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CONSTRUCTION METHOD STATEMENT
(Planning Application)

For

Proposed basement works at

70 Gascony Avenue
London
NW6 4NE

05th July 2022

1. Introduction

1.1 Martin Redston Associates has been asked by Mr Felix Padfield, to consider the construction aspects of the proposed development in support of a planning application.

1.2 The report is to be read in conjunction with all other relevant information

FELIXDB ARCHITECTURAL DESIGN

Drg No. FDB-70GA-A001 - 1	Location and Block Plan
Drg No. FDB-70GA-A002 - 1	Existing Ground Floor Plan
Drg No. FDB-70GA-A003 - 1	Existing First Floor Plan
Drg No. FDB-70GA-A004 - 1	Existing Second Floor Plan
Drg No. FDB-70GA-A006 - 1	Existing Roof Plan
Drg No. FDB-70GA-A301 - 1	Existing Front Elevation
Drg No. FDB-70GA-A302 - 1	Existing Rear Elevation
Drg No. FDB-70GA-A306 - 1	Existing Side Elevation
Drg No. FDB-70GA-A401 - 1	Existing Section A-A
Drg No. FDB-70GA-A601 - 1	Photographs
Drg No. FDB-70GA-A201 - 1	Proposed Basement Floor Plan
Drg No. FDB-70GA-A202 - 1	Proposed Ground Floor Plan
Drg No. FDB-70GA-A203 - 1	Proposed First Floor Plan
Drg No. FDB-70GA-A204 - 1	Proposed Second Floor Plan
Drg No. FDB-70GA-A206 - 1	Proposed Roof Plan
Drg No. FDB-70GA-A304 - 1	Proposed Front Elevation
Drg No. FDB-70GA-A305 - 1	Proposed Rear Elevation
Drg No. FDB-70GA-A307 - 1	Proposed Side Elevation
Drg No. FDB-70GA-A402 - 1	Proposed Section A-A

Martin Redston Association (Structural Engineers):
Preliminary Planning Drawings:

Drg No. 21.535 - 01	Basement Underpin Foundation Plan
Drg No. 21.535 - 02	Basement Floor Plan
Drg No. 21.535 - 03	Section 1-1
Drg No. 21.535 - 04	Underpin RC Retaining Wall Detail A-A & Detail B-B
Drg No. 21.535 - 05	RC Corner Detail
Drg No. 21.535-TP101 to TP103	Temporary works proposal to construct new R.C. basement

Basement Design Calculation for planning application

Site Analytical Services Ltd

Factual Report on a Geotechnical Ground Investigation Ref (22/34911-1)
Basement Impact Assessment Ref (22/34911-2)

1. Soil Properties

1.1 From Soil report
The underlying soils consist of made ground up to 0.7m over Silty sandy Clay containing partings of silty fine sand and gypsum crystals on London Clay formation.
Groundwater was encounter at 6.12m below ground level.
The soil has a net bearing capacity of approx. 150-200kN/m^2 at 3.0m depth below ground level and increasing. Calculations show that the existing structure plus the proposed development will load the soil to a maximum of 150kN/m^2.

2. Existing Conditions

2.1 The existing site is a residential property, located in Gascony Avenue, Camden. The residential dwelling has three levels of accommodation plus loft; Lower ground (cellar), upper ground, first floor and second. The residential property comprises of a rear gardens, as well as a three storey building attached to the rear of the property.

2.2 The footprint of the property is approximately 0.10 Hectares.

2.3 The site is essentially level.

2.4 The site is located in with residential properties area.

2.5 Localised investigations indicated that the ground, first and second floors plus loft and roof are generally of timber with joists spanning onto load bearing masonry walls or internal steel beams. The lower ground floor (cellar) consists of predominantly ground bearing concrete slab.

2.6 The existing foundations are anticipated to be brick corbelled strip footings to a depth of approximately 1.0m below ground level.

2.7 Below ground drainage is assumed to runs below the property. This will need to be supported inside the basement and boxed out on completion of the structural works.

3. Structural Proposals

3.1 The proposed structural works consist of the following.

a) Extend headroom of a void in the ground floor for the stair access to the basement.

b) Extend headroom in basement/cellar under the footprint of the main house ground floor.

3.2 The proposed basement's perimeter retaining walls are generally to be formed by extending the existing foundations under the flank party walls of existing building down to the new basement level via reinforced concrete underpins. The front and rear retaining walls will be formed in a similar manner. The underpins are to be 'L – shaped' and installed in a consecutive sequence as the excavation proceeds through the building. The overall widths of the underpins are to match the width of the existing footings in order to maintain the bearing of the existing foundations. All the underpins are to be linked by dowel bar reinforcement.

3.3 The new basement floor will be formed of a 350 mm reinforced concrete ground bearing slab onto concrete blinding. In terms of potential ground heave the slab is to span onto and connect to the perimeter underpins. The new ground floor will be supported by steel beams (Box frames) that span party wall to party wall where appropriate.

3.4 Solutions for waterproofing of the basement slabs and retaining walls will take the form of proprietary drained cavities with a sump and pump within the basement area.

3.5 Existing and new drainage may be collected beneath the basement slab and run via gravity to the front boundary where it may be pumped from a sump chamber to a high level. A new manhole may be required. Where possible all above ground drainage ie the existing drainage, from the main house will be taken out by gravity, diverted above the basement level to run out into the new or existing manhole at the front.

