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Structural report on Proposed
Basement Construction works
Hunters Lodge,
5 Belsize Lane
NW3 5AD.

Client
Date
Job no

Mr N Cartwright
February 2012
27956

Brief:

Gary Gabriel Associates were requested, by Mr Neil Cartwright to prepare a report in respect of proposed construction works proposed at Hunters Lodge to identify hazards and construction techniques to reduce such hazards and to be sympathetic to the existing structure, which is a listed property, and the surrounding area.

Scope:

A visual inspection of the site, house and surrounding area was carried out on 5th January 2012.

A previous 'desk top' study was carried out by JDL Consultants Ltd in May 2011. This report is intended to be an extension of that report in light of a hydro geological assessment (June 2011) and an intrusive geotechnical investigation. (September 2011)

This report should be read in conjunction with the JDL Consultants Ltd report and the two reports prepared by Tweedie Evans Consulting Ltd.

Findings:

The JDL Consultants Ltd report identified that in reducing levels for the proposed works a perimeter retaining structure will be required. The installation of this structure needs to be such that there is no or very minimal risk of undermining adjacent structures. In addition the installation should not introduce lateral loading or vibration into the structures which is most significant in respect of the main property.

British Standards suggest the range of vibration where cosmetic damage may occur are in the range of 4 to 250 Hz and that below 4Hz that maximum displacement of 0.6mm (zero to peak) should be used.

Accordingly techniques employing vibrating installation or impact driven piles are discounted.

The use of a contiguous CFA piled retaining wall satisfied all these requirements subject to ground conditions being appropriate for their use. The desk top study suggested ground water levels to be below the basement level.

Intrusive investigation revealed the ground condition as being shallow fill, topsoil and slightly gravelly clay over original material of the London Clay Formation comprising soft to firm becoming firm brown and orange brown fissured clay and sandy silty clay to 4.4m below which is stiff dark brown slightly sandy clay to 10m. (For more detail see Tweedie Evans report) No ground water was recorded during the investigation.

The report confirms the suitability of a CFA pile solution and in addition addresses subsurface ground water flow impact as minimal due to the lack of water within the considered strata.

Contiguous piles in the order of 350-400mm diameter would be anticipated to be viable. The perimeter of the works is approximately 60m which would require 150-170 piles to be installed. This represents approximately four weeks work including mobilisation.

The boundary wall between the garden and Belsize Lane has been inspected and identified as being cracked with a pronounced lean. Recommendations are to rebuild this wall which would remove any risk associated with piling near it. Should our client choose to retain the wall a margin will be needed to avoid any possible impact from the piling rig.

The existing 1920 extension, forming the garage, is of poor construction and under the current permission is to be demolished back to the gable of the original listed property. During previous works this gable was underpinned which with the retention of the original gable ensures stability of main house.

The new CFA piled wall is to be located beyond the underpinning line to avoid any risk of undermining the original property.

Conclusions:

It is concluded that techniques are readily available to enable the installation of a ground retaining structure in the form of a contiguous piled wall which presents minimal hazard and risk to the existing property, surrounding area and also to existing ground water.

Such a structure will support the ground outside of the piled wall thus protecting the highway, high level garden, the existing house and garden during the process of excavating for the basement and construction of the new works.

Recommendations:

It is recommended that as working details are developed specialist piling contractors advice is incorporated in selecting rig type and size to further reduced impact on the surrounding area and the general public during installation. This effects access, egress, working space and hording locations.

11.0 Proposed Plans

