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ADVISORY

Laing O'Rourke
HRI PMU
Huddersfield
Flood Risk Assessment

www.bwbconsulting.com

ADVISORY

Laing O'Rourke
HRI PMU
Huddersfield
Flood Risk Assessment

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds
LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 0207 407 3879

Manchester
11 Portland Street, Manchester, M1 3HU
0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

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EXECUTIVE SUMMARY

This report demonstrates that the proposed development is at an acceptable level of flood risk, subject to the recommended flood mitigation strategies being implemented.

A review of flood data published by the EA and provided within the local SFRA has identified that the following potential sources of flooding do not pose a risk to the site or the proposed development: the sea, canals, rivers and minor watercourse, and reservoirs and large waterbodies. Based on the available data groundwater was found to pose a very low risk of flooding to the site.

Strategic level flood data has identified a high probability for surface water flooding to form in the north of the site under existing conditions. The layout has been arranged to locate the built development away from this flooding; therefore, the flood risk has been managed appropriately through avoidance. Also, the proposed development will improve upon these existing conditions through the implementation of a new surface water drainage strategy which will manage surface water runoff from the development up to and including the 1 in 100-year+CC storm event; thereby addressing the risk of surface water flooding to the required level.

Similarly, the existing drainage infrastructure on the site is at risk of exceedance in large storm events, a risk that will increase after considering climate change. Based on anecdotal reports, a tank located inside of the existing building is online of the drainage, and its exceedance has previously contributed to internal flooding. However, crucially, the proposed development will improve upon these existing conditions through the implementation of new surface water drainage infrastructure designed. This will reduce flood risk to an appropriate level. The outdated drainage infrastructure will be removed, which will include the tank located inside of the building, thereby addressing this anecdotal source of internal flood risk.

The existing discharge rate from the site to the receiving downstream sewer network(s) will be no greater than the existing rate, thereby preventing any adverse downstream impacts. The proposed redevelopment will not introduce new impermeable surfaces to the site therefore no additional surface water runoff will be generated from the development.

Any third-party drainage connections entering/passing through the site should be maintained, or appropriately diverted, so that connectivity is preserved and in a manner that does not create a flood risk.

This report sets out recommended measures that will increase the development's resilience to flood risk, and which will help manage any residual risks.

In compliance with the requirements of the NPPF, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider area subject to the suitable management of surface water runoff discharging from the site.

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GLOSSARY & NOTATION

Abbreviation / Notation	Definition
AEP	Annual Exceedance Probability. The probability (%) of a flood event occurring in any year
m bgl	metres below ground level
BGS	British Geological Survey
Catchment	The land area that drains (normally naturally) to a given point on a river, drainage system or body of water
CC	Climate Change
DTM / DEM	Digital Terrain Model / Digital Elevation Model
EA	Environment Agency
Floodplain	Any area of land over which water flows or is stored during a flood event
FFL	Finished Floor Level
FRA	Flood Risk Assessment
Freeboard	The height of finished floor levels, top of a bank, floodwall or other flood defence structure, above the design water level. Freeboard can be seen as a safety margin that makes allowance for uncertainty associated with the potentially damaging effects of flood rise or wave action
Hydraulic Model	A mathematical numerical (generally computer based) model of a water/sewer/storm system which is used to analyse the system's hydraulic behaviour
LiDAR	Light Detection and Ranging aerial survey data
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
m AOD	metres Above Ordnance Datum
Main River	A statutory type of watercourse in England and Wales, usually larger watercourses and rivers. The EA can carry out maintenance, improvement or construction work on main rivers to manage flood risk as part of its duties and powers
NPPF	National Planning Policy Framework
Ordinary Watercourse	A river, stream, ditch, drain, dyke, culvert/pipe (other than a public sewer) and passage through which water flows and which does not form part of a main river
OS	Ordnance Survey
PFRA	Preliminary Flood Risk Assessment. An assessment of floods that have taken place in the past and floods that could take place in the future. It generally

Abbreviation / Notation	Definition
	considers flooding from surface water runoff, groundwater and ordinary watercourses, and is prepared by the LLFAs
PMU	Pharmaceutical Manufacturing Unit
PPG	Planning Policy Guidance. Specifically, the Flood Risk and Coastal Change category
Return period	A statistical term defining the probability of occurrence of a flood event. A 1 in 30-year flood is one likely to be equalled or exceeded on average only once in a 30-year period: a flood with a 3.33% AEP
RoFRS	Risk of Flooding from Rivers and Sea. A strategic level dataset published by the EA, illustrating the potential probability of flooding from the rivers and sea, including an allowance for climate change
RoFSW	Risk of Flooding from Surface Water. A strategic level dataset published by the EA, illustrating the potential probability of flooding from surface water runoff, including an allowance for climate change
SFRA	Strategic Flood Risk Assessment. A study carried out by one or more local planning authorities to assess the risk of flooding from all sources, now and in the future within a defined area
SDS	Sustainable Drainage Statement
Section 19 Flood Investigation Reports	Under their duties under the Flood and Water Management Act 2010, LLFAs have a duty to publish reports of investigations of flood incidents. A section 19 flood investigation report is a public statement of the circumstances of a historical flood event and what parties have a role in managing the risks. The investigation does not always give an in-depth analysis of the flood risk or mechanisms, but it can provide a valuable record of past events
SuDS	Sustainable Drainage Systems. Surface water management techniques that are intended to reduce the risk of flooding and pollution from urban runoff
SWMP	Surface Water Management Plan. These are non-statutory plans which preceded the introduction of the Flood and Water Management Act 2010. They can provide an important evidence base of local flood risk issues which can include critical drainage areas, surface water drains, groundwater, and small watercourses
UOW	Unnamed Ordinary Watercourse. An ordinary watercourse that has no name published on OS maps or within the SFRA

1. INTRODUCTION

1.1 This FRA has been prepared on behalf of Laing O'Rourke to support a full planning application for the demolition of the existing building on site and subsequent redevelopment.

1.2 The level of detail included is commensurate and subject to the nature of the proposals at the planning stage of the design process.

Sources of Data

1.3 The following sources of data have been reviewed in the preparation of this FRA:

i. Topographical Survey by Survey Solutions, reference 63286 - **Appendix 1**
ii. Proposed Site Plan by AFL Architects, reference 001001 - **Appendix 2**
iii. OS maps
iv. EA Flood risk assessments: climate change allowances[1]
v. EA RoFSW[2]
vi. EA RoFRS[3]
vii. Kirklees Metropolitan Borough Council Consultation
viii. Local Authority Surface Water Flood Risk Maps
ix. Calder Catchment Strategic Flood Risk Assessment Volume I[4]
x. Calder Catchment Strategic Flood Risk Assessment Volume II[5]
xi. Kirklees Preliminary Flood Risk Assessment[6]
xii. Groundwater Flood Risk Data by BGS
xiii. Yorkshire Water Sewer Records - **Appendix 3**
xiv. Utility Survey by Survey Solutions - **Appendix 4**
xv. Curtins Drainage Survey - **Appendix 5**
xvi. Local Press Flood Reports / Anecdotal Evidence
xvii. BGS Drift & Geology Maps
xviii. EA LiDAR (Composite 1m DTM 2022)
xix. BWB Sustainable Drainage Statement (SDS), ref: 232808-BWB-ZZ-XX-T-C-0001_SDS

The Existing Site

1.4 The site is located in the Lindley area of Huddersfield, approximately 295m from Huddersfield Royal Infirmary. The site is bound by Union Street to the north of the site with

[1] Environment Agency, Flood risk assessments: climate change allowances: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances. Last Accessed November 2025.
[2] Risk of Flooding from Surface Water. Environment Agency. Last Accessed November 2025.
[3] Risk of Flooding from River and Sea. Environment Agency. Last Accessed November 2025.
[4] Calder Catchment Strategic Flood Risk Assessment Volume I. JBA Consulting, August 2016.
[5] Calder Catchment Strategic Flood Risk Assessment Volume II. JBA Consulting, July 2016.
[6] Kirklees Preliminary Flood Risk Assessment. Kirklees Council, 2009.

residential developments beyond, the wider Acre Mills site to the east, and south with Wellington Street and School Street West to the west with residential properties beyond. The site's location is illustrated in **Figure 1.1**.

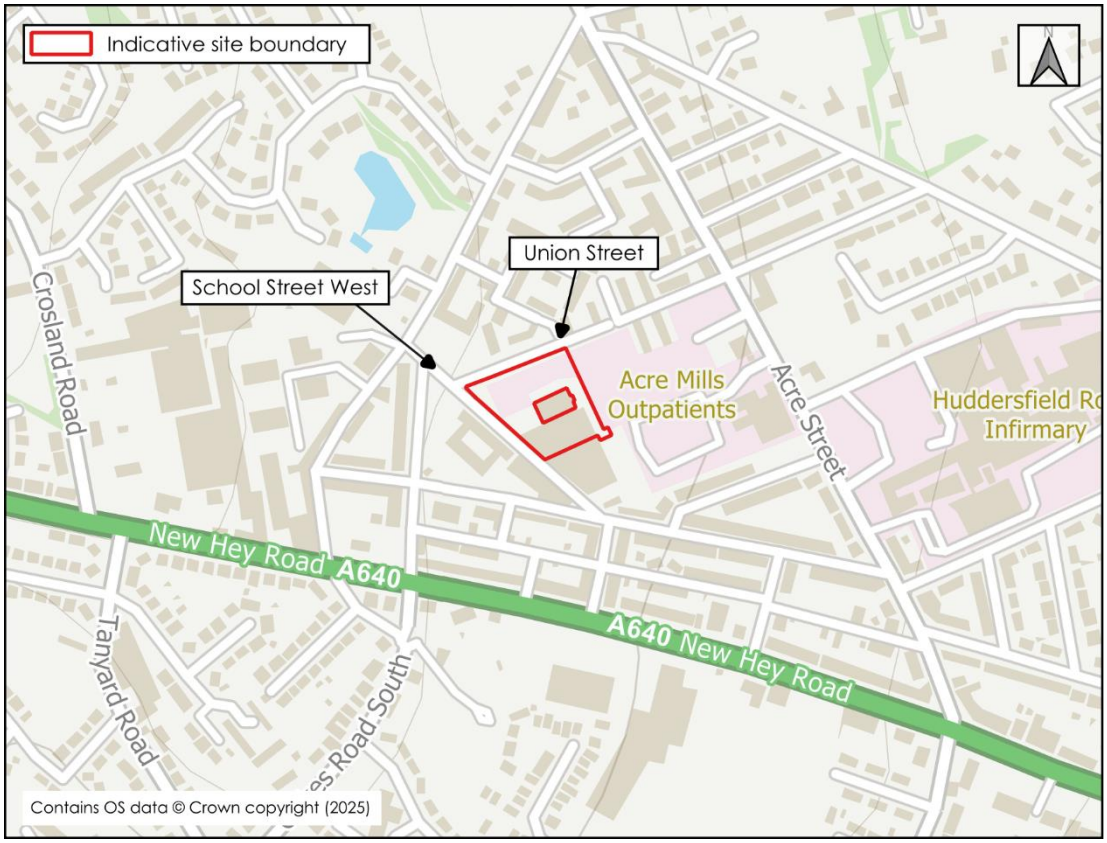


Figure 1.1: Site Location

1.5 The site is brownfield comprising a disused warehouse in the south for the Huddersfield Royal Infirmary. Access is from the south and west side of the site via School Street West. The existing site land use is presented in **Figure 1.2**, illustrating that it is essentially entirely impermeable.

