



Report prepared at

Land at Pound Farm
Ickelford
SG5 3RS

On behalf of

Bugler Homes Limited

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1.0 PROJECT AND SITE INFORMATION

1.1 APPOINTMENT

Aviron Associates Limited (Aviron) was retained by Bugler Homes Limited (the “Client”) to prepare a tier 1 Preliminary Risk Assessment (PRA) of the following premises:

Land at Pound Farm, Ickleford, SG5 3RS (hereafter referred to as the “site”).

The PRA associated with the residential development of the site, forms a tier 1 assessment by completing a desk-based study with site walkover to identify potential areas of contaminative concern associated with the redevelopment. The PRA will then form a preliminary Conceptual Site Model (CSM) with recommendations for any further investigation or risk assessment if required.

In addition, geotechnical issues shall be assessed to provide recommendations for new foundations, drainage and pavement design, if required.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

1.2 THE SITE

Table 1.2 provides a summary of site details and surrounding area.

Table 1.2: Site Details	
Site Location	The site is located on Bedford Road in the north-west of the village of Ickleford, 2.7 kilometres (km) north of Hitchin and 10km north-east of Luton. Figure 1 is presented as the Site Location Plan.
National Grid Ref.	Centred at approximately 517460, 231420.
Current Land Use	The site currently comprises arable agricultural land with a track bisecting the site in a west-east orientation. Figures 2 and 3 are presented as the Existing Site Layout Plans, using an aerial view and topographical survey, showing the positions of the walkover photographs. Figure 4 is presented as the Site Photographs.
Surrounding Land Use	The site is almost entirely surrounded by agricultural land or pasture with the village of Ickleford to the south-east and east. Bedford Road forms the eastern boundary of the site.
Proposed Land Use	Hybrid application for a mixed-use development to provide a total of up to 230 dwellings, a residential care home (Use Class C2), an Independent Special School (ISS) and new sports pitch, with access from Bedford Road, landscaping, parking and SuDS comprising: Phase 1 – Application for full planning permission for the erection of 100 dwellings, an ISS, new sports pitch and associated parking, landscaping, open space and SuDS; Phase 2 – An outline application on the remaining part of the site for the erection of up to 130 dwellings, a residential care home (Use

Table 1.2: Site Details

	Class C2) and associated works with access from Bedford Road (all matters reserved apart from access). Figure 5 is presented as the Proposed Development Plan.
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1.3 SITE WALKOVER SURVEY

A site walkover survey was undertaken on 14 October 2025 and included an inspection of the site and surrounding area, where safe and accessible. The purpose of the survey is to identify any potential on-site or nearby contaminative activities or potential sources of land contamination.

Additionally, as part of the survey any features which may affect site re-development in terms of physical site and ground conditions were noted.

Table 1.3 provides a description of site features observed during the walkover survey and also current Ordnance Survey maps made available at the time of report writing.

Table 1.3: Summary of Site Walkover Survey

Physical Site Characteristics	
Existing Structures	No buildings on-site. There are overhead cables running along the track that crosses the centre of the site in a west-east direction. There is a locked gate at the site access point on the eastern boundary.
Basements	None observed.
Visual Topography and Site Surfacing	The site comprises ploughed fields that have recently been planted with crops.
Retaining Structures and Slopes	The site slopes gently downwards generally in a northerly direction, locally to the north-east and north-west.
Drainage Issues	Shallow drainage ditch observed along the north-western site boundary.
Surface Waters	Softened ground surface following prolonged rain.
Trees and Hedges	Numerous young, semi-mature and mature trees, shrubs and hedges line the site boundary with the road and to the west.
Made and Infilled Ground	No significant made ground or infilled ground is anticipated. Made ground may however be encountered locally as unmade surfacing at the site entry points.
Contaminative Characteristics	
Above (AST) or Underground (UST) Storage Tanks and Drums	None observed.

Table 1.3: Summary of Site Walkover Survey	
Fuel Interceptors	None observed.
Waste Storage and Disposal	None observed.
Hazardous Material Storage and Use	None observed.
Asbestos Containing Materials (ACMs)	None observed.
Boiler Houses	None observed.
Sub-stations	None observed.
Surface Staining	None observed.
Potentially Contaminative Activities	No significant evidence of potentially contaminative activities observed at the site.

