AVAL CONSULTING GROUP.
CIVIL, ENVIRONMENT & STRUCTURAL ENGINEERS

Level 2 Flood Risk Assessment

Street Car Park (Formerly Land Adjacent to Teas Me Café), 6 Albert St, Huddersfield, HD1 3PR

Mohammed Khan

July 2025

Project Information

Title	Level 2 Flood Risk Assessment
Job Code	94207
Sector	Flood Risk
Report Type	FRA
Client	Mohammed Khan
Revision	A
Status	Final
Date of Issue	24 July 2025

Revision History

Revision	Date	Author	Reviewer	Approver	Status
A	26 June 2025	DL	PR	WR	Draft
A	24 July 2025	DL	PR	WR	Final

Disclaimer

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1. Executive Summary

1.1 Aval Consulting Group Limited has been commissioned by Mohammed Khan ('the client') to provide a Flood Risk Assessment in relation to a planning application at Street Car Park (Formerly Land Adjacent to Teas Me Café), 6 Albert St, Huddersfield, HD1 3PR.

1.2 The proposal involves the construction of a double-storey commercial unit. The site is within Flood Zone 3a and is considered at high risk of flooding from both fluvial and surface water sources. The proposed use is classed as 'Less Vulnerable' under the National Planning Policy Framework (NPPF), and therefore an Exception Test is not required.

1.3 The proposed development was part of a larger site which was analysed within an FRA provided by AVAL Ref: (92531_FRA_RevA_Final).

1.4 No topographical or CCTV survey has been provided for this report.

1.5 The proposed drainage strategy will connect surface water runoff from the development to the existing public combined sewer, subject to approval by Kirklees Council Lead Local Flood Authority (LLFA) and Yorkshire Water. Sustainable drainage features are not proposed at this stage.

1.6 The proposed drainage is sustainable and will reduce the flow rate from the site. This will reduce the risk of off-site flooding for other properties and the green/blue roofs will contribute to the overall network performance in the area. The proposed surface water will be discharged into the existing public sewers.

1.7 The proposed foul water will be discharged into the existing combined drainage public sewer located along Albert Street.

1.8 The proposed development will also include information on surface water management and SuDS for the proposed development in order to reduce surface water discharge.

2. Introduction

Overview

2.1 AVAL Consulting Group Limited (ACL) has been commissioned by the client to produce a Flood Risk Assessment at Albert Street Car Park (Formerly Land Adjacent to Teas Me Café), 6 Albert St, Huddersfield, HD1 3PR. This is to accompany the planning application to the Local Authority for consent to undertake the proposed work.

2.2 This report will state the Flood Zone the development is located in and will analyse the risks of flooding at the site. Mitigation measures will also be discussed.

2.3 The existing and proposed development drawings are presented in Appendix A.

Site Location and Details

2.4 Figure 2.1 shows the proposed site location. The site is bounded by Albert Street to the south, Independent electrical services building to the west, Logwood Street to the east and Lockwood Road to the north.

Figure 2.1: Proposed Site Location (Source: Client)

Proposed Development and Vulnerability Classification

2.5 The proposed development comprises a double-storey commercial unit. As per the NPPF, this falls under the 'Less Vulnerable' classification.

2.6 As per the National Planning Policy Framework, the proposed development will be under the '**Less Vulnerable**' classification.

3. Relevant Standards and Policies

3.1 This section summarises all legislation, policy, statutory and non-statutory guidelines relevant to the proposed development. That also includes all the latest regional and local planning policy guidance specifically applicable to the proposed development.

The National Planning Policy Framework (NPPF)

3.2 The latest National Planning Policy Framework (NPPF) was published on 7th February 2025. The NPPF is supported by technical guidance set out within the Planning Practice Guidance for Flood Risk and Drainage, including the classification of the site vulnerability and the requirement do an Exception Test in relation to the Flood Zone and Vulnerability Classification.

3.3 One of the key aims of the NPPF is to ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding and to direct development away from areas of highest risk.

3.4 It advises that where new development is necessary in areas of higher risk, flood mitigation resilience and resistance measures should be incorporated which can include but not limited to a higher finished floor level, installing flood boards and moving electrical points above. The developments upstream of the proposed development should also be taken into the consideration of flood risk.

3.5 The NPPF's flood risk advice is all set out in Chapter 14 of the Framework document, meeting the challenge of climate change, flooding and coastal change.

Flood and Water Management Act 2010

3.6 The Flood and Water Management Act 2010 received Royal Assent on 8th April 2010. This Act provides duties on the Environment Agency, Local Authorities, Developers and other bodies to manage flood risks. The Act has significant planning and design implications for Developers.

3.7 It should be noted that these standards and procedures are being reviewed by the respective regulatory bodies and third parties against the requirements imposed by the Flood and Water Management Act 2010. The advice and recommendations provided may change when associated regulations have been issued in order to implement the full scope of the Act.

3.8 Kirklees Council Flood Risk Management Strategy

The Kirklees Council Flood Risk Management Strategy, which highlights the flood risk management roles in Huddersfield, objectives of managing local flood risk, measures supporting the Kirklees Council Local Flood Risk Management Strategy, Local Flood Risk Management Strategy Action Plan, as well as states any historic flooding which can help in the analysis of a proposed development. This will be used in order to progress through this report.

4. Assessment of Flood Risk

Flood Zone Areas

4.1 The proposed development is located within a Flood Zone 3a area as per the Environment Agency's Flood Zone Map and the local authority's SFRA. Figure 4.1 shows the proposed development in Flood Zone 2 and 3 using QGIS layers from the Environment Agency.

Figure 4.1: Flood Zone Area (Source: QGIS Layer from the EA)

River/Sea Flooding and Surface Water Flooding Risks

4.2 The site is at a high risk of flooding from both fluvial (river/sea) and surface water sources, as indicated by Environment Agency mapping in Figures 4.2 and 4.3. These risks remain high when accounting for future climate change, as shown in Figures 4.4 and 4.5.

4.3 Detailed flood depth maps for both fluvial and surface water flooding, under present and future climate scenarios, are provided in Appendix C. Summary findings indicate that the site is subject to medium risk of river/sea flooding with flood depths reaching up to 0.6m under current conditions. With climate change, this increases to medium risk with depths up to 0.9m. For surface water, the site is currently at medium risk for flood depths up to 0.3m, which increases to high risk at the same depth under climate change scenarios.

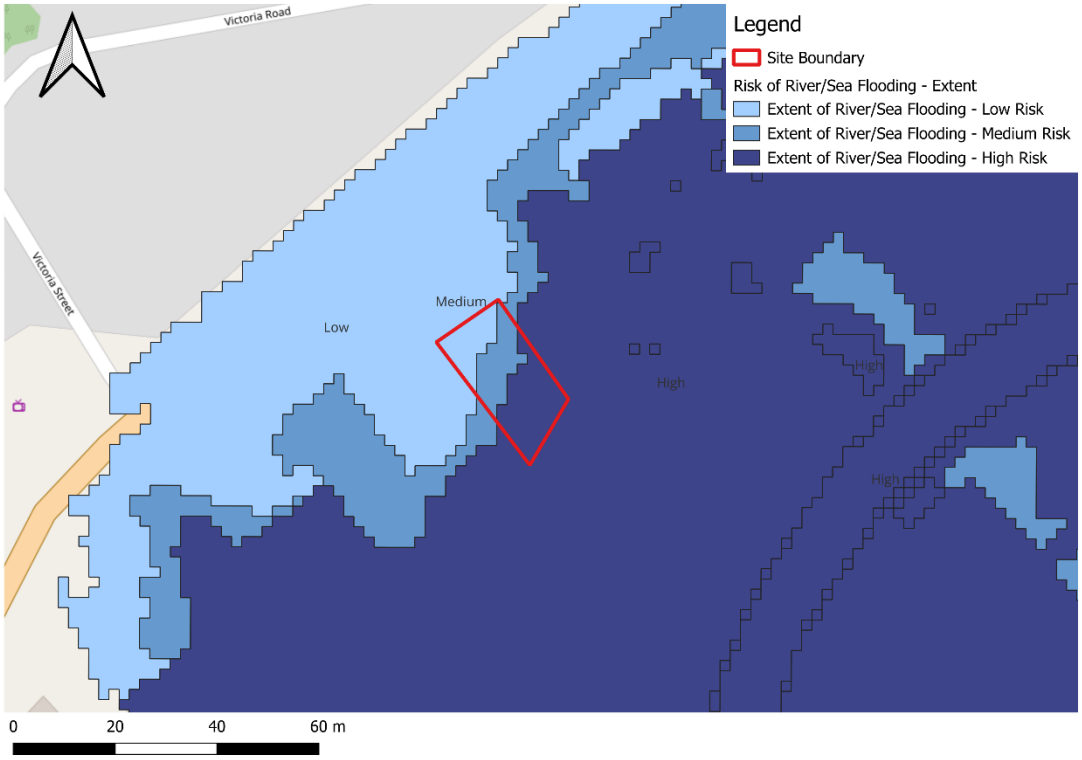


Figure 4.2: Extent of Flooding from River or the Seas (Source: QGIS Layer from the EA)

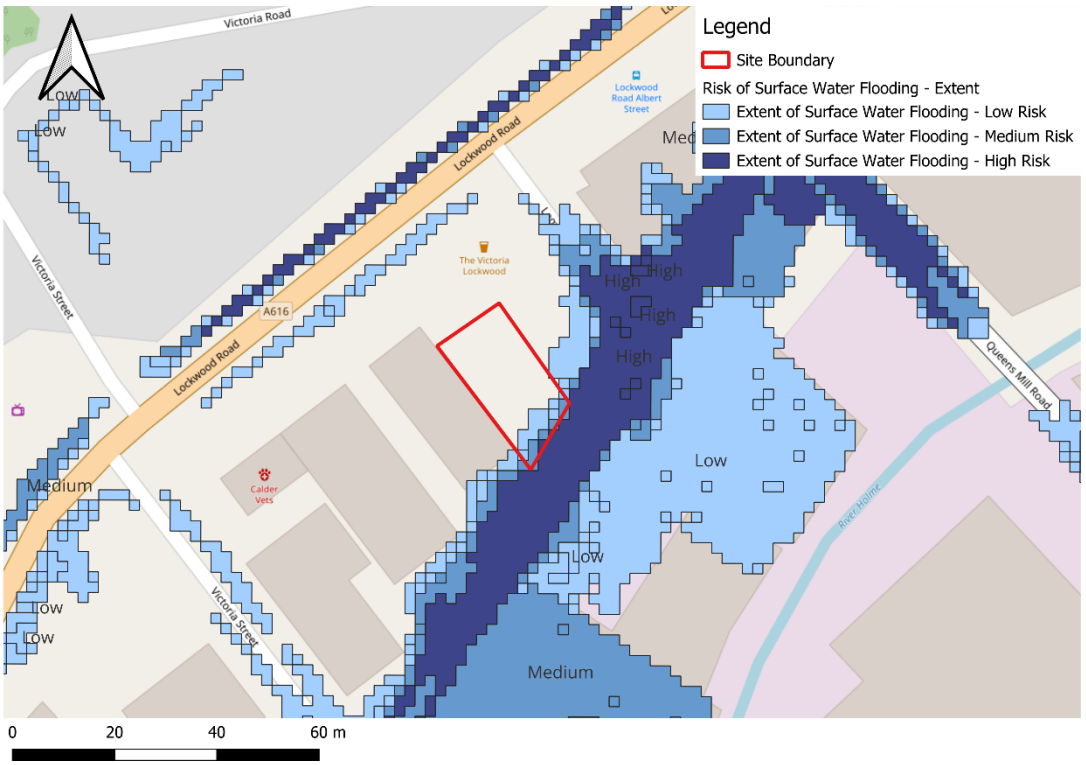


Figure 4.3: Extent of Flooding from Surface Water (Source: QGIS Layer from the EA)

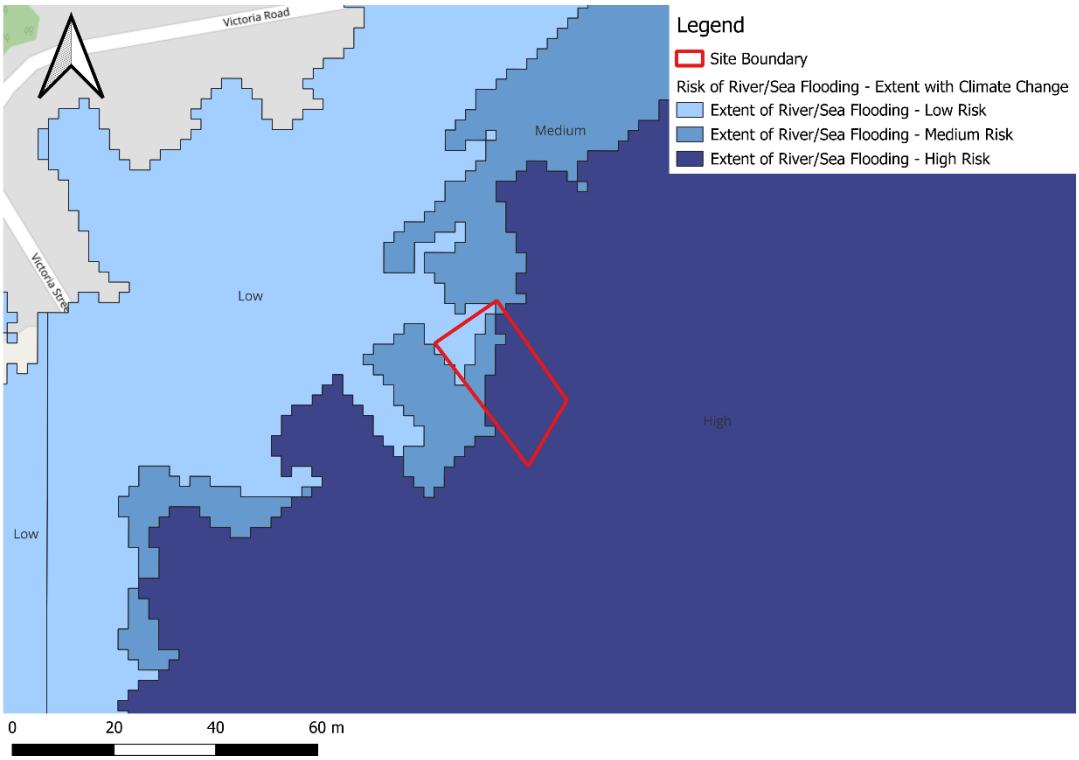


Figure 4.4: Extent of Flooding from River or the Seas with Climate Change (Source: QGIS Layer from the EA)

