GeoDyne

Geotechnical &
Environmental
Consultants

Jubilee Hall
Stadon Road
Anstey

Site Investigation
For
Anstey Parish Council

GeoDyne Limited
Clarendon House, Clarendon Park,
Clumber Avenue, Nottingham NG5 1AH
Tel: 0115 962 0001 email: info@geodyne.co.uk

Contents

Appendices

Project No: 42116		**Date: 29th June 2022**	
Issue/revision	Prepared by	Checked By	Approved By
	Amy Newman BSc (Hons) MRes MIEnvSc **Principal**	Jason Hollands BSc (Hons) MSc MIEnvSc CGeol FGS **Director**	Jason Hollands BSc (Hons) MSc MIEnvSc CGeol FGS **Director**
Comments			

1.0 INTRODUCTION

1.1 Introduction

GeoDyne Limited have been appointed by Dragon Structural Ltd on behalf of the client Anstey Parish Council to undertake a site investigation on land located at Jubilee Hall, Stadon Road, Anstey, Leicester. A site location plan (Figure No. 42116/01) is included as Appendix I.

1.2 Project Understanding and Objectives

We understand that it is proposed to extend the existing Jubilee Hall on both the far east and western extents with single storey extensions. The western extension is proposed to comprise a community hall, changing rooms and facilities, whilst the smaller eastern extension is proposed to comprise a garage.

An intrusive investigation is required to confirm ground conditions. A proposed layout plan is included as Appendix II.

The objective of the site works was primarily to undertake exploratory holes in the vicinity of the proposed new building extensions to collect soil samples for initial geotechnical soil testing. The Client confirmed to GeoDyne that no exploratory holes were required through the existing Astroturf area immediately adjacent to the western end of the existing hall.

1.3 Scope of Works

Exploratory Investigation works comprised:

- A subcontracted underground utility avoidance scan.
- A series of window sample boreholes at the site.
- Geotechnical laboratory soil analysis.

Phase I Desk Study enquiries or contamination testing were not required by the Client, and these have not been included within this document.

1.4 Limitations

The conclusions and recommendations made in this report are limited to those that can be made based on the findings of the investigation. Where comments are made based on information obtained from third parties, GeoDyne Limited assumes that all third party information is true and correct. No independent action has been undertaken to validate the findings of third parties, unless specifically stated.

This report has been prepared in accordance with our understanding of current good practice. However, changes to good practice, guidance or legislation may necessitate revision of this report after the date of issue.

GeoDyne Limited has prepared this report for the sole use and reliance of the Client, Anstey Parish Council and Dragon Structural Ltd, in accordance with our Standard Conditions and Limitations (included in Appendix X).

This report may not be used or relied upon by any unauthorised third party without the explicit written agreement of GeoDyne Limited.

1.5 Confidentiality

The risk assessment herein remains the intellectual property and trade secret of GeoDyne Limited. The information contained within this report must not be disclosed or divulged to any commercial Consultant or other third party without the prior written agreement of GeoDyne Limited.

2.0 SITE DESCRIPTION AND GEOLOGY

2.1 Site Description

The site comprised an irregularly shaped parcel of land located to the south of Stadon Road in Anstey, Leicestershire. The site may be located centred around approximate Ordnance Survey National Grid Reference 454790E 308751N.

Access into the site was gained off Stadon Road via a gated entrance in the sites northeast corner. The site had a gentle slope from west to east which was more pronounced in the western extent of the site.

In the central part of the site was a long rectangular single storey brick building known as 'Jubilee Hall', the Parish Council offices / community building.

A Macadam surfaced car park was located in the northern part of the site which was bordered by grass verges and mature trees. In the far eastern part of the site was an area of grassed landscaping with various trees, some of which were noted to be at an angle. The southern part of the site comprised the edge of the wider playing fields which extend to the south. The western part of the site comprised a square area of Astroturf surfacing along the edge of Jubilee Hall and grassed landscaping beyond.

Numerous manhole covers were observed around the site including within the paving slab path which ran around the edge of the building and also in the northwest part of the site. A manhole cover was observed in the eastern part of the site which, when lifted as part of the services clearance works, was noted to comprise a deep chamber and a possible deep drain / culvert which was not shown on any of the supplied plans and was unable to be properly traced with the equipment on site at the time of the works.

The land to the immediate north of the site comprised a War Memorial, Stadon Road and residential properties beyond. To the immediate east was Paper Mill Close (with a small, unusual brick wall feature along the road edge) with residential properties beyond. To the immediate south was a large playing field laid to grass with mature trees around the edge which sloped upwards to the south. To the immediate west of the site was grassed landscaping which sloped up towards the west, a children's playground and further sports courts with residential properties beyond. The site is set within a mainly residential environ with some industrial / commercial premises to the southwest along Hollow Road.

An annotated site plan (Figure No. 42116/02) is presented in Appendix III. Plans showing views of the site (Figure Nos 42116/03 and 42116/06) are presented in Appendix IV.

2.2 Geology

2.2.1 Geological References

The following geological publications were referred to:

- British Geological Survey Series Map 156 (Leicester) Solid and Drift Edition, scale 1:50,000 (2007).
- BGS Geology of Britain Interactive Map Viewer and Lexicon of Named Rock Units.
- Coal Authority online interactive map viewer.

A Phase I Desk Study was not required by the Client, however, the following research was undertaken to aid logging of exploratory hole arisings and/or for Health and Safety reasons.

2.2.2 Geology

The southwest, southern and northeast parts of the site are mapped as being underlain by Superficial Deposits comprising Colluvium – Clay, Silt, Sand and Gravel of Holocene age. The BGS Online lexicon states that Colluvium *'refers to slope-foot deposits formed as the result of runoff and creep. Synonym: hillwash'.*

The northwest and northern parts of the site are mapped as being underlain by Superficial Deposits comprising the Thrussington Member – Diamicton of Anglian age. The BGS Online lexicon describes the Thrussington Member – Diamicton as typically comprising *'Diamicton, brown to reddish-brown with stones and matrix derived primarily from Upper Carboniferous and Triassic rocks; subordinate sand, gravel and stoneless clay and silt. Red pebbly clay and silty clay with rock fragments'.*

The underlying bedrock geology is mapped as the Edwalton Member – Mudstone of Carnian Age. The BGS Online lexicon describes the Edwalton Member as typically comprising *'Mudstone and siltstone, red-brown and greenish grey, with beds of indurated, variably dolomitic siltstone and very fine-grained sandstone common in the lower half; finely disseminated gypsum common in upper half'.*

2.2.3 Faults

The BGS maps do not indicate the presence of faults beneath the site, or in the general vicinity of the site.

2.2.4 BGS Boreholes

BGS borehole records for a borehole located to the southeast of the site indicates that the area may be underlain by soft, firm and stiff gravelly Clay, however, one exploratory hole revealed clay underlain by Sand at shallow depth, water ingress occurred which rose to 0.10m begl i.e. appeared to be confined. Therefore, whilst the site may be underlain by gravelly Clay, it should be anticipated that water bearing Sand pockets may be present.

2.2.5 Man Made Deposits

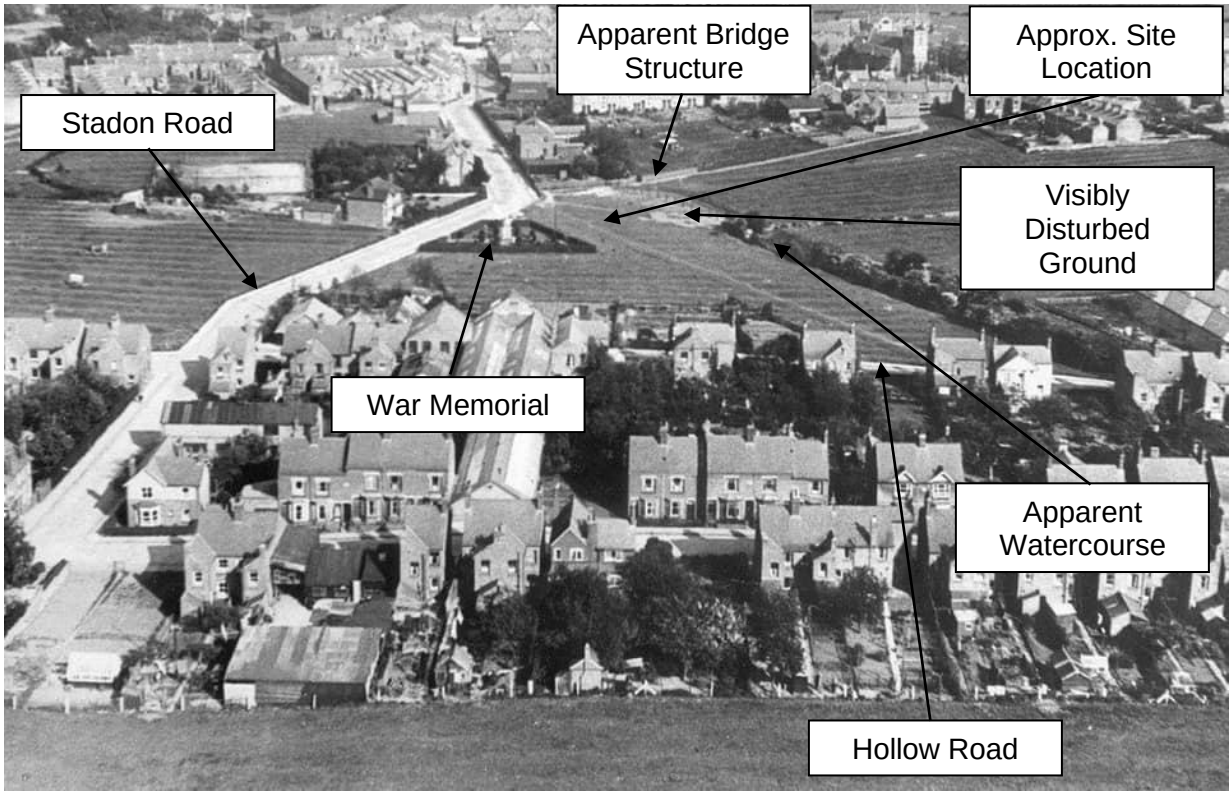
There are no areas of Made Ground/Worked Ground indicated on the site, or in the immediate vicinity of the site, on the viewed geological maps.

Based on the publicly available Groundsure Enviro Data Viewer, the closest landfill site appears to be over 1.4km east of the site.

