



Surface Water Drainage Strategy Statement

Issue 2

17 April 2026

Land at Grid Reference 535270138258,
Hophurst Lane, Crawley Down.

1.0 Introduction

The purpose of this document is to demonstrate to the Local Planning Authority that the site can be drained both safely and sustainably for the lifetime of the development.

The document has been prepared in accordance with guidance set out within the West Sussex LLFA Policy for the Management of Surface Water.

With particular reference to;

SuDS Policy 1: Follow the drainage hierarchy.

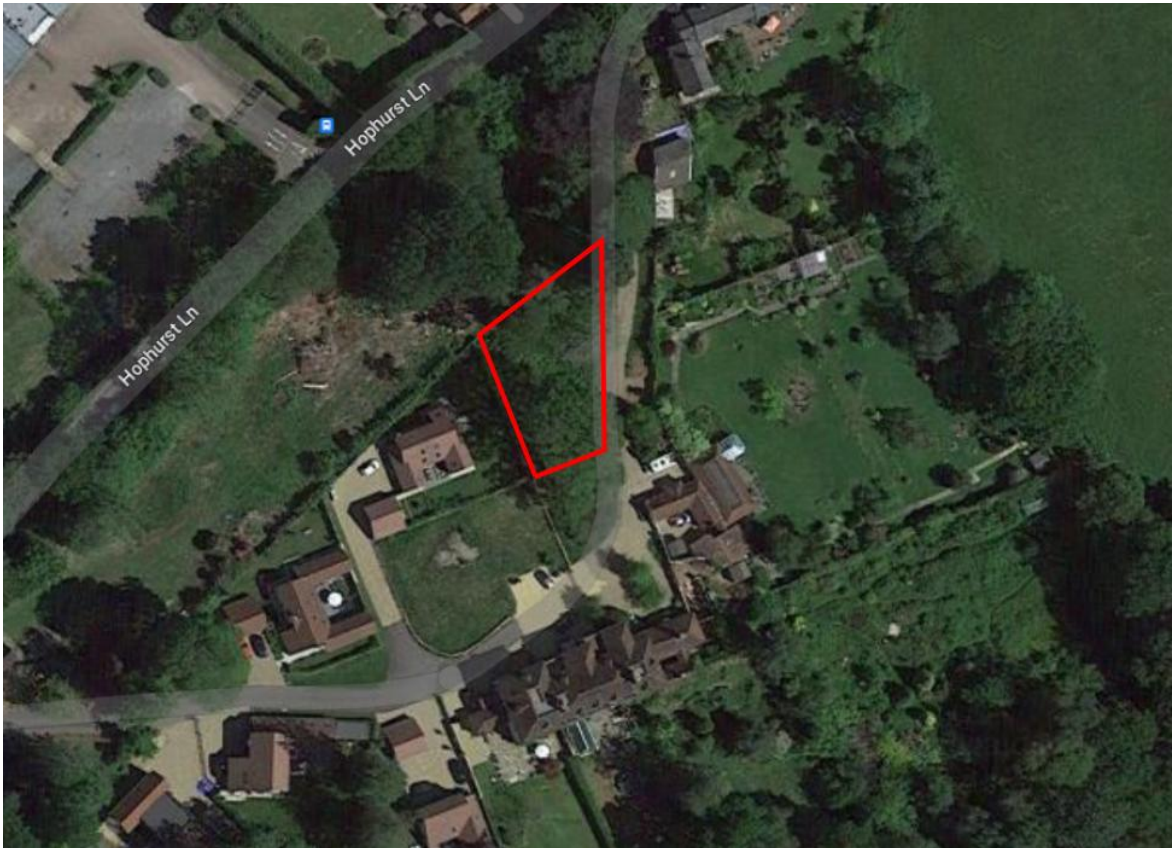
1. Surface runoff not collected for use must be discharged according to the following discharge hierarchy:

- to ground,*
- to a surface water body,*
- to a surface water sewer, highway drain, or another drainage system, or*
- to a combined sewer where there are absolutely no other options, and only where agreed with the relevant sewerage undertaker.*

2. The selection of a discharge point should be clearly demonstrated and evidenced.

2.0 Site Location

The site is located at at Grid Reference 535270138258, Hophurst Lane, Crawley Down.



3.0 Existing Conditions

3.1 Land Use

The site covers an area of approximately 1318m² (0.1318 hectares).

