



Flood Risk Assessment

Watermead, Henfield Road, Cowfold, RH13 8DT

Client

Earlswood Homes Ltd

Ref: 13897

Date: May 2026

Consulting Engineers

GTA Civils & Transport Limited

Maple House

192-198 London Road

Burgess Hill

West Sussex

RH15 9RD

Tel: 01444 871444

Index

1	Introduction	2
2	Policy Context	3
3	Existing Site & Current Flood Risk	4
4	Proposed Surface Water Strategy	8
5	Foul Drainage Strategy	12
6	Conclusions	13

Schedule of Appendices

A	Location Plan
B	Site Survey
C	SI Data
D	Flood Maps
E	Sewer Records and CCTV Surveys
F	Scheme Drawings
G	Calculations
H	Draft Drainage Maintenance Plan

Issue	Issue date	Compiled	Checked
First Draft Issue	24/04/2026	FVV	MR
First Issue	13/05/2026	AW	FVV

1 Introduction

- 1.1 GTA Civils & Transport Ltd was appointed by Earlswood Homes Ltd to provide a Flood Risk Assessment (FRA) to support the planning application to Horsham District Council for the development at Watermead, Henfield Road, Cowfold, RH13 8DT. No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.
- 1.2 The application proposes the erection of 9 new dwellings to replace the existing commercial premise, along with associated landscape and infrastructure.
- 1.3 This FRA has been prepared in accordance with the National Planning Policy Framework (NPPF) (2025) and relevant planning practice guidance, in particular "Flood risk and coastal change" (PPG ID7, updated September 2025).

2 Policy Context

Legislative Context

- 2.1 The Flood and Water Management Act 2010 (FWMA) updated legislation to ensure better protection from flooding, manage water more sustainably, improve public services and secure water resources during periods of drought. The FWMA helps reduce flood risk by:
- clarifying who is responsible for managing all sources of flood risk;
 - encouraging more sustainable forms of drainage in new developments; and
 - making it easier to resolve misconnections to sewers.
- 2.2 The FWMA established the creation of the Lead Local Flood Authority (LLFA) at county or unitary level to manage local flood risk. Each LLFA is required to prepare a Local Flood Risk Management Strategy which considers all sources of flood risk and identifies objectives to manage local flood risk to local communities.
- 2.3 The LLFA relevant to the Development is West Sussex County Council.
- 2.4 The FWMA also laid the groundwork for national Sustainable Drainage Systems (SuDS) standards to be created. Defra published the "National standards for sustainable drainage systems (SuDS)" on 19 June 2025 which provide the technical guidance that developers are expected to follow and which LLFAs will use to assess submissions.
- 2.5 The Water Industry Act 1991 establishes the duties of sewerage undertakers to provide, maintain, and operate an effective sewerage system, including ensuring that public sewers and treatment works are capable of handling current and future demands. The Act places a general duty on undertakers to assess and plan investment to ensure sufficient capacity in sewers and treatment works to accommodate growth while upholding environmental and operational standards.

3 Existing Site & Current Flood Risk

Site Location

- 3.1 The site is located in the south of Cowfold, just west of the A281 (Henfield Road). It currently comprises a disused industrial unit, with open space and an existing artificial pond in its northern half. It is accessed through a shared access with the adjacent Summer Meadow development.
- 3.2 A location plan is in Appendix A.

Topography

- 3.3 The site slopes from north-east to south-west, from approximately 21.4m Above Ordnance Datum (AOD) to 19.4m AOD. There is an existing earth bund adjacent to the pond in the northern portion of the site, with a localised high point of 23.10m AOD.
- 3.4 Survey data is in Appendix B.

Hydrology

- 3.5 The Cowfold Stream flows approximately 160m south of the site, where it flows beneath the A281 (bridge). It then flows in an eastwards direction where it becomes a Main River before ultimately joining the River Adur some distance from the site.
- 3.6 A small unmapped ditch also flows on the western edge of the Summer Meadow development, starting approximately 50m south of the site boundary. A large pond in the adjacent field also overflows to this ditch, which ultimately then flows into the Cowfold Stream.

Geology

- 3.7 The published bedrock geology for the site comprises Weald Clay, with no superficial deposits.
- 3.8 The Soilscape classification at the site is "slowly permeable seasonally wet [...] loamy and clayey soils". It is shown to have impeded drainage, with onward discharge to the local stream network.
- 3.9 The Groundwater Vulnerability Map indicates that it is located over an Unproductive area, and away from any groundwater Source Protection Zone (SPZ). This is reflective of the low permeability and likely deep groundwater table in the area.

- 3.10 A site investigation was conducted in June 2025, this confirmed the presence of Weald Clay, underneath Made Ground approximately 0.2m to 0.5m thick. Infiltration tests were conducted in two locations, which one resulting in significant better rates (in the order of 1×10^{-5} m/s) than the other (in the order of 1×10^{-7} m/s). Relevant extracts from the site investigation report are included in Appendix C.
- 3.11 The lower result is considered more typical of the clay soil at the site. It is likely that the higher results encountered in the south-west corner of the site are linked to a localised pocket of more granular deposits at that location. Those pockets of granular deposits are susceptible to becoming saturated over time, as they are surrounded by areas of impermeable clay soil.

Flood Zone

- 3.12 The EA's Flood Map for Planning shows the Site lies within Zone 1 – Low Probability, having less than a 1 in 1,000 (0.1%) annual exceedance probability (AEP) of river flooding.
- 3.13 A relevant extract from the EA's "Flood Map for Planning" is in Appendix D.

Surface Water Flood Risk

- 3.14 Surface water flooding occurs when excess rainwater does not infiltrate into the ground, or is not intercepted by urban drainage systems, and instead flows across the surface.
- 3.15 The EA's Risk of Flooding from Surface Water (RoFSW) map extracts are included in Appendix D. These show areas of risk for the 1 in 30, 1 in 100, and 1 in 1000 AEP events (High, Medium, and Low Risk respectively).
- 3.16 There are two areas of surface water flood risks identified within the site boundary. One is associated with the existing pond in the north of the site. The other is linked to localised low points around the edge of the existing commercial building.
- 3.17 There are no overland flow routes or significant offsite flows entering the site.

Reservoir Flood Risk

- 3.18 The large existing pond in the adjacent land south of the site is located downstream and therefore does not pose any risks to the site. The EA mapping indicates that the site is clear from any mapped reservoir flooding extent.
- 3.19 The EA's "Flood Risk Map from Reservoirs" is in Appendix D.

Groundwater Flood Risk

- 3.20 The published geology, as well as the findings from the site investigation, indicates very low permeability soil with negligible risks of groundwater flooding.

Climate Change

- 3.21 The site lies within the Adur and Ouse Management Catchment. The relevant climate change allowances for a residential development in this catchment is 37% (Central Allowance, 2080s epoch).
- 3.22 A Climate Change (2070 to 2125) layer was added to the Flood Map for Planning by the EA on 27 August 2025. This dataset is intended to show how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century, ignoring the benefits of any existing flood defences and assuming no changes to flood defences or land-use during that time. The mapping shows negligible change in extent from the present-day Flood Zones, away from the site, as shown in Appendix D.
- 3.23 The applicable peak rainfall allowances are 40% for the 1 in 30 AEP events and 45% for the 1 in 100 AEP events (Upper end allowances, 2070s epoch). The RoFSW climate change extents at the site are similar to the present-day extents.

Historical Flooding

- 3.24 A review of the available data and documents has not identified any records of flooding incidents at or close proximity to the site.

Existing Sewers

- 3.25 The nearest Southern Water asset is a 300mm diameter foul sewer within the A281. This turns eastwards directly opposite the site access road. Their nearest surface water sewer is located within Acorn Avenue, approximately 300m to the east. This is separate from the site by built-up residential areas.
- 3.26 The sewer records are included in Appendix E.

Existing Drainage Characteristics

- 3.27 A drainage survey of the existing drainage serving the disused industrial unit has been carried out. This is included in Appendix E. This shows that the existing surface water runoff from the unit is directed to an informal outfall on the western boundary of the site, onto the adjacent field.

3.28 The foul runoff was historically directed to the combined network within this adjacent land to the south via a Klargestor unit. This used to outfall to the existing ditch further to the south – however, this was redirected to the new foul network draining to the public sewer in A281 as part of the Summer Meadows development.

3.29 Greenfield runoff rates per hectare have been calculated using FEH22 data. The results are shown below and calculations included in Appendix G.

1 in 1 AEP	7.0 litres per second per hectare (l/s/ha)
1 in 2 AEP	7.3 l/s/ha
1 in 30 AEP	19.0 l/s/ha
1 in 100 AEP	26.4 l/s/ha

3.30 The proposed development follows the sequential approach outlined in the NPPF as it will be located on land with least flood risk. No further specific flood risk mitigation measures are required beyond the management of development runoff. This is discussed in the next section.

4 Proposed Surface Water Strategy

- 4.1 Defra published the National standards for SuDS ("NSS") on 19 June 2025. The key principles underpinning the NSS include a natural approach to managing water and an early and integrated design. The proposed SuDS strategy is illustrated in Appendix F and has been prepared in accordance with these key principles. There are 7 core standards set out in the NSS and these are discussed in turn as follows:

Standard 1: runoff destinations.

- 4.2 The NSS hierarchy sets the priority as collecting runoff for non-potable use. Water butts will be included as a minimum. Unless supersized storage tanks are provided in excess of the demand sizing, it must be assumed that any RWH systems are full and quickly overflowing at the time of an extreme storm event. Onward discharge must therefore be considered.
- 4.3 The 2nd priority is to infiltrate runoff to ground. The published ground conditions indicate that the use of infiltration SuDS at the site is unlikely to be effective due to the impermeable soils, as outlined in Section 3 of this report.
- 4.4 The 3rd priority is to discharge runoff to an above ground surface water body. The possibility of connecting to the existing ditch east of the Summer Meadows has been explored; however, it would required crossing through third party land, for which it was not possible to reach an agreement in principle.
- 4.5 The existing highway drainage network in Henfield Road has been surveyed to confirm its condition, routing and outfall. The CCTV survey is included in Appendix E. This indicates that the existing 300mm diameter highway drain at the front of the site access drains south, discharging into the Cowfold Stream where it flows under the A281.
- 4.6 The NSS hierarchy lists the 4th priority to discharge to a surface water sewer or another piped surface water drainage system. On that basis, a new restricted discharge to the existing highway drain is proposed for this development. This is considered more sustainable than laying a new 140m length of pipe within the A281 to discharge to the stream separately.
- 4.7 The new outfall to the highway system will be subject to formal approval by the Highway Authority in due course. An initial enquiry has been submitted to confirm feasibility.

Standard 2: management of everyday rainfall (interception)

- 4.8 An integrated SuDS approach has been prepared in order to meet the requirements of Standard 2 for interception. The proposed strategy includes unlined permeable paving and roadside bioretention features which will deal with the everyday rainfall and prevent it leaving the site as runoff.
- 4.9 The unlined permeable paving areas will provide interception for up to 2 times the paving areas, i.e. for an additional impermeable area no greater than the permeable area. The total area of permeable paving is 897m², providing interception for up to 1,794m² of developed area.
- 4.10 Additionally, the proposed bioretention feature can provide interception for up to 5 times its vegetated surface. Based on a total area of 88m², this provides interception for up to 440m² of developed area.

Standard 3: management of extreme rainfall and flooding

- 4.11 The NSS guidance sets out that the peak allowable discharge rate from the development to the watercourses should be limited to the 1 in 2 (50%) AEP greenfield runoff rate, or 3 l/s/ha, whichever is the greater. As shown in Section 3 above, the 1 in 2 AEP greenfield runoff rate for the site is 7.3 l/s/ha (see Appendix G). The peak allowable discharge rate for the development is therefore 7.3 l/s/ha.
- 4.12 The proposed impermeable areas have been calculated as 1850m², including a 10% urban creep factor applied to all roof areas. The corresponding 1 in 2 AEP greenfield rate would therefore be 1.35 l/s. However, to ensure any impact on the existing highway drainage is limited, it is proposed to limit the flow rate from the development further to 1 l/s.
- 4.13 Attenuation shall be provided through a combination of permeable paving, bioretention areas, and an attenuation tank, as illustrated on the SuDS strategy drawing in Appendix F. The permeable paving areas are split into sections through the provision of concrete baffles, in order to work more efficiently with the existing fall of the land.
- 4.14 Network calculations for all design events are included in Appendix G, demonstrating that sufficient capacity has been provided for all events up to and including the 1 in 100+45% climate change event. The calculations are based on FEH22 rainfall data, and CV values of 1.

- 4.15 Exceedance flows, in extreme storm events or in the unlikely event of a system failure, would flow down the road and towards the A281.

