

20 ALBERT TERRACE MEWS.

STRUCTURAL ENGINEER'S CONSTRUCTION METHOD STATEMENT IN SUPPORT OF PLANNING APPLICATION

Job No: 16110

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Revision

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PREAMBLE

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TERMS OF REFERENCE

We were appointed in May 2016 by the client to prepare a supporting Construction Method Statement in support of a Planning Submission for the Proposed Basement and refurbishment at 20 Albert Terrace Mews, NW1.

Introduction

1.0 Introduction

This report has been prepared as a supporting document to the planning application for the proposed basement and associated structural works at 20 Albert Terrace Mews. The report is produced with reference to Camden Planning Guidance CPG4 and predominantly presents the structural scheme for the proposed basement work. The construction methodology, as described herein demonstrates the feasibility of the proposed works with particular regard to the stability of the existing and adjacent structures during the works.

Limitations

This report and the structural information produced to date is based on a visual inspection of the building, review of the survey plans and proposed architectural plans. There have been trial pits carried out at the front of the building and some limited investigation carried out internally. At the outset of the works, a full survey of the existing structural elements will be carried out to confirm the proposed scheme as the most suitable structural solution.

2.0 The Site and Existing Building

20 Albert Terrace Mews is a detached residential property situated on the south side of the Mews, which backs onto the rear gardens of No 20 Prince Albert Road. There are properties immediately adjacent on both sides with approximately 75-100mm gap between the main flank walls. At the rear, No 20 Prince Albert Road is approximately 9.0m away and the houses opposite are 7.5m away.

The existing building is a 2-storey structure, broadly square in shape, with load-bearing brickwork external walls and timber floor joists at the 1st floor level. The roof structure is a largely flat timber roof apart from the central section, which has a shallow slope falling to each side. At the ground floor level there is a ground bearing concrete slab throughout. The foundations, where checked at the front of the property, are mass concrete strip footings to a minimum depth of 1.75m below the existing ground level.



Figure 1 – Aerial View



Figure 2 – Current Street Map

Site Information

3.0 Ground Conditions/Geology

The 1994 geological map for the area at 1:50,000 scale sheet number 256 "North London" shows the site to be underlain by London Clay. This is confirmed by excavation of trial pits at the front of the property and existing boreholes carried out in the vicinity of the site as published by the British Geological Survey. Refer to Appendix A to borehole logs.

Slope stability

The site is considered to be generally level and not cut into the side of hills or valleys therefore slope stability is not considered to be a problem.

4.0 Watercourses, Site Hydrology and Existing Trees

A desktop study indicates that the nearest watercourse to the site is Regents Canal approximately 90m south of the site and roughly 5m below the ground level of the site. The canal also runs to east of the site, approximately 135m away. A review of "The Lost Rivers of London" indicates that the historical River Fleet lies approximately 800-850m to the northeast of the site.

The hydrogeology of the site is determined by the superficial geology of the Head Deposits and the solid geology of the bedrock, the London Clay Formation.

Due to the nature of the underlying soil, London Clay, designated as an 'unproductive strata' by the EA we would not expect the proposals to have an adverse affect on the ground water flow in this area or be a concern to the neighbouring properties.

Examination of the EA records indicates that the site is not within a Groundwater Protection Zone (SPZ)

The possibilities of encountering ground water within sub-soils must however be borne in mind as seasonal variations in the ground water are to be expected. The contractor will be required as part of his method statements measures in place to deal with ground water should it appear during the main excavations & general basement works. Regardless of site water conditions the retaining walls will be designed to BS 8102 for a head of water at 1.0m below prevailing ground level.

Flooding

A check on the Environment Agency website has shown that the area is not at risk flooding from rivers or seas. The risk of surface water flooding is indicated on the EA Maps as being low to medium. It is however understood that there has been no history of flooding or surcharging of local combined sewer systems in periods of heavy rainfall in the Mews. The street was not flooded during extreme rainfall events in 1975 and 2002.

It is therefore considered very unlikely to have an impact on the development and a qualitative assessment carried out by Card Geotechnics Ltd in the Basement Impact Assessment reaches the same conclusion.

Existing Trees

There is a pleached hornbeam hedge on the other side of rear right hand boundary wall within No 21. This is described in the report carried out by John Cromar's Arboricultural Company Limited as a hedge rather than a tree and further information is provided with regard to the proposed works. Other than this nearest significant tree is approximately 10m away to the west along the Mews to the right hand side of No 21. There were no roots encountered within the trial pits carried out at the front of the site and the proposed excavation works will not affect the tree.

5.0 Existing Utilities and Underground services

A Thames Water Asset search has been carried out and included in Appendix D.

Gas and Electricity enter the property to the front RHS of the building and will be redirected to the plant room in the basement, same location.

The services will be diverted and replaced to modern day standards where necessary as determined by the Mechanical and Electrical Engineer for the project. All services that are required to pass through new structure will be sleeved and articulated accordingly to allow for future movements and settlements of the surrounding structure.

6.0 Boundary Conditions

The front elevation of the property faces directly onto Albert Terrace Mews to the north, with a pavement approximately 1.0m wide separating the site from the Road. The east and west flank walls of the building about No 19 and 21 where there is a small gap between 75-100mm between the walls.