1.6 The closest EA Main River is the River Colne approximately 1.4km south of the site. The closest watercourse to the site is an UOW approximately 465m south in William Wood. The nearest surface waterbody is Low Hills Pond, approximately 165m north of the site.

1.7 A topographical survey has been completed by Survey Solutions in May 2024 and is included as **Appendix 1**. The survey shows the site gently slopes down towards the south. The highest point of the site is approximately 209m AOD in the northwest and falls to approximately 203m in the southeast. The topographical survey indicates the north of the site is relatively flat.



Figure 1.2: Existing Land Use

The Proposed Scheme

1.8 The proposed scheme comprises a full planning application for the redevelopment of Building 17. The building is to be demolished and redeveloped into a two-storey extension to the existing Pharmaceutical Manufacturing Unit (PMU) building within the current building footprint. Access and egress from School Street West will be retained. A Proposed Site Plan is available as **Appendix 2**.

Site Summary

Table 1.1: Site Summary

Site Name	HRI PMU
Location	Huddersfield
Easting & Northing	411820 417648
Application Site Area (ha)	0.675
Development Type	Industrial
Flood Zone Classification	Flood Zone 1
NPPF Vulnerability	Less Vulnerable
Anticipated Development Lifetime*	75 Years
Lead Local Flood Authority	Kirklees Council
Sewer Operator	Yorkshire Water

**In accordance with PPG Flood Risk and Coastal Change Paragraph 006*

2. FLOOD RISK PLANNING POLICY & GUIDANCE

National Planning Policy Framework

2.1 The NPPF[7] sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk.

2.2 The NPPF states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere. When considering flood risk, the NPPF requires development to account for future climate change.

2.3 The NPPF identifies that development should only be allowed in areas at risk of flooding where it can be demonstrated that:

- within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;
- the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;
- it incorporates SuDS, unless there is clear evidence that this would be inappropriate;
- any residual risk can be safely managed; and
- safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

Planning Practice Guidance – Flood Risk and Coastal Change

2.4 The NPPF is accompanied by the PPG category entitled "Flood Risk and Coastal Change"[8]. This sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

2.5 Flood risk is identified as a combination of the probability and the potential consequences of flooding:

Flood Risk = Probability x Consequences

2.6 The probability is the chance of a flood occurring expressed as a return period or AEP, and the consequences are the potential impacts of the flood (for example, damage to buildings or risk to people's safety).

2.7 The PPG identities the potential sources of flood risk as rivers and the sea, direct rainfall on the ground surface resulting in surface water runoff, rising groundwater,

[7] Revised National Planning Policy Framework, Ministry of Housing, Communities & Local Government, amended 2024
[8] Planning Practice Guidance: https://www.gov.uk/guidance/flood-risk-and-coastal-change, amended 2025

overwhelmed sewers and drainage systems, reservoirs, canals and lakes, and other artificial sources.

2.8 The PPG requires development to be designed to include flood risk management and resilience against the "design flood" for its lifetime. The PPG also states that all potential sources of flooding should be considered when preparing an FRA.

2.9 The PPG defines the "design flood" that new development should consider in its design, which is an event of a given probability generally defined as:

- river flooding likely to occur with a 1% AEP (a 1 in 100 chance each year); or
- tidal flooding likely to occur with a 0.5% AEP (1 in 200 chance each year); or
- surface water flooding likely to occur with a 1% AEP (a 1 in 100 chance each year),

plus, an appropriate allowance for climate change.

2.10 The PPG includes a series of tables that define Flood Zones (Table 1), the flood risk vulnerability classification of development land uses (Table 2) and 'compatibility' of development within the defined Flood Zones (Table 3).

2.11 This FRA is written in accordance with the NPPF and the associated PPG.

Flood Zone Classification

2.12 With particular reference to planning and development, and specifically the risk of flooding from rivers and the sea ignoring the presence of flood defences, the Flood Map for Planning identifies Flood Zones in accordance with Table 1 of the PPG. Further details on the Flood Zone classifications are outlined in **Table 2.1**.

Table 2.1: Flood Zone Classifications

Flood Zone	Description
Flood Zone 1 (Low Probability)	Land having less than a 1 in 1000 annual probability of river or sea flooding (<0.1% Annual Exceedance Probability). All land outside of Flood Zone 2 and 3.
Flood Zone 2 (Medium Probability)	Land having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1% AEP); or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1% AEP).
Flood Zone 3a (High Probability)	Land having a 1 in 100 or greater annual probability of river flooding (>1% AEP); or land having a 1 in 200 or greater annual probability of flooding from the sea (>0.5% AEP). This is represented by "Flood Zone 3" on the Flood Map for Planning.
Flood Zone 3b (The Functional Floodplain)	Flood Zone 3b (The Functional Floodplain) is defined as land where water must flow or be stored in times of flood. This is not identified or separately distinguished from Zone 3a on the Flood Map for Planning.

2.13 LPAs use the Flood Zones to determine if they must consult the EA on planning applications. They are also used to determine the appropriate climate change allowance to consider and whether development is subject to the exception test.

2.14 The Flood Map for Planning does not identify functional floodplain. LPAs are responsible for producing maps showing the extent of functional floodplain (Flood Zone 3b) as part of a SFRA.

2.15 The site is shown to be located within entirely within Flood Zone 1, as shown in **Figure 2.1**.

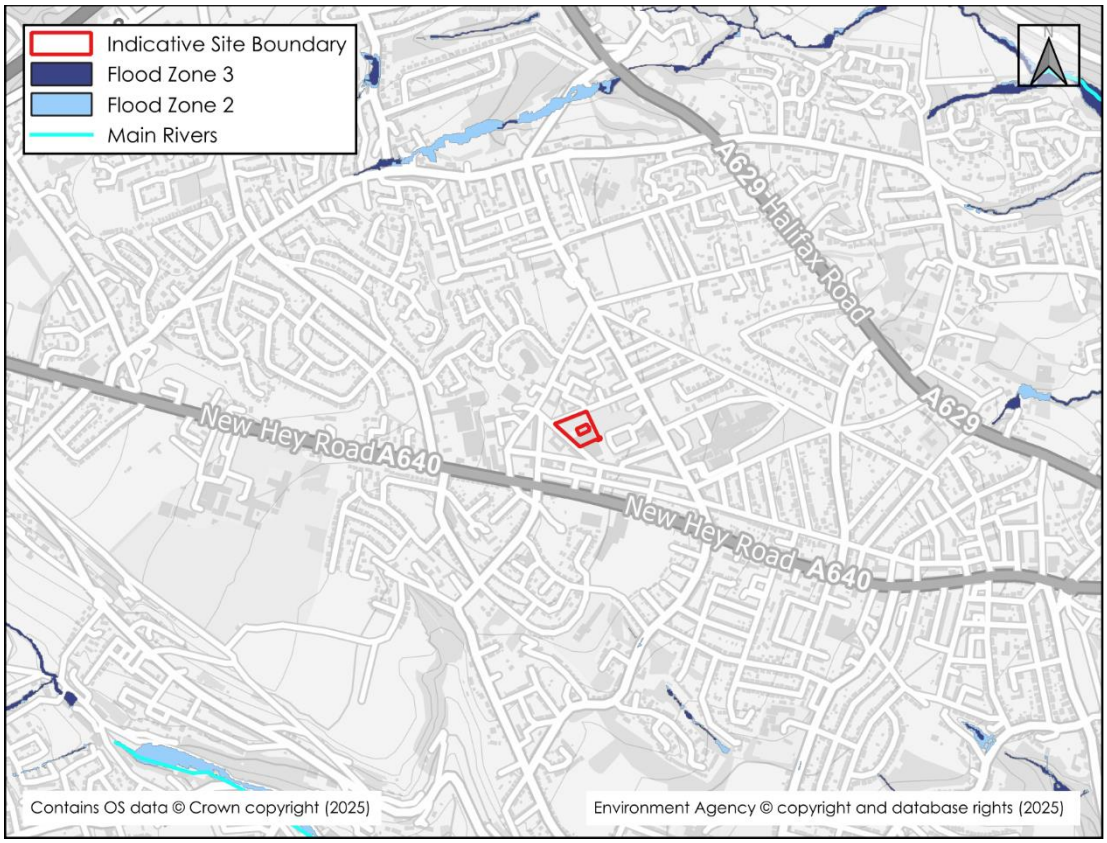


Figure 2.1: Flood Map for Planning

Flood Risk Assessments: Climate Change Allowances

2.16 Predicted future changes in sea levels, peak river flows, and rainfall intensities caused by climate change are provided by the EA online. A range of projections are applied to regionalised 'River Basin Districts', which are further subdivided into Management Catchments, to provide a series of climate change allowances. The appropriate climate change allowances are determined by a number of factors that include the source of flooding, the current level of risk, the vulnerability of the proposed development, and the lifespan of the development.

