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Proposal: Enhancement works to Hinchingbrooke Country Park, to include an extension to the existing countryside centre, new car parking (to include new electric vehicle charging), improved access, biodiversity enhancements and other associated improvements and works

Hinchingbrooke Country Park Hinchingbrooke Park Road Huntingdon

Comments from Lead Local Flood Authority (LLFA)

Dear James,

Thank you for your re-consultation which we received on 22nd May 2025.

We have reviewed the following documents:

- Flood Risk Assessment, Link Engineering, Ref: HCB-LE-GEN-XX-RP-CE-FRA01-P1, Dated: March 2025
- MicroDrainage Calculations, Link Engineering, Dated: 19th May 2025
- Response to LLFA comments, Link Engineering, Ref: HCP-LINK-XX-XX-RP-CE-0001, Dated: 16th May 2025
- Drainage Layout 2, Link Engineering, Ref: HCB-LE-DPR-XX-DR-CE-501, Dated: 16th May 2025
- Drainage Layout 1, Link Engineering, Ref: HCB-LE-DPR-XX-DR-CE-500, Dated: 16th May 2025

Based on these, as Lead Local Flood Authority (LLFA) we **have no objection in principle** to the proposed development.

The above documents demonstrate that surface water from the proposed development can be managed through the use of permeable paving and an attenuation tank, restricting surface water discharge to 1.3l/s.

The LLFA is supportive of the use of permeable paving as in addition to controlling the rate of surface water leaving the site it also provides water quality treatment which is of particular importance when discharging into a watercourse.

Water quality has been adequately addressed when assessed against the Simple Index Approach outlined in the CIRIA SuDS Manual.

We request the following conditions are imposed:

Condition

No laying of services, creation of hard surfaces or erection of a building shall commence until a detailed design of the surface water drainage of the site has been submitted to and approved in writing by the Local Planning Authority. Those elements of the surface water drainage system not adopted by a statutory undertaker shall thereafter be maintained and managed in accordance with the approved management and maintenance plan.

The scheme shall be based upon the principles within the agreed Flood Risk Assessment, prepared by Link Engineering (ref: HCB-LE-GEN-XX-RP-CE-FRA01-P1) dated March 2025 and shall also include:

a) *Full calculations detailing the existing surface water runoff rates for the Q_{BAR}, 3.3% Annual Exceedance Probability (AEP) (1 in 30) and 1% AEP (1 in 100) storm events;*
b) *Full results of the proposed drainage system modelling in the above-referenced storm events (as well as 1% AEP plus climate change), inclusive of all collection, conveyance, storage, flow control and disposal elements and including an allowance for urban creep, together with an assessment of system performance using FEH data;*
c) *Detailed drawings of the entire proposed surface water drainage system, attenuation and flow control measures, including levels, gradients, dimensions and pipe reference numbers, designed to accord with the CIRIA C753 SuDS Manual (or any equivalent guidance that may supersede or replace it);*
d) *Full detail on SuDS proposals (including location, type, size, depths, side slopes and cross sections);*
e) *Site Investigation and test results to confirm infiltration rates;*
f) *Details of overland flood flow routes in the event of system exceedance, with demonstration that such flows can be appropriately managed on site without increasing flood risk to occupants;*
g) *Demonstration that the surface water drainage of the site is in accordance with DEFRA non-statutory technical standards for sustainable drainage systems;*
h) *Full details of the maintenance/adoption of the surface water drainage system;*

i) *Permissions to connect to a receiving watercourse or sewer;*
j) *Measures taken to prevent pollution of the receiving groundwater and/or surface water*

Reason
To ensure that the proposed development can be adequately drained and to ensure that there is no increased flood risk on or off site resulting from the proposed development and to ensure that the principles of sustainable drainage can be incorporated into the development, noting that initial preparatory and/or construction works may compromise the ability to mitigate harmful impacts.

