

**CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING,
CONTAMINATED LAND SURVEYS,
DESK STUDIES, RISK ASSESSMENT.**



Our Ref: MRH 231779

24th July 2024

Qaim Structures Limited
Arena Business Centre
100 Berkshire Place
Wokingham
RG41 5RD

Dear Zargham,

Re: Geotechnical Summary – 10 Abbot's Place, London NW6 4NP.

Please find below a Summary of Geotechnical Data from the Ground Investigation Report for Abbot's Place.

The soil samples recovered were all subjected to a Natural Moisture Content determination, with six samples representing the London Clay material also subjected to Atterberg Limit assessments which categorise the clay strata of the London Clay to be of Very High Plasticity.

Soluble Sulphate Concentrations were measured in the three samples subjected to the Wide-Range Contamination Suite with a further sample taken at depth. While concentrations in the samples of the near-surface materials fall within BRE Class DS-1, the sample from 3m depth reaches into BRE Class DS-4. The presence of Selenite crystals in the clay are also indicative of high sulphate levels. Concrete should be specified accordingly.

With regard to proposed foundation designs, the in-situ testing indicates the following Allowable Bearing Capacities (based on a Factor of Safety = 3) within the Natural Strata at depths below current ground/floor level at each location:

| Borehole No. | Depth (m) | Allowable Bearing Capacity (kN/m ²) | Strata |
|--------------|-----------|---|-------------|
| 1 | 1.0m | 140 (Clay) | London Clay |
| | 2.0m | 200 (Clay) | London Clay |
| | 3.0m | 240 (Clay) | London Clay |
| 2 | 1.0m | 140 (Clay) | London Clay |
| | 2.5m | 220 (Clay) | London Clay |
| | 3.0m | 260 (Clay) | London Clay |

Table 1, Allowable Bearing Capacity with Depth (FoS = 3)

The Borehole Logs of Appendix B also present the Undrained Shear Strength (c_u in kN/m²) with depth and are summarised in Table 2 below.

| Depth (m) | Borehole 1 (c_u kN/m ²) | Borehole 2 (c_u kN/m ²) |
|-----------|--|--|
| 1.00m | 70 | 70 |
| 2.00m | 100 | - |
| 2.50m | 120 | 110 |
| 3.00m | 120 | 130 |
| 4.00m | 120 | 130 |
| 5.00m | 140 | 120 |
| 6.00m | 170 | 130 |
| 7.00m | 170 | 140 |
| 8.00m | 170 | 150 |

The British Geological Survey map of the area identifies the site as lying on Bedrock Strata of the London Clay Formation and this was proved during the sinking of the Borehole.

No groundwater seepages were encountered during the sinking of Borehole 1 on site and the Borehole was dry on completion prior to the installation of the Monitoring Standpipe. A small seepage was encountered in Borehole 2 on encountering a Claystone Nodule at 3.20m depth, but again the Borehole was found to be dry on completion.

On visiting the site on 14th June 2024 Groundwater was found to be resting at 3.80m below ground level (bgl) although due to the wet winter and spring between the installation of the Standpipe and the monitoring visit, it was suspected that the measured water level was due to seepage passed the concrete and clay seal at the top of the borehole.

8 litres of water were bailed from the Borehole which reduced the level to 7.20m bgl and after 1 hour there was no discernible recharge of the water level within the standpipe which also indicated no flow into the Borehole from the London Clay strata.

A further visit was made on 24th June 2024 and the Groundwater was found to rest at 6.24m.

The strata of the London Clay Formation are classified by the Environment Agency as an Unproductive Strata. These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

According to British Geological Survey data the site is at Negligible Risk of Groundwater Flooding.

Regards



Steven Brooks BEng.(Hons)

Email: steve@mrhgeotechnical.com

MRH Geotechnical Limited

14 Frederica Road, Chingford, London E4 7AL

**TEST SUMMARY**

WATER CONTENT, LIQUID AND PLASTIC LIMIT PROFILE

| | | | |
|------------|----------------------------------|---------------------|-----------|
| CLIENT | Qaim Structures Ltd | DATE SAMPLED | 23-Nov-23 |
| SITE | 10 Abbot's Place, London NW6 4NP | DATE RECEIVED | 24-Nov-23 |
| SAMPLED BY | Steve Brooks | DATE TESTED | 29-Nov-23 |
| JOB NUMBER | 231779 | DATE OF CERTIFICATE | 01-Dec-23 |

