CampbellReith
consulting engineers

Basement Impact Assessment Audit

Ground Floor Flat, 253 Goldhurst Terrace, London NW6 3EP

For
London Borough of Camden

Project No.
14291-19

Date
April 2025

Campbell Reith Hill LLP
15 Bermondsey Square
London
SE1 3UN

T: +44 (0)20 7340 1700
E: london@campbellreith.com
W: www.campbellreith.com

DOCUMENT HISTORY AND STATUS

Revision	Date	Purpose/ Status	File Ref	Author	Check	Review
D1	25/03/2025	For comment	SSemb14291-19-100425- 253 Goldhurst Terrace_D1	SS	EMB	EMB

Document Details

Last Saved	10/04/2025 10:52
Author	Sam Savery, BSc MSc CGeol FGS
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	14291-19
Project Name	Basement Impact Assessment Audit
Revision	D1
Planning Reference	2024/5799/P
File Ref	SSemb14291-19-100425- 253 Goldhurst Terrace_D1.docx

CONTENTS

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 Ground Floor Flat 253 Goldhurst Terrace, London NW6 3EP (planning reference 2024/5799/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 BIA has been carried out by consultants whose qualifications comply with CPG.

1.5 The presence of neighbouring basements requires clarification.

1.6 The BIA confirms the proposed basement will be founded within the London Clay Formation. Basement proposals involve construction of a reinforced concrete retaining wall by underpinning. The temporary support measures require clarification and should be reported consistently.

1.7 The BIA notes a SUDS drainage strategy is likely required. Outline details should be provided with the BIA. The conclusions of the surface water screening exercise require review and confirmation.

1.8 It is accepted that the basement will not impact the local and wider hydrogeological regime. The BIA recommends that perched water in the Made Ground is dealt with via sump pumping.

1.9 The BIA states basement design must account for the volume change potential of the London Clay Formation.

1.10 Geotechnical parameters used in the structural calculations require verification.

1.11 The BIA includes a Ground Movement Assessment and building damage assessment. The assessments predict damage to neighbouring structures can be limited Burland Category 1 (Very Slight); however, the Ground Movement Assessment requires revision.

1.12 The BIA recommends movement monitoring during excavation and construction.

1.13 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) in February 2025 to carry out a Category B audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Ground Floor Flat 253 Goldhurst Terrace, London NW6 3EP and Planning Reference 2024/5799/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 "*Extension of existing basement; to rear: replacement of conservatory, erection of glazed projection, installation of air source heat pump, and hard and soft landscaping; to front: installation of cycle and waste storage, replacement of windows, and alterations to gate and boundary.*"

2.6 The Audit Instruction confirmed 253 Goldhurst Terrace is not involved, or was a neighbour to, listed buildings.

2.7 CampbellReith accessed LBC's Planning Portal on 7th March 2025 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment & Ground Investigation Report by Ground & Water Ltd, ref. GWPR6303/BIA&GIR, rev. V1.01, dated December 2024.
- Basement Impact Assessment (Flood Risk Assessment) by Nimbus Engineering Consultants, ref. C3000-R1-REV B, dated March 2024.

- Structural Method Statement by ads consultancy, ref. 24078/SR-001/SN, rev. p1, dated December 2024.
- Design and Access Statement, and Planning Statement by Silvia Ferrario Architect, ref.-, rev.-, dated 18th December 2024.
- Planning Application Drawings by Silvia Ferrario Architect, dated December 2024, consisting of:
  - Existing Block Plan, drawing no. 01
  - Existing Floor Plan, drawing no. 02
  - Existing Elevations, drawing no. 03
  - Existing Sections, drawing no. 04
  - Proposed Elevations, drawing no. 03
  - Proposed Floor Plans, drawing no. 05
  - Proposed Sections, drawing no. 07
  - Proposed Front area, drawing no. 08
  - Existing/Proposed Front Elevation, drawing no. 10, dated March 2024

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	
Is data required by Cl.233 of the GSD presented?	Yes	
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?	Yes	
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA section 3.1
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA section 3.1
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA section 3.1
Is a conceptual model presented?	Yes	BIA section 5.0
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA section 3.2

