GEOTECHNICAL SITE INVESTIGATION REPORT

26 HIGH STREET
BURWELL
CAMBRIDGESHIRE
CB25 0HB

Reference Number 3309/Rpt 1v2
September 2023

Prepared for
Rowe Build
C/o Gary Johns Architects

By

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Client	Rowe Build C/o Gary Johns Architects
Report Title	Geotechnical Site Investigation Report: 26 High Street, Burwell
Reference Number	3309/Rpt 1v2
Date	September 2023

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1 INTRODUCTION

1.1 Background

Brown 2 Green Associates Ltd have been commissioned by Gary Johns Architects on behalf of Rowe Build to undertake a geotechnical site investigation of land at 26 High Street, Burwell, CB25 0HB. The site location is presented in Figure 1.

1.2 Proposed Development

It is proposed to redevelop to residential consisting of two dwellings with associated gardens and parking. The proposed development is shown on drawing number 16-417 10 rev D prepared by Gary Johns Architects. The proposed development layout is presented in Appendix II.

1.3 Objectives

The objective of the work is to provide geotechnical recommendations in relation to foundation.

2 SITE DESCRIPTION

2.1 Site Descriptions and Observations

The site is currently vacant, and demolition works have been undertaken to ensure that the necessary on-site contamination investigation works could be conducted. An old partly backfilled soakaway was present on the north-western part of the site.

The topography of the site slopes towards the west.

2.2 Geology

The British Geological Survey website indicates that the site is underlain by the following geology:

Geological Unit	Drift/Solid	Description
None Present	Drift	
Zig Zag Chalk Formation	Solid	Mostly firm, pale grey to off-white blocky chalk with a lower part characterised by rhythmic alternations of marls and marly chalks with firm white chalk. Thin gritty, silty chalk beds act as markers in the sequence.

The data base on the presence of natural cavities held by Stantec records that no natural cavities have been recorded within 500m of the site.

The British Geological Survey database for Natural Hazards indicates that the potential for dissolution of soluble rocks is described as Negligible.

3 SITE INVESTIGATION

3.1 Exploratory Fieldwork

Five boreholes (WS1 to WS5) were drilled using a window sample drilling rig on 13th June 2023 to a maximum depth of 5.45m below surface. Drilling of some of the boreholes was suspended as no further advance could be achieved. During the drilling of the boreholes SPT were completed at 1.0m intervals. In addition, four trial pits (SA1 and SA2 and TP1 and TP2) were also excavated. At SA1, a pit was excavated to a depth of 1.5m below ground level. At location SA2, the pit was excavated to a depth of 1.45m. The pits were filled with water. The time required for the water to infiltrate was monitored. The sampling locations are illustrated in Figure 2.

During the site works recovered soils were geologically logged by an experienced Geo-environmental Engineer. The geological logs are presented in Appendix III. Disturbed samples for geotechnical testing and chemical analysis were obtained from selected locations.

On completion of the drilling the boreholes were backfilled with recovered soil.

Two soakage tests (SA1 and SA2) were completed in accordance with BRE365 Design of Soakaways. At each location a trail pit was excavated to a maximum depth of 1.5m. Water was then added to the trial pit. Due to the high infiltrations rates of the underlying chalk, water was not accumulating within the pits to allow long term monitoring to be undertaken. Any accumpation of water would infiltrate within 30 seconds.

3.2 Laboratory Analysis

Selected soil samples were submitted to Soil Property Testing Ltd for geotechnical testing. The following tests were completed:

Moisture Content; and
Atterberg Limits.

The laboratory results are presented in Appendix IV.

In addition, two soil sample from WS3 and WS5 were submitted to Eurofins/Chemtest Ltd of Newmarket for chemical analysis. Samples were analysed for:

pH; and
Soluble Sulphate.

The laboratory results are presented in Appendix IV.

4 RESULTS

4.1 Ground Conditions

The geological logs are presented in Appendix III.

Made Ground

The boreholes indicate that the site is generally underlain by 0.3m of made ground consisting of dark grey slightly gravelly, slightly sandy, silty clay with rare anthropogenic materials. In the north-western corner of the site, in WS4, up to 2.0m of made ground was noted. It is believed that a basement was previously located in the area. A backfilled soakaway was also present within this part of the site.

Zig Zag Chalk Formation

The made ground is underlain by weak light cream structureless marly Chalk (Dc) composed of silty gravel.

Visual and Olfactory Evidence of Contamination

No visual or olfactory evidence of contamination was identified.

Soil Density

The density of the underlying soils has been assessed using CPTs undertaken within window sampler boreholes. This shows the chalk to vary from very weak to weak.

4.2 Groundwater Conditions

No groundwater was identified during the drilling of the window sample holes.

It should be noted that groundwater levels can fluctuate seasonally and therefore, may be encountered at higher or lower elevations than those recorded in this site investigation.

4.3 Geotechnical Laboratory Results

The geotechnical testing of the samples was undertaken by Soil Property Testing Ltd under UKAS accreditation. The test certificates are included in Appendix IV.

4.4 Chemical Laboratory Results

The chemical analysis of the soil samples was undertaken by Eurofins/Chemtest Ltd of Newmarket under UKAS accreditation. The test certificates are included in Appendix V.

4.5 Soakage Tests

The results of the soakage tests are presented in Appendix V and summarised below:

Location	Test Number 1	Test Number 2	Test Number 3
SA1	3.13E-02m/s	1.39E-02 m/s	8.93E-03 m/s
SA2	3.13E-02m/s	1.39E-02 m/s	8.93E-03 m/s

5 GEOTECHNICAL ASSESSMENT

5.1 Proposed Development

It is understood that the proposed development will comprise residential units consisting of two dwellings with associated gardens and parking. Details of the proposed loadings are not known and therefore a line loading of 50kN/m has been assumed for preliminary assessment purposes only.

5.1 Ground Conditions

The ground conditions consist of between 0.3m and 2m of Made Ground over structureless marly chalk. Strength of the marly chalk is variable and is generally firm to stiff but within Borehole WS3 and WS4 was noted to be soft.

Groundwater was not encountered.

5.2 Site Preparation

The site should be cleared and any vegetation below areas of proposed development stripped in accordance with Series 200 of the Specification for Highway Works. This should include:

Roots present below the footprint of proposed structures and infrastructure should be grubbed out and the resulting void infilled with suitable compacted engineered fill;
Redundant services should be sealed off and grubbed out and replaced with suitable compacted engineered fill; and,
Buried structures and old foundations have been encountered on site. These should be excavated from below the proposed development foot print with the resulting void backfilled.

5.3 Foundations

It is considered that conventional strip foundations should be feasible founding in the firm and stiff chalk at a minimum depth of 1.5m bgl. It is likely that foundations will need to be locally deepened where soft chalk and deeper Made Ground are present. A typical bearing capacity of 100kN/m^2 may be used and settlements are estimated to be less than 25mm.

It is recommended that additional investigation is undertaken around Boreholes WS3 and WS4 to determine the depth of Made Ground and extent of the soft marly chalk encountered as it may be necessary to span this material.

Final foundation design should take account of the presence of existing and proposed trees in accordance with the requirements of NHBC Standards for a soil of low volume change potential.

5.4 Ground Floor Slabs

It is recommended that suspended floor slabs are used.

5.5 Pavement Construction

An assessment of the likely California Bearing Ratio (CBR) for the Made Ground has been assessed from the following sources:

Correlations with undrained shear strength from Black and Lister;

Correlations with plasticity index from HD25/94; and
Description of the materials encountered in the exploratory holes.

Based on this it is considered that a CBR of less than 2% may be suitable. Based on the plasticity index the soils are considered frost susceptible in accordance with Road Note 29 soils are not considered frost susceptible.

Following excavation, the sub formation should be proof rolled and any soft material inspected and removed.