Standard 4: water quality

- 4.16 The proposed SuDS strategy includes a multi-stage treatment train to protect water quality in the receiving water environment.
- 4.17 Based on the Simple Index Approach described in CIRIA C753 (The SuDS Manual) the development's pollution hazard indices are outlined in Table 4-1 below along with the relevant SuDS mitigation indices for the proposed SuDS components.

Pollutant type	TSS	Metals	Hydrocarbons
Pollution hazard indices			
Residential roofs – Very low	0.2	0.2	0.05
Vehicular areas – Low	0.5	0.4	0.4
SuDS mitigation indices			
Permeable pavement	0.7	0.6	0.7
Bioretention system	0.8	0.8	0.8

Table 4-1: Runoff Treatment - Simple Index Approach

- 4.18 Table 4-1 demonstrates that the proposed SuDS treatment train will sufficiently protect the water environment. All development runoffs shall be routed through either the permeable pavement areas or the bioretention system before reaching the outfall.

Standard 5: amenity

- 4.19 The strategic SuDS features have been integrated into the landscape proposals to ensure their amenity potential is realised. The bioretention area will take the form of raingardens and tree pits and will represent positive destinations as part of the green infrastructure. For more information, refer to the landscape architect's documents.

Standard 6: biodiversity

- 4.20 The proposed SuDS strategy offers some potential for biodiversity gains due to the potential for water habitat creation within the bioretention area. For more information, refer to the ecology consultant's documents.

Standard 7: design of drainage for construction, operation, maintenance, decommissioning and structural integrity

- 4.21 Construction and Phasing: Limited information is available at this stage regarding the proposed phasing of the development. These topics are typically addressed by

condition with Phasing Plans and Construction Environmental Management Plans (CEMP). Construction of the surface water drainage scheme will be carried out in line with best practice methods and controls.

4.22 Ownership and maintenance: A draft Drainage Maintenance Plan (DMP) outlining ownership and maintenance responsibilities is included in Appendix H. This is a draft version based on the information currently available at this stage; the DMP will be updated as the design of each phase is developed and will remain a live document over the duration of the project. A summary of the various ownership responsibilities is as follows:

- Individual property drainage will be cared for by the property owner.
- Adopted sewers and qualifying SuDS components will be the responsibility of Southern Water, or will be vested in a sewerage company under a NAV agreement. The final arrangements will be confirmed at the next stage.
- The remaining drainage features along with the site-wide infrastructure will be cared for the Estate Management Company set up by the developer.
- The developer will be responsible for maintaining completed SuDS components in advance of transfer to / adoption by the relevant party.

5 Foul Drainage Strategy

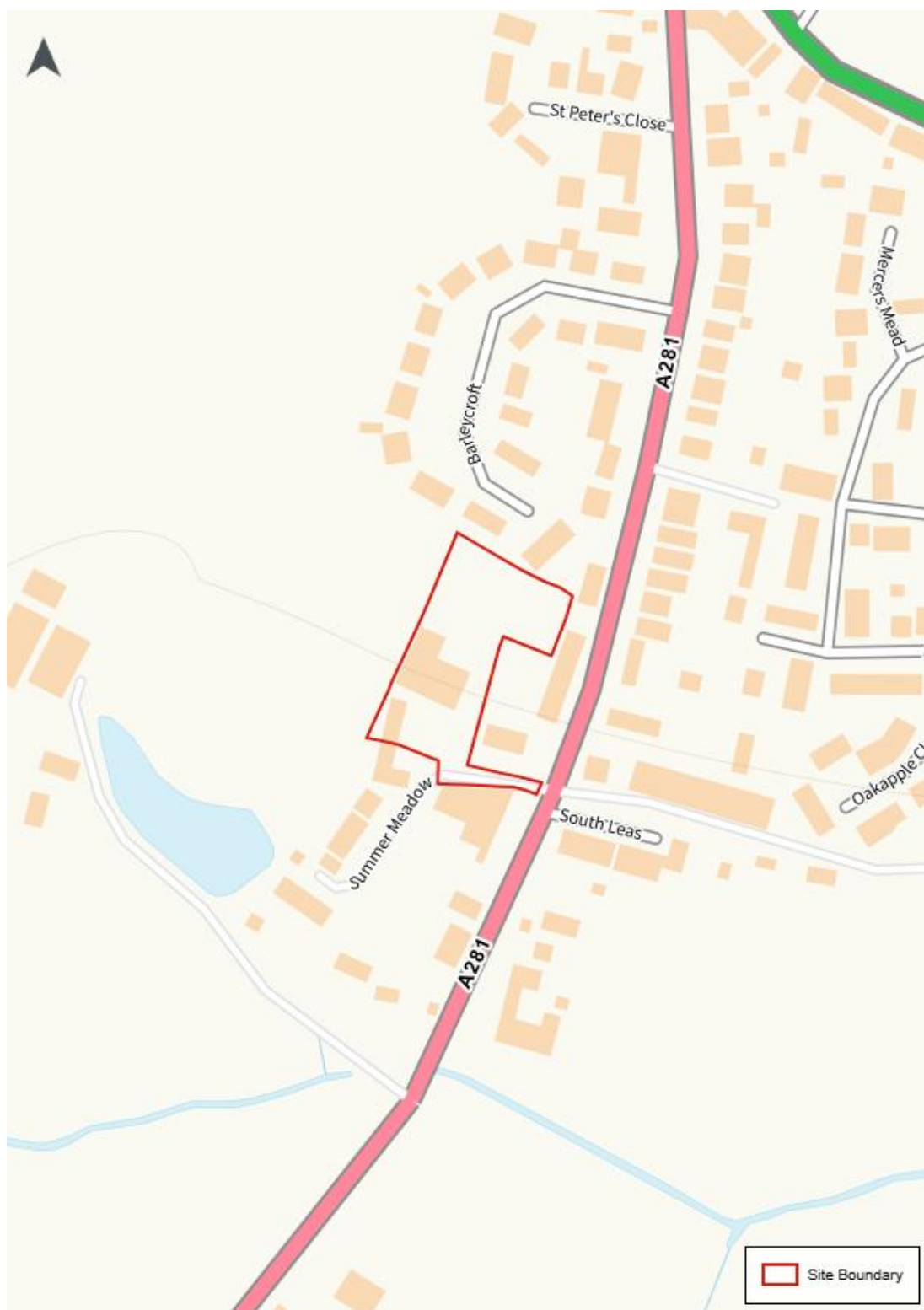
- 5.1 It is proposed to discharge the development's foul water via the existing 150mm diameter foul drain in the access road, which was installed to serve the Summer Meadow development. This connects into the existing Southern Water sewer manhole 2101, in Henfield Road.
- 5.2 The new connection will be subject to a new indirect S106 application with Southern Water in due course. Should off-site upgrades to the network be required, this shall be delivered by Southern Water and funded by the Infrastructure Charges payable by all developers for new connections. This will be coordinated and phased with the development's programme to ensure all required off-site improvements are delivered in time for occupation.

6 Conclusions

- 6.1 The site lies entirely within Flood Zone 1 – Low Probability of river flooding. Flood risks from all sources have been assessed as Negligible. The proposed development is therefore appropriate in terms of flood risk and is consistent with the Sequential Test as required by the NPPF (2025).
- 6.2 The proposed SuDS strategy will restrict surface water discharge to 1 l/s, which represents a significant reduction below the existing 1 in 2 year AEP greenfield runoff rate. This will ensure any impacts on the receiving highway drain is mitigated, before reaching its outfall location to the Cowfold Stream.
- 6.3 The proposed SuDS components – comprising permeable paving, bioretention features, and an attenuation tank – incorporate a multi-stage treatment train that will adequately protect water quality in the receiving water environment, in accordance with the Simple Index Approach set out in CIRIA C753.
- 6.4 The development complies with the NPPF (2025), the National Standards for SuDS (2025), and relevant planning practice guidance in terms of flood risk and surface water management.
- 6.5 Foul water will be discharged to the existing Southern Water network via the established connection serving the adjacent Summer Meadow development.

Appendix A

Location Plan



Aerial Photo



Appendix B

Site Survey

Appendix C

SI Data



**GEOTECHNICAL AND
GROUND CONTAMINATION
RISK ASSESSMENT REPORT**

**WATERMEAD
HENFIELD ROAD
COWFOLD
WEST SUSSEX**

PROJECT REFERENCE: P17246

REPORT REFERENCE: R16751

Report Beneficiary: Earlswood Homes (South East) Ltd

Document Control			
Issue No.	Status	Issue Date	Notes
1	Final	23 rd July 2025	
Report Section		Prepared By	Approved By
Preliminary Ground Contamination Risk Assessment		Stuart Card BA (Hons)	Alex Minchell-Bewick BSc MSc DIC AISEP MEnvSc CEnv
Factual Section		Tom Hughes BA MA	Rebecca Webb BSc FGS
Geotechnical Assessment		Adam Cormack HNC FGS	Steven McSwiney BA mod Geol MSc FGS
Quantitative Ground Contamination Risk Assessment		Stuart Card BA (Hons)	Alex Minchell-Bewick BSc MSc DIC AISEP MEnvSc CEnv

Limitations

This report was prepared specifically for the Client's project and may not be appropriate to alternative schemes. The copyright for the report and licence for its use shall remain vested in Ashdown Site Investigation Limited (the Company) who disclaim all responsibility or liability (whether at common law or under the express or implied terms of the Contract between the Company and the Client) for any loss or damage of whatever nature in the event that this report is relied on by a third party, or is issued in circumstances or for projects for which it was not originally commissioned.

This report is not intended to be either an ecological, archaeological or flood risk assessment. An appropriate specialist should be consulted about any concerns that may arise in this regard.

Head Office:

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
East Sussex
BN6 8SG

Telephone:

01273 483119

Email:

contact@ashdownsi.co.uk

Company Registration No.
242 6786



EXECUTIVE SUMMARY

The following presents a summary of the main findings of the report. It is emphasised that no reliance should be placed on any individual point until the whole of the report has been read as other sections of the report may put into context the information contained herein.

It is proposed to develop the site at Watermead, Henfield Road, Cowfold, West Sussex. The exact layout proposals are yet to be finalised, but it is understood that the development will comprise several houses with associated gardens, communal soft landscaped areas and associated access roads.

The northern part of the site comprises an area of grassland containing clumps of trees and a dried-up pond. The southern part of the site contains three large interlinked light industrial buildings and a number of outbuildings. A vehicle repair garage and car sales yard are located a short distance to the south-east of the site.

The site comprised part of an open field at the time of the earliest inspected historical map, dated 1875. By the early 1980s the site is shown on its approximate current layout.

Reference to geological datasets indicates that the site is expected to be underlain by the Weald Clay Formation. The ground investigation confirmed the underlying soils to comprise a shallow thickness of made ground, overlying Weald Clay Formation deposits.

The Weald Clay Formation is classed as an Unproductive Stratum. The site does not lie within a SPZ. Groundwater was not encountered during the short period of the intrusive works.

The preliminary contamination risk assessment identified potential pollutant linkages relating to proposed end users of the site.

The ground investigation did not identify any of the potential contaminants to be present at concentrations considered to pose an unacceptable risk to either end users of the site or controlled waters beneath the site. No remedial measures or further contamination risk assessment works are considered to be necessary.

The report should be submitted for approval as part of a planning application for the site and to any other relevant regulator and/or warrantor.

Precautions against shrinkage and heave for any new foundation system could assume a medium volume change potential for the fine-grained Weald Clay Formation.

A net allowable bearing capacity of 150kN/m² may be assumed for pad or strip foundations up to 1.00m in breadth that are constructed directly onto the Weald Clay Formation soils of at least stiff consistency.

A DS-1 Design Sulfate Class and an AC-1 ACEC classification should be assumed as a minimum for the design of concrete in contact with the ground.

Ground floors should be suspended unless the conditions set out within this report can be met.

Design equilibrium California bearing ratios and moduli of subgrade reaction are presented in the report. The subgrade is not likely to be susceptible to frost heave.

Infiltration testing within the Weald Clay Formation soils recorded infiltration rates ranging between $3.91 \times 10^{-5} \text{m/sec}$ and $2.25 \times 10^{-7} \text{m/sec}$.

6. SITE WORKS

6.1 Introduction

The intrusive site works comprised a series of dynamic sampler boreholes, together with accompanying in-situ geotechnical testing. The intrusive work was carried out between 24th June 2025 and 25th June 2025, with the coring of hard surfacing and walkover being undertaken ahead of the boreholes. The exploratory hole locations are shown on Figure 2.

Descriptions of the strata encountered and comments on groundwater conditions are shown in the exploratory hole records given in Appendix D, which also includes explanatory notes to assist in their interpretation.

