

Confidential

**298 Finchley Road**  
**NW3 7AG**

For  
London Borough of Camden

Project No.  
13693-97

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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 298 Finchley Road NW3 7AG (planning reference 2022/4764/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 Basement Impact Assessment (BIA) has been carried out by LBHGEO Ltd and the individuals concerned in its production have qualifications in accordance with CPG Basements.
- 1.5 The BIA has confirmed that the proposed basement will be founded within London Clay, which is considered a suitable founding stratum. Site investigation confirms the ground conditions and demonstrates that the proposed construction methodology is feasible and that the impacts to stability are correctly assessed.
- 1.6 The BIA refers to Redington and Froggnal Neighbourhood Plan and the accompanying Sub Surface Water Features map. The site investigation is compliant with the Redington and Froggnal Neighbourhood Plan.
- 1.7 Mitigation measures are provided for any groundwater ingress during the excavation. The BIA demonstrates that subterranean flows are not diverted as result of the development in accordance with Redington and Froggnal Neighbourhood Plan.
- 1.8 It is accepted the site is at low risk of flooding from all sources. A Surface Water Drainage Risk Assessment and Drainage Strategy has been presented which concludes the development will maintain a status quo for surface water flow.
- 1.9 Geotechnical parameters have been revised after recent site-specific ground investigation.
- 1.10 The Ground Movement Assessment (GMA) is compliant with CPG guidance for basements and damage category for the neighbouring structures is within the limits allowed.
- 1.11 Considering the additional information presented, it can be confirmed that the BIA complies with the requirements of CPG: Basements.

## 2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 11/01/2023 to carry out a Category B audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 298 Finchley Road, NW3 7AG and Reference: 2022/4764/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.
- Redington and Frognal Neighbourhood Plan

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 "Replacement of the indoor swimming pool with 4-bedroom Granny Annex built as a high quality, accessible home constructed to passive house standards. With the same sized footprint and style as the existing it will be two storeys with basement."

2.6 CampbellReith accessed LBC's Planning Portal on 19/01/2023 and gained access to the following relevant documents for audit purposes:

- 298 Finchley Road – Basement Impact Assessment by LBHGEO, ref: LBH4678v1, rev. 1 dated 25/10/2022 (BIA) .
- 298 Finchley Road - SUDS assessment by LBHGEO, Ref: LBH4678sudsv1, rev.1, dated 27/10/2023.
- 298 Finchley Road Croftway House - Basement Impact Assessment (LBH4678 v1.1) (002) dated 27/02/2023.

- Planning Application Drawings consisting of:
  - 298-01-Proposed First Floor Plan
  - 298-02-Proposed Ground Floor Plan
  - 298-03-Proposed Basement Floor Plan
  - 298-04-Proposed Basement Structure Plan
  - 298-06-Proposed Site Plan
  - 298-07-Proposed West Elevation
  - 298-08-Proposed East Elevation
  - 298-10-Proposed Section AA
  - 298-11-Proposed Section BB
  - 298-12-Proposed North Elevation
  - 298-13-Proposed South Elevation
  - 298-32-Existing Pool House
  - 298-35-Location Plan
  - 298-36-Existing Topographic map
  - 298-41-Proposed Basement Detail
  - 298-42-Proposed Ground Floor Detail

2.7 CampbellReith issued the initial audit in February 2023, following which, the following additional information was received in March 2023:

- 298 Finchley Road Croftway House - Basement Impact Assessment (LBH4678 v1.1) (002)
- 298 Finchley Road, Croftway House - Basement Impact Assessment (LBH4678 v1.2)

### 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	Authors hold the required qualifications.
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	Section 1.2 Section 2.1, 2.2 & 2.3, Section 7.1 to 7.3
Are suitable plan/maps included?	Yes	BIA includes Site location plan. Extract of Fig 16 of CGHHS Extract of Fig 6 of SFRA Extract of Topographic survey Extract of old OS map (c20s) and present Extract of geological map
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	Section 2.1 of the BIA
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Section 5.1.3 of the BIA
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Section 3.3 of the BIA. Reference made to RedFrog Neighbourhood Plan (see section 1.3.2)
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Section 3.4 of the BIA