5.6 Buried Concrete

Based upon the results of the chemical analyses it is considered that subsurface concrete can be designed in accordance with Design Sulphate Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1s in accordance with the recommendations provided in BRE Special Digest 1 (2005). It is recommended that piles are designed to Class AC-2s.

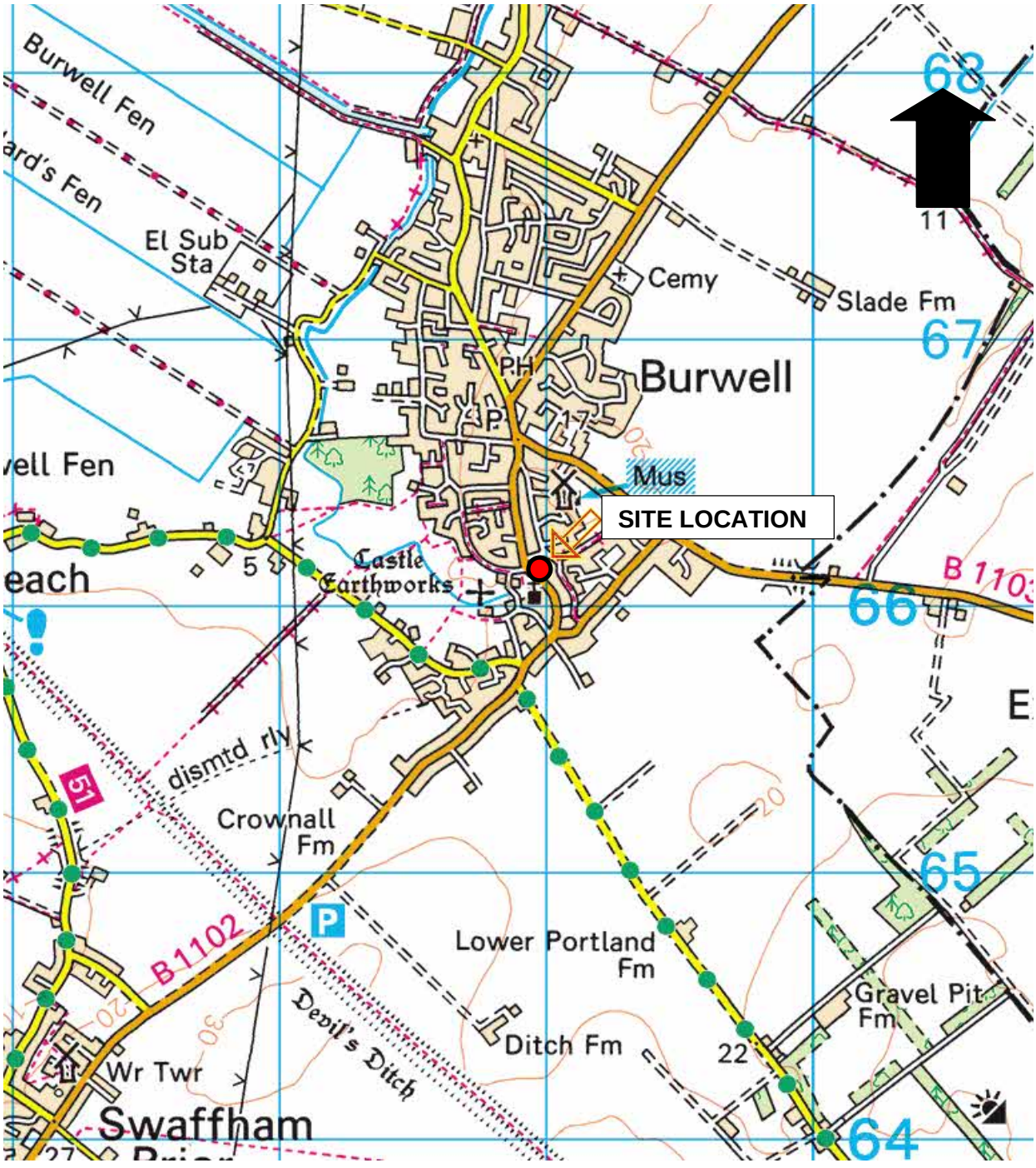
5.7 Excavations

Site observations indicated that excavations should be feasible in the near surface with normal plant. No significant dewatering is anticipated.

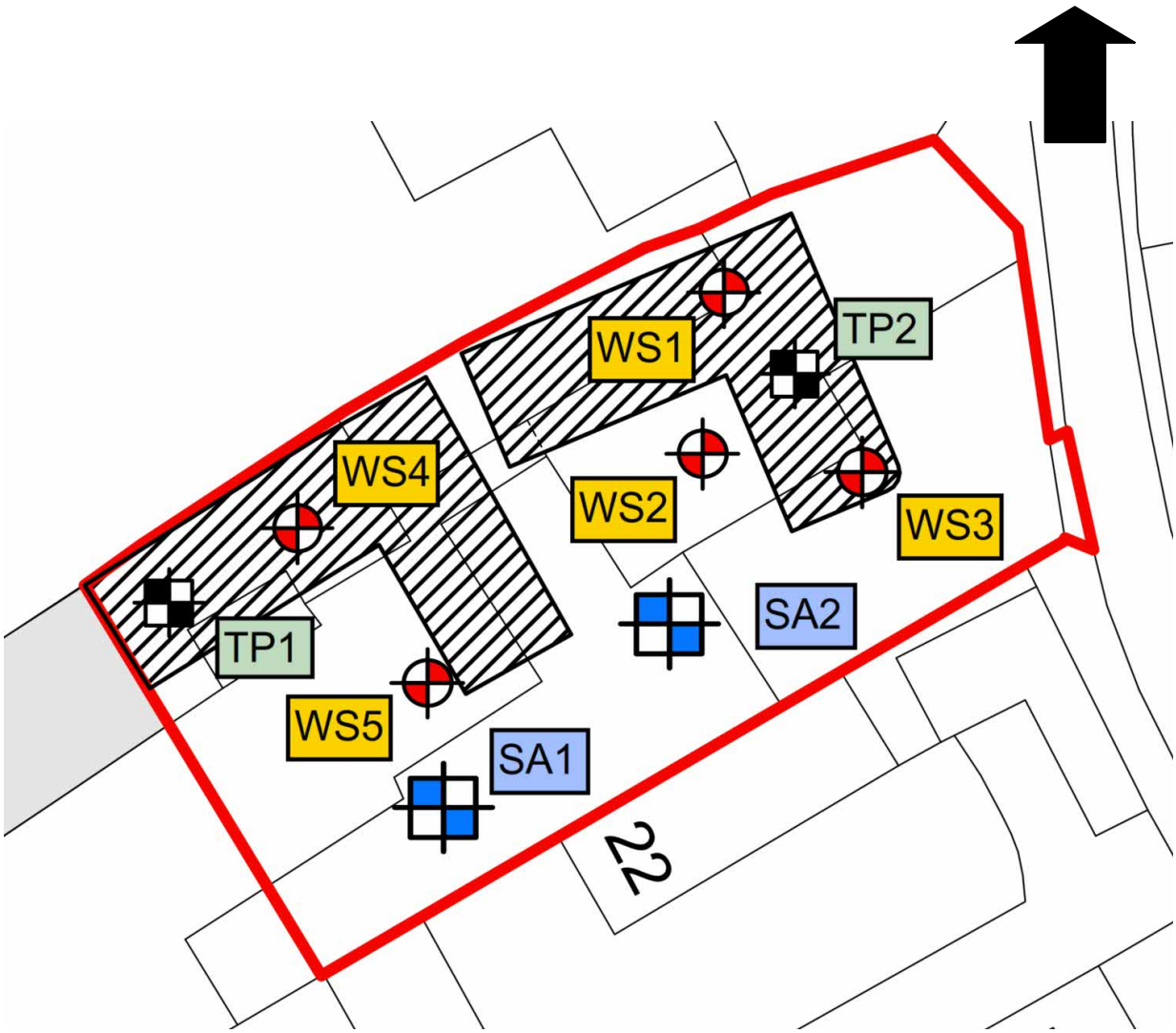
5.8 Soakaways

The underlying soils are suitable for soakaways. Soakaways should be designed in accordance with CIRIA Guidance C574 Engineering in Chalk.