3.6 We confirm these works will not detrimentally affect the surrounding structures.

4. Impact on Drainage and Surface Water

4.1 We understand that there is no statutory drainage within the area of influence of the proposed basement works. With regards to surface water the majority of the proposed basement is below the existing extension and concrete paving. We do not foresee significant impact on the surface water courses but might have some form of dewatering system in place. (Well points)
Well points are commonly used to depress the water table. These are vertical sections of pipe with screened openings at the bottom that keep out soil particles while allowing water to enter. Closely spaced well points are driven into the soil around the entire perimeter of the excavation. These are connected to horizontal header pipes leading to pumps that continually draw water from the system and discharge it away from the building site. Once pumping has drawn down the water table in the area of the excavation, work can continue “in the dry”.

5. Slope Instability

5.1 The ground is essentially to be constructed directly below the existing footprint of the property by extending the party walls downwards. This work will be completed in stages using underpinning techniques that have been established over many years. The proposed contractor is a specialist basement contractor and is very experienced in this type of work.

6 Structural Stability of the Existing Buildings

6.1 The proposed basement is be to be constructed directly below the existing footprint of the property by extending the party walls downwards. This work will be completed in stages using underpinning techniques that have been established over many years. The proposed contractor is a specialist basement contractor and is very experienced in this type of work.

6.2 Number 67’s foundations will be underpinned and reinforced and will bear on strata that will provide a safe bearing with a capacity great of that found at the existing depth. The reinforced walls are designed to resist the lateral earth pressures. The existing building does not show signs of differential movement and these works will not create any significant differential settlement or have a detrimental effect on the structural stability of the adjoining or adjacent buildings.

7 Impact on Trees

7.1 There are existing small trees in the front situated at least 10 m from the building in each direction and some large vegetation in the rear garden of the main house. We believe the proposed basement is not within the zone of influence of the existing trees.

8 Assumed Sequence of Construction

8.1 Site set up:

8.1.1 Deliveries, removals and access for operatives will most likely take place from Gascony Avenue and through the main front entrance. This entrance will be manned throughout operational hours by a banksman to ensure construction deliveries do not post a potential risk to pedestrians.

8.1.2 Construct site hording, entrance gates and possibly to provide protection to passers-by from site activities. It is assumed site accommodation and welfare facilities will be provided within the main house building throughout the duration of construction. Materials may be removed or delivered over the temporary pavement tunnel.

8.1.3 Terminate/protect services, temporarily divert all active drainage.

8.2 Underpinning and excavation

8.2.1 For underpinning, excavate holes in agreed sequencing, a maximum of 1.0m wide x 2m off wall face to proposed depth of basement (approximately 3.0m overall depth). Use proprietary side shutters to provide protection to operatives working at depth and to retain sides of excavations. Excavations to extend up to the edge of existing foundation on the neighboring side of the party wall.

8.2.2 Push reinforcing bars into the side and base of the excavation to form dowels to tie the pins together at 450mm vertical centres. Install reinforcement for the 300mm thick toe and the vertical section of the underpins. Install formwork and pour concrete to form the underpins.

8.2.3 Dry-pack tight between pin and underside of existing wall at least 24 hours after casting pin and back fill hole to top of underpin level, ensuring this is properly compacted. Remove projecting existing footing corbel as necessary – this could be carried out at a later date when the underpinning and subsequent excavation is complete.

8.2.4 All pins cast in sequence such that no two adjacent pins are constructed consecutively within 48 hours of completing and starting an adjacent pin. Leave a central bund of soil as high as possible to allow propping off as required. As the excavation progresses steel beams shall be installed to support the ground floor at approximately 1.0m spacing together with precast concrete lintels in-between.

8.2.5 Once the underpinning is complete install temporary propping to existing wall around stair to allow beam below wall to be installed at ground floor level.

8.2.6 Lay down concrete blinding upon completion of the excavation to protect bearing ground.

8.2.7 Install below-ground drainage where necessary, including any manholes and sumps.

8.2.8 Install any necessary below-slab insulation, tanking/damp proof membrane as required.

8.2.9 Fix reinforcement and cast slab throughout with steps and wall and column starter bar where required.

8.3 Temporary Works

8.3.1 The temporary works will be designed to suit the soil conditions and contractor's method of working. A central bund will be left in the middle of the basement to allow the underpinning to be propped off as the construction proceeds through the property. When the contractor is appointed, he will be fully responsible for the temporary works including the design and erection.

8.4 Install New Steel Beams Beneath Existing Main House Walls:

8.4.1 Provided temporary propping and needling to existing internal and external wall, as necessary. Temporary concrete footings will likely be required beneath props or support off new basement structure.

8.4.2 Install new pad footings, strip footings and ground slabs where specified and removing existing foundations and coincides with these.

8.4.3 Install steel beams, steel columns as required, supported on new basement structure or new foundations. Install padstones where required.

8.4.4 Dry pack tight between new beams and existing walls.

8.4.5 Repair and make good existing structure as required.

8.5 General Monitoring

8.5.1 Fix level stations to entire perimeter of the property and internally where necessary.

8.5.2 Fix level stations to neighbouring property where necessary.

8.5.3 Remote datum to be used

8.5.4 Readings to be taken and returned on a weekly basis until further notice.

8.6 General

8.6.1 At all times the existing structures will be carefully monitored to ensure no damage due to unsupported work occurs.

8.6.2 During the works inspections will be made by the temporary works engineers as deemed necessary.

8.6.3 All work will be carried out in a logical sequence with due regard for health and safety issues. Recommended Underpinning sequence included on foundation level structural drawing.

8.6.4 Any unforeseen problems encountered will be notified to both the permanent and temporary works engineers to enable a solution to be agree

8.7 Follow on Trades

8.7.1 The structural works are now complete and the work can concentrate on making the building weathertight. The finishing trades can then commence through to completion.

Ref 21.535
Prepared by Sam George
Checked by Tanya Kosanovic MEng CEng MIStructE

Signed …… Date: 11th July 2022