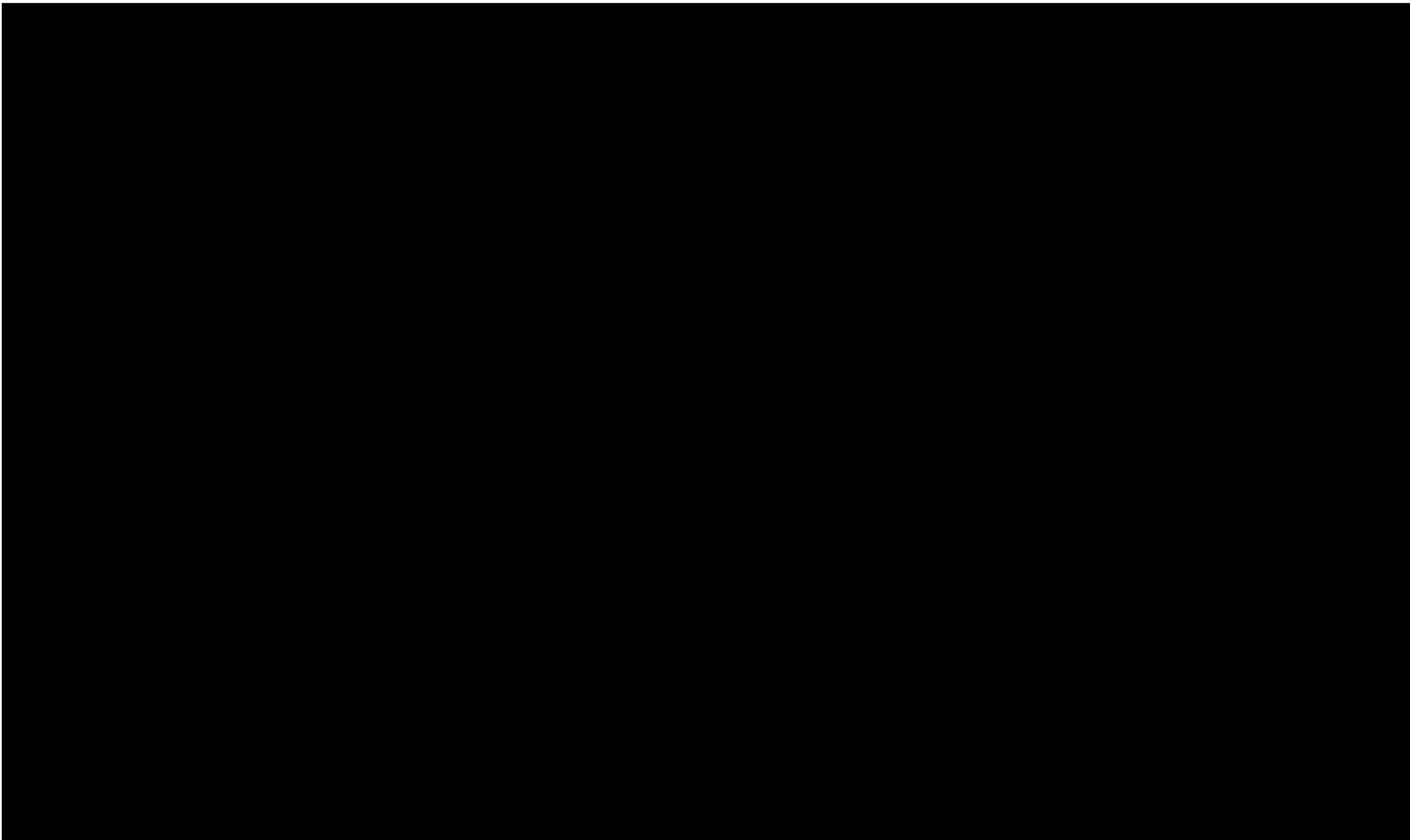




From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Sent: 22 March 2022 11:36
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Simon Davis <Simon.Davis@arun.gov.uk>
Subject: RE: Planning Re-Consultation on: P/15/22/DOC

Engineers Further Comments Regarding Conditions 9-11

Key

ADC comment 01/03/22

Applicant response

ADC further comment 22/03/22

Condition 9

- 1. "No winter groundwater monitoring has been completed. Observed perched groundwater at 1m depth in August is noted within the report. This is not winter groundwater monitoring. Even when infiltration is not deemed suitable, we require on site winter groundwater monitoring to establish peak seasonal groundwater levels and ensure that attenuation design appropriately considers and resists flotation. Please complete and supply winter groundwater monitoring."*

Ashdown Site Investigation Limited undertook In Situ Infiltration testing and groundwater monitoring between November 2020 and March 2021.

The conclusions drawn from the monitoring visits which were provided in graph format and showed groundwater fluctuations between 0.8m below ground level (bgl) to near surface level.

A copy of Ashdown Site Investigation reports inclusive winter groundwater monitoring is annexed within Appendix B.

Okay.

