



42 Market Street, Milnsbridge, Huddersfield, HD3
4HY

Flood Risk Assessment

For Melvyn Morrell

KRS.0948.001.R.001.A

April 2026

www.krsenviro.com

CONTACT DETAILS

Registered Office:
KRS Environmental Ltd
3 Princes Square
Princes Street
Montgomery
Powys
SY15 6PZ

Tel: 01686 668957

Mob: 07711 257466

Email: keelan@krseenviro.com

Web: www.krseenviro.com

LinkedIn: uk.linkedin.com/in/keelanserjeant/

42 Market Street, Milnsbridge, Huddersfield, HD3 4HY

Project	Flood Risk Assessment
Client	Melvyn Morrell
Status	Final
Prepared by	Ruth Evans
Reviewed by	Keelan Serjeant BSc (Hons), MSc, MCIWEM
Date	April 2026

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EXECUTIVE SUMMARY

The Site would be expected to remain dry in all but the most extreme conditions. The potential consequences of flooding are considered manageable, and the assessment has been undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF). The Proposed Development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF.

The Proposed Development should not therefore be precluded on the grounds of flood risk or drainage.

1.0 INTRODUCTION

1.1 Background

This Flood Risk Assessment (FRA) has been prepared by KRS Enviro at the request of Melvyn Morrell to support a planning application for the conversion of a ground floor café to a single residential flat (“the Proposed Development”) at 42 Market Street, Milnsbridge, Huddersfield, HD3 4HY (“the Site”).

This FRA has been carried out in accordance with guidance contained in the National Planning Policy Framework (NPPF)¹, associated Planning Practice Guidance on flood risk and coastal change² (PPG) and the PPG ‘Site-specific flood risk assessment checklist’. This FRA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

It is recognised that developments which are designed without regard to flood risk may endanger lives, damage property, cause disruption to the wider community, damage the environment, be difficult to insure and require additional expense on remedial works. The development design should be such that future users will not have difficulty obtaining insurance or mortgage finance, or in selling all or part of the development, as a result of flood risk issues.

1.2 National Planning Policy Framework (NPPF)

One of the key aims of the NPPF is to ensure that flood risk is taken into account at all stages of the planning process; to avoid inappropriate development in areas at risk of flooding and to direct development away from areas of highest risk. This FRA has been prepared in accordance with the NPPF, in particular Paragraphs 170-182, which require that development:

- avoids inappropriate development in areas at risk of flooding;
- is directed to areas of lowest flood risk through the Sequential Test;
- is demonstrated to be safe for its lifetime, taking climate change into account;
- does not increase flood risk elsewhere; and
- incorporates appropriate opportunities for flood risk reduction and resilience.

The associated PPG has been used to structure this FRA and ensure that all sources of flooding, both now and in the future, have been assessed in accordance with current national policy.

The report findings are based upon professional judgement and are summarised below with detailed recommendations provided at the end of the report. The report includes rainfall data from the Flood Estimation Handbook (FEH) and hydrogeological information from the British Geological Survey (BGS). The assessment will summarise and refer to these datasets in the text.

¹ Ministry for Housing, Communities and Local Government (2025) National Planning Policy Framework: <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>

² Communities and Local Government (2022) Planning Practice Guidance - Flood Risk and Coastal Change: <https://www.gov.uk/guidance/flood-risk-and-coastal-change>

1.3 Report Structure

This FRA has the following report structure:

- Section 2 describes the location of the Site, the existing and Proposed Development;
- Section 3 outlines the flood risk to the existing and Proposed Development;
- Section 4 details the proposed surface water drainage for the Site and assesses the potential impacts of the Proposed Development on surface water drainage;
- Section 5 outlines the mitigation measures used to reduce the overall level of flood risk;
- Section 6 details the Sequential and Exception Tests; and
- Section 7 presents a summary and conclusions.

2.0 LOCATION & DEVELOPMENT DESCRIPTION

2.1 Site Location

The Site is located at 42 Market Street, Milnsbridge, Huddersfield, HD3 4HY (see Figure 1). The National Grid Reference (NGR) of the Site is 411585, 415994. The surrounding land use is predominantly residential, with local roads and gardens forming the immediate context.

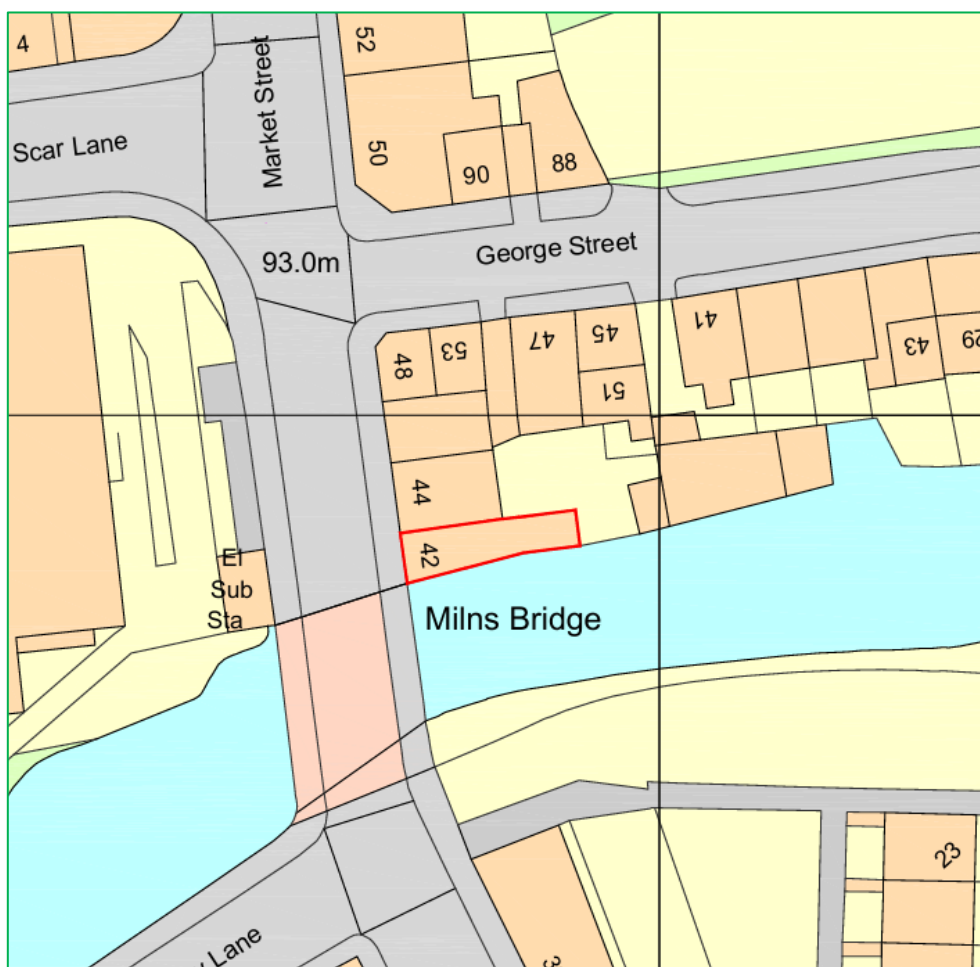


Figure 1 - Site Location

2.2 Existing Development

The Site comprises an existing ground floor café within an established residential area (see Appendix 1).

2.3 Proposed Development

The Proposed Development comprises the conversion of the ground floor café to a single residential flat (see Appendix 1). Further details with regard to the Proposed Development can be found in the accompanying information submitted with the planning application.

2.4 Ground Level

The Site is relatively level with an approximate ground level of 92 metres Above Ordnance Datum (mAOD).

2.5 Catchment Hydrology/Drainage

The River Colne is located adjacent to the southern boundary of the Site. The Huddersfield Narrow Canal is located approximately 155m to the south of the Site. The Longwood Brook, a tributary of the River Colne, is culverted to the east of the Site however, the closest open section of this watercourse is located approximately 140m to the north of the Site.

2.6 Ground Conditions

The British Geological Survey (BGS) map³ shows that the bedrock deposits underlying the Site consists of the Huddersfield White Rock - sandstone. These sedimentary rocks are fluvial, palustrine and shallow-marine in origin. They are detrital, forming deposits reflecting the channels, floodplains and deltas of a river in a coastal setting (with periodic inundation from the sea).

The superficial deposits present at the Site consist of Alluvium - clay, silt, sand and gravel. These sedimentary deposits are fluvial in origin. They are detrital, ranging from coarse- to fine-grained and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river or estuary (if in a coastal setting).

Information from the National Soil Resources Institute⁴ details the Site area as being situated on freely draining slightly acid loamy soils.

³ https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.14476159.932338379.1655890995-1831306757.1655472887

⁴ <http://www.landis.org.uk/soilscapes/>

3.0 FLOOD RISK

3.1 Sources of Flooding

All sources of flooding have been considered, these are; fluvial (river) flooding, tidal (coastal) flooding, groundwater flooding, surface water (pluvial) flooding, sewer flooding and flooding from artificial drainage systems/infrastructure failure.

3.2 Environment Agency

Information regarding the current flood risk at the application Site and local flood defences has been obtained from the Environment Agency (see Appendix 2).

3.3 Kirklees Council

Kirklees Council is the LPA and the LLFA and has responsibilities for 'local flood risk', which includes surface runoff, groundwater and ordinary watercourses. Planning guidance written by Kirklee Council regarding flood risk was consulted to assess the mitigation policies in place. The Kirklees Council Strategic Flood Risk Assessment (SFRA) and the Kirklees Council Preliminary Flood Risk Assessment (PFRA) which cover the Site have been reviewed.

3.4 Climate Change

Projections of future climate change, in the UK, indicate more frequent, short-duration, high intensity rainfall and more frequent periods of long duration rainfall. Guidance included within the NPPF recommends that the effects of climate change are incorporated into FRA's. Recommended precautionary sensitivity ranges for peak rainfall intensities and peak river flows are outlined in the flood risk assessments: climate change allowances guidance⁵.

The flood risk assessments: climate change allowances guidance recommends that the central allowances are used as the design event and the higher allowances are used to test the sensitivity of flood risk across the anticipated lifespan of the development⁶. The lifetime of the Proposed Development, as per Environment Agency guidance, is 100 years. Therefore, the fluvial design event for the Site is the 1 in 100 year (+23%) event.

Table 1 - Peak River Flow Allowances by River Catchment

River Management Catchment	Allowance Category	2020s	2050s	2080s
Aire and Calder Management Catchment	Upper	+24%	+31%	+51%
	Higher	+15%	+18%	+31%
	Central	+11%	+13%	+23%

3.5 Environment Agency Flood Zones

A review of the Environment Agency's Flood Zones indicates that the majority of the Site is located within Flood Zone 2 and therefore has a 'medium probability' of flooding with between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) in any year. However, a very small proportion of the Site, on the southern boundary is located within Flood Zone 3 and therefore has a 'high probability' of flooding with a 1 in 100 or greater annual probability of river flooding (>1%) in any year, as shown in Figures 2 and 3.

⁵ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#high-allowances>

⁶ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#high-allowances>

The Site should not be designated as Flood Zone 3b 'Functional Floodplain'. The definition of Flood Zone 3b 'Functional Floodplain' as per the PPG is: *"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."

The Site does not comprise land where water has to flow or be stored in times of flood. The Site does not perform a water conveyance flood route or a flood storage area. The Site does not provide a function of flood conveyance (i.e. free flow) or flood storage, either through natural processes, or by design (e.g. washlands and flood storage areas). The Site is already developed therefore, the Site is located within Flood Zone 3a.

The Flood Zones are the current best information on the extent of the extremes of flooding from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development. They show the worst case scenario. The Environment Agency Flood Zones and acceptable development types are explained in Table 2. Table 2 shows that some development types are generally acceptable in Flood Zones 2 and 3a.

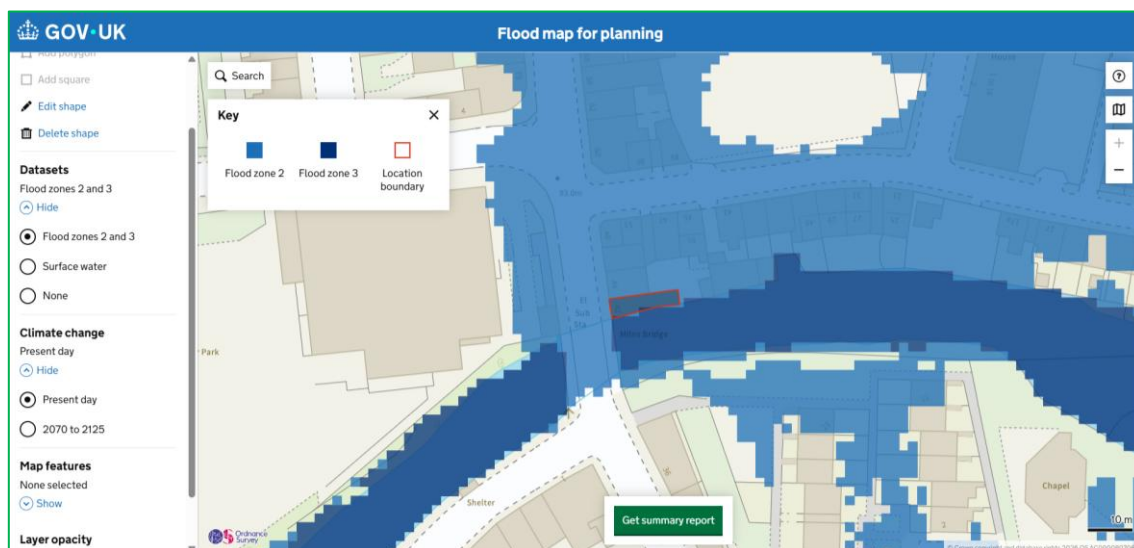


Figure 2 - Environment Agency Flood Zones: Present Day

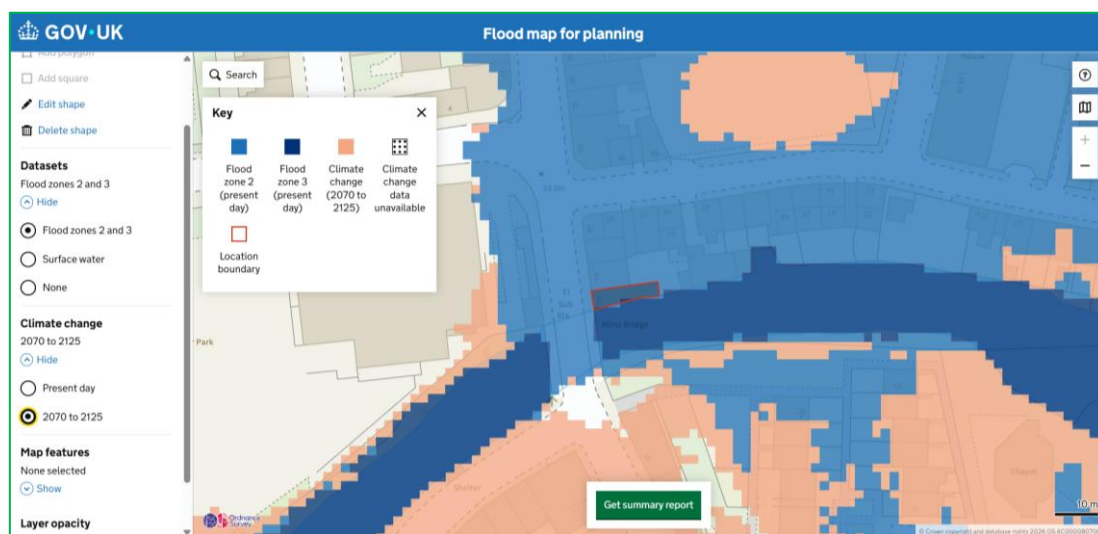


Figure 3 - Environment Agency Flood Zones: Climate Change 2070 to 2125

Table 2 - Environment Agency Flood Zones and Appropriate Land Use

Flood Zone	Probability	Explanation	Appropriate Land Use
Zone 1	Low	Less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%)	All development types generally acceptable
Zone 2	Medium	Between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year	Most development type are generally acceptable
Zone 3a	High	A 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year	Some development types not acceptable
Zone 3b	'Functional Floodplain'	<p>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:</p> <ul style="list-style-type: none"> 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). <p>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)</p>	Some development types not acceptable

3.6 Flood Vulnerability

In the PPG, appropriate uses have been identified for the Flood Zones. Applying the Flood Risk Vulnerability Classification in the PPG, the proposed use is classified as ‘more vulnerable’. Table 3 of this report and the PPG state that ‘more vulnerable’ uses are appropriate within Flood Zones 2 and 3a after the completion of a satisfactory FRA.

Table 3 - Flood Risk Vulnerability and Flood Zone ‘Compatibility’

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception test required	✓	✓
Zone 3a	Exception test required	✓	✗	Exception test required	✓
Zone 3b ‘Functional Floodplain’	Exception test required	✓	✗	✗	✗

Key: ✓: Development is appropriate, ✗: Development should not be permitted.

3.7 Historic Flooding

The Environment Agency data shows that the Site has not historically flooded as confirmed by the Kirklees Council SFRA (see Figure 4). There are no other records of anecdotal information of flooding at the Site. The British Hydrological Society “Chronology of British Hydrological Event”⁷ has no information on flooding within the vicinity of the Site. No other historical records of flooding for the Site have been recorded. Therefore, it has been concluded that the Site has not recently flooded.

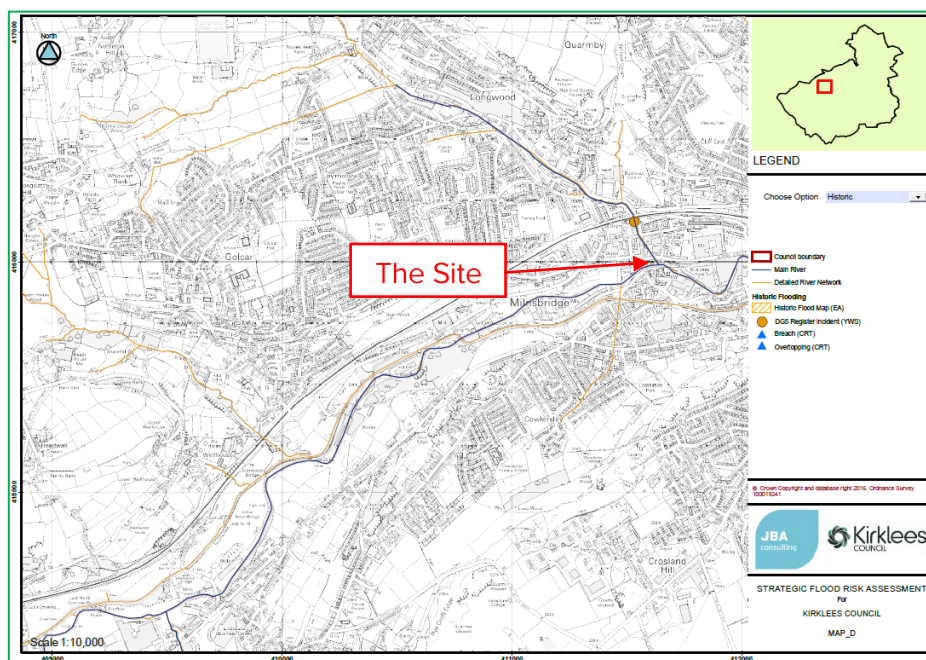


Figure 4 - Kirklees Council SFRA Historic Flood Map

⁷ <https://cbhe.hydrology.org.uk/>

3.8 Existing and Planned Flood Defence Measures

The Environment Agency data confirms that the Site is not protected against flooding by existing flood defence measures to the south of the Site however, there are existing flood defences to the east and northwest of the Site (see Figure 5). Further property level protection measures will be used to protect the Site from flooding these are discussed in Section 5.0.

