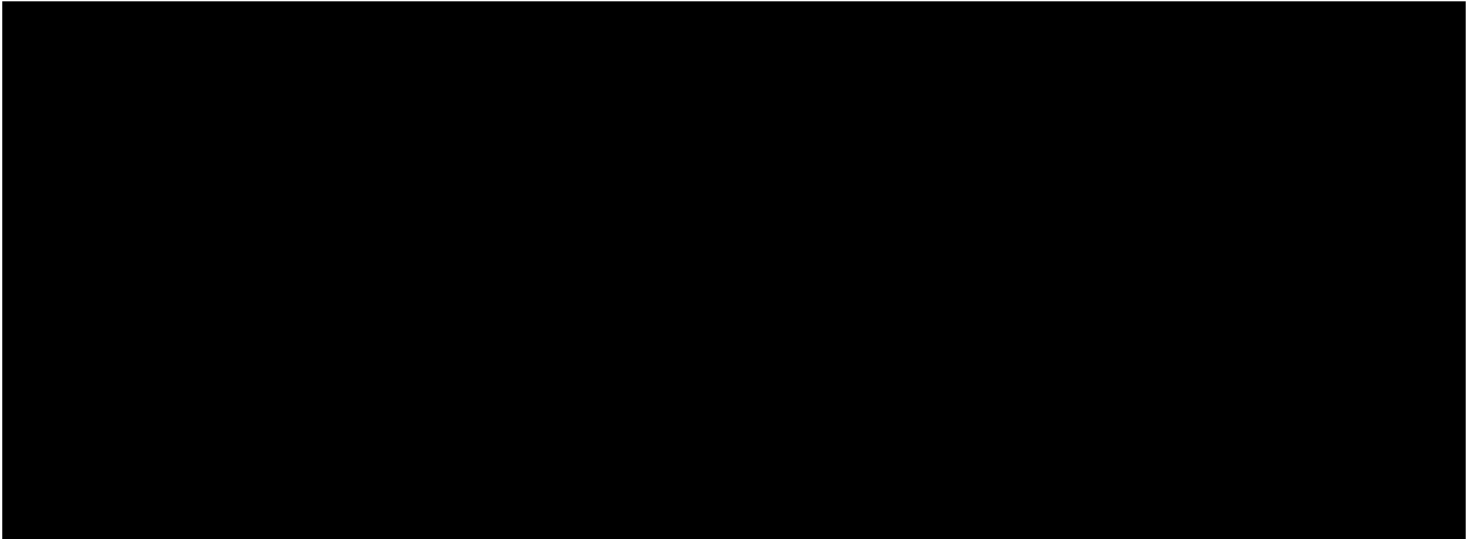
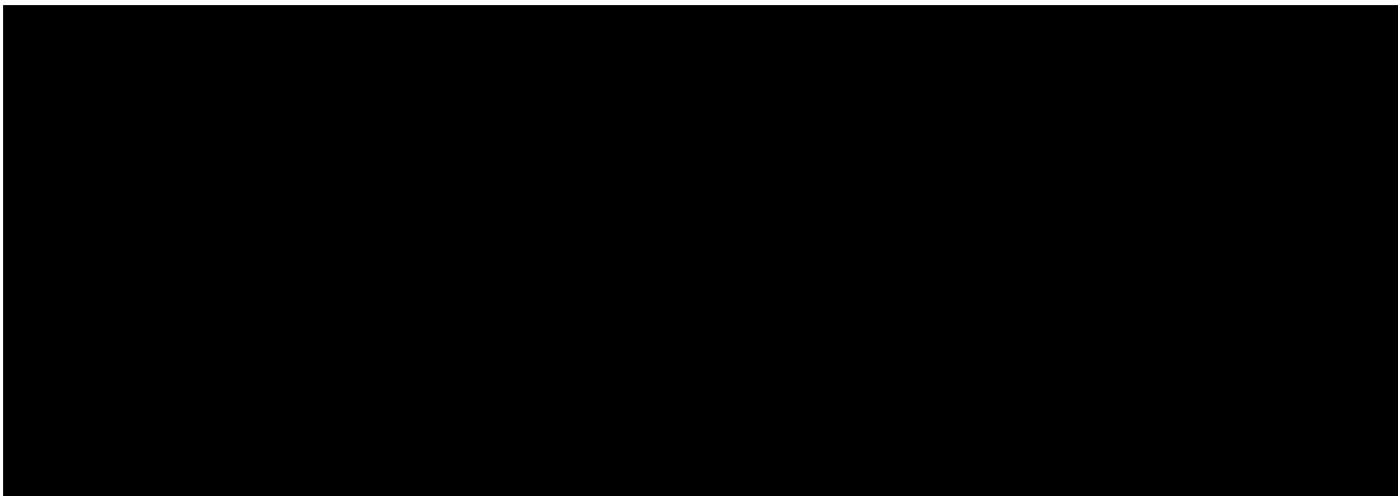




