

Project Title
**Land East of College Lane,
Hurstpierpoint**
Report Title
Flood Risk Assessment

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Prepared For
Thakeham Homes

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EXECUTIVE SUMMARY

- I. Robert West Consulting was appointed by Thakeham Homes in January 2026 to prepare a Flood Risk Assessment (FRA) and Drainage Strategy report in accordance with the National Planning Policy Framework (NPPF), supporting Planning Practice Guidance, the National Standards for Sustainable Drainage Systems and local council planning policy, in support of a full planning application for the erection of 100 dwellings, with associated access, car parking, refuse/recycling storage, landscaping, infrastructure and works ('the Proposed Development') on Land east of College Lane, Hurstpierpoint, West Sussex, BN6 9AB ('the Site').
- II. The aims of this FRA are as follows:
 - a) Identify the risks of flooding associated with the development of the site from all potential sources.
 - b) Assess the impact that the proposals would have on these risks.
 - c) Seek to demonstrate that, as part of the development proposals, the overall flood risk can be reduced and / or managed.
- III. This Assessment is to be read in conjunction with all planning, architectural and other reports that accompany the planning application for the Proposed Development.
- IV. The entirety of the Site is located within Flood Zone 1 on the Environment Agency online mapping.
- V. The information presented in this report is based on the best available data obtained from internal records and/or third-party sources at the time of preparation. While every effort has been made to ensure accuracy and completeness, no warranty is given or implied regarding the reliability or precision of the information provided. This report should not be regarded as a substitute for undertaking appropriate additional investigations, inspections, or due diligence enquiries where required.
- VI. The Proposed Development will incorporate a sustainable drainage system which will discharge surface water into the existing watercourse located adjacent to the northern boundary of the Site under a controlled discharge rate and provide storage for all storm return periods up to and including the 1:100-year rainfall event with an allowance for 45% climate change.
- VII. Foul drainage from the development will discharge to the existing adopted Southern Water public foul sewer network located to the west of the Site within College Lane. A single foul gravity-based outfall is proposed in the north-western corner of the Site, from where all foul flows will connect to the public sewer system. A single pump station will be used to pump foul effluent from the north-eastern corner of the Site towards the gravity outfall.

- VIII. The final type and precise location of the pumping station will be confirmed during the detailed design stage. The pumping solution will be designed to ensure long-term reliability and compliance with relevant standards, supporting the overall functionality of the development.
- IX. This report concludes that the Site is not at risk of flooding from tidal or fluvial sources, overland flows, groundwater or other sources.
- X. In terms of flood risk, the Proposed Development is suitable at this location.

1.0 PLANNING POLICY CONTEXT

National Planning Policy Framework

- 1.1 The NPPF was first published by the Department for Communities and Local Government in March 2012 and deals specifically with development planning and flood risk using a sequential characterisation of risk based on planning zones and the EA flood mapping.
- 1.2 The NPPF has been periodically updated since its first publication. The current version was published in August 2026 and replaces the previous versions.
- 1.3 The current NPPF establishes national planning policies for plan-making and for decision-making on development proposals. In relation to flood risk and drainage, it requires planning decisions to take account of flood risk from all sources, avoid inappropriate development in areas at risk of flooding, and ensure that development is safe for its lifetime without increasing flood risk elsewhere.
- 1.4 The National Standards for Sustainable Drainage Systems, published by Defra in 2025, provide non-statutory national standards for the design, construction, maintenance and operation of surface water drainage systems in England. These standards form an important national technical reference for surface water drainage design, including runoff destination, everyday rainfall interception, extreme rainfall management, water quality, amenity, biodiversity, and long-term operation and maintenance.

For the purposes of this Flood Risk Assessment, the current NPPF policy requirements may be summarised as requiring development to be directed towards areas at lowest risk of flooding, to be supported by a site-specific flood risk assessment where required, and to demonstrate that flood risk will not be increased elsewhere.

Where development is proposed in an area affected by current or future flood risk, the assessment should demonstrate that the development will remain safe over its lifetime, that any residual risk can be safely managed, and that safe access and egress can be provided where appropriate.

The current national policy and supporting Planning Practice Guidance also require sustainable drainage systems to be incorporated in major development unless there is clear evidence that this would be inappropriate. Such systems should be designed to manage surface water runoff sustainably, take account of advice from the Lead Local Flood Authority, provide appropriate operation and maintenance arrangements, and deliver multifunctional benefits where possible.

- 1.5 A site-specific Flood Risk Assessment is required for development in Flood Zones 2 and 3 and,

in Flood Zone 1, for sites of 1 hectare or more, sites affected by critical drainage problems, land identified as being at increased flood risk in future, or land that may be subject to other sources of flooding where a more vulnerable use is proposed.

1.6 Major development is defined as follows:

“For housing, development where 10 or more homes will be provided, or the site has an area of 0.5 hectares or more. For non-residential development it means additional floorspace of 1,000m² or more, or a site of 1 hectare or more, or as otherwise provided in the Town and Country Planning (Development Management Procedure) (England) Order 2015.”

1.7 For major developments, sustainable drainage systems should be incorporated unless there is clear evidence that this would be inappropriate. The systems should be designed having regard to the National Standards for Sustainable Drainage Systems, relevant local standards and guidance, and advice from the Lead Local Flood Authority.

Lead Local Flood Authority (LLFA)

1.8 West Sussex County Council became a Lead Local Flood Authority under the Flood and Water Management Act 2010 and was given a series of responsibilities to coordinate the management of local flood risk within the county.

1.9 As part of its role, West Sussex County Council has commissioned and produced the following documents:

- West Sussex Local Flood Risk Management Strategy (2025)
- West Sussex Preliminary Flood Risk Assessment (2017)
- Level 1 Flood Risk Report (2025)
- Sustainable Drainage Systems Guidance (2026, via West Sussex Council webpage)
- LLFA SuDS Proforma and Validation Checklist for Flood Risk and Drainage (2026)
- Local Surface Water Management Plans (2014 - 2016)

1.10 The above documents have been reviewed in the preparation of this report.

Mid Sussex District Council

1.11 As part of its role, Mid Sussex District Council has commissioned and produced the following documents:

- Mid Sussex District Council Level 1 Strategic Flood Risk Assessment (2024)
- Flood Risk and Drainage Information Requirements (2025, via Mid Sussex Council webpage)
- Flood Risk and Drainage Validation Checklist (Application Stage) (2025)
- Sustainable Drainage Systems (SuDS) Guidance (2023, via Mid Sussex Council webpage)
- Mid Sussex District Plan (adopted, 2018)

Local Planning Policy

- 1.12 The Mid Sussex District Plan 2014–2031 was adopted in March 2018 and sets out the Council’s approach to managing development across the district.
- 1.13 The following policies are of specific relevance to this Flood Risk Assessment.
- 1.14 Policy DP41 – Flood Risk and Drainage:

“Strategic Objectives: 1) To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change; and 12) To support sustainable communities which are safe, healthy and inclusive.

Evidence Base: Gatwick Sub Region Water Cycle Study; Strategic Flood Risk Assessment; Water. People. Places SuDS guidance.

Proposals for development will need to follow a sequential risk-based approach, ensure development is safe across its lifetime and not increase the risk of flooding elsewhere. The District Council’s Strategic Flood Risk Assessment (SFRA) should be used to identify areas at present and future flood risk from a range of sources including fluvial (rivers and streams), surface water (pluvial), groundwater, infrastructure and reservoirs.

Particular attention will be paid to those areas of the District that have experienced flooding in the past and proposals for development should seek to reduce the risk of flooding by achieving a reduction from existing run-off rates.

Sustainable Drainage Systems (SuDS) should be implemented in all new developments of 10 dwellings or more, or equivalent non-residential or mixed development²² unless demonstrated to be inappropriate, to avoid any increase in flood risk and protect surface and ground water quality. Arrangements for the long-term maintenance and management of SuDS should also be identified.

For the redevelopment of brownfield sites, any surface water draining to the foul sewer must be disconnected and managed through SuDS following the remediation of any previously contaminated land.

SuDS should be sensitively designed and located to promote improved biodiversity, an enhanced landscape and good quality spaces that improve public amenities in the area, where possible.

The preferred hierarchy of managing surface water drainage from any development is:

1. Infiltration Measures
2. Attenuation and discharge to watercourses; and if these cannot be met,
3. Discharge to surface water only sewers.

Land that is considered to be required for current and future flood management will be safeguarded from development and proposals will have regard to relevant flood risk plans and strategies.”

1.15 Policy DP42 – Water Infrastructure and the Water Environment:

“Strategic Objectives: 1) To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change; 6) To ensure that development is accompanied by the necessary infrastructure in the right place at the right time that supports development and sustainable communities. This includes the provision of efficient and sustainable transport networks.

Evidence Base: Building Regulations (Approved Document G); Gatwick Sub Region Water Cycle Study; DCLG Housing Standards Review: Technical Consultation, September 2014; South East Water - Water Resources Management Plan 2014, Strategic Flood Risk Assessment.

New development proposals must be in accordance with the objectives of the Water Framework Directive, and accord with the findings of the Gatwick Sub Region Water Cycle Study with respect to water quality, water supply and wastewater treatment and consequently the optional requirement under Building Regulations – Part G applies to all new residential development in the district. Development must meet the following water consumption standards:

- Residential units should meet a water consumption standard of 110 litres per person per day (including external water use);
- Non-residential buildings should meet the equivalent of a ‘Good’ standard, as a minimum, with regard to the BREEAM water consumption targets for the development type.

Development proposals which increase the demand for off-site service infrastructure will be permitted where the applicant can demonstrate;

- that sufficient capacity already exists off-site for foul and surface water provision. Where capacity off-site is not available, plans must set out how appropriate infrastructure improvements approved by the statutory undertaker will be completed ahead of the development's occupation;
- and that there is adequate water supply to serve the development.
- Planning conditions will be used to secure necessary infrastructure provision.

Development should connect to a public sewage treatment works. If this is not feasible, proposals should be supported by sufficient information to understand the potential implications for the water environment.

The development or expansion of water supply or sewerage/sewage treatment facilities will normally be permitted, either where needed to serve existing or proposed new development, or in the interests of long term water supply and waste water management, provided that the need for such facilities outweighs any adverse land use or environmental impacts and that any such adverse impact is minimised."

Hurstpierpoint & Sayers Common Neighbourhood Plan

- 1.16 The site lies within the area covered by the Hurstpierpoint & Sayers Common Neighbourhood Plan, which forms part of the statutory development plan for the area.
- 1.17 The Neighbourhood Plan sets out local policies relating to landscape protection, settlement character, and the location of new development within the parish.
- 1.18 The policies of the Neighbourhood Plan have been reviewed in the preparation of this Flood Risk Assessment.

2.0 EXISTING SITE

Site Location

- 2.1 The Site is located to the east of College Lane in Hurstpierpoint, West Sussex. The site is centred approximately at National Grid Reference TQ 29264 16089, with nearest Postcode BN6 9AB.
- 2.2 The Site is defined by a number of distinct physical boundaries. To the west, the Site is bounded by existing residential properties and their associated gardens fronting College Lane, together with an access point onto College Lane. The southern boundary is delineated by established hedgerows and field boundaries, which separate the Site from adjacent residential properties and agricultural land beyond. To the east, the boundary is formed by mature vegetation and tree belts adjoining open agricultural land. The northern boundary is defined by an unnamed watercourse/ditch, a tributary of Herrings Stream, which flows in a west-to-east direction.



Figure 1 – Site Location Plan

- 2.3 As noted, access to the Site will be taken from College Lane, along the western boundary. A new vehicular access is proposed to serve the residential development, providing a connection to the internal site road network.

Site Description

- 2.4 The Site is greenfield, with an area of approximately 5.4ha, and currently comprises undeveloped land.
- 2.5 Levels across the Site range from approximately 51 metres Above Ordnance Datum (AOD) at the southern and western parts of the site to approximately 45 metres AOD at the northeastern boundary adjacent to the existing watercourse, indicating a general slope across the site from south to north.
- 2.6 A copy of the topographical survey is located in Appendix A at the rear of this report.

Existing Drainage

- 2.7 The overall development site currently has no positive surface or foul water drainage systems serving the Site.
- 2.8 The nearest Main River to the Site is the Herrings Stream located approximately 1km northeast of the site. However, there is a ditched watercourse and tributary of the Herrings Stream that follows the northern boundary of the site, which is expected to drain the site and forms part of the wider surface water drainage network. The watercourse is understood to convey flows generally from west to east and has been surveyed as part of the topographical survey undertaken for the Site.
- 2.9 The Herrings Stream is a significant tributary of the River Adur, confirming the onward connectivity of the watercourse adjacent to the northern boundary at the Site.
- 2.10 The geotechnical assessment indicates that surface water runoff across the Site generally follows the natural topography, draining northwards towards the existing watercourse along the northern boundary.
- 2.11 Some infiltration is expected to occur within the Site; however, this is constrained by the presence of silty-clayey sands, which are likely to become compacted when wetted and therefore behave as a low-permeability, effectively impermeable layer. During periods of heavy rainfall, excess runoff that cannot infiltrate is anticipated to flow overland towards the northern part of the Site, where it is conveyed by the existing drainage ditch/ordinary watercourse, which runs broadly west to east.
- 2.12 Surface water runoff is currently discharged at an unrestricted rate from the existing site and this rate of discharge has been calculated for a range of rainfall events with varying return periods. Pre-developed greenfield runoff rates for the site have been established on a per hectare basis

using the HR Wallingford tool for Greenfield runoff estimation.

