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Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12066-86
Revision: D1

December 2015

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Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	December 2015	Comment	EJBejb-12066-86-111215-228 Belsize Road-D1.doc	E Brett	E Brown	E Brown

Document Details

Last saved	22/12/2015 09:28
Path	EJBejb-12066-86-111215-228 Belsize Road-D1.doc
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Project Number	12066-86
Project Name	228 Belsize Road, London NW6 4BT
Planning Reference	2015/5832/P

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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 228 Belsize Road (planning reference 2015/5832/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 review it against an agreed audit check list.

1.4. The BIA and FRA have been carried out by established firms of consultants, and whilst the authors do not have all of the specified qualifications, the assessment appears to have been undertaken in general accordance with Camden's policies and technical procedures listed in 2.3.

1.5. The proposed basement extension is to be formed using a contiguous bored pile retaining wall with a reinforced concrete lining and a drained cavity.

1.6. It is accepted that the basement is likely to be founded in the London Clay. However, this is to be confirmed through an intrusive ground investigation once access allows.

1.7. It is accepted that there are no slope stability concerns regarding the proposed development.

1.8. It is accepted that the development will not impact on the wider hydrogeology of the area.

1.9. It is accepted that the development will have no adverse effect on drainage or run off as there is no increase in impermeable area and the site is not in an area known to be at risk from surface water flooding.

1.10. Whilst vertical and lateral deflections have not been predicted, it is accepted that given the neighbouring properties have single storey basements, that will be limited to within Burland Category 0 and, hence, comply with guidance within CPG4.

1.11. The BIA adequately identified the impacts of the basement proposals and outlines suitable mitigation measures for this stage of the project. However, it is recommended that a Basement Construction Plan is provided and approved prior to commencement on site and should include:

- The results of the ground investigation
- Confirmation of the ground conditions and groundwater regime

- Detailed design of the temporary and permanent works
- Detailed movement monitoring regime, including setting trigger values
- Confirmation that the BIA is still valid

1.12. It is assumed that condition surveys of neighbouring properties will be undertaken as part of the Party Wall award.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 26 November 2015 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 228 Belsize Road, London NW6, Camden Reference 2015/5832/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 *"Demolition of existing single storey extension and erection of 3 storey plus basement building to provide enlargement of the existing Class A3 restaurant at ground and basement level and the provision of 2no. 1-bed and 2no. 2-bed units on the first and second floors to replace the existing 3no. studios and 1no. 1-bed units. Alteration to shopfront".*

The Audit Instruction also confirmed that the basement proposals did not involve any listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 11 December 2015 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment For Planning Report (BIA)
- Flood Risk Assessment Report (FRA)
- Planning Application Drawings consisting of
  - Location Plan
  - Existing Plans and Sections
  - Proposed Plans and Sections

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	See 4.1 in Discussion.
Is data required by Cl.233 of the GSD presented?	Yes	BIA.
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 Appendix A-D.
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	BIA Section 4.1.3.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 4.1.1.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 4.1.2.
Is a conceptual model presented?	Yes	BIA Section 2 and 4.3.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.2.3.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.2.1.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.2.2.
Is factual ground investigation data provided?	No	
Is monitoring data presented?	No	
Is the ground investigation informed by a desk study?	No	
Has a site walkover been undertaken?	Yes	BIA Section 2.0.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	1a Priory Road and 226 Belsize Road have single storey basements. BIA Section 2.0, 4.1.3, 4.4.1 and 4.4.3.
Is a geotechnical interpretation presented?	No	
Does the geotechnical interpretation include information on retaining wall design?	No	
Are reports on other investigations required by screening and scoping presented?	Yes	FRA.
Are 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	BIA Section 4.4.3.
Are estimates of ground movement and structural impact presented?	Yes	BIA Section 4.4.3.

Item	Yes/No/NA	Comment
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	
Has the need for monitoring during construction been considered?	Yes	BIA Section 4.4.3.
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	BIA Section 4.4.3.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	BIA Section 4.4.2.
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	BIA Section 4.4.3.
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

4.1. The BIA and FRA have been carried out by established firms of consultants, and whilst the authors do not have the specified qualifications with respect to the groundwater flow screening and scoping, the assessment appears to have been undertaken in general accordance with Camden's policies and technical procedures listed in 2.3.

