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# Basement Impact Assessment Audit

## 161 Arlington Road

For
London Borough of Camden

Project No.
14006-79

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 161 Arlington Road NW1 7ET (planning application 2024/1376/P and Listed Building Consent application 2024/1821/L). 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 prepared by Cochrane Construction Consultants. The authors' qualifications do not comply with the requirements of CPG: Basements.

1.5 The BIA has confirmed that the proposed basement will be founded within the London Clay Formation. The BIA outlines the construction methodology and recommends temporary propping is installed for the existing basement walls during the site preparation stage.

1.6 It is unlikely that the groundwater table will be encountered during basement foundation excavation. However, water ingress was noted in a foundation exposure pit and mitigation measures for water ingress during construction should be considered.

1.7 It is accepted that the development will not impact on the local and wider hydrogeology of the area.

1.8 It is accepted the basement will not impact the hydrology.

1.9 The existing foundation depths were identified during the site-specific ground investigation and the BIA identifies that there is no significant increase in differential depths between existing foundations and the new basement. The basement is remote from public highways and the site and its surroundings are level. It is accepted that the basement can be constructed without unacceptable impacts to stability.

1.10 The BIA recommends movement monitoring is undertaken during excavation and construction as a mitigation measure.

1.11 The queries raised in Section 4 and Appendix 2 should be addressed to confirm the BIA complies with the requirements of CPG: Basements.

## 2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 4th June to carry out a Category A audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 161 Arlington Road NW1 7ET (planning application 2024/1376/P and Listed Building Consent application 2024/1821/L).

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 "Removal of existing rear conservatory and erection of a two-storey rear extension at basement and ground floor levels (with a basement lightwell). See also Listed Building Consent application 2024/1821/L for associated internal works."

2.6 The Audit Instruction confirmed 161 Arlington Road involved, or was a neighbour to, listed buildings.

2.7 CampbellReith accessed LBC's Planning Portal on 11th June 2024 and gained access to the following relevant documents for audit purposes:

- Desk Study Report by Cochrane Construction Consultants, ref. S2930, Rev. 00, dated 8th April 2024.
- Screening and Scoping Report by Cochrane Construction Consultants, ref. S2930, Rev. 00, dated 8th April 2024.

- Basement Impact Assessment Report by Cochrane Construction Consultants, ref. S2930, Rev. 00, dated 8th April 2024.

## 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

| Item | Yes/No/NA | Comment |
|---|---|---|
| Are BIA Author(s) credentials satisfactory? | No | Qualifications do not comply with CPG basements |
| Is data required by Cl.233 of the GSD presented? | No | Mitigation measures for water ingress into the excavation should be provided |
| Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology? | Yes | BIA report |
| Are suitable plan/maps included? | Yes | BIA desk study report, Appendix A |
| Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail? | Yes | BIA desk study report, Appendix A |
| Land Stability Screening:<br>Have appropriate data sources been consulted?<br>Is justification provided for 'No' answers? | Yes | BIA screening and scoping report, Section 4.2 |
| Hydrogeology Screening:<br>Have appropriate data sources been consulted?<br>Is justification provided for 'No' answers? | Yes | BIA screening and scoping report, Section 4.1 |
| Hydrology Screening:<br>Have appropriate data sources been consulted?<br>Is justification provided for 'No' answers? | Yes | BIA screening and scoping report, Section 4.3 |
| Is a conceptual model presented? | Yes | BIA report, Section 7.2 |
| Land Stability Scoping Provided?<br>Is scoping consistent with screening outcome? | Yes | BIA screening and scoping report, Section 5 |

| Item | Yes/No/NA | Comment |
|---|---|---|
| Hydrogeology Scoping Provided?<br>Is scoping consistent with screening outcome? | Yes | None |
| Hydrology Scoping Provided?<br>Is scoping consistent with screening outcome? | Yes | None |
| Is factual ground investigation data provided? | Yes | BIA Appendix E |
| Is monitoring data presented? | No | |
| Is the ground investigation informed by a desk study? | Yes | BIA desk study report |
| Has a site walkover been undertaken? | Yes | |
| Is the presence/absence of adjacent or nearby basements confirmed? | Yes | BIA report, Section 4.6 d) |
| Is a geotechnical interpretation presented? | Yes | BIA report, Section 7.2 |
| Does the geotechnical interpretation include information on retaining wall design? | Yes | BIA report, Section 7.2 |
| Are reports on other investigations required by screening and scoping presented? | N/A | |
| Are the baseline conditions described, based on the GSD? | Yes | BIA report, Section 6.0 |
| Do the baseline conditions consider adjacent or nearby basements? | Yes | BIA report, Section 4.6 d) |
| Is an Impact Assessment provided? | Yes | BIA report, Section 8.0 |
| Are estimates of ground movement and structural impact presented? | Yes | BIA report, Section 7.6 |

| Item | Yes/No/NA | Comment |
|---|---|---|
| Is the Impact Assessment appropriate to the matters identified by screening and scoping? | Yes | BIA report, Section 8.0 |
| Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme? | No | Mitigation measures for water ingress into the excavation should be provided |
| Has the need for monitoring during construction been considered? | Yes | BIA report, Section 7.8 |
| 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 | BIA report, Section 8.0 |
| Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment? | Yes | BIA screening and scoping report, Section 4.1 |
| Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area? | Yes | |
| Does report state that damage to surrounding buildings will be no worse than Burland Category 1? | Yes | BIA report, Section 7.6 |
| Are non-technical summaries provided? | Yes | BIA report |

## 4.0 DISCUSSION

4.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants Cochrane Construction Consultants (CCC). The author is a chartered structural engineer but no proof of expertise in surface water, hydrogeology or engineering geology has been provided and the authors' qualifications do not comply with CPG Basements.