2.13 The use of only the developed or impermeable area to determine greenfield runoff rates would artificially reduce the contributing catchment area and could result in an unrealistically low allowable discharge rate that is not representative of the site's natural runoff characteristics. Accordingly, the greenfield runoff rate and associated discharge criteria have been calculated using the whole drainage catchment area contributing to the point of discharge, consistent with national SuDS guidance and established industry practice.

2.14 The pre-developed greenfield runoff rates, have been calculated on a per hectare basis, and are as follows:

- Qbar 8.3 l/s/ha
- 1:10 year 13.5 l/s/ha
- 1:30 year 19.2 l/s/ha
- 1:100-year 26.6 l/s/ha
- 1:200-year 31.1 l/s/ha

2.15 A copy of the HR Wallingford Greenfield Runoff Calculation is located in Appendix B at the rear of this report.

2.16 An asset location search was requested from Southern Water, which shows there is a public foul sewer located within College Lane to the west of the Site.

2.17 A copy of the Southern Water Sewer Records is located within Appendix C at the rear of this report.

Geology and Groundwater

2.18 British Geological Survey (BGS) mapping indicates that superficial deposits are absent across the majority of the Site. Localised superficial deposits are present only along the northern boundary in proximity to the watercourse, where Alluvium comprising clay, silt, sand and gravel is recorded. This area also corresponds with the lowest site levels and may reflect the deposition of fine-grained, silty-clayey material transported hydrologically across the Site and concentrated within topographic lows adjacent to the watercourse corridor.

2.19 Underlying the Site, the bedrock geology is mapped as the Lower Greensand Group, which includes silty sandstone. Typically, when saturated, this material exhibits behaviour consistent with a dense, compacted, clay-like medium of low permeability, as the sandstone structure weakens and the silt fraction becomes slurry-like. Therefore, groundwater movement is considered to be restricted both vertically and laterally within the ground.

- 2.20 The nearest available borehole records comprise a group of 19 boreholes (TQ21NE7 to TQ21NE26) located approximately 300 m south of the Site, beneath the B2116 (Wickham Hill Road). These records indicate near-surface strata predominantly consisting of shallow fine-grained deposits, including clayey sands, green clay rock, Gault Clay, brown sandy clay and grey clay, with localised interbedding of sandy and clay-rich materials. These deposits are recorded to extend to depths of approximately 5 m below ground level.
- 2.21 In addition to the publicly available BGS mapping described above, site-specific ground investigations have been undertaken to confirm the underlying ground conditions. An intrusive ground investigation was completed between 24 June and 26 June 2026, comprising 12 window sampler boreholes to a maximum depth of 4.0 m below ground level (bgl) and 12 machine-excavated trial pits. Full-scale soakage testing, generally in accordance with BRE 365, was also undertaken within four of the trial pits.
- 2.22 The ground conditions encountered within the exploratory holes were broadly consistent with the anticipated published sequence of strata and typically comprised a mantle of Topsoil overlying Clays, clayey silty sand, sandy silty clay and clayey sandy silt of the Lower Greensand Formation.
- 2.23 Groundwater was encountered in three of the trial pits and three of the window sampler boreholes during the fieldworks at depths between 1.70mbgl and 2.80mbgl.
- 2.24 A copy of the ground investigation summary, results, and testing locations is found within Appendix D at the rear of this report.
- 2.25 The variability and overall fine-grained nature of the encountered soils supports the interpretation of widespread shallow clay-rich deposits in the wider area. This geological context is consistent with reduced permeability conditions, which are likely to limit both groundwater movement and infiltration potential, thereby restricting soakage and promoting surface runoff across the Site.
- 2.26 Further to the above, Environment Agency aquifer mapping indicates that the Site is underlain by sandstone-based bedrock, which is classified as a Principal Aquifer. Principal Aquifers are geological formations capable of storing and transmitting significant quantities of groundwater and are therefore considered important water resources. However, the hydraulic behaviour of the underlying strata at the Site is influenced by the local geological conditions, including the presence of silty horizons and weathered sandstone. Consequently, groundwater flow and permeability are likely to be variable across the Site and may be more limited than would typically be expected within a regionally designated Principal Aquifer.



Figure 2 – Aquifer Designation Map (Bedrock)

- 2.27 Groundwater vulnerability refers to the susceptibility of underlying groundwater resources to contamination from pollutants originating at or near the ground surface. It is influenced by a range of factors including soil permeability, geological composition, the presence of superficial deposits, and the depth to groundwater.
- 2.28 Environment Agency mapping indicates that the site is located within an area of high groundwater vulnerability (Figure 3). However, such mapping is produced at a strategic scale and does not necessarily reflect localised ground conditions that may provide additional protection to underlying groundwater resources. In particular, available geological information via nearby borehole records suggests the presence of relatively impermeable shallow clay-rich soils across the site, which are likely to reduce vertical infiltration rates and impede the downward migration of potential contaminants.
- 2.29 Furthermore, the proposed drainage strategy does not rely upon infiltration as the primary means of surface water disposal, with runoff instead being collected, attenuated and discharged in a controlled manner to adjacent watercourses. As a result, the potential pathways for contaminants to reach underlying groundwater are significantly reduced.
- 2.30 Whilst the groundwater vulnerability mapping highlights the need for appropriate drainage design and pollution control measures, the actual risk to groundwater resources is considered to be lower than may initially be inferred from the strategic mapping alone. Further site-specific ground investigations will be undertaken during the detailed design stage to confirm local ground conditions and inform any additional groundwater protection measures that may be required.

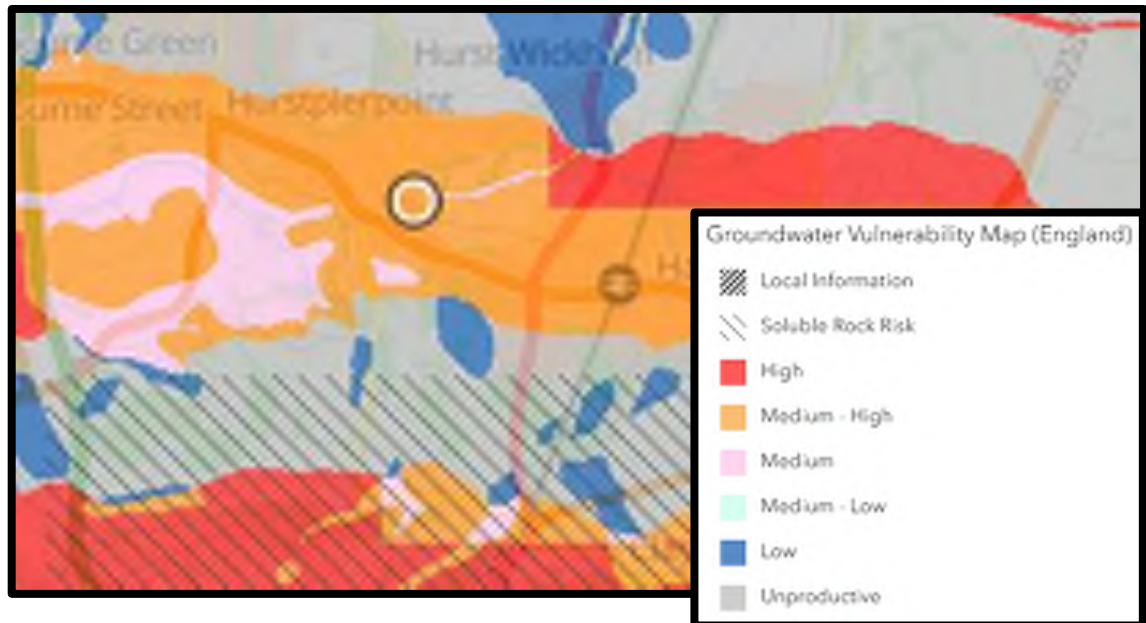


Figure 3 – Groundwater Vulnerability Map

2.31 Additionally, the Site is not located within a groundwater Source Protection Zone (SPZ).



Figure 4 – Source Protection Zone Map

2.32 A copy of the geotechnical information is located within Appendix D at the rear of this report.

3.0 FLOOD ZONES

3.1 The Flood Zone definitions are as follows:

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probabilities of river or sea flooding.
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding
Zone 3b The Functional Floodplain	This zone comprises land where water must flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

Table 1: The Flood Zone Definitions

Environment Agency Flood Zones

- 3.2 The flood zones depicted on the Environment Agency's flood map for planning purposes do not currently consider the potential effects of climate change. As a result, future flood probabilities may differ significantly due to changing weather patterns, sea levels and other climate-related factors. It is essential to recognise this limitation and seek alternative approaches to account for climate resilience in flood risk assessments.
- 3.3 The Site is located within Flood Zone 1, having a less than 1 in 1,000 annual probability of river or sea flooding.
- 3.4 The latest climate change allowances, which are available online at <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>, support the NPPF in making an allowance for climate change within flood risk assessments. The allowances provide predictions of anticipated change for peak river flow by river basin district.

- 3.5 The Adur and Ouse Management Catchment Peak River Flow Allowances which should be allowed for within the area of this development and applied to the flood risk assessment are as follows:

Epoch	Central Allowance	Higher End Allowance	Upper End Allowance
2020s	16%	23%	40%
2050s	18%	28%	57%
2080s	37%	55%	107%

Table 2: Catchment Peak River Flow Allowances

- 3.6 Based on the latest allowances and a life span of the development of 70-100 years, an Upper End Allowance for climate change of 107% should be applied to flood levels assessing fluvial flooding for the development.
- 3.7 Copies of the available flood maps are located in Appendix E at the rear of this report.

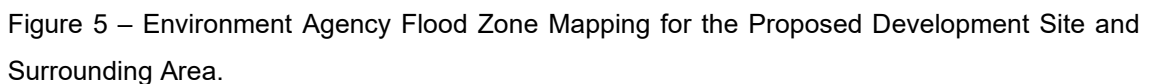
4.0 FLOODING POTENTIAL

Tidal Flooding

- 4.1 Tidal flooding refers to the risk of elevated sea or estuarine water levels exceeding the normal tidal range, potentially resulting in inundation of adjacent land. This type of flooding can occur through several mechanisms, including: (i) overtopping of coastal or estuarine flood defences; (ii) breaching of defences due to structural failure; (iii) tide locking, where high tidal levels prevent the discharge of fluvial or surface water, leading to localised ponding; and (iv) flooding caused by wave action during storm events.
- 4.2 The site is located roughly 12 km from the coast and is not at risk of tidal flooding.
- 4.3 The site is at **Low Risk** of Tidal Flooding.

Fluvial Flooding

- 4.4 Fluvial flooding refers to flooding resulting from the overtopping or breach of rivers and watercourses. This type of flooding can occur through various mechanisms, including: (i) inundation of natural floodplains; (ii) flooding of areas outside designated floodplains due to hydraulic influences from structures such as bridges, embankments, or other features that elevate water levels; (iii) overtopping of existing flood defences; (iv) structural failure or breaching of flood defences; (v) blockages within culverts; and (vi) obstruction of designated flood channels or flow corridors.
- 4.5 The site is within Flood Zone 1 and is not at risk of fluvial flooding from anything less extreme than a 1:1000-year flood event as shown in Environment Agency mapping below in Figure 5.



Pluvial (Surface Water) Flooding

4.8 Surface water flooding commonly occurs in natural valley bottoms, where normally dry areas become inundated by flowing water, as well as in topographical low points where water can pond. However, this mechanism of flooding can occur almost anywhere, particularly where overland flow paths are restricted by natural topography or man-made obstructions.

4.9 Overland flows may originate both within the site and from adjacent land, and it is therefore essential that any proposed development is designed to avoid increasing the risk of flooding on-site or to neighbouring properties as a result of changes to surface water runoff.

- 4.10 The Environment Agency mapping is generated from LiDAR data on ground levels and drainage assets and is considered to provide a relatively coarse assessment of surface water flood risk.
- 4.11 The Flood Map for Surface Water evaluates flooding scenarios resulting from rainfall, considering the likelihood of occurrence in any given year:
- 1:30 (3.3%)
 - 1:100 (1%)
 - 1:1000 (0.1%)
- 4.12 The Environment Agency's Risk of Flooding from Surface Water mapping indicates that the proposed development site lies predominantly within an area of Very Low risk of surface water flooding, noting all proposed dwellings are located outside any surface water flood extent. Localised areas of surface water flooding are, however, identified within the northernmost parts of the Site, immediately adjacent to the existing ditch that runs parallel to the northern site boundary.
- 4.13 The mapping indicates that the principal surface water flow path is located to the north of the existing ditch, outside the site boundary, where ground levels are lower and naturally convey overland runoff during significant rainfall events. Within the Site itself, south of the existing ditch, the mapped surface water flooding is limited to isolated areas of ponding associated with local topographical depressions rather than a continuous overland flow route. Consequently, these areas represent temporary accumulations of surface water in low-lying ground during rainfall events, rather than a defined conveyance pathway passing through the development site.
- 4.14 A limited extent of surface water flooding is also shown to extend across the proposed site access. The Environment Agency mapping for the present-day 1 in 30-year, 1 in 100-year and 1 in 1,000-year rainfall events, together with the equivalent climate change scenarios for the period 2061–2125, is presented in Figures 6 and 7 respectively.



