



SUSTAINABLE DRAINAGE STRATEGY REPORT

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1. INTRODUCTION

ARC Engineers have been commissioned by Propco (Wokingham) Ltd to produce a Sustainable Drainage Strategy Report for the proposed 64no. unit development at Evendons Lane residential care home, Wokingham, RG41 4EH as shown in Fig.1. The proposed development comprises the demolition of the existing Evendons Industrial Centre and the construction of a new care home facility with associated garden amenity space, parking, and access.



Fig. 1 SITE LOCATION PLAN

© Magic Map

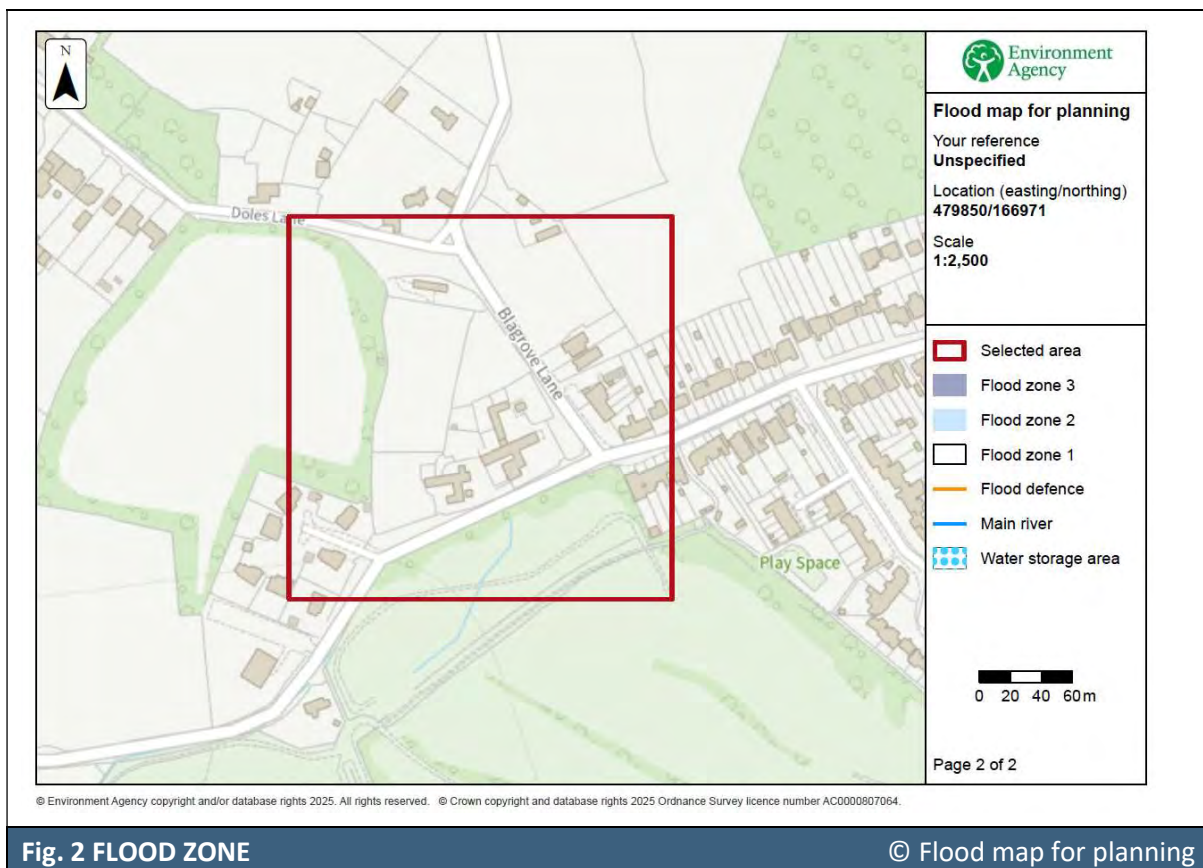
Planning Practice guidance Paragraph 55 states that *“SuDS are designed to control surface water runoff close to where it falls”*, referred to as Source Control a sustainable drainage system provides opportunities to:

1. Control the quantity of runoff.
2. Manage the quality of runoff to prevent pollution.
3. Create amenity space for people.
4. Promote biodiversity to create better places for nature.

These are known as the Four Pillars of SuDS and this report will demonstrate how they are to be incorporated into the proposals for this development.

2. FLOOD ZONE CLASSIFICATION

The site has been identified as being within Flood Zone 1 which means there is a low risk of flooding from rivers and the sea. This is as shown in Fig2. The total area of the development site is 8280m² (0.82Ha). and in such circumstances, the standing advice is that a Flood Risk Assessment is not required and this report does not purport to assess flood risk.



2.1 SOURCES OF FLOODING

The Government website www.check-long-term-flood-risk.service.gov.uk has been consulted and the following advice has been confirmed.

Surface Water Flooding	Low Risk of Flooding - Low risk means that this area has a chance of flooding of between 0.1% and 1% each year. See also Fig 3.
Rivers and the Sea	Very low risk of flooding - Very low risk means that this area has a chance of flooding of less than 0.1% each year.
Ground Water	Flooding from groundwater is unlikely in this area.
Reservoirs	Flooding from reservoirs is unlikely in this area.

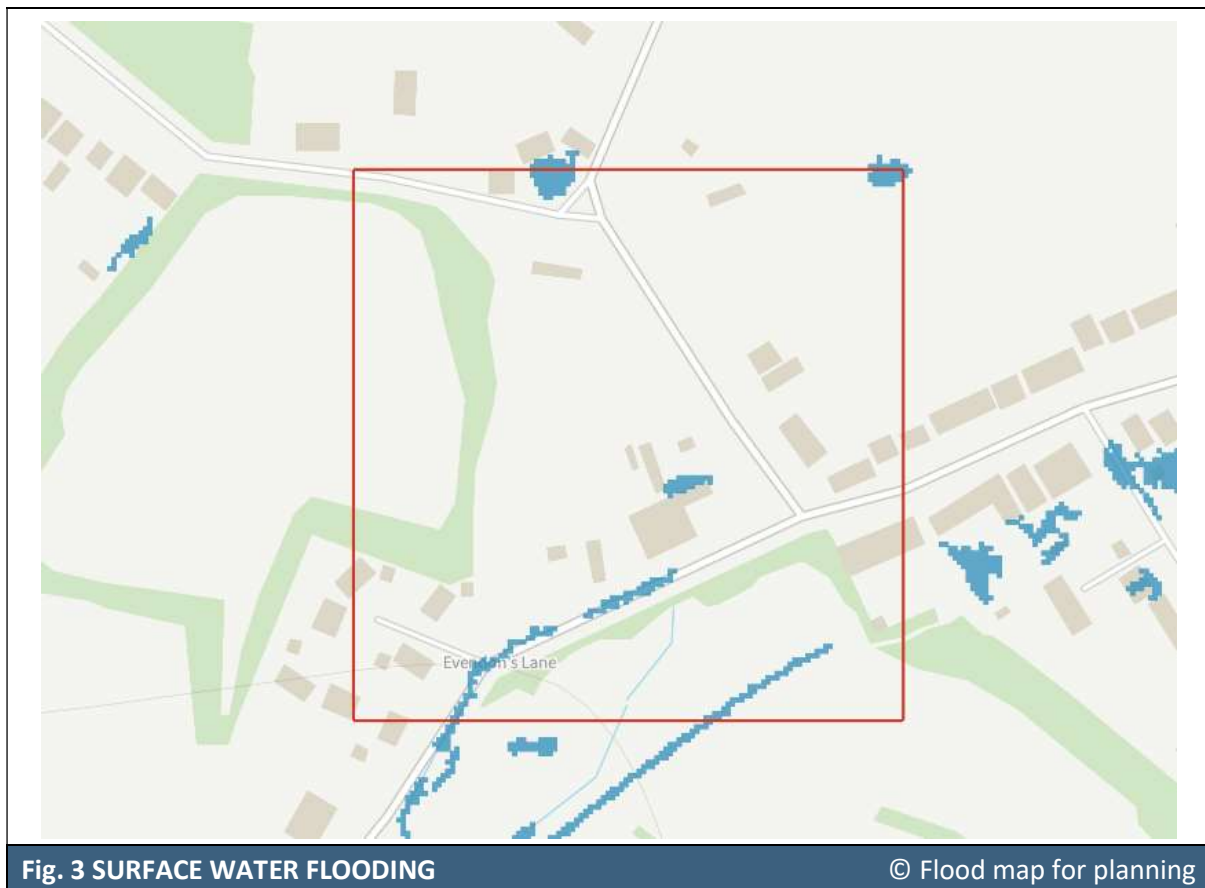


Figure 3 shows a small risk of surface water flooding on site although there is no suggested depth or velocity. It is considered that the potential surface water flooding shown on the mapping is attributable to the existing topography and a low spot within the site. Due to the proposals for the new building footprint, this risk will be mitigated on the completed development.

3.0 GEOLOGY AND HYDROLOGY

3.1 GEOLOGY

A Phase 2 ground investigation report has been undertaken by Geo Integrity for the site. As part of the report intrusive investigations have been undertaken to confirm the geological conditions on site. The following statements have been made with regards the geological conditions.

Published Geology

Geological maps identify that the investigation area is directly underlain by Palaeogene Bedrock Geology of the Bagshot Formation overlying the London Clay Formation.

Ground Conditions Encountered

The exploratory fieldwork undertaken during this investigation has identified that the site is underlain by localised hard-standing, Topsoil and Made Ground down to a depth of between 0.80m and 1.30m depth, overlying variably granular and cohesive Bagshot Formation to a depth of between 3.50m and 4.60m bgl, transitioning into a sandy London Clay Formation soil. Conservatively the natural soils beneath the site should be considered as shrinkable cohesive deposits with dispersed subordinate granular layers.

A copy of the ground investigation report by Geo Integrity confirming the onsite geology can be found in Appendix A.

3.2 HYDROLOGY

As part of the Phase 2 ground investigation report by Geo Integrity the on-site hydrology has been assessed. The following statements have been made with regards the hydrology condition.

Groundwater Encountered

Groundwater was encountered within the exploratory holes at the site during the intrusive works, as fairly quick seepages at depths ranging from 0.70m to 3.80m, standing at depths ranging from 0.60m to 1.8m bgl, across the development area. Monitoring of the two standpipes (CT3 located in the Evendons Business Centre and CT6 Located in the proposed SWALE), undertaken as part of the project revealed even shallower groundwater levels at 0.66m in CT3 and 0.76m bgl in CT6.

A copy of the ground investigation report by Geo Integrity confirming the onsite hydrology can be found in Appendix A.

3.3 INFILTRATION TESTING

As part of the Phase 2 ground investigation report by Geo Integrity the infiltration testing has been undertaken to confirm if infiltration drainage techniques are suitable to be used within the development. The following statements have been made with regards the use of infiltration drainage techniques on site.

Three soakaway tests were undertaken, at the site, within the near-surface Bagshot Formation soils at depths ranging from 0.70m and 1.62m (initially situated above the groundwater influx). The test results from SA1 and SA2 located in the proposed parking area, indicated a very lower-end infiltration rate, due to an insufficient drop in water levels over the three days, with calculation of an infiltration rate not possible and the ground is considered to be effectively impermeable.

Furthermore testing in SA3, positioned within the proposed SWALE SUDS feature identified a rise in groundwater level, occurring due to a groundwater seepage. As such calculation of an infiltration rate is not possible and the ground, is again considered to be effectively impermeable and groundwater should be expected to be as shallow as 0.70m in this area, and as shallow as 0.60m across the site as a whole.

A copy of the ground investigation report by Geo Integrity confirming the onsite geology can be found in Appendix A.

4.0 EXISTING DRAINAGE

Existing sewer records have been obtained from Thames Water and are included in Appendix B. These show an existing foul water drainage in Blagrove Lane and Evendons Lane. The record plans show no Thames Water surface water assets in the area. A surface water drainage has been highlighted to the South West of the site which is believed to be an LLFA controlled asset.

4.1 EXISTING FOUL WATER DRAINAGE

The foul water drainage on site has been surveyed and traced and is included with the topographical survey in Appendix C.

Foul water effluent from the existing buildings on site discharge to a private combined water drainage system which discharges to a private drainage system within the grounds of the adjacent bungalow. Effluent from the private system outfalls to an on-site septic tank.

4.2 EXISTING SURFACE WATER DRAINAGE

The surface water drainage on site has been surveyed and traced and is included with the topographical survey in Appendix C.

Surface water runoff from the existing buildings on site discharge to a private combined water drainage system which discharges to a private drainage system within the grounds of the adjacent bungalow.

The total impermeable area of the existing development is calculated as follows;

Existing Buildings	614 m ²
Total	0.061 Ha

5.0 PROPOSED FOUL DRAINAGE

The new network on site will be designed in accordance with Part H1 and H2 of the current Building Regulations 2010 (2015 Edition) and BS EN 752:2008 'Drain and sewer systems outside of buildings and it is proposed to discharge to the Thames Water foul water sewer in Evendons Lane.

The following calculation is presented to show the peak, Dry Weather Flow (DWF) contributions for the given operational parameters;

- Flow rate of 150 l/p/day
- Maximum occupancy rate 128 residents plus 64 staff / visitors.

The performance of the FW sewer system is assessed using a constant 6 x DWF flat profile to represent the maximum diurnal variations in flow.

Maximum Occupancy	=	192	people
Domestic Foul Water DWF (No. people x l/p/day)	=	28800	litres / day
DWF = (60x60x24 = 86,400 seconds / 24 hours) `	=	0.333	litres / second
Peak FW Flow Rate would therefore be 6 DWF	=	2.00	litres / second

6.0 PROPOSED SURFACE WATER DRAINAGE

The surface water drainage solution has been developed using the principles outlined within the Drainage Strategy report prepared by Stuart Michael Associates which was approved as part of the Planning Application.

6.1 DRAINAGE HIERARCHY - DISCHARGE OF SURFACE WATER

Part H of the Building Regulations requires that surface water should be discharged from new development in accordance with the following hierarchy;

- By infiltration to the ground via soakaway or other infiltration device.
- To surface water body / watercourse
- To a public sewer.

As already demonstrated, the ground conditions are such that soakways will not be viable for this site. There are no open watercourses with positive outfalls within the extents of the site which could be utilised to discharge surface water runoff. Surface water runoff is proposed to discharge to an LLFA drainage system located to the South West of the site that accepts runoff from a minor watercourse.

6.2 FLOOD RISK MANAGEMENT

The proposed drainage scheme has been developed to protect people and property on the development site from flooding and to avoid creating any additional flood risk outside of the development. An exceedance plan to demonstrate this is provided in Appendix D.

As part of the design, the following has been taken into consideration;

- The drainage system has been designed to operate without any flooding occurring during any rainfall event up to (and including) the critical 1 in 30 year storm (3.33% AEP).
- The system can accommodate the rainfall generated by events of varying durations and intensities up to (and including) the critical, climate change adjusted 1 in 100 year storm (1% AEP) without any onsite property flooding and without exacerbating the offsite flood risk.
- Where they occur, surface flows between the 1 in 30 and 1 in 100 year events are retained on site.
- Storage has been based upon analyses of a range of winter and summer storm profiles to determine a critical storm event.
- Hydraulic calculations and catchment area plan is included in Appendix F, and the following criteria has been used for modelling;

- Cv value 1.0
- MADD Factor 1.0
- Rainfall data FEH
- Climate change allowance 40%
- Urban creep 0 % (Commercial development, no permitted rights)

6.3 NATURAL FLOWS, DRAINAGE FLOW PATHS, REDUCE FLOOD RISK

It is understood that the LLFA's policy is, where possible, for development on brownfield land to reduce flood risk by restricting the surface water discharge to the greenfield 1 in 1 year runoff rate during all events up to and including the 1 in 100 year rainfall event with climate change.

In accordance with the Drainage Strategy report prepared by Stuart Michael Associates the 1 in 1 year Greenfield Discharge rate has been calculated as 0.4 l/s. Surface water runoff from the development shall be restricted to a peak rate of 0.4l/s for all storm events up to and including 1 in 100 year + 40% Climate Change.

6.4 SUDS FEATURES

National Planning Policy Framework (the NPPF) states that SuDS should be incorporated in all new developments unless evidence of unsuitability is provided. Table 1 shows the SuDS components that have been considered for incorporation within this project along with comments regarding their inclusion or rejection.

Table 1 – SuDS Components			
SuDS Component	Suitable for site?	Comments	Included
Rainwater harvesting system	✗	Not to be used for operational restrictions regarding risk to health of residents.	No
Green roof	✗	May be possible to use on flat roof area.	No
Soakaway	✗	Ground conditions are unsuitable.	No
Pervious pavement/ pavement reservoir	✓	Ground conditions are unsuitable.	Yes
Filter strip	✗	Ground conditions are unsuitable.	No
Filter trench	✗	Ground conditions are unsuitable.	No
Infiltration trench	✗	Ground conditions are unsuitable.	No
Swale	✗	Unsuitable given the limited space on site.	No
Bioretention	✓	Could be used but rejected in favour of other features	No
Geocellular System	✓	Could be used but rejected in favour of other features	No
Infiltration basin	✗	Ground conditions are unsuitable.	No
Detention basin	✓	Detention basin used to attenuate all runoff from the development.	Yes
Pond	✓	Could be used but rejected in favour of a detention basin	No
Proprietary device	✓	Suitable but other options preferable	No
Rain garden	✓	Suitable but other options preferable	No

6.5 WATER QUALITY

It is understood that Wokingham Council LLFA expects developers to demonstrate that the first 5 mm of any rainfall event can be accommodated and disposed of onsite, rather than being discharged to any receiving watercourse or surface water sewer.

