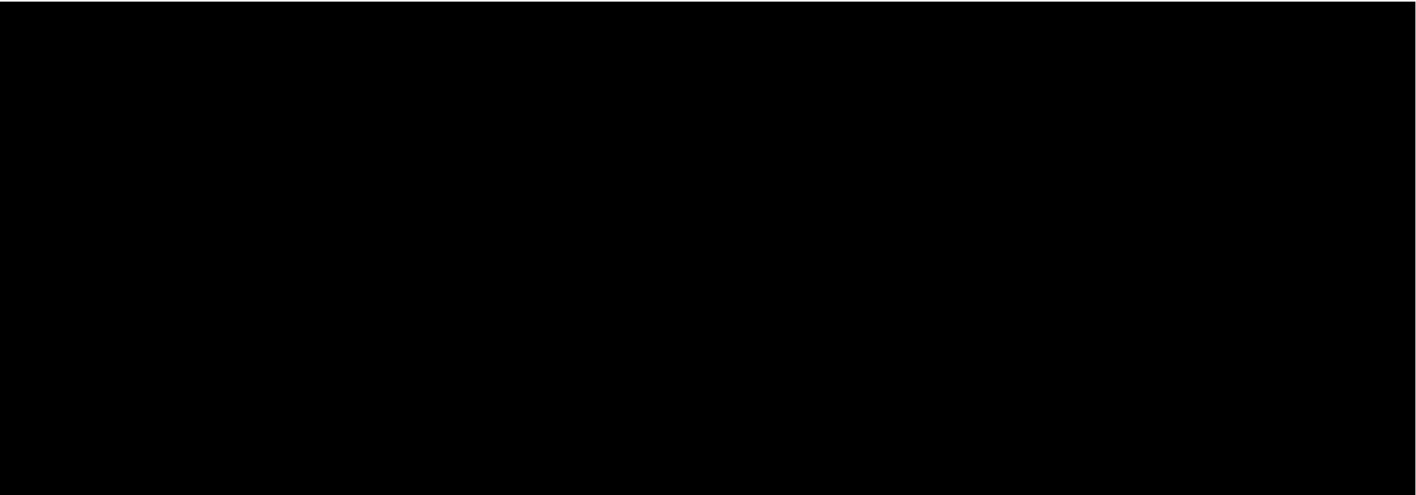


From: Sarah Burrow <Sarah.Burrow@arun.gov.uk>
Sent: 03 November 2020 16:18
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Maria Tomalova <Maria.Tomalova@arun.gov.uk>
Subject: RE: Planning Consultation on: FP/201/20/DOC

Engineers Comments Regarding Surface Water Drainage

The applicant has supplied infiltration testing results and groundwater monitoring data. Both undertaken within the winter period. It is noted that the three repeat infiltration tests were completed on consecutive days rather than in succession as stipulated by BRE 365. A factor of safety of 3 should be used in the calculations to compensate for this. The worst calculated infiltration rate of 1.267×10^{-5} has been used for the calculations which is appropriate.

Whilst calculations, a drainage layout and construction details have been provided, the following points require addressing before I can recommend discharging condition 4 on application FP/203/17/PL:

1. No impermeable area plan has been provided. The impermeable area used in the calculations is 140m^2 , it is unclear whether this is per soakaway or for the two combined, or whether this includes the garage or not. The impermeable areas draining to each soakaway need to be shown on a plan so that the calculations can be checked.
2. Following on from point 1, the calculations are unclear. The soakaways modelled in the calculations (1 in 10 year and 1 in 100 year storm) are different ($3.5\text{m} \times 4\text{m} \times 0.4\text{m}$ and $4\text{m} \times 3\text{m} \times 0.8\text{m}$ respectively). The $8\text{m} \times 2\text{m} \times 0.4\text{m}$ soakaway as shown on the drainage layout is not modelled (which should include the impermeable area of the garage). Furthermore the soakaways must be kept to a depth of 0.4m to account

for the depth of groundwater. The 1 in 100 year +40% calculations are not applicable in this case (as the depth is 0.8m). Calculations for each different soakaway should be supplied, for both the 1 in 10 and 1 in 100 year +40% event. The inputs should correspond with the drainage layout.

3. A safety factor of 2 has been used in the calculations. A minimum of 2 should be used for this kind of development where $CV=1$ (as shown in the Factor of Safety Table in our Drainage Checklist – a copy of which the applicant has completed). In this case C_v of 0.75 and 0.84 have been used in the calculations, and as discussed above, the infiltration testing was not completed in quick succession. A safety factor of less than three will not be accepted.
4. The Drainage Plan itself lacks sufficient detail. Guidance note 10 on the Drainage Checklist (as completed by the applicant) details what is required. In this case the following need to be added to the plan:
 - a. All surface water drainage pipes labelled with; diameters, pipe materials, falls and invert levels.
 - b. Soakaways to be labelled with invert and cover levels.
 - c. Manholes/Inspection chambers to be labelled with; cover levels, invert levels and cover types.
 - d. Silt traps clearly labelled with sump depths.
5. Permeable paving is shown on a separate drawing to the drainage layout without consideration of how it will interact with the soakaway below. It may be worth considering a permeable paving solution which half the property and the garage can drain into via diffuser units. As a minimum the permeable paving should be detailed on the Drainage Plan and 'Clean Crushed Stone' will need to be specified as Type 3 reduced fines or 4/20 or similar to be suitable for the engineered fill. A construction detail will also need to be supplied to show the layers from the block pavers to the bedding layer of the soakaway crates.
6. Linked to point 5; the soakaway construction details show a minimum cover depth of 0.7m, and the crates are 0.4m depth, yet depth of crates is stated on the drainage checklist as 0.9mbgl. With groundwater evidenced at 1m below ground level the crates must be kept at 0.9mbgl as a minimum. The construction detail will need to be amended to reflect this. If necessary the specified crates will need to be changed to ones that are suitable at shallower depths in vehicular areas.

Kind Regards

Kind Regards

Sarah Burrow

Engineering Assistant, Engineering Services

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Current working hours: Mon 8:00-2:30, Tues-Thur 8:00-17:30, Fri 8:00-11:30

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From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: 23 October 2020 08:52
To: Land Drainage [REDACTED]
Subject: Planning Consultation on: FP/201/20/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No: FP/201/20/DOC
Registered: 20th October 2020
Site Address: 7 Middleton Road Felpham PO22 6BL
Description of Works: Approval of details reserved by condition imposed under ref FP/203/17/PL relating to Condition No 4 - surface water drainage.

The Council have received the above application to discharge conditions. I shall be pleased to receive any observations you may wish to make in respect of those conditions relating to your field of expertise.

[Click here to view the Discharge of Condition application](#)

[Click here to view conditions on original application - click on decision tab](#)

Should you wish to make any comments click on the link www.arun.gov.uk/planning and click into ?Enter Comment? or if this is not possible email your response to planning.responses@arun.gov.uk by **6th November 2020**.

Please be aware that any comments you may make will be available on our website so please do not insert personal details or signatures on your reply.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

Yours sincerely

Maria Tomalova

Planning Case Officer- Arun District Council

Telephone: 01903 737510

Email: maria.tomalova@arun.gov.uk

PLCOND00 (006) 2020