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Project No: 26178

Project: Greenbanks Farm, Green Lane, Grindleton, BB7 4QJ

Subject: Drainage Statement

Date: 13 July 2026



Figure 1.1 - Location Plan



1.0 GENERAL

This statement supports the planning application for the proposed development at Greenbanks Farm, Green Lane, Grindleton, BB7 4QJ. The proposed development comprises the erection of a steel portal frame agricultural building for the housing of livestock and storage of manure, together with an extension to the existing hardstanding within the established farmyard. The drainage arrangements relate solely to surface water generated by the development and have been prepared in accordance with Building Regulations, the National Planning Policy Framework (NPPF), and Ribble Valley Borough Council as their capacity as Lead Local Flood Authority (LLFA) guidance.

The drainage strategy demonstrates how surface water from the proposed development will be managed sustainably through attenuation and controlled discharge, following the drainage hierarchy set out in the Planning Practice Guidance. The design seeks to ensure that runoff from the site is discharged at an equivalent or reduced rate compared with existing conditions, with no increase in off-site flood risk.

The site at Greenbanks Farm, Green Lane, Grindleton, BB7 4QJ comprises an established agricultural farmyard and associated agricultural land. Architectural drawings and drainage layouts produced as part of this application are referenced throughout this report. The development is not located within a Critical Drainage Area. Sustainable drainage measures are proposed to ensure that surface water is managed in accordance with national policy and Lead Local Flood Authority requirements.

2.0 DRAINAGE DESIGN

2.1 Surface Water Drainage

2.1.1 Drainage Strategy

1st Choice - Discharge to Soakaway

In accordance with the drainage hierarchy set out within the Building Regulations and Planning Practice Guidance for the disposal of surface water, the initial consideration has been given to the use of soakaway drainage systems.

British Geological Survey mapping confirms that the superficial deposits beneath the site comprise Devensian Till (Diamicton), a dense glacial deposit that is typically clay-rich and associated with low permeability. The underlying bedrock geology comprises the Clitheroe Limestone Formation and Hodder Mudstone Formation (Undifferentiated). Whilst limestone can exhibit permeable characteristics where fractured, the presence of the overlying glacial till and mudstone deposits is likely to significantly restrict infiltration potential across the site.

Soil mapping identifies the site as Soilscape 17 – slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. This classification is consistent with

the mapped geological conditions and indicates generally slow infiltration rates, seasonal waterlogging and elevated surface water runoff. Consequently, ground conditions are anticipated to provide restricted and potentially poor soakage characteristics.

As a result, ground conditions at Greenbanks Farm, Green Lane, Grindleton, BB7 4QJ are currently considered unlikely to support viable soakaway systems, and infiltration is not presently proposed as the primary method of surface water disposal.

At this stage, BRE365 infiltration testing has not been undertaken; however, based on the published geological and soil mapping, infiltration potential is considered to be limited. As such, soakaway systems have not been considered feasible at this stage. Should infiltration testing be undertaken at a later stage and demonstrate suitable infiltration rates, the drainage strategy may be reviewed accordingly.

