Flood Risk Assessment for Planning

April 2026

Prepared for:

Hilmia5 Property Limited

Location:

The Bridge

159-161 Manchester Road

Huddersfield

HD1 3LE

Our reference:

97188-Farooq-ManchesterRd

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Document Issue Record

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Location:	The Bridge, 159-161 Manchester Road, Huddersfield, HD1 3LE
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1. Key Facts

Flood Risk Posed:

- Site is located within Flood Zones 1, 2 and 3 according to the EA Flood Map for planning (Rivers and the Sea). Risk would appear to be fluvial and originates from the River Colne located approximately 38m south of the site.
- The site is shown to be within the EA Flood Zones plus climate change (2070 to 2125) extent.
- According to the 2016 Calder Catchment SFRA, the site is located within Flood Zone 3a, entirely outside of the functional floodplain.
- The information provided was taken from the Colne and Holme flood mapping, completed in 2020 by JBA.
- Comparison of the modelled flood level for the undefended 1:100 year plus 20% climate change event (74.43mAOD) with approximate topographic site levels (73.60mAOD to 76.70mAOD) shows the site to be up to 0.83m below and 2.27m above the flood level for this event.
- Comparison of the modelled flood level for the undefended 1:100 year plus 20% climate change event (74.43mAOD) with finished floor levels of the ground floor (76.50mAOD) and basement (73.76mAOD) shows the site to be up to 2.07m above and 0.67m below the flood level for this event, respectively.
- According to EA data, there are no Flood Storage Areas located in close proximity to the site.
- No formal flood defences would appear to defend the site from direct inundation to any significant degree. Therefore, there is negligible residual risk from breach and overtopping of flood defences.
- The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Very Low” to “High” chance of flooding from surface water for the present day and between 2040 and 2060.
- Risk to the site from groundwater and sewer surcharge would appear to be very low. No information has been provided to suggest that the site has flooded historically from these sources.
- The site is located within the maximum inundation extent on the EA Reservoir Inundation Map when river levels are normal. The EA also advise on their website that reservoir flooding is extremely unlikely.
- The EA hold no records of historic flooding having affected the site or the surrounding area.

Flood Risk Mitigation:

- The proposed application is for the change of use of ground floor public house to dental clinic and taxi office.
- There will be no increase to built footprint, impermeable areas or increase to vulnerability. Internal access will be permanently maintained from the basement to the ground floor. There will be no residential elements as part of this proposal.
- Post development, the site will remain “less vulnerable” (commercial).
- The ground floor finished floor levels are 76.50mAOD, 2.07m above the undefended 1:100 year plus 20% climate change flood event (74.43mAOD).
- The applicant has agreed to raise the basement finished floor levels as much as feasibly possible (150-200mm above the existing).
- The applicant has also confirmed that the new basement floor will be of solid resilient construction. The applicant has detailed that the basement walls are of solid imperforate construction with no openings.
- Extra flood resistance and resilience measures will be implemented.
- The proposed development fits within Standing Advice for vulnerable developments.
- Safe escape can be achieved with the inclusion of climate change.
- In case of an extreme flood event without warning, site users should seek refuge on the ground floor of building, as the ground floor finished floor levels are 76.50mAOD, 2.07m above the undefended 1:100 year plus 20% climate change flood event (74.43mAOD).
- The applicant has agreed that a permanent means of internal access will be provided from the basement to the ground floor, thus providing safe refuge.
- There will be no loss of fluvial floodplain storage.

- Due to the small scale of development, a full Surface Water Drainage Strategy is not required at this stage of planning.
- The applicant will register with the free Environment Agency Floodline Alert Direct service.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

2. Introduction

2.1. Unda Consulting Limited have been appointed by Hilmia5 Property Limited (hereinafter referred to as "the applicant") to undertake a Flood Risk Assessment for the proposed development at The Bridge, 159-161 Manchester Road, Huddersfield, HD1 3LE (hereinafter referred to as "the site"). The purpose of the study is to support a planning application for the proposed development.

2.2. This report presents our findings based on the readily available information and data relating to the site and surrounding drainage area.

2.3. The site appears to be located within Flood Zones 1, 2 and 3 as defined by the Environment Agency (EA) on their Flood Map for Planning. Under the National Planning Policy Framework (NPPF), a FRA is required for all development or changes of use proposed:

- In Flood Zones 2 or 3 or see flood map for planning;
- Within Flood Zone 3b;
- Within Flood Zone 1 with a site area of 1 hectare or more;
- Within 'Flood Zones plus Climate Change', showing it is at increased risk of flooding from rivers or sea in future - see flood map for planning;
- With Flood Zone 1 and the flood map for planning shows it is at risk of flooding from surface water;
- In areas with critical drainage problems;
- Within Flood Zone 1 where the LPA's strategic flood risk assessment (SFRA) shows it will be at increased risk of flooding during its lifetime;
- That increases the vulnerability classification and may be subject to sources of flooding other than rivers or sea.

2.4. The assessment should demonstrate to the Local Planning Authority (LPA) and EA how flood risk will be managed now and over the development's lifetime, taking climate change into account, and with regard to the vulnerability of its potential users.

- Whether the proposed development is likely to be affected by current or future flooding from any source;
- Whether it will increase flood risk elsewhere;
- Whether the measures proposed to deal with these effects and risks are appropriate.

3. Existing Site

3.1. The site comprises of a public house.

3.2. The site is understood to have lawful planning permission for commercial use.

3.3. The surrounding area is characterised by commercial properties.

3.4. Existing plans are provided in the report Appendix.

Figure 1: Aerial imagery of site and surrounding area (Source: Google Earth)

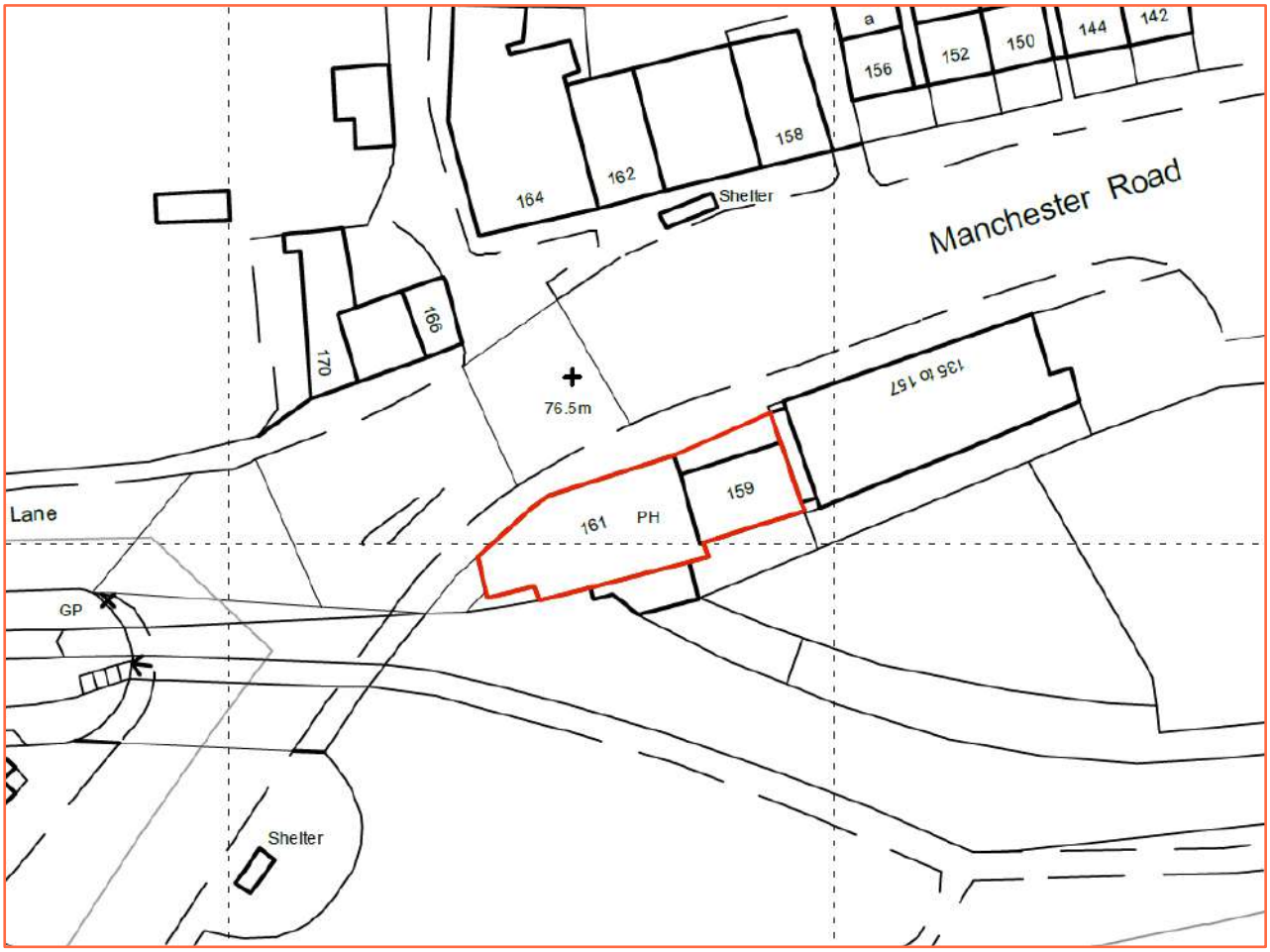


Figure 2: Site location plan (Source: ADP)

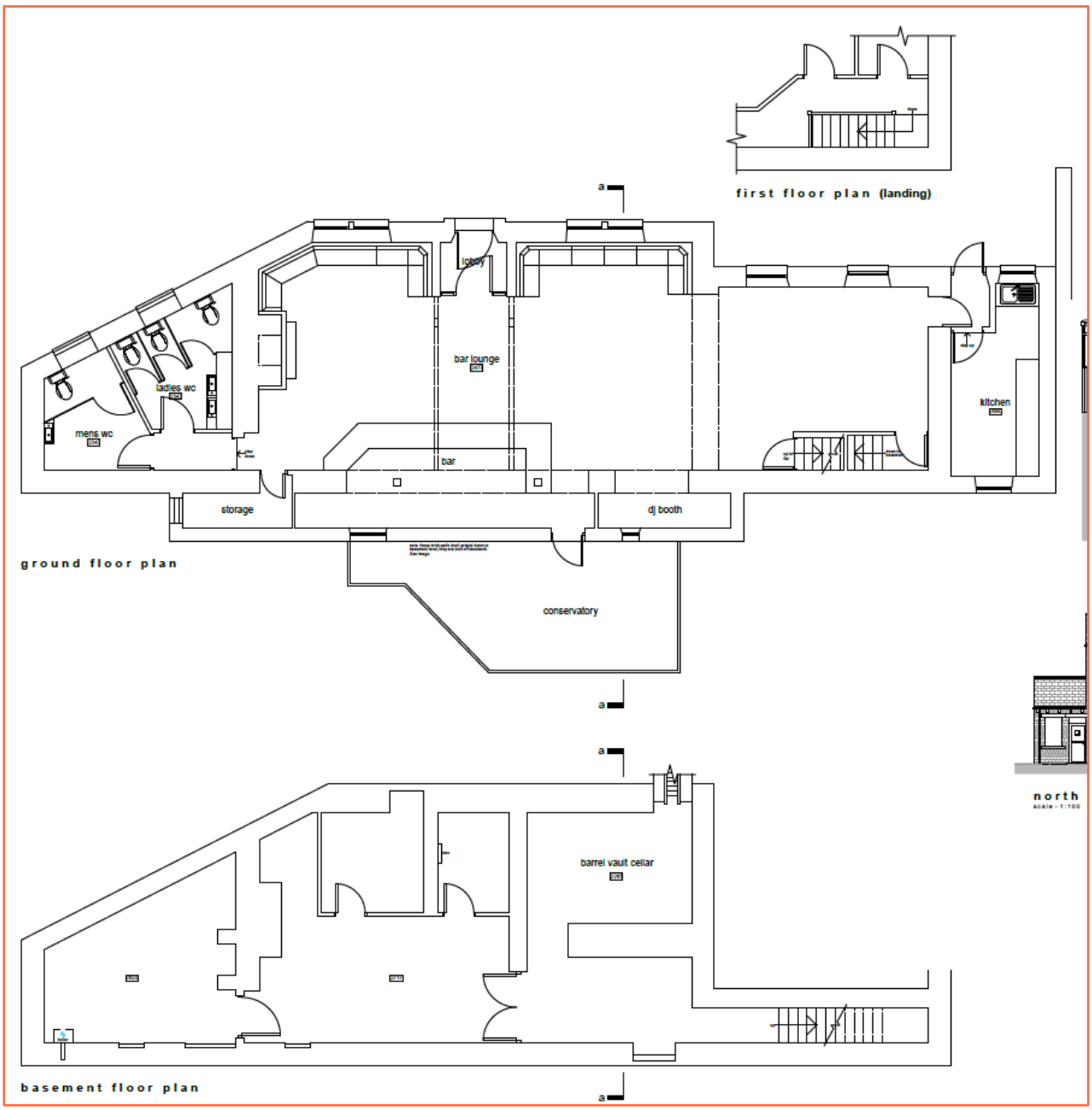


Figure 3: Existing floor plans (Source: ADP)

Site Topography:

3.5. Environment Agency LiDAR has been used to assess the topography across the site and wider area. Light Detection and Ranging (LiDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground surface. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at high spatial resolutions. The EA's LiDAR data archive contains digital elevation data derived from surveys carried out by the EA's specialist remote sensing team. Accurate elevation data is available for over 70% of England. The LiDAR technique records an elevation accurate to +/-5cm to 15cm with spatial resolutions ranging from 25cm to 2 metres. This dataset is derived from a combination of the full dataset which has been merged and re-sampled to give the best possible coverage. The dataset can be supplied as a Digital Surface Model (DSM) produced from the signal returned to the LiDAR (which includes heights of objects, such as vehicles, buildings and vegetation, as well as the terrain surface) or as a Digital Terrain Model (DTM) produced by removing objects from the Digital Surface Model. 1.0m horizontal resolution DTM LiDAR data has been used for the purposes of this study.

