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From: Sarah Burrow <Sarah.Burrow@arun.gov.uk>

Sent: 21 April 2023 13:28

To: Planning.Responses <Planning.Responses@arun.gov.uk>

Cc: Maria Tomalova <Maria.Tomalova@arun.gov.uk>; Paul Cann <Paul.Cann@arun.gov.uk>; Karl Mclaughlin <Karl.Mclaughlin@arun.gov.uk>

Subject: RE: Planning Consultation on: BE/40/22/PL

Further Engineers Comments Regarding Surface Water Drainage

I **object** to this application.

Full guidance on our policies and how to discharge conditions can be found at:

- Arun District Council Surface Water Drainage Guidance - <https://www.arun.gov.uk/surfacewater>
- WSCC Policy - https://www.westsussex.gov.uk/media/12230/ws_lifa_policy_for_management_of_surface_water.pdf
- Land Drainage Consent - <https://www.arun.gov.uk/land-drainage-consent/>

The updated plans show unresolved potential conflicts between the proposed surface water drainage for the site and landscaping plans. This may affect the proposed layout and will in turn impact upon the ecological appraisal of the site and the accuracy and achievability of any assessment of ecological enhancement that is proposed.

This application is classified as a major development, therefore it must meet all of the stipulations of the local plan policy W DM3. The current site plan and landscaping plans include no open features, this contrasts with the updated drainage layout [11642/1601 Rev P5] which shows a swale bordering the communal area in the centre of the site and a second swale south of plot 11 (shown as a native mix hedge on the landscaping plans). Multiple policy documents and guidance refer to the need for SUDS to deliver multifunctional benefits which are generally achieved through open features.

If open features are required to meet policy requirements then these must be accounted for within the proposed layout and must not conflict with the POS or landscaping requirements of the site. There is currently no provision for this. All plans should be consistent to ensure that local plan policy is being met. If the proposed swales are included within the rest of the plans then the ecology officer must be consulted to determine whether these swales actually provide the biodiversity and amenity benefits that are required through local plan policy.

The current landscaping design proposes one Red Oak tree and 8 Himalayan Birches planted directed over the area where the attenuation tank and storage blanket are proposed. This is inappropriate – drainage infrastructure and trees must not conflict. Tree roots have the potential to damage pipes, the tank and blanket liners which can cause groundwater ingress, loss of capacity and connectivity. Furthermore the location of substantial drainage apparatus within 0.3m of ground level is likely to inhibit the growth of the proposed trees – please consult the landscaping officer in this regard.

There also appears to be a proposed Quercus Rubra (Red Oak) located directly over the proposed outfall pipe east of plot 11. It is likely that this tree will need to be removed or relocated in the landscaping proposals.

The removal or reduction in number of proposed trees will likely impact the ecological assessment, please consult the ecology officer if there any alterations to the proposed landscaping strategy.

I have not undertaken an accurate assessment of the calculations that have been provided as they are not supported by an impermeable area plan. However, it is clear that there is an error in the calculation of volume for the storage blanket which is proposed over the attenuation tank to provide extra capacity. The volume falsely assumes that the storage blanket will be a depth of 0.5m over it's full area, however on the basis of the levels provided, there will only be a depth of 0.1m available over the tank area once a 100mm sand surround is allowed for. Therefore an optimistic estimate (not allowing for the 0.1m sand surround to the sides of the tank) is that the storage blanket will only provide 20.4m³ – instead of the 36m² allowed for in the design. This volume will need to be provided elsewhere.

In addition to my comments, an external consultant acting on our behalf has provided a previous consultation which the applicants engineers have responded to. I have copied these comments below and replied in **bold** where necessary:

- 1) Please can you provide calculations to confirm the proposed geo-cellular storage will not become buoyant if the groundwater was to become elevated.

The groundwater monitoring results suggest high groundwater across the entire site.

The base of the geo-cellular storage system is ~1.5m below ground level (BGL) in the centre of the site, and all 3 of the groundwater monitoring results provided suggest groundwater levels will become elevated above this level.

Consequently, we would request that calculations are submitted to confirm that the proposed SuDS will not need to be altered in order to accommodate the expected high groundwater levels.

At this stage in the planning process, we anticipate a worst case groundwater level will be encountered, based on the testing provided. At present the FRA suggests in section 2.6 that this will be around 1.0m BGL.

