

53 Glenmore Road,
London NW3 4DA

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 13693-39

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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 53 Glenmore Road, London NW3 4DA (planning reference 2021/5068/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 (BIA) 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 proposed development comprises the extension of the existing cellar on the lower ground floor to create a separate unit with a private entrance and rear garden. A rear light-well has been proposed, half of which will be used as an external garden.
- 1.5. The BIA has been prepared by Fairhurst. The qualifications of the authors in regard to the Groundwater assessment should be demonstrated to be in accordance with LBC guidance.
- 1.6. The BIA has not been informed by a desk study in line with LBC guidance: no investigation into the historical use of the site has been undertaken and utility companies have not been approached with regards to underground infrastructure.
- 1.7. Screening assessments have been completed but no scoping assessment has been included within the BIA although a number of issues have been identified within the screening assessment.
- 1.8. The reported ground conditions comprise Made Ground overlying the London Clay Formation. However, no factual site investigation information is presented, which is required.
- 1.9. Groundwater is reported to have been encountered in shallow soils during trial pit excavation and monitored at depth below the proposed basement formation level within the London Clay. Given that the groundwater has only been monitored once in 2017 it is recommended that further monitoring is undertaken to inform temporary works contingency planning, control measures and waterproofing design.
- 1.10. The BIA states that a 'lost' tributary of the River Tyburn is located 90m west of the site which has since been covered/culverted.
- 1.11. The site is reported to be at low to medium risk of flooding from surface water. The BIA states that a Flood Risk Assessment will be required and this should be provided for review.
- 1.12. Glenmore Road is within Critical Drainage Area (Group 3-005). The proposed basement development is reported to "not change significantly" the impermeable site area. The change in impermeable site areas should be quantified and outline drainage plans should be provided, including attenuation proposals, with sufficient assessment to demonstrate discharge flows will be in accordance with LBC's and Thames Water's requirements.
- 1.13. Interpretative geotechnical information in accordance with LBC guidance is required.
- 1.14. Outline structural information should be provided, including construction methodology, sequencing and propping proposals. Waterproofing and flood risk mitigation measures should be presented, as required.
- 1.15. An outline construction programme is required.

- 1.16. A Ground Movement Assessment (GMA) has been undertaken to predict movements that may impact the adjacent properties at 51 and 55 Glenmore Road. Queries are raised, as detailed in Section 4.
- 1.17. Non-technical summaries should be provided in future revisions of the BIA.
- 1.18. Queries and matters requiring further clarification are discussed in Section 4 and summarised in Appendix 2. Until the additional information requested is provided, the BIA does not meet the requirements of CPG: Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 15th February 2022 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 53 Glenmore Road, London NW3 4DA, Camden Reference 2021/5068/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): Basements. January 2021
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
 - The Local Plan (2017): Policy A5 (Basements).
- 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; and,
 - 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 planning portal describes the proposal as: *"Conversion of 3 partially self-contained flats to 1 x 5 bed and 1 x 1 bed fully self contained dwellings including excavation of basement, rear/side infill extension, rear dormer extension and enlargement of front lightwell."*
- The planning portal confirmed the site lies within Belsize Park Conservation Area and neither the subject site nor neighbouring properties are listed buildings.
- 2.6. CampbellReith accessed LBC's Planning Portal on 22nd February 2022 and gained access to the following relevant documents for audit purposes:
- Basement Impact Assessment (ref 145294/R1) dated 29th September 2021 by Fairhurst.
 - Existing and proposed plans and sections dated August and October 2021 by Richard James Hastings Architecture Ltd.
 - Planning, Design & Access Statement dated 14th October 2021 by RJH Architecture Ltd.
 - Construction/Demolition Management Plan dated September 2021 by TTP Consulting.
 - Planning consultation comments.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	The authors' qualifications for the Subterranean (groundwater) assessment do not meet the requirements of CPG Basements.
Is data required by Cl.233 of the GSD presented?	No	Outline construction programme and utilities information 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	Construction methodology and outline structural information including temporary works required.
Are suitable plans/maps included?	No	A site location plan along with existing and proposed plans have been provided. However, no historical maps of the subject site have been provided.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	No	Insufficient plans and maps included.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Section 3.3 of the BIA. London Clay is the shallowest stratum at the site. Historic watercourse within 100m. Differential depth of foundations with neighbours not demonstrated.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Section 3.2 of the BIA. Historic watercourse within 100m.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Section 3.1 of the BIA. Historic watercourse within 100m. Change in impermeable site area to be demonstrated.

