

No.	LLFA Objection	AECOM Response
1	<p>Provision of evidence to show the surface water flood risk noted within the Flood Risk Assessment (FRA) will not impact the extension. This may include consideration of ground levels around of the existing and proposed buildings, access points to buildings and how the existing drainage network will interact with the new extension (e.g. surcharge of a network designed to out of date standards). As no updated Flood Risk Assessment has been provided, this point remains outstanding.</p>	<p>Volumetric survey has been completed to review existing flood risk and assess/mitigate impact from proposed development. (Section 3.5). Proposed valley will provide 175mm of freeboard for the proposed development.</p>
2a	<p>Evidence of how the Drainage Hierarchy was applied in line with the Defra Non-Statutory Technical Standards, industry best practice and HCC SuDS Policies within the Local Flood Risk Management Strategy 2 (LFRMS2). This includes evidence on why infiltration is not possible for the extension drainage network, such as evidence of ground conditions / underlying geology and permeability including BRE Digest 365 infiltration tests as referred to as undertaken for the site in the submitted Flood Risk Assessment. Further evidence demonstrating consideration of any ground contamination or source protection zones which is highlighted by the Environment Agency to prevent infiltration and deep infiltration soakaways as a surface water drainage disposal location. We note that Thames Water have highlighted there are capacity issues in the sewer system due to ingress of groundwater. Therefore, further information and evidence identifying the site-specific groundwater levels.</p>	<p>Additional information provided regarding Drainage Hierarchy, and further information following additional GI and correspondence with Affinity water included. (Sections 2.2 and 3.2)</p>
2b	<p>Provide evidence of the pre and post development runoff rates and volumes and how these rates and volumes are calculated. This would include pre-development greenfield runoff rates and volumes.</p>	<p>Pre- and Post-development runoff rate and volume calculations have been included in the report (Appendix C). Additional explanation provided in Section 3.3</p>
2c	<p>For a full planning application the quick storage estimate is not acceptable. Detailed calculations for pre and post development runoff rates and volumes should be evidenced. We require the discharge is limited to greenfield runoff rates and volumes unless discharge rates lower than the greenfield rates are required to prevent surcharge of the existing drainage system. Evidence of this assessment should be submitted. The Quick Storage Estimate in Appendix C of the Drainage Strategy uses FEH 1999 rather than FEH 2022 and uses an impermeable area of 1.6 ha when the area within the site boundary equates to 1.38 ha. The LLFA requires the proposed design calculations to be updated.</p>	<p>Quick Storage calculations have been re-run using InfoDrainage 2024 to incorporate FEH 2022 data, whereby these are used to inform the drainage strategy. However, full drainage model has been run with provided attenuation capacity to ensure it is suitable. Impermeable area updated to be consistent within the Drainage Strategy report.</p>
2d	<p>A full detailed drainage layout plan showing the proposed SuDS features, any associated manhole cover and invert levels, proposed ground levels, pipe sizes and gradients, all online controls, online and offline storage structures, water quality mitigation and outfall details has been provided however, based on the proposed phasing plan (Drainage Strategy Figure 2-3) it is unclear whether all relevant areas are included in the proposals in the Appendix D. We await clarification and recommend an impermeable areas plan is prepared.</p>	<p>Impermeable Areas Plan provided in Appendix D (Drawing ESL-ACM-XX-ZZ-DR-C-0520), with additional explanation provided within Section 3.4.</p>

