



MANCHESTER BUSINESS PARK, AVIATOR WAY

DRAINAGE STRATEGY

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Rev: P02

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CONTENTS

1.0 INTRODUCTION.....	1
1.1 Purpose of this Report.....	1
2.0 THE SITE	2
2.1 Site Location.....	2
2.2 Site Description	2
2.3 Existing Site Drainage	3
2.4 Geology	3
2.5 Hydrogeology & Hydrology.....	3
2.6 Summary of Site Investigations.....	4
2.7 Proposed Development.....	4
3.0 SURFACE WATER DRAINAGE HIERARCHY.....	5
3.1 Surface Water Discharge Assessment	5
4.0 SURFACE WATER DISCHARGE RATE ASSESSMENT	7
4.1 Pre-Development Surface Water Run-Off Rates	7
4.2 Proposed Surface Water Discharge Rates	7
5.0 ATTENUATION AND SUDS ASSESSMENT.....	8
5.1 Attenuation Requirements.....	8
5.2 Sustainable Drainage Systems	8
5.3 Water Quality Assessment	10
5.4 SuDS Maintenance and Management Plan	11
6.0 OUTLINE DRAINAGE STRATEGY.....	14
6.1 Surface Water Drainage System.....	14
6.2 Foul Water Drainage System	14

APPENDIX A – TOPOGRAPHICAL SURVEY

APPENDIX B – UNITED UTILITIES SEWER MAP

APPENDIX C – HISTORICAL MAPPING

APPENDIX D – PROPOSED DEVELOPMENT PLANS

APPENDIX E – UNITED UTILITIES CORRESPONDENCE

APPENDIX F – GREENFIELD RUN-OFF CALCULATIONS

APPENDIX G – PROPOSED DRAINED AREAS PLAN

APPENDIX H – BELOW GROUND DRAINAGE GA

APPENDIX I – SURFACE WATER DRAINAGE CALCULATIONS

1.0 INTRODUCTION

1.1 Purpose of this Report

This Drainage Strategy has been prepared to support the planning application for the proposed development at Unit 2000, Aviator Way, near Manchester Airport, Greater Manchester, M22 1GE.

The assessment includes: a summary of the site, an estimate of the existing and proposed surface water discharge rates, infiltration assessment, SUDs assessment, drainage proposals and performance criteria.

This report should be read in conjunction with the Flood Risk Assessment, MBP-REN-00-ZZ-RP-C-00001.

The proposals within this report are intended to demonstrate the feasibility of the overarching drainage strategy to support the planning proposal.

2.0 THE SITE

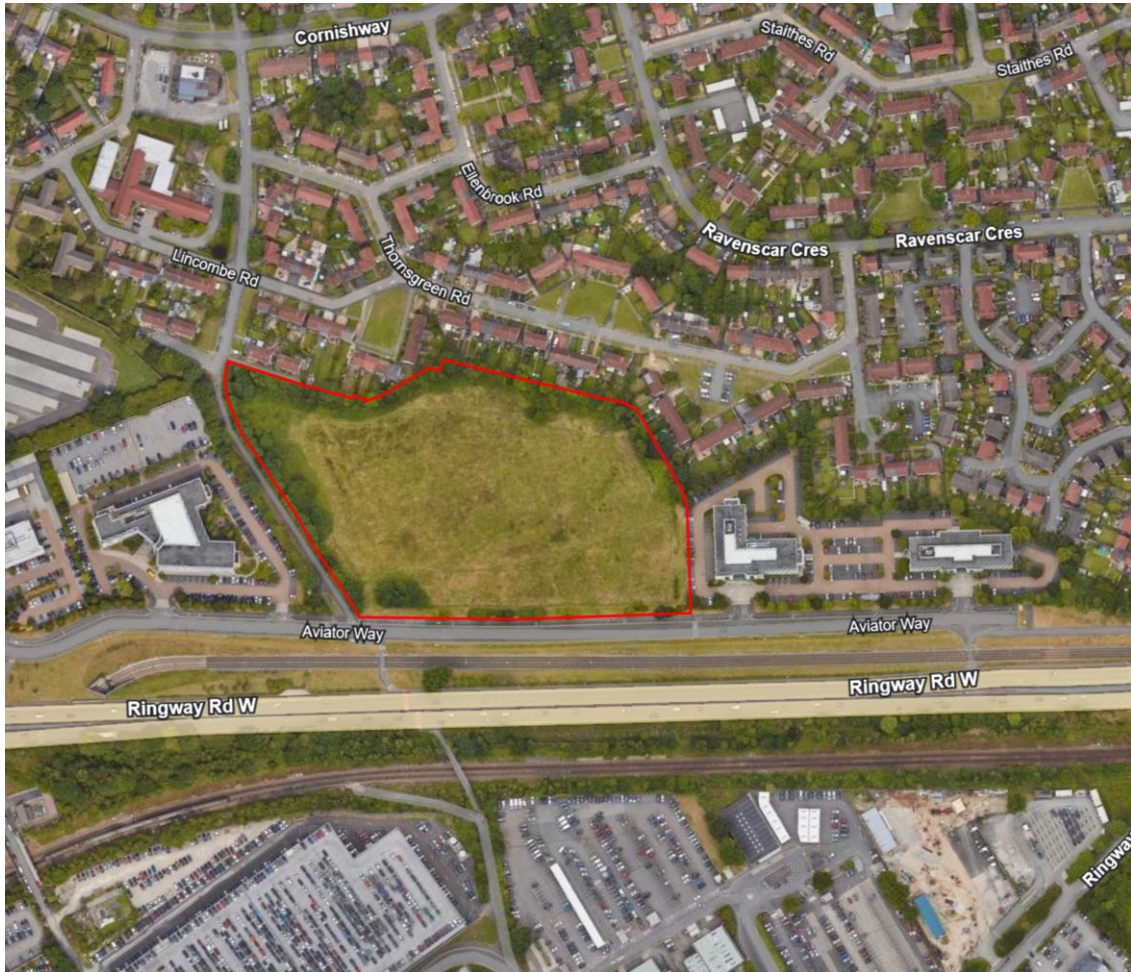
2.1 Site Location

The site is located at Manchester Business Park, Aviator Way, Wythenshawe, Manchester.

The site location is described below:

- Post Code M22 1GE
- OS X (Easting) 382628
- OS Y (Northing) 385633

The site location is illustrated in Figure 2.1 below



Google Earth 2025

Figure 2.1: Site Location

2.2 Site Description

The development site is circa 3.210 hectares and largely comprises undeveloped grassland with dense vegetation nearer to the site boundaries.

The Site is bounded to the north by residential housing along Thornsgreen Road, to the east by existing Manchester Business Park office units, to the south by Aviator Way and the A555 Ringway Road West, and to the west by Woodhouse Lane and existing Manchester Business Park units beyond this.

The site elevation varies between circa +70.1m AOD to the northwest corner of the site rising to +72.5m AOD to the southeast corner of the site.

Refer to Appendix A for the Existing Site Topography.

2.3 Existing Site Drainage

Manchester Business Park is considered to be an entirely permeable greenfield site due to the lack of previous development.

Several open land drains once ran across the site, as evidenced by historical mapping dating from the 1960s to the early 1990s. Some physical evidence of these drains can be found at the site boundary with Aviator Way.

The available United Utilities record plans indicate that the closest surface water, foul water or combined public sewers to the site are:

- A 150mm dia. foul water sewer in Aviator way to the south of the site.
- A 300mm private culverted watercourse within the site boundary to the northwest.
- A 300mm dia. combined sewer in Woodhouse Lane to the west of the site

Refer to Appendix B for United Utilities Sewer records.

Refer to Appendix C for Historical Map Data.

2.4 Geology

BGS mapping does not display any made ground deposits on site, however based on the historical mapping and the development that has historically taken place, made ground deposits are likely to be present.

The site is indicated to be predominantly underlain by Till. This stratum typically comprises mixed clay, sand and gravel (diamicton).

The far southeastern corner is indicated to be underlain by Glaciofluvial Deposits, typically comprising sand and gravel.

The deeper solid geology is indicated to be part of the Bollin Mudstone Member of the Sidmouth Mudstone Formation, which typically comprises mudstone.

Two faults are shown 37m and 48m to the east, trending broadly north – south and running parallel to the eastern boundary. Any movements associated with this fault should now have stopped.

2.5 Hydrogeology & Hydrology

Based on the inferred geology, a summary of the Environment Agency aquifer designations is presented in the table below:

Stratum	Coverage	Aquifer Designation
Superficial Aquifer – Till	Full site	Secondary Aquifer (Undifferentiated). The classification is assigned where it is not possible to attribute either category A or B to the aquifer.
Bedrock Aquifer – Bollin Mudstone	Full Site	Secondary (B) Aquifer. Predominantly lower permeability layers which may store / yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts off the former non-aquifers.

Table 2.1–Environment Agency (EA) Aquifer Designations

The nearest active groundwater abstraction licence is not recorded within 2000m

The nearest named watercourse is the River Bollin (approximately 2km to the south)

The nearest surface water abstraction licence is not noted within 2000m

The closest active licenced discharge consent is located 241m southwest of the site, this is associated to the River Bollin and its nearby tributaries from Manchester Airport.

2.6 Summary of Site Investigations

A phase I Geo-Environmental Assessment Report was conducted by Brownfield Solutions dated September 2025. This report also considers, for guidance purposes, the information presented in a Geo-Environmental Site Assessment by RSK dated October 2015.

BGS Exploratory hole records indicate made ground was discovered from ground level to a depth of 0.4 - 1.0m bgl. The made generally consisted of topsoil over sand and gravel of limestone, ash, brick and concrete. Superficial deposits of firm to stiff sandy clay were found up to depths of 2.9 – 6.2m bgl.

RSK's 2015 report indicates topsoil from a depth of 0.1m to 0.5m bgl, with made ground in one location up to 0.8m bgl. Superficial deposits were Glacial Till comprising soft to firm (stiff with depth) clay with secondary sand and gravel, and bands of loose to medium dense sand. Groundwater was encountered between 0.44m and 5.35m bgl.

No risks from soil contamination were identified and thus no risks to controlled waters were identified.

Pertaining to the Till, the infiltration rates recorded suggested that soakaways were unlikely to be a suitable method of site drainage.

2.7 Proposed Development

The Proposed Development comprises of 9 no. Commercial B2 (General Industry) and B8 (Storage and distribution) units to form light industrial and ancillary office space, with associated landscaping works, access and car parking.

Refer to Appendix D for Proposed Development Plans

3.0 SURFACE WATER DRAINAGE HIERARCHY

3.1 Surface Water Discharge Assessment

The Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA states that drainage from new developments should use the following hierarchy:

- Infiltration
- Discharge to a watercourse
- Discharge to a public sewer

In accordance with NPPF, the following hierarchy of surface water drainage options should be considered:

- Discharge into the ground (infiltration);
- Discharge to a surface water body;
- Discharge to a surface water sewer, highway drain, or another drainage system;
- Discharge to a combined sewer.

'The SuDS approach to managing surface water runoff' as set out in the 'CIRIA SuDS Manual 2015' expands on the NPPF hierarchy and advises that the prescribed list below should be evaluated:

- 1) Control at Source – Infiltration, Re-Use, Green Roofs, Run-off to grass or verge, Harvesting, Water Butts, and Permeable Layers
- 2) On Site Treatment with Other SuDS Techniques – Collection for Infiltration and Detention
- 3) Local Treatment with Other SuDS Techniques – Collection away from the Site
- 4) Regional Treatment with Other SuDS Techniques – Collection in Wetlands and Balancing Ponds
- 5) Watercourse – including streams, ditches or existing swales.
- 6) Surface Water Sewers
- 7) Combined Sewers

Infiltration Based Systems

RSK Geo-environmental Risk Assessment dated October 2015 found that, based on the infiltration rates recorded, soakaways were unlikely to be a suitable method of site drainage.

The shallow groundwater, which was located between 0.44m and 5.35m bgl, is likely to restrict the effectiveness of infiltration systems, particularly in terms of storage capacity and drain-down times — both of which are critical to the performance of soakaways during consecutive storm events over a short period.

Given these constraints, infiltration is currently considered unviable. However, this conclusion should be confirmed through further intrusive site investigations to assess ground conditions, including soil contamination levels and infiltration rates. Testing should follow the guidance set out in BRE Digest 365 – Soakaway Design and CIRIA C753 – The SuDS Manual.

Surface Waterbody

UU records indicate a 300mm private culverted watercourse located within the site boundary in the northwestern corner.

Although the presence of said watercourse has not yet been confirmed by drainage surveys or a site walkover, further survey works have been commissioned to locate it.

If infiltration is found not to be viable then a surface water connection with this watercourse should be sought after. This has been agreed in principle via a pre-development enquiry with United Utilities.

If a connection to the 300mm culverted watercourse is considered not to be feasible, then a connection to the combined sewer on Woodhouse Lane is proposed

Refer to Appendix E for United Utilities Correspondence Details.

4.0 SURFACE WATER DISCHARGE RATE ASSESSMENT

4.1 Pre-Development Surface Water Run-Off Rates

A review of the topographical survey and aerial images indicate that the site is a greenfield site and is thus considered to be fully permeable.

Greenfield Run-Off Rates

The equivalent greenfield run-off rate has been calculated using the InfoDrainage ICP SUDS method, which utilises the IH124 method and linearly interpolates for sites less 50 hectares. The site area has been calculated based on the proposed drained area.

Refer to Appendix F for Greenfield calculations, the results are summarised in the table below.

Areas (ha)	Greenfield Runoff Rates (l/s)			
	1 in 1 Year	1 in 30 Year	1 in 100 Year	Q _{bar}
2.333	11.9	23.1	28.4	13.6

Table 4.2 – Greenfield Run-Off Rates

4.2 Proposed Surface Water Discharge Rates

The Manchester, Salford and Trafford SFRA Minimum Development Control Standards for Flood Risk states that for all major development, the peak flow rate shall be capped at Q Bar.

Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA states that development should aim to deliver Greenfield runoff on Greenfield sites up to a 1 in 100-year storm event plus climate change.

As noted within the Salford Council, Minimum Development Control Standards for Flood Risk, the Greenfield Runoff rate should be calculated using the total proposed drained area of the site.

Policy JP-S 5 of the recently adopted Places for Everyone Joint Development Plan expects developments to manage surface water runoff through sustainable drainage systems and as close to source as possible (unless demonstrably inappropriate) so as to not exceed greenfield run-off rates or alternative rates specified in district local plans, such as those identified for areas with critical drainage issues. It is therefore proposed that the discharge from site is limited to Qbar, equivalent to 13.6 l/s, which satisfies the requirements of the Manchester, Trafford and Salford SFRA.

Refer to Appendix E for UU Correspondence Details.

5.0 ATTENUATION AND SUDS ASSESSMENT

5.1 Attenuation Requirements

The total proposed drained area is 2.333 Ha. This comprises of the building footprint, external hard landscaping and SuDS features.

Refer to Appendix G for the proposed drained areas plan.

Due to the nature of the development, the space constraints of the site and the root protection zones around the site, urban creep has not been considered as it is unlikely that the percentage of impermeable area will increase during the lifetime of the development.

The post development discharge rates will include for an increase in the rainfall intensity of 45% for the 1% annual exceedance probability (AEP), to allow for climate change as is consistent with a design life of the development of 100 years, as outlined by the National Planning Practice Framework (NPPF).

InfoDrainage storage calculations indicate that the approximate attenuation volumes shown in Table 3.4 are required to limit the peak surface water discharge to 13.6 l/s. The table also gives an indication of the attenuation volumes should infiltration be confirmed as viable.

Proposed Impermeable Area (ha)	1:100 Year +45%CC Attenuation Volume (m ³)		
	No Infiltration	1x10 ⁻⁵ m/s	1x10 ⁻⁶ m/s
2.333	1749-1958m ³	1009-1781m ³	1524-1939m ³

Table 5.1 – Attenuation Volumes

Refer to Appendix I for the InfoDrainage calculations.

5.2 Sustainable Drainage Systems

Table 5.1 below provides a summary of typical SuDS techniques outlined within 'CIRIA - The SuDS Manual C753', including a description of their suitability for use in the Manchester Business Park development.

SuDS Technique	Description	Suitability for Development Site	
Rainwater Harvesting	Collection of rainwater run-off for use	Commercial use of site results in low water usage making rainwater harvesting ineffective.	✗
Green Roof	Vegetated roof area that reduces runoff and increases time of concentration.	Unsuitable due to additional weight and attraction of birds in proximity to Manchester Airport.	✗
Blue Roof	Roof area designed to store and reduce peak runoff rates during intense storms.	Open SuDs features unsuitable due to potential to attract birds in proximity to Manchester Airport.	✗
Infiltration systems	Systems that collect and store runoff allowing it to infiltrate into the ground.	Initial investigations suggest that infiltration is not viable due to low infiltration rates. Further infiltration and contamination testing required to inform final detailing	?
Proprietary treatment systems	Underground structures designed to provide treatment to runoff	Presence of HGVs on site requires the use of proprietary treatment systems beyond the inherent treatment provided by SuDS.	✓

Filter Strips	Grass strips that promote sedimentation and filtration as runoff is conveyed over the surface	Unsuitable due to limited space constraints and the vulnerability of the feature to damage from movement of HGVs.	✗
Filter Drains	Granular filled Linear drains / soakaway with either granular fill and perforated pipe, or dense vegetation that treat runoff from adjacent impermeable areas	Unsuitable due to limited space constraints and the vulnerability of the feature to damage from movement of HGVs.	✗
Swales	Shallow landscape channels that treat and convey runoff.	Limited space for the size of swale required to attenuate the estimate runoff volumes.	✗
Bioretention systems	Shallow landscape depressions that allow runoff to pond temporarily on the surface, before filtering through vegetation and underlying soils. Can either infiltrate or convey via perforated pipes.	Open SuDs features unsuitable due to potential to attract birds in proximity to Manchester Airport.	✗
Trees	Trees within soil filled pits or permeable paving that can collect, store and treat run off	News trees planned to be planted on site, as well as existing trees to be maintained around the site perimeter.	✓
Pervious Paving	Granular build-up beneath permeable paving systems that can be used to either store runoff (lined system) and increase time of concentration or allow percolation into the ground.	Type B system subject to infiltration testing on site, however Type C acceptable otherwise.	✓
Attenuation Storage tanks/ large diameter pipes	Large underground voided spaces used to storage runoff before infiltration or controlled discharge	Suitable to store and convey surface water run-off.	✓
Ponds and wetlands	Permanent pools of water used to treat run-off and provide attenuation above normal water level	Open SuDs features unsuitable due to potential to attract birds in proximity to Manchester Airport.	✗
Detention Basins	Dry basins that are designed to temporarily store runoff providing water quality treatment. Can either be positively drained or infiltrate or both.	Open SuDs features unsuitable due to potential to attract birds in proximity to Manchester Airport.	✗

✗ Not suitable

? Potentially suitable subject to further investigation

✓ Suitable

Table 5.2 – SuDS Assessment

Following the above assessment, it is proposed that development may utilise the following:

- Proprietary treatment systems such as fuel and oil separators.
- Permeable Paving systems.
- Geocellular attenuation crate systems.

The SuDS elements planned for the Manchester Business Park development are shown on the Below Ground Drainage General Arrangement within Appendix H.

5.3 Water Quality Assessment

Water quality is generally affected by frequent rainfall events, 1-in-1-year events or less. To assess the water quality consideration will be given to the guidance with CIRIA Guide C753 The SuDS Manual. The pollution hazard levels for different land uses are presented in the table below.

Land Use	Pollution Hazard Level	Total Suspended Solids	Metals	Hydro-carbons
Residential Roofs	Very Low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking within infrequent change (eg schools, offices) ie <300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Site with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), site where chemical and other fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured, industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

Table 5.3 – Pollution Hazard Levels (Table 26.2 - CIRIA SuDS Manual C753')

The surface water run-off from the plot will be from the commercial roofs and external hard landscaping such as commercial yards and roads. This results in a low-medium pollution hazard level.

Discharge of the surface water to the receiving private watercourse and eventually to the public surface water sewer requires proprietary treatment to intercept the domestic fuels and oils associated with vehicles coming onto the site. Although SuDS features will provide inherent treatment, a dedicated system will be required to provide further treatment.

The SuDS Manual sets out various approaches to water quality risk management. The Simple Index approach uses hazard mitigation indices to ensure sufficient treatment is provided before discharge to a surface water body or groundwater. If infiltration is found to be viable, treatment will be required prior to discharge to ground. Table 26.4 extracted from the SuDS Manual sets out the characteristics of potential systems.

Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates	Total Suspended Solids	Metals	Hydro-carbons
A layer of dense vegetation underlain by a soil with good contaminant attenuation potential of at least 300 mm in depth	0.6	0.5	0.6
A soil with good contaminant attenuation potential of at least 300 mm in depth	0.4	0.3	0.3
Infiltration trench (where a suitable depth of filtration material is included that provides treatment, i.e. graded gravel with sufficient smaller particles but not single size coarse aggregate such as 20mm gravel) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.4	0.4	0.4
Constructed permeable pavement (where a suitable filtration layer is included that provides treatment, and including a geotextile at the base separating the foundation from the subgrade) underlain by a soil with good contaminant attenuation potential of at least 300 mm in depth	0.7	0.6	0.7
Bioretention underlain by a soil with good contaminant attenuation potential of at least 300 mm in depth	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for inflow concentrations relevant to the contributing drainage area.		

Table 5.4 – Indicative SuDS Mitigation Indices for discharges to groundwater (Table 26.4 - The SuDS Manual C753)

5.4 SuDS Maintenance and Management Plan

In order to ensure the ongoing functioning of the below ground drainage networks, a suitable maintenance strategy is to be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

The SuDS and below ground drainage network are to be maintained by the building owners or a maintenance company employment on their behalf. They will be required to maintain the SuDS in line with the recommendations set out within the 'The SuDS Manual C753' and the suppliers' requirements.

The following tables are extracted from The SuDS Manual and provide an indication of the operation and maintenance requirements for the SuDS that are proposed. These requirements should be reviewed as part of the detailed design.

