ARMSTRONG STOKES & CLAYTON LIMITED

Civil & Structural Engineering Consultants

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Our Ref: JS/W155/001

Date: 6th November 2025

Dear Sean

OUTLINE APPLICATION FOR A RESIDENTIAL DEVELOPMENT ON LAND AT MOOR LANE, KIRK LANGLEY, DERBYSHIRE - AVA/2025/0668
TECHNICAL NOTE - SURFACE WATER DRAINAGE

Further to receipt of Derbyshire County Council Lead Local Flood Authority's (DCC LLFA) correspondence to Amber Valley Borough Council Planning Authority dated 1st October 2025, we would like to take this opportunity to provide our observations within this Technical Note in response to the comments raised with reference to planning application AVA/2025/0668.

This Technical Note should be read in conjunction with the submitted Armstrong Stokes & Clayton (ASC) Flood Risk Assessment & Drainage Strategy report dated August 2025, and where required, draws data from it.

The issues raised by DCC LLFA are highlighted in *italics* below followed by the ASC response to each point. A copy of the DCC LLFA correspondence is appended to this document.

- *Consideration of the drainage hierarchy in paragraphs 5.10 to 5.14 of the Flood Risk Assessment and Drainage Strategy Report should include collection, as per Standards 1 and 2 of DEFRA's National standards for sustainable drainage systems (2025). While water butts are mentioned in paragraph 5.25, collection methods should be considered as fundamental to the drainage strategy rather than an optional extra.*

In accordance with Standards 1 and 2 of DEFRA's National Standards for Sustainable Drainage Systems (2025), SuDS hierarchy priority 1: run-off collected for non-potable use will be promoted.

This will include the use of a water butt on an individual rainwater pipe for each roof water catchment, with an overflow draining to the surface water network. The use of a water butt will delay the time of entry, thus that the first 5mm of rainfall for the majority of rainfall events will not result in run-off from the site to the drainage system. In addition, the inclusion of a water butt will provide the facility for some surface water run-off to be stored and used for irrigation of garden areas.

- *The topography of the site is such that the northern part drains to the north and the southern part drains to the south. The drainage strategy proposes that both catchments will drain to the south. How will runoff from the northern catchment drain to the south?*

Reviewing the site levels and likely proposed ground levels, with a proposed finished floor level to the northeastern portion of the application site of circa 110.50m AOD, will provide an invert level to the attenuation pond of 108.50m AOD with a gravity fall of circa 1:150 and sufficient cover at the head and along the full length of the proposed sewer as it runs along the development highway proposed for the eastern portion of the site. An existing ground level of 110.00m AOD at the location of the attenuation pond will result in a depth of circa 1.5m, which correlates with the Source Control attenuation calculations within Appendix E of the submitted FRA.

At the detailed design stage, the feasibility of a gravity discharge to either the sewer or directly to the water body from the attenuation pond, will be confirmed. It is noted from OS data, that the contour level of the water body to the immediate west of the Moor Lane culvert is circa 105.00m AOD, and thus on this basis a gravity discharge will be available to the water body.

- *If the whole site is to drain to the south, the discharge rate should be calculated according to the area of the southern catchment to avoid catchment transfer. To calculate storage volumes, the entire development area that could potentially drain to the proposed surface water drainage system in an extreme event should be used (including both permeable and impermeable surfaces).*

As the site falls predominantly from west to east ultimately the majority of the overland route will fall to the south, whilst it may not be a direct overland route but more west-to-east-to-south. Thus, the majority of the overland flows are within the catchment of the southern water body. It is acknowledged that a small section of the site within the northeast portion does fall away from the southern water body and thus this area will be removed from the QBAR calculation should an outfall to the water body be pursued at the detailed design stage. It should be noted however, that currently the QBAR calculation is based on a contributing area of 1.17 ha, which is less than 50% of the development area of 2.53 ha.

It should also be noted that a discharge rate for an outfall to the existing sewer has been provided by STW of 5.0 l/s/ha within their correspondence dated 26th June 2025 included within Appendix C of the FRA. STW are in the process of adopting this sewer and thus are aware of its available capacity. The rate provided by STW equates to the calculated QBAR Greenfield run-off for the developable area of the application site of 5.1 l/s.