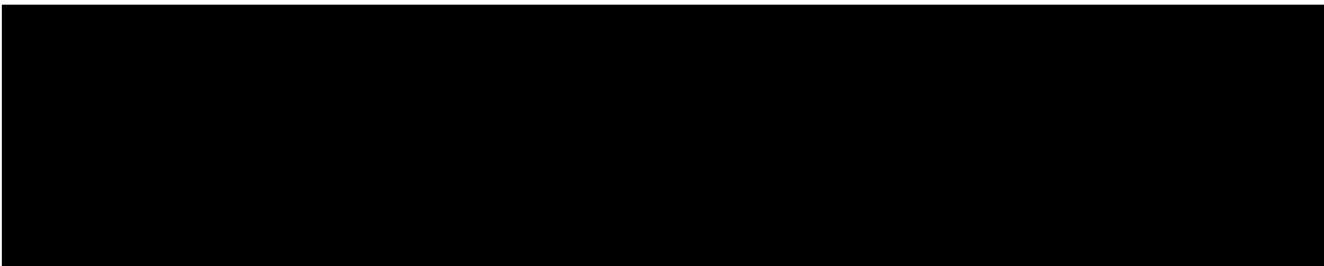
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Amanda Scholes



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From: Andrew Wood <Andrew.Wood@arun.gov.uk>
Sent: 23 February 2021 15:10
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Subject: FW: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Andrew Wood MRTPI
Senior Planning Officer, Planning Department



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From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 22 February 2021 12:55
To: Kazys Narbutas Consulting [REDACTED]

Subject: RE: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Hi Kazys

Comments in brown below;

Andrew -- Based upon the current drawings/calculations/maintenance manual, I can now confirm that the proposals are acceptable. This relates to conditions 6 and 7. It would be a good idea to upload all the correspondence on this matter to the planning portal.

Regards

Paul Cann
Principal Drainage Engineer
Engineering Services



T: 01903 737819
E: paul.cann@arun.gov.uk

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www.arun.gov.uk



From: Kazys Narbutas Consulting [REDACTED]

Sent: 09 February 2021 18:05

To: Paul Cann <Paul.Cann@arun.gov.uk>
[REDACTED]

Subject: RE: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Paul

Thank you for your comments, I would respond to the outstanding issues as follows in purple:

2. Rodding eye schedule on plan – R13 to R17 information incomplete. Added R16 & R17 IL should be 25.950? I have amended these (typing error!) ok

13 d) The calculations will be fully checked once all the necessary adjustments have been made. Noted – see below;

There appears to be some discrepancies in the calcs, for example, taking the 1 in 100 year calcs. Top of storage taken as invert level of incoming pipe as per construction detail ; I have amended the standard detail to show the granular backfill up to the underside of topsoil and included on the soakaway schedule a level for the top of the granular fill. Top of storage for the 1 in 100yr calcs is the ground level less allowance for topsoil, shown as 'Cap Volume' on Page 4 of calculations. The calculations show there to be no overtopping of the designed soakaway, ie no garden flooding if the Cap volume had been exceeded.

S01 – Top water level 27.87 (in red) Top of granular material = 27.40, so volume exceeded. Cap Volume-27.950 ok
S02 – Top water level 27.27 (in red) Top of granular material = 26.98, so volume exceeded. Cap Volume-27.350 ok
S03 – Top water level 26.99 (in red). Top of granular material = 26.57, so volume exceeded. Cap Volume-27.050 ok
S04 – Top water level 26.56 (in red). Top of granular material = 26.20, so volume exceeded. Cap Volume-26.650 ok
S05 – Top water level 26.84 (in red). Top of granular material = 26.43, so volume exceeded. Cap Volume-27.050 ok
S06 – Top water level 26.08 (in red). Top of granular material = 25.90, so volume exceeded. Cap Volume-26.100 ok
S07 – Top water level 26.25 (in red). Top of granular material = 25.92, so volume exceeded. Cap Volume-26.450 ok
S08 – Top water level 25.97 (25.897) (in red). Top of granular material = 25.70, so volume exceeded. Cap Volume-25.950 (This has been widened by 100mm) ok
S09 – Top water level 27.72 (in red). Top of granular material = 27.25, so volume exceeded. Cap Volume-27.750 ok

Please correct/clarify.

Hopefully the above explains the position but please contact me should you wish to discuss further.

Hopefully you will now be in a position to advise your planning colleague that the drainage conditions can be discharged.

