

From: Jon Phipps <j.phipps@lathams.uk.com>
Sent: Tuesday, 7 February 2023 3:31 PM
To: info@programmeofficers.co.uk
Subject: Places for Everyone (EiP) Robert Fletcher Paper Mill (JPA 15/GM 18)

Helen,
Further to our conversation earlier.
The flood risk work for the Robert Flecher Paper Mill, Oldham (JPA 15) was received on Friday evening by ourselves and OBC.
Having spoken to OBC this morning it was suggested that we should seek to opportunity to present this material to the Inspectors.
A summary email below sets out the key points.
The link should still be active should you wish to access the detailed reports.

Could you please advise whether this can be submitted?

Regards

Jon

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From: Rowan Arkley <rowan.arkley@rhdhv.com>
Sent: 03 February 2023 18:49
To: Elizabeth Dryden-Stuart <elizabeth.dryden-stuart@oldham.gov.uk>;
Georgina.Brownridge@oldham.gov.uk
Cc: john@purico.co.uk; Jon Phipps <j.phipps@lathams.uk.com>; Sophie Isaacs
<sophie.isaacs@rhdhv.com>
Subject: RE: Chew Brook Vale

Hello Liz and Georgina,

I just wanted to give you a very quick overview of the work undertaken and the general findings.

It is understood that the Greenfield Mill site is up for examination for redevelopment suitability and a total of 160 units is needed to make the site viable. The Site had a hydraulic model done on it by JBA however this model did not include many of the culverts/collecting boxes/lakes/buildings which are present on site. That JBA *did* include the Fletchers Brook watercourse (an ordinary watercourse),

starting above the treeline uphill of the Site and progressing down to the bottom of the site where it outputs into the Chew. Included in this model was the culverted section of the Fletchers Brook, which has a 300mm dia. intake at the Bradbury Lane/Hey Top houses. The JBA model shows extremely extensive flooding over the main development area and would apparently restrict the development potential to ~90 units.

Our new model takes this initial model and implements the various details which were missing. The results from this show that the Site still has extensive overland flooding although the overall volumes present in the main part of the site are reduced. The root cause for these results is that the 300mm dia. Fletchers Brook culvert is not sufficient to take the large flood flows coming down the hill and is rapidly overwhelmed.

A blockage sensitivity test was run where I blocked all of the pipe network by 50% and this showed negligible difference in the results even at the lowest return period run (5% AEP / 1in20 year event). Estimating using the hydrology results shows that the existing pipe network could cope with between a 50% to 20% AEP event (1in2 – 1in5). Much beyond this the pipes reach capacity and flow starts to flow overland.

The good news is that it should be possible to solve this issue with mitigation measures. The most attractive measure examined so far is to deculvert the Fletchers Brook pipe and install a naturalised two-stage channel which approximately follows the existing overland flow route. It is estimated that this channel would be approximately 10 metres wide at the top (although this measurement should not be taken as any sort of specific design standard). Creating a naturalised channel brings a number of benefits. This ~10m channel would be sufficient to fully contain the flood outline from the 0.1% AEP + 41% climate change event. Additionally there are potential amenity opportunities for the development. Finally, deculverting and naturalising the Fletchers Brook would allow the habitat creation.

In summary: There is an existing risk to the site, even after the introduction of the network of pipes and other details. However this risk can be entirely contained by the deculverting of Fletchers Brook and creation of a naturalised two-stage channel. The channel does not create a significant barrier to development on site and provides opportunity for both habitat creation and provision of amenity to the development.

I hope that this is all clear. If you have any questions, comments, or difficulties accessing the folder please just drop me a line and I'll be happy to help.

<https://royalhaskoningdhv.box.com/s/6l8hfi6icf6ym6xzuc1ldgchjk03umkz>

Kind regards,

Rowan Arkley MSc BSc

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