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA section 3.2
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA section 3.2
Is factual ground investigation data provided?	Yes	BIA appendix E, F and G
Is monitoring data presented?	Yes	BIA section 5.4
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	No	Clarification is required
Is a geotechnical interpretation presented?	Yes	BIA section 7.2
Does the geotechnical interpretation include information on retaining wall design?	Yes	BIA section 7.3
Are reports on other investigations required by screening and scoping presented?	Yes	FRA
Are the baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	BIA section 7.0

Item	Yes/No/NA	Comment
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	However a description of the SUDS strategy should be provided with the BIA
Has the need for monitoring during construction been considered?	Yes	BIA section 7.5
Have the residual (after mitigation) impacts been clearly identified?	Yes	BIA section 7.7
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	GMA requires review
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	A SUDS strategy should be provided
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	GMA requires review
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	However, GMA requires review
Are non-technical summaries provided?	Yes	Executive summary

4.0 DISCUSSION

4.1 The Basement Impact Assessment (BIA) is presented in two parts. The BIA considering groundwater and stability has been carried out by Ground & Water Ltd. The BIA considering surface water has been caried out by Nimbus Engineering Consultants. The individuals concerned in their production have suitable qualifications.

4.2 The Structural Method Statement has similarly been carried out by ads consultancy. The author and reviewer are both chartered structural engineers.

4.3 253 Goldhurst Terrace is a 3-storey semi-detached residential property, with an existing single storey basement beneath the rear of the building.

4.4 The proposed basement involves the extension of an existing basement beneath the rear of the structure, forming a uniform floor level roughly double the existing basement area.

4.5 The Structural Method Statement (SMS) indicates that the new basement extension construction involves underpinning existing foundations with reinforced concrete retaining walls, undertaken in a hit-and-miss style sequence. The SMS states a new reinforced concrete ground bearing slab will form the floor of the new basement areas. The Construction Methodology (SMS section 3.0) states the new retaining walls have been designed to provide lateral stability therefore no additional temporary props will be required during construction.

4.6 The BIA, section 2.4, states there is no evidence of neighbouring basements however, publicly available planning application records on the Camden Council website include a potential neighbouring basement at 251 Goldhurst Terrace. Evidence of liaison with neighbours should be provided.

4.7 The BIA has been informed by a desk study and site-specific ground investigation. The ground conditions identified comprise Made Ground to 1.90m depth below which lies the London Clay Formation to the maximum depth of investigation of 5.00m.

4.8 Groundwater was not encountered during the ground investigation although the subsequent monitoring visits measured water between 1.27m and 4.60 depth, and dry standpipes. The BIA states this is perched water gathering in the standpipes as opposed to the groundwater table.

4.9 A screening and scoping assessment has been included with the BIA following Camden Planning Guidance.

4.10 Surface water and flooding screening indicates there is an increase in hardstanding with a potential impact to surface water flow. This is taken forward to scoping. A SUDS drainage strategy is required to mitigate potential impact from an increase in surface water discharge. Outline details should be provided with the BIA.

4.11 The Ground & Water BIA identifies the site is located within a Flood Zone 1 with a very low risk of surface water flooding. It summarises the flood risk information including the Critical Drainage Areas, Goldhurst Local Flood Risk Zone and local sewer capacity issues. Considering the Ground & Water information, the conclusions of the Nimbus BIA concerning flooding require justification.

4.12 Groundwater screening identifies the London Clay Formation is classified as an unproductive stratum although there is potential for perched water within Made Ground overlying the London Clay Formation. The BIA states no effects to groundwater are anticipated due to the low soil permeability.

4.13 Stability screening identifies the London Clay Formation is the shallowest strata on site and the potential impacts of shrink swell soils are brought forward to scoping, although no trees are to be removed as part of the proposals. The BIA states basement design must account for the volume change potential of soils.

4.14 The BIA notes the natural topography surrounding the site is <7°.

4.15 The potential impact to excavation stability from water ingress is brought forward to scoping. The BIA states appropriate propping and support should be incorporated during construction of the basement. Dewatering from sumps may be required during construction and the advice of a reputable dewatering contractor should be sought.

4.16 Stability screening identifies an increase of the differential depth of foundations relative to neighbouring properties. A Ground Movement Assessment (GMA) has been undertaken that is conservatively based on neighbouring properties with shallow foundations.