3.6. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 73.60mAOD to 76.70mAOD.

3.7. A partial topographic survey of the site undertaken in March 2026 by ADP on behalf of the Applicant shows the finished floor levels are 76.50mAOD for the ground floor and 73.76mAOD for the basement.

3.8. The topographic survey can be found within the Appendix.

Existing Ground Conditions:

3.9. The 1:50,000 BGS map shows that the bedrock underlying the site is Pennine Lower Coal Formation – Mudstone siltstone and sandstone.

3.10. The BGS mapping shows superficial deposits of Alluvium – clay, silt, sand and gravel underlying the site.

3.11. The soil type taken from the UKSO Soil Map Viewer, shows the site to be located upon relatively deep soils of riverine clay and floodplain sands and gravel soil parent material with a soil texture of clay to sandy loam.

Nearby Watercourses / Drainage Features:

3.12. The nearest watercourse to the site is the Huddersfield Narrow Canal located approximately immediately south.

3.13. The River Colne is located approximately 38m south of the site.

4. Development Proposal

4.1. The proposed application is for the change of use of ground floor public house to dental clinic and taxi office.

4.2. There will be no increase to built footprint, impermeable areas or increase to vulnerability.

4.3. Internal access will be permanently maintained from the basement to the ground floor.

4.4. There will be no residential elements as part of this proposal.

4.5. Proposed plans are provided in the report Appendix.

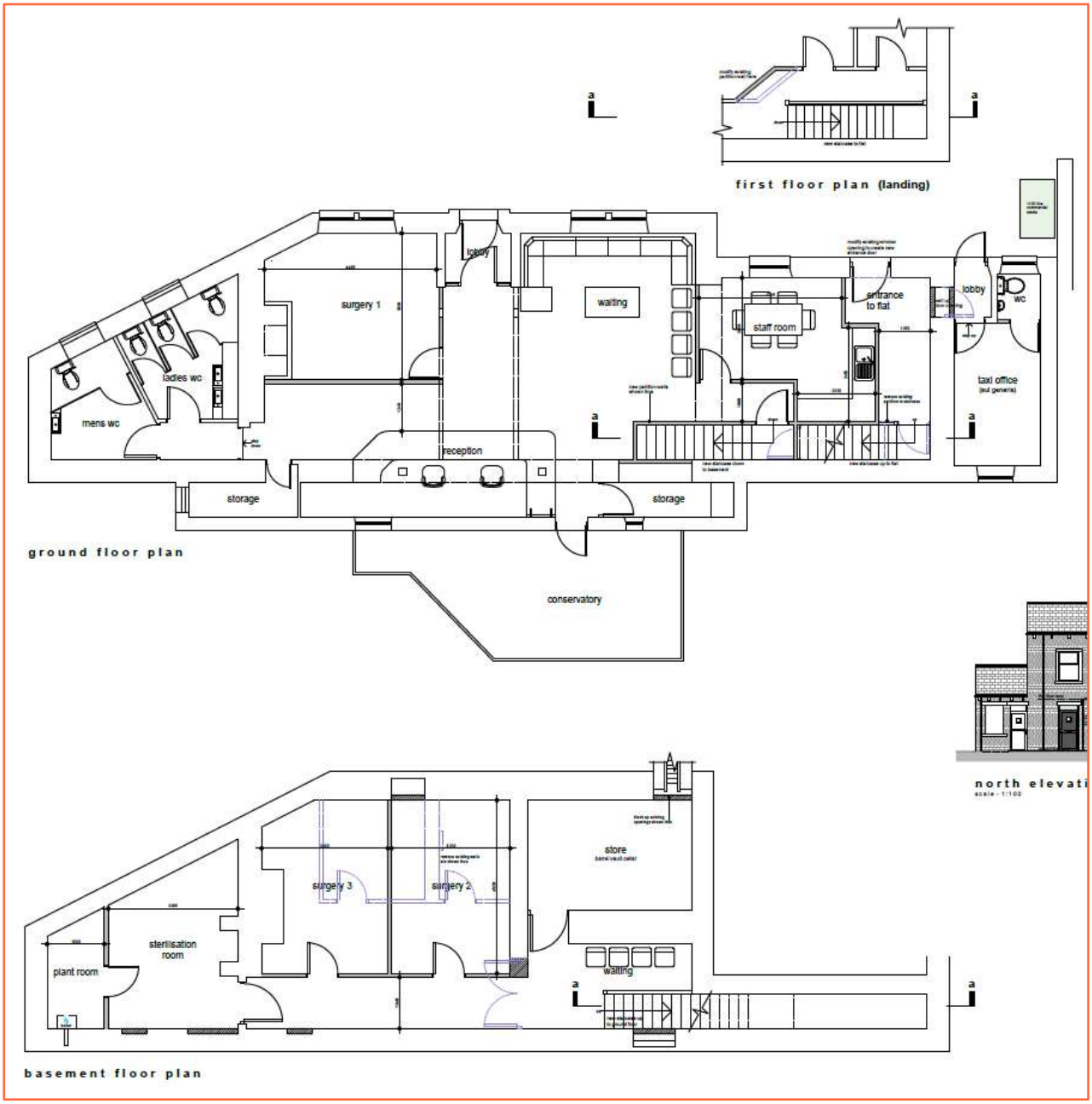


Figure 4: Proposed floor plans (Source: ADP)

5. Flood Risk Assessment

EA Flood Zones:

5.1. Within planning, Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's website.

Flood Zone	Definition
Zone 1 **Low Probability**	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 **Medium Probability**	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a **High Probability**	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b **The Functional Floodplain**	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 1: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

5.2. The Flood Zones are created using local flood model outputs, recorded flood outlines and national flood model information. These are combined to generate extents of land at flood risk, with the aim of using the best available flood risk information in any one location. The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

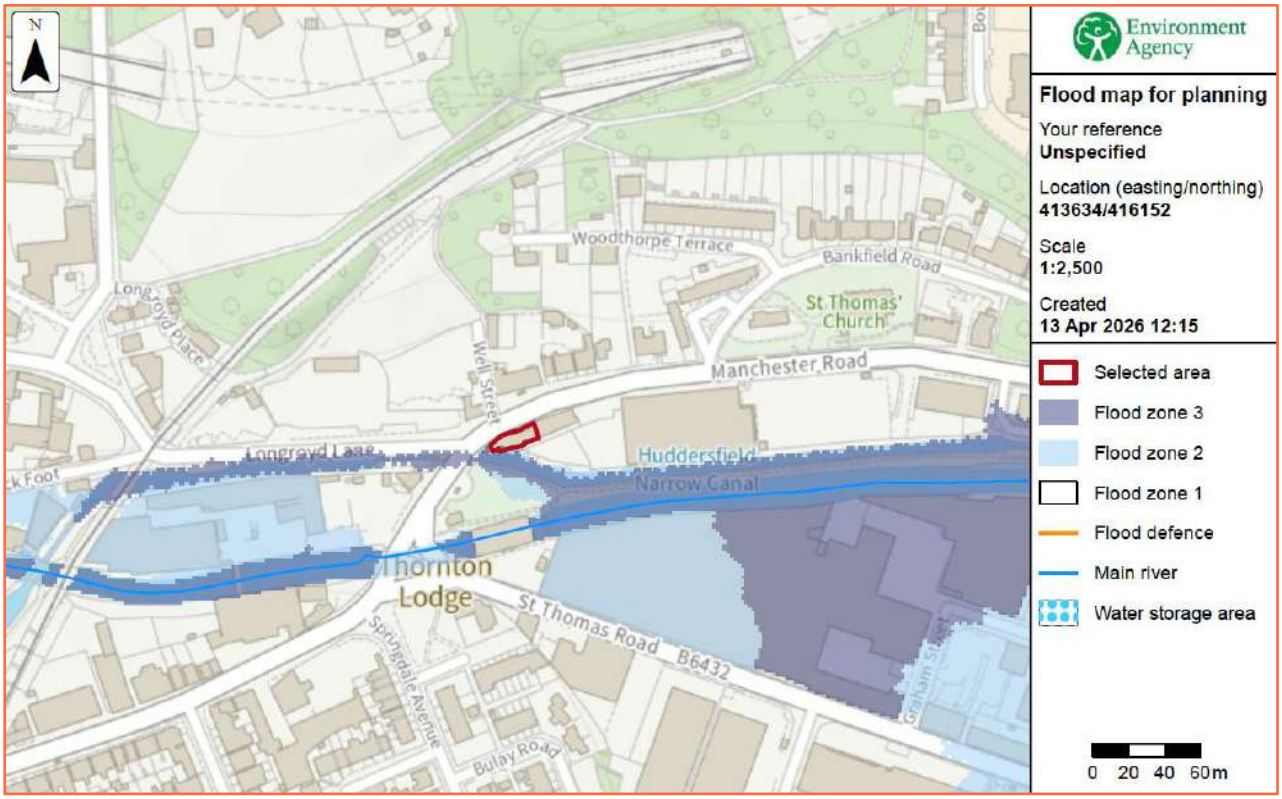


Figure 5: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

5.3. The site is located within Flood Zone 1 (Low Probability), defined as land having a less than 1:1000 year probability of river or sea flooding, Flood Zone 2 (Medium Probability), defined as land having between a 1:100 and 1:1000 annual probability of river flooding; or Land having between a 1:200 and 1:1000 annual probability of sea flooding and partially within Flood Zone 3 (High Probability), defined as land having a 1:100 or greater annual probability of river flooding; or Land having a 1:200 or greater annual probability of sea flooding.

5.4. The risk would appear to be fluvial and originates from the River Colne located approximately 38m south of the site.

EA Flood Zones plus Climate Change:

5.5. The Flood Zones plus climate change dataset shows how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century, ignoring the benefits of any existing flood defences. The EA have assumed no changes to flood defences or land-use that could occur in future. The effects of climate change on flood risk which may be seen in the future could be different to those currently considered.

5.6. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.

5.7. The datasets shown on Flood Map for Planning are aimed at supporting planners and developers to make long-term decisions about the location and design of development and the use of land. Such decisions need to account for the full anticipated lifetime of the development being planned.

5.8. The EA have therefore chosen:

- The 'Central' allowance for the 2080s epoch (2070-2125) for risk of flooding from rivers
- The 'Upper End' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2125

5.9. The Flood Zones plus climate change dataset is created using local flood model outputs, recorded flood outlines and national flood model information, and by adding climate change scenarios from local and national modelling, using the maximum extents from:

- Rivers and sea with defences 3.3%, 1%/0.5% and 0.1% AEPs
- Rivers and sea without defences 1%/0.5% and 0.1% AEPs

5.10. The extents are merged to create a single outline.

5.11. The site is shown to be within the EA Flood Zones plus climate change (2070 to 2125) extent.

Alternative Flood Zones:

5.12. Within their Strategic Flood Risk Assessment (SFRA), 2016 Calder Catchment differentiate Flood Zone 3a from Flood Zone 3b, the functional floodplain. Flood Zone 3b comprises land where water is required to flow or be stored in times of flood. The functional floodplain designation encompasses land which would flood with an annual probability of 1 in 30 or greater in any year; and includes areas of land required for water conveyance routes.

5.13. According to the 2016 Calder Catchment SFRA, the site is located within Flood Zone 3a, entirely outside of the functional floodplain.

