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**Land at Ebsworth St.,
The Moston Superstore,
Moston**

Drainage Strategy Report

Date: November 2025

9535-SWF-XX-XX-TR-S-0201

S1: Issued for Information

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Report Details

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Report Reference	9535-SWF-XX-XX-TR-S-0201
Client	The Moston Superstore
Author	Phil S Sarbutts
Approval by	Phil S Sarbutts

Revision History

Version	Date	Suitability	Revision
P01	16/12/2025	S1: Issued for Information	Issued For Information
P02	17/12/2025	S1: Issued for Information	Updated to include the latest architectural plans

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1. Development Details

- 1.1. The development site is the existing public car park bounded by Ebsworth Street, Moston Road, Penn Street and Kenyon Lane in Moston, Manchester.
- 1.2. The postcode for the site is M40 9WB with the approximate National Grid Reference being 387028E, 401886N.
- 1.3. The northern boundary of the site is formed with the properties fronting onto Moston Lane with the western boundary against Ebsworth Street. The southern boundary is formed by Penn Street with the eastern side bounded by Kenyon Lane.
- 1.4. The proposal for the development will see the construction of a new superstore for the relocated Moston Superstore with space for customer parking, deliveries and a two-storey building and a basement for storage.
- 1.5. The building is likely to be a small steel framed structure with a masonry envelope.
- 1.6. Details of the existing site layout can be found in Appendix A at the rear of this report.
- 1.7. Details of the proposed development can be found in Appendix B with an extract reproduced below.

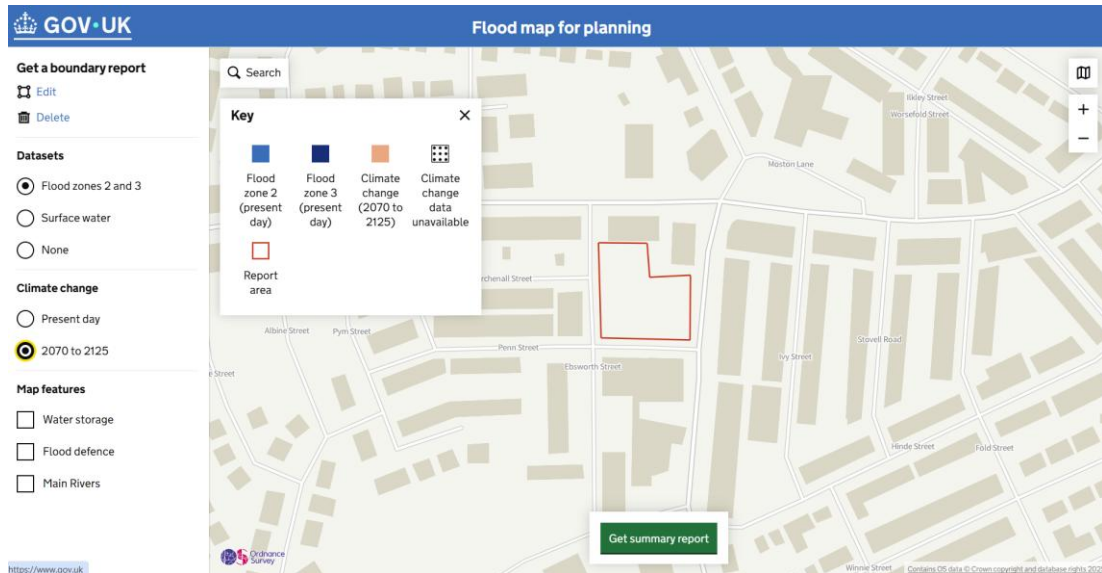


- 1.8. The red line on the extract indicates the planning application boundary for the site.



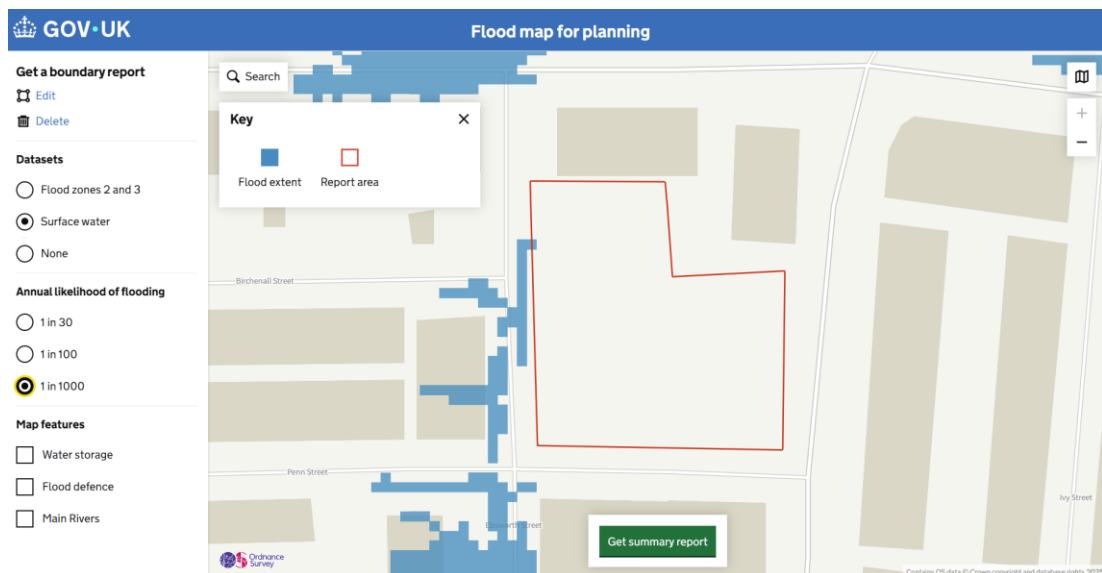
2. Flood Zone Classification

- 2.1. Environment Agency maps have been consulted online and these show the site to be in Flood Zone 1.



