

CONSTRUCTION METHOD STATEMENT

For
Basement Construction
at
76 Fleet Road
London
NW3 2QT

On behalf of
Mr. Matt Godfrey



STRUCTURAL ENGINEERING CONSULTANTS

Brentano House, Unit 5, The Exchange

Brent Cross Gardens

London

NW4 3RJ

www.fridum.com

info@fridum.com

T: 0208 090 4802

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Report By:	A Chaudhry, BEng, Msc	21 st June 2016
Checked By:		
Revision		


PREAMBLE

The following method statement is based on our experience of similar projects. We have utilised some of the information from 3rd parties' documents, such as, ground investigation report, planning permission drawings and access statements etc. for the production of this document. We have only carried out a preliminary site visit to inspect the property with the exception of any areas that were covered, unexposed or inaccessible without any exploratory opening up or site tests.

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1. BACKGROUND

This construction method statement is produced to facilitate the planning permission required for the proposed construction works including a basement for No. 76 Fleet Road, London, NW3 2QT 0SR. The document is to be submitted to Camden Council's planning department for review and is to be read in conjunction with all the relevant documents, such as, structural design calculations, permanent and temporary works drawings etc. The document is to be considered as preliminary at this stage, and hence should not be used for any other purposes than intended, e.g. party wall awards or construction works etc.

2. DESCRIPTION OF THE STRUCTURE


76 Fleet Road is a three -storey Victorian terraced house comprising of a ground, first and second floors. The house is of traditional construction consisting of masonry external walls, a combination of masonry and timber studwork internal walls, timber floors and a timber roof structure. The property appears to be in sound condition without signs of distress or deterioration of structural significance where observed visually. The neighbouring properties appear to be of similar construction and condition as observed visually from the outside. 76 Fleet Road shares a party wall with both No. 74 and No. 78 Fleet Road.

3. GROUND CONDITIONS

A Geo-Environmental Interpretative Report was carried out by Chelmer Consultancy Services in January 2016 on behalf of the client. According to the report, the ground water table is relatively high, with the highest level recorded at 1.25m below ground level. The geology is known to be London Clay formation at 3.0m and greater depths with anticipated bearing capacity to be 125kN/m². The above soil formation is in agreement with British Geological Survey website. The preliminary structural design for the permanent works of the substructure is therefore based on the above.

4. IMPACT OF PROPOSED CONSTRUCTION

The basement extension is to be carried out by underpinning the party walls, creation of retaining walls to the rear and formation of the floor slab, all in a sequential construction of 1m width with no adjacent underpins to be constructed within a 48-hour period, in order to ensure the concrete to reach sufficient strength, with a maximum of 2 sections open at any one time on any wall. Sacrificial back shuttering should be used, where required, to avoid any ground loss and to retain the soil behind the underpinned sections using non-deteriorating sheets.

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The impact of the above works on the property and the adjoining properties including any slope instability, ground movement or settlement can be minimised by ensuring that the works are undertaken by a competent contractor strictly in accordance with the method statements, adequate implementation of temporary works, compliance to the structural design and the drawings. In practice, some settlement may occur but should be of magnitude to be considered as superficial. The construction sequence and implementation of temporary works would ensure the defence against any slope instability which is only possible to occur during the temporary works.

There are no known man-made cavities in the vicinity of the proposed works. It is proposed that the new drainage from the proposed basement extension, for the foul and surface water, is to be connected to the existing drainage system.


The existing utility services are to be maintained during the construction. Although, the exact location of these services is to be confirmed prior to the works commencement, the impact should be negligible as these are to be maintained. If any diversion is required, then the contractor is to notify the utility owners prior to commencement of works for approvals.

There are no known trees that will be affected by the proposed construction.


5. CONSTRUCTION SEQUENCE

Refer to Fridum Ltd's drawings STRU-1001, STRU-1002, TMP 1001 and TMP 1002 (Appendix A) for the generalised illustration of the following construction sequence.


1. Form the opening to the front by carefully removing the existing windows at ground floor ensuring that the existing lintels above the windows are adequate. Allow for temporary supports if necessary. The removed windows are to be stored carefully for re-use or to be allowed for replacement.
2. Erect a temporary platform to the front bridging over the pedestrian pavement subject to necessary permits. Arrange to place a skip or a container for spoil storage either on the temporary platform or on the road within the front premises of the property subject to necessary permits.
3. Carefully remove part of suspended ground floor timber joists in order to set up a conveyor belt to convey the spoil from the excavation to the skip via the front opening.

