Buckingham Park Pavilion
Shoreham-by-Sea
West Sussex

Geotechnical Assessment Report

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EXECUTIVE SUMMARY

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

It is proposed to construct a new sports pavilion to replace the existing pavilion located at the southern end of Buckingham Park, Shoreham-by-Sea, West Sussex. The proposed new single-storey building is to comprise a sports club with adjoining café and public toilets at the western end. New surrounding hardstanding areas, including an outdoor dining area at the western end of the building, are also proposed.

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

The Head is classed as a Secondary Undifferentiated Stratum. The White Chalk Subgroup is classed as a Principal Aquifer. Though a majority of the site lies within a Total catchment – SPZ3, the north-western part pf the site lies within an Outer zone – SPZ2. Each of the boreholes remained dry during the course of drilling and a previously installed standpipe was also recorded to be dry.

Precautions against shrinkage and heave for any new foundation system should assume a low volume change potential for the fine-grained Head soils.

A net allowable bearing capacity of 100kN/m^2 may be assumed for spread (pad or strip) foundations up to 1.00m across bearing within the Head deposits.

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

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

Design equilibrium California bearing ratios and moduli of subgrade reaction are presented in the report. The subgrade is likely to be susceptible to frost heave

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1. INTRODUCTION

It is proposed to construct a new sports pavilion to replace the existing pavilion located at the southern end of Buckingham Park, Shoreham-by-Sea, West Sussex. The proposed single storey building is to comprise a sports club with adjoining café and public toilets at the western end. New surrounding hardstanding areas, including an outdoor dining area at the western end of the building, are also proposed. A copy of the proposed development layout is presented in Appendix A.

Ashdown Site Investigation Ltd was requested to undertake a ground investigation and to provide advice to assist with the structural design.

The specific objectives of the works were to:
a) Establish the expected geology and hydrogeology at the site;
b) Investigate the shallow ground and groundwater conditions in the area of the proposed development; and
c) Provide advice to assist others in undertaking design of spread foundations, ground floors and pavements.

The scope of the works covered by this report, and the terms and conditions under which they were undertaken, were set out within the offer letter Q14028, dated 11th April 2024. The works were undertaken under purchase order ref: PO1012887 provided by the client.

Ashdown Site Investigation Ltd has previously undertaken an intrusive investigation at the site in May 2016 and issued an accompanying Geotechnical Assessment Report[1]. These works were carried out for a different proposed development layout, located further to the north and north east of the existing building. The factual data (exploratory hole records, in situ test results and laboratory test results) from the previous works has been included in the relevant appendices for completeness.

[1] Ashdown Site Investigation Report No. R16-11420, dated June 2016.

2. SITE CONTEXT

2.1 Site Details

The site is located at the southern end of Buckingham Park, Shoreham-by-Sea, West Sussex, and is centred on the approximate Ordnance Survey national grid reference 522103, 105942. A site location plan and site plan are presented as Figure 1 and Figure 2, respectively.

The area under investigation is accessed from Upper Shoreham Road to the south and comprises the area around an existing single storey brick and wood-built sports pavilion, café and public toilet building. The building is surrounded by hardstanding paths and, more widely, by grass parkland/playing fields, with hardstanding playgrounds/courts to the north-west and a children's play area to the south. Mature trees are present to the south and south-east of the existing club house building.

2.2 Geological Data Review

2.2.1 Expected Geology and Aquifer Designation

The stratigraphic succession that may be expected to underlie the site has been established by reference to British Geological Survey (BGS) mapping and the BGS Lexicon of Named Rock Units. The expected stratigraphy is presented in the following table.

Table 1. Expected Strata and Aquifer Designation

Type	Stratum	Aquifer Designation
Superficial	Head	Secondary Undifferentiated Aquifer
Bedrock	Tarrant Chalk Member (White Chalk Subgroup)	Principal Aquifer

The superficial Head is a polymict deposit generally comprising clay and sandy clay with variable amounts of gravel and cobbles. The lithology of the Head reflects the nature of the parent solid strata; the gravel and cobble fraction comprising chalk and flint. The material is likely to have been disturbed by intense frost action in a periglacial environment. It is usually poorly sorted but may be stratified where it has been subject to solifluction and/or hillwash and soil creep. It may form infill to solution features within the chalk.

The Tarrant Chalk Member forms part of The Culver Chalk Formation, which in turn forms part of the White Chalk Subgroup. The Culver Chalk Formation is of Campanian age (72.1 to 83.6 million years old; Late Cretaceous) and comprises white chalk with flint seams. The flints are generally large and, in the upper part, tabular. The stratum is relatively marl free. The formation is recorded by the BGS to range in thickness up to 90m.

2.2.2 Natural Ground Subsidence

The chalk can be expected to have a deeply convoluted upper surface as a result of solution weathering and erosion. The presence of natural cavities in the chalk is very rare and solution features, if present, can be expected to be infilled with Quaternary Superficial Deposits. The infill material may be significantly weaker than the surrounding chalk. Solution features can comprise pipes extending to several metres deep into the chalk or conical depressions and basin shaped structures.

The British Geological Survey GeoSure 5km hex grid indicates the generalised area of the site has a significant susceptibility from soluble rocks.

Further assessment of the natural ground hazards can be undertaken, if required, to provide more detailed comment specific to the site.

2.2.3 Mining and Ground Workings

Historically, chalk deposits were often mined locally. Most commonly historical mines characteristically comprise a narrow shaft with a number of chambers radiating from the base. These structures are colloquially known as "deneholes", "chalk-wells" or "chalkangles".

The depth of the features reflects the depth to the underlying chalk bedrock. The shaft width was commonly in the order of 2m to 3m, widening out into galleries at depth. The chalk was extracted for soil improvement and was usually applied directly to fields though sometimes the chalk was processed, typically by burning in kilns where the chalk was used to produce quicklime (calcium oxide).

Once they had reached their limits the mines were commonly capped. Various capping techniques were used; examples include the use of upturned trees or brick arching. Records pertaining to the distribution of these localised mines are incomplete, usually being limited to features marked as shafts or the occurrence of circular depressions on historic Ordnance Survey maps. In the field they are most likely to be visible as shallow depressions, if at all.

The British Geological Survey GeoIndex Onshore viewer records the presence of a number of quarries within 1km of the site: Kingston by Sea and Shoreham Beach Brick Fields some 630m and 960m respectively to the south-east, Slonk Hill Chalk Pit some 830m to the north-east and Shoreham Aggregate Wharf some 920m to the approximate south. A search of the Chelsea Speleological Society records revealed no relevant records within 1km of the site.

Whilst it is considered the risk posed by historical mining of chalk is negligible to very low, further assessment of the mining hazards can be undertaken, if required, to provide more detailed comment specific to the site.

2.2.4 Groundwater Source Protection Zones (SPZ)

The Environment Agency defines SPZs as those areas where groundwater supplies are at risk from potentially polluting activities and accidental releases of pollutants. SPZs are primarily a policy tool used to control activities close to water supplies intended for human consumption.

Though a majority of the site lies within a Total catchment – SPZ3, the north-western part pf the site lies within an Outer zone – SPZ2.

3. SITE WORKS

3.1 Introduction

The recent phase of intrusive site works comprised a series of dynamic sampler boreholes (designated WS101 to WS104), together with accompanying in-situ geotechnical testing. The intrusive work was carried out on 28th June 2024.

The previous phase of ground investigation works undertaken in May 2016 comprised a series of dynamic sampler boreholes (designated WS1 to WS4) to depths of between 2.00m and 5.00m below ground level, together with hand dug trial pits (denoted TP1, FP1 and FP2) excavated to depths of between 0.80m and 1.20m below ground level.

The exploratory hole locations for both the recent and previous phase of works are shown on Figure 2.

Descriptions of the strata encountered and comments on groundwater conditions are shown in the exploratory hole records given in Appendix B, together with explanatory notes to assist in their interpretation.

3.2 Exploratory Holes

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

Table 2. Summary of Intrusive Works Undertaken

Designation	Depth (m bgl)	Method
WS101	3.00	Dynamic Sampler
WS102	3.00	Dynamic Sampler
WS103	3.00	Dynamic Sampler
WS104	3.00	Dynamic Sampler

3.3 Sampling

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

3.4 In Situ Strength Testing

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

3.5 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd. Results from the laboratory tests are provided in Appendix C.

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

4. GROUND CONDITIONS

4.1 Stratigraphy

The ground conditions recorded by the recent intrusive works are similar to those encountered during the previous phase of works.

4.1.1 Surface Covering

In general, each of the exploratory holes was excavated through an initial surface cover of topsoil. At the location of the previous trial pit FP1 a paving slab overlying sand sub-base was recorded.

4.1.2 Made Ground

No specific made ground was recorded within boreholes WS102 and WS103.

At the remaining exploratory hole positions, made ground comprising slightly gravelly to gravelly silty clay was recorded to depths of between 0.20m and 0.60m below ground level during both phases of intrusive works. The gravel fraction comprised variable quantities of flint, brick, plastic, glass, chalk, concrete, ceramics, breeze block, ash-like material, charcoal-like material and clinker-like material.

4.1.3 Head

Underlying the surfacing/made ground, the investigation progressed into undisturbed generally firm, locally becoming stiff, slightly gravelly/gravelly, slightly sandy, silty clay deposits. These soils were recorded to a depth of 4.00m within the previous borehole WS1 and to the full depth of the remaining exploratory holes. The gravel fraction comprised variable quantities of flint and chalk, with rare ironstone also at times recorded.

Beneath the clay soils, borehole WS1 encountered dense sandy gravel deposits which continued to the full depth of the borehole of 5.00m.

These deposits are considered to represent the Head deposits indicated to underlie the site on BGS geological maps.

4.2 Stability

Each of the exploratory holes was recorded to remain stable during the course of drilling.

4.3 Groundwater Conditions

Each of the boreholes remained dry during the course of drilling. A previous standpipe, installed to a depth of 3.00m within borehole WS5, was also dry at the time of the recent intrusive works.

5. GEOTECHNICAL ASSESSMENT

The geotechnical assessment has been prepared in connection with the development proposals shown on the drawings included in Appendix A.

In summary, the proposed development is to comprise demolition of the existing building and the construction of a single storey building over a larger footprint containing facilities for sports, café and public toilets. New surrounding hardstanding areas, including an outdoor dining area at the western end of the building, are also proposed.

At the time of writing, no details were available concerning the specific loads likely to be applied to the foundations. It should be noted the following assessment is based on the data obtained during both the previous and recent phases of intrusive works undertaken at the site.

5.1 Foundations

5.1.1 Soil Shrinkage/Heave Potential

The fine-grained soils of the Head have been classified as clays, and with modified plasticity indices in the range of 2% to 19%, the soils may be expected to exhibit up to a low volume change potential.

It is recommended that the design of precautions against shrinkage and heave for any new foundation system (spread footings and ground beams etc.) should assume a low volume change potential for the fine-grained Head soils and take into account current guidance such as that given by the Building Research Establishment (BRE)[2] or the National House Builders Council (NHBC)[3].

Whilst this report has been prepared to provide advice to assist designers in undertaking detailed design, the report itself does not represent a detailed design statement. Detailed foundation design, including assessment of foundation type, minimum founding depths for spread foundations, and requirements for placement of void formers et cetera, should take into account the findings of this report and the presence of trees (previous, present and proposed). In connection with the latter, it is recommended that an arboricultural survey of the site that identifies the species and maturity of the existing or recently felled trees in the areas of the proposed new buildings should be provided to engineers responsible for the foundation design. Information on proposed planting schemes that may affect foundation design should also be provided.

5.1.2 Spread Foundations

5.1.2.1 Foundation Depths for Spread Foundations

Foundations should be constructed to bear below soils that are likely to be affected by significant soil volume changes caused by seasonal changes in moisture content to avoid damage to foundations that could otherwise arise. In addition, all made ground and any soils disturbed by the construction or removal of any previously existing foundations or services should be regarded as being variable in nature and state of compaction and, as such, unsuitable as a founding medium for shallow footings. New footings should be constructed so as to bear below made

[2] www.bre.co.uk : BRE Digests 240, 241 and 242, Low rise buildings on shrinkable clay soils, parts 1, 2 and 3; and BRE Digest 298 , The influence of trees on house foundations in clay soils and BRE Digest 412, Desiccation in clay soils.
[3] http://www.nhbc.co.uk/ : NHBC Standards, Chapter 4.2.

ground/disturbed natural soils and soil subject to seasonal soil volume changes, whichever is the deeper, and onto undisturbed, competent, natural deposits.

Summary guidance on suitable minimum foundation depths to protect against the effects of seasonal soil volume changes is presented in the table below but designers undertaking detailed design of foundations should follow the detailed guidance such as that provided within Chapter 4.2 of the NHBC Standards.

Table 3. Indicative Minimum Foundation Depths

Tree Type	Water Demand of Tree	Tree Distance to Tree Height Ratio (D/H)									
		0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.25
		Minimum Foundation Depth Required in Low Volume Change Potential Soils (m)									
Broad Leaf	High	2.50†	2.40	2.25	2.10	1.95	1.80	1.70	1.40	1.10	0.75
	Moderate	1.60	1.50	1.40	1.30	1.15	1.05	0.95	0.75*	0.75*	0.75*
	Low	1.20	1.10	1.05	0.95	0.85	0.75*	0.75*	0.75*	0.75*	0.75*
Coniferous	High	2.50†	2.20	1.90	1.65	1.35	1.05	0.75*	0.75*	0.75*	0.75*
	Moderate	1.60	1.35	1.15	0.90	0.75*	0.75*	0.75*	0.75*	0.75*	0.75*

* Minimum foundation depth required to protect against soil volume changes.
† Foundations deeper than 2.50m require specialist design to protect against soil volume changes.

Where specialist foundation design is required (foundation depths exceeding the maximum permitted by the guidance) then piled foundations are likely to be needed, though commercial considerations may also dictate that piled foundations may be more economic even in comparison with conventional spread foundations constructed to depths less than the maximum permitted by guidance. Further works including deep boreholes would be required if structural engineers or quantity surveyors decide that piled foundations should be adopted.

Details on the water demand and mature height of common trees is given within Table 3 of Chapter 4.2 of the NHBC standards which should be referred to when assessing minimum foundation depths required for the proposed development. A summary is provided in the table below.

Table 4. Indicative Summary of Water Demand and Mature Height of Common Trees

Tree Type	High Water Demand		Moderate Water Demand		Low Water Demand	
	Tree	Height (m)	Tree	Height (m)	Tree	Height (m)
Broad Leaf	Elm	18 – 24*	Acacia	18	Birch	14
	Oak	16 – 24*	Alder	18	Elder	10
	Poplar	15 – 28*	Apple	10	Fig	8
	Willow	16 – 24*	Ash	11 – 23*	Hazel	8
	Eucalyptus	18	Laurel	10	Holly	12
	Hawthorn	10	Beech	20	Honey Locust	14
			Blackthorn	8	Hornbeam	17
			Cherry	8 – 17*	Laburnum	12
			Chestnut	20 – 24*	Magnolia	9
			Lime	22	Mulberry	9

Tree Type	High Water Demand		Moderate Water Demand		Low Water Demand	
	Tree	Height (m)	Tree	Height (m)	Tree	Height (m)
			Maple	8 – 18*	Tulip Tree	20
			Pear	12		
			Plane	26		
			Plum	10		
			Sycamore	22		
			Tree of Heaven	20		
			Walnut	18		
			Whitebeam	12		
Coniferous	Cypress	18 – 20*	Cedar	20		
			Douglas Fir	20		
			Larch	20		
			Monkey Puzzle	18		
			Pine	20		
			Spruce	18		
			Wellingtonia	30		
			Yew	12		

* Dependent on particular species.

5.1.2.2 Bearing Capacity for Spread Foundations

For design purposes, a net allowable bearing capacity of 100kN/m^2 may be assumed for spread (pad or strip) foundations up to 1.00m across bearing within the Head deposits. The quoted bearing capacity is expected to limit settlement to less than 25mm.

In view of the risk associated with the underlying geology at the site for potential natural ground and mining hazard, it is recommended that as a minimum all stripped formation levels should be inspected by a suitably qualified person for evidence of historical backfilled shafts/chambers and/or dissolution features as a precaution, and the inspections should be appropriately documented.

5.2 Ground Floors

In view of the variable thickness of made ground and the presence of soils of low volume change potential underlying the site, it is recommended that ground floors should be suspended.

Current guidance[4] suggests that ground bearing floor slabs may, however, be considered where:

1. All made ground is removed from beneath the building footprint;
2. The depth of foundations required to protect against seasonal soil volume changes close to trees is less than 1.5m; and
3. Further works demonstrate that close to the time of construction, no significant soil desiccation is present.

[4] http://www.nhbc.co.uk/ : NHBC Standards, Chapter 4.2.

Where the above criteria cannot be met ground floors should be suspended.

If ground bearing floors are adopted it is recommended that the potential for differential movement, both between the floor slab and walls and across the floor slab itself, should be anticipated. Such floors should be fully debonded from walls. Formations should be adequately proof rolled and any excessively soft materials excavated and replaced with a suitable, well graded granular fill. The depth of any fill should be limited to a maximum of 600mm unless placed to an engineering specification designed to limit internal settlement of the fill materials to a tolerance to be advised by the designer.

5.3 Groundwater

Groundwater was not encountered during either phase of intrusive works, and a standpipe previously installed in in May 2016 was recorded to be dry during the recent works. It is noted that the ground investigation works were conducted during a late spring/summer periods and that higher groundwater levels may prevail during wetter seasons.

It is possible that heavy precipitation during construction could lead to the ingress of perched groundwater or surface water run-off into excavations. In such circumstances it would be expected that water entering excavations would be adequately managed by either pumping from sumps or natural drainage, or a combination of the two.

5.4 Stability of Excavations

All made ground or coarse-grained natural soils exposed in excavations should be assumed to be unstable, even in the short term. Whilst fine-grained natural soils may remain stable for a short period of time if not subjected to surcharge loads (such as may be imposed by existing foundations, traffic or storage of materials), the stability of these deposits if left unsupported should be assumed to have the potential to deteriorate. Where stable excavations are required, excavations should either be suitably supported or, where space permits, side slopes could be battered back to a safe angle of repose.

All excavations requiring human entry must be shored or battered as necessary to conform to current best practice, as accepted by the Health and Safety Executive (HSE)[5]. Current legislation requires that where personnel access is required into any excavation a competent person must inspect excavation supports or battering of slopes at the start of the working shift and at other specified times. No work should take place until the excavation is safe. Excavations should also be inspected after any event that may have affected their stability, such as a significant weather event, changes in surcharge loadings imposed by temporary storage of materials or changes in site traffic plans or alteration of support systems. Inspections should be formally recorded and any faults that are found should be corrected immediately.

5.5 Aggressivity to Concrete

The aggressivity of the soils to concrete has been assessed in accordance with guidance published by the BRE[6].

[5] Relevant guidance is given on the HSE website, www.hse.gov.uk
[6] BRE Special Digest 1:2005 Concrete in Aggressive Ground.

In view of the soils encountered beneath the site it is considered that 'natural ground conditions' may be assumed for the purpose of assessing the aggressivity of the chemical environment for concrete classification (ACEC class). Whilst groundwater was not encountered, in the absence of long-term winter monitoring data, 'mobile groundwater' conditions should be conservatively assumed.

The following table summarises the characteristic values indicated from the chemical analysis of the soils present beneath the site.

Table 5. Assessment of the Chemical Analysis of the Soil

	Characteristic Value	Design Sulfate Class	ACEC Classification
pH	7.4	-	-
Water Soluble Sulphate (mg/l as SO4) *	<100	DS-1	AC-1

Notes: * Characteristic value rounded to nearest 100.

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

5.6 Pavement Design

Current guidance[7] suggests that pavement design should be based on the design subgrade surface modulus, determined as being equal to the lower of the short-term subgrade modulus and the long-term subgrade modulus. The subgrade surface modulus can be related to California bearing ratio using the formula, $E = 17.6(CBR)^{0.64}$, where E is the subgrade modulus expressed in MPa.

Cone penetrometer tests were undertaken to establish the California bearing ratio (CBR) of the in situ soils at the time of the investigation. The range of values determined is presented on the test result records within Appendix B, and the table and graphs contained within Appendix D. A summary of the in situ test data is presented below. It is noted that in situ CBR values are, in part, dependent on the moisture content of the tested soils and are consequently subject to seasonal variation.

Table 6. In Situ CBR Values (At Time of Ground Investigation Works)

	CBR (%)	Modulus of Subgrade Reaction E (MPa)
Minimum	7.0	61.4
Average	27.3	140.9
Maximum	114.7	366.0
10%ile	12.7	89.7
20%ile	17.3	108.9
50%ile (Median)	26.5	143.3

[7] Highways England Design Manual for Roads and Bridges CD 225 Rev1; Design for new pavement foundations.

Equilibrium CBR values can be derived from knowledge of soil classification data (plasticity index for soils exhibiting cohesion (clay type) and particle size distribution for granular soils) and pavement thickness. Historical guidance[8] suggests the following design equilibrium CBR values would be applicable to the Head soils and derived made ground for the construction of pavement. The subgrade moduli calculated from these design equilibrium CBR values can be reasonably considered to be representative of long-term subgrade modulus using the formula given above.

Table 7. Long-term CBR Values

Stratum	Design Equilibrium CBR Value (%)			†Modulus of Subgrade Reaction E (MPa)
		Thin Road* Pavement	Thick Road* Pavement	
Fine grained Head and Derived Made Ground	Minimum	1.0	1.0	17.6
	Average	2.9	4.1	34.4
	Maximum	3.9	5.9	42.1

* Thin pavement being 300mm sub-base, thick pavement being 1200mm sub-base. †Modulus based on average of all calculated moduli based on CBR values for thin sub-base.