- 2.2. Therefore, the site has a low probability of flooding having a less than 1 in 1000 annual probability of river or sea flooding.

- 2.3. The online mapping also indicates that the site is within an area at very low risk of surface water flooding.



- 2.4. Flooding from groundwater is unlikely in the area according to the long-term flood risk data available online.

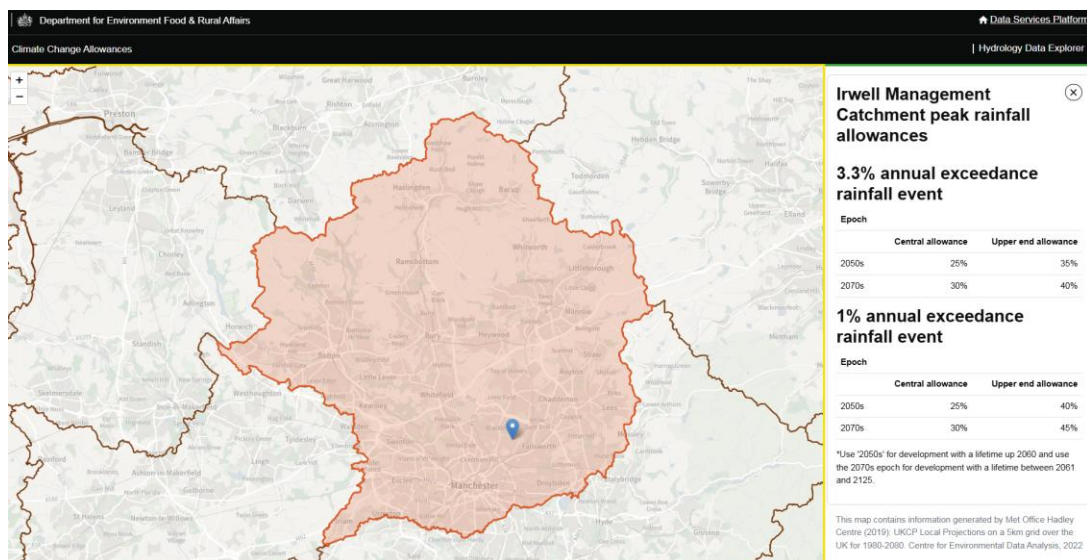
- 2.5. Reservoir flooding is also unlikely according to this same dataset.

- 2.6. The flood map for planning purposes has been included within Appendix D.



3. Climate Change Allowance

- 3.1. The current guidance indicates that the change in the UK climate could result in significant changes to storm profiles and intensities and therefore an allowance should be made for this within the designs.
- 3.2. The current EA advice can be obtained from the government website. Climate change allowances for peak rainfall intensity are therefore considered on the basis of the river basin catchment area and the design life of the proposed development.
- 3.3. Given the lifetime of the development is expected to be 50 years the peak rainfall intensities can be obtained using the upper end allowances within the EA guidance.
- 3.4. Mapping shows the site to be in the Irwell Management catchment with the information indicated below.



- 3.5. Given the information on the EA website, a climate change allowance of 45% will be taken within the design, representing the upper end allowance for the 1% annual exceedance rainfall event (100YR event). A 40% allowance shall be considered for the 3.3% event (30YR event).
- 3.6. In addition, the requirements of the Building Regulations will be met in that no surface flooding will be accepted for the 1 in 30-year storm event and no surface water shall escape the site boundary for the 100-year event.



4. Existing Drainage Details

4.1. Surface Water Drainage

- 4.1.1. Details of the existing site can be found in Appendix A with very little evidence of drainage on the site.
- 4.1.2. The topographic survey appears to suggest that the entire site is drained via a single gully to the southern perimeter of the site.
- 4.1.3. Reviewing Google Maps, using the StreetView system, we can see a further gully to the boundary with the properties to the north but there is no evidence of manholes within the site.
- 4.1.4. It is therefore presumed that the drainage is also allowed to escape the site boundary and discharge to the surrounded road network which does contain gullies.
- 4.1.5. The red line boundary to the development covers 2210m² of which, in the existing situation, very little is soft landscaping.
- 4.1.6. There is some nominal landscaping to the east, west and southern boundaries but, for the purposes of the calculations, these will be ignored.
- 4.1.7. QBAR for the site has been determined as 2.3l/s, as shown within Appendix F, using the UKSuds website (<https://www.uksuds.com/>).
- 4.1.8. Discharge from the site, based on calculated rainfall intensities for a 15-minute storm have been calculated within Appendix G, using InfoDrainage software and reproduce in the table below:

Storm	rainfall intensity (mm/hr)	drained area (m ²)	discharge (l/s)
2 year	33.3	2210	20.4
30 year	73.3	2210	45.0
100 year	92.6	2210	56.8
100 year + 45%CC	134.27	2210	82.4

- 4.1.9. This discharge is currently presumed to be taken to the combined water network under Penn Street.

4.2. Foul Water Drainage

- 4.2.1. Given the site is currently a car park it is not expected to have any foul water connections serving the site.
- 4.2.2. Sewer records show there are 300mm combined sewers passing under Ebsworth Street and Penn Road with a 500mm pipe under Kenyon Lane.



5. Proposed Drainage Details

5.1. Surface Water Drainage

5.1.1. Under the hierarchical approach from within the National Planning Practice Guidance, discharge of surface water should be considered in the following order:

- i. Infiltration
- ii. Surface water body (river/ watercourse etc)
- iii. surface water sewer or highway drain
- iv. combined sewer

5.1.2. Given that there is very little drainage to the site we are anticipating that drainage will need to either infiltrate or re-use the existing gully connection from the site for the discharge.

5.1.3. As part of the works to the site we would expect infiltration testing to be undertaken to determine the suitability of the site for infiltration drainage. Testing should be undertaken in accordance with BRE 365 or using falling head testing.

5.1.4. At the time of writing the report there is no ground investigation available but reference has been made to the British Geological Society online records.

