HERTS & ESSEX SITE INVESTIGATIONS

The Old Post Office, Wellpond Green, Standon,
Ware, Herts, SG11 1NJ

Telephone : Ware (01920) 822233
Fax: Ware (01920) 822200

5th November 2014

Our Ref : MRS/12419

Martin Redston Associates
3 Edward Square
London
N1 0SP

For the attention of J.Hutchins Esq,:.

Dear Sir,

Re: 102 Camden Mews, Camden, NW1 9AG : Site Investigation

1.0 Introduction

1.01 In accordance with your instructions, we visited the above site during October 2014 .

1.02 The purpose of our visit was to carry out an investigation into the subsoil conditions with a view to foundation design.

1.03 The comments and opinions expressed are based purely on the conditions encountered and the subsequent laboratory testing.

1.04 Therefore, it is possible that some special conditions prevailing on site have not been encountered or taken into account.

1.05 All ground water recordings or their absence relate to short term observations and do not allow for fluctuations due to seasonal or other effects.

2.0 Description of Site

2.01 The site is situated at 102 Camden Mews, Camden, NW1 9AG

2.02 At the time of our visit the site was generally flat.

3.0 Fieldwork

3.01 One borehole was sunk to a maximum depth of 7.00m by means of a window sampler drilling rig.

3.02 The location of the works is indicated on the site plan forming appendix one.

3.03 The various strata and details encountered were noted and are recorded on the borehole logs forming appendix two.

3.04 Insitu strength tests were carried out in the boreholes, the results of which can be seen on the aforementioned logs.

3.05 A full range of samples were recovered as noted and retained for subsequent laboratory testing.

3.06 The location, type and height of any trees should be taken from a survey for later use with NHBC Chapter 4.20, if required.

4.0 Laboratory Testing

4.01 All samples were tested in accordance with BS:1377:1990 Methods of Test for Soils for Civil Engineering purposes.

4.02 Selected samples were tested to determine their atterberg limits, triaxial strength, soluble sulphate content and pH value.

4.03 The results of all laboratory testing are summarised in appendix three.

5.0 Conclusions and Recommendations

5.01 By inspection of the borehole logs it can be seen that the subsoil consists of Cobble over Gravely SAND to 0.25m where a Loose Dark grey To Black Claybound Gravely Brick Concrete FILL overlies at 1.20m a Firm To Stiff Brown Mottled grey CLAY to 3.00m where a Stiff grey Brown CLAY is encountered and present to the base of the excavation.

5.02 No water was encountered upon excavation of the borehole as described on the borehole logs, a standpipe was installed at 5.00m .

5.03 Standard Penetration Tests in the Fill gave N values of 8 indicating a low bearing capacity.

5.04 No significant roots were encountered in the borehole.

5.05 Laboratory testing proved the clays to be of very high plasticity (PI=46 - 47 %) which indicates a high susceptibility to movement associated with moisture content change.

5.06 Triaxial testing proved the CLAYS to have cohesion values between 106 - 136 Kn/m² these values are generally seen to increase with depth.

5.07 Therefore when considering the information available we are of the opinion that a the basement can take the form of a reinforced raft with walls designed to take the pressure of the retained soil.

5.08 Further investigation may be required in order to locate existing foundations within the area of the site which may restrict any future works.

5.09 As the site contains less than 0.50g/L of soluble sulphate it can be categorised as a class 1 site in accordance with BRE Digest, and as such any concrete in contact with the subsoil needs no special precautions.

5.10 Chemical testing is enclosed to allow material to be taken to the tip, the upper FILL material is contaminated with hydrocarbons and will need to be removed from the site, whereas the lower natural soil has no elevated levels of contamination.

We hope that this is satisfactory, however if you should require any further information, please do not hesitate to contact us.

