



Flood Risk Management
Derbyshire County Council
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Development Services
High Peak Borough Council
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Telephone
Ask for John Vilas
Email
Our ref HPBC/2023/38
Your ref HPK/2023/0192
Date 24 July 2023

Dear John Copestake

Proposal: Construction of 116 dwellings

Location: Land at Hoghaw, Fairfield, Buxton

Application reference HPK/2023/0192

No objections in principle	Conditions Recommended	Objection Recommended	X
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Derbyshire County Council as the Lead Local Flood Authority (LLFA) has reviewed the information submitted for this application, which was received on 23/6/2023. The LLFA recommends an objection for the reasons set out below.

REASONS FOR OBJECTION

We are recommending an objection on the proposed development as it is not possible to provide an informed comment until such a time that the applicant has submitted further information to resolve the issues outlined below.

1. The proposed attenuation basin is located over an existing culverted ordinary watercourse. The LLFA objects to the construction of any part of a proposed development over a culverted watercourse to the extent that such construction would restrict access to the culvert or limit the ability to maintain or remove the culvert at some point in the future.
2. The proposed attenuation pond is shown to be constructed in made ground that is reported (*Soiltechnics , Ground Investigation Report, rev 03 (April 2023)*) as having the following consistency below 0.7m “*Very loose to loose dark grey slightly clayey GRAVEL. Gravel consists of plastic, shale, slag, coal, timber, pottery and bricks.*” Additional information is needed to demonstrate how this area is suitable for an attenuation basin.
3. Surface water flood maps show flooding upstream of the existing culvert adjacent to the site, the width of the flooded area is over 40m for the 1 in 100 probability event suggesting depths and volume could pose an increased flood risk to the site and downstream during an extreme event scenario. The LLFA would want to see a detailed hydrologic study to

characterise the upstream fluvial and pluvial flood depths and volumes under a range of scenarios against the fill over the culvert.

4. There is well documented flooding downstream of the site in the vicinity of the confluence of Nun Brook and Hogshaw Broo (Lightwood Road area). The LLFA produced a S19 report in 2020 that documents 3 major flooding events (1975, 1998, 2019) where as many as 32 properties were internally flooded. With any new development in the catchment area there is concern over the potential to further increase flood risk in these areas. Given this situation, the LLFA would request that the developer seek to fully satisfy flood risk mitigation standards and exceed these standards where possible including consideration of performing or contributing to NFM initiatives outside of the redline boundary.
5. The LLFA would request a modified surface water management strategy that would leave at least a minimum 6.5m (each side of the culvert centreline) free of any critical infrastructure.
6. Further review of the submitted surface water management strategy is not possible until the issues have been resolved.

Advisory/Informative Notes (It should be noted that the information detailed below (where applicable), will be required as an absolute minimum in order to discharge any of the drainage conditions set by the LPA):

- A. The County Council does not adopt any SuDS schemes at present (although may consider ones which are served by highway drainage only). As such, it should be confirmed prior to commencement of works who will be responsible for SuDS maintenance/management once the development is completed.
- B. Any works in or nearby an ordinary watercourse may require consent under the Land Drainage Act (1991) from the County Council. For further advice, or to make an application please contact
- C. No part of the proposed development shall be constructed within 5-8m of an ordinary watercourse and a minimum 3 m for a culverted watercourse (increases with size of culvert). It should be noted that DCC have an anti-culverting policy.
- D. The applicant should be mindful to obtain all the relevant information pertaining to proposed discharge in land that is not within their control, which is fundamental to allow the drainage of the proposed development site.
- E. The applicant should demonstrate, to the satisfaction of the Local Planning Authority, the appropriate level of treatment stages from the resultant surface water discharge, in line with Table 4.3 of the CIRIA SuDS Manual C753.
- F. The County Council would prefer the applicant to utilise existing landform to manage surface water in mini/sub-catchments. The applicant is advised to contact the County Council's Flood Risk Management team should any guidance on the drainage strategy for the proposed development be required.
- G. The applicant should provide a flood evacuation plan which outlines:
 - The flood warning procedure
 - A safe point of extraction
 - How users can safely evacuate the site upon receipt of a flood warning
 - The areas of responsibility for those participating in the plan

