Engineers Comments Regarding Surface Water Drainage

Application Reference:	M/22/25/PL	**Reviewer Reference:**	ADC/PC
Planning Officer:	Harry Chalk	**Date of Review:**	10/06/2025
Site Name:	86 Ancton Way Middleton-on-sea PO22 6JP		
Application Description:	Demolition and erection of 1 No dwelling. This application is in CIL Zone 4 and is CIL Liable as a new dwelling.		
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**

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. Items are further elaborated upon in the attached comment tracker where necessary. Further comments which are unlikely to impact the design methodology will be provided in the comment tracker, these relate to the detailed design. Unless clearly stated, it is considered that these additional comments are unlikely to result in a redesign of the system. These can be addressed following a second consultation to prevent unnecessary refusals.

Critical Item	**Reason**	**Status**
Winter groundwater monitoring data.	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.	**Sufficient**

	The same data is necessary to ensure that the potential for buoyancy has been adequately considered in attenuation designs.	
Winter infiltration testing data.	Adequate winter infiltration testing must be supplied to justify the proposed discharge method and design infiltration rates. 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. Designs must be based upon the slowest infiltration rate evidenced closest to a proposed infiltration feature. Average design rates will not be accepted. The results of incomplete tests should not be extrapolated to obtain design values for infiltration rates.	**Supplied but insufficient**
The hierarchy for sustainable drainage.	The proposed discharge method must accord with the SuDS hierarchy as given below. Evidence must be supplied to justify the proposed discharge method. 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. A water body may be defined as a river, watercourse, ditch, culverted watercourse, reservoir, wetland or the sea. **Engineers cannot support any proposed connection of surface water to the foul sewer.**	**Supplied but further investigation required**

Calculations	Calculations for pre-development run off rates must be based upon the positively drained area only. Proposed discharge rates must not increase flood risk on site or elsewhere. Discharge rates must be restricted to QBAR or 2 l/s/ha, depending on whichever is higher.	**Supplied but further information required**
	Designs must be based on the most recently available rainfall data at the time of conditions being applied. **FSR rainfall data will not be accepted.** FEH rainfall data is based upon more recent records and continues to be updated.	**To be determined**
	Designs must use the correct climate change allowances at the time of determination of the outline or full planning application. CV values for all events must be set to 1. This includes summer, winter, design, and simulation events. The correct allowance for urban creep must be applied. Additional storage must be set to zero unless it can be evidenced where this is provided. Infiltration half-drain times must be less than 24 hours. 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. A surcharged outfall must be modelled.	**Insufficient**
Natural catchments design.	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. The condition, performance (including capacity where appropriate) and ownership of any existing site surface water drainage infrastructure must be accurately reported.	**Sufficient if infiltration proves feasible**

	Appropriate easements to watercourses and other services must be shown on all plans. 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 be accommodated on the site without conflicting with those areas of flood risk. 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. **The use of pumps for surface water drainage is not sustainable and will not be supported**. .	
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.	**Sufficient**
Trees and planting	There should be no conflict between surface water drainage infrastructure and existing or proposed trees or planting. The design must consider the potential growth of proposed trees and adequate mitigation must be provided to protect drainage infrastructure where conflict **cannot** be avoided.	**Sufficient**

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.

An infiltration design has been proposed. Groundwater levels have been monitored which revealed a peak groundwater level of 1.23m below ground level on the 30th January 2025. The design has tried to ensure that 1m of unsaturated ground is provided between the base of the infiltration structures and the peak groundwater level. However, it is unclear as to whether 1m is truly being achieved based upon the construction depths, particularly for the rear infiltration structure. The

construction details for the proposed drainage blanket beneath the patio also does not replicate the proposed aggregate construction depths indicated on the layout plan view. Clarity should be provided by providing peak groundwater levels and formation levels for infiltration devices, to a common datum. AOD would be the preference. The construction details should be adjusted as necessary.

A plan showing the location of the groundwater monitoring point should also be provided.

In order to achieve such a design, a very shallow drainage system is being proposed, which has its challenges in terms of pipework configuration, etc. The layout plan should indicate all pipe invert levels, diameters, diffuser unit invert levels, manhole cover/invert levels, infiltration blanket formation levels, permeable paving/patio finished surface levels and infiltration structure plan areas/dimensions. Diffuser units should be 5m distance from buildings and this needs to be clearly indicated on the plans.

Infiltration testing has not been carried out on site. Instead, infiltration test results have been taken from a neighbouring site (no.88). This test was undertaken at 1m depth and into the underlying chalk. This does not replicate the proposed design in terms of depth. Specific testing is required on the application site itself, and at the location/depth of the proposed infiltration structures. Testing must be undertaken at an agreed time in the winter period and in accordance with BRE365. The applicant should also be aware that the existing ground geology at the depth of the proposed infiltration structures is also important in terms of infiltration viability ie. made ground would not be suitable for infiltration due to its variability. Thus further information is required in this respect.

The calculations provided are from software that it is unfamiliar to us and we would require further information in this respect. Surface water run off from the patio area is not included in the calculations so it is assumed that it will drain onto garden/grass areas – clarification required. Surface water runoff from the driveway appears not to be accounted for? Urban creep at 10% of the roof area also needs to be included. FEH rainfall data is to be used, however, the calculations are unclear in this respect. Infiltration for calculation purposes is to be through the base only – it is unclear if the sides have been utilised too? The calculations should be supported by an impermeable area plan, clearly indicating the drained areas and corresponding areas (m^2).