4.2. 228 Belsize Road comprises a three storey building with a basement and a single storey extension to the east. It is proposed to demolish the extension and construct a three storey structure with a single storey basement, tying into the existing building. The footprint of the proposed basement encompasses that of the existing extension on site.

4.3. It is accepted that there is no increase in impermeable area across the ground surface above the basement and the FRA demonstrates that the site is not at risk from surface water flooding and will not affect the adjoining area. It is noted that the most recent 2014 SFRA is not referred to. However, it is accepted that this does not affect the overall conclusions given in the FRA.

4.4. The BIA has shown that although the development is close to a tributary of the "lost" River Westbourne, it will not impact on the wider hydrogeology of the area, any other watercourses, springs or the Hampstead Heath Pond chain catchment area.

4.5. It is accepted that there are no slope stability concerns regarding the proposed development.

4.6. The basement is to be formed using a contiguous bored pile wall with a reinforced concrete lining and drained cavity, and the anticipated depth of construction is approximately 3.70m below ground floor level. The toe level of the piles is indicatively given as 9m, although this it to be confirmed through detailed design. Piles are also tentatively indicated beneath the basement slab to control heave movements.

4.7. Due to the site being occupied, it has not been possible to undertake a ground investigation to date, and thus no information other than a desk study has been provided with respect to the onsite ground and groundwater regime, nor any detailed design of the proposed basement structure. However, it is understood that the geology at the site is likely to comprise Made Ground directly overlying London Clay, and as such the basement is likely to be founded in the London Clay.

4.8. The BIA confirms that the neighbouring properties, 226 Belsize Road and 1a Priory Road, both have single storey basements, as does the building on site directly adjacent to the proposed basement. There are no others buildings within the vicinity of the proposed basement. However, the site is bound by public highways to the south and east.

4.9. The BIA provides an estimate of heave movement and states that, whilst there are no neighbouring properties that will be affected by the proposed basement, lateral deflections will be limited to 10mm to reduce the risk of movement to the adjoining highway and services to within the footpath. It is accepted that this is reasonable with regards to the proposed development.

4.10. The BIA provides an Outline Sequence of Works in Appendix D which states that a ground investigation is to be undertaken to provide pile design data and validation of the expected geology. The Outline Sequence of Works also confirms that the wall is to be propped at the top during the temporary case, and will be propped at ground floor and basement level during the permanent case.

4.11. The BIA confirms that monitoring is to be undertaken prior to and during construction and provides details of mitigation measures where movements are above those predicted.

5.0 CONCLUSIONS

5.1. The BIA and FRA have been carried out by established firms of consultants, and whilst the authors do not have all of the specified qualifications, the assessment appears to have been undertaken in general accordance with Camden's policies and technical procedures listed in 2.3.

5.2. The proposed basement extension is to be formed using a contiguous bored pile retaining wall with a reinforced concrete lining and a drained cavity.

5.3. It is accepted that the basement is likely to be founded in the London Clay. However, this is to be confirmed through an intrusive ground investigation once access allows.

5.4. It is accepted that there are no slope stability concerns regarding the proposed development.

5.5. It is accepted that the development will not impact on the wider hydrogeology of the area.

5.6. It is accepted that the development will have no adverse effect on drainage or run off as there is no increase in impermeable area and the site is not in an area known to be at risk from surface water flooding.

5.7. Whilst vertical and lateral deflections have not been predicted, it is accepted that given the neighbouring properties have single storey basements, that damage will be limited to within Burland Category 0 and, hence, comply with guidance within CPG4.

5.8. The BIA adequately identified the impacts of the basement proposals and outlines suitable mitigation measures for this stage of the project. However, it is recommended that a Basement Construction Plan is provided and approved prior to commencement on site and should include:

- The results of the ground investigation
- Confirmation of the ground conditions and groundwater regime
- Detailed design of the temporary and permanent works
- Detailed movement monitoring regime, including setting trigger values
- Confirmation that the BIA is still valid

5.9. It is assumed that condition surveys of neighbouring properties will be undertaken as part of the Party Wall award.

Appendix 1: Residents' Consultation Comments

NONE

Appendix 2: Audit Query Tracker

NONE

Appendix 3: Supplementary Supporting Documents

NONE

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