2.3 Anecdotal Information

During the site investigation works, anecdotal information about the history of the site was gathered from a Council employee at the site. It appears that historically there may have been an open watercourse which ran west to east possibly just beyond the southern boundary of the site and under a bridge structure on the lane (which is now known as Paper Mill Close). An old aerial photograph (date unknown) was provided to us and shown in Figure 1 below and has been annotated to indicate various features:

Figure 1: Historical Aerial Photograph of the Site Looking East (Date Unknown)



As mentioned previously, during the services clearance works a manhole cover was observed in the eastern part of the site which when lifted was noted to comprise a deep chamber and a possible deep drain / culvert which was not shown on any of the supplied plans and was unable to be properly traced with the equipment on site at the time. It is considered possible that the manhole cover identified could be associated with the possible culverting / piping of this historical watercourse. It is therefore recommended that further works are undertaken by the Client to ascertain more detailed information regarding services at the site and including this features, exact route, dimensions and depths etc (such as by a CCTV survey for example) and what easements may be associated with it.

3.0 GROUND INVESTIGATION

3.1 Introduction

Sub Surface Scan

Prior to the commencement of our intrusive works at the site a sub-contracted sub-surface utility scan was undertaken to attempt to avoid buried services during the intrusive works. Based on the results of the service scan the exploratory holes were positioned to provide site coverage, whilst attempting to avoid any buried services.

Window Sample Boreholes

Investigation works were undertaken on the 23rd May 2022 to investigate and confirm the shallow ground conditions beneath the site in the location of the proposed building extensions and to obtain visually representative soil samples for subsequent soils testing. A total of 5No. window sample boreholes (designated WS1 to WS5) were advanced to depths ranging between 3.00m to 4.00m below existing ground levels (begl), terminating in the superficial geology.

Standard Penetration Testing (SPT) was undertaken at 1.00m nominal intervals in all boreholes in order to obtain quantitative strength data.

Exploratory Hole Locations/Logs

The approximate locations of the exploratory holes are shown on the plan (Figure No. 42116/07) presented in Appendix V. The exploratory hole logs are presented in Appendix VI of this report.

3.2 Ground Conditions

Topsoil / Made Ground Topsoil

Topsoil was encountered in WS1 to a depth of 0.15m below existing ground level (begl). The topsoil was typically described as comprising a brown slightly clayey sandy gravelly Topsoil with rootlets and rare fine fragments of glass towards the surface (WS1).

Made Ground Topsoil was encountered in WS2 to WS5 to depths ranging between 0.20 and 0.45m begl. This material was typically described as comprising a dark brown sandy very gravelly topsoil with rootlets and fragments of brick, concrete, glass and coal.

Made Ground

Underlying the Made Ground Topsoil in WS2 to WS5 inclusive, further Made Ground materials were encountered extending to depths of between 2.80m begl in WS2 and 4.00m in WS5 (base unproven).

In WS4 and WS5 the materials immediately beneath the Made Ground topsoil were typically described as comprising brown and grey gravels of brick and concrete in a sandy clay matrix or grey brown slightly ashy very gravelly sand with gravels of concrete, clinker, macadam, ceramic, brick and coal (WS4 and WS5 were both located on the far eastern end of the existing Jubilee Hall).

At depth in WS4 and WS5, and beneath the Made Ground topsoil in WS2 and WS3, Made Ground materials comprising either firm to stiff brown with various mottling sandy silty Clays or sandy gravelly Clays, with varying proportions of gravel were encountered. These soils appeared to comprise Made Ground / reworked materials.

In WS5 a Made Ground firm brown mottled orange and black sandy clay and a dark grey organic sandy clay with organic smearing was encountered to a depth of 2.75m begl, which may possibly represent a ditch bottom sediment and this was further underlain by a Made Ground firm to stiff brown mottled black sandy gravelly clay which was noted to have a fragment of wood (possible fragment of an object rather than a root) and possible brick at 3.70m depth. This material was encountered to the base of the borehole at 4.00m begl where the base of the Made Ground is considered to be unproven.

Natural Strata - Colluvium

Underlying the topsoil in WS1 or the Made Ground in WS2, WS3 and WS4, materials considered likely to represent the mapped Colluvium deposits (undisturbed) were encountered. These materials were typically described as comprising firm to stiff sandy Clays, medium dense to dense Sands, or firm silty Clays with varying proportions of gravel.

The base of the superficial deposits was not penetrated. Undisturbed natural strata was not considered to have been encountered in WS5.

Edwalton Member

Strata considered to represent the solid bedrock of the Edwalton Member was not encountered in any of the exploratory holes advanced as part of this investigation.

3.3 Discussion on Ground Conditions

It is considered possible that the presence of Made Ground materials encountered to depths of between 2.80m (WS2) and 4.00m (WS5) may be related to the historical presence of an open watercourse that appears to have been located to the immediate south of the investigation area as discussed in Section 2.3 above. The materials could have been disturbed during any earthworks undertaken around the watercourse including the laying of an apparent culvert / pipe as evidenced by the deep manhole chamber in the eastern part of the site.

The exact route and depth of the possible culverted watercourse is currently unknown, and it is recommended that this is determined prior to any development works including details on the required easement.

WS1 was located furthest away from the assumed culvert and may explain why this exploratory hole appeared to only comprise natural apparently undisturbed materials.

3.4 Water

Slight water ingress was revealed in WS3 and WS5 at depths of 3.85m and 3.70m respectively. All other boreholes remained dry for the short time they were left open.

3.5 Excavation Stability

The borehole sidewalls were noted to be generally stable during the short time they were open.

3.6 Plates

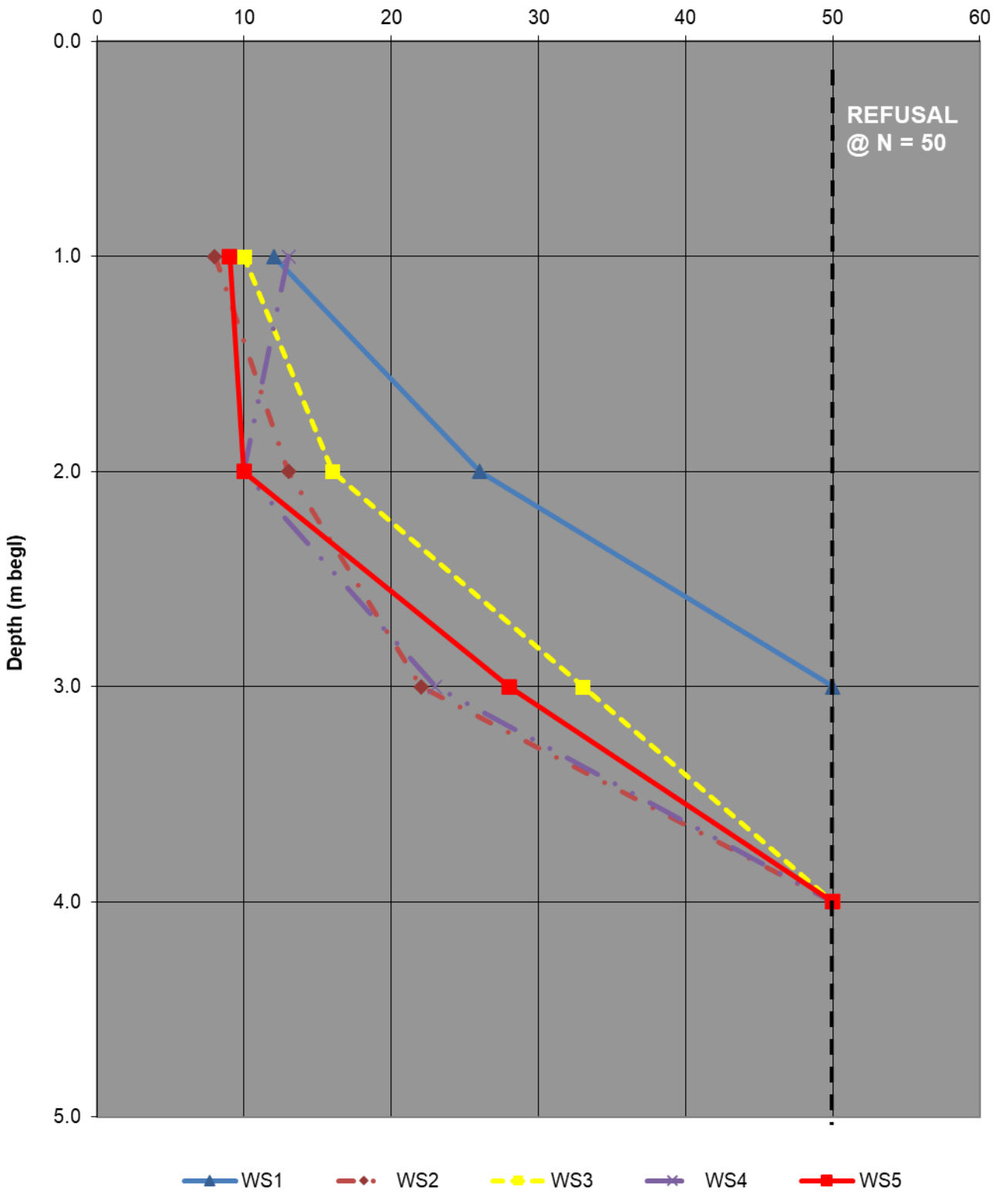
A photographic record of the exploratory investigation was obtained during the intrusive works, with photographs of the borehole arisings provided on plates included in Appendix VII.

3.7 Standard Penetration Test (SPT) Data

In order to establish a strength/depth profile of the soils beneath the site, in-situ Standard Penetration Testing (SPT) was undertaken at one-metre nominal centres in all exploratory boreholes.

An SPT Vs Depth Chart of the data obtained from the boreholes advanced at the site is shown on the chart on the following page. The SPT results are also included on the borehole logs presented in Appendix VI.

Chart 42116/01
Jubilee Hall, Anstey
SPT N Values Vs Depth (m begl)



3.8 Falling Head Testing

As part of our works preliminary falling head permeability testing was carried out within two completed boreholes (WS1 and WS2), the results of which are provided in Table 1 below. Copies of the infiltration rate calculation sheets are included in Appendix IX.

TABLE 1 – FALLING HEAD PERMEABILITY TESTING RESULTS				
Borehole Reference	**Test Number**	**Testing Time (mins)**	**Drop in Water Level (cm)**	**Derived Infiltration Rate (m/s)**
WS1	1	150	2.78	$8.56x10^{-6}$
WS2	1	141	0.26	$5.24x10^{-7}$

It is noted that the ground conditions between WS1 and WS2 differed in that WS1 comprised natural mainly granular materials below the topsoil, whilst WS2 comprised Made Ground sandy silty gravelly clays. WS1 was completed until the borehole was nearly emptied of water (depth of borehole was 3.00m), WS2 was stopped at 0.26m depth due to silting up of the base of the borehole and time constraints (testing was undertaken over two hours).

The variance in the test results is anticipated to be a result of the cohesive reworked materials in WS2 and the granular natural strata in WS1, indicating likely variability in permeability of the soils across the site.

Window sample boreholes test only a very small area of the site and results are therefore indicative only.

