3517 – Concord Logistics**, Flood Risk Assessment and Drainage Strategy**

Contents

1. Introduction
2. Site Description
   - 2.1 Existing Development
   - 2.2 Proposed Development
   - 2.3 Site Topography and Geology
3. Flood Risk
   - 3.1 Flood Risk from Rivers and/or the Sea
   - 3.2 Flood Risk from Surface Water and Overland flows.
   - 3.3 Flood Risk from Sewers
   - 3.4 Flood Risk from Groundwater
   - 3.5 Summary
4. Existing Drainage Arrangements
   - 4.1 Public Drainage Network
   - 4.2 Private Drainage Network
   - 4.3 Existing Surface Water Runoff Rates
5. Proposed Drainage Arrangements
   - 5.1 Surface Water Drainage
   - 5.2 Proposed Foul Water Drainage Strategy
   - 5.3 Drainage Inspection and Maintenance Strategy
6. Conclusions

Appendices

A. Proposed Site Plans

B. Flood and Geology Maps

C. United Utilities Asset Map

D. Topographic Survey

E. CCTV Survey Plans

F. Existing Runoff Rate Calculations

G. Greenfield Runoff Rate Calculations

H. Proposed SuDS Strategy

I. Proposed Drainage Calculations

J. SuDS Maintenance Plan

Status: Planning
Date: 16-12-2025
Revision: P02
Job no: 3517
Prepared by: Matthew Quant
Approved by: Ronan Hennessy

This report relies on information generally accessible at the time of writing. This report should be considered in the context of any alterations in legislation, statutory requirements, or industry practices that might have transpired after the date of issue. Unless expressly stated otherwise, this report is not intended as a letter of reliance and it is not intended to confer or create any right enforceable by any person not party to it. This report is subject to the standards of skill, care and diligence expected of a reasonably competent member of the profession. This report shall not extend the duty of Heyne Tillett Steel Ltd to the level of fitness of purpose. Heyne Tillett Steel Ltd do not, in issuing this report, accept or assume responsibility for any other purpose or to any other person who may come into possession and/or have sight of this report, except for where agreed by Heyne Tillett Steel Ltd in writing.

1. Introduction

This Flood Risk Assessment and SuDS Strategy Report has been prepared by Heyne Tillett Steel (HTS) to support the planning submission to Manchester City Council (as Lead Local Flood Authority-LLFA) in relation to the proposed redevelopment at Concord Business Park, Threapwood Rd, Wythenshawe, Manchester, M22 0EY, hereafter referred to as 'the site'.

This report aims to incorporate and demonstrate compliance with the following national, regional and local planning policy guidance and statutory requirement as far as reasonably possible:

+ National Planning Policy Framework (NPPF), 2024
+ Planning Practice Guidance (PPG), 2024
+ Manchester City, Salford City and Trafford Councils (MST) Level 1 Hybrid SFRA, 2010.
+ Manchester City, Salford City and Trafford Councils (MST) Level 2 Hybrid SFRA, 2011.
+ Level 1 Strategic Flood Risk Assessment for Greater Manchester, 2019
+ Greater Manchester Surface Water Management Plan (SWMP), 2012
+ Manchester City Council Local Flood Risk Management Strategy (LFRMS), 2014

2. Site Description

2.1 Existing Development

The Site comprises land and buildings at Concord House, within Concord Business Park, on Threapwood Road, in Wythenshawe. It measures approximately 3ha, has a predominantly flat topography and is irregular in shape.

Concord House is a large floorplate office building, surrounded by areas of car parking and significant areas of landscaping. Vehicular access to the Site is made from Threapwood Road, whilst pedestrian access can be made by the same route or directly from Simonsway.

The Site is not located within a Conservation Area, nor are there any statutorily or locally listed buildings either on-site or in the local area.

The Site is bound by the Metrolink and Simonsway, to the north, areas of woodland to the east and west, Longley Lane to the north and existing industrial buildings to the east. To the south-east lies the remaining areas of Concord Business Park, whilst to the south-west lies residential dwellings on Hatchett Road and Coxton Road, which are visually separate from the Site by virtue of existing trees and landscaping. The National Grid reference of the site is 383240E, 386403N.

2.2 Proposed Development

Erection of two-storey Warehouse Units (Use Class B2/ B8/ E(g)(iii)), with ancillary offices and trade counters, along with all associated works including landscaping, car parking and alterations to access arrangements.

2.3 Site Topography and Geology

A topographical survey has been conducted at the site by Powers in August 2025. Refer to Appendix D. The existing building sits at the approximate centre of the site, with the ground level falling in a south to north direction, with the southern boundary of the site at approximately 67.00mAOD falling to approximately 65.45mAOD at the northern boundary of the site.

A site investigation has yet to be conducted for the site, however, British Geological Survey (BGS) borehole records show a series of boreholes logs adjacent to the northern boundary, thought to be produced as part of the Metrolink works and investigations in June 2010, shown in Appendix B. These records show that there is made ground (0.15m - 2.70m BGL) underlain by weak siltstone layer (2.70m – 3.20m BGL) over a weak layer of mudstone (3.20m – 5.56m BGL). The BGS maps also indicates the site is located on superficial deposits of Till classified as Devensian-Diamicton, underlain by bedrock geology of Bollin Mudstone. The report also states that the site is not located within a groundwater Source Protection Zone (SPZ) and there are no SPZs within 500m of the site.

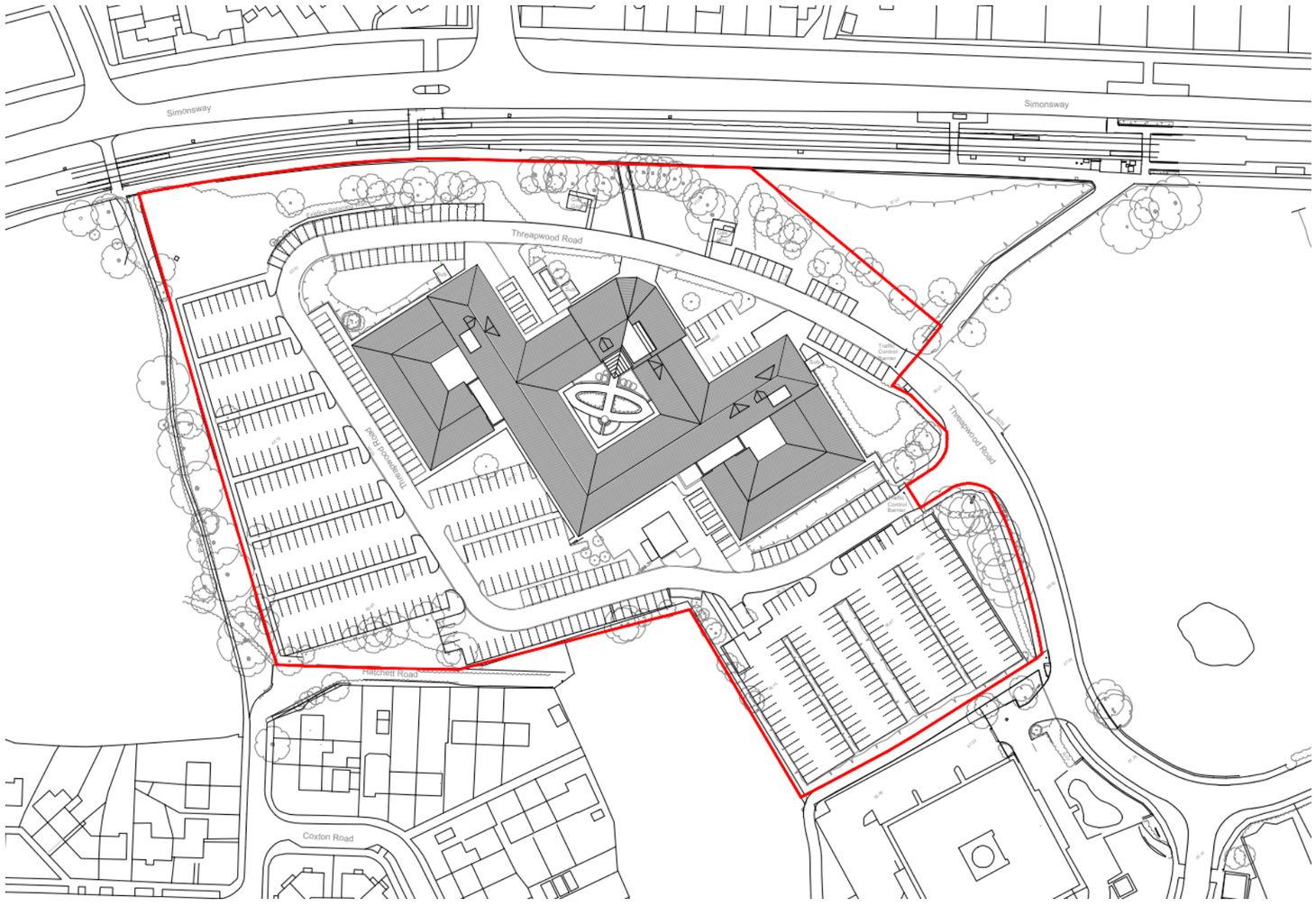


Image 1 - Existing Site

3. Flood Risk

In order to determine the risk of flooding for the development site, the Environment Agency (EA)'s website was referenced as well as flood maps published by Manchester City Council, including information contained in the Strategic Flood Risk Assessment (SFRA) and Surface Water Management Plan (SWMP). Flood risk was also assessed in accordance with the technical guidance document to the NPPF.

3.1 Flood Risk from Rivers and/or the Sea

According to the Environment Agency (EA)'s Flood Map for Planning, shown in Image 2, the site is wholly within Flood Zone 1. This zone is defined as land having a less than 1 in 1000 annual probability of river or sea flooding (<0.1%).

As the site is classified as 'Less vulnerable' and lies in Flood Zone 1, all development is deemed appropriate, and the sequential and exception tests are not required. This is supported by Table 1 found in the NPPF guidance as shown below:

Flood Zones	Essential Infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water Compatible
Zone 1	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate
Zone 2	Appropriate	Exception Test Required	Appropriate	Appropriate	Appropriate
Zone 3a	Exception Test Required	Not Appropriate	Exception Test Required	Appropriate	Appropriate
Zone 3b	Exception Test Required	Not Appropriate	Not Appropriate	Not Appropriate	Appropriate

Table 1 - Flood Zone Vulnerability Matrix

The EA's Long-Term Flood Risk from Rivers and Sea Map indicates the site is wholly within an area at very low risk of river and/or sea flooding. Refer to Image 3. Therefore, the risk of flooding from rivers and/or the sea is considered low.

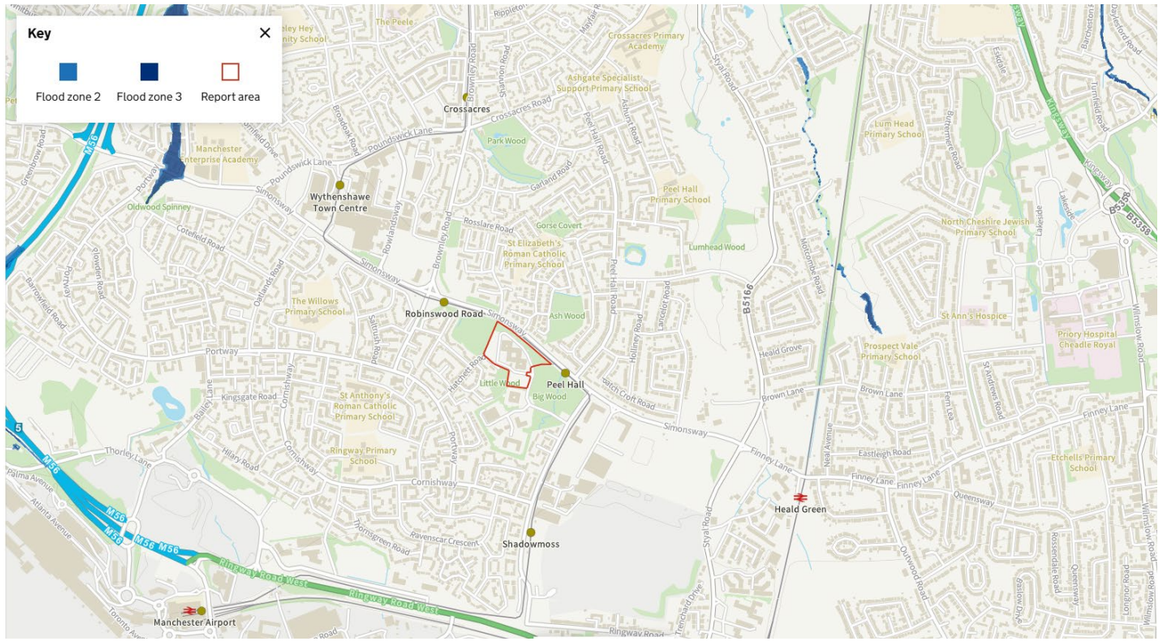


Image 2 - EA Flood Zones

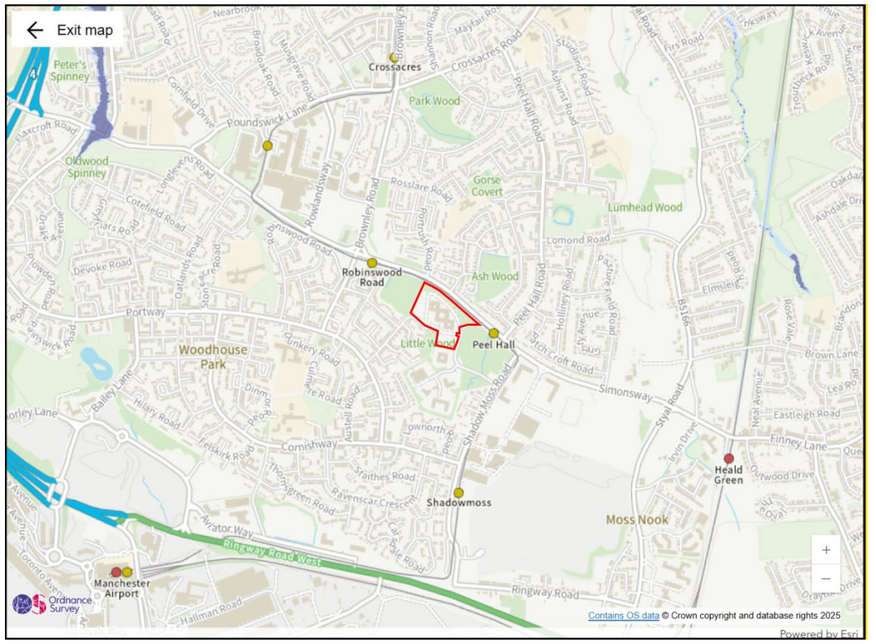


Image 3 - Flood Risk Map from Rivers and Sea

3.2 Flood Risk from Surface Water and Overland flows.

Surface water flooding occurs when rainwater neither drains away through the on-site drainage system nor soaks into the ground. It instead ponds locally or flows over the ground. Surface water flooding is typically associated with topographical low points.

The EA projected long term flooding map shows that there is a medium to high risk of surface water flooding. Refer to Image 4 for the EA surface water flooding map.

It can be seen on the EA surface water flooding maps that the area on site which shows medium flood risk is almost entirely matching the location of the existing building footprint. To explain the reasoning for this, it is worth discussing how these EA maps are created. The issue with the EA surface water flood mapping in urban areas arises primarily from the way the model represents structures, landscape, and highways. The EA's hydraulic models are based on LiDAR-derived topographic data, which can introduce inaccuracies in urban environments. During the processing of LiDAR data, buildings and raised features are removed to create a "bare-earth" digital terrain model (DTM). This filtering process often produces artificial low points where buildings or structures exist, which the model then interprets as potential flow routes or ponding areas.

In addition, the EA models assume buildings are flat impermeable surfaces and do not account for kerbs, thresholds, or formal drainage systems. As a result, the mapping frequently shows surface water routing through existing buildings or enclosed sites where these flows could not physically occur. In reality, runoff from roofs and paved areas are directed to the public sewer via private drainage networks, while most overland flow in this area would be conveyed along the adjacent highway network, contained by kerb lines and road gradients.

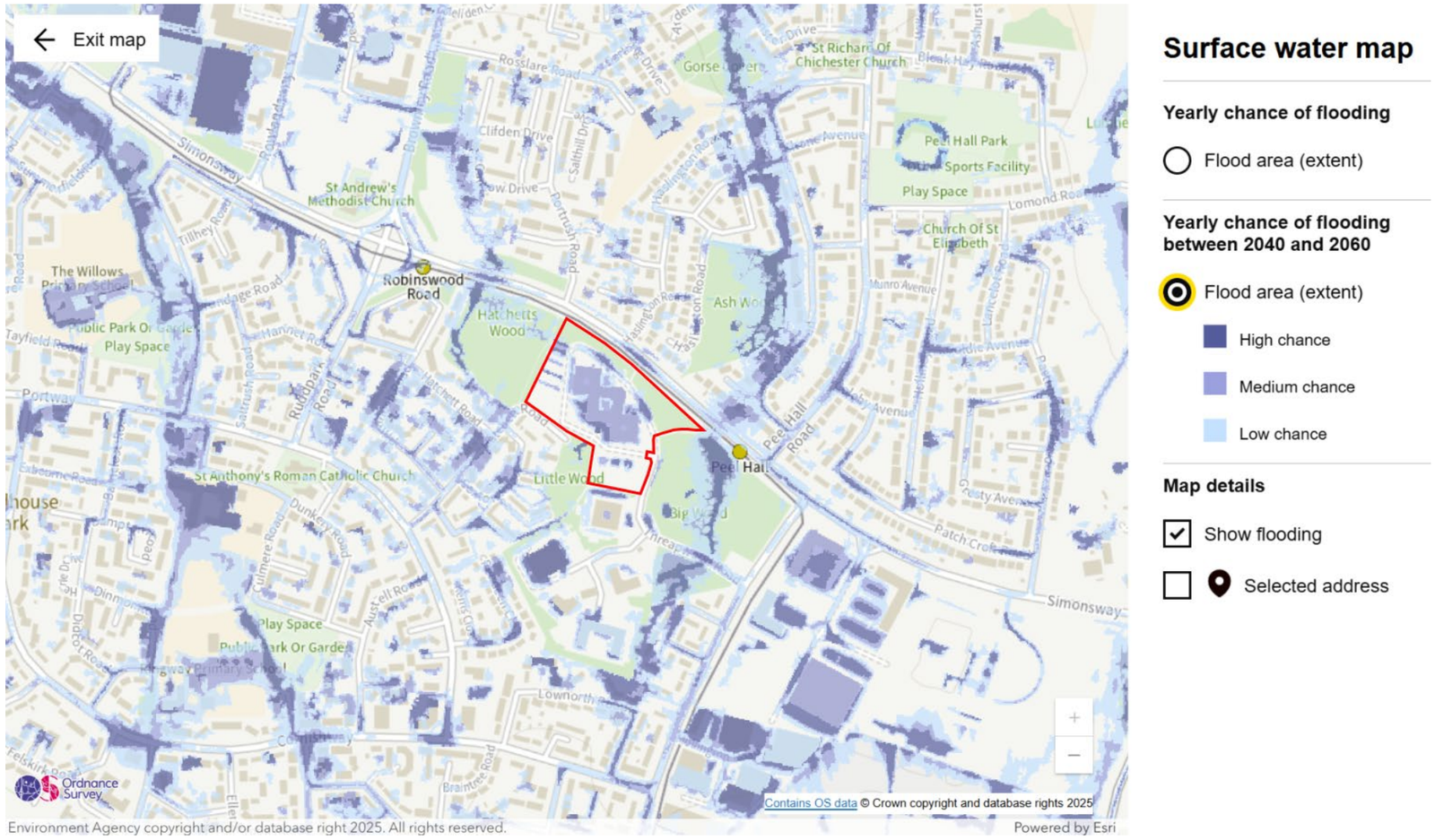


Image 4 - EA Surface Water Flooding Map

The EA's long-term surface water flood map indicates a medium-to-high risk area across parts of the site. However, this mapping does not consider the presence of existing buildings, raised thresholds, or drainage infrastructure. Given the existing site is already fully developed, the mapped flood extent is likely the result of a modelled topographic low point. There is also no record of historical flooding at the existing site. Although there is an overland flow route adjacent to site, this does not fall within the site boundary and appears to flow through the woodland area adjacent to the eastern boundary of the site.

The proposed scheme includes preliminary proposed FFLs equal or above the surrounding external levels. The proposed scheme will maintain existing pavement cross falls away from building thresholds, ensuring protection in exceedance events, this strategy will be expanded upon in Section 5 of this report.

It should be noted that the site is located within a Critical Drainage Area (CDA), specifically the "Manchester and Trafford South CDA", as identified in Image 5 extracted from the Level 2 SFRA.

The Level 1 SFRA for Greater Manchester states that the CDA policy for brownfield sites in Manchester requires developments to reduce runoff by 50% of the pre-development runoff rates. The policy also requires developments to be designed so that there is no flooding to the development in a 1 in 30 AEP event and no property flooding in a 1 in 100 year plus climate change event. This will be achieved through the private drainage system and SuDS design as discussed in Section 5.

The site is therefore considered to be at a low risk of surface water flooding.

