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115 PRIORY ROAD

WEST HAMPSTEAD

LONDON

NW6 3NN

STRUCTURAL METHODOLOGY STATEMENT

PREPARED FOR
Ms. N Cowley & Mr. A Woodgate

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Ref: 20058
Prepared by: AOH
Checked by: DG

1 Athenaeum Road
Whetstone
London N20 9AA

t. 020 8445 7721
e. office@halsteads.co.uk
w. www.halsteads.co.uk

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1 Brief

1.1 The site of the subject structure is located at 115 Priory Road, London, NW6 3NN. The property is situated nearby the junction of Priory Road and Broadhurst Gardens, and the surrounding area is a mix of residential and commercial properties.

1.2 The subject property is a four-storey building including a lower ground floor with all floors and the roof built from timber. It has load-bearing exterior and interior masonry walls and is similar in style and construction to the neighbouring building. And shares a party wall with 117 Priory Road at the right-hand side exterior wall.

1.3 The site is accessible from both Priory Road and Broadhurst Gardens. However, it is also located on a busy thoroughfare, with West Hampstead Underground Station at the end of Broadhurst Gardens. While this accessibility benefits construction logistics, it also requires careful planning to minimise disruption to vehicular and pedestrian traffic during construction.

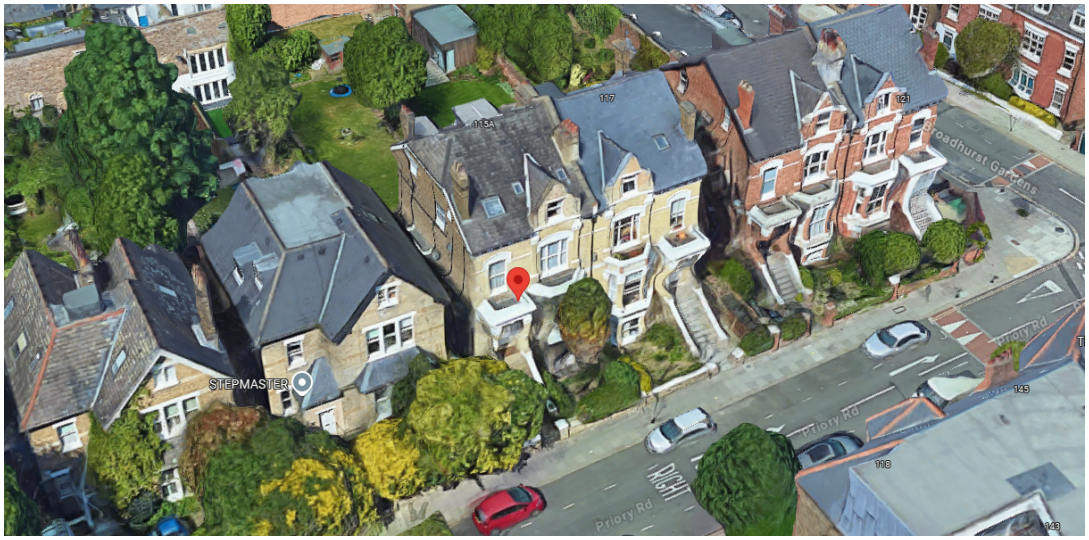

Figure 1: View of Site (Google Maps)

1.4 This report is to be read in conjunction with the following reports and drawings:

- 20058/PL01 – Lower Ground Floor Plan & Underpinning Sections
- 20058/PL02 – Upper Ground Floor Plan

1.5 The proposed works involve lowering the existing lower ground floor by approximately 500mm and requires staged underpinning to support the loadbearing masonry walls. A new reinforced concrete slab will be constructed in situ using A393 mesh to create the new lower ground floor.

2 Screening

2.1 Structural Stability Screening Assessment

I.	Does the proposed lower ground floor involve underpinning of the existing building?	Yes
II.	Does the proposed lower ground floor extend lower than the adjacent structure to the left?	Yes
III.	Does the proposed lower ground floor extend lower than the Party Wall to the right?	Yes
IV.	Does the proposed lower ground floor extend below the Party Wall footing level to the right?	Yes
V.	Does the proposed lower ground floor extend lower than the building structure to the left?	Yes
VI.	Does the proposed lower ground floor extend undermine the public highway?	No

3 Site Investigation

3.1 As no site investigation data was provided, proactive steps were taken to determine the ground conditions through other reliable methods. A comprehensive desk study, using the British Geological Survey indicates that the site is directly underlain by solid deposits of the London Clay Formation, with potentially sacrificial deposits of made ground.

