

Proposed Development at Clarks Mill & Mill House, Stallard Street, Trowbridge.

FLOOD RISK ASSESSMENT - (updated September 2022)

Introduction.

It is proposed to convert the buildings known as Clarks Mill & Mill House from commercial to a residential use. Part of the site lies within the flood plain of the River Biss. Any planning application, therefore, needs to be accompanied by a formal flood risk assessment in accordance with the requirements of the Government's National Planning Policy Framework (NPPF). This document fulfils that requirement.

The Site.

The site comprises a substantial plot of land off Stallard Street, Trowbridge. The subjects of the development are Clarks Mill and Mill House, both listed buildings, situated beside the River Biss. The site lies in an area with a general level of approximately 34.0m above OD, with the River Biss flowing alongside in a north-westerly direction. A partial topographical survey is available with levels correct to Ordnance Datum. The floor levels of the existing buildings are 34.61 and 34.67m above OD for Mill House and Clarks Mill respectively.

The Proposals.

Clarks Mill will be converted into 16 self-contained flats, for which planning permission and listed building consent has already been granted. The ground floor level had originally (historically) been raised by 200mm and the proposal under construction raises it by a further 200mm therefore some 400mm higher from the original ground floor level. There are no plans to alter the existing floor levels at upper levels with regards to flood risk, albeit the insulation and screeding for under floor heating has meant that all upper levels have been raised by circa 200mm. The ground floor, levels will be raised to 36.70 taking any risk of flooding away from the corner of Clarks Mill. The proposals include off-street car parking.

Mill House is a grade two star listed building that already has consent to convert and part re-build into residential accommodation. The latest application for Clarks Mill is to rebuild the bomb damage and re-create the original footprint. As this is partly new build the floor levels can be set at a height to avoid flooding and we suggest that be 36.00 OD at the threshold nearest the River Biss, well above the quoted 34.90 level quoted by the Environment Agency.

Environment Agency Information.

Current Agency website information shows that the site is within the 1 in 100-year flood plain of the River Biss. The site is shown to be at no risk of low order flooding events but may be susceptible to flooding from extreme events, with flooding in excess of 300mm. The Agency has provided modelled flood data for the site, contained in their report 29044-WX dated 6th December 2016. The data states that at the end of the life of the development, taking into account climate change, the 1 in 100-year extreme flood will reach a height of **34.90m** above OD in the vicinity of the buildings. The data was appended to the original report.

What This Means for the Development.

The ground floors of Clarks Mill buildings were previously at marginal risk of flooding during an extreme event on the River Biss. At the end of the life of the development, flooding to a depth of 300mm may be expected. Given that the ground floor levels of both Clarks Mill and Mill house are now above the 34.90 OD measurement then no flood risk exists. There is a high level of confidence in this data.

The residential accommodation in Clarks Mill, on upper floors, will remain risk-free for the whole of the life of the development. On the ground floor, the flood risk would have remained, albeit this has been recognised and raising the floor levels to **36.70m** above OD will mean that no flood risk now exists. With regards to Mill House ensuring that the ground floor at threshold fronting the River Biss is set at **36.00 OD** will also mean that Mill House is free from flood risk on an extreme event.

Residual Flood Risk.

In this instance, residual flood risk may be interpreted as that affecting the car park access and egress during extreme events. The still water flooding in the car park area is unlikely to represent a danger to life. On the site itself, the Agency data suggests current speeds of 0.25m/second. The Agency's FD2320 matrix states that there may be "danger to most" pedestrians in the grounds. This will especially affect children, the aged and disabled. Residual flood risk in the future may be managed by the adoption of an Emergency Flood Plan, should the LPA consider this necessary. The Flood Plan would be used to inform and advise occupants of the buildings what to do in the event of a severe flood warning. Whilst Stallard Street will flood to significant depths, there are other safe routes off the site.

Flood Resilience.

The NPPF requires that where a building is known to be in a risk area, flood resilience measures should be considered. These would normally include solid floors, water-resistant lower wall coverings and high-level electrical infrastructure. The conversion of these buildings provides the opportunity for flood resilience measures to be added. Flood resistance, in the form of barge-boards or other barriers may also be appropriate.

Raising the floor level of the ground floor of Clarks Mill to 36.70m OD and of Mill House to 36.00 OD and incorporating high level electrical fixings on the ground floor will enable occupiers to be safe from the risk of flooding.

In addition, a significant rain water gulley surrounds Clarks Mill funnelling any over flow water in the car park into these for storage and then slow seepage into the main drains when river levels drop.

In addition, the latest proposal for Mill House incorporates a stone wall along the already increased river bank, this work was undertaken by the EA in the 1980's, since that time no surface water flooding has occurred within the site. The height of the new stone wall will be built at a height of circa 800mm, the same height as the wall it connects to fronting Stallard Street. This will form an additional barrier for water should an extreme event occur.

Other Sources of Flood Risk.

The NPPF requires that the whole range of flood risk should be investigated, as follows: -

☐ Flooding from the Sea. Not applicable.

☐ Flooding from Rivers. This is identified as the major risk and is dealt with above.

☐ Flooding from Surface Water. The current Environment Agency mapping indicates that the area is susceptible to surface water flooding, mainly in the highways. The flooding will not affect the buildings.

☐ Flooding from Groundwater. The proximity of the River Biss may lead to artesian issue in this area. It is unlikely, however, that the buildings will be affected in any way.

☐ Flooding from Sewers. Stallard Street has a sewerage infrastructure. Surface water sewers may surcharge during extreme events. The risk is considered low.

☐ Flooding from Reservoirs, Canals etc. Not applicable.

Sequential and Exception Tests.

The Sequential Test is not appropriate to change of use provided the LPA is satisfied that the character of the buildings is retained. In this instance, the listing of the buildings is a material consideration and planning permission has been granted for the change of use to residential.

Conclusions.

Although the buildings on this site are within a flood plain, the low risk of flooding does afford the opportunity for a residential usage, especially as the ground floor level will be raised to 36.70m OD in the Clarks Mil development and 36.00 OD on the Mill House development taking all ground floors out of the risk area defined by the Environment Agency data including extreme events.

Specifically: -

- ☑ The site is within the flood plain of the River Biss.
- ☑ Environment Agency data suggests that the building on the site are safe from flooding during minor events, but become susceptible to rarer events, including the 1 in 100-year condition.
- ☑ Under extreme conditions at the end of the life of the development, the ground floors may flood to depths of 300mm, whilst the grounds will flood to perhaps 600mm. raising the floor levels to 36.70m OD (CM) and 36.00 OD (MH) will eradicate the risk of internal flooding.
- ☑ The conversion of these listed buildings provides the opportunity to adopt flood resilience Measures as detailed throughout this report.
- ☑ The upper floors accommodation in Mill House provides a safe haven for residents during a flood event. Therefore, the Residential accommodation in Clarks Mill is risk-free. The additional measures of a substantial gulley around Clarks Mill and the wall fronting the River Biss opposite Mill House will further safeguard the site from flooding.
- ☑ Safe access and egress for pedestrians can be achieved.
- ☑ Residual flood risk can be managed by the adoption of a Flood Emergency Plan.

End.

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