

39 Fitzjohn's Avenue,
London NW3 5JY

Basement Impact Assessment
Audit

For

London Borough of Camden

Project Number: 12727-88
Revision: D1

August 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	August 2018	Comment	12727-88-070818-39 Fitzjohn's Avenue-D1.doc	A Gleeson	R Morley	R Morley

This document has been prepared in accordance with the scope of Campbell Reith Hill LLP's (CampbellReith) appointment with its client and is subject to the terms of the appointment. It is addressed to and for the sole use and reliance of CampbellReith's client. CampbellReith accepts no liability for any use of this document other than by its client and only for the purposes, stated in the document, for which it was prepared and provided. No person other than the client may copy (in whole or in part) use or rely on the contents of this document, without the prior written permission of Campbell Reith Hill LLP. Any advice, opinions, or recommendations within this document should be read and relied upon only in the context of the document as a whole. The contents of this document are not to be construed as providing legal, business or tax advice or opinion.

© Campbell Reith Hill LLP 2015

Document Details

Last saved	07/08/2018 15:29
Path	12727-88-070818-39 Fitzjohn's Avenue-D1.doc
Author	A Gleeson
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	12727-88
Project Name	39 Fitzjohn's Avenue, NW3 5JY
Planning Reference	2018/2415/P

Contents

1.0 Non-technical summary 1
2.0 Introduction 3
3.0 Basement Impact Assessment Audit Check List..... 5
4.0 Discussion 8
5.0 Conclusions 11

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 submitted as part of the Planning Submission documentation for 39 Fitzjohn's Avenue, NW3 5JT (planning reference 2018/2415/P). The basement is considered to fall within 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 reviewed it against an agreed audit check list.
- 1.4. The BIA has been prepared by RWA London Civil and Structural Engineers. The qualification on the authors have not been confirmed in accordance with LBC guidance.
- 1.5. The proposed works involve rebuilding and extending the Victorian property whilst retaining the building façade. The proposed basement will extend approximately 5m below ground level and occupy the rear third of the building footprint. It is proposed to construct the two storey basement by underpinning the existing structure and forming new retaining wall to the light well area. It is not clear from the drawing which sections of basement are new and which form the existing lower ground floor. The drawing should be clarified and sections provided with references and existing and proposed levels.
- 1.6. The BIA includes the majority of the information required from a desk study in accordance with LBC guidance.
- 1.7. Reference is made in the BIA to a Site Investigation report however this has not been provided for review. This should be provided as part of the audit documents. The ground conditions comprise Made Ground over London Clay. Groundwater was not encountered during the investigation.
- 1.8. The BIA notes that the proposed building hard standing is to increase significantly. This impact of this increase in hardstanding area on the groundwater flow should be assessed and a SUDS assessment provided for review.
- 1.9. The formation level of the new basement slab will be founded in the London Clay formation. The basement will be formed by underpinning techniques and new retaining walls. Outline temporary works and permanent structural calculations should be provided as well as an outline construction programme.

- 1.10. The BIA notes the proximity of the Network Rail tunnels and air shaft which run through the site. Any infrastructure running within the adjacent pavement and highway should also be identified within the zone of influence of the proposed works. A Ground movement assessment should be provided which included all properties and infrastructure within the zone of influence of the proposed works.
- 1.11. A movement monitoring proposal should be provided. Once the geotechnical and structural design elements have been considered further and the GMA updated to mitigate the damage category risk to Category 1 or less on the Burland Scale.
- 1.12. The BIA advised the basement slab should be designed to resist heave forces arising from the excavation. Evidence should be provided that the retaining walls will be designed to resist hydrostatic pressure, in line with good practice.
- 1.13. It is accepted that there are no slope stability concerns regarding the proposed development.
- 1.14. Non-technical summaries should be included in any updated BIA submissions.
- 1.15. Queries and matters requiring further information or clarification are summarised in Appendix 2. Until the additional information and assessment requested has been provided, the BIA does not meet the requirements of CPG Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 21 June 2018 to carry out a Category C Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 39 Fitzjohn's Avenue, NW3 5JY and 2018/2415/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. March 2018.
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
 - Local Plan 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, and;
 - d) 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 *"Alterations and extensions associated with conversion of existing dwelling (Class C3) into 20 flats (5x1 bed; 6x2 bed; 7x3 bed; 2x4 bed) and 1 x 4 bed house (Class C3)"*