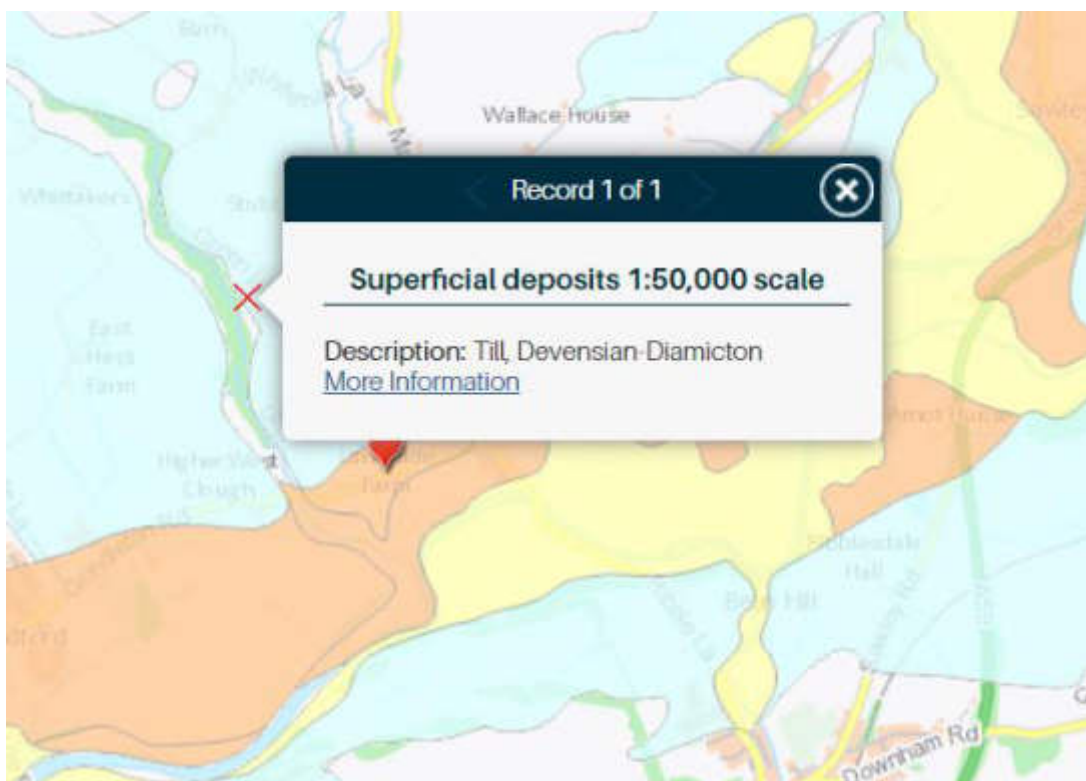


Figure 2.1 – Superficial Geology

2nd Choice - Discharge to Watercourse

West Clough Brook is located immediately to the west of the site and represents a suitable and accessible receiving watercourse for surface water runoff from the proposed development. The approved site layout indicates that the brook lies in close proximity to the proposed agricultural building and existing farmyard, allowing a gravity discharge to be achieved, subject to detailed design and confirmation of levels.

In accordance with the drainage hierarchy, discharge to West Clough Brook is considered to be the preferred method of surface water disposal following the assessment of infiltration potential. Surface water runoff from the proposed development will be attenuated on site and discharged at a controlled rate to the



watercourse, ensuring that runoff from the development does not increase flood risk elsewhere.

The feasibility of this option will be subject to the detailed design of the outfall arrangement and the necessary third-party permissions and regulatory consents, including any Land Drainage Act consent, where required. Subject to these approvals, discharge to West Clough Brook is considered to provide a sustainable and policy-compliant means of surface water disposal for the proposed development.

3rd Choice - Discharge to Surface Water Sewer

The third option in the drainage hierarchy is discharge to a public surface water sewer.

United Utilities sewer records do not identify any public surface water sewers within the vicinity of Greenbanks Farm, Green Lane, Grindleton, BB7 4QJ. As such, there is no practical opportunity to connect the proposed development to a public surface water sewer.

Accordingly, discharge to a public surface water sewer is not considered to be a viable option for the proposed development.

4th Choice - Discharge to Combined Sewer

The final option within the drainage hierarchy is discharge to a public combined sewer.

United Utilities sewer records do not identify any public combined sewers within the vicinity of the site. Consequently, there is no feasible connection point available for the proposed development.

As no public combined sewer is available within the vicinity of the site, discharge to a combined sewer is not considered to be a viable option. In any event, the preferred strategy is to discharge attenuated surface water runoff to West Clough Brook, in accordance with the drainage hierarchy and subject to the necessary consents.



Surface Water Drainage Design

As the development site has not been previously developed (greenfield), greenfield runoff rates are considered applicable. In accordance with current guidance, the discharge rate has therefore been restricted to greenfield rates. A restricted discharge rate of 3.0 l/s has been adopted to ensure effective operation of the flow control device, reducing the risk of blockage and complying with Lead Local Flood Authority and United Utilities guidance.

