

Flood Risk Assessment

IN SUPPORT OF A STORE ROOM
Bolton-by-Bowland Village Hall.



Contents

1.0 INTRODUCTION

1.1 Site Details

1.2 Flood Risk

2.0 FLOOD DEFENCE ASSESSMENT

2.1 Present and Future Flood Risk

3.0 FLOOD RECORDS

4.0 SEQUENTIAL TEST

5.0 FLOOD PRECAUTION MEASURES

6.0 IMPACT ON SURROUNDING PROPERTIES

7.0 CONCLUSION

Appendix A – Location Plan, Plans & Images

Appendix B – EA Flood Hazard Maps

Appendix C – EA Flood Risk Assessment Report

Appendix D - Flood Warning and Evacuation Plan

1.0 Introduction

1.1 Site Details

Bolton-by-Bowland Village Hall
Main Street
Bolton -by-Bowland
Clitheroe
BB7 4NW

Grid Reference SD78524932

Flood Risk Zone 3

A site specific flood risk assessment has been undertaken to assess the flood risk to and from the proposed development. The proposed development is to provide an additional storage room for tables and chairs adjacent to the main hall.

A flood risk assessment is required as the site lies within the indicative flood risk area as detailed on the Environment Agency Flood Zone 3. It lies within the area benefiting from flood defences according to the EA flood risk map and information supplied.

The storage room will be accessed internally from the hall. There will be no external doors or windows.

The site is located immediately west of Kirk Beck. The minor tributary to Skirden Beck runs to the south to join Skirden Beck approximately

The Flood Risk and Coastal Change strategy defines Zone 3 as follows (Table 1):

Zone 3a High Probability

Land having a 1 in 100 or greater annual probability of river flooding; or

Land having a 1 in 200 or greater annual probability of sea flooding.

(Land shown in dark blue on the Flood Map)

The proposal is for the construction of storage, office and retail space within Flood Zone 3.

Table 2 of the Guidance provides the following uses within the '**Less Vulnerable**' classification.

- Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure.
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The requirements of the FRA are dictated by the zone in which the site lies as well as the use proposed. The Guidance provides the following within Table 3. The guidance indicates that the proposed 'Less Vulnerable' uses in Flood Zone 3a are **appropriate**. The Exception Test is not required.

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b 'Functional Flood plain'	Exception Test required	✓	✗	✗	✗

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

Proposed Development

The proposed development is to construct a 6.00m x 2.80m single storey extension to the eastern elevation of the existing village hall. The extension will link directly with the main hall by internal doors. There will be no external doors or windows.

The proposed building will provide storage for tables and chairs which are used for various functions within the hall. Currently these items are stored in an external store on the western side of the hall and involves negotiating a number of stairs. The existing store is approximately 900mm lower than the proposed building.

The proposed building will be built with rendered block walls and concrete floor in accordance with Approved Document C Building Regulations 2010.

No internal drainage is required.

Electrical fittings will be limited to lighting with control switches in the main hall.

The existing building floor level is 86.85m AOD. The finished floor level of the proposed building will be the same height.

Elevation drawings showing finished floor levels are attached as Appendix A.

The risk of flooding is fluvial from Kirk Beck.

Based on the Fluvial Flood Levels Map with an annual probability of flooding at the site of 1% shows an undefended level of <86.85m (finished floor level). Full details are provided in section 2.0 below.

1.2 Flood Risk

The site is located within the Environment Agency designated Flood Risk Zone 3a. The principle flood hazards are detailed below.

Tidal/Storm Surge: Low Risk: There is no risk of flooding from the sea.

Rivers: High Risk: The main risk of flooding is Kirk Beck which runs approximately 3.50m to the east of the current building.

The EA report provides historical flood data. Flooding occurred in the village in August 2004. The village hall was outside the flooded area.

Land: Surface water drains are limited to roof water. There is no history of flooding from surface water.

Groundwater: No risk: The Environment Agency's Groundwater Vulnerability Zone Map indicates that the proposed development sits within an area that is designated "Medium Low". There is no aquifer vulnerable to contamination.