If further assurance is required, full soakaway testing to BRE365 should be considered in trial pits which would test a larger area of the ground and potentially provide more robust results for design purposes.

4.0 LABORATORY TESTING

4.1 Introduction

As part of our works a suite of geotechnical laboratory soils testing has been undertaken, which comprised the following:

- 4No. Plasticity Index tests.
- 5No. Water Soluble Sulphate tests.
- 5No. pH tests.

All laboratory soil test results are included in Appendix VIII.

4.2 Geotechnical Soil Test Results

Water Soluble Sulphate/pH

Water soluble sulphate testing was undertaken on 4No. samples of Made Ground (from WS2, WS3, WS4 and WS5) and 1No. sample of Natural Sand (WS1). The samples revealed concentrations between <0.01g/l and 0.13g/l. The pH values of the soils tested ranged between 7.73 and 8.81.

Adopting the mean of the highest two sulphate test results (0.105) and the lowest measured pH value (7.73), in accordance with the Building Research Establishment publication Special Digest 1 '*Concrete in Aggressive Ground*' (2005) the Natural Strata fall into Design Sulphate Class DS-1 and an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1.

This classification has been made based on the assumption of a brownfield location and the presence of potentially mobile groundwater conditions beneath the site.

Plasticity Index (PI) Testing

4No. Plasticity Index tests has been undertaken on a selected sample of the near surface cohesive Natural Strata / Reworked Strata obtained during the site works.

In accordance with NHBC standards Chapter 4.2 *'Building Near Trees'* and BRE Digest 240 '*Low-rise buildings on shrinkable clay soils: Part 1*' (1993) the reported PI values may be modified based on the portion of the sample passing the 425μm sieve.

The results of the PI analyses are summarised in Table 2.

TABLE 2 – SUMMARY OF PLASTICITY INDEX (PI) DATA						
Sample Ref. & Depth (m begl)	**Strata**	**Moisture Content (%)**	**Reported PI Value (%)**	**Portion Passing 425μm Sieve (%)**	**Modified PI Value (%)**	**Volume Change Potential**
WS1 @ 0.50-0.90m	Natural sandy Clay	18	19	100	19	Low
WS3 @ 1.00m	Made Ground sandy clay	19	22	100	22	Medium
WS4 @ 1.60m	Made Ground silty sandy clay	19	20	100	20	Medium
WS5 @ 1.90m	Made Ground sandy clay	23	29	100	29	Medium

In accordance with BRE Guidance, Table 2 reveals that the cohesive soils analysed may be regarded as being a Medium volume change potential. We would recommend that soils with Medium volume change potential are adopted during foundation design at this stage.

5.0 CONCLUSIONS & RECOMMENDATIONS

5.1 Geotechnical Information

5.1.1 Ground Conditions

Topsoil was encountered in WS1 to a depth of 0.15m below existing ground level (begl). Made Ground Topsoil was encountered in WS2 to WS5 to depths ranging between 0.20 and 0.45m begl.

Underlying the Made Ground Topsoil in WS2 to WS5 inclusive, further Made Ground materials were encountered extending to depths of between 2.80m begl in WS2 and 4.00m in WS5 (base unproven).

In WS4 and WS5 the Made Ground materials immediately beneath the Made Ground topsoil contained varying proportions of anthropogenic inclusions including brick, concrete, ash, clinker, macadam, ceramic and coal. At depth in WS4 and WS5, and beneath the Made Ground topsoil in WS2 and WS3, the Made Ground materials comprised either firm to stiff brown with various mottling sandy silty Clay or sandy gravelly Clay, with varying proportions of gravel.

In WS5 a Made Ground firm brown mottled orange and black sandy clay and a dark grey organic sandy clay with organic smearing was encountered to a depth of 2.75m begl, which may possibly represent a ditch bottom sediment and this was further underlain by a Made Ground firm to stiff brown mottled black sandy gravelly clay which was noted to have a fragment of wood (possible fragment of an object rather than a root) and possible brick at 3.70m depth. This material was encountered to the base of the borehole at 4.00m begl where the base of the Made Ground is considered to be unproven.

Natural Strata considered to represent undisturbed Colluvium was encountered beneath the topsoil in WS1 or beneath the Made Ground in WS2, WS3 and WS4. These materials were typically described as comprising firm to stiff sandy Clays, medium dense to dense Sands, or firm silty Clays with varying proportions of gravel. The base of the superficial deposits was not penetrated. Undisturbed natural strata were not considered to have been encountered in WS5.

It is considered possible that the presence of the Made Ground materials encountered to depths of between 2.80m (WS2) and 4.00m (WS5) may be related to the historical presence of an open watercourse that appears to have been located to the immediate south of the investigation area. The materials could have been disturbed during any earthworks undertaken around the watercourse including the laying of an apparent culvert / pipe as evidenced by the deep manhole chamber in the eastern part of the site.

The base of the superficial deposits was not penetrated and therefore strata considered to represent the solid bedrock of the Edwalton Member was not encountered in any of the exploratory holes advanced as part of this investigation.

5.1.2 Water

Slight water ingress was revealed in WS3 and WS5 at depths of 3.85m and 3.70m respectively. All other boreholes remained dry for the short time they were left open.

It is considered that shallow excavations are unlikely to require significant dewatering. However, water levels may vary due to seasonal or other effects and water may be

encountered in deeper excavations. Excavations within shallow cohesive soils may be susceptible to standing water following periods of wet weather.

5.1.3 Excavations / Stability

The borehole sidewalls were noted to be generally stable during the short time they were open.

We would note that the assessment of ground stability in boreholes is not always fully representative of the stability of larger excavations and therefore the contractor should assess the stability of the ground and the need for support upon commencement of site works.

Soils may be subject to deterioration and softening if excavations are left open and exposed to wet weather. Any softened soils should be removed from excavations prior to the pouring of concrete.

Seasonal variations in groundwater levels should be considered as the water levels are likely to be higher in winter, which may affect stability.

5.1.4 Building Near Trees

Foundations should be designed in accordance with BRE Digest 240 '*Low-rise Buildings on Shrinkable Clay Soils: Part 1*' (1993) and NHBC Standard Chapter 4.2 where building near existing, proposed or recently removed trees adopting soils of a medium volume change potential (as revealed by laboratory testing).

There are some trees located close to the proposed far eastern building extension, some of which are understood to require removal as part of the works.

5.1.5 Foundations

It is assumed that the proposed finished floor level of the new extensions will accord with the existing building.

The ground conditions encountered suggest the presence of Made Ground across the majority of the site extending to depths in the region of 2.80m begl to in excess of 4.00m begl. The presence of Made Ground was not anticipated in advance of our works and could potentially be associated with earthworks to culvert the stream that appears to have historically been present in the site's southern extent.

Inspection of services beneath manhole covers suggest the presence of an unrecorded deep service, possibly a culverted watercourse beneath the southern part of the site.

It is possible that the Made Ground may be suitable for lightly loaded raft foundations to be adopted at the site. However, taking account of the uncertainty associated with the ground conditions, we would recommend that additional works should be undertaken to further inform foundation designs. These works should include:

I. A full Phase I Desk Study to allow a more detailed understanding of the site's history and environmental setting.
II. Detailed service location and route tracing including the unmapped deep drain / culvert.
III. Supplementary ground investigation possibly including trial pits and / or deep cable percussion boreholes.

5.1.6 Floor Slabs Design

The floor slab design will be informed by the final foundation solution.

It is noted that the existing building is likely to be constructed with a suspected floor slab as evidenced by the presence of air bricks located around the Jubilee Hall building.

5.1.7 Buried Concrete/Sulphate Classification

In accordance with Special Digest 1:2005 the Made Ground and Natural soils fall into Design Sulfate Class DS-1 and an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1. An appropriate concrete mix should be adopted in accordance with BRE Special Digest 1 for all buried concrete in contact with Made Ground materials.

5.1.8 Drainage Design

Initial falling head testing has been undertaken at the site as discussed above. The use of soakaways to dispose of surface water from the proposed development may be possible in selected areas of the site (such as around WS1). Should soakaways be proposed at the site then appropriate infiltration testing to BRE365 may be required.

5.2 General Considerations

5.2.1 Possible Culverted Watercourse

As mentioned previously, during the services clearance works a manhole cover was observed in the eastern part of the site which when lifted was noted to comprise a deep chamber and a possible deep drain / culvert which was not shown on any of the supplied plans and was unable to be properly traced with the equipment on site at the time. It is considered possible that the manhole cover identified could be associated with the possible culverting / piping of this historical watercourse. It is therefore recommended that further works are undertaken by the Client to ascertain more detailed information on this feature including its exact route, dimensions and depths etc (such as by a CCTV survey for example) and what easements may be associated with it.

5.2.2 Contamination and Ground Gas Assessment

The objective of the foregoing works was primarily to undertake exploratory holes in the vicinity of the proposed new building extensions to collect soil samples for initial geotechnical soil testing. Phase I Desk Study enquiries, contamination testing or ground gas assessment works were not part of the requested scope of works.

The ground conditions encountered suggest the presence of Made Ground across the majority of the site extending to depths in the region of 2.80m begl to in excess of 4.00m begl. The presence of Made Ground was not anticipated in advance of our works and could potentially be associated with earthworks to culvert the stream that appears to have historically been present in the site's southern extent.

In view of the above and based on the findings of the site investigation, consideration should be given to undertaking a nominal scope of contamination tests during the recommended further works for foundation design and to the undertaking of ground gas monitoring and assessment, unless the Client opts for the installation of ground gas protection measures within the new building extensions in lieu of the ground gas monitoring and assessment works.

5.2.3 Off-site Disposal

Should off-site disposal be required, Waste Acceptance Criteria (WAC) testing may be required to confirm disposal costs.

5.2.4 Unforeseen Circumstances

Should any areas of potentially contaminated soil, or anomalous features be encountered during site construction works we would recommend consultation with GeoDyne to provide further advice.

Any potentially contaminated soils should be left in-situ and subjected to further assessment, to potentially include further chemical testing and risk assessment.

The following procedure should be adhered to if any areas of previously unidentified suspected contamination are encountered during the development of the site:

i. Suspected contaminated material will remain in-situ.
ii. GeoDyne to be notified and will inform the Local Authority Environmental Health Department and warranty provider (if appropriate).
iii. GeoDyne will undertake a visual assessment of the possible contamination, followed by appropriate sampling/testing (as necessary).
iv. If necessary, an appropriate strategy to remove/remediate the contamination will be submitted to the Local Authority and warranty provider.

5.2.5 Construction Workers

It is recommended that construction personnel involved with direct contact with the soils at the site use appropriate PPE / RPE equipment together with hygiene facilities in accordance with general health and safety guidelines.

The chosen Contractor should undertake the necessary Risk Assessments and Method Statements (RAMS) to determine the most appropriate protection required for safe working practices at the site.