4.2 The LBC Instruction to proceed with the audit identified that the basement proposal either involved a listed building or was adjacent to listed buildings but gave no details. The Desk Study report identifies that 161 Arlington Road is in the Camden Town Conservation Area. Numbers 161, 157 and 159, are Grade II listed buildings although the BIA states the listings appears to relate only to the streetscape. The Lady of Hal Church is located on the northern boundary and the church link block borders the plant room in the existing basement.

4.3 The existing and proposed comparison drawing show the proposals comprise demolition of the rear extension and extending the existing basement into the rear garden by c.3.20m to form a new lightwell. Proposals involve lowering the ground floor by c.0.50m and rebuilding the rear extension as a 2-storey structure.

4.4 The intended method of construction is underpinning the existing foundations in a hit-and-miss sequence and forming a reinforced concrete basement. The BIA states temporary propping should be used as required.

4.5 The BIA has been informed by a desk study and site-specific ground investigation including a borehole and four trial pits. The ground conditions encountered comprise made ground over weathered brown clay of the London Clay Formation.

4.6 Water was encountered in foundation exposure pit TP2 that was assumed to be from a leaking drain. Groundwater was encountered in BH1 at 4.90m bgl although Section 6.3 of the BIA states no groundwater was encountered. Groundwater should be reported consistently. Noting the observation of water in the foundation exposure pit, mitigation measures for potential water ingress into the excavation should be provided within the construction sequence.

4.7 The BIA states the existing No 161 foundations are between 0.36 and 0.48m depth below existing basement floor level and comprise shallow strip footings on the London Clay Formation. The BIA states the basement flank wall adjacent to the church has been previously underpinned to 1.00m below existing basement floor level.

4.8 The BIA includes a screening and scoping assessment. Groundwater screening confirms the site is not mapped in a groundwater flood risk area and there are no water features within 100m distance. The London Clay Formation aquifer status is unproductive strata. It is accepted the development will not impact the hydrogeology.

4.9 Surface water screening notes the development will not change the proportion of hard surface/paved areas and surface water will be discharged into the sewer as existing. The surface water and flooding screening states there will no change to the existing run off, the site is in flood zone 1 and does not lie in a critical drainage area nor a local flood risk zone. It is accepted the development will not impact the hydrology.

4.10 The BIA indicates the site and wider area are level and will generally remain as existing.

4.11 The BIA states the London Clay Formation is the shallowest natural strata on-site and includes laboratory test results that indicate medium-high volume change potential soil is present. No trees will be removed and there was no evidence of subsidence or ground movement identified at the property or others nearby.

4.12 The BIA states the maximum increase in differential depth between the existing and new foundations is approximately 0.50m, therefore a ground movement assessment is not required.

4.13 The BIA states the rear basement extension is located 8.50m distance from the Arlington Road pavement so the proposed works will not affect the pavement or public highway. It is accepted the development will not impact the stability of the road.

4.14 On the basis of the above, and we accept there is no impact to stability and the ground movement/building damage assessment has not been audited.

4.15 The BIA recommends structural visual inspection and monitoring is undertaken on the adjacent buildings during the demolition, excavation and basement construction phases to mitigate any potential structural damage. Final monitoring requirements will be confirmed with the Contractor and adjoining owner's Surveyor prior to works.

## 5.0 CONCLUSIONS

5.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants Cochrane Construction Consultants (CCC) however the authors' qualifications do not comply with CPG Basements.

5.2 The BIA has confirmed that the proposed basement will be founded within the London Clay Formation. Site-specific ground investigation identifies the existing foundation depths to inform basement design.

5.3 The BIA outlines the construction methodology and sequencing. It recommends temporary propping is installed for the existing basement walls during the site preparation stage.

5.4 Groundwater was encountered during the investigation at depth. Water was also encountered in a foundation exposure pit.

5.5 It is accepted that the development will not impact on the local and wider hydrogeology of the area and is not in an area subject to flooding. However, mitigation measures for potential water ingress into the excavation should be considered.

5.6 It is accepted the development will not impact the hydrology.

5.7 It is accepted the basement, provided good workmanship is employed, will not impact the stability of the neighbouring properties and public highway.

5.8 The BIA recommends a movement monitoring strategy during excavation and construction as mitigation measures.

5.9 The queries raised in Section 4 and Appendix 2 should be addressed to confirm 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 | Authors' qualifications do not comply with CPG basements | Open – see 4.1 | |
| 2 | Stability | Mitigation measures for water ingress into the excavation should be provided | Open – see 4.6 | |

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# Appendix 3

## Supplementary Supporting Documents

None

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