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Athlone House
London, N6 4RU

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12336-84
Revision: F1

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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 Athlone House, London N6 4RU (planning reference 2016/3587/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 proposed development incorporates a swimming pool within a new ground floor and single basement level extension to the existing building. The existing single level basement will be slightly enlarged immediately adjacent to the new extension.

1.5. The BIA has been prepared by Geotechnical and Environmental Associates. The authors' qualifications are in accordance with LBC's requirements.

1.6. A desk study broadly in accordance with the GSD Appendix G1 has been prepared for a previous planning application at the site, and has been referenced for this planning application.

1.7. A previous ground investigation at the site is referenced and relied upon to provide site specific information on the ground and groundwater conditions. The borehole information confirms the desk study findings that the site is underlain by Made Ground over the Claygate Member of the London Clay Formation.

1.8. The BIA indicates the site to be at low risk of surface water flooding or impacting the wider surface water flow environment, which is accepted.

1.9. Groundwater levels are indicated to be at approximately 6m below the proposed basement. The BIA discusses the formation of a basement within the Claygate Member and concludes that there is no risk of groundwater flooding at the site or impact to the wider hydrogeological environment, which is accepted.

1.10. The BIA indicates that slopes in the immediate vicinity of the proposed house and surrounding gardens are at 4° to 6° and concludes there will be no land stability impacts caused by the proposed development, which is accepted.

1.11. The BIA states that an open cut excavation is likely to be utilised for the proposed basement construction. Given the site location and lack of sensitive structures in the vicinity, and in line with the ground movement assessment carried out which indicates negligible damage impact to the existing house (the only structure in the vicinity), this is considered acceptable and should not impact land stability.

1.12. The BIA discusses the requirement for survey and monitoring of Athlone House during construction of the new extension, in line with best practise.

1.13. The BIA is assessed to meet the criteria contained within CPG4 and DP27.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 14 July 2016 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Athlone House, London N6 4RU, Camden Reference 2016/3587/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) 4: Basements and Lightwells.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.

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; and,

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: "*Restoration and extension of Athlone House for use as a 6 bedroom single dwelling house; creation of new vehicular/pedestrian entrance from Hampstead Lane and associated part demolition of boundary wall; refurbishment and extension of Caen Cottage and refurbishment of the Gate House, both to be used as ancillary residential accommodation; erection of a summer house on disused tennis court within the grounds; and associated landscaping works and restoration of historic garden*".

2.6. CampbellReith accessed LBC's Planning Portal on 18 July 2016 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment (ref J16075, Final, Issue 2) dated 1 June 2016 by Geotechnical and Environmental Associates.
- Site Location Plan, Existing Plans and Elevations, Proposed Plans and Elevations, Demolition Plans dated June 2016 (Revision PL01) by SHH Architects.
- Flood Risk Assessment and Drainage Statement (ref 2129-07-01, Revision C) dated April 2016 by Infrastruct CS Ltd.
- Structural Drawings dated June 2016 (Revision P2) by Engineers HRW.
- Structural Engineer's Construction Sequence Methodology for Planning dated 16 June 2016 (Revision P2) by Engineers HRW.
- Desk Study & Basement Impact Assessment Report (ref J1224, Final (Revised), Issue 3) dated 6 June 2013 by Geotechnical and Environmental Associates.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	The author's qualifications are in accordance with CPG4 guidelines for all sections.
Is data required by Cl.233 of the GSD presented?	Yes	A desk study broadly in line with the GSD Appendix G1 has been provided via the Camden Planning Portal for a previous planning application, 2013/7242/P. Not all appendices have been provided for review.
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?	No	The desk study indicates slopes on site of greater than 7° whilst the BIA indicates that slopes on site in the vicinity of the proposed development are 4° to 6°, and greater than 7° at greater than 100m from the proposed development.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	The desk study indicates the site is not within the catchment of the pond chains whereas the BIA indicates the site is within their catchment.