A copy of this report should be included in the site health and safety file, and site workers should be made fully aware of the sites setting.

5.2.6 Utilities

Chemical analysis of the soils at the site has not been undertaken as part of these works. We would recommend that liaison is undertaken by the Client with the appropriate utility companies (including water supply), to determine their recommendations relating to appropriate supply pipes.

5.2.7 Licenses, Permits, Registrations and Approvals

The Contractor/Developer is responsible for, and must ensure that, all necessary licenses, permits, plans, registrations and approvals are in place prior to commencing with the construction works at the site.

These may include any Materials Management Plans (MMPs), Site Waste Management Plans (SWMPs) and/or Environmental Permits/Exemptions as necessary to enable the completion of the proposed works.

Any MMP for the site will require a Qualified Persons Declaration (QPD) and subsequent verification in due course.

5.3 Further Works

Based on the findings of the investigation to date, it is recommended that the following further works are undertaken at the site:

- A full Phase I Desk Study to allow a more detailed understanding of the site's history and environmental setting.
- Detailed service location and route tracing including the unmapped deep drain / culvert.
- Supplementary ground investigation possibly including trial pits and / or deep cable percussion boreholes to include nominal contamination testing and ground gas monitoring and assessment (unless gas protection measures are included in new building extensions in lieu of monitoring).

Derby Office
Chartwell House, 9 Brunel Parkway
Derby DE24 8HR
Tel: 01332 290798
email: info@geodyne.co.uk
Web: www.geodyne.co.uk

Nottingham Office
Clarendon House, Clarendon Business Park,
Clumber Avenue, Nottingham NG5 1AH
Tel: 0115 962 0001
email: info@geodyne.co.uk
Web: www.geodyne.co.uk

APPENDIX I

Site Location Plan
(Figure No. 42116/01)

Project No.	42116	Drawn By	ACH
Client	Anstey Parish Council	Checked By	AN
		Approved By	JPH
Project	Jubilee Hall, Stadon Road, Anstey	Scale	NTS
		Date Drawn	16/05/2022
Title	Site Location Plan	Revision	
		Figure No.	42116/01

GeoDyne
Nottingham 0115 962 0001
Derby 01332 290 798
info@geodyne.co.uk
www.geodyne.co.uk

APPENDIX II

Proposed Layout Plan

Site layout legend:

- Block paving
- Tarmac retained
- Tarmac removed
- New tarmac
- 450x450 riven faced paving slabs
- Areas laid to grass
- Low level landscape planting

- Proposed site boundary
- Area in clients ownership

Red line site area: 3028 m²
0.302 ha
0.748 acre

- Proposed tree planting
- Existing tree planting (root protection in red, refer to SPTCUK's drawings)
- Removed trees
- 1.8 CBF - 1.8m close boarded timber fence
- Existing bollard retained
- Existing bollard removed
- New bollard

NOTES:
This drawing is to be read in conjunction with all relevant drawings and specifications.
Do not scale from this drawing. Use figured dimensions only. All levels and dimensions to be checked on site. All level and dimensional discrepancies are to be bought to the immediate attention of HSSP Architects ltd.
Reproduction of this drawing is prohibited, for alteration and/or deviation from this design without prior knowledge/consent of HSSP Architects ltd.
Copyright reserved. This drawing may only be used for the client and location specified in the title block. It may not be copied or disclosed to any other third party without prior written consent from HSSP Architects ltd.
Prior to any works commencing on site, the engineer is to be contacted regarding the current status, revision or regulatory approval of this drawing.
All work to be to the entire satisfaction of the NHBC or Local Authority not withstanding anything shown or implied on this drawing. All materials and workmanship to be in accordance with the current British Standard or the equivalent of the appropriate British Standard Code of Practice. All relevant dimensions and levels to be ascertained or checked and verified on site before specific areas of work are commenced.
This drawing is to be read in conjunction with clients specification/employers requirements and structural engineers design.

N

War Memorial

Stadon Road

new 1.2m wide tarmac footpath to connect to existing

new tarmac

existing hedge trimmed back and retained

existing hedge trimmed back and retained

existing tree retained

existing trees removed

existing ground to be re-graded max 1:3

landscaping

existing bollards removed

24 number car parking spaces including 2 number disabled spaces

existing white lining to be stripped off and new applied

existing tree retained

existing landscaping removed, replaced with new tarmac

landscaping

new retaining wall

existing ground to be re-graded max 1:3

existing group of trees retained

existing ground to be re-graded max 1:3

existing bollards removed if required

existing grass retained

existing bollards retained

new bollards

existing bollards retained

existing trees removed

existing bollards removed

existing tree retained

CS2 69.297

CS1 68.661

MH 69.4

LP

GAS

68. 13

1772

1669

2772

2687

4431

existing pitch
Pitch three
5-a-side ages 6-8

existing pitch
Pitch two
5-a-side ages 6-8

existing pitch
Pitch one
7-a-side ages 9 -10

1:200

T4 211215 SG Updates following internal conversation
- revised plan

T3 211108 SG Updates following internal conversation
- retaining wall and re-grading of existing landscaping

T2 210507 SG Updates following internal review dated 210507:
- additional information added relating to tarmac and bollards

T1 210504 SG
- issued for internal review and comment

Revision Notes.

Drawing Status.

TENDER

hssp architects

Pera Business Park,Nottingham Road
Melton Mowbray, LE13 0PB

Telephone: 01664 563 288 Fax: 01664 563 360
E-Mail: info@hsparchitects.co.uk Web: www.hsparchitects.co.uk

Project.
Proposed Extensions and Alterations to Jubilee Hall
Stadon Road, Anstey
For Anstey Parish Council

Title.
Proposed Site Plan

Scale.	Drawn.	Checked.	Date.
1:200	SG	NC	May '21

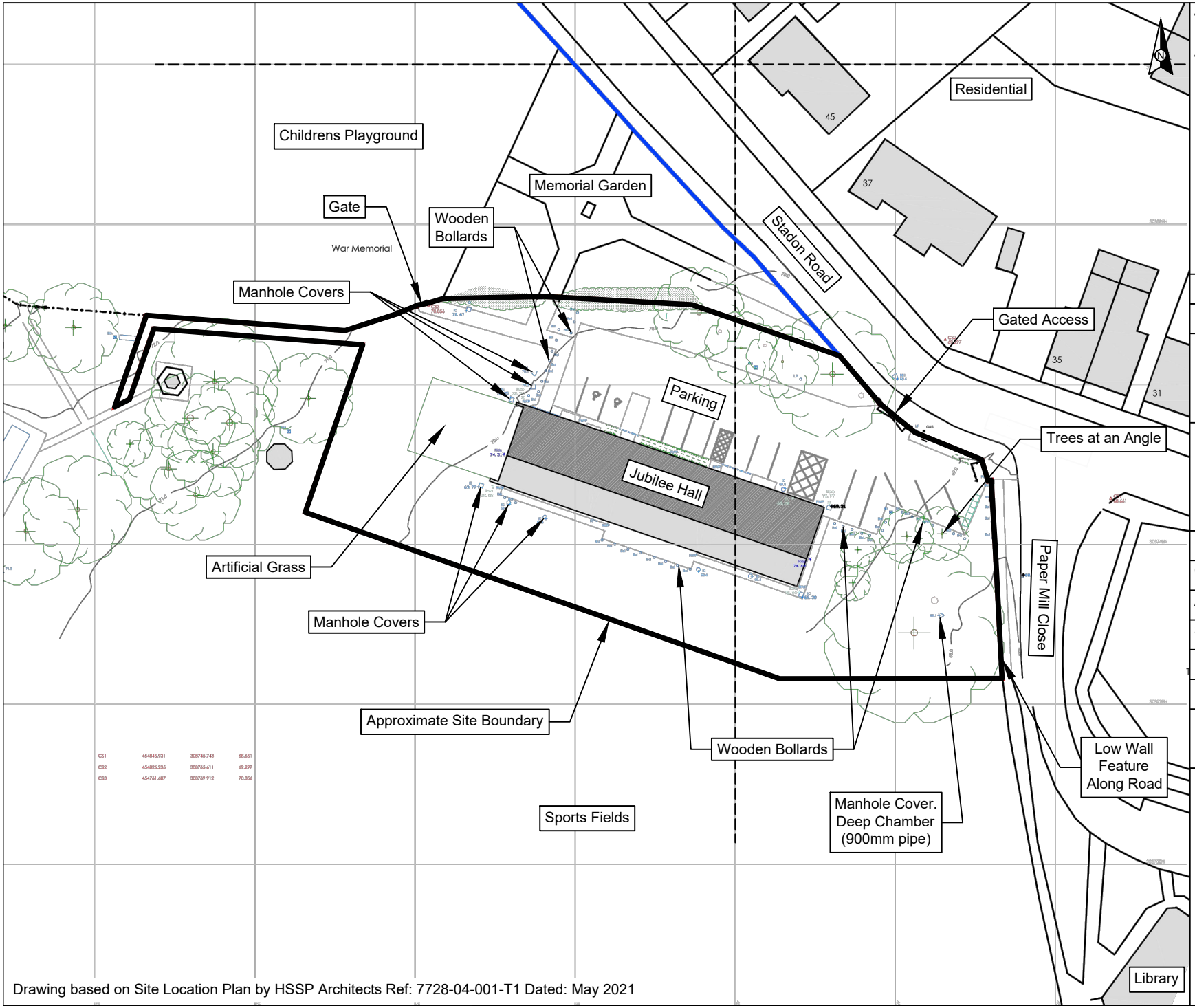
Drawing No. 7728-04-003

Revision. T4

HSSP A1

APPENDIX III

Annotated Plan
(Figure No. 42116/02)



Drawing based on Site Location Plan by HSSP Architects Ref: 7728-04-001-T1 Dated: May 2021

Project No.	42116
Client	Anstey Parish Council
Project	Jubilee Hall, Stadon Road, Anstey
Title	Annotated Site Plan
Drawn By	ACH
Checked By	AN
Approved By	JPH
Scale	NTS
Date Drawn	16/05/2022
Revision	
Figure No.	42116/02

GeoDyne

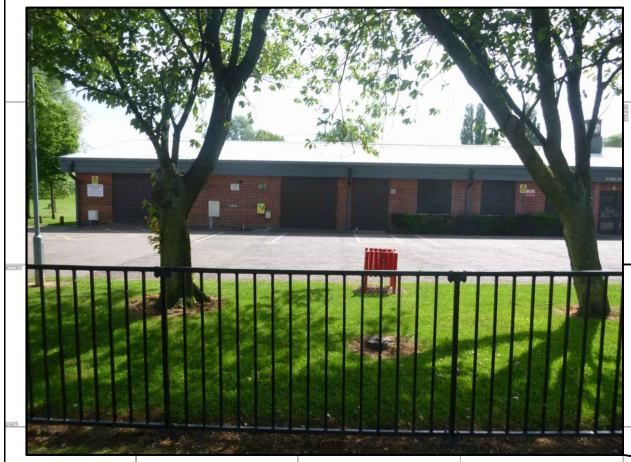
Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