Following consideration of the possible SuDS components in the previous section, the following SuDS measures have been included to address the issue of water quality;

- Permeable paving and detention basin to treat water from the parking area and access road
- Detention basin to treat water from areas of roof.

An assessment as to the suitability of these provisions has been made using the simple index approach outlined within Chapter 26 of CIRIA C753 The SUDS Manual. This requires that the pollution mitigation indices (see fig. 5b) are equal to, or higher than, the pollution hazard indices (see fig. 5a).

TABLE 26.2 Pollution hazard indices for different land use classifications				
Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	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

Fig. 5a Pollution Hazard Indices

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TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters			
Type of SuDS component	Mitigation Indices ¹		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4 ²	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond ⁴	0.7 ³	0.7	0.5
Wetland	0.8 ²	0.8	0.8
Proprietary treatment systems ^{5,6}	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Fig. 5b SuDS mitigation indices

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Consideration is given to the following three situations set out in tables 2a, 2b & 2c for land use in conjunction with the proposed SuDS components to demonstrate that water quality has been adequately addressed.

Tb 2a External Works	Total SS	Metals	Hydrocarbons
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Non residential parking <300 traffic movements per day				
Hazard Index	External works	0.5	0.5	0.4
Mitigation Index	Permeable Pavement	0.7	0.6	0.7
	Detention Basin	0.5	0.5	0.6
		Pass	Pass	Pass

Tb 2b Roof Only		Total SS	Metals	Hydrocarbons
Hazard Index	Roof	0.2	0.2	0.05
Mitigation Index	Detention Basin	0.5	0.5	0.6
		Pass	Pass	Pass

Based on the above, the proposed SUDS features are therefore considered to provide appropriate mitigation against potential sources of pollution generated by the development.

A General Arrangement drawing showing all aspects detailed above is included in Appendix F.

Details of the proposed SuDS features are included in Appendix G.

7.0 MAINTENANCE

Maintenance of the foul and surface water drainage systems serving the development will be the responsibility of the care home operator. Operation and maintenance requirements for the SUDS features incorporated within the drainage strategy are provided in Appendix H.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ARC Engineers have been commissioned to undertake a Drainage Strategy for a proposed 64 bed care home at land off Evendons Lane, Wokingham, RG41 4EH The details below are a summary of the preceding pages.

FOUL DRAINAGE

Foul water effluent is to discharge to the Thames Water foul water sewer located in Evendons Lane.

DRAINAGE HIERARCHY

It is not possible to discharge surface water via infiltration due to low infiltration rates and a high water table experienced on site. Additionally, there are no watercourses or bodies of water in close proximity to the site. Discharge of surface water will be to public sewer believed to be managed by the LLFA following SuDS treatment and attenuation.

CONTROL THE QUANTITY OF RUNOFF

At present the surface water from the site discharges in unattenuated manner, largely to the public foul sewer. The proposed develop seeks to return the surface water to public sewer 0.4l/s the same as the 1 in 1 year greenfield run-off rate. This solution will help reduce the volume and speed of water leaving the site, thereby reducing flood risk.

MANAGE THE QUALITY OF RUNOFF TO PREVENT POLLUTION

The proposals for surface water management include an appropriate number of SuDS components that provide sufficient treatment for pollutants as set out in simple index approach outlined within Chapter 26 of The SuDS Manual.

APPENDIX A

SOAKAWAY TEST RESULTS

DRAFT

Boutique Care Homes

Phase II Ground Investigation Report

Land at Evendons Lane

Wokingham

Berkshire

RG41 4EH

Report No: 25-02-04

April 2025



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DOCUMENT RECORD

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Project Address Land at Evendons Lane, Wokingham, Berkshire, RG41 4EH

Project Number 25-02-04

Client Name Boutique Care Homes.

Issue No Date	Status	Prepared by	Checked by
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-  HazWaste Online Spreadsheet

EXECUTIVE SUMMARY

Site Location	Land at Evendons Lane, Wokingham, Berkshire, RG41 4EH
OS Grid Reference	SU 79867 66943
Development Proposals	It is proposed to construct a new care home situated in the eastern site area (current area of Evendons Business Centre) with associated communal soft landscaped areas, a new parking area situated within the paddock area to the north of the existing Evendons Business Centre. Furthermore, proposals also include a SUDS SWALE feature to the west of Rosery Cottage.
Published Geology	Geological maps identify that the investigation area is directly underlain by Palaeogene Bedrock Geology of the Bagshot Formation overlying the London Clay Formation.
Site History	The historical mapping indicates that the north and west of the Site has remained greenfield with little to no change since 1871. The southeast of the site (Evendons Business Centre) has been brownfield with buildings on the Site since at least 1871-1872. The existing buildings have changed over time with expansions and alterations.
Ground Conditions Encountered	The exploratory fieldwork undertaken during this investigation has identified that the site is underlain by localised hard-standing, Topsoil and Made Ground down to a depth of between 0.80m and 1.30m depth, overlying variably granular and cohesive Bagshot Formation to a depth of between 3.50m and 4.60m bgl, transitioning into a sandy London Clay Formation soil. Conservatively the natural soils beneath the site should be considered as shrinkable cohesive deposits with dispersed subordinate granular layers.
Groundwater Encountered	Groundwater was encountered within the exploratory holes at the site during the intrusive works, as fairly quick seepages at depths ranging from 0.70m to 3.80m, standing at depths ranging from 0.60m to 1.8m bgl, across the development area. Monitoring of the two standpipes (CT3 located in the Evendons Business Centre and CT6 Located in the proposed SWALE), undertaken as part of the project revealed even shallower groundwater levels at 0.66m in CT3 and 0.76m bgl in CT6.
Ground/Groundwater Contamination	Locally the Made Ground materials backfilled within the mini-bus service pit and the soils underlying the garage area at CT3, in the area of the oil drum encountered to 1.15m bgl recorded some elevated values of TPH and PAHs, and it has been established that this will provide a risk to end users of the site (should a pathway be available) and to construction workers during the groundworks. The pathways of concern are dermal contact and ingestion of exposed impacted soils. To break the pollutant linkage, this material needs to be excluded from the end users, and special control measures need to be in place to protect the surrounding residents and construction workers. A preliminary options appraisal has therefore been undertaken in section 7.2 and recommends either removal of the impacted materials or implementation of external cover systems. It is also recommended that further investigation of the impacted area post demolition may also be beneficial to zoning the impacted area.

Foundations	Given the issues associated with water ingress of trenches and dewatering and/or should the quoted allowable bearing pressure prove insufficient, or ineffective at greater depths, a piled foundation solution may be adopted. Piles would extend through the Made Ground and likely terminate in the deeper Bagshot Formation and underlying London Clay Formation. Should a piled foundation solution be utilised, then, a supplementary deep borehole investigation would likely be required by a piling contractor, aiming to undertake sampling and insitu testing and achieve a depth ranging from 10-25m. Alternatively as detailed in the above sections, it should be noted that shallow water ingress was noted across the site and in the area of the proposed care home, from depths as shallow as 0.60m, and was observed as fairly quick seepages and standing levels. Therefore whilst excavation of trenches at the end of the dry summer months and sump pumping may allow for conventional trench fill footings, a trial is recommended beforehand to confirm this summation. If the above can be achieved then shallow foundations may be considered at the site. However, a low net allowable bearing pressure would be expected. Furthermore given there were localised horizons of granular soils within the Bagshot Formation, it is recommended foundations are reinforced to guard against differential settlement.
Chemical Attack On Buried Concrete	Made Ground: DS-1, AC-1 Topsoil: DS-1, AC-1 Bagshot Formation: DS-1, AC-1 London Clay: DS-3, AC-3 The recommendations given in the above digest, with respect to suitable concrete design and other associated precautions against sulphate attack, should be followed for all below-ground level concrete.
Waste Soil Classification	In line with the contaminants identified above, a waste classification of the materials from the area surrounding the mini-bus service pit area and within the backfilled service pit have been classified as Hazardous waste. Both hazardous waste streams must be segregated to prevent cross-contamination and ensure safe handling, treatment, and disposal. It is also recommended that further investigation of the impacted area post demolition may also be beneficial to zoning the impacted area.
Further Recommendations	Key factors impacting the proposed development have been noted in section 9, however, for the full list of findings and recommendations the relevant report sections and/or previous phases of investigation should be viewed in the first instance. We recommend a watching brief should be undertaken during the construction phase, and if during development any previously undiscovered contamination (including visual or olfactory evidence) is found then site management should be immediately informed and inspection by a suitably qualified person should be undertaken. Furthermore, investigation of the impacted area around CT3 post demolition may also be beneficial to zoning the impacted area. Additionally regarding the Imported soils within the historical pond area. As the chemical certificates for the imported soils are pending submission from Knighton Landscapes Ltd. Should these not be presented, then to prove suitability, it is recommended that sampling of this material is undertaken once access is suitable, to confirm these imported soils are suitable for use.

This executive summary must be read in conjunction with this report and the previous site reports.

1 GROUND INVESTIGATION REPORT

1.1 INTRODUCTION

Geo-Integrity Ltd were commissioned by on behalf of Boutique Care Homes, on the 28th February 2025, to undertake an additional site investigation at Land at Evendons Lane, Wokingham, Berkshire, RG41 4EH. This Phase II intrusive investigation has been completed to gather geotechnical and geo-environmental data.

Previously the site had been the subject of two ground investigation reports;

- Ground Investigation Services Ltd Site Investigation Report S.4072 Dated May 2012, available on the planning portal as part of a historical residential development proposal.
- Stuart Michael Associates - Phase 1 Geo-Environmental Assessment Report 7116 dated May 2023, was provided by the vendor and was used as part of the outline planning application.

As such, this report includes a salient review of the previous geological, environmental and historical information, informing the recent Geo-Integrity 2025 phase of fieldwork and laboratory testing undertaken and provides an interpretative section of the geotechnical and geo-environmental data from this investigation to inform the proposed development.

The site is located at National Grid Reference SU 79867 66943.

The report is likely to be reviewed by Wokingham District Council with reference to the NPPF. Once the development is completed, and as a minimum, land must not be capable of being determined as 'contaminated land' under the terms of Part IIA of the Environmental Protection Act 1990. However, it also states that "Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner." As such this desk study report is the first stage in investigating whether the site is likely to be considered "contaminated", in accordance with the ground conditions and pollution clause.

The objectives of this phase I and phase II interpretative report are:-

- To undertake a site walkover to identify any potential pollution sources or geotechnical hazards on the site.
- To gather historical, geological and environmental information.
- To complete a preliminary site conceptual model so that potential pollutant linkages can be established and investigated further.

-  Briefly summarise the site development proposals and site setting.
-  To describe and report the fieldwork undertaken at the site.
-  To describe and report the chemical laboratory work undertaken on selected samples.
-  To describe and report the geotechnical laboratory work undertaken on selected samples.
-  To provide an interpretation of the results of this investigation with regard to the geo-environmental and waste disposal implications for the proposed development.

The investigation was performed in accordance with the general requirements of BS 5930:2015+A1-2020, BS EN 1997-2 (2009), BS EN ISO 22475-1 (2006) and other relevant related standards identified below. The initial fieldwork took place between the 4th and 6th March 2025.

1.2 SOURCES OF INFORMATION

The following sources of information have been used to compile this report:-

-  Outline Application Design & Access Statement Revision E 13.11.23
-  Stuart Michael Associates - Phase 1 Geo-Environmental Assessment Report 7116 dated May 2023.
-  Ground Investigation Services Ltd Site Investigation Report S.4072 Dated May 2012.
-  The British Geological Survey (BGS) and Environment Agency (EA) websites.
-  A site reconnaissance visit undertaken on 4th March 2025.
-  Information from various internet sites on site history and environmental setting.

It should be noted that the information provided in this report is obtained from independent third-party sources. It is provided in good faith, but no guarantee can be provided as to its accuracy or reliance. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources.

1.3 DEVELOPMENT PROPOSALS

It is proposed to construct a new 2/2.5 storey care home in the southeastern site area, on land at Evendons Lane, Wokingham, Berkshire, RG41 4EH. The care home will be situated in the eastern site area (current area of Evendons Business Centre) with associated communal soft landscaped areas. Access is proposed to be resituated off Blagrove Lane, with a new parking area situated within the paddock area to the north of the existing Evendons Business Centre. Furthermore, proposals also include a SUDS SWALE feature to the west of the site, west of Rosery Cottage.

2 SITE INFORMATION

In conjuncture with the indicative site layout red line plan provided in the Design and Access statement the investigation area consists of an irregular parcel of land comprising three main areas;

1. The existing and recently closed Evendons Business Centre, situated at SU 79867 66943.
2. An undeveloped paddock area to the north of Evendons Business centred at SU 79859 67006.
3. A parcel of land to the west of Rosery Cottage centred at SU 79801 66925.

The site is located within a residential/rural area in the Borough of Wokingham. The site is bounded by Evendons Lane to the south and Blagrove Lane to the east, with the existing vehicle access from the southern boundary along Evendons Lane.

The site area totals approximately 0.83 hectares, with Evendons Business Centre occupying approximately half of the site, which comprises an assortment of small commercial units, and a large area of associated hardstanding for parking. The remainder of the site areas (2 & 3) comprise small fields/paddocks, enclosed by strong partially wooded boundaries.

A large paddock is situated to the northwest of the site area and is shown to be within the same land ownership (but does not form part of the planned development).

The site surroundings are varied. It sits between new and existing residential settlement areas, including a built up area to the east along Evendons Lane/Blagrove Lane, and the newer development Redlands Place to the southwest. The north and west of the area is generally characterised by farmland, open space and rural houses. The site boundary wraps around a residential dwelling, 'Rosery Cottage' on the north side of Evendons Lane. To the south of Evendons Lane Sandmartins Golf Club is present.

The topography of the investigation area is generally flat-lying, with a fall to the southwest.

The investigation occurred, the week following the central pond being drained and backfilled by Knighton Landscapes Ltd reportedly using clean imported soil, as such access to this area was not possible, as the area was still unstable and waterlogged. The chemical certificates for the imported soils are pending submission from Knighton Landscapes Ltd. Furthermore, Evendons Business Centre (which features a minibuss company) had been recently cleared and closed.

The caravans, busses, engine and waste materials noted on the historical desk study survey were not present on the site. However notably (and unrecorded in the previous Phase I) the northeastern

developed area featured a partially demolished garage workshop area, which featured a now external backfilled and covered mini-bus service pit. Furthermore, within the partially demolished garage workshop area an unmarked 55-gallon drum was present with a strong hydrocarbon odour, considered to possibly be waste engine oil based on the staining on the drum and surrounding concrete floor slab. The floor slab appeared in good condition save the staining. The service pit was uncovered and seen to have been backfilled with a rubble and ash material.

3 GEOLOGY

3.1.1 Published Geology

Reference to the British Geological Survey website and Sheet 268; Reading; 2000; indicates that the site is directly underlain by Palaeogene Bedrock Geology of the Bagshot Formation overlying the London Clay Formation.

No superficial soils, artificial worked or Made Ground deposits are recorded locally to the investigation area.

The Bagshot Formation is generally represented as a pale yellow-brown, fine to coarse grained sand, which is locally clayey and increases with clay content towards its base. In this area, the formation occurs up to around 25m in thickness, and given the proximity to nearby underlying geological strata, recorded within 30m southwest, it is likely that the formation is significantly thinner beneath the site.

The London Clay is described in the BGS memoir as “mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions (‘cementstone nodules’) and disseminated pyrite”. The London Clay Formation is encountered up to approximately 100m in thickness beneath the site area. Geological maps show the formation to daylight 71m southeast of the site.

3.2 UNEXPLODED ORDNANCE AND BOMB SITES

Reference to the site-specific unexploded bomb risk map (UXO) produced by Zetica indicates that the site is located in an area where there is a low risk of unexploded ordnance. Low risk regions are those with a bombing density of <15 bombs per 1000 acres or less.

Care is however required when assessing the risk for specific sites where the risk may be higher because of local wartime activity, such as munitions factories, pivotal infrastructure, airfields and

dummy airfields, many of which were removed from historical maps in the interest of national security.

4 PREVIOUS SITE REPORTS

Previously the site had been the subject of two detailed ground investigations;

-  Ground Investigation Services Ltd Site Investigation Report S.4072 Dated May 2012, available on the planning portal as part of a historical residential development proposal.
-  Stuart Michael Associates - Phase 1 Geo- Environmental Assessment Report 7116 dated May 2023, for a similar proposed development.

The salient information from the previous reports have been provided in the section below, to build the updated conceptual site model. For full details, the previous reports should be referred to in the first instance.

4.1 SITE INVESTIGATION REPORT S.4072

The Ground Investigation Services Ltd Site Investigation Report S.4072 dated May 2012, was supplied to Geo-integrity by the client as part of the tender pack and was downloaded from the planning portal. The investigation was undertaken in 2012 for a historical proposed development of forty-three dwellings across the site area and adjacent Rosary Cottage and paddock area.

The purpose of the 2012 investigation was to establish whether soil contamination was present and comment on how this may impact the development. The scope of the report included eighteen shallow boreholes, limited to 2m depth.

Soil sampling and contamination analysis were then undertaken to compile the interpretive report with recommendations with respect to the historical proposed development.

4.1.1 Ground conditions

The Ground Investigation Services Ltd 2012 investigation identified that the strata encountered during the exploratory works generally confirm that the strata encountered during the exploratory works generally confirm with the expected geology.

Locally, however, Made ground was encountered (but restricted to) the hardstanding areas around the Evendons Business Centre and Rosery Cottage.

