

9 Harley Road, London, NW3 3BX

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 submitted as part of the Planning Submission documentation for 9 HARLEY ROAD, LONDON, NW3 3BX (planning reference 2015/7015/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 required qualifications and experience have not been proven for the authors of the BIA or the Ground Movement Assessment. A list of assessors is provided in the BIA although their roles in the assessment are not confirmed. Nevertheless, in general the BIA is comprehensive and consistent in its reporting and assessment of relevant issues, and the screening, scoping and impact assessment have been carried out correctly.
- 1.5. The BIA has confirmed that the proposed basement will be founded within the London Clay Formation. Adequate site investigation and groundwater monitoring has been undertaken in order to characterise the site ground and groundwater conditions in regards to the proposed basement construction.
- 1.6. The Structural Engineer's Design Statement for Planning and associated layout drawings indicate the proposed use of underpinning and contiguous bored pile retaining walls to form the basement structure.
- 1.7. It is proposed that the construction of the basement will involve excavation to approximately 3.3m below ground level (bgl) for the main basement and 4.4m bgl for the plant room. No groundwater issues have been identified. The potential for groundwater seepage into excavations is low and the BIA recommends that "the chosen contractor should have a contingency plan in place to deal with any perched groundwater inflows as a precautionary measure".
- 1.8. It is proposed that the final drainage detailed design will incorporate a pumping device to protect the property from sewer flooding in the permanent case.
- 1.9. A ground movement assessment has been carried out. The damage assessment is defined as 'negligible' (Category 0) in accordance with the Burland Scale for both the adjoining properties

and the existing structure on site. This assumes stiff propping in accordance with best practise, as outlined within BS5975 and BS8002.

- 1.10. Condition surveys and a movement monitoring regime on the adjacent properties during construction is discussed in the BIA and this should be provided by the contractor in advance of the works. This may be agreed as part of the Party Wall Act.
- 1.11. It is accepted that the proposed development is not in an area with slope angles in excess of 7°.
- 1.12. It is accepted that the proposed development is not in an area prone to surface water or sewage overflow flooding.
- 1.13. It is accepted that the development will not impact on the wider hydrogeology of the area.
- 1.14. It is accepted that a Network Rail tunnel is approximately 20m below ground level at the rear boundary of the property and an exclusion zone of 10m from the tunnel edge will be maintained at all times.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 5 February 2016 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 9 Harley Road, London, NW3 3BX (2015/7015/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, groundwater 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 *"excavation of basement level and rear extensions and other associated minor alterations"*.
- 2.6. CampbellReith accessed LBC's Planning Portal on 19th February 2016 and gained access to the following relevant documents for audit purposes:
- BIA – parts 1, 2 and 3
 - Desk Study and Maps – parts 1 to 9

- Design Access Statements – parts 1 and 2
- Planning Application Drawings consisting of
 - Site Location Plan
 - Existing Lower Ground Floor and Ground Floor Plans
 - Existing Elevations
 - Proposed Lower Ground and Ground Floor Plans
 - Proposed Elevations
- Construction Management Plan
- Aborigicultural Impact Assessment
- Planning Comments and Responses (1no)
- Structural Engineer’s Design Statement for Planning
- Construction Methodology Sketches.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	It has not been demonstrated that the BIA has been produced and reviewed by relevant engineering professionals i.e. CEng MICE or CGeol FGS.
Is data required by Cl.233 of the GSD presented?	No	A work programme for the project is absent. It is assumed this will be provided once a contractor is appointed.
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	Within Desk Study.
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	Within Desk Study.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	The BIA references the appropriate geological mapping and Environment Agency aquifer classifications.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	It is noted that Harley Road flooded in 1975 but No 9 is classified by the EA as Very Low Risk of surface water flooding.
Is a conceptual model presented?	Yes	Section 6.3.

