

DRAINAGE ASSESSMENT

Land to the North of 6 Woodlands Avenue

Woodley, Reading, RG5 3HJ

Planning Application Submission

Site Address	Land to the North of 6 Woodlands Avenue, Woodley, Reading, RG5 3HJ
Local Planning Authority	Wokingham Borough Council
Development Type	Residential (Flats)
Approximate Site Area	Under 0.1 hectare
Document Status	Preliminary Drainage Assessment for Planning
Date	17th May 2026

1. Introduction

This Preliminary Drainage Statement has been prepared in support of a planning application for residential development on land to the north of 6 Woodlands Avenue, Woodley, Reading (RG5 3HJ), within the administrative boundary of Wokingham Borough Council.

The purpose of this document is to demonstrate that surface water drainage has been considered at a preliminary planning stage and that an appropriate surface water drainage strategy is likely capable of being achieved in principle for the proposed development.

This document has been prepared proportionately to the current planning stage of the proposals and is intended solely to support the planning application submission. It does not constitute a detailed drainage design, hydraulic calculation package, or engineering specification.

The document:

- considers the SuDS hierarchy at a high level
- identifies known site constraints that may influence drainage design
- outlines a potential surface water drainage approach
- demonstrates that a viable drainage solution is anticipated to be achievable without increasing flood risk elsewhere

Detailed drainage design will be subject to:

- topographical survey
- ground investigation and infiltration testing
- utility and sewer investigations
- hydraulic modelling
- detailed engineering design
- statutory approvals and agreements with relevant authorities, including Thames Water

The detailed drainage proposals may therefore evolve following further technical investigations and specialist consultant input.

2. Policy and Regulatory Framework

2.1 National Planning Policy Framework (NPPF)

The NPPF (2023) requires that development should ensure flood risk is not increased elsewhere and that sustainable drainage systems (SuDS) are incorporated where appropriate. Planning Practice Guidance (PPG) on Flood Risk and Coastal Change provides detailed guidance on drainage requirements for new development.

2.2 Flood and Water Management Act 2010 - Schedule 3

Schedule 3 requires that new drainage systems for construction of buildings or other impermeable surfaces with a drainage area of 100m² or more must comply with the Non-Statutory Technical Standards for SuDS. In England, the Lead Local Flood Authority (LLFA) – Wokingham Borough Council – is a statutory consultee on major applications and must be satisfied that the SuDS standards are met.

2.3 Wokingham Borough Council Local Plan

Policy CC02 of the adopted Wokingham Borough Local Plan requires developments to incorporate SuDS and to demonstrate that surface water run-off rates and volumes are managed appropriately. The Council follows the national SuDS drainage hierarchy, with infiltration as the first-choice option where ground conditions permit.

2.4 Non-Statutory Technical Standards for SuDS (DEFRA, 2015)

The Non-Statutory Technical Standards set minimum performance requirements for SuDS including:

- Peak run-off rates must not exceed greenfield rates for the 1 in 1 year and 1 in 100 year events.
- Run-off volumes must not exceed greenfield volumes for the 1 in 100 year, 6-hour event.
- Drainage systems must incorporate 40% climate change allowance for all events.
- SuDS must be designed for maintenance throughout the development's lifetime.

3. Site Description and Existing Conditions

3.1 Location and Setting

The application site is located to the north of 6 Woodlands Avenue, Woodley, Reading, RG5 3HJ. The site falls within the administrative boundary of Wokingham Borough Council. The site area is under 0.1 hectare. The surrounding area is predominantly residential in character.

Lytham Road lies in proximity to the site and carries a Thames Water surface water drainage sewer, which forms the proposed ultimate discharge point for the development's managed surface water drainage system.

3.2 Existing Land Use and Drainage

The site is currently undeveloped or greenfield land. Rainfall currently drains naturally via infiltration into the ground and through vegetation, with no formal drainage system on site. The site therefore currently operates as a fully permeable surface.

A topographic survey has not been undertaken at this planning stage; one will be commissioned prior to detailed design to confirm finished ground levels, drainage gradients, and outfall routes.

3.3 Flood Risk

Based on the Environment Agency Flood Map for Planning, the application site is understood to lie within Flood Zone 1, indicating a low probability of flooding from rivers or the sea. There is no known fluvial or tidal flood risk associated with the site.

Surface water flood risk has been reviewed using publicly available mapping. Residual surface water flood risk will be addressed through the proposed drainage design and appropriate finished floor levels, which will be established at detailed design stage.

3.4 Ground Conditions and Infiltration Potential

At this stage, formal infiltration testing has not been undertaken.

Based on the constrained nature of the site, the presence of multiple surrounding trees and associated Root Protection Areas (RPAs), together with the limited available developable area, infiltration-based drainage solutions may present practical constraints and may not be feasible without impacting retained trees or the proposed development layout.

