
From: Whittaker, Roberta (EXT)
Sent: 31 October 2022 12:18
To: Johnston, Christopher
Cc: Planning (SMDC)
Subject: SMD/2021/0491 - Land off Tenford Lane - LLFA Response (Rev 8)

Categories:

Hi Chris,

Thank you for reconsulting us on the RM application SMD/2021/0491 – Land off Tenford Lane.

Staffordshire County Council Flood Risk Management Position

We have reviewed the submitted information and note that the layout has now changed and therefore there is further information required on the revised drainage strategy, listed below.

Drainage Strategy

- Please label pipe lengths on the drainage plan.
- Need to see a revised impermeable area plan to correspond with the figures in the revised modelling.
- The revised strategy has removed the swales in the latest design iteration. As per the planning condition, please explain how the required 2 levels for highway drainage are being provided, and please provide an updated SIA for the site.

Infiltration Rates

Previously we were supplied with infiltration testing from November 2021 – Winter test. We agreed to take the rate from the test pit closest to the proposed infiltration basins – TP03 with a rate of 1.99×10^{-5} m/s – the slowest recorded rate from this test pit, with a safety factor of 10.

In the latest revision, you have provided new infiltration testing from June 2022 – Summer test. We have only been supplied with 2 test location logs TP05 and TP02. It appears that the rates from TP05 have been used in the modelling of 9.55×10^{-5} m/s. This is the highest of the 3 supplied rates.

As you have now provided both summer and winter testing, we would expect the infiltration rate to take the slowest value of both of these tests at an appropriate location – i.e. 1.99×10^{-5} m/s (or a rate from TP10, TP06 or TP07 in the summer testing should any of these results be slower).

We also note that you have now raised the safety factor of the infiltration basins in Micro drainage to 3 from 10. We would not support this and request that you change it back to 10 as previously agreed.

Design of the Infiltration Basins

- Please provide cross sections of the revised infiltration basins for us to make an assessment that the slopes are suitable for maintenance and that sufficient freeboard is provided
- Effective pre-treatment of water is required to remove sediment and silt loads to prevent long-term clogging of infiltration basins – the swales have now been removed from the strategy – how will this pre-treatment be provided in the revised strategy?
- The GI report is still outstanding. While you have provided summer testing results, it was the GI report relating to the winter testing (November 2021) that we need. – we need to see this to determine if groundwater is sufficiently below the base of the infiltration features to allow them to operate correctly and to look at contamination, risk of collapse / other things in the SuDS manual listed below.

The following issues should be assessed as part of the design process for infiltration systems:

- risk of ground instability, subsidence or heave due to infiltration

Part D: Technical detail

CIRIA SuDS Manual 2015

- risk of slope instability or solifluction due to infiltration
- risk of groundwater pollution from mobilising existing contaminants on the site
- risk of pollution from infiltrating polluted surface water runoff from the site
- risk of groundwater flooding due to infiltration
- risk of groundwater leakage into the sewers, basements, tunnels or other structures due to promoting infiltration on the site.

Calculations

- The modelling only includes one infiltration basin. Can you please supply the MD for the whole site as it has changed from previous revisions.
- Can you resupply the source control outputs for the permeable paving as the configuration has now been changed.

Exceedance

- We need to see further details on the landscape bund or fencing on the Tenford Lane boundary and the exceedance arrangements as per the discussions at

outline

7.0 Flood Routing and Exceedance

Due to the topography of the site the natural failure route should the system become inundated would be towards the southern boundary.

Initially it would be proposed to try and contain as much of the runoff within the carriageway which would direct it towards the undeveloped area to the west. A cut off drain should also be positioned along the southern boundary to capture and residual runoff, preventing it running into Tenford Lane, and directing it towards the infiltration basins to the west.

A bund should be positioned around the area of the infiltration basins to provide extra volume and allow water to be temporarily stored and infiltrate at a controlled rate.

As a test for how the system would perform during an extreme event, a simulation was run for the 1 in 1000 year event with no climate change. It was found that the system generally performed well with only a small amount of flooding, 6.179m³ being present at within Pipe 2.006 and 4.807m³ in pipe 2.007. It is anticipated that this could be temporarily stored within the grassed area to the east or designed out at detailed design stage through an adequately sized collection system.

A plan showing exceedance routes is included in Appendix N and this will need to be visited once the proposed level strategy has been finalised.

stage

- We also need to see FFLs on the plan

Please note that new documents often raise further questions so any list of requirements we provide may not be exhaustive.

Advice to LPA

Please re-consult us at when amended details are received. If you are minded to approve the application contrary to this advice, we request that you contact us again to allow further discussion.

Kind Regards
Roberta

Please note my working days are Monday to Wednesday.



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