Many thanks

Regards

Kazys

Kazys Narbutas

K A Z Y S · N A R B U T A S · C O N S U L T I N G
Civil Engineering Consultant

Unit 5B
Tanners Court
Tanners Lane
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Romsey
SO51 6DP

From: Paul Cann [<mailto:Paul.Cann@arun.gov.uk>]

Sent: 09 February 2021 14:16

To: Kazys Narbutas Consulting [REDACTED]

Subject: RE: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Hi Kazys

See comments in green below;

Regards

Paul Cann
Principal Drainage Engineer
Engineering Services

T: 01903 737819

E: paul.cann@arun.gov.uk

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From: Kazys Narbutas Consulting [REDACTED]

Sent: 20 January 2021 22:05

To: Paul Cann <Paul.Cann@arun.gov.uk> [REDACTED]

<Andrew.Wood@arun.gov.uk>

Subject: RE: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Paul

Thank you for your comments on my drainage submission for the above development which I have responded to as shown in red below.

All the drawings and information have been attached to the 'We Transfer' link below

Hopefully this revised package will enable you to advise your planning colleague that the surface water drainage conditions can be discharged when my client makes the formal application to discharge to discharge Conditions 8, 9, 10, 11, 12, 16 & 17. I look forward to hearing back from you but please contact me should you need to discuss any aspects.

Regards

Kazys

Kazys Narbutas

K A Z Y S · N A R B U T A S · C O N S U L T I N G
Civil Engineering Consultant

Unit 5B
Tanners Court
Tanners Lane
East Wellow
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SO51 6DP

From: Paul Cann [mailto:Paul.Cann@arun.gov.uk]

Sent: 23 October 2020 17:11

To: Kazys Narbutas Consulting

Subject: RE: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Hi Kazys

Comments below;

1. Add pipe gradients to plan. Added ok
2. Rodding eye schedule on plan – R13 to R17 information incomplete. Added R16 & R17 IL should be 25.950?
3. The infiltration testing was carried out in March 2019. We would have expected this to be carried out in perhaps Jan/Feb and the tests undertaken at the proposed depth of structures. However, since you have applied reasonable safety factors in the calculations/construction and infiltration potential across the site is good, we will accept the testing on this occasion. Noted --
4. The infiltration testing in S01 was carried out too deep (ie. below the level of recorded peak groundwater levels). Therefore this rate (zone 1) is not usable and the calculations need to be adjusted accordingly. }

disagree with this. The highest recorded groundwater level in WS3 was 2.23m BGL which is 24.72m AOD. A ground level of 26.71 is indicated at WS3 on drg 500-01 Rev A (Drained Areas portion). Therefore, groundwater level would have been recorded at 24.48m AOD. Having said that I must have misread or interpolated something incorrectly, so please ignore comment no.4. The test S01 was taken at a level of 25.13m AOD. The soakaways sited in Zone 1 have base levels of So1-25.50, So2-24.90, So3-25.0 & So9-26.45. I therefore feel that both the testing and the soakaway base levels are above the highest recorded groundwater levels and the calculations are appropriate. ok

