

**District: Cherwell**

**Application No:** 21/00184/DISC

**Proposal:** Discharge of condition 11 (surface water drainage scheme) of 16/02446/F

**Location:** Heyford Park, Camp Road, Upper Heyford, Bicester

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## **Local Lead Flood Authority**

### **Recommendation:**

Condition 11 not discharged

### **Detailed comments:**

The LLFA was under the impression that infiltration is no longer feasible due to contamination issues however, infiltration is being proposed throughout the system. There is also no detailed BRE 365 testing across the site to clarify more accurate infiltration rates if infiltration is feasible.

There also appears to be issues with the calculated discharge rates for this parcel.

The PBA FRA (ref 33374/4000 Rev B, 05.12.16) calculated the following greenfield runoff rates based upon a 12.5ha (the site is noted as 12.04ha?) parcel area:

Q1 – 4.2 l/s

Qbar – 5 l/s

Q30 – 9.9 l/s

Q100 – 12.9 l/s

The PBA FRA produced in Dec 16, has used 30% climate change factor for peak rainfall.

The 40% climate change factor came into effect in Feb 16 so should have been used to calculate the required storage volumes.

The current Woods Hardwick designs have also only applied the 30%cc to the detailed design, when a 40% allowance needs to be considered in the attenuation calculations.

In addition, the peak discharge for the current Woods Hardwick designs have used the Q100 12.9 l/s rate as the limiting rate. Therefore, during all events up to the 100y (i.e. the 1y and 30y events), the discharge from the site will be greater than the current equivalent greenfield runoff rate, contrary to current guidance.

For the southern attenuation basin, the TWL during the 100y+30% event is 121.514mAOD with the GL of 121.520mAOD there is not the 300mm min freeboard provided. This is therefore likely to flood during the 40%cc event.

The northern attenuation basin TWL during the 100y+30% event is 121.514mAOD with the GL of 123.090, there is sufficient freeboard and is likely to be ok during the +40%cc event but needs checking.

The amount of flooding across the onsite network during the 100y+30%cc event is generally manageable and not likely to cause local or compounded flooding issues to dwellings:

- 1.007 – 0.091m<sup>3</sup>
- 5.000 – 2.955 m<sup>3</sup>
- 7.000 – 7.952 m<sup>3</sup>
- 11.000 – 3.392 m<sup>3</sup>
- 11.001 – 3.575 m<sup>3</sup>
- 16.000 – 0.173 m<sup>3</sup>
- 17.000 – 4.388 m<sup>3</sup>
- 23.000 – 1.577 m<sup>3</sup>
- 23.001 – 3.316 m<sup>3</sup>
- 4.000 – 107.392m<sup>3</sup> – This is substantial flooding but is offsite entering the system from the north. This flooding appears to be the result of 5000m<sup>2</sup> being directly entered into a DN225 pipe at once.

However, A flood exceedance plan is required to demonstrate that any excess flows in the event of a blockage to the system will be managed safely throughout the site.

CV – 0.84 used, ideally should be 0.9-0.95.

Not all the pipe references on the plan match the calcs.

A brief plan indicating the Maintenance and management of SUDS features has been provided in the report, but is not specific enough and should list actual maintenance activities that are required for the Permeable Paving, Cellular attenuation Tank and open Swales / Attenuation Basins and the vortex / orifice flow controls.

No Phasing plan or note indicating how the surface water is to be managed during the construction phase has been provided.

**Officer's Name:** Richard Bennett  
**Officer's Title:** Flood Risk Engineer  
**Date:** 01 March 2021

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