

15 Chalcot Gardens
London, NW3 4YB

Basement Impact Assessment
Audit

For

London Borough of Camden

Project Number: 13398-55

Revision: F1

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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 15 Chalcot Gardens, London, NW3 4YB (planning reference 2020/2892/P). The basement is considered to fall within Category A 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 undertaken by John Caine a Chartered Structural Engineer and Member of Institute of Civil Engineers. The author has suitable qualifications to assess hydrology and land stability. The report has been co-authored by Mr Andrew Smith, a Chartered Geologist suitably qualified to assess hydrogeology.
- 1.5. It is proposed to lower the existing basement to increase head height. The lowering will be facilitated by underpinning the existing foundations which have already been deepened. The existing patio and the existing lightwell to the front will be deepened.
- 1.6. A ground investigation has been undertaken in the form of three foundation inspection pits, that expose the existing foundations. They have not been taken down to the level of the proposed basement founding level, however, they have confirmed the bearing stratum to be London Clay. No groundwater monitoring has been undertaken. The site is underlain by a non-aquifer.
- 1.7. It is accepted that the proposal will not impact the hydrology, based on the confirmation from the applicant that the impermeable surface area on site will not increase as a result of the development.
- 1.8. Given the unproductive nature of underlying geology, it is accepted that the proposal will not adversely impact the hydrogeology of the area.
- 1.9. It is accepted that the surrounding slopes are not more than 7 degrees, that the development is not within 5m of a highway, and that it is not within the root protection zone of any tree.
- 1.10. It is stated in the updated BIA that the neighbouring 16 Chalcot Gardens has a basement and that 14 Chalcot Gardens does not.

- 1.11. No analysis has been undertaken of horizontal and vertical ground movements, howeverd it is stated that the expected damage will be within a Category 1 on the Burland scale. Assuming good control of workmanship, this is accepted as reasonable.
- 1.12. Based on the updated BIA and additional confirmation provided by the applicant, the BIA meets the requirements of CPG: Basements.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 15th September 2020 to carry out a Category A audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 15 Chalcot Gardens, London, NW3 4YB (Planning Reference: 2020/2892/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: Basements. March 2018
- 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 "*Lowering of lower ground floor by 1m, installation of crittal style windows to rear lower ground. Alterations to existing balcony.*"

2.6. CampbellReith accessed LBC's Planning Portal on 12th October 2020 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment by John Caine, dated September 2020;
- Design and Access Statement by Open London, dated June 2020;
- Planning Application Drawings consisting of

Location Plan: Drawing Reference: 20006_001(P5)

Existing Plans and Sections: Drawing Reference: 2005_001(P7), 20005_003(P3),

Demolition Plans and Sections: Drawing Reference: 20005_004(P8), 20005_006(P4)

2.7. The following documents were forwarded to CampbellReith on 9th November 2020 following the issue of initial audit report:

- Basement Impact Assessment by John Caine, dated September 2020;
- Proposed Plans and Sections: 20006_004(P9), 20006_006(P5).

2.8. The following additional letter was forwarded to CampbellReith on 1st December 2020 as a response to the final query regarding hydrology in the previous audit report;

- Letter to Josh Lawlor, dated 30th November 2020.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	
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	Pages 20 to 30 of the BIA.
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?	No	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	NA	

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	Only trial pit sections are provided.
Is monitoring data presented?	No	
Is the ground investigation informed by a desk study?	No	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Section drawings provided (20005_003 (P3)) based on a survey indicates that 16 Chalcot Gardens has a basement, and Question 13 of updated BIA.
Is a geotechnical interpretation presented?	No	
Does the geotechnical interpretation include information on retaining wall design?	No	
Are reports on other investigations required by screening and scoping presented?	NA	
Are the baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	No	

Item	Yes/No/NA	Comment
Are estimates of ground movement and structural impact presented?	No	
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	NA	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Appropriate Monitoring Strategy to be in place during detail design and construction.
Has the need for monitoring during construction been considered?	No	
Have the residual (after mitigation) impacts been clearly identified?	NA	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	However detailed design and calculations will be required to be completed prior to construction.
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	It is stated that the impact will be within Category 1.
Are non-technical summaries provided?	No	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by John Caine a Chartered Structural Engineer and Member of Institute of Civil Engineers. He has suitable qualifications to assess hydrology and land stability, but not hydrogeology. Updated information submitted in November states that the BIA was co-authored by an individual suitably qualified to assess hydrogeology as per CPG. This is accepted.
- 4.2. It is proposed to lower the existing basement of the property facilitated by sequential 1m wide underpinning, c.1m in height and founding at c. 1.70m below ground level (m bgl). It is understood from the drawings provided that the existing basement, with a footprint of c. 12m x 7m, is founded at 0.65m bgl to 0.90m bgl, on underpinned foundations within the London Clay.
- 4.3. Based on the response to queries in the previous audit report (Version D2) it is confirmed that the paved patio area towards the rear property and the existing light well to the front of the property would be deepened by 0.5m.
- 4.4. A ground investigation, comprising three trial pits extending to 1m below ground level, has been undertaken to the front and rear of the property. It is stated that no groundwater was encountered, and monitoring has not been carried out. Although the proposed basement shall extend to 1.70m below ground level, it is accepted that the bearing stratum has been proven.
- 4.5. It is stated in the BIA that the site is not within the catchment of the Hampstead Heath pond chains and that the proposed development area has no history of flooding.
- 4.6. The BIA initially stated that the proposed development will not lead to an increase in the impermeable surface area, and will not generate any further surface water run-off. However, reference to proposed lower ground floor layout, showed the excavation extending into front and rear gardens. Although the updated BIA states otherwise, a letter from the author of the BIA has now confirmed that there will be no change in the patio area. It is accepted that the proposal will not impact the hydrology of the area.
- 4.7. Since the basement excavation is within London Clay, an unproductive stratum, it can be accepted that the development will not adversely impact the hydrogeology of the area.
- 4.8. It is stated the site does not include slopes greater than 7 degrees, that no reprofiling is proposed, and that no trees will be felled or affected by the proposal. A visual inspection has been undertaken of the surrounding areas of the site by the author, who confirms that there is no past evidence of subsidence and structural damage. It is stated, and accepted, that the site is not within 5m of the highway or pedestrian right of way.