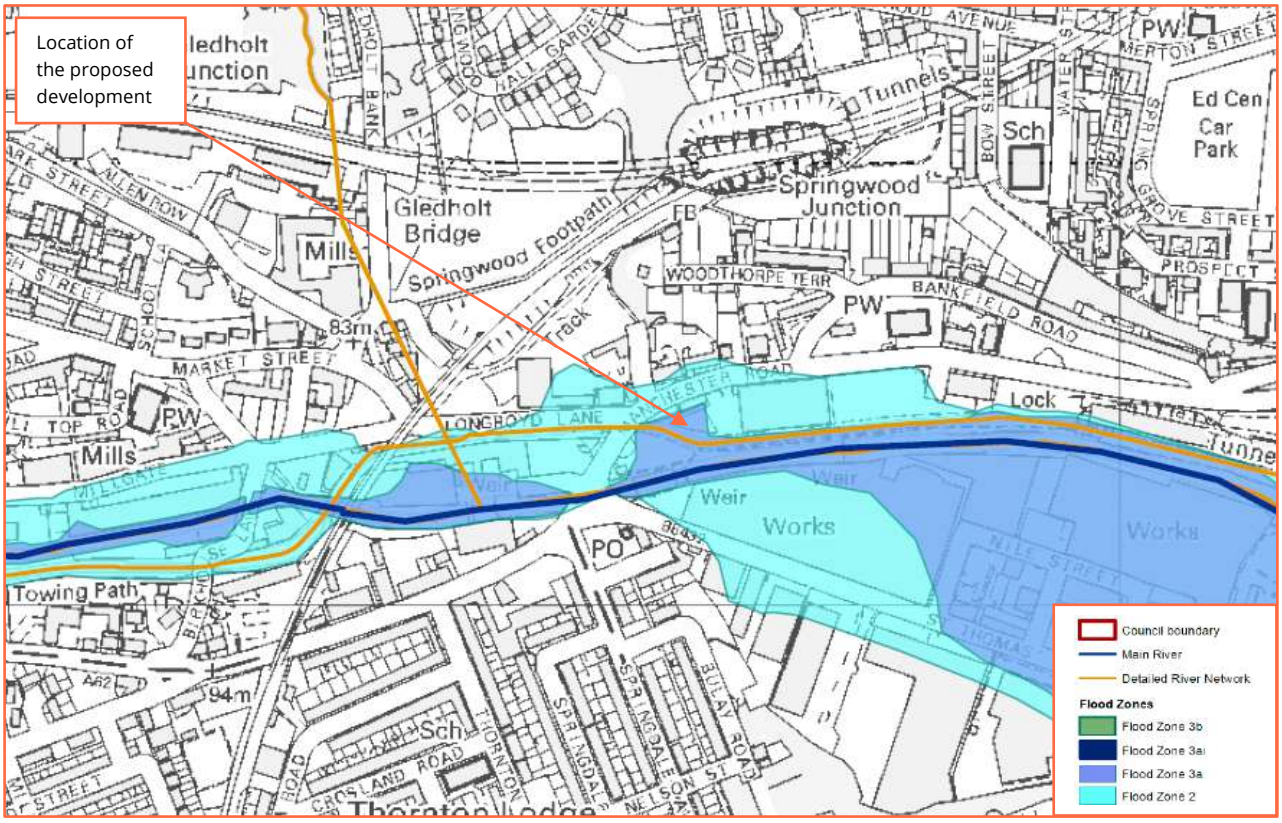


Figure 6: Flood Zones (Source: 2016 Calder Catchment SFRA)

Fluvial (River Colne):

5.14. The Huddersfield Narrow Canal is a man made waterway in West Yorkshire forming part of the inland canal network across northern England. It begins in Huddersfield town centre, where it connects to the Huddersfield Broad Canal, which in turn links to the Calder and Hebble Navigation. From its eastern terminus, the canal runs westwards through the Colne Valley, passing through settlements such as Slaithwaite, Marsden and Diggle. It crosses the Pennines via the Standedge Tunnel, one of the longest canal tunnels in the United Kingdom, before descending towards Stalybridge and Ashton under Lyne, where it joins the Ashton Canal. The canal is an artificial navigation rather than a natural watercourse and is not designated as Main River by the Environment Agency, however the River Colne is designated as a "Main River".

Detailed Flood Modelling:

5.15. Modelled flood levels and extents have been requested from the Environment Agency.

5.16. The information provided was taken from the Colne and Holme flood mapping, completed in 2020 by JBA.

5.17. Both undefended and defended modelled flood levels and extents have been provided for a variety of return periods.

5.18. The development is classified as "Less Vulnerable" and is located within Flood Zones 1, 2 and 3. The Flood Risk Assessments: climate change allowances guidance states that for "Less Vulnerable" development in Flood Zones 2 and 3, the Central allowance should be used. The site falls within the Aire and Calder Management Catchment, where Central allowance is a 23% increase in flows.

5.19. The data provided by the EA includes climate change allowances of 20%, 30% and 50%. Therefore, the most suitable allowance is the 20% increase in river flows, which will be used for this assessment.

5.20. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 73.60mAOD to 76.70mAOD.

5.21. The topographic survey shows that the finished floor levels are 76.50mAOD for the ground floor and 73.76mAOD for the basement.

Return Period	Defended (mAOD)	Undefended (mAOD)
1:100 year	74.41	74.41
1:100 year + 20%	Data not provided	74.43
1:1000 year	74.94	74.94

Table 2: Maximum modelled flood levels on site (Source: Colne and Holme flood mapping, 2020)

5.22. As the site does not benefit to any significant extent from the presence of flood defences, the same modelled flood levels are shown for the undefended and defended events.

5.23. Comparison of the modelled flood level for the undefended 1:100 year plus 20% climate change event (74.43mAOD) with approximate topographic site levels (73.60mAOD to 76.70mAOD) shows the site to be up to 0.83m below and 2.27m above the flood level for this event.

5.24. Comparison of the modelled flood level for the undefended 1:100 year plus 20% climate change event (74.43mAOD) with finished floor levels of the ground floor (76.50mAOD) and basement (73.76mAOD) shows the site to be up to 2.07m above and 0.67m below the flood level for this event, respectively.

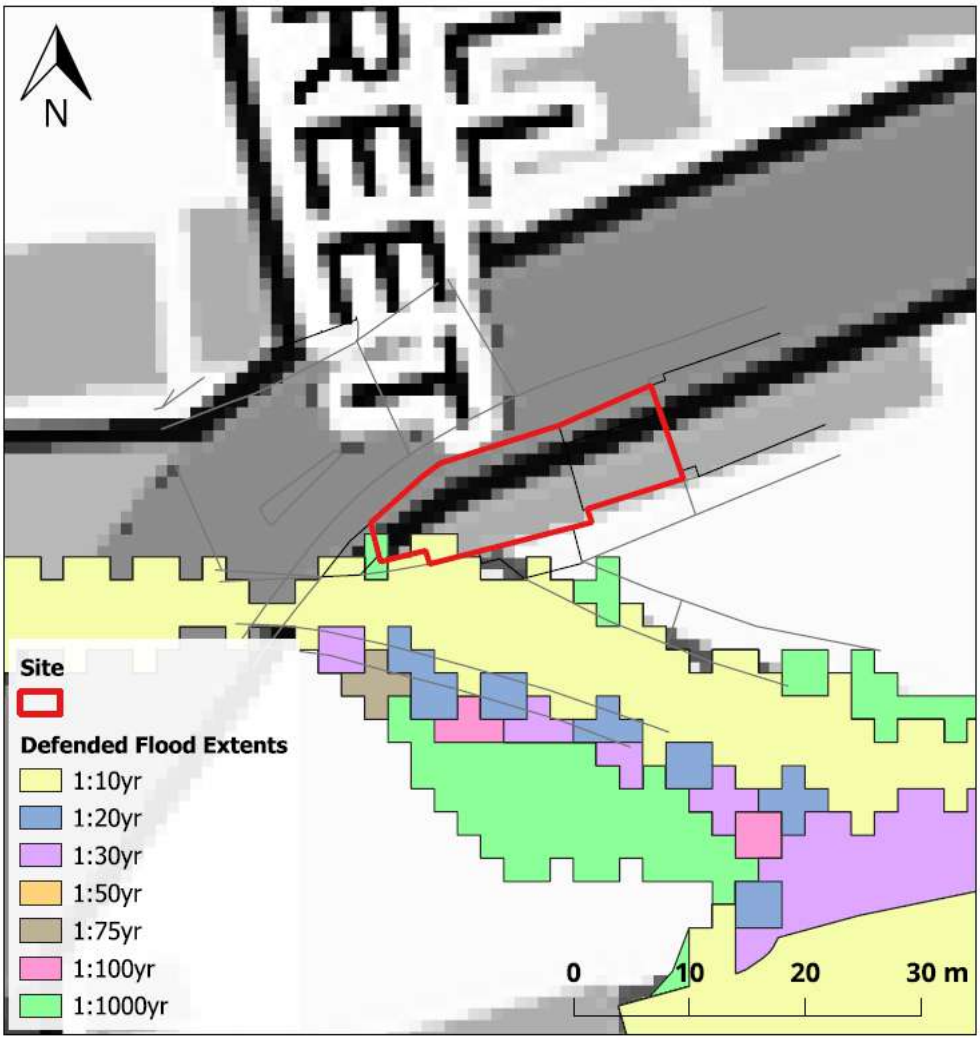


Figure 7: Defended flood extents (Source: EA)

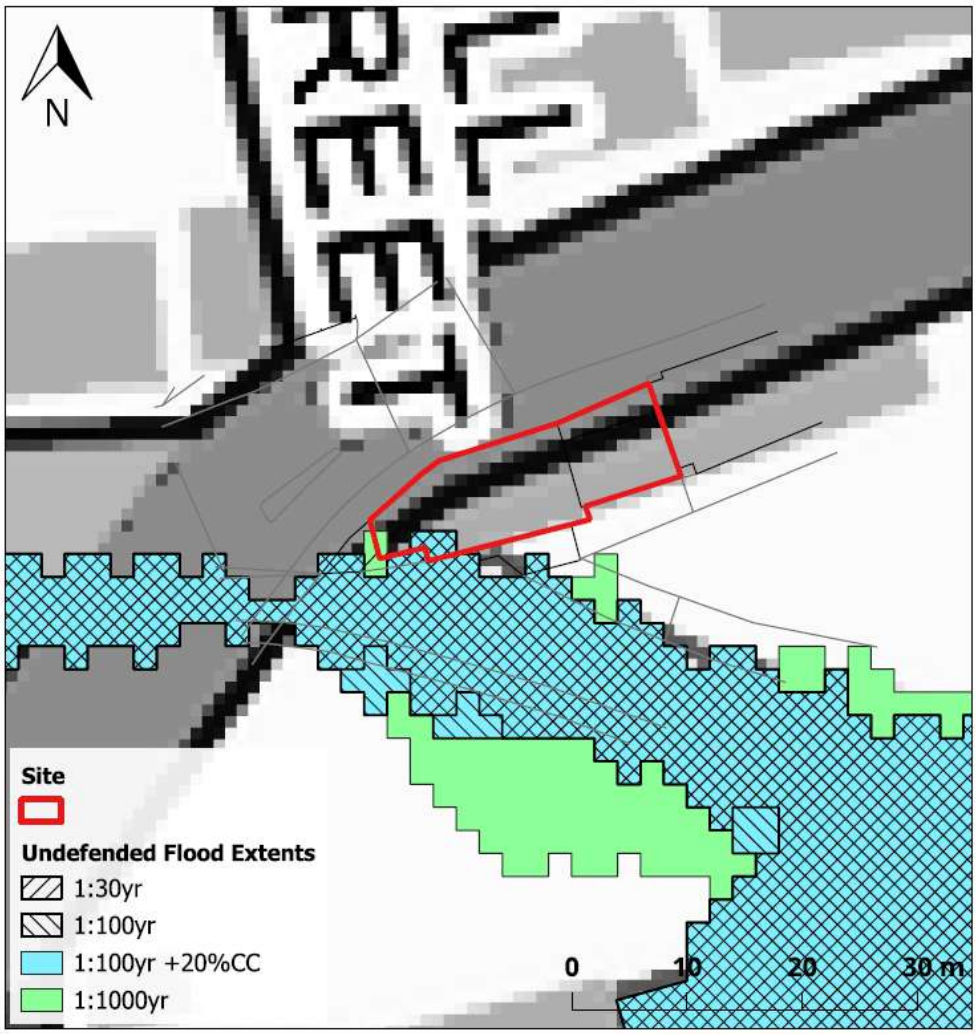


Figure 8: Undefended flood extents (Source: EA)

Flood Storage Areas:

5.25. Flood Storage Areas are areas that act as a balancing reservoir, storage basin or balancing pond. Their purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.

5.26. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

Flood Defences:

5.27. Flood defences are typically raised structures that alter natural flow patterns and prevent floodwater from entering property in times of flooding. They are generally categorised as either 'formal' or 'informal' defences. A 'formal' flood defence is a structure that was built specifically for the purpose of flood defence, and is maintained by its respective owner, which could be the EA, Local Authority, or an individual. An 'informal' flood defence is a structure that has not been specifically built to retain floodwater, and is not maintained for this specific purpose, but may afford some protection against flooding.

