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Basement Impact Assessment Audit

154 Royal College Street, London, NW1 0TA

For
London Borough of Camden

Project No.
14006-97

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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 154 Royal College Street, London, NW1 0TA (planning reference: 2024/1541/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 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 qualifications of the authors are not in accordance with the requirements of CPG: Basements. The audit refers to out of date guidance, CPG4, and should be revisited against current guidance (CPG Basement (2021)).

1.5 The proposed basement consists of the deepening and extension of the existing basement towards the rear garden. No dimensions are provided for its location and depth relative to neighbouring structures.

1.6 The BIA states that hit and miss underpinning techniques will be used to construct the basement. However, structural information is not presented to justify the assumptions made and assessment undertaken.

1.7 There is inconsistency in screening questions that have been carried forward to scoping. As noted in Section 4, further information is required to support some of the screening questions responses.

1.8 A site specific ground investigation was not undertaken and information presented in the BIA contradicts that presented in the SFBIA. Baseline ground conditions are not established and design parameters require confirmation.

1.9 The BIA confirms that offsite flows will be attenuated and controlled however, it does not consider the impact of increased impermeable areas on neighbouring properties and water courses.

1.10 Utility information should be provided and considered in the assessment.

1.11 The Ground Movement Assessment (GMA) is not supported by a geotechnical interpretation and considers only heave due to unloading. Further justification for the damage assessment is required.

1.12 As described in Section 5, it cannot be confirmed that the BIA complies with the requirements of CPG: Basements and the Principles for Audit set out in the Basement Impact Assessment (BIA) Audit Service Terms of Reference & Audit Process. Queries and comments on the BIA are described in Section 4 and Appendix 2.

2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 12/09/2024 to carry out a Category B audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 154 Royal College Street, London, NW1 0TA (Planning Reference: 2024/1541/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 "Erection of a ground floor rear extension, mansard roof extension and basement excavation including the insertion of a rear lightwell to existing residential units".

2.6 The Audit Instruction confirms 154 Royal College Street is not listed and is not a neighbour to listed buildings.

2.7 CampbellReith accessed LBC's Planning Portal on 16/09/2024 and gained access to the following relevant documents for audit purposes:

- Subsurface Flow Basement Impact Assessment: Screening and Scoping Document by Stephen Buss Environmental Consulting Ltd (SBEC), Ref: 2024-009-051-001, Dated 25/07/2024
- Basement Impact Assessment by JMS Civil & Structural Consulting Engineers (JMS), Ref: L24/055/02, Frist Issue, Dated 24/07/2024

- Planning, Design and Access Statement by Eade Planning Ltd, Version: Revised, Dated August 2024
- Planning Application Drawings consisting of:
  - Site Location Plan, Ref: PP-12983755v1, Dated 18/04/2024.
  - Existing floor plans and elevations by AJS Planning, Ref: RCS.154.EX.101 rev B, RCS.154.EX.102 rev A and RCS.154.EX.103 rev A, dated 03/04/2024.
  - Proposed floor plans and elevations by AJS Planning, Ref: RCS.154.PR.101 rev B, RCS.154.PR.102 rev B and RCS.154.PR.103 rev B, dated 03/04/2024.
- Planning consultation comments.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	
Is data required by Cl.233 of the GSD presented?	No	Insufficient justification for impact assessments. No construction programme.
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?	No	Scale of topography map in Section 5 does not allow confirmation of slope angles at site and surrounding area.
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	Topography and ground conditions not confirmed.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Q.3 of Hydrogeology Screening is missing in the subsurface flow BIA (SFBIA). It is accepted that the site is remote from the Hampstead chain of ponds.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	The answer for Q.4 of Hydrology Screening should be Yes as there is an increase in hardstanding area due to extension at the rear of the property.
Is a conceptual model presented?	Yes	For subsurface flow only.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	Q.8 of Land Stability Screening should be forwarded to Scoping.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	However, the impact assessment in subsurface flow BIA considers impact to groundwater flows.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	Q.4 of Hydrology Screening should be forwarded to Scoping.
Is factual ground investigation data provided?	No	No site specific ground investigation. Contradictory information concerning ground and groundwater conditions presented.
Is monitoring data presented?	No	Site Specific ground investigation report was not submitted. However, SFBIA references two adjacent GI Reports.
Is the ground investigation informed by a desk study?	NA	No ground investigation presented.
Has a site walkover been undertaken?	No	No evidence of walkover is recorded in BIA
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	See 2.4 Local Basements of SFBIA
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?	N/A	
Are the baseline conditions described, based on the GSD?	No	
Do the baseline conditions consider adjacent or nearby basements?	No	Baseline conditions not described.

