REPORT ON
SITE INVESTIGATION
AT
27 GLADYS ROAD
WEST HAMPSTEAD

CLIENT: CONSTRUCTURE LIMITED

DATE: 19 MAY 2017 **REF:** G/051750/001

K F GEOTECHNICAL

CONSULTING GEOTECHNICAL ENGINEERS

W. J. C. WALLACE B.Eng (Hons.)

70a Lysons Road
Aldershot
Hants
GU11 3ED

Email: info@kfgeotechnical.co.uk

Consultant
G. L. Martin B.Sc., M.Sc., C.Eng., M.I.C.E.

CONTENTS

APPENDICES

1. INTRODUCTION

1.1 We were instructed by Constructure Limited, Consulting Engineers, to carry out a site investigation by a single hand augered borehole at 27 Gladys Road, West Hampstead.

1.2 The purpose of the investigation was to determine ground conditions to assist in the design of additions and alterations to the property including design parameters for a 3.5m high retaining wall and the potential for heave and other matters.

1.3 The site work took place on the 9 May 2017.

2. THE SITE

2.1 Gladys Road is a residential street in West Hampstead. It is aligned north/south and No.27 lies on the west side of the road facing east and is a mid-terrace two/three storey property. Typical of early Edwardian/late Victorian properties it is L-shaped in plan with the main front part of the house being rectangular with a narrower rear addition.

2.2 There is a paved area at the front of the house which is surrounded by hedges. There is a locally authority tree growing within the public walkway in front of the neighbouring property to the right.

2.3 The natural slope of the ground is downwards from front to rear to the extent that the house is split-level. There is a ground level at the front and a lower ground level at the rear which becomes a basement for the front part of the house.

2.4 The Geology of Great Britain indicates that the naturally occurring subsoil is London Clay.

3. SITE WORK

3.1 The layout of the site and the location of our single borehole is indicated on our Location Plan G/051750/101. The log of the borehole is appended at the rear of this report.

3.2 The borehole revealed a paving slab on sand and cement overlying fill material to 850mm. There is then, what appears to be natural ground (reworked) which consists of a firm brown/orange/grey silty clay. However, there is another layer of clearly fill material between 1.8m and 1.95m consisting of a loose black silty sand with ash and bricks. At 1.95m there is further fill material but this time a stiff dark brown sandy clay with ash and brick. This extends to 3.2m below which is a stiff dark grey/blue silty clay typical of undisturbed unweathered London Clay. Between 3.4m and 3.7m there is a band of medium dense clayey silty sand and this overlies a firm to stiff dark grey clay to the base of the borehole at 5.0m.

3.3 In-situ testing was carried out at regular depths throughout the depth of the borehole and the results are indicated on the individual log. Disturbed samples were taken at regular depths and these were bagged and labelled and sent to our laboratories of appropriate geotechnical analysis.

4. LABORATORY WORK

4.1 Moisture contents were determined on all samples with liquid and plastic limits being determined on the samples from 1.0m and 2.0m. Where tested it is clear that the clay forms part of fill material but is of very high plasticity and of correspondingly high shrinkage potential according to the NHBC or similar standards.

4.2 A comparison of the moisture contents with the liquid and plastic limits reveals no sign of any significant desiccation and indeed the moisture content is consistent throughout the depth.

5. DISCUSSION

5.1 This property is split level and it would appear from the results of our borehole that natural ground level is at the rear whilst the front has all been built up. It is clearly fill material down to 3.2m but below that appears to be reworked material to an overall depth of 3.7m. The natural ground was encountered at 3.7m consisting of a firm to stiff grey silty clay typical of undisturbed unweathered London Clay which was proved to the base of the borehole at 5.0m.

5.2 We were not instructed to carry out any trial pits but we would anticipate that the foundations of the lower ground floor are at this datum (i.e 3.7m below ground level at the front of the house) or close to it.

5.3 The hand held vane test could not extend to any depth greater than 3.0m but it is unlikely that the shear strength in the natural ground will be worse than measured in the fill material and we would recommend a safe bearing capacity of 190kPa which would be typical for a stiff undisturbed unweathered London Clay. Settlements at these sorts of loads in these ground conditions will be well within allowable tolerance.

5.4 The borehole was dry and open on completion and there should on this basis be no difficulty with the excavation for any additions and alterations that might be required and the sides should remain stable long enough to allow for construction although some temporary shoring might be required for bands of looser material such as was found between 1.8m and 1.95m in the borehole.

5.5 The fill material is predominately clay and as this will give the worst case parameters we give below the retaining wall design parameters based on a firm silty clay:

Bulk density (γm) - 18kN/m^3

Critical state angle of shearing resistance (ø') crit – 21º

Effective cohesion (c') - 0.

