

15 Lyndhurst Terrace,
London NW3 5PB

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 13398-95

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August 2021

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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 15 Lyndhurst Terrace, London, NW3 5PB (planning reference 2021/1304/P). The basement is considered to fall within Category C 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. CampbellReith previously audited a basement scheme at the site (ref 12466-79, July 2017).
- 1.4. The existing site is occupied by a two-storey detached building. It is proposed to extend the existing dwelling house at the rear and construct a new basement under the majority of the existing building footprint of the house including a front light well.
- 1.5. The proposed scheme is considered to broadly reflect the previously audited scheme. As such, this audit will only address the amendments, which result in a slight increase in proposed basement depth and change of construction methodology, and consider the subsequent impacts.
- 1.6. The previous audits indicated the previously proposed scheme met the policy criteria of LBC as presiding at the time. It should be noted that LBC guidance for basement development has twice been updated since then, in 2018 and 2021.
- 1.7. The conclusions of the previous audit are considered to apply in regard to hydrogeology and hydrology; the proposed scheme will not impact upon the wider hydrogeological or hydrological environments.
- 1.8. The Appendices to the Construction Method Statement have been reviewed and provided in full.
- 1.9. The proposed formation level and founding Strata has been reviewed and is now consistent between documents.
- 1.10. The permissible settlement of foundations stated within the Construction Method Statement has been reviewed and is consistent with that stated in the Ground Movement Assessment (GMA).
- 1.11. The GMA indicates a predicted level of damage to the houses at Nos 13 and 17 Lyndhurst Terrace to be Very Slight (Category 1).

- 1.12. A separate garage structure at No 17 is predicted to have damage of Slight (Category 2). Whilst this an uninhabited structure, LBC policies require damage to be limited to a maximum of Category 1. However, LBC will accept Category 2 damage on this occasion on the basis of the uninhabited structure being detached from the main house with no heritage merit.
- 1.13. Notwithstanding the above, the construction process should be controlled to minimise ground movements and mitigate damage to neighbouring structures to the lowest level practicable, in accordance with best practice.
- 1.14. Considering the revised submissions, the BIA meets the requirements of CPG Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 11 May 2021 to carry out a Category C Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 15 Lyndhurst Terrace, London NW3 5PB, Camden Reference 2021/1304/P. CampbellReith previously audited a basement scheme at the site (ref 12466-79, July 2017) in relation planning application reference 2017/2471/P. It is understood that a further application to retain and extend the existing house was approved in 2020 (reference 2020/0746/P), which did not include a basement.
- 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. The original scheme was a new build with basement to side and rear extension. The current scheme is to extend the existing property at the site and construct a new single storey basement. As such, this audit will only address the amendment, which is an increase in proposed basement depth and change of construction methodology, and consider the subsequent impacts.
- 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): Basements. January 2021
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
 - The Local Plan (2017): Policy A5 (Basements).
- 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: *"Excavation of basement level with front lightwell."*
- 2.6. The planning portal also confirmed the site lies within Fitzjohns Netherhall Conservation Area but that the building and its neighbours are not listed.
- 2.7. CampbellReith accessed LBC's Planning Portal on 21 June 2021 and gained access to the following relevant documents for audit purposes:
- Basement Impact Assessment Report (Ref 15/23908-2) dated February 2021 by Site Analytical Services Ltd (SAS) including:
 - Factual Report on a Ground Investigation (Ref 15/23908) dated November 2015 by SAS;
 - Ground Movement Assessment (Ref 078070-CUR-00-XX-RP-GE-001, Revision: 01) dated 4 February 2021 by Curtins Consulting Ltd.
 - Construction Method Statement (Ref 3161) dated February 2021 by Concept Consultancy Structural Designers Ltd
 - Construction Management Plan dated January 2021 by Blue Sky Building.
 - Pre-development Arboricultural Survey and Report (ref WAS163/2021 Rev A) dated March 2021 by Wassells.
 - Design and Access Statement (ref 20-313-DAS) dated March 2021 by Miltiadou Cook Mitzman Architects LLP.
 - Existing and proposed elevations, plans and sections dated January 2020 and December 2020 by Mitzman Architects LLP and Miltiadou Cook Mitzman Architects LLP.
 - Comments and objections to the proposed development from 13 Lyndhurst Terrace.
- 2.8. CampbellReith issued an initial audit report on 28/06/2021 (GKemb13398-95-28062021-15 Lyndhurst Terrace-D1) with comments on the above BIA documents.
- 2.9. In response to the initial audit report, CampbellReith received the revised Construction Method Statement (dated 22th July 2021).

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	BIA Section 2.3.
Is data required by Cl.233 of the GSD presented?	Yes	Updated in revised submissions
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	
Are suitable plans/maps included?	Yes	
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 Table 3 (Part 2).
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Table 3 (Part 1).
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Table 3 (Part 3).
Is a conceptual model presented?	Yes	BIA Section 6.3.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.1.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.1.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.1.
Is factual ground investigation data provided?	Yes	BIA Section 5.
Is monitoring data presented?	Yes	BIA Section 5.3.
Is the ground investigation informed by a desk study?	Yes	BIA Section 1.2.
Has a site walkover been undertaken?	Yes	BIA Section 3.2
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	BIA Section 3.2.
Is a geotechnical interpretation presented?	Yes	BIA Section 6.
Does the geotechnical interpretation include information on retaining wall design?	Yes	BIA Section 6.7 and Construction Method Statement.
Are reports on other investigations required by screening and scoping presented?	Yes	Arboricultural Survey and Report and consultations with Network Rail, London Underground and Crossrail and Ground Movement Assessment report.
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 7.

