

Engineers Comments Regarding Surface Water Drainage

Application Reference:	WA/44/25/PL	Reviewer Reference:	ADC/PC
Planning Officer:	Harry Chalk	Date of Review:	10/09/2025
Site Name:	Longacres Eastergate Lane Walberton BN18 0BA		
Application Description:	Erection of 1 No self build dwelling with associated parking and landscaping (resubmission following WA/101/24/PL). This application is a Departure from the Development Plan and is in CIL Zone 3 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>

National Standards for Sustainable Drainage Systems (SuDS) - <https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds>

The SuDs Manual [C753] by CIRIA

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.	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. The same data is necessary to ensure that the potential for buoyancy has been adequately considered in attenuation designs.	Sufficient

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 <u>slowest</u> 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.	Sufficient – infiltration ruled out due to high groundwater levels.
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.	Sufficient
Calculations	Calculations for pre-development run off rates must be based upon the positively drained area only.	Insufficient

	Proposed discharge rates must not increase flood risk on site or elsewhere. Discharge rates must be restricted to QBAR or 3 l/s/ha, depending on whichever is higher.	
	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.	Sufficient but subject to alteration due to required redesign.
	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.	New calculations required due to required redesign.
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. 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	Insufficient – further details of proposed alterations to watercourse to facilitate proposed outfall connection to be reviewed upon receipt.

	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 only be considered where the designer has fully demonstrated that they are proposed as a last resort.	
Plans	Plan areas, depths and levels of drainage infrastructure must accurately correspond with the supporting calculations.	Insufficient – redesign required
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	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.	Insufficient

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, and the National Standards for SuDS [NSfS], which supersede 'Sustainable drainage systems: non-statutory technical standards' and have been introduced/enacted since our previous consultation on WA/101/24/PL.

The following documents have been submitted and reviewed to inform this consultation with reference to surface water drainage:

- DRAINAGE TECHNICAL NOTE DATED 30.5.25
- GREENFIELD RUNOFF RATE ESTIMATION FOR SITE DATED 27.2.25
- DRAINAGE CALCULATIONS DATED 4.3.25 (OUTDATED)
- IMPERMEABLE CATCHMENT PLAN 13467/1102 REV P2
- SITE DRAINAGE STRATEGY 13467/1101 REVP2 (UPDATED TO REV P3 IN TECHNICAL REPORT)
- FRA AND DRAINAGE IMPACT ASSESSMENT DATED 27.2.25
- IN SITU INFILTRATION TEST REPORT DATED 19.12.24

Comments:

STANDARD 1: RUNOFF DISPOSAL LOCATIONS

Due to the high groundwater levels identified on site, infiltration is deemed not to be an option due to the inability to achieve one metre freeboard between peak groundwater levels and the bases of infiltration structures. The proposal is therefore to discharge to existing watercourse on the eastern boundary at a restricted rate.

In order to facilitate the connection to the watercourse and achieve freeboard between the bed of the watercourse and the proposed invert of the outfall pipe, the applicant is proposing to undertake significant re-grading of the watercourse (up to 400mm increase in depth). Further information is required to evidence that this is possible without detriment to the existing watercourse/banks/adjacent land.

It will be necessary to provide an existing and proposed longitudinal section through the watercourse with supporting existing/proposed cross sections. If the works impact third party land then appropriate permissions will need to be evidenced.

100mm of freeboard is currently being achieved and needs to be maximised as much as possible, as this helps reduce the risk of the pipe becoming obstructed by debris and silt in the watercourse.

The use of water butts for rainwater harvesting is welcomed and meets the requirements Standard 1 in terms of the disposal hierarchy.

STANDARD 2: INTERCEPTION

The development must demonstrate that the first 5mm of rainfall for the majority of rainfall events does not result in any runoff from the site. This is to replicate greenfield conditions.

The failure to adequately demonstrate interception drainage conflicts with guidance, national standards and best practice, and may increase flood risk.

A formal assessment of interception drainage will need to be submitted, or considered within the design.