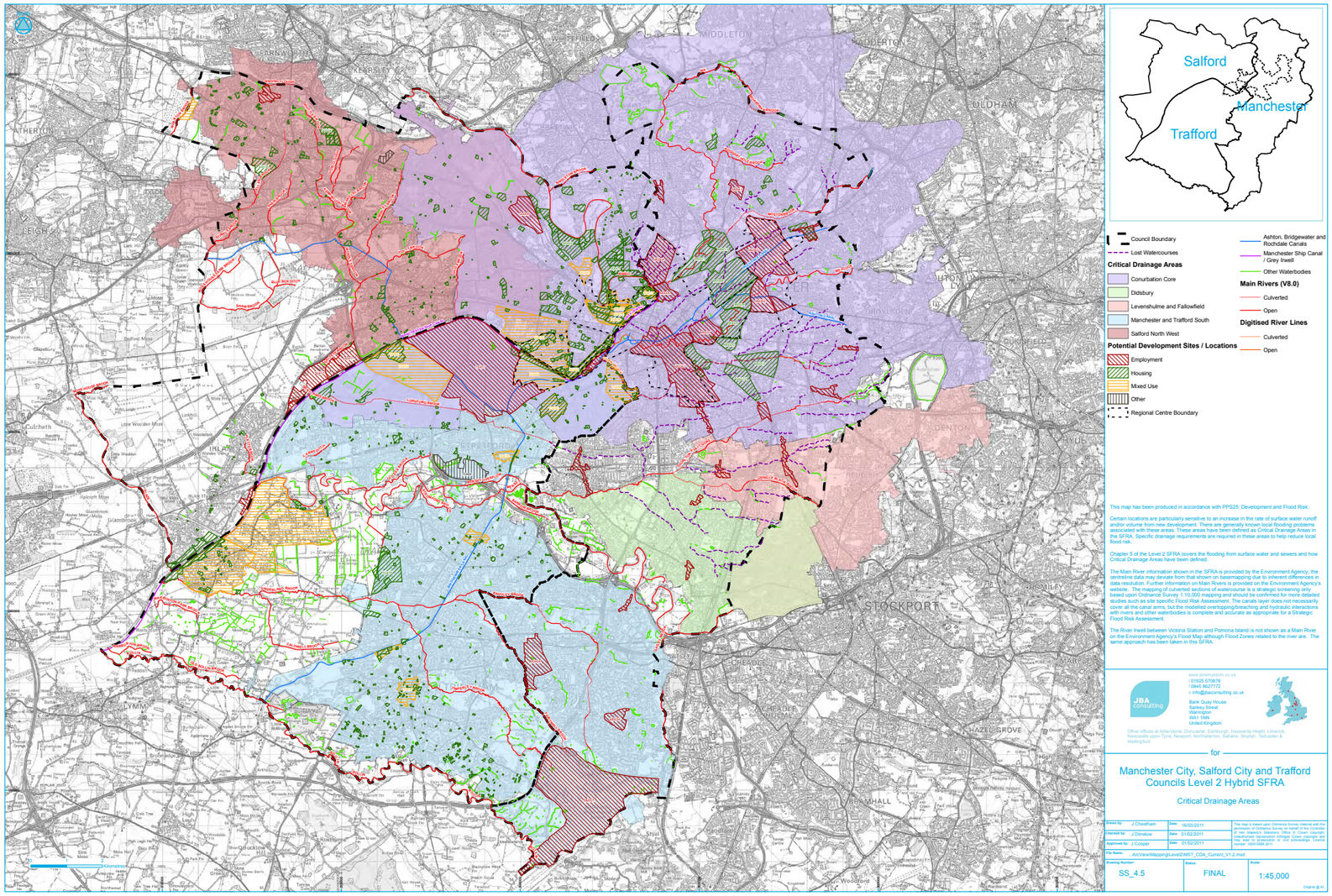


Image 5 - Critical Drainage Areas

3.3 Flood Risk from Sewers

Sewer flooding typically occurs when the drainage network lacks sufficient capacity during extreme rainfall events.

Historical data on sewer flooding incidents in Manchester City is limited. The Greater Manchester Combined Authority Strategic Flood Risk Assessment (GMCA SFRA, 2019) noted that United Utilities could not provide exact incident locations due to data sensitivity.

The proposed FFLs are located above the road level, thus in the event of sewer surcharge, the public highway will accommodate the overland flows via existing flow paths in the public highway, this will protect the building against flooding as evidenced in the surface water flood risk section. The site is therefore considered to be at a low risk of sewer flooding.

3.4 Flood Risk from Groundwater

Groundwater flooding is caused when the level of water within rock or soil rises significantly due to long periods of abnormally high rainfall. Although this type of flooding does not pose a significant risk to life, it can cause significant damage to property and infrastructure. The two most vulnerable settings for groundwater flooding are chalk and river valleys which are underlain by permeable superficial deposits. Lead Local Flood Authorities are responsible for managing groundwater flood risk.

According to the MST Level 3 SFRA, certain areas are susceptible to groundwater flooding. However, as shown in Image 6, the site is not located within one of these areas. Also, due to the site not having a proposed basement on any of the units, the risk of groundwater flooding is considered low.

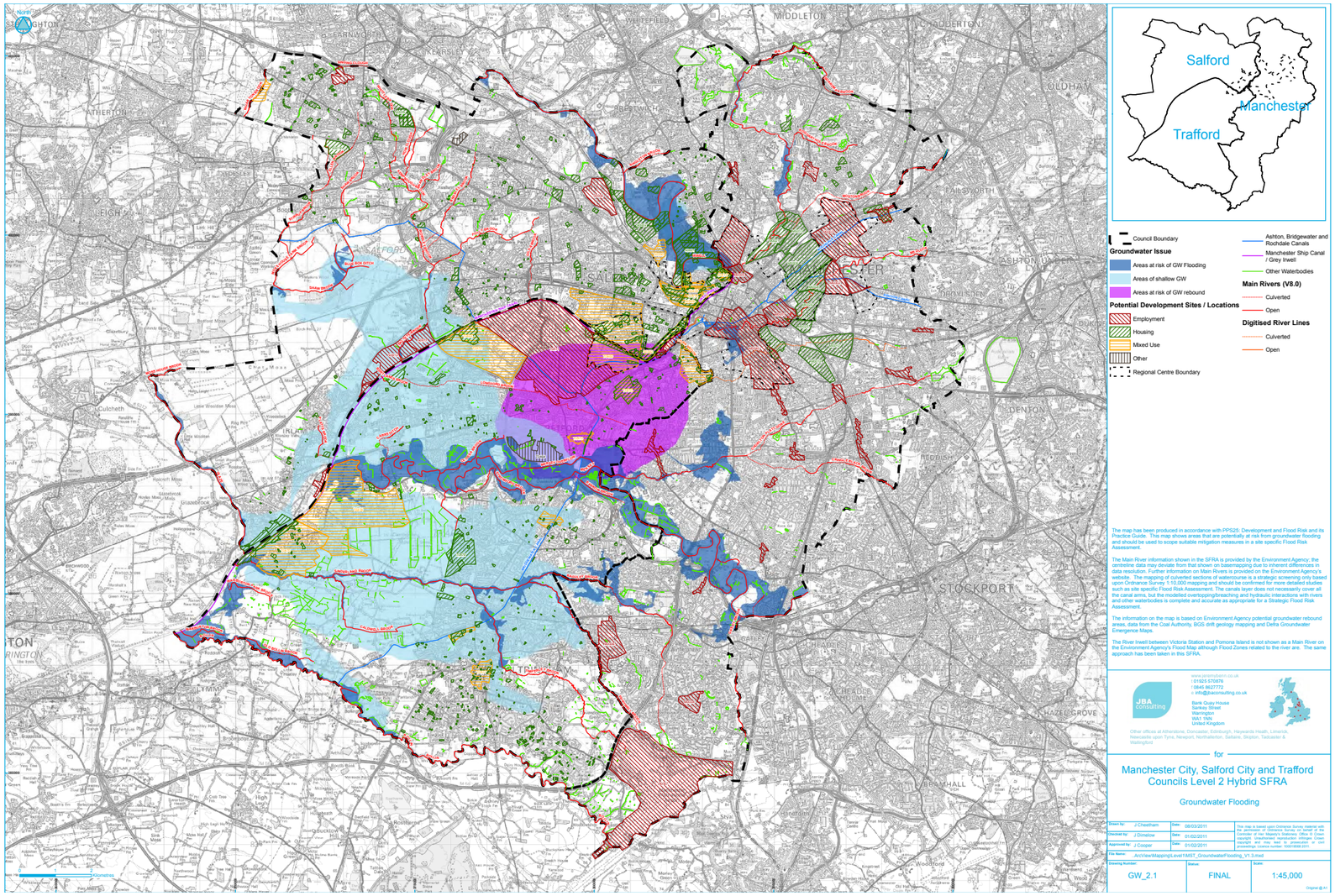


Image 6 - Groundwater Flooding Susceptibility Map (Extracted from Manchester SFRA)

3.5 Summary

This Flood Risk Assessment has been prepared in accordance with the local, regional, and national planning policy and guidance documents.

The site is wholly in Flood Zone 1, with a very low risk of river or sea flooding. While some areas face a low risk of surface water flooding, proposed drainage measures will mitigate this. Sewer flood risk is minimal, with SuDS and raised levels about the highway enhancing protection. Groundwater is also a low risk based upon the proposal not including the basement and the site not being in an area susceptible to groundwater flooding. Overall, the flood risk to the site is low.

4. Existing Drainage Arrangements

4.1 Public Drainage Network

The site is served by separate surface water and foul water sewers operated by United Utilities (UU). UU Asset Records, which can be seen in Appendix C, were obtained in November 2025. Following a CCTV survey conducted in November 2025 by Greenhatch Group (Refer to Appendix E), it was made apparent that there was conflicting information between the UU asset records and the CCTV survey results. The key features obtained from the asset maps and CCTV survey are summarised below:

+ The asset map shows a 600mm-diameter SW sewer in Threapwood Road which increased in size at UU MH3303 to 825mm-diameter surface water sewer, within the public footpath to the east of the site. However, the CCTV survey recorded a 900mm-diameter pipe run, instead of 825mm-diameter, which also showed evidence of foul waste flushing into the line from further upstream. The CCTV survey recorded the cover level and invert level of MH3303 as 66.14m and 63.32m respectively.
+ The asset map shows a previous diversion of the foul sewer, which previously routed through the centre of the site from UU MH1300 to UU MH2400 which has now been diverted around the western boundary of the site and joins the sewer just inside the northern boundary. The asset map shows this diversion to be 375mm-diameter before increasing in size at UU MH2400 to a 1275mm-diameter brick sewer when exiting the site under the Metrolink tracks. However, the CCTV survey provided additional information in the fact that the diversion backdrops into UU MH2400 and does not increase in size before exiting the site, it remains 375mm diameter. The CCTV survey recorded the cover level and invert level of MH2400 as 65.50m and 61.00m respectively.

Refer to Image 7 for the UU Asset Plans and Appendix C for the full UU Asset Records.

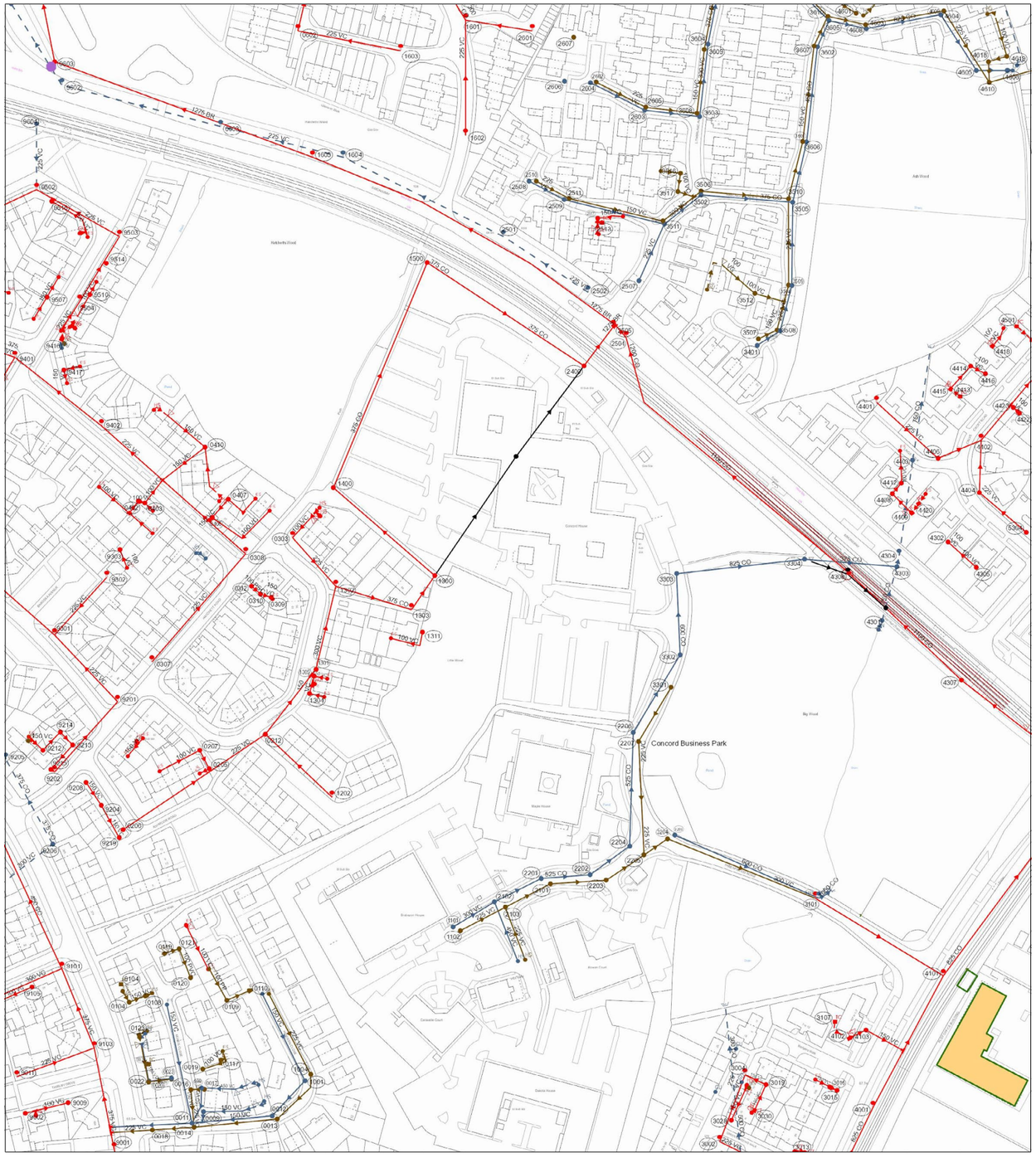


Image 7 - UU Asset Plans

4.2 Private Drainage Network

As stated in Section 4.1, A CCTV Survey was conducted in November 2025 by Greenhatch Group which provided more information on the existing private drainage on site and the number/condition of the outfalls to the UU sewers which can be seen in Appendix E.

The CCTV survey found that the private surface water and foul drainage networks on site had separate individual connections to the corresponding UU sewers adjacent to the site discussed in Section 4.1.

The private foul water network connects to the UU foul sewer via gravity through a 150mm-diameter backdrop to UU MH2400. The private surface water network connects to the UU surface water sewer via gravity through a 450mm-diameter direct connection to UU MH3303. An existing flow control, thought to be a Hydrobrake, was found in the final private surface water manhole before connecting to the UU surface water sewer; no hydraulic calculation or design characteristics for the flow control could be found in any previous site information.

The remaining private drainage on site serves the building, parking area and private road via gravity. Due to the nature of the development, the majority of the existing drainage will be demolished, including the existing outfalls to the sewers which is proposed to be replaced with new connections. This existing drainage network and outfalls can be seen in Image 8.



Image 8 - CCTV Survey (By Greenhatch Group)

4.3 Existing Surface Water Runoff Rates

The existing site runoff rates have been calculated based on the available site information. The site area used is the total site area minus the woodland areas which is considered to be permeable. The Modified Rational Method can be used to obtain the existing peak runoff rates for the 1 in 2 year (FEH data does not include 1 in 1 year), 1 in 30 year and 1 in 100 year rainfall events for 15-minute storm durations in accordance with formula:

Q = 3.61 x Cv x i x A

Where Cv is the volumetric runoff coefficient, A is the catchment area in hectares and i is the peak rainfall intensity in mm/hr using FEH data. A Cv value of 1.0 has been used for the impermeable areas.

Due to the existing flow control being found in the system which has unknown hydraulic characteristics, there have been two methods shown to calculate the existing surface water runoff rates from the site. The first method is to assume the site is free draining as an assumption that the flow control is not functional; a summary of this calculation is shown in Table 2. The second method is to assume the maximum flow rate from the site is the maximum capacity of the connection to the sewer based on the pipe full flow rate; a summary of this calculation is shown in Table 3. Refer to Appendix E for a full breakdown of existing runoff rate calculations.

The results presented in Tables 2 and 3 indicate that the lowest existing flow rate derived from the two methodologies is 93.26 l/s. This value has therefore been adopted as the existing discharge rate to provide a conservative assessment.

Return Period	Rainfall (mm)	Rainfall Intensity (mm/hr)	Catchment Area (ha)	Runoff Rate (l/s)
1 in 2 years	7.46	29.84	2.15	231.60
1 in 30 years	19.17	76.68	2.15	595.15
1 in 100 years	24.36	97.44	2.15	756.28
1 in 100 year + 45% CC	35.32	141.29	2.15	1096.61

Table 2 - Existing Surface Water Runoff Rates (Free draining)

Return Period	Rainfall (mm)	Rainfall Intensity (mm/hr)	Catchment Area (ha)	Runoff Rate (l/s)
1 in 2 years	7.46	29.84	2.15	93.26
1 in 30 years	19.17	76.68	2.15	93.26
1 in 100 years	24.36	97.44	2.15	93.26
1 in 100 year + 45% CC	35.32	141.29	2.15	93.26

Table 3 - Existing Surface Water Runoff Rates (Max Pipe Capacity)

5. Proposed Drainage Arrangements

Separate foul and surface water drainage networks are proposed to collect surface water runoff and wastewater from the site as per Building Regulations Part H prior to discharging to the separate foul and surface water sewers. It is the intention to use Sustainable Drainage Systems (SuDS) for the capture of surface water runoff to provide multi-functional benefits and to make new connections to the foul and surface water sewers.

5.1 Surface Water Drainage

To establish the most suitable means of discharge, a detailed SuDS assessment has been carried out referencing the government's "Guidance for Flood Risk and Coastal Change" drainage hierarchy, priority given to SuDS which provide multi-functional benefits.

SUDS Technique	Feasible	Explanation
Discharge into the ground (infiltration)	No	Due to existing ground conditions and site constraints, infiltration has been deemed not feasible.
Discharge to a surface water body	No	No watercourses were found in the vicinity of the site.
Discharge to a surface water sewer, highway rain or other drainage system	Yes	As supported by UU asset map and CCTV survey, a surface water sewer was found in Threapwood Road, adjacent to the site. wTherefore, surface water drainage for the site will discharge to this UU surface water sewer.
Discharge to a combined sewer	No	N/A

Table 4 - Gov.UK Guidance for Flood Risk and Coastal Change Drainage Hierarchy

5.1.1 Climate Change Allowances

In 2021, the EA issued updated climate changes allowances for peak rainfall allowances. According to the EA website "Flood risk assessments: climate change allowances guidance".

The site lies in the Upper Mersey Management Catchment. The climate change allowance for this catchment is presented in Table 5.

In accordance with EA guidance, developments with a lifetime beyond 2100 must be designed so that for the upper end allowance of the 1% annual exceedance probability event (1 in 100 year) for the 2070 epoch (2061 to 2125), there is no increase in flood risk elsewhere and the development will be safe from surface water flooding. As such, the proposed SuDS strategy has been designed considering the 45% value for climate change allowance.

	Allowance Category	Total potential change anticipated for the '2050s' (<2060)	Total potential change anticipated for the '2070s' (2061 and 2125)
Upper Mersey Management Catchment	Upper End	40%	45%
	Central	25%	30%

Table 5 - Upper Mersey Management Catchment Peak Rainfall Allowances (1% annual exceedance rainfall event)

5.1.2 Greenfield Runoff

The greenfield run-off rate has been calculated using the UKSuDS calculation tool, rates presented in Table 6 below using the site area of 3.0 hectares.

Rainfall event	Greenfield Rates (0.21ha)
Q_{bar}	20.9 l/s
Q_{1}	18.2 l/s
Q_{30}	35.6 l/s
Q_{100}	43.5 l/s

Table 6 - Greenfield Run-off Rates

Refer to Appendix G for a copy of the greenfield runoff rate calculations.

5.1.3 Proposed Surface Water Discharge Rates.

Manchester City Council, who serve as the LLFA, states with the Greater Manchester SFRA that new developments constructed on brownfield sites located in CDAs must reduce the pre-development runoff rates by 50%, and when this is genuinely unachievable discharge rates should be as close as possible. Should the development proposal be unable to meet the 50% reduction rates the LLFA will require evidence the SuDS provisions have been maximised.

