Heyford Park - Lead Local Flood Authority Comments Response.

The OCC response states that a site specific Flood Risk assessment should be provided for any development over 1ha in flood zone 1, which has been provided. It also states that surface water management should be considered from concept and that the layout should be influenced by the drainage solution. I believe that the positioning of the green spaces allows the SuDS features to be positioned in the topographically correct position which would mimic the current overland surface water routes.

The green spaces provided will also allow infiltration techniques to be utilised if soakaway testing is proved to be viable. As the site is also currently drained by an existing system, this system has been retained where possible and existing connections points to the local network also being utilised. In addition, betterments have been provided to discharge rates by decreasing the max flow rates to QBAR greenfield run-off. This will in turn reduce the impact of the downstream network

1. Infiltration results not currently available, therefore a strategy has been developed which does not currently rely on infiltration at source.
2. Full ground water levels are not currently available.
3. Discharges to local watercourses have been restricted to greenfield run-off rate. Greenfield run off calculations are shown in Appendix A showing QBAR greenfield rate of 4.3l/s/ha. This rate has been applied to all proposed development parcels.
4. A 40% increase for climate change has been applied to al 1 in 100-year events to calculate attenuation requirements. See results for each parcel in Appendix A.
5. Full Micro Drainage calculations have been provided for each parcel
6. Cv values used are based on data provided by Micro Drainage based on site location.
7. Calculations
8. As the site is already developed it has been assumed that as the proposed developments have been reduced from free discharge to Greenfield Run off Rate that a net improvement to downstream impacts has been provided.
9. The local watercourses are not considered main river by the Environment Agency so discharge consents not required from the EA.
10. Land Drainage consents for proposed connections to Ordinary Water courses will need to be made to Cherwell District Council.
11. Infiltration results not currently available. Green spaces provided could be utilised for infiltration features if infiltration methods are viable.
12. Green spaces have been utilised for provision of attenuation basins.
13. Majority of development parcels are for residential use; it is unlikely that blue/green roofs would be used on private properties. Green roofs could be considered on Educational and commercial buildings.
14. Swales could be utilised to ensure surface water conveyance is kept as close to surface as possible.
15. There are no proposed connections to the existing Thames Water surface water system.
16. Parcels are separated in to individual drainage catchments based on topography, and individual attenuation systems are provided for each catchment.
17. A pre & post development overland surface water flow plan can be provided.
18. Routes for ingress/egress can be provided for each parcel based on existing surface/fluvial flooding routes and potential exceedance flow routes.
19. Plan showing exceedance flow routes and areas for exceedance can be produced.

20. Green spaces have been utilised for attenuation provision.
21. Forbay areas could be introduced in to attenuation basins to provide surface water treatment.
22. Internal road layout for parcels is information that is not currently available. Permeable materials can be considered for private parking areas, driveways and potentially adoptable estate roads.
23. Half drain times can be provided within the Micro Drainage calculations.
24. Detailed network of drainage network has not been developed as the internal layouts of residential parcels will be developed at a later date. Current strategy shows the overall process for surface water management.
25. 10% increase for Urban Creep has been included in residential impermeable areas. Table 2 shows parcel areas including urban creep increase. Urban Creep has been used to calculate overall attenuation volume required, but has not been applied to calculating discharge rate.
26. Further information will be required as to the phasing of the development to allow construction phase drainage strategy to be developed.
27. Usage of swales could be incorporated in to parcels where possible for conveyance of surface water to attenuation basins.
28. Forbay areas could be included within attenuation basins for sediment removal. In addition to this swales could be utilised for conveyance of surface water to attenuation basins.
29. Exceedance flow route plan can be produced for post development.
30. -
31. Cross sectional drawings for attenuation basins can be provided.
32. Maintenance procedures for SuDS features included in Table 3 of Flood Risk Assessment.