At the detailed design stage, and when a more detailed development layout is available, the areas that are potentially drained, whether impermeable or permeable, will be included within the attenuated volumes and the QBAR Greenfield discharge rate for the development site.

- *If the site will drain to the S104 sewer which intersects the south-east corner of the site, the applicant should demonstrate:*
    - *permission from the sewer owner,*
    - *that the sewer can accommodate the additional flow,*
    - *that the watercourse has sufficient capacity, including the culvert under Moor Lane.*

The STW correspondence dated 26th June 2025 highlights that this sewer is in the process of being adopted in accordance with section 104 of the Water industry Act 1991 and thus an outfall is available at a rate of 5.0 l/s/ha.

It should also be noted that STW have provided comments on this application as a consultee to the LPA, and support the application with conditions, which in principle, and subject to the undertaker's obligations under the Water Industry Act 1991, are acceptable to the applicant.

Should the storm sewer not be adopted at the detailed design stage, a direct outfall to either the water body, which will include an assessment of the Moor Lane culvert should it be impacted by the outfall location, or a connection to the combined public sewer will be promoted.

- *The applicant should demonstrate how the proposed SuDS maximises biodiversity benefits, as per Standard 6 of DEFRA's National standards for sustainable drainage systems (2025).*

Standard 6 of DEFRA's National Standards for Sustainable Drainage Systems (2025) requires a SuDS approach to be adopted to ensure the surface water drainage system maximises biodiversity benefits throughout the development lifecycle with the surface water drainage system adding biodiversity value by:

- creating diverse, self-sustaining, resilient local ecosystems which contribute to net gains in biodiversity
- supporting and promoting natural local habitat and species, for example, through local nature recovery strategies (LNRS)
- contributing to the delivery of local biodiversity strategies
- contributing to habitat connectivity

The inclusion of an open above ground attenuation pond situated within an expansive landscaped area, adjoining the greenfield agricultural land to the south and west of the application site, will provide connectivity with adjacent habitat and allow migration of local species. The attenuation pond will include appropriate planting to support local habitat and encourage migration, along with promoting water quality enhancement of development run-off prior to discharge.

Discharge rates from the new surface water drainage system are maintained to a pre-developed greenfield rate, thus should an outfall to the water body be pursued, there will be no detriment or depletion of the receiving water body, its channel and local habitat.

To summarise, the inclusion of an attenuation pond within an expansive landscaped area will promote biodiversity as outlined with the guidance provided within DEFRA's National Standards for Sustainable Drainage Systems (2025).

It should also be noted that a more detailed assessment of the biodiversity benefits of the development will be provided to the LPA by the applicant's ecologist at the detailed design stage.

- *If shared private driveways are to be permeable paving, how will the future maintenance be secured and how will any reduction to permeable paving area be avoided in the future.*

The shared permeable private driveways will be the responsibility of the approved appointed management company and thus the permeable driveways will be maintained in perpetuity.

In addition, the advisory / informative notes provided within the LLFA correspondence is acknowledged, thus that the details highlighted, where relevant, will be supplied to the LPA for examination prior to the discharge of drainage conditions associated with a planning consent of AVA/2025/0668.

To conclude, the drainage strategy within the FRA provides sufficient and robust surface water outfall options for the detailed design to pursue, with the SuDS hierarchy providing the guide to the priority

of the outfall options. This should be sufficient for an outline approval with a supporting suitably worded planning condition securing the detailed design.

We trust the enclosed is of assistance in your deliberations and will allow the local planning authority to approve the surface water drainage strategy for the outline application AVA/2025/0668. Should you have any queries, please do not hesitate to contact the undersigned.

Yours sincerely



Jon Stokes
Armstrong Stokes & Clayton Limited

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Ask for Jo Crawshaw-Moore
Email jo.crawshaw-moore@derbyshire.gov.uk
Our ref AVBC 2025/39
Your ref AVA/2025/0668
Date 01 October 2025

Dear Alan

Proposal: **Outline application for development of up to 49 dwellings including affordable housing, enhanced public right of way, equipped play area, public amenity space and habitat creation.**

Location: **Land At Moor Lane Moor Lane Kirk Langley Ashbourne Derbyshire**

Application reference **AVA/2025/0668**

No objections in principle		Conditions Recommended		Objection Recommended	X

Derbyshire County Council as the Lead Local Flood Authority (LLFA) has reviewed the information submitted for this application, which was received on 19/09/2025. The LLFA recommends an objection for the reasons set out below.