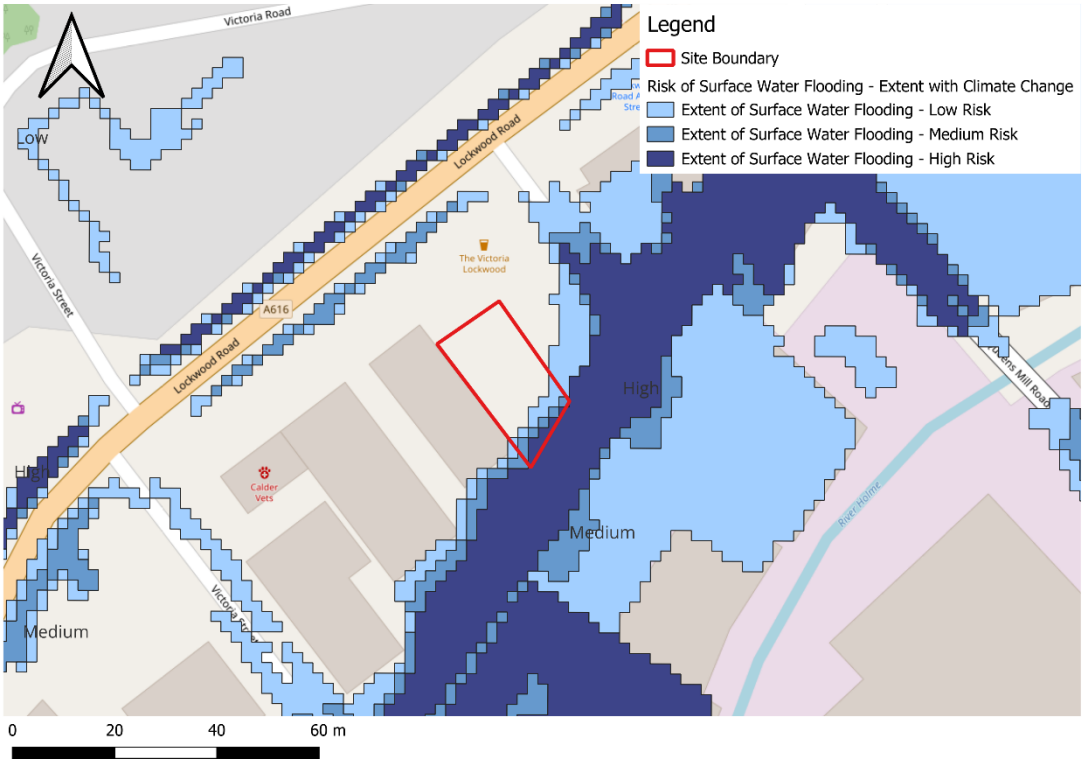


Figure 4.5: Extent of Flooding from Surface Water with Climate Change (Source: QGIS Layer from the EA)

Nearest Watercourse

4.4 The River Holme is located approximately 65m south-east from the site.

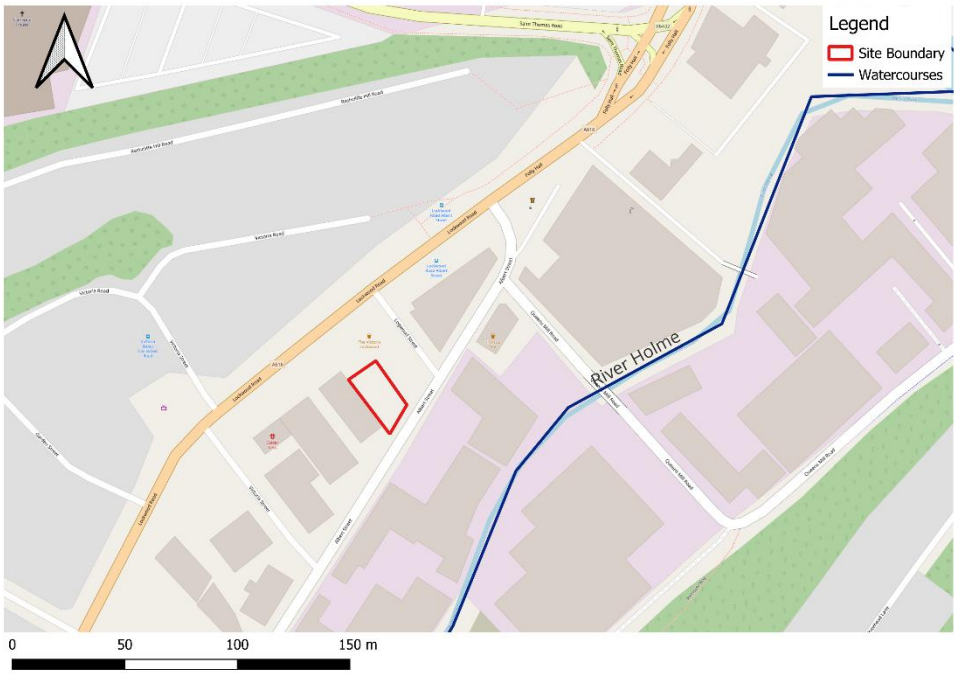


Figure 4.7: Nearest Watercourses (Source: QGIS Layer)

Geology, Hydrology and Hydro-Geology

4.5 The BGS Bedrock Geology provides details of the bedrock geology within the site. Figure 4.8 shows the bedrock geology within the site, which is identified to be Pennine Lower Measures Formation – Mudstone, siltstone and sandstone. And superficial deposits of Alluvium – Clay, silt, sand and gravel.

4.6 The Cranfield Soil and AgriFood Institute (CSAI), incorporating the National Soil Resources Institute (NSRI,) at Cranfield University maintains soil reports and maps for England and Wales. The Soilscapes dataset map, shown in Figure 4.9 indicates that soils in the area are 'Loamy soils with naturally high groundwater. These soils are identified as being 'naturally wet'.

4.7 No ground investigations were provided as part of the report.

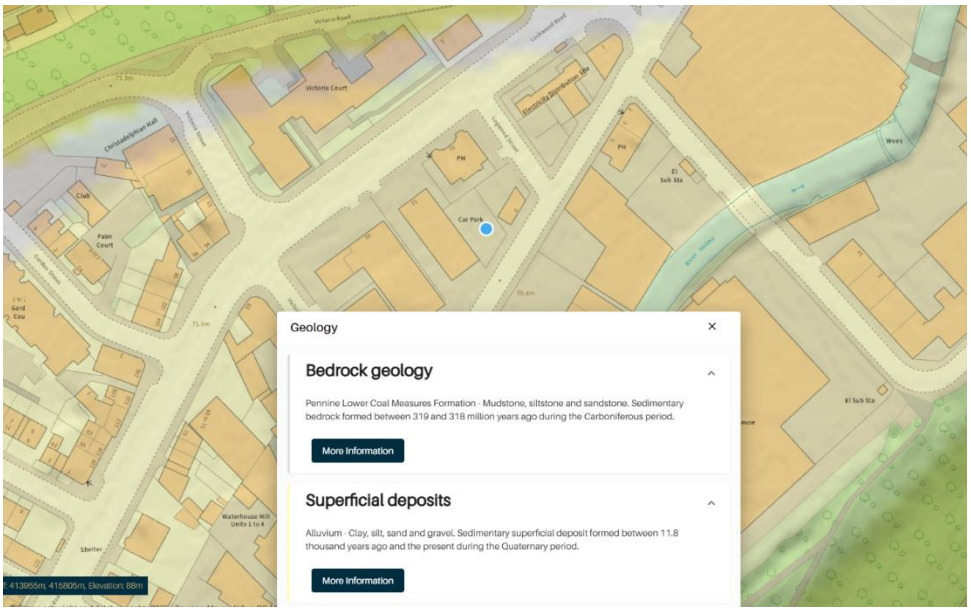


Figure 4.8: BGS Bedrock Geology Map (Source: BGS Geology Map Viewer)

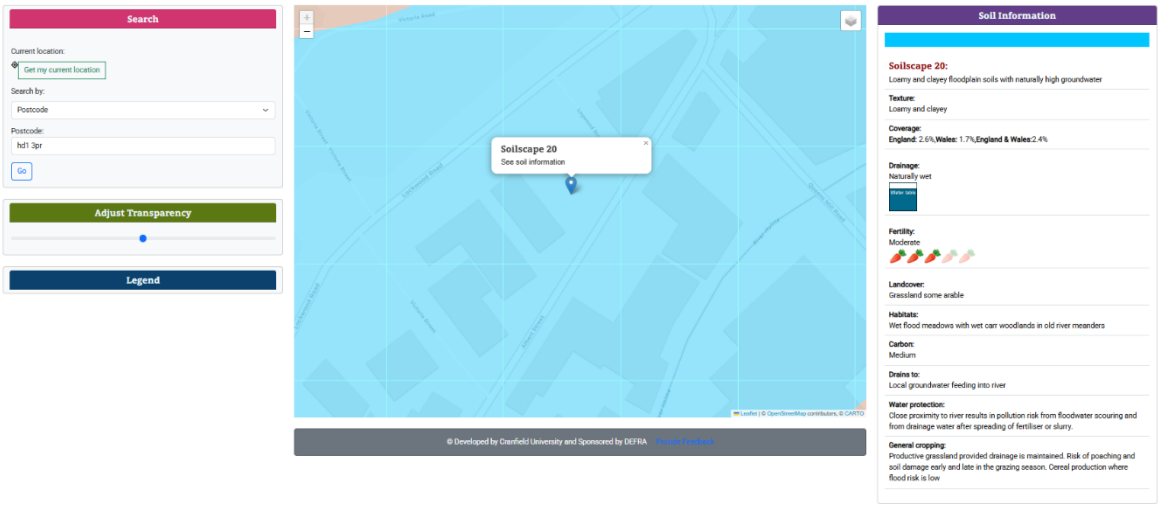


Figure 4.9: Soilscapes Map (Source: Soilscapes)

Other Sources of Flooding Risks and Historical Flooding

4.8 The Environment Agency's Aquifer Designation Map dataset held on Natural England's MAGIC website provides authoritative geographic information about the natural environments across Great Britain. An inspection of the map shows that the site does not lie within an area of aquifer designation, however the site lies within an area of medium to high groundwater vulnerability. This can be seen in Figure 4.10.

4.9 The Environment Agency recorded flood outline map indicates the site has recorded previous flooding. This can be seen in Figure 4.11.

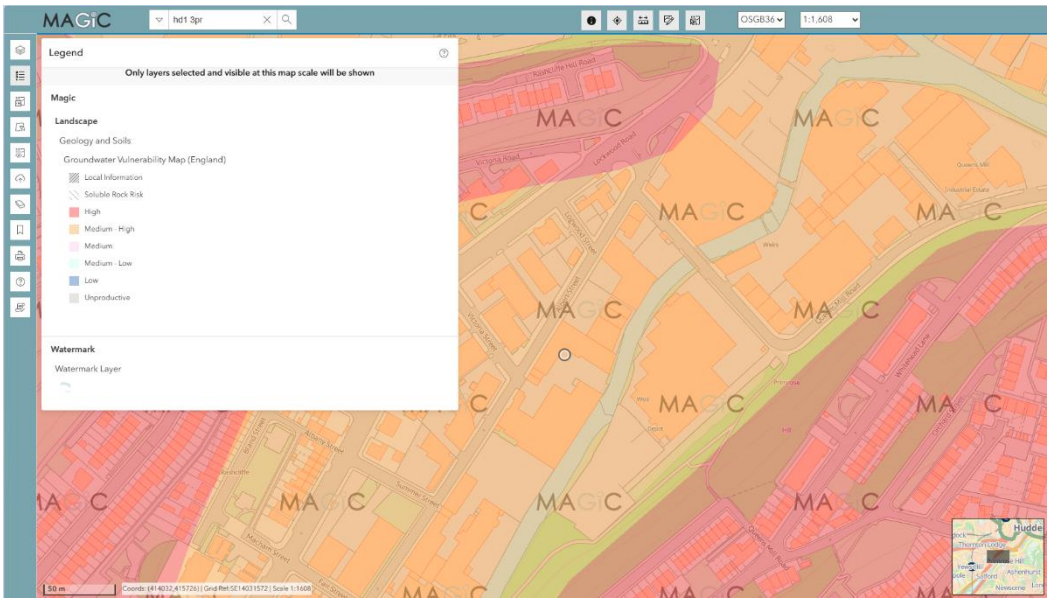


Figure 4.10: Groundwater Vulnerability Map (Source: Magic Maps)

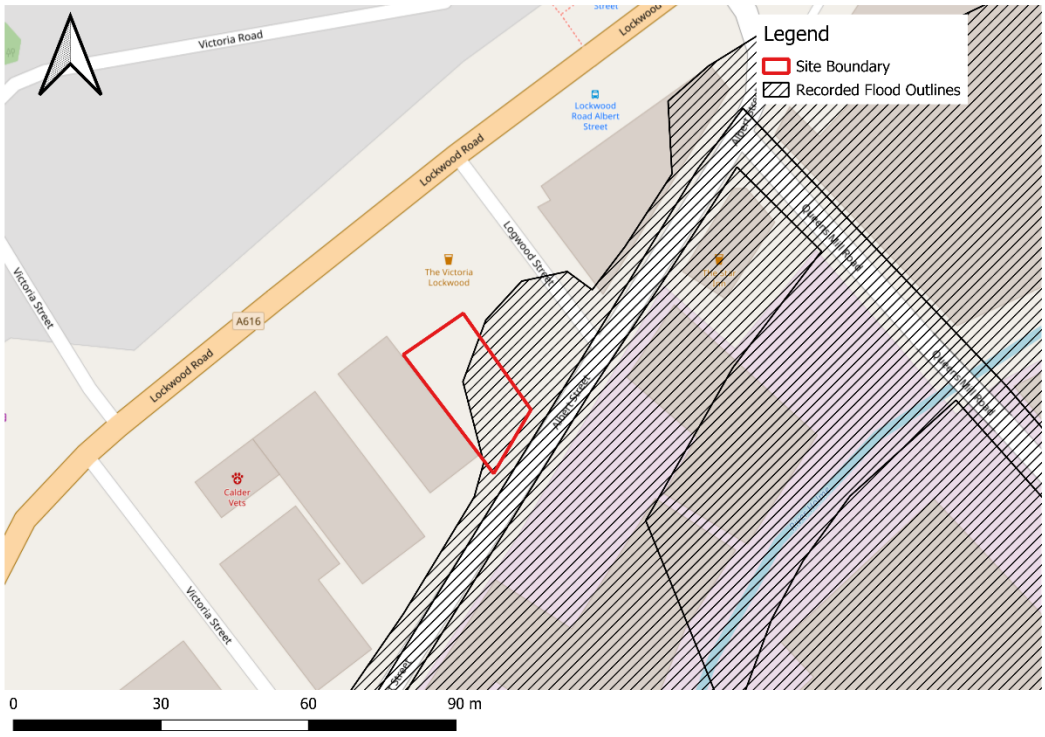


Figure 4.11: Recorded Flood Outline (QGIS Layer from EA)

4.10 It should be noted the site is not within an area benefitting from river/sea flood defences, as can be seen in Figures 4.12 and 4.13.