The deposits comprise a thin mantle layer, ranging in thickness from 0.15m to 0.30m, composed of a sandy limestone ballast to clayey sand with varying amounts of flints, brick and concrete fragments and carbonaceous deposits, overlying an old topsoil layer, ranging in thickness from 0.15m and 0.40m. Locally to the east of Evendens Business Centre within a raised verge, an intervening layer between 0.30m and 0.50m composed of a greyish brown silty sand with a little flint and a trace of plastic and glass fragments.

Surface Topsoil was recorded in the boreholes undertaken in northern and western paddock areas (areas 2 and 3) to depths of between 0.30m and 0.55m. The deposit generally comprises a brown to greyish brown clayey sand to sandy clay with occasional flints and carbonaceous deposits.

The Bagshot Formation, encountered at depths of between 0.30m and 0.90m and extended beyond the base of the boreholes at 2m bgl, generally comprises soft to firm mottled orange brown and light grey sandy clays with occasional flints and some interbedded layers of loose to medium dense orange brown, light grey and light brown mottled clayey silty sands. The formation is deeper where mantled by overlying Made Ground.

4.1.2 Groundwater

Groundwater was locally encountered at depths of between 0.55m and 1.85m.

4.1.3 Contamination Assessment

The sampling strategy was non-targeted and the sampling pattern random, although additional contaminant testing was undertaken on samples obtained from within the area of the Evendons Business Centre.

The Itemised schedule of soils tests on page 10 of the report shows that eighteen samples of topsoil/Made ground and six samples of natural underlying Bagshot Formation soils were tested for a testing suite comprising metals, pH, Organic Matter Content and speciated Polycyclic Aromatic Hydrocarbons (PAH) twelve of these samples (representing 6 made ground/topsoil and 6 natural soils) were also tested for Total Petroleum Hydrocarbons (TPH), and asbestos.

No asbestos fibres were detected, and the contamination assessment revealed that the soils exposed on site may be regarded as being uncontaminated for the purposes of the proposed development (residential houses).

4.2 STUART MICHAEL ASSOCIATES - PHASE 1 GEO- ENVIRONMENTAL ASSESSMENT REPORT 7116

The Stuart Michael Associates - Phase 1 Geo- Environmental Assessment Report 7116 dated May 2023, was provided by the vendor and was used as part of the outline planning application.

This report utilised a third-party Envirocheck desk study information pack supplied by Landmark Information Group on the 10th May 2023, a site walkover undertaken in May 2023 (prior to the closure of the business park) and the findings of the Ground Investigation Services Ltd Site Investigation Report S.4072 dated May 2012, to appraise the current proposed 64-bed care home development.

4.2.1 History of the site

“The historical mapping obtained indicates that the north of the Site has remained greenfield with little to no change since 1871. The south of the Site has been brownfield with buildings on the Site since at least 1871-1872. At one point there were two Wells in the south of the Site. The existing buildings have changed over time with expansions and alterations.

The Site is currently occupied by a commercial building in the south and greenfield land in the north. The Site as whole has remained largely unchanged since at least 1999”

4.2.2 Conclusions

“This report presents a Phase 1 Geo-Environmental Assessment in accordance with the guidelines set out in the National Planning Policy Framework and the Land Contamination: Risk Management. It also refers to, and complies with, DEFRA standards, the policies of Wokingham District Council (WDC) and the Environment Agency (EA).

A walkover survey was undertaken on the 17th of May 2023. This survey did not identify any significant issues that could pose a risk to present or future receptors.

The Site and surrounding area is indicated to be underlain by a bedrock stratum of Bagshot Formation consisting of Sand from the Eocene Period. The Site is not indicated to be underlain by any superficial strata.

The information obtained from public records indicate that the Site is underlain by a Secondary A bedrock aquifer and is not underlain by any superficial Aquifers, meaning leaching potential of pollutants on and off Site is low.

Public records indicate that radon gas protection measures are not required to facilitate the development.

In conclusion, the conceptual model has demonstrated that there should be no significant geo-environmental issues that would prevent the Site from being developed for its intended use. Further intrusive ground investigations may be carried out at the appropriate time to inform the design of buildings and onsite infrastructure. If these investigations reveal any potential contamination, then these will be dealt with as necessary at that time.

The conceptual model in this report should be reviewed and developed following the results of any further intrusive ground investigations or new information being uncovered as the project develops"

4.2.3 Review of previous reports

It was considered that the report/s provided a good basis for the site and proposed development. However based on the outdated assessment criteria and change to threshold levels of the initial intrusive investigation (2012) along with the limited depth of investigation, the contamination assessment of the site should be updated based on the new site proposals. Additionally, the assessment should be compared against contemporary assessment criteria and undertaken in conjuncture with the relevant current guideline values.

The 2025 works have been undertaken after the sale of the site, and as such Evendons Business Centre had been cleared and was empty at the time of the investigation. The caravans, busses, engine and waste materials noted on the historical desk study survey were not present on the site. However notably (and unrecorded in the previous Phase I) the northeastern developed area featured a partially demolished garage workshop area, which featured a now external backfilled and covered mini-bus service pit. Furthermore, within the partially demolished garage workshop area an unmarked 55-gallon drum was present with a strong hydrocarbon odour, considered to possibly be waste engine oil based on the staining on the drum and surrounding concrete floor slab. The floor slab appeared in good condition save the staining. The service pit was uncovered and seen to have been backfilled with a rubble and ash material.

Furthermore, it is notable that no ground gas risk assessment was undertaken by the previous reports, excluding Radon. Therefore further assessment for this and site-wide investigation has been undertaken by this Phase II investigation.

4.3 GROUND GASES

In accordance with BS8576:2013, the site has been provisionally assessed for the risk of ground gases. This has been done with reference to “A pragmatic approach to ground gas risk assessment for the 21st Century” Card and Wilson, 2011.

-  No credible sources or pathways for landfill gas migration from an off-site landfill have been identified, as there are no active or historical landfill sites within 500m of the site area.
-  The site has not been a registered landfill.
-  The Made Ground is not expected to be 5m deep or an average of 3m in thickness at the site.
-  The site is not located on a carbonate-rich rock that can produce carbon dioxide.
-  Radon protection measures are not recommended for this site.
-  The site does not significantly lie on a potential naturally organic soil or humic or degradable Made Ground soil.

Therefore, it is considered that the site is unlikely to be at risk from ground gases, however, confirmatory ground gas monitoring is to be undertaken as part of the Phase II investigation, alongside groundwater monitoring.

5 PHASE II INTRUSIVE INVESTIGATION

5.1 SITE WORK AND SAMPLING STRATEGY

The fieldwork was undertaken in accordance with BS 5930:2015+A1:2020, BS EN 1997-2 (2007) (NA 2009) and BS EN ISO 22475-1 (2006), with the exploratory locations being selected by Geo-Integrity Ltd. The exploratory hole locations can be seen in the Appendices.

The initial fieldwork was undertaken between the 4th and 6th March 2025 and consisted of six continuous tube (window) sampler boreholes to 5.0m bgl, three in-situ TRL DCP-CBR probes and five machine excavated trial pits, three of which were utilised as infiltration pits, undertaken in general accord with 'BRE 365'.

Exploratory Hole	Location Reasoning
CT1 – CT5	5m deep boreholes positioned well across the footprint of the proposed care home to identify ground conditions.
CT3	Positioned within the northeastern limb of the proposed structure, and in the location of the encountered mini-bus service area. The borehole was located equidistantly between the backfilled vehicle service pit and the identified oil drum within a metre or so of each.
CT6	5m deep borehole positioned to the west of the site area, in the location of the proposed SWALE SUDS feature
SA1 & SA2	Deep and shallow soakways positioned within the existing grassed paddock area, in the northern site area, where the proposed parking is to be situated.
SA3	Positioned within the SWAL SUDS feature adjacent to CT6.
TP1	Located within the western area of the northern paddock area, to increase the area of investigation
TP2	Located to the west of Evendens Centre in existing soft landscaped areas, where a historical bonfire had been located.
HA1	Near-surface excavation within the covered vehicle inspection pit
HA2	Positioned in the wooded area to the east of the site.

Disturbed samples were taken at selected depths down to the base of the holes for subsequent laboratory testing and inspection. On completion, all excavations were carefully backfilled with

arising in thin layers, ensuring that the excavated material was replaced in the same order as it had been removed.

Additionally, within CT3 and CT6 groundwater and gas monitoring standpipes were installed to 5m and 4.20m depth respectively.

5.2 GROUND CONDITIONS

5.2.1 Summary

The site and laboratory test work revealed that the general succession of strata can be represented by localised hard-standing, Topsoil or Made Ground, overlying the Bagshot Formation, overlying the London Clay Formation. The downward succession was generally consistent across the site and was in accordance with published geology and previous 2012 investigation. Descriptions of the strata encountered are given on the exploratory hole records and are summarised below. Further information is provided on the exploratory hole logs within the appendices.

5.2.2 Hard-standing

Encountered at CT3, as concrete, down to a depth of 0.10m bgl.

5.2.3 Topsoil

Encountered at surface in six of the exploratory holes, from ground level to a depth of 0.05m below ground level. The material generally consisted of a soft, dark-brown, silty sandy organic clay.

5.2.4 Made Ground

Encountered at seven of the test locations, from between ground level and below localised hardstanding, down to a depth of between 0.80m and 1.30m depth.

The material is predominantly associated with the developed areas of Evendons Business Centre in the eastern site area, the material varied across the zone and consisted of seemingly reworked natural soils and buried topsoils with small inclusions of brick and other man-made material, to more heavily anthropogenic material containing larger quantities of flint, glass metal and brick.

The vehicle service pit in the east of the site was opened by removing the wooden joists, a small exploratory hole was then excavated into the top of the pit, which identified that the concrete lined pit had been backfilled by a black ashy silty gravelly rubble of brick and concrete cobbles, which exhibited a strong hydrocarbon odour.

Furthermore, the near surface Made Ground soils within CT3 beneath the vehicle garage area (adjacent to the service pit and oil drum) also exhibited slight to moderate hydrocarbon odours.

5.2.5 Bagshot Formation

Encountered at each of the deeper exploratory locations from depths of between 0.10m and 1.30m below ground level, down to a depth between 3.50m and 4.60m bgl. Represented in general as a highly variable orangish brown and grey clay, sand and flint gravel of varying proportions.

The formation is predominantly encountered as a silty very sandy gravelly clay, with the granular layers showing no discernible or predictable layering orientation over the development area.

The subordinate sand and gravel layers are typical of the geology and are highly variable in this area. Within CT6, positioned away from the proposed structure in the SWALE, fragments of gravel sized ferruginous sandstone were encountered within the clay matrix.

Laboratory tests undertaken on representative samples revealed moisture contents range from 8.2% to 31%, a modified plasticity index ranging from non plastic to 21%, which equates to an NHBC Volume Change Potential ranging from non-shrinkable to moderate, with an average value of low.

SPT 'N' values undertaken within the boreholes ranged from 6 to 32, the penetration resistance of the strata generally increased with depth beyond 3m, and the results are conservatively interpreted to indicate generally soft to firm soils to 3m becoming stiff clay soils beyond this depth.

5.2.6 London Clay Formation

Encountered at each of the deeper exploratory locations from depths of between 3.50m and 4.60m below ground level, down to a depth in excess of 5m bgl.

The boundary between the sandy Bagshot Formation and the underlying silty clay of the London Clay is transitional, as such locally the top of the London Clay has been encountered as a medium dense silt in CT1. The main body of the London Clay is however encountered as a stiff grey and brown silty sandy and very sandy clay.

Laboratory tests undertaken on representative samples revealed moisture contents ranging from 23% to 29%, and a modified plasticity index ranging from 6% to 15%, which equates to an NHBC Volume Change Potential ranging from non-shrinkable to low.

SPT 'N' values undertaken within the boreholes ranged from 23 to 28, and the results are interpreted to indicate generally stiff clay soils.

5.2.7 Groundwater

Groundwater was encountered within the exploratory holes at the site during the initial intrusive works, at depths ranging from 0.70m to 3.80m, standing at depths ranging from 0.60m to 1.8m bgl, across the development area.

Monitoring of the two standpipes, undertaken as part of the project revealed the following groundwater levels.

Date	Standpipe Installation	Depth to Groundwater (m bgl)
4 th March 25 (DRILLING)	CT3	1.0m
	CT6	2.30m
17 th March 2025	CT3	0.66m
	CT6	0.76m
20 th March 2025	CT3	0.70m
	CT6	0.75m
27 th March 2025	CT3	0.72m
	CT6	0.76m
1 st April 2025	CT3	0.80m
	CT6	0.80m

5.2.8 BRE365 Infiltration Testing

The three exploratory holes (SA1, SA2 & SA3) were tested for their infiltration potential using the general methods set out in BRE 365. However, SA1 and SA2 recorded very low infiltration over the 48-hour test period, insufficient to calculate an infiltration rate, and SA3 recorded a rise in water level inferring an influx of groundwater.

5.2.9 Ground Gas

Ground gas monitoring was undertaken within the borehole standpipes at CT3 and CT6 as part of this investigation, in conjuncture with the groundwater monitoring on four occasions (the 17th, 20th and 27th March, and the 1st April 2025), using a calibrated Gas Data GFM Series gas analyser.

The results revealed oxygen levels of between 18.2% and 19.8% by volume, a carbon dioxide level of between 0% and 2.9% by volume, and a methane level below detectable limits.

Peak ground gas flow rates were recorded at 0l/hr, which is indicative of the underlying low permeability strata.

5.2.10 Sulphate and pH Tests

Soluble sulphate and pH tests were carried out on four soil samples recovered from the exploratory holes. These recorded values as shown in the table below:

Parameter	Range
Soluble Sulphate (mg/l)	24 – 310
Total Sulphur %	0.28
Sulphate (Acid Soluble) %	<0.01
pH units	6.9 – 10.4

5.2.11 California Bearing Ratio (CBR) Tests

In-situ TRL Dynamic Cone Penetrometer (DCP) tests were undertaken within the near-surface soils, at three locations within the proposed pavement areas and recorded equivalent CBR percentages ranging from 3% to 5%.

5.2.12 Evidence of Contamination

Within the partially demolished garage workshop area an unmarked 55-gallon drum was present with a strong hydrocarbon odour, considered to possibly be waste engine oil based on the staining on the drum and surrounding concrete floor slab. The floor slab appeared in good condition save the staining. The service pit was uncovered and seen to have been backfilled with a rubble and ash material through inspection in HA1.

As part of the works the vehicle service pit in the east of the site was opened by removing the wooden joists, a small exploratory hole was then excavated into the top of the pit, which identified that the concrete lined pit had been backfilled by a black ashy silty gravelly rubble of brick and concrete cobbles, which exhibited a strong hydrocarbon odour.

Furthermore, the near surface Made Ground soils within CT3 beneath the vehicle garage area (adjacent to the service pit and oil drum) also exhibited slight to moderate hydrocarbon odours.

No other obvious or significant contamination was identified within the natural or Made Ground soils encountered during the fieldwork across the rest of the business park or the site area. However, some man-made materials were encountered within the Made Ground such as brick, metal and glass, which may contain elevated levels of possible contaminants.

Therefore, chemical testing has been undertaken across the site and in targeted locations, see section 5.1 and environmental risk assessments below.

5.3 GEOENVIRONMENTAL TESTING

Geo-environmental laboratory testing was scheduled by Geo-Integrity on eight soil samples recovered during the fieldwork. The testing was carried out at an MCERTS and UKAS accredited laboratory. The results are presented in the Appendices.

Soil samples were tested for a varied suite containing the following

-  Metals and inorganic substances
-  Speciated Polyaromatic Hydrocarbons (PAH)
-  Benzene, Toluene, Ethylbenzene and Xylene (BTEX)
-  Total Petroleum Hydrocarbons (TPH), with eight band split
-  The presence or absence of Asbestos.

Furthermore, two samples from soils at depths consistent with the installation of water supply pipes have been tested for the suite recommended by the UKWIR water pipe guidance protocol.

Additionally, a sample of potentially impacted soils taken from CT3 was tested for a single-stage inert WAC test for final waste classification, as this was considered to potentially reflect the worst case soil conditions, given the potential hydrocarbon sources identified.

6 GEOTECHNICAL INTERPRETATIVE SECTION

6.1 GENERAL GROUND CONDITIONS INTERPRETATION

The exploratory fieldwork undertaken during this investigation has identified that the site is underlain by localised hard-standing, Topsoil and Made Ground down to a depth of between 0.80m and 1.30m depth, overlying variably granular and cohesive Bagshot Formation to a depth of between 3.50m and 4.60m bgl, transitioning into a sandy London Clay Formation soil.

Conservatively the natural soils beneath the site should be considered as shrinkable cohesive deposits with dispersed subordinate granular layers.

Additionally, groundwater was encountered within the exploratory holes at the site during the intrusive works, as fairly quick seepages at depths ranging from 0.70m to 3.80m, standing at depths ranging from 0.60m to 1.8m bgl, across the development area.

Monitoring of the two standpipes (CT3 located in the Evendons Business Centre and CT6 Located in the proposed SWALE), undertaken as part of the project revealed even shallower groundwater levels at 0.66m in CT3 and 0.76m bgl in CT6.

Additionally given that the Bagshot Formation and London Clay Formation are predominantly cohesive deposits, the effects of any trees or hedgerows, within desiccation influencing distance of the development (as described in the NHBC Standards, Chapter 4.2), should also be considered during design and construction. Where such vegetation is within influence of new buildings, then foundations will need to extend to depths where soils are moisture/volume stable and appropriate precautionary foundation and floor slab design measures adopted in accordance with the NHBC Building Near Trees protocol.

