

Engineers Comments Regarding Surface Water Drainage

Application Reference:	WA/109/24/OUT	Reviewer Reference:	ADC/PC
Planning Officer:	Harry Chalk	Date of Review:	06/06/2025
Site Name:	Sussex Business Village Lake Lane Barnham PO22 0AL		
Application Description:	Outline planning permission for 3 No. attached dwellings with associated gardens, access and parking. This application is in CIL zone 3 (CIL liable as new dwellings) and is a dual parish application with Yapton Parish Council.		
Assessment Number:	1 of 1		

Policy and Guidance Information

Arun District Council Surface Water Drainage Guidance - <https://www.arun.gov.uk/surfacewater>

Land Drainage Consent – <https://www.westsussex.gov.uk/fire-emergencies-and-crime/dealing-with-extreme-weather/flooding/flood-risk-management/ordinary-watercourse-land-drainage-consent/> and

<https://www.arun.gov.uk/land-drainage-consent/>

Arun District Council surface water pre-commencement conditions -
<https://www.arun.gov.uk/planning-pre-commencement-conditions>

The SuDs Manual [C753] by CIRIA

Sustainable drainage systems: non-statutory technical standards'
<https://assets.publishing.service.gov.uk/media/5a815646ed915d74e6231b43/sustainable-drainage-technical-standards.pdf>

Response	Objection
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Critical Items for Surface Water Drainage Design Conditions

The failure to adequately address the following items will result in an objection to a surface water drainage design.

If any of these items are inadequately addressed by the submission, then their correction may result in a redesign of the surface water drainage scheme. A redesign is likely to have site wide implications such as the potential for storage structures to increase in volume or plan area.

Critical Item	Reason	Status
Winter groundwater monitoring data.	<p>Adequate winter groundwater monitoring data must be supplied to evidence that infiltration designs have sufficient freeboard from the base of structures and the peak groundwater level.</p> <p>The same data is necessary to ensure that the potential for buoyancy has been adequately considered in attenuation designs.</p>	Insufficient.

Winter infiltration testing data.	<p>Adequate winter infiltration testing must be supplied to justify the proposed discharge method and design infiltration rates.</p> <p>Infiltration tests must be completed strictly in accordance with BRE DG 365, CIRIA R156 or a similar approved method. Testing depths must account for peak groundwater levels and correspond with the location and depth of proposed infiltration features.</p> <p>Designs must be based upon the <u>slowest</u> infiltration rate evidenced closest to a proposed infiltration feature. Average design rates will not be accepted.</p> <p>The results of incomplete tests should not be extrapolated to obtain design values for infiltration rates.</p>	Insufficient.
The hierarchy for sustainable drainage.	<p>The proposed discharge method must accord with the SuDS hierarchy as given below. Evidence must be supplied to justify the proposed discharge method.</p> <ol style="list-style-type: none"> 1. Rainwater reuse where possible. 2. Complete discharge into the ground (infiltration). 3. Hybrid infiltration and restricted discharge to an appropriate water body or surface water sewer. 4. Restricted discharge to an appropriate water body. 5. Restricted discharge to a surface water sewer. 6. Restricted discharge to a combined sewer. <p>A water body may be defined as a river, watercourse, ditch, culverted watercourse, reservoir, wetland or the sea.</p> <p>Engineers cannot support any proposed connection of surface water to the foul sewer.</p>	Compliant but inadequately proven.
Calculations	<p>Calculations for pre-development run off rates must be based upon the positively drained area only.</p> <p>Proposed discharge rates must not increase flood risk on site or elsewhere. Discharge</p>	Insufficient – full hydraulic calculations required.

	<p>rates must be restricted to QBAR or 2 l/s/ha, depending on whichever is higher.</p>	
	<p>Designs must be based on the most recently available rainfall data at the time of conditions being applied. <u>FSR rainfall data will not be accepted.</u> FEH rainfall data is based upon more recent records and continues to be updated.</p>	Compliant but to be incorporated in full hydraulic calculations
	<p>Designs must use the correct climate change allowances at the time of determination of the outline or full planning application.</p> <p>CV values for all events must be set to 1. This includes summer, winter, design, and simulation events.</p> <p>The correct allowance for urban creep must be applied.</p> <p>Additional storage must be set to zero unless it can be evidenced where this is provided.</p> <p>Infiltration half-drain times must be less than 24 hours.</p> <p>Infiltration design rates must be applied to the sides of soakaways, or to the base of infiltration blankets. Design rates must not be applied to both the base and sides of infiltration structures.</p> <p>A surcharged outfall must be modelled.</p>	Insufficient
Natural catchments design.	<p>The submission must define the natural drainage characteristics within, and hydraulically linked to, the site and demonstrate that the drainage proposals will integrate with and not compromise the function of the natural and existing drainage systems.</p> <p>The condition, performance (including capacity where appropriate) and ownership of any existing site surface water drainage infrastructure must be accurately reported.</p> <p>Appropriate easements to watercourses and other services must be shown on all plans.</p> <p>Where there are areas of flood risk from any source on the site, it must be shown how a sustainable surface water drainage design can</p>	Insufficient.