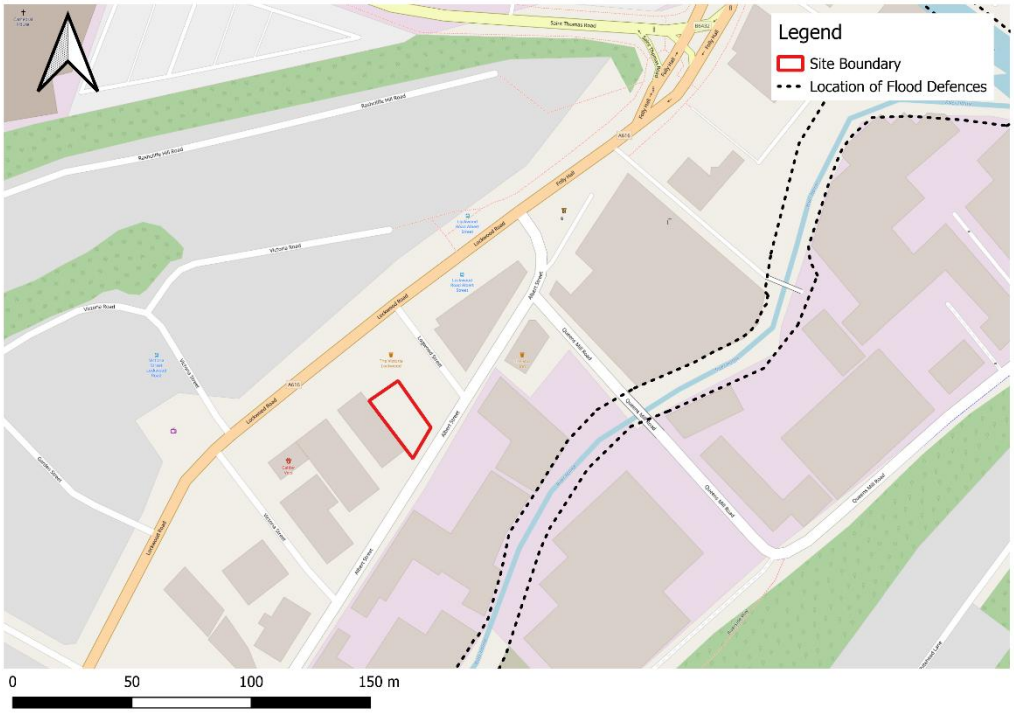


Figure 4.12: River/Sea Flood Defence Locations (QGIS Layer from EA)

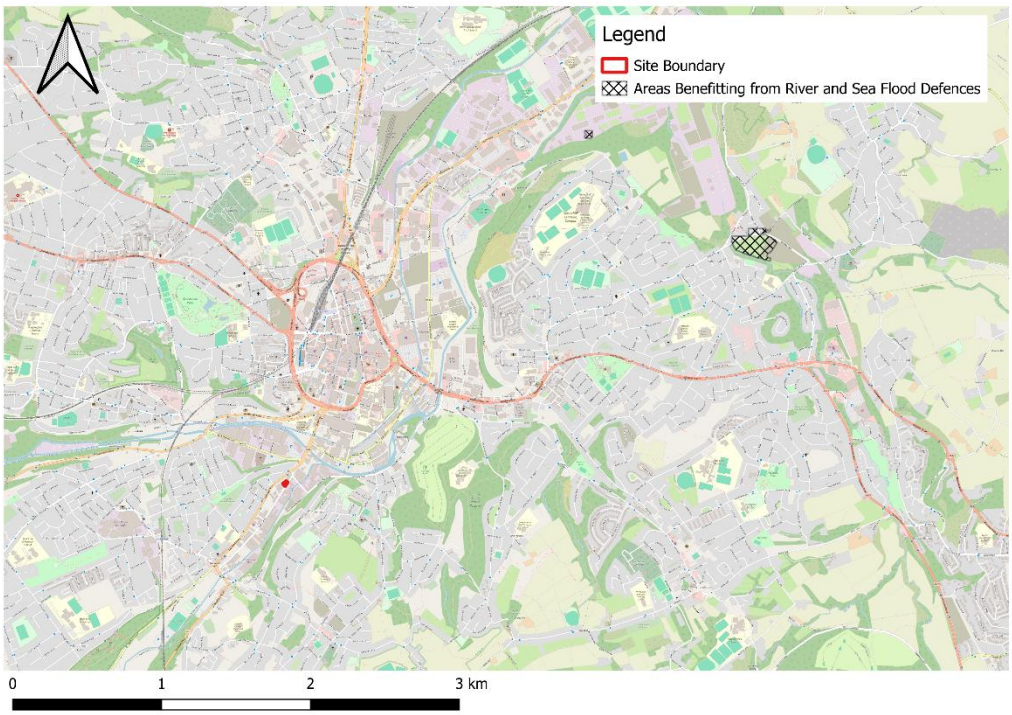


Figure 4.13: Areas Benefitting from River/Sea Flood Defences (QGIS Layer from EA)

5. Residual Risk and Exception Test

5.1 This section will explain how the proposed development will reduce the flood risk within the site and within the surrounding areas of the site.

Residual Risk

5.2 The primary residual risk that would remain at the site would be the drainage of surface water. Flood Mitigation and Management details will be given in Section 6. However, additional residual risks remain such as a breach of a raised flood defence, blockage of a surface water conveyance system, overtopping of an upstream storage area, or failure of a pumped drainage system; failure of a reservoir; or a severe flood event that exceeds a flood management design standard, such as a flood that overtops a raised flood defence, or an intense rainfall event which the drainage system cannot cope with.

5.3 In order to further reduce the risk of surface water flooding within the proposed development, Sustainable Urban Drainage Systems would need to be installed to either safely discharge the surface water or to temporarily store the surface water for future use or discharge. This can be in the form but are not limited to, permeable paving, green roofs, attenuation storage or rainwater harvesting.

Exception Test

5.4 The National Planning Policy Framework sets out the different conditions in terms of the vulnerability of the development and the flood zone and accordingly sets out the requirements to do an Exception Test. The table below describes the conditions required for an Exception Test.

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	×	×	×

Key: ✓ Development is appropriate.
× Development should not be permitted.

5.5 As the development is located within a Flood Zone 3 and is classified as a ‘Less Vulnerable’, an Exception Test is not required to be undertaken to determine if the proposed development is appropriate.

5.6 Refer to Section 6 explains for further details on the mitigation measures.

6. Flood Mitigation and Management Measures

6.1 The proposed development will implement a new surface water drainage system discharging to the public combined sewer. The system will be designed in accordance with current national guidance and best practice standards.

6.2 The drainage system will incorporate site-wide measures to manage runoff and reduce flood risk to adjacent areas. Where feasible, the use of sustainable drainage system (SuDS) components such as permeable surfaces, or below-ground attenuation features will be considered to improve surface water quality, reduce runoff rates, and provide additional resilience.

6.3 Finished site levels will be carefully graded to promote positive surface water drainage and avoid areas of ponding or localised flooding. In accordance with Environment Agency guidance for developments in Flood Zone 3, finished floor levels (FFLs) will be set a minimum of 300mm above the design flood level or adjacent ground levels, whichever is higher.

6.4 Flood resistance and resilience measures will include:

- Use of low-permeability flood-resistant materials up to 600mm above design flood level.
- Installation of flood barriers or flood-resistant construction to doors, windows, and other openings.
- Use of water-resilient internal materials (e.g., lime plaster, concrete floors).
- Positioning of electrical sockets, wiring, and sensitive equipment at least 600mm above flood level.
- Incorporation of sump and pump systems to enable rapid water removal following flooding.
- Design of internal spaces to facilitate easy drying and cleaning.
- Installation of non-return valves to prevent foul and surface water backflow.

6.5 SuDS features, where incorporated, will contribute to reducing runoff volume and peak discharge while also offering wider environmental and amenity benefits.

Climate Change and Surface Water Management

6.6 The National Planning Policy Framework 2025 (NPPF) and accompanying Planning Practice Guidance indicate surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management.

6.7 Consideration should therefore firstly be given to using sustainable urban drainage (SuDS) techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, ponds and wetlands to reduce flood risk by attenuating the rate and quantity of surface water run-off from a site. This approach can also offer other benefits in terms of promoting groundwater recharge, water quality improvement and amenity enhancements. The NPPF sets out a hierarchy for the disposal of surface water which encourages a SuDS approach, which will be mentioned in Section 7.29.

Climate Change

6.8 There are indications that the climate in the UK is changing significantly, and it is widely believed that the nature of climate change will vary greatly by region. Current expert opinion indicates the likelihood that future climate change would produce more frequent short-duration and high-intensity rainfall events with the addition of more frequent periods of long-duration rainfall.

6.9 The Environment Agency has highlighted the climate change allowance for all proposed developments as described in Section 7.

Small and Urban Catchment Climate Change Growth

The table below highlights the potential climate change expected in the future.

Applies across all of England	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 2115)
Upper end	10%	20%	40%
Central	5%	10%	20%

As this development is for residential use, **a climate change growth factor of 40% is proposed** to be used for the surface water runoff/storage calculations.

Existing Public and Private Sewers

6.10 The existing site is currently brownfield with existing private drainage infrastructure located within the site.

6.11 There is evidence of public Yorkshire Water combined water sewer located along Albert Street.

6.12 A detailed Topographical survey and CCTV survey was not provided for this report. A survey will be required to confirm the location, depths and type of assets in the area.

6.13 Appendix B includes the Yorkshire Water Asset records.

Pre-development Surface Water Runoff

6.14 The total area of the proposed development site is circa **0.0372 hectares (ha)**.

6.15 The assumed existing permeable area is **0.00 hectares (ha)**

6.16 The assumed existing impermeable area is **0.0372 hectares (ha)**

6.17 The existing runoff of the site has been estimated using a combination of Modified Rationale Method and the IH124 method. The IH124 method is used to calculate greenfield discharge rates, with the Modified Rationale Method used to check brownfield discharge rates.

6.18 The following greenfield runoff rates are calculated:

- 1 in 1 Year Flood Event: 0.08 l/s
- 1 in 30 Year Flood Event: 0.16 l/s
- 1 in 100 Year Flood Event: 0.19 l/s

6.19 As the site is brownfield, the following brownfield discharge rates have been calculated:

- 1 in 1 Year Flood Event: 6.1 l/s
- 1 in 30 Year Flood Event: 14.5 l/s
- 1 in 100 Year Flood Event: 18.4 l/s

6.20 Appendix D contains the pre-development greenfield and brownfield discharge rate calculations.

Methods of Surface Water Management

6.21 As set out within the NPPF 2025, there are four methods that have been reviewed for the management and discharge of surface water for the site which are detailed below; these may be applied individually or collectively to form a complete strategy. They should be applied in the order of priority as listed:

- Discharge via infiltration;
- Discharge via watercourse;
- Discharge via a dedicated public surface water system; and
- Discharged via a combined sewer.

Discharge via Infiltration

6.22 Any impermeable areas that can drain to a soakaway or an alternative method of infiltration would significantly improve the sustainability of any surface water systems.

6.23 SOIL mapping for the site suggests that the soils beneath the site may be suitable for infiltration. In line with Yorkshire Waters standard practice, the drainage will be required to discharge via soakaways. In the absence of permeability information for the site, the drainage assumption is to provide a piped system with limited discharge to the sewer, if following permeability tests, in line with BRE digest 365, the use of soakaways is found to be appropriate, the design will be reconsidered accordingly.

6.24 As per standard practice, Yorkshire Water will require evidence that testing has been undertaken to demonstrate the suitability of soakaways.

6.25 Therefore, deeming the site not suitable for infiltration.

Discharge to a Watercourse

6.26 The next consideration for the disposal of surface water is via a watercourse. There are no nearby watercourses and therefore it is not possible to discharge via a watercourse.

Discharge via a Dedicated Surface Water Sewer

6.27 Following the above, the preferred option to discharge surface water is to the existing Yorkshire Water public combined sewer network.

Proposed Surface Water Discharge Strategy

6.28 The general principle of the surface water drainage strategy for this site is to collect the roof-top runoff and car parking area run-off and convey this to the existing private combined water manhole located within the site.

6.29 Surface water discharge will be informed by feasibility and approval of the receiving sewer network. General SuDS principles, such as minimising hardstanding and incorporating potential attenuation or flow control features, will be reviewed at the detailed design stage, subject to site constraints and LLFA/Water Company requirements.

6.30 It is recommended to undertake a CCTV and topographical survey to confirm the location, depth, connection and current use of the private and public drainage networks located both within the private site and public highways.

7. Foul Water Discharge

7.1 It is proposed to install new wash basins/bathrooms which will connect to the existing combined water drainage system.

7.2 The existing combined water from the development connects to the public combined water sewer located on Albert Street.

7.3 The foul water system will be designed and constructed in accordance with the current Building Regulations, BS EN:752 drainage and sewer systems outside buildings, the local authority building control specifications and requirements, Sewers for Adoption 8th Edition and the Civil Engineering Specification for the Water Industry 7th Edition.

7.4 It is anticipated that foul water can discharge without any restriction.

7.5 Flow rate from the proposed development increases on the existing public combined sewer. A pre-development enquiry with the water authority will be required.

7.6 Indirect connection to the existing Yorkshire Water combined water sewer is subject to a S106 agreement from Yorkshire Water.

7.7 It is recommended to undertake a more intrusive CCTV survey to confirm the location, depth, connection and current use of the private and public drainage networks located both within the private site and public highways.

8. Conclusion

8.1 The proposed development sites are located within a Flood Zone 3a, with a high risk of river/sea flooding and a high risk of surface water flooding.

8.2 As per the SFRA, the proposed development site is suitable for development and an Exception test was not required as per the NPPF due to the development being a less vulnerable development.

8.3 The Flood Risk Assessment (FRA) has reviewed all sources of flood risk to both the proposed development and to existing adjacent developments because of the proposals, including fluvial, tidal, pluvial, groundwater, sewers and flooding from artificial sources and found the risks to be high.

8.4 The surface water proposes to connect to the existing private combined water sewer network which connects to the existing Yorkshire Water combined water sewer asset located along Albert Street. Which is subject to a formal approval by Yorkshire Water.

8.5 The foul water is proposed to be discharged unrestricted to the existing Yorkshire Water public combined water sewer located south of the site and flows downstream along Albert Street. Which is subject to a formal approval by Yorkshire Water.

8.6 Additional CCTV and topographical survey will need to be undertaken to identify and confirm the location and depth of the private combined water asset located within the existing building.

8.7 The development is accessible for emergency access and egress during times of extreme flooding as no potential flooding is evident on any of the access routes.

8.8 The Flood Risk Assessment is commensurate with the development proposals and in summary, the development can be considered appropriate for the Flood Zone in accordance with the NPPF.