1.3.1 Summary of Physical Site Characteristics

Consideration should be made towards the make-up and competency of the underlying strata and the influence of trees on any proposed buildings.

1.3.2 Summary of Contaminative Site Characteristics

No significant evidence of potentially contaminative activities observed at the site.

2.0 DESK STUDY REVIEW

Historical Ordnance Survey (OS) maps were obtained as part of the Envirocheck database search within report package reference 387515715 dated 9 October 2025, provided by the Client and included within **Appendix I**. Database information within the Envirocheck report also includes reference to the hydrogeology, hydrology and ground gas hazards in the site area and is summarised in the following sections.

A summary of the ground hazards for construction purposes is also included.

2.1 HISTORICAL REVIEW

Historical Ordnance Survey (OS) maps were reviewed within the Envirocheck report, and the historical development of the site and the surrounding land is summarised in the following table.

Table 2.1: History of the Site and Surrounding Land		
Date	Site History	Surrounding Land History
1881, 1882 (1:2,500) 1884 (1:10,560) 1887 (1:10,560) 1899 (1:10,560) 1901(1:10,560) 1901 (1:2,500) 1898-1901 (1:2,500)	The site is shown to have comprised undeveloped agricultural land or pasture.	The site is surrounded by fields, roads, or tracks in all directions. Roads bound the site along the eastern boundary and at the south-west corner (Hambridge Way). To the south-east, the site was bordered by fields, with the Icknield Way (Roman Road) located approximately 200m SE. The village of Ickleford was around 500m E. Several corn mills associated with the River Oughton were located approximately 500m SW and between 500m and 800m SE. A railway line was present about 700m E, an old gravel pit approximately 500m NW, and Ickleford Roller Mills about 500m SW. These off-site features represent the nearest historical industrial or extractive land uses; however, given their distance and orientation, they are not considered likely to have impacted the site. An apparent land drain running along the north-western boundary and extending off the most northerly point of the site, flows in a north-easterly direction.
1922 (1:2,500) 1925(1:10,560) 1925 (1:2,500) 1938-47(1:10,560) 1939 (1:2,500) 1948-50(1:10,560)	No notable changes identified at the site.	A gravel pit is shown approximately 600m to the SE. No other notable changes were identified in the surrounding area until the 1950 edition, when residential development appeared beyond the SE site boundary. Further residential development is shown around 1km to the SE.

Table 2.1: History of the Site and Surrounding Land

Date	Site History	Surrounding Land History
1950 (1:10,560)		
1960 (1:10,000) 1966-80 (1:2,500) 1966-69 (1:10,000) 1969 (1:10,560) 1978-80 (1:2,500)	No notable changes identified at the site.	No notable changes identified in the surrounding area.
1980 (1:2,500) 1983 (1:10,000) 1982-83(1:10,560)	No notable changes identified at the site.	No notable changes identified in the surrounding area.
1993 (1:2,500) 1999 (1:10,000) 2006 (1:10,000) 1999 (aerial photograph)	No notable changes identified at the site.	No notable changes identified in the surrounding area.
2025 (1:10,000) 2025 walkover	No notable changes identified at the site. The site is a field without any on-site structures aside from overhead cables. An unsurfaced track runs through the centre of the site.	No notable changes identified in the surrounding area.
Note: All distances are approximate.		

2.1.1 Anecdotal Evidence

No anecdotal evidence available at the time of reporting.

2.1.2 Summary of Historical Landuses

The site has remained undeveloped throughout the available mapping history.

No significant industrial or commercial landuses shown in the surrounding area.

2.2 GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

2.2.1 Anticipated Geology

Relevant geological information has been sourced using the British Geological Survey (BGS) extract sheet 221 of Hitchin and is summarised in table 2.1.1 below.

