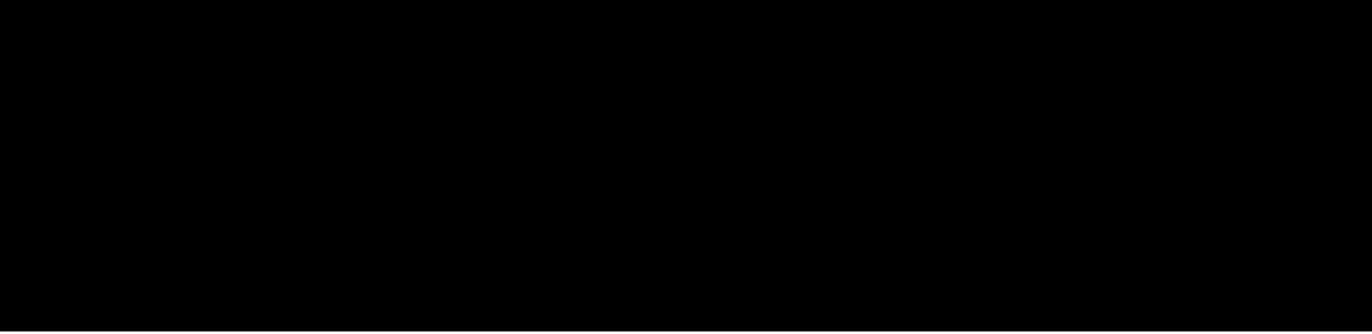




From: Michael Eastham <Michael.Eastham@arun.gov.uk>
Sent: 06 November 2019 09:38
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Subject: FW: Saltbox - BE/110/19/DOC - Conditions 9 and 10

Please upload this email trail from ADC Drainage onto Ocella for BE/110/19/DOC.

Thanks,

Michael

From: Roger Spencer <Roger.Spencer@arun.gov.uk>
Sent: 05 November 2019 16:21
To: Michael Eastham <Michael.Eastham@arun.gov.uk>
Cc: Paul Cann <Paul.Cann@arun.gov.uk>
Subject: RE: Saltbox - BE/110/19/DOC - Conditions 9 and 10

Dear Mike,

We have not undertaken a further full review – the MicroDrainage calcs for instance have not been reviewed

Many of the points raised have either been as a result of you responding to Laura's points (e.g. requesting more detail) and from my picking up points in my review which you have provided revised information – the revisions have had a ripple-through effect – some of which have not been picked up in the drawings; Paul has picked these up now.

A lot of the points are very minor but need to be addressed before you would issue for construction and as such we have made the input at this stage – e.g. construction details of the Network 2 tank and the manhole/hydrobrake chamber details. On the Network 2 tank issue – this was changed as part of my review 15m > 5m wide then the need for a low flow channel.

I am sorry but you may have misunderstood – we have no issue with the main application which will go to Committee tomorrow with our recommendation to approve – these issues raised relate solely to the DoC and as such are issues that need to be clarified before the various elements can be built.

Regards,

Roger

From: Mike Griffin [REDACTED]
Sent: 05 November 2019 16:00
To: Paul Cann <Paul.Cann@arun.gov.uk>

Cc: Roger Spencer <Roger.Spencer@arun.gov.uk>; Michael Eastham <Michael.Eastham@arun.gov.uk>; Arfon Hughes [REDACTED]; Mr Will Marsh [REDACTED]; Keith Sarchett [REDACTED]; Jason Walker [REDACTED]; Jason Magee [REDACTED]; David Gallimore [REDACTED]
Subject: RE: Saltbox - BE/110/19/DOC - Conditions 9 and 10

Paul / Roger,

These comments are a little frustrating.

I was under the impression that Laura had carried out a review on behalf of Arun DC for the new application and DOC based on the information we submitted October 11th. The points that Laura raised were collated for both and summarised in the attached email. We had then provided a response to those points and more information where required – My understanding is that in Laura's absence you would be reviewing the information to confirm that the points raised were answered accordingly, not to carry out another full review.