Item	Yes/No/NA	Comment
Is a conceptual model presented?	No	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	No scoping provided within BIA.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	No scoping provided within BIA.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	No scoping provided within BIA.
Is factual ground investigation data provided?	No	Refenced investigation report to be provided.
Is monitoring data presented?	Yes	Section 4.2 of the BIA. One monitoring well was monitored on one occasion in 2017.
Is the ground investigation informed by a desk study?	No	Desk study in accordance with GSD Appendix G1 required.
Has a site walkover been undertaken?	No	Not demonstrated.
Is the presence/absence of adjacent or nearby basements confirmed?	No	Section 5.5 of the BIA notes that site observations suggest that No. 51 Glenmore Road has a single-storey basement while No. 55 consists of an undeveloped cellar. The BIA assumes that the basement at No. 51 is at the same depth as the proposed basement at the subject site and only extends to half of the building footprint from the front. The cellar at No. 55 Glenmore Road has been assumed to be at the same depth and of the same size as the existing cellar at the subject site. However, these assumptions are not supported by any evidence.
Is a geotechnical interpretation presented?	Yes	Section 5 of the BIA. However, information accordance with GSD Appendix G3 required.

Item	Yes/No/NA	Comment
Does the geotechnical interpretation include information on retaining wall design?	No	
Are reports on other investigations required by screening and scoping presented?	No	A Ground Movement Assessment has been provided. The screening refers to the requirement of a Flood Risk Assessment which is not included within the documents reviewed. Ground Investigation report not provided.
Are baseline conditions described, based on the GSD?	No	Desk study, SI report, geotechnical interpretation, structural information, impermeable site area, flood risk assessment etc required.
Do the baseline conditions consider adjacent or nearby basements?	Yes	Assumptions have been made on the depth of adjacent basements.
Is an Impact Assessment provided?	No	
Are estimates of ground movement and structural impact presented?	Yes	Section 5 of the BIA. Queries as Section 4.
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	To be clarified once baseline information established.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	To be clarified once baseline information established.
Has the need for monitoring during construction been considered?	Yes	Section 6 of the BIA. However, no details are provided.
Have the residual (after mitigation) impacts been clearly identified?	No	To be further assessed, as applicable.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	Structural scheme and temporary works to be confirmed. GMA to be clarified, as detailed in Section 4.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	Not demonstrated. Assessment of change in impermeable site area. No proposed drainage plans have been provided. Final proposed drainage design will require approval from LBC and Thames Water.

Item	Yes/No/NA	Comment
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	Not demonstrated.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	However, as above and Section 4, not demonstrated.
Are non-technical summaries provided?	No	Non-technical summaries are not provided.

4.0 DISCUSSION

- 4.1. The site currently comprises a three-storey terraced residential property with a cellar. The proposed development comprises the extension of the existing cellar on the lower ground floor to create a separate unit with a private entrance and rear garden. A rear light-well has been proposed, half of which will be used as an external garden. The basement excavation includes the deepening of the existing cellar by approximately 1.35m and excavation of approximately 3.20m (2.70m to finished floor level + 200mm finishes + 300mm thick basement slab) in the remaining proposed basement area.
- 4.2. The BIA has been prepared by Fairhurst. The qualifications of the authors in regard to the hydrogeological impact assessment should be demonstrated to be in accordance with LBC guidance.
- 4.3. The BIA has not been informed by a desk study in line with GSD Appendix G1: no investigation into the historical use of the site has been undertaken and utility companies have not been approached with regards to underground infrastructure.
- 4.4. Screening assessments have been completed. It is noted that a number of 'No' and 'unknown' answers have been stated although the accompanying text indicates 'Yes' answers would be appropriate:
- Change in proportion of impermeable site area. This should be quantified, noting that a number of responses to screening questions may be impacted.
 - Proximity of a watercourse. The BIA notes an historic / culverted watercourse within 90m.
 - The London Clay is the shallowest natural stratum on site.
 - History of shrink-swell subsidence in the area.
 - Differential depth of foundations relative to neighbours. The neighbours have assumed cellar / basement levels based on the site walkover only and without providing any evidence. A such assumptions on this regard made in the GMA should be conservative as detailed in 4.15.
- 4.5. In addition to 4.4, the BIA identifies a number of potential issues within the screening assessment. However, no scoping assessment has been included within the BIA. The screening assessment should be revised and a scoping assessment added to the BIA.
- 4.6. No factual site investigation data is presented. The BIA references a site investigation undertaken by LMB Geosolutions Ltd, which should be provided for review. The ground conditions are reported as Made Ground overlying the London Clay Formation. Groundwater was not encountered within a borehole during the investigation but standing water was recorded in a trial pit at a depth of c. 0.80m below ground level (bgl). Following completion of the ground investigation works the monitoring well installed within the borehole was monitored on one occasion on 15 March 2017 with groundwater recorded at a depth of 5.66m bgl within the London Clay. The BIA notes that this represents perched water.
- 4.7. Given that the groundwater has only been monitored once in 2017 it is recommended that further monitoring is undertaken to inform temporary works contingency planning, control measures and waterproofing design.
- 4.8. The BIA states that a 'lost' tributary of the River Tyburn is located 90m west of the site which has since been covered/culverted. The BIA makes no assessment as to whether this is likely to be impacted by and / or impact the proposed development.
- 4.9. The site is reported to be at low to medium risk of flooding from surface water. The BIA states that a Flood Risk Assessment will be required and this should be provided for review.

