

From: Sarah Burrow <Sarah.Burrow@arun.gov.uk>
Sent: 19 November 2019 15:22
To: Finlay Gardner <Finlay.Gardner@arun.gov.uk>
Cc: Planning.Responses <Planning.Responses@arun.gov.uk>
Subject: RE: Application BN/83/19/DOC

Hi Finlay,

1. I have now tested the proposed soakaways on two programs, both of which have them surcharged (slightly) for a 1 in 100 year +40% event.
2. The applicant will need to submit calculations for the permeable paving. Alternatively they can choose to direct the surface water to the soakaways and upsize them with amended calcs. If they choose to infiltrate through the paved area then they will need to consider putting in check dams to prevent the water cascading to the lower levels as the site has a significant slope. Alternatively the base can be formed flat but this will require more stone. Either option will need to be shown in detail drawings.
3. The 5/20 stone is acceptable as long as it is free from fines and achieves 30% voids.

Please can you pass this on to the applicant so that they can address the issues.

Kind Regards

Sarah

From: Finlay Gardner <Finlay.Gardner@arun.gov.uk>
Sent: 18 November 2019 11:44
To: Sarah Burrow <Sarah.Burrow@arun.gov.uk>
Subject: FW: Application BN/83/19/DOC
Importance: High

Hi Sarah,

I have had the agent get back to me regarding the drainage on the application and dealing with the 10 issues raised last time. Would these be acceptable? They are time pressured due to the permission running out on Friday. Any information that you need please let me know and I will get it for you as soon as possible.

Kind regards

Finlay Gardner

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

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Save the environment - think before you print.

From: Chris Slade [REDACTED]
Sent: 15 November 2019 08:53
To: Finlay Gardner <Finlay.Gardner@arun.gov.uk>
Cc: Luke Honeywill [REDACTED]
Subject: Application BN/83/19/DOC
Importance: High

Finlay

Please find responses below. Please bear in mind the urgency of this as the drainage information was submitted early September and Planning is about to lapse.

1. The design has been adjusted to suit the testing and was re-submitted. Calculations attached again indicating shallower soakaways.
2. Attached
3. The porous paved area will self-drain similar to any landscaped areas albeit with the addition of extra volume in the sub base. Calculations for this type of porous paving do not reflect this as flows are directed to a specific node on the network as opposed to the whole areas. The testing revealed similar strata throughout all depths so infiltration rates will be similar. If this is unacceptable then we will connect into a soakaway and increase the size to suit. Levels now taken and added the porous paving. Please confirm why Type 3 is preferred over a 5/20mm stone. We have retained the 5/20 stone otherwise we will lose any warranty with the manufacturer.
4. Calculations now show 1 in 10 year event. The return period is based upon the BRE 365 recommendation that calculates the half drain time assuming the structure is full, therefore the return period will not have any relevance.
5. Please clarify 'raw data' as I cannot see any reference to this on the checklist. The soakaway test report indicates the details of the test and seconds for each test. I'm not sure what else we can provide you with.
6. Noted and adjusted. There are two soakaways so levels not added to detail but references made clearer
7. Perforations facing down and note adjusted to suit
8. Ratio-R adjusted to 0.35
9. Sump depth adjusted on drainage layout
10. Agreed and going forward we will bear this in mind as this was not an issue on previous applications. The calculations stay the same so we would like to keep the tests as they are.

Kind regards

Chris Slade **FIHE**
CGS Civils Ltd



Drainage Design | SuDS | Flood Risk Assessments | Highways | External Works

Richard Cobden House | Lion Street | Chichester | West Sussex | PO19 1LW

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From: Finlay Gardner <Finlay.Gardner@arun.gov.uk>
Sent: 11 November 2019 11:12
To: Chris Slade [REDACTED]
Subject: RE: Application BN/83/19/DOC

Hi Chris,

Apologies for the delay in response, I have come back to the comments from our drainage engineers and they have said:

"Engineers Comments Regarding Surface Water Drainage Design"

There are a number of points to be addressed before we can consider recommending discharging the condition on this application.

1. The proposed soakaways are at a greater depth than the infiltration testing depth. The applicant has two options; redesign the soakaways to a shallower depth with a greater surface area, OR, recomplete infiltration testing in accordance with BRE365 to a greater depth at an agreed time in the winter. However, the calcs show a different story in terms of proposed base levels – please clarify.
2. Please provide an impermeable areas plan or list so that the calculations may be checked.
3. No calculations have been provided for the permeable paving. Specify formation and surface levels on the layout plans. Specify type 3 stone for the sub base. If it is proposed that the permeable paving infiltrates to the ground beneath then infiltration testing in accordance with BRE365 will need to be completed at the appropriate depths and at an agreed time in the winter. If the permeable paving is to attenuate and discharge to the proposed geocellular soakaways then this should be shown in the design drawings and allowed for within the calculations. Levels, etc may prevent this option.
4. The calculations provided do not include a 10 year event, the half drain time for a 10 year event (plus climate change) is required. Don't worry as it half empties easily on 30/100 year event/s. I note the half empty times within the calculations – it is unclear whether this is for the 100 year or 30 year event.
5. Please provide the results (raw data) of your infiltration testing so that the infiltration calculations can be checked.
6. Soakaway detail needs to clearly show a geotextile permeable membrane between the crates and the granular material in order to prevent granular material entering the crates. Please also make it clear that all geotextile wrapping is permeable. In addition the site specific cover, invert levels and crate depths should be shown on the construction detail drawing.
7. Please confirm and note on your details if the perforated pipes that are proposed will be fully perforated or half.
8. Within the calculations the Ratio-R needs to be adjusted to approximately 0.35 as is the norm for this area.
9. The silt trap construction detail sump depth does not correspond to that shown on the drainage layouts.
10. The percolation test hole dimensions do not comply with the requirements of BRE365 i.e. should be 0.3m to 1m wide x 1m to 3m long. Would welcome your comments in this respect.

Please make use of the Surface Water Drainage Proposal Checklist attached, or available at <https://www.arun.gov.uk/download.cfm?doc=docm93ijjm4n14067.pdf&ver=14313> to ensure that the updated proposal meets our requirements and to expediate discharge of conditions."

I trust this assists you and I look forward to hearing your response.

Kind regards

Finlay Gardner

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