

11A Parkhill Road,  
London, NW3 2YH

Basement Impact Assessment  
Audit

For  
London Borough of Camden

Project Number: 12985-13  
Revision: D1

Date: October 2018

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## Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	October 2018	Comment	ARfd-12985-13-191018-11A Parkhill Road-D1.doc	A Ross	F Drammeh	A Finn

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## Document Details

Last saved	19/10/2018 16:01
Path	ARfd-12985-13-191018-11A Parkhill Road-D1.doc
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Project Number	12727-49
Project Name	11A Parkhill Road, NW3 2YH
Planning Reference	2018/1375/P

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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 11A Parkhill Road (planning reference 2017/5913/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 prepared by engineering consultants and the author's qualifications meet CPG Basements 2018 requirements.
- 1.5. The proposal consists lowering the existing lower ground floor area within the studio building and an additional extension to the front and back of the studio building.
- 1.6. A site investigation has been completed confirms the proposed basement will be found within London Clay.
- 1.7. It is stated it is unlikely that the groundwater table will be encountered during basement excavation, however this has been considered within the construction sequencing if it is found.
- 1.8. A sequencing plan with a methodology has been provided for the construction process however retaining wall calculations are requested.
- 1.9. It is accepted that the impact on surface water flows will be negligible due to no increase in hardstanding surfaces. Further maps are however required to verify that the risk of flooding is low.
- 1.10. Further justification to indicate the risk of subsidence in the area and the effects of tree removal are negligible is required.
- 1.11. A ground movement assessment has been provided, however there are comments and queries on this.
- 1.12. A preliminary monitoring strategy is requested to ensure predicted movements during construction remain within acceptable limits.

- 1.13. An indicative works programme has not been provided. This may be provide within a Construction Management Plan. A detailed programme may be provided by the appointed contractor at a later date.
- 1.14. It is accepted that there are no slope stability concerns and wider hydrogeological impacts regarding the proposed development.
- 1.15. Queries and requests for information are summarised in Appendix 2. Until the additional information and further assessments requested are presented, the BIA does not meet the requirements of Camden Planning Guidance: Basements.

## 2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 20 September 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 11A Parkhill Road, Haverstock and 2018/1375/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 Policy (2017): 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 *"Erection of a single storey rear extension at lower ground floor. Removal of existing external rear staircase and extension of existing rear terrace at ground floor and installation of a replacement balustrade. Alterations to rear fenestration (Class C3)."*
- 2.6. The Audit Instruction also confirmed 11A Parkhill Road and neighbouring buildings reside within a Conservation Area.

2.7. CampbellReith accessed LBC's Planning Portal on 5/10/2018 and gained access to the following relevant documents for audit purposes:

- Planning Application letter submitted by Mr James Owen (Reference PP-07123441 dated 13<sup>th</sup> July 2018)
- Basement Impact Assessment Report (BIA) by LBH Wembley Engineering dated May 2018
- Engineering Design and Construction Statement by HowardCavanna Consulting Engineers dated July 2018
- Temporary Works Sketches Set by HowardCavanna Consulting Engineers dated July 2018 (2018 019/TW01-06)
- Design and Access Statement by Novel dated 5<sup>th</sup> July 2018
- Novel Architect and HowardCavanna Structural Engineer's Planning Application Drawings consisting of:

Site Location Plan (PL\_000)

Existing GAs, Sections & Elevations (PL\_001, PL\_002, PL\_003)

Proposed GAs, Sections & Elevations (PL\_004B, PL\_005, PL\_006, PL\_007, PL\_008)

Structural GAs, Sections & Details (2018 019/01, 2018 019/02, 2018 019/03, 2018 019/D3, 2018 019/N)

### 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	See Audit paragraph 4.1.
Is data required by Cl.233 of the GSD presented?	No	The majority of documents have been provided, however an indicative programme of works is requested. See Audit paragraph 5.11.
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 and supporting documents.
Are suitable plan/maps included?	No	See Audit paragraph 4.9.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	No	See Audit paragraph 4.9, Relevant maps not provided to verify the findings on Section 3.3 & 3.4.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Justification not provided for all 'No' answers. See Audit paragraph 4.10.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Justification not provided for all 'No' answers and relevant maps not referenced or provided. See Audit paragraph 4.12.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	Justification not provided for all 'No' answers and relevant maps not referenced or provided. See Audit paragraph 4.11.
Is a conceptual model presented?	Yes	See Audit paragraph 4.5.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	See Audit paragraph 4.11, the findings of the effects of tree removal may amend the scoping assessment.
Hydrogeology Scoping Provided?	N/A	No issues carried forward by screening.