2.17 The site falls within the Aire and Calder Management Catchment.

Peak River Flow

2.18 The relevant peak river flow climate change allowances are identified in **Table 2.2**.

Table 2.2: Peak River Flow Allowance for the Aire and Calder Management Catchment

Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2125)
Upper End	24%	31%	51%
Higher Central	15%	18%	31%
Central	11%	13%	23%

2.19 **Table 2.3** provides a matrix summarising the EA's guidance on determining the appropriate climate change allowance(s) for river flow.

Table 2.3: Application of Appropriate Peak River Flow Climate Change Allowances

Flood Zone	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
1	Use the central allowance where a location may fall within Flood Zone 2 or 3 in the future.				
2	Use the higher central allowance	Use the central allowance			
3a	Use the higher central allowance	Development should not be permitted	Use the central allowance		
3b	Use the higher central allowance	Development should not be permitted			Use the central allowance
If development is considered appropriate by the LPA when not in accordance with Flood Zone vulnerability categories, then it would be appropriate to use the higher central allowance.					

2.20 The site is located entirely within Flood Zone 1, the proposed development is classified as less vulnerable, and it has an anticipated lifespan of over 75 years. Given the considerable distance between the site and nearest main river, it is very unlikely that it will fall into Flood Zone 3 or 2 in the future. Therefore, climate change allowances do not need to be considered.

Local Plan

2.21 The Kirklees Local Plan Strategies and Policies[9] has been reviewed during the preparation of this report. The Local Plan covers the period from 2013-2031. The relevant policies are included below.

2.22 Policy LP27 – Flood Risk.

Proposals require an appropriate site specific Flood Risk Assessment in line with national planning policy. This must cover all sources of flooding set out in the Strategic Flood Risk Assessment. It must demonstrate that the proposal will be safe throughout the lifetime of the development (taking account of climate change). Where possible, the proposal should reduce flood risk; it must not increase flood risk elsewhere. Mitigation measures should be proposed where necessary.

Strategic Flood Risk Assessment

2.23 The Calder Catchment SFRA Volume 1[10] has been reviewed in the production of this FRA. The SFRA includes the following general objectives, but no other recommendations or requirements related to the flood risk management for redevelopments were observed:

> *This SFRA shall be a reference document to which all parties involved in development planning and flood risk can reliably turn to for initial advice that also provides guidance on the potential risk of flooding associated with future applications. It shall form the basis of an informed development management process and site specific FRAs.*

2.24 The Kirklees Council Level 2 SFRA[11] has also been reviewed in the production of this FRA. The SFRA includes the following general objectives, but no other recommendations or requirements related to the flood risk management for redevelopments were observed:

> *2.5.7 Developers*
>
> - *Have a vital role in ensuring effective local flood risk management by avoiding development in areas at risk of flooding. Local Strategies should form a key element of local planning guidance.*
>
> *4.4 Assessment of Risk to Future Development*
>
> - *Further development on brownfield sites may not lead to increased flood risk. However, the EA may have their own views on this in regard to health warnings as new-build properties in risk areas could be built with flood protection in mind.*

[9] Kirklees Local Plan Strategies and Policies, Kirklees Council (2019)
[10] Calder Catchment Strategic Flood Risk Assessment – Volume I, Kirklees Council (2016)
[11] Calder Catchment Strategic Flood Risk Assessment – Volume II, Kirklees Council (2016)

3. HISTORICAL FLOODING INCIDENTS

3.1 A review of the data sources identified in **Section 1** was undertaken to identify any records of historical flooding incidents within the vicinity of the site, these are summarised within **Table 3.1**.

Table 3.1: Summary of Reported Historical Flooding Incidents

Data Source	Commentary
SFRA	The following historical flooding incidents are documented in Kirklees, up to and including 2016; all incidents recorded in the SFRA are significantly removed from the site.
PFRA[12]	Limited funding and lack of foresight in appreciating the value of recording and assessing historic flood incidents has resulted in the Council possessing very limited and incomplete records of past flood events. However, as the SFRA post-dates the PFRA reports, it is likely to have presented a more complete record of incidents (as listed above).
SWMP[13]	The Kirklees Surface Water Management Plan states that 'Historic flood incidents from the last 10 years are now mapped on GIS'. The flood extents have been assessed under the EA Recorded Flood Outlines dataset below. The SWMP quotes the Don Catchment Flood Management Plan; the catchment covers 15% of the Kirklees District. 'Heavy rain can lead to both river and surface water flooding and historically reports have not differentiated between these sources. Estimates suggest that in June 2007, 70% of the properties flooded in the Yorkshire and Humberside regions were as a result of surface water' however no site-specific information was noted.
Section 19 Flood Investigation Reports	Kirklees Council has published two Section 19 Flood Investigation Reports however, no reports have been published around the vicinity of the site.
Internet Search of Local Press Reports	There are no locally reported flood incidents in the vicinity of the site.
EA Recorded Flood Outlines	There are no historical flood events recorded within 1km of the site.
Anecdotal Reports	Anecdotal evidence from the site representative noted that a tank is present under the existing unit that was previously used in site operations. The site representative noted internal flooding that may have been attributed to the tank however it may have also originated from a roof leak that is present.
LLFA	Consultation with the LLFA which was received on the 29th of October noted minor cellar flooding incidents in nearby properties close to the site however, no further information was provided.

[12] Preliminary Assessment Report for Kirklees, Kirklees Council (2009)
[13] Kirklees Surface Water Management Plan, Kirklees Council (2011)

3.2 It should be noted that a lack of recorded flooding incidents does not necessarily mean the site and local area have never experienced flooding. Flooding incidents may not have been reported or observed.

4. FLOOD RISK FROM RIVERS (FLUVIAL)

4.1 Flooding from watercourses occurs when flows exceed the capacity of the channel or conduits, or where a restrictive hydraulic structure is encountered, which leads to water overtopping the banks into the floodplain.

4.2 The nearest fluvial flood zone to the site is approximately 550m south of the site, attributed to the small watercourse within William Wood. The present-day fluvial flood zones are displayed in **Figure 2.1.**

4.3 As well as the 'present day' risk of flooding from rivers, the sea and surface water, climate change scenarios have been produced and published by the EA to indicate the predicted impacts of climate change on future flood risk. It should be noted that this is probability mapping based on climate change projections up to 2100, which are the most precautionary climate change projections available at this time.

4.4 As illustrated in **Figure 4.1** the site is wholly removed from the climate change flood zones with the nearest flood extents located approximately 550m south of the site.

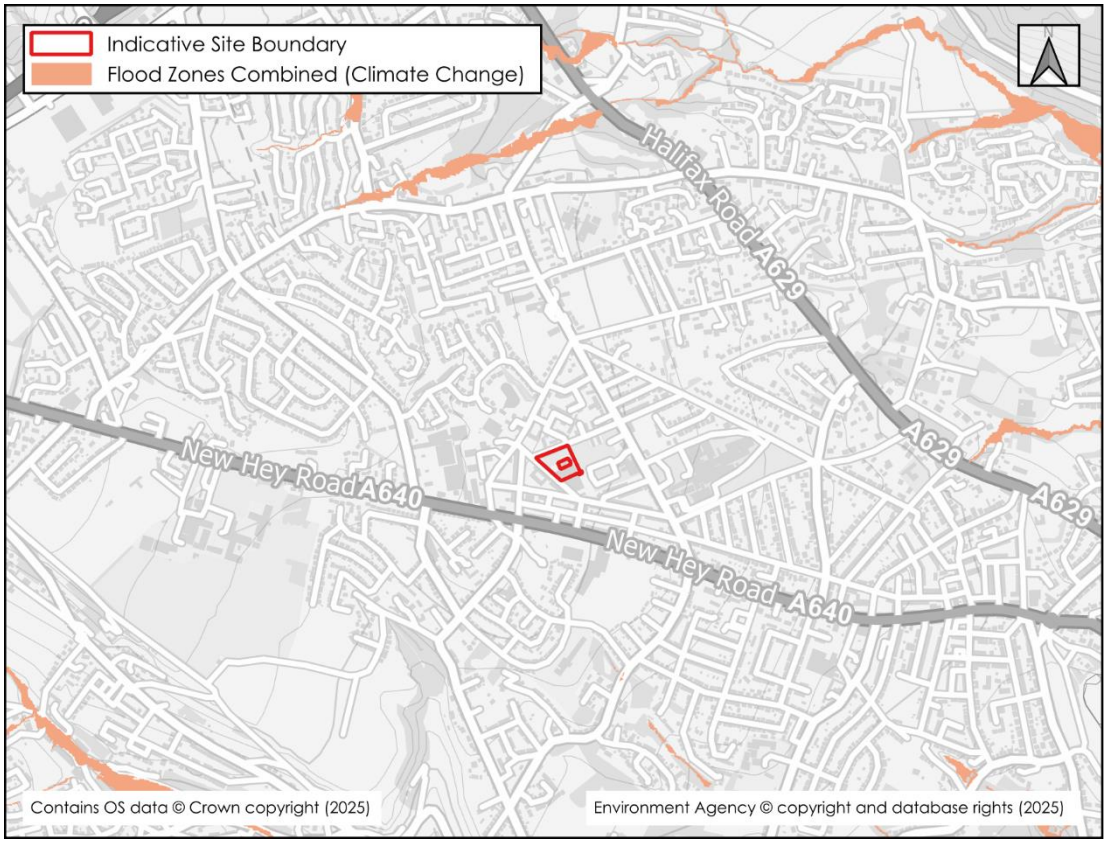


Figure 4.1: Flood zones with climate change

Flood Risk

4.5 The proposed development is located wholly outside of the fluvial floodplain, therefore it can be concluded that there is no main river fluvial flood risk to the proposed.

5. FLOOD RISK FROM SURFACE WATER

5.1 Surface water flooding can occur during prolonged or intense storm events when the infiltration potential of soils, and/or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

5.2 RoFSW mapping has been collated and published by the EA; this shows the potential probability of flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. This data can also identify the potential floodplain associated within small watercourses/ditches omitted from the Flood Map for Planning. An extract from the mapping is included as **Figure 5.1**. The dataset includes climate change up to 2060 which is the most precautionary projection currently published by the EA but does not extend for the entire development lifetime.

