CampbellReith
consulting engineers

30 Glenilla Road
London, NW3 4AN

Basement Impact Assessment
Audit

For

London Borough of Camden

Project Number: 12727-73
Revision: D1

May 2018

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

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

Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	May 2018	Comment	NSgk12727-73-010518-30 Glenilla Road-D1.doc	N Simonini	F Drammeh	F Drammeh

Document Details

Last saved	17/05/2018 12:22
Path	NSns-12727-73-160518-30 Glenilla Road-D1.doc
Author	N Simonini, Bsc MSc FGS
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	12727-73
Project Name	30 Glenilla Road
Planning Reference	2018/0932/P

Contents

1.0 Non-technical summary 3
2.0 Introduction 5
3.0 Basement Impact Assessment Audit Check List 7
4.0 Discussion 10
5.0 Conclusions 13

Appendix

Appendix 1: Residents' Consultation Comments
Appendix 2: Audit Query Tracker
Appendix 3: Supplementary Supporting Documents

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 (BIA) submitted as part of the Planning Submission documentation for 30 Glenilla Road (planning reference 2018/0932/P). The basement is considered to fall within Category B 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 reviewed it against an agreed audit check list.

1.1. The qualifications of the individuals involved in the BIA meet Camden Planning Guidance requirements.

1.2. The Camden Policy Guidance: Basements March 2018 should be referenced in any future revisions together with other current LBC planning guidance.

1.3. Contradictory information is given on the issue of an increase in the area of hardstanding and it is requested this be made consistent.

1.4. A flood risk assessment should be undertaken as recommended in the BIA. An outline drainage strategy has not been presented this is requested.

1.5. The presence or absence of basements beneath the neighbouring properties and the depths of these where present should be confirmed prior to construction.

1.6. A utilities search should be undertaken to allow an assessment of the potential impact of the proposals to be undertaken.

1.7. The BIA identifies the presence of trees within the site although it is stated these would not be affected by the construction proposals which is confirmed in the arboricultural assessment.

1.8. The retaining wall parameters are considered incomplete and should be updated as discussed on Section 4.

1.9. Outline retaining wall calculations including details such as the proposed wall depth are requested.

1.10. The GMA does not reflect the proposed construction methodology and is to be reassessed.

1.11. Outline monitoring proposals with trigger levels based the updated GMA are requested with details to be agrees with the relevant parties at a later date.

1.12. An indicative works programme is not included and this is requested.

1.13. It is accepted that there are no slope stability concerns regarding the basement development.

1.14. Queries and requests for information are summarised in Appendix 2. Until the additional information and further assessments requested are presented, the BIA does not meet the requirements of the Camden Planning Guidance.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 9 April 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 30 Glenilla Road, London NW3 4AN (Reference: 2018/0932/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: Basements 2018.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.
- Local Plan 2017: Policy A5 Basements.

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;

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

d) 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 *"Demolition of existing dwelling house and erection of four storey replacement dwelling house with single storey basement and associated hard and soft landscaping works, including erection of garden room to rear and bin store to front of property."*

2.6. The audit instruction also confirmed that the proposal does not involve any listed building.

2.7. CampbellReith accessed LBC's Planning Portal on 2 May 2018 and gained access to the following relevant documents for audit purposes:

- Construction Method Statement/Basement Impact Assessment Report (BIA) by Davis Maguire (DMAG-1650-CMS), dated February 2018.
- Desk Study & Ground Investigation Report by GEA Ltd (Ref. J17299), dated February 2018.
- Ben Adam's Architects Planning Application drawings:

  Proposed site plan and ground floor (P004/A)

  Proposed basement plan (P199)

  Proposed ground floor plan (P200)

  Proposed section A-A (P500)

  Proposed section B-B (P501)

  Proposed north east Elevation (P400)

  Proposed south elevation (P403)

  Proposed north west Elevation (P401)

  Proposed south east Elevation (P402)

  Existing section A-A (P130/A)

  Existing ground floor plan (P100/A)

  Existing north west elevation (P121/A)

  Existing north east elevation (P120/A)

  Existing south west elevation (P123/A)

  Existing south east elevation (P122/A)
- Design and access statement (Ben Adams Architects, 17-058, February 2018)
- Arboricultural Assessment (Arboricultural Solutions LLP, November 2016)

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	GEA document control. See Audit paragraph 4.1.
Is data required by Cl.233 of the GSD presented?	No	Some of the information provided in GEA report, however, works programme not included and utilities search not undertaken.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	No	Maps indicating site location in Davies Maguire CMS are incorrect.
Are suitable plan/maps included?	No	Maps with site location incorrect in CMS and not provided in GEA BIA.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	No	As above.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Section 3.1.1 of the GEA report makes reference to some of the relevant maps, however, they are not provided with the site location indicated.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Section 3.1.1 of the GEA report makes reference to some of the relevant maps, however, they are not provided with the site location indicated. Contradictory response given elsewhere in relation to increase in paved areas (see Audit paragraph 4.8).
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Section 3.1.3 of the GEA report makes reference to some of the relevant maps, however, they are not provided with the site location indicated. Contradictory response given elsewhere in relation to increase in paved areas (see Audit paragraph 4.8).
Is a conceptual model presented?	Yes	Section 7 of the GEA report presents a summary of the ground conditions.