Furthermore based on the soil classification tests undertaken and assessed to establish if the clay soils are desiccated, it is considered that the underlying cohesive soils are unlikely to be significantly desiccated. However, an overall low shrinkability should be assigned to the underlying soils and the guidelines within NHBC Chapter 4.2 Building Near Trees must be followed during the design stage.

6.2 EXCAVATIONS

Conventional excavation equipment and plant should be sufficient for excavating shallow foundations and service trenches at the site. However, as mentioned above It is considered likely that shallow excavations will experience water ingress from depths as shallow as 0.60m bgl.

It should be noted that the investigation works were undertaken at the end of the wet winter season when groundwater levels are likely to be near their shallowest, and therefore seasonally the levels may be deeper.

It is also worth noting that excavations may be unstable where significant Made Ground is encountered, locally down to 1.30m in the area of the proposed development and any/all excavations should be suitably shored and edge protected in line with best practice.

6.3 FOUNDATIONS

It is understood that the development at the site will include a new 2/2.5 storey care home in the southeastern site area. The care home will be situated in the eastern site area (current area of Evendons Business Centre). Therefore, we have provided the following interpretative geotechnical analysis and recommendations with regard to the ground conditions and foundation of the development.

6.3.1 Shallow Foundations

As detailed in the above sections, it should be noted that shallow water ingress was noted across the site and in the area of the proposed care home, from depths as shallow as 0.60m, and was observed as fairly quick seepages and standing levels.

Therefore whilst excavation of trenches at the end of the dry summer months and sump pumping may allow for conventional trench fill footings, a trial is recommended beforehand to confirm this summation.

If the above can be achieved then Shallow foundations may be considered at the site providing the additional following criterion is followed;

The Made Ground (including reworked deposits hardstanding and topsoil) is considered unsuitable as a bearing stratum due to its variability, and potential for unacceptable total and differential settlement under applied foundation loadings.

However, the underlying bedrock Bagshot Formation may be considered to be a suitable bearing stratum for conventional shallow foundations at not less than 0.75m below existing ground level or 0.20m into the top of the formation, whichever is the deeper. This depth assumes that there will be a reduction in finished floor levels, and there will be no future planting within the influence zones of the foundations – if future planting cannot be discounted the minimum depth of foundations should be 1.0m bgl in accord with the NHBC Standards.

Realistically however should finished floor levels remain relatively similar to that of present then footings would have to extend to depths ranging from 1.0m to 1.50m bgl, in order to achieve a socket of 0.20m into the top to the Bagshot Formation.

As such these depths would exacerbate the issues associated with water ingress of trenches and dewatering.

However, at these depths, a net allowable bearing pressure of 60kPa may be adopted for foundations not exceeding 1.0m in width. This allows for a factor of safety of three against shear failure and for settlements generally not to exceed 25mm taking place over a number of years.

On average the soils should be considered as being of low volume change potential. However given there were localised horizons of granular soils within the Bagshot Formation, it is recommended foundations are reinforced to guard against differential settlement.

Additionally as mentioned above should foundations be constructed within the vicinity of trees or shrubs on this site then they will require deepening in accordance with guidelines given in NHBC Building Standards Chapter 4.2. Should trees not be removed, mature tree heights should be assumed when determining the foundation depths.

6.3.2 Piled Foundations

Given the issues associated with water ingress of trenches and dewatering and/or should the above quoted allowable bearing pressure prove insufficient, or ineffective at greater depths, a piled foundation solution may be adopted.

Piles would extend through the Made Ground and likely terminate in the deeper Bagshot Formation and underlying London Clay Formation.

Should a piled foundation solution be utilised, then, a supplementary deep borehole investigation would likely be required by a piling contractor, aiming to undertake sampling and insitu testing and achieve a depth ranging from 10-25m.

The advice of specialist piling contractors should be sought to formulate a suitable piling technique and type for the ground conditions encountered at this site, before the commencement of the works. The following comments regarding the pile design are therefore for general guidance only.

It is anticipated that a bored, cast in situ pile system will be the most appropriate on this site given the ground conditions. Consideration will still however need to be given to the possible obstructions

within the Made Ground, gravel bands and potential rock quality claystone beds beneath the site. Hard bands and claystone bands may make driven piling and flight auger piling unsuitable (due to the piles being halted before depth).

6.4 FLOOR SLAB DESIGN

Given the thickness of Made Ground in the area of the proposed development being >600mm, suspended ground floors are recommended.

Alternatively, should finished floor levels change then floor slabs at the site can be ground bearing, provided the Topsoil/Made Ground is stripped and removed and is based on a blanket of good quality, free draining, well compacted granular material, placed prior to the construction of the floor slab, in order to make up the level.

However, where it is required to deepen the main foundations below 1.50m depth, due to the presence of vegetation or where seasonal desiccation is occurring, then ground floor slabs will require suspending in accord with NHBC guidelines (should NHBC guarantees be required). A void should be left below the floor slab to accommodate future moisture content related soil movements. This may be achieved by the use of a proprietary compressible material such as Clay board or Cellcore.

6.5 SULPHATE ATTACK ON UNDERGROUND CONCRETE

Four soil samples from this investigation were scheduled for the measurement of water-soluble sulphate, pH, Total Sulphur and Acid Soluble Sulphate (to investigate the potential for sulphate ions/pyrite) and to give an indication of the aggressivity of the ground in relation to buried concrete, as set out in the Building Research Establishment (BRE) Special Digest 1 (2005) Concrete in Aggressive Ground, Part 1: Assessing the aggressive chemical environment. The samples were recovered from depths ranging from 0.20m to 4.50m and were sourced from representative areas of Topsoil, Made Ground, Bagshot Formation and London Clay Formation Soils.

The results indicated a range of values, however, the sample from the London Clay Formation recorded elevated levels. This is not unexpected as the London Clay Formation is known to be elevated given the presence of sulphate minerals such as selenite and pyrite.

Therefore, in accordance with the BRE Special Digest, these results have been given in the table below, in relation to strata type and required Design Sulphate Class and site Aggressive Chemical Environment Classification (ACEC).

Strata	Design Sulphate Class	Aggressive Chemical Environment Classification
Made Ground	DS-1	AC-1
Topsoil		
Bagshot Formation		
London Clay	DS-3	AC-3

The recommendations given in the above digest, with respect to suitable concrete design and other associated precautions against sulphate attack, should be followed for all below-ground level concrete.

6.6 ACCESS ROADS AND PARKING

The structural design of a road or hard standing is based on the strength of the subgrade, which is assessed on the California Bearing Ratio (CBR) scale.

In-situ CBR tests undertaken in the near-surface soils provided equivalent CBR values from 3%. Notably, the classification tests undertaken on the soils recovered from site identified that the soils exhibit a high percentage of fine particles with low plasticities and a range of moisture contents and low permeabilities, each of these factors indicates that the soils are likely to be somewhat frost susceptible.

Additionally, as Made Ground has been proven across the site, and given the unknown origin of the soil, its variability and the likelihood and proven possibility for soft spots, we recommend that any areas of soft or deleterious material should be excavated, replaced with a properly compacted coarse-grained fill and proof rolled prior to construction.

In addition, to avoid uneven and excessive settlement in hard-standing areas it is recommended that the following precautions are taken:-

-  Heavy proof-rolling of the exposed sub-grade strata
-  Excavation of soft spots encountered and replacement with well-compacted granular material
-  The usage of a geotextile separator layer above the sub-grade
-  All materials within 450mm of final finished levels in roads or pavement should comprise non-frost susceptible soils in accordance with BS 812-124. Given the materials encountered near surface on site, it is considered that suitable imported materials would therefore be required.

6.7 INFILTRATION MEASURES

Appropriately designed sustainable drainage systems (SuDS) are more sustainable than using piped drainage to local sewer systems. However, infiltration measures close to buildings may result in the undermining of foundations and softening of soils leading to instability. Attenuation measures should be located at suitable distances from foundations and infrastructure.

Three soakaway tests were undertaken, at the site, within the near-surface Bagshot Formation soils at depths ranging from 0.70m and 1.62m (initially situated above the groundwater influx). The test results from SA1 and SA2 located in the proposed parking area, indicated a very lower-end infiltration rate, due to an insufficient drop in water levels over the three days, with calculation of an infiltration rate not possible and the ground is considered to be effectively impermeable.

Furthermore testing in SA3, positioned within the proposed SWALE SUDS feature identified a rise in groundwater level, occurring due to a groundwater seepage. As such calculation of an infiltration rate is not possible and the ground, is again considered to be effectively impermeable and groundwater should be expected to be as shallow as 0.70m in this area, and as shallow as 0.60m across the site as a whole.

6.8 GAS PROTECTION

The risk of ground gases impacting the site was assessed by reference to the paper “A pragmatic approach to ground gas risk assessment for the 21st Century” Card and Wilson, 2011. And determined that the site is unlikely to be at risk from ground gases, however, confirmatory ground gas monitoring is to be undertaken as part of the Phase II investigation, alongside groundwater monitoring.

Confirmatory monitoring visits undertaken at the site, in conjunction with groundwater level monitoring, recorded no methane gas above detectable limits or recorded carbon dioxide levels above 5% within one of the two installations. A flow rate of <0l/h was also recorded.

Based on the conditions measured during the monitoring visits carried out to date, In accordance with BS8485:2015 and CIRIA C665, 2007 the site is classified as a Characteristic Situation 1 (CS1). Therefore, it is currently considered that no ground gas protection is required with regard to methane or carbon dioxide gas.

Furthermore, the site is located in an area where less than 1% of homes exceed the action level of 200Bq/m³ for radon gas, and no radon protection measures are necessary in the construction of new dwellings or extensions.

Full details of gas concentrations and gas flow data recorded during the monitoring visits are given in the Appendices.

7 GEO-ENVIRONMENTAL INTERPRETATION SECTION

7.1 RISKS TO HUMAN HEALTH

7.1.1 Introduction

Environment Agency guidance LCRM *Land Contamination: Risk Management*, (EA, 2019), states that human health risk assessment should be undertaken by a tiered approach using the source-pathway-receptor principle.

A desk study constitutes the first tier and this has been undertaken previously by Stuart Michael Associates - Phase 1 Geo- Environmental Assessment Report 7116 dated May 2023 (prior to the closure of the business park), which incorporated the historical findings of the Ground Investigation Services Ltd - Site Investigation Report S.4072 dated May 2012, to appraise the current proposed 64-bed care home development. The conclusions of this informed phase I report were that:-

“the conceptual model has demonstrated that there should be no significant geo-environmental issues that would prevent the Site from being developed for its intended use. Further intrusive ground investigations may be carried out at the appropriate time to inform the design of buildings and onsite infrastructure. If these investigations reveal any potential contamination, then these will be dealt with as necessary at that time.”

The report also stated that *“The conceptual model in this report should be reviewed and developed following the results of any further intrusive ground investigations or new information being uncovered as the project develops”*. As such it was considered that the report/s provided a good basis for the site and proposed development. However based on the outdated assessment criteria and change to threshold levels of the initial intrusive investigation (2012) along with the limited depth of investigation, the contamination assessment of the site should be updated based on the new site proposals. Additionally, the assessment should be compared against contemporary assessment criteria and undertaken in conjuncture with the relevant current guideline values.

The 2025 works have been undertaken after the sale of the site, and as such Evendons Business Centre had been cleared and was empty at the time of the investigation. The caravans, busses, engine and waste materials noted on the historical desk study survey were not present on the site. However notably (and unrecorded on the previous 2023 Phase I) the northeastern developed area featured a partially demolished garage workshop area, which featured a now external backfilled and covered mini-bus service pit. Furthermore, within the partially demolished garage workshop area an

unmarked 55-gallon drum was present with a strong hydrocarbon odour, considered to possibly be waste engine oil based on the staining on the drum and surrounding concrete floor slab. The floor slab appeared in good condition save the staining. The service pit was uncovered and seen to have been backfilled with a rubble and ash material (HA1).

Therefore, as part of the investigation chemical testing was undertaken at the site. Testing was undertaken to target a wide range of areas but also target the newly identified risk of the service pit (HA1) and oil drum (CT3).

Results incorporating those from the 2012 investigation have been analysed under the contemporary second tier, known as a Generic Quantitative Risk Assessment (GQRA), which uses modern generic guideline values to compare site chemical data against are stated in the LCRM.

The assessment included in this report comprises a GQRA, which is undertaken by comparing soil contaminant concentrations from this investigation with conservative Generic Assessment Criteria (GAC). GAC for various land use and exposure scenarios have been selected from the following sources:

-  CL:AIRE Category 4 Screening Levels (C4SL);
-  LQM Suitable for Use Levels (S4UL);
-  CL:AIRE/EIC/AGS GAC

The GACs have been derived using the Environment Agency Contaminated Land Exposure Assessment (CLEA) model, for a range of land uses and exposure scenarios, including:

-  Residential with the consumption of home-grown produce;
-  Residential without the consumption of home-grown produce;
-  Commercial;
-  Allotments;
-  Public Open Space near residential housing (POS_{resi}); and
-  Public Open Space public park scenario (POS_{park})

It is considered that as the development at the site will include a new care home in the southeastern site area (current area of Evendons Business Centre) with associated communal soft landscaped areas, that for the purposes of this assessment a “Residential without the consumption of home-grown produce” has been selected.

7.1.2 Results of Chemical Testing

Of the eight soil samples screened as part of this investigation and the twenty-four screened as part of the Ground Investigation Services Geo Environmental Investigation, screened against the relevant modern GAC for a 'Residential without the consumption of home-grown produce' land use scenario as described above, only two samples have exceeded the relevant GACs.

The two samples were taken from the recent 2025 investigation and were located in Made Ground soils in the area of the oil drum and service pit (CT3) and from within the service pit.

Elevated levels of both TPH and PAHs were identified in both samples;

-  Made Ground from HA1 at 0.10m depth identified elevated TPHs and was sourced from the ashy cobbly material recovered from the backfilled service pit.
-  Made Ground from CT3 at 0.40m depth identified elevated TPHs and PAHs and was sourced from the Made Ground soils located beneath the concrete slab.

7.1.2.1 Total Petroleum Hydrocarbons & Poly Aromatic Hydrocarbons

Polyaromatic Hydrocarbons (PAHs) were recorded within both HA1 (service pit) and CT3 Made Ground, however, the levels in HA1 were below the relevant GACs whereas the concentrations in CT3 (particularly at 0.40m depth) were elevated with respect to their relevant S4UL GACs for three species (Benzo[b]fluoranthene, Benzo[a]pyrene and Dibenz(a,h)Anthracene).

Moreover, locally within the Made Ground of HA1 at 0.10m depth and CT3 at 0.40m depth elevated TPH has been identified across carbon banding ranges C16-C>35 which is indicative of long chain diesels and is predominantly indicative of residual engine oils.

Therefore it is considered that there is no significant risk of volatile vapours given that no significant short-chain hydrocarbons are recorded, either being at low levels or below detectable limits.

Excavation within the backfilled service pit was limited to hand excavation at the time of the site works, and therefore the depth of backfill or composition of the pit base could not be confirmed.

However, within CT3 soils above and below the impacted strata were also tested given the boreholes targeted position within proximity of the two identified TPH sources (oil drum and service pit).

Notably the samples above at 0.10m in an overlying Made Ground layer did identify residual levels of TPH and PAHs, below that however of the relevant GAC (but above those of the background levels found elsewhere across the site), orders of magnitude below that of the underlying impacted Made Ground material at 0.40m.

Additionally, the underlying natural Bagshot Formation soil layer below the impacted zone was also tested, taken from a depth of 1.15m bgl. This underlying soil was representative of the Bagshot Formation soils encountered elsewhere beneath the site. Under the same assessment criteria as the overlying samples taken, no elevated or background TPH or PAH levels were identified, with all TPH/PAH results recorded below detectable limits.

7.1.2.2 Asbestos

Screening for the presence of asbestos did not reveal any asbestos-containing material (ACM) or fibres in the eight samples of soils tested in the recent 2025 investigation or the six samples tested by Ground Investigation Services in 2012 from the Evendons Business Centre area.

7.1.3 Risk to End Users

Given the results of the desk study, both intrusive investigations and combined laboratory testing it is currently considered there is an elevated risk to end users of the site from the impacted Made Ground locally at the site.

The materials backfilled within the mini-bus service pit and the soils underlying the garage area and in the area of the oil drum recorded some elevated values of TPH and PAHs within the Made Ground, and it has been established that this will provide a risk to end users of the site (should a pathway be available) and to construction workers during the groundworks.

Given the long-chain nature of the hydrocarbons and their inherent low-mobility, and low-volatility it is considered that there is no significant risk of volatile vapours with carbon banding of short chain compounds recorded, either being at low levels or below detectable limits. As such the significant pathways of concern are considered to be dermal contact and ingestion of exposed impacted soils.

To break the pollutant linkage, this material needs to be excluded from the end users, and special control measures need to be in place to protect the surrounding residents and construction workers.

7.1.4 Risk to Surrounding Residents and Construction Workers

Given the results of the intrusive investigation and laboratory testing, it is considered there is no further significant risk to surrounding residents of the site, other than those encompassed by the risk to end users (see above section).

However, it is considered there is an elevated risk to construction workers at the site (particularly ground workers) from dermal contact and inhalation of dust from the Made Ground across the site. To break the pollutant linkage, several measures are discussed below.

7.2 REMEDIAL MEASURES OR FURTHER WORK REQUIRED

Locally the Made Ground materials backfilled within the mini-bus service pit and the soils underlying the garage area at CT3, in the area of the oil drum encountered to 1.15m bgl recorded some elevated values of TPH and PAHs, and it has been established that this will provide a risk to end users of the site (should a pathway be available) and to construction workers during the groundworks.

The pathways of concern are dermal contact and ingestion of exposed impacted soils.