GTA: Groundwater monitoring was carried out from 24th November 2021 to 30th March 2022 by Risk Management Ltd. The results are contained in the appendix to this note. The peak GW level was recorded as 1.84m AOD on 24th November 2021 within BH3 and 2nd February 2021 in BH1. The tank invert is 1.835m AOD therefore, this figure has been used in the floatation calculations appended.

These show that the tank is not in danger of floatation.

ADC: The referenced groundwater monitoring data does not appear to be included within the appendices of the technical note. In any case, evidence of groundwater levels at approximately 1-1.1mbgl has already been presented in the FRA, this monitoring being from three separate points on the site. Comparison with the later data will be necessary before we will consider the use of a lower peak groundwater level than that already evidenced.

- 2) Additional information should be provided on the proposed SuDS to show how the treatment provided to the runoff will impact the water quality.

We are concerned that there may be insufficient space if additional SuDS are required to ensure a suitable quality of water is discharged offsite. We request that calculations are provided which follow the Basic Index Method, to confirm that the proposed SuDS will treat runoff sufficiently.

GTA: See attached calculator sheets taken from the Susdrain web site which show treatment for water falling on residential roads and car parking is sufficiently treated by the permeable paving and swale provided.

ADC: This is not an accurate representation of the design. The roof water on the site is not diverted through permeable paving as the Susdrain calculators imply. In reality permeable paved driveways are linked separately to the positive network and roof water is piped directly to catchpit inspection chambers with no treatment. Furthermore, whilst some sections of the road may drain to the swales in the communal garden area (if these are indeed proposed – see above) there are at least five road gullies that appear to discharge to the network with limited treatment.

- 3) A 10% allowance for urban creep should be applied to the design. A 10% allowance does not appear to have been applied.

Given the limited available space to expand the crate system, it is important to consider urban creep at this stage in the planning process, as additional storage may be required.

GTA: 10% has been added to the calculations for all the plots and drainage layout updated accordingly. See attached revised microdrainage calculations and drawing 11642/1601 rev P5.

ADC: Unfortunately the previous calculations have not been uploaded to the public portal and therefore I am unable to compare them to the latest revision. No impermeable area plan has been provided.

- 4) We require the fences to be at least 3m from top of bank, between the development and ancient watercourse, to ensure that the proposals are in accordance with our land drainage byelaws. This easement should be delineated and confirmed on the drainage layout plan.

From the information provided it appears that a 2m easement (approximately) has been provided for access and maintenance of the watercourse at present. It is recognised that no buildings are located within 5m (as is also required).

GTA: We have clarified the location of the top of the bank of the watercourse and shown a 3.5m easement to a relocated fence line location on amended drawing 11642/1601 rev P5 appended.

ADC: OK thank you. The same easement will need to be shown on all proposed site layouts and landscaping plans going forward.

- 5) We are unsure how the ditch / small watercourse adjacent to the site connects to the nearby main river and we have concerns regarding how onward connection from the development site to this watercourse, or the main river will be achieved.

The drainage layout shows the proposed onward connection to the main river crossing the smaller ditch channel. There is likely to be works required to facilitate the connection as shown, or to ensure the ditch / small channel is fit for purpose and has onward connectivity to the main river if a connection to this feature is proposed at the detailed design stage.

We require additional details of the proposed connection, including whether an existing connection between the main river and smaller channel is present.

We require details of how any pipework can be accommodated / will pass through the area where the existing ditch / channel is. This pipework should remain above the water level within the main river.

GTA: We have searched the area and we cannot find connectivity between the small watercourse and main river due to dense undergrowth.

The proposed connection is mimicking the existing school outfall location which is shown on the survey plan appended.

The only reason this existing outfall was not used was that it is not in a convenient location for future maintenance, as the manhole falls in the garden of plot 13.

The level of the existing outfall is likely to be somewhere in the region of 1.4m AOD (as upstream chamber is 1.54m) which is what we are proposing, so the new outfall will have no more impact than the existing, especially taking into account this used to have no flow restriction from the school site.

The main river ditch bed level has been surveyed at approximately 1.020m AOD in the vicinity of the connection with no water level in the river present. So the connection is 380mm above the bed level which we feel is more than sufficient.

ADC: The viability of the blind ditch crossing is critical to the proposed surface water drainage strategy and the layout of the site. The designer needs to be able to evidence that a gravity connection can cross beneath the hard bed of the blind ditch with sufficient freeboard between the hard bed and the top of the pipe bedding, whilst also achieving an acceptable outlet invert level into the main river.

