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London NW1 9TY

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12066-36
Rev: D1

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Appendices

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 St Pauls Mews, London NW1 9TY (planning reference 2014/7710/P). The basement is considered to fall within Category A 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. It has been confirmed that the development site does not involve a listed building, nor is it in the neighbourhood of listed buildings. The site does lie within a conservation area.

1.5. The BIA was prepared by Card Geotechnics Ltd and reviewer of the BIA has suitable qualifications.

1.6. It is proposed to construct a single storey dwelling with a single storey basement beneath. Drawings indicate the depth the underside of the foundation to be approximately 4.40m below the surrounding ground levels.

1.7. The BIA has confirmed that the proposed basement will be located within the London Clay and that, although small quantities of perched groundwater might exist, the basement will not have an adverse impact on subterranean water flows.

1.8. The BIA has confirmed that the proposed basement will not cause significant variations in surface water flows as the area of hardstanding will not alter. The site is not in an area of flood risk.

1.9. With respect to stability, the BIA has confirmed that the surrounding area is not sloping. Although the site is underlain by London Clay, no trees are to be removed and the depth of the basement will be below the depth of any existing desiccation.

1.10. The BIA states that the nearest neighbouring properties are not less than 10m from the proposed basement and that they are outside the zone of influence of the excavation. However, the Ordnance Survey plan suggests that the nearby houses are less than 10m away. Furthermore, CIRIA C580 suggests that ground movements associated with basement excavation can extend for a distance equivalent to 4 x the excavation depth. It is therefore not

considered that the surrounding properties maybe within the zone of influence and that an impact assessment may be required for these buildings and the adjacent road.

1.11. There is a discrepancy between the construction methodology shown in the drawings which indicate a combination of underpinning and piling, and the BIA which refers to piled basement retaining walls. There is no information with respect to permanent or temporary construction methodologies, programme, mitigation measures or monitoring. Both the BIA and Form B submitted by the applicant refer to a Construction Method Statement prepared by FORM Structural Design. This document is not on the planning portal and has not been supplied to CampbellReith. It is possible that the missing information is contained within this CMS.

1.12. The site investigation information provided to date comprises an 'Interim Ground Investigation Report'. It does not contain the results of any laboratory testing and no geotechnical interpretation is provided. Nor is information for retaining wall design provided.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 5th August 2015 to carry out a Category A Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for St Pauls Mews, London NW1 9TY, Camden Reference 2014/7710/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 the "*Erection of new house with basement*."

The Audit Instruction also confirmed that the basement proposals do not involve a listed building, nor does the site neighbour listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 28th August 2015 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment – Card Geotechnics Ltd
- Interim Ground Investigation Report – Aviron Associates Ltd
- Drawings 448_(00)_:

100 Rev A	Existing site plan
110 and 111	Proposed ground and lower ground floors
201 and 202	Existing elevations (revised)
300 Rev A	Existing section
301 – 305	Proposed sections

2.7. On 5th August, LBC provided CampbellReith with a consultation response which was to be considered with the BIA. Details are provided in Appendix 1.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	The reviewer of the BIA has suitable credentials.
Is data required by Cl.233 of the GSD presented?	No	Construction methodology, programme and mitigation measures 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?	No	Construction methodology, programme and mitigation measures not provided.
Are suitable plan/maps included?	Yes	BIA and drawings.
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	BIA Sections 2.2, 3.3 and 4 state that the nearest properties are not less than 10m from proposed basement. However, plans and a comment raised by a neighbour indicate that a number are closer than 10m.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.2
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.4
Is a conceptual model presented?	Yes	Interim Ground Investigation Report provides basic model.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	BIA Sections 2.2, 3.3 and 4 state that the nearest properties are not less than 10m from proposed basement. However, plans and a comment raised by a neighbour indicate that a number are closer than 10m.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 3.2
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 3.4
Is factual ground investigation data provided?	Yes	Interim Ground Investigation Report provides exploratory hole records but no laboratory testing or monitoring.
Is monitoring data presented?	No	
Is the ground investigation informed by a desk study?	Yes	BIA Section 2
Has a site walkover been undertaken?	-	Not known
Is the presence/absence of adjacent or nearby basements confirmed?	No	
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	Thames Water asset search
Are baseline conditions described, based on the GSD?	Yes	Interim GIR has basic information
Do the base line conditions consider adjacent or nearby basements?	No	Only the nearest basement. Resident comment indicates other basements in the area.
Is an Impact Assessment provided?	No	
Are estimates of ground movement and structural impact presented?	No	BIA states that adjacent properties and highway are not at risk, however this is to be confirmed once construction methodology and distance to surrounding structures are clarified.

Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	Impact on stability needs to be considered in more detail.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	
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 been maintained?	No	BIA Sections 2.2, 3.3 and 4 state that the nearest properties are not less than 10m from proposed basement. However, plans and a comment raised by a neighbour indicate that a number are closer than 10m.
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?	-	Not possible to confirm.
Does report state that damage to surrounding buildings will be no worse than Burland Category 2?	No	
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

4.1. The BIA has been carried out by Card Geotechnics Ltd, with a later Interim Ground Investigation Report provided by Aviron Associates Ltd. The reviewer of the BIA has suitable qualifications.

4.2. The interim GIR contains no laboratory testing and no monitoring. No geotechnical interpretation is provided, nor information for the design of retaining walls.

4.3. The BIA makes reference to a Construction Method Statement prepared by FORM Structural Design. The CSM is not on the planning portal and has not been supplied to CampbellReith.

4.4. In addition to the BIA and supporting documents, CampbellReith was requested by LBC to consider comments raised by a neighbour within the audit. This is referenced in Appendix 1.

4.5. It is proposed to construct a single storey house over a single storey basement. The architect's drawings indicate the depth to the underside of the basement to be approximately 4.40m below the surrounding ground levels. The drawings also indicates a combined underpinning and piled foundation scheme. However the BIA indicates that the basement will be fully supported by a piled retaining wall.

4.6. It is acknowledged that the basement will be constructed in the London Clay and that, whilst limited perched groundwater flows might be encountered, the proposals will not adversely affect subterranean groundwater flows.

4.7. It is accepted that there will be appreciable change to the impermeable area and that the site is not in area at risk of flooding; consequently the impacts on surface water are negligible.

4.8. Whilst the site is underlain by London Clay it is not proposed to remove any trees. The basement will be founded below the depth of any likely desiccation, therefore there is unlikely to be any adverse impact on stability.

4.9. The BIA states that there are no properties within the zone of influence of the proposed basement and that the adjacent highway will not be significantly affected. However, plans show the surrounding structures to be less than 10m from the proposed basement and CIRIA C580 suggests that ground movements can extend for a distance of 4 x the excavation depth. The potential impact on the nearby properties and highway is to be confirmed once the construction methodology and proximity of the neighbouring buildings are clarified. Ground movement and building damage assessments may be required.

4.10. There is no discussion of temporary and permanent works, programme, mitigation measures, condition surveys or monitoring. It is possible that they are contained within the CSM. The

extent of any such measures will be dependent on the results of the stability assessment for the surrounding buildings.

5.0 CONCLUSIONS

5.1. The BIA was prepared by Card Geotechnics Ltd and reviewer of the BIA has suitable qualifications.

5.2. The BIA has confirmed that the proposed basement will be located within the London Clay and that, although small quantities of perched groundwater might exist, the basement will not have an adverse impact on subterranean water flows.

5.3. The BIA has confirmed that the proposed basement will not cause significant variations in surface water flows as the area of hardstanding will not alter. The site is not in an area of flood risk.

5.4. With respect to stability, the BIA has confirmed that the surrounding area is not sloping. Although the site is underlain by London Clay, no trees are to be removed and the depth of the basement will be below the depth of any existing desiccation.

5.5. The BIA states that the nearest neighbouring properties are not less than 10m from the proposed basement and that they are outside the zone of influence of the excavation. However, the Ordnance Survey plan suggests that the nearby houses are less than 10m away. Furthermore, CIRIA C580 suggests that ground movements associated with basement excavation can extend for a distance equivalent to 4 x the excavation depth. It is therefore not accepted that the surrounding properties are outside the zone of influence and that an impact assessment is not required for these buildings and the adjacent road.

5.6. There is a discrepancy between the construction methodology shown in the drawings which indicate a combination of underpinning and piling, and the BIA which refers to piled basement retaining walls. There is no information with respect to permanent or temporary construction methodologies, programme, mitigation measures or monitoring. Both the BIA and Form B submitted by the applicant refer to a Construction Method Statement prepared by FORM Structural Design. This document is not on the planning portal and has not been supplied to CampbellReith. It is possible that the missing information is contained within this CMS

5.7. The site investigation information provided to date comprises an 'Interim Ground Investigation Report'. It does not contain the results of any laboratory testing and no geotechnical interpretation is provided. Nor is information for retaining wall design provided.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Hesketh	29 St Pauls Mews	09/02/15	Proximity of buildings to proposed basement and possible impact.	See Audit Report Sections 4.9 and 4.10 and 5.6

Appendix 2: Audit Query Tracker

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Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Proximity of surrounding buildings to be confirmed and whether any lie within zone of influence of proposed basement. Ground movement and building damage assessments may be required for buildings and highway.	Open	
2	Stability	Construction techniques to be confirmed for permanent and temporary works.	Open	
3	Stability	Proposals for monitoring and mitigation measures to be provided.	Open	
4	Stability	Missing information required by Arup GSD and CPG4 to be provided.	Open	

Appendix 3: Supplementary Supporting Documents

None

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