

**Borde Hill Estate
Sugworth Farm Community project
RH16 1XP**

Drainage statement

Introduction

This development consists of community project on a greenfield site at the base of a hill, just north of the driveway to Sugworth Farm.

Foul drainage

There is a WC on the site and the one specified by the Client is a waterless type and is compostable, therefore there is no foul drainage required for this site.

Surface water drainage

The surface water system is divided into two parts.

1. The water which will travel overground and down the hillside is intercepted by the land drains to the north of the developed surfaces.
2. The sub strata drainage which is under the permeable paving (self-binding gravel areas).

Both systems are connected together and discharge into the dry pond at the southern end of the site. There are catchpits to intercept any silt which may enter the drainage.

The surface water for the onsite buildings will discharge into the sub-base land drains as appropriate.

The watering points will have gullies under which will the discharge directly to catchpits or the land drains as appropriate.

The outfall from this dry pond is routed via pipework into an existing ditch which then discharges into a stream.

Drawing 5177 D01&D02 shows the arrangement

Attenuation

The dry pond is sized to attenuate the surface water for all storms up to 1 in 100 years plus 45% for climate change allowance with a restricted discharge rate of 2 l/s which is based on providing minimum self-cleansing velocities within the outfall pipework.

The greenfield run-off rate was calculated as $Q2 = 5.2$ litres per second per hectare.

Info drainage storage calculations were used to calculate the required attenuation storage at 105m³ for 2 l/s restricted discharge for a catchment area of 0.12 hectares which is based on the sum of all proposed hard standing areas (self-binding gravel as permeable hard standing).

On the outlet from the site there is an orifice plate capable of allowing a flow of 2 litres per second which is the minimum flow to allow self-cleansing velocity in the downstream pipework.

Site Investigation

A site investigation was undertaken by the Client on 19th May 2026.

The result of the soakage test was that the ground is impermeable therefore we have opted for attenuation and overflow to a water source as the next best option.

Attachments

Two PDFs from the SI contractor.

Genever design drawings attached.

5177- D01 B shows the site drainage

5177- D02 B shows the off site drainage.

Calculations attached below.

5177/Admin/reports/BS
9th June 2026

Greenfield run-off calculations

29/05/2026, 10:59

Greenfield runoff rate estimation - members | UK SuDS



Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

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

29/05/2026

Calculated by

Genever and Partners Ltd

Reference

5177

Model version

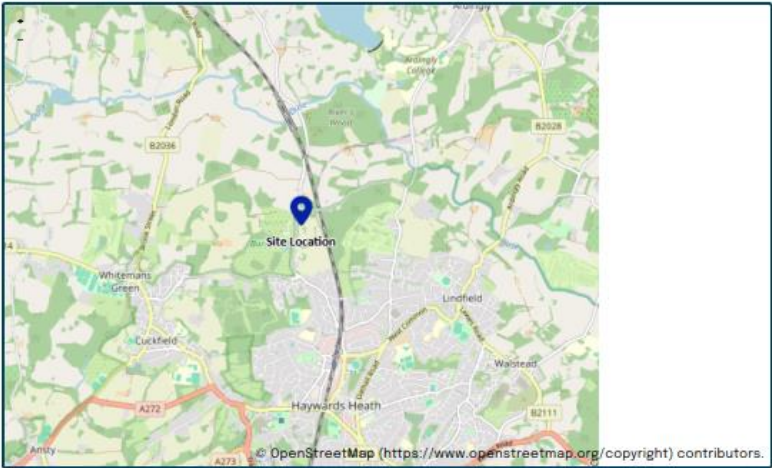
2.2.3

Location

Site name

Sugworth Farm

Site location



Site easting (British National Grid)

532531

Site northing (British National Grid)

126223

Site details

Total site area (ha)

1

ha

Greenfield runoff

Method

Method

IH124

IH124

SAAR (mm)

My value

833

mm

Map value

833

How should SPR be derived?

