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3 Honeybourne Road
London
NW6 1HH

Basement Impact Assessment

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 3 Honeybourne Road, NW6 1HH (planning reference 2015/4710/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 BIA has been carried out by an established firm of structural engineering consultants. Although the author has the required accreditation for the land stability assessment only. It is considered that the screening and scoping to evaluate impacts on the water environment has been correctly carried out.

1.5. The proposal is to extend and deepen an existing basement to form a single storey basement covering the entire plan of the building including a light well at the rear. It has not been demonstrated whether the basement proposals will increase the differential foundation depths with the neighbouring properties. A trial pit investigation is required to allow this potential impact to be assessed.

1.6. It is accepted that the surrounding slopes to the development site are stable. A ground movement and damage assessment has not been carried out or its requirement discussed. Dependent on the findings of the trail pit investigation a ground movement and damage assessment may be required to determine the level of potential damage to the neighbouring properties and the highway.

1.7. The proposed basement would be located within the London Clay and would not affect ground water flows. This is accepted. It is also accepted that the development will not impact on the wider hydrology and hydrogeology of the area and is not in an area subject to flooding.

1.8. Details of the proposed construction sequence and temporary works have been provided and detail best practice techniques in order to maintain stability and reduce ground movements. However, the methodology should be reviewed once the foundation pits have been completed. Additionally allowance should be made for limited dewatering during construction.

1.9. Details of the root protection areas of nearby trees are required to ensure that the proposal will not adversely their stability.

1.10. Confirmation is required that heave protection is not required. No geotechnical interpretation has been provided to confirm design parameter for the proposed underpinning. This is also required.

1.11. No proposals are provided for a movement monitoring strategy during excavation and construction. These should be submitted together with an indicative construction programme.

1.12. Given the above points it is recommended that the BIA be revised and resubmitted with the requested information.

1.13. Due to the above requested further information, as further detailed in Appendix 2, it is recommended that the BIA be updated and resubmitted.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 12th October 2015 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 3 Honeybourne Road NW6 1HH (planning reference 2015/4710/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 "*Extension of existing cellar to form new single-storey basement below the footprint of existing dwelling along with rear lightwell".*

The Audit Instruction also confirmed that 3 Honeybourne Road is not a listed building, nor is a neighbour to, listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 22nd October and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment Report (BIA), by INGealoir
- Appended Structural drawings and calculations, By INGealoir
- Appended geotechnical investigation, by Chelmer
- Existing Plans and Elevations, Ian Hay Architects
- Proposed Plans and Elevations, Ian Hay Architects
- Front and Rear Elevation Photos, Ian Hay Architects
- Block Plan, Ian Hay Architects
- Site Plan

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	The author of the BIA holds the MIStructE credentials only. This covers the land stability assessment requirement only.
Is data required by Cl.233 of the GSD presented?	No	A works programme is not provided
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
Are suitable plan/maps included?	Yes	BIA contained annotated maps from the GSD indicating the properties location on each map. Architectural and structural plans have also been provided.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	Site and block plans are provided.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	No justification of the claim that the works will not affect the tree protection zones of the surrounding trees has been provided. It is not agreed that the basement will not significantly increase the differential depth of the foundations relative to neighbouring properties, as the existing basement is only a small partial basement and a trial pit investigation has not been carried out.
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?	Yes	

Item	Yes/No/NA	Comment
Is a conceptual model presented?	Yes	BIA section 3
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	No scoping statement is provided regarding the proximity to a highway/pedestrian right of way.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	N/A	No items were carried forward from screening
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	N/A	No items were carried forward from screening
Is factual ground investigation data provided?	Yes	A borehole log is provided
Is monitoring data presented?	No	No ground water monitoring has been carried out.
Is the ground investigation informed by a desk study?	No	Geological maps have been consulted.
Has a site walkover been undertaken?	Unknown	It is not clear if a site walkover has been carried out by the author of the BIA.
Is the presence/absence of adjacent or nearby basements confirmed?	No	The presence or absence of adjacent basements has not been discussed.
Is a geotechnical interpretation presented?	No	Only factual geological information has been provided in the BIA and the appended Geotechnical Investigation.
Does the geotechnical interpretation include information on retaining wall design?	No	
Are reports on other investigations required by screening and scoping presented?	N/A	No other reports or investigations were deemed as being required by screening/scoping.

Item	Yes/No/NA	Comment
Are baseline conditions described, based on the GSD?	Yes	BIA section 3.
Do the base line conditions consider adjacent or nearby basements?	N/A	The presence or absence of adjacent basements has not been discussed.
Is an Impact Assessment provided?	Yes	BIA section 11
Are estimates of ground movement and structural impact presented?	No	Estimates of ground movement are not presented nor is their requirement discussed.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	An impact assessment of the basements proximity to the highway/pedestrian right of way has not been carried out.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	Some discussion of mitigation measures, such as carrying out the underpinning in a hit and miss sequence and the need for propping, has been provided.
Has the need for monitoring during construction been considered?	No	
Have the residual (after mitigation) impacts been clearly identified?	No	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	Sequence of works in BIA section 5, and appended structural drawings, temporary works drawings, and calculations.
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?	Unknown	The presence/absence of neighbouring basements has not been discussed and no building damage assessment provided.

Item	Yes/No/NA	Comment
Does report state that damage to surrounding buildings will be no worse than Burland Category 2?	No	A damage assessment has not been carried out.
Are non-technical summaries provided?	No	However the BIA is written in a way that is easy to understand and avoids the use of excessive technical terms.

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA) has been carried out by an established firm of structural engineering consultants, INGEaltoir. The individual concerned in its production has suitable qualifications to assess the land stability aspect of the proposal only, and not for the hydrology or hydrogeology aspects. However, it is considered that the screening and scoping for these potential impacts have been carried out correctly.