The Main Contractor delivering the development is to update the general requirements to reflect the product specific requirements of the as installed proprietary SuDS and incorporate these into the Operation & Maintenance manual for the building. A Verification Report, including photographic evidence, to demonstrate that the drainage has been constructed as per the design drawings. As-built drawings should be supplied by the Main Contractor where the construction of the drainage varies from the design drawings.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than sprays	As required - once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial works to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10-15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three month after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 hours after large storms in first 6 months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 5.6 - Operation and Maintenance requirements for Pervious Pavements (Table 20.15 – The SuDS Manual C753)

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial Actions	Repair/ rehabilitate inlets, 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
	Survey inside of tanks for sediment build-up and remove if necessary	Every 5 years or as required

Table 5.6 - Operation and Maintenance requirements for Attenuation Storage Tanks (Table 21.3 The SuDS Manual C753)

6.0 OUTLINE DRAINAGE STRATEGY

6.1 Surface Water Drainage System

The development is to have a dedicated surface water network that collects the runoff from the proposed building roofs and external hard landscaping. The runoff is to discharge via the 300mm private culverted watercourse to the northwest of the site.

The discharge rate from site is to be limited to 13.6 l/s. This is the value of Qbar as required by the NPFF.

Surface water attenuation is firstly to be provided by subbase systems beneath service yard and car parking areas, of which each will have local orifice plate flow controls. Further attenuation must be provided downstream by a geocellular storage tank as a Hydro-Brake flow control will limit outflow to ensure the target flow rate of 13.6 l/s is achieved.

Inherent treatment of surface water will be provided permeable paving systems. However, the full treatment will be provided by a vortex separator or downstream defender prior to discharge to the wider surface water network.

The surface water drainage networks are to be designed in accordance with Building Regulation Part H, BS EN 752 and the Appendix C of the Sewerage Sector Guidance— Design and Construction Guidance. In addition, the following requirements will also be adopted in accordance with the Non-Statutory Technical Standards for Sustainable Drainage: Practice Guidance:

- The below ground drainage system will be designed to ensure flooding does not occur on site for the 1 in 30 year and no flooding to habitat spaces for up to the 1 in 100-year + climate change storm events
- The surface water system is to be designed to accommodate the 1-, 2-, 30- and 100-year return events with 40% and 45% climate change allowances for the 30- and 100-year events respectively. The climate change allowances should be reviewed at the detailed design stage to ensure the latest allowances are used.

Refer to Appendix H for the renaissance Below Ground Drainage General Arrangement.

Refer to Appendix I for the Surface Water Drainage Calculations.

6.2 Foul Water Drainage System

The development is to have a dedicated foul water network that will collect the foul water associated with the individual commercial units.

United Utilities have expressed their preference for foul water flows from the site to connect into the public foul water/combined sewer system at the 375mm dia. combined public sewer located beneath Woodhouse Lane. This is, however, subject to confirming the location and condition of the manhole in which the connection is planned.

UU records suggest that, given the invert level of the sewer in relation to the levels of the site, it would be unlikely to make a single gravity connection using the required 1:80 gradient across the site. Therefore, only units 2 and 3 are proposed to connect to the sewer on Woodhouse Lane, with two further connections to the public sewer on Aviator Way proposed to connect units 1 and 4 respectively.

A further enquiry to United Utilities will confirm the feasibility of these proposals, with the final connections to the public sewer subject to a Section 106 application.

The network is to be designed in accordance with Building Regulation Part H, BS EN 752 and the Appendix C of the Sewerage Sector Guidance – Design and Construction Guidance.

Refer to Appendix H for the renaissance Below Ground Drainage General Arrangement.

APPENDIX A TOPOGRAPHICAL SURVEY

TOPOGRAPHICAL & MEASURED BUILDING SURVEYS

AA	Auto Head Lock	ET	ET-Transformer	RSD	Roller Roller Drive
AB	AB	FE	Flow Seal	RSD	Roller Seal
AC	AC	FE	Flow Seal	SL	Slide Liner
AD	AD	FBD	Flow Direction	SL	Slide Liner
AE	AE	FD	Flow Direction	SL	Slide Liner
AF	AF	FD	Flow Direction	SL	Slide Liner
AG	AG	FD	Flow Direction	SL	Slide Liner
AH	AH	FD	Flow Direction	SL	Slide Liner
AI	AI	FD	Flow Direction	SL	Slide Liner
AK	AK	FD	Flow Direction	SL	Slide Liner
AL	AL	FD	Flow Direction	SL	Slide Liner
AM	AM	FD	Flow Direction	SL	Slide Liner
AN	AN	FD	Flow Direction	SL	Slide Liner
AO	AO	FD	Flow Direction	SL	Slide Liner
AP	AP	FD	Flow Direction	SL	Slide Liner
AQ	AQ	FD	Flow Direction	SL	Slide Liner
AR	AR	FD	Flow Direction	SL	Slide Liner
AS	AS	FD	Flow Direction	SL	Slide Liner
AT	AT	FD	Flow Direction	SL	Slide Liner
AV	AV	FD	Flow Direction	SL	Slide Liner
AW	AW	FD	Flow Direction	SL	Slide Liner
AX	AX	FD	Flow Direction	SL	Slide Liner
AY	AY	FD	Flow Direction	SL	Slide Liner
AZ	AZ	FD	Flow Direction	SL	Slide Liner
BA	BA	FD	Flow Direction	SL	Slide Liner
BB	BB	FD	Flow Direction	SL	Slide Liner
BC	BC	FD	Flow Direction	SL	Slide Liner
BD	BD	FD	Flow Direction	SL	Slide Liner
BE	BE	FD	Flow Direction	SL	Slide Liner
BF	BF	FD	Flow Direction	SL	Slide Liner
BG	BG	FD	Flow Direction	SL	Slide Liner
BH	BH	FD	Flow Direction	SL	Slide Liner
BI	BI	FD	Flow Direction	SL	Slide Liner
BJ	BJ	FD	Flow Direction	SL	Slide Liner
BK	BK	FD	Flow Direction	SL	Slide Liner
BL	BL	FD	Flow Direction	SL	Slide Liner
BM	BM	FD	Flow Direction	SL	Slide Liner
BN	BN	FD	Flow Direction	SL	Slide Liner
BO	BO	FD	Flow Direction	SL	Slide Liner
BP	BP	FD	Flow Direction	SL	Slide Liner
BQ	BQ	FD	Flow Direction	SL	Slide Liner
BR	BR	FD	Flow Direction	SL	Slide Liner
BS	BS	FD	Flow Direction	SL	Slide Liner
BT	BT	FD	Flow Direction	SL	Slide Liner
BU	BU	FD	Flow Direction	SL	Slide Liner
BV	BV	FD	Flow Direction	SL	Slide Liner
BW	BW	FD	Flow Direction	SL	Slide Liner
BX	BX	FD	Flow Direction	SL	Slide Liner
BY	BY	FD	Flow Direction	SL	Slide Liner
BZ	BZ	FD	Flow Direction	SL	Slide Liner
CA	CA	FD	Flow Direction	SL	Slide Liner
CB	CB	FD	Flow Direction	SL	Slide Liner
CC	CC	FD	Flow Direction	SL	Slide Liner
CD	CD	FD	Flow Direction	SL	Slide Liner
CE	CE	FD	Flow Direction	SL	Slide Liner
CF	CF	FD	Flow Direction	SL	Slide Liner
CG	CG	FD	Flow Direction	SL	Slide Liner
CH	CH	FD	Flow Direction	SL	Slide Liner
CI	CI	FD	Flow Direction	SL	Slide Liner
CJ	CJ	FD	Flow Direction	SL	Slide Liner
CK	CK	FD	Flow Direction	SL	Slide Liner
CL	CL	FD	Flow Direction	SL	Slide Liner
CM	CM	FD	Flow Direction	SL	Slide Liner
CN	CN	FD	Flow Direction	SL	Slide Liner
CO	CO	FD	Flow Direction	SL	Slide Liner
CP	CP	FD	Flow Direction	SL	Slide Liner
CQ	CQ	FD	Flow Direction	SL	Slide Liner
CR	CR	FD	Flow Direction	SL	Slide Liner
CS	CS	FD	Flow Direction	SL	Slide Liner
CT	CT	FD	Flow Direction	SL	Slide Liner
CU	CU	FD	Flow Direction	SL	Slide Liner
CV	CV	FD	Flow Direction	SL	Slide Liner
CW	CW	FD	Flow Direction	SL	Slide Liner
CX	CX	FD	Flow Direction	SL	Slide Liner
CY	CY	FD	Flow Direction	SL	Slide Liner
CZ	CZ	FD	Flow Direction	SL	Slide Liner
DA	DA	FD	Flow Direction	SL	Slide Liner
DB	DB	FD	Flow Direction	SL	Slide Liner
DC	DC	FD	Flow		

DRAWING NOTES

Topographical Surveys

Trees are drawn to scale showing the average canopy spread. Descriptions and heights should be used as a guide only.

All building names, descriptions, number of storeys, construction type including roof line details are indicative only and taken externally from ground level.

All below ground details including drainage, voids and services have been identified from above ground and therefore all details relating to these features including; sizes, depth, description etc will be approximate only. All critical dimensions and connections should be checked and verified prior to starting work.

Detail, services and features may not have been surveyed if obstructed or not reasonably visible at the time of the survey.

Surveyed physical features may not necessarily represent the legal boundary line.

Measured Building Surveys

Measurements to internal walls are taken to the wall finishes at approx 1m above the floor level and the wall assumed to be vertical.

General	
---------	--

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work. Any

The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

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This drawing should only be scaled using digital methods.

1

SHEET LAYOUT

SURVEY STATIONS

Name	Easting	Northing	Height
STN1	382752.488	385513.441	72.736
STN2	382649.556	385534.418	72.190
STN3	382541.937	385561.445	71.946
STN4	382502.158	385677.477	70.791

SURVEY GRID AND LEVEL DATUM

The coordinate system established for this survey is related to Ordnance Survey (OS) National Grid at multiple points using GNSS with a scale factor of 1.000.

The level datum established for this survey is related to Ordnance Survey (OS) using GPS Smartnet.

To avoid discrepancies within the survey, adding to the survey or setting out point from the survey, any coordinated data must be directly derived from the original survey control. Survey Solutions are not responsible for any third-party adding survey data to the existing information.

REV	DESCRIPTION	DRAWN	APPR	DATE
-----	-------------	-------	------	------



LAND SURVEYING
BUILDING SURVEYING
UNDERGROUND SURVEYING
SITE ENGINEERING

0845 040 5969
survey-solutions.co.uk

IPSWICH / BEDFORD / BIRMINGHAM / COVENTRY / CRUICKLEY / GLASGOW / LEEDS / LONDON-CENTRAL /
LONDON-EAST / MANCHESTER / NEWCASTLE / NORWICH / NOTTINGHAM / THAMES VALLEY

PROJECT TITLE

Unit 2000, Manchester Business Park,
Anister Way, Wuthenshawe, M32 1GF

DRAWING DETAIL

TOPOGRAPHICAL SURVEY
Sheet 1 of 3

CLIENT	SCALE
Matt @ 10 AM	1,000

Motion Project Management				1:200
SURVEYOR	SURVEY DATE	CHECKED BY	APPROVED BY	DWG STATUS

ST / TV	Feb 2025	SR	SR	Final
---------	----------	----	----	-------

DRAWING NUMBER	REVISION	ISSUE DATE
74648MCLS-01		25/02/2025

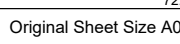





 **BRITISH
CARTOGRAPHIC
SOCIETY**

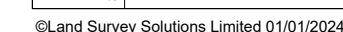
 **ISO
14001 : 2015**

promoting maps and navigation



This drawing should only be scaled using digital methods.

SHEET LAYOUT



This drawing should only be scaled using digital methods.

SHEET LAYOUT

promoting maps and reporting

APPENDIX B UU SEWER MAP

James Albert

**Tribeca House, 21-27
Dale Street,
Manchester,
M1 1EY**

FAO:

How to contact us:

**United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP**

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

**Your Ref: Manchester Business Park
Our Ref: UUPS-ORD-679253
Date: 23/09/2025**

Dear Sirs

Location: AVANT GARDE A V LTD 3000 AVIATOR WAY, MANCHESTER, M22 5TG

I acknowledge with thanks your request dated 22/09/2025 for information on the location of our services.

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

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

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

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

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



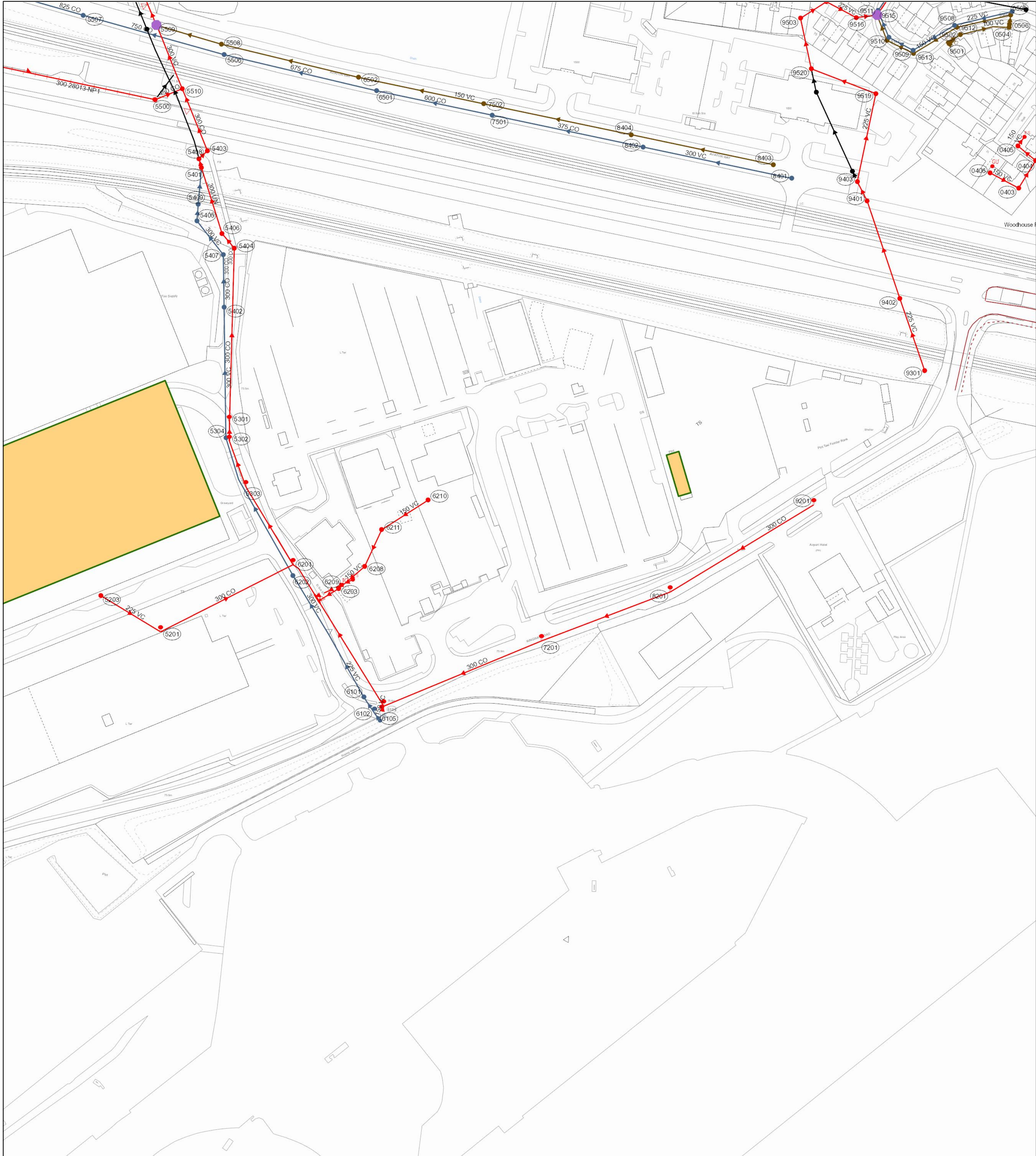
Karen McCormack
Property Searches Manager

TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

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

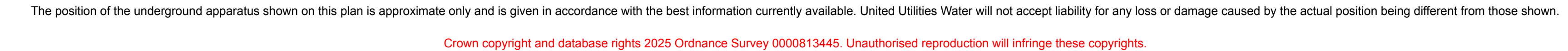
TERMS AND CONDITIONS:

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



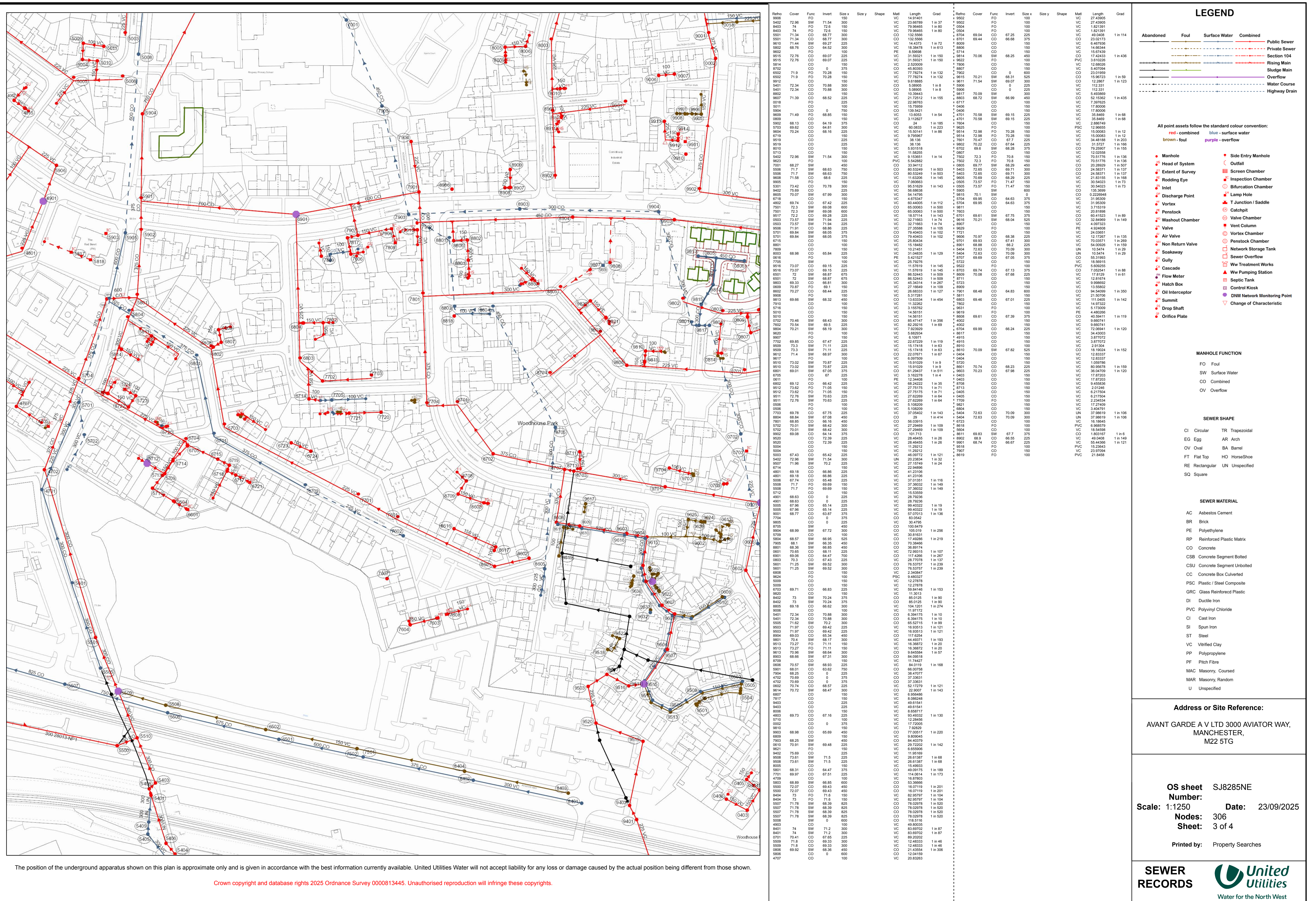
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6202		SW	73.07	300			VC	84.84319	1 in 106
5402	72.96	SW	71.54	300			VC	23.66789	1 in 37
8401	74	SW	71.2	300			VC	83.89702	1 in 87
8401	74	SW	71.2	300			VC	83.89702	1 in 87
8403	74	SW	72.8	150			VC	79.96465	1 in 80
8403	74	FO	72.8	150			VC	79.96465	1 in 80
5509	71.8	FO	69.33	300			VC	12.48333	1 in 46
5509	71.8	CO	69.33	300			VC	12.48333	1 in 46
9502		FO	100				VC	27.43905	
0504		FO	100				VC	1.821391	
9516	73.07	CO	69.15	225			VC	11.57619	1 in 145
9516	73.07	CO	69.15	225			VC	11.57619	1 in 145
5302	73.65	CO	71.01	300			CO	11	1 in 52
9515	72.76	CO	69.07	225			VC	31.59321	1 in 150
9515	72.76	CO	69.07	225			VC	31.59321	1 in 150
6501	72	SW	68.87	675			CO	86.52443	1 in 509
6501	72	SW	68.87	675			CO	86.52443	1 in 509
8201	75.83	CO	73.89	300			CO	75.96052	1 in 117
6102	75.46	SW	73.88	225			VC	10.81665	1 in 57
6502	71.9	FO	70.28	150			VC	77.78274	1 in 132
6502	71.9	FO	70.28	150			VC	77.78274	1 in 132
6101	71.9	SW	73.69	225			VC	38.84868	1 in 126
5401	72.34	CO	70.88	300			CO	5.08905	1 in 8
5401	72.34	CO	70.88	300			CO	5.08905	1 in 8
8402	73	SW	70.24	375			CO	85.0125	1 in 80
8402	73	SW	70.24	375			CO	85.0125	1 in 80
5201	74.57	CO	72.19	300			CO	81.84131	1 in 149
5401	72.34	CO	70.88	300			CO	6.384175	1 in 10
5401	72.34	CO	70.88	300			CO	6.384175	1 in 10
5303	73.99	CO	71.21	300			CO	26.5706	1 in 148
9503	71.97	CO	68.42	225			VC	16.93513	1 in 121
9503	71.97	CO	68.42	225			VC	16.93513	1 in 121
6105	75.45	FO	74.62	150			VC	3.162278	
6201	74.86	CO	71.63	300			VC	50.24938	1 in 126
9509	73.3	SW	71.11	225			VC	15.17418	1 in 63
9513	73.27	FO	71.11	150			VC	16.36972	1 in 20
9513	73.27	FO	71.11	150			VC	16.36972	1 in 20
9510	73.02	SW	70.87	225			VC	15.91029	1 in 9
9510	73.02	SW	70.87	225			VC	15.91029	1 in 9
0406		CO	150				VC	17.80006	
6209		CO	150				VC	12.96301	
9512	73.62	FO	71.05	150			VC	27.75175	1 in 71
9512	73.62	FO	71.05	150			VC	27.75175	1 in 71
9514	72.98	FO	70.28	150			VC	15.00083	1 in 12
9514	72.98	FO	70.28	150			VC	15.00083	1 in 12
9511	72.76	SW	70.63	225			VC	27.62269	1 in 64
9511	72.76	SW	70.63	225			VC	27.62269	1 in 64
5203		CO	0	225			VC	38.58756	
5203		CO	0	225			VC	38.58756	
0506		FO	100				VC	5.108209	
9201	76.2	CO	74.73	300			VC	92.43917	1 in 113
9519		CO	225				VC	38.136	
9301	76.14	CO	0	225			VC	42.99003	
6206		FO	150				VC	18.77658	
7502	72.3	FO	70.8	150			VC	70.51776	1 in 136
7502	72.3	FO	70.8	150			VC	70.51776	1 in 136
8403		CO	225				VC	49.81541	
8403		CO	225				VC	49.81541	
9520		CO	72.39	225			VC	28.46455	1 in 26
9520		CO	72.39	225			VC	28.46455	1 in 26
5402	72.96	SW	71.54	300			VC	8.153601	1 in 14
5506	71.7	SW	68.63	750			CO	80.53249	1 in 503
5506	71.7	SW	68.63	750			CO	80.53249	1 in 503
5402	72.96	SW	71.54	300			CO	28.87746	1 in 45
5403	72.65	CO	69.71	300			CO	24.58371	1 in 137
5403	72.65	CO	69.71	300			CO	24.58371	1 in 137
5402	72.96	SW	71.54	300			UN	20.23834	1 in 32
0505	73.57	FO	71.47	150			VC	30.54023	1 in 73
0505	73.57	FO	71.47	150			VC	30.54023	1 in 73
5301	73.42	CO	70.78	300			VC	95.51629	1 in 143
5508	71.7	FO	69.69	150			VC	37.36032	1 in 149
5508	71.7	FO	69.69	150			VC	37.36032	1 in 149
6210		CO	150				VC	30.3481	
5304		SW	72.27	300			VC	72.00694	1 in 101
9402	75.69	CO	71.5	225			VC	11.58169	
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9508	73.61	SW	71.5	225			VC	26.81387	1 in 68
9508	73.61	SW	71.5	225			VC	26.81387	1 in 68
7501	72.3	SW	69.08	600			CO	65.90063	1 in 500
7501	72.3	SW	69.08	600			CO	65.90063	1 in 500
7201	75.8	CO	73.22	300			CO	94.15413	
8517	72.2	CO	69.28	225			VC	18.57114	1 in 143
0503	73.57	SW	71.94	225			VC	32.71663	1 in 74
0503	73.57	SW	71.94	225			VC	32.71663	1 in 74
5500	72.07	CO	69.43	450			CO	16.07119	1 in 201
5500	72.07	CO	69.43	450			CO	16.07119	1 in 201
8404	73	FO	71.6	150			VC	82.95797	1 in 104
8404	73	FO	71.6	150			VC	82.95797	1 in 104
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
6104	75.48	CO	73.12	300			VC	92.96438	1 in 63
0403		CO	150				VC	17.87203	
5404	72.63	CO	70.09	300			UN	10.5474	1 in 29
5404	72.63	CO	70.09	300			UN	10.5474	1 in 29
0404		CO	150				VC	12.83337	
0404		CO	150				VC	12.83337	
5404	72.63	CO	70.09	300			UN	37.88619	1 in 106
5404	72.63	CO	70.09	300			UN	37.88619	1 in 106
0405		CO	150				VC	6.217504	
0405		CO	150				VC	6.217504	