3.2 BGS borehole records from a site approximately 100m away (Reference: TQ28SE514, Broadhurst Gardens) also indicates that soft to firm red-brown granular clay extending to a depth of 5.0m.

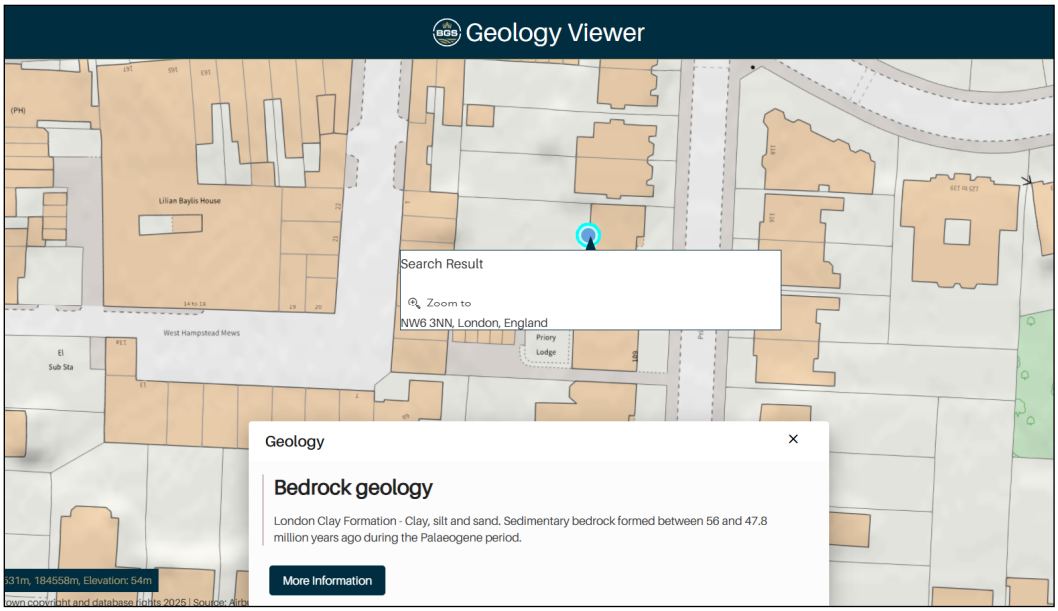

Figure 2: British Geology Survey View of Site

3.3 Three trial pits were excavated at the load-bearing walls down to the foundation, providing valuable insight into the existing ground conditions. This approach further validated the earlier findings and informed the structural design.

3.4 Trial Pit 1 Findings: TP1 revealed a three-corbelled footing bearing on natural ground. This was the widest foundation, indicating it supports the main structural wall for the upper floors.

Beneath the made ground the underlying strata consisted of wet red-brown clay. The water found in the trial pit was unlikely to have resulted from rainwater.

3.5 Trial Pit 2 Findings: TP2 was in the conservatory and the foundation supports an adjacent party wall. The trial pit was filled with water, which the homeowner attributed to recent heavy rainfall, which was confirmed using timeanddate.com.

Due to the waterlogged conditions, it was not possible to determine the foundation depth and width, making TP2 inconclusive. However, we still ascertained some information from the ground excavated. The soil was a moist soft clay with some broken fragments of concrete.

Trial Pit 3 Findings: TP3 was located along the left-hand side exterior wall, adjacent to the alley footpath. The trial pit revealed a two-corbel footing. Beneath the excavated material, the underlying soil consisted of moist red-brown granular clay with a small puddle of water, likely caused by recent rainfall.