Designers will need to select an appropriate design equilibrium CBR value / modulus of subgrade reaction taking account of proposed pavement thickness, expected winter groundwater conditions, the standard to which pavement is to be designed and any local authority or other regulatory/warrantor requirements together with construction conditions likely to prevail at the time of construction.

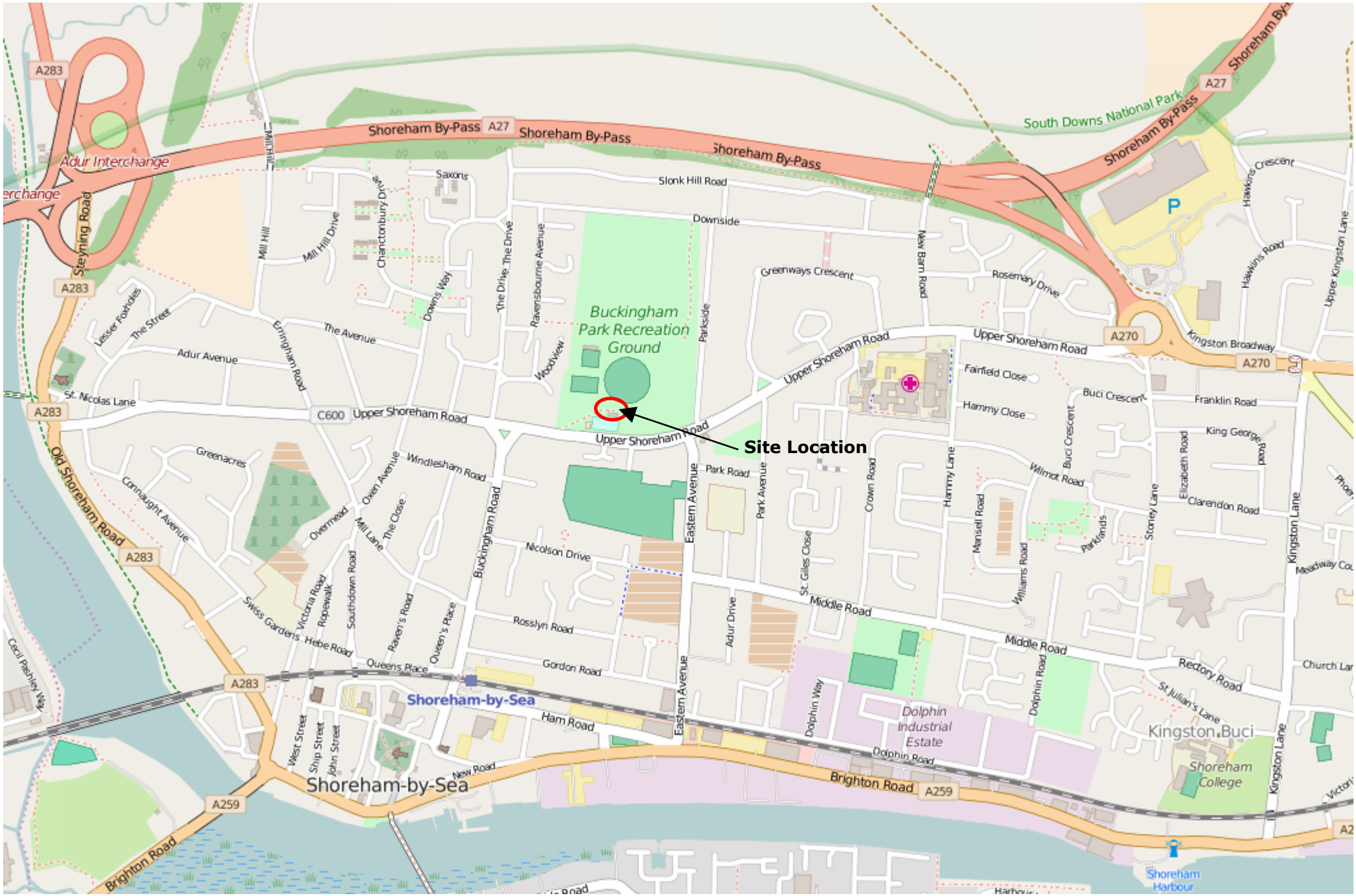
The subgrade should be assumed to be susceptible to frost heave.

Ashdown Site Investigation Ltd.

[8] Highways England Design Manual for Roads and Bridges Interim Advice Note 73/09 Rev1; now withdrawn.

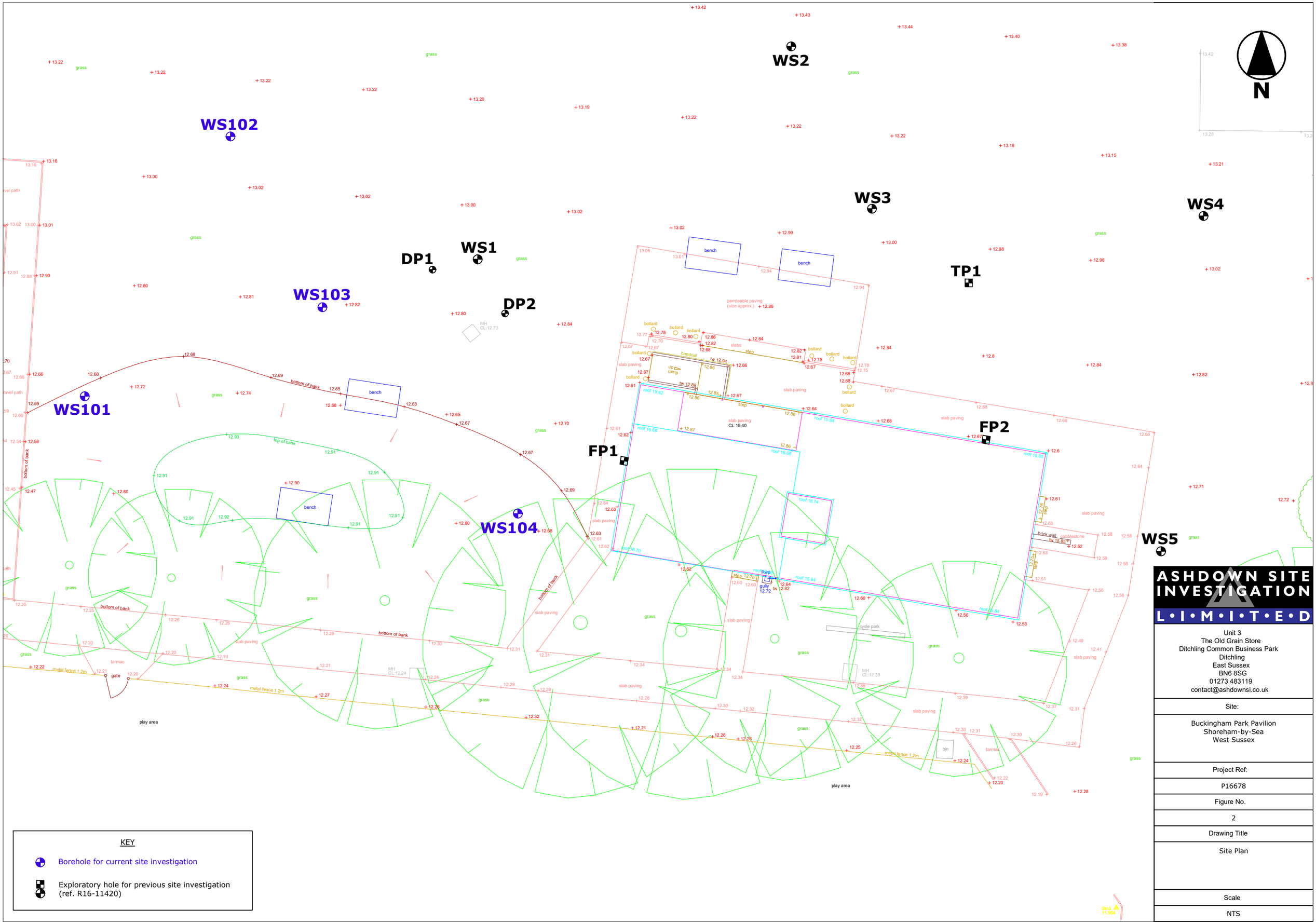
FIGURES

Figure 1 Site Location Plan
Figure 2 Site Plan



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ASHDOWN SITE INVESTIGATION LIMITED	Site: Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex	Site Location Plan. Not To Scale	Figure 1 P16678



KEY

- Borehole for current site investigation
- Exploratory hole for previous site investigation (ref. R16-11420)

ASHDOWN SITE INVESTIGATION LIMITED

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Site:

Buckingham Park Pavilion
Shoreham-by-Sea
West Sussex

Project Ref:

P16678

Figure No.

2

Drawing Title

Site Plan

Scale

NTS

APPENDIX A

Proposed Development Layout

CDM 2015 Health & Safety Information:

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Hazard Register.

Existing MUGA

Existing Sports Pitches

Existing Trees

Existing Play Park

Cafe 73 m²
Kitchen 36 m²
Servery
Servery
Store 6 m²
Dis. WC 5 m²
WC 3 m²
WC 3 m²
Changing Places 13 m²
Plant 3 m²
Bin Store 9 m²
Club Room 26 m²
Office 6 m²
First Aid / Physio 11 m²
Sh. 2 m²
Officials 6 m²
WC 2 m²
Store 3 m²
Cl. St 1 m²
WC 3 m²
Circulation 20 m²
Changing Room (18) 21 m²
Lobby 4 m²
WC's 6 m²
WC's 6 m²
Lobby 4 m²
Changing Room (18) 20 m²
Store 5 m²
Showers 7 m²
Showers 7 m²
Sp. Store 3 m²

N

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Client's Name: Adur District Council

Job Title: Buckingham Park South Pavilion

Drawing Title: Proposed site plan

Scale: 1:200 @ A3

metres 2 4 6 8

Drawn	Checked	Date
HG	DW	08.03.24

Job No	Drawing No	Rev
7387	PL-04	P1

Status: APPROVAL

Rev	Date	Revision Details	Dr	Ch
P1	20.03.24	Planning Submission	HG	DW

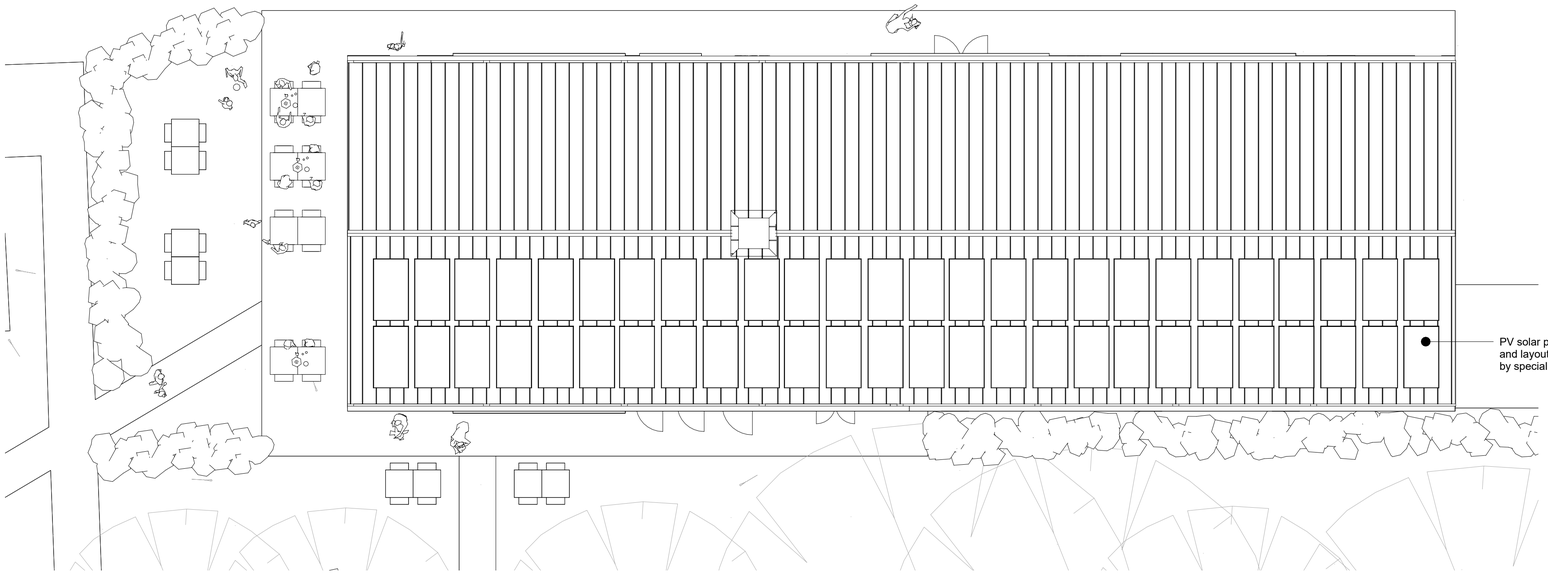
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CAD Plot date: 20/03/2024 - 09:34:16

7387-pl-04_proposed site plan.dwg

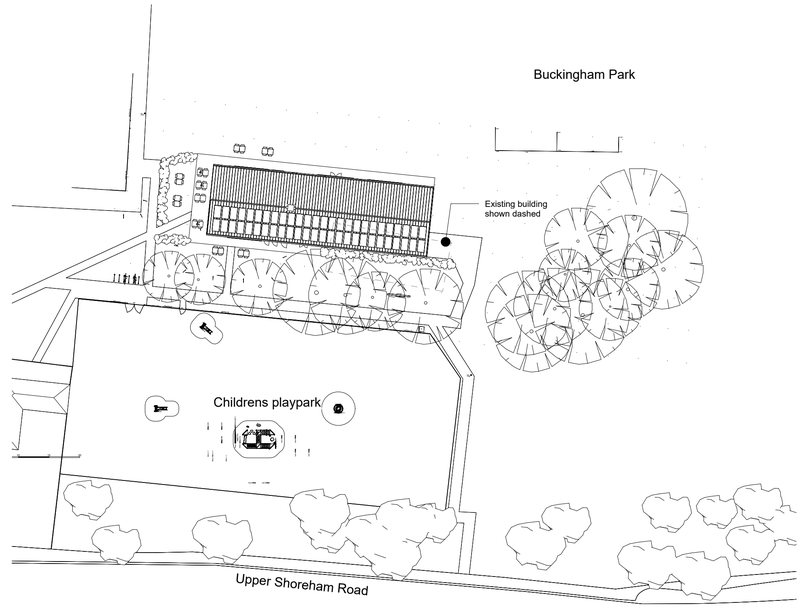
CDM 2015 Health & Safety Information

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Risk Assessment Register.



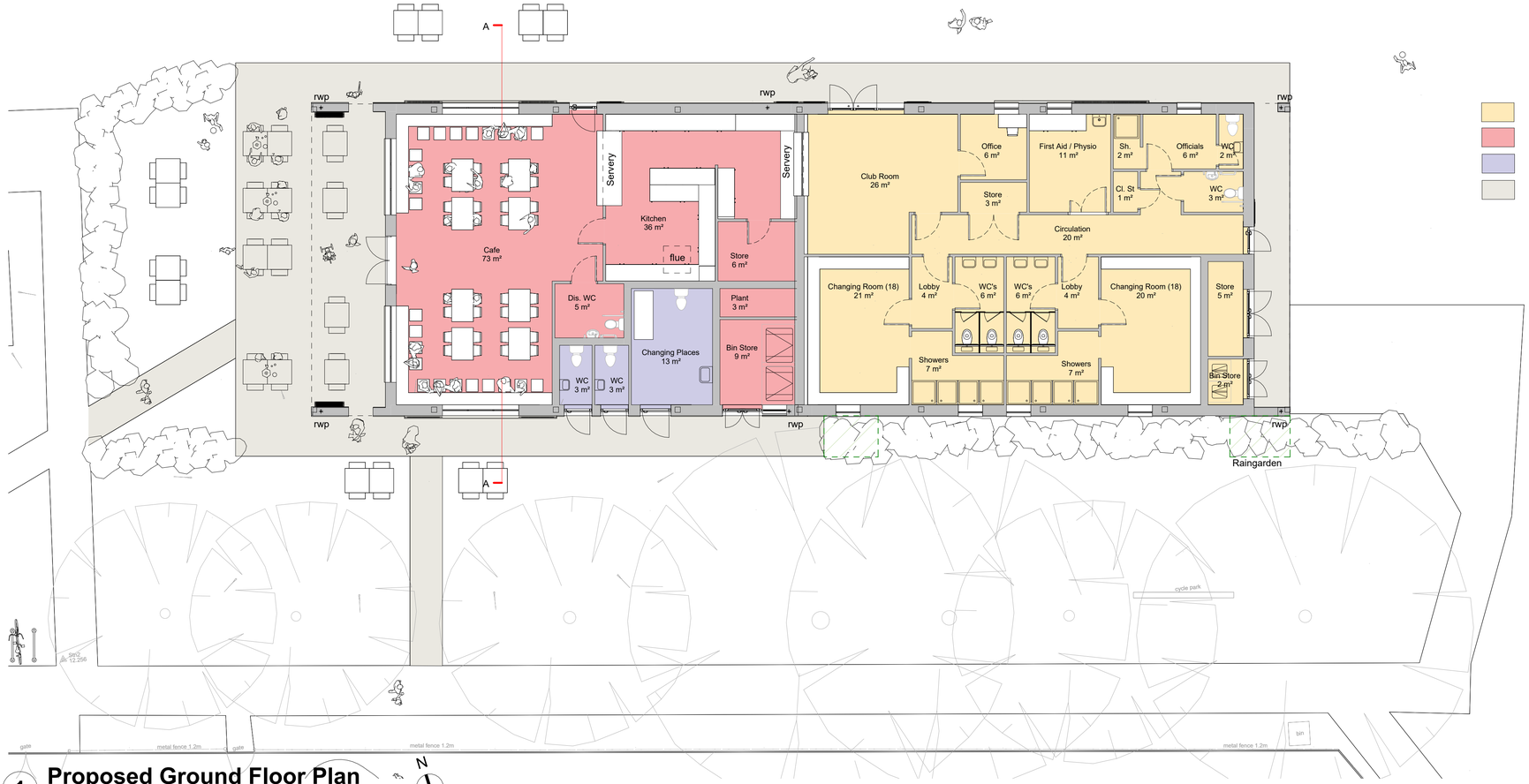
2 Proposed Roof Plan

1 : 100



3 Proposed Site Plan

1 : 500



1 Proposed Ground Floor Plan

1 : 100

- Club
- Cafe
- Public toilets
- New hard standing

Room Schedule - Full	
Room Name	**Area**
Cafe	
Bin Store	8.7 m²
Cafe	73.5 m²
Dis. WC	5.1 m²
Kitchen	36.4 m²
Plant	2.9 m²
Store	6.2 m²
	132.8 m²
Club	
Bin Store	2.2 m²
Changing Room (18)	20.6 m²
Changing Room (18)	20.1 m²
Circulation	20.2 m²
Cl. St	1.4 m²
Club Room	25.9 m²
First Aid / Physio	10.9 m²
Lobby	4.0 m²
Lobby	4.0 m²
Office	5.9 m²
Officials	5.5 m²
Sh.	2.0 m²
Showers	7.5 m²
Showers	7.5 m²
Store	4.5 m²
Store	2.7 m²
WC	1.8 m²
WC	3.3 m²
WC's	6.4 m²
WC's	6.4 m²
	162.8 m²
WC's	
Changing Places	12.9 m²
WC	2.7 m²
WC	2.6 m²
Total NIA	18.3 m²
	313.9 m²
Total GIA	335.0 m²

Rev	Date	Revision Details		Dr	Ch
P1	20.03.20	Planning Submission		HG	DW

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Adur District Council

Job Title
Buckingham Park South Pavilion

Drawing Tittle
Proposed Ground Floor Plan & Roof Plan

Scale
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project	Drawing No	Rev
7387	PL-05	P1
Drawn	**Checked**	**Date**
HG	DW	08.03.24