2. "No winter infiltration testing has been completed. It is considered that infiltration is unlikely to work here, however this should be supported by on site infiltration testing."

Refer to Ashdown Site Investigations Ltd infiltration testing report in Appendix B.

Okay.

3. "The catchment area diagram in Appendix F has been cut and does not show the full extents of this plan. Please provide the full plan."

The full plan has been provided within Appendix C.

Okay.

4. "FSR rainfall has been used in design calculations, please use FEH 2013 data."

FEH 2013 data has been obtained and a revised greenfield run-off assessment undertaken to assess the implications on the as designed discharge rate for the site.

Findings are based upon an ReFH2 assessment utilizing the FEH 2013 catchment data and inputting the sites gross area of 0.267ha for both summer and winter seasons and are summarized in table 1 below.

Event	Winter Flow (l/s)	Summer Flow (l/s)
1 in 1 year	0.4	0.6
1 in 2 year	0.4	0.7
1 in 30 years	0.9	1.6
1 in 100 years	1.2	2.0

Table 1: Summary of FEH 2013 Greenfield runoff rates

The findings summarized above confirm runoff from the site to be negligible. The summer 100 year run-off rate corresponds to the 'as designed discharge rate'

Whilst there are a limited number of available flow control devices on the market which provide flow rates off less than 2.0l/s, these have a high risk of blockage. In order to future proof the proposed drainage network and to minimise flood risk the flow rate of 2.0l/s has been retained.

A copy of the updated greenfield calculations has been included within Appendix D.

Okay.

5. "Please model a surcharged outfall, with a surcharged water level set to equal top of bank level".

The hydraulic simulations of the proposed surface water network have now been updated and remodeled with a surcharged outfall and updated FEH 2013 catchment data and included within Appendix D.

A surcharged depth of 0.19m has been applied, this does not equate to a surcharged water level equal to top of bank level, please revise.

6. "Please detail if an urbanisation allowance has been applied to impermeable areas."

A 10% increase to impermeable catchment areas has been included within the revised hydraulic model to allow for urban creep.

Okay.

7. "We note that the levels of the ditch are shown to drop away sharply nearly the point of proposed connection. Please check all ditch levels on site. Please also provide downstream culvert invert levels, as well as soft and hard bed levels of the watercourse. An extended outfall pipe is proposed to get the discharge to the area where the watercourse is deeper. However, it may be that soft bed levels are shown upstream and that a discharge point closer to the hydrobrake, and drainage features is actually achievable with necessary maintenance completed to the watercourse."

At the time of this response additional topographic data was unavailable to check ditch levels on site together with the downstream culvert. The drainage scheme has therefore been based on the Medlams Surveys limited Topographic survey conducted in December 2019 (reproduced within Appendix E).

The additional survey information has been requested from the developer and once received shall be checked accordingly.

The current design which is based upon available stream levels has therefore been resubmitted and shall be reviewed once the additional survey requested has been provided for us to review.

Additional survey information awaited.

8. "The proposed invert levels of outfalls are not clear (please clearly define them on plan), however upstream manhole inverts show that outfalls will not meet our minimum requirement for clearance between bed level and invert level of outfall pipes. As an absolute minimum we require 150mm".

Noted. The outfall bed level is 2.93m and which means the minimum permitted connection would be 3.08m at the outfall location. The designed network has been adjusted accordingly.

Okay.

9. "Finish and formation level of permeable paving must be labelled on layout plan".

Finished and formation levels for the main access permeable paving have now been included on the updated drainage layout plan.

For clarification on the proposed finished levels for the scheme an external levels layout has also been included.

The updated drainage and external levels have been included within Appendix F. *Okay.*

10. "All pipes must be labelled with diameter and fall".

Noted. Now illustrated on the Below Ground Drainage Layout in Appendix F. *Okay.*

11. "Please label gully cover levels on plan".

Noted. Updated accordingly *Okay.*

12. "Hydrobrake unit reference must be stated on plan".

Noted. Updated accordingly *Okay.*

13. "Please show connections from permeable paving areas to the piped network."

Noted. Updated accordingly *Okay.*

14. "Exceedance flow plan has been cropped, please supply the full plan."

This has been reproduced and annexed in Appendix G. *Okay.*

15. "Please supply site specific construction detail drawings of permeable paving, pipe bed and surround, gullies, manholes, catchpits, attenuation pond (a minimum of two perpendicular cross sections), attenuation tank, headwalls to basin, hydrobrake, outfalls to watercourse, etc."

A full set of site specific drainage construction details has been included within Appendix H. *Please submit a land drainage consent application for the two proposed outfalls. The outfall as shown within the construction details will need improving. We will need to see invert levels, hard bed levels, bank levels, existing bank profile, etc. shown.*

Please provide a further basin cross section. Please detail how separation of topsoil and Type 1 in basin will be provided. We would suggest a 45 degree cranked grille should be provided to the 375mm diameter pipe out of the basin, please consider.

16. "Flotation calculations for the basin and tank will be required."