3.6 Although small deposits of groundwater were observed in the internal trial pit (TP1), three nearby borehole records (from the British Geology Viewer) indicated no groundwater at depths of up to 5.0 m. A desk study was carried out using .GOV data to better understand the local groundwater conditions based on nearby river, sea, groundwater, and rainfall levels. The River Brent at Brent Cross and Mutton Brook at Hampstead Suburb showed average heights of 0.18 m and 0.79 m respectively.

3.7 The rate of flow of any ground water encountered would likely be low and slow-moving owing to the cohesive nature of London clay. Excavations for the underpinning would not, therefore, be impacted by groundwater, with any inflows being controlled by localised pumping.

3.8 In the absence of direct site investigation data, by reviewing nearby BGS records, geological data, and on-site investigations, a solid basis for making informed decisions about structural design and construction can be made.

3.9 There are small trees and bushes at the rear of the property which will affect the depth of the new footings for the rear extension. The NHBC guidance chapter 4.2 should be used in estimating the required depth of the footings based on their relative position from the trees affecting the development. The depth of strip foundations is not expected to be in excess of 1.5m.

3.10 London Clay is a generally stable material and not typically prone to collapse in short term excavations. Notwithstanding, in line with good construction practice, temporary shoring would be required in all underpinning excavations below the existing building.

3.11 The formation of the proposed lower ground floor at 115 Priory Road should not adversely impact the site, providing adequate measures are taken to protect the surrounding land and properties during construction. This will be achieved by utilising the progressive underpinning type construction in narrow sections and full temporary support. Refer to drawing 20058/PL01 for the suggested sequence of the underpinning works.

3.12 The proposed excavations will be more than 3.0m of a public pavement, which is far enough to avoid traffic surcharge from the road or the light pavement traffic to the front cantilever retaining wall.

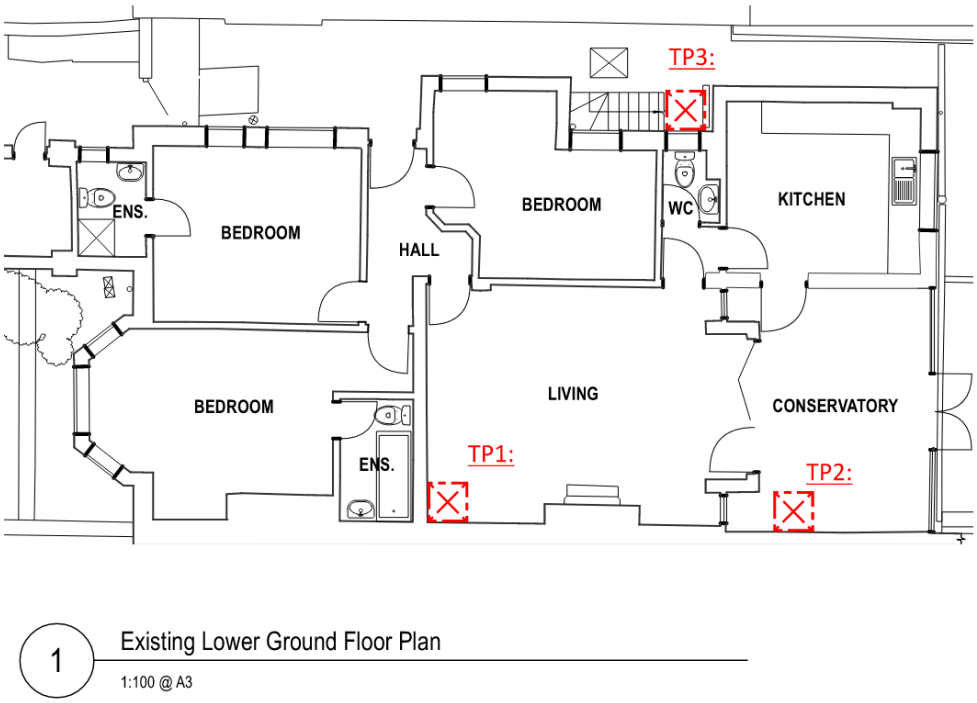

Figure 3: Existing Lower Ground Floor Plan Trial Pit Locations

4 Formation of Proposed Lower Ground Floor

4.1 As lowering the existing lower ground floor impacts the existing foundations, underpinning is essential to maintain structural integrity. This must be carried out using a sequential underpinning method.

