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

**Sent:** 21 September 2022 10:49

**To:** Juan Baeza <Juan.Baeza@arun.gov.uk>

**Cc:** Planning.Responses <Planning.Responses@arun.gov.uk>; Nik Weaver <Nik.Weaver@arun.gov.uk>; Paul Cann <Paul.Cann@arun.gov.uk>

**Subject:** RE: AB/54/22/DOC

Hi Juan,

This application was reviewed by an external consultant. When a response is provided that deals with all the consultation comments we will endeavour to consult the same consultant for the sake of consistency and continuity.

However, it is clear from the response provided by the applicant that two of the consultation comments (1 and 4) have not been satisfactorily addressed. **On this basis I recommend that the application is refused.** It is suggested

that the applicant reapplies to discharge the relevant conditions when they have all the necessary detail for the full drainage design to be approved.

I have not undertaken a technical appraisal of all of the comments, particularly where they may still be open to discussion, but I can comment on the following in blue:

1. Insufficient information has been provided regarding the design of the suspended above ground tank.

We require full design drawings for this feature including details of its construction, including but not limited to:

- Details of the materials used to make the tank
- Details of any welding or riveting
- Details of any galvanising
- Details of any seals or joints
- Details of any expansion joints (if required) and calculations confirming whether this will be necessary.
- Details of the support mechanism (we appreciate this has been submitted under different application, but this will be required in this application also)
- We also require signoff on the design for the tank from your structural engineer.  
This signoff must show that the engineer has considered the impacts of higher than design flood levels on the drainage system's buoyancy or the impact that the drainage system becoming buoyant would have on the building above.
- Signoff of the tank from the manufacturer.
- Confirmation from the manufacturer that the tank will be fully watertight.
- Details of the access arrangements for maintenance and inspection, including detailed drawings of any maintenance hatches.
- Details of any confined space signage.
- Details of any foul air prevention systems (if required).
- Details of the openings in the grills to permit entry for maintenance access.
- Buoyancy calculations to confirm the tank will not damage the building in the event flood levels are at a reasonable worst-case level.

#### Response

The order for the suspended above ground tanks is yet to be placed. Therefore the construction details are not available. The tanks design / fabrication details sign off will follow when technically confirmed. Full details will be in the O & M manual issued to the management company.

*This is not acceptable. The condition states that full details of the surface water drainage design will be agreed via this condition and the tanks are fundamental and critical elements of the design. We expect all of the details listed by our consultant to be included in the next DOC submission.*

2. Surface and bed levels for the proposed permeable surfacing should be included on the drainage drawing.

#### Response

The base level of the voided stone below the permeable paving has been added to the plan E19-003-1101. The surface level is 2.80m AOD and is shown on the levels plan E19-003-1102 attached.

*Not assessed but assumed to be acceptable -- will be checked at next DOC.*

3. Confirmation of land ownership for the track should be provided. It is unclear whether the track lies within the confines of the site or is controlled by a 3rd party landowner. If the latter, confirmation from the landowner that the proposed connections across the track can be made should be provided. This point can be resolved if the applicant confirms that the track is within their land ownership boundary.

Response

The land ownership plans / details for the track are attached along with the consent to cross the road to the ditch with the surface water drainage.

*Legal documents not assessed – assumed to be acceptable – will be checked at next DOC.*

4. Connections to the watercourse / ditch will require IDB approval (Outfalls 2 and 3) and evidence of this should be provided. For the northern most connection (Outfall 1), ordinary watercourse consent from Arun DC will be required and evidence for this will also be required. Please note that the Environment Agency are the responsible IDB in this area.

- As the levels agreed as part of the LDC will impact the surcharge calculations (point 5 below), this will need to be agreed prior to approval / DOC.

Response

Applications have been made to the IDB and Arun DC for consent and responses are awaited.

*This is not acceptable. Please submit approvals - once received - from ADC and the EA with your next DOC submission.*

5. During earlier discussions with the LPA it was acknowledged that remediation for onsite contamination resulted in raised ground levels and this is also stated in Condition 11 of the originally approved application. As there is potential for this to conflict with the drainage design and proposed level of the car park required as flood compensation, we require confirmation that the agreed car park level of 2.80m AODN will be achieved.

- The levels on the drainage drawing suggest land raising has not been carried out, however, it is unclear if the 2.80m level will be achieved across the entire permeable car parking area.
- The applicant should confirm whether land raising has been carried out as per the contamination mitigation strategy or not been carried out as per the drainage design drawing.

Response

The preliminary remediation work levels are above the 2.8m AOD agreed level. However, further detailed remediation works are to be carried out and this will enable the final level of 2.80m AOD to be achieved in accordance with the planning approval.