Yours faithfully,

M. R. Smith M.Sc
Principal Engineer

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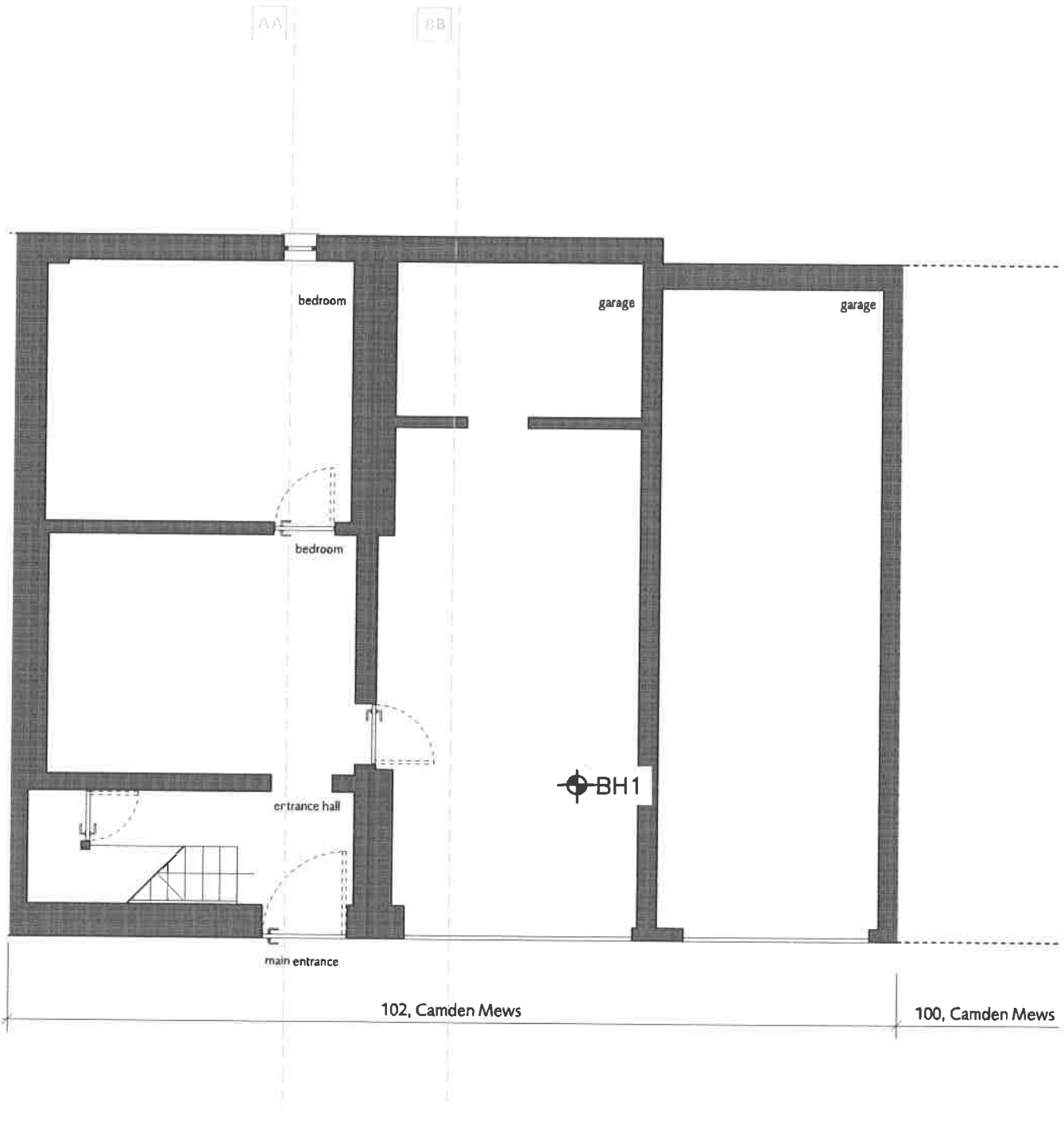
Appendix No.	1
Sheet No.	1
Job No.	12419
Date	Oct 2014

102 Camden Mews, Camden, NW1 9AG

Site Plan



Not to Scale

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Appendix No. 2
Sheet No. 1
Job No. 12419
Date OCT 2014

102 Camden Mews, Camden, NW1 9AG

Borehole One

Description of Strata	Depth	Reduced Level	Legend	Thickness (m)	Water Level	Samples No.	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	Casing Depth (m)
Cobble Over Light Brown Gravely SAND	0.25			0.25	DRY	1	U	0.00		
Loose Dark Grey To Black Claybound Gravely Brick Concrete FILL	1.20			0.95		2	U	1.00	N=8	1.00
Firm To Stiff Brown Mottled Grey CLAY	3.00			1.80		3	U	2.00		
						4	U	3.00		
Stiff Grey Brown CLAY	7.00			4.00		5	U	4.00		
						6	U	5.00		
						7	U	6.00		
								7.00		
Borehole Complete At 7.00m Standpipe Installed at 5.00m										

Remarks: Standpipe Installed at 5.00m

Scale 1:50

Key : U–Undisturbed Sample (100mm diameter) B –Bulk Sample ▼–Water Struck D –Disturbed Sample ▽–Water Standing W–Water Sample P–Piston Sample N–S.P.T. N–Value V–Vane Strength (kN/m²)

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Appendix No. 3
Sheet No. 1
Job No. 12419
Date Nov 2014

LOCATION 102 Camden Mews, London NW1

LIQUID AND PLASTIC LIMIT TEST RESULTS

Borehole	Depth (m)	Sample	Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Group Symbol	Desiccation Profile	Percentage Retained 425 Micron Sieve (%)
1	2.00	U	31	71	25	46	CV		0
1	4.00	U	31	72	25	47	CV		0
1	6.00	U	29	73	26	47	CV		0

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Appendix No. 3
Sheet No. 2
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Date Nov 2014

