Flood Risk Assessment for Proposed Development

Site Address: 40 Bradford Road Huddersfield HD1 6JE

Date: 02/11/2024

1. Introduction

This Flood Risk Assessment (FRA) has been prepared to support the planning application for the proposed development at 40 Bradford Road Huddersfield HD1 6JE. The site is currently located within Flood Zone 2, as defined by the Environment Agency's Flood Map for Planning. The proposed development includes the conversion of the basement to accommodate bedrooms, which introduces potential flood risk concerns.

The purpose of this assessment is to evaluate the flood risk to the site, identify any necessary mitigation measures, and outline steps to ensure that the development complies with the National Planning Policy Framework (NPPF) and local flood risk management policies.

2. Site Description

The site is located at grid reference: 414514/417590. It is currently Student accommodation and basement is use as Kitchen with bathroom. The proposed development includes the conversion of the basement area into residential bedrooms.

Site Location Map:

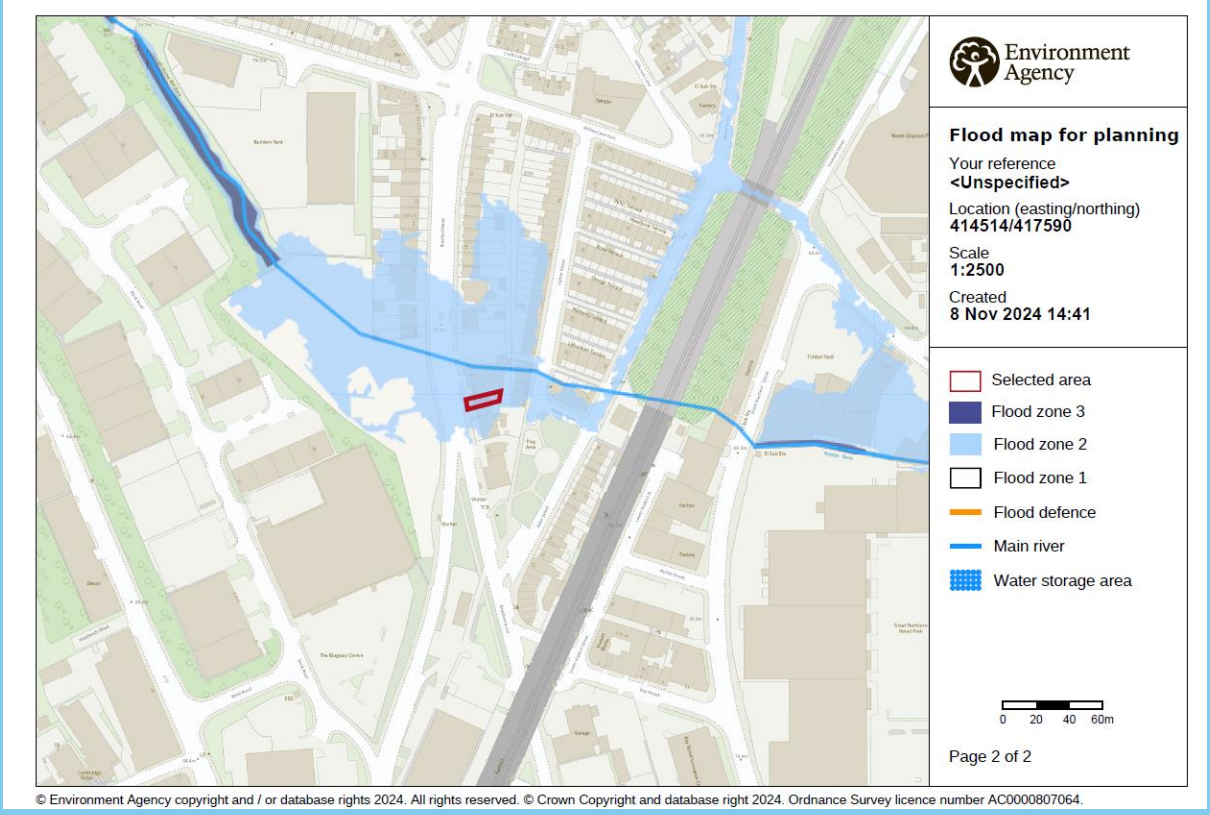


Fig 1

The surrounding area consists of residential properties, roads, watercourses, etc.. The site is situated in Flood Zone 2, which represents land with a medium probability of flooding (1 in 100 to 1 in 1,000 annual probability of flooding from rivers or sea).

