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Our Ref: GA/slh22504/171810
Your Ref: 16/1904/FUL

20 June 2017

Dear Mr Archer,

16/1904/FUL - Erection of Wooden Pedestrian and Cycle Bridge and Floating Pontoon. Yarm School, The Friarage, The Spital, Yarm, TS15 9EJ – Additional JBA Consulting Comments Review and Objection on behalf of the Minerva Mews Management Company.

Ardent Consulting Engineers has been commissioned by the Minerva Mews Management Company to review the above planning application and additional comments provided for a new footbridge crossing the River Tees in terms of the potential impact on flood risk within the area.

Introduction

We understand that JBA Consulting was commissioned by the applicant to undertake a Flood Risk Assessment (FRA) for a proposed footbridge at Yarm School (OS NGR 442080, 512680). The new Footbridge is located across the River Tees at the Heritage Park Corridor. Part of the footbridge access ramp/staircase will be located in Flood Zone 3. Flood Zone 3 is defined as having a greater than 1 in 100 annual probability of flooding from rivers or the sea.

A first review was conducted in May 2017 and an objection report¹ was produced outlining concerns about the above planning application in relation to increased flood risk to the surrounding properties. Lichfields, in consultation with JBA Consulting, has provided additional information in their letter dated 25 May 2017². The key items discussed in the letter from Lichfields are as follows:

- The bridge piers have been included in the hydraulic model and the modelling carried out represents the footbridge completely;
- There is a 35mm increase in predicted flood levels for the 1 in 100, including 20% climate change, event upstream of the proposed Bridge. The difference in predicted flood levels increases to 54mm for the 1 in 100, including 30% climate change, event at the proposed bridge;
- The maximum depth difference within the floodplain is 30mm for the 1 in 100 including 20% climate change, event; and
- The entire bridge is elevated above the flood level for the 1 in 100 year event.

¹ Letter reference GA/slh22151/171810 produced by Ardent Consulting Engineers in May 2017

² Letter reference 23048/HE/Abo/14077401v1 produced by Linchfields in May 2017



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We note that the applicant re-iterates that the Environment Agency have raised no objections to the proposed development. However, we respectfully disagree with this assessment.

Flood Risk Assessment and Additional Information Review

We have reviewed the additional submitted information and expanded on our previous concerns with the assessment which should be addressed by the applicant. Our primary concerns around the increase in flood levels within the river reach as well as within the flood plain affecting residential properties.

Based on the additional information provided by the applicant, the hydraulic modelling shows an increase of 35mm in predicted flood levels for the 1 in 100, including 20% climate change, event upstream of the proposed Bridge. This results in a 30mm increase in predicted flood depths within the floodplain. However, as stated in our previous correspondence, we consider that the 30% climate change projection (Upper End) should be used for assessing the proposed development due to the vulnerability of the upstream land uses (i.e. residential properties)

The difference in predicted flood levels increases to 54mm for the 1 in 100, including 30% climate change, event (at the bridge) which is significant in areas with residential development. The predicted increase in flood depth within the floodplain has not been provided by the applicant, for this event. It is therefore unknown how many properties are affected from the construction of the footbridge during the 1 in 100, including 30% climate change, event. However, based on the increase in predicted flood depth within the floodplain for the 1 in 100, including 20% climate change, event mentioned in the above paragraph, it can be concluded that the increase for the 1 in 100, including 30% climate change, event will also be significant.

As stated in our previous response, the applicant should undertake a survey of residential property thresholds and use this to assess the impact of the flood level increase compared to residential properties within the area affected. It is considered that a 54mm increase in flood depth will significantly impact on the residential properties upstream of the proposed foot bridge.

JBA Consulting confirmed that the entire bridge is elevated above the 1 in 100 year event. However, since the suggested design event is the 1 in 100, including 30% climate change, we would expect confirmation that the entire bridge soffit level is also located above this event. We would also like to know the freeboard (if any) along the entire span of the footbridge for this event.

Conclusions and Recommendation

In order to assess the effects of the footbridge on flood risk the Yarm School Footbridge FRA prepared by JBA Consulting in March 2017 and the additional information provided in May 2017 were reviewed by Ardent Consulting Engineers. It is concluded that there is a significant increase in predicted flood levels (54mm for the 1 in 100, including 30% climate change, event at the bridge) particularly given the presence of residential development within close proximity of the proposed footbridge.

We would therefore suggest the following:

- Provision of the maximum increase in predicted flood depths within the floodplain for the 1 in 100, including 30% climate change, event;

- Provision of a map showing the difference between pre and post development flood levels for the 1 in 100, including 30% climate change, event in order to identify which properties are affected by the proposed bridge;
- Property threshold survey and assessment against flood levels in order to assess the consequences and quantify the flood risk to existing residential properties; and
- Confirmation that the entire bridge soffit level is located above the 1 in 100, including 30% climate change, event along with the freeboard (if any) across the entire span of the proposed footbridge.

On the basis of the above we do not consider that the Flood Risk Assessment, or subsequent information, provides an appropriate assessment of the flood risk posed by the proposed footbridge. We therefore recommend that Stockton-on-Tees Borough Council **refuse** this planning application on the grounds of increased flood risk to the surrounding properties.

Yours sincerely



Brian Cafferkey
Director