

Mr M Thompson & Mr T Thompson
The Old Coach House
Tewkesbury Road
Gloucester
GL2 9PH

Our Ref: 5101/3/DB

17 August 2023

Dear Matthew and Thomas,

**RE: BROADMOOR COTTAGE, 6 STEAM MILLS ROAD, CINDERFORD, GL14 3HY – CBR
ADDENDUM LETTER REPORT**

Introduction

This Addendum Letter Report has been written to advise the hardstanding design based on the scheduled remoulded CBR test data for Broadmoor Cottage. Having now received and reviewed the laboratory test results, our recommendations are presented below.

This letter report is to be read in conjunction with the Ground Investigation Report Ref: 5101/2 issued to you on 27th July 2023.

CBR Testing

Remoulded CBR testing was carried out by i2 Analytical Ltd in accordance with BS 1377-4: 1990.

A total of three samples were obtained, one from each hand dug pit at HP1, HP2 and HP3 as shown on drawing 5101/3/1. All tests were carried out on samples obtained from c.0.5m bgl on the made ground comprising reworked gravelly clay/silt with gravel comprising coal and brick fragments.

The results are plotted on drawing 5101/3/1 and in Table 1 below. The full CBR Test Certificates are included in the Appendix.

Test Location	Depth (m)	Moisture Content (%)	Min. CBR Value (%)	Max. CBR Value (%)
HP1	0.5	23	6.2	7.1
HP2	0.4 - 0.5	22	6.9	9.1
HP3	0.5	17	7.6	9.4

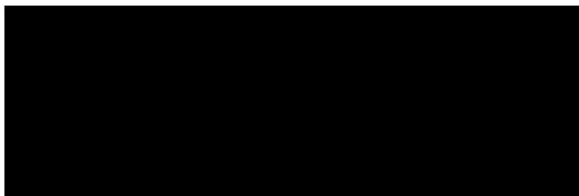
Summary of Findings

In view of the above and attached, this Practice confirms the following:

