

133-137 Brecknock Road
N19 5AE

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 12727-94
Revision: F1

August 2018

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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 133-137 Brecknock Road (planning reference 2017/7045/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 has been carried out by engineering consultants and the individuals concerned in its production have suitable qualifications, in accordance with Camden Planning Guidance.
- 1.5. The proposal is to construct a new 2 storey building (ground floor levels and lower ground floor) at the rear gardens of properties 133 to 137 Brecknock Road.
- 1.6. A site specific desk study and ground investigations was executed. The site investigation confirmed that the ground conditions comprise Made Ground and Head Deposits over London Clay. No groundwater was discovered during the investigations.
- 1.7. Geotechnical interpretation is provided, including parameters for retaining wall and foundation design.
- 1.8. The site is to become largely impermeable from its current permeable soft landscaping condition. However an appropriate outline surface water drainage strategy has been provided, which will require further development during the detailed design stage.
- 1.9. A construction methodology for the basement is presented which indicates the construction of the reinforced concrete retaining wall followed by construction of the reinforced concrete slab.
- 1.10. The BIA indicates that the worst case damage category to the surrounding properties will be Burland category 1.
- 1.11. Movement monitoring has been proposed.

- 1.12. Trees exist in the surroundings of the proposed building and there is indication that a tree was recently felled in the rear garden of number 135 Brecknock Road. The scheme will avoid excavating the root protection areas and also remove the soil affected by the felled tree.
- 1.13. It is accepted that there are no impacts relating to slopes at or close to the proposed development.
- 1.14. The flood risk assessment confirmed that the risk of flooding is low.
- 1.15. An outline construction programme is provided.
- 1.16. Given the above it can be confirmed that the proposal confirms to the requirements of CPG Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 23rd of July 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 133-137 Brecknock Road, reference 2017/7045/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: CPG Basements.
 - 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 *"Erection of two storey 4 bedroom dwelling involving excavation and landscaping with entrance off Ospringle Road"*.
- 2.6. CampbellReith accessed LBC's Planning Portal on 26th of July 2018 and gained access to the following relevant documents for audit purposes:
- Basement Impact Assessment Report (BIA), LBH Wembley Engineering, ref. LBH4521 v1.2, June 2018

- Structural Engineer's Design Statement for Planning, engineersHRW, rev.A, 5th July 2018
- Flood Risk Assessment and Drainage Statement, Infrastruct CS, ref. 3036-BREN-ICS-RP-C-07.001A
- Planning Application Drawings consisting of:
 - Location Plan (Dwg. Number 092_X_00_00_P1)
 - Existing Plans (dwgs number 092_X_03_01_P1; 092_X_01_01_P1; 092_X_02_01_P1; 092_X_02_02_P1; 092_X_00_01_P1)
 - Proposed Plans (dwgs number 092_A_03_02_P1; 092_A_03_03_P1; 092_A_03_01_P1; 092_A_01_02_P1; 092_A_01_03_P1; 092_A_02_01_P1; 092_A_02_02_P1; 092_A_02_03_P1; 092_A_00_01_P1; 092_A_01_03_P2)
- Design & Access Statement, ref. 092_DOC01_P1, December 2017
- Planning Comments and Responses

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	MICE and CGeol are held by the BIA authors/checkers
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	An appropriate justification is generally provided for 'no' answers where explanation is required.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	An appropriate justification is generally provided for 'no' answers where explanation is required.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	An appropriate justification is generally provided for 'no' answers where explanation is required.
Is a conceptual model presented?	Yes	Section 5 of the BIA
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	A scoping statement has been provided for all items carried through from land stability screening
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	A scoping statement has been provided for all items carried through from hydrogeology screening

Item	Yes/No/NA	Comment
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	A scoping statement has been provided for all items carried through from hydrology screening
Is factual ground investigation data provided?	Yes	Appendix to BIA
Is monitoring data presented?	N/A	Ground water was not encountered
Is the ground investigation informed by a desk study?	Yes	Section 3 of the BIA
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	It has been confirmed that the extension to the neighbouring building, The Poplars, contains an existing basement level
Is a geotechnical interpretation presented?	Yes	Section 6.4 of BIA
Does the geotechnical interpretation include information on retaining wall design?	Yes	Yes appropriate retaining wall design parameters are provided
Are reports on other investigations required by screening and scoping presented?	Yes	A flood risk assessment and ground movement assessment has been provided
Are the baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	Yes	Ground movement assessment
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	