Reho	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
6202		SW	73.07	300			VC	84.84319	1 in 106
5402	72.96	SW	71.54	300			VC	23.66789	1 in 37
8401	74	SW	71.2	300			VC	83.89702	1 in 87
8401	74	SW	71.2	300			VC	83.89702	1 in 87
8403	74	SW	72.8	150			VC	79.96465	1 in 80
8403	74	FO	72.8	150			VC	79.96465	1 in 80
5509	71.8	FO	69.33	300			VC	12.48333	1 in 46
5509	71.8	CO	69.33	300			VC	12.48333	1 in 46
9502		FO	100				VC	27.43905	
0504		FO	100				VC	1.821391	
9516	73.07	CO	69.15	225			VC	11.57619	1 in 145
9516	73.07	CO	69.15	225			VC	11.57619	1 in 145
5302	73.65	CO	71.01	300			CO	11	1 in 52
9515	72.76	CO	69.07	225			VC	31.59321	1 in 150
9515	72.76	CO	69.07	225			VC	31.59321	1 in 150
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6501	72	SW	68.87	675			CO	86.52443	1 in 509
8201	75.83	CO	73.89	300			CO	75.96052	1 in 117
6102	75.46	SW	73.88	225			VC	10.81665	1 in 57
6502	71.9	FO	70.28	150			VC	77.78274	1 in 132
6502	71.9	FO	70.28	150			VC	77.78274	1 in 132
6101	71.9	SW	73.69	225			VC	38.84868	1 in 126
5401	72.34	CO	70.88	300			CO	5.08905	1 in 8
5401	72.34	CO	70.88	300			CO	5.08905	1 in 8
5303	73.99	CO	71.21	300			CO	26.5706	1 in 148
9503	71.97	CO	68.42	225			VC	16.93513	1 in 121
9503	71.97	CO	68.42	225			VC	16.93513	1 in 121
6105	75.45	FO	74.62	150			VC	3.162278	
6201	74.86	CO	71.63	300			VC	50.24938	1 in 126
9509	73.3	SW	71.11	225			VC	15.17418	1 in 63
9513	73.27	FO	71.11	150			VC	16.36972	1 in 20
9513	73.27	FO	71.11	150			VC	16.36972	1 in 20
9510	73.02	SW	70.87	225			VC	15.91029	1 in 9
9510	73.02	SW	70.87	225			VC	15.91029	1 in 9
0406		CO	150				VC	17.80006	
6209		CO	150				VC	12.96301	
9512	73.62	FO	71.05	150			VC	27.75175	1 in 71
9512	73.62	FO	71.05	150			VC	27.75175	1 in 71
9514	72.98	FO	70.28	150			VC	15.00083	1 in 12
9514	72.98	FO	70.28	150			VC	15.00083	1 in 12
9511	72.76	SW	70.63	225			VC	27.62269	1 in 64
9511	72.76	SW	70.63	225			VC	27.62269	1 in 64
5203		CO	0	225			VC	38.58756	
5203		CO	0	225			VC	38.58756	



**SEWER
RECORDS**

 **United
Utilities**
Water for the North West



APPENDIX C

HISTORICAL SITE MAPPING

Site Details:

AVIATOR WAY, MANCHESTER,
M22 5TG

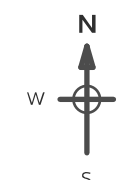
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Report Ref: GS-2800008_1250scale_2_2
Grid Ref: 382631, 385844

Map Name: National Grid

Map date: 1960

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1949

Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1949

Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1949

Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1949



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E: info@groundsure.com
W: www.groundsure.com

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Production date: 03 March 2016

To view map legend click here [Legend](#)



Site Details:

AVIATOR WAY, MANCHESTER,
M22 5TG

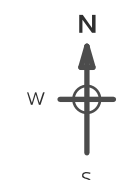
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Report Ref: GS-2800008_1250scale_2_2
Grid Ref: 382631, 385844

Map Name: National Grid

Map date: 1978-1981

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1981
Levelled 1959

Surveyed N/A
Revised 1978
Edition N/A
Copyright 1960
Levelled 1949

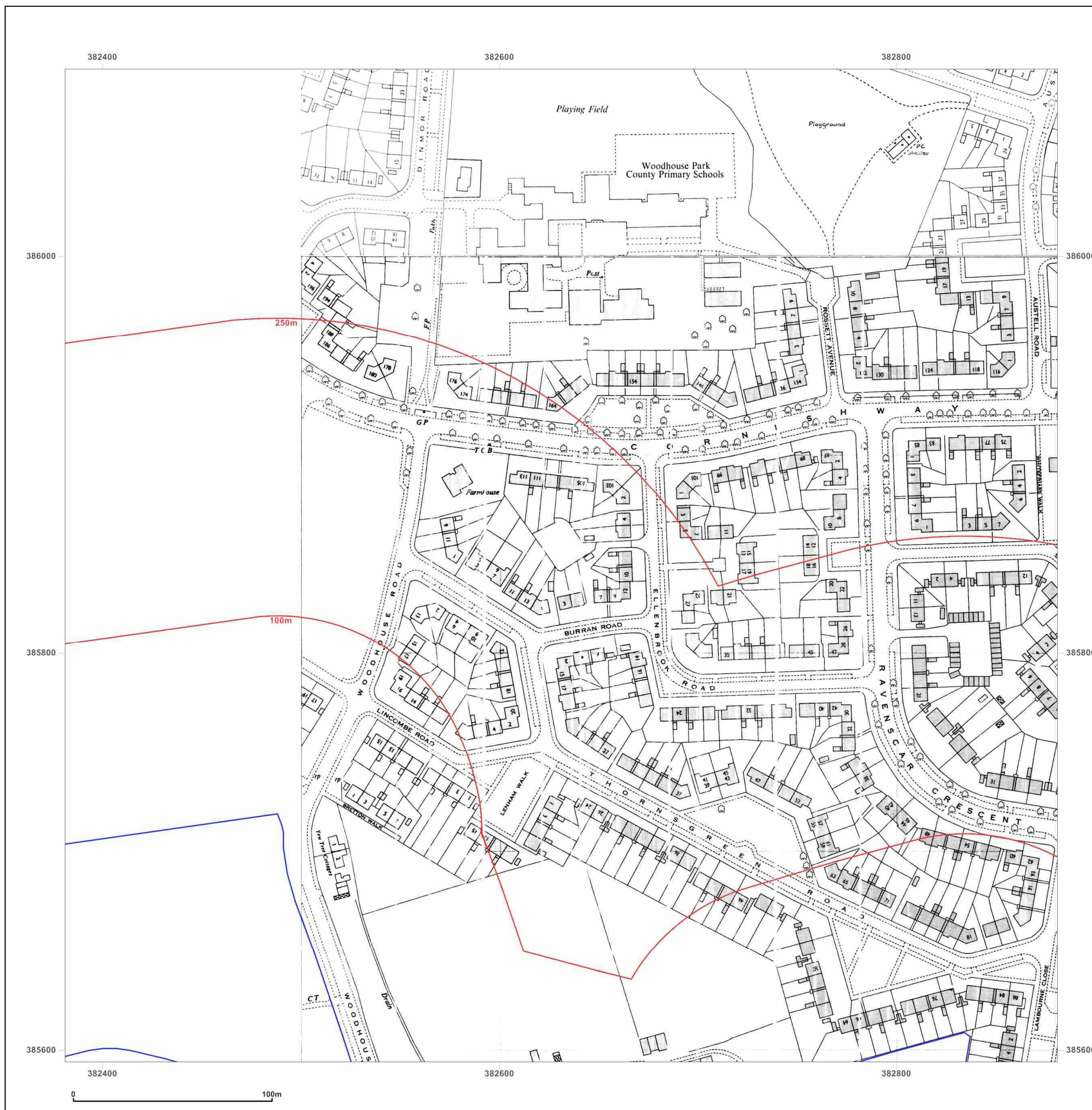


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Production date: 03 March 2016

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Site Details:

AVIATOR WAY, MANCHESTER,
M22 5TG

Client Ref: X0442_Manchester
Report Ref: GS-2800008_1250scale_2_2
Grid Ref: 382631, 385844

Map Name: National Grid

Map date: 1986-1987

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Levelled 1959

Surveyed 1959
Revised 1986
Edition N/A
Copyright 1986
Levelled 1959

Surveyed 1959
Revised 1987
Edition N/A
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Production date: 03 March 2016

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Site Details:

AVIATOR WAY, MANCHESTER,
M22 5TG

Client Ref: X0442_Manchester
Report Ref: GS-2800008_1250scale_2_2
Grid Ref: 382631, 385844

Map Name: National Grid

Map date: 1987-1992

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed 1959
Revised 1987
Edition N/A
Copyright 1987
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
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Production date: 03 March 2016

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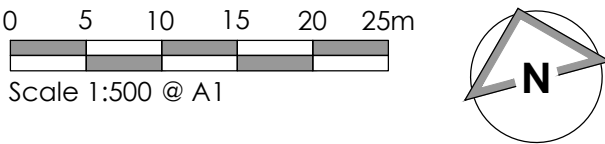
APPENDIX D

PROPOSED DEVELOPMENT PLANS

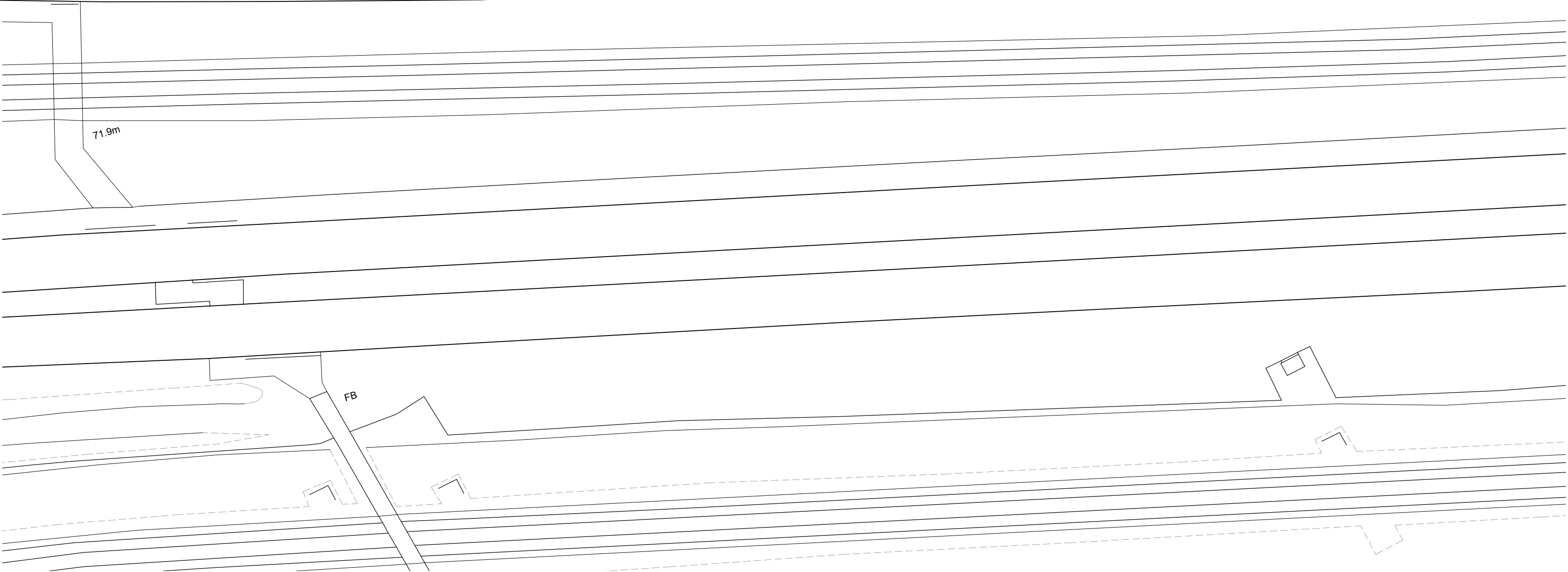


- NOTES**
- All dimensions and levels are to be checked on site.
 - Any discrepancies are to be reported to the architect before any work commences
 - Whilst information on this sheet is issued to scale, scaling directly from this drawing may result in inaccuracies. For precise measurements, refer to the stated dimensions or contact the Architect
 - This drawing shall not be reproduced without express written permission from AEW.
 - Title overlay drawings and ownership boundaries are produced using all reasonable endeavors. AEW cannot be responsible for the accuracy or scale discrepancy of base plans supplied to them.
 - All works are to be undertaken in accordance with Building Regulations and the latest British Standards.
 - All proprietary materials and products are to be used strictly in accordance with the manufacturers recommendations.

- Key:**
- Site Boundary 7.93acres / 3.21ha
 - Existing trees to be removed
 - Existing Trees
 - Landscape area to be retained & enhanced
 - Proposed Acoustic Fencing
 - Parking space provided with EV charging point
 - Parking space provided with cable routes to allow for future installation of EV charging point
 - Office at first floor
 - Condenser
 - Bin Store
 - Cycle Store
 - Proposed FFLs stated are indicative only and subject to further detail design of the cut and fill modelling. As such, a tolerance of +/- 300mm should be allowed for the final FFLs.



Schedule of Accommodation						
Unit	Ground Floor GIA	First Floor Office GIA	TOTAL UNIT GIA	Total Car Parking (incl. Accessible)	Parking Ratio (spaces / GIA m²)	EV Charging Spaces (Future Spaces)
Unit 1A	1,485 m² / 15,986ft²	221m² / 2,376ft²	1,706m² / 18,363ft²	29 (2)	1:59	4 (4)
Unit 1B	1,733m² / 18,655ft²	245m² / 2,637ft²	1,978m² / 21,292ft²	23(2)	1:86	2 (4)
UNIT 1 TOTAL			3,684m² / 39,655ft²	52 (4)	1:71	6 (8)
Unit 2A	798m² / 8,586ft²	127m² / 1,368ft²	925m² / 9,954ft²	12 (1)	1:77	2 (2)
Unit 2B	476m² / 5,125ft²	103m² / 1,105ft²	579m² / 6,231ft²	10 (1)	1:58	3 (2)
Unit 2C	478m² / 5,142ft²	102m² / 1,097ft²	580m² / 6,239ft²	10 (1)	1:58	2 (2)
UNIT 2 TOTAL			2,084m² / 22,424ft²	32 (3)	1:65	6 (6)
Unit 3A	997m² / 10,735ft²	153m² / 1,653ft²	1,150m² / 12,388ft²	17 (1)	1:68	4 (2)
Unit 3B	796m² / 8,562ft²	128m² / 1,137ft²	923m² / 9,939ft²	14 (1)	1:66	4 (2)
Unit 3C	597m² / 6,429ft²	104m² / 1,123ft²	702m² / 7,552ft²	11 (1)	1:64	4 (2)
UNIT 3 TOTAL			2,776m² / 29,879ft²	42 (3)	1:66	6 (6)
Unit 4	1,391m² / 14,977ft²	232m² / 2,502ft²	1,624m² / 17,480ft²	19 (2)	1:86	2 (4)
GRAND TOTAL			10,167m² / 109,438ft²	145 (12)	1:70	20 (24)



P03	26/11/25	AW	AS
Planning Issue			
P02	05/11/25	AG	AS
Red line boundary updated			
P01	31/10/25	AG	AS
Initial Issue			
REV	Date	Drawn by: -	Checked by: -
Status	Purpose of Issue		
S2	For Information		
drawing stage	Planning		
client	Ask Real Estate		
project	Manchester Business Park		
drawing title	Proposed Site Plan		
date	03/10/25	drawn	AG
scale@A1	1:500	checked	AS
AEW Reference Number 13502			

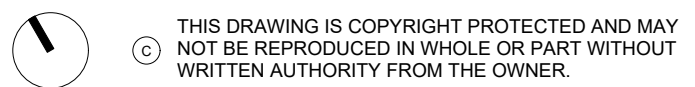


- NOTES:
1. Do not scale from this drawing.
 2. Always work to noted dimensions.
 3. All dimensions are in millimetres unless otherwise stated.
 4. All setting out, levels and dimensions to be agreed on site.
 5. The dimensions of all materials must be checked on site before being laid out.
 6. This drawing must be read with the relevant specification clauses and detail drawings.
 7. Order of construction and setting out to be agreed on site.