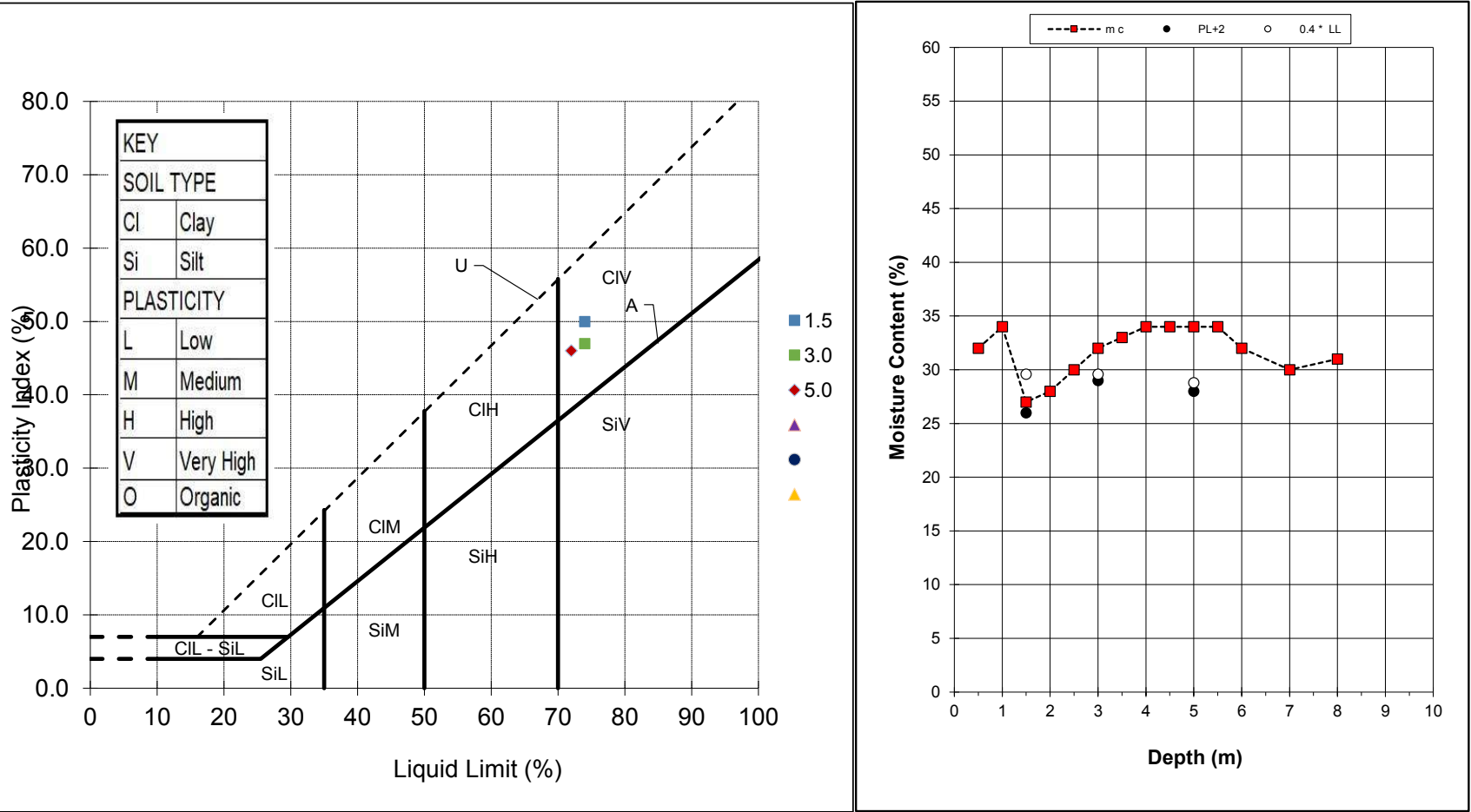
| Sample Number | TP/BH Number | Depth (m) | < 425 m (%) | m c (%) | L.L (%) | P.L (%) | P.I. | Sample Description |
|---------------|--------------|-----------|-------------|---------|---------|---------|------|---|
| 23177901 | 1 | 0.50 | | 32 | | | | Firm brown silty CLAY |
| 23177902 | 1 | 1.00 | | 34 | | | | Firm brown silty CLAY |
| 23177903 | 1 | 1.50 | | 27 | 74 | 24 | 50 | Stiff brown silty CLAY |
| 23177904 | 1 | 2.00 | | 28 | | | | Stiff brown silty CLAY |
| 23177905 | 1 | 2.50 | | 30 | | | | Stiff to very stiff brown silty CLAY |
| 23177906 | 1 | 3.00 | | 32 | 74 | 27 | 47 | Stiff to very stiff brown silty CLAY |
| 23177907 | 1 | 3.50 | | 33 | | | | Stiff to very stiff brown silty CLAY |
| 23177908 | 1 | 4.00 | | 34 | | | | Stiff to very stiff grey brown silty CLAY |
| 23177909 | 1 | 4.50 | | 34 | | | | Very stiff grey brown silty CLAY |
| 23177910 | 1 | 5.00 | | 34 | 72 | 26 | 46 | Very stiff grey brown silty CLAY |
| 23177911 | 1 | 5.50 | | 34 | | | | Very stiff grey brown silty CLAY |
| 23177912 | 1 | 6.00 | | 32 | | | | Very stiff grey brown silty CLAY trace Selenite |
| 23177913 | 1 | 7.00 | | 30 | | | | Very stiff grey brown silty CLAY trace Selenite |
| 23177914 | 1 | 8.00 | | 31 | | | | Very stiff grey brown silty CLAY trace Selenite |