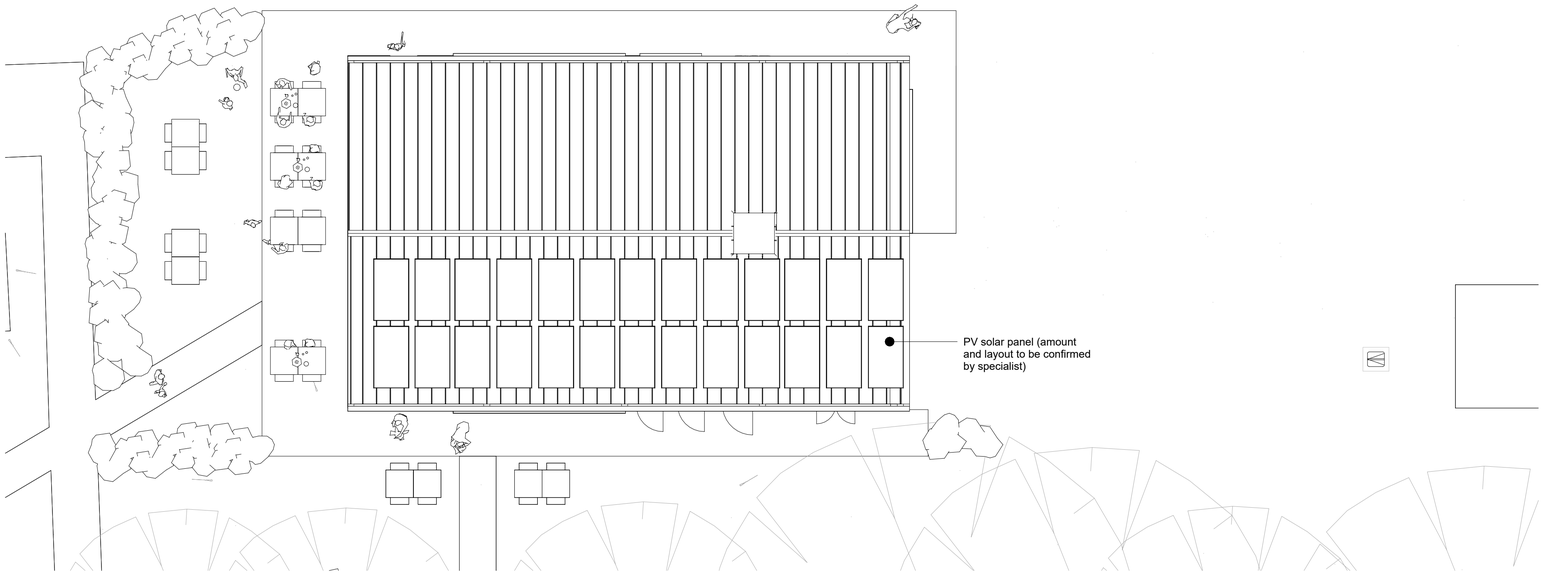
Status
S4 - Suitable for Stage Approval

CAD Plot Date:20/03/2024 09:47:09

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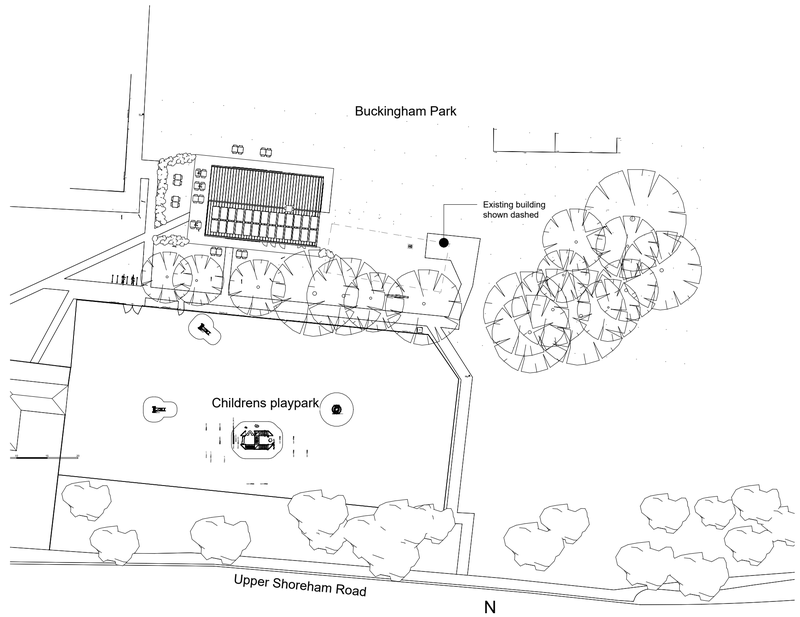
CDM 2015 Health & Safety Information

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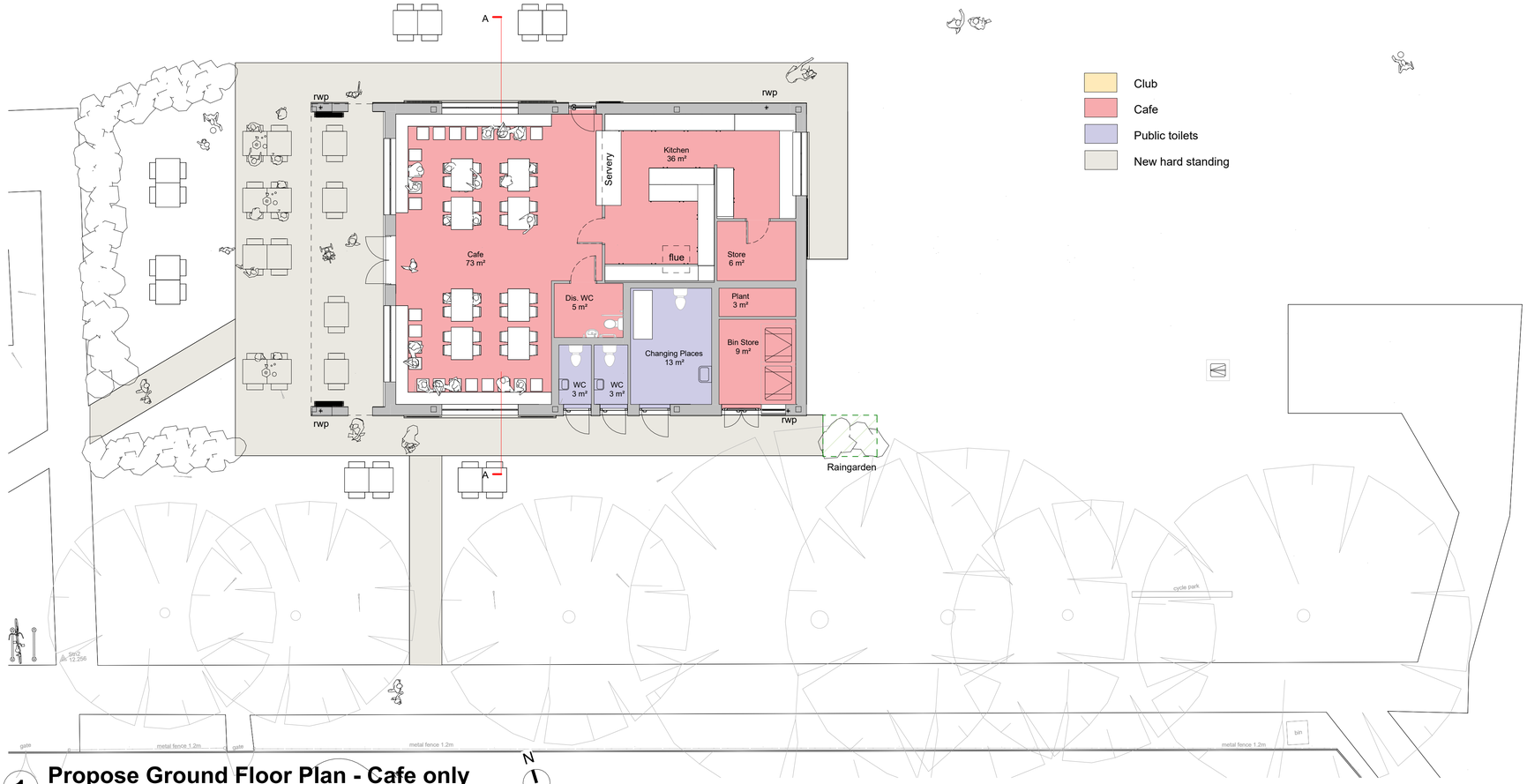
2 Proposed Roof Plan - Cafe only

1 : 100



3 Proposed Site Plan - Cafe only

1 : 500



- Club
- Cafe
- Public toilets
- New hard standing

1 Propose Ground Floor Plan - Cafe only

1 : 100

Room Schedule - Cafe only	
Name	Area
Cafe	
Bin Store	8.7 m²
Cafe	73.5 m²
Dis. WC	5.1 m²
Kitchen	36.4 m²
Plant	2.9 m²
Store	6.2 m²
	132.8 m²
WC's	
Changing Places	12.9 m²
WC	2.7 m²
WC	2.6 m²
Total NIA	18.3 m²
	151.1 m²
Total GIA	126.3 m²

Rev	Date	Revision Details		
P1	20.03.20	Planning Submission	HG	DW

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Adur District Council

Job Title
Buckingham Park South Pavilion

Drawing Tittle
Proposed Ground Floor Plan & Roof Plan - Cafe only

Scale
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project	Drawing No	Rev
7387	PL-06	P1
Drawn	**Checked**	**Date**
HG	DW	08.03.24

Status
S4 - Suitable for Stage Approval

CAD Plot Date:20/03/2024 09:47:18

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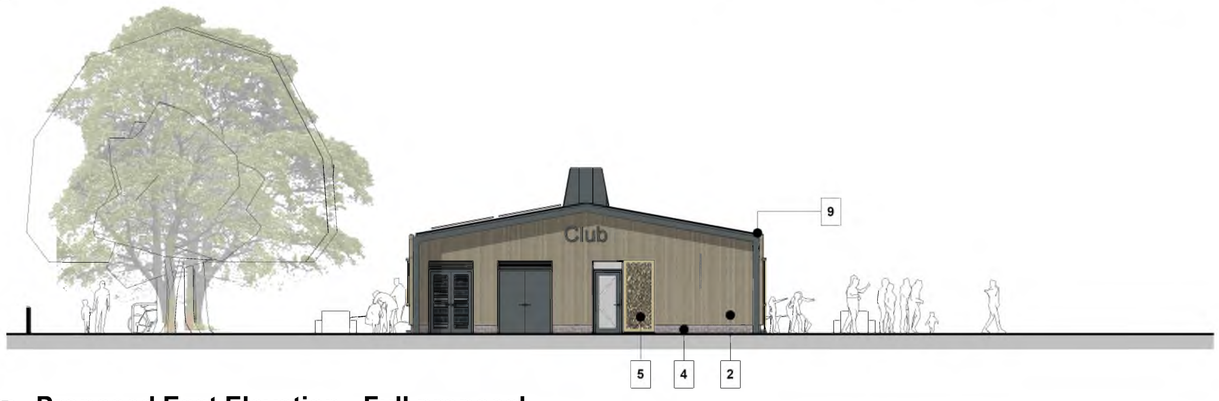


1 Proposed North Elevation - Full proposal
1 : 100

Materials Key:

1. Grey standing seam roof – Euroclad Vieo, Colour: Ral 7016 (or similar)
2. 'Silvered' timber look composite panel, vertical – Parklex Nature Siding, Silver, lap joint (or similar). With matching system window reveals and corner/edge trims.
3. 'Silvered' timber look composite panel, horizontal – Parklex Nature Siding, Silver, lap joint (or similar)
4. Grey brick plinth, 300mm high – AG Woodward Clarendon Blue Antique (or similar)
5. PV solar panel (amount, and layout to be confirmed by specialist)
6. Folding metal screen, laser cut pattern - Aluminium PPC Colour: 'Regency Gold 1' (final design to be defined)
7. Sliding metal screen, laser cut pattern - Aluminium PPC Colour: 'Regency Gold 1' (final design to be defined) on aluminium rails - Colour: RAL 7016
8. PPC aluminium windows and doors – Colour: RAL 7016
9. PPC aluminium flashing, concealed gutter and facias – Colour: RAL 7016
10. Ventilation 'chimney', clad to match standing seam roof finish.
11. Signage (final design to be defined by leaseholder)

Refer to Design & Access Statement for further detail.



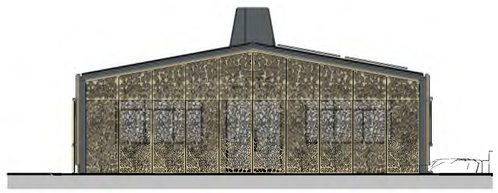
2 Proposed East Elevation - Full proposal
1 : 100



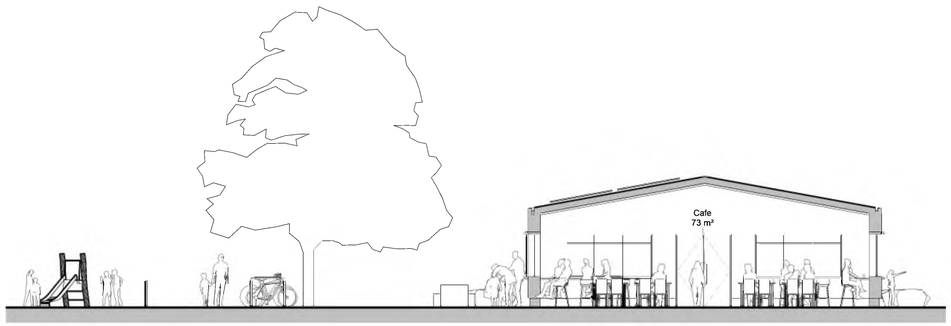
3 Proposed West Elevation - Full proposal
1 : 100



4 Proposed South Elevation - Full proposal
1 : 100



6 West Elevation - closed screens
1 : 100



5 Proposed Section A-A
1 : 100



7 South extract - closed screens
1 : 100



8 North extract - closed screens
1 : 100

Rev	Date	Revision Details	Dr	Ch
P1	20.03.20	Planning Submission	HG	DW

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Adur District Council

Job Title
Buckingham Park South Pavilion

Drawing Tittle
GA Elevations - Proposed Cafe & Clubhouse

Scale
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project	Drawing No	Rev
7387	PL-07	P1

Drawn	Checked	Date
HG	DW	08.03.24

Status
S4 - Suitable for Stage Approval

CAD Plot Date:20/03/2024 09:49:45

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CDM 2015 Health & Safety Information
The information relates only to Significant Hazards identified on this drawing and is to be read in conjunction with the Designer's Risk Assessment Register

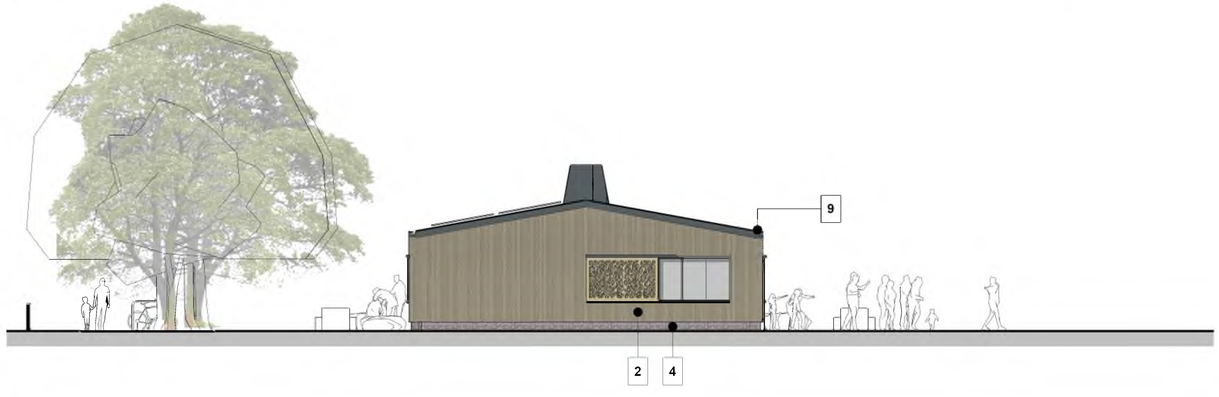


1 Proposed North Elevation - Cafe only
1 : 100

Materials Key:

1. Grey standing seam roof – Euroclad Vieo, Colour: Ral 7016 (or similar)
2. 'Silvered' timber look composite panel, vertical – Parklex Nature Siding, Silver, lap joint (or similar). With matching system window reveals and corner/edge trims.
3. 'Silvered' timber look composite panel, horizontal – Parklex Nature Siding, Silver, lap joint (or similar)
4. Grey brick plinth, 300mm high – AG Woodward Clarendon Blue Antique (or similar)
5. PV solar panel (amount, and layout to be confirmed by specialist)
6. Folding metal screen, laser cut pattern - Aluminium PPC Colour: 'Regency Gold 1' (final design to be defined)
7. Sliding metal screen, laser cut pattern - Aluminium PPC Colour: 'Regency Gold 1' (final design to be defined) on aluminium rails - Colour: RAL 7016
8. PPC aluminium windows and doors – Colour: RAL 7016
9. PPC aluminium flashing, concealed gutter and facias – Colour: RAL 7016
10. Ventilation 'chimney', clad to match standing seam roof finish.
11. Signage (final design to be defined by leaseholder)

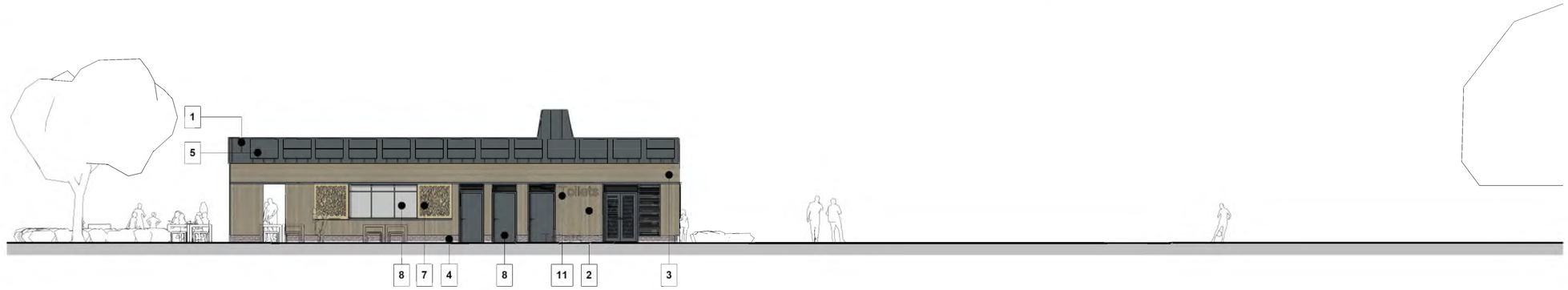
Refer to Design & Access Statement for further detail.



2 Proposed East Elevation - Cafe only
1 : 100



3 Proposed West Elevation - Cafe only
1 : 100



4 Proposed South Elevation - Cafe only
1 : 100



5 Section A-A - Cafe only
1 : 100

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Rev	Date	Revision Details	Dr	Ch
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www.ecearchitecture.com

Adur District Council

Job Title
Buckingham Park South Pavilion

Drawing Tittle
GA Elevations - Proposed Cafe only

Scale
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project	Drawing No	Rev
7387	PL-08	P1

Drawn	Checked	Date
HG	DW	08.03.24

Status
S4 - Suitable for Stage Approval

CAD Plot Date:20/03/2024 09:57:22

CDM 2015 Health & Safety Information

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Risk Assessment Register.



Illustrative view from NW



Illustrative cafe viewed from SW - Screens closed



Illustrative cafe viewed from SW - Screens open

Adur District Council

Job Title: Buckingham Park South Pavilion

Drawing Title: Proposed illustrative 3D views

Scale: NOT TO SCALE

Drawn	Checked	Date
HG	DW	08.03.24

Project	Drawing No	Rev
7387	PL-09	P1

Status: S4 - Suitable for Stage Approval

Rev	Date	Revision Details	Dr	Ch
P1	20.03.20	Planning Submission	HG	DW

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CDM 2015 Health & Safety Information:

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Hazard Register.

A - Proposed permeable paths and terraces
B - Existing paved path
C - Existing grassed area
D - Proposed native planting bed
E - Proposed small trees and mid-level shrubs
F - Existing mature trees
G - Moveable cafe seating

Existing MUGA

Existing Sports Pitches

Cycles

Existing Play Park

Cafe 73 m²
Kitchen 36 m²
Servery
Servery
Store 6 m²
Dis. WC 5 m²
Plant 3 m²
Changing Places 13 m²
WC 3 m²
WC 3 m²
Bin Store 9 m²
Club Room 26 m²
Office 6 m²
First Aid / Physio 11 m²
Sh. 2 m²
Officials 6 m²
WC 2 m²
Store 3 m²
Cl. St 1 m²
WC 3 m²
Circulation 20 m²
Changing Room (18) 21 m²
Lobby 4 m²
WC's 6 m²
WC's 6 m²
Lobby 4 m²
Changing Room (18) 20 m²
Store 5 m²
Showers 7 m²
Showers 7 m²
Bin Store 3 m²

N

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Client's Name: Adur District Council

Job Title: Buckingham Park South Pavilion

Drawing Title: Indicative Landscape Plan

Scale: 1:200 @ A3
metres 2 4 6 8

Drawn	Checked	Date
HG	DW	14.03.24

Job No	Drawing No	Rev
7387	PL-10	P1

Status: APPROVAL

Rev	Date	Revision Details	Dr	Ch
P1	20.03.24	Planning Submission	HG	DW

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CAD Plot date: 20/03/2024 - 09:53:23

7387-pl-04_proposed site plan.dwg

APPENDIX B

Explanatory Notes
Exploratory Hole Records
DPSH-B Dynamic Probe Records
In-situ TRL Cone Penetrometer (CBR) Test Results

Explanatory Notes

Symbols and abbreviations on Exploratory Hole Records

Samples

U 'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
Pi Piston Sample: 'Undisturbed' sample 100mm diameter by 600mm long.
D Disturbed Sample
R Root Sample
B Bulk Disturbed Sample
W Water Sample
ES Environmental Suite (on older records may be referenced J T)

In Situ Testing

S Standard penetration test (SPT): Using the split spoon sampler.
C Standard Penetration Test (SPT): Using a solid cone instead of the sampler – conducted usually in coarse grained soils or weak rocks.
V Shear Vane Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.
H Hand penetrometer Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.
P Perth Penetrometer Test: Number of blows for 300mm penetration shown under Vane/Pen Test and N Value column.

Excavation Method

CP Cable Percussion Borehole
RC Rotary Cored Borehole
WLS Dynamic Sampler Borehole using windowless sampler tubes
WS Dynamic Sampler Borehole using window sampler tubes
TP Trial Pit excavated using mechanic excavator
HDP Trial Pit excavated using hand tools

Soil Description

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1) and Part 2 Principles of classification (BS EN 14688-2) as well as the BS5930 code of Practice for Ground Investigations.