If infiltration proves not to be viable, then alternative sustainable means of draining the site are summarised as follows, and would need to be investigated to determine if they are viable options:

1. Infiltration – to be determined.
2. To a watercourse – nearest approx.130m to the east (permission required).
3. To a surface water sewer – none available.
4. To a highway drainage system – serving the Elmer Sands Estate (permission required).
5. To a combined sewer – none available.

Surface water must not be discharged into the foul sewer. The foul sewer is not a recognised disposal location in the SuDS Manual, Approved Document H, or the NPPG **[Flood risk and coastal change para 056]**. It is important to recognise that the foul and combined sewer networks are defined by the public sewer records held by Southern Water Services Ltd.

In the absence of further evidence being provided to confirm that a viable surface water drainage design can be achieved, we cannot assess if flood risk will be increased by the proposed development. Therefore, this application does not accord with the NPPF as set out above.

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.

In order to establish that a sustainable surface water drainage system can be accommodated on this site and within the development layout, the following critical information is to be provided and reviewed;

1. Confirmation/evidence that 'made ground' is not extensively present at formation level of the proposed infiltration structures. If the case, then alternative methods of disposal may need to be considered.

2. Winter infiltration testing is undertaken and evidenced on site, if deemed viable (taking account of item 1 above).

3. Revised calculations are provided to suit and take account of all matters discussed in this consultation.

4. All other information discussed in this consultation is provided.

A full surface water drainage design checklist to assist the applicant is provided on our website; https://www.arun.gov.uk/surfacewater/. **If the design is amended following receipt of our consultation the designer may need to refer to the checklist to ensure that the revised design meets our requirements.**

[redacted]

Drainage Engineers response

[redacted]

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Littlehampton, West Sussex, BN17 5LF
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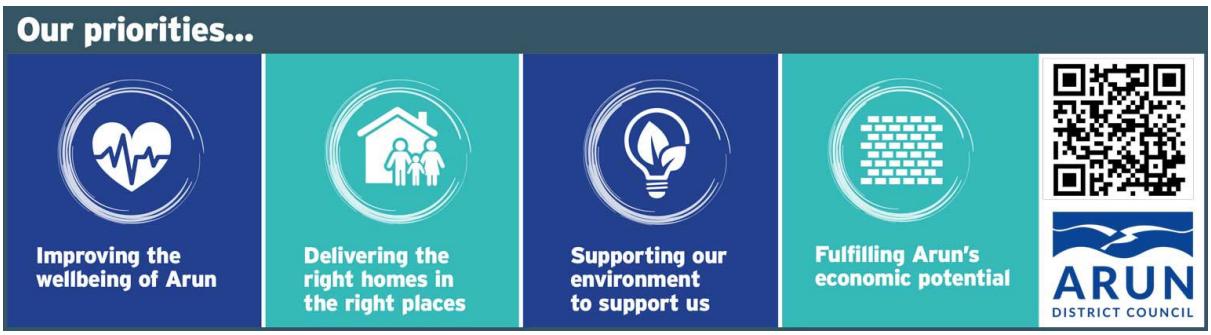
To register to receive notifications of planning applications in your area please go to https://www1.arun.gov.uk/planning-application-finder



From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 10 June 2025 10:49
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: M/22/25/PL

Please find enclosed my consultation, an objection.

Regards

Paul Cann

Principal Drainage Engineer, Coastal Engineers and Flood Prevention

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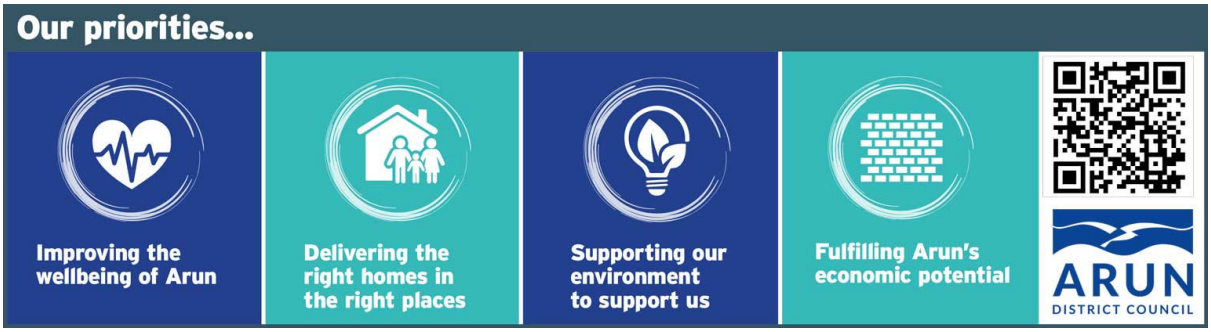

From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: Monday, March 24, 2025 11:18:28 AM (UTC+00:00) Monrovia, Reykjavik
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Consultation on: M/22/25/PL

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

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

Planning Permission

Application No:	**M/22/25/PL**
Registered:	21st March 2025
Site Address:	86 Ancton Way Middleton-on-sea PO22 6JP
Grid Reference:	498828 100380
Description of Works:	Demolition and erection of 1 No dwelling. This application is in CIL Zone 4 and is CIL Liable as a new dwelling.

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

Harry Chalk

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