2e	<p>Provision of supporting calculations to demonstrate there is no flooding of the drainage network at the 1 in 30 year rainfall event and that no flooding occurs of building at the 1 in 100 year plus climate change event. All supporting calculations and modelling scenarios should use FEH2022 rainfall parameters and include a summary of results, showing all the modelling criteria and summary network results for critical design storm events. The results will show maximum water level, flow and velocity. Currently, the calculations have used the outdated FEH and are only provided for the 1 in 2 year, 1 in 30 year plus climate change and 1 in 100 year plus climate change. We require the standalone 1 in 1 year, 1 in 30 year and 1 in 100 year in addition to those previously mentioned. We also require pipe lengths to be included in the calculations to be able to correlate with the drainage drawing to ensure the system, is not over or underestimating storage. We await further information.</p>	<p>As agreed during meeting with LLFA on 25/05/23, 1 in 1 year storm event calculations will not be included due to drainage modelling software unable to model the storm event using FEH2022 data set. 1 in 2 year storm event was the minimum storm event modelled. Pipe lengths now included in modelling results.</p>
2f	<p>The applicant shall provide comment to demonstrate as to how freeboard has been provided to any finished ground floor levels of buildings or essential infrastructure (e.g., plant rooms). This shall be added to the drainage drawing. We await further information.</p>	<p>This is now added in Section 3.5. 175mm freeboard has been provided to mitigate exceedance flows.</p>
3	<p>A Phase 1 Geotechnical Desk Study Report has been provided. Section 9.3.4 of the Drainage Strategy states that two infiltration tests were carried out during the 2006 investigations leading to the conclusion they are potentially unsuitable for the use of soakaways but that this will need to be further examined by carrying out more infiltration testing during the new ground investigation. The LLFA requires these further results to be submitted as previously discussed.</p>	<p>Additional correspondence with Affinity Water and further GI results provided. Although GI results indicate adequate infiltration results, soakaways are not to be utilised due to Affinity Water guidance.</p>
4	<p>A plan showing exceedance flood flow routes in the event of a failure of the drainage system or storm event in excess of the 1 in 100 year return period with an allowance for climate change has been provided. This has been provided however, the drawing incorporates a 'proposed valley adjacent to footpath to protect buildings and convey overland flows within the site'. We require further information on what this valley is, its proposed design, its topographic levels and whether it is a low point in the site. Additionally flooded volume is present in two areas of the access road, the applicant shall state how this is to be mitigated and managed on site and how long the access road is likely to remain flooded for.</p>	<p>This is now added in Section 3.5. 175mm freeboard has been provided to mitigate exceedance flows. Flooded volume present on the roads has been identified as only contributed to by the existing drainage network, with no additional volume added by the proposed network.</p>

5	<p>We require clarification on why the permeable paving along the road is broken up into two sections given the topographic survey does not highlight any steep area. We require justification why permeable paving cannot be used throughout the whole of the proposed internal road to add an additional layer of treatment. We require the application to provide clarification on the levels of treatment for the proposed road which ties into the existing road to the west and south of the site. Additionally, the applicant shall provide detailed engineering drawings for the proposed site which includes each of the proposed drainage elements.</p>	<p>Additional permeable paving has now been provided between the original two sections. However the effective storage of this section is considered negligible, in accordance with SuDS manual guidance. This also applies to other non-permeable paving sections of the road, due to restrictive gradients. Further sections of road are to remain as existing, and therefore have not been incorporated as part of a permeable paving network. All surface water drained by the proposed network will pass through the downstream defender, which will provide sufficient treatment for the pollution indices present on site. Further information can be found in Section 3.6.2.</p> <p>Detailed engineering drawings will be provided as part of further detailed design stages.</p>
6	<p>We require details of the proposed construction phase drainage control measures to ensure that during construction, and prior to the main drainage system being installed and operating, that there is no increase in flood risk to adjacent properties or the public highway or pollution generated. These proposals must consider a reasonable plan of how water will be managed and consider where the most vulnerable receptors are e.g. adjacent dwellings or the water environment.</p>	<p>This is to be conditioned.</p>
7	<p>We require confirmation of the proposed maintenance activities and schedules of any surface water drainage structures and who will be maintaining or adopting these features for the lifetime of the development. Part of this has been provided for the permeable paving and attenuation tank, however, no information is provided for the piped drainage, manhole chambers nor flow control devices. We await further information to be submitted. We note that should Thames Water or any other third party be proposed for adopting the structures the LLFA will require a written agreement in principle to be submitted by the applicant.</p>	<p>Proposed drainage network will be private and managed by Eisai. Additional information on maintenance activities can now be found in Appendix E.</p>