FIGURES



Project Number: 3309	Project: 26 High Street, Burwell	Scale: NTS
Figure 1	**Site Location Plan**	Brown 2 Green



Project Number: 3309	Project: 26 High Street, Burwell	Scale: NTS
Figure 2	**Borehole Location Plan**	Brown 2 Green

APPENDIX I

LIMITATIONS AND CONSTRAINTS

Brown 2 Green Associates Limited has prepared this report in accordance with our standard Terms and Conditions solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.

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For the work, reliance has been placed on publicly available data obtained from the sources identified and data supplied by other parties. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information. Brown 2 Green Associates Ltd does not warrant work / data undertaken / provided by others.

Due to the short timescales associated with these projects responses may not have been received from all parties. Brown 2 Green Associates Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.

Access considerations, the presence of services and the activities being carried out on the site limited the positions where sampling locations could be installed and the techniques that could be used.

This report presents an interpretation of the geo-environmental information established by excavation, observation and testing. It should be noted that when investigating, or developing land it is important to recognise that sub-surface conditions may vary spatially and also with time. Groundwater conditions are dependent on seasonal and other factors. Consequently there may be conditions present not revealed by this investigation. The absence of certain ground, ground gas, and contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Due to the presence of existing buildings and structures access could not be obtained to all areas. Additional contamination may be identified following the removal of the buildings or hard standing.

The scope of any investigation was basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.

Rather, this investigation has been undertaken to provide a characterisation of the existing sub-surface geo-environmental characteristics and make up and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

During any development programme Brown 2 Green Associates Limited should be consulted if alternative ground conditions are encountered. It assumes during any site works that the contractor will use their best endeavours to manage and control groundwater and other unforeseen ground

conditions. Brown 2 Green Associates Limited will not be liable for actions taken prior to consultation.

APPENDIX II

PROPOSED DEVELOPMENT LAYOUT

Change ID	Item Changed	Last Modified	Modified By

Gross Internal Floor Areas:

Plot 1 = 160m²
Plot 2 = 155m²

N

Scale Bar
0 1 2 3 4 5

Ridge level. 17.78

level. 15.77

Ridge Level 22.43

60

New section of boundary wall

MILL LANE

Plot 1

Plot 2

Kitchen

Living Area

Utility Room

Study

WC

Shower

Bedroom 03

En Suite

Dining Area

Kitchen

Utility Room

Study

WC

Bedroom 03

En Suite

Steel Beam 01

10.000

5.000

Footpath

22

24

1:100

Site Plan - Proposed

Rev	Comment	Issued	Checked	Review

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WEB : www.johnsarchitectsco.uk

CLIENT

26 High Street
Burwell
Cambridgeshire CB25 OHB

PROJECT

Proposed housing development
26 High Street
Burwell
Cambridgeshire CB25 OHB

DRAWING TITLE

Site Plan - Proposed

SCALE @ A1	STATUS
1:100	Planning

DRAWN	REVIEWED	DATE
SH	GJ	25.07.2018

DRAWING NUMBER		REVISION
16-417	10	D

APPENDIX III

GEOLOGICAL LOGS

GEOLOGICAL LOG

Project:	26 High Street	**Borehole Number:**	WS1
Location:	Burwell Cambridgeshire CB25 0HB	**Start of Drilling:**	13-Jul-23
Project No:	3309	**Completion of Drilling:**	13-Jul-23
Client	Rowe Build c/o Gary Johns Architects	**Drilling Method:**	Window sampling
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test							
Sample / Test	Result	Sample range	Description	Log	Depth (m)	Thick-ness (m)	S/pipe
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.				
T,J,V		0.0-0.3			0.3	0.3	
			Structureless marly CHALK composed of light cream silty GRAVEL.				
D		0.5	Gravel of fine to coarse, angular to subrounded weak marly chalk.				
			(Grade Dc)				
D		1			1.0		
SPT	15,21,25 N>50	1.0-1.1			1.1	>0.8	
			No further advance achieved due to the density of strata. End of borehole.				

2.0

3.0

4.0

5.0

6.0

7.0

Remarks:

Groundwater: Dry on completion.

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample,

GEOLOGICAL LOG

Project:	26 High Street	**Borehole Number:**	WS2
Location:	Burwell		
	Cambridgeshire		
	CB25 0HB	**Start of Drilling:**	13-Jul-23
Project No:	3309	**Completion of Drilling:**	13-Jul-23
Client	Rowe Build c/o Gary Johns Architects	**Drilling Method:**	Window sampling
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test							
Sample / Test	Result	Sample range	Description	Log	Depth (m)	Thick-ness (m)	S/pipe
T,J,V		0.0-0.3	MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.		0.3	0.3	
D		0.5	Structureless marly CHALK composed of light cream silty GRAVEL with occasional brown speckling. Gravel of fine to coarse, angular to subrounded weak marly chalk.				
T,J,V		0.3-0.6	(Grade Dc)				
D		1			1.0		
SPT	1,0,1,0,0 N=1	1.0-1.45					
D		1.5					
D		2			2.0		
SPT	11,14,13,25 N>50	2.0-2.2					
			No further advance achieved due to the density of strata. End of borehole.		2.2	>1.9	

3.0

4.0

5.0

6.0

7.0

Remarks:

Groundwater: Dry on completion.

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample,

GEOLOGICAL LOG

Project:	26 High Street	**Borehole Number:**	WS3
Location:	Burwell Cambridgeshire CB25 0HB	**Start of Drilling:**	13-Jul-23
Project No:	3309	**Completion of Drilling:**	13-Jul-23
Client	Rowe Build c/o Gary Johns Architects	**Drilling Method:**	Window sampling
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test			Description	Log	Depth (m)	Thick-ness (m)	S/pipe
Sample / Test	Result	Sample range					
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.		0.3	0.3	
			Structureless marly CHALK composed of light cream silty GRAVEL.				
D		0.5	Gravel of fine to coarse, angular to subrounded weak marly chalk. (Grade Dc)				
D		1			1.0		
SPT	1,1,0,1,0 N=2	1.0-1.45					
D		1.2					
D		2			2.0		
SPT	1,0,0,0,0 N=0	2.0-2.45					
D		3	with very low recovery below 3.0m.		3.0		
SPT	1,1,0,1,0 N=2	3.0-3.45					
					4.0		
SPT	1,0,0,0,0 N=0	4.0-4.45					
D		4.0-5.0			5.0		
SPT	1,0,0,0,0 N=0	5.0-5.45					
					5.45	>5.15	
			End of borehole.				
					6.0		
					7.0		

Remarks:

Groundwater: Dry on completion.

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample,

GEOLOGICAL LOG

Project:	26 High Street	**Borehole Number:**	WS4
Location:	Burwell		
	Cambridgeshire		
	CB25 0HB	**Start of Drilling:**	13-Jul-23
Project No:	3309	**Completion of Drilling:**	13-Jul-23
Client	Rowe Build c/o Gary Johns Architects	**Drilling Method:**	Window sampling
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test			Description	Log	Depth (m)	Thick-ness (m)	S/pipe
Sample / Test	Result	Sample range					
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and charcoal. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.				
T,J,V		0.0-0.6					
T,J,V		0.8-1.0					
SPT	1,0,0,0,0	1.0-1.45			1.0		
	N=0						
					2.0	2.0	
			Structureless marly CHALK composed of light cream silty GRAVEL.				
D		2.2	Gravel of fine to coarse, angular to subrounded weak marly chalk.				
SPT	1,0,1,0,0	2.0-2.45	(Grade Dc)				
	N=1				3.0		
SPT	2,7,8,	3.0-3.4			3.4	>1.4	
	25/5mm		No further advance achieved due to the density of strata. End of borehole.				
	N>50						
					4.0		
					5.0		
					6.0		
					7.0		

Remarks:

Groundwater: Dry on completion.