Interception can only be achieved through the use of infiltration (which is not viable on this site), evapotranspiration and water reuse.

In the case of rainwater harvesting systems, these can be assumed to provide interception when they are "*designed for supply purposes (ie it has a regular daily demand)*"¹.

Water butts are not considered to meet the requirements unless proven otherwise. Nevertheless, their incorporation is accepted as good practice for other reasons.

Green roofs can be useful features to achieve interception. However, their use must be planned for at the conceptual development stage and cannot be agreed via condition when the roof plans and elevations are approved as part of the permission.

Therefore, interception of roof water runoff needs to be further considered.

The proposed permeable paving achieves interception for the rainwater that falls on its surface, and since no additional areas are drained into the permeable pavement structure, this is deemed acceptable.

The applicant is expected to demonstrate compliance with this standard with a formal assessment in accordance with the NSfS and The SuDS Manual. When interception drainage standards are complied with, it is expected that the scale, appearance and layout of the proposed development may be impacted by potential changes to the surface water drainage scheme.

STANDARD 3: EXTREME RAINFALL AND FLOODING

Proposed Discharge Rates and Volumes

It is not possible to accurately assess whether the development will increase flood risk. The applicant is proposing to discharge 1 l/s, which exceeds the requirements of the NSfS. The NSfS

¹ Woods Ballard, B. et al, (2015) C753 The SuDS Manual, C753, CIRIA London, UK. p207.

offers the option to demonstrate compliance on both rates and volumes by restricting discharge rates to 50% AEP greenfield run off rate (essentially QBAR) or 3l/s/ha, whichever is greater.

Due to the minimal flow rate required to achieve the above requirement, and the practicalities of providing a suitable flow control device, we are willing to accept a maximum discharge rate of 0.5 l/s in this instance. The system will need to be re-designed to suit.

The risk of blockage of such small diameter flow control devices is recognised but mitigation measures can be addressed at a later date during detailed design.

Plans and Modelling

As a result, of the required re-design the hydraulic calculations have not been fully checked, however, the applicant should ensure that the following is also provided/evidenced in any submitted calculation sheets;

- i. Urban creep allowance @ 10% is input as 'additional area'.
- ii. All contributing areas are included (460m² + urban creep allowance) and discharged to the relevant nodes. For example pipeline 3.000 appears to be receiving no contributing area in the calculations.
- iii. Pipework upstream of pipeline 4.000 to be included in the hydraulic model.
- iv. A surcharged outfall (assume surcharge level to be top of watercourse bank at point of connection).
- v. Fully detailed inputs for the permeable paving.

All pipelines are to connect soffit to soffit level. It appears this is not being achieved in all cases ie. pipeline 3.001.

Pipeline 4.000 – 100mm pipe gradient needs to be min. 1/100 gradient and achieve a soffit to soffit connection. Increasing the pipe diameter which would enable a slacker gradient, could help resolve the issue.

There are potential clashes between the proposed surface water drainage and proposed foul water drainage, where they cross ie. pipelines 1.003 and 3.001. The designer will need to evidence that there is no conflict.

A non-return valve is proposed on the pipe outlet from chamber PPCP3 (to reduce the risk of backflow from the watercourse reducing storage in the system). A construction detail will be required to support this proposal, to ensure the arrangement is fit for purpose. This can be dealt with via condition/detailed design.

The designer has used FEH 22 point data on their current design and will be utilised in any redesign. This includes rainfall data and information about the ground conditions on the site (BFHost19, SAAR) to input into greenfield models. This data will need to be submitted to us at land.drainage@arun.gov.uk (outside of the Planning process) and the parameters will be checked upon receipt of the calculations discussed above.

Formation and finished levels of proposed permeable paving to be indicated on the Drainage Layout Plan, supported by a typical construction detail.

Indicate proposed finished floor/garage slab levels of property on Drainage Layout Plan.

