Chelmer Site Investigations

Unit 15, East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
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Factual Report

Client:	William Carter Ltd
Site:	35 Buckland Crescent London NW3
CSI Ref:	FACT/4253
Dated:	31ST January 2014

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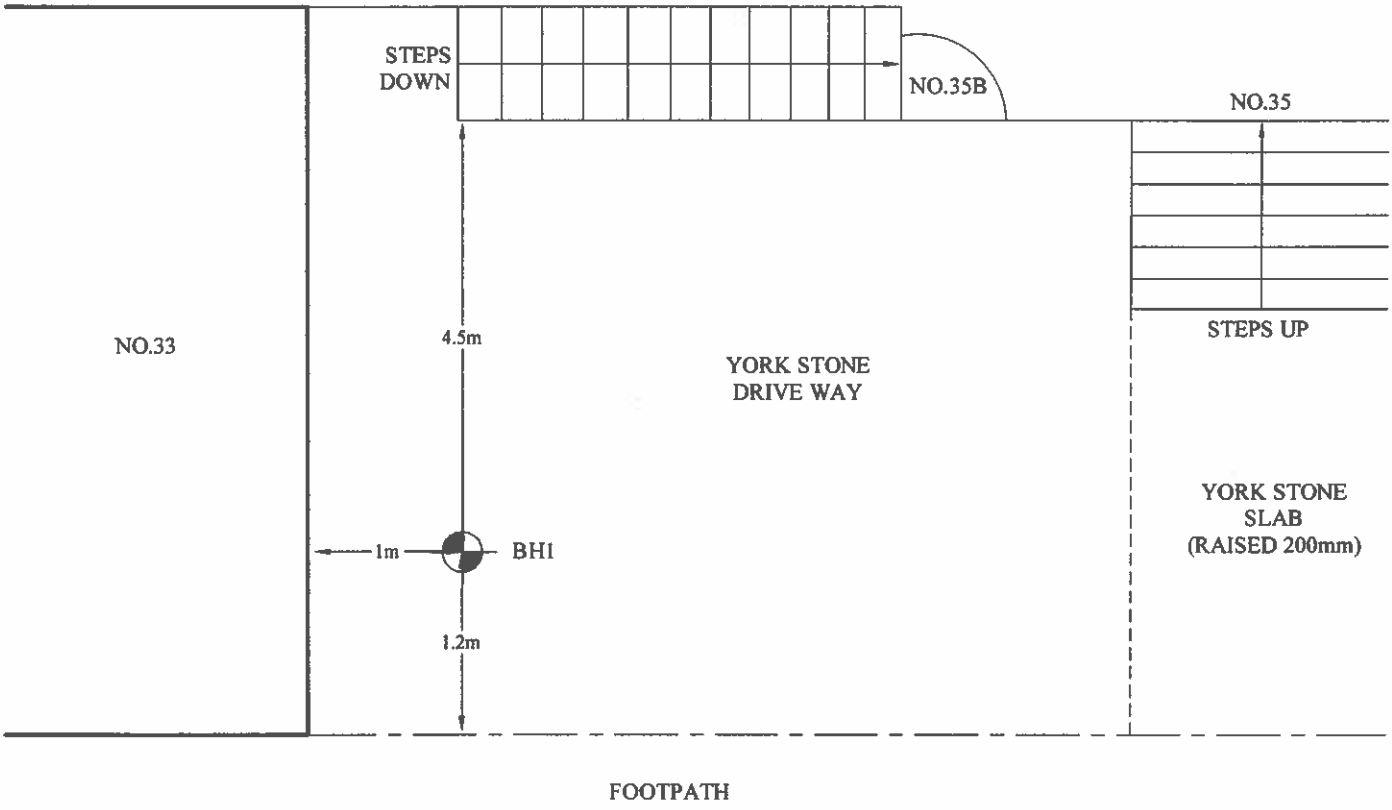
Client: William Carter Ltd	**Scale:** N.T.S.	**Sheet:** 1 of 1	**Date:** 31.1.14	
Location: 35 Buckland Crescent, London NW3	**Job No:** 4253	**Weather:** Rain	**Drawn by: JP**	**Checked by: JH**



Notes:

On site tree identification for guidance only. Not authenticated.

