

Knowsley Lane

Flood Risk Assessment

Final Report

May 2022

www.jbaconsulting.com

CaddickDevelopments.

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Final 25/05/2022	Recommendations reflect drainage plan	David Baker, Ryan Lewis & Tom Park
Update 31/05/2022	Finished flood levels revised (section 6 and appendix A) Site plan updated (Figure 1-2)	David Baker, Ryan Lewis & Tom Park

Contract

This report describes work commissioned by David Baker, on behalf of Caddick Developments Ltd. Guy Dixon and Tom Keene of JBA Consulting carried out this work.

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Purpose

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Abbreviations

1D/2D	One Dimensional/Two Dimensional
AEP	Annual Exceedance Probability
BGS	British Geological Survey
CC	
EA	Environment Agency
DTM	Digital Terrain Model
FEH	Flood Estimation Handbook
FMfp	Flood Map for Planning
FRA	Flood Risk Assessment
FSR	Flood Studies Report
FZ	Flood Zone
FZ1	Flood Zone 1
FZ2	Flood Zone 2
FZ3	Flood Zone 3
GI	Ground Investigation
GIS	Geographical Information Systems
IH	Institute of Hydrology
IH124	
JBA	Jeremy Benn Associates
JPG	JPG Group – Engineering Consultants
KMBC	Knowsley Metropolitan Borough Council
LIDAR	Light Detection and Ranging
LLFA	Lead Local Flood Authority
NPPF	National Planning Policy Framework
PPG	Planning Policy Guidance
mAOD	Metres Above Ordnance Datum
QSE	Quick Storage Estimate
RoFSW	Risk of Flooding From Surface Water

1 Introduction

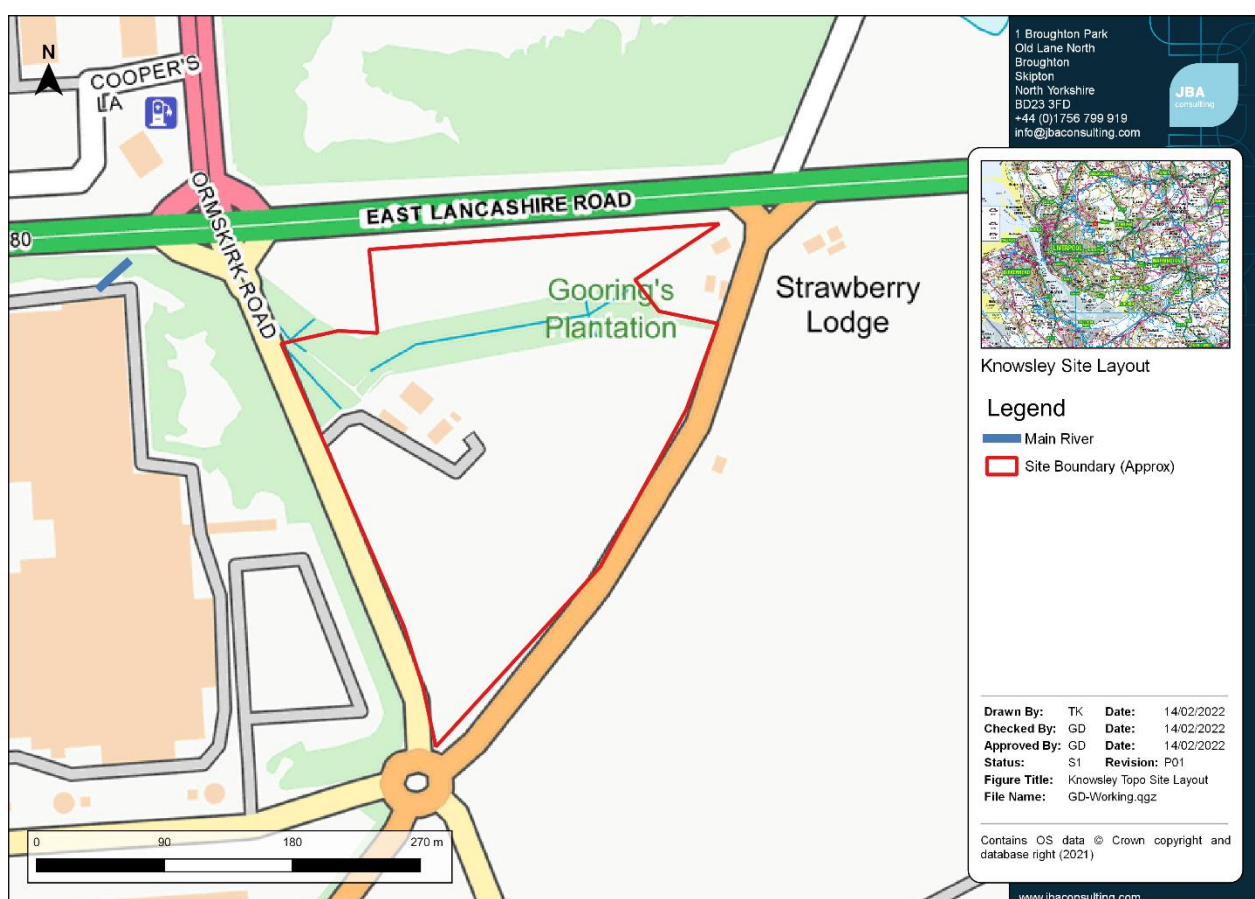
1.1 Overview

JBA have been commissioned by the Caddick Group to produce a Flood Risk Assessment (FRA) for a proposed commercial development site to the north of Knowsley. Preliminary enquiries have been made to Knowsley Council, the Lead Local Flood Authority (LLFA), United Utilities (UU) and the Environment Agency (EA) requesting relevant flood risk and drainage information.

1.2 Location

The site is located 1.5km north of Knowsley town and to the east of Knowsley Business Park. It is bounded on all sides by the existing road network, the A580 (East Lancashire Road) marks the northern boundary with Ormskirk Road to the west and Knowsley Lane (B5202) to the east. Ormskirk Road and Knowsley Lane meet at a roundabout which marks the site's southern boundary. The site covers an area of approximately 0.055km² (5.5 hectares) and hydrologically lies within the Knowsley Brook catchment. Currently most of the site is farmland with woodland covering roughly 20% of the site along its northern boundary. For reference a site location is shown in Figure 1.1 and at a large scale in Appendix A.

Figure 1-1: Site Plan



1.3 Proposed Development

The proposed development will be accessed off Ormskirk Road and will comprise three commercial warehouses, with associated yard space and carparking. The site will be largely impermeable with parts of an existing woodland retained in the northern portion. Hedgerows and other planting will be maintained / added around the perimeter. The site Masterplan is shown in Figure 1-2 and at a larger scale in Appendix A.

