8 Oakhill Avenue
London, NW3 7RE

Construction Method Statement

Prepared by:	**Andrew Stearn MEng CEng MIStructE**
Reviewed by:	**Andy Toohey MEng BEng MIStructE**
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Date	Revision	Notes/Amendments/Issue Purpose
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Consulting Engineers
37 Alfred Place
London WC1E 7DP

020 7631 5128
mail@pricemyers.com
www.pricemyers.com

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1 Introduction

Price & Myers have been appointed by Mr Neill Abrams to assist their Architect Carver Farshi in preparing structural proposals for the refurbishment and extension of their property at 8 Oakhill Avenue in Hampstead, London.

This report outlines the progress of the design at Planning Application stage.

The information in this report is based on desk study searches of the area, a visual inspection of the existing property, internal intrusive investigations & inspection consisting of trial pits & local removal of finishes and results of the site-specific geotechnical investigation carried out by Geotechnical & Environmental Associates (GEA); report reference J19232 dated March 2020, refer to Appendix F.

2 The Site

The site fronts on to Oakhill Avenue within the London Borough of Camden. Oakhill Avenue runs from northeast to southwest between Redington Road and Bracknell Gardens respectively. Oakhill Avenue slopes from northeast down to southwest. The site occupies a rectangular plot of 21m x 60m on the northwestern side of Oakhill Avenue. The site is occupied by a detached house, which is set back from the public pavement. The front garden slopes steeply down away from the building to an existing brickwork retaining wall that fronts the public pavement. The main building occupies nearly the entire width of the site, with a passageway on the northeastern elevations providing access to the rear garden. The passageway between the southwestern elevation and boundary is overgrown with grass, shrubs and weeds with access to the rear garden blocked by the garden shed. Steps lead down from the initial rear patio to the rear garden which is separated from the patio by a low retaining wall. The garden continues to slope downwards towards the northwest boundary. Refer to Appendix C for the existing site plan.

Historic maps show the site to be undeveloped and occupied by fields with a stream approximately 30m to the north of the site, which was completely culverted or covered by 1895. The historical maps show that the original building was built between 1896 and 1915, where the 1915 map shows the existing row of properties having been established.

3 Existing Building

The building is currently used a multiple occupancy house with the top floor having been converted into a self-contained flat with separate entrance via the side passage. The original building has also had a previous rear extension, which is assumed to have been built when the top floor was converted into a flat.

From visual inspection of the building from floor levels the structure consists of timber rafters and purlins supported on both the internal and external walls. External walls are of solid masonry construction with internal walls being of both masonry and timber studwork. Timber joists span between the loadbearing walls at the 1st, 2nd & Loft levels. At ground floor, the floor primarily consists of timber joists spanning between internal dwarf brickwork walls, except towards the rear of the property (where previously extended) and floors appear to be of ground bearing concrete slab.

The rear terrace is bounded by retaining walls, which are assumed to be of brickwork construction before stepping down into the rear garden.

Refer to **Error! Reference source not found.** & **Error! Reference source not found.**

4 Ground Conditions

A geotechnical investigation was carried out by Geotechnical & environmental Associates (GEA); report reference J19232 dated March 2020. The purpose of the investigation was to:

- check the history of the site and surrounding area with respect to previous uses
- determine the ground conditions and their engineering properties
- assess the possible impact of the proposed development on the local hydrogeology
- to investigate the configuration of the existing foundations
- to provide advice with respect to the design of suitable foundations and retaining walls for the proposed development
- provide a preliminary assessment of the presence of soil contamination and assess the risk that any such contamination may pose to the proposed development, its users or the wider environment.

This established that the ground conditions were as expected with a variable, but generally moderate thickness of Made Ground (0.2-1.5m bgl) overlying the Claygate Formation, which in turn overlies the London Clay Formation.

Groundwater was encountered during the drilling of the boreholes at depths varying between 3.8 & 5.3m bgl over a period of 5 months from September to February with perched water encountered in the window samples.

5 Proposed Structure

Introduction

In order to increase the living spaces within the building, the building will be returned to a single occupancy house and it is proposed to construct an additional level below the current ground floor under a small footprint within the northern corner of the existing building.

