

Flood Risk Assessment for Planning

April 2025

Our reference:

95394-WalkerSimpson-BridgeCollege

Prepared for:

Together Trust

Location:

Bridge College
Whitworth Street
Openshaw
Manchester
M11 2GR



Document Issue Record

Project Details	
Project:	Flood Risk Assessment for Planning
Prepared for:	Together Trust
Application:	The construction of an extension to the existing school (Approx. 300m ²)
Location:	Bridge College, Whitworth Street, Openshaw, Manchester, M11 2GR
Our reference:	95394-WalkerSimpson-BridgeCollege
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1. Key Facts

Flood Risk Posed:

- Site is located within Flood Zone 1 (Low Probability), Flood Zone 2 (Medium Probability) and Flood Zone 3 (High Probability). Risk would appear to be fluvial and originates from the Corn Brook located approximately 145m south.
- Product 4 modelled flood levels and extents have been requested from the Environment Agency for use in this report.
- No Flood Storage Areas located in close proximity to the site.
- There are no formal raised flood defences owned or operated by the EA protecting the site.
- The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Low” to “High” chance of flooding from surface water at the present day and between 2040 – 2060.
- According to the 2011 Manchester City, Salford City and Trafford Councils Level 2 Strategic Flood Risk Assessment (SFRA), 5 CDA’s have currently been identified. The site is located within Conurbation Core CDA.
- Risk to the site from groundwater and sewer surcharge flooding 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 there is a risk from reservoir flooding.
- The EA hold no records of historic flooding having affected the site.

Flood Risk Mitigation:

- The proposed application is for the construction of an extension to the existing school (Approx. 300m²).
- The finished ground floor level will be set no lower than existing (53.85mAOD) and therefore 0.11m above the design flood level (53.74mAOD).
- Post development, the site will remain “more vulnerable” (educational facility).
- Flood proofing of the development will be incorporated as appropriate.
- There will be no unacceptable loss of fluvial floodplain storage.
- Due to the 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 Together Trust (hereinafter referred to as “the applicant”) to undertake a Flood Risk Assessment for the proposed development at Bridge College, Whitworth Street, Openshaw, Manchester, M11 2GR (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 if a proposed development:
 - Includes building or engineering works in Flood Zone 2 or 3;
 - Includes building or engineering works on land classified by the Environment Agency as having critical drainage problem;
 - Changes the use of land or buildings in a location at risk of flooding from rivers or the sea, or with critical drainage problems;
 - Changes the use of land or buildings in a way that increases the flood vulnerability of the development where it may be subject to other sources of flooding;
 - Is larger than 1 hectare.
- 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 an existing school and associated parking and green areas.
- 3.2. The surrounding area is characterised by commercial properties.
- 3.3. 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: Walker Simpson Architects)

Site Topography:

- 3.4. 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.
- 3.5. A topographic survey of the site undertaken in 2011 by planit intelligent environments on behalf of the Applicant shows ground topography on site ranges between 52.29mAOD to 55.75mAOD.

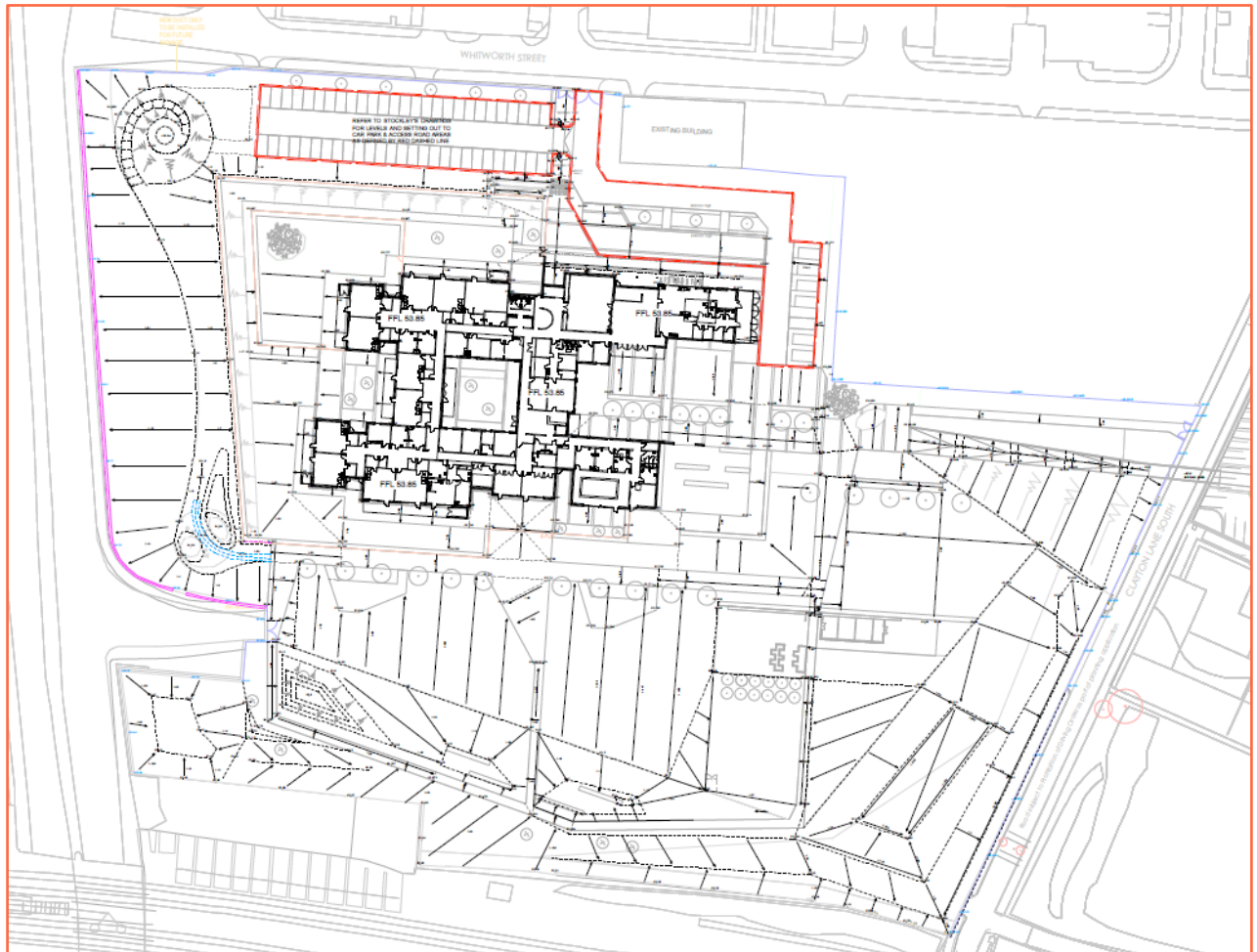


Figure 3: Topographical survey of the site in mAOB (Source: planit intelligent environments)

Existing Ground Conditions:

- 3.6. The 1:50,000 BGS map shows that the bedrock underlying the site is Etruria Formation – Sandstone and Mudstone.
- 3.7. The BGS mapping shows superficial deposits of Till, Devensian – Diamicton underlying the site.
- 3.8. The soil type taken from the UKSO Soil Map Viewer, shows the site to be located upon relatively deep soils of Glacial Till parent material with a soil texture of Loam to Clayey Loam.

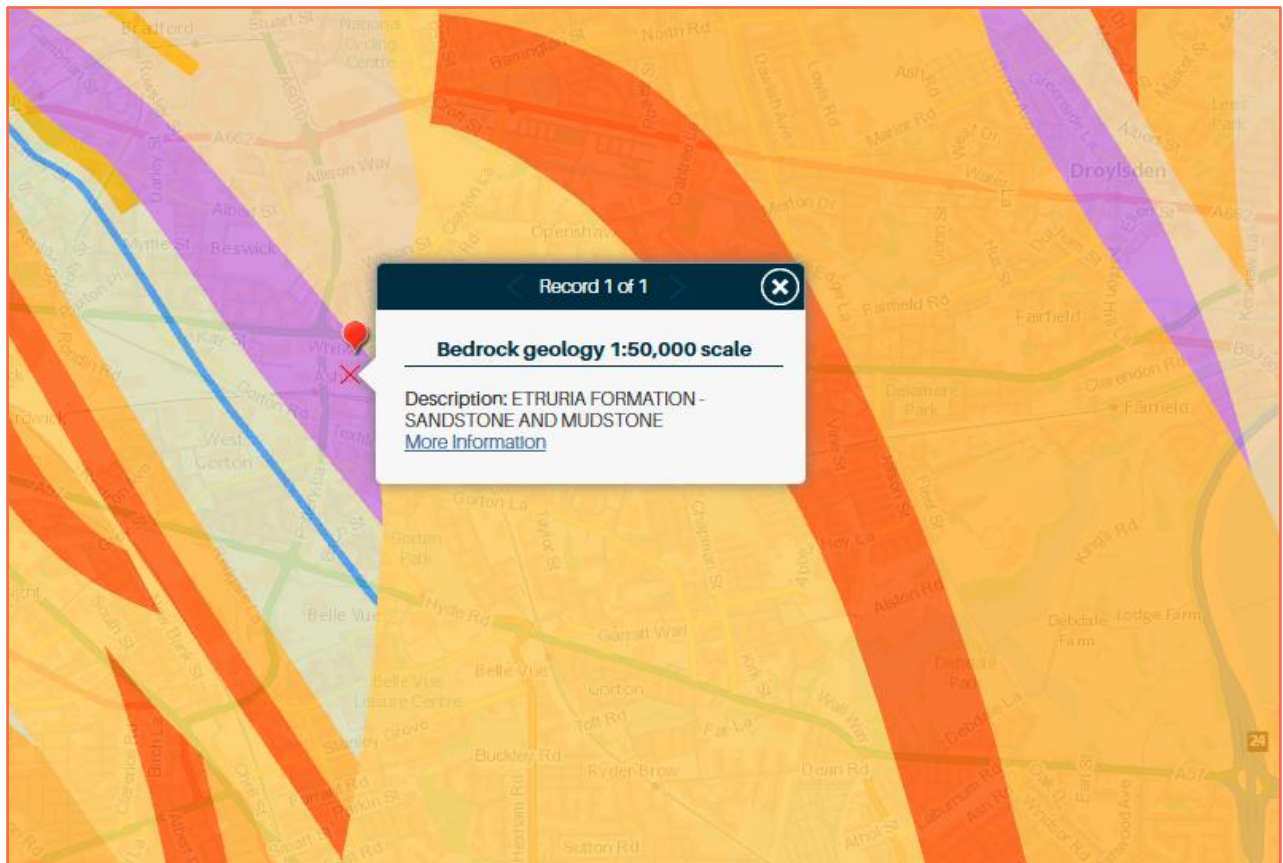


Figure 4: BGS Bedrock Geology (Source: BGS)

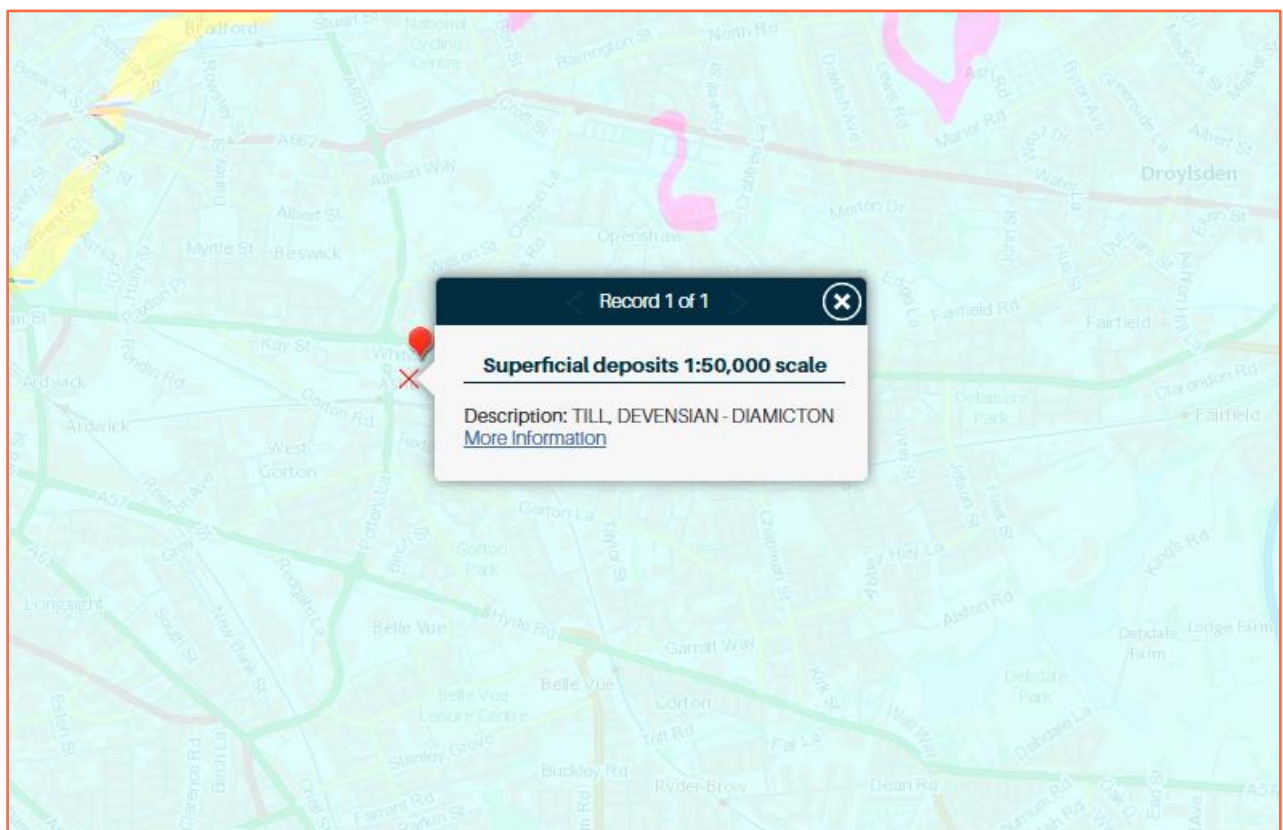


Figure 5: BGS superficial deposits (Source: BGS)

