

From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Sent: 03 November 2020 13:33
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Simon Davis <Simon.Davis@arun.gov.uk>
Subject: Y/71/20/RES

Simon,

The comments below in italics are from our original consultation response on the 15th September. Our latest comments are shown below in red. We maintain our holding objection at this time.

Engineers Comments Regarding Surface Water Drainage

The application includes details that appear to be attempting to discharge the surface water drainage conditions under this reserved matters application. I have broken my comments down into those relevant to the RM submission and those relevant to a future DOC application.

Reserved Matters Comments

*The below comments are based upon the level of information required to demonstrate that the proposed layout can be adequately drained. **Until the below points are resolved we wish to raise a holding objection to this application.** It is essential to establish if there is adequate space for surface water drainage prior to agreement of site layout. Drainage should be a fundamental consideration in design. Failure to secure a robustly evidenced implementable drainage strategy at this stage will likely unduly prejudice the drainage design and result in proposals failing to meet policy requirements.*

- 1. There appears to be conflict between the proposed public open space and surface water drainage proposals. There is a shallow infiltration basin proposed within the public open space, a LAP is even proposed within the basin. This is not appropriate. It is stated that water will only emerge on the surface here for events in excess of approximately the 1 in 10 year event, however with climate change and more intense storms it can be anticipated that the basin will have water in more frequently than this. The basin fails to meet half drain*

time requirements. With half drain time exceeding 24 hours for the 10 year plus climate change event. This is not acceptable. Water also emerges to the surface of the basin in the climate change event. Given the location of the LAP within the basin, this is not acceptable.

2. *An infiltration rate of $1.8 \times 10^{-6} \text{m/s}$ has been applied across the entire site. Yet infiltration rates were found to be lower than this in some areas. Please use the lowest infiltration rate found at/ nearest to the proposed location. Okay.*
3. *Within the checklist it is stated that all infiltration devices are kept to a maximum of 600mm depth. Yet permeable paving area 1 has a total depth of 770mm, permeable paving area 2 has a total depth of 710mm, permeable paving area 3 has a total depth of 780mm, permeable paving area 4 has a total depth of 860mm. Please review or provide evidence that all features are located above peak recorded groundwater level, i.e. put groundwater levels on the drainage plan. Details, supplied, point closed.*
4. *It is understood that the permeable paving areas will not have a flat sub-base, please provide spot levels on the drainage layout showing finish and formation levels of permeable paving. Okay.*
5. *Construction detail drawings of check dams have been provided, please clearly indicate on plan where these are proposed. Provided.*
6. *Please provide impermeable areas plans that clearly show the areas draining to each surface water drainage feature. Preferably provide these in dwg to facilitate paperless review. This drawing is not broken down into infiltration features, i.e. figures of impermeable area are given for roads and houses, but not what area drains to each feature, e.g. area draining to soakaway for plots 5-8.*
7. *Please provide network calculations. Invert levels of pipes should not be at the base of infiltrating structures.*
8. *A full review of calculations will be completed once this information is supplied.*
 - a. *Pipes must achieve 1m/s self-cleansing velocity. There are currently numerous pipes that do not achieve this.*
 - b. *Please ensure all structures half drain in less than 24 hours for the 1 in 10 year plus climate change event.*
 - c. *Please provide 300mm of freeboard on basin above 1 in 100 year plus climate change event level.*
 - d. *Please provide invert levels of diffuser blocks on plan.*

DOC comments

We do not recommend discharge of the drainage conditions at this time. A separate application should be made.

1. *Successful resolution of the above reserved matters points. Awaited.*
2. *Please provide two perpendicular site specific cross sections of the proposed infiltration basin. These should show invert level, maximum water level, bank level, construction including connection between sub-base and basin. Provided, please see comment above.*
3. *Please provide construction detail drawings of pipe bed and surround. Okay.*
4. *Please provide construction detail drawings that clearly correspond to each of the proposed permeable paving types. Road types 2, 3 and 4 are inconsistent between layout drawing and detail drawing.*
5. *The construction detail drawing of the infiltration blankets needs to clearly show the layers of geotextile separating the geocellular units from the stone. Please ensure that permeable geotextile is stated. Please detail how compaction of stone is to occur, i.e. what are the loading limits for the crates. Okay.*
6. *The maintenance manual will be reviewed once the design has been agreed. Will be reviewed once design is finalised.*
7. *Further comments are likely once details are further reviewed.*

Regards,

Laura Gibbons

Drainage Engineer

Engineering Services

Please note that I work Tuesdays 08:00-16:00 for Arun only.



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