The existing runoff rates for the site provided in Section 4.3 determined a rate of 93.26 l/s using the maximum pipe capacity methodology; therefore, a reduction of 50% would result in a rate of 46.63 l/s being appropriate for the site area. It is intended to better this rate and reduce the discharge rates to Q_{BAR} greenfield rates discharging at 20.9 l/s. Discharging at 20.9 l/s is a 78% reduction in existing runoff rates based on maximum pipe capacity at the outfall and a 98% reduction for 1 in 100 year+45% event based on the site being free draining. (Note that UU have been contacted to seek approval for higher discharge rate, but until this is verified and confirmed in writing, this report and attenuation requirements are based on the more conservative approach)

HTS contacted United Utilities via a pre-development application enquiry to confirm this discharge rate is acceptable but are yet to receive confirmation.

As detailed in Section 5.1.4 of this report, 20.9 l/s is achievable through the implementation of permeable paving, below ground attenuation tank systems, and dry attenuation basins.

5.1.4 Proposed SuDS Features

In accordance with NPPF, the new development will incorporate SuDS to manage rainfall on site and ensure that runoff is not increased elsewhere. Drawings showing the proposed drainage strategy are presented in Appendix H. It is the intention for surface water drainage to be designed to incorporate SuDS into the parking and landscape areas of the site, with priority given to SuDS which provide multi-functional benefits, providing biodiversity and amenity value, alongside improving water quality and managing water quantity. These comprise of permeable paving and below ground attenuation tanks where feasible. Proposed SuDS are to be designed in line with best practice and have been coordinated with Architect and Landscape Architect proposals.

A conventional gravity drainage system is proposed. The intent is to have tanked permeable paving wherever feasible; these are proposed across the majority of parking areas where flat surfaces provide the ability to attenuate surface water at source.

It is also proposed to attenuate the remaining catchment areas via below ground attenuation tanks.

The surface water from the roofs and hard landscape will drain to the tanks via gravity which will then outfall to the 900mm diameter UU surface water sewer located in Threapwood Road.

During extreme rainfall events, the docking bays for each unit have been implemented within the drainage strategy by utilising them as dry basins that will fill with water before the rest of the system, this provides additional storage in the extreme rainfall events.

The total discharge rate achieved using this permeable paving, attenuation tank and dry basin system is 20.9 l/s for the 1 in 100 year + 45% climate change peak storm event, calculated using FEH rainfall data. A breakdown of depths and run-off rates is included in Appendix I.

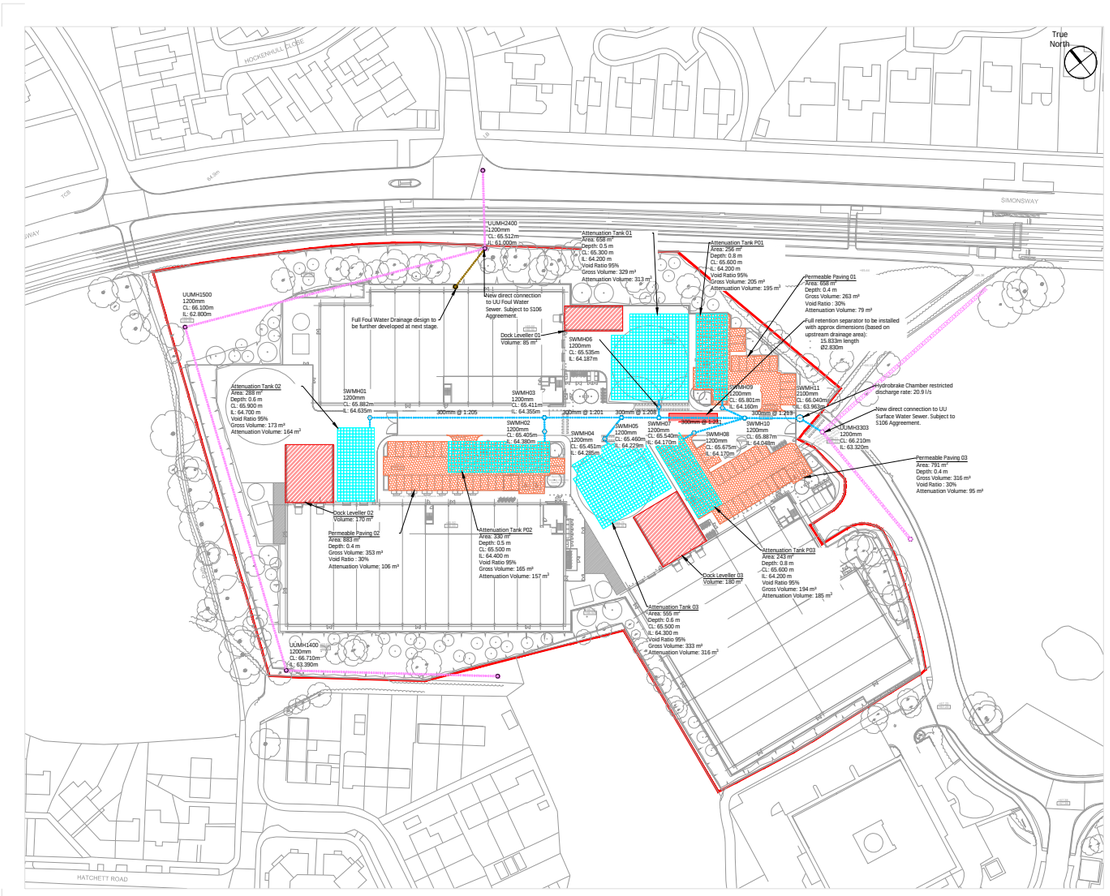


Image 9 - Proposed SuDS Strategy

5.1.5 SuDS Design Summary

SuDS have been incorporated into the proposed development considering SuDS Design guidance as far as feasible. Proposals utilise tanked permeable paving and below ground attenuation tanks to attenuate the 1 in 100 year + 45% storm to as close to greenfield rates as possible while discharging no greater than the 20.9 l/s maximum discharge rate.

A summary of run-off rates from the development in the existing and proposed scenarios are presented in Table 7. Through the proposed SuDS features, a significant reduction to the peak surface water run-off from the development is achieved; 78%, comparing existing and proposed rates for the design storm.

Flow rates from blue roofs have been included assuming a constant discharge up to and including the critical storm duration.

Rainfall Event	Greenfield Rates	Existing Rates	Proposed Rates	Betterment over existing rates
$Q_{1/2}$	18.2 l/s	93.26 l/s	20.9 l/s	78%
Q_{30}	35.6 l/s	93.26 l/s	20.9 l/s	78%
Q_{100}	43.5 l/s	93.26 l/s	20.9 l/s	78%
$Q_{100+45\%}$		93.26 l/s	20.9 l/s	78%

Table 7 - Comparison of Existing and Proposed Run-off Rates

5.1.6 Water Quality

The proposed SuDS strategy aims to provide sufficient mitigation to the surface water run-off. To assess this, the CIRIA C753 Simple Index Approach. The car parks will be drained via permeable paving, and this is shown in Table 8; all service yards will be drained via a full retention separator which has been appropriately sized based upon the supplier's specifications for the drainage area upstream.

	Total Suspended Soilds (TSS)	Metals	Hydrocarbons
Pollution Hazard Indices			
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways1	0.7	0.6	0.7
Pollution Mitigation Indices			
Permeable Paving	0.7	0.6	0.7
Check Mitigation Index ≥ Hazard Index	PASS	PASS	PASS

Table 8 - CIRIA C753 Simple Index Approach

As per CIRIA C753, the minimum pollution index that demands mitigation is equal to the pollution index from the commercial yard use of the site, therefore the risk to water quality is considered low and no mitigation is needed.

5.1.7 Exceedance

In an event where the capacity of the surface water system is exceeded, water will leave the site via overland flow. For the site this is generally towards the north east, but designed to flow towards the soft landscape areas.

5.2 Proposed Foul Water Drainage Strategy

Due to the nature of the redevelopment, existing foul drainage reusability is not achievable. As such, a new drainage system will be designed in accordance with Building Regulations part H to serve the proposed buildings. At this stage of design, it is the intention for the foul drainage to discharge via gravity to the UU sewer located along the northern boundary of the site. Reusing the existing backdrop to the UU foul sewer is not feasible, therefore, a new direct connection will be made.

5.3 Drainage Inspection and Maintenance Strategy

In accordance with CIRIA C625 it is recommended that a private SuDS maintenance agreement is agreed as a simple contract between the property owner/ tenant (customer) and the maintenance provider (the maintainer). It is mainly to facilitate continuing maintenance of the SuDS that are in private ownership. The maintenance requirements are in accordance with the CIRIA C753 SuDS Manual 2015.

Refer to Appendix J for the SuDS maintenance plan.

6. Conclusions

This SuDS strategy has been prepared in accordance with local and national planning policy and guidance, aiming to comply with local and national planning policy as far as reasonably practicable.

This report found that the site is at low risk from all sources with the inclusion of mitigation measures as detailed within Table 4.

The suitability of different SuDS techniques was explored in accordance with the drainage hierarchy within the government's "Guidance for Flood Risk and Coastal Change", priority given to SuDS which provide multi-functional benefits. Surface water attenuation will be provided in the form of tanked permeable paving, below ground attenuation tanks, and in extreme rainfall events, the docking bays will be utilised as dry attenuation basins. By utilising this strategy, the proposed development will reduce runoff rates to 20.9 l/s.

Through this SuDS strategy, achieves a significant betterment sitewide of up to 78% against the existing runoff rates considering the most onerous storm conditions. A total rate of 20.9 l/s for the 1 in 100-year storm event plus 45% climate change is achieved through the strategy

Foul water will be discharged via gravity via new direct outfalls to the UU foul sewer located along the northern boundary of the site.

Appendix A

Proposed Site Plans

The Harris Partnership Ltd does not accept liability for any deviation from our drawings or specification. This drawing is copyright and may not be reproduced or shared in whole or part without written authority. Do not scale off this drawing.

Rev	Date	Description	Drawn	Ch'd
P01	15.12.25	Planning Submission	AV	AV

Schedule of Accommodation

GEA Areas:

Unit 1 Ground Floor	2,975 m²	32,023 ft² GEA
Unit 1 First Floor	381 m²	4,098 ft² GEA
Unit 2 Ground Floor	3,714 m²	39,981 ft² GEA
Unit 2 First Floor	474 m²	5,102 ft² GEA
Unit 3 Ground Floor	4,438 m²	47,772 ft² GEA
Unit 3 First Floor	555 m²	5,973 ft² GEA
Total excl. First Floor Office:	**11,127 m²**	**119,776 ft² GEA**
Total incl. First Floor Office:	**12,537 m²**	**134,949 ft² GEA**

GIA Areas:

Unit 1 Ground Floor	2,834 m²	30,505 ft² GIA
Unit 1 First Floor	340 m²	3,660 ft² GIA
Unit 2 Ground Floor	3,557 m²	38,283 ft² GIA
Unit 2 First Floor	428 m²	4,602 ft² GIA
Unit 3 Ground Floor	4,275 m²	46,019 ft² GIA
Unit 3 First Floor	513 m²	5,526 ft² GIA
Total excl. First Floor Office:	**10,666 m²**	**114,807 ft² GIA**
Total incl. First Floor Office:	**11,947 m²**	**128,595 ft² GIA**

Parking Spaces 105 spaces
(Incl. 6 acc. spaces 6 car share priority, 3 Active EV Charging spaces and 21 Passive EVC spaces)

Cycle Parking 72 long stay spaces
30 short stay spaces

Key:
- Application Boundary
- 2.5m Tall Acoustic Fence
- Car Share Spaces
- Passive EVC spaces provision
- +0.00 Existing Levels
- +0.00 Proposed Levels (indicative, subject to cut & fill)

Note:
Drawn to received information, OS Map and Topographical survey. Proposed levels subject to Civil Engineer's advice. Subject to detailed design, M&P advice, Structural, Engineer's advice, security specialist advice, tracking and fire engineer's advice.

0 5 10 15 20 25m
SCALE 1:500

THE HARRIS PARTNERSHIP
Architecture
Masterplanning
Interior Design
www.harrispartnership.com
Wakefield Manchester Milton Keynes Reading London Harrogate Edinburgh

Client
Karlin VMH Ltd c/o Global Mutual

Project Title
Concord Logistics

Concord Business Park
Threapwood Road, Wythenshawe
Manchester, M22 0EY

Drawing Title
Proposed Site Plan

Drawn	Checked	Scale @A1	BIM Status	Date
AV	AV	1:500	NA	15.9.2025

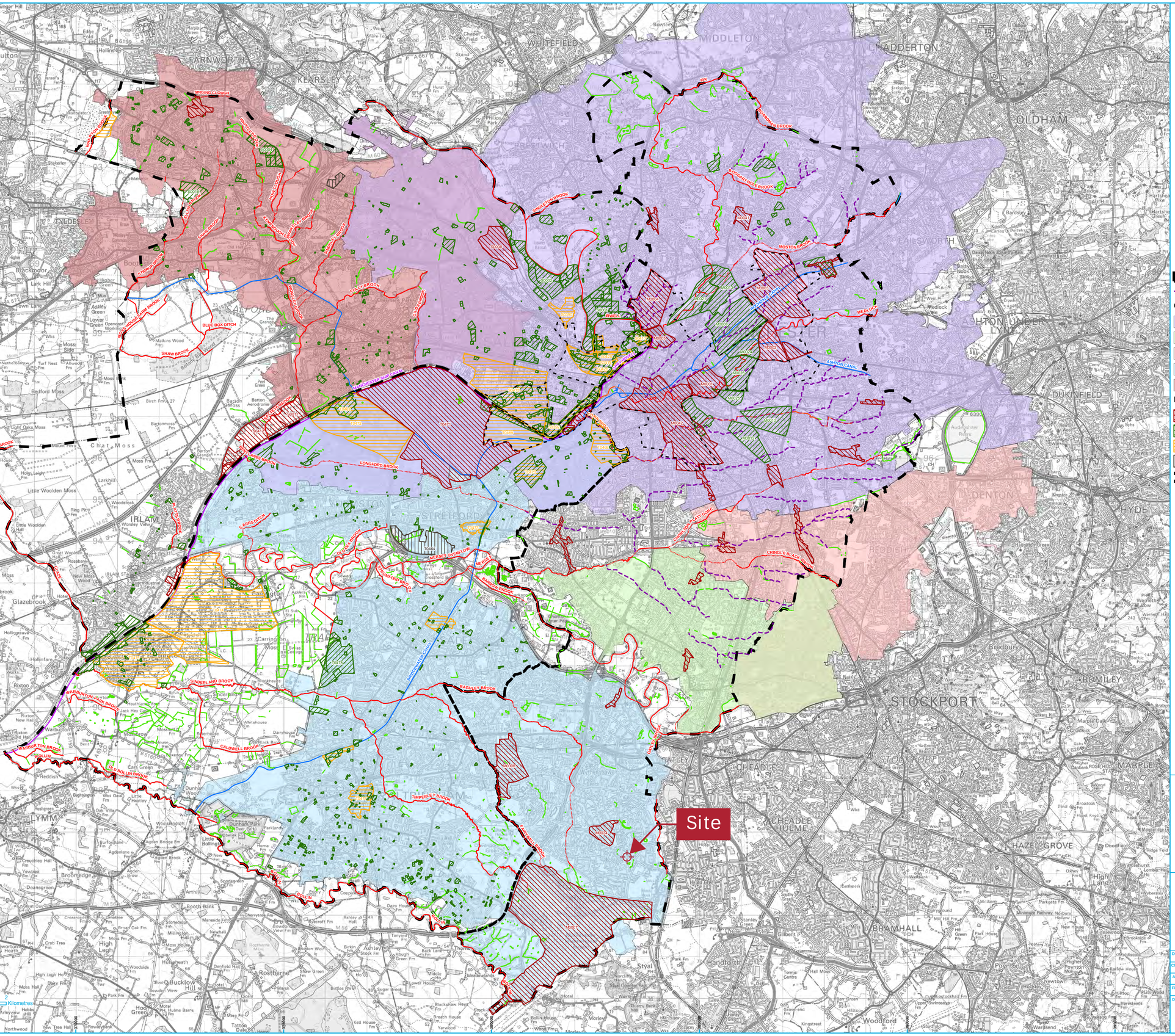
Drawing Status	Rev.	THP Project No
PLANNING	P01	21701

Project No.	Originator	Volume	Level	Type	Role	Number
21701	THPL	XX	XX	DR	A	(PL)1110

HEYNE TILLETT STEEL

Appendix B

Flood and Geology Maps



This map has been produced in accordance with PPS25: Development and Flood Risk.

Certain locations are particularly sensitive to an increase in the rate of surface water runoff and/or volume from new development. There are generally known local flooding problems associated with these areas. These areas have been defined as Critical Drainage Areas in the SFRA. Specific drainage requirements are required in these areas to help reduce local flood risk.

Chapter 5 of the Level 2 SFRA covers the flooding from surface water and sewers and how Critical Drainage Areas have been defined.

The Main River information shown in the SFRA is provided by the Environment Agency; the centreline data may deviate from that shown on basemapping due to inherent differences in data resolution. Further information on Main Rivers is provided on the Environment Agency's website. The mapping of culverted sections of watercourse is a strategic screening only based upon Ordnance Survey 1:10,000 mapping and should be confirmed for more detailed studies such as site specific Flood Risk Assessment. The canals layer does not necessarily cover all the canal arms, but the modelled overtopping/breaching and hydraulic interactions with rivers and other waterbodies is complete and accurate as appropriate for a Strategic Flood Risk Assessment.

The River Irwell between Victoria Station and Pomona Island is not shown as a Main River on the Environment Agency's Flood Map although Flood Zones related to the river are. The same approach has been taken in this SFRA.

JBA consulting

www.jeremybenn.co.uk
t 01925 570876
f 0845 8627772
e info@jbaconsulting.co.uk

Bank Quay House
Sankey Street
Warrington
WA1 1NN
United Kingdom

Other offices at Atherstone, Doncaster, Edinburgh, Haywards Heath, Limerick, Newcastle upon Tyne, Newport, Northallerton, Saltaire, Skipton, Tadcaster & Wallingford

for

Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA

Critical Drainage Areas

Drawn by:	J Cheetham	Date:	16/03/2011
Checked by:	J Dimelow	Date:	01/02/2011
Approved by:	J Cooper	Date:	01/02/2011

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence number: 100015568 2011.

File Name: ...ArcView\Mapping\Level2\MST_CDA_Current_V1.2.mxd

Drawing Number:	Status:	Scale:
SS_4.5	FINAL	1:45,000

Original @ A1

GOV.UK

Flood map for planning

Get a boundary report

Edit

Delete

Datasets

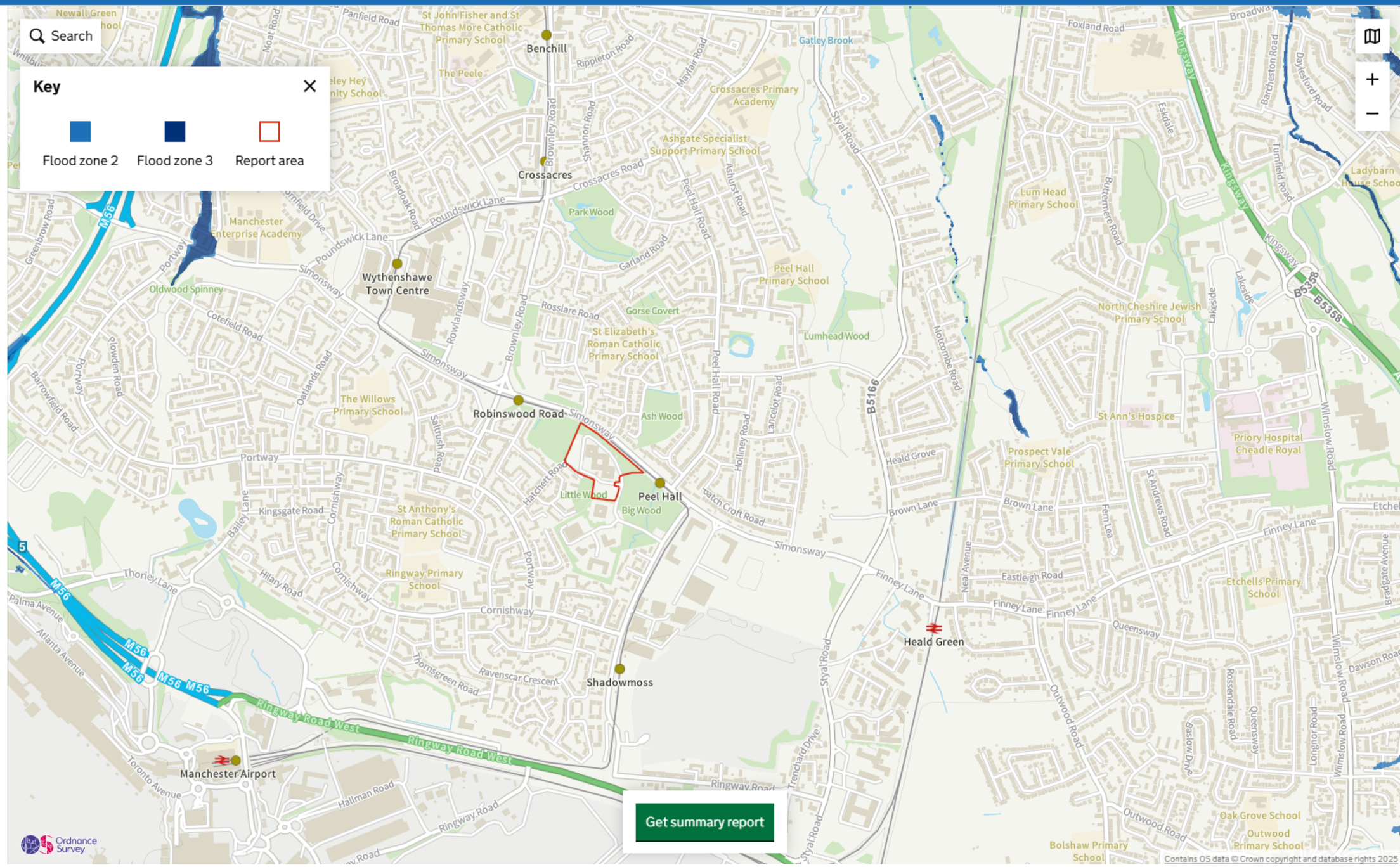
- (•) Flood zones 2 and 3
- ( ) Surface water
- ( ) None