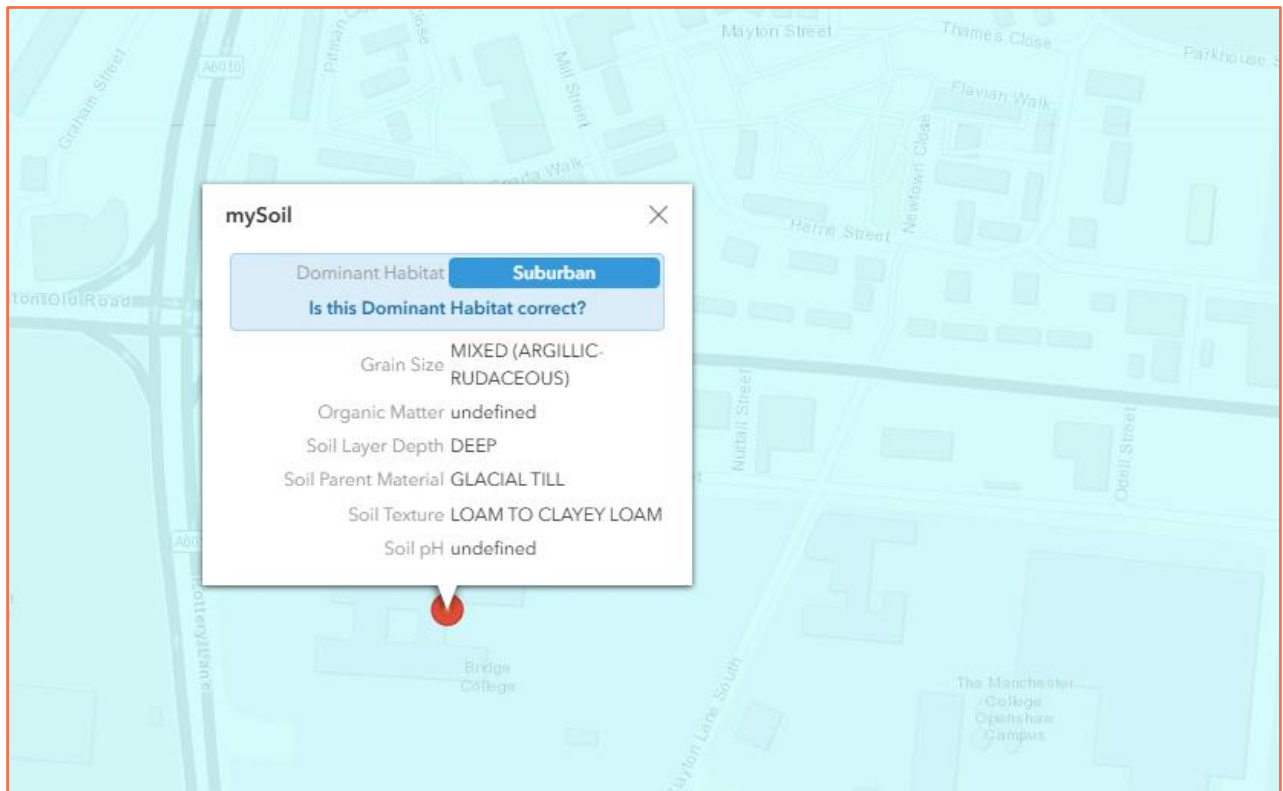


Figure 6: Soil maps (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

- 3.9. The nearest watercourse to the site is the Corn Brook located approximately 145m south.

4. Development Proposal

- 4.1. The proposed application is for the construction of an extension to the existing school (Approx. 300m²).
- 4.2. The extension will not create any additional or separate units or businesses, or change the usage of the School.
- 4.3. Proposed plans are provided in the report Appendix.

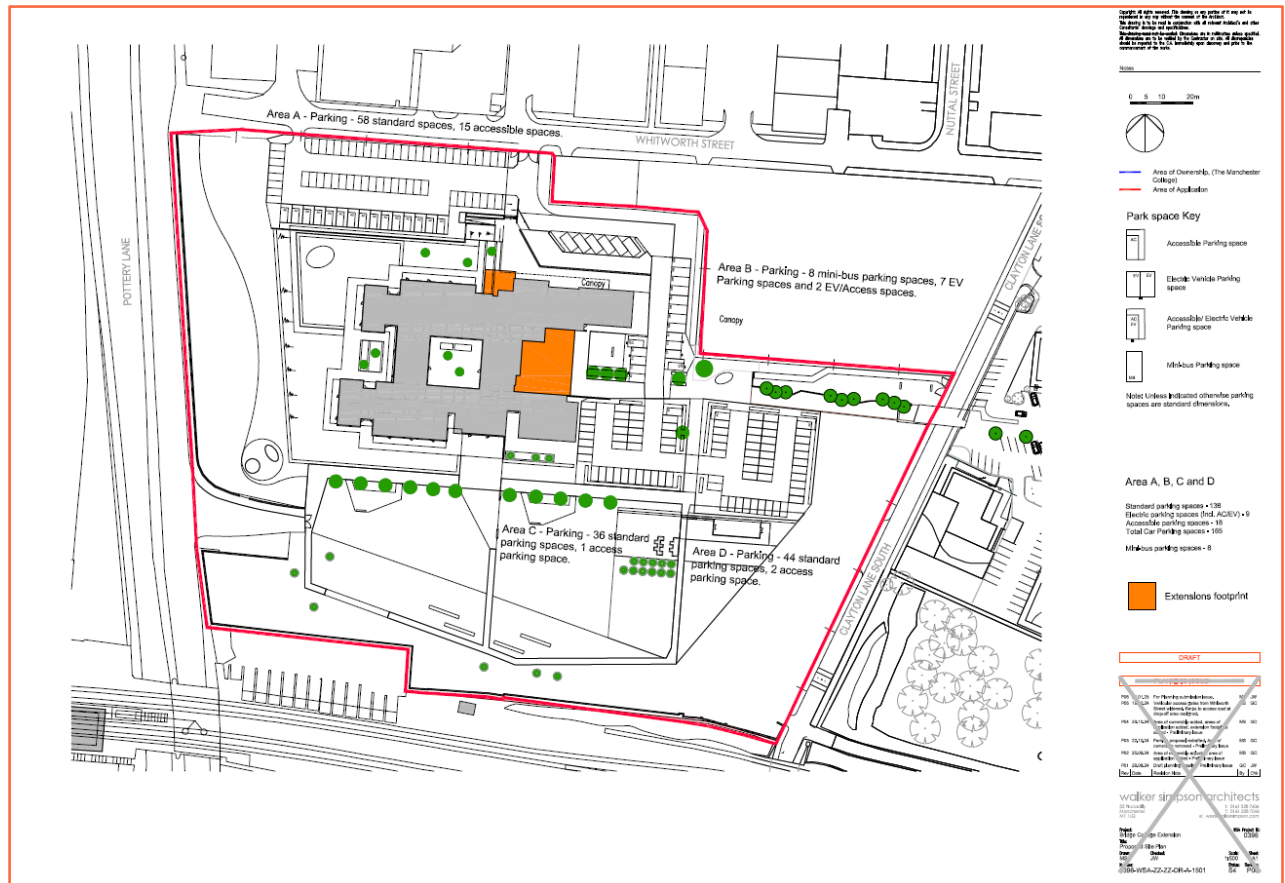


Figure 7: Proposed plan (Source: Walker Simpson Architects)

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. (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 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.

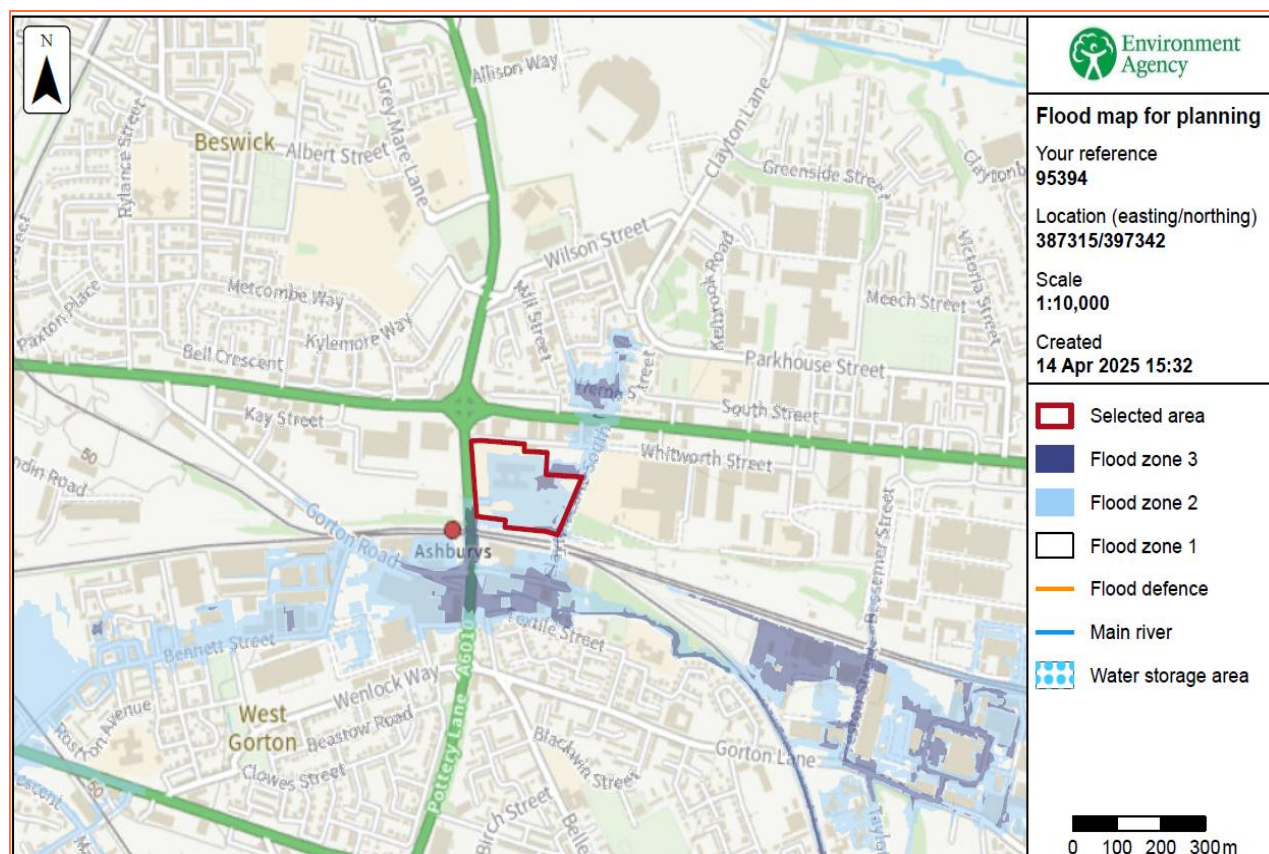


Figure 8: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

- 5.3. The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1 in 1,000 annual probability of river or sea flooding, partially within Flood Zone 2 (Medium Probability), defined as land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding and partially within Flood Zone 3 (High Probability), defined as land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
- 5.4. The risk would appear to be fluvial and originates from the Corn Brook located approximately 145m south.
- 5.5. The built footprint of the proposed development is located entirely outside of Flood Zone 3.

Fluvial (Corn Brook):

- 5.6. The Corn Brook watercourse is a largely culverted ordinary watercourse that is around 8.5km in length. The Corn Brook flows in a westerly direction through areas of Greater Manchester including Gorton North, Bradford, Ardwick, Hulme, Moss Side and Clifford, discharging into the Manchester Ship Canal at Pomona. The main watercourse has two upstream tributaries, the northern Clayton Brook and the southern Mill Brook.