To break the pollutant linkage, this material needs to be excluded from the end users, and special control measures need to be in place to protect the surrounding residents and construction workers.

7.2.1 Reducing Risk to End Users

To break the exposure pathways to site users, it is considered that the pathways between the contaminated Made Ground and end users need to be broken.

A preliminary options appraisal has therefore been undertaken below;

7.2.1.1 Remedial Option Appraisal

7.2.1.1.1 Removal of Material

Removal of the impacted materials and replacement with certified clean materials would inherently remove the source and therefore the risk to end users.

It is considered that as part of the demolition of the existing Evendons Business Centre that the service pit will need to be removed. The hydrocarbon-impacted materials backfilled within the pit should also be completely excavated and removed from the site (see waste classification section below 8).

Furthermore, the impacted Made Ground soils beneath the demolished garage workshop area to a depth of 1.15m exhibited slight to moderate hydrocarbon odours.

No other obvious or significant contamination was identified within the natural or Made Ground soils encountered during the fieldwork across the rest of the business park or the site area. However, an exact area of impacted soils cannot be determined based on the existing dataset.

As such an appropriate engineer should be on site during the excavation of the material, and sampling of the remaining pit base and walls should be undertaken to confirm all impacted materials were removed.

Any imported materials used to backfill the resultant excavation should be certified clean, with all associated paperwork stored on site and in the project folders.

Successful implementation of this remedial option, along with confirmation that all materials were removed and certification that the backfilled materials are suitable and “clean” would have removed the source, and therefore there would be no remaining risk to end users.

However “chasing out” of the impacted materials may result in a large pit (laterally and vertically), and may not be restricted to the area directly beneath the existing garage/ service pit area.

During the development, it is recommended that this process of excavation and replacing imported soils is tightly monitored and recorded (soil tests, photographs, depth measurements etc) as it is likely that a verification report will be required to prove its existence to Local Authorities or financing organisations (mortgage companies etc).

7.2.1.1.2 Cover System

Should the impacted materials not be completely removed from the site then protective measures to negate the pathways to the end users must be implemented.

Pending further investigation this would take the form of a soil cover system externally at the site in the area of CT3.

It is also recommended that further investigation of the impacted area post demolition may also be beneficial to zoning the impacted area, particularly if this option is taken.

7.2.1.1.2.1 Cover System

A cover system could be engineered in the areas of soft landscaping, which are those areas of soft landscaping and communal planting on the site. Such a cover system would require a 600mm layer of clean cover, consisting of at least 150mm of topsoil. This cover system is not required in areas of hardstanding (car parks, patios and under the building), where this will break the pathway between contaminated soils and site users. During the development, it is recommended that this process of placing the cover layer is tightly monitored and recorded (soil tests, photographs, depth measurements etc) as it is likely that a verification report will be required to prove its existence to Local Authorities or financing organisations (mortgage companies etc).

7.2.2 *Reducing the Risk to Construction Workers*

The major exposure routes of concern for the contamination encountered are dermal contact, ingestion and inhalation of dust from the Made Ground soils at the site. For the construction workers, remedial measures would not be in place when they undertake the site work and therefore different measures should be taken to reduce the risk of coming into contact with the soil and break the pollutant linkage with these receptors.

To reduce the risk to as low as reasonably practicable for the construction workers it is recommended that high standards of personal hygiene should be maintained amongst the site personnel at all times. All personnel coming into contact with the soil, ground workers in particular, should be instructed to use gloves when on site to avoid dermal contact and restrict inadvertent hand-to-mouth ingestion. Washing facilities should be provided for the site staff to use and should be used prior to eating or smoking. Reference should be made to the HSE Document, "Protection of Workers and the General Public during Development of Contaminated Land".

It is also recommended that a watching brief for undiscovered contamination is included in the Works Method Statement. Given the long human history of the surrounding area, it is always possible that some previous undiscovered contamination may be encountered. If this is the case, the area should be isolated and contact be made to a suitably qualified professional for further advice. This is particularly important if the contamination is possibly ACM or liquid-based.

7.3 POST REMEDIATION VERIFICATION

Any remedial measures undertaken at the site will require independent verification once completed to satisfy the relevant regulatory authorities and other interested parties, including future owners of

the site, banks, insurers and mortgage companies. This usually involves a small validation investigation to confirm that the recommended work has been successful.

7.4 RISK TO CONTROLLED WATERS

The Phase I investigation concluded that the; “site is underlain by a Secondary A bedrock aquifer and is not underlain by any superficial Aquifers, meaning leaching potential of pollutants on and off Site is low.”

Furthermore, the site is not located within a source protection zone, and the results of the investigation have identified that the underlying soils exhibit a very low to negligible permeability, and the unproductive strata of the London Clay Formation was proven beneath the site at depths ranging from 3.50m and 4.60m.

However, locally elevated TPH and PAHs have been identified within the backfilled mini-bus service pit and near surface Made Ground soils beneath the workshop area and borehole CT3(see above sections).

Polycyclic Aromatic Hydrocarbons (PAHs) exhibit low mobility in groundwater and the environment due to their hydrophobic nature and high molecular weight. These compounds tend to bind strongly to organic matter and fine particles in soil, reducing their solubility and transport in water. Additionally, PAHs have low vapour pressure, further limiting their ability to migrate through the environment. Consequently, they are more likely to accumulate and persist in soil.

Furthermore, the predominant TPHs encountered heralded from long-chain hydrocarbons (diesels and residual oils) exhibit low mobility in groundwater and the environment due to their high hydrophobicity and low solubility in water. Their large molecular size and similar strong tendency to adsorb onto soil particles and organic matter significantly limit their transport through subsurface media. Additionally, their viscous nature reduces their ability to disperse, leading to localized contamination rather than widespread distribution. As a result, these hydrocarbons also tend to persist in soil.

Fundamentally, these factors and the development at the site requiring human health remedial measures for the same contaminants, will reduce the risk even further (compared to its present state), enhancing the site, removing the sources and/or significantly inhibiting pathways further.

The considered source of the contaminants is the past usage of the mini-bus service pit and storage of waste fuels/oils, which are no longer in place, and as such levels would decrease over time in keeping with natural attenuation systems.

Therefore, it is considered that there is no significantly elevated risk of significant harm to Controlled Waters pollution from development at this site.

The Environment Agency is however the regulatory body charged with the protection of controlled waters and may be a consultee in the planning process. We recommend that the conclusions of this report are agreed with the relevant Local Authority at the earliest stage, to reduce potential delays to the development.

7.5 RISK TO UNDERGROUND WATER SUPPLY PIPES

Based upon the guidance document from the UK Water Industry Research (UK WIR), 'Contaminated Land Assessment Guidance', February 2014, and the results of the samples tested from the site, it is considered that barrier pipe could be required due to the levels of hydrocarbons within the near surface Made Ground soils encountered in the area of CT3 that extended to a depth of 1.15m bgl.

However elsewhere across the site and in the natural un-impacted Bagshot formation soils at depth based upon the guidance document from the UK Water Industry Research (UK WIR), "Contaminated Land Assessment Guidance" February 2014, and the results of the samples tested from the site, it is considered that conventional PE water pipes are also locally suitable on this site.

This should be confirmed with the local water company as not all authorities use this guidance.

8 WASTE DISPOSAL CLASSIFICATION

8.1 INTRODUCTION

Excavation for foundations or services will produce waste soil and possibly other waste streams. As a waste producer, you have a duty of care under section 34 of the Environmental Protection Act 1990 to ensure, amongst other things that these wastes are: -

-  Correctly stored
-  Correctly classify
-  Handed only to an authorised person
-  Disposed of properly.

To aid with these obligations we have used HazWasteOnline to undertake the Hazard Assessment Screen as part of this investigation, to establish whether the sampled soils should be considered as either hazardous or non-hazardous waste. This classification process is in line with the Environment Agency's guidance WM3 "Guidance on the classification and assessment of waste", 2021.

Additionally, during site demolition and clearance, materials and objects such as the oil drum should be disposed of correctly in line with waste law requirements best practices and guidance.

It is also recommended that further investigation of the impacted area post demolition may also be beneficial to zoning the impacted area.

8.2 RESULTS OF HAZARD ASSESSMENT

The full results of the HazWasteOnline analyses can be seen in the Appendices.

The HazWasteOnline classification summary sheet from this investigation provides a waste classification of non-hazardous waste for all samples tested, excluding two samples of Made Ground from the mini-bus service area where samples were recorded as hazardous.

The two samples were taken from the recent 2025 investigation and were located in Made Ground soils in the area of the oil drum and service pit (CT3) and from within the service pit.

Exceeding levels of both TPH, Ethylbenzene and Xylene were identified in both samples;

-  Made Ground from HA1 at 0.10m depth sourced from the ashy cobbly material recovered from the backfilled service pit.
-  Made Ground from CT3 at 0.40m depth identified from the Made Ground soils located beneath the concrete slab, in the area of the service pit and oil drum.

No visible pieces of asbestos were detected (by the naked eye) in any of the exploratory holes. Therefore, asbestos was not considered further from a waste perspective.

8.2.1 Waste Acceptance Criteria (WAC) Testing Results

To further classify the waste soil for landfill disposal, Waste Acceptance Criteria (WAC) testing has been carried out on the impacted soils taken from CT3 at 0.40m depth, tested for a single-stage inert WAC test for final waste classification, as this was considered to potentially reflect the largest volume and worst case soil conditions (outside of the contained service pit), given the potential hydrocarbon sources identified.

The results show that this Made Ground soil fails the Stable non reactive hazardous waste in a non-hazardous landfill waste criteria, and is just within the upper Hazardous threshold due to levels of Total Organic Carbon at 6%. The laboratory testing results are presented in the Appendices.

Analytical results relevant to the materials being disposed of should be provided to the landfill operators or waste management contractors to confirm whether it meets their license agreements and to confirm tipping costs.

Furthermore, uncontaminated soil can be classified as inert without testing, in accordance with EU Council Decision 2003/33/EC para. 2.1.1. As such, given the testing results, currently the underlying un-impacted natural soils of the Bagshot Formation and London Clay Formation soils from the site can be disposed of at an INERT Landfill site. In addition, the HazWasteOnline results corroborate this.

All wastes removed from the site should be consigned, transported, and disposed of in full accordance with all relevant UK legislation.

8.3 WASTE CLASSIFICATION

From the results of the HazWasteOnline spreadsheets and the WAC testing, currently, the waste soil on this site is classified as follows.

Stata/ Waste Stream	Recommended Classification	Recommended List of Waste Code	Recommended Landfill Tax Rate
Topsoil	Non-Hazardous	17 05 04	Standard Rate
Service Pit backfilled materials	Hazardous	17 05 03	Standard Rate
Impacted - Made Ground from the area of CT3	Hazardous	17 05 03	Standard Rate
Made Ground	Non-Hazardous	17 05 04	Lower Rate
Natural Soil Bagshot Formation & London Clay Naturally occurring soils and stones (subsoil)	Inert	17 05 04	Lower Rate

Under section 63(2) of the Finance Act 1996 it states where a disposal to landfill consists mainly of qualifying material(s), but includes a small amount of standard-rated material, the whole load is taxable at the lower rate. As such, the surrounding Made Ground soils (excluding any Topsoil) are considered to be taxable at the lower rate. The natural soils are also taxable at the lower rate.

Analytical results relevant to the materials being disposed of should be provided to the landfill operators or waste management contractors to confirm whether it meets their license agreements and to confirm tipping costs.

All wastes removed from the site should be consigned, transported, and disposed of in full accordance with all relevant UK legislation.

Hazardous waste streams must be segregated to prevent cross-contamination and ensure safe handling, treatment, and disposal.

8.4 DISCOVERY STRATEGY

During construction, unexpected ground or groundwater conditions may be encountered despite prior investigation.

During construction, ground workers must immediately report any previously undiscovered contamination or unforeseen ground conditions to the Site Manager, who will then notify the developer/client and by extension an appointed consultant (such as Geo-integrity Ltd).

When deemed necessary, the Consultant shall attend the site and inspect the area of contention and provide recommendations for further actions, if any. Where necessary the regulatory authority shall be informed.

Following any additional investigation and/or subsequent laboratory testing the client shall report the results of any proposed remedial measures to the regulatory authority or other appropriate organisation for consensus, prior to implementation of additional remedial measures.

A documented discovery strategy folder should be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious, abnormal, unforeseen or contaminated ground and/or groundwater conditions they may encounter, in keeping with their requirements under H&S and safe working practises.

Depending on the nature, type, and extent of any "discovery," it may be necessary to stop development work in that area until the assessment is complete. This will be evaluated on a case-by-case basis for each "discovery" and in consultation with the client, other technical staff, and regulatory or approval organizations.

As a general guide, where such unexpected conditions are encountered the following approach is required as a minimum:

-  All discoveries are to be reported to the Site Manager immediately and works at that location (which qualify under the above) are to halt until further notice;
-  If any unexpected discoveries are made, the Site Manager must immediately report them to the Client and consult with a consultant, such as Geo-Integrity Ltd. All discoveries must be reported immediately to the Site Manager. Any works being carried out at that location, which fall under the above criteria, should be halted until further notice.

- Following notification of a qualifying discovery from the Site Manager, the relevant parties should be informed and if considered necessary, arrange to meet on site to view the discovery;
- An appointed consultant will visit the site to document the location, extent, and nature of any qualifying discoveries. They will also implement a suitable sampling and analysis plan, taking into consideration the type and nature of the discovery, as well as the known and probable land uses in that particular area of the site.;
- When additional remedial action is necessary, the client should seek regulatory consultation and approval;
- A record will be produced by the appointed consultant and held on site (with copies held by the Consultant, Client and Local Authority/other relevant organisation), detailing the discovery, assessment works undertaken, conclusions, Confirmation should either state no action required or detail remedial action taken and its validation.

Any future works such as the above fall outside the scope of this report, and would necessitate further instruction and fees.

9 RECOMMENDATIONS

Key factors impacting the proposed have been noted below, however, for the full list of findings and recommendations the relevant report sections and/or previous phases of investigation should be viewed in the first instance.

9.1 FOUNDATIONS

Given the issues associated with water ingress of trenches and dewatering and/or should the quoted allowable bearing pressure prove insufficient, or ineffective at greater depths, a piled foundation solution may be adopted. Piles would extend through the Made Ground and likely terminate in the deeper Bagshot Formation and underlying London Clay Formation.

Should a piled foundation solution be utilised, then, a supplementary deep borehole investigation would likely be required by a piling contractor, aiming to undertake sampling and insitu testing and achieve a depth ranging from 10-25m.

9.2 CONTAMINATION

Locally the Made Ground materials backfilled within the mini-bus service pit and the soils underlying the garage area at CT3, in the area of the oil drum encountered to 1.15m bgl recorded some elevated values of TPH and PAHs, and it has been established that this will provide a risk to end users of the site (should a pathway be available) and to construction workers during the groundworks.

The pathways of concern are dermal contact and ingestion of exposed impacted soils.

To break the pollutant linkage, this material needs to be excluded from the end users, and special control measures need to be in place to protect the surrounding residents and construction workers.

A preliminary options appraisal has therefore been undertaken in section 7.2 and recommends either removal of the impacted materials or implementation of external cover systems.

It is also recommended that further investigation of the impacted area post demolition may also be beneficial to zoning the impacted area.

9.2.1 Imported soils – Pond area

The investigation occurred, the week following the central pond being drained and backfilled by Knighton Landscapes Ltd reportedly using clean imported soil, as such access to this area was not possible, as the area was still unstable and waterlogged. The chemical certificates for the imported soils are pending submission from Knighton Landscapes Ltd. Should these not be presented, then

to prove suitability, it is recommended that sampling of this material is undertaken once access is suitable, to confirm these imported soils are suitable for use.

9.3 WASTE CLASSIFICATION

In line with the contaminants identified above, a waste classification of the materials from the area surrounding the mini-bus service pit area and within the backfilled service pit have been classified as Hazardous waste.

Hazardous waste streams must be segregated to prevent cross-contamination and ensure safe handling, treatment, and disposal.

It is also recommended that further investigation of the impacted area post demolition may also be beneficial to zoning the impacted area.

9.4 WATCHING BRIEF

We recommend a watching brief should be undertaken during the construction phase, and if during development any previously undiscovered contamination (including visual or olfactory evidence) is found then site management should be immediately informed and inspection by a suitably qualified person should be undertaken.

