

Engineers Comments Regarding Surface Water Drainage

Application Reference:	WA/51/26/RES	Reviewer Reference:	ADC/EXT5/AF
Planning Officer:	Simon Davis	Date of Review:	27/07/2026
Site Name:	Land East of Wandleys Lane Fontwell		
Application Description:	Approval of reserved matters following the grant of outline planning permission WA/35/23/OUT, for the construction of 95 No. new homes, access, new pedestrian and cycle links, open space, landscaping, habitat creation, drainage features and associated groundworks and infrastructure, including details relating to the Sensitive Lighting Strategy, POS details and Part M Compliance. This application is in CIL Zone 3 and is CIL Liable as new dwellings.		
Assessment Number:	1		

Policy and Guidance Information

Arun District Council Surface Water Drainage Guidance (including design checklists) - <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/>

Arun District Council Land Drainage Byelaws - <https://www.arun.gov.uk/byelaws/>

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

The National Standards for 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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References

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' [NsTS] 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.

The NsTS have been superseded by the National Standards for Sustainable Drainage Systems [NSfS] from 19 June 2025.

This consultation has been primarily informed by the NSfS and The SuDS Manual.

Summary

This summary highlights if critical items aligning with each of the standards have been met. Critical items are highlighted in **bold** on our surface water drainage design checklist (linked above). A failure to address these will likely result in an **objection** to an objection to a full or reserved matters planning application.

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, or the provision of other important infrastructure to satisfy the NSfS set out below.

A full written explanation of the assessment and response is given in the consultation comments to the planning officer.

Standard	Assessment	Response
1. Runoff destination	Insufficient	Objection
2. Interception drainage	Compliant	Further Information
3. Extreme Rainfall and Flooding	Insufficient	Objection
4. Water Quality	Compliant	No objection
5. Amenity	Insufficient	Further Information
6. Biodiversity	Insufficient	Further Information
7. Construction, operation, maintenance, decommissioning and structural integrity	Insufficient	Objection

Reviewed Plans

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

- DRAINAGE PLANS
- PROPOSED DRAINAGE DETAILS SHEET 1 OF 6 401-A01, 6 parts uploaded via public planning portal
- EXCEEDANCE FLOW ROUTES SHEET 1 OF 2 5988-005-0520-A02
- EXCEEDANCE FLOW ROUTES SHEET 2 OF 2 5988-005-0521-A02
- EXISTING EXCEEDANCE FLOW ROUTES SHEET 1 OF 2 5988-005-0525-A01
- EXISTING EXCEEDANCE FLOW ROUTES SHEET 2 OF 2 5988-005-0426-A01
- IMPERMEABLE AREAS PLAN SHEET 1 OF 2 5988-005-0530-A02
- IMPERMEABLE AREAS PLAN SHEET 2 OF 2 5988-005-0531-A02
- DRAINAGE STRATEGY SHEET 1 OF 2 5988-005-5551-A02
- DRAINAGE STRATEGY SHEET 2 OF 2 5988-005-5552-A02
- DRAINAGE STRATEGY MANHOLE SCHEDULE 5988-005-5555-A01
- LOCATION PLAN 250515/LP01
- SITE LAYOUT 250515/SL01 REVAQ
- SITE LAYOUT MATERIALS 250515/SL07 REVC
- DRAINAGE STATEMENT
- DRAINAGE CALCULATIONS

- TEST CERTIFICATE DETERMINATION OF PARTICLE SIZE DISTRIBUTION
- MANHOLE DETAILS
- PLANNING STATEMENT
- TANK BOUYANCY ARCHIMEDES' PRINCIPLE
- RAIN GARDEN AREA INTERCEPTED

Plans/Documents to be listed as approved

The following plans/documents should be listed as approved:

- N/A

Consultation comments to the planning officer

0. General

- 0.1. The outline planning application was consented via planning appeal with a Decision Notice dated 7 April 2025. There were no drainage or flood risk reasons for refusal. Conditions were applied to require a detailed drainage strategy to be submitted and approved as part of the reserve matters application (Condition 13).
- 0.2. Further conditions attached to the planning consent require the technical design of the sustainable drainage system (C14), construction phase surface water management plan (C15), Management and Maintenance Plan (C16) and verification of the works constructed in accordance with the approved plans (C17).
- 0.3. The planning consent was granted marginally before the introduction of the National Standards for Sustainable Drainage (NSfS) and in accordance with Arun DC guidance the design should seek to incorporate the new requirements where feasible within the site constraints.

