

15 Chalcot Gardens
London, NW3 4YB

Basement Impact Assessment
Audit

For

London Borough of Camden

Project Number: 13398-55

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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, but not 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.
- 1.6. It is understood from the drawings that the proposed excavation will be undertaken beyond the existing building footprint, to include part of the existing front and rear gardens. However, this has not been discussed in the BIA.
- 1.7. 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.
- 1.8. It is not accepted that the proposal will not impact the hydrology, until an adequate response to screening questions and further clarification as requested in Section 4 are provided.
- 1.9. The response to hydrogeology screening question regarding changes to impermeable areas requires confirmation as discussed in Section 4, although given the unproductive nature of underlying geology, it is accepted that the proposal should not adversely impact the hydrogeology of the area.
- 1.10. 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.

- 1.11. An outline design of the proposed underpinning is not included in the BIA.
- 1.12. It is not explicitly stated that the neighbouring properties have no basement, however it is understood from the drawings that 16 Chalcot Gardens has a basement and that 14 Chalcot Gardens does not.
- 1.13. No analysis has been undertaken of horizontal and vertical ground movements. This is accepted provided a clear statement confirming the maximum potential damage to the neighbouring properties is included in the BIA.
- 1.14. 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 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)

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	Author not suitably qualified to undertake hydrogeological assessment.
Is data required by Cl.233 of the GSD presented?	No	Areas of excavation to front and rear of property not considered in BIA. Outline design of the underpinning required. Nature and scale of impact on neighbouring properties not presented. Mitigation measures to reduce, avoid or offset adverse impacts may be required.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	No	Areas of excavation to front and rear of property not considered in BIA. Design of underpinning required based on in-situ soil conditions required.
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	However, response to Question 13 is unsatisfactory.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Response to Question 4 may need revision.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Response to Question 6 to be provided. Response to Question 3 may need revision once the areas of excavation to front and rear of property are considered.
Is a conceptual model presented?	No	

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	NA	
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	
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.
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?	No	Cannot be confirmed until hydrology and hydrogeology screening responses confirmed.
Are the baseline conditions described, based on the GSD?	No	

Item	Yes/No/NA	Comment
Do the baseline conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	No	
Are estimates of ground movement and structural impact presented?	No	
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	Cannot be confirmed until screening responses confirmed.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Cannot be confirmed until screening responses confirmed.
Has the need for monitoring during construction been considered?	No	
Have the residual (after mitigation) impacts been clearly identified?	No	Cannot be confirmed until screening responses confirmed.
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?	No	Further clarification required.
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	No	Definitive statement required within BIA.
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.
- 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. 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.
- 4.4. 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. The BIA states 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, shows the excavation extending into front and rear gardens. Confirmation is required as to whether these areas are permeable, based on which Question 3 of the screening questions may need revision. Response to Question 6 of the screening questions related to 'Surface Water Flooding' is not included. Unless further clarification and appropriate response is provided, it cannot be confirmed that that the proposal will not adversely impact the hydrology of the area.
- 4.5. It is stated that the proposed lowering of the basement will not extend beneath the water table surface. 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. However, Question 4 of the screening questions may need revision depending on the existing ground surface condition and proposed works in the front and rear garden areas.
- 4.6. 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.
- 4.7. Although not explicitly stated, it is noted from the section drawings that 16 Chalcot Gardens has a basement, and 14 Chalcot Gardens does not. A statement confirming the same is required

within the BIA, along with a satisfactory response to Question 13 of the land stability screening. It is understood that the proposal will lead to an increase in differential depth of foundations relative to 14 Chalcot Gardens.

- 4.8. A ground movement assessment has not been undertaken, and the expected scale of damage based on Burland scale has not been presented. 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. However a definitive statement with respect to the scale of potential damage to neighbouring properties is requested.
- 4.9. 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 an individual qualified to assess hydrology and land stability, but not hydrogeology.
- 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 underpinning to the shallow foundation of the building. The proposal includes excavation of front and rear garden, which is not discussed in the BIA. Clarification is requested.
- 5.4. It cannot be accepted that the proposal will not impact the hydrology of the area, until a response is provided to Question 6 of 'Surface Water Flow' screening question and it is confirmed whether the excavations to the front and rear of the property will alter the extent of impermeable areas (Q3 hydrology screening). Further impact assessment may be required based on the responses provided.
- 5.5. Question 3 of the hydrogeology screening should be confirmed. The scoping and impact assessment may need revision based on the above confirmation.
- 5.6. Although not explicitly stated, it is understood 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. Whilst it is accepted that significant stability impacts are not expected, a definitive statement is requested regarding the scale of potential damage to the neighbouring properties.
- 5.7. 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: 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.	Open	
2	Hydrology	Response to Question 3 of screening questions may need revision. Response to Question 6 is required. Further scoping or confirmation of impact may be required based on above response.	Open	
3	Hydrogeology	Response to Question 4 of screening questions may need revision.	Open	
4	Land Stability	A definitive statement related to the impact of the proposal to the neighbouring properties is requested.	Open	

Appendix 3: Supplementary Supporting Documents

None

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