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DEVELOPMENT BY DAVID WILSON HOMES AND TAYLOR WIMPEY HOMES AT WHALLEY ROAD, BARROW

FLOOD RISK AND SURFACE WATER DRAINAGE STATEMENT IN SUPPORT OF DETAILED PLANNING APPLICATION REF 3/2019/0012

1.0 INTRODUCTION

1.1 Lees Roxburgh have been instructed to prepare a flood risk and surface water drainage statement in support of the above application.

1.2 The proposed development occupies the southern area of a larger parcel of land which was granted outline planning consent at appeal in February 2014 ref 3/2012/0630/P.

The northern area of the site is currently being developed by Redrow Homes.

1.3 Rutter Johnson FRA and Drainage Strategy ref RJ-BL-FRA of May 2012 was submitted in support of the outline application at that time.

Since then, the role of Lancashire County Council as the Lead Local Flood Authority (LLFA) has been finalised in accordance with the Flood and Water Management Act 2010 and national and regional policy with respect to flood risk has developed.

This statement therefore sets out the scheme proposals in the context of current flood risk and surface water drainage policy for the application site.

2.0 FLOOD RISK

2.1 Reference to current flood mapping **(Figure 1)** identifies that the development area is located in an area of Flood Risk Zone 1.

Flood Risk Zone 1 comprises land assessed as having a 1 in 1000 or less annual probability of flooding (<0.1% in any year).

Figure 1: Gov.UK Flood Map for Planning

2.2 Reference to current surface water flood mapping **(Figure 2)** identifies isolated ribbons of risk associated with the various onsite ditch systems. This will be dealt with by the adoption of good engineering design and construction practice in setting development levels accordingly and ensuring any residual land drainage flows are safely conveyed through the development. In this regard, it is noted that development will inherently significantly reduce greenfield runoff.

