

1 Steele's Studios
London NW3 4RN

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 12985-45

Revision: F1

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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 1 Steele's Studios, London NW3 4RN (planning reference 2019/0157/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 (BIA) 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.
- 1.4. The BIA has been prepared by Soiltechnics Ltd. The qualifications of the authors are accepted, considering points 1.8 and 1.9, although the hydrogeology assessment has not been reviewed by a Chartered Geologist.
- 1.5. The proposed development involves the partial demolition of the existing 2 storey residential building with construction of a 2 storey residential building plus single basement level below the full footprint of the building and extending below the courtyard areas.
- 1.6. The adjacent plot's ground level is higher, and an existing retaining wall will be maintained along the boundary.
- 1.7. The original BIA references superseded LBC guidance. Current guidance is referenced in the revised documents.
- 1.8. The BIA includes the majority of the information required from a desk study in line with LBC guidance.
- 1.9. A site investigation has been undertaken. The ground conditions comprise Made Ground over London Clay. Perched water was encountered within the Made Ground.
- 1.10. The London Clay is designated as unproductive strata. It is accepted there will be no impact to the wider hydrogeological environment.
- 1.11. It is proposed to form basement retaining walls by underpinning (of existing foundations) and reinforced concrete walls formed in an underpinning style sequence. Stiff propping will be adopted in the temporary and permanent cases. Geotechnical and structural information has been presented, including retaining wall design parameters.

- 1.12. A ground movement assessment (GMA) has been presented that indicates a maximum of Category 1 damage (Very Slight) will be sustained by neighbouring properties. Utility asset owners have been contacted and asset protection agreements will be entered into, as required.
- 1.13. An outline methodology and guidance for monitoring structural movements during construction is provided.
- 1.14. The site is at low risk of flooding from surface water run-off. Standard flood risk mitigation measures should be adopted.
- 1.15. The proposed scheme will not increase the proportion of impermeable area. There is no impact to the wider hydrological environment.
- 1.16. The original BIA indicates a Sycamore tree is proposed to be removed. However, the revised BIA, construction method statement and arboricultural report confirms that no trees will be removed as part of the proposed works.
- 1.17. Discussion is presented in Section 4 and queries are summarised in Appendix 2. 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 14th March 2019 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 1 Steele's Studios, London NW3 4RN, Camden Reference 2019/0149/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): Basements. March 2018.
- 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 planning portal describes the proposal as: "*Partial demolition of the existing 3no x bedrooms 2-storey family dwelling (Class C3) and erection of 3no x bedrooms 2-storey dwelling plus basement excavation, alterations to front boundary wall, front curtilage and forecourt area*".

The LBC instruction confirmed that neither the site nor neighbouring properties are listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 8th April 2019 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment (ref STQ4296-BIA01, Rev 03) dated 24th October 2018 by Soiltechnics Ltd.
- Site Investigation Report (ref STQ4296-G01, Rev 03) dated 24th October 2018 by Soiltechnics Ltd.
- Structural Engineer's Report (ref 18011) dated 15th October 2018 by Eckersley O'Callaghan.
- Existing and proposed elevations, sections and plans (Rev C) by James Gorst Architects.
- Arboricultural Impact Assessment (ref JGA/STS/AIA/01b)) dated 19th October 2018 by Landmark Trees.
- Comments and objections to the proposed development from local residents.

2.7. CampbellReith received the following relevant documents for audit purposes in May and June 2019:

- Basement Impact Assessment (ref STQ4296-BIA01, Rev 04) dated 17th May 2019 by Soiltechnics Ltd.
- Structural Engineer's Report (ref 18011, Issue 2) dated 15th October 2018 by Eckersley O'Callaghan.
- Arboricultural Impact Assessment (ref JGA/STS/AIA/01c)) dated 20th June 2019 by Landmark Trees.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	Hydrogeology assessment not reviewed by a Chartered Geologist.
Is data required by Cl.233 of the GSD presented?	Yes	
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	
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Is a conceptual model presented?	Yes	

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	N/A	Monitoring data indicates surface water draining into standpipes. London Clay is designated unproductive strata.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	N/A	There is no change in the permeable / impermeable site ratio.
Is factual ground investigation data provided?	Yes	Site Investigation Report.
Is monitoring data presented?	Yes	
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	None identified.
Is a geotechnical interpretation presented?	Yes	
Does the geotechnical interpretation include information on retaining wall design?	Yes	
Are reports on other investigations required by screening and scoping presented?	Yes	Arboricultural report.
Are baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	N/A	None identified.