The proposed development comprises the erection of a steel portal frame agricultural building for the housing of livestock and storage of manure, together with an extension to the existing hardstanding within the established farmyard. In accordance with current best practice, a 10% urban creep allowance has also been incorporated into the impermeable area calculations to account for the potential future increase in paved surfaces over the lifetime of the development. Consequently, the attenuation requirements have been increased accordingly to ensure sufficient storage capacity is provided. Surface water discharge from the site will be restricted to 3.0 l/s, with any exceedance above this rate managed through on-site attenuation. This approach is consistent with the requirements for development on previously undeveloped (greenfield) land and accords with LLFA guidance for the 1 in 100-year storm event plus 50% climate change allowance.

2.1.2 Sustainable Drainage Systems (SuDS)

The proposed drainage strategy incorporates Sustainable Drainage Systems (SuDS) principles in accordance with the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG) and the Defra Non-Statutory Technical Standards for Sustainable Drainage Systems.

Surface water runoff from the proposed agricultural building will be collected via a separate surface water drainage system and conveyed to an underground geocellular attenuation storage system. The attenuation system will provide approximately 50m³ of storage prior to discharge through a Hydrobrake flow control device, restricting discharge to 3.0 litres per second before discharging to West Clough Brook.

The proposed attenuation system provides the primary SuDS component for the development by reducing peak runoff rates and providing temporary storage during storm events. The use of below-ground attenuation has been selected due to the operational requirements of the existing agricultural yard, where above-ground SuDS features such as swales, detention basins or rain gardens would conflict with farm operations, vehicle movements and livestock management.

The proposed drainage strategy therefore provides a sustainable means of managing surface water whilst ensuring that runoff from the development does not increase flood risk elsewhere.



2.1.4 Management and Maintenance

The proposed surface water drainage system will remain under the ownership and responsibility of the site owner and will be maintained for the lifetime of the development.

Routine maintenance shall include:

- Inspection of all inspection chambers and catchpits every six months and following significant storm events.
- Removal of accumulated silt, debris and vegetation from chambers and pipework as required.
- Inspection and maintenance of the Hydrobrake flow control device in accordance with the manufacturer's recommendations.
- Inspection of the geocellular attenuation system via the inspection chambers, with jetting undertaken where necessary to maintain hydraulic performance.
- Regular inspection of the outfall to West Clough Brook to ensure it remains free from blockage, erosion and excessive vegetation growth.
- Any damaged drainage components shall be repaired or replaced as necessary to ensure the drainage system continues to operate as designed.

These maintenance activities will ensure the drainage system continues to provide the required level of flood protection throughout the operational life of the development.

