CampbellReith
consulting engineers

9 Parkhill Road
London NW3 2YH

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12066-14
Rev: F1

October 2015

Campbell Reith Hill LLP
Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T:+44 (0)20 7340 1700
F:+44 (0)20 7340 1777
E:london@campbellreith.com
W:www.campbellreith.com

Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	July 2015	Comment	EMBts12066-200715-D1	E Brown	E Brown	E Brown
F1	October 2015	Planning	EMBts12066-14-061015-9 Parkhill Road-F1.doc	E Brown	E Brown	A Marlow

Document Details

Last saved	06/10/2015 12:57
Path	EMBts12066-14-061015-9 Parkhill Road-F1.doc
Author	E M Brown, BSc MSc CGeol FGS
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	12066-14
Project Name	9 Parkhill Road, London NW3 2YH
Planning Reference	2015/1429/P

Contents

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 9 Parkhill Road, London NW3 2YH (planning reference 2015/1429/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. Information has been received to confirm that the development site does not involve a listed building nor is it in the neighbourhood of listed buildings.

1.5. The BIA has confirmed that the proposed basement will be located within the London Clay and that the surrounding slopes are stable.

1.6. It is accepted that groundwater will not be affected by the excavation and mitigation measures should effectively control potential variations to the groundwater regime.

1.7. The proposed basement will be excavated and constructed utilising established techniques.

1.8. It is accepted that because the basement is relatively shallow and or will be away from adjacent properties it is not necessary to undertake a Ground Movement Assessment nor instigate a movement monitoring regime on adjacent properties during construction.

1.9. A non-technical summary was not provided with the BIA, however, it is accepted that due to the limited nature of the basement excavation and the absence of significant impacts, such a summary is not required.

1.10. The audit identified that a Construction Method Statement was required. This was subsequently provided and adequately describes the proposed methodology.

1.11. The BIA is accepted as adequate with respect to identifying potential impacts and proposing adequate mitigation.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) in June 2015 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 9 Parkhill Road, Camden Reference 2015/1429/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 "*Alterations to existing lower ground floor flat and maisonette to create 3 bedroom maisonette and 3 bedroom coach house*"

The Audit Instruction also confirmed that the basement proposals did not involve a listed building nor the site neighboured listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 18 June 2015 and gained access to the following relevant documents for audit purposes:

- Site Location Plan
- Ground Investigation
- Basement Impact Assessment
- Drawings indicating existing and proposed building plans.

2.7. CampbellReith was provided with a Method Statement for Basement Construction, prepared by Ecos Maclean Ltd on 15 September 2015. This is discussed in Section 5, A copy is presented in Appendix 3.

2.8. At the time of the audit, no comments pertaining to land stability or the water environment had been uploaded on to the planning portal.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	Author is experienced although apparently not qualified. One of the approvers of the BIA is a chartered engineer.
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 Section 5.3.
Are suitable plan/maps included?	Yes	BIA and supplementary 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?	Yes	BIA Section 3.2.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.1.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.3.
Is a conceptual model presented?	Yes	BIA Section 4.4.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Is factual ground investigation data provided?	Yes	Ground Investigation Report.
Is monitoring data presented?	Yes	Ground Investigation Report.
Is the ground investigation informed by a desk study?	Yes	BIA Section 2.7 and Ground Investigation Report.
Has a site walkover been undertaken?	Yes	BIA Section 3.2.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	BIA Section 2.3 indicates that the adjoining property has a lower ground floor level.
Is a geotechnical interpretation presented?	Yes	BIA Appendix 3.
Does the geotechnical interpretation include information on retaining wall design?	Yes	Ground Investigation Report Section 5.5.
Are reports on other investigations required by screening and scoping presented?	Yes	Ground Investigation Report. No utilities information.
Are baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	N/A	
Is an Impact Assessment provided?	Yes	BIA Section 5.3.
Are estimates of ground movement and structural impact presented?	N/A	Minimal deepening of foundation and/or not near to neighbouring properties.

