



Environmental

Geotechnical

Highways

Structural

Civil

**Cables Way,
Prescot**

Proposed Mixed Use Development

Flood Risk and Surface Water Drainage Assessment.

For: ALDI, Neston

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Manchester
M15 4GB

Ref: 3122-FRA
Job: 3122
Rev: C
By: NS

Date: Feb 2020

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1. **INTRODUCTION**

- 1.1 Integra Consulting has been commissioned by ALDI, Neston to undertake a Flood Risk and Surface Water Drainage Assessment (FRA) for the site at Cables Way, Prescott. This document has been prepared to accompany the detailed planning application for the proposed development of the application site.
- 1.2 The objective of the FRA is to identify potential flooding issues and any consequent implications on the proposed site development. Both existing and proposed surface water drainage for the development site are considered.
- 1.3 The FRA has been undertaken in accordance with the pro-forma guidance contained in:
- Department for Communities and Local Government document 'National Planning Practice Guidance: Flood Risk and Coastal Change'
 - Knowsley MBC – Strategic Flood Risk Assessment Level 2 by Capita Symonds dated October 2012
 - Knowsley MBC: Sustainable Drainage & Surface Water Management – Technical Guidance for Developers v06 dated August 2016.
 - DEFRA / Environment Agency publication SC030219 'Rainfall Runoff Management for Developments' dated October 2013.

- 1.4 To date, consultations have been undertaken with the Environment Agency (EA) and Lead Local Flood Authority. Guidance for the surface water drainage strategy has been taken from the Lead Local Flood Authority (LLFA) with reference to Knowsley Council: Sustainable Drainage & Surface Water Management – Technical Guidance for Developers v06 dated August 2016.

2. STANDARDS AND LIMITATIONS

This report has been prepared solely for use by ALDI Neston.

It shall not be relied upon or transferred to any other party without the prior written authorisation of Integra Consulting.

The findings and opinions in the report are based on information derived from a variety of different sources. Integra Consulting do not accept any liability for the accuracy or otherwise of any information provided by third parties.

It should be noted that some of the aspects considered in this study may be subject to change with time. Therefore, if the development is delayed or postponed, consideration may need to be given to reviewing such issues to confirm that no changes have taken place, either at the site or within relevant legislation.

Further consultations with statutory bodies are likely as the scheme progresses. It should be noted that even where responses have been received from Regulators, these could be subject to change at a later date.

3. CURRENT SITUATION

3.1 Site Location and Description

The 3.7 hectare site is located to the south west of Prescott, Knowsley centred at National Grid reference 346318, 392318 as shown on the site location plan in Appendix 1.

The greenfield site is bounded to the north by residential properties and Prescott Manor Bowling Club, to the east by Manchester Road, to the south by Cables Way / Carr Lane and to the west by King George V Memorial Playing Fields.

Site levels fall from circa 64.0m AOD in the north west extremity of the site to circa 40m AOD in the south west corner of the site. The existing topographical survey can be found in Appendix 2.

3.2 Hydrology and Flooding

Current Environment Agency flood data indicates the site to generally lie in Flood Zone 1 with a localised area of Flood Zone 2 and 3 noted adjacent to Logwood Mill Brook which flows from north to south in the south western corner of the site.

It is proposed that the proposed Employment Unit in the south western corner of the development site (refer to site masterplan in Appendix 5). Logwood Mill Brook is identified as 'main river' and this unit will therefore need to maintain an 8m easement to the adjacent watercourse which is reflected in the masterplan proposals. Based on a review of the EA Product 4 data obtained (refer to Appendix 3), this unit will need to be sited at a minimum finished floor level of 43.5m AOD – this minimum level broadly accords with the existing site topography and is based on the 1 in 100 year plus climate change level obtained from the EA Product 4 data of 43.18m AOD plus a 300mm freeboard.

EA / DEFRA flood mapping indicates generally low (with one isolated area of medium) surface water flooding risk across the site. On the basis of our discussions with the Knowsley LLFA officer and as the surface water flooding risk is generally identified as low, it has been agreed with the LLFA that this risk does not require further consideration in terms of on-site storage in the post-development situation.

The EA / DEFRA mapping indicates reservoir flooding in the western fringe of the site – this is however not considered in this report due to its very low probability of occurrence (1 in 10,000 annual probability).

3.3 Existing Sewers

The existing sewers crossing the site are noted as follows (refer to Appendix 4 for detailed UU sewer plans):

- 600mm diameter adopted combined water sewer extending from north to south adjacent to the western site boundary;
- 750mm diameter adopted surface water sewer extending from east to west adjacent to the south western site boundary;
- 525mm/675mm/750mm diameter adopted combined water sewer extending from east to west along the northern fringe of the site;
- 1200mm diameter culverted watercourse extending from east to west along the eastern section of the northern fringe of the site;
- 300mm diameter adopted foul water sewer extending from south to north across the site from the formed highway access off Cables Way.

4. PROPOSED DEVELOPMENT

4.1 Development Proposals

It is proposed to undertake a mixed-use development of the application site comprising retail and industrial buildings with highway access off Cables Way.

4.2 Surface Water Drainage

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3:

- i) Sustainable Urban Drainage Systems (SUDS)
- ii) Discharge of surface water off site direct to watercourse
- iii) Discharge to adopted sewer

SUDS are made up of one or more structures built to manage surface water runoff. They are used in conjunction with good management of the site to prevent flooding and pollution. There are four general methods of control:

- Filter strips and swales
- Filter drains and permeable surfaces
- Infiltration devices
- Basins and Ponds

From the results of a detailed geotechnical desk study, it is anticipated that the site is typically underlain by made ground of unknown thickness (associated with previous extensive site development including sewage works and cable works). This made ground is anticipated to be underlain by firm to very stiff gravelly clays of average thickness 4m and up to 11m thick in places. Underlying bedrock is Pennine Coal Measures consisting of low permeability interbedded mudstone, siltstones and coal seams.

On the basis of the low permeability associated with the clay drift deposits and the underlying mudstone / siltstone deposits, soakaways and permeable surfaces are deemed unsuitable from a geotechnical viewpoint.

Logwood Mill Brook extends along the south western site boundary and it is therefore proposed to discharge suitably attenuated post-development surface water from both Employment Units to be located in the western area of the site direct to this watercourse within the site curtilage. As Logwood Mill Brook is designated as 'main river', the formal application to discharge suitably attenuated surface water from the development site to this watercourse should ultimately be made to the Environment Agency.