Detailed Flood Modelling:

- 5.7. Product 4 modelled flood levels and extents have been requested from the Environment Agency.
- 5.8. The information provided was taken from the Corn Brook model completed by JBA in 2017.
- 5.9. The Corn Brook modelling study report states that there are no designated defences in the Corn Brook catchment and therefore all model scenarios are undefended.
- 5.10. Modelled flood levels and extents have been provided for a variety of return periods.
- 5.11. The development is classified as “More Vulnerable” and is located within Flood Zones 1, 2 and 3. The Flood Risk Assessments: climate change allowances guidance states that for “More Vulnerable” development in Flood Zones 2 and 3, the Central allowance should be used. The site falls within the Irwell Management Catchment, where the Central allowance is a 35% increase in flows.
- 5.12. Therefore, the most suitable allowance is the 35% increase in river flows, which will be used for this assessment.
- 5.13. The site is located entirely outside of the 1:100 year flood extents but partially within the 1:100 year plus 35% climate change and 1:1000 year extents.

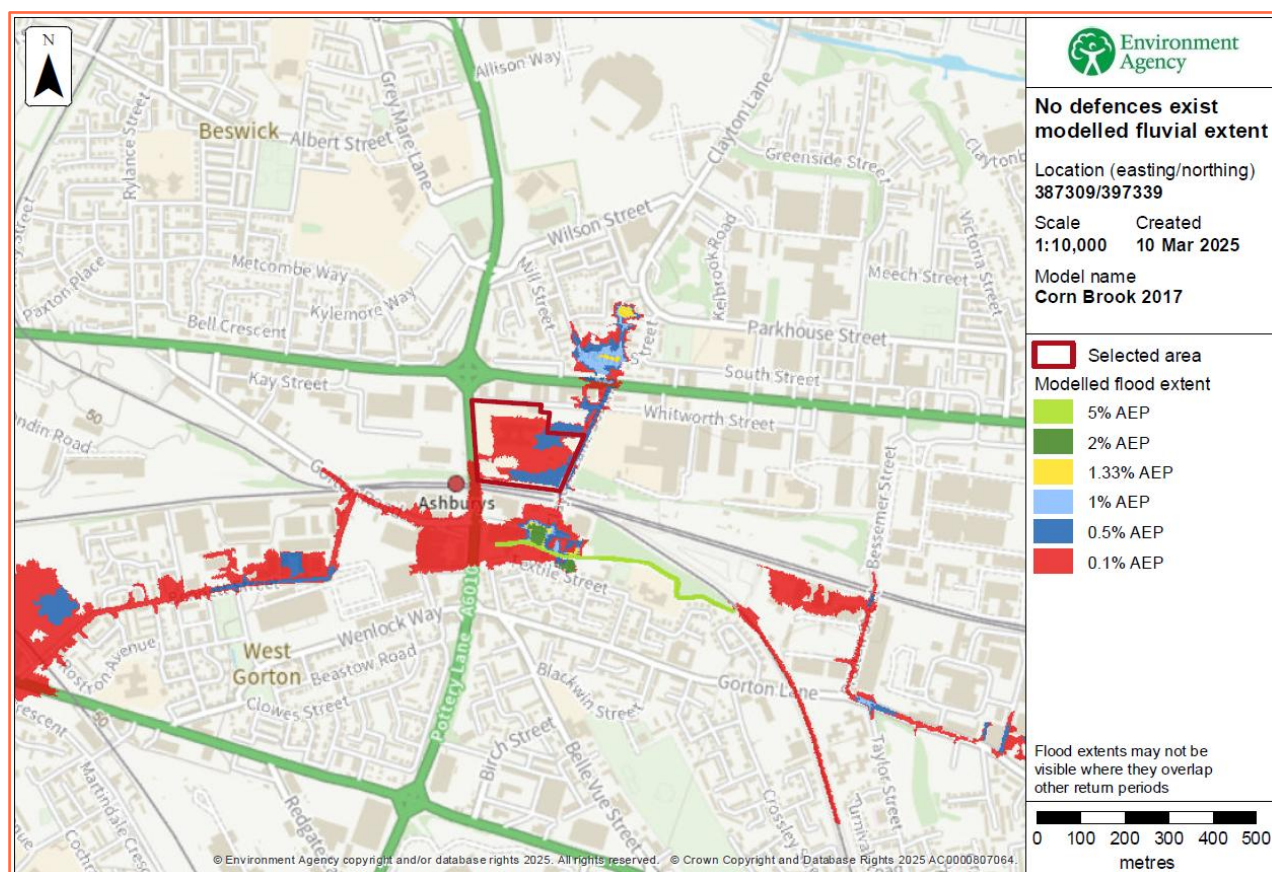


Figure 9: No defences exist modelled fluvial extents (Source: EA)

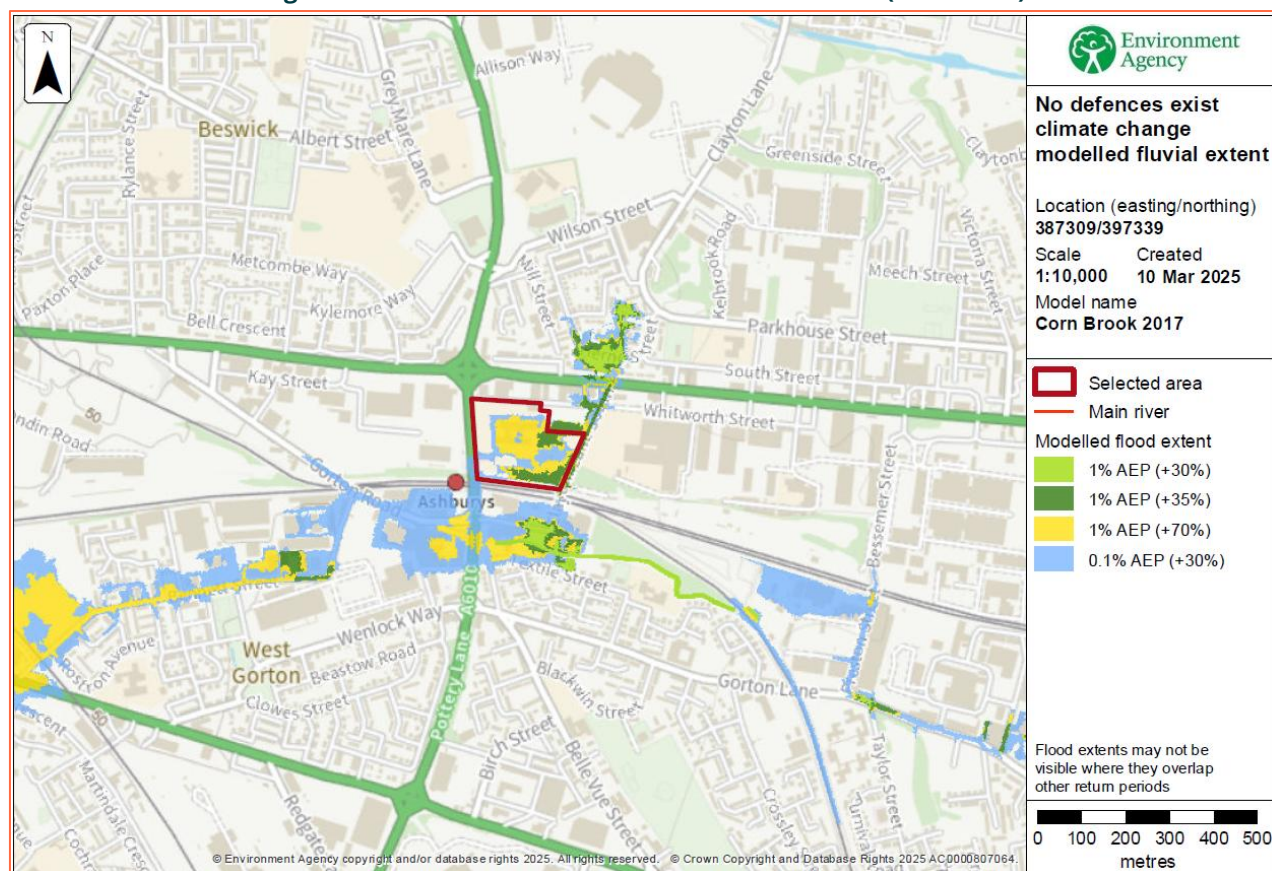


Figure 10: No defences exist climate change modelled fluvial extents (Source: EA)

- 5.14. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 52.29mAOD to 55.75mAOD.

	Modelled Flood Levels in meters AOD			
Return Period	1:20 year	1:100 year	1:100 year + 35% climate change	1:1000 year
Modelled Flood Levels	Outside extent	Outside extent	53.74mAOD	54.21mAOD

Table 2: Maximum modelled flood levels on site (Source: EA)

- 5.15. Comparison of the modelled flood level for the 1:100 year plus 35% climate change event (53.74mAOD) with topographic site levels (52.29mAOD to 55.75mAOD) shows the site to be between 1.45m below and 2.01m above the flood level for this event.
- 5.16. Comparison of the modelled flood level for the 1:100 year plus 35% climate change event (53.74mAOD) with topographic site levels in the area of the proposed development (53.67mAOD to 53.85mAOD) shows the proposed extensions to be between 0.07m below and 0.11m above the flood level for this event.
- 5.17. The proposed development is located entirely outside of the 1:100 year plus 35% climate change extent.
- 5.18. The finished ground floor level will be set no lower than existing (53.85mAOD) and therefore 0.11m above the design flood level (53.74mAOD).

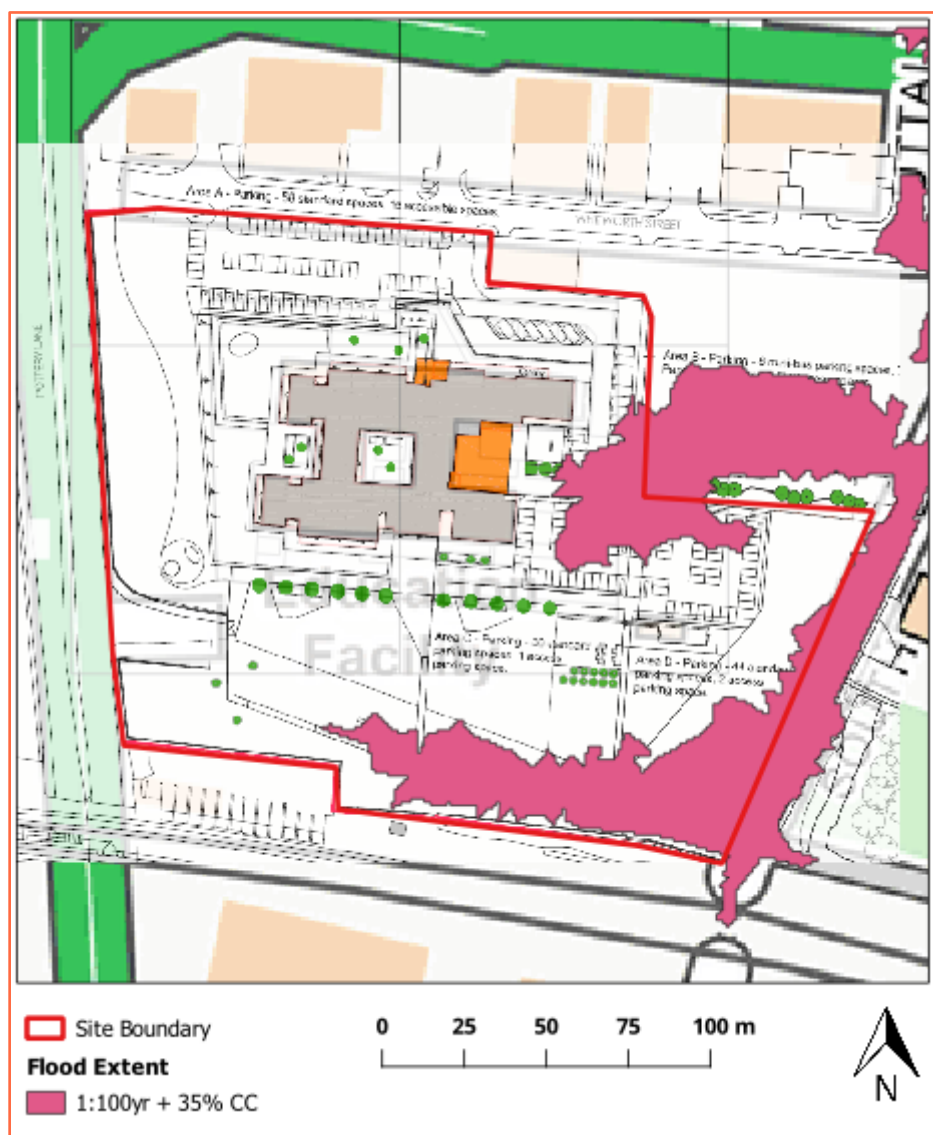


Figure 11: 1:100 year plus 35% climate change flood extent overlain onto site plan (Proposed extension shown in orange)(Source: EA)

Flood Storage Areas:

- 5.19. 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.
- 5.20. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

Flood Defences:

- 5.21. 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.