3. Flood Risk Identification

Flood Zone 2 is designated by the Environment Agency as having a medium likelihood of flooding. This assessment will focus on the following key flood risks:

Fluvial Flood Risk: Flooding from rivers or streams.

Surface Water Flooding: Flooding due to rainfall and water runoff.

Flooding from Sewers: Potential for drainage systems to be overwhelmed.

Flooding from Groundwater: Potential flooding from underground water sources.

Flood Zone Map

Insert a copy of the Environment Agency's Flood Zone map for the site showing Flood Zone 2. (Fig 1)

The basement area, which is proposed to be used as bedrooms, will be particularly vulnerable to flooding. The development is therefore required to demonstrate that suitable flood risk mitigation measures are in place.

4. Flood Risk Assessment Methodology

The flood risk assessment follows standard methodologies outlined by the Environment Agency, the National Planning Policy Framework (NPPF), and Kirklees Local Planning Authority. The assessment includes:

Review of the site's location within flood zones, including analysis of the Flood Zone maps.

Assessment of surface water flood risk, using the Environment Agency's Risk of Flooding from Surface Water (RoFSW) maps.

Consideration of any history of flooding within the vicinity of the site.

Investigation of existing drainage infrastructure and capacity.

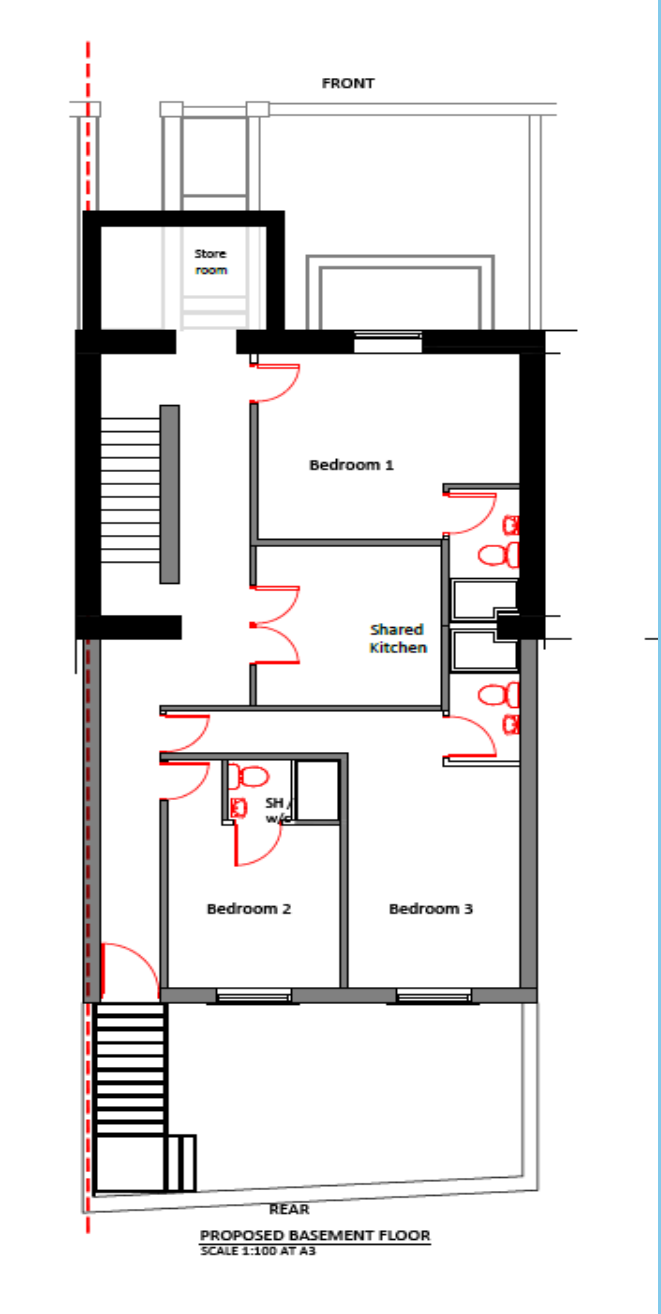
5. Proposed Mitigation Measures

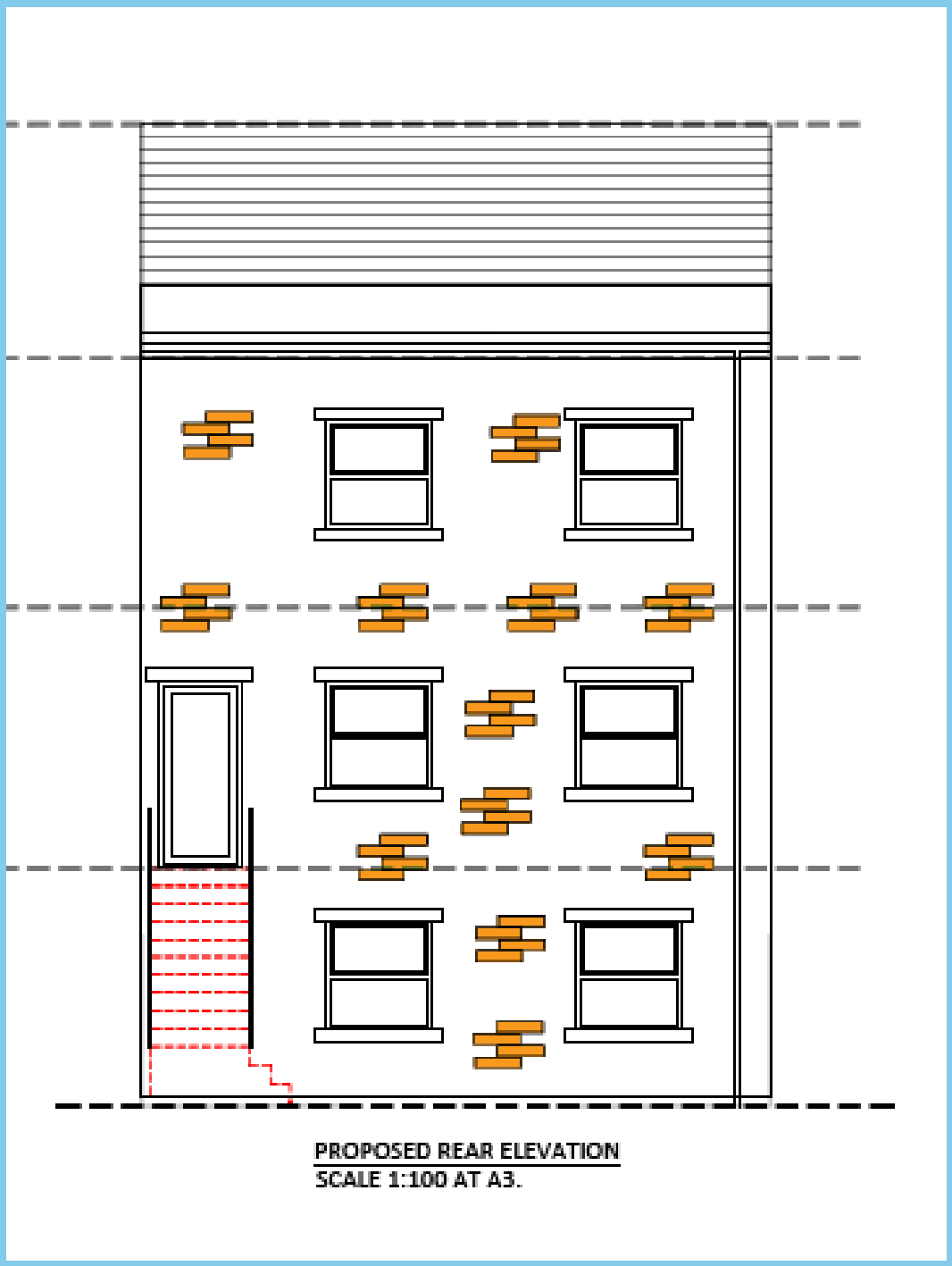
To mitigate the flood risk, several measures will be incorporated into the design of the development. These measures include:

