

[REDACTED]

From: Andrew Wood
Sent: 19 September 2019 16:05
To: Planning Scanning
Subject: FW: Planning Consultation on A/113/19/DOC - Angmering site

[REDACTED]

Andrew Wood MRTPI | Senior Planning Officer, Planning Department, Arun District Council |
Location: 1st Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

[REDACTED]

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From: Laura Gibbons [REDACTED]
Sent: 17 September 2019 16:14
To: Robert Steventon [REDACTED]
Cc: Paul Cann <[REDACTED]>; Andrew Wood [REDACTED]; [REDACTED]; 'Wayne Stutchbury' [REDACTED]; Kevin Lang [REDACTED]
[REDACTED]

Subject: RE: Planning Consultation on A/113/19/DOC - Angmering site

Hi Robert,

Comments below.

Key

Original comments

Your response

My response

1. Groundwater monitoring was undertaken and recorded groundwater to shallow depths of 0.43, 0.66 and 0.89mbgl. It is accepted that the results from WS1 and WS2 should be used for the surface water drainage design as they are relevant to the areas proposed for infiltration. It is not clear what the maximum recorded groundwater level was at each monitoring location respectively. Please can this be confirmed.

We enclose additional documents from Constructive Evaluation as part of their investigation. This provides full details of the groundwater monitoring. The highest and lowest groundwater levels at each location are as follows;

WS1 max = 1.48m bgl min = 1.69m bgl

WS2 max = 0.83m bgl min = 1.13m bgl

WS3 max = 0.43m bgl min = 1.04m bgl

2. Infiltration testing was completed at one location and gave rates of $5.13 \times 10^{-4} \text{ms}^{-1}$ at 0.9m depth. This is deeper than the highest recorded groundwater levels and the scarcity of infiltration testing is of significant concern. We would have expected at least one further infiltration test, ideally two further tests at the proposed location and depth of infiltrating structures.

The infiltration test was close to WS3 where the groundwater level is lower. The testing was in accordance with BRE365 and the location and depth close to the proposed filter drain. You state that testing was completed at WS3, maximum recorded groundwater level here was 0.43mbgl. Therefore, I stand by my comment that this was completed deeper than maximum recorded groundwater level. One test location is inadequate. The test location is also a long way from the proposed infiltrating structures.

3. Please can an impermeable areas plan be provided that clearly shows the impermeable areas draining to each surface water drainage feature. Please refer to enclosed drawing 191183/SK/04 for impermeable areas. *This will likely need to be revised due to comment 9 below.*
4. The filter drain is inadequate. Maximum modelled water depths are nearly 1m. This clearly will not be able to be contained above maximum recorded groundwater level. The groundwater monitoring found that the highest groundwater level in the vicinity of the filter drain was 1.48m below ground level. This has been shown on the filter drain long section 191183 2 Crete Nursery, Dappers Lane, Angmering, Bn16 4en11 September 2019 drawing 191183/520/02 and therefore the filter drain will be above the maximum groundwater level. As shown on the drawing, Filter Drain 1 is flat, and Filter Drain 2 is sloped, and this is correctly reflected in the MicroDrainage calculations. Location actually appears to be between WS1 and WS2. *For clarity, please overlay monitoring locations onto drainage strategy drawing.*
5. From looking at cross sections it also appears that the filter drain will be on a slope, please ensure this is accurately depicted within calculations.
6. Please provide evidence that a resin bound surface with open surface course asphalt is permeable. We have significant concerns over the permeability of this type of surface now and over the design lifetime. Please refer to the enclosed brochure for the Clearstone permeable resin bound surfacing. *The brochure provides us with no confidence regarding this. Type 3 is not permeable. We would require independent evidence of permeability.*
7. A permeable liner should fully wrap around the sub-base of the permeable paving areas. Please refer to drawing 191183/SD/01. *Okay.*
8. Please confirm material specification for filter drain. All sub-base material should be no fines. Please refer to drawing 191183/SD/01. *Type 3 is not permeable.*
9. Are diffusers to be used to disperse surface water into permeable paving subbases? Please provide construction details and locations of these if so. Diffusers should be located 5m from buildings, therefore the use of permeable patios to receive roof water is not acceptable. Diffusers have been added to the drawing. The patios have an impermeable surface so that rainwater runs off onto the grass and the subbase is only infiltrating the roof runoff. *As stated, diffusers should not be located within 5m of buildings. Permeable structures adjacent to buildings can receive water falling directly upon them, but should not receive concentrated rainwater within 5m of buildings.*
10. Catchpits must be provided upstream of all connections to permeable paving. Please ensure the location of rwp, catchpits, and connections to permeable areas are clearly shown on plan. The discharge into the permeable paving is only taking roof runoff so will contain minimal silt/fines and it is considered excessive to provide catchpits on all connection to the patios and driveways. The rainwater down pipes will have access points to allow for maintenance. *Catchpits must be provided upstream of all connections to permeable paving, this is as per CIRIA C753. Think about how much debris sits in a standard gutter.*
11. Please provide invert levels and cover levels of all inspection chambers, manholes, filter drains, etc. Please also ensure that finish and formation level of permeable paving is clearly provided on plan. Please refer to drawing 191183/500/01. *I will review further once GW and infiltration testing result acceptability has been agreed.*

