

08th May 2024 Our reference: 890695-L01(0)-TRF

Hannah Purkis Flood And Water Manager Flood and Water Management (Lead Local Flood Authority) Growth, Highways and Infrastructure Directorate Suffolk Country Council Endeavour House, 8 Russel Road, Ipswich, Suffolk, IP1 2BX

RE: LLFA HOLDING OBJECTION IN RELATION TO OUTLINE APPLICATION – HYBRID APPLICATION REFERENCE: DC/24/0771/OUT

Dear Hannah,

Thank you for your recent comments with regards to the drainage strategy for the outline planning application at Humber Doucy Lane, Ipswich. In light of these comments, we have prepared a series of responses which should address all the points raised and allow for the removal of the holding objection. Your comments have been included below for reference along with the official description of the application:

Outline Application (With All Matters Reserved) - Hybrid Application – Full Planning Permission for the means of external access/egress to and from the site. Outline planning application (all matters reserved) for a mixed use development for up to 660 dwellings (Use Class C3), up to 400 sq m (net) of non-residential floorspace falling within Use Class E and/or Use Class F2(b), an Early Years facility, and associated vehicular access and highway works, formal and informal open spaces, play areas, provision of infrastructure (including internal highways, parking, servicing, cycle and pedestrian routes, utilities and sustainable drainage systems), and all associated landscaping and engineering works. Address: Land North-East Of Humber Doucy Lane, Humber Doucy Lane, Rushmere St Andrew, Ipswich.

We would first like to highlight that the onsite drainage strategy falls under the outline planning section of this hybrid application and it is only for the access points that full planning permission is being pursued. As such it is subject to the requirements stipulated 'Outline' in the table from Chapter 3 of the Suffolk Flood Risk Management Strategy Appendix A. These requirements are for '*indicative drawings of layout, properties, open space and drainage infrastructure*'.

Drawing 890695-RSK-ZZ-XX-DR-C-0007-P01-Proposed Surface Water Drainage Strategy presents an indicative layout for the drainage network demonstrating the relationship of open space, open Suds features and the proposed drainage infrastructure. This includes the details of the proposed detention basins and their associated infiltration. The FRA expands on this information by describing additional forms of treatment, at source, for the sub catchments.

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The comments and our responses are as follows:

Watercourse network

1. A plan of the watercourse network is included in the flood risk assessment and drainage strategy however it is missing some of the watercourses within and/or adjacent to the site. It is of vital importance that the development does not adversely impact the existing surface water network and thus a detailed survey of the existing watercourse network should be undertaken. This should comprise a walkover of the watercourse network and trace each from where it approaches the site, its connectivity through or around it to its outfall beyond the site's boundaries including any culverted sections. The plan should be updated and photos included where necessary. Any required maintenance to the network needs to be highlighted to ensure that the new development will not increase offsite flood risk.

The image below, taken from the FRA, shows the ditches in the area as identified by OS mapping.



The OS mapping, IDB mapping and EA mapping do not indicate any further 'watercourse' features bounding the site. The western ditch, and southern ditch (along Humber Doucy Lane) and covered by the existing topographical survey and fall towards the southeastern corner of the development where they appear to terminate. No survey or OS line work indicates any other features in the vicinity. This would suggest that these features do not positively outfall and cannot be considered 'watercourses'. A preliminary site walk over has been conducted and did not indicate any connectivity between the features and/or a positive outfall.

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Nevertheless, none of the development proposals include any material changes to these features, they are to be left in place and untouched allowing them to function as they were previously.

2. There is a watercourse adjacent highway on the eastern parcel that could be adversely impacted by the proposed highway upgrades. Any upgrade works to the existing highway need to be carefully planned in conjunction with existing onsite constraints.

No watercourse is indicated on the OS mapping and or topographical survey around the highway to the eastern parcel. Nevertheless, all proposed highway works will carefully consider existing constraints ensuring not to increase offsite flood risk.

Drainage Strategy

3. The hierarchy set out in the Suffolk SuDS Guide (based on the NPPF and CIRIA SuDS Guide) states that deep infiltration is a last resort and should only be considered once all other options have been fully assessed. Whilst shallow infiltration and a connection to a surface water sewer are understood to be not viable, a discharge to the nearby watercourse network should be considered further. We would encourage a hybrid approach being adopted where surface water is directed to the nearby watercourse network where possible with deep infiltration being used where this is not possible, ie. adjacent the railway line. Constructing deep infiltration structures up to 8m below ground level as is currently proposed requires significant earthworks, is higher risk and less sustainable than surface-based solutions. The deep infiltration structures also increase the risk of discharging pollutants directly into the ground in an area highlighted as being vulnerable to pollution incidents.

