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From: Maria Tomalova <Maria.Tomalova@arun.gov.uk>

Sent: 07 August 2020 10:44

To: Planning.Responses <Planning.Responses@arun.gov.uk>

Subject: FW: BR/128/20/DOC, 9 Westloats Lane

Please upload the below to the above application; Drainage Engineers comments.

Thank you

Maria Tomalova | Senior Planning Officer, Directorate of Place, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Internal: 37510 | External: +44 (0) 1903 737510 | E-mail: maria.tomalova@arun.gov.uk



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From: Sarah Burrow <Sarah.Burrow@arun.gov.uk>

Sent: 07 August 2020 10:19

To: Maria Tomalova <Maria.Tomalova@arun.gov.uk>

Subject: RE: BR/128/20/DOC, 9 Westloats Lane

Engineers Comments Regarding Surface Water Drainage

The soakaway appears to be undersized. I have used BRE365 (as the applicant has) and found that the calculations did not go up to the 24 hour duration (1440 minutes). The soakaway sizing is appropriate for the 60 minute storm duration, however using BRE365, the applicant would need to upsize it by approximately 10m³ to cover the 24hour storm.

The fundamental issue with regards to this application is that the soakaway is a shallow 'blanket' solution, designed as such to avoid the high groundwater. Therefore, the primary infiltration surface will in fact be the base which BRE365 does not allow for (due to risk of siltation). Given the design and the infiltration rate (being somewhat comparable to silt), it is proposed that the applicant uses a different method (CIRIA R156) to calculate the soakaway volume. This method allows the base to be utilised for infiltration. When I ran the calculations on our own model, the soakaway was still undersized but by making the width 1.5m throughout (rather than 1m for some), whilst keeping the total length at 25.5m the capacity would meet the requirement.

No calculations or dimensions have been provided for the permeable paving. At present I cannot run my own calculations with the detail provided.

With regards to the Drainage Layout and constructions details the following points need to be addressed:

1. Invert and cover levels for all components (including soakaway) need to be shown on the drainage layout.
2. The cross section needs to show the pipe going into the side of the crate rather than into the ground above it.
3. Please specify no fines in permeable paving and that it should be fully wrapped with a permeable membrane.
4. Given that the base is now to be utilised in the calculations please include silt traps (in addition to or opposed to the gully pots) upstream of the soakaway. Every opportunity must be made to avoid siltation as the base is the primary infiltration surface.

Kind Regards

Sarah Burrow

Engineering Assistant, Engineers

Current Working Hours:

Monday-Wednesday, Friday: 8:00 – 17:00

Thursday 8:00 – 11:00

Some of this time is spent on site.

T: 01903 737815

E: sarah.burrow@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF

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From: Maria Tomalova <Maria.Tomalova@arun.gov.uk>

Sent: 30 July 2020 10:18

To: Sarah Burrow <Sarah.Burrow@arun.gov.uk>

Subject: FW: BR/128/20/DOC, 9 Westloats Lane

Sara, the above and below was received on 20/07/20; probably I haven't forwarded it to you...

There is a plenty of time since the deadline is on 10/08/20.

Kind regards

Maria

Maria Tomalova | Senior Planning Officer, Directorate of Place, Arun District Council | Location: First Floor, Arun Civic Centre,
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From: Orchard Enterprises [REDACTED]
Sent: 20 July 2020 12:47
To: Maria Tomalova <Maria.Tomalova@arun.gov.uk>
Subject: RE: BR/128/20/DOC, 9 Westloats Lane

Dear Maria

I have spoken to Sarah Burrow with regards to her comments and please find attached the responses.

- 1, The calculation is correct Sarah made an error
- 2, Three tests were carried out and the worst case was used, the other tests are now noted on the calculation sheets.
- 3, Using the correct infiltration figures I supplied this does now drain within 24 hours
- 4, See attached new plan
- 5, see attached new plan
- 6, Permeable paving is shown on the plan and construction details from Marshalls are attached, they are not included in the calculations as no surface water from these areas is added to the drainage system.
- 7, Drawing amended to take this into account

I hope this answers the queries

Regards

Lee Smith

From: Maria Tomalova <Maria.Tomalova@arun.gov.uk>
Sent: Tuesday, July 14, 2020 1:43 PM

Subject: BR/128/20/DOC, 9 Westloats Lane

Dear Mr Smith,

With regards to your application (condition 4) there is a comment of Drainage Engineer attached on our website to be considered:

The infiltration rate calculated does not appear to be correct. Based on the dimensions of the trial pit and the times recorded to infiltrate from 75% to 25% full, using BRE365 I have calculated the infiltration rate to be 1.45×10^{-6} . The A value does not appear to be correct in the calculations.

2. It also appears that only one infiltration test was completed. BRE 365 stipulates that the trial pit should be filled three times in succession and the worst rate used for the calculations.

3. Using an infiltration rate of 1.45×10^{-6} the half drain time for a ten year event (+40% climate change) exceeds 24 hours.

4. The Soakaway Plan does not include the necessary level of detail as described in the Drainage Checklist. (Pipes, silt traps/manholes/inspection chambers, invert levels, cover levels, gradients/falls).

5. No construction detail drawings have been supplied (Soakaway, silt trap, pipe bed and surround minimum).

6. Permeable paving is noted on the site plan, but there are no calculations for this. Nor is it included in the drainage layout. Nor do we have a construction detail for it.

7. Any soakaways need to be kept a minimum of 1.5m from the property boundaries.

This application requires a significant redesign and further detail before it will be possible to recommend that the relevant condition is discharged. Indeed, based on the (apparently) insufficient testing it may be that infiltration is not viable on the site. It is strongly recommended that the applicant engages a professional Drainage Engineer who may be able to assist with the challenges of draining this site and discharging the relevant condition.

Kind regards

Maria

Maria Tomaiova | Senior Planning Officer, Directorate of Place, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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