

18 Regent's Park Road
London, NW1 7TX

Basement Impact Assessment
Audit

For
London Borough of Camden

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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 (BIA) submitted as part of the Planning Submission documentation for 18 Regent's Park Road (planning reference 2018/4364/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 LBC Instruction to proceed with the audit identified that the basement proposal neither involves, nor is neighbouring to, a listed building.
- 1.5. The Basement Impact Assessment (BIA) was undertaken by individuals that hold suitable qualifications.
- 1.6. Non-technical summaries are presented in accordance with LBC guidance.
- 1.7. Groundwater was monitored below the proposed basement depth. The basement is being formed within the London Clay. There will be no impact to the wider hydrogeological environment.
- 1.8. Neighbouring properties are identified as having basements.
- 1.9. A summary of geotechnical parameters is presented in the BIA.
- 1.10. Based on the drawings and structural calculations, proposed foundations will be a maximum of 0.9m below existing Party Wall foundations. Adequate stability assessment is provided.
- 1.11. It is accepted the site is in an area at low risk of flooding from surface water.
- 1.12. It is accepted that the impermeable site area will remain unchanged and there will be no impact to the wider hydrological environment.
- 1.13. It is accepted that there are no slope stability concerns regarding the proposed development.
- 1.14. The BIA meets the requirements of CPG Basements.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 27 February 2019 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 18 Regent's Park Road, London NW1 7TX (Reference: 2018/4364/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, 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 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 *"Reconfiguration of existing building from 3 self-contained residential units to provide 1 x 5 bedroom unit and 1 x 2 bedroom unit to include demolition of existing side extension and erection of two-storey side extension, basement excavation, alterations to existing eastern side extension and new steps into the rear garden and front side access; other alterations to fenestration, front boundary wall, landscaping, provision of cycle storage."*

2.6. The audit instruction also confirmed that the proposal does not involve any listed building.

2.7. CampbellReith accessed LBC's Planning Portal on 10 April 2019 and gained access to the following relevant documents for audit purposes:

- Construction Method Statement (CMS) and BIA by Symmetrys Ltd (ref: 18375 Rev.1.1), dated February 2019.
- Robert Rhodes Architecture + Interiors Planning Application drawings:
 - Existing Plans (DWG #002)
 - Existing Elevations (DWG #003),
 - Existing Section (DWG #004),
 - Proposed Plans (DWG #005),
 - Proposed Elevations (DWG #006),
 - Proposed Section (DWG #007).

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	Characteristics and location of the project are presented in the BIA along with characteristics of the potential impact.
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	Maps and plans are provided in the BIA.
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	Data sources are presented in Section 6 and 7 of the BIA. Justification is provided for 'No' answers.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	As above.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	As above.
Is a conceptual model presented?	Yes	A conceptual model has been described from Section 5, 6 and 7 of the BIA.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 7 of the BIA.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 7 of the BIA.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 7 of the BIA.
Is factual ground investigation data provided?	Yes	Section 6 of the BIA and Appendix C.
Is monitoring data presented?	Yes	Ground Investigation Report (Appendix C).
Is the ground investigation informed by a desk study?	Yes	Desk study information is presented in the Ground Investigation Report.
Has a site walkover been undertaken?	Yes	A site walkover was completed on Sunday 16 th December 2018
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Basement levels to neighbouring buildings
Is a geotechnical interpretation presented?	Yes	Geotechnical advice and parameters are presented in the Ground Investigation Report.
Does the geotechnical interpretation include information on retaining wall design?	Yes	Drained parameters (friction angle and earth pressure coefficients) are presented in the BIA.
Are reports on other investigations required by screening and scoping presented?	NA	
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	Section 12 of the BIA.
Are estimates of ground movement and structural impact presented?	Yes	Section 12 of the BIA and Appendix H of the Ground Investigation Report.

Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	Section 8 of the BIA.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	Section 9 to 15 of the BIA.
Has the need for monitoring during construction been considered?	Yes	Section 13 of the BIA.
Have the residual (after mitigation) impacts been clearly identified?	Yes	The BIA states residual impacts to be negligible.
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 BIA confirmed the discharge flow rates will remain unchanged. Also hard and soft landscaping areas will not be modified.
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	As above.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	Section 12.1 of the BIA.
Are non-technical summaries provided?	Yes	Section 16 of the BIA.