Key:

Tree/Shrub | Borehole | Trial Pit | G Gully | Tree Stump | Rain Water/ Soil Pipe | MH Manhole

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Client: William Carter Ltd	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Rain	**Date:** 31.1.14
Site: 35 Buckland Crescent, London NW3	**Job No:** 4253	**Borehole No:** 1	**Boring method:** Secondman (100mmØ) C.F.A.	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	SLAB	0.06							
0.06	SAND	0.04					Roots of live appearance to 2mmØ to 2.5m.		
0.1	CONCRETE	0.1							
0.2	MADE GROUND: medium compact, organic, dark brown, silty clay, with brick and concrete fragments.	1.3		D					0.5
				D	M	08 08 08 08			1.0
1.5				D					1.5
	Stiff, orange-brown, grey veined, silty CLAY, with partings of orange and brown, silt and fine sand.	3.5		D	V	90 96			2.0
				D			No roots observed below 2.5m.		2.5
				D	V	100 110			3.0
				D					3.5
				D	V	140+ 140+			4.0
				D					4.5
5.0	Borehole ends at 5.0m			D	V	140+ 140+			5.0

Drawn by: JP **Approved by:** JH

Remarks: Borehole dry and open on completion.

Key: T.D.T.D. Too Dense to Drive
D Small Disturbed Sample J Jar Sample
B Bulk Disturbed Sample V Pilcon Vane (kPa)
U Undisturbed Sample (U100) M Mackintosh Probe
W Water Sample N Standard Penetration Test Blow Count

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REPORT NOTES

Equipment Used

Hand tools, Mechanical Concrete Breaker and Spade, Hand Augers, 100mm/150mm diameter Mechanical Flight Auger Rig, GEO205 Flight Auger Rig, Window Sampling Rig, and Large or Limited Access Shell & Auger Rig upon request and/or access permitting.

On Site Tests

By Pilcon Shear-Vane Tester (Kn/m^2) in clay soils, and/or Mackintosh Probe in granular soils or made ground and/or upon request Continuous Dynamic Probe Testing and Standard Penetration Testing.

Note:

Details reported in trial-pits and boreholes relate to positions investigated only as instructed by the client or engineer on the date shown.

We are therefore unable to accept any responsibility for changes in soil conditions not investigated i.e. variations due to climate, season, vegetation and varying ground water levels.

Full terms and conditions are available upon request.

CONSULTING CIVIL AND
STRUCTURAL ENGINEERS
PROJECT MANAGERS
CDM REGULATIONS
PARTY WALL SURVEYORS
SUSTAINABLE PROJECT SPECIALISTS

Job No: 14008

Planning stage structural appraisal for proposed new basement construction

at 35 Buckland Crescent, London, NW3 5DJ

1.0 Existing property

The existing building is a four storey property constructed in a traditional manner incorporating solid external brick walls with timber upper floors set below a timber pitched roof. We understand the property was constructed around the latter half of the 19th century as a single family house. The property has been converted at some time in the past into three self contained flats. The property was originally constructed as semi-detached with the property on the left, number 37, but was later linked to the property on the right, number 33 by small infill connecting extensions.

A planning application is to be made for the construction of a new basement below the entire footprint of the lower ground floor flat; this covers the entire footprint of the property with the exception of the front left hand corner. The internal layout of the lower ground floor is also to be reconfigured in order to provide additional accommodation.

A modest rear extension is also to be constructed, as indicated on William Carter Ltd drawings in order to provide additional accommodation at lower ground and basement levels, including a basement level light well.

The new basement floor level is to be set approximately 2.5 meters below external ground level, as shown on the Architects drawings.

We understand that neither of the adjoining property currently has a basement below lower ground floor level.

TANKERTON WORKS
12 ARGYLE WALK
LONDON
WC1H 8HA

Tel: 020 7833 0666
Fax: 020 7833 0669

David Rose Associates Ltd. Co. No 6248184
Reg. Office. Hansford Brown, 1a Green Close, Brookmans Park, Hertfordshire, AL9 7ST

Director. Mr D.C Rose, BSc (Hons) C Eng. M.I.C.E. M.I Struct E.
Associate Director: Mr R Andrews, I Eng. A.M.I. Struct E.

2.0 Consulting Engineers

Rose Associates are chartered civil and structural engineers; MICE and MIStructE and ISO 9001 accredited. We have been appointed as Consulting Structural Engineers for the proposed basement and refurbishment works. This will include the design and specification of the basement structure and associated underpinning works.

The underpinning works will be designed and detailed so that the works will not pose any undue risk to the host or neighbouring properties.

3.0 New Basement

It is recommended that the basement structure is undertaken using traditional underpinning techniques, where short sections of existing walls are undercut and new foundations cast at a lower level to suit the new basement depth. The underpinning shall be performed to a set designed sequence on a "hit and miss" basis, following good building practice.

As the underpinning works proceed the new internal basement walls can also be constructed. The underpin sections shall be anchored sufficiently at their base or the concrete underpins suitably back propped to prevent slippage in the temporary condition when the bulk of the earth is removed from the basement. These works are all prior to the new basement slab being cast.

It is our considered opinion that the works will not pose any undue risk to the stability of the existing or surrounding buildings.
Pre-start survey work should also include an appraisal of the existing ground floor construction as the floor may be ground bearing or suspended, supported on traditional brick sleeper walls. The floor may need to be replaced or additionally supported using new beams at basement ceiling level as works proceed.