Figure 6 – Present day annual likelihood of surface water flooding for 1:30 (left) 1:100 (middle) and 1:1000 (right) year return period rainfall events.



Figure 7 – Climate change adjusted (2061 to 2125) annual likelihood of surface water flooding for 1:30 (left) 1:100 (middle) and 1:1000 (right) year return period rainfall events.

- 4.15 Review of the mapping demonstrates that the proposed residential development itself remains outside the mapped extent of the most extreme present-day surface water flooding event (1 in 1,000 annual probability). This indicates that the proposed dwellings are located within an area of very low susceptibility to surface water flooding.
- 4.16 It is also evident that the mapped flood extents are confined to the lowest parts of the site, reflecting the existing topography. The proposed dwellings have been deliberately positioned on higher ground, with finished floor levels and surrounding land levels located above the adjacent areas where surface water ponding is predicted. The difference in elevation between the nearest mapped flooding and the proposed dwellings provides an additional level of resilience, ensuring that any temporary accumulation of surface water would remain confined to lower-lying areas and would not present a flood risk to the residential properties.
- 4.17 A more detailed review of the proposed access, including the Environment Agency's predicted flood depth mapping, has also been undertaken (Figure 8). Although shallow surface water flooding is indicated across limited sections of the access during the most extreme rainfall events,

the mapped flood depths remain below 300 mm. Furthermore, the mapping demonstrates that the areas exceeding depths of 150 mm and 300 mm do not extend across the proposed access route. As part of the Proposed Development, the access road will be raised by a minimum of 300 mm relative to the existing ground level, thereby providing additional mitigation above the predicted flood depths and further reducing the likelihood of surface water affecting access during extreme rainfall events. The finished floor levels of all dwellings will be raised by at least 300mm above existing ground levels.



Figure 8 – Surface water flood extent for all depths (left), extent over 150mm (middle), and extent over 300mm (right).

- 4.18 The development proposals also incorporate a sustainable drainage system (SuDS) designed in accordance with current national and local standards. The drainage strategy will attenuate and control post-development runoff rates, ensuring that surface water generated by the development is managed appropriately and discharged in a controlled manner. Consequently, the proposed development will not increase the risk of surface water flooding either on-site or elsewhere.
- 4.19 Overall, the Environment Agency's Risk of Flooding from Surface Water mapping indicates that the Site is predominantly located within an area of Very Low risk of surface water flooding. The limited areas of Low to Medium risk are confined to the northern boundary adjacent to the existing ditch and to a small section of the proposed access. These areas correspond with the Site's natural topography and lower ground levels and do not affect the proposed residential development.
- 4.20 Taking account of the proposed site layout, the higher elevation of the dwellings, the proposed raising of the access road and the inclusion of a sustainable drainage system, it is concluded that the risk posed by surface water flooding to the proposed development is **low** and that the development can be accommodated safely without increasing flood risk elsewhere.

Safe Access and Flood Hazard Ratings

- 4.21 Environment Agency Risk of Flooding from Surface Water mapping indicates limited areas of Low to Medium surface water flood risk (Annual Exceedance Probability (AEP) between 0.1% and 3.3%) affecting the proposed vehicular access from College Lane. The mapping indicates predicted flood depths of up to and no greater than 0.30 m during the most extreme modelled events, including the 2061–2125 climate change scenario.
- 4.22 In accordance with the Supplementary Note on Flood Hazard Ratings and Thresholds for Development Planning and Control Purposes, the potential hazard to people using the access during a surface water flood event is dependent upon both flood depth and flood velocity. For a flood depth of below 0.30 m, hazard ratings may range from 'Very Low Hazard – Caution' where water velocities are negligible, to 'Danger for Some' or, under higher velocity conditions, 'Danger for Most'.
- 4.23 Using the Environment Agency surface water mapping for site-specific velocity data at this location, it is shown that the velocity of surface water does not exceed approximately 0.25 m/s (see Figure 9).



Figure 9 – Risk of surface water flooding velocity of approx. 0.25 m/s (left) and approx. 0.5 m/s (right).

- 4.24 Using a surface water velocity of 0.25 m/s, the flood hazard methodology has been implemented to identify a hazard classification within Table 3 below.

Depth (m)	Velocity (m/s)	Debris Factor	Flood Hazard Rating	Hazard Classification
0.25	0.25	0.5	0.69	Very Low Hazard – Caution
0.3	0.25	0.5	0.73	Very Low Hazard – Caution

Table 3 – Flood hazard classification.

- 4.25 The mapped flooding and calculations above indicate a shallow, localised area of ponding rather than a defined high-energy flow path.
- 4.26 Furthermore, the proposed access road will be raised by a minimum of 300 mm above existing ground levels, significantly reducing the likelihood of surface water affecting the access during design rainfall events.
- 4.27 Further investigation of the surface water drainage network in the vicinity of the proposed access on College Lane is recommended during the detailed design stage to determine whether maintenance or enhancement of the existing highway drainage infrastructure could further reduce the residual surface water flood risk. This assessment should be undertaken in consultation with the Local Highway Authority, which may hold additional information relating to the performance of the local drainage network. A review of the Lead Local Flood Authority's published flood investigation records did not identify any recorded flood investigations affecting or immediately adjacent to the Site.

Groundwater Flooding

- 4.28 Groundwater levels naturally fluctuate throughout the year, typically rising during wet winter months and falling during the summer as water discharges into rivers and other surface watercourses. In periods of exceptionally wet weather, prolonged or intense rainfall can cause the water table to rise, potentially leading to the flooding of normally dry ground and the reactivation of temporary/seasonal streams, often referred to as 'bournes'.
- 4.29 Groundwater flooding occurs when the water table rises above ground level or close to the surface, resulting in the saturation of soils and localised flooding, particularly where natural drainage systems are unable to adequately convey or dissipate the excess water. This form of

flooding is most likely to occur in low-lying areas underlain by permeable geological formations (aquifers), where groundwater can accumulate and emerge at the surface during sustained rainfall events.

- 4.30 The Environment Agency's groundwater vulnerability mapping indicates that the Site is situated over areas classified as Medium to High groundwater vulnerability. This is due to the Site sitting above a secondary aquifer designation.
- 4.31 The Mid Sussex District Council Level 1 Strategic Flood Risk Assessment includes mapping of areas potentially susceptible to groundwater emergence; however, this mapping does not provide an indication of the likelihood of groundwater flooding or specific groundwater levels beneath the site.
- 4.32 The Mid Sussex Strategic Flood Risk Assessment (SFRA) does not identify the Site or its immediate surroundings, including College Lane, as being at significant risk of groundwater flooding or as an area with a history of recorded groundwater flooding incidents. Groundwater flooding is not represented as a mapped flood risk layer within the SFRA and is instead considered on a qualitative basis, taking account of local geology, topography and recorded historical events.
- 4.33 In the context of the Site, groundwater flooding is therefore considered to be a localised and site-specific, rather than a strategic flood risk constraint. No groundwater flood hotspots are identified within the SFRA mapping in the vicinity of the site, and there is no evidence of recorded groundwater flooding affecting the Site or surrounding area.
- 4.34 While localised variations in permeability within the underlying Greensand Formation may influence shallow groundwater movement beneath the Site, available strategic mapping and geological information indicate that the Site is not at significant risk of groundwater emergence or groundwater flooding. On this basis, the risk of groundwater flooding is considered to be low.
- 4.35 However, groundwater flooding cannot be entirely discounted in the absence of detailed site-specific ground investigation data. Ground conditions and groundwater levels should therefore be confirmed at the detailed design stage, particularly to inform foundation design and the suitability of any proposed sustainable drainage measures.

Historic Flooding

- 4.36 The Mid Sussex District Council Strategic Flood Risk Assessment does not record any historical flood events on the Site.
- 4.37 A review of the Environment Agency's Historic Flood Map has not identified any historic flooding within the Site or its immediate vicinity.
- 4.38 A review of the West Sussex County Council flood investigation records has not identified any recorded flood events at or in the immediate vicinity of the Site.

Sewer Flooding

- 4.39 In developed areas, rainwater is typically drained into surface water sewers or sewers containing both surface water and wastewater, known as combined sewers. Flooding can result when the sewer is overwhelmed by heavy rainfall, becomes blocked, or has inadequate capacity; this will continue until the water drains away.
- 4.40 Inspection of the asset location mapping provided by Southern Water identifies that the sewers in this area are separated into dedicated foul water sewers only.
- 4.41 The absence of combined sewers significantly reduces the risk of the sewer network being overwhelmed during an extreme rainfall event.
- 4.42 There are no known records of flooding from sewers in this area. Additionally, the topography of the land within the Site and the surrounding area suggests that any above ground flooding that might occur as a result of a surcharged sewer would not pond at the Site.
- 4.43 Recorded incidents within the wider district are generally associated with isolated exceedance of local sewer capacity during periods of heavy rainfall or blockage events. There is no evidence to suggest that the Site is subject to a pattern of recurring sewer flooding.
- 4.44 The risk of flooding from this source is therefore considered to be **low**.

Reservoirs Flooding

- 4.45 Environment Agency reservoir flood mapping does not identify any areas within the site at risk of flooding from reservoir breaches.
- 4.46 The site is at **Low Risk** of reservoir flooding.

Flood Routing

- 4.47 The natural route for flood waters to dissipate, should any event occur on the Site, is towards the existing drainage ditch / ordinary watercourse located within the northern part of the Site, which conveys flows eastwards through the local surface water drainage network.
- 4.48 There is unlikely to be any associated flood risk to the downstream catchment area.

5.0 FLOOD RISK VULNERABILITY AND FLOOD ZONE COMPATIBILITY

Flood Risk Vulnerability

5.1 Table 4 below summarises the compatibility of developments of different vulnerabilities with each Flood Risk zone.

	Flood Risk Vulnerability Classification				
Flood Zone	Essential Infra	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1 Low Probability	✓	✓	✓	✓	✓
Zone 2 Medium Probability	✗	✓	✓	✓	✓
Zone 3a* High Probability	Exception test	✗	Exception test	✓	✓
Zone 3b** Functional Floodplain	Exception test	✗	✗	✗	✓**

Table 4: Flood Risk Vulnerability and Flood Zone Compatibility

✓ Development appropriate

✗ Development should not be permitted

* Essential Infrastructure should be designed and constructed to remain operational and safe in times of flood

** In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

Sequential Test & Exception Test

- 5.2 The proposed development is classified as 'More Vulnerable' and the development areas of the Site are located within Flood Zone 1. In accordance with the current Planning Practice Guidance, 'More Vulnerable' development is appropriate within Flood Zone 1, subject to consideration of flood risk from all sources and the findings of this FRA.
- 5.3 The Sequential Test seeks to steer development towards areas with the lowest probability of flooding, taking account of flood risk from all sources and future flood risk. Based on the assessment presented within this FRA, the proposed dwelling areas are located outside areas at risk of flooding from all relevant sources. The Site access is affected by surface water flood risk; however, the identified risk is of very low hazard and the access is located at a lower level than the areas accommodating the proposed dwellings. The access therefore does not result in the proposed development being located within an area at risk of flooding that would warrant application of the Sequential Test.
- 5.4 On this basis, and given that the proposed development areas are outside the identified flood extents from all sources, the Sequential Test is not triggered.

Risk to Others

- 5.5 The proposed surface water drainage system will be designed to current standards incorporating SuDS elements providing treatment, attenuation and storage which will minimise runoff leaving the site during times of heavy rain.
- 5.6 Allowance has been made for a 45% increase in rainfall intensity, which accords with the latest figures published by the Environment Agency and current national planning guidance for flood risk assessments.
- 5.7 The proposed drainage system will incorporate sufficient treatment prior to final discharge thus mitigating the risk of pollution from the Site.
- 5.8 The risk of surface water flooding to others due to the Proposed Development is reduced and the resultant risk is negligible.
- 5.9 Sewerage undertakers have an obligation to upgrade the existing networks if a connection to an equivalent or larger sized public sewer is technically achievable.
- 5.10 The residual risk of sewer flooding from this development for the foreseeable future is therefore negligible.

6.0 PROPOSED DEVELOPMENT AND FLOOD REDUCTION MEASURES

The Works

- 6.1 The Proposed Development is for the erection of 100 dwellings, with associated access, car parking, refuse/recycling storage, landscaping, infrastructure and works on land east of College Lane, Hurstpierpoint, Mid Sussex, West Sussex.
- 6.2 A copy of the Site Layout Plan is in Appendix F at the rear of this report.

Rainfall Climate Change Allowance

- 6.3 The latest climate change allowances, which are available online at <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>, support the NPPF in making an allowance for climate change within flood risk assessments. The allowances provide predictions of anticipated change for peak river flow by river basin district and peak rainfall intensity.
- 6.4 The table below shows the anticipated changes in extreme rainfall intensity. For flood risk assessments, both the central and upper end allowances should be assessed to understand the range of impact.

Epoch	Central Allowance	Upper End Allowance
2050s	20%	45%
2070s	25%	45%

Table 5: Climate Change Allowances

*Use '2050s' for development with a lifetime up to 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.

- 6.5 Based on the latest allowances and a life span of the development of 70 to 100 years, an increase of 45% should be applied to peak rainfall to this development.