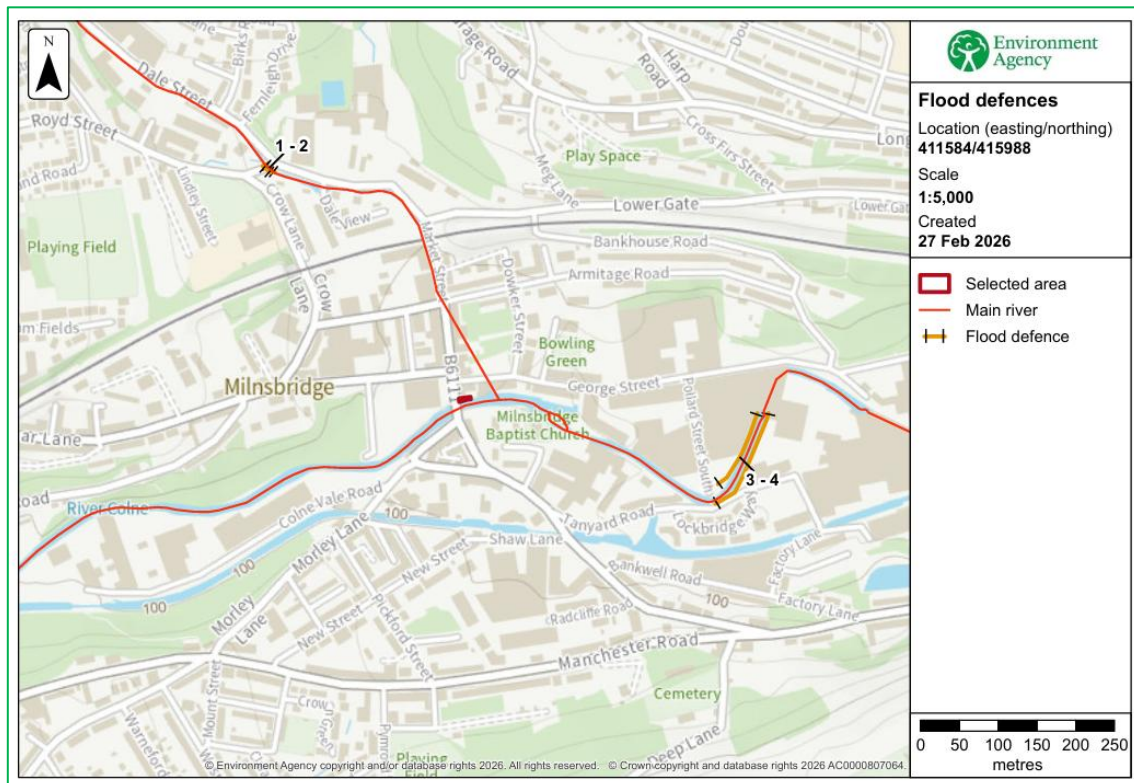


Figure 5 - Environment Agency Flood Defences Map

3.9 Fluvial (River) Flooding

Fluvial flooding poses the primary, but unlikely, flood risk to the Site.

River Colne

The Environment Agency has provided defended and undefended modelled flood data from the River Colne 2019 Model. The modelled water levels have been compared to the ground level of the Site and areas within the vicinity of the Site to assess the flood risk at the Site in detail.

Tables 5 and 6 show the Environment Agency defended and undefended in-channel water levels for the Site. Figure 6 shows the model node locations. Node 3 has been used as this is the closest to the Site. Figures 7 to 9 show the Environment Agency defended and undefended modelled flood outlines.

The approximate ground level of the Site is 92mAOD therefore, the Site will not be inundated with floodwater for all events up to and including the 1 in 1000 year (+20%) event. Therefore, the Site will be flood free during the undefended 1 in 100 year (+23%) event, which is the design flood event for the Site.

Table 5 - River Colne: Environment Agency Defended Modelled Water Levels (mAOD)

Node Label	Easting	Northing	Return Period (years)							
			20	25	30	50	75	100	200	1000
1	411479	415905	91.02	91.08	91.11	91.25	91.36	91.44	91.61	92.03
2	411560	415967	90.36	90.42	90.45	90.57	90.67	90.74	90.87	91.20
3	411585	415979	90.32	90.38	90.41	90.53	90.62	90.68	90.80	91.10
4	411602	415984	90.12	90.16	90.19	90.28	90.35	90.40	90.49	90.76
5	411641	415988	89.86	89.90	89.92	90.02	90.11	90.15	90.25	90.57

Table 6 - River Colne: Environment Agency Undefended Modelled Water Levels (mAOD)

Node Label	Easting	Northing	Return Period (years)					
			100	100 (+20%)	100 (+30%)	100 (50%)	1000	1000 (+20%)
1	411479	415905	91.44	91.66	91.77	91.96	92.03	92.63
2	411560	415967	90.74	90.90	90.98	91.13	91.20	92.22
3	411585	415979	90.68	90.83	90.91	91.03	91.10	91.27
4	411602	415984	90.40	90.52	90.57	90.68	90.76	90.91
5	411641	415988	90.15	90.28	90.35	90.49	90.57	90.64

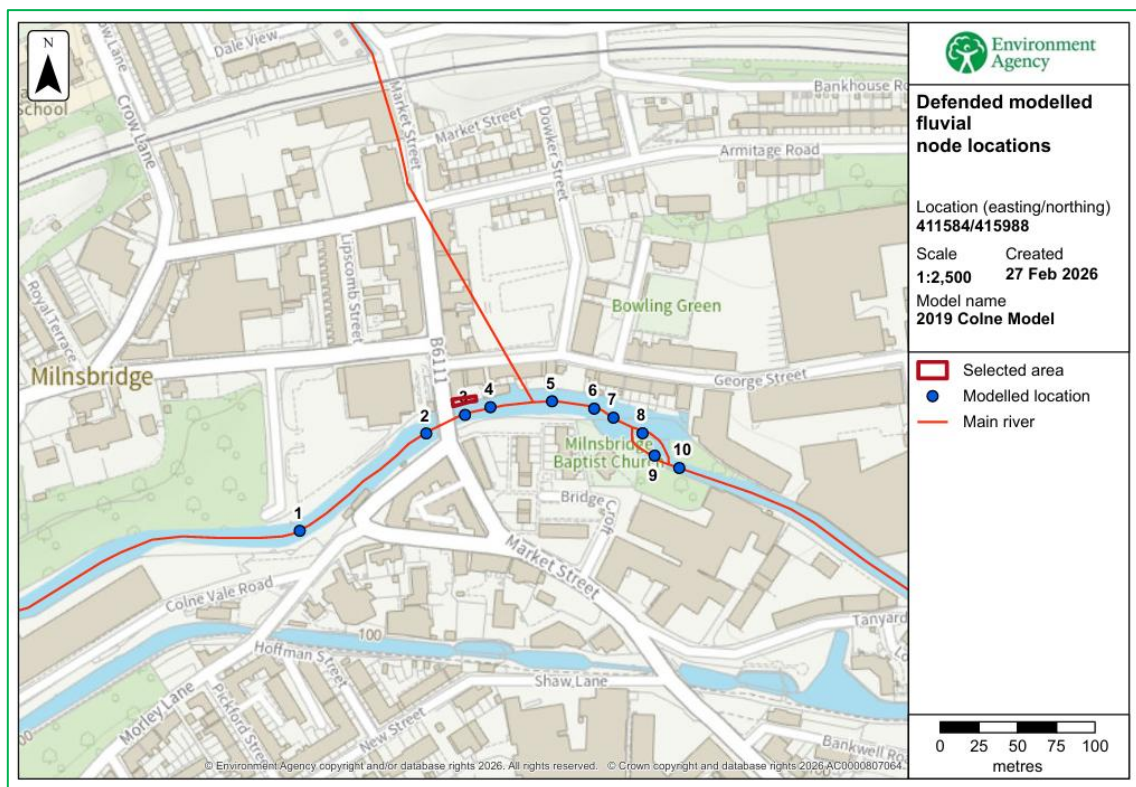


Figure 6 - River Colne: Environment Agency Modelled Nodes Location Map

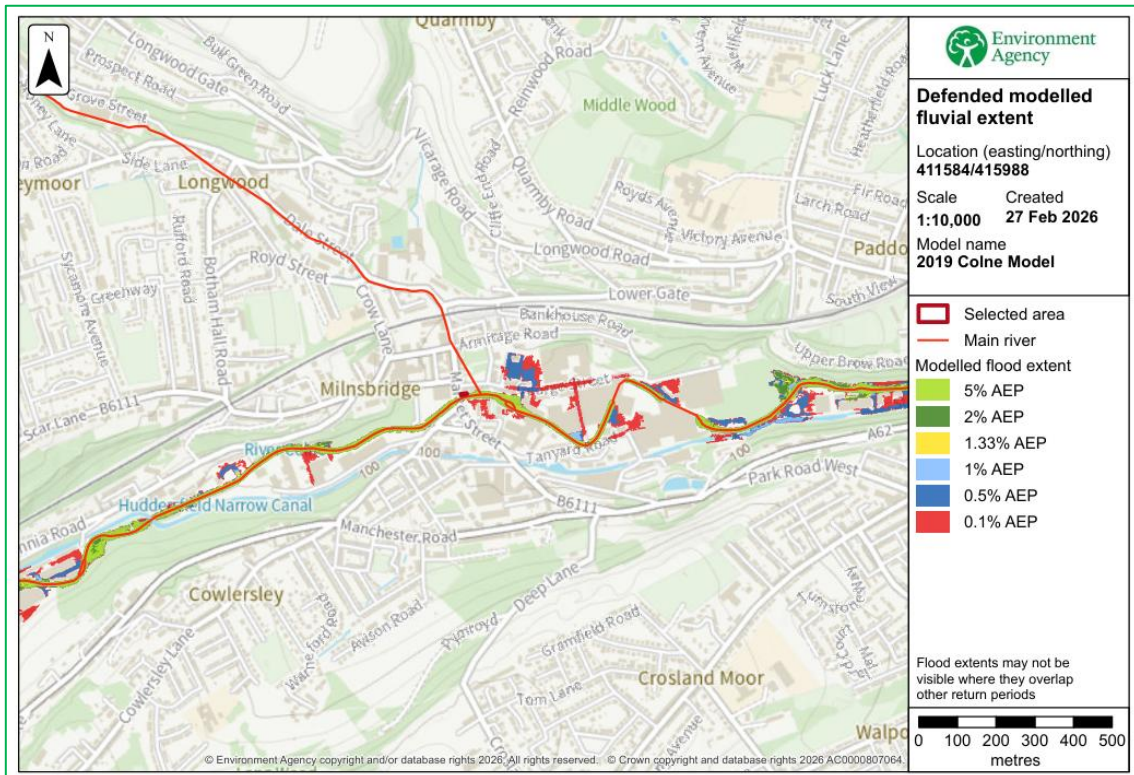


Figure 7 - River Colne: Environment Agency Defended Modelled Flood Outlines

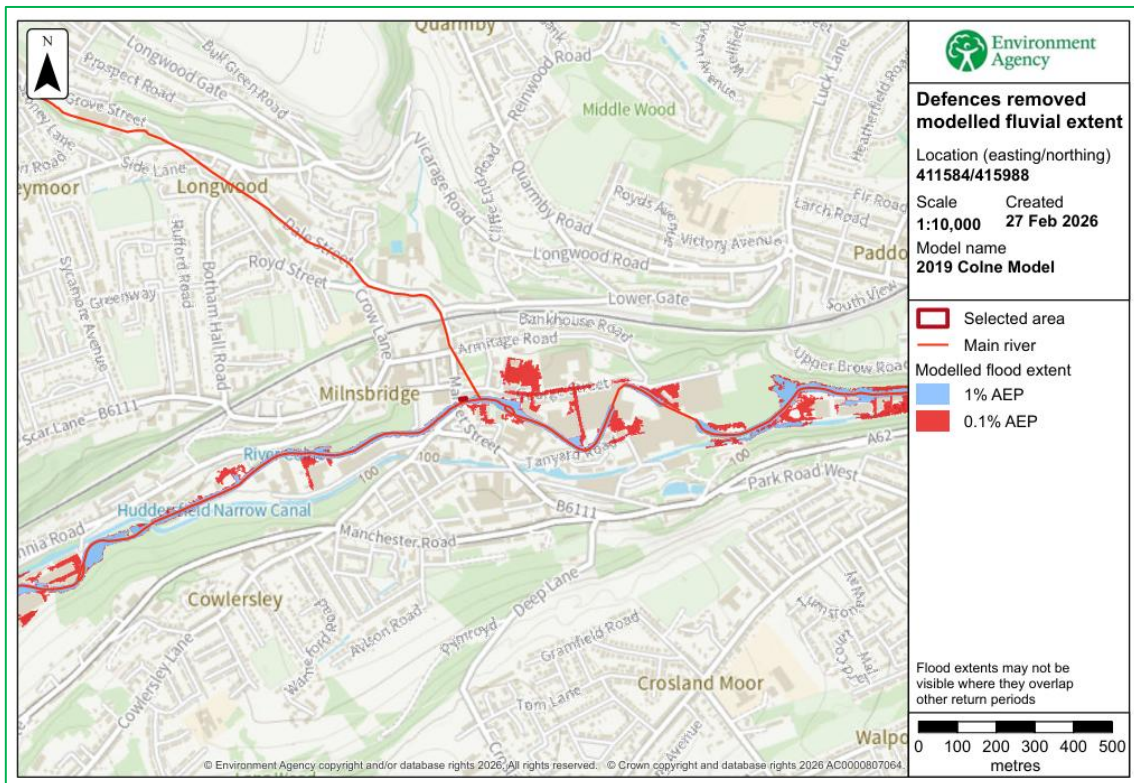


Figure 8 - River Colne: Environment Agency Undefended Modelled Flood Outlines

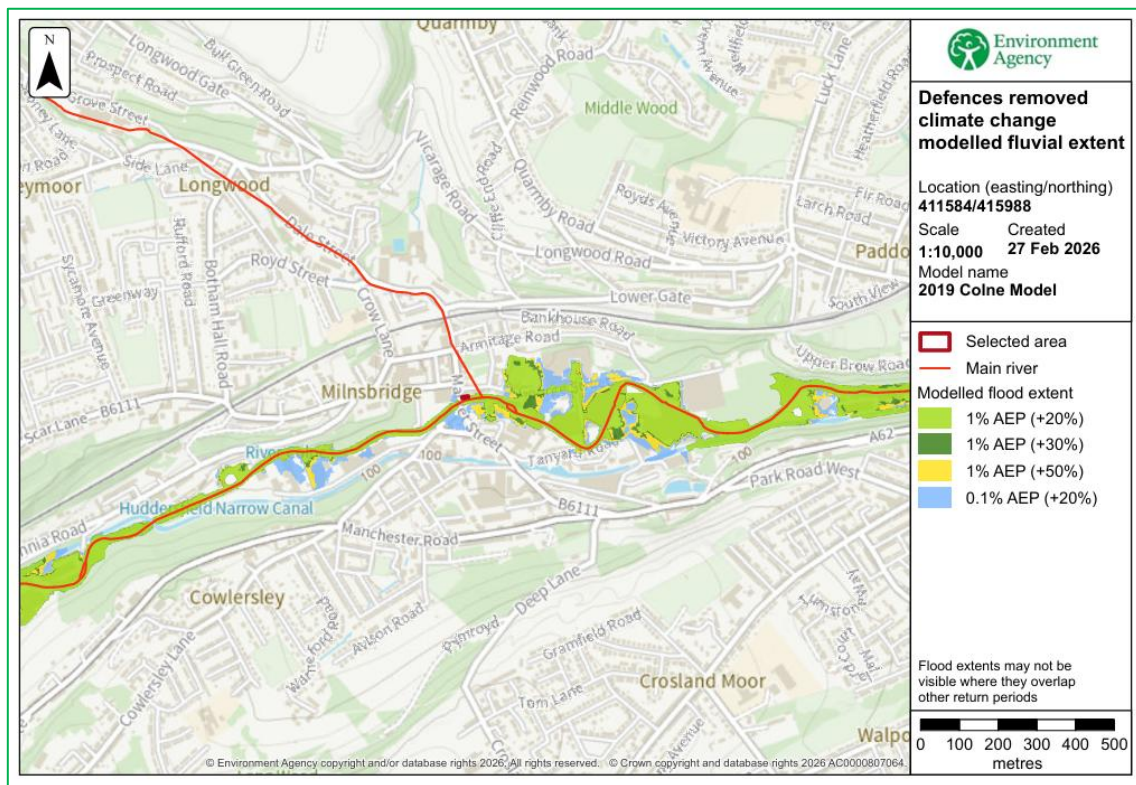


Figure 9 - River Colne: Environment Agency Undefended Climate Change Modelled Flood Outlines

Longwood Brook

The Environment Agency has provided undefended modelled flood data from the Longwood Brook 2011 Model. The modelled water levels have been compared to the ground level of the Site and areas within the vicinity of the Site to assess the flood risk at the Site in detail. Figures 10 and 11 show the Environment Agency undefended modelled flood outlines.

The Environment Agency data shows that the Site will not be inundated with floodwater for all events up to and including the undefended 1 in 100 year (+20%) event. Therefore, the Site will be flood free during the undefended 1 in 100 year (+23%) event, which is the design flood event for the Site. The actual flood risk posed to the Site is less than a 1 in 100 (+23%) annual probability.

It is only during the undefended 1 in 1000 year event that the Site may be inundated with floodwater. The Longwood Brook is shown to overtop its banks approximately 140m to the north of the Site, near the junction of Market Street and Armitage Road where a short section the watercourse is not culverted. The floodwater then follows the local topography of the surrounding area flowing south down Market Street towards the Site. Mapping indicates that any flooding is shallow, short duration and limited to extreme events. The Site is shown to be located on the edge of the flood outlines.

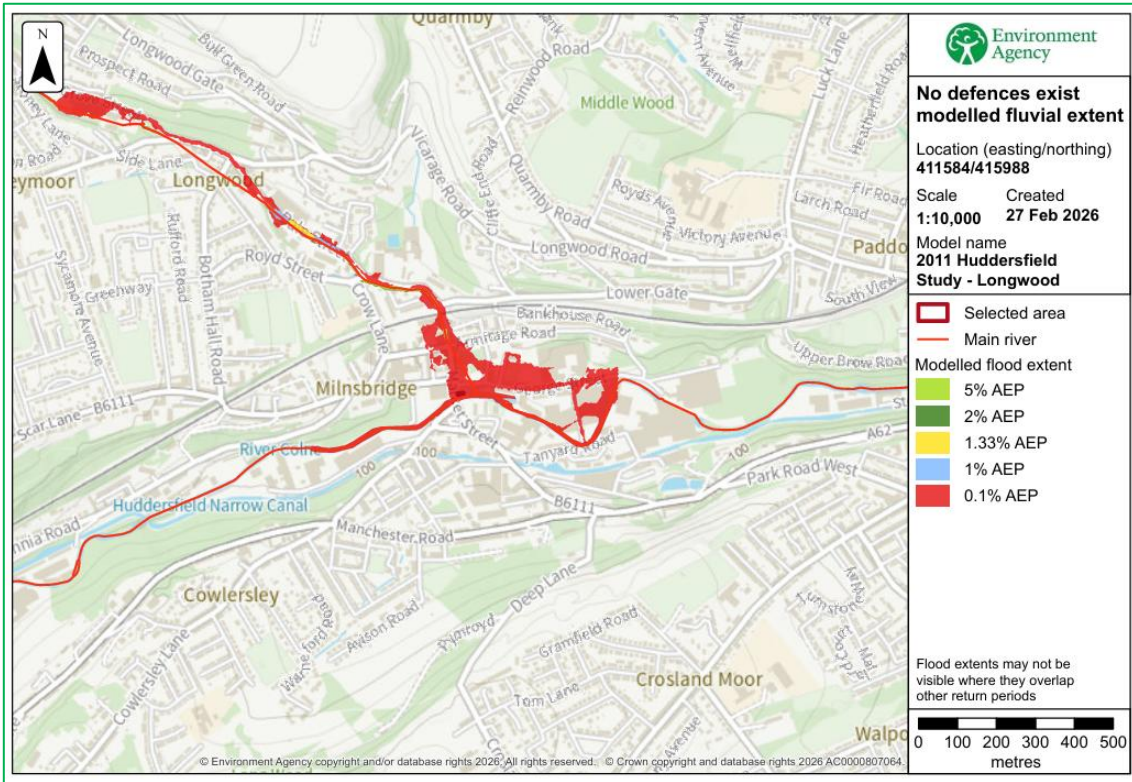


Figure 10 - Longwood Brook: Environment Agency Undefended Modelled Flood Outlines

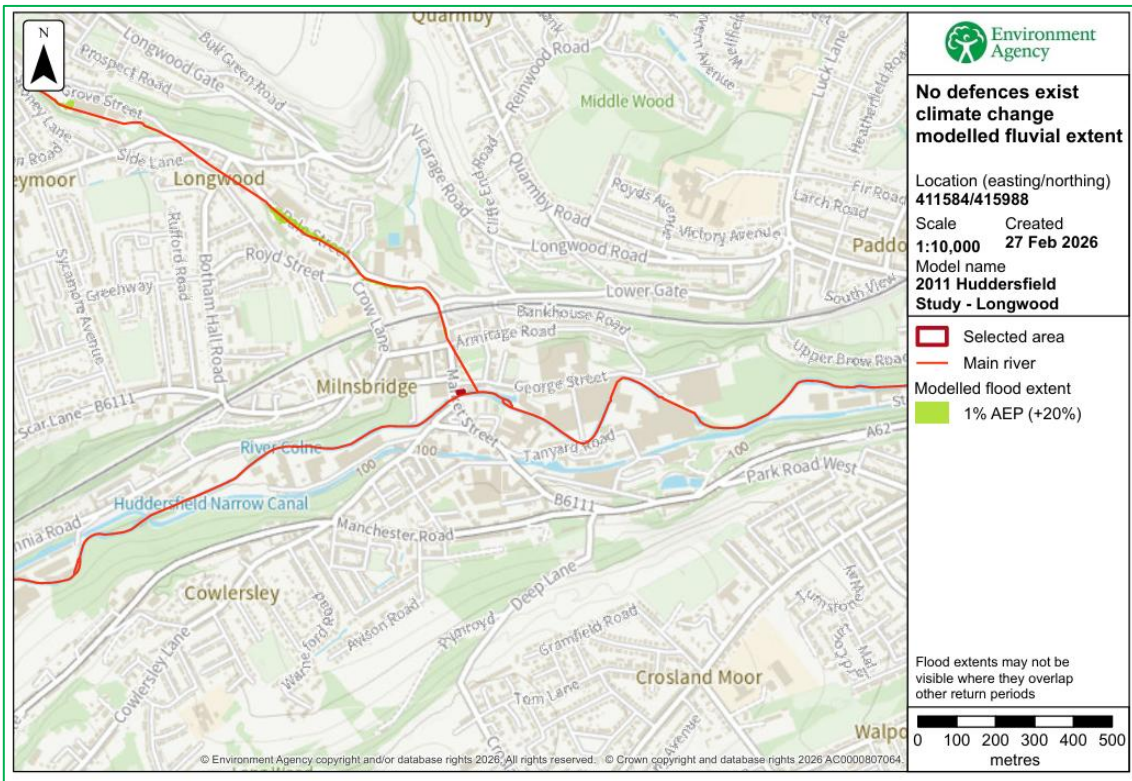


Figure 11 - Longwood Brook: Environment Agency Undefended Climate Change Modelled Flood Outlines

The mechanism for flooding is generally prolonged episodes of rainfall, which affords good time for flood warnings to be issued. The likelihood of a rapid water level rise and possible rapid inundation of urban areas posing a risk to life is considered to be minimal with a forewarning of two (2) days of a pending flood event. The site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2.