Item	Yes/No/NA	Comment
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	Yes	
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	Yes	Updated based on revised submissions.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	Updated based on revised submissions.
Has the need for monitoring during construction been considered?	Yes	
Have the residual (after mitigation) impacts been clearly identified?	Yes	Updated based on revised submissions.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	Updated based on revised submissions.
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	Updated based on revised submissions.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	Ground Movement Assessment report, Section 5. Damage Impact limited to Category 1 (Very Slight).
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The BIA has been prepared by Soiltechnics Ltd. Supporting structural information is provided by Eckersley O'Callaghan. Supporting arboricultural information is provided by Landmark Trees.
- 4.2. Whilst chartered civil and structural engineers have contributed to the assessment of hydrological and stability impacts, the hydrogeology assessment has not been reviewed by a Chartered Geologist. However, the hydrogeological assessment is accepted, based on the comments provided in points 4.6 and 4.7.
- 4.3. It is noted that the original BIA referenced superseded LBC guidance. The revised BIA and the Structural Engineer's Report references current LBC guidance.
- 4.4. The proposed development involves the partial demolition of the existing 2 storey residential building with construction of a 2 storey residential building plus single basement level below the full footprint of the building and extending below the courtyard areas. Dimensioned drawings and sections are provided, including conceptual sections indicating ground conditions at formation level, and neighbouring structures' foundation levels. The adjacent plot's ground level is higher, and an existing retaining wall will be maintained and underpinned along the boundary.
- 4.5. The BIA includes the majority of the information required from a desk study in line with the GSD Appendix G1. Utility companies and TfL have been consulted with regards to underground infrastructure. Thames Water has been consulted in regard to the proposed drainage scheme.
- 4.6. A site investigation has been undertaken by Soiltechnics Ltd. The ground conditions comprise Made Ground over London Clay. Water was encountered during monitoring of the boreholes / standpipes. Once purged, recharge was not observed. It is concluded that the water observed is perched water within the Made Ground draining from surface.
- 4.7. The London Clay is designated as unproductive strata. Existing foundations on the site and the adjacent retaining wall currently penetrate the Made Ground to bear on the London Clay. There will be no impact to the wider hydrogeological environment from the proposed development.
- 4.8. It is proposed to form basement retaining walls by underpinning (of existing foundations) and reinforced concrete walls formed in an underpinning style sequence (basement walls to be formed within the courtyard). Structural drawings including construction sequences are provided for review. Stiff propping will be adopted in the temporary and permanent cases.
- 4.9. Interpretative geotechnical information has been presented, including retaining wall design parameters.

- 4.10. The original BIA indicated that a Sycamore tree was proposed to be removed. The revised Arboricultural Assessment confirms that no trees will be removed as part of the proposed development works. The assessment includes tree protection mitigation measures and an updated foundation solution adjacent to a Sycamore tree in order to avoid disturbing the root protection areas. The revised BIA and construction method statement also confirm that no trees will be removed as part of the proposed works (although it is noted that some of the drawings have not been updated and still indicate tree removal).
- 4.11. A ground movement assessment (GMA) has been presented, based on assessment methodology provided in CIRIA C760. Whilst this assessment methodology is intended for embedded retaining walls, it is accepted that it can provide a reasonable prediction of movements and resultant impacts to neighbouring structures when applied to underpinning / underpin style construction sequences. To provide a sensitivity analysis, the GMA has considered both 'high stiffness' and 'low stiffness' retaining walls. The range of movements calculated are in line with expectations for the proposed scale, depth and construction methodology.
- 4.12. The GMA indicates a maximum of Category 1 damage (Very Slight) will be sustained by neighbouring properties. Utility asset owners have been contacted and it has been confirmed that asset protection agreements will be entered into, as required.
- 4.13. An outline methodology and guidance for monitoring structural movements during construction is provided. A detailed proposal should be agreed with the relevant Party Wall surveyors and asset owners.
- 4.14. The site is at low risk of flooding from surface water run-off. Standard flood risk mitigation measures should be adopted.
- 4.15. The proposed scheme will not increase the proportion of impermeable area. There is no impact to the wider hydrological environment. The drainage scheme has been discussed with Thames Water. The final scheme will require approval from Thames Water and LBC.

5.0 CONCLUSIONS

- 5.1. The qualifications of the authors are not in accordance with CPG guidelines in regards to hydrogeology. However, the hydrogeological assessment is accepted.
- 5.2. The BIA includes the majority of the information required from a desk study in line with LBC guidance.
- 5.3. The ground conditions comprise Made Ground over London Clay.
- 5.4. The London Clay is designated as unproductive strata. It is accepted there will be no impact to the wider hydrogeological environment.
- 5.5. Geotechnical interpretation is presented, including retaining wall design parameters.
- 5.6. Structural information is provided, including outline temporary works proposals.
- 5.7. The damage impact assessment indicates Category 1 damage (Very Slight) to neighbouring structures. Asset protection agreements to be entered into, as required, with utility owners.
- 5.8. An outline strategy for monitoring structural movements is presented.
- 5.9. The site is at low risk of flooding from surface water run-off. Standard flood risk mitigation measures should be adopted.
- 5.10. The proposed scheme will not increase the proportion of impermeable area. It is accepted there is no impact to the wider hydrological environment.
- 5.11. It has been confirmed that no trees will be removed as part of the proposed construction works.
- 5.12. Queries are summarised in Appendix 2. 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
Thames Water	-	19 th March 2019	Applicant to confirm damage impact / asset protection of TWUL's assets and final surface water drainage proposals.	BIA Audit Section 4
Klag	Stanbury Court	23 rd March 2019	Concerned about potential impacts to groundwater and trees along the boundary.	BIA Audit Section 4
Drake	-	16 th March 2019	Concerned about potential ground movements and impacts to trees.	BIA Audit Section 4

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status/Response	Date closed out
1	BIA	The hydrogeological assessment has not been reviewed by a chartered geologist. Considering the project ground / groundwater conditions, SI and proposals, the assessment is accepted.	Note only	N/A
2	BIA	The BIA references superseded LBC guidance. Future revisions should reference CPG Basements.	Closed	June 2019
3	Land Stability	Impacts of removing tree on neighbouring foundations to be assessed and mitigated if required.	Closed	June 2019

Appendix 3: Supplementary Supporting Documents

None

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