Noted. Pond flotation calculations have been included within Appendix G. In regard to the cellular storage tank, these details are pending manufacturer design and shall be forwarded under separate cover once received. *Please provide revised flotation calculations, you have existing ground levels circa 4.95mAOD, not 4.354mAOD. Furthermore, with a basin invert level of 3.05, 1050mm of Type 1 and 100mm of topsoil the pond liner level is circa 1.9mAOD, not 2.004mAOD. We also require a FoS of 1.1 to be applied to destabilizing forces, and 0.9 to be applied to stabilising forces.*

You should also apply an evaporation allowance to the permanent water level, i.e. a decrease from 3.554mAOD.

Please provide flotation calculations for the attenuation tanks.

17. "We note that a foul treatment plant is proposed on site, it is a shame that development in the area has not been considered more broadly as the large sites nearby will shortly mean a foul sewer is provided within close proximity. Discharge to a foul sewer would be preferred to the use of a treatment plant and discharge to watercourse."

Noted. Unfortunately, at the time of design, there were no Southern Water assets within the vicinity of the site. The developer there has no other feasible solution for the discharge of foul wastewater from this scheme

Condition 10

"Please supply evidence of ordinary watercourse land drainage consent for both the surface water and foul water connections."

The developer has not yet made applications for land drainage consent noting that approval on the drainage scheme as part of condition 9 would be required in the first instance.

This file note therefore only seeks to provide additional information in respects to conditions 9 and 11.

Please submit a land drainage consent application.

Condition 11

1. "Please detail how maintenance will be funded, i.e., will a charge be levied on residents?"

This query has been raised with the developer who shall respond under separate cover. *Please outline within maintenance manual.*

2. *"Please add to maintenance of ponds- annual removal of tree saplings. Okay.*
3. *Please detail inspection and replacement of liners. Please detail frequency of inspection.*
4. *Please detail inspection, greasing and movement of bypass door on hydrobrake and frequency of this. Please include requirement to operate bypass door at x frequency.*
5. *Please include maintenance of gullies and pipes. Okay.*
6. *Please include maintenance of ordinary watercourse for which the development will have riparian responsibility for. Please include a layout plan which clearly defines the watercourse extents."* Noted. The updated maintenance management schedule incorporating the above comments has been annexed within Appendix I. *Please make specific to watercourses, and remove irrelevant details such as scarifying, gravel trenches. Please include a layout plan which clearly defines the watercourse extents that the developer has riparian responsibility for.*

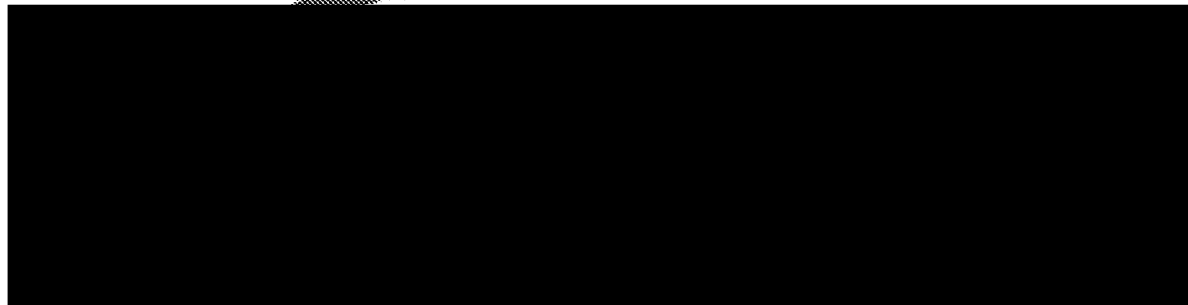
Kind regards,

Laura Gibbons

Drainage Engineer

Engineering Services

Please note that I work Tuesdays 08:00-16:00 for Arun only.



From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: 14 March 2022 11:34
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Re-Consultation on: P/15/22/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No: P/15/22/DOC
Registered: 9th February 2022
Site Address: Land adjacent to Sefter School House Sefter Road Bognor Regis PO21 3EE
Grid Reference: 489528 99491
Category: Discharge of Condi
Description of Works: Approval of details reserved by condition imposed under ref P/116/19/OUT relating to Condition Nos 9 - surface water drainage, 10 - discharge flows to watercourses, 11 - maintenance & management of surface water drainage, 12 - foul drainage assessment, 13 - contamination, 14 - Construction Management Plan and 15 - Arboricultural Impact Assessment.

I am able to inform you that I have received an amendment to the above application dated 14th March 2022 relating to: Amended CMP and additional Drainage info.

[Click here to view the plans and documents](#)

If you should wish to make further representations as a result of this amendment you should click the link below and then click on 'Enter comment'.

[Click here to make further comments](#)

Please make any further comment by **29th March 2022**.

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.

Yours sincerely

Mr S Davis

Planning Case Officer-Arun District Council

Telephone: 01903 737874

Email: Simon.Davis@arun.gov.uk

PLP/ECOM_DOC (008) 2020