GeoDyne

APPENDIX IV

General Site Views
(Figure Nos 42116/03 and 42116/06)



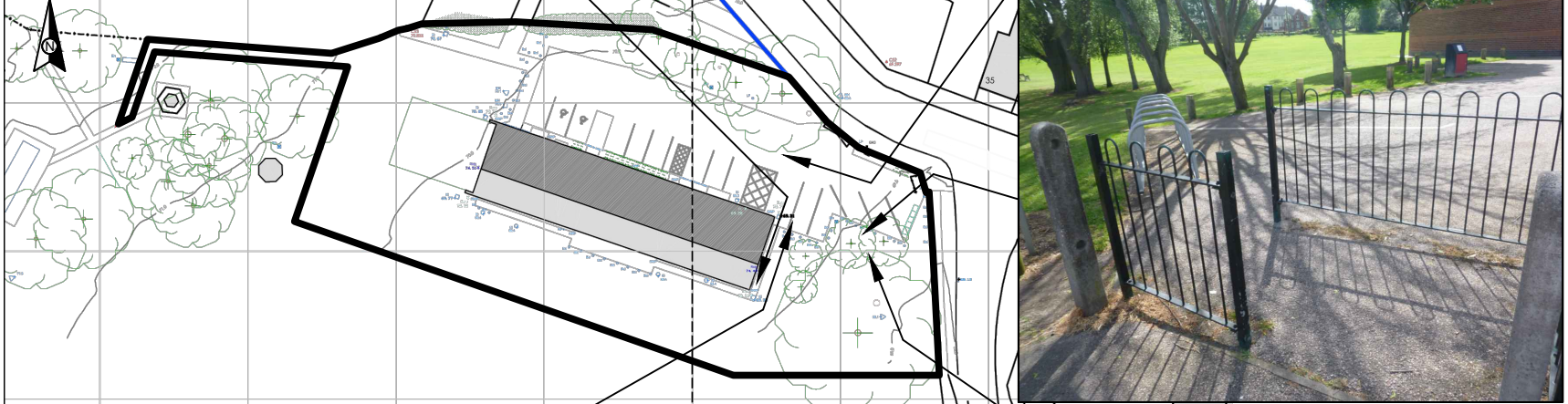
Drawing based on Site Location Plan by HSSP Architects Ref: 7728-04-001-T1 Dated: May 2021

Project No.	42116
Client	Anstey Parish Council
Project	Jubilee Hall, Stadon Road, Anstey
Title	Site Plan and General Views of Site
Drawn By	ACH
Checked By	AN
Approved By	JPH
Scale	NTS
Date Drawn	16/05/2022
Revision	
Figure No.	42116/03

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk



Drawing based on Site Location Plan by HSSP Architects Ref: 7728-04-001-T1 Dated: May 2021

Project No.	42116
Client	Anstey Parish Council
Project	Jubilee Hall, Stadon Road, Anstey
Title	Site Plan and General Views of Site
Drawn By	ACH
Checked By	AN
Approved By	JPH
Scale	NTS
Date Drawn	16/05/2022
Revision	
Figure No.	42116/04

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

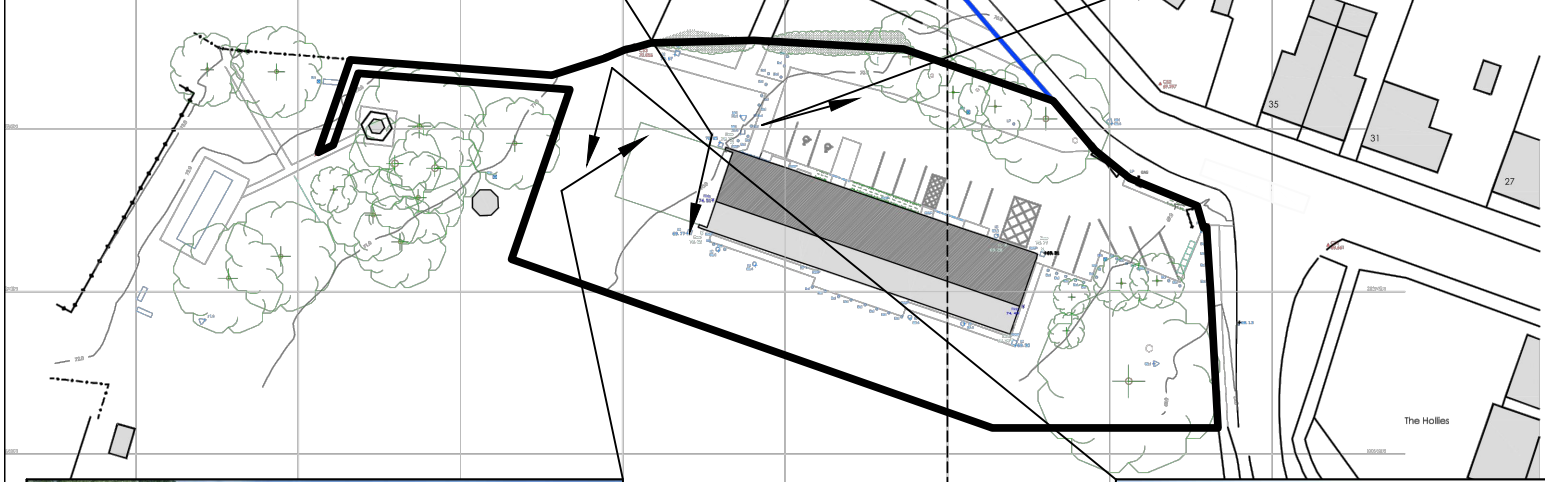
Drawing based on Site Location Plan by HSSP Architects Ref: 7728-04-001-T1 Dated: May 2021

Project No.	42116
Client	Anstey Parish Council
Project	Jubilee Hall, Stadon Road, Anstey
Title	Site Plan and General Views of Site
Drawn By	ACH
Checked By	AN
Approved By	JPH
Scale	NTS
Date Drawn	16/05/2022
Revision	
Figure No.	42116/05

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk



Drawing based on Site Location Plan by HSSP Architects Ref: 7728-04-001-T1 Dated: May 2021

Project No.	42116
Client	Anstey Parish Council
Project	Jubilee Hall, Stadon Road, Anstey
Title	Site Plan and General Views of Site
Drawn By	ACH
Checked By	AN
Approved By	JPH
Scale	NTS
Date Drawn	16/05/2022
Revision	
Figure No.	42116/06

GeoDyne

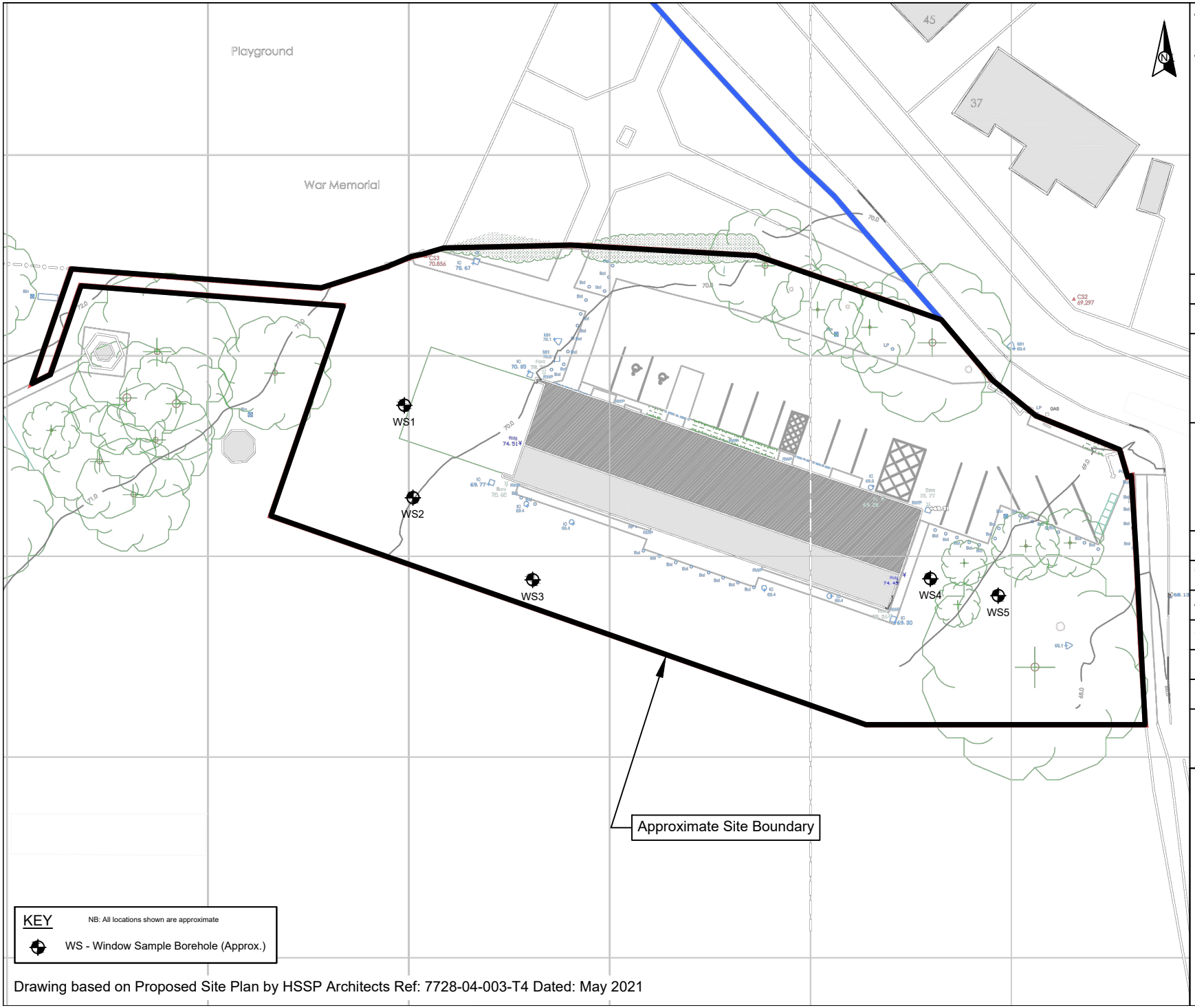
Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

GeoDyne

APPENDIX V

Exploratory Hole Location Plan
(Figure No. 42116/07)



Drawing based on Proposed Site Plan by HSSP Architects Ref: 7728-04-003-T4 Dated: May 2021