Item	Yes/No/NA	Comment
Is scoping consistent with screening outcome?		
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	See Audit paragraph 4.12.
Is factual ground investigation data provided?	Yes	Provided within BIA Appendices. See Audit paragraphs 4.5 & 4.6.
Is monitoring data presented?	No	See Audit paragraph 4.6.
Is the ground investigation informed by a desk study?	Yes	See Audit paragraph 4.3.
Has a site walkover been undertaken?	Unknown	Not explicitly stated, however there are references to visual observations in the BIA. See Audit paragraph 4.5.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	See Audit paragraph 4.7.
Is a geotechnical interpretation presented?	Yes	Some interpretation presented although there are comments on this. See Audit paragraphs 4.6.
Does the geotechnical interpretation include information on retaining wall design?	Yes	See Audit paragraph 4.6. Values are given for design but cannot be verified.
Are reports on other investigations required by screening and scoping presented?	No	Evidence from Environment Agency map indicate no further investigations required. See Audit paragraph 4.11.
Are the baseline conditions described, based on the GSD?	No	Existing foundation depths not confirmed. See Audit paragraph 4.6 & 4.7.
Do the base line conditions consider adjacent or nearby basements?	Yes	See Audit paragraph 4.7.
Is an Impact Assessment provided?	Yes	However, GMA is not verified and Impact Assessment may change.
Are estimates of ground movement and structural impact presented?	Yes	See Audit paragraph 4.13 and 4.14. Movements cannot be verified due to insufficient evidence provided.

Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	See Audit paragraph 4.13 and 4.14
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	This is not presented within the BIA.
Has the need for monitoring during construction been considered?	Yes	This has been considered but outline proposals not presented. See Audit paragraph 4.15.
Have the residual (after mitigation) impacts been clearly identified?	No	None identified.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	See Audit paragraph 4.6.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	See Audit paragraph 4.12.
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	See Audit paragraph 4.6.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	Category 0 & 1 predicted however there are queries on this. See Audit paragraph 4.13 & 4.14
Are non-technical summaries provided?	Yes	A non-technical summary is provided on page 6 of the BIA.

## 4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been prepared by a firm of engineering consultants, LBH Wembley Engineering. The qualifications of the author of the BIA are given as CEng MICE, CGeol qualifications which meet CPG Basements 2018 requirements. The qualifications of HowardCavanna Consultant Engineers who prepared the Engineering Design and Construction Statement are given as CEng MIStructE.
- 4.2. The LBC Instruction to proceed with the audit identified that the basement proposal involves a building which resides within a Conservation Area. This is identified within the Design and Access Statement by Novel Architects.
- 4.3. The existing property is discussed in Section 2 of the BIA. It is a two storey studio side extension to a larger semi-detached, four storey villa (No. 11). The villa and studio are typically composed of load bearing masonry walls and assumed timber flooring, typical construction of the building's age of the 1800s, with further site history discussed in Section 3.1.
- 4.4. The proposed basement is discussed in Section 2.4 of the BIA, and consists of a single storey construction formed by lowering the existing lower ground floor area within the studio building. The studio floor is to be lowered by 0.5m and an additional area is to be excavated to the front and back of the studio building. The excavation to the front of the house increase to circa 1.70m as it is currently situated at a higher level.
- 4.5. A site investigation has been completed and is discussed in Section 5 of the BIA. The investigation consisted of two small diameter percussive boreholes (to depths of 5.90m below ground level) to the front and rear of the property. There is no evidence of insitu or lab strength tests were undertaken. Monitoring visits for ground water monitoring are not indicated to have been undertaken. The report concludes that the groundwater identified beneath the site and is likely to constitute local flows only within the Made Ground, and perched on top of the London Clay Formation, as discussed in section 5.5 of the BIA. This conclusion is accepted.
- 4.6. The descriptive nature of Section 5 is accepted, with ground conditions composed of Made Ground, with downwash deposits and London Clay formation underneath. Although the technical details provided under Section 6.2 for new foundations, Section 6.3 for retaining walls and Section 7.2 Modelled Ground Conditions, are not strictly based on insitu or laboratory strength tests which were not undertaken, the recommendations are considered to be reasonable based on the scale of the proposal.
- 4.7. Adjacent basements are discussed within the BIA Section 2.3, with property at 9C undergoing a similar proposal in 2015 with development which is now completed. There is no evidence of existing party wall foundations being investigated. It is noted that the final depth of the

neighbouring properties is unknown, although it is stated this is assumed to extend to below the depth of the proposed basement based on the drawings for that proposal. It is stated underpinning is assumed to be required until further investigation. This has also been assumed in Geotechnical models in Section 6.1 and ground movement assessments in 7.1. This assumption is accepted.