- KEY
- Site Boundary
 - M1-Proposed Wildflower
 - S1- Proposed Vertical Planting
 - S2- Proposed Shrubs Entrance Planting
 - S3- Scrub area to be retained and enhanced
 - S4-Proposed Scrub
 - Existing Grassland Enhanced
 - Proposed Mown path
 - H1-Proposed Native Hedge
 - H2-Proposed Holly Hedge
 - Proposed Tree
 - Existing Tree to be retained
 - Existing Trees to be removed
 - Proposed Fence
 - Proposed Acoustic Fence
 - Proposed Unit
 - Proposed Tarmac
 - Proposed Concrete
 - Proposed Tarmac Footpath
 - Proposed Coloured Tarmac
 - Proposed Plaza Paving (600*600 Concrete Paver)
 - Proposed Permeable Paving
 - Seating
 - Picnic Bench
 - Habitat Log
 - Cycle Store
 - Gate
 - Bin Store

P11	01/12/25	Planting Update	SL	CF
P10	25/11/25	Minor Tree Adjustment	CF	SR
P09	24/11/25	Co-ordination update	TI	CF
P08	20/11/25	Minor Edits	CF	SR
P07	11/11/25	Updated Layout and BNG Edits	CF	SR
P06	05/11/25	Layout Update	SL	CF
P05	22/10/25	Updated Hardwork	SL	CF
P04	21/10/25	Moved Trees, Updated Hardwork	TI	CF
P03	21/10/25	Updated Software	TI	CF
P02	14/10/25	Updated Software	TI	KR

Revision	Date	Description	Drawn	Apprvd.
----------	------	-------------	-------	---------



Client Motion Project Management

Project Manchester Business Park

Drg Title Landscape General Arrangement

Created on 01/10/25 Created by TI Approved by CF

Scale 1:500 Size A1 Workstage S3

Drg No. 468-LST-XX-XX-DR-L-0101 Suitability P11 Revision

© Land Studio Limited

PLANTING SCHEDULE					
M1-Meadow Planting					
Plant Name	Specification	% mix	Area/m ²	G's/ p m2	Total Grams
Emorsgate EM2	Seed mix	-	3000	4	12000
Total					12kg

S1- Vertical Planting to Soften Acoustic Fence					
Plant Name	Specification	% Mix	Area/m ²	Density p	Total plants
Trachelospermum jasminoides	3L pot to be planted on freestanding trellis	40	10	2	20
Lonicera periclymenum	3L pot to be planted on freestanding trellis	40	7	2	14
Total linear metres:	16.79		100		34

S2- Scrub Entrance Planting					
Plant Name	Specification	% Mix	Area/m ²	Density p	Total plants
Prunus laurocerasus 'Otto Luyken'	10L pot	50	299	3	897
Pittosporum tenuifolium	10L pot	30	181	3	484
Salpa tenuissima	3L pot	20	108	5	538
Total m²:	538.19		100		1830

S3- Scrub Planting Enhanced Existing					
Plant Name	Specification	% mix	Area/m ²	Density p	Total Plants
Corylus avellana	1+1 bare root, 40-60cm whip	50	2298	2	4597
Crataegus monogyna	1+1 bare root, 40-60cm whip	50	2298	2	4597
Total m²:	4597		100		9192

S4- Scrub Planting New					
Plant Name	Specification	% mix	Area/m ²	Density p	Total Plants
Crataegus monogyna	1+1 bare root, 40-60cm whip	10	10	5	49
Corylus avellana	1+1 bare root, 40-60cm whip	20	20	5	99
Taxus baccata	1+1 bare root, 40-60cm whip	10	10	5	49
Ulex Europaeus	1+1 bare root, 40-60cm whip	10	10	5	49
Prunus Spinosa	1+1 bare root, 40-60cm whip	10	10	5	49
Cornus Sanguinea	1+1 bare root, 40-60cm whip	10	10	5	49
Viburnum opulus	1+1 bare root, 40-60cm whip	20	20	5	99
Ilex Aquifolium	1+1 bare root, 40-60cm whip	10	10	5	49
Emorsgate EM2	Seed mix	-	99	4	395
Total m²:	98.76		100		484

H1-Proposed Hedgerow					
Plant Name	Specification	% mix	Linear m	Density p	Total Plants
Crataegus monogyna	1+1 bare root, 40-60cm whip	10	47	6	284
Corylus avellana	1+1 bare root, 40-60cm whip	20	95	6	569
Taxus baccata	1+1 bare root, 40-60cm whip	10	47	6	284
Ulex Europaeus	1+1 bare root, 40-60cm whip	10	47	6	284
Prunus Spinosa	1+1 bare root, 40-60cm whip	10	47	6	284
Cornus Sanguinea	1+1 bare root, 40-60cm whip	10	47	6	284
Viburnum opulus	1+1 bare root, 40-60cm whip	20	95	6	569
Ilex Aquifolium	1+1 bare root, 40-60cm whip	10	47	6	284
Total linear m	474		100		2808

H2-Proposed Holly Hedgerow					
Plant Name	Specification	% mix	Linear m	Density p	Total Plants
Ilex aquifolium	10L pot	100	150	6	900
Total linear m	150		100		900

Trees					
Plant Name	Specification	% mix	m	density p	Total Plants
Quercus robur (Qr)	Select Standard 10-12cm Girth, Root Ball	-	-	As Shown	11
Betula pendula (Bp)	Select Standard 10-12cm Girth, Root Ball	-	-	As Shown	21
Malus sylvestris (Ma)	Select Standard 10-12cm Girth, Root Ball	-	-	As Shown	22
Pinus sylvestris (Pa)	Extra Heavy Standard 14-16cm, Root Ball	-	-	As Shown	31
Aesculus hippocastanum (Ah)	Select Standard 10-12cm Girth, Root Ball	-	-	As Shown	10
Prunus Avium 'Flora Plena' (Pa)	Select Standard 10-12cm Girth, Root Ball	-	-	As Shown	28
Total					123

1

Landscape General Arrangement

Scale: 1:500

LandStudio



APPENDIX E

UNITED UTILITIES CORRESPONDENCE

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

20/10/2025

Dear **James Albert**,

Pre-Development Enquiry for **Machester Business Park** UU Reference Number: **08264539**

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

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

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

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

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

Asset Protection

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

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

Foul Water

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

Our preferred point of discharge would be to the 375mm diameter public combined sewer within Woodhouse Lane located Northwest of your proposed development at an unrestricted rate.

Manhole reference SJ82854702, **Grid reference** x:382494, y: 385,723

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

Surface Water

WASTEWATER PRE-DEVELOPMENT ENQUIRY

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

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

Infiltration

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

Waterbody

If an evidence-based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the **300mm private culverted watercourse** located in the site boundary Northwestern Corner of the proposed site.

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

Grid reference x:382,511.000 y:385,723

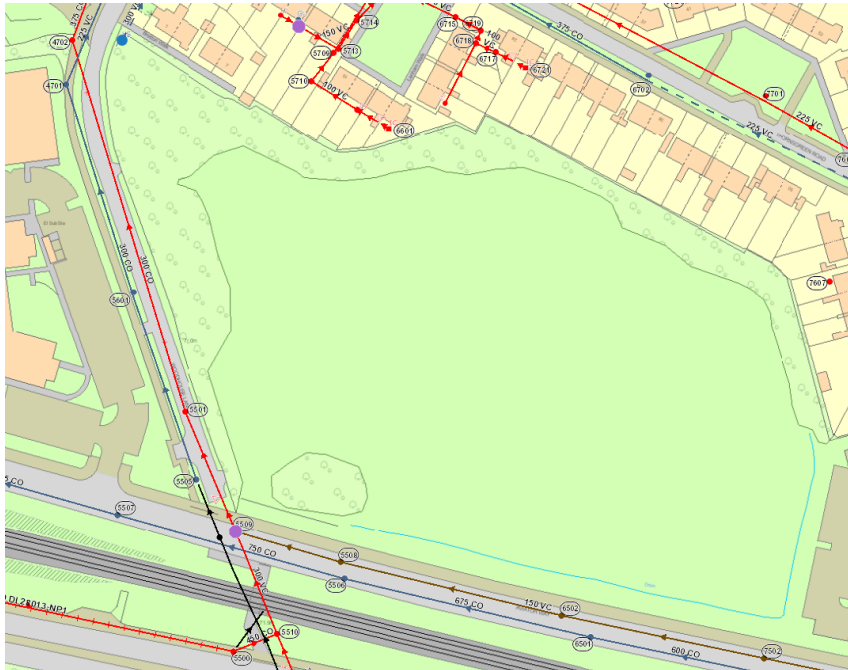
Public Sewer

No connection to the public sewer will be permitted as this time. This is because of the private culverted watercourse present mentioned above.

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

Site Images

United Utilities
Water for the North West



Recommended Foul Connection

70.4m

4702

4710

4711

Recommended Surface Water Connection

Bretton Walk

1

Figure 2 Recommended Points of Connection

Kind Regards

Gulshan



Developer Engineer (Greater Manchester Area)
Developer Services & Metering
Customer Services

T: 01925 429092
unitedutilities.com

APPENDIX F

GREENFIELD RUNOFF CALCULATIONS



ICP SUDS / IH 124

ADAS 345

FEH

ReFH2

Greenfield Volume

Method ☒ ICP SUDS ☐ IH 124Area (ha) SAAR (mm) Soil

Map

Region

...

Additional Options

Urban Return Period (years) Growth Curve 

Calculate

Results

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 2 (years) (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 10	13.6	13.6	12.7	11.9	23.1	28.4

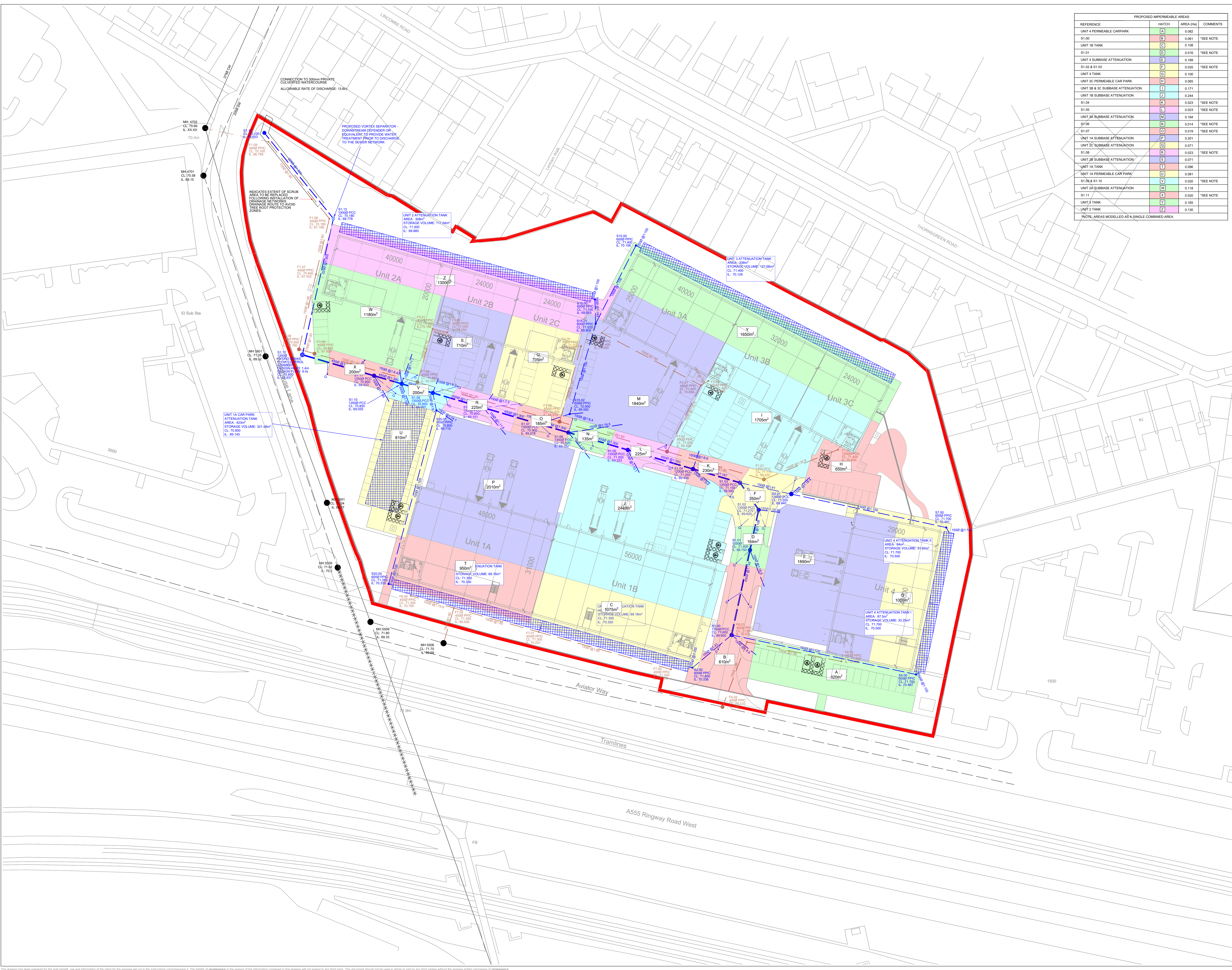
OK

Cancel



APPENDIX G

PROPOSED DRAINED AREAS PLAN



PROPOSED IMPERMEABLE AREAS			
REFERENCE	HATCH	AREA (H)	COMMENTS
UNIT 4 PERMEABLE CAR PARK	A	0.082	
S1.00	B	0.061	*SEE NOTE
UNIT 1B TANK	C	0.106	
S1.01	D	0.016	*SEE NOTE
UNIT 4 SUBBASE ATTENUATION	E	0.169	
S1.02 & S1.03	F	0.035	*SEE NOTE
UNIT 4 TANK	G	0.100	
UNIT 3C PERMEABLE CAR PARK	H	0.065	
UNIT 3B & 3C SUBBASE ATTENUATION	I	0.171	
UNIT 1B SUBBASE ATTENUATION	J	0.244	
S1.04	K	0.023	*SEE NOTE
S1.05	L	0.023	*SEE NOTE
UNIT 3A SUBBASE ATTENUATION	M	0.184	
S1.06	N	0.014	*SEE NOTE
S1.07	O	0.019	*SEE NOTE
UNIT 1A SUBBASE ATTENUATION	P	0.201	
UNIT 2C SUBBASE ATTENUATION	Q	0.071	
S1.08	R	0.023	*SEE NOTE
UNIT 2B SUBBASE ATTENUATION	S	0.071	
UNIT 1A TANK	T	0.096	
UNIT 1A PERMEABLE CAR PARK	U	0.081	
S1.09 & S1.10	V	0.020	*SEE NOTE
UNIT 2A SUBBASE ATTENUATION	W	0.116	
S1.11	X	0.020	*SEE NOTE
UNIT 3 TANK	Y	0.165	
UNIT 3 TANK	Z	0.130	

*NOTE: AREAS MODELLED AS A SINGLE COMBINED AREA

- NOTES
- DO NOT SCALE FROM THIS DRAWING
 - THIS DRAWING IS INTENDED TO INDICATE THE ANTICIPATED DRAINED AREAS FROM THE MANCHESTER BUSINESS PARK. IT IS BASED UPON A REVIEW OF THE ARCHITECTURAL AND LANDSCAPE SITE PLAN DRAWINGS.
 - REFER TO DRAWING MBP-REN-00-XX-DR-C-01100 FOR THE BELOW GROUND DRAINAGE PLAN GENERAL ARRANGEMENT

P02	REVISED IN-LINE WITH ARCHITECT COMMENTS	21.11.25	JAB	PC
P01	STAGE 3 ISSUE	17.11.25	JAB	PC

Rev: Description: Date: By: Chkd:



MANCHESTER BUSINESS PARK

PROPOSED DRAINED AREAS PLAN

STAGE 3

Size: A0	Date: NOV'25	Drawn by: JAB	Designed by: JAB	Checked by: PC
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Scale: 1:400 Project No: 2501-01

Project - Originator - Volume - Level - Type - Role - Number: Revision:

MBP-REN-00-XX-DR-C-00060 P02

APPENDIX H BELOW GROUND DRAINAGE GA

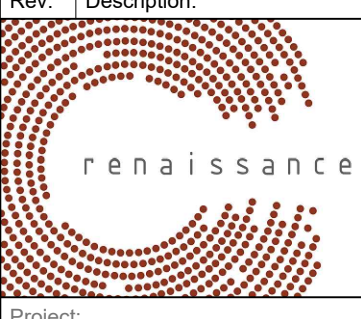
LEGEND	DESCRIPTION
REF	
INDICATIVE SITE BOUNDARY	
PROPOSED SITE SURFACE WATER DRAINAGE	
PROPOSED SITE FOUL WATER DRAINAGE NETWORK	
EXISTING UNITED UTILITIES SURFACE WATER SEWER	
EXISTING UNITED UTILITIES COMBINED SEWER	
EXISTING UNITED UTILITIES FOUL WATER SEWER	
EXISTING ABANDONED UNITED UTILITIES FOUL WATER SEWER	
ATTENUATION TANK	
PROPOSED PERMEABLE PAVING SUB-BASE ATTENUATION SYSTEM, ALLOW FOR PERFORATED PIPE AND LOCAL OPEN FLOW CONTROL CHAMBERS FOR EACH SYSTEM	
EXISTING PERMEABLE PAVING SUB-BASE ATTENUATION SYSTEM	

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RENAISSANCE, ARCHITECTS, LANDSCAPE ARCHITECTS AND BUILDING SERVICES ENGINEERS DRAWINGS.
- THE FINAL CONNECTION TO THE PUBLIC SEWER IS SUBJECT TO UNITED UTILITIES APPROVAL AND IS TO BE IN ACCORDANCE WITH THEIR AGREED DETAILS.
- ALL BELOW GROUND DRAINAGE WORKS TO BE IN ACCORDANCE WITH RELEVANT BUILDING REGULATIONS AND SEWER SECTOR GUIDANCE. APPENDIX C: DESIGN AND CONSTRUCTION GUIDANCE. IF DISCREPANCIES ARE NOTED BETWEEN SS&G DRAWINGS THESE SHOULD BE BROUGHT TO THE ATTENTION OF RENAISSANCE FOR REVIEW.
- RWPs, SVPs, S&Ss AND FLOOR GULLEYS ARE TO HAVE RODDABLE ACCESS POINTS ABOVE GROUND FLOOR TO BUILDING SERVICES DETAILS.
- PERMEABLE PAVING SYSTEMS AND FLOW CONTROL DEVICES ARE TO BE TO SUPPLIERS DESIGN AND DETAILS. INSTALLATION IS TO BE IN ACCORDANCE WITH THE SUPPLIERS REQUIREMENTS.
- SEWERS TO BE LAID IN CLASS 3 BEDDING (150mm DIA GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN: 1.2m IN HIGHWAYS OR VERGES, OR LESS THAN 0.9m IN PEDESTRIAN AREAS. THEN A 150mm DIA CONCRETE SLAB SHOULD BE PROVIDED ABOVE THE GRANULAR BED AND SURROUND REFER TO DETAILS SHEETS.
- THE CONTRACTOR IS TO UNDERTAKE A FULL CCTV SURVEY AT COMPLETION OF THE PROJECT TO DEMONSTRATE THAT THE DRAINAGE IS CLEAR ANY DEFECTS ARE TO BE CORRECTED BY THE CONTRACTOR PRIOR TO HANDOVER OF THE SYSTEM TO THE CLIENT.
- THE CONTRACTOR IS TO KEEP A RECORD SET OF THE AS INSTALLED DRAINAGE ON SITE AND PROVIDE THIS TO RENAISSANCE UPON COMPLETION OF THE WORKS TO ALLOW FOR PRODUCTION OF A FINAL CONSTRUCTION ISSUE DRAWING.
- DURING THE WORKS ALTERATIONS TO THE DRAINAGE LAYOUT ARE TO BE MARKED UP BY THE CONTRACTOR AND AGREED WITH RENAISSANCE IN WRITING.
- THE CHAMBER SIZE OF PCC MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BEDDING.
- MANHOLE COVERS ARE TO BE IN ACCORDANCE WITH BS EN 124 FOR THE RATING INDICATED IN THE MANHOLE SCHEDULE. THE CONTRACTOR IS TO SUBMIT DETAILS FOR THE PROPOSED MANHOLE COVERS TO THE ENGINEER AND LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION.
- ALL INTERNAL COVERS TO BE RECESSED AND TRIPLE SEALED.
- COVER SLABS MUST CARRY THE BS1 KITEMARK, WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING REDUCING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO REQUIRED SIZE.
- ALL CONCRETE PIPES TO BE TO BS EN 1916 CLASS 120 (54kN/m).
- BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-08002 (TABLE A2).
- IF PLASTIC PIPES ARE TO BE USED THEN THE FOLLOWING MUST APPLY: A BS1 KITEMARK CERTIFIED TO BS EN 1401-1 AND WS-4-35-01. B PIPES LESS THAN OR EQUAL TO 500mm DIA. C BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-08002 (TABLE A2).
- THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA, 40kN/m; 150mm DIA DIA, 40kN/m; 225mm DIA, 45kN/m AND 300mm DIA, 72kN/m.
- THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE: CLASS 120 TO EN 1916/BS5911-1:2002. PLASTIC PIPES SHOULD CONFORM TO WS-4-35-01 AND BS EN 13476.
- SULPHATE RESISTANT CEMENT (C20-DC3) AND PRECAST CONCRETE PRODUCTS MUST BE USED ON A LABORATORY REPORT PROVIDING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
- SEWER PIPES TO BE LAID IN MAXIMUM 3 METER LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER PIPES, AND THIS IS AGREED BY THE CONTRACTOR WITH THE PIPE MANUFACTURER.
- ALL FOUL AND SURFACE WATER BELOW GROUND SYSTEMS ARE TO BE VENTED WITHIN THE ABOVE GROUND DRAINAGE TO THE BUILDING SERVICES ENGINEERS DETAILS.
- ALLOW FOR ALL THE EXISTING SURFACE WATER DRAINAGE ON SITE TO BE GRUBBED UP AND BACKFILLED. ANY CONNECTIONS FROM THE SITE TO THE PUBLIC SEWER TO THE SITE ARE TO BE CAPED AND GROUTED.

RIBA STAGE 3
ALL CIVIL DESIGN IS INDICATIVE TO ALLOW FOR SPATIAL COORDINATION RIBA STAGE 3 AND OUTLINE COSTING BY THE PROJECT CONTRACTOR. ALL CIVIL DESIGN IS SUBJECT TO CONFIRMATION AND ALTERATION AS THE STAGE 4 (TECHNICAL DESIGN) IS COMPLETED.

A DESIGN CONTINGENCY OF 10-15% IS RECOMMENDED TO ALLOW FOR DESIGN DEVELOPMENT DURING RIBA STAGE 4 (TECHNICAL DESIGN) AND INPUT CONTRACTOR DESIGNED PACKAGES.