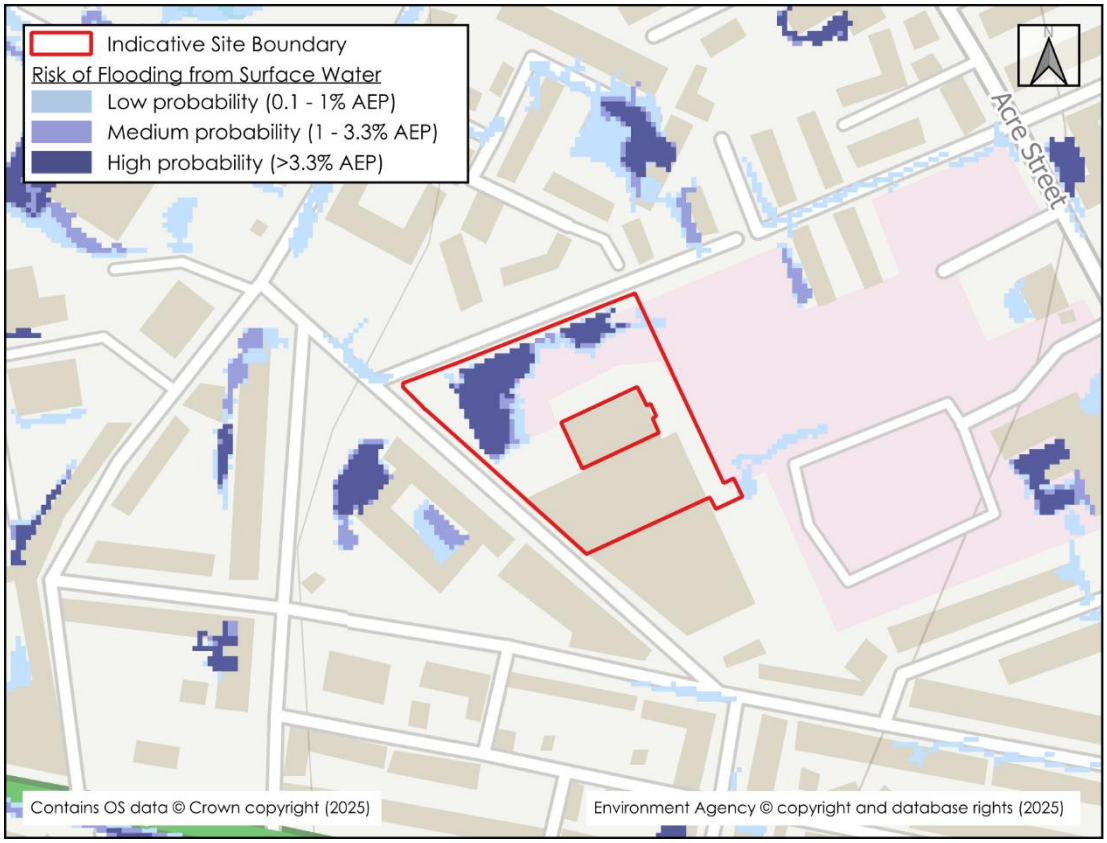


Figure 5.1: Risk of Flooding from Surface Water Climate Change Extents

5.3 The EA's RoFSW mapping indicates the potential for surface water flooding to occur in the north and northeast of the site. The mapping suggests that this is isolated from the surrounding area, no flooding from off-site sources is shown to enter the site. Therefore, the illustrated flooding is most likely a result of runoff from with the site itself ponding within topographical depressions.

5.4 The existing/proposed building footprint is located in the south of the site in an area at a very low probability of flooding.

5.5 The EA's RoFSW is a strategic level dataset that is designed to identify areas potentially at flood risk. In reality, the existing site is served by private drainage infrastructure that will manage the surface water flood risk somewhat, therefore the RoFSW mapping is likely to be exaggerated; however, the drainage is unlikely to be up to modern standards. Therefore, in extreme storms and under climate change conditions it would be expected that surface water would pond in external areas.

5.6 However, crucially, the proposed development will improve upon these existing conditions. New/upgraded surface water drainage infrastructure and the opportunity to re-profile external areas will allow the redevelopment to manage surface water runoff up to and including the 1 in 100-year+CC storm event; thereby addressing any risk of surface water flooding to the proposed development to an appropriate level.

5.7 Further information on the proposed drainage strategy is available in the accompanying SDS (ref: 232808-BWB-ZZ-XX-T-C-0001_SDS).

Flood Risk

5.8 While isolated parts of the site are currently at a high probability of surface water flooding, due to the sequential arrangement of the redevelopment and the new/upgraded drainage infrastructure that will accompany it, the development will be at a low risk of flooding from surface water.

Residual Flood Risk & Management

5.9 For resilience, finished floor levels should be raised a minimum of 150mm above surrounding ground levels to help mitigate any residual risk from localised surface water runoff within the development.

5.10 Development ground levels should be profiled to encourage runoff and overland flows away from the built development and towards the nearest drainage point.

6. FLOOD RISK FROM SEWERS & DRAINAGE SYSTEMS

6.1 Sewer and flooding from drainage systems can occur when the capacity of the infrastructure is exceeded by excessive flows, because of a reduction in capacity due to collapse or blockage, or if the downstream system becomes surcharged. This can lead to the sewers flooding onto the surrounding ground via manholes and gullies, which can generate overland flows.

6.2 Sewer plans provided by Yorkshire Water display existing combined sewers and Section 104 sewers primarily located within Union Street and School Street West. The asset plans are provided in **Appendix 3**.

6.3 Any potential exceedance flows from Yorkshire Water assets are expected to be contained within the road network and flow away from the site following the fall of the local topography.

6.4 A utility survey by Survey Solutions, presented in **Appendix 4**, shows the approximate location of the private drainage located withing the site boundary. A 225mm diameter surface water drain is shown to be located within the northwest of the site, originating within Union Street and flowing in a southerly direction. However, the onwards connectivity of the sewer is unknown at this time. A 150 mm diameter foul sewer is located in the southeast of the site and flows in an easterly direction into the wider Acre Mills park. Numerous surface water manholes are located throughout the site.

6.5 An existing site drainage plan produced by Curtins Consulting in 2007 is included in **Appendix 5** and provides further clarity on the existing private drainage network. The plan notes a further 150 mm surface water sewer that originates within the north of east of the site and flows in a southerly direction before being directed to the east via a 225 mm diameter pipe. The private drainage ultimately outfalls to the Yorkshire Water Assets in Acre Street, School Street West and Union Street.

6.6 There was evidence of pipe runs within the existing buildings footprint consisting of 2 separate 150 mm diameter surface water sewers. At the time of writing the exact location and condition of the sewers is unknown. The consultant has assumed that these were grubbed out to allow for the new construction.

6.7 Evidence from a previous site investigation indicates the presence of a below ground water tank within the footprint of the existing building that may be connected to the private drainage system. It is understood that this may have been used in historical manufacturing/industrial uses on the site. Exceedance of the tank may have contributed to the internal flooding of the ground floor that has been reported by the site operative.

6.8 The existing drainage infrastructure is unlikely to be up to modern standards. Therefore, in large storms and under climate change conditions it would be expected to be exceeded. However, crucially, the proposed development will improve upon these existing conditions.

6.9 New/updated surface water drainage infrastructure designed to manage surface water runoff up to and including the 1 in 100-year+CC storm event will accompany the re-development. This will reduce flood risk to an appropriate level. The outdated drainage infrastructure will be removed, which will include the tank located inside of the building, thereby addressing this anecdotal source of internal flood risk.

6.10 The existing discharge rate from the site to the receiving downstream sewer network(s) will be no greater than the existing rate, thereby preventing any adverse downstream impacts. The proposed redevelopment will not introduce new impermeable surfaces to the site therefore no additional surface water runoff will be generated from the development.

6.11 Any third-party drainage connections entering/passing through the site should be maintained, or appropriately diverted, so that connectivity is preserved and in a manner that does not create a flood risk.

6.12 Further information on the proposed drainage strategy is available in the accompanying SDS (ref: 232808-BWB-ZZ-XX-T-C-0001).

Flood Risk

6.13 While parts of the site are currently at a risk of flooding from drainage exceedance, due to the new/upgraded drainage infrastructure that will accompany it, the development will be at a low risk of flooding from drainage exceedance.

Residual Flood Risk and Management

6.14 The residual surface water flood risks and the recommended measures to help manage these risks, as described in **Section 5**, are also applicable to help address the residual flood risk from sewers and drainage systems.

6.15 The proposed development should be designed with drainage exceedance in mind, and external areas should be used to convey overland flows above the capacity of the drainage networks away from built development and towards the drainage points and low vulnerability areas such as car parks and landscaped areas.

6.16 It is recommended that an operation and maintenance plan is established to ensure that the development's drainage systems are inspected and maintained for their lifetime.

7. FLOOD RISK FROM GROUNDWATER

7.1 Groundwater flooding occurs when the water table rises above ground elevations, or it rises to depths containing basement level development. It is most likely to happen in low lying areas underlain by permeable geology. This is most common on regional scale chalk aquifers, but there may also be a risk on sandstone and limestone aquifers or on thick deposits of sands and gravels underlain by less permeable strata such as that in a river valley. The presence of springs and/or winterbourne streams near to a site are a good indicator that groundwater flooding may be an issue in the area.

7.2 The SFRA contains mapping displaying areas susceptible to groundwater flooding within the Kirklees Council. The site is indicated to be located outside of a risk area.

7.3 Information published by the BGS indicates that the site is not underlain by superficial deposits; it is directly underlain by the Soft Bed Flags (Sandstone) bedrock. This is defined by the EA as a Secondary A aquifer. Secondary A aquifers are described as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. Artificial ground is not indicated to be present on site.

7.4 BGS Groundwater data acquired by BWB indicates the site is within an area that has a limited potential for groundwater flooding.

7.5 The BGS holds historical records of borehole samples across the UK which include measurements of groundwater levels taken during the sample. These are measurements taken at one point in space and time and are not a substitute for a long-term record of groundwater levels. However, they can provide an indication of groundwater levels that could potentially be experienced.

7.6 There are no BGS borehole logs located within the site based on online records. However, there are several borehole logs available in the near vicinity of the site underlain by the same bedrock geology which may be used to indicate conditions at the site. A summary of the logs has been provided in **Table 7.1**.

