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Date 20 April 2021

RE: 6/2018/2768/OUTLINE - Hatfield Business Park, Hatfield, AL10 9SL

Dear Clare,

Thank you for re-consulting us on the above application for outline permission for a large-scale mixed use development including 1,100 new homes and supporting infrastructure including a primary school, local centre and open space with all matters reserved at Hatfield Business Park, Frobisher Way, Hatfield AL10 9SL.

We understand this application seeks outline planning permission for a major development, and we have assessed the Flood Risk Assessment & Drainage Strategy prepared by Baynham Meikle Partnership Ltd, project reference EB/12011, fourth edition, dated July 2020, submitted to support to this application. However, the information provided to date does not provide a suitable basis for an assessment to be made of the flood risks arising from the proposed development.

We therefore object to the grant of planning permission and recommend refusal on this basis for the following reasons.

Details of how surface water arising from a development is to be managed is required under the NPPF for all Major Planning Applications as amended within the NPPG from the 6 April 2015. Therefore, for the LLFA to be able to advise the Local Planning Authority that there is no flood risk from surface water an application for full planning permission should include the following:

1. An updated surface water drainage strategy.

Overcoming our objection

We acknowledge that the current planning application is for an outline permission. However, it is important that certain details are confirmed to ensure that the most

appropriate drainage scheme can be implemented to ensure there will be no flood risk to the site and the surrounding area and to demonstrate that an appropriate site strategic scheme using the key principles of SuDS is feasible.

We note that the proposed development has been divided into four phases and the strategic surface water scheme for the site is following a similar phasing approach. A number of swales, ponds and underground attenuation tanks have been proposed as a strategic system within the proposed site area in order to provide required attenuation storage for surface water and discharge into Ellenbrook, which is an ordinary watercourse. At plot level permeable paving with gravel sub-base will be provided for car parking within residential areas. All storage features are to be lined. It has been proposed that the surface water discharge from the development will be restricted by complex flow controls to greenfield runoff rates for the 1 in 1 year event, the 1 in 30 year and the 100 year rainfall event including an allowance for climate change events. The total runoff from the site for the 1 in 100 year event plus climate change has been proposed at 389.9l/s and has been spilt over four outfalls with a discharge into Ellenbrook.

However, we would advise that the total surface water discharge from the site should be limited to Q_{BAR} discharge rate for the greenfield site. As the LLFA, we are aware of downstream flooding issues on Ellenbrook, which have been indicated during a recent planning application process for the Quarry site, located in the vicinity of the proposed Hatfield Business Park development. Therefore, we would expect to see the final discharge from the site to be limited to Q_{BAR} discharge rate. Moreover, as the proposed development significantly impacts on the existing watercourses, a full capacity assessment of Ellenbrook will have to be undertaken. If the applicant will update the scheme to include Q_{BAR} discharge rate, we may consider conditioning the capacity assessment for later design stage. The entire modelling should be updated to reflect the above.

In addition, we have noticed that the proposed SuDS storage features will cover a significant area. Therefore, any proposed open water SuDS features like swales or basins have to be positively drained, as the entire runoff falling on those feature will reach the drainage network and therefore SuDS features areas should be considered in the model. The applicant should provide a plan of actively drained area, total contribution area. Greenfield area that is intended to drain naturally should not be included in greenfield runoff calculations.

Based on the assessment of the submitted predicted surface water flooding areas, we have noticed a significant area of ponding on the site for the 1 in 100 year rainfall event. By developing the site, the runoff ponding on the site will be moved, which will potentially increase downstream flood risk on or off site. This would not be acceptable. As the applicant intends to develop this area, we would advise that those volumes have to be managed within the site. Additional storage volumes may need to be considered within the proposed development. Please refer to our SuDS Policy 5 regarding natural flow routes and potential high risk areas management.

As part of the submitted drainage strategy JBA's flood modelling study of Ellenbrook within the development area, part of the SFRA from 2019, commissioned by Welwyn Hatfield Borough Council has been provided. We have noticed that a significant part of phase 1 and 2 is located within Flood Zone 2 and 3. As the LLFA, we would advise that

no storage features should be provided within Flood Zone 2 or 3. In the submitted drainage strategy the applicant intends to deliver zero nett level change within Flood Zone 2 and 3 area. However, by developing the site the applicant will misplace volumes of water. Therefore, detailed plans of displaced surface water from Zone 2 and 3 area have to be provided, as at the moment we are unable to advise if the proposed scheme will not increase flood risk in downstream catchment. The applicant has to demonstrate how fluvial flood water will be managed. We would like to highlight that based on the results of the assessment additional flood compensation storage may be required.

In the submitted Micro Drainage modelling we have noticed margin for flood risk to be set at 50mm. In line with good practice design, we would advise that 300mm should be considered. Moreover, the applicant should clarify why volumetric runoff coefficient has been set at 0.75. For all on surface storage features a design freeboard should be clarified.

In addition, we have noticed that the submitted Micro Drainage model is very detailed for an outline design stage. Multiple permeable paving areas as well as infiltration blankets have been included. However, at this stage no detailed plot level design has been proposed. Therefore, the applicant should clarify how they obtained the model design. It may be required to provide a separate model for the strategic system only.

We have assessed the submitted drainage plans for all phases. As the proposed development site is a greenfield area, no underground storage features should be considered. Therefore, all underground cellular tanks or oversized pipe storage proposed as part of the submitted drainage strategy are unacceptable. We have also noticed a lot of proposed piped network connections/ conveyance features. As this is a greenfield site, the applicant has to limit to minimum the usage of any underground piped connections. We would advise that on surface conveyance features should be considered. The applicant should update the scheme to reflect that.

