

Drainage Technical Note-Response to LLFA

DESFORD
1089-TN-0001

Contents

1.0 Introduction and Background 2

2.0 LLFA Response 05/06/25 3

 2.1 Layout and Attenuation Capacity 3

 2.2 Runoff Rate Calculations/Catchment Area 3

 2.3 Infiltration Methodology and Potential..... 3

 2.4 Supporting Drainage Design Details..... 4

3.0 Conclusion 4

1.0 Introduction and Background

The proposed development at Desford is a residential development of 120 dwellings benefitting from outline planning permission (22/01227/OUT). A Flood Risk Assessment and Drainage Strategy was produced by ADC as part of the approved outline planning consent following significant correspondence with LLFA.

As part of the outline approval, the below condition has been secured:

Condition 9 - *“With or before the submission of Reserved Matters a surface water drainage scheme has been submitted to and approved in writing by the Local Planning Authority. The scheme shall include evidence to confirm or otherwise, the suitability of the site for the use of infiltration as a drainage element. The development must be carried out in accordance with these approved details and completed prior to first occupation.”*

Previous responses from LLFA and HBBC Drainage have been received between 8/10/24 and 14/5/25 raised no concerns, objections or comments and, whilst there has been a re-consultation since this date no notable change has been made to the site that impacts upon its drainage.

A subsequent response has been received from LLFA on 5/6/25 raising a number of points. It is noted that this is from a different reviewing officer and Davidsons’ acknowledges that there is significant background and history with the site that may not have been fully available prior to the return of the officer’s comments.

This Technical Note has been prepared to identify the relevant background and set out Davidsons’ response to these comments. It is Davidsons view that the site has not been substantially altered since the previous LLFA comments of 14/5/25.

2.0 LLFA Response 05/06/25

Below is the response provided by the LLFA (identified by quotation marks and italics), broken down into sections as there are numerous points within to address separately.

2.1 Layout and Attenuation Capacity

“The proposed site layout has altered slightly from the previous consultation, and from the layout that was approved in 22/01227/OUT. The latest changes show a reduction in the capacity of the attenuation basin from 1413m³ to 1355m³. This change is mostly due to a reduction in the freeboard of the pond from 595mm to 300mm, which is still compliant with freeboard requirements.”

As noted, this is compliant with requirements.

2.2 Runoff Rate Calculations/Catchment Area

“The catchment area used to derive the greenfield runoff rate is 5.35ha as summarised above, however, much of the perimeter of the site remains undeveloped and the LLFA questions the suitability and appropriateness of including undeveloped areas when calculating a representative greenfield runoff rate. Section 24.2.2 of The SuDS Manual (CIRIA C753) states:

‘The runoff area used... should be consistent; for example, if the whole site area is used in the greenfield runoff rate calculations, the whole site should also be represented in the runoff calculations for the proposed development.’

To compound the LLFA’s concerns, it is stated on the drainage strategy drawing that the total contributing area to the attenuation volume is 2.491ha, with the hydraulic calculations only accounting for an impermeable area of 1.572ha. The LLFA is concerned that the methodology used to derive the greenfield runoff rate has not been reviewed as part of the detailed design process and as submitted the proposals will result in an increase in flood risk elsewhere, particularly to the immediate downstream community of Desford.

The site is proposed to discharge at 23.5l/s. This is the rate stipulated within the Flood Risk Assessment and below the rate stipulated as a maximum flow rate by STW as part of the original outline application (5l/s/ha).

The proposed discharge rate is consistent with the rate shown within the drainage strategy that was included within the flood risk assessment and the layout, whilst updated as part of this reserved matters application to reflect the detailed design, retains the principles of the undeveloped perimeter and development extents. As the proposed scheme does not vary in these principles from that within the Flood Risk Assessment it is considered that the proposed discharge rate remains unchanged from that approved.

The previous responses from LLFA and HBBC Drainage did not raise any concerns over the discharge rate from the site.

2.3 Infiltration Methodology and Potential

“The submitted infiltration testing suggests some parts of the site may be suitable for infiltration drainage techniques. However, as stated within the report the methodology did not fully accord with the requirements of BRE365 as only a single soakage test was undertaken for each trial pit

and results extrapolated. The applicant should ensure that further testing is undertaken to determine the areas of the site which are suitable for infiltration testing. The British Geological Survey suggests superficial glaciofluvial deposits, Mid Pleistocene - sand and gravel, supporting the initial infiltration test results that disposal of surface water to ground may be suitable in parts of the site.

Linking to the above concerns about the greenfield runoff rate calculations, the presence of sands and gravels is likely to reduce the pre-development greenfield runoff rate. The rate of 4.4l/s/ha is used for clay soils only. The applicant should ensure all opportunities to infiltrate are explored to reduce the attenuation storage volumes which may be otherwise required.”

A detailed Phase 2 Ground Investigation, incorporating infiltration testing, has been undertaken on the site. This has assessed the suitability of the ground for soakaways and found that rates could not be obtained. Insufficient infiltration occurred to undertake additional tests and the BGS data is clearly superseded by the onsite observations, which encountered clays and fines within any sand and gravel deposits. This ground investigation has been submitted as part of the submission documents along with the infiltration testing results.

No concerns about the means of discharge have been raised in previous correspondence and the means of outfall were discussed at length as part of the outline permission.

Infiltration is therefore considered not to be a suitable means of discharge on this site.

2.4 Supporting Drainage Design Details

“Once the above strategic level drainage concern has been addressed, the following supporting information should be provided:

A catchment area plan to support a revised set of hydraulic calculations

Flood flow routing plan

Private drainage details

Cross-sectional details of the proposed attenuation basin and flow control chamber (site specific details, as opposed to typical details)”

Please see attached catchment plan, flood flow routing plan demonstrating overland flows and cross sections of the proposed attenuation basin. The flow control chamber will be offered for adoption as part of a separate S104 process as is standard practice and we do not consider the detailing of this to be within the planning process. Private drainage is to be produced and installed in accordance with the relevant Building Regulations and is also considered to be outside of the scope of planning.

3.0 Conclusion

As discussed above, the site remains compliant with the Flood Risk Assessment as submitted within the approved outline planning consent for the development, which underpins and informs the detailed design of the site. Appropriate infiltration testing has been undertaken and provided to demonstrate that soakaways are not a suitable means of outfall and additional details are provided as appropriate to support the design proposals.