Item	Yes/No/NA	Comment
Are estimates of ground movement and structural impact presented?	Yes	Appendix C of BIA.
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	Updated in revised submissions.
Has the need for monitoring during construction been considered?	Yes	BIA Section 7.2 and 7.3
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	Construction Method Statement and BIA Section 7.3.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	BIA Section 7.4
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 1?	Yes	Updated in revised submissions.
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by Site Analytical Services Ltd (SAS) and the individuals concerned in its production have suitable qualifications. Supporting documents have been provided by Concept Consultancy, a Construction Method Statement (CMS), and Curtins, a Ground Movement Assessment (GMA).
- 4.2. The existing site is occupied by a two-storey detached building. It is proposed to extend the existing dwelling house at the rear and construct a new basement under the majority of the existing building footprint of the house including a front light well. The new basement walls shall be reinforced concrete retaining walls which will also underpin the existing house structure where they coincide. The front light well shall also be formed with reinforced concrete walls.
- 4.3. CampbellReith previously audited a basement scheme at the site (ref 12466-79, July 2017) in relation to planning application reference 2017/2471/P. The proposed scheme is considered to broadly reflect the previously audited schemes. As such, this audit will only address the amendment, which is an increase in proposed basement depth and change in construction methodology, and consider the subsequent impacts.
- 4.4. The proposed formation levels have been updated; the BIA, GMA and CMS now state that the basement formation level as 3.0m to 3.2m below ground level (bgl).
- 4.5. The previous scheme involved demolition of the building and construction of the basement retaining walls utilising contiguous bored piled walls and underpinning methodologies. The current scheme will utilise underpinning an RC walls cast in an underpinning style sequence.
- 4.6. The previous audits indicated the previously proposed scheme met the policy criteria of LBC as presiding at the time. It should be noted that LBC guidance for basement development has twice been updated since then, in 2018 and 2021.
- 4.7. The conclusions of the previous audit are considered to apply in regard to hydrogeology and hydrology; the proposed scheme will not impact upon the wider hydrogeological or hydrological environments.
- 4.8. Structural calculations are included within the CMS version that has been submitted for audit. The Appendices to the Construction Method Statement have been reviewed and are provided in full.
- 4.9. The proposed formation level and founding Strata has been consistently referenced between documents.
- 4.10. The permissible settlement of foundations stated within the CMS, Section 4.0, has been reviewed and is consistent with that generated within the Ground Movement Assessment (GMA).

- 4.11. The GMA indicates a predicted level of damage to the houses at Nos 13 and 17 Lyndhurst Terrace to be Very Slight (Category 1).
- 4.12. A separate garage structure at No 17 is predicted to have damage of Slight (Category 2). Whilst this an uninhabited structure, LBC policies require damage to be limited to a maximum of Category 1. However, LBC will accept Category 2 damage on this occasion on the basis of the uninhabited structure being detached from the main house with no heritage merit.
- 4.13. Notwithstanding the above, the construction process should be controlled to minimise ground movements and mitigate damage to neighbouring structures to the lowest level practicable, in accordance with best practice.

5.0 CONCLUSIONS

- 5.1. CampbellReith previously audited a basement scheme at the site (ref 12466-79, July 2017) in relation planning reference 2017/2471/P.
- 5.2. The previous audits indicated the previously proposed scheme met the policy criteria of LBC as presiding at the time. It should be noted that LBC guidance for basement development has twice been updated since then, in 2018 and 2021.
- 5.3. The conclusions of the previous audit are considered to apply in regard to hydrogeology and hydrology; the proposed scheme will not impact upon the wider hydrogeological or hydrological environments.
- 5.4. The Appendices to the Construction Method Statement are provided in full.
- 5.5. The proposed formation level and founding Strata is consistently referenced between documents.
- 5.6. The permissible settlement of foundations stated within the Construction Method Statement have been reviewed and clarified.
- 5.7. The GMA indicates a predicted level of damage to the houses at Nos 13 and 17 Lyndhurst Terrace to be Very Slight (Category 1). A separate garage structure at No 17 is predicted to have damage of Slight (Category 2). LBC will accept this on the basis of the uninhabited structure being detached from the main house with no heritage merit.
- 5.8. Notwithstanding the above, the construction process should be controlled to minimise ground movements and mitigate damage to neighbouring structures to the lowest level practicable.
- 5.9. Considering the revised submissions, the BIA meets the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Immanuel	13 Lyndhurst Terrace	23/05/2021	Concerned about potential land stability and hydrogeological impacts.	Section 4: <ul style="list-style-type: none">- Hydrogeological impacts closed by previous BIA and Audit.- Land Stability impacts, queries addressed.

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Land Stability	The Appendices to the Construction Method Statement should be provided in full for review.	Closed – See Section 4.8	July 2021
2	Land Stability	The proposed formation level and founding Strata is inconsistently referenced between documents and should be confirmed.	Closed – See Section 4.4, 4.9	July 2021
3	Land Stability	The permissible settlement of foundations stated within the Construction Method Statement should be clarified.	Closed – See Section 4.10	July 2021
4	Land Stability	GMA – damage to neighbouring structures should be mitigated to remain within LBC policy limits of Category 1.	Closed – See Section 4.11, 4.12	August 2021

Appendix 3: Supplementary Supporting Documents

None

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