*Not assessed but assumed to be acceptable – will be checked at next DOC.*

6. The original Arboricultural tree survey Report submitted to planning includes section 11.15, which assumes no services within RPZ's across the site. Further to this, the plan associated with the Arboricultural report shows an exclusion zone for tree protection. Outfall 1 is located within this RPZ and exclusion zone. The applicant should provide evidence that the arboriculturist is satisfied that the proposed headwall, pipework and work to be carried out within the exclusion zone and RPZ will not damage these trees in a way which affects the conclusions of the Arboricultural Report. We request a statement from the arboriculturist confirming that this outfall is acceptable.

Response

The RPZ's have been corrected on the drainage plan and the outfall pipe and headwall just clip the RPZ. A response from the arboriculturist is attached confirming the small incursion is not an issue.

*Not assessed and open to discussion – will be checked at next DOC – tree officer may need to be consulted.*

7. We note that in several cases the incoming pipe invert level is potentially below the 1@10 year water level within the storage tanks. Either:

- Justification as to why the design does not have to achieve this requirement should be provided.

Or

- The design should be amended to ensure that this requirement is achieved.

Response

The surface water outfalls are all restricted via hydrobrakes and 1 in 10 year runoff exceeds this rate. Therefore all the pipework will be below the 1 in 10 year attenuation.  
*Not assessed – will be checked at next DOC.*

8. A flap valve will be required on the outlet for each of the headwalls (with the exception of the diverted watercourse). This must be included within the surcharge calculations. The reason for this is to prevent silt and potentially contaminated floodwater from reaching the storage tanks.

Response

A flap valve has been added to the outfalls and the calculations already take a surcharged outfall to a level of 4.12m AOD.  
*Not assessed but assumed to be acceptable – will be checked at next DOC.*

9. A justification for why vents have not been included within the tank designs that are not vented should be provided. If vents are required for all tanks, then they should be included on the drawings. Vents should be located at a sufficient elevation to prevent floodwater ingress into the tanks (i.e. above the design flood level) unless there is good reason why this cannot be achieved and any impacts of the vents being below this level are fully considered.

Response

Currently the tanks are vented in the usual way into adjacent manholes as per the manufacturer's requirements. Vents have been added to the drainage layout E19-003-1101 and show a level above 4.12m AOD.  
*Not assessed – will be checked at next DOC.*

10. Buoyancy calculations are required for all of the proposed SuDs and elements of the drainage system.

Response

As the SuDS elements are all associated with the permeable paving, buoyancy calculations are not required in flood conditions as they will be inundated with water.  
*Not assessed and open to discussion – will be checked at next DOC. It is assumed buoyancy calculations are required to account for high groundwater in non-flood conditions but this will need to be clarified with the consultant.*

11. The applicant should confirm that the pipe is not likely to be surcharged during the 1:10 year storm. The pipe could be raised to provide a larger difference between the soakaways invert level and the pipe inlet invert level, or additional crates could be included within the design, to lower the 1:10 year water level.

Response

Please refer to Point 7.  
*Not assessed – will be checked at next DOC.*

12. Discharge into the paving rather than tanks should be justified, this follows previous correspondence with Arun DC regarding the proposed discharge into the tanks rather than permeable paving.

Response

Where possible the rainwater pipes from the two blocks of flats have been taken to attenuation tanks. Where they are not due to levels etc., and the use of pumps are not recommended they have been taken into the paving.  
*Not assessed and open to discussion – will be checked at next DOC.*

13. If the drainage calculations only account for run-off draining from impermeable surfaces, then the calculations should use a CV of 1.0.

- The requirement to use CV 1.0 is based on recent clarifications from HR Wallingford which suggest the values of 0.84 and 0.75 often used are in error and confirm that a value of CV = 1 should be used in situations where run-off from only the impermeable areas is considered.
- It is noted that CV 1.0 is only considered applicable to the sizing of the SuDS, and pipework may still be designed to lower values.

Response

Noted and the calculation re-run using a CV value of 1.0. This has revised the attenuation and the drainage drawing E19-003-1101 has been updated.

*Not assessed but assumed to be acceptable – will be checked at next DOC.*

14. The drainage calculations include a 10\*2 (20)m<sup>3</sup> per ha additional storage volume, which is not included within the design. A justification for this value should be provided, or this value reduced to 0.

Response

Not sure where this figure is shown in the calculations as we have not made these allowances.