6.2 Exploratory Holes

The following table summarises the intrusive works undertaken at the site.

Table 12. Summary of Intrusive Works Undertaken

Designation	Depth (m bgl)	Method
WS01	3.00	Dynamic Sampler
WS02	3.00	Dynamic Sampler
WS03	3.00	Dynamic Sampler
WS04	3.00	Dynamic Sampler
WS05	3.00	Dynamic Sampler
WS06	3.00	Dynamic Sampler
WS07	3.00	Dynamic Sampler
WS08	3.00	Dynamic Sampler
WS09	3.00	Dynamic Sampler
WS10	2.00	Dynamic Sampler

6.3 Sampling

Samples of soil were taken from the exploratory holes at the depths shown in the exploratory hole records. The types of samples taken are indicated on the exploratory hole records. Details on the sample types are provided in the explanatory notes.

Where appropriate, samples were stored in cool boxes with cooling blocks to maintain temperatures below 4°C until transferred to refrigerators upon return to the office and subsequently forwarded to the external accredited chemical testing laboratory.

6.4 In Situ Strength Testing

The types and depths of in situ testing, together with the test results, are either given on the exploratory hole records or are summarised separately in Appendix D. Further details on the in situ testing methods are provided in the explanatory notes.

6.5 In Situ Infiltration Testing

Falling head soakage tests were undertaken in two boreholes in general accordance with Kent County Council guidance³. The results of the testing along with the infiltration rate calculations are included in Appendix F.

6.6 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd.

Geotechnical testing was undertaken by Ashdown Site Investigation Ltd. Chemical testing was undertaken by a laboratory with recognised (UKAS and MCERTS) accreditation for quality control.

Results from the laboratory tests are provided in Appendix E.

³ The Soakaway Design Guide published by Kent County Council, 2000.

8.7 Stormwater Infiltration Systems

In-situ infiltration testing¹¹ was undertaken in boreholes WS03 and WS10. From the test results, calculations were made to estimate the infiltration rate that could be expected for soakaways constructed to discharge into the underlying soils within the test zone.

The infiltration rates derived from the tests are summarised in the following table.

Table 18. Calculated Infiltration Rates

Exploratory Hole	Top of Response Zone (m bgl)	Bottom of Response Zone (m bgl)	Stratum	Infiltration Rate (f) (m/sec)	Driving Head of Water (m)
WS03	2.00	3.00	Weald Clay Formation	2.25×10^{-7}	2.5
WS10 Test 1	1.00	2.00	Weald Clay Formation	2.96×10^{-5}	1.0
				1.41×10^{-5}	0.7
WS10 Test 2	1.00	2.00	Weald Clay Formation	3.91×10^{-5}	1.0
				9.06×10^{-6}	0.6
WS10 Test 3	1.00	2.00	Weald Clay Formation	2.54×10^{-5}	1.1
				1.10×10^{-5}	0.8

The value 'f' is equivalent to the soil infiltration coefficient 'q' quoted in the Construction Industry Research and Information Association (CIRIA) Report 156.

The results from the infiltration tests should be provided to engineers responsible for the design of the drainage system. It is noted that the results from borehole WS10 are significantly better than those for borehole WS03, which would be considered more typical of the clays of the Weald Clay Formation. It is likely that the higher results achieved in borehole WS10 are linked to the more granular deposits that were encountered at this location, possibly representative of a horizon of rock deposits, and are unlikely to be representative of the soils generally encountered at the site.

To comply with building regulations¹², point discharging infiltration systems (conventional ring or trench soakaways) are required to be constructed a minimum of 5.0m away from proposed or existing buildings.

The infiltration testing conducted in the boreholes is intended to provide calculated soil infiltration rates to assist in the preliminary design of infiltration systems at the site. In light of the varying results between the two boreholes, further testing across the site would be recommended ahead of undertaking designs if a soakaway drainage system is to be considered at the site.

It is also noted that Regulators/Local Authorities may require further testing to be undertaken at a later stage in accordance with the BRE365 guidance. This guidance states the testing should be carried out at the locations and depths of the proposed soakaways, which will not be known until preliminary drainage design has been undertaken.

¹¹ Conducted in accordance with The Soakaway Design Guide, published by Kent County Council, July 2000.

¹² The Building Regulations 2010; Part H; Drainage and Waste Disposal

Monitoring of groundwater levels during the worst annual case (winter period) is often a requirement of Local Authorities and the BRE365 guidance suggests this should be undertaken prior to finalising design of infiltration systems.

FIGURES

- Figure 1 Site Location Plan
- Figure 2 Site Plan



Site Location



Head Office

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
East Sussex
BN6 8SG
contact@ashdownsi.co.uk

Site

Watermead
Henfield Road
Cowfold
West Sussex

Project Ref

P17246

Figure No

1

Drawing Title

Site Location Plan

Scale

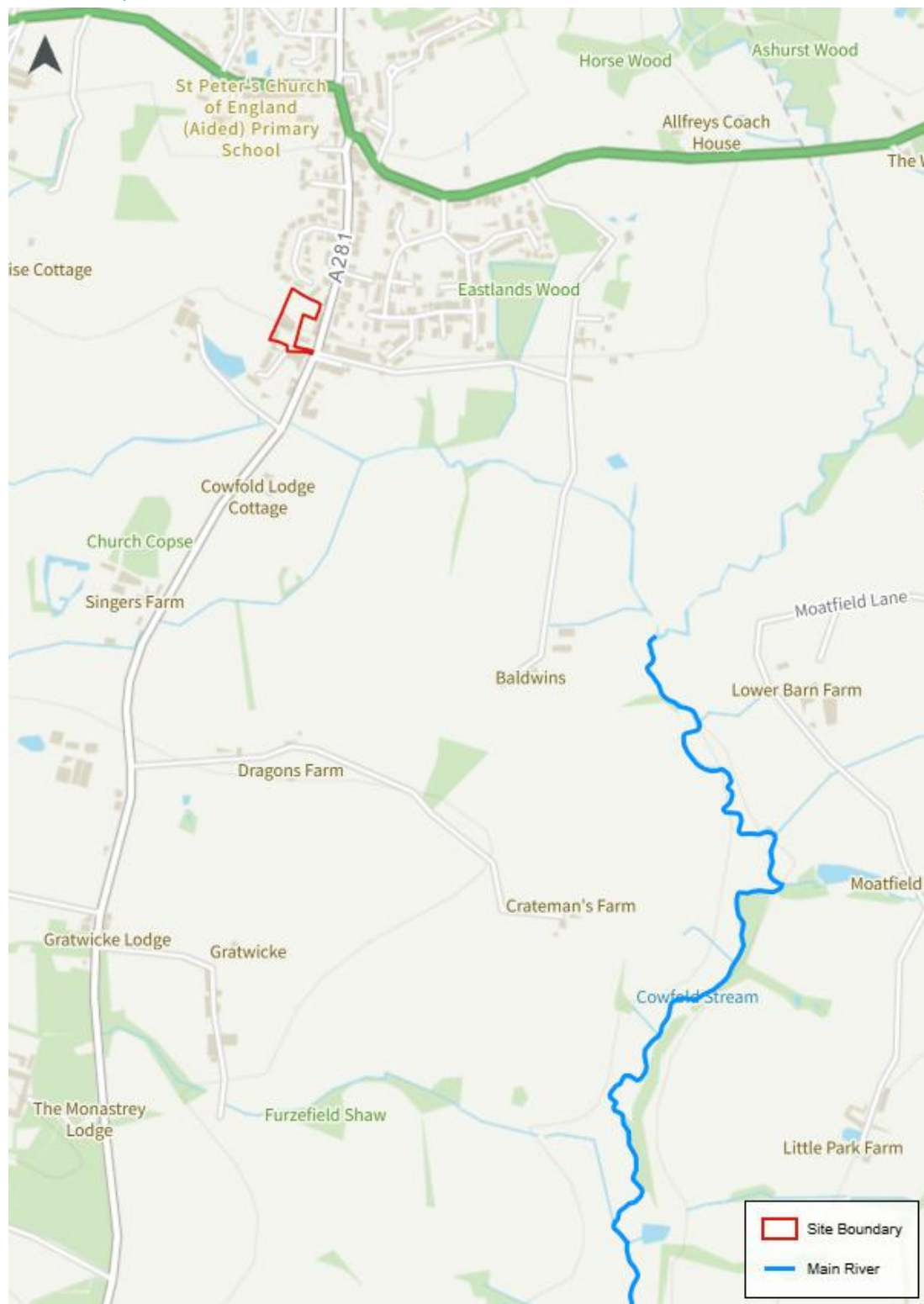
Not To Scale



Head Office
Unit 3 The Old Grain Store Ditchling Common Business Park Ditchling East Sussex BN6 8SG contact@ashdownsi.co.uk
Site
Watermead Henfield Road Cowfold West Sussex
Project Ref
P17246
Figure No
2
Drawing Title
Site Plan
Scale
Not To Scale