Reservoirs: No risk. There are no reservoirs in the area that form a risk.

Sewers: The development will have no impact on the sewage system.

See Appendix B for EA flood hazard maps for Rivers and Seas and Surface Water.

2.0 Flood Defence Assessment

The site is protected by fluvial defences against Kirk Beck. Details of the defences with information on modelled flood scenarios is provided in the EA Flood Risk Assessment Report (FRAR) (Formerly Product 4) attached as Appendix C.

2.1 Present and Future Flood Risk

The FRAR provides details of the fluvial flood defence.

The flood defence is a wall. The height of the wall is AODm86.65. Condition is shown as fair.

Modelled scenarios are shown for:

- 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
 - Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change
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- Defences removed climate change modelled fluvial: risk of flooding from rivers where
- flood defences have been removed, including estimated impact of climate change

Modelled scenario	Extent AEP	Level
Defended	2%	86.32
Defences removed	2%	86.31
Defended + climate change	1% + 20%	86.35
Defences removed	1% + 20%	86.34

At a final floor level finish of AODm86.65 the proposed building will not be at risk of flooding in a 1 in 100 year event with + 20% climate change

A precautionary approach will be taken and flood mitigation measures have been incorporated and are detailed in section 5.0 below.

3.0 Flood Records

The FRAR data shows that flooding occurred in Bolton-by-Bowland Village in 2004. The flooding was within the western reaches of Main Street. The Village Hall was not within the flooded area.

The village hall has never been subject to flooding.

4.0 Sequential Test

The NPPG states that when applying the sequential test a pragmatic approach to the availability of alternative sites should be taken. It gives an example of a planning application for an extension to an existing business premises and suggests that it **might be impractical to** suggest that there are more suitable alternative locations for that development elsewhere.

Not all development is stand alone or involves a cleared site. As the NPPG suggests, in some cases developments may involve an extension to an existing use. A development proposal may also involve the intensification or partial re-development (in whole or part) of an existing use.

In such circumstances, and particularly where the proposal involves an existing business premises or operation, it may well be impractical to identify comparator sites. Where possible, and by reference to appropriate evidence, this should be agreed with the Council prior to the submission of a planning application. Where the Council does agree that it is impractical to identify comparator sites, applicants should still address this issue under the heading of “sequential test”, with appropriate evidence, such as a statement of operational circumstances, as part of the planning application.

Statement of operational circumstances

Bolton-by-Bowland Village Hall is used for a wide variety of community and private events. A number of events require tables and chairs (e.g Whist & domino drives, private functions etc). The current storage of tables and chairs is within an existing store room accessed from outside the building. This requires organisers to carry heavy items from the store to the hall, negotiating a number of stairs before an after the event. Health and safety is an issue particularly in adverse weather conditions (snow and ice).

The proposed development is to provide a store directly accessible from the main hall to avoid using an external store. The use of alternative premises outside the building is not practical and the test of impracticality is met.



5.0 Flood Precaution and Mitigation.

The following mitigation measures will be incorporated.

These include the following:

- Electrical services, wiring and switches will be positioned 600mm above floor level.
- Heating and ventilation installations will be wall mounted.
- A site flood emergency strategy will be introduced. This will included a named flood coordinator, actions to be taken in the event of flooding and emergency contact numbers. (Appendix 4)

6.0 Impact on Surrounding Properties

The Village Hall is the most southerly building within the village boundary. Kirk Beck flows to the south. There are no properties downstream of the hall. As a result there will be no impact on any surrounding properties.

7.0 Conclusions

The site is located within Flood Risk Zone 3 with an EA level of risk of high due to the threat of river flooding of a 1 in 100 year event. As a result additional mitigation measures have been provided.

Kirk Beck benefits from fluvial defences. This risk assessment has been based on an undefended scenario.

Climate change modelling data has been taken into account.

The site will not generate any increase in surface water drainage compared to the present use.

On this basis it is suggested that the site meets the requirements of the Technical Guidance
