

Engineers Comments Regarding Surface Water Drainage

Application Reference:	CM/18/25/DOC	Reviewer Reference:	ADC/EXT12/GK
Planning Officer:	Jessica Riches	Date of Review:	06/08/2025
Site Name:	Land West of Church Lane & South of Horsemere Green Lane Climping		
Application Description:	Approval of details reserved by condition imposed under reference CM/1/17/OUT relating to condition number 9 - i. surface water drainage scheme and ii. a foul water drainage scheme and condition number 10 - i./ ii. watercourses and iii. rising main and foul sewer pipe.		
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>

Response	Condition 9 i: Further information required Condition 10 i: Support Condition 10 ii: Support
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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.	Compliant

	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 <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.	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.	Insufficient
Calculations	Calculations for pre-development run off rates must be based upon the positively drained area only.	Not supplied / Insufficient

	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.	
	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.	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.	Not supplied
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.	Compliant

	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 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
Water quality benefits.	An assessment of water quality is necessary to evidence that the proposed design provides adequate treatment of surface water.	Compliant
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 <u>cannot</u> be avoided.	Compliant

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.

Condition 9 I wording:

"No development shall take place until:

- i. a surface water drainage scheme, based on sustainable drainage principles, has been submitted to and approved in writing by the local planning authority. The sustainable urban drainage system (SUDS) shall be implemented in accordance with the approved details and agreed timetable, and shall be permanently retained thereafter. The details shall include a detailed site specific SUDS Maintenance and Management Plan, setting out the ongoing maintenance and management of the SUDS, including financial management;"*

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

Condition 10 wording:

"No development shall take place until:

- ii. consent has been granted in writing by the local planning authority for the discharge of any flows to watercourses, or the culverting, diversion, infilling or obstruction of any watercourse on the site;*
- iii. ii. a scheme for the future access and maintenance of any watercourse or culvert crossing or abutting the site has been submitted to and approved in writing by the local planning authority. The scheme shall be implemented as approved;"*



NoApplication Reference: CM/18/25/DOC Site Name: Land to the West of Church Lane and South of Horsemere Green Lane Climping	Initial Issue Date: Issue Date: 02/0102024 Reviewer Reference: ADC/EXT12/GK
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Summary and Recommendation:

Condition 9: **Further information required**

Condition 10: **Support**

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 Further Comment	Designer Response	ADC Drainage Further Comment
Date:	29/05/2024 [CM/6/24/DOC]	16/07/2024	1/10/2024	22/04/2025	06/08/2025

Condition Number: 9 [Surface water drainage design]