Appendix D

Flood Maps

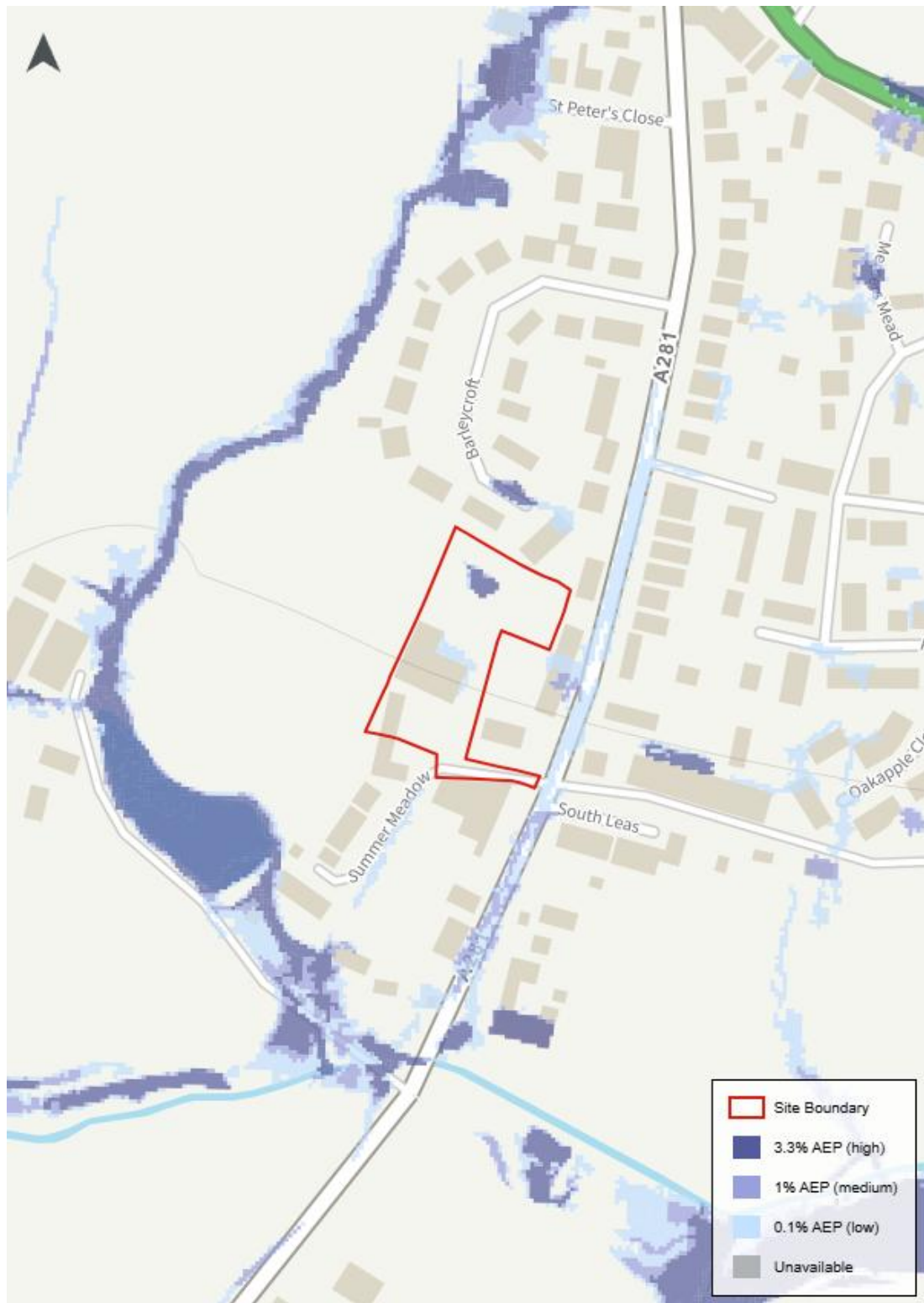


Environment Agency Main Rivers Map

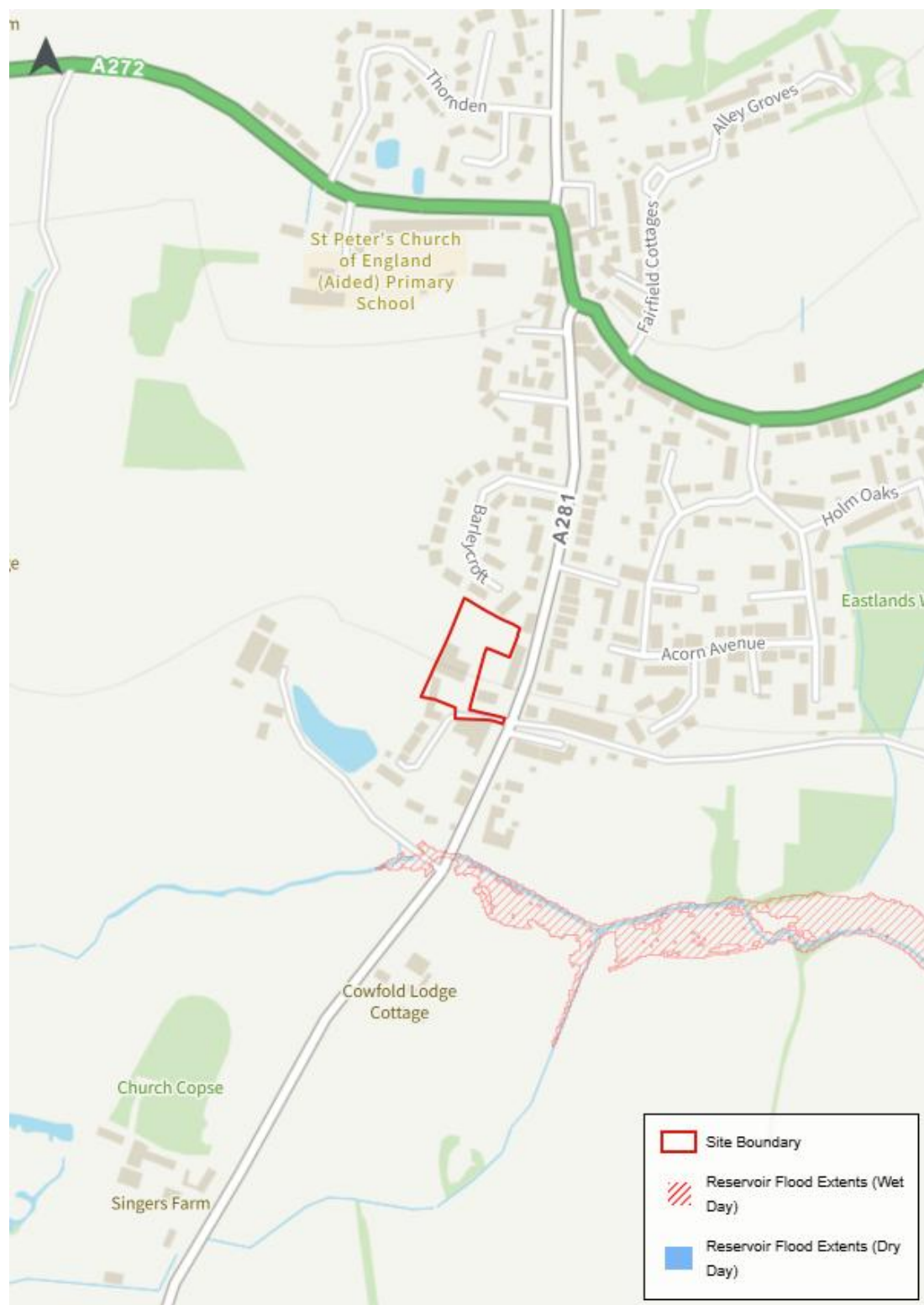


Environment Agency Flood Map for Planning

The site is located in Flood Zone 1.

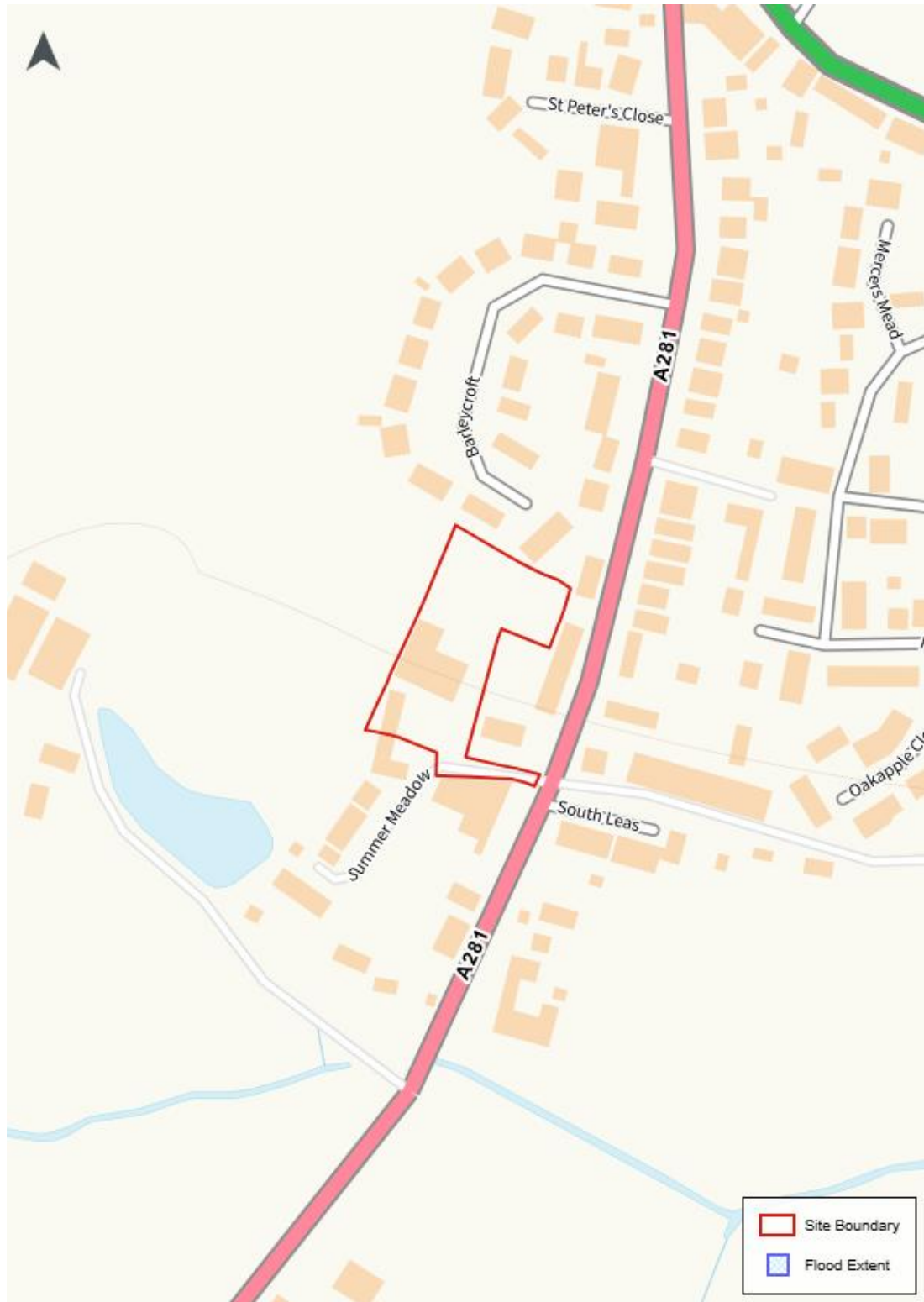


Environment Agency Surface Water Flood Extents Map



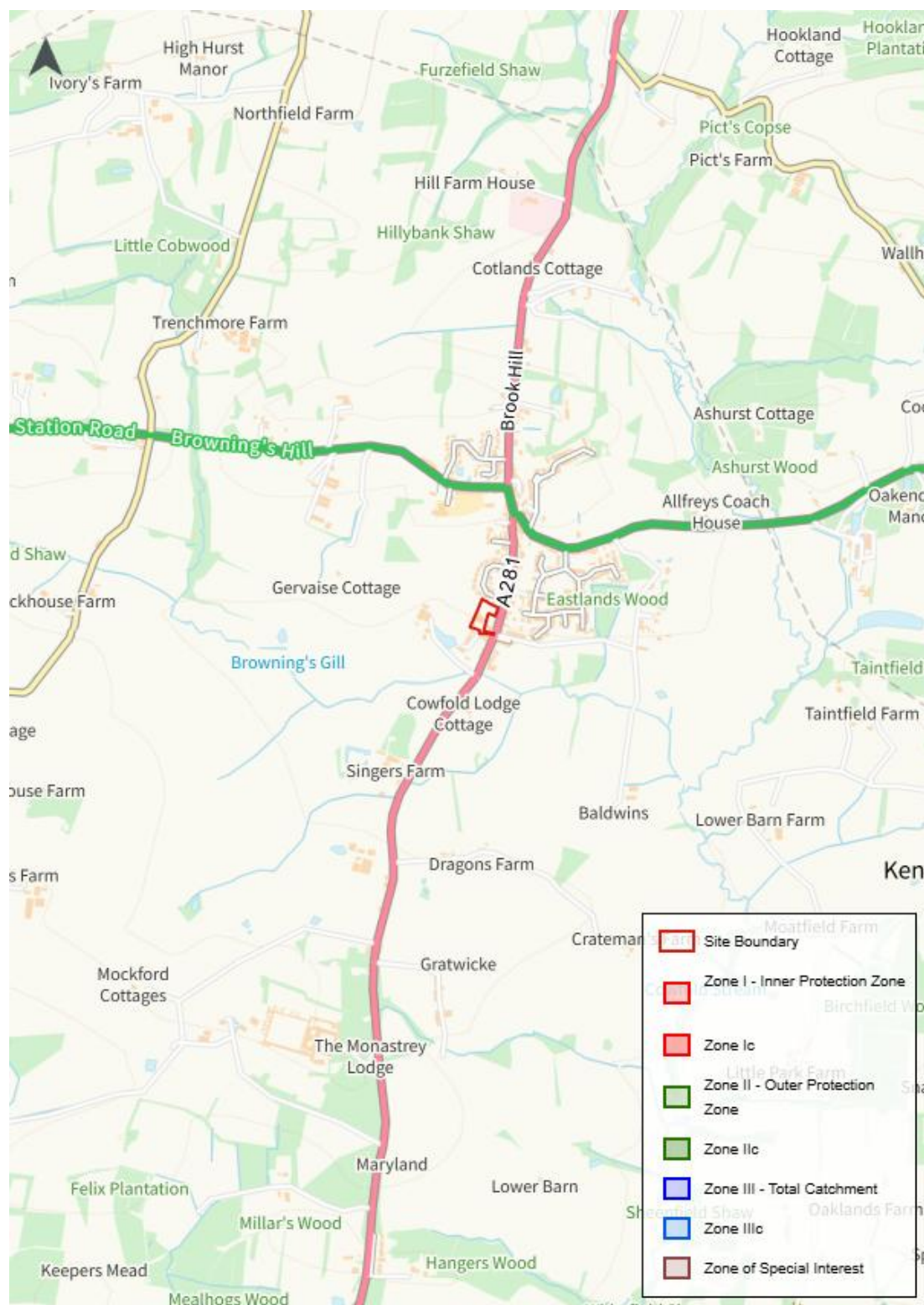
Environment Agency Flood Risk from Reservoirs

The site is clear from the risk of flooding from this source



DEFRA Historical Flooding Map

Neither this site nor anywhere in the vicinity has been affected by flooding in the past



Environment Agency Groundwater Source Protection Zones Map



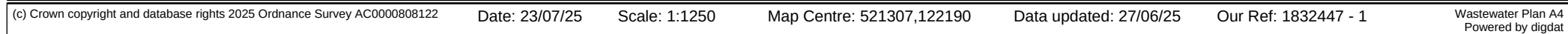
Environment Agency Online Groundwater Vulnerability Zones Map

Groundwater Vulnerability Map (England)

-  Local Information
-  Soluble Rock Risk
-  High
-  Medium - High
-  Medium
-  Medium - Low
-  Low
-  Unproductive

Appendix E

Sewer Records and CCTV Surveys



WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.