Surface Water Drainage

- 6.6 In compliance with current national and local planning policy, the National Standards for Sustainable Drainage Systems and the requirements set out in the Building Regulations, surface water runoff from the Proposed Development will be managed sustainably at source. This will be achieved through the implementation of Sustainable Drainage Systems (SuDS), wherever practicable, to reduce runoff rates, promote infiltration where feasible, and enhance water quality.
- 6.7 A comprehensive surface water drainage design must incorporate the principles and advantages of Sustainable Drainage Systems (SuDS), as outlined in the CIRIA SuDS Manual (2015). Central to this approach are the 'four pillars of SuDS,' which collectively support effective and sustainable water management. These pillars include: (i) Water Quantity – aimed at controlling surface runoff to mitigate flood risks and maintain the natural water cycle; (ii) Water Quality – focused on improving the quality of runoff to reduce pollution and protect receiving water bodies; (iii) Amenity – intended to enhance urban environments and deliver multifunctional spaces that provide social and recreational value; and (iv) Biodiversity – designed to support and improve ecological habitats, thereby promoting urban biodiversity. Incorporating these pillars into drainage design ensures a balanced approach that delivers environmental, social, and technical benefits.
- 6.8 CIRIA report C753, The SuDS Manual, provides guidance on surface water drainage. The aim for surface water runoff is to match greenfield runoff rates and volumes, where reasonably achievable.
- 6.9 For surface water discharge, the drainage hierarchy notes the following list of drainage options in order of preference:
1. Infiltration to ground
 2. Discharge to a watercourse
 3. Discharge to a surface water sewer
 4. Discharge to a combined sewer
- 6.10 The table below offers a summary of potential SuDS techniques that could be used to manage surface water at the site together with a suggestion of their suitability for this project:

SuDS Technique	Suitable	Comments
Rainwater Harvesting	Yes	Water butts could be provided at the dwellings onsite. Due to water reuse being limited on a residential site, the storage provided by these has not been included within any calculations.
Living Roof / Blue Roof	No	Not suitable due to nature of the development.
Rain Gardens	Yes	Rain gardens are suitable for this type of development with an appropriate maintenance schedule.
Basins and Pond - Constructed Wetlands - Balancing Ponds - Detention Basins - Retention Ponds	Yes	Surface water attenuation basins are proposed as part of the SuDS design for the site to provide storage and water quality improvements.
Filter Drains and Swales	Yes	Filter drains will be provided on the inlets to the basins to provide water quality. Swales are not suitable due to lack of space on site.
Infiltration Devices - Soakaways - Infiltration Trenches and Basins - Tree Pits / Bioretention	No	The strata below the site is expected to have low permeability and not suitable for infiltration. Further testing is recommended to confirm this.
Permeable Surfaces and Filter Strips - Gravel Areas - Solid Paving Blocks - Porous Paving	Yes	Such measures are considered viable.
Tanked Systems - Oversized Pipes - Cellular Tanks	Yes	Tanked systems have only been considered where above ground SuDS are not suitable.

Table 6: SuDS Technique Summary

Infiltration Potential

- 6.11 Based on the ground conditions described in paragraphs 2.18 to 2.21, which indicate that the underlying geology is predominantly silty sandstone with some alluvium deposits in the north, full infiltration is not considered a feasible option for surface water disposal due to the low permeability across the Site in wetted conditions.

- 6.12 Additionally, full-scale BRE 365 soakage tests were carried out in four trial pits at the Site. During these tests, no successful infiltration was recorded. The results demonstrate that infiltration drainage is not feasible at the Site. In each of the four trial pits, a 75% fall in water level was not achieved.
- 6.13 The ground investigation study summarises, 'In conjunction with the infiltration test results and observed ground conditions it is considered that conventional soakaways will not work effectively on this site, with infiltration into clay strata not considered feasible. On-site storage and attenuation, or alternative storm water disposal options should be considered.'
- 6.14 The results of the infiltration testing can be found in Appendix D at the rear of this report.
- 6.15 Therefore, it is instead proposed that surface water runoff will be discharged to the existing watercourse located along the northern boundary of the Site, utilising Type B SuDS features to allow partial infiltration, where possible, while discharging off-site at restricted rates.
- 6.16 However, it is recognised that, due to the availability of space for SuDS attenuation features within the development, the proposed SuDS will be located in the northern part of the site, adjacent to the existing ditch. Soakage conditions in this area are anticipated to be less favourable due to the presence of alluvial deposits.
- 6.17 To ensure a conservative approach when estimating storage requirements, any potential infiltration has been assumed to be negligible within the current drainage modelling. Discharge to the watercourse will be strictly controlled at a restricted rate to manage flow volumes, supported by on-site attenuation measures to temporarily store runoff and ensure full compliance with drainage design standards.
- 6.18 While infiltration is currently omitted from the modelling as a conservative measure, it is recommended that site-specific infiltration testing and seasonal groundwater monitoring be undertaken during the detailed design stage. This will determine the actual viability of Type B SuDS at the Site, which could ultimately reduce the volume of runoff discharged off-site, even if only minimally.
- 6.19 Discharge to the watercourse will be controlled at a restricted rate to manage flow volumes, with on-site attenuation measures provided to temporarily store runoff and ensure compliance with drainage design standards.

Drainage Catchment Areas

6.20 The impermeable areas of the various elements of the overall development are summarised as follows:

- House/Garage Roofs (+10% Urban Creep on plots): 5,542m²
- Roads/Hardstanding: 9,884m²
- Private drives: 3,232m²
- Misc (Soft landscaping, SuDS, etc.): 4,854m²
- Total: 23,512m²

6.21 An additional 10% of roof area has been included within the calculations to account for potential future urban creep.

6.22 In addition to impermeable areas to be drained, the proposed site layout and surrounding topography have been carefully reviewed to identify those external greenfield areas that have the potential to contribute runoff to the proposed drainage infrastructure. These contributing areas have been incorporated within the drainage modelling and attenuation storage calculations. A runoff coefficient (Cv) of 0.40 has been applied to these areas to reflect their predominantly pervious, soft-landscaped nature.

6.23 All proposed impermeable surfaces have been assigned a runoff coefficient (Cv) of 1.00, which provides a conservative assessment and also accounts for runoff from adjacent private gardens and landscaped areas draining towards the proposed systems.

6.24 Larger areas of surrounding greenfield land that naturally fall away from the development and proposed SuDS features and therefore do not contribute runoff to the drainage systems, have not been included within the drainage calculations.

6.25 The drainage catchment extents, including all impermeable and contributing greenfield areas incorporated within the drainage design, are illustrated on the Drainage Area Catchment Plan provided in Appendix G.

Proposed Discharge Rate

6.26 In accordance with the National Standards for Sustainable Drainage Systems and the CIRIA SuDS Manual (C753), the greenfield runoff rate has been derived from the total contributing drainage catchment area and not solely from the proposed impermeable area of the development. Greenfield runoff estimation methods are intended to represent the natural hydrological response of the entire site catchment under existing conditions, including both permeable and impermeable

surfaces.

6.27 The resulting Greenfield runoff rates for the development, considering the entire drained area, are summarised below:

- Qbar 43.99 l/s
- 1:10 year 71.55 l/s
- 1:30 year 101.76 l/s
- 1:100 year 140.98 l/s
- 1:200 year 164.83 l/s

6.28 Surface water runoff generated from all proposed impermeable areas within each catchment, including roofs, roads, parking areas, patios and other hardstanding, together with runoff from soft landscaped areas that will drain into the surface water network, including the basin footprints, will be collected and conveyed through the proposed SuDS network before being discharged to the existing ditched watercourse along the northern boundary of the Site. The outfall into the watercourse will be located in the north-eastern corner of the Site, as shown on the drainage layout plan at the rear of this report.

6.29 The proposed discharge rate from the SuDS system will be restricted to match the existing Qbar greenfield runoff rate for all rainfall events, thereby mimicking the pre-development discharge conditions for all return period events up to and including the 1:100 plus climate change event.

6.30 It is further recognised that for larger return-period rainfall events, a betterment on existing discharge rates will be provided.

6.31 Furthermore, the Proposed Development will incorporate a significant volume of surface water attenuation storage, which is not currently provided on the existing site, resulting in an overall improvement to the management and control of surface water runoff, reducing the potential risk of flooding offsite.

Surface Water Proposals

6.32 In accordance with the runoff destination hierarchy set out in the National Standards for Sustainable Drainage Systems, infiltration has been considered. However, available geological mapping, nearby borehole data and site-specific infiltration testing indicate relatively impermeable strata at shallow depth, suggesting infiltration is unlikely to be viable as the primary drainage approach. The proposed strategy therefore adopts attenuation with controlled discharge to the adjacent watercourse as a feasible and policy-compliant solution.

- 6.33 The outfall into the adjacent watercourse has been modelled as a surcharged outfall due to the extent of surface water flooding found adjacent to the northern site boundary. The surcharged outfall has been calculated using maximum surface water flood depth at the outfall location. Further details can be found within the surface water drainage calculations in Appendix H.
- 6.34 The outfall into the adjacent watercourse has been modelled as a surcharged outfall due to the extent of surface water flooding found adjacent to the northern Site boundary. The surcharged outfall has been calculated using the maximum surface water flood depth at the outfall location. Further details can be found within the surface water drainage calculations in Appendix H.
- 6.35 Runoff from dwelling and garage roofs will be collected via rainwater downpipes and directed to adjacent permeable paving systems within private driveways and parking areas, via perforated pipework or diffusion boxes. All private driveways and private roads will be constructed using permeable paving incorporating a minimum 300 mm subbase, providing localised storage, interception, attenuation and treatment of runoff at source.
- 6.36 In addition, a series of rain gardens will be located throughout the Site to receive and manage runoff from dwelling and garage roofs, as well as runoff from non-private roads. These features will provide additional source-control and SuDS functions, including runoff interception, temporary storage, attenuation and water quality treatment.
- 6.37 The proposed combination of permeable paving, rain gardens and associated drainage infrastructure will therefore provide a treatment-train approach, maximising opportunities for surface water to be managed within the Site prior to entering the formal piped drainage network.
- 6.38 The strategy will limit the volume and rate of runoff conveyed downstream, whilst ensuring that the required 5 mm rainfall interception, attenuation and water quality requirements are appropriately addressed as part of the overall surface water management strategy.
- 6.39 Following this initial attenuation and treatment, runoff will be conveyed via a piped drainage network throughout the Site towards two interlinked attenuation basins located in the northern part of the Site, adjacent to and set below the existing ditched watercourse. These basins will operate in tandem as a single storage and attenuation system, providing distributed storage capacity and hydraulic resilience within the overall drainage strategy. The system has been designed to operate entirely by gravity, without the need for pumped infrastructure.
- 6.40 The permeable paving systems will form an important component of the SuDS management train by providing source control, promoting the settlement of suspended solids, and improving water quality through filtration processes within the sub-base. In addition, these systems provide

distributed attenuation and reduce peak runoff rates entering the downstream piped network. For conservatism, any storage benefit provided by the permeable paving has not been included within the drainage modelling at this stage.

6.41 The combined attenuation system in the northern part of the Site has been designed to accommodate runoff from storm events up to and including the 1 in 100-year return period event, including a 45% allowance for climate change. Flow control devices will be installed at the outlet of the attenuation system to restrict discharge rates to Q_{bar} prior to controlled discharge into the existing ditch along the northern Site boundary.

6.42 The storage properties of the attenuation system are summarised below:

Western Basin:

- Maximum Volume: 1729m³
- Storage Volume Required Under 1:100+45% Event: 1206m³
- Freeboard: 350mm

Eastern Basin:

- Maximum Volume: 880m³
- Storage Volume Required Under 1:100+45% Event: 621m³
- Freeboard: 350mm

6.43 The attenuation basins will comprise shallow landscaped features with appropriately graded 1:3 side slopes to ensure safe access and facilitate long-term maintenance. In addition to their primary flood attenuation function, the basins will provide multifunctional benefits including biodiversity enhancement, visual amenity, ecological habitat creation, improved landscape character and opportunities for informal recreation. Subject to detailed landscape design, the basin areas may incorporate species-rich grassland, native planting, ecological features, pedestrian routes and informal open space, whilst maintaining the required flood storage capacity.

6.44 The inlets of the attenuation basins will benefit from gabion filter (reno mattress) drains to provide further water quality improvements to the SuDS system, while also providing energy relief.

6.45 The proposed drainage strategy adopts a SuDS management train approach throughout the site, incorporating source control measures, conveyance features and attenuation storage, prior to controlled discharge. This approach accords with the National Standards for Sustainable Drainage Systems and delivers multiple benefits in terms of flood risk management, water quality improvement, biodiversity enhancement and placemaking.

6.46 Surface water discharge from the Site will be restricted in accordance with the requirements of the Lead Local Flood Authority. Hydraulic modelling demonstrates that the proposed drainage

system can safely accommodate runoff from all critical storm events up to and including the 1 in 100-year event with a 45% allowance for climate change, without increasing flood risk on-site or elsewhere.

6.47 Calculations have been prepared in order to demonstrate that surface water drainage can be adequately accommodated within the site without any increased flood risk at the site or elsewhere.