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	A construction method statement was provided on 15 September 2015 which details items such as the exclusion of groundwater from excavations.
Has the need for monitoring during construction been considered?	Yes	But not considered necessary.
Have the residual (after mitigation) impacts been clearly identified?	Yes	BIA Section 5.2.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure been 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	Estimated to be Burland Category O.
Are non-technical summaries provided?	No	

4.0 DISCUSSION

4.1. The BIA has been carried out by an established firm of consulting engineers, Ecos MacClean Ltd. The lead author has suitable experience and the approver has suitable qualifications. The hydrogeology has been correctly assessed and the input of a chartered hydrogeologist is not required in this instance.

4.2. The proposed development requires the excavation of 400-500mm of ground.

4.3. The proposed basement will generally be within an excavation supported by underpinning walls. This is an acceptable methodology using established techniques.

4.4. It is acknowledged that the basement is founded within the London Clay, which extends to within 0.5-0.7 metres of the existing site surface. We accept that the minor seepages detected in the London Clay do not constitute a continuous water flow and the groundwater will not be affected by the excavation. Similarly, limited groundwater flows are unlikely to significantly affect construction although consideration should be given to excluding groundwater from under pin excavations.

4.5. The BIA has shown that the surrounding slopes to the development are stable.

4.6. The BIA includes an assessment of whether the development is likely to be affected by surface water flooding, and the risk is accepted as being very low.

4.7. Although the BIA does not contain a Ground Movement Assessment, it is accepted that it is not necessary to supply one since the basement is away from the neighbouring buildings and infrastructure. For similar reasons, it is not considered necessary to instigate a movement monitoring regime on adjacent properties during construction.

5.0 CONCLUSIONS

5.1. Although there has been no input from a chartered geologist the hydrogeological input has been correctly assessed.

5.2. The proposed development requires the excavation of 400-500mm of ground. The proposed basement will generally be within an excavation supported by underpinning walls. This is an acceptable methodology using established techniques.

5.3. It is acknowledged that the basement is founded within the London Clay, which extends to within 0.5-0.7 metres of the existing site surface. The BIA has shown that the surrounding slopes to the development are stable.

5.4. The BIA includes an assessment of whether the development is likely to be affected by surface water flooding, and the risk is accepted as being very low.

5.5. Although the BIA does not contain a Ground Movement Assessment, it is accepted that it is not necessary to supply one due to the limited extent of excavation and because much of the basement is away from the neighbouring buildings and infrastructure. For similar reasons, it is not considered necessary to instigate a movement monitoring regime on adjacent properties during construction.

5.6. Consideration must be given to excluding limited volumes of perched water from underpinning excavations.

5.7. A non-technical summary was not provided with the BIA, however, it is accepted that due to the limited nature of the basement excavation and the absence of significant impacts, such a summary is not required.

5.8. The draft audit report identified that a construction method statement should be provided, detailing items such as the exclusion of water ingress from excavations. This was subsequently issued on 15 September 2015. It is accepted that the Method Statement for Basement Construction adequately describes the proposed works and measures to be taken to minimise ground movements and control water ingress.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

CampbellReith
consulting engineers

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Groundwater	There is the potential for groundwater ingress into underpin excavations.	A construction method statement including proposals for excluding groundwater should be provided.	15/09/15