Raising Finished Floor Levels (FFL):

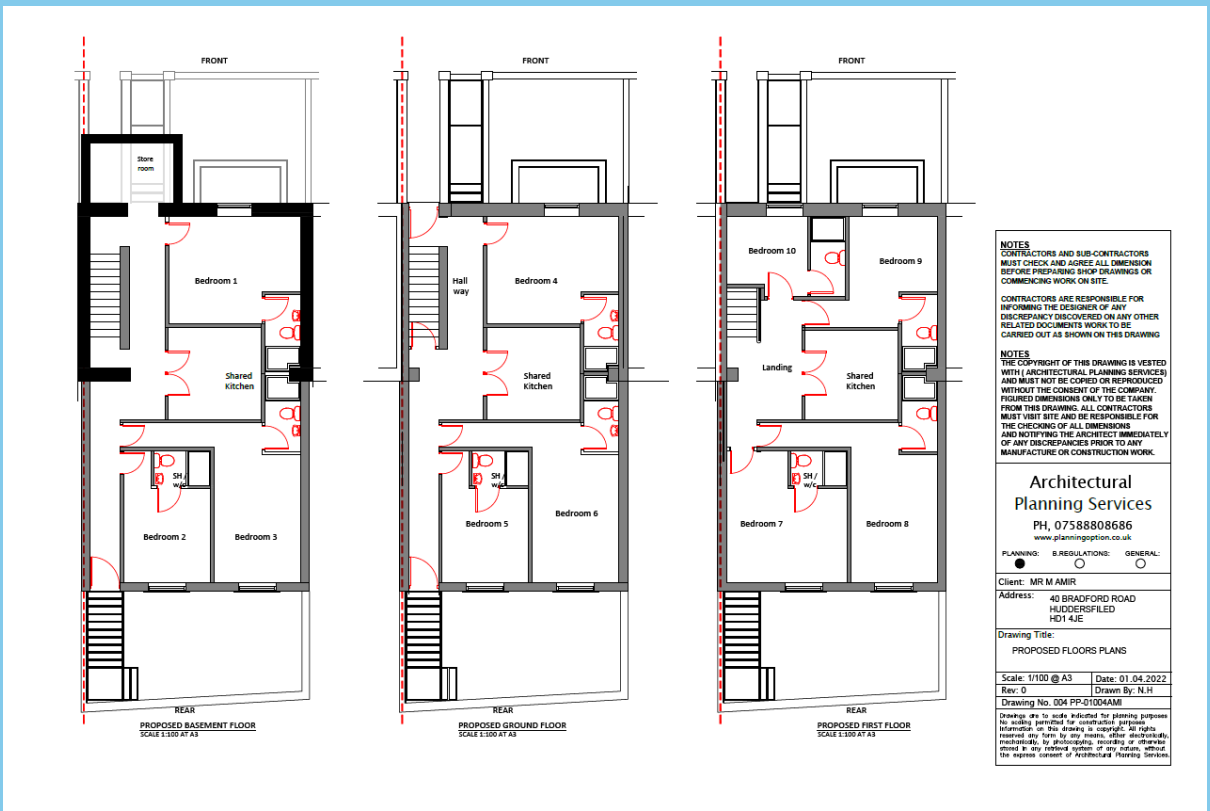
The basement level where bedrooms are proposed will have a finished floor level that is raised above the 1 in 100-year flood level (taking into account climate change allowances). This will reduce the risk of water ingress into the living spaces.

Illustration of Basement Layout with Raised Floor Level





PROPOSED REAR ELEVATION
SCALE 1:100 AT A3.