Given the scale and nature of the Proposed Development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a low actual flood risk to the site. Therefore, the risk of fluvial flooding is considered to be of **medium significance**. The risk from this source will be further mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site (see Section 5.0).

3.10 Tidal (Coastal) Flooding

The Site is not located within the vicinity of tidal flooding sources and the risk of tidal flooding is considered to be **not significant**.

3.11 Groundwater Flooding

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

Groundwater flooding tends to occur sporadically in both location and time. When groundwater flooding does occur, it tends to mostly affect low-lying areas, below surface infrastructure and buildings (for example, tunnels, basements and car parks) underlain by permeable rocks (aquifers).

Site ground conditions suggest a low potential for groundwater flooding. The Environment Agency data shows that flooding from groundwater is unlikely in this area. This is confirmed within the Kirklees Council SFRA (see Figure 12). The risk of flooding from groundwater flooding is considered to be **not significant**.

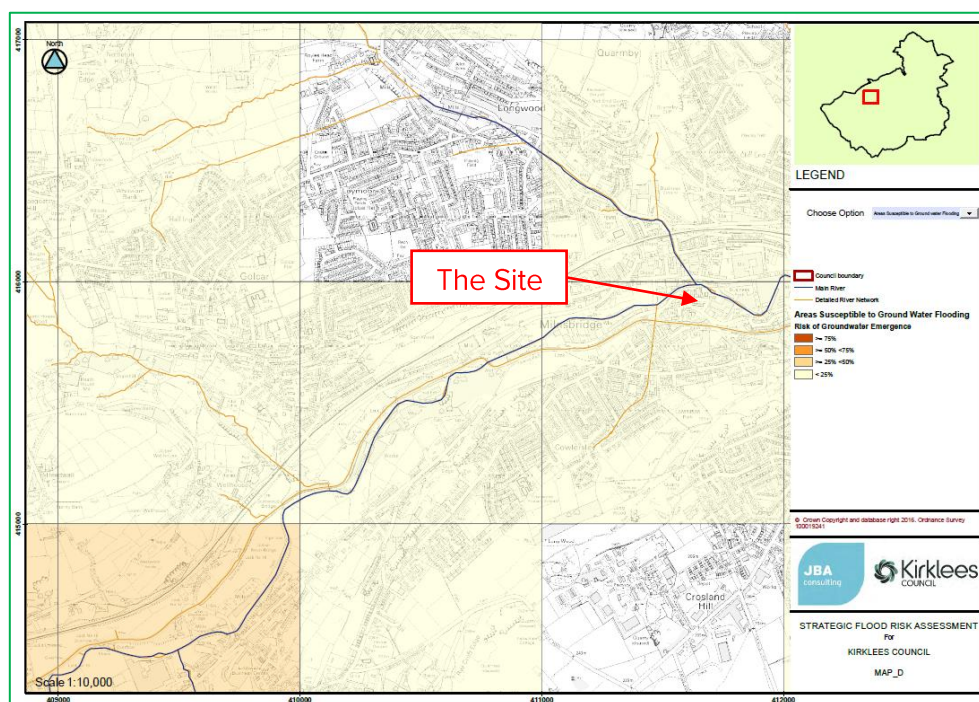


Figure 12 - Kirklees Council SFRA Areas Susceptible to Groundwater Flooding

3.12 Surface Water (Pluvial) Flooding

The Site is not situated near to large areas of poor permeability or areas with the geology and/or topography which may result in surface water flooding. The Site surroundings are relatively flat and there are no large catchments that would tend to generate surface water runoff towards the Site. Surface water flow flooding tends to occur sporadically in both location and time such surface water flows would tend to be confined to the streets around the development.

The Environment Agency Surface Water flood map shows that majority of the Site is not at risk of surface water flooding however, a small proportion of the Site, on the northern boundary, has an annual probability of 1 in 1000 years, as shown in Figures 13 to 15. The effect of climate change on surface water flooding is shown in Figure 16. The surface water depths maps show that the Site may experience water depths of considerably less than 0.20m during the 1 in 1000 year in 2060 event (see Figures 17 to 18).

Mapping indicates that any surface water flooding is shallow, short-duration and limited to extreme events. The Site is at such a ground level that it would only flood in the most extreme flood events; the Site will remain flood free for the vast majority of flood events during the lifetime of the Proposed Development.

Given the scale and nature of the Proposed Development and the size and location of the surface water sources it has been concluded that surface water flooding poses a low flood risk to the Site. Therefore, the risk of surface water flooding is considered to be of **low significance**. The risk of surface water flooding will be further managed and mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site (see Section 4.0).

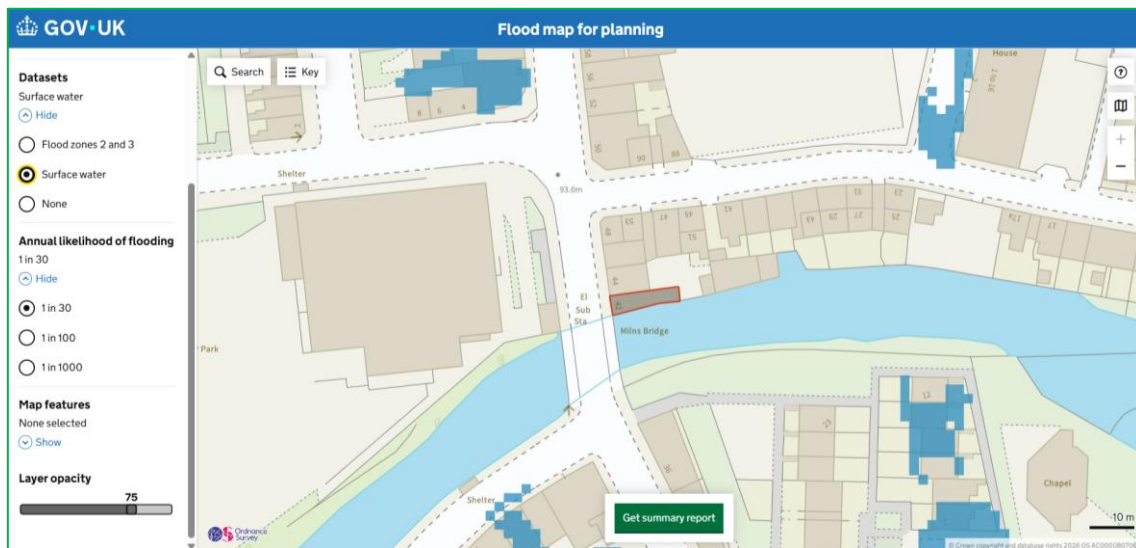


Figure 13 - Environment Agency Surface Water Flood Map: High Risk 1 in 30 Year Event

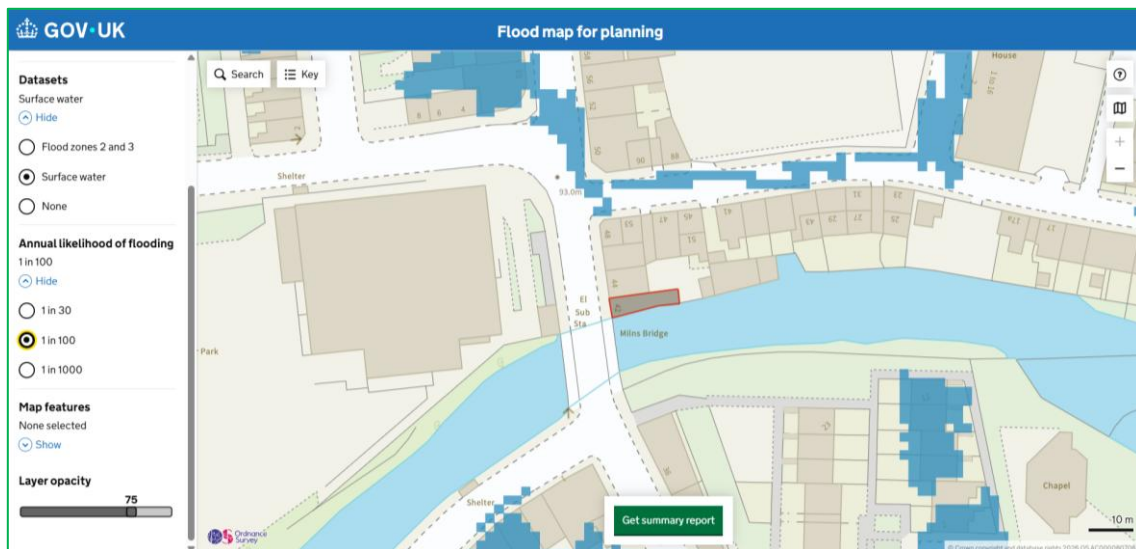


Figure 14 - Environment Agency Surface Water Flood Map: Medium Risk 1 in 100 Year Event

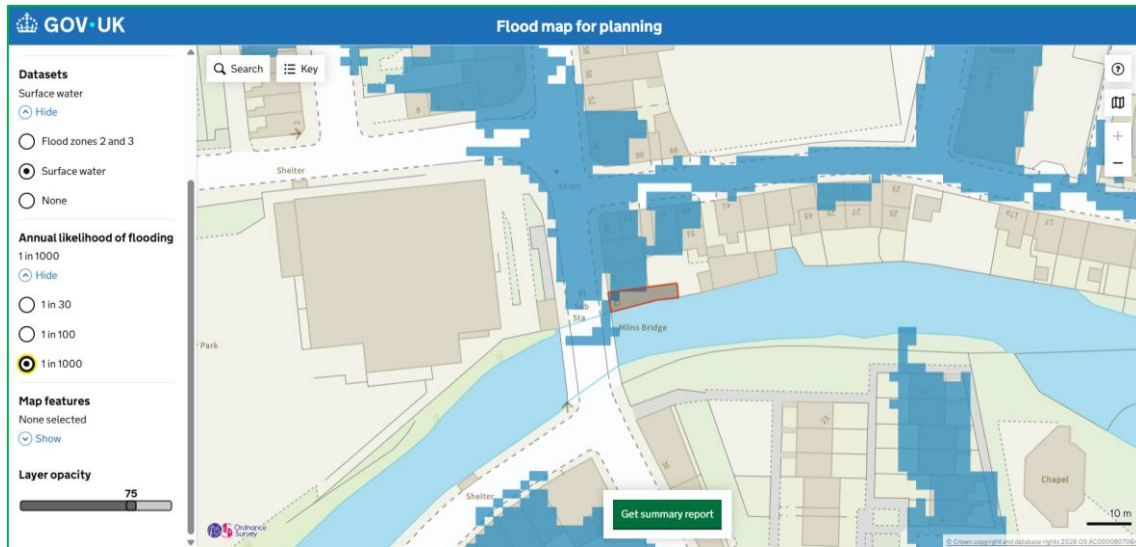


Figure 15 - Environment Agency Surface Water Flood Map: Low Risk 1 in 1000 Year Event

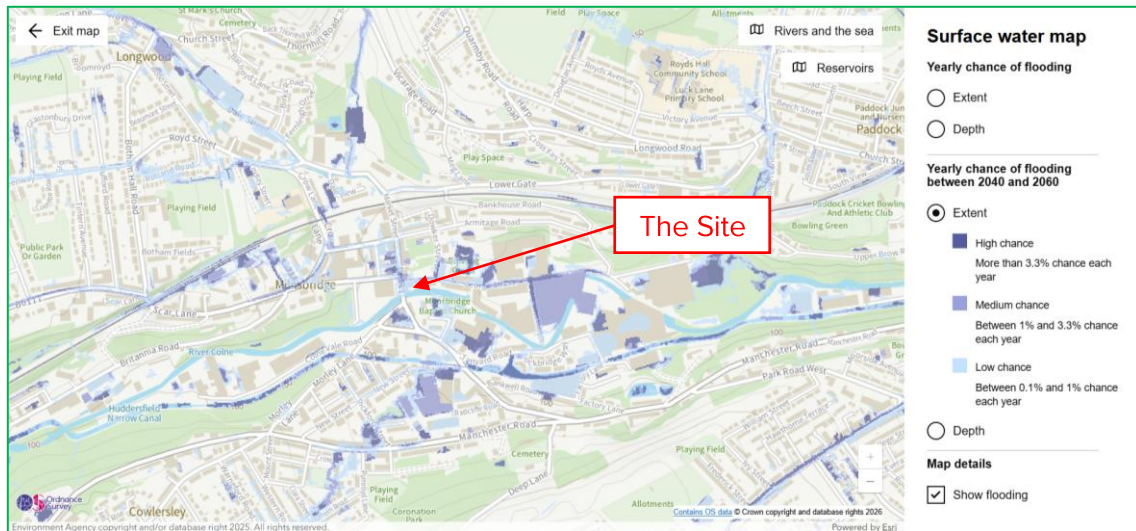


Figure 16 - Environment Agency Surface Water Flood Map: 2040 to 2060



Figure 17 - Environment Agency Surface Water Flood Map: Present Day Water Depths



Figure 18 - Environment Agency Surface Water Flood Map: Climate Change Water Depths

3.13 Sewer Flooding

Sewer flooding occurs when urban drainage networks become overwhelmed and maximum capacity is reached. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. Sewer flooding tends to occur sporadically in both location and time such flood flows would tend to be confined to the streets around the development.

There are existing sewers located within the vicinity of the Site and these will inevitably have a limited capacity so in extreme conditions there would be surcharges, which may in turn cause flooding. Flood flows could also be generated by burst water mains, but these would tend to be of a restricted and much lower volume than weather generated events and so can be discounted for the purposes of this assessment.

Given the design parameters normally used for drainage design in recent times and allowing for some deterioration in the performance of the installed systems, which are likely to have

been in place for many years, an appropriate flood risk probability from this source could be assumed to have a return period in the order of 1 in 10 to 1 in 20 years.

The provision of adequate level difference between the ground floors and adjacent ground level would reduce the annual probability of damage to property from this source to 1 in 100 years or less. There are no records of sewer flooding in the vicinity of the Site, and in the absence of confirmed DG5 entries, sewer flood risk is considered negligible. Therefore, the risk of flooding from sewer flooding is considered to be **not significant**.

3.14 Flooding from Artificial Drainage Systems/Infrastructure Failure

Reservoirs are located within the vicinity of the Site. The Environment Agency Reservoir flood map shows that the Site is at risk of reservoir flooding (see Figure 19). Reservoir flooding is extremely unlikely; reservoirs in the UK have a very good safety record. There has been no loss of life in the UK from reservoir flooding since 1925.

Since then, reservoir safety legislation has been introduced to make sure reservoirs are well maintained. The hazard is well managed through effective legislation and it is unlikely that the impact zone downstream of the reservoirs should not preclude the Proposed Development.

The Huddersfield Narrow Canal is located approximately 155m to the south of the Site. The Huddersfield Narrow Canal is not raised above the surrounding ground levels and as such is not risk of bank failure.

There are no other nearby artificial water bodies, water channels and artificial drainage systems that could be considered a flood risk to the Site. The risk of flooding from these sources is considered to be not significant. There are no other nearby artificial water bodies, reservoirs, water channels and artificial drainage systems that could be considered a flood risk to the Site. The risk of flooding from artificial drainage systems/infrastructure failure is considered to be **not significant**.

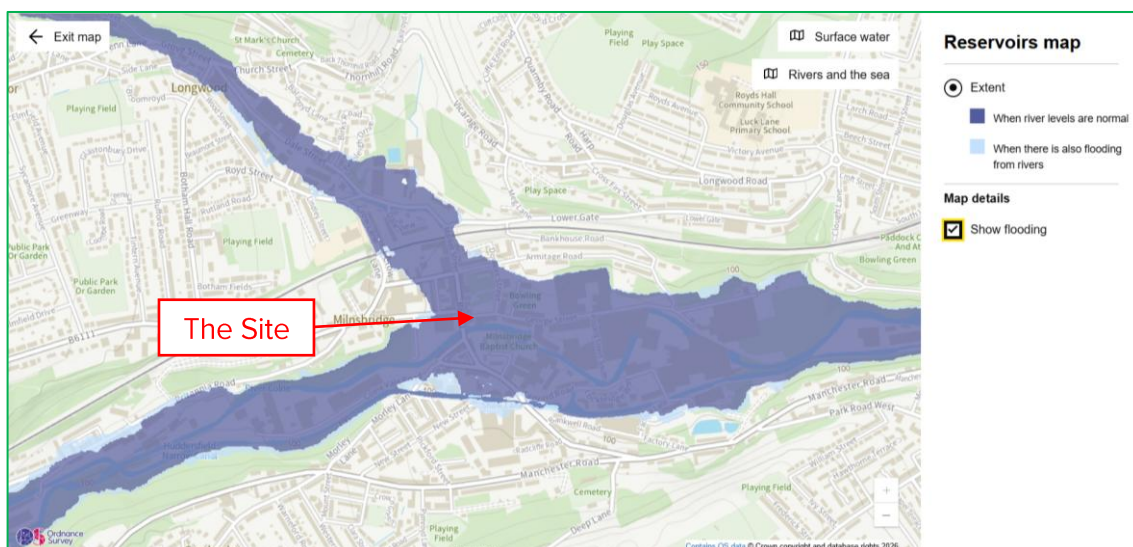


Figure 19 - Environment Agency Reservoir Flood Map

3.15 Impact of the Proposed Development on Flood Risk

The Proposed Development will not increase the footprint of the building and no land raising will occur within the Site therefore, the Proposed Development will not impede the movement of floodwater across the Site. This will ensure no detriment to the flood storage capacity of the Site.

The overall direction of the movement of water will be maintained within the developed Site and surrounding area. The conveyance routes (flow paths) will not be blocked or obstructed. There will be no increase in the floodwater levels due to the Proposed Development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

3.16 Summary of Site Specific Flood Risk

A summary of the sources of flooding and a review of the risk posed by each source at the Site is shown in Table 7.