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) was undertaken by Symmetrys Ltd and the individuals concerned in its production hold suitable qualifications, as required by the CPG Basements 2018. Non-technical summaries are presented in Section 16 of the BIA.
- 4.2. The LBC Instruction to proceed with the audit identified that the basement proposal neither involves, nor is neighbouring to, a listed building.
- 4.3. The site comprises a four storey, terraced family home with a basement and falls within Area 1 'Regent's Park Road South' of the Primrose Hill Conservation Area. The existing basement entrance is down a steep staircase. The property is bounded by 16 and 20 Regent's Park Road to the east and to the west respectively. The proposals is to extend the existing lower ground floor below the front garden as well as lowering the existing vault at the front of the property to create a living space and to improve the access to the basement.
- 4.4. A ground investigation undertaken by LMB Geosolutions Ltd in January 2019 identified Made Ground to a maximum 0.8m below existing basement level (3.30m bgl) underlain by London Clay which was proven to 10.00m bgl. Groundwater was not struck during the site investigation. During one monitoring visit after the investigation works, groundwater was monitored at a depth of 5.06m bgl, which is below the proposed basement depth. There will be no impact to the wider hydrogeological environment
- 4.5. The existing walls are to be supported onto reinforced concrete underpin retaining walls. The reinforced concrete structure will be designed to accommodate surcharges from the neighbouring properties. Neighbouring properties are identified as having basements.
- 4.6. The BIA states that temporary propping to the newly formed retaining walls will be required until floor slabs has been completed. Two levels of horizontal props and one diagonal prop are shown in in Symmetrys drawings in Appendix A of the BIA. The ground movement assessment assumes that stiff propping will be adopted in the permanent and temporary cases.
- 4.7. It is understood that the basement slab is to be a ground bearing reinforced concrete slab tied into the toes of the underpinning section and will provide a permanent base prop to the underpins. A net allowable bearing capacity of 120kPa was calculated in the ground investigation report for the London Clay at a depth of 3.5m bgl. Structural calculations presented in Appendix B assume a value of 100kPa at 3.0m bgl. Considering the design shear strength (as 4.8), the bearing capacity range is accepted.
- 4.8. A summary of geotechnical parameters is presented in the BIA. Values for the undrained shear strength of the London Clay have been determined undertaking hand vane shear tests on

remoulded samples withdrawn from borehole BH1. Results have been factored within the geotechnical recommendations, indicating a shear strength of 60 kN/m².

- 4.9. A Ground Movement Assessment (GMA) has been undertaken. Vertical and horizontal movements have been calculated following CIRIA C760 guidance for retaining wall. In particular, the analysis has adopted the values for 'installation of a planar diaphragm wall' in the estimation of ground movements caused by the installation of the underpins.
- 4.10. Whilst the CIRIA approach is intended for embedded retaining walls, we accept that the predicted ground movements are within the range typically anticipated for underpinning techniques carried out with good control of workmanship.
- 4.11. The GMA and structural calculations present slightly different excavation depths. However, based on the drawings and calculations provided, it is accepted that the Party Wall foundations will be underpinned by a maximum of 0.9m and a maximum excavation in the centre of the site of approximately 3m will be required.
- 4.12. The GMA undertaken indicates that damage to surrounding properties (No. 14, 16, 20, 22 Regent's Park Road) will be Burland Category 0 (Negligible) to 1 (Very Slight). This is accepted. A structural movement monitoring strategy is presented and should be adopted to ensure movements and damage impacts are controlled to within predicted limits.
- 4.13. The LMB report identified the presence of water utilities running approximately parallel to the property underneath Regent's Park Road. However, the locations of the utilities are stated to be outside the zone of influence of any ground movements caused by the proposed development. Correspondence with Thames Water has been provided for review and an asset protection agreement should be entered into, if required.
- 4.14. It is accepted the site is in an area at low risk of flooding from surface water. It is also accepted that the percentage of hardstanding and landscaped areas will not increase as result of the proposed development.
- 4.15. It is accepted the site is in an area at low risk of flooding from surface water.
- 4.16. It is accepted that the impermeable site area will remain unchanged and there will be no impact to the wider hydrological environment.
- 4.17. It is accepted that there are no slope stability concerns regarding the proposed development.

5.0 CONCLUSIONS

- 5.1. The Basement Impact Assessment (BIA) was undertaken by individuals that hold suitable qualifications.
- 5.2. Non-technical summaries are presented.
- 5.3. There will be no impact to the wider hydrogeological environment.
- 5.4. A summary of geotechnical parameters is presented in the BIA.
- 5.5. Adequate stability assessment is provided. Damage to neighbours will be a maximum of Category 1 (Very Slight).
- 5.6. It is accepted the site is in an area at low risk of flooding.
- 5.7. There will be no impact to the wider hydrological environment.
- 5.8. The BIA meets the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comment

None

Appendix 2: Audit Query Tracker

None

Appendix 3: Supplementary Supporting Documents

None

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