Permanent Works

A new reinforced concrete box structure will be required to form the new lower ground floor; this will be achieved by installing sequential mass concrete underpins below the northern corner of the existing building with a reinforced concrete retaining liner wall in front. For the other walls, sequential reinforced concrete pins will be installed (i.e. similar method to underpinning, but not below an existing wall). All the reinforced concrete walls will be tied to the new lower ground floor raft slab and ground floor slab. The proposed works will need to be agreed under the Party Wall Agreement.

Alterations to the interior of the existing building predominantly require a new steel frame to re-support floors and internal walls, which will bear onto the new reinforced concrete box structure distributing loads into the bearing strata.

The reinforced concrete box and structure above are designed to resist heave and buoyancy, which may be encountered.

The proposed structural layouts are included in **Error! Reference source not found.** and described b elow.

External Works

No external works are proposed as part of this planning application.

Site Drainage & Ground Water

The site drainage strategy will remain largely as existing. The proposals are considered not to result in an overall increase in the drained area of the site.

It is proposed to discharge foul water generated at basement level to a new foul water pumping chamber, from where the foul flows will be pumped up to the existing combined manhole located within the site boundary. The foul flows generated at ground level will discharge to the existing combined manholes via new gravity connections. The exact location of the proposed foul water stack positions is to be confirmed by the Architect.

Surface water will be collected at ground level via rainwater down pipes and will discharge into the existing manholes via gravity connections.

The waterproofing strategy for the basement relies on a drained cavity system. The cavity drainage pumping chamber is shown for indicative purposes on the below ground drainage layout. The pumping chamber is to be designed by a cavity drainage specialist and the exact location to be confirmed by the Architect.

The site drainage will ultimately discharge into the public sewer located on Oakhill Avenue via the existing combined drainage network within the site.

The proposed preliminary below ground drainage layout is included in **Error! Reference source not found.**

6 Design Criteria

Codes and Standards

Loads to be assessed in accordance with the latest edition of:

BS6399	Part 1 Dead & Imposed
	Part 2 Wind
	Part 3 Roof Imposed
BS EN 1991-1	Dead & Imposed
BS EN 1991-3	Snow
BS EN 1991-4	Wind

Concrete to be designed in accordance with: BS EN 1992 & BS 8500.
The concrete in the ground is exposure class DS-1 and AC-1

Steel to be designed in accordance with: BS EN 1993.
The steel is to be grade S355 and bolts are all to be grade 8.8.

Masonry to be designed in accordance with: BS EN 1995 (or CP111 for existing brickwork)

Below ground drainage to be designed in accordance with BS EN 752 Drain and Sewer Systems Outside Buildings, Building Regulations part H and Sewers for adoption where applicable.

Loadings

Typical domestic floor loads of 1.5kN/m2 with additional allowance made for heavy floor finishes where appropriate.

Design Fire Periods

Fire periods are achieved generally by the appropriate thickness fireboard or plasterboard. This will be specified by the Architect.

Disproportionate Collapse

The proposals consist of adding an additional lower storey to an existing 3-storey building with the lower storey only covering part of the building's footprint. In accordance with Building Regulations Approved Document A, a single occupancy house up to 4-storeys in height should achieve Category 2A.

The new lower ground floor structure will meet Category 2B under the Building Regulations Part A3, which requires the incorporation of horizontal ties and vertical ties into the structure. This will inherently be achieved with continuity of the reinforcement within the concrete

It is assumed that the remaining structure, which is mostly existing, will already meet Category 2A, which requires the incorporation of horizontal ties. The existing structure will need to be fully investigated in due course to establish this.

However, it should be noted that where existing structures are being improved and not affected detrimentally, it is generally understood that requirement A3 of Building Regulations does not become applicable to the existing structure of the building, as per the definition below:

Building Regulations, Regulation 3 – Meaning of Building Work.
(2) An alteration is material for the purposes of these Regulations if the work, or any part of it, would at any stage result –
(a) in a building or controlled service or fitting not complying with a relevant requirement where previously it did; or
(b) in a building or controlled service or fitting which before the work commenced did not comply with a relevant requirement, being more unsatisfactory in relation to such a requirement.

