

From: Anita Gardner
Sent: 19 December 2017 14:15
To: Planning.Responses
Subject: FW: 1 in 100 hydraulic calcs for 1-4 Holm Oaks F/26/17/DOC

Please treat as a consultee response.

Anita Gardner | Principal Planner, Directorate of Place, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: Paul Cann
Sent: 19 December 2017 11:44
To: Anita Gardner
Subject: RE: 1 in 100 hydraulic calcs for 1-4 Holm Oaks F/26/17/DOC

Hi Anita

Comments;

1. Please note that since the properties have been constructed, the comments below are likely to mean that additional construction works are required on site, in order to comply with our requirements. As part of this assessment, I undertook a walkover of the site.
2. It appears that the current surface water drainage design deviates from the originally approved scheme. Also, what exists on site does not correspond to what is shown on the current drawings.
3. The three soakaways shown at the front of the site are not visible. The two at the rear in the rear gardens also do not exist in the positions shown, although there are two manhole covers visible in the rear of plots 1 and 3, which may suggest that their positions have been moved. A channel drain exists where the driveway meets the public highway. The applicant needs to clarify what has been built on site and update the drawings accordingly.
4. Show how the channel drain is connected into the system.
5. The scheme has a fundamental problem in that the proposals/calculations are partly utilising deep soakage and storage. The basis of the original scheme was to rely on shallow soakage/storage due to the high water table (650mm below ground level) and with also the better percolation rates being achieved at shallow depth. Therefore, a large proportion of the storage in the ring soakaways is not unusable in high groundwater conditions and cannot be taken account of in the calculations. If ring soakaways are to be used as a means of providing pipe connectivity/water distribution, then they need to be physically connected to shallow storage, where suitable capacity can be provided, and favourable percolation rates made use of. It should be noted that the potential ring soakaways in the rear of the properties may not have any

connection to shallow storage features and are therefore probably unable to accommodate the design storm. The hydraulic calculations will need to reflect the above (they currently do not).

6. An outflow/overflow is shown from the permeable paving. Why is this needed? Has it been built? The original scheme was to solely rely on shallow soakage/storage and therefore this type of connection would not be permitted. If the connection has been made, then it would have been made to the highway drain in Burndell Road. Did WSCC approve this? The notes on the drawing mention it discharging to a channel drain?, whilst item 1.9 of the Ambiantal report refers to a discharge to a ditch? Has the permeable paving been tanked as a result?
7. The percolation rate used in the calculations was the best rate achieved in testing and should not have been used. Either the worst rate or an average would only be permitted. Please note that percolation through the base of ring soakaways should not be taken account of in the hydraulic calculations, not to mention anything deeper than 650mm below ground level. Due to the likely construction of the ring soakaways, this likely rules out the entire ring soakaways soakage potential and needs to be reflected in the calculations .
8. The drawing should clearly indicate the perimeter of the permeable paving (assumed green shaded area) -- add key.
9. Indicate finished surface levels for the permeable paving on the drawing, including levels on the channel drain. Has the permeable paving been laid with a flat formation level? -- indicate levels on drawing.
10. Pipe diameters/invert levels and gradients need to be specified for all pipes.
11. Catchpits required immediately upstream of all soakaway structures.
12. Full construction detail drawings will be required for catchpits/permeable paving/soakaways, including how the soakaways interact with the permeable paving.
13. The hydraulic calculations will need to be resubmitted once the principles of the drainage scheme have been agreed.
14. The management and maintenance manual will need to be finalised once the design has been agreed.

Clearly there are a number of fundamental design/construction issues that need to be resolved before the drainage design can be considered further.

On a separate note ie. foul drainage, it appears that there may be a public foul sewer which has been diverted. Have Southern Water approved this?

Regards

Paul Cann
Senior Engineer (Drainage & Coastal)

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From: Anita Gardner
Sent: 07 December 2017 14:36
To: Paul Cann
Subject: FW: 1 in 100 hyraulic cals for 1-4 Holm Oaks F/26/17/DOC1

Paul,
Please see the attached additional information.
Is this now satisfactory for compliance with condition 3 of F/15/16/PL
Thanks
Anita

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From: [REDACTED]
Sent: 07 December 2017 08:09
To: Anita Gardner
Subject: FW: 1 in 100 hydraulic calcs for 1-4 Holm Oaks F/26/17/DOC1

Good morning Anita

I now attach the Source Control drainage calculations, as requested.

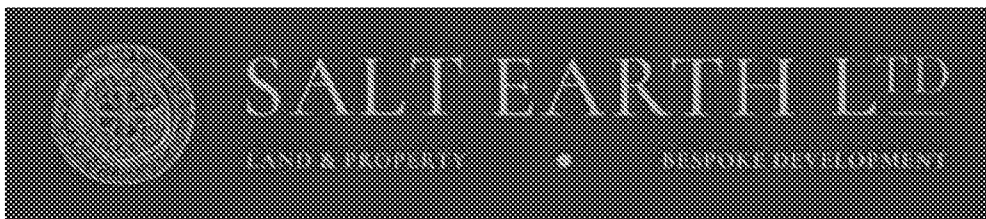
I would be extremely grateful if you could liaise with your Drainage Engineer as soon as possible, because this is the only item now holding up the sale of the houses.

I do appreciate that we have been very slow to produce the information required, for which I do apologize.

Thank you very much for your help, Anita, and I look forward to your response soon.

Kind Regards

Jeremy Napthine
Director



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