6.48 A copy of the Drainage Strategy Plan and calculations is located within Appendix H at the rear of this report.

Water Quality

- 6.49 The proposed development is for residential use. In accordance with the CIRIA SuDS Manual 2015 (Report C753), the pollution hazard level for this type of development is between Very Low and Medium Pollution Hazard Level.
- 6.50 The surface water scheme will need to include mitigation to ensure that surface water is suitably treated, and any pollution risk adequately managed prior to discharge.
- 6.51 Table 26.2 in Chapter 26 of CIRIA report C753 The SuDS Manual provides pollution hazard indices.
- 6.52 Indices for varying land types. Those of relevance to the development proposals are as follows:

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very Low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie <300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7

Table 7: Pollution Hazard Indices

- 6.53 Pollution Mitigation Indices for each SuDS component are as follows:

Type of Mitigation	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Permeable Pavement	0.7	0.6	0.7
Detention Basin	0.5	0.5	0.6

Table 8: Pollution Mitigation Indices

- 6.54 When used in combination, the proposed drainage features for the site meet the target treatment levels required for a site classified as having a Pollution Hazard Level of Very Low to Medium Risk.

Exceedance Flows

- 6.55 In scenarios where rainfall exceeds the design capacity of the proposed drainage system, it is critical that flood risk to buildings and key infrastructure is avoided. To address this, site levels will be strategically contoured to ensure that surface water is diverted away from building footprints and other sensitive areas. The exceedance flow route will be carefully managed to maintain existing overland flow patterns, directing excess runoff toward the eastern boundary of the site. This approach replicates the current drainage behaviour and ensures that surface water is safely conveyed off-site during extreme rainfall events without posing a flood risk to the Proposed Development.
- 6.56 In the event of an exceedance scenario, exceedance flows would exit the lowest points within the proposed drainage network first. Initial exceedance would occur within the attenuation basins and adjacent manholes before overland flows are conveyed northwards towards the site boundary and the existing ditch. This ensures that any exceedance is directed away from the built development.
- 6.57 A copy of the exceedance flow plans is provided in Appendix J at the rear of this report.

Foul Water Drainage

- 6.58 The objective of the proposed foul water drainage strategy is to provide a practical and sustainable solution for the management of foul effluent generated by the proposed development. In accordance with the foul water drainage hierarchy and national planning guidance, the preferred method of foul water disposal is via connection to the existing public foul sewer network operated by the statutory undertaker.
- 6.59 A review of the site topography indicates that ground levels fall away northwards across the Site and generally towards the east, away from College Lane (where the nearest public foul sewer is located). As a consequence, a wholly gravity-based connection is not feasible, as foul effluent generated by the Proposed Development cannot be conveyed naturally uphill to the point of connection.
- 6.60 Whilst the Site levels fall towards the north-east, the majority of the Site can be served by a conventional gravity foul drainage system. The foul network will utilise the natural topography to convey flows by gravity towards the lower-lying central and eastern parts of the Site.

- 6.61 Dwellings within the north-eastern portion of the Site, where gravity connection is not feasible, will be served by a local foul pumping station located in the north-east of the Site, adjacent to the attenuation basins. This facility will pump foul effluent via a rising main to the central part of the Site, where it will discharge into the gravity foul drainage network.
- 6.62 The pumping station will be designed in accordance with statutory undertaker requirements and relevant industry standards, incorporating duty/standby pumps, high-level alarms, telemetry and emergency storage to ensure operational resilience and minimise the risk of surcharge or pollution.
- 6.63 The pumping station will be located to allow safe access for operation, inspection and maintenance, with appropriate vehicular access and working areas provided within the detailed design.
- 6.64 Given the availability of a viable connection to the public foul sewer within College Lane, alternative foul water disposal methods such as package treatment plants, septic tanks or cesspits are not considered necessary.
- 6.65 Consultation with the statutory undertaker will be undertaken at detailed design stage to confirm connection points, network capacity and any required off-site reinforcement works.
- 6.66 A detailed foul drainage design will be prepared following planning approval to support sewer connection and requisition applications. The proposed strategy demonstrates that a deliverable foul drainage solution can be achieved for the development.
- 6.67 The proposed Drainage Strategy Plan and hydraulic calculations are provided in Appendix H of this report.

7.0 CONCLUSIONS

- 7.1 This Flood Risk Assessment has been undertaken in accordance with the National Planning Policy Framework (NPPF), supporting Planning Practice Guidance, the National Standards for Sustainable Drainage Systems and relevant local planning policy in support of a full planning application for the Proposed Development.
- 7.2 The Environment Agency's online mapping confirms that the whole of the site is in Fluvial Flood Zone 1 and is not at risk of fluvial flooding from anything less extreme than a 1:1000-year flood event.
- 7.3 The majority of the Site, especially all areas of proposed dwellings, is classified as having a 'Very Low' surface water flood risk, with limited areas of Low to Medium risk along the northern boundary and at the site access.
- 7.4 Localised Low to Medium surface water flood risk of up to 0.30 m at the College Lane access will be mitigated by raising levels by 300 mm, with no recorded local flood incidents and further drainage review to be undertaken at detailed design stage. Furthermore, the finished floor levels of all dwellings will be raised a minimum of 300 mm above the surface water flood levels.
- 7.5 The Site is at low risk of groundwater flooding.
- 7.6 The risk of flooding to the Site from all other sources is 'Low'.
- 7.7 A suitable SuDS drainage system is proposed which accords with the requirements of national and local policy.
- 7.8 Preliminary calculations indicate that surface water runoff generated by the proposed development can be attenuated on site for all rainfall events up to the 1:100-year event including an allowance for climate change.
- 7.9 The proposed works will not increase the flood risk at or in the vicinity of the Site.
- 7.10 The development proposals will not result in any change to the flood risk of the Site.
- 7.11 The proposed works are considered to have a Vulnerability Classification of More Vulnerable.
- 7.12 In accordance with current Planning Practice Guidance on flood risk vulnerability and flood zone compatibility, a More Vulnerable use is appropriate within Flood Zone 1, subject to consideration of flood risk from all sources and the findings of this FRA.

7.13 The works are compliant with national, regional and local planning policies and this FRA concludes that the Proposed Development is safe in terms of flood risk planning.

Appendix A – Topographical Survey

Appendix B – HR Wallingford Green Field Runoff Calculation

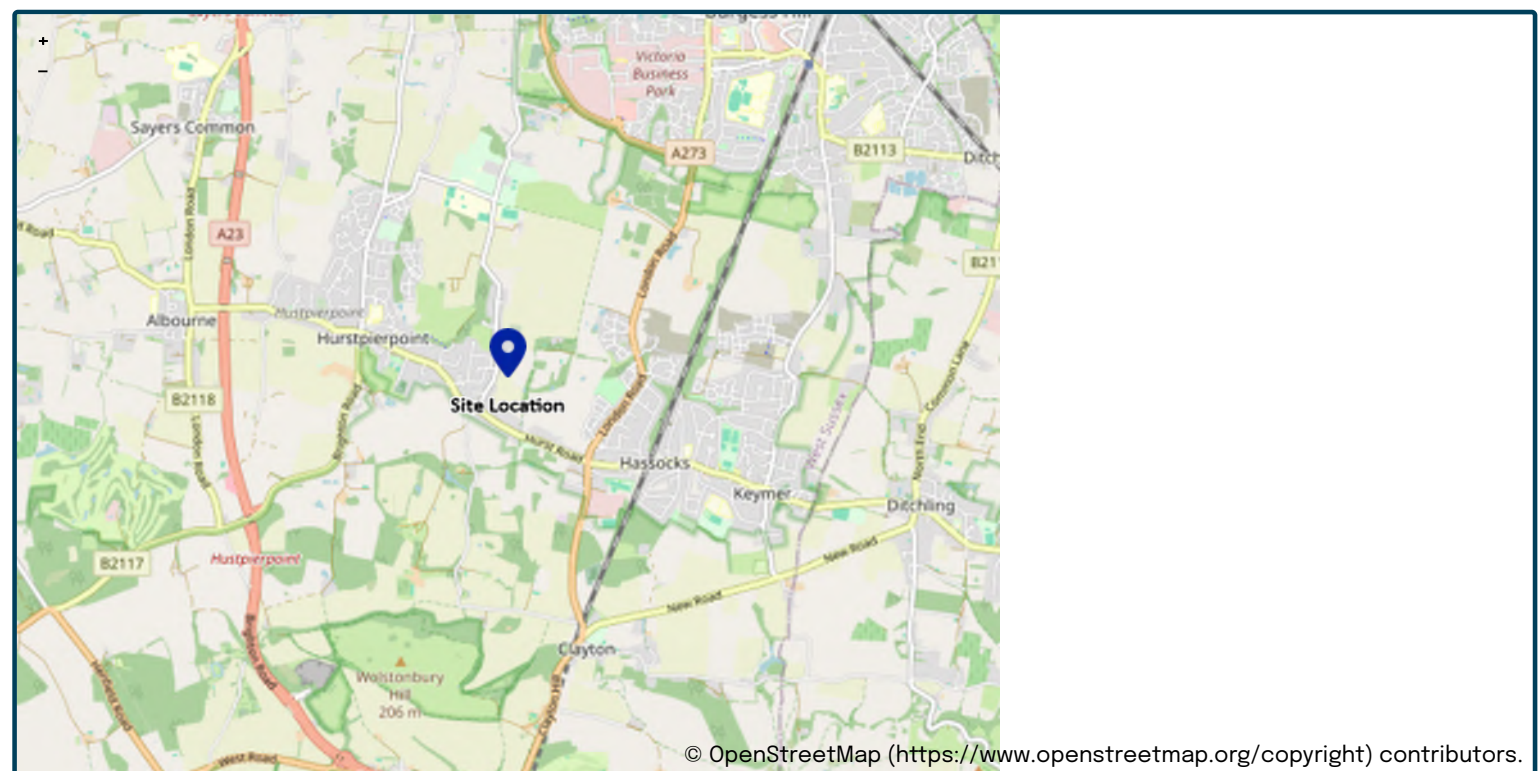
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	06/03/2026
Calculated by	Abdul Aden
Reference	3195-015
Model version	2.2.3

Location

Site name	College Lane
Site location	Hurstpierpoint



Site easting (British National Grid)	529234
Site northing (British National Grid)	115996

Site details

Total site area (ha)	1	ha
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Greenfield runoff

Method

Method	FEH statistical (2025)
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FEH statistical (2025)

	My value	Map value
SAAR9120 (mm)	927	mm
BFIHOST19scaled	0.371	
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

	My value	Map value
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)	7.1	l/s
Flow rate 2 year (l/s)	7.3	l/s
Flow rate 10 years (l/s)	13.5	l/s
Flow rate 30 years (l/s)	19.2	l/s
Flow rate 100 years (l/s)	26.6	l/s
Flow rate 200 years (l/s)	31.1	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/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Appendix C – Southern Water Records

Appendix D – Geotechnical Information

14/07/2026

Our ref: GE23829/GE01/14/07/2026

Bob Westwood
Thakeham Homes



By email only

Dear Rob,

RE: College Lane, Hurstpierpoint – Prelim Letter

Geo-Environmental Services Limited (Geo-Environmental) was instructed by Thakeham Homes (the Client) to undertake ground investigation at the above-named site.

Background

The purpose of the intrusive investigation was to inform the preliminary planning, design and construction strategies for the site. It is understood that the development will comprise houses, private gardens, access roads, local amenities and associated infrastructure.

The intrusive investigation was between the 24th June to 26th June 2026. These works included 12No. window sampler boreholes to a maximum depth of 4.0m bgl, together with 12 machine excavated trial pits. In addition, full scale soakage testing generally in accordance with BRE365 were undertaken in 4 of the trial pits. The intrusive investigation works were supervised by a Geo-Environmental Engineer.

The locations of the exploratory holes are presented within Figure 1. The exploratory hole locations were targeted to provide general site coverage.

Brief Site Description

The site comprised two fields. The southern field sloped down gently to the north, whilst the northern field sloped down gently to the south. The boundary between the fields comprised a line of trees and a track. All other boundaries were tree lined.

Ground Conditions

The ground conditions encountered within the exploratory holes were broadly consistent with the anticipated published sequence of strata and typically comprised a mantle of Topsoil overlying Clays, clayey silty SAND, sandy silty CLAY and clayey sandy SILT of the Lower Greensand Formation. It is possible that the shallow soils encountered at the location of WS10 comprised Alluvial Deposits, though laboratory testing is in hand to confirm this.

A brief generalisation of ground conditions is presented in Table 1 below.

Geo-Environmental Services Ltd
Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL
+44(0)1273 832972 www.gesl.net

Environmental Consultants | Geotechnical Engineers | Site Investigations

Geo-Environmental Services Ltd incorporated in England number 3214980 VAT number 679544479



Top (m bgl)	Base (m bgl)	Description	Location
0.0	0.20 – 0.40	Brown sandy gravelly clayey SAND TOPSOIL with and rootlets. Gravel is medium chert.	All
0.40	0.40 – 4.0	Firm to stiff orange brown and grey green laminated silty sandy CLAY, clayey sandy SILT and silty CLAY. Occasional soft horizons at shallow depth. Cemented siltstone encountered at depth in WS11 and WS12.	All

Table 1 Summary of ground conditions

Obstructions

No obstructions were recorded within the exploratory locations. Refusals were noted at 3.40m in WS11 and WS12 at depth within siltstone strata.

Groundwater

Groundwater was encountered in TP1, TP 2, TP3, WS5, WS7 and WS8 during the fieldworks at depths between 1.70mbgl and 2.80mbgl. The speed of the window sampling is such that some water strikes may go unnoticed. Further groundwater monitoring within existing and newly installed wells is to be undertaken as part of the investigation.

Soakage Testing

Full Scale BRE365 soakage tests were carried out in TP1, TP2, TP3 and TP6. A summary of the soakage test results are presented in Table 2 below.

