16 PILGRIM'S LANE

LONDON, NW3 1SN

BASEMENT IMPACT ASSESSMENT

ENGINEERING METHOD STATEMENT

Project Ref: J002378

EXECUTIVE SUMMARY

The proposed lower ground floor works at 16 Pilgrim's Lane involves the extension of the existing lower ground floor to form a lower ground floor underneath the full footprint of the house, extending the lower ground floor area to the rear of the house and creating an external terrace at lower ground floor level to the rear.

This report assesses the feasibility of the proposed works in accordance with the staged appraisal as set out in Camden Planning Guidance (CPG) for Basements published January 2021. It contains a detailed desk top study which explores the existing condition of the site, the property, adjoining properties, legislative status, bomb damage and other basements/lower ground floors in the vicinity.

A site visit has been carried out to inspect the existing property and those in the vicinity which will be affected by the proposed works and this has enabled an appraisal of the existing properties for any signs of historic or ongoing movement to be made.

A site specific geotechnical investigation was carried out by Geotechnical and Environmental Associates (GEA) in November 2022 to confirm the ground conditions, depth of the London Clay and groundwater levels.

Structural proposals are included along with a viable temporary works construction sequence to allow the installation of the proposed permanent works and enable safe method of construction.

This report shows that the proposed works do not adversely affect the support or stability of the adjacent properties, significantly alter the site hydrology and have negligible impact on any existing or proposed infrastructure.

The proposed lower ground floor follows the guidelines set out in Camden's CPG for Basements.

This report has been prepared by Natasa Williams, on behalf of Green Structural Engineering, as part of the planning application for 16 Pilgrim's Lane.

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

REVISION HISTORY

Rev	Purpose	Date	Prepared	Approved
0	BIA for planning – Engineering methodology	17.02.2023	NW	PB
1	BIA for planning – Engineering methodology	21.02.2023	NW	PB

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

CONTENTS

APPENDICES

The following appendices are included with this report:

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

1. INTRODUCTION

Green Structural Engineering Limited (GSE) have been appointed to prepare a Basement Impact Assessment covering the engineering method statement for inclusion in the planning submission to the London Borough of Camden for the proposed lower ground floor works at no. 16 Pilgrim's Lane, NW3 1SN.

Green Structural Engineering has been involved in over 300+ successful basement and lower ground floor designs in a number of London Boroughs on behalf of private clients, developers and contractors.

The basement and lower ground projects previously undertaken successfully have been of a similar size to that proposed in this application and quite often on a much larger scale and complexity.

Green Structural Engineering also undertake the temporary works design and sequencing for a number of contractors who operate in the London Boroughs of Camden, Royal Borough of Kensington and Chelsea, Hammersmith and Fulham and the City of Westminster.

This experience has positioned GSE at the forefront of basement design and indeed temporary works design for basement and lower ground construction. This experience has led to an in-depth understanding and appreciation of the design parameters that should be considered for all basement and lower ground floor construction projects.

GSE holds professional indemnity insurance and is a member of the ACE.

2. SCOPE OF REPORT

This BIA report reviews the existing information on the site and provides a response to the issues set out in in Camden's Planning Guidance for Basements (CPG). It deals with the structural and construction issues related to the proposed construction of a lower ground floor under the existing property.

This report should be read in conjunction with the following information:

- Green Structural Engineering Desk Top Study (DTS);
- Wolff Architects – existing and proposed drawings;
- GSE - structural drawings for permanent design;
- Geotechnical & Environmental Associates (GEA) - Report on Ground Investigation and trial pits;
- GSE - Temporary works requirements;

This report is produced for submission to the London Borough of Camden as part of a planning application for 16 Pilgrim's Lane and is not intended for any other purposes, e.g. construction or Party Wall Awards.

3. SCOPE OF PROPOSED WORKS

The property at 16 Pilgrim's Lane originally built as semi detached property now shares party walls with both No. 14 & 18 Pilgrim's Lane. The proposed lower ground works include lowering the existing lower ground floor level and extending the lower ground floor area over the full footprint of the house and creating a terrace at the rear at new lower ground level. Several internal alterations to the main building are also proposed as part of the remodelling works. The extent of these works can be seen from the appended structural scheme drawings as well as existing and proposed architectural plans.