A 1200mm diameter culverted watercourse is identified on the United Utilities sewer plans extending from east to west along the northern boundary of the development site and discharging into Logwood Mill Brook. Given the very significant level difference across the site (site levels fall from circa 64.0m AOD in the north west to circa 40m AOD in the south west), it is considered pragmatic to discharge suitably attenuated post-development surface water from the proposed food retail unit together with the proposed retail / leisure units in the central / eastern sections of the site to this riparian owned culvert which then discharges into open watercourse (Logwood Mill Brook) at the south western boundary of the overall development site.

As the site is currently undeveloped, the flow rates from the development are to be limited to the equivalent pre-development greenfield run off rates for all rainfall events up to and including the 1 in 100 year event plus 30% climate change factor.

These greenfield run off rates are split down as follows into separate site zones as indicated below (refer to Appendix 5 site for further details):

Employment Units (western section of site)

Qbar: 9.6 litres per second

Food Retail Unit (central section of site)

Qbar: 8.9 litres per second

Drive Through Restaurant Units (eastern section of site)

Qbar: 5.5 litres per second

The overall estimated on site storage to cater for a 1 in 30 year event is circa 900m³ with the estimated on site storage to cater for a 1 in 100 year plus 30% climate change event circa 1700m³ – it is envisaged that these overall attenuation storage volumes will be accommodated separately in the employment, food retail and drive through restaurant areas of the site. It is noted that these approximate figures are all subject to future detailed drainage design.

The post development surface water drainage system will be designed to ensure that:

- Surface water flows up to a 1 in 30 year event remain in below ground storage;
- Surface water flows remain on site up to a 1 in 100 year + 30% climate change storm event. Sufficient surface water storage and shallow ponding volume will be available to ensure there is no risk to property.

4.3 National Planning Policy Framework and Technical Guidance

The retail, industrial and leisure site development proposals are classed as 'less vulnerable' in Table 2 of the Flood Risk and Coastal Change guidance.

'Less vulnerable' developments in Flood Zone 1 are classed as appropriate according to Table 3 of the Flood Risk and Coastal Change guidance.

Proposed post development levels will be engineered in order to protect the development and not provide any increased flood risk elsewhere.

Types of flooding that could affect the site are:

River- the site is in Flood Zone 1

Sea – there is no risk of flooding from the sea

Land – there are no undrained land slopes towards the site

Groundwater – there are no springs or weep areas on the site

Sewers – there have been no local reports of sewer surcharge

4.4 Strategic Flood Risk Assessment & EA Mapping Review

From our review of the Knowsley MBC - Strategic Flood Risk Assessment Level 2 produced by Capita Symonds dated October 2012, the site lies within a Critical Drainage Area. However, flood mitigation measures are already proposed through the agreed discharge of post-development surface water from the site at greenfield runoff rates.

Accordingly, it is proposed that post-development surface water discharges into the existing adjacent UU sewer network and provides a 50% betterment on flow rate compared with the existing situation in line with the Level 2 Hybrid SFRA.

There are no groundwater protection zones in the vicinity of the site and there is negligible residual fluvial risk. The site is not noted to lie within a flood warning area.

4.5 Safe Access and Egress

Safe access / egress from the site in extreme conditions will be via the entrance on Cables Way.

5. CONCLUSIONS

5.1 Flooding

Following review of the Environment Agency flood maps and data, it has been confirmed that the site lies generally in Flood Zone 1 with a localised area of Flood Zone 2 and 3 noted adjacent to Logwood Mill Brook which flows from north to south in the south western corner of the site.

There are to be no off site surface water flood routes generated by the development during an enhanced 1 in 100 year storm. All surface water run-off will remain on site in the 1 in 100 year + 30% climate change event.

5.2 Site Surface Water Drainage

It is proposed to discharge suitably attenuated post-development surface water from the 2 No Employment Units in the western section of the site direct to Logwood Mill Brook adjacent to the south western site boundary.

It is considered pragmatic, given the very significant level difference across the site, to discharge suitably attenuated post-development surface water from the proposed retail and drive through units in the central / eastern sections of the site to the 1200mm diameter culvert that extends from east to west along the northern site boundary and discharges into open watercourse (Logwood Mill Brook) at the western boundary of the overall development site.

As the site is currently undeveloped, the flow rates from the development are to be limited to the equivalent pre-development greenfield run off rates for all rainfall events up to and including the 1 in 100 year event plus 30% climate change factor.

5.3 Flood Risk Management Measures

There will be a site management Health and Safety document prepared in respect of the site.

5.4 Off Site Impacts

All roofed and paved areas are to be formally drained into the site surface water drainage system. The design of the site surface water system will ensure that no off site flood flows are generated by the proposed development in the 1% plus climate change event.

