



14 Parliament Hill
London, NW3 2SY

Basement Impact Assessment
Audit

For
London Borough of Camden

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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 14 Parliament Hill, NW3 2SY (Camden Planning reference 2016/1248/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 was undertaken by Geotechnical & Environmental Associates (GEA) and the individuals involved have suitable qualifications.
- 1.5. The proposal includes the construction of a ground floor extension into the rear garden, however, due to the slope of the ground, this will require a 1.20m excavation.
- 1.6. A site specific ground investigation has not been undertaken. Reference is made to a nearby ground investigation which recorded Made Ground over London Clay. The BIA has not confirmed the depth or nature of the foundations, however, they should be taken through to bear on to the London Clay.
- 1.7. Perched water may exist in the Made Ground and this should be considered in the design of the temporary and permanent works.
- 1.8. Clarification is requested on where the additional surface water from the rear terraced area which is indicated to be permeable paving would be discharged.
- 1.9. The screening exercise did not identify that the site is in an area which previously flooded. The BIA should be updated to consider this potential impact.
- 1.10. A works programme is not included although it is understood construction will be undertaken in parallel with the works at No. 15A. A detailed programme should be provided once details are agreed with No. 15A.
- 1.11. Although no details are provided, it is acknowledged that due to the works being undertaken in parallel with No 15A, which is the property most likely to be affected, adverse effects on stability are reduced. There are no slope stability concerns, any other surface water

considerations or wider hydrogeological issues regarding the proposed development. It is accepted that the information provided for the BIA reflects this.

- 1.12. Queries on two issues regarding hydrology are summarised in Appendix 2.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 11 July 2017 to carry out a Category A Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 14 Parliament Hill, NW3 2SY (Camden Planning reference 2016/1248/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 (CPG) 4: Basements and Lightwells.
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
- 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 *"Erection of ground floor infill extension of side passage and ground floor rear/side extension with green roof and rooflights at rears of nos. 14 and 15a plus patios and landscaping works"*.
- 2.6. The Audit Instruction also confirmed 14 Parliament Hill is not listed, nor is it a neighbour to listed buildings.

2.7. CampbellReith accessed LBC's Planning Portal on 26 July 2017 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment (BIA): Geotechnical & Environmental Associates (GEA), dated May 2016
- Design & Access Statement (DAS): Barnaby Gunning Studio Ltd, dated March 2016
- Barnaby Gunning Studio Ltd Planning Application Drawings consisting of
 - Location Plan
 - Existing Plans
 - Proposed Plans
 - Existing Elevations
 - Proposed Elevations
 - Existing Sections
 - Proposed Sections
 - 3D views

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	See Audit paragraph 4.1.
Is data required by Cl.233 of the GSD presented?	No	No information provided (see Audit paragraph 4.4) and works programme not included.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	No	No information provided but acknowledged groundworks may be undertaken in close coordination with the development at No. 15A which has planning permission (see Audit paragraph 4.4).
Are suitable plan/maps included?	No	Scheme drawings incomplete and Arup GSD extracts with site location indicated not provided.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	No	As above.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Relevant map extracts with site location not provided. Justification to Q8 incomplete. Response to Q3 contradictory to information in parts of the report (see Audit paragraphs 4.5 and 4.7).
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Relevant Arup GSD maps not provided. Response to Question 1b should be 'Unknown' and response to Q5 contradicts information in other parts of the report. Justification to Q2 is incomplete (see Audit paragraphs 4.5 to 4.7).
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Relevant Arup GSD maps not provided. Response to Q6 incorrect (see Audit paragraphs 4.5 and 4.8).
Is a conceptual model presented?	No	Not presented, although reference is made to a nearby ground investigation in the desk study sections.