The following drawings relate to the elements relevant to this report:

- Proposed architectural layouts - drawings by Wolff Architects.
- Preliminary permanent works structural design - a structural scheme based on the proposals by Wolff Architects.
- Temporary works - an outline design intent showing the requirements for the temporary works during excavation has been carried out by Green Structural Engineering and is included in the appendices and discussed in section 10.
- Outline sequence - an outline sequence for the main works is set in section 11 below.

In the proposed works the major issues impacting on the adjoining property will be maintaining their stability during the demolition and construction stages and the environmental issues associated with the construction. These points are dealt with in the following sections and appendices.

4. DESCRIPTION OF THE SITE AND EXISTING PROPERTIES

a) The Site

16 Pilgrim's Lane stands on the south side of the road. The property was originally a semi-detached house with adjoining no.14 Pilgrim's lane of similar construction. Following extension to the side, the property also shares party wall with no.18 of similar construction.

Based on the measured building survey undertaken by Point 2 Surveyors Limited in Jan 2021, the external levels indicate that the property lies on a site with a change of levels of 82.68mAOD at front of the house and between 80.20mAOD – 79.83mAOD at rear garden. The neighboring sites follow similar level changes.

The site is located to the south of Hampstead Heath, in between Hampstead Underground station and Hampstead Heath Overground station. Location of the site in relation to the surrounding areas is shown on the Figure below.

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

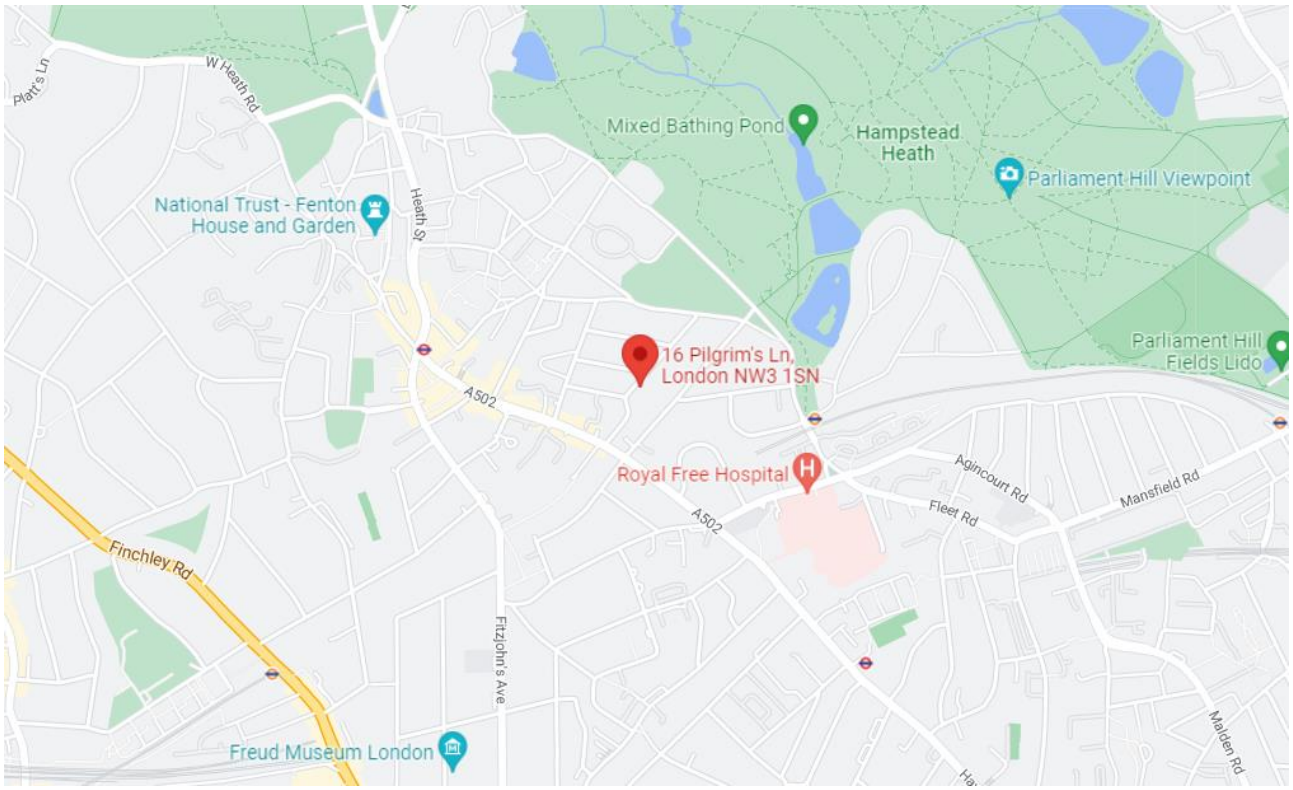

Figure 1: Site Location

a) The Properties

16 Pilgrim's Lane was originally developed in the early 19th century and forms part of semi-detached properties of similar build.

