

Engineers Comments Regarding Surface Water Drainage

Application Reference:	M/39/24/DOC	Reviewer Reference:	ADC/PC
Planning Officer:	Kathryn Welch	Date of Review:	03/09/2024
Site Name:	117 Elmer Road Middleton-on-Sea PO22 6LH		
Application Description:	Approval of details reserved by condition imposed under reference M/84/23/PL relating to condition number 7 - 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>

WSCC Policy for the Management of Surface Water-

https://www.westsussex.gov.uk/media/12230/ws_ifa_policy_for_management_of_surface_water.pdf

Land Drainage Consent - <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>

Response

Condition 7: **Further information required**

Critical Items for Surface Water Drainage Design Conditions

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

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.	Compliant – as previously agreed

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.	Compliant
The hierarchy for sustainable drainage	The proposed discharge method must accord with the Building Regulations & SuDS hierarchy, evidence must be supplied to justify the proposed discharge method.	Compliant
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. A minimum discharge rate of 2 l/s/ha must be applied.	Compliant
	Designs must be based on the most up to date 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 conditions being applied. 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.	Insufficient – CV values unclear. Other elements compliant.

	A surcharged outfall must be modelled.	
Natural catchments design	Designs must replicate the natural drainage catchments of the site. All surface water drainage designs must therefore drain via gravity. The use of pumps for surface water drainage is not sustainable and will not be accepted.	Compliant
Plans	Plan areas and depths of drainage infrastructure must accurately correspond with the supporting calculations. A 3m easement must be provided from all watercourses and open SuDS features for maintenance purposes. This easement must be clearly shown on all plans.	Insufficient
Water quality benefits	An assessment of water quality is necessary to evidence that the proposed design provides adequate treatment of surface water.	Insufficient but not required as silt traps will capture debris from residential roofs.
Trees	There should be no conflict between surface water drainage infrastructure and existing or proposed trees. 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.	Not supplied - assumed to be compliant.

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 173 and 180e). 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.

Further information is required to ensure that the proposed soakaway has been designed correctly and that it can be constructed as designed without increasing flood risk on site or elsewhere.

Please see the attached comment tracker for further detail.

Application Reference: M/39/24/DOC Site Name: 117 Elmer Road Middleton-on-sea PO22 6LH	Initial Issue Date: 03/09/2024 Issue Date: Reviewer Reference: ADC/PC
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Summary and Recommendation:

Condition 7: Further information required.

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	ADC Further Comment	ADC Drainage Comments		
Date:	26/02/2024 [M/5/24/DOC – ADC/SB]	[M/5/24/DOC – ADC/SB]	03/09/2024		
Condition Number: 7					
Comment Number					
	Groundwater monitoring and infiltration testing results are accepted. [The design rate of 8.2 x 10 ⁻⁶ m/s at a design depth of 1.2m].				
1.	Calculations should be based upon FEH rainfall data. (Currently FSR).	Thank you – point closed.			
2.	The proposed soakaways appear to be undersized. The calculations specify a total volume of 6.28m ² per housing unit. The layout shows a total volume of 2.28m ³ per unit (split between two soakaways, one at the front and one at the rear).	Thank you – point closed.			
3.	The soakaways at the front of the proposed properties are positioned too close together, ideally these should be 5m apart.	Thank you – described in method but not shown clearly on the layout. Please mark.	Thank you – point closed.		
4.	Please provide catchpits/silt traps upstream of all soakaways.	Thank you – point closed.			
5.	The drainage layout requires further detail. Please see guidance note k on the attached drainage checklist for the level of detail required.	Soakaways need to be labelled with base levels and cover levels. Silt traps (which will also be inspection chambers) need to be labelled with cover levels and pipe invert levels. The invert level of '300' given for the soakaways is unclear if it relates to the incoming pipe invert level – which we need, or the base of the soakaway. It is unclear what the 300 relates to, mm below ground level?	Please see points 10 and 11 below regarding 'levels' vs 'depths below ground level' and the risk involved with this descriptor.		
6.	Please supply construction detail drawings of soakaways, pipe bed and surround, and catchpits/silt traps.	Not provided – the description of the scheme is noted but technical drawings are required.	Outstanding, please see points 12 and 14 below.		

