

Manor Road, Richmond

Addendum Flood Risk Assessment

6th September 2023

Document Status

Rev	Issue Status	Prepared / Date	Checked / Date	Approved / Date
0	First Issue – For Comment	S.Mirams / 06.09.2023	S.Mirams 06.09.2023	S.Mirams 06.09.2023

1 Introduction

- 1.1 The Addendum Flood Risk Assessment report has been prepared in response to comments made by AECOM on behalf of the Greater London Authority (GLA) in response to documents submitted and a meeting held between Avanton Richmond Developments (applicant), Avison Young and Hydrock via teams on 5th June 2023. This meeting was to discuss previous consultation comments received from GLA but focused on the previously submitted Flood Risk Assessment (25608-HYD-XX-XX-RP-FR-0001 P04, dated: 24/03/2023) that was prepared by Hydrock.
- 1.2 Further to this, Brookbanks were appointed to complete a review of the modelling works undertaken and the accompanying technical note submitted on 12th July 2023, which addressed the latest comments provided by Great London Authority (Ref: Manor Road: Stage 3 Comments (20-06-2023)). Following submission of this technical note a further meeting was held between GLA, AECOM, Avison Young and Brookbanks (5th September) to discuss the note.
- 1.3 As part of this meeting it was agreed that an Addendum Flood Risk Assessment would be produced based on additional modelling and the discussions. It was agreed that this Addendum would supplement the previously submitted Flood Risk Assessment document (14075-HYD-XX-XX-RP-FR-0001 P12, dated: 04/04/2023) and as such, would only highlight where changes had occurred. For completeness the below follows the same headings as those within the submitted Flood Risk Assessment but only where changes have been made.

2 Updates to Policy

- 2.1 The policies stated within the previous FRA remain unchanged and therefore these have been used to assess the application.

- 2.2 Through consultation responses and meetings, no reference to any updated (or soon to be updated) policy has been made by GLA or AECOM which confirms that no further updates are required.

3 Site Information (inc. Planning History)

- 3.1 These are unchanged from the previously submitted report with no changes having been made to the application boundary or the description of development– i.e. *Demolition of existing buildings and structures and comprehensive phased residential-led redevelopment to provide residential units (Class C3), flexible commercial, business and service uses (Class E), provision of car and cycle parking, landscaping, public and private open spaces and all other necessary enabling works.*
- 3.2 The planning history for the site remains unchanged with the exception of further discussions and consultants which has been summarised within the introduction to this note.

4 Sources of Flood Risk

Fluvial / Tidal

- 4.1 As detailed within the previous FRA the site is located entirely within Flood Zone 1 and assessed as land having a $\leq 0.1\%$ AEP of fluvial or tidal flooding in any given year, equivalent to the $\geq 1,000$ yr return period flood event.
- 4.2 On review of all available information this position is unchanged and the site remains as being at 'low' risk from these two sources of flooding.