Project

Project Name: Watermead (Former PJ Barrow)
Project Description: CCTV Survey, Trace & Plot
Project Status: Complete
Project Date: 26/02/2026
Inspection Standard: MSCC5 Sewers & Drainage GB (SRM5 Scoring)



EYES ON DRAINAGE

CCTV-Trace-Plot-Map-Repair

Table of Contents

Project Name	Project Number	Project Date
Watermead (Former PJ Barrow)		26/02/2026

Project Information	P-1
Scoring Summary	P-3
Project Pictures	P-4
Section Profile	P-7
Section Summary	P-8
Section Item 1: SVP > FW1 (SVPX)	1
Section Item 2: FW1 > Klargest (FW1X)	4
Section Item 3: Klargest > RWG (KlargestX)	6
Section Item 4: CP1 > OF1 (CP1X)	8
Section Item 5: CP2 > JN (CP2X)	11
Section Item 6: CP3 > CP2 (CP3X)	13
Section Item 7: A > CP3 (AX)	15
Section Item 8: B > CP3 (BX)	17
Section Item 9: CP4 > OF2 (CP4X)	19
Section Item 10: RWG > A (RWGX)	22
Disclaimer	26

Project Information

Project Name	Project Number	Project Date
Watermead (Former PJ Barrow)		26/02/2026

Client

Company: gta Civils & Transport
Department: Maple House
Street: 192-198 London Road
Town or City: Burgess Hill
County: West Sussex
Post Code: RH15 9RD
Phone: 01444 871444

**Site**

Department: Former PJ Barrow Garden Machinery
Street: Watermead
Town or City: Cowfold
County: W.Sussex
Post Code: RH13 8DT

Contractor

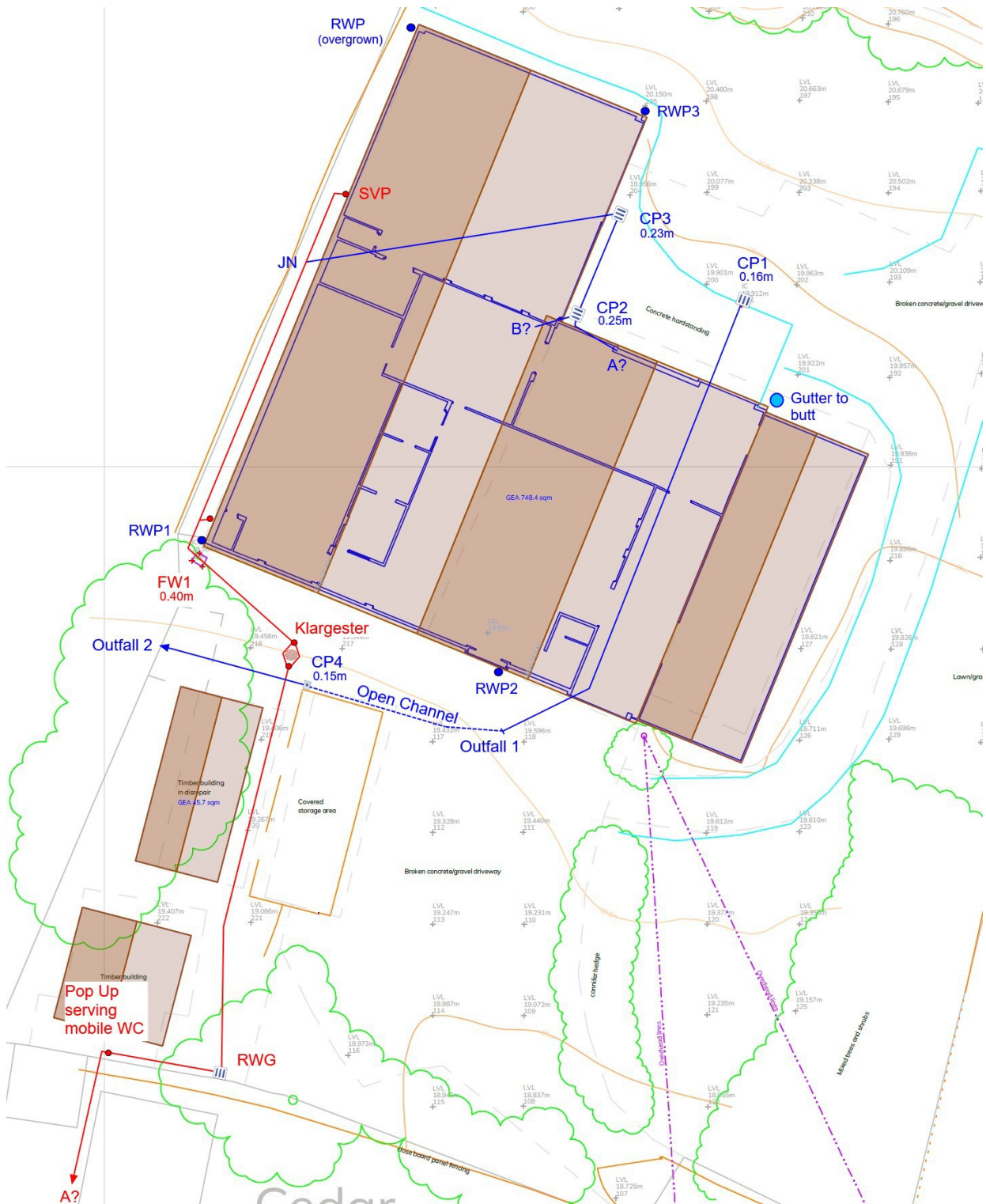
Company: Eyes On Drainage Services Ltd
Contact: Jay Young
Department: Merrion House
Street: Bines Green
Town or City: Horsham
County: West Sussex
Post Code: RH13 8EH
Phone: 01403 710971
Mobile: 077111 84951
Email: info@eyesondrainage.co.uk



Project Information

Project Name	Project Number	Project Date
Watermead (Former PJ Barrow)		26/02/2026

Project Drawing, Page 'Watermead (Former PJ Barrow)'



Scoring Summary

Project Name
Watermead (Former PJ Barrow)

Project Number

Project Date
26/02/2026

Structural Defects

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.

Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.

Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
9	CP4X	5	Multiple defects
10	RWGX	4	Broken pipe from 12 o'clock to 12 o'clock

Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
1	SVPX	4	Settled deposits, hard or compacted, 25% cross-sectional area loss, finish
2	FW1X	4	Settled deposits, hard or compacted, 10% cross-sectional area loss, finish
3	KlargesterX	5	Roots, mass, 20% cross-sectional area loss, finish
4	CP1X	3	Settled deposits, fine, 25% cross-sectional area loss, finish
6	CP3X	4	Settled deposits, fine, 20% cross-sectional area loss, finish
7	AX	4	Settled deposits, fine, 50% cross-sectional area loss, finish
8	BX	5	Connection defective, connecting pipe is intruding at 12 o'clock, 40mm dia, intrusion: 95%
9	CP4X	4	Settled deposits, hard or compacted, 60% cross-sectional area loss, finish
10	RWGX	5	Roots, mass, 20% cross-sectional area loss

Abandoned Surveys

Section	PLR	Description
7	AX	Survey abandoned
8	BX	Survey abandoned
9	CP4X	Survey abandoned
10	RWGX	Survey abandoned

Information

These scoring summaries are based on the SRM grading from the WRc.

Project Pictures

Project Name	Project Number	Project Date
Watermead (Former PJ Barrow)		26/02/2026



FW1



Klargester



Klargester



CP1



CP2



CP3

Project Pictures

Project Name	Project Number	Project Date
Watermead (Former PJ Barrow)		26/02/2026



CP4



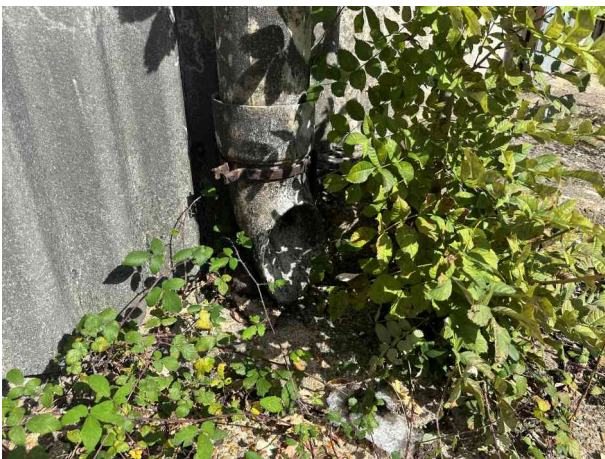
Outfall 1



Outfall 2



RWP1



RWP2



RWP3

Project Pictures

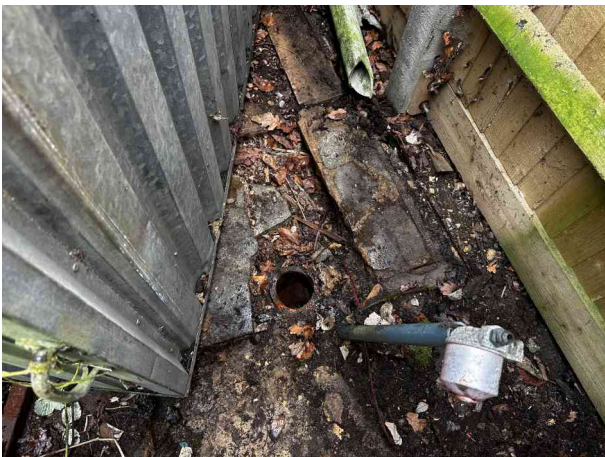
Project Name	Project Number	Project Date
Watermead (Former PJ Barrow)		26/02/2026



Open gutter to butt



RWG



Pop Up serving mobile WC



Mobile WC & point of exit from RWG (neighbouring property)

Section Profile

Project Name Watermead (Former PJ Barrow)	Project Number	Project Date 26/02/2026
---	-----------------------	-----------------------------------

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	SVP	FW1	09/09/2025	Watermead	Polyvinyl chloride	20.00 m	20.00 m
2	FW1	Klargester	09/09/2025	Watermead	Polyvinyl chloride	6.50 m	6.50 m
3	Klargester	RWG	09/09/2025	Watermead	Polyvinyl chloride	23.20 m	23.30 m
4	CP1	OF1	09/09/2025	Watermead	Polyvinyl chloride	28.30 m	28.30 m
5	CP2	JN	09/09/2025	Watermead	Polyvinyl chloride	18.80 m	18.80 m
6	CP3	CP2	09/09/2025	Watermead	Polyvinyl chloride	5.40 m	5.40 m

Total: 6 Inspections x Circular 100 mm, 0 mm = 102.20 m Total Length and 102.30 m Inspected Length

Total: 6 Inspections = 102.20 m Total Length and 102.30 m Inspected Length

Disclaimer

Although every effort has been made to produce a thorough and precise report, Eyes On Drainage Services Ltd cannot be held liable for any discrepancies or omissions.

Furthermore Eyes On Drainage Services Ltd cannot be held responsible for any actions taken based on the information supplied within this report.

Project

Project Name: Watermead (Henfield Rd_ Cowfold)
Project Description: CCTV survey, trace & plot
Project Status: Complete
Project Date: 03/04/2026
Inspection Standard: MSCC5 Sewers & Drainage GB (SRM5 Scoring)



EYES ON DRAINAGE

CCTV-Trace-Plot-Map-Repair

Table of Contents

Project Name	Project Number	Project Date
Watermead (Henfield Rd_ Cowfold)		03/04/2026

Project Information	P-1
Scoring Summary	P-3
Project Pictures	P-4
Section Profile	P-6
Section Summary	P-7
Section Item 1: A > CP6 (AX)	1
Section Item 2: CP6 > CP5 (CP6X)	3
Section Item 3: RG > CP7 (RGX)	9
Section Item 4: A > CP7 (AX)	11
Section Item 5: CP7 > B (CP7X)	13
Section Item 6: CP5 > CP4 (CP5X)	16
Section Item 7: CP4 > CP3 (CP4X)	19
Section Item 8: CP3 > CP2 (CP3X)	25
Section Item 9: CP2 > CP1 (CP2X)	27
Disclaimer	29

Project Information

Project Name	Project Number	Project Date
Watermead (Henfield Rd_ Cowfold)		03/04/2026

Client

Company: gta Civils & Transport
Department: Maple House
Street: 192-198 London Road
Town or City: Burgess Hill
County: West Sussex
Post Code: RH15 9RD
Phone: 01444 871444

**Site**

Street: Henfield Rd
Town or City: Cowfold
County: W.Sussex
Post Code: RH13

Contractor

Company: Eyes On Drainage Services Ltd
Department: Merrion House
Street: Bines Green
Town or City: Horsham
County: West Sussex
Post Code: RH13 8EH
Phone: 01403 710971
Mobile: 077111 84951
Email: info@eyesondrainage.co.uk





Project Information

Project Name	Project Number	Project Date
Watermead (Henfield Rd_ Cowfold)		03/04/2026

Project Drawing, Page 'Watermead'



Scoring Summary

Project Name
Watermead (Henfield Rd_ Cowfold)

Project Number

Project Date
03/04/2026

Structural Defects

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.

Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.

Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
7	CP4X	4	Hole in drain or sewer from 5 o'clock to 7 o'clock
9	CP2X	4	Fractures, multiple from 12 o'clock to 12 o'clock, finish

Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
2	CP6X	5	Multiple defects
3	RGX	4	Settled deposits, fine, 20% cross-sectional area loss, finish
4	AX	4	Settled deposits, fine, 30% cross-sectional area loss, finish
5	CP7X	3	Multiple defects
6	CP5X	5	Roots, mass, 20% cross-sectional area loss
7	CP4X	4	Multiple defects

Abandoned Surveys

Section	PLR	Description
4	AX	Survey abandoned
5	CP7X	Survey abandoned

Information

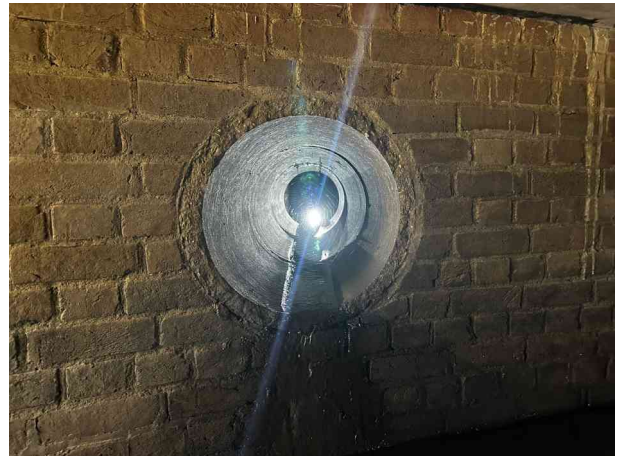
These scoring summaries are based on the SRM grading from the WRC.

Project Pictures

Project Name	Project Number	Project Date
Watermead (Henfield Rd_Cowfold)		03/04/2026



Outfall to stream



Confirmation of camera within CP1 (seen through outfall)



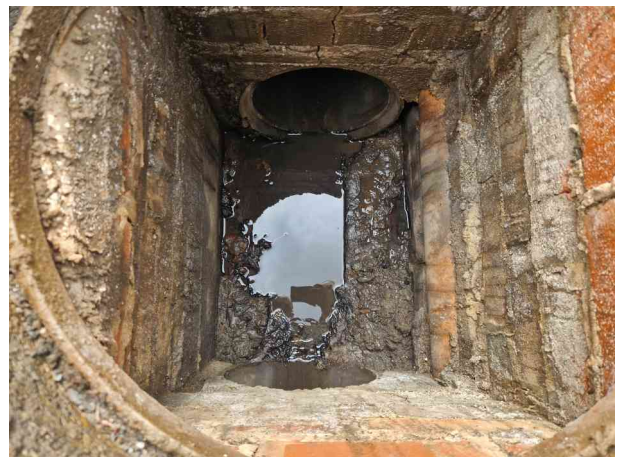
CP2



CP3



CP4



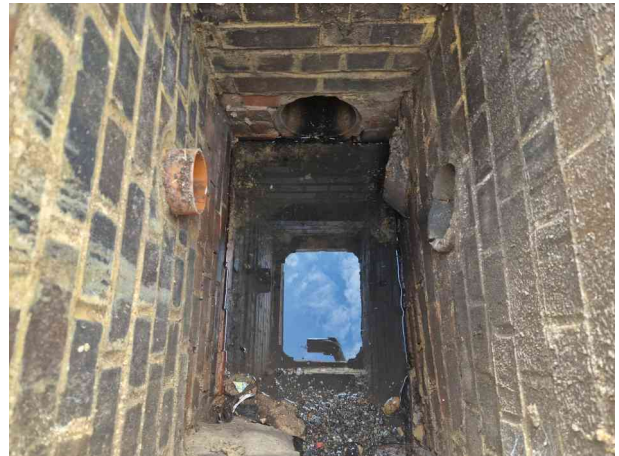
CP5

Project Pictures

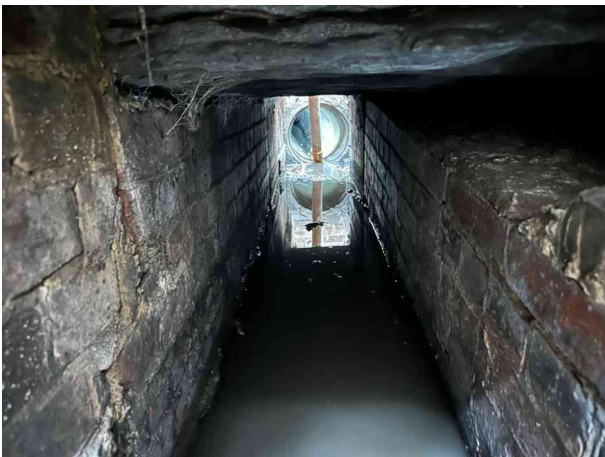
Project Name	Project Number	Project Date
Watermead (Henfield Rd_Cowfold)		03/04/2026



CP6



CP7



Culvert



Location of pipe 21.5m US of CP6, depth 1.49m



Location of pipe 23.7m US of CP6, depth 1.29m

Section Profile

Project Name
Watermead (Henfield Rd_ Cowfold)

Project Number

Project Date
03/04/2026

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
3	RG	CP7	31/03/2026	Henfield Road	Vitrified clay	1.00 m	1.00 m

Total: 1 Inspection x Circular 150 mm, 0 mm = 1.00 m Total Length and 1.00 m Inspected Length

Circular, 225 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
7	CP4	CP3	31/03/2026	Henfield Road	Concrete	40.80 m	40.80 m

Total: 1 Inspection x Circular 225 mm, 0 mm = 40.80 m Total Length and 40.80 m Inspected Length

Circular, 300 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	A	CP6	31/03/2026	Henfield Road	Concrete	22.70 m	22.70 m
2	CP6	CP5	31/03/2026	Henfield Road	Concrete	30.30 m	30.30 m
6	CP5	CP4	31/03/2026	Henfield Road	Concrete	20.70 m	20.70 m

Total: 3 Inspections x Circular 300 mm, 0 mm = 73.70 m Total Length and 73.70 m Inspected Length

Circular, 450 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
9	CP2	CP1	31/03/2026	Henfield Road	Concrete	27.40 m	27.40 m

Total: 1 Inspection x Circular 450 mm, 0 mm = 27.40 m Total Length and 27.40 m Inspected Length

Rectangular, 700 mm, 500 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
8	CP3	CP2	31/03/2026	Henfield Road	Brick	2.20 m	2.20 m

Total: 1 Inspection x Rectangular 700 mm, 500 mm = 2.20 m Total Length and 2.20 m Inspected Length

Total: 7 Inspections = 145.10 m Total Length and 145.10 m Inspected Length

Section Summary

Project Name Watermead (Henfield Rd_ Cowfold)	Project Number	Project Date 03/04/2026
---	-----------------------	-----------------------------------

Number of sections	9
Total length of sections	156.80 m
Total length of inspected sections	156.80 m
Total length of not inspected sections	0.00 m
Number of abandoned inspections	2
Number of section inspection photos	76
Number of section inspection videos	9
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	AX	Upstream Node:	A
Inspection Direction:	Upstream	Downstream Node:	CP6
Inspected Length:	22.70 m	Dia/Height:	300 mm
Total Length:	22.70 m	Material:	Concrete

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP6
2	0.00	WL	Water level, 5% of the vertical dimension, Live
3	16.50	RFJ	Roots, fine at joint
4	22.50	RM	Roots, mass, 5% cross-sectional area loss
5	22.70	MHF	Finish node, manhole, reference: A

PLR:	CP6X	Upstream Node:	CP6
Inspection Direction:	Downstream	Downstream Node:	CP5
Inspected Length:	30.30 m	Dia/Height:	300 mm
Total Length:	30.30 m	Material:	Concrete

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP6
2	0.00	WL	Water level, 5% of the vertical dimension, Live
3	1.30	RMJ	Roots, mass at joint, 5% cross-sectional area loss
4	4.10	RTJ	Roots, tap at joint, start
5	4.80	RTJ	Roots, tap at joint, finish
6	5.10	RMJ	Roots, mass at joint, 5% cross-sectional area loss
7	6.10	RMJ	Roots, mass at joint, 10% cross-sectional area loss
8	6.90	RMJ	Roots, mass at joint, 5% cross-sectional area loss
9	8.00	RMJ	Roots, mass at joint, 10% cross-sectional area loss
10	10.10	WL	Water level, 10% of the vertical dimension
11	11.70	RMJ	Roots, mass at joint, 20% cross-sectional area loss

Section Summary

Project Name Watermead (Henfield Rd_Cowfold)	Project Number	Project Date 03/04/2026
--	-----------------------	-----------------------------------

No.	m+	Code	Observation
12	13.00	RMJ	Roots, mass at joint, 10% cross-sectional area loss
13	13.70	RMJ	Roots, mass at joint, 20% cross-sectional area loss, start
14	14.20	RMJ	Roots, mass at joint, 20% cross-sectional area loss, finish
15	15.50	RMJ	Roots, mass at joint, 20% cross-sectional area loss
16	16.50	RTJ	Roots, tap at joint, start
17	17.10	RTJ	Roots, tap at joint, finish
18	17.50	RMJ	Roots, mass at joint, 5% cross-sectional area loss
19	19.10	RMJ	Roots, mass at joint, 10% cross-sectional area loss
20	23.10	RMJ	Roots, mass at joint, 5% cross-sectional area loss
21	28.50	JN	Junction at 10 o'clock, 150mm dia
22	30.30	CPF	Finish node, catchpit, reference: CP5

PLR:	RGX	Upstream Node:	RG
Inspection Direction:	Upstream	Downstream Node:	CP7
Inspected Length:	1.00 m	Dia/Height:	150 mm
Total Length:	1.00 m	Material:	Vitrified clay

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP7
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.40	DES	Settled deposits, fine, 70% cross-sectional area loss, start
4	0.70	DES	Settled deposits, fine, 20% cross-sectional area loss, change
5	1.00	DES	Settled deposits, fine, 20% cross-sectional area loss, finish
6	1.00	GYF	Finish node, gully, reference: RG

PLR:	AX	Upstream Node:	A
Inspection Direction:	Upstream	Downstream Node:	CP7
Inspected Length:	0.40 m	Dia/Height:	150 mm
Total Length:	0.40 m	Material:	Vitrified clay

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP7
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.00	DES	Settled deposits, fine, 30% cross-sectional area loss, start
4	0.40	DES	Settled deposits, fine, 30% cross-sectional area loss, finish
5	0.40	SA	Survey abandoned, Unable to continue

PLR:	CP7X	Upstream Node:	CP7
Inspection Direction:	Downstream	Downstream Node:	B
Inspected Length:	11.30 m	Dia/Height:	225 mm
Total Length:	11.30 m	Material:	Concrete

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP7
2	0.00	WL	Water level, 0% of the vertical dimension
3	1.20	DER	Settled deposits, coarse, 10% cross-sectional area loss
4	1.60	DES	Settled deposits, fine, 5% cross-sectional area loss, start
5	2.70	DES	Settled deposits, fine, 20% cross-sectional area loss, change

Section Summary

Project Name Watermead (Henfield Rd_Cowfold)	Project Number	Project Date 03/04/2026
--	-----------------------	-----------------------------------

No.	m+	Code	Observation
6	3.70	RMJ	Roots, mass at joint, 10% cross-sectional area loss
7	8.10	DES	Settled deposits, fine, 50% cross-sectional area loss, change
8	11.20	DES	Settled deposits, fine, 50% cross-sectional area loss, finish
9	11.30	SA	Survey abandoned, Unable to continue

PLR:	CP5X	Upstream Node:	CP5
Inspection Direction:	Downstream	Downstream Node:	CP4
Inspected Length:	20.70 m	Dia/Height:	300 mm
Total Length:	20.70 m	Material:	Concrete

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: CP5
2	0.00	WL	Water level, 10% of the vertical dimension
3	1.60	RF	Roots, fine, start
4	2.20	RF	Roots, fine, finish
5	3.30	RMJ	Roots, mass at joint, 5% cross-sectional area loss
6	3.70	RM	Roots, mass, 20% cross-sectional area loss
7	4.50	WL	Water level, 5% of the vertical dimension
8	20.70	CPF	Finish node, catchpit, reference: CP4

PLR:	CP4X	Upstream Node:	CP4
Inspection Direction:	Downstream	Downstream Node:	CP3
Inspected Length:	40.80 m	Dia/Height:	225 mm
Total Length:	40.80 m	Material:	Concrete