5.5 Residual Risk

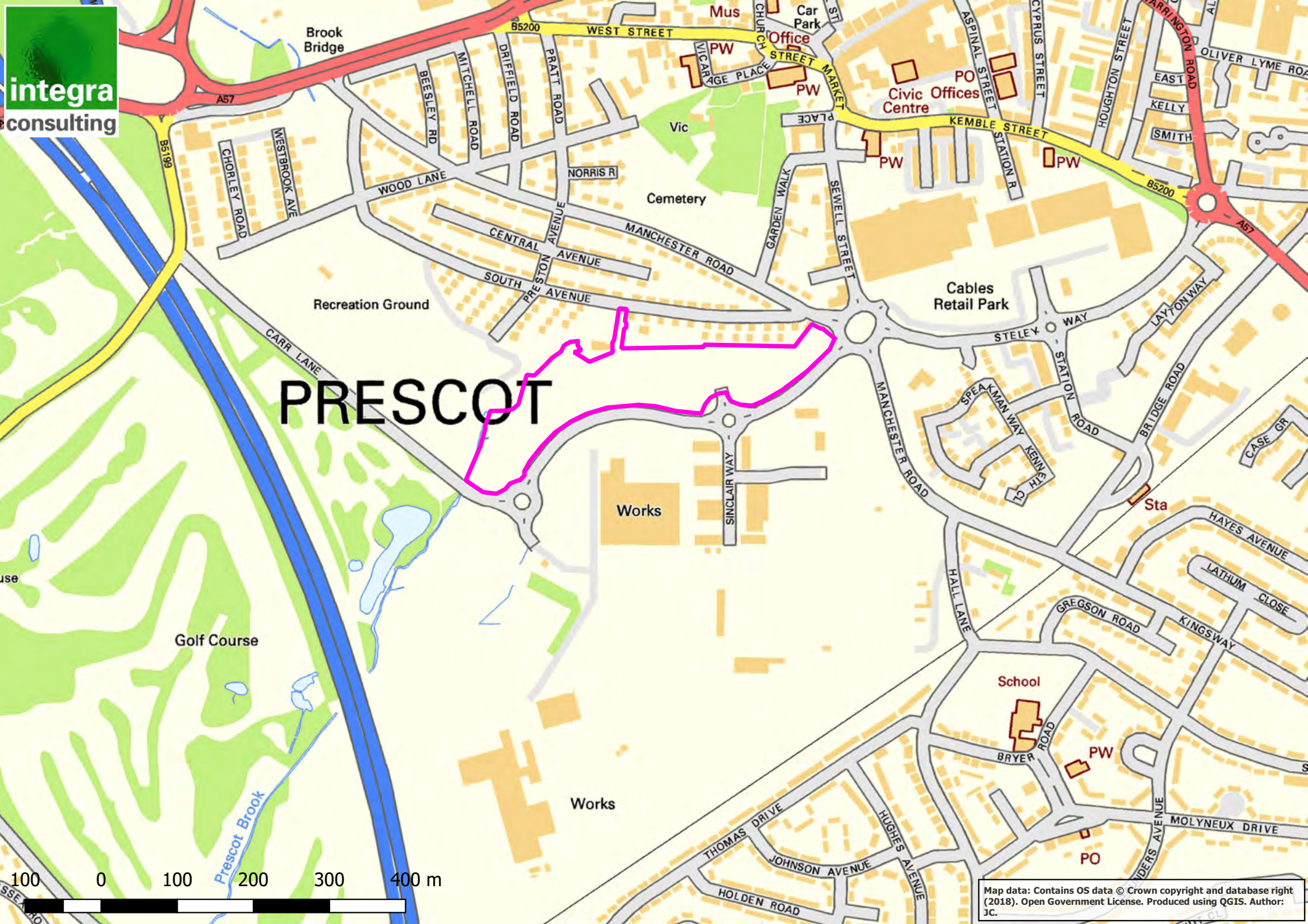
With careful design of the drainage elements as described above, there will be no residual flood related risks remaining after the development has been completed.

The proposed building envelopes will generally lie in Flood Zone 1 with the Employment Unit located in the south western corner of the site to be based at a minimum finished floor level of 43.5m AOD – this minimum level broadly accords with the existing site topography and is based on the 1 in 100 year plus climate change level obtained from the Product 4 data of 43.18m AOD plus a 300mm freeboard.

A post-development safe emergency access can be maintained at all times during a flood event. Emergency access will be from Cables Way.

APPENDIX 1

SITE LOCATION PLAN





Proposed Development Manchester Road Prescot

Client: Aldi Stores Limited
Date: 24/01/20
Job/Dwg: 1031NES-Exisitng Aerial
NTS@A3

THE HARRIS PARTNERSHIP
ARCHITECTS

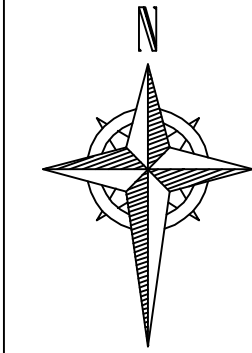
2 St Johns North,
Wakefield, WF1 3QA
T: 01924 291 800
F: 01924 290 072

www.harrispartnership.com



APPENDIX 2

EXISTING TOPOGRAPHICAL SURVEY



- Notes
1. The survey was carried out using Leica TPS 1203/1205 and GPS 1200 instruments.
 2. North relates to OS Grid North.
 3. All co-ordinates relate to OS GB36 datum at Stn 1. The rest of the site is orientated to OS Grid North but has been surveyed on a flat grid with no scale factor. All heights relate to OSGB 36 datum and have been computed using the OSTN15/15 Geoid model.

- LEGEND
- ▲ Survey Station
 - IC - Inspection Cover
 - CA - Cable TV Cover
 - FH - Fire Hydrant
 - SV - Stop Valve
 - GV - Gas Valve
 - PB - Post Box
 - TCB - Call box
 - TC - TCSU Cover
 - PT - Parking Ticket Machine
 - ER - Earthing Rod
 - TB - Traffic Bollard
 - Litter Bin
 - Gully
 - △ MH - Manhole Triangular
 - MH - Manhole Circular
 - PB - Post Box
 - P Gate Post
 - TP Telephone Pole
 - EP Electricity Pole
 - RS Road Sign
 - TL Traffic Light
 - B Bollard
 - FP Flag Pole
 - LP Lamp Post
 - CC Camera
 - Gate
 - Tree (Coniferous - girth and spread to scale)
 - Tree (Deciduous - girth and spread to scale)
 - Tree (Dead/diseased - girth and spread to scale)
 - Spot Level
 - Top of Wall Height
 - Apex Height
 - Eave Height
 - TT Tactile Paving
 - UC Utilities Cabinet
 - Kerb
 - Drop Kerb
 - Road Edge (channel)
 - Track Edge
 - Change of Surface
 - Road Centre Line
 - Double Yellow Lines
 - Wall
 - Fence
 - Edge of Hedge
 - Vegetation Edge
 - Metal Railings
 - Building
 - Apex Line
 - Eave Line
 - Parking Bay
 - Overhead Power Cable
 - Open Channel
 - Top of Bank
 - Bottom of Bank
 - Major Contour Interval - 10m
 - Minor Contour Interval - 0.2m

N.B. Additional information added to
dwg. no. IR.THPPRESCOT21_01
as per 24th March 2017.

rev.	amendment	checked	date
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m3
mayer brown
Mayer Brown Limited
Suite 4.5, 4 Camwood Park
Selby Road, Leeds, LS15 4LG
Telephone 01133 854 697 Fax 01133 854 698
leeds.office@mayerbrown.co.uk
www.mayerbrown.co.uk

client
ALDI STORES LTD.

project
CABLES WAY,
PRESCOT.

