

**London Road,
Handcross**

**Prepared for
Welbeck Strategic Land III Limited**

by

**Stuart Michael
Associates Limited**



April 2026

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SMA Ref: 7409.FRA

Issue Status: 02

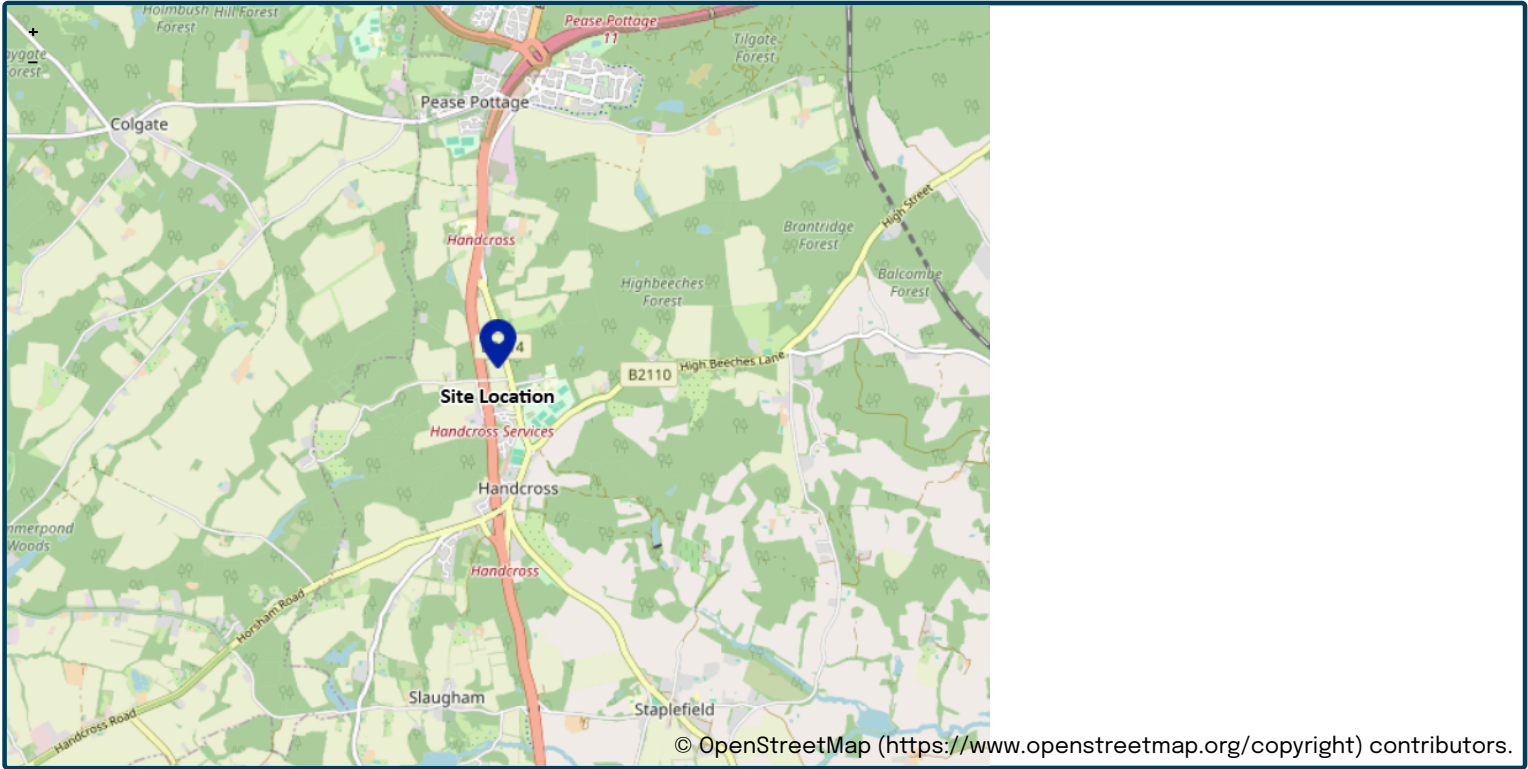
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	25/11/2025
Calculated by	Imogen Stevenson
Reference	7409
Model version	2.2.2

Location

Site name	Handcross
Site location	



Site easting (British National Grid)	526105
Site northing (British National Grid)	130699

Site details

Total site area (ha)	1 ha
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Greenfield runoff

Method

Method	FEH statistical (2025)
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FEH statistical (2025)