5. Infiltration zone table on layout plan – zone 3 should be 4.126×10^{-5} as opposed to 10^{-6} – shown correctly in calculations. Noted, a typing error and table has been amended ok
6. Some the house soakaways are too deep in terms of depth between ground level and base level ie. they must not be deeper than peak recorded groundwater levels in that area. Interpreting peak gwl's between boreholes is acceptable, however, soakaways S01 and S02 should use readings from borehole WS3. Ideally more boreholes should have been installed due to the slope of the land. As above, the level of groundwater at WS3 is 24.27m (24.72/24.48) AOD and is approx. 30m from So1 & So2. The ground level difference between these soakaways and WS3 is between 1.18m and 0.69m I do not think it is unreasonable to assume that the ground water level at the soakaways is no greater than 0.18m above this level (this is the distance between the base level of the deepest soakaway So2 and the highest water level in WS3. As a comparison the water level recorded at WS1 was 24.63m AOD with a ground level difference of 0.55m over a distance of 105m. I agree with your comment, another borehole, WS2, was installed between WS1 & WS3 but unfortunately it was damaged and no readings are available. ok – see item 4 above.
7. Specify oblique 45 degree junctions where pipes do not connect to manholes. Note 19 added specifying 45 degree junction ok
8. Add finished surface levels to the plan for driveway permeable paving areas. Levels added ok
9. Specify sump depth on silt trap manhole detail. Sump depth added ok
10. Specify construction details for bellmouth channel drain. Channel detail added. ok
11. Permeable paving construction details – provide geotextile between binder course and sub base, also between concrete and sub base on access road construction. Additional geotextile incorporated ok
12. Soakaway construction detail;
 - a) Specify permeable geotextile and make it clear that the granular material is to be fully wrapped. Note added ok
 - b) Dimension positioning of pipework from perimeter of granular fill. Dimension shown ok
 - c) Replace 4 way junction pipe with 3 way or specify end cap to unused connection. Detail amended to 3 way junction ok
13. Calculations;
 - a) Some cover/invert levels do not reflect those in soakaway schedule on the plan. Calculations and levels amended to accord. ok
 - b) Calculations are required for each segment of the access road, applying the infiltration rate specific to that section and also the specific slope (taking account of the highest/lowest finished surface level for that segment). Please ensure that water does not pass over the baffles or else it will need to be taken into account in the next segment downstream. It is assumed that the formation level slope of the permeable paving will match the slope of the finished surface. The access road is at a constant gradient of 1% through its entire length and the turning head a constant 2.0%. Two shallow soakaways tests were undertaken giving results of 0.5238mm/hr and 0.5101mm/hr. For ease I have used the lowest value in my calculations. Calculations have been undertaken for each area of the access road and turning head as shown on the impermeable areas drawing KNC1822-500-01. Calculations show that the water level will not go above the threshold level of the baffle sited on the lower level of each segment. Formation levels have been shown on the levels & Setting Out drawing KNC1822-506-01. ok
 - c) Calculations are required for each permeable driveway, applying the infiltration rate specific to that area and also the specific slope (taking account of the highest/lowest finished surface level for that driveway). It is assumed that the formation level slope of the permeable paving will match the slope of the finished surface. Calculations have been undertaken for each driveway as requested. As you will see from the calculations the depth of stone required for infiltration drainage in each drive to achieve the 1 in 100years+40% and FoS of 10 is far below that shown in the construction detail. ok
 - d) The calculations will be fully checked once all the necessary adjustments have been made. Noted – see below;

There appears to be some discrepancies in the calcs, for example, taking the 1 in 100 year calcs. Top of storage taken as invert level of incoming pipe as per construction detail ;

501 – Top water level 27.87 (in red) Top of granular material = 27.40, so volume exceeded.
502 – Top water level 27.27 (in red) Top of granular material = 26.98, so volume exceeded.
503 – Top water level 26.99 (in red). Top of granular material = 26.57, so volume exceeded.
504 – Top water level 26.56 (in red). Top of granular material = 26.20, so volume exceeded.
505 – Top water level 26.84 (in red). Top of granular material = 26.43, so volume exceeded.
506 – Top water level 26.08 (in red). Top of granular material = 25.90, so volume exceeded.
507 – Top water level 26.25 (in red). Top of granular material = 25.92, so volume exceeded.
508 – Top water level 25.97 (in red). Top of granular material = 25.70, so volume exceeded.
509 – Top water level 27.72 (in red). Top of granular material = 27.25, so volume exceeded.

Please correct/clarify.

14. Maintenance manual;

- a) Add a paragraph giving an overview as how the drainage system works referencing each component.
Addition to para. 1.5 ok
- b) Table 2 – include pipework upstream of soakaways. Addition to Table 2 ok

Look forward to receiving your revised details.

Regards

Paul Cann
Principal Engineer (Drainage)

Paul Cann | Principal Engineer (Drainage), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre,
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Arun is Working in Partnership with Chichester District Council
Visit Arun's web site at <http://www.arun.gov.uk/> and www.chichester.gov.uk



Save the environment - think before you print.

From: Kazys Narbutas Consulting [REDACTED]
Sent: 01 October 2020 18:38
To: Paul Cann <Paul.Cann@arun.gov.uk>
[REDACTED]

Subject: Arundel Road, Walberton: Planning Consent WA/63/19/PI

Paul

I have completed the detailed engineering design work for the above scheme and attached are my proposals together with substantiating information submitted for your comments prior to our formal application to discharge Conditions 5, 6 & 7.

Information submitted includes:

1. Site investigation information including groundwater monitoring and BRE365 infiltration test results undertaken at proposed soakaway depths.
2. MicroDrainage calculations with soakaways designed in accordance with current EA criteria and a site plan showing discharge areas to each soakaway including an additional 10% allowance for 'urban creep'
3. A full set of engineering drawings showing drainage proposals, standard construction details and proposed finished levels.
4. A SuDS Maintenance manual for the development.

I can advise that a Section 106 Agreement application has been made to Southern Water as part of the discharge for Condition 5.

Due to the file size I am sending the package over by WeTransfer, the link is:



If you have any problems or require anything further please contact me

Regards

Kazys

Kazys Narbutas

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