Figure 1-2: Site Masterplan



1.4 Flood Risk Assessment – Planning Context

The requirements of an FRA are provided in the National Planning Policy Framework (NPPF) and associated Planning Policy Guidance (PPG). The NPPF outlines that a site-specific FRA should be submitted as part of a planning application for all developments larger than 1ha in Flood Zone (FZ) 1 or any development of any size within FZs 2 and 3. The FRA should describe and assess all flood risks (from rivers, the sea, reservoirs, sewers and groundwater) to and from the development and demonstrate how they will be managed, including an assessment of the potential impacts of climate change. In the following sections of this report all relevant flood risk information has been reviewed in detail in order to understand the flood risks to the site.

2 National Planning Policy Framework

2.1 Overview

We have assessed the proposed development in accordance with the NPPF. Our assessment shows that:

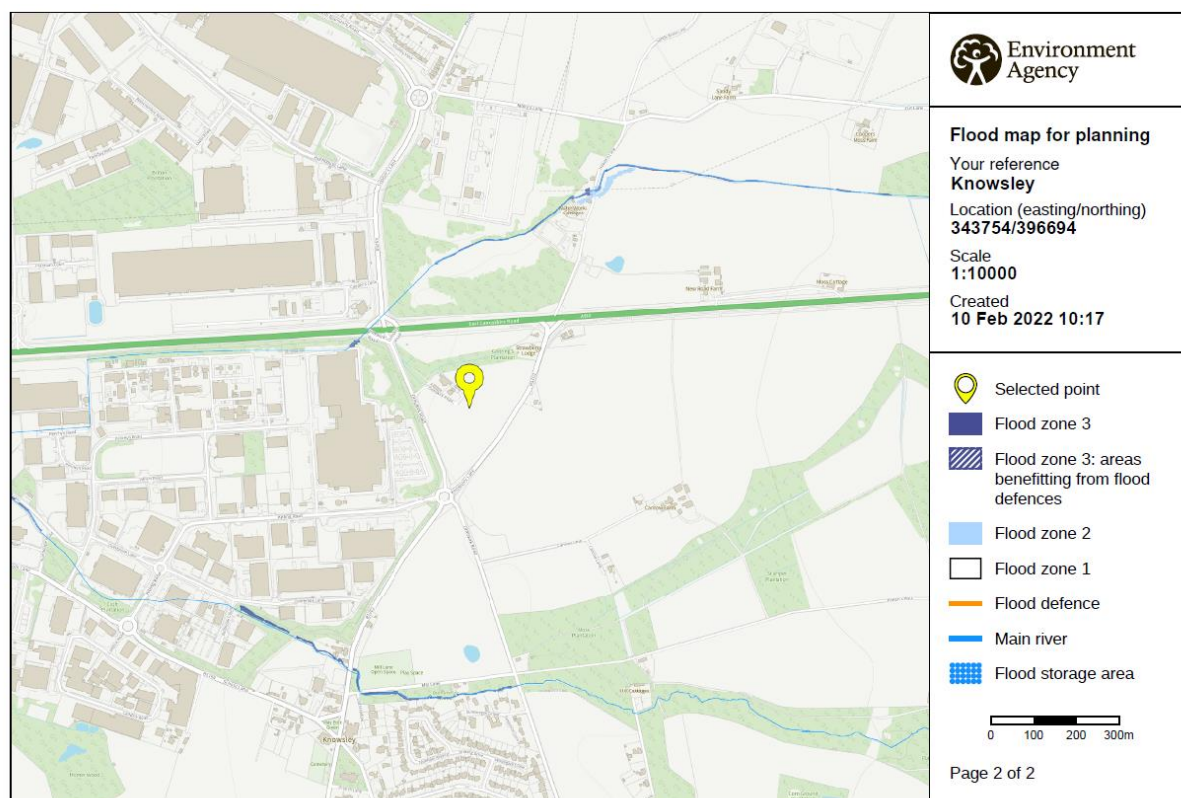
- The proposed development is located within Flood Zone 1
- The proposed development will consist of warehousing which is considered to be “less vulnerable” development
- The site does not require an exception test or sequential test as it is located in flood zone 1.

2.2 Environment Agency Flood Classification

The EA’s Flood Map for Planning (FMfP) indicates that the site lies within Flood Zone 1 (FZ1) which is an area at low risk of flooding. Definitions from NPPF for each FZ are provided in Table 2-1. For reference the likelihood of flooding in the area around the site, extracted from the FMfP service is shown in Figure 4-1.

Table 2-1: Flood Zone Definitions	
Flood Zone Definition	Flood Zone Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as ‘clear’ on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1% and 0.1%, Annual Exceedance Probability (AEP) of river flooding; or Land having between a 0.5% and 0.1% AEP of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1% or greater AEP of river flooding; or Land having a 0.5% or greater AEP of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Figure 2-1: FMfp – Flood Zones



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2.3 Land use vulnerability

The proposed land use will be warehousing, which is considered to be “less vulnerable”¹.

2.4 Sequential and Exception tests

We consider that the site has passed the sequential test in terms of flooding as the development is located in Flood Zone 1. This is shown on the Flood risk and vulnerability and flood zone compatibility matrix in Table 2-2.

Table 2-2: Flood Risk Vulnerability Classification Matrix					
Flood Zones	Flood Risk Vulnerability Classification				
	Essential	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	✗	Exception Test required	✓	✓
Zone 3b	Exception Test required	✗	✗	✗	✓
✓ Development is appropriate. ✗ Development should not be permitted.					