5.1.5. Two historic boreholes have been found within 250m of the site and are therefore thought to be representative of the likely findings of any investigation. This have been reproduced within Appendix I and indicate clay-based material across the site and therefore unlikely to be suitable for infiltration techniques.

5.1.6. A pre-development enquiry has been submitted to United Utilities and their response with provided within Appendix E.

5.1.7. The UU response has suggested that a discharge rate of 5l/s can be accepted within the 300mm combined sewer under Ebsworth Street with the point of connection being manhole 0809.

5.1.8. The proposed development area is 2210m² and considering this for a storage volume would give the following volumes presuming no infiltration and limiting discharge to QBAR (2.3l/s) or 5l/s as permitted by United Utilities:

Discharge Rate	2 YR	30 YR	30 YR + 40% CC	100 YR	100 YR + 45% CC
2.3 l/s	22 to 39 m ³	57 to 90 m ³	91 to 146 m ³	78 to 131 m ³	130 to 216 m ³
5.0 l/s	13 to 27 m ³	43 to 67 m ³	68 to 106 m ³	60 to 92 m ³	99 to 158 m ³

5.1.9. The full results are available within 0.

5.1.10. The discharge is to be controlled by a flow control device, such as an orifice plate, and then discharged into the existing sewer network.

5.1.11. UU manhole 0809 has a cover level of 86.71m with the invert at 82.11m suggesting a depth of sewer 4.60m which will need careful consideration when making the connection.

5.1.12. In the unlikely event that infiltration techniques are proven possible then this method of disposal must be used.

5.1.13. Indicative details of the proposed drainage can be found within Appendix J although this will be subject to final designs.

5.1.14. It is expected that the discharge rate shall be limited to 5.0l/s in line with the United Utilities proposal and reducing the risk of blockage to any flow control device.

5.1.15. The expected storage volume is therefore to be between 100 and 160m³.



5.1.16. The site is to be provided with a separator to improve the water quality being discharged from the site. A SPEL ESR separator should be provided as this product can supply the required mitigation under the simple index approach to water quality risk.

5.1.17. The separator shall have high level alarms which should be routed to the manager's office to ensure any failure in the system is quickly addressed.

5.2. Foul Water Drainage

5.2.1. There is a small butchery to be provided to the ground floor of the superstore but the vast majority of the foul drainage is expected to be on the first floor where the staff accommodation is located.

5.2.2. It is therefore expected that foul water drainage will be able to connect to the existing sewer network around the site.

5.2.3. Discharge is to be domestic in nature and will not require trade effluent consents.

5.2.4. A pre-development enquiry has been submitted to United Utilities in connection with the site and they have confirmed that a connection should be made to the 300mm combined sewer in Ebsworth Street via manhole 0809.

5.2.5. UU manhole 0809 has a cover level of 86.71m with the invert at 82.11m suggesting a depth of sewer 4.60m which will need careful consideration when making the connection.



6. Exceedance

- 6.1. The surface water network is to be designed such that all storm events, up to and including the 100 Yr event, shall be stored below ground within the attenuation system.
- 6.2. Exceedance events will therefore see surface water for greater storms appear on the surface and this must be considered to ensure no increased risk from the development proposals to neighbouring properties.
- 6.3. Reviewing the topographic survey shows that the site generally falls towards the southwestern corner and therefore exceedance flooding is expected to be present in this area.
- 6.4. The car park is expected to be surrounded by 125mm kerbing and this is expected to provide protection to surface water leaving the site. However, it is worth noting that this is the same as the undeveloped site and therefore there will not be a worsening of the existing situation.



7. Future Maintenance

7.1. Surface Water

- 7.1.1. The surface water drainage network should be treated like any other gravity-based drainage system.
- 7.1.2. As part of the maintenance, it is recommended that gullies or channel drains are cleared of silt build up on an annual basis to prevent the build-up of silts within the below ground drainage network.
- 7.1.3. As with any drainage system it is recommended that jet clearing of the system is undertaken on a 5 yearly basis. This should check for defects in the pipework and allow for the removal of any debris.
- 7.1.4. Any flow control devices will also need annual inspections and should be checked to ensure they are in full working order, particularly after heavy storms.
- 7.1.5. The separator should be placed under a maintenance contract with the manufacturer to ensure it remains operational.

7.2. Foul Water

- 7.2.1. The foul water installation is also a gravity-based system and therefore is subject to a similar inspection regime.
- 7.2.2. It is recommended that the system is cleaned on a 5-yearly basis which checks for pipe defects and allows for removal of any blockages.