The Site is unlikely to flood except in extreme conditions, the primary, but unlikely, flood risk posed to the Site is from fluvial flooding from the Longwood Brook. The Environment Agency's Flood Zones indicates that the majority of the Site is located within Flood Zone 2 and therefore has a 'medium probability' of flooding, a very small proportion of the Site, on the southern boundary is located within Flood Zone 3a and therefore has a 'high probability' of flooding. However, the Site has no recent history of flooding. The proposed use is classified as 'more vulnerable'. 'More vulnerable' uses are appropriate within Flood Zones 2 and 3a after the completion of a satisfactory FRA.

The Environment Agency data shows that the Site will not be inundated with floodwater for all events up to and including the undefended 1 in 100 year (+20%) event. Therefore, the Site will be flood free during the undefended 1 in 100 year (+23%) event, which is the design flood event for the Site. The actual flood risk posed to the Site is less than a 1 in 100 (+23%) annual probability.

It is only during the undefended 1 in 1000 year event that the Site may be inundated with floodwater. The Longwood Brook is shown to overtop its banks approximately 140m to the north of the Site, near the junction of Market Street and Armitage Road where a short section the watercourse is not culverted. The floodwater then follows the local topography of the surrounding area flowing south down Market Street towards the Site. Mapping indicates that any flooding is shallow, short duration and limited to extreme events. The Site is shown to be located on the edge of the flood outlines.

Given the scale and nature of the Proposed Development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a low actual flood risk to the site. Therefore, the risk of fluvial flooding is considered to be of **medium significance**. A secondary flooding source has been identified which may pose a **low significant** risk to the Site. This is:

- Surface Water Flooding

The risk from all flooding sources will be further managed and mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site (see Section 5.0).

The Proposed Development will not increase the footprint of the building and no land raising will occur within the Site therefore, the Proposed Development will not impede the movement of floodwater across the Site. This will ensure no detriment to the flood storage capacity of the Site.

The overall direction of the movement of water will be maintained within the developed Site and surrounding area. The conveyance routes (flow paths) will not be blocked or obstructed. There will be no increase in the floodwater levels due to the Proposed Development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

Table 7 - Risk Posed by Flooding Sources

Sources of Flooding	Potential Flood Risk	Potential Source	Probability/Significance
Fluvial Flooding	Yes	Longwood Brook	Medium
Tidal Flooding	No	None Reported	None
Groundwater Flooding	No	None Reported	None
Surface Water Flooding	Yes	Low Spots	Low
Sewer Flooding	No	None Reported	None
Flooding from Artificial Drainage Systems/Infrastructure Failure	Yes	Reservoirs	Not Significant

4.0 SURFACE WATER DRAINAGE

4.1 Surface Water Management Overview

It is recognised that consideration of flood issues should not be confined to the floodplain. The alteration of natural surface water flow patterns through developments can lead to problems elsewhere in the catchment, particularly flooding downstream. For example, replacing vegetated areas with roofs, roads and other paved areas can increase both the total and the peak flow of surface water runoff from the Site. Changes of land use on previously developed land can also have significant downstream impacts where the existing drainage system may not have sufficient capacity for the additional drainage.

An assessment of the surface water runoff rates has been undertaken, in order to determine the surface water options and attenuation requirements for the Site. The assessment considers the impact of the proposals compared to current conditions. Therefore, the surface water attenuation requirement for the developed Site can be determined and reviewed against existing arrangements.

The surface water drainage arrangements for any development site should be such that the volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the Proposed Development unless specific off-site arrangements are made and result in the same net effect.

4.2 Surface Water Runoff

The Proposed Development will not alter the impermeable areas of the Site. There will be no increase in surface water runoff or exacerbation of off-site risk as a result of the development. It is understood that the existing drainage infrastructure at the Site efficiently and effectively manages surface water runoff generated at the Site. The Proposed Development will continue to discharge to the public sewers. No changes are proposed.

5.0 RISK MANAGEMENT

5.1 Introduction

The flood risk at this location is considered suitable for 'more vulnerable' developments within the NPPF. In this flood zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development and the use of flood mitigation measures.

The flooding sources will be mitigated on the Site by using a number of techniques, and mitigation strategies to manage and reduce the overall flood risk at the Site. This will ensure the development will be safe and there is:

- Minimal risk to life;
- Minimal disruption to people living and working in the area;
- Minimal potential damage to property;
- Minimal impact of the Proposed Development on flood risk generally; and;
- Minimal disruption to natural heritage.

The flood risk at the Site will be reduced by mitigation measures; these are discussed in more detail below.

5.2 Finished Floor Levels

The finished floor levels of the Proposed Development will be set no lower than the existing finished floor levels, which are understood to be raised by approximately 0.15m above external ground levels. It is recognised that, owing to headroom constraints, massing considerations, planning policy and Building Regulations requirements, it is not practicable to raise finished floor levels further. As such, it is recommended that occupants register to receive Environment Agency flood warnings and that a Flood Plan is prepared identifying appropriate actions and a safe area away from the building during flood events.

A combination of flood resistance (proofing) and flood resilience measures will be incorporated to provide additional protection, as discussed below.

5.3 Flood Resilience and Resistance

The development of the layout should always consider that the site is potentially at risk from an extreme event and as such the implementation of flood resilience and resistance methods should be assessed.

To make the building more resistant to seepage the following measures will be incorporated. Sealant will be used around external doors and windows. All windows are located above the ground levels. All external doors and windows are constructed from robust materials. External walls are of a robust construction appropriate to a flood resilient design.

To improve the buildings resilience to flooding the following measures will be incorporated. All electrical wiring, switches, sockets, socket outlets, electrical, and gas meters etc. will be located a minimum of 450mm above the finished floor levels.

5.4 Flood Warning and Evacuation

The Site is located within a flood risk area; the Site will participate in the Environment Agency flood warning telephone service. The Site will register contact details with the Environment Agency's Flood Warnings Service (Floodline 0345 988 1188) in order to receive Flood Warnings. The Environment Agency operate a free flood warning service providing alerts by phone, text or email when flooding is anticipated providing an opportunity for home owners to take necessary precautions, giving enough time for the building to be safely evacuated and mitigation measures to be put in place.

All occupants/visitors of the Site will be made aware of the Environment Agency Floodline telephone number (call Floodline on 0345 988 1188 to get more information) and the three Flood Warning Codes and their meaning. The owner of the Site will carry out the role of Flood Warden for the Site and ensure they have an understanding of the flood mechanisms of the Site and will ensure that the safety of the occupants and visitors will not be compromised.

The Environment Agency uses three Flood Warnings Codes. They can be issued in any order, usually ending with an 'all clear'. They are issued by the Environment Agency through their website and Floodline Warning Service. The flood warning will be passed onto the occupier/visitors of the Site verbally, by telephone and/or in person. It will be ensured that everyone receives the flood warnings when required.

5.5 Flood Plan

A Flood Plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause will be developed. Sensible precautions would include raising electrical items, moving valuable items off the ground or where possible moving them to a higher floor, rolling up carpets and rugs and turning off utilities. In addition, consider what actions you would take should the property need to be evacuated including access and egress routes and preparing a flood kit in advance containing warm clothing, medication, a torch, food and wellingtons.

The Flood Plan is a 'living' document and therefore should be periodically reviewed and updated to provide advice and guidance to occupants in the event of an extreme flood. The Flood Plan will therefore reduce the vulnerability of the occupants to flooding and makes them aware of the mechanisms of flooding at the Site.

Residual Risk

If flooding starts to affect the Site without any pre-warning i.e. in real time (e.g. through a failure of the flood warning delivery) the following actions will be taken:

- Occupants and visitors should consider evacuating the Site.
- If flood levels continue to rise, occupants and visitors are advised to evacuate before safe access is lost. Occupants and visitors should monitor the flood progression and evacuate.

If required a 'safe haven' can also be maintained and may be required in very extreme events if a flood warning has not been received.

5.6 Safe Access and Egress Route

The NPPF requires that, where required, safe access and escape is available to/from new developments in flood risk areas. Access routes should be such that occupants can safely

access and exit sites in design flood conditions. These routes must also provide the emergency services with access to the development during a flood event and enable flood defence authorities to carry out any necessary duties during the period of flood.

The Site is one of the last places in the area to flood and remains flood free when other areas close by are flooded. The Site is at such a ground level that it would only flood in the most extreme flood events; the Site will remain flood free for the vast majority of flood events during the lifetime of the Proposed Development. The Site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2. The speed of inundation and rate of floodwater rise would be low.

Safe access and egress routes, including emergency access can be maintained for vehicles and/or by foot via the Site entrance. The Safe Access and Egress Route shown in Figure 20 indicates the exit routes that all people (i.e. occupants and visitors) on Site should follow once a flood warning has been received. People should make their way to areas outside of the flood zone.

In the event of a Flood Warning, vital belongings, including waterproof clothing, necessary medication and essentials will be collected. It should be ensured that all occupiers and visitors to the Site are accounted for, and then exit the Site. Facilities such as community centres, shops etc. are located to the south of the Site which may be used in the event of a flood event. There may also be large areas than those shown in Figure 2 that are flood free located nearer and within the vicinity of the Site. Therefore, safe access and egress can be maintained in accordance with the NPPF and Environment Agency Guidance.

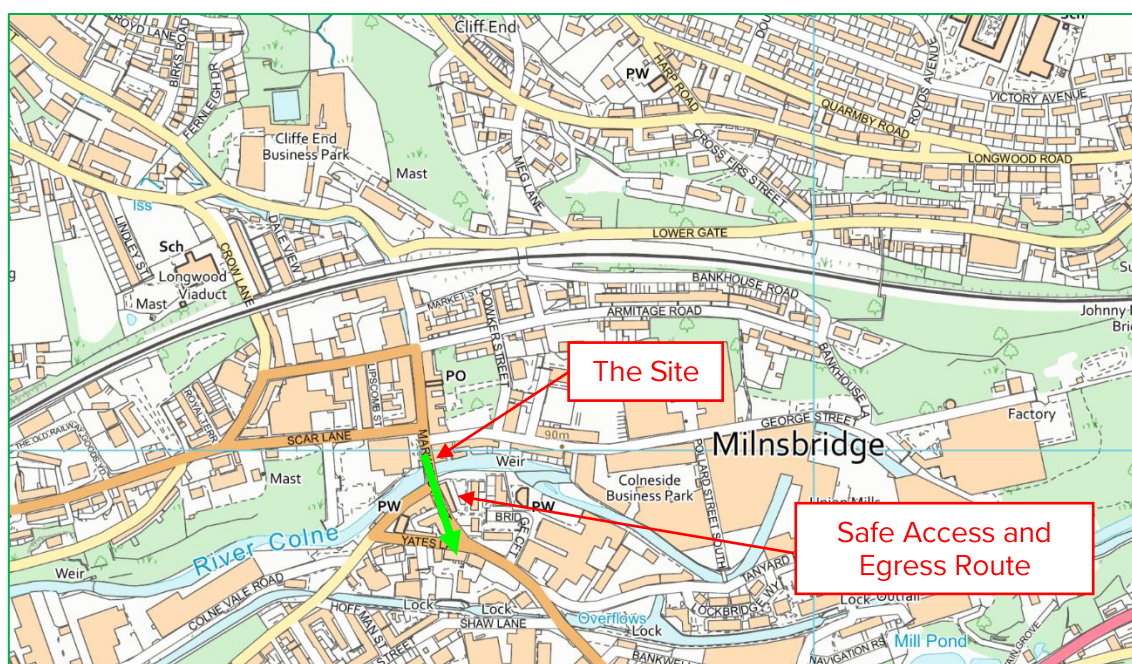


Figure 20 - Safe Access and Egress Route

5.7 Residual Risk

The mitigation measures detailed above show that the flood risk can be effectively managed and therefore the consequences of flooding are acceptable. The Site is unlikely to flood except in extreme conditions. This takes into account the property level protection measures.

6.0 SEQUENTIAL APPROACH

6.1 Sequential/Exception Tests

The risk-based Sequential Test in accordance with the NPPF aims to steer new development to areas at the lowest probability of flooding (i.e. Flood Zone 1). However, paragraph 176 of the NPPF confirms that: *'Applications for some minor development and changes of use⁸ should not be subject to the Sequential or Exception Tests but should still meet the requirements for site-specific flood risk assessments'*.

In accordance with paragraph 176 of the NPPF, the Sequential and Exception Tests are not required for this minor development.

⁸ This includes householder development, small non-residential extensions (with a footprint of less than 250m²) and changes of use; except for changes of use to a caravan, camping or chalet site, or to a mobile home or park home site, where the sequential and exception tests should be applied as appropriate.

7.0 SUMMARY AND CONCLUSIONS

7.1 Introduction

This report presents a FRA in accordance with the NPPF for the Proposed Development at 42 Market Street, Milnsbridge, Huddersfield, HD3 4HY.

This FRA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

7.2 Flood Risk

The Site is unlikely to flood except in extreme conditions, the primary, but unlikely, flood risk posed to the Site is from fluvial flooding from the Longwood Brook. The Environment Agency's Flood Zones indicates that the majority of the Site is located within Flood Zone 2 and therefore has a 'medium probability' of flooding, a very small proportion of the Site, on the southern boundary is located within Flood Zone 3a and therefore has a 'high probability' of flooding. However, the Site has no recent history of flooding. The proposed use is classified as 'more vulnerable'. 'More vulnerable' uses are appropriate within Flood Zones 2 and 3a after the completion of a satisfactory FRA.

The Environment Agency data shows that the Site will not be inundated with floodwater for all events up to and including the undefended 1 in 100 year (+20%) event. Therefore, the Site will be flood free during the undefended 1 in 100 year (+23%) event, which is the design flood event for the Site. The actual flood risk posed to the Site is less than a 1 in 100 (+23%) annual probability.

It is only during the undefended 1 in 1000 year event that the Site may be inundated with floodwater. The Longwood Brook is shown to overtop its banks approximately 140m to the north of the Site, near the junction of Market Street and Armitage Road where a short section the watercourse is not culverted. The floodwater then follows the local topography of the surrounding area flowing south down Market Street towards the Site. Mapping indicates that any flooding is shallow, short duration and limited to extreme events. The Site is shown to be located on the edge of the flood outlines.

Given the scale and nature of the Proposed Development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a low actual flood risk to the site. Therefore, the risk of fluvial flooding is considered to be of **medium significance**. A secondary flooding source has been identified which may pose a **low significant** risk to the Site. This is:

- Surface Water Flooding

The risk from all flooding sources will be further managed and mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site.

The Proposed Development will not increase the footprint of the building and no land raising will occur within the Site therefore, the Proposed Development will not impede the movement of floodwater across the Site. This will ensure no detriment to the flood storage capacity of the Site.

The overall direction of the movement of water will be maintained within the developed Site and surrounding area. The conveyance routes (flow paths) will not be blocked or obstructed.

There will be no increase in the floodwater levels due to the Proposed Development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

7.3 Surface Water Drainage

The Proposed Development will not alter the impermeable areas of the Site. There will be no increase in surface water runoff or exacerbation of off-site risk as a result of the development. It is understood that the existing drainage infrastructure at the Site efficiently and effectively manages surface water runoff generated at the Site. The Proposed Development will continue to discharge to the public sewers. No changes are proposed.

7.4 Risk Management

The flood risk at the Site will be reduced by mitigation measures, discussed below.

Finished Floor Levels: The finished floor levels of the Proposed Development will be set no lower than the existing finished floor levels, which are understood to be raised by approximately 0.15m above external ground levels. It is recognised that, owing to headroom constraints, massing considerations, planning policy and Building Regulations requirements, it is not practicable to raise finished floor levels further. As such, it is recommended that occupants register to receive Environment Agency flood warnings and that a Flood Plan is prepared identifying appropriate actions and a safe area away from the building during flood events.

A combination of flood resistance (proofing) and flood resilience measures will be incorporated to provide additional protection, as discussed below.

Flood Resilience and Resistance: To make the building more resistant to seepage the following measures will be incorporated. Sealant will be used around external doors and windows. All windows are located above the ground levels. All external doors and windows are constructed from robust materials. External walls are of a robust construction appropriate to a flood resilient design.

To improve the buildings resilience to flooding the following measures will be incorporated. All electrical wiring, switches, sockets, socket outlets, electrical, and gas meters etc. will be located a minimum of 450mm above the finished floor levels.

Flood Warning and Evacuation: The Site is located in a flood risk area therefore; the building will participate in the Environment Agency flood warning telephone service. The Site will register contact details with the Environment Agency's Flood Warnings Service.

Flood Plan: A Flood Plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause will be developed.

Safe Access and Egress Route: The Site is one of the last places in the area to flood and remains flood free when other areas close by are flooded. The Site is at such a ground level that it would only flood in the most extreme flood events; the Site will remain flood free for the vast majority of flood events during the lifetime of the Proposed Development. The Site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2. The speed of inundation and rate of floodwater rise would be low.

Safe access and egress routes, including emergency access can be maintained for vehicles and/or by foot via the Site entrance. The Safe Access and Egress Route indicates the exit routes that all people (i.e. occupants and visitors) on Site should follow once a flood warning has been received. People should make their way to areas outside of the flood zone.

In the event of a Flood Warning, vital belongings, including waterproof clothing, necessary medication and essentials will be collected. It should be ensured that all occupiers and visitors to the Site are accounted for, and then exit the Site. Facilities such as community centres, shops etc. are located to the south of the Site which may be used in the event of a flood event. There may also be large areas than those shown in Figure 2 that are flood free located nearer and within the vicinity of the Site. Therefore, safe access and egress can be maintained in accordance with the NPPF and Environment Agency Guidance.

7.5 Sequential/Exception Tests

In accordance with paragraph 176 of the NPPF, the Sequential and Exception Tests are not required for this minor development.

7.6 Conclusion

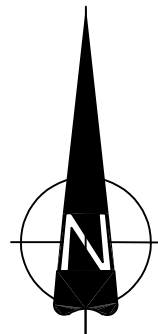
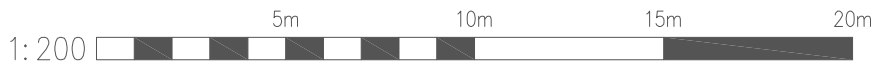
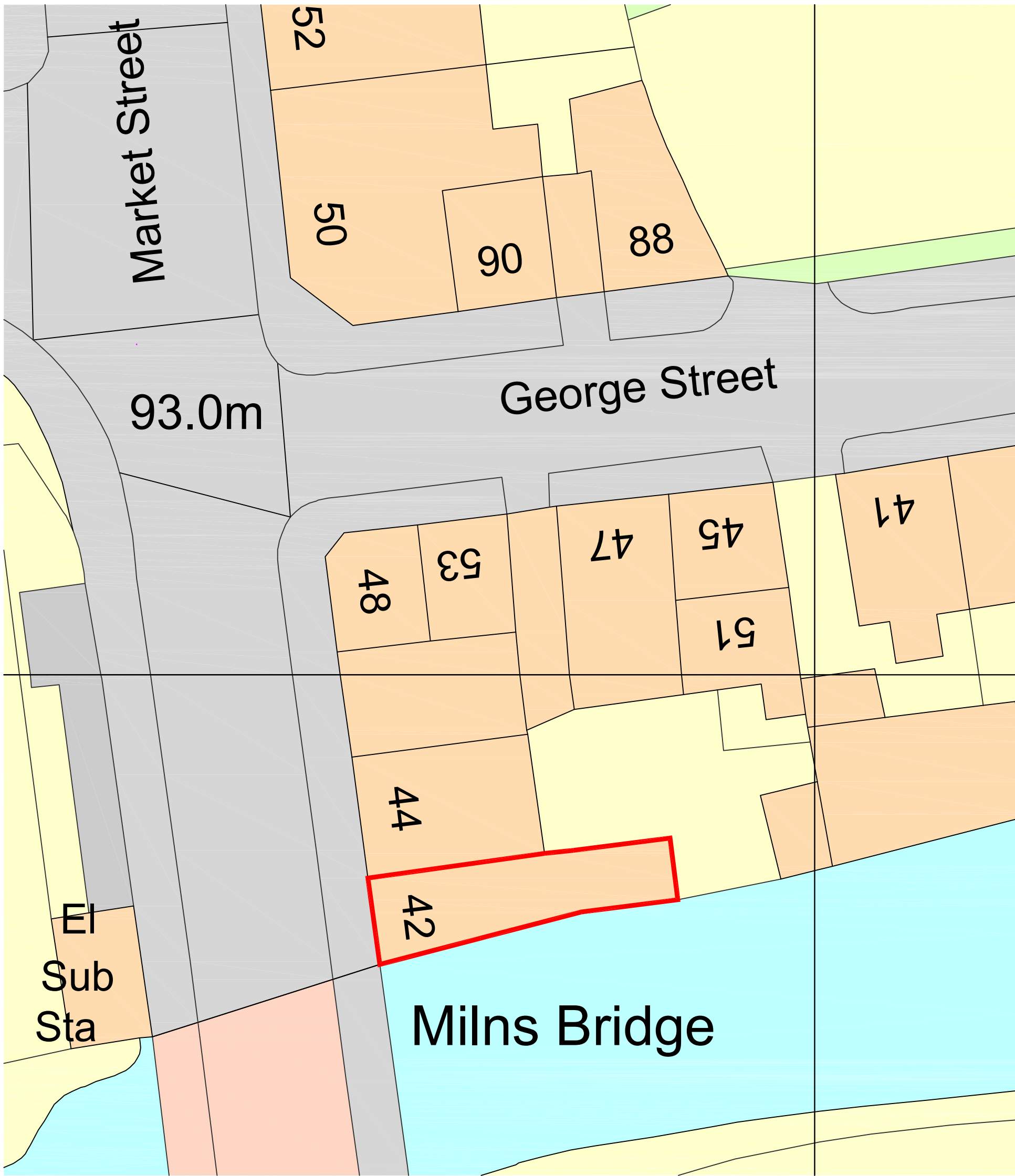
In conclusion, the Proposed Development, would be expected to remain dry in all but the most extreme conditions. Providing the recommendations made in this FRA are instigated, flood risk from all sources would be minimised, the consequences of flooding are acceptable and the development would be in accordance with the requirements of the NPPF.