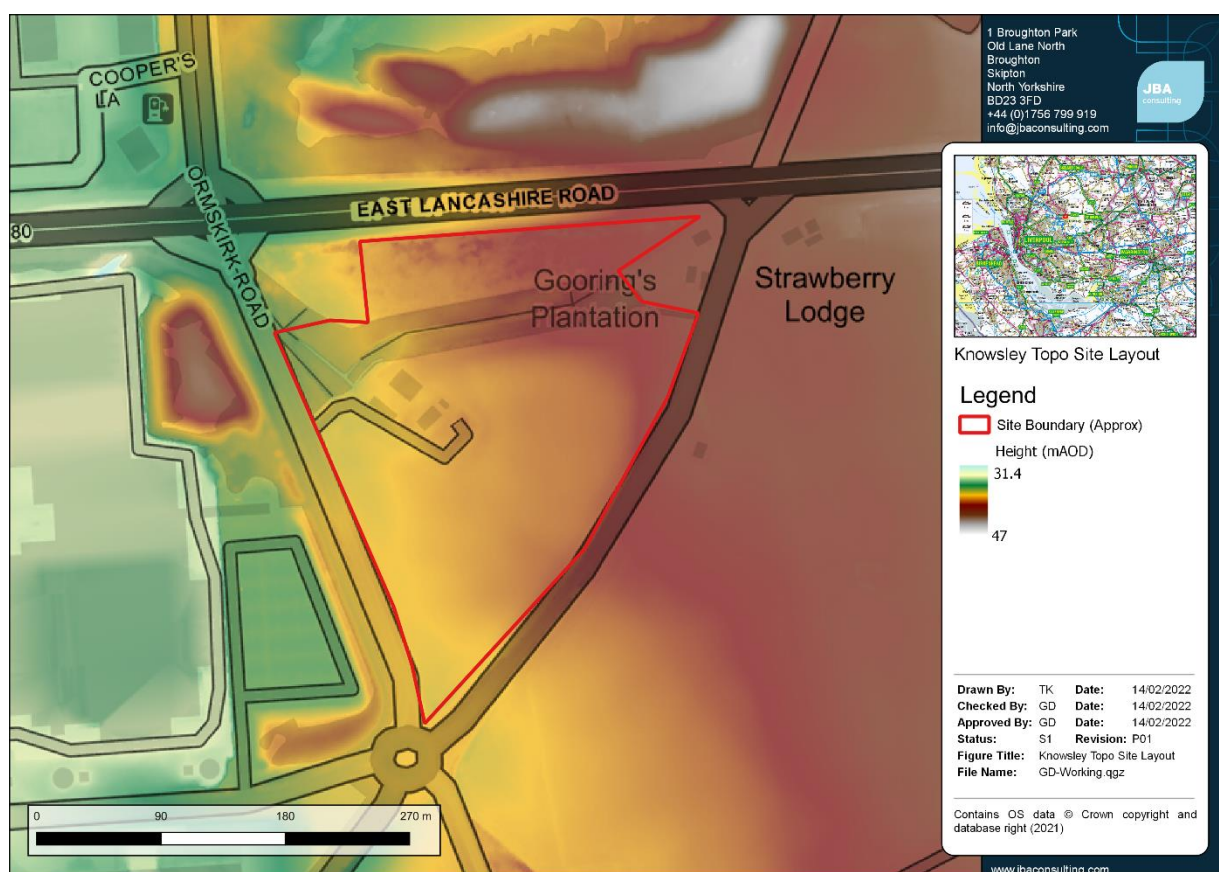
1 <https://www.gov.uk/guidance/flood-risk-and-coastal-change#Table-2-Flood-Risk-Vulnerability-Classification>

3 Baseline Environmental Conditions

3.1 Topography

The site falls from east to west from roughly 44mAOD to 39.0mAOD. The lowest ground levels are found along the site's western boundary with levels ranging from 39.5mAOD at the junction of Ormskirk Road and Knowsley Lane to 39.0mAOD on the boundary of the site near to the East Lancashire Road (A580). In the wooded areas of the site there is evidence of ditching to aid land drainage. There is no evidence in the topographic data to suggest that any watercourses or drainage systems offsite contribute to these. For reference Figure 3-1 shows the local topography immediately around the site.

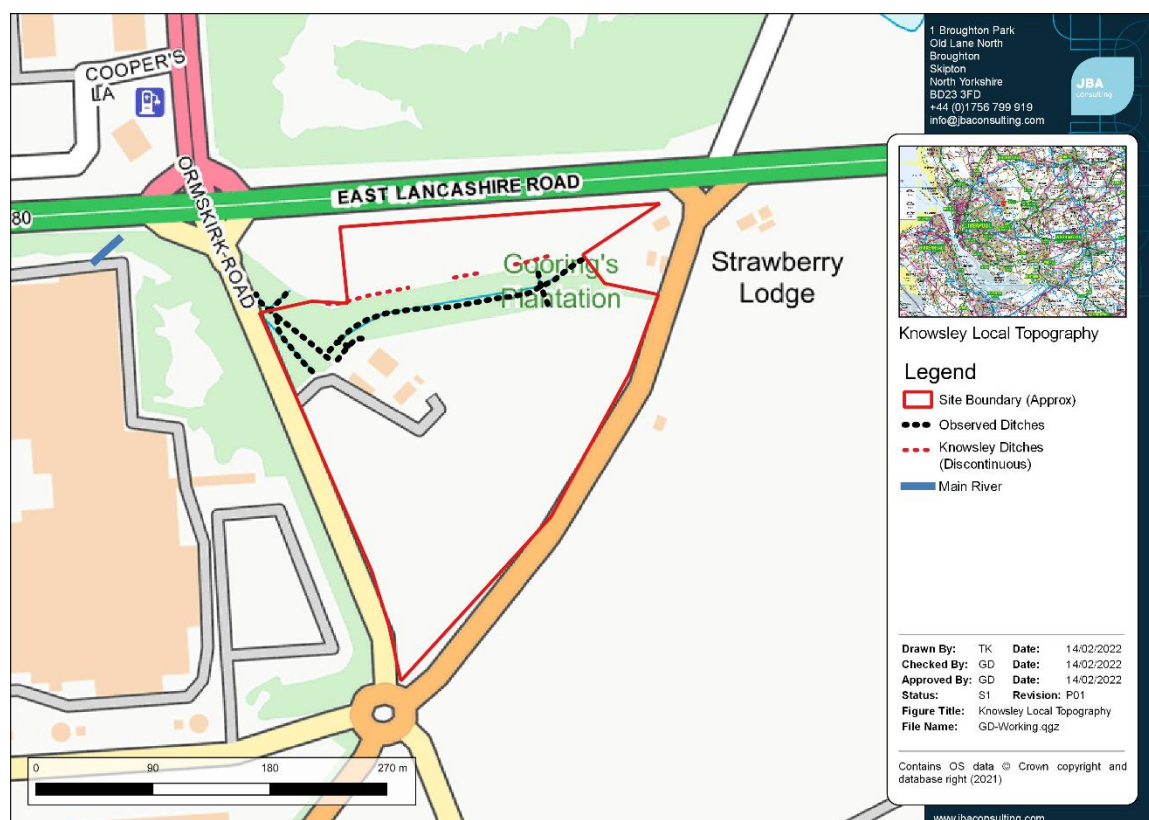
Figure 3-1: Local Topography



3.2 Local Watercourses

Lead Local Flood Authorities, District Councils and Internal Drainage Boards carry out flood risk management work on ordinary watercourses which are the responsibility of the local authority and the riparian owners. Ordinary watercourses are defined as any river, stream, ditch, drain etc through which water flows but that does not form part of a Main River. There are no named watercourses within the site boundary but there are a number of ditches, shown in Figure 3-2, within the woodland area.