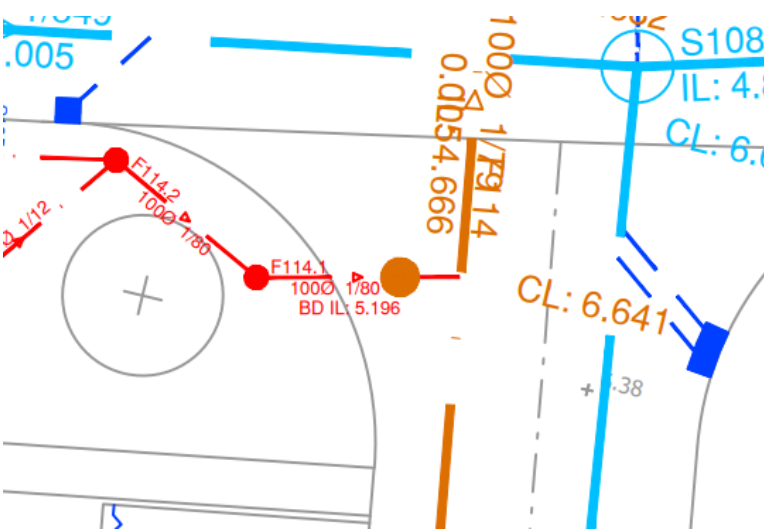
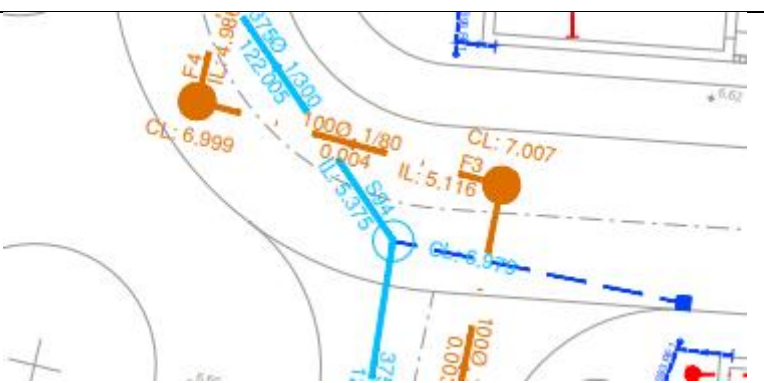
Comment Number					
1.	No additional impermeable area has been indicated for Urban Creep, please show this on the impermeable areas plan and ensure the calculations are based upon 10% Urban Creep.	No comments – refer to updated design.	This comment remains. We haven't revised a revision of drawing D1886-PL105.	A 10% urban creep allowance has been applied to all plots. Please refer to the impermeable areas plans included with the response pack - FOR-E5139-489 to 491.	Comment closed.
2.	The proposed drainage sheets do not display any private drainage information, all sitewide drainage information is to be provided. Drawings are to be to a construction level of detail ensuring no room for interpretation.	No comments – refer to updated design.	Please show IL and CL for all the private drainage manholes. Please show material and bedding types for all private pipes. Please show the name/code of each private manhole	1. CL and IL information for private drainage is not shown on the layouts as the clarity of the drawing is reduced making it difficult for the groundwater to follow the designs. Please refer to the domestic manhole schedules for information on main private runs (FOR-E5139-419) 2. For mains drainage pipes up to 300mm will be vitrified clay. 300mm and over will be concrete (refer to FOR/E5139/410). 3. Noted on mains drainage and main private runs. Other private drainage has been omitted for clarity on the drawings.	Comment closed.
3.	Pipe materials are to be provided for all drainage runs, these are to be noted within the pipe label of each	No comments – refer to updated design.	Comment remains.	For mains drainage pipes up to 300mm will be vitrified clay. 300mm and over will be concrete (refer to FOR/ E5139/410).	Comment closed.

	run on the drainage GA's.				
4.	No proposed levels information has been provided on the Proposed drainage drawings meaning these can not be checked against manhole cover levels or the calculations please overlay the levels onto the drainage drawings.	No comments – refer to updated design.	Comment remains. Please also include road contours at the roads.	Please refer to the proposed levels design plans (FOR-E5139-501 to 522). Highways contours have now been included on the domestic drainage layout.	Comment closed.
5.	All drainage runs should achieve a self-cleansing velocity of 1m/s.	No comments – refer to updated design.	Comment remains.	All pipes have been designed to achieve self-cleansing. Outside of 'dummy' pipes used in modelling attenuation features.	Please submit the updated calculations that reflect all the recent changes. Comment remains.
6.	A catchment area plan should be provided showing which impermeable areas are being included into each drainage run to allow for cross examination with the calculations.	No comments – refer to updated design.	Comment remains.	A 10% urban creep allowance has been applied to all plots. Please refer to the impermeable areas plans included with the response pack - FOR-E5139-489 to 491.	Comment closed.
7.	The 1 in 100 year storm event clearly displays flooding, flooding should not occur where possible. In the instance of small flooding being unavoidable a plan displaying the extent of the flooding is to be provided including a flood management route.	No comments – refer to updated design.	Comment remains.	The calcs have been updated, small amounts of flooding are shown in the most extreme storm events modelled. A flood flows assessment has shown the minor flooding, exceedance flows will be contained within the highway and conveyed down the roads where it will enter the system further downstream via gullies.	Comment closed.
8.	No drainage details have been provided, all materials and structures are to have details	No comments – refer to updated design.	Headwall details have been provided but they are generic. Each headwall should contain the outfall IL, the basin level, the pipe size and the earthworks details. There have been submitted typical details of the swale but detailed design details are required.	Refer to headwall sections plans - FOR-E5139-482 to 485. Althon specific headwall details are shown on these plans. The sections shown on the plans give specific information for how the	Comment closed

