46 Holmdale Road, NW6 1BL

Structural Methodology Report

Brief

This document is the structural methodology report carried out for the purposes of the planning application for the proposals at 46 Holmdale Road. It should be noted that this report outlines and suggests the assumed construction at this stage. It should also be noted that, as is standard for works of this type, the main contractor will be fully responsible for the design and erection of all temporary works.
The purpose of the report, with the Basement Impact Assessment prepared by LBH Wembley Engineering, is to demonstrate that a subterranean development can be safely constructed on the particular site having regard to the sites existing structural conditions and geology.
The Basement Impact Assessment prepared by LBH Wembley Engineering references the stages set out in the CPG4 Basement & Lightwells planning document.

Richard Tant Associates

Richard Tant Associates are consulting Civil and Structural Engineers comprising a number of chartered engineers. We have experience in post basement construction and have successfully carried out a number of basements in the Borough Camden from the Basement Impact Assessment stage through to construction on site.

Description of Proposed Basement and Internal Works

46 Holmdale Road is a mid-terraced brick, Victorian, three storey house comprising timber floors and load bearing masonry walls with a partial basement. The basement level is approximately 1.6m below the pavement level. There are no signs of significant differential movement and the property appears to be in sound structural condition.

The proposal is to lower the floor level of the existing basement by approximately 1.1m with a formation level approximately 3.1m below pavement level. The proposal is to extend the front lightwell slightly and to extend the basement out to the rear to line up with the rear wall of the main section of the house.

The proposed works also include a single storey rear extension that plan to commence after the basement works.

Please refer to the drawings prepared by the Architect 2x2: A100, A150, A160 and the existing survey drawings.

Basement with Ground Floor Extension
The proposal is to underpin under the main house with 350mm thick reinforced concrete retaining walls to a depth of approximately 1.5m below current basement level. At the front of the property the lightwell is due to be extended and a new 350mm thick reinforced concrete retaining wall proposed. Due to the proximity to the pavement and possible services under the pavement temporary trench sheeting is shown to safeguard the pavement and services. A steel frame will be introduced to support the internal spine wall of the house. After the basement is structurally complete the single storey rear extension will commence.

A geotechnical and hydrological report including flood risk assessment has been carried out by LBH Wembley Engineering; a bore hole showed 0.75m of made ground at the garden level underlain by

firm London Clay. At the existing lightwell level a bore hole was completed and showed 0.4m of made ground underlain by firm clay. No water seepages were encountered.
Based on this geotechnical information, the new basement construction is to comprise reinforced concrete underpinned retaining walls with an internal cavity drain system. This will be described in more detail throughout this report.

Trial holes have been completed and inspected, the information is shown on drawing SM01.

Please refer to our drawings 4435-SM01, SM02, SM03, SM04 and SM05 for the suggested sequence showing temporary and permanent works.

Structural Stability of the Existing buildings

The proposed basement is to be constructed between reinforced concrete underpinned party walls and reinforced retaining walls. The reinforced concrete underpinned party walls and retaining walls will be designed to retain the ground pressures and possible accidental water pressures and distribute the vertical load down. Refer to calculation sheets for justification of the retaining walls: 4435-P1 et seq. Refer to the damage assessment section of the LBH Wembley Engineering report confirming these works are not expected to create any significant differential settlement or have a detrimental effect on the structural stability of the existing building or neighbouring buildings. Due to the expected damage category 1 being very slight, mitigation measures have been taken. A monolithic reinforced concrete box tied into the retaining wall structure has been adopted rather than having an independent retaining wall structure and independent lower ground floor slab structure. Also propping is described until the basement slab has been fully completed and cured to create a stiffer and more robust support structure.

Supporting the Proposed Loads

The vertical loads from the proposed basement will be supported via reinforced concrete underpinning or retaining walls into strip footings. The loads from the internal floors will be supported via the new steel frame in turn supported via the new pad and strip footings. Refer to the calculation sheets for justification of the retaining walls: 4435-P1 et seq.

Structural Integrity of Surrounding Structures and Utilities

We understand there are no public utilities, tunnels or infrastructure within the area of influence of the proposed basement works apart from the existing foundations mentioned above and therefore we do not expect any impact regarding the structural integrity to these items.

Slope Instability

The proposal is to construct the walls in stages that will be temporarily propped until the final base is constructed and cured. No battering back is proposed. We refer to the LBH Wembley Engineering Basement Impact Assessment where the risk of slope instability is addressed and discharged.

Impact on Drainage and Surface Water

We do not expect there to be any existing public drainage within the area of influence of the proposed basement works. With regards to surface water the basement is mainly below existing hard standing. Refer to the Surface Flow Assessment and Flood Risk Assessment in the LBH Wembley Engineering report.

Geological & Hydrological Concerns

The application is informed and supplemented by the hydrological section of the geotechnical report and flood risk assessment carried out by LBH Wembley Engineering and identified in their Basement Impact Assessment report.

Impact on Trees

There is a plumb tree at the rear of the property, ACS (TREES), an Arboricultural consultancy are involved and have prepared a protection plan for this tree. We can confirm the depth of the proposed footing are such that they will not be detrimentally affected by the tree.

Temporary Works

Please refer to the proposed drawings: 4435-SM01, SM02, SM03, SM04 and SM05 enclosed, for details of the temporary works. When the contractor is appointed he will be fully responsible for the temporary works including the design and erection.

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