- 5.22. 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.
- 5.23. 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.
- 5.24. According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site.

Residual Risk (breach or overtopping of flood defences):

- 5.25. 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 concur 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.
- 5.26. 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.
- 5.27. The site is not shown to be defended by formal flood defences.

Tidal Flooding:

- 5.28. 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):

- 5.29. 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.
- 5.30. 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.
- 5.31. The RoFSW products are an assessment of where surface water flooding may occur.
- 5.32. 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.

- 5.33. 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.
- 5.34. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Low” to “High” chance of flooding from surface water at the present day.
- 5.35. The EA Risk of Flooding from Surface Water mapping shows the site to be at “Low” to “High” chance of flooding between 2040 and 2060.

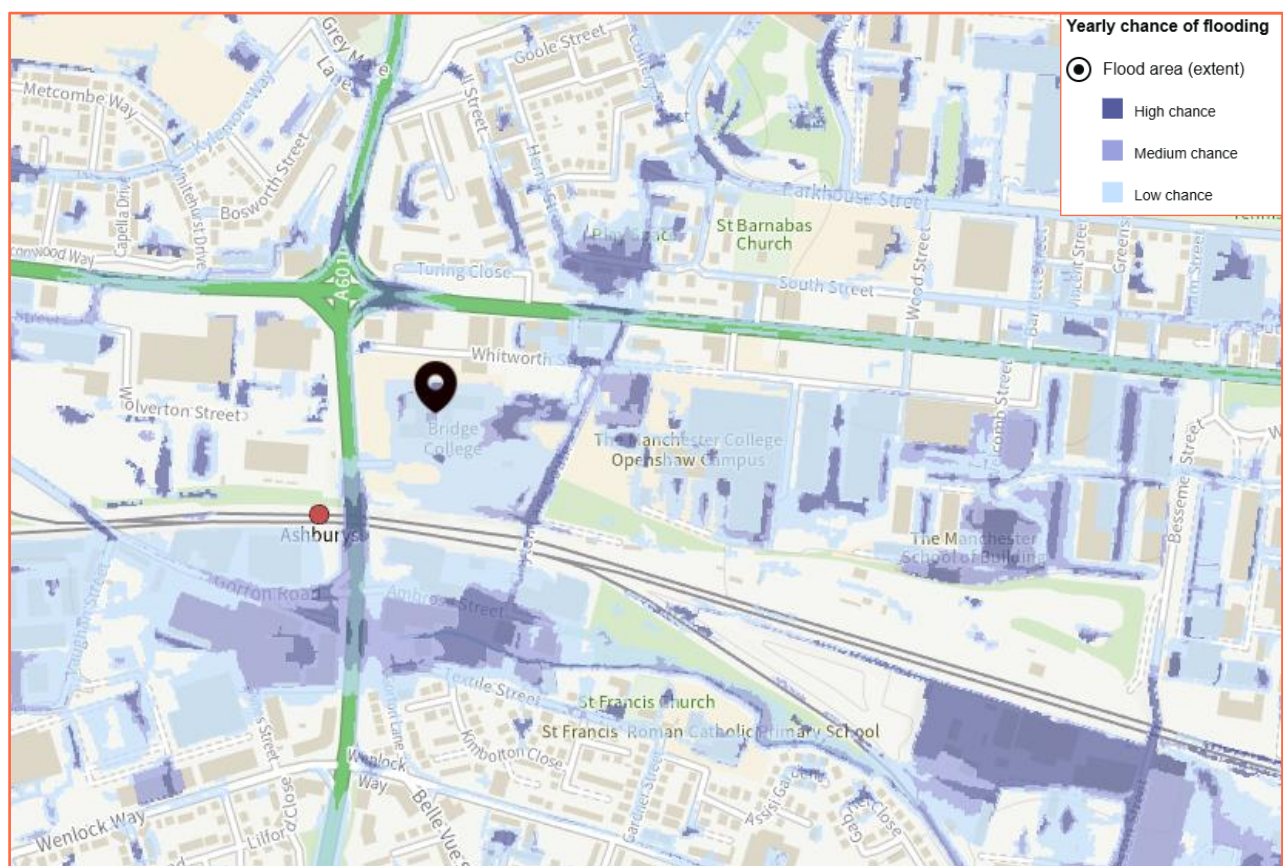


Figure 12: Extract from 2025 EA Risk of Flooding from Surface Water mapping – present day (Source: EA)

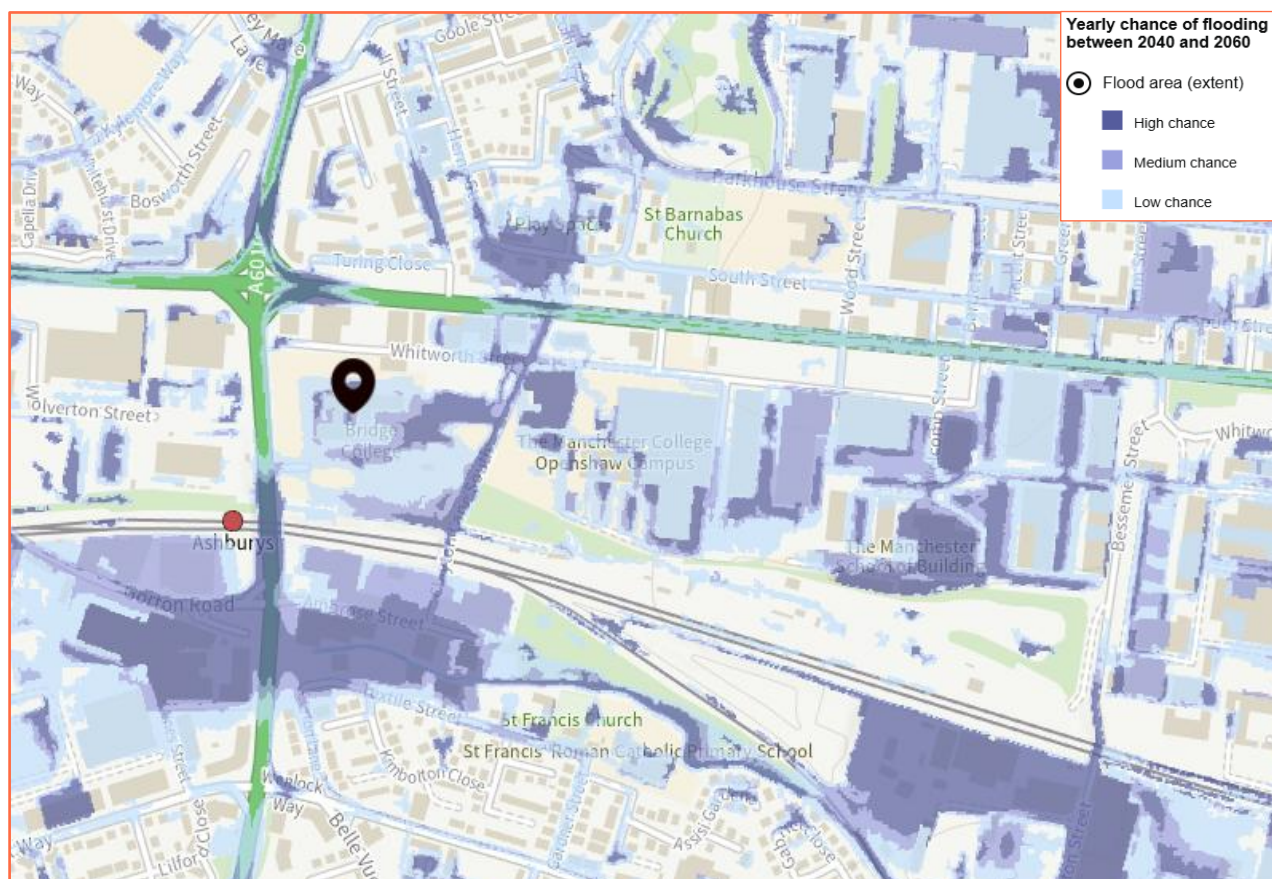


Figure 13: Extract from Environment Agency RoFSW map – between 2040 and 2060 (Source: EA)

Critical Drainage Areas:

- 5.36. A Critical Drainage Area (CDA) is an area that has critical drainage problems and which has been notified to the local planning authority as such by the Environment Agency in line with the National Planning Policy Framework (NPPF). In these locations, there is a need for surface water to be managed to a higher standard than normal to ensure any new development will contribute to a reduction in flooding risks in line with NPPF. These higher standards are determined by the Environment Agency.
- 5.37. According to the 2011 Manchester City, Salford City and Trafford Councils Level 2 Strategic Flood Risk Assessment (SFRA), 5 CDA's have currently been identified.
- 5.38. The site is located within Conurbation Core CDA.

Groundwater:

- 5.39. 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.
- 5.40. 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.

- 5.41. The 2011 Manchester City, Salford City and Trafford Councils Level 1 SFRA shows the site lies within an area at no risk from groundwater flooding.
- 5.42. The EA advise that flooding from groundwater is unlikely in this area.
- 5.43. No information has been provided to suggest that the site has flooded historically due to groundwater.

Sewer:

- 5.44. 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.
- 5.45. 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.
- 5.46. No information has been presented to suggest that the site itself has been affected by sewer flooding.

Other Sources:

- 5.47. 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 there is a risk from reservoir flooding. 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.
- 5.48. 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.
- 5.49. 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.
- 5.50. No information has been provided to suggest that the site is susceptible to flooding from other sources.

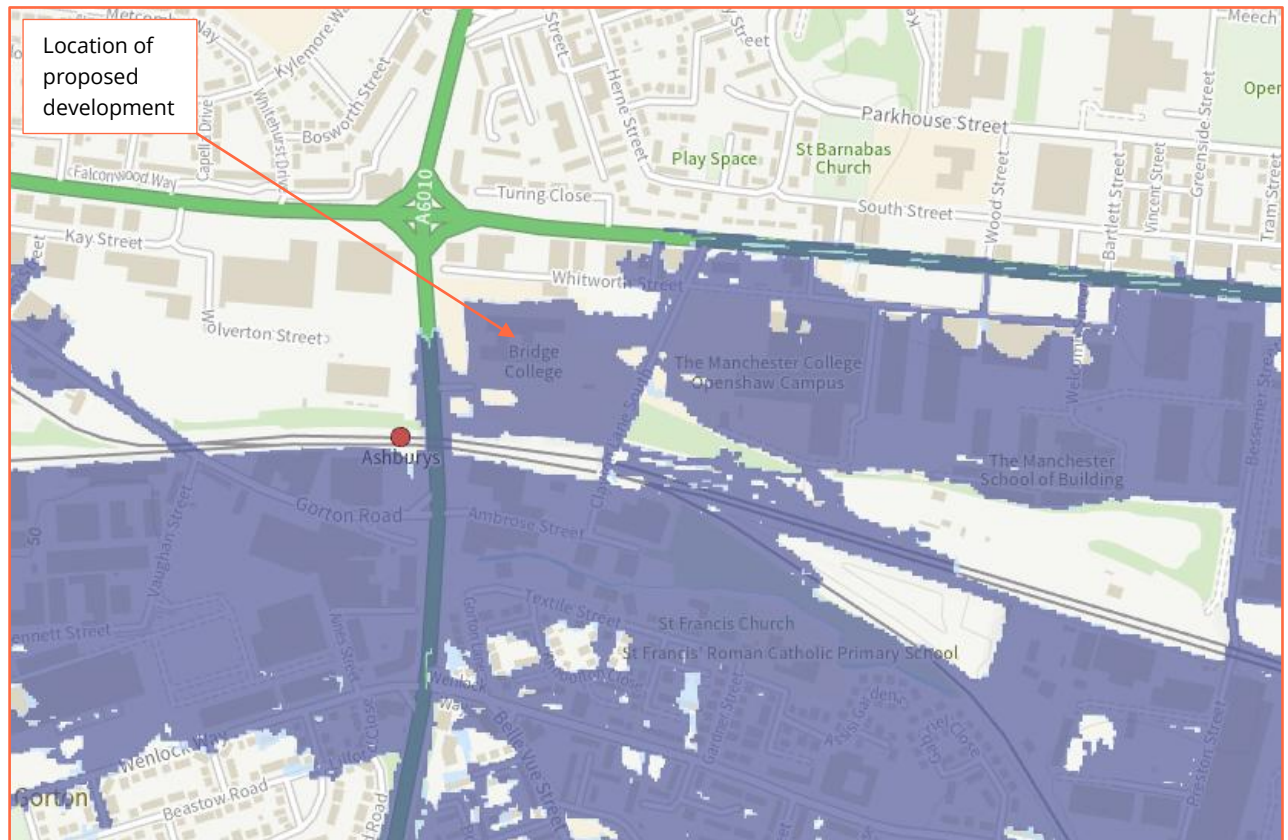


Figure 14: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

- 5.51. 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.
- 5.52. The EA hold no records of historic flooding having affected the site.
- 5.53. 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 “more vulnerable” (educational facility).
- 6.3. Post development, the site will remain “more vulnerable” (educational facility), as the application is for the construction of an extension to the existing school (Approx. 300m²).
- 6.4. The extension will not create any additional or separate units or businesses, or change the usage of the School.
- 6.5. Accordingly, it is considered that the vulnerability of the site as a whole will not increase post development.