Rock Description

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1) as well as the BS5930 code of Practice for Ground Investigations. TCR – Total Core Recovery, SCR – Solid Core Recovery, RQD – Rock Quality Designation, NI – Non Intact, If – indicative fracture spacing (min/ave/max), FI – Fracture Index.

Chalk Description

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk.

In Situ Strength Testing

Standard penetration testing (SPT) carried out in accordance with BS EN ISO 22476-3:2005.

Continuous dynamic probe testing conducted using a super heavy DPSH-B (As defined by BS EN ISO 22476-2:2005) probing geometry. The DPSH-B configuration is similar to that of the standard penetration test (SPT); the main differences being that the tip comprises a 90° cone, the driving rods are lighter than those used for SPT testing and the blow counts are recorded over 100mm increments rather than 300mm, as is the case for the SPT.

Perth penetrometer tests carried out in accordance with Australian Standard AS 1289:6.3.3-1997, Method of Testing Soils for Engineering Purposes; no equivalent European or British Standard having been published to date.

Undrained shear strength determinations made in-situ using a Geonor hand shear vane or a hand penetrometer.

Testing to determine the in-situ California Bearing Ratio (CBR) of soils conducted at shallow depths using a hand-held Transport Research Laboratory (TRL) cone penetrometer.

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex

Job Number: P16678

Start Date: 28/06/2024

End Date: 28/06/2024

Borehole Number: **WS101**

Standpipe	Samples and In Situ Testing: Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe (0 5 10 15 20 25 30)	Legend	Depth	Stratum Description
							0.00	Topsoil over, MADE GROUND: Brown gravelly silty clay. Gravel is subangular to subrounded fine to coarse flint, brick and rare plastic.
							0.20	Stiff brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	D	0.40						
	D	0.70						
	H	0.80		200			0.85	becoming very stiff at 0.80m depth.
	V	1.00		>130				Stiff light brown and brown mottled gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (Head)
	D	1.10						
							1.40	Firm brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	H	1.50		40				
	D	1.90						
	V	2.00		120				locally becoming stiff below 2.00m depth.
	H	2.10		65				
	D	2.40						with rare gravel of ironstone at 2.40m depth.
	H	2.50		100				
	D	2.85	3.00				2.85	Firm light brown gravelly CLAY. Gravel is subangular to subrounded fine flint and chalk. (Head)
	H	2.90		40				
	V	3.00		70			3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: GRD

ASHDOWN SITE INVESTIGATION LIMITED
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Tel: 01273 483119

Site Name: Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex

Job Number: P16678

Start Date: 28/06/2024

End Date: 28/06/2024

Borehole Number: **WS102**

Standpipe	Samples and In Situ Testing: Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
							0.15	Light brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	D	0.30					0.40	Stiff brown and light brown mottled slightly gravelly silty CLAY with occasional bands of gravel of subangular to subrounded fine to coarse chalk and flint. (Head)
	D	0.90						
	V	1.00		>130				becoming brown below 1.00m depth.
	D	1.20						
							1.55	Stiff brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	D	1.80						
	H	1.80		75				
	V	2.00		>130				
	D	2.30						
	H	2.85		75				with subangular to subrounded fine to medium gravel of ironstone below 2.85m depth.
	D	2.90						
	V	3.00		>130			3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: GRD

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Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex

Job Number: P16678

Start Date: 28/06/2024

End Date: 28/06/2024

Borehole Number: **WS103**

Standpipe	Samples and In Situ Testing: Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe (0 5 10 15 20 25 30)	Legend	Depth	Stratum Description
							0.00	Topsoil.
							0.20	Firm brown gravelly silty CLAY. Gravel is subangular ro subrounded fine to coarse flint. (Head)
	D	0.50						
	D	0.80						
	H	0.90		60				
	V	1.00		110				becoming locally stiff below 1.00m depth.
	D	1.30						
	D	1.70						
	V	2.00		90			1.95	Firm orange brown slightly gravelly silty CLAY with frequent bands of subangular to subrounded fine to coarse flint. (Head)
	D	2.10						becoming locally stiff below 2.00m depth.
							2.45	Firm orange brown gravelly CLAY. Gravel is subangular to subrounded fine flint and rare ironstone. (Head)
	D	2.70						
							3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: GRD

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Site Name: Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex

Job Number: P16678

Start Date: 28/06/2024

End Date: 28/06/2024

Borehole Number: **WS104**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil over,
	D	0.25					0.20	MADE GROUND: Brown slightly gravelly silty clay. Gravel is subangular to subrounded fine to coarse flint with rare brick and glass.
								Firm brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	H	0.80		140				
	D	0.85						becoming stiff below 0.80m depth.
	V	1.00		>130			1.00	Stiff light brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. (Head)
	D	1.40						
	D	2.00					1.90	Stiff orange brown very gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	D	2.20					2.10	Stiff orange brown slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
	H	2.20		100				
	H	2.50		90				with gravel of ironstone below 2.40m depth.
	D	2.85						
	H	2.85		75			3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: GRD

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Borehole Number: **WS1** Sheet 1 of 1

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.10	MADE GROUND: Brown slightly gravelly silty clay. Gravel is angular to subrounded fine to coarse flint and plastic.
	D	0.50					0.30	Firm brown slightly gravelly CLAY. Gravel is angular to subangular fine to coarse flint.
	J T	1.10					0.70	Stiff light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint and chalk. (Head)
	D	1.30						
	D	1.80						becoming very clayey GRAVEL towards base.
	J T	2.00					2.00	Stiff to very stiff orange brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint and chalk. (Head)
	D	2.50						
	H	2.80		170				
	V	3.00		90			3.00	Stiff light orange and yellow brown slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to medium chalk and rare flint. (Head)
	H	3.20		115				
	D	3.50						with much gravel of chalk below 3.50m depth.
	H	3.50		115				
	D	4.50					4.00	Dense grey brown sandy angular to rounded fine to coarse GRAVEL of flint. Sand is fine to coarse. (Head) limited sample recovery below 4.00m depth.
							5.00	End of borehole at 5.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: SA

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Borehole Number: **WS2** Sheet 1 of 1

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.05	MADE GROUND: Brown slightly gravelly silty clay. Gravel is subangular to subrounded fine to coarse flint with a trace of brick.
	J T	0.60					0.40	Stiff light brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to coarse flint and chalk. (Head)
	D	0.90						
	D	1.20						
	J T	1.50						
	D	1.90					1.90	
	V	2.00		>130				Stiff orange brown slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to medium flint and chalk. (Head)
	H	2.20		115				
	D	2.50						
	H	2.50		115				
	H	2.80		195				
								becoming firm below 3.00m depth.
	D	3.50						
	H	3.50		60				
	H	3.80		60				
							4.00	End of borehole at 4.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: SA

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Tel: 01273 483119

Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Borehole Number: **WS3**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.10	MADE GROUND: Brown slightly gravelly silty clay. Gravel is angular to subrounded fine to coarse flint and brick.
	D	0.60					0.40	Stiff brown slightly sandy gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint and chalk. (Head)
	J T	0.80						
	V	1.00		>130				
	D	1.20					1.10	Stiff light brown slightly sandy gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint, chalk and sandstone. (Head)
	J T	1.50						
	D	1.80						
							2.00	Stiff orange brown slightly gravelly silty CLAY. Gravel is angular to subrounded fine to coarse flint and chalk. (Head)
	D	2.50						
							3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: SA

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Borehole Number: **WS4** Sheet 1 of 1

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.10	MADE GROUND: Brown slightly gravelly silty clay. Gravel is angular to subangular fine to coarse flint and charcoal-like material with a trace of brick.
	J T	0.40					0.30	
	H	0.50		115				Stiff dark brown slightly gravelly silty CLAY. Gravel is angular to subrounded fine to coarse flint. (Head)
	D	0.70					0.80	
	J T	1.00						Stiff light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, chalk and sandstone. (Head)
	V	1.00		90				
	D	1.20						
	D	2.00					2.00	
	V	2.00		100				End of borehole at 2.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: n/a

Excavation Method: WLS

Borehole Diameter: Various

Made By: SA

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Borehole Number: **WS5**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
							0.15	MADE GROUND: Dark brown slightly gravelly silty clay. Gravel is subangular to subrounded fine to coarse flint, concrete and breeze block.
	J T	0.30						
	D	0.40						
							0.60	Very stiff brown gravelly silty CLAY. Gravel is angular to subrounded fine to coarse flint. (Head)
	D	0.80						
	H	0.80		170				
							1.00	Very stiff light brown sandy gravelly CLAY. Sand is medium to coarse. Gravel is subangular to rounded fine to coarse flint and chalk. (Head)
	J T	1.10						
	H	1.20		225				
	D	1.50						
	H	1.50		195				
	H	1.80		115				becoming stiff below 1.80m depth.
	D	1.90						
							2.00	Stiff orange brown slightly gravelly silty CLAY. Gravel is angular to subrounded fine to coarse flint. (Head)
	H	2.20		115				
	D	2.50						
	H	2.80		170				becoming stiff towards base.
							3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: Standpipe installed to 3.00m depth; 3.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with end cap and security cover concreted flush with ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: SA

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Trial Pit Number: **TP1**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Topsoil.
J T	0.20				0.10	MADE GROUND: Brown slightly gravelly silty clay. Gravel is angular to subrounded fine to coarse flint and brick.
					0.30	Stiff brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint and chalk. (Head)
D	0.60					
D	0.75				0.70	Stiff light brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint, chalk and sandstone. (Head)
J T	0.75				0.80	End of trial pit at 0.80m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: 0.27m

Pit Width: 0.24m

Made By: SA

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Trial Pit Number: **FP1**

Sample/ Test Type	Samples and In Situ Testing: Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level	Stratum Description
					0.00	Paving slab (50mm) over,
					0.10	Sand.
J T	0.20					MADE GROUND: Brown slightly sandy gravelly silty clay with a trace of rootlets. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse flint ,concrete, ash-like material, charcoal-like material, brick, ceramic, clinker-like material and chalk with cobbles of concrete.
					0.50	
D	0.60					Stiff orange brown slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse flint. (Head)
P	0.80	1.25	24			
					1.00	
D	1.10				1.10	Stiff yellow brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. (Head)
P	1.25	1.55	19			End of trial pit at 1.10m
P	1.55	1.60	10			

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: Perth at 1.55m depth - blow count for 50mm penetration only.

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	SA

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Site Name: Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex

Job Number: R16-11420

Start Date: 17/05/2016

End Date: 17/05/2016

Trial Pit Number: **FP2**

Sample/ Test Type	Samples and In Situ Testing: Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level	Stratum Description
					0.00	Topsoil.
J T	0.20				0.05	MADE GROUND: Brown slightly sandy gravelly silty clay. Gravel is subangular to subrounded fine to coarse flint, chalk, ash-like material, clinker-like material, plastic, bitumen and brick.
					0.30	Stiff oange brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse flint. (Head)
D	0.60					
P	0.80	1.25	20			
					0.90	
D	1.00					Stiff yellow brown gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. (Head)
P	1.25	1.55	21		1.20	End of trial pit at 1.20m
P	1.55	1.60	5			

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: Perth at 1.55m depth - blow count for 50mm penetration only.

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	SA

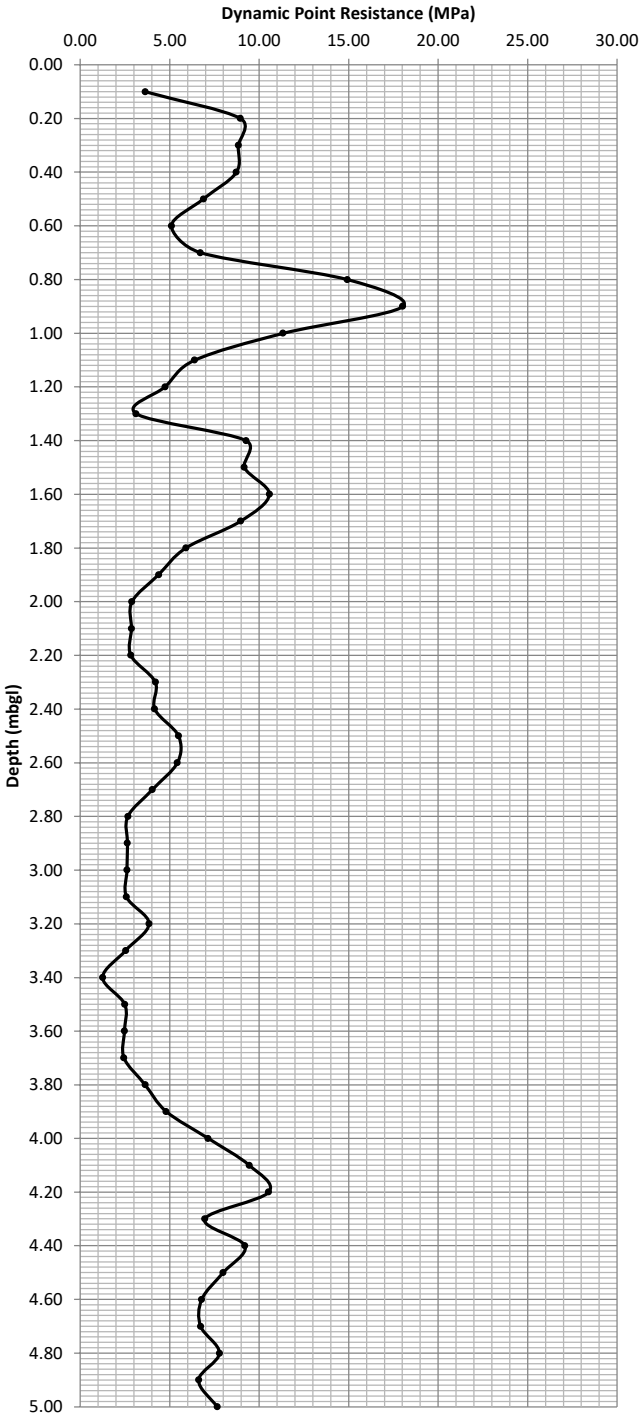
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Dynamic Probe Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Report Ref.** P16678

Test Location Reference	WS101

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	2	0.05	3.74	3.63
0.20	5	0.02	9.34	8.96
0.30	5	0.02	9.34	8.84
0.40	5	0.02	9.34	8.72
0.50	4	0.03	7.48	6.89
0.60	3	0.03	5.61	5.10
0.70	4	0.03	7.48	6.72
0.80	9	0.01	16.82	14.93
0.90	11	0.01	20.56	18.03
1.00	7	0.01	13.08	11.33
1.10	4	0.03	7.48	6.40
1.20	3	0.03	5.61	4.74
1.30	2	0.05	3.74	3.13
1.40	6	0.02	11.21	9.27
1.50	6	0.02	11.21	9.17
1.60	7	0.01	13.08	10.57
1.70	6	0.02	11.21	8.96
1.80	4	0.03	7.48	5.91
1.90	3	0.03	5.61	4.38
2.00	2	0.05	3.74	2.89
2.10	2	0.05	3.74	2.86
2.20	2	0.05	3.74	2.83
2.30	3	0.03	5.61	4.20
2.40	3	0.03	5.61	4.16
2.50	4	0.03	7.48	5.49
2.60	4	0.03	7.48	5.43
2.70	3	0.03	5.61	4.04
2.80	2	0.05	3.74	2.66
2.90	2	0.05	3.74	2.64
3.00	2	0.05	3.74	2.61
3.10	2	0.05	3.74	2.59
3.20	3	0.03	5.61	3.84
3.30	2	0.05	3.74	2.54
3.40	1	0.10	1.87	1.26
3.50	2	0.05	3.74	2.49
3.60	2	0.05	3.74	2.47
3.70	2	0.05	3.74	2.45
3.80	3	0.03	5.61	3.64
3.90	4	0.03	7.48	4.81
4.00	6	0.02	11.21	7.15
4.10	8	0.01	14.95	9.44
4.20	9	0.01	16.82	10.53
4.30	6	0.02	11.21	6.96
4.40	8	0.01	14.95	9.20
4.50	7	0.01	13.08	7.98
4.60	6	0.02	11.21	6.79
4.70	6	0.02	11.21	6.73
4.80	7	0.01	13.08	7.79
4.90	6	0.02	11.21	6.62
5.00	7	0.01	13.08	7.66



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.75	
Anvil Mass	1	kg
Rod Mass	8.79	kg/m

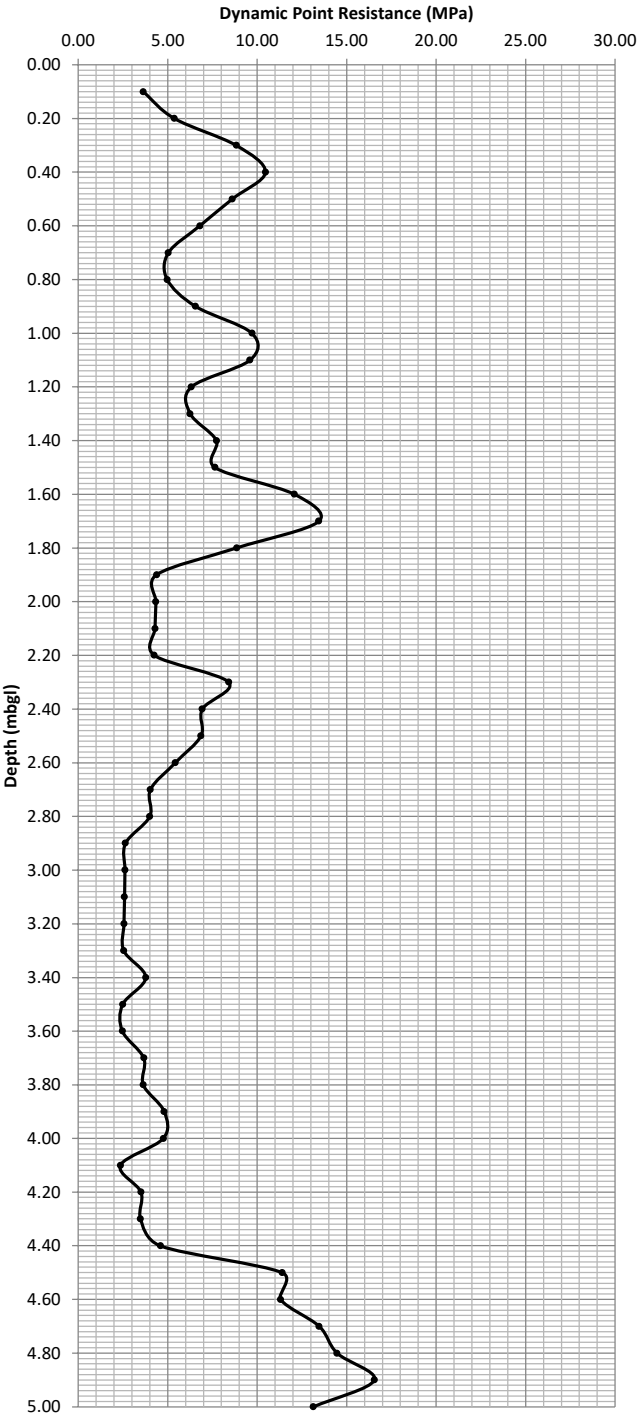
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Dynamic Probe Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Report Ref.** P16678

Test Location Reference	WS102

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	2	0.05	3.74	3.63
0.20	3	0.03	5.61	5.37
0.30	5	0.02	9.34	8.84
0.40	6	0.02	11.21	10.47
0.50	5	0.02	9.34	8.61
0.60	4	0.03	7.48	6.80
0.70	3	0.03	5.61	5.04
0.80	3	0.03	5.61	4.98
0.90	4	0.03	7.48	6.56
1.00	6	0.02	11.21	9.72
1.10	6	0.02	11.21	9.60
1.20	4	0.03	7.48	6.33
1.30	4	0.03	7.48	6.25
1.40	5	0.02	9.34	7.73
1.50	5	0.02	9.34	7.64
1.60	8	0.01	14.95	12.09
1.70	9	0.01	16.82	13.45
1.80	6	0.02	11.21	8.87
1.90	3	0.03	5.61	4.38
2.00	3	0.03	5.61	4.34
2.10	3	0.03	5.61	4.29
2.20	3	0.03	5.61	4.25
2.30	6	0.02	11.21	8.41
2.40	5	0.02	9.34	6.93
2.50	5	0.02	9.34	6.86
2.60	4	0.03	7.48	5.43
2.70	3	0.03	5.61	4.04
2.80	3	0.03	5.61	4.00
2.90	2	0.05	3.74	2.64
3.00	2	0.05	3.74	2.61
3.10	2	0.05	3.74	2.59
3.20	2	0.05	3.74	2.56
3.30	2	0.05	3.74	2.54
3.40	3	0.03	5.61	3.77
3.50	2	0.05	3.74	2.49
3.60	2	0.05	3.74	2.47
3.70	3	0.03	5.61	3.67
3.80	3	0.03	5.61	3.64
3.90	4	0.03	7.48	4.81
4.00	4	0.03	7.48	4.76
4.10	2	0.05	3.74	2.36
4.20	3	0.03	5.61	3.51
4.30	3	0.03	5.61	3.48
4.40	4	0.03	7.48	4.60
4.50	10	0.01	18.69	11.41
4.60	10	0.01	18.69	11.31
4.70	12	0.01	22.43	13.46
4.80	13	0.01	24.29	14.46
4.90	15	0.01	28.03	16.55
5.00	12	0.01	22.43	13.13



Notes:

Hammer Mass	63.5 kg
Fall Height	0.76 m
Cone Area	0.0019 m^2
E_{theor}	473 J
Energy Ratio	0.75
Anvil Mass	1 kg
Rod Mass	8.79 kg/m