4.17 The BIA presents anticipated maximum vertical and horizontal movements of 5mm. It is noted that these are at the bottom of the range of movements typically associated with underpinning. These movements differ from the ground movement estimations in the GMA which are illustrated in the PDisp and XDisp contour plots and show locally >5mm (BIA Appendix I and J). The BIA notes that damage to neighbouring properties can be limited to Category 1 (Very Slight) damage providing high levels of workmanship and suitable construction sequence is maintained however, clarification on the ground movement estimations is required.

4.18 The pavement of Goldhurst Terrace is located on the northern site boundary. The BIA states movements are unlikely to cause damage to the public right of way and utilities due to the distance, although monitoring is recommended as good practice.

4.19 It is accepted there are no underground tunnels or railways in close proximity to the site.

4.20 Ranges of soil strength are provided in the BIA although geotechnical parameters for retaining wall and foundation design are not provided. The SMS includes retaining wall calculations and typically adopt a soil strength at the lower end of range given (24°) however a phi value of 29° is used for retaining wall 3 and this requires justification.

4.21 The BIA states a movement monitoring regime will be implemented to monitor displacement during construction and limit any neighbouring building damage to Category 1 on the Burland Scale.

5.0 CONCLUSIONS

5.1 The BIA and SMS have been carried out by individuals who possess suitable qualifications.

5.2 The BIA has been informed by a desk study and site-specific ground investigation. The presence of neighbouring basements should be clearly reported in the BIA.

5.3 Basement proposals involve construction of a reinforced concrete retaining wall by underpinning. The BIA states temporary support will be critical in limiting ground movement; however, the SMS states temporary support is not required. The temporary support measures require clarification and should be reported consistently.

5.4 The submission includes a flood risk assessment however, the two BIAs appear to be contradictory and the conclusions require justification.

5.5 An outline SUDS drainage strategy should be provided with the BIA.

5.6 The BIA confirms the proposed basement will be founded within the London Clay Formation and retain Made Ground <1.90m depth.

5.7 It is unlikely the groundwater table will be encountered during basement foundation excavation although perched water could be present. The BIA recommends dewatering of excavations via sump pumping and allowing for temporary support of excavation faces.

5.8 The London Clay Formation is unproductive strata. It is accepted that the basement will not impact the local and wider hydrogeological regime.

5.9 The BIA states basement design must account for the volume change potential of the London Clay Formation.

5.10 Geotechnical parameters used in the structural calculations require verification.

5.11 The BIA includes a Ground Movement Assessment and building damage assessment. The assessments predict damage to neighbouring structures can be limited Burland Category 1 (Very Slight); however, the ground movement estimations are reported inconsistently, and the assessment requires revision.

5.12 The BIA recommends movement monitoring during excavation and construction.

5.13 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 and/or are not appropriate to the scale of the proposals and the nature of the site.
- The conclusions have not been arrived at based on 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

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

CampbellReith
consulting engineers

Appendix 1

Consultation Responses

None

CampbellReith
consulting engineers

Appendix 2

Audit Query Tracker

CampbellReith
consulting engineers

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Temporary propping requirements should be reported consistently	Open – paragraph 4.4	
2	Stability	The presence or absence of surrounding basements should be confirmed	Open – paragraph 4.6	
3	Hydrology	Outline SUDS details should be provided with the BIA	Open – paragraph 4.9	
4	Hydrology	The conclusions of the Nimbus BIA concerning flooding require justification	Open – paragraph 4.10	
5	Stability	Clarification on the ground movement estimations is required	Open – paragraph 4.16	
6	Stability	Suitably conservative geotechnical parameters in the retaining wall calculations should be verified	Open – paragraph 4.19	

CampbellReith
consulting engineers

Appendix 3

Supplementary Supporting Documents

None

London

15 Bermondsey Square
London
SE1 3UN

T: +44 (0)20 7340 1700
E: london@campbellreith.com

Birmingham

Chantry House
High Street, Coleshill
Birmingham B46 3BP

T: +44 (0)1675 467 484
E: birmingham@campbellreith.com

Bristol

Unit 5.03
HERE
470 Bath Road
Bristol BS4 3AP

T: +44 (0)117 916 1066
E: bristol@campbellreith.com

Manchester

10 Chapel Walks
Manchester
M2 1HL

T: +44 (0)161 819 3060
E: manchester@campbellreith.com