7 Construction Methodology

Construction Method

The existing external walls are to be laterally propped prior to the existing suspended ground floor construction being removed to ensure lateral propping of the external walls is maintained.

A reduced dig will be undertaken to provide a level working surface.
Sequential mass concrete underpins will be installed to the northern corner of the existing building; along part of the northeastern and northwesten external walls. The mass concrete underpins will be constructed with a toe to match the width of the existing corbelled footings. Underpinning is a quiet and gradual process, well known and understood.

For the other walls, sequential reinforced concrete pins will be installed with a reinforced toe and continuity strips (i.e. similar methodology to underpinning, but not below an existing wall).

Following completion of all underpinning and pins to the perimeter basement walls, the bulk excavation can commence. Lateral props are to be installed across the basement as the excavation depth progresses.

Once formation level has been reached, the ground bearing basement slab will be installed and tied into the toe of the reinforced concrete pins via the continuity strips.

The reinforced concrete liner wall can then be cast up against the mass concrete underpins. This can be cast in multiple lifts up to the underside of each level of lateral propping. Once each lift of concrete is of sufficient strength the propping to the face of the mass concrete underpins can be repositioned to the face of the reinforced concrete liner wall.

Finally, the ground floor slab can be cast to tie the top of the reinforced concrete liner walls and pins to form an integral reinforced concrete 'box'.

The proposed works will need to be agreed under the Party Wall Agreement.

A ground movement analysis has been undertaken based upon this sequence of works, which can be found within the Site Investigation and Ground Movement Assessment. This concludes that ground movements would not affect the structural integrity of nearby buildings with a Burland Scale category of 1-very slight being anticipated.

During the works an appropriate movement monitoring strategy should be implemented. This will be agreed during the Party Wall processes and implemented by the main contractor

The assumed construction sequence is given in Appendix E

Site Hoardings and Security

Site hoardings and security should be agreed with the contractor before works commence. Due to the nature of the work, it is assumed that the hoarding on the boundaries with the neighbouring properties will need to extend into their gardens. This will need to be agreed with the adjoining owners.

Site Logistics and Management

Good access to the site is available off the Finchley Road (A41), approximately 300m south of the site, and this will make deliveries to and from the site easy, with little impact to the surrounding streets.

A solid timber hoarding will be required along the side boundary, to restrict any public access into the site. There are currently no parking bays in front of the site, due to the private driveways, so it is unlikely that there will need to be any parking suspensions enforced during the construction. Materials can be unloaded at the front of the site stored within the house or garden. Site waste could follow a similar route, and waste from the basement excavation could leave through a conveyor to an awaiting skip.

Tyre washing and dust suppression methods including damping down, minimising the working face exposed and covering stockpiles, will be implemented where required.

The basement does not extend beyond the footprint of the existing building, therefore excavation works will be undertaken within the envelope of the existing building, inherently reducing dust and noise to external sources.

The chosen Contractor will be required to participate in the Considerate Constructors Scheme, and special consideration will need to be working hours and the potential for noise & dust pollution in accordance with Camden Development Policy DP28.

Appendix A
Structural Proposal

28373 GEN01 Ver 1
28373 SK1 Ver 2
28373 SK2 Ver 2
28373 SK3 Ver 1
28373 SK10 Ver 1

Appendix B
Below Ground Drainage

28373 SKD6000

Appendix C
Existing Site Plan

PL12174 - 8 Oakhill Avenue NW3 7RE-SITE PLAN

Appendix D
Existing Building

28373 EX01 Ver 3
28373 EX02 Ver 1
28373 EX03 Ver 3
28373 EX04 Ver 2
28373 EX05 Ver 1
28373 EX06 Ver 1
28373 EX07 Ver 1
28373 EX08 Ver 1

Appendix E
Construction Methodology Sequence

28373 SKA & SKB Rev 1 - Assumed Construction Sequence

Appendix F
Basement Impact Assessment

Site Investigation and Ground Movement Assessment Report Ref J19392
(Supplied Separately)