Overcoming our objection

If the planning officer is minded to allow the applicant additional time to submit further documents to support this application then the following evidence may overcome our objection. Please do not submit further documents without prior discussion with the planning officer as to whether it will be possible for these to be assessed or influence their determination. **The failure to overcome my objection at this stage may result in any permission given being unimplementable if a policy compliant surface water drainage design cannot be achieved at DOC stage.**

1. An impermeable area plan clearly showing all positively drained areas and where urban creep has been applied.
2. An updated surface water drainage design, including calculations, to show how storage capacity and adequate water treatment can be provided on site without conflicts with public open space requirements, landscaping or ecology.

The calculations must use an allowance of 45% for the 1 in 100 year event and have the MADD factor set to zero.

3. Update all site and landscaping plans to reflect the drainage design, including potential swales and the watercourse easement.
4. Show tree root potential growth on the drainage layout.
5. Detail what protection will be offered to drainage apparatus in any tree root protection or potential growth areas to prevent root incursion – the tree or landscaping officer will also need to be consulted regarding this and any potential impact that the protection may have upon the existing trees.
6. Provide accurate cross and long sections of the proposed connection to the main river, detailing the crossing of the blind ditch as covered in point 5) above.

If my comments cannot be addressed adequately prior to a decision on this application then I request that approval of any matters relating to landscaping and ecology are deferred to be agreed via condition.

Comments not affecting determination – no action required at this stage

7. Updated buoyancy calculations based on peak evidenced groundwater levels.
8. A flood risk activity permit will be required for the proposed connection to the main river and removal of the existing outfall. This will need to be evidenced as part of an application to discharge conditions if the application is approved.
9. Land drainage consent would normally be required for the proposed crossing of the blind ditch. However, Paul Cann has agreed that oversight of the crossing may be covered under the planning process and no LDC will be required. It is likely remediation and maintenance works that are required to the receiving watercourses to ensure they are capable of receiving proposed flow. At the DOC stage we will expect full details of this to be provided.
10. The existing connection to the main river will have to be properly abandoned. The piped network will ideally need to be grubbed out, otherwise it may be filled with concrete.
11. The infiltration testing that has been carried out does not show drain down times from 75-25% across all 3 tests, as in most cases a single test has been carried out. If the permeable surfacing / paving with infiltration is included in the detailed design, BRE 365 compliant infiltration tests will be necessary to support the calculations. This area cannot be excluded from the impermeable areas in the drainage model unless this additional testing is carried out.

12. A detailed maintenance and management plan has been made a condition of planning. For the DOC application full maintenance details will be required, including information on responsible parties, expected costs and funding for ongoing maintenance.
13. Detailed design / construction drawings will be required as part of the DOC application, these will need to be prepared in accordance with ADC's guidance and checklist (link below).
14. The applicant should confirm that the SuDS have been excluded from the landscaping / open space allowance calculations by providing a summary table of the developed and open space allowance areas.

Kind regards

Sarah Burrow
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Usual working pattern: 8am – 2:30pm Monday to Friday

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From: Planning.Responses <Planning.Responses@arun.gov.uk>

Sent: 06 April 2023 19:34

To: Land Drainage <Land.Drainage@arun.gov.uk>

Subject: Planning Consultation on: BE/40/22/PL

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No: BE/40/22/PL

Registered: 6th April 2022
Site Address: Former Bartons Infant School Romney Broadwalk Bersted PO22 9BH
Grid Reference: 492553 100908
Category: Plan Applicat'n
Description of Works: Demolition of former school building and erection of 21 No. new dwellings and associated car parking, cycle parking and landscaping. This site is in CIL Zone 4 (Zero Rated).

I am able to inform you that I have received an amendment to the above application dated 16th February 2023 relating to:- Substitute and additional documents and plans.

[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 **20th March 2023**.

Please be aware that Planning Services operate an 'open file' policy and will publish your comments including your name and address on the website. We will aim to redact signatures, telephone numbers and email addresses but please help us by not incorporating them in the body of your text. Please make sure that you only include information that you are happy will be published in this way. If you supply information belonging to a third party, you must make sure you have their permission to do so.

Yours sincerely

Maria Tomalova

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PLRECON (ODD) 2018