

Pre-Application Advice

Suffolk County Council, Flood and Water Management

Application reference: Pending

Proposal: Pending

Site Address: Land East of Humber Doucy Lane, Ipswich

Pre-Application Advice by: Hannah Purkis, Flood & Water Engineer, Suffolk County Council Lead Local Flood Authority (SCC LLFA)

Date Advice Given: 01/11/2023

Flood Risk:

- 1) Fluvial/Tidal Flooding - the site is located within Flood Zone 1. See below for a summary of the flood risk vulnerability and flood zone compatibility.
 - a. Fluvial/Tidal – Zone 1 Low Probability, land assessed as having a less than 0.1% annual event probability (AEP) of river or sea flooding
 - b. Fluvial/Tidal – Zone 2 Medium Probability, land assessed as having between a 1% – 0.1% AEP of river flooding, or between a 1% – 0.1% AEP of sea flooding.
 - c. Fluvial/Tidal – Zone 3 High Probability, land assessed as having a 1% or greater AEP of river flooding, or a 0.5% or greater AEP of flooding from the sea.

Flood Risk Vulnerability Classification					
Flood Zones	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a†	Exception Test Required †	✗	Exception Test Required	✓	✓
Zone 3b*	Exception Test Required*	✗	✗	✗	✓*

See key overleaf.

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Key:

✓ Development is appropriate

✗ Development should not be permitted

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* In Flood Zone 3b (functional floodplain) essential infrastructure that must be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood, result in no net loss of floodplain storage,
- not impede water flows and not increase flood risk elsewhere.

NB: the sequential test has now been updated to include all forms of flooding

- 2) Pluvial (Surface Water) Flooding – there are isolated areas shown to be at low risk of pluvial flooding within the site. This should be further assessed to ensure the proposed development will not be at risk of surface water flooding or negatively impact localised small scale observed overland flow routes.
- 3) Groundwater Flooding – local geological information indicates groundwater is likely to be relatively deep however this should be further confirmed through a site-specific ground investigation.
- 4) Sewer Flooding – Anglian Water should be contacted to ascertain if there are any historical records of sewer flooding in the vicinity.

Surface Water Discharge Hierarchy:

Surface water runoff should be managed via a method as high up the SuDS hierarchy as reasonably possible, with more sustainable options ruled out only where sufficient evidence can be provided to support the decision.

Any new areas of impermeable surfacing that are to be created or altered as part of the proposed development will result in additional surface water runoff. This should be managed in such a way that mimics the greenfield scenario as far as possible, with respect to the surface water drainage hierarchy as follows;

- Infiltration to Ground – shallow soakaways (less than 2m in depth) need to reflect the locations of any existing/proposed buildings, vegetation and trees and ensure there is a minimum of 1.2m clearance between the base of the soakaway and highest groundwater levels. Soakage rates need to be above 10mm/hr for infiltration to be the sole method of drainage. Any designs must be supported by BRE365 testing, contamination testing and groundwater monitoring (if applicable) which confirms the ground is suitable for infiltration.

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Deep soakaways (greater than 2m in depth) will only be considered as a last resort, once other more favourable options have been ruled out. We note that deep soakaways are being proposed following discussions with SCC LLFA subject to no objection from the EA being received.

- Discharge to a Watercourse – SCC recommends that offsite discharge is restricted to QBAR or 2l/s/ha for all events up the 1% AEP plus climate change (unless this requires an orifice of less than 100mm in diameter) with appropriate treatment and volume control in place where appropriate. As there are no continuous watercourse networks recorded on the OS mapping on or adjacent to the site, any minor watercourse into which surface water is discharged will need to be surveyed through to its connection with a mapped watercourse to demonstrate it is not an isolated section of ditch.
- Discharge to a Surface Water Sewer – SCC recommends that discharge is restricted to QBAR or 2l/s/ha for all events up the 1% AEP plus climate change (unless this requires an orifice of less than 100mm in diameter) with appropriate treatment and volume control in place where appropriate. Anglian Water confirmation will be required that this option is feasible.