scale	1:500@A0	drawn by	GC	checked by	RW
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date	21ST SEPTEMBER 2017	cad file	IR.THPPRESCOT.21
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title
DETAILED
TOPOGRAPHICAL
SURVEY

drawing number	IR.THPPRESCOT2.21_01	rev.
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APPENDIX 3

ENVIRONMENT AGENCY FLOOD MAPPING & DATA

Flood risk assessments: Climate change allowances

Application of the allowances and local considerations

Greater Manchester, Merseyside & Cheshire

1) The climate change allowances

The [National Planning Practice Guidance](#) refers planners, developers and advisors to the Environment Agency guidance on considering climate change in Flood Risk Assessments (FRAs). This guidance was updated in February 2016 and is available on [Gov.uk](#) and should be read in conjunction with this document. The guidance can be used for planning applications, local plans, neighbourhood plans and other projects. It provides climate change allowances for peak river flow, peak rainfall, sea level rise, wind speed and wave height. The guidance provides a range of allowances to assess fluvial flooding, rather than a single national allowance. It advises on what allowances to use for assessment based on vulnerability classification, flood zone and development lifetime.

2) Assessment of climate change impacts on fluvial flooding

Table A below indicates the level of technical assessment of climate change impacts on fluvial flooding appropriate for new developments depending on their scale and location. This should be used as **a guide only**. Ultimately, the agreed approach should be based on expert local knowledge of flood risk conditions, local sensitivities and other influences. **For these reasons we recommend that applicants and / or their consultants should contact the Environment Agency at the pre-planning application stage to confirm the assessment approach, on a case by case basis.** **Table A** defines three possible approaches to account for flood risk impacts due to climate change, in new development proposals:

- **Basic:** Developer can add an allowance to the 'design flood' (i.e. 1% annual probability) peak levels to account for potential climate change impacts. The allowance should be derived and agreed locally by Environment Agency teams.
- **Intermediate:** Developer can use existing modelled flood and flow data to construct a stage-discharge rating curve, which can be used to interpolate a flood level based on the required peak flow allowance to apply to the 'design flood' flow.
- **Detailed:** Perform detailed hydraulic modelling, through either re-running Environment Agency hydraulic models (if available) or construction of a new model by the developer.

Table A – Indicative guide to assessment approach

<u>VULNERABILITY CLASSIFICATION</u>	<u>FLOOD ZONE</u>	<u>DEVELOPMENT TYPE</u>		
		<u>MINOR</u>	<u>SMALL-MAJOR</u>	<u>LARGE-MAJOR</u>
ESSENTIAL INFRASTRUCTURE	Zone 2	Detailed		
	Zone 3a	Detailed		
	Zone 3b	Detailed		
HIGHLY VULNERABLE	Zone 2	Intermediate/ Basic	Intermediate/ Basic	Detailed
	Zone 3a	Not appropriate development		
	Zone 3b	Not appropriate development		
MORE VULNERABLE	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Detailed	Detailed
	Zone 3b	Not appropriate development		
LESS VULNERABLE	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Basic	Detailed
	Zone 3b	Not appropriate development		
WATER COMPATIBLE	Zone 2	None		
	Zone 3a	Intermediate/ Basic		
	Zone 3b	Detailed		

NOTES:

- Minor: 1-9 dwellings/ less than 0.5 ha | Office / light industrial under 1ha | General industrial under 1 ha | Retail under 1 ha | Gypsy/traveller site between 0 and 9 pitches
- Small-Major: 10 to 30 dwellings | Office / light industrial 1ha to 5ha | General industrial 1ha to 5ha | Retail over 1ha to 5ha | Gypsy/traveller site over 10 to 30 pitches
- Large-Major: 30+ dwellings | Office / light industrial 5ha+ | General industrial 5ha+ | Retail 5ha+ | Gypsy/traveller site over 30+ pitches | any other development that creates a non residential building or development over 1000 sq m.

The assessment approach should be agreed with the Environment Agency as part of pre-planning application discussions to avoid abortive work.

3) Specific local considerations

Where the Environment Agency and the applicant and / or their consultant has agreed that a 'basic' level of assessment is appropriate the figures in Table B below can be used as a precautionary allowance for potential climate change impacts on peak 'design' (i.e. 1% annual probability) fluvial flood level rather than undertaking detailed modelling.

Table B – Local precautionary allowances for potential climate change impacts

Watercourse	Central	Higher Central	Upper
All	0.15m	0.24m	0.48m

Use of these allowances will only be accepted after discussion with the Environment Agency.

4) Fluvial food risk mitigation

Read the guidance on [Gov.uk](https://www.gov.uk) to find out which allowances to use to **assess** the impact of climate change on flood risk.

For planning consultations where we are a statutory consultee and our [Flood risk standing advice](#) **does not** apply we use the following benchmarks to inform flood risk **mitigation** for different vulnerability classifications. **These are a guide only. We strongly recommend you contact us at the pre-planning application stage to confirm this on a case by case basis. Please note you may be charged for this advice.** For planning consultations where we are not a statutory consultee or our [Flood risk Standing advice](#) applies we recommend local planning authorities and developers use these benchmarks but we do not expect to be consulted.