Figure 3-2: Ordinary Watercourses (Ditches)



These ditches were investigated as part of a site walkover conducted in January 2022; and a summary of the findings are presented below:

- The ditches converge and discharge from the northwest corner of the site into a culvert. This then flows under Ormskirk Road and joins Knowsley Brook as it flows under the A580 in culvert. The connection was observed in the culvert conveyance report (Culvert Conveyance Report, Knowsley Brook, A580 East Lancs Road) undertaken by the EA in 2014 and was confirmed by undertaking a dye test.
- Dye was added to the ditch on site and was then observed in the short open channel section of Knowsley Brook between the A580 (East Lancashire Road) and the News International Newspapers building.
- The ditch running SE/NW from the access road to the existing property was flowing on the day of the site visit. There is a culvert under the access road but no evidence upstream of a culvert inlet, additional ditching or watercourse. It was therefore concluded that this is a land drain to prevent waterlogging of the field immediately upstream which sits at a lower level than the access road.
- There are a number of ditches running east to west through the woodland. One of these is continuous and joins the ditch described above but a number have fallen into disrepair over time and would no longer convey water effectively. Upstream, all these ditches terminate within the site boundary. There was no evidence to suggest contributions from outside the site boundary. None of the ditches were flowing on the day of the site visit and were typically found covered in dry leaves which suggests that they are dry most of the time. Figure 3-3 shows a photograph of the main ditch looking west towards Ormskirk Road.

Figure 3-3: Ditch (Looking west)



3.3 Main River

Main Rivers are usually larger rivers and streams. These have been designated as such and are shown on a '[Main River Map](#)' which is maintained by the EA. The EA carries out maintenance, improvement, or construction work on Main Rivers to manage flood risk. Tributaries of Knowsley Brook are located to both the north and to the south of the site; and are described in more detail below:

- The northern leg of the watercourse is roughly 150m northwest of the site and is almost entirely in culvert from the A580 to Ainsworth Lane where the southern tributary of Knowsley Brook joins. There is a short open channel section between the A580 and the News International Newspapers building. The watercourse was observed to be approximately 4m lower than the road at this location. Upstream of the A580, the catchment of the watercourse is approximately 1km²; it is largely open channel and drains farm and woodland.
- The southern tributary of Knowsley Brook is approximately 500m away from the site. This drains an area of approximately 1.5km² and is largely open channel

with the exception of one significant length of culvert before it meets the northern tributary of Knowsley Brook at Ainsworth Lane.

- The EA built a new hydraulic model of Knowsley Brook as part of the Upper Alt Tributaries project, completed by JBA in 2018. The model and outputs from the study were provided under license by the EA for use in this FRA. The results from the study showed that the site is not at risk of flooding from Knowsley Brook even when blockage of the culvert under the A580 is considered.

3.4 Geology and hydrogeology

The British Geological Survey (BGS) Geology of Britain viewer shows that the site is underlain by the bedrock of Chester Formation Sandstone. This sedimentary bedrock was formed 247 to 250 million years ago in the Triassic Period. The bedrock is overlain by the Shirdley Hill Sand Formation. These superficial deposits are comprised of sands and medium to fine grained sedimentary deposits formed up to 2 million years ago.

Information from Soilscales shows that soils in the area are naturally very wet, very acid, sand and loamy with low fertility. In lowland areas, these permeable soils are often affected by high groundwater levels. The site Ground Investigation (GI), undertaken by JPG, concluded that portions of the site may have a perched water table but for many of the trail pits and boreholes there was no evidence of groundwater

4 Flood Risk

4.1 Overview

Our assessment of existing flood risk has found that:

- The site is at a very low risk of fluvial flooding, which is confirmed in the recently completed EA flood mapping study;
- The site is predominantly at a very low risk of surface water flooding, with small areas at low to high risk due to the local topography;
- There is a low risk of flooding from a reservoir breach or groundwater;
- There is no history of flooding (surface water or fluvial) in the flooding information provided by both the EA and LLFA;
- Access and egress are unlikely to be affected in a flood event from any source of flooding.

4.2 Fluvial Flood Risk

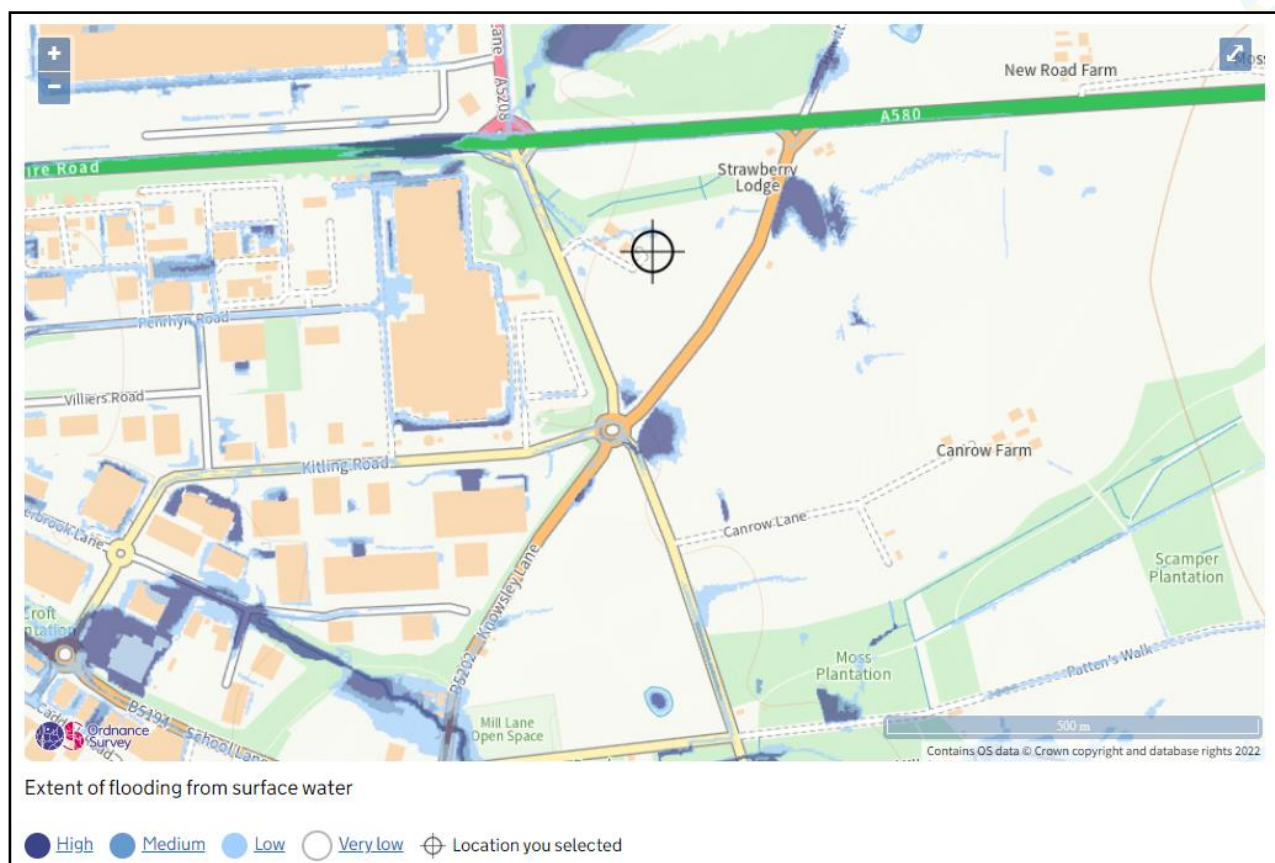
Following a review of the supplied Knowsley Brook model outputs, provided by the Environment Agency under license, the site is not shown to be at flood risk in a defended or undefended flood scenario. The study also undertook a series of blockage scenarios, including the culvert under the A580 which is to the north west of the site. Again, this showed no risk to the site even if a 75% blockage scenario is considered with the 1% AEP plus 35% flow increase for climate change. Fluvial flood risk from Knowsley Brook is therefore considered to be very low.

