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Basement Impact Assessment Audit

5 Chamberlain Street, London, NW1 8XB

For
London Borough of Camden

Project No.
14006-39

Date
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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 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. The revised drawings confirm the depth of the basement extension is 2.65m bgl. The floor to the existing rear extension will be removed to allow excavation of the new basement extension.

1.7 A desktop study is provided under a separate cover titled Preliminary Investigation Report (PIR) however, no intrusive ground investigation has been carried out. 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.

1.8 Screening has been carried out and it is accepted that the proposed development will not increase the likelihood of surface water or sewer flooding.

1.9 It is accepted that the proposed development will not significantly impact the local hydrogeology.

1.10 An outline construction sequence has been provided. It has been confirmed that the floor of the existing rear extension will be removed to allow excavation of the basement extension.

1.11 Although there is no increase in differential depth between new and existing foundations, a GMA has been undertaken.

1.12 No proposals are provided for a movement monitoring strategy during excavation and construction.

1.13 It can be confirmed that the BIA complies with the requirements of CPG: Basements.

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;

2.5 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.

2.6 LBC's Audit Instruction described the planning proposal as "*excavation of basement extension, new glass balustrade and juliet balcony to rear door.*"

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

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

- 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 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

2.9 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.

2.10 Since the initial review an updated revision of the BIA report was submitted on 15th January 2024 along with amended drawings:

- Basement Impact Assessment by Soiltechnics, January 2024, ref. STV6032-R02 Rev B.
- Proposal Plans, ref. CHA5-2-PL-100-01c, dated January 2024
- Cross Section 'Contract Section E', ref. CHA5-C-50-09, dated January 2024

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?	Yes	
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	
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?	Yes	
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	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	

Item	Yes/No/NA	Comment
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?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	
Is a geotechnical interpretation presented?	Yes	Section 5 of the BIA
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	
Is an Impact Assessment provided?	Yes	

Item	Yes/No/NA	Comment
Are estimates of ground movement and structural impact presented?	Yes	GMA provided in Section 5 of the BIA.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	
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?	Yes	
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?	Yes	
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	
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 into the rear garden. The drawings provided show that the proposed basement extends beneath the rear ground floor extension of the property. An email provided in February 2024 (included in Appendix 3) confirms that the floor of the rear extension will be removed to allow excavation of the basement. Additional drawings provided confirm the extension will be excavated to a depth of 2.65m bgl.

4.4 Soiltechnics has carried out a desktop study (issued as a Preliminary Investigation Report (PIR)) under a separate cover however, no intrusive ground investigation has been undertaken. Available sources of information indicate 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.

4.5 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. An email received in February 2024 (included in Appendix 3) confirms a bearing capacity of 150kPa is assumed. The BIA report states that the formation will be inspected by a suitably competent geotechnical engineer to validate the ground model.

4.6 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.

4.7 The BIA confirms the existing garden area is paved and that the proposed basement will not result in an increased in hard surface.

4.8 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.

4.9 It is accepted that the proposed development will not increase the likelihood of surface water or sewer flooding.

4.10 The land stability screening identifies that the shallowest strata is London Clay and that it 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 will be below the depth of susceptibility.

4.11 The site is not in an area prone to slope instability.

4.12 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. Further clarification of this was received by subsequent drawings and emails included in Appendix 3.

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 of the construction sequence were provided to confirm that the floor of the rear extension will be removed to allow excavation of the basement extension across this area.

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". While this is not a cautious assumption, , due to the screening and scoping responses identifying that there is no increase in differential depth with foundations of the host building and neighbouring structures, no additional assessment is deemed necessary.

4.16 No proposals are provided for a movement monitoring strategy during excavation and construction.

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 proposed works consists of extending the existing basement into the rear garden. The foundations will be 2.65m bgl and founded in the London Clay. The floor to the existing rear extension will be removed to allow excavation of the new basement extension.

5.4 A desktop study is provided under a separate cover titled Preliminary Investigation Report (PIR) but no intrusive ground investigation has been carried out. 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.

5.5 Screening has been carried out and it is accepted that the proposed development will not increase the likelihood of surface water or sewer flooding.

5.6 It is accepted that the proposed development will not significantly impact the local hydrogeology.

5.7 An outline construction sequence has been provided. It has been confirmed that the floor of the existing rear extension will be removed to allow excavation of the basement extension.

5.8 The screening and scoping responses identify that there is no increase in differential depth with the foundations of the host building and neighbouring structures.

5.9 No proposals are provided for a movement monitoring strategy during excavation and construction.

5.10 It can be confirmed that the BIA complies with the requirements of CPG: Basements.

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Appendix 1

Consultation Responses

None

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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.	Closed	February 2024
2	Preliminary Investigation Report	The Appendices for the Preliminary Investigation Report should be provided.	Closed	February 2024
3	Land Stability	Provide details of the allowable bearing capacity and the proposed loading scheme of the foundations.	Closed	February 2024
4	Land Stability	Provide justification for the No responses of Q6 and Q13 in the screening.	Closed	February 2024
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.	Closed	February 2024
6	Preliminary Investigation Report	Include consideration of the foundations within the rear extension of the property and the neighbouring listed buildings. 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.	Closed	February 2024
7	Ground Movement Assessment	Include consideration of the movements created following removal of the trench sheet.	Closed	February 2024

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Appendix 3

Supplementary Supporting Documents

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