	<p>be accommodated on the site without conflicting with those areas of flood risk.</p> <p>Designs must replicate the natural drainage catchments of the site. All surface water drainage designs must therefore drain via gravity to corresponding points of discharge.</p> <p>The use of pumps for surface water drainage is not sustainable and will only be considered where the designer has fully demonstrated that they are proposed as a last resort.</p>	
Plans	Plan areas, depths and levels of drainage infrastructure must accurately correspond with the supporting calculations.	Insufficient.
Water quality benefits.	An assessment of water quality is necessary to evidence that the proposed design provides adequate treatment of surface water.	Insufficient.
Biodiversity and amenity benefits.	The surface water drainage design must provide biodiversity and amenity benefits.	Insufficient.
Trees and planting	<p>There should be no conflict between surface water drainage infrastructure and existing or proposed trees or planting.</p> <p>The design must consider the potential growth of proposed trees and adequate mitigation must be provided to protect drainage infrastructure where conflict <u>cannot</u> be avoided.</p>	Insufficient – landscaping proposals not provided.

Drainage Impact on Other Planning Matters

This application has been assessed with regards to surface water drainage design only.

Other planning matters occasionally effect the surface water drainage design. If plans relating to other matters have been assessed for their impact on the proposed drainage, then it must not be assumed that they have been assessed for any other purpose. The planning officer is advised to check for conflicts with any existing approved plans and to consult any relevant consultees as appropriate.

It has been identified that the following consultees may have comments about the plans that have been submitted and reviewed for this application:

- Landscaping officer (proposed trees and landscaping)
- Tree officer (existing trees)

- Environment Agency (main rivers and fluvial/tidal flood risk, groundwater source protection zones)
- Southern Water (foul drainage and surface water disposal to public sewer network)
- Portsmouth Water (groundwater source protection zones)
- Lead local flood authority (all other sources of flooding and ordinary watercourses)
- Other:
- None

Additional comments to the planning officer

The NPPF states that when determining any planning application, local planning authorities should ensure that flood risk is not increased elsewhere (paragraph 181, 182 and 187e). The PPG guides local planning authorities to refer to 'Sustainable drainage systems: non-statutory technical standards' and detailed industry guidance like The SuDS Manual [C753] by CIRIA to guide decisions about the design, maintenance, and operation of sustainable drainage systems for non-major development.

This consultation has been primarily informed by The SuDS Manual.

The drainage strategy comprises two options, 1) Infiltration into the ground 2) Discharge to existing culverted watercourse.

Option 1 has been based upon insufficient groundwater monitoring and infiltration testing. This fact is recognised by the applicants designer. Winter groundwater monitoring is required and this will determine if winter infiltration testing is viable, as one metre freeboard needs to be achieved between the base of infiltration structures and peak groundwater levels.

Groundwater monitoring and infiltration testing **must** be undertaken at the location of the infiltration structures. This has not been achieved with the monitoring and testing undertaken to date. Infiltration into made ground should not be considered due to its variability.

Option 2 consider a discharge to an adjacent culverted watercourse, on the assumption that infiltration proves unviable. Full details of the culvert have not been provided ie. condition and levels, etc. Therefore, it is not possible to confirm for sure if a gravity connection is possible or if the culvert is fit for purpose. It should be noted that Land Drainage Consent would also be required for such a connection.

Qbar calculations have been based upon a larger impermeable/drained area than what is proposed and will need to be corrected. However, it is recognised that flow rates are low and the designer has proposed a restricted flow rate of 0.7 l/s. This rate achieves a lower rate than 2 l/s/ha so is deemed acceptable in principle Required storage has been calculated upon high level criteria, however full hydraulic calculations will be required to support any proposal.

The applicant should incorporate permeable paving and rain gardens with any future proposal. This will help achieve the required water treatment requirements, and the preference for open features (ie. rain gardens). Only option 1 considered such measures but option 2 didn't.

Any storage structures should not span more than one property boundary.

All structures must achieve a minimum distance of 3 metres from the edge of the culverted watercourse. This includes boundary fencing. A plan clearly showing this arrangement will need to be submitted.