- 4.8. A structural methodology and sequence with accompanying sketches is included within HowardCavanna's Engineering Design and Construction Statement. HowardCavanna's basement plan also indicates underpinning sections layout to match the methodology. However, no outline structural calculations have been provided to demonstrate stability. Section 3 of the BIA reviews the Geological, Hydrogeological and Flood Risk information of the site. Use of the Camden Geological, Hydrogeological and Hydrological Study has only been used for Section 3.2. Whilst the findings are considered valid, the relevant maps are not referenced or provided with the site location indicated for Sections 3.3 and 3.4. These are helpful to support the responses. Additionally, justification is not provided for all the no responses.
- 4.9. As part of the screening assessment in Section 4.1.3, it is stated there is no evidence of such shrink-swell subsidence effects on site, however, there is no indication of historical data being reviewed for confirmation of this prior to providing a 'No' answer. The removal of a tree and its effects has also not been adequately addressed and requires further justification.
- 4.10. The screening assessment in section 4.1.2 suggests that historical flooding has occurred on Parkhill Road, and within the Scoping (Section 4.2.1) a Flood Risk Assessment is suggested. Section 8.2.2 follows up on this suggestion by referencing Environment Agency hazard mapping, whereby in a 1 in 1000 rainfall event the risk is still classed as low. This conclusion will be accepted on the basis of the map extract presented within the appendix or report to provide evidence of this.
- 4.11. It is accepted that the impact on surface water flows will be as existing due to no increase in standing hard surfaces, given that the area of extended basement will be beneath existing hard standing area.
- 4.12. The Engineering Design and Construction Statement coincides with the temporary works sketches, which detail the underpinning and construction methodology. However, the ground movement assessment does not refer to this and it is unclear whether the methodology is taken into account within the calculations.
- 4.13. The predicted ground movements are not accepted. The full input and output from the analysis is not provided to verify the conclusions shown in Section 7.3 and 7.4.

- 4.14. The Engineering Design and Construction Statement refers to adjoining properties being continuously monitored for any movement during construction works subject to agreement, however no outline proposals have been presented. This is requested with trigger levels.
- 4.15. It is accepted that there are no slope stability concerns regarding the proposed development.

## 5.0 CONCLUSIONS

- 5.1. The Basement Impact Assessment (BIA) has been prepared by LBH Wembley Engineering and the author's qualifications meet CPG Basement 2018 requirements.
- 5.2. The property resides within a Conservation Area and is identified within the Design and Access Statement. The proposal consists of a single storey construction formed by lowering the existing lower ground floor area by 0.50m within the studio building and an additional extension to the front and back of the studio building.
- 5.3. A site investigation has been completed and consisted of two percussive boreholes to the front and rear of the property. Although there is no evidence of strength testing undertaken, the design recommendations are considered to be reasonable.
- 5.4. Although no monitoring visits were undertaken, it is concluded that the groundwater identified beneath the site as perched water on top of the London Clay Formation. This conclusion is accepted.
- 5.5. Adjacent basements are discussed and it is noted that the party wall foundation depth is assumed, with underpinning assumed to be required. This assumption is accepted at this stage although it is recommended that this is confirmed prior to construction.
- 5.6. A structural methodology and sequence with accompanying sketches and a basement plan indicating underpinning sections layout to match the methodology is provided. No structural calculations and finished floor build up (including waterproofing details) have been provided within the report and this is requested.
- 5.7. It is accepted that the impact on surface water flows will be negligible due to no increase in hardstanding surfaces.
- 5.8. Further justification and explanation is required with regards to the effects of tree removal on shrink/swell subsidence, which is required to justify answer within scoping assessment.
- 5.9. The predicted ground movements cannot be verified as the full input and output analysis from relevant analytical software has not been provided. Additionally, no reference is made to underpinning sequencing or methodology.
- 5.10. An outline monitoring strategy to ensure movements and damage impacts remain within acceptable limits is requested.

- 5.11. An indicative works programme has not been provided. This may be provided within a Construction Management Plan. A detailed programme may be provided by the appointed contractor at a later date.
- 5.12. It is accepted that there are no slope stability concerns and wider hydrogeological impacts regarding the proposed development. Additional information to confirm the site is in a low flood risk area as stated is requested.
- 5.13. Queries and requests for information are summarised in Appendix 2. Until the additional information and further assessments requested are presented, the BIA does not meet the requirements of Camden Planning Guidance: Basements.

## Appendix 1: Residents' Consultation Comments

None

## Appendix 2: Audit Query Tracker

Audit Query Tracker\*

Query No	Subject	Query	Status	Date closed out
1	BIA format/ Works Programme	An indicative programme is required.	Open – to be provided.	
2	BIA format/hydrogeology	Map extract to justify conclusions on flood risk	Open – see Audit paragraph 4.11	
3	BIA format/stability	Effect on tree removal not adequately addressed	Open – see Audit paragraph 4.10.	
4	Stability/party wall foundation	Depth of the foundation assumed from drawings.	To be confirmed prior to construction	N/A
5	Stability/Ground movement assessment	Input and output from analysis for vertical and horizontal displacements not provided.	Open – to be provided to verify the conclusions	
6	Stability/Construction method statement	Outline structural calculations and waterproofing details not provided.	Open – to be provided. Provide floor details if internal drained cavity floor and walls are to be used in lieu of integral structural waterproofing	
7	Stability/ Movement monitoring	Movement monitoring	Open – outline strategy to be provided	

\* Please provide complete and clear responses to the above queries which are discussed in detail in Section 4. Where any of the documents are updated, please indicate the updated sections in a covering email/letter.

## Appendix 3: Supplementary Supporting Documents

None

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