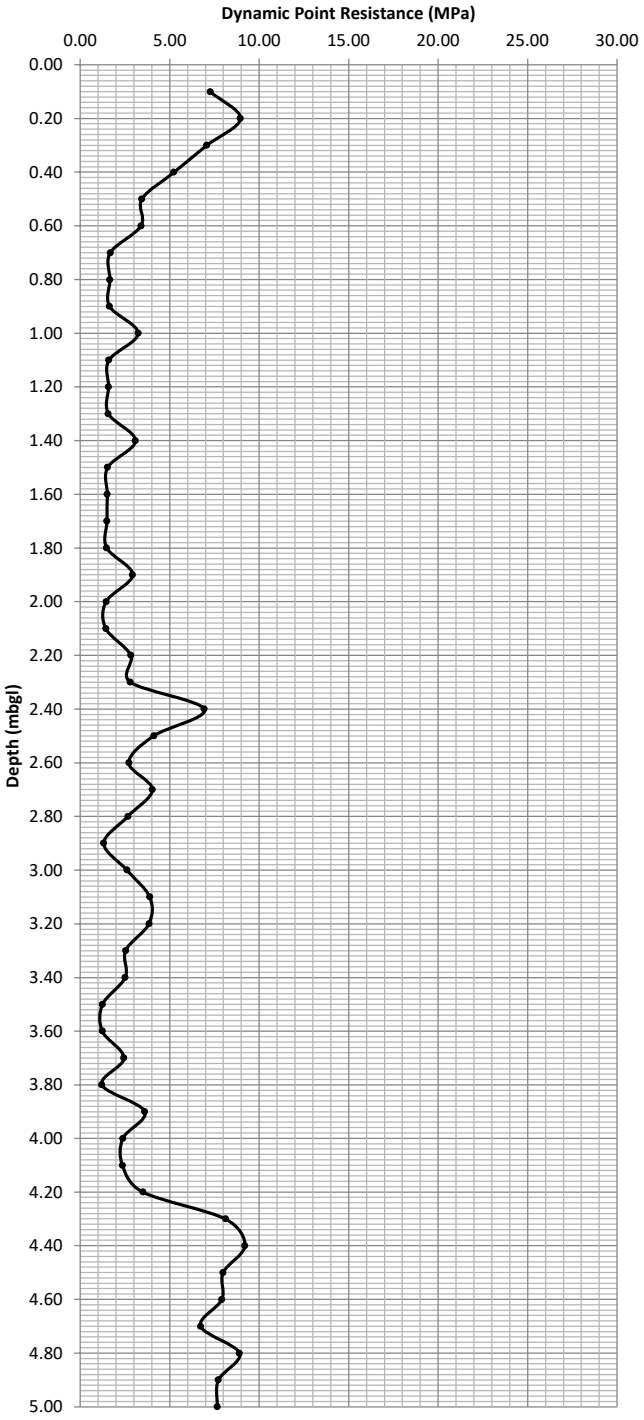
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Dynamic Probe Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Report Ref.** P16678

Test Location Reference	WS103

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	4	0.03	7.48	7.26
0.20	5	0.02	9.34	8.96
0.30	4	0.03	7.48	7.07
0.40	3	0.03	5.61	5.23
0.50	2	0.05	3.74	3.45
0.60	2	0.05	3.74	3.40
0.70	1	0.10	1.87	1.68
0.80	1	0.10	1.87	1.66
0.90	1	0.10	1.87	1.64
1.00	2	0.05	3.74	3.24
1.10	1	0.10	1.87	1.60
1.20	1	0.10	1.87	1.58
1.30	1	0.10	1.87	1.56
1.40	2	0.05	3.74	3.09
1.50	1	0.10	1.87	1.53
1.60	1	0.10	1.87	1.51
1.70	1	0.10	1.87	1.49
1.80	1	0.10	1.87	1.48
1.90	2	0.05	3.74	2.92
2.00	1	0.10	1.87	1.45
2.10	1	0.10	1.87	1.43
2.20	2	0.05	3.74	2.83
2.30	2	0.05	3.74	2.80
2.40	5	0.02	9.34	6.93
2.50	3	0.03	5.61	4.12
2.60	2	0.05	3.74	2.72
2.70	3	0.03	5.61	4.04
2.80	2	0.05	3.74	2.66
2.90	1	0.10	1.87	1.32
3.00	2	0.05	3.74	2.61
3.10	3	0.03	5.61	3.88
3.20	3	0.03	5.61	3.84
3.30	2	0.05	3.74	2.54
3.40	2	0.05	3.74	2.52
3.50	1	0.10	1.87	1.25
3.60	1	0.10	1.87	1.23
3.70	2	0.05	3.74	2.45
3.80	1	0.10	1.87	1.21
3.90	3	0.03	5.61	3.60
4.00	2	0.05	3.74	2.38
4.10	2	0.05	3.74	2.36
4.20	3	0.03	5.61	3.51
4.30	7	0.01	13.08	8.12
4.40	8	0.01	14.95	9.20
4.50	7	0.01	13.08	7.98
4.60	7	0.01	13.08	7.92
4.70	6	0.02	11.21	6.73
4.80	8	0.01	14.95	8.90
4.90	7	0.01	13.08	7.72
5.00	7	0.01	13.08	7.66



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.75	
Anvil Mass	1	kg
Rod Mass	8.79	kg/m

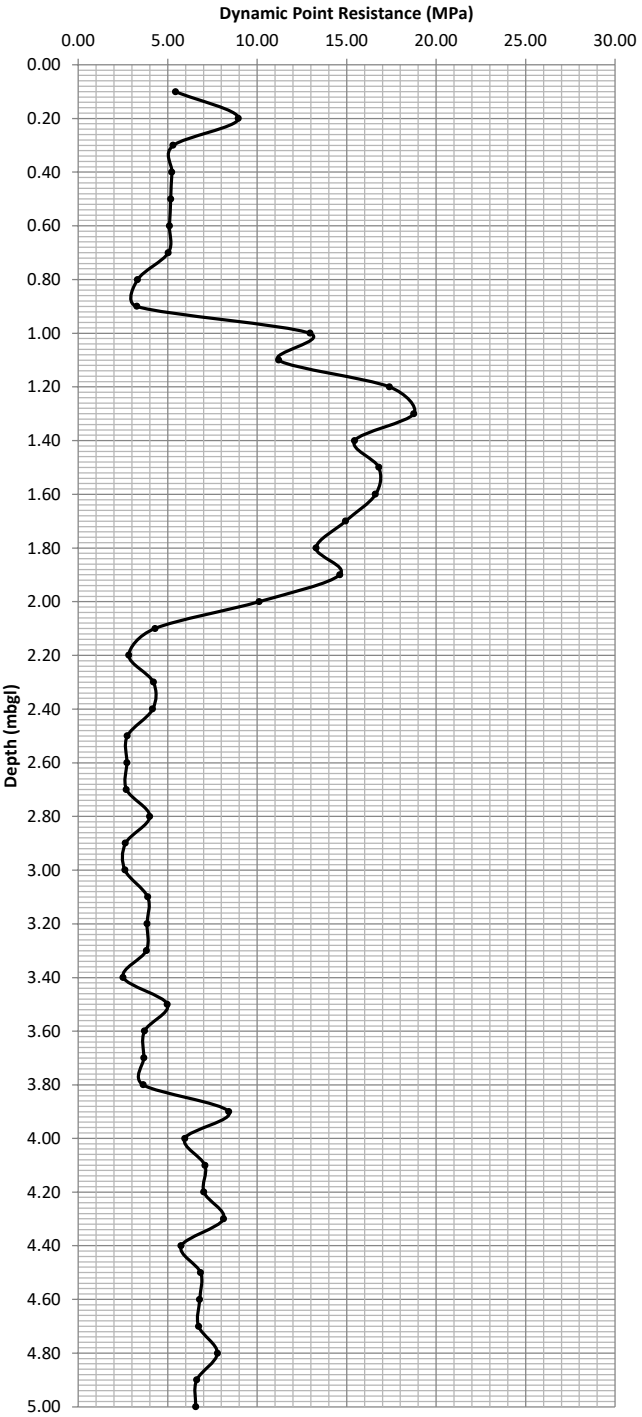
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Report Ref.** P16678

Test Location Reference	WS104

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	3	0.03	5.61	5.45
0.20	5	0.02	9.34	8.96
0.30	3	0.03	5.61	5.30
0.40	3	0.03	5.61	5.23
0.50	3	0.03	5.61	5.17
0.60	3	0.03	5.61	5.10
0.70	3	0.03	5.61	5.04
0.80	2	0.05	3.74	3.32
0.90	2	0.05	3.74	3.28
1.00	8	0.01	14.95	12.95
1.10	7	0.01	13.08	11.20
1.20	11	0.01	20.56	17.40
1.30	12	0.01	22.43	18.76
1.40	10	0.01	18.69	15.45
1.50	11	0.01	20.56	16.80
1.60	11	0.01	20.56	16.62
1.70	10	0.01	18.69	14.94
1.80	9	0.01	16.82	13.30
1.90	10	0.01	18.69	14.62
2.00	7	0.01	13.08	10.12
2.10	3	0.03	5.61	4.29
2.20	2	0.05	3.74	2.83
2.30	3	0.03	5.61	4.20
2.40	3	0.03	5.61	4.16
2.50	2	0.05	3.74	2.74
2.60	2	0.05	3.74	2.72
2.70	2	0.05	3.74	2.69
2.80	3	0.03	5.61	4.00
2.90	2	0.05	3.74	2.64
3.00	2	0.05	3.74	2.61
3.10	3	0.03	5.61	3.88
3.20	3	0.03	5.61	3.84
3.30	3	0.03	5.61	3.81
3.40	2	0.05	3.74	2.52
3.50	4	0.03	7.48	4.98
3.60	3	0.03	5.61	3.70
3.70	3	0.03	5.61	3.67
3.80	3	0.03	5.61	3.64
3.90	7	0.01	13.08	8.41
4.00	5	0.02	9.34	5.95
4.10	6	0.02	11.21	7.08
4.20	6	0.02	11.21	7.02
4.30	7	0.01	13.08	8.12
4.40	5	0.02	9.34	5.75
4.50	6	0.02	11.21	6.84
4.60	6	0.02	11.21	6.79
4.70	6	0.02	11.21	6.73
4.80	7	0.01	13.08	7.79
4.90	6	0.02	11.21	6.62
5.00	6	0.02	11.21	6.57



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.75	
Anvil Mass	1	kg
Rod Mass	8.79	kg/m

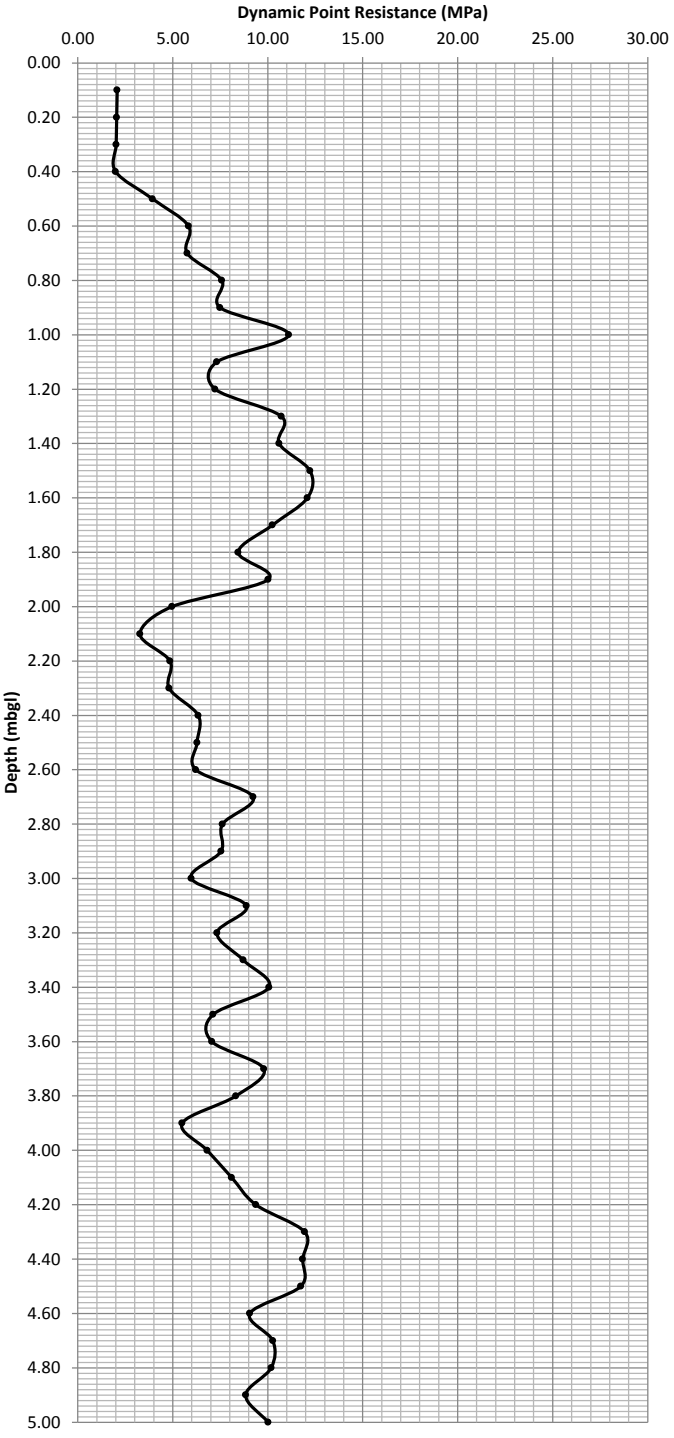
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	DP1

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	1	0.10	2.14	2.07
0.20	1	0.10	2.14	2.05
0.30	1	0.10	2.14	2.02
0.40	1	0.10	2.14	1.99
0.50	2	0.05	4.29	3.94
0.60	3	0.03	6.43	5.83
0.70	3	0.03	6.43	5.76
0.80	4	0.03	8.57	7.58
0.90	4	0.03	8.57	7.49
1.00	6	0.02	12.86	11.10
1.10	4	0.03	8.57	7.31
1.20	4	0.03	8.57	7.23
1.30	6	0.02	12.86	10.72
1.40	6	0.02	12.86	10.60
1.50	7	0.01	15.00	12.22
1.60	7	0.01	15.00	12.09
1.70	6	0.02	12.86	10.25
1.80	5	0.02	10.71	8.45
1.90	6	0.02	12.86	10.02
2.00	3	0.03	6.43	4.96
2.10	2	0.05	4.29	3.27
2.20	3	0.03	6.43	4.86
2.30	3	0.03	6.43	4.81
2.40	4	0.03	8.57	6.34
2.50	4	0.03	8.57	6.28
2.60	4	0.03	8.57	6.21
2.70	6	0.02	12.86	9.23
2.80	5	0.02	10.71	7.61
2.90	5	0.02	10.71	7.54
3.00	4	0.03	8.57	5.97
3.10	6	0.02	12.86	8.88
3.20	5	0.02	10.71	7.33
3.30	6	0.02	12.86	8.71
3.40	7	0.01	15.00	10.07
3.50	5	0.02	10.71	7.12
3.60	5	0.02	10.71	7.06
3.70	7	0.01	15.00	9.79
3.80	6	0.02	12.86	8.32
3.90	4	0.03	8.57	5.50
4.00	5	0.02	10.71	6.81
4.10	6	0.02	12.86	8.10
4.20	7	0.01	15.00	9.37
4.30	9	0.01	19.29	11.94
4.40	9	0.01	19.29	11.84
4.50	9	0.01	19.29	11.74
4.60	7	0.01	15.00	9.06
4.70	8	0.01	17.14	10.27
4.80	8	0.01	17.14	10.18
4.90	7	0.01	15.00	8.84
5.00	8	0.01	17.14	10.02



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

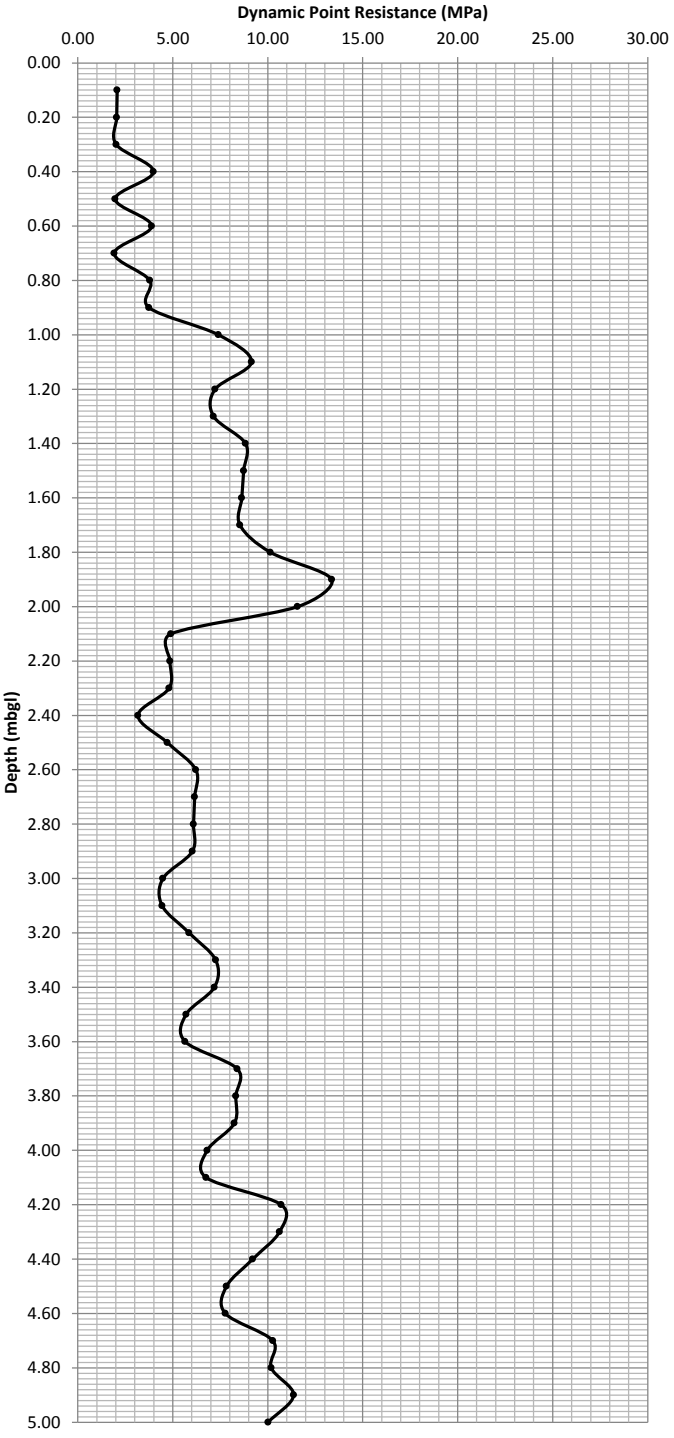
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	DP2

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	1	0.10	2.14	2.07
0.20	1	0.10	2.14	2.05
0.30	1	0.10	2.14	2.02
0.40	2	0.05	4.29	3.99
0.50	1	0.10	2.14	1.97
0.60	2	0.05	4.29	3.89
0.70	1	0.10	2.14	1.92
0.80	2	0.05	4.29	3.79
0.90	2	0.05	4.29	3.75
1.00	4	0.03	8.57	7.40
1.10	5	0.02	10.71	9.14
1.20	4	0.03	8.57	7.23
1.30	4	0.03	8.57	7.15
1.40	5	0.02	10.71	8.83
1.50	5	0.02	10.71	8.73
1.60	5	0.02	10.71	8.63
1.70	5	0.02	10.71	8.54
1.80	6	0.02	12.86	10.13
1.90	8	0.01	17.14	13.37
2.00	7	0.01	15.00	11.57
2.10	3	0.03	6.43	4.91
2.20	3	0.03	6.43	4.86
2.30	3	0.03	6.43	4.81
2.40	2	0.05	4.29	3.17
2.50	3	0.03	6.43	4.71
2.60	4	0.03	8.57	6.21
2.70	4	0.03	8.57	6.15
2.80	4	0.03	8.57	6.09
2.90	4	0.03	8.57	6.03
3.00	3	0.03	6.43	4.48
3.10	3	0.03	6.43	4.44
3.20	4	0.03	8.57	5.86
3.30	5	0.02	10.71	7.26
3.40	5	0.02	10.71	7.19
3.50	4	0.03	8.57	5.70
3.60	4	0.03	8.57	5.65
3.70	6	0.02	12.86	8.39
3.80	6	0.02	12.86	8.32
3.90	6	0.02	12.86	8.25
4.00	5	0.02	10.71	6.81
4.10	5	0.02	10.71	6.75
4.20	8	0.01	17.14	10.71
4.30	8	0.01	17.14	10.62
4.40	7	0.01	15.00	9.21
4.50	6	0.02	12.86	7.83
4.60	6	0.02	12.86	7.76
4.70	8	0.01	17.14	10.27
4.80	8	0.01	17.14	10.18
4.90	9	0.01	19.29	11.36
5.00	8	0.01	17.14	10.02