EA Standing Advice for Minor Extensions:

- 6.6. EA Standing Advice guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250m². It should not be applied if an additional dwelling is being created, e.g. a self-contained annexe or additional commercial unit.
- 6.7. The proposed application is for the construction of an extension to the existing school (Approx. 300m²).

Physical Design Measures:

- 6.8. The site is located within Flood Zones 1, 2 and 3 according to the EA Flood Map for planning (Rivers and the Sea).
- 6.9. The EA Risk of Flooding from Surface Water Map suggests that risk at the site ranges from “Low” to “High” risk.
- 6.10. Comparison of the modelled flood level for the 1:100 year plus 35% climate change event (53.74mAOD) with topographic site levels (52.29mAOD to 55.75mAOD) shows the site to be between 1.45m below the flood level and 2.01m above the flood level for this event.
- 6.11. Comparison of the modelled flood level for the 1:100 year plus 35% climate change event (53.74mAOD) with topographic site levels in the area of the proposed development (53.67mAOD to 53.85mAOD) shows the proposed extensions to be between 0.07m below and 0.11m above the flood level for this event.
- 6.12. The proposed development is located entirely outside of the 1:100 year plus 35% climate change extent.
- 6.13. The finished ground floor level will be set no lower than existing (53.85mAOD) and therefore 0.11m above the design flood level (53.74mAOD).
- 6.14. 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:
 - 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 high level;
- Electrical incomer and meter situated 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;

6.15. It is recommended that flood proof doors and windows are installed for all 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:

- 6.16. The NPPF requires a route of safe escape for all residents and users to be provided from new residential properties in Flood Zone 3. Safe escape is usually defined as being through slow moving flood water no deeper than 25cm during the 1:100 year plus allowance for climate change flood event.
- 6.17. Based on the hazard map provided, a route of safe escape within the Very Low hazard category can be provided during the 1:100 year plus 35% climate change event. Site users should exit the site onto Whitworth Street and travel west to A6010.
- 6.18. Flood warning notices will be erected around the site to inform site users of the risk of flooding, and the flood warning and evacuation measures.
- 6.19. Site users will follow the Flood Warning and Evacuation Plan detailed in the following section.

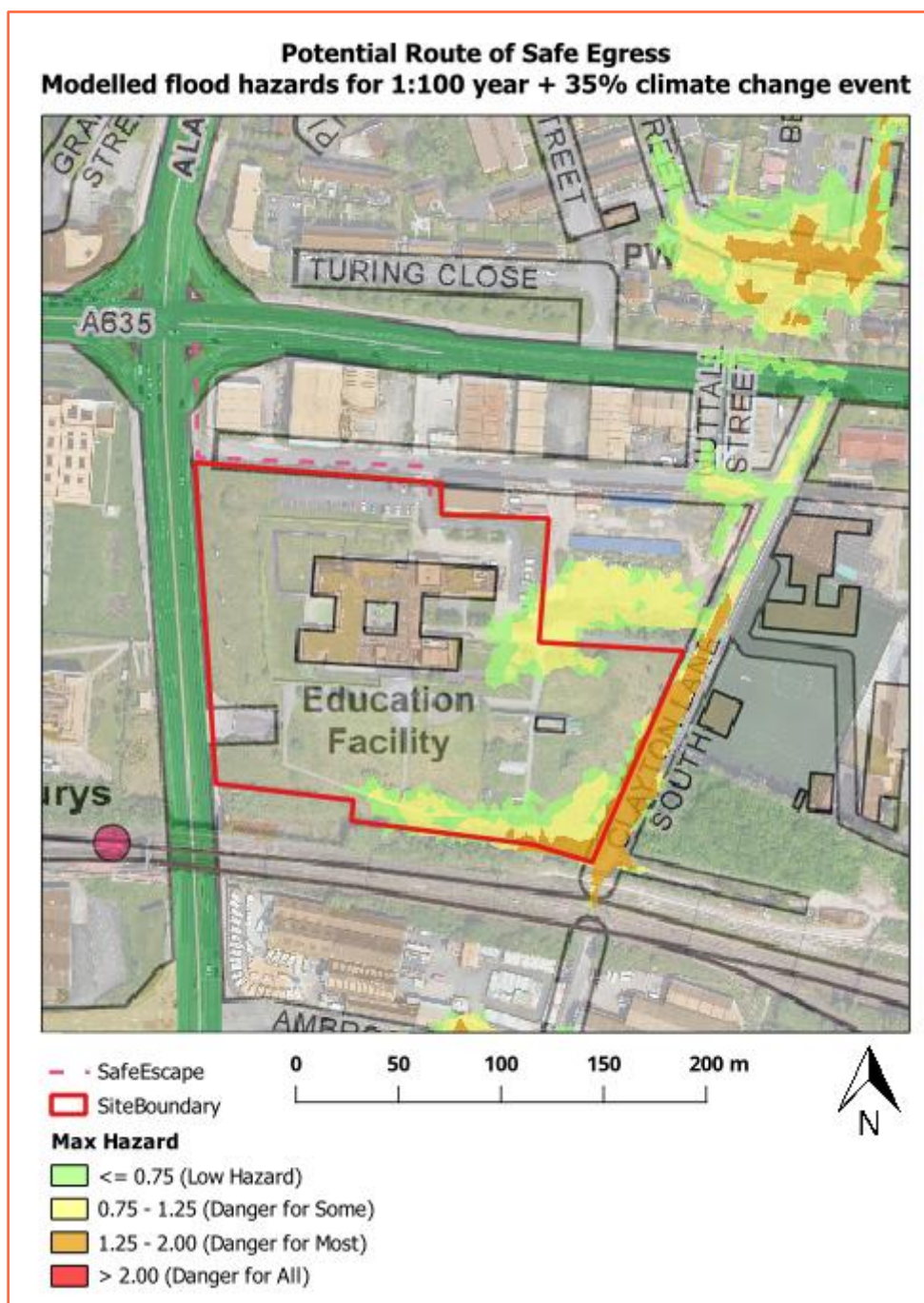


Figure 15: Potential route of safe egress (Source: EA, OS)

Flood Warning:

- 6.20. 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.
- 6.21. 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.
- 6.22. The applicant has agreed to subscribe to the EA's flood warning service.

- 6.23. The EA issue flood warnings/alerts to specific areas when flooding is expected. The site lies within the Lower River Irwell catchment including areas in Greater Manchester Flood Alert 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 3: EA Flood Warning Service

Flood Plan:

- 6.24. It is recommended that the applicant and future owners, occupiers and Landlords of the properties 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 4: Flood plan

Off-Site Impacts:

Fluvial Floodplain Storage:

- 6.25. 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.
- 6.26. 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.
- 6.27. 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.
- 6.28. The site is located within Flood Zones 1, 2 and 3 according to the Environment Agency Flood Map for Planning (Rivers and Sea). The built footprint of the proposed development is located entirely outside of Flood Zone 3 and the 1:100 year plus 35% climate change extent. As such, post development, there will be no unacceptable loss of fluvial floodplain storage.

Surface Water Drainage:

- 6.29. 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.
- 6.30. Due to the scale of the development, a full Surface Water Drainage Strategy is not required at this stage of planning. However, SuDS features will be incorporated into the development where practically possible or will utilise the existing arrangement on site. As such, any change in surface water runoff from the site will likely be negligible.

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 located within Flood Zones 1, 2 and 3 according to the Environment Agency Flood Map for Planning (Rivers and Sea) and within an area at “Low” to “High” risk of surface water flooding.
- 7.5. Post development, the site will remain “more vulnerable”, as the application is for the construction of an extension to the existing school (Approx. 300m²).
- 7.6. The extension will not create any additional or separate units or businesses, or change the usage of the School.

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

Table 5: Flood risk vulnerability and flood zone ‘compatibility’ (Source: NPPF Table 3 Technical Guidance)

- 7.7. Using the table above, the proposed application (“more vulnerable”) is considered to be suitable within Flood Zones 1, 2 and 3, subject to passing the Sequential and Exception Tests.
- 7.8. Given that the proposal is for extensions to an existing School, finding an alternative site is not likely to be a realistic option.

8. Discussion and Conclusion

- 8.1. Unda Consulting Limited have been appointed by Together Trust to undertake a Flood Risk Assessment for the proposed development at Bridge College, Whitworth Street, Openshaw, Manchester, M11 2GR. The purpose of the study is to support a planning application for the proposed development.
- 8.2. The site comprises of an existing school and associated parking and green areas.
- 8.3. The proposed application is for the construction of an extension to the existing school (Approx. 300m²).
- 8.4. The existing site usage is classified as “more vulnerable” (educational facility). Post development, the site will remain “more vulnerable” (educational facility). Accordingly, it is considered that the vulnerability of the site as a whole will not increase post development.
- 8.5. The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1 in 1,000 annual probability of river or sea flooding, partially within Flood Zone 2 (Medium Probability), defined as land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding and partially within Flood Zone 3 (High Probability), defined as land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. The risk would appear to be fluvial and originates from the Corn Brook located approximately 145m south.
- 8.6. The built footprint of the proposed development is located entirely outside of Flood Zone 3.
- 8.7. Product 4 modelled flood levels and extents have been requested from the Environment Agency for use in this report.
- 8.8. Comparison of the modelled flood level for the 1:100 year plus 35% climate change event (53.74mAOD) with topographic site levels (52.29mAOD to 55.75mAOD) shows the site to be between 1.45m below the flood level and 2.01m above the flood level for this event.
- 8.9. Comparison of the modelled flood level for the 1:100 year plus 35% climate change event (53.74mAOD) with topographic site levels in the area of the proposed development (53.67mAOD to 53.85mAOD) shows the proposed extensions to be between 0.07m below and 0.11m above the flood level for this event.
- 8.10. The proposed development is located entirely outside of the 1:100 year plus 35% climate change extent.
- 8.11. The finished ground floor level will be set no lower than existing (53.85mAOD) and therefore 0.11m above the design flood level (53.74mAOD).
- 8.12. According to EA data, there are no Flood Storage Areas located in close proximity to the site.
- 8.13. According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site.
- 8.14. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Low” to “High” chance of flooding from surface water at the present day and between 2040 – 2060.
- 8.15. According to the 2011 Manchester City, Salford City and Trafford Councils Level 2 Strategic Flood Risk Assessment (SFRA), 5 CDA's have currently been identified. The site is located within Conurbation Core CDA.
- 8.16. Risk to the site from groundwater and sewer surcharge flooding 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 there is a risk from reservoir flooding.
- 8.18. The EA hold no records of historic flooding having affected the site.

In Summary:

- The proposed application is for the construction of an extension to the existing school (Approx. 300m²).
- The finished ground floor level will be set no lower than existing (53.85mAOD) and therefore 0.11m above the design flood level (53.74mAOD).
- Post development, the site will remain “more vulnerable” (educational facility).
- Flood proofing of the development will be incorporated as appropriate.
- There will be no unacceptable loss of fluvial floodplain storage.
- Due to the 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 2025

Appendix

A – Development Plans:

- Site location, existing and proposed plans – Applicant.

B – Topographical Survey:

- Topographical Survey – planit intelligent environments

C – NPPF Annex 3:

- NPPF Annex 3: Flood risk vulnerability classification table

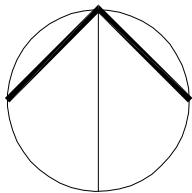
D – EA Product 4:

- Environment Agency Product 4 data

Copyright: All rights reserved. This drawing or any portion of it may not be reproduced in any way without the consent of the Architect.
This drawing is to be read in conjunction with all relevant Architect's and other Consultants' drawings and specifications.
All dimensions are to be verified by the Contractor on site. All discrepancies should be reported to the C.A. immediately upon discovery and prior to the commencement of the works.