Project No.	42116
Client	Anstey Parish Council
Project	Jubilee Hall, Stadon Road, Anstey
Title	Exploratory Hole Location Plan
Drawn By	ACH
Checked By	AN
Approved By	JPH
Scale	NTS
Date Drawn	07/06/2022
Revision	
Figure No.	42116/07

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

APPENDIX VI

Exploratory Hole Logs

GeoDyne

Unit 2.2 Clarendon House
Clarendon Park, Clumber Avenue
Nottingham NG5 1AH
Tel: 0115 962 0001
email: info@geodyne.co.uk

WS1

Project No. 42116

Sheet 1 of 1

Samples and Tests				Description of Strata	Legend	Depth & (Thickness) (m)	Casing (m)	Ground-water	Installation
Depth (m)	Type	Sample Ref	SPT "N" Value						
				Brown slightly clayey sandy topsoil with occasional rootlets and rare black carbonaceous flecks, rare sub-angular gravel of quartzite and rare flecks of glass (TOPSOIL)		0.15			
0.50 - 0.90	B	B1		Firm to stiff brown mottled grey sandy CLAY. Rare fine rootlets to 0.50m, black carbonaceous inclusions and rare medium sub-rounded quartzite gravel (COLLUVIUM)		(0.75)			
1.00 - 1.45	C		12	Medium dense brown mottled orange and grey very clayey SAND becoming red brown at 1.05m. Rare black natural carbonaceous smears		0.90			
1.10	D	D1		(COLLUVIUM)		(0.50)			
1.50	D	D2		Firm red brown very sandy very silty CLAY. (COLLUVIUM)		1.40 (0.35)			
2.00 - 2.45	C		26	Medium dense becoming dense orange brown medium grained SAND, becoming fine and red-brown from 2.50m (COLLUVIUM)		1.75			
2.50	D	D3				(1.25)			
3.00 - 3.45	C		50/295mm	End of Borehole at 3.00m		3.00			

Remarks

1.Sides of window sample stable.
2.No groundwater encountered.
3.Window sample terminated at 3.00m due to refusal.
4.Falling head test carried out in this location.
5. Window sample backfilled with arisings upon completion.

Key

D = Disturbed Sample
U = Undisturbed Sample
B = Bulk Sample
J = Jar Sample
V = Vial Sample
W = Water Sample

S = Standard Penetration Test (Split Spoon)
C = Standard Penetration Test (Cone)
= Water Strike (m)
= Steady Water Level (m)

Project:	Jubilee Hall, Stadon Road, Anstey			**Client:**	Anstey Parish Council		
Logged:	AN	**Checked:**	JPH	**Field Book Ref:**	**Plant:** Competitor Rig		**Drawing Ref:**
Date:	23/05/2022	**Approved:**	JPH	AN2021/02	**Scale:** 1:25		WS1

GeoDyne

Unit 2.2 Clarendon House
Clarendon Park, Clumber Avenue
Nottingham NG5 1AH
Tel: 0115 962 0001
email: info@geodyne.co.uk

WS2

Project No. 42116

Sheet 1 of 1

Samples and Tests				Description of Strata	Legend	Depth & (Thickness) (m)	Casing (m)	Ground-water	Installation
Depth (m)	Type	Sample Ref	SPT "N" Value						
				Grass over brown very dry sandy topsoil with frequent rootlets (MADE GROUND - TOPSOIL)		0.20			
				Firm brown mottled orange very sandy slightly silty clay with rare medium grained sub-rounded gravel of quartzite with rootlets to 0.70m and rare black carbonaceous smears (MADE GROUND)		(0.95)			
0.70	D	D1							
1.00 - 1.45	C		8						
				...gravel of fine to medium grained sub-rounded to sub-angular flint at 1.05m		1.15			
				Firm brown mottled grey and orange silty clay (MADE GROUND)		(0.65)			
1.40	B	B1							
				...pocket of oxidised dark orange clayey sand at 1.75m		1.80			
1.95	D	D2		Firm becoming stiff brown mottled grey and white with yellow/orange pockets silty sandy clay with frequent fine to medium grained (mostly fine) sub-rounded and sub-angular gravel of mixed lithology including grey siltstone, quartzite and sandstone (MADE GROUND)		(1.00)			
2.00 - 2.45	C		13	...pocket of clayey sand between 2.30m and 2.40m					
2.60	D	D3		...sub-angular gravel of grey siltstone at 2.70m		2.80			
2.90	D	D4		Stiff brown sandy gravelly CLAY. Gravel is fine, sub-rounded of mixed lithology including quartzite (COLLUVIUM)		(1.20)			
3.00 - 3.45	C		22	...slightly damp at 3.00m					
4.00 - 4.45	C		50/295mm	End of Borehole at 4.00m		4.00			

Remarks

1.Sides of window sample stable.
2.No groundwater encountered.
3.Window sample terminated at 4.00m due to refusal.
4.Falling head test carried out in this location.
5. Window sample backfilled with arisings upon completion.

Key

D = Disturbed Sample
U = Undisturbed Sample
B = Bulk Sample
J = Jar Sample
V = Vial Sample
W = Water Sample

S = Standard Penetration Test (Split Spoon)
C = Standard Penetration Test (Cone)
= Water Strike (m)
= Steady Water Level (m)

Project:	Jubilee Hall, Stadon Road, Anstey			**Client:**	Anstey Parish Council		
Logged:	AN	**Checked:**	JPH	**Field Book Ref:**	**Plant:** Competitor Rig		**Drawing Ref:**
Date:	23/05/2022	**Approved:**	JPH	AN2021/02	**Scale:** 1:25		WS2

GeoDyne

Unit 2.2 Clarendon House
Clarendon Park, Clumber Avenue
Nottingham NG5 1AH
Tel: 0115 962 0001
email: info@geodyne.co.uk

WS3

Project No. 42116

Sheet 1 of 1

Samples and Tests				Description of Strata	Legend	Depth & (Thickness) (m)	Casing (m)	Ground-water	Installation
Depth (m)	Type	Sample Ref	SPT "N" Value						
				Grass over brown friable sandy topsoil with frequent rootlets and rare sub-rounded gravel of quartzite (MADE GROUND - TOPSOIL)		0.20			
0.40	B	B1		Stiff friable sandy clay with fine to coarse rootlets and black carbonaceous inclusions, with sub-rounded to sub-angular gravel of mixed lithology including limestone and sandstone (MADE GROUND)		(0.30)			
				Firm brown mottled grey and orange silty sandy clay with rootlets to 0.90m, rare fine grained sub-rounded gravel of quartzite and rare black flecks (MADE GROUND)		0.50			
1.00	B	B2				(0.60)			
1.00 - 1.45	C		10						
				Firm brown very sandy clay with black organic inclusions and fine gravel with a pocket of orange sand at 1.40m (MADE GROUND)		1.10			
1.40	D	D1				(0.40)			
				Firm brown mottled grey and orange silty gravelly clay. Gravel is fine to coarse sub-rounded to sub-angular of quartzite, red gravel (possibly brick), flint, sandstone and possible coal (MADE GROUND)		1.50			
2.00 - 2.45	C		16	...becoming stiff at 2.00m depth		(1.50)			
2.50	D	D2		...gravels of grey siltstone at 2.70m					
3.00 - 3.45	C		33	Medium dense to dense grey brown mottled red slightly gravelly damp medium grained SAND. Gravel is very fine grained sub-rounded of quartzite (COLLUVIUM)		3.00			
3.50	D	D3		...gravels becoming medium and sub-angular from 3.70m		(1.00)		▽	
4.00 - 4.45	C		50/265mm	End of Borehole at 4.00m		4.00			

Remarks

1.Sides of window sample stable.
2.Groundwater encountered at 3.85m.
3.Window sample terminated at 4.00m due to refusal.
4. Window sample backfilled with arisings upon completion.

Key

D = Disturbed Sample
U = Undisturbed Sample
B = Bulk Sample
J = Jar Sample
V = Vial Sample
W = Water Sample

S = Standard Penetration Test (Split Spoon)
C = Standard Penetration Test (Cone)
▽ = Water Strike (m)
▼ = Steady Water Level (m)

Project:	Jubilee Hall, Stadon Road, Anstey			**Client:**	Anstey Parish Council		
Logged:	AN	**Checked:**	JPH	**Field Book Ref:**	**Plant:**	Competitor Rig	**Drawing Ref:**
Date:	23/05/2022	**Approved:**	JPH	AN2021/02	**Scale:**	1:25	WS3

GeoDyne

Unit 2.2 Clarendon House
Clarendon Park, Clumber Avenue
Nottingham NG5 1AH
Tel: 0115 962 0001
email: info@geodyne.co.uk

WS4

Project No. 42116

Sheet 1 of 1

Samples and Tests				Description of Strata	Legend	Depth & (Thickness) (m)	Casing (m)	Ground-water	Installation
Depth (m)	Type	Sample Ref	SPT "N" Value						
				Grass over dark brown very gravelly sandy clayey topsoil with rootlets. Gravel is fine to coarse sub-rounded and sub-angular of brick, concrete, glass, sandstone, quartzite and coal (MADE GROUND - TOPSOIL)		(0.40)			
						0.40			
0.50	D	D1		Brown and grey sandy gravel of brick and concrete with a sandy clay matrix (MADE GROUND)		(0.50)			
						0.90			
1.00 - 1.45	C		13	Firm grey brown silty sandy clay becoming orange brown with orange veining, a slight organic odour and rare brick flecks at 0.90 to 1.00m (MADE GROUND)					
1.10	D	D2				(0.90)			
1.60	B	B1							
						1.80			
2.00	D	D3		Firm orange brown mottled grey very sandy gravelly clay. Gravel is fine to coarse sub-rounded of quartzite with some coarse white sand grains (MADE GROUND)		2.00			
2.00 - 2.45	C		10	Firm to stiff silty sandy gravelly clay. Gravel is fine to medium sub-rounded to sub-angular of flint and quartzite, with rare brick (MADE GROUND)					
2.60	D	D4				(1.70)			
3.00 - 3.45	C		23						
						3.70			
				Dense grey brown fine SAND (COLLUVIUM)		(0.30)			
3.90	D	D5							
4.00 - 4.45	C		50/265mm	End of Borehole at 4.00m		4.00			

Remarks

1.Sides of window sample stable.
2.No groundwater encountered.
3.Window sample terminated at 4.00m due to refusal.
4. Window sample backfilled with arisings upon completion.