The site is currently un-developed and occupied by soft landscaping and semi-mature/mature trees along with a small area of gravel car parking.

3.2 Topography

The topographical survey indicates that the site has a gentle fall in a south to north direction.

Ground levels are typically within the range of 7.90m–9.80m. Levels are approximately 9.20–9.80m in the south of the site falling to 7.90-9.40m in the north of the site. Beyond the site boundary to the south the connecting combined chamber cover sits at approximately 9.98m.

3.3 Geology

A Geotechnical Investigation was undertaken in December 2022 by S Chick Investigations Limited.

In total, 3 boreholes were drilled with the following summary of results;

0.0m to 0.50m BGL - MADE GROUND

0.50-1.80m to 2.30m BGL – SILTY CLAY

1.80 to 2.30 (end of boreholes) – MUDSTONE/SANDSTONE

Infiltration testing was undertaken at two locations, both tests showed that there was no drop in water levels over a 60 minute period.

3.4 Permeable/Impermeable Area

The topographical survey shows that there is no impermeable area on the site apart from a small area (approximately 69m²) of compacted Type 1 material.

The surface run-off from the site is considered to discharge to the adjacent access road in an uncontrolled manner.

3.5 Drainage

There is no on-site drainage system.



3.6 Watercourses/Rivers

The nearest recorded watercourse is approximately 500m to the south of the site.

4.0 Development Proposals

The existing site is to be developed to provide 1 three-bedroom house.

5.0 Sustainable Drainage Options

CIRIA C753 SuDS Manual explains that the primary function of SuDS measures is to protect watercourses from any impact due to the new development. However, SuDS can also improve the quality of life in a new development and urban spaces by making them more vibrant, visually attractive, sustainable, and more resilient to change. This document explains the wider social context of SuDS and how SuDS can deliver high quality drainage while supporting urban areas to cope better with severe rainfall both in present and future.

There are four main categories of benefits that can be achieved by SuDS:

- Water Quantity (mitigate flood risk & protect natural water cycle)
- Water Quality (manage the quality of the runoff to prevent pollution)
- Amenity (create and sustain better places for people)
- Biodiversity (create and sustain better places for nature)

There are many site-specific factors which will influence the choice of any SuDS devices used within a development. The primary factors are:

- How the land is to be used- whether domestic, commercial, or industrial.
- Soil contamination.
- Existing soil conditions i.e. ground permeability, groundwater levels.
- Site topography e.g. steeply sloping.
- Space availability – urban or non-urban.

Most advice on the use of sustainable drainage techniques recommends the utilisation of ground infiltration, which may take the form of permeable paving, swales, infiltration basins or soakaways. However, these systems are dependent on the sub-soil suitability, unsaturated soil zone to an adequate depth and the absence of leachable contaminants in the sub-soils.

It is essential to design and install a sustainable drainage system that is appropriate for the specific development and location in question.

SuDS measures, as stated in CIRIA C753 SuDS Manual, have been considered and the potential SuDS solutions for inclusion in this development are stated in Table 1 – SuDS Feasibility Matrix.

Table 1: SuDS Feasibility Matrix

Technique	Description	Implementation at the Site
Rainwater Harvesting	Collection of rainwater for re-use externally for irrigation or internally within the building for toilets, washing machine etc.	POSSIBLE - Water butts could be provided for irrigation. Internal re-use not implementable due to cost.
Green Roofs	Areas of living vegetation installed on the top of buildings to reduce run-off	YES – A green roof incorporating blue roof storage will cover the entire roof of the building.
Infiltration Systems	Specifically, designed systems designed to promote infiltration of surface water runoff into the ground	NO – The constraints of Root Protection Areas means insufficient space is available.
Proprietary Treatment Systems	Manufactured products that remove specified pollutants from surface water run off	NO – Pollution hazard indices class the site as VERY LOW or LOW. No specific products required before discharge to combined sewer.
Filter Strips	Uniformly graded and gently sloping strips of grass or vegetation designed to treat surface water runoff from adjacent impermeable areas.	NO – All external areas will be permeable.
Filter Drains	Shallow trenches filled with stone/gravel creating temporary storage, conveyance and filtration of surface water run off.	NO – All external areas will be permeable.
Swales	Shallow, flat bottomed, vegetated open channels for conveyance and often attenuation	NO – The constraints of Root Protection Areas means insufficient space is available
Bioretention Systems	Shallow landscaped depressions that can reduce run off	NO – The constraints of a small 'infill' site means insufficient space is available.
Trees	Protect and enhance the urban environment. Transpiration, Interception, Increased infiltration, Phytoremediation.	NO – Existing trees being retained leave insufficient space.
Pervious Pavements	Vehicular/pedestrian pavements allowing water to infiltrate through the surface into underlying structural layers	YES – All external 'hardstanding' areas will use permeable, no dig, construction methods such as a celluweb granular confinement system.