RWC Responses – 2026.08.14

1. Runoff destination

- 1.1. There does not appear to be any barrier to providing, as a minimum, water butts to each home and this should be shown on the drainage layouts.
Water butts added to each plot. This can be seen on all updated plans.
- 1.2. The ground investigation shows relatively shallow groundwater (up to 1.4m bgl) and the subsoil classification may not be suitable for a full infiltration solution. However, there is no infiltration testing present and this is a requirement of Condition 13. There may be potential for a partial infiltration solution or an infiltration solution for a part of the site. A more thorough assessment of infiltration potential and groundwater depths should be included in the current submission.
We have produced a plan showing groundwater depths and infiltration results at each recorded location. Following this review, we can confirm that;
Very localised areas of the site are suitable for infiltration where sufficient freeboard of 1m is available beneath the base of the infiltration feature. In these areas, infiltration to ground has been incorporated through shallow, unlined permeable paving and unlined rain gardens, as shown on the updated drainage plans provided with this submission. To mitigate the risk of inundation, blinding or siltation of the infiltration features, positively connected high-level overflows will be provided to the wider drainage network should infiltration become limited or restricted. Any infiltration benefit from these features has therefore been excluded from the storage calculations, as it is considered that, during extreme rainfall events, these areas could still potentially contribute runoff to the overall

drainage network / SuDS system. These updates can be seen on drawings 5988-005-5551 Drainage Strategy Sheet 1 of 2 A04 and 5988-005-5552 Drainage Strategy Sheet 2 of 2 A04. The updated details can be found on drawing 5988-005-0404 Proposed Drainage Details Sheet 4 of 6 A03

Further to this the soakage testing undertaken at TP1, TP2 and TP3 demonstrates favourable infiltration rates within the tested strata, the base of each test pit is located very close to the groundwater table. For the purposes of assessment, the groundwater level adopted at each test location has been taken as the shallowest surrounding groundwater monitoring result, representing the most conservative interpretation of the available data and therefore the lowest-risk approach. Using this methodology, the offset between the base of the soakage tests and groundwater ranges from only 0.05 m to 0.25 m. This indicates that deeper infiltration structures, such as infiltration tanks or infiltration basins, would be likely to encroach upon the groundwater regime and would be unable to maintain the recommended separation to groundwater. Consequently, the available unsaturated zone beneath the proposed feature bases is insufficient to support the use of deep infiltration systems across the site.

TP	Ground Level (m AOD)	Depth of Test (m bgl)	Base of Test (m AOD)	Estimated Groundwater Level (m AOD)	Offset: Base of Test to Groundwater (m)
TP1	26.35	2.00	24.35	24.10	0.25
TP2	26.60	1.00	25.60	25.55	0.05
TP3	27.40	1.50	25.90	25.80	0.10

The proposed permeable paving and rain gardens are, however, founded at significantly shallower levels and therefore within a different geological horizon to that tested during the soakage assessments. As a result, the infiltration characteristics beneath these features cannot be confirmed directly from the available soakage testing data. To maximise the opportunity for source-control SuDS, the permeable paving and rain gardens have been designed as unlined systems, allowing infiltration to occur where local ground conditions prove favourable. However, each feature is also provided with an overflow connection to the wider drainage network, ensuring effective drainage performance should infiltration be limited or absent. Furthermore, no allowance has been made for infiltration within the drainage calculations, with all attenuation volumes sized on the basis that these features operate as storage systems only. Any infiltration that does occur will therefore provide additional benefit beyond that assumed within the hydraulic modelling, making the proposed drainage strategy both conservative and highly robust.

- 1.3. The proposed runoff destination is similar to the outline strategy, which is to the southeast edge of the site where there is no topographic survey but the drainage layout states: 'existing ditch'. It is not clear whether the existence, connectivity and suitability of the outfall was established at outline planning stage. The applicant should submit evidence in support of this current design to demonstrate feasibility subject to final technical design.