The property consists of lower ground floor under a small proportion of the property at rear extension and three additional storeys, one being loft conversion forming additional bedroom and bathroom. It is of traditional construction with masonry walls and timber floor to all level including timber rafter forming the pitched roof. The existing lower ground floor is assumed to be of masonry construction. The property is in a sound condition structurally following completion of non-intrusive site assessment.

The adjoining buildings to each side (No. 14 & No. 18 Pilgrim's Lane) are of similar construction to No.16 Pilgrim's Lane.

The depth of the foundations to the buildings has been found between approximately 0.66-1.39m below ground level based on trial pits undertaken as part of the Site investigation works by GEA.

b) Legislative Status of The Building

No. 16 Pilgrim's Lane is not listed, but it does lie within the Hampstead Conservation Area (see Figure 4 in the DTS document). The neighbouring properties at no 14& 18 are not listed.

5. GEOLOGY AND HYDROLOGICAL CONDITIONS

The British Geological Survey website indicates the underlying ground condition to be London Clay. The Desk Top Study includes an extract from the British Geological Survey map for the area and copies of the nearby boreholes referenced (figures 7-8). This has been confirmed by the site investigation carried out which has confirmed the ground conditions to comprise of soft to firm to stiff brown mottled grey clay immediately below a nominal layer of made ground found at the surface.

A copy of the site specific boreholes carried by GEA Investigations is included in the Appendices to this report.

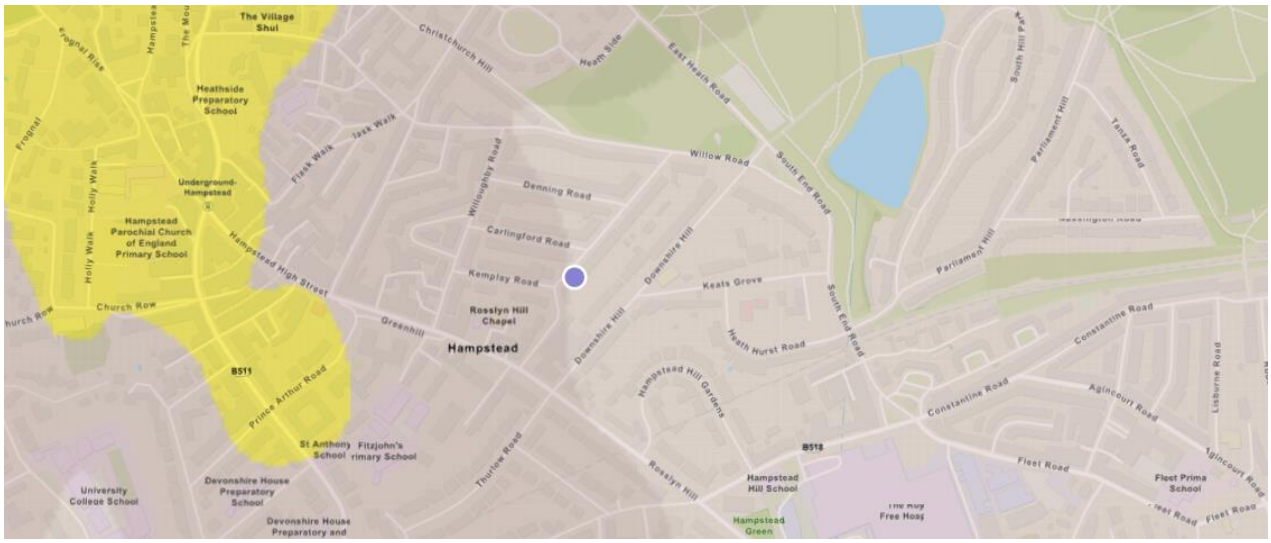

Figure 2: British Geological Survey – Bedrock Geology

Reference to Barton's Lost Rivers map indicates that River Fleet runs approximately 400m to the east, indicating that the lost rivers aren't located in vicinity of the site. There is a possibility that tributaries of this may be present; refer to the appended site-specific geotechnical investigation which outlines any water levels encountered.