Condition
No development, including preparatory works, shall commence until details of measures indicating how additional surface water run-off from the site will be avoided during the construction works have been submitted to and approved in writing by the Local Planning Authority. The applicant may be required to provide collection, balancing and/or settlement systems for these flows. The approved measures and systems shall be brought into operation before any works to create buildings or hard surfaces commence.

Reason
To ensure surface water is managed appropriately during the construction phase of the development, so as not to increase the flood risk to adjacent land/properties or occupied properties within the development itself; recognising that initial works to prepare the site could bring about unacceptable impacts.

Informatives

Detailed design hydraulic calculations
Hydraulic calculations should include the following, where appropriate:

- Full network hydraulic calculations are required for the LLFA to suitably review the proposed system. These should show the full pipe network and results for the 100%, 3.3% and 1% Annual Exceedance Probability (AEP) storm events. This should align with the detailed drainage layout.
- Full calculations to show the performance of the system for a range of summer and winter storm durations from 15 minutes up to the 10080 minute (7 day).
- For storm durations less than 1 hour, Flood Studies Report (FSR) rainfall data should be used. For storm durations greater than 1 hour, Flood Estimation Handbook (FEH) rainfall data should be used. FEH data must be used in these longer duration storms as it uses more up to data rainfall data and is more accurate for the purpose of modelling the future storm events over other data sources such as FSR for the larger duration storms.
- Recent updates are now available that include new catchment descriptors (e.g. BFIHOST19) and the latest FEH depth-duration-frequency model (FEH22), which should be used when submitting calculations.

- In accordance with the latest climate change peak rainfall intensity allowances, a climate change allowance should be incorporated into the surface water management scheme for the 3.3% annual exceedance probability rainfall event. The allowance used should be based on the lifetime of the development and therefore should include a 35% climate change allowance on the 3.3% AEP hydraulic calculations.
- The software default of 2 is commonly applied to the additional storage (MADD factor); however, the applicant should set this to 0.
- The Cv values (volumetric runoff coefficient) for the winter and summer storms are set as 0.840 and 0.750, respectively. However, since the modelling is for the impermeable area, these values should be set to 1.0 to account for the total runoff during storm events.

Ordinary Watercourse Consent

Constructions or alterations within an ordinary watercourse (temporary or permanent) require consent from the Lead Local Flood Authority under the Land Drainage Act 1991. Ordinary watercourses include every river, drain, stream, ditch, dyke, sewer (other than public sewer) and passage through which water flows that do not form part of Main Rivers (Main Rivers are regulated by the Environment Agency). The applicant should refer to Cambridgeshire County Council's Culvert Policy for further guidance:

https://www.cambridgeshire.gov.uk/asset-library/Cambridgeshires-Culvert-Policy.pdf

Please note the council does not regulate ordinary watercourses in Internal Drainage Board areas.

Pollution Control

Surface water and groundwater bodies are highly vulnerable to pollution and the impact of construction activities. It is essential that the risk of pollution (particularly during the construction phase) is considered and mitigated appropriately. It is important to remember that flow within the watercourse is likely to vary by season and it could be dry at certain times throughout the year. Dry watercourses should not be overlooked as these watercourses may flow or even flood following heavy rainfall.

Construction Surface Water Maintenance

Prior to final handover of the development, the developer must ensure that appropriate remediation of all surface water drainage infrastructure has taken place, particularly where the permanent drainage infrastructure has been installed early in the construction phase. This may include but is not limited to jetting of all pipes, silt removal and reinstating bed levels. Developers should also ensure that watercourses have been appropriately maintained and remediated, with any obstructions to flows (such as debris, litter and fallen trees) removed, ensuring the condition of the watercourse is better than initially found. This

is irrespective of the proposed method of surface water disposal, particularly if an ordinary watercourse is riparian owned.

Yours sincerely,

H Tandy

Hilary Tandy
Flood Risk Manager

If you have any queries regarding this application please contact the Officer named at the top of this letter (contact details are above).

Please note: We are reliant on the accuracy and completeness of the reports in undertaking our review and can take no responsibility for incorrect data or interpretation made by the authors.