10 REFERENCES

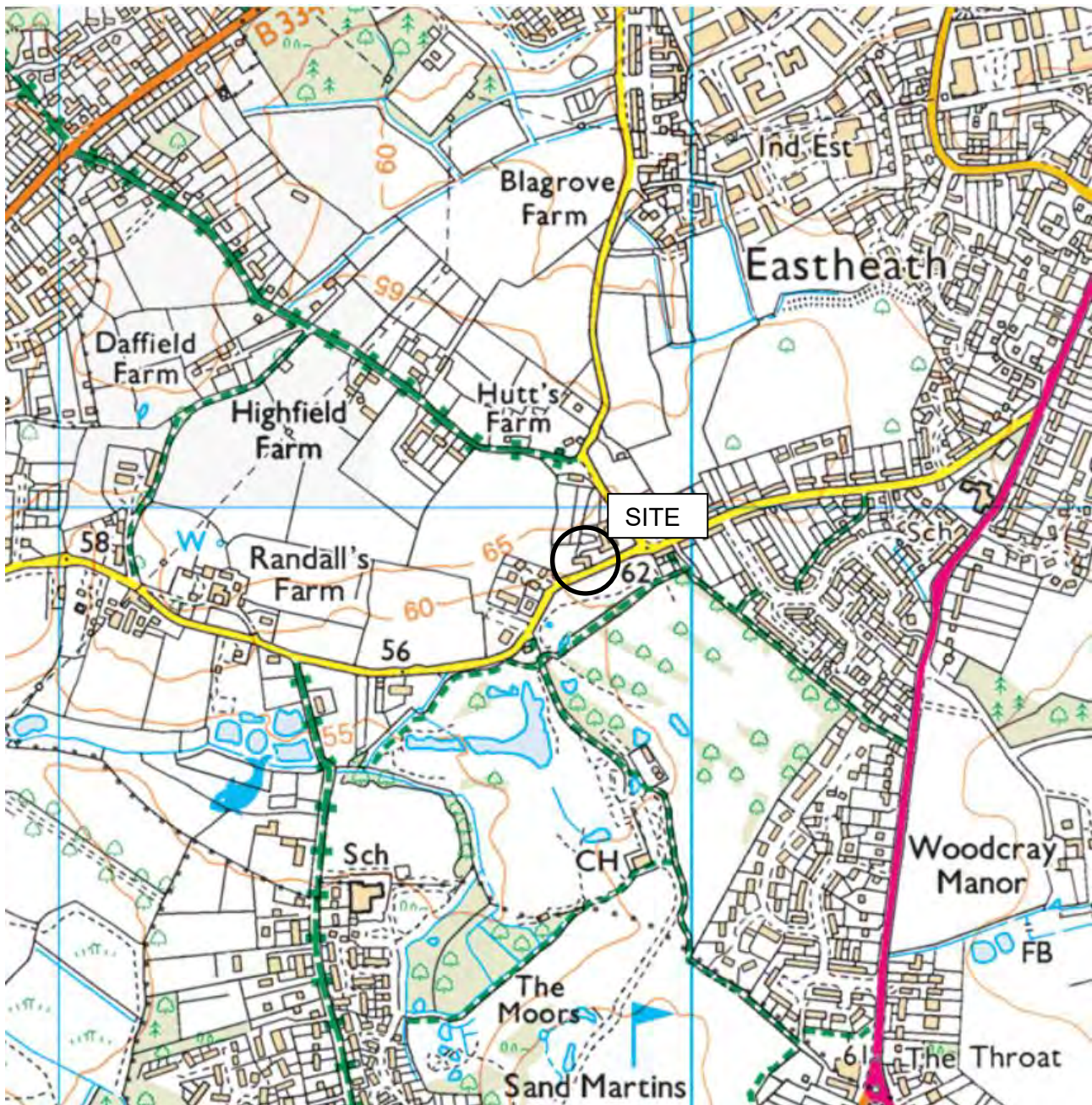
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APPENDIX A

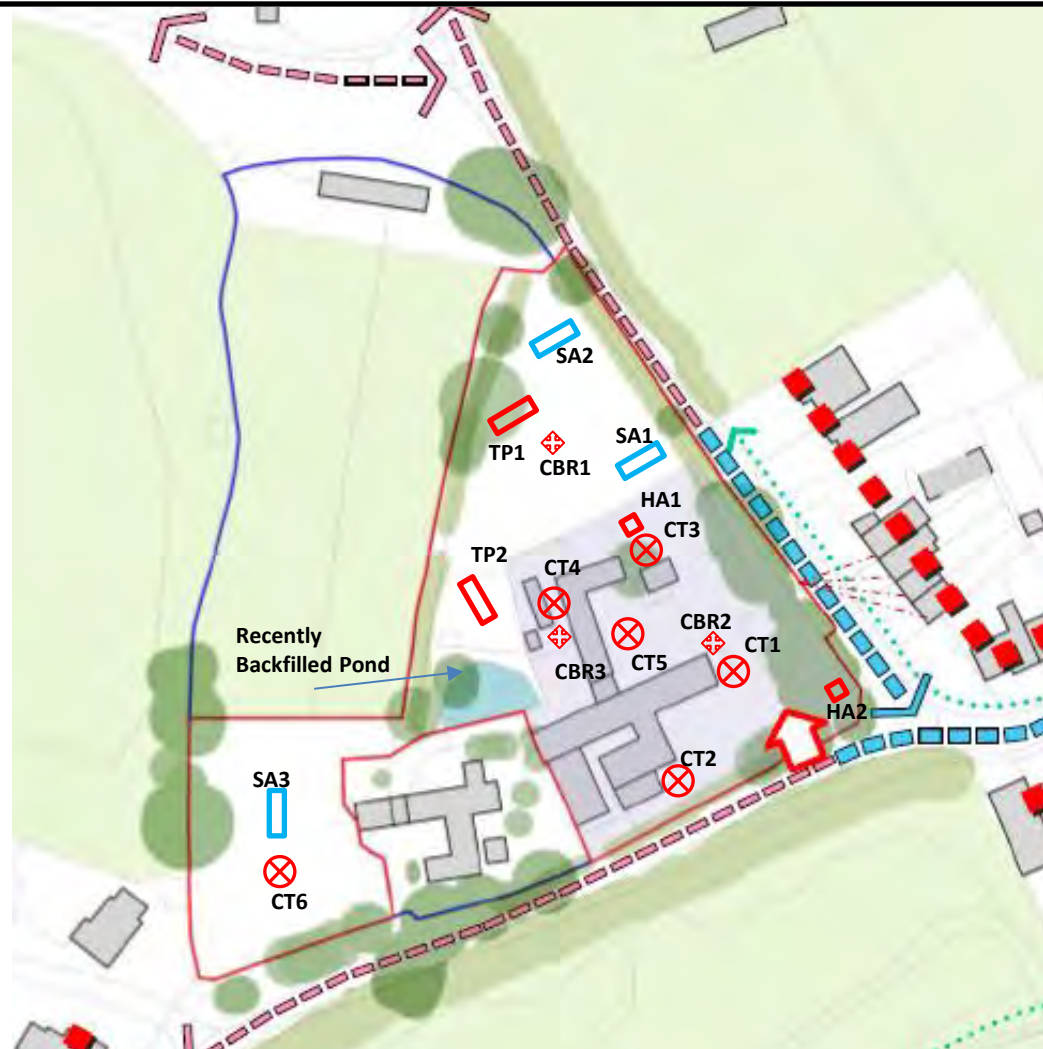


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SITE LOCATION PLAN

Report No:- 25-02-04



Key

-  Trial Pit
-  Continuous Tube Borehole
-  Soakaway Pit
-  CBR Test

Exploratory Hole Location Plan

JOB NO.: -25-02-04

Tel:- 01280 816409
Mob:- 07858 367 125
[www. geo-integrity.co.uk](http://www.geo-integrity.co.uk)

SITE:- Evendons
Business Centre,
Wokingham

CLIENT:- Boutique
Care Homes

4 Church Street
Maids Moreton
MK18 1QE

Drawn
EM

Checked
DL

Scale: Not To Scale, for
indicative purposes only





Key

-  Trial Pit
-  Continuous Tube Borehole
-  Soakaway Pit
-  CBR Test

Exploratory Hole Location Plan

JOB NO.: -25-02-04

Tel:- 01280 816409
Mob:- 07858 367 125
www. geo-integrity.co.uk

SITE:- Evendons Business Centre, Wokingham

CLIENT:- Boutique Care Homes

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Maids Moreton
MK18 1QE

Drawn
EM

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DL

Scale: Not To Scale, for indicative purposes only





Assumed Area of TPH
Impacted Soil
(unverified)

**TPH Contaminated
Sources &
Impacted Soils - Existing**

JOB NO.:-25-02-04

Tel:- 01280 816409
Mob:- 07858 367 125
[www. geo-integrity.co.uk](http://www.geo-integrity.co.uk)

**SITE:- Evendons
Business Centre,
Wokingham**

**CLIENT:- Boutique
Care Homes**

4 Church Street
Maids Moreton
MK18 1QE

**Drawn
EM**

**Checked
DL**

**Scale: Not To Scale, for
indicative purposes only**





Key

-  Trial Pit
-  Continuous Tube Borehole
-  Soakaway Pit
-  CBR Test

TPH Contaminated Sources
&
Impacted Soils - Proposed

JOB NO.: -25-02-04

Tel:- 01280 816409
Mob:- 07858 367 125
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SITE:- Evendons
Business Centre,
Wokingham

CLIENT:- Boutique
Care Homes

4 Church Street
Maids Moreton
MK18 1QE

Drawn
EM

Checked
DL

Scale: Not To Scale, for
indicative purposes only





View from the entrance to Evendons Business Centre looking northwards (CT1)



View from the entrance of Evendons Business Centre looking westwards (CT2)

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



View of the central area of Evendons Business Centre(CT5)



View of the wooded area to the east of Evendons Business Centre (HA2)

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



View of the covered and backfilled vehicle service pit (HA1)



View of the backfilled materials

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



View of the adjacent unlabelled 55 gallon hydrocarbon drum



Equidistant position of borehole CT3 and excavated impacted near surface soils

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



View of the northern paddock area (TP1)



View of the change from the Evendons Business Centre to the paddock (SA1)

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



View of the bonfire area (TP2)



View of the west and rear access of Evendons Business Centre (CT4)

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



View of the recently backfilled pond (inaccessible) and foot access to western site area



View of the proposed SWALE SUDS area (CT6/ SA3)

April 2025

SITE PHOTOGRAPHS

Report No.:- 25-02-04



APPENDIX B



Association of Geotechnical &
Geoenvironmental Specialists

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Site
Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT1

Machine : Window Sampler Method : Drive-in Windowless Sampler	Dimensions 87mm to 2.0m 57mm to 5.0m 77mm to 3.0m 67mm to 4.0m	Ground Level (mOD)	Client Boutique Care Homes	Job Number 25-02-04
	Location (Observed measurements) 479891 E 166952 N	Dates 04/03/2025	Engineer Danny Lusardi	Sheet 1/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	D	0.60	Water strike(1) at 0.80m. 5,5/4,3,2,1			MADE GROUND - Soft dark brown silty sandy gravelly organic CLAY. Gravel is fine to coarse angular of brick		▽1
0.50	D				(0.90)			
0.90	D				0.90			
1.00-1.45	SPT N=10				(0.40)	BAGSHOT FORMATION - Loose dark brown slightly clayey silty very sandy fine to coarse angular to rounded GRAVEL of flint.		
1.30	D				1.30			
1.50	D					BAGSHOT FORMATION - Firm becoming stiff orange brown and grey silty sandy CLAY with sand inclusions		
2.00-2.45	SPT N=9							
2.00	D							
2.50	D				(2.40)			
3.00-3.45	SPT N=21							
3.00	D							
3.50	D	4,4/6,6,7,7						
3.70	D				3.70			
					(0.30)	LONDON CLAY FORMATION - Medium dense grey and orangish brown SILT with clay inclusions		
4.00-4.45	SPT N=26				4.00			
4.00	D					LONDON CLAY FORMATION - Stiff grey very silty sandy CLAY		
4.50	D				(1.00)			
5.00-5.45	SPT N=27				5.00			

Remarks

Scale (approx)
1:25

Logged By
DL

Figure No.
25-02-04.CT1





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Site
Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT1

Machine : Window Sampler
Method : Drive-in Windowless
Sampler

Dimensions
87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)

Client
Boutique Care Homes

Job
Number
25-02-04

Location (Observed measurements)
479891 E 166952 N

Dates
04/03/2025

Engineer
Danny Lusardi

Sheet
2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00	D							

Remarks

Scale
(approx)
1:25

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Figure No.
25-02-04.CT1





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT2

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)

Client

Boutique Care Homes

Job
Number
25-02-04

Location

479882 E 166931 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet
1/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	D				(0.10) 0.10	MADE GROUND - Dark brown and brown sandy fine to coarse angular to rounded GRAVEL hardcore		
0.30	D				(0.20) 0.30	MADE GROUND - Loose orangish brown and brown very gravelly fine SAND with brick cobbles. Gravel is fine to coarse angular brick and concrete		
					(0.50)	MADE GROUND - Soft dark brown sandy gravelly organic CLAY. Gravel is fine to coarse angular to sub-rounded of brick		
0.80	D		Water strike(1) at 0.80m.		0.80	MADE GROUND - Firm becoming soft dark brown sandy gravelly CLAY. Gravel is fine to coarse angular to rounded flint and brick		▽1
1.00-1.45	SPT N=4 D	1.00	1,,2,2		(0.50)			
1.30	D				1.30	BAGSHOT FORMATION - Firm orangish brown and grey silty sandy CLAY with widely spaced thin laminae of fine sand		
1.50	D							
2.00-2.45 2.00	SPT N=9 D		2,2/2,2,2,3		(2.00)			
2.50	D							
3.00-3.45 3.00	SPT N=20 D		3,3/4,5,5,6					
			Water strike(2) at 3.30m.		3.30	BAGSHOT FORMATION - Medium dense orangish brown, brown and grey very silty slightly gravelly fine SAND. Gravel is fine to medium angular of flint		▽2
3.50	D							
4.00-4.45 4.00	SPT N=27 D		4,4/8,7,6,6		(1.30)			
4.60	D				4.60	LONDON CLAY FORMATION - Stiff grey silty sandy CLAY		
					(0.40)			
5.00-5.45	SPT N=24		3,4/5,5,6,8		5.00			

Remarks

Scale
(approx)

1:25

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By

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Figure No.

25-02-04.CT2





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT2

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)**Client**

Boutique Care Homes

Job
Number
25-02-04

Location

479882 E 166931 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet
2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00	D							

Remarks

Scale
(approx)

1:25

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Figure No.

25-02-04.CT2



				www.geo-integrity.co.uk info@geo-integrity.co.uk 01280 816409			Site Evendins Business Centre, Evendon Lane, Wokingham, RG41 4EH		Number CT3							
Machine : Window Sampler Method : Drive-in Windowless Sampler		Dimensions 87mm to 2.0m 57mm to 5.0m 77mm to 3.0m 67mm to 4.0m		Ground Level (mOD)		Client Boutique Care Homes		Job Number 25-02-04								
		Location 479877 E 166978 N		Dates 04/03/2025		Engineer Danny Lusardi		Sheet 1/2								
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water								
0.10	D	1.00	Water strike(1) at 1.00m. /2,2,2,2		(0.10)	CONCRETE										
0.40	D				(0.30)	MADE GROUND - Light brown sandy fine to coarse angular to sub-rounded GRAVEL. With a slight hydrocarbon odour.										
0.60	D				0.40	MADE GROUND - Dark brown sandy fine to coarse angular to sub-rounded GRAVEL. With a hydrocarbon odour.										
					(0.20)											
					0.60	MADE GROUND - Firm becoming soft dark grey sandy gravelly CLAY. Gravel is fine to coarse angular to rounded. With a slight hydrocarbon odour.										
					(0.55)											
1.00-1.45	SPT N=8				1.15	BAGSHOT FORMATION - Firm light orangish brown and grey silty slightly sandy slightly gravelly CLAY. Gravel is fine to medium angular to rounded flint										
1.15	D															
1.50	D				(0.85)											
2.00-2.45	SPT N=10	2.2/2,2,3,3	2,2/2,2,3,3		2.00	BAGSHOT FORMATION - Firm to stiff orangish brown and grey silty sandy CLAY with widely spaced thin laminae of fine sand										
2.00	D															
2.50	D				(1.40)											
3.00-3.45	SPT N=19				3.40	BAGSHOT FORMATION - Medium dense orangish brown, brown and grey very silty slightly gravelly fine SAND. Gravel is fine to medium angular to rounded flint										
3.00	D				(0.60)											
3.40	D															
4.00-4.45	SPT N=27				4.00	LONDON CLAY FORMATION - Stiff grey silty very sandy CLAY										
4.00	D				(1.00)											
4.50	D															
5.00-5.45	SPT N=23				5.00											
Remarks										Scale (approx) 1:25		Logged By DL				
										Figure No. 25-02-04.CT3						
																



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Site
Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT3

Machine : Window Sampler
Method : Drive-in Windowless
Sampler

Dimensions
87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)

Client
Boutique Care Homes

Job
Number
25-02-04

Location
479877 E 166978 N

Dates
04/03/2025

Engineer
Danny Lusardi

Sheet
2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00	D							

Remarks

Scale
(approx)

1:25

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Figure No.
25-02-04.CT3





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT4

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)**Client**

Boutique Care Homes

Job
Number
25-02-04

Location (Observed measurements)

479859 E 166960 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet

1/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	D					MADE GROUND - Soft dark brown sandy gravelly organic CLAY with occasional metal pieces. Gravel is fine to coarse angular brick and glass		
0.50	D				(0.80)			
0.80	D				0.80			
1.00-1.45	SPT N=7	1.80	1,2,2,2		(0.40)	BAGSHOT FORMATION - Firm dark grey and dark brown silty sandy gravelly CLAY. Gravel is fine to coarse angular to rounded of flint		
1.20	D				1.20			
1.50	D					BAGSHOT FORMATION - Firm orange brown and grey silty sandy gravelly CLAY with sand inclusions. Gravel is fine to coarse angular to rounded		
					(1.30)			
2.00-2.45	SPT N=9		1,2,2,2,3					
2.00	D							
2.50	D				2.50	BAGSHOT FORMATION - Orangish brown and grey very clayey very sandy SILT		
					(0.50)			
3.00-3.45	SPT N=21		3,4/4,5,5,7		3.00	BAGSHOT FORMATION - Firm becoming stiff orangish brown and grey silty very sandy CLAY with widely spaced thin laminae of fine sand		
3.00	D				(0.60)			
3.60	D		Water strike(1) at 3.50m.		3.60	BAGSHOT FORMATION - Grey and orangish brown very clayey very silty fine SAND		
					(0.40)			
4.00-4.45	SPT N=25		5,6/6,6,6,7		4.00	LONDON CLAY FORMATION - Stiff grey silty sandy CLAY Poor sample recovery below 4.0m		
4.00	D				(1.00)			
5.00-5.45	SPT N=25		4,4/5,6,7,7		5.00			

Remarks

Scale
(approx)

1:25

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Figure No.