5.28. Asset inspections are undertaken on average every six months, although some critical assets are assessed on a more regular basis. It is possible that adjacent assets are inspected on different dates, which may result in two assets of a similar state of repair having different condition ratings. It is unclear when both assets were last inspected.

5.29. Condition ratings of assets may also be affected by the time of year the surveys are conducted, as vegetation may obscure the asset in the summer months, or accessibility may be an issue during winter months. These factors would not usually affect the recorded condition rating of an asset unless the asset is on a borderline between two ratings.

5.30. No formal flood defences would appear to defend the site from direct inundation to any significant degree. Therefore, there is negligible residual risk from breach and overtopping of flood defences.

Residual Risk (breach or overtopping of flood defences):

5.31. Breaching of flood defences can cause rapid inundation of areas behind flood defences as flow in the river channel discharges through the breach. A breach can occur with little or no warning, although they are much more likely to occur with extreme river levels or tides when the stresses on flood defences are highest. Flood water flowing through a breach will normally discharge at a high velocity, rapidly filling up the areas behind the defences, resulting in significant damage to buildings and a high risk of loss of life. Breaches are most likely to occur in soft defences such as earth embankments although poorly maintained hard defences can also be a potential source of breach.

5.32. Overtopping of flood defences occurs when water levels exceed the protection level of raised flood defences. The worst case occurs when the fluvial or tidal levels exceed the defence level as this can lead to prolonged flooding. Less severe overtopping can occur when flood levels are below defence levels, but wave action causes cyclic overtopping, with intermittent discharge over the crest level of the defence. Flood defences are commonly designed with a freeboard to provide protection against overtopping from waves. The risk from overtopping due to exceedance of the flood defence level is much more significant than the risk posed by wave overtopping. Exceedance of the flood defence level can lead to prolonged and rapid flooding with properties immediately behind the defences at highest risk.

5.33. The site is not shown to be defended by formal flood defences.

Tidal Flooding:

5.34. Due to the site topography and distance to the nearest coast/tidal watercourse, the risk of tidal flooding is considered to be very low.

Pluvial (Surface Water):

5.35. Pluvial (surface water) flooding occurs 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.

5.36. The mapping below shows the Risk of Flooding from Surface Water (RoFSW). Please note that the EA do not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation. This information tells you the flood risk of the land around a building, not the building itself.

5.37. The RoFSW products are an assessment of where surface water flooding may occur.

5.38. The mapping shows the following likelihood categories, for the present day risk of flooding from surface water, and the climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk.

- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
- Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
- Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

5.39. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 "2050s" epoch) and Central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

5.40. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Very Low" to "High" chance of flooding from surface water.

5.41. The EA Risk of Flooding from Surface Water mapping shows the site to be at "Very Low" to "High" chance of flooding between 2040 and 2060.

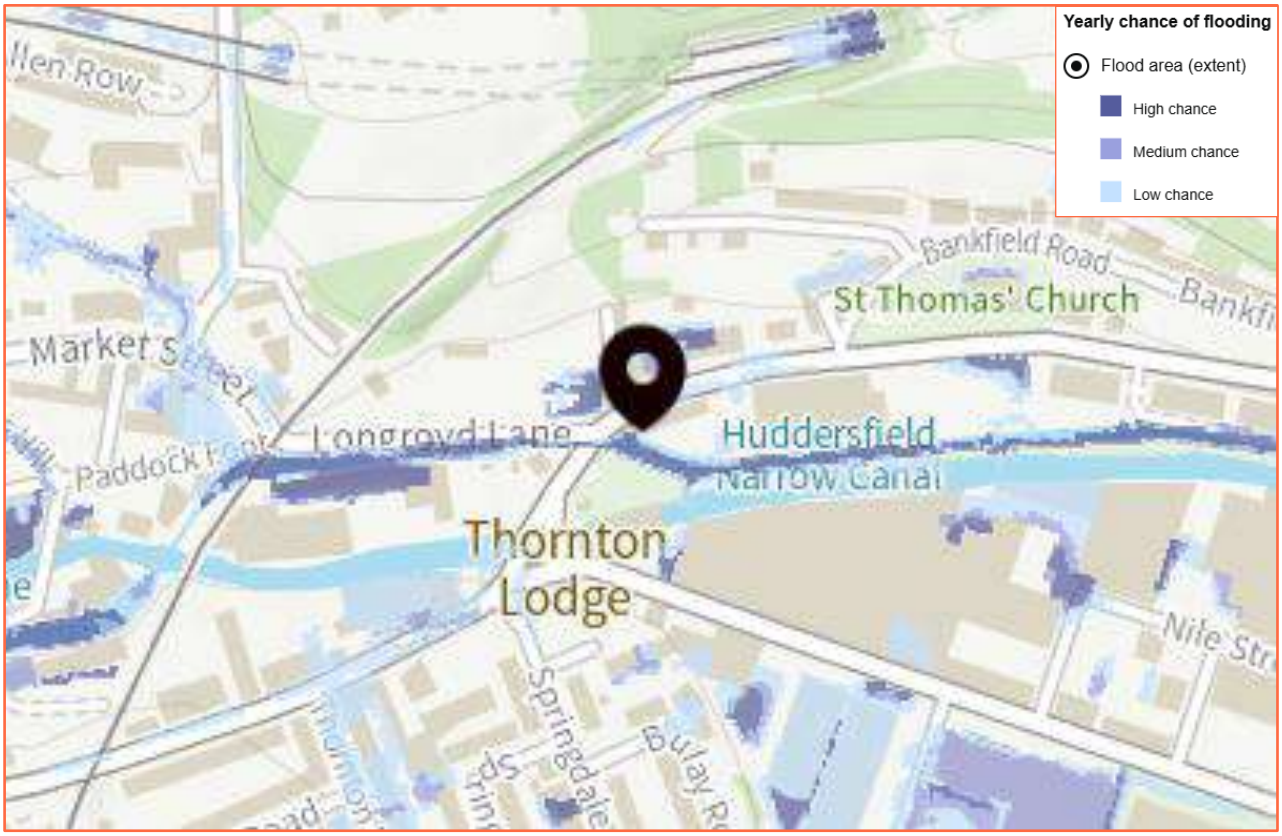


Figure 9: Extract from EA Risk of Flooding from Surface Water mapping – present day (Source: EA)

Figure 10: Extract from Environment Agency RoFSW map – between 2040 and 2060 (Source: EA)

Groundwater:

5.42. Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

5.43. Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.

5.44. The 2016 Calder Catchment SFRA shows the site lies within an area that is <25% susceptible to groundwater flooding.

5.45. The EA states that this location is outside of a groundwater flood alert area.

5.46. No information has been provided to suggest that the site has flooded historically due to groundwater.

Sewer:

5.47. Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.

5.48. All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.

5.49. No information has been presented to suggest that the site itself has been affected by sewer flooding.

Other Sources:

5.50. Reservoirs with an impounded volume in excess of 25,000 cubic metres (measured above natural ground level) are governed by the Reservoirs Act and are listed on a register held by the Environment Agency. The site is located within the maximum inundation extent on the EA Reservoir Inundation Map when river levels are normal. The EA also advise on their website that reservoir flooding is extremely unlikely. There has been no loss of life in the UK from reservoir flooding since 1925. All major reservoirs have to be inspected by specialist dam and reservoir Engineers. In accordance with the Reservoirs Act 1975 in England, these inspections are monitored and enforced by the EA themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating to the potential for fluvial / tidal flooding to occur. The Environment Agency Reservoir Flood Map illustrated below, illustrates the largest area that might be flooded if the storage area were to fail and release the water it is designed to hold during a flood event.

5.51. Records of flooding from reservoirs and canals are erratic as there is no requirement for the Environment Agency to provide information on historic flooding from canals and raised reservoirs on plans. In particular, the NPPF does not require flood risk from canals and raised reservoirs to be shown on the Environment Agency flood zones.

5.52. Overflows from canals can be common as they are often fed by land drainage, and often do not have controlled overflow spillways. Occasionally, major bank breaches also occur, leading to rapid and deep flooding of adjacent land.

5.53. No information has been provided to suggest that the site is susceptible to flooding from other sources.

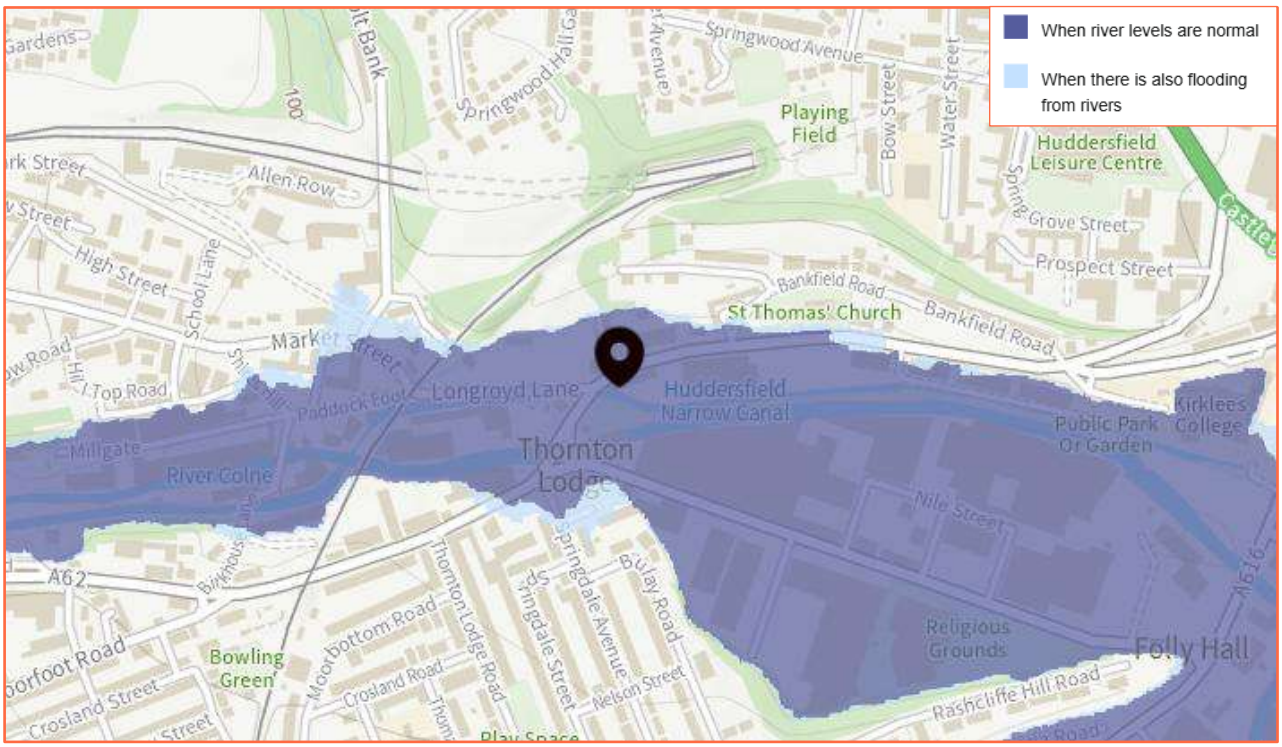


Figure 11: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

5.54. The EA hold records of historic flood events from rivers and the sea. The EA map flooding to land, not individual properties. Their historic flood event record outlines are an indication of the geographical extent of an observed flood event. Their historic flood event outlines do not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.

5.55. The EA hold no records of historic flooding having affected the site or surrounding area.

5.56. The EA historical flood records are not comprehensive, and they advise that further enquiries locally are made with specific reference to flooding at the location.

6. Flood Risk Management

Vulnerability to Flooding:

6.1. The NPPF classifies property usage by vulnerability to flooding.

6.2. The existing site usage is classified as “less vulnerable” (commercial).

6.3. Post development, the site will remain “less vulnerable” (commercial), as the application is for the change of use of ground floor public house to dental clinic and taxi office.

6.4. There will be no increase to built footprint or impermeable areas.

6.5. Internal access will be permanently maintained from the basement to the ground floor.

6.6. There will be no residential elements as part of this proposal.

6.7. Accordingly, it is considered that the vulnerability of the site as a whole will not increase post development.

EA Standing Advice for Vulnerable Developments:

6.8. EA Standing Advice for vulnerable development (for example, less vulnerable and water compatible) development in Flood Zone 3 states that finished floor levels should be a minimum of whichever is higher of 600mm above the:

- Average ground level of the site
- Adjacent road level to the building
- Estimated river or sea flood level

6.9. If you cannot raise floor levels to meet the minimum requirements, you will need to:

- Raise them as much as possible
- Consider moving vulnerable uses to upper floors
- Include extra flood resistance and resilience measures

6.10. The change of use does not propose an increase to vulnerability classification or increase to built footprint.

6.11. The ground floor finished floor level is 76.50mAOD, 2.07m above the undefended 1:100 year plus 20% climate change flood event (74.43mAOD).