Notes

0 5 10 20m



- Area of Ownership, (The Manchester College).
- Area of Application



DRAFT

PLANNING ISSUE

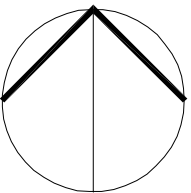
P05	31.11.25	For Planning submission issue.	MS	JW
P04	23.11.24	Area of ownership added. Site section references removed. - Preliminary issue.	MS	JW
P03	16.10.24	Area of ownership removed. Site section references added. - Preliminary issue.	MS	JW
P02	29.09.24	Area of ownership adjusted, area of application added - Preliminary issue.	MS	GC
P01	29.08.24	Draft planning drawing- Preliminary issue.	GC	JW
Rev	Date	Revision No.	By	Chk

walker simson architects
33 Piccadilly
Manchester
M1 1LQ
t: 0161 228 7406
f: 0161 228 7046
e: info@walkersimpson.com

Project: Bridge College Extension
Title: Existing Site Plan
Drawn: MS
Checked: JW
Scale: 1:500
Sheet: A1
Status: S4
Revision: P0
WSA Project ID: 0396
396-WSA-ZZ-ZZ-DR-A-1002

Notes

0 5 10 20m



- Area of Ownership, (The Manchester College)
- Area of Application

Park space Key

- AC Accessible Parking space
- EV EV Electric Vehicle Parking space
- AC EV Accessible/ Electric Vehicle Parking space
- MB Mini-bus Parking space

Note: Unless indicated otherwise parking spaces are standard dimensions.

Area A, B, C and D

Standard parking spaces - 138
Electric parking spaces (incl. AC/EV) - 9
Accessible parking spaces - 18
Total Car Parking spaces - 165

Mini-bus parking spaces - 8

- Extensions footprint

DRAFT

PERMISSIONS				
P06	01.25	For Planning submission issue.	MS	JW
P05	18.12.24	Vehicular access gates from Whitworth Street widened. Kerbs to access road at drop-off area realigned.	MS	GC
P04	23.10.24	Area of ownership added, areas of application added, extension footprint added - Preliminary issue	MS	GC
P03	22.10.24	Parking proposal redrafted. Area of ownership removed - Preliminary issue	MS	GC
P02	20.09.24	Area of ownership adjusted, area of application added - Preliminary issue	MS	GC
P01	29.08.24	Draft planning drawing - Preliminary issue	GC	JW
Rev	Date	Revision Note	By	Chk

walker simpson architects
33 Piccadilly Manchester M1 1LQ
t: 0161 228 7406 f: 0161 228 7046 e: ws@walker-simpson.com

Project: Bridge College Extension WSA Project ID: 0396
Title: Proposed Site Plan
Drawn: MS Checked: JW Scale: 1:500 Sheet: A1
Number: 396-WSA-ZZ-ZZ-DR-A-1501 Status: S4 Revision: P01

GENERAL NOTES

1. Do not scale drawing.
2. All setting out, levels and dimensions to be agreed on site.
3. The dimensions of all materials must be checked on site before being laid out.
4. This drawing must be read with the relevant specification clauses and detail drawings.
5. Order of construction and setting out to be agreed on site.

KEY

LEVELS / SETTING OUT

+53.2000

EXISTING LEVELS

+53.912

PROPOSED LEVELS / FALLS

NOTE: REFER TO STOCKLEY DRAWING (GA)510 FOR LEVELS AND SETTING OUT INFORMATION TO CAR PARK AND ACCESS ROAD AREAS

AA	07.11.11	CONSTRUCTION	MS	AM
Rev	Date	Description	Drawn	Checked
15.07.11		DRAFT FOR COMMENT	MS	AM

Originator:
PLANIT-IE LTD
2 Back Grafton Street
Altrincham
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Tel: 0161 928 9281
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E-mail: info@planit-ie.com

planit
intelligent environments

Client:
The Manchester College /
Together Trust

Project:
Co-Location Project, Manchester

Title:
Site Levels Plan

Status:		CONSTRUCTION			
Designed: DP		Drawn: MS		Checked: EL	
Scale @ A1 1:500		Date: 15/07/11		Approved: EL	
Drawing No.: PL1103.M110				Revision: AA	

Flood map for planning

Your reference
95394

Location (easting/northing)
387315/397342

Created
14 April 2025 15:32

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.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
95394

Location (easting/northing)
387315/397342

Scale
1:10,000

Created
14 Apr 2025 15:32

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


0 100 200 300m

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

Flood risk assessment data

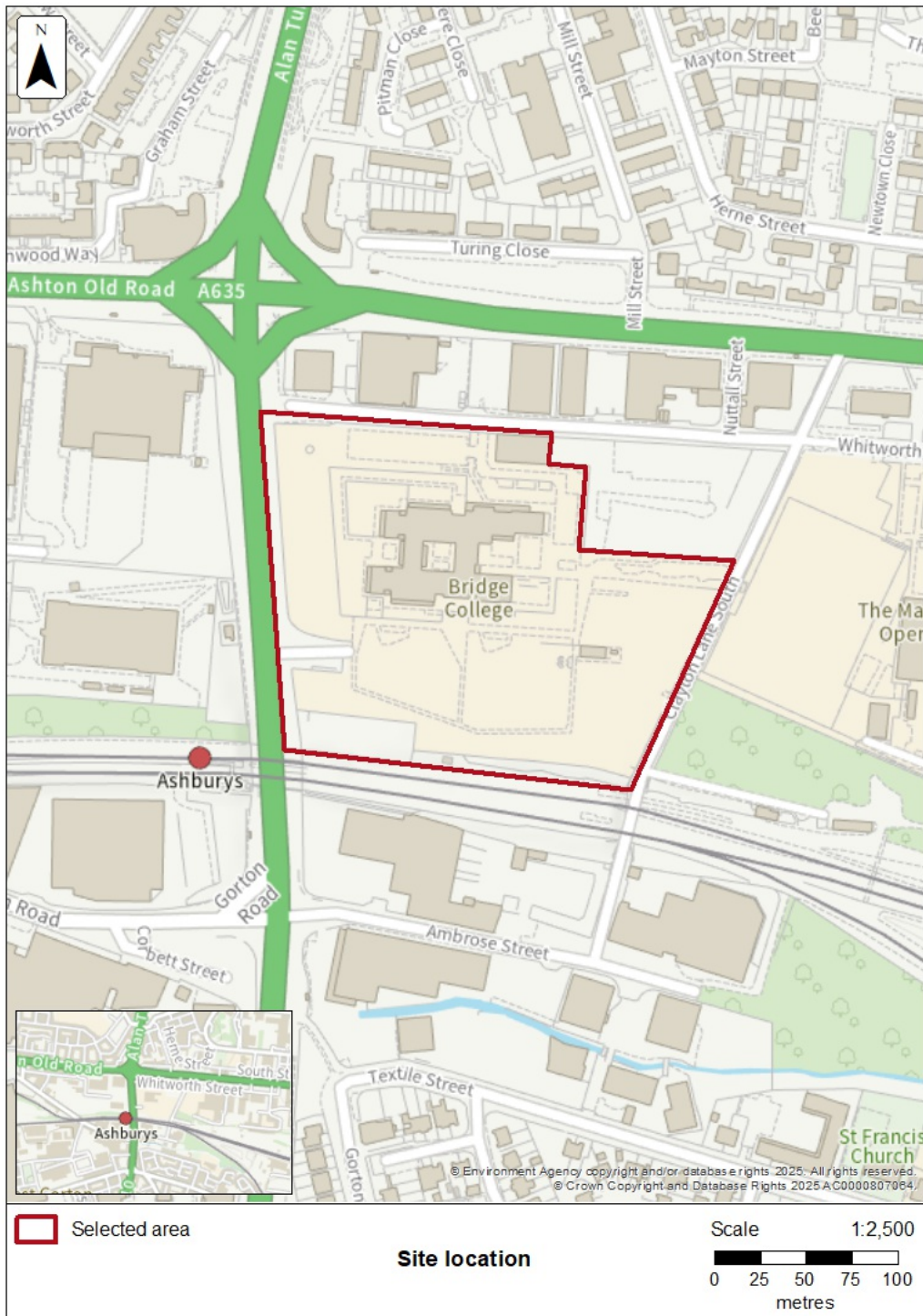
Location of site: 387309 / 397339 (shown as easting and northing coordinates)

Document created on: 10 March 2025

This information was previously known as a product 4.

Customer reference number: 34N6CTHKP651

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- modelled data
- climate change modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- past floods
- flood defences and attributes

We do not have past flooding data for this location.

Please note that:

- flooding may have occurred that we do not have records for
- flooding can come from a range of different sources
- we can only supply flood risk data relating to flooding from rivers or the sea

You can contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

We aren't able to display flood defence locations and attributes as there are no formal flood defences in the area of interest.

Surface water and other sources of flooding

Use the [long term flood risk service](#) to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

Or you can contact your Lead Local Flood Authority for further information.

Your Lead Local Flood Authority is Manchester District.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Corn Brook 2017

Scenario(s): No defences exist fluvial, no defences exist climate change fluvial

Date: 31 December 2017

This model contains the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

The flood zones are not currently being updated. The last update was in November 2023. Some of the flood zones may have changed, however all source data is included in the models below.



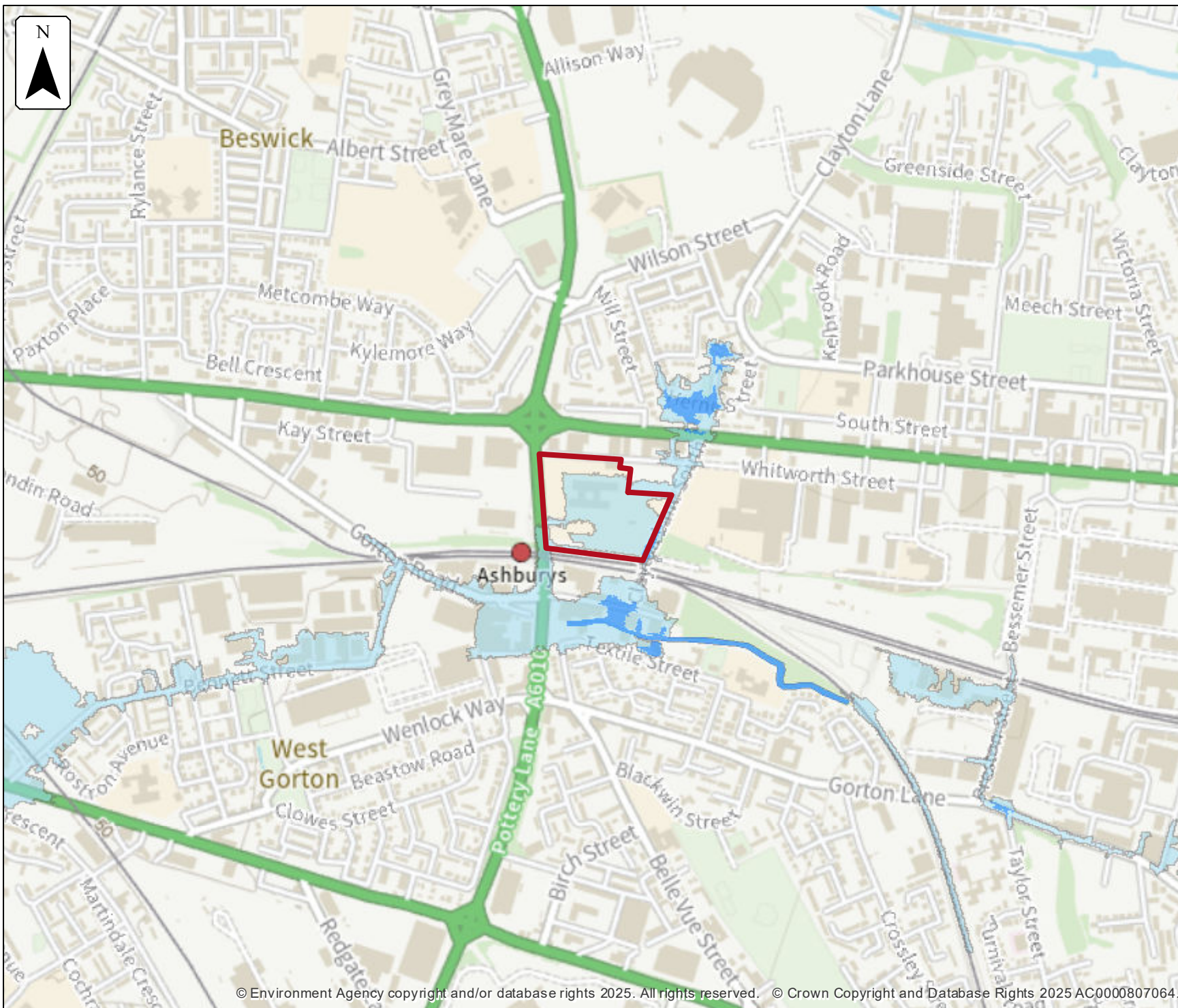
Flood map for planning

Location (easting/northing)
387309/397339

Scale
1:10,000

Created
10 Mar 2025

-  Selected area
-  Flood zone 3
-  Flood zone 2



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Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- No defences exist climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change