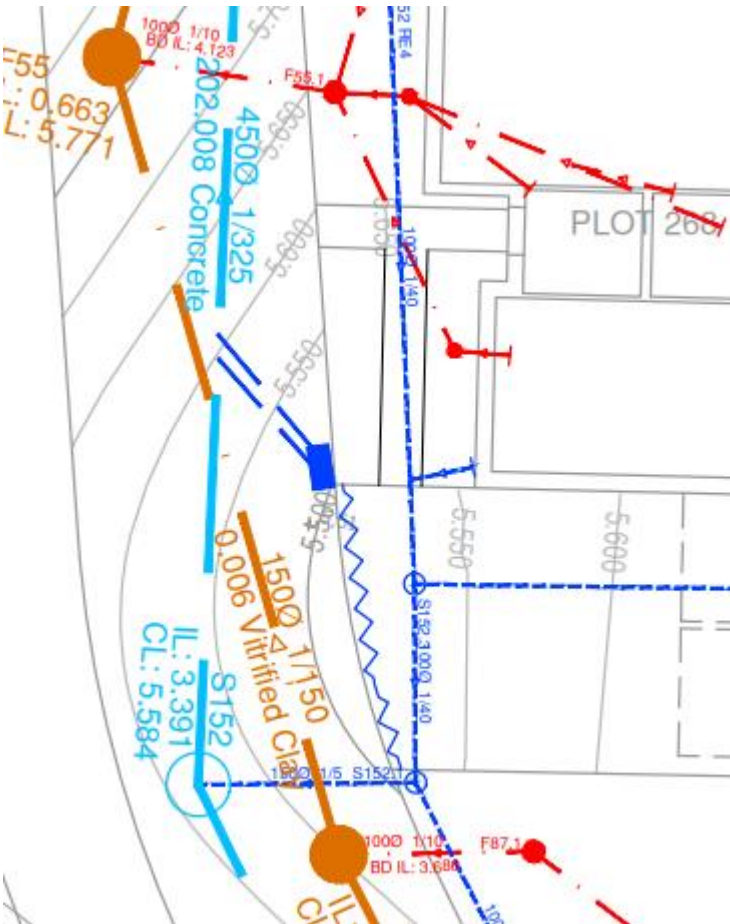
	provided including control devices.		Please provide detailed construction details for all the attenuation tanks. Also, include the road/footpath detail above where applicable.	headwalls tie-in with surrounding earthworks and base of basins.	
9.	No manhole schedules have been provided.	No comments – refer to updated design.	Manhole schedule submitted but many manholes are missing probably due to wrong printing options. All the manholes are shown as Type E which is impossible. Please also note which manholes are catchpits. All the manholes have a diameter of 450 which is wrong in many cases. Please amend. Please specify the cover type on manhole schedule. Clarify how the shallow pipes will be protected.	A 10% urban creep allowance has been applied to all plots. Please refer to the impermeable areas plans included with the response pack - FOR-E5139-489 to 491.	All the manholes prior to attenuation tanks and the watercourses should be catchpits. Please also specify the cover type of each manhole.
10.	Groundwater monitoring is required to be undertaken throughout the wettest months being October – march. The entire duration must be covered.	No comments – refer to updated design.	The comment remains. The trial holes contained at “Phase II Site Investigation Report” were undertaken between March and July 2024. Please also provide a plan showing the borehole results and the infiltration rates across the site.	Please find included with the response pack current and previous groundwater monitoring and a plan showing locations.	Comment closed
11.	Buoyancy calculations are required for all basins based on the updated basin design and recorded groundwater levels at the site together with details of the depths of material required to combat flotation. The calculations must take account for the total depth of the impermeable liner and not just the invert of the basin to determine displaced groundwater.	No comments – refer to updated design.	Comment remains.	Please find current buoyancy calculations included in response pack.	A Factor of Safety of 1.1 should be applied to disturbing forces and a Factor of Safety of 0.9 should be applied to resisting forces. Please update accordingly.
12.	Please provide further information and commentary for the catchment which currently drains to the proposed point of discharge together	No comments – refer to updated design.	Comment remains.	The on-site drainage has been designed in accordance with the approved FRA and to ensure that discharge from the site is not greater. The existing drainage regime and potential outfalls for the site have been	Comment closed.