P02	REVISED IN-LINE WITH ARCHITECT COMMENTS	21.11.25	JAB	PC
P01	STAGE 3 ISSUE	17.11.25	JAB	PC
Rev:	Description:	Date:	By:	Chkd:



Renaissance Associates Ltd
2nd Floor Tribeca House
21-27 Dale Street
Manchester
M1 1ET

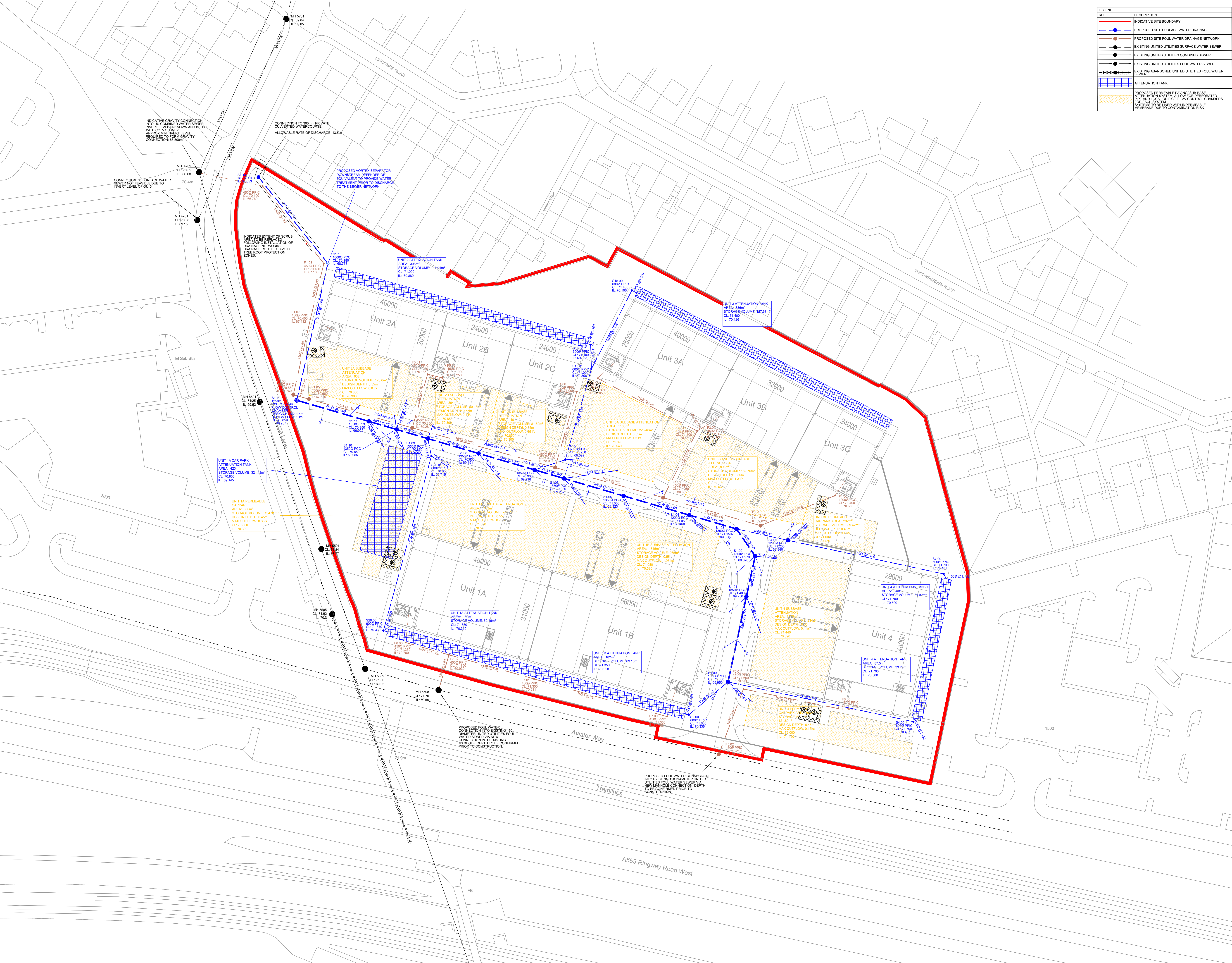
MANCHESTER BUSINESS PARK

BELOW GROUND DRAINAGE GENERAL ARRANGEMENT

STAGE 3

Size:	Date:	Drawn by:	Designed by:	Checked by:
A0	NOV'25	JAB	JAB	PC
Scale:	1:400	Project No:	2501-01	
Project -	Originator -	Volume -	Level -	Type -

MBP-REN-00-XX-DR-C-01100 P02



APPENDIX I

SURFACE WATER DRAINAGE CALCULATIONS

Project:	Date: 27/10/2025			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Inflows Storm Phase: Phase	JamesAlbert			
	Company Address:			



PP A

Type : Catchment Area

Area (ha)	0.08
-----------	------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



UNIT 4 II

Type : Catchment Area

Area (ha)	0.055
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP C

Type : Catchment Area

Area (ha)	0.065
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



U

Type : Catchment Area

Area (ha)	0.189
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project:	Date: 27/10/2025			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Inflows Storm Phase: Phase	JamesAlbert			
	Company Address:			



UNIT 3C

Type : Catchment Area

Area (ha)	0.067
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP D

Type : Catchment Area

Area (ha)	0.173
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP H

Type : Catchment Area

Area (ha)	0.196
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP J

Type : Catchment Area

Area (ha)	0.081
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project:	Date: 27/10/2025			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Inflows Storm Phase: Phase	JamesAlbert			
	Company Address:			



PP F

Type : Catchment Area

Area (ha)	0.184
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP G

Type : Catchment Area

Area (ha)	0.071
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP I

Type : Catchment Area

Area (ha)	0.071
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



PP E

Type : Catchment Area

Area (ha)	0.235
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: Phase	Company Address:		





PP K

Type : Catchment Area

Area (ha)	0.118
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Road

Type : Catchment Area

Area (ha)	0.254
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



UNIT 4 I

Type : Catchment Area

Area (ha)	0.044
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



1B TANK

Type : Catchment Area

Area (ha)	0.117
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: Phase	Company Address:		





1A TANK

Type : Catchment Area

Area (ha)	0.10
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



UNIT 2A

Type : Catchment Area

Area (ha)	0.058
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



UNIT 2B

Type : Catchment Area

Area (ha)	0.033
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



UNIT 2C

Type : Catchment Area

Area (ha)	0.039
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Inflows Storm Phase: Phase	Company Address:			



UNIT 3B

Type : Catchment Area

Area (ha)	0.052
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



UNIT 3A

Type : Catchment Area

Area (ha)	0.047
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase				



Unit A Car Park

Type : Porous Paving

Dimensions

Exceedance Level (m)	72.000
Depth (m)	0.600
Base Level (m)	71.400
Paving Layer Depth (mm)	150
Membrane Percolation (m/hr)	4.2
Porosity (%)	40
Length (m)	54.360
Long. Slope (1:X)	500.00
Width (m)	11.000
Total Volume (m³)	107.889

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	PP A
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S3.000
Outlet Type	Orifice
Diameter (m)	0.010
Coefficient of Discharge	0.600
Invert Level (m)	71.400

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		





Unit 4 Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	71.440
Depth (m)	0.900
Base Level (m)	70.540
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	25.971
Long. Slope (1:X)	100.00
Width (m)	44.500
Total Volume (m³)	236.211

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	8
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	U
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S5.000
Outlet Type	Orifice
Diameter (m)	0.011
Coefficient of Discharge	0.600
Invert Level (m)	70.540

Outlet (1)

Outgoing Connection	S6.000
Outlet Type	Orifice
Diameter (m)	0.011
Coefficient of Discharge	0.600
Invert Level (m)	70.540

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



Unit 3B 3C Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	71.180
Depth (m)	0.900
Base Level (m)	70.280
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	18.470
Long. Slope (1:X)	100.00
Width (m)	49.107
Total Volume (m³)	185.307

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	8
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	PP D
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S9.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.280

Outlet (1)

Outgoing Connection	S11.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.280

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		





Unit 3A Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	71.090
Depth (m)	0.900
Base Level (m)	70.190
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	29.370
Long. Slope (1:X)	100.00
Width (m)	37.828
Total Volume (m³)	227.254

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	8
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	PP F
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S13.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.190

Outlet (1)

Outgoing Connection	S17.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.190

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		





Unit 2B Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	70.850
Depth (m)	0.900
Base Level (m)	69.950
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	16.060
Long. Slope (1:X)	100.00
Width (m)	24.334
Total Volume (m³)	79.689

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	2
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	PP I
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S22.000
Outlet Type	Orifice
Diameter (m)	0.016
Coefficient of Discharge	0.600
Invert Level (m)	69.950

Advanced

Conductivity (m/hr)	500.0
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Unit 1B Yard & Car Park

Type : Porous Paving

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		



Dimensions

Exceedance Level (m)	71.080
Depth (m)	0.900
Base Level (m)	70.180
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	29.080
Long. Slope (1:X)	100.00
Width (m)	46.353
Total Volume (m³)	276.034

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	12
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	PP E
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S12.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.180

Outlet (1)

Outgoing Connection	S14.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.180

Outlet (2)

Outgoing Connection	S10.000
Outlet Type	Orifice
Diameter (m)	0.020
Coefficient of Discharge	0.600
Invert Level (m)	70.180

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		





Unit 1A Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	71.080
Depth (m)	0.900
Base Level (m)	70.180
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	26.000
Long. Slope (1:X)	100.00
Width (m)	45.500
Total Volume (m³)	241.770

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	8
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	PP H
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet (1)

Outgoing Connection	S21.000
Outlet Type	Orifice
Diameter (m)	0.015
Coefficient of Discharge	0.600
Invert Level (m)	70.180

Outlet

Outgoing Connection	S18.000
Outlet Type	Orifice
Diameter (m)	0.015
Coefficient of Discharge	0.600
Invert Level (m)	70.180

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



Unit 1A Car Park

Type : Porous Paving

Dimensions

Exceedance Level (m)	70.850
Depth (m)	0.550
Base Level (m)	70.300
Paving Layer Depth (mm)	80
Membrane Percolation (m/hr)	4.2
Porosity (%)	40
Length (m)	38.440
Long. Slope (1:X)	500.00
Width (m)	17.159
Total Volume (m³)	124.185

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	PP J
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet (1)

Outgoing Connection	S26.000
Outlet Type	Orifice
Diameter (m)	0.014
Coefficient of Discharge	0.600
Invert Level (m)	70.300

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		





Unit 2A Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	70.850
Depth (m)	0.900
Base Level (m)	69.950
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	41.944
Long. Slope (1:X)	200.00
Width (m)	15.046
Total Volume (m³)	129.257

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	4
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	PP K
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S25.000
Outlet Type	Orifice
Diameter (m)	0.016
Coefficient of Discharge	0.600
Invert Level (m)	69.950

Outlet (1)

Outgoing Connection	S22.000
Outlet Type	Orifice
Diameter (m)	0.016
Coefficient of Discharge	0.600
Invert Level (m)	69.950

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		





Unit 2C Yard

Type : Porous Paving

Dimensions

Exceedance Level (m)	70.850
Depth (m)	0.900
Base Level (m)	69.950
Paving Layer Depth (mm)	350
Membrane Percolation (m/hr)	4.2
Porosity (%)	37
Length (m)	29.733
Long. Slope (1:X)	100.00
Width (m)	13.429
Total Volume (m³)	81.552

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	2
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	PP G
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S19.000
Outlet Type	Orifice
Diameter (m)	0.016
Coefficient of Discharge	0.600
Invert Level (m)	69.950

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



Unit 3C Car Park

Type : Porous Paving

Dimensions

Exceedance Level (m)	71.000
Depth (m)	0.600
Base Level (m)	70.400
Paving Layer Depth (mm)	150
Membrane Percolation (m/hr)	4.2
Porosity (%)	40
Length (m)	27.607
Long. Slope (1:X)	300.00
Width (m)	10.579
Total Volume (m³)	52.830

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	2
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	PP C
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S8.000
Outlet Type	Orifice
Diameter (m)	0.016
Coefficient of Discharge	0.600
Invert Level (m)	70.400

Advanced

Conductivity (m/hr)	500.0
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Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase				



Car Park Tank

Type : Cellular Storage

Dimensions	
Exceedance Level (m)	70.850
Depth (m)	0.800
Base Level (m)	69.145
Number of Crates Long	37
Number of Crates Wide	22
Number of Crates High	2
Porosity (%)	100
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	326.505
Inlets	
Outlets	
Outlet	
Outgoing Connection	S24.000
Outlet Type	Free Discharge

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase				



Unit 4 Tank II

Type : Cellular Storage

Dimensions

Exceedance Level (m)	71.700
Depth (m)	0.400
Base Level (m)	70.500
Number of Crates Long	25
Number of Crates Wide	7
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	34.050

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 4 II
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S7.000
Outlet Type	Orifice
Diameter (m)	0.025
Coefficient of Discharge	0.600
Invert Level (m)	70.500

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase				



Unit 4 Tank I

Type : Cellular Storage

Dimensions

Exceedance Level (m)	71.700
Depth (m)	0.400
Base Level (m)	70.500
Number of Crates Long	24
Number of Crates Wide	7
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	32.720

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 4 I
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S4.000
Outlet Type	Orifice
Diameter (m)	0.015
Coefficient of Discharge	0.600
Invert Level (m)	70.500

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		



UNIT 3 Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	71.400
Depth (m)	0.400
Base Level (m)	70.126
Number of Crates Long	97
Number of Crates Wide	7
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	129.884

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 3A
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 3B
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 3C
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S15.000
Outlet Type	Orifice
Diameter (m)	0.024
Coefficient of Discharge	0.600
Invert Level (m)	70.126

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



UNIT 2 Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	71.000
Depth (m)	0.400
Base Level (m)	69.880
Number of Crates Long	89
Number of Crates Wide	7
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	119.090

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 2B
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 2C
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	UNIT 2A
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet (1)

Outgoing Connection	S16.000
Outlet Type	Orifice
Diameter (m)	0.024
Coefficient of Discharge	0.600
Invert Level (m)	69.880

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase				



UNIT 1B Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	71.350
Depth (m)	0.400
Base Level (m)	70.350
Number of Crates Long	52
Number of Crates Wide	7
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	69.760

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1B TANK
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S2.000
Outlet Type	Orifice
Diameter (m)	0.035
Coefficient of Discharge	0.600
Invert Level (m)	70.350

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



UNIT 1A Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	71.350
Depth (m)	0.400
Base Level (m)	70.350
Number of Crates Long	52
Number of Crates Wide	7
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	69.760

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1A TANK
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	S20.000
Outlet Type	Orifice
Diameter (m)	0.025
Coefficient of Discharge	0.600
Invert Level (m)	70.350

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	Company Address:		



Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
S1.012	25.471	Pipe	300.000		0.6	450	70.850	69.022
S1.011	9.847	Pipe	300.000		0.6	450	70.850	69.055
S1.010	11.049	Pipe	300.000		0.6	450	70.850	69.092
S1.009	17.985	Pipe	300.000		0.6	450	70.850	69.151
S1.008	19.841	Pipe	300.000		0.6	450	70.900	69.218
S1.007	10.396	Pipe	300.000		0.6	450	70.920	69.252
S1.006	21.114	Pipe	300.000		0.6	450	71.000	69.323
S1.005	23.208	Pipe	300.000		0.6	450	71.050	69.400
S1.004	16.738	Pipe	167.377		0.6	450	71.150	69.500
S1.003	11.199	Pipe	93.324		0.6	450	71.270	69.620
S1.002	14.084	Pipe	108.335		0.6	450	71.400	69.750
S1.001	29.651	Pipe	148.256		0.6	450	71.600	69.950
S1.013	47.691	Pipe	300.000		0.6	225	70.850	68.937
S2.001	16.735	Pipe	43.355		0.6	150	71.600	70.336
S8.000	8.474	Pipe	18.421		0.6	150	71.092	70.400
S3.000	12.882	Pipe	8.884		0.6	150	72.109	71.400
S24.000	9.040	Pipe	100.444		0.6	300	70.850	69.145
S5.000	13.339	Pipe	16.884		0.6	150	71.700	70.540
S9.000	8.332	Pipe	10.682		0.6	150	71.365	70.280
S11.000	5.815	Pipe	6.608		0.6	150	71.365	70.280
S6.000	7.284	Pipe	7.917		0.6	150	71.700	70.540
S10.000	6.586	Pipe	8.444		0.6	150	71.371	70.180
S12.000	8.651	Pipe	10.094		0.6	150	71.371	70.180
S14.000	11.421	Pipe	12.307		0.6	150	71.371	70.180
S13.000	18.287	Pipe	19.496		0.6	150	71.384	70.190
S17.000	4.995	Pipe	8.353		0.6	150	71.384	70.190
S22.000	5.373	Pipe	6.262		0.6	150	71.011	69.950
S19.000	5.820	Pipe	7.284		0.6	150	71.147	69.950
S18.000	11.959	Pipe	11.622		0.6	150	71.340	70.180
S21.000	6.569	Pipe	14.131		0.6	150	71.340	70.180
S26.000	10.197	Pipe	7.979		0.6	150	70.927	70.300
S25.000	5.751	Pipe	6.426		0.6	150	71.060	69.950
S22.000	10.483	Pipe	11.713		0.6	150	71.060	69.950
S1.014	37.569	Pipe	300.000		0.6	225	70.180	68.778
S4.001	64.379	Pipe	119.887		0.6	150	71.700	70.487
S7.001	54.088	Pipe	99.977		0.6	150	71.700	70.481
S7.002	17.926	Pipe	40.741		0.6	150	71.200	69.940
S15.001	30.018	Pipe	100.059		0.6	150	71.400	70.106
S15.002	32.107	Pipe	150.034		0.6	150	71.000	69.806
S15.003	10.970	Pipe	29.332		0.6	150	70.950	69.592
S20.001	61.489	Pipe	100.000		0.6	150	71.350	70.330
20.002	6.052	Pipe	9.712		0.6	150	70.850	69.715
S2.000	1.426	Pipe	101.868		0.6	150	0.000	70.350
S20.000	2.037	Pipe	101.844		0.6	150	71.350	70.350
S4.000	1.289	Pipe	99.127		0.6	150	71.700	70.500
S7.000	1.907	Pipe	100.388		0.6	150	71.700	70.500
S15.000	1.974	Pipe	98.719		0.6	150	71.400	70.126
S16.001	8.491	Pipe	148.962		0.6	150	71.000	69.863
S16.000	1.630	Pipe	95.876		0.6	150	71.000	69.880

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	Company Address:		



Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance	Wall Thickness (mm)
S1.012	70.850	68.937		None		(None)	(None)	0
S1.011	70.850	69.022		None		(None)	(None)	0
S1.010	70.850	69.055		None		(None)	(None)	0
S1.009	70.850	69.092		None		(None)	(None)	0
S1.008	70.850	69.151		None		(None)	(None)	0
S1.007	70.900	69.218		None		(None)	(None)	0
S1.006	70.920	69.252		None		(None)	(None)	0
S1.005	71.000	69.323		None		(None)	(None)	0
S1.004	71.050	69.400		None		(None)	(None)	0
S1.003	71.150	69.500		None		(None)	(None)	0
S1.002	71.270	69.620		None		(None)	(None)	0
S1.001	71.400	69.750		None		(None)	(None)	0
S1.013	70.180	68.778		None	9.8	(None)	(None)	0
S2.001	71.600	69.950		None		(None)	(None)	0
S8.000	71.200	69.940		None	0.4	(None)	(None)	0
S3.000	71.600	69.950		None	0.1	(None)	(None)	0
S24.000	70.850	69.055		None		(None)	(None)	0
S5.000	71.400	69.750		None	0.2	(None)	(None)	0
S9.000	71.150	69.500		None	0.6	(None)	(None)	0
S11.000	71.050	69.400		None	0.6	(None)	(None)	0
S6.000	71.270	69.620		None	0.2	(None)	(None)	0
S10.000	71.050	69.400		None	0.6	(None)	(None)	0
S12.000	71.000	69.323		None	0.6	(None)	(None)	0
S14.000	70.920	69.252		None	0.6	(None)	(None)	0
S13.000	70.920	69.252		None	0.6	(None)	(None)	0
S17.000	70.950	69.592		None	0.6	(None)	(None)	0
S22.000	70.850	69.092		None	0.4	(None)	(None)	0
S19.000	70.850	69.151		None	0.4	(None)	(None)	0
S18.000	70.850	69.151		None	0.3	(None)	(None)	0
S21.000	70.850	69.715		None	0.3	(None)	(None)	0
S26.000	70.850	69.022		None	0.3	(None)	(None)	0
S25.000	70.850	69.055		None	0.4	(None)	(None)	0
S22.000	70.850	69.055		None	0.4	(None)	(None)	0
S1.014	70.100	68.653		None		(None)	(None)	0
S4.001	71.600	69.950		None		(None)	(None)	0
S7.001	71.200	69.940		None		(None)	(None)	0
S7.002	71.150	69.500		None		(None)	(None)	0
S15.001	71.000	69.806		None		(None)	(None)	0
S15.002	70.950	69.592		None		(None)	(None)	0
S15.003	70.900	69.218		None		(None)	(None)	0
S20.001	70.850	69.715		None		(None)	(None)	0
20.002	70.850	69.092		None		(None)	(None)	0
S2.000	71.600	70.336		None	2.5	(None)	(None)	0
S20.000	71.350	70.330		None	1.3	(None)	(None)	0
S4.000	71.700	70.487		None	0.5	(None)	(None)	0
S7.000	71.700	70.481		None	1.4	(None)	(None)	0
S15.000	71.400	70.106		None	1.4	(None)	(None)	0
S16.001	71.000	69.806		None		(None)	(None)	0
S16.000	71.000	69.863		None	1.3	(None)	(None)	0

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase		Company Address:	



Name	Material	Trench Width (mm)	Bedding Material	Surrounding Material
S1.012		0		
S1.011		0		
S1.010		0		
S1.009		0		
S1.008		0		
S1.007		0		
S1.006		0		
S1.005		0		
S1.004		0		
S1.003		0		
S1.002		0		
S1.001		0		
S1.013		0		
S2.001		0		
S8.000		0		
S3.000		0		
S24.000		0		
S5.000		0		
S9.000		0		
S11.000		0		
S6.000		0		
S10.000		0		
S12.000		0		
S14.000		0		
S13.000		0		
S17.000		0		
S22.000		0		
S19.000		0		
S18.000		0		
S21.000		0		
S26.000		0		
S25.000		0		
S22.000		0		
S1.014		0		
S4.001		0		
S7.001		0		
S7.002		0		
S15.001		0		
S15.002		0		
S15.003		0		
S20.001		0		
20.002		0		
S2.000		0		
S20.000		0		
S4.000		0		
S7.000		0		
S15.000		0		
S16.001		0		
S16.000		0		

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
1A TANK	UNIT 1A Tank		Time of Concentration	0.100	100	0	100	0.100
1B TANK	UNIT 1B Tank		Time of Concentration	0.117	100	0	100	0.117
PP A	Unit A Car Park		Time of Concentration	0.080	100	0	100	0.080
PP C	Unit 3C Car Park		Time of Concentration	0.065	100	0	100	0.065
PP D	Unit 3B 3C Yard		Time of Concentration	0.173	100	0	100	0.173
PP E	Unit 1B Yard & Car Park		Time of Concentration	0.235	100	0	100	0.235
PP F	Unit 3A Yard		Time of Concentration	0.184	100	0	100	0.184
PP G	Unit 2C Yard		Time of Concentration	0.071	100	0	100	0.071
PP H	Unit 1A Yard		Time of Concentration	0.196	100	0	100	0.196
PP I	Unit 2B Yard		Time of Concentration	0.071	100	0	100	0.071
PP J	Unit 1A Car Park		Time of Concentration	0.081	100	0	100	0.081
PP K	Unit 2A Yard		Time of Concentration	0.118	100	0	100	0.118
Road	S1.011		Time of Concentration	0.254	100	0	100	0.254
U	Unit 4 Yard		Time of Concentration	0.189	100	0	100	0.189
UNIT 2A	UNIT 2 Tank		Time of Concentration	0.058	100	0	100	0.058
UNIT 2B	UNIT 2 Tank		Time of Concentration	0.033	100	0	100	0.033
UNIT 2C	UNIT 2 Tank		Time of Concentration	0.039	100	0	100	0.039
UNIT 3A	UNIT 3 Tank		Time of Concentration	0.047	100	0	100	0.047
UNIT 3B	UNIT 3 Tank		Time of Concentration	0.052	100	0	100	0.052
UNIT 3C	UNIT 3 Tank		Time of Concentration	0.067	100	0	100	0.067
UNIT 4 I	Unit 4 Tank I		Time of Concentration	0.044	100	0	100	0.044
UNIT 4 II	Unit 4 Tank II		Time of Concentration	0.055	100	0	100	0.055
TOTAL		0.0		2.326				2.326

