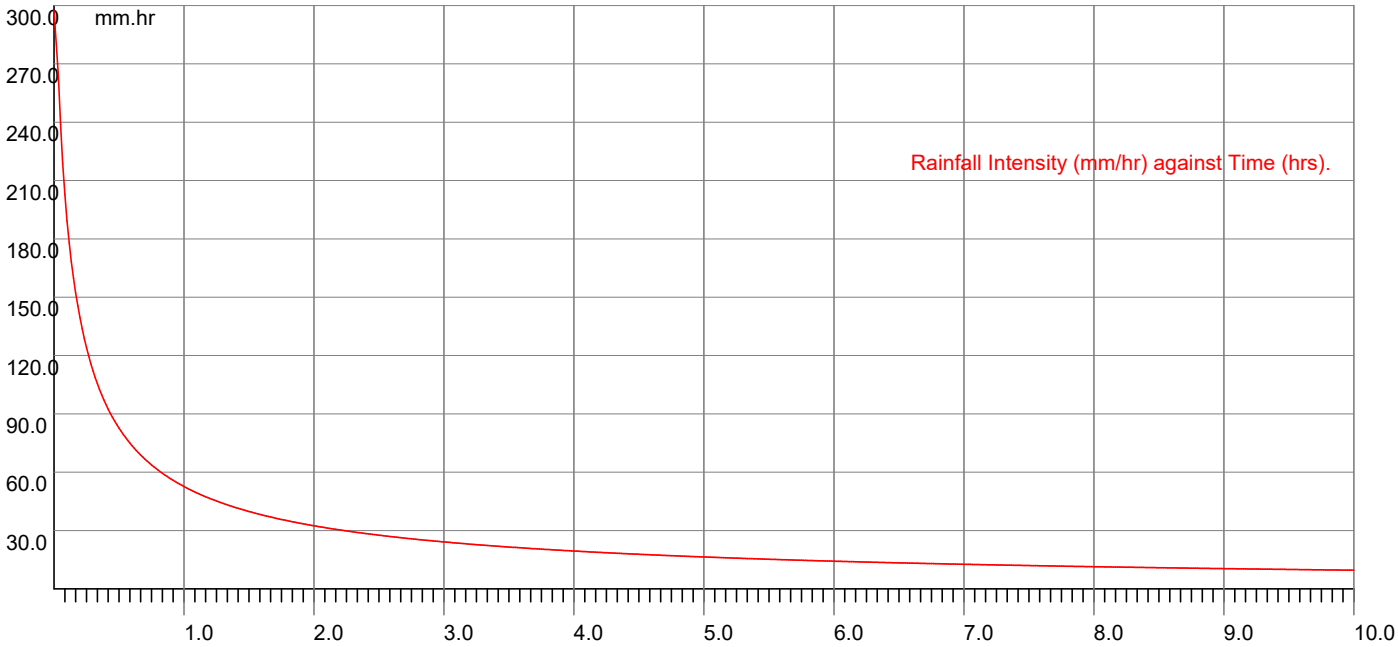
Project	70 Mauldeth Road, M20 4WF	By	AY
Title	100yr + 45%cc	Checked	
		Reviewed	