Climate change

- (•) Present day
- ( ) 2070 to 2125

Map features

- [ ] Water storage
- [ ] Flood defence
- [ ] Main Rivers



Exit map

Contains OS data © Crown copyright and database rights 2025

Powered by Esri

Rivers and sea map

Yearly chance of flooding

Flood area (extent)

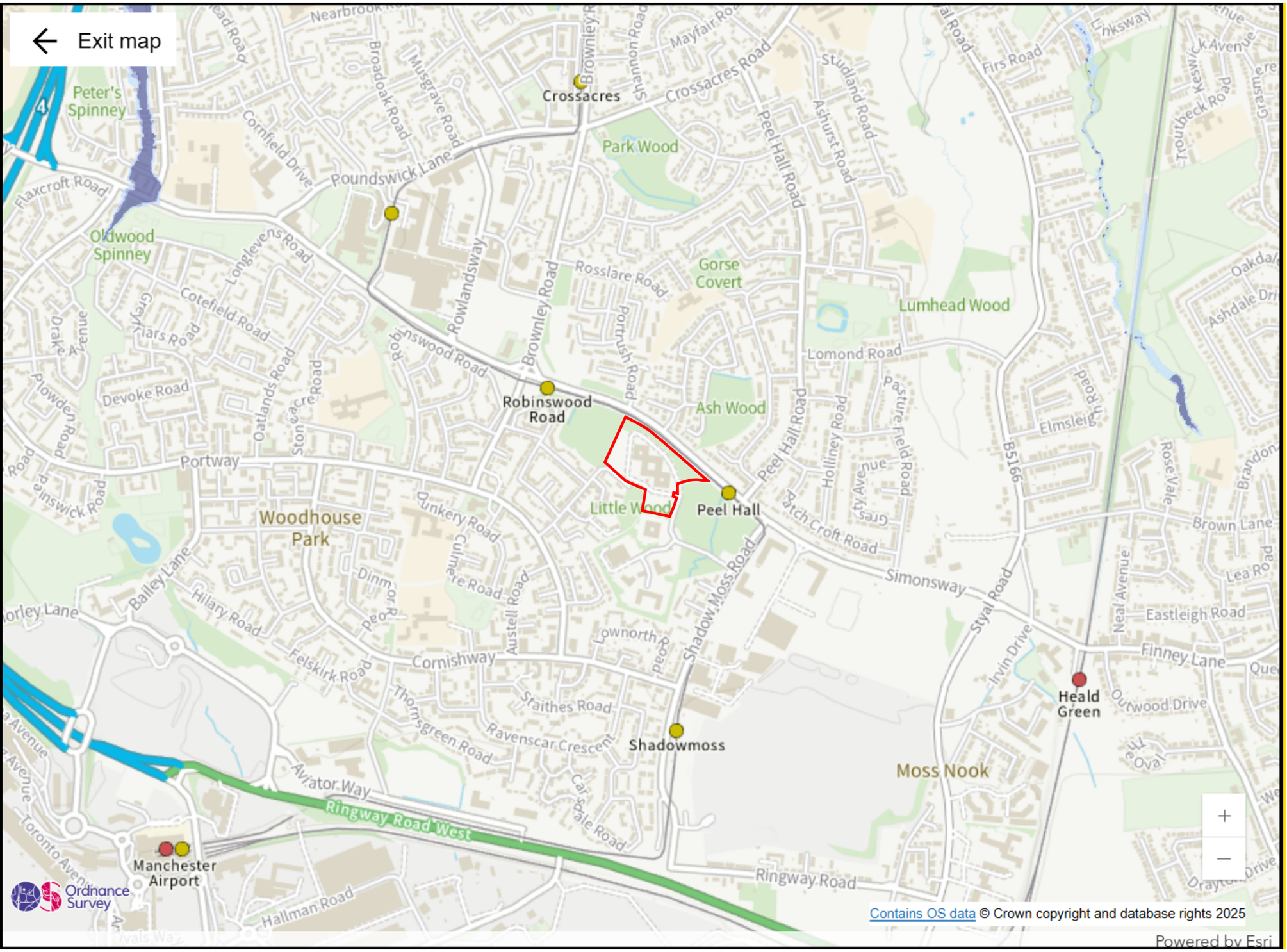
- High chance
- Medium chance
- Low chance
- Very low chance

Yearly chance of flooding between 2036 and 2069

Flood area (extent)

Map details

- [x] Show flooding
- [ ] Selected address



Rivers and sea map

Yearly chance of flooding

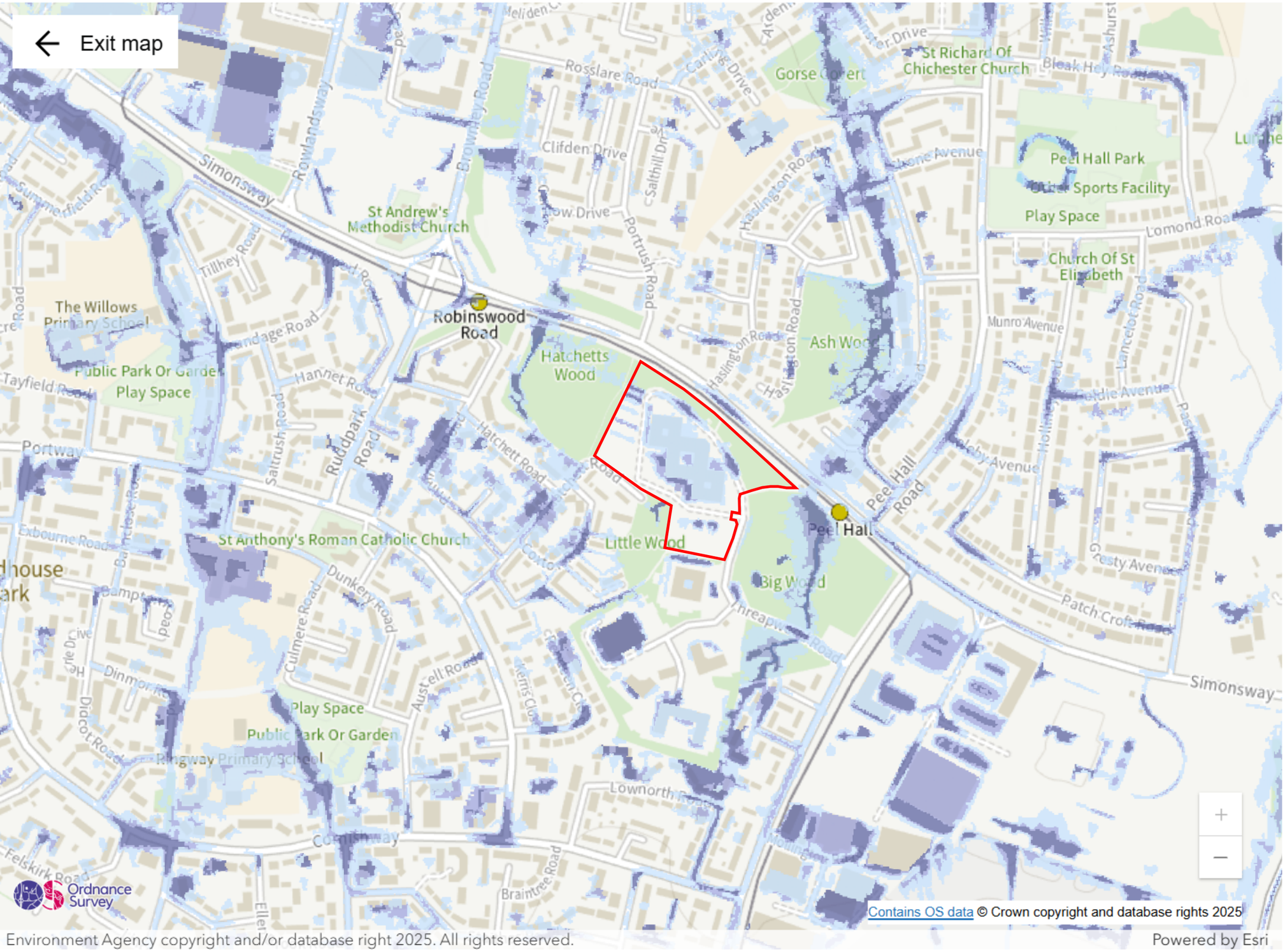
- ○ Flood area (extent)

Yearly chance of flooding between 2036 and 2069

- ◉ Flood area (extent)
  - High chance
  - Medium chance
  - Low chance
  - Very low chance
  - No data available

Map details

- ☑ Show flooding
- ☐ Selected address



Surface water map

Yearly chance of flooding

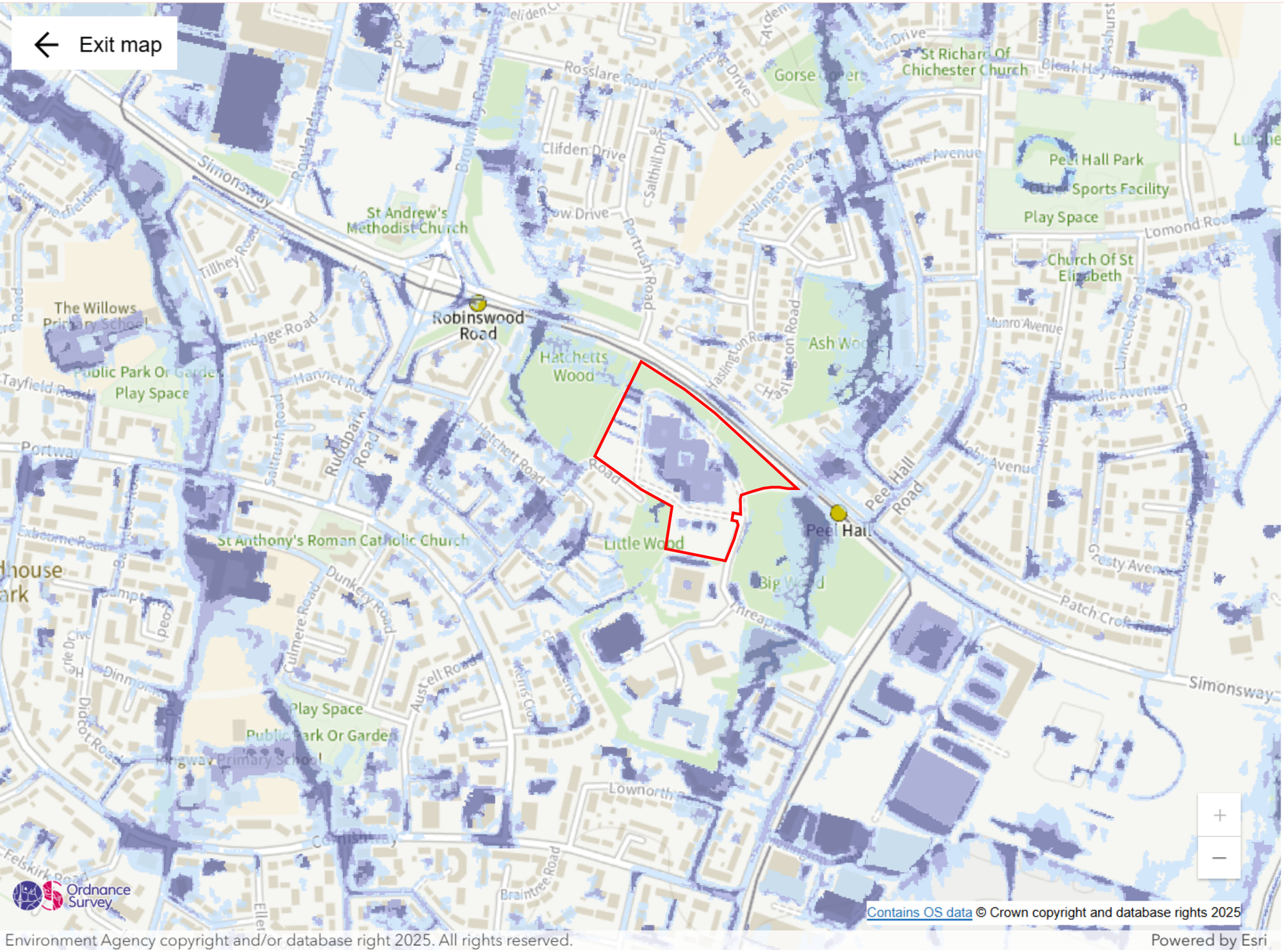
- (●) Flood area (extent)
  - High chance
  - Medium chance
  - Low chance

Yearly chance of flooding between 2040 and 2060

- ( ) Flood area (extent)

Map details

- [x] Show flooding
- [ ] Selected address



Surface water map

Yearly chance of flooding

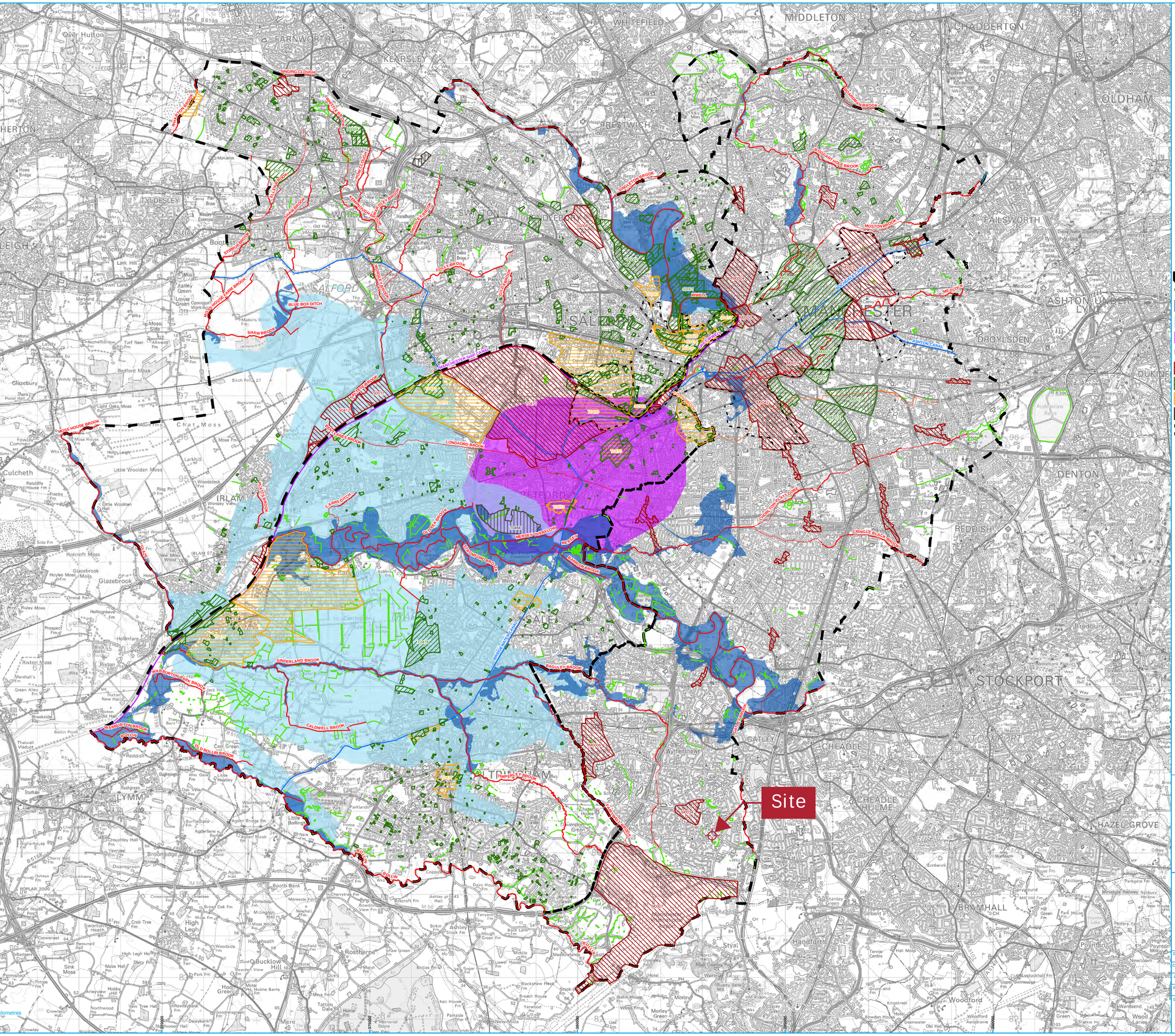
- ○ Flood area (extent)

Yearly chance of flooding between 2040 and 2060

- ◉ Flood area (extent)
  - High chance
  - Medium chance
  - Low chance

Map details

- ☑ Show flooding
- ☐ Selected address





Council Boundary

Groundwater Issue

- Areas at risk of GW Flooding
- Areas of shallow GW
- Areas at risk of GW rebound

Potential Development Sites / Locations

- Employment
- Housing
- Mixed Use
- Other
- Regional Centre Boundary

- Ashton, Bridgewater and Rochdale Canals
- Manchester Ship Canal / Grey Irwell
- Other Waterbodies

Main Rivers (V8.0)

- Culverted
- Open

Digitised River Lines

- Culverted
- Open

The map has been produced in accordance with PPS25: Development and Flood Risk and its Practice Guide. This map shows areas that are potentially at risk from groundwater flooding and should be used to scope suitable mitigation measures in a site specific Flood Risk Assessment.

The Main River information shown in the SFRA is provided by the Environment Agency; the centreline data may deviate from that shown on basemapping due to inherent differences in data resolution. Further information on Main Rivers is provided on the Environment Agency's website. The mapping of culverted sections of watercourse is a strategic screening only based upon Ordnance Survey 1:10,000 mapping and should be confirmed for more detailed studies such as site specific Flood Risk Assessment. The canals layer does not necessarily cover all the canal arms, but the modelled overtopping/breaching and hydraulic interactions with rivers and other waterbodies is complete and accurate as appropriate for a Strategic Flood Risk Assessment.

The information on the map is based on Environment Agency potential groundwater rebound areas, data from the Coal Authority, BGS drift geology mapping and Defra Groundwater Emergence Maps.

The River Irwell between Victoria Station and Pomona Island is not shown as a Main River on the Environment Agency's Flood Map although Flood Zones related to the river are. The same approach has been taken in this SFRA.

JBA consulting

www.jeremybenn.co.uk
t 01925 570876
f 0845 8627772
e info@jbaconsulting.co.uk

Bank Quay House
Sankey Street
Warrington
WA1 1NN
United Kingdom

Other offices at Atherstone, Doncaster, Edinburgh, Haywards Heath, Limerick, Newcastle upon Tyne, Newport, Northallerton, Saltaire, Skipton, Tadcaster & Wallingford

for

Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA

Groundwater Flooding

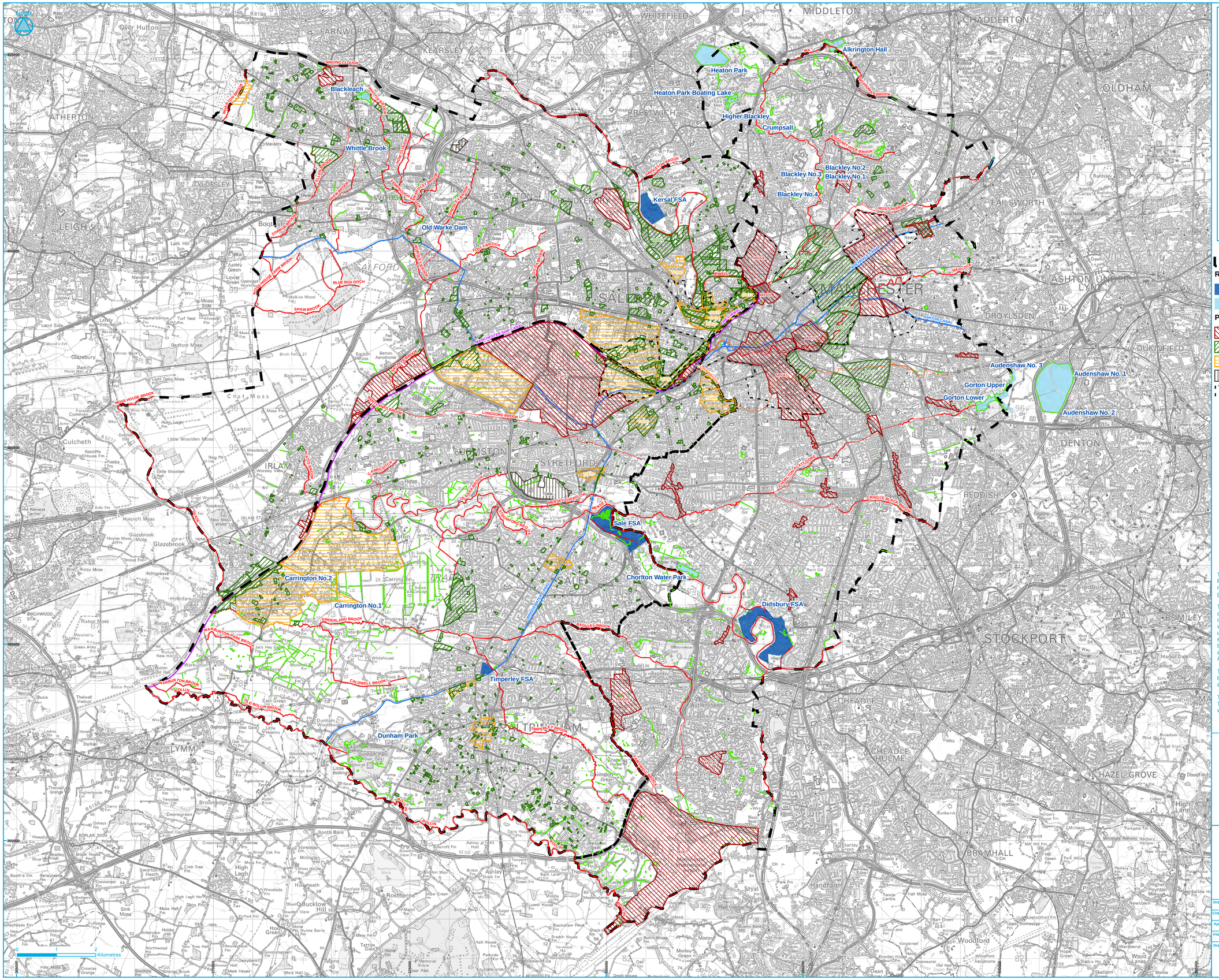
Drawn by:	J Cheetham	Date:	08/03/2011
Checked by:	J Dimelow	Date:	01/02/2011
Approved by:	J Cooper	Date:	01/02/2011

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence number: 100019568 2011.

