

## Engineers Comments Regarding Surface Water Drainage

|                                 |                                                                                                                                                                                                                                                          |                            |            |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Application Reference:</b>   | WA/50/25/DOC                                                                                                                                                                                                                                             | <b>Reviewer Reference:</b> | ADC/EXT4   |
| <b>Planning Officer:</b>        | Amber Willard                                                                                                                                                                                                                                            | <b>Date of Review:</b>     | 04/09/2025 |
| <b>Site Name:</b>               | Fleurie Nursery Lake Lane Barnham PO22 0AL                                                                                                                                                                                                               |                            |            |
| <b>Application Description:</b> | Approval of details reserved by condition imposed under reference WA/75/20/PL relating to condition number 3 - surface water drainage scheme, condition number 4 - surface water drainage system and condition number 7 - surface water drainage scheme. |                            |            |
| <b>Assessment Number:</b>       | 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>

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

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Response</b> | Condition 3: <b>Further information required</b><br>Condition 4: <b>Further information required</b><br>Condition 7: <b>Further information required</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

### 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              |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Winter groundwater monitoring data.</b> | 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. | <b>Not supplied</b> |

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                | The same data is necessary to ensure that the potential for buoyancy has been adequately considered in attenuation designs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |
| <b>Winter infiltration testing data.</b>       | <p>Adequate winter infiltration testing must be supplied to justify the proposed discharge method and design infiltration rates.</p> <p>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.</p> <p>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.</p> <p>The results of incomplete tests should not be extrapolated to obtain design values for infiltration rates.</p>                                                                                                                                          | <b>Not supplied</b> |
| <b>The hierarchy for sustainable drainage.</b> | <p>The proposed discharge method must accord with the SuDS hierarchy as given below. Evidence must be supplied to justify the proposed discharge method.</p> <ol style="list-style-type: none"> <li>1. Rainwater reuse where possible.</li> <li>2. Complete discharge into the ground (infiltration).</li> <li>3. Hybrid infiltration and restricted discharge to an appropriate water body or surface water sewer.</li> <li>4. Restricted discharge to an appropriate water body.</li> <li>5. Restricted discharge to a surface water sewer.</li> <li>6. Restricted discharge to a combined sewer.</li> </ol> <p>A water body may be defined as a river, watercourse, ditch, culverted watercourse, reservoir, wetland or the sea.</p> <p><b>Engineers cannot support any proposed connection of surface water to the foul sewer.</b></p> | <b>Not supplied</b> |
| <b>Calculations</b>                            | Calculations for pre-development run off rates must be based upon the positively drained area only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Insufficient</b> |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                   | 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. <b><u>FSR rainfall data will not be accepted.</u></b> FEH rainfall data is based upon more recent records and continues to be updated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Not supplied</b> |
|                                   | <p>Designs must use the correct climate change allowances at the time of determination of the outline or full planning application.</p> <p>CV values for all events must be set to 1. This includes summer, winter, design, and simulation events.</p> <p>The correct allowance for urban creep must be applied.</p> <p>Additional storage must be set to zero unless it can be evidenced where this is provided.</p> <p>Infiltration half-drain times must be less than 24 hours.</p> <p>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.</p> <p>A surcharged outfall must be modelled.</p> | <b>Insufficient</b> |
| <b>Natural catchments design.</b> | <p>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.</p> <p>The condition, performance (including capacity where appropriate) and ownership of any existing site surface water drainage infrastructure must be accurately reported.</p> <p>Appropriate easements to watercourses and other services must be shown on all plans.</p>                                                                                                                                                                                                     | <b>Insufficient</b> |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                           | <p>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.</p> <p>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.</p> <p><b>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.</b></p> |                     |
| <b>Plans</b>                              | Plan areas, depths and levels of drainage infrastructure must accurately correspond with the supporting calculations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Insufficient</b> |
| <b>Water quality benefits.</b>            | An assessment of water quality is necessary to evidence that the proposed design provides adequate treatment of surface water.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Insufficient</b> |
| <b>Biodiversity and amenity benefits.</b> | The surface water drainage design must provide biodiversity and amenity benefits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Not supplied</b> |
| <b>Trees and planting</b>                 | <p>There should be no conflict between surface water drainage infrastructure and existing or proposed trees or planting.</p> <p>The design must consider the potential growth of proposed trees and adequate mitigation must be provided to protect drainage infrastructure where conflict <b><u>cannot</u></b> be avoided.</p>                                                                                                                                                                                                                                                                               | <b>Not supplied</b> |
|                                           | The drainage designs, including layouts appear to be very basic schematic drawings and wholly insufficient to provide the required level of detail to address the drainage conditions. Detailed drainage proposals with adequate calculations need to be provided to allow a suitable assessment of the proposals                                                                                                                                                                                                                                                                                             |                     |

