3201711 57P

Flood Risk Assessment

42 Sarmatian Fold, Ribchester, Preston PR3 3YG

Location

Easting	364873
Northing	435456
Latitude	53.814192
Longitude	-2.534980

The property is approximately 30m (98ft) above sea level.

Development

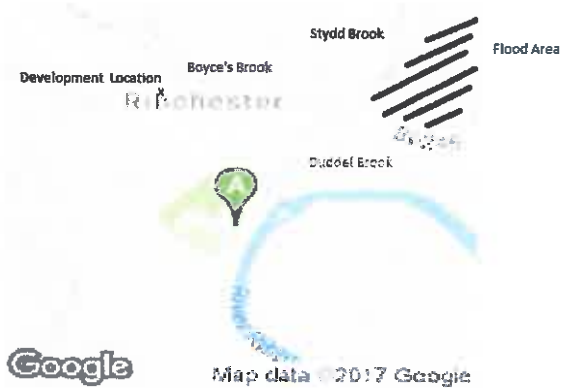
Single storey side extension to a detached dwelling house.
The dwelling house was built in 1994.

Flood Risks

The property is partially in Flood Zone 1 and partially in Flood Zone 2. As partially within Flood Zone 2 the land has an assigned annual probability of flooding between 1 in 100 and 1 in 1000. This is not unusual in the area. The Ribble Catchment Flood Management Plan 2009 says 'Approximately 6,400 properties across the catchment have a 1% chance of flooding from rivers or a 0.5% chance of flooding from the tide in any one year.'

Dangers From Rivers

One danger of flooding is from the River Ribble back-filling Boyce's Brook. Boyce's Brook is about 40 meters from the property. However, water tends to divert into a field adjacent to Stydd Lane, beside the Ribchester Arms, which is lower down the watercourse. This is at the confluence of Boyce's Brook with Stydd Brook and Duddel Brook. Duddel Brook continues into the River Ribble. The Environment Agency positions this house in the **Low Risk Category for Flooding from Rivers.**



Dangers From Surface Runoff

There is also a danger of flooding from surface runoff which tends to pool in the meadow behind the house. The original housing developer was aware of these risks and raised the houses above the level of the meadow. Thus, in extended periods of heavy rainfall, such as Christmas 2015, when parts of Ribchester were flooded, the flood meadow was underwater but the houses in Sarmatian Fold were not affected. Flood water would likely flow into Preston Road and down towards the Ribble before reaching a level that would intrude upon the property. The Environment Agency positions this address in the **Low Risk Category for Surface Runoff Flooding.**

Danger from Reservoirs

There is also a danger of flooding from Water Reservoirs in Longridge, particularly Spade Mill Reservoir, should they be broken. Such a situation would flood the whole village of Ribchester and is beyond the scope of any preventative steps that a domestic extension could reasonable take.

Climate Change

In respect of climate change, the Department of the Environment provides the following table https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

River basin district	Allowance category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
North West	Upper end	20%	35%	70%
	Higher central	20%	30%	35%
	Central	15%	25%	30%

The Environment Agency suggests that properties in Flood Zone 2 should 'use the higher central and upper end to assess a range of allowances'. However, it is important to note that the baseline for this table is peak river flow from 1960 to 1990. It seems reasonable to assume that by now, in 2018, some of the projected percentage increase in peak flow has already taken place. Indeed the first column stretches from 2015-2039. So, taking the Higher Central figure, a 20% increase from the baseline may have already taken place in recent peak flows. And a further 10% increase to 2069 or 15% increase to 2115 is a less dramatic prognostication than a casual view of the table may yield. Obviously a 70% increase as stipulated in the Upper End column is a worrying figure, but should peak flows increase by that amount a larger scale plan that covers the whole village and most of the Ribble Valley would be the appropriate response. Local solutions could involve deepening Boyce's Brook or providing a culvert to divert water through the village.

The Ribble Catchment Management Flood Plan 2009 calculates a 20% increase in peak flow in all watercourses to 2100. The predicted increase in flow can affect the frequency, timing, scale of flooding and the flood levels. One of its key messages for the Lower Ribble Area including Ribchester is that 'Flood risk is relatively low but will increase in the future due to the effects of climate change.'

The property still remains protected as the general water flow would be either down Boyce's Brook or Preston Road/Church Street and not through the higher land that the property occupies.

Section to show relevant position of land

Diagram not to scale

Height of wall without castellations from footpath side	115 cm
Garden side	75 cm
Difference	40cm
Fall of Garden from house towards wall	15cm
Floor level above adjacent ground level	13cm
Floor level above ground level (rear of property)	68cm
Estimated flood level from surface runoff during extreme event (two-yearly)	15cm
Existing and Proposed Floor Level approximately	53cm (530mm) above flood level

Flood resilience and resistance plans

The Environment Agency describes these terms as follows. 'Flood resistance, or dry-proofing, stops water entering a building. Flood resilience, or wet-proofing, accepts that water will enter the building, but through careful design will minimise damage and allow the re-occupancy of the building quickly.'

In order not to increase the flood risk to the property, the proposed extension will have the same floor level as the existing dwelling. Electric Outlets will be 450mm above the floor level as per current regulations.

The building will continue to have protection from surface runoff as provided by the original developer who raised the ground level above the flood meadow to the rear of the property. It may be possible to strengthen the garden wall to the rear of the property but such unilateral measures are unlikely to be successful without neighbours following suit.