Flood risk assessment

FOR THE CONSTRUCTION OF A TWO-STOREY EXTENSION TO EXISTING DWELLING, TO PROVIDE ADDITIONAL LIVING ACCOMMODATION, WITH PART OF EXISTING DWELLING TO BE DEMOLISHED.

APPLICATION REFERENCE S/094/02490/23.

POPLAR FARM, ROUGHTON ROAD, KIRKBY ON BAIN,

WOODHALL SPA, LN10 6YL

Contents

INTRODUCTION

This Flood Risk Assessment (FRA) accompanies a planning application for the construction of a two-storey extension to existing dwelling, to provide additional living accommodation, with part of existing dwelling to be demolished.

Application reference S/094/02490/23

The aims of this site-specific FRA will be as follows:

- Identify and address flood risk issues associated with the development.
- Assess if the project is likely to be affected by flooding from all relevant sources now and in the future.
- Assess whether the project will increase the flood risk elsewhere.
- Demonstrate that the project is safe and where possible, reduces flood risk.
- Propose measures to deal with the identified effects and risks.

PROPOSAL

The proposal involves the demolition of a single storey extension and the construction of a two-storey extension. Traditional materials will be used to the latest building regulations and will be sympathetic and to match existing materials similar to the main body of the house.

Existing drainage systems and additional soak away will be integrated to this proposal.

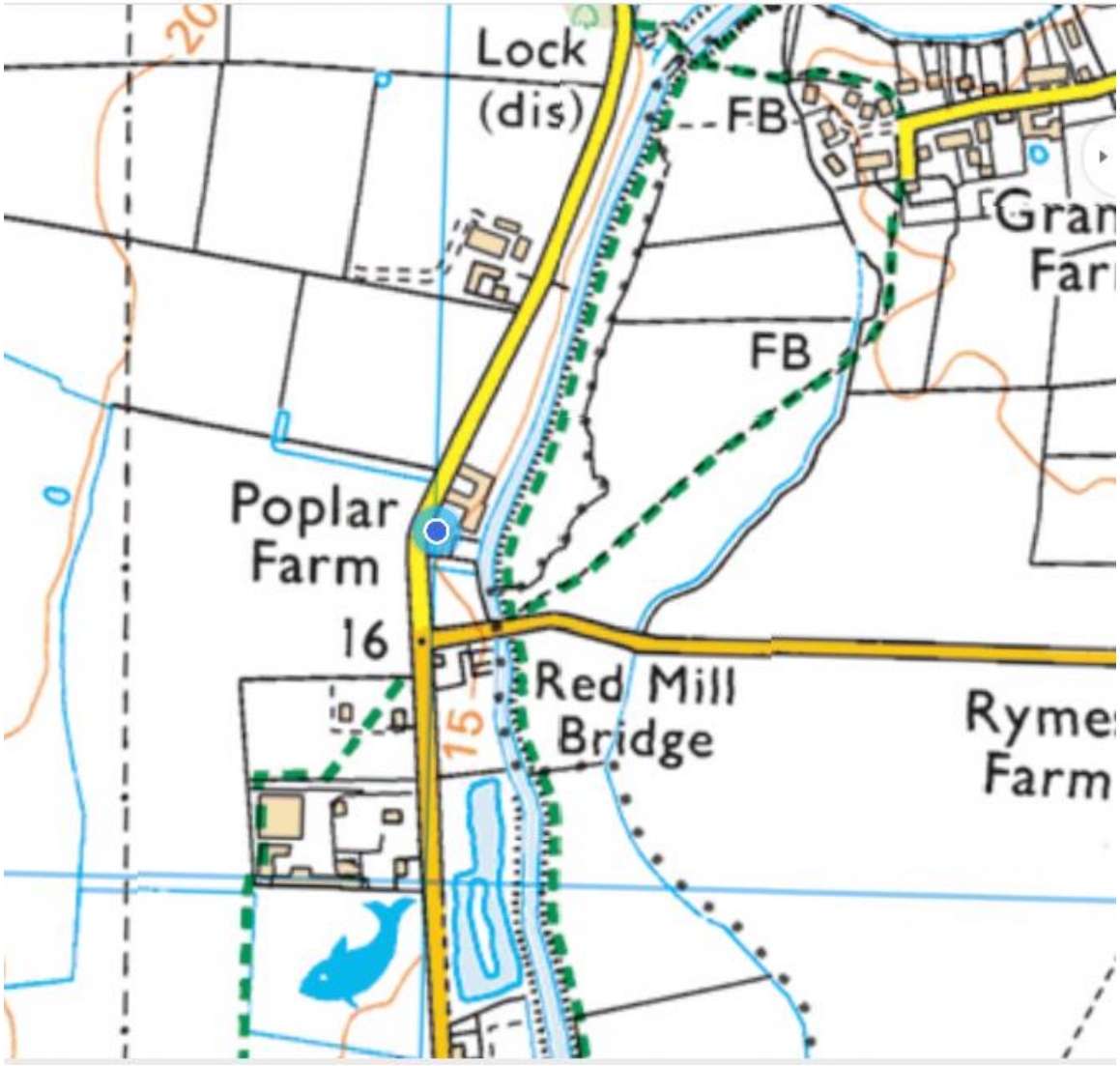
To overcome the risk from flooding the ground floor of the building has been raised and will be discussed later in this report.