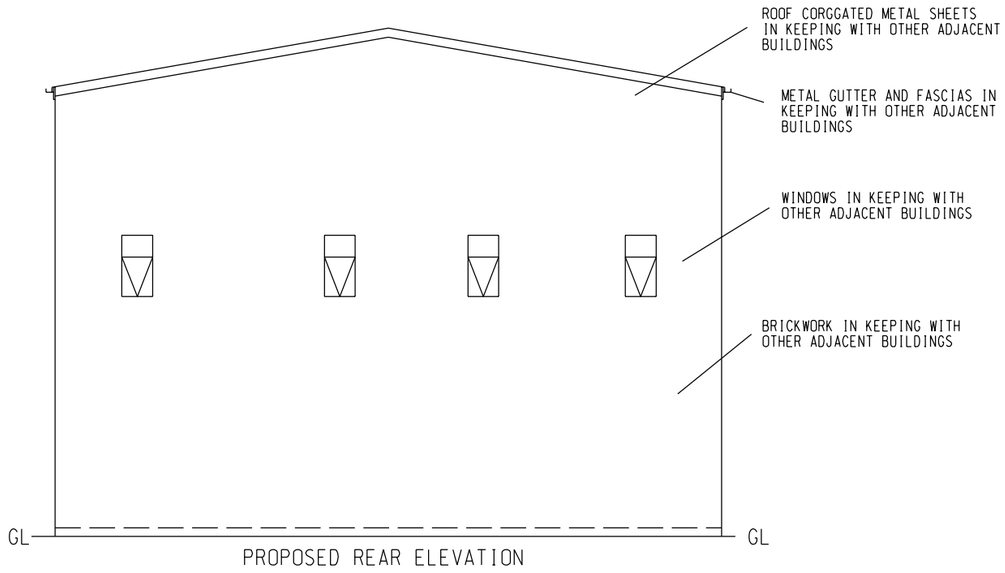
Appendices

Appendix A: Existing and Proposed Site Plans

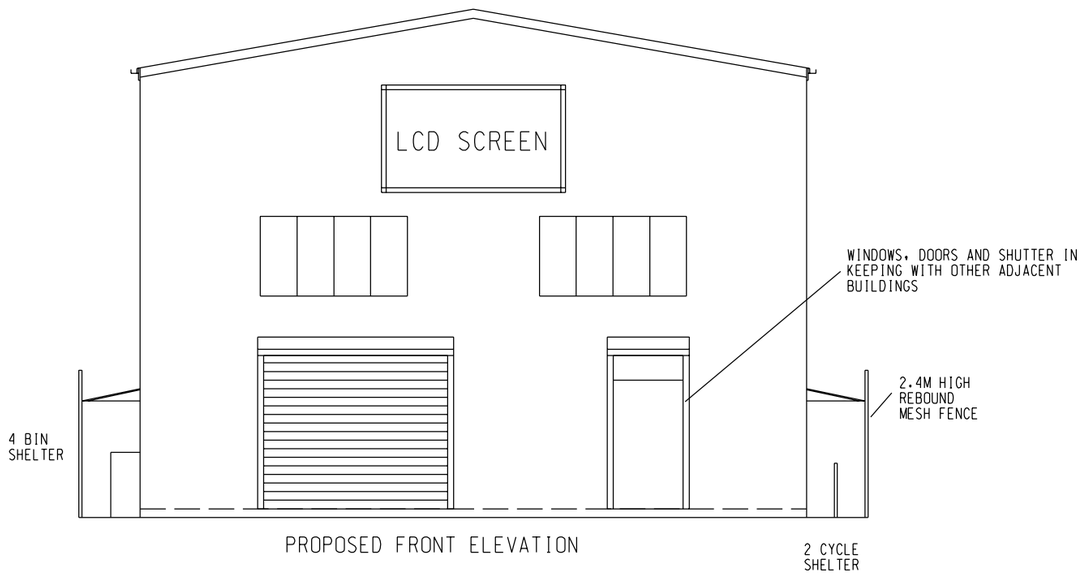
ALBERT ST

Ordnance Survey Licensed Mapping

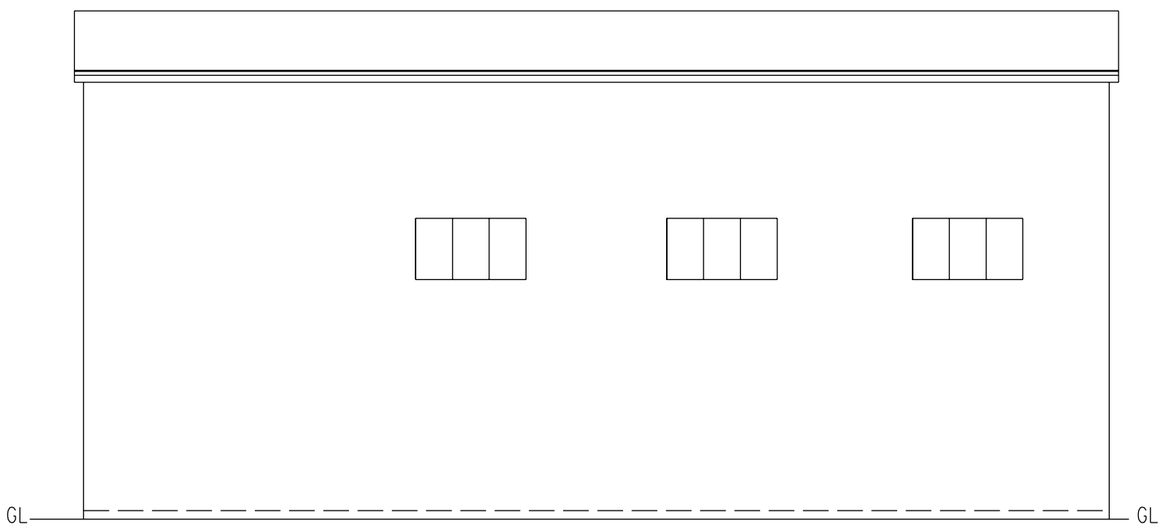
PROPOSED ELEVATIONS AND FLOOR PLANS	
ALBERT STREET CAR PARK, HUDDERSFIELD, HD1 3PR	
SCALE: 1:100 (ISO A2)	ALL DIMENSIONS IN MM
DATE: 19-03-25	PP/19325/2 Issue 1
PROPOSED SCHEME 2 OF 2	



PROPOSED REAR ELEVATION

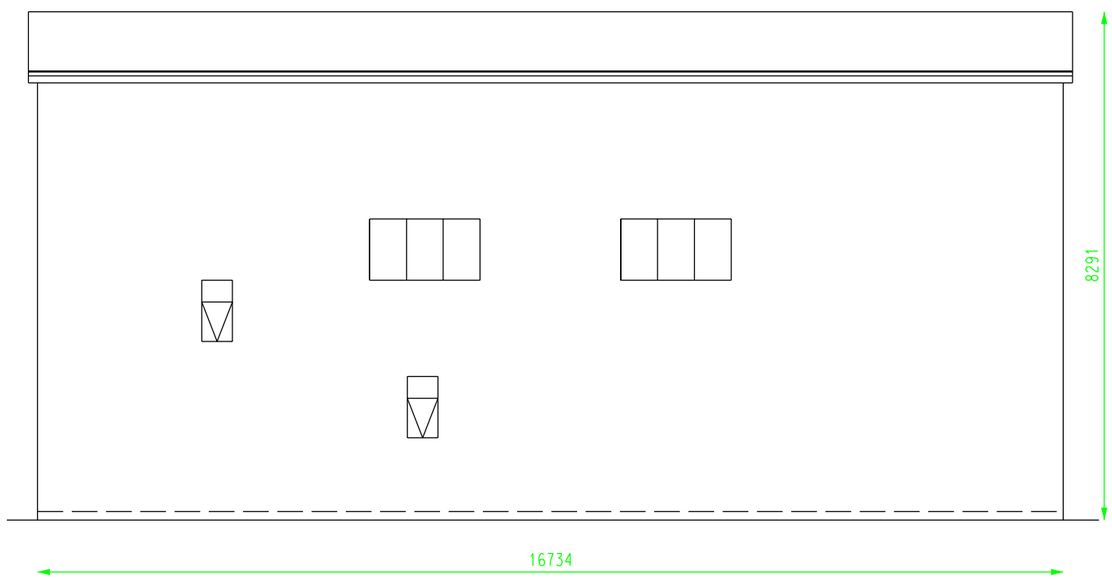


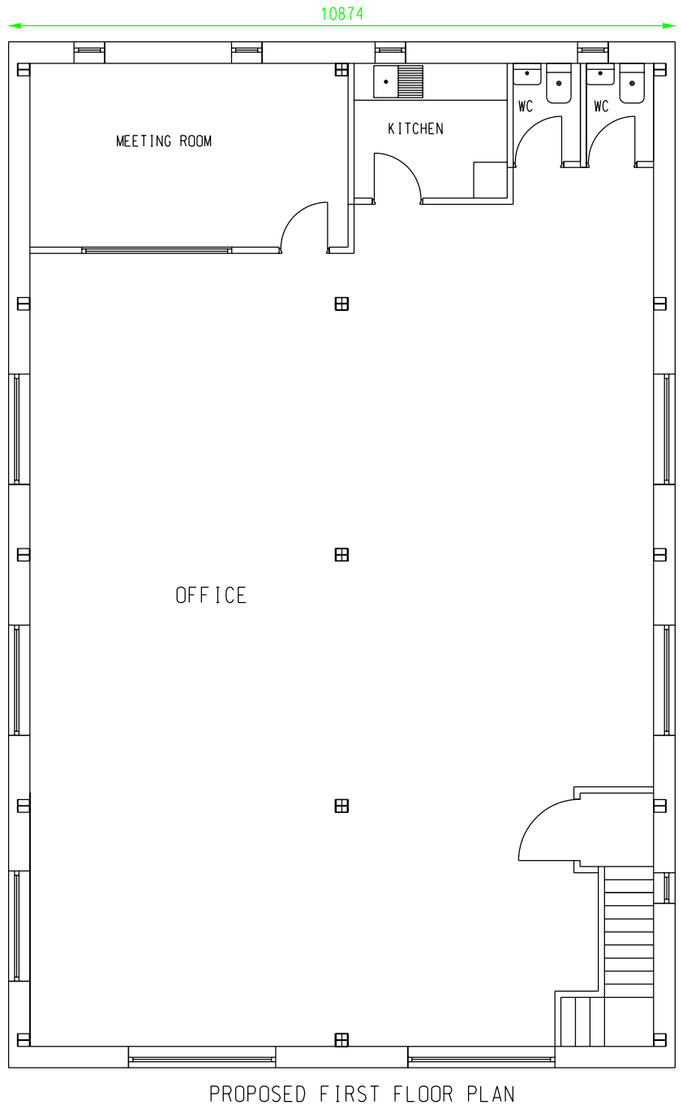
PROPOSED FRONT ELEVATION



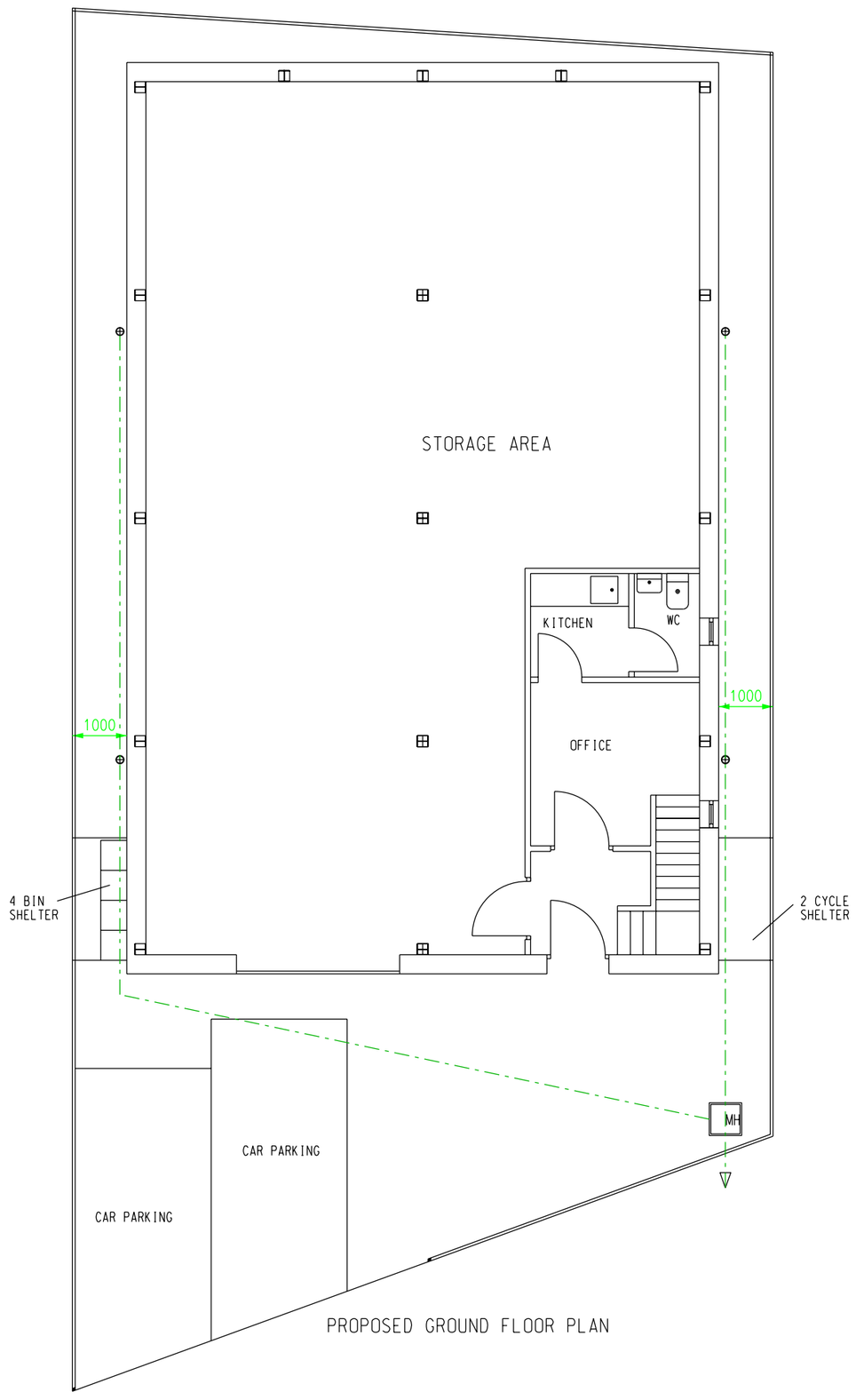
PROPOSED WEST SIDE ELEVATION

PROPOSED EAST SIDE ELEVATION





PROPOSED FIRST FLOOR PLAN



PROPOSED GROUND FLOOR PLAN

Appendix B: Yorkshire Water Asset Records

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.

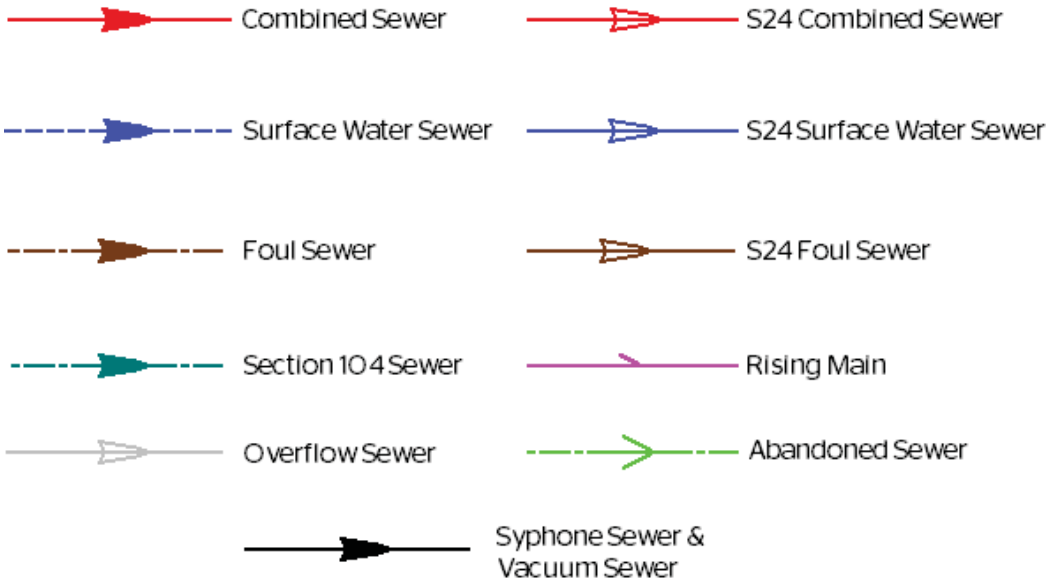
Private pumping stations will also transfer during the period 1 October 2011 – 1 Oct 2016. Records of these assets may not yet be shown on the existing mains record drawing(s). If you encounter any of these assets you must inform Yorkshire Water Services Ltd (YWS).

19. Please note that the information supplied on the enclosed plans is reproduced from Ordnance Survey material with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number 1000019559.

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.