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP4
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.20	RTJ	Roots, tap at joint, start
4	0.70	RTJ	Roots, tap at joint, finish
5	10.90	RMJ	Roots, mass at joint, 5% cross-sectional area loss, start
6	11.40	RMJ	Roots, mass at joint, 5% cross-sectional area loss, finish
7	14.40	H	Hole in drain or sewer from 5 o'clock to 7 o'clock
8	17.30	RTJ	Roots, tap at joint
9	18.40	RMJ	Roots, mass at joint, 5% cross-sectional area loss
10	20.30	RTJ	Roots, tap at joint, start
11	20.80	RTJ	Roots, tap at joint, finish
12	23.30	RMJ	Roots, mass at joint, 10% cross-sectional area loss, start
13	25.10	RMJ	Roots, mass at joint, 10% cross-sectional area loss, change
14	25.60	RMJ	Roots, mass at joint, 10% cross-sectional area loss, finish
15	25.70	RMJ	Roots, mass at joint, 10% cross-sectional area loss, start
16	26.90	RMJ	Roots, mass at joint, 5% cross-sectional area loss, change
17	27.40	RMJ	Roots, mass at joint, 5% cross-sectional area loss, finish
18	27.70	RTJ	Roots, tap at joint, start
19	31.00	RTJ	Roots, tap at joint, finish
20	36.20	RTJ	Roots, tap at joint, start
21	36.50	RTJ	Roots, tap at joint, finish

Section Summary

Project Name Watermead (Henfield Rd_ Cowfold)	Project Number	Project Date 03/04/2026
---	-----------------------	-----------------------------------

No.	m+	Code	Observation
22	38.90	LR	Line deviates right
23	40.00	RMJ	Roots, mass at joint, 5% cross-sectional area loss, start
24	40.50	RMJ	Roots, mass at joint, 5% cross-sectional area loss, finish
25	40.80	CPF	Finish node, catchpit, reference: CP3, Culvert

PLR:	CP3X	Upstream Node:	CP3
Inspection Direction:	Upstream	Downstream Node:	CP2
Inspected Length:	2.20 m	Dia/Height:	700 mm
Total Length:	2.20 m	Material:	Brick

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP2, Culvert
2	0.00	WL	Water level, 20% of the vertical dimension
3	0.00	CUW	Loss of vision, camera under water, start
4	2.20	CUW	Loss of vision, camera under water, finish
5	2.20	CPF	Finish node, catchpit, reference: CP3, Culvert

PLR:	CP2X	Upstream Node:	CP2
Inspection Direction:	Downstream	Downstream Node:	CP1
Inspected Length:	27.40 m	Dia/Height:	450 mm
Total Length:	27.40 m	Material:	Concrete

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: CP2
2	0.00	WL	Water level, 5% of the vertical dimension
3	9.00	FM	Fractures, multiple from 12 o'clock to 12 o'clock, start
4	11.10	FM	Fractures, multiple from 12 o'clock to 12 o'clock, finish
5	27.40	CPF	Finish node, catchpit, reference: CP1

Disclaimer

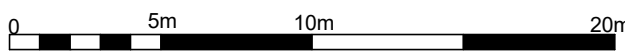
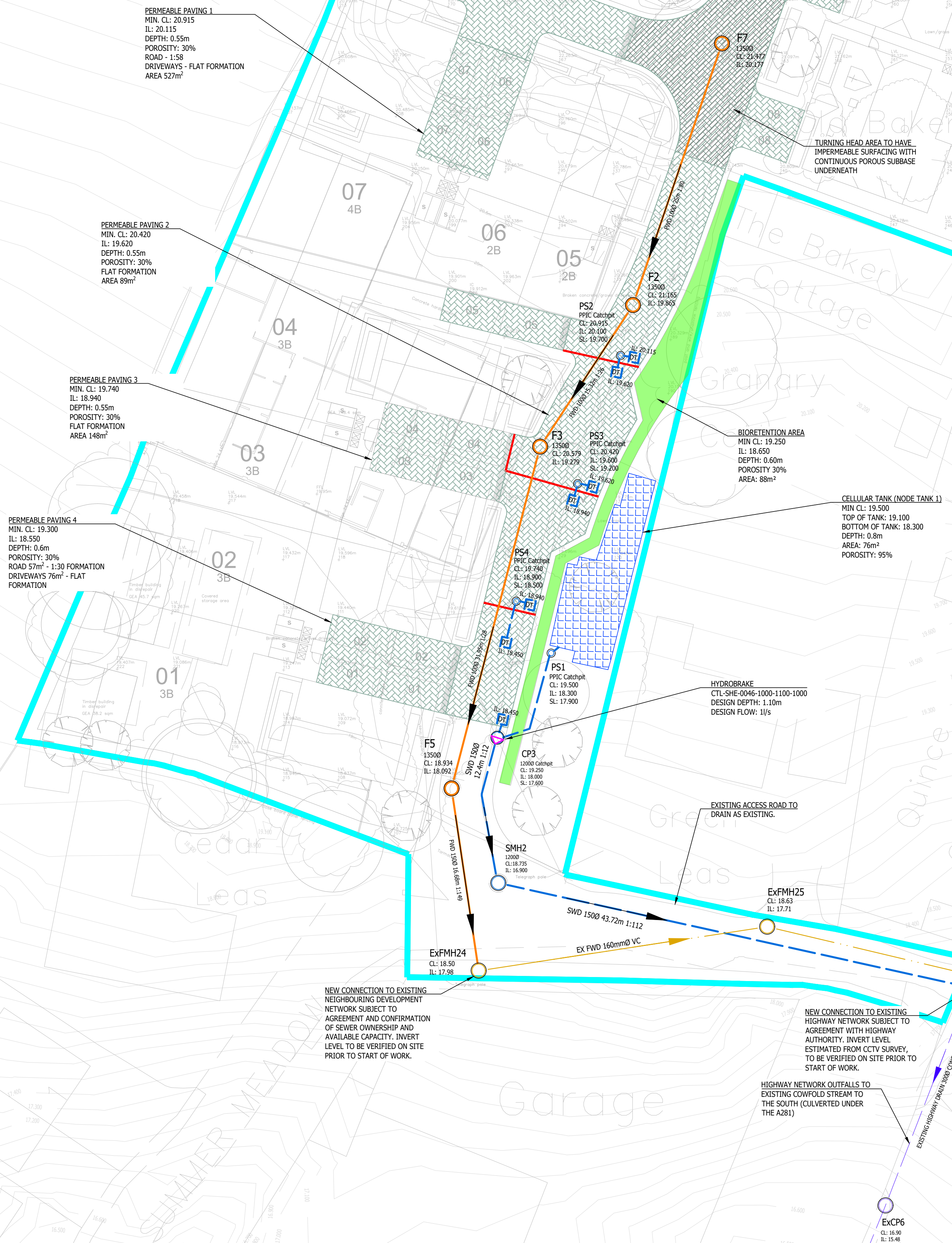
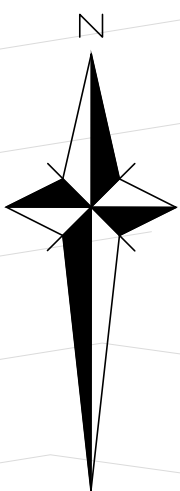
Although every effort has been made to produce a thorough and precise report, Eyes On Drainage Services Ltd cannot be held liable for any discrepancies or omissions.
Furthermore Eyes On Drainage Services Ltd cannot be held responsible for any actions taken based on the information supplied within this report.

Appendix F

Drawings

GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gta prior to works commencing.
2. Tender or billing drawings shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be site confirmed.
4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements
5. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Clients risk. gta hold no responsibility for resulting abortive works or costs.



KEY

- Private Surface Water Drain & Manhole
- Private Foul Water Drain & Manhole
- Existing Foul Water Manhole
- Permeable Paving Baffle
- Permeable Paving
- Impermeable Surfacing with continuous porous subbase
- Bioretention Area
- Cellular Attenuation Tank
- Distribution tank
- Flow Control
- Direction of Flow
- LIDAR Contour
- Site boundary

DESIGN NOTES

1. PROPOSED SUDS STRATEGY BASED ON DISCHARGE TO EXISTING NETWORK UNDER HIGHWAY A281. SUBJECT TO AGREEMENT WITH HIGHWAY AUTHORITY.
2. STORAGE DESIGN BASED ON 1 IN 100 YR STORM + 45%. ADDITIONAL 10% ALLOWANCE INCLUDED ON ROOF AREA FOR 'URBAN CREEP'.
3. PROPOSED FOUL SEWER CONNECTION TO EXISTING NEIGHBOURING DEVELOPMENT NETWORK SUBJECT TO AGREEMENT AND CONFIRMATION OF SEWER OWNERSHIP AND AVAILABLE CAPACITY.
4. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.
- 5 CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
6. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.

P5	UPDATED TO REFLECT LATEST LAYOUT	13.05.2026	AW	FVV
P4	FOLLOWING CCTV SURVEY	24.04.2026	AW	FVV
P3	UPDATED TO SHOW NEW SW & FW OUTFALLS	01.04.2026	AW	FVV
P2	UPDATED TO SHOW OFFSITE SW ROUTE	03.02.2026	AW	FVV
P1	FIRST ISSUE	15.09.2025	AW	FVV
Rev	Amendments	Date	Dsn	Chk

Status	PRELIMINARY		
Client	EARLSWOOD HOMES		
Architect	ECE ARCHITECTURE		
Project	WATERMEAD HENFIELD ROAD, COWFOLD		
Title	PROPOSED DRAINAGE STRATEGY		
Date	SEPTEMBER 2025	Scale @ A1	1:250
Clients Ref.		Project Ref.	13897
 Gloucester House, 66a Church Walk, Burgess Hill, West Sussex, RH15 9AS Tel:01444 871444 Web: www.gtacivils.co.uk			
Drawing Number	13897_1100		Rev. P5

Appendix G

Calculations

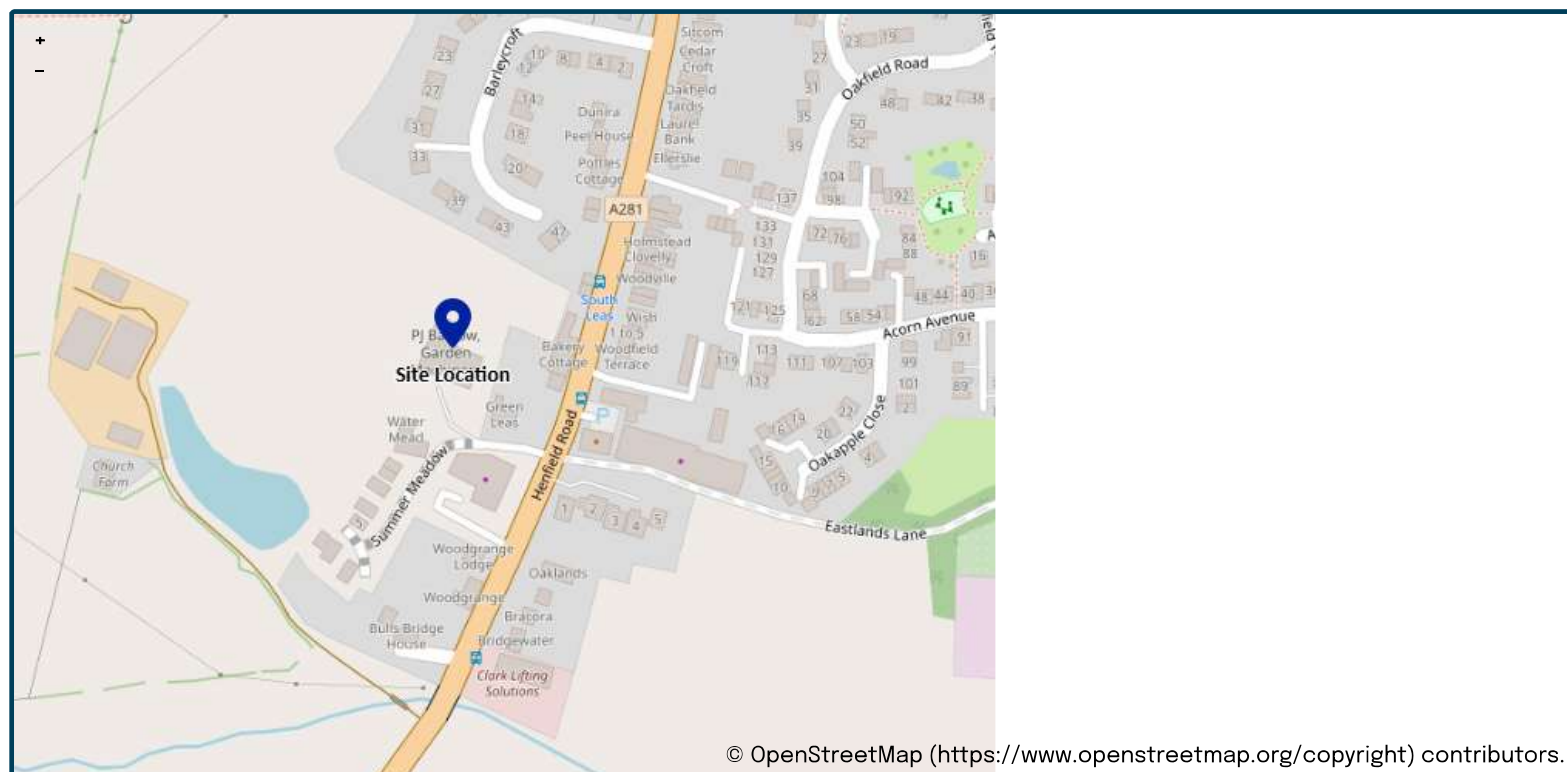
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	24/04/2026
Calculated by	FVV
Reference	13897
Model version	2.2.3

Location

Site name	Watermead
Site location	Cowfold



Site easting (British National Grid)	521228
Site northing (British National Grid)	122194

Site details

Total site area (ha)	1	ha
----------------------	--------------------------------	----

We use cookies on this site to enhance your user experience

OK, I AGREE

MORE INFO

By clicking the Accept button, you agree to us doing so.