7.3. Financial Responsibility for Replaced Elements

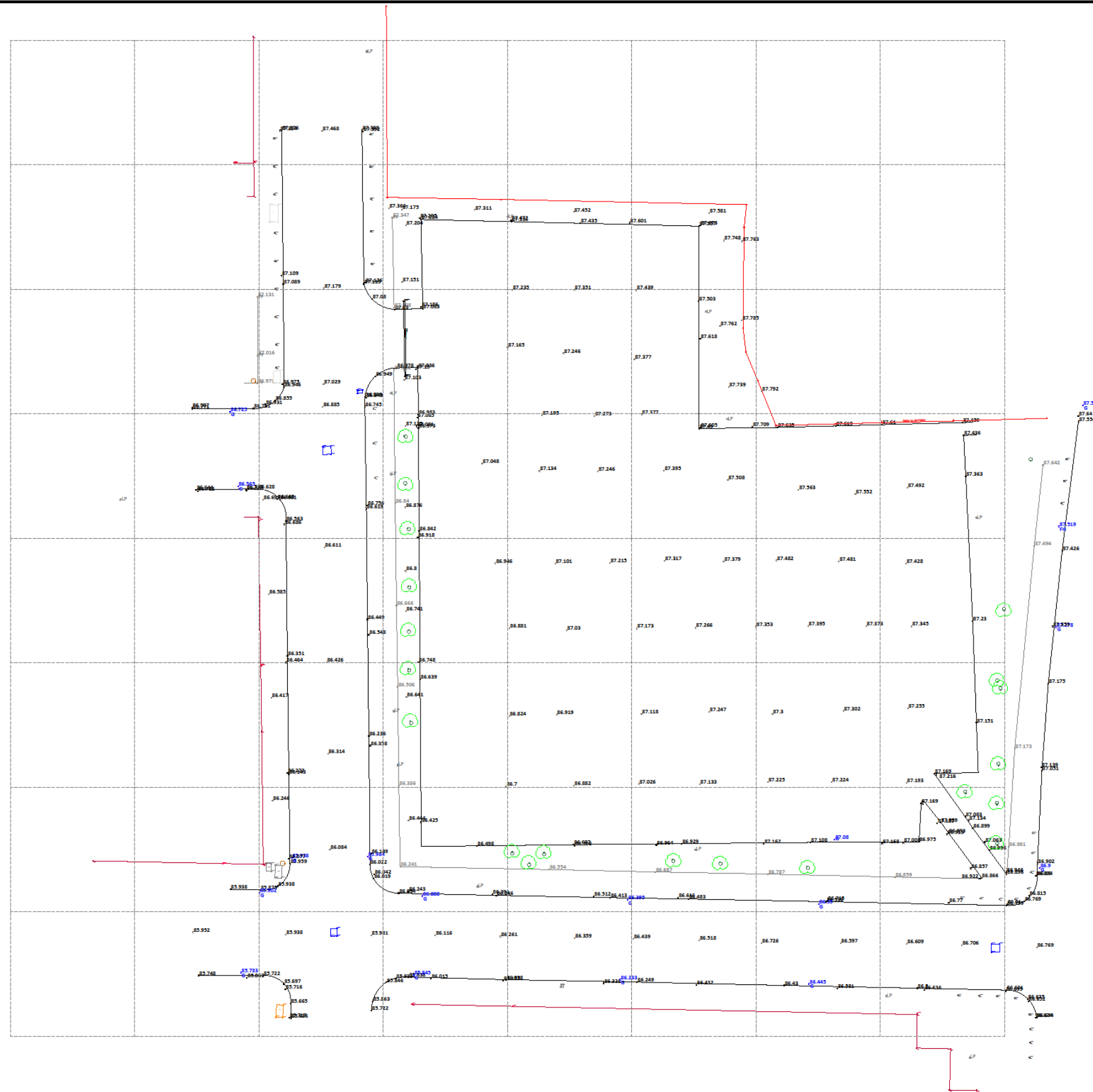
- 7.3.1. The entire drainage system is to remain a private network and therefore all responsibility for upkeep and replacement of components will fall to Moston Superstore or subsequent site owners. At the time of writing this document the person responsible is as noted in paragraph 7.4.1.
- 7.3.2. Pipes and manholes have a design life of at least 50 years.
- 7.3.3. The design life of the permeable surfacing is expected to be at least 20 years although, should degradation occur, a replacement product must be sought in accordance with the installed system.

7.4. Responsible Person

- 7.4.1. It is expected that the responsibility for the maintenance of the drainage system will lie with the business owner Mr Haider Jan Jaj.
- 7.4.2. It is expected that the business owner will sub-contract all maintenance work to a specialist drainage contractor.
- 7.4.3. Contact is expected to be arranged through the superstore but, at this present time, the contact telephone numbers have yet to be agreed.



Appendix A Existing Site Plan/ Topographic Survey



Notes

ONLY MANHOLES AND SERVICES VISIBLE
AT TIME OF SURVEY SHOWN

TREE SPREADS ARE SYMBOLIC ONLY AND
REPRESENT AVERAGE SPREAD

LEVELS DEFINING CARRIAGEWAY ARE
OBSERVED AT CHANNEL(BTM OF KERB)
UNLESS STATED

Name	Easting	Northing	Height

TOPOGRAPHICAL SURVEY LEGEND

FL	Floor Level
RH	Ridge Level
EH	Eaves Level
DSW	Dry Stone Wall
G	Gully
GP	Gate Post
P	Post
IC	Inspection Chamber
TH	Trial Hole
WL	Water Level
BC	Building Canopy
FPP	Fence Post Panel
FIR	Fence Iron Roll
FPW	Fence Post Wire
FPR	Fence Post Roll

0			Original Drawing
Rev	Date	Drawn	Description

STEVEN TILLEY ENGINEERING LTD
66 TINTAGEL, SKELMERSDALE, LANC'S
WN8 8PF
STEngineering@hotmail.co.uk

Client
MARTIN SPENCER
ARCHITECTURE LTD

Site Location
EBSWORTH ST, MOSTON

Title
TOPOGRAPHICAL LAND SURVEY

Surveyed	JK	Drawn	22.07.2025
Dwg.Chk.	AF	Approved	ST
Scale	EBSWORTH ST, MOSTON		Status
	CAD file		
Drawing No	EBS-MOS-001		Rev
			P1