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.1
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	Not provided although one issue from the screening should have been carried forward.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	Provided but one issue not carried forward from the screening. The scoping to Q5 is contradictory to information given in other parts of the report (see Audit paragraph 4.6).
Is factual ground investigation data provided?	No	Site specific ground investigation not undertaken.
Is monitoring data presented?	No	Site specific ground investigation not undertaken.
Is the ground investigation informed by a desk study?	N/A	Desk study presented, but ground investigation not undertaken.
Has a site walkover been undertaken?	No	Not stated.
Is the presence/absence of adjacent or nearby basements confirmed?	No	Not mentioned although it is stated in the Design and Access (DAS) statement that planning permission has been granted for the construction of a four storey building which includes a basement excavation at No. 15A.
Is a geotechnical interpretation presented?	No	Site specific ground investigation not undertaken.
Does the geotechnical interpretation include information on retaining wall design?	N/A	As above.
Are reports on other investigations required by screening and scoping presented?	N/A	None identified.
Are the baseline conditions described, based on the GSD?	No	Detailed proposals not provided. Description of neighbouring properties included in DAS, however this is incomplete.

Item	Yes/No/NA	Comment
Do the base line conditions consider adjacent or nearby basements?	No	Not considered.
Is an Impact Assessment provided?	No	BIA not undertaken beyond scoping.
Are estimates of ground movement and structural impact presented?	No	Not provided although it is acknowledged that the property most likely to be affected (No. 15A) has planning permission which includes a basement level extension adjacent to the proposed No. 14 extension.
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	N/A	BIA not undertaken beyond scoping.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Detailed proposals not provided but it is understood from the DAS that works are to be undertaken in conjunction with the proposals to No. 15A.
Has the need for monitoring during construction been considered?	No	It is understood from DAS that works are to be undertaken in conjunction with the works to No 15A which is the property most likely to be affected.
Have the residual (after mitigation) impacts been clearly identified?	N/A	Mitigation not provided.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	Although it is understood that works are to be undertaken in conjunction with the works to No. 15A which is the property most likely to be affected.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	Contradictory information given on the drainage.
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	As above.
Does report state that damage to surrounding buildings will be no	No	Although it is understood that works are to be undertaken in

Item	Yes/No/NA	Comment
worse than Burland Category 2?		conjunction with the works to No. 15A which is the property most likely to be affected.
Are non-technical summaries provided?	Yes	Summary of issues identified from the screening provided.

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by a well-known firm of engineering consultants, Geotechnical & Environmental Associates (GEA) and the individuals involved have CEng MICE, C.Geol and CIWEM qualifications.
- 4.2. The Design and Access Statement (DAS) prepared by Barnaby Gunning Studio Ltd also comprises a screening assessment, however, this has not been audited.
- 4.3. The property comprises a four storey building which is part of '*three paired semi-detached*' (13, 14 and 15A) properties. The site slopes up from street level to the rear garden by 1.20m. Due to the irregularly shaped plot of land, the site is bounded by both No. 15A and 15 to the east and No. 13 to the west.
- 4.4. The proposal includes the construction of a ground floor extension into the rear garden, however, due to the slope of the ground, this will require a 1.20m excavation. There is no indication of a construction methodology. It is stated in the DAS that planning permission has been granted for the demolition of the existing 2 storey building at No. 15A and the construction of a 4 storey building which also includes excavation at basement level. From the drawings, it appears the rear of the new building to No 15A will be adjacent to the proposed extension to No. 14. It is understood the works will be undertaken in parallel, therefore on this basis the eastern boundary with No. 15A would not be a retaining wall.
- 4.5. Although it is evident that a thorough screening process has been largely undertaken, it would be beneficial if the requirements of CPG4 are followed accurately by the inclusion of map extracts from the Arup GSD, Environment Agency and the LBC Flood Risk Management Strategy identifying the site location on each map. This would help to support statements made in the BIA screening process. The justifications to Question 3 of the hydrogeology screening and Question 8 of the hydrology screening are considered incomplete.
- 4.6. A 'No' response is given to Question 1b of the hydrogeology screening which relates to whether or not the proposed basement level will extend to beneath the water table. Whilst it is accepted as stated in the justification that the London Clay is not sufficiently permeable to support a water table, the response ignores the potential that perched water may be encountered which may require temporary dewatering measures. A 'No' response is given to Question 4 which relates to whether or not there will be a change in the proportion of paved areas, however, this contradicts other sections of the report which states there will be a slight increase in the paved area.
- 4.7. It is stated in the hydrogeology screening that no surface water would be discharged into the ground due to the London Clay being unsuitable for SUDS type soakaways. This appears to be

contradictory to the statement in the scoping that part of the rear terrace area would be permeable paving.