Hydrologically there are no watercourses flowing through the site, but there are a number of ditches, as shown in Figure 3-2. Based on a review of the topographic information, drainage data and site observations, the site forms a discrete catchment with the ditches serving to drain the site only. The flood risk from these watercourses would, therefore, be similar to the sites surface water flood risk, which is discussed in Section 4.3.

4.3 Surface Water Flood Risk

The site is predominantly at a Very Low risk of flooding on the EA Risk of Flooding from Surface Water (RoFSW) maps. There is a small area on the southern site boundary shown at high risk of flooding (annual chance of flooding greater than 3.3%) which is expected given the site levels here. There are some isolated areas of the site that are designated as low risk of flooding (annual chance of flooding between 0.1% and 1%) as can be seen in Figure 4-1.

Figure 4-1: Surface Water Flood Map



Source: [Long Term Flood Risk](#)

4.4 Flooding from other sources

4.4.1 Reservoir

The EA's Long Term Flood Risk from Reservoirs Map shows the site is at a very low risk from reservoir flooding.

4.4.2 Groundwater

The Preliminary Flood Risk Assessment (PFRA) completed by Knowsley Metropolitan Borough Council (KMBC) in 2011 used the EA's "Areas Susceptible to Groundwater Flooding" data to identify areas that may be at risk from groundwater flooding. The site is not highlighted as an area of risk. The site GI undertaken by JPG suggests some trial pit and borehole locations had evidence of a perched water table but for the majority of the site there was no evidence of groundwater. Based on a review of the available data the risk of groundwater flooding to the site is considered to be low.

4.5 Flood History

Following a review of the local flood history information the site shows that:

- The EA of LLFA has no known flood history for the site or local to that area;
- There are no reported surface water flooding incidents based on information provided by the LLFA. There are some records slightly further afield around the A580 and Hewitt Lane;
- There are no properties reported as flooded in the United Utilities DG5 register in the vicinity of the site.

4.6 Proposed Site Access

Access and egress to the proposed site is proposed along Ormskirk Road which is located in Flood Zone 1. This and other roads in the area are at a very low risk of flooding from surface water. Therefore, during an extreme flood event it is likely that there will not be difficulties with access and/or egress to the site.

5 Surface Water Drainage

5.1 Existing Surface Water Drainage

The public sewer map was purchased from UU and is included for reference in Appendix B. This shows no existing surface water or foul drainage system on site. Trunk main water pipes run along the western site boundary and through the northern portion of the site. Given that there are no drainage systems shown in close proximity to the properties on the eastern site boundary or for Tinkle Peg Farm, it is recommended that further investigations are completed to confirm the drainage arrangements for these properties.

5.2 Post development drainage arrangements

It is proposed that the development will discharge to a watercourse, which in this case consist of the ditches along the western site boundary that eventually connect into Knowsley Brook. As the site is currently greenfield, discharge rates should be restricted to a greenfield runoff rate, which is discussed in more detail in the sections that follow. JPG have been appointed to formally design the drainage system, the purpose of this FRA is to estimate potential discharge rates and storage volumes required on site. Table 5-1 summarises the values of the key drainage variables used in the runoff and volume calculations.

Table 5-1: Drainage area data used in runoff & volume estimates	
Total Site Area (sq m)	54,172
Impermeable Area (sq m) Proposed Development	33,393
Proposed Development (% Impermeable)	62
Standard Average Annual Rainfall (SAAR)	870
Climate Change % - Upper end 2080's rainfall intensity	40

5.3 Runoff Rates

For the calculation of greenfield runoff rate the Institute of Hydrology (IH) Report 124 flood estimation for small catchments has been used and compared to the commonly quoted 5 l/s per hectare. The IH124 method produced 1-year (100% AEP) runoff values of 26.7 l/s or 4.93 l/s per hectare. For the proposed development scenario with an impermeable area of 3.34 hectares the permissible discharge from any drainage feature would be 16.46 l/s.

As this value is more conservative than adopting 5 l/s per hectare the IH124 derived runoff values were used in the storage volume estimate.

5.4 Storage Volumes

An initial quick storage estimate (QSE) was calculated using MicroDrainage which provides a required storage volume between 2,071m³ and 2,803m³ for the proposed development in a 100-year + 40% climate change (CC) surface water event.

The calculation is based on:

- A developed area of 3.34ha;
- A permissible discharge rate of 16.46 l/s
- Rainfall estimated using Flood Studies Report (FSR) approach
- Rainfall increased by 40% to allow for climate change (in line with climate change allowances recommended in the NPPF).

The outputs from the analysis suggest that the area designated for storage in the site masterplan would result in a pond depth of up 1.5m when full and the bed levels would have a positive gradient into the receiving watercourse.

5.5 Conceptual surface water drainage design

Surface water arising from a development should as far as is practicable, be managed to mimic the surface water flows arising from the site prior to the proposed development while reducing the flood risk to the site itself and elsewhere.

Generally, the aim should be to discharge surface water runoff based on the following hierarchy:

- Infiltration
- To a surface water body (e.g. local watercourse)
- To a public surface water sewer
- To a public combined sewer

Whilst the site soils for the most part would support an infiltration arrangement, the presence of the existing drainage ditches supports a formal discharge location into the existing drainage ditches.

6 Development Design

6.1 Finished floor levels

It is expected that the site will be levelled pre-construction. Ground levels (i.e. the car park and walkways should fall away from the buildings to channel water away, thus reducing risk. The EA requires that the finished floor levels should be 300mm above surrounding ground levels to mitigate against any shallow localised surface water flows that may occur as a result of developing the site. The proposed finished floor levels (FFLs) have been raised above the typical proposed development ground levels, to reduce the impact of flooding.

Figure 6-1 (included as part of Appendix A) details the version of the site plan that will be submitted with the planning application. This demonstrates that the proposed FFLs are sufficiently elevated above the adjacent ground levels to comply with EA requirements.

6.2 Access and egress

Access and egress to the proposed site is proposed along Ormskirk Road which is located in Flood Zone 1. This and other roads in the area are at a very low risk of flooding from surface water. Therefore, during an extreme flood event it is likely that there will not be difficulties with access and/or egress to the site.