Item	Yes/No/NA	Comment
Has the need for monitoring during construction been considered?	Yes	Movement monitoring is proposed however a strategy has not been provided
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	The outline surface water drainage strategy adequately demonstrates the feasibility of surface water drainage mitigation.
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	A worst case damage category of 1 has been indicated
Are non-technical summaries provided?	No	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by LBH Wembley Engineering consultants and the individuals concerned in its production have suitable qualifications, in accordance with Camden Planning Guidance (CPG Basements).
- 4.2. The proposal is to construct a new 2 storey building (ground floor and lower ground floor) at the rear gardens of properties 133 to 137 Brecknock Road.
- 4.3. A site specific desk study and ground investigations has been carried out. The site investigation confirmed that the ground conditions comprise Made Ground (to approximately 0.5 mbgl) and Head Deposits (to 2.2 mbgl) over London Clay (to depth of investigation of 5.45 mbgl). No groundwater was discovered during the investigations and further monitoring was not undertaken.
- 4.4. An appropriate geotechnical interpretation has been provided, including parameters for retaining wall and foundation design.
- 4.5. The proposed basement will be constructed in area currently occupied by soft landscaping. As a result, the whole area will become impermeable, increasing the volume of surface water drained to public sewers. The Drainage statement provides outline details of proposed SUDs measures which may be adopted in order to achieve run off rates in accordance with The London Plan and other planning policy, which are described as from green roofs, water butts, and possibly rainwater harvesting. It is accepted that the applicant has adequately demonstrated an outline proposal for the adherence to the planning policy in respect of surface water drainage, with the strategy to be developed further at detailed design stage, along with a requirement for adherence to any requirements of Thames Water or other stakeholders.
- 4.6. The basement will be founded in the London Clay, at approximately 3m bgl. A construction methodology for the basement is presented which indicates the construction of the reinforced concrete retaining wall, in a "hit and miss" pattern, followed by construction of the reinforced concrete raft slab. The retaining walls will be propped only in the temporary condition and are designed as unpropped cantilevers in the permanent case.
- 4.7. The BIA indicates that buildings in number 133, 135 and 137 are far enough to avoid being adversely affected by the proposed basement. As the proposal comprises a stiff retaining wall founded in London Clay, this assumption is considered reasonable.
- 4.8. A ground movement assessment (GMA) has been produced with determination made as to the impact on The Poplars, and Nos 133-137 Brecknock Road. By inspection it has been determined that the impact on 133-137 Brecknock Road will not be significantly impacted by the proposal

due to their distance from the proposed basement excavation, along with the same conclusion drawn regarding the impact to the extension to the Poplars which contains an existing basement level some 0.5m above the excavation level, both conclusions are considered reasonable.

- 4.9. A quantitative GMA and impact assessment to the party wall of to the Poplars has been carried out, with it being assumed that only vertical movement due to excavation will be realised at this wall, due to the wall being generally outside of the 45° line of the basement wall. The damage category determination is calculated as a worst case of Burland category 1 (very slight).
- 4.10. Movement monitoring of ground movements during construction is proposed, however a monitoring strategy is not provided. A detailed monitoring strategy will be required to be developed during the detailed proposals stage.
- 4.11. Trees exist in the surroundings of the proposed building and there is indication that a tree was recently felled in the rear garden of number 135 Brecknock Road. The scheme will avoid excavating the root protection areas and also remove the soil affected by the felled tree.
- 4.12. There are no impacts relating to slopes at or close to the proposed development.
- 4.13. The flood risk assessment confirmed that the risk of flooding is low.
- 4.14. An outline construction programme is provided.

5.0 CONCLUSIONS

- 5.1. The BIA has been carried out by LBH Wembley Engineering consultants and the individuals concerned in its production have suitable qualifications.
- 5.2. The proposal is to construct a new 2 storey building (ground floor and lower ground floor) at the rear gardens of properties 133 to 137 Brecknock Road.
- 5.3. A site specific desk study and ground investigations was executed. The site investigation confirmed that the ground conditions comprise Made Ground and Head Deposits over London Clay. No groundwater was discovered during the investigations.
- 5.4. Geotechnical interpretation is provided, including parameters for retaining wall and foundation design.
- 5.5. The proposed basement will be constructed in area currently occupied with gardens. As a result the site will largely become impermeable. An outline surface water drainage strategy incorporating the use of SUDs has been provided, which is to be developed further during the detailed design stage.
- 5.6. The basement will be founded in the London Clay. A construction methodology for the basement is presented which indicates the construction of the reinforced concrete retaining wall, in a "hit and miss" pattern, followed by construction of the reinforced concrete raft slab.
- 5.7. A GMA has been produced that indicates a worse case damage category of 1 to the Poplars, and negligible damage to 133-137 Brecknock Road, using a combination of quantitative analysis and inspection.
- 5.8. It is stated that movement monitoring is to be carried out during basement construction.
- 5.9. Trees exist in the surroundings of the proposed building and there is indication that a tree was recently felled. The scheme will avoid excavating the root protection areas and also remove the soil affected by the felled tree.
- 5.10. It is accepted that there are no impacts relating to slopes at or close to the proposed development.
- 5.11. The flood risk assessment confirmed that the risk of flooding is low.
- 5.12. An outline construction programme is provided.
- 5.13. Given the above it can be confirmed that the proposal confirms to the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
The Poplars Residents	The Poplars, Montpelier Grove, London, NW5 2XD	03.05.18	<ul style="list-style-type: none">• Impact on existing drainage system• Damage to neighbouring properties due to subsidence/heave	<ul style="list-style-type: none">• The applicant has produced an adequate surface water drainage strategy that provides outline details of how surface water discharge will be attenuated in accordance with planning policy• The applicant has produced an appropriate ground movement assessment that indicates movements to neighbouring properties will be within the limits stipulated by local planning policy.

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Programme	An outline programme of work is required	Closed	24.08.2018

Appendix 3: Supplementary Supporting Documents

Land to the rear of 133-137 Brocknock Road, London, W1D 5AE			Month 1				Month 2				Month 3				Month 4				Month 5				Month 6				Month 7				Month 8				Month 9				Month 10				Month 11				Month 12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Please note the following:
 Indicative expected programme - to be superseded by the contractors proposals
 Start date to be confirmed subject to planning approval, section 106 agreement and party wall award negotiations
 Current expected start date is Mid January 2019
 Expected completion date early 2020

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