Please can you advise why another full review has been carried out by Arun DC?

It goes without saying that without DOC this development is in real danger of not going ahead – These further comments are the only thing holding things up now.

I would therefore request that you address only our responses to the points raised in Laura's original full review and confirm discharge of conditions 9 and 10, and in return we will review the additional comments you have made below and incorporate into our designs where applicable.

Kind Regards
Mike Griffin
Principal Infrastructure Engineer

Hydrock
Merchants' House North, Wapping Road, Bristol BS1 4RW
[REDACTED]



Hydrock Consultants Limited, company number 3118932 registered in England and Wales at Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF.

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From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 05 November 2019 14:40
To: Mike Griffin <[REDACTED]>
Cc: Roger Spencer <Roger.Spencer@arun.gov.uk>; Michael Eastham <Michael.Eastham@arun.gov.uk>
Subject: RE: Saltbox - BE/110/19/DOC - Conditions 9 and 10

Hi Mike

We have now looked at your further proposals, our comments are below;

Access Road

1. The stretch road of from hammerhead by the foul pumping station towards manhole SW-511 does not appear to have any surface water drainage associated with it. Please advise/detail.
2. Pipeline SW-507 to the headwall is showing planting over/within close proximity. Please remove as necessary.
3. The concrete box tank appears to have no gradient. Please rectify to ensure self-cleansing in the low flow channel.
4. Provide a plan showing finished levels for the road.
5. Specify pipe diameters/gradients from control manhole FC-501 to oil interceptor and FC-501 to box tank.
6. Provide fully detailed construction drawing for box tank, including low flow channel within.
7. There is minimal cover to the box tank – please provide structural calculations to ensure no detriment due to vehicle wheel loadings/movements.
8. Provide fully detailed construction drawing for the manholes between the box tank sections and showing their connectivity with the tank. All these to be catchpit manholes. The plans need to clearly indicate which are catchpits as there are some discrepancies between drawings.
9. All road gully connects to tank to be made at soffit to soffit level or near as possible. Add notes.
10. One road gully is on top of the box tank and would not be possible to construct and would also result in an unacceptable connection into the top of the tank . Please reconfigure as necessary.
11. Manhole SW-505 to be catchpit manhole.
12. Manhole SW-504 - 450mm connection not connected at soffit at soffit level and the invert is lower than the downstream invert. The 300mm connection into this manhole needs a slight adjustment to make it connect at soffit to soffit level.
13. Specify pipe diameters/gradients between manhole SW-505 and box tank.
14. Manholes SW-508 & SW-509 – Specify D400 covers as opposed to B125.
15. Where road gullies are being connected to pipelines, oblique 45 degree junctions to be used, ensuring the connection is made at 10 or 2 o'clock, as per a clock face, assuming to the top of the pipe being connected to is 12 o'clock. Add note.
16. There are numerous types of road gully as per the construction detail. Specify which type applies to each gully.
17. Gully near manhole SW-503 – connect into manhole rather than onto the pipeline.
18. Clearly indicate on plans which manholes are to be catchpits.
19. Headwall – An activity permit is required from the Environment Agency for the connection to the 'main river'. This will include their agreement to the headwall construction, discharge of flows and erosion control measures. Add a suitable note.
20. Despite item 19, please include rocker pipes on the construction detail. Reference to drg. 7020 should refer to the layout arrangements rather than 'details'. A construction detail is required for the concrete protection slab pipe protection and the full extent of this type of protection shown on the drawings. A flap valve to be specified on the end of the pipe.
21. Control chamber FC-501 – cover level differs between plan and construction details. Construction drawing to be fully detailed ie. dimensions, ring diameter, materials, etc.
22. Manhole SW-507 – is this manhole required?
23. Specify pipe materials for all pipelines.