Appendix B Proposed Site Plan





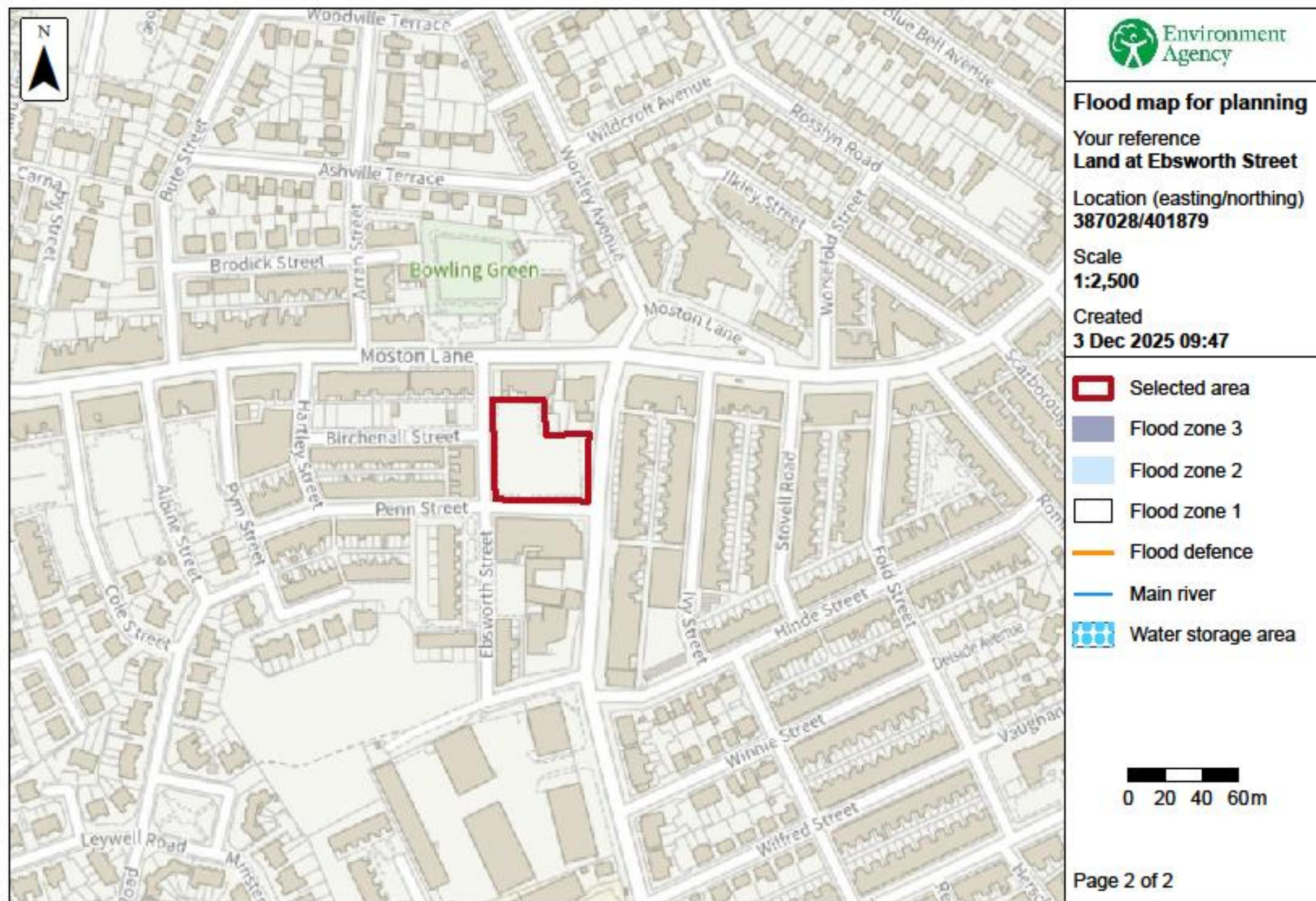
Appendix C Sewer Records







Appendix D Flood Map for Planning





Appendix E United Utilities Pre Development Enquiry Response



WASTEWATER PRE-DEVELOPMENT ENQUIRY



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

08/12/2025

Dear Phil Sarbutts,

Pre-Development Enquiry for Land at Ebsworth Street Moston Manchester M40 9WB UU Reference Number: 07943347

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

We have reviewed our records and can confirm that there does not appear to be any charted public sewers located within the boundary of the proposed development.

[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 300m diameter public combined sewer within Ebsworth Street located West of your proposed development at an unrestricted rate.

Manhole reference SD87010809, Grid reference x:387001 y:401887

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

Surface Water



WASTEWATER PRE-DEVELOPMENT ENQUIRY



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.

[Please see comment 4 within the guidance sheet](#)

Infiltration

[Please see comment 4 within the guidance sheet](#)

(If evidence of infiltration not being feasible has been provided, please state so)

Waterbody

There are no chartered watercourses with in the vicinity of the development

Public Sewer

United Utilities will consider a connection to the 300mm diameter public combined sewer within Ebsworth Street located West of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities requests that any agreed rate does not exceed 5 l/s.

Manhole reference SD87010809, Grid reference x:387001 y:401887



Water for the North West

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WASTEWATER PRE-DEVELOPMENT ENQUIRY

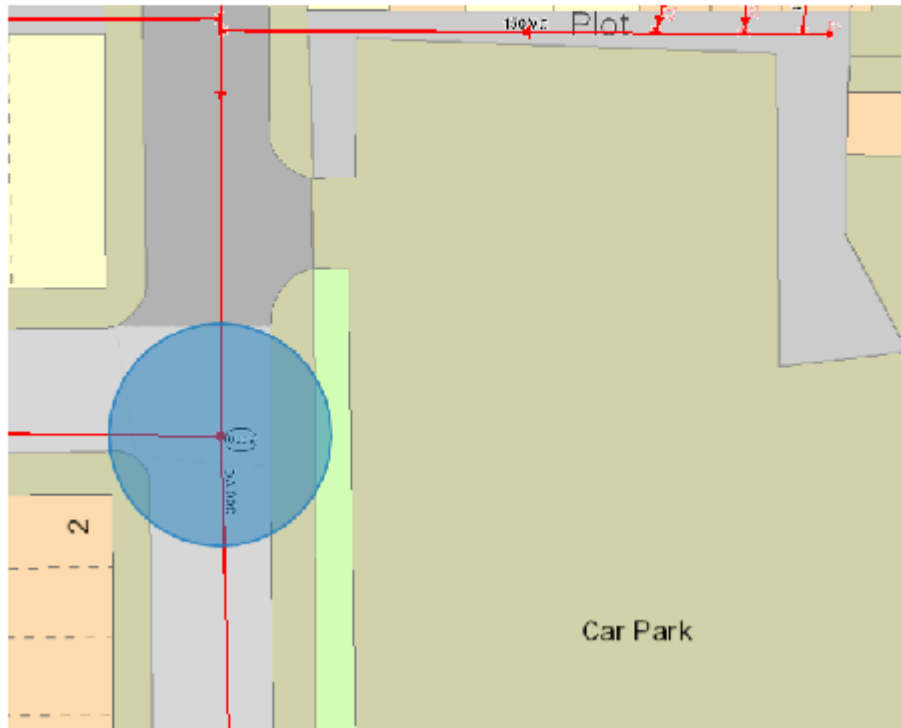


Figure 2 Recommended Point of Connection for Surface Water and Foul



Appendix F Greenfield Run Off Calculation



Greenfield runoff rate estimation tool

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

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

Project details

Date	03/12/2025
Calculated by	Phil Sarbutts
Reference	9535
Model version	2.2.2

Location

Site name	Moston Superstore
Site location	Ebsworth Street



Site easting (British National Grid)	387030
Site northing (British National Grid)	401874