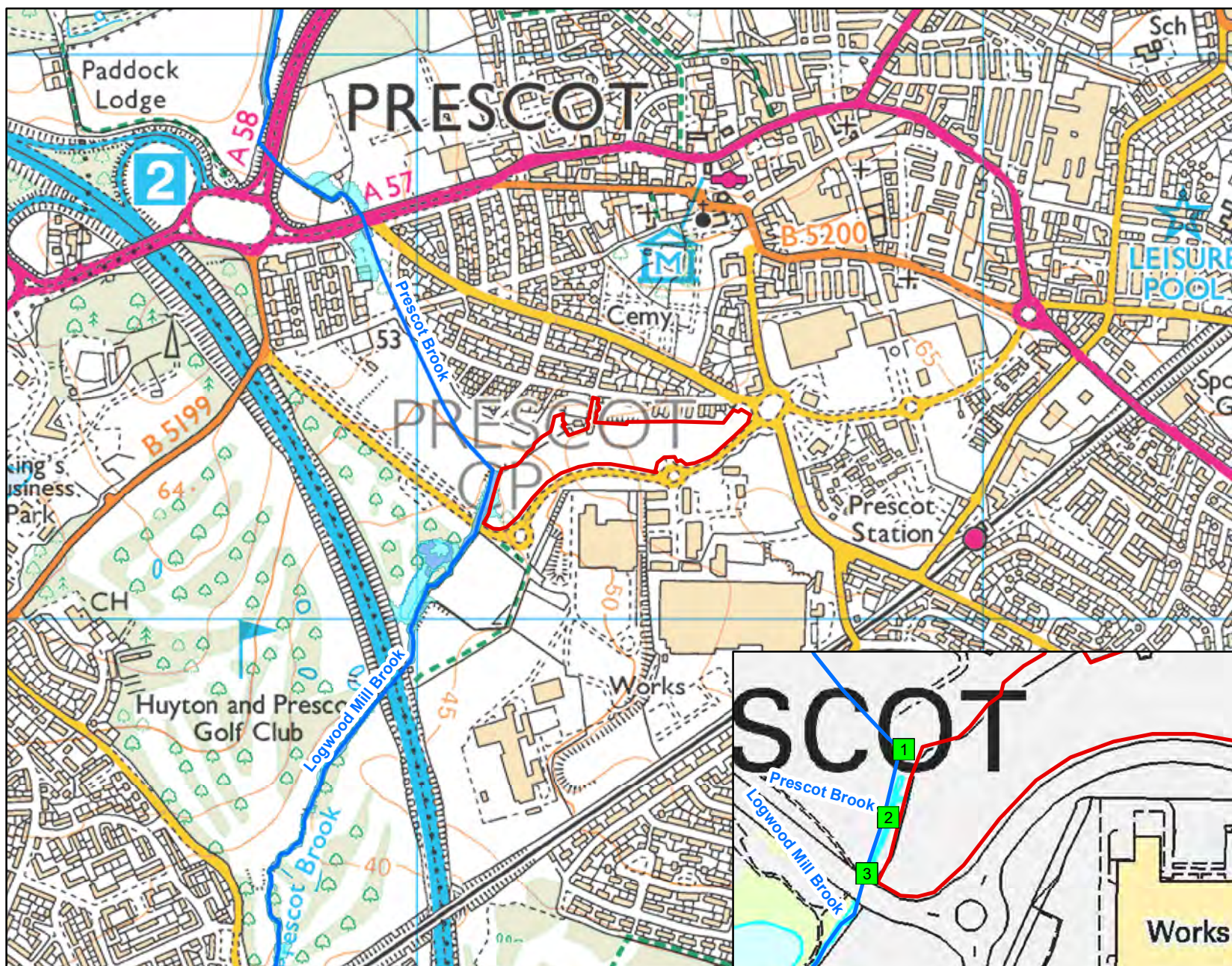
- For development classed as '[Essential Infrastructure](#)' our benchmark for flood risk mitigation is for it to be designed to the '**upper end**' climate change allowance for the epoch that most closely represents the lifetime of the development, including decommissioning.
- For [highly vulnerable](#) in flood zone 2, the '**higher central**' climate change allowance is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **upper end** allowance.
- For [more vulnerable developments](#) in flood zone 2, the '**central**' climate change allowance is our minimum benchmark for flood risk mitigation, and in flood zone 3 the '**higher central**' climate change allowance is our minimum benchmark for flood risk

mitigation. In sensitive locations it may be necessary to use the **higher central** (in flood zone 2) and the **upper end** allowance (in flood zone 3).

- For [water compatible](#) or [less vulnerable](#) development (e.g. commercial), the 'central' climate change allowance for the epoch that most closely represents the lifetime of the development is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **higher central** (particularly in flood zone 3) to inform built in resilience.

There may be circumstances where local evidence supports the use of other data or allowances. Where you think this is the case we may want to check this data and how you propose to use it.

END.



1:10,001



Legend

- Site Location
- Model Measurements
- Main River
- Flood Zone 3
- Flood Zone 2

Map Reference	Model Node Reference	Easting	Northing	Data	Undefended						
					10 % AEP (1 in 10 year)	4 % AEP (1 in 25 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + Climate Change*	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)
1	ea013_0168_Logwood_027	346138	392264	Modelled Water Level (m aodN)	41.70	41.78	42.37	42.58	43.18	43.16	43.45
				Modelled Flow (cumecs)	1.01	1.18	1.57	1.70	2.03	1.99	2.31
2	ea013_0168_Logwood_029	346127	392216	Modelled Water Level (m aodN)	41.52	41.67	42.35	42.57	43.18	43.16	43.44
				Modelled Flow (cumecs)	1.10	1.28	1.68	1.80	2.07	2.05	2.37
3	ea013_0168_Logwood_031	346112	392176	Modelled Water Level (m aodN)	41.40	41.57	42.33	42.56	43.18	43.15	43.44
				Modelled Flow (cumecs)	1.18	1.39	1.80	1.92	2.20	2.19	2.77

Model data taken from Logwood Mill Brook 2012 study

Notes:

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

*Climate Change Scenario - 20% increase in flow. We only hold climate change measurements based on the previous climate change guidance. The new climate change guidance is available at <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

For further guidance on climate change within the GMMC area please see the attachment 'Flood risk assessments: Climate change allowances'. Particularly section 3, table B which shows the Local precautionary allowances for potential climate change impacts.

APPENDIX 4

UNITED UTILITIES SEWER PLAN

IGE Consulting

**14-32
Hewitt Street,
Manchester,
M15 4GB**

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: Prescott
Our Ref: UUPS-ORD-40666
Date: 03/07/2018**

Dear Sirs

Location: Proposed Development Manchester Rd Prescott

I acknowledge with thanks your request dated 29/06/2018 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,