Greenfield rates should be calculated in accordance with the CIRIA SuDS Manual, based only on the area of the site to be positively drained, with no climate change allowance. SCC LLFA's preferred method for calculating greenfield runoff rates is the FEH methodology. In areas where surface water runoff is a critical issue, sensitivity checks should be undertaken to establish which runoff estimation method is the most conservative, with this method being used.

For sites on steep slopes or where overland flows of surface water are known to present issues locally, even if this hasn't been identified on national pluvial flood mapping, an allowance should be made for this within the location and design of SuDS features (e.g. not positioning open SuDS in existing flow routes or including interception features to safely divert flows).

The developer will need to obtain the relevant permits and permissions, dependent upon the runoff destination (e.g. Anglian Water, a local Internal Drainage Board, the Environment Agency, an adjacent landowner or SCC).

Exceedance flows should be identified on a plan demonstrating where water would travel should a rainfall event occur that was in excess of the design capacity of the network or in the event of a blockage or failure of the system. Exceedance flows should be mitigated where necessary (i.e. where they cannot be directed away from existing/proposed buildings).

Treatment of surface water should be designed in accordance with the Simple Index Approach as described in Chapter 26 of the CIRIA SuDS Manual.

Water is a valuable natural resource, and the management of rainfall and runoff can support sustainable development. Good urban design aims to deliver attractive, pleasant, useful and above all "liveable" urban environments that support and enhance local communities. Where possible, SuDS

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and amenity features can be merged to create multifunctional spaces. By doing so, the amenity and biodiversity of the SuDS feature is maximised while still providing its primary purpose.

Groundwater Vulnerability

- Source Protection Zone – the site is located within Source Protection Zone 3 (Total Catchment). The impact of the development on this feature should be further assessed.
- Groundwater/Aquifer Vulnerability - within an area where the underlying aquifer is recorded to be at medium to high vulnerability. The impact of the development on this feature should also be further assessed.

Policy & Guidance

The following documents and papers provide an overview of the majority of relevant policy and guidance relevant to both the area and to this site specifically,

National Legislation/Codes:

- National Planning Policy Framework
- National Planning Policy Guidance
- Defra's Non-Statutory Technical Standards for SuDS
- Building Regulations: Approved Document H - Drainage and Waste Disposal (2015 edition)
- BS8582:2013 Code of Practice for Surface Water Management for Development Sites
- CIRIA SuDS Manual C753

Local Policy & Guidance:

- Suffolk Flood Risk Management Strategy (SFRMS)
- Appendix A (Suffolk SuDS Guidance) to SFRMS
- Ipswich Local Plan (Policy DM4 Development & Flood Risk)
- Draft Development and Flood Risk Supplementary Planning Document
- Ipswich Strategic Flood Risk Assessment

Summary/Site Specific Notes

No flood risk assessment has been provided and no information has been submitted with respect to the extent and type of sustainable drainage that will be provided. This will be required to support the planning application. A list of required validation documents and evidence provided by SCC LLFA at the following link: <https://www.suffolk.gov.uk/asset-library/2023-sf3967-scc-suffolk-flood-risk-appendix-a2.pdf>.

SCC LLFA would welcome a sustainability led approach on this site and request that further consideration of the sustainable collection and reuse of rainwater be considered. This could include the incorporation of a blue and/or green roof element to improve the water quality of rainwater leaving the site or the inclusion of rainwater harvesting to provide a source of irrigation water or non-potable water uses. There is the potential associated with this site to provide substantial benefit with

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regard to improving the downstream flood risk by reducing off site flows, improving water quality and reusing water onsite to increase the project's sustainability which should be embraced.

SCC LLFA welcome further engagement with respect to this site and the proposed plans and can be contacted via email at floods@suffolk.gov.uk.

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