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Basement Impact Assessment Audit

2 Elsworthy Terrace, London NW3 3DR

For
London Borough of Camden

Project No.
14006-50

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 2 Elsworthy Terrace, London NW3 3DR (planning reference 2023/5350/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 on 26 January 2024 and reviewed it against an agreed audit check list.

1.4 The BIA and has been prepared by individuals who possess suitable qualifications.

1.5 It is proposed to extend the existing lower ground floor to the rear of the property and construct a bike store area at the front of the property. The floor level of a vault space below the front entrance stairs will be lowered by 1.50m using underpinning techniques.

1.6 Screening and scoping assessments are presented and informed by desk study information. These should be revised to consider any impacts from the proposed vault lowering.

1.7 A ground investigation was undertaken and confirms the presence of London Clay as the shallowest strata. It is accepted that there will be no impact to the hydrogeology of the area.

1.8 Any perched ground water encountered during construction will be mitigated by sump pumping.

1.9 The area has low risk from surface water flooding. However, the increase in surface water flow due to an increase in hard standing area will be mitigated by implementing SuDS. It is accepted that there will be no impact to the hydrology of the area.

1.10 The proposed rear basement extension and front bike store area will be formed by extending the existing lower ground floor level. The new retaining walls will not require excavation deeper than the existing and neighbouring foundations. There is also new excavation and underpinning to the vault at the front of the property.

1.11 The Construction Method Statement has been revised to reflect the conclusions of the BIA with respect to impact to neighbouring structures.

1.12 Based on the revised submission it can be confirmed the BIA complies with the requirements of CPG: Basements.

2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 19 January 2024 to carry out a Category A audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 2 Elsworthy Terrace, London NW3 3DR (Planning Application Reference 2023/5350/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;

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 "Alterations and additions to the existing terraced dwelling, including; lower ground floor rear extension, replacement windows at rear and front elevations, replace existing second floor front and rear dormers with new dormers and erect an additional, second dormer on the rear elevation; remove existing rooflight and install five new rooflights; construct new sunken rear garden, erect new outbuilding; install new air conditioning condenser unit in an acoustic enclosure in the rear garden; extend existing front light well and erect a new cycle store and bin enclosure at the front elevation; rebuild the front boundary wall with hedge planter to rear."

2.6 The Audit Instruction confirmed the applicant's property is not a listed building.

2.7 CampbellReith accessed LBC's Planning Portal on 26 January 2024 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment Report (BIA) by Ground and Water, Ref: GWPR5616/GIR&BIA, Rev. V1.01, dated December 2023.

- Design & Access Statement (DAS) by Wolff Architects, Ref: 2307-PL-DAS, Rev 0, dated 01 December 2023.
- Structural Construction Method Statement (CMS) by Structural Design Studio, Ref: 223176, Rev. P1, dated November 2023.
- Planning Application Drawings consisting of:

  Location Plan, Ref B1. 2307-PL-001-PL1_Location Plan.pdf, dated 01/11/2023
- Existing Plans
  - B2. 2307-PL-010-PL2_Existing Site Plan.pdf, dated 15/09/2023
  - B3. 2307-PL-150-PL2_Existing Lower Ground Floor Plan.pdf, dated 15/09/2023
  - B4. 2307-PL-151-PL2_Existing Ground and First Floor Plan.pdf, dated 15/09/2023
  - B5. 2307-PL-152-PL2_Existing Second and Roof Plan.pdf, dated 11/09/2023
  - B6. 2307-PL-160-PL2_Existing Front and Rear Elevations.pdf, dated 11/09/2023
  - B7. 2307-PL-170-PL2_Existing Section A-A.pdf, dated 15/09/2023
- Demolition Plans,
  - A1. 2307-PL-050-PL2_Lower Ground Floor Demolition Plan.pdf, dated 11/09/2023
  - A2. 2307-PL-051-PL2_Ground and First Floor Demolition Plans.pdf, dated 01/11/2023
  - A3. 2307-PL-052-PL2_Second Floor and Roof Demolition Plans.pdf, dated, 11/09/2023
  - A4. 2307-PL-054-PL2_Section B-B - Demolition.pdf, dated 11/09/2023
  - A5. 2307-PL-055-PL3_Front and Rear Demolition Elevations.pdf, dated 11/09/2023
- Proposed Plans
  - 2307-PL-011-PL2_Proposed Site Plan.pdf, dated 11/02/2023
  - 2307-PL-200-PL2_Proposed Lower Ground Floor Plan.pdf, dated 19/10/2023
  - 2307-PL-201-PL1_Proposed Ground and First Floor Plans.pdf, dated 19/10/2023
  - 2307-PL-202-PL1_Proposed Second Floor and Roof Plans.pdf, dated 19/10/2023
  - 2307-PL-300-PL1_Proposed Front and Rear Elevations.pdf, dated 19/10/2023
  - 2307-PL-310-PL2_Proposed Section A-A.pdf, dated 19/10/2023
- Tree Survey, Ref WA 2307, dated November 2023

