STRUCTURAL ENGINEER'S REPORT IN SUPPORT OF THE PLANNING APPLICATION FOR THE REDEVELOPMENT AT

28 HOLLYCROFT AVENUE
LONDON
NW3 7QL

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I N D E X

28 HOLLY CROFT AVENUE, LONDON, NW3 7QL

1.0 INTRODUCTION

1.1 This structural report has been prepared to support the planning application for the redevelopment at 28 Hollycroft Road, London, NW3. The report outlines the structural design philosophy and the anticipated construction methodology for the proposals. It presents factual information and interpretation regarding the existing building, the site, the geology, hydrogeology, environmental considerations and the boundary aspects in relation to the proposed re-development.

1.2 This report is prepared in accordance with the London Borough of Camden's planning guidance on Basements and Lightwells ensuring that the proposed development does not:

a) Cause harm to the built and natural environment and local amenity.
b) Result in flooding.
c) Lead to ground instability.

1.3 This report should be read in conjunction with all Architect's and other Consultant's reports, drawings and other documentation submitted with the planning application.

2.0 DESCRIPTION OF THE SITE

2.1 The site address is 28 Hollycroft Avenue, London, NW3 7QL, situated at National Grid reference TQ 25374 86108. The site is to the south west of Hampstead Heath and is part of the Frognal and Fitzjohns ward in The London Borough of Camden. The site is within the Redington and Frognal Conservation Area.

2.2 The site is situated to the west of Platt's Lane off the North side of the A41 Finchley Road.

2.3 The site is approximately ten metres wide by forty two metres deep and comprises a three-storey residential property constructed in the early 1900s with a garden to the front and rear at ground level. The surrounding area is residential.

3.0 OVERVIEW OF PROPOSED REDEVELOPMENT

3.1 The following is a brief overview of the proposed redevelopment in order to give context to the following sections of the report. Reference should be made to the Architect's and other Consultant's reports and drawings for more detail.

3.2 The proposed redevelopment comprises the refurbishment of the existing house and excavation below the existing ground floor to create an additional storey below including a partial extension beneath the rear garden.

3.3 The existing main house is to be retained although some remodelling of the internal layout and the rear of the property is proposed.

4.0 DESCRIPTION OF THE EXISTING PROPERTY

4.1 The following description of the existing property is based on a visual structural inspection undertaken by Sinclair Johnston & Partners on 4th October 2011.

4.2 28 Hollycroft Avenue is a semi-detached house built in the early 1900s; circa 1910.

4.3 Foundations are mass concrete strip footings with formation levels generally proven to be at least 1.1m below ground level by trial pitting.

4.6 The ground floor comprises a combination of suspended timber floors on masonry walls and concrete ground bearing floors on hard core.

4.7 The house is of masonry construction with internal and external solid load bearing masonry walls.

4.8 The upper floors comprise timber joists spanning onto load bearing internal and external walls.

5.0 DESCRIPTION OF THE LOCAL GEOLOGY & HYDROGEOLOGY

5.1 The following is an overview based on experience and records of similar developments within the general locality of the site.

5.2 An intrusive site investigation has been undertaken on site which will comprise one borehole to 6m depth below existing ground level, trial pits to investigate existing and adjoining foundation details, ground water assessment and soil sampling and testing for a range of technical parameters and contamination testing.

5.3 The Geology of Britain online viewer by the British Geological Survey indicates that the site geology comprises 'Claygate' overlying London clay to depth.

5.4 Groundwater was encountered at a depth of 4.5m below ground level within the sand partings of the Claygate Member. This is below the proposed formation level of the basement structure.

5.5 There are no ponds, streams or drainage ditches on or adjacent to the site. It is not located in an area containing or within the catchment of sensitive springs, shallow wells or watercourses. The proposed development works are, therefore, unlikely to present a risk to any such features.

5.7 The site is situated within the Environment Agency's Flood Zone 1. The site is therefore at little or no risk from fluvial flooding.

5.8 It is not on the list of streets at risk of surface water flooding. There will be no significant increase in the extent of hard surfacing on the site and therefore no significant increase in design for surface water run-off. Sustainable Urban Drainage System (SUDS) will be considered and adopted as appropriate in the drainage design.

5.9 The site is not located within a radon affected area.

6.0 STRUCTURAL PROPOSALS

6.1 Drawings showing the proposed basement structure are included in Appendix A.

6.2 The basement structure is to comprise reinforced concrete underpins installed using conventional hit and miss sequence. These will resist the horizontal earth and hydrostatic pressures and transmit vertical super-structural loads down to the bearing strata. The basement slab is to comprise a reinforced concrete ground bearing slab.

6.3 The existing building is to be retained during construction. It will be stripped out, the rear elevation will be removed and temporary works will be installed to maintain stability and structural integrity at all times.

6.4 Isolated concrete pads and local underpins are to be constructed to internal and internal walls follow by the installation of steel beams at ground floor level to support in the internal walls. Temporary needles are to be used to install these beams to maintain stability at all times. This will provide clear access for the underpinning, substructure and ground works to construct the basement.