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Its noted that a 'groundwater exception test' is recommended prior to construction.
Is factual ground investigation data provided?	Yes	
Is monitoring data presented?	Yes	No groundwater present.
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	The GMA references a 'substantial' basement at 3 Wadham Gardens, next door to the subject site.
Is a geotechnical interpretation presented?	Yes	The Cu profile, based on SPTs up to 15m bgl, and stiffness values are presented.
Does the geotechnical interpretation include information on retaining wall design?	Yes	Basic parameters based on the SI undertaken have been proposed. Retaining walls are proposed to be formed by contiguous bored pile walls and underpinning.
Are reports on other investigations required by screening and scoping presented?	Yes	
Are the baseline conditions described, based on the GSD?	Yes	

Item	Yes/No/NA	Comment
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	
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	The mitigation relies on construction best practise in accordance with relevant standards.
Has the need for monitoring during construction been considered?	Yes	
Have the residual (after mitigation) impacts been clearly identified?	Yes	No significant residual impacts reported.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	Assuming the appointed contractor undertakes the works in line with those proposed in the structural engineer's design statement.
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	Stated as Negligible (Category 0).
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The BIA was prepared by Site Analytical Services Ltd. In general it is comprehensive and consistent in its reporting and assessment of relevant issues. It has not been demonstrated that the Basement Impact Assessment (BIA) has been authored by appropriately qualified engineers and engineering geologists. Nevertheless, we are satisfied that the screening, scoping and impact assessment have been carried out correctly.
- 4.2. The proposed basement consists of a single storey construction formed at the same time as a ground floor extension to the property, at the rear. The excavation is proposed to extend to approximately 3.3m bgl for the main basement and 4.4m bgl for the plant room. The layout drawings and structural engineer's design statement indicate contiguous bored pile walls and underpinning techniques will be utilised.
- 4.3. The BIA has confirmed that the proposed basement will be founded within the London Clay Formation. Adequate site investigation and groundwater monitoring has been undertaken in order to characterise the site ground and groundwater conditions in regards to the proposed basement construction.
- 4.4. A Ground Movement Assessment (GMA) has been carried out. The damage assessment is defined as 'negligible' (Category 0) in accordance with the Burland Scale for both the adjoining properties and the existing structure on site. This assumes stiff propping in accordance with best practice, as outlined within BS5975 and BS8002.
- 4.5. Condition surveys and a movement monitoring regime on the adjacent properties during construction is discussed in the BIA and this should be provided by the contractor in advance of the works as part of the method statement. This may be agreed as part of the Party Wall Act.
- 4.6. No listed structures have been identified within the vicinity of the subject site.
- 4.7. Outline proposals are provided for a movement monitoring strategy during excavation and construction and these should be further detailed and specified on a site plan as part of the contractor's method statement.
- 4.8. It is accepted that the proposed development is not in an area with slope angles in excess of 7°.
- 4.9. It is accepted that the proposed development is not in an area prone to surface water or sewage overflow flooding. It is proposed that the final drainage detailed design will incorporate a pumping device to protect the property from sewer flooding in the permanent case.
- 4.10. It is accepted that the development will not impact on the wider hydrogeology of the area.

5.0 CONCLUSIONS

- 5.1. It has not been demonstrated that the Basement Impact Assessment (BIA) has been authored by appropriately qualified engineers and engineering geologists. However, the screening, scoping and impact assessment have been carried out correctly.
- 5.2. The proposed basement consists of a single storey construction formed at the same time as a ground floor extension to the property, at the rear. The excavation is proposed to extend to approximately 3.3m bgl for the main basement and 4.4m bgl for the plant room. The layout drawings and structural engineer's design statement indicate contiguous bored pile walls and underpinning techniques will be utilised.
- 5.3. It is accepted that the development, to be constructed as proposed and in line with best practise, will have negligible ground movement / land stability impact on the site and the adjoining properties.
- 5.4. It is accepted that the development will not impact on the wider hydrogeology of the area.
- 5.5. It is accepted that the proposed development is not in an area prone to surface water or sewage overflow flooding.
- 5.6. Outline proposals are provided for a movement monitoring strategy during excavation and construction and these should be further detailed and specified on a site plan as part of the contractor's method statement.
- 5.7. The contractor's method statement should also address contingency planning for dealing with perched water during excavation / construction.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Keats	5 Wadham Gardens, NW3 3DN	8/2/16	Supports the proposed Development	

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA	The BIA and GMA should be signed off by appropriately qualified engineers / geologists (CEng MICE, CGeol FGS)	Not confirmed but accepted that process has been correctly followed.	11 th April 2016
2	Stability	A Structural Method Statement / Feasibility Report and drawings should be provided.	Closed – Information Provided	11 th April 2016
3	Stability	This should confirm it is based on the Structural Methodology Statement.	Closed	11 th April 2016

Appendix 3: Supplementary Supporting Documents

None

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