6.12. The applicant has agreed to raise the basement finished floor levels as much as feasibly possible (150-200mm above existing).

6.13. The applicant has also confirmed that the new basement floor will be of solid resilient construction. The applicant has detailed that the basement walls are of solid imperforate construction with no openings.

6.14. Extra flood resistance and resilience measures will be implemented.

6.15. As such, the proposed development fits within Standing Advice for vulnerable developments.

Physical Design Measures:

6.16. The site is located within Flood Zones 1, 2 and 3 according to the EA Flood Map for planning (Rivers and the Sea).

6.17. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Very Low" to "High" chance of flooding from surface water for the present day and between 2040 and 2060.

6.18. The EA Standing Advice states that the design should be appropriately flood resistant and resilient by:

- Using flood resistant materials that have low permeability to at least 600mm above the estimated flood level;
- Making sure any doors, windows or other openings are flood resistant to at least 600mm above the estimated flood level;
- Using flood resilient materials (for example lime plaster) to at least 600mm above the estimated flood level;
- By raising all sensitive electrical equipment, wiring and sockets to at least 600mm above the estimated flood level;
- Making it easy for water to drain away after flooding such as installing a sump and a pump;
- Making sure there is access to all spaces to enable drying and cleaning;
- Ensuring that soil pipes are protected from back-flow such as by using non-return valves.

6.19. To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the development where practical and feasible, in consultation with the Local Authority building control department. These measures can include the following:

- Solid concrete ground floor slab, with waterproof membrane;
- Closed-cell foam used in wall cavities;
- Waterproof ground floor internal render;
- Waterproof screed used on ground floors;
- Damp proof membranes;
- External walls rendered resistant to flooding to at least 600mm above ground floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Raised wiring and power outlets at least 600mm above ground floor level;
- Ground floor electrical main ring run from first floor level; and on separately switched circuit from first floor;
- Electrical incomer and meter situated at least 600mm above ground floor level;
- Boilers, control and water storage / immersion installed at least 600mm above ground floor level;
- Gas meter installed at least 600mm above ground floor level;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;
- Kitchen units of solid, water resistant material at ground floor level;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level;
- Stairs of solid hardwood construction with wood faces treated to resist water penetration at ground floor level.

6.20. It is recommended that flood proof doors and windows are installed for all basement and ground floor external doors and windows. Demountable flood defence barriers to 600mm to defend ground level doorways and low windows could be used if flood doors are not practical or other planning constraints prevent it.

Safe Escape:

6.21. The Flood Risk and Coastal Change Planning Practice Guidance (PPG) states that access considerations should include the voluntary and free movement of people during a design flood, as well as the potential for evacuation before a more extreme flood, considering the effects of climate change for the lifetime of the development. Emergency access and escape plans are needed if any part of a development is below the estimated design flood level, which connects the site to an area away from current or future flood risk.

6.22. In case of an extreme flood event without warning, site users should seek refuge on the ground floor of building, as the ground floor finished floor levels are 76.50mAOD, 2.07m above the undefended 1:100 year plus 20% climate change flood event (74.43mAOD).

6.23. The applicant has agreed that a permanent means of internal access will be provided from the basement to the ground floor, thus providing safe refuge.

6.24. The proposed development is located within Flood Zone 3a. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Very Low" to "High" chance of flooding from surface water at present day and between 2040 – 2060.

6.25. The flood hazard along an escape route can be calculated using flood depth, flood velocity and an associated debris factor using the FD2320 analysis. The degree of flood hazard is given four classifications. Under the NPPF, routes should not be subject to any combination of depth and velocity that would result in a flood hazard rating of 0.75 ('danger for some') or greater.

6.26. A "danger for all" degree of flood hazard includes the emergency services.

Flood Hazard Rating (HR)	Hazard to People Classification
Less than 0.75	Very low hazard – caution
0.75 to 1.25	Danger for some – includes children, the elderly and the infirm
1.25 to 2.0	Danger for most – includes the general public
More than 2.0	Danger for all – includes the emergency services

Table 3: Hazard to People Classification using Hazard Rating (Source: Table 13.1 of FD2320/TR2 – Extended Version)

6.27. A safe escape route is provided below during a fluvial flood event.

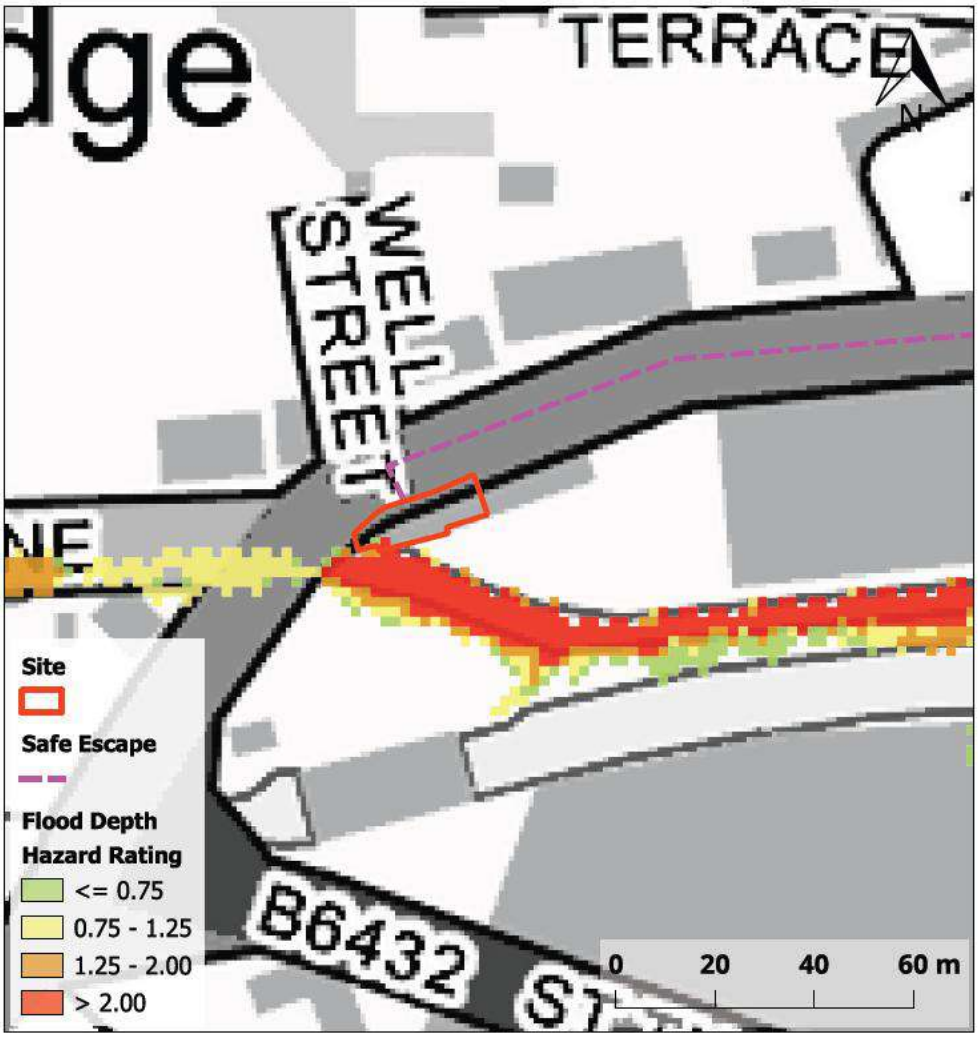


Figure 12: Safe escape route during the design flood level with climate change (Source: EA, OS Mapping)

6.28. The EA have released a Risk of Flooding from Surface Water (RoFSW) dataset including information about hazard ratings. Flood hazard ratings are a measure of how dangerous a flood might be. They are calculated using a combination of flood depth and speed – higher depths and speed mean more dangerous flooding and a higher flood hazard rating.

6.29. The RoFSW is a probabilistic product, meaning that it shows the overall risk, rather than the risk associated with a specific event or scenario. In externally published versions of this dataset, risk is displayed as one of three likelihood bandings, High, Medium or Low.

6.30. The hazard data shows the chance (High, Medium or Low) of a flood occurring with a given flood hazard rating (or higher). There are separate layers for hazard ratings of 0 (i.e. flooding extent), 0.25, 0.5, 0.75, 1.25 and 2.

6.31. The EA RoFSW data includes the 1:30 year (Low), 1:100 year (Medium) and 1:1000 year (High) events with a climate change allowance for between 2040 and 2060.

6.32. For the 0.75 hazard rating, the proposed escape route is entirely outside of the “High” (1:30 year), “Medium” (1:100 year) and “Low” (1:1000 year) events.

6.33. A safe escape route is provided below for surface water flooding. Site users should exit the site onto Manchester Road and travel east.

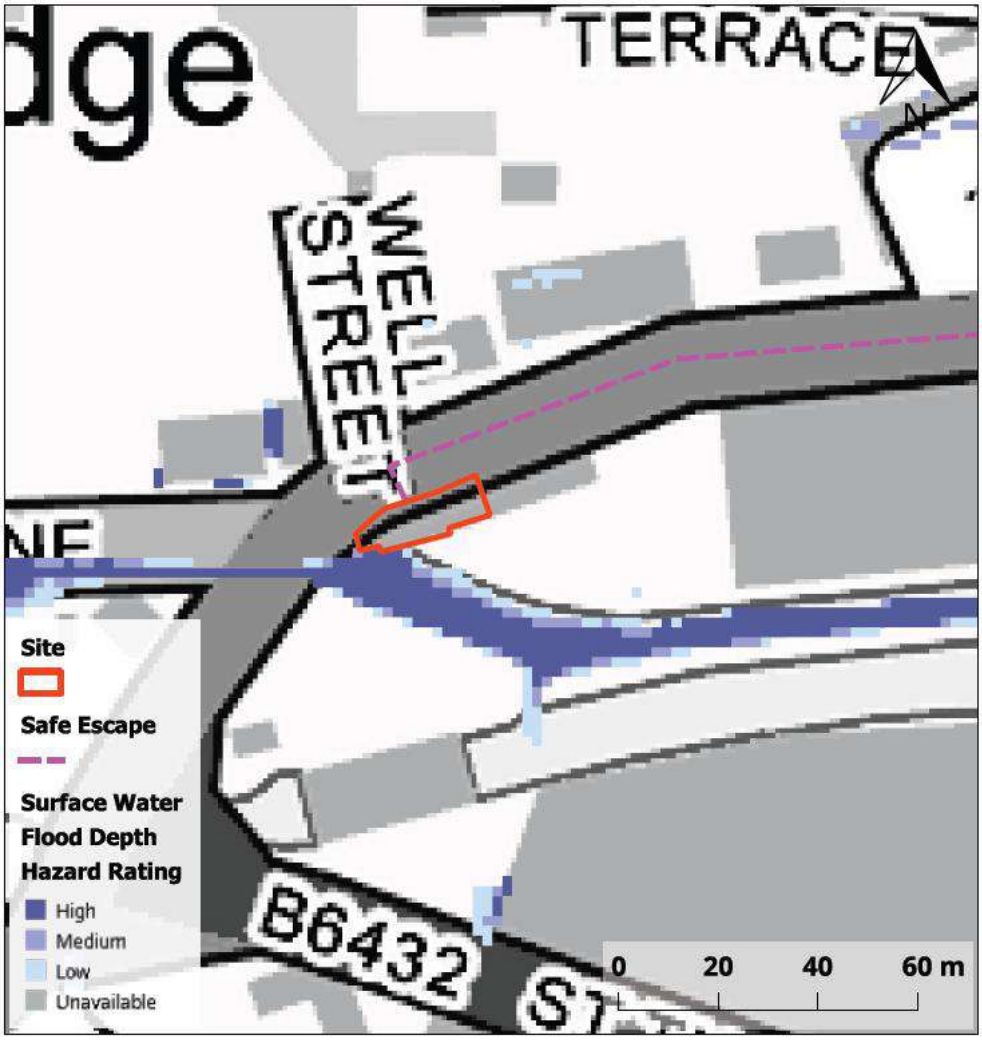


Figure 13: Surface Water Flood Hazard of 0.75 with climate change along the proposed safe escape route (Source: EA, OS)

6.34. Site users will follow the Flood Warning and Evacuation Plan detailed in the following section.

Flood Warning:

6.35. The EA is responsible for issuing flood warnings. Flood warnings are issued to the emergency services and local authorities. Both private individuals and organisations can sign-up to receive warnings via phone, text or email. This system of receiving warnings is currently voluntary.

