

At this stage we **would not recommend discharge of conditions** until the following comments are addressed.

1. Additional information is required on the design drawings.
 - The loading class for the cover on the sediment trap manhole (and any other manholes) should be stated.
 - The access point for carrying out maintenance and inspection of the soakaway should be stated, (and details given if this is an additional element of the design e.g. additional manhole).
2. The site is located in a source protection zone, as a result it is necessary to confirm that the proposed soakaway will not present an undue hazard to underlying groundwater.
 - Section 4.3.4 of the Surface Water Drainage Report states that the EA's website confirmed the site is not within a groundwater source protection zone. Inspection of the SPZ mapping hosted by DEFRA suggest the site is located within SPZ 1 (Inner Protection Zone), due to the presence of a water abstraction borehole and water treatment works to the north. This can have an impact on the conclusions of the pollution control section of the report and should be amended within the report to ensure any requirements relating to the SPZ have been considered.
 - Agreement with EA would be required for the use of soakaways at this location. Especially as the site is located in a groundwater source protection zone (SPZ 1). Proof that the EA has accepted the use of soakaways at this location is required.
3. Groundwater levels at the site have not been confirmed. In addition, a plan showing the location of the groundwater test has not been provided. Please provide this information.
 - Please note for a single unit extension we would expect measurements for at least 48 hours in either January or February.
 - Assessing groundwater levels in this location is considered particularly important due to the proximity of the adjacent water treatment works, position within a groundwater source protection zone, proximity to the spring line at the interface between the London clay and Lambeth group, and the borehole to the east (along strike), which indicates groundwater levels in this area may be less than 2m below ground level.
4. The incoming pipe invert level is potentially below the 1:10 year water level within the soakaway. The applicant should confirm that the pipe is not likely to be surcharged during the 1:10 year storm. Or the pipe could be raised to provide a larger difference between the soakaways invert level and the pipe inlet invert level, or additional crates included within the design, to lower the 1:10 year water level.
5. The applicant should confirm that the soakaway is outside of the root protection zone (RPZ) for the trees located on the land where the soakaway is proposed.
 - If the soakaway is within the RPZ, details of any mitigation required to protect the tree(s) during construction, and for the lifetime of the development must be provided.
6. The calculations assume base infiltration will be available. This assumes no, or minimal siltation within the soakaway base over the lifetime of the soakaway, which typically is not acceptable to building control. The design calculation(s) should be rerun excluding base infiltration.

7. The infiltration rate calculations provided in the appendix of the surface water drainage report give a value for A_{p-50} of $1.32m^2$. Based on the pit dimensions provided, this value differs from the value calculated using BRE365, ($A_{p-50} = 1.47m^2$). This result differs by $0.15m^2$ (*1/2 the $0.3m^2$ base area of the trial pit*) and results in a difference in calculated infiltration rate. This will subsequently affect the drainage calculations. The infiltration rate calculations should be checked to ensure that they are with compliant BRE365 and to apply the correct pit dimensions and A_{p-50} value.
8. If the drainage calculations only account for runoff draining from impermeable surfaces, then the calculations should use a CV of 1.0.
 - It is noted that a safety factor of 2 has been used. If CV 1.0 is used as requested above, the safety factor can potentially be reduced to 1.5
 - The requirement to use CV 1.0 is based on recent clarifications from HR Wallingford which suggest the values of 0.84 and 0.75 often used are in error and confirm that a value of CV = 1 should be used in situations where runoff from only the impermeable areas is considered.
 - It is noted that CV 1.0 is only considered applicable to the sizing of the SuDS, and pipework may still be designed to lower values.

The use of FEH rainfall data would be preferred, however, in this case due to the small scale of the proposed development FSR rainfall is considered acceptable.

It is also noted that recent changes have been made to climate change allowances. As this proposal was submitted prior to these changes being made, this does not need to be considered as part of this submission.