2.1.3 Climate Change

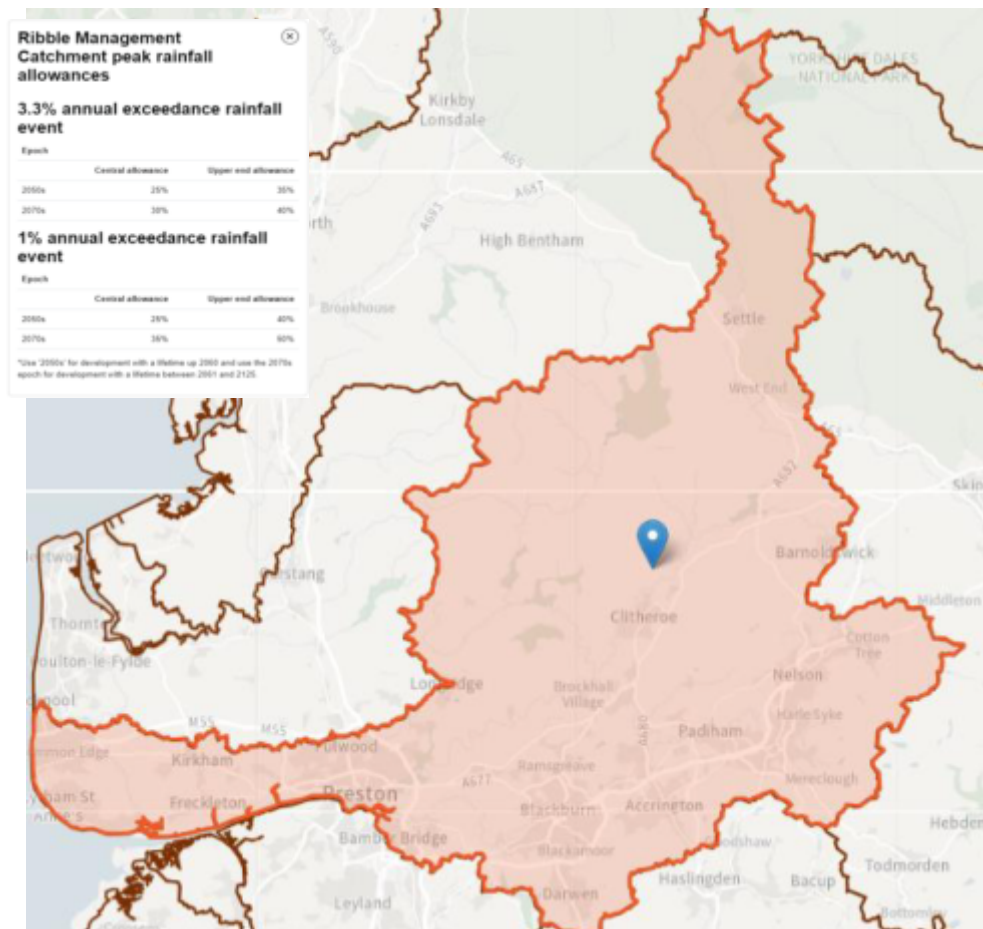


Figure 5 – Climate Change

The design criteria for network modelling to be used for the site is:

- 1 in 30 year no surcharging of the surface water network.
- 1 in 100 year (+ 50% climate change, see Figure 5 above) will be contained within the attenuation, and the volume has been indicated for the development site.
- The roof water from the proposed development will be directed into the on-site attenuation system.
- A bypass separator upstream of the proposed attenuation structure is not considered a requirement due to the limited number of parking bays for the proposed development.

2.2 Foul Drainage

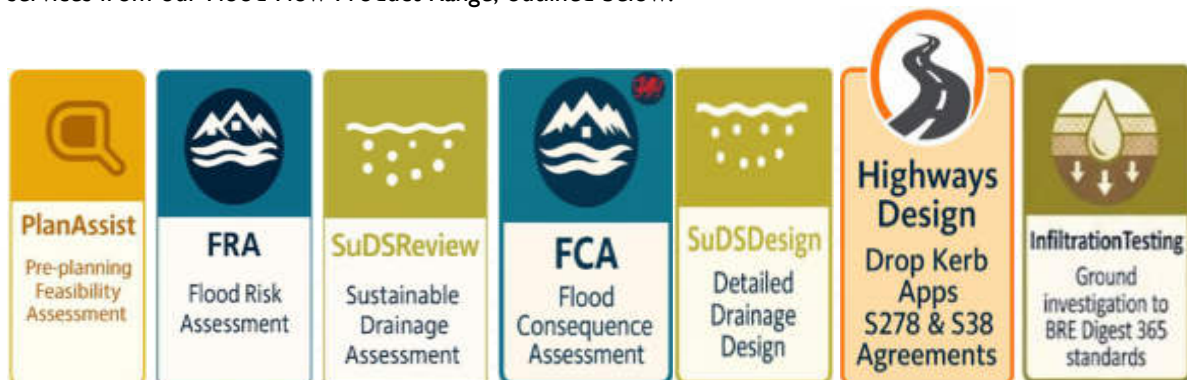
There is no proposed foul drainage for the proposed development.

Appendices

- Appendix A – Public Sewer Records
- Appendix B - Flood Flow Drawing Number 26178.001 – Drainage Layout.
- Appendix C – Attenuation Calculations