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Network Design Criteria Storm Phase: Phase				

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

FEH

Type: FEH

Site Location	GB 382635 385619 SJ 82635 85619
Return Period (years)	100.0
Rainfall Version	2022

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	300.00
Max. Slope (1:X)	40.00
Use Flow Restriction	☒
Reduce Channel Depths	☐

Pipe Size Library

Pipe Size Library

Add. Increment (mm)	150
Max. Diameter (mm)	600

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
450	300.00	0.00

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: Phase		Company Address:	



Manhole Options

Apply Offset	☐
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Manhole Size Library

Manhole Lib HW

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
150	0.450	0.000
225	0.600	0.000
300	1.200	0.000
375	1.350	0.000
450	1.350	0.000
700	1.500	0.000
750	1.800	0.000
900	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	0.450	0.000
3.000	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Outfall Details Storm Phase: Phase	Company Address:			

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
End	Free Discharge			

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Inflows Summary Storm Phase: Phase				



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address:		



Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
PP A	FEH: 2 years: +0 %: 15 mins: Summer	0.08	14.4	6.214
UNIT 4 II	FEH: 2 years: +0 %: 15 mins: Summer	0.06	10.0	4.324
PP C	FEH: 2 years: +0 %: 15 mins: Summer	0.07	11.7	5.063
U	FEH: 2 years: +0 %: 15 mins: Summer	0.19	34.0	14.710
UNIT 3C	FEH: 2 years: +0 %: 15 mins: Summer	0.07	12.0	5.203
PP D	FEH: 2 years: +0 %: 15 mins: Summer	0.17	31.1	13.449
PP H	FEH: 2 years: +0 %: 15 mins: Summer	0.20	35.2	15.244
PP J	FEH: 2 years: +0 %: 15 mins: Summer	0.08	14.6	6.304
PP F	FEH: 2 years: +0 %: 15 mins: Summer	0.18	33.1	14.334
PP G	FEH: 2 years: +0 %: 15 mins: Summer	0.07	12.7	5.493
PP I	FEH: 2 years: +0 %: 15 mins: Summer	0.07	12.8	5.523
PP E	FEH: 2 years: +0 %: 15 mins: Summer	0.23	42.2	18.276
PP K	FEH: 2 years: +0 %: 15 mins: Summer	0.12	21.3	9.196
Road	FEH: 2 years: +0 %: 15 mins: Summer	0.25	45.7	19.764
UNIT 4 I	FEH: 2 years: +0 %: 15 mins: Summer	0.04	8.0	3.438
1B TANK	FEH: 2 years: +0 %: 15 mins: Summer	0.12	21.1	9.113
1A TANK	FEH: 2 years: +0 %: 15 mins: Summer	0.10	18.0	7.783
UNIT 2A	FEH: 2 years: +0 %: 15 mins: Summer	0.06	10.4	4.488
UNIT 2B	FEH: 2 years: +0 %: 15 mins: Summer	0.03	6.0	2.603
UNIT 2C	FEH: 2 years: +0 %: 15 mins: Winter	0.04	6.1	2.831
UNIT 3B	FEH: 2 years: +0 %: 15 mins: Summer	0.05	9.3	4.017
UNIT 3A	FEH: 2 years: +0 %: 15 mins: Summer	0.05	8.4	3.644

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address:		



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
PP A	FEH: 30 years: +40 %: 15 mins: Summer	0.08	44.5	19.292
UNIT 4 II	FEH: 30 years: +40 %: 15 mins: Summer	0.06	31.0	13.426
PP C	FEH: 30 years: +40 %: 15 mins: Summer	0.07	36.3	15.723
U	FEH: 30 years: +40 %: 15 mins: Summer	0.19	105.4	45.666
UNIT 3C	FEH: 30 years: +40 %: 15 mins: Summer	0.07	37.3	16.160
PP D	FEH: 30 years: +40 %: 15 mins: Summer	0.17	96.3	41.750
PP H	FEH: 30 years: +40 %: 15 mins: Summer	0.20	109.2	47.317
PP J	FEH: 30 years: +40 %: 15 mins: Summer	0.08	45.2	19.574
PP F	FEH: 30 years: +40 %: 15 mins: Summer	0.18	102.7	44.493
PP G	FEH: 30 years: +40 %: 15 mins: Summer	0.07	39.4	17.055
PP I	FEH: 30 years: +40 %: 15 mins: Summer	0.07	39.5	17.133
PP E	FEH: 30 years: +40 %: 15 mins: Summer	0.23	130.9	56.734
PP K	FEH: 30 years: +40 %: 15 mins: Summer	0.12	65.9	28.551
Road	FEH: 30 years: +40 %: 15 mins: Summer	0.25	141.6	61.347
UNIT 4 I	FEH: 30 years: +40 %: 15 mins: Summer	0.04	24.6	10.680

Project:	Date: 27/10/2025		
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1B TANK	FEH: 30 years: +40 %: 15 mins: Summer	0.12	65.3	28.282
1A TANK	FEH: 30 years: +40 %: 15 mins: Summer	0.10	55.8	24.172
UNIT 2A	FEH: 30 years: +40 %: 15 mins: Summer	0.06	32.2	13.941
UNIT 2B	FEH: 30 years: +40 %: 15 mins: Summer	0.03	18.7	8.083
UNIT 2C	FEH: 30 years: +40 %: 15 mins: Winter	0.04	19.0	8.786
UNIT 3B	FEH: 30 years: +40 %: 15 mins: Summer	0.05	28.8	12.472
UNIT 3A	FEH: 30 years: +40 %: 15 mins: Summer	0.05	26.1	11.305

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address:		



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
PP A	FEH: 100 years: +45 %: 15 mins: Summer	0.08	58.6	25.405
UNIT 4 II	FEH: 100 years: +45 %: 15 mins: Summer	0.06	40.8	17.675
PP C	FEH: 100 years: +45 %: 15 mins: Summer	0.07	47.8	20.701
U	FEH: 100 years: +45 %: 15 mins: Summer	0.19	138.7	60.127
UNIT 3C	FEH: 100 years: +45 %: 15 mins: Summer	0.07	49.1	21.281
PP D	FEH: 100 years: +45 %: 15 mins: Summer	0.17	126.8	54.967
PP H	FEH: 100 years: +45 %: 15 mins: Summer	0.20	143.7	62.303
PP J	FEH: 100 years: +45 %: 15 mins: Summer	0.08	59.4	25.764
PP F	FEH: 100 years: +45 %: 15 mins: Summer	0.18	135.1	58.574
PP G	FEH: 100 years: +45 %: 15 mins: Summer	0.07	51.8	22.454
PP I	FEH: 100 years: +45 %: 15 mins: Summer	0.07	52.0	22.562
PP E	FEH: 100 years: +45 %: 15 mins: Summer	0.23	172.3	74.695
PP K	FEH: 100 years: +45 %: 15 mins: Summer	0.12	86.7	37.592
Road	FEH: 100 years: +45 %: 15 mins: Summer	0.25	186.3	80.771
UNIT 4 I	FEH: 100 years: +45 %: 15 mins: Summer	0.04	32.4	14.060

Project:		Date: 27/10/2025		
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Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address:		



1B TANK	FEH: 100 years: +45 %: 15 mins: Summer	0.12	85.9	37.241
1A TANK	FEH: 100 years: +45 %: 15 mins: Summer	0.10	73.4	31.819
UNIT 2A	FEH: 100 years: +45 %: 15 mins: Summer	0.06	42.3	18.357
UNIT 2B	FEH: 100 years: +45 %: 15 mins: Summer	0.03	24.6	10.648
UNIT 2C	FEH: 100 years: +45 %: 15 mins: Winter	0.04	25.1	11.568
UNIT 3B	FEH: 100 years: +45 %: 15 mins: Summer	0.05	37.9	16.418
UNIT 3A	FEH: 100 years: +45 %: 15 mins: Summer	0.05	34.3	14.880

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S1.013	FEH: 2 years: +0 %: 120 mins: Summer	70.18 0	68.77 8	68.865	0.087	9.0	0.125	0.000	9.0	83.692	OK
S1.012	FEH: 2 years: +0 %: 30 mins: Summer	70.85 0	68.93 7	69.342	0.405	10.6	0.579	0.000	9.0	22.059	Surcharged
S1.011	FEH: 2 years: +0 %: 30 mins: Summer	70.85 0	69.02 2	69.342	0.320	29.4	0.458	0.000	10.6	33.118	OK
S1.010	FEH: 2 years: +0 %: 30 mins: Summer	70.85 0	69.05 5	69.342	0.287	17.0	0.411	0.000	6.0	24.133	OK
S1.09	FEH: 2 years: +0 %: 30 mins: Summer	70.85 0	69.09 2	69.342	0.251	11.3	0.359	0.000	9.6	16.754	OK
S1.08	FEH: 2 years: +0 %: 30 mins: Summer	70.85 0	69.15 1	69.344	0.193	9.1	0.276	0.000	7.4	12.354	OK
S1.07	FEH: 2 years: +0 %: 30 mins: Summer	70.90 0	69.21 8	69.345	0.128	6.2	0.183	0.000	5.3	9.348	OK
S1.06	FEH: 2 years: +0 %: 30 mins: Summer	70.92 0	69.25 2	69.347	0.095	3.7	0.136	0.000	3.5	6.585	OK
S1.05	FEH: 2 years: +0 %: 360 mins: Summer	71.00 0	69.32 3	69.363	0.041	3.2	0.058	0.000	3.2	99.018	OK
S1.04	FEH: 2 years: +0 %: 360 mins: Summer	71.05 0	69.40 0	69.439	0.039	2.8	0.055	0.000	2.8	87.242	OK
S1.03	FEH: 2 years: +0 %: 360 mins: Summer	71.15 0	69.50 0	69.529	0.029	2.1	0.042	0.000	2.1	64.178	OK
S1.02	FEH: 2 years: +0 %: 360 mins: Summer	71.27 0	69.62 0	69.639	0.019	1.2	0.028	0.000	1.2	35.722	OK
S1.01	FEH: 2 years: +0 %: 360 mins: Summer	71.40 0	69.75 0	69.769	0.019	1.1	0.028	0.000	1.1	31.896	OK
S1.00	FEH: 2 years: +0 %: 360 mins: Summer	71.60 0	69.95 0	69.970	0.020	1.0	0.028	0.000	1.0	28.087	OK
End	FEH: 2 years: +0 %: 120 mins: Summer	70.10 0	68.65 3	68.737	0.084	9.0	0.000	0.000	9.0	83.692	OK
S2.00	FEH: 2 years: +0 %: 360 mins: Summer	71.60 0	70.33 6	70.353	0.017	0.8	0.005	0.000	0.8	21.066	OK
S4.00	FEH: 2 years: +0 %: 360 mins: Winter	71.70 0	70.48 7	70.497	0.010	0.1	0.003	0.000	0.1	4.668	OK
S7.00	FEH: 2 years: +0 %: 360 mins: Summer	71.70 0	70.48 1	70.497	0.016	0.4	0.004	0.000	0.4	10.672	OK
S7.01	FEH: 2 years: +0 %: 360 mins: Summer	71.20 0	69.94 0	69.955	0.015	0.6	0.004	0.000	0.6	17.292	OK
S15.02	FEH: 2 years: +0 %: 360 mins: Winter	70.95 0	69.59 2	69.610	0.018	1.1	0.005	0.000	1.1	33.811	OK
S15.01	FEH: 2 years: +0 %: 360 mins: Winter	71.00 0	69.80 6	69.829	0.023	0.7	0.007	0.000	0.7	21.963	OK
S15.00	FEH: 2 years: +0 %: 360 mins: Winter	71.40 0	70.10 6	70.121	0.015	0.4	0.004	0.000	0.4	11.686	OK
S20.00	FEH: 2 years: +0 %: 360 mins: Winter	71.35 0	70.33 0	70.347	0.017	0.4	0.005	0.000	0.4	12.255	OK
S20.01	FEH: 2 years: +0 %: 360 mins: Winter	70.85 0	69.71 5	69.725	0.010	0.6	0.003	0.000	0.6	19.248	OK
S16.00	FEH: 2 years: +0 %: 360 mins: Winter	71.00 0	69.86 3	69.879	0.016	0.3	0.004	0.000	0.3	10.337	OK

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:			



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

Project:		Date: 27/10/2025		
		Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address:		



Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S1.013	FEH: 30 years: +40 %: 180 mins: Winter	70.180	68.778	68.865	0.087	9.0	0.125	0.000	9.0	128.622	OK
S1.012	FEH: 30 years: +40 %: 30 mins: Summer	70.850	68.937	69.749	0.812	9.7	1.162	0.000	8.8	25.754	Surcharged
S1.011	FEH: 30 years: +40 %: 30 mins: Summer	70.850	69.022	69.749	0.727	93.0	1.040	0.000	9.7	91.886	Surcharged
S1.010	FEH: 30 years: +40 %: 15 mins: Summer	70.850	69.055	69.740	0.685	124.1	0.981	0.000	8.0	79.295	Surcharged
S1.09	FEH: 30 years: +40 %: 15 mins: Summer	70.850	69.092	69.747	0.656	104.0	0.939	0.000	55.7	55.778	Surcharged
S1.08	FEH: 30 years: +40 %: 15 mins: Summer	70.850	69.151	69.757	0.606	99.4	0.867	0.000	48.3	47.478	Surcharged
S1.07	FEH: 30 years: +40 %: 15 mins: Summer	70.900	69.218	69.765	0.547	92.5	0.783	0.000	38.9	40.229	Surcharged
S1.06	FEH: 30 years: +40 %: 15 mins: Summer	70.920	69.252	69.770	0.517	83.0	0.740	0.000	34.3	31.251	Surcharged
S1.05	FEH: 30 years: +40 %: 15 mins: Summer	71.000	69.323	69.775	0.453	66.2	0.648	0.000	32.0	22.696	Surcharged
S1.04	FEH: 30 years: +40 %: 15 mins: Summer	71.050	69.400	69.780	0.380	18.4	0.544	0.000	27.5	14.506	OK
S1.03	FEH: 30 years: +40 %: 15 mins: Summer	71.150	69.500	69.782	0.282	10.7	0.404	0.000	17.8	7.883	OK
S1.02	FEH: 30 years: +40 %: 15 mins: Summer	71.270	69.620	69.786	0.166	5.9	0.237	0.000	10.0	3.430	OK
S1.01	FEH: 30 years: +40 %: 15 mins: Summer	71.400	69.750	69.793	0.043	1.3	0.062	0.000	5.9	1.709	OK
S1.00	FEH: 30 years: +40 %: 360 mins: Winter	71.600	69.950	69.976	0.026	1.7	0.037	0.000	1.7	54.484	OK
End	FEH: 30 years: +40 %: 180 mins: Winter	70.100	68.653	68.737	0.084	9.0	0.000	0.000	9.0	128.622	OK
S2.00	FEH: 30 years: +40 %: 360 mins: Winter	71.600	70.336	70.359	0.023	1.4	0.006	0.000	1.4	42.700	OK
S4.00	FEH: 30 years: +40 %: 360 mins: Winter	71.700	70.487	70.500	0.013	0.2	0.004	0.000	0.2	8.326	OK
S7.00	FEH: 30 years: +40 %: 360 mins: Summer	71.700	70.481	70.501	0.020	0.7	0.006	0.000	0.7	21.567	OK
S7.01	FEH: 30 years: +40 %: 360 mins: Winter	71.200	69.940	69.960	0.020	1.0	0.006	0.000	1.0	32.117	OK
S15.02	FEH: 30 years: +40 %: 15 mins: Summer	70.950	69.592	69.766	0.174	1.1	0.049	0.000	2.5	1.590	Surcharged
S15.01	FEH: 30 years: +40 %: 360 mins: Winter	71.000	69.806	69.836	0.030	1.2	0.009	0.000	1.2	39.421	OK
S15.00	FEH: 30 years: +40 %: 360 mins: Winter	71.400	70.106	70.125	0.019	0.6	0.005	0.000	0.6	20.810	OK
S20.00	FEH: 30 years: +40 %: 360 mins: Winter	71.350	70.330	70.352	0.022	0.7	0.006	0.000	0.7	22.645	OK
S20.01	FEH: 30 years: +40 %: 15 mins: Summer	70.850	69.715	69.754	0.039	0.7	0.011	0.000	4.2	0.948	OK
S16.00	FEH: 30 years: +40 %: 360 mins: Winter	71.000	69.863	69.883	0.020	0.6	0.006	0.000	0.6	18.692	OK

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S1.013	FEH: 100 years: +45 %: 180 mins: Winter	70.180	68.778	68.865	0.087	9.0	0.125	0.000	9.0	127.685	OK
S1.012	FEH: 100 years: +45 %: 15 mins: Summer	70.850	68.937	69.953	1.016	13.8	1.453	0.000	8.9	11.957	Surcharged
S1.011	FEH: 100 years: +45 %: 15 mins: Summer	70.850	69.022	69.952	0.930	186.3	1.331	0.000	13.8	81.678	Surcharged
S1.010	FEH: 100 years: +45 %: 30 mins: Summer	70.850	69.055	69.900	0.846	114.3	1.210	0.000	7.8	134.572	Surcharged
S1.09	FEH: 100 years: +45 %: 15 mins: Summer	70.850	69.092	69.906	0.814	137.8	1.165	0.000	74.7	74.605	Surcharged
S1.08	FEH: 100 years: +45 %: 15 mins: Summer	70.850	69.151	69.921	0.770	123.9	1.101	0.000	66.4	64.595	Surcharged
S1.07	FEH: 100 years: +45 %: 15 mins: Summer	70.900	69.218	69.934	0.717	121.0	1.025	0.000	56.9	56.946	Surcharged
S1.06	FEH: 100 years: +45 %: 15 mins: Summer	70.920	69.252	69.942	0.689	108.9	0.987	0.000	49.4	45.236	Surcharged
S1.05	FEH: 100 years: +45 %: 15 mins: Summer	71.000	69.323	69.951	0.628	105.2	0.899	0.000	46.7	35.926	Surcharged
S1.04	FEH: 100 years: +45 %: 15 mins: Summer	71.050	69.400	69.961	0.561	77.1	0.803	0.000	43.7	26.636	Surcharged
S1.03	FEH: 100 years: +45 %: 15 mins: Summer	71.150	69.500	69.967	0.467	35.5	0.668	0.000	39.8	18.365	Surcharged
S1.02	FEH: 100 years: +45 %: 15 mins: Summer	71.270	69.620	69.969	0.349	22.0	0.499	0.000	31.1	10.867	OK
S1.01	FEH: 100 years: +45 %: 15 mins: Summer	71.400	69.750	69.970	0.220	6.4	0.315	0.000	21.9	5.798	OK
S1.00	FEH: 100 years: +45 %: 15 mins: Summer	71.600	69.950	69.995	0.045	1.4	0.065	0.000	6.4	2.360	OK
End	FEH: 100 years: +45 %: 180 mins: Winter	70.100	68.653	68.737	0.084	9.0	0.000	0.000	9.0	127.685	OK
S2.00	FEH: 100 years: +45 %: 360 mins: Winter	71.600	70.336	70.367	0.031	2.5	0.009	0.000	2.5	52.701	OK
S4.00	FEH: 100 years: +45 %: 360 mins: Winter	71.700	70.487	70.501	0.014	0.3	0.004	0.000	0.3	9.687	OK
S7.00	FEH: 100 years: +45 %: 360 mins: Winter	71.700	70.481	70.504	0.023	0.8	0.006	0.000	0.8	25.707	OK
S7.01	FEH: 100 years: +45 %: 15 mins: Summer	71.200	69.940	69.988	0.048	0.8	0.014	0.000	4.1	1.120	OK
S15.02	FEH: 100 years: +45 %: 15 mins: Summer	70.950	69.592	69.949	0.357	10.0	0.101	0.000	5.6	3.617	Surcharged

Project:		Date: 27/10/2025			
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S15.01	FEH: 100 years: +45 %: 15 mins: Summer	71.00 0	69.80 6	69.971	0.165	2.5	0.047	0.000	4.0	2.029	Surcharged
S15.00	FEH: 100 years: +45 %: 360 mins: Summer	71.40 0	70.10 6	70.127	0.021	0.7	0.006	0.000	0.7	24.159	OK
S20.00	FEH: 100 years: +45 %: 360 mins: Winter	71.35 0	70.33 0	70.353	0.023	0.8	0.007	0.000	0.8	26.526	OK
S20.01	FEH: 100 years: +45 %: 15 mins: Summer	70.85 0	69.71 5	69.911	0.196	11.0	0.056	0.000	3.5	1.743	Surcharged
S16.00	FEH: 100 years: +45 %: 15 mins: Summer	71.00 0	69.86 3	69.973	0.110	1.1	0.031	0.000	2.1	0.832	OK

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Unit A Car Park	FEH: 2 years: +0 %: 360 mins: Winter	71.536	71.528	0.027	0.128	2.2	17.733	0.000	0.000	0.1	2.460	83.564	OK
Unit 4 Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.824	70.754	0.024	0.214	5.2	41.216	0.000	0.000	0.2	7.774	82.551	OK
Unit 3B 3C Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.487	70.463	0.023	0.183	4.7	31.671	0.000	0.000	0.7	22.607	82.909	OK
Unit 3A Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.508	70.395	0.024	0.205	5.0	34.137	0.000	0.000	0.7	23.778	84.978	OK
Unit 2B Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.139	70.126	0.028	0.176	1.9	13.853	0.000	0.000	0.2	7.211	82.616	OK
Unit 1B Yard & Car Park	FEH: 2 years: +0 %: 360 mins: Summer	70.484	70.384	0.013	0.204	9.7	40.602	0.000	0.000	1.1	35.898	85.291	OK
Unit 1A Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.465	70.388	0.025	0.208	5.3	40.505	0.000	0.000	0.4	14.043	83.246	OK
Unit 1A Car Park	FEH: 2 years: +0 %: 360 mins: Winter	70.448	70.406	0.071	0.106	2.2	17.947	0.000	0.000	0.1	3.672	85.549	OK
Unit 2A Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.193	70.143	0.033	0.193	3.2	22.063	0.000	0.000	0.5	14.953	82.931	OK
Car Park Tank	FEH: 2 years: +0 %: 360 mins: Summer	69.218	69.218	0.073	0.073	8.4	29.603	0.000	0.000	0.9	14.606	90.933	OK
Unit 2C Yard	FEH: 2 years: +0 %: 360 mins: Winter	70.277	70.168	0.030	0.218	1.9	13.552	0.000	0.000	0.2	7.966	83.382	OK
Unit 3C Car Park	FEH: 2 years: +0 %: 360 mins: Winter	70.555	70.555	0.063	0.155	1.8	12.693	0.000	0.000	0.2	6.682	75.973	OK
Unit 4 Tank II	FEH: 2 years: +0 %: 360 mins: Summer	70.605	70.605	0.105	0.105	2.3	8.768	0.000	0.000	0.4	10.702	74.250	OK
Unit 4 Tank I	FEH: 2 years: +0 %: 360 mins: Winter	70.606	70.606	0.106	0.106	1.2	8.471	0.000	0.000	0.1	4.698	74.112	OK
UNIT 3 Tank	FEH: 2 years: +0 %: 360 mins: Winter	70.232	70.232	0.106	0.106	4.5	34.218	0.000	0.000	0.4	11.722	73.655	OK
UNIT 2 Tank	FEH: 2 years: +0 %: 360 mins: Winter	69.968	69.968	0.088	0.088	3.5	25.916	0.000	0.000	0.3	10.369	78.238	OK
UNIT 1B Tank	FEH: 2 years: +0 %: 360 mins: Summer	70.461	70.461	0.111	0.111	4.8	19.142	0.000	0.000	0.8	21.098	72.561	OK
UNIT 1A Tank	FEH: 2 years: +0 %: 360 mins: Winter	70.457	70.457	0.107	0.107	2.7	18.540	0.000	0.000	0.4	12.302	73.423	OK

