

**Mansfield Bowling Club
Croftdown Road
London NW5 1EP**

**Basement Impact Assessment
Audit**

For
London Borough of Camden

Project Number: 12066-07

July 2015

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Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	June 2015	Comment	AJMt12066-07-280515-D1.doc	A Marlow	A Marlow	E Brown
F1	July 2015	Final	AJMt12066-07-130715-F1.doc	A Marlow	A Marlow	E Brown

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Document Details

Last saved	13/07/2015 10:12
Path	AJMt12066-07-130715-F1.doc
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Project Number	12066-07
Project Name	Mansfield Bowling Club, Croftdown Road, London NW5 1EP
Planning Reference	2015/1444/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 Mansfield Bowling Club, Croftdown Road, London NW5 1EP (planning reference 2015/1444/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. Additional information has been received to confirm that the development site did not involve a listed building nor was 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. Although the proposed development is adjacent to a Local Flood Risk Zone, it is accepted that the risk of surface water flooding the buildings is very low.
- 1.9. The BIA makes no mention of the presence of a tributary of the River Fleet which runs close to the development site and could impact on the sensitive hydrogeology of the area and surrounding properties.
- 1.10. It is accepted that because the basement will be remote from adjacent properties, an existing Victorian brick sewer and existing trees, as well as trees to be removed, it is not necessary to undertake a Ground Movement Assessment nor instigate a movement monitoring regime on adjacent properties during construction.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 20 May 2015 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Mansfield Bowling Club, Camden Reference 2015/1444/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 "*Creation of a new publicly accessible open space; enhanced tennis facilities including the reconfiguration and extension of the courts to provide an additional court and increased playing area to accord with LTA requirements; the provision of a new ancillary pavilion (Class D2) to replace existing ancillary buildings and structures providing community and leisure space; a new community garden; and the demolition and replacement of the existing bowling club building with a new part three storey, part 2 storey building providing 21 residential dwellings (Class C3) with associated access, parking and landscaping.*"

and indicated that *"4 dwellings have basements, Victorian brick sewer running through the site and neighbours concerned over implications on sewer and flooding."*

The Audit Instruction also confirmed that either the basement proposals involved a listed building or the site neighboured listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 27 May 2015 and gained access to the following relevant documents for audit purposes:

- Heritage Statement
- Flood Risk and Drainage Statement
- Utilities Statement
- Basement Impact Assessment
- Construction Management Plan 02
- Drawing Nos
 - 2101 AA4437 Existing Site Layout Rev B
 - 2102 AA4437 Existing Site Sections AA, BB Rev B
 - 2103 AA4437 Existing Site Sections CC, DD Rev B
 - 2104 AA4437 Existing Ground Floor Rev B
 - 2105 AA4437 Existing First Floor Rev B
 - 2106 AA4437 Existing Second Floor Rev B
 - 2107 AA4437 Existing Roof Plan Rev B
 - 2110 AA4437 Existing Elevations, South-West, North-West Rev B
 - 2111 AA4437 Existing Elevations North-East, South-East Rev B
 - 2121 AA4437 Footprint of Existing Structures Rev B
 - 2100 AA4437 Site Location Plan Rev B
 - AL4437-2004 sections
 - 2130 AA4437 Proposed Roof Level Masterplan Rev B
 - 2131 AA4437 Proposed Ground Level Masterplan Rev B
 - 2135 AA4437 Proposed Site Sections AA, BB Rev C
 - 2136 AA4437 Proposed Site Section CC, DD Rev C
 - 2140 AA4437 Proposed Site Sections EE, FF Rev B
 - 2160 AA4437 Proposed Block Plan – Ground Level Rev B
 - 2161 AA4437 Proposed Block Plan – First Floor Rev B
 - 2162 AA4437 Proposed Block Plan – Second Floor Rev B

2163 AA4437 Proposed Block Plan – Roof Level Rev B
2164 AA4437 Proposed Block Plan – Basement Level Rev B
2170 AA4437 GA Elevations North-West, South-West Rev C
2171 AA4437 GA Elevations North-East, South-East Rev C
2175 AA4437 Sections AA, BB Rev B
2176 AA4437 Sections CC, DD Rev B
2180 AA4437 Pavilion GA Plans & Elevations Rev B
AL4437-2001 hard landscape

- 2.7. CampbellReith was issued with an amended version of the Basement Impact Assessment, revision 04, by LBC on 20 May and this was used together with the other documents listed above.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	
Is data required by Cl.233 of the GSD presented?	Yes	BIA and Construction Management Plan.
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 2 to 5.
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 4.1.
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 5.1.
Is a conceptual model presented?	Yes	BIA and supplementary drawings.
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	BIA Appendix 3.
Is monitoring data presented?	Yes	BIA Section 3.3.
Is the ground investigation informed by a desk study?	Yes	BIA Appendix 3.
Has a site walkover been undertaken?	Yes	BIA Section 4.3
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	No basement present in vicinity of proposal.
Is a geotechnical interpretation presented?	Yes	BIA Appendix 3.
Does the geotechnical interpretation include information on retaining wall design?	No	Reinforced concrete retaining walls and raft foundation.
Are reports on other investigations required by screening and scoping presented?	Yes	Flood Risk & Drainage Statement Utilities Statement.
Are baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	NA	
Is an Impact Assessment provided?	Yes	BIA Section 4.4.
Are estimates of ground movement and structural impact presented?	NA	Remote from 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	BIA Section 3.4.
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 Sections 3.5, 4.5 and 5.5.
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?	Yes	BIA Section 7.

