

Director of Environment & Transport:  
Mark Kemp



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**Lead Local Flood Authority**  
**Post Point CHN 215**  
**Hertfordshire County Council**  
**County Hall, Pegs Lane**  
**HERTFORD SG13 8DN**

Contact Katherine Ashworth  
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Date 6 July 2022

Dear David,

**RE: 6/2022/1097/OUTLINE– Land to the North of Bradmore Way, Brookmans Park**

Thank you for consulting us on the outline planning permission with all matters reserved except access, for up to 125 dwellings, a care facility for up to 60 bedrooms (Use Class C2), and a scout hut (Use Class F2) at Land to the North of Bradmore Way Brookmans Park

The applicant has provided the following updated information in support of the application:

- Flood Risk Assessment and Drainage Strategy, Wallingford HydroSolutions Ltd, Ref. WHS1929, dated 13 April 2022.

We acknowledge that the current planning application is for outline permission with all other matters reserved. 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 scheme using the key principles of SuDS are feasible.

We understand it is proposed to drain the site via two attenuation tanks and a pond to the west of the site due to the likely limited infiltration potential. The pond will discharge to an existing ordinary watercourse to the west of the site. It is proposed to include an outflow control device in the drainage system to restrict the discharge to the 1 in 30 year storm event at the respective greenfield rate of 49.43 l/s. The drainage strategy is based on the assumption that infiltration is not feasible however, we have a number of concerns surrounding this.

We have reviewed the information submitted by the applicant in support of the planning application. However, the information provided to date does not provide a suitable basis for an assessment to be made of the flood risk arising from the proposed development. Therefore, we object to the grant of planning permission.

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## Overcoming our objection

In order for the Lead Local Flood Authority to advise the relevant Local Planning Authority that the site will not increase flood risk to the site and elsewhere and can provide appropriate sustainable drainage techniques the following information is needed:

- 1) Feasible surface water discharge.
- 2) Provision of greenfield runoff rates and pre and post-development calculations including half drain down times.
- 3) Provision of appropriate management of surface water
- 4) Detailed infiltration tests in accordance with BRE Digest
- 5) Justification of SuDS features, applying the SuDS hierarchy.
- 6) Management and maintenance schedule
- 7) Provision of appropriate treatment of surface water

We acknowledge that Pre App advice was provided by the LLFA on 08 April 2016 for this site whereby a different FRA and Drainage Strategy was submitted. However, since this application was submitted and approved, the LLFA have updated their Local Flood Risk Management Strategy and associated SuDS Policies. Our comments below reflect these changes and our requirements in line with current industry standards:

1. Following a review of ground conditions it has been proposed that the discharge location for surface water run-off will be to an existing ordinary watercourse on the western boundary of the site. We are pleased the applicant has provided an alternate discharge mechanism for the proposed outfall until infiltration testing can be conducted to confirm the feasibility of infiltration. However, the exact discharge location is unknown, and the applicant needs to confirm they have the right to discharge or that permission has been sought from the relevant landowner(s).

Please note that regardless of any planning permission 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.

Recognising the above into support the the application, we require further evidence to be submitted of the existing size and condition of the ordinary watercourse the applicant proposes to discharge to and the number of watercourses/ditches surrounding the site. This may be in the form of a site walkover survey of the watercourses and any CCTV inspection of any culverts. We need to ensure conveyance of water through the site from existing watercourses is maintained. This is particularly important as several watercourses appear to be associated with the surface water flow paths. This information is required in order for the applicant to demonstrate the proposed discharge mechanism is feasible.

The discharge from the pond into an ordinary watercourse using a flow control device will increase the risk of erosion problems in the downstream sections of the flow control device. This should be kept in mind and erosion protection measures should be included as part of the development in order to avoid any detrimental effect to the ordinary watercourse.

2. As the LLFA, we require an updated greenfield runoff rate for the site. Our attention has been brought to the current limiting discharge rate of 49.43 l/s from the attenuation pond which is unacceptable. Surface water drainage calculations should be provided as evidence to support the proposed drainage strategy to demonstrate that there will be no increase in risk of flooding from surface water including the pre- and post-development run-off rates and volumes. The drainage strategy should also include all surface water calculations for rainfall events up to and including the 1 in 100 year event + climate change. We would advise that calculations should take into account the potential addition SuDS.