Item	Yes/No/NA	Comment
Is a conceptual model presented?	Yes	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	It is accepted that steeper slopes within the wider site and surrounding area are not in the vicinity of the proposed development.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	It is accepted that the development will not materially change run-off from the current site arrangements.
Is factual ground investigation data provided?	Yes	
Is monitoring data presented?	Yes	
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	There are no other buildings in the vicinity of the development.
Is a geotechnical interpretation presented?	Yes	
Does the geotechnical interpretation include information on retaining wall design?	Yes	
Are reports on other investigations required by screening and scoping presented?	Yes	
Are baseline conditions described, based on the GSD?	Yes	

Item	Yes/No/NA	Comment
Do the base line conditions consider adjacent or nearby basements?	Yes	However, there are no nearby basements.
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	Yes	Based on an open excavation methodology.
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	Drainage and SUDS attenuation discussed to mitigate any hydrological impacts, which may result in betterment compared to the current site arrangement.
Has the need for monitoring during construction been considered?	Yes	
Have the residual (after mitigation) impacts been clearly identified?	Yes	No impacts identified, assuming best practice methodologies and good quality workmanship.
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	
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 2?	Yes	Category 0 indicated, based on an open excavation methodology for the basement.
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

4.1. A desk study has been presented. Not all appendices have been presented for review. However, it is accepted that sufficient information has been provided to conclude the desk study is broadly in accordance with the GSD Appendix G1.

4.2. The BIA clarifies statements in the Desk Study in relation to slope angles across the site and the site's presence within the catchment of the pond chains.

4.3. It is accepted that the steeper slope angles on site, >7°, are remote and downhill from the proposed basement excavation and will not be impacted by the excavation / construction works.

4.4. Similarly, it is accepted that the proposed development will not result in additional surface water run-off from the current site condition that could impact the pond chains or cause local surface water flooding, and that attenuation SUDS utilised within the scheme may improve the volume or rate of run-off discharge from the current site arrangements.

4.5. The basement will be excavated into and founded upon the Claygate Member of the London Clay Formation, which is classified as a Secondary 'A' aquifer. Groundwater monitoring data is available for discrete periods over a number of years and appears to remain consistently greater than 5m below the base of the proposed basement formation level. The basement should not therefore impede groundwater flow or cause an impact to the wider hydrogeological environment. It should not be at risk from groundwater flooding.

4.6. The BIA advises that the contractor should make suitable contingency plans to deal with any perched water encountered during construction. In the long term, the permanent structure will require suitable waterproofing to be provided in line with best practise.

4.7. The BIA indicates that the basement is likely to be constructed within an open-cut, battered excavation. Given the development site's location and the underlying ground conditions, this methodology should prove suitable. The BIA provides advice on formation, visual inspection and monitoring of the battered slopes during construction to ensure land stability. The contractor should have a mitigation plan in place should the need arise to stabilise the excavation.

4.8. A ground movement assessment (GMA) has been undertaken assuming construction of the basement within an open-cut, battered excavation. Aside from Athlone House itself, there are no other structures located in the vicinity of the proposed development. The GMA predicts limited heave, settlement and lateral movements and consequently the damage assessment is indicated as Negligible, Category 0 in line with the Burland Scale.

5.0 CONCLUSIONS

5.1. The BIA has been prepared by Geotechnical and Environmental Associates. The authors' qualifications are in accordance with LBC's requirements.

5.2. A desk study broadly in accordance with the GSD Appendix G1 has been provided for the proposed development.

5.3. It is accepted that the proposed development does not intercept the groundwater level within the Claygate Member and as such will not impact the wider hydrogeological environment or be at risk of groundwater flooding.

5.4. It is accepted that the proposed development presents negligible changes in hard to soft landscaping ratios and as such should not impact the wider hydrology. Attenuation SUDS designs form part of the proposed wider landscape development which may provide betterment to the existing site conditions in terms of surface water run-off and discharge flow rates to the local drainage network.

5.5. It is accepted that the proposed development does not impact land stability and that the scheme, as assessed, will produce limited ground movements resulting in a damage category of Negligible, Category 0 (Burland Scale) to the existing Athlone House structure.

5.6. In conclusion, the BIA is assessed as having met the required criteria contained within CPG4 and DP27.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

None

Appendix 3: Supplementary Supporting Documents

None

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