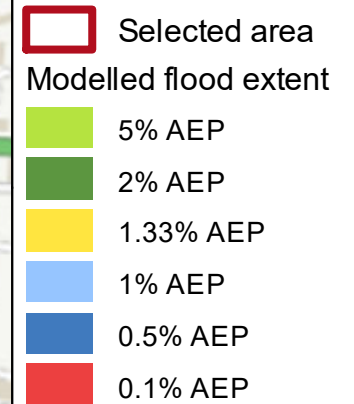


No defences exist modelled fluvial extent

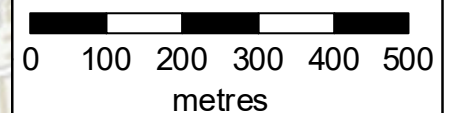
Location (easting/northing)
387309/397339

Scale Created
1:10,000 10 Mar 2025

Model name
Corn Brook 2017



Flood extents may not be
visible where they overlap
other return periods





**No defences exist
climate change
modelled fluvial extent**

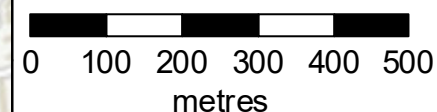
Location (easting/northing)
387309/397339

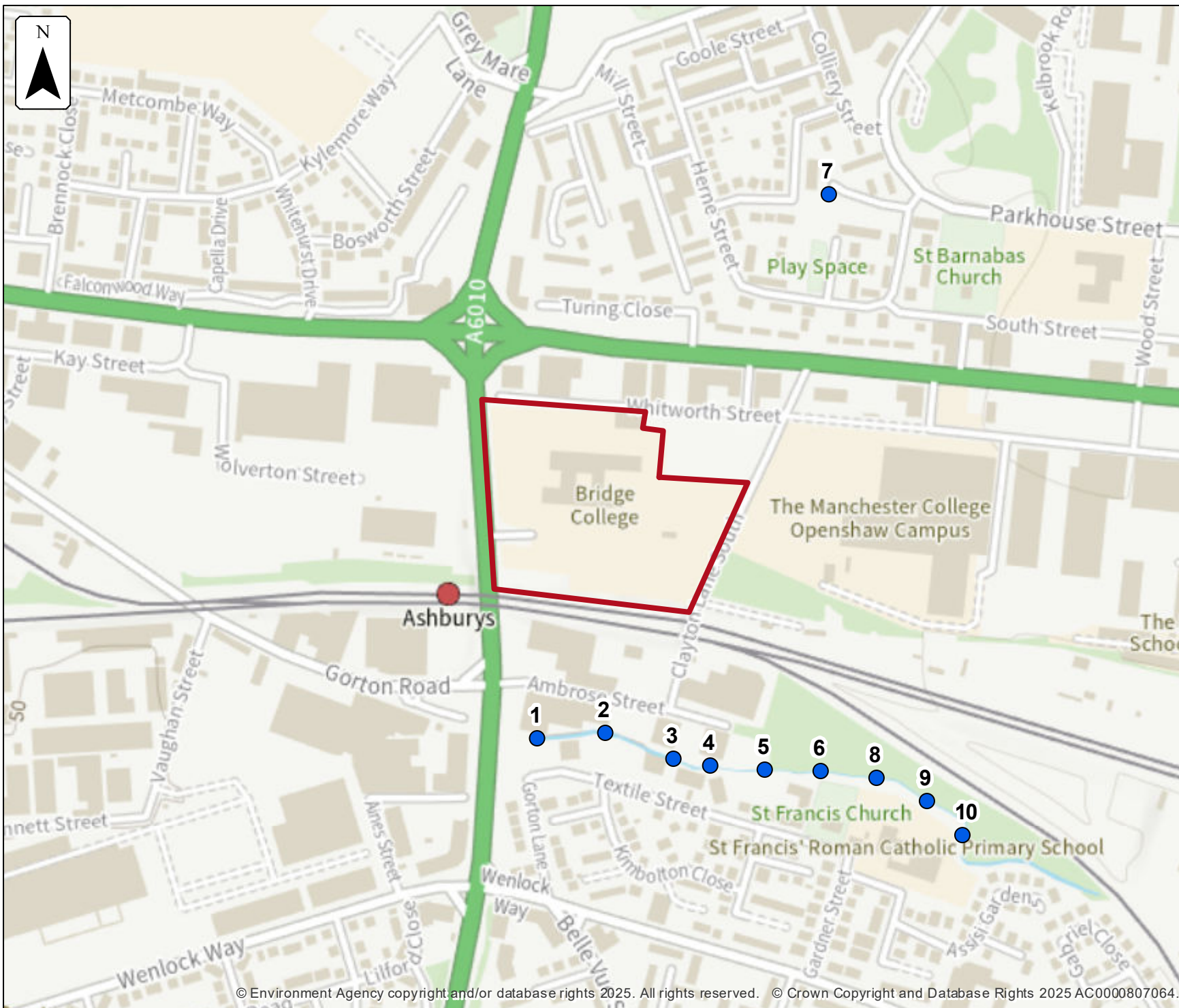
Scale Created
1:10,000 10 Mar 2025

Model name
Corn Brook 2017

-  Selected area
-  Main river
- Modelled flood extent
-  1% AEP (+30%)
 -  1% AEP (+35%)
 -  1% AEP (+70%)
 -  0.1% AEP (+30%)

Flood extents may not be
visible where they overlap
other return periods





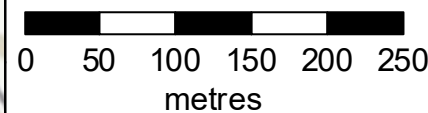
**No defences exist
modelled fluvial
node locations**

Location (easting/northing)
387309/397339

Scale Created
1:5,000 10 Mar 2025

Model name
Corn Brook 2017

-  Selected area
-  Modelled location



Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
1	952461	387253	397116	49.0	49.14	49.23	49.31	49.37	49.45	49.66	49.84	49.93	50.82	
2	952460	387319	397120	49.22	49.28	49.33	49.39	49.44	49.50	49.69	49.87	49.95	50.84	
3	952444	387385	397096	49.81	49.86	49.89	49.91	49.92	49.94	49.98	50.03	50.07	50.84	51.94
4	952443	387421	397089	51.16	51.28	51.37	51.45	51.50	51.54	51.60	51.64	51.69	51.87	52.05
5	952455	387474	397085	51.55	51.64	51.70	51.74	51.77	51.81	51.90	51.96	52.01	52.17	52.49
6	952466	387528	397084	51.86	51.95	52.01	52.04	52.07	52.11	52.21	52.28	52.34	52.51	52.95
7	952448	387536	397643	53.14	53.22	53.27	53.32	53.37	53.44	55.02	56.65	56.82	57.11	57.71
8	952442	387582	397077	52.19	52.28	52.33	52.36	52.39	52.43	52.52	52.59	52.65	52.81	53.25
9	952463	387631	397055	52.49	52.56	52.62	52.65	52.67	52.71	52.79	52.85	52.90	53.05	53.48
10	952456	387666	397022	52.83	52.90	52.94	52.98	53.01	53.03	53.10	53.15	53.19	53.32	53.66

Data in this table comes from the Corn Brook 2017 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

If no level or flow data is available for a scenario, no table will be shown.

No defences exist

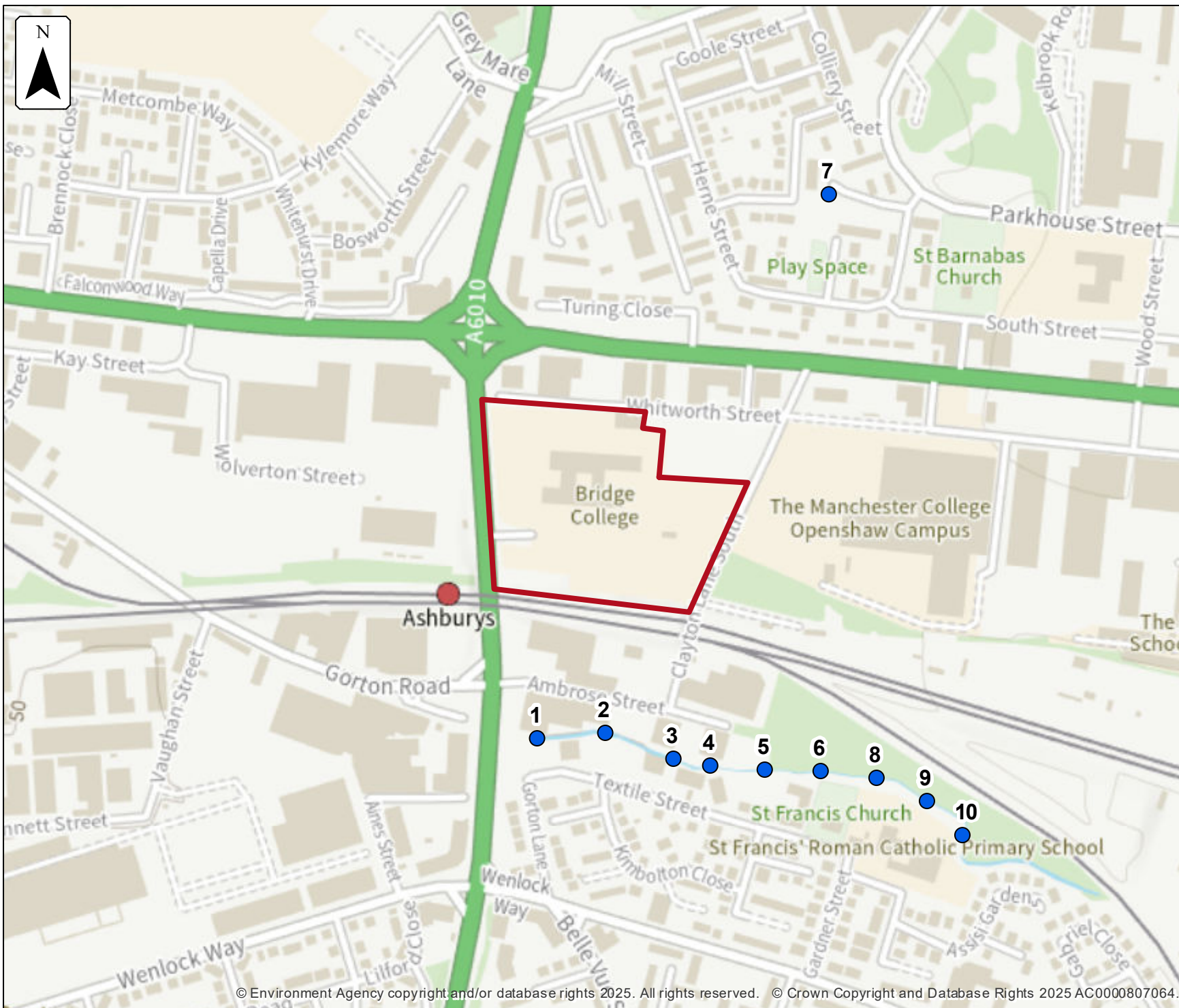
Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	952461	387253	397116	1.31	1.87	2.31	2.68	2.98	3.38	4.52	5.58	6.10	8.26	
2	952460	387319	397120	1.31	1.87	2.31	2.68	2.98	3.39	4.52	5.58	6.10	9.79	
3	952444	387385	397096	0.71	1.01	1.26	1.47	1.59	1.77	2.26	2.59	2.83	4.18	6.05
4	952443	387421	397089	0.71	1.01	1.26	1.44	1.59	1.82	2.42	2.96	3.40	5.08	10.36
5	952455	387474	397085	0.71	1.01	1.26	1.44	1.59	1.82	2.42	2.96	3.40	5.08	10.36
6	952466	387528	397084	0.71	1.01	1.26	1.43	1.59	1.80	2.38	2.93	3.38	4.90	10.12
7	952448	387536	397643	0.51	0.73	0.90	1.06	1.20	1.39	1.92	2.41	2.82	3.95	8.04
8	952442	387582	397077	0.71	1.01	1.26	1.43	1.59	1.79	2.37	2.92	3.38	4.89	10.11
9	952463	387631	397055	0.71	1.01	1.26	1.43	1.59	1.79	2.37	2.92	3.38	4.88	10.14
10	952456	387666	397022	0.71	1.01	1.26	1.43	1.59	1.79	2.37	2.92	3.38	4.89	10.23

Data in this table comes from the Corn Brook 2017 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

If no level or flow data is available for a scenario, no table will be shown.