We require provision of half drain down times no greater than 24 hours up to and including the 1 in 100 year + 40% climate change event for all attenuation features whether they are discharging via infiltration or not, such as for attenuation ponds and tanks, etc.

3. We note that a surface water flow paths enter the site from the north, south and west. The applicant shall provide attenuation for the existing overland flow routes through the site.

We understand that mitigation measures have been included for the development such as leaving areas undeveloped to avoid flood risk from the offsite runoff originating from the drainage ditches and ordinary watercourses along the northern, southern and eastern site boundary. The applicant should provide a hydrological assessment on the southern manmade drainage ditch as this is the most significant source of flooding to the site. We would advise the LPA that we require no flooding to occur on site up to and including the 1 in 30 year storm, any informal flooding to be allowed on site in events greater than the 1 in 30 storm should be identified on the layout with its volume, depth and area.

As such, the applicant should provide an assessment of the surface water flow path and manage it within the site up to and including the 1 in 30 year storm. The applicant should assess the volume of the flow path entering the site and demonstrate that sufficient surface water attenuation can be provided on site to manage for the flow path. The applicant should also indicate how runoff from the flow path will be captured and conveyed, with discharge restricted to greenfield rates.

Considering this flow path affects the area of the proposed pond and access and egress, the applicant should provide evidence to confirm that the areas, and therefore the drainage network, will not be compromised by the flow path.

We note that within the red line boundary there is the presence of Flood Zone 2 and 3 from modelling work undertaken in the Welwyn Hatfield Borough Council Level 2 SFRA from 2016. We advise the applicant to liaise with the LPA regarding the application of the Sequential and Exception test.

4. We understand that the site lies in Source Protection Zone III therefore, the proposed strategy must provide a robust level of treatment in accordance with the Environment Agency's guidance. The applicant shall confirm if infiltration is viable

and permitted and submit evidence of permeability including BRE Digest 365 information. These tests may also indicate that infiltration is not a viable option. Where shallow infiltration cannot be achieved, we would expect the applicant to explore the use of deep borehole soakaway.

5. We note that the proposed SuDS strategy consists of a piped drainage system, two attenuation tanks and an attenuation pond discharging into an ordinary watercourse. The proposed tanks beneath the buildings as seen in Appendix 7 present an unnecessary risk to the drainage system. As this a greenfield site, where surface water should be as analogous as possible to pre-development conditions, we find the proposed underground drainage system unacceptable and require the applicant to provide above ground storage measures and permeable surfaces. In addition we have concerns regarding the depth of easements and the connectivity into the attenuation pond feature.

The applicant should provide clear technical justifications if the SuDS hierarchy cannot be applied. We would strongly advise incorporating conveyance swales and filter drains throughout the site, which would deliver improved treatment for any road runoff. This approach could be coupled with lower kerbs to allow natural run off from the roads into swales. No underground storage will be accepted on a greenfield site. We understand there may be presence of contamination. If this is the case, a lined system would be acceptable. A lack of space will not be accepted as a technical justification for underground storage on a greenfield site.

Green areas on site should be incorporated into SuDS design to act as multipurpose areas, providing surface water storage, benefiting water quality, enhancing the local ecology and increasing biodiversity.

6. We require the applicant to include details of required maintenance of any SuDS features and structures and who will be adopting these features for the lifetime of the development.
7. The proposed drainage strategy does not provide any water quality treatment SuDS measures. The applicant should consider the use of permeable paving with a sub-base. This offers 2 levels of treatment which then could be discharged to another level of treatment i.e. a filter strip, swale or other above ground feature. The applicant must demonstrate that they have complied with the CIRIA SuDS Manual in relation to water quality treatment. As this is a greenfield site, any areas of development, in particular the access road, site entrance road and parking areas will require treatment. As this is outline stage, we would like to see some level of commitment to providing a complete SuDS treatment train.

As a result of the above comments, we would suggest the applicant needs to re-evaluate the surface water drainage strategy for the site, so that the surface water discharge mechanism proposed is feasible.

## **Informative to the LPA**

We have provided comments from the Lead Local Flood Authority in this letter. However, due to the LLFA SuDS team staff shortages, we may not be able to provide further advice at this site.

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/surface-water-drainage.aspx>

This link also includes HCC's policies on SuDS in Hertfordshire.

Please note, if the LPA decides to grant planning permission, we wish to be notified for our records.

Yours sincerely

Katherine Ashworth  
SuDS and Watercourses Support Officer  
Flood Risk Management