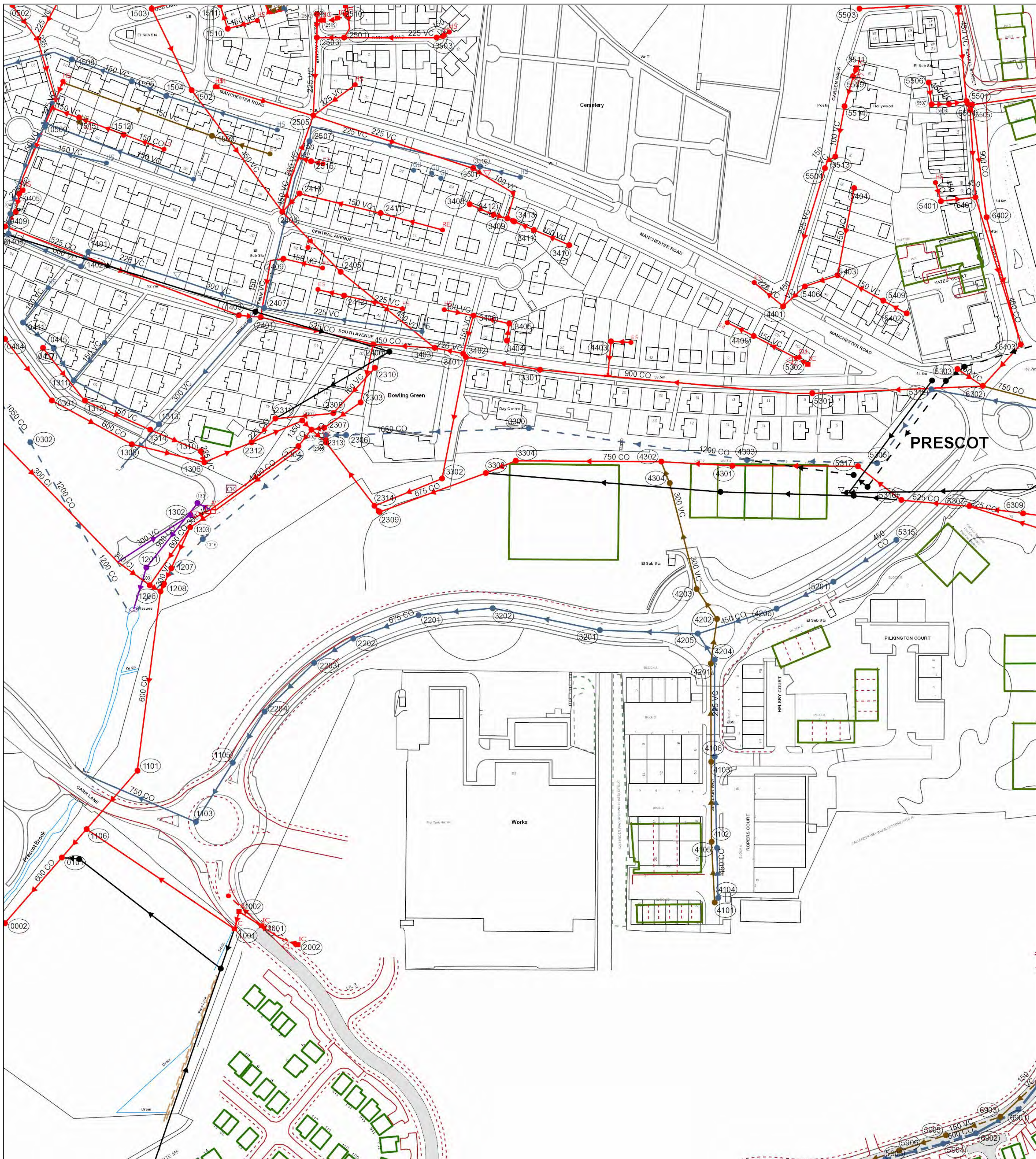
Karen McCormack
Property Searches Manager

TERMS AND CONDITIONS - WASTERWATER 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.



