From: Harrison, Lauren <<u>Lauren.Harrison@balfourbeatty.com</u>>
Sent: 21 October 2022 13:40
To: Bailey, Josh <<u>Joshua.Bailey@herefordshire.gov.uk</u>>
Cc: Hockenhull, Joel <<u>Joel.Hockenhull@balfourbeatty.com</u>>
Subject: 220532 - Broomhill Farm

Hi Josh,

We have reviewed the additional information provided for the above application which included a direct response to our previous comments. Within this document, the Scottish Building Regulations were quoted throughout however, in Hereford, the foul water drainage infrastructure must comply with Building Regulations Approved Document H Drainage and Waste Disposal. As previously identified, the current foul water drainage proposals for the site do not adhere to this guidance as the 'completed' percolation tests have found unacceptable Vp rates which are outside of the accepted range stipulated in Document H. Attached is our most recent formal consultation response; our comments still stand. We have concerns regarding the risk of water re-emergence that could lead to water ponding in the low point alongside the A417. The risk of emergence onto the highway would be increased particularly after episodes of rainy weather. This is likely to cause a hazard to motorists using the A417.

An alternative solution would be a direct discharge to the watercourse, via a package treatment plant, upon the purchase of phosphate credits.

Please find this to be our 'formal' response to the recent consultation. We have no further comments to provide until the attached advice is considered.

Kind regards, Lauren

Lauren Harrison

Graduate Flood Risk Consultant | Balfour Beatty | Services | Living Places | Herefordshire Public Realm

(Seconded to BBLP from Waterman Aspen)

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Download the : <u>Herefordshire SuDS Handbook</u> and the <u>Strategic Flood Risk</u> <u>Assessment (Level 1)</u>

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SITE:	Broomhill Farm, Felton Court Road, Felton, Herefordshire		
TYPE:	Planning Permission		
DESCRIPTION:	Proposed change of use of agricultural building to dwelling (C3) with associated landscaping and drainage works		
APPLICATION NO:	220532		
GRID REFERENCE:	OS 358666 - 248471		
APPLICANT:	Mr & Mrs I Aubrey		
AGENT:	Mr Ed Thomas		

Our knowledge of the development proposals has been obtained from the additional sources following our previous comments in April 2022:

• Surface Water & Foul Drainage Report 08.08.22.

Overview of the Proposal

The Applicant proposes the change of use of agricultural building to dwelling (C3) with associated landscaping and drainage works. The site covers an area of approx. 0.092ha. An ordinary watercourse flows approx. 290m to the east of the site. The topography of the site slopes down from west to east by approx. 1m.

Site Location

Figure 1: Environment Agency Flood Map for Planning (Rivers and Sea), March 2022



Flood Risk

Fluvial Flood Risk

Review of the Environment Agency's Flood Map for Planning (Figure 1) indicates that the site is located within the low risk Flood Zone 1. As the proposed development is less than 1ha and is located within Flood Zone 1, in accordance with Environment Agency standing advice, the planning application does not need to be supported by a Flood Risk Assessment (FRA). This is summarised in Table 1:

Table 1	1: Scenarios	requiring	a FRA

	Within Flood Zone 3	Within Flood Zone 2	Within Flood Zone 1
Site area less than 1ha	FRA required	FRA required	FRA not required*
Site area greater than 1ha	FRA required	FRA required	FRA required

*except for changes of use to a more vulnerable class, or where they could be affected by other sources of flooding

Surface Water Flood Risk





Review of the EA's Risk of Flooding from Surface Water map indicates that the site is not at risk of surface water flooding.

Other Considerations

Review of the EA's Groundwater map indicates that the site is not located within a designated Source Protection Zone or Principal Aquifer.

Surface Water Drainage

Infiltration testing has been undertaken at the site whereby one trial hole was excavated to 1.5mBGL. the trial hole failed to drain as the water fell by only 180mm in 24 hours. We understand that no groundwater was encountered at 2.5mBGL.

As the development proposals comprise the change of use of an existing agricultural barn and the retention of an existing access, the existing surface water drainage arrangements are proposed to be retained. Currently surface water runoff flows onto the soil to the south and east of the barn via gutters.

As the building use will be residential, the potential effects of climate change must be considered, and a formal surface water drainage system must be proposed. This may include an offsite discharge, given that a discharge to ground is not viable as suggested from the percolation test results.

We are confident that an arrangement can be agreed and would look for an amended surface water drainage strategy to be provided at Discharge of Condition stage.

Foul Water Drainage

Percolation testing was initially undertaken at the site whereby 9 trial pits were excavated. The depths of the pits ranged between 150mm and 750mmBGL. 5 of the 9 trial pits were abandoned due to poor soakage. The remaining pits did show some soakage; notably these were at shallower depths and mostly located to the east of the land ownership boundary, adjacent to the A417. Despite this, it was concluded that a discharge to ground would not be viable.

We calculated the percolation rates for trial pits 2, 7 and 9 which were not abandoned based on the water level drop over 5 hours. Trial pit 2 was excavated to 300mm and found an approximate rate of 86s/mm. Trial pit 7 was excavated to 150mm and found an approximate rate of 106s/mm. Trial pit 9 was excavated to 550mm and found an approximate rate of 95s/mm. The average rate from these pits is approx. 96s/mm which is slow however it is within the accepted Vp rate range between 12-100s/mm as stipulated by BS 6297.

However, the porosity tests were incomplete. The water should have dropped to 25% of the 300mm deep test pit. In most cases the water dropped to 170mm or 190mm below the top of the pit.

Upon our request of further testing, 4 additional trial pits and a groundwater level assessment were excavated in the potential drainage mound location. The groundwater level assessment confirmed that no groundwater is evident at 2mBGL. Again, the additional percolation testing was conducted at shallow depths whereby two pits were 400mm deep and the other two were 600mm deep. All the Vp rates obtained from the testing were not acceptable, ranging from 117s/mm-293s/mm. Therefore, it is concluded that a foul water discharge to ground is not viable.

Given the poor soakage onsite, we have significant concerns regarding the risk of foul water reemergence and subsequent flooding of the adjacent A417.





The drainage mound is proposed along the eastern land ownership boundary; however, this is too close to the adjacent highway (A417). A 5m offset distance is required between the A road and proposed drainage mound.

We object to the current foul water drainage proposals of a drainage mound for the following reasons:

- The Vp rate established onsite is not within the acceptable range stipulated by BS 6297, therefore a drainage mound is not an acceptable discharge method.
- The inherent risk of foul water re-emergence to the adjacent highway (A417) given the poor soakage onsite.
- The close proximity of the proposed mound to the adjacent highway (A417) along the eastern land ownership boundary. A 5m offset distance must be accommodated.

Overall Comment

We object to the proposed development based on the current foul water drainage proposals.

An alternative solution would be a direct discharge to the watercourse, via a package treatment plant, upon the purchase of phosphate credits.