Figure 3: Barton's Lost Rivers

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

6. SURFACE WATER

Refer to Figures 14-16 of the Desktop study included in Appendix B, which show that there is a very low risk of river and sea flooding, as well as surface water flooding. Pilgrim's Lane is located in flood zone 1 and is not located in the surface water flood risk hotspots within Camden.

The land registered under the above title number does not fall within a river or sea floodplain. The land is in an area that has a very low chance of flooding from rivers or the sea which means that it is unlikely to flood except in extreme conditions. The chance of flooding each year is less than 0.1 percent (1 in 1000). This takes into account the effect of any flood defences that may be in this area.

Camden's Flood Risk Management Strategy 2022-2027 shows the site to be outside of all local Flood Risk Zones. The site is shown to be located within the Critical Drainage Area, Group3_010 as shown in Figure 16 of the Desktop Study within Appendix B. This is addressed further in Section 3 of the Flood Risk Assessment and Drainage Strategy Report prepared by GSE.

The only other risk of flooding for the lower ground floor will be backing up of the existing drainage, which can be dealt with by the installation of non-return valves and other similar measures.

7. SUBTERRANEAN (GROUNDWATER)

Ground water was not encountered within the boreholes during the site investigation.

The groundwater level is therefore expected to be below the proposed formation level where it is not likely to be an issue.

The site Investigation reported slight seepage in boreholes within rear garden at depth of 3m and perched water in within one of the trial pits. Any water ingress which does occur due to variation in the ground strata will be relatively minor and will be controlled by forming local sumps and pumping without adversely affecting adjacent properties.

To allow for potential burst water mains the retaining wall design will include ground water pressure to -1m below ground level.

An uplift pressure due to ground water of 26kPa is to be allowed for in the lower ground floor slab design.

8. SLOPE STABILITY

GEA's BIA report covers the geotechnical aspects of slope and ground stability and report no issues as per section 13 of the GEA's report.

The temporary condition during the works is dealt with in the temporary works section below.

9. INFRASTRUCTURE AND SERVICES

Reference to the infrastructure searches carried out and included in the Desktop Study (DTS) indicates the following infrastructure in the vicinity of the site:

- The Northern Line tunnel runs to the west and Overground line to the south (DTS Figure 12)
- The site is outside the protected areas for Crossrail line 2.
- The main utilities run along the road and to the side of the property. A foul sewer run to private manhole has been traced along the side of the property leading to no. 8 Downshire Hill.

10. STRUCTURAL DESIGN PROPOSALS

GSE have carried out an outline structural design for the new lower ground floor to confirm the feasibility and buildability of the scheme.

The proposed structural design for No. 16 Pilgrim's Lane at lower ground floor involves reinforced concrete underpinning, as described below, to the existing masonry walls at ground level and lower ground level. The proposed works involve:

i) Reinforced concrete underpinning to existing ground floor and lower ground floor walls. Refer to section R1/2/3 in Appendix C for details. The underpinning will be cast in 1.0m wide bays in reinforced concrete.

ii) Reinforced concrete retaining wall to the rear to form lower ground level open terrace, with underpinning base forming a raft foundation. Refer to section R4 in Appendix C for details. The retaining wall will be cast in 1.0m wide bays in reinforced concrete.

As identified in the planning applications available on Camden Planning Search, it is considered that no basements or lower ground floors are present at neighbouring properties.

The underpinning walls will be constructed in reinforced concrete to provide a robust solution capable of dealing with the earth forces. The permanent walls will be designed using 'at rest' pressures as the walls in this condition will be stable, but 'active pressures' will be used for the temporary condition. The underpinned walls will have a dry lining, incorporating a Delta system or similar, to deal with water vapour or any seepages which occur.

The new retaining walls are designed as cantilever walls to reduce the amount of propping required during construction.

On the party wall line the retaining wall sections only require a bottom prop to maintain stability against sliding as the weight of the wall above resists the overturning.

The retaining wall at the open terrace area at the rear of the property will require temporary propping at high level and low level. At high level this will provided during construction by Multiprops propped off the central berm and in the permanent condition by designing the base of the retaining wall as a raft.

The proposed structural scheme is included in the appendices and general arrangement plan of the proposed lower ground floor and typical sections through party wall.