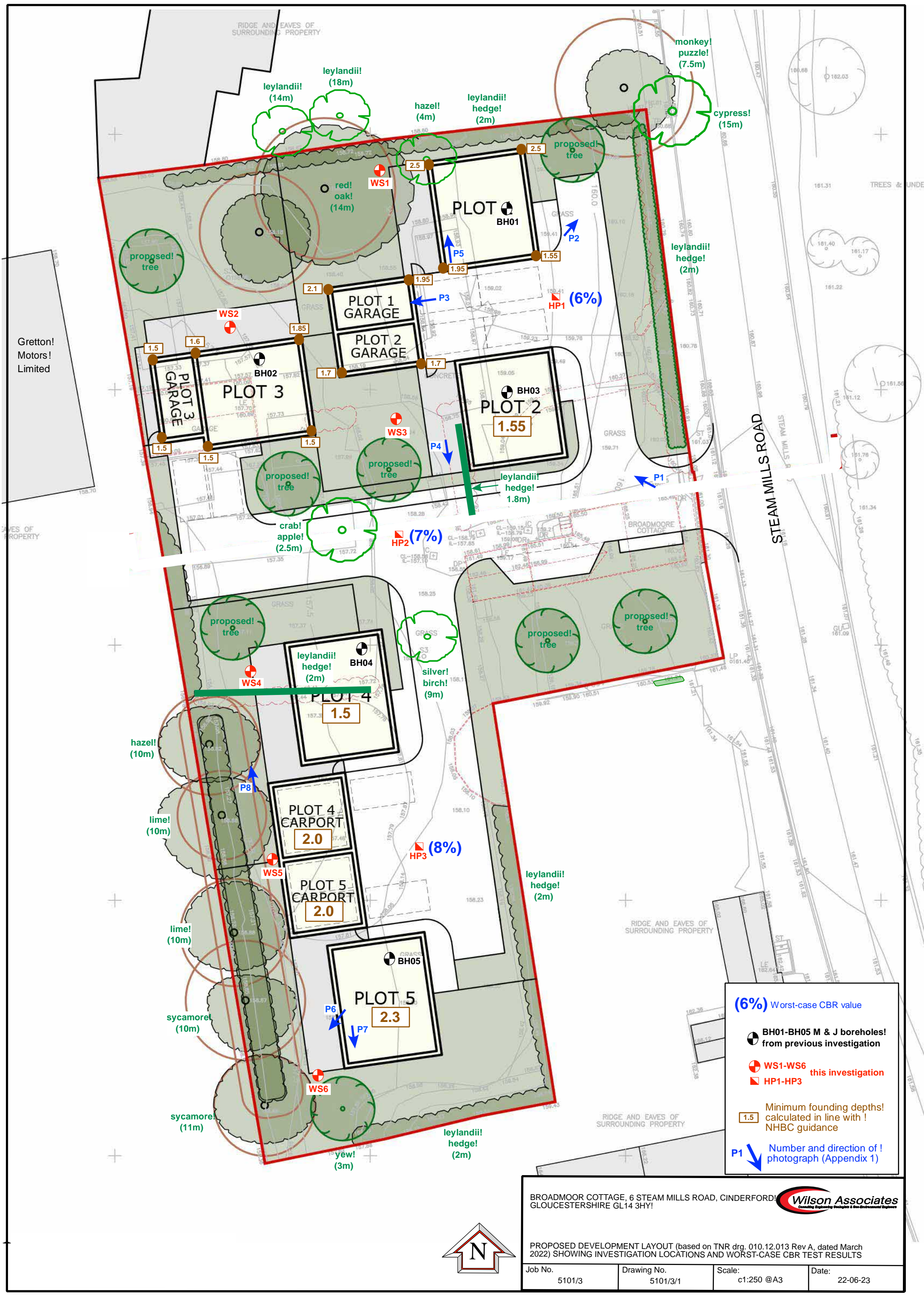
- A CBR of 6% should be suitable for the design of hardstanding including car parking and driveways across the site.
- The tests have been conducted on soils sampled in June. There will likely be a degree of seasonal variability from the results obtained. In wetter winter months this value could be lower due to higher moisture content of the shallow soils.

I trust that this suitably addresses your requirements, however please do not hesitate to contact us should you require anything further. This report is subject to our standard terms and conditions.

Yours sincerely,



DAVE BOSWELL BSc (Hons) MSc
GEO-ENVIRONMENTAL ENGINEER
for
WILSON ASSOCIATES (CONSULTING) LIMITED



(6%) Worst-case CBR value

- BH01-BH05 M & J boreholes! from previous investigation
- WS1-WS6 this investigation
- HP1-HP3
- Minimum founding depths! calculated in line with! NHBC guidance
- P1 ↓ Number and direction of! photograph (Appendix 1)

BROADMOOR COTTAGE, 6 STEAM MILLS ROAD, CINDERFORD! GLOUCESTERSHIRE GL14 3HY!

Wilson Associates
Consulting Engineers, Designers & Geo-Environmental Engineers

PROPOSED DEVELOPMENT LAYOUT (based on TNR drg. 010.12.013 Rev A, dated March 2022) SHOWING INVESTIGATION LOCATIONS AND WORST-CASE CBR TEST RESULTS

Job No. 5101/3	Drawing No. 5101/3/1	Scale: c1:250 @A3	Date: 22-06-23
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TEST CERTIFICATE

DETERMINATION OF THE CALIFORNIA BEARING RATIO (CBR)

Tested in Accordance with: BS 1377-4: 1990: Clause 7

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Client: Wilson Associates (Consulting) Limited
Client Address: 36 Brunswick Road, Gloucester, GL1 1JJ

Client Reference: 5101-2
Job Number: 23-40557-1
Date Sampled: 19/06/2023
Date Received: 20/06/2023
Date Tested: 11/08/2023
Sampled By: Not Given