A joint Bellway and project engineer site walkover was undertaken to inspect the receiving ditch and the proposed outfall location. The walkover considered the general condition, apparent continuity and suitability of the ditch to receive the proposed connection. The ditch was found to be in good

condition, with no obvious constraints identified, and the proposed connection was considered suitable and acceptable. Whilst the walkover cannot definitively confirm downstream hydraulic capacity, supporting connectivity mapping indicates that the ditch connects to the wider drainage network. An outfall inset has also been added to drawing 5988-005-5552, Drainage Strategy Sheet 2 of 2, Rev A04, to provide further detail of the proposed connection.

- 1.4. The runoff destination is not currently demonstrated to be in accordance with the requirements of NSfS Standard 1. Therefore, we **object** to the application.

2. Interception drainage

- 2.1. The current solution is discharge to a watercourse and the design includes permeable paving, raingardens and basins. A calculation is provided which indicates the standard is met by a combination of permeable pavement, basin and raingarden. For these features to be 'unlined', the base would need to be at least 1 metre above high ground water level. Clarification of the features included and that they are valid in terms of the areas they serve in accordance with NSfS criteria should be provided.

A plan has been produced showing recorded peak winter groundwater levels. Where more than a 1m of freeboard is available from the highest recorded winter level we will use unlined features, where less than 1m is available lined features will be used. Infiltration testing has been included to support this proposal. The plans can be found on drawing 5988-005-SK03 Groundwater levels P02.

- 2.2. Further information should be provided to demonstrate interception drainage is achieved by the design.

3. Extreme rainfall and flooding

- 3.1. The calculations and parameters used are broadly in accordance with current sustainable drainage policy and guidance. The following aspects should be clarified or addressed.

- 3.2. It is not clear whether a downstream surcharge is needed to represent the downstream top water conditions in the receiving watercourse during the design storm.

A downstream surcharge is unlikely however we have updated the calculations to include a surcharged outfall. These have been included in the resubmission. To better detail the connection an inset has been added to drawing 5988-005-5552 Drainage Strategy Sheet 2 of 2 A04

- 3.3. The drained area calculations should include the lined basin areas.

The previous calculations included the areas of the basins, as do the latest provided with this submission.

- 3.4. It is not clear from the calculations whether the base gradients for the permeable paving are in accordance with the design. Base levels should be added to the drainage layouts and base gradients confirmed and reflected in the calculations.

Base gradients added to layout along with periodical invert levels for the formation of the permeable paving. These updates can be seen on drawings 5988-005-5551 Drainage Strategy Sheet 1 of 2 A03 and 5988-005-5552 Drainage Strategy Sheet 2 of 2 A04.

- 3.5. An exceedance path appears to flow towards the Foul Water Pumping Station. Please clarify the levels are designed to divert the flow away from the pumping station compound.

Levels adjusted to ensure no pumping station flooding will occur. This can be seen on drawing "5988-005-0521 Exceedance Flow Route Sheet 2 of 2 A04"

- 3.6. The design to manage extreme rainfall is not currently demonstrated to be in accordance with the requirements of NSfS Standard 3. Therefore, we **object** to the application.

4. Water quality

- 4.1. The measures proposed would provide adequate water quality mitigation for the development and the details provided would be acceptable subject to confirmation through technical design.

5. Amenity

- 5.1. No mitigation or specific design is proposed for amenity / multifunctionality and no assessment is provided on the amenity aspect for the sustainable drainage system.
- 5.2. Whilst the planning consent was granted prior to the introduction of the NSfS, the layout was not determined and in accordance with Arun DC guidance there should be consideration of this aspect of sustainable drainage design and incorporation where feasible.
- 5.3. It is noted that surface features are proposed including basins and raingardens and an assessment of the design in terms of maximising opportunity on the site would assist in assessing this aspect.
The proposed SuDS planting strategy utilises a range of native and naturalistic species suited to varying moisture conditions, from permanently wet to seasonally dry areas. The planting palette has been selected to provide year-round visual interest, enhance biodiversity, and reinforce the multifunctional role of the drainage features. The zoned approach ensures resilient establishment and long-term performance whilst creating an attractive and ecologically valuable landscape setting.