File Name: ..\ArcView\Mapping\Level 1\MST_GroundwaterFlooding_V1.3.mxd

Drawing Number:	Status:	Scale:
GW_2.1	FINAL	1:45,000

Original @ A1



Council Boundary

Reservoirs

- Flood Storage Area
- Reservoir

Potential Development Sites / Locations

- Employment
- Housing
- Mixed Use
- Other
- Regional Centre Boundary

- Ashton, Bridgewater and Rochdale Canals
- Manchester Ship Canal / Grey Irwell
- Other Waterbodies

Main Rivers (V8.0)

- Culverted
- Open

Digitised River Lines

- Culverted
- Open

This map has been produced in accordance with PPS25: Development and Flood Risk and its Practice Guide. The reservoirs within and near to proposed development sites have been mapped to show their location only. The information is based on OS MasterMap and data gathered in the AGMA Sub-regional Level 1 SFRA.

The Main River information shown in the SFRA is provided by the Environment Agency; the centreline data may deviate from that shown on basemapping due to inherent differences in data resolution. Further information on Main Rivers is provided on the Environment Agency's website. The mapping of culverted sections of watercourse is a strategic screening only based upon Ordnance Survey 1:10,000 mapping and should be confirmed for more detailed studies such as site specific Flood Risk Assessment. The canals layer does not necessarily cover all the canal arms, but the modelled overtopping/breaching and hydraulic interactions with rivers and other waterbodies is complete and accurate as appropriate for a Strategic Flood Risk Assessment.

The River Irwell between Victoria Station and Pomona Island is not shown as a Main River on the Environment Agency's Flood Map although Flood Zones related to the river are. The same approach has been taken in this SFRA.

This map should not influence the spatial placement of development during the Sequential Test; however, it should inform the need for emergency planning to take account of the risk within community plans.

JBA consulting

www.jeremybenn.co.uk
t 01925 570876
f 0845 8627772
e info@jbaconsulting.co.uk

Bank Quay House
Sankey Street
Warrington
WA1 1NN
United Kingdom

Other offices at Atherstone, Doncaster, Edinburgh, Haywards Heath, Limerick, Newcastle upon Tyne, Newport, Northallerton, Saltaire, Skipton, Tadcaster & Wallingford

for

Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA

Reservoir Screening

Drawn by:	J Cheetham	Date:	08/03/2011
Checked by:	J Dimelow	Date:	01/02/2011
Approved by:	J Cooper	Date:	01/02/2011

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence number: 100019588 2011.

File Name: ...ArcView\Mapping\Level1\MST_ReservoirScreening_V1.2.mxd

Drawing Number:	Status:	Scale:
MM_3.1	FINAL	1:45,000

Original @ A1

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Number
MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION	WS49_AIR

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		65.21	JACOBS ENGINEERING UK LTD	PN102241
	Location	**Dates**	**Engineer**	**Sheet**
	383350.103 E 386420.143 N	09/06/2010	MPACT	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				65.06	(0.15) 0.15	Grass over TOPSOIL		
0.20-0.30	E				(0.25)	MADE GROUND: Brown very silty gravelly fine and coarse sand. Gravel is fine and coarse angular and subangular including brick and limestone		
0.35	D			64.81	0.40	At 0.20m, cobble of tarmac		
0.50-0.60	E							
0.80	DN2229					MADE GROUND: Firm reddish brown mottled grey slightly sandy slightly gravelly clay. Gravel is fine and coarse subangular of mudstone and siltstone		
1.00-1.20	BN2229							
1.20-1.65	SPT N=2		1,0/1,0,1,0					
1.20-1.65	D							
1.30-1.40	D				(2.30)			
1.50-1.90	E							
2.20-2.65	SPT N=2		1,0/1,0,1,0					▽1
2.20-2.65	D		Moderate(1) at 2.30m.					
2.40-2.60	D							
				62.51	2.70	Extremely weak thinly laminated grey SILTSTONE		
					(0.50)			
3.00-3.20	D			62.01	3.20			
3.20-3.65	SPT N=22		5,5/5,5,5,7			Extremely weak reddish brown MUDSTONE with occasional bedding of grey siltstone		
3.20-3.65	D							
3.60-4.20	D							
4.20-4.65	SPT N=23		5,3/4,6,6,7		(2.36)			
4.20-4.65	D							
4.60-5.20	D							
5.20-5.56	SPT 50/205		4,8/10,18,22,0					
5.20-5.56	D		09/06/2010:3.10m	59.65	5.56	Complete at 5.56m		
			09/06/2010:					
			09/06/2010:					

Remarks

Scale (approx)	Logged By
1:50	MH

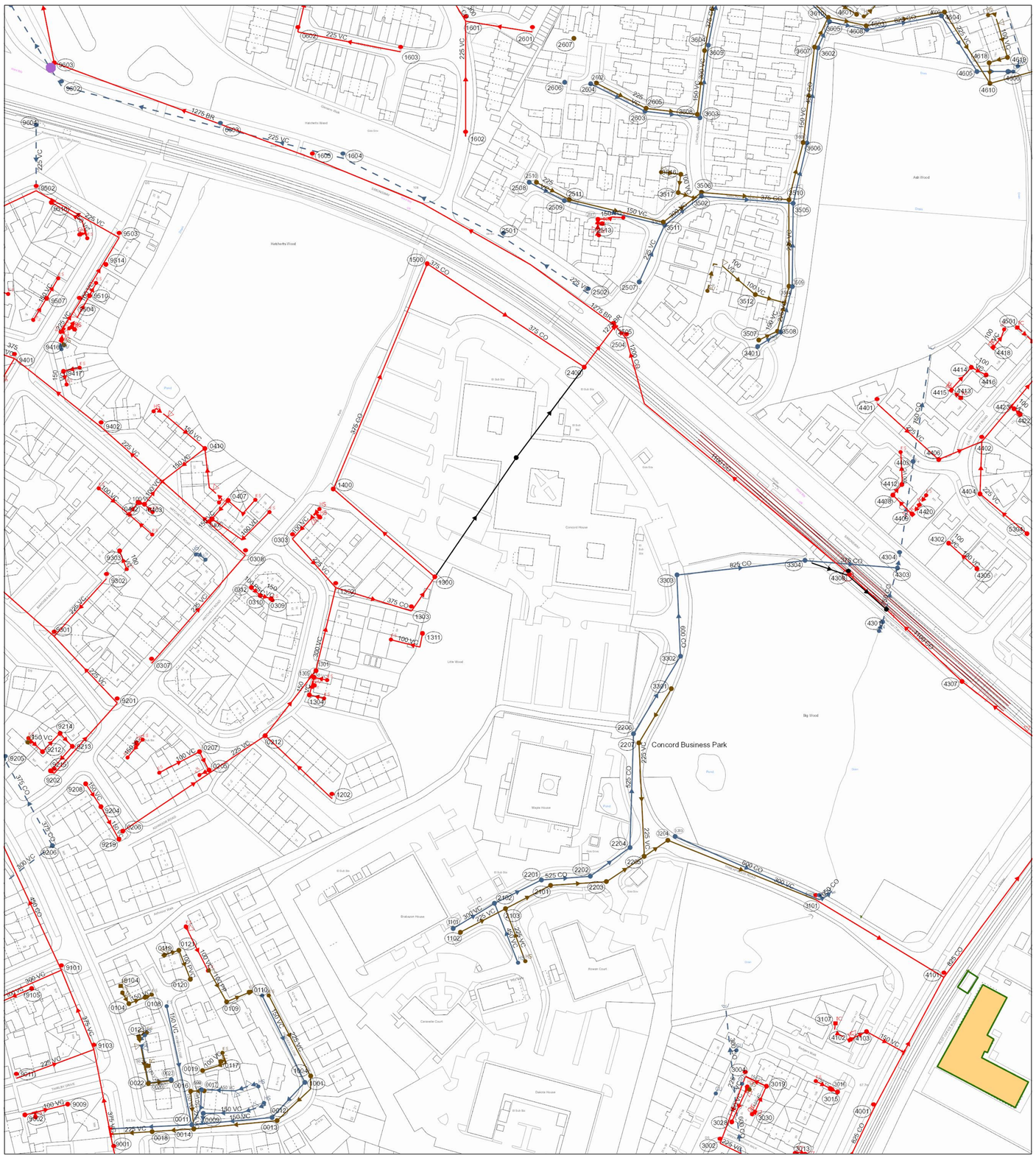
Figure No.

Produced by the GEOtechnical DAtabase SYstem (GEODASY) (C) all rights reserved

HEYNE TILLETT STEEL

Appendix C

United Utilities Asset Map



Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
3610		FO	60.97	225			VC	21.62667	1 in 144
1604	64.51	SW	62.08	225			VC	70.0928	1 in 175
1400		CO	0	375			CO	135.2336	
0602	63.84	CO	62.01	225			VC	30.80584	1 in 154
0016		FO		225			VC	20.97428	
3507		FO	63.17	150			VC	11.55538	1 in 68
0104		FO		150			VC	9.638376	
3606		FO	61.64	150			VC	53.36151	1 in 118
2517		CO		150			VC	14.48714	
9201	66.64	CO	64.09	225			VC	50.93133	1 in 150
0410		CO		150			VC	29.85613	
0403		CO		100			VC	16.0814	
0009		SW		150			VC	5.813673	
1300		CO	0	375			CO	74.40067	
3517		FO		100			VC	9.409389	
1305		CO		150			VC	1.610021	
0018		FO		225			VC	22.98763	
2505	65.1	CO	60.95	1275			BR	1.414214	
3016		CO		150			VC	4.587739	
1500		CO	0	375			CO	104.1242	
9103	68.13	CO	63.22	375			VC	47.53946	1 in 132
2507		SW	63.5	225			VC	34.44641	1 in 75
2400		CO	61.42	375			CO	27.1528	1 in 60
4401	64.28	CO	62.01	225			VC	46.01087	1 in 0.77031421
0407		CO		100			VC	13.58714	1 in
0011		SW		150			VC	45.63586	
9401	65.75	CO	62.66	375			VC	55.97321	1 in 33
1303	66.74	CO	63.8	375			CO	22.91572	1 in 88
0312		CO		100			PSC	6.643641	
3602		SW	61.92	450			CO	15.91536	1 in 199
3401		SW	63.5	225			VC	14.99732	1 in 107
1101	67.4	SW	65.19	300			VC	26.92582	
0406		CO		150			VC	2.682126	1 in
4303	64.79	SW	62.7	750			CO	6.196883	1 in 124
4603		SW	61.4	825			CO	41.87613	1 in 349
9604	64.31	SW	62.25	225			VC	34	1 in 100
1311		CO		100			VC	24.30656	
3601		SW	62.23	450			CO	53.02147	1 in 171
9212		CO		150			VC	13.96202	
9002		CO		100			VC	24.49438	
0212	66.7	CO	64.31	300			VC	45.60756	1 in 240
0012		SW		150			VC	44.63545	
0402		CO		100			VC	3.820553	1 in
2511		FO	63.03	150			VC	53.45105	1 in 114
3603		SW	62.59	300			VC	40.38563	1 in 168
0108		FO		150			VC	4.117637	
3516		FO		100			VC	10.21782	
9202	66.89	CO	64.43	225			VC	52.40229	1 in 164
2502	65.29	SW	63.14	225			VC	56.30275	1 in 201
9011	68.6	CO	0	225			VC	45.88028	
3609		FO	62.01	150			VC	47.69599	1 in 122
3504		SW	63.04	225			VC	46.15107	1 in 76
3509		FO	62.6	150			VC	47.97712	1 in 72
4101	67.31	CO	63.11	825			CO	137.4081	1 in 286
0308	66.49	CO	0	225			VC	45.32479	
3506		FO	62.33	150			VC	48.63121	1 in 122
5304		CO	0	225			VC	34.05877	
2201	67.4	SW	64.65	525			CO	27.07397	
3605		SW	61.46	825			CO	21.19149	1 in 353
9507		CO		150			VC	12.99201	
4103		CO		150			VC	23.66797	
9301	66.21	CO	63.73	225			VC	99.90495	
1603	64.42	CO	62.84	225			VC	58.0517	1 in 72
2603		SW	62.79	300			VC	30.70145	1 in 154
3019		CO		150			VC	12.81719	
9205	66.73	SW	65.22	375			CO	41.7732	1 in 174
1102	67.4	FO	66.65	225			VC	28.17801	1 in 97
1004		FO		225			VC	32.63143	
0017		FO		100			VC	7.451979	
9001	68.77	CO	63.87	375			VC	57.07013	1 in 136
0013		FO		225			VC	46.40276	
9206		SW		375			CO	53.7122	
3303	66	SW	63.25	825			CO	71.44928	1 in 325
4001	67.72	CO	63.54	825			CO	82.76472	1 in 202
2101	67.4	FO	64.97	225			VC	31.06445	1 in 84
3512		FO		100			VC	17.00864	
3101	66.2	SW	65	600			CO	4.472136	1 in 14
9215		CO		150			VC	2.457824	
2206	67.1	SW	64.05	600			CO	50.24938	
2510		FO	63.25	150			VC	20.54406	1 in 93
4608		FO	60.82	225			VC	43.95362	1 in 152
9302	66.34	CO	64	225			VC	43.18565	1 in 173
1202	67.06	CO	64.94	225			VC	50.93133	1 in 93
3004	67.23	CO	64.7	225			VC	39.56008	1 in 158
3503		SW	63.36	225			VC	26.01608	1 in 81
2602		SW	63.2	225			VC	33.70238	1 in 99
1302	66.91	CO	63.91	375			VC	43.9659	1 in 489
0206	67.28	CO	64.94	225			VC	95.13148	1 in 173
0303	66.5	CO	64.37	225			VC	36.12478	1 in 93
1301	66.68	CO	64.08	300			VC	47.29694	1 in 473
4412		CO		100			VC	17.99376	
0010		SW		150			VC	20.77204	
4301	65.4	SW	63.05	750			CO	31.02874	1 in 94
3606		FO	62.31	150			VC	35.62502	1 in 119
2605		FO	62.54	150			VC	28.48521	1 in 124
3204	67.25	FO	64.29	300			VC	88.39117	1 in 170
2501	65.24	SW	62.84	225			VC	99.28242	1 in 134
2102	67.4	SW	64.79	525			CO	29.06888	
2504	65.1	CO	55.84	1275			BR	9.219544	
4308	64.96	CO	58.13	1100			CO	166.3984	
4307		CO	0	1100			CO	86.27	
2509		SW	63.25	300			VC	57.29397	1 in 205
3502		SW	62.7	375			VC	50.92726	1 in 189
3103	66.24	CO	63.75	300			VC	83.00603	1 in 180
3501		SW	62.97	300			VC	26.05976	1 in 137
2202	67.4	SW	64.52	525			CO	27.20294	
1001		SW		150			VC	26.68387	
0014		FO		225			VC	23.24434	
3511		FO	62.56	150			VC	26.8441	1 in 117
2203	67.4	FO	64.6	225			VC	25.23886	1 in 210
0308	66.49	CO	0	225			VC	61.63782	
3013		CO		150			VC	2.843168	
3302	66.5	SW	63.7	600			CO	45.04442	
2103	67.48	FO	65.15	225			VC	28.17801	1 in 176
9402	66.03	CO	63.09	225			VC	61.22091	1 in 149
1601	64.51	CO	62.1	300			CO	77.17513	1 in 103
3607		FO	61.19	150			VC	18.19369	1 in 130
3301	66.7	FO	64.99	225			VC	34.98571	1 in 250
9602	63.97	SW	61.03	225			VC	53	
3304	65.26	SW	63.03	375			CO	51.33436	1 in 214
0207		CO		100			VC	11.52562	
0603	63.99	SW	61.66	225			VC	90.95603	1 in 149
2508		SW	63.55	225			VC	21.98823	1 in 100
3203	67.25	SW	64.75	600			CO	87.32124	
2601	64.56	CO	62.64	225			VC	37.48333	1 in 73
2204	67.4	SW	64.34	525			CO	63.03174	
2604		FO	62.89	150			VC	31.03217	1 in 89
9504	65.48	CO	63.08	225			VC	42.19004	1 in 53
1605	64.46	CO	55.14	1275			BR	152.5057	
3505		SW	62.43	450			CO	34.39639	1 in 172
1602	64.97	CO	62.71	225			VC	64	1 in 110
2207	67.1	FO	64.83	225			VC	63.07139	1 in 170
3510		FO	61.93	150			VC	32.73555	1 in 113
3508		FO	63	150			VC	25.63804	1 in 64
2205	67.4	FO	64.45	225			VC	15.81139	
9213		CO		150			VC	18.04339	
9502	64.83	CO	61.89	225			VC	56.36488	1 in 123
0310		CO		150			VC	6.159051	
9214		CO		150			VC	10.012	
9101	67.75	CO	62.84	450			CO	82.76472	1 in 188
3604		SW	62.27	375			CO	43.02755	1 in 287
1304		CO		150			VC	10.06363	
0307	66.45	CO	64.28	225			VC	79.39774	1 in 1.27998924
9603		CO	0	1275			BR	62.16912	
9105		CO		100			VC	21.48985	
4604		SW	61.28	825			CO	36.71582	1 in 367
4305		CO		100			VC	21.20441	
9510		CO		100			VC	8.104615	
4423		CO		100			VC	1.997653	
0205		CO		100			VC	5.863021	
0020		FO		150			VC	12.95915	
4404		CO	0	225			VC	29.01724	
9208		CO		150			VC	15.32495	
9417		CO		150			VC	7.506125	
4619		FO		100			VC	10.55895	
0022		SW		100			VC	12.77493	
9503	65.13	CO	62.22	225			VC	52.83938	1 in 170
4610		FO	60.23	225			VC	55.11393	1 in 145
4408		CO		100			VC	7.671601	
4422		CO		100			VC	4.638023	
4406		CO	0	225			VC	26	
4605		SW	61.18	825			CO	17.03801	1 in 341
0121		FO		100			PVC	17.35888	
4609		FO	60.53	225			VC	47.02094	1 in 157
4606		SW	61.13	825			CO	3.09	
3002	67.69	CO	64.4	225			VC	67.97794	1 in 174
9516		CO		150			VC	1.523433	
4403		SW		750			CO	63.78872	
0109		FO		100			PP	13.59739	
4304	64.71	SW	62.63	750			CO	53.54508	1 in 0.88270815
4414		CO		100			VC	9.127616	
9204		CO		150			VC	20.5948	
4402	64.16	CO	61.92	225			VC	80.16349	1 in 72
0110		FO		100			PP	0.994135	
4618		FO		100			VC	11.52951	
0309		CO		150			VC	1.176851	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

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:

Concord Bussiness Park,

Scale: 1:1250 **Date:** 05/11/2025
Nodes: 176
Sheet: 1 of 1

Printed by: Property Searches

SEWER RECORDS

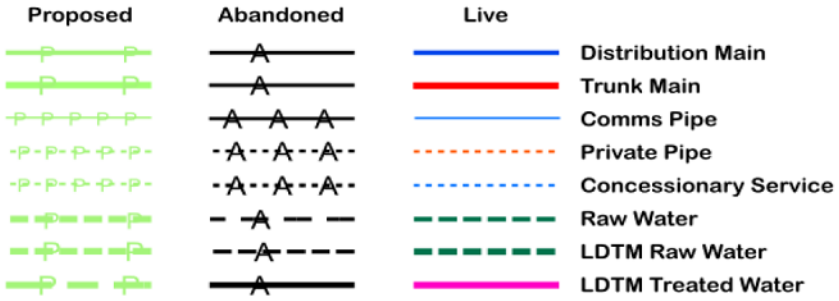
United Utilities
Water for the North West

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.

