

Confidential

**Basement Impact
Assessment Audit**

5 Chamberlain Street,
London, NW1 8XB

For
London Borough of Camden

Project No.
14006-39

Date
November 2023

Campbell Reith Hill LLP
15 Bermondsey Square
London
SE1 3UN

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	21/11/2023	Preliminary	RAkb14006-39- 281123-5 Chamberlain Street_D1.docx	RA	KB	KB

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 2023

Document Details

Last Saved	21/11/2023 14:43
Author	Rose Ashmore MSci MSc FGS
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	14006-39
Project Name	Basement Impact Assessment Audit
Revision	D1
Planning Reference	2023/1404/P
File Ref	RAkb14006-39-281123-5 Chamberlain Street_D1.docx

CONTENTS

1.0	NON-TECHNICAL SUMMARY	4
2.0	INTRODUCTION.....	6
3.0	BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST	8
4.0	DISCUSSION	11
5.0	CONCLUSIONS.....	14

APPENDICES

Appendix 1	Consultation Responses.....	15
Appendix 2	Audit Query Tracker.....	16
Appendix 3	Supplementary Supporting Documents.....	18

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 5 Chamberlain Street (planning reference 2023/1404/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.
- 1.4 The Basement Impact Assessment (BIA) has been carried out by engineering consultants Soiltechnics and the individuals concerned in its production have suitable qualifications.
- 1.5 The LBC Instruction to proceed with the audit identified that 5 Chamberlain Street is a Grade II listed building.
- 1.6 The proposed basement consists of extending the existing basement into the rear garden. Fully dimensioned drawings showing the basement depth and extents are required.
- 1.7 A desktop study is provided under a separate cover titled Preliminary Investigation Report (PIR). The Appendices of the PIR are not included and should be provided to support the submission.
- 1.8 No intrusive ground investigation has been carried out however, the BIA concludes the area comprises a thin cover of Made Ground underlain by London Clay. Groundwater is not anticipated to be present in significant quantities. The BIA includes a summary of the estimated geotechnical parameters however, information regarding the bearing capacity has not been outlined and is requested.
- 1.9 Screening has been carried out and it is accepted that the proposed development will not increase the likelihood of surface water or sewer flooding.
- 1.10 It is accepted that the proposed development will not significantly impact the local hydrogeology.
- 1.11 Clarification of the requirement for removal of trees is requested.
- 1.12 Further clarification is required regarding the foundation depths of the rear extension of the property and of the neighbouring property at No. 4.
- 1.13 An outline construction sequence has been provided however additional details on how the basement will be constructed beneath the ground floor extension are requested.

- 1.14 Some additional clarification and considerations are required within the Ground Movement Assessment (GMA). The GMA should be updated to include all impacted structures, including the Grade II listed host building and neighbouring properties. The assessment should use cautious or moderately conservative assumptions and engineering values, as required by LBC policy.
- 1.15 No proposals are provided for a movement monitoring strategy during excavation and construction. Due to the listed status of the property, it would be recommended that discussion of this is included.
- 1.16 It cannot be confirmed that the BIA complies with the requirements of CPG: Basements until the queries raised in Section 4 and Appendix 2 are addressed.

2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 01/11/2023 to carry out a Category B audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 5 Chamberlain Street, London, NW1 8XB and Planning Reference No. 2023/1404/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

- Camden Local Plan 2017 - Policy A5 Basements.
- Camden Planning Guidance (CPG): Basements. January 2021.
- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.

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 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 *"excavation of basement extension, new glass balustrade and juliet balcony to rear door."*

2.5.1 The Audit Instruction confirmed 5 Chamberlain Street is a Grade II listed building.

2.6 CampbellReith accessed LBC's Planning Portal on 06/11/2023 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment by Soiltechnics, June 2023, ref. STV6032-R02 Rev A.
- Preliminary Investigation Report by Soiltechnics, June 2023, ref. STV6032-R01 Rev A.
- Design and Access Statement issued in April 2023.
- Heritage Statement issued in September 2022.
- Drawings and Sections by Davies Architecture including:
 - Proposal Location Plan, ref. CHA5-site, dated March 2021

- Proposal Plans, ref. CHA5-PL-100-01, dated March 2023
- Proposal Rear Elevation Section D&E, ref. CHA5-PL-100-01, dated March 2023
- Existing Rear Elevation Section D&E, ref. CHA5-2-EX-100-02, dated July 2023
- Existing Section B&C, ref. CHA5-EX-100-03, dated July 2023
- Proposal Section B&C, ref. CHA5-PL-100-03, dated March 2023