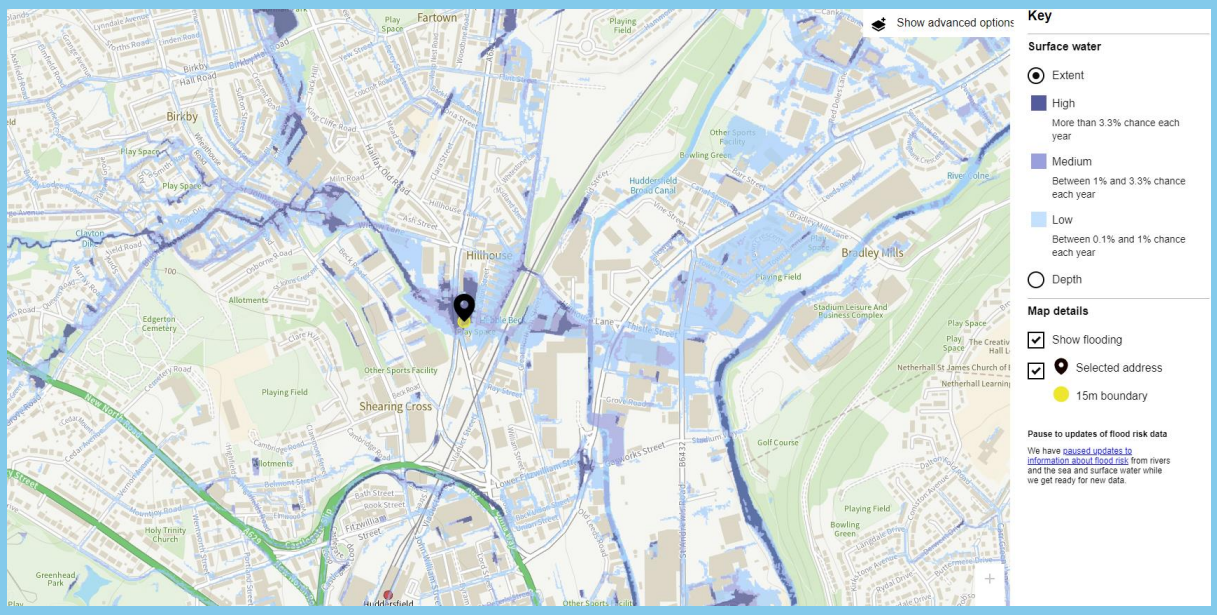
Flood-Proofing Measures:

The use of flood-resistant materials in the basement, such as waterproof membranes and non-porous materials, will prevent water penetration into the structure. In addition, flood barriers or flood gates will be installed at entrances and vulnerable points.

Sustainable Drainage Systems (SuDS):

Surface water runoff will be managed through the implementation of SuDS to reduce the risk of surface water flooding. Features may include permeable paving, rainwater harvesting, and on-site detention basins to slow the flow of water.

Illustration of Proposed Drainage Solutions



features proposed for the site, including attenuation ponds or permeable surfaces.

Flood Resilient Construction:

The development will follow best practice guidelines for flood-resilient construction, ensuring that the building materials and methods used will be suitable for flood conditions, minimizing damage in the event of a flood.

Safe Egress and Flood Warning Systems:

A flood emergency plan will be put in place, detailing escape routes and flood warning measures. Occupants will be informed of the flood risk and the actions required in the event of a flood warning being issued.

6. Residual Risks and Further Mitigation

Despite the proposed mitigation measures, residual risks may remain, particularly due to unforeseen changes in flood levels or extreme weather events. To address this, the following will be incorporated:

Ongoing Monitoring and Flood Warning:

The site will be registered with the Environment Agency’s Flood Warning Information Service (FWIS) to receive flood alerts.

Flood Risk Management Plan:

A comprehensive flood risk management plan will be implemented, detailing maintenance of the drainage system, inspection schedules, and emergency procedures in case of flooding.

7. Conclusion

This Flood Risk Assessment has demonstrated that, with the proposed mitigation measures in place, the risk of flooding to the site and the proposed development, particularly the basement bedrooms, can be effectively managed. The flood-proofing strategies and drainage solutions outlined in this document ensure that the development will comply with national and local flood risk management policies.

We trust that this report satisfies the requirements of Kirklees Council. Should you require any further information or clarification, please do not hesitate to contact us.