Item	Yes/No/NA	Comment
Is a conceptual model presented?	Yes	Section 7.3 & 8.2. Ground model was presented using historical borehole record, borehole 8 and addition boreholes (1 & 2) excavated on 24/02/2023.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 5.2.3.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 5.2.1.Reference made to RedFrog Neighbourhood Plan.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	NA	No items brought forward to scoping.
Is factual ground investigation data provided?	Yes	Site Investigation was completed on 24/02/2023.
Is monitoring data presented?	N/A	No groundwater was encounter during site investigation.
Is the ground investigation informed by a desk study?	Yes	Historic borehole, ground information from previous excavation and recent ground investigation on 24/02/2023.
Has a site walkover been undertaken?	Yes	Section 6.1 and 6.2
Is the presence/absence of adjacent or nearby basements confirmed?	No	
Is a geotechnical interpretation presented?	Yes	Section 7.3 and 8.3 of the BIA, were updated after site investigation.
Does the geotechnical interpretation include information on retaining wall design?	Yes	As above



Item	Yes/No/NA	Comment
Are reports on other investigations required by screening and scoping presented?	Yes	SUDS Report provided. Ground investigation was completed on 24/02/2023.
Are the baseline conditions described, based on the GSD?	Yes	Based on desk study information.
Do the base line conditions consider adjacent or nearby basements?	No	No information on basements nearby.
Is an Impact Assessment provided?	Yes	Section 9.1 to 9.3 and 9.4
Are estimates of ground movement and structural impact presented?	Yes	Section 9.3.3 of the BIA
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	The Impact Assessment has been informed by a site-specific ground investigation.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	As above.
Has the need for monitoring during construction been considered?	Yes	Structural monitoring is not considered to be warranted in this case, subject to the requirements of any party wall agreements.
Have the residual (after mitigation) impacts been clearly identified?	Yes	RedFrog Neighbourhood Plan is referenced and site-specific ground investigation was completed.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	

<b>Item</b>	<b>Yes/No/NA</b>	<b>Comment</b>
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	
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	
Are non-technical summaries provided?	Yes	Page 5 of the BIA

## 4.0 DISCUSSION

- 4.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants LBHGEO Ltd and the individuals concerned in its production have suitable qualifications.
- 4.2 The site is 'L' shaped and is located on the northern side of Finchley Road. It contains a two-storey detached house roughly occupying the centre of the site and a spacious rear garden and gravel surface courtyard that serves as a parking area. The south of the site is occupied by a detached pavilion building housing a swimming pool.
- 4.3 The site is bordered to the west by pedestrian path, Croft Way and to the south by adjacent property, No. 296 Finchley Road. The site is also close to a row of garages on Studholme Court to the south-east. The ground gently slopes toward the south (from +80m OD at the main house in the north to approximately +81m OD in the south).
- 4.4 As part of the proposals, the pavilion building will be replaced with a new two storey building on approximately the same footprint with a basement which will be extended 4m to the south to create a glazed basement greenhouse. The level of the basement floor is to be around 2.8m below the existing ground floor level of approx.: +81.80m). The depth of excavation will vary from 3.4m at the northern edge to 2.50m depth in the south. In the area of the existing pool the depth of excavation will be reduced.
- 4.5 The proposed basement development requires excavation of varying depths from north to south. The basement retaining wall will be built using a 'hit and miss' construction methodology to ensure stability of the surrounding ground. Calculations and diagrams on retaining wall construction sequence and temporary works are provided.
- 4.6 Screening and scoping assessments are presented and informed by desk study information. Most relevant figures/maps from the ARUP GSD and other guidance documents are referenced within the BIA to support responses to screening questions. Section 3.1.2 of the BIA correctly refers to Redington and Froggnal Neighbourhood Plan and accompanying Sub Surface Water Features map.
- 4.7 A site specific ground investigation has been undertaken and presented in the updated BIA. The investigation included two boreholes to a depth of 4.00m bgl and ground conditions comprised of Made Ground to a maximum depth of c. 1.00m bgl overlying deposits of the London Clay to the bottom of the boreholes. Groundwater was not encountered during the investigation.
- 4.8 The report concludes that the development will not have any impact upon groundwater flow in the local area due to the absence of groundwater during the site investigation and the presence of London Clay at depth which does not support groundwater flows. Section 7.1 of BIA confirms that any surface water run-off permitted collect in the excavation will be removed through traditional pumping.