Accordingly, the current preliminary strategy assumes that attenuation and controlled discharge to the existing surface water sewer network is likely to represent the most practical drainage solution. This assumption will be reviewed following detailed site investigations and specialist drainage design input.

4. SuDS Hierarchy Assessment

Surface water drainage has been considered in accordance with the SuDS hierarchy recommended by the Environment Agency, PPG, and the Non-Statutory Technical Standards for SuDS. The following table summarises the assessment of each option for this site.

#	Option	Assessment	Viable
1	Infiltration to ground (soakaways, infiltration trenches)	Not feasible. The site is under 0.1 hectare and is surrounded by trees with Root Protection Areas (RPAs). There is no available footprint to accommodate soakaways or infiltration features without compromising the trees or the development.	X
2	Discharge to surface watercourse	No surface watercourse is available within a practicable distance of the site.	X
3	Discharge to Thames Water surface water sewer (Lytham Road)	A Thames Water surface water sewer is located on Lytham Road. A geocellular attenuation tank installed beneath the parking area will provide slow, controlled discharge at greenfield rates via a flow control device. Subject to Thames Water approval.	✓
4	Discharge to combined sewer	Not proposed. Only to be considered as absolute last resort if options 1-3 are all demonstrated to be unfeasible.	X

Note: Based on the information currently available, discharge to the Thames Water surface water sewer on Lytham Road appears likely to represent the most feasible drainage option in accordance with the SuDS hierarchy, subject to further technical investigations, hydraulic design, and Thames Water approval.

5. Proposed Drainage Strategy

5.1 Overview

At this preliminary planning stage, it is anticipated that surface water drainage could potentially be managed through a combination of:

- permeable paving within external hardstanding areas
- below-ground attenuation storage
- flow control measures restricting discharge rates
- controlled discharge to the existing Thames Water surface water sewer network

The precise form, sizing, specification, and arrangement of any drainage infrastructure will be subject to detailed engineering design and coordination following planning approval.

The strategy outlined within this document is therefore indicative only and intended to demonstrate that a viable drainage solution is capable of being developed in principle.

5.2 Source Control – Permeable Paving

Permeable paving is anticipated to form part of the drainage strategy for all driveways and parking areas across the development. Permeable paving allows rainfall to pass through the surface layer and be temporarily stored within a granular sub-base before gradual drainage, providing source control and a first stage of attenuation. This reduces the volume and peak rate of run-off entering the downstream attenuation system.

Permeable paving will be designed in accordance with CIRIA C753 and BS 7533. The sub-base will be sized to provide adequate storage between voids, and an overflow route to the main attenuation system will be provided.

5.3 Attenuation Storage

Surface water from roof drainage and any residual run-off not managed by permeable paving will be directed to an underground attenuation system. This provides the principal storage volume within the drainage system, temporarily holding peak storm flows before releasing them at the controlled discharge rate.

The preferred attenuation solution is a modular geocellular (cellular crate) attenuation tank system installed beneath a car parking or landscaped area. Geocellular systems offer a high void ratio (typically 95%) and a compact footprint, making them well-suited to residential sites where above-ground space is constrained. Oversized pipe storage is an alternative where site layout dictates.

Should the scheme progress, detailed hydraulic modelling and drainage design would typically be undertaken by an appropriately

qualified drainage engineer to demonstrate compliance with the following design standards:

- Peak discharge rate at or below greenfield run-off for the 1 in 1 year and 1 in 100 year events.
- Run-off volume not exceeding greenfield volumes for the 1 in 100 year, 6-hour event.
- 40% climate change allowance applied to all design storm events.
- Exceedance flow route designed so that flood water is safely conveyed within the site without flooding to buildings or the public highway.

5.4 Flow Control and Discharge to Lytham Road Surface Water Sewer

A proprietary flow control device (hydro-brake, vortex flow controller, or orifice plate) will be installed at the outlet of the attenuation tank. This device will restrict the discharge rate to the calculated greenfield run-off rate, regardless of the depth of water in storage.

The controlled discharge will connect to the Thames Water surface water sewer on Lytham Road via a new below-ground connection. The route of the connection will be confirmed at detailed design stage following survey of the existing sewer network.

A formal Section 104 agreement (adoption) or Section 106 connection approval will be sought from Thames Water for the sewer connection. A pre-application drainage enquiry will be submitted to Thames Water to confirm:

- The location and capacity of the surface water sewer on Lytham Road.
- The maximum permitted discharge rate Thames Water will accept.
- Any network reinforcement works required as a condition of connection.

Note: The proposed discharge rate to the sewer will not exceed greenfield run-off rates, and in many cases will be lower due to attenuation. This ensures no adverse impact on the capacity of the Thames Water network.