25-02-04.CT4





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Site
Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT4

Machine : Window Sampler
Method : Drive-in Windowless
Sampler

Dimensions
87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)

Client
Boutique Care Homes

Job
Number
25-02-04

Location (Observed measurements)
479859 E 166960 N

Dates
04/03/2025

Engineer
Danny Lusardi

Sheet
2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00	D							

Remarks

Scale
(approx)

1:25

Logged
By

DL

Figure No.
25-02-04.CT4





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT5

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)**Client**

Boutique Care Homes

Job
Number
25-02-04

Location (Observed measurements)

479872 E 166957 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet

1/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	D				(0.10)	MADE GROUND - Medium dense dark brown and brown sandy fine to coarse angular to rounded GRAVEL of flint		
0.35	D				(0.25)	MADE GROUND - Loose orangish brown and brown fine SAND and GRAVEL with brick cobbles. Gravel is fine to coarse angular hardcore		
			Water strike(1) at 0.70m.		(0.35)	MADE GROUND - Firm dark brown sandy gravelly organic CLAY with brick cobbles. Gravel is fine to coarse angular to sub-rounded brick		
0.90	D				(0.55)			
1.00-1.45	SPT N=7	1.20	1,2,2,2		0.90	BAGSHOT FORMATION - Soft to firm orange brown and grey silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to rounded		
					(0.80)			
1.50	D				1.70	BAGSHOT FORMATION - Firm orangish brown and grey silty sandy CLAY with pockets or silty fine sand		
1.70	D							
2.00-2.45	SPT N=6		1,1/2,1,1,2		(1.30)			
2.00	D				3.00	BAGSHOT FORMATION - Medium dense orangish brown, brown and grey clayey silty fine SAND		
2.50	D				(1.00)			
3.00-3.45	SPT N=23		3,4/4,5,6,8		4.00	BAGSHOT FORMATION - Firm to stiff brown and grey silty sandy CLAY		
3.00	D				(0.40)			
3.50	D				4.40	LONDON CLAY FORMATION - Stiff grey silty very sandy CLAY		
			Water strike(2) at 3.80m.		(0.60)			
4.00-4.45	SPT N=27		3,4/5,6,8,8		5.00			
4.00	D							
4.50	D							
5.00-5.45	SPT N=28		4,4/5,7,8,8					

Remarks

Scale
(approx)

1:25

Logged
By

DL

Figure No.

25-02-04.CT5





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT5

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)**Client**

Boutique Care Homes

Job
Number
25-02-04

Location (Observed measurements)

479872 E 166957 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet
2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00	D							

Remarks

Scale
(approx)

1:25

Logged
By

DL

Figure No.

25-02-04.CT5





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT6

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)**Client**

Boutique Care Homes

Job
Number
25-02-04

Location

479799 E 166929 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet
1/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	D				(0.30)	TOPSOIL - Loose dark brown sandy gravelly organic CLAY. Gravel is fine to coarse of flint		
0.30	D				0.30	BAGSHOT FORMATION - Firm brown silty sandy very gravelly CLAY. Gravel is fine to coarse rounded flint		
0.50	D				(0.90)			
1.00-1.45 1.00	SPT N=7 D	2.30	/1,2,2,2		1.20	BAGSHOT FORMATION - Firm orange brown and grey silty sandy gravelly CLAY with occasional bands of sandy gravel. Gravel is fine to medium angular of ferruginous sandstone		
1.20	D				(1.30)			
1.50	D				2.50	BAGSHOT FORMATION - Medium dense becoming dense grey and orangish brown very silty fine SAND		
2.00-2.45 2.00	SPT N=9 D		2,2/2,2,2,3		(1.00)			
2.50	D				3.50	LONDON CLAY FORMATION - Stiff grey and brown silty very sandy CLAY		
3.00-3.45 3.00	SPT N=32 D		5,6/7,8,8,9		(1.50)			
3.50	D		Water strike(1) at 3.30m.		5.00			
4.00-4.45 4.00	SPT N=23 D		4,4/6,5,6,6					
4.50	D							
5.00-5.45	SPT N=25		4,4/5,5,7,8					

Remarks

Scale
(approx)

1:25

Logged
By

DL

Figure No.

25-02-04.CT6





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Number
CT6

Machine : Window Sampler

Method : Drive-in Windowless
Sampler

Dimensions

87mm to 2.0m 57mm to 5.0m
77mm to 3.0m
67mm to 4.0m

Ground Level (mOD)**Client**

Boutique Care Homes

Job
Number
25-02-04

Location

479799 E 166929 N

Dates

04/03/2025

Engineer

Danny Lusardi

Sheet
2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00	D							

Remarks

Scale
(approx)

1:25

Logged
By

DL

Figure No.

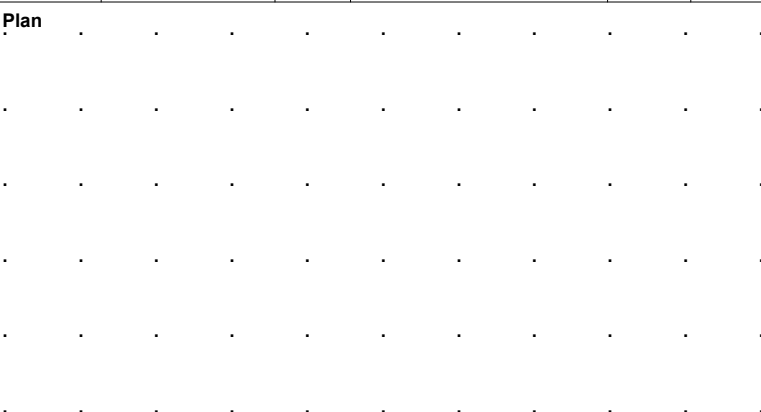
25-02-04.CT6





**Job
Number**
25-02-04

Sheet
1/1

Plan 	Remarks 		
	Scale (approx) 1:20	Logged By DL	Figure No. 25-02-04.HA1



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01280 816409

Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

Trial Pit
Number
HA2

Machine : Hand Dug

Method : Trial Pit

Dimensions

Ground Level (mOD)

Client

Boutique Care Homes

Job
Number
25-02-04

Location (Observed measurements)

479916 E 166947 N

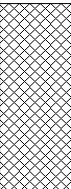
Dates

04/03/2025

Engineer

Danny Lusardi

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20-0.50	D				(0.50) 0.50	MADE GROUND - Soft brown silty sandy gravelly CLAY. Gravel is fine to coarse angular to rounded flint and brick Complete at 0.50m		

Plan

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Remarks

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Scale (approx)

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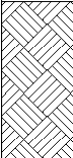
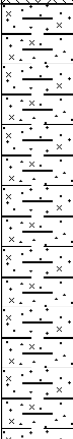
Logged By

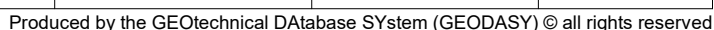
DL

Figure No.

25-02-04.HA2



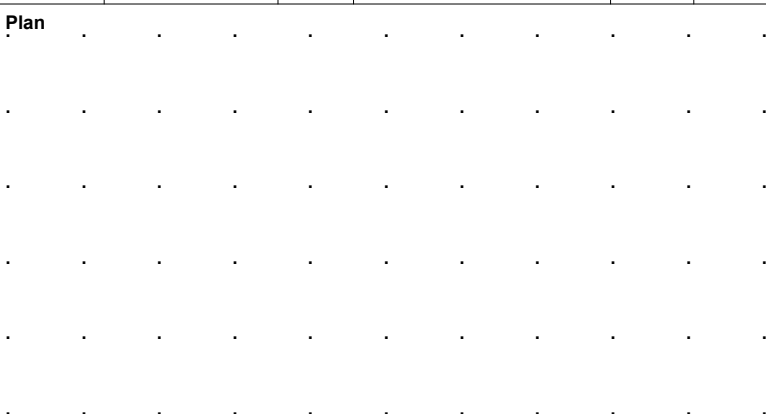
 www.geo-integrity.co.uk info@geo-integrity.co.uk 01280 816409					Site Evendins Business Centre, Evendon Lane, Wokingham, RG41 4EH			Trial Pit Number SA1		
Machine : JCB 3CX Method : Trial Pit		Dimensions 1.60m x 0.40m x 1.62m		Ground Level (mOD)		Client Boutique Care Homes		Job Number 25-02-04		
		Location (Observed measurements) 479877 E 166994 N		Dates 04/03/2025		Engineer Danny Lusardi		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
0.20	D				(0.45)	TOPSOIL - Soft dark brown silty sandy organic CLAY				
0.50-1.00	D				0.45	BAGSHOT FORMATION - Firm becoming stiff light brown and grey silty very sandy CLAY				
1.00-1.50	D				(1.17)					
					1.62	Complete at 1.62m				
Plan 					Remarks 					
					Scale (approx) 1:20		Logged By DL		Figure No. 25-02-04.SA1	





**Job
Number**
25-02-04

Sheet
1/1

Plan 	Remarks 		
	Scale (approx) 1:20	Logged By DL	Figure No. 25-02-04.SA3



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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

**Trial Pit
Number
TP1**

Machine : JCB 3CX

Method : Trial Pit

Dimensions

1.75m x 0.45m x 2.55m

Ground Level (mOD)**Client**

Boutique Care Homes

**Job
Number
25-02-04**

Location (Observed measurements)

479848 E 166995 N

Dates

04/03/2025

Engineer

Danny Lusardi

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	D				(0.35)	TOPSOIL - Soft dark brown silty sandy organic CLAY		
0.50-1.00	D				0.35	BAGSHOT FORMATION - Firm becoming stiff light brown and grey silty very sandy CLAY		
1.00-1.50	D							
1.50-2.00	D				(2.20)			
2.00-2.50	D							
			Water strike(1) at 2.50m.		2.55	Complete at 2.55m		∇1

Plan

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Remarks

Scale (approx)

1:20

Logged By

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Figure No.

25-02-04.TP1





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Site

Evendins Business Centre, Evendon Lane, Wokingham,
RG41 4EH

**Trial Pit
Number
TP2**

Machine : JCB 3CX

Method : Trial Pit

Dimensions**Ground Level (mOD)****Client**

Boutique Care Homes

**Job
Number
25-02-04**

Location (Observed measurements)

479840 E 166967 N

Dates

04/03/2025

Engineer

Danny Lusardi

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00	D					Residual surface ash from historical bonfire		
0.20-0.50	D				(0.70)	TOPSOIL - Soft dark brown silty sandy organic CLAY		
					0.70	BAGSHOT FORMATION - Firm becoming stiff light brown and grey silty very sandy CLAY		
1.00	D				(0.50)			
					1.20	Complete at 1.20m		

Plan

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Remarks



Scale (approx)

1:20

Logged By

DL

Figure No.

25-02-04.TP2

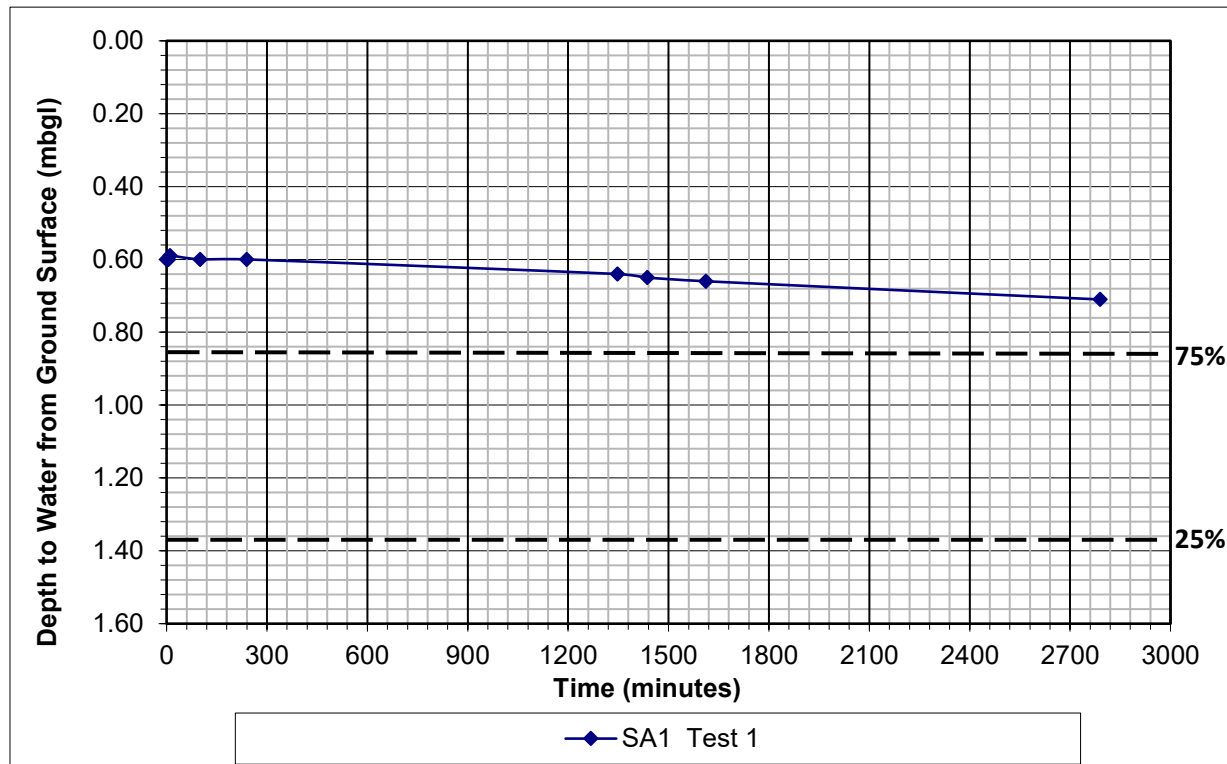
Trial Pit Infiltration Testing to BRE Digest 365

Client:	Boutique Care Homes	Report No:	25-02-04
Site:	Evendons Business Centre	Date Tested:	4-6/03/2025
Dimensions:	0.40m x 1.60m x 1.62m (width x length x depth)	Test Location:	SA1

Test Response Zone Description - : Bagshot Formation

Time	Depth BGL	Time	Depth BGL	Time	Depth BGL
0	0.60	1436	0.65		
2	0.60	1612	0.66		
5	0.60	2790	0.71		
10	0.59				
100	0.60				
239	0.60				
1347	0.64				

Unable to Calculate Soil Infiltration Rate
Comments: Insufficient drop in water levels



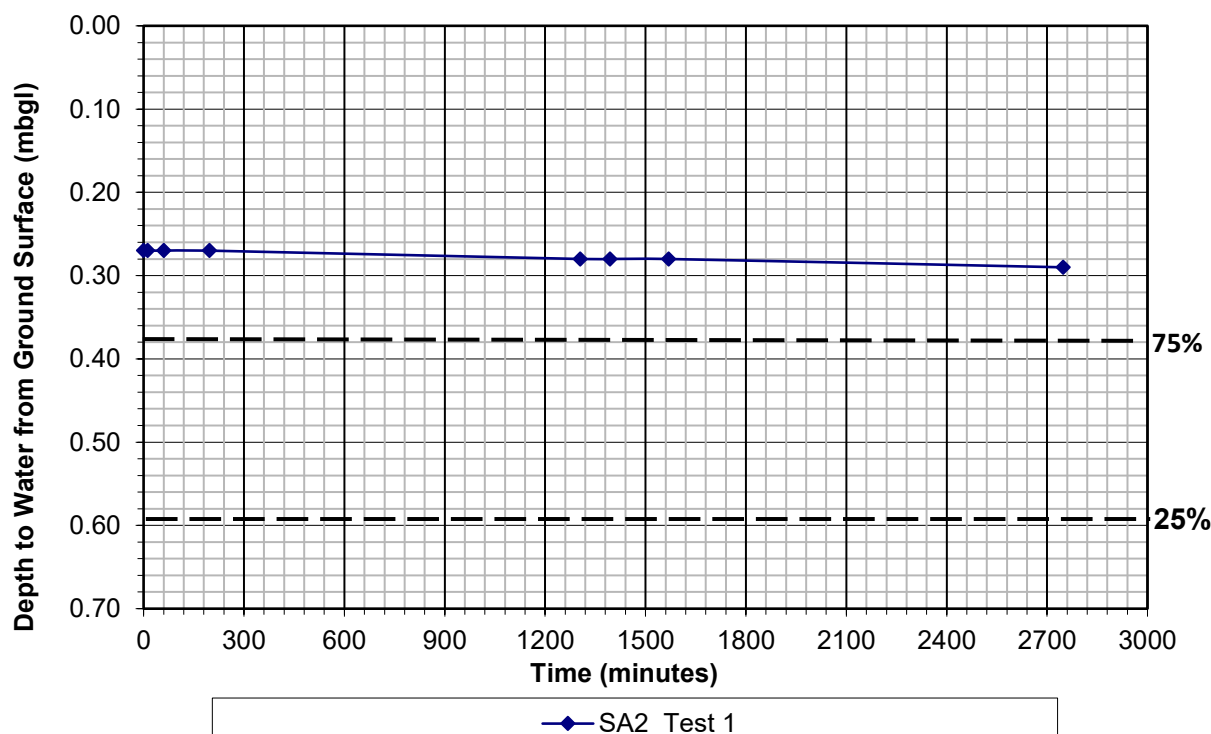
Trial Pit Infiltration Testing to BRE Digest 365