Kind Regards,

Laura Gibbons, MEng, GMICE
Engineer (Drainage & Coastal)

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From: Robert Steventon <[REDACTED]>

Sent: 11 September 2019 15:15

To: Laura Gibbons <[REDACTED]>

Cc: Paul Cann <[REDACTED]>, Andrew Wood <[REDACTED]>, 'Wayne Stutchbury' <[REDACTED]>; Kevin Lang <[REDACTED]>

Subject: FW: Planning Consultation on A/113/19/DOC - Angmering site

Laura,

Further to your comments below we enclose a letter providing responses and the updated engineering drawings for the development.

The aim of the surface water strategy is to discharge all runoff to ground in accordance with the SuDS hierarchy. Due to the high groundwater table the use of soakaways is not viable, so runoff is discharged via permeable paving. If this strategy is not acceptable then the only alternative is to provide an attenuation tank with a discharge to the culvert, which we are trying to avoid.

Please call if you have any queries.

Kind regards,

Robert Steventon

Civil Engineer



Civil Engineers & Transport Planning

A Thorogood House, 34 Tolworth Close, Surbiton, Surrey, KT6 7EW

From: Mark Goodchild <[REDACTED]>

Sent: 06 September 2019 16:07

To: <[REDACTED]>

Cc: 'Wayne Stutchbury' <[REDACTED]>; Richard Sloman <[REDACTED]>, Daniel Burton <[REDACTED]>

Subject: FW: Planning Consultation on A/113/19/DOC - Angmering site

Dear Robert,

Please see below for an email from the local authorities drainage consultant.

Regards

Mark Goodchild

Architect & Director



3 Church Street, Godalming, Surrey. GU7 1EQ

Registered in England and Wales. Registration number: 7435882

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From: Admin Dept. <[REDACTED]>
Sent: 06 September 2019 13:28
To: Mark Goodchild <[REDACTED]>; Richard Sloman <[REDACTED]>
Cc: Daniel Burton <[REDACTED]> Admin Dept. <[REDACTED]>
Subject: FW: Planning Consultation on A/113/19/DOC - Angmering site

From: Andrew Wood <[REDACTED]>
Sent: 06 September 2019 11:03
To: Admin Dept. <[REDACTED]>
Subject: FW: Planning Consultation on A/113/19/DOC

Attention Richard Sloman,

Please see additional information request. Please do negotiate directly with Laura Gibbons ADC Drainage Engineer. Contact details below. Thank you,

