CampbellReith
consulting engineers

11 Prince Albert Road
London NW1 7SR

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12066-26
Revision: D1

August 2015

Campbell Reith Hill LLP
Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T:+44 (0)20 7340 1700
F:+44 (0)20 7340 1777
E:london@campbellreith.com
W:www.campbellreith.com

Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	August 2015	Comment	AJMlt12066-26-210815-D1.doc	A Marlow	A Marlow	E Brown

Document Details

Last saved	21/08/2015 08:56
Path	AJMlt12066-26-210815-D1.doc
Author	A J Marlow, BSc CEng MIStructE FConsE
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	12066-26
Project Name	11 Prince Albert Road, London NW1 7SR
Planning Reference	2014/7605/P

Contents

Appendices

1.0 NON-TECHNICAL SUMMARY

1.1. CampbellReith was instructed by London Borough of Camden (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for 11 Prince Albert Road (planning reference 2014/7605/P). The basement is considered to fall with Category C as defined by the Terms of Reference.

1.2. The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.

1.3. CampbellReith was able to access LBC's Planning Portal and gain access to the latest revision of submitted documentation and review it against an agreed audit check list.

1.4. It is not possible to determine whether the BIA and Basement Construction Methodology Report have been carried out by individuals who possess suitable qualifications.

1.5. The BIA has confirmed that the proposed basement will be located within the London Clay.

1.6. It is accepted that groundwater will not be affected by the excavation and variations to the groundwater regime are unlikely to occur.

1.7. It is proposed to form the basement and lower ground floor extension by the introduction of a contiguous bored pile retaining wall, suitably braced by temporary propping, together with an inner reinforced concrete box structure. The upper section of the piles should be cased to prevent any unstable Made Ground and perched water entering the pile bores.

1.8. No Ground Movement Analysis has been undertaken to identify likely vertical and horizontal movements upon No. 11 or its adjoining and nearby properties.

1.9. No measures to monitor ground movements during construction have been provided.

1.10. The BIA has identified suitable measures to overcome heave of the underlying clay soils due to basement excavation.

1.11. No assessment of the hydrogeological impact of the development has been provided.

1.12. It is accepted that the site is not within an area known to be at risk from flooding. However, no assessment has been made of the hydrological impact of the development.

1.13. No assessment has been made of the land stability impact of the development.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 22 July 2015 to carry out a Category C Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Prince Albert Road,, Camden Reference 2014/7605/P.

2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.

2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within

- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
- Camden Planning Guidance (CPG) 4: Basements and Lightwells.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water

2.4. The BIA should demonstrate that schemes:

a) maintain the structural stability of the building and neighbouring properties;

b) avoid adversely affecting drainage and run off or causing other damage to the water environment; and,

c) avoid cumulative impacts upon structural stability or the water environment in the local area.

and evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

2.5. LBC's Audit Instruction described the planning proposal as the "*Erection of a single storey side extension to lower ground floor level, basement excavation and associated internal alterations.*"

The Audit Instruction also confirmed that No. 11 Prince Albert Road is Grade II listed, as is its adjoining semi-detached property, No. 10.

2.6. CampbellReith accessed LBC's Planning Portal on 19 August 2015 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment (BIA)
- Structure and Basement Construction Methodology Report (BCMR)
- Architect's Drawings nos.

  96-101 to 103, 105 to 111

  96-200 to 201

  96-300 to0 304
- Location Plan drawing no. 96-000

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	No qualifications of author/reviewer provided.
Is data required by Cl.233 of the GSD presented?	Yes	BIA, BCMR and accompanying drawings.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	BIA Sections 2 and 3.
Are suitable plan/maps included?	Yes	BIA and Appendices.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 4.2.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 4.1.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 4.3.
Is a conceptual model presented?	Yes	Ground Investigation Report Section 6.0 (BIA Appendix A).
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 5.2.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 5.1.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 5.3.
Is factual ground investigation data provided?	Yes	Ground Investigation Report (GIR).
Is monitoring data presented?	Yes	GIR Section 4.3.
Is the ground investigation informed by a desk study?	Yes	GIR Section 2.0.
Has a site walkover been undertaken?	No	
Is the presence/absence of adjacent or nearby basements confirmed?	No	BIA Section 5.2 identifies possible basement beneath adjoining property. No discussion of any others.
Is a geotechnical interpretation presented?	Yes	GIR Section 4.0.
Does the geotechnical interpretation include information on retaining wall design?	Yes	GIR Section 7.0.
Are reports on other investigations required by screening and scoping presented?	Yes	
Are baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	BIA Section 7.0.
Are estimates of ground movement and structural impact presented?	No	

Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	
Has the need for monitoring during construction been considered?	No	
Have the residual (after mitigation) impacts been clearly identified?	No	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	
Does report state that damage to surrounding buildings will be no worse than Burland Category 2?	No	
Are non-technical summaries provided?	No	

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA), dated November 2014, has been carried out by a firm of structural engineers, Fluid Structures, but no details are provided of author or reviewer.

4.2. A Structure and Basement Construction Methodology Report (BCMR), dated March 2015, has also been produced by Fluid Structures which identifies the author and reviewer but not their qualifications.

4.3. Both documents largely contain the same information and both include a Ground Investigation Report (GIR) dated November 2014, produced by Geotechnical & Environmental Associates. The author and reviewer of the GIR have suitable qualifications.