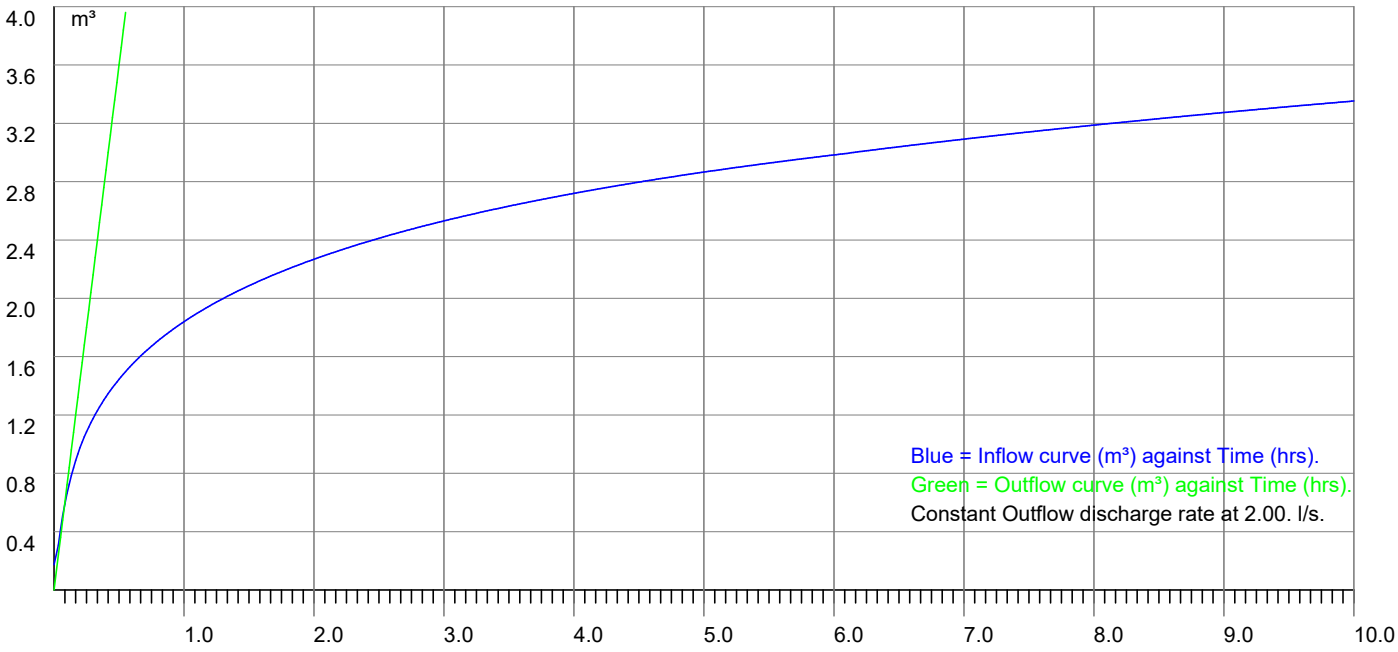
Data:-

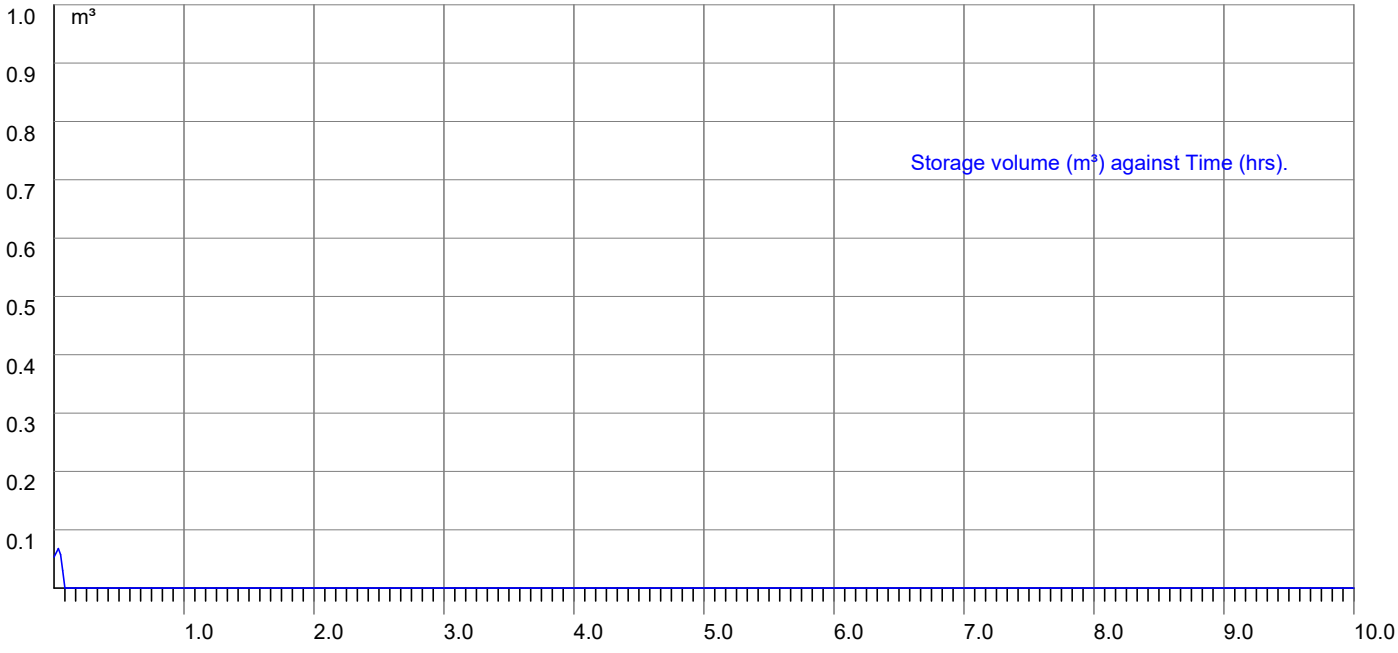
Time (mins)	Rain mm/hr	Inflow (m3)	Outflow (m3)	Balance (m3)
10	152.0	0.887	1.200	0.000
20	106.0	1.230	2.400	0.000
30	83.0	1.445	3.600	0.000
40	69.0	1.605	4.800	0.000
50	59.0	1.733	6.000	0.000
60	53.0	1.840	7.200	0.000
70	47.0	1.932	8.400	0.000
80	43.0	2.014	9.600	0.000
90	40.0	2.087	10.800	0.000
100	37.0	2.152	12.000	0.000
110	35.0	2.213	13.200	0.000
120	32.0	2.268	14.400	0.000
130	31.0	2.319	15.600	0.000
140	29.0	2.367	16.800	0.000
150	28.0	2.412	18.000	0.000
160	26.0	2.454	19.200	0.000
170	25.0	2.494	20.400	0.000
180	24.0	2.531	21.600	0.000
190	23.0	2.566	22.800	0.000
200	22.0	2.600	24.000	0.000
210	22.0	2.632	25.200	0.000
220	21.0	2.663	26.400	0.000
230	20.0	2.692	27.600	0.000
240	19.0	2.720	28.800	0.000
250	19.0	2.747	30.000	0.000
260	18.0	2.772	31.200	0.000
270	18.0	2.797	32.400	0.000
280	17.0	2.821	33.600	0.000
290	17.0	2.844	34.800	0.000
300	16.0	2.866	36.000	0.000
310	16.0	2.887	37.200	0.000
320	16.0	2.908	38.400	0.000
330	15.0	2.927	39.600	0.000
340	15.0	2.947	40.800	0.000