This FRA demonstrates that the Proposed Development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF. The development should not therefore be precluded on the grounds of flood risk.



APPENDICES

APPENDIX 1 – Existing and Proposed Site Layout



Existing Block Plan

Change of Use of Cafe to Dwelling

Client
Mr M Morrell

Project
Change of Use from Cafe to Dwelling
42 Market Street, Milnsbridge, Huddersfield

Drawing
Existing Block Plan

Number
4453-01-04

Date 10/2025

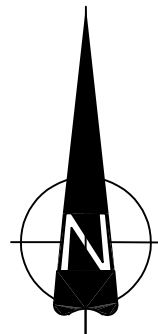
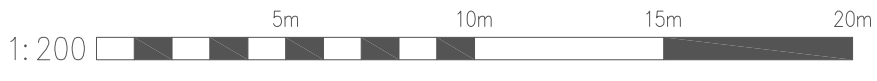
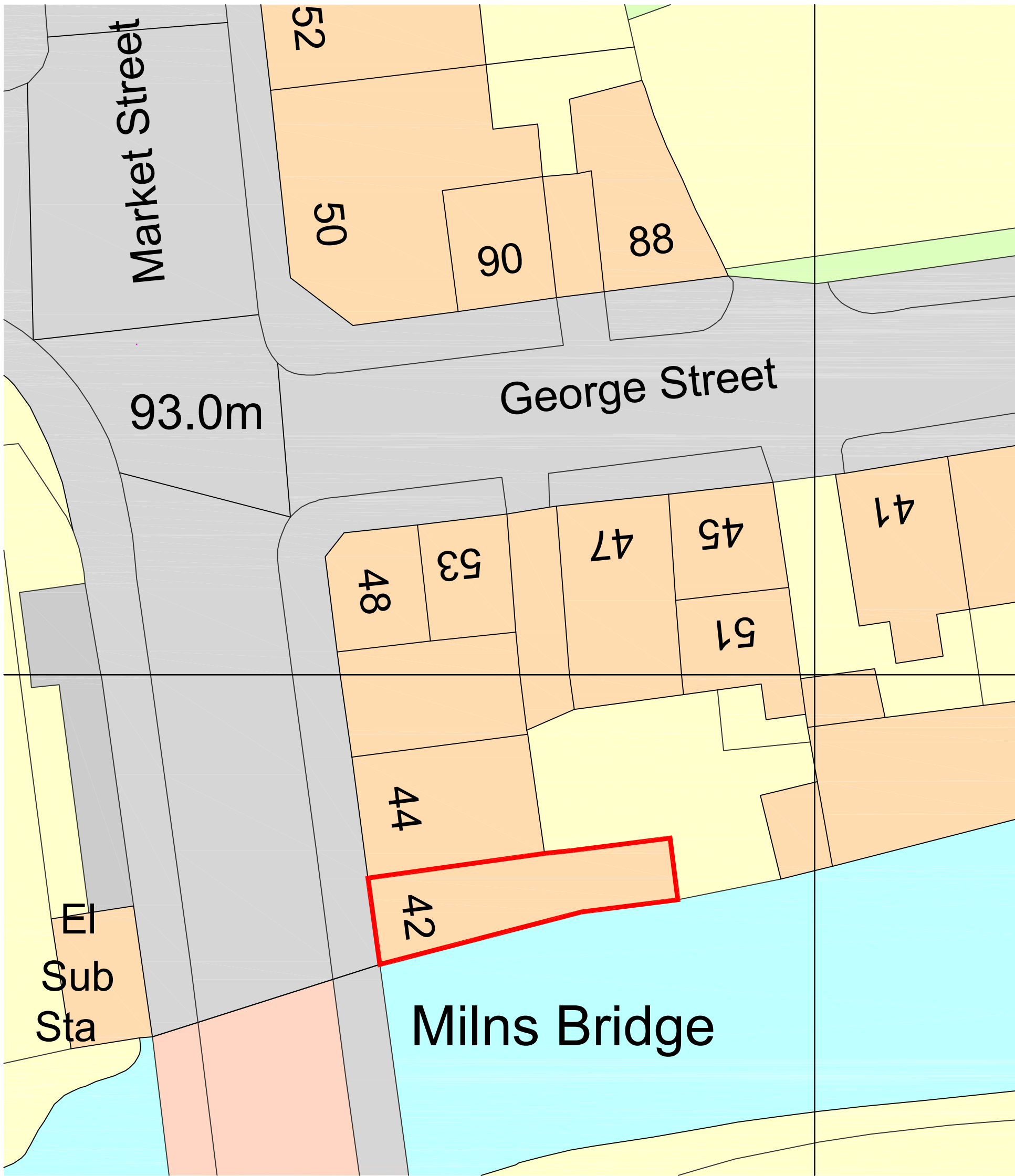
Scale @ A3
As Marked

HEPPENSTALLS
Chartered Architects

Architecture
Surveying
Planning
Project Management

Allisons Buildings, 135 Armitage Road Milnsbridge,
Huddersfield, HD3 4JY tel 01484 658411
projects@heppenstalls.net www.heppenstalls.net

Planning
Existing Block Plan



Proposed Block Plan Change of Use of Cafe to Dwelling

Client
Mr M Morrell

Project
**Change of Use from Cafe to Dwelling
42 Market Street, Milnsbridge, Huddersfield**

Drawing
Proposed Block Plan

Number
4453-01-05

Date 10/2025

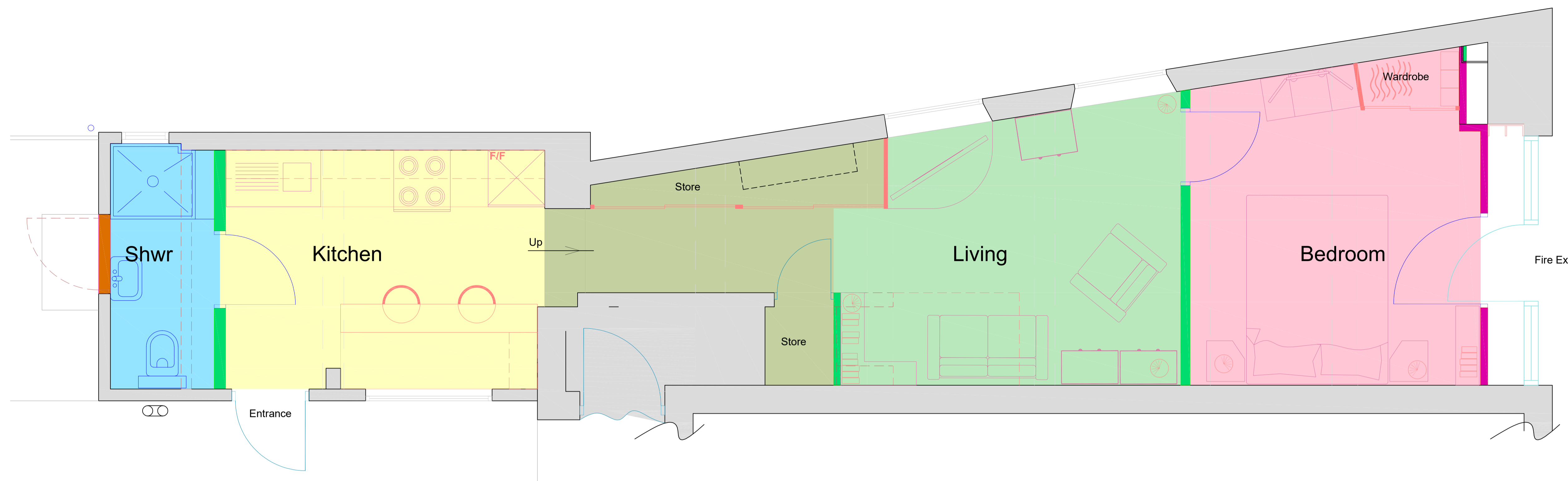
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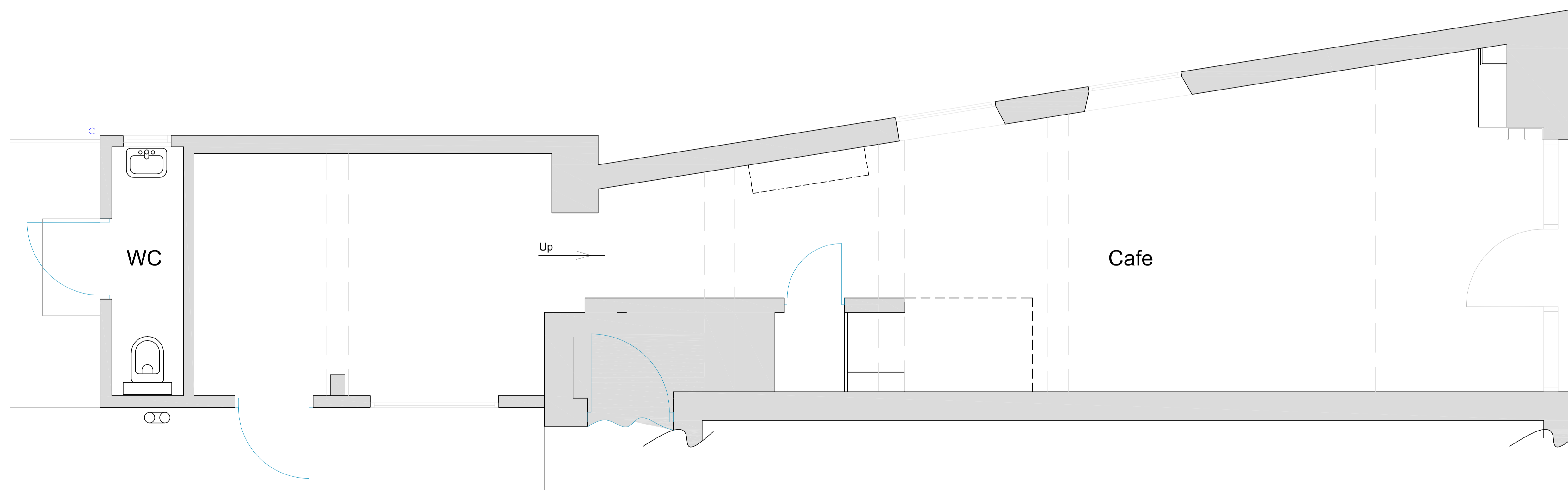
Architecture
Surveying
Planning
Project Management

RIBA
Allisons Buildings, 135 Armitage Road Milnsbridge,
Huddersfield, HD3 4JY tel 01484 658411
projects@heppenstalls.net www.heppenstalls.net

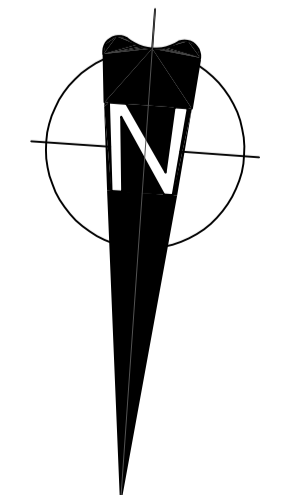
Planning
Proposed Block Plan



Proposed Plan



Existing Plan



Existing & Proposed Plans Change of Use of Cafe to Dwelling

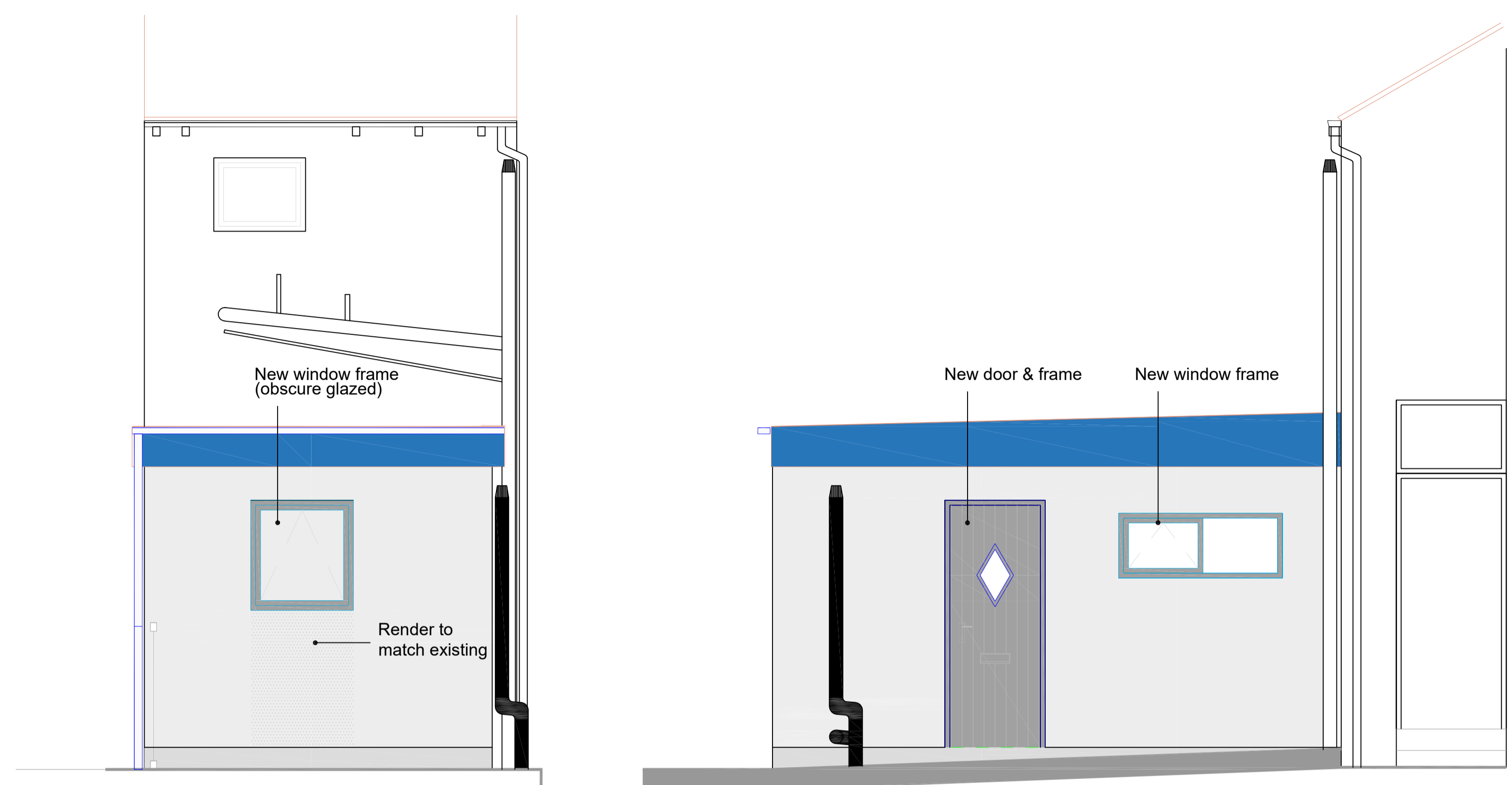


- Existing Walls
- Proposed Partitions
- Proposed Glazed & Acoustic Enhanced Partitions

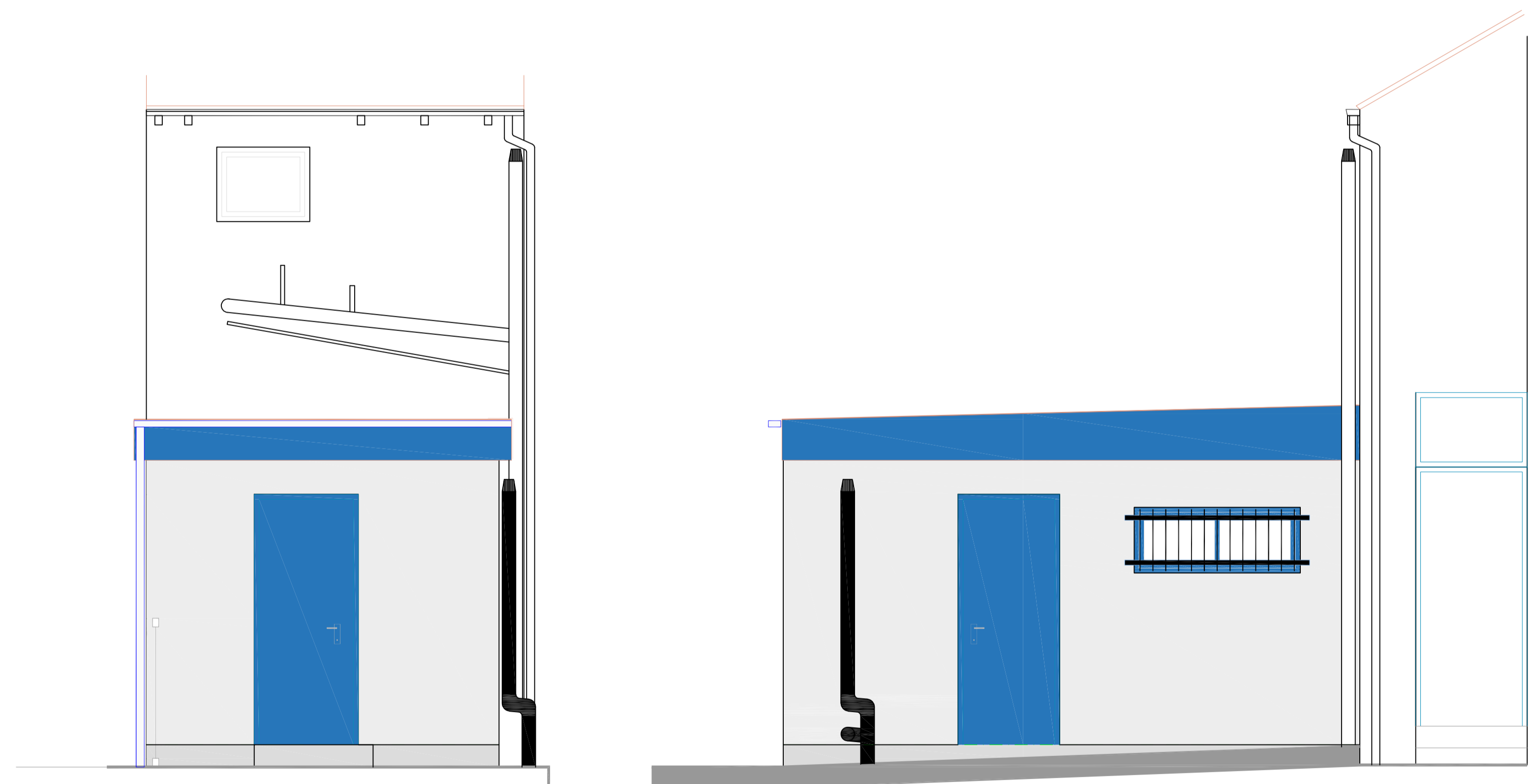
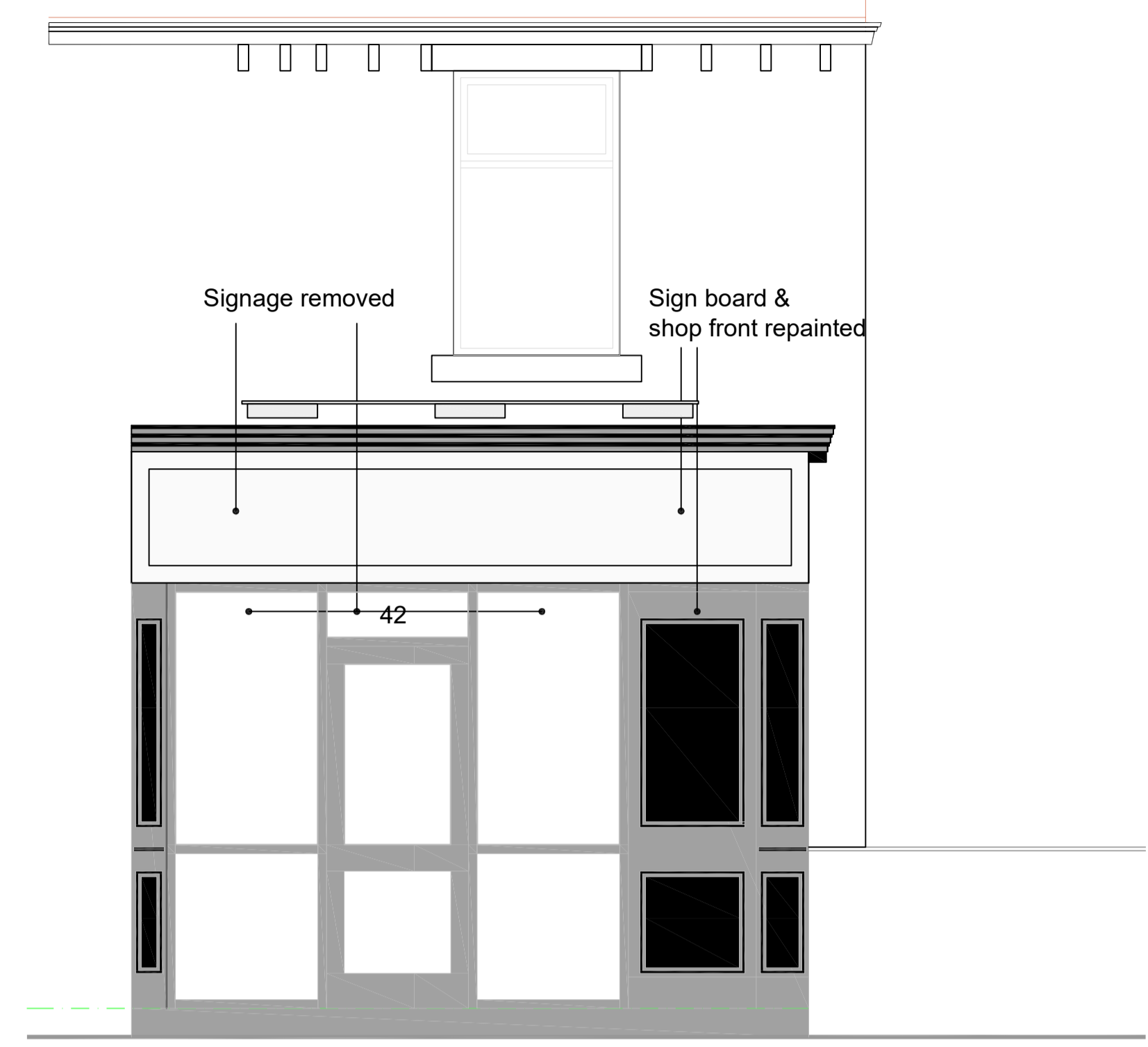
Client Mr M Morrell	
Project Change of Use from Cafe to dwelling 42 Market Street, Milnsbridge, Huddersfield	
Drawing Existing & Proposed Plans	
Number 4453-03-02	Date 10/2025 Scale @ A1 As Marked