*Not assessed – will be checked at next DOC.*

15. We would expect details for the proposed culvert realignment to include an assessment of the hydraulic performance of the new culvert. With adjusted K values to account for the nearly 90 degree angle. Alternatively, any suitable argument that confirms that the 90 degree bend will have a negligible impact on flows or volumes discharged through this system can be presented.

Response

The existing culvert which is to be diverted is not shown on any record plans. The upstream culvert cannot be traced as the landowners will not allow access. Therefore providing a catchment plan is not possible. From investigations on site the 225 dia culvert is virtually dry. We have received consent from Southern Water to the diversion and a copy is attached for your records.

*Not assessed and open to discussion – will be checked at next DOC.*

16. Index Methodology calculations should be provided to ensure that the proposed drainage system will provide sufficient treatment for run-off draining from the roofs and hardstanding across the site.

- If water quality targets are not achieved, justification as to why they cannot be achieved should be provided.

Response

The Index Methodology has been followed from the CIRIA SuDS manual and the calculation is attached.

*Not assessed – will be checked at next DOC.*

17. The catchpit drawings should include a dimension to confirm the minimum depth of the catchpit below the inlet and outlet invert levels. This depth should be a minimum of 300mm in line with our policy requirements.

Response

All the proposed catchpits have a minimum sump depth of 300mm as per the attached detail drawings.

*Not assessed but assumed to be acceptable – will be checked at next DOC.*

If you would like any further comments I can package the submission and send it for full technical review but there will be a significant delay until receipt of a consultation. If I don't hear from you I will assume that my comments are sufficient and will await a new DOC application.

Kind regards

**Sarah Burrow**  
**Engineering Assistant**, Coastal Engineers and Flood Prevention

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**From:** Juan Baeza <[Juan.Baeza@arun.gov.uk](mailto:Juan.Baeza@arun.gov.uk)>

**Sent:** 20 September 2022 13:58

**To:** Sarah Burrow <[Sarah.Burrow@arun.gov.uk](mailto:Sarah.Burrow@arun.gov.uk)>

**Cc:** Planning.Responses <[Planning.Responses@arun.gov.uk](mailto:Planning.Responses@arun.gov.uk)>; Nik Weaver <[Nik.Weaver@arun.gov.uk](mailto:Nik.Weaver@arun.gov.uk)>

**Subject:** AB/54/22/DOC

**Importance:** High

Hi Sarah

Not sure who from Engineers initially responded – see PDF for engineers response. Does this additional info satisfy your objections?

Thanks

Planning responses/Nik can you post this as private and confidential correspondence for the DIP button only. Thanks

**Juan Baeza**  
**Planning Team Leader, Development Management**

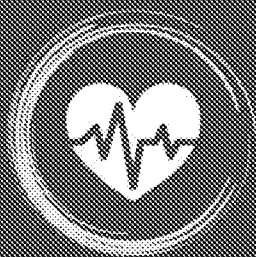
T: 01903 737765

E: [juan.baeza@arun.gov.uk](mailto:juan.baeza@arun.gov.uk)

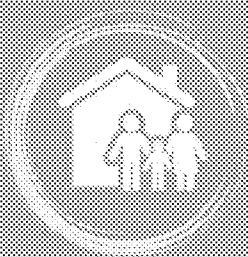
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Littlehampton, West Sussex, BN17 5LF  
[www.arun.gov.uk](http://www.arun.gov.uk)



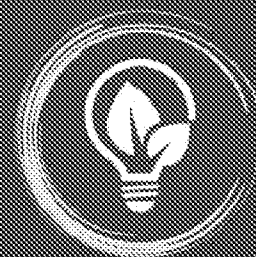
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**Improving the wellbeing of Arun**



**Delivering the right homes in the right places**



**Supporting our environment to support us**

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**From:** Alex Munro [REDACTED]  
**Sent:** 20 September 2022 13:05  
**To:** Juan Baeza <[Juan.Baeza@arun.gov.uk](mailto:Juan.Baeza@arun.gov.uk)>  
**Cc:** Geoff Armstrong <[REDACTED]>  
**Subject:** RE: Arundel Planning Conditions - Surface water related  
**Importance:** High

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Juan,

Further to my previous email I am pleased to attach information provided by my client's drainage engineers which seek to respond the comments from your colleagues in respect of the application references listed in my previous email.

I would be grateful for your acknowledgement of receipt of this email.