7.	Please ensure that your drainage layout clearly indicates that soakaways are positioned 5m from the proposed properties.	Thank you – point closed.			
8.			Please provide the winter storm profile calculations as they currently only appear show the summer results. Please confirm and show that the CV value is 1 – this is not shown on the calculation output. It would be helpful if a copy of the calculation program was provided (for both the summer and winter storms) as the format is unfamiliar and would help enable the relevant checks to be made.		
9.			The soakaways dimensions in the calculations do not reflect the soakaways that are proposed on the layout and section. Please submit revised calculations.		
10.			Please stipulate the gradient of the pipe between the silt trap and the soakaway on the soakaway section drawing, ensuring that the calculated pipe invert levels reflect the gradient specified. The current drawing assumes level ground, however, if the ground is not level, then basing the design drawings only on dimensions below ground level can risk an inaccurate pipe gradients/pipe invert levels and soakaway base/cover levels. Please clarify if the ground is level and adjust the design as necessary.		
11.			The cover level of the soakaway is likely to be more than 400mm depth below ground level to achieve a 1 in 40 gradient for the length of pipe proposed. Please adjust the design as necessary. Please specify the distance of the vertical pipe drop into the soakaway (from the top of the soakaway to the bottom of the pipe. [An alternative option is to have the incoming pipe at the side of the		

			soakaway into one of the likely prefabricated inlets. This will aid the designer in achieving the specified gradients without altering the depth of the soakaway, etc.]		
12.			Please provide fully detailed construction details for the silt traps.		
13.			Please specify that the non-woven geotextile is <u>permeable</u> and make it clear on the soakaway section that this is a full wrap around the crates, not just a cover.		
14.			Please specify the manufacturer and model of the crates being used, these need to be checked to ensure that they are capable of carrying the loads at the specified depth, particularly under the driveway.		
15.			Please specify the subbase material beneath the driveways stone filled grid, including its depth. [Natural ground is unlikely to support a vehicle. Please also note that Type 1 material will not be acceptable as a subbase since it is not permeable.]		

Drainage Engineers response

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk

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: Tuesday, September 3, 2024 12:16 PM
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Karl McLaughlin <Karl.McLaughlin@arun.gov.uk>; Sarah Burrow <Sarah.Burrow@arun.gov.uk>
Subject: RE: Planning Re-Consultation on: M/39/24/DOC

Please find enclosed our consultation response.

Regards

Paul Cann
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From: Land Drainage <Land.Drainage@arun.gov.uk>
Sent: Tuesday, July 23, 2024 10:39 AM
To: Paul Cann <Paul.Cann@arun.gov.uk>
Subject: FW: Planning Re-Consultation on: M/39/24/DOC

From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: Tuesday, July 23, 2024 9:39:08 AM (UTC+00:00) Monrovia, Reykjavik
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Re-Consultation on: M/39/24/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No: M/39/24/DOC
Registered: 31st May 2024
Site Address: 117 Elmer Road Middleton-on-Sea PO22 6LH
Grid Reference: 498284 100135
Category: Discharge of Condi
Description of Works: Approval of details reserved by condition imposed under reference M/84/23/PL relating to condition number 7 - surface water drainage scheme.

I am able to inform you that I have received an amendment to the above application dated 23rd July 2024 relating to: Additional soakaway plans/documents.

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

If you should wish to make further representations as a result of this amendment you should click the link below and then click on 'Enter comment'.

[Click here to make further comments](#)

Please make any further comment by **6th August 2024**.

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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PURECON_DOC (005) 0020