Set out below is the drainage hierarchy taken from page 11 of the Suffolk Flood Risk Management Strategy Appendix A along with the justification for ruling out each method until the proposed deep infiltration:

- Rainwater Harvesting/Re-Use Onsite.
 - To be implemented were plausible on plot, but not sufficient for site wide strategy.
- Shallow infiltration (circa 2.0m, see section on infiltration systems).
 - Infiltration rates are insufficient at depths of 2.0m or less as indicated in table 3.2 from the FRA.
- Gravity discharge to a watercourse.
 - There is no appropriate watercourse in close proximity to the proposed development as discussed in the response to point 1.
- Gravity discharge to a surface water sewer/highway drain.
 - The nearest surface water sewer is located along Humber Doucy Lane opposite the eastern parcel. This surface water combines with the foul water into a



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combined sewer shortly downstream of the development. A predevelopment enquiry was submitted to Anglian Water for the discharge of surface water. The following is an extract (the full report can be found in the appendix of the FRA):

'The impact of additional surface water flow to a combined sewer will be to significantly increase the risk of flooding and pollution from the receiving network and potentially to compromise the ability of assets to operate within statutory enforced permitted limits'

As such, this was deemed unfeasible as a point of discharge.

- Gravity discharge to a combined sewer.
 - \circ Refer to point above.

The following options are listed as a last resort, rather than a hierarchical order and are based on site specific constraints.

- Deep infiltration
 - Infiltration testing at depths from 3m 7m has indicated feasible infiltration rates, as presented in table 3.2 in the FRA. Therefore, this is the proposed method of discharge.
- Pumped discharge to a watercourse or infiltration feature.
 - Refer to point above regarding gravity connection to a watercourse. Pumped solution not required for deep infiltration proposals.
- Pumped discharge to a surface water sewer/highway drain.
 - Refer to point above regarding discharge to a surface water sewer
- Pumped discharge to a combined sewer.
 - Refer to point above regarding discharge to a surface water sewer
- Gravity or pumped discharge to a foul sewer.
 - Refer to point above regarding discharge to a surface water sewer
- 4. The greenfield runoff rate has been calculated but is very low compared to the more typical figure of 2l/s/ha that is often used. If a restricted discharge to a watercourse is progressed then this should be reviewed to ensure a viable rate is proposed.

As the site is to discharge via infiltration this is not pertinent to the strategy. However, the Qbar rate was calculated using the FEH methodology in line with SCC's preferred method of calculation stipulated on page 12 of the Suffolk Flood Risk Management Strategy Appendix A.

5. Many of the sub catchments use the more traditional pipe to pond approach which does not incorporate above ground conveyance of surface water or address surface



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water at source. The strategy should be reconsidered to include more SuDS within the parcels, eg. raingardens, downpipe planters, tree pits, permeable paving or swales.

The requested detail is beyond the scope of this outline application, please refer to the opening paragraphs of this response.

6. The simple index approach has been used to assess the surface water pollution hazard potential however given the number of dwellings, a school and community uses proposed on the site, it is likely that the main distributor road will generate a greater level of pollution than can be assessed using this method. The assessment used only applies to roads with less than 300 traffic movements per day.

The simple index approach methodology has been applied correctly to this use case. We accept that the spine road would be subject to more than 300 traffic movements per day and as such should be classified as medium hazard. The drainage strategy would still provide the necessary treatment for this classification of contamination as at a minimum the spine road will drain to its associated swales and to the detention basin. The combined mitigation indices of these features exceeds the pollution hazard indices stipulated for a medium hazard level.

7. In accordance with the Suffolk SuDS Guide and Suffolk Design for Streets Guide the main access roads should be drained to roadside swales. Cross sections should be provided to demonstrate how space has been provided to ensure this can be accommodated in the final layout.

The requested detail is beyond the scope of this outline application, please refer to the opening paragraphs of this response.

8. The school plot will require a connection to services and utilities and this often extends to the SuDS network. It should be confirmed with the schools team if they require a unrestricted discharge into the SuDS network as this may result in a change to the current proposal.

Please refer to the official site description in which no reference to a school is made. As such, no unrestricted discharge will be required.

9. The strategic swales and basins should have dimensions provided to demonstrate they are in accordance with the Suffolk SuDS Guide. As many of the parcels are currently shown to be drained by traditional drainage, it is likely that the invert level of the pipes will be too deep to discharge into surface features and this should be considered at this stage to avoid excessive below ground infrastructure being required at the detailed design stage.

The requested detail is beyond the scope of this outline application, please refer to the opening paragraphs of this response.







We trust that the above is sufficient to remove the recommendation for a holding objection for the application. If you have any questions or wish to discuss this further, please do not hesitate to get in touch.

Yours sincerely,

For RSK Land & Development Engineering Limited



Thomas Fillingham Senior Infrastructure Engineer

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