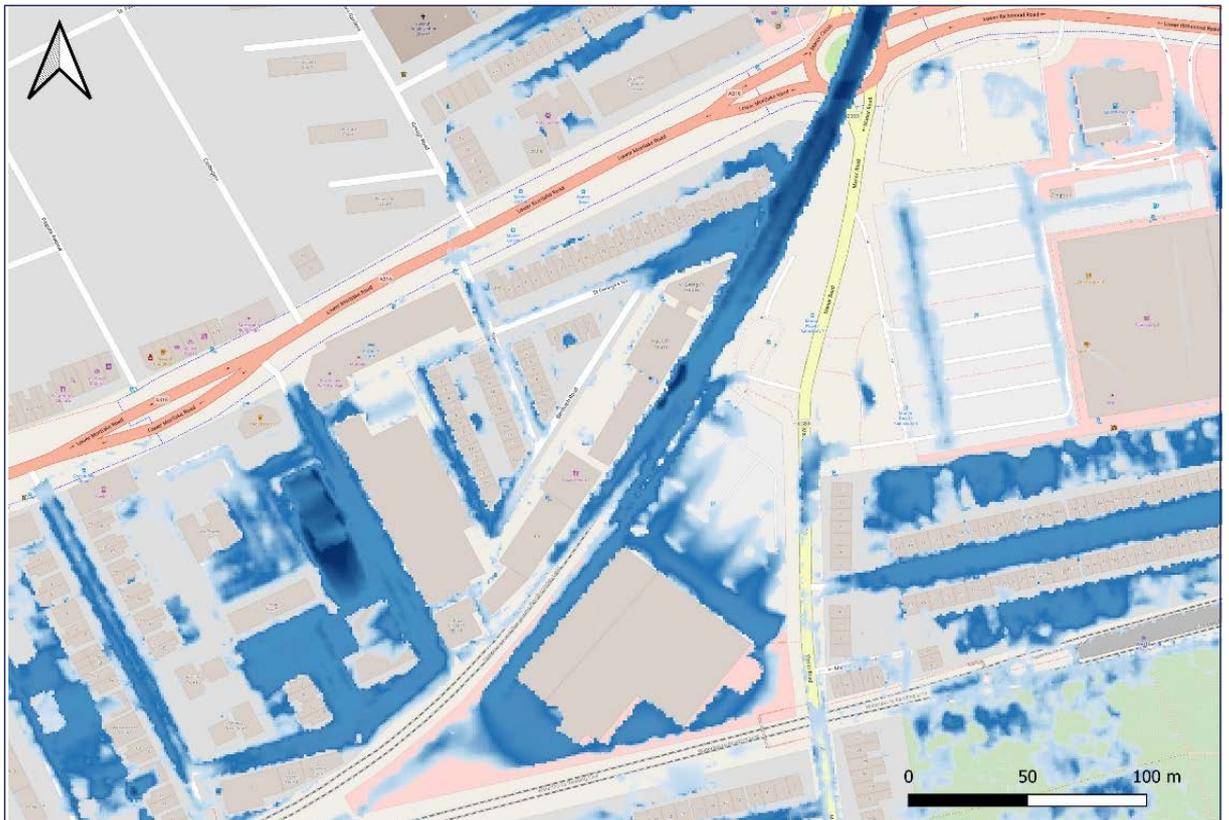
Surface Water

- 4.3 The previous Flood Risk Assessment was supported by detailed modelling in order to confirm the existing surface water flood risks to the site and the surrounding area. It is noted that this modelling, at the request of the GLA, followed the Environment Agency's preferred modelling methodology and did not include any drainage networks (i.e. sewers, tanks etc) when assessing the existing risk.
- 4.4 This was recognised within the Hydrock report and the conclusion determined that the site predominantly is at 'Low risk', with some isolated patches of medium risk within the south of the site and along the north west boundary associated with the railway line. There are some 'high risk' areas around the edge of the building which is referred to as being 'excessive'.
- 4.5 The Hydrock report continues to explain that detailed modelling has been undertaken to confirm the existing risk, but also to assess the impacts of the proposed development and what, if any, mitigation would be required in order to ensure the development remains outside the risk of any flooding. The modelling undertaken by Hydrock provided outlines that differed from the existing flood mapping. The modelling undertaken demonstrates that the site lies within a key surface water flow route. This flow route occurs across a wide range of events and enters the site on the southern boundary and flows around the existing building in a northerly direction and exiting the site via the railway line along the northern boundary. The modelling showed approximate flood depths to a maximum of 450mm within the site boundary and up to 1000mm along the lower elevated section of railway line to the immediate north of the site. These depths are taken from the Hydrock report and are for the 1 in 100 year plus climate change rainfall event. It is noted that post submission,