7 Conclusions & Recommendations

7.1 Overview

Following a review of all sources of flood risk information from the LLFA and EA the following conclusions / recommendations have been made.

7.2 Conclusions

- The supplied EA flood risk information, shows that the site is located within Flood Zone 1;
- The proposed access and egress route to the site will be flood free;
- Surface water drainage for the new development will need to discharge at a rate of 16.59 l/s into the existing network of ditches on site which eventually joins Knowsley Brook.
- The connection to Knowsley Brook has been confirmed through a review of the EA culvert surveys and through a drainage dye test completed during a site walkover.
- The proposed finished floor levels have been provided by JPG Consultants (See Appendix A) which confirm that they will be a minimum of 300mm above the surrounding ground levels.

7.3 Recommendations

- It is recommended that further investigations are completed to confirm the drainage arrangements for Tinkle Peg Farm and the properties along the eastern edge as there is no information provided within the United Utilities drainage plans.
- As the development of the site will alter ground levels, it is recommended that the drainage design considers capture, collection, and routing of surface water around the existing drainage channels to prevent ponding of water.

A

Appendices

Larger Scale Figures

Figure 6-1 – Site layout



Proposed Site Plan
Scale: 1:1000

Key

- Site Boundary
- Retaining Wall
- Public Right of Way
- Acoustic Fencing
- Council owned land, no new landscaping proposed in these areas
- Refer to Urban Green drawings & reports for details of the existing and proposed landscaping
- NHO Non Habitable Outbuildings

General Notes

All site dimensions shall be verified by the Contractor on site prior to commencing any works.

Do not scale from this drawing.

Only work to written dimensions.

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Site Area

62,254 sq.m. / 6.25 hectares / 15.3 acres
(Area Excludes Tincle Peg Farm)

Accommodation Schedule

Building 1		
GF Warehouse	6,510sqm / 70,000sqft	
5% FF Office	325sqm / 3,500sqft	
Total	6,835sqm / 73,500sqft	
Building 2		
GF Warehouse	2,790sqm / 30,000sqft	
5% FF Office	139sqm / 1,500sqft	
Total	2,929sqm / 31,500sqft	
Building 3		
GF Warehouse	4,645sqm / 50,000sqft	
5% FF Office	232sqm / 2,500sqft	
Total	4,877sqm / 52,500sqft	

Total Unit Area

Approx. 150,000sqft Excl. Officers at First Floor Level
Approx. 157,500sqft Incl. 5% Offices at First Floor Level

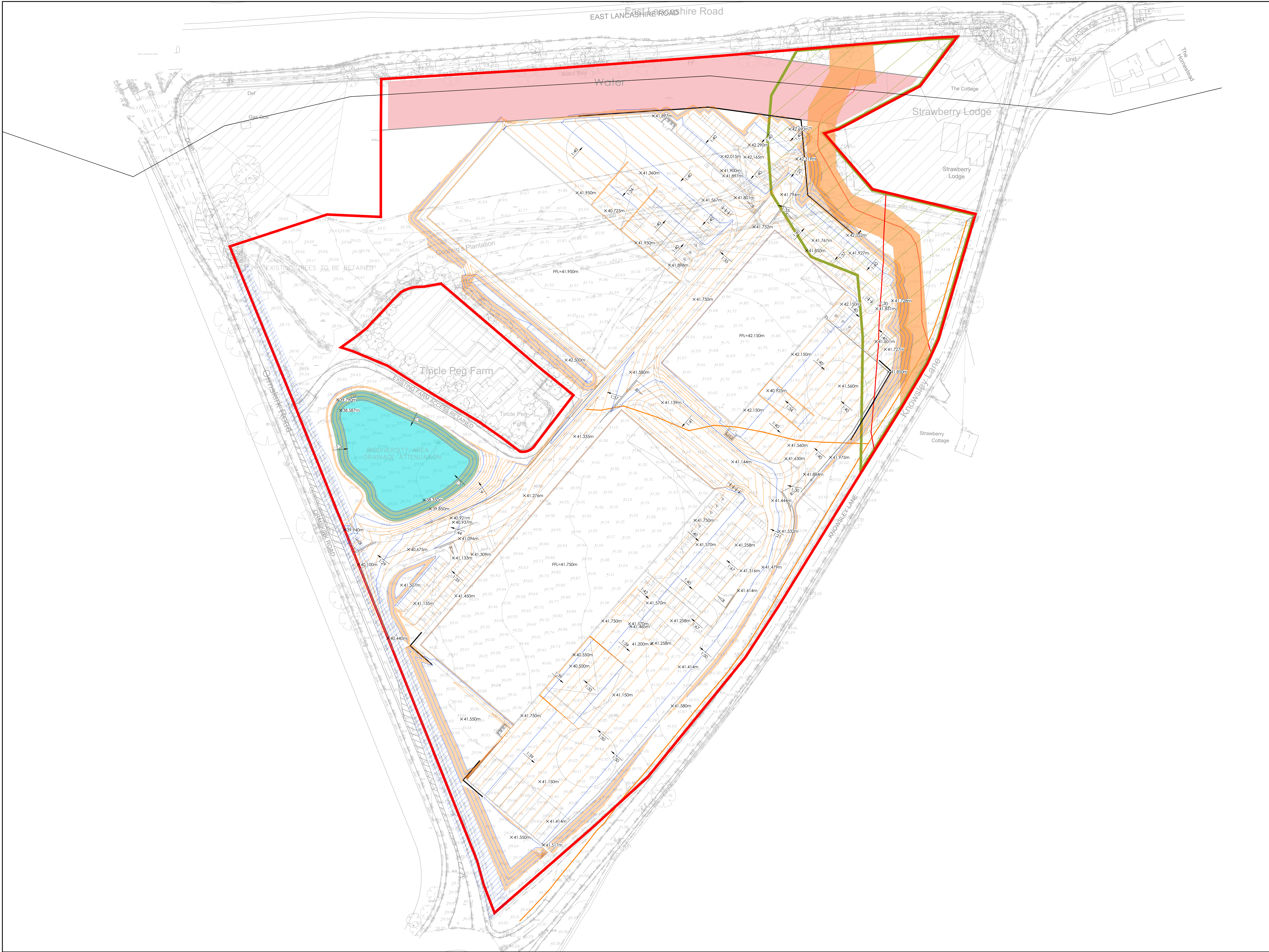
Parking Schedule

Building 1	
Car parking spaces (Based on B8:B2 70:30 Split): 93	
Including 5% accessible spaces (B2 Standards): 5	
Including 10% EV spaces: 10	
Cycle spaces (BREEAM): 16 external, 15 internal, total: 31	
Motorcycles at 1 space per 1000sqm (B2 Standards): 7	
Building 2	
Car parking spaces (Based on B8:B2 70:30 Split): 43	
Including 5% accessible spaces (B2 Standards): 3	
Including 10% EV spaces: 5	
Cycle spaces (BREEAM): 8 external, 8 internal, total 16	
Motorcycles at 1 space per 1000sqm (B2 Standards): 3	
Building 3	
Car parking spaces (Based on B8:B2 70:30 Split): 67	
Including 5% accessible spaces (B2 Standards): 4	
Including 10% EV spaces: 7	
Cycle spaces (BREEAM): 12 external, 12 internal, total 24	
Motorcycles at 1 space per 1000sqm (B2 Standards): 5	