Table 7.1: Summary of Borehole Logs

Borehole Log	Distance to site (m)	Depth of Excavation (m bgl)	Depth of Water Strike (m bgl)
SE11NW4/A	70	143	Not recorded
SE11NW372	120	152	52.5
SE11NW771	340	3.0	N/A
SE11NW956	170	4.1	3.0
SE11NW795	240	3.5	1.35

7.7 Given the nature of the underlying ground, and the raised position of the proposed development, the probability of groundwater exceeding ground levels is considered to be low.

7.8 No specific flood management or mitigation measures are required in relation to this source of flood risk.

Flood Risk

7.9 Based on the available data, it is concluded that the risk of flooding from groundwater to the development is very low.

Residual Flood Risk & Management

7.10 It is recommended that groundwater levels are monitored during the construction phase and that the potential to encounter shallow groundwater levels should be considered during any excavations, as well as within the design of the earthworks, foundations and below ground infrastructure. Should shallow groundwater be encountered, a groundwater specialist should be consulted, and appropriate dewatering techniques should be employed as necessary.

8. OTHER SOURCES OF FLOOD RISK

8.1 The site has been reviewed against data relating to other sources of flood risk, including the sea, canals, reservoirs and large waterbodies. The data available in the SFRA and published by the EA identity no flood risk to the site from these sources. Therefore, they have not been considered in any further detail.

9. SUMMARY AND RECOMMENDATIONS

9.1 This report demonstrates that the proposed development is at an acceptable level of flood risk. In compliance with the requirements of NPPF and the PPG, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider area subject to suitable management of surface water runoff discharging from the site. A summary of the FRA is presented within **Table 9.1.**

Table 9.1: Flood Risk Assessment Summary

Flood Source	Flood Risk to Development	Embedded Mitigation Measures	Additional Mitigation for the Management of Residual Flood Risk
The Sea	**None**	-	-
Rivers	**None**	-	-
Surface Water	**Low**	• The proposed development is removed from surface water flooding areas and flow routes. • Finished floor levels are to be raised a minimum of 150mm above immediate surrounding ground levels, and ground levels are to be profiled to encourage runoff and overland flows away from the built development and towards the nearest drainage point. • Buildings are not to be sited in topographical low points or potential overland flow pathways. • The existing private drainage network will be replaced/upgraded as part of the re-development. The new drainage infrastructure will be designed to manage flood risk up to and including the 1 in 100-year plus climate change storm.	• It is recommended that site users are encouraged to sign up to Met Office severe weather warnings so that they have advance warning of potential incidents in the area that may affect access/egress to the development. • The proposed development should be designed with exceedance in mind, and the road network and landscaped areas should be used to convey exceedance/ overland flows towards the existing drainage and away from the built development.
Sewers & Drainage Infrastructure	**Low**	• The flood risk management measures to address the surface water flood risk are also applicable to address the flood risk from sewers and drainage systems. • The existing discharge rate from the site to the receiving downstream sewer network(s) will be no greater than the existing rate, thereby preventing any adverse downstream impacts. • Any third-party drainage connections entering/passing through the site should be maintained, or appropriately diverted, so that connectivity is preserved and in a manner that does not create a flood risk.	• The recommended measures to help manage the residual risks from surface water are also applicable. • Additionally, it is recommended that an operation and maintenance plan is established to ensure that the development's drainage systems are inspected and maintained for their lifetime.
Groundwater	**Very Low**	-	• Groundwater levels are to be monitored during the construction phase and appropriate dewatering implemented where necessary.
Canals	**None**	-	-

Flood Source	Flood Risk to Development	Embedded Mitigation Measures	Additional Mitigation for the Management of Residual Flood Risk
Reservoirs and waterbodies	**None**	-	-

APPENDICES

Appendix 1: Topographical Survey

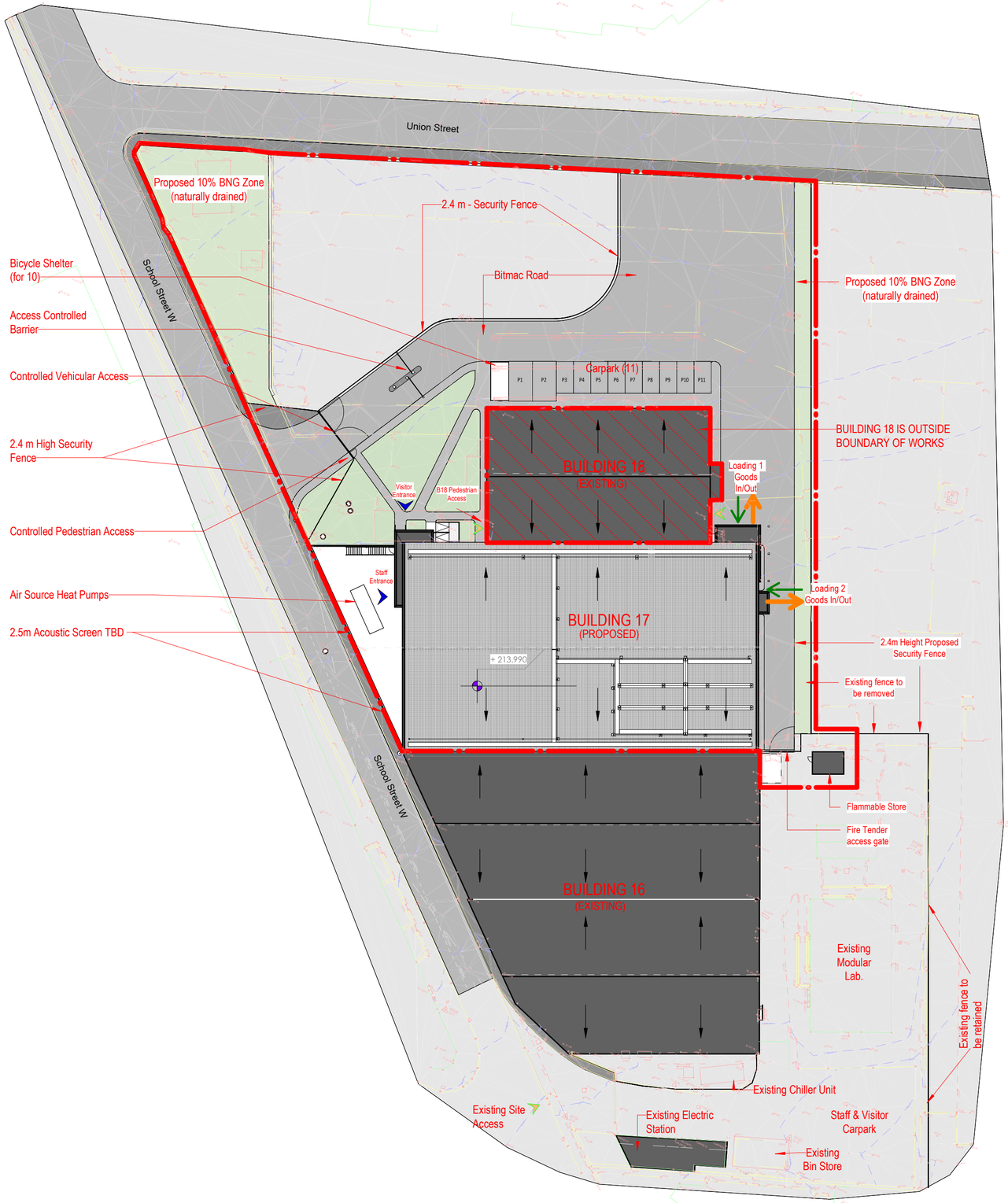






Appendix 2: Proposed Site Layout

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[v1.6]



Site Plan External Surfacing

- Boundary of Works
- Out of Boundary of Works
- Bitmac Road
- Proposed Soft Lanscaping

NOTES
All dimensions and levels to be checked on site
Any descrepancies are to be reported to the Architect before any work commences
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rev no.	rev date	rev by	description
P06	31.10.2025	SO	Updated Site Plan (main gate location, carpark, bike shelter, grassland, security fence and boundary or works updates)
P05	16.10.2025	SO	Updated Boundary of Works Layout
P04	08.10.2025	SO	Site Plan Issue for Information
P03	18.08.2025	SO	Issued for Stage 3 Report Submission

project
Huddersfield Pharmaceutical Unit

location
Huddersfiled Royal Infirmary (Acre Mill Site)