Table 2.2.1: Anticipated Geology				
Stratum	Age	Possible Thickness (m)	Typical Description	Aquifer Status
Artificial/Made Ground None indicated on site	N/A	N/A	N/A	N/A
Superficial Lowestoft Formation (northern third)	Anglian	Extremely variable Up to 60m	Diamicton (north)	Secondary Aquifer - Undifferentiated
Superficial Glaciofluvial Deposits, Mid Pleistocene (southern two-thirds)	Cromerian	Not recorded	Sand and Gravel (south)	Secondary Aquifer - A
Solid Gault Formation	Albian	Up to 60m in Bedfordshire	Mudstone	Unproductive strata

The BGS website indicates that there are no references to artificial ground, mass movement, linear features or faults recorded on site or within 500m of the site.

2.2.2 Ground Conditions – BGS Borehole Records

The nearest BGS borehole log(s) for drilling or excavation works undertaken within circa 500m of the site, and a summary of the ground conditions encountered to approximate depths in metres (m) below ground level (bgl), are presented in table 2.2.2.

Table 2.2.2: Summary of Local BGS Borehole Logs			
Unit	Description	From (bgl)	To (bgl)
TL13SE15 – POUND FARM ICKLEFORD— On site			
Topsoil	No details of the geology		24m
Superficial/Solid			
Groundwater (bgl)	6.1m (fairly stable)		
GL = Ground Level			
TL13SE6 - THE RECTORY ICKLEFORD -525m NE			
Topsoil	Soil or mould	0.0	0.6m

Superficial	Clay and stones	0.6m	5.9m
	Sand and gravel	5.9m	8.8m
	Sand and thick veins of clay	8.8m	11.9m
	Sandy Clay	11.9m	15.2m
	Boulder clay with pieces of chalk, flints, etc. A thin layer of flints at 22.7m, with water	15.2m	35.4m
	Boulder clay with gravels of chalk	35.4m	44.5m
Groundwater (bgl)	3.35m and 22.7m		

2.2.4 Hydrogeology

The hydrogeology of the site has been determined by the superficial geology of the Lowestoft Formation and the Glaciofluvial Deposits, which are classified by the Environment Agency as Secondary Aquifers – ‘undifferentiated’ and ‘A’ respectively.

Secondary (undifferentiated) aquifers have been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. Secondary A aquifers are described as *permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.*

Both the Envirocheck report and the Environment Agency website (October 2025) indicate that the site is not located within an Environment Agency source protection zone (SPZ).

The Envirocheck report indicates that there are two references to groundwater abstraction licences for premises within 1000m of the site. One abstraction is located 164m NW for ‘General Farming and Domestic’ and the other is located 810m NE for ‘General Agriculture Purposes’.

Areas of BGS Groundwater Flooding Susceptibility include ‘Potential for Groundwater Flooding to Occur at Surface’, along the north-western site boundary, at the location of the drainage ditch, and ‘Potential for Groundwater Flooding of Property Situated Below Ground Level’ for the southern two-thirds of the site.

2.2.5 Hydrology

The Ordnance Survey Water Network Lines indicates that the nearest inland river (and surface water feature) is a drainage ditch located on the north-western boundary.

The nearest named watercourse is the River Oughton located 500m to the south.

There are several records of surface water abstractions within 1000m. The nearest record is 658m to the SW for impounding purposes. At distances of approximately 853m there are numerous records relating to 'General Agriculture: Spray Irrigation' and 'General Farming and Domestic' purposes. Additional surface water abstractions for 'Spray Irrigation' purposes are recorded 880m (W) and 939m and 952m (both SW).

The Envirocheck report indicates that there is one reference to 'Discharge Consents' for premises within 500m of the site. The record relates to a consent 485m SE for 'Sewage Discharges - Final/Treated Effluent'.

The Envirocheck report indicates that the nearest record of a 'Pollution Incident to Controlled Waters' is at a location 465m to the south-east, where 'unknown pollutant' is noted to have entered the River Oughton, however the incident is shown to have been 'minor'.

There are no 'Local Authority Pollution Prevention and Controls' for premises within 250m of the site.

