

From: Mark Jones

Sent: Thursday, October 24, 2019 9:56 AM

To: Samantha Taylor <Samantha.Taylor@Cherwell-DC.gov.uk>

Cc: Planning <Planning@Cherwell-DC.gov.uk>

Subject: Land Adjoining and West of Bloxham Recreation Ground, South Newington Road,

Planning Ref: 19/01705/OUT

Samantha

Find below replies to the comments of Richard Bennett (LLFA)

Site is partially in Flood Zone 2 and 3 as noted in FRA. Evidence required from Environment Agency that they are happy to permit development.

Discussions are being held with the EA but the attached plan shows that Flood Zones 2 & 3 within the site are restricted to the edge in the north east corner of the site with the development area being in Fluvial Flood Zone 1

Discharge to existing culvert/watercourse. Evidence required as to condition of culvert, capacity or culvert/watercourse and consent to discharge has been obtained.

The culvert that ran beneath the former railway has been adopted by the water company during the process of building the houses to the north. It has been assumed it is regularly inspected and maintained by the water company.

Flows to be at Greenfield rate for all relevant Return periods including 40% Climate Change.

The greenfield runoff rates have been calculated for events between the 1 in 1 year event and the 100 year event, they are included in the appendices. The storage and retention has been calculated for events up to the 100 year plus 40% level.

Evidence required of buffer zone between development and watercourse.

The main watercourse is to the north of the boundary by approximately 60m the ordinary watercourse follows the northern boundary within the sports club boundary before turning north within pipes towards the railway embankment. This flows along the railway embankment towards the culvert. This is within the public open space area.

Overland surface water post development flow path to be provided.

At present this will flow to the north towards the sports pitches or overland towards the culvert location, as the development is not detailed at this stage the internal flow route between properties cannot be determined as the layout is not fixed. The FRA deems it appropriate for the reserved matters application to consider the overland flow routes.

FRA notes significant area to the North of the site which is prone to flooding.

Evidence/justification required as to how this will be mitigated, i.e. shallow basins for temporary shallow sacrificial storage.

There is a potential Surface Water risk shown on the plans in the northwest but there is no development shown within the area. It is also a different catchment from the developed area (photo of the culvert to the north of the site that would collect the flow from the northern area).

Infiltration test results required.

They have been undertaken for the site in three locations, they show two failures for the lower locations where the flows would collect and one marginal pass towards the high end of the site in the southeast. Overall infiltration would be impractical.

Table 5.3 refers to the old CIRIA SuDS Manual, not latest industry best practice. Apologies, this is a typographical error as the report was initially produced a number of years ago this reference was not updated.

Calculation files do not appear to indicate a Cv value that has been applied. Cv is a measure that dictates the flow rate it usually applies to pipework of channels. Both of the calculation methods for greenfield runoff incorporate factors based upon soils and/or slope of the ground to determine the overland flow rates rather than an estimated factor.

Calculations for a site of this scale should use FEH methodology. The FEH is a methodology based upon statistics from river catchments and has been developed for sites of 50ha or greater containing watercourses. The results are then factored down to match the site size. The EA recognise that the IH124 method is a suitable form to use for sites of less than 50ha.

Freeboard for attenuation basin needs demonstrating. At this stage we do not know what the detailed designer will specify but we would normally use a minimum of 600mm as it is across sloping ground we would build up the low side to minimise excavation depth.

Draft Management and Maintenance Plan needs to be submitted. Written and plan demonstration of Treatment and Management train needs to be demonstrated. This will be implemented at the reserved matters stage and can be secured via an appropriately worded condition.

Plan required detailing final discharge points, flow rate and flow control method to be submitted. The estimated calculations showing flow rates and attenuation volumes are included in the Appendices. This is to show that the development will be feasible, a drainage strategy plan is included within the appendices.

Proposed Greenfield discharge rate appears high. The greenfield flow rates are estimated utilising standard calculation methods and the Non-statutory technical standards for sustainable drainage systems.

Design notes:

Consider splitting site into sub-catchments that manage their own surface water, in turn providing redundancy. Site should look to having a dispersed site storage regime. With the information available at this stage it would be difficult to undertake a detailed network.

Design out combined kerb drains as these pose a long term maintenance burden. At present we would have to keep the drainage shallow to avoid the existing water mains, although we would like to introduce swales or similar constructing them across the mains might not be practical.

Permeable paving should be used for all hardstanding areas. This was discussed in the report as an option but we had to consider the worst case scenario in the strategy to ascertain if the storage could be accommodated within the site boundary.

Green space should be better used for SuDS techniques to be employed.

We would expect the developers drainage designer to consider the 4 pillars of SuDS coordinating with the environmental mitigation requirements for the final design.

At present, from the data submitted, site appears to be pipe to pond, this is not considered best practice.

We would hope any developer would consider the SuDS options comparison within the Surface Water management section within the report for their design layout.

Although we acknowledge it will be hard to determine all the detail of source control attenuation and conveyance features at concept stage, we will expect the Surface Water Management Strategy to set parameters for each parcel/phase to ensure these are included when these parcels/phases come forward. Space must be made for shallow conveyance features throughout the site and by also retaining existing drainage features and flood flow routes, this will ensure that the existing drainage regime is maintained, and flood risk can be managed appropriately.

Regards

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I N C R E A S I N G L A N D V A L U E