350	15.0	2.965	42.000	0.000
360	14.0	2.983	43.200	0.000
370	14.0	3.002	44.400	0.000
380	14.0	3.021	45.600	0.000
390	13.0	3.039	46.800	0.000
400	13.0	3.057	48.000	0.000
410	13.0	3.075	49.200	0.000
420	13.0	3.092	50.400	0.000
430	12.0	3.108	51.600	0.000
440	12.0	3.125	52.800	0.000
450	12.0	3.141	54.000	0.000
460	12.0	3.157	55.200	0.000
470	12.0	3.172	56.400	0.000
480	11.0	3.188	57.600	0.000
490	11.0	3.203	58.800	0.000
500	11.0	3.218	60.000	0.000
510	11.0	3.232	61.200	0.000
520	11.0	3.246	62.400	0.000
530	11.0	3.260	63.600	0.000
540	10.0	3.274	64.800	0.000
550	10.0	3.288	66.000	0.000
560	10.0	3.301	67.200	0.000
570	10.0	3.315	68.400	0.000
580	10.0	3.328	69.600	0.000
590	10.0	3.340	70.800	0.000
600	10.0	3.353	72.000	0.000

Storage volume (m^3) = 0.1 m^3

MasterDrain SW	**The LK Group** www.thelkgroup.com	Eton Business Park, Eton Hill Road, Radcliffe M26 2ZS Tel: 0161 763 7200 email: m.jones@thelkgroup.com	Job No. **FRA251016** Sheet no. **3** Date **02/04/25**
	Project **70 Mauldeth Road, M20 4WF**		By **AY** / Checked / Reviewed
	Title **100yr + 45%cc**		