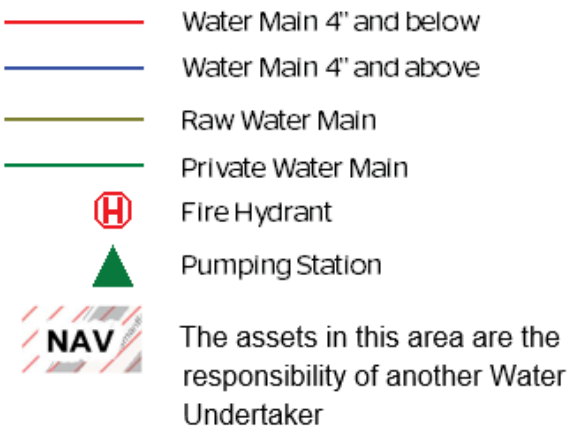
Property Identfier

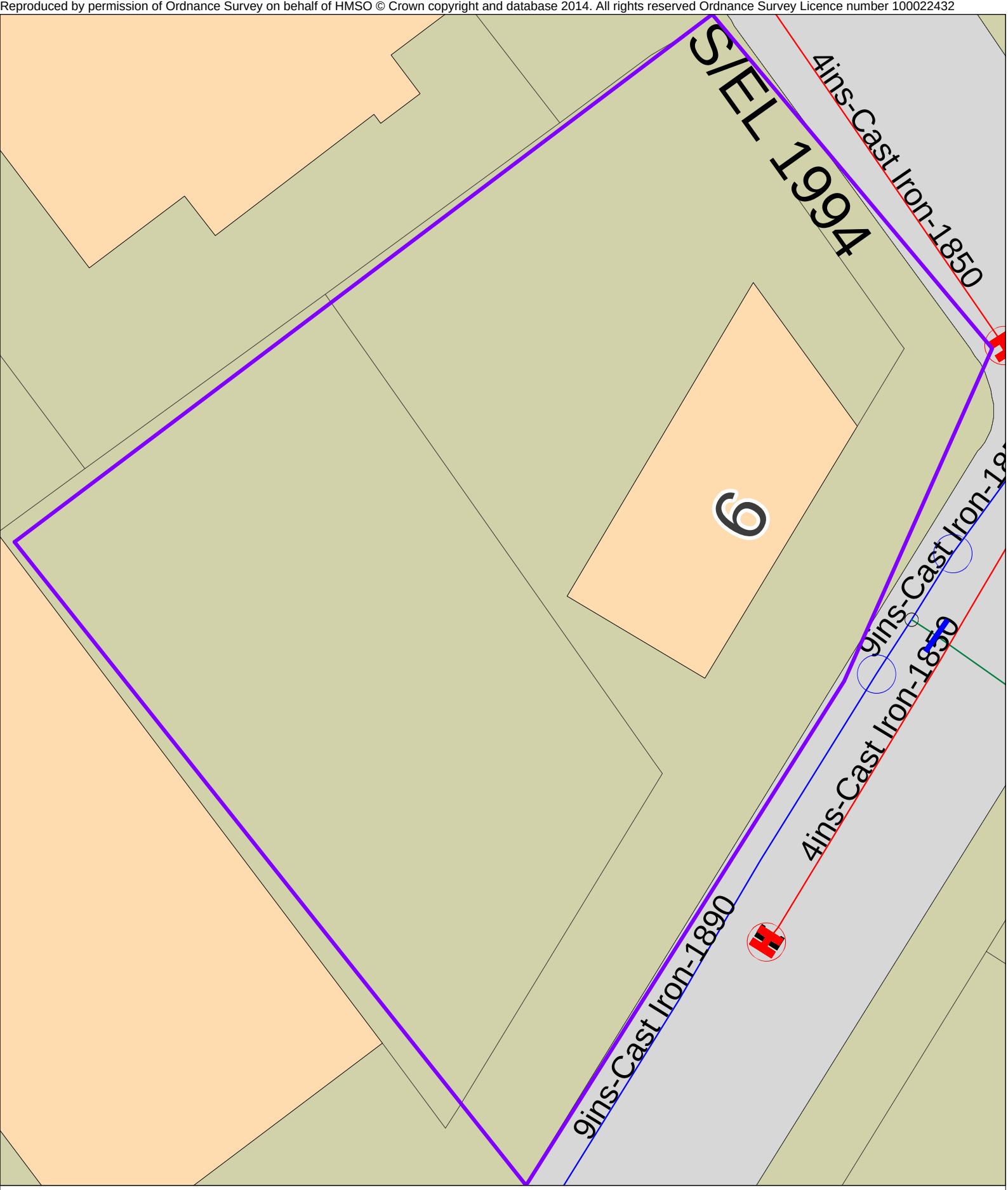
Sewer Legend



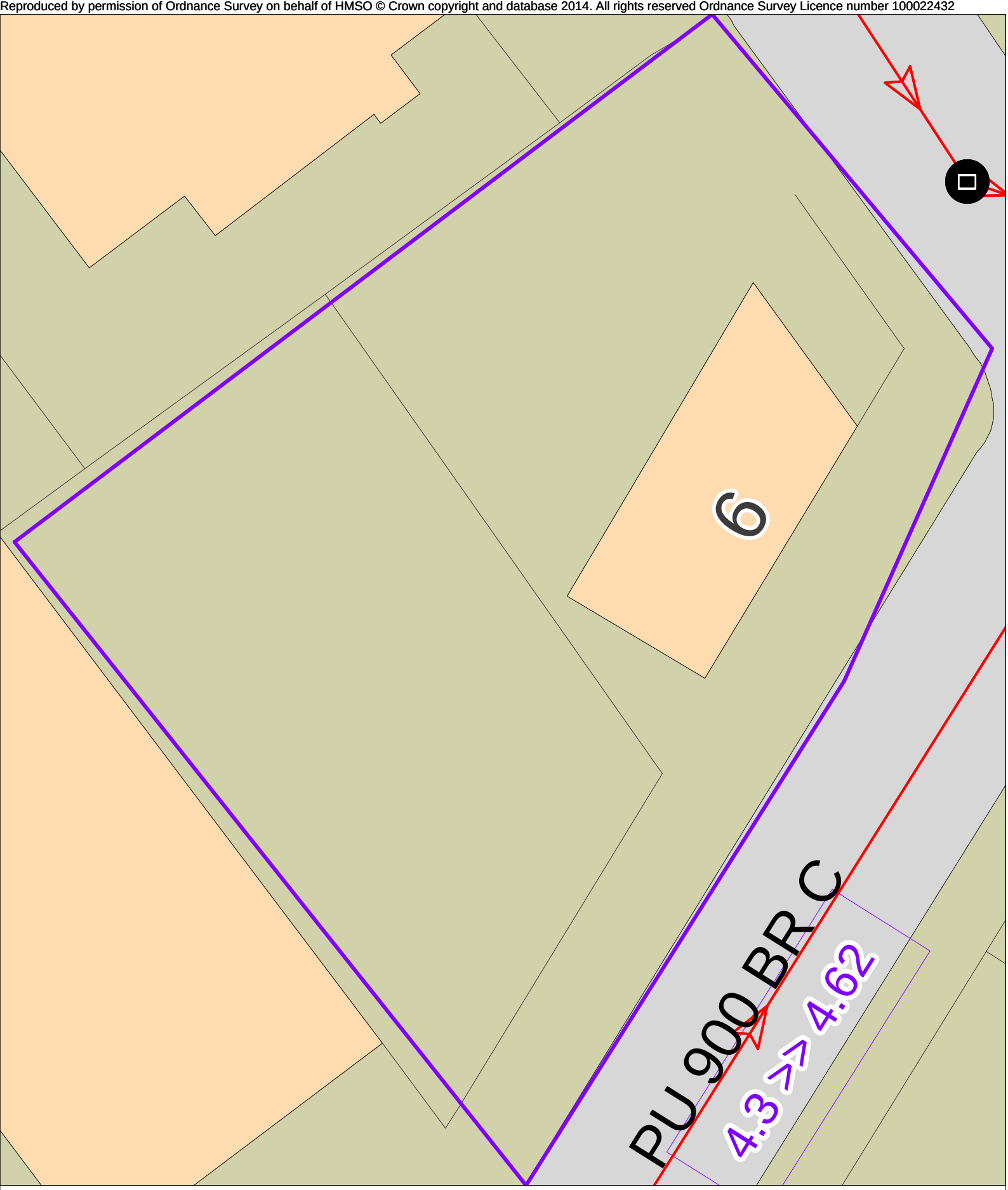
Please note that the direction of flow arrows may not always appear depending on the scale of the map.

Water Legend





Public Clean Water Network 15/03/2023 18:08:36 OS Grid Coordinates: 414078 : 415714 Map Name : SE1415NW svcGISSafeMovePD



Public Waste Water Network 15/03/2023 18:08:37 OS Grid Coordinates: 414078 : 415714 Map Name : SE1415NW svcGISSafeMovePD

Appendix C: Maps of Likelihood of Flooding from River/Seas and Surface Water at Varying Depths (Without and With Climate Change)

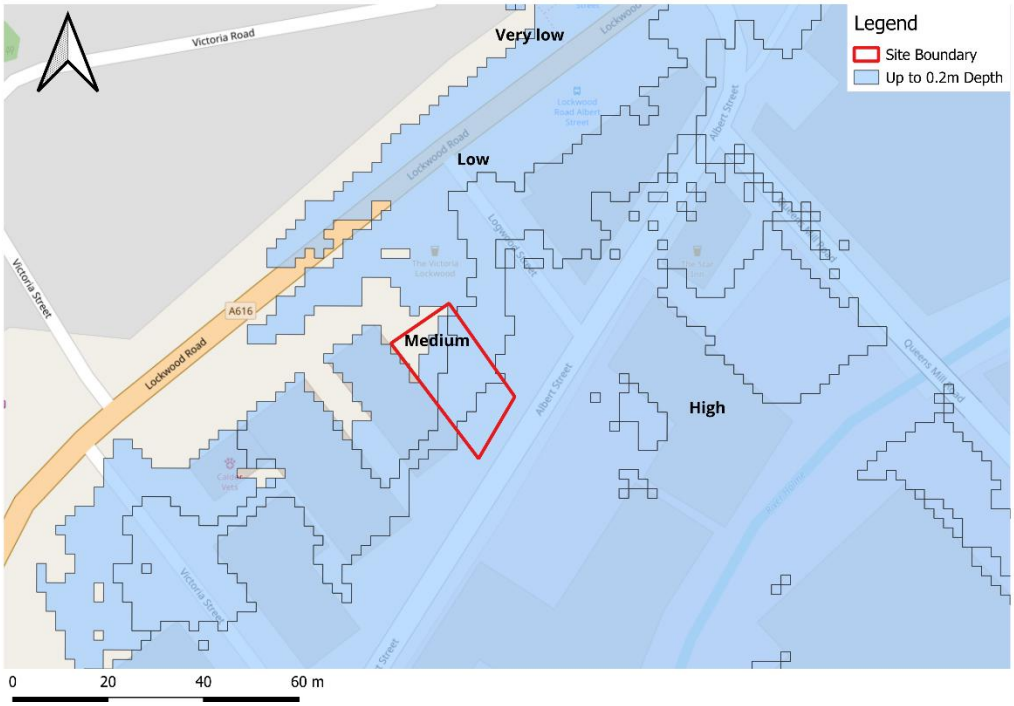


Figure C.1: Likelihood of River/Sea Flooding of Up to 0.2m Depth (No Climate Change) (Source: QGIS Layer from the EA)

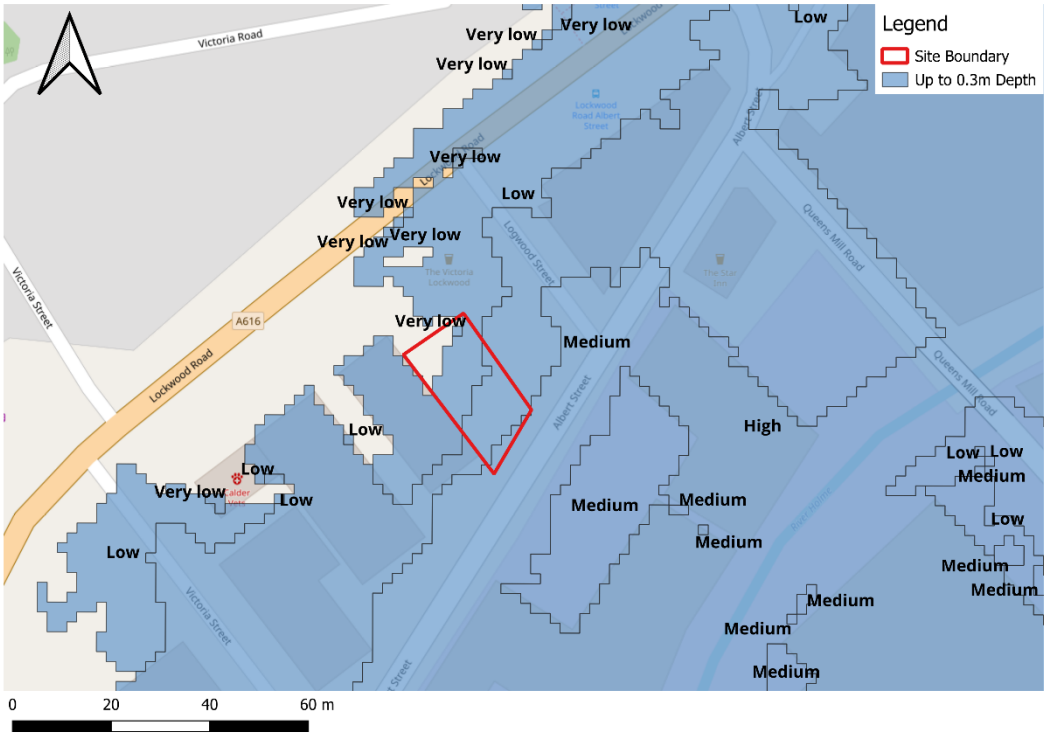


Figure C.2: Likelihood of River/Sea Flooding of Up to 0.3m Depth (No Climate Change) (Source: QGIS Layer from the EA)

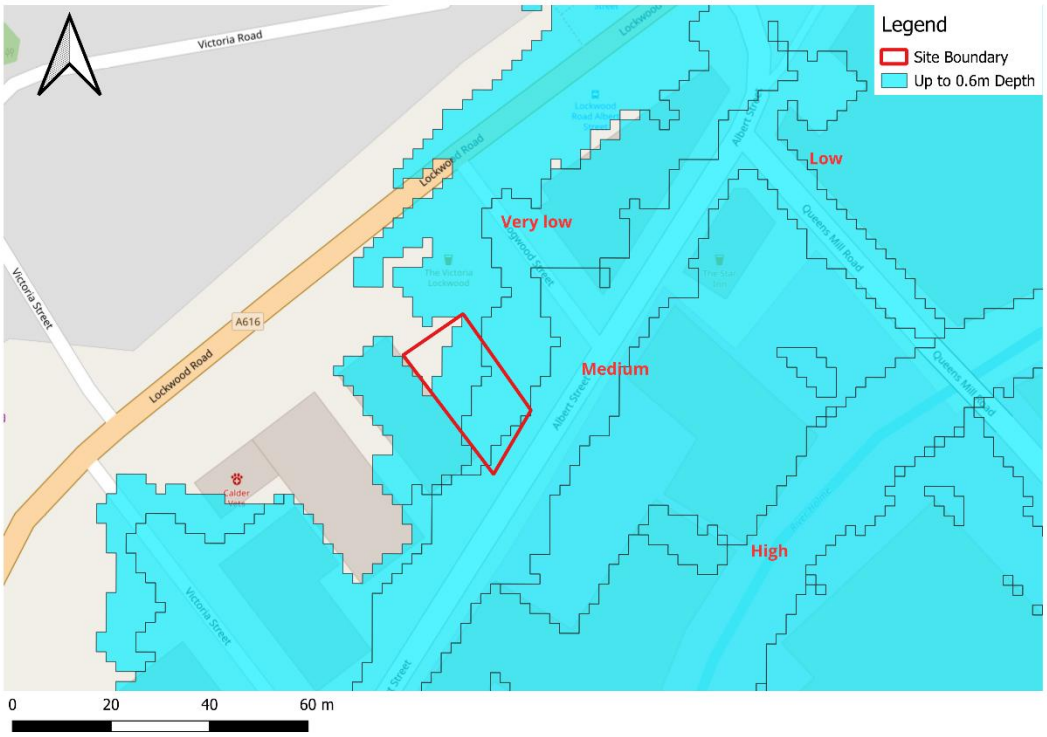


Figure C.3: Likelihood of River/Sea Flooding of Up to 0.6m Depth (No Climate Change) (Source: QGIS Layer from the EA)