An excavation sequence together with supplementary sketches has also been attached to this report to further clarify a safe working method.

Reference to geological maps for this area as well as local knowledge shows that the building over lies London Clay. Clay does not allow the free flow of ground water so we do not expect there to be any hydrological issues to deal with when executing the basement works. However any ground water encountered during the excavation works, which would be via seepage through sand lenses sometimes found in London Clay, then this water will be dealt with by a system of sumps and pumps. In the unlikely event a perched water table is encountered a strategy shall be developed to evaluate where the collected water is to be pumped. If this is to the existing underground drainage system appropriate filtration systems must be agreed with the relevant authorities.

The basement construction will involve the excavation of around 3.0 metre depth of material below the existing level ground floor.

When the basement area is excavated there will be a degree of recovery in the remaining clay due to the weight of material removed however, as the ground conditions are clay this recovery will be relatively slow.

If recovery does occur during the construction process it will take the form of a small "pudding" in the middle of the excavation which will be trimmed down for the basement slab construction.

Much of the load removed will be replaced by the new concrete retaining wall and basement floor slab structures.

It is our considered opinion that any additional long term heave recovery of the clay that may occur will not cause damage to neighbouring properties in excess of "Burland Category Slight".

This report has been prepared following a review of the Basement Impact Assessment.

4.0 Summary

We believe the proposals shown forming this planning application have a viable structural solution as set out in this report. Our recommendations are broadly as shown on the Architects drawings and described in their Design and Access statement.

In summary we believe they can be safely executed without undue risk to the existing building or the adjoining properties.

Signed 

For and on behalf of Rose Associates Ltd

Dated 6-2-14

35 Buckland Crescent
Job ref: 14008

Excavation sequence

This sequence is to be read in conjunction with drawings 14008/P01 and P05.
Underpinning to be excavated and cast using a traditional 1, 3, 5, 2, 4 sequence.

Stage 1

As existing. Remove existing floor, as necessary, to provide access to the underpinning works.

Stage 2

Bulk excavate in the centre of the building leaving 45° battered earth surfaces to protect the existing foundations.

Stage 3

Excavate locally below existing walls for the first sequence in the underpinning and provide planking and strutting on the central earth earth berm.

Stage 4

Place reinforcement including dowel bars to adjoining sections and cast base slab for sequence 1.

Stage 5

Remove planking and strutting and place reinforcement for wall including dowel bars to adjoining sections in the sequence to be cast later and erect wall framework propped off the central earth berm. Cast concrete wall sequence sections 1.

Stage 6

Dry pack between the top of the concrete wall and the underside of the existing foundation. When concrete has gained sufficient strength remove shutter, trim existing protecting foundation and re prop wall into the central earth berm.

Stage 7

Continue to excavate and cast floor slab and wall underpin sections 3, 5, 2, 4 in sequence using stages 3 to 6 as above.

Stage8

Commence excavation of the central berm down to 500mm above the top of the basement slab level. Install peri multi-props or similar between opposite underpin sections across the width of the site including perimeter wailing beams and bracing as necessary.

Stage 9

Complete excavation down to slab formation level.

Stage 10

Place reinforcement and cast central section of basement slab.

Stage 11

Once slab has cured, remove props and waling beams.

BGS Borehole Index

Thames CA AC NO 45355

256

TQ28/209

Project No: 400 **Borehole Number:** 1

Project: Swiss C llage

Engineer: Giffo & Prts **NGR:** TQ 268 843

Client: Camden BC **Elevation:** 56mOAD

Kinley Hill Farm,
Hawthorn, Seaham,
County Durham, SR7 8SW.
Tel: 0191 527 3970 (Northern)
Tel: 01473 236611 (Southern)

TQ28SE/1769

SUBSURFACE PROFILE				INSTALLATION DETAILS	Remarks
Depth	Legend	Description	Elevation	Well Completion Details	
0		Ground Surface	56.00		Cable Percussion boring at 10" to 9.0m BGL.
1		Bricks and rubble			Rotary mud flush drilling 9.0-157m BGL
2		Dark brown sandy soil			Drill at 15/8" diameter 9.0-117.0m BGL
3		Pale brown clay			Permanent mild steel casing 6" diameter GL-117m BGL
4			50.80		
5		Pale brown mottled clay			Drill at 5 5/8" diameter 117.0-157m BGL
6		Brown clay. Laminated from 5.2-9m			113/16 3mm uPVC liner installed full depth of hole.
7					Borehole acidized using 2t of 28% HCL
8					Constant rate pump test carried out for 3 days and 1 day recovery
9					
10					
11					
12					
13					
14					
15					
16					
17			38.50		
18		Grey clay			
19					
20					
21					
22					
23					

Drilled By: N Snowball/L.Berry

Logged by: D Tiller

Date step tested: 9-13 Nov 04

Date acidized: 2 Nov 04

Date geophysically logged: n/a

Sheet: 1 of 7

Acc no 46102.