P9	Red line boundary amended along Ormskirk Road, 1.8m acoustic fence heights amended to 2m, extent of Council owned land hatch reduced to identify no new planting areas only	26.05.22	AT	JC
P8	Amenity area and ramped access added, retaining wall added to building 2 yard, building 2 acoustic fence line updated, post and rail fence added to high side of retaining walls	23.05.22	AT	JC
P7	Legend updated to reflect BREEAM cycle space provision, retaining wall positions amended, 1.2m pedestrian route added to building 3 car park, dim between Tincle Peg Farm & Building 1 clarified, EV charging provision increased from 5% to 10%	19.05.22	AT	JC
Rev.	Description	Date	ISS	APP
Scale	1:1000@A1			
Status	S2 Information			
Drawn by	AT			
Checked by	JC			
Date	27.01.2022			
Client:	Caddick Developments			

Project:
Knowsley Lane, Knowsley

Sheet Name:
Proposed Site Plan



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DO NOT SCALE (A0)

NOTES

GENERAL NOTES

1. ALL RETAINING WALL LOCATIONS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO DETAILED DESIGN.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, M & E CONSULTANTS AND JPG CONSULTANTS DRAWINGS.

3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO COMMENCEMENT OF WORKS.

LEGEND

DENOTES PROPOSED RETAINING WALLS

DENOTES RETAINED HEIGHTS

LEGEND

DENOTES PROPOSED MAJOR CONTOURS

DENOTES PROPOSED MINOR CONTOURS

DENOTES PROPOSED GRADIENTS

P03	UNIT 1 LIFTED AND EXTERNAL LEVELS AMENDED	20.05.22	MDP	BT
P02	REVISED FOR LATEST SITE PLAN	12.04.22	KW	BT
P01	INITIAL ISSUE	03.12.20	KW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
KNOWSLEY BUSINESS PARK
KNOWSLEY
LIVERPOOL

Drawing Title
PROPOSED FINISHED FLOOR LEVELS

INFORMATION ISSUE

JPG

www.jpg.group

Leeds 0113 263 1155 | London 0203 947 4148

5570-JPG-SW-XX-DR-C-1300

S2

P03

B United Utilities Drainage Plans

CROOKES WALKER CONSULTING LTD

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Your Ref: Crookes Walker Consulting Ltd
Our Ref: UUPS-ORD-231768
Date: 23/12/2020

Dear Sirs

Location: COTTAGE KNOWSLEY LANE, KNOWSLEY, PRESCOT, L34 8HA

I acknowledge with thanks your request dated 16/12/2020 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

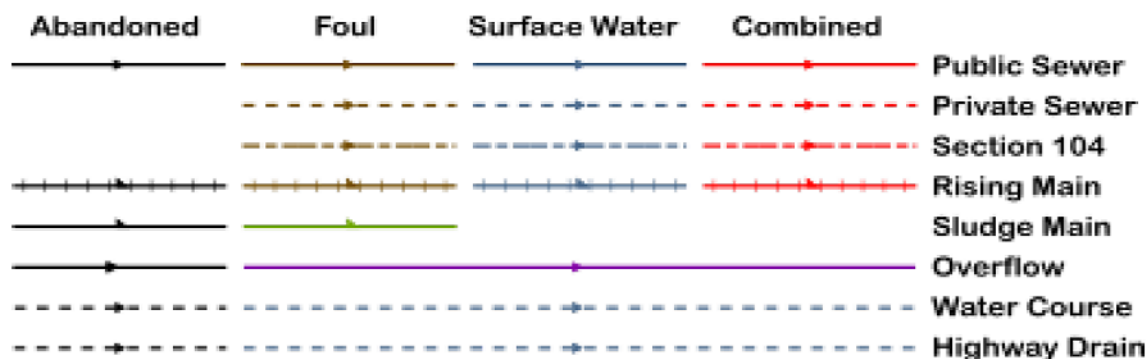
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

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:

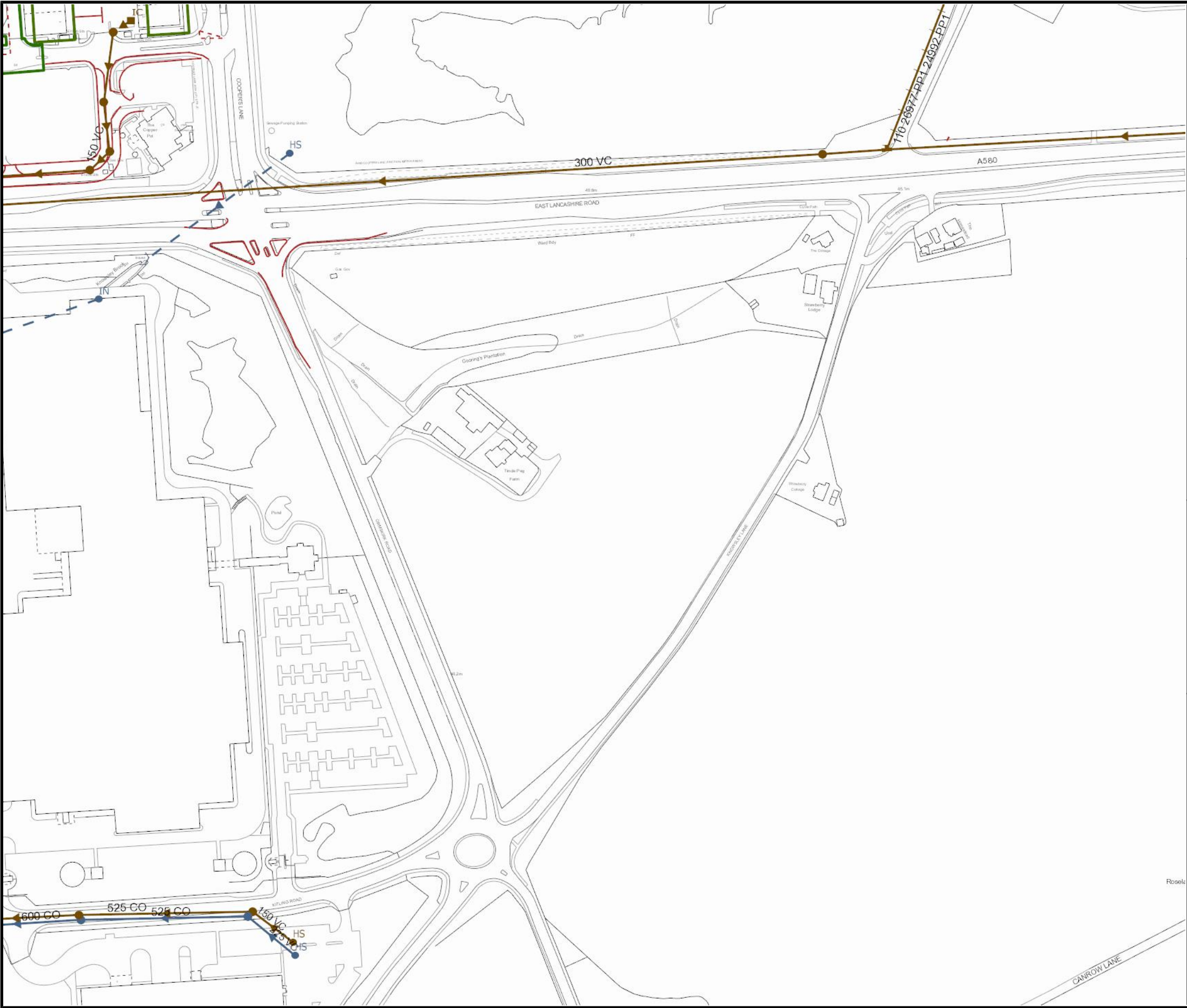
- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out 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.