Site details

Total site area (ha)	0.2210	ha
----------------------	--------	----



Greenfield runoff

Method

Method

FEH statistical (2025)

FEH statistical (2025)

	My value	Map value
SAAR9120 (mm)	1021	mm
BFIHOST19scaled	0.333	
QMed-QBar conversion	1.075	1.075
QMed (l/s)	2.1	l/s
QBar (FEH statistical 2025) (l/s)	2.3	l/s

Growth curve factors

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

Results

Method	FEH statistical (2025)
Flow rate 1 year (l/s)	2.0
Flow rate 2 year (l/s)	2.1
Flow rate 10 years (l/s)	3.1
Flow rate 30 years (l/s)	3.9
Flow rate 100 years (l/s)	4.7
Flow rate 200 years (l/s)	5.4

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

Disclaimer

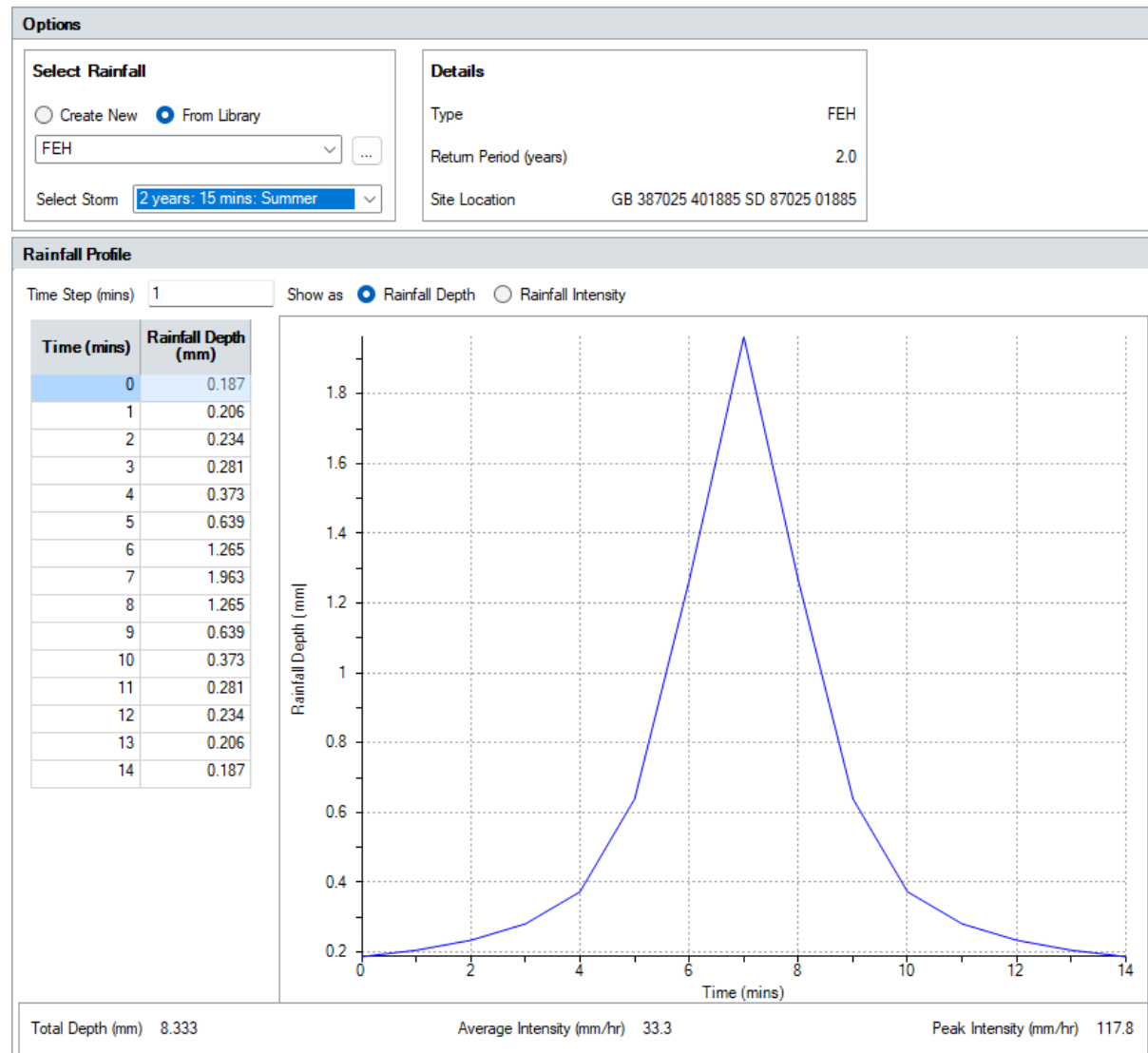
This report was produced using the Greenfield runoff rate estimation tool (2.2.2) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com/) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.