4.2 The sequencing of this work would be such that no more than 20% of a single wall elevation would be excavated at any given time. At the required excavation depth, suitable shoring would be required to provide a safe working area for site operatives. Typical sequencing for the excavation of a wall section is shown on Drawing No. 20058/PL01.

4.3 Continuous monitoring of the structural conditions during underpinning process is vital. Inspections by a competent structural engineer should check that each stage of the underpinning meets the required standards and specifications provided by drawings.

4.4 The existing lower ground floor joists and concrete sub-base must be demolished and all debris cleared out, to prepare for the construction of the proposed lower ground floor slab. Which will be constructed using insitu concrete with A393 mesh at top and bottom layers, with a waterproof membrane to prevent moisture ingress such as a Delta Cavity Drain System.

4.5 A clear emergency response plan is essential for managing unexpected structural issues during underpinning, ensuring rapid action, risk mitigation, and safety through defined procedures and regular training.

4.6 The Contractor will provide a method statement prior to commencement of work on site in which full details of hours, site set up and method for the formation of underpinning sections will be detailed.

5 Ground movement & Predicted damage category

5.1 It is not expected that any cracking will occur during the works. However, our experience informs us that there is a risk of movement to the neighbours.

5.2 To reduce the risk to the development:

- Employ a reputable firm for extensive knowledge of substructure works.
- Employ suitably qualified Consultants. Halstead Associates have extensive experience with substructure constructions.
- Assessment of ground conditions during the proposed works.
- Provide method statements for the Contractors to follow.
- Record and monitor the external properties. This would be done by a condition survey under the Party Wall Act before and after the works are completed.

5.3 The maximum level of cracking anticipated is Hairline cracking which can be made good with decorative repairs by the appointed contractor. Under the Party Wall Act damage is allowed (although unwanted) to occur to a neighbouring property as long as repairs are suitably undertaken to rectify this. To mitigate this risk, the Party Wall Act is to be followed, and Halstead Associates can be appointed to act in this respect.

5.4 Burland Scale:

Extract from The Institution of Structural Engineers "Subsidence of Low-Rise Buildings" Classification of visible damage to walls with particular reference to type of repair and rectification consideration.

Category of Damage	Approximate Crack Width	Limiting Tensile Strain	Definitions of cracks & repair types / considerations
0	Up to 0.1	0.0 – 0.05	HAIRLINE – Internally cracks can be filled or covered by wall covering and redecorated. Externally, cracks rarely visible & remedial works rarely justified
1	0.2 to 2	0.05 – 0.075	FINE – Internally cracks can be filled or covered by wall covering, and redecorated. Externally, cracks may be visible, sometimes repairs required for weather tightness or aesthetics. NOTE: Plaster cracks may, in time, become visible again if not covered by a wall covering.

6 Monitoring

6.1 Visual movement monitoring, level of monitoring and reporting strategy required are to be agreed subject to a Party Wall Surveyor's consultation before the works commence on site.

7 Waterproofing

7.1 As this form of construction will not allow external damp proofing systems to be employed, it is envisaged that the Architect will opt for a proprietary drained cavity system to line the face of the retaining wall and slab. Any inflow of ground water which may result would then be directed to an internal sump and then pumped as necessary into the surface water system.

8 Party Walls

8.1 Given the proximity of adjacent buildings, Party Wall Agreements will be required with neighbouring home owners, particularly in light of the recommendations for monitoring during the works. Halstead Associates can be appointed to act on behalf of the Building Owner.

9 Temporary Works

9.1 A competent Contractor, experienced in this form of residential substructure construction must be used, and a Temporary Works Coordinator should be employed to ensure that the stability of the ground and adjoining buildings is maintained though out the construction process.

9.2 Whilst suggestions have been provided with this document for the sequencing of the works, it will be the responsibility of the Contractor and Temporary Works co-ordinator to provide detailed proposals for the methodology for the Structural Engineer and design team to review.

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David Oates CEng BEng (Hons) MIStructE

10 Appendix A - Drawings

Halstead Associates Drawing No:

- 20058/PL01 – Lower Ground Floor Plan & Underpinning Sections
- 20058/PL02 – Upper Ground Floor Plan