Engineers Comments Regarding Surface Water Drainage

Application Reference:	AL/29/25/DOC	**Reviewer Reference:**	ADC/PC
Planning Officer:	Kathryn Welch	**Date of Review:**	27/10/2025
Site Name:	White Mill House Days Lane Aldingbourne BN18 0TA		
Application Description:	Approval of details reserved by condition imposed under reference AL/101/23/PL relating to condition number 4 - Biodiversity Enhancement Layout and condition number 10 - surface water drainage scheme.		
Assessment Number:	1 of 2		

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
(Now superseded by the National Standards for SuDs-NSfS) – the requirements of which have not been fully considered in this response, due to this being an ongoing DOC application that was not initially checked against the NSfS.

Response	Condition 10: **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. 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 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.	**Sufficient**
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.	**Sufficient**

	Engineers cannot support any proposed connection of surface water to the foul sewer.	
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.	**Sufficient**
	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.	**Compliant**
	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.	**Sufficient**
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.	**Sufficient**

	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 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- permeable paving only**
Water quality benefits.	An assessment of water quality is necessary to evidence that the proposed design provides adequate treatment of surface water.	**Sufficient**
Biodiversity and amenity benefits.	The surface water drainage design must provide biodiversity and amenity benefits.	**Compliant**
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- protective measures potentially required**

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.

Condition 10

See the enclosed comment tracker for comments in respect to the proposed design and the critical element of infiltration testing..

Due to the impact on existing trees, the tree officer should be consulted.

Surface Water Drainage Comment Tracker

Application Reference: AL/29/25/DOC **Site Name: White Mill House Days Lane Aldingbourne BN18 0TA**	**Initial Issue Date: 23/06/2025** **Issue Date: 27/10/2025** **Reviewer Reference: ADC/PC**

Summary and Recommendation:

Condition 10: **Objection**

Please note: Any DOC application should only have a maximum of two consultation responses. If this is the second response for an open application and there are still comments outstanding, then please recommend that the application is refused.

	ADC Drainage Comments	Designer Response	ADC Drainage Comments		
Date:	**23/06/2025 [AL/29/25/DOC]**		**27/10/2025 [AL/29/25/DOC]**		
Comment Number					
1.	Please provide the infiltration testing data to support the design. Whilst this may have been previously provided under application AL/60/24/DOC, all data must be submitted with any new application. However, please note that testing must take place at the location and depth of the proposed infiltration structures. The previous testing does not achieve this in full and was also flawed for various other reasons identified in our consultation on AL/60/24/DOC. Therefore, further infiltration testing will be required this coming winter at an agreed time and locations, and at depths to correspond to the proposed crate soakaway and permeable paving. The testing report should include a plan showing where infiltration tests were completed. The dates of all tests and the calculations to establish the design infiltration rate must be submitted.	BRE365 Testing was undertaken by Constructive Evaluation, from which we have now based our design. REf: CE24.1206, though we have opted to use 1.06x10-5m/s rather than the suggested 1.44x10-5m/s This was in the location and appropriate depth in relation to the proposed soakaway.	Further infiltration testing noted. The use of the worst infiltration rate of 1.06x10-5 m/s is acceptable and is a requirement. Comment closed.		
2.	Provide impermeable area plan with areas to be drained in m^2.	This is now provided	Noted. Comment closed.		
3.	Show proposed base levels of the permeable paving on the layout plan. This will need to include base fall arrows and gradients.	This is now provided	Noted. Comment closed.		
4.	Clearly show RWP's on layout plan and provide suitable construction detail.	This is now provided	Noted. Comment closed.		
5.	Dimension permeable paving extents on layout plan.	This is now provided	Noted. Comment closed.		
6.	Connections direct to pipes ie. not to manholes, etc – to be made using oblique 45 degree junctions. Indicate this on the layout plan and provide suitable construction detail.	This is now provided	Add suitable note to layout plan, specifying use of 45 degree junctions for non-manhole connections, and as per construction detail.	NOTE ADDED TO PLAN. SEE CONSTRUCTION ISSUE REV C01	