Unit 2

1. The 450mm pipe on the north side of unit 2 which discharges at the headwall – assumed to be draining a future phase, however, how are these flows being attenuated?
2. SW-1002 to SW-1004 needs its gradient improving to provide self-cleansing velocity of 1 m/s at full bore.
3. SW-1004 to SW-1005 – Levels indicate no gradient.
4. Manhole SW-1104 150mm outlet from flow control chamber shown connecting invert to invert with 450mm pipeline – needs to be soffit to soffit.
5. Headwall – Althon model H3C not suitable for a 450mm pipe.
6. Pipeline SW-1002 to headwall is showing planting over/within close proximity. Please remove as necessary.
7. Manhole SW-205a to be a catchpit.

8. Numerous pipelines are shown as 400mm diameter which is an unconventional diameter. Please adjust to 450mm.
9. Where road gullies are being connected to pipelines, oblique 45 degree junctions to be used, ensuring the connection is made at 10 or 2 o'clock, as per a clock face, assuming to the top of the pipe being connected to is 12 o'clock. Add note.
10. There are numerous types of road gully as per the construction detail. Specify which type applies to each gully.
11. Headwall – An activity permit is required from the Environment Agency for the connection to the 'main river'. This will include their agreement to the headwall construction, discharge of flows and erosion control measures. Add a suitable note.
12. Despite item 11, please include rocker pipes on the construction detail. Reference to drg. 7010 should refer to the layout arrangements rather than 'details'. A construction detail is required for the concrete protection slab pipe protection and the full extent of this type of protection shown on the drawings. A flap valve to be specified on the end of the pipe.
13. Geocellular tanks AT-201 and AT-202 – provide vent and a means to access crates for inspection.
14. Is there scope to reduce base level of tank AT-202 to say 0.85 to improve hydraulics?
15. Has any infiltration potential been ruled out for tanks AT-201 and AT-202? Please clarify.
16. Dependent on item 15, clearly specify on both construction details the permeable/impermeable membrane's, manufacturer/product name.
17. Control chamber FC-201 –drawing to be fully detailed ie. dimensions, ring diameter, materials, etc.
18. Control chamber FC-1001 – Not located on layout plans. Is this in relation to item 1?
19. Specify crate manufacturer/model, ensuring the chosen product is suitable for the anticipated vehicle wheel loadings/movements.
20. Manhole SW-213 – pipes to be laid soffit to soffit.
21. Manhole immediately downstream of tank AT-202 has differing reference on the plan and construction details.
22. Increase channel drains from 100mm wide to 200mm wide.
23. All manholes downstream of or receiving direct connections from channel drains to be catchpits.
24. Permeable paving sub base – specify as clean (no fines).
25. Increase fin drain outlet from 100mm diameter to 150mm diameter.
26. Manhole type 2 and catchpit manhole – include ring diameter table from SFA7.
27. Manhole SW-213 – is the cover level correct?
28. Pipe bedding detail – min. 150mm full bed & surround for class S and class Z. Add note; All vehicular areas <1.2m cover to receive class Z bedding.
29. Specify pipe materials for all pipelines.

Management & Maintenance Manual

1. It is noted that the system is 'anticipated' to be maintained by the management company. This needs to be more definite ie 'will be'.
2. The manual needs to explain how the system is designed to work, naming the individual components in the process.
3. Include catchpit manholes and the geocellular tank, within the maintenance regime.
4. I note that you are intending to offer the road/box storage tank for adoption by WSCC. Have WSCC agreed to this in principle?
5. Hydrobrake inspections – to be changed from quarterly to monthly as previously requested.
6. Permeable paving sweeping – to be changed to twice yearly as previously requested.
7. Oil interceptors to be inspected monthly as previously requested. Specify proposed actions should an alarm be activated.

Look forward to receiving revised drawings, etc.