Item	Yes/No/NA	Comment
Is an Impact Assessment provided?	Yes	Additional information required to confirm impacts to stability and building damage.
Are estimates of ground movement and structural impact presented?	No	Further information is required to justify conclusions.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	In relation to surface water attenuation.
Has the need for monitoring during construction been considered?	Yes	See 1.1.9 of BIA. However, trigger values and details monitoring system have not been presented
Have the residual (after mitigation) impacts been clearly identified?	No	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	Not demonstrated.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	Not demonstrated.
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	See 7.5 Ground Movement and Damage Impact Assessment. However, adequate justification not presented.
Are non-technical summaries provided?	Yes	See 1.0 Executive Summary in BIA

4.0 DISCUSSION

4.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants, JMS Civil and Structural Consulting Engineers (JMS) with a separate BIA covering Subsurface Flows (SFBIA) prepared by SBEC. There is no evidence of input by an individual with experience or qualifications in ground engineering.

4.2 It is noted that the BIA refers to out-dated guidance CPG4; the report should be updated in line with current guidance CPG Basements (2021).

4.3 The LBC Instruction to proceed with the audit identified that the basement proposal is not listed and is not a neighbour to listed buildings. The BIA is located within Camden Broadway Conservation Area and Camden Central Neighbourhood.

4.4 The proposed basement development consists of the deepening and extension of the existing basement to the rear of the property. A single storey extension to the existing ground floor level is also proposed, along with internal layout alterations to all floors and a loft conversion.

4.5 The basement excavation depth is not explicitly confirmed in the BIA. However, by observation of architect's drawings, the audit can estimate that the depth is c. 3.00m below ground level (bgl) where it extends into the garden. The extent by which the existing basement is being deepened is approximately 0.60m. There is no information presented to confirm the differential depths between existing and proposed foundations. This information is requested.

4.6 The BIA does not provide a site specific ground investigation (GI) report but refers to a BGS borehole approximately 0.2 miles away. The SFBIA references two GI reports from properties adjacent to the subject site: to the south 152, Royal College Street and to the north 156, Royal College Street. The ground conditions identified at the neighbouring properties differ from those assumed in the BIA and require further consideration.

4.7 The SFBIA identifies 1.50m to 2.30m of made ground overlying the London Clay while the BIA reports London Clay to be present from the surface. Both adjacent GI reports record groundwater. At 152, Royal College Street, groundwater was monitored at 2.86m bgl, two weeks after excavation. At 156, Royal College Street the groundwater was measured at 1.70m bgl, nearly 2 years after excavation (initial GI was completed in September 2020 and groundwater was measured in March 2022). The BIA reports groundwater to be at c. 68m bgl. Confirmation of groundwater levels is requested and mitigation measures identified if it is anticipated that water will be encountered during basement construction.

4.8 Q.3 of the Hydrogeology (groundwater) Screening is missing although it is accepted that the site is remote from the Hampstead ponds. The SFBIA records that the site is not underlain by an aquifer. This is contradicted by the BIA which notes the site is underlain by a Secondary A aquifer (see 6.2.2). Clarification is required.

4.9 Q.4 of the Hydrology (surface water) Screening should be answered as Yes as there is an increase in hardstanding area which may alter inflows to surrounding properties and water courses. It should be forwarded to Scoping and the BIA updated accordingly.

4.10 Q.8 of the Slope Stability screening (nearby watercourse) is not forwarded to Scoping for further discussion. The information presented to support the responses to Q.1 to Q.4 is inadequate. The screening notes that London Clay is the shallowest stratum but does not identify the potential for made ground as recorded at the neighbouring properties. As noted above, the BIA also records that the site lies within an area identified as an aquifer.

4.11 BIA provides Hydrology (surface flow and flooding) Screening questions, Q.2, Q3 & Q4, with 'No' answers. The BIA confirms that hard surface area will increase on site will increase due to the extension of ground floor. Therefore, BIA must forward these questions to Scoping stage for further discussion and justification.

4.12 The BIA confirms that the site is in flood zone 1 and it is accepted that the risk of flooding from sea, rivers and surface water is low. Although the increase in hardstanding area is not carried through to scoping. A brief flood risk assessment and drainage strategy are presented. The BIA states the increase in hardstanding will be mitigated by implementing SUDS attenuation to control and limit flows off site. It is assumed this will require the approval of the LLFA.

4.13 The BIA states in Section 5.8.1 that the attenuation system will be agreed once the planning layout is approved. This is not acceptable as the BIA has to provide an assessment of impact of design and construction and the attenuation system constitutes a mitigation measure for the impact to hydrology.

4.14 Section 7.0 of the BIA describes the construction methodology including temporary and permanent works, the sequence of works including propping and the description of hit and mis underpinning sequence with plans and drawings. The SFBIA states dewatering may be required during construction. This contradicts the BIA which records that dewatering will not be required (para 5.1.20).

4.15 The application documents do not include outline structural engineering calculations to support the assumptions made regarding the basement construction. Geotechnical soil parameters are also requested.