#### 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.

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

- Flood risk assessment for proposed greenhouse structures
- Response to ADC Engineer questions
- As-built details of drainage and attenuation system. 23.11.23
- Drainage statement referring to WA/75/22/DOC
- Topographic Survey 004023\_TOPO March 2023
- Phase 1 Drainage Plan 1120-012b August 2021
- Drainage SE Glass exceedance Bund area and level 23.11.23
- Drawing #2.North area - route of watercourse ditches and culverts
- Drawing #3.North area - 8.5m contour containment
- Drainage Pipe routes 23.11.23
- Drainage Invert levels & pipe details 23.11.23
- East Glass exceedance Bund area and level 5.1.25
- Headwalls
- Outfall A (North) 23.02.24
- Outfall B (South) 23.02.24

**Condition 3**

*“Development shall not be brought into use until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels and winter Percolation testing to BRE 365, or similar approved, will be required to support the design of any Infiltration drainage. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.”*

**No ground investigations have been provided with the submission. The drainage drawings and calculations provided appear to be of a very basic and schematic nature and do not provide full details of the drainage scheme. The proposals remain unclear. Detailed drainage design drawings, schedules and details with supporting calculations need to be provided by the applicant to allow for a suitable assessment of their proposals. Without this information this could allow a scheme which increases the risk of surface flooding both onsite and offsite which would be unacceptable.**

**Reference should be made to the Arun District Council Checklist for the required information that should be submitted.**

**Condition 4:**

*“Immediately following implementation of the approved surface water drainage system and prior to occupation of any part of the development, the developer/applicant shall provide the local planning authority with as-built drawings of the implemented scheme together with a completion report prepared by an independent engineer that confirms that the scheme was built in accordance with the approved drawing/s and is fit for purpose. The scheme shall thereafter be maintained in perpetuity.”*

**The verification report provided is incomplete and lacks as-built information including drainage surveys of installed drainage. Without the as-built information, there is a risk that the surface water is not installed correctly and could cause unacceptable levels of flooding**

**Reference should be made to the Arun District Council Checklist for the required information that should be submitted.**

**Condition 7:**

*“Development shall not be brought into use until a surface water drainage scheme for the site, based on sustainable drainage principles and an assessment of the hydrological and hydro geological context of the development, has been submitted to and approved in writing by the local planning authority. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed. The scheme shall also include details of how the scheme shall be maintained and managed after completion.”*

**No assessment has been submitted nor details of a maintenance plan of the drainage scheme following completion. Without this information this could cause unacceptable levels of flooding**

**Reference should be made to the Arun District Council Checklist for the required information that should be submitted.**

|                                                                                                            |                                                                                                               |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Application Reference: WA/50/25/DOC</b><br><b>Site Name: Fleurie Nursery Lake Lane Barnham PO22 0AL</b> | <b>Initial Issue Date: 04/09/2025</b><br><b>Issue Date: 04/09/2025</b><br><b>Reviewer Reference: ADC/EXT4</b> |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|