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

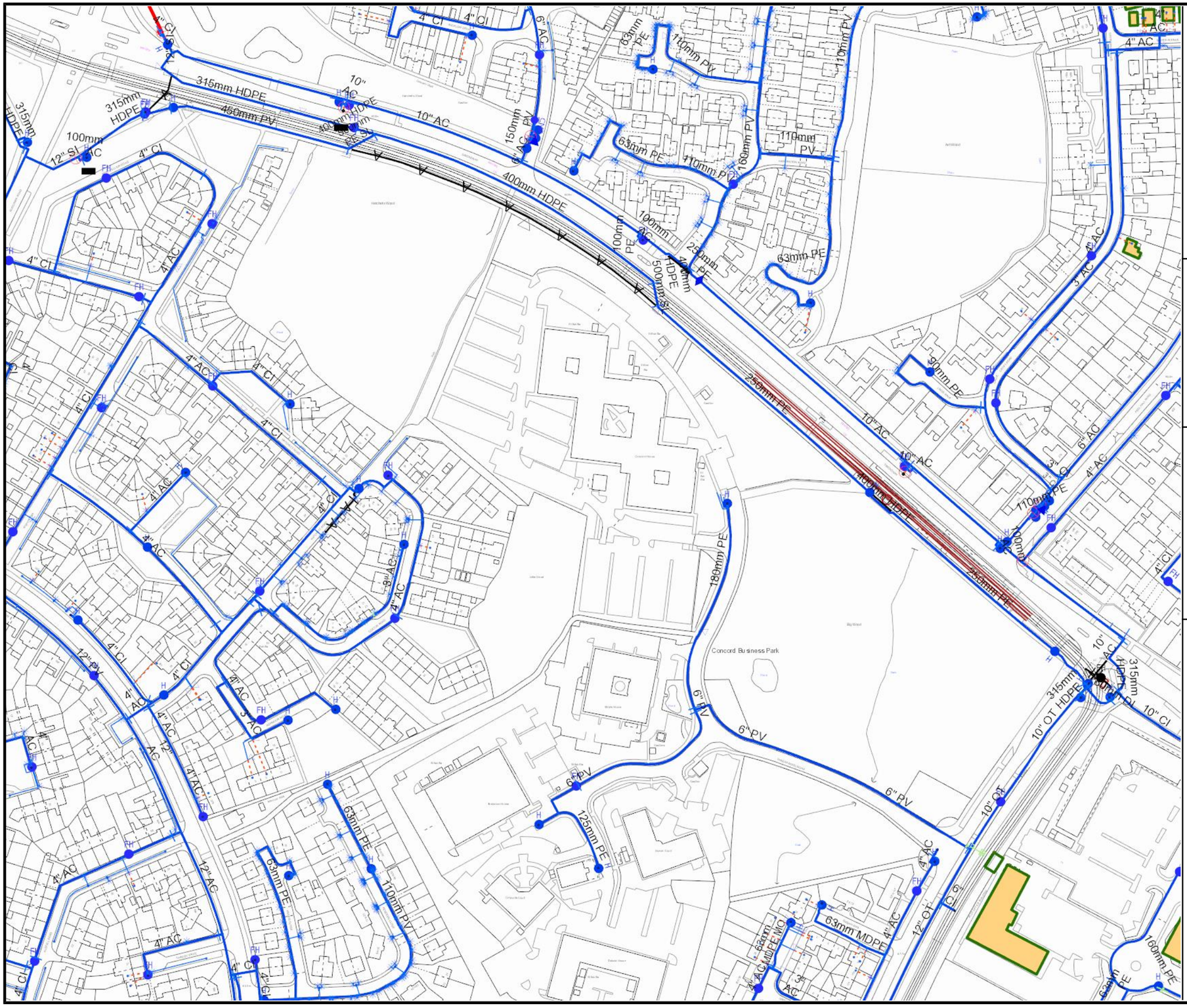
United Utilities
Water for the North West

Clean Water Symbology





Symbology for proposed assets is the same as above, but shown in green
Symbology for abandoned assets is the same as above, but shown in black



United Utilities

Water for the North West

WATER MAIN RECORDS

Address or Site Reference

Concord Bussiness Park,

Scale: 1:2500

Date: 05/11/2025

Printed by: Property Searches

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

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

Appendix D

Topographic Survey

Survey Grid and Datum

The derived coordinate system used for this survey is related to Ordnance Survey national grid using Smartnet RTK (OSTN15 Transformation), orientated to north with a scale factor of 1.000.

The derived level datum used for this survey is related to Ordnance Survey (OSGM15 Geoid Model) using Smartnet RTK.

To avoid discrepancies any coordinated data used in conjunction with this survey must be derived directly from this control data.

The survey control listed is only to be used for topographical surveys at the stated scale. All control must be checked and verified prior to use.

Legend

- Top/Bottom of bank
- Building
- Channel
- Concrete slab
- Closeboard fence
- Chainlink fence
- Concrete post & panel fence
- Iron railing fence
- Palisade fence
- Post & Panel fence
- Post & rail fence
- Post and Wire Fence
- Hedge
- Invert
- Kerb line (bottom)
- Kerb line (top)
- Overhead Power lines
- SBX Switchbox
- Steel
- Tree spread
- Verge
- Wall
- BH Borehole
- Bol Bollard
- CATV Cable tv
- Elec Electric cover
- EP Electricity pole
- Earth Earth rod
- FH Fire hydrant
- G Gulley
- GAS Gas cover
- IC Inspection cover
- LP Lamp post
- MH Manhole

Marker

- OSBM OSBM
- RE Rodding eye
- RS Road sign
- SP Sign post
- Stump Stump
- SV Sluice Valve
- TP Telegraph Pole
- Trees
- TRL Traffic lights
- Trial Pit Trial pit
- Tree Trunk
- W Water cover
- Bus Stop Bus stop
- BT BT rectangle 3 pts

Notes

The contractor must ensure that adequates checks on building dimensions, levels, features are completed prior to commencing any construction works.

Any errors or discrepancies must be notified to Powers UK Ltd immediately.

The accuracy of the digital data is the same as the plotting scale implies.

All dimensions are in metres unless otherwise stated.

Topographical Surveys

Any surveyed boundary features may not be representative of the legal boundary of the site

All reasonable effort has been made to survey features and detail that are unobstructed/visible during at the time of survey

Grouped trees have been shown as a tree spread, individual trees are drawn to scale showing a bole diameter taken at approximately 1.5m above GL and an average spread

Measured Building Surveys

All measurements to internal wall are taken at approximately 1.5m above floor level and assumed to be vertical

© Powers UK Ltd holds the copyright to all the information contained within this document and their written consent must be obtained before copying or using the data other than for the purpose it was originally supplied.

Do not scale from this drawing.

SURVEY STATIONS

Name	Easting	Northing	Height
OK1	383452.796	386149.837	67.103
OK2	383352.195	386208.507	66.694
OK3	383282.337	386226.653	67.647
OK3A	383275.454	386272.082	67.357
OK3B	383284.620	386284.500	67.128
OK4	383313.881	386341.426	66.495
F4	383250.435	386345.694	66.497
GO2	383176.549	386402.083	66.541
OK5	383307.719	386401.244	65.972
OK4A	383256.399	386340.021	66.662
OK4B	383231.274	386343.037	66.786
OK4C	383230.444	386384.720	65.788
GO1	383210.459	386376.834	66.334
OK1A	383236.436	386384.422	65.748
STNF4	383250.435	386345.694	66.497
GO3	383173.120	386440.958	66.024
GO4	383186.583	386504.758	65.720
GO5	383233.997	386493.686	65.571
GO5A	383239.031	386447.153	65.697
GO5B	383251.800	386456.933	65.742
GO6	383258.263	386523.138	65.419
OK5A	383319.912	386373.397	66.314
GO6A	383167.631	386548.891	65.211
GO6B	383390.310	386372.834	65.151
GO6C	383376.556	386385.100	65.316
GO6D	383158.797	386525.371	65.332
GO6E	383134.408	386489.602	65.537
GO6F	383115.460	386439.197	66.265
GO6G	383117.498	386416.839	66.512
GO6H	383150.925	386388.855	66.782

Layout Key

(1)

(2)

Rev	Date	Description	Check
-	--/--/----		---

powers
Integrated Survey Partner

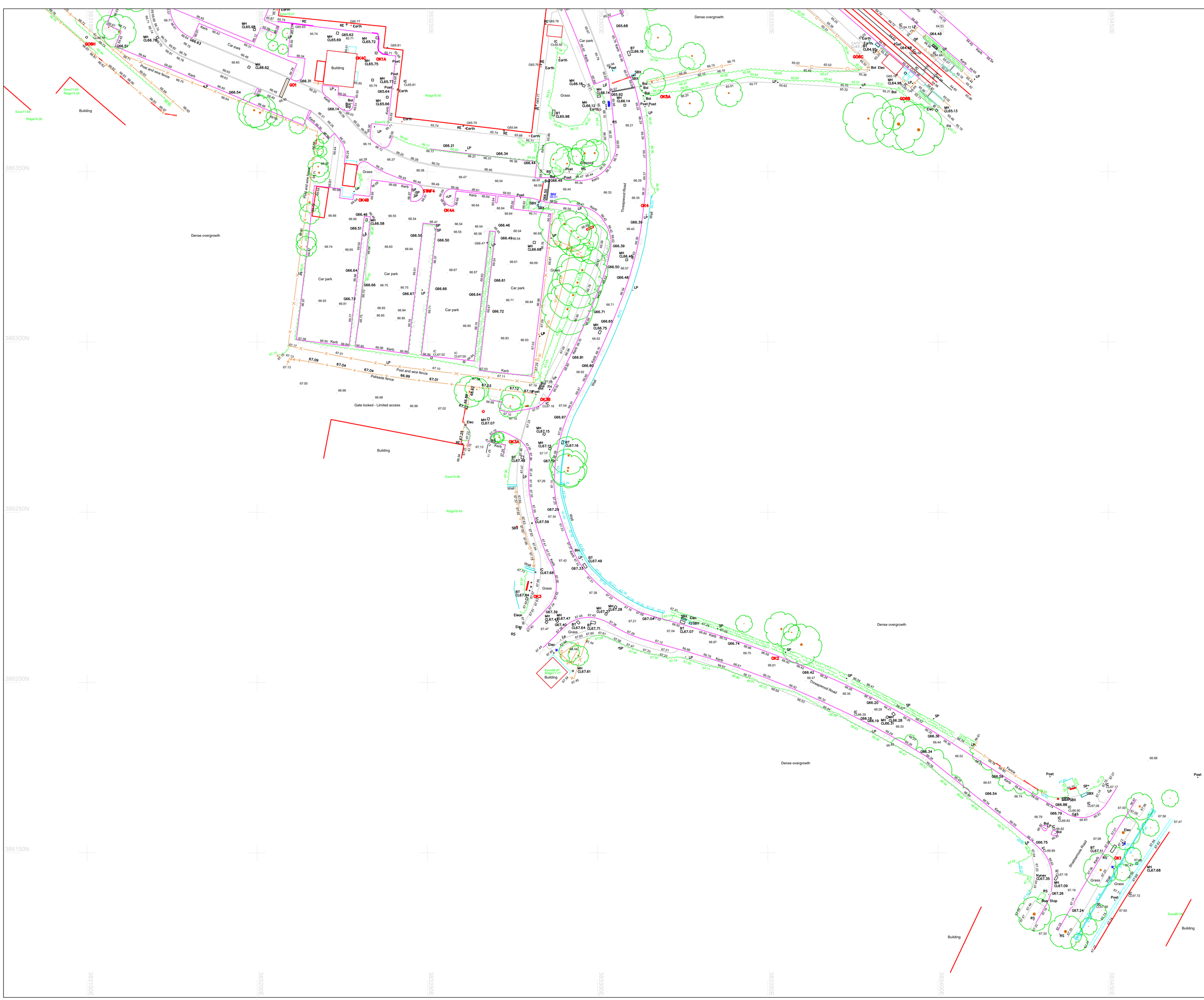
Meridian House, 58-60 Hillside Road, Frodsham, Cheshire WA6 6AG
Tel: 01928 734473
Email: surveyors@powersuk.com
www.powersuk.com

Client: The Harris Partnership

Site: Threapwood Road, Wythenshawe, Manchester, M22 0EY

Title: Topographical Survey

Survey by	OO	Drawn by	OO
Check by	JL	Date	18/08/25
Scale [A1 Sheet]	1:500	Project No.	FP7534
Status	FINAL		
Drawing No.	FP7534-T-01	Revision	



Survey Grid and Datum

The derived coordinate system used for this survey is related to Ordnance Survey grid using Smartnet RTK (OSTN15 Transformation), orientated to north with a factor of 1.000.

The derived level datum used for this survey is related to Ordnance Survey (OSGM Geoid Model) using Smartnet RTK.

To avoid discrepancies any coordinated data used in conjunction with this survey is derived directly from this control data.

The survey control listed is only to be used for topographical surveys at this time. All control must be checked and verified prior to use.

Legend

Top/Bottom of bank		G	Gulley
Building		GAS	Gas cover
Channel		IC	Inspection cover
Concrete slab		LP	Lamp post
Closeboard fence		MH	Manhole
Chainlink fence		Marker	
Concrete post & panel fence		OSBM	Marker post
Iron railing fence		RE	OSBM
Palisade fence		RS	Rodding eye
Post & Panel fence		SP	Road sign
Post & rail fence		Stump	Sign post
Post and Wire Fence		SV	Stump
Hedge		TP	Sluice Valve
Invert		TRL	Telegraph Pole
Kerb line (bottom)		Trial Pit	Trees
Kerb line (top)		W	Traffic lights
Overhead Power lines			Trial pit
Switchbox			Tree Trunk
Steel			Water cover
Tree spread			Bus stop
Verge			BT rectangle 3 pits
Wall			
Borehole			
Bollard			
Cable tv			
Electric cover			
Electricity pole			
Earth rod			
Fire hydrant			

Notes

The contractor must ensure that adequates checks on building dimensions, levels, features are completed prior to commencing any construction works.

Any errors or discrepancies must be notified to Powers UK Ltd immediately.

The accuracy of the digital data is the same as the plotting scale implies.

All dimensions are in metres unless otherwise stated.

Topographical Surveys

Any surveyed boundary features may not be representative of the legal boundary of the site

All reasonable effort has been made to survey features and detail that are unobstructed/visible during at the time of survey

Grouped trees have been shown as a tree spread, individual trees are drawn to scale showing a bole diameter taken at approximately 1.5m above GL and an average spread

Measured Building Surveys

All measurements to internal wall are taken at approximately 1.5m above floor level and assumed to be vertical

© Powers UK Ltd holds the copyright to all the information contained within this document and their written consent must be obtained before copying or using the data other than for the purpose it was originally supplied.

Do not scale from this drawing.

SURVEY STATIONS

Name	Easting	Northing	Height
OK1	383452.796	386149.837	67.103
OK2	383352.195	386208.507	66.694
OK3	383282.337	386226.653	67.647
OK3A	383275.454	386272.082	67.357
OK3B	383284.620	386284.500	67.128
OK4	383313.881	386341.426	66.495
F4	383250.435	386345.694	66.497
G02	383176.549	386402.083	66.541
OK5	383307.719	386401.244	65.972
OK4A	383256.399	386340.021	66.662
OK4B	383231.274	386343.037	66.786
OK4C	383230.444	386384.720	65.788
G01	383210.459	386376.834	66.334
OK1A	383236.436	386384.422	65.748
STNF4	383250.435	386345.694	66.497
G03	383173.120	386440.958	66.024
G04	383186.583	386504.758	65.720
G05	383233.997	386493.686	65.571
G05A	383239.031	386447.153	65.697
G05B	383251.800	386456.933	65.742
G06	383258.263	386523.138	65.419
OK5A	383319.912	386373.397	66.314
G06A	383167.631	386548.891	65.211
G06B	383390.310	386372.834	65.151
G06C	383376.556	386385.100	65.316
G06D	383158.797	386525.371	65.332
G06E	383134.408	386489.602	65.537
G06F	383115.460	386439.197	66.265
G06G	383117.498	386416.839	66.512
G06H	383150.925	386388.855	66.782

Layout Key

Rev	Date	Description	Check
-	--/--/----		--

powers
Integrated Survey Partner

Meridian House, 58-60 Hillside Road, Frodsham, Cheshire WA6 6AG
Tel: 01928 734473
Email: surveyors@powersuk.com
www.powersuk.com

Client: The Harris Partnership

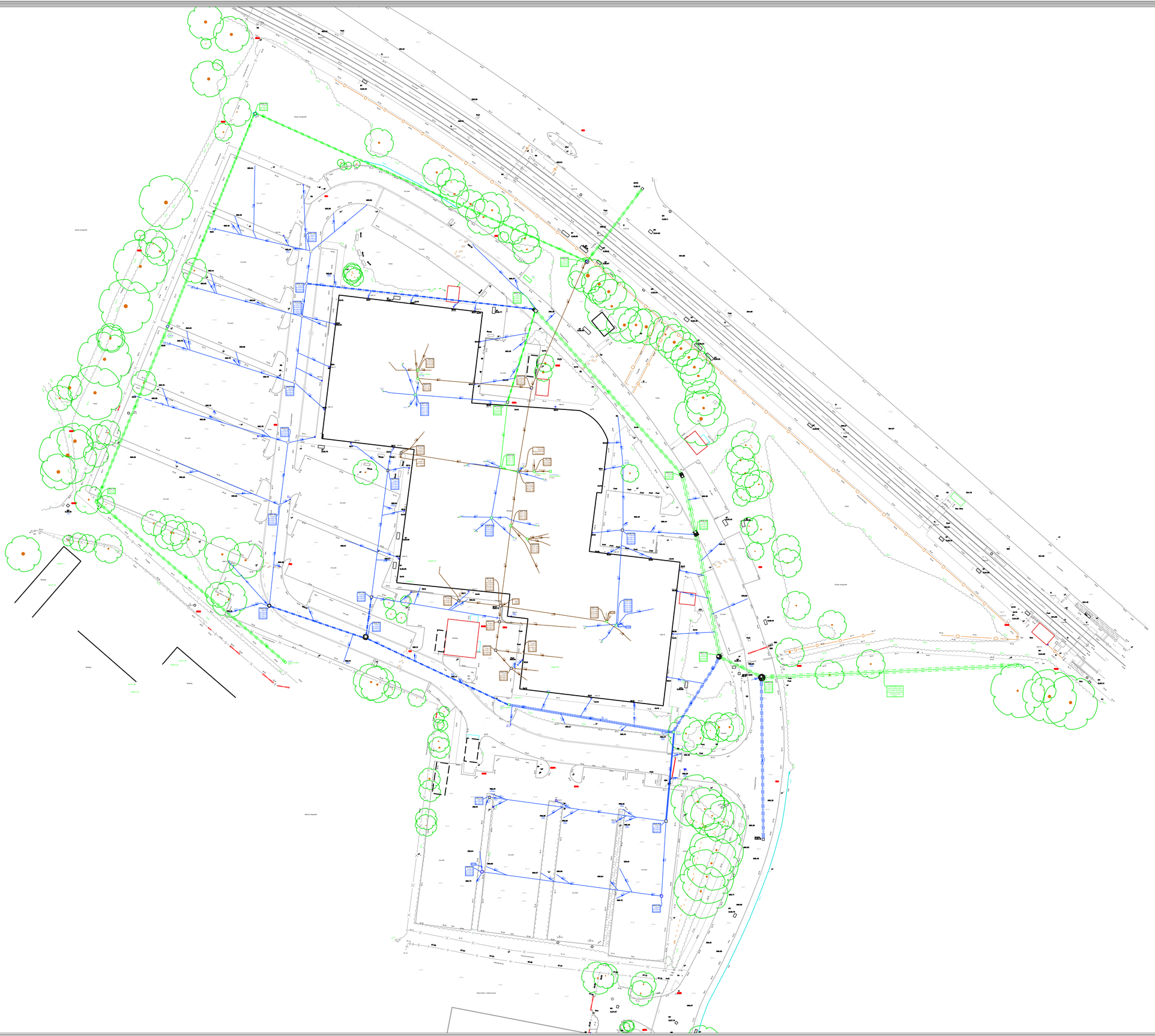
Site: Threapwood Road, Wythenshawe, Manchester, M22 0EY

Title: Topographical Survey

Survey by	OO	Drawn by	OO
Check by	JL	Date	18/08/25
Scale [A1 Sheet]	1:500	Project No.	FP7534
Status	FINAL		
Drawing No.	FP7534-T-02	Revision	

Appendix E

CCTV Survey Plans



N

CCTV KEY

- Surface Water
- Assumed Surface Water
- Foul Water
- Assumed Foul Water
- Combined Water
- Assumed Combined Water
- SV Rising Main
- FV Rising Main
- Vent Pipe
- Survey Boundary

ABBREVIATIONS

B	Sewer broken at this point	GY	Gully
BJ	Broken joint	H	Hole
CC	Circumferential crack	HJ	Hole at joint
CCJ	Circumferential crack on joint	HPWJ	High pressure water jetting
CIPR	Cured in place repair	IR	Infiltration running
CIPP	Cured in place pipe	IS	Infiltration seeping
CM	Multiple cracks	JD	Joint displaced medium
CMJ	Cracks multiple on joint	JN	Junction
CN	Connection	JXD	Junction defective
CUD	Loss of vision (silt)	LD	Line down
CUW	Camera underwater	LL	Line left
CUZ	Loss of vision (Camera under water)	LR	Line right
CW	**Combined water**	LU	Line up
CXD	Connection defective	NCA	No camera access
CXI	Connection intruding	MH	Manhole
DC	Diameter of pipe changes	OJ	Open joint medium
DEC	Settled deposits hard or compacted	**OBP**	**Obstruction (external pipe or cable)**
DEE	Encrustation scale light	REM	General observation at this point with explanation
DEEJ	Encrustation light at joint	RFJ	Roots fine at joint
DEF	Debris foulings	RMJ	Roots mass at joint
DER	Debris rubble	**RE**	**Rodding eye**
DES	Debris silt	RT	Root top
DEX	Othersettled deposits	**SW**	**Surface Water**
DEZ	Other attached deposits	**SA**	**Survey Abandoned**
FC	Fracture circumferential	UTL	Unable to locate
FCJ	Fracture circumferential on joint	UTR	Unable to raise
FL	Fracture longitudinal	UTS	Unable to survey
FM	Fracture multiple	WL	Water level
FMJ	Fracture multiple	XP	Collapse to pipe
FW	**Foul water**	**MHP**	**Major connection without Manhole**
UTC	Unable to Continue		

NOTES

1. *All sewer runs are presumed to be straight line connections between chambers unless proven otherwise by the use of a sonde or CCTV survey.*
2.