Wastewater Symbolology



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

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



Water for the North West

SEWER RECORDS

Address or Site Reference

COTTAGE KNOWSLEY LANE,
KNOWSLEY,
PRESCOT,
L34 8HA

Scale: 1:2500
Date: 23/12/2020

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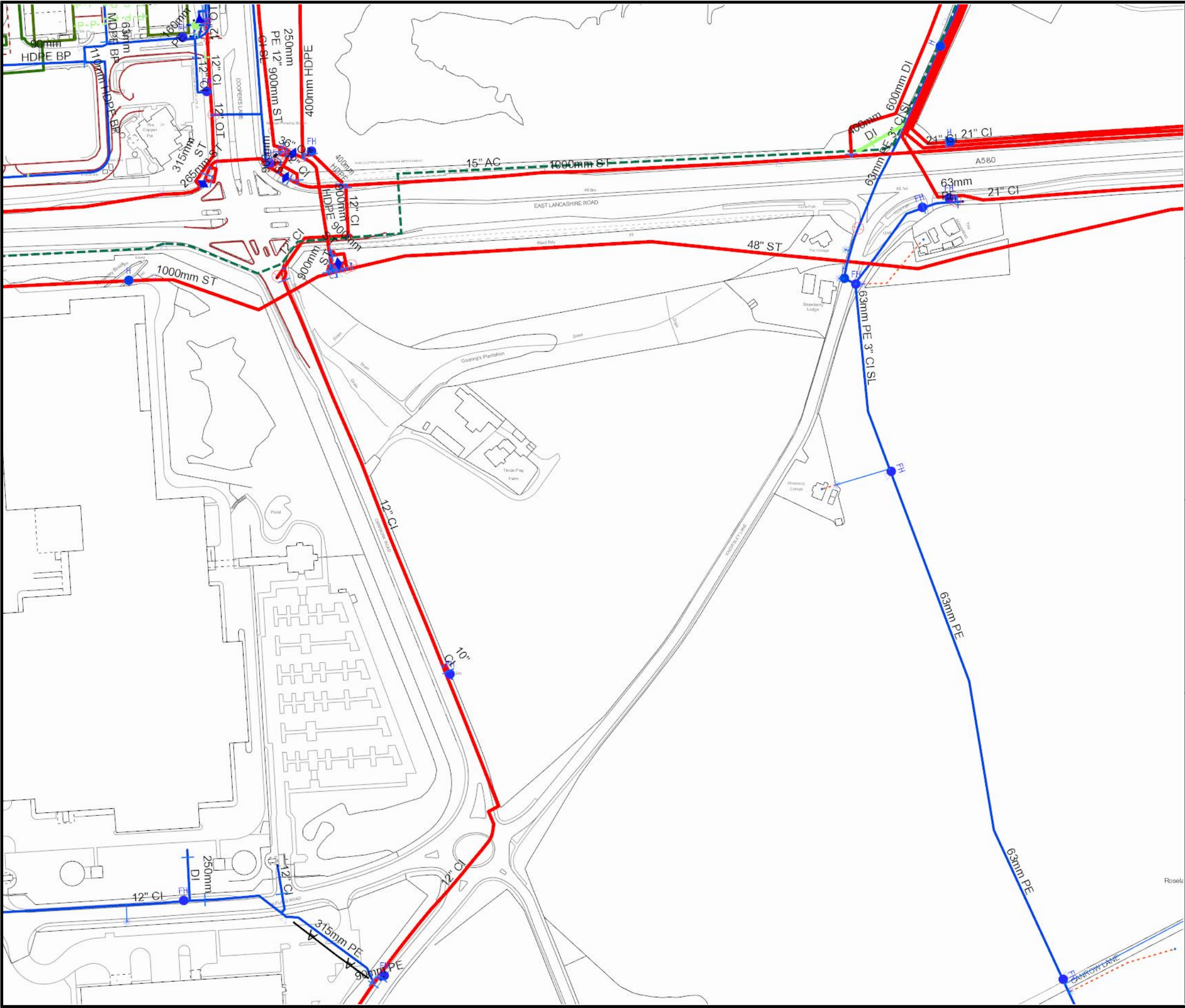
The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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Clean Water Symbolology

Proposed	Abandoned	Live	
			Distribution Main
			Trunk Main
			Comms Pipe
			Private Pipe
			Concessionary Service
			Raw Water
			LDTM Raw Water
			LDTM Treated Water
			Air Valve
			AC Valve, open
			AC Valve, closed
			CC Valve, open
			CC Valve, closed
			Non Return Valve
			Pressure Management Valve
			OMS Valve
			Stop Tap
			Flow Meter
			Domestic Meter
			Commercial Meter
			Pump
			Hydrant
			Fire Hydrant
			Anode
			Chlorination Point
			De-chlorination Point
			Strainer Point
			Access Point
			Hatch Box
			IP Point
			Sampling Station
			Logger Box
			Bore Hole
			Inlet Point
			Bulk Supply Point
			End Cap
			Site Termination
			Change of Characteristic
			Condition Report
			<u>Property Types</u>
			Water Tower
			Valve House
			Booster Pumping Station
			Intake Pumping Station
			Water Treatment Works
			Supply Reservoir
			Service Reservoir
			Impounding Reservoir
			Pipe Bridge

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



Water for the North West

WATER MAIN RECORDS

Address or Site Reference

COTTAGE KNOWSLEY LANE,
KNOWSLEY,
PRESCOT,
L34 8HA

Scale: 1:2500
Date: 23/12/2020

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