Client:	Boutique Care Homes	Report No:	25-02-04
Site:	Evendons Business Centre	Date Tested:	4-6/03/2025
Dimensions:	0.40m x 1.00m x 0.70m (width x length x depth)	Test Location:	SA2

Test Response Zone Description - : Bagshot Formation

Time	Depth BGL	Time	Depth BGL	Time	Depth BGL
0	0.27	2748	0.29		
12	0.27				
60	0.27				
197	0.27				
1305	0.28				
1394	0.28				
1569	0.28				

Unable to Calculate Soil Infiltration Rate
Comments: Insufficient drop in water levels



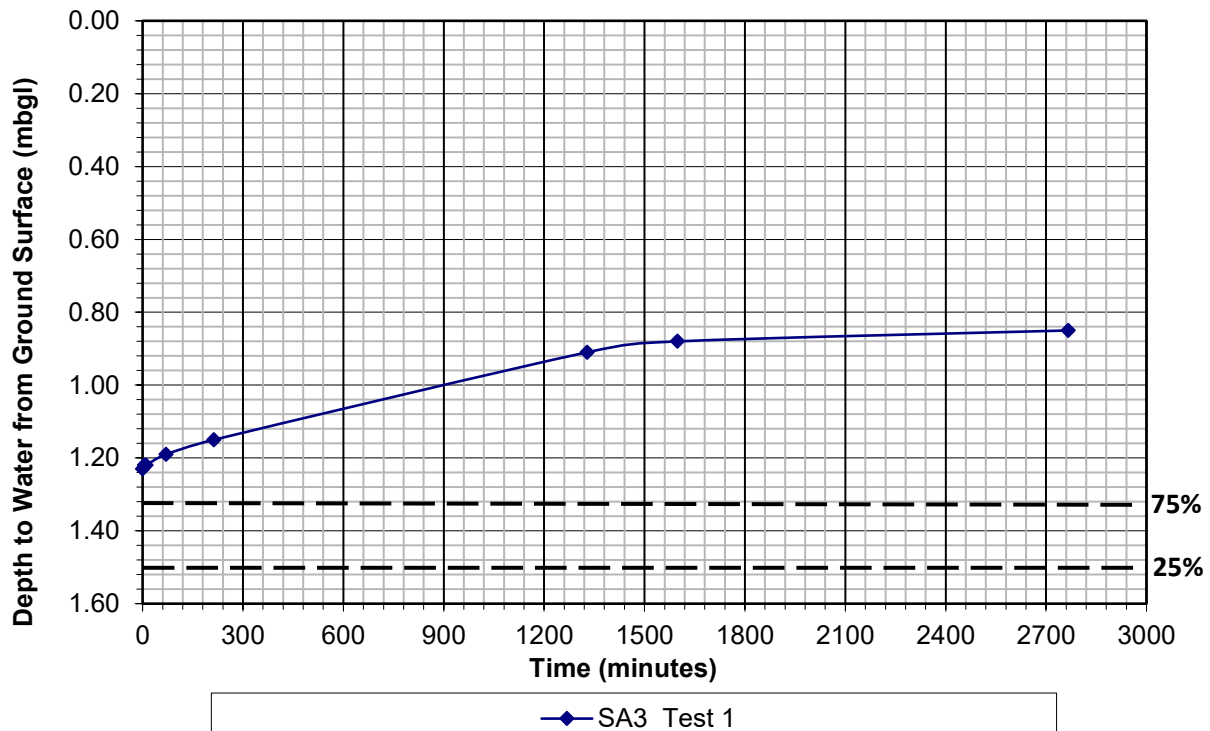
Trial Pit Infiltration Testing to BRE Digest 365

Client:	Boutique Care Homes	Report No:	25-02-04
Site:	Evendons Business Centre	Date Tested:	4-6/03/2025
Dimensions:	0.40m x 1.60m x 1.60m (width x length x depth)	Test Location:	SA3

Test Response Zone Description - : Bagshot Formation

Time	Depth BGL	Time	Depth BGL	Time	Depth BGL
0	1.23	2766	0.85		
5	1.22				
10	1.22				
70	1.19				
213	1.15				
1328	0.91				
1598	0.88				

Unable to Calculate Soil Infiltration Rate
Comments: Rise in water levels



TRL DYNAMIC CONE PENETROMETER RECORD

Job No:- 25-02-04

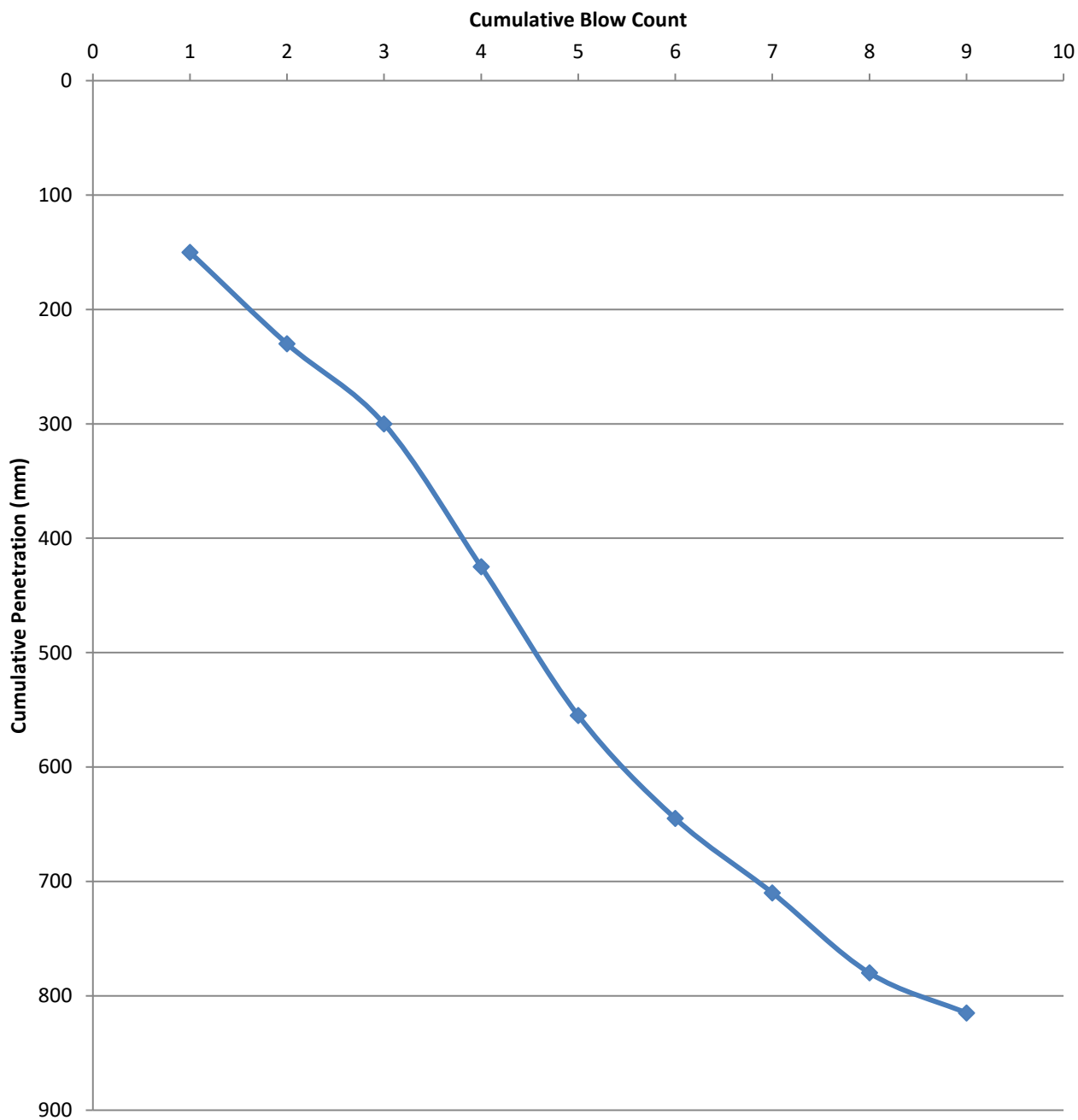
Job Name:- Evendons Business Centre, Wokingham

Equivalent CBR:- 3%

Position:- CBR1

Depth below ground level at start of test:- GL

Cumulative Blows Vs Penetration (mm)



TRL DYNAMIC CONE PENETROMETER RECORD

Job No:- 25-02-04

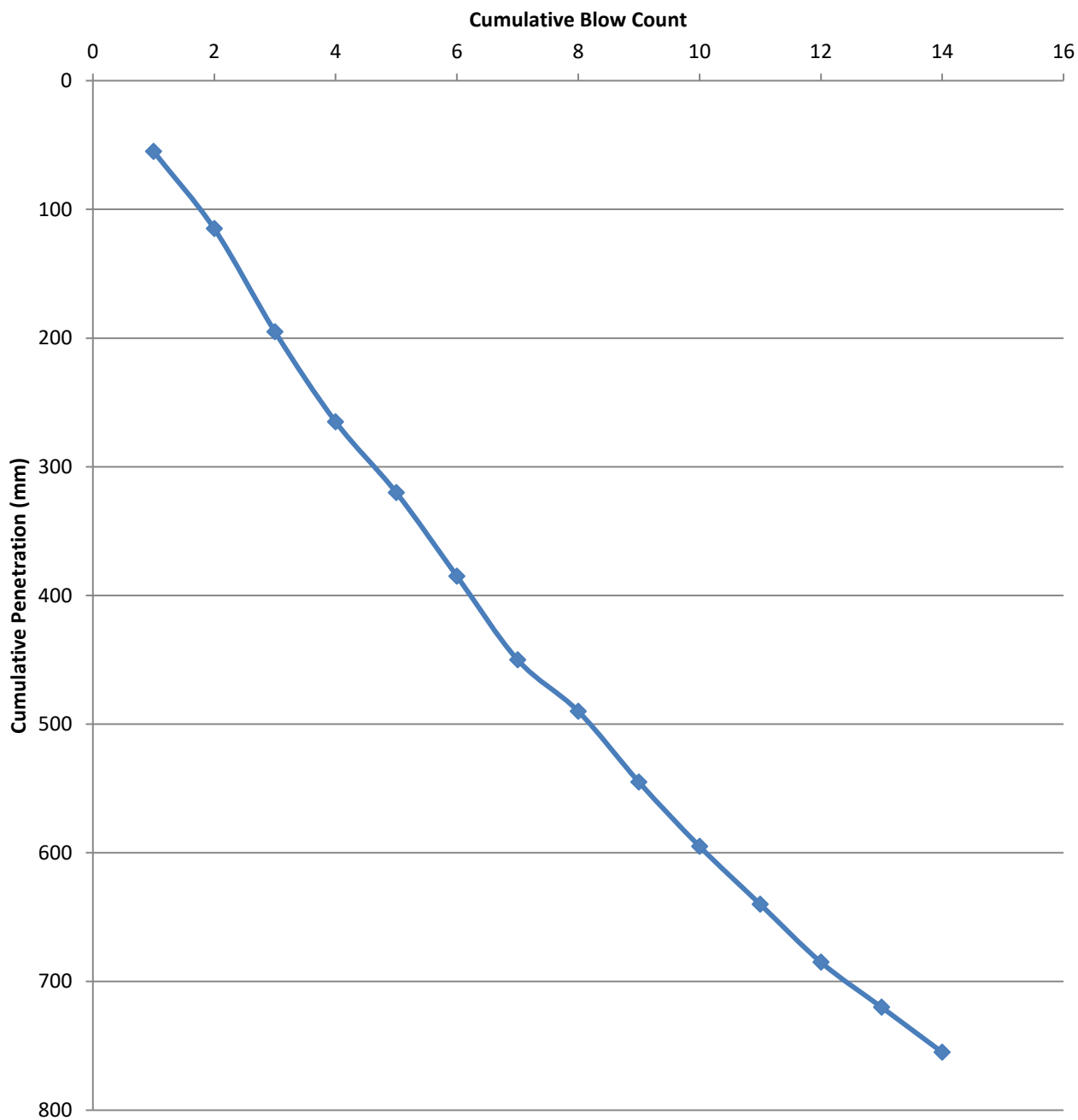
Job Name:- Evendons Business Centre, Wokingham

Equivalent CBR:- 4%

Position:- CBR2

Depth below ground level at start of test:- GL

Cumulative Blows Vs Penetration (mm)





TRL DYNAMIC CONE PENETROMETER RECORD

Job No:- 25-02-04

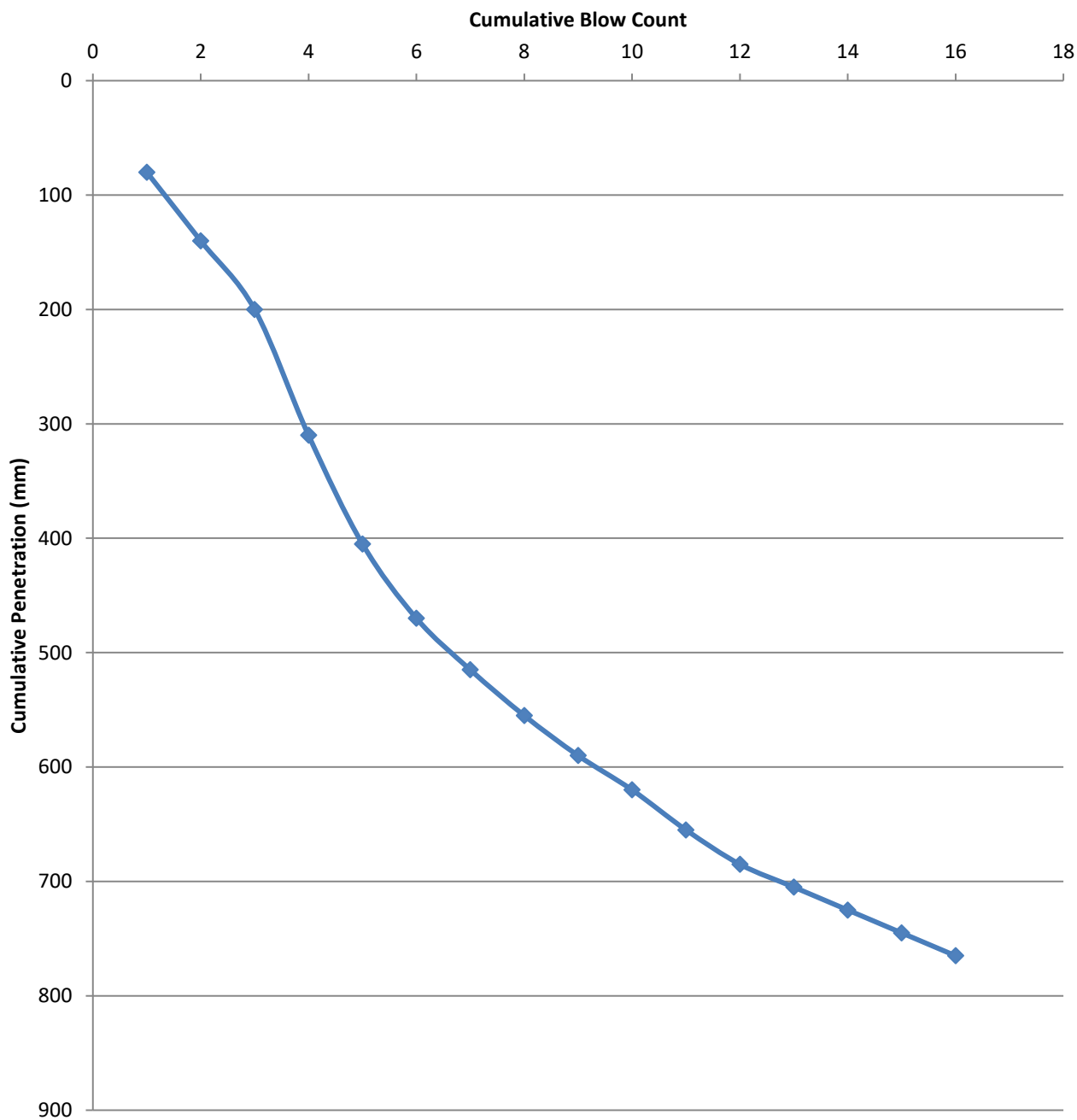
Job Name:- Evendons Business Centre, Wokingham

Equivalent CBR:- 5%

Position:- CBR3

Depth below ground level at start of test:- GL

Cumulative Blows Vs Penetration (mm)





Date	Job No.	BH	CH4(%)	LEL(%)	CO2(%)	O2(%)	H2S (ppm)	CO (ppm)	Hex(%)	PIDCf()	PkFlw (lh)	AP (mbar)	GW (m bgl)	Pmp (s)	Bal(%)
17/03/25	25-02-04	CT3	0	0	0	19.5	0	0	0.001	1	0	1023	0.66	60	80.5
17/03/25	25-02-04	CT6	0	0	0.3	18.6	0	0	0	1	0	1023	0.76	60	81.1
20/03/25	25-02-04	CT3	0	0	0.4	19.8	0	0	0	1	0	1013	0.7	80	79.8
20/03/25	25-02-04	CT6	0	0	0.4	19.1	0	0	0	1	0	1012	0.75	65	80.5
27/03/25	25-02-04	CT3	0	0	2.9	18.5	0	0	0.003	1	0	1016	0.72	60	78.6
27/03/25	25-02-04	CT6	0	0	0.7	18.2	0	0	0	1	0	1015	0.76	62	81.1
01/04/25	25-02-04	CT3	0	0	0.5	19.6	0	0	0	1	0	1020	0.8	62	79.9
01/04/25	25-02-04	CT6	0	0	0.7	18.9	0	0	0	1	0	1019	0.8	70	80.4