

FAO Lancashire County Council / LLFA Phil Wadley / Elizabeth Hundle

Date: 03/03/2023

Ref: AEG0904_BB11_Burnley_07_B

RE: Hollin Cross Farm, Woodplumpton Road, Burnley, Habergham Eaves, Lancashire, BB11 3RS – FUL/2022/0149

Dear Lancashire County Council,

Aegaea have been asked to review the submitted documents and consultee responses to Burnley Borough Council planning application FUL/2022/0149 for the proposed development of Hollin Cross Farm with focus to Flood Risk and Surface Water Drainage. For the benefit of the reader, Aegaea previously produced a letter dated 18/01/2023. The format of this letter follows on from the previous by reviewing documents associated with the application regarding flood risk. Aegaea previous letter set out how groundwater was first raised by the LLFA and then was not mentioned in further consultations. Aegaea recommended further investigation in the form of ground water monitoring should be conducted to satisfy residents and inform the design. In addition to groundwater, surface water flood risk was also discussed that the EA model is national scale and that a site-specific model would be more representative, it should also include climate change allowances in line with the latest EA guidance. Finally, the letter set out that the current SuDS drainage layout could need to be reviewed/redesigned especially if further site specific investigations such as groundwater monitoring and a site specific direct rainfall model demonstrated different results to those presented on the current information.

. For the purposes of this review, the following documents have been reviewed to understand the risk of flooding to the site.

- Sweco – Groundwater Flood Risk Review (Project Number 65209009 & Dated 14/02/2023)
- Flood Risk Assessment, Report Ref: 680259-R1 (02) FRA
- Drainage and Levels Assessment, Report Ref: 21061
- Geo Environmental Investigation Report Pt 1, Report Ref: 21061/GEIR
- Geo Environmental Investigation Report Pt 2, Report Ref: 21061/GEIR
- Drainage Query Clarification Report, Report Ref: 21061, dated 20/12/2022
- LLFA Response dated 15/08/2022
- LLFA Response dated 11/10/2022
- LLFA Response dated 06/01/2023

The main focus areas Aegaea have been asked to review are;

1. Groundwater
2. Surface Water / Pluvial
3. Surface Water Drainage (SuDS)

Discussion

1. Groundwater

Aegaea have reviewed the response provided by Sweco (Project Number 65209009 & Dated 14/02/2023). Their report was a review of the site from a groundwater flood risk perspective only. The study was based on a high-level review of the third-party information available and was current at the time of drafting. No consultation or a site visit has been undertaken.

The letter reads positively, and the conclusions summarise the hydrogeological conditions at the site against the proposed development. However, the final statements align with previous recommendations that groundwater monitoring would be beneficial to determine and inform the design and temporary works.

Residents have expressed concerns that if groundwater monitoring were to demonstrate that the site was affected much more than has been initially thought, that there would be potential implications to them, as well as the overall design of the site in terms of layout, SuDS and mitigation to the proposed units and existing properties.

SWECO Conclusion is set out below.

Based on the high-level review of the reports and information listed in Section 1 our assessment concludes that groundwater and any associated potential flood risk is not expected to be a significant constraint to the development.

Based on the information available, any flooding appears to be primarily associated with surface run-off due to the presence of low permeability clayey glacial till underlying most of the site.

Groundwater is present within the peat, which would be naturally associated with wet ground. Groundwater is also within small, localised pockets of more permeable deposits within the clayey glacial till.

Much of the peat deposit within the site boundary will be removed during construction of the attenuation pond, reducing groundwater storage. Any perched groundwater within more permeable horizons within the till will be isolated and of very limited extent. It may be encountered during regrading or excavation activities, but flows are likely to be minimal in terms of volume and duration.

Weathered sandstone at the top of the bedrock is likely to contain groundwater but will not be intercepted by the attenuation basin.

Further monitoring of winter groundwater levels (between November and March) within peat and sand horizons would be beneficial to inform the detailed design and temporary works.

2. Surface Water / Pluvial

The previous letter recommended that Surface Water Flooding should be considered in greater detail. No response has been provided. A site-specific rainfall model factoring climate change and ground conditions would be more representative than the EA national scale model. Particularly given the concerns over potentially high groundwater levels. The national surface water maps take a high level approach to infiltration based on soil moisture storage capacity that could be checked based on better local information and monitoring. This is based on ReFH and older rainfall data sets that have now been superseded.

Model results could demonstrate that further mitigation is required to not increase flood risk elsewhere.

3. Surface Water Drainage (SuDS)

Surface Water Drainage Strategy could be required to be reviewed in terms of design and arrangement of SuDS features, especially if the groundwater monitoring were to show that the site is much more affected than the current third-party information concludes.

Conclusion

Groundwater monitoring should be conducted to determine the overall risk to the proposed development. Mitigation should then be designed to support the proposed development in line with NPPF and local plan policy CC4, ensuring that there is no increase to flood risk either within or without the site.

Surface Water Drainage Strategy could be required to be reviewed in terms of design and arrangement of SuDS features. This may limit the depth of suds features and require broader, shallow attenuation, or raised features, especially if the groundwater monitoring were to show that the site is much more affected than the current third-party information concludes.

Surface Water flooding has been assessed to date by only using the EA RoFSW mapping which does not factor climate change. A site-specific rainfall model factoring climate change and ground conditions would be more representative than the EA national scale model. Model results could demonstrate that further mitigation is required to not increase flood risk elsewhere or impact flood flows in accordance with the, PPG, NPPF and the Local Plan Policy CC4.