Reho	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
5903	59.35	SW	56.54	60	60	0	VC	32.7359	1 in 99
5906	59.89	FO	56.47	150	150	0	VC	28.2893	1 in 149
5904	60.12	SW	56.07	600	600	0	CO	32.78417	1 in 89
5905	60.15	CO	56.05	150	150	0	VC	27.25933	1 in 151
6902	60.31	SW	57.8	600	600	0	CO	18.84974	1 in 23
6903	60.51	CO	58.51	150	150	0	VC	17.75254	1 in 17
6901	60.58	SW	58.16	600	600	0	CO	27.00287	1 in 75
4205	61.85	SW	59.38	450	450	0	VC	45.66767	1 in 98
5317	61.91	CO	57.11	750	750	0	CO	69.11671	1 in 346
5305	62.1	SW	58.407	1200	1200	0	CO	34.54473	1 in 84
5301	62.1	SW	59.79	450	450	0	VC	94.08507	1 in 59
6302	62.74	SW	60.49	450	450	0	VC	41.60949	1 in 84
5316	62.3	CO	57.19	750	750	0	CO	30.32888	1 in 379
5312	62.3	CO	57.19	750	750	0	CO	30.32771	1 in 379
5307	62.3	CO	57.79	525	525	0	VC	37.71357	1 in 63
6309	62.3	CO	57.79	525	525	0	VC	39.91441	1 in 63
4302	61.5	CO	56.17	750	750	0	VC	80.26339	1 in 349
4303	61.44	SW	57.36	675	675	0	VC	121.3773	1 in 78
4205	61.44	SW	57.36	675	675	0	VC	53.85708	1 in 83
4304	61.38	FO	56.36	300	300	0	VC	12.8999	1 in 327
4301	61.05	CO	56.91	750	750	0	VC	99.29729	1 in 106
4203	61.56	FO	56.93	300	300	0	VC	60.20346	1 in 100
4202	61.64	FO	57.13	225	225	0	VC	20.07203	1 in 40
4204	61.54	SW	57.79	450	450	0	VC	17.02462	1 in 180
4201	61.49	FO	57.26	225	225	0	VC	24.75443	1 in 97
4103	61.91	FO	57.82	225	225	0	VC	54.12048	1 in 99
4106	61.92	SW	58.33	450	450	0	VC	53.39	1 in 109
4101	61.44	FO	58.55	225	225	0	VC	33.59668	1 in 115
4104	61.4	SW	59.05	450	450	0	VC	27.50816	1 in 100
4105	61.62	SW	58.19	450	450	0	VC	50.34527	1 in 100
4102	61.72	FO	58.26	225	225	0	VC	44.01046	1 in 83
2202	52.69	SW	48.74	675	675	0	VC	33.3344	1 in 45
2201	55.17	SW	50.83	675	675	0	VC	38.22141	1 in 37
3201	60.8	SW	55.17	675	675	0	VC	60.33484	1 in 65
3202	58.05	SW	52.82	675	675	0	VC	41.10033	1 in 94
2313	54.82	CO	0	675	675	0	VC	88.89445	1 in 37
2309	54.82	CO	0	675	675	0	VC	4.387433	1 in 37
3303	57.38	CO	50.9	675	675	0	VC	62.33339	1 in 37
2304	52.31	CO	45.43	1200	1200	0	VC	61.37733	1 in 37
2304	52.31	CO	45.43	1200	1200	0	VC	59.72454	1 in 37
2314	52.31	CO	0	900	900	0	VC	44.03322	1 in 37
3302	57.38	CO	50.9	675	675	0	VC	46.14071	1 in 37
3401	61.5	CO	0	900	900	0	VC	68.24954	1 in 15
3304	61.5	SW	55.94	750	750	0	VC	17.8817	1 in 15
2302	52.72	CO	45.49	1350	1350	0	VC	11.57837	1 in 15
2311	52.02	CO	0	225	225	0	VC	18.3849	1 in 15
2312	52.02	CO	0	600	600	0	VC	38.46399	1 in 15
2305	52.32	CO	47.48	900	900	0	VC	2	1 in 15
2302	52.72	CO	0	525	525	0	VC	18.0015	1 in 15
3306	52.49	SW	45.93	1050	1050	0	VC	11	1 in 15
2307	52.72	CO	46.38	525	525	0	VC	100.9016	1 in 32
2302	52.82	CO	46.78	600	600	0	VC	7.071068	1 in 707
2303	52.82	CO	0	150	150	0	VC	7.071068	1 in 707
2308	53.16	CO	51.49	225	225	0	VC	24.41311	1 in 707
2310	53.16	CO	0	150	150	0	VC	32.14032	1 in 707
0302	50.75	SW	43.08	600	600	0	VC	33.37058	1 in 707
1301	50.75	OV	0	300	300	0	VC	107.5407	1 in 707
1302	50.55	OV	0	300	300	0	VC	45.33229	1 in 707
1311	50.75	OV	0	300	300	0	VC	2.556971	1 in 707
1305	51.24	CO	47.24	600	600	0	VC	31.89044	1 in 707
1306	51.24	CO	46.99	600	600	0	VC	41.23106	1 in 707
1310	51.24	CO	0	150	150	0	VC	28.23119	1 in 707
1314	51.59	CO	48.92	600	600	0	VC	14.74769	1 in 251
1312	51.59	CO	0	150	150	0	VC	30.46309	1 in 251
1311	51.59	CO	0	150	150	0	VC	15.11886	1 in 251
1312	51.59	CO	0	150	150	0	VC	39.39543	1 in 251
1311	51.59	CO	0	150	150	0	VC	52.7131	1 in 251
0417	51.59	CO	0	150	150	0	VC	37.01351	1 in 251
0403	51.59	CO	0	150	150	0	VC	68.48333	1 in 251
0101	51.59	CO	0	150	150	0	VC	47.88645	1 in 251
1101	51.59	CO	0	150	150	0	VC	20.80588	1 in 251
1101	51.59	CO	0	150	150	0	VC	42.55658	1 in 251
1103	46.17	SW	42.1	750	750	0	VC	66.51553	1 in 78
1105	47.45	SW	43.31	675	675	0	VC	38.418	1 in 78
1206	47.45	SW	0	600	600	0	VC	99.69057	1 in 78
1316	49.21	OV	42.28	900	900	0	VC	52.86651	1 in 0.59303479
1201	49.21	OV	42.28	900	900	0	VC	24.04163	1 in 0.59303479
1303	50.33	CO	0	300	300	0	VC	4.724812	1 in 16
1203	47.12	CO	41.47	600	600	0	VC	6.825727	1 in 16
1303	50.33	CO	43.95	600	600	0	VC	38.8293	1 in 16
1303	50.33	CO	43.95	600	600	0	VC	34.74988	1 in 16
1303	50.33	CO	44.69	300	300	0	VC	24.8893	1 in 60
5514	68.21	CO	28.1332	150	150	0	VC	28.1332	1 in 60
5503	68.21	CO	67	225	225	0	VC	54.98327	1 in 60
5506	68.21	CO	0	450	450	0	VC	12.05039	1 in 60
5507	68.21	CO	0	450	450	0	VC	14.74769	1 in 60
5508	68.21	CO	0	450	450	0	VC	9.75537	1 in 60
5501	68.21	CO	0	450	450	0	VC	5.380165	1 in 60
5504	66.27	CO	64.7	225	225	0	VC	79.40407	1 in 60
5406	66.27	CO	0	150	150	0	VC	16.27882	1 in 60
5403	66.27	CO	0	150	150	0	VC	18.97367	1 in 60
5513	66.27	CO	0	150	150	0	VC	9.175504	1 in 60
5404	66.27	CO	0	150	150	0	VC	48.83646	1 in 60
5402	66.27	CO	0	150	150	0	VC	28.8689	1 in 60
5402	66.27	CO	0	150	150	0	VC	14.74769	1 in 60
5401	66.27	CO	0	150	150	0	VC	19.10497	1 in 60
5303	65.58	CO	62.81	450	450	0	VC	16.86073	1 in 60
5505	65.58	CO	62.81	450	450	0	VC	48.09366	1 in 60
5504	65.58	CO	61.17	900	900	0	VC	62.514	1 in 60
6401	65.58	CO	61.17	900	900	0	VC	84.77028	1 in 60
6403	65.58	CO	0	900	900	0	VC	31.14482	1 in 60
6402	65.58	CO	0	900	900	0	VC	72.53775	1 in 60
5301	65.58	CO	0	900	900	0	VC	150.6066	1 in 60
4403	63.88	CO	0	150	150	0	VC	19.22055	1 in 60
4405	63.88	CO	0	150	150	0	VC	16.38143	1 in 60
4401	63.88	CO	0	150	150	0	VC	20.61553	1 in 60
3408	61.05	CO	0	225	225	0	VC	14.39186	1 in 60
3502	61.05	CO	0	225	225	0	VC	9.433681	1 in 60
3409	61.05	CO	0	100	100	0	VC	31.60014	1 in 60
3412	61.05	CO	0	100	100	0	VC	7.82948	1 in 60
3411	61.05	CO	0	100	100	0	VC	4.140745	1 in 60
3411	61.05	CO	0	100	100	0	VC	11.78585	1 in 60
3410	61.05	CO	0	100	100	0	VC	21.25399	1 in 60
2411	61.1	SW	0	150	150	0	VC	46.00215	1 in 17
3501	61.1	SW	0	225	225	0	VC	103.829	1 in 19
2505	59.76	CO	0	225	225	0	VC	92.85527	1 in 19
2412	59.76	CO	0	225	225	0	VC	14.82633	1 in 19
2406	59.76	CO	0	525	525	0	VC	32.75668	1 in 19
3301	59.76	CO	0	900	900	0	VC	41.59327	1 in 19
3406	59.76	CO	0	150	150	0	VC	21.64332	1 in 19
3402	54.33	CO	51.76	225	225	0	VC	15.93711	1 in 19
2405	54.33	CO	0	450	450	0	VC	56.8431	1 in 19
3403	54.33	CO	0	450	450	0	VC	34.05877	1 in 19
2401	53.26	CO	48.91	525	525	0	VC	63.78872	1 in 19
3404	53.26	CO	0	150	150	0	VC	9.351763	1 in 19
3405	53.26	CO	0	150	150	0	VC	20.32398	1 in 19
1403	53.26	CO	0	525	525	0	VC	12.04159	1 in 19
2503	62.84	CO	60.9	225	225	0	VC	43.04649	1 in 17
3503	62.84	CO	64.72	225	225	0	VC	51	1 in 17
2502	62.84	CO	0	225	225	0	VC	13	1 in 17
2501	62.84	CO	61.72	225	225	0	VC	83.80024	1 in 19
1502	58.46	CO	0	450	450	0	VC	38.84055	1 in 19
2409	58.46	CO	0	150	150	0	VC	96.52038	1 in 19
2507	58.3	SW	57.81	225	225	0	VC	45.96738	1 in 19
2404	58.3	SW	0	450	450	0	VC	19.64688	1 in 19
2410	58.3	SW	0	150	150	0	VC	13.71284	1 in 19
2516	58.3	SW	0	150	150	0	VC	7.28079	1 in 19
0409	51.97	CO	0	525	525	0	VC	137.9928	1 in 17
2407	51.97	SW	0	300	300	0	VC	50.59	

