

Date: 20/08/26
REV: B

DRAINAGE TECHNICAL NOTE

19 Grovelands Road, Spencers Wood, Reading, RG7 1DP

INTRODUCTION

This Technical Note has been prepared in response to comments received from the Council's Drainage Officer regarding the submitted surface water drainage strategy for the proposed development at 19 Grovelands Road, Spencers Wood, Reading, RG7 1DP.

The drainage strategy was revised following BRE365 infiltration testing which demonstrated that infiltration techniques, including soakaways, were not feasible at the site. The revised drainage proposal therefore utilises permeable paving attenuation with a restricted discharge to the sewer network.

It should also be noted that the existing site currently disposes of surface water runoff directly to the sewer network. The proposed development introduces attenuation and flow control measures, providing an improvement over the existing drainage arrangement by storing water on site and controlling the rate of discharge during storm events.

RESPONSE TO DRAINAGE OFFICER COMMENTS

1 WRITTEN CONFIRMATION OF THE CHANGE IN DRAINAGE STRATEGY

The original drainage strategy considered the use of soakaways in accordance with the SuDS hierarchy. However, BRE365 infiltration testing demonstrated that the ground conditions at the site were unsuitable for infiltration drainage, under building regulations a 5m clearance needs to be provided from structure to soakaway, the site constraints mean that a 5m clearance from the proposed building and neighboring properties would leave only a limited area for a soakaway which is why this was discounted.

As a consequence, soakaways have been discounted and the drainage design has been amended to provide attenuation storage within a permeable paving system with a restricted discharge to the sewer network.

The proposed system temporarily stores runoff generated by the development and releases it at a regulated rate through the flow control chamber. This Technical Note therefore confirms that the drainage strategy has changed from infiltration via soakaway to attenuation within permeable paving with restricted discharge into the surface water sewer. The condition submission confirms the final drainage strategy change for the site.

2 CONFIRMATION THAT THE STORAGE STRUCTURE IS FULLY IMPERMEABLE

The proposed permeable paving attenuation system has been designed as a sealed storage structure and does not rely upon infiltration into the surrounding ground.

The submitted construction details identify that the permeable paving sub-base is lined with an impermeable membrane. Water is retained within the storage layer and discharged through the designed control chamber and outlet arrangement.

The hydraulic model also assumes no ground infiltration, with the infiltration coefficient set to zero. This confirms that the storage structure is impermeable, that no runoff is intended to infiltrate into the ground, and that stored water is discharged through the flow control system.

3 THAMES WATER ACCEPTANCE OF PROPOSED SEWER CONNECTION AND DISCHARGE RATE

The drainage design incorporates flow attenuation and a controlled outfall via a 20 mm diameter orifice before discharge to the sewer network.

Formal Thames Water approval has not yet been obtained. A Section 106 Sewer Connection Application will be submitted to Thames Water prior to implementation of the drainage connection works and in accordance with the relevant statutory approval process.

The proposed discharge rate and attenuation performance have been provided within the submitted drainage calculations for review by the Drainage Officer / LLFA. The proposed arrangement should also be considered in the context that the existing site already drains surface water directly to the foul sewer network. The proposed scheme improves on the existing arrangement by introducing attenuation storage and controlled discharge.

It is therefore respectfully requested that the planning condition may be discharged on the basis of the submitted drainage strategy, and as then approved with further Thames Water Section 106 approval to be secured prior to construction of the drainage connection.

4 CLARIFICATION OF FLOOD RISK STATUS WITHIN THE MICRODRAINAGE RESULTS AND DESIGN CHECKS

The submitted MicroDrainage calculations include 'Flood Risk' status entries for certain storm events. These entries are understood to be software warnings rather than evidence of actual flooding of the site or failure of the drainage system.

The warning is generated when the retained water level within the attenuation structure approaches the software threshold close to cover level. In a permeable paving attenuation system, temporary storage of runoff within the sub-base is an intended part of the design and these warnings can arise during extreme design storm events.

The modelling results show a flooded volume of 0.0 m3 for the modelled storm events. The results also show that controlled discharge is maintained through the outlet control and that the system has been assessed for the 1 in 100 year storm event including a 40% climate change allowance.

The 'Flood Risk' notation should therefore be interpreted as a software warning relating to storage depth rather than evidence of actual surface flooding or exceedance of system capacity. The drainage design was prepared by Lanmor Consulting and issued following the consultant's normal internal review and checking procedures.

5 MAINTENANCE AND MANAGEMENT PLAN

The proposed SuDS feature comprises a permeable paving attenuation system. Ongoing maintenance will be undertaken on behalf of the Trust to ensure that the system continues to operate effectively throughout the lifetime of the development.

Maintenance type	Required action	Typical frequency
Regular maintenance	Remove debris, leaves and detritus from the permeable paving surface, with particular attention to areas receiving runoff from adjacent impermeable surfaces.	Annually, after autumn leaf fall, or more frequently if site inspections identify clogging risk.
Occasional maintenance	Stabilise and maintain adjacent landscaped areas and remove weeds from paved areas where required.	As required.
Remedial actions	Remediate landscaping where vegetation or soil migration affects pavement levels; repair depressions, rutting or localised settlement; rehabilitate surface and upper substructure if infiltration/percolation performance through the pavement surface is reduced.	As required; major rehabilitation typically every 10 to 15 years or as site performance dictates.
Monitoring	Inspect for evidence of poor operation, weed growth, silt accumulation and flow control/inspection chamber condition.	Three-monthly and following large storm events during the first six months, then annually once satisfactory operation is established.
Long-term management	Include all inspection, cleaning, repair and rehabilitation requirements within the site Operation and Maintenance Manual.	For the lifetime of the development; responsibility to remain with the site owner or management body.

CONCLUSIONS

The drainage strategy submitted for the development demonstrates the following:

- BRE365 testing has reasonably discounted infiltration drainage and soakaways as a viable solution for the site.
- The revised strategy comprises permeable paving attenuation with restricted discharge to the sewer network.
- The attenuation structure is impermeable and does not rely on ground infiltration.
- The MicroDrainage 'Flood Risk' warnings relate to software reporting thresholds and do not represent actual flooding; the modelled flooded volume is 0.0 m3.
- The system has been assessed for the 1 in 100 year storm event including a 40% climate change allowance.
- The proposal improves upon the existing site arrangement by introducing attenuation and controlled discharge, where surface water currently drains directly to the sewer network.
- Appropriate maintenance and management measures have been identified for the long-term operation of the drainage system.

On the basis of the information provided, it is respectfully considered that the outstanding drainage matters have been addressed and that the surface water drainage condition can be discharged.