6.5 Timber floors are to be retained at the front of the house and the rear of the property will comprise reinforced concrete slabs supported on columns and walls.

6.6 The basement is to be designed in accordance with BS 8102:2009 ‘Code of practice.

6.7 The basement structure will be designed to established design limits for structural deflections and ground movement to maintain stability at all times and to prevent damage to adjoining properties.

7.0 CONSTRUCTION METHODOLOGY

7.1 The works can be split into three elements:-

1) Enabling works

2) Basement construction works

3) Existing house refurbishment works

Anticipated construction sequence for the enabling and the basement construction works are given in Appendix B. The following section discusses the various site specific construction activities that have been addressed to ensure compliance with the London Borough of Camden planning application requirements.

7.2 The initial works are to comprise strip out of the main house, demolition of the rear elevation and installation of temporary works, installation of discreet pads and underpin foundations with steel beams under internal walls to retain structural integrity and stability at all times to provide safe access for the proposed basement works.

7.3 The excavated material for the new basement will require spoil to be transported off site to a licensed landfill. To reduce the amount of standing time required by trucks and to allow the timing of the delivery of the trucks to be coordinated around peak traffic hours, the excavated earth will be deposited into skips, located on site. Skip and delivery trucks would pick up and drop off in the conventional manner. Wait and load may be adopted from time to time.

7.4 Delivery of concrete will be via road, concrete trucks would park at the front of the house and the concrete will be pumped or skipped to the required location on site.

7.5 The works are to be undertaken by a competent Contractor with experience in this kind of work.

8.0 ENVIRONMENTAL ISSUES

8.1 The site was not expected to have had a potentially contaminative history having been a residential area for the last two centuries as indicated by the Survey of London.

8.2 However, representative samples that have been taken for testing as a precautionary measure were found to have elevated concentrations of lead, TPH, total PAH and other constituent PAHs in excess of the generic risk screening values for a residential end use. These concentrations could pose a potentially unacceptable risk to human health through direct contact, accidental ingestion or inhalation of soil or soil derived dust.

8.3 The metal and PAH compound are non-volatile or low volatility and low solubility so do not represent a significant risk from vapour or leaching and migration within the groundwater.

8.4 The contaminants however could pose an unacceptable risk to human health through ingestion or inhalation of soil or soil dust. Site workers will be required to take precautions when handling the soil in accordance with HSE and CIRIA guidelines and the requirements of the Local Authority Environmental Health Officer.

8.5 The made ground will be removed off site and there will be no risk to the end user.

9.0 ADJOINING PROPERTIES AND PARTY WALL MATTERS

9.1 The site is bounded on three sides by adjoining properties. Party Wall matters in accordance with the Party Wall etc., Act 1996 will be addressed.

9.2 The construction of the proposed basement by conventional underpinning method and sequence adjacent to and in close proximity to surrounding buildings designed to resist all lateral earth, surcharge and ground water pressures is well established and has been used successfully on many similar developments in similar ground conditions.

9.3 During construction suitably designed lateral temporary waling and propping will be installed to support the underpins. These will be designed to established design limits for structural deflections and ground movement to maintain stability at all times and to prevent damage to adjoining properties.

10 CONCLUSIONS

Land and Structural Stability

10.1 It is proposed to construct a new basement under the existing house at 28 Hollycroft Avenue. The sub-structure is to comprise reinforced underpinning designed to resist lateral earth, surcharge and hydrostatic pressures and to transmit vertical structural loads down to the bearing strata as outlined in sections 6 & 7 of this report.

10.2 A proposed construction sequence is provided in Appendix B. This demonstrates that the works can proceed in a safe and logical manner. An on site loading/unloading area is to be formed at the front of the house for efficient removal of excavated spoil and delivery of construction material.

10.3 The structural proposals are to be executed using well established construction techniques that have been used successfully on many similar developments in similar ground conditions to safeguard the structural integrity of the existing house and adjoining properties.

Groundwater, Hydrogeology and Surface Water Run-off

10.4 The groundwater level was monitored and found to be 4.5m below ground level; below the formation level of the propose basement structure. The site is not in an area at risk of fluvial or surface water flooding.

10.5 There is no significant increase in the extent of hard surfacing on the site and therefore no significant increase in design for surface water run-off. Sustainable Urban Drainage System (SUDS) will be considered and adopted if appropriate in the drainage design.

Environmental

10.6 Contaminants were found in tests undertaken with elevated levels of lead and PAH as outlined in section 8 above. Whilst the made ground will be removed off site and there will be no risk to the end user, site workers will be required to take precautions when handling the soil in accordance with HSE and CIRIA guidelines and the requirements of the Local Authority Environmental Health Officer.

Quality

10.7 The proposed works are to be executed by a competent Contractor with experience in the chosen form of construction and working on a restricted site to ensure the construction is undertaken with quality.

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