Employer

client
Calderdale & Huddersfield NHS Foundation Trust

AFL Architects
1st Floor
St Georges House
56 Peter Street
Manchester UK
M2 3NQ

t: +44(0)161 236 6263
f: +44(0)161 236 6484

w: www.afl-architects.com
e: mail@afl-uk.com

twitter.com/AFLArchitects

key plan

drawing title
Proposed Site Plan

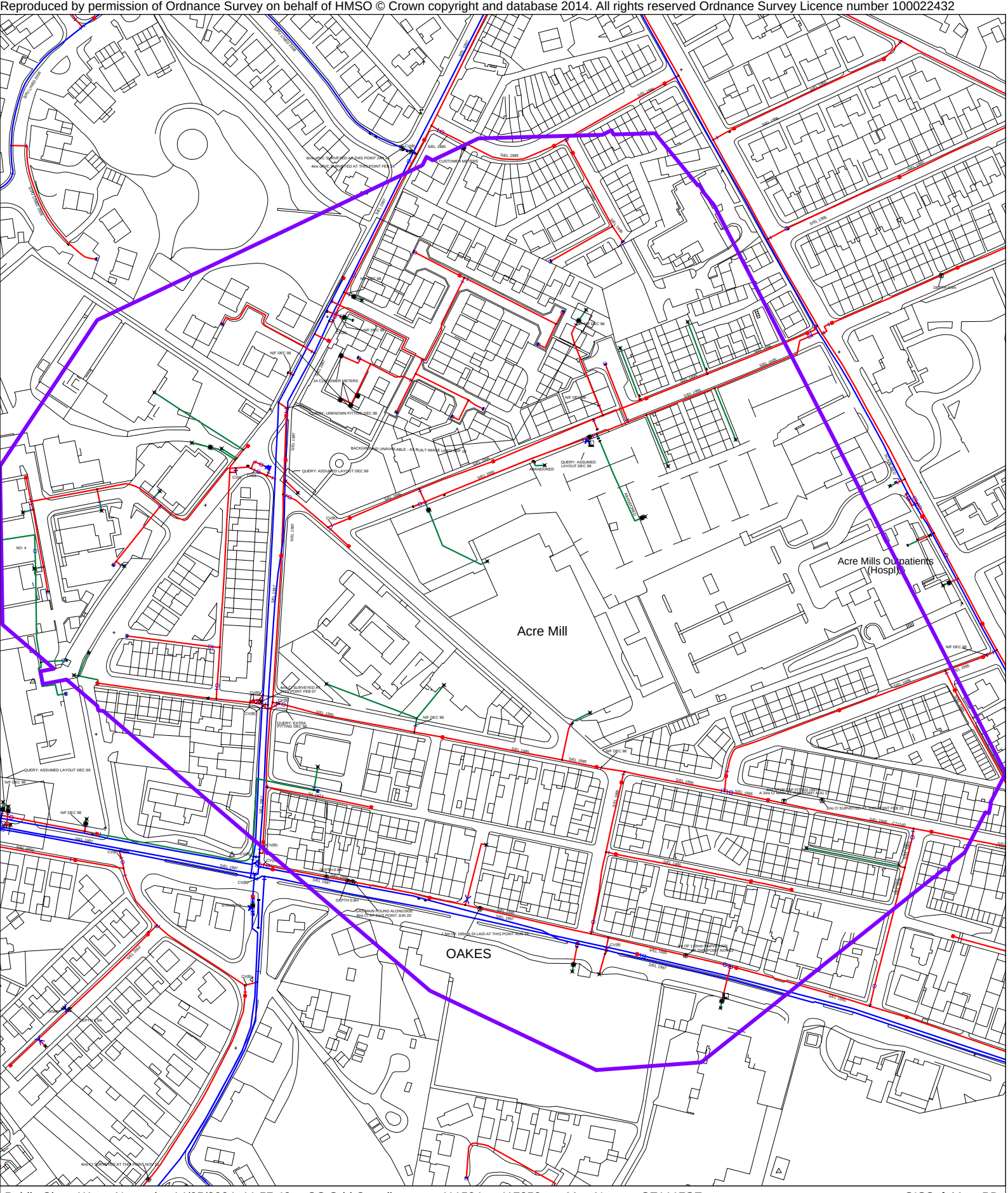
AFL job number 233148 | scale @ A2 As indicated | drawn SO | checked MM | rev date 31.10.2025

dwg purpose	status	rev
Review&Acceptance	S5	P06

bim project origin zone level type role 6-digit no.
HPU-AFL-ZZ-ZZ-DR-A-001001

Appendix 3: Yorkshire Water Asset Plans

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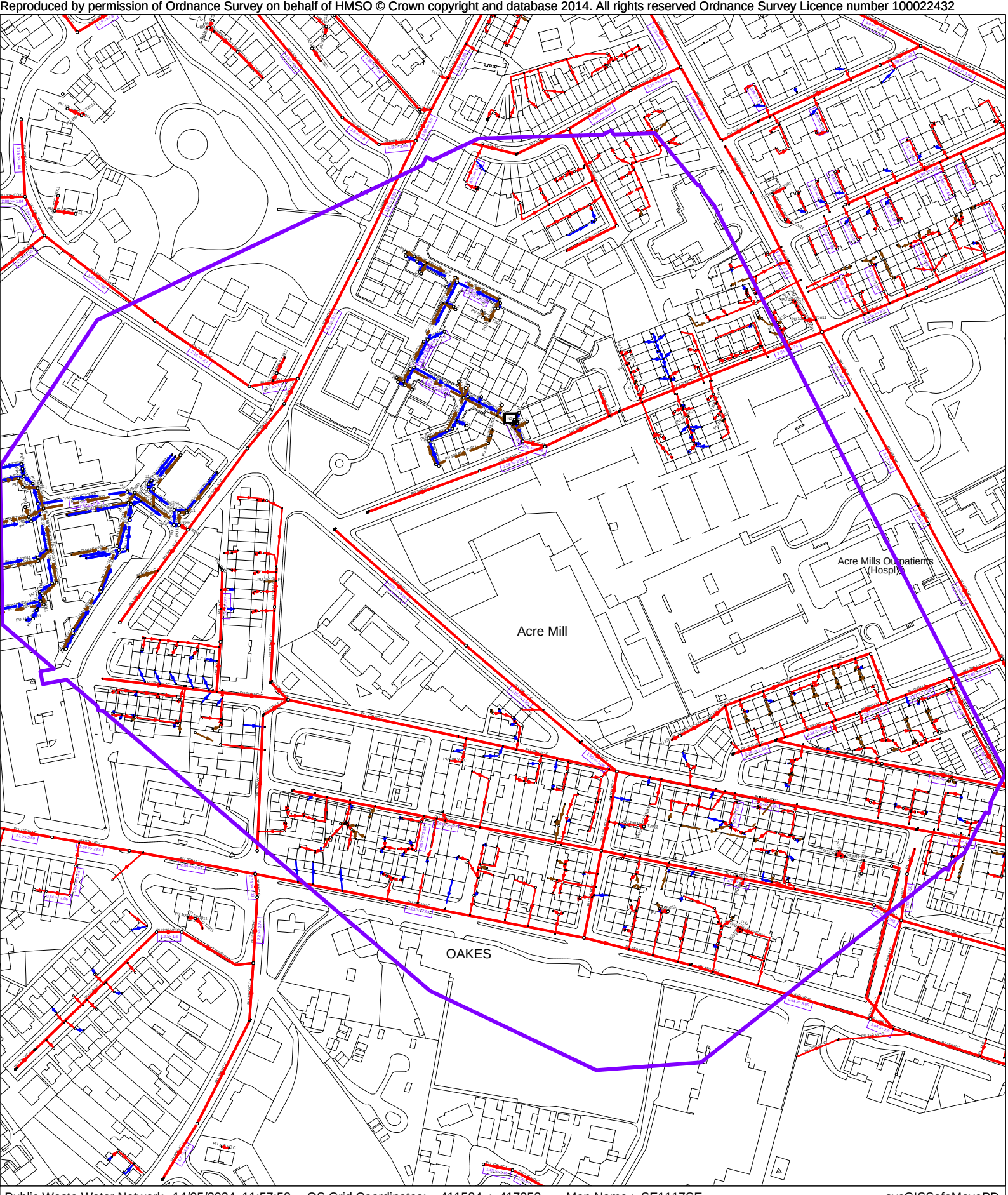


Public Clean Water Network 14/05/2024 11:57:42 OS Grid Coordinates: 411584 : 417352 Map Name : SE1117SE svcGISSafeMovePD

Registered office, Yorkshire water Services Limited. 1
Western House, Halifax Road, Bradford BD62SZ.
Registered in England and wales No. 2366682

SafeMove
A part of YorkshireWater

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Public Waste Water Network 14/05/2024 11:57:58 OS Grid Coordinates: 411584 : 417352 Map Name : SE1117SE svcGISSafeMovePD

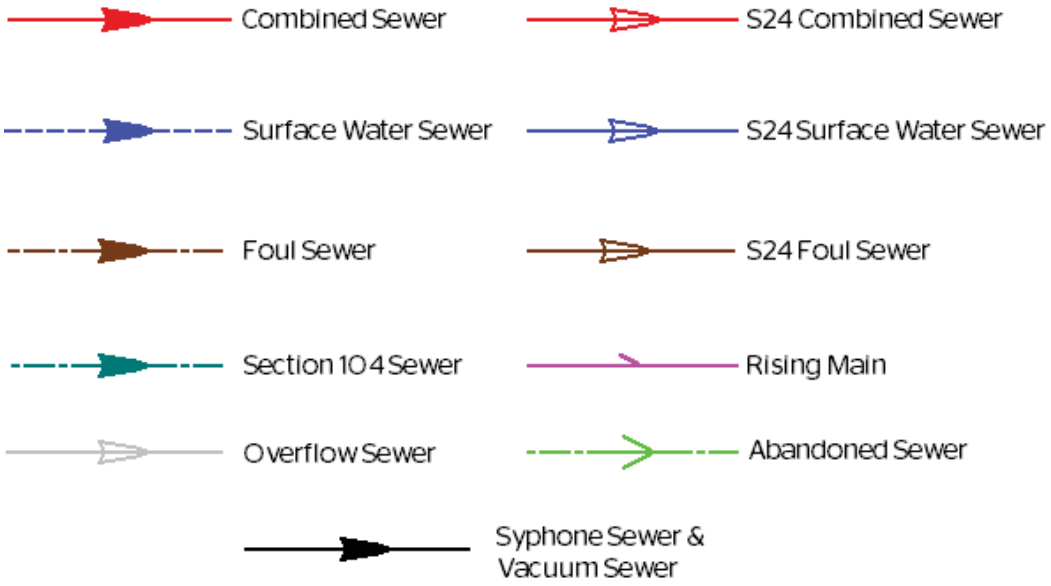
Registered office, Yorkshire water Services Limited. 1
Western House, Halifax Road, Bradford BD62SZ.
Registered in England and wales No. 2366682

SafeMove
A part of YorkshireWater

Property Identfier

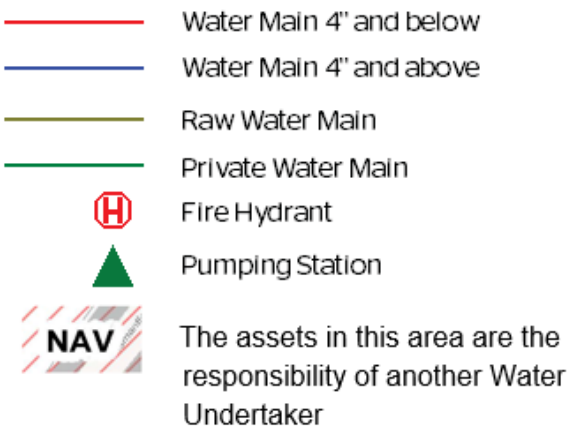


Sewer Legend



Please note that the direction of flow arrows may not always appear depending on the scale of the map.

Water Legend



YORKSHIRE WATER
PROTECTION OF MAINS AND SERVICES

1. The position of Yorkshire Water Services Ltd (YWS) apparatus shown on the existing mains record drawing(s) indicates the ***general*** position and nature of our apparatus and the accuracy of this information cannot be guaranteed. Any damage to YWS apparatus as a result of your works may have serious consequences and you will be held responsible for all costs incurred. Prior to commencing major works, the exact location of apparatus must be determined on site, if necessary by excavating trial holes. The actual position of such apparatus and that of service pipes which have not been indicated must be established on site by contacting the Customer Helpline on 0845 124 24 24 for both water and sewerage.

