



Planning Department
Gravesham Borough Council
Civic Centre
Windmill Street
Gravesend
Kent
DA12 1AU

Roads & Sewers for Planning &
Design Ltd
The Business Suite
Maidstone House
King Street
Maidstone
Kent
ME15 6JQ

Email: Jamie.finch@roadsandsewers.co.uk
Telephone: 01622 910125
Mobile: 07876 573377
Ask for: Jamie Finch
Job No: **6348**
Date: 27th September 2026

Dear Sir/Madam,

RE: Flood Risk Assessment and Drainage Strategy for the benefit of a planning application for Residential Development of up to 67 new dwellings, located at Woodlands Farm, Wrotham Road, Culverstone, Gravesend, Kent, TN15 7LA

Following Kent County Council's review of the RSPD FRA & DS for Woodlands Farm, which was submitted as part of the planning application for the scheme, they provided the following comments as part of a letter response dated 10/09/2026:

- 1. While the Flood Risk Assessment (FRA) includes details of the proposed drainage strategy, the main body of the report little detail on the parameters used, including urban creep allowances, and the proposed attenuation volumes etc. to demonstrate they are appropriate. Presently the simulation settings use the default values for Cv. This should be set to 1 when modelling only impermeable areas.*

A 10% allowance for urban creep has now been incorporated into the surface water drainage calculations. The updated results demonstrate that the proposed drainage system continues to operate without flooding within the system for all events up to and including the 1 in 100-year event with 45% climate change allowance.

The Cv values within the simulation settings have also been updated to 1, in accordance with the modelling requirements for impermeable areas. The FLOW calculations have been re-attached for reference.



2. *A catchment plan identifying and clearly labelling the site's impermeable and permeable areas has not been submitted. This information is required to demonstrate how surface water runoff has been calculated and managed across the development. Contributing permeable areas (e.g. footprints of the basins and swales) should not be ignored.*

A catchment plan has now been prepared identifying and clearly labelling the impermeable areas across the development. The plan includes the contributing permeable areas associated with the proposed drainage features, including the footprints of the basins and swales, to ensure these areas are appropriately accounted for within the surface water runoff calculations.

3. *The infiltration rates have not been explicitly stated within the main body of the report. These values should be clearly presented to support the proposed drainage approach along with chosen factors of safety to demonstrate they have been appropriately selected.*

The infiltration rate for the proposed deep bore soakaways has been assumed pending completion of soakage testing within a borehole. The assumed infiltration rate has been based on previous testing results obtained from a site with similar underlying geology, namely chalk. An infiltration rate of 3.85×10^{-5} m/s has therefore been adopted for the purposes of the current drainage calculations.

The infiltration rate will be reviewed and updated following completion of the proposed borehole soakage testing.

Following the comments received, the drainage calculations and supporting information have been reviewed and updated accordingly. A catchment plan has been provided to clearly identify the impermeable areas contributing to the proposed drainage model, including the areas associated with the proposed basins.

The infiltration rate adopted for the proposed deep bore soakaways has also been clearly stated. An assumed infiltration rate of 3.85×10^{-5} m/s has been used based on previous testing undertaken within similar chalk geology, pending completion of site-specific borehole soakage testing.



The drainage calculations have been updated to incorporate a 10% allowance for urban creep, with the Cv values set to 1 for the impermeable areas. The updated modelling demonstrates that the proposed drainage system continues to operate without flooding for all events up to and including the 1 in 100-year event plus 45% climate change allowance.

It is therefore considered that the information requested has now been provided and that the proposed drainage strategy remains appropriate for the development.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'Luke Shaw', written over a light blue horizontal line.

Luke Shaw AMIHE
Civil Engineer
Roads & Sewers for Planning & Design