Appendix G Rainfall Intensity Calculations

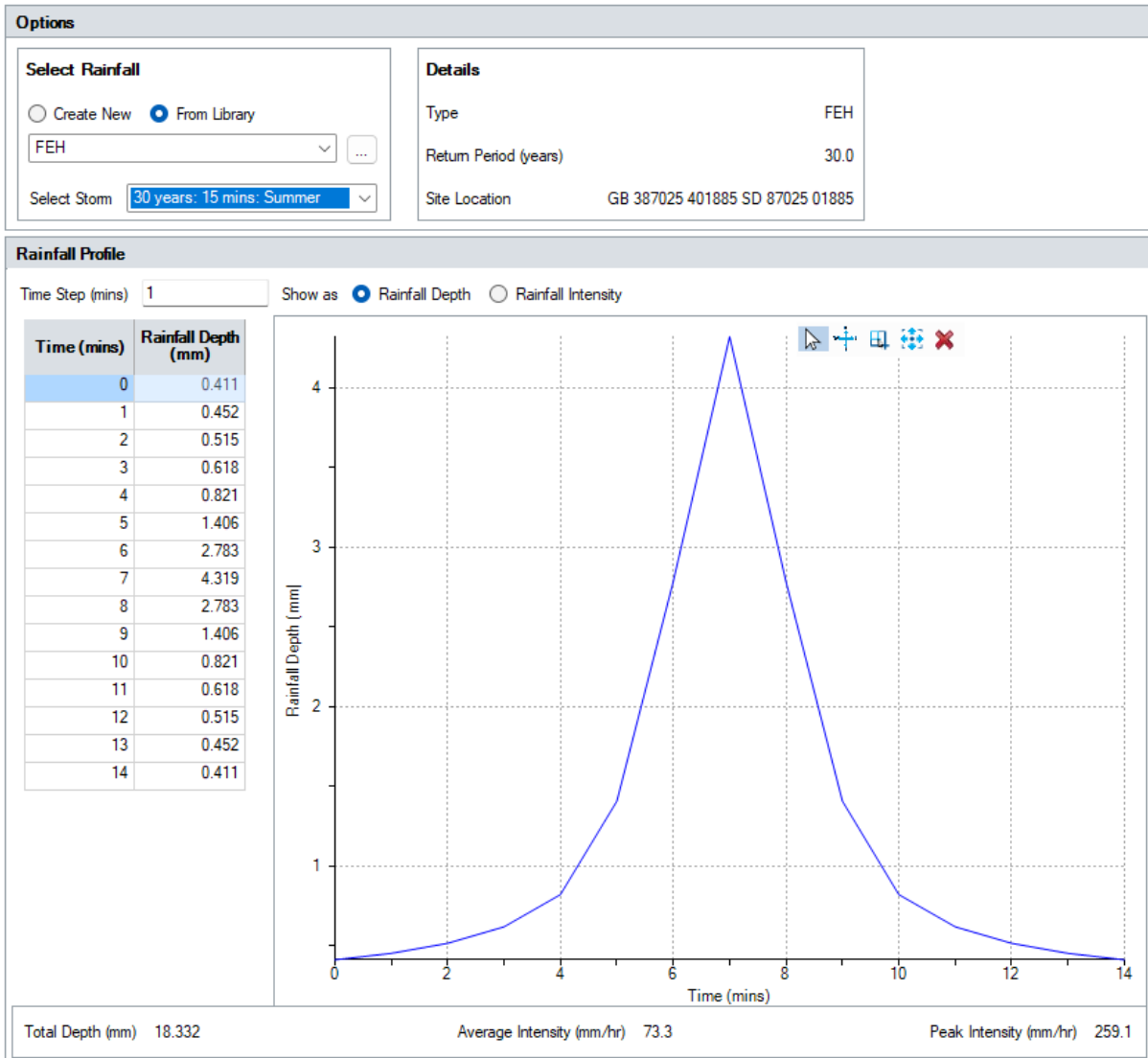


2 Year storm



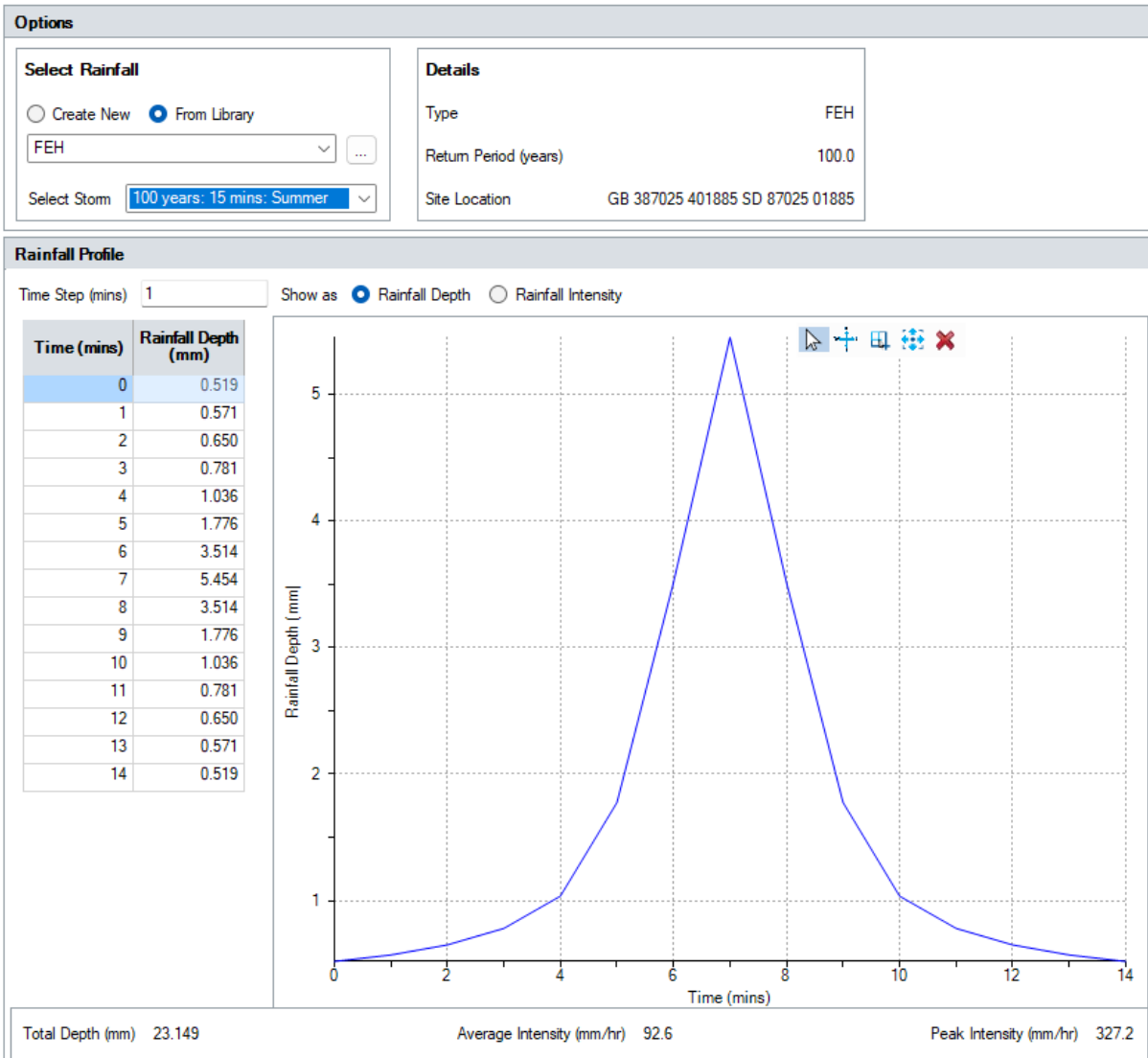


30 Year storm





100 Year storm





Appendix H Storage Estimates



Input: 2.3l/s discharge

Quick Storage Estimate

Input	
Input Type	User Input
Area (ha)	0.221
Volumetric Runoff Coefficient	0.900
Discharge Rate (L/s)	2.3
Infiltration Rate (m/hr)	0.0
Safety Factor	2.0
	Quick
☐ Create New ☒ From Library All FSR FEH ...	
Method	FEH
Number of Storms	90
Max. Run Time (mins)	2880

Calculate

2 Year storm:

Results

Quick Storage Estimate variables require approximate storage of between 22m³ - 39m³.

These values are estimates only and should not be used for final design purposes.

30 Year storm:

Results

Quick Storage Estimate variables require approximate storage of between 57m³ - 90m³.

These values are estimates only and should not be used for final design purposes.

100 Year storm:

Results

Quick Storage Estimate variables require approximate storage of between 78m³ - 131m³.

These values are estimates only and should not be used for final design purposes.

30 Year storm + 40% CC:

Results

Quick Storage Estimate variables require approximate storage of between 91m³ - 146m³.

These values are estimates only and should not be used for final design purposes.

100 Year storm + 45% CC:

Results

Quick Storage Estimate variables require approximate storage of between 130m³ - 216m³.

These values are estimates only and should not be used for final design purposes.



Input: 5l/s discharge

Quick Storage Estimate

Input

Input Type	User Input
Area (ha)	0.221
Volumetric Runoff Coefficient	0.900
Discharge Rate (L/s)	5.0
Infiltration Rate (m/hr)	0.0
Safety Factor	2.0
	Quick
☐ Create New ☒ From Library	
☒ All ☐ FSR ☒ FEH ...	
Method	FEH
Number of Storms	90
Max. Run Time (mins)	2880

Calculate

2 Year storm:

Results

Quick Storage Estimate variables require approximate storage of between 13m³ - 27m³.