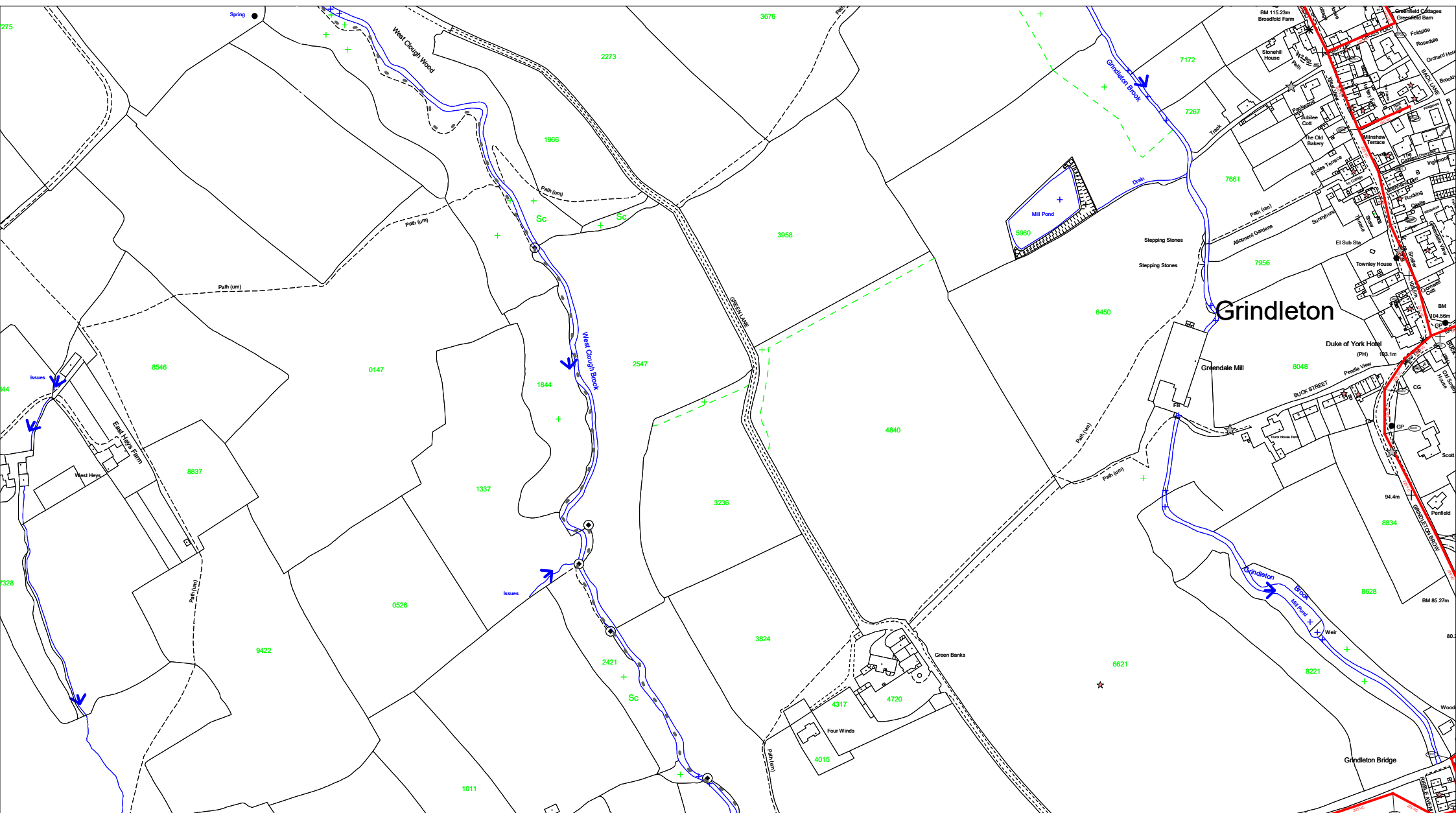
Flood Flow Product Range

We also offer a wider range of supporting reports and assessments. Please get in touch if you require additional services from our Flood Flow Product Range, outlined below.



APPENDIX A





APPENDIX B



APPENDIX C



Greenbanks Farm, Green Lane, Grindleton, BB7 4QJ

Attenuation Calculations

Quick Storage Estimate

Micro Drainage

Variables

FSR Rainfall

Return Period (years) 100

Region England and Wales

Map

M5-60 (mm) 19.000

Ratio R 0.300

Cv (Summer) 0.750

Cv (Winter) 0.840

Impermeable Area (ha) 0.082

Maximum Allowable Discharge (l/s) 3.0

Infiltration Coefficient (m/hr) 0.00000

Safety Factor 1.0

Climate Change (%) 50

Analyse OK Cancel Help

Enter Infiltration Coefficient between 0.00000 and 100000.00000

Quick Storage Estimate

Micro Drainage

Results

Global Variables require approximate storage of 50 m³.

Analyse OK Cancel Help

Enter Infiltration Coefficient between 0.00000 and 100000.00000