Contact: Dave Boswell
Site Address: Broadmoor Cottage, Cinderford
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

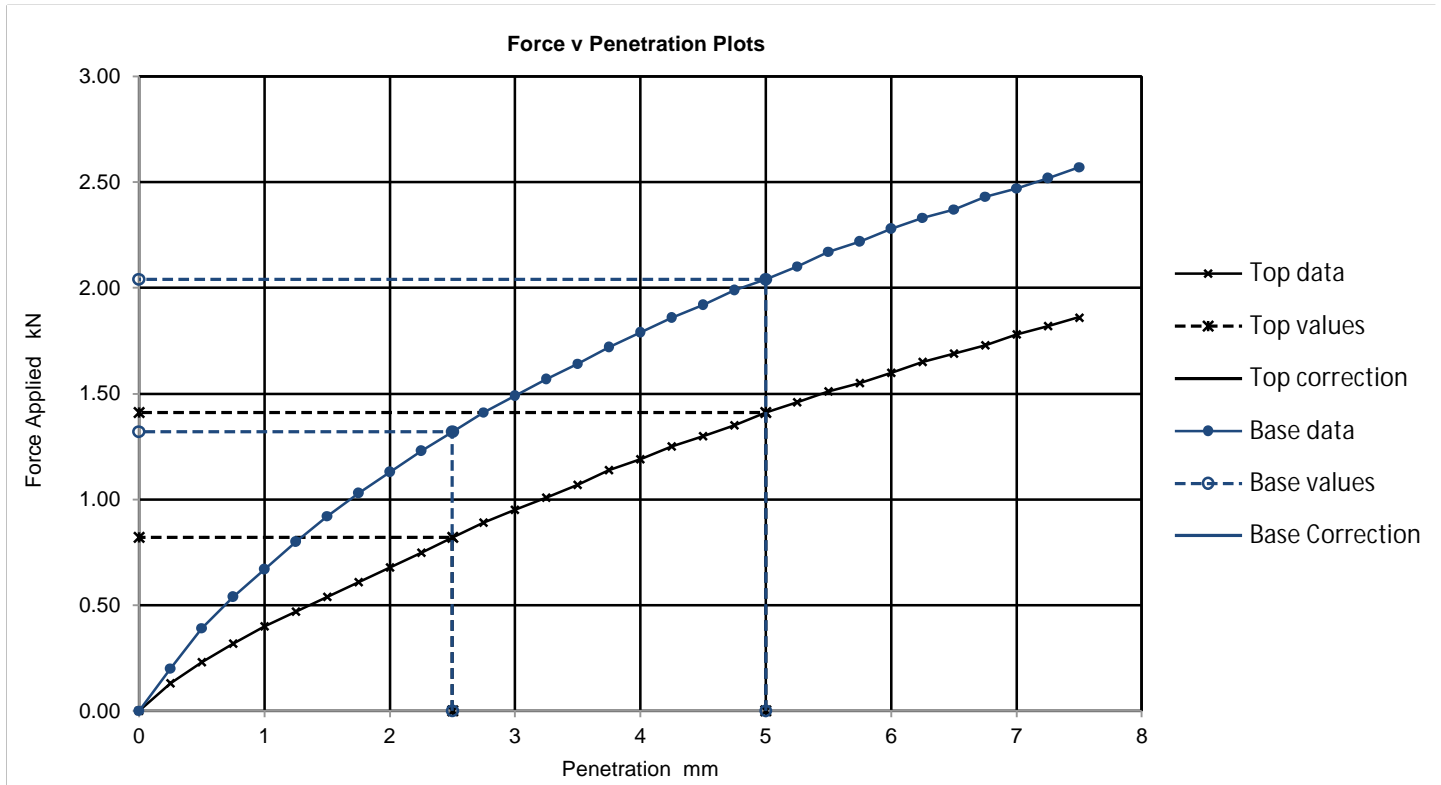
Test Results:

Laboratory Reference: 2721595
Hole No.: HP1
Sample Reference: Not Given
Sample Description: Dark brown slightly gravelly CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	1 %	Dry density after soaking	Mg/m ³
Initial Specimen details	Bulk density 1.85 Mg/m ³	Surcharge applied	8 kg
	Dry density 1.51 Mg/m ³		4.8 kPa
	Moisture content 23 %		



Results	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	6.2	7.1	7.1		23
BASE	No	10	10	10		23

Remarks:

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



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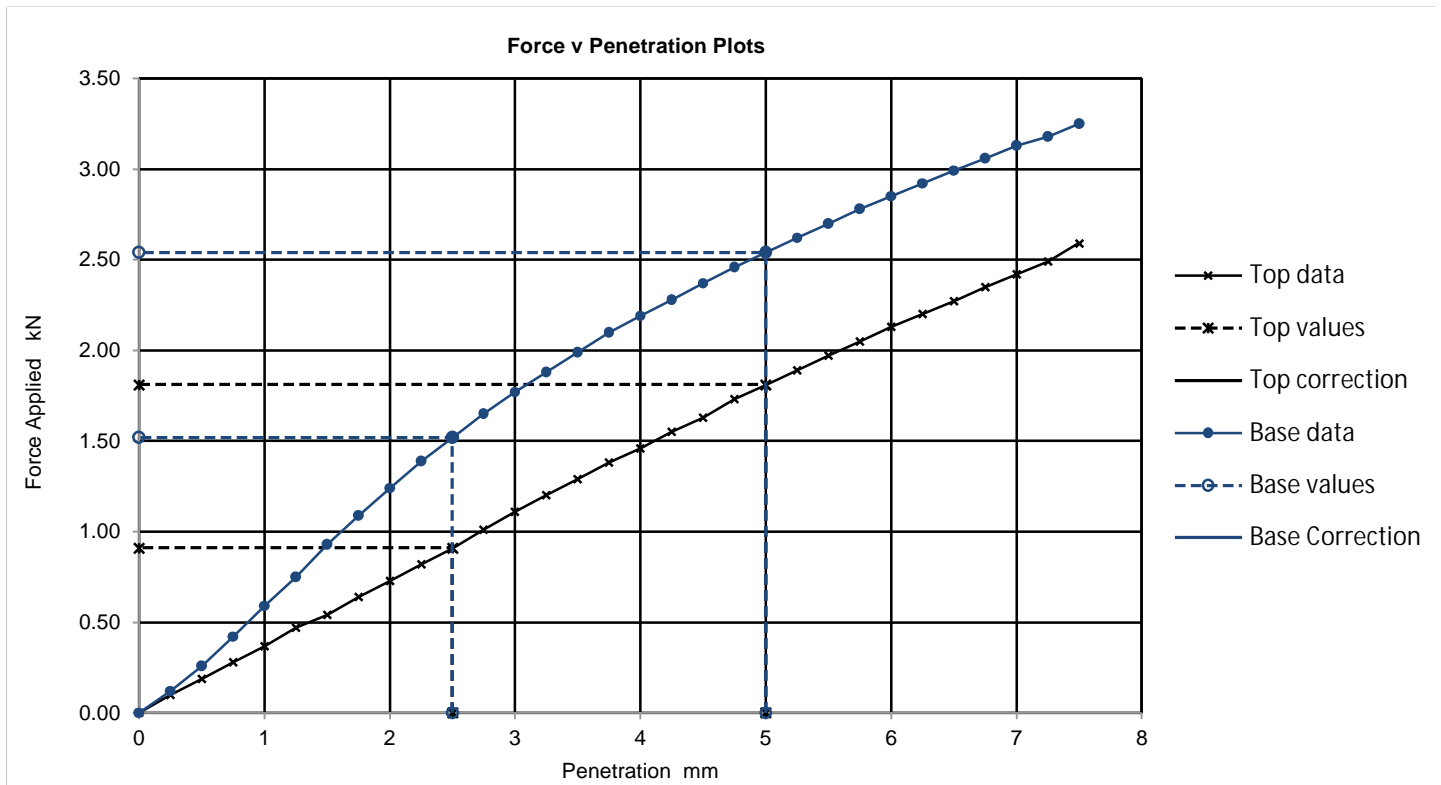
Test Results:

Laboratory Reference: 2721596
Hole No.: HP2
Sample Reference: Not Given
Sample Description: Brown slightly gravelly CLAY

Depth Top [m]: 0.40
Depth Base [m]: 0.50
Sample Type: B

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	5 %	Dry density after soaking	Mg/m ³
Initial Specimen details	Bulk density 1.83 Mg/m ³	Surcharge applied	8 kg
	Dry density 1.50 Mg/m ³		4.8 kPa
	Moisture content 22 %		



Results	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	6.9	9.1	9.1		22
BASE	No	12	13	13		22

Remarks:

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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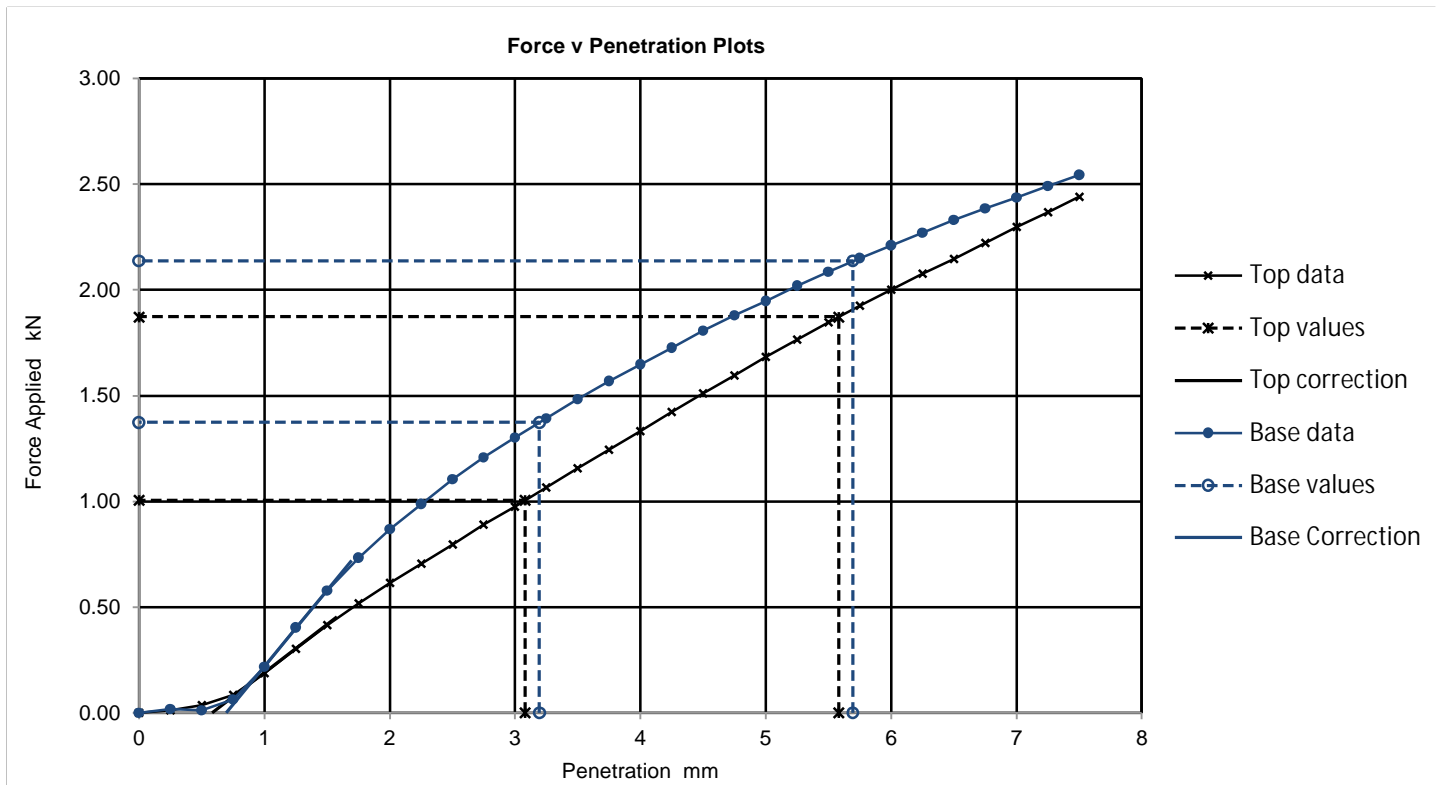
Test Results:

Laboratory Reference: 2721597
Hole No.: HP3
Sample Reference: Not Given
Sample Description: Brown slightly gravelly CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	2 %	Dry density after soaking	Mg/m ³
Initial Specimen details	Bulk density 2.04 Mg/m ³	Surcharge applied	8 kg
	Dry density 1.75 Mg/m ³		4.9 kPa
	Moisture content 17 %		



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	Yes	7.6	9.4	9.4	10	16
BASE	Yes	10	11	11		17

Remarks:

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel

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CONDITIONS OF CONTRACT - CONSULTANCY SERVICES

- 1 Wilson Associates (Consulting) Limited ("the Consultant") shall carry out the Services, including any proposal, report or other document, as detailed in any relevant correspondence, which forms part of this Agreement, for the Client with reasonable skill, care and diligence. The Consultant shall use reasonable endeavours to adhere to any agreed programme. Each instruction or acceptance of a quotation shall be deemed to be an offer to purchase the services subject to the conditions laid out in this document.
- 2 An interim invoice will normally be submitted upon completion of the site works, to include all disbursements and fees to date, and for contracts extending over a long period, monthly invoices will be submitted for payment. The final report will not be issued until payment of the first interim invoice has been received, unless agreed with this Practice beforehand. Invoices are not to be assigned to a third party without prior agreement. Should the contract be cancelled after either preparatory or fieldwork has commenced then a claim will be made for work completed to that date.
- 3 The rates quoted, are net of Value Added Tax (VAT) which will be added to invoices at the standard prevailing rate, and are valid for a period of 12 weeks from the date of the quote. The Consultant shall issue accounts monthly in respect of that part of the Services carried out in the preceding period. The Client shall make payment of accounts without discount or retention within 30 days of submission. Disputes should be raised within 10 days. In the event of non-payment of the account(s) within the specified period the Consultant reserves the right to charge, from time to time, interest on the unpaid amount at the rate of 2% per calendar month above the Bank of England base rate (at time of original invoice date).
- 4 In the event of non-payment of the account(s), the Client undertakes to pay to the Consultant all costs and expenses, on an indemnity basis, incurred by the Consultant in: (i) the recovery from the Client of money or arrears (ii) the enforcement of any of the provisions of these conditions of contract (iii) the service of any notice relating to the breach by the Client of any of their obligations under this contract whether or not the same shall result in court proceedings (iv) the cost of any bank or other charges incurred by the Consultant if any cheque written by the Client is dishonoured or if any standing order payment is withdrawn by the Client's bankers (v) compensation for the breach of any terms of this agreement.
- 5 Unless expressly stipulated to the contrary, payment of the account(s) is not dependent upon the Client achieving regulatory approval for or discharge of a planning condition relating to the project, nor is it dependent upon the Client's securing of funding for the development where this may be conditional upon the prior granting of planning or building regulations approval, nor the Client's onward sale of the site to another party. In the case of provision of services to another consultant, payment of our account is not dependent upon the prior settlement of their own account by their Client.
- 6 No work will commence until an official written order or completed Quote Acceptance form has been received by post or email. Such order will be deemed to constitute acceptance of the quotation and these terms and conditions. Where the instruction to undertake the Services may have been issued by an intermediary on behalf of the Client, full Client details including confirmation of and contact details for the person responsible for authorising payment must be provided to the Consultant. In the event that the Client defaults or otherwise fails to pay the due account, the Consultant reserves the right to pursue and recover any unpaid amount from the instructing intermediary.