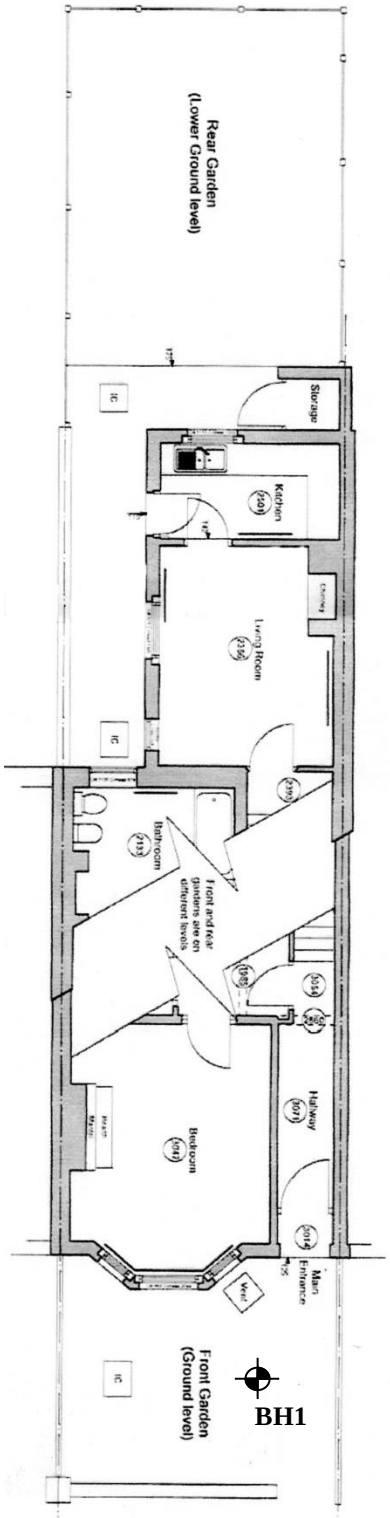
5.6 The borehole was dry and open on completion but some allowance should be made for a build-up of water pressure behind any retaining wall to allow for a short term condition.

5.7 Based on the results of the laboratory soil testing there is no threat of heave and no anti-heave precautions will be required.

W J C Wallace

K F Geotechnical 70a Lysons Road Aldershot Hants GU11 3ED	SITE LOCATION PLAN		Ref: G/051750/101
	Sheet: 1 of 1	Scale: N/A	Date: 9 May 2017
	Client: Constructure Limited		

Location: **27 GLADYS ROAD, WEST HAMPSTEAD**



Remarks:	**Key:**					
	Borehole	SVP	Soil Vent Pipe	MH	Manhole
	Trial pit	RWP	Rainwater Pipe	G	Gully
	Samples		Soakaway (S/A)		Tree/Bush (approx. ht in m)

K. F. Geotechnical

85 Alexandra Road
Farnborough
Hants
GU14 6BN

Tel : (01252) 518821
Fax : (01252) 370394
Email : kfgroup@fbro.demon.co.uk

Borehole 1		Ref: G051750
Sheet: 1	Scale: 1:25	Date: 9/5/17
Client: CONSTRUCTURE		
Equipment & Method : Hand Auger	Location: 27, GLADYS ROAD, WEST HAMPSTEAD	

Description of Strata [thickness]	Reduced Level	Legend	Depth	Samples Type	Samples Depth	Tests Type	Tests Value	Field Notes
Slabs on sand and cement (0.12)								
	-0.12		0.12					
MADE GROUND: loose dark brownsilty sand with gravel and brick (0.73)								
	-0.85		0.85					
MADE GROUND: firm brown/orange/grey silty clay (0.95)				D	1.00	V	56	
				D	1.50	V	58	
	-1.80		1.80					
MADE GROUND: loose black silty sand with ash and brick (0.15)								
	-1.95		1.95	D	2.00	V	92	
MADE GROUND: stiff dark brown silty sandy clay with brick and ash (1.25)								
				D	2.50	V	86	
				D	3.00	V	94	
	-3.20		3.20					
MADE GROUND (probably): Stiff dark grey silty clay (0.20)								
	-3.40		3.40	D	3.50			
MADE GROUND (probably): medium dense dark grey/black clayey silty sand (0.30)								
	-3.70	×	3.70					
Firm to stiff dark grey/blue silty CLAY (1.30)				D	4.00			
	-5.00		5.00	D	5.00			
Base of Borehole								

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value)
All depths and reduced levels are in metres.
Water level observations during boring are given on the last sheet of the log.

U Undisturbed Sample
D Disturbed Sample
B Bulk Sample
W Water Sample
S Standard Penetration Test
V Vane Test
MP Mackintosh Probe

Remarks

Borehole dry and open on completion

LABORATORY TEST RESULTS

Moisture Content & Plasticity Tests.

Location: 27 Gladys Road, West Hampstead.

Ref: G/051750/A
Sheet: 1 of 1

Client:

Date: May 2017.

BH No:	Description	Depth (m)	MC (%)	PL (%)	LL (%)	PI (%)	% < 425µm	I 'p (%)
1.	Brown silty sandy CLAY with occasional fine gravel, brick fragments and occasional fine roots.	1.00	35	29	76	47		
	Brown gravelly silty sandy CLAY with occasional brick fragments and occasional fine roots.	1.50	35					
	Brown, dark brown in places, silty sandy CLAY with occasional fine gravel, brick fragments and occasional hair roots.	2.00	34	29	75	46		
	Brown, dark brown black organic in places, silty sandy CLAY with occasional fine gravel, brick fragments and occasional fine roots.	2.50	36					
	Brown silty CLAY with traces of orange sand, occasional brick fragments and occasional fine roots.	3.00	37					
	Brown, dark brown black organic silty sandy CLAY with occasional fine gravel, brick fragments and occasional hair roots.	3.50	35					
	Brown, blue grey possibly organic in places silty CLAY with occasional fine gravel and brick fragments.	4.00	34					
	Brown, blue grey possibly organic in places silty CLAY with occasional fine gravel.	5.00	28					

MC - Moisture Content
PL - Plastic Limit
LL - Liquid Limit
I 'p - Modified Plasticity Index
PI - Plasticity Index
NP - Non Plastic

Notes.

K. F. GEOTECHNICAL