Surface Water Drainage Comment Tracker

7.	Specify pipe invert at entry into soakaway.	This is now provided	Noted. Comment closed.		
8.	Specify pipe inverts for 100mm and 150mm diameter pipes at manhole S1.	This is now provided	Noted. Comment closed.		
9.	Manhole S1 to be a catchpit – adjust manhole schedule and provide construction detail.	This is now provided	Manhole schedule to be updated – currently showing S2 as a catchpit instead.	SCHEDULE UPDATED. SEE CONSTRUCTION ISSUE REV C01	
10.	Provide sufficiently detailed landscaping layout to include any root protection zones associated with existing/proposed trees. This should be overlaid on the drainage layout to ensure no conflict.	??	Existing tree/hedge root protection zones (RPZ's) now added to drainage layout plan. Whilst the pipes will be adequately protected where within the RPZ's, as they will be surrounded in concrete, due to depth of cover. The permeable paving requires additional protection, as permeable geotextiles can be penetrated by roots. Therefore, unless it can be proven that the geotextile is sufficient to resist intrusion, then root barriers should be considered along the eastern and southern boundaries of the permeable pavement. This is to be sufficiently detailed in terms of layout extents and construction details.	RPZ AREAS NOW GREATLY REDUCED DUE TO TREES COMING DOWN IN THE STORM. ONLY A SMALL AREA OF RPZ NOW AT THE SITE ENTRANCE. HY-TEX C3 ROOT BARRIER DETAIL NOW ADDED TO DETAILS DRAWING AND EXTENTS SHOWN ON GA.	
11.	Rainwater re-use not considered – please investigate and adjust the design accordingly.	Water butts now added, though we were not aware this was mandatory	Water reuse has always been considered a good thing to do. The new National Standards has now recognised this and considered it to be the number one priority in terms of surface water disposal options and a consideration of achieving 'Interception'. Comment closed.		
12.	Infiltrating into made ground needs to be avoided due to its variability in terms of porosity. The permeable paving design/construction will need to take account of this fact in terms of construction depth, etc.	Refer to Contructive Evaluation trial pit logs. The subbase will be well below the 300mm of topsoil	Noted. Comment closed.		
13.	Whilst infiltration rates have not yet been agreed, it is noted that the permeable paving and crate soakaway designs use the same rate. This is unlikely to be case as the structures are at completely different depths and therefore the geology/permeability are likely to differ. This will need adjusting accordingly once item 1 has been addressed/agreed.	The geology between the underside of the paving the underside of the soakaway is uniform and so the rate applied to both appropriate. See also supporting email from Constructive Evaluation on this.	Due to the similarity of the geology, and the fact that the permeable paving is only draining water that falls upon it, the use of the infiltration rate of 1.06x10-5 m/s is acceptable in this instance. Comment closed.		
14.	The surface water drainage statement identifies that the site is located in an outer groundwater source protection zone (bordering zone1). Please present advice from the Environment Agency and Portsmouth Water relating to infiltrating in this zone.	EA have been consulted. Awaiting response	Awaited.	EA COMMENTS NOW RECEIVED. NO PERMITS REQUIRED	

15.	Please provide an assessment of water treatment for the updated design in accordance with the Suds manual.	This is now provided	Noted. Comment closed.		
16.	Hydraulic calculations; a) All additional storage settings to be set to zero unless a valid reason not to is provided. b) Infiltration rate can only be applied to the sides of the house soakaway and the base of the permeable paving ie. not applied to both sides and bases. c) Provide winter storm simulations for the permeable paving. d) Pipe gradients for the pipework associated with the house soakaway are inconsistent with the layout plan. e) Ensure the calculations for the permeable paving reflect item 3. f) The infiltration rate used in the calculations will be dependent on item 1.	This is now provided	Permeable Paving Hydraulic Calculations; a) Adjust gradient of base formation level to correspond to proposed formation levels shown on the drainage layout plan. b) It is unclear as to the purpose of the short length of 225mm diameter pipe?	SUBBASE NOW SHOWN AS BEING LAID FLAT ON GA DRAWING, SO NO GRADIENT ON THE FORMATION LEVEL DUMMY PIPE REMOVED FROM MODEL	

[redacted]

Drainage Engineers response

[redacted]

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From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 27 October 2025 12:20
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Sarah Burrow <Sarah.Burrow@arun.gov.uk>; Kathryn Welch <Kathryn.Welch@arun.gov.uk>
Subject: RE: Planning Re-Consultation on: AL/29/25/DOC

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: Friday, July 18, 2025 11:03:29 AM (UTC+00:00) Monrovia, Reykjavik
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Re-Consultation on: AL/29/25/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No:	**AL/29/25/DOC**
Registered:	3rd April 2025
Site Address:	White Mill House Days Lane Aldingbourne BN18 0TA
Grid Reference:	494859 107273
Category:	Discharge of Conditi
Description of Works:	Approval of details reserved by condition imposed under reference AL/101/23/PL relating to condition number 4 - Biodiversity Enhancement Layout and condition number 10 - surface water drainage scheme.

I am able to inform you that I have received an amendment to the above application dated 17th July 2025 relating to: Substitute Drainage Plans. Supplementary Drainage Documents.

If you should wish to make further representations as a result of this amendment, please make any further comment by **1st August 2025.**

Click here to view the application, documents and make further 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.

Yours sincerely

Kathryn Welch

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