2.8 Following issue of the D1 BIA audit report the following revised documents were provided to CampbellReith, to address the queries raised:

- Basement Impact Assessment Report (BIA) by Ground and Water, Ref: GWPR5616/GIR&BIA, Rev. V1.02, dated February 2024.
- Structural Construction Method Statement (CMS) by Structural Design Studio, Ref: 223176, Rev. P2, dated 26 February 2024.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	See authors qualification table on BIA cover page.
Is data required by Cl.233 of the GSD presented?	Yes	BIA presents data required by Cl.233 of GSD.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	See Section 3.0.
Are suitable plan/maps included?	Yes	Maps and Diagrams including relevant Arup GSD map extract are attached.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	See BIA appendices.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	See Section 3.1.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	See Section 3.1.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	See Section 3.1.
Is a conceptual model presented?	Yes	See Section 5.1

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	See Section 3.2.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	See Section 3.2.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	See Section 3.2.
Is factual ground investigation data provided?	Yes	Exploratory hole logs are presented in the revised submission.
Is monitoring data presented?	Yes	Section 4.1 of the BIA.
Is the ground investigation informed by a desk study?	Yes	Section 2.0 of the BIA.
Has a site walkover been undertaken?	Yes	Section 2.2 of the BIA.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	BIA and DAS confirm the existing lower ground floor level in adjacent properties.
Is a geotechnical interpretation presented?	Yes	See Section 6.1 In-situ Strength Testing.
Does the geotechnical interpretation include information on retaining wall design?	Yes	See Section 7.2 Retaining Walls, Excavations and Stability See Appendix B – Retaining Wall Calculations in CMS.
Are reports on other investigations required by screening and scoping presented?	NA	
Are the baseline conditions described, based on the GSD?	Yes	

Item	Yes/No/NA	Comment
Do the base line conditions consider adjacent or nearby basements?	Yes	BIA and DAS confirm the existing lower ground floor in adjacent properties.
Is an Impact Assessment provided?	Yes	See Section 3.0 Basement Impact Assessment.
Are estimates of ground movement and structural impact presented?	Yes	
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?	Yes	
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	Based on revised submission.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	However this should be revised in consideration of the proposed deepening of the vault.
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	Based on revised submission.

Item	Yes/No/NA	Comment
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	
Are non-technical summaries provided?	Yes	See Page (iv) titled Executive Summary.

4.0 DISCUSSION

4.1 The Basement Impact Assessment (BIA) has been carried out by Ground and Water and the individuals concerned in its production have suitable qualifications.

4.2 The property is situated in Elsworthy Conservation Area and neither the building nor the adjacent properties are listed.

4.3 The applicant property is a four-storey terraced house with an existing lower ground floor. It is traditionally constructed with timber roof and floors supported on load bearing internal and perimeter walls. The front of the Lower ground floor has a vault room with a stepped ceiling located below the front entrance staircase. The property also comprises of a front and rear garden with existing elevations of 48.85m and 48.70m AOD respectively.

4.4 The proposed basement will be formed by extending the existing lower ground floor level into the existing rear garden of the site. The proposed extension measures 7m (L) x 7.5m (W). The existing building and patio, which are currently at a level of 48.70m AOD, will be reduced to 47.54m AOD to accommodate a new 300mm slab and finished floor details. The proposal also includes the construction of a new bike storage area at the front of the property and the lowering of the floor of the vault room present below the entry stairs.