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample,

GEOLOGICAL LOG

Project:	26 High Street	**Borehole Number:**	WS5
Location:	Burwell		
	Cambridgeshire		
	CB25 0HB	**Start of Drilling:**	13-Jul-23
Project No:	3309	**Completion of Drilling:**	13-Jul-23
Client	Rowe Build c/o Gary Johns Architects	**Drilling Method:**	Window sampling
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test							
Sample / Test	Result	Sample range	Description	Log	Depth (m)	Thick-ness (m)	S/pipe
T,J,V		0.0-0.3	MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.		0.3	0.3	
D		1	Structureless marly CHALK composed of light cream silty GRAVEL. Gravel of fine to coarse, angular to subrounded very weak marly chalk. (Grade Dc)		1.0		
SPT	1,1,0,1,1 N=3	1.0-1.45					
D		1.5					
D		2			2.0		
SPT	2,2,1,3,1 N=7	2.0-2.45					
D		3			3.0		
SPT	3,2,1,2,3 N=8	3.0-3.45					
D		4			4.0		
SPT	2,2,1,3,3 N=9	4.0-4.45					
D		5			5.0		
SPT	3,4,3,2,3 N=12	5.0-5.45					
					5.45	>5.15	
			End of borehole.		6.0		
					7.0		

Remarks:

Groundwater: Dry on completion.

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample,

GEOLOGICAL LOG

Project:	26 High Street	**Trial Pit Number:**	TP1
Location:	Burwell Cambridgeshire CB25 0HB		
Project No:	3309	**Date of Excavation:**	13-Jul-23
Client	Rowe Build c/o Gary Johns Architects	**Type of Machine**	Mini digger
Logged By:	RMI	**Co-ordinates**	N/A
		Ground Level (m AOD):	N/A

W E

Sample/Test			Description	Log	Depth (m)	Thick- ness (m)	Ground Water (m)
Sample / Test	Result	Sample range					
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.				
			with a wooden beam at 0.5m		0.6		
					1.0		
			Made ground stops at 1.9m.		1.5		
			Structureless marly CHALK composed of light cream silty GRAVEL. Gravel of fine to coarse, angular to subrounded very weak marly chalk. (Grade Dc)		1.9		
			Chalk was also noted along the eastern side of the pit from 0.6m bgl.		2.0		
			End of pit.				
			End of pit.		3.0		
					4.0		
					5.0		
					6.0		
					7.0		

Remarks: Dry.

Dimensions and Orientation: L=1.5m;w=0.5m. NE-SW.

Stability:

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample, HSV - hand shear vane

GEOLOGICAL LOG

Project:	26 High Street	**Trial Pit Number:**	TP2
Location:	Burwell Cambridgeshire CB25 0HB	**Date of Excavation:**	13-Jul-23
Project No:	3309	**Type of Machine**	Mini digger
Client	Rowe Build c/o Gary Johns Architects	**Co-ordinates**	N/A
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test			Description		Log	Depth (m)	Thick- ness (m)	Ground Water (m)
Sample / Test	Result	Sample range						
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.			0.6	0.6	
			Structureless marly CHALK composed of light cream silty GRAVEL. Gravel of fine to coarse, angular to subrounded very weak marly chalk. (Grade Dc)			0.9	>0.3	
			End of pit.			1.0		
						2.0		
						3.0		
						4.0		
						5.0		
						6.0		
						7.0		

Remarks: Dry.

Dimensions and Orientation: L=1.5m;w=0.5m. N-S.

Stability:

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample, HSV - hand shear vane

GEOLOGICAL LOG

Project:	26 High Street	**Trial Pit Number:**	SA1
Location:	Burwell		
	Cambridgeshire		
	CB25 0HB	**Date of Excavation:**	13-Jul-23
Project No:	3309	**Type of Machine**	Mini digger
Client	Rowe Build c/o Gary Johns Architects	**Co-ordinates**	N/A
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test			Description	Log	Depth (m)	Thick- ness (m)	Ground Water (m)
Sample / Test	Result	Sample range					
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.		0.3	0.3	
			Structureless marly CHALK composed of light cream silty GRAVEL. Gravel of fine to coarse, angular to subrounded very weak marly chalk. (Grade Dc)		1.0		
					1.5	>1.2	
			End of pit.		2.0		
					3.0		
					4.0		
					5.0		
					6.0		
					7.0		

Remarks: Dry.

Dimensions and Orientation: L=1.2m;w=0.4m. NE-SW.

Stability:

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample, HSV - hand shear vane

GEOLOGICAL LOG

Project:	26 High Street	**Trial Pit Number:**	SA2
Location:	Burwell		
	Cambridgeshire		
	CB25 0HB	**Date of Excavation:**	13-Jul-23
Project No:	3309	**Type of Machine**	Mini digger
Client	Rowe Build c/o Gary Johns Architects	**Co-ordinates**	N/A
Logged By:	RMI	**Ground Level (m AOD):**	N/A

Sample/Test			Description	Log	Depth (m)	Thick- ness (m)	Ground Water (m)
Sample / Test	Result	Sample range					
			MADE GROUND - Dark grey slightly gravelly, slightly sandy, silty CLAY with rare bricks and carbonaceous materials. Gravel of fine to coarse, angular to subrounded flint, brick and concrete.		0.3	0.3	
			Structureless marly CHALK composed of light cream silty GRAVEL. Gravel of fine to coarse, angular to subrounded very weak marly chalk. (Grade Dc)		1.0		
					1.45	>1.15	
			End of pit.		2.0		
					3.0		
					4.0		
					5.0		
					6.0		
					7.0		

Remarks: Dry.

Dimensions and Orientation: L=1.2m;w=0.4m. NE-SW.

Stability:

Keys J - 250 or 500ml Jar, T - Tub, V - Vial or 60ml jar, D - Small Disturbed, B - Large bulk sample, W - Water sample, HSV - hand shear vane

