Our ref: *JH 18-2830*
Your ref:

STL
CONSULTING STRUCTURAL ENGINEERS

Phase 2: Site Investigation Assessment

New Development at
Tudor Inn
Peel Hall Road
Wythenshawe
Manchester
M22 5HB



for:
Peel Hall Park GB Ltd

Date of report:
18th January 2019

The Institution of Structural Engineers

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Executive Summary

The project involves demolishing the existing commercial public house and the erection of ten new residential houses on the site.

The Phase 1 Assessment Report undertaken by ourselves revealed no significant signs of contamination and as such recommendations for intrusive investigations to confirm the bearing capacities for foundation design was made. As part of these recommendations, we suggested observations for any contamination were also made.

The five boreholes undertaken around the existing property and site revealed typical shallow levels of made ground below the tarmac and paved areas with stiff clay becoming stiffer with depth to the southern and western side of the site, whilst the northeast corner seems to have an outcrop of sand over the deeper stiff clay.

The existing property has a cellar beneath the main two storey extent.

We recommend that the new foundations are taken down approximately 1.0m into the stiff clay for plots 1-8 and slightly deeper through the wet sands in BH's 1&2 and into the stiff clay at 2.3m BGL.

The existing basement structure can be retained and infilled with clean well graded and consolidated hardcore and the new foundations adjacent this area locally increased in depth as necessary.

Borehole 1 noted a localised area of made ground down to 2.4m overlying the stiff clay that consist of clayey sand with brick fragments with a sight odour.

As this is a very localised observation and unlikely to be disturbed as part of the proposed development, we consider the soils can be capped with new topsoil.

Ref: 18-2830 Address: New development at Tudor Inn

1 Brief.

To undertake intrusive investigations of the site located at Tudor Inn, Peel Hall Road in Wythenshawe, Manchester to confirm the bearing capacity of the soils for foundation design of the proposed houses and identify any significant contamination that may be present over the site.

2 Scope of Work.

The report is to assess the soil conditions for foundation design.

This report is based on the previous Phase 1 Geo Assessment Report undertaken by ourselves and dated 26th June 2018, which revealed no evidence of significant risks to health.

3 Site Details

3.1 Site description

The site is located towards the southern end of Peel Hall Road in Wythenshawe in Manchester

- The size of the site is approximately 0.21ha.
- The Grid Reference for the site is 383593, 386688

3.2 Surrounding Features

The site is located on a stretch of detached properties, to the north and south there are domestic properties, and to the east there is Peel Hall Park, to the west is Calve Croft Road and there are houses on the opposite side of the road.



Extracted from Groundsure GS-5127296

3.3 Proposed Development

The proposal is to demolish the existing building and replace it with five pairs of two storey semi-detached residential properties. The buildings will be over two levels, ground floor and first floor. The buildings are to be constructed with traditional masonry cavity walls, suspended precast concrete and timber floors under timber trussed rafter roofs covered with concrete tiles.

4 Findings.

Five boreholes were undertaken over the site to identify the ground conditions.

Borehole 1

Located to the north of the site, within the fenced off compound of the existing property, used for private car parking etc.

Description	Depth	Leg	Test Depth	Type	Value
.100M Concrete overlying compact gravel, FILL					
Loose wet brown clayey sand with gravel and fragments of brick, MADE GROUND	0.40		1.20	SPT	N=11
Firm/stiff brown clay , MADE GROUND	1.40				
Loose wet gravel with a strong diesel / fuel odour, becoming clayey with depth. MADE GROUND	1.60		1.60 1.80	DS SPT	N=7
Stiff brown and grey mottled CLAY	2.40		2.40	SPT	N=43
Dense damp very silty fine SAND becoming more silty with depth.	2.60		3.00	SPT	N=56
End of Hole	3.40				

S P T @ 1.20M 2/2/2,2,3,4, S P T @ 1.80M 2/2/2,1,2,2,
S P T @ 2.40M 6/8/9,9,11,14, S P T @ 3.00M 13/14/13,14,14,15,
DISTURBED SAMPLES 1.6 - 2.20M
STANDING WATER AT .500M BELOW GROUND LEVEL ON COMPLETION OF BOREHOLE

Borehole 2

Located to the northeast corner of the site, within the paved external seating area.

Description	Depth	Leg	Test Depth	Type	Value
.060M Concrete flagstone overlying loose brown ash,cinder and gravel, FILL					
Loose damp brown fine/medium SAND	0.30				
Firm / stiff brown very sandy CLAY with rounded gravel.	0.80		1.00	DS	
			1.20	SPT	N=23
Medium dense wet brown fine / medium SAND	1.50		1.80	SPT	N=10
Stiff becoming very stiff brown and grey mottled CLAY	2.30		2.40	SPT	N=29
			2.90	SV	Cu=140+kN/m2
			3.00	SPT	N=34
End of Hole	3.40				

S P T @ 1.20M 2/3/4,6,6,7, S P T @ 1.80M 2/2/2,2,3,3, S P T @ 2.40M 5/6/6,7,8,8,
S P T @ 3.00M 7/8/8,9,8,9,
DISTURBED SAMPLES 1.0 - 1.50M
STANDING WATER AT 1.00M BELOW GROUND LEVEL ON COMPLETION OF BOREHOLE

Borehole 3

Located to the southeast corner of the site, within the garden area.