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Chartered Architects
Architecture
Surveying
Planning
Project Management
Allisons Buildings, 135 Armitage Road Milnsbridge,
Huddersfield, HD3 4JY tel 01484 658411
projects@heppenstalls.net www.heppenstalls.net

Existing & Proposed Plans
Planning



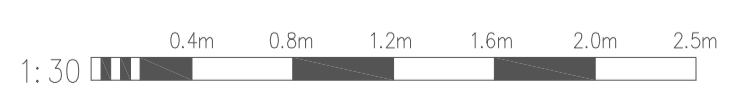
Proposed Elevations



Existing Elevations



Existing & Proposed Elevations Change of Use of Cafe to Dwelling



FINISHES:
 RENDER PATCHING - GREY TO MATCH EXISTING
 DOOR & WINDOW FRAMES - ANTHRACITE (RAL 7016)
 SHOPFRONT - ANTHRACITE (RAL 7016) BLACK DETAILING (RAL 9005)
 SIGN BOARD - TRAFFIC WHITE (RAL 9016)
 SHOPFRONT GLAZING TO HAVE INTERNAL OVERLAY OF A TINTED PRIVACY FILM, WHITE OR SILVER FROSTED

Client Mr M Morrell
 Project Change of Use from Cafe to dwelling
 42 Market Street, MIlnsbridge, Huddersfield
 Drawing Existing & Proposed Elevations
 Number 4453-03-03
 Date 10/2025
 Scale @ A1 As Marked

HEPPENSTALLS
 Chartered Architects
 Architecture
 Surveying
 Planning
 Project Management
 RIBA
 Allisons Buildings, 135 Armitage Road MIlnsbridge,
 Huddersfield, HD3 4JY tel 01484 658411
 projects@heppenstalls.net www.heppenstalls.net

Existing & Proposed Elevations
 Planning



APPENDIX 2 – Environment Agency Data

Flood risk assessment data



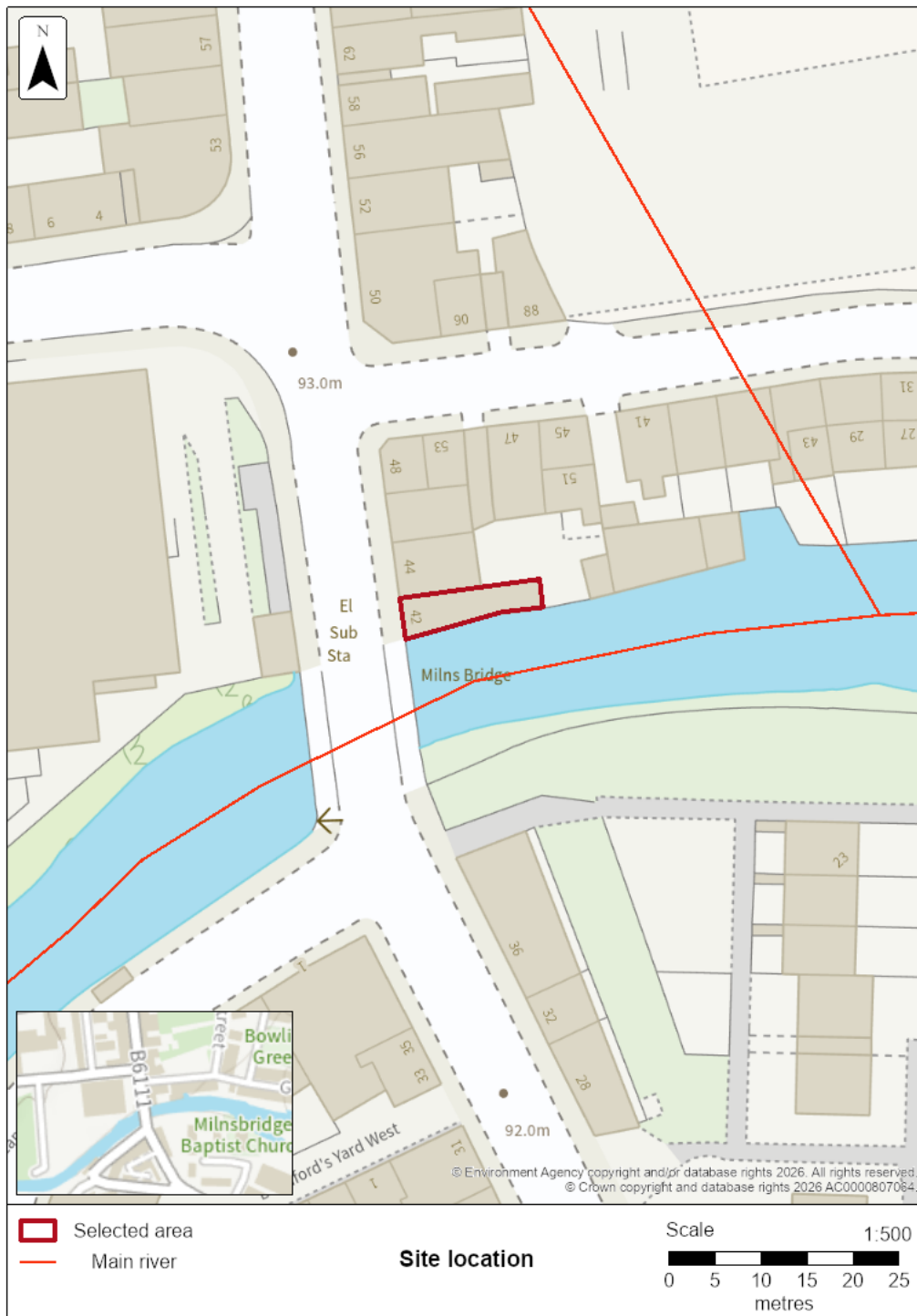
Location of site: 411584 / 415988 (shown as easting and northing coordinates)

Document created on: 27 February 2026

This information was previously known as a product 4.

Customer reference number: MFBN9C6YEC79

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)
- flood defences and attributes
- information to help you assess if there is a reduced flood risk from rivers and the sea because of defences
- 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

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.

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Kirklees District.

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

About the models used

Model name: 2011 Huddersfield Study - Longwood Brook

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

Date: 31 March 2011

Model name: 2019 Colne Model

Scenario(s): Defended fluvial, defences removed fluvial, defences removed climate change fluvial

Date: 1 August 2019

These models contain 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








Flood map for planning

Location (easting/northing)
411584/415988

Scale
1:10,000

Created
27 Feb 2026

-  Selected area
-  Main river
-  Flood defence
-  Flood Zone 3
-  Flood Zone 2



Flood defences and attributes

The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk






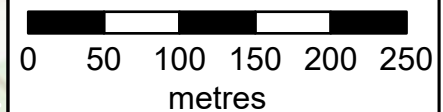
Flood defences

Location (easting/northing)
411584/415988

Scale
1:5,000

Created
27 Feb 2026

-  Selected area
-  Main river
-  Flood defence



Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	153345	Bridge Abutment	20				
2	150517	Bridge Abutment	20				
3	27981	Wall	20		89.21	89.71	
4	27685	Wall	20		90.20	89.57	

Any blank cells show where a particular value has not been recorded for an asset.

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:

- Defended modelled fluvial: risk of flooding from rivers where there are flood defences
- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change
- 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 data available

We do not have any height or depth data at this location for the following models:

Model name: 2019 Colne Model

Scenario(s): Defences removed climate change modelled fluvial, Defences removed modelled fluvial, Defended modelled fluvial









Defences removed climate change modelled fluvial extent

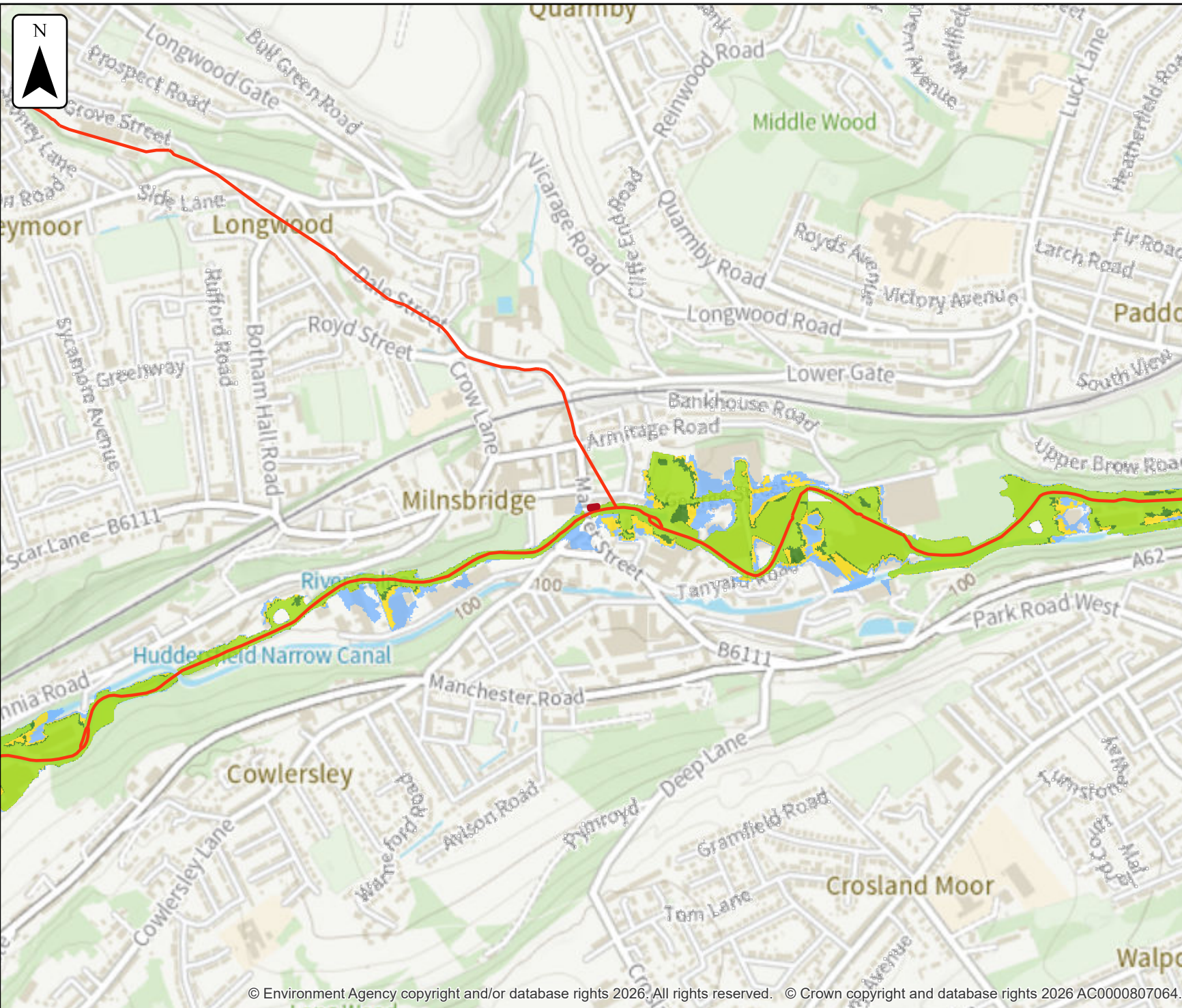
Location (easting/northing)
411584/415988

Scale Created
1:10,000 27 Feb 2026

Model name
2019 Colne Model

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+20%)
 -  1% AEP (+30%)
 -  1% AEP (+50%)
 -  0.1% AEP (+20%)

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









Defences removed modelled fluvial extent



Location (easting/northing)
411584/415988

Scale Created
1:10,000 27 Feb 2026

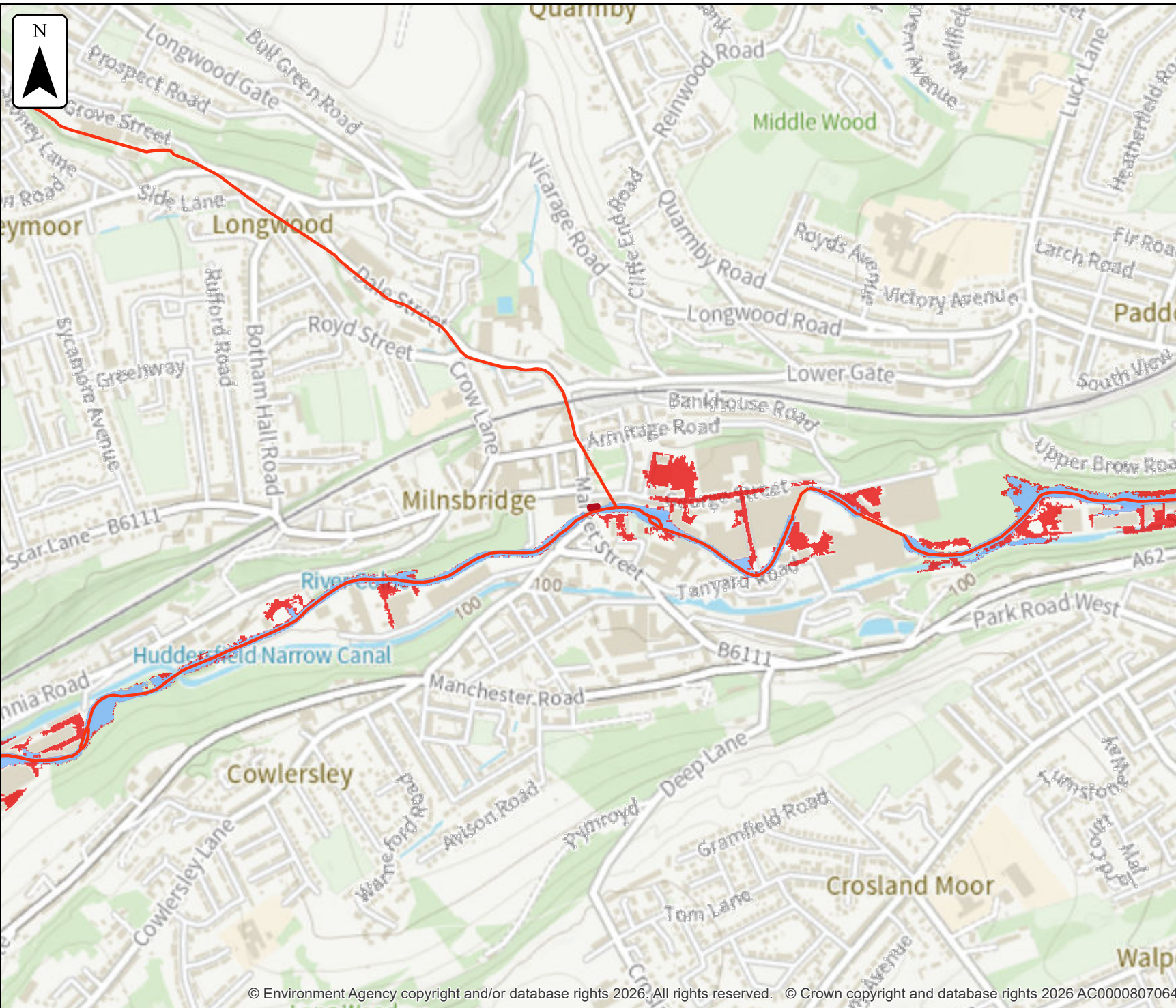
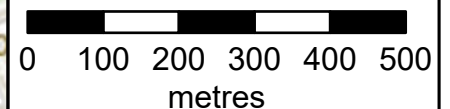
Model name
2019 Colne Model