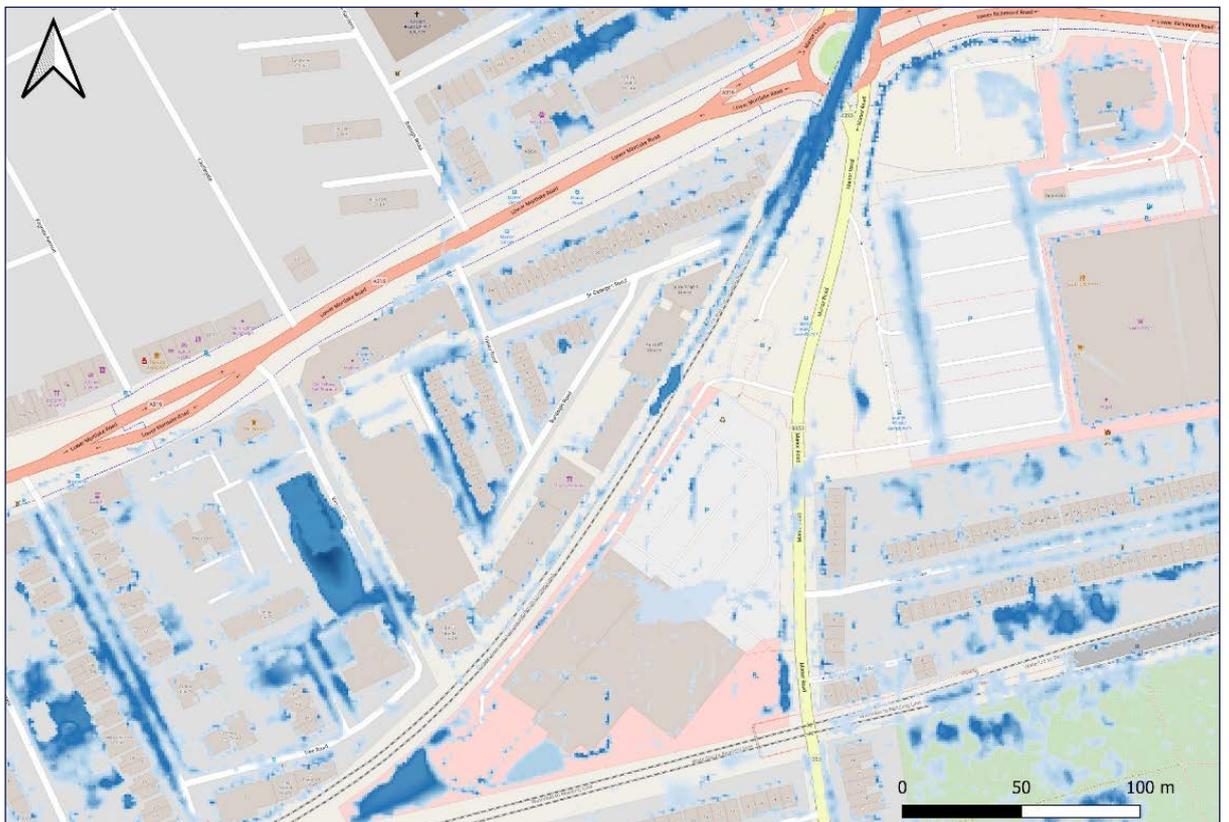
the GLA have approved this modelling for use. Given no alterations in the topography of the site or surrounding area, or modelling methodologies, the approved status is unchanged.

- 4.6** Within the previous Flood Risk Assessment details are provided of 'post development' scenarios that have been modelled. These scenarios include the proposed development buildings and proposed ground levels (both raising and lowering) to determine what impact this has on the identified surface water flooding and flow route through the site.
- 4.7** This post development scenario showed the proposed development scenario resulted in no internal flooding of the proposed development scenario but did result in an increase in flood depths to third party land. This increase, of 17mm, is shown to occur along the railway line on the northern site boundary.
- 4.8** During consultation GLA and AECOM have raised a concern in relation to this increase being unacceptable and exceeding the industry standard modelling tolerance allowance of 10mm. It is noted that further technical notes have been provided but the LLFA's position remains unchanged and they would not be accepting of any offsite increase in line with policy requirements.
- 4.9** Further to the Hydrock modelling works and the consultation responses, Brookbanks have undertaken a further post development modelling scenario with a view of reducing / removing the off-site increase in flood depth. The approach for this scenario was to include the proposed surface water drainage strategy for the development into the model to understand what impact this has. The provision of the proposed drainage features is secured by planning condition and therefore must be delivered as part of the development. Consideration was given to include drainage within the wider area (i.e. surrounding road network) but to avoid any deviation from the EA's preferred methodology this was not progressed. Additionally, any off-site drainage network would be out of the site occupiers control and therefore it would not be their responsibility for management and maintenance and assurances couldn't be provided. On this basis, and to adopt a conservative approach, the sewers were assumed as 'full' for everywhere with the exception of the site.
- 4.10** In order to achieve this the proposed attenuation tanks and proposed sewer network (as per the submitted drainage strategy document) were built into the model. The boundary condition for this was modelled as a pumped system again to ensure consistency. Owing to a lack of available data no off-site drainage was included.
- 4.11** The outputs from this scenario demonstrate that when including the onsite drainage the flood extents and depths are significantly lower from the baseline scenario AND the 'no drainage' post development scenario details. To illustrate this the below figures both the baseline and the 'post development drainage' option. As can be seen there is a significant reduction and specifically to and along the railway line.