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.1 of the GEA report.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.1 of the GEA report.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	Contradictory/incorrect response to Q4 (see Audit paragraph 4.7)
Is factual ground investigation data provided?	Yes	GEA report Appendix.
Is monitoring data presented?	Yes	Section 5.4 of the GEA report.
Is the ground investigation informed by a desk study?	Yes	Desk study information presented in Section 2 of the GEA report.
Has a site walkover been undertaken?	Yes	Section 2.1 of the GEA report.
Is the presence/absence of adjacent or nearby basements confirmed?	No	Not confirmed.
Is a geotechnical interpretation presented?	Yes	Section 8 of the GEA report.
Does the geotechnical interpretation include information on retaining wall design?	Yes	Section 8.1.1 of the GEA report.
Are reports on other investigations required by screening and scoping presented?	No	The BIA identified the need for a Flood Risk Assessment (FRA) and a surface water drainage strategy, however, these are not presented.
Are the baseline conditions described, based on the GSD?	No	Presence or absence of neighbouring property basements not confirmed.
Do the base line conditions consider adjacent or nearby basements?	No	As above.
Is an Impact Assessment provided?	Yes	Section 10 of the GEA report.
Are estimates of ground movement and structural impact presented?	Yes	Section 9 of the GEA report, however the assessment does not reflect the proposed construction methodology.

Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	Potential need for a FRA identified but report not presented.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Mentioned in the BIA that this needs consideration, however, not all potential issues have been identified as the FRA has not been undertaken.
Has the need for monitoring during construction been considered?	Yes	The need for monitoring is briefly mentioned in Section 9.3.2 of the GEA report, however, no outline proposals have been presented (see Audit paragraph 4.16).
Have the residual (after mitigation) impacts been clearly identified?	Yes	Section 11 of the GEA report, however FRA not undertaken.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	GMA not based on proposed construction methodology.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	Not demonstrated (see Audit paragraph 4.9)
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	As above.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	Category 0 (Negligible) damage predicted, however, there are queries on the GMA which is not based on the proposed methodology.
Are non-technical summaries provided?	Yes	GEA report.

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA) was undertaken by GEA and the individuals involved hold CEng MICE, CGeol and CWEM MCIWEM qualifications. A construction method statement (CMS) undertaken by Davies Maguire Ltd is presented and the reviewer holds CEng MIStructE qualifications.

4.2. The GEA report makes reference to CPG4: Basements and Lightwells together with the Local Plan (2017) and other guidance documents. It should be noted that CPG4 is superseded by Camden Policy Guidance: Basements March 2018 and any future revisions should make reference to this.

4.3. As stated above, the main BIA was prepared by GEA with the CMS undertaken by Davies Maguire. Where a basement application is supported by a number of documents, it is helpful I these documents are consistent with each other. The CMS makes reference to the BIA, however the construction methodology in the GEA report is inconsistent with the CMS. This is further discussed below.

4.4. The site comprises a two storey detached residential structure with a garden at the rear. The proposed development includes the demolition of existing building and erection of a four storey building with a single storey basement. The depth of excavation is indicated to be 3.40m and the basement is to be constructed using a secant pile wall.

4.5. A ground investigation undertaken by GEA Ltd identified Made Ground to a maximum 2.50m bgl underlain by Superficial Deposits described as clay to up to 4.00m bgl overlying the London Clay which was proven to 20m bgl. Groundwater was monitored at c. 0.70m which is within the proposed basement depth.

4.6. Groundwater monitoring was undertaken on a single occasion recording the shallowest groundwater levels to be within the Head Deposits at 0.73m bgl at the rear of the house. The screening assessment ruled out groundwater as a potential issues, however, it is stated in the conclusions that '*it may be prudent to carry out a rising head test within the existing standpipes to confirm the likely inflow rate. Shallow inflows of localised perched water are likely to be encountered from within the made ground, which should be adequately controlled through sump pumping […] It would be prudent to carry out trial pits on the site once the existing house has been demolished to provide further information about the existing groundwater regime […]'.*

4.7. Contradictory information is given on the hydrogeology and hydrology screening assessments. The former states that there will be an increase in the area of hardstanding whilst it stated on

the latter that there will be no increase. Although the BIA identifies the need for a Flood Risk Assessment (FRA) as discussed below, this information should be made consistent.

4.8. Although some of the relevant figures/maps from the Arup GSD and other guidance documents are referenced, these are not included in the GEA report with the site location indicated to support the statements made in the screening assessments. Nevertheless, the responses are considered to be largely valid. The Davies Maguire report however includes flood risk maps which do not correctly identify the location of the site.