Attenuation Storage Tanks	Below ground void space for the temporary storage of surface water.	NO – The constraints of Root Protection Areas means insufficient space is available.
Detention Basins	Landscaped depressions for the temporary storage of surface water.	NO – The constraints of a small 'infill' site means insufficient space is available.
Ponds and Wetlands	Features with permanent water providing attenuation and treatment of surface water.	NO – The constraints of a small 'infill' site means insufficient space is available.

6.0 Surface Water Drainage Proposals

6.1 Proposed Drainage Strategy

The West Sussex LLFA Policy for the Management of Surface Water requires that new developments should utilise sustainable drainage systems (SuDS) unless there are practical reasons for not doing so, and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

- *to ground,*
- *to a surface water body,*
- *to a surface water sewer, highway drain, or another drainage system, or*
- *to a combined sewer where there are absolutely no other options, and only where agreed with the relevant sewerage undertaker.*

and;

The selection of a discharge point should be clearly demonstrated and evidenced.

The Geotechnical Investigation report indicates ground conditions of made ground and silty clay to depths of 1.80 to 2.30m with mudstone/sandstone beyond. The two Infiltration tests (one within the clay strata and one at the top of the mudstone/sandstone strata) resulted in a zero drop of water levels over a 60 minute period. The soils conditions and infiltration results preclude infiltration.

As such, the surface water flows from the site will be dealt with in two ways;

1. All external areas (not forming part of the building) will be either retained grassed/soft landscaping (as existing) or in the case of the access drive and associated car parking will be formed of a granular confinement system (such as Geoweb), which will mimic the existing soft landscaped condition.
2. The roof construction will be flat to allow the use of a blue-green roof. The green roof element will help to reduce run-off, increase biodiversity and water quality. The blue roof element (incorporating restricted flow outlets to a maximum of 0.25l/s) will further reduce run-off closer to greenfield run-off rates.

Site levels and the level of the off-site connection point (an existing combined chamber approximately 30m to the south of the site) means the resulting run-off from the green-blue roof will discharge via the on-site pipe network to a package pumping station. A new pumped main will be laid along the existing access road (permission has been granted by the land owner) to the existing combined chamber. From this chamber, serving the existing houses, the waste will flow

under gravity conditions to a connection point with the southern water network at chamber ref 4101.

The proposed sewer connection will be subject to Water Authority approval via a Section 106 agreement under the terms of the Water Industry Act 1991.

7.0 Maintenance

Maintenance of any drainage scheme is essential to ensure that it continues to perform as designed. Within the site's, Health & Safety File a Maintenance Strategy will be developed which will give details of routine maintenance inspections for each element of the drainage system, together with details of how they should be undertaken and at what intervals or events. It should also include, where relevant, the installed manufacturer's details and maintenance recommendations.

The surface water drainage system requires regular inspection/clearing to prevent blockages due to the accumulation of silt. Table 2 sets out the maintenance requirement for each SuDS element proposed for the development, based on CIRIA C753 SuDS Manual.

The on-site foul and surface water drainage systems will be maintained and funded by the individual property owners over the lifetime of the development.

All maintenance must be carried out by suitably trained persons.