- 4.9. It is stated in response to Question 13 of the screening section in the updated BIA that 16 Chalcot Gardens has a basement, and 14 Chalcot Gardens does not. It is understood that the proposal will lead to an increase in differential depth of foundations relative to 14 Chalcot Gardens.
- 4.10. A ground movement assessment has not been undertaken, and the expected scale of damage based on Burland scale has not been presented. As requested in the previous audit report a definitive statement with respect to the scale of potential damage to neighbouring properties is included. It is stated that the potential damage to neighbouring properties will not exceed Category 1 on the Burland scale. Considering the depth of excavation and resultant differential depth with respect to neighbouring properties, it is accepted that there is likely to be no significant impact to stability.
- 4.11. A proposal for a movement monitoring strategy during excavation and construction may be required, as part of party wall awards.

5.0 CONCLUSIONS

- 5.1. The BIA has been undertaken by suitably qualified individuals.
- 5.2. The BIA has confirmed that the founding stratum is London Clay. No groundwater monitoring has been undertaken, however, it is accepted that the site is underlain by a non-aquifer.
- 5.3. It is proposed to lower the existing basement by underpinning the existing foundations of the building, which have already been deepened. The maximum depth of excavation is 1m. The proposal includes deepening of the rear patio area, and the existing lightwell to the front of the property.
- 5.4. It is accepted that the proposal will not impact the hydrology and hydrogeology of the area.
- 5.5. It is stated in the updated BIA that the neighbouring 16 Chalcot Gardens has a basement and 14 Chalcot Gardens does not have one. No analysis has been undertaken of horizontal and vertical ground movements. However, it is stated that the potential damage to neighbouring properties will be within Category 1 of the Burland Scale. Assuming good control of workmanship, this is accepted.
- 5.6. The BIA meets the requirements of CPG: Basements.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA	Discussion regarding proposed excavation to front and rear gardens to be included.	Closed	24.11.2020
2	Hydrology	Further scoping and confirmation of impact is required based on the response to Question 3 of the screening questions.	Closed	01.12.2020
3	Hydrogeology	Response to Question 4 of screening questions may need revision.	Closed	24.11.2020
4	Land Stability	A definitive statement related to the impact of the proposal to the neighbouring properties is requested.	Closed	24.11.2020

Appendix 3: Supplementary Supporting Documents

Letter to Josh Lawlor, dated 30th November 2020
(Confirming there will be no increase in patio area following development)

JOHN CAINE – CHARTERED STRUCTURAL ENGINEER

82 Elers Road,

Ealing,

London W13 9QD

30th November 2020

John.caine@outlook.com

(M) 07976 709319

Mr Josh Lawler,
Planning Officer,
Supporting Communities,
London Borough of Camden,
5 Pancreas Square,
London N1C 4AG

RE: 15 CHALCOT GARDENS, LONDON NW3 4YB – BASEMENT IMPACT ASSESSMENT AUDIT

Further to your email today to Open London, Architects with a copy of the Campbell Reith, Basement Impact Assessment Audit – Revision: D1, I have been sent their report which I have read and noted a mistake in my report with respect to the area of proposed rear patio and the existing area of rear patio.

My report wrongly states that there is a 12m² increase in area of patio which has been picked up in the Campbell Reith report. There is in fact no increase in area between the existing and proposed rear patio.

I have this afternoon spoken to the Author of the Campbell Reith report and explained to her the error and referred her to the Architects drawings numbered 001 and 004 which are both in Appendix A of my Basement Impact Assessment report ref: OL8 rev B November 2020.

The new patio is set lower to suit the lower ground floor level and the new patio will be drained to the existing drainage system as noted in my report.

The two drawings were briefly looked at by Campbell Reith to see that the areas of the existing and the proposed rear patio show no meaningful change in area and I was advised by Campbell Reith to write to you to explain the situation.

I understand from Campbell Reith that you will forward my letter to them.

Yours Sincerely,



John Caine – BSc. Dip Geo.C.Eng.M.I. Struct.E

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