Kind regards,

Alex

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**From:** Alex Munro  
**Sent:** 06 September 2022 15:01  
**To:** Juan Baeza <[Juan.Baeza@arun.gov.uk](mailto:Juan.Baeza@arun.gov.uk)>  
**Subject:** RE: Arundel Planning Conditions - Surface water related

Sure - AB/54/22/DOC and AB/56/22/DOC

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**From:** Juan Baeza <[Juan.Baeza@arun.gov.uk](mailto:Juan.Baeza@arun.gov.uk)>  
**Sent:** 06 September 2022 14:59  
**To:** Alex Munro <[REDACTED]>  
**Subject:** RE: Arundel Planning Conditions - Surface water related

Hi Alex

With Anita's departure these have been left standing. Can you please let me know what the relevant app reference is?

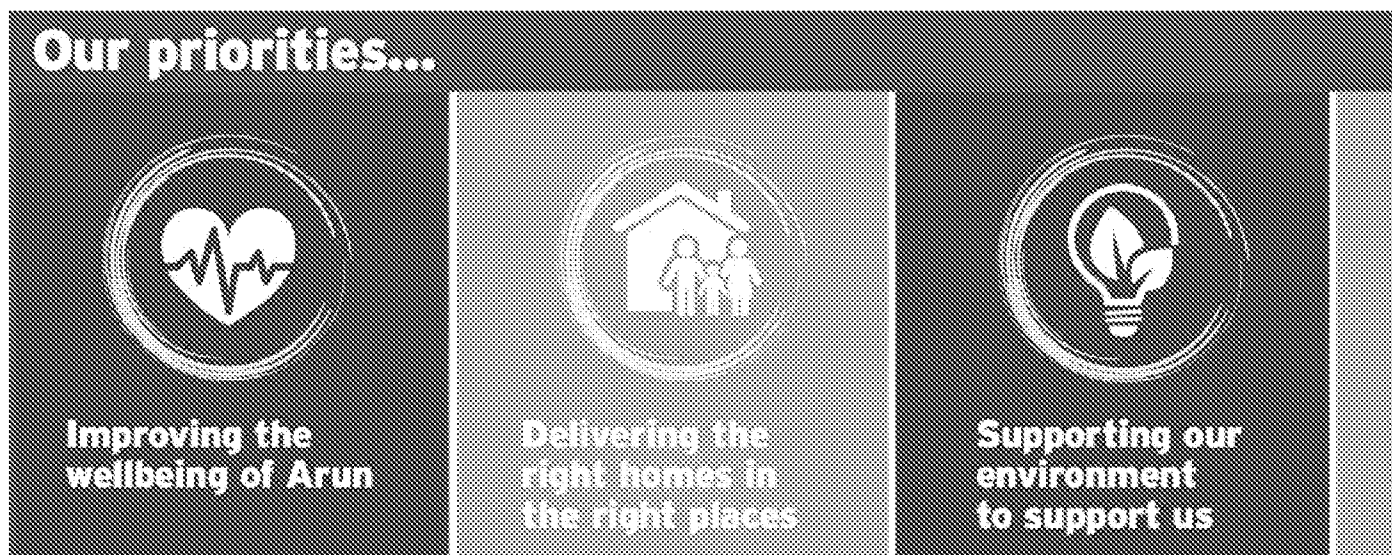
Thanks

**Juan Baeza**  
**Planning Team Leader, Development Management**

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**From:** Alex Munro [REDACTED]  
**Sent:** 06 September 2022 14:29  
**To:** Juan Baeza <[Juan.Baeza@arun.gov.uk](mailto:Juan.Baeza@arun.gov.uk)>  
**Cc:** Geoff Armstrong [REDACTED] Stuart Greenwood  
[REDACTED]  
**Subject:** RE: Arundel Planning Conditions - Surface water related

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Good afternoon Juan,

I hope you don't mind me chasing on the below – we would obviously be happy to agree an extension of time to allow us to address your colleague's drainage comments.

I look forward to hearing from you.

Alex

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**From:** Alex Munro  
**Sent:** 02 September 2022 10:27  
**To:** Juan Baeza <[Juan.Baeza@arun.gov.uk](mailto:Juan.Baeza@arun.gov.uk)>  
**Cc:** Geoff Armstrong [REDACTED] Stuart Greenwood [REDACTED]

**Subject:** FW: Arundel Planning Conditions - Surface water related  
**Importance:** High

Good morning Juan,

I hope you're well.

Further to my voicemail just now we are conscious that you have finally now received the comments of your drainage colleagues after quite a long wait re our conditions 3 and 6.

My client is keen to address these asap as part of this application. In which case can we therefore please agree an extension of time (I believe we have already exceeded that agreed with Anita in any event). We are happy for you to nominate a timescale. Otherwise, my client will seek to provide the requested information on both asap.

I look forward to hearing from you.

Alex

Alex Munro [REDACTED]  
Senior Planner



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[REDACTED]

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