

Job No. 4515

New Build Property

Land North of 554 Canal Bridge, Semington, BA14 6JT

Surface Water Drainage Strategy

REVISIONS	DATE	INITIALS
Preliminary	2026/04/21	AB

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1. BACKGROUND - Existing Site Runoff

1.1.1. Site area: 0.1373ha

1.1.2. Existing site type: Greenfield

1.1.3. Soil type SPR: 0.47 - The Existing site runoff rates are shown in Appendix A.

1.1.4. Proposed Impermeable area: House roof: 311m² – Semi Impermeable area: Driveway and hardstanding: 289m²

1.1.5. The site is currently pastureland. Excess water runs off the compacted topsoil and into the Eastern parcel before entering the ditch on the Eastern boundary.

2. SuDS HIERARCHY

The following paragraphs in this section outline the drainage strategy to meet national and local design requirements and guidance.

2.1.1. Current guidance requires that new developments implement means of storm water control, known as SUDS (Sustainable Drainage Systems), to maintain flow rates discharged to the surface water receptor at the pre-development 'baseline conditions' and improve the quality of water discharged from the land.

2.1.2. It is the intention to implement a SUDS compliant scheme at the proposed development.

2.1.3. When appraising suitable storm water discharge options for the site, Part H of the Building Regulations 2010 (and associated guidance from Wiltshire Developer's guidance note) provides the following search sequence for identification of the most appropriate drainage methodology.

- a. Surface Water runoff is collected for use (Water Butts will be used for water storage collection for watering plants and washing cars)
- b. **Infiltration:** Discharge into the ground via infiltration: Unfeasible. The soil is clay based and therefore the infiltration rate is likely below 1×10^{-6} m/s.
- c. **Watercourse: Proposed** - Discharge to a watercourse or other surface water body (The main rainwater will discharge to an attenuation pond before discharging to an open drainage ditch along the eastern site boundary)
- d. **Sewer: N/A** (unless the ditch is unavailable)

3. PEAK FLOW CONTROL

3.1. Greenfield Runoff Rate (Q_{BAR}): 0.55 l/s

3.2. 1 in 100 year Greenfield Rate: 1.75 l/s

3.3. Proposed Discharge Rate: 2.0 l/s

Discharge is limited to 2.0 l/s as a minimum practicable limit to prevent orifice blockage, providing betterment for smaller storm events.

4. VOLUME CONTROL & STORAGE

4.1. Storage Method: Water Butts, Open Basin/ Pond.

- 4.2. Design Standard: The system is designed for the 1 in 100 year event + 40% climate change.
- 4.3. Attenuation Volume: 65m³.
- 4.4. Exceedance: Finished floor levels are set 300mm above the ground level and floor flow routes are directed toward the eastern boundary ditch.

5. WATER QUALITY (Treatment)

- 5.1. Pollution hazard level "Low" (Residential).
- 5.2. Treatment Stages:
 - a. Permeable paving for driveway, paths, terrace
 - b. Attenuation pond for rainwater runoff

6. MAINTENANCE

- 6.1. Storage Method: Open Basin/ Pond.
- 6.2. Design Standard: The system is designed for the 1 in 100 year event + 40% climate change.
- 6.3. Attenuation Volume: 65m³.
- 6.4. Exceedance: Finished floor levels are set 300mm above the ground level and floor flow routes are directed toward the eastern boundary ditch.

7. APPENDIX

- a. Drainage layout plan – Drawing 4515 – AL(1)02 Rev B
- b. Runoff calculations: The UK SuDS report attached.
- c. Maintenance Plan