REASONS FOR OBJECTION

We are recommending an objection on the proposed development as it is not possible to provide an informed comment until such a time that the applicant has submitted further information.

- Consideration of the drainage hierarchy in paragraphs 5.10 to 5.14 of the Flood Risk Assessment and Drainage Strategy Report should include collection, as per Standards 1 and 2 of DEFRA's National standards for sustainable drainage systems (2025). While water butts are mentioned in paragraph 5.25, collection methods should be considered as fundamental to the drainage strategy rather than an optional extra.

- The topography of the site is such that the northern part drains to the north and the southern part drains to the south. The drainage strategy proposes that both

catchments will drain to the south. How will runoff from the northern catchment drain to the south?

- If the whole site is to drain to the south, the discharge rate should be calculated according to the area of the southern catchment to avoid catchment transfer. To calculate storage volumes, the entire development area that could potentially drain to the proposed surface water drainage system in an extreme event should be used (including both permeable and impermeable surfaces).

- If the site will drain to the S104 sewer which intersects the south-east corner of the site, the applicant should demonstrate:
    - permission from the sewer owner,
    - that the sewer can accommodate the additional flow,
    - that the watercourse has sufficient capacity, including the culvert under Moor Lane.

- The applicant should demonstrate how the proposed SuDS maximises biodiversity benefits, as per Standard 6 of DEFRA's National standards for sustainable drainage systems (2025).

- If shared private driveways are to be permeable paving, how will the future maintenance be secured and how will any reduction to permeable paving area be avoided in the future.

Advisory/Informative Notes (It should be noted that the information detailed below (where applicable), will be required as an absolute minimum in order to discharge any of the drainage conditions set by the LPA):

A. The LLFA are currently using software to audit drainage calculations therefore submit files in a digital format alongside a soft copy (PDF). Acceptable digital file formats consist of: .PFD, .SWS, .EWS, .MDX, .IDDX, .PDS .

B. The County Council does not adopt any SuDS schemes at present (although may consider ones which are served by highway drainage only). As such, it should be confirmed prior to commencement of works who will be responsible for SuDS maintenance/management once the development is completed.

C. Any works in or nearby an ordinary watercourse may require consent under the Land Drainage Act (1991) from the County Council. For further advice, or to make an application please contact Flood.Team@derbyshire.gov.uk.

D. No part of the proposed development shall be constructed within 5-8m of an ordinary watercourse and a minimum 3 m for a culverted watercourse (increases with size of culvert). It should be noted that DCC have an anti-culverting policy.

E. The applicant should be mindful to obtain all the relevant information pertaining to proposed discharge in land that is not within their control, which is fundamental to allow the drainage of the proposed development site.

F. The applicant should demonstrate, to the satisfaction of the Local Planning Authority, the appropriate level of treatment stages from the resultant surface water discharge, in line with Table 4.3 of the CIRIA SuDS Manual C753.

G. The LLFA requires that site surface water drainage is designed in line with DEFRA's National standards for sustainable drainage systems (2025).

H. Surface water management should be considered at the earliest stages of site appraisal, planning and design. The drainage design should be integrated throughout the site layout, utilising existing landform to manage surface water in mini/sub-catchments as close to the source as possible, rather than a single attenuation feature located prior to the point of discharge.

I. Surface water drainage plans should include the following:

- Rainwater pipes, gullies and drainage channels including cover levels.
- Inspection chambers, manholes and silt traps including cover and invert levels.
- Pipe sizes, pipe materials, gradients, flow directions and pipe numbers.
- Soakaways, including size and material.
- Typical inspection chamber / soakaway / silt trap and SW attenuation details.
- Site ground levels and finished floor levels.

J. On Site Surface Water Management;

- The site is required to accommodate rainfall volumes up to the 1% AEP event (plus climate change) whilst ensuring no flooding to buildings or adjacent land.

- The applicant will need to provide details and calculations including any below ground storage, overflow paths (flood routes), surface detention and infiltration areas, etc, to demonstrate how the 3.3% AEP event + climate change and 1% AEP event + climate change rainfall volumes will be controlled and accommodated. The most up to date EA climate change allowances should be used. In addition, an appropriate allowance should be made for urban creep throughout the lifetime of the development as per 'BS 8582:2013 Code of Practice for Surface Water Management for Developed Sites' (to be agreed with the LLFA).