The Audit Instruction also confirmed 39 St John's Avenue does not involve, or is neighbour to, listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal in July 2018 and gained access to the following relevant documents for audit purposes:

- Design and Access Statement dated April 2018
- Basement Impact Assessment (BIA) Rev. E dated May 2018 by RWA London
- Site Location Plan by GH+MRP dated April 2018
- Existing and Proposed Plans, Elevations & Sections by GH+MRP dated April 2018
- Planning Statement
- Tree Plan and survey April 2018
- Consultation responses (3 no.)

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	Persons undertaking the BIA report to hold relevant qualifications. Confirmation of author(s) qualifications to be confirmed as set out in CPG Basements.
Is data required by Cl.233 of the GSD presented?	No	Outline construction programme to be provided. Limited information has been provided on mitigation measures being considered.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	No	
Are suitable plan/maps included?	No	Relative maps and extracts to support screening questions have not been provided.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	No	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Site investigations should be provided to justify answers. Question 4 omitted. Assessment referenced in JAL report should be provided.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Proposed development will increase the impermeable area by 140%, SUDS should be provided. Anticipated groundwater should be confirmed by site investigation. Assessment referenced in JAL report should be provided.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Question 3 omitted. SUDS to be provided. Assessment referenced in JAL report should be provided.
Is a conceptual model presented?	No	A conceptual model indicating the proposed changes to the site in the context of the ground/groundwater conditions and adjacent structures, noting potential risks/impacts and proposed mitigation should be presented.

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	Site investigation to be provided
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	Ground investigation and SuDs to be provided
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	SuD's to be provided Response to be provided for all screening questions
Is factual ground investigation data provided?	No	Reference is made to Site Investigation in JAL report P1153J1199 however this report has not been provided.
Is monitoring data presented?	Yes	Reference is groundwater monitoring, SI results should be provided to justify assumptions
Is the ground investigation informed by a desk study?	Yes	A desk study carried out by Jonas Associates Limited has been referenced but not provide for review.
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	No	The report assumes that neighbouring properties do not have basements. This should be investigated further and included in BIA.
Is a geotechnical interpretation presented?	No	This should be rectified and GMA provided
Does the geotechnical interpretation include information on retaining wall design?	No	This should be rectified and preliminary retaining wall calculations provided with reasonable assumption provided for soil parameters.
Are reports on other investigations required by screening and scoping presented?	No	SuD's not provided. Ground Movement Assessment Report not provided. Evidence of consultation with Network Rail regarding infrastructure below the site not provided. Further details to be provided on the temporary works proposals and the construction methodology.
Are the baseline conditions described, based on the GSD?	No	GMA and Site Investigations to be provided

