

157 York Rise
London N7 9LN

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 12727-98
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Document Details

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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 157 York Rise (planning reference 2017/5303/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 prepared by Geotechnical & Environmental Associates (GEA) using individuals who possess suitable qualifications in accordance with LBC guidance.
- 1.5. The proposed scheme neither involves nor neighbours Listed buildings, but is located in a Conservation Area.
- 1.6. A site investigation has been conducted. Factual data and geotechnical interpretation is presented in the BIA. No insitu geotechnical testing was undertaken. Prior to construction, insitu shear strength at formation level should be confirmed as suitable.
- 1.7. It has been confirmed that the basement is to be founded approximately 3m below ground level within London Clay. Perched groundwater inflows may potentially be encountered during basement excavation and contingency measures to control these should be allowed for.
- 1.8. The basement structural solution proposed by the engineer comprises RC underpins and an RC slab at basement level. Although outline permanent and temporary structural information was not originally provided, this was subsequently made available to CR upon their request.
- 1.9. A Ground Movement Assessment (GMA) has been carried out to identify potential ground movement during and post construction, which identifies damage to neighbours to be no worse than Burland Category 0 (Negligible). Whilst the original GMA was not accepted, it has been revised since and is now considered satisfactory.
- 1.10. A movement monitoring strategy relating to all existing structures is recommended by the BIA during construction and this should be implemented.

- 1.11. It is accepted that the surrounding slopes to the development site are stable; and the development will not impact on the hydrological or wider hydrogeological environment and is not in an area subject to flooding.
- 1.12. Following receipt of supplementary information and the review of this, it can now be confirmed that the BIA meets the requirements of CPG Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 7th August 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 157 York Rise N7 9LN, Camden reference 2017/5303/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
- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
 - Camden Planning Guidance: Basements (March 2018).
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
 - Local Plan (2017): Policy A5 (Basements).
- 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;
 - d) 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 formation of a 2-bed duplex at ground and basement levels; rear extension of basement and formation of front lightwell. The Audit Instruction also confirmed the development did not involve or neighbour any Listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 27th August 2018 and gained access to the following relevant documents for audit purposes:

- Design Statement by Yurky Cross Chartered Architects dated November 2016.
- Impact Assessment of Below-Ground Development (ref MBP-7441, Issue P1.1) by Michael Barclay Partnership dated June 2018.
- Impact Assessment of Below-Ground Development (ref MBP-7441, Issue P2.1) by Michael Barclay Partnership dated October 2018.
- Site Investigation and Basement Impact Assessment Report (ref J18052) by Geotechnical & Environmental Associates dated 21 May 2018.
- Planning Application Drawings consisting of
 - Location Plan
 - Existing Plans
 - Demolition Plans
 - Proposed Plans
- Consultation responses.

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	BIA Ch. 1-6.
Are suitable plan/maps included?	Yes	BIA Appendix
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	BIA Appendix
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Ch. 3.1.2
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Ch. 3.1.1.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Ch. 3.1.3.
Is a conceptual model presented?	Yes	BIA Ch. 8.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Ch. 4.1.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	Scoping not required.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	Scoping not required
Is factual ground investigation data provided?	Yes	No insitu geotechnical testing undertaken.
Is monitoring data presented?	Yes	BIA Ch. 6.
Is the ground investigation informed by a desk study?	Yes	BIA Ch. 2.
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	BIA provided a map indicating existing neighbouring basements; TP investigation.
Is a geotechnical interpretation presented?	Yes	However, no insitu geotechnical testing undertaken.
Does the geotechnical interpretation include information on retaining wall design?	Yes	BIA Ch. 9.1.2. However, no insitu geotechnical testing undertaken.
Are reports on other investigations required by screening and scoping presented?	No	
Are the baseline conditions described, based on the GSD?	Yes	BIA – various sections.
Do the base line conditions consider adjacent or nearby basements?	Yes	GMA
Is an Impact Assessment provided?	Yes	BIA Ch. 14.
Are estimates of ground movement and structural impact presented?	Yes	A GMA has been carried out (BIA ch. 11).

Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screen 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	Outline movement monitoring strategy provided in the structural report.
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	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	BIA Ch. 3 and 4.
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	Revised GMA submitted and accepted.
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by Geotechnical & Environmental Associates (GEA) and the individuals concerned in its production have suitable qualifications.
- 4.2. The LBC Instruction to proceed with the audit identified that the basement proposal neither involved a Listed building nor neighboured one. The Design Statement and Conservation Area Assessment documents have confirmed that the site is located within Camden Square Conservation Area.
- 4.3. The development proposals comprise the extension of the single-storey basement to the rear of the existing property. The basement slab level is proposed to be approximately 3m below ground level.
- 4.4. A structural report has been prepared by Michael Barclay Partnership (MBP). This discusses the basement extension structural solution and sequence of construction works. The construction is proposed to comprise reinforced concrete underpinning cast in a "hit & miss" sequence and a new 150mm RC slab cast on 50mm of blinding. Summary structural information has been provided, but this was insufficient to confirm the validity of the assessments originally presented. Revised information, comprising additional structural sketches, design calculations and an updated GMA, were subsequently submitted and accepted. The foundation bearing pressures have also been confirmed and considered by the GMA.
- 4.5. The ground investigation was based on 3 no. drive-in window sampler boreholes within the gardens, drilled to depths of approximately 5m below ground level (bgl). In addition, 7 trial pits have been excavated to a maximum depth of 1.2m bgl to expose the existing foundations as part of the site investigation. No insitu geotechnical testing was undertaken.
- 4.6. The BIA has identified that the new basement formation level would be within firm to stiff London Clay, which was identified to the full depth of the exploratory holes. As no insitu geotechnical testing was undertaken, insitu shear strength at formation level should be confirmed as suitable prior to construction, in accordance with the design requirements. Notwithstanding this, the geotechnical parameters derived and presented are within the typical range expected for shallow London Clay.
- 4.7. The BIA also confirmed that Made Ground was found to be overlying the London Clay to depths between 0.39m and 1.95m bgl, and that groundwater seepages were recorded at depths between 0.68m and 1.16m bgl. The BIA indicates that these would likely be a result of perched water within Made Ground and advises that the contractor makes allowance for contingency plans to deal with any potential groundwater inflows during excavation.

- 4.8. The BIA confirmed that the London Clay is a low permeability, unproductive stratum that is not capable of supporting a groundwater table. It is accepted that the development plans are unlikely to have an impact on the wider hydrogeological environment.
- 4.9. The BIA includes an assessment of vertical movements (settlement / heave) generated by changes in loading conditions due to the proposed development. The assessment was based on assumed bearing pressures for the proposed foundation, as the actual pressures were not originally provided by the engineer. The bearing pressures were subsequently made available and the assessment reviewed and confirmed as appropriate.
- 4.10. A ground movement assessment (GMA) has been prepared as part of the BIA. The results of the GMA conclude that the potential damage to neighbouring structures due to basement construction is likely to fall within Damage Category 0 (Negligible). The GMA was not accepted initially due to a number of queries raised. However, a revised GMA has been provided, upon request, which addressed the queries and has now been accepted.
- 4.11. Both the GMA and structural report identify the need for movement monitoring of existing neighbouring structures during basement construction. An outline movement strategy, indicating frequency of monitoring and trigger levels, is presented in the structural report and this should be followed during construction.
- 4.12. The BIA confirmed that the site is not located in an area at risk of flooding due to surface water. The report also states that the redevelopment plans will not increase the impermeable areas and, as such, no SUDS mitigation measures are considered. There should be no impact to the wider hydrological environment. Notwithstanding this, the final drainage design will need to be approved by LBC and Thames Water.
- 4.13. The BIA indicates that a "positive pump device would be installed to protect the basement from flooding from sewers".
- 4.14. The BIA gives consideration to the relevant slope angle maps and suggests that there are no slope stability concerns regarding the proposed development, which is accepted.

5.0 CONCLUSIONS

- 5.1. The BIA has been prepared by individuals who possess suitable qualifications in accordance with LBC guidance.
- 5.2. The proposed development does not involve or neighbour a Listed building.
- 5.3. The basement proposals comprise the extension of the existing single storey basement to the rear of the property.
- 5.4. The engineering report indicates RC underpins and a new 150mm thick RC slab for the basement construction. Sketches presenting an outline of permanent and temporary structural information have been included in the BIA.
- 5.5. A site investigation has been conducted. No insitu geotechnical testing was undertaken. Prior to construction, insitu shear strength at formation level should be confirmed as suitable.
- 5.6. It has been confirmed that the basement is to be founded approximately 3m bgl within London Clay. Perched groundwater inflows may potentially be encountered during basement excavation and contingency measures to control these should be allowed for.
- 5.7. A Ground Movement Assessment (GMA) had been carried out, which identifies damage to neighbours to be no worse than Burland Category 0 (Negligible), but was not initially accepted. The GMA has since been revised and accepted.
- 5.8. A movement monitoring strategy relating to all existing structures is recommended by the BIA during construction and this should be implemented.
- 5.9. It is accepted that the surrounding slopes to the development site are stable; and the development will not impact on the hydrological or wider hydrogeological environment and is not in an area subject to flooding.
- 5.10. The initial queries and requests for additional information, which are summarised in Appendix 2, have been resolved upon receipt of supplementary information from the applicant. It can now be confirmed that the revised BIA meets the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Outline permanent and temporary structural information should be provided, including sequencing, propping requirements and dewatering requirements to maintain stability.	Closed - Additional sketches and statement provided	16.11.2018
2	Stability	The foundation bearing pressures adopted within the settlement calculations should be stated and confirmed as consistent with the structural proposals.	Closed - Foundation pressures confirmed	16.11.2018
3	Stability	The GMA is not accepted and should be reviewed and updated in accordance with the comments in Section 4.	Closed – Revised GMA received	16.11.2018
4	Stability	Prior to construction, insitu shear strength at formation level should be confirmed as suitable.	No insitu testing has been carried out. The Engineer / Contractor should confirm that the bearing capacity is equal to / greater than the anticipated bearing pressures.	Note Only

Appendix 3: Supplementary Supporting Documents

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