Greenfield runoff

Method

Method	FEH statistical (2025)
--------	-----------------------------------

FEH statistical (2025)

	<u>My value</u>	<u>Map value</u>
SAAR9120 (mm)	815 mm	
BFIHOST19scaled	0.255	
QMed-QBar conversion	1.136	1.136
QMed (l/s)	7.3 l/s	
QBar (FEH statistical 2025) (l/s)	8.3 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)	7.0	l/s
Flow rate 2 year (l/s)	7.3	l/s
Flow rate 10 years (l/s)	13.4	l/s
Flow rate 30 years (l/s)	19.0	l/s
Flow rate 100 years (l/s)	26.4	l/s
Flow rate 200 years (l/s)	31.0	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.

We use cookies on this site to enhance your user experience

By clicking the Accept button, you agree to us doing so.

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Depth (m)	Invert Level (m)
Tank 1		5.00	19.500	1.200	18.300
PP + BIORETENTION	0.185	5.00	19.250	0.800	18.450
CP3			19.250	1.250	18.000
S2			18.623	1.723	16.900
PS5			17.989	1.479	16.510

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)
2.000	Tank 1	CP3	10.010	0.600	18.300	18.000	0.300	33.4	225	Circular	5.07
1.001	PP + BIORETENTION	CP3	8.784	0.600	18.450	18.000	0.450	19.5	225	Circular	5.05
1.002	CP3	S2	12.400	0.600	18.000	16.900	1.100	11.3	150	Circular	5.14
1.003	S2	PS5	43.720	0.600	16.900	16.510	0.390	112.1	150	Circular	5.91

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Pro Depth (mm)	Pro Velocity (m/s)
2.000	2.272	90.3	0.0	0.975	1.025	0.000	0	0.000
1.001	2.975	118.3	33.4	0.575	1.025	0.185	81	2.563
1.002	3.017	53.3	33.4	1.100	1.573	0.185	86	3.178
1.003	0.948	16.8	33.4	1.573	1.329	0.185	150	0.966

Simulation Settings

Rainfall Methodology	FEH-22	Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Rate(s)	x
Rainfall Events	Singular	Analysis Speed	Detailed	Additional Storage (m³/ha)	0.0	Check Discharge Volume	x
Summer CV	1.000	Skip Steady State	x	Starting Level (m)			

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440	2160	2880	4320
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	45	0	0
30	40	0	0				

Node CP3 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	18.000	Product Number	CTL-SHE-0046-1000-1100-1000
Design Depth (m)	1.100	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node PP + BIORETENTION Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	5.000	Depth (m)	0.600
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.550	Length (m)	15.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)		Slope (1:X)	1000.0		

Node PP + BIORETENTION Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	5.000	Depth (m)	0.550
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.600	Length (m)	11.400	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)		Slope (1:X)	30.0		

Node PP + BIORETENTION Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	10.000	Depth (m)	0.550
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.600	Length (m)	14.800	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)		Slope (1:X)	1000.0		

Node Tank 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	18.300
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	76.0	0.0	0.800	76.0	0.0	0.810	0.0	0.0

Node PP + BIORETENTION Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	18.650
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	88.0	88.0	0.600	88.0	108.0

Node PP + BIORETENTION Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	5.000	Depth (m)	0.550
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.600	Length (m)	17.800	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)		Slope (1:X)	1000.0		

Node PP + BIORETENTION Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	5.000	Depth (m)	0.550
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.600	Length (m)	105.400	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)		Slope (1:X)	1000.0		

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.09%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	Tank 1	344	18.651	0.351	4.9	25.8298	0.0000	SURCHARGED
360 minute winter	PP + BIORETENTION	344	18.651	0.201	5.9	7.4712	0.0000	OK
360 minute winter	CP3	344	18.651	0.651	5.7	0.9313	0.0000	SURCHARGED
360 minute winter	S2	352	16.922	0.022	0.8	0.0318	0.0000	OK
360 minute winter	PS5	352	16.532	0.022	0.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	Tank 1	2.000	CP3	-4.9	-0.124	-0.054	0.3981	
360 minute winter	PP + BIORETENTION	1.001	CP3	5.7	0.212	0.049	0.3391	
360 minute winter	CP3	1.002	S2	0.8	0.688	0.015	0.0145	
360 minute winter	S2	1.003	PS5	0.8	0.488	0.047	0.0707	26.6

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	Tank 1	705	18.918	0.618	3.5	45.4860	0.0000	SURCHARGED
720 minute winter	PP + BIORETENTION	705	18.918	0.468	9.6	82.0149	0.0000	SURCHARGED
720 minute winter	CP3	705	18.918	0.918	4.4	1.3133	0.0000	SURCHARGED
720 minute winter	S2	705	16.924	0.024	0.9	0.0343	0.0000	OK
720 minute winter	PS5	705	16.534	0.024	0.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	Tank 1	2.000	CP3	-3.5	-0.089	-0.039	0.3981	
720 minute winter	PP + BIORETENTION	1.001	CP3	4.4	0.150	0.037	0.3493	
720 minute winter	CP3	1.002	S2	0.9	0.719	0.017	0.0162	
720 minute winter	S2	1.003	PS5	0.9	0.510	0.055	0.0788	47.4

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.52%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	Tank 1	945	19.054	0.754	2.6	55.5108	0.0000	SURCHARGED
960 minute winter	PP + BIORETENTION	945	19.054	0.604	10.0	122.3110	0.0000	FLOOD RISK
960 minute winter	CP3	945	19.054	1.054	3.4	1.5081	0.0000	FLOOD RISK
960 minute winter	S2	945	16.925	0.025	1.0	0.0353	0.0000	OK
960 minute winter	PS5	945	16.535	0.025	1.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	Tank 1	2.000	CP3	-2.6	-0.065	-0.029	0.3981	
960 minute winter	PP + BIORETENTION	1.001	CP3	3.4	0.152	0.029	0.3493	
960 minute winter	CP3	1.002	S2	1.0	0.733	0.018	0.0169	
960 minute winter	S2	1.003	PS5	1.0	0.519	0.058	0.0823	61.9

Appendix H

Drainage Maintenance Plan

1. Health and Safety

All those responsible for and involved in the maintenance of the site drainage systems should be safety-conscious and comply with the relevant health and safety legislation. This includes:

- The Health and Safety at Work etc Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Workplace (Health, Safety and Welfare) Regulations 1992

The Estate Management Company is responsible for suitable risk assessment and management to ensure safe working conditions and practices. Measures to protect potential visitors also need to be considered.

Specialist contractors used should work to industry guidelines and be able to demonstrate safe working practices.

Employers have a duty to employees to inform them about the risks of their work environment and to decrease the risk as far as reasonably practicable. Appropriate personal protective equipment (PPE) should be provided and policies implemented based on risk assessment.

Operatives should be trained for working near water. Risks of contaminated water should be considered. Checking for open cuts and using nitrile gloves, waterproof plasters etc is advised.

Entry of pipes, chambers, tanks and culverts should be avoided wherever possible. Work should be carried out from the surface using appropriate equipment. In the event that entry cannot be avoided to perform a critical task, the required safety training, protection measures and precautions must be implemented prior to entry. Lone working should never be attempted.

For further information refer to Section 36 of The SuDS Manual (CIRIA C753).

2. Contamination or Dilution of Spillage

In the event of a spillage, it is the responsibility of the landowner to clear up any spillage before it enters the drainage system. The primary method of dealing with any spillage of hydrocarbons should be using sand to soak up the leak and prevent any hydrocarbons entering the drainage system. Once sand has been contaminated it should not be washed into the drainage system but disposed of by a Licensed Contractor.

Environment Agency – Emergency Contact Number

In the event of a spillage the Environment Agency should be contacted to notify the event and seek advice. The Environment Agency Incident Hotline is 0800 80 70 60 (Freephone 24hrs).

3. Schedule A – Sewers, Gullies and Manholes

Regular inspection and maintenance are required to ensure the effective long-term operation of private drains and manholes.

Post Completion: a CCTV survey to be carried out on all new and retained existing drainage systems and any downstream receiving systems.

The report will be used to prove the integrity of the as-built drainage system prior to issue of practical completion certificate and will be handed over to the Client for future reference.

Operation and maintenance requirements for all sewers, manholes, gullies and channel drains are described in the following table:

Schedule	Action	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	6 Monthly
	Common yard & car park & other hard standing areas to be swept clear of debris, to prevent possibility of blockages to the receiving drainage systems	Monthly
	Lift and inspect receiving manholes to check for any blockages	Monthly
Remedial Actions	Repair any damaged drains	As required
	Replace / fix any loose manhole covers	As required
Monitoring	Carry out full CCTV survey to confirm ongoing integrity of all drains. Inspect all silt pits during the survey	10-yearly intervals

Where appropriate, refer to specialist drainage manufacturer's information and maintenance requirements.

In all instances, inspection and cleaning should be carried out only by a specialist contractor and in accordance with the guidelines given in 'Safe Working in Sewers and at Sewage Works' published by National Joint Health and Safety Committee for the Water Services. Further information on safety is set out in Section 1.

4. Schedule B – Bioretention Features,

Inspection Frequency and Maintenance Requirements: as per table below.

Schedule	Action	Frequency
Regular Inspections	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly; monthly for tree pits
Regular Maintenance	Remove litter, debris and weeds	At least quarterly; monthly for tree pits
	Replace any plants, to maintain planting density	As required
	Manage other vegetation and remove nuisance plants from tree pits	Monthly (at start, then as required)
	Remove sediment, build-up from around inlets and forebays	Quarterly to biannually
Occasional Maintenance	Infill any holes or scour, improve erosion protection	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of filter medium and replacing mulch	As required

5. Schedule C – Attenuation Tank and Control Chambers

Inspection Frequency and Maintenance Requirements: as per table below.

Schedule	Action	Frequency
Regular Maintenance	Remove debris and litter etc from sumps	Monthly
	Check for and remove any sediment from sumps and catchpits	Annually
Remedial Actions	Repair inlets, outlets, and vents	As required
	Clear blockages	As required
Monitoring	Inspect full system to ensure good condition and operating correctly	Monthly for first 3 months, then annually
	Inspect system following storm events to ensure emptying is occurring and remove any debris	After each significant storm event
	CCTV survey inside tank for sediment build-up	5 years
Control Chambers	Check orifices are clear and clear debris cowl. Similarly, check outfalls and inlets to ensure pipes are clear and free-flowing.	First 2 years of occupation – Monthly Then annually and after every significant storm event.

Where appropriate refer also to specialist drainage manufacturer's information and maintenance requirements.

In all instances, inspection and cleaning should be carried out only by a specialist contractor and in accordance with the guidelines given in 'Safe Working in Sewers and at Sewage Works' published by National Joint Health and Safety Committee for the Water Services.



Civil Engineering - Transport Planning - Flood Risk

GTA Civils & Transport, Maple House, 192-198 London Road, Burgess Hill, West Sussex, RH15 9RD
T: 01444 871444 E: enquiries@gtacivils.co.uk www.gtacivils.co.uk
 GTA Civils & Transport Limited, Registered in England No. 11917461. VAT Registration No. 319 2609 02



Certificate No.89542021