APPENDIX 5

PROPOSED SITE MASTERPLAN



Proposed Development Manchester Road Prescot

Client: Aldi Stores Limited
Date: 24/01/20
Job/Dwg: 1031NES-V102C-Retail Site Plan
Scale 1:1000@A3

THE HARRIS PARTNERSHIP
ARCHITECTS

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F: 01924 290 072

www.harrispartnership.com





Proposed Development Manchester Road Prescot

Client: Aldi Stores Limited
Date: 24/01/20
Job/Dwg: 1031NES-V102C-Industrial Site Plan
NTS@A3

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Proposed Development Manchester Road Prescot

Client: Aldi Stores Limited
Date: 24/01/20
Job/Dwg: 1031NES-V102C-Site Plan Context
NTS@A3

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☐ 101 London Road,
Reading, RG1 3BT
t. 0118 9507700
☐ 10 Green Court, St Christopher's Place,
London, W10 1JF
t. 0207 4091215

Proposed Site Plan - Scale 1:500

SCALE 1:500
SCALE 1:1

0m 10m 20m 30m 40m 50m

0m 10m 20m 30m 40m 50m

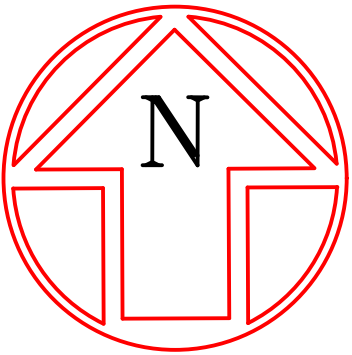
CAD file reference J:\1031Nes-Prescot\17.0 - DWG & L\100 Series Planning

APPENDIX 6

GREENFIELD RUNOFF RATE

Notes.

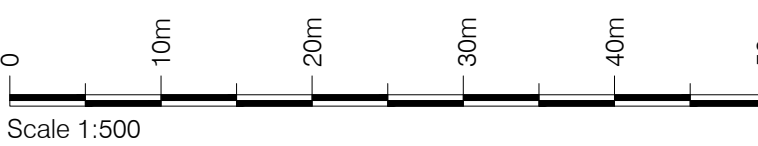
- 1 All dimensions are in millimetres unless noted otherwise.
2 All levels are in metres unless noted otherwise.
3 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.



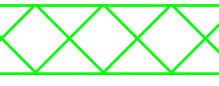
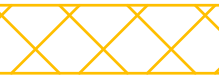
Catchments Area Plan
(Hardstanding Area)

Scale: 1:500

DRAFT



Legend

-  Landscaped Area
 Hardstanding Area
 Site Boundary (tbc. by Architect)

P1	JS	02/20	Issued for Information
Rev	Drawn	Date	Description
INFORMATION			
Contract			
PROPOSED DEVELOPMENT MANCHESTER ROAD PRESCOT			
Drawing Title			
CATCHMENTS AREA PLAN HARDSTANDING AREA			
integra consulting Civil & Structural Engineers			
Tel : 0161 237 3400 Fax : 0161 237 3635 Email : manchester@integraconsulting.co.uk Web : www.integraconsulting.co.uk			
Scales		Date	
1:500 @ A0		02/2020	
Drawn		Checked	
JS		NS	
Contract No		Drawing No	
3122		001	
		Rev	
		P1	

Calculated by:	jan Skibniewski
Site name:	3122
Site location:	Cables Way, Prescott

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

Site Details

Latitude:	53.42501° N
Longitude:	2.80635° W
Reference:	1818993891
Date:	Feb 19 2020 16:16

Runoff estimation approach

IH124

Site characteristics

Total site area (ha):	3.7414
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Methodology

Q _{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	885	885
Hydrological region:	10	10
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 30 years:	1.7	1.7
Growth curve factor 100 years:	2.08	2.08
Growth curve factor 200 years:	2.37	2.37

Notes

(1) Is $Q_{\text{BAR}} < 2.0 \text{ l/s/ha}$?

When Q_{BAR} is $< 2.0 \text{ l/s/ha}$ then limiting discharge rates are set at 2.0 l/s/ha .

(2) Are flow rates $< 5.0 \text{ l/s}$?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is $\text{SPR/SPRHOST} \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q _{BAR} (l/s):	23.77	23.77
1 in 1 year (l/s):	20.68	20.68
1 in 30 years (l/s):	40.4	40.4
1 in 100 year (l/s):	49.43	49.43
1 in 200 years (l/s):	56.32	56.32

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.