THE SITE

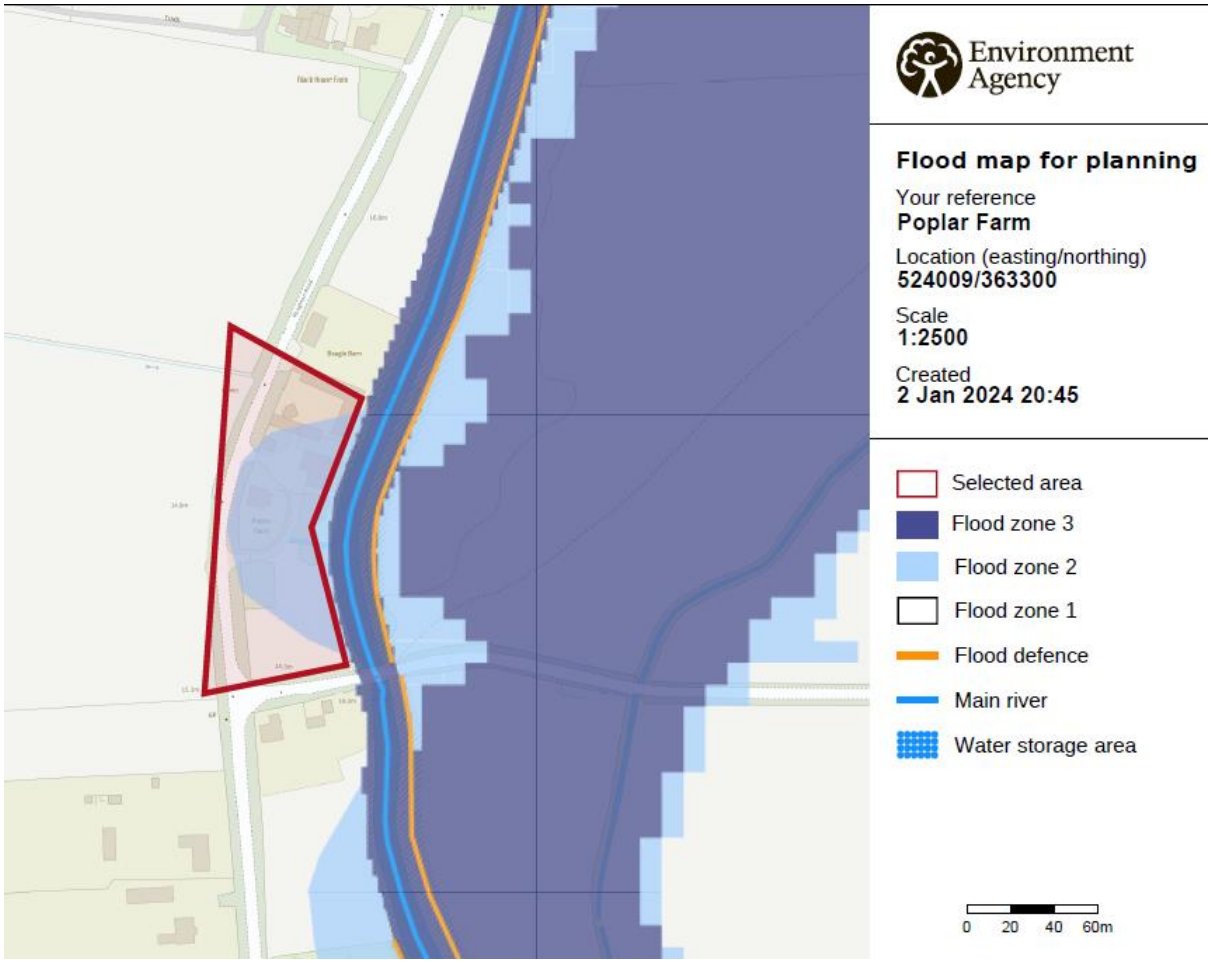
The application site is located on the northern side of Kirkby-on-Bain and on the eastern side of Roughton Road, to the West of the river Bain.

The Ordnance Survey Grid is 53.1524, 0.1469.

Indicated with a blue dot in the following map.



The application site lies within flood zone 2 as indicated by the national planning guidance indicated on the following diagram. Generated by the Environment agency reference Poplar Farm



The guidance describes this area as land having between a 1 in 100 to 1 in 1000 annual probability of river flooding and 1 in 200 to 1 in 1000 annual probability of sea flooding.