**Summary and Recommendation:**

Condition 3: **Further information required**  
Condition 4: **Further information required**  
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 object to the application.*

|                            | ADC Drainage Comments                                                                                                                                                                                                                                                                                                              | Designer Response |  |  |  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--|--|--|
| <b>Date:</b>               | <b>04/09/2025</b>                                                                                                                                                                                                                                                                                                                  |                   |  |  |  |
| <b>Condition Number: 3</b> |                                                                                                                                                                                                                                                                                                                                    |                   |  |  |  |
| Comment Number             |                                                                                                                                                                                                                                                                                                                                    |                   |  |  |  |
| 1.                         | The current level of detail provided appears to only be very outline schematic proposal in nature. Full detailed design proposals of the layout, which should include construction details of the attenuation tanks, pipework, bedding details, drainage inspection chambers, manholes, manhole schedules etc.. should be provided |                   |  |  |  |
| 2.                         | The information provides is unclear and we would request that the applicant provides a clear drainage statement providing background information and clearly present proposals and design intent for the drainage system                                                                                                           |                   |  |  |  |
| 3.                         | The long sections provided are too basic and unclear and do not to appear to provide any details on chamber locations, depths of chambers etc.. nor is there a clear corelation to the drainage layouts                                                                                                                            |                   |  |  |  |
| 4.                         | The drainage layouts provide are unclear. Detailed external drainage layouts which should include clear information on pipe diameters, chamber depths and drainage chamber and pipe number references should be provided to allow a cross reference to the calculations.                                                           |                   |  |  |  |
| 5                          | The exceedance flow layouts are unclear. Further information is required on areas of temporary ponding, flow directional arrows etc...                                                                                                                                                                                             |                   |  |  |  |
| 6.                         | The headwall outfall details provided are insufficient and do not provide any construction details on specific type of headwall, bedding details, interface with the existing earthworks etc..                                                                                                                                     |                   |  |  |  |
| 7                          | Please provide details on existing trees and any proposed planting to ensure                                                                                                                                                                                                                                                       |                   |  |  |  |

|                            |                                                                                                                                                                                                                    |  |  |  |  |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|                            | that the proposed drainage does not conflict with existing/proposed planting                                                                                                                                       |  |  |  |  |
| 8                          | Please provide construction details for orifice flow controls. The construction details should clearly show how these are fitted within the flow control chamber and relationship with drainage network            |  |  |  |  |
| <b>Condition Number: 4</b> |                                                                                                                                                                                                                    |  |  |  |  |
| Comment Number             |                                                                                                                                                                                                                    |  |  |  |  |
| 1.                         | The verification statement provided is insufficient to address this condition. Please refer to the Arun District Council Checklist on what items should be provided as a minimum to seek to satisfy this condition |  |  |  |  |
| 2.                         | Please provide as-built drainage information including a CCTV survey of the main drainage runs installed                                                                                                           |  |  |  |  |
| 3.                         |                                                                                                                                                                                                                    |  |  |  |  |
| 4.                         |                                                                                                                                                                                                                    |  |  |  |  |
|                            |                                                                                                                                                                                                                    |  |  |  |  |
| <b>Condition Number: 7</b> |                                                                                                                                                                                                                    |  |  |  |  |
| Comment Number             |                                                                                                                                                                                                                    |  |  |  |  |
| 1.                         | The current maintenance and management plan should be a “standalone” document and prepared in a format which is available for any management company or individual responsible for maintaining this system         |  |  |  |  |
| 2.                         | The maintenance plan should include all relevant detailed design drawings for ease of reference.                                                                                                                   |  |  |  |  |
| 3.                         | The maintenance plan should include manufacturers details                                                                                                                                                          |  |  |  |  |
|                            |                                                                                                                                                                                                                    |  |  |  |  |
|                            |                                                                                                                                                                                                                    |  |  |  |  |

If a designer would like a .docx version of this document to aid administration of responses, please request this by email to [land.drainage@arun.gov.uk](mailto:land.drainage@arun.gov.uk).