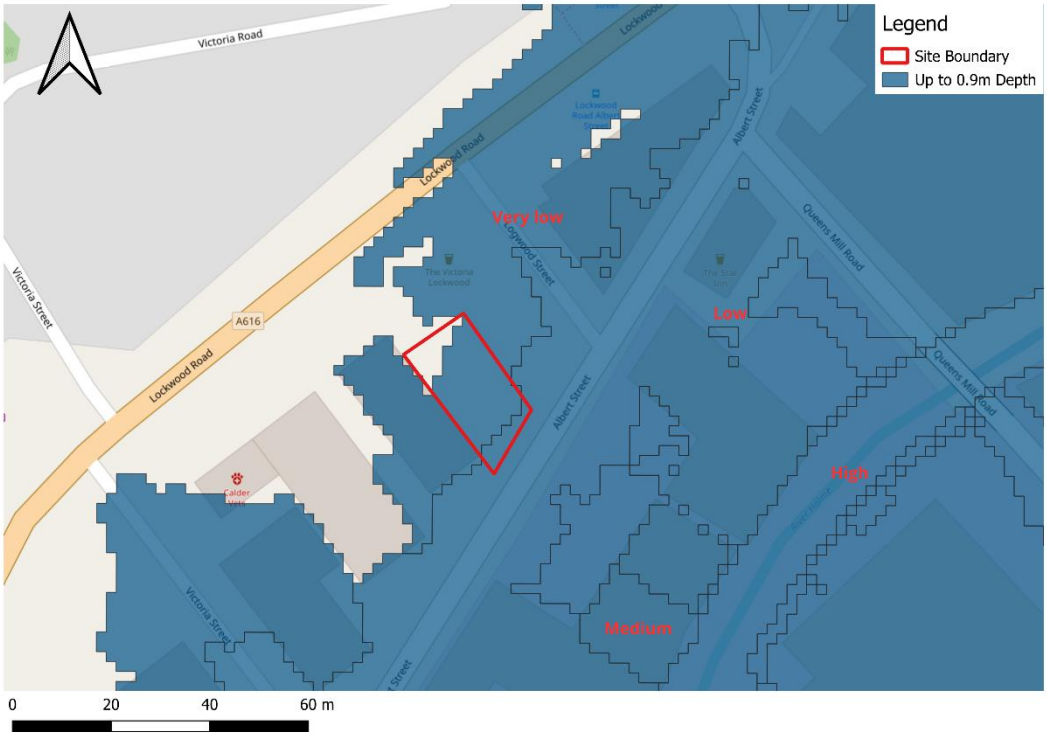


Figure C.4: Likelihood of River/Sea Flooding of Up to 0.9m Depth (No Climate Change) (Source: QGIS Layer from the EA)

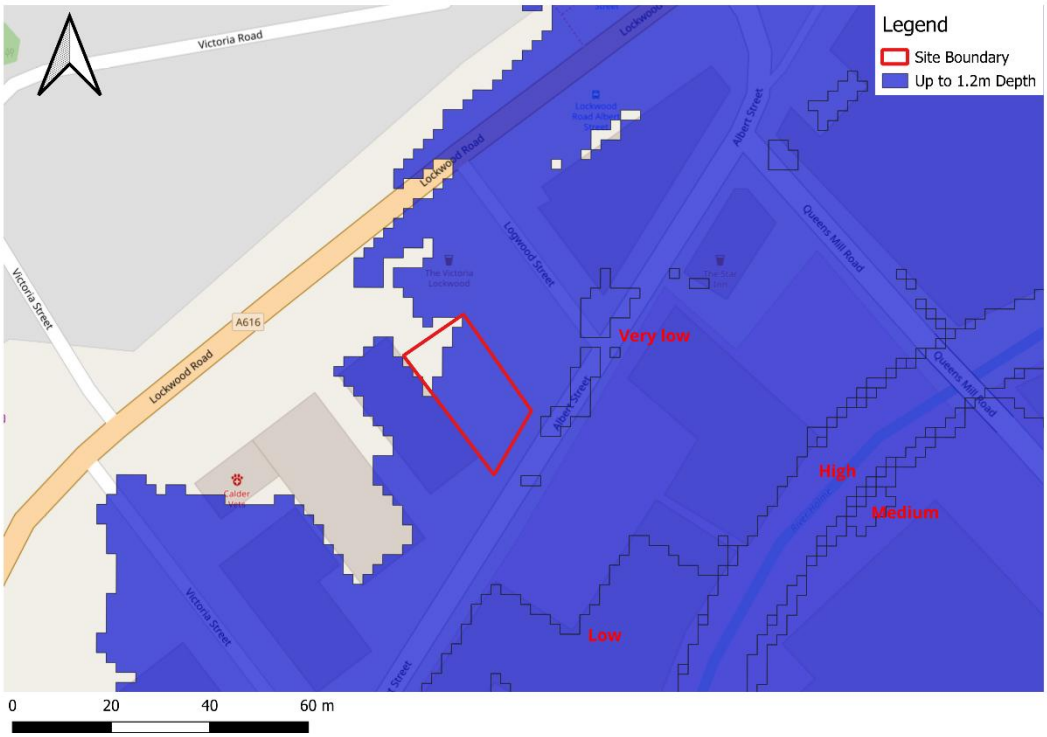


Figure C.5: Likelihood of River/Sea Flooding of Up to 1.2m Depth (No Climate Change) (Source: QGIS Layer from the EA)

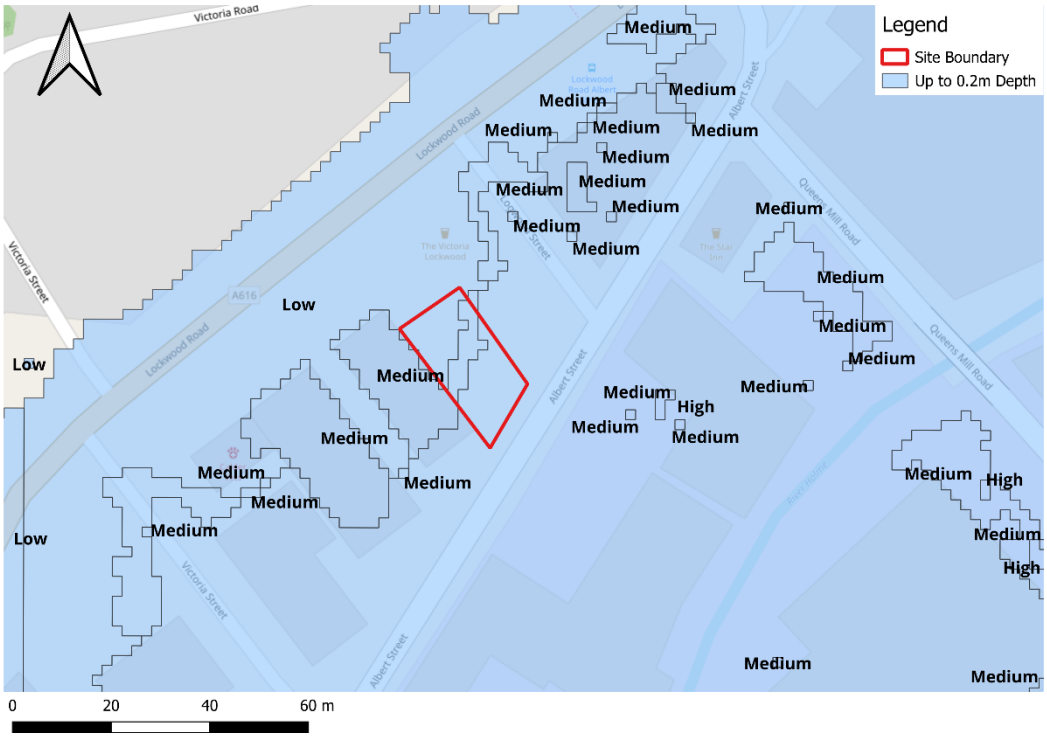


Figure C.6: Likelihood of River/Sea Flooding of Up to 0.2m Depth (With Climate Change) (Source: QGIS Layer from the EA)

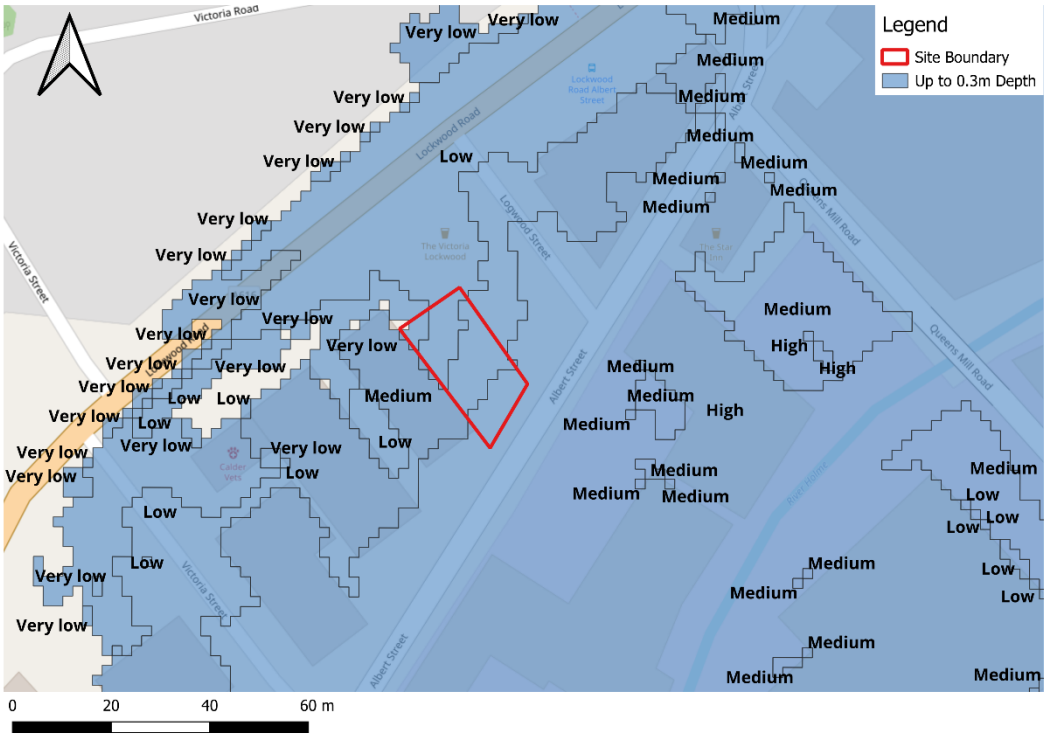


Figure C.7: Likelihood of River/Sea Flooding of Up to 0.3m Depth (With Climate Change) (Source: QGIS Layer from the EA)

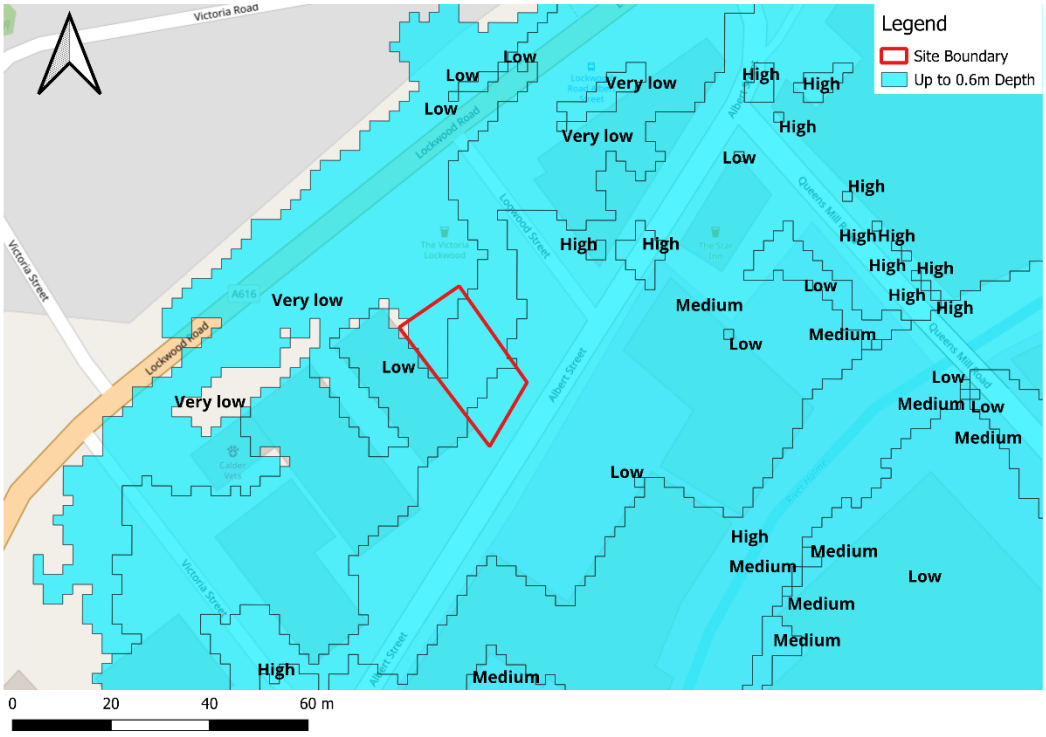


Figure C.8: Likelihood of River/Sea Flooding of Up to 0.6m Depth (With Climate Change) (Source: QGIS Layer from the EA)

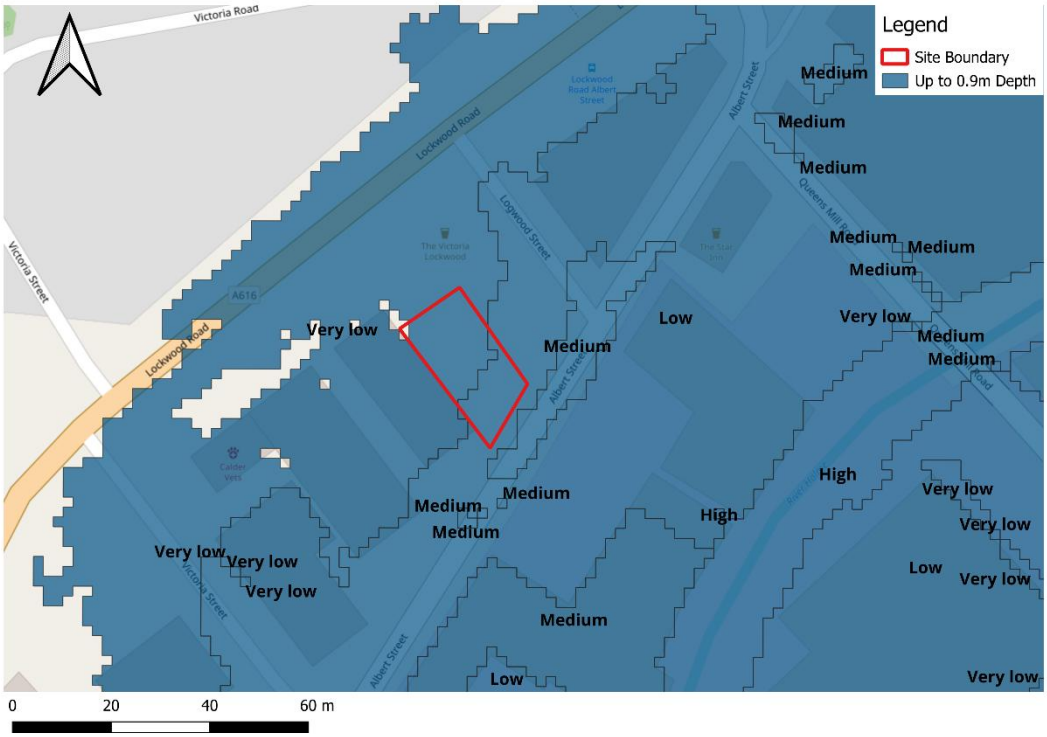


Figure C.9: Likelihood of River/Sea Flooding of Up to 0.9m Depth (With Climate Change) (Source: QGIS Layer from the EA)