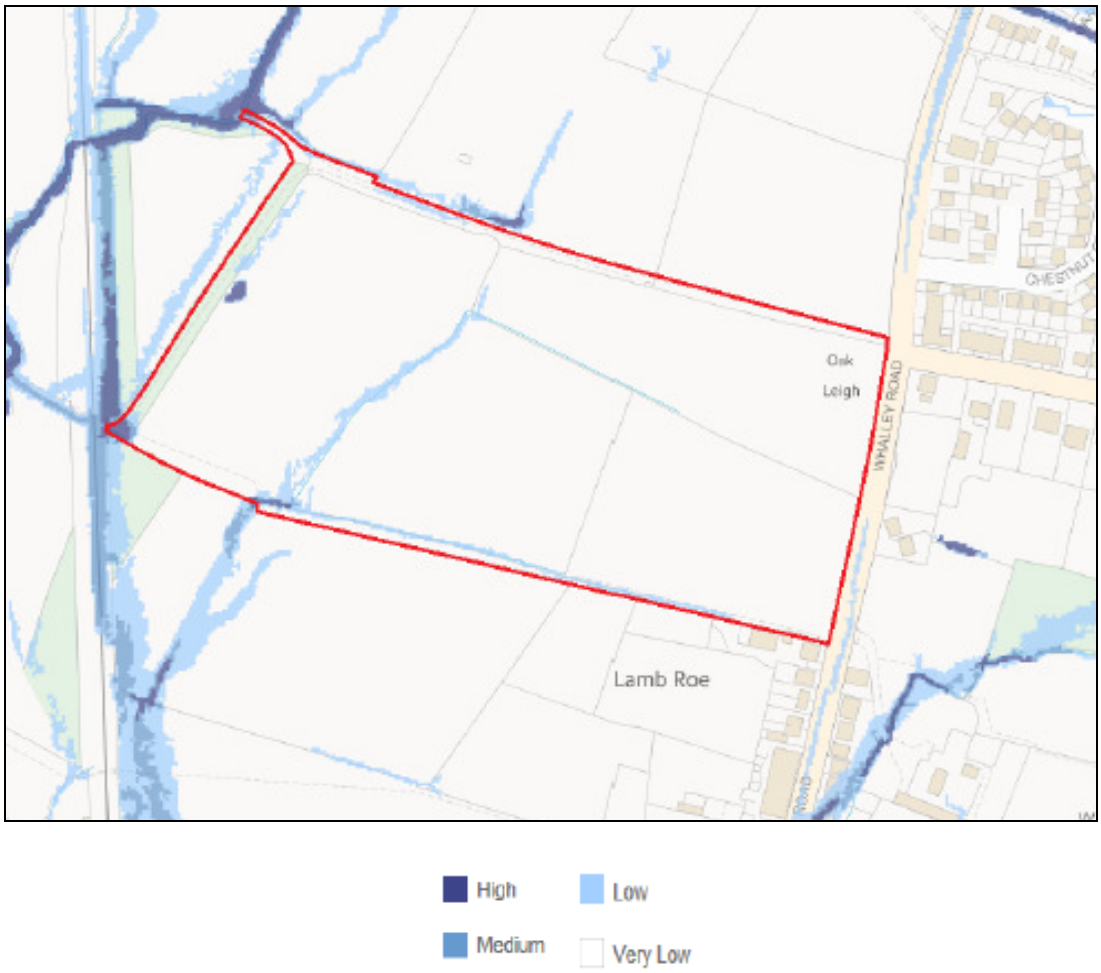

Figure 2: Gov. UK Flood Risk from Surface Water

2.3 The site therefore is not at risk of flooding from external sources with recorded localised surface water flooding within the site, inherently and substantially being dealt with by the development drainage system.

3.0 SURFACE WATER DRAINAGE

3.1 In undertaking the technical appraisal for the development, Lees Roxburgh identified;

Existing greenfield runoff rates based on the proposed developable area of 7.25 ha;

- Q_{bar}… 49.8 litres/sec
- Q_{30}… 84.4 litres/sec
- Q_{100}… 103.5 litres/sec

The Q_{100} rate is equivalent to 14.3 litres/sec/ha.

That connection to the surface water system designed and constructed for the northern phase would result in significant and unacceptable raising of levels to the low south west area of the site. On this basis, a second more direct outfall to Barrow Brook was required from this low area and indeed this better mimics greenfield runoff behaviour.

3.2 The flows between the two outfalls have been split as follows;

To northern surface water system;

- Q_1… 16.3 litres/sec
- Q_{30}… 21.7 litres/sec
- Q_{100}… 38.2 litres/sec

Balance direct to Barrow Brook;

- Q_1… 33.5 litres/sec
- Q_{30}… 62.7 litres/sec
- Q_{100}… 65.3 litres/sec

This approach is in accordance with that agreed on other sites in Lancashire by LCC LLFA and was approved for the Bloor Homes' scheme which outfalls into Barrow Brook just upstream of this development.

It is noted here that these proposals inherently achieve betterment in that flows up to the 1 in 100 year plus 30% climate change event will be contained onsite within the drainage system as compared with the existing situation whereby overland flows up to this design standard will flow overland uncontrolled into Barrow Brook.

3.3 The piped surface water system will be designed and constructed in accordance with Sewers for Adoption 6th Edition and submitted for adoption by United Utilities within an S104 agreement.

Overall surface water attenuation is being provided to contain flows up to the 1 in 100 year plus 30% climate change event.

4.0 EXISTING DITCHES

4.1 Reference to mapping identifies that the site itself comprises the primary source of land drainage flows within the existing minor ditch systems.

These flows will substantially be removed by the development proposals with surface water runoff being picked up by the development drainage system. Nonetheless, existing ditches will be retained and culverted as necessary at road crossings with proposals to be submitted to the LLFA for consent to the works.

5.0 CONCLUSIONS

5.1 It is concluded that the application site is not at risk of flooding from external sources and the surface water drainage proposals comply with Lancashire County Council LLFA policy with the proposed surface water outfalls and run off rates mimicking existing runoff arrangements all in compliance with the NPPF.

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