15 Rudall Crescent

Structural Methodology Report

Brief

This document is the structural methodology report carried out for the purposes of the planning application for the proposals at 15 Rudall Crescent. 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 GEA Ltd, is to demonstrate that a subterranean development can be constructed on this particular site having regard to the sites existing structural conditions and geology.
The Basement Impact Assessment prepared by GEA Ltd references to 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

15 Rudall Crescent is an end of terrace red brick, four storey Victorian house comprising timber floors and load bearing masonry walls with an existing small cellar. There are no signs of significant differential movement and the property appears to be in sound structural condition.

The proposal is to deepen the existing cellar by approximately 0.5m and to enlarge slightly in width by about 1m. The proposed basement is within the perimeter of the original house.

Basement Works

A geotechnical report has been carried out by GEA Ltd; the desk study confirms made ground overlying firm greenish grey to orange-brown silty clay and carbonaceous material. Water was recorded in the trial hole, however we note the GEA Ltd report highlights that groundwater inflow is likely to be relatively slow. 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. Please refer to our drawings 4447-SM01, and SM02.

Supporting the Proposed Loads

The vertical and horizontal loads will be supported via reinforced concrete underpinning with the vertical loads from the internal floors and ground floor walls being supported via the new steel beam in turn supported via new internal proposed basement walls. Refer to calculation sheets for justification: 4447-P1 et seq.

Structural Integrity of Surrounding Structures and Utilities

We do not expect there to be any 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 therefore confirm slope instability will not be initiated due to these works. Please refer to the proposed drawings, 4387-SM01 and SM02.

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, this is not applicable as the basement is within the perimeter of the existing building. Also refer to the surface flow assessment in the GEA Ltd. basement impact assessment.

Geological & Hydrological Concerns

The application is informed and supplemented by the hydrological section of the geotechnical report and flood risk assessment carried out by GEA Ltd and identified in their basement impact assessment.

Structural Stability of the Existing Buildings

The proposed basement is to be constructed between reinforced underpinning. The reinforced concrete underpinned walls and reinforced concrete walls will be designed to retain soil and water pressures. Refer to calculation sheets for justification. 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.

Impact on Trees

There are no trees, we are aware of, within the zone of influence of the proposed basement.

Temporary Works

Please refer to the proposed drawings, 4447-SM01 and SM02 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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