- The procedures for implementing the plan
 - How users will be made aware of flood risk
 - How users will be made aware of flood resilience
 - Who will be responsible for the update of the flood evacuation plan
- H. Flood resilience should be duly considered in the design of the new building(s) or renovation. Guidance may be found in BRE Digest 532 Parts 1 and 2, 2012 and BRE Good Building Guide 84.
- I. Surface water drainage plans should include the following:
- Rainwater pipes, gullies and drainage channels including cover levels.
 - Inspection chambers, manholes and silt traps including cover and invert levels.
 - Pipe sizes, pipe materials, gradients, flow directions and pipe numbers.
 - Soakaways, including size and material.
 - Typical inspection chamber / soakaway / silt trap and SW attenuation details.
 - Site ground levels and finished floor levels.
- J. On Site Surface Water Management;
- The site is required to accommodate rainfall volumes up to the 1% probability annual rainfall event (plus climate change) whilst ensuring no flooding to buildings or adjacent land.
 - The applicant will need to provide details and calculations including any below ground storage, overflow paths (flood routes), surface detention and infiltration areas, etc, to demonstrate how the 30 year + 35% climate change and 100 year + 40% Climate Change rainfall volumes will be controlled and accommodated. In addition, an appropriate allowance should be made for urban creep throughout the lifetime of the development as per 'BS 8582:2013 Code of Practice for Surface Water Management for Developed Sites' (to be agreed with the LLFA).
 - Production of a plan showing above ground flood pathways (where relevant) for events in excess of the 1% probability annual rainfall event, to ensure exceedance routes can be safely managed.
 - A plan detailing the impermeable area attributed to each drainage asset (pipes, swales, etc), attenuation basins/balancing ponds are to be treated as an impermeable area.

Peak Flow Control

- For greenfield developments, the peak run-off rate from the development to any highway drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event, should never exceed the peak greenfield run-off rate for the same event.
- For developments which were previously developed, the peak run-off rate from the development to any drain, sewer or surface water body for the 100% probability annual rainfall event and the 1% probability annual rainfall event must be as close as reasonably practicable to the greenfield run-off rate from the development for the same rainfall

event, but should never exceed the rate of discharge from the development, prior to redevelopment for that event.

Volume Control

- For greenfield developments, the runoff volume from the development to any highway drain, sewer or surface water body in the 6 hour 1% probability annual rainfall event must not exceed the greenfield runoff volume for the same event.
- For developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 6 hour 1% probability annual rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event, but must not exceed the runoff volume for the development site prior to redevelopment for that event.

Note:- If the greenfield run-off for a site is calculated at less than 2 l/s, then a minimum of 2 l/s could be used (subject to approval from the LLFA).

- Details of how the on-site surface water drainage systems shall be maintained and managed after completion and for the lifetime of the development to ensure the features remain functional.
 - Where cellular storage is proposed and is within areas where it may be susceptible to damage by excavation by other utility contractors, warning signage should be provided to inform of its presence. Cellular storage and infiltration systems should not be positioned within the highway.
 - Guidance on flood pathways can be found in BS EN 752.
 - The Greenfield runoff rate which is to be used for assessing the requirements for limiting discharge flow rates and attenuation storage for a site should be calculated for the whole development area (paved and pervious surfaces - houses, gardens, roads, and other open space) that is within the area served by the drainage network, whatever the size of the site and type of drainage system. Significant green areas such as recreation parks, general public open space, etc., which are not served by the drainage system and do not play a part in the runoff management for the site, and which can be assumed to have a runoff response which is similar to that prior to the development taking place, may be excluded from the greenfield analysis.
- K. If infiltration systems are to be used for surface water disposal, the following information must be provided:
- Ground percolation tests to BRE 365.
 - Ground water levels records. Minimum 1m clearance from maximum seasonal groundwater level to base of infiltration compound. This should include assessment of relevant groundwater borehole records, maps and on-site monitoring in wells.
 - Soil / rock descriptions in accordance with BS EN ISO 14688-1:2002 or BS EN ISO 14689-1:2003.
 - Volume design calculations to 1% probability annual rainfall event + 40% climate change standard. An appropriate factor of safety should be applied to the design in accordance with CIRIA C753 – Table 25.2.

- Location plans indicating position (soakaways serving more than one property must be located in an accessible position for maintenance). Soakaways should not be used within 5m of buildings or the highway or any other structure.
- Drawing details including sizes and material.
- Details of a sedimentation chamber (silt trap) upstream of the inlet should be included.

Soakaway detailed design guidance is given in CIRIA Report 753, CIRIA Report 156 and BRE Digest 365.

- L. All Micro Drainage calculations and results must be submitted in .MDX format, to the LPA. (Other methods of drainage calculations are acceptable.)
- M. The applicant should submit a comprehensive management plan detailing how surface water shall be managed on site during the construction phase of the development ensuring there is no increase in flood risk off site or to occupied buildings within the development.
- N. The applicant should manage construction activities in line with the CIRIA Guidance on the Construction of SuDS Manual C768, to ensure that the effectiveness of proposed SuDS features is not compromised.

Yours sincerely

John Vilas
Senior Flood Risk Management Technician

Checked by: Richard Ward
Date 24/06/2023