	with evidence that the receiving network has capacity to receive additional flows. This connection to the water course also serves the highway drainage for a large section of the A259 and Church Lane.			assessed in section 1.5 of the approved FRA.	
13.	A new water course is proposed along the northern site boundary. Is this just a conveyance swale for the onsite system or does this receive flows from anywhere offsite? There is no mention of this in the FRA. It is noted that the side slopes are 1:2 these should be reduced to 1:3 as it is noted that the 'swale' is up to 1.9m deep in some places.	No comments – refer to updated design.	Comment remains.	This is a proposed swale for conveying flows from the proposed site. SI works done by G and W encountered groundwater at 1.5m bgl in the road south of the swale. The swale is proposed as a conveyancing feature and will not infiltrate into the ground. Swale banks shall be 1:3 with a granular sub-base. For the swale levels refer to FOR-E5139-492.	Comment closed.
14.	The impact of groundwater needs to be considered for the proposed swale. Should the swale be located within the groundwater, how will ground water be prevented from entering the swale? Buoyancy calculations will need to be provided should the swale be proposed as lined.	No comments – refer to updated design.	Comment remains. Also please provide detailed design construction details and cross-sections.	The swale is proposed as a conveyancing feature and will not infiltrate into the ground.	Buoyancy calculations need updating as per comment 11. Comment remains.
15.	The FRA and drainage plans state that the system 'is proposed that a	No comments – refer to updated design.	Comment remains.	The groundwater monitoring carried out and observations during the onsite works found groundwater levels on-site to be	The winter groundwater monitoring is suggesting that at several locations groundwater was encountered deep into the ground or the boreholes were dry. At these areas soakaways or permeable paving could be implemented.

	'hybrid' strategy will be implemented, with infiltration maximised where possible in view of site constraints'. Has this been considered? The site should in accordance with the SuDS hierarchy infiltrate to ground in the first instance wherever possible taking into account the ground water levels and recorded soakage rates from the investigations on site.			relatively shallow. Therefore, a hybrid approach has not been able to be pursued. The current strategy uses SuDS features in the form of swales, basins and tanks for conveyancing and storage of run-off.	On the other hand email named " Climping Groundwater monitoring" dated 20/11/24 is advising against the installation of soakaways due to high groundwater levels during the BRE testing. Please submit the full results of the BRE testing together with a location map of the trial pits. Finally clarify why the hybrid strategy has been abandoned.
16.	Further details of the permeable paving storage blankets is required.	No comments – refer to updated design.	Comment remains.	Permeable paving is no longer required as the storage requirements have been met via basins and tanks.	Same as above please clarify why the hybrid strategy has been abandoned.
17.			All drawings should be at a construction issue level. They are currently labelled as 'INITIAL TENDER ISSUE'.	Noted, plans have been updated subject to adopting authority.	Comment closed.
21.			All the inspection chambers at the drainage details have been named Type D even though they have different details. Please rename accordingly and update the manhole schedules.	Manhole type removed for inspection chambers as this is not applicable.	Comment closed.
22.			Please provide detailed constructions details of all the ponds including two cross-section for each pond.	Refer to drawings FOR-E5139-486 to 488 and 482 to 485	Comment closed.
23.			At the FRA is suggested the rate of discharge from the site will be restricted to QBar, at 20.50l/s. Has this been implemented? Please provide detailed design details of the hydrobreak or any other similar mean of flow restriction.	A hydro-brake will be used at the site's outfall. The hydro-brake has been designed so peak flows do not exceed 20.5 l/sec.	Comment closed.
24.			Please clarify the incoming and the outcoming ILs at the manholes where there is a change at the pipe diameters.	Refer to manhole schedules FORE5139-415 to 418.	Comment closed.
25.			There are several locations where the private surface water drainage is crossing foul pipes (both private and public). Please confirm that there is no clash between them.	A clash has been undertaken to ensure that the pipes can cross via the design software site3D.	Comment closed.
26.			Please provide detailed design construction details for the internal hydrobrakes.	Please find hydro-brake details included with response pack.	Comment closed.
27.			Make clear the text shown at the attenuation tanks at drawing FOR/E5139/454.	Plans updated as per comment	Comment closed.