-  Selected area
-  Main river
-  1% AEP
-  0.1% AEP

Modelled flood extent

-  1% AEP
-  0.1% AEP

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





Defended modelled fluvial extent

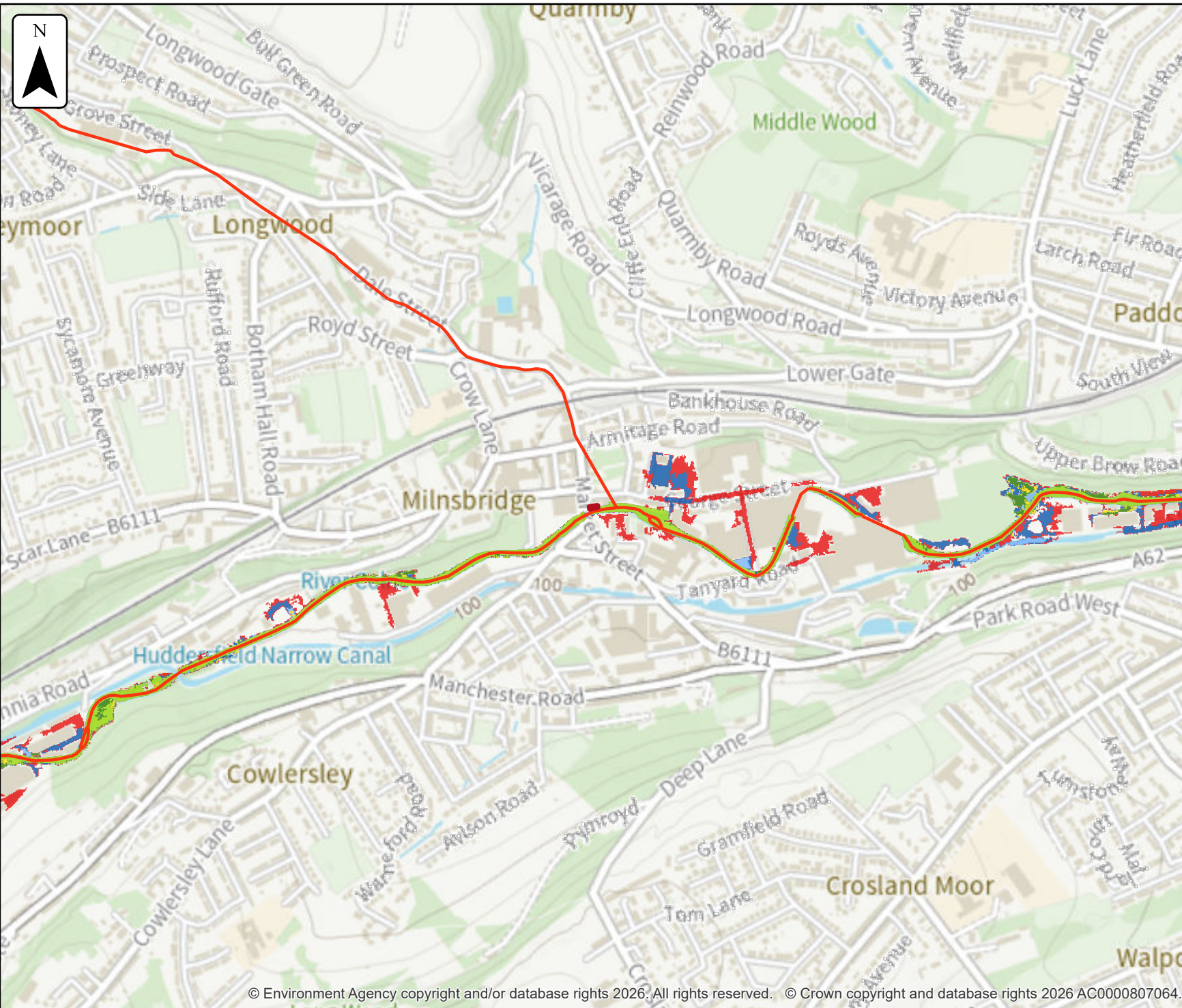
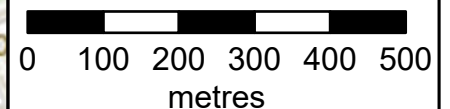
Location (easting/northing)
411584/415988

Scale Created
1:10,000 27 Feb 2026

Model name
2019 Colne Model

- Selected area
- Main river
- Modelled flood extent
- 5% AEP
- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

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









No defences exist climate change modelled fluvial extent

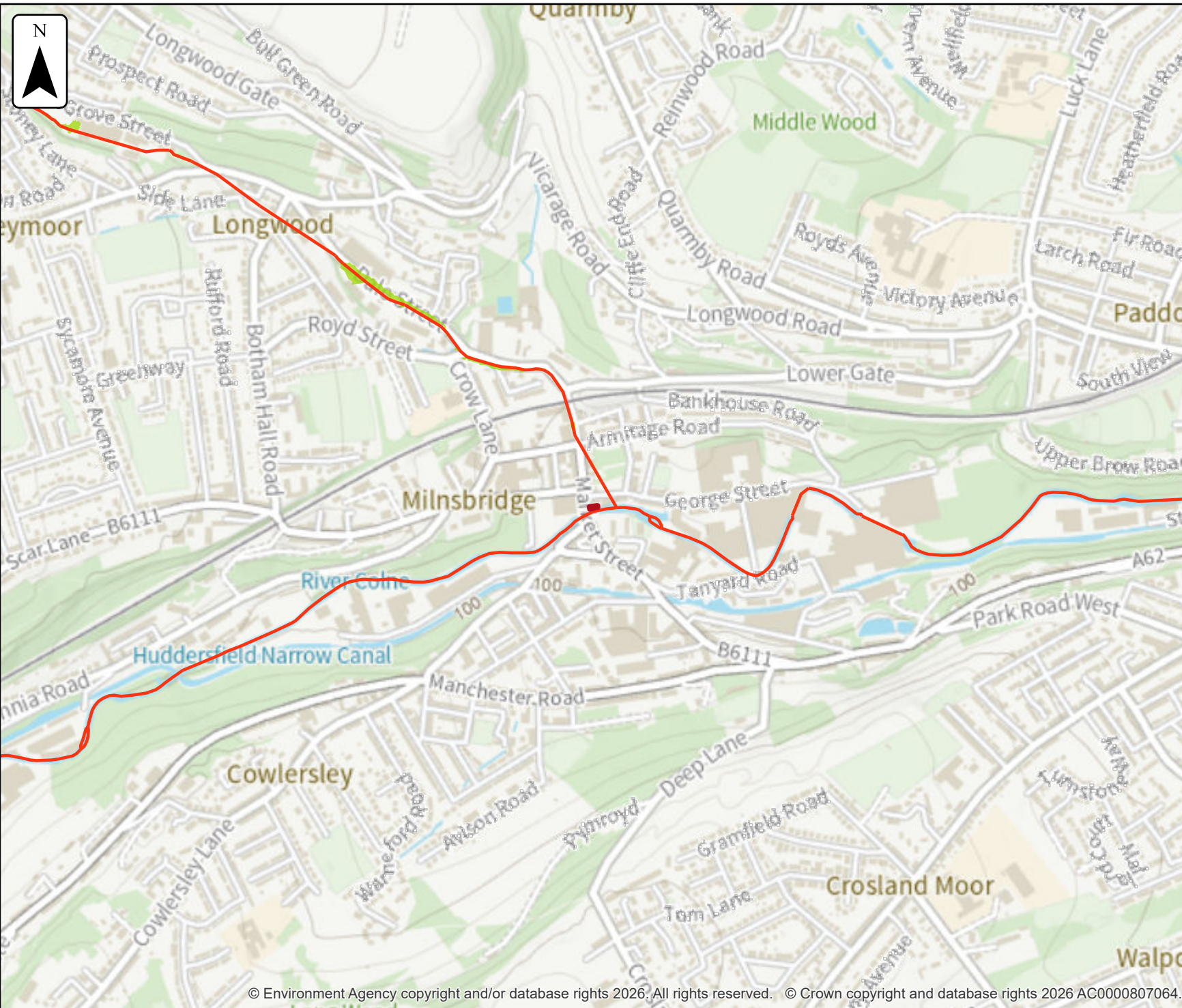
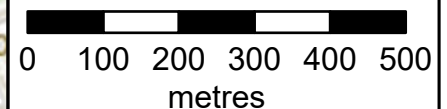
Location (easting/northing)
411584/415988

Scale Created
1:10,000 27 Feb 2026

Model name
**2011 Huddersfield
Study - Longwood**

-  Selected area
-  Main river
-  Modelled flood extent
-  1% AEP (+20%)

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












No defences exist modelled fluvial extent

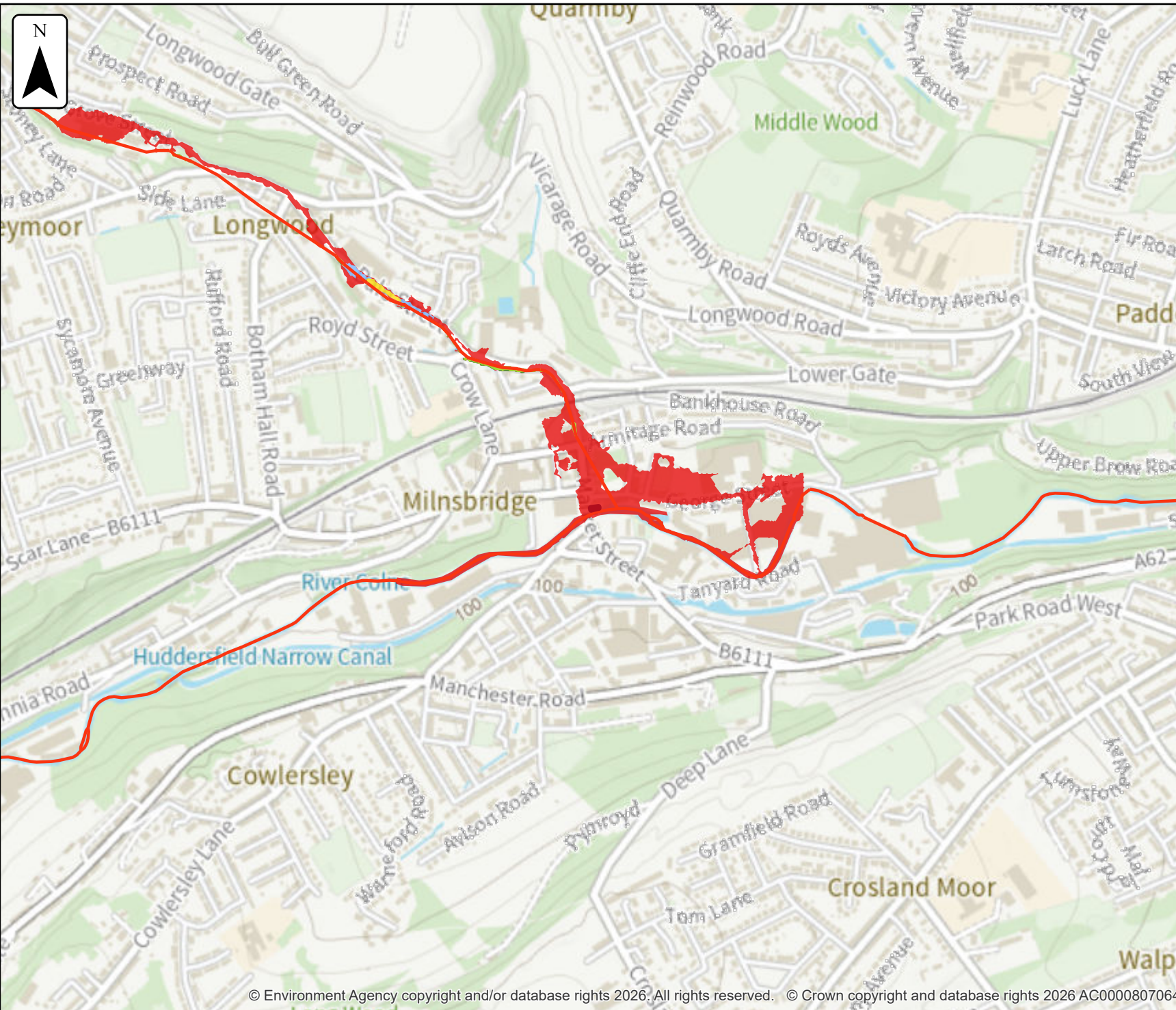
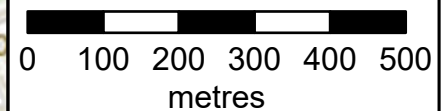
Location (easting/northing)
411584/415988

Scale Created
1:10,000 27 Feb 2026

Model name
**2011 Huddersfield
Study - Longwood**

-  Selected area
-  Main river
- Modelled flood extent
-  5% AEP
-  2% AEP
-  1.33% AEP
-  1% AEP
-  0.1% AEP

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








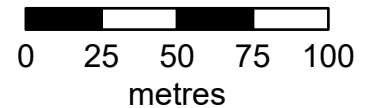
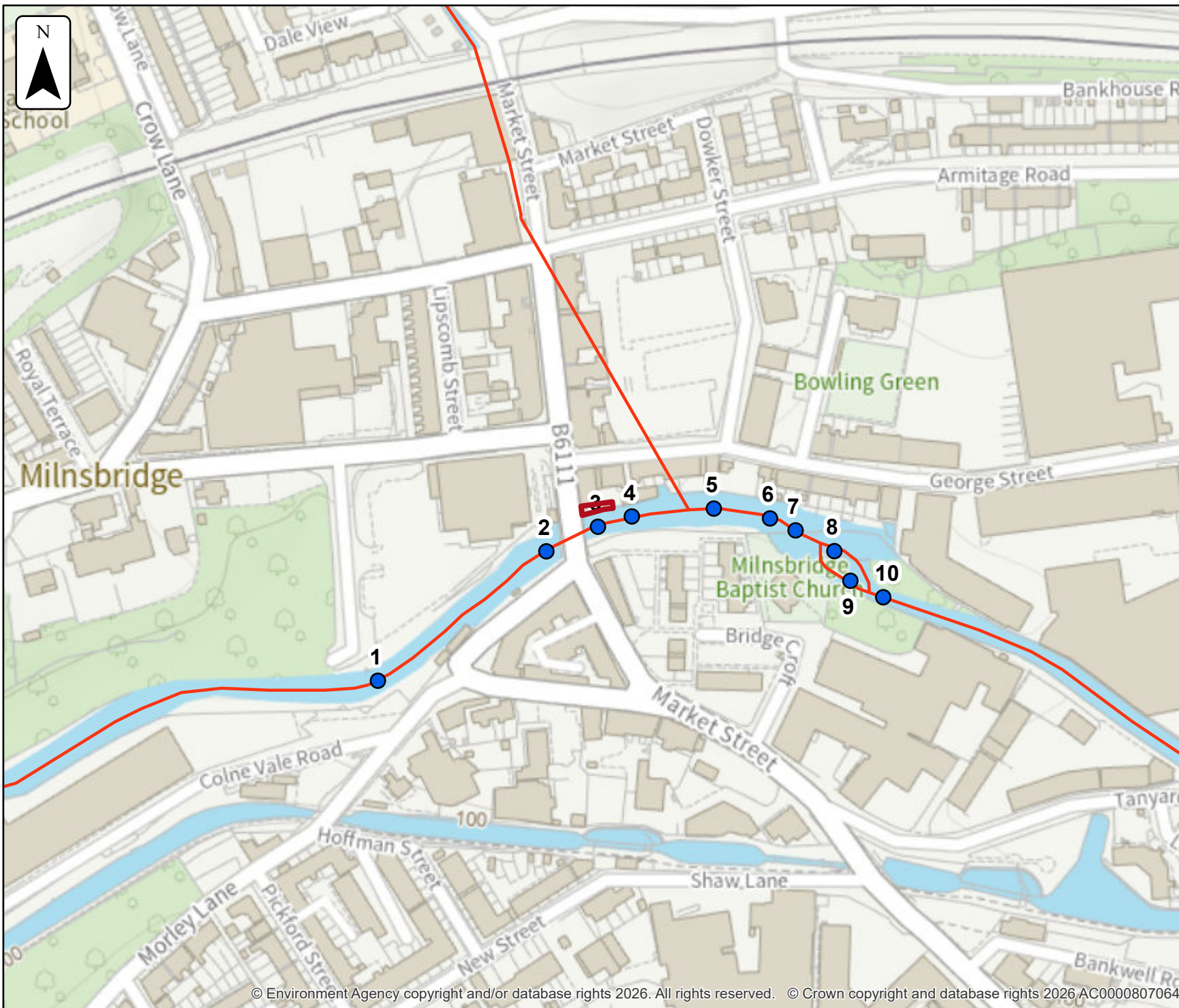
Defended modelled fluvial node locations

Location (easting/northing)
411584/415988

Scale Created
1:2,500 27 Feb 2026

Model name
2019 Colne Model

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

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	1198237	411479	415905	90.54	90.70	90.86	91.02	91.08	91.11	91.25	91.36	91.44	91.61	92.03
2	1197927	411560	415967	89.87	90.05	90.21	90.36	90.42	90.45	90.57	90.67	90.74	90.87	91.20
3	1197934	411585	415979	89.85	90.02	90.17	90.32	90.38	90.41	90.53	90.62	90.68	90.80	91.10
4	1197936	411602	415984	89.70	89.86	89.99	90.12	90.16	90.19	90.28	90.35	90.40	90.49	90.76
5	1198115	411641	415988	89.55	89.66	89.76	89.86	89.90	89.92	90.02	90.11	90.15	90.25	90.57
6	1198110	411669	415983	89.47	89.55	89.64	89.72	89.76	89.78	89.86	89.93	89.98	90.11	90.55
7	1197931	411681	415978	89.42	89.49	89.56	89.63	89.65	89.67	89.73	89.78	89.82	89.95	90.52
8	1197919	411700	415967	88.05	88.29	88.52	88.78	88.87	88.93	89.15	89.33	89.55	89.80	90.48
9	1198024	411708	415953	88.02	88.25	88.49	88.74	88.83	88.89	89.11	89.30	89.53	89.78	90.47
10	1198165	411724	415945	87.94	88.18	88.42	88.68	88.78	88.84	89.06	89.24	89.46	89.70	90.46

Data in this table comes from the 2019 Colne Model 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.

Defended

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	1198237	411479	415905	26.07	32.91	39.81	47.59	50.67	52.62	59.93	66.27	71.28	82.08	111.40
2	1197927	411560	415967	26.07	32.91	39.81	47.59	50.67	52.62	59.93	66.27	71.28	82.11	111.40
3	1197934	411585	415979	26.07	32.91	39.81	47.59	50.67	52.62	59.93	66.27	71.28	82.11	111.40
4	1197936	411602	415984	26.07	32.91	39.81	47.59	50.67	52.62	59.93	66.27	71.28	82.12	111.40
5	1198115	411641	415988	26.07	32.91	39.81	47.59	50.67	52.62	59.93	66.27	71.28	82.09	111.40
6	1198110	411669	415983	27.24	34.45	41.67	49.81	53.0	55.07	62.74	69.35	74.59	86.57	117.68
7	1197931	411681	415978	27.24	34.45	41.67	49.81	53.0	55.07	62.74	69.35	74.59	86.59	117.65
8	1197919	411700	415967	27.24	34.45	41.67	49.81	53.0	55.07	62.74	69.34	79.12	87.60	117.63
9	1198024	411708	415953	27.24	34.45	41.67	49.81	53.0	55.07	62.74	69.34	81.48	88.42	117.62
10	1198165	411724	415945	27.24	34.45	41.67	49.81	53.0	55.07	62.74	69.34	81.08	88.63	117.60

Data in this table comes from the 2019 Colne Model 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.