TQ28/209

From: sjjenkins@btconnect.com
To: <hydroenq@bgs.ac.uk>
Date: Tue, Aug 15, 2006 5:34 pm
Subject: Swiss Cottage Pump Test - Rosemary Fry

Rosemary
Please find attached the pump test data for Swiss Cottage. Not quite a dry hole but close.
Regards

Steve Jenkins
Contracts Manager
Drilcorp Ltd
T 0191 5273970
F 0191 5273115
M 07743 806302

yield less than 1 m3/hour during pump test.
Recovery slow.
Borehole in use but will need modifications.

CASING DEPTH (m)	WATER (m)	STRATA DESCRIPTION	LEGEND	DEPTH (m)	TEST RESULTS		SUB SAMPLING		
					TYPE AND DEPTH	RESULT	FROM (m)	TO (m)	TYPE
		Dense grey reinforced concrete with 6mm twisted bar at 100mm depth. (MADE GROUND)		0.0 0.15					
		Hard dark brown slightly gravelly CLAY with occasional roots. Gravel consists of brick and ash. (MADE GROUND)		0.5					
		Very stiff brown slightly gravelly CLAY with occasional roots. Gravel consists of flint, brick and ash. (MADE GROUND)		1.0	P 1.0m P 1.25m P 1.5m P 1.75m P 2.0m P 2.25m	2.75, 2.75 3.75, 3.75 3.75, 3.75 4.25, 4.0 3.75, 3.75 3.75, 4.0			
		Very stiff brown occasionally mottled light grey CLAY. (LONDON CLAY)							
		Stiff brown occasionally mottled light grey CLAY. (LONDON CLAY)		2.5	P 2.5m P 2.75m P 3.0m P 3.25m	2.75, 2.5 2.5, 2.5 2.5, 2.25 2.25, 2.0			

DRILLING			GROUNDWATER				
TYPE (DIAMETER)	FROM	TO	DEPTH STRUCK	BEHAVIOUR	DEPTH SEALED	DATE	DEPTH OF CASING
101mm	0.0m	5.0m	Dry				

REFER TO KEY AT BEGINNING OF THIS APPENDIX FOR EXPLANATION OF SYMBOLS

DRIVEN TUBE SAMPLER BOREHOLE SHEET 1 OF 2

SOILTECHNICS
GEOTECHNICAL ENGINEERS, ENVIRONMENTAL CONSULTANTS
Cecil Barn, White Lodge, Wallgrove, Southampton SO40 9PY
Tel: (01794) 781677 Fax: (01794) 781007 E-Mail: mail@soiltechnics.co.uk

GROUND LEVEL	CO-ORDINATES
LOCATION PLAN ON DRAWING NO	DATE OF EXCAVATION
STD0953U-02	06.03.07

PROJECT
No's 3, 5 & 7, Fitzjohn's Avenue, London
Proposed Residential Development

PROJECT REF	BOREHOLE No
STD0953U	DTS01

DTSC1

CASING DEPTH (m)	WATER (m)	STRATA DESCRIPTION	LEGEND	DEPTH (m)	TEST RESULTS		SUB SAMPLING		
					TYPE AND DEPTH	RESULT	FROM (m)	TO (m)	TYPE
					P 3.0m	2.5, 3.0			
					P 3.75m	3.0, 2.75			
				4.0	P 4.0m	3.0, 3.25			
		Very stiff brown occasionally mottled light grey CLAY. (LONDON CLAY)			P 4.25m	3.5, 4.0			
					P 4.5m	3.25, 3.75			
					P 4.75m	3.25, 3.75			
		BOREHOLE TERMINATED at 5.0m		5.0	P 5.0m	3.5, 3.5			

DRILLING			GROUNDWATER				
TYPE (DIAMETER)	FROM	TO	DEPTH STRUCK	BEHAVIOUR	DEPTH SEALED	DATE	DEPTH OF CASING
101mm	0.0m	5.0m	Dry				

REFER TO KEY AT BEGINNING OF THIS APPENDIX FOR EXPLANATION OF SYMBOLS

DRIVEN TUBE SAMPLER BOREHOLE SHEET 2 OF 2

SOILTECHNICS
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Tel. (01604) 781677 Fax: (01604) 781007 E-mail: mail@soiltechnics.net

GROUND LEVEL	CO-ORDINATES
LOCATION PLAN OR DRAWING No: STD0963U-02	DATE OF EXCAVATION: 06.03.07
PROJECT: No's 3, 5 & 7, Fitzjohn's Avenue, London Proposed Residential Development	
PROJECT REF: STD0953U	BOREHOLE No: DTS01

DTS01.1