The guidance also indicates that applications for miner developments should not be subject to sequential or exceptions tests but should still meet the requirements of a site-specific flood risk assessment.

The Environment agency flood map clearly indicates that the West side of the river Bain is in flood risk 2 and the East side of the river is in flood risk 3 therefor the East side of the river Bain will be sacrificial to this site.

ASSESSMENT OF POTENTIAL SOURCES OF FLOODING

Surface water

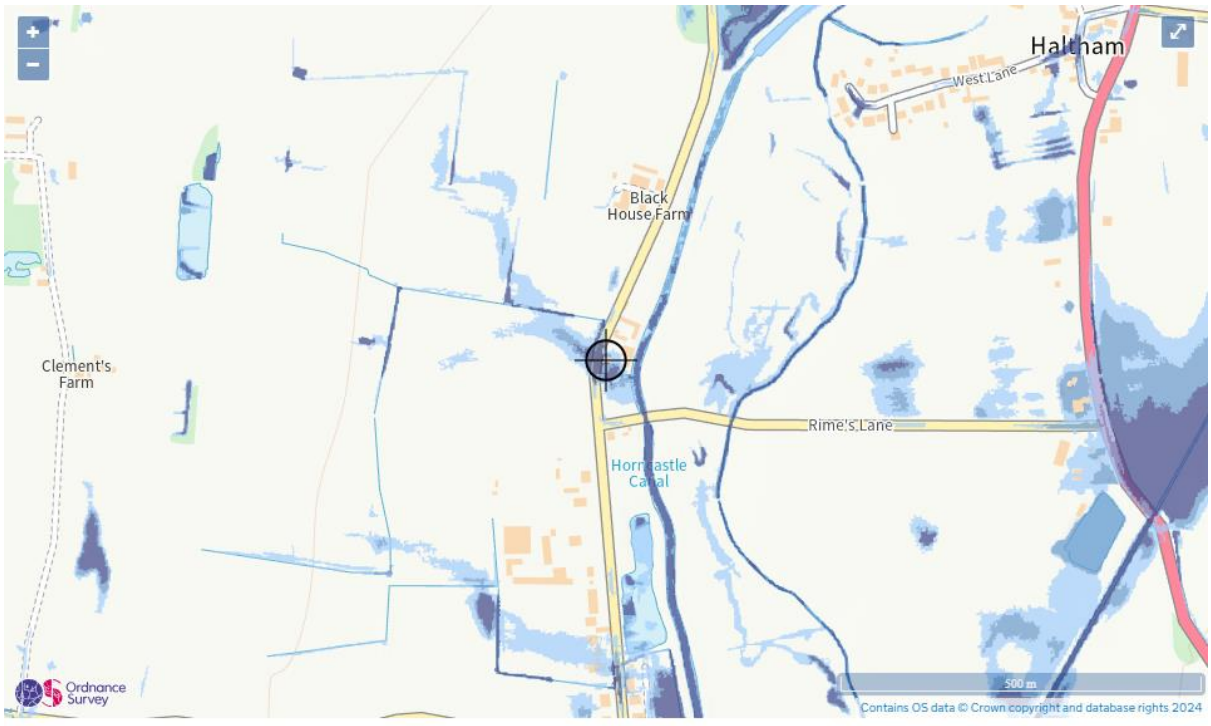
High risk

The area surrounding the site is not known to suffer from ground water problems and there is no significantly higher ground adjacent to the development which could promote overland flow of water across the site. There are also no depressed areas which could encourage ponding and no evidence of ponding has been observed.

This flood risk summary reports the highest risk from surface water within a 15-metre radius of this property.

High risk means that this area has a chance of flooding of greater than 3.3% each year.

Surface water flood scenario indicated on the following diagram.



Extent of flooding from surface water

High Medium Low Very low Location you selected

The surface water flood risk water depth scenario in a high-risk situation would still be below 300 millimetres across the site.

Rivers and the sea

Very low risk

The Environment Agency is responsible for managing the flood risk from rivers and the sea.