4.16 Utility plans should be provided as required by Camden's Scope of Engineering Services document, and considered in the assessment.

4.17 A Ground Movement Assessment (GMA) is presented in Section 7.5 and states that the host building and neighbouring properties will be subject to heave. The heave is quantified although, in the absence of site investigation, there is no evidence presented to support the assumptions made about the ground conditions. The GMA does not consider ground movements around the excavation due to the yielding of the excavation and construction activities.

4.18 The BIA predicts a damage Category of 0 (Negligible) for adjoining and nearby structures, with limited areas of Category 1 (Very Slight) damage. This conclusion is not supported by the information presented and further justification is requested.

4.19 It is noted that structural monitoring of neighbouring structures during construction is proposed. This may be agreed as part of Party Wall awards.

5.0 CONCLUSIONS

5.1 The qualifications of the authors of the BIA are not in accordance with LBC guidance.

5.2 The BIA refers to out of date guidance (CPG4) and should be revisited to reflect current guidelines (CPG Basements (2021)).

5.3 The proposed basement consists of the deepening and extension of the existing basement into the rear garden. No dimensions are provided or its location and depth relative to neighbouring structures.

5.4 The BIA notes that the basement will be formed using hit and miss underpinning techniques. No structural engineering information is presented to justify the assumptions made and assessments undertaken.

5.5 There is no site specific ground investigation. Information presented in the BIA contradicts that presented in the SFBIA. Baseline conditions are not established and geotechnical soil parameters are not provided.

5.6 There is inconsistency in screening questions that have been carried forward to scoping. As noted in Section 4, further information is required to support some of the screening questions responses.

5.7 The BIA confirms that offsite flows will be attenuated and controlled, however, it does not consider the impact of increased impermeable areas on neighbouring properties and water courses.

5.8 Contradictory information is presented as to whether the groundwater table will be encountered during basement foundation excavation and whether dewatering will be required.

5.9 The GMA is not supported by a geotechnical interpretation and considers only heave due to unloading. Consideration should be given to the impact from ground movements associated with the yielding of the excavation and construction activities.

5.10 The BIA predicted the damage Category of 0 (Negligible) for adjoining and nearby structures with limited areas of Category 1 (Very Slight) damage. However, this is not justified by the information presented and further clarification is required.

5.11 It cannot be confirmed that the BIA complies with the requirements of CPG: Basements and the Principles for Audit set out in the Basement Impact Assessment (BIA) Audit Service Terms of Reference & Audit Process, specifically:

- The methodologies and assumptions are not clearly stated.
- The conclusions have not been arrived at based on all necessary and reasonable evidence and considerations, in a reliable, transparent manner, by suitably qualified professionals, with sufficient attention paid to risk assessment and use of cautious or moderately conservative engineering values/estimates.
- The conclusions of the various documents/details comprising the BIA are not consistent with each other. The conclusions are not sufficiently robust and accurate and are not

accompanied by sufficiently detailed amelioration/mitigation measures to support the grant of planning permission in accordance with Policy A5 of the Local Plan, in respect of:

- maintaining the structural stability of the building, the ground and any neighbouring properties to within limits set out in the policy/guidance
- avoiding adversely affecting drainage and run-off or causing other damage to the water environment and
- avoiding cumulative impacts on ground and structural stability or the water environment in the local area.

5.12 Queries and comments on the BIA are described in Section 4 and Appendix 2.

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Appendix 1

Consultation Responses

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Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Stummel	152 Royal College Street	25/09/24	Shared sewer system crosses the rear gardens of the property	The drainage strategy has been queried as part of this audit and utility plans have been requested.

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Appendix 2

Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA	Qualifications not in accordance with requirements of CPG Basements.	Open – See 4.1	
2	BIA	BIA refers to out of date guidance (CPG4).	Open – See 4.2	
3	BIA	The baseline conditions are not defined (ground and groundwater conditions, scheme dimensions, position and depth relative to neighbouring properties).	Open – See 4.5 to 4.7, 4.14	
4	Screening	Screening question responses are presented inconsistently and some have not been carried forward to scoping. As noted in Section 4, further information is required to support some of the screening responses.	Open – See 4.8 to 4.11	
5	Surface water	Proposed attenuation measures for the increase in hardstanding should be presented.	Open – See 4.13	
6	BIA	No structural engineering information to support assessments and conclusions. Geotechnical soil parameters are not provided.	Open – See 4.15	
7	BIA	Utility plans should be provided.	Open – See 4.16	
8	Stability	Ground Movement Assessment (GMA) should consider ground movements around the excavation due to the yielding of the excavation and construction activities	Open – See 4.17	
9	Stability	Further justification required to support building damage conclusions.	Open – See 4.18	

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Appendix 3

Supplementary Supporting Documents

None

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