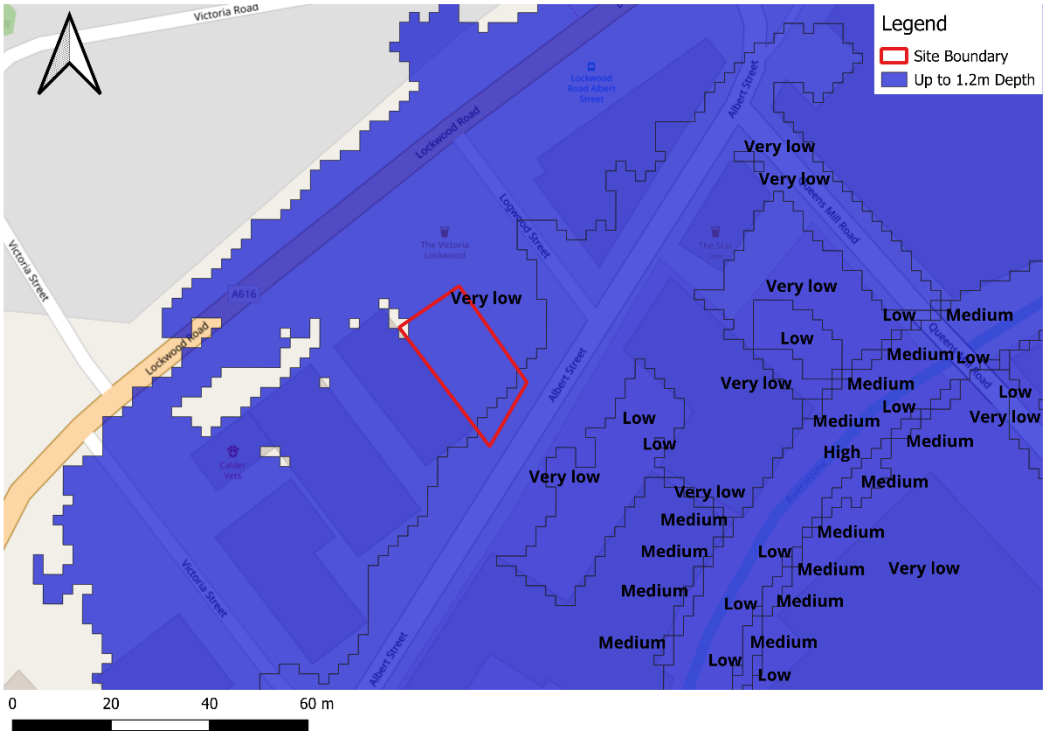


Figure C.10: Likelihood of River/Sea Flooding of Up to 1.2m Depth (With Climate Change) (Source: QGIS Layer from the EA)

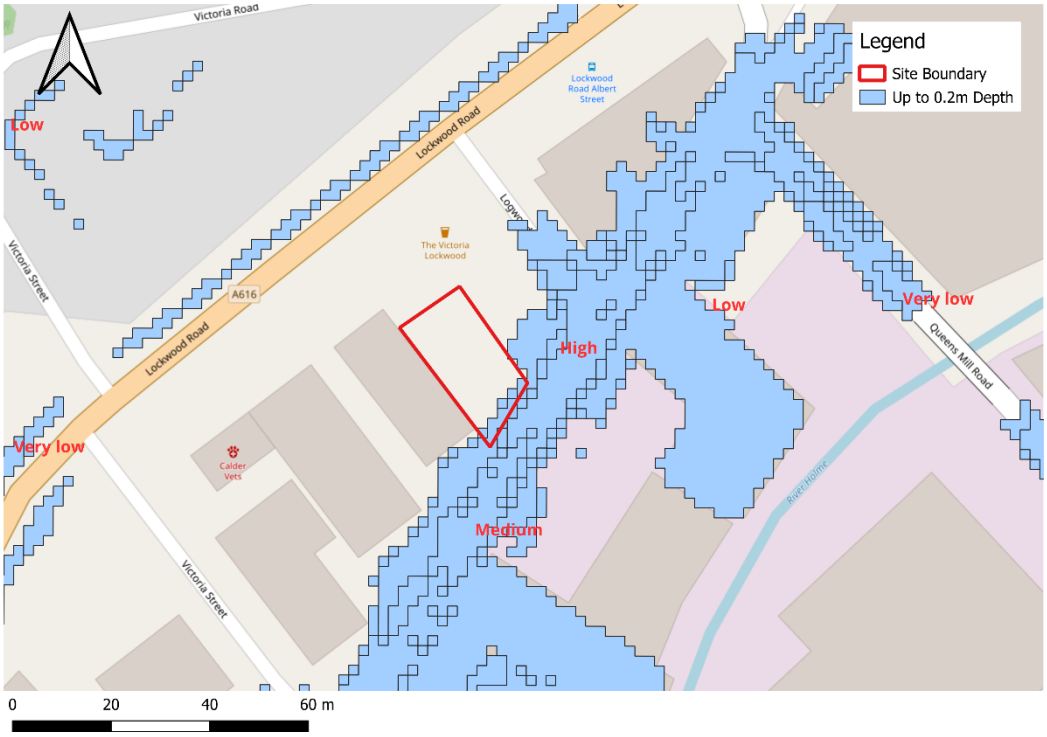


Figure C.11: Likelihood of Surface Water Flooding of Up to 0.2m Depth (No Climate Change) (Source: QGIS Layer from the EA)

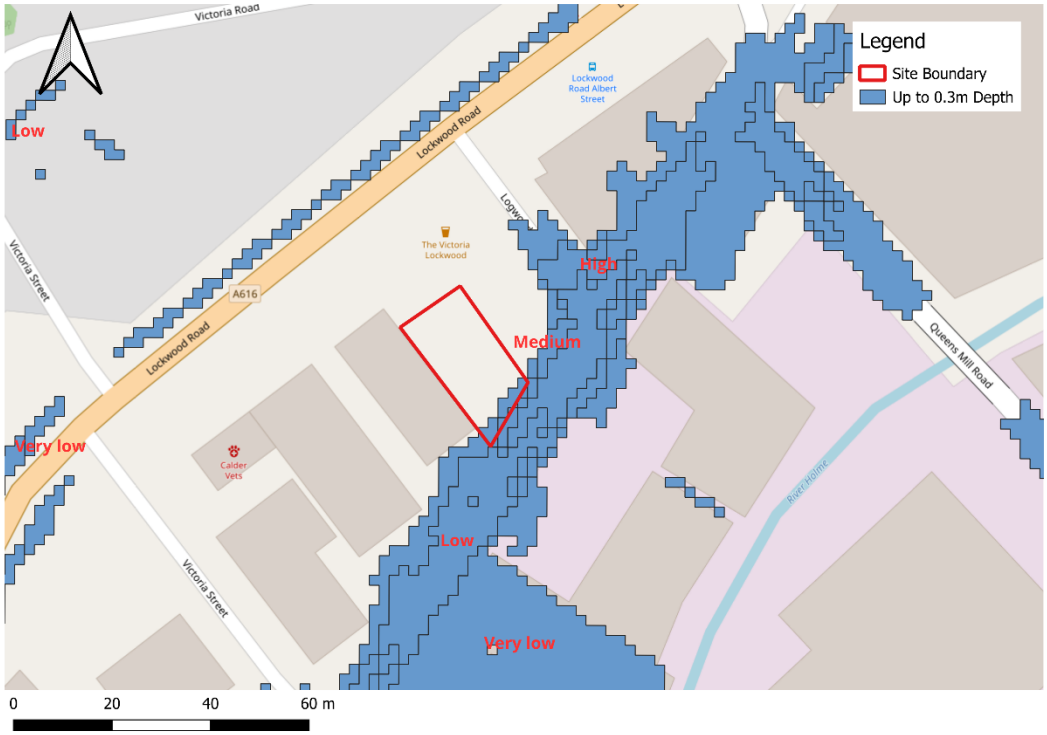


Figure C.12: Likelihood of Surface Water Flooding of Up to 0.3m Depth (No Climate Change) (Source: QGIS Layer from the EA)

Figure C.13: Likelihood of Surface Water Flooding of Up to 0.6m Depth (No Climate Change) (Source: QGIS Layer from the EA)

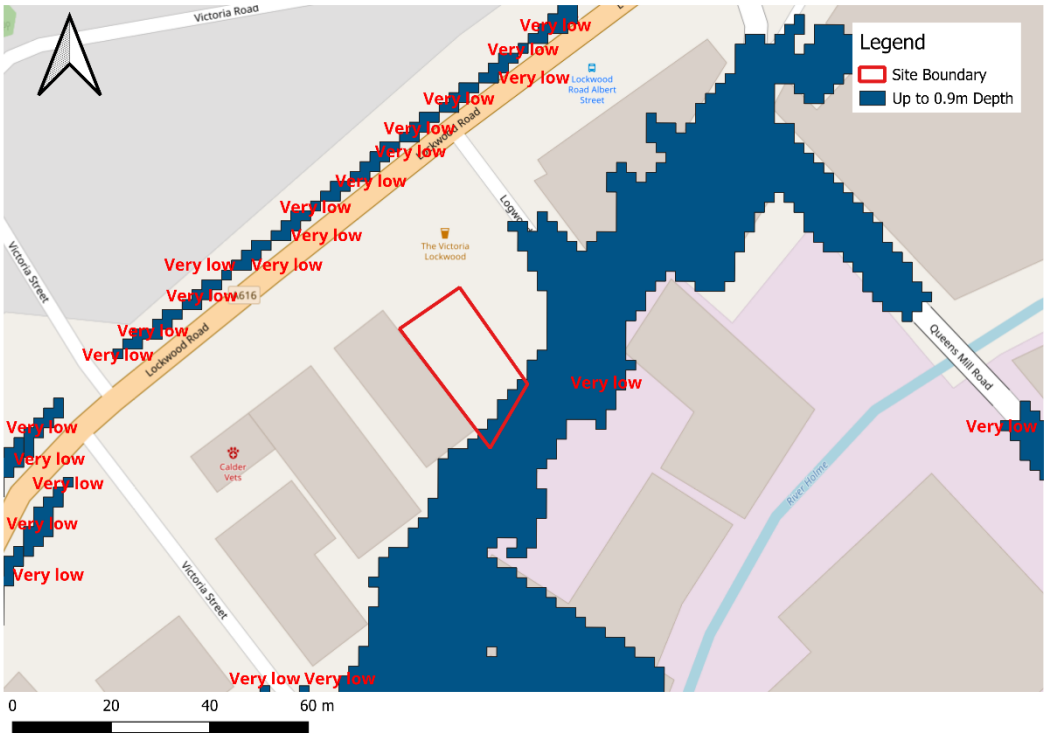


Figure C.14: Likelihood of Surface Water Flooding of Up to 0.9m Depth (No Climate Change) (Source: QGIS Layer from the EA)

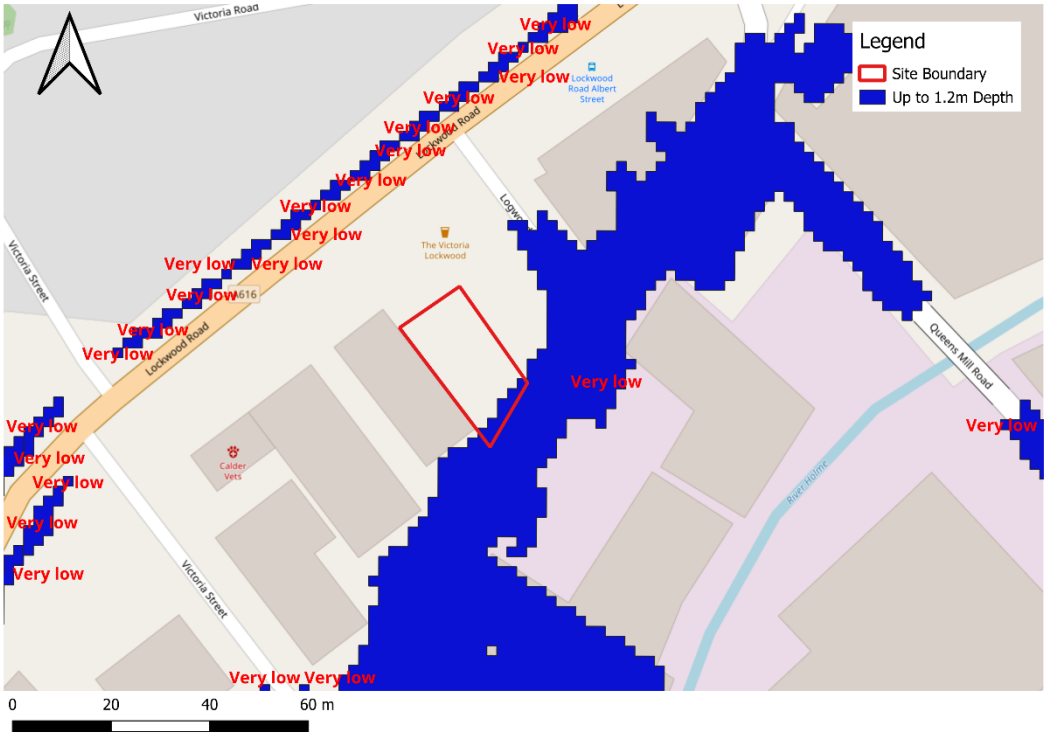


Figure C.15: Likelihood of Surface Water Flooding of Up to 1.2m Depth (No Climate Change) (Source: QGIS Layer from the EA)

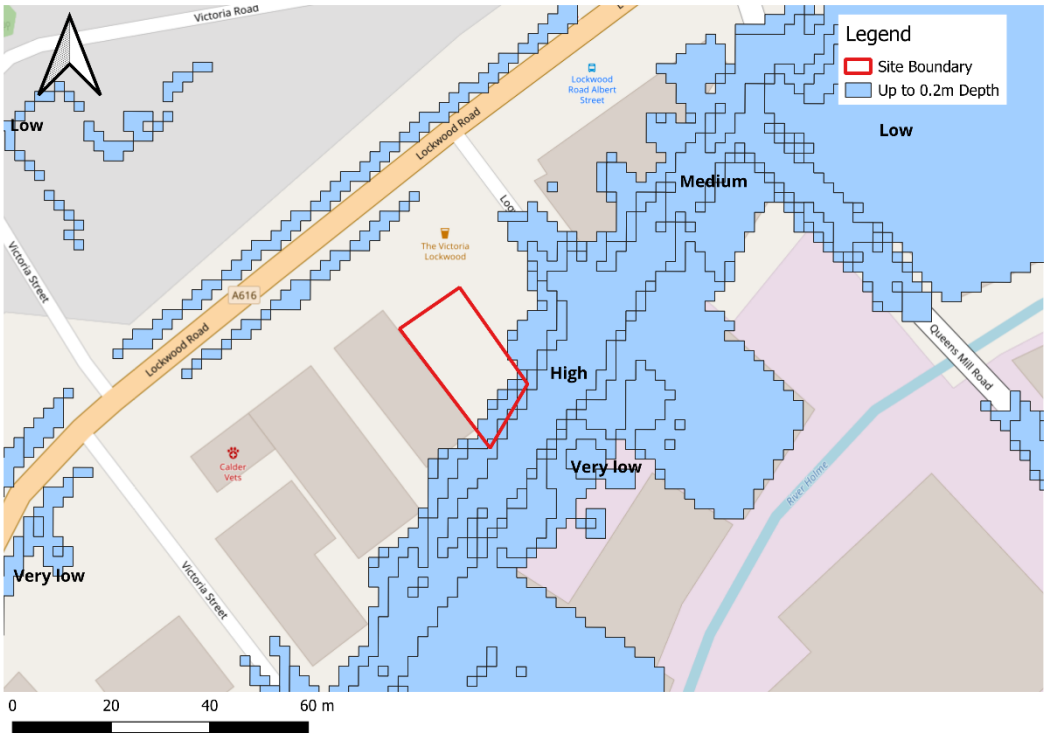


Figure C.16: Likelihood of Surface Water Flooding of Up to 0.2m Depth (With Climate Change) (Source: QGIS Layer from the EA)