2.7 A copy of the Construction Method Statement for the basement was provided by Richard Fryer via email on the 14th November 2023. The document was not dated and did not include any reference number.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	Section 1.3 of the BIA.
Is data required by Cl.233 of the GSD presented?	No	Need clarification of the dimensions of the proposed extension.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	No	See comments in Section 4.
Are suitable plan/maps included?	Yes	
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?	No	Justification for the 'no' response regarding to Q6. and Q13.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Is a conceptual model presented?	Yes	Section 5 of the BIA
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4 of the BIA. Damage to neighbouring properties has been brought forward even though the screening response

Item	Yes/No/NA	Comment
		was 'no'. Question 5 and 7 from Table 3.8 have not been brought through to scoping.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	NA	
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	NA	
Is factual ground investigation data provided?	No	
Is monitoring data presented?	No	
Is the ground investigation informed by a desk study?	NA	
Has a site walkover been undertaken?	Unknown	Unclear, no mention within the BIA.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	
Is a geotechnical interpretation presented?	Yes	Section 5 of the BIA however, no bearing capacity provided.
Does the geotechnical interpretation include information on retaining wall design?	Yes	
Are reports on other investigations required by screening and scoping presented?	NA	
Are the baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	Yes	

Item	Yes/No/NA	Comment
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	Yes	GMA provided in Section 5 of the BIA. The magnitude of ground movements is not provided.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	Require clarification on the movement curves used and the foundations at the rear of the property.
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?	Yes	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	Require additional justification on the movement curves used and the foundation depths at the rear of the property.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	See above.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	However, further information required.
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants Soiltechnics and the individuals concerned in its production have suitable qualifications.
- 4.2 The LBC Instruction to proceed with the audit identified that 5 Chamberlain Street is a Grade II listed building. The neighbouring properties (No. 4 and No. 6) are also Grade II listed buildings.
- 4.3 The BIA report outlines that the proposed basement consists of extending the existing basement 2.20m laterally into the rear garden however, drawing CHA5-2-PL-100-01 indicates the extension is up to 3.85m wide. Confirmation on the dimensions of the proposed extension is required, this should include fully dimensioned drawings confirming the depth of the proposed excavation.
- 4.4 The drawings provided show that the proposed basement extends beneath the rear ground floor extension of the property. Clarification is required to outline the foundation depths of this area of the rear extension. The depth of the foundations beneath the rear extension of the neighbouring property at No. 4 should also be confirmed as the drawings suggest this area is also not underlain by an existing basement.
- 4.5 Soiltechnics has carried out a desktop study (issued as a Preliminary Investigation Report (PIR)) under a separate cover. The Appendices of the report should be provided to support the submission.
- 4.6 The BIA does not include any intrusive ground investigation however, based on available sources of information indicates the ground conditions at the site comprise a nominal cover of Made Ground (<1m) over London Clay. Groundwater is considered unlikely to be present in significant quantities within the London Clay.
- 4.7 Geotechnical parameters have been provided and are based on previous experience and published literature. The justification provided is accepted as being sufficient for the Ground Movement Assessment. No information on the anticipated bearing capacity has been provided and is requested. The BIA report states that the formation will be inspected by a suitably competent geotechnical engineer to validate the ground model.
- 4.8 It is accepted that no known ponds, wells or aquifers are in close proximity to the site and that the site is outside the Hampstead Pond chain catchment area.
- 4.9 The BIA confirms the existing garden area is paved and that the proposed basement will not result in an increased in hard surface.
- 4.10 The land stability screening identifies that the shallowest strata is London Clay and that the London Clay is susceptible to shrink/swell subsidence. These items have not been carried forward to scoping, however discussion in the 'Details' column of Table 3.8 identifies that the proposed basement foundations below the depth of susceptibility. This should be confirmed.

- 4.11 The land stability screening response to Q13 indicates that the proposed basement will not significantly increase the differential depth of foundations relative to neighbouring properties however, this item was then taken through to scoping. In addition, the drawings provided indicate that the proposed basement is partially beneath the extension present at the rear of the property. As discussed in paragraph 4.4 above, clarification on this matter is required.
- 4.12 Justification should also be provided for the response provided for Q6 regarding the removal of trees.
- 4.13 The Construction Method Statement provided outlines that the basement will be constructed following the below sequence:
- Excavating the rear and 'left hand side' of the basement, installing 0.25m wide trench sheeting at 1.00m wide centres and using across props (or similar) to support.
 - Continue excavating each section and lowering trench sheets (releasing one prop at a time) until the foundation levels are reached.
 - Construct reinforcement for the base slab and cast in concrete.
 - Construct the reinforcement for the walls and cast in concrete.
 - Shutter the roof slab, construct the reinforcement, and then cast in concrete.
 - Once concrete has achieved adequate strength, remove shuttering and extract the trench sheeting.
- 4.14 Further details on the construction sequence are requested to show how the basement will be constructed beneath the existing ground floor extension and how stability of the Grade II listed host building will be maintained during the construction works.
- 4.15 A Ground Movement Assessment (GMA) has been carried out as part of the BIA using OASYS XDisp software. The BIA report states that due to the excavation not undermining the existing foundations, the ground movement curves have been set to "no movement". Further clarification is required as to why modelling has been undertaken with curves set to assume no movement and how this constitutes a moderately conservative assessment, as required by Camden policy. In addition, the plans appear to show that the basement will extend beneath the ground floor rear extension. As the host building is listed, the impact to this part of the building should be included in the assessment.
- 4.16 The neighbouring properties should be considered in the BIA and included in the ground movement and damage category assessments.
- 4.17 The method statement indicates that the trench sheeting will be removed following completion of the basement construction. Consideration of movement caused during this stage of construction should be included in the impact assessment.
- 4.18 No proposals are provided for a movement monitoring strategy during excavation and construction. Due to the listed status of the property, it would be recommended that discussion of this is included.