Andrew Wood

Andrew Wood MRTPI | Senior Planning Officer, Planning Department, Arun District Council |
Location: 1st Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: Laura Gibbons <[REDACTED]>
Sent: 05 September 2019 10:37
To: Planning.Responses <[REDACTED]>
Cc: Andrew Wood <[REDACTED]>
Subject: RE: Planning Consultation on A/113/19/DOC

Engineers Comments Regarding Condition 9- surface water drainage design

1. Groundwater monitoring was undertaken and recorded groundwater to shallow depths of 0.43, 0.66 and 0.89mbgl. It is accepted that the results from WS1 and WS2 should be used for the surface water drainage design as they are relevant to the areas proposed for infiltration. It is not clear what the maximum recorded groundwater level was at each monitoring location respectively. Please can this be confirmed.
2. Infiltration testing was completed at one location and gave rates of $5.13 \times 10^{-4} \text{ms}^{-1}$ at 0.9m depth. This is deeper than the highest recorded groundwater levels and the scarcity of infiltration testing is of significant concern. We would have expected at least one further infiltration test, ideally two further tests at the proposed location and depth of infiltrating structures.
3. Please can an impermeable areas plan be provided that clearly shows the impermeable areas draining to each surface water drainage feature.
4. The filter drain is inadequate. Maximum modelled water depths are nearly 1m. This clearly will not be able to be contained above maximum recorded groundwater level.
5. From looking at cross sections it also appears that the filter drain will be on a slope, please ensure this is accurately depicted within calculations.
6. Please provide evidence that a resin bound surface with open surface course asphalt is permeable. We have significant concerns over the permeability of this type of surface now and over the design lifetime.
7. A permeable liner should fully wrap around the sub-base of the permeable paving areas.
8. Please confirm material specification for filter drain. All sub-base material should be no fines.
9. Are diffusers to be used to disperse surface water into permeable paving subbases? Please provide construction details and locations of these if so. Diffusers should be located 5m from buildings, therefore the use of permeable patios to receive roof water is not acceptable.
10. Catchpits must be provided upstream of all connections to permeable paving. Please ensure the location of rwp, catchpits, and connections to permeable areas are clearly shown on plan.
11. Please provide invert levels and cover levels of all inspection chambers, manholes, filter drains, etc. Please also ensure that finish and formation level of permeable paving is clearly provided on plan.

Comments Regarding condition 10- discharge of flows to watercourse

It would not be appropriate to approve condition 10 whilst the surface water drainage design is still being revised.

Comments Regarding condition 11- SuDS maintenance manual

It would not be appropriate to review the adequacy of the maintenance manual whilst the surface water drainage design is still being revised. I will provide comments once the details of condition 9 are agreed.

Regards,

Laura Gibbons, MEng, GMICE
Engineer (Drainage & Coastal)

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: planning.responses [REDACTED]
Sent: 02 September 2019 11:06
To: Land Drainage [REDACTED]
Subject: Planning Consultation on A/113/19/DOC

To: Engineers (Drainage)

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

APPLICATION NO: A/113/19/DOC

Registered: 22-AUG-19

Site Address: Crete Nursery Dappers Lane Angmering BN16 4EN

Description of Works: Approval of details reserved by condition imposed under ref A/178/17/OUT relating to Condition Nos 4 - external lighting, 5 - construction management plan, 6 - road safety audit, 7 - visibility splays, 8 - footway, 9 - proposed surface water drainage, 10 - discharge flows to watercourses, 11 - SuDs system and 13 - future access & management of any watercourse or culvert.

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 have any comments to make, these should be sent by replying to this email by 16th September 2019.

www.arun.gov.uk/planning

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.

The officer dealing with this application is Andrew Wood who can be contacted on telephone number [REDACTED]

Thanking you in anticipation

Planning Case Officer
Arun District Council

post_con_email

<http://www.arun.gov.uk>

DX 57406 Littlehampton

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