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4. Commence the basement excavation via underpinning forming access pits in a 'hit and miss' sequence in accordance with Fridum Ltd's drawing **STRU-1001** and the **underpinning specifications (Refer to Appendix A and section 7 of this document)**. The access pit opposite the wall will be sheeted with ply and braced and strutted with timber. The shuttering and propping is to commence in stages as the excavation progresses after every 0.5m depth. This is to ensure that the access pit is supported for every 1m width x 0.5m depth in order to limit any movements to the soil and hence avoiding any collapse or loss of soil (Refer to Photo 1 below). Reinforcing steel will then be fixed and the outer shutter positioned and braced. Concreting of the base and wall stem will be carried out, as soon as possible following excavation. All the pins upon completion (setting of concrete) are to be dry packed using mechanically ramming of the non-shrinkable grout the following day.
5. The main contractor is to ensure that there is monitoring in place to note any soil loss from the party wall side for each underpin. This monitoring is to be recorded in units of volume available as a data sheet along with relevant photographs. In case of any soil loss recorded, this will have to be reported to the consultant engineers and the party wall surveyors with immediate effect so that the remediation measures can be proposed depending upon the nature and amount of the loss.
6. **In case of any water inflow into pin excavations from the head deposits, especially in wet weather**, local pumping is to be provided in each pin excavation as required to ensure dry working conditions. Water collected from any pumping operations is to be settled and filtered before being discharged into the existing surface water drainage.
7. Install the horizontal and other temporary props as required during various stages of excavation and concreting as illustrated on the drawings TMP-1001 and 1002. Allowance is to be made for horizontal propping across the site at existing formation level using proprietary props, such as Mabey or similar approved.
8. The temporary props are to be supported on the concrete bases of the already constructed pins. Where this is not possible then the contractor is to allow for temporary concrete pad bases to support the props.
9. Upon completion of all the pins, carry out the bulk excavation to the central area. Once the bulk excavation is down to approximately 0.5m above the proposed formation level, subject to the temporary works design, allow for second level horizontal props to be installed. Progress the excavation to the formation level.

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10. Install the below-slab drainage for foul and ground water, sumps and pumps as per the client's appointed consultant's specifications and drawings. The pumps will discharge the foul / ground water into the existing sewer system.
11. Construct the new reinforced concrete slab which will prop the pins in the permanent condition on each side in accordance with the design intent.
12. Remove the horizontal props once the new slab has gained sufficient strength.
13. Install the tanking membranes and insulation in accordance with the client's appointed consultant's specifications and drawings.
14. Apply finishes to the basement floor in accordance with the client's appointed consultant's specifications and drawings.

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Stem reinforcement

Sacrificial marine ply or similar sheet to the retaining face

Timber strutting and sheeting to all faces

Photo 1- Typical Pin Access Pit (View from top down)

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6. STRUCTURAL DESIGN CALCULATIONS


Refer to Appendix B for the structural design calculations.

7. GENERAL UNDERPINNING SPECIFICATION

1. The perimeter walls of the new basement shall be underpinned in reinforced concrete grade C32/40.
2. Underpinning bases shall be excavated in short sections not exceeding 1m in width.
3. The sequence of the underpinning shall be such that any given underpin will be completed, dry-packed and a minimum period of 48 hours lapsed before an adjacent excavation commenced to form another underpin.
4. In the event that the existing foundations to the wall are found to be unstable, sacrificial steel jacks shall be installed underneath the foundation to prop the bottom few courses of bricks. These steel jacks shall be left in place and shall be incorporated into the concrete stem.
5. In the event that the ground is unstable, lateral propping shall be provided as required to the rear of the excavation and to the sides of the excavated working trench. The front and side faces of the excavation shall be propped using trench sheeting and acrow props as appropriate. Sacrificial back-shutters shall be used to the rear face of the excavation, using marine plywood.
6. Excavation for an underpinned section shall be dug in a day, and concrete to the base shall be poured by the end of the same day.
7. The concrete to the stem of the pin shall be poured the following day. This shall be poured up to within 50-75mm of the existing wall foundations.
8. On the following day, the gap between the concrete and the underside of the existing foundation shall be dry-packed with C32/40 concrete using 5-10mm coarse aggregate and "Combex 100" expanding admixture by Fosroc UK or similar approved in accordance with manufacturer's guidelines.
9. Once the dry-pack has gained sufficient strength, any protrusions of the footings into the site shall be carefully trimmed back using hand tools to avoid causing any damage to the foundation. The protrusions shall be trimmed back to be flush in-line with the face of the wall above.
10. A minimum of 48 hours shall be allowed before adjacent sections are excavated to form a new underpin.


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11. Adjacent underpins shall be connected using B16 dowel bars 1000mm long, 500mm embedment each side, at 300mm vertical centres.
12. Concrete cover to the reinforcement shall be 35mm for cast against shutter or top surface of the basement slab, 50mm for cast against blinding and 75mm for cast against earth.
13. Grade of concrete shall be C32/40 with minimum cement 300kg/m³, maximum free water cement ratio 0.60, slump 100mm.

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Appendix A

Structural Drawings

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Appendix B

Structural Calculations