WS Location	Soil Infiltration Rate (m/s)	Comments
Parcel A		
TP1	0.00	75% water level fall not achieved.
TP2	0.00	75% water level fall not achieved.
TP3	0.00	75% water level fall not achieved.
TP6	0.00	75% water level fall not achieved.

Table 4 Summary of Soakage Test Results

In conjunction with the infiltration test results and observed ground conditions it is considered that conventional soakaways will not work effectively on this site, with infiltration into clay strata not considered feasible. On-site storage and attenuation, or alternative storm water disposal options should be considered.

Changes in groundwater levels, such as shallower groundwater during winter months, could reduce storage capacity and performance of soakaways. This might also adversely impact the ability of any ponds to drain via infiltration to the ground and thus attenuated discharge to ditches and surface water may be more appropriate under extension of existing riparian rights.

Excavations

The trial pit excavations remained relatively stable above the groundwater table. Where groundwater was intercepted some slumping, side collapse and running sand was noted.

All excavations taken below the groundwater table will require dewatering and support.

Foundations

Based on the preliminary information, conventional shallow foundations are appropriate for the proposed development. Testing is in hand to establish the volume change of the soils encountered. It is likely that the soils will be of low to medium volume change potential, with some areas being of high volume change potential.

A preliminary allowable bearing capacity of 100kPa is appropriate for foundations no less than 450mm in width.

It is noted that groundwater was encountered at shallow depth at a number of locations. The investigation was undertaken in the summer months after a period of dry weather. Groundwater levels are likely to be higher in the winter months or after a prolonged rainfall event. The presence of shallow groundwater is likely to cause significant construction problems and it is possible that a piled foundation scheme may be more suitable for construction in the winter months.

Pavements

Based on the ground conditions encountered a preliminary CBR value of 2% is estimated for soils at formation depth.

Environmental Assessment

No organoleptic evidence of soil contamination was noted in the soils or exploratory holes. Testing is in hand to confirm this.

Closure

We trust we have interpreted your request correctly and provided sufficient information for your current requirements. If you have any questions or queries in relation the information provided, please do not hesitate to contact us.

Yours sincerely
For and on Behalf of Geo-Environmental



Glyn Evans B.Sc, M.Sc, PG Dip, FGS, MIEEnvSc
Company Chairman

Enc Figure 1 – Trial Hole Location Plan
 Trial Hole Logs



Legend

-  Untitled Group - 3
-  Untitled Group - 2
-  Site Boundary

0 25 m 50 m
© OpenStreetMap contributors



Geo-Environmental

Produced by DataSenseEarth

Title:

Hole Location Plan

Client: Thakeham Homes

Size: A4

Project:
College Lane
Hurstpierpoint

Drawn: JC

Figure No: 2

Date: 17-08-2026

Checked: JC

Proj No: GE23829

Scale: 1:2585

Version:
draft

 Geo-Environmental	Contract Name: College Lane		Client: Thakeham Homes			Trial Pit ID: TP01			
	Contract Number: GE23829	Date Started: 24/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 1 of 2			
	Easting: 529302.6	Northing: 115987.5	Ground Level: 47.50mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30			
Trial Pit Log		Weather: Sunny		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.50	D1	PP=2kg/cm2	47.30	0.20		Grass overlying slightly gravelly slightly clayey SAND. TOPSOIL	0.5		
				(0.60)		Firm to stiff orangish brown mottled grey sandy silty CLAY. Sand is fine. LOWER GREENSAND FORMATION			
1.00	D2	PP=1.5kg/cm2	46.70	0.80		Firm orangish brown mottled light grey very sandy very silty CLAY with occasional yellowish brown sandy laminations. LOWER GREENSAND FORMATION	1.0		
2.00	D3	PP=1kg/cm2		(1.60)			1.5		
							2.0		
			45.10	2.40		End of Trial Pit at 2.40m	2.5		
							3.0		
							3.5		
							4.0		
							4.5		
Dimensions:						Photo:			
Final Depth:	2.40m					 24/06/2026 09:24			
Final Width:	0.45m								
Final Length:	1.80m								
Remarks									
EOH excavated to 2.4m bgl. Water strike with fast groundwater ingress from 2.1m bgl.									
Water Strikes (mbgl)									
Depth Strike	Rose to		Time Elapsed (mins)						
2.10	2.10		10						

 Geo-Environmental	Contract Name: College Lane			Client: Thakeham Homes			Trial Pit ID: TP02										
	Contract Number: GE23829		Date Started: 24/06/2026		Logged By: DG		Checked By:		Status: PRELIM								
	Easting: 529267.3		Northing: 116096.5		Ground Level: 46.32mOD		Plant Used: 360		Date Printed: 14/07/2026								
Trial Pit Log								Scale: 1:30		Sheet 2 of 2							
Weather:				Hole Termination:				Stability: Sides stable									
Samples & In Situ Testing						Strata Details						Water	Backfill				
Depths		Sample ID		Test Result		Reduced Level		Depth (m) (Thickness)		Legend				Strata Description			
														5.0			
														5.5			
														6.0			
														6.5			
														7.0			
														7.5			
														8.0			
														8.5			
														9.0			
Dimensions:														Photo:			
Final Depth:		2.20m															
Final Width:		45.00m															
Final Length:		1.90m															
Remarks																	
EOH excavated to 2.2mbgl. Water strike at 1.7 and 2.2 with fast ingress into pit.																	
Water Strikes (mbgl)																	
Depth Strike		Rose to		Time Elapsed (mins)													
1.70		1.70		0													
																	
						Photo of Spoil						Photo of Reinstated Position					

 Geo-Environmental	Contract Name: College Lane			Client: Thakeham Homes			Trial Pit ID: TP03				
	Contract Number: GE23829	Date Started: 24/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 1 of 2					
	Easting: 529183.4	Northing: 116025.2	Ground Level: 48.80mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30					
Trial Pit Log				Weather:		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing						Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.10 0.20	ES2 ES1		48.50	(0.30) 0.30		Grass overlying dark brown slightly gravelly clayey SAND with occasional rootlets. TOPSOIL			0.5		
0.50	D1	PP=1.5kg/cm2		(0.70)		Firm light orangish brown mottled grey very sandy very silty CLAY. LOWER GREENSAND FORMATION					
1.00	D2	PP=1.5kg/cm2	47.80	1.00		Firm to stiff light orangish brown mottled grey slightly sandy silty CLAY. LOWER GREENSAND FORMATION			1.0		
		PP=1.5kg/cm2	46.30	(1.50)					1.5		
		PP=1.5kg/cm2							2.0		
		PP=1.5kg/cm2							2.5		
						End of Trial Pit at 2.50m			2.5		
									3.0		
									3.5		
									4.0		
									4.5		
Dimensions:						Photo:					
Final Depth:	2.50m					 Photo of Pit					
Final Width:	0.45m										
Final Length:	1.90m										
Remarks						 Photo of Spoil					
EOH excavated to 2.5m bgl. Water seepage at base of pit.											
Water Strikes (mbgl)											
Depth Strike	Rose to		Time Elapsed (mins)								



Client:

Thakeham Homes

Trial Pit ID:	
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TP03

Sheet 2 of 2

Trial Pit Log

Contract Number:	GE23829
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Date Started:	24/06/2026
---------------	------------

Logged By:	DG
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Checked By:	
-------------	--

Status:

PRELIM

Easting:	529183.4
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Northing:	116025.2
-----------	----------

Ground Level:	48.80mOD
---------------	----------

Plant Used:	360
-------------	-----

Date Printed:
14/07/2026

Scale: 1:30

Weather:

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		

Dimensions:

Final Depth:	2.50m
--------------	-------

Final Width:	0.45m
--------------	-------

Final Length:	1.90m
---------------	-------

Remarks

EOH excavated to 2.5m bgl. Water seepage at base of pit.

Water Strikes (mbgl)

Depth Strike

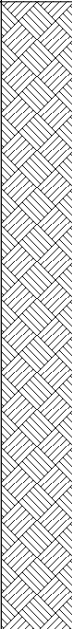
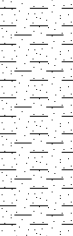
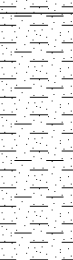
Rose to

Time Elapsed (mins)

Photo:



Photo of Reinstated Position

 Geo-Environmental	Contract Name: College Lane			Client: Thakeham Homes			Trial Pit ID: TP04			
	Contract Number: GE23829	Date Started: 25/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 1 of 2				
	Easting: 529391.4	Northing: 116265.5	Ground Level: 52.26mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30				
Trial Pit Log				Weather:		Hole Termination:		Stability: Sides stable		
Samples & In Situ Testing				Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
0.10	ES1		52.06	0.20		Grass overlying dark brown slightly gravelly silty SAND with frequent rootlets. TOPSOIL				
0.50	D1	PP=1.5kg/cm2		(1.00)		Firm to stiff orangish brown slightly sandy CLAY. Sand is fine. LOWER GREENSAND FORMATION			0.5	
		PP=1kg/cm2	51.06	1.20		Firm light orangish brown very sandy CLAY with frequent grey sand laminations. Sand is fine to medium. LOWER GREENSAND FORMATION			1.0	
1.50	D2	PP=1kg/cm2		(1.00)					1.5	
		PP=1.5kg/cm2 PP=1kg/cm2	50.06	2.20					2.0	
2.50	D3					End of Trial Pit at 2.50m			2.5	
									3.0	
									3.5	
									4.0	
									4.5	
Dimensions:						Photo:				
Final Depth:	2.50m					 Photo Prior To Commencement				
Final Width:	0.55m									
Final Length:	2.10m									
Remarks						 Photo of Pit				
EOH excavated to 2.5m bgl. No presence of groundwater.										
Water Strikes (mbgl)										
Depth Strike	Rose to		Time Elapsed (mins)							

 Geo-Environmental	Contract Name: College Lane			Client: Thakeham Homes			Trial Pit ID: TP04				
	Contract Number: GE23829	Date Started: 25/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 2 of 2					
	Easting: 529391.4	Northing: 116265.5	Ground Level: 52.26mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30					
Trial Pit Log				Weather:		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing						Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
										5.0	
										5.5	
										6.0	
										6.5	
										7.0	
										7.5	
										8.0	
										8.5	
										9.0	
Dimensions:						Photo:					
Final Depth:	2.50m					 					
Final Width:	0.55m										
Final Length:	2.10m										
Remarks											
EOH excavated to 2.5m bgl. No presence of groundwater.											
Water Strikes (mbgl)											
Depth Strike	Rose to		Time Elapsed (mins)								

 Geo-Environmental	Contract Name: College Lane		Client: Thakeham Homes			Trial Pit ID: TP05			
	Contract Number: GE23829	Date Started: 25/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 1 of 2			
	Easting: 529367.3	Northing: 116232.8	Ground Level: 50.37mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30			
Trial Pit Log		Weather:		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.50	D1	PP=1.5kg/cm2	50.17	0.20		Grass overlying dark brown slightly gravelly silty SAND with frequent rootlets. Gravel is fine to medium chert. TOPSOIL	0.5		
		PP=1.5kg/cm2	49.57	0.80		Firm to stiff light orangish brown slightly sandy CLAY. LOWER GREENSAND FORMATION			
1.50	D2	PP=1.2kg/cm2	49.07	1.30		Firm to stiff light orangish brown mottled grey sandy silty CLAY with frequent sand laminations. Sand is fine to medium. LOWER GREENSAND FORMATION	1.0		
			48.67	1.70		Light orangish brown mottled grey very silty very clayey SAND. Sand is fine to medium. LOWER GREENSAND FORMATION			
2.00	D3	PP=1.2kg/cm2	47.87	2.50		Firm to stiff light orangish brown sandy silty CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION	2.0		
2.50	D4								End of Trial Pit at 2.50m
							3.0		
							3.5		
							4.0		
							4.5		
Dimensions:						Photo:			
Final Depth:	2.50m					 Photo Prior To Commencement			
Final Width:	0.50m								
Final Length:	1.80m								
Remarks						 Photo of Pit			
EOH excavated to 2.5m bgl. No presence of groundwater.									
Water Strikes (mbgl)									
Depth Strike		Rose to		Time Elapsed (mins)					



Thakeham Homes

TP05

GF23829

25/06/2026

DG

PRELIM

Sheet 2 of 2

Trial Pit Log

529367.3

116232.8

50.37mOD

360

14/07/2026

1:30

Weather:

Hole Termination:

Stability: Sides stable

Dimensions:		
Final Depth:	2.50m	
Final Width:	0.50m	
Final Length:	1.80m	
Remarks		
EOH excavated to 2.5m bgl. No presence of groundwater.		
Water Strikes (mbgl)		
Depth Strike	Rose to	Time Elapsed (mins)



Photo of Spoil



Photo of Reinstated Position

 Geo-Environmental	Contract Name: College Lane		Client: Thakeham Homes			Trial Pit ID: TP06			
	Contract Number: GE23829	Date Started: 24/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 2 of 2			
	Easting: 529333.1	Northing: 116174.0	Ground Level: 47.16mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30			
Trial Pit Log		Weather: Sunny and hot		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
								5.0	
								5.5	
								6.0	
								6.5	
								7.0	
								7.5	
								8.0	
								8.5	
								9.0	
Dimensions:						Photo:			
Final Depth:	2.50m					 Photo of Spoil			
Final Width:	0.50m								
Final Length:	1.50m								
Remarks						 Photo of Reinstated Position			
EOH excavated to 2.5m bgl. No presence of grounwater.									
Water Strikes (mbgl)									
Depth Strike		Rose to		Time Elapsed (mins)					