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

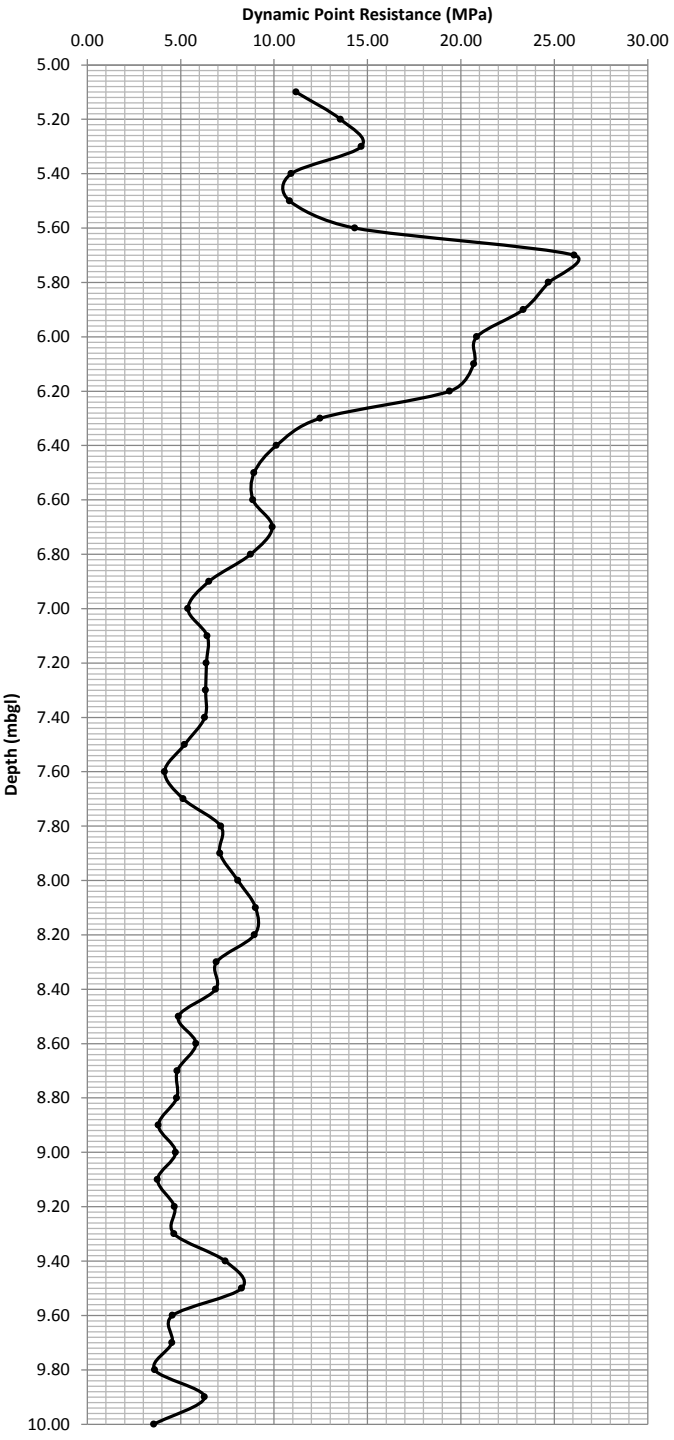
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	DP2

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
5.10	9	0.01	19.29	11.18
5.20	11	0.01	23.57	13.55
5.30	12	0.01	25.71	14.67
5.40	9	0.01	19.29	10.92
5.50	9	0.01	19.29	10.83
5.60	12	0.01	25.71	14.33
5.70	22	0.00	47.14	26.07
5.80	21	0.00	45.00	24.70
5.90	20	0.01	42.86	23.34
6.00	18	0.01	38.57	20.85
6.10	18	0.01	38.57	20.70
6.20	17	0.01	36.43	19.40
6.30	11	0.01	23.57	12.46
6.40	9	0.01	19.29	10.12
6.50	8	0.01	17.14	8.93
6.60	8	0.01	17.14	8.87
6.70	9	0.01	19.29	9.91
6.80	8	0.01	17.14	8.74
6.90	6	0.02	12.86	6.51
7.00	5	0.02	10.71	5.39
7.10	6	0.02	12.86	6.42
7.20	6	0.02	12.86	6.38
7.30	6	0.02	12.86	6.33
7.40	6	0.02	12.86	6.29
7.50	5	0.02	10.71	5.21
7.60	4	0.03	8.57	4.14
7.70	5	0.02	10.71	5.14
7.80	7	0.01	15.00	7.15
7.90	7	0.01	15.00	7.10
8.00	8	0.01	17.14	8.06
8.10	9	0.01	19.29	9.01
8.20	9	0.01	19.29	8.95
8.30	7	0.01	15.00	6.92
8.40	7	0.01	15.00	6.88
8.50	5	0.02	10.71	4.88
8.60	6	0.02	12.86	5.82
8.70	5	0.02	10.71	4.82
8.80	5	0.02	10.71	4.79
8.90	4	0.03	8.57	3.81
9.00	5	0.02	10.71	4.73
9.10	4	0.03	8.57	3.76
9.20	5	0.02	10.71	4.67
9.30	5	0.02	10.71	4.65
9.40	8	0.01	17.14	7.39
9.50	9	0.01	19.29	8.26
9.60	5	0.02	10.71	4.56
9.70	5	0.02	10.71	4.54
9.80	4	0.03	8.57	3.61
9.90	7	0.01	15.00	6.28
10.00	4	0.03	8.57	3.57



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

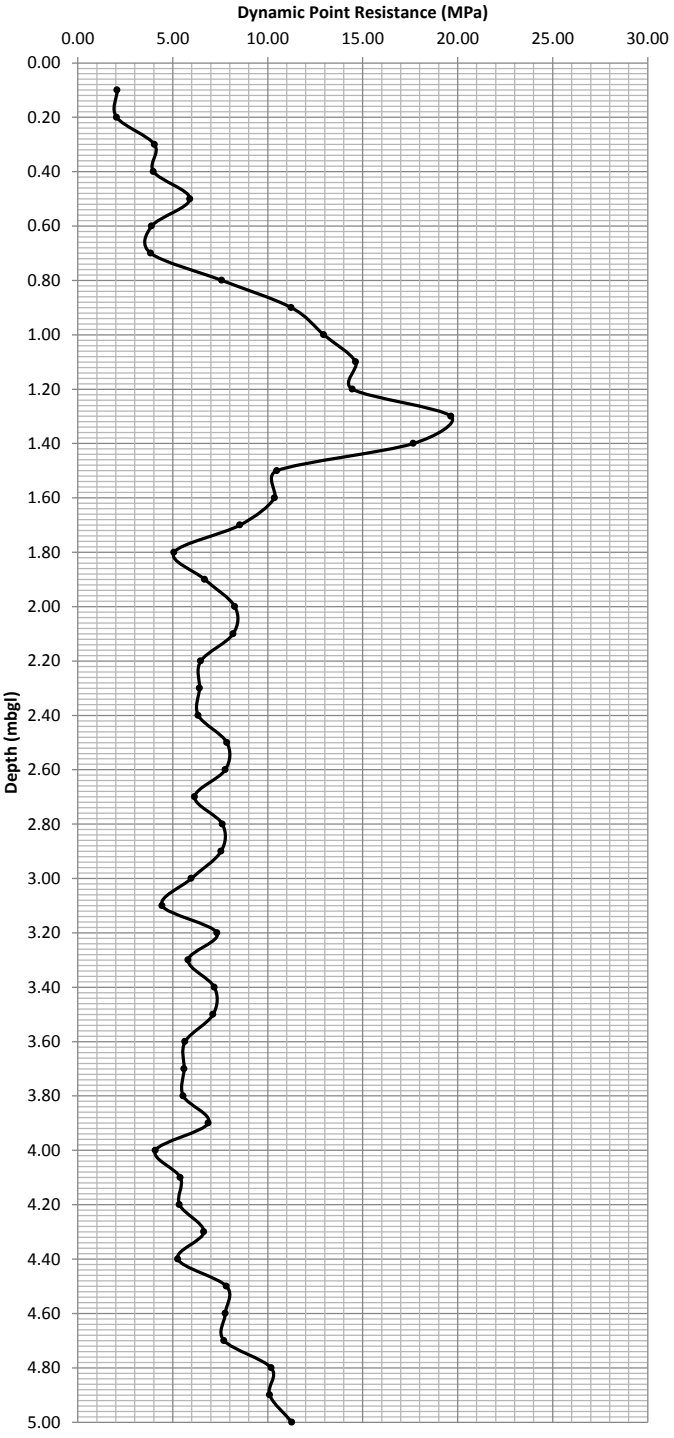
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	WS2

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	1	0.10	2.14	2.07
0.20	1	0.10	2.14	2.05
0.30	2	0.05	4.29	4.04
0.40	2	0.05	4.29	3.99
0.50	3	0.03	6.43	5.90
0.60	2	0.05	4.29	3.89
0.70	2	0.05	4.29	3.84
0.80	4	0.03	8.57	7.58
0.90	6	0.02	12.86	11.24
1.00	7	0.01	15.00	12.95
1.10	8	0.01	17.14	14.63
1.20	8	0.01	17.14	14.46
1.30	11	0.01	23.57	19.65
1.40	10	0.01	21.43	17.66
1.50	6	0.02	12.86	10.48
1.60	6	0.02	12.86	10.36
1.70	5	0.02	10.71	8.54
1.80	3	0.03	6.43	5.07
1.90	4	0.03	8.57	6.68
2.00	5	0.02	10.71	8.26
2.10	5	0.02	10.71	8.18
2.20	4	0.03	8.57	6.47
2.30	4	0.03	8.57	6.41
2.40	4	0.03	8.57	6.34
2.50	5	0.02	10.71	7.85
2.60	5	0.02	10.71	7.77
2.70	4	0.03	8.57	6.15
2.80	5	0.02	10.71	7.61
2.90	5	0.02	10.71	7.54
3.00	4	0.03	8.57	5.97
3.10	3	0.03	6.43	4.44
3.20	5	0.02	10.71	7.33
3.30	4	0.03	8.57	5.81
3.40	5	0.02	10.71	7.19
3.50	5	0.02	10.71	7.12
3.60	4	0.03	8.57	5.65
3.70	4	0.03	8.57	5.60
3.80	4	0.03	8.57	5.55
3.90	5	0.02	10.71	6.87
4.00	3	0.03	6.43	4.09
4.10	4	0.03	8.57	5.40
4.20	4	0.03	8.57	5.35
4.30	5	0.02	10.71	6.64
4.40	4	0.03	8.57	5.26
4.50	6	0.02	12.86	7.83
4.60	6	0.02	12.86	7.76
4.70	6	0.02	12.86	7.70
4.80	8	0.01	17.14	10.18
4.90	8	0.01	17.14	10.10
5.00	9	0.01	19.29	11.27



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

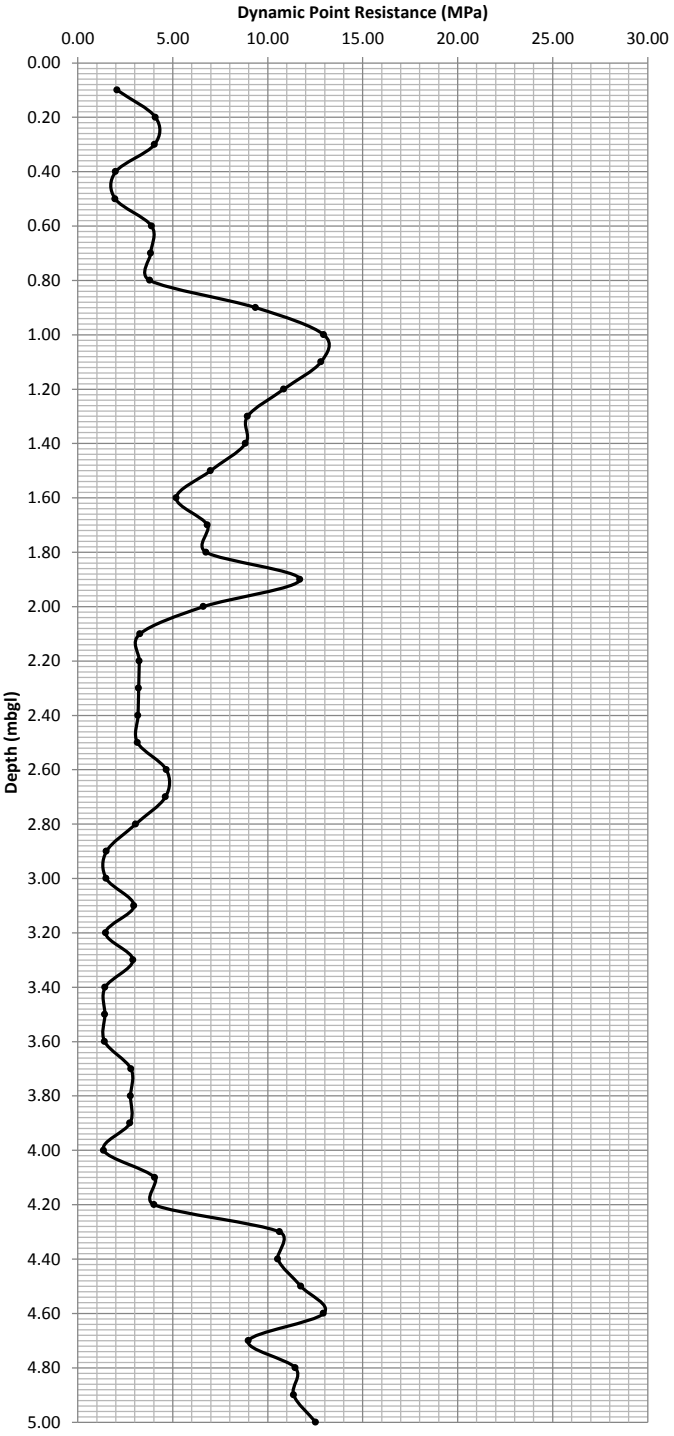
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	WS3

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	1	0.10	2.14	2.07
0.20	2	0.05	4.29	4.09
0.30	2	0.05	4.29	4.04
0.40	1	0.10	2.14	1.99
0.50	1	0.10	2.14	1.97
0.60	2	0.05	4.29	3.89
0.70	2	0.05	4.29	3.84
0.80	2	0.05	4.29	3.79
0.90	5	0.02	10.71	9.36
1.00	7	0.01	15.00	12.95
1.10	7	0.01	15.00	12.80
1.20	6	0.02	12.86	10.84
1.30	5	0.02	10.71	8.93
1.40	5	0.02	10.71	8.83
1.50	4	0.03	8.57	6.98
1.60	3	0.03	6.43	5.18
1.70	4	0.03	8.57	6.83
1.80	4	0.03	8.57	6.76
1.90	7	0.01	15.00	11.70
2.00	4	0.03	8.57	6.61
2.10	2	0.05	4.29	3.27
2.20	2	0.05	4.29	3.24
2.30	2	0.05	4.29	3.20
2.40	2	0.05	4.29	3.17
2.50	2	0.05	4.29	3.14
2.60	3	0.03	6.43	4.66
2.70	3	0.03	6.43	4.61
2.80	2	0.05	4.29	3.05
2.90	1	0.10	2.14	1.51
3.00	1	0.10	2.14	1.49
3.10	2	0.05	4.29	2.96
3.20	1	0.10	2.14	1.47
3.30	2	0.05	4.29	2.90
3.40	1	0.10	2.14	1.44
3.50	1	0.10	2.14	1.42
3.60	1	0.10	2.14	1.41
3.70	2	0.05	4.29	2.80
3.80	2	0.05	4.29	2.77
3.90	2	0.05	4.29	2.75
4.00	1	0.10	2.14	1.36
4.10	3	0.03	6.43	4.05
4.20	3	0.03	6.43	4.02
4.30	8	0.01	17.14	10.62
4.40	8	0.01	17.14	10.53
4.50	9	0.01	19.29	11.74
4.60	10	0.01	21.43	12.94
4.70	7	0.01	15.00	8.98
4.80	9	0.01	19.29	11.45
4.90	9	0.01	19.29	11.36
5.00	10	0.01	21.43	12.52



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

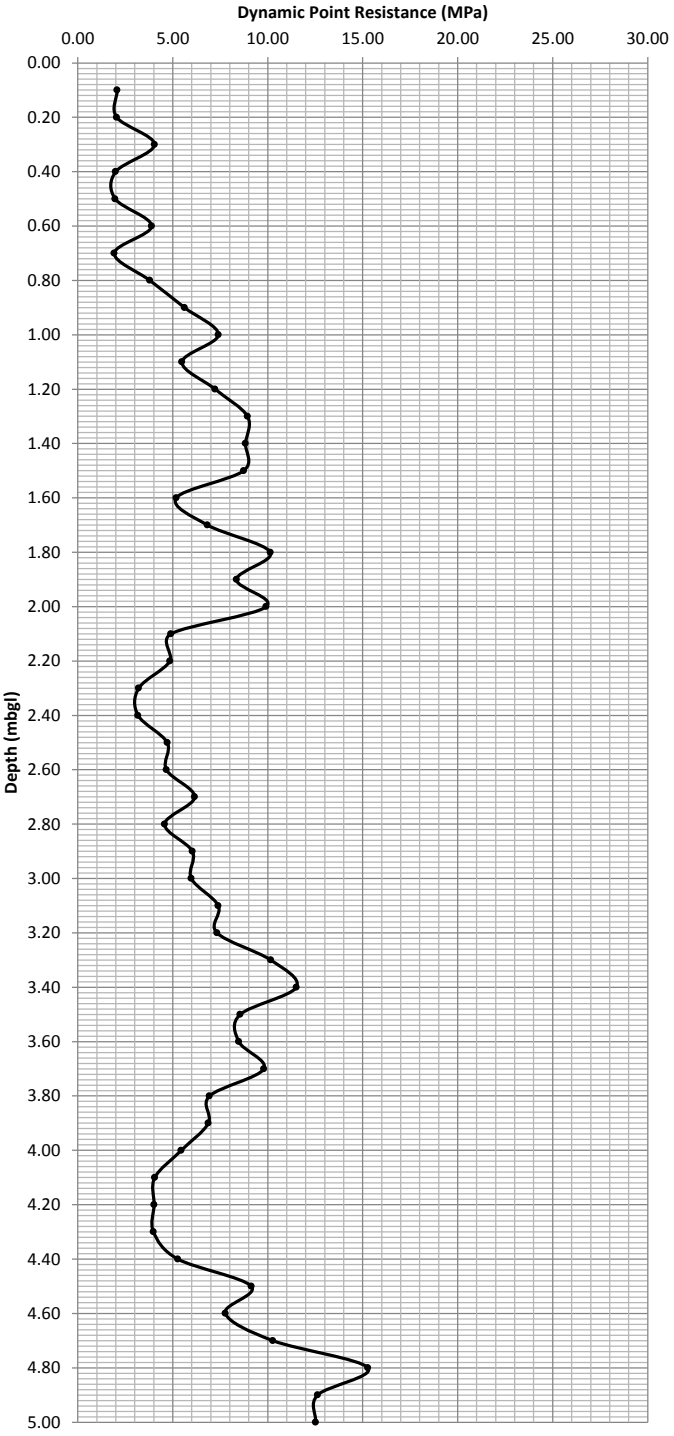
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	WS4

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	1	0.10	2.14	2.07
0.20	1	0.10	2.14	2.05
0.30	2	0.05	4.29	4.04
0.40	1	0.10	2.14	1.99
0.50	1	0.10	2.14	1.97
0.60	2	0.05	4.29	3.89
0.70	1	0.10	2.14	1.92
0.80	2	0.05	4.29	3.79
0.90	3	0.03	6.43	5.62
1.00	4	0.03	8.57	7.40
1.10	3	0.03	6.43	5.49
1.20	4	0.03	8.57	7.23
1.30	5	0.02	10.71	8.93
1.40	5	0.02	10.71	8.83
1.50	5	0.02	10.71	8.73
1.60	3	0.03	6.43	5.18
1.70	4	0.03	8.57	6.83
1.80	6	0.02	12.86	10.13
1.90	5	0.02	10.71	8.35
2.00	6	0.02	12.86	9.92
2.10	3	0.03	6.43	4.91
2.20	3	0.03	6.43	4.86
2.30	2	0.05	4.29	3.20
2.40	2	0.05	4.29	3.17
2.50	3	0.03	6.43	4.71
2.60	3	0.03	6.43	4.66
2.70	4	0.03	8.57	6.15
2.80	3	0.03	6.43	4.57
2.90	4	0.03	8.57	6.03
3.00	4	0.03	8.57	5.97
3.10	5	0.02	10.71	7.40
3.20	5	0.02	10.71	7.33
3.30	7	0.01	15.00	10.16
3.40	8	0.01	17.14	11.50
3.50	6	0.02	12.86	8.55
3.60	6	0.02	12.86	8.47
3.70	7	0.01	15.00	9.79
3.80	5	0.02	10.71	6.93
3.90	5	0.02	10.71	6.87
4.00	4	0.03	8.57	5.45
4.10	3	0.03	6.43	4.05
4.20	3	0.03	6.43	4.02
4.30	3	0.03	6.43	3.98
4.40	4	0.03	8.57	5.26
4.50	7	0.01	15.00	9.13
4.60	6	0.02	12.86	7.76
4.70	8	0.01	17.14	10.27
4.80	12	0.01	25.71	15.27
4.90	10	0.01	21.43	12.62
5.00	10	0.01	21.43	12.52