APPENDIX IV

LABORATORY REPORTS

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

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

4041

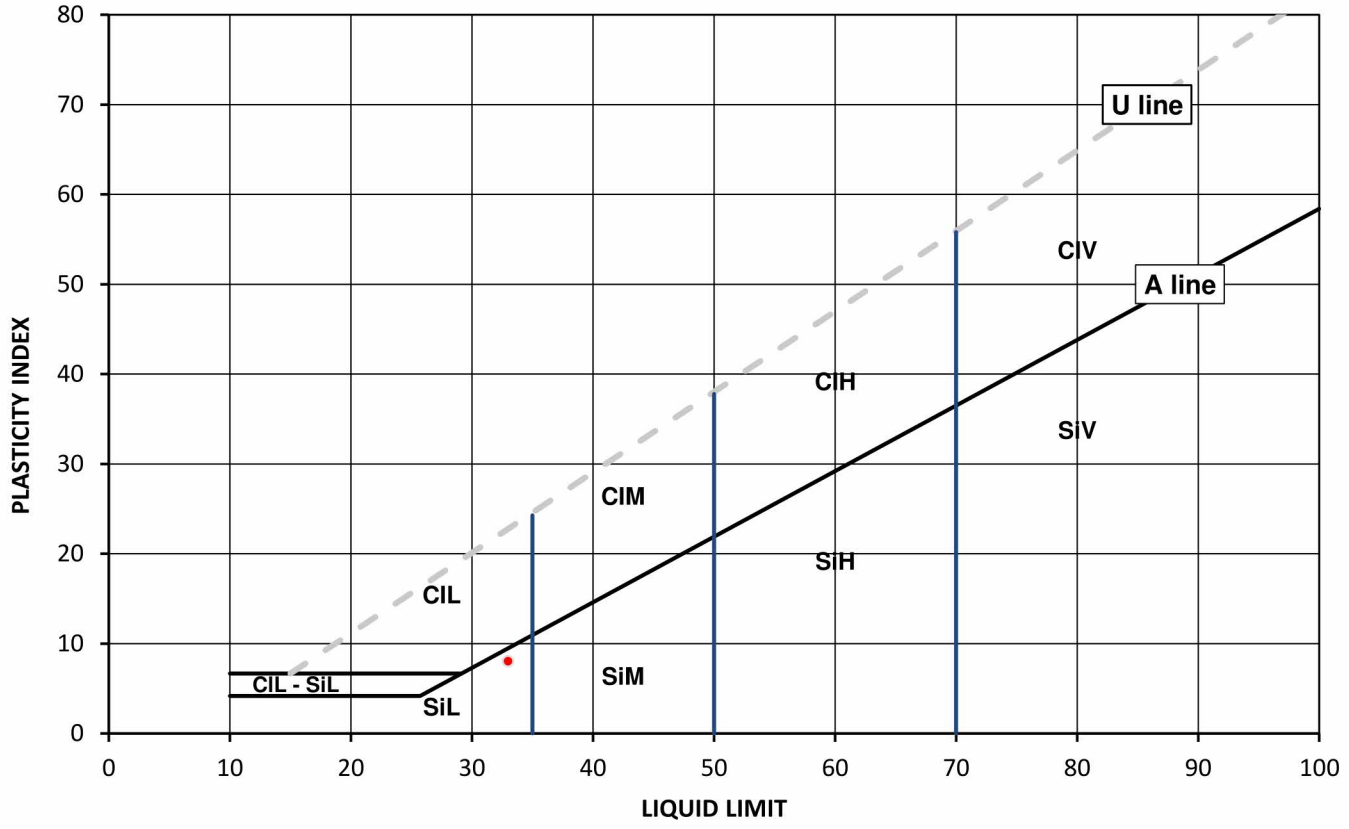
Client:	Brown 2 Green Associates Ltd	Client Reference:	3309
Client Address:	Suite 1, Wenden Court, Station Road, Wendens Ambo, Walden, CB11 4LB	Job Number:	23-45251-1
		Date Sampled:	Not Given
		Date Received:	14/07/2023
Contact:	Radu Ilie	Date Tested:	25/07/2023
Site Address:	26 High Street, Burwell, Cambridgeshire	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2749677	Depth Top [m]:	1.50
Hole No.:	WS2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light grey clayey CHALK		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
26	33	25	8	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: [redacted]

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

Date Reported: 04/08/2023

GF 232.13

4041

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

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

Environmental Science

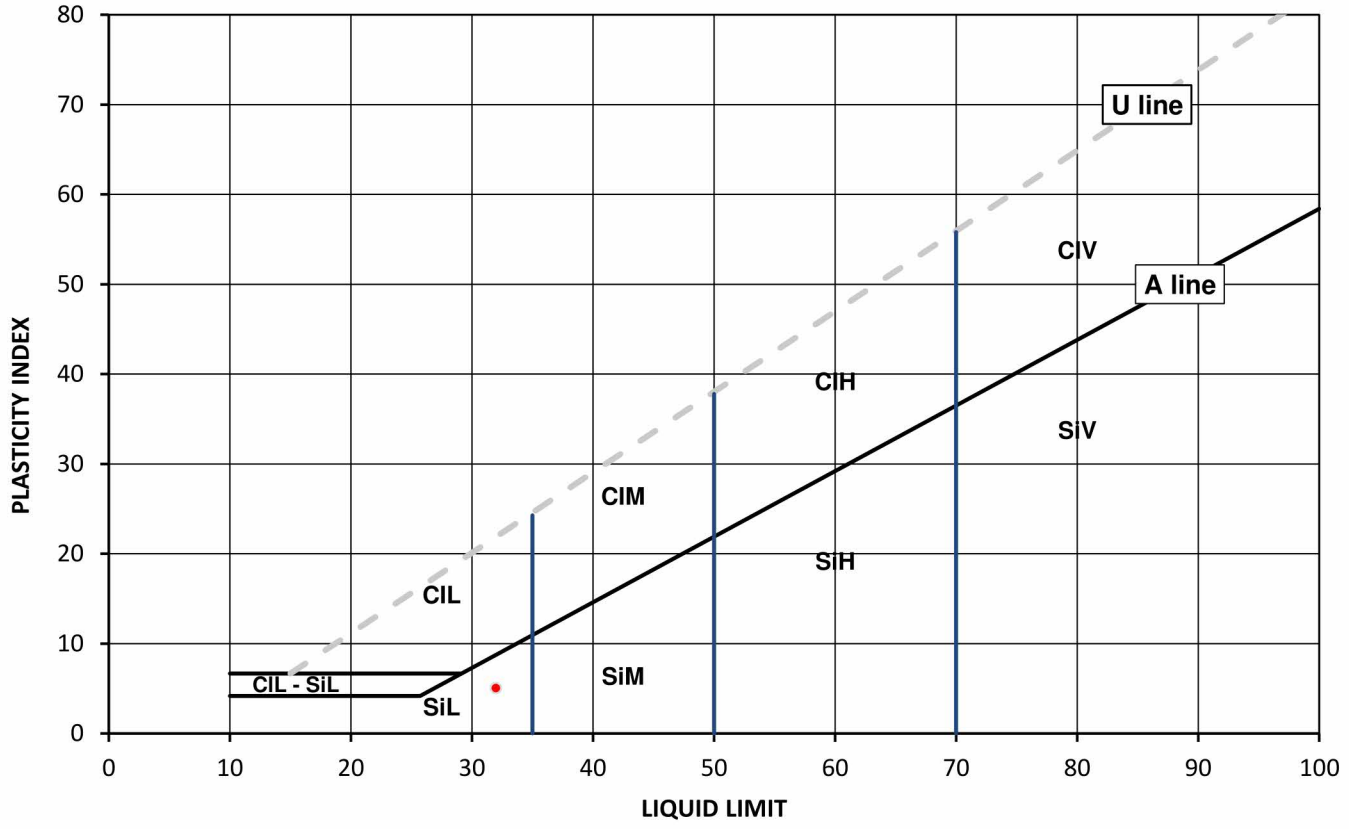
Client:	Brown 2 Green Associates Ltd	Client Reference:	3309
Client Address:	Suite 1, Wenden Court, Station Road, Wendens Ambo, Walden, CB11 4LB	Job Number:	23-45251-1
		Date Sampled:	Not Given
		Date Received:	14/07/2023
Contact:	Radu Ilie	Date Tested:	25/07/2023
Site Address:	26 High Street, Burwell, Cambridgeshire	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2749679	Depth Top [m]:	2.00
Hole No.:	WS3	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light grey clayey CHALK		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
22	32	27	5	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: [redacted]

