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15 CLEVE ROAD
LONDON, NW6

Modification of existing basement
Three storey rear extension
Internal alterations

STRUCTURAL STABILITY REPORT

To be read in conjunction with:-

The Basement Impact Assessment Report by Soiltechnics Ltd, environmental and geotechnical consultants

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1. INTRODUCTION

Jampel Davison & Bell have been appointed by The AJR Charitable Trust to provide structural engineering services for the proposed works to No.15 Cleve Road, NW6.

The proposed works entail the following:-

- Lowering of the front part of the existing basement by approximately 330mm.
- Extension of the existing basement at the front of the property to form lightwells and additional space beneath the entrance steps.
- Replacement of the existing single storey rear extension with a new three storey extension.
- Internal alterations.

Soiltechnics Environmental and Geotechnical Consultants have been appointed by the Client to undertake a Stage 1 screening study to the requirements of CPG4.

2. EXISTING BUILDING

The existing building is a five storey Victorian detached building inclusive of a basement and loft accommodation.

The original building generally consists of 350mm thick loadbearing solid brick elevations, two loadbearing spine walls constructed in 215mm brickwork on the basement and ground floor and in timber studding on the upper floors and timber floors with joists spanning side to side between the side elevations and the spine wall.

A number of alterations have been carried out to the original building over the years.

A single storey basement extension was constructed in the 1980's. The construction of this incorporates reinforced concrete walls below ground.

Part of the loft space has been converted into living accommodation.

A lift and staircase have been added to the building.

2.1 Trial Hole Information

A number of trial holes have been excavated to expose existing foundations to this property. The information revealed is shown on the accompanying drawings.

The foundations to the original building consist of brick corbelling on rubble concrete footings founded onto firm London clay.

Hand auger holes have confirmed the clay to a depth of approximately 2 metres below basement level.

A 1.5m hand auger hole in the rear garden confirmed 300mm of topsoil/made ground followed by sandy silty clay.

3. ADJACENT STRUCTURES

The adjacent buildings are of the same era and of similar construction to No.15.

No.17 is situated on the east side of No.15 on the uphill side of the gently sloping Cleve Road. Its ground floor level is approximately 350-400mm higher than that of No.15. This building also has a basement at the rear and along a central corridor extending the full depth of the building; the front corner room has a void beneath the ground floor but not a full depth basement. The clear distance between the side elevation of the two buildings is of the order of 2.3 metres.

No.13 is situated on the east side on the downhill side of No.15. This building has a shallow basement extending over the entire footprint of the building. The clear distance between the two buildings is of the order of 3 metres.

4. PROPOSED STRUCTURE

Drawing R9730/1&2 accompanying this report show the general principles of the substructure scheme and the relationship between the substructure of this building and the adjacent buildings.

4.1 Lowering of Front Part of the Basement and Lightwell Extension at the Front

The lowered basement will have a new reinforced concrete ground bearing slab. The depth of excavation, allowing for a screed and thermal insulation is anticipated to be in the order of 730mm below the existing finished floor level.

The existing loadbearing walls will need to be underpinned to a moderate depth as indicated on drawing R9730/1&2. The underpinning will be done by an experienced contractor in accordance with a strict specification using long traditional “hit and miss” method.

The drawings also demonstrate that, where the adjacent buildings have a basement, the proposed excavations are well above the 45 degree load spread line taken from the foundations of the adjacent buildings.

The only exception is to the front section of No.17 which has no full depth basement. Over this extent the excavation for the underpinning is likely to encroach very slightly into the 45 degree foundation load spread line. However the underpinning will be constructed in traditional hit and miss fashion and this temporary, slight encroachment is therefore of no significance.

4.2 Rear Extension

The existing single storey and proposed three storey rear extensions are situated approximately 1.2 metres below garden level. The nearest tree in the rear garden is a Sycamore situated about 18 metres from the building. Tree roots are therefore not an issue in the design of the foundations and 1 metre deep traditional strip foundations placed onto the clay should suffice.

4.3 Internal Alterations

Internal alterations should be designed with the aim of improving the robustness of the building.

Where loadbearing walls are removed in the basement, steel picture frames can be employed in order to support the building above, to spread foundation loadings and to maintain lateral robustness to the building.

The rear of the building will be reconstructed internally.

5. Basement Impact Assessment

The study and report by Soiltechnics Ltd expresses the opinion that the impact assessment needs only be taken to stage 1 – 'screening'.

5. CONCLUSIONS

The proposed works involve a moderate depth of excavation for new and underpinned foundations.

The proposed excavations are generally contained well above the 45 degree load spread line from the foundations of the adjoining buildings and should therefore have no impact on the structural stability of the adjoining buildings.

The structural solutions proposed are robust and conventional and fully designed by a qualified structural engineer and constructed by an experienced and skilled contractor would ensure the stability of the buildings and limit ground movements to acceptable levels.

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