Regards

Paul Cann
Senior Engineer (Drainage & Coastal)

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

Internal: 37819 | External: +44 (0) 1903 737819 | Fax: +44 (0) 1903 716019 | E-mail: Paul.Cann@arun.gov.uk

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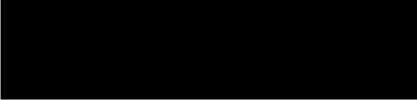
From: Mike Griffin [REDACTED]
Sent: 30 October 2019 12:01
To: Michael Eastham <Michael.Eastham@arun.gov.uk>
Cc: Roger Spencer <Roger.Spencer@arun.gov.uk>
Subject: RE: Saltbox - BE/110/19/DOC - Conditions 9 and 10

Hi Michael,

The information / drawings provided relate to both conditions 9 and 10 see below in red.

Mike Griffin
Principal Infrastructure Engineer

Hydrock
Merchants' House North, Wapping Road, Bristol BS1 4RW



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From: Michael Eastham <Michael.Eastham@arun.gov.uk>
Sent: 30 October 2019 09:26
To: Mike Griffin <[REDACTED]>
Cc: Roger Spencer <Roger.Spencer@arun.gov.uk>
Subject: RE: Saltbox - BE/110/19/DOC - Conditions 9 and 10
Importance: High

Hi Mike,

Please could you confirm that the following document is the only one that relates to **Condition 10: foul water drainage?**

- Salt Box, Bognor Regis – Foul & Surface Water Drainage Strategy for Landlink Estates, prepared by Hydrock, 29 October 2019, Doc. Ref. SAL-HYD-XX-ZZ-RP-C-0001. Issue 02. This document is more for the new application but can be read in conjunction with the DOC 10
- Salt Box, Bognor Regis – Unit 2 and Access Road Operation and Maintenance Drainage for Landlink Estates, prepared by Hydrock, 29 October 2019, Doc. Ref. SAL-HYD-XX-ZZ-RP-C-0011. Issue No. 02.
- Technical Design Note: Salt Box, Bognor Regis – Unit 2 and Estate Road Drainage Details, prepared by Hydrock, 29 October 2019, Doc. Ref. SAL-HYD-XX-ZZ-RP-C-0010 Rev 03.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7020 Rev. P05 – Access Road Drainage Layout Sheet 1.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7021 Rev. P03 – Access Road Drainage Layout Sheet 2.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7022 Rev. P02 – Access Road Drainage Layout Sheet 3.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7100 Rev. P01 – Drainage Details Sheet 1.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7101 Re. P01 – Drainage Details Sheet 2.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7010 Rev. P02 – Unit 2 Drainage Layout.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7102 Rev. P01 – Drainage Details Sheet 3.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7103 Rev. P02 – Drainage Details Sheet 4.

I am assuming that the following documents and plans all relate to **Condition 9: surface water drainage: Am I correct?** Yes

- Salt Box, Bognor Regis – Foul & Surface Water Drainage Strategy for Landlink Estates, prepared by Hydrock, 29 October 2019, Doc. Ref. SAL-HYD-XX-ZZ-RP-C-0001. Issue 02. This document is more for the new application but can be read in conjunction with the DOC 9
- Salt Box, Bognor Regis – Unit 2 and Access Road Operation and Maintenance Drainage for Landlink Estates, prepared by Hydrock, 29 October 2019, Doc. Ref. SAL-HYD-XX-ZZ-RP-C-0011. Issue No. 02.
- Technical Design Note: Salt Box, Bognor Regis – Unit 2 and Estate Road Drainage Details, prepared by Hydrock, 29 October 2019, Doc. Ref. SAL-HYD-XX-ZZ-RP-C-0010 Rev 03.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7020 Rev. P05 – Access Road Drainage Layout Sheet 1.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7021 Rev. P03 – Access Road Drainage Layout Sheet 2.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7022 Rev. P02 – Access Road Drainage Layout Sheet 3.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7100 Rev. P01 – Drainage Details Sheet 1.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7101 Re. P01 – Drainage Details Sheet 2.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7010 Rev. P02 – Unit 2 Drainage Layout.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7102 Rev. P01 – Drainage Details Sheet 3.