- 4.19 The BIA has shown that the proposed basement extension will not impact on the wider hydrogeology of the area, any other watercourses, springs or the Hampstead Heath Pond chain catchment area.
- 4.20 It is accepted that the proposed development will not increase the likelihood of surface water or sewer flooding.

5.0 CONCLUSIONS

- 5.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants Soiltechnics and the individuals concerned in its production have suitable qualifications.
- 5.2 The LBC Instruction to proceed with the audit identified that 5 Chamberlain Street is a Grade II listed building.
- 5.3 The BIA has confirmed that the proposed basement will be founded within London Clay.
- 5.4 The proposed basement consists of extending the existing basement into the rear garden. Fully dimensioned drawings showing the basement depth and extents are required.
- 5.5 A desktop study is provided under a separate cover titled Preliminary Investigation Report (PIR). The Appendices of the PIR are not included and should be provided to support the submission.
- 5.6 No intrusive ground investigation has been carried out however, the BIA concludes the area comprises a thin cover of Made Ground underlain by London Clay. Groundwater is not anticipated to be present in significant quantities. The BIA includes a summary of the estimated geotechnical parameters however, information regarding the bearing capacity has not been outlined and is requested.
- 5.7 Screening has been carried out and it is accepted that the proposed development will not increase the likelihood of surface water or sewer flooding.
- 5.8 It is accepted that the proposed development will not significantly impact the local hydrogeology.
- 5.9 Clarification of the requirement for removal of trees is requested.
- 5.10 Further clarification is required regarding the foundation depths of the rear extension of the property and of the foundations of the neighbouring property at No. 4.
- 5.11 An outline construction sequence has been provided however additional details on how the basement will be constructed beneath the ground floor extension are requested.
- 5.12 Clarification of the purpose of undertaking XDisp modelling using curves with "no movement" is required. The GMA should be updated to include all impacted structures, including the Grade II listed host building and the neighbouring property. The assessment should use cautious or moderately conservative assumptions and engineering values, as required by LBC policy.
- 5.13 Consideration of movement caused from removal of the trench sheeting should be included.
- 5.14 No proposals are provided for a movement monitoring strategy during excavation and construction. Due to the listed status of the property, it would be recommended discussion of this is included.
- 5.15 It cannot be confirmed that the BIA complies with the requirements of CPG: Basements until the queries raised in Section 4 and Appendix 2 are addressed.

Appendix 1

Consultation Responses

None

Basement Impact Assessment Audit
5 Chamberlain Street, London, NW1 8XB

CampbellReith
consulting engineers

Appendix 2

Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA	Fully dimensioned drawings should be provided to clearly show the dimensions of the proposed extension including depths of existing and proposed foundations.	Open	
2	Preliminary Investigation Report	The Appendices for the Preliminary Investigation Report should be provided.	Open	
3	Land Stability	Provide details of the allowable bearing capacity and the proposed loading scheme of the foundations.	Open	
4	Land Stability	Provide justification for the responses for Q6 and Q13 in the screening.	Open	
5	Construction Methodology	Provide details of how the basement will be constructed beneath the rear extension and how stability of the area will be maintained during construction.	Open	
6	Ground Movement Assessment	<p>Include consideration of the foundations within the rear extension of the property and the neighbouring listed buildings.</p> <p>Provide clarification of the purpose of modelling using curves set to assume no movement. Note that the assessment should use suitably cautious or moderately conservative assumptions and engineering values, as required by LBC policy.</p>	Open	
7	Ground Movement Assessment	Include consideration of the movements created following removal of the trench sheet.	Open	

Appendix 3

Supplementary Supporting Documents

None

London

15 Bermondsey Square
London
SE1 3UN

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

Bristol

Unit 5.03,
HERE,
470 Bath Road,
Bristol BS4 3AP

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

Manchester

No. 1 Marsden Street
Manchester
M2 1HW

T: +44 (0)161 819 3060
E: manchester@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: 15 Bermondsey Square, London, SE1 3UN
VAT No 974 8892 43