4.5 The revised submission includes consideration of the vault deepening at the front of the property.

4.6 Screening and scoping assessments have been undertaken, with reference to relevant data sources.

4.7 A ground investigation was undertaken in October 2023 which included Trial Pits (T1-T4 & T6) and cable percussion bore holes (BH1 and BH2) to a maximum depth of 6.45m. The ground conditions encountered comprise Made Ground over London Clay. Groundwater was not encountered. The revised submission now includes all exploratory hole logs.

4.8 Although no water was encountered during site investigation, water level of 1.6m bgl was recorded in a combined groundwater/gas monitoring standpipe on 16/11/2023 which BIA attributed to seasonal effects. The CMS confirms that water level will be monitored as part of work and control of any inflows would be achieved by sump pumping. It is accepted there will not be any significant impact on the local hydrogeology.

4.9 The screening and scoping assessments confirm that the area has low risk from surface water flooding, a very low risk of flooding from rivers and sea and the area has no known risk from groundwater flooding. The BIA indicates there will be an increase in hardstanding areas and recommends the implementation of SuDS to manage surface water drainage according to relevant policy. It is noted that the final drainage proposal will require approval from the local lead flood authority.

4.10 The CMS includes a construction sequence, which includes the installation of new RC walls following a typical hit and miss sequence. Excavation of the remaining soil and constructing the basement slab will then be undertaken. The construction sequence also includes the underpinning of the vault to a maximum excavation depth of c. 1.50m below existing vault level. This underpinning will be undertaken in three bays the full width of the vault.

4.11 It is accepted that the proposed extension of the basement to the rear of the property and the construction of the new lower ground floor slab, and the bike store area to the front of the property will not cause an increase in differential depth to neighbouring foundation. the revised BIA considers the impacts from the proposed deepening of the vault in the front garden. The trial pit logs in the area identify existing foundations to be 0.95m deep. The vault deepening will therefore increase the depth by 0.55m relative to the neighbouring building. The BIA states that the vault excavation is a sufficient distance from neighbouring structures that any ground movement associated with the work will not impact them. It is accepted that the development will not impact the land stability of the area.

4.12 The CMS has been updated to reflect the conclusions of the BIA.

5.0 CONCLUSIONS

5.1 The BIA has been carried out by individuals who hold suitable qualifications.

5.2 It is proposed to extend the existing lower ground floor to the rear of the property and construct a bike store area at the front of the property. The floor level of a vault space below the front entrance stairs will be lowered by 1.50m using underpinning techniques.

5.3 Screening and scoping assessments are presented and informed by desk study information.

5.4 A ground investigation was undertaken and confirms the presence of London Clay as the shallowest strata. It is accepted that the development will not impact the hydrogeology of the area.

5.5 It is likely that perched ground water will be encountered during construction and it will be mitigated by sump pumping.

5.6 The area has low risk from surface water flooding. However, increased in surface water flow due to increase in hard standing area will be mitigated by implementing SuDS. It is accepted that the development will not impact the hydrology of the area.

5.7 The proposed rear basement extension and front bike store area will be formed by extending the existing lower ground floor level. The new retaining walls will not require excavation deeper than the depth of the existing and neighbouring foundations.

5.8 The proposed vault lowering will be formed by underpinning in three bays the full width of the vault. Based on the distance of the vault from neighbouring structures and the limited excavation required below their existing foundations, it is accepted that the proposed vault excavation will have a negligible impact on the land stability of the area.

5.9 The Construction Method Statement has been updated to reflect the conclusions of the BIA.

5.10 Based on the revised submission 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	The BIA does not appear to consider the proposed vault excavation below the front entrance stairs. The Screening, scoping and impact assessment should be reviewed in consideration of this element of the proposed development.	Open – 4.5, 4.6, 4.11	March 2024
2	Ground Investigation	Some of the exploratory hole logs from the ground investigation are missing and should be provided.	Open – 4.7	March 2024
3	Construction Method Statement	The CMS and BIA should present a consistent approach to assessing the impacts from the basement development. If significant impacts from the proposals are identified the basement may be reclassified as Category B.	Open – 4.12, 4.13	March 2024

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Appendix 3

Supplementary Supporting Documents

None

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