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

Date Reported: 04/08/2023

GF 232.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

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

4041

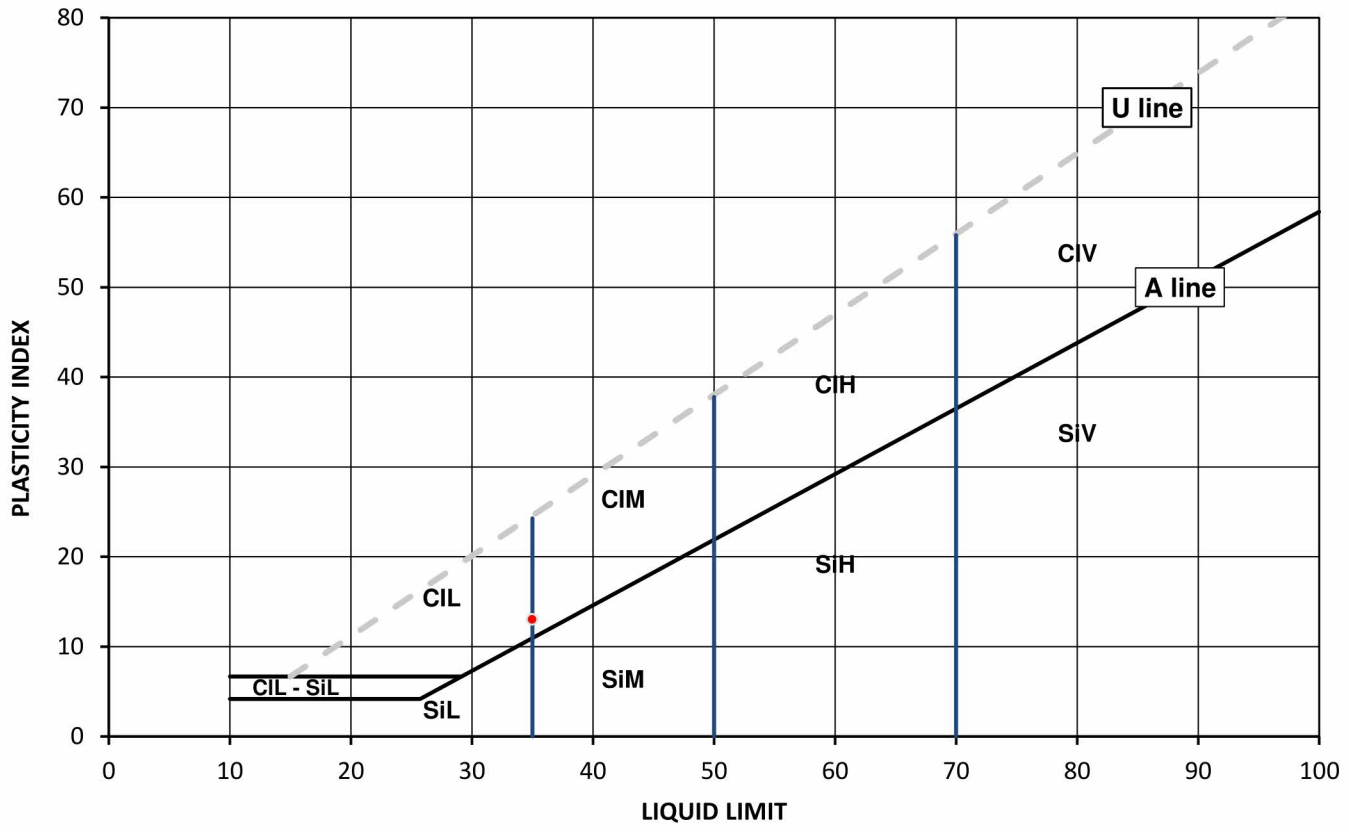
Client:	Brown 2 Green Associates Ltd	Client Reference:	3309
Client Address:	Suite 1, Wenden Court, Station Road, Wendens Ambo, Walden, CB11 4LB	Job Number:	23-45251-1
		Date Sampled:	Not Given
		Date Received:	14/07/2023
Contact:	Radu Ilie	Date Tested:	25/07/2023
Site Address:	26 High Street, Burwell, Cambridgeshire	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2749683	Depth Top [m]:	1.50
Hole No.:	WS5	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light grey sandy CLAY with fragments of chalk		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	35	22	13	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: [redacted]

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

Date Reported: 04/08/2023

GF 232.13

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

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

4041

Client: Brown 2 Green Associates Ltd

Client Address: Suite 1, Wenden Court, Station Road, Wendens Ambo, Walden, CB11 4LB

Contact: Radu Ilie

Site Address: 26 High Street, Burwell, Cambridgeshire

Water Content by BS 1377-2:1990: Clause 3.2Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5

Client Reference: 3309
Job Number: 23-45251-1
Date Sampled: Not Given
Date Received: 14/07/2023
Date Tested: 25/07/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W]	Water Content BS EN ISO 17892-1 [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
2749675	WS1	Not Given	1.00	Not Given	B	Light grey CLAY with fragments of chalk		22											
2749676	WS2	Not Given	1.00	Not Given	B	Light grey CLAY with fragments of chalk		21											
2749677	WS2	Not Given	1.50	Not Given	B	Light grey clayey CHALK	Atterberg 1 Point	26		100	33	25	8						
2749678	WS3	Not Given	1.00	Not Given	B	Light grey CLAY		22											
2749679	WS3	Not Given	2.00	Not Given	B	Light grey clayey CHALK	Atterberg 1 Point	22		100	32	27	5						
2749680	WS3	Not Given	3.00	Not Given	B	Light grey CLAY		18											
2749681	WS4	Not Given	2.20	Not Given	B	Light grey CLAY with fragments of chalk		29											
2749682	WS5	Not Given	1.00	Not Given	B	Light grey silty CLAY		29											
2749683	WS5	Not Given	1.50	Not Given	B	Light grey sandy CLAY with fragments of chalk	Atterberg 1 Point	27		100	35	22	13						
2749684	WS5	Not Given	2.00	Not Given	B	Light grey CLAY with fragments of chalk		28											

Note: # Non accredited; NP - Non plastic

Comments:

Signed: [redacted]

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

Date Reported: 04/08/2023

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

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

4041

Client: Brown 2 Green Associates Ltd

Client Address: Suite 1, Wenden Court, Station Road,
Wendens Ambo, Walden,
CB11 4LB

Contact: Radu Ilie

Site Address: 26 High Street, Burwell, Cambridgeshire

Client Reference: 3309
Job Number: 23-45251-1
Date Sampled: Not Given
Date Received: 14/07/2023
Date Tested: 25/07/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type			%				
2749675	WS1	Not Given	1.00	Not Given	B	Light grey CLAY with fragments of chalk		22	Sample was quartered, oven dried at 106.3 °C			
2749676	WS2	Not Given	1.00	Not Given	B	Light grey CLAY with fragments of chalk		21	Sample was quartered, oven dried at 106.3 °C			
2749677	WS2	Not Given	1.50	Not Given	B	Light grey clayey CHALK		26	Sample was quartered, oven dried at 106.3 °C			
2749678	WS3	Not Given	1.00	Not Given	B	Light grey CLAY		22	Sample was quartered, oven dried at 106.3 °C			
2749679	WS3	Not Given	2.00	Not Given	B	Light grey clayey CHALK		22	Sample was quartered, oven dried at 106.3 °C			
2749680	WS3	Not Given	3.00	Not Given	B	Light grey CLAY		18	Sample was quartered, oven dried at 106.3 °C			
2749681	WS4	Not Given	2.20	Not Given	B	Light grey CLAY with fragments of chalk		29	Sample was quartered, oven dried at 106.3 °C			
2749682	WS5	Not Given	1.00	Not Given	B	Light grey silty CLAY		29	Sample was quartered, oven dried at 106.3 °C			
2749683	WS5	Not Given	1.50	Not Given	B	Light grey sandy CLAY with fragments of chalk		27	Sample was quartered, oven dried at 106.3 °C			
2749684	WS5	Not Given	2.00	Not Given	B	Light grey CLAY with fragments of chalk		28	Sample was quartered, oven dried at 106.3 °C			

Comments:

Signed: [redacted]

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

Date Reported: 04/08/2023

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	23-23739-2		
Initial Date of Issue:	19-Jul-2023	**Date of Re-Issue:**	19-Jul-2023
Re-Issue Details:	This report has been revised and directly supersedes 23-23739-1 in its entirety		
Client	Brown 2 Green Associates		
Client Address:	Suite 1, Wenden Court Station Road Wendens Ambo Nr. Saffron Walden Essex CB11 4LB		
Contact(s):	Philip Miles Radu Mihai Ilie		
Project	3309 - 26 High Street, Burwell, Cambridgeshire		
Quotation No.:		**Date Received:**	13-Jul-2023
Order No.:		**Date Instructed:**	13-Jul-2023
No. of Samples:	8		
Turnaround (Wkdays):	5	**Results Due:**	19-Jul-2023
Date Approved:	19-Jul-2023		
Approved By:	[redacted]		
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: 3309 - 26 High Street, Burwell, Cambridgeshire

Client: Brown 2 Green Associates		**Chemtest Job No.:**			23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739
Quotation No.:		**Chemtest Sample ID.:**			1673768	1673769	1673770	1673771	1673772	1673773	1673774	1673775
			Sample Location:		WS1	WS2	WS2	WS4	WS4	WS5	WS3	WS5
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.00	0.00	0.30	0.00	0.80	0.00	1.20	1.50
			Bottom Depth (m):		0.30	0.30	0.60	0.60	1.00	0.30	1.20	1.50
			Date Sampled:		13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-	-	-	Fibres/Clumps	-		
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected		
Asbestos by Gravimetry	U	2192	%	0.001					0.004			
Total Asbestos	U	2192	%	0.001					0.004			
Moisture	N	2030	%	0.020	19	21	16	21	20	16	16	21
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown		
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones		
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand		
pH	M	2010		4.0	8.0		8.2			7.8	8.6	7.9
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010		< 0.010			0.014	0.024	0.019
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50		
Arsenic	M	2455	mg/kg	0.5	2.4	0.5	1.7	7.2	7.5	5.1		
Cadmium	M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.25	0.80	0.12		
Chromium	M	2455	mg/kg	0.5	4.0	0.6	4.5	9.3	11	8.0		
Copper	M	2455	mg/kg	0.50	10	2.9	5.1	37	33	19		
Mercury	M	2455	mg/kg	0.05	0.08	< 0.05	< 0.05	0.21	0.17	0.10		
Nickel	M	2455	mg/kg	0.50	6.0	0.88	5.1	13	15	10		
Lead	M	2455	mg/kg	0.50	25	8.4	5.7	120	170	65		
Selenium	M	2455	mg/kg	0.25	0.35	< 0.25	0.33	0.73	0.82	0.56		
Vanadium	U	2455	mg/kg	0.5	6.0	1.1	5.4	13	18	11		
Zinc	M	2455	mg/kg	0.50	38	15	17	120	270	69		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10		
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25		< 0.25		< 0.25		
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	7.2	6.1		6.3		4.6		
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	4.4	3.2		3.1		3.1		
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	< 2.0	< 2.0		< 2.0		< 2.0		
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	5.3	20		5.1		6.9		
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10		< 10		< 10		
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	17	30		15		16		
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	17	30		15		16		
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		

Results - Soil

Project: 3309 - 26 High Street, Burwell, Cambridgeshire

Client: Brown 2 Green Associates		**Chemtest Job No.:**			23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739
Quotation No.:		**Chemtest Sample ID.:**			1673768	1673769	1673770	1673771	1673772	1673773	1673774	1673775
		Sample Location:			WS1	WS2	WS2	WS4	WS4	WS5	WS3	WS5
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.00	0.30	0.00	0.80	0.00	1.20	1.50
		Bottom Depth (m):			0.30	0.30	0.60	0.60	1.00	0.30	1.20	1.50
		Date Sampled:			13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05		
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25		< 0.25		< 0.25		
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0		
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0		
Aromatic EPH >C16-C21	U	2690	mg/kg	2.00	3.0	3.9		6.6		13		
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	9.4	9.0		18		40		
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	4.3	4.2		2.9		7.7		
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	13	13		25		53		
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	17	17		28		61		
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50		
Total EPH >C10-C35	U	2690	mg/kg	10.00	30	43		40		69		
Total EPH >C10-C40	N	2690	mg/kg	10.00	35	47		43		77		
Organic Matter	M	2625	%	0.40	3.0	9.0	6.7	4.8	4.7	5.6		
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Chloromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Vinyl Chloride	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Bromomethane	M	2760	µg/kg	20	< 20	< 20		< 20		< 20		
Chloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0		
Trichlorofluoromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,1-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Dichloromethane	N	2760	µg/kg	50	< 50	< 50		< 50		< 50		
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,1-Dichloroethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0		< 5.0		< 5.0		
Trichloromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,1,1-Trichloroethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Tetrachloromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2-Dichloroethane	M	2760	µg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0		
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2-Dichloropropane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Dibromomethane	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Bromodichloromethane	M	2760	µg/kg	5.0	< 5.0	< 5.0		< 5.0		< 5.0		
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10		< 10		< 10		
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10		< 10		< 10		

Results - Soil

Project: 3309 - 26 High Street, Burwell, Cambridgeshire

Client: Brown 2 Green Associates		**Chemtest Job No.:**			23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739
Quotation No.:		**Chemtest Sample ID.:**			1673768	1673769	1673770	1673771	1673772	1673773	1673774	1673775
		Sample Location:			WS1	WS2	WS2	WS4	WS4	WS5	WS3	WS5
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.00	0.30	0.00	0.80	0.00	1.20	1.50
		Bottom Depth (m):			0.30	0.30	0.60	0.60	1.00	0.30	1.20	1.50
		Date Sampled:			13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
1,1,2-Trichloroethane	M	2760	µg/kg	10	< 10	< 10		< 10		< 10		
Tetrachloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0		
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10		< 10		< 10		
1,2-Dibromoethane	M	2760	µg/kg	5.0	< 5.0	< 5.0		< 5.0		< 5.0		
Chlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0		
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	1.8		< 1.0		< 1.0		
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	4.0		< 1.0		< 1.0		
o-Xylene	M	2760	µg/kg	1.0	< 1.0	3.2		< 1.0		< 1.0		
Styrene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Isopropylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Bromobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50		< 50		< 50		
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
2-Chlorotoluene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0	4.2		< 1.0		< 1.0		
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,3-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,4-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50		< 50		< 50		
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0		
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0		
Naphthalene	M	2800	mg/kg	0.10	0.47	1.1	< 0.10	0.88	0.72	0.71		
Acenaphthylene	N	2800	mg/kg	0.10	0.14	0.36	< 0.10	0.18	0.41	0.14		
Acenaphthene	M	2800	mg/kg	0.10	0.28	0.49	< 0.10	0.46	0.49	0.31		
Fluorene	M	2800	mg/kg	0.10	0.15	0.21	< 0.10	0.22	0.33	0.18		
Phenanthrene	M	2800	mg/kg	0.10	0.30	0.79	< 0.10	0.57	2.0	0.75		
Anthracene	M	2800	mg/kg	0.10	< 0.10	0.27	< 0.10	0.16	0.51	0.27		