Project:		Date: 27/10/2025		
		Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address:		





FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Unit A Car Park	FEH: 30 years: +40 %: 360 mins: Winter	71.651	71.651	0.142	0.251	5.6	46.991	0.000	0.000	0.1	3.611	56.445	OK
Unit 4 Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.927	70.928	0.128	0.388	13.4	110.210	0.000	0.000	0.3	10.980	53.343	OK
Unit 3B 3C Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.643	70.643	0.179	0.363	12.2	91.022	0.000	0.000	1.0	34.296	50.880	OK
Unit 3A Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.574	70.574	0.090	0.384	13.0	97.615	0.000	0.000	1.0	35.335	57.046	OK
Unit 2B Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.298	70.298	0.187	0.348	5.0	38.738	0.000	0.000	0.3	10.758	51.389	OK
Unit 1B Yard & Car Park	FEH: 30 years: +40 %: 360 mins: Winter	70.566	70.566	0.095	0.386	16.6	120.117	0.000	0.000	1.5	53.957	56.485	OK
Unit 1A Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.563	70.563	0.123	0.383	13.8	110.745	0.000	0.000	0.6	20.118	54.194	OK
Unit 1A Car Park	FEH: 30 years: +40 %: 360 mins: Summer	70.586	70.517	0.209	0.217	8.7	47.262	0.000	0.000	0.2	5.757	61.942	OK
Unit 2A Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.324	70.324	0.164	0.374	8.4	62.870	0.000	0.000	0.6	22.201	51.361	OK
Car Park Tank	FEH: 30 years: +40 %: 360 mins: Summer	69.688	69.688	0.543	0.543	25.3	221.041	0.000	0.000	0.0	0.000	32.301	OK
Unit 2C Yard	FEH: 30 years: +40 %: 360 mins: Winter	70.357	70.357	0.110	0.407	5.0	38.182	0.000	0.000	0.3	11.661	53.181	OK
Unit 3C Car Park	FEH: 30 years: +40 %: 360 mins: Winter	70.748	70.748	0.256	0.348	4.6	35.291	0.000	0.000	0.3	10.583	33.198	OK
Unit 4 Tank II	FEH: 30 years: +40 %: 360 mins: Winter	70.798	70.798	0.298	0.298	3.9	24.775	0.000	0.000	0.7	21.647	27.238	OK
Unit 4 Tank I	FEH: 30 years: +40 %: 360 mins: Winter	70.794	70.794	0.294	0.294	3.1	23.497	0.000	0.000	0.2	8.368	28.187	OK

Project:		Date: 27/10/2025		
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Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address:		



UNIT 3 Tank	FEH: 30 years: +40 %: 360 mins: Winter	70.412	70.412	0.286	0.286	11.7	92.200	0.000	0.000	0.6	20.861	29.013	OK
UNIT 2 Tank	FEH: 30 years: +40 %: 360 mins: Winter	70.117	70.117	0.237	0.237	9.0	70.142	0.000	0.000	0.6	18.737	41.102	OK
UNIT 1B Tank	FEH: 30 years: +40 %: 360 mins: Winter	70.660	70.660	0.310	0.310	8.3	53.619	0.000	0.000	1.4	42.752	23.138	OK
UNIT 1A Tank	FEH: 30 years: +40 %: 360 mins: Winter	70.649	70.649	0.299	0.299	7.1	51.733	0.000	0.000	0.7	22.717	25.841	OK

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		





**FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:
Max. Avg. Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Unit A Car Park	FEH: 100 years: +45 %: 360 mins: Winter	71.711	71.711	0.202	0.311	7.3	61.420	0.000	0.000	0.1	4.049	43.071	OK
Unit 4 Yard	FEH: 100 years: +45 %: 360 mins: Winter	71.007	71.007	0.207	0.467	17.4	144.329	0.000	0.000	0.3	12.135	38.898	OK
Unit 3B 3C Yard	FEH: 100 years: +45 %: 360 mins: Winter	70.732	70.732	0.267	0.452	15.9	120.861	0.000	0.000	1.1	38.585	34.778	OK
Unit 3A Yard	FEH: 100 years: +45 %: 360 mins: Winter	70.652	70.652	0.169	0.462	17.0	129.674	0.000	0.000	1.1	39.145	42.938	OK
Unit 2B Yard	FEH: 100 years: +45 %: 360 mins: Winter	70.384	70.384	0.273	0.434	6.5	51.151	0.000	0.000	0.3	12.102	35.811	OK
Unit 1B Yard & Car Park	FEH: 100 years: +45 %: 360 mins: Winter	70.647	70.647	0.176	0.467	21.6	160.490	0.000	0.000	1.7	59.821	41.859	OK
Unit 1A Yard	FEH: 100 years: +45 %: 360 mins: Winter	70.643	70.643	0.203	0.463	18.0	145.673	0.000	0.000	0.6	22.283	39.747	OK
Unit 1A Car Park	FEH: 100 years: +45 %: 360 mins: Summer	70.653	70.572	0.276	0.272	11.3	61.786	0.000	0.000	0.2	6.560	50.247	OK
Unit 2A Yard	FEH: 100 years: +45 %: 360 mins: Winter	70.412	70.412	0.252	0.462	10.9	83.393	0.000	0.000	0.7	24.875	35.482	OK
Car Park Tank	FEH: 100 years: +45 %: 360 mins: Summer	69.863	69.863	0.718	0.718	33.7	292.353	0.000	0.000	0.0	0.000	10.460	OK
Unit 2C Yard	FEH: 100 years: +45 %: 360 mins: Winter	70.442	70.441	0.194	0.491	6.5	50.598	0.000	0.000	0.4	12.925	37.955	OK
Unit 3C Car Park	FEH: 100 years: +45 %: 360 mins: Winter	70.845	70.845	0.353	0.445	6.0	46.615	0.000	0.000	0.4	12.060	11.765	OK
Unit 4 Tank II	FEH: 100 years: +45 %: 360 mins: Winter	70.929	70.929	0.429	0.429	5.1	33.307	0.000	0.000	0.8	25.771	2.181	OK
Unit 4 Tank I	FEH: 100 years: +45 %: 360 mins: Winter	70.889	70.889	0.389	0.389	4.1	31.082	0.000	0.000	0.3	9.734	5.006	OK

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

UNIT 3 Tank	FEH: 100 years: +45 %: 360 mins: Winter	70.501	70.501	0.375	0.375	15.2	121.070	0.000	0.000	0.7	24.240	6.786	OK
UNIT 2 Tank	FEH: 100 years: +45 %: 360 mins: Winter	70.192	70.192	0.312	0.312	11.7	92.250	0.000	0.000	0.6	21.841	22.537	OK
UNIT 1B Tank	FEH: 100 years: +45 %: 360 mins: Winter	71.314	71.314	0.964	0.964	10.8	69.757	0.000	0.000	2.5	52.758	0.004	OK
UNIT 1A Tank	FEH: 100 years: +45 %: 360 mins: Winter	70.746	70.746	0.396	0.396	9.2	68.511	0.000	0.000	0.8	26.596	1.790	OK

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
S1.012	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S1.011	S1.012	70.850	69.340	0.362	13.101	0.3	0.07	12.9	OK
S1.011	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.010	S1.011	70.850	69.249	0.211	195.495	0.2	0.04	7.1	OK
S1.010	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S1.09	S1.010	70.850	69.340	0.267	1.441	0.2	0.06	10.3	OK
S1.009	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	S1.08	S1.09	70.850	69.340	0.217	20.650	0.3	0.04	7.8	OK
S1.008	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	S1.07	S1.08	70.900	69.341	0.156	19.190	0.5	0.03	5.6	OK
S1.007	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.06	S1.07	70.920	69.299	0.048	122.613	0.4	0.02	3.9	OK
S1.006	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.05	S1.06	71.000	69.363	0.044	99.018	0.4	0.02	3.2	OK
S1.005	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.04	S1.05	71.050	69.439	0.040	87.242	0.4	0.02	2.8	OK
S1.004	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.03	S1.04	71.150	69.529	0.034	64.178	0.4	0.01	2.1	OK
S1.003	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.02	S1.03	71.270	69.639	0.024	35.722	0.4	0	1.2	OK
S1.002	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.01	S1.02	71.400	69.769	0.019	31.896	0.5	0	1.1	OK
S1.001	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S1.00	S1.01	71.600	69.970	0.020	28.087	0.4	0	1.0	OK
S1.013	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	S1.012	S1.013	70.850	69.342	0.086	21.821	0.6	0.3	9.0	Surcharged
S2.001	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S2.00	S1.00	71.600	70.353	0.019	21.066	0.6	0.03	0.8	OK
S8.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 3C Car Park	S7.01	71.092	70.509	0.011	6.674	0.4	0	0.2	OK
S3.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit A Car Park	S1.00	72.109	71.474	0.012	2.455	0.2	0	0.1	OK
S24.000	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	Car Park Tank	S1.010	70.850	69.170	0.147	0.000	0.1	0.01	1.1	OK
S5.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 4 Yard	S1.01	71.700	70.636	0.012	3.880	0.2	0	0.1	OK
S9.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 3B 3C Yard	S1.03	71.365	70.374	0.019	11.294	0.3	0.01	0.3	OK

Project:				Date: 27/10/2025					
				Designed by:	Checked by:	Approved By:			
Report Details: Type: Connections Summary Storm Phase: Phase				JamesAlbert					
				Company Address:					

S11.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 3B 3C Yard	S1.04	71.365	70.374	0.023	11.296	0.2	0	0.3	OK
S6.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 4 Yard	S1.02	71.700	70.636	0.012	3.882	0.2	0	0.1	OK
S10.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.04	71.371	70.261	0.023	11.983	0.2	0.01	0.4	OK
S12.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.05	71.371	70.261	0.024	11.982	0.2	0.01	0.4	OK
S14.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.06	71.371	70.261	0.028	11.982	0.2	0.01	0.4	OK
S13.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 3A Yard	S1.06	71.384	70.273	0.028	11.878	0.2	0.01	0.4	OK
S17.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 3A Yard	S15.02	71.384	70.273	0.013	11.880	0.5	0.01	0.4	OK
S22.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 2B Yard	S1.09	71.011	70.046	0.066	7.205	0.1	0	0.2	OK
S19.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 2C Yard	S1.08	71.147	70.042	0.040	7.959	0.1	0	0.2	OK
S18.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 1A Yard	S1.08	71.340	70.273	0.040	7.014	0.1	0	0.2	OK
S21.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 1A Yard	S20.01	71.340	70.273	0.009	7.013	0.5	0	0.2	OK
S26.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 1A Car Park	S1.011	70.927	70.368	0.099	3.667	0.0	0	0.1	OK
S25.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 2A Yard	S1.010	71.060	70.044	0.084	7.470	0.0	0	0.2	OK
S22.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 2A Yard	S1.010	71.060	70.044	0.084	7.469	0.0	0	0.2	OK
S1.014	FEH: 2 years: +0 %: 120 mins: Summer	Pipe	S1.013	End	70.180	68.865	0.086	83.692	0.6	0.3	9.0	OK
S4.001	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S4.00	S1.00	71.700	70.497	0.015	4.668	0.2	0.01	0.1	OK
S7.001	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S7.00	S7.01	71.700	70.497	0.015	10.672	0.4	0.02	0.4	OK
S7.002	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	S7.01	S1.03	71.200	69.955	0.022	17.292	0.4	0.02	0.6	OK
S15.001	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S15.00	S15.01	71.400	70.121	0.019	11.686	0.3	0.02	0.4	OK
S15.002	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S15.01	S15.02	71.000	69.829	0.021	21.963	0.5	0.05	0.7	OK
S15.003	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S15.02	S1.07	70.950	69.610	0.034	33.811	0.4	0.03	1.1	OK
S20.001	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S20.00	S20.01	71.350	70.347	0.013	12.255	0.5	0.02	0.4	OK

Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:			

20.002	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S20.01	S1.09	70.850	69.725	0.068	19.248	0.1	0.01	0.6	OK
S2.000	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	UNIT 1B Tank	S2.00	0.000	70.461	0.020	21.080	0.5	0.04	0.8	OK
S20.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	UNIT 1A Tank	S20.00	71.350	70.457	0.017	12.286	0.4	0.02	0.4	OK
S4.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	Unit 4 Tank I	S4.00	71.700	70.606	0.010	4.687	0.3	0.01	0.1	OK
S7.000	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	Unit 4 Tank II	S7.00	71.700	70.605	0.016	10.690	0.4	0.02	0.4	OK
S15.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	UNIT 3 Tank	S15.00	71.400	70.232	0.015	11.705	0.4	0.02	0.4	OK
S16.001	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	S16.00	S15.01	71.000	69.879	0.019	10.337	0.2	0.02	0.3	OK
S16.000	FEH: 2 years: +0 %: 360 mins: Winter	Pipe	UNIT 2 Tank	S16.00	71.000	69.968	0.015	10.353	0.3	0.02	0.3	OK

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		





FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
S1.012	FEH: 30 years: +40 %: 15 mins: Summer	Pipe	S1.011	S1.012	70.850	69.739	0.450	13.453	0.2	0.07	12.2	Surcharged
S1.011	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S1.010	S1.011	70.850	69.735	0.450	0.000	0.1	0.05	9.6	Surcharged
S1.010	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S1.09	S1.010	70.850	69.736	0.450	14.312	0.4	0.33	60.7	Surcharged
S1.009	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S1.08	S1.09	70.850	69.739	0.450	13.383	0.4	0.31	57.1	Surcharged
S1.008	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S1.07	S1.08	70.900	69.741	0.450	13.532	0.3	0.28	51.2	Surcharged
S1.007	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S1.06	S1.07	70.920	69.742	0.450	10.998	0.3	0.23	42.9	Surcharged
S1.006	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S1.05	S1.06	71.000	69.745	0.450	9.262	0.4	0.18	34.2	OK
S1.005	FEH: 30 years: +40 %: 15 mins: Summer	Pipe	S1.04	S1.05	71.050	69.780	0.416	2.668	0.4	0.15	27.5	OK
S1.004	FEH: 30 years: +40 %: 15 mins: Summer	Pipe	S1.03	S1.04	71.150	69.782	0.331	2.082	0.4	0.07	17.8	OK
S1.003	FEH: 30 years: +40 %: 15 mins: Summer	Pipe	S1.02	S1.03	71.270	69.786	0.224	1.234	0.4	0.03	10.0	OK
S1.002	FEH: 30 years: +40 %: 15 mins: Summer	Pipe	S1.01	S1.02	71.400	69.793	0.105	1.226	0.5	0.02	5.9	OK
S1.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S1.00	S1.01	71.600	69.976	0.025	54.484	0.5	0.01	1.7	OK
S1.013	FEH: 30 years: +40 %: 180 mins: Winter	Pipe	S1.012	S1.013	70.850	69.508	0.087	129.151	0.6	0.3	9.0	Surcharged
S2.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S2.00	S1.00	71.600	70.359	0.024	42.700	0.7	0.05	1.4	OK

Project:				Date: 27/10/2025					
				Designed by:	Checked by:	Approved By:			
Report Details: Type: Connections Summary Storm Phase: Phase				JamesAlbert					
				Company Address:					

S8.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 3C Car Park	S7.01	71.092	70.702	0.014	10.573	0.4	0.01	0.3	Surcharged
S3.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit A Car Park	S1.00	72.109	71.596	0.015	3.606	0.1	0	0.1	Surcharged
S24.000	FEH: 30 years: +40 %: 30 mins: Winter	Pipe	Car Park Tank	S1.010	70.850	69.304	0.300	0.000	0.1	0.02	2.7	OK
S5.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 4 Yard	S1.01	71.700	70.798	0.016	5.480	0.2	0	0.2	Surcharged
S9.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 3B 3C Yard	S1.03	71.365	70.551	0.098	17.137	0.3	0.01	0.5	Surcharged
S11.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 3B 3C Yard	S1.04	71.365	70.551	0.147	17.139	0.2	0.01	0.5	Surcharged
S6.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 4 Yard	S1.02	71.700	70.798	0.036	5.487	0.2	0	0.2	Surcharged
S10.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.04	71.371	70.421	0.148	17.976	0.3	0.01	0.5	Surcharged
S12.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.05	71.371	70.421	0.150	17.975	0.3	0.01	0.5	Surcharged
S14.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.06	71.371	70.421	0.150	17.974	0.3	0.01	0.5	Surcharged
S13.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 3A Yard	S1.06	71.384	70.427	0.150	17.641	0.2	0.01	0.5	Surcharged
S17.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 3A Yard	S15.02	71.384	70.427	0.052	17.670	0.5	0.01	0.5	Surcharged
S22.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 2B Yard	S1.09	71.011	70.218	0.150	10.751	0.1	0	0.3	Surcharged
S19.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 2C Yard	S1.08	71.147	70.208	0.150	11.653	0.1	0.01	0.3	Surcharged
S18.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 1A Yard	S1.08	71.340	70.433	0.150	10.056	0.1	0.01	0.3	Surcharged
S21.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 1A Yard	S20.01	71.340	70.433	0.011	10.044	0.5	0.01	0.3	Surcharged
S26.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 1A Car Park	S1.011	70.927	70.479	0.150	5.800	0.0	0	0.2	Surcharged

Project:				Date: 27/10/2025				
				Designed by: JamesAlbert	Checked by:	Approved By:		
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address:				

S25.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 2A Yard	S1.010	71.060	70.219	0.150	11.093	0.0	0	0.3	Surch arged
S22.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 2A Yard	S1.010	71.060	70.219	0.150	11.092	0.0	0.01	0.3	Surch arged
S1.014	FEH: 30 years: +40 %: 180 mins: Winter	Pipe	S1.013	End	70.180	68.865	0.086	128.622	0.6	0.3	9.0	OK
S4.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S4.00	S1.00	71.700	70.500	0.019	8.326	0.2	0.02	0.2	OK
S7.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S7.00	S7.01	71.700	70.501	0.020	21.590	0.5	0.04	0.7	OK
S7.002	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S7.01	S1.03	71.200	69.960	0.101	32.117	0.4	0.04	1.0	OK
S15.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S15.00	S15.01	71.400	70.125	0.025	20.810	0.3	0.03	0.6	OK
S15.002	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S15.01	S15.02	71.000	69.836	0.061	39.421	0.6	0.08	1.2	OK
S15.003	FEH: 30 years: +40 %: 15 mins: Winter	Pipe	S15.02	S1.07	70.950	69.754	0.150	1.076	0.3	0.09	2.9	Surch arged
S20.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S20.00	S20.01	71.350	70.352	0.017	22.645	0.6	0.04	0.7	OK
20.002	FEH: 30 years: +40 %: 15 mins: Summer	Pipe	S20.01	S1.09	70.850	69.754	0.150	0.655	0.2	0.07	4.2	OK
S2.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	UNIT 1B Tank	S2.00	0.000	70.660	0.026	42.723	0.6	0.08	1.4	Surch arged
S20.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	UNIT 1A Tank	S20.00	71.350	70.649	0.022	22.693	0.4	0.04	0.7	Surch arged
S4.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 4 Tank I	S4.00	71.700	70.794	0.013	8.354	0.3	0.01	0.2	Surch arged
S7.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Unit 4 Tank II	S7.00	71.700	70.798	0.021	21.626	0.5	0.04	0.7	Surch arged
S15.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	UNIT 3 Tank	S15.00	71.400	70.412	0.020	20.838	0.4	0.03	0.6	Surch arged
S16.001	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	S16.00	S15.01	71.000	69.883	0.025	18.692	0.3	0.04	0.6	OK

Project:				Date: 27/10/2025								
				Designed by: JamesAlbert		Checked by:		Approved By:				
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address:								
S16.000	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	UNIT 2 Tank	S16.00	71.000	70.117	0.020	18.715	0.4	0.03	0.6	Surcharged

Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		





FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
S1.012	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1.011	S1.012	70.850	69.952	0.450	14.347	0.1	0.07	13.8	Surcharged
S1.011	FEH: 100 years: +45 %: 15 mins: Winter	Pipe	S1.010	S1.011	70.850	69.880	0.450	0.000	0.1	0.05	8.7	Surcharged
S1.010	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S1.09	S1.010	70.850	69.902	0.450	14.539	0.5	0.41	76.1	Surcharged
S1.009	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S1.08	S1.09	70.850	69.905	0.450	13.814	0.5	0.39	72.2	Surcharged
S1.008	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S1.07	S1.08	70.900	69.906	0.450	14.559	0.4	0.37	68.3	Surcharged
S1.007	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S1.06	S1.07	70.920	69.908	0.450	12.043	0.4	0.32	58.7	Surcharged
S1.006	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S1.05	S1.06	71.000	69.910	0.450	10.597	0.3	0.28	51.5	Surcharged
S1.005	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1.04	S1.05	71.050	69.961	0.450	3.159	0.4	0.24	43.7	Surcharged
S1.004	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1.03	S1.04	71.150	69.967	0.450	2.453	0.4	0.16	39.8	Surcharged
S1.003	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1.02	S1.03	71.270	69.969	0.408	1.449	0.4	0.09	31.1	OK
S1.002	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1.01	S1.02	71.400	69.970	0.284	1.428	0.5	0.07	21.9	OK
S1.001	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1.00	S1.01	71.600	69.995	0.133	1.452	0.4	0.02	6.4	OK
S1.013	FEH: 100 years: +45 %: 360 mins: Summer	Pipe	S1.012	S1.013	70.850	69.863	0.087	268.749	0.6	0.3	9.0	Surcharged
S2.001	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	S2.00	S1.00	71.600	70.367	0.032	52.701	0.9	0.09	2.5	OK