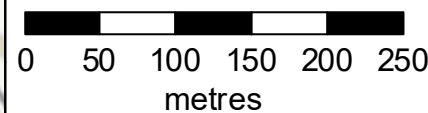
**No defences exist
climate change
modelled fluvial
node locations**

Location (easting/northing)
387309/397339

Scale Created
1:5,000 10 Mar 2025

Model name
Corn Brook 2017

-  Selected area
-  Modelled location



Modelled node locations data

No defences exist climate change

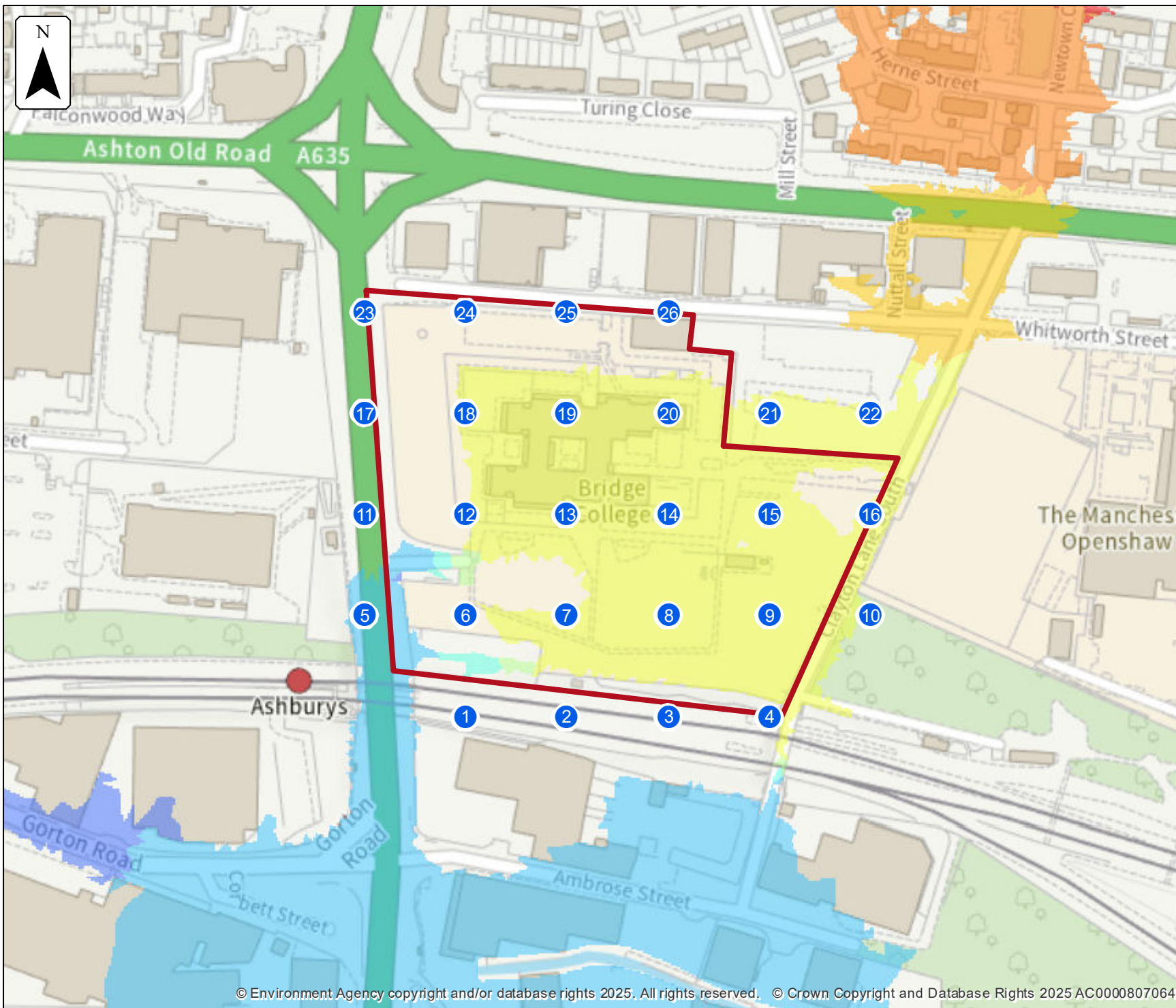
Label	Modelled location ID	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
				Level	Level	Level	Level	Flow	Flow	Flow	Flow
1	952461	387253	397116	50.57	50.70			7.77	8.03		
2	952460	387319	397120	50.58	50.73			8.07	8.78		
3	952444	387385	397096	50.61	50.74	51.43	52.15	3.93	4.05	4.64	7.07
4	952443	387421	397089	51.84	51.85	51.89	52.20	4.66	4.85	6.64	12.56
5	952455	387474	397085	52.14	52.15	52.32	52.57	4.66	4.85	6.64	12.56
6	952466	387528	397084	52.47	52.49	52.68	53.03	4.50	4.68	6.51	12.37
7	952448	387536	397643	57.05	57.08	57.24	58.0	3.66	3.80	4.79	10.45
8	952442	387582	397077	52.77	52.79	52.95	53.35	4.49	4.68	6.52	12.29
9	952463	387631	397055	53.01	53.03	53.21	53.59	4.49	4.67	6.49	12.20
10	952456	387666	397022	53.29	53.30	53.45	53.76	4.49	4.67	6.52	12.33

Data in this table comes from the Corn Brook 2017 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

If no level or flow data is available for a scenario, no table will be shown.



No defences exist modelled fluvial extent and height

Location (easting/northing)
387309/397339

Scale Created
1:2,500 10 Mar 2025

Model name
Corn Brook 2017

 Selected area
 Main river

Modelled 2D grid
Water level in mAOD

 0 - 51.0
 51.0 - 51.75
 51.75 - 52.5
 52.5 - 53.25
 53.25 - 54.0
 54.0 - 54.75
 54.75 - 55.5
 55.5 - 56.25
 56.25 - 57.0

This map shows the
0.1% AEP height data


0 25 50 75 100
metres

Sample point data

No defences exist

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
1	387246	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	387295	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	387344	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	387393	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	387197	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.99
6	387246	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	387295	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.41
8	387344	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.42
9	387393	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.11	0.52
10	387442	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	387197	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	387246	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
13	387295	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.34
14	387344	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.12	0.52
15	387393	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.31
16	387442	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.57	1.05

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
17	387197	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	387246	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.24
19	387295	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.36
20	387344	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.36
21	387393	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.37	0.77
22	387442	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.33	0.73
23	387197	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
24	387246	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	387295	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	387344	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	NoData	NoData	NoData	NoData	NoData	NoData	Could not determine	0.45	1.37	1.78

Data in this table comes from the Corn Brook 2017 model.

Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

If no height or depth data is available for a scenario, no table will be shown.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

No defences exist

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
1	387246	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	387295	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	387344	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	387393	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	387197	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	51.79
6	387246	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	387295	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.21
8	387344	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.21
9	387393	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	53.80	54.21
10	387442	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	387197	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	387246	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
13	387295	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.19
14	387344	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	53.80	54.20
15	387393	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.20
16	387442	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	53.80	54.21
17	387197	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	387246	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.19

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
19	387295	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.19
20	387344	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	54.19
21	387393	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	53.80	54.20
22	387442	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	53.80	54.20
23	387197	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
24	387246	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	387295	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	387344	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	NoData	NoData	NoData	NoData	NoData	NoData	Could not determine	52.88	53.80	54.22

Data in this table comes from the Corn Brook 2017 model.

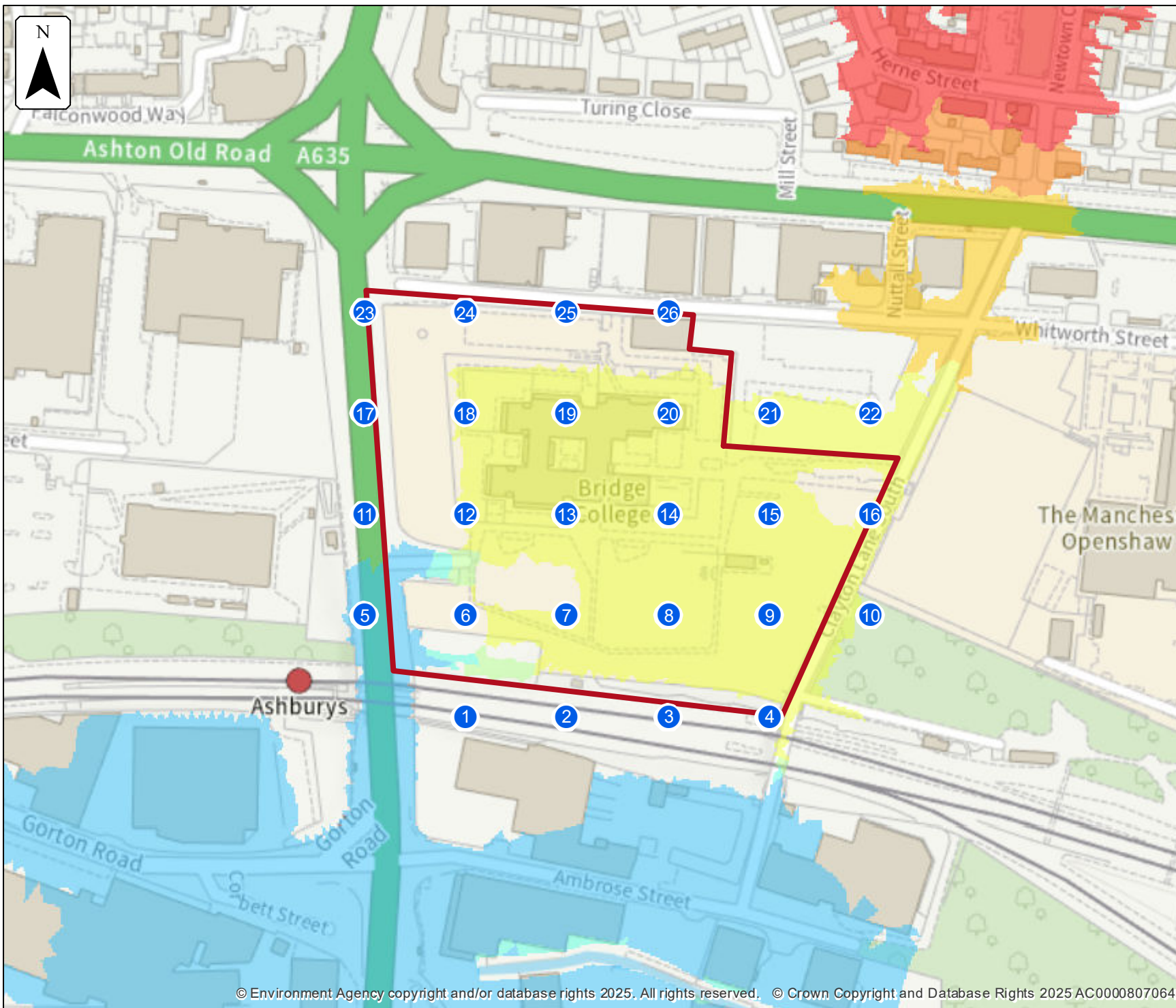
Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

If no height or depth data is available for a scenario, no table will be shown.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



No defences exist climate change modelled fluvial extent and height

Location (easting/northing)
387309/397339

Scale Created
1:2,500 10 Mar 2025

Model name
Corn Brook 2017

Selected area

Main river

Modelled 2D grid
Water level in mAOD

0 - 51.0
 51.0 - 51.75
 51.75 - 52.5
 52.5 - 53.25
 53.25 - 54.0
 54.0 - 54.75
 54.75 - 55.5
 55.5 - 56.25
 56.25 - 57.0

This map shows the
0.1% AEP +30% height data

0 25 50 75 100
metres

Sample point data

No defences exist climate change

Label	Easting	Northing	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Depth	Depth	Depth	Height	Height	Height	Height
1	387246	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	387295	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	387344	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	387393	397238	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	387197	397287	NoData	NoData	1.24	NoData	NoData	NoData	52.04
6	387246	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	387295	397287	NoData	0.19	0.48	NoData	NoData	53.99	54.28
8	387344	397287	NoData	0.20	0.49	NoData	NoData	53.99	54.29
9	387393	397287	NoData	0.30	0.60	NoData	NoData	53.99	54.29
10	387442	397287	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	387197	397336	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	387246	397336	NoData	NoData	0.10	NoData	NoData	NoData	54.22
13	387295	397336	NoData	0.14	0.42	NoData	NoData	53.98	54.26
14	387344	397336	NoData	0.30	0.60	NoData	NoData	53.98	54.28
15	387393	397336	NoData	NoData	0.37	NoData	NoData	NoData	54.28
16	387442	397336	0.50	0.76	0.56	53.65	53.73	53.99	54.28

Label	Easting	Northing	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Depth	Depth	Depth	Height	Height	Height	Height
17	387197	397385	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	387246	397385	NoData	NoData	0.31	NoData	NoData	NoData	54.26
19	387295	397385	NoData	0.14	0.43	NoData	NoData	53.98	54.27
20	387344	397385	NoData	0.14	0.43	NoData	NoData	53.98	54.27
21	387393	397385	0.30	0.55	0.92	53.66	53.74	53.99	54.28
22	387442	397385	0.26	0.51	0.81	53.66	53.74	53.99	54.28
23	387197	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData
24	387246	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	387295	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	387344	397434	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			1.30	1.56	1.87	53.66	53.74	53.99	54.31

Data in this table comes from the Corn Brook 2017 model.

Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

If no height or depth data is available for a scenario, no table will be shown.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Manchester District.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Greater Manchester Merseyside and Cheshire Environment Agency team at inforequests.gmmc@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for