	<u>My value</u>	<u>Map value</u>
SAAR9120 (mm)	934	mm
BFIHOST19scaled	0.652	
QMed-QBar conversion	1.136	1.136
QMed (l/s)	2.8	l/s
QBar (FEH statistical 2025) (l/s)	3.1	l/s

Growth curve factors

	<u>My value</u>	<u>Map value</u>
Hydrological region	7	7
1 year growth factor	0.85	
2 year growth factor	0.88	
10 year growth factor	1.62	
30 year growth factor	2.3	
100 year growth factor	3.19	
200 year growth factor	3.74	

Results

Method	FEH statistical (2025)
Flow rate 1 year (l/s)	2.7
Flow rate 2 year (l/s)	2.8
Flow rate 10 years (l/s)	5.1
Flow rate 30 years (l/s)	7.2
Flow rate 100 years (l/s)	10.0
Flow rate 200 years (l/s)	11.8

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 (2.2.2) developed by HR Wallingford and available at 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>). 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.

Appendix J

Flood Exceedance Routes



KEY:
SITE BOUNDARY
EXCEEDANCE FLOW ROUTE

Rev	Description	DN	CH	DATE
REVISIONS				
1	Preliminary Issue	✓		Submitted for S104
2	Planning Issue			Issued for tender
3	Submitted for S38			Issued for Construction
4	Submitted for S278			As Built
DRAWING STATUS				

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LONDON ROAD HANDCROSS

SURFACE WATER EXCEEDANCE ROUTES

DATE: MAR 26

DRAWN: MH

CHECKED: MJP

SCALE: 7409.404

DATE: 1:250

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Appendix K

SuDS Management and Maintenance and Plans

Table 18.3 Operation and maintenance requirements for bioretention systems

Maintenance Schedule	Required action	Frequency
Regular Inspections	Inspect infiltration surfaces for sitting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if maintenance is necessary.	Quarterly
	Check operation of underdrains by inspection of flows after rain.	Annually
	Assess plants for disease, infection, poor growth, invasive species etc and replace as necessary.	Quarterly
	Inspect inlets and outlets for blockage.	Quarterly
Regular maintenance	Remove litter and surface debris and weeds.	Quarterly (or more frequently for tardiness or aesthetic reasons)
	Reolace any plants, to maintain planting density.	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays.	Quarterly to biannually
Occasional maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required.	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and	As required.
Remedial actions	Remove and replace filter medium and vegetation above.	As required (but likely to be > 20 years)

Table 22.1 Operation and maintenance requirements for detention basins

Maintenance Schedule	Required action	Frequency
Regular maintenance	Remove litter and debris.	Monthly.
	Cut grass - for spillways and access routes.	Monthly (during growing season), or as required.
	Cut grass - meadow grass in and around basin.	Half yearly (spring - before nesting season, and autumn).
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required).
	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage.	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year, then annually as required).
	Check any penstocks and other mechanical devices	Annually.
	Tidy all dead growth before start of growing season.	Annually.
	Remove sediment from inlets, outlet and forebay.	Annually (or as required).
	Manage wetland plants in outlet pool - where provided.	Annually.
Occasional maintenance	Re-seed areas of poor vegetation growth.	As required.
	Prune and trim trees and remove cuttings.	Every 2 years, or as required.
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided).
Remedial actions	Repair erosion or other damage by re-seeding or re-turfing.	As required.
	Realignment of rip-rap.	As required.
	Repair / rehabilitation of inlets, outlets and overflows.	As required.
	Re-level uneven surfaces and reinstate design levels.	As required.

Table 20.15 Operation and maintenance requirements for pervious pavements

Maintenance Schedule	Required action	Frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required.
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required - once per year on less frequently used pavements
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material.	As required.
	Rehabilitation of surface and upper sub-structure by remedial sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging).
Monitoring	Initial inspection.	Monthly for three months after installation.
	Inspect for evidence of poor operation and/or weed growth - if required, take remedial action.	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor inspection chambers	Annually.

Appendix L

Foul Water Drainage Strategy



KEY:

- SITE BOUNDARY
- PROPOSED FOUL WATER
- EXISTING FOUL WATER
- PROPOSED FOUL RISING MAIN

NOTES:

1. FOUL WATER DRAINAGE BASED ON PUMPED OUTFALL TO EXISTING SOUTHERN WATER MANHOLE 3101 TO SOUTH OF SITE VIA LONDON ROAD.

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LONDON ROAD HANDCROSS

FOUL WATER DRAINAGE STRATEGY

DATE: DEC 25 DRAWN: JOK CHECKED: 7409.403 REV: 1:500 © A0

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