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

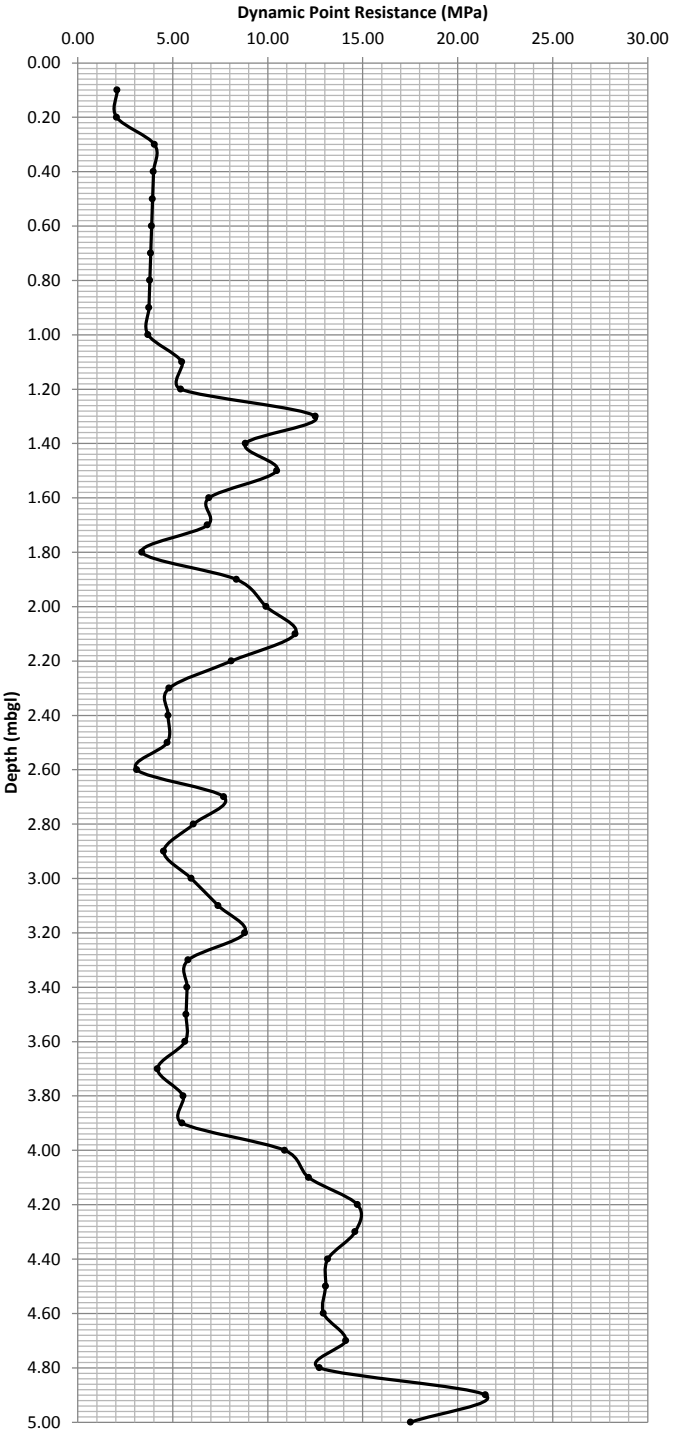
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex **Report Ref.** R16-11420

Test Location Reference	WS5

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10	1	0.10	2.14	2.07
0.20	1	0.10	2.14	2.05
0.30	2	0.05	4.29	4.04
0.40	2	0.05	4.29	3.99
0.50	2	0.05	4.29	3.94
0.60	2	0.05	4.29	3.89
0.70	2	0.05	4.29	3.84
0.80	2	0.05	4.29	3.79
0.90	2	0.05	4.29	3.75
1.00	2	0.05	4.29	3.70
1.10	3	0.03	6.43	5.49
1.20	3	0.03	6.43	5.42
1.30	7	0.01	15.00	12.51
1.40	5	0.02	10.71	8.83
1.50	6	0.02	12.86	10.48
1.60	4	0.03	8.57	6.91
1.70	4	0.03	8.57	6.83
1.80	2	0.05	4.29	3.38
1.90	5	0.02	10.71	8.35
2.00	6	0.02	12.86	9.92
2.10	7	0.01	15.00	11.45
2.20	5	0.02	10.71	8.09
2.30	3	0.03	6.43	4.81
2.40	3	0.03	6.43	4.76
2.50	3	0.03	6.43	4.71
2.60	2	0.05	4.29	3.11
2.70	5	0.02	10.71	7.69
2.80	4	0.03	8.57	6.09
2.90	3	0.03	6.43	4.52
3.00	4	0.03	8.57	5.97
3.10	5	0.02	10.71	7.40
3.20	6	0.02	12.86	8.79
3.30	4	0.03	8.57	5.81
3.40	4	0.03	8.57	5.75
3.50	4	0.03	8.57	5.70
3.60	4	0.03	8.57	5.65
3.70	3	0.03	6.43	4.20
3.80	4	0.03	8.57	5.55
3.90	4	0.03	8.57	5.50
4.00	8	0.01	17.14	10.90
4.10	9	0.01	19.29	12.15
4.20	11	0.01	23.57	14.73
4.30	11	0.01	23.57	14.60
4.40	10	0.01	21.43	13.16
4.50	10	0.01	21.43	13.05
4.60	10	0.01	21.43	12.94
4.70	11	0.01	23.57	14.12
4.80	10	0.01	21.43	12.73
4.90	17	0.01	36.43	21.46
5.00	14	0.01	30.00	17.53



Notes:

Hammer Mass	63.5	kg
Fall Height	0.76	m
Cone Area	0.0019	m^2
E_{theor}	473	J
Energy Ratio	0.86	
Anvil Mass	1.25	kg
Rod Mass	8.79	kg/m

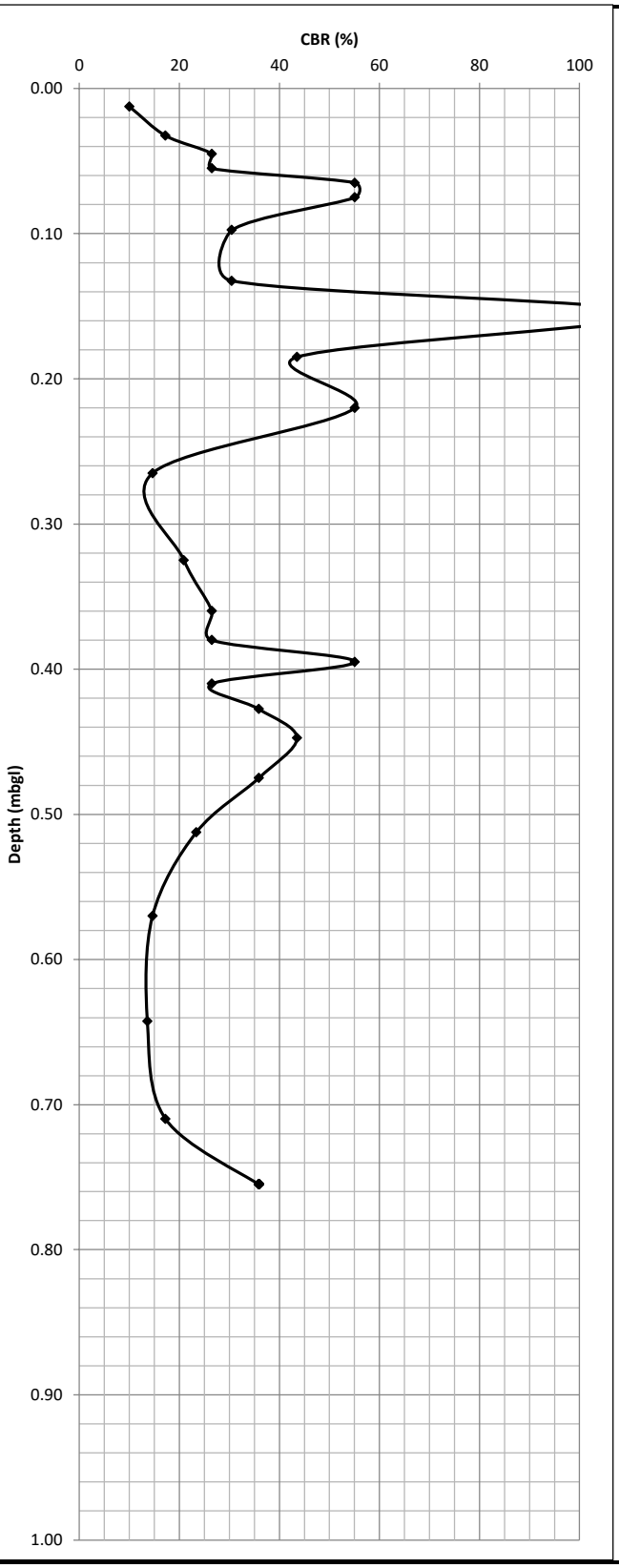
ASHDOWN SITE INVESTIGATION LTD

TRL Dynamic Cone Penetrometer Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Project Ref.** P16678

Test Location Reference	WS101
Depth of Start of Test (mbgl)	0.00

No. Blows	Total Blows	Reading (mm)	Depth (mbgl)	CBR%
DCP Zero Reading		60	0.00	
1	1	85	0.03	10
1	2	100	0.04	17
1	3	110	0.05	26
1	4	120	0.06	26
2	6	130	0.07	55
2	8	140	0.08	55
4	12	175	0.12	30
4	16	210	0.15	30
4	20	220	0.16	115
8	28	270	0.21	44
4	32	290	0.23	55
4	36	360	0.30	15
4	40	410	0.35	21
2	42	430	0.37	26
2	44	450	0.39	26
2	46	460	0.40	55
2	48	480	0.42	26
2	50	495	0.44	36
4	54	520	0.46	44
4	58	550	0.49	36
4	62	595	0.54	23
4	66	665	0.61	15
4	70	740	0.68	14
4	74	800	0.74	17
4	78	830	0.77	36



Notes: CBR Value calculated in accordance with the TRRL equation given in TRL Road Note 8.

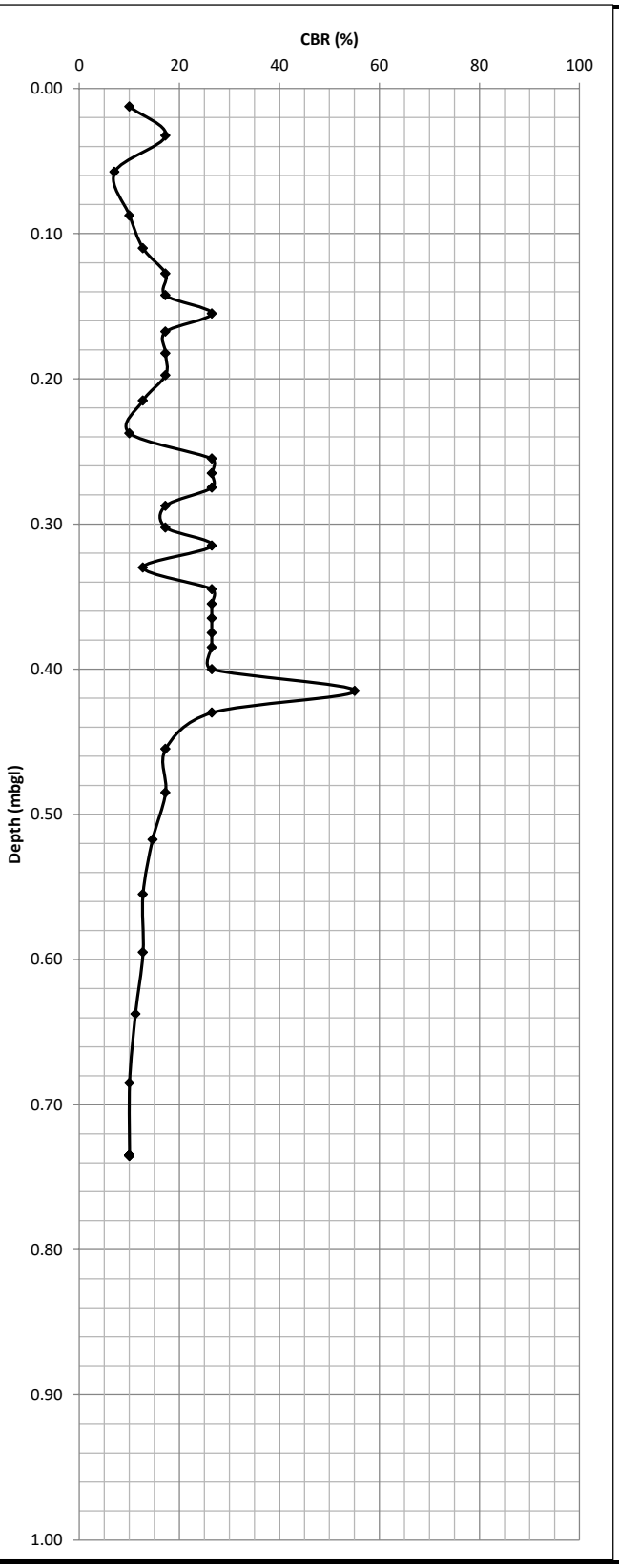
ASHDOWN SITE INVESTIGATION LTD

TRL Dynamic Cone Penetrometer Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Project Ref.** P16678

Test Location Reference	WS102
Depth of Start of Test (mbgl)	0.00

No. Blows	Total Blows	Reading (mm)	Depth (mbgl)	CBR%
DCP Zero Reading		60	0.00	
1	1	85	0.03	10
1	2	100	0.04	17
1	3	135	0.08	7
1	4	160	0.10	10
1	5	180	0.12	13
1	6	195	0.14	17
1	7	210	0.15	17
1	8	220	0.16	26
1	9	235	0.18	17
1	10	250	0.19	17
1	11	265	0.21	17
1	12	285	0.23	13
1	13	310	0.25	10
1	14	320	0.26	26
1	15	330	0.27	26
1	16	340	0.28	26
1	17	355	0.30	17
1	18	370	0.31	17
1	19	380	0.32	26
1	20	400	0.34	13
1	21	410	0.35	26
1	22	420	0.36	26
1	23	430	0.37	26
1	24	440	0.38	26
1	25	450	0.39	26
2	27	470	0.41	26
2	29	480	0.42	55
2	31	500	0.44	26
2	33	530	0.47	17
2	35	560	0.50	17
2	37	595	0.54	15
2	39	635	0.58	13
2	41	675	0.62	13
2	43	720	0.66	11
2	45	770	0.71	10
2	47	820	0.76	10



Notes: CBR Value calculated in accordance with the TRRL equation given in TRL Road Note 8.

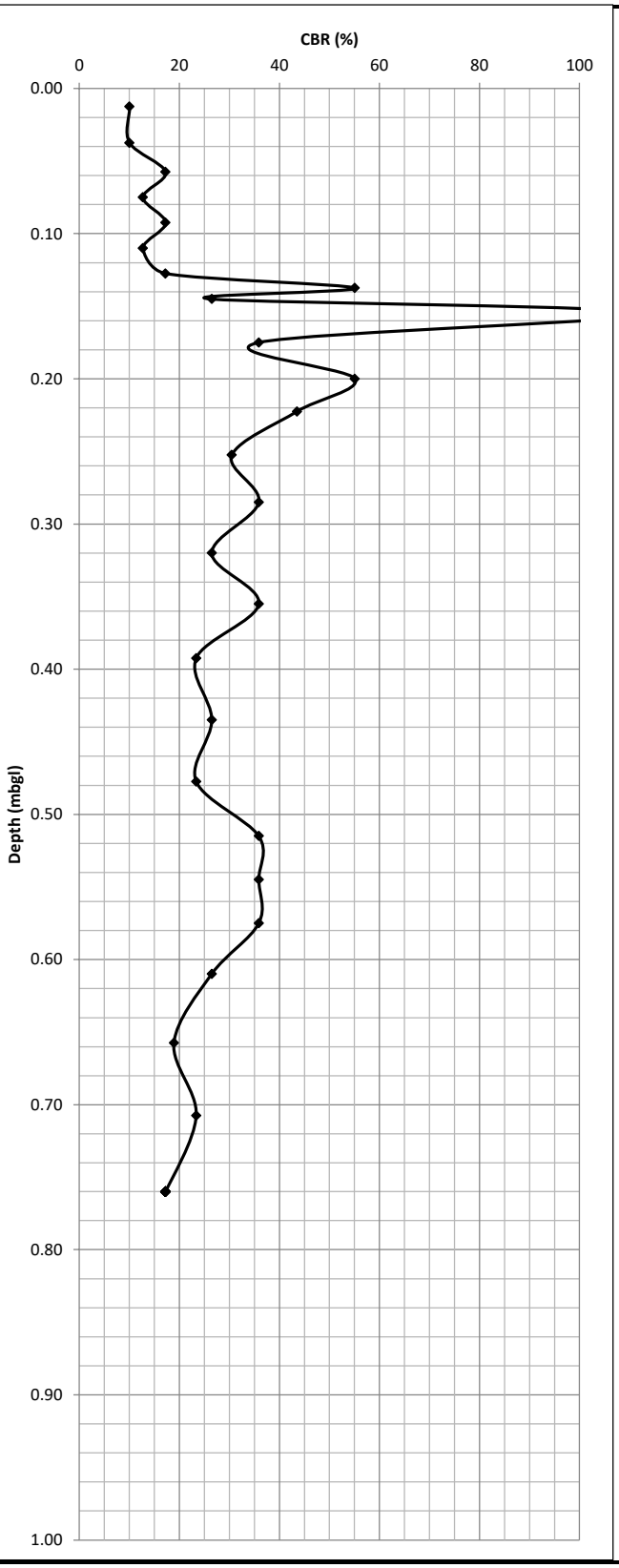
ASHDOWN SITE INVESTIGATION LTD

TRL Dynamic Cone Penetrometer Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Project Ref.** P16678

Test Location Reference	**WS103**
Depth of Start of Test (mbgl)	0.00

No. Blows	Total Blows	Reading (mm)	Depth (mbgl)	CBR%
DCP Zero Reading		50	0.00	
1	1	75	0.03	10
1	2	100	0.05	10
1	3	115	0.07	17
1	4	135	0.09	13
1	5	150	0.10	17
1	6	170	0.12	13
1	7	185	0.14	17
1	8	190	0.14	55
1	9	200	0.15	26
4	13	210	0.16	115
4	17	240	0.19	36
4	21	260	0.21	55
4	25	285	0.24	44
4	29	320	0.27	30
4	33	350	0.30	36
4	37	390	0.34	26
4	41	420	0.37	36
4	45	465	0.42	23
4	49	505	0.46	26
4	53	550	0.50	23
4	57	580	0.53	36
4	61	610	0.56	36
4	65	640	0.59	36
4	69	680	0.63	26
4	73	735	0.69	19
4	77	780	0.73	23
4	81	840	0.79	17



Notes: CBR Value calculated in accordance with the TRRL equation given in TRL Road Note 8.

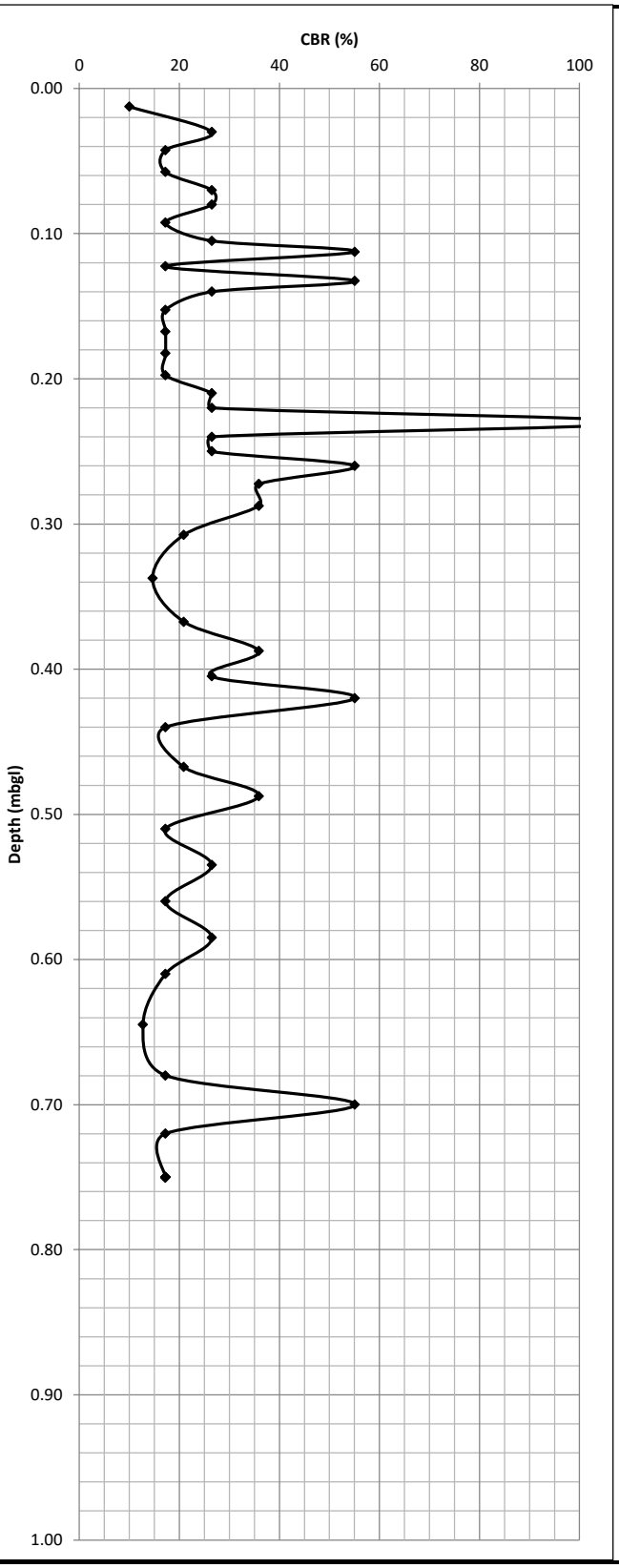
ASHDOWN SITE INVESTIGATION LTD

TRL Dynamic Cone Penetrometer Record

SITE Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex **Project Ref.** P16678

Test Location Reference	WS104
Depth of Start of Test (mbgl)	0.00

No. Blows	Total Blows	Reading (mm)	Depth (mbgl)	CBR%
DCP Zero Reading		55	0.00	
1	1	80	0.03	10
1	2	90	0.04	26
1	3	105	0.05	17
1	4	120	0.07	17
1	5	130	0.08	26
1	6	140	0.09	26
1	7	155	0.10	17
1	8	165	0.11	26
1	9	170	0.12	55
1	10	185	0.13	17
1	11	190	0.14	55
1	12	200	0.15	26
1	13	215	0.16	17
1	14	230	0.18	17
1	15	245	0.19	17
1	16	260	0.21	17
1	17	270	0.22	26
1	18	280	0.23	26
4	22	290	0.24	115
1	23	300	0.25	26
1	24	310	0.26	26
2	26	320	0.27	55
2	28	335	0.28	36
2	30	350	0.30	36
2	32	375	0.32	21
2	34	410	0.36	15
2	36	435	0.38	21
2	38	450	0.40	36
2	40	470	0.42	26
2	42	480	0.43	55
2	44	510	0.46	17
2	46	535	0.48	21
2	48	550	0.50	36
2	50	580	0.53	17
2	52	600	0.55	26
2	54	630	0.58	17
2	56	650	0.60	26
2	58	680	0.63	17
2	60	720	0.67	13
2	62	750	0.70	17
2	64	760	0.71	55
2	66	790	0.74	17
2	68	820	0.77	17



Notes: CBR Value calculated in accordance with the TRRL equation given in TRL Road Note 8.