Project:				Date: 27/10/2025				
				Designed by: JamesAlbert	Checked by:	Approved By:		
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address:				

S8.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 3C Car Park	S7.01	71.092	70.799	0.015	12.049	0.4	0.01	0.4	Surcharged
S3.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit A Car Park	S1.00	72.109	71.657	0.019	4.044	0.1	0	0.1	Surcharged
S24.000	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	Car Park Tank	S1.010	70.850	69.369	0.300	0.000	0.0	0	0.4	OK
S5.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 4 Yard	S1.01	71.700	70.877	0.059	6.057	0.2	0	0.2	Surcharged
S9.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 3B 3C Yard	S1.03	71.365	70.640	0.150	19.281	0.3	0.01	0.6	Surcharged
S11.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 3B 3C Yard	S1.04	71.365	70.640	0.150	19.283	0.2	0.01	0.6	Surcharged
S6.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 4 Yard	S1.02	71.700	70.877	0.123	6.065	0.2	0	0.2	Surcharged
S10.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.04	71.371	70.502	0.150	19.933	0.3	0.01	0.6	Surcharged
S12.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.05	71.371	70.502	0.150	19.932	0.3	0.01	0.6	Surcharged
S14.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 1B Yard & Car Park	S1.06	71.371	70.502	0.150	19.922	0.3	0.01	0.6	Surcharged
S13.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 3A Yard	S1.06	71.384	70.505	0.150	19.541	0.2	0.01	0.6	Surcharged
S17.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 3A Yard	S15.02	71.384	70.505	0.140	19.580	0.5	0.01	0.6	Surcharged
S22.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 2B Yard	S1.09	71.011	70.304	0.150	12.094	0.1	0	0.3	Surcharged
S19.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 2C Yard	S1.08	71.147	70.292	0.150	12.917	0.1	0.01	0.4	Surcharged
S18.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 1A Yard	S1.08	71.340	70.513	0.150	11.139	0.1	0.01	0.3	Surcharged
S21.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 1A Yard	S20.01	71.340	70.513	0.077	11.127	0.5	0.01	0.3	Surcharged
S26.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 1A Car Park	S1.011	70.927	70.534	0.150	6.595	0.0	0	0.2	Surcharged

Project:				Date:								
				27/10/2025								
Report Details:				Designed by:								
				JamesAlbert								
Type: Connections Summary				Company Address:								
Storm Phase: Phase												

S25.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 2A Yard	S1.010	71.060	70.307	0.150	12.430	0.0	0.01	0.4	Surcharged
S22.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 2A Yard	S1.010	71.060	70.307	0.150	12.428	0.0	0.01	0.4	Surcharged
S1.014	FEH: 100 years: +45 %: 180 mins: Winter	Pipe	S1.013	End	70.180	68.865	0.086	127.685	0.6	0.3	9.0	OK
S4.001	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	S4.00	S1.00	71.700	70.501	0.023	9.687	0.2	0.02	0.3	OK
S7.001	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	S7.00	S7.01	71.700	70.504	0.021	25.707	0.5	0.05	0.8	OK
S7.002	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S7.01	S1.03	71.200	69.988	0.150	0.778	0.4	0.15	4.1	OK
S15.001	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	S15.00	S15.01	71.400	70.127	0.039	24.186	0.4	0.04	0.7	OK
S15.002	FEH: 100 years: +45 %: 15 mins: Winter	Pipe	S15.01	S15.02	71.000	69.959	0.150	0.947	0.5	0.3	4.4	Surcharged
S15.003	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S15.02	S1.07	70.950	69.903	0.150	3.562	0.4	0.19	6.2	Surcharged
S20.001	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	S20.00	S20.01	71.350	70.353	0.083	26.526	0.6	0.04	0.8	OK
20.002	FEH: 100 years: +45 %: 15 mins: Winter	Pipe	S20.01	S1.09	70.850	69.896	0.150	0.769	0.2	0.06	3.7	Surcharged
S2.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	UNIT 1B Tank	S2.00	0.000	71.314	0.035	52.725	0.8	0.14	2.5	Surcharged
S20.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	UNIT 1A Tank	S20.00	71.350	70.746	0.023	26.571	0.5	0.05	0.8	Surcharged
S4.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 4 Tank I	S4.00	71.700	70.889	0.014	9.718	0.3	0.02	0.3	Surcharged
S7.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	Unit 4 Tank II	S7.00	71.700	70.929	0.023	25.748	0.5	0.05	0.8	Surcharged
S15.000	FEH: 100 years: +45 %: 360 mins: Winter	Pipe	UNIT 3 Tank	S15.00	71.400	70.501	0.021	24.216	0.5	0.04	0.7	Surcharged
S16.001	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S16.00	S15.01	71.000	69.973	0.137	0.407	0.3	0.14	2.1	OK

Project:				Date: 27/10/2025							
				Designed by: JamesAlbert		Checked by:					
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address:							

S16.000	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	UNIT 2 Tank	S16.00	71.000	70.012	0.102	0.428	0.4	0.06	1.1	OK
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Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	Company Address:		





Phase

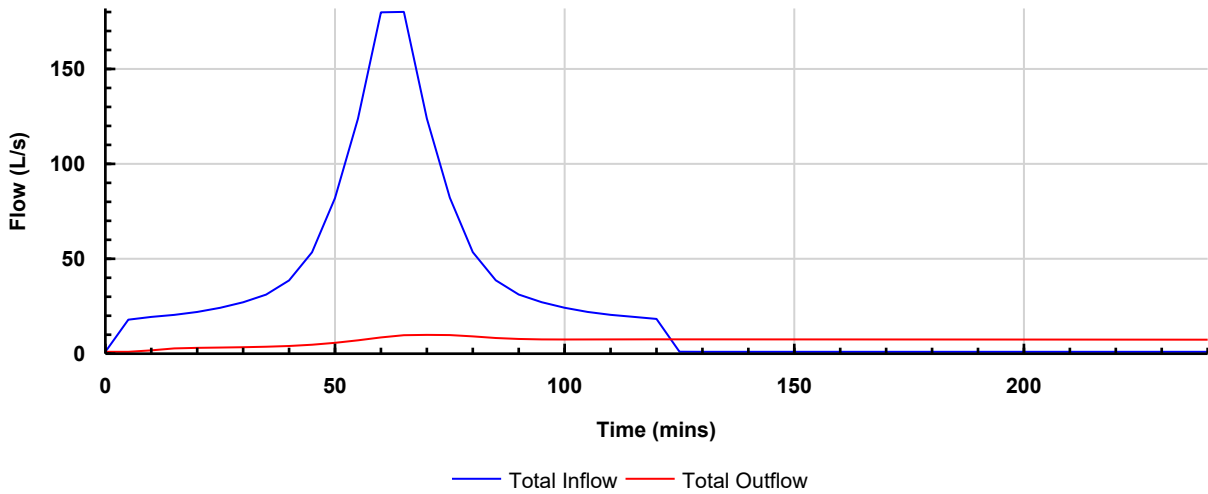
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Tables

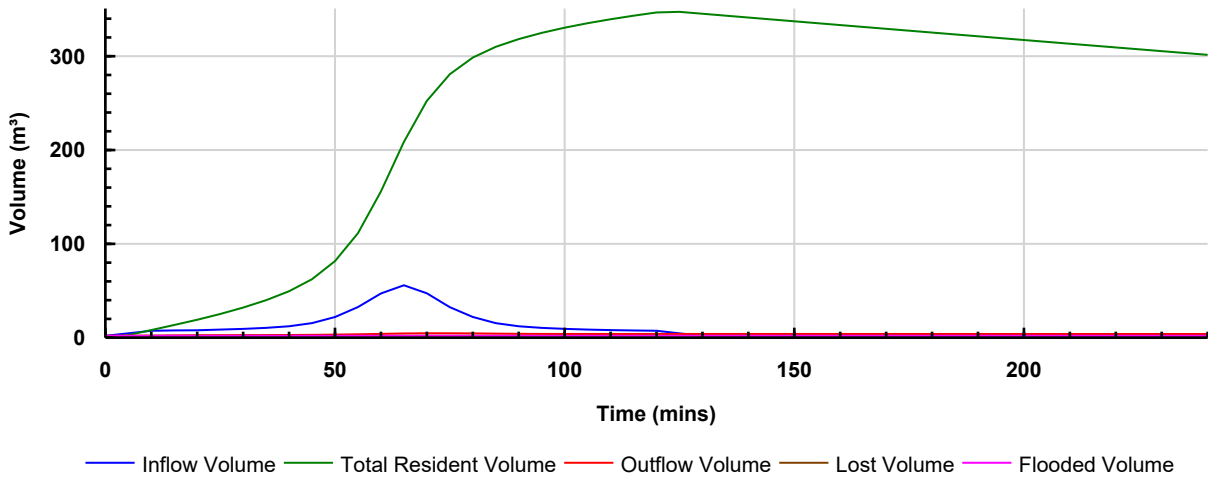
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
End			9.0	83.692
TOTAL	180.1	379.235	9.0	83.692

Graphs

Flow Graph



Volume Graph



Project:	Date: 27/10/2025			
	Designed by: JamesAlbert	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Phase Management Storm Phase: Phase				



Phase

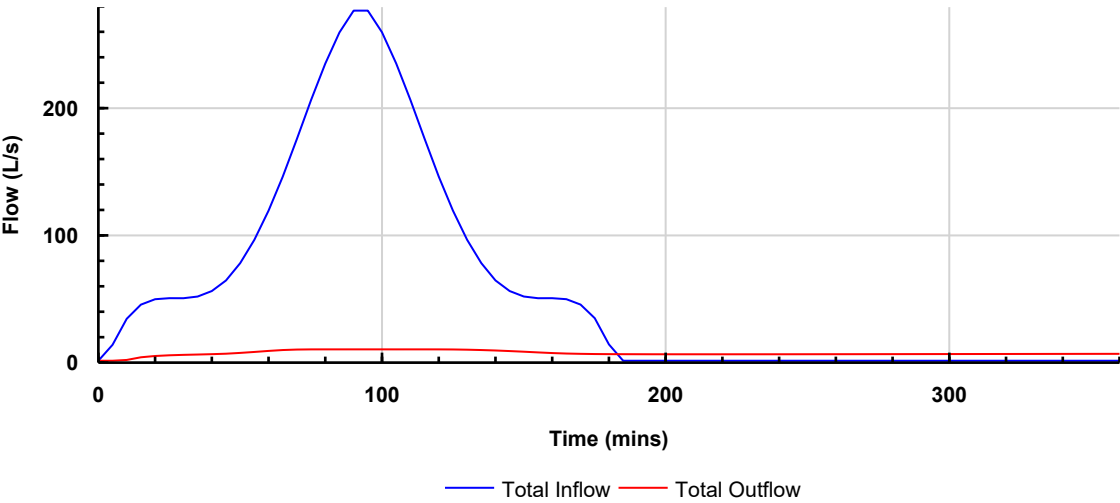
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Tables

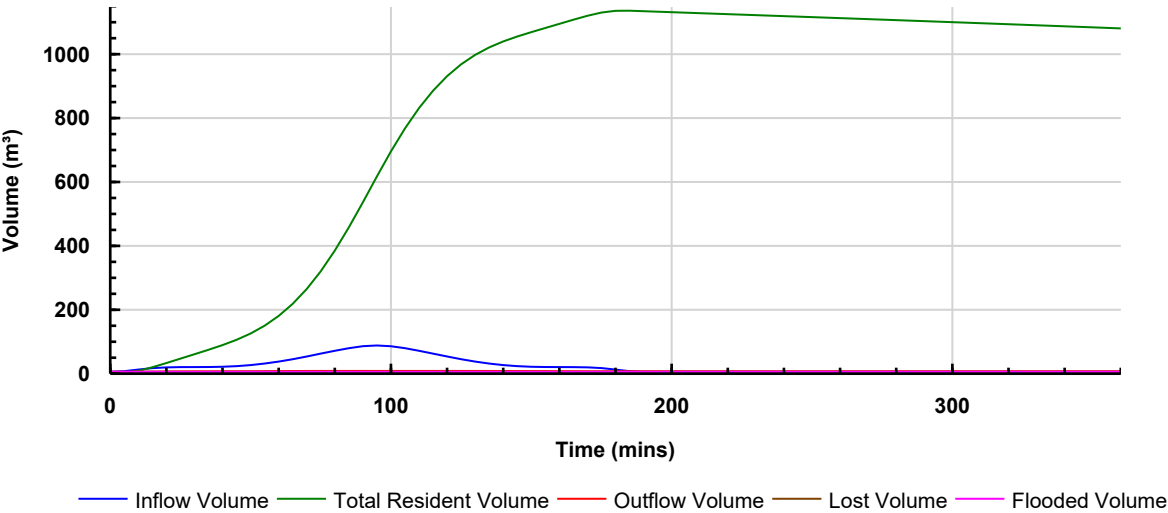
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
End			9.0	128.622
TOTAL	276.6	1197.812	9.0	128.622

Graphs

Flow Graph



Volume Graph



Project:	Date: 27/10/2025		
	Designed by: JamesAlbert	Checked by:	Approved By:
Report Details:	Company Address:		
Type: Phase Management			
Storm Phase: Phase			





Phase

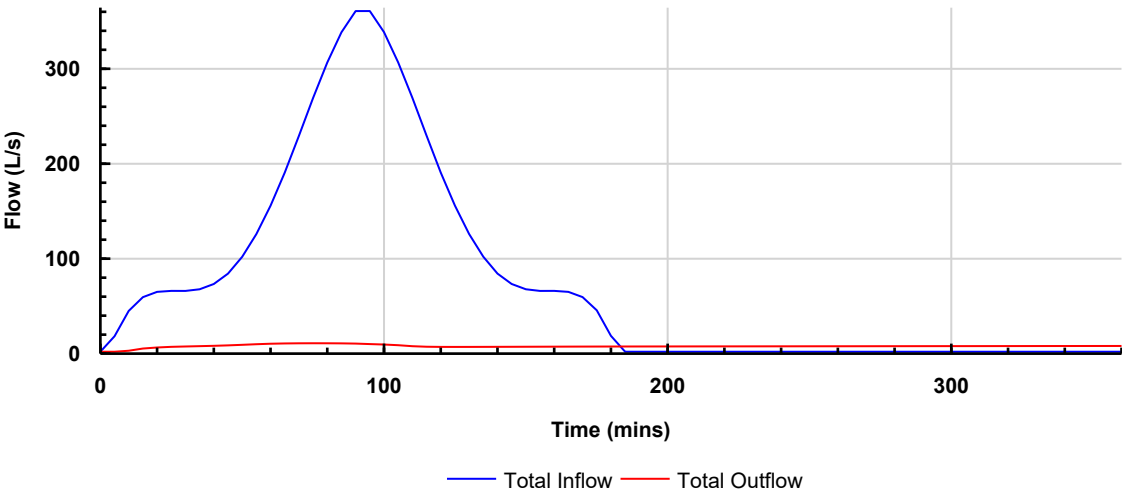
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Tables

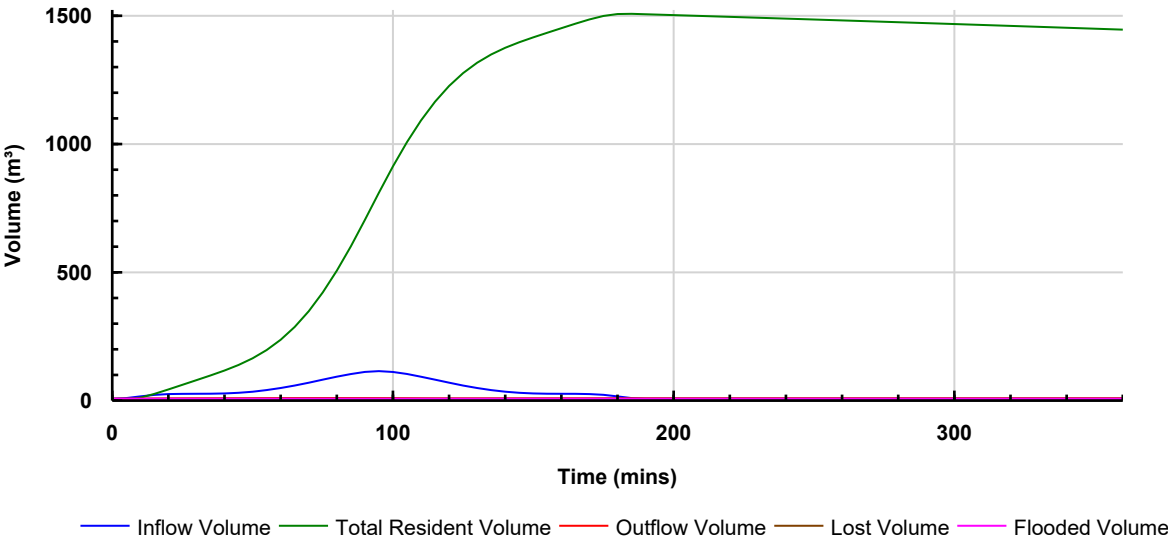
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
End			9.0	127.685
TOTAL	360.8	1562.010	9.0	127.685

Graphs

Flow Graph



Volume Graph

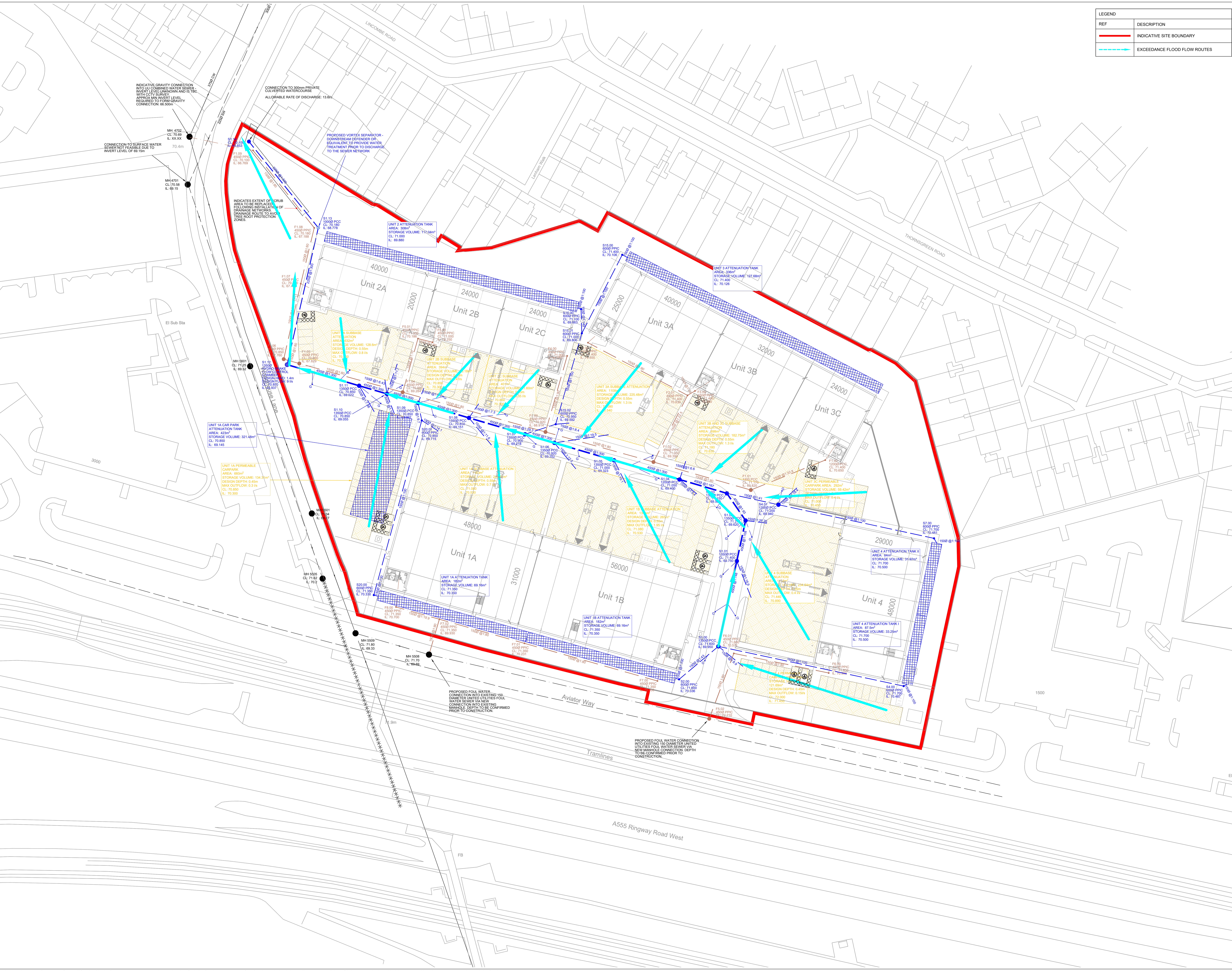


APPENDIX J

OVERLAND FLOOD FLOW ROUTES

LEGEND	
REF	DESCRIPTION
	INDICATIVE SITE BOUNDARY
	EXCEEDANCE FLOOD FLOW ROUTES

- NOTES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RENAISSANCE ARCHITECTS, LANDSCAPE ARCHITECTS AND BUILDING SERVICES ENGINEERS DRAWINGS.
 - THE DRAINAGE SYSTEM HAS BEEN DESIGNED TO ACCOMMODATE RAINFALL EVENTS UP TO 1 IN 100 YEAR + 45% CLIMATE CHANGE AND AS SUCH THIS DRAWING INDICATES THE OVERLAND FLOW ROUTES FOR AN EXCEEDANCE EVENT OF THE DRAINAGE SYSTEM.



P01 STAGE 3 ISSUE		18.11.25	JAB	PC
Rev:	Description:	Date:	By:	Chkd:

rennaissance

Manchester Business Park

OVERLAND FLOW ROUTES PLAN

STAGE 3

Size:	Date:	Drawn by:	Designed by:	Checked by:
A0	NOV'25	JAB	JAB	PC

Scale: 1:400 Project No: 2501-01

Project - Originator - Volume - Level - Type - Role - Number - Revision:

MBP-REN-00-XX-DR-C-00070 P01