WRAP soil type

WRAP soil type

4

4

SPR

0.47

QBar (IH124) (l/s)

5.9

l/s

Growth curve factors

Hydrological region

My value

7

Map value

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

IH124

Flow rate 1 year (l/s)

5.0

l/s

Flow rate 2 year (l/s)

5.2

l/s

Flow rate 10 years (l/s)

9.6

l/s

Flow rate 30 years (l/s)

13.6

l/s

Flow rate 100 years (l/s)

18.9

l/s

Flow rate 200 years (l/s)

22.1

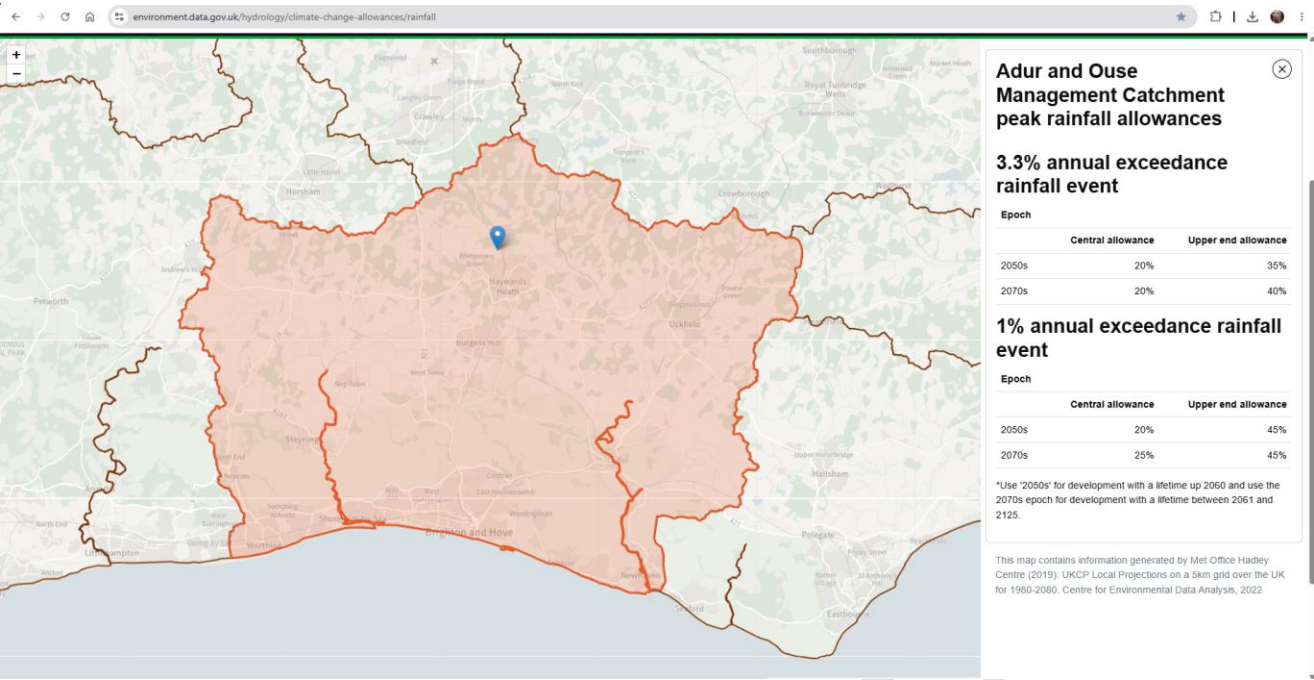
l/s

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.

Climate change allowance



InfoDrainage storage calculations

Quick Storage Estimate

Results

Quick Storage Estimate variables require approximate storage of between 69m³ - 103m³.

These values are estimates only and should not be used for final design purposes.

Input

Results

2D Graph

OK

Cancel

Create New

Help

Quick Storage Estimate

Input

Input Type

User Input

Area (ha)

0.12

Volumetric Runoff Coefficient

1.000

Discharge Rate (L/s)

2.5

Infiltration Rate (m/hr)

0.0

Safety Factor

2.0

Quick

Calculate

Create New

From Library

FEH

FSR Erlestone

FSR Onley

FSR Bordehill RH16 1XP

...

Method

FSR

Number of Storms

72

Max. Run Time (mins)

2880

Input

Results

2D Graph

OK

Cancel

Create New

Help