Item	Yes/No/NA	Comment
Do the base line conditions consider adjacent or nearby basements?	No	
Is an Impact Assessment provided?	Yes	However JAL report referenced should be provided. Sufficient information has not been provided to demonstrate stability. GMA required.
Are estimates of ground movement and structural impact presented?	No	GMA should be provided with estimated heave movements from excavation and vertical and horizontal movements from excavation and underpinning. Impact on the surrounding highway, pathway and Belsize tunnel should be considered and applicable protection agreement sought.
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	GMA and SuDs to be should be provided
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Indicative underpinning sequence and temporary works proposals have been provided however these should be reviewed following completion of GMA
Has the need for monitoring during construction been considered?	Yes	Need for monitoring has been noted however this should be reviewed following completion of GMA. A movement monitoring proposal including trigger levels should be provided.
Have the residual (after mitigation) impacts been clearly identified?	No	This should be provided as part of the GMA.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	This should be rectified and proposals supported by calculations in GMA. GMA should reference all neighbouring properties and infrastructure within
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	Area of hardstanding to be increased by 140%. SuDs assessment to be provided
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	SuDs assessment to be provided.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	However the values noted should be support by reference to a GMA. Impact on infrastructure assets and applicable protection agreements to be referenced.
Are non-technical summaries provided?	No	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by RWA Civil & Structural engineering consultants. The qualifications of the authors of the BIA and the associated reports have not been provided as noted in Section 3.0. This should be provided.
- 4.2. The BIA includes screening, scoping, site investigation and impact assessment stages as defined and required in LBC Planning Guidance document 'Basements and Lightwells (CPG Basements)', dated March 2018. However not all screening questions have been answered, as noted in Section 3.0. This should be rectified and the screening and scoping revised accordingly. The BIA referencing a screening assessment carried out by JAL, report P1135J1199, this report should be provided for review.
- 4.3. The LBC Instruction to proceed with the audit identified that the basement proposal neither involved a listed building nor was adjacent to any listed buildings. The Design & Access Statement identified that 39 Fitzjohns Avenue is located in the Fitzjohns & Netherhall Conservation Area.
- 4.4. 39 Fitzjohns Avenue is a semi-detached two storey Victorian house with a partial lower ground floor with occupies approximately 50% of the building footprint. The adjoining building is a later extension which does not currently have a basement. Both building are to be refurbished as part of the current redevelopment, converting them into 20 apartments and one house, however it is only proposed to extend the basement beneath the Victorian house.
- 4.5. The proposed works involve rebuilding and extending the Victorian property whilst retaining the façade. The proposed basement will extend approximately 5m below ground level and occupy the rear third of the building footprint. It is proposed to construct the two storey basement by underpinning the existing lower ground floor and forming new retaining wall to the light well area. It is not clear from the drawing which sections of basement are new and which form the existing lower ground floor. The drawing should be clarified and sections provided with references and existing and proposed levels.
- 4.6. Reference is made in the BIA to 'JAL BIA report J1135J1199' which has not been provided for audit. This report should be provided.
- 4.7. Based on record information and limited site investigations the BIA confirms the basement is to be founded on the London Clay. The basement is not anticipated to be constructed below the groundwater table. Temporary dewatering should be allow for by the contractor due to season variations in groundwater levels and the possible presence of perched water.
- 4.8. Reference is made in the BIA to a Site Investigation report however this has not been provided for review. This should be provided as part of the audit documents. The SI should confirm

factual ground investigation data, laboratory test, along with a sufficient geotechnical interpretation. The existing foundations to be underpinned should also be investigated to confirm form and depths. Retaining wall design parameters should be provided within the geotechnical interpretation, in accordance with the GSD Appendix G3 noting that LBC guidance requires a reasonably conservative approach.

- 4.9. The BIA notes that the proposed building hard standing is to increase by approximately 140%. This impact of this increase in hardstanding area on the groundwater flow should be assessed and a SUDs assessment provided for review. It should be noted that any SUDs assessment should be produced in accordance with The London Plan along with Camden's planning policy.
- 4.10. The BIA notes the proximity of the Network Rail tunnels and air shaft which run through the site. The zone of influence of the tunnel should be assessed. Any infrastructure running within the adjacent pavement and highway should also be identified within the zone of influence of the proposed works. Evidence should be provided that asset owners have been consulted and asset protection agreements entered into, as applicable. A Ground movement assessment should be provided which included all properties and infrastructure within the zone of influence of the proposed works. The depth of neighbouring foundations should be confirmed. The BIA notes the expected damage category risk as Category 1, however does not provide supporting evidence. This should be substantiated by a formal ground movement assessment.
- 4.11. The BIA notes the need for movement monitoring, however a movement monitoring proposal has not been provided. Once the geotechnical and structural design elements have been considered further and the GMA updated to mitigate the damage category risk to Category 1 or less on the Burland Scale, an outline movement monitoring strategy should be provided.
- 4.12. It is proposed to remove a number of trees as part of the proposed development. The BIA suggests remediation measures to deal with potential shrink swell in the London Clay. Site investigations should confirm the shrink well potential.
- 4.13. Further details of indicative temporary propping proposals included underpinning sequencing and propping layouts should be provided. Details of the basement construction sequence should be expanded to clearly portray the construction sequence and proposals.
- 4.14. The BIA advised the basement slab should be designed to resist heave forces arising from the excavation. Structural calculations should be provided to demonstrate the feasibility of the main retaining structures and foundations.
- 4.15. It is accepted that there are no slope stability concerns regarding the proposed development.
- 4.16. Non-technical summaries should be included in any updated BIA submissions.