Appendix 3: Supplementary Supporting Documents

Project – 9 Parkhill Rd

Method Statement for Basement Construction

Author: CHC

Date: Sept 2015

1. **Enabling Works**
   - 1.1. Create access for equipment and removal of materials using conveyors by creating 1000 mm x 1500 mm opening in wall at back of cupboard space in Studio
   - 1.2. Route for conveyor indicated in red as marked on existing drawings.
   - 1.3. Remove all internal non load bearing partitions
   - 1.4. Demolish existing conservatory.
   - 1.5. Erect temporary cover for working area
2. **Excavation for Retaining Wall**
   - 2.1. Excavate trench 2 metres wide in 1.5 metre lengths install temporary trench sheeting, walling board and trench props as shown on Temporary Works Plan 01TW.
   - 2.2. The excavations to receive concrete should be clean, with no debris, tying wire clippings, fastenings or free water.
   - 2.3. During excavation all workings should be covered and protected from rain and should be kept free from water until foundations and below ground constructions are completed.
   - 2.4. Any perched water encountered during excavation should be removed by use of small portable dirty water pump and discharged to surface water drains to the south of the site.
3. **Retaining Wall Construction**
   - 3.1. Plastic coil land drains to be distributed behind new Stepoc wall to to discharge into sump and existing surface water drainage system.
   - 3.2. Construct concrete foundation and Stepoc Wall in front of temporary sheeting, advancing along trench and filling voids behind with pea gravel.
   - 3.3. Stepoc blocks to EN15435:2008 and concrete to BSEN206 Part1:2000.
   - 3.4. The concrete to have an aggregate size not exceeding 10mm and the mix should contain no less than 300kg of OPC per cubic metre of fresh concrete. Filling is best accomplished by a concrete pump or skip with a 75mm nozzle. Mechanical vibration must not be used.
   - 3.5. A period of five days is to be allowed following completion of all permanent works as noted above prior to removal of the temporary works frames supporting the main

rear masonry wall elevation. All pockets and associated masonry works to be made good once temporary frames have been removed.

4. Remaining External Excavation

4.1. Verify through excavation at party wall the depth and position of previous underpin and foundation as marked on Plan 01TW, and allow inspection by SE to confirm structural adequacy

4.2. Excavate central core of retained material working outwards from house to end of party wall.

5. Floor Slab

5.1. Breakout existing floor slab and lower floor to new level as indicated on plan.

5.2. Dig 150 deep trenches across site and lay plastic coil land drains from edge of site towards sump.

5.3. Place drain ends vertically into the sump.

5.4. Backfill throughout with pea shingle and cover with plastic to prevent concrete grout leaking into the pea shingle.

5.5. Cast new floor slab with mesh top cover as indicated on Engineer’s plan.

CHC 7/09/15

Notes:
1. Do not scale from drawings. all measurements to be checked on site
2. All timber to be C16 unless noted otherwise
3. All steel to be S275 unless noted otherwise
4. All concrete to be grade C35 minimum

Structure below
Structure removed
New blockwork
New brickwork
Concrete

02 C
02 B
A 02

200x50 @400
B2 - 2 no. 203x102 UB23
200x50 @400
B3 - 203x102 UB23

Ground Floor

NEW TEMP. OPENING.
CONVEYOR
600 wide, 300 deep, bottom 1000 bgl
TRENCH SHEETING WALLING BOARD.
EXCAVATION
New 325 wide Stepoc wall
New blockwork wall
Edge of base
TRENCH PROPS 2 ROWS 900 CENTRES
Concrete slab 150 thick, A193 mesh top cover 30
Existing foundation
New blockwork
Existing foundation
2 no. Supreme HSR22 215x100 pc lintels
EXCAVATION
New 325 wide Stepoc wall
600 wide, 300 deep, bottom 1000 bgl
Existing foundation TBC
Lower Ground Floor
EXISTING FOUNDATION TO BE INSPECTED
TEMPORARY WORKS
SEPT 2015.

Ecos Maclean Ltd Engineering - materials, energy, structure 6A Chamberlain Street ~ London NW1 8XB ~ Tel: 020 7722 7525 ~ Fax: 020 7722 9711 Web-site: www.nickmaclean.co.uk ~ e-mail: office@nickmaclean.co.uk	Corin Bennett
9 Parkhill Rd NW3 2YH	Lower Ground and Ground Floor Plans - Proposed

Revision	Date	Made by	Amendments
~~01~~	~~29/02/2015~~	~~IG~~	~~Section C-C added~~

Date	Drawn by	Checked
Jan 2015	CHC	
Scales	Job No.	Drawing No. / Revision
1:50@A3	15002	01 TW

J:\ECOS-SERVER1\Ecos-Server\Ecos\Maclean Jobs 2015\15002 9 Parkhill Rd NW3 2YH\A Drawings\Structural\15002 9 Parkhill Rd.dwg