Exceedance flow routes are noted. The applicant may need to consider measures to reduce the risk of excess flows impacting buildings beyond the southern boundary. Bunding may assist in this respect.

STANDARD 4: WATER QUALITY

A water quality assessment will be required for the redesign.

Whilst the driveway areas will receive treatment through the permeable paving, the treatment of roof water will need to be considered further.

STANDARD 5: AMENITY

An assessment of amenity benefit will need to be submitted in order to assess the surface water drainage design in terms of achieving placemaking and environmental enhancement. Such opportunities within a development of this scale are limited, however, any proposal may be considered alongside achieving 'STANDARD 6'.

STANDARD 6: BIODIVERSITY

Any design shall maximise biodiversity benefits. Features such as rain gardens will help achieve this requirement.

STANDARD 7: CONSTRUCTION, OPERATION, MAINTENANCE, DECOMMISSIONING AND STRUCTURAL INTEGRITY

Please indicate all root protection zones (RPZ) for existing trees to be retained and proposed trees on the Drainage layout Plan, to ensure no conflict/detriment. All RPZ to take account of trees reaching maturity. Any existing trees to be removed to be clearly indicated.

OTHER MATTERS

Any landscaping scheme should not be approved until STANDARD 7 has been satisfied.

OVERCOMING THE OBJECTION

Multiple conflicts with National Standards for SuDS have been identified. To achieve compliance with national standards and demonstrate that flood risk is not increased, it is necessary for the applicant to reconsider the proposed surface water drainage design.

Therefore, we **object in principle** to the proposed development.

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.

- **A revised design is required with supporting documents/calculations to address the issues raised under the STANDARDS above.**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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<https://www1.arun.gov.uk/planning-application-finder>



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From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 10 September 2025 11:00
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/44/25/PL

Please find enclosed my consultation, an objection.

Regards

Paul Cann

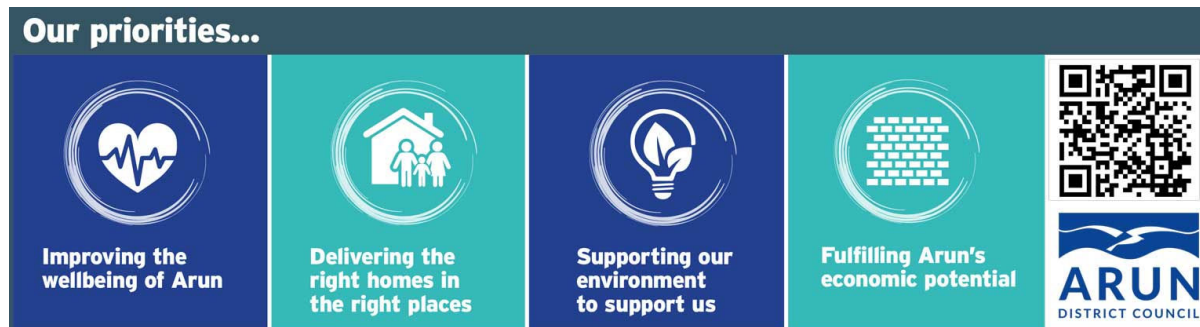
Principal Drainage Engineer, Coastal Engineers and Flood Prevention

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

Sent: Wednesday, June 18, 2025 8:33:29 AM (UTC+00:00) Monrovia, Reykjavik

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

Subject: Planning Consultation on: WA/44/25/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: WA/44/25/PL

Registered: 16th June 2025

Site Address: Longacres Eastergate Lane Walberton BN18 0BA

Grid Reference: 495792 106189

Description of Works: Erection of 1 No self build dwelling with associated parking and landscaping (resubmission following WA/101/24/PL). This application is a Departure from the Development Plan and is in CIL Zone 3 and is CIL Liable as a new dwelling.

The Council have received the above application.

[Click here to view the application and documents](#) The website is updated once a day in the evening, so you may need to wait until the day after this notification to view the 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 17th July 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

Planning Officer- Arun District Council

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Email: harry.chalk@arun.gov.uk

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