- 4.17. Queries and matters requiring further information or clarification are summarised in Appendix 2. Until the additional information and assessment requested has been provided, the BIA does not meet the requirements of CPG Basements.

5.0 CONCLUSIONS

- 5.1. The qualifications of the authors should be confirmed in accordance with CPG Basements guidelines.
- 5.2. The proposal is to excavate a double basement to a depth of 5 metres beneath the rear of the new development. Construction proposals should be clarified.
- 5.3. Limited site investigation has confirmed the underlying ground conditions to comprise of Made Ground over London Clay. Groundwater was not encountered. SI report to be provided.
- 5.4. A SUDs assessment should be provided to assess the impact of the significant increase in hardstanding area.
- 5.5. The BIA should present a geotechnical interpretation, including retaining wall design parameters.
- 5.6. Outline temporary works and permanent structural calculations should be provided. An outline construction programme should be included in the BIA documents.
- 5.7. A Ground Movement assessment should be provided to include all building and infrastructure within the zone of influence of the proposed basement.
- 5.8. Consultations with Network Rail should be provided.
- 5.9. An outline methodology and guidance for monitoring structural movements during construction should be provided which including proposed trigger values and mitigation measures.
- 5.10. It is accepted that there are no slope stability concerns regarding the proposed development.
- 5.11. Non-technical summaries should be included in any updated BIA submissions.
- 5.12. Queries and matters requiring further information or clarification are summarised in Appendix 2. Until the additional information and assessment requested has been provided, the BIA does not meet the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments – None relevant to basement proposals

Surname	Address	Date	Issue raised	Response

Appendix 2: Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA	Qualification of authors to be confirmed as required by Section 3.6 of CPG4.	Open	
2	BIA	Answers to be provided for all screening questions set out in CPG Basements, and scoping revised accordingly.	Open	
3	Stability	Retaining wall design parameters should be provided based on site specific geotechnical data. Retaining wall calculations should be provided to justify the feasibility of the proposed scheme.	Open	
4	Stability	A formal ground movement assessment is required noting impacts to and protection of all neighbouring properties and infrastructure. Mitigation measures to be addressed to limit Damage to Category 1 on the Burland Scale. Impact and protection of infrastructure assets should be agreed with the asset owners.	Open	
5	Stability	Once the geotechnical and structural design elements have been confirmed and the GMA updated, the monitoring strategy should be considered further. An outline monitoring plan should be provided to demonstrate that works will be controlled to protect surrounding structures / assets.	Open	
6	Stability	Evidence should be provided that Network Rail and other asset owners have been consulted and asset protection agreements entered into, as applicable.		
	Hydrology/Hydrogeology	A SUDS assessment should be provided due the significant increase in hardstanding, which should be produced in accordance with The London Plan along with Camden planning policy.	Open	
7	Stability	Further details of construction details including confirmation of underpinning depths and sequencing to be provided. Drawings should be clarified to confirm where the existing structure is to be underpinned and where the new retaining walls are to be constructed. Further detail to be provided for temporary propping proposals and construction methodology/sequencing.	Open	
8	BIA	Non-technical summaries should be included in any updated BIA submissions.	Open	

Audit Query Tracker

9	BIA	Site investigation document 'JAL BIA report J1135J1199' to be provided.		
---	-----	---	--	--

Appendix 3: Supplementary Supporting Documents

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

Campbell Reith Hill LLP. Registered in England & Wales. Limited Liability Partnership No OC300082
A list of Members is available at our Registered Office at: Friars Bridge Court, 41- 45 Blackfriars Road, London SE1 8NZ
VAT No 974 8892 43