As part of the permanent design the full retaining wall design is based on the following London Clay parameters:

Angle of internal friction φ' = 23 deg

Unit weight ɣ' = 20 kN/m3

Cohesion - ignore

Intrusive opening up works to confirm the existing structural arrangement, the detailed design of the new lower ground floor will be undertaken at the start of works, once the house is unoccupied, to confirm that the existing structural arrangement are as allowed for in the outline design.

These operations will be carried out as part of the normal design process once planning has been obtained and will be submitted for checking by Building Control or an Approved Inspector.

11. CONSTRUCTION METHOD AND TEMPORARY WORKS REQUIREMENTS

The temporary works design and installation will be the design responsibility of the appointed contractor or consultant, and the information and sequence included within this report is intended only as an outline for guidance and to illustrate that the works can be carried out safely and without detriment to the adjacent buildings.

The proposed works under the house are as follows:

1. Single stage underpinning of existing walls to new lower ground floor level.
2. The underpinning will not be stable against sliding and will be designed to be stable against overturning where possible. Excavations will need to be propped at all times with trench sheets and trench props to prevent any possible ground loss. The propping at low level will be required during excavation and construction of the new lower ground floor slab and will comprise of RMD Slimshor or similar. The underpins will be formed in 1.0m wide bays to again minimise potential ground movement.
3. Single stage formation of the retaining wall at the rear open terrace.

Refer to TW drawings included in Appendix E of this document.

12. CONSTRUCTION SEQUENCE

The sequence described is an outline and the contractor will devise and develop their own final construction sequence once they are appointed. This will need to be circulated to all relevant parties for comments prior to the start of any excavation works.

CONSTRUCTION SEQUENCE

1. Set up hoarding around the front and side of the property. A conveyor belt will be set up through the front room at the ground floor to convey spoil from the excavation to the skip placed on the road for disposal. The conveying will be done using a method that does not impair the safety of pedestrians.
2. All excavation for underpinning will be by hand so as to avoid damage to surrounding walls.
3. All debris will be removed by hand so as not to damage the existing property during transport to the front.

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

4. The existing walls will be underpinned in a single 1 to 5 'hit and miss' underpinning sequence. See drawings MS/01 - MS/02 for the construction sequence of a typical underpin. No adjacent underpin to be constructed within 48 hours.
5. The underpins to form the new lower ground floor will require horizontal propping until completion of the lower ground floor slab.
6. The existing internal walls over (where required) will be temporarily propped using steel beam needles at regular centres, as necessary. Temporary concrete pad foundations may be required beneath the props, or the props may be supported on the concrete bases of underpins already constructed, whenever the location allows.
7. New steel beams and columns will be installed, as specified on the structural drawings. These will be supported on the underpins or on the new concrete foundations. Steel beams supported by existing masonry walls will bear on concrete padstones, as specified on the structural drawings. The padstones will spread the load on the existing masonry with stresses kept to acceptable levels.
8. The top of the new steel beams will be dry-packed to the underside of the existing walls above, and the existing walls will be repaired and made good, as required.
9. When all the underpins to the existing property have been completed, bulk excavation to the whole site will be carried out.
10. Horizontal propping across the site, if required by design, will be installed at high level. This will be via a proprietary propping system such as Mabey props or similar.
11. Once the bulk excavation is down to approximately 500mm above the proposed lower ground floor level, a second level of horizontal props will be installed, if required by the design.
12. Excavation will then be carried out down to formation level.
13. The below – slab drainage for foul & ground water, sumps and pumps will then be installed. The pumps will discharge the foul / ground water into the existing sewer system to the front of the property.
14. The new lower ground floor RC slab (ground bearing slab) will then be constructed.
15. Once the new slab has gained sufficient strength, the horizontal propping across the site will be removed.
16. After the new slab has cured, a drained – cavity layer will be laid to the slab and walls.
17. A layer of insulation will be placed on top of the drained – cavity layer on the slab, and in front of the drained – cavity layer on the walls.
18. Finally a layer of screed will be laid to form the finished lower ground floor.

13. POTENTIAL STRUCTURAL IMPACT ON ADJOINING PROPERTIES

The impact of the proposed works on the adjoining properties will be minimal provided the works are carried out by a competent building contractor following an agreed temporary works sequence.