2. The public sewer and water network is lawfully retained in its existing position and the sewerage and water undertaker is entitled to have it remain so without any disturbance. The provisions of section 159 of the Water Industry Act 1991 provides that the undertaker may "inspect, maintain, adjust, repair or alter" the network. Those rights are given to enable the undertaker to perform its statutory duties. Any development of the land or any other action that unacceptably hindered the exercise of those rights would be unlawful. The provisions contained in Section 185 of the Water Industry Act 1991 state that where it is reasonable to do so, a person may require the water supply undertaker to alter or remove a pipe where it is necessary to enable that person to carry out a proposed change of use of the land. The provisions contained in Section 185 also require the person making the request to pay the full cost of carrying out the necessary works.

3. Ground levels over existing YWS apparatus are to be maintained. Sewers in highways will ***generally*** be laid to give 1200mm of cover from finished ground level working to kerb races, other permanent identification of the limits of the road or to an agreed line and level. Substantial increases or decreases to this 1200mm depth of cover will result in the sewer being re-laid at your expense. Water mains and services will ***generally*** be laid with a minimum of 750mm depth of cover however some mains and services usually those installed over 50 years ago may have less ground cover.

4. If surface levels are to be decreased / increased significantly the effects on existing water supply apparatus will be carefully considered and if any alterations are necessary, the costs of the alterations will be recharged to you in full. Outlets on fire hydrants must be no more than 300mm below the new levels and all surface boxes must be adjusted as part of the scheme.

5. To enable future repair works to be carried out without hindrance; any pipe, cable, duct, etc. installed parallel to a water main or service pipe should not be installed directly over or within 300mm of a water main or service pipe or 1000mm of a waste water asset. Where a pipe, cable, duct, etc. crosses a main or service it should preferably cross perpendicular or at an angle of no less than 45o and with a minimum clearance of 150mm. These requirements apply to activities within an existing highway and are relevant to the installation of pipes, cables, ducts, etc. up to and including 250mm in diameter *(see illustration below)*. Necessary protection measures for installations greater than 250mm in diameter and/or in private land will need to be agreed on an individual basis. Installations within a new development site must comply with the National Joint Utilities Group publication Volume 2: NJUG Guidelines On The Positioning Of Underground Utilities Apparatus For New Development Sites.

6. All excavation works near to YW apparatus should be by hand digging only.

7. Backfilling with a suitable material to a minimum 300mm above YW apparatus is required.

8. Adequate support must be provided where any works pass under YW apparatus.

9. Jointing chambers, lighting columns and other structures must be installed in such a way that future repair or maintenance works to YW apparatus will not be hindered.

10. Apparatus such as; railings, sign posts, etc. must not be placed in such a way that they prevent access to or full operation of controlling valves, hydrants or similar apparatus. YWS surface boxes must not be covered or buried. Any adjustment, alteration or replacement of manhole covers must be agreed on site prior to the commencement of the works with a YWS Inspector who may be contacted via our Call Centre on 0845 124 24 24.

11. Explosives shall not be used within 100 metres of any Yorkshire Water Services apparatus or installations.

12. Vibrating plant should not be used directly over any apparatus. Movement or operation by vehicles or heavy plant is not to be permitted in the immediate vicinity of YWS plant or apparatus unless there has been prior consultation and, if necessary, adequate protection provided without cost to YWS.

13. ***Under no circumstances*** should thrust boring or similar trenchless techniques commence until the actual position of the Company's mains/services along the proposed route have been confirmed by trial holes.

14. Any alterations to the highway should be notified following the procedures outlined in the New Road and Street Works Act 1991 Code of Practice; Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works).

15. You will be held responsible for any damage or loss to YWS apparatus during and after completion of work, caused by yourselves, your servant or agent. Any damage caused or observed to YWS plant or apparatus should be immediately reported to YWS. Should YW incur any costs as a result of non-compliance with the above, all costs will be rechargeable in full.

16. You should ensure that nothing is done on the site to prejudice the safety or operation of YWS employees, plant or apparatus.

17. In accordance with the New Roads and Street Works Act 1991, Chapter 22, Part 3, Section 80. The location of any identified YW asset "*which is not marked, or is wrongly marked, on the records made available*" should be communicated back to Yorkshire Water. The location of the apparatus should be identified on copies of the supplied plans which should be returned to Yorkshire Water (Asset Records Team) with photographic supporting evidence where possible.

18. The Government has decided that responsibility for private sewers serving two or more properties and lateral drains (the section of pipe beyond the boundary of a single property, connecting it to the public sewer) will be transferred to the water companies on Oct 1 2011.

Private pumping stations will also transfer during the period 1 October 2011 – 1 Oct 2016. Records of these assets may not yet be shown on the existing mains record drawing(s). If you encounter any of these assets you must inform Yorkshire Water Services Ltd (YWS).

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20. This information is for guidance only and the position and depth of any YW apparatus is approximate only. Likewise, the nature and condition of any YW apparatus cannot be guaranteed. YW has no responsibility for recording the locations of privately owned apparatus. As of 1 October 2011, there may be some lateral drains and/or public sewers which are not documented on YW records but may still be present. For the avoidance of doubt, this information is not a substitute for appropriate professional and/or legal advice. YW accepts no responsibility for any inaccuracy or omissions in this information. The actual position of YW apparatus must be determined on site by excavating trail holes by hand. YW requires a minimum of two working days' written notice of the intention to excavate any trial holes before any excavation can be undertaken. If there are any queries in this respect please contact Yorkshire Water on 0845 124 24 24.

Appendix 4: Utility Survey

PAS 128: 2014 QUALITY LEVEL GUIDE

QL-LEVEL	DESCRIPTION	QCI	QL-LEVEL	DESCRIPTION
QL-D	Service positions taken from records.	none	QL-B2	Accurate in vertical & plan* using only one geophysical technique
QL-C	Location inferred by geophysical technology	maybe	QL-B1	Accurate in vertical & plan* using more than one geophysical technique
QL-B4	Location inferred by geophysical technology and at least one trial excavation*	YES	QL-A	Precisely surveyed, verified and recorded*
QL-B3	Location inferred by geophysical technique and with trace wire or sonde*			

DETECTION METHOD
IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B

DRAINAGE SURVEY
All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber sizes/type and service data recorded from ground level. All connections from DPs, Gullies, Drains, VP's, RE's and lamp holes have been proven wherever possible using audible connections (AC) and/or sonde instrumentation where applicable. Where these methods have proved unsuccessful then assumed (AR) straight line connections will be shown.

CCTV DRAINAGE SURVEY
All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber sizes/type and service data recorded from ground level. Pipework has been traced, accessed and collected for post processing. Drainage layout, including manhole covers not located by topographical survey, may be taken from CCTV chainage and will be shown as indicative only.

Electricity
Elec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

British Telecoms
BT cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Due to current laws and legislation protecting all BT apparatus, cabling can only be located remotely. We therefore compare all our telecom findings against record information to produce the final service layout. In some instances, where high amount of cable ducts are present, we may only be able to identify a linear centre peak signal rather than identifying all the individual duct positions. For further information regarding Telecoms apparatus, please contact Openreach directly.

Cable TV &
CTV and/or Com cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Fibre Optic
FO cables will have been predominantly located using GPR methodology. This is due to the materials used within fibre optic cabling. In some rare instances, tracer cabling or conductible non fibre optic cabling will be present within some or all ducting. When this is the case, both EML and GPR methodology will be combined to identify service network and achieve greater quality levels.

Lighting, Traffic Signal & Security Cables
LC, TS and/or Sec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Gas & Water Inc. Fuel Pipes and Hot Water Pipes
GM/GS and/or VM/VS pipe work will have been attempted and located using both EML & GPR methodology with electronically derived depths shown for the former and depths to crown levels shown for the latter.
When the Gas/Water pipe work is constructed using conductible materials, then we are able to to employ multiple geophysical techniques to identify service network and achieve greater quality levels. When a non conductible material is used, GPR methodology will be employed to locate and plot the final service layout.

Ground Penetrating Radar
GPR methodology is used to identify and locate all non metallic, non conductible piping and cabling. We also employ GPR to obtain a greater accuracy levels on EML located services. The GPR has a greater success rate on pipe or service diameter upward of Ø63mm.Ø63mm, as size increments increase, so does the chance of detection. The GPR can produces varying results and as such, wouldn't be used as an independent utility surveying instrument.

Unidentified Traces
All UiTs will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Every effort has been made to identify the service but in this instance, is not achievable. We recommend excavation work to determine identity and depth where applicable.

Scarring (QL-C)
Scarring has been identified on site with a potential of an undetectable service present.

Assumed Routes & Taken from Records (QL-B4/D)
Assumed routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site. The surveyor will attempt to locate various risers/cs/valves/meters (service evidence) etc. around site area to successfully determine an assumed route between these points. If there is little evidence on site but they believe a service is still present, then a common sense approach to an assumed route shall be employed.

Taken from records (TFR) are service routes that are taken from STAT record plans or previous survey information and overlaid onto our drawings.

SURVEY RECOMMENDATIONS

To undertake a CCTV drainage survey of the entire site area to establish a more comprehensive drainage network, and asset condition of the pipework.

The sewers with high levels of silt or blockages to be jetted to extend the CCTV drainage survey, if any of these areas are deemed critical or of high importance.

Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out within critical areas for verification and to eliminate the possibility of undetectable services present.