- 7 Neither party shall assign any obligation or benefit under this Agreement without prior written consent of the other Party. The Client shall not be entitled to assign the report(s) or any part of it without our prior written consent. Re-assignment of reports can be provided on request, subject to liaison with our Insurers and standard administration costs. Any assignment shall exclude the Contracts (Rights of Third Parties) Act 1999. Provision of a Collateral Warranty can only be considered if it is agreed at the pre-works stage, and fees for legal advice and warranty provision agreed before the works commence.
- 8 The Client guarantees that it has the right to have the Services performed and that he has obtained all the necessary certificates, licences, permits and consents required by Statute or any order or regulation made there under or by any regulation or by-law of any authority undertaker. The Client shall indemnify and hold harmless the Consultant from and against all consequences of a failure in this respect. The Client shall arrange such rights of access to property and use of Client's facilities as described in (or reasonably to be inferred from) this Agreement. The Client shall use reasonable endeavours to supply to the Consultant, promptly and free of charge: (a) any other necessary things in accordance with this Agreement; (b) any instructions, decisions, consents and approvals; and (c) any relevant data and information in the Client's possession; all of which the Consultant may reasonably require in order to carry out the Services. The Client will indemnify the Consultant in respect of any failure by the Client under this Clause.
- 9 In line with the Construction (Design & Management) Regulations 2015 and AGS guidance, neither the Consultant nor any sub-contractor shall be held responsible for any accidental damage or the consequences of any damage to buried services such as cables, pipes, sewers, etc., the positions and nature of which have not been clearly indicated to the Consultant in writing prior to the commencement of the work, unless the locating of same is expressly part of the Services. Where necessary it is assumed that the Client will permit the use of their toilet/welfare facilities by Consultant's staff and sub-contractors, including domestic properties. We will normally undertake the role of Contractor on a ground investigation project, but may occasionally 'inherit' the role of Principal Contractor. In either case that role is restricted to the ground investigation phase ONLY and not the subsequent build.
- 10 The Consultant shall not be held responsible for any loss, damage or injury arising from actions or omissions of the Client, his agents, servants and/or independent contractors. The Client shall indemnify the Consultant from any such acts or omissions.
- 11 Each Party shall retain the copyright of its documents. Information relating to the contract will only be disclosed to those employees who require it to carry out their job. If necessary this may include subcontractors. Any other third party enquiry about the purposes of these works will be referred back to the Client. Upon completion any technical information or ground investigation data obtained as part of your commission will thereafter be archived as 'in-house' data, and may be used (without specific reference to your site) on other projects in the future; this specifically excludes any personal data.
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- 14 The Consultant's liability under this Agreement shall be limited to £500,000 (five hundred thousand pounds). The Consultant shall maintain professional indemnity insurance in this amount providing that such insurance cover is available at commercially reasonable rates.
- 15 To comply with the General Data Protection Regulation (GDPR) 2018, we will only request contact details sufficient to complete our project with you, name/job title, address/postcode/email. Any data collected will be used only by authorised personnel in the context of that project. We are committed to ensuring that your information is secure and in order to prevent unauthorised access or disclosure, we have put in place suitable physical, electronic and managerial procedures to safeguard and secure the information we collect. We will not share your information with third parties.