The Envirocheck report indicates that the site is not located within an area that is at risk of 'extreme flooding' or 'flooding' from rivers or sea without defences. The site is not located in an area that benefits from flood defences. The site is not located in a flood water storage area.

Areas of the eastern and north-western boundary, as well as small areas discreetly within the site fall within areas of 1 in 30, 1 in 100 and 1 in 1000 year flood extents.

2.3 LANDFILLS AND BIO-GROUND GAS

2.3.1 Landfills, Waste Management Facilities and Infilled Ground

The Envirocheck report indicates that there no historical landfill sites, Local Authority recorded landfill sites, registered landfill sites, or waste facilities within 250m of the site.

There are also no references to potentially infilled land (non-water or water) within 250m of the site.

2.3.2 Preliminary Risk Assessment (PRA) – Bio-Ground Gas

Table 2.3.2 summarises the gas risk for the site, based on the above information gained through the desk-based research.

In accordance with current guidance (CIRIA C665), the gas generation potential for each source has been individually assessed, with references to potential gassing risk made according to the following definitions: Negligible, Very Low, Low, Moderate, High and Very High. The definitions are explained in Section 10.0 of the guidance.

The objective of this exercise is to determine if potentially unacceptable bio-ground gas risks exist, and whether further investigation and assessment is necessary.

Table 2.3.2: Preliminary Risk Assessment (PRA) – Bio-Ground Gas			
Potential Source	Risk	Risk Rating	Rationale
Made Ground (CO ₂ + CH ₄)	Human health Explosion	Very Low	The site has remained undeveloped with the exception of an access track. Although Made Ground may be encountered locally at site entrance points. Significant organic biodegradable material is not expected.
Alluvial Strata (CO ₂ + CH ₄)	Human health Explosion	Negligible	No alluvial deposits noted within 250m of the site.
Landfills (CO ₂ + CH ₄)	Human health Explosion	Negligible	No landfill sites noted within 250m of the site.
Infilled Ground + Burial Sites (CO ₂ + CH ₄)	Human health Explosion	Negligible	No potentially infilled ground locally within 250m of the site.
Coal and Mining (CO ₂ + CH ₄)	Human health Explosion	Negligible	The site is not located in a 'non-coal mining area(s) of Great Britain'.
Soil Vapours	Human health Explosion	Very Low	No evidence of fuel storage.
COMBINED RISK RATING = VERY LOW			

A combined Very Low risk from ground gas ingress and explosion is considered and ground gas monitoring is not required. Precautionary gas monitoring would be prudent as a matter of course during future ground investigation and subsequent routine groundwater monitoring, to confirm the very low risk determined.

2.4 RADON GAS

Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level)' and that no radon protection measures are required.

Notwithstanding the above, a Radon report is recommended immediately prior to the re-development as radon guidance periodically changes and the above advice may be outdated by the time of any re-development.

The HSA website (ukradon.org) can be used to purchase radon reports, where an address-specific radon report may be obtained. It should however be noted that for redevelopment sites, a GeoReport provided by the British Geological Survey may be more appropriate.

2.5 GROUND STABILITY, NATURAL CAVITIES AND MINING HAZARDS

Table 2.5 indicates potential ground stability, natural cavities and mining hazards identified within the Envirocheck report for the site.

These will be considered in terms of the proposed development and detailed in the following section 2.5, Preliminary Ground Hazards Summary.

Table 2.5: Ground Stability, Natural Cavities and Mining	
Hazard	Ground Stability and Natural Cavities Hazard Potential
Potential for Collapsible Ground Stability	Very Low
Potential for Compressible Ground Stability	No Hazard
Potential for Ground Dissolution	No Hazard
Landslides	Very Low
Running Sands	Very Low
Shrink-Swell Clay	Low, for the Diamicton in the northern third of the site
Hazard	Mining Hazard Potential
Non coal mining areas of Great Britain	Risk noted as 'No Hazard'
Coal Mining Affected Areas	Not located in a coal mining affected area
Infilled Land	No potentially infilled land (non-water or water) within the site extents
Other mining/quarrying	None noted on the historical mapping within the site or immediate vicinity

The site is not located in a coal mining affected area. The risk associated with 'non-coal mining area(s) of Great Britain' is noted to be no hazard.