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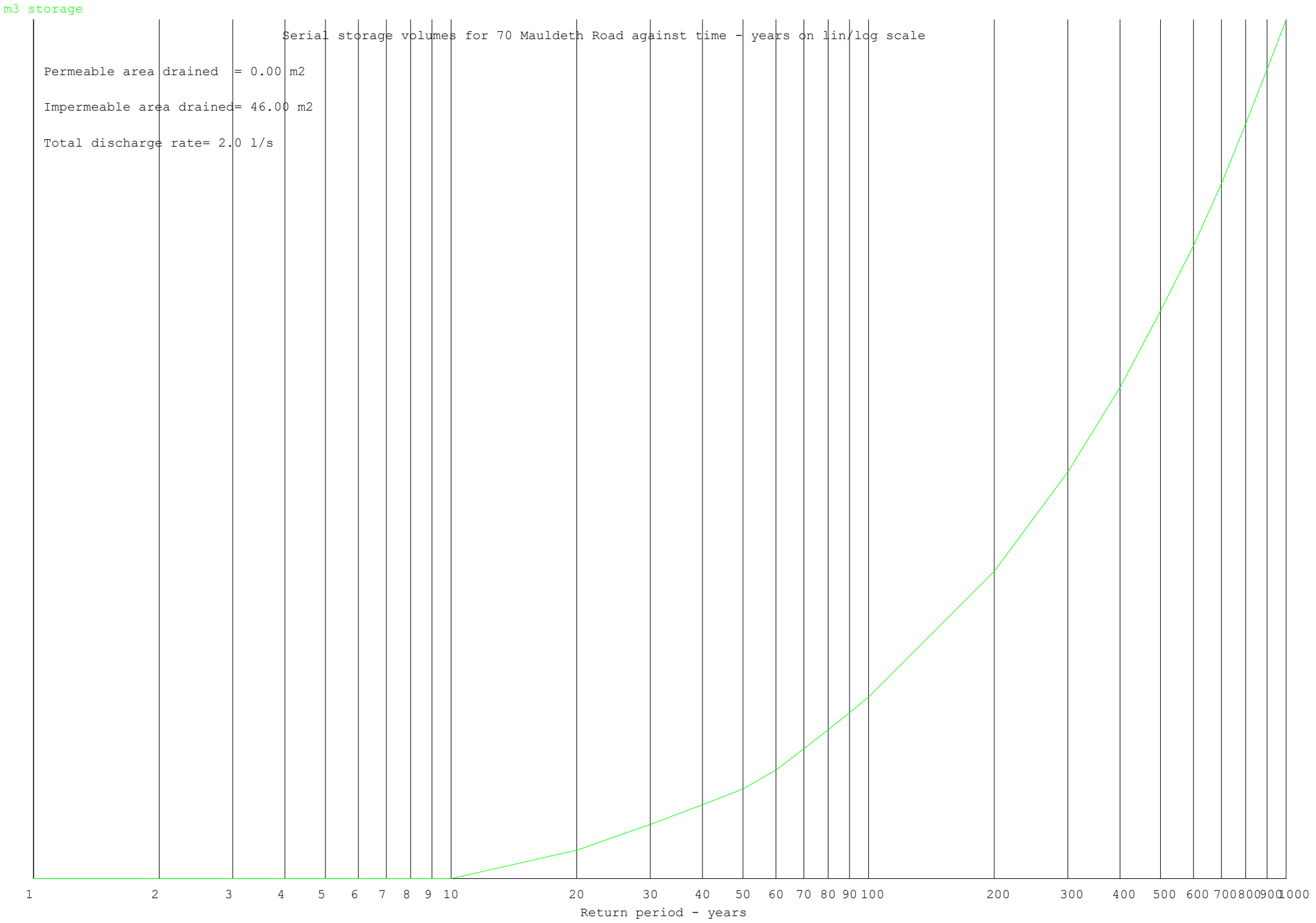
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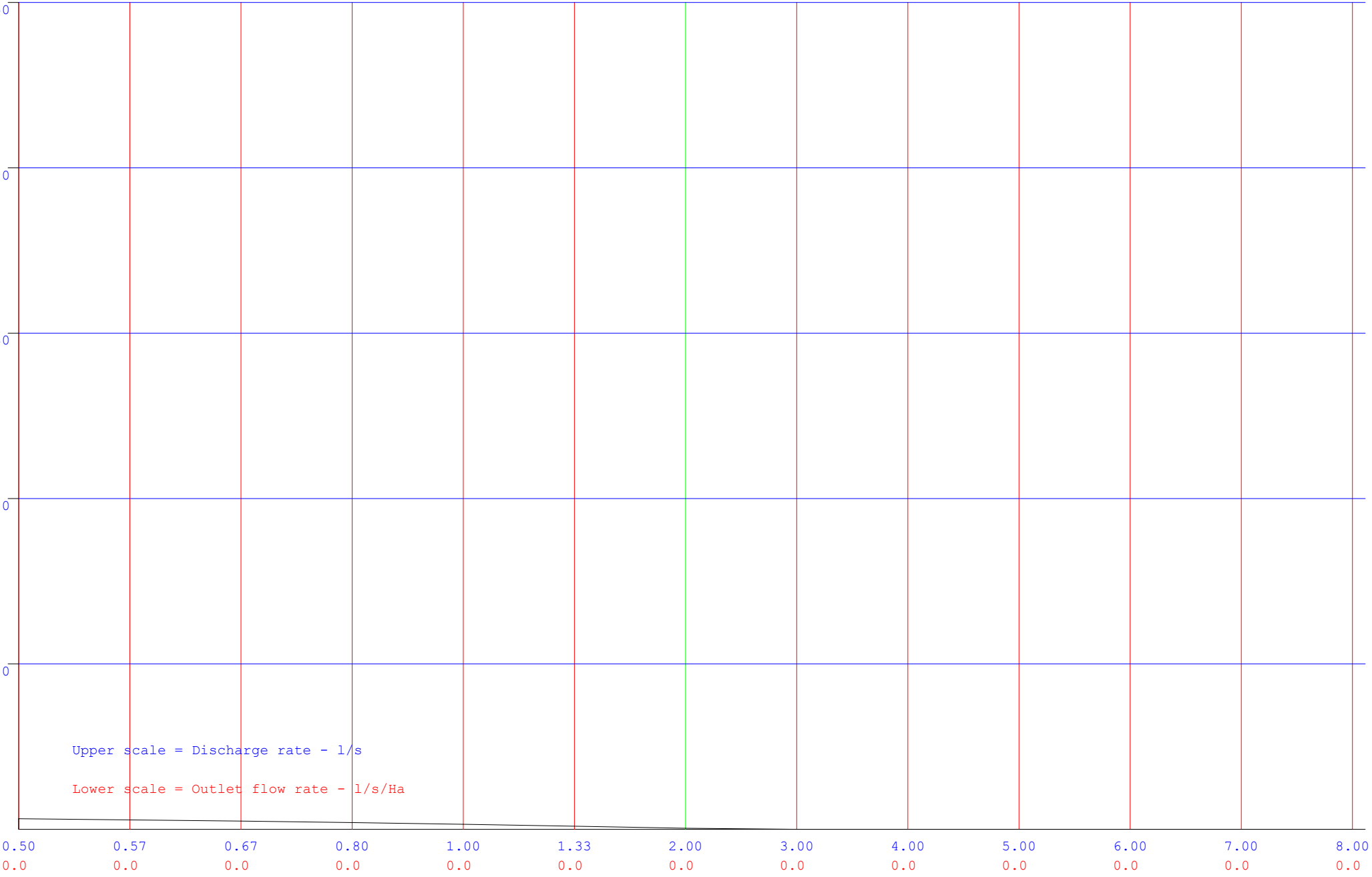

Appendix D – References

[1] Department for Environment, Food & Rural Affairs, March 2015, “Non-statutory technical standards for sustainable drainage systems”.
[2] Ministry of Housing, Communities and Local Government, August 2022, “Planning practice guidance”.
[3] Ministry of Housing, Communities and Local Government, December 2010, “Drainage and waste disposal: Approved Document H”, Part H3.

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

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