4.4. The existing building contains an upper ground floor, level with the front driveway, and a lower ground floor which is level with the rear garden due to the sloping nature of the site. It is proposed to extend the lower ground floor on the western side of the property and construct a basement swimming pool and ancillary areas below the extension. The basement area is larger than the lower ground floor extension. The property forms a semi-detached building on its eastern flank with No. 10 Prince Albert Road.

4.5. The GIR has identified that the site is underlain by variable depths of Made Ground, between 0.4 metres and 3.0 metres, below which the London Clay Formation was encountered. Previous investigations by GEA of nearby locations proved the presence of London Clay to 20 metres.

4.6. It is accepted that the proposed basement will be founded within the London Clay and is unlikely to be detrimental to any groundwater flow.

4.7. Although monitoring of standpipes within boreholes indicated that groundwater was not encountered, perched groundwater was encountered in a number of trial pits at the top of the London Clay.

4.8. It is proposed to install a contiguous bored pile retaining wall on the western face of the existing lower ground floor, and around the perimeter of the new basement footprint, to facilitate the excavation. These piles should be cased for their upper section to prevent unstable materials and perched water entering the pile bores.

4.9. An acceptable construction and temporary works methodology has been proposed but no Ground Movement Assessment has been carried out to identify likely vertical and horizontal movements, due to piling installation and basement excavation, on No. 11 or adjoining and nearby properties. The BIA has noted that a basement proposal has been made in the past for

No. 12 but does not confirm its presence or the situation with No. 10. The GIR noted the presence of masonry cracking to No. 11 and its garden retaining walls.

4.10. The BIA did not provide measures to monitor ground movements during the construction process.

4.11. The BIA has identified that heave of the underlying clay soils will occur, due to the basement excavation, and has provided construction details to mitigate the effect.

4.12. The BIA has identified the presence of the Regent's Canal within a 100 metre radius of the development site but does not provide any assessment of the hydrogeological impact of the development. However, it is accepted the basement is unlikely to impact the groundwater flow.

4.13. The BIA has identified that the site is not within an area known to be at risk from flooding although it did not identify that Kentish Town Road and Hawley Road, to the northeast, were both flooded in 1975. The BIA does not provide any assessment of the hydrological impact of the development and further assessments should be provided.

4.14. The BIA did provide a Slope Angle Map from the Camden GHH Study but does not provide any assessment of the land stability impact of the development. Additional assessments should be provided.

5.0 CONCLUSIONS

5.1. It is not possible to determine whether the BIA and BCMR have been carried out by individuals who possess suitable qualifications.

5.2. The BIA has confirmed that the proposed basement will be located within the London Clay.

5.3. No assessment of the hydro-geological impact of the development has been provided. However, it is accepted that groundwater will not be affected by the excavation and variations to the groundwater regime are unlikely to occur.

5.4. It is proposed to form the basement and lower ground floor extension by the introduction of a contiguous bored pile retaining wall, suitably braced by temporary propping, together with an inner reinforced concrete box structure. The upper section of the piles should be cased to prevent any unstable Made Ground and perched water entering the pile bores.

5.5. No Ground Movement Analysis has been undertaken to identify likely vertical and horizontal movements upon No. 11 or its adjoining and nearby properties.

5.6. No measures to monitor ground movements during construction have been provided.

5.7. The BIA has identified suitable measures to overcome heave of the underlying clay soils due to basement excavation.

5.8. It is accepted that the site is not within an area known to be at risk from flooding. However, no assessment has been made of the hydrological impact of the development.

5.9. No assessment has been made of the land stability impact of the development.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

CampbellReith
consulting engineers

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Temporary casing to be used.	Ongoing	
2	Stability	Ground Movement Assessment to be provided.	Ongoing	
3	Stability	Indicative monitoring regime to be provided.	Ongoing	
4	Hydrogeological Impact	To be provided.	Ongoing	
5	Hydrological Impact	To be provided.	Ongoing	
6	Land Stability Impact	To be provided.	Ongoing	
7	BIA & BCMR Author Qualifications	To be provided.	Ongoing	

Appendix 3: Supplementary Supporting Documents

None

London

Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T: +44 (0)20 7340 1700
F: +44 (0)20 7340 1777
E: london@campbellreith.com

Birmingham

Chantry House
High Street
Coleshill
Birmingham B46 3BP

T: +44 (0)1675 467 484
F: +44 (0)1675 467 502
E: birmingham@campbellreith.com

Surrey

Raven House
29 Linkfield Lane
Redhill
Surrey RH1 1SS

T: +44 (0)1737 784 500
F: +44 (0)1737 784 501
E: surrey@campbellreith.com

Manchester

The Lexicon
10-12 Mount Street
Manchester
M2 5NT

T: +44 (0)161 819 3060
F: +44 (0)161 819 3090
E: manchester@campbellreith.com

Bristol

Wessex House
Pixash Lane
Keynsham
Bristol BS31 1TP

T: +44 (0)117 916 1066
F: +44 (0)117 916 1069
E: bristol@campbellreith.com

UAE

Office 705, Warsan Building
Hessa Street (East)
PO Box 28064
Dubai, UAE

T: +971 4 453 4735
F: +971 4 453 4731
E: uae@campbellreith.com