Overcoming our objection

As this is not a holding objection or a request for further information, requested conditions are not listed. If you are minded to approve this application, please reconsult engineers for a list of suggested conditions to ensure that the development is adequately drained and does not increase flood risk elsewhere.

The imposition of conditions at this stage rather than overcoming the objection could result in a circumstance where the condition cannot be discharged. In the event of attaching a condition that cannot be discharged, permission may be invalid.

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 the 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 two items below need to be resolved and agreed, in order for us to consider withdrawing our objection;

1. Existing culverted watercourse to be further investigated in terms of condition and levels. Provide evidence that a gravity connection to the culvert can be achieved, this must include detailed levels information with the outlet to the culvert achieving a soffit to soffit connection, and the design adjusted as necessary, with full hydraulic modelling for the onsite system. The culvert must also be fit for purpose, thus a CCTV survey will be required. Any necessary remedial works will need to be detailed and agreed.
2. A plan showing that a minimum 3m distance is achieved between the edge of the existing culvert and any structure/boundary fencing. Culvert to be accurately located.

If this information can be submitted, then we would request that a pre-commencement drainage design condition was applied to the decision notice. It would be expected that infiltration was fully investigated with winter groundwater monitoring and winter infiltration testing. This would be assessed via an application to discharge the condition. It must not be assumed that if a connection to the watercourse can be achieved and evidenced, that we will not expect infiltration to be investigated and prioritised in accordance with the sustainable drainage hierarchy.

Checklist

A full surface water drainage design checklist is provided on our website <https://www.arun.gov.uk/surfacewater/>. The applicant should consult this to ensure that all information required is submitted with any revised design.

From: Nicola Oktay on behalf of Planning.Responses
Sent: 09 June 2025 10:11
To: Planning Scanning
Subject: FW: Planning Consultation on: WA/109/24/OUT
Attachments: WA-109-24-OUT Sussex Business Village.docx

Drainage Engineers response

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To register to receive notifications of planning applications in your area please go to <https://www1.arun.gov.uk/planning-application-finder>



Our priorities...



From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 06 June 2025 12:06
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Sarah Burrow <Sarah.Burrow@arun.gov.uk>; Harry Chalk <Harry.Chalk@arun.gov.uk>
Subject: RE: Planning Consultation on: WA/109/24/OUT

Please find enclosed my consultation, an objection, although it is expected that the objection can be overcome within reasonable timescales, provided the applicant obtains the information required.

Regards

Paul Cann
Principal Drainage Engineer, Coastal Engineers and Flood Prevention

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Our priorities...



From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: Wednesday, March 19, 2025 4:33:29 PM (UTC+00:00) Monrovia, Reykjavik
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Consultation on: WA/109/24/OUT

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

Town & Country Planning Act 1990 (as amended)
Town & Country Planning (Development Management Procedure) (England) Order 2015 - Article 5

Outline Consent

Application No: WA/109/24/OUT
Registered: 19th March 2025
Site Address: Sussex Business Village Lake Lane Barnham PO22 0AL
Grid Reference: 497227 104602
Description of Works: Outline planning permission for 3 No. attached dwellings with associated gardens, access and parking. This application is in CIL zone 3 (CIL liable as new dwellings) and is a dual parish application with Yapton Parish Council.

The Council have received the above application.

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

This application has been identified as CIL Liable. Therefore please be aware that, in accordance with Appendix 2 of the Arun CIL Charging Schedule, your consultation response should only include requests for Section 106 for onsite mitigation, Pagham Harbour Management Contributions (if applicable) or Affordable Housing. "Off" Site mitigation measures directly related to this development should be dealt with by condition if possible to ensure the scaling back of Section 106 if possible. CIL contributions will be used for "off" site infrastructure mitigation schemes. Therefore if this proposal triggers the need for "off" site mitigation, please ensure that you engage in the CIL Infrastructure List Consultation process upon receipt of a consultation letter.

Should you have any comments to make, these should be sent by replying to this email by 24th April 2025 . You can also monitor the progress of this application through the Council web site:

<https://www.arun.gov.uk/planning-application-search>

The application will be determined having regard to the development plan policies (if any are relevant) and other material considerations. The development plan can be accessed via the website <https://www.arun.gov.uk/development-plan> as can information on what comments we can consider <https://www.arun.gov.uk/planning-application-comments>

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.

Should the application go to appeal the Planning Inspectorate will publish any comments made to the Council on their website: <https://acp.planninginspectorate.gov.uk/> but they will protect personal details.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

Yours sincerely

Hannah Kersley

Planning Officer- Arun District Council

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