6.36. Advice regarding severe flood warnings will generally be given during weather forecasts on local radio and TV. In the case of extreme events, warnings can also be disseminated via door to door visits by the police or locally appointed flood wardens.

6.37. The applicant has agreed to subscribe to the EA's flood warning service.

6.38. The EA issue flood warnings/alerts to specific areas when flooding is expected. The site lies within the River Colne at Foley Hall and Aspley Flood Warning Area.

Flood Warning	Flood Alert	Flood Warning	Severe Flood Warning
			
What it means?	Flooding is possible. Be prepared.	Flooding is expected. Immediate action required.	Severe flooding. Danger to life.
When it's used?	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.
What to do?	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Table 4: EA Flood Warning Service

Flood Plan:

6.39. It is recommended that the applicant and future owners, occupiers and Landlords of the property prepare a flood plan to protect life and property during a flood event:

	Action
Before a flood	• Prepare and keep a list of all your important contacts to hand or save them on your mobile phone. • Think about what items you can move now and what you would want to move to safety during a flood. • Know how to turn off electricity and water supplies to the site. • Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.
During a flood	• Activate the evacuation plan and evacuate the site. • Remove cars from the site if there is sufficient warning and the water levels are not rising rapidly. • Switch off water and electricity for the site. • Tune into your local radio station on a battery or wind-up radio. • Listen to the advice of the emergency service and evacuate if told to do so. • Avoid walking or driving through flood water. Six inches of fast-flowing water can knock over an adult and two feet of water can move a car.
After a flood	• If you have flooded, contact your insurance company as soon as possible. • Take photographs and videos of your damaged property as a record for your insurance company. • If you don't have insurance, contact your local authority for information on grants and charities that may help you. • Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask. • Have your electrics and water checked by qualified engineers before switching them back on.

Table 5: Flood plan

Off-Site Impacts:

Fluvial Floodplain Storage:

6.40. The NPPF requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.

6.41. In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.

6.42. For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.

6.43. The site is located within Flood Zones 1, 2 and 3 according to the EA Flood Map for Planning, and according to the 2016 Calder Catchment SFRA, the site is located within Flood Zone 3a, and entirely outside of the functional floodplain. The proposed development is for a change of use to the existing property and therefore there will be no loss of floodplain storage.

Surface Water Drainage:

6.44. The development will utilise Sustainable drainage systems (SuDS) design in accordance with the NPPF for Planning Applications and the drainage hierarchy as follows:

1. Store rainwater for later use;
2. Infiltration techniques;
3. Attenuate rainwater by storing in tanks for gradual release;
4. Discharge rainwater direct into watercourse;
5. Discharge rainwater into surface water sewer;
6. Discharge rainwater into a combined sewer.

6.45. Due to the nature of the development (change of use of existing buildings), there will be no increase to the built footprint, no change to the impermeable coverage, and therefore no increase to surface water runoff generation. The existing surface water drainage arrangements for the site will continue to be utilised.

7. Sequential and Exception Test

7.1. The Sequential Test aims to ensure that development does not take place in areas at high risk of flooding when appropriate areas of lower risk are reasonably available.

7.2. The Sequential Test is applied to developments in areas identified as being at risk of any source of flooding now or in the future. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account.

7.3. The sequential approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk.

7.4. The site is situated within Flood Zone 3a according to the EA Flood Map for planning (Rivers and the Sea) and within an area of "Very Low" to "High" chance of flooding from surface water. Post development, the site will remain "less vulnerable", as the application is for the change of use of ground floor public house to dental clinic and taxi office.

	Flood Risk Vulnerability Classification				
Flood Zones	**Essential Infrastructure**	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**	**Water Compatible**
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	X	Exception Test required	✓	✓
Zone 3b	Exception Test required	X	X	X	✓

Table 6: Flood risk vulnerability and flood zone 'compatibility' (Source: NPPF Table 3 Technical Guidance)

7.5. Using the table above, the proposed application ("less vulnerable") is considered to be suitable within Flood Zone 3a. The Sequential and Exception Tests do not need to be applied for minor developments and changes of use – this application is for the change of use of ground floor public house to dental clinic and taxi office – change of use.

8. Discussion and Conclusion

8.1. Unda Consulting Limited have been appointed by Hilmia5 Property Limited to undertake a Flood Risk Assessment for the proposed development at The Bridge, 159-161 Manchester Road, Huddersfield HD1 3LE. The purpose of the study is to support a planning application for the proposed development.

8.2. The site comprises of a public house. The site is understood to have lawful planning permission for commercial use. The surrounding area is characterised by commercial properties.

8.3. The proposed application is for the change of use of ground floor public house to dental clinic and taxi office.

8.4. There will be no increase to built footprint, impermeable areas or increase to vulnerability. Internal access will be permanently maintained from the basement to the ground floor. There will be no residential elements as part of this proposal.

8.5. The existing site usage is classified as “less vulnerable” (commercial). Post development, the site will remain “less vulnerable” (commercial), as the application is for the change of use of ground floor public house to dental clinic and taxi office. Accordingly, it is considered that the vulnerability of the site as a whole will not increase post development.

8.6. The site is located within Flood Zone 1 (Low Probability), defined as land having a less than 1:1000 year probability of river or sea flooding, Flood Zone 2 (Medium Probability), defined as land having between a 1:100 and 1:1000 annual probability of river flooding; or Land having between a 1:200 and 1:1000 annual probability of sea flooding and partially within Flood Zone 3 (High Probability), defined as land having a 1:100 or greater annual probability of river flooding; or Land having a 1:200 or greater annual probability of sea flooding.

8.7. The risk would appear to be fluvial and originates from the River Colne located approximately 38m south of the site.

8.8. The site is shown to be within the EA Flood Zones plus climate change (2070 to 2125) extent.

8.9. According to the 2016 Calder Catchment SFRA, the site is located within Flood Zone 3a, entirely outside of the functional floodplain.

8.10. The information provided was taken from the Colne and Holme flood mapping, completed in 2020 by JBA.

8.11. Comparison of the modelled flood level for the undefended 1:100 year plus 20% climate change event (74.43mAOD) with approximate topographic site levels (73.60mAOD to 76.70mAOD) shows the site to be up to 0.83m below and 2.27m above the flood level for this event.

8.12. Comparison of the modelled flood level for the undefended 1:100 year plus 20% climate change event (74.43mAOD) with finished floor levels of the ground floor (76.50mAOD) and basement (73.76mAOD) shows the site to be up to 2.07m above and 0.67m below the flood level for this event, respectively.

8.13. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

8.14. No formal flood defences would appear to defend the site from direct inundation to any significant degree. Therefore, there is negligible residual risk from breach and overtopping of flood defences.

8.15. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Very Low” to “High” chance of flooding from surface water for the present day and between 2040 and 2060.

8.16. Risk to the site from groundwater and sewer surcharge would appear to be very low. No information has been provided to suggest that the site has flooded historically from these sources.

8.17. The site is located within the maximum inundation extent on the EA Reservoir Inundation Map when river levels are normal. The EA also advise on their website that reservoir flooding is extremely unlikely.

8.18. The EA hold no records of historic flooding having affected the site or surrounding area.

In Summary:

- The proposed application is for the change of use of ground floor public house to dental clinic and taxi office.
- There will be no increase to built footprint, impermeable areas or increase to vulnerability. Internal access will be permanently maintained from the basement to the ground floor. There will be no residential elements as part of this proposal.
- Post development, the site will remain “less vulnerable” (commercial).
- The ground floor finished floor levels are 76.50mAOD, 2.07m above the undefended 1:100 year plus 20% climate change flood event (74.43mAOD).
- The applicant has agreed to raise the basement finished floor levels as much as feasibly possible (150-200mm above existing).
- The applicant has also confirmed that the new basement floor will be of solid resilient construction. The applicant has detailed that the basement walls are of solid imperforate construction with no openings.
- Extra flood resistance and resilience measures will be implemented.
- The proposed development fits within Standing Advice for vulnerable developments.
- Safe escape can be achieved with the inclusion of climate change.
- In case of an extreme flood event without warning, site users should seek refuge on the ground floor of building, as the ground floor finished floor levels are 76.50mAOD, 2.07m above the undefended 1:100 year plus 20% climate change flood event (74.43mAOD).
- The applicant has agreed that a permanent means of internal access will be provided from the basement to the ground floor, thus providing safe refuge.
- There will be no loss of fluvial floodplain storage.
- Due to the small scale of development, a full Surface Water Drainage Strategy is not required at this stage of planning.
- The applicant will register with the free Environment Agency Floodline Alert Direct service.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Unda Consulting Limited
April 2026

Appendix

A – Development Plans:

- Site location, existing and proposed plans – ADP.

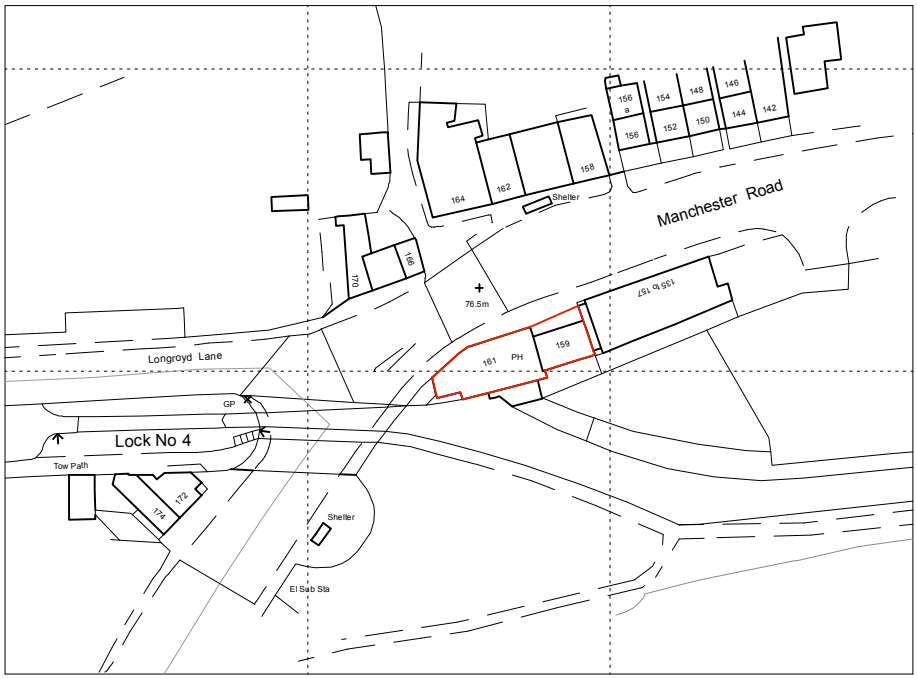
B – EA Flood Map for Planning:

- Flood Map for Planning – Environment Agency.

C – NPPF Annex 3:

- NPPF Annex 3: Flood risk vulnerability classification table.

Appendix A



rev.	description	date	drawn	appvd
P02	Drawing updated	02.11.25	AS	AS
P01	Drawing originated	14.03.25	AS	AS

project Proposed change of use of public house to dental clinic & taxi office

at

159 -161, Manchester Road, Huddersfield HD1 3LE

for

Mr Omar Farooq

title location plan

number 24090D-00-P02

scale 1:1250

size A4

ARCHITECTURE AND DESIGN
The Old Police Station 16 Bridge Lane Holmfirth HD9 7AN
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RIBA Chartered Practice

rev.	description	date	drawn	appvd
P02	Drawing updated for planning submission	23.02.25	AS	AS
P01	Drawing originated	28.03.25	AS	AS

project: Proposed change of use of public house to dental clinic & taxi office
at
159 -161, Manchester Road, Huddersfield HD1 3LE
for
Mr Omar Farooq