6. Biodiversity

- 6.1. No mitigation or specific design is proposed for biodiversity and no assessment is provided on the biodiversity aspect for the sustainable drainage system.
In terms of mitigation, the areas where any SuDS features are going will be mitigated through reptiles being translocated before ground works start and a Dormouse licence being in place if any woody vegetation needs to be removed. Once operational, the features have been designed in a way that will ensure any amphibians that colonise can get out of them (though we can potentially look at getting additional means of escape added such as rocks or wooden planks). See below for information on the biodiversity aspect.
- 6.2. Whilst the planning consent was granted prior to the introduction of the NSfS, the layout was not determined and in accordance with Arun DC guidance there should be consideration of this aspect by an Ecologist and incorporation of multifunctional (landscape led) SuDS where feasible.
The proposed SuDS features provide biodiversity benefits alongside surface water management. Although site constraints have limited the extent to which the drainage design could be landscape-led, a diverse native planting palette has been incorporated to create varied habitats, support biodiversity and maximise ecological value where feasible.
- 6.3. It is noted that surface features are proposed including basins and raingardens and an assessment of the design in terms of maximising opportunity on the site would assist in assessing this aspect.
Having discussed this point with Deacon Design they have provided the following information "The planting palette has been selected to provide year-round visual interest, enhance biodiversity, and reinforce the multifunctional role of the drainage features. The zoned approach ensures resilient establishment and long-term performance whilst creating an attractive and ecologically valuable landscape setting." The planting includes a number of native flowering species such as Yarrow, Yellow Flag Iris, Meadowsweet and Water Avenues.

7. Construction, operation, maintenance, decommissioning and structural integrity

- 7.1. There is no management and maintenance plan submitted with the detailed drainage strategy. However, there is a planning condition (C16) which requires a detailed plan to be provided prior to occupation. A draft or outline plan setting out ownership and how the maintenance will be managed should be provided with the reserve matters submission to set key parameters for the detailed maintenance plan and demonstrate the design can be effectively maintained for the lifespan of the development.

7.2. Condition 13 (sub parts 8,9,10) require that at reserve matters stage, A plan showing the impact of the proposed development on existing watercourses (where applicable). Details of any necessary permissions relating to the discharge location, works to watercourses or adoption of the SuDS scheme. Details of how the drainage scheme shall affect the hydrological conditions of the adjoining ancient woodland such that no loss or deterioration shall occur. This information should be clarified to ensure the solution is feasible and can be constructed without detriment to the environment. The Tree Officer and Natural England should be consulted on proposed works within or in proximity to the woodland.

Under existing conditions, surface water runoff from the site does not discharge towards or enter the adjacent ancient woodland, due to the prevailing land levels and the ditch along parts of the southern boundary. The proposed site levels, drainage system and exceedance flow routes retain this arrangement, with development runoff collected and managed within the site before discharge to the proposed outfall. Accordingly, the proposals will not introduce additional flows to the woodland or alter its existing hydrological conditions, thereby avoiding any increase in flood risk or potential waterlogging.

7.3. The design and assessment has not currently demonstrated to be in accordance with the requirements of NSfS Standard 7. Therefore, we **object** to the application.

A full maintenance schedule has been produced and is provided. This is completed to adoptable standards to ensure it will be consistent when offering drainage and sewers for adoption.

8. Suggested conditions / Overcoming the objection

8.1. 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.

8.2. 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 or that condition could be deemed to be unreasonable.

8.3. If you are minded to allow the applicant additional time to submit further documents to support this application, then further evidence may overcome our objection. Please do not allow the applicant to submit further documents without prior discussion as to whether it will be possible for these to be assessed or influence your determination.

Drainage Impact on Other Planning Matters

This application has been assessed with regards to surface water drainage design only, together with land drainage aspects if deemed necessary.

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, River Arun internal drainage board, groundwater source protection zones)
- ☐ Southern Water (foul drainage and surface water disposal to public sewer network/groundwater source protection zones)
- ☐ Portsmouth Water (groundwater source protection zones)
- ☐ Lead local flood authority (all other sources of flooding and ordinary watercourses)
- ☐ Other: Specify
- ☐ None