END

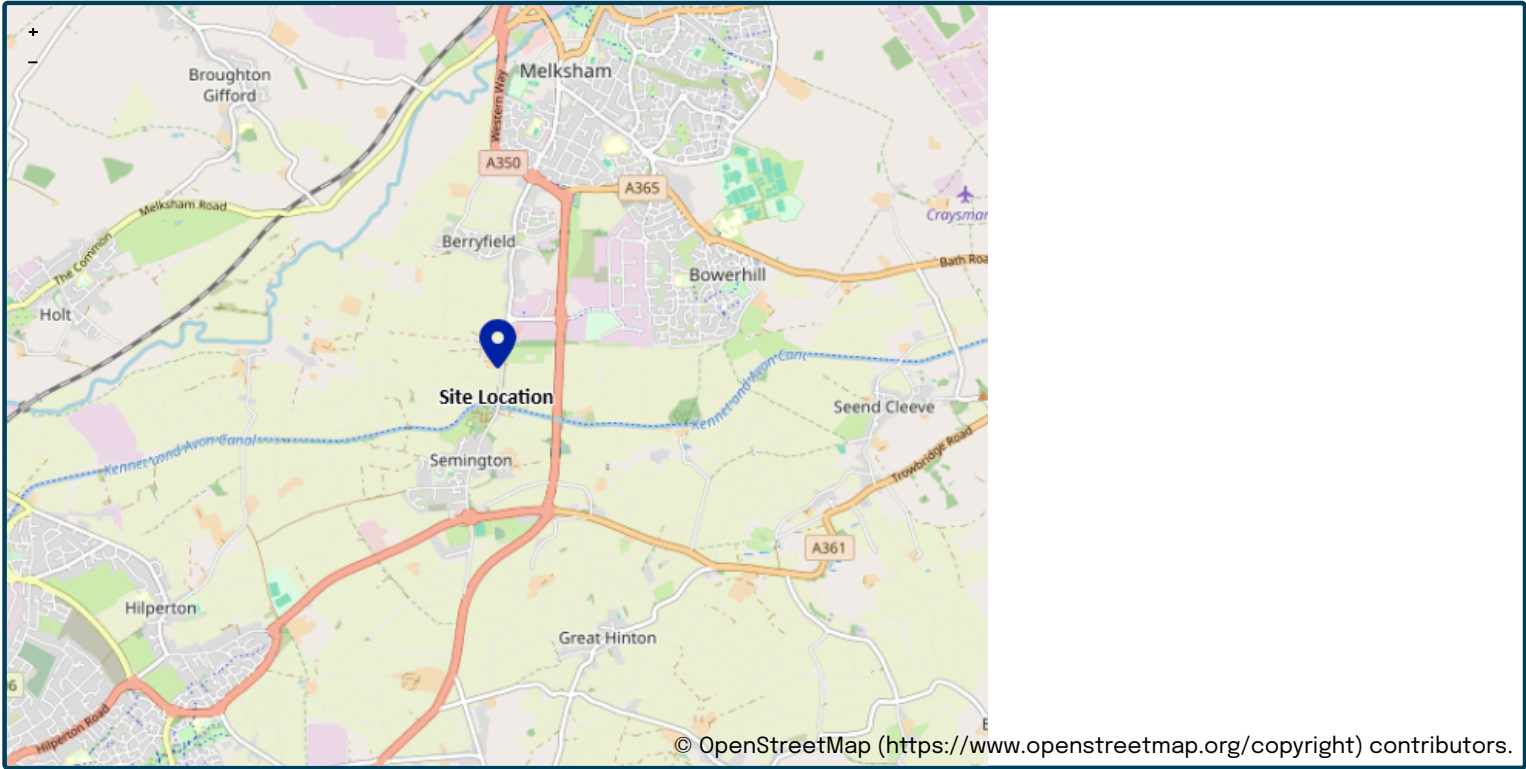
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	21/04/2026
Calculated by	Adam Brill
Reference	4515
Model version	2.2.3

Location

Site name	554 Canal Bridge
Site location	Semington



Site easting (British National Grid)	389968
Site northing (British National Grid)	161156

Site details

Total site area (ha)	0.1374	ha
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Greenfield runoff

Method

Method	IH124
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IH124

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	699	mm	699
How should SPR be derived?	WRAP soil type		
WRAP soil type	4		4
SPR	0.47		
QBar (IH124) (l/s)	0.7	l/s	

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	8		8
1 year growth factor	0.78		
2 year growth factor	0.93		
10 year growth factor	1.49		
30 year growth factor	1.95		
100 year growth factor	2.43		
200 year growth factor	2.78		

Results

Method	IH124	
Flow rate 1 year (l/s)	0.5	l/s
Flow rate 2 year (l/s)	0.6	l/s
Flow rate 10 years (l/s)	1.0	l/s
Flow rate 30 years (l/s)	1.3	l/s
Flow rate 100 years (l/s)	1.6	l/s
Flow rate 200 years (l/s)	1.8	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Surface Water Drainage Maintenance Plan

In accordance with Wiltshire Council Sustainable Drainage Systems (SuDS) Guidance

Site Address: Land North of 554 Canal Bridge, Semington, BA14 6JT
Development: Residential Dwelling
SuDS Features: Attenuation Pond, Flow Control Chamber, Drainage Ditch (Eastern Boundary)

1. Introduction

This document sets out the maintenance requirements for the surface water drainage system serving the proposed development. The primary objective is to ensure the system continues to manage flood risk effectively by limiting discharge to the agreed rate of 2.0 l/s into the eastern boundary ditch.

2. Responsibility for Maintenance

The management and maintenance of all drainage components within the property boundary are the sole responsibility of the **Freehold Owner** of the property. This includes the attenuation pond, the flow control device, and the section of the drainage ditch located within the site boundary (Riparian ownership).

3. Maintenance Schedule: Attenuation Pond & Ditch

Activity	Frequency	Description
Litter/Debris Removal	Monthly	Removal of litter and large debris from the pond area and ditch to prevent blockages.
Vegetation Management	Annually (Late Summer)	Mowing of grassed slopes and trimming of aquatic plants. Ensure the ditch remains clear of overhanging brush.
Inlet/Outlet Inspection	After major storms	Check that the pipes entering and leaving the pond are clear of silt and trash.
Silt Removal		

Activity	Frequency	Description
	Every 5-10 years	Removal of accumulated sediment from the base of the pond to maintain storage volume.

4. Maintenance Schedule: Flow Control Chamber

The Vortex Flow Control (e.g., Hydro-Brake) is a critical component that limits discharge to 2.0 l/s. It must be kept clear to prevent upstream flooding.

Activity	Frequency	Description
Chamber Inspection	Six-monthly	Open the cover and inspect for any buildup of fat, oil, or grit around the orifice.
Flush/Clean	Annually	Hose down the internal components of the flow control to ensure the bypass mechanism is free to move.
Structural Check	As required	Check manhole covers for stability and ensure seals are intact.

5. Emergency Procedures

In the event of extreme rainfall exceeding the 1-in-100 year design, the pond is designed to overflow safely toward the eastern ditch. The owner should ensure the "Exceedance Route" (the ground between the pond and ditch) remains unobstructed by new sheds, fences, or walls.