The risk of shrink/swell clays is noted to be 'low' for the northern third of the site and the surrounding area.

The risk of ground dissolution of soluble rocks is noted to be 'no hazard' (ie negligible) for the site and the surrounding area.

2.6 PRELIMINARY GROUND HAZARDS SUMMARY

The following Table 2.6 provides a summary of the preliminary ground hazards identified with the ground and groundwater conditions and historical site use as determined from the desk-based information accumulated within the PRA. The following key plan should be considered in regard of plausible risk:

○ - Further action required. Potentially plausible hazard.

○ - Unlikely to represent a hazard, no further consideration required.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	Plausible	Description
Topographic		
Site constraints	○	Restricted site access. The site is almost entirely soft surfaced; however, overhead cables run along the track through the centre of the site west-east.
Slopes, embankments, cuttings	○	The site is slightly sloping to the north, and locally to the north-east and north-west, with a shallow drainage ditch along the north-western site boundary. Foundation type and construction difficulties. Remedial measures to stabilise slopes, embankments and cuttings, and mitigate risks of landslides.
Man-made		
Filled ground/ made ground/ infilled basements	○	Foundation type and construction difficulties associated with existing and former buildings on site.
Existing foundations and below ground structures	○	Foundation type and construction difficulties. Obstructions to new construction. Influence of existing and adjacent foundations to new construction. Vibration associated with the construction technique.
Mining instability	○	Foundation type and construction difficulties. Appropriate mining investigation.
Ground chemistry	○	Made Ground is heterogenous and subject to composition may present a risk of sulphate and sulphide attack on buried concrete.
Unexploded Ordnance	○	Detailed unexploded ordnance (UXO) risk assessment did not form part of our project instruction.
Geological		
Frost action	○	Susceptibility of soils affected at pavement and foundation formation. Provision of non-frost susceptible materials.

Table 2.6: Preliminary Ground Hazards Summary

Ground Hazard	Plausible	Description
Lateral soil instability	○	Foundation type and construction difficulties. Provision of temporary works – shoring.
Soft clays, silts and compressible soils	○	Foundation type and construction difficulties. Sufficient bearing resistance to support the proposed construction.
Shrinkable soils	○	Foundation type and construction difficulties. Influence of trees on foundation depths. Potential for desiccation to have occurred and heave protection. NHBC Standards Chapter 4.2, Building Near Trees.
Ground dissolution of soluble rocks	○	The risk of ground dissolution of soluble rocks is noted to be 'negligible'. Foundation type and construction difficulties. Dynamic probing, torque readings.
Ground chemistry	○	Natural soils may present a risk of sulphate and sulphide attack on concrete.
Hydrogeological/Hydrological		
Elevated or rising groundwater	○	Foundation type and construction difficulties. Provision of temporary works – dewatering (possibly well-points) in shallow excavations due to surface water flooding. Provision of temporary works – shoring. Reduced bearing resistance. Effectiveness of soakaway drainage. Sufficient freeboard required to enable effective infiltration. Secondary Aquifers anticipated.
Fluvial or coastal scour/erosion	○	Shallow drainage ditch along the north-western boundary, not considered a significant risk. Foundation type and construction difficulties. Remedial or preventative measures.
○ - Further action required. Potentially plausible hazard. ○ - Unlikely to represent a hazard, no further consideration required.		

The available mapping history indicates that the site has remained undeveloped with the exception of overhead cables. The site therefore is not expected to be overlain by significant thicknesses of made ground.

Any proposed new construction will need to consider the required bearing resistance of the proposed buildings, the influence of trees and groundwater, as well as temporary works.

A conventional shallow foundation solution may be feasible; however, a suitable ground investigation would confirm an appropriate foundation solution.

Shallow soakaway drainage may be successful locally given the anticipated soils at shallow depth. Soil infiltration testing and groundwater monitoring are however recommended.

Groundwater may be expected at shallow depth, and perched water or water held in coarse soils may be encountered following periods of heavy rainfall.