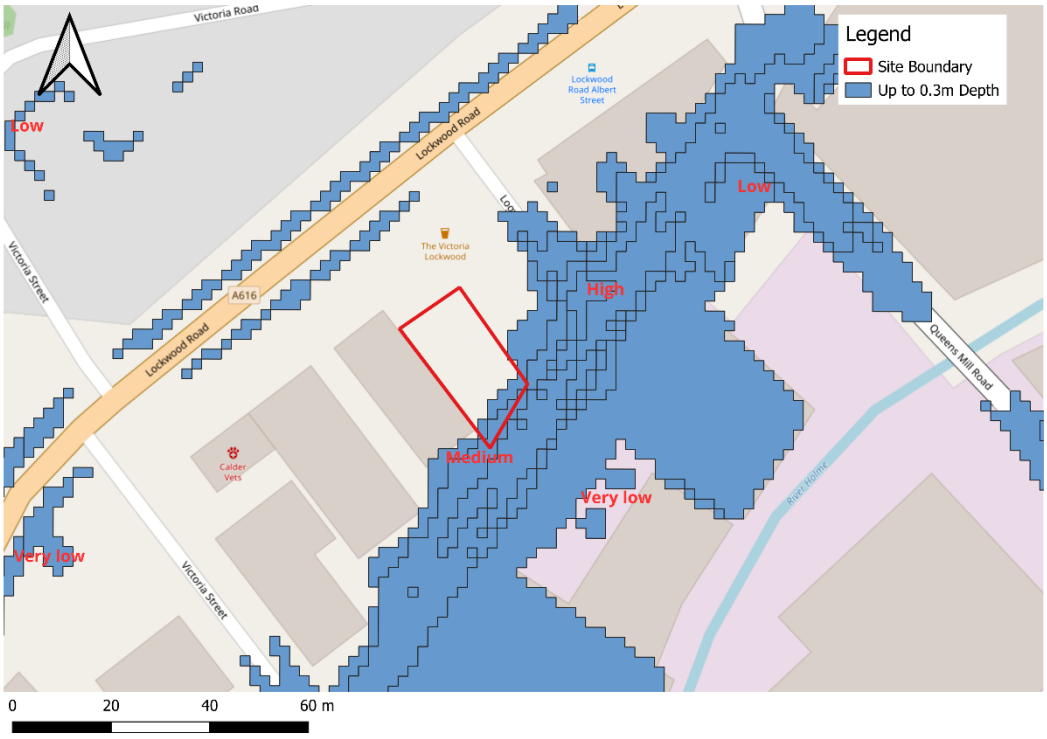


Figure C.17: Likelihood of Surface Water Flooding of Up to 0.3m Depth (With Climate Change) (Source: QGIS Layer from the EA)

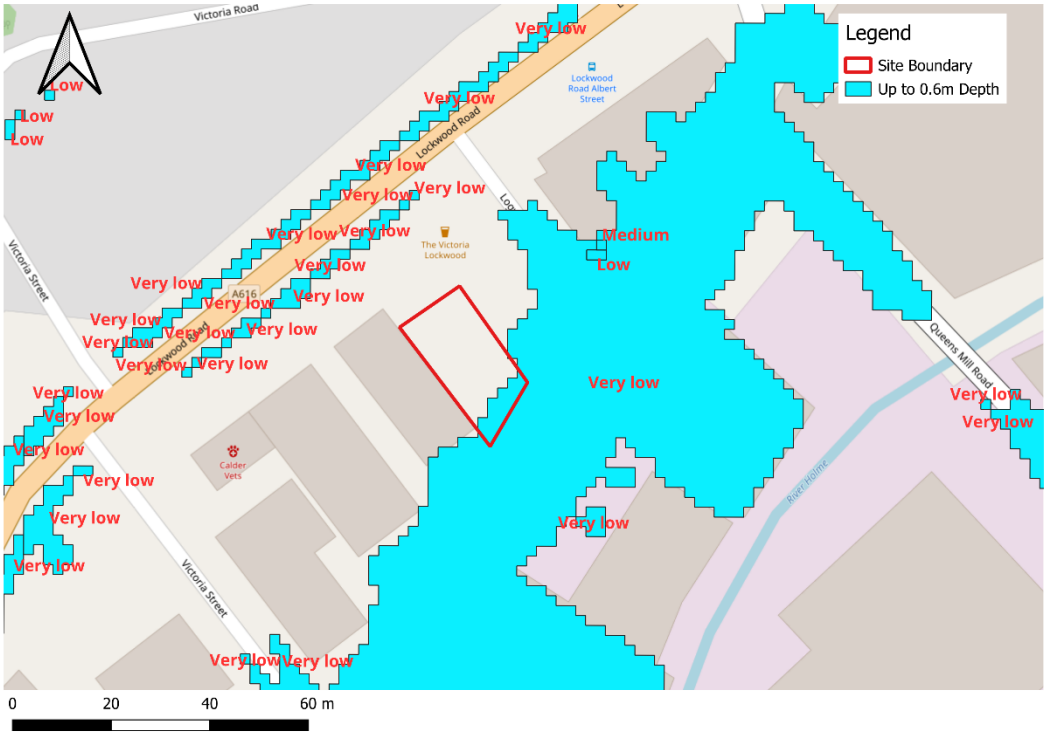


Figure C.18: Likelihood of Surface Water Flooding of Up to 0.6m Depth (With Climate Change) (Source: QGIS Layer from the EA)

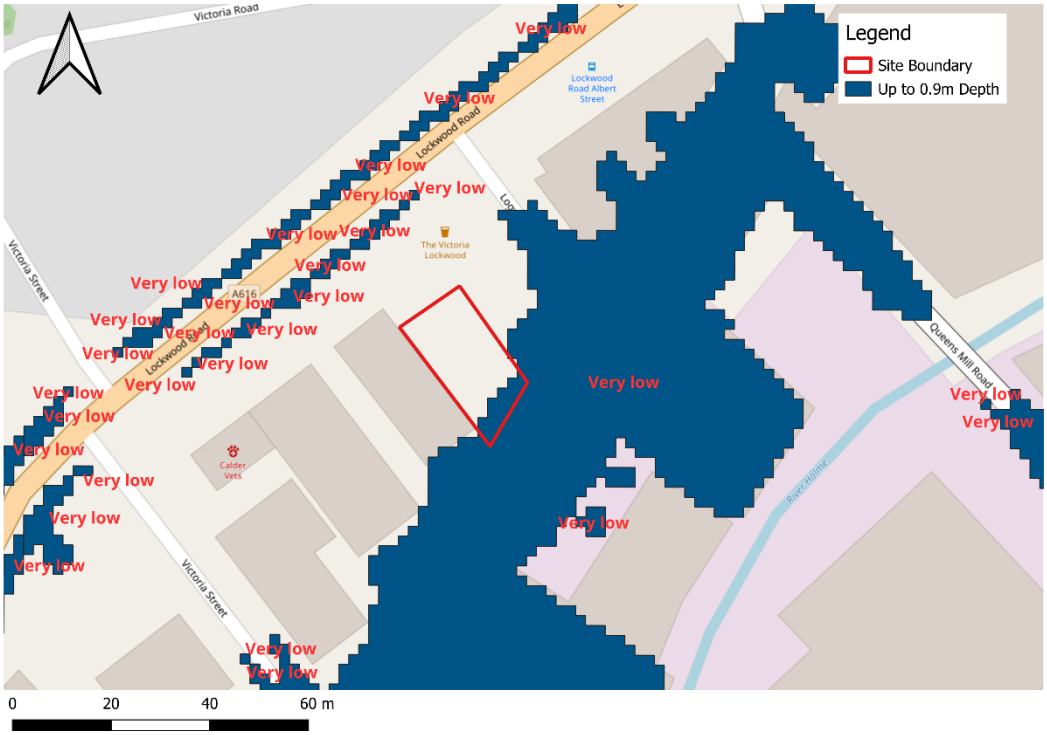


Figure C.19: Likelihood of Surface Water Flooding of Up to 0.9m Depth (With Climate Change) (Source: QGIS Layer from the EA)

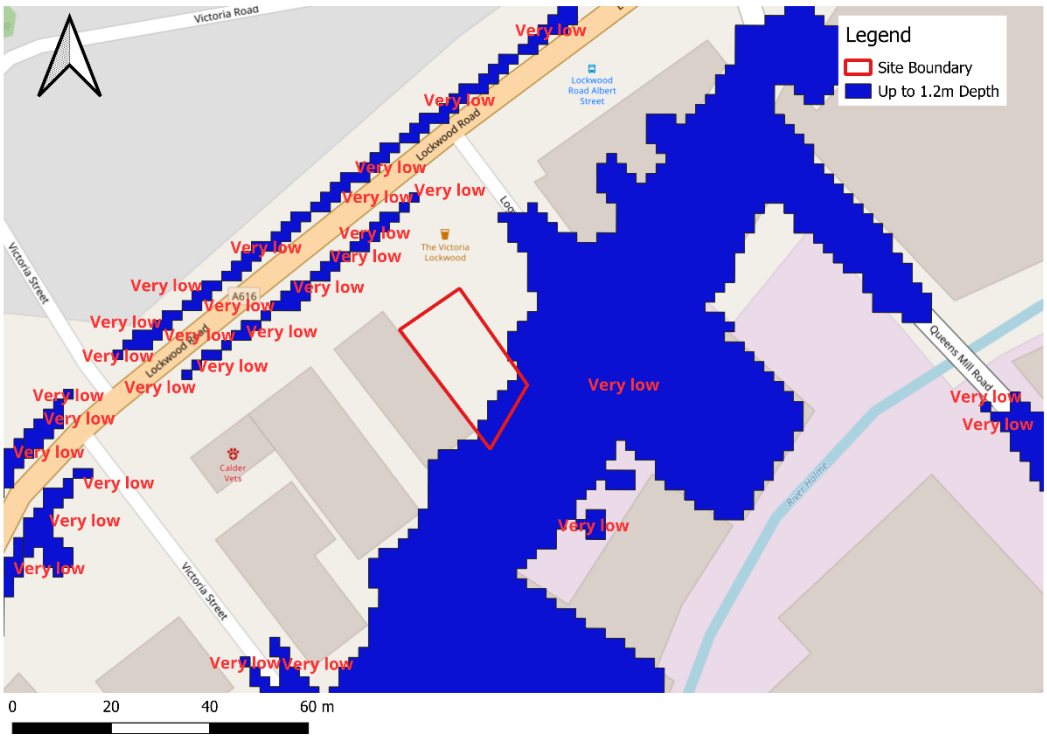


Figure C.20: Likelihood of Surface Water Flooding of Up to 1.2m Depth (With Climate Change) (Source: QGIS Layer from the EA)

Appendix D: Pre-Development Greenfield and Brownfield Discharge Rates

Greenfield runoff rate estimation tool

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

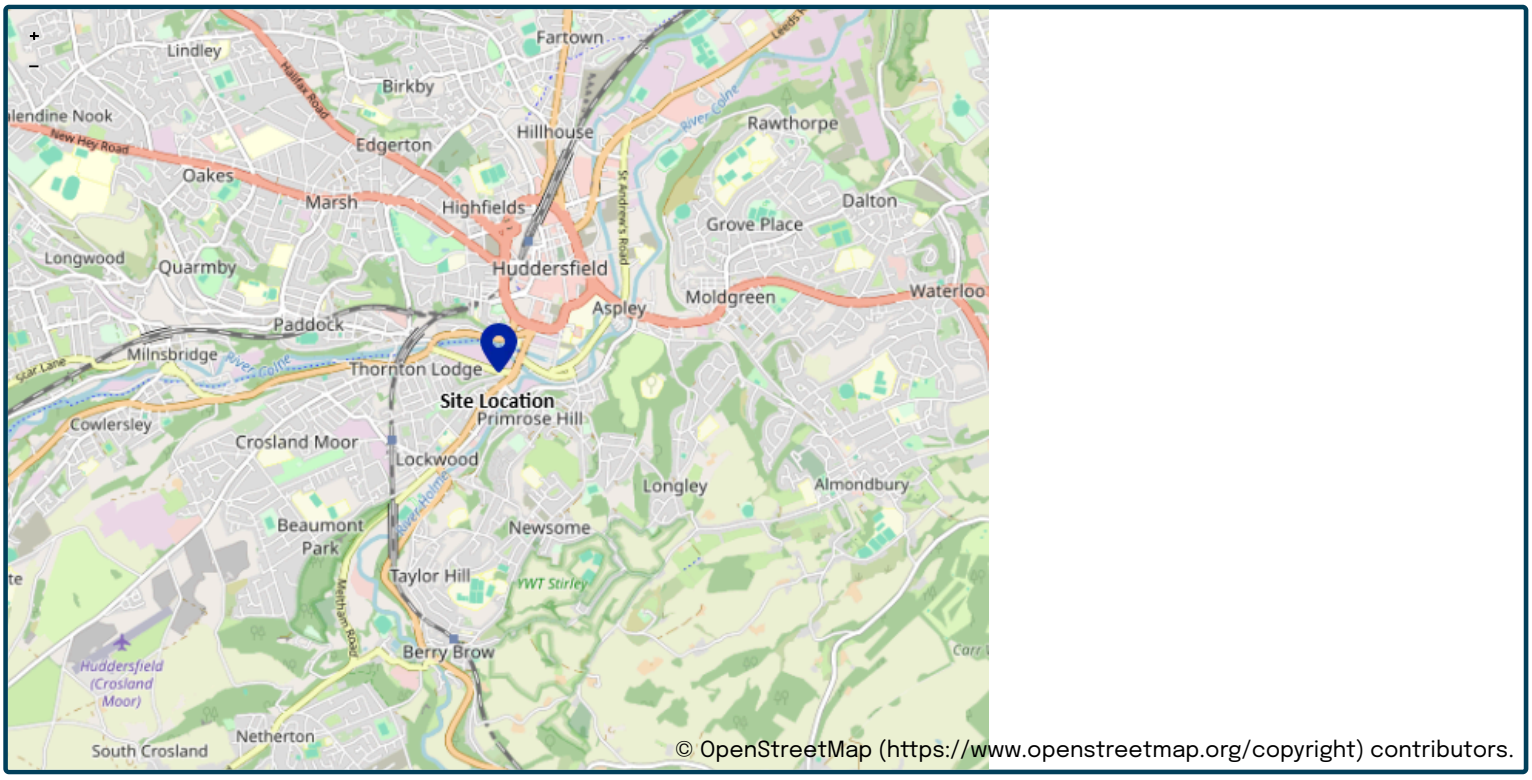
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	26/06/2025
Calculated by	Pratheek Ramesh
Reference	94207
Model version	2.0.1

Location

Site name	Albert Street Car Park
Site location	6 Albert Street



Site easting	414092
Site northing	415737

Site details

Total site area (ha)	0.0372 ha

Greenfield runoff

Method

Method	IH124

IH124

	My value		Map value
SAAR (mm)	903 mm		903
How should SPR be derived?	WRAP soil type		
WRAP soil type	2		2
SPR	0.3		
QBar (IH124) (l/s)	0.091 l/s		

Growth curve factors

	My value		Map value
Hydrological region	3		3
1 year growth factor	0.86		
2 year growth factor	0.94		
10 year growth factor	1.45		
30 year growth factor	1.75		
100 year growth factor	2.08		
200 year growth factor	2.37		

Results

Method	IH124
Flow rate 1 year (l/s)	0.079 l/s
Flow rate 2 year (l/s)	0.086 l/s
Flow rate 10 years (l/s)	0.13 l/s
Flow rate 30 years (l/s)	0.16 l/s
Flow rate 100 years (l/s)	0.19 l/s
Flow rate 200 years (l/s)	0.22 l/s

Disclaimer

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	4320
Rainfall Events	Singular	Additional Storage (m³/ha)	0.0
FSR Region	England and Wales	Starting Level (m)	
M5-60 (mm)	20.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	1.8
Summer CV	1.000	30 year (l/s)	5.0
Winter CV	1.000	100 year (l/s)	6.7
Analysis Speed	Normal	Check Discharge Volume	✓
Skip Steady State	x	100 year 360 minute (m³)	170

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Time of Concentration (mins)	5.00
Brownfield Method	MRM	Betterment (%)	0
Contributing Area (ha)	0.037	Q 1 year (l/s)	6.1
PIMP (%)	100	Q 30 year (l/s)	14.5
CV	0.840	Q 100 year (l/s)	18.4

Pre-development Discharge Volume

Site Makeup	Brownfield	CV	0.840	Betterment (%)	0
Brownfield Method	MRM	Return Period (years)	100	PR	0.840
Contributing Area (ha)	0.037	Climate Change (%)	0	Runoff Volume (m³)	19
PIMP (%)	100	Storm Duration (mins)	360		