Surface water flood risk: water depth in a high risk scenario

Flood depth (millimetres)

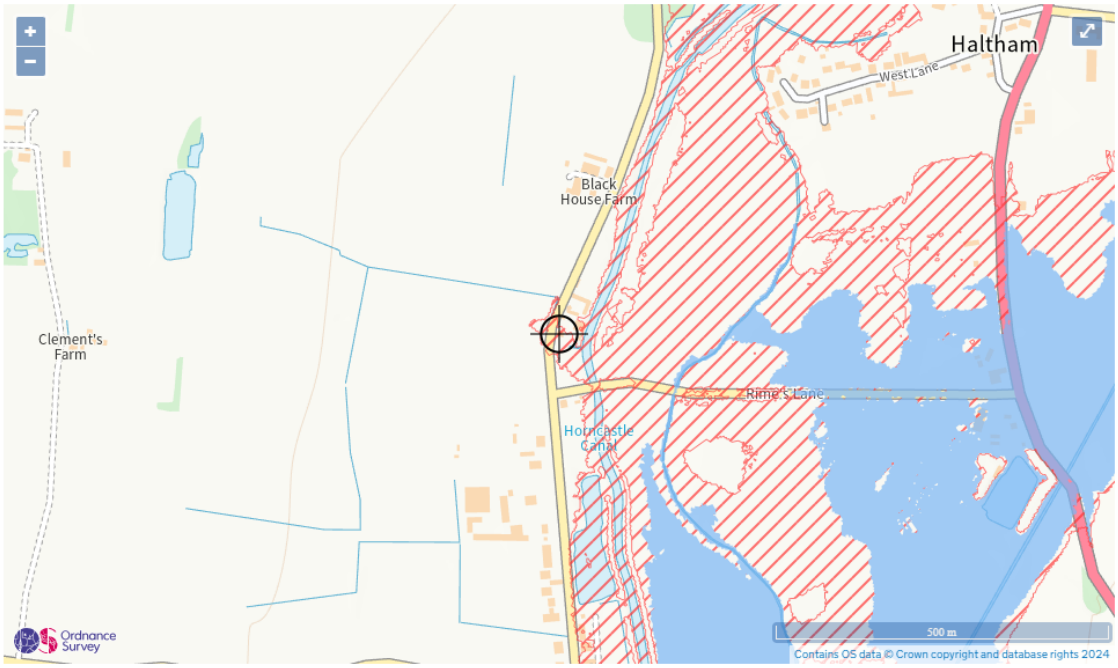
Over 900mm | 300 to 900mm | Below 300mm | Location you selected

The river and sea risk water depth scenario in a high-risk situation would still be below 300 millimetres across the site.

Reservoirs

There is a risk of flooding from reservoirs in this area.

Flooding from reservoirs is extremely unlikely. An area is considered at risk if peoples' lives could be threatened in the event of a dam or reservoir failure.



Maximum extent of flooding from reservoirs:

when river levels are normal | when there is also flooding from rivers | Location you selected

Summary

The river Bain is the likely source of flood risk. Flooding could occur should there be overtopping of the river, however, the modelled flood risk shows the river is at greater risk on the western side.

Fluvial flooding is considered the main source of flood risk to the site for assessment of flooding mechanisms.

Based on information from the Environment Agency, the worst-case level for the river Bain is 15.05M. This is most extreme scenario (1 in 1000 years including climate change)

This is the in-channel level for the Bain and therefore may not represent the flood levels on the flood plain, particularly where the channel is embanked or has raised defences.

Whilst the development is stated to be within the flood plain it is to be built at 15.3M the likelihood of flooding is very low. Overall, there is no reason to believe that there would be a risk to life or property at this site.

6 POTENTIAL FLOODING IMPACTS

As the proposal involves the extension of existing building it is considered that

the development will not increase flood risk elsewhere.

7 MITIGATION MEASURES

The potential source of flooding has been identified as fluvial. Although the development site is stated to be within the flood plain the likelihood of flooding is very low, though the site remains theoretically at risk of flooding. Precautionary approach should be adopted to ensure that the development is safe and not exposed unnecessarily to flooding. Therefore, the following mitigation measures will be put into place.

- Insulating and screeding the internal floor, the finished floor level (FFL) will be raised to 250mm above the main body of the existing house FFL effectively the extension will be much less risk than the existing building.
- Electrical circuits and sockets to be raised as high as reasonably possible at least 450 millimetres above FFL and to BS7671.
- Electrical under floor heating will be avoided and wet under floor heating will be continuous and have feed tails extending upwards to at least 450 millimetres above FFL.
- All service entries should be sealed with expanding foam or similar closed cell material.
- making sure there's access to all spaces to enable drying and cleaning.
- using materials that have low permeability (ie materials that water cannot pass through such as impermeable concrete).

Advice for end user

Protecting your property is a key part of helping to reduce the impact of flooding on your home.

Whilst you can never eliminate the risk of flooding, protecting your property can be a key part of helping to reduce the impact of flooding on your home or business.

Property level resilience are measures that can be taken to reduce the impact of flooding.

Flood resilience is about reducing the damage to the inside of your property once water has got in and speeding up the time it takes to recover after a flood.

Such measures as solid floors or tiled floor coverings and taking simple steps in a flood event to move furniture and valuable possessions upstairs.

The aim is to ensure that if your home is flooded, you can get back up and running as soon as possible. For example, fixtures and fittings are chosen so that they can easily be moved out of the way, whilst walls and floors can be quickly washed down.