4.0 DISCUSSION

4.1. The BIA has been carried out by an established firm of consulting engineers, Train and Kemp. The lead author has suitable qualifications as does the reviewer of the hydrogeology section, who is a chartered geologist.

4.2. Although LBC's Audit Instruction indicated that the basement proposals either involved a listed building or the site neighboured listed buildings, the Heritage Statement accompanying the BIA, by Icen Projects, states *"There are no listed buildings within the site boundary, or within 50 metres of the site, and the site does not form part of the setting of any listed building. The site is however registered as an asset of community value"*.

This anomaly was queried with LBC's Planning Department, who confirmed that the description within the Heritage Statement was correct.

4.3. Although the proposed development consists of 21 no. residential dwellings only 4 no. will have basements constructed. These are adjacent to one another and, hence, will be formed by the excavation of a single reinforced concrete box with an integral raft foundation.

4.4. The proposed basement will generally be excavated in open cut with its sides battered back to ground level, except that sheet trenching will be required in the southeast corner of the basement due to its proximity to the eastern boundary. This is an acceptable methodology using established techniques.

4.5. It is acknowledged that the basement is founded within the London Clay, which extends to within 0.70 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. Proposals to mitigate potential variations to the groundwater regime, by backfilling with compacted clay arisings and installing a shallow land drain, appear acceptable.

4.6. The BIA has shown that the surrounding slopes to the development are stable and proposed basement is in excess of 20 metres from the existing Victorian brick sewer. Although two trees are to be removed they are too remote to affect the proposed basement and the basement is beyond the root protection area of the trees that are to be retained.

4.7. The BIA includes an assessment of whether the development is likely to be affected by surface water flooding, given that it is adjacent to a Local Flood Risk Zone. The BIA provides a summary of the work contained within the Flood Risk and Drainage Statement prepared by Ardent. This document includes a statement at item 3.9 as follows:

3.9 *“According to the existing ground levels across the site and the surrounding areas, there is a potential risk of overland flows entering the site via Croftdown Road. However, an assessment of the topographic survey indicates that any surface water flowing along Croftdown Road is more likely to bypass the site as a result of the steeper gradients along the road.*

3.10 *Furthermore, the existing finished floor levels for the building are currently set at approximately 51.53m AOD, which is some 0.72m above the ground levels at the entrance to the site. Therefore, the risks of surface water flooding the buildings within the site, is considered to be very low.”*

After reviewing the levels in Brookfield Park, Croftdown Road and York Rise from the Existing Site Layout drawing AA4437/2101B, together with the proposed building level, the risk is accepted as being very low.

4.8. The Flood Risk and Drainage Statement, however, makes no mention of the fact that a tributary of the River Fleet runs in the vicinity of York Rise as shown on the CGHH Study Figure 11 and identified in one of the Resident’s objection notices. York Rise and Woodsome Road were flooded in the 1975 event and lie immediately southwest of the development site. It is possible that any basement construction, however minimal, will impact on the sensitive hydrogeology of the area and surrounding properties.

4.9. 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 remote from any existing buildings and infrastructure, and proposed loadings due to the development will not be dissimilar to existing soil loadings. For similar reasons, it is not considered necessary to instigate a movement monitoring regime on adjacent properties during construction.

5.0 CONCLUSIONS

- 5.1. Additional information has been received to confirm that the development site did not involve a listed building nor was it in the neighbourhood of listed buildings.
- 5.2. The BIA has confirmed that the proposed basement will be located within the London Clay and that the surrounding slopes are stable.
- 5.3. It is accepted that groundwater will not be affected by the excavation and mitigation measures should effectively control potential variations to the groundwater regime.
- 5.4. The proposed basement will be excavated and constructed utilising established techniques.
- 5.5. Although the proposed development is adjacent to a Local Flood Risk Zone, it is accepted that the risk of surface water flooding the buildings is very low.
- 5.6. The BIA makes no mention of the presence of a tributary of the River Fleet which runs close to the development site and could impact on the sensitive hydrogeology of the area and surrounding properties.
- 5.7. It is accepted that because the basement will be remote from adjacent properties, an existing Victorian brick sewer and existing trees, as well as trees to be removed, it is not necessary to undertake a Ground Movement Assessment nor instigate a movement monitoring regime on adjacent properties during construction.

Appendix 1: Residents' Consultation Comments

CampbellReith were advised that Resident's grounds of objection that related to technical issues within the criteria of a BIA audit were:

- Insufficient information regarding water table or geological reports
- Excavation of basements will set a dangerous precedent
- Question whether adequate assessments have been carried out
- Will have geological and ecological impact
- Tributary of River Fleet runs through this part of Dartmouth Park
- Existing Problems of flooding and subsidence

It is believed all these issues are adequately addressed within the BIA other than the issue of the tributary of the River Fleet, upon which comments are made in Sections 4.8 and 5.6.

Appendix 2: Audit Query Tracker

None

Appendix 3: Supplementary Supporting Documents

None

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