Table 2 SuDS Maintenance Schedule

Item	Task	Frequency	Location	Access	Comments
Main Drainage Network					
Rainwater downpipes	Clean out at roof level and ground level	Twice yearly for the first 2 years of operation then annually	Roof level, around building perimeter .	High level access required to roof outlets.	Works undertaken by appropriately qualified person(s).
Chambers, silt-traps & catchpits	Clean out chamber/sump		Outside building to the front and rear elevations	At ground level	For RWP outlets at roof level follow health & safety regulations dealing with working at height
Pipe network & drainage channels	Pipes to be inspected and condition assessed. Pipes/channels to be cleaned (jetted) as necessary				

Table 2 SuDS Maintenance Schedule (cont'd)

Item	Task	Frequency	Location	Access	Comments
Blue & Green (Biodiverse) Roofs					
Generally	Inspect all components including soil substrate, underside of roof for structural integrity & signs of leakage. Remove litter/debris.	Monthly for first 12 months then annually or after severe storms	Roof of building	High level access to roof	Works undertaken by appropriately qualified person(s) following health & safety regulations dealing with working at height
Roof Outlets	Clean out, inspect, remove plant growth				
Permeable Hardstandings					
Gravel Confinement System	Remove organic matter from surface. Replenish gravel if required.	Monthly for first 3 months then twice yearly (in spring and autumn)	Front of building	Access drive/ parking area	Works undertaken by appropriately qualified person(s)
Pumping Station					
Pumps	As pump manufacture's maintenance schedule	Annually (or as otherwise defined by pump manufacture's maintenance schedule)	Front garden	Access drive/ Soft landscaping	Works undertaken by appropriately qualified person(s) It is recommended that an annual maintenance contract is arranged with the pump supplier

8.0 Implementation Timetable

The surface water drainage strategy adopts a SuDS-based approach incorporating water butts, green/blue roofs, and permeable paving to manage runoff at source and restrict discharge. The system will be delivered with all measures installed and operational prior to occupation and will be secured by a long-term maintenance regime assigning responsibilities to the homeowner.

Surface Water Drainage – Implementation Timetable			
Stage	Timing	Actions (Including SuDS Features)	Responsibility
Pre-Commencement	Prior to any above-ground works	Submission and approval of detailed surface water drainage design, including hydraulic calculations, layout drawings, exceedance routing, and details of water butts, green/blue roofs, and permeable paving. Agreement of discharge rates and connection details.	Developer/Consulting Engineer
Enabling & Groundworks	Early construction phase	Installation of temporary drainage and silt control measures. Preparation of sub-base for permeable paving and structural provisions for green/blue roofs.	Developer / Principal Contractor
Construction Phase	Throughout build programme	Installation of drainage network. Construction of permeable paving. Installation of green/blue roofs on building. Installation of water butts to dwelling.	Developer / Principal Contractor
Prior to First Occupation	Before occupation of any dwelling	Completion and commissioning of drainage infrastructure, including operational permeable paving, installed water butts, and completed green/blue roofs. Verification of system performance	Developer (with verification by Principal Contractor/Drainage Engineer)
Prior to Final Occupation	Before occupation of final dwelling	Completion of all SuDS features across the site. Submission of as-built drawings and verification report confirming compliance with approved drainage strategy.	Developer/Consulting Engineer
Post-Completion (Operation & Maintenance)	Ongoing after completion	Implementation of maintenance plan:	Homeowner

9.0 Conclusions

The Geotechnical Investigation report indicates ground conditions of made ground, silty clay and mudstone/sandstone.

The two Infiltration tests resulted in a zero drop of water levels over a 60 minute period.

The soils conditions and infiltration results preclude infiltration.

All external areas (not forming part of the building) will be either retained grassed/soft landscaping (as existing) or in the case of the access drive and associated car parking will be formed of a granular confinement system, which will mimic the existing soft landscaped condition.

The roof construction will provide a blue-green roof. The green roof element will help to reduce run-off, increase biodiversity, and water quality. The blue roof element (incorporating restricted flow outlets to a maximum of 0.25l/s) will further reduce run-off closer to greenfield run-off rates.

The nearest recorded watercourse is approximately 500m to the south of the site. Third party land ownership between the site and the watercourse precludes a connection.

There are no surface water sewers, highway drains or other surface water drainage systems in the vicinity of the site.

The on-site drainage system will discharge via a pumped main running along the existing access road with a final discharge point of the existing combined chamber to the south of the site.

Approval has been granted by the landowner to lay the pumped main in the access road and connect to the existing combined chamber.

The on-site foul and surface water drainage systems will be maintained and funded by the individual property owners over the lifetime of the development. The Maintenance Strategy gives details of routine maintenance inspections for each element of the drainage system.

This document has been prepared in accordance with guidance set out within the West Sussex LLFA Policy for the Management of Surface Water and demonstrates that the surface water drainage proposals follow the requirements of the drainage hierarchy.