As with all underpinning projects the major challenge and risk to the adjoining properties, is maintaining lateral support during the excavation and construction stages. Using the underpinning approach means that any arch forces and support of retained soil is maintained and the impact on the other properties due to movement will be negligible. Propping the walls during the works will maintain the stability of the new extension during construction and prevent rotation or slipping of the retaining walls.

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

The building shares party wall with No. 14 & 18 Pilgrim's Lane and therefore Party Wall Agreements will be required, which will include Schedule of Conditions. This will allow any inherent defects in the existing structures to be assessed and accommodated in the proposed design before starting works on site.

The contractor will be required to produce traffic management, detailed method statements and provide detailed temporary works proposals for approval prior to the start of any works.

The design and construction methodology, as described in previous section, deals with the potential risks and ensures that the excavation and construction of the proposed lower ground floor will not affect the structural integrity of the property and adjoining properties.

14. GROUND MOVEMENT ASSESSMENT

A ground movement assessment has been undertaken by GEA. Refer to the site investigation report, included in the appendices, for the ground movement analysis results.

The damage assessment for the party wall with No14 and No18 is within category 0 (Negligible) and category 1 (Very Slight) and therefore the impact will be minimal provided a suitably experienced contractor is appointed and an agreed method of construction works incorporating all necessary temporary works is followed on site.

Referencing BRE Digest 251 – 'Assessment of damage in low-rise buildings' the classification of the visible damage caused by the anticipated movement will therefore be at worst category 1, described as fine cracks which can be treated easily using normal decoration.

15. REDUCTION OF NOISE, DUST AND VIBRATION IMPACT ON NEIGHBORING OCCUPIERS

The main environmental impacts are noise, vibration and dust. Contractors will always be expected to have considered noise and dust impacts related to their operations and to use Best Practicable Means (BPM) to minimise them, e.g. adjust working times, consider use of quieter methods.

The appointed contractor will be a member of the Considerate Contactors scheme.

The appointed contractor will comply with the following standards and practices.

- British Standard BS 5228 (noise and vibration control on construction and open sites).
- BS 6472:2008 (guide to evaluation of human exposure to vibration in buildings).
- Mayor's guidance on 'The control of dust and emissions during construction and demolition'.
- Principles set out within Section 61 of the Control of Pollution Act 1974.

Liaison with neighbours likely to be affected by works is an essential element of BPM and will be undertaken. The contractors will be expected to respond to complaints and resolve where practicable.

Impact on neighbours from vehicle movement will be addressed in the traffic management plan.

As residents are likely to be disturbed by noise, the permitted times of operation, including ancillary activities such as deliveries, will be restricted to standard hours:

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

- 8am – 6.00pm (Monday to Friday);
- 8am - 1pm (Saturday);
- No working is permitted on Sundays, bank holidays or other national holidays.

The appointed contractors will employ quiet working methods and noise generating equipment where practicable. Plant and activities to be employed should be reviewed to ensure that they are the quietest available for the required purpose e.g. 'super silenced' compressors. Work and sound reducing equipment should be regularly maintained to minimise noise emissions.

The contractors will make use of acoustic barriers or enclosures where there is likely to be significant disturbance to residents (subject to safety considerations).

The contractor's management team will employ the following actions to minimise the impact of noise, dust and vibration on the neighbours;

- All site operatives should be briefed and trained in the correct use of equipment and BPM measures in order to minimise noise impacts.
- Site surveys should take place to identify potential problems and facilitate work scheduling, the need for noise control measures, working hours and minimal delay and noise / dust impacts.
- Effective arrangements for the timely communication of site specific noise control measures to site teams should be in place.

To reduce air pollution the appointed contractors will be expected to employ the methods listed below.

- Ensuring that fumes and/or dust do not escape from the site to affect members of the public and the surrounding environment;
- Burning of materials on site is not permitted under any circumstances;
- Dusty activity should be undertaken away from sensitive receptors, with wind direction taken into consideration;
- The site should be regularly inspected for spillages of cement and other powders which should be removed to prevent off-site deposition;
- Dusty material and activities should be dampened down in dry weather. The use of groundwater should be investigated, and water should be reused wherever possible.
- Rubber chutes should be used and drop heights minimised;
- Off-site fabrication, or cutting to size, shall be employed to avoid cutting materials on site whenever possible; and
- Careful consideration should be given to the location and temperature control of tar and asphalt burners.