DISCLAIMER

Whilst every effort has been taken in the preparation of this drawing, the original land surveyor and subsequent draughtsman cannot guarantee that all services have been plotted. The user shall make further enquiries of the organisations in control of or the ownership of the drawing and position of the apparatus. The exact positions of the apparatus should be proved on site by hand digging trial excavations before the commencement of any work in the vicinity. Further advice on the location of apparatus should be obtained by the user. No liability of any kind whatsoever is accepted by us for any error or omission in the completeness, use and sufficiency or otherwise of this drawing and the position of the apparatus. All excavations in the vicinity of apparatus should be carried out with care and attention. The responsibility of safe working on or near utilities is the users. It is the users responsibility to ensure that the information is brought to the attention of all persons (either direct labour or contractors) working in proximity to the apparatus.

Rev.	Date	Description	Drawn	Q. Ref.

greenhatch group

- Topographical Surveys
- Site Engineering
- Utility / CCTV Surveys
- Measured Building Surveys
- 3D Laser Scanning
- Revit & BIM Models

Rowan House
Duffield Road
Little Eaton
Derby
DE21 5DR

Tel (01332) 830044 Fax (01332) 830055
admin@greenhatch-group.co.uk
www.greenhatch-group.co.uk

St Albans	Newcastle	London
Unit B, The Courtyard Alban Park St Albans Hertfordshire AL4 0LA t. (01727) 854481	24 Riverside Studios Amethyst Road Newcastle Bus. Park Newcastle-U-Tyne NE4 7YL t. (01912) 736391	27, Cornwall Terrace Mews Regents Park London NW1 5LL t. (02072) 241806

CLIENT

Cudd Bentley Consulting

PROJECT

Concord Business Park, Threapwood Road, Wythenshawe, Manchester

TITLE

CCTV Survey

SCALE	DATE
A1@ 1: 500	**24/10/2025**
DRAWN	QUALITY REF.
DE	**JE**

Level datum	*Drawing supplied by client*
Grid orientation	*Drawing supplied by client*
Job number	*55990*

Drawing No.	Rev.
55990_CCTV	*0*

Comments

This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

© Copyright Greenhatch Group 06/07/15

Appendix F

Existing Runoff Rate Calculations

Project	Concord Business Park	Made By	Date	Page
Client	Global Mutual	MQ	20/11/2025	1 of 2
Location	Manchester	Checked	Revision	Job No
Title	Existing Runoff Rate Calculations	RH	P01	3517

HEYNE TILLETT STEEL

Existing runoff rate (free draining)

From FEH 2022 Point Rainfall Data at: 383228, 386419

Rainfall Depths (M5-60 minutes):	M5-60 =	18.7	mm
Time of concentration:	Tc =	15	mins
Design Storm Return Period:	P =	2	years
Rainfall Depths (M2-15 minutes):	M2-15 =	7.46	mm
Average point intensity (M2-15):	i =	29.84	mm/hr
Design Storm Return Period:	P =	30	years
Rainfall Depths (M30-15 minutes):	M30-15 =	19.17	mm
Average point intensity (M30-15):	i =	76.68	mm/hr
Design Storm Return Period:	P =	100	years
Rainfall Depths (M100-15 minutes):	M100-15 =	24.36	mm
Average point intensity (M100-15):	i =	97.44	mm/hr
Rainfall Depths (M100+45%-15 minutes):	M100+45%-15 =	35.32	mm
Average point intensity (M100+45%-15):	i =	141.28	mm/hr
Existing Impermeable Area:	A =	2.15	ha
Runoff Coefficient:	Cv =	1.0	

$$Q_p = 3.61 \times C_v \times i \times A$$

1 in 2 year runoff rate:	Q_2 =	231.6	l/s
1 in 30 year runoff rate:	Q_{30} =	595.15	l/s
1 in 100 year runoff rate:	Q_{100} =	756.28	l/s
1 in 100 year + CC runoff rate:	$Q_{100+45\%}$ =	1096.61	l/s

Project	Concord Business Park	Made By	Date	Page
Client	Global Mutual	MQ	20/11/2025	2 of 2
Location	Manchester	Checked	Revision	Job No
Title	Existing Runoff Rate Calculations	RH	P01	3517

HEYNE TILLETT STEEL

Maximum pipe capacity for connection to UU Sewer

Using the Colebrook-White Equation, the maximum pipe velocity for the connection to the UU sewer can be calculated.

$$v = -2\sqrt{2gS_f D}\log_{10}\left(\frac{k_s}{3.7D} + \frac{2.51\nu}{D\sqrt{2gS_f D}}\right)$$

k_s pipe roughness (m)
S_f hydraulic gradient or friction slope, h_f/L (–)
ν kinematic viscosity (m^2/s)

Combining this formula with the flow rate equation and multiplying by 1000 creates a single formula which can calculate maximum discharge rate for the flow through the connection as a function of, pipe roughness, kinematic viscocity, diameter, and gradient.

k = 0.6 mm for surface water drainage

kin.Visc. = 0.0000013 m^2/s for surface water

Q = V*A A = $(\pi D^2)/4$ g = 9.81m/s^2

$$Pipe\ Capacity(l/s) = \left[\left(\pi\left(\frac{D}{2}\right)^2\right)\left(-2\sqrt{2\times 9.81\times D\times S}\right)\left(\log\left(\frac{k_s\times 0.001}{3.7\times D} + \frac{2.51\times\nu}{D\sqrt{2\times 9.81\times S\times D}}\right)\right)\right]\times 1000$$

US MH	MH37
DS MH	UU3303
Upstream IL (mAOD)	63.38
Downstream IL (mAOD)	63.37
Length (m)	11.55
S (1 in...)	1155
S (Dec.)	0.00087
D (m)	0.45
Area (m^2)	0.159
V (m/s)	0.586
Pipe Capacity (m^3/s)	0.093
Pipe Capacity (l/s)	93.257

Therefore the maximum flowrate that can leave the site via this connection to the UU sewer is 93.257 l/s.

Appendix G

Greenfield Runoff Rate Calculations

Greenfield runoff rate estimation tool

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

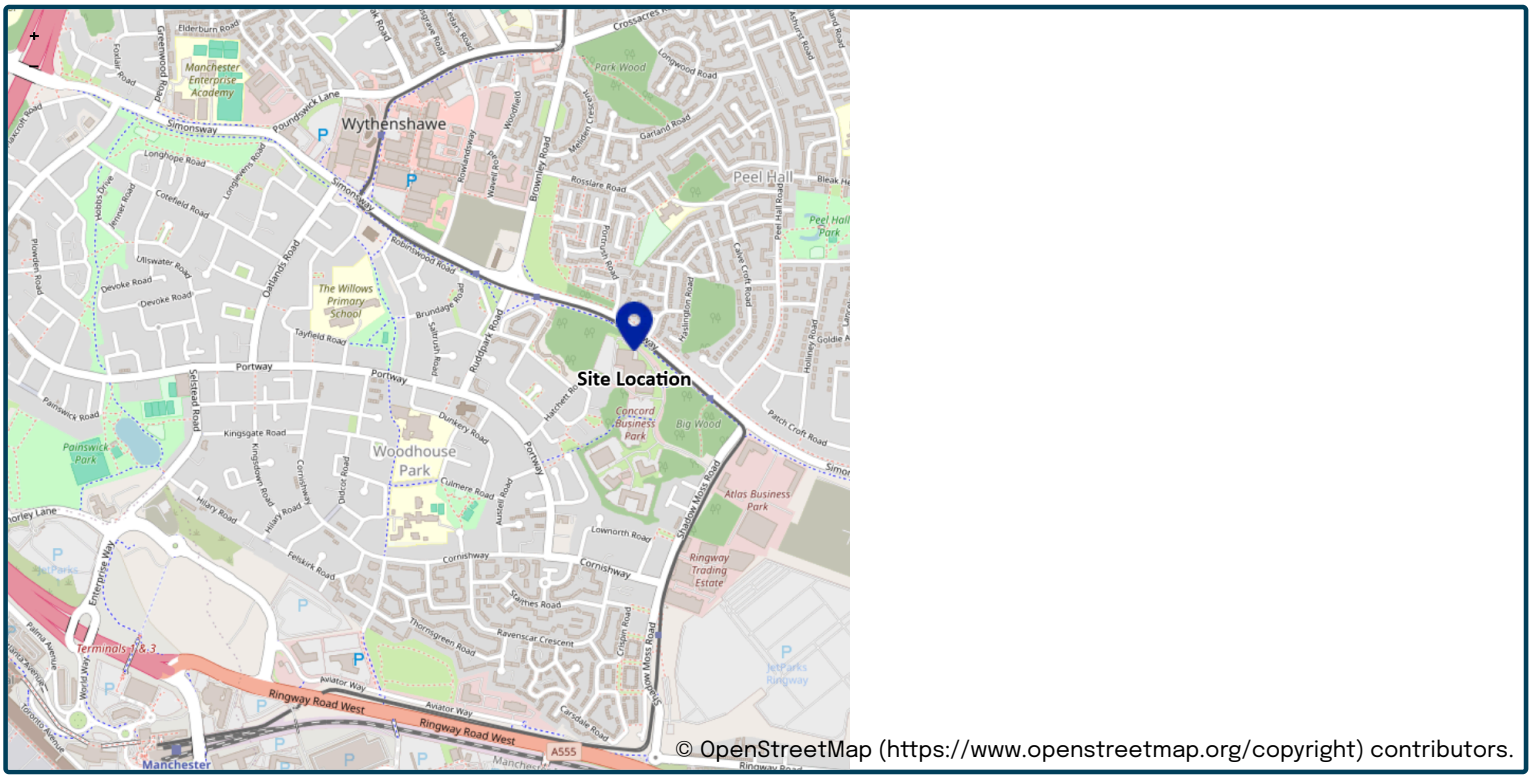
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	04/12/2025
Calculated by	Matthew Quant
Reference	3517
Model version	2.2.2

Location

Site name	Concord Logistics
Site location	Wythenshawe



Site easting (British National Grid)	383234
Site northing (British National Grid)	386416

Site details

Total site area (ha)	3 ha

Greenfield runoff

Method

Method	FEH statistical (2025)

FEH statistical (2025)

	My value		Map value
SAAR9120 (mm)	859 mm		
BFIHOST19scaled	0.361		
QMed-QBar conversion	1.075		1.075
QMed (l/s)	19.5 l/s		
QBar (FEH statistical 2025) (l/s)	20.9 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)	18.2 l/s
Flow rate 2 year (l/s)	19.5 l/s
Flow rate 10 years (l/s)	28.9 l/s
Flow rate 30 years (l/s)	35.6 l/s
Flow rate 100 years (l/s)	43.5 l/s
Flow rate 200 years (l/s)	49.6 l/s

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

Disclaimer

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

Appendix H

Proposed SuDS Strategy

100mm @ A1 (50mm @ A3)

1. This drawing is to be read in conjunction with all relevant Architects, Engineers and specialists drawings and specifications.
2. Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm
3. This drawing has been based on the following external inputs:

6.1	Topo Survey:	Powers
	Drawing title:	Topographical Survey
	Drawing number:	FP7534-T-01
	Date issued:	18/08/25
6.2	CCTV Survey:	Greenhatch Group
	Drawing title:	CCTV Survey
	Drawing Number:	55990_CCTV
	Date issued:	24/10/2025
6.3	Architect:	The Harris Partnership
	Drawing title:	Proposed Site Plan
	Drawing number:	21701-THPL-XX-XX-DR-A-(PL)1110
	Date issued:	11/12/25 (Rev P11)

Key

- Application Boundary

Existing drainage

- Foul Water (FW) existing sewer
- Surface Water (SW) existing sewer

Proposed Private Drainage

- FW private sewer
- SW private sewer
- FC — Proposed SW flow control manhole
- CP — Proposed SW catchpit manhole
- Attenuation tanks
- Permeable paving
- Dock leveller utilised as dry retention basin

UUMH2400
1200mm
CL: 65.512m
IL: 61.000m

Attenuation Tank 01
Area: 658 m²
Depth: 0.5 m
CL: 65.300 m
IL: 64.200 m
Void Ratio 95%
Gross Volume: 329 m³
Attenuation Volume: 313 m³

Attenuation Tank P01
Area: 256 m²
Depth: 0.8 m
CL: 65.600 m
IL: 64.200 m
Void Ratio 95%
Gross Volume: 205 m³
Attenuation Volume: 195 m³

Permeable Paving 01
Area: 658 m²
Depth: 0.4 m
Gross Volume: 263 m³
Void Ratio : 30%
Attenuation Volume: 79 m³

Full retention separator to be installed with approx dimensions (based on upstream drainage area):
- 15.833m length
- Ø2.830m

UUMH1500
1200mm
CL: 66.100m
IL: 62.800m

Full Foul Water Drainage design to be further developed at next stage.

New direct connection to UU Foul Water Sewer. Subject to S106 Aggreement.

Dock Leveller 01
Volume: 85 m³

SWMH06
1200mm
CL: 65.535m
IL: 64.187m

Attenuation Tank 02
Area: 288 m²
Depth: 0.6 m
CL: 65.900 m
IL: 64.700 m
Void Ratio 95%
Gross Volume: 173 m³
Attenuation Volume: 164 m³

SWMH01
1200mm
CL: 65.882m
IL: 64.635m

SWMH03
1200mm
CL: 65.411m
IL: 64.355m

SWMH09
1200mm
CL: 65.801m
IL: 64.160m

SWMH11
2100mm
CL: 66.040m
IL: 63.963m

Hydrobrake Chamber restricted discharge rate: 20.9 l/s

New direct connection to UU Surface Water Sewer. Subject to S106 Aggreement.

300mm @ 1:205
300mm @ 1:201
300mm @ 1:208
300mm @ 1:231
300mm @ 1:213

SWMH02
1200mm
CL: 65.405m
IL: 64.380m

SWMH04
1200mm
CL: 65.451m
IL: 64.285m

SWMH05
1200mm
CL: 65.460m
IL: 64.229m

SWMH07
1200mm
CL: 65.540m
IL: 64.170m

SWMH08
1200mm
CL: 65.675m
IL: 64.170m

SWMH10
1200mm
CL: 65.887m
IL: 64.048m

UUMH3303
1200mm
CL: 66.210m
IL: 63.320m

Permeable Paving 03
Area: 791 m²
Depth: 0.4 m
Gross Volume: 316 m³
Void Ratio : 30%
Attenuation Volume: 95 m³

Dock Leveller 02
Volume: 170 m³

Permeable Paving 02
Area: 883 m²
Depth: 0.4 m
Gross Volume: 353 m³
Void Ratio : 30%
Attenuation Volume: 106 m³

Attenuation Tank P02
Area: 330 m²
Depth: 0.5 m
CL: 65.500 m
IL: 64.400 m
Void Ratio 95%
Gross Volume: 165 m³
Attenuation Volume: 157 m³

Attenuation Tank P03
Area: 243 m²
Depth: 0.8 m
CL: 65.600 m
IL: 64.200 m
Void Ratio 95%
Gross Volume: 194 m³
Attenuation Volume: 185 m³

Dock Leveller 03
Volume: 180 m³

Attenuation Tank 03
Area: 555 m²
Depth: 0.6 m
CL: 65.500 m
IL: 64.300 m
Void Ratio 95%
Gross Volume: 333 m³
Attenuation Volume: 316 m³

UUMH1400
1200mm
CL: 66.710m
IL: 63.390m

HOCKENHULL CLOSE
SIMONSWAY
Path

Attenuation Summary

Ref.	Attenuation Volume Provided (m^3)
Attenuation Tank 01	313
Attenuation Tank 02	164
Attenutation Tank 03	316
Attenuation Tank P1	195
Attenuation Tank P2	157
Attenuation Tank P3	185
Permeable Paving 01	79
Permeable Paving 02	106
Permeable Paving 03	95
Dock Leveller 01	85
Dock Leveller 02	170
Dock Leveller 03	180
Total	**2045**

Rev	Date	By	Eng	Amendments
P03	16.12.25	MQ	RH	Updates following comments from Arboriculturist
P02	10.12.25	MQ	RH	Updated Architect's Layout
P01	21.11.25	MQ	RH	Draft Issue

HEYNE TILLETT STEEL
STRUCTURAL & CIVIL ENGINEERS
www.hts.uk.com

Job Name
Concord Logistics
Concord Business Park, Threapwood Rd, Wynthenshawe, Manchester, M22 0EY

Drawing Title
Proposed SuDS Strategy

Purpose of Issue Planning
Scale at A1 1:500

Drg No. 3517-HTS-XX-00-DR-CD-50001

HTS Job No 3517 Suitability S3 Rev P03

Appendix I

Proposed Drainage Calculations

Design Settings

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

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Tank02	0.361	5.00	65.900	1200	383191.558	386460.792	1.200
SWMH01	0.032	5.00	65.882	1200	383195.357	386465.705	1.247
TankP2	0.138	5.00	65.600	1200	383235.147	386423.845	1.200
SWMH02			65.405	1200	383237.131	386426.416	1.025
SWMH03	0.024	5.00	65.411	1200	383239.956	386430.017	1.056
Tank03	0.853	5.00	65.600	1200	383250.671	386409.809	1.300
SWMH04			65.451	1200	383251.044	386412.239	1.166
SWMH05	0.041	5.00	65.460	1200	383259.611	386414.212	1.231
TankP3	0.137	5.00	65.500	1200	383270.475	386396.147	1.300
SWMH08			65.675	1200	383275.058	386395.498	1.505
Dock01	0.016	5.00	65.300	1200	383277.648	386437.259	1.050
Tank01	0.433	5.00	65.500	1200	383273.186	386411.581	1.300
SWMH06			65.535	1200	383271.369	386409.319	1.348
TankP1	0.090	5.00	65.600	1200	383289.329	386398.564	1.400
SWMH07	0.030	5.00	65.540	1200	383269.166	386406.583	1.370
SWMH10	0.023	5.00	65.887	1200	383290.993	386388.925	1.839
SWMH11			66.040	2100	383305.058	386377.543	2.077
UUMH3303			66.210	1200	383308.000	386369.494	2.290
Dock02	0.030	5.00	65.900	1200	383168.334	386453.073	1.150
Dock03	0.032	5.00	66.100	1200	383243.073	386385.663	1.300
SWMH09			65.801	1200	383287.380	386396.098	1.641

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	Dock02	Tank02	24.473	0.600	64.750	64.700	0.050	489.5	300	5.58	50.0
2.000	Tank02	SWMH01	6.210	0.600	64.700	64.635	0.065	95.5	300	5.64	50.0
3.000	SWMH01	SWMH03	57.120	0.600	64.635	64.355	0.280	204.0	300	6.51	50.0
4.000	TankP2	SWMH02	3.248	0.600	64.400	64.380	0.020	162.4	300	5.04	50.0
5.000	SWMH02	SWMH03	4.577	0.600	64.380	64.355	0.025	183.1	300	5.11	50.0
6.000	SWMH03	SWMH05	25.221	0.600	64.355	64.229	0.126	200.2	300	6.89	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.704	49.7	5.4	0.850	0.900	0.030	0.0	67	0.464
2.000	1.608	113.7	70.7	0.900	0.947	0.391	0.0	171	1.692
3.000	1.097	77.5	76.4	0.947	0.756	0.423	0.0	243	1.243
4.000	1.231	87.0	24.9	0.900	0.725	0.138	0.0	110	1.068
5.000	1.159	81.9	24.9	0.725	0.756	0.138	0.0	113	1.021
6.000	1.107	78.3	105.7	0.756	0.931	0.585	0.0	300	1.122

