

FORTESS ROAD

STRUCTURAL FOUNDATIONS PHILOSOPHY

Project Overview

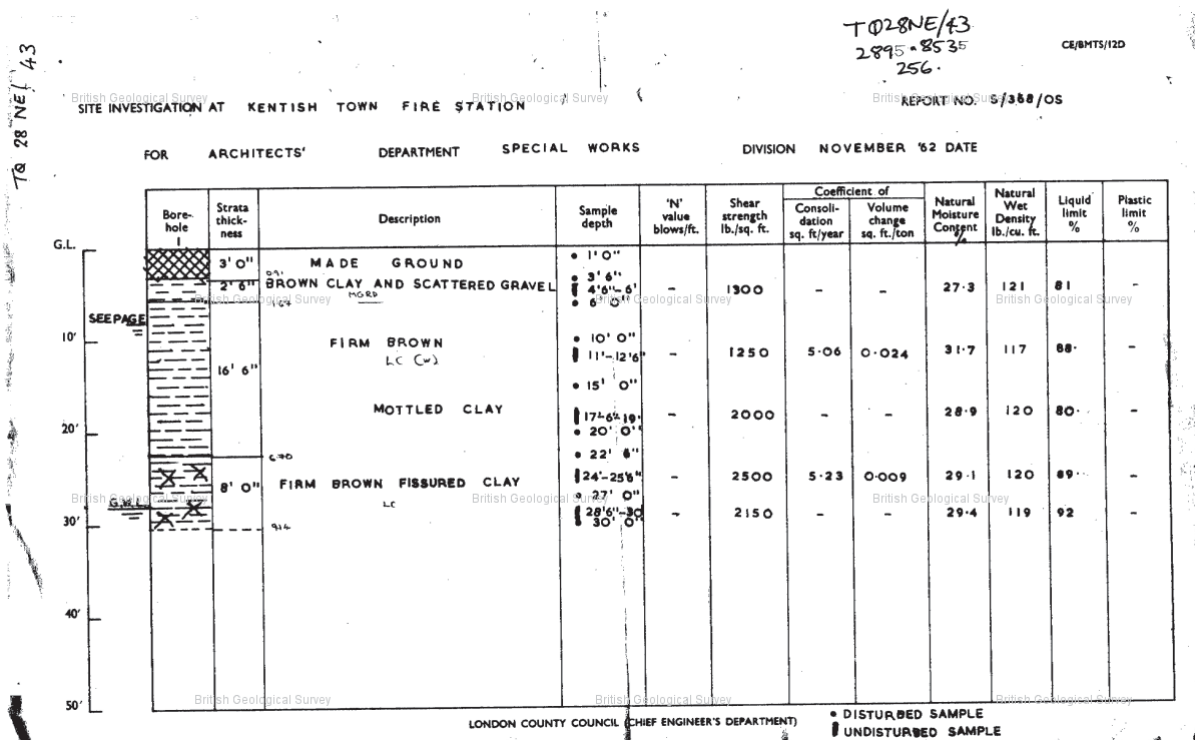
Fortess Road is a multi-storey office development constructed within the confines of an existing workshop and warehouse. Cranston consulting are responsible for the design of the substructures, ground floor slabs, retaining walls and superstructure.

Substructure

1.1 Substructure Constraints

The British Geological Survey shows the site to be underlain by London Clay Formation - clay, silt and sand. There are no known superficial deposits at this location.

There are no existing borehole logs for the site, however there is a log for 9.14m deep borehole at TQ28NE43, which is 50m away from site.



Borehole log for TQ28NE43. Copyright: British Geological Survey

This shows made ground to 1.0m depth, underlain by 5.8m thick layer of firm brown mottled clay with shear strength ranging from 60kN/m² (1250 lb./sq. ft.) to 96kN/m² (2000 lb./sq. ft.) from 5.35m below existing ground level. The lower strata is firm brown fissured clay with shear strength of 120kN/m² (2500 lb./sq. ft.) dropping to 103kN/m² (2150 lb./sq. ft.) at 9m below ground level.

For clay the allowable ground bearing resistance can be taken as $2 * C_u$. This includes 2.5 safety factor.

Therefore, based on 60kN/m² shear strength (C_u) the ABP for the existing and new foundations is taken as 120kN/m².

Trial excavations on site confirm the presence of the firm brown mottled clay beneath a shallow made ground layer.

No ground water was observed.

The proposed building will therefore be constructed utilising reinforced concrete pads foundations with a maximum bearing pressure of 150kN/m². (225kN/m² factored) founded approximately 1.2 to 1.5m below existing ground level.

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