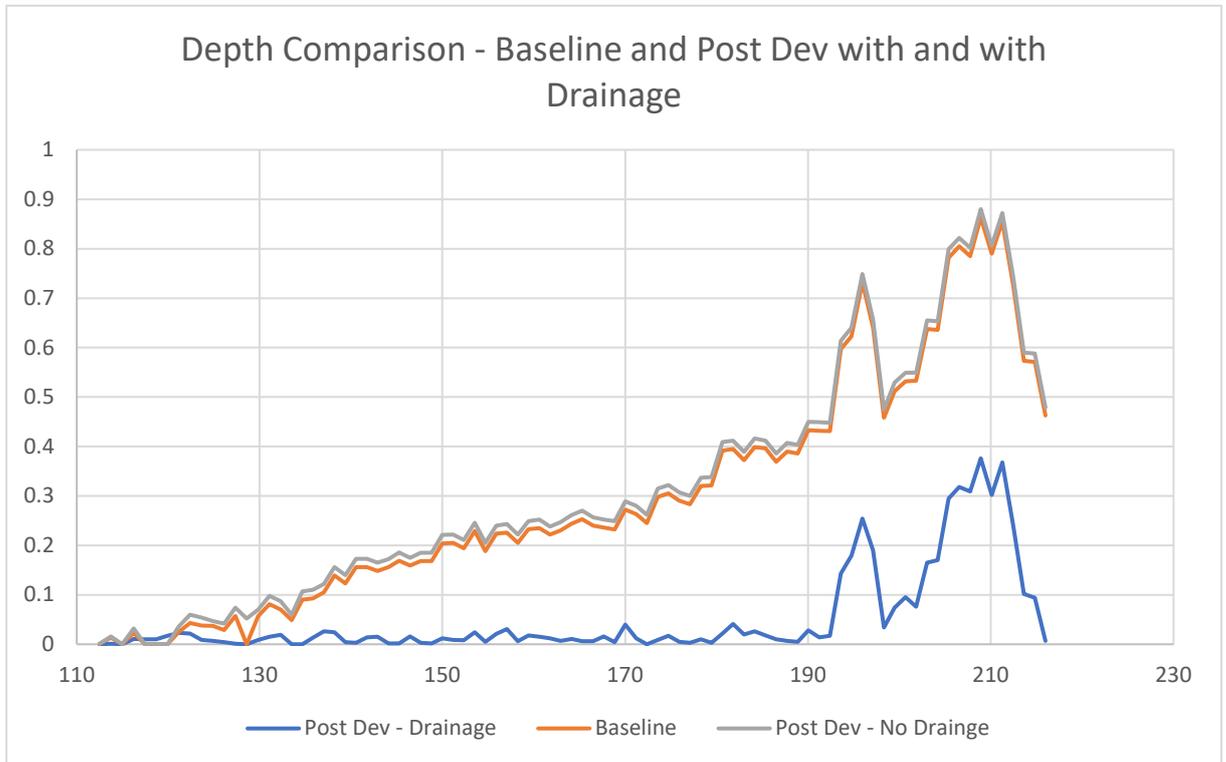
Baseline



Post Development with Drainage



4.12 On comparison of predicted flood depths the on-site drainage results in a significant betterment and removes vast areas of flooding from the adjacent railway – with a maximum decrease compared to baseline of circa 250mm. It is reiterated that this difference is only when including the proposed site drainage and does not include any existing Thames Water sewers serving the surrounding area so would maintain as given conservative outputs. Along with the outlines a comparison graph showing the difference between the three events is shown below. These values have been taken running west to east along the railway line for the length of the site boundary.



4.13 During the meeting held on 5th September, AECOM stated that there were accepting of the above option given that there was no detrimental impact as a result of the development and actually a significant increase.

Groundwater Flooding

4.14 There has been no changes in the classification or risk to the site with respect to groundwater since the Hydrock report and therefore the risk to the site is unchanged and remains acceptable.

Sewer and Infrastructure Failure

4.15 There has been no changes in the classification or risk to the site with respect to this source of flooding since the Hydrock report and therefore the risk to the site is unchanged and therefore remains as being acceptable. This element has been further reinforced by Hydrock preparing a Flood Evacuation Plan in order to provide details of what occupants are to do in the event of any such breach of the upstream basins.

5 National Planning Policy Framework

Sequential Test

- 5.1 The additional modelling works undertaken has resulted in no change in the classification of the development site with respect to planning and therefore the submitted Hydrock Sequential Test document (25608- HYD-XX-XX-RP-FR-0001) remains unchanged.

Exception Test

- 5.2 Again, the classification and general recommendations for the site (Finished Floor Levels etc) are unchanged. These were shown as being acceptable within the Hydrock modelling and this remains the case. The only difference is that the latest modelling concludes that once built the proposed development and its drainage network would provide a significant increase in available storage and therefore, and unlike the previous modelling, would result in a **betterment** to third party land.
- 5.3 The above confirms that suitable design measures have been put in place (and are unchanged from previous submissions) such that the development is safe both now and across its design life but it also results in a reduction in flood depths to third party land – which is above and beyond the requirements.