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UTILITIES & UNDERGROUND INVESTIGATIONS

ABBREVIATIONS & SYMBOLS

1D.SC	1 Duct S Cables	DCr	Depth To Crown	RBC	Rectangular Brick Chamber
Ø	Diameter	DI	Depth To Invert	RCC	Rectangular Conc Chamber
AC	Audible Connection	DS	Depth To Silt	RE	Rodding Eye
AG	Above Ground	DTB	Depth To Base	SA	Survey Abandoned
AR	Assumed Route	DTW	Depth To Water	SL	Silt Level
BL	Bees Level	DTS	Depth To Surcharge	SuL	Surcharge Level
CB	Concrete Benching	EBD	External Backdrop	TFR	Taken From Records
CBC	Circular Brick Chamber	EOT	End Of Trace →	UTC	Unable To CCTV
CCC	Circular Conc Chamber	IBD	Internal Backdrop	UTDO	Unable To Determine Outlet
CI	Cast Iron	Inv	Invert Level	UTE	Unable To Excavate
CPC	Cast Plated Chamber	Ovh	Overhead	UTS	Unable To Survey
CVL	Crown Level	PDR	Prior Depth Response	UTT	Unable To Trace
CU	Carries Utilities	RB ■	Red Bend	WL	Water Level

BT CABLE(S)
OVERHEAD BT CABLE(S)
COMMUNICATIONS CABLE(S)
CABLE TV CABLE(S)
EMPTY DUCT
ELECTRIC CABLE(S)
OVERHEAD ELECTRIC CABLE(S)
FIBREOPTIC CABLE(S)
FUEL PIPE(S)
GAS MAIN
GAS SERVICE
GROUND PENETRATING RADAR (GPR) TRACE
HOT WATER PIPE
LOW VOLTAGE CIRCUIT
OIL PIPELINE
VISIBLE SCARRING
SECURITY CABLING
TELECOM CABLE(S)
TRAFFIC CABLE(S)
UNIDENTIFIED SERVICE
UNIDENTIFIED TRACE
WATER MAIN
WATER SERVICE
WATER TANK/TOWER
COMBINED WATER RISING MAIN
EFFLUENT WATER
FOUL SEWER
FOUL WATER RISING MAIN
SURFACE WATER
SURFACE WATER SEWER
SURFACE WATER RISING MAIN
INVESTIGATION EXTENTS

Note: UTILITIES COMMENT BOX (GENERAL NOTES)
DEPTH TO SERVICE

AUDIBLE CONNECTION
SERVICE ABOVE GROUND
CAMERA UNDER WATER
SERVICE OVERHEAD

DRAWING NOTES

All below ground details shown have been identified from above ground without excavation. Survey Solution use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate for underground utilities, services and features. Results using these methods are not infallible and we recommend trial excavations are carried out for verification of positions, depths and identification.

Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should still be employed during design and construction processes.

Certain types of services such as plastic or concrete pipes, some conduit and ducting where direct access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed . Therefore Survey Solutions cannot be held responsible for any features annotated as Taken from records (TFR).

Depths obtained using electro-magnetic or GPR are effected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature, GPR depths to the top of a feature and drainage depth shown to inverts, unless otherwise indicated.

Drainage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records when available.

All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated.

Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey.

Survey Solutions accept no responsibility for the completeness or accuracy of either the topographical survey or base mapping on this project.

All critical dimensions and measurements should be checked and verified with any errors or discrepancies notified to Survey Solutions immediately. The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

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

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Do not scale from this drawing.

GENERAL SYNOPSIS

This survey has been carried out in accordance with PAS 128: 2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specification for Measured Surveys of Land, Buildings and Utilities. Our survey extents have been agreed and confirmed with formal acceptance of 63286 from AFL Architects. If you have any queries regarding the final services layout, please may we ask you to carefully read all the information within this title block in its entirety before continuing to do so.

TOPOGRAPHICAL/ DWG DRAWING INFORMATION
TOPOGRAPHICAL SURVEY DATE 04/2024

SURVEY TYPE	DESCRIPTION	EFFECT ON SURVEY RESULTS
TOPO	Survey Solutions	
OUTDATED		
OS		
NTS		

GENERAL SITE CONDITIONS
AVERAGE

ADDITIONAL INFORMATION	EFFECT ON SURVEY RESULTS

DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D) PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B COMMISSIONED: YES

UTILITY	AVAILABILITY	UTILITY COMPANY PROVIDER
SEWER	PUBLIC	YORKSHIRE WATER
WATER MAIN	PUBLIC	YORKSHIRE WATER
GAS MAIN	PUBLIC	NORTHERN GAS NETWORKS
TELECOM	PUBLIC	BRITISH TELECOMS
CABLE TV	PUBLIC	VIRGIN MEDIA
ELECTRICITY	PUBLIC	NORTHERN POWERGRID
OIL PIPES	NO	NA
OTHER	PUBLIC	CITYFIBRE

REV	DESCRIPTION	DRAWN	CHECKED	APPR	SURVEY DATE

SURVEY SOLUTIONS
LAND SURVEYING
BUILDING SURVEYING
UNDERGROUND SURVEYING
SITE ENGINEERING
MONITORING
0845 040 5969
survey-solutions.co.uk
IPSWICH BEDFORD COVENTRY GLASGOW LONDON MANCHESTER NORWICH NOTTINGHAM TRURO

PROJECT TITLE
NHS ACRE MILL,
SCHOOL STREET WEST, HUDDERSFIELD, HD3 3EN.

DRAWING DETAIL
UTILITIES AND DRAINAGE SURVEY.
SHEET 1 OF 1

CLIENT				SCALE
AFL ARCHITECTS				1:200
SURVEYOR	SURVEY DATE	CHECKED BY	APPROVED BY	DWG STATUS
OTM	07/05/2024	JAD	JTM	FINAL
DRAWING NUMBER			REVISION	ISSUE DATE
63286NGUG-01				16/05/2024

RICS ices THE SURVEY ASSOCIATION CHAS SAFE CONTRACTOR QMS ISO 14001 : 2015 REGISTERED

Original Sheet Size A0H

Appendix 5: Curtins Drainage Survey

NOTES:

KEY

EXISTING MANHOLE

EXISTING DRAIN

DIRECTION OF FLOW

MAIN DRAINS

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Rev:	Description:	Date:	By:	Chkd:

curtins consulting
Curtins Consulting Ltd
Woodside Mews, Clayton Wood Close, Leeds, LS16 6QE
t: 0113 274 8509 f: 0113 274 8496
e: leeds@curtins.com www.curtins.com
Structures • Civils • Environmental • Infrastructure • Urban Regeneration • Health & Safety • Dispute Resolution
Birmingham • Bristol • Cardiff • Douglas • Edinburgh • Kendal • Leeds • Liverpool • London • Manchester • Nottingham

Status: PLANNING

Project: ACRE MILLS HUDDERSFIELD

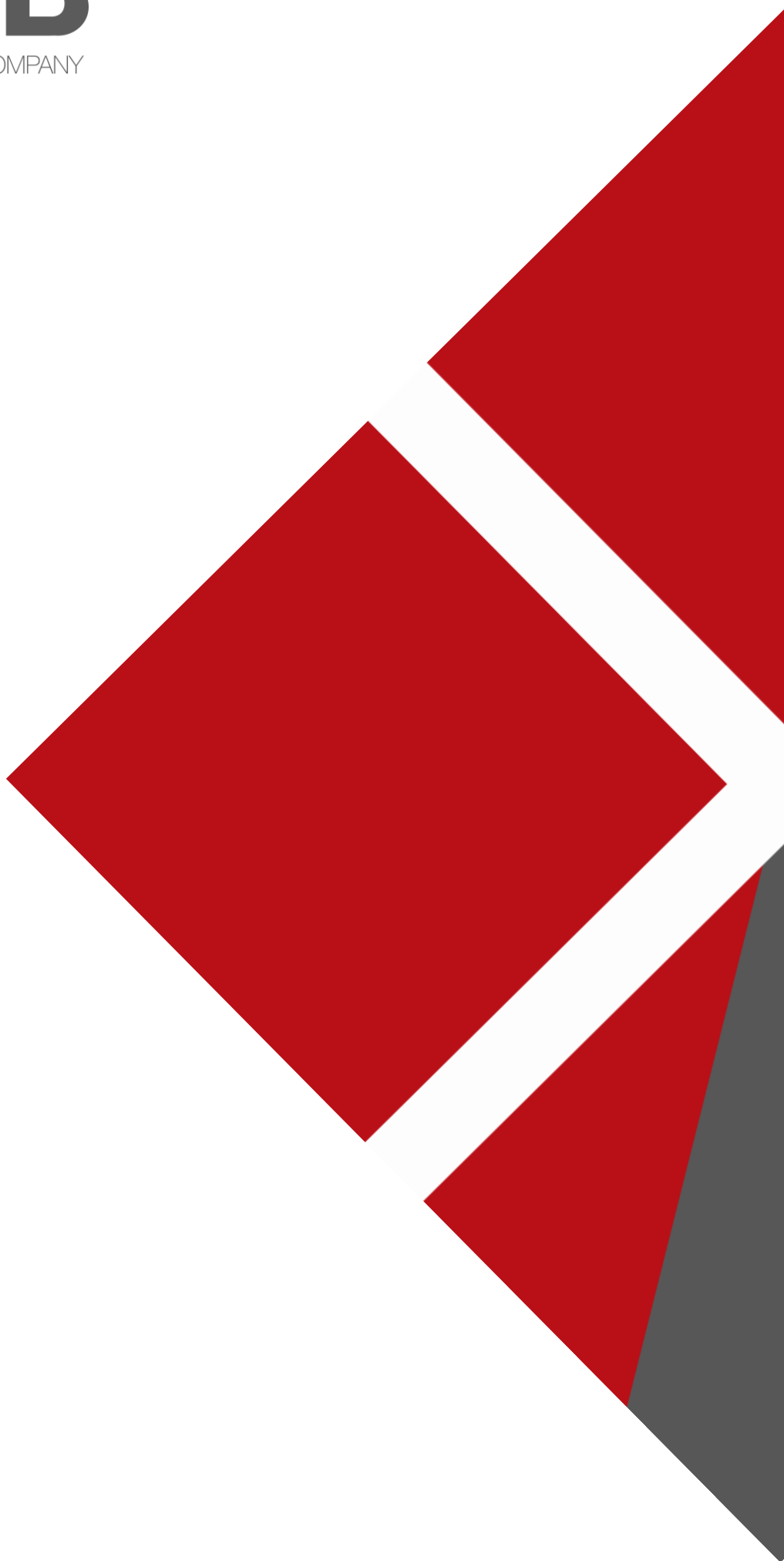
Drg Title: EXISTING DRAINAGE LAYOUT

Scale:	Size:	First Issue:	Drawn:	Checked:
1:500	A1	Oct 2007	EJN	SB

Drg No: 60038/SKD01 Rev: /

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