- 4.8. A 'No' response is given to Question 6 of the hydrology screening which relates to whether or not the site is in an area at risk of flooding. Parliament Hill flooded in 2002 as indicated on Figure 3iii of the SFRA and Figure 15 of the Arup GSD.
- 4.9. The response to Question 13 of the land stability screening states that due to the level of the garden and the assumption that the neighbouring properties are of similar construction, the proposed extension would not significantly increase the differential depth of the foundations relative to the neighbouring properties. Although no information is provided, due to the proposals to No. 15A this is accepted.
- 4.10. It is stated in the land stability scoping that *'it is unclear at this stage whether there are plans to remove the existing trees on site'*. This should be confirmed. If the trees are to be removed, it is recommended the foundations be taken through to beyond the shrink-swell zone of influence determined from guidance given in the NHBC Standard.
- 4.11. A site specific ground investigation has not been undertaken. Reference is made to a site c.20m away where a *'nominal thickness'* of Made Ground over London Clay was encountered. Whilst the depth and nature of the proposed foundations are not indicated, they should be taken through to the London Clay beneath as the thickness of Made Ground could vary significantly on site.
- 4.12. A works programme has not been submitted as required by Cl.233 of the GSD.
- 4.13. Although a site specific investigation has not been undertaken and no construction details are provided, it is understood that construction is to undertaken in parallel with the proposals at No. 15A, which is the property most likely to be affected by the proposals to No. 14. It is therefore accepted that despite some omissions in the BIA, there are no slope stability concerns, any other surface water considerations or wider hydrogeological issues regarding the proposed development.

5.0 CONCLUSIONS

- 5.1. The BIA was undertaken by Geotechnical & Environmental Associates (GEA) and the individuals involved have suitable qualifications.
- 5.2. The proposal includes the construction of a ground floor extension into the rear garden, however, due to the slope of the ground, this will require a 1.20m excavation.
- 5.3. A site specific ground investigation has not been undertaken. Reference is made to a nearby ground investigation which recorded Made Ground over London Clay. The BIA has not confirmed the depth or nature of the foundations, however, they should be taken through to bear on to the London Clay.
- 5.4. Perched water may exist in the Made Ground and this should be considered in the design of the temporary and permanent works.
- 5.5. Clarification is requested on where the additional surface water from the rear terraced area which is indicated to be permeable paving would be discharged.
- 5.6. The screening exercise did not identify that the site is in an area which previously flooded. The BIA should be updated to consider this potential impact.
- 5.7. A works programme is not included although it is understood construction will be undertaken in parallel with the works at No 15A. A detailed programme should be provided once details are agreed with No 15A.
- 5.8. Although no details are provided, it is acknowledged that due to the works being undertaken in parallel with No. 15A, which is the property most likely to be affected, adverse effects on stability are reduced. There are no slope stability concerns, any other surface water considerations or wider hydrogeological issues regarding the proposed development. It is accepted that the information provided for the BIA reflects this.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA format	Works programme not included.	Open – Programme to be provided once details are agreed with No 15A.	N/A
2	Hydrology	Contradictory information on where the additional surface water as a result of the slight increase in paved areas will be discharged.	Open – clarification requested.	
3	Hydrology	BIA did not identify site is located in an area which previously flooded.	Open – risk to be assessed and addressed as appropriate.	

Appendix 3: Supplementary Supporting Documents

None

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