LOCATION 102 Camden Mews, London NW1

UNDRAINED COMPRESSION TEST RESULTS

Borehole	Depth (m)	Sample	Natural Moisture Content (%)	Bulk Density (Mg/m^3)	Lateral Pressure (kN/m^2)	Deviator Stress (kN/m^2)	Apparent Cohesion (kN/m^2)	Angle of Shearing Resistance	Remarks
1	2.00	U	31	1.99	40	220	110		
1	3.00	U	35	2.00	60	212	106		
1	4.00	U	31	2.01	80	228	114		
1	5.00	U	28	2.00	100	252	126		
1	6.00	U	29	2.00	120	262	131		
1	7.00	U	29	2.03	140	272	136		

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Appendix No. 3
Sheet No. 3
Job No. 12419
Date Nov 2014

LOCATION 102 Camden Mews, London NW1

SULPHATE ANALYSIS TEST RESULTS

Window Sampler	Depth (m)	Sample	Concentrations of Soluble Sulphate			Classification	pH
			Soil		Groundwater		
			Total SO_4 (%)	SO_4 in 2:1 water:soil (g/l)			
1	2.00	U		0.31			7.51
1	4.00	U		0.24			7.77
1	6.00	U		0.05			7.72

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Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.co.uk

UKAS TESTING
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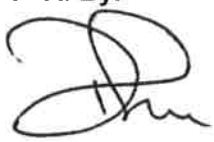
mCERTS

Final Report

Report Number:	14-13210 Issue-1		
Initial Date of Issue:	04-Nov-14		
Client:	Herts & Essex Site Investigations		
Client Address:	The Old Post Office Wellpond Green Standon Ware Hertfordshire SG11 1NJ		
Contact(s):	Martyn Smith		
Project:	12419 - 102 Camden Mews, London NW1		
Quotation No.:		**Date Received:**	31-Oct-14
Order No.:		**Date Instructed:**	31-Oct-14
No. of Samples:	2	**Results Due:**	04-Nov-14
Turnaround: (Weekdays)	3		
Date Approved:	04-Nov-14		

Approved By:



Details: Darrell Hall, Laboratory Director

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Results Summary - Soil

Project: 12419 - 102 Camden Mews, London NW1

Client: Herts & Essex Site Investigations			Chemtest Job No.:		14-13210	14-13210
Quotation No.:			Chemtest Sample ID.:		64309	64310
Order No.:			Client Sample Ref.:			
			Client Sample ID.:		WS1	WS1
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.80	1.50
			Bottom Depth(m):			
			Date Sampled:		27-Oct-14	27-Oct-14
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192			-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.02	18	21
Stones	N	2030	%	0.02	< 0.020	< 0.020
Soil Colour	N				brown	brown
Other Material	U				stones	none
Soil Texture	N				loam	loam
pH	M	2010			8.2	8.0
Electrical Conductivity (2:1)	N	2020	µS/cm	1	830	810
Boron (Hot Water Soluble)	M	2120	mg/kg	0.4	32	1.6
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01	0.22	0.27
Cyanide (Total)	M	2300	mg/kg	0.5	0.80	< 0.50
Cyanide (Free)	M	2300	mg/kg	0.5	< 0.50	< 0.50
Sulphate (Total)	M	2430	%	0.01	1.1	0.16
Arsenic	M	2450	mg/kg	1	82	15
Cadmium	M	2450	mg/kg	0.1	< 0.10	0.13
Copper	M	2450	mg/kg	1	1200	67
Mercury	M	2450	mg/kg	0.1	< 0.10	< 0.10
Nickel	M	2450	mg/kg	1	57	58
Lead	M	2450	mg/kg	1	510	49
Zinc	M	2450	mg/kg	1	91	130
Chromium (Trivalent)	N	2490	mg/kg	5	17	70
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50
Organic Matter	M	2625	%	0.4	33	1.2
Naphthalene	M	2700	mg/kg	0.1	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.1	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.1	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.1	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.1	1.4	< 0.10
Anthracene	M	2700	mg/kg	0.1	0.24	< 0.10
Fluoranthene	M	2700	mg/kg	0.1	5.4	< 0.10
Pyrene	M	2700	mg/kg	0.1	6.3	< 0.10

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Results Summary - Soil

Project: 12419 - 102 Camden Mews, London NW1

Client: Herts & Essex Site Investigations			Chemtest Job No.:		14-13210	14-13210
Quotation No.:			Chemtest Sample ID.:		64309	64310
Order No.:			Client Sample Ref.:			
			Client Sample ID.:		WS1	WS1
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.80	1.50
			Bottom Depth(m):			
			Date Sampled:		27-Oct-14	27-Oct-14
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Benzo[a]anthracene	M	2700	mg/kg	0.1	2.5	< 0.10
Chrysene	M	2700	mg/kg	0.1	2.2	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.1	4.0	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.1	1.1	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.1	2.3	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.1	1.3	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.1	0.35	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.1	1.5	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2	29	< 2.0
Total Phenols	M	2920	mg/kg	0.3	< 0.30	< 0.30

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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"

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, SVCOs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at our Coventry 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

Sample Retention and Disposal

All soil samples will be retained for a period of 1 month following the date of the test report
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

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