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
7.000	Dock03	Tank03	25.313	0.600	64.800	64.300	0.500	50.6	300	5.19	50.0
8.000	Tank03	SWMH04	2.458	0.600	64.300	64.285	0.015	163.9	300	5.22	50.0
9.000	SWMH04	SWMH05	8.791	0.600	64.285	64.229	0.056	157.0	300	5.34	50.0
10.000	SWMH05	SWMH07	12.227	0.600	64.229	64.170	0.059	207.2	300	7.08	50.0
11.000	Dock01	Tank01	26.063	0.600	64.250	64.200	0.050	521.3	300	5.64	50.0
12.000	Tank01	SWMH06	2.901	0.600	64.200	64.187	0.013	223.2	300	5.68	50.0
13.000	SWMH06	SWMH07	3.513	0.600	64.187	64.170	0.017	206.6	300	5.74	50.0
14.000	TankP1	SWMH09	3.143	0.600	64.200	64.160	0.040	78.6	300	5.03	50.0
15.000	SWMH09	SWMH10	8.032	0.600	64.160	64.048	0.112	71.7	300	5.10	50.0
16.000	TankP3	SWMH08	4.629	0.600	64.200	64.170	0.030	154.3	300	5.06	50.0
17.000	SWMH08	SWMH10	17.237	0.600	64.170	64.048	0.122	141.3	300	5.28	50.0
18.000	SWMH07	SWMH10	28.075	0.600	64.170	64.048	0.122	230.1	300	7.53	50.0
19.000	SWMH10	SWMH11	18.093	0.600	64.048	63.963	0.085	212.9	300	7.81	50.0
20.000	SWMH11	UUMH3303	8.570	0.600	63.963	63.920	0.043	199.3	300	7.94	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
7.000	2.214	156.5	5.8	1.000	1.000	0.032	0.0	39	1.067
8.000	1.225	86.6	159.9	1.000	0.866	0.885	0.0	300	1.241
9.000	1.252	88.5	159.9	0.866	0.931	0.885	0.0	300	1.268
10.000	1.088	76.9	273.0	0.931	1.070	1.511	0.0	300	1.102
11.000	0.682	48.2	2.9	0.750	1.000	0.016	0.0	50	0.377
12.000	1.048	74.1	81.1	1.000	1.048	0.449	0.0	300	1.062
13.000	1.090	77.0	81.1	1.048	1.070	0.449	0.0	266	1.224
14.000	1.775	125.5	16.3	1.100	1.341	0.090	0.0	72	1.234
15.000	1.859	131.4	16.3	1.341	1.539	0.090	0.0	71	1.275
16.000	1.263	89.3	24.8	1.000	1.205	0.137	0.0	108	1.084
17.000	1.320	93.3	24.8	1.205	1.539	0.137	0.0	105	1.121
18.000	1.032	72.9	359.6	1.070	1.539	1.990	0.0	300	1.045
19.000	1.073	75.9	404.8	1.539	1.777	2.240	0.0	300	1.087
20.000	1.110	78.4	404.8	1.777	1.990	2.240	0.0	300	1.124

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	24.473	489.5	300	Circular	65.900	64.750	0.850	65.900	64.700	0.900
2.000	6.210	95.5	300	Circular	65.900	64.700	0.900	65.882	64.635	0.947
3.000	57.120	204.0	300	Circular	65.882	64.635	0.947	65.411	64.355	0.756
4.000	3.248	162.4	300	Circular	65.600	64.400	0.900	65.405	64.380	0.725
5.000	4.577	183.1	300	Circular	65.405	64.380	0.725	65.411	64.355	0.756
6.000	25.221	200.2	300	Circular	65.411	64.355	0.756	65.460	64.229	0.931

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	Dock02	1200	Manhole	Adoptable	Tank02	1200	Manhole	Adoptable
2.000	Tank02	1200	Manhole	Adoptable	SWMH01	1200	Manhole	Adoptable
3.000	SWMH01	1200	Manhole	Adoptable	SWMH03	1200	Manhole	Adoptable
4.000	TankP2	1200	Manhole	Adoptable	SWMH02	1200	Manhole	Adoptable
5.000	SWMH02	1200	Manhole	Adoptable	SWMH03	1200	Manhole	Adoptable
6.000	SWMH03	1200	Manhole	Adoptable	SWMH05	1200	Manhole	Adoptable

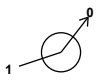
Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
7.000	25.313	50.6	300	Circular	66.100	64.800	1.000	65.600	64.300	1.000
8.000	2.458	163.9	300	Circular	65.600	64.300	1.000	65.451	64.285	0.866
9.000	8.791	157.0	300	Circular	65.451	64.285	0.866	65.460	64.229	0.931
10.000	12.227	207.2	300	Circular	65.460	64.229	0.931	65.540	64.170	1.070
11.000	26.063	521.3	300	Circular	65.300	64.250	0.750	65.500	64.200	1.000
12.000	2.901	223.2	300	Circular	65.500	64.200	1.000	65.535	64.187	1.048
13.000	3.513	206.6	300	Circular	65.535	64.187	1.048	65.540	64.170	1.070
14.000	3.143	78.6	300	Circular	65.600	64.200	1.100	65.801	64.160	1.341
15.000	8.032	71.7	300	Circular	65.801	64.160	1.341	65.887	64.048	1.539
16.000	4.629	154.3	300	Circular	65.500	64.200	1.000	65.675	64.170	1.205
17.000	17.237	141.3	300	Circular	65.675	64.170	1.205	65.887	64.048	1.539
18.000	28.075	230.1	300	Circular	65.540	64.170	1.070	65.887	64.048	1.539
19.000	18.093	212.9	300	Circular	65.887	64.048	1.539	66.040	63.963	1.777
20.000	8.570	199.3	300	Circular	66.040	63.963	1.777	66.210	63.920	1.990

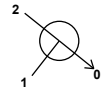
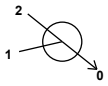
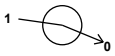
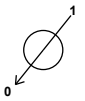
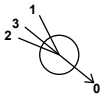
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
7.000	Dock03	1200	Manhole	Adoptable	Tank03	1200	Manhole	Adoptable
8.000	Tank03	1200	Manhole	Adoptable	SWMH04	1200	Manhole	Adoptable
9.000	SWMH04	1200	Manhole	Adoptable	SWMH05	1200	Manhole	Adoptable
10.000	SWMH05	1200	Manhole	Adoptable	SWMH07	1200	Manhole	Adoptable
11.000	Dock01	1200	Manhole	Adoptable	Tank01	1200	Manhole	Adoptable
12.000	Tank01	1200	Manhole	Adoptable	SWMH06	1200	Manhole	Adoptable
13.000	SWMH06	1200	Manhole	Adoptable	SWMH07	1200	Manhole	Adoptable
14.000	TankP1	1200	Manhole	Adoptable	SWMH09	1200	Manhole	Adoptable
15.000	SWMH09	1200	Manhole	Adoptable	SWMH10	1200	Manhole	Adoptable
16.000	TankP3	1200	Manhole	Adoptable	SWMH08	1200	Manhole	Adoptable
17.000	SWMH08	1200	Manhole	Adoptable	SWMH10	1200	Manhole	Adoptable
18.000	SWMH07	1200	Manhole	Adoptable	SWMH10	1200	Manhole	Adoptable
19.000	SWMH10	1200	Manhole	Adoptable	SWMH11	2100	Manhole	Adoptable
20.000	SWMH11	2100	Manhole	Adoptable	UUMH3303	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections		Link	IL (m)	Dia (mm)
Tank02	383191.558	386460.792	65.900	1.200	1200		1	1.000	64.700	300
							0	2.000	64.700	300
SWMH01	383195.357	386465.705	65.882	1.247	1200		1	2.000	64.635	300
							0	3.000	64.635	300
TankP2	383235.147	386423.845	65.600	1.200	1200					
							0	4.000	64.400	300
SWMH02	383237.131	386426.416	65.405	1.025	1200		1	4.000	64.380	300
							0	5.000	64.380	300

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWMH03	383239.956	386430.017	65.411	1.056	1200		1	5.000	64.355	300
							2	3.000	64.355	300
							0	6.000	64.355	300
Tank03	383250.671	386409.809	65.600	1.300	1200		1	7.000	64.300	300
							0	8.000	64.300	300
SWMH04	383251.044	386412.239	65.451	1.166	1200		1	8.000	64.285	300
							0	9.000	64.285	300
SWMH05	383259.611	386414.212	65.460	1.231	1200		1	9.000	64.229	300
							2	6.000	64.229	300
							0	10.000	64.229	300
TankP3	383270.475	386396.147	65.500	1.300	1200		0	16.000	64.200	300
SWMH08	383275.058	386395.498	65.675	1.505	1200		1	16.000	64.170	300
							0	17.000	64.170	300
Dock01	383277.648	386437.259	65.300	1.050	1200		0	11.000	64.250	300
Tank01	383273.186	386411.581	65.500	1.300	1200		1	11.000	64.200	300
							0	12.000	64.200	300
SWMH06	383271.369	386409.319	65.535	1.348	1200		1	12.000	64.187	300
							0	13.000	64.187	300
TankP1	383289.329	386398.564	65.600	1.400	1200		0	14.000	64.200	300
SWMH07	383269.166	386406.583	65.540	1.370	1200		1	13.000	64.170	300
							2	10.000	64.170	300
							0	18.000	64.170	300
SWMH10	383290.993	386388.925	65.887	1.839	1200		1	15.000	64.048	300
							2	17.000	64.048	300
							3	18.000	64.048	300
							0	19.000	64.048	300
SWMH11	383305.058	386377.543	66.040	2.077	2100		1	19.000	63.963	300
							0	20.000	63.963	300

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
UUMH3303	383308.000	386369.494	66.210	2.290	1200	 1	20.000	63.920	300
Dock02	383168.334	386453.073	65.900	1.150	1200	 0	1.000	64.750	300
Dock03	383243.073	386385.663	66.100	1.300	1200	 0	7.000	64.800	300
SWMH09	383287.380	386396.098	65.801	1.641	1200	 1 0	14.000 15.000	64.160 64.160	300 300

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

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

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

Node SWMH11 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	63.963	Product Number	CTL-SHE-0189-2090-1900-2090
Design Depth (m)	1.900	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	20.9	Min Node Diameter (mm)	1800

Node Tank01 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	658.0	0.0	0.500	658.0	0.0	0.501	0.0	0.0

Node Tank03 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.300
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	555.0	0.0	0.600	555.0	0.0	0.601	0.0	0.0

Node Tank02 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.700
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	225

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	288.0	0.0	0.600	288.0	0.0	0.601	0.0	0.0

Node TankP1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	65.000	Slope (1:X)	60.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	75	Depth (m)	0.400
Safety Factor	2.0	Width (m)	15.000	Inf Depth (m)	
Porosity	0.30	Length (m)	44.000		

Node TankP1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	256.0	0.0	0.800	256.0	0.0	0.801	0.0	0.0

Node TankP3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	65.000	Slope (1:X)	34.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	135	Depth (m)	0.400
Safety Factor	2.0	Width (m)	17.600	Inf Depth (m)	
Porosity	0.30	Length (m)	45.000		

Node TankP3 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	243.0	0.0	0.800	243.0	0.0	0.801	0.0	0.0

Node TankP2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	64.900	Slope (1:X)	56.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	105	Depth (m)	0.400
Safety Factor	2.0	Width (m)	16.050	Inf Depth (m)	
Porosity	0.30	Length (m)	55.000		

Node TankP2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.400
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	330.0	0.0	0.500	330.0	0.0	0.501	0.0	0.0

Node Dock01 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.250
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	85.0	0.0	1.000	85.0	0.0	1.001	0.0	0.0

Node Dock02 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.750
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	105

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	170.0	0.0	1.000	170.0	0.0	1.001	0.0	0.0

Node Dock03 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.800
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	180.0	0.0	1.000	180.0	0.0	1.001	0.0	0.0

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	Tank02	585	65.291	0.591	31.2	162.4090	0.0000	SURCHARGED
720 minute winter	SWMH01	690	65.291	0.656	24.7	0.7422	0.0000	SURCHARGED
600 minute winter	TankP2	585	65.292	0.892	26.5	166.3778	0.0000	SURCHARGED
720 minute winter	SWMH02	690	65.291	0.911	15.0	1.0307	0.0000	FLOOD RISK
720 minute winter	SWMH03	690	65.291	0.936	26.1	1.0589	0.0000	FLOOD RISK
60 minute summer	Tank03	38	65.431	1.131	481.0	317.8924	0.0000	FLOOD RISK
600 minute winter	SWMH04	585	65.290	1.005	25.7	1.1370	0.0000	FLOOD RISK
720 minute winter	SWMH05	690	65.291	1.062	42.1	1.2013	0.0000	FLOOD RISK
720 minute winter	TankP3	690	65.282	1.082	17.4	188.2017	0.0000	FLOOD RISK
720 minute winter	SWMH08	690	65.282	1.112	9.5	1.2577	0.0000	SURCHARGED
600 minute winter	Dock01	585	65.290	1.040	11.1	86.2191	0.0000	FLOOD RISK
720 minute winter	Tank01	690	65.289	1.089	38.0	314.0938	0.0000	FLOOD RISK
720 minute winter	SWMH06	690	65.289	1.102	22.4	1.2465	0.0000	FLOOD RISK
720 minute winter	TankP1	690	65.282	1.082	18.2	201.7957	0.0000	SURCHARGED
720 minute winter	SWMH07	690	65.288	1.118	43.4	1.2648	0.0000	FLOOD RISK
600 minute winter	SWMH10	585	65.282	1.234	47.4	1.3960	0.0000	SURCHARGED
720 minute winter	SWMH11	690	65.276	1.313	21.1	4.5492	0.0000	SURCHARGED
30 minute summer	UUMH3303	197	64.024	0.104	20.9	0.0000	0.0000	OK
600 minute winter	Dock02	585	65.291	0.541	13.5	92.6602	0.0000	SURCHARGED
720 minute winter	Dock03	690	65.291	0.491	11.7	88.9687	0.0000	SURCHARGED
600 minute winter	SWMH09	585	65.282	1.122	15.0	1.2694	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Tank02	2.000	SWMH01	66.0	1.191	0.581	0.4373	
15 minute winter	SWMH01	3.000	SWMH03	79.1	1.170	1.020	4.0224	
60 minute summer	TankP2	4.000	SWMH02	-101.3	-1.439	-1.164	0.2287	
60 minute summer	SWMH02	5.000	SWMH03	-101.4	-1.441	-1.239	0.3223	
30 minute summer	SWMH03	6.000	SWMH05	41.4	0.698	0.529	1.7760	
60 minute summer	Tank03	8.000	SWMH04	159.0	2.258	1.836	0.1731	
60 minute summer	SWMH04	9.000	SWMH05	163.0	2.315	1.842	0.6191	
60 minute summer	SWMH05	10.000	SWMH07	135.6	1.925	1.762	0.8610	
120 minute summer	TankP3	16.000	SWMH08	-25.1	0.409	-0.282	0.3260	
120 minute summer	SWMH08	17.000	SWMH10	-25.3	-0.359	-0.271	1.2138	
120 minute summer	Dock01	11.000	Tank01	-51.6	-0.732	-1.070	1.8353	
60 minute summer	Tank01	12.000	SWMH06	-77.5	-1.100	-1.046	0.2043	
60 minute summer	SWMH06	13.000	SWMH07	-77.4	-1.099	-1.004	0.2474	
60 minute summer	TankP1	14.000	SWMH09	-44.2	-0.719	-0.352	0.2213	
120 minute winter	SWMH07	18.000	SWMH10	77.9	1.106	1.068	1.9770	
240 minute winter	SWMH10	19.000	SWMH11	27.0	0.383	0.356	1.2741	
30 minute summer	SWMH11	20.000	UUMH3303	20.9	0.902	0.266	0.1984	325.8
30 minute summer	Dock02	1.000	Tank02	-57.6	-0.991	-1.158	1.5966	
60 minute summer	Dock03	7.000	Tank03	-103.8	-2.035	-0.663	1.5079	
60 minute summer	SWMH09	15.000	SWMH10	-44.7	-0.635	-0.341	0.5656	

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

HEYNE TILLETT STEEL

Appendix J

SuDS Maintenance Plan

3517 – Concord Business Park, Threapwood Rd, Manchester M22 0EY
Date: November 2025
Prepared by: MQ

Drainage Inspection and Maintenance Strategy

This document has been prepared to support the inspection and maintenance of the proposed below ground drainage of the Concord Business Park site. The drainage network comprises surface and foul water drainage systems:

- Surface water network will route all the rainwater towards outfall manholes and United Utilities surface water sewers via gravity; comprising permeable paving, cellular storage and associated piped drainage.
- Foul water network from above ground level will be routed towards outfall manholes and the United Utilities foul water sewer via gravity.

In accordance with CIRIA C625 it is recommended that a private SuDS maintenance agreement is undertaken as a simple contract between the property owner and the maintenance provider (the maintainer). It is mainly to facilitate continuing maintenance of the SuDS that are in private ownership. The maintenance requirements are in accordance with the CIRIA C753 SuDS Manual 2015 and product manufacturer's requirements.

The following Drainage / SuDS measures are proposed within the development:

- General Drainage:

Maintenance Period	Maintenance Task	Frequency
Regular maintenance	Inspect and identify areas that are not operating correctly. If required, take remedial action.	Monthly
	Inspect surface structures and covers removing obstructions and silt as necessary.	Monthly or as required
	Top-up traps to floor gullies and internal channel drains.	
	Check there is no physical damage.	
	Remove overgrown vegetation 1m min. around structures and keep hard aprons free from silt and debris.	
Occasional Maintenance	Remove sediment from pre-treatment structures (e.g. gullies, channels silt traps) and non-return valves.	Six-monthly or as required after large storm events
	Remove cover and inspect inside, ensuring water is flowing freely and that the exit route for water is unobstructed.	Annually or as required after large storm events.
	Remove debris and silt.	
	Undertake inspection after leaf fall in autumn.	
Remedial Actions	Repair/rehabilitation of inlets, outlets, overflows and vents.	As required
Monitoring	Inspect all manholes, inspection chambers, inlets, outlets, overflows and vents to ensure they are in good condition and operating as designed.	Annually or after large storms.

Heyne Tillett Steel Ltd is a Private Limited Company registered in England and Wales No. 7155581 Registered Office 16 Chart Street, London N1 6DD

- Inlets, Outlets and Inspection Chambers:

Maintenance Period	Maintenance Task	Frequency
Regular Maintenance	Inspect surface structures and covers removing obstructions and silt as necessary.	Monthly or as required
	Check there is no physical damage. Remove overgrown vegetation 1m min. around structures and keep hard aprons free from silt and debris.	
	Remove cover and inspect inside, ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn.	Annually
Occasional Maintenance	Check topsoil levels are 20mm above edges off baskets and chambers to avoid mower damage.	As necessary
Remedial Work	Unpack stone in basket features and unblock or repair and repack stone as design detail as necessary.	As required
	Repair physical damage is necessary.	

- Flow control Structures:

Maintenance Period	Maintenance Task	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action (for 3 months following installation).	Monthly
	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Six Monthly
	Remove sediment from pre-treatment structures.	
Monitoring	Inspect and carry out essential recovery works to return the feature to full working order.	Following all significant storm events

- Geocellular Storage Tank:

Maintenance Period	Maintenance Task	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for three months, then every six months.
	Debris removal from catchment surface (where may cause risks to performance).	Monthly.
Remedial Actions	Repair/rehabilitation of inlets, outlets, overflows and vents.	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually or after large storms.

- Hydro-Brake (Flow Control):

Maintenance Period	Maintenance Task	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for three months, then every six months.
	Remove sediment from pre-treatment structures.	
Remedial Actions	Repair/rehabilitation of Hydro-Brake.	As required
	If problems are experienced, please contact the company (Hydro International) so that an investigation may be made. Contact: enquiries@hydro-int.com (+44 (0)118 933 1325).	
Monitoring	Inspect and with a hose down if required.	Annually or after large storms.

- Overflows and Flood Routes:

Maintenance Period	Maintenance Task	Frequency
Regular maintenance	Remove any accumulated grass cuttings or other debris on top of grass weirs or stone filled baskets overflows.	Monthly
	Make visual inspection of flood routes. Check route is not blocked by new fences, walls, soil or other rubbish. Remove as necessary.	
	Jet pipes leading from overflow structures annually and check by running water through overflow. Check free flow at next SuDS feature – inlet to basin or chamber.	Annually
Remedial Actions	If overflow is not clear, then dismantle structure and reassemble to design detail.	As Required

- Permeable paving system:

Maintenance Period	Maintenance Task	Frequency
Regular maintenance	Inspect for sediment and debris in the inlet chambers and trim any roots that may be causing blockages.	Annually or as required based on inspections
	Cleaning of gutters and any filters on downpipes	
	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or as required,
Occasional maintenance	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required, based on inspections
Remedial Actions	Remedial work to any depressions, rutting, cracked or broken blocks considered detrimental to the permeable paving performance.	As required
	Rehabilitation of surface and upper substructure by remedial sweeping.	Every 10 to 15 years or as required
	Jet washing and suction cleaning will substantially reinstate pavement to 90% efficiency (CIRIA RP992).	As required
Monitoring	Initial inspection.	Monthly for three months after installation

	Inspect inspection chambers and note rate of sediment accumulation and establish appropriate brushing frequencies.	Monthly in the first year and then annually
	Inspect for evidence of poor operation and/or week growth – if required, take remedial action.	Annually
	Monitor effectiveness of permeable pavement and when water does not infiltrate immediately advise Client of possible need for reinstatement of top layers or specialist cleaning.	As required

Reference shall be made to CIRIA publication C753 (The SuDS Manual) and to the relevant maintenance guidance from the products manufacturers.