28.			There is an attenuation tank at drawing FOR/E5139/455 which is not connected with any pipes. Please clarify why.	Tank updated to show connection	
29.			There is an attenuation tank at drawing FOR/E5139/456 which is not connected with any pipes. Please clarify why.	Tank updated to show connection	Comment closed.
30.			 Please clarify the CL and IL of the foul manhole and whether it is private or not.	Plans updated for clarity, this is not a manhole. The symbol is indicating a backdrop.	Comment closed.
31.			 Please confirm that there is no pipe clashing at the above location.	A pipe clash check has been undertaken and these pipes to clear each other	Comment closed.

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36.			There is an attenuation tank at drawing FOR/E5139/464 which is not connected with any pipes. Please clarify why.	Plan updated to show tank Connections.	Comment closed.
37.			A SUDS maintenance schedule has been provided within the FRA and not as a separate document. However, this contains the basic tables from the SUDS manual and it does not comply with ACC guidance. Please provide a SUDS maintenance schedule I accordance to the ACC checklist for maintenance.	Please find the SuDS maintenance plan included with the response pack	Comment closed.
					Please confirm that there is no clash between tank's connecting pipe and the foul pipe 
					The gullies outside plot 268 should be moved slightly to the lowest local point. 
					It is understood that either the calculations need updating or some networks are missing. E.g the areas shown on FOR-E5139-489 to 491 are different from those shown on calculations Please submit the most updated calculations for all the networks.

					Also, make sure that there is a clear reference between the pipe numbers showing on the layouts and those on the calculations and reflect all the recent changes.
Condition Number: 10 i & ii [Watercourses]					
Comment Number					
1.	The applicant will need to detail all connections and crossings for existing watercourses and gain Ordinary Watercourse Consent.	No comments – refer to updated design.	Comment remains.	The on-site drainage connects into a existing manhole located east of the site boundary and not directly into a watercourse. The proposed on-site drainage design does not cross any existing watercourses.	Comment closed.
2.	All watercourses maintenance, existing and proposed is to be detailed within the maintenance schedule.	No comments – refer to updated design.	Comment remains.	Please find the SuDS maintenance plan included with the response pack.	Comment closed

From: Nicola Oktay on behalf of Planning.Responses
Sent: 12 August 2025 10:00
To: Planning Scanning
Subject: FW: Planning Consultation on: CM/18/25/DOC
Attachments: CM-18-25-DOC - West of Church Lane 1.docx; CM-18-25-DOC - West of Church Lane Comment Tracker.docx

Drainage Engineers response

Nikki Oktay
Planning Receptionist, Planning Department

T: 01903 737965
E: Nicola.Oktay@arun.gov.uk

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>



Our priorities...

Improving the wellbeing of Arun

Delivering the right homes in the right places

Supporting our environment to support us

Fulfilling Arun's economic potential

From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 11 August 2025 12:27
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Sarah Burrow <Sarah.Burrow@arun.gov.uk>; Jessica Riches <Jessica.Riches@arun.gov.uk>
Subject: RE: Planning Consultation on: CM/18/25/DOC

Please find enclosed our consultants response.

Regards

Paul Cann
Principal Drainage Engineer, Coastal Engineers and Flood Prevention

T: 01903 737819
E: paul.cann@arun.gov.uk

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



Our priorities...

Improving the wellbeing of Arun

Delivering the right homes in the right places

Supporting our environment to support us

Fulfilling Arun's economic potential

From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: Wednesday, April 23, 2025 11:25:04 AM (UTC+00:00) Monrovia, Reykjavik
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Consultation on: CM/18/25/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No:	CM/18/25/DOC
Registered:	22nd April 2025
Site Address:	Land West of Church Lane & South of Horsemere Green Lane Climping
Description of Works:	Approval of details reserved by condition imposed under reference CM/1/17/OUT relating to condition number 9 - i. surface water drainage scheme and ii. a foul water drainage scheme and condition number 10 - i./ ii. watercourses and iii. rising main and foul sewer pipe.

The Council have received the above application to discharge conditions. I shall be pleased to receive any observations you may wish to make in respect of those conditions relating to your field of expertise.

[Click here to view the Discharge of Condition application and view the 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.

[Click here to view the original application and decision notice](#)

Should you wish to make any comments click on the link and click into ?Enter Comment? or if this is not possible email your response to planning.responses@arun.gov.uk by **8th May 2025**.

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.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

Yours sincerely

Jessica Riches

Planning Case Officer- Arun District Council

Telephone: 01903 737852

Email: jessica.riches@arun.gov.uk