- Production of a plan showing above ground flood pathways (where relevant) for events in excess of the 1% AEP event, to ensure exceedance routes can be safely managed.

- A plan detailing the impermeable area attributed to each drainage asset (pipes, swales, etc), attenuation basins/balancing ponds are to be treated as an impermeable area.

Peak Flow Control

- Interception shall be delivered within the development for the first 5mm of rainfall for the majority of rainfall events, for both winter (50% of events) and summer (80% of events).

- For greenfield developments, the peak allowable discharge rate from the development to surface waters or sewers for the 50% AEP event shall be limited to the equivalent 50% AEP greenfield runoff rate, or 3 l/s/ha, whichever is the greater.

- For developments which were previously developed, a 'relaxation factor' shall be applied to the target 50% greenfield runoff rate where evidence is provided that demonstrates why greenfield runoff or 3l/s/ha rates cannot be achieved.

  Note:- If the greenfield run-off for a site is calculated at less than 2 l/s, then a minimum of 2 l/s could be used (subject to approval from the LLFA).

Volume Control

- Where the volume of runoff discharged from the development to surface waters or sewers for the 1% AEP, 6-hour rainfall event is greater than the volume of greenfield runoff for the same rainfall event, the peak allowable discharge rate from the development for the 1% AEP event shall be limited to the 50% AEP greenfield runoff rate or 3l/s/ha, whichever is the greater.

- Where the volume of runoff discharged from the development to surface waters or sewers for the 1% AEP, 6-hour rainfall event is less than or equivalent to the volume of greenfield runoff for the same event, the peak allowable discharge rate from the development for the 1% AEP event shall be limited to the 1% AEP greenfield runoff rate or 3l/s/ha, whichever is the greater.

- For previously developed sites a 'relaxation factor' shall be applied to the target 50% and 1% AEP greenfield runoff rates where evidence is provided that demonstrates why greenfield runoff or 3l/s/ha rates cannot be achieved and this is agreed with the approving body.

- Details of how the on-site surface water drainage systems shall be maintained and managed after completion and for the lifetime of the development to ensure the features remain functional.

- Where cellular storage is proposed and is within areas where it may be susceptible to damage by excavation by other utility contractors, warning signage should be provided to inform of its presence. Cellular storage and infiltration systems should not be positioned within the highway.

- Guidance on flood pathways can be found in BS EN 752.

- The entire development area that could potentially drain to the proposed surface water drainage system in an extreme event shall be used for estimating greenfield runoff rates and volumes (including both permeable and impermeable surfaces).

K. If infiltration systems are to be used for surface water disposal, the following information must be provided:
   - Ground percolation tests to BRE 365.

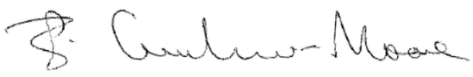
- Ground water levels records. Minimum 1m clearance from maximum seasonal groundwater level to base of infiltration compound. This should include assessment of relevant groundwater borehole records, maps and on-site monitoring in wells.
- Soil / rock descriptions in accordance with BS EN ISO 14688-1:2002 or BS EN ISO 14689-1:2003.
- Volume design calculations to 1% AEP event + 40% climate change standard. An appropriate factor of safety should be applied to the design in accordance with CIRIA C753 – Table 25.2.
- Location plans indicating position (soakaways serving more than one property must be located in an accessible position for maintenance). Soakaways should not be used within 5m of buildings or the highway or any other structure.
- Drawing details including sizes and material.
- Details of a sedimentation chamber (silt trap) upstream of the inlet should be included.

Soakaway detailed design guidance is given in CIRIA Report 753, CIRIA Report 156 and BRE Digest 365.

L. The applicant should submit a comprehensive management plan detailing how surface water shall be managed on site during the construction phase of the development ensuring there is no increase in flood risk off site or to occupied buildings within the development.

M. The applicant should manage construction activities in line with the CIRIA Guidance on the Construction of SuDS Manual C768, to ensure that the effectiveness of proposed SuDS features is not compromised.

Yours sincerely



Jo Crawshaw-Moore
Senior Technician, Flood Risk Management

Checked by: Martin Coleman
Date 01/10/2025