4.2. No other consultants have contributed to the production of the BIA, with the site investigation being carried out by Chelmer Site Investigations who have provided factual borehole data only.

4.3. The LBC Instruction to proceed with the audit identified that the basement proposal neither involved a listed building nor was adjacent to listed buildings.

4.4. 3 Honeybourne Road is the centre property of a terrace of three, with 3 and 5 Honeybourne Road being of late Victorian/early Edwardian construction, and 1 Honeybourne Road being a modern reconstruction of the same style.

4.5. The existing property contains a partial basement under the entrance hallway. The proposal is to deepen and extend this basement to cover the entire plan area of the property, and to form a lightwell to the rear of the property. The depth of the excavation is to be approximately 3m below ground level.

4.6. The basement walls are to be formed from L shaped reinforced concrete underpinning. The underpins have been designed as being unpropped in the permanent case. Satisfactory structural calculations have been provided to substantiate the underpinning design in the permanent case.

4.7. A ground bearing basement slab is proposed. The BIA does not mention whether an allowance for ground heave has been considered in the design of the ground bearing slab and no heave protection measures have been proposed. Further details are required to demonstrate that heave protection is not required.

4.8. Underpinning is to be carried out in a hit and miss sequence in order to allow the concrete to gain strength prior to excavating the adjacent bay. It is acknowledged that this method is a way of ensuring stability is maintained throughout construction. However, no discussion has been provided about the possible differential foundation levels of the attached modern property (1 Honeybourne Road) and how this may affect the proposed basements design and construction methodology.

4.9. A ground movement and damage assessment has not been produced and the BIA states that the differential in depth of foundations relative to the neighbouring properties will not be

increased. No evidence has been provided to show this, and the presence of adjacent basements has not been discussed. Due to the property being a terraced property, if an increase in differential foundation results from the proposals, a ground movement and damage assessment will be required.

4.10. No trial pits have been carried out and the existing foundations have been assumed for the purposes of the structural design. It is noted that the excavation of trial pits to confirm the foundations is listed in the sequence of works in the first stage. However it is considered that trial pit investigations should be carried out in order to determine the depth and form of the foundations to the property and the party walls and allow the construction methodology to be confirmed and the impact on stability to be assessed.

4.11. Ground investigations consist of a single borehole in the front garden of the property. The ground conditions have been identified as the London Clay Formation from 0.4m bgl to the base of the borehole at 8m below ground level. No geotechnical interpretation has been provided to justify the design of the underpins and floor slab.

4.12. Ground water was not discovered in the 8m deep borehole and is not expected to be found during construction. This is an accepted conclusion, however an allowance for some dewatering due to perched water inflows should still be made.

4.13. It is concluded that groundwater flows will not be disrupted, due to the proposed basement being situated in the impermeable London Clay. It has also been concluded that neither the surface water runoff, nor the surface water discharge into the drainage system will be affected and that there will be no increase in the amount of hardstanding/paved external areas. These conclusions are accepted.

4.14. The screening proposes that the proposal will not require the felling of any trees nor any works within the root protection zones of any trees. However no factual information is provided to confirm this conclusion. Due to the proximity of several mature trees to the property factual evidence is required to confirm that the root protection zones will not be affected.

4.15. It is accepted that there are no slope stability concerns regarding the proposed development and it is not in an area prone to flooding.

5.0 CONCLUSIONS

5.1. The BIA has been carried out by an established firm of structural engineering consultants. Although the author has the required accreditation for the land stability assessment only, it is considered that the screening and scoping to evaluate impacts on the water environment have been correctly carried out.

5.2. The proposal is to extend and deepen an existing basement to form a single storey basement covering the entire plan of the building including a light well at the rear. It has not been demonstrated whether the basement proposals will increase the differential foundation depths with the neighbouring properties. A trial pit investigation is required to allow this potential impact to be assessed.

5.3. It is accepted that the surrounding slopes to the development site are stable. A ground movement and damage assessment has not been carried out or its requirement discussed. Dependent on the findings of the trial pit investigation, a ground movement and damage assessment may be required to determine the level of potential damage to the neighbouring properties and the highway.

5.4. The proposed basement would be located within the London Clay and would not affect ground water flows. This is accepted. It is also accepted that the development will not impact on the wider hydrology and hydrogeology of the area and is not in an area subject to flooding.

5.5. Details of the proposed construction sequence and temporary works have been provided and detail best practice techniques in order to maintain stability and reduce ground movements. However, the methodology should be reviewed once the foundation pits have been completed. Additionally allowance should be made for limited dewatering during construction.

5.6. Details of the root protection areas of nearby trees are required to ensure that the proposal will not adversely affect their stability.

5.7. Confirmation is required that heave protection is not required. No geotechnical interpretation has been provided to confirm design parameters for the proposed underpinning and floor slab. This is also required.

5.8. No proposals are provided for a movement monitoring strategy during excavation and construction. These should be submitted together with an indicative construction programme.

5.9. Given the above points it is recommended that the BIA be revised and resubmitted with the requested information.

Appendix 1: Resident's Consultation Comments

None

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Trial pits are required to confirm the depth of the foundations and their relationship with the adjoining properties foundation.	Open	
2	Stability	Dependent on the findings of the foundation inspection pits, a ground movement/building damage assessment may be required with proposals for monitoring.	Open	
3	Stability	A geotechnical interpretation is required to justify the design of the underpins and basement slab.	Open	
4	Trees	Due to the proximity of a number of mature trees to the property, evidence is required that the root protection areas will not be disturbed.	Open	

Appendix 3: Supplementary Supporting Documents

None