Remarks

Moisture contents not corrected for gravel content

Liquid limit reported is the average of two determinations, corrected in accordance with Clayton and Jukes 1978

Client : Qaim Structures Ltd
Site : 10 Abbot's Place, London NW6 4NP
BH/TP : 1



MRH Geotechnical Limited

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**TEST SUMMARY**

WATER CONTENT, LIQUID AND PLASTIC LIMIT PROFILE

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|------------|----------------------------------|---------------------|-----------|
| CLIENT | Qaim Structures Ltd | DATE SAMPLED | 23-Nov-23 |
| SITE | 10 Abbot's Place, London NW6 4NP | DATE RECEIVED | 24-Nov-23 |
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| JOB NUMBER | 231779 | DATE OF CERTIFICATE | 01-Dec-23 |

| Sample Number | TP/BH Number | Depth (m) | < 425 m (%) | m c (%) | L.L (%) | P.L (%) | P.I. | Sample Description |
|---------------|--------------|-----------|-------------|---------|---------|---------|------|--|
| 23177914 | 2 | 0.50 | | 27 | | | | Firm brown silty CLAY |
| 23177915 | 2 | 1.00 | | 29 | 72 | 24 | 48 | Firm to stiff brown silty CLAY |
| 23177916 | 2 | 1.50 | | 15 | | | | Firm brown silty CLAY with trace to a little gravel |
| 23177917 | 2 | 2.00 | | 13 | | | | Firm brown silty CLAY with trace to a little gravel |
| 23177918 | 2 | 2.50 | | 30 | | | | Stiff to very stiff brown silty CLAY |
| 23177919 | 2 | 3.00 | | 34 | 70 | 28 | 42 | Stiff to very stiff brown silty CLAY |
| 23177920 | 2 | 3.50 | | 36 | | | | Stiff to very stiff brown silty CLAY |
| 23177921 | 2 | 4.00 | | 36 | | | | Stiff to very stiff brown & blue-grey silty CLAY |
| 23177922 | 2 | 4.50 | | 36 | | | | Stiff to very stiff grey brown silty CLAY |
| 23177923 | 2 | 5.00 | | 36 | 73 | 26 | 47 | Stiff to very stiff grey brown silty CLAY |
| 23177924 | 2 | 5.50 | | 38 | | | | Stiff to very stiff grey brown silty CLAY trace Selenite |
| 23177925 | 2 | 6.00 | | 35 | | | | Very stiff grey brown silty CLAY trace Selenite |
| 23177926 | 2 | 7.00 | | 31 | | | | Very stiff grey brown silty CLAY trace Selenite |
| 23177927 | 2 | 8.00 | | 31 | | | | Very stiff grey brown silty CLAY trace Selenite |

Remarks

Moisture contents not corrected for gravel content

Liquid limit reported is the average of two determinations, corrected in accordance with Clayton and Jukes 1978

Client : Qaim Structures Ltd
Site : 10 Abbot's Place, London NW6 4NP
BH/TP : 2