APPENDIX C

Geotechnical Laboratory Test Results

ASHDOWN SITE INVESTIGATION LIMITED

Soil Classification Summary

Site Name:	Buckingham Park Pavilion, Shoreham-by-Sea, West Sussex	Job No:	P16678

BH/TP No.	Depth (m)	Nat. Moist. Cont. (w %)	Equiv. Moist. Cont. (w_a %)	Atterberg Limits			Class'n	Cons. Index (I_c)	% passing 425 µm sieve	Visual Description of Sample
				W_l %	W_p %	I_p %				
WS101	1.90	11		28	17	11	ClL		39	Brown gravelly silty CLAY. Gravel is fine to coarse flint.
WS102	2.90	17		42	18	24	ClM		61	Brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium flint.
WS103	1.30	13		34	17	17	ClL		47	Brown gravelly silty CLAY. Gravel is fine to coarse flint.
WS104	2.20	16		38	19	19	ClM		85	Orange brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse flint.

Test Method: Classification Tests BS1377: Part 2: 1990: Method 4.4, 5.3 and 5.4	Sheet No. 1
* Consistency index based on natural moisture content and not the equivalent moisture content.	

Swanborough Farm Swanborough Lewes, East Sussex BN73PF	**ASHDOWN SITE INVESTIGATION LTD** **Geotechnical and Geoenvironmental Engineers**	ASHDOWN SITE INVESTIGATION L·I·M·I·T·E·D

Site:	Shoreham RFC, Buckingham Park, Shoreham-by-Sea, West Sussex.	Job No: Sheet No:	R16-11420 1

SOIL CLASSIFICATION SUMMARY

BH/TP No.	Depth (m)	Nat. Moist. Cont. (w %)	Equiv. Moist. Cont. (w_a %)	Atterberg Limits			Class'n	Cons. Index (I_c)	% passing 425 µm sieve	Visual Description of Sample
				W_l %	W_p %	I_p %				
WS1	2.50	14		37	20	17	CI	1.35*	75	Very stiff brown slightly gravelly CLAY. Gravel is fine to coarse flint.
WS2	3.50	21		32	16	16	CL	0.69*	95	Firm brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium chalk and flint.
WS3	1.20	12		23	15	8	CL	1.38*	58	Very stiff light brown gravelly CLAY. Gravel is fine to medium chalk, flint and rare fine sandstone.
WS4	2.00	13		25	17	8	CL	1.50*	30	Very stiff light brown gravelly CLAY. Gravel is fine to coarse flint and fine to medium ferruginous sandstone.
WS5	0.80	18		52	19	33	CH	1.03*	57	Very stiff brown gravelly CLAY. Gravel is fine to coarse flint.

Test Method: Classification Tests BS1377: Part 2: 1990: Method 4.4, 5.3 and 5.4

* Consistency index based on natural moisture content and not the equivalent moisture content.

Alex Bewick
Ashdown Site Investigations Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex
BN6 8SG

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-07440

Site Reference:	Buckingham Park Pavillion, Shoreham-by-Sea, West Sussex
Project / Job Ref:	P16678 2300
Order No:	11727
Sample Receipt Date:	02/07/2024
Sample Scheduled Date:	02/07/2024
Report Issue Number:	1
Reporting Date:	08/07/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 except in full, without the prior written approval of the laboratory.

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate						
DETS Report No: 24-07440	**~Date Sampled**	28/06/24	28/06/24	28/06/24	28/06/24	
Ashdown Site Investigations Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
~Site Reference: Buckingham Park Pavillion, Shoreham-by-Sea, West Sussex	**~TP / BH No**	WS101	WS102	WS103	WS104	
~Project / Job Ref: P16678_2300	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	
~Order No: 11727	**~Depth (m)**	0.70	1.80	2.70	1.40	
Reporting Date: 08/07/2024	**DETS Sample No**	724328	724329	724330	724331	

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.9	8.0	8.0	8.3	
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	44	< 10	< 10	< 10	
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.04	< 0.01	< 0.01	< 0.01	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)
~Sample details provided by customer and can affect the validity of results

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-07440	
Ashdown Site Investigations Ltd	
~Site Reference: Buckingham Park Pavillion, Shoreham-by-Sea, West Sussex	
~Project / Job Ref: P16678_2300	
~Order No: 11727	
Reporting Date: 08/07/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
724328	WS101	None Supplied	0.70	12.3	Light brown sandy clay with stones and chalk
724329	WS102	None Supplied	1.80	14	Light brown sandy clay
724330	WS103	None Supplied	2.70	12.5	Light brown sandy clay with stones
724331	WS104	None Supplied	1.40	9	Light brown sandy clay with stones and chalk

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S
~Sample details provided by customer and can affect the validity of results

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-07440

Ashdown Site Investigations Ltd

~Site Reference: Buckingham Park Pavillion, Shoreham-by-Sea, West Sussex

~Project / Job Ref: P16678_2300

~Order No: 11727

Reporting Date: 08/07/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

~Sample details provided by customer and can affect the validity of results

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

List of HWOL Acronyms and Operators
DETS Report No: 24-07440
Ashdown Site Investigations Ltd
~Site Reference: Buckingham Park Pavillion, Shoreham-by-Sea, West Sussex
~Project / Job Ref: P16678_2300
~Order No: 11727
Reporting Date: 08/07/2024

Acronym	**Description**
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total
~	Sample details provided by customer and can affect the validity of results

Det - Acronym

Alex Bewick
Ashdown Site Investigations Ltd
The Old Dairy
Swanborough Farm
Swanborough
Lewes
East Sussex
BN7 3PF

QTS Environmental Ltd
Unit 1
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russell.jarvis@qtsenvironmental.com

QTS Environmental Report No: 16-44656

Site Reference:	Shoreham RFC, Shoreham-by-Sea, West Sussex
Project / Job Ref:	R16-11420
Order No:	3600
Sample Receipt Date:	24/05/2016
Sample Scheduled Date:	25/05/2016
Report Issue Number:	1
Reporting Date:	01/06/2016

Authorised by: [redacted]

Russell Jarvis
Associate Director of Client Services
On behalf of QTS Environmental Ltd

Authorised by: [redacted]

Kevin Old
Associate Director of Laboratory
On behalf of QTS Environmental Ltd

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
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Tel : 01622 850410

4480

Soil Analysis Certificate						
QTS Environmental Report No: 16-44656	**Date Sampled**	17/05/16	17/05/16	17/05/16	17/05/16	17/05/16
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Shoreham RFC, Shoreham-by-Sea, West Sussex	**TP / BH No**	WS1	WS2	WS3	WS4	WS5
Project / Job Ref: R16-11420	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 3600	**Depth (m)**	1.30	0.90	1.80	0.70	2.50
Reporting Date: 01/06/2016	**QTSE Sample No**	208646	208647	208648	208649	208650

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.9	7.7	7.5	7.3	7.4
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	15	16	37	37	36
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.02	0.02	0.04	0.04	0.04

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Analysis carried out on the dried sample is corrected for the stone content
Subcontracted analysis $^{(S)}$

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4480

Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 16-44656	
Ashdown Site Investigations Ltd	
Site Reference: Shoreham RFC, Shoreham-by-Sea, West Sussex	
Project / Job Ref: R16-11420	
Order No: 3600	
Reporting Date: 01/06/2016	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
208646	WS1	None Supplied	1.30	9.5	Light brown clay with stones
208647	WS2	None Supplied	0.90	9.2	Light brown clay with stones
208648	WS3	None Supplied	1.80	6.9	Light brown clay with stones
208649	WS4	None Supplied	0.70	15.9	Light brown clay with stones
208650	WS5	None Supplied	2.50	13	Light brown clay with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information

QTS Environmental Report No: 16-44656
Ashdown Site Investigations Ltd
Site Reference: Shoreham RFC, Shoreham-by-Sea, West Sussex
Project / Job Ref: R16-11420
Order No: 3600
Reporting Date: 01/06/2016

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

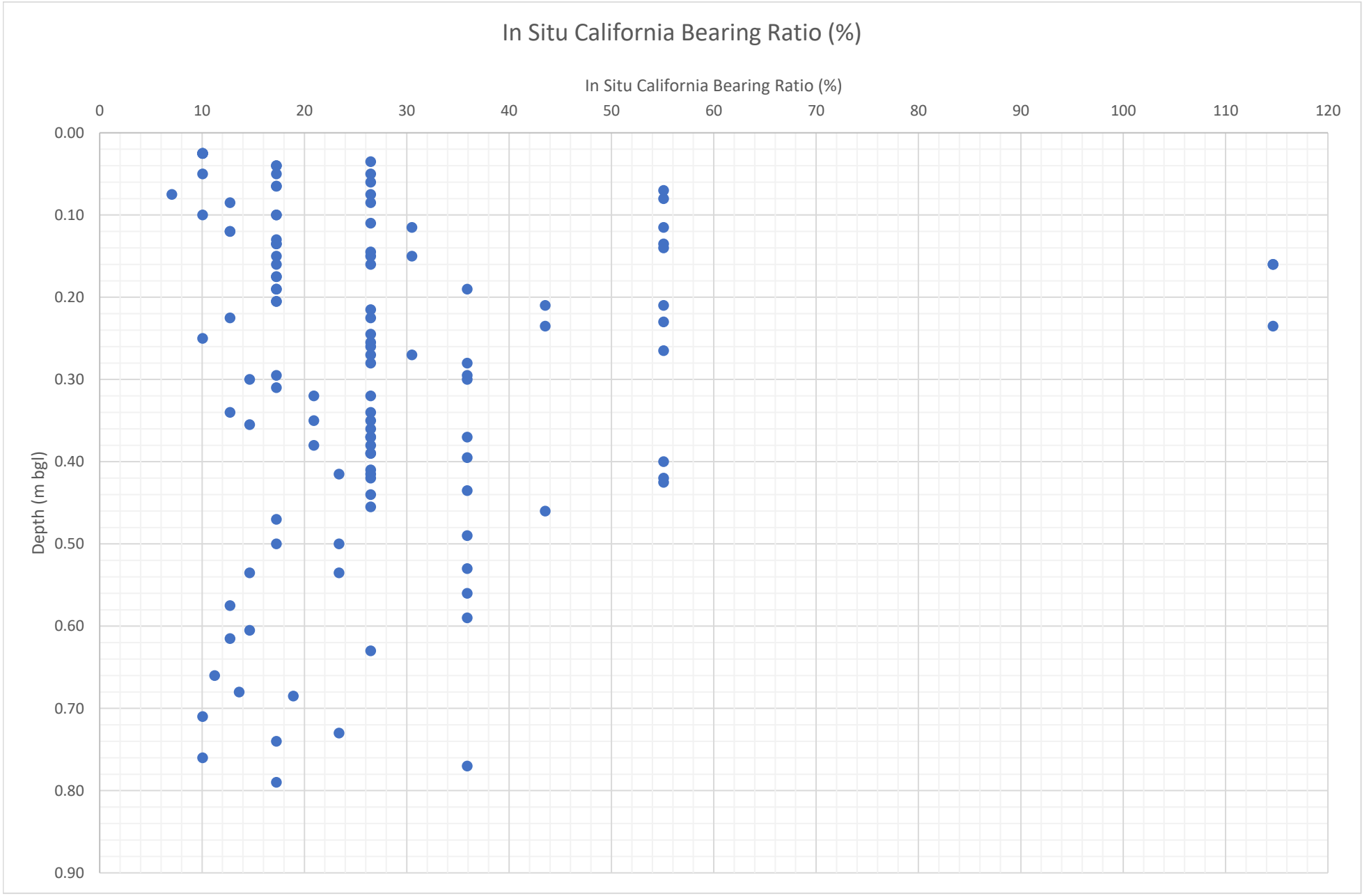
APPENDIX D

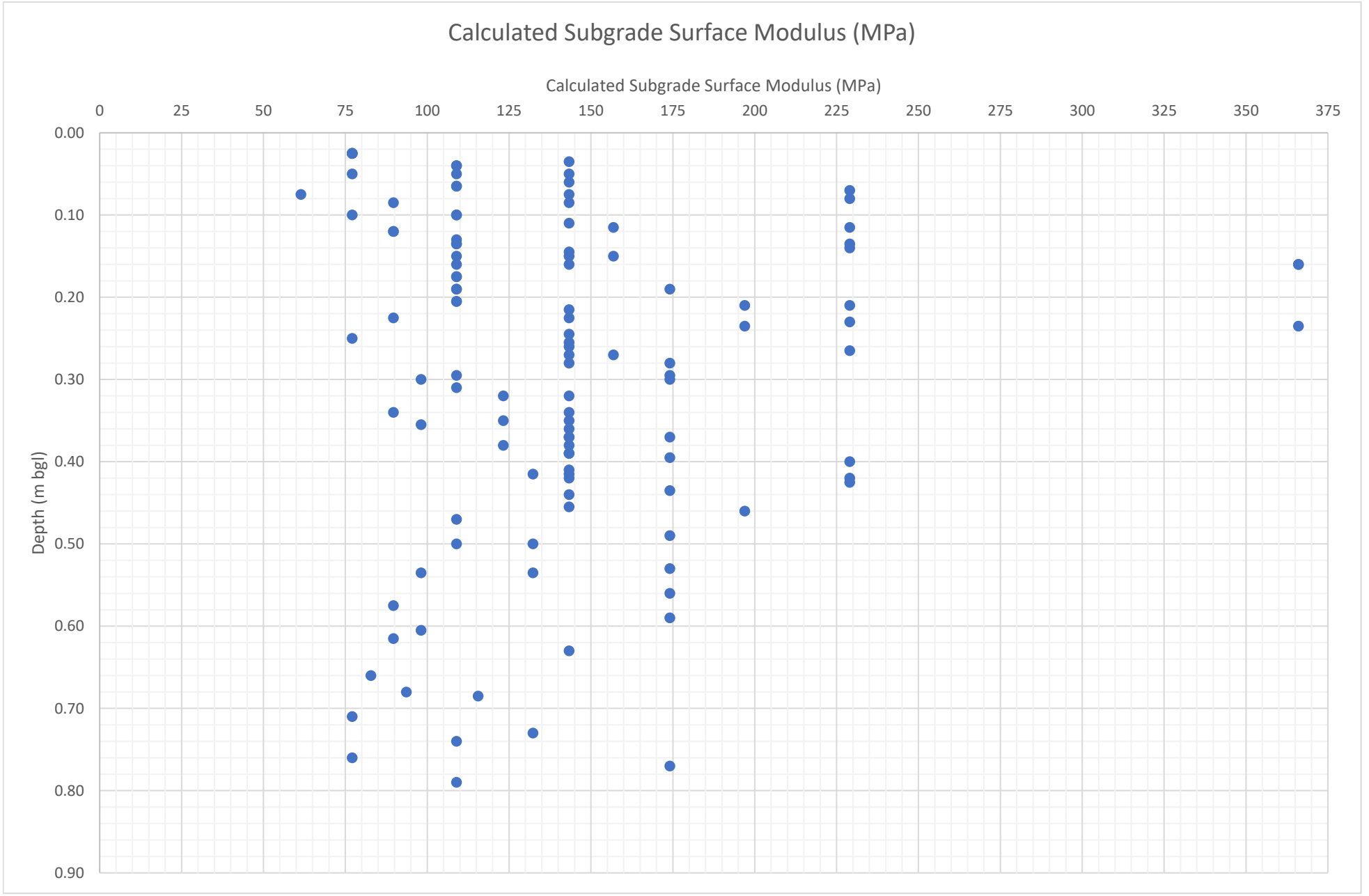
Summary of In Situ CBR Test Results
Graph of Subgrade Surface Modulus vs Depth
Graph of CBR vs Depth

BH	Depth (m)	CBR (%)	Ks (Mpa)
WS101	0.03	10	77
WS101	0.04	17	109
WS101	0.05	26	143
WS101	0.06	26	143
WS101	0.07	55	229
WS101	0.08	55	229
WS101	0.12	30	157
WS101	0.15	30	157
WS101	0.16	115	366
WS101	0.21	44	197
WS101	0.23	55	229
WS101	0.30	15	98
WS101	0.35	21	123
WS101	0.37	26	143
WS101	0.39	26	143
WS101	0.40	55	229
WS101	0.42	26	143
WS101	0.44	36	174
WS101	0.46	44	197
WS101	0.49	36	174
WS101	0.54	23	132
WS101	0.61	15	98
WS101	0.68	14	94
WS101	0.74	17	109
WS101	0.77	36	174
WS102	0.03	10	77
WS102	0.04	17	109
WS102	0.08	7	61
WS102	0.10	10	77
WS102	0.12	13	90
WS102	0.14	17	109
WS102	0.15	17	109
WS102	0.16	26	143
WS102	0.18	17	109
WS102	0.19	17	109
WS102	0.21	17	109
WS102	0.23	13	90
WS102	0.25	10	77
WS102	0.26	26	143
WS102	0.27	26	143
WS102	0.28	26	143
WS102	0.30	17	109
WS102	0.31	17	109
WS102	0.32	26	143
WS102	0.34	13	90
WS102	0.35	26	143
WS102	0.36	26	143
WS102	0.37	26	143
WS102	0.38	26	143

BH	Depth (m)	CBR (%)	Ks (Mpa)
WS102	0.39	26	143
WS102	0.41	26	143
WS102	0.42	55	229
WS102	0.44	26	143
WS102	0.47	17	109
WS102	0.50	17	109
WS102	0.54	15	98
WS102	0.58	13	90
WS102	0.62	13	90
WS102	0.66	11	83
WS102	0.71	10	77
WS102	0.76	10	77
WS103	0.03	10	77
WS103	0.05	10	77
WS103	0.07	17	109
WS103	0.09	13	90
WS103	0.10	17	109
WS103	0.12	13	90
WS103	0.14	17	109
WS103	0.14	55	229
WS103	0.15	26	143
WS103	0.16	115	366
WS103	0.19	36	174
WS103	0.21	55	229
WS103	0.24	44	197
WS103	0.27	30	157
WS103	0.30	36	174
WS103	0.34	26	143
WS103	0.37	36	174
WS103	0.42	23	132
WS103	0.46	26	143
WS103	0.50	23	132
WS103	0.53	36	174
WS103	0.56	36	174
WS103	0.59	36	174
WS103	0.63	26	143
WS103	0.69	19	116
WS103	0.73	23	132
WS103	0.79	17	109
WS104	0.03	10	77
WS104	0.04	26	143
WS104	0.05	17	109
WS104	0.07	17	109
WS104	0.08	26	143
WS104	0.09	26	143
WS104	0.10	17	109
WS104	0.11	26	143
WS104	0.12	55	229
WS104	0.13	17	109

BH	Depth (m)	CBR (%)	Ks (Mpa)
WS104	0.14	55	229
WS104	0.15	26	143
WS104	0.16	17	109
WS104	0.18	17	109
WS104	0.19	17	109
WS104	0.21	17	109
WS104	0.22	26	143
WS104	0.23	26	143
WS104	0.24	115	366
WS104	0.25	26	143
WS104	0.26	26	143
WS104	0.27	55	229
WS104	0.28	36	174
WS104	0.30	36	174
WS104	0.32	21	123
WS104	0.36	15	98
WS104	0.38	21	123
WS104	0.40	36	174
WS104	0.42	26	143
WS104	0.43	55	229
WS104	0.46	17	109
WS104	0.48	21	123
WS104	0.50	36	174
WS104	0.53	17	109
WS104	0.55	26	143
WS104	0.58	17	109
WS104	0.60	26	143
WS104	0.63	17	109
WS104	0.67	13	90
WS104	0.70	17	109
WS104	0.71	55	229
WS104	0.74	17	109
WS104	0.77	17	109


In Situ California Bearing Ratio (%)
In Situ California Bearing Ratio (%)
0
10
20
30
40
50
60
70
80
90
100
110
120
Depth (m bgl)
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90


Calculated Subgrade Surface Modulus (MPa)
Calculated Subgrade Surface Modulus (MPa)
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
Depth (m bgl)
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90