- 4.10. Glenmore Road is within Critical Drainage Area (Group 3-005). The proposed basement development is reported to “not change significantly” the impermeable site area. The change in impermeable site areas should be quantified and outline drainage plans should be provided, including attenuation proposals, with sufficient assessment to demonstrate discharge flows will be in accordance with LBC’s and Thames Water’s requirements.
- 4.11. Interpretative geotechnical information is presented. However, it does not include information on bearing capacity and retaining wall design. The requirements indicated within the GSD Appendix G3 should be presented.
- 4.12. Outline structural information should be provided, including construction methodology, sequencing and propping proposals. If required, dewatering and other temporary works requirements to mitigate stability impacts should be presented. Waterproofing and flood risk mitigation measures should be presented, as required.
- 4.13. An outline construction programme is required.
- 4.14. A Ground Movement Assessment (GMA) has been undertaken to predict movements that may impact the adjacent properties at 51 and 55 Glenmore Road in order to allow an assessment of the potential damage. It has been assumed that the basement at No. 51 is at the same depth as the proposed basement at the subject site and only extends to half of the building footprint from the front. The cellar at No. 55 Glenmore Road has been assumed to be at the same depth and of the same size as the existing cellar at the subject site. The maximum damage category for the adjacent properties has been calculated to be within Category 1 (very slight damage) using Burland’s classification.
- 4.15. The GMA should be reviewed and clarified, considering the following:
- The geotechnical and structural information requested should be provided to demonstrate that the geotechnical parameters and loads adopted in the GMA are consistent.
 - The geometry and depths of the adjacent structures are currently assumed. Where definitive geometry / dimensions of neighbouring structures cannot be demonstrated, moderately conservative assumptions should be adopted.
 - The anticipated range of vertical and horizontal movements generated by a single stage of underpinning is 5mm to 10mm at the retaining walls. The current GMA damage assessment indicates movements lower than this range and is therefore not considered to be moderately conservative.
 - It is noted that the predicted settlements due to foundation loading are significantly larger than the movement range adopted within the damage assessment. This should be clarified.
- 4.16. The BIA states that movement monitoring of walls is recommended during the construction stage and that trigger levels should be specified and agreed with the party wall surveyor to protect the neighbouring properties as a precautionary measure.
- 4.17. Non-technical summaries should be provided within any revisions to the BIA submitted.

5.0 CONCLUSIONS

- 5.1. The authors' qualifications should be demonstrated to be in accordance with the requirements of CPG Basements.
- 5.2. The historical use of the site should be investigated, and utility companies approached with regards to underground infrastructure.
- 5.3. The screening assessment should be reviewed and a scoping assessment presented.
- 5.4. Factual ground investigation data should be provided.
- 5.5. Groundwater conditions should be confirmed.
- 5.6. A flood risk assessment should be presented.
- 5.7. The impermeable site areas should be quantified and the appropriate drainage assessment presented.
- 5.8. Interpretative geotechnical information in accordance with LBC guidance is required.
- 5.9. Outline structural information should be provided.
- 5.10. An outline construction programme is required.
- 5.11. The GMA should be clarified, as detailed in Section 4.
- 5.12. Non-technical summaries should be provided.
- 5.13. Queries and matters requiring further clarification are summarised in Appendix 2. Until the additional information requested is provided, the BIA does not meet the requirements of CPG: Basements.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status/Response	Date closed out
1	BIA Format	BIA authors' qualifications	Open – to be demonstrated as 4.2	
2	Desk Study	Historical mapping of site and underground utility and infrastructure information should be provided.	Open – to be provided as 4.3	
3	BIA Format	Screening assessment to be reviewed / updated and scoping assessment to be presented.	Open – to be provided as 4.4, 4.5, 4.8	
4	BIA Format	Factual site investigation report to be presented	Open – to be provided as 4.6	
5	Land Stability / Groundwater	Groundwater levels to be confirmed (and assessment demonstrated to be consisted with site investigation data)	Open – to be provided as 4.6, 4.7	
6	Surface Water Flow	Flood Risk Assessment required.	Open – to be provided as 4.9	
7	Surface Water Flow	Impermeable site area to be clarified. Outline drainage plans should be provided including SUDS proposals.	Open - to be provided as 4.10	
8	Land Stability	Interpretative geotechnical parameters as GSD G3.	Open – to be provided as 4.11	
9	Land Stability	Outline structural information to be provided.	Open – to be provided as 4.12	
10	Land Stability	GMA to be clarified.	Open – to be provided as 4.14, 4.15	
11	BIA Format	Outline Construction programme and non-technical summaries required	Open – to be provided as 4.13, 4.17	

Appendix 3: Supplementary Supporting Documents

None

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