 Geo-Environmental	Contract Name: College Lane		Client: Thakeham Homes			Trial Pit ID: TP07		
	Contract Number: GE23829	Date Started: 25/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 1 of 2		
Trial Pit Log	Easting: 529381.5	Northing: 116196.2	Ground Level: 48.24mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30		
Weather: Sunny and hot		Hole Termination:			Stability: Sides stable			
Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		
0.10	ES1		48.04	0.20		Grass overlying dark brown silty SAND. Sand is medium. TOPSOIL		
0.50	D1	PP=3kg/cm2		(0.80)		Stiff dark orangish brown sandy silty CLAY. LOWER GREENSAND FORMATION	0.5	
1.00	D2	PP=3kg/cm2	47.24	1.00		Firm to stiff light orangish brown mottled grey sandy silty CLAY. Sand is fine. LOWER GREENSAND FORMATION	1.0	
1.50	D3	PP=1kg/cm2	46.84	1.40		Stiff light orangish brown mottled grey sandy silty CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION	1.5	
2.00	D4	PP=1kg/cm2	46.44 46.14	1.80 2.10		Firm light orangish brown very sandy silty CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION	2.0	
2.50	D5	PP=1kg/cm2	45.74	2.50		Light orangish brown mottled grey very clayey SAND. Sand is fine to medium. LOWER GREENSAND FORMATION	2.5	
End of Trial Pit at 2.50m							2.5	
							3.0	
							3.5	
							4.0	
							4.5	
Dimensions:					Photo:			
Final Depth:	2.50m				 25/06/2026 09:17			
Final Width:	0.50m							
Final Length:	1.80m							
Remarks					 25/06/2026 09:17			
Water Strikes (mbgl)								
Depth Strike		Rose to	Time Elapsed (mins)					



Thakeham Homes

TP07

Sheet 2 of 2

Trial Pit Log

Contract Number:
GE23829

Date Started:	25/06/2026
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Logged By:	DG
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Checked By:	
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Status:	PRELIM
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Easting:	529381.5
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Northing:	116196.2
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Ground Level:	48.24mOD
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Plant Used:	360
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Date Printed:
14/07/2026

Scale: 1:30

Weather: Sunny and hot

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details					
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description	Water	Backfill

Dimensions:

Final Depth:	2.50m
--------------	-------

Final Width:	0.50m
--------------	-------

Final Length:	1.80m
---------------	-------

Remarks

Photo:



Photo of Spoil



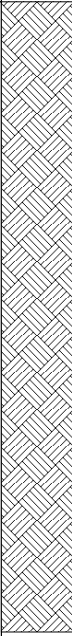
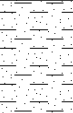
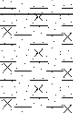
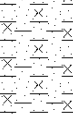
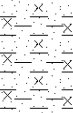
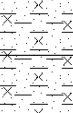
Photo of Reinstated Position

Water Strikes (mbgl)

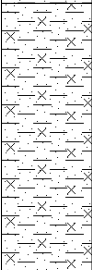
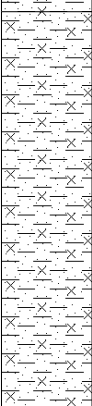
Depth Strike

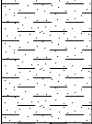
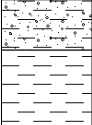
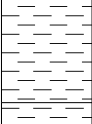
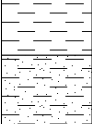
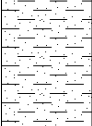
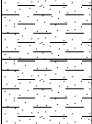
Rose to

Time Elapsed (mins)

 Geo-Environmental	Contract Name: College Lane		Client: Thakeham Homes			Trial Pit ID: TP08			
	Contract Number: GE23829	Date Started: 24/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 1 of 2			
	Easting: 529353.1	Northing: 116149.1	Ground Level: 46.50mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30			
Trial Pit Log		Weather: Sunny and hot		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1		46.30	0.20		Dark reddish brown silty SAND with occasional rootlets. TOPSOIL			
0.50	D1	PP=0.2kg/cm2		(0.50)		Soft dark reddish brown very sandy CLAY. Sand is medium. LOWER GREENSAND FORMATION	0.5		
			45.80	0.70		Soft light orangish brown mottled grey very sandy silty CLAY. Sand is medium. LOWER GREENSAND FORMATION	1.0		
1.00	D1	PP=0.5kg/cm2		(1.50)			1.5		
		PP=0.5kg/cm2					2.0		
2.30	D3	PP=1.5kg/cm2	44.30	2.20		Firm to stiff light orangish brown mottled grey very sandy silty CLAY. Sand is medium. LOWER GREENSAND FORMATION	2.5		
			44.00	2.50		End of Trial Pit at 2.50m	2.5		
							3.0		
							3.5		
							4.0		
							4.5		
Dimensions:						Photo:			
Final Depth:	2.50m					 Photo Prior To Commencement			
Final Width:	0.50m								
Final Length:	1.80m								
Remarks						 Photo of Pit			
EOH excavated to 2.5mbgl. No presence of groundwater.									
Water Strikes (mbgl)									
Depth Strike	Rose to		Time Elapsed (mins)						

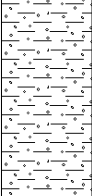
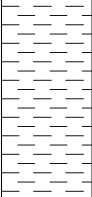
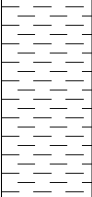
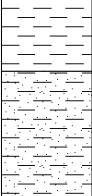
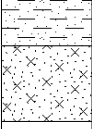
 Geo-Environmental	Contract Name: College Lane		Client: Thakeham Homes			Trial Pit ID: TP08			
	Contract Number: GE23829	Date Started: 24/06/2026	Logged By: DG	Checked By:	Status: PRELIM	Sheet 2 of 2			
	Easting: 529353.1	Northing: 116149.1	Ground Level: 46.50mOD	Plant Used: 360	Date Printed: 14/07/2026	Scale: 1:30			
Trial Pit Log		Weather: Sunny and hot		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
								5.0	
								5.5	
								6.0	
								6.5	
								7.0	
								7.5	
								8.0	
								8.5	
								9.0	
Dimensions:						Photo:			
Final Depth:	2.50m					 Photo of Spoil			
Final Width:	0.50m								
Final Length:	1.80m								
Remarks						 Photo of Reinstated Position			
EOH excavated to 2.5mbgl. No presence of groundwater.									
Water Strikes (mbgl)									
Depth Strike		Rose to		Time Elapsed (mins)					

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS01 Sheet 1 of 1		
Project Name: College Lane				Project No. GE23829		Co-ords: 529116E - 115996N		Hole Type WLS		
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 51.15		Scale 1:30		
Client: Thakeham Homes						Dates: 23/06/2026		Logged By DG		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES		0.30	50.85		Grass overlying dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is fine. TOPSOIL	1 2 3 4 5 6	
		0.50 0.50	D PP	2.0kg/cm2				Stiff light brown slightly sandy CLAY. Sand is fine. LOWER GREENSAND FORMATION		
		1.00	PP	2.0kg/cm2	1.10	50.05		Firm to stiff dark brown mottled grey and orange slightly sandy silty CLAY. Sand is fine. LOWER GREENSAND FORMATION		
		1.50 1.50	D PP	0.7kg/cm2						
		2.00	PP	1.5kg/cm2	2.20	48.95		Firm light orangish brown mottled grey sandy silty CLAY. Sand is fine. LOWER GREENSAND FORMATION		
		2.50 2.50	D PP	1.5kg/cm2						
		3.00 3.00	D PP	1.5kg/cm2	3.80	47.35		Soft dark orangish brown sandy CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION		
		3.50	D							
		4.00	D							
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks						
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled to 4.00m bgl. No presence of groundwater.					
 Status PRELIM										

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log Borehole No. WS03 Sheet 1 of 1					
Project Name: College Lane		Project No. GE23829		Co-ords: 529174E - 116117N		Hole Type WLS			
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG				Level: 47.45		Scale 1:30			
Client: Thakeham Homes				Dates: 22/06/2026		Logged By DG			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30	47.15		Grass overlying dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine. TOPSOIL	
		0.50 0.50	D PP	2.0kg/cm2				Dark greyish brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded flint. LOWER GREENSAND FORMATION	
		0.90 0.90	D PP	1.5kg/cm2	0.80 1.00	46.65 46.45		Light orangish brown mottled grey sandy gravelly CLAY. Sand is medium to coarse. Gravel is fine to medium angular to subrounded flint and ironstone. LOWER GREENSAND FORMATION	1
								Stiff light orangish brown mottled grey CLAY. LOWER GREENSAND FORMATION	
		1.50 1.50	D PP	1.5kg/cm2		45.75		Stiff light grey CLAY. LOWER GREENSAND FORMATION	
		1.90 1.90	D PP	2.0kg/cm2	2.00	45.45		Stiff orangish brown sandy CLAY with frequent black specs. Sand is fine to medium. LOWER GREENSAND FORMATION	2
		2.50 2.50	D PP	2.0kg/cm2				<i>Reddish brown ironstone band 2.75 - 2.80m bgl.</i>	
		3.00	PP	2.5kg/cm2	3.00	44.45		Dark bluish grey sandy CLAY. Sand is medium. LOWER GREENSAND FORMATION	3
		3.50 3.50	D PP	3.0kg/cm2					
		4.00 4.00	D PP	3.5kg/cm2	4.00	43.45		End of Borehole at 4.00m	4
									5
									6
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH at 4.00m bgl. No presence of groundwater.				



Status
PRELIM

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS04 Sheet 1 of 1		
Project Name: College Lane				Project No. GE23829		Co-ords: 529237E - 116052N		Hole Type WLS		
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 47.51		Scale 1:30		
Client: Thakeham Homes						Dates: 22/06/2026		Logged By DG		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.20	ES		0.30	47.21		Grass overlying dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine. TOPSOIL	1 2 3 4 5 6	
		0.50 0.50	D PP	3.0kg/cm2				Firm to stiff light brown mottled orange and grey slightly gravelly CLAY. Gravel is fine to medium angular to subangular flint. LOWER GREENSAND FORMATION		
		1.00	PP	2.0kg/cm2	1.10	46.41		Firm Light brown mottled grey and orange CLAY. LOWER GREENSAND FORMATION		
		1.50 1.50	D PP	1.0kg/cm2						
		2.00 2.10	PP D	1.0kg/cm2						
		2.50	PP	2.5kg/cm2	3.00	44.51		Firm to stiff dark brown mottled dark orange slightly sandy CLAY. LOWER GREENSAND FORMATION		
		3.00 3.10	PP D	2.0kg/cm2						
		3.50	PP	2.0kg/cm2						
						3.70	43.81			Stiff dark brown silty SAND. Sand is medium. LOWER GREENSAND FORMATION
		4.00 4.00	D PP	3.0kg/cm2	4.00	43.51		End of Borehole at 4.00m		
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					 Status PRELIM	
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled 4.0m bgl. No presence of groundwater.					

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net			Borehole Log				Borehole No. WS05 Sheet 1 of 1	
Project Name: College Lane			Project No. GE23829		Co-ords: 529255E - 116009N		Hole Type WLS	
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG					Level: 47.58		Scale 1:30	
Client: Thakeham Homes					Dates: 23/06/2026		Logged By DG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES				Grass overlying dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine. TOPSOIL		
		0.50	PP	2.0kg/cm2	0.40	47.18	Firm greyish brown sandy CLAY. LOWER GREENSAND FORMATION		
		1.00	PP	1.0kg/cm2	1.00	46.58	Firm light orangish brown mottled grey and orange slightly sandy CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION	1	
		1.10	D						
		1.50	D	1.0kg/cm2					
		1.50	PP						
		2.00	D	1.0kg/cm2	1.90	45.68	Firm to stiff light grey mottled yellow and orange very sandy silty CLAY. Sand is medium. LOWER GREENSAND FORMATION	2	
		2.00	PP						
		2.50	D	2.5kg/cm2					
		2.50	PP						
		3.00	PP	2.0kg/cm2	3.00	44.58	Firm to stiff dark grey sandy silty CLAY. Sand is medium. LOWER GREENSAND FORMATION	3	
		3.00	SPT	N=12 (2,2/3,2,3,4)					
		3.10	D						
		3.50	D	1.0kg/cm2					
		3.50	PP						
		4.00	D	2.5kg/cm2	4.00	43.58	End of Borehole at 4.00m	4	
		4.00	PP						
		4.00	SPT	N=26 (3,5/5,6,7,8)					

Dynamic Sampling Run Details

Depth Top	Depth Base	Diameter

Water Strike Details (mbgl)

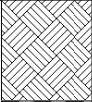
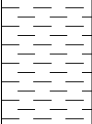
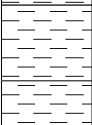
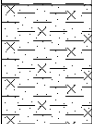
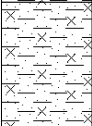
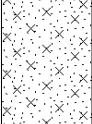
Depth Strike	Rose To
3.00	3.00

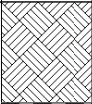
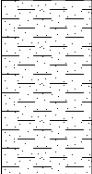
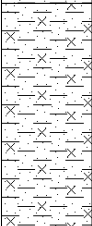
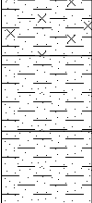
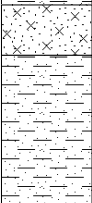
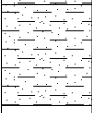
Remarks

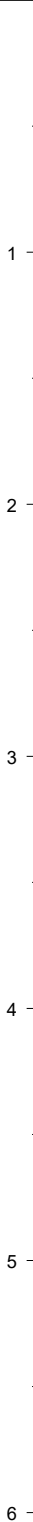
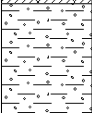
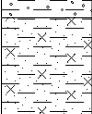
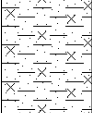
EOH drilled to 4m bgl. Groundwater at 3.00m bgl but due to soil from surface falling in, we were unable to monitor for 20 minutes.