- Drawing No. SAL-HYD-00-ZZ-DR-C-7103 Rev. P02 – Drainage Details Sheet 4.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7110 Rev. P01 – Headwall Details.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7210 Rev. P02 – Unit 2 External Works.
- Drawing No. SAL-HYD-00-ZZ-DR-C-7300 Rev. P01 – External Details.

Kind regards,

Michael

From: Mike Griffin <[REDACTED]>
Sent: 29 October 2019 11:35
To: Michael Eastham <Michael.Eastham@arun.gov.uk>; Roger Spencer <Roger.Spencer@arun.gov.uk>
Cc: Arfon Hughes <[REDACTED]>; Will Marsh <[REDACTED]>; Keith Sarchett <[REDACTED]>;
 Chris Thrippleton <[REDACTED]>; Nia Russell <[REDACTED]>;
 David Gallimore <[REDACTED]>; Jason Magee <[REDACTED]>
 <[REDACTED]>
Subject: Saltbox - Current Information for DOC and New Application

Hi Michael / Roger,

As discussed please find a attached collated information for both DOC and new application. All of this information has been issued previously and incorporate both Laura's and Roger's comment. For clarity and ease of reference we have issued again as WeTransfer against the relevant packages.

Discharge of Conditions 9 and 10 relating to Unit 2 and Access Road

<https://we.tl/t-V1YEJ8knKb>

New planning application

<https://we.tl/t-ooOtml3Jpj>

See below, also for completeness responses to Laura's 12 comments in *RED*

1. *Please provide construction detail drawings of attenuation tanks, permeable paving and outfalls. These should be site specific. Included in DOC submission*
2. *Please provide site specific construction details for the hydrobrakes in unit 2 and the road. Included in DOC submission*
3. *I believe that emergence of water will occur from the ACO drain near the unit 2 access, i.e. on the southern ACO drain between SW-205 and SW-204. Please either model as dummy manhole to prove this doesn't occur or look at revising levels. This has reviewed and the drawings updated.*
4. *Please provide MicroDrainage printouts for surcharged outfall inputs for each calculation set. Calculations appended to new application 'Site Wide Drainage Strategy' for networks 1, 2 and 3, and appended to 'Unit 2 / Access Rd Drainage Strategy' for networks 1 and 2*
5. *Design head is exceeded for unit 2 flow control device. Reviewed and amended.*
6. *Please provide the MicroDrainage printout for modelled dimensions for the attenuation culvert for Network 2. Completed. Appended to 'Site Wide Drainage Strategy' and 'Unit 2 / Access Rd Drainage Strategy' reports.*
7. *You are significantly under-utilising the flow control device for network 2. Reviewed and amended*

8. *There are a couple of small inconsistencies between invert and cover levels on plan and in calculations. These are unlikely to have a significant impact upon results, but may be worth checking if revising calculations. Reviewed and amended*
9. *How are you removing soluble pollutants? See section 2.7 of 'Unit 2 / Access Rd Drainage Strategy' report and section 4.11.1 of 'Site Wide Drainage Strategy' report.*
10. *I would like to see the frequency of checking hydrobrakes increased from quarterly to monthly. I would also like the frequency of sweeping of permeable paving to be twice yearly rather than once or twice. Unit 2 / Access Rd O+M document updated as requested.*
11. *Periodic inspection of oil interceptors is too vague. Please specify frequency. I would recommend these are checked when hydrobrakes are checked. I also want further information included on what maintenance is likely to be required, i.e. emptying disposal of materials etc. Also detail what is required when an alarm goes off. Unit 2 / Access Rd O+M document updated as requested.*
12. *Please state within the maintenance manual how maintenance will be funded. Unit 2 / Access Rd O+M document updated to clarify maintenance responsibilities / funding.*

Mike Griffin

Principal Infrastructure Engineer

Hydrock

Merchants' House North, Wapping Road, Bristol BS1 4RW



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