5.5 Rainwater Harvesting (Optional)

Rainwater harvesting tanks may be incorporated at individual plots to collect roof run-off for reuse in garden irrigation and WC flushing. This further reduces the volume of water entering the attenuation system and the rate of discharge to the sewer. This will be assessed at detailed design stage and confirmed in the planning condition discharge submissions.

5.6 Indicative Greenfield Run-off Rates

Any discharge rates and attenuation requirements referenced within this document are preliminary and indicative only and have not yet been verified through detailed hydraulic calculations or site-specific modelling.

Detailed runoff analysis and hydraulic modelling will be undertaken at the detailed design stage by an appropriately qualified drainage engineer using site-specific survey and investigation data.

Return Period	Indicative Greenfield Rate (l/s/ha)	Design Requirement
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1 in 1 year (QBAR)	~2.0 l/s/ha	Discharge rate ≤ greenfield
1 in 30 year	~4.5 l/s/ha	Attenuation required
1 in 100 year	~6.5 l/s/ha	Attenuation required
1 in 100 year + 40% CC	~8.5 l/s/ha	Attenuation + climate change storage required

Note: Indicative values only. To be confirmed with site-specific FEH analysis at detailed design stage.

5.7 Water Quality Treatment

The drainage strategy may incorporate a series of SuDS components intended to assist in the management and treatment of surface water runoff to remove pollutants from surface water run-off prior to discharge to the Thames Water sewer:

- Stage 1 - Source control: permeable paving filters fine sediment and hydrocarbon pollutants from driveway and parking run-off through the surface layer and sub-base.
- Stage 2 - Site control: the geocellular attenuation tank acts as a sedimentation chamber, allowing suspended solids to settle before discharge.
- Stage 3 - Outlet: a silt trap or catchpit will be incorporated upstream of the flow control device and sewer connection to capture any residual sediment and prevent blockage of the public sewer.

Pollutant hazard indices will be assessed in accordance with CIRIA C753 at detailed design stage to confirm that the proposed treatment train is appropriate for the site's land use and drainage catchment.

6. Construction Phase Drainage

Appropriate temporary drainage and pollution prevention measures would be expected to be implemented during construction in accordance with standard construction environmental management practices and any requirements imposed through planning conditions or statutory approvals.

The detailed construction phase drainage arrangements would be developed separately by the appointed contractor and relevant specialist consultants at the appropriate stage.

7. Long-Term Maintenance and Management

7.1 Maintenance Responsibilities

Should planning permission be granted, detailed maintenance responsibilities and management arrangements for the drainage system would be established as part of the detailed drainage design process and secured through the appropriate legal or planning mechanisms where required.

Any future drainage management arrangements would be dependent upon the final drainage design, ownership structure, and statutory approval requirements.

7.2 Indicative Maintenance Considerations

At this preliminary planning stage, it is anticipated that any future surface water drainage system would require periodic inspection, maintenance, and cleaning in accordance with standard SuDS maintenance practices and manufacturers' recommendations. The precise maintenance requirements will depend upon the final drainage design and any drainage features ultimately incorporated within the development.

Detailed maintenance schedules, responsibilities, access arrangements, and management procedures would be established as part of the detailed drainage design process and secured through the appropriate planning or legal mechanisms where required.

7.3 Drainage Management Plan

If required by planning condition, a future Drainage Management Plan may be prepared prior to commencement of development (or as required by planning condition). The DMP will include:

- As-built drainage drawings and a full drainage asset register.
- Detailed maintenance schedules for all SuDS features and drainage assets.
- Named responsible parties and contact details for each drainage asset.
- Inspection and maintenance record pro-formas for ongoing use by the management company.
- Financial arrangements for long-term maintenance funding.
- Emergency procedures in the event of drainage failure.

8. Summary and Conclusions

This Preliminary Drainage Statement demonstrates that surface water drainage has been considered at an appropriate level for the current planning stage.

Based on the information presently available, it is considered likely that an appropriate surface water drainage solution can be developed for the site through attenuation and controlled discharge to the existing Thames Water surface water sewer network, subject to:

- detailed engineering design
- hydraulic modelling
- site investigations
- statutory approvals
- agreement with Thames Water

The drainage proposals outlined within this document are preliminary and indicative only and are intended solely to demonstrate that a viable drainage strategy is likely achievable in principle.

Further technical work and specialist consultant input will be required as the project progresses through detailed design stages.

9. Further Information and Next Steps

The following actions are required to progress the detailed drainage design:

- Pre-application drainage enquiry to Thames Water to confirm the surface water sewer location on Lytham Road and the permitted discharge rate.
 - Detailed hydraulic design to size the attenuation tank and flow control device, for submission with a planning condition discharge application.
 - Thames Water connection approval (Section 104 or Section 106) prior to construction.
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Prepared on behalf of the applicant for submission to Wokingham Borough Council.