Results - Soil

Project: 3309 - 26 High Street, Burwell, Cambridgeshire

Client: Brown 2 Green Associates			**Chemtest Job No.:**		23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739	23-23739
Quotation No.:			**Chemtest Sample ID.:**		1673768	1673769	1673770	1673771	1673772	1673773	1673774	1673775
			Sample Location:		WS1	WS2	WS2	WS4	WS4	WS5	WS3	WS5
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.00	0.00	0.30	0.00	0.80	0.00	1.20	1.50
			Bottom Depth (m):		0.30	0.30	0.60	0.60	1.00	0.30	1.20	1.50
			Date Sampled:		13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023	13-Jul-2023
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Fluoranthene	M	2800	mg/kg	0.10	0.56	2.0	< 0.10	1.4	4.6	1.5		
Pyrene	M	2800	mg/kg	0.10	0.55	1.8	< 0.10	1.3	3.9	1.3		
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.26	0.98	< 0.10	0.59	2.0	0.65		
Chrysene	M	2800	mg/kg	0.10	0.27	1.0	< 0.10	0.66	2.2	0.72		
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	0.41	1.5	< 0.10	1.1	3.6	0.92		
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.19	0.63	< 0.10	0.45	1.5	0.34		
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.36	1.2	< 0.10	0.79	2.8	0.75		
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.22	1.0	< 0.10	0.68	2.1	0.52		
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	0.16	< 0.10	0.15	0.56	< 0.10		
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.26	0.95	< 0.10	0.64	2.0	0.55		
Total Of 16 PAH's	N	2800	mg/kg	2.0	4.4	14	< 2.0	10	30	9.6		

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

APPENDIX IV

RESULTS OF INFILTRATION TESTS

Brown 2 Green
Geotechnical and Geo-environmental Consultants

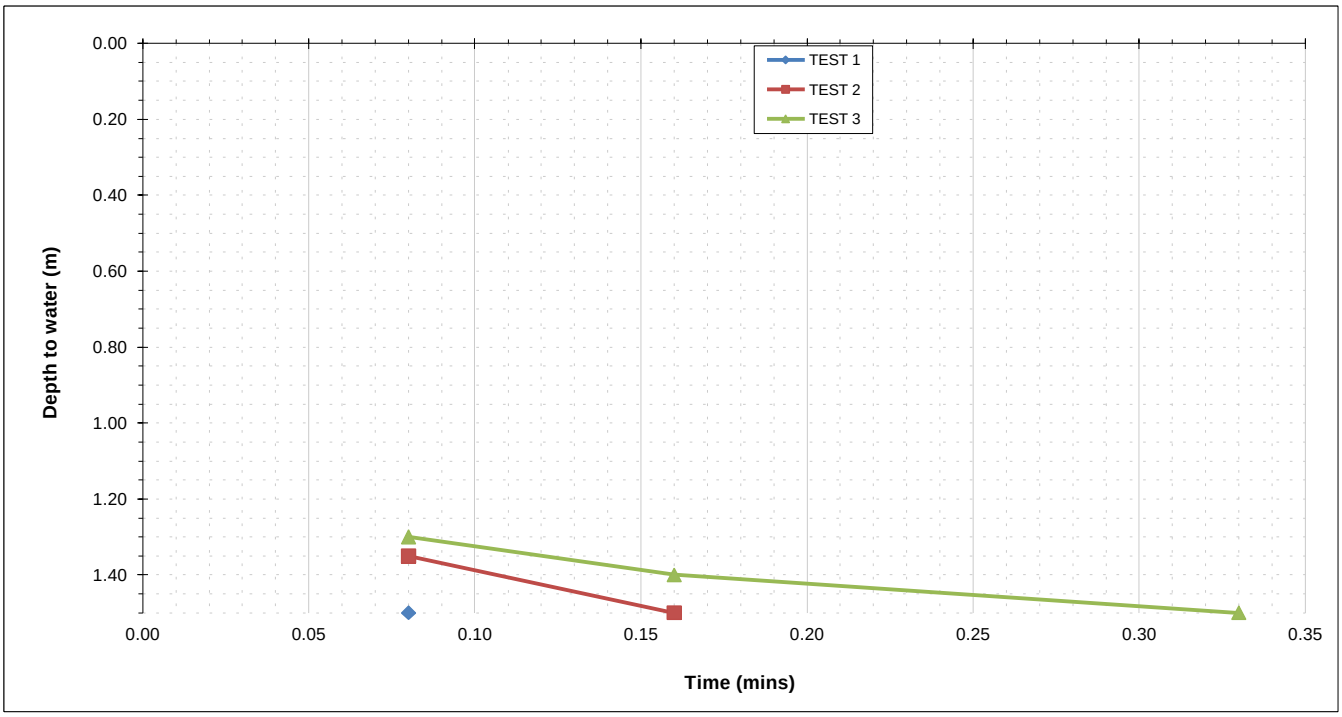
Site	**26 High Street, Burwell**
Job Number	**3309**
Date of Test	**13/07/2023**

Trial Pit Number	**SA1**	
Length.....	1.20	m
Width.....	0.40	m
Depth.....	1.50	m
Groundwater Level.....	below 1.50	m

Remarks	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0	1.20	0	1.20	0.00	1.20
	0.08	1.50	0.08	1.35	0.08	1.30
			0.16	1.50	0.16	1.40
					0.33	1.50
All three tests completed during the day.						
Strata						
0.00m - 0.30m Made Ground - Dark brownish grey slightly gravelly, slightly sandy, silty CLAY with occasional bricks.						
0.30m - 1.50m Structureless light cream CHALK composed of silty sandy GRAVEL. (Grade Dc)						

Effective Storage Depth	m	0.30	0.30	0.30
75% Effective Storage Depth	m	0.23	0.23	0.23
(i.e. depth below GL)	m	1.28	1.28	1.28
25% Effective Storage Depth	m	0.08	0.08	0.08
(i.e. depth below GL)	m	1.43	1.43	1.43
Effective Storage Depth 75%-25%	m	0.15	0.15	0.15
Time to fall to 75% effective depth	mins	0.04	0.06	0.08
Time to fall to 25% effective depth	mins	0.08	0.15	0.22
V (75%-25%)	m3	0.07	0.07	0.07
a (50%)	m2	0.96	0.96	0.96
t (75%-25%)	mins	0.04	0.09	0.14
SOIL INFILTRATION RATE	m/s	**3.13E-02**	**1.39E-02**	**8.93E-03**

DESIGN SOIL INFILTRATION RATE, f	**8.93E-03**



Brown 2 Green
Geotechnical and Geo-environmental Consultants

Site	**26 High Street, Burwell**
Job Number	**3309**
Date of Test	**13/07/2023**

Trial Pit Number	**SA2**	
Length.....	1.20	m
Width.....	0.40	m
Depth.....	1.45	m
Groundwater Level.....	below 1.50	m

Remarks	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0	1.30	0	1.20	0.00	1.20
	0.08	1.50	0.08	1.35	0.08	1.25
			0.16	1.50	0.16	1.35
					0.33	1.50
All three tests completed during the day.						
Strata						
0.00m - 0.30m Made Ground - Dark brownish grey slightly gravelly, slightly sandy, silty CLAY with occasional bricks.						
0.30m - 1.50m Structureless light cream CHALK composed of silty sandy GRAVEL. (Grade Dc)						
Effective Storage Depth	m	0.15		0.25		0.25
75% Effective Storage Depth	m	0.11		0.19		0.19
(i.e. depth below GL)	m	1.34		1.26		1.26
25% Effective Storage Depth	m	0.04		0.06		0.06
(i.e. depth below GL)	m	1.41		1.39		1.39
Effective Storage Depth 75%-25%	m	0.08		0.13		0.13
Time to fall to 75% effective depth	mins	0.02		0.04		0.09
Time to fall to 25% effective depth	mins	0.07		0.10		0.21
V (75%-25%)	m3	0.04		0.06		0.06
a (50%)	m2	0.72		0.88		0.88
t (75%-25%)	mins	0.05		0.06		0.12
SOIL INFILTRATION RATE	m/s	**1.67E-02**		**1.89E-02**		**9.47E-03**

DESIGN SOIL INFILTRATION RATE, f	**9.47E-03**