

**73 Riverside, Low Moor  
Clitheroe**

**Domestic extension to  
existing house**

**Flood risk assessment**

**NGR SD 730 420**

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## **1.0 Introduction.**

The site is at the end of Riverside in Low Moor which is on the west side of Clitheroe. The site is next to the river Ribble and has existing flood defences. Extensions and internal alterations are proposed to the existing house. This report covers flood risks from all sources and new drainage.

## **2.0 Executive summary**

The site is an existing house that is to be extended. Riverside has a flood history and also flood defences. The extension is a two storey extension without any basement and is a 'minor extension' covered by Environment Agency standing guidance available on [www.gov.uk](http://www.gov.uk). Proposals need to be above 1 in 100 year risk levels plus 300 mm or if they are at the same level as existing they must incorporate flood resilience as per the 2007 Communities and Local Government report on flood resilience- the same level as existing plus flood resilience is proposed.

The site is floodzone 3a and flooded in 1980. Since then a flood defence scheme has been built and there is a flood defence wall to the rear of the property plus earth embankments upstream to the Ribble weir. The new roof drainage will connect into the existing house drainage. In the event of a flood occupants can go upstairs or leave the house by walking along Riverside and then uphill. A flood warning service is available for the area and the occupiers will sign up to receive warnings.

## **3.0 Existing site, flood risk, history.**

The existing Riverside houses are next to the river Ribble and the land area of no. 73 is approx 210m<sup>2</sup>. The existing house is a two storey building and is the northern end of a 4 unit terrace of houses. The site has been surveyed and garden levels are 51.7 to 51.8. The house has front and rear doorways and the step levels of these are 51.99 rear 52.00 front. To the rear of the houses is a flood defence wall with a top of coping level of 52.51 to 52.53.

Risk levels for the Ribble have been obtained from the Environment Agency (EA) also details of the local flood defences. The site is in between two nodes and Ribble risk levels next to the property are:-

1 in 100 yr- average of 52.67 and 51.94 = 52.31

1 in 1000 yr- average of 53.6 and 52.73 = 53.16

The EA data provided also included defence details i.e walls and embankments and there is a flood defence wall to the rear of the Riverside properties plus embankments on both sides of the Ribble from the upstream Ribble weir to south of Low Moor. The EA defence data lists defence standards and states a design standard for L32 'high ground' of 1 in 10 year for the defence between the houses and the weir. The risk levels and existing wall levels at the rear of 73 indicate a 1 in 100 year standard at that point. Based on the 1 in 100 year risk level of 52.31 and the house step levels of 52 the house is in floodzone 3a as floodzoning is mapped as if defences do not exist.

The EA supplied historic flood data for Ribble overtopping and gave dates of 26/10/2000 and 31/1 1995. An internet search also gave October 1980 from the Council website and a record photo of the 1980 Riverside estate flood.

The defence table showed a 1 in 10 year standard for L32 which is the Ribble embankment upstream of the house to the weir.

The Ribble catchment is approx 400 km<sup>2</sup> and extends north past Settle. The Ribble responds to long slow rainstorms of time length approx 15 hours so prolonged slow steady rain for nearly a day will produce high flows particularly if the catchment is experiencing a period of wet weather which saturates the ground.

#### **4.0 Proposals, existing & new drainage, flood resilience.**

The proposals are to build a two storey extension to the house with a footprint area of approx 30 m<sup>2</sup>. The new roof area will connect to the existing house drainage. The estate is known to flood and as the extension will have the same ground floor level as existing it will be built utilising 'flood resilient' techniques in accord with the May 2007 CLG report. The existing house has no air bricks so floodwater can only enter the house via the front and rear doorways or via backflow from the public drainage network over ground floor toilet pan rims.

Based on the 2007 report and Ribble risk levels we advise that a water entry strategy be adopted as potential flood depths could be over 600mm although this is a rare risk. The basics of this are:-

Front and rear doors to be Stormmeister or conventional uPVC with doorseals plus front and rear removeable 600mm depth floodgates and guides.

Lime plaster to internal walls to 1.5m up from the floor

New electric ground floor power sockets to be 750mm above slab level and on a separate circuit breaker.

Existing electricity meter, tails and consumer unit to be checked for height above ground floor. The proposals show a ground floor toilet pan and an emergency toilet pan sealer will be needed.

There will be a slight increase in hard drained area and during the detail design phase the garden areas will be assessed for soakage by means of percolation tests to see if the extra runoff can soak away.

The EA provide a flood warning service for Riverside and the house occupants should sign up to receive warnings. These are also available from Floodline by phoning 0345 988 1188, selecting option 1 and entering the quickdial number 02222213. If a warning is received or flooding starts to occur the walking route to higher ground is along Riverside and up the hill- see survey for road levels. A personal flood plan is attached for the applicant.

## 5.0 National Planning Policy Framework and Technical Guidance and EA mapping.

The proposed extension is classed as 'more vulnerable' in Table 2 and is 'appropriate' in floodzone 3a as per Table 3 subject to the exception test. However the proposals are a house extension and are covered by the guidance on [www.gov.uk](http://www.gov.uk) in the 'householder and other minor extensions in flood zones 2 and 3'. No basement is proposed.

Types of flooding that could affect the site are:-

1. River- the site is floodzone 3a below any local 1 in 100 year risk levels
2. Sea- no tidal influence
3. Land- no undrained land slopes towards the site.
4. Groundwater- no springs or weep areas on site
5. Sewers- there are no local internet reports of sewer surcharge.
6. Reservoirs canals- none nearby.

Environment Agency mapping is as follows:-

Flood map for Planning- the site is shown as floodzone 3a.

Risk of flooding from rivers and sea- this shows the effect of any flood defences.

Flood warning- a flood warning service is available from the EA.

Groundwater- the site is not in a groundwater protection zone.

Risk of flooding from reservoirs- this shows reservoir risk- all over 25,000 m<sup>3</sup> reservoirs are maintained to a 1 in 10,000 year risk standard under the Reservoirs legislation and this is a very rare and unlikely risk.

Risk of flooding from surface water- this mapping shows surface water flood risk. Pluvial mapping is the subject of a separate EA paper made public in November 2013 and is useful in locating possible ground low points and depressions. We quote- 'the conveyance effect of ordinary watercourses or drainage channels is not explicitly modelled'- the local EA mapping shows some ditch flooding and a low spot near the site, also that Riverside roadway ponds.

## 6.0 Attachments

Attachment	Number	Size
Location plans	1 to 4	A4
Land survey	5, 6	A3
EA risk level data	7, 8	A3
EA defences data	9, 10	A4
Proposals	11 to 13	A4
Flood resilience extracts	14 to 23	A4
Low Moor flood scheme	24, 25	A4
EA flood map for planning, flood warning	26 to 28	A3

EA risk from rivers, risk from surface water	29, 30	A3
FEH Ribble data	31, 32	A3
www.gov.uk advice	33 to 45	A4
Ribble Valley News extract	161124riversideA3	A3
Personal flood plan	46, 47	A4

This report is a copyright email report and is transmitted in less than 10mB amounts to avoid server rejection. Dropbox transmission can be arranged.

Email file list

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Should you need further data such as survey drawings please email [floodriskengineer@gmail.com](mailto:floodriskengineer@gmail.com)