These values are estimates only and should not be used for final design purposes.

30 Year storm:

Results

Quick Storage Estimate variables require approximate storage of between 43m³ - 67m³.

These values are estimates only and should not be used for final design purposes.

100 Year storm:

Results

Quick Storage Estimate variables require approximate storage of between 60m³ - 92m³.

These values are estimates only and should not be used for final design purposes.

30 Year storm + 40% CC:

Results

Quick Storage Estimate variables require approximate storage of between 68m³ - 106m³.

These values are estimates only and should not be used for final design purposes.

100 Year storm + 45% CC:

Results

Quick Storage Estimate variables require approximate storage of between 99m³ - 158m³.

These values are estimates only and should not be used for final design purposes.



Appendix I Historic Borehole Records

[illegible]



(B11857) Wk. 17852-8154--5,000 12/26 Sp. 160. O.A.

SD 80 SE 246

SECTION OF Borehole

at Barnes Green
N. Manchester.

Maps: One-inch 85 Six-inch 965.E.E. County Lancs.

Height above O.D. 282.15 ft. Latitude - Longitude -

Communicated by Manchester Corporation. Date of Sinking -

Made by - Dip of Strata -

	Thickness.		Depth from Surface.	
No. 4 282.15 ft. O.D. 30 yds. S. of corner of Penn St. & Kenyon Lane, STREET FOLD, MOSTON.				
Filling, clay & stones	2	6	0.76	2 6
[965.E.E.] Dark loamy soil	1	-	1.06	3 6
Light loamy clay. (Water level. 10 ft.)	8	6	3.65	12 -
Stiff brown clay	7	-	5.79	19 -
Hard brown sand	4	-	7.01	23 -
Stiff brown clay	2	-	7.62	25 -
Light loamy clay	3	6	8.68	28 6
Hard brown boulder clay.	14	6	13.10	43 -
Brown loamy clay.	2	-	13.71	45 -
Hard brown boulder clay	10	-	16.76	55 -
Hard brown loamy sand.	9	6	19.65	64 6
Stiff brown clay.	3	6	20.72	68 -
Soft brown loamy clay	6	-	22.55	74 -
Hard red sand	5	-	24.07	79 -
Running sand.	10	-	27.12	89 -
Hard brown sand.	9	-	29.87	98 -
Loamy clay.	11	-	33.22	109 -



Appendix J Proposed Schematic Drainage Layout