title: block plan existing
number: 24090D-10-P02
scale: 1:100
size: A2

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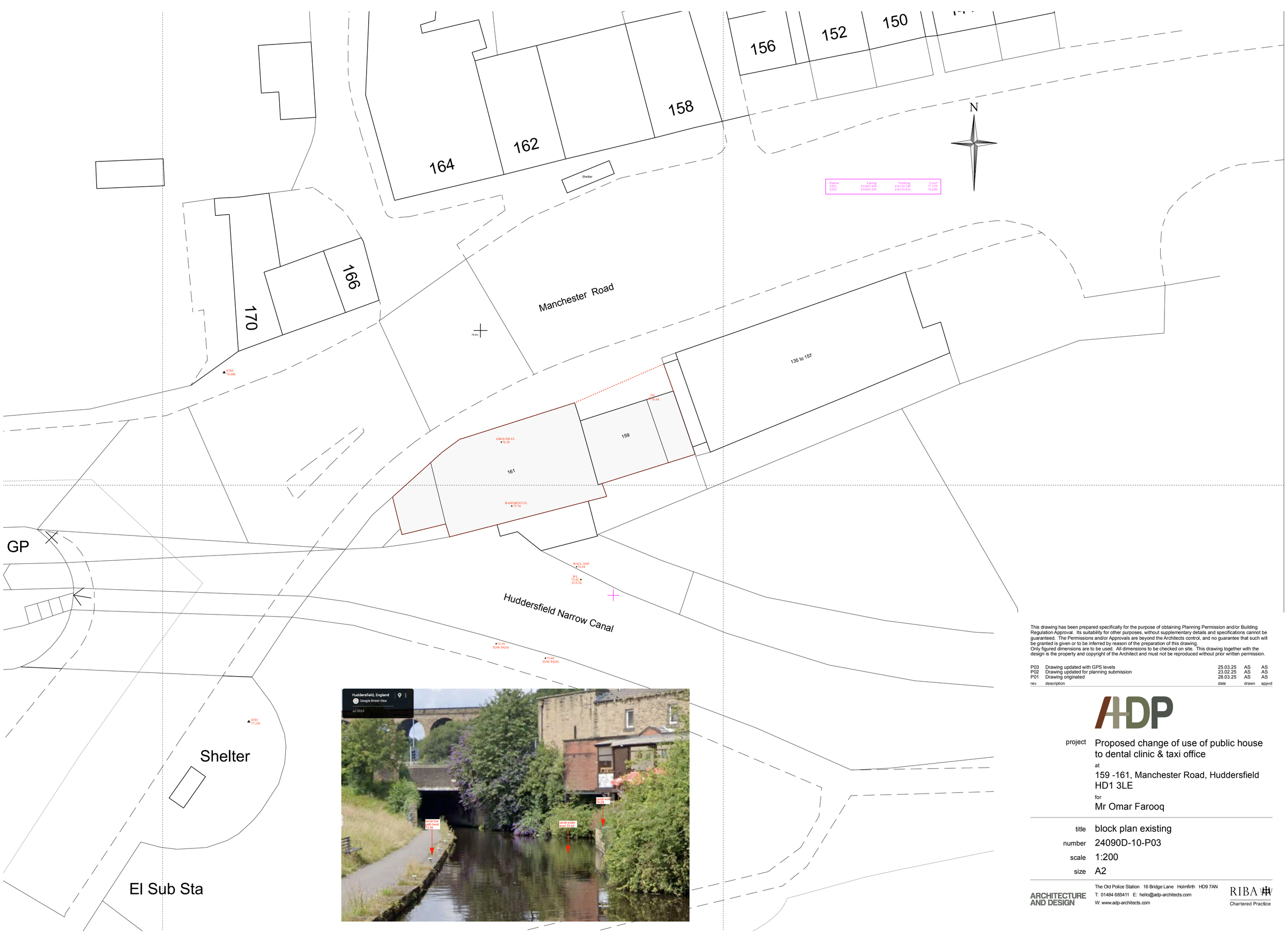

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rev.	description	date	drawn	appvd
P03	Drawing updated with GPS levels	25.03.25	AS	AS
P02	Drawing updated for planning submission	23.02.25	AS	AS
P01	Drawing originated	28.03.25	AS	AS

project
Proposed change of use of public house to dental clinic & taxi office
at
159 -161, Manchester Road, Huddersfield HD1 3LE
for
Mr Omar Farooq

title: block plan existing
number: 24090D-10-P03
scale: 1:200
size: A2

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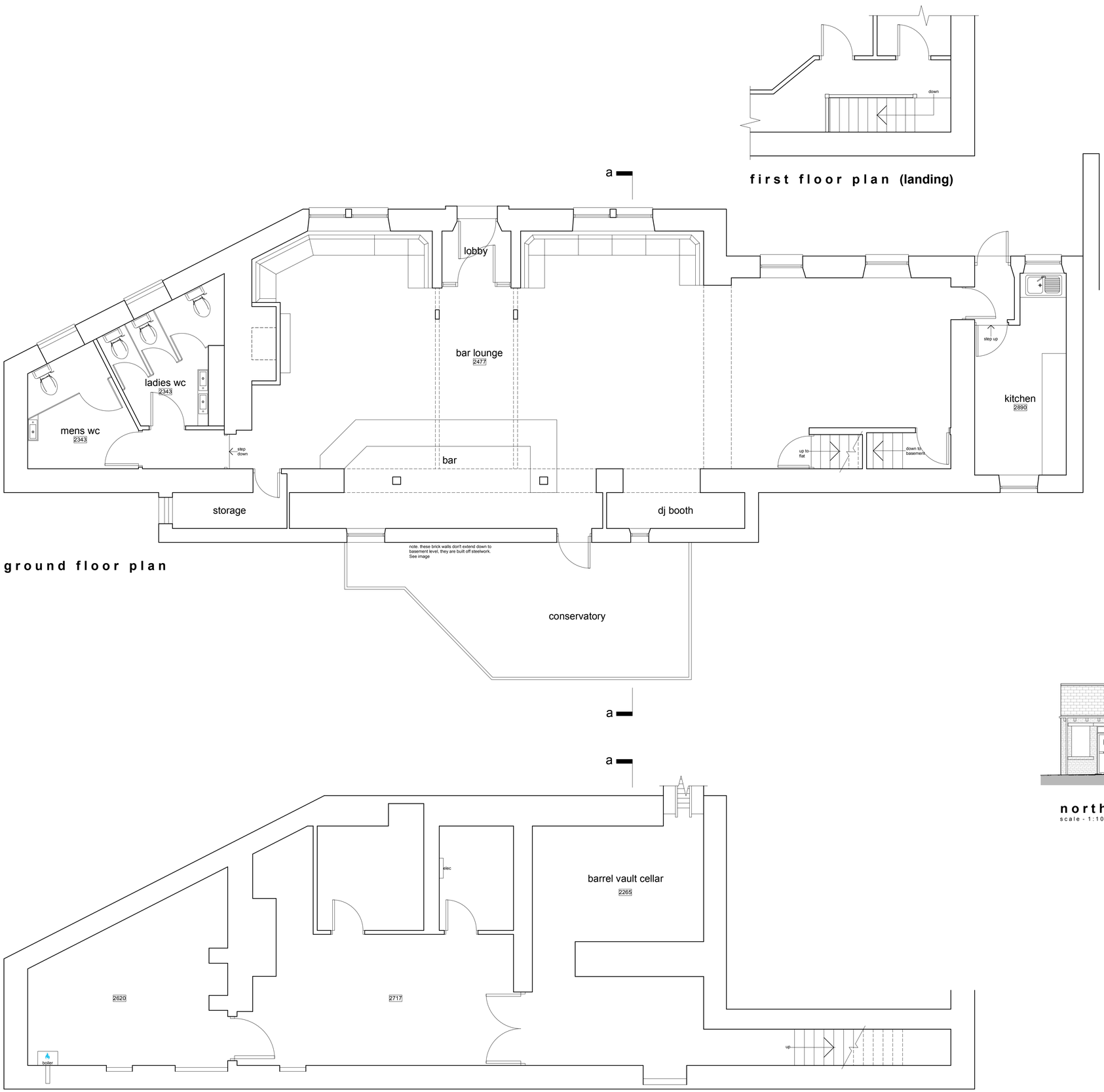
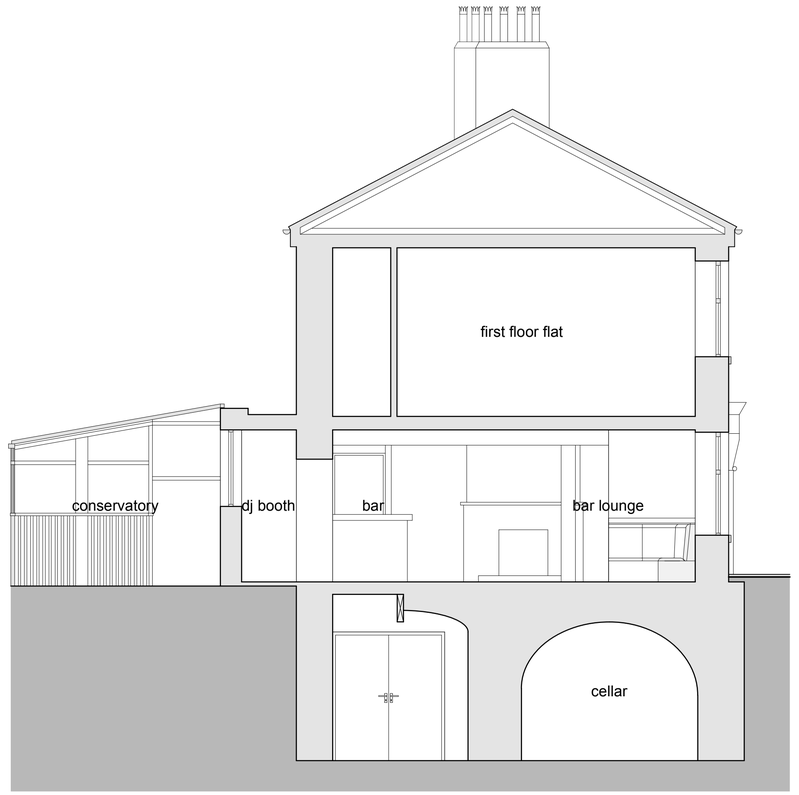


first floor plan (landing)

ground floor plan

basement floor plan



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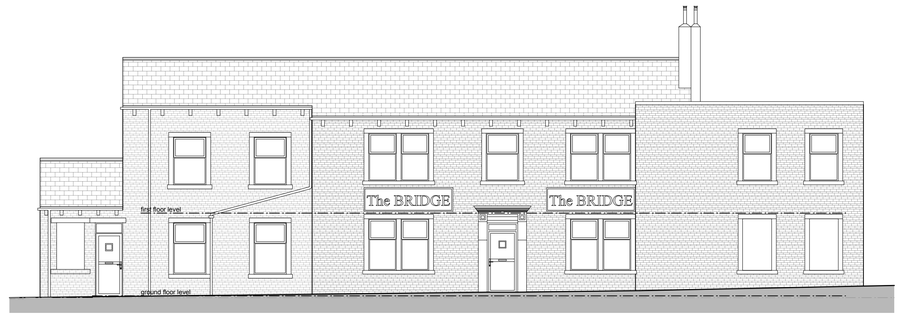

north elevation - front

scale - 1:100

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project
Proposed change of use of public house to dental clinic & taxi office
at
159-161, Manchester Road, Huddersfield, HD1 3LE
for
Mr Farooq

title: General arrangement as existing
number: 24090D-01-P01
scale: 1:50,1:100
size: A1