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Arun District Council, Civic Centre, Maltravers Rd  
Littlehampton, West Sussex, BN17 5LF  
[www.arun.gov.uk](http://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...**

|                                                                                                                               |                                                                                                                                              |                                                                                                                                        |                                                                                                                                     |                                                                                                                                                                                |
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| <br><b>Improving the wellbeing of Arun</b> | <br><b>Delivering the right homes in the right places</b> | <br><b>Supporting our environment to support us</b> | <br><b>Fulfilling Arun's economic potential</b> | <br> |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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**From:** Paul Cann <Paul.Cann@arun.gov.uk>  
**Sent:** 09 September 2025 11:22  
**To:** Planning.Responses <Planning.Responses@arun.gov.uk>  
**Cc:** Sarah Burrow <Sarah.Burrow@arun.gov.uk>; Amber Willard <Amber.Willard@arun.gov.uk>  
**Subject:** RE: Planning Consultation on: WA/50/25/DOC

Please find enclosed our external consultants response.

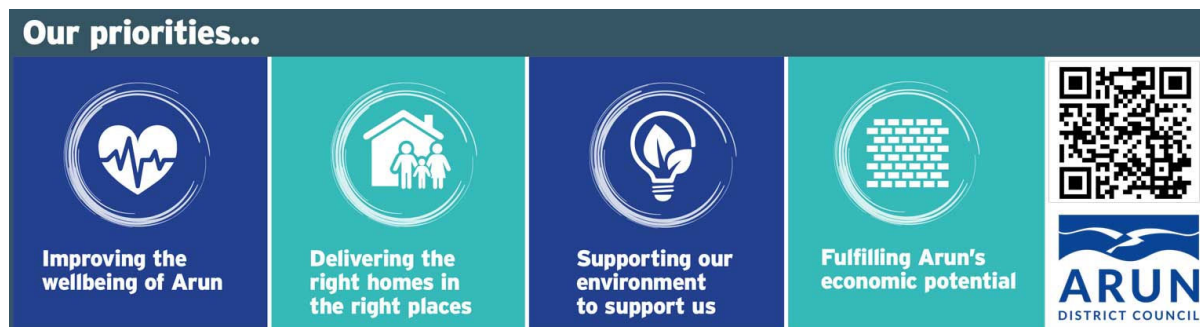
Regards

**Paul Cann**  
**Principal Drainage Engineer, Coastal Engineers and Flood Prevention**

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**From:** Planning.Responses <[Planning.Responses@arun.gov.uk](mailto:Planning.Responses@arun.gov.uk)>

**Sent:** Monday, June 23, 2025 8:18:29 AM (UTC+00:00) Monrovia, Reykjavik

**To:** Land Drainage <[Land.Drainage@arun.gov.uk](mailto:Land.Drainage@arun.gov.uk)>

**Subject:** Planning Consultation on: WA/50/25/DOC

**To:** **Engineers (Drainage)**

## NOTIFICATION FROM ARUN DISTRICT COUNCIL

### TOWN AND COUNTRY PLANNING ACT 1990

**Application No:** WA/50/25/DOC

**Registered:** 20th June 2025

**Site Address:** Fleurie Nursery Lake Lane Barnham PO22 0AL

**Description of Works:** Approval of details reserved by condition imposed under reference WA/75/20/PL relating to condition number 3 - surface water drainage scheme, condition number 4 - surface water drainage system and condition number 7 - surface water drainage scheme.

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](mailto:planning.responses@arun.gov.uk) by **7th July 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

Amber Willard

Planning Case Officer- Arun District Council

Telephone: 01903 737942

Email: [amber.willard@arun.gov.uk](mailto:amber.willard@arun.gov.uk)

PLCONDOC (ODB) 2020