The main rear wall and rear boundary wall back onto the rear garden of No 20 Prince Albert Road.

The right hand boundary wall to the rear courtyard is located within the garden of No 21 Albert Terrace Mews and the front boundary wall adjacent to the car port straddles the boundary of No 19/20.

Development Proposals

It is proposed to refurbish the existing building or renew to modern standards including the construction of a new basement structure below the footprint of the existing building.

7.0 Sub-structure & Basement Construction

The proposals for the new basement construction take account of the development proposals as indicated on the architect's drawings, anticipated ground conditions, the stability of the neighbouring properties, health and safety considerations and the physical constraints of the site.

It is intended to construct the new basement below the existing building and the small patio area at the rear. This will be largely achieved by underpinning the perimeter walls using reinforced concrete L-shaped pins that will effectively act as retaining walls and transfer the vertical loads from the external walls to the new basement level. At the rear wall and front left hand boundary wall there will be mass concrete underpinning carried out in two stages to enable excavating safely to formation level. In conjunction with the underpinning works there will be short lengths of contiguous piled wall at the rear right hand corner of the site and at the front left hand side. The walls will be temporarily propped during the construction phase generally as indicated the Basement Construction Sequence, see drawings 16109/MS.01&MS.02, and permanently propped by the new basement RC slab and ground floor composite metal deck / concrete slab.

All underpinning would be carried out in a set and agreed hit/miss sequence taking into account propping of existing walls and foundations. Assuming the works are carried out to best practice and in accordance with the drawings and specifications we would not expect significant movements and the front elevation & garden boundary walls should remain stable and unaffected by the works. A contractor's method statement will be required at this stage for comment by the Structural Engineer and Architect. (Refer to Appendix B for Outline Construction Statement & Underpinning Specification.)

8.0 Potential Ground Movement to Adjoining Properties

The building is detached from the neighbouring properties and although the houses on both sides are in close proximity the methods to be adopted for the construction of the basement as set out in the proposed methodology and sequence of works is expected to minimise or negate ground movement. Further in depth analysis of potential ground movement is carried out in the Basement Impact Assessment by Card Geotechnics Ltd.

The category of movement expected for this element of work would be category 0-1 of the Building Damage classification table based on Boscarding and Cording / Burland and Potts.

9.0 Excavation of Soil

The soil will be excavated and removed by hand, bagged and moved up to ground level for transfer to a normal 7m skip at a designated location on Regents Park Road. The footpath and street adjacent to the site will be cleaned each evening. The frequency of vehicle movement is referred to in the Traffic Management Plan and Construction Management Plan, deliveries and removal of spoil have been scheduled to minimise disruption to access through the mews.

All of the works, particularly the sub-structure are to be carried out in a manner in which minimises any noise and vibration that may affect the neighbouring properties.

The engineer will make site visits at regular intervals during the works to check that they key stages as shown in the sequence of construction are being carried out satisfactorily. The ground works contractors will provide detailed method statements for the works and temporary propping to the basement for approval by the engineer prior to commencement of the works.

10.0 Waterproofing and Drainage systems

The proposal is to provide a cavity drainage arrangement as the waterproofing system to give a grade 3 basement to BS 8102. The system will require an arrangement of channels or drainage points and a sump chamber that will pump any collected water to the existing drainage connection. The cavity drained system using a studded membrane (Delta) applied to underpinned retaining walls. Sump pumps and drainage will be required to remove any water ingress if the cavity drain system is installed and these would need to be designed by a specialist drainage engineer.

The amount of water expected to enter the drainage system as a result of the proposed basement is negligible and not considered a risk to the existing sewer system.

Sump pumps and drainage will be required to remove any water ingress if the cavity drain system is installed and these would need to be designed by a specialist drainage engineer.

11.0 Demolition, Recycling, Dust/Noise Control & Site Hoarding

The demolition works are to take place within the hoarded confines of the site. Above the 6 foot plywood hoarding line any scaffolding is to be clad with monoflex sheeting to minimise any dust or debris from falling onto the neighbouring gardens.

Materials such as stock-bricks, re-useable timbers, steel beams etc are to be recycled where possible.

To minimise dust and dirt from the demolition phase of the project, the following measures shall be implemented:

- All brickwork and concrete demolition work is to be constantly watered to reduce any airborne dust.
- Demolished materials are to be stored in the holding space within the boundary of the hoarding and offloaded to a skip at a location on Regents Park Road twice per week.
- The pavement at the front of the property is to be washed and cleaned down each day.
- Any debris or dust / dirt falling on to the street and public highway will be cleared as it occurs by designated cleaners and washed down fully every night.

Building work which can be heard at the boundary of the site will not be carried out on Sundays and Bank Holidays and will be carried out within working hours as agreed with the council.

12.0 Super-Structure

The superstructure works will comprise complete refurbishment / remedial works or rebuilding to modernise the existing building. This will entail alterations to the upper floors as shown on the proposed upper floor layouts.

The proposed superstructure works have been taken into account with regards to installing as much of the main permanent support structure as possible in conjunction with temporary support systems to allow the basement excavations to progress safely. This will entail the installation of plunge piles internally to support the ground floor beams as indicated in the outline sequence of construction works below in Appendix B.