16. POTENTIAL IMPACT ON EXISTING AND SURROUNDING UTILITIES, INFRASTRUCTURE AND MAN – MADE CAVITIES

Any local service connections on site will be maintained during construction and re–routed if necessary. The exact location of these services will not be known until the works commence. However, the impact will be negligible as these services will be maintained.

If it is necessary to relocate or divert any utilities, the Contractor and Design Team will be under a statutory obligation to notify the utility owner prior to any works. This will be so that they can assess the impact of the works and grant or refuse their approval.

There are no known man–made cavities (e.g. tunnels) in the vicinity of the proposed works.

17. POTENTIAL IMPACT ON DRAINAGE, SEWAGE, SURFACE AND GROUND WATER LEVELS AND FLOWS

A site-specific borehole was undertaken as part of the site investigation and is included in Appendix G. Slight groundwater seepage was recorded in two boreholes and perched water in one of the trial pits. As noted in the Geotechnical report, such pockets are likely to be localised and unlikely to form a general water table, due to clay ground conditions.

Surface water will not be greatly altered as the proposed works will be carried out in London Clay, which itself is a highly impermeable material, and the proposed external terrace extensions are within generally within existing hardstandings resulting in negligible change to the property's 'hard surfaces'.

The proposed works is therefore expected to have a negligible effect on the hydrological flows below this site and the adjacent properties.

The geotechnical investigations and research carried out confirm that the new formation will be into stiff London Clay and ground water is not expected to be an issue.

During construction, some perched water tables or minor seepages may occur due to bands in the clay. In our experience, excavating local sumps and pumping out any water that gathers will deal with any water that collects.

The existing drainage and its condition will be confirmed by CCTV survey prior to the start of works. All existing drainage connections are to be maintained throughout the construction works so avoid impact on these existing systems.

The proposed development will not alter the current state of the property, which will remain as part of a single family residence; therefore there will be no significant increased discharge into the existing drainage and sewage systems and there will be little or no impact on the foul drainage.

18. POTENTIAL IMPACT ON EXISTING AND PROPOSED TREES

No existing trees will be felled during the construction of the proposed works. Small part of rear extension will be formed within Root protection rea (RPA) of a nearby tree, therefore works in the vicinity to be undertaken as per arboriculturist recommendations to ensure the works in the area will not have detrimental effect on the tree root system.

With the above considerations, the impact on existing and proposed trees is negligible.

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

19. CONCLUSION

It can be concluded that the principle of lowering the lower ground floor level and extending the lower ground floor under existing ground floor area can be undertaken without harm to the property or adjacent buildings.

Prepared By

Natasa Williams
Structural Engineer
MEng (Hons)

Approved by

Paul Bennett
Associate
B.sc (Hons) C.Eng MICE

On behalf of Green Structural Engineering Ltd

February 2023

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

APPENDICES

The following appendices are included with this report:

Appendix A - Site Inspection Notes
Appendix B- GSE – Desktop Study
Appendix C - GSE – Proposed Structural Scheme Package
Appendix D - GSE – Design calculations
Appendix E - GSE – Temporary works Intent
Appendix F - Existing and Proposed Building Plans
Appendix G - Geotechnical Survey Report

Unit 21 Berghem Mews, Blythe Road, Hammersmith, W14 0HN
Registered in England Number 06533911

APPENDIX A

SITE INSPECTION NOTES

www.gseltd.co.uk info@gseltd.co.uk tel: 020 3405 3120

APPENDIX B

GSE – DESKTOP STUDY

Unit 21 Berghem Mews, Blythe Road Hammersmith, W14 0HN
Registered in England. Number 06533911

www.gseltd.co.uk info@gseltd.co.uk tel: 020 3405 3120

APPENDIX C

GSE – PROPOSED STRUCTURAL SCHEME PACKAGE

Unit 21 Berghem Mews, Blythe Road Hammersmith, W14 0HN
Registered in England. Number 06533911

APPENDIX D

GSE – DESIGN CALCULATIONS

www.gseltd.co.uk info@gseltd.co.uk tel: 020 3405 3120

APPENDIX E

GSE – TEMPORARY WORKS INTENT

Unit 21 Berghem Mews, Blythe Road Hammersmith, W14 0HN
Registered in England. Number 06533911

APPENDIX F

EXISTING AND PROPOSED BUILDING PLANS

APPENDIX G

GEOTECHNICAL SURVEY REPORT

Unit 21 Berghem Mews, Blythe Road Hammersmith, W14 0HN
Registered in England. Number 06533911