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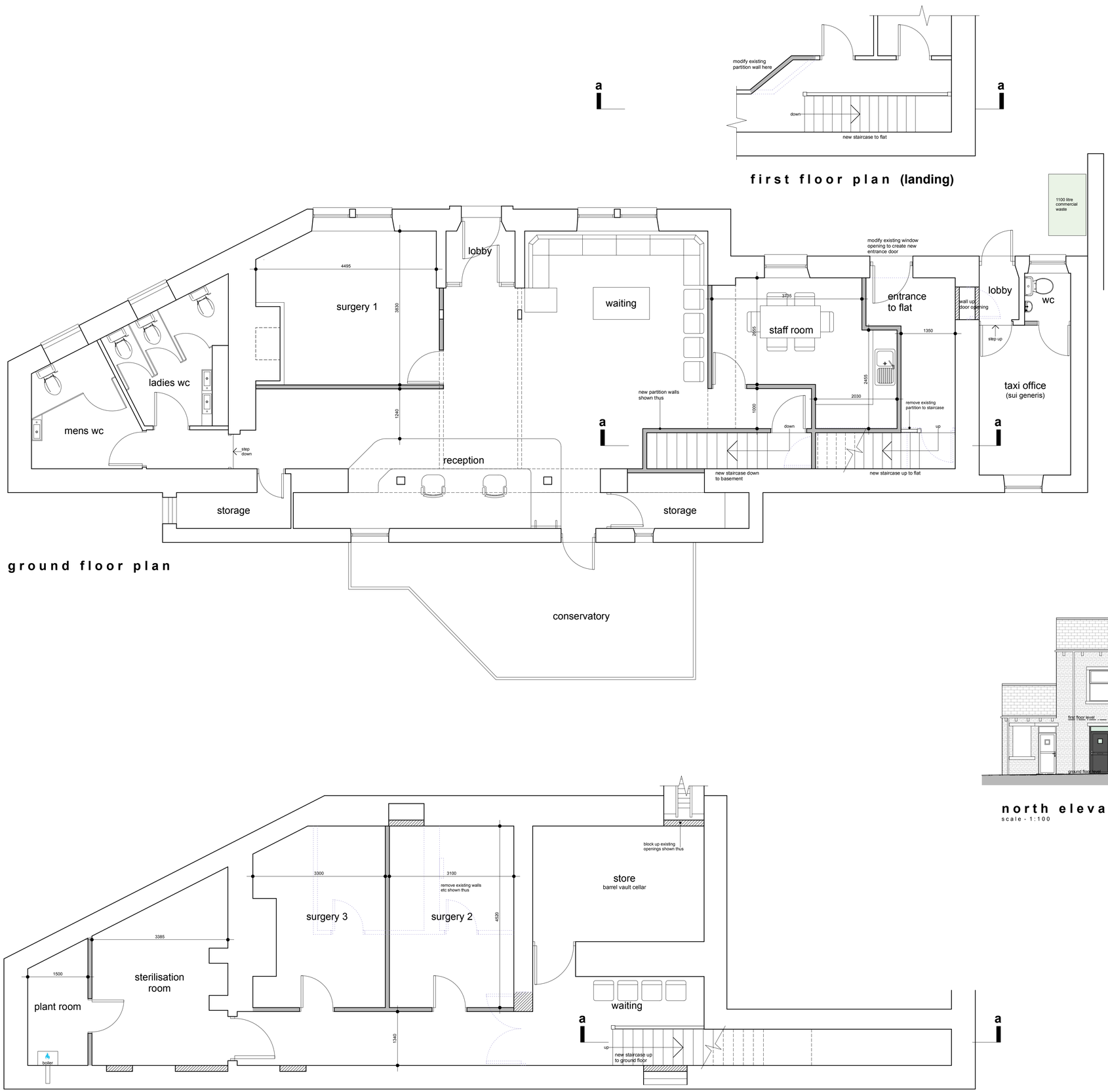
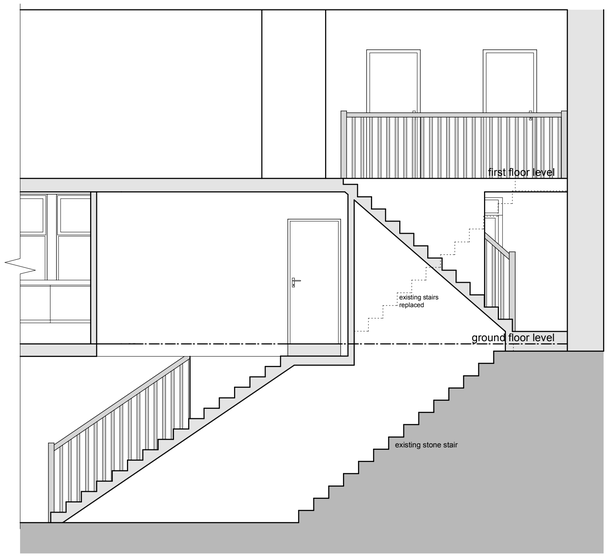


ground floor plan



section a-a

north elevation - front

scale - 1:100

basement floor plan

rev.	description	date	drawn	apprvd
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P01	Drawing originated	14.01.26	JH	AS

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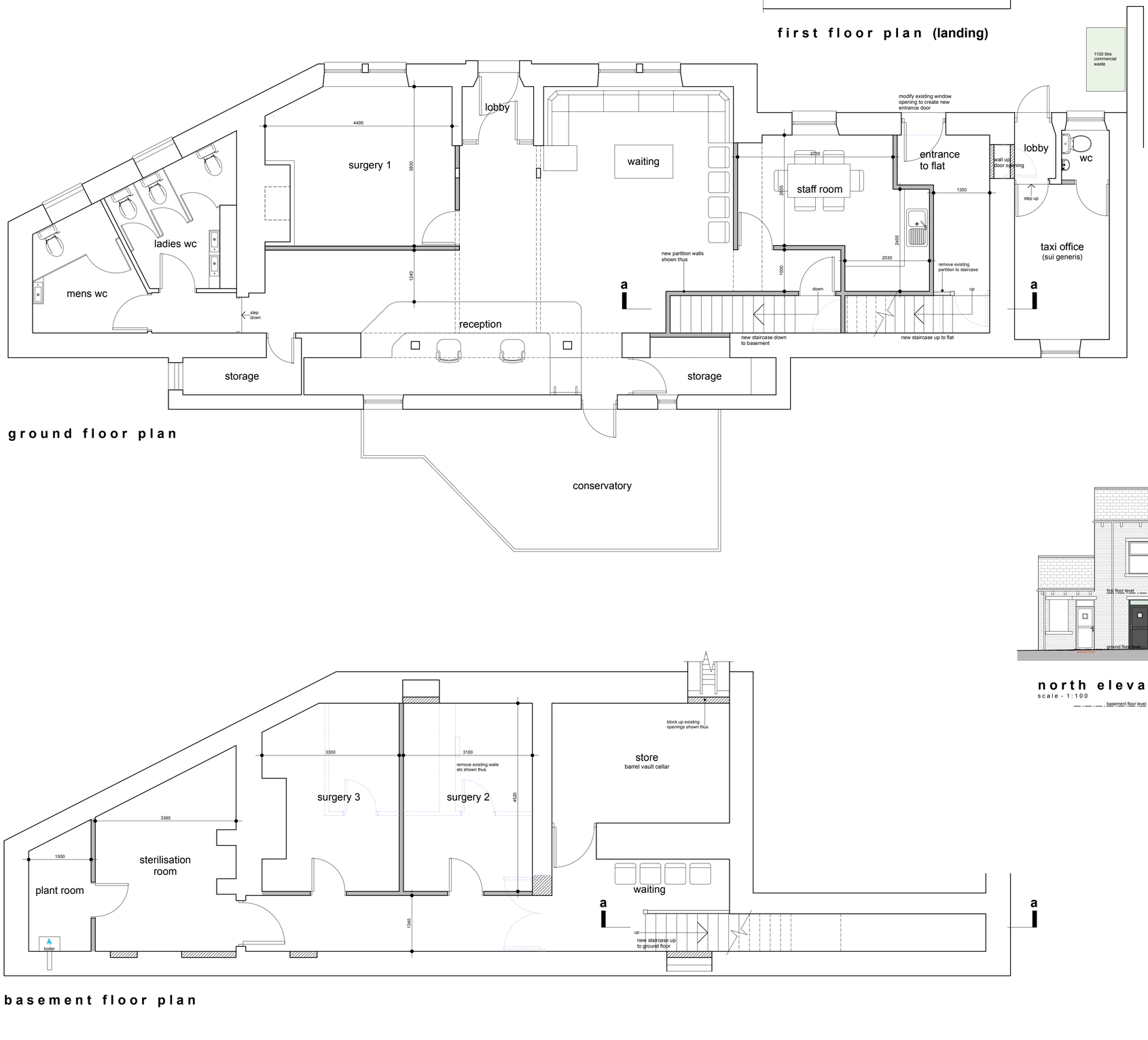
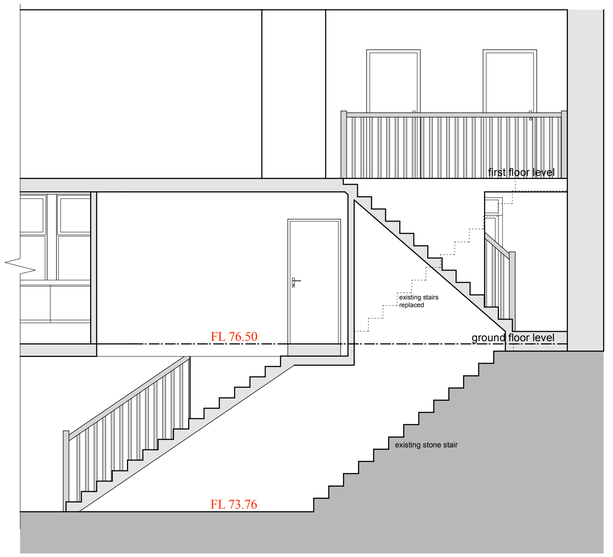
RIBA Chartered Practice



first floor plan (landing)

ground floor plan



section a-a

north elevation - front

scale - 1:100

basement floor plan

rev.	description	date	drawn	apprvd
P03	Drawing updated - GPS floor levels added	25.03.26	AS	AS
P02	Drawing updated to client instructions	20.01.26	AS	AS
P01	Drawing originated	14.01.26	JH	AS

project: Proposed change of use of public house to dental clinic & taxi office
at
159-161, Manchester Road, Huddersfield, HD1 3LE
for
Mr Farooq

title: General arrangement as proposed
number: 24090D-02-P03
scale: 1:50,1:100
size: A1

ARCHITECTURE + DESIGN PARTNERSHIP
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Appendix B

Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	**413634/416152**	**13 April 2026 12:15**

Your selected location is in flood zone 3, an area with a high probability of flooding.

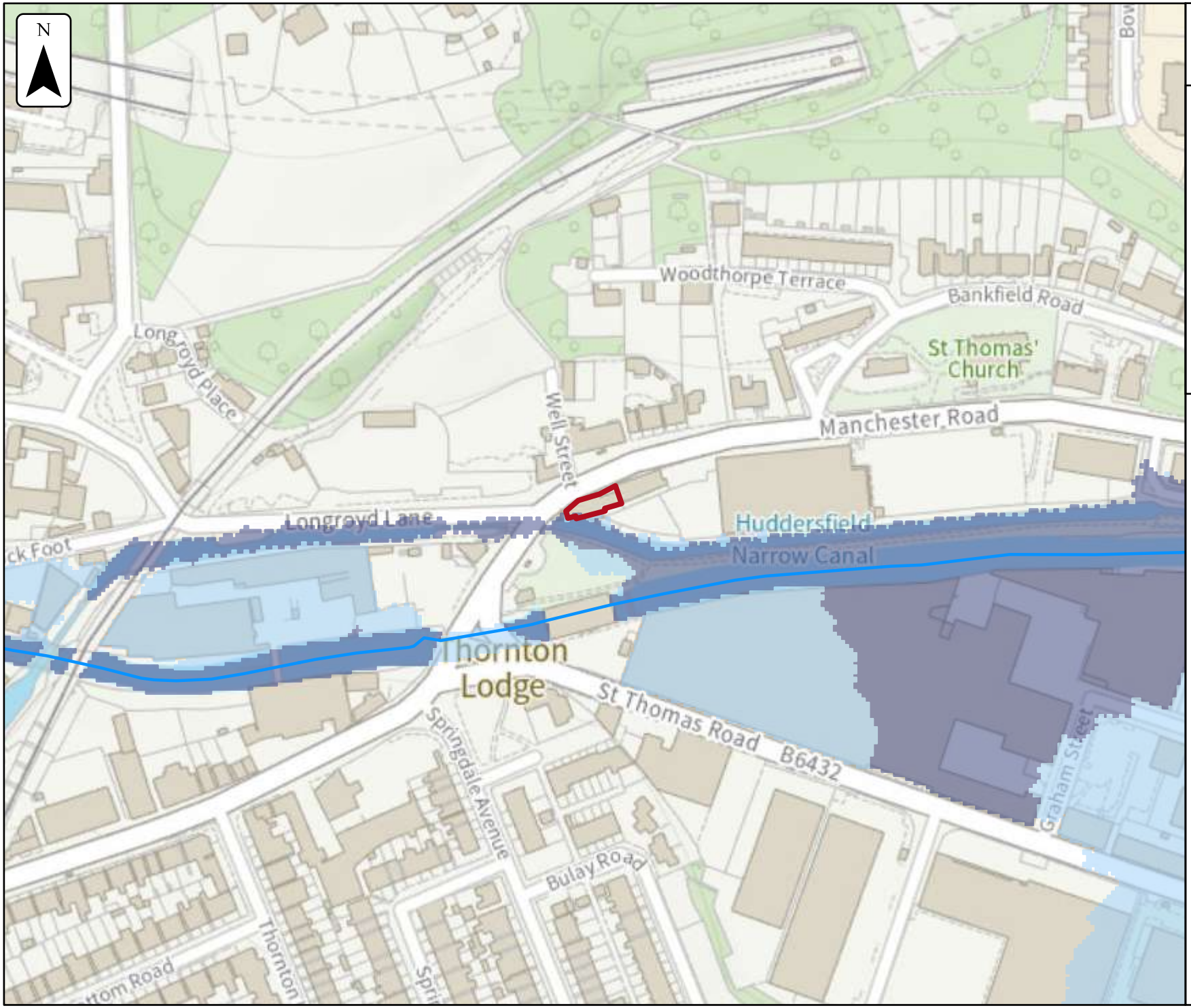
This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see https://www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
413634/416152

Scale
1:2,500

Created
13 Apr 2026 12:15

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60 m

Appendix C

Annex 3: Flood Risk Vulnerability Classification	
Essential Infrastructure:	• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood. • Wind turbines. • Solar farms.
Highly Vulnerable:	• Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure'.)
More Vulnerable: * Landfill is as defined in Schedule 10 of the Environmental Permitting (England and Wales) Regulations 2010	• Hospitals. • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable:	• Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill* and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. • Car parks.
Water-Compatible Development:	• Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

National Planning Policy Framework Annex 3: Flood risk vulnerability classification