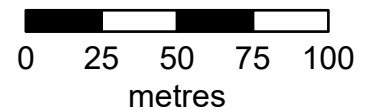
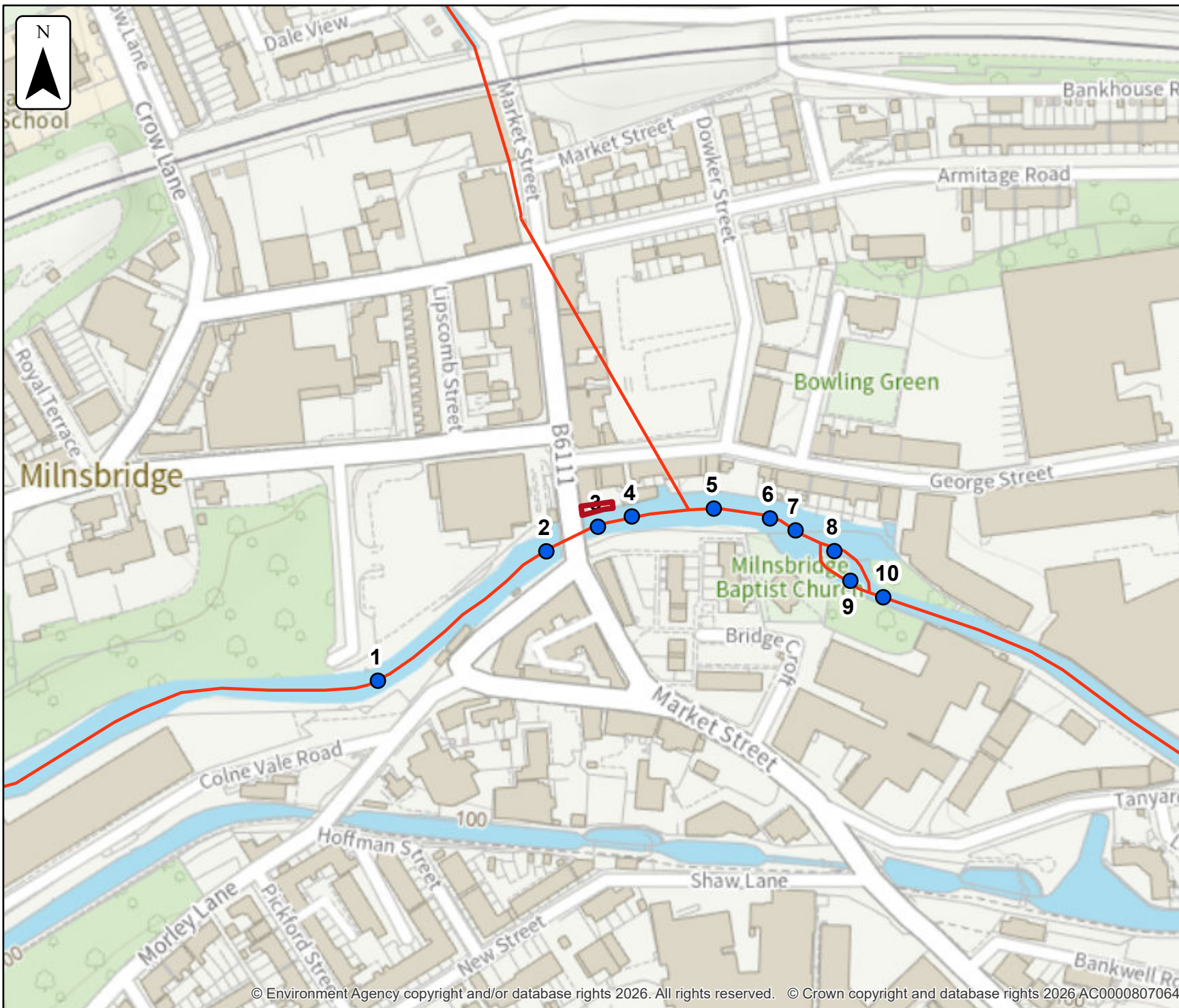
Defences removed modelled fluvial node locations

Location (easting/northing)
411584/415988

Scale Created
1:2,500 27 Feb 2026

Model name
2019 Colne Model

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	3.33% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level
1	1198237	411479	415905	90.86	91.11	91.44	92.03
2	1197927	411560	415967	90.21	90.45	90.74	91.20
3	1197934	411585	415979	90.17	90.41	90.68	91.10
4	1197936	411602	415984	89.99	90.19	90.40	90.76
5	1198115	411641	415988	89.76	89.92	90.15	90.57
6	1198110	411669	415983	89.64	89.78	89.98	90.55
7	1197931	411681	415978	89.56	89.67	89.82	90.52
8	1197919	411700	415967	88.52	88.93	89.54	90.48
9	1198024	411708	415953	88.49	88.89	89.53	90.47
10	1198165	411724	415945	88.43	88.84	89.48	90.46

Data in this table comes from the 2019 Colne Model 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.

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	3.33% AEP	1% AEP	0.1% AEP
				Flow	Flow	Flow	Flow
1	1198237	411479	415905	39.81	52.62	71.28	111.40
2	1197927	411560	415967	39.81	52.62	71.28	111.40
3	1197934	411585	415979	39.81	52.62	71.28	111.40
4	1197936	411602	415984	39.81	52.62	71.28	111.40
5	1198115	411641	415988	39.81	52.62	71.28	111.40
6	1198110	411669	415983	41.67	55.07	74.59	117.68
7	1197931	411681	415978	41.67	55.07	74.59	117.65
8	1197919	411700	415967	41.67	55.07	81.17	117.63
9	1198024	411708	415953	41.67	55.07	82.71	117.62
10	1198165	411724	415945	41.67	55.07	82.33	117.61

Data in this table comes from the 2019 Colne Model 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.

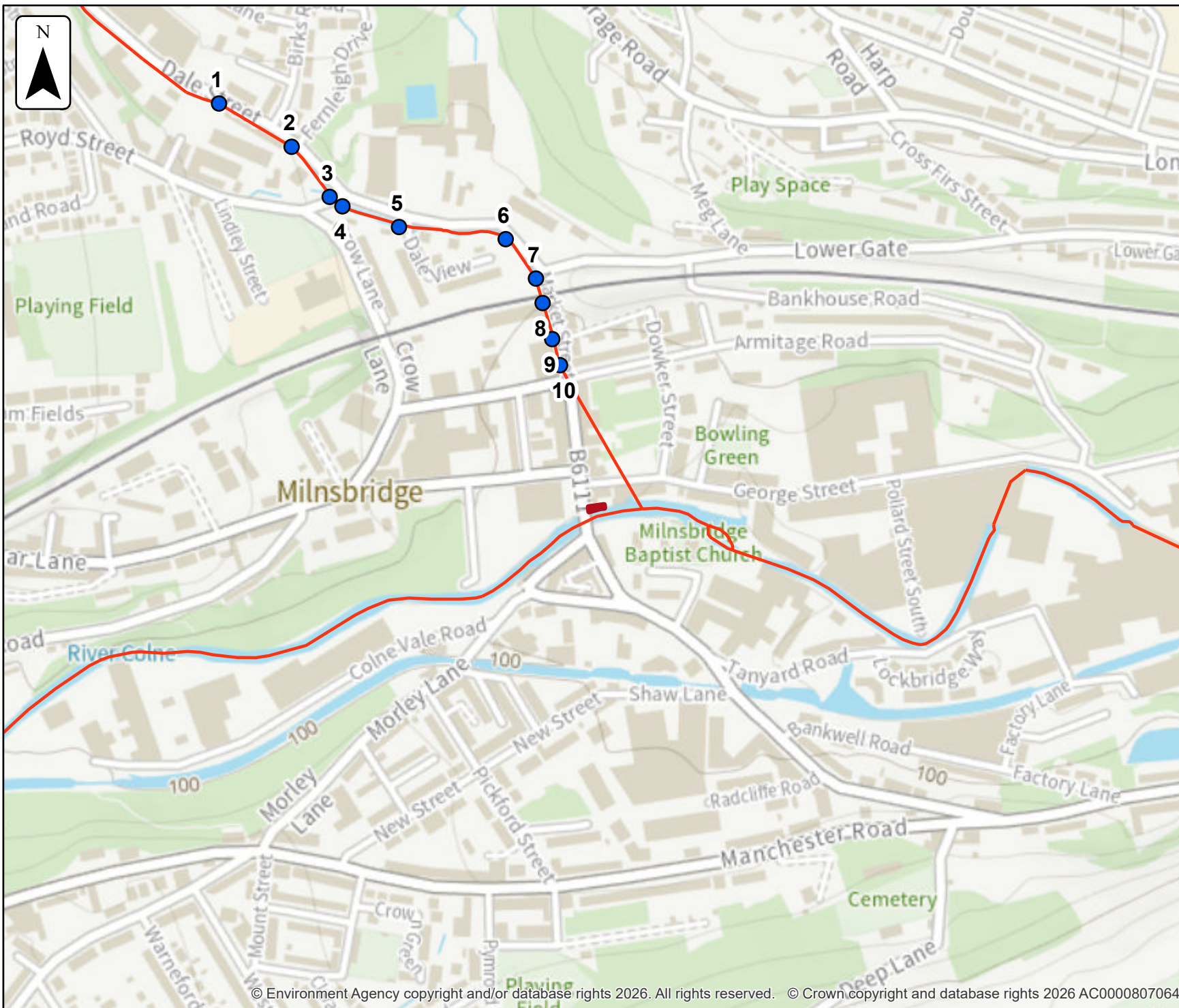
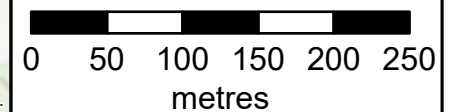
No defences exist modelled fluvial node locations

Location (easting/northing)
411584/415988

Scale Created
1:5,000 27 Feb 2026

Model name
**2011 Huddersfield
Study - Longwood**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level
1	203650	411219	416381	110.35	110.47	110.57	110.68	110.71	110.88	110.98	111.06	111.57
2	295457	411289	416339	106.33	106.44	106.53	106.64	106.67	106.82	106.92	106.99	107.62
3	39625	411326	416290	104.78	104.86	104.92	105.02	105.04	105.14	105.20	105.25	105.60
4	240964	411338	416281	104.68	104.74	104.79	104.88	104.89	104.96	105.0	105.04	105.25
5	44955	411393	416261	102.05	102.10	102.14	102.18	102.20	102.27	102.30	102.33	102.48
6	68573	411497	416249	98.81	98.89	98.96	99.04	99.07	99.21	99.32	99.40	101.15
7	131835	411526	416211	97.34	97.53	97.69	97.86	97.92	98.20	98.38	98.54	100.86
8	211958	411533	416187	96.58	96.72	96.84	97.0	97.07	97.38	97.64	97.87	100.18
9	125834	411542	416152	95.07	95.16	95.23	95.30	95.33	95.50	95.61	95.68	96.50
10	188330	411549	416127	94.48	94.61	94.71	94.83	94.87	95.07	95.22	95.34	96.50

Data in this table comes from the 2011 Huddersfield Study - Longwood Brook 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.

No defences exist

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	
1	203650	411219	416381	2.33	3.01	3.60	4.30	4.55	5.68	6.46	7.08	10.93
2	295457	411289	416339	2.32	3.01	3.59	4.29	4.54	5.67	6.46	7.07	10.97
3	39625	411326	416290	2.71	3.54	4.25	5.10	5.41	6.78	7.73	8.49	15.39
4	240964	411338	416281	2.71	3.54	4.25	5.10	5.41	6.78	7.73	8.49	15.39
5	44955	411393	416261	2.70	3.53	4.24	5.05	5.35	6.75	7.70	8.48	15.41
6	68573	411497	416249	3.65	4.80	5.80	7.0	7.37	9.44	10.91	12.08	16.75
7	131835	411526	416211	3.67	4.83	5.84	7.03	7.42	9.51	10.99	12.16	18.77
8	211958	411533	416187	3.69	4.86	5.86	7.06	7.46	9.56	11.05	12.22	18.98
9	125834	411542	416152	3.69	4.86	5.86	7.06	7.45	9.55	11.04	12.21	18.98
10	188330	411549	416127	3.71	4.89	5.90	7.09	7.50	9.61	11.11	12.28	20.31

Data in this table comes from the 2011 Huddersfield Study - Longwood Brook 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.






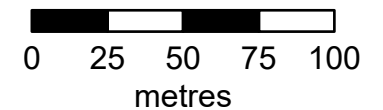
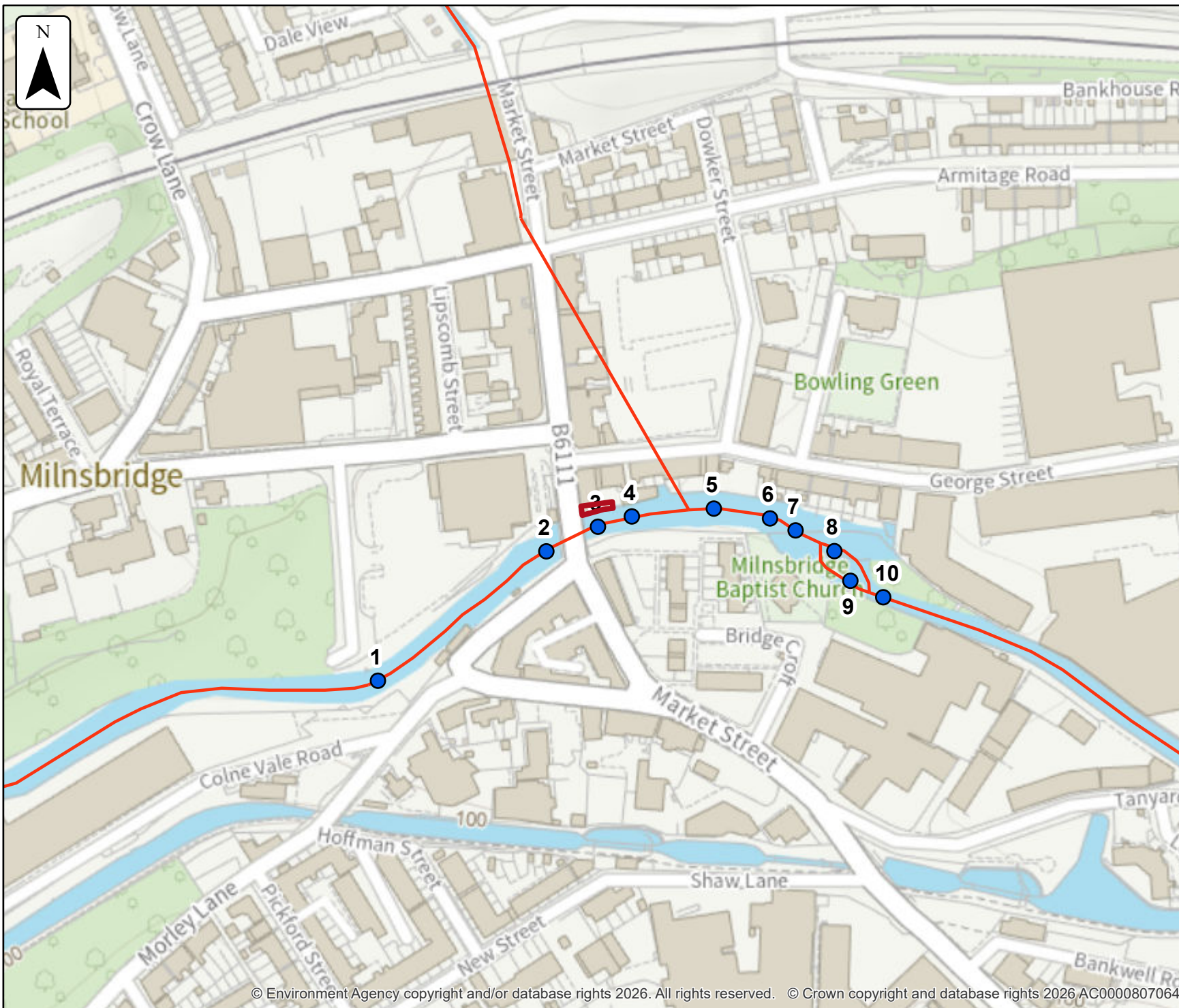
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
411584/415988

Scale Created
1:2,500 27 Feb 2026

Model name
2019 Colne Model

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)
				Level	Level	Level	Level
1	1198237	411479	415905	91.66	91.77	91.96	92.63
2	1197927	411560	415967	90.90	90.98	91.13	92.22
3	1197934	411585	415979	90.83	90.91	91.03	91.27
4	1197936	411602	415984	90.52	90.57	90.68	90.91
5	1198115	411641	415988	90.28	90.35	90.49	90.64
6	1198110	411669	415983	90.13	90.23	90.47	90.62
7	1197931	411681	415978	89.98	90.14	90.43	90.57
8	1197919	411700	415967	89.84	90.05	90.39	90.53
9	1198024	411708	415953	89.81	90.02	90.38	90.52
10	1198165	411724	415945	89.73	89.98	90.37	90.48

Data in this table comes from the 2019 Colne Model 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.

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)
				Flow	Flow	Flow	Flow
1	1198237	411479	415905	85.31	92.55	106.25	133.57
2	1197927	411560	415967	85.31	92.55	106.25	133.56
3	1197934	411585	415979	85.31	92.55	106.25	133.56
4	1197936	411602	415984	85.31	92.55	106.25	133.56
5	1198115	411641	415988	85.31	92.55	106.24	133.56
6	1198110	411669	415983	89.21	96.84	111.09	141.12
7	1197931	411681	415978	89.21	96.81	111.04	148.44
8	1197919	411700	415967	89.36	96.81	111.02	162.34
9	1198024	411708	415953	89.82	96.79	111.0	179.46
10	1198165	411724	415945	89.93	96.78	110.99	191.57

Data in this table comes from the 2019 Colne Model 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.

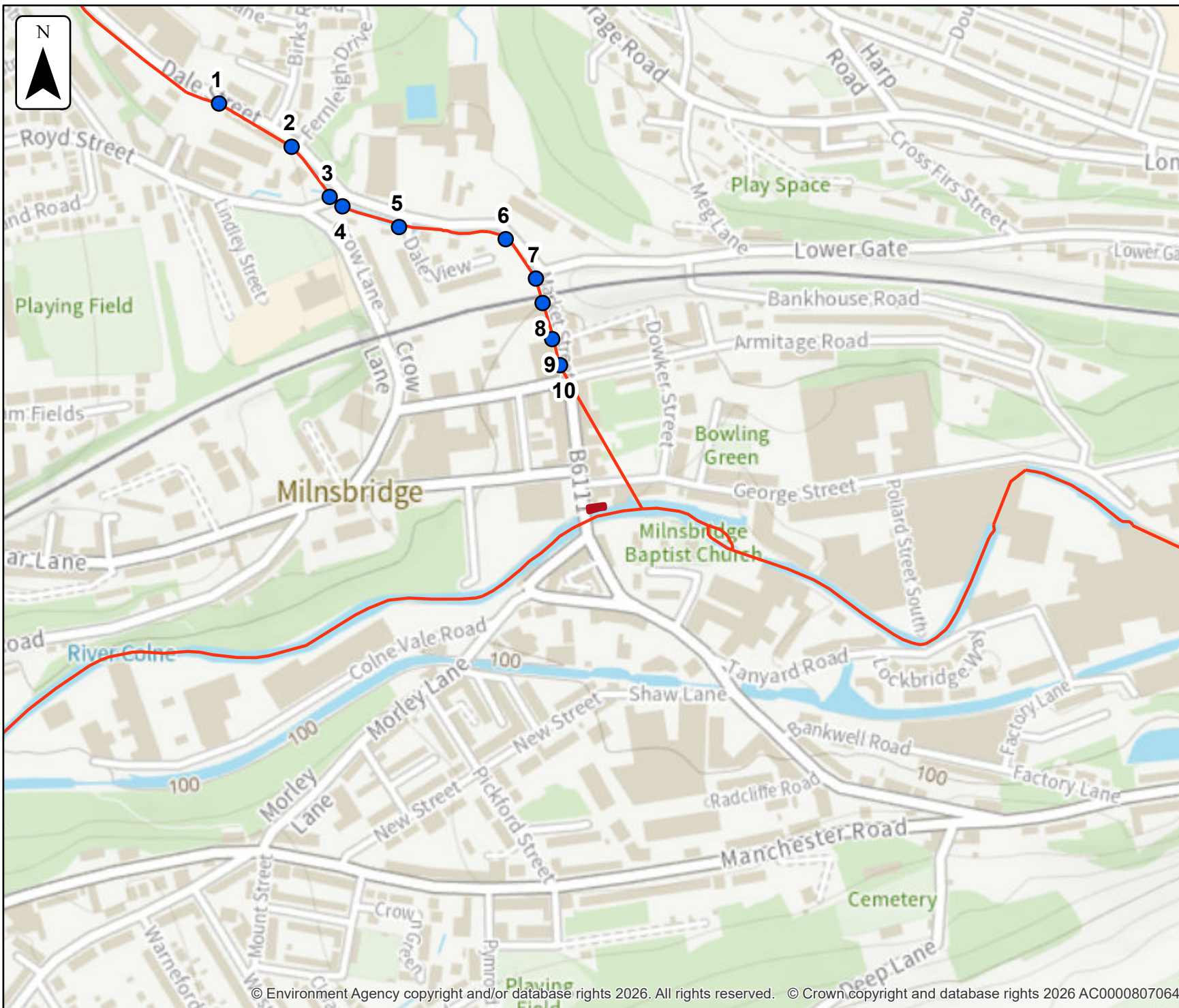
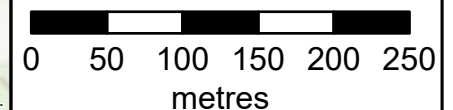
No defences exist climate change modelled fluvial node locations

Location (easting/northing)
411584/415988

Scale Created
1:5,000 27 Feb 2026

Model name
**2011 Huddersfield
Study - Longwood**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	
				Level	Flow
1	203650	411219	416381	111.21	8.22
2	295457	411289	416339	107.12	8.21
3	39625	411326	416290	105.33	9.92
4	240964	411338	416281	105.09	9.92
5	44955	411393	416261	102.38	9.90
6	68573	411497	416249	99.59	14.14
7	131835	411526	416211	98.87	14.25
8	211958	411533	416187	98.35	14.31
9	125834	411542	416152	95.83	14.31
10	188330	411549	416127	95.66	14.38

Data in this table comes from the 2011 Huddersfield Study - Longwood Brook 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.

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 Kirklees 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 Yorkshire Environment Agency team at neyorkshire@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