Key

D = Disturbed Sample
U = Undisturbed Sample
B = Bulk Sample
J = Jar Sample
V = Vial Sample
W = Water Sample

S = Standard Penetration Test (Split Spoon)
C = Standard Penetration Test (Cone)
= Water Strike (m)
= Steady Water Level (m)

Project:	Jubilee Hall, Stadon Road, Anstey			**Client:**	Anstey Parish Council		
Logged:	AN	**Checked:**	JPH	**Field Book Ref:**	**Plant:** Competitor Rig		**Drawing Ref:**
Date:	23/05/2022	**Approved:**	JPH	AN2021/02	**Scale:** 1:25		WS4

GeoDyne

Unit 2.2 Clarendon House
Clarendon Park, Clumber Avenue
Nottingham NG5 1AH
Tel: 0115 962 0001
email: info@geodyne.co.uk

WS5

Project No. 42116

Sheet 1 of 1

Samples and Tests				Description of Strata	Legend	Depth & (Thickness) (m)	Casing (m)	Ground-water	Installation
Depth (m)	Type	Sample Ref	SPT "N" Value						
				Grass over dark brown sandy poor quality gravelly topsoil with rootlets. Gravel is fine to coarse sub-rounded to sub-angular of brick, concrete, quartzite, ceramic and coal (MADE GROUND - TOPSOIL)		(0.45)			
						0.45			
0.60	D/J/V	D1/J1/V1		Grey brown slightly ashy very gravelly sand. Gravel is fine to coarse and cobble sized, sub-rounded to sub-angular of concrete, clinker, macadam fragments, coal and brick (MADE GROUND)					
1.00 - 1.45	C		9			(1.05)			
						1.50			
				Firm brown mottled orange and black sandy clay with black organic smearing (MADE GROUND)					
1.90	B	B1				(0.80)			
2.00 - 2.45	C		10						
						2.30			
				Dark grey silty organic sandy clay with an organic odour and black organic smearing (possible ditch bottom sediment) (MADE GROUND)					
2.50	D	D2				(0.45)			
						2.75			
				Firm to stiff grey brown mottled black and orange sandy gravelly clay. Gravel is mainly fine to medium sub-rounded of mixed lithology including quartzite, siltstone and red gravel (MADE GROUND)					
3.00 - 3.45	C		28						
						(1.25)			
3.50	D	D3							
				...piece of wood and brick fragment at 3.70m depth				▽	
4.00 - 4.45	C		50/255mm	End of Borehole at 4.00m		4.00			

Remarks

1.Sides of window sample stable.
2.Groundwater encountered at 3.70m.
3.Window sample terminated at 4.00m due to refusal.
4. Window sample backfilled with arisings upon completion.

Key

D = Disturbed Sample
U = Undisturbed Sample
B = Bulk Sample
J = Jar Sample
V = Vial Sample
W = Water Sample

S = Standard Penetration Test (Split Spoon)
C = Standard Penetration Test (Cone)
▽ = Water Strike (m)
▼ = Steady Water Level (m)

Project:	Jubilee Hall, Stadon Road, Anstey			**Client:**	Anstey Parish Council		
Logged:	AN	**Checked:**	JPH	**Field Book Ref:**	**Plant:**	Competitor Rig	**Drawing Ref:**
Date:	23/05/2022	**Approved:**	JPH	AN2021/02	**Scale:**	1:25	WS5

GeoDyne

APPENDIX VII

Plates

Project No.	42116	Drawn By	ACH
Client	Anstey Parish Council	Checked By	AN
		Approved By	JPH
Project	Jubilee Hall, Stadon Road, Anstey	Scale	NTS
		Date Drawn	07/06/2022
Title	Views of Arisings From Exploratory Holes WS1 and WS2	Revision	
		Figure No.	42116/P1

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

Project No.	42116	Drawn By	ACH
Client	Anstey Parish Council	Checked By	AN
		Approved By	JPH
Project	Jubilee Hall, Stadon Road, Anstey	Scale	NTS
		Date Drawn	07/06/2022
Title	Views of Arisings From Exploratory Holes WS3 and WS4	Revision	
		Figure No.	42116/P2

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

Project No.	42116	Drawn By	ACH
Client	Anstey Parish Council	Checked By	AN
		Approved By	JPH
Project	Jubilee Hall, Stadon Road, Anstey	Scale	NTS
		Date Drawn	07/06/2022
Title	View of Arisings From Exploratory Hole WS5	Revision	
		Figure No.	42116/P3

GeoDyne

Nottingham 0115 962 0001
Derby 01332 290 798

info@geodyne.co.uk
www.geodyne.co.uk

GeoDyne

APPENDIX VIII

Laboratory Soil Test Results

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

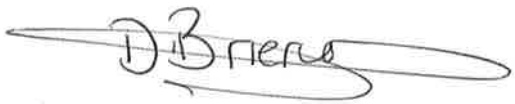
FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 22/05258
Issue Number: 1 **Date:** 01 June, 2022

Client:
GeoDyne (Nottingham)
Unit 2.2 Clarendon House
Clarendon Park
Clumber Avenue
Nottingham
Nottinghamshire
UK
NG5 1AH

Project Manager: Amy Newman
Project Name: Jubilee Hall, Anstey
Project Ref: 42116
Order No: 42116/AN
Date Samples Received: 27/05/22
Date Instructions Received: 27/05/22
Date Analysis Completed: 01/06/22

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

Envirolab Job Number: 22/05258

Client Project Name: Jubilee Hall, Anstey

Client Project Ref: 42116

Lab Sample ID	22/05258/1	22/05258/2	22/05258/3	22/05258/4	22/05258/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS1	WS2	WS3	WS4	WS5					
Depth to Top	1.1	0.7	2.5	1.1	0.6					
Depth To Bottom										
Date Sampled	23-May-22	23-May-22	23-May-22	23-May-22	23-May-22					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code	5	5A	6A	6A	4A					
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1			% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.87	7.73	8.81	8.05	8.72			pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	<0.01	<0.01	0.08	<0.01	0.13			g/l	0.01	A-T-026s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Analysis Dates

Lab Sample ID	22/05258/1	22/05258/2	22/05258/3	22/05258/4	22/05258/5
Client Sample No					
Client Sample ID/Depth	WS1 1.1m	WS2 0.7m	WS3 2.5m	WS4 1.1m	WS5 0.6m
Date Sampled	23/05/22	23/05/22	23/05/22	23/05/22	23/05/22
A-T-026s	01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
A-T-031s	01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
A-T-044	30/05/2022	30/05/2022	30/05/2022	30/05/2022	30/05/2022

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/3728

Report Date: 23 June 2022

Client's Reference: 42116

Client Name: GeoDyne Notts
Unit 2.2 Clarendon House
Clarendon Park
Clumber Avenue
Nottingham
NG5 1AH

For the attention of: Amy Newman

Contract Title: Jubilee Hall, Anstey

Date Received: 26/5/2022
Date Commenced: 26/5/2022
Date Completed: 23/6/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)

R Berriman (Quality Manager)

S Royle (Laboratory Manager)

L Knight (Assistant Laboratory Manager)

S Eyre (Senior Technician)

R Gibbons (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
WS1			0.50	0.90	Brown sandy CLAY
WS3			1.00		Brown sandy CLAY
WS4			1.60		Brown mottled grey sandy CLAY
WS5			1.90		Brown sandy CLAY

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
WS1			0.50	0.90	18			37	18	19	100	Intermediate Plasticity CI
WS3			1.00		19			41	19	22	100	Intermediate Plasticity CI
WS4			1.60		19			39	19	20	100	Intermediate Plasticity CI
WS5			1.90		23			52	23	29	100	High Plasticity CH

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Jubilee Hall, Anstey

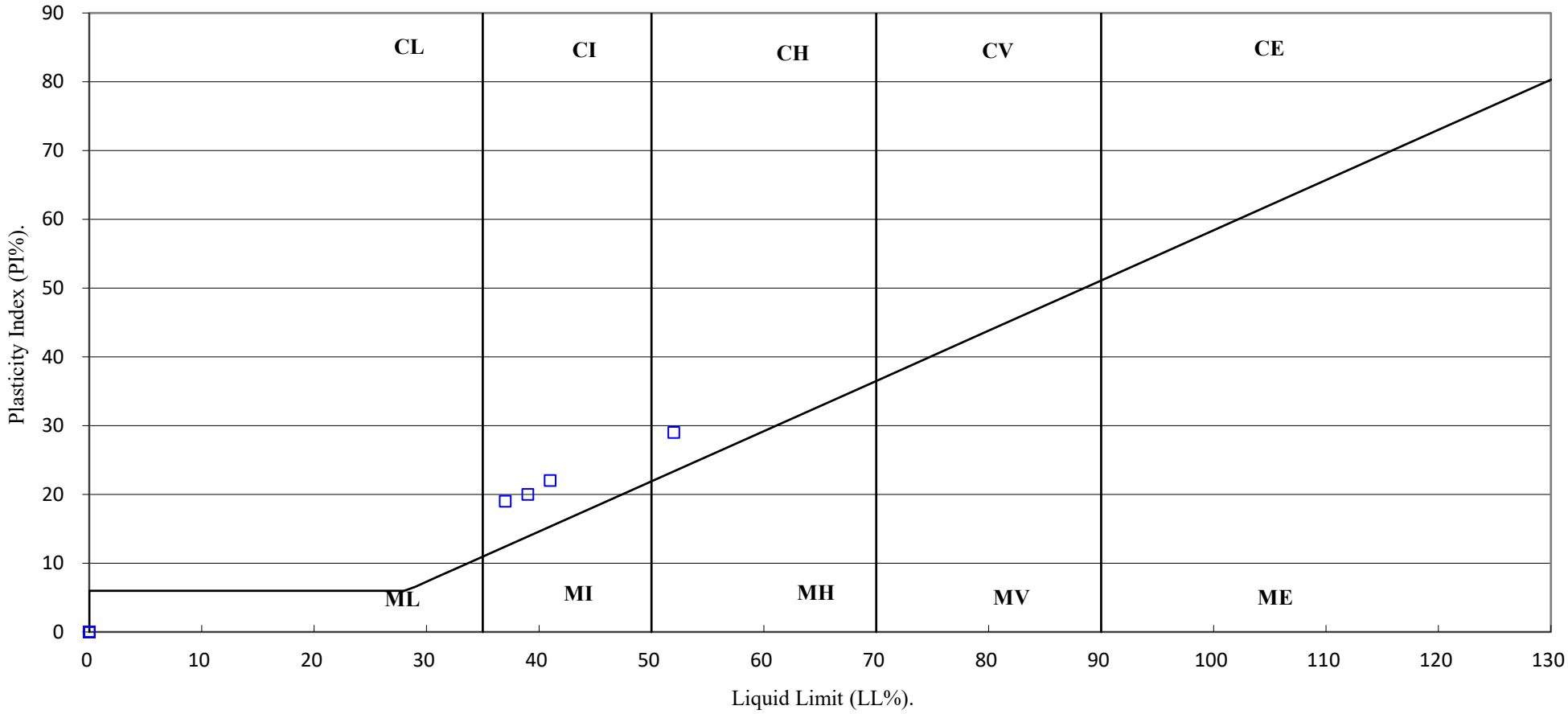
Contract No:

PSL22/3728

Client Ref:

42116

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Jubilee Hall, Anstey	Contract No: PSL22/3728 Client Ref: 42116

GeoDyne

APPENDIX IX

Falling Head Test Infiltration Sheets

SOIL INFILTRATION RATE CALCULATIONS (FALLING HEAD TESTS)

WS1 Test 1

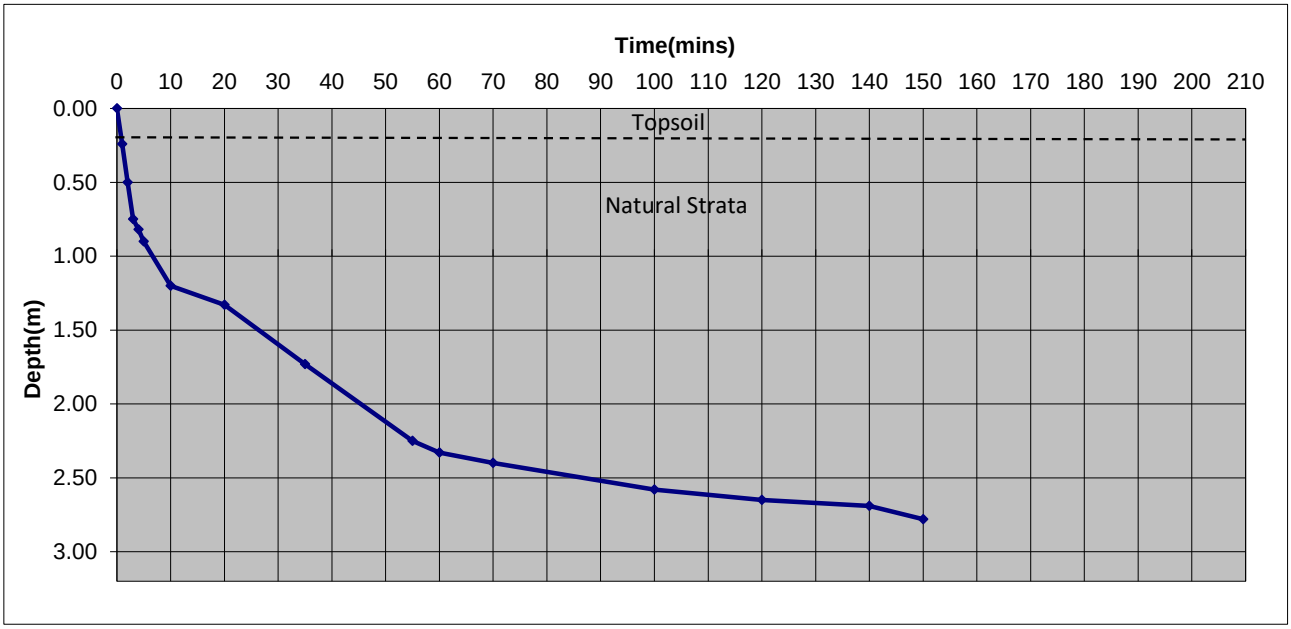
Time(mins)	Depth(m)
0	0.00
1	0.24
2	0.50
3	0.75
4	0.82
5	0.90
10	1.20
20	1.33
35	1.73
55	2.25
60	2.33
70	2.40
100	2.58
120	2.65
140	2.69
150	2.78

Client :	Anstey Parish Council
Site :	Jubilee Hall, Anstey
Site ref :	42116

Is borehole installed with monitoring pipe and gravel surround? (If YES, use alternative sheet)	No

Borehole Dimensions	
Outside Diameter (m)	Depth (m)
0.10	3.00

Depth from water level at start of test to bottom of pit =	3.00



75% effective depth(m)	=	0.70
25% effective depth(m)	=	2.09

Time at 75% effective depth(mins)	=	2.50
Time at 25% effective depth(mins)	=	46.00

Volume outflowing, V_{p75-25} = 0.010485

Area, a_{p50} = 0.469357

Time, T_{75-25} = 43.5

Infiltration Rate, F = 8.56E-06 m/s

SOIL INFILTRATION RATE CALCULATIONS (FALLING HEAD TESTS)

WS2 Test 1

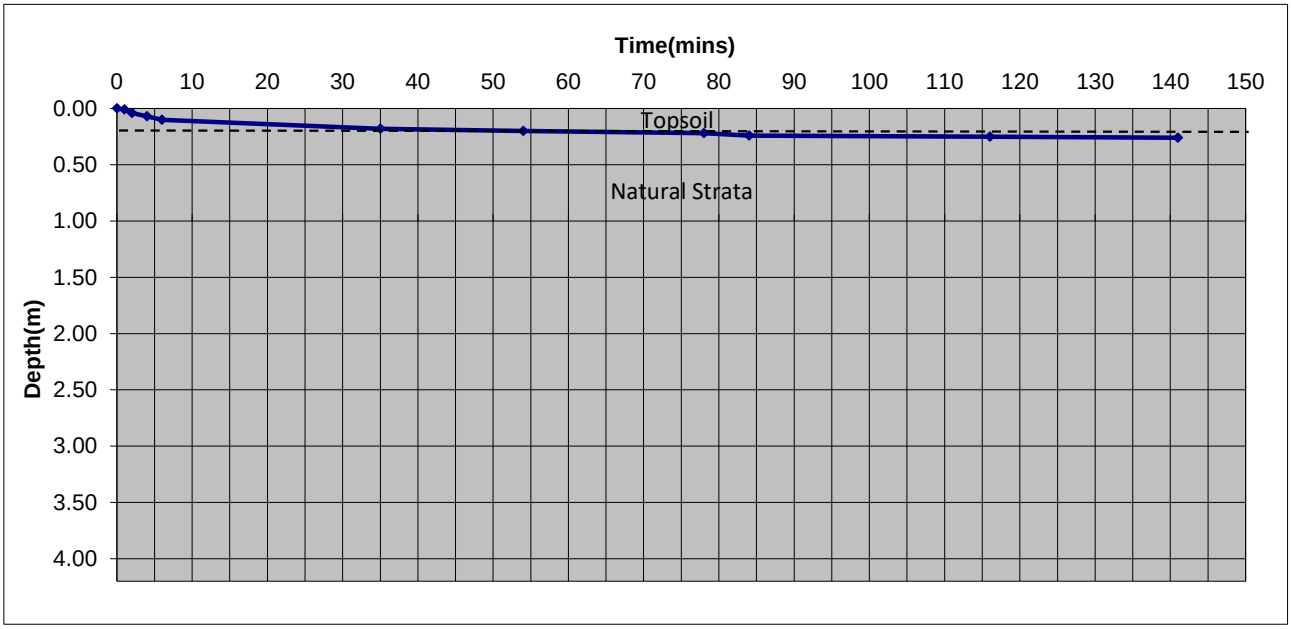
Time(mins)	Depth(m)
0	0.00
1	0.01
2	0.04
4	0.07
6	0.10
35	0.18
54	0.20
78	0.22
84	0.24
116	0.25
141	0.26

Client :	Anstey Parish Council
Site :	Jubilee Hall, Anstey
Site ref :	42116

Is borehole installed with monitoring pipe and gravel surround? (If YES, use alternative sheet)	No

Borehole Dimensions	
Outside Diameter (m)	Depth (m)
0.10	4.00

Depth from water level at start of test to bottom of pit =	4.00



75% effective depth(m)	=	0.07
25% effective depth(m)	=	0.20

Time at 75% effective depth(mins)	=	4.00
Time at 25% effective depth(mins)	=	54.00

Volume outflowing, V_{p75-25} = 0.000981

Area, a_{p50} = 0.623295

Time, T_{75-25} = 50.0

Infiltration Rate, F = 5.24E-07 m/s

GeoDyne

APPENDIX X

Conditions & Limitations

Conditions & Limitations

Phase I Desk Studies

1. Works undertaken to provide the basis of the Phase I Desk Study report comprise a review of information available from a number of sources/parties (potentially also including the Client) together with a walk over of the site (where applicable and included within the quotation). The opinions given in the Phase I Desk Study are based on the information available from third parties/sources that has been obtained within the available timeframe. GeoDyne Limited assumes all third party information to be true and correct and therefore cannot accept liability for the accuracy of such information supplied.

2. Should additional information become available that may affect the comments and opinions made within the Phase I Desk Study, GeoDyne Limited reserves the right to review such information and make modifications to comments/opinions as appropriate.

3. It should be borne in mind that a Phase I Desk Study collates available information to generate a conceptual model of the site. The actual geotechnical and environmental considerations can only be fully quantified by intrusive investigation works to confirm the accuracy of the conceptual site model.

Phase II Intrusive Investigations

1. Our quotation assumes that access to the site will be arranged by others at no cost to ourselves.

2. We have assumed that free access is available throughout to the entire site and that works can be undertaken during a single mobilisation. Where restricted access is encountered, or where additional unscheduled mobilisations are required, additional costs may be incurred to the client.

3. We have assumed that all available information relating to buried services will be supplied by the Client at no cost to ourselves. No responsibility will be accepted for damage to underground services that have not been brought to our prior attention by the Client.

4. All excavations/boreholes will be backfilled with compacted arisings upon completion, with any excess arisings left proud of ground levels. Excess arisings will not be removed from the site unless specifically requested by the Client. Where we are requested to remove excess arisings, all associated costs will be passed to the Client.

5. We will attempt to leave the site in a clean and tidy state, however, it must be understood that some disturbance of the site is unavoidable during intrusive works.

6. Exploratory holes are positioned approximately on site by GeoDyne Limited. Should the client require precise locations of all exploratory points, additional fees will be incurred. It must be borne in mind that backfilled trial pits can create ‘soft spots’, therefore, should the Client wish to designate ‘no dig’ zones, for example under the footprint of proposed structures, these must be brought to our attention prior to commencement of works.

7. Groundwater observations relate to conditions encountered at the time of investigation. It must be understood that groundwater levels may vary as a result of recent climatic conditions or seasonal variation.

8. Trial pits and boreholes examine only a small proportion of the total site area. No liability can be accepted for conditions not revealed in exploratory holes, particularly between positions. All extrapolations of available data are given in good faith.

Payment

1 Payment terms are strictly 28 days from the invoice date. GeoDyne reserve the right to charge interest on any late payments.

2 Prior to commencement of works, we require receipt of formal written instruction from the party accepting full financial responsibility for the work. In the absence of such an instruction, we would expect the instructing Consulting Engineers/Architects to accept full financial responsibility for the works.

3 Receipt of instruction to commence work shall be taken as acceptance and compliance of the foregoing conditions.

Liability

1. GeoDyne Limited offer £5,000,000.00 Professional Indemnity Insurance (in aggregate over the year). This shall be the limit of our liability for works undertaken. No individual liability shall be implied to, or accepted by, any employee for works undertaken for and on the behalf of GeoDyne Limited.