- 4.9 The BIA demonstrates that underground streams or spring lines are not diverted in accordance with Redington & Frognal Neighbourhood Plan. "Arup-Mapping-Report-(RevA\_Issue-01041\_Reduced)" confirms that the presence of a watercourse flowing along Croft Way to Finchley is based on anecdotal information which is not been supported by other lines of evidence.
- 4.10 It is accepted that the site is at very low risk from both 'rivers and the sea' and 'surface water' flooding. There will be an increase in impermeable areas as part of the development. A Surface Water Drainage Assessment has been presented which includes mitigation measures to be implemented in the proposed scheme (such as attenuation and rainwater tanks) to avoid any increase in the surface water flooding risk.
- 4.11 A Ground Movement Assessment (GMA) is included in the report which included movement due to excavation heave and due to yielding of the retaining wall and determined the impacts on neighbouring structures. The structures analysed are the walls of the row of garages at Studholme Court, and the applicant's property.
- 4.12 The GMA anticipates a maximum of Category 1 of the Burland Scale ('very slight'), which is compliant with CPG guidance for basements.
- 4.13 The BIA confirms that no trees are to be removed as part of the development, and as such no impact on neighbouring foundations is expected.

## 5.0 CONCLUSIONS

- 5.1 The Basement Impact Assessment (BIA) has been carried out by LBHGEO Ltd and the individuals concerned in its production have qualifications in accordance with CPG Basements.
- 5.2 The BIA reports that the proposed basement will be founded within London Clay. This is verified by site investigation.
- 5.3 The site investigation demonstrates that the proposed construction methodology is feasible and that the impacts to stability are correctly assessed. The site investigation is compliant with Section 4.28.3 of the Redington and Frogna1 Neighbourhood Plan.
- 5.4 The BIA confirms that pumps will be used to remove any excess groundwater during the excavation. The BIA demonstrates that underground streams or spring lines/potential watercourses that are located uphill will not be diverted as required by Redington and Frogna1 Neighbourhood Plan.
- 5.5 It is accepted the site is at low risk of flooding from all the sources and Surface Water Drainage Risk Assessment and Drainage Strategy has been presented which concludes the development will contribute to maintain a status quo for surface water flow.
- 5.6 Geotechnical parameters and values for the allowable bearing capacity are presented and revised after site specific ground investigation.
- 5.7 The GMA anticipates a maximum of Category 1 of the Burland Scale ('very slight'), which is compliant with CPG guidance for basements.
- 5.8 As BIA confirms that no trees will be removed, no impact is therefore expected on neighbouring foundations.
- 5.9 Considering the additional information presented, it can be confirmed that the BIA complies with the requirements of CPG for 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	Reference should be made to Redington and Frognaal Neighbourhood Plan.	Closed	17/03/2023
2	Hydrogeology	Mitigation measures against the potential ingress of groundwater into the excavation should be presented.	Closed	17/03/2023
3	Hydrogeology	As the site is downhill of a spring line/potential watercourse, BIA should demonstrate that they are not diverted.	Closed	17/03/2023
4	Land Stability	Impact assessment to be confirmed by site specific ground investigation.	Closed	17/03/2023
5	Land Stability	The GMA should include damage prediction for the back rear wall of the neighbouring garages.	Closed	17/03/2023
6	Land Stability	The BIA should present an assessment to determine whether any neighbouring foundations will be affected by tree removal/incursion into root protection zones.	Closed	17/03/2023



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## Appendix 3

### Supplementary Supporting Documents

None

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