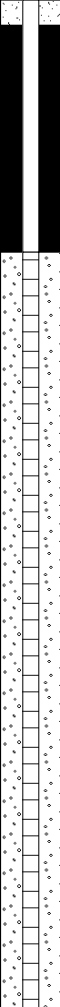
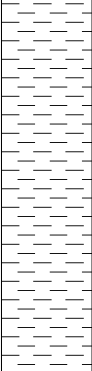
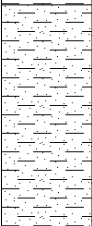
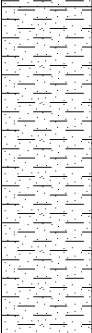


Status
PRELIM

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS06 Sheet 1 of 1		
Project Name: College Lane				Project No. GE23829		Co-ords: 529183E - 115980N		Hole Type WLS		
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 49.91		Scale 1:30		
Client: Thakeham Homes						Dates: 23/06/2026		Logged By DG		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES		0.40	49.51		Grass overlying slightly gravelly sandy SILT with one red brick fragments. Gravel is fine to medium angular flint. Red brick is 30mm in diameter. TOPSOIL	1 2 3 4 5 6	
		0.50 0.60	PP D	3.0kg/cm2						Stiff orangish brown CLAY. LOWER GREENSAND FORMATION
		1.00	PP	2.5kg/cm2		Light brown sandy CLAY. LOWER GREENSAND FORMATION				
		1.20	D			1.30	48.61	Firm light grey CLAY. LOWER GREENSAND FORMATION		
		1.50 1.50	D PP	1.0kg/cm2	1.80	48.11		Firm to stiff orangish brown sandy silty CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION		
		2.00 2.00	D PP	0.5kg/cm2						
		2.50	PP	2.5kg/cm2	2.50	47.41		Stiff light brown mottled orange sandy silty CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION		
		3.00	PP	2.0kg/cm2						
		3.50	D		3.20	46.71		Dark greyish brown silty SAND. Sand is fine to medium. LOWER GREENSAND FORMATION		
		4.00	D							
End of Borehole at 4.00m										
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					 Status PRELIM	
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled to 4m bgl. No presence of groundwater.					

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS07 Sheet 1 of 1	
Project Name: College Lane				Project No. GE23829		Co-ords: 529236E - 115959N		Hole Type WLS	
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 49.94		Scale 1:30	
Client: Thakeham Homes						Dates: 23/06/2026		Logged By DG	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40	49.54		Grass overlying dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is fine. TOPSOIL	
		0.50 0.50 0.50	D ES PP	2.5kg/cm2				Stiff light brown slightly sandy CLAY with occasional rootlets. Sand is fine LOWER GREENSAND FORMATION	1
		1.00	PP	1.5kg/cm2	1.10	48.84		Firm to stiff dark brown mottled grey and orange slightly sandy silty CLAY. Sand is fine. LOWER GREENSAND FORMATION	
		1.50 1.50 1.50	D ES PP	0.5kg/cm2					2
		2.00 2.00	D PP	1.0kg/cm2	2.20	47.74		Stiff orangish brown very sandy CLAY. Sand is fine to medium. LOWER GREENSAND FORMATION	
		2.50 2.60	PP D	1.0kg/cm2	2.50	47.44		Stiff dark grey mottled orange very sandy CLAY. LOWER GREENSAND FORMATION	
					2.80	47.14			
		3.00	PP	3.0kg/cm2	3.00	46.94		Dark greenish grey mottled orange silty SAND. LOWER GREENSAND FORMATION	3
		3.50 3.50	D PP	2.5kg/cm2	3.60	46.34		Stiff greenish grey mottled orange very sandy CLAY. Sand is fine. LOWER GREENSAND FORMATION	
		4.00 4.00 4.00	D PP SPT	1.8kg/cm2 N=20 (2,3/4,5,6,5)	4.00	45.94		End of Borehole at 4.00m	4
								5	
								6	
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled to 4.0m bgl. Groundwater at 3.27m bgl. SPT at 4.00m.				
			3.20	3.27					
					 Status PRELIM				

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS08 Sheet 1 of 1		
Project Name: College Lane				Project No. GE23829		Co-ords: 529300E - 115934N		Hole Type WLS		
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 49.48		Scale 1:30		
Client: Thakeham Homes						Dates: 23/06/2026		Logged By DG		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES	2.0kg/cm2	0.30	49.18		Grass overlying slightly gravelly clayey SAND. TOPSOIL		
		0.50 0.50	D PP		0.80	48.68		Stiff brown slightly gravelly CLAY with occasional black staining. Gravel is fine to medium angular to subrounded flint and medium to coarse subangular ironstone. LOWER GREENSAND FORMATION		
		1.00	D	2.0kg/cm2						Stiff orangish brown mottled grey and orange slightly sandy silty CLAY with frequent black specs. LOWER GREENSAND FORMATION
		1.50	D							
		2.00 2.00	D PP							
		2.50 2.50	D PP	2.0kg/cm2	3.20	46.28				
		3.30	D							
		3.70	PP	3.0kg/cm2						
		4.00 4.00 4.00	D PP SPT	1.3kg/cm2 N=28 (4,5/7,7,7,7)						
				End of Borehole at 4.00m						
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks						
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled to 4.00m bgl. Groundwater resting at 2.84m bgl. SPT at 4.00m bgl.					
			2.84	2.84						
 Status PRELIM										

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net			Borehole Log				Borehole No. WS09 Sheet 1 of 1		
Project Name: College Lane			Project No. GE23829		Co-ords: 529321E - 116056N		Hole Type WLS		
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG					Level: 45.36		Scale 1:30		
Client: Thakeham Homes					Dates: 22/06/2026		Logged By DG		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	45.06		Grass overlying dark brown slightly gravelly sandy CLAY with frequent rootlets. TOPSOIL	
		0.50 0.50 0.50	D ES PP	0.3kg/cm2				Soft to firm light orangish brown mottled grey CLAY LOWER GREENSAND FORMATION	1
		1.00 1.00	D PP	3.0kg/cm2					
		1.50 1.50 1.50	D ES PP	0.5kg/cm2	1.80	43.56		Stiff dark greenish grey sandy CLAY with rare selenite specs. Sand is white and medium. LOWER GREENSAND FORMATION	2
		2.00	D						
		2.50 2.60	D PP	2.0kg/cm2	2.70	42.66		Stiff dark orangish brown mottled green and grey very sandy CLAY with black specs. Sand is medium. LOWER GREENSAND FORMATION	3
		3.00 3.00	D PP	2.5kg/cm2					
		3.50	D						
		4.00 4.00	D PP	3.5kg/cm2	4.00	41.36		End of Borehole at 4.00m	4
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled to 4m bgl. Groundwater at 1m bgl. Monitoring well installed				
			1.00	1.00					
					 Status PRELIM				



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Borehole Log

Borehole No.

WS10

Sheet 1 of 1

Project Name: College Lane

Project No.
GE23829

Co-ords: 529328E - 116103N

Hole Type	WLS
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Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG

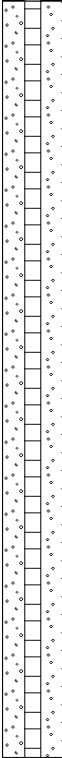
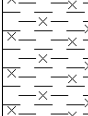
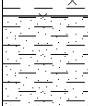
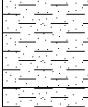
Level: 45.31

Scale
1:30

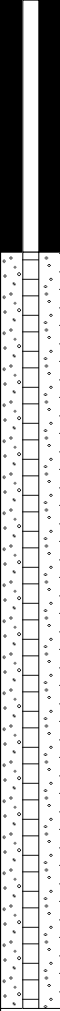
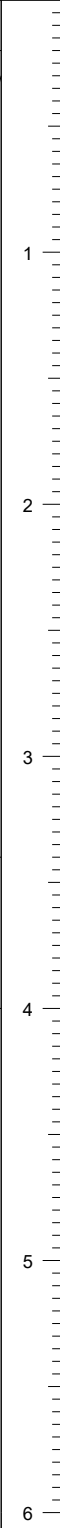
Client: Thakeham Homes

Dates: 22/06/2026

Logged By
DG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.10	ES		0.30	45.00		Grass overlying slightly gravelly sandy CLAY with frequent rootlets. Gravel is fine flint. TOPSOIL	1 2 3 4 5 6		
		0.50	PP				0.8kg/cm2			Firm greyish brown mottled orange silty CLAY. ALLUVIUM	
		0.80	D	0.5kg/cm2	0.70	44.60		Firm light brown mottled grey and orange gravelly CLAY. Gravel is medium to coarse angular to subangular flint. ALLUVIUM			
		1.00	PP					Firm greenish brown silty CLAY. ALLUVIUM			
		1.50 1.50 1.50	D ES PP	0.8kg/cm2	1.20	44.10					
		1.90	43.40								Stiff dark green with white specs sandy CLAY with one 20mm in diameter root. Sand is white and medium. ALLUVIUM
		2.10 2.10	D PP	1.2kg/cm2	2.60	42.70		Stiff brown mottled grey and orange sandy CLAY. Sand is fine. LOWER GREENSAND FORMATION			
		2.70	D								
		3.00	PP	2.5kg/cm2							
		3.50 3.50	D PP	2.5kg/cm2							
		4.00 4.00	D PP	2.5kg/cm2	4.00	41.30		End of Borehole at 4.00m			
		Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks EOH drilled to 4.0m. Soil is damp from 0.9m bgl. Monitoring well installed.					
		Depth Top	Depth Base	Diameter	Depth Strike						Rose To
									 Status PRELIM		

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS11 Sheet 1 of 1	
Project Name: College Lane				Project No. GE23829		Co-ords: 529293E - 116144N		Hole Type WLS	
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 46.26		Scale 1:30	
Client: Thakeham Homes						Dates: 22/06/2026		Logged By DG	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	45.96		Grass overlying slightly clayey SAND. TOPSOIL	1 2 3 4 5 6
		0.40	ES	1.5kg/cm2				Soft to firm light brown mottled orange and grey slightly sandy silty CLAY. Sand is fine to medium, LOWER GREENSAND FORMATION Occasional black staining at 0.5 - 0.6m	
		0.50	D						
		0.50	PP						
		1.00	D	0.5kg/cm2					
		1.00	PP						
		1.50	D	1.0kg/cm2					
		1.50	PP						
		2.00	D	0.5kg/cm2					
		2.00	PP						
2.50	D	0.5kg/cm2							
2.50	PP								
			2.80	43.46		Stiff brown slightly sandy silty CLAY. LOWER GREENSAND FORMATION			
			3.00						
			3.00	PP	2.5kg/cm2				
			3.40						
			3.50	D			Light grey weakly cemented SILTSTONE. LOWER GREENSAND FORMATION		
					42.86				
					42.76		End of Borehole at 3.50m		
			4.00	D					
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					 Status PRELIM
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH refused at 3.5m bgl on siltstone. Soil is damp at 3m bgl.				

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS12 Sheet 1 of 1	
Project Name: College Lane				Project No. GE23829		Co-ords: 529313E - 116204N		Hole Type WLS	
Location: College Lane, Hurstpierpoint, West Sussex, BN6 9AG						Level: 48.23		Scale 1:30	
Client: Thakeham Homes						Dates: 22/06/2026		Logged By DG	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30	47.93		Grass overlying slightly gravelly clayey SAND. TOPSOIL	
		0.50	D		0.30	47.93		Stiff orangish brown mottled grey slightly sandy silty CLAY.	
		0.50	PP	3.0kg/cm2				LOWER GREENSAND FORMATION	
		1.00	D					Very stiff light brown mottled orange and grey sandy silty CLAY. Sand is medium.	
		1.00	PP	1.5kg/cm2				LOWER GREENSAND FORMATION	
		1.00	SPT	N=7 (1,1/2,2,2,1)					
		1.50	D						
		1.50	PP	1.5kg/cm2					
		2.00	D						
		2.00	PP	1.8kg/cm2					
	2.00	SPT	N=13 (2,2/2,3,4,4)						
	2.50	D							
	2.50	PP	1.2kg/cm2						
	3.00	D							
	3.00	PP	2.0kg/cm2						
	3.00	SPT	N=25 (3,3/5,6,7,7)						
	3.50	D			3.40	44.83		Light grey weakly cemented SILTSTONE.	
	3.50	PP	4.0kg/cm2					LOWER GREENSAND FORMATION	
	4.00	D							
	4.00	SPT	N=68 (6,7/8,10,10,40)		4.00	44.23		End of Borehole at 4.00m	
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks					
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	EOH drilled to 4m bgl. No presence of groundwater. Monitoring well installed.				


Status
PRELIM