Description	Depth	Leg	Test Depth	Type	Value
.060M Concrete flagstone overlying loose brown ash,cinder and gravel with fragmented brick , becoming clayey with depth. MADE GROUND					
Firm / stiff becoming stiff brown and grey mottled CLAY.	0.50		1.00	DS	
			1.20	SPT	N=14
Stiff becoming very stiff brown and grey mottled CLAY with fine gravel.	1.60		1.70	SV	Cu=130kN/m2
			1.80	SPT	N=20
			2.30	SV	Cu=140+kN/m2
			2.40	SPT	N=27
End of Hole	3.40				

S P T @ 1.20M 2/2/3,3,4,4, S P T @ 1.80M 3/4/4,5,5,6, S P T @ 2.40M 5/6/6,6,7,8,
DISTURBED SAMPLES 1.0 - 1.60M
NO STANDING WATER ON COMPLETION OF BOREHOLE

Borehole 4

Located to the southwest corner of the site, within the tarmac parking area.

Description	Depth	Leg	Test Depth	Type	Value
Compact gravel FILL with fragments of brick , becoming wet and clayey with depth.					
Firm/stiff becoming stiff brown and grey mottled CLAY	0.60		1.00	DS	
			1.20	SPT	N=21
Stiff becoming very stiff brown and grey mottled CLAY.	1.60		1.70	SV	Cu=130kN/m2
			1.80	SPT	N=24
			2.30	SV	Cu=140+kN/m2
			2.40	SPT	N=40
			3.00	SPT	N=47
End of Hole	3.40				

S P T @ 1.20M 3/5/4,5,6,6, S P T @ 1.80M 4/5/5,6,6,7,
S P T @ 2.40M 8/10/9,10,10,11, S P T @ 3.00M 10/11/11,12,11,13,
DISTURBED SAMPLES 1.0 - 1.60M
STANDING WATER AT .700M BELOW GROUND LEVEL ON COMPLETION OF BOREHOLE
RISING TO .200M AFTER 20 MINUTES

Borehole 5

Located to the northwest corner of the site, within the tarmac parking area.

Description	Depth	Leg	Test Depth	Type	Value
Compact gravel FILL with fragments of brick , becoming wet and clayey from .200M					
Firm / stiff becoming stiff brown and grey mottled CLAY.	0.70		1.00	DS	
			1.20	SPT	N=16
Stiff becoming very stiff brown and grey mottled CLAY with fine gravel.	1.80		1.70	SV	Cu=135kN/m2
			1.80	SPT	N=22
			2.30	SV	Cu=140+kN/m2
			2.40	SPT	N=42
End of Hole	3.00				

S P T @ 1.20M 2/3/3,3,4,6, S P T @ 1.80M 4/3/5,5,5,7,
S P T @ 2.40M 9/10/9,10,10,13,
DISTURBED SAMPLES 1.0 - 1.60M
STANDING WATER AT .800M BELOW GROUND LEVEL ON COMPLETION OF BOREHOLE
RISING TO .200M AFTER 20 MINUTES

5 Conclusion

The site is generally underlain with a stiff clay from around 500mm below ground level beneath a granular fill material normally found beneath such a site.

The northern boreholes revealed an outcrop of wet sand over the lower clay levels, which is suggested on the British Geological Maps for the area.

We are satisfied with the ground conditions noted in the boreholes and their bearing capacities for the foundation design of the new houses. We would recommend a safe bearing capacity of 100kN/m^2 for the firm to stiff clay strata but we recommend the foundations to plots 9&10 are extended down into the stiff clay beneath the dense wet sand noted in BH2 to prevent differential settlement.

Also, the depth of the existing basement to the existing building requires the new foundations to extend down to this depth.

A very localised area of made ground within BH1 was encountered, which had a slight odour. We suspect this is due to the old oil tank used for originally heating the building or due to an old fuel leak from cars parked in the private parking area.

We do not consider this to be of concern for the risk to human health for the proposed development due to the depth of the sample taken (at 1.6m BGL) and thus with suitable top soil capping layer, no apparent risk will be associated.

6 Recommendation

From the site investigations carried out, we recommend the new foundations for the properties are of traditional mass concrete strip/trench fill foundations taken down approximately 1.0m into the stiff clay (Plots 1-8), however the foundations to plots 9&10 will require locally deeper depths to extend through the wet sands into the stiff clay at around 2.3m BGL.

The foundations to plots 7-10 will require localised deepening to allow for the depth of the existing basement.

These are shown on our drawings 18-2830 SE01 & SE02.

We recommend that the surface of the site is stripped of the granular made ground to around 500mm BGL and a minimum 300mm thick layer of clean imported topsoil laid over to build up the levels as required.

We trust that this is all sufficient for your purposes, however, should you have any queries then please do not hesitate to contact us.

Yours sincerely



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For STL Projects Ltd