The proposed swale features are deep and provide major storage volumes for the strategic network. Based on the design principles, we would consider them to be linear storage features. At detailed design stage appropriate planting will have to be considered within those storage features.

Based on the submitted layout plans the final flow controls have been identified, as well as flow controls prior to discharge into the strategic system. We note potentially permeable paving is being considered. However, it should be clarified how the applicant intends to limit surface water flows from plot level networks. Flow restriction structures and sub-catchment level control should be considered. This will have to be considered at detailed design stage.

The submitted Flood Route Plan indicated informal flooding areas for the 1 in 100 year including an allowance for climate change. However, we are concerned about flooding areas indicated at the end of network for phase 1 and 2, as we would assume overflows into Ellenbrook. This would provide higher discharge rates from the site than the approved rates. Moreover, it could cause contamination issues. Therefore, this design approach should be further reconsidered by the applicant.

In the submitted drainage strategy the applicant included an overview of the strategic drainage system proposed for the development parcels. However, no consideration has been given to the proposed strategic road drainage.

The proposed development includes provision of major road networks. Therefore, it should be clarified how the applicant intends to manage any runoff arising from the proposed road networks. As this is an outline application, we would expect to see some design principles at this stage. Moreover, treatment train needs to be appropriately assessed in line with the simple index approach based on The SuDS Manual. This assessment approach needs to be applied for any hardstanding, commercial areas and roads runoff. This is to avoid any detrimental risk to Ellenbrook and the ecological environment in the vicinity of the site.

Based on the submitted drainage layout plans, it is shown that outfall 34 collects runoff from the proposed road and roundabout area and discharges directly into Ellenbrook. Road gullies connected directly into a sewer network will not be allowed. This is not acceptable in principle. The applicant has to follow the appropriate treatment train assessment and design principles as described above.

We have assessed the submitted ground investigation results. We note there are high groundwater levels present within the site. The applicant should clarify how they intend to protect surface water storage structures from lifting. This should be considered at this stage, as it may impact on the proposed design and depths of SuDS features. However, further investigation at detailed design stage will have to be undertaken and should be considered at structural design process.

Moreover, it should be clarified if there is a remediation strategy to be delivered on the site. If yes, it should be clarified how this will impact on the proposed drainage scheme.

We still have concerns regarding the phasing arrangements of the development and how the strategic drainage for the site will be delivered. The catchment areas should be generally in line with the phasing of the development. Therefore, the timeframe for the phasing and construction of the strategic system should be clarified to ensure the masterplan infrastructure has been put in place in order to secure the feasible discharge locations for the various catchments. Should different catchments/sites/plots come forward prior to the construction of strategic system an alternative means of discharge will have to be identified. The use of a sub-catchment approach with attenuation provided throughout the site rather than in large features would provide opportunities for the use of additional SuDS components which would provide source control and opportunities for additional management and treatment stages prior to the discharge.

Based on the submitted layout plans, there is a linear storage feature proposed for phase 3, which enters phase 4 area with the final outfall 29 in phase 4. It should be clarified how the delivery of this network will be undertaken. Similar design principles have been identified for phase 4 and for the proposed football fields. We would advise this should be clarified and revised.

Following our assessment of documents submitted to support the proposed development, we have noticed there may be existing culverts on Ellenbrook. Therefore, the applicant should provide a plan with identified all culverted parts and any existing structures on

Ellenbrook. Based on our Ordinary Watercourse Policy 3, any culverted ordinary watercourse should be re-opened. Moreover, if as part of the proposed development there are any crossings proposed on Ellenbrook, it should be clearly shown on a plan. Full clarification on that should be provided by the applicant. Full assessment of any existing culvert will have to be provided at detailed stage.

Please note Ellenbrook is classified as an ordinary watercourse. Moreover, there is an additional ordinary watercourse located on the western boundary of the site within phase 1, running along the proposed swale. Any impact from the proposed development to all existing ordinary watercourses has to be assessed.

Any works proposed to be carried out that may affect the flow within an ordinary watercourse will require the prior written consent from the Lead Local Flood Authority under Section 23 of the Land Drainage Act 1991. This includes any permanent and or temporary works regardless of any planning permission. For further advice on Ordinary Watercourses, please visit our Ordinary Watercourse Webpage on the link below.

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/ordinary-watercourses/>

For further advice on what we expect to be contained within the FRA to support a planning application, please refer to our Developers Guide and Checklist on our surface water drainage webpage.

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/surface-water-drainage/>

Informative to the LPA

We acknowledge that the current planning application is for an outline permission. However, it is important that certain details are confirmed to ensure that the most appropriate drainage scheme can be implemented to ensure there will be no flood risk to the site and the surrounding area and to demonstrate that an appropriate site strategic scheme using the key principles of SuDS is feasible.

Ellenbrook is a major watercourse with known flooding problems downstream from the proposed development site. Therefore, the Local Planning Authority should consider de-culverting of the ordinary watercourse outside of the development's red line boundary. The opportunity to de-culvert could be seek as part of S106 agreement.

The applicant can overcome our objection by submitting information which covers the deficiencies highlighted above and demonstrates that the development will not increase risk elsewhere and where possible reduces flood risk overall and gives priority to the use of sustainable drainage methods.

If this cannot be achieved, we are likely to maintain our objection to the application.

We ask to be re-consulted when the amended surface drainage assessment will be submitted. We will provide you with bespoke comments within 21 days of receiving formal

reconsultation. Our objection will be maintained until an adequate surface water management scheme has been submitted.

Yours sincerely,

Julia Puton
SuDS Officer
Hertfordshire County Council