4.9. The BIA confirmed that the proposed development will result in a change in the proportion of hard surface/paved areas that could result in a decreased recharge to the underlying ground and an increase in surface water run-of. The report identified the potential need for a Flood Risk Assessment to be undertaken. The risk of flooding was further assessed Construction Method Statement (CMS) which concluded that this was not required, however, as stated above the maps provided do not identify the correct location of the site. An outline drainage strategy has not been presented.

4.10. The presence or absence of basements beneath the neighbouring properties and the depths of these where present should be confirmed.

4.11. Section 3.4 of the CMS states no LUL infrastructure in present within the vicinity of the site, however, a utilities search does not appear to have been undertaken. A utilities search should be undertaken to allow an assessment of the potential impact of the proposals to be undertaken.

4.12. It is stated in the BIA and CMS that although trees are present within the site, these would not be affected by the construction proposals. One tree has been recommended for removal due to its poor condition, while the rest of the trees surveyed can be retained with tree protection installed.

4.13. Retaining wall parameters are provided on Section 8.1.1 of the GEA report, however, this does not include stiffness parameters despite a secant piled wall being proposed.

4.14. Outline structural proposals are presented on sketches which also indicate temporary propping in the CMS. Outline calculations or details including the proposed wall depth are however not included.

4.15. A Ground Movement Assessment (GMA) was undertaken by GEA Ltd, however, this was based on reinforced concrete walls rather than the secant piled wall indicated in the CMS. A revised GMA based on the proposed construction methodology should be presented. This should take into consideration the structural proposals such as whether vertical loads are to be supported

by the piled wall which will have an effect on the length of the piles and hence the predicted ground movements.

4.16. The need for movement monitoring is identified in the BIA, however, no outline proposals are presented. Outline proposals with trigger levels following reassessment of the GMA should be presented.

4.17. An indicative works programme is not included as required by the planning guidance.

4.18. It is accepted that there are no slope stability concerns regarding the basement development.

5.0 CONCLUSIONS

5.1. The qualifications of the individuals involved in the BIA meet Camden Planning Guidance requirements.

5.2. The Camden Policy Guidance: Basements March 2018 should be referenced in any future revisions together with other current LBC planning guidance.

5.3. It is stated the basement is to be constructed using a secant piled all and although sketches are included in the CMS, outline calculations are not provided.

5.4. Contradictory information is given on the issue of an increase in the area of hardstanding and it is requested this be made consistent.

5.5. A flood risk assessment should be undertaken as recommended in the BIA. An outline drainage strategy has not been presented this is requested.

5.6. The presence or absence of basements beneath the neighbouring properties and the depths of these where present should be confirmed prior to construction.

5.7. A utilities search should be undertaken to allow an assessment of the potential impact of the proposals to be undertaken.

5.8. The BIA identifies the presence of trees within the site although it is stated these would not be affected by the construction proposals which is confirmed in the arboricultural assessment.

5.9. The retaining wall parameters should be updated to include stiffness values for the proposed secant wall.

5.10. Outline retaining wall calculations including details such as the proposed wall depth are requested.

5.11. The GMA does not reflect the proposed construction methodology and is to be reassessed.

5.12. Outline monitoring proposals with trigger levels based the updated GMA are requested with details to be agrees with the relevant parties at a later date.

5.13. An indicative works programme is not included and this is requested.

5.14. It is accepted that there are no slope stability concerns regarding the basement development.

5.15. Queries and requests for information are summarised in Appendix 2. Until the additional information and further assessments requested are presented, the BIA does not meet the requirements of the Camden Planning Guidance.

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	BIA format	Planning guidance referenced in the BIA superseded.	Open – See Audit paragraph 4.2	
2	BIA format	Outline construction programme not presented.	Open – to be provided.	
3	BIA format/hydrology/hydrogeology.	Contradictory information on the increase in paved areas.	Open – to be made consistent as per Audit paragraph 4.7.	
4	BIA format	Utility search not undertaken.	Open – to be undertaken to allow impacts to be assessed.	
5	Hydrology	Site incorrectly identified on flood risk maps, no FRA and drainage strategy.	Open – see Audit paragraphs 4.7 to 4.9 and 5.5 to 5.6.	
6	Stability	No outline retaining wall calculations.	Open – to be provided as discussed on Audit paragraph 4.14.	
7	Stability	GMA not based on proposed construction methodology. Revised GMA should be provided.	Open – to be provided on Audit paragraph 4.15.	
8	Stability	Monitoring proposal.	Open – outline proposal with trigger values based on revised GMA to be presented.	

Appendix 3: Supplementary Supporting Documents

None

London

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

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

Birmingham

Chantry House
High Street, Coleshill
Birmingham B46 3BP

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

Surrey

Raven House
29 Linkfield Lane, Redhill
Surrey RH1 1SS

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

Manchester

No. 1 Marsden Street
Manchester
M2 1HW

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

Bristol

Wessex House
Pixash Lane, Keynsham
Bristol BS31 1TP

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

UAE

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

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