

27 Maresfield Gardens,
London NW3 5SD

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 13398-91

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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 27 Maresfield Gardens, London NW3 5SD (planning reference 2020/5961/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 LBHGEO Ltd. The qualifications of the authors are in accordance with LBC guidance.
- 1.5. The site is occupied by a four-storey semi-detached Victorian building with a lower ground floor set 0.6m lower than the street level. The proposed development comprises the extension of the lower ground floor into the rear garden at the same elevation by up to 6m.
- 1.6. Planning applications were recently approved for single storey lower ground floor extensions at neighbouring properties, No. 29 and at No. 25 Maresfield Gardens.
- 1.7. The BIA includes the majority of the information required from a desk study in line with LBC guidance.
- 1.8. A site investigation indicates the ground conditions comprise Made Ground over London Clay. No groundwater was encountered.
- 1.9. Geotechnical interpretation for retaining wall design and a preliminary bearing capacity for the soils at proposed foundation level is provided. The proposed construction methodology and sequence indicates reinforced concrete retaining walls constructed in a hit and miss sequence.
- 1.10. The Arboricultural Impact Assessment indicates trees will be felled as part of the proposed development. The BIA states that the new foundations should be taken beyond the depth of likely volume change in accordance with NHBC guidance. No adverse impacts to the foundations of the adjacent buildings are predicted, considering the proximity and level difference from the trees to the neighbouring structures.

- 1.11. Category 0 damage (Negligible) in accordance with the Burland Scale is predicted to neighbouring structures due to ground movements generated by the proposed construction and excavation works.
- 1.12. The site is not located within a Local Flood Risk Zone. The site is at low to very low risk of flooding. Standard flood risk mitigation measures should be adopted.
- 1.13. Maresfield Gardens is within a Critical Drainage Area (Group 3-005). The proposed development will increase the impermeable area of the site. Mitigation is proposed in the form of attenuation SUDS to reduce off-site drainage flows in accordance with best practice. There will be no impact to the wider hydrological environment.
- 1.14. The BIA meets the requirements of CPG: Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 30 March 2021 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 27 Maresfield Gardens, London NW3 5SD, Camden Reference 2020/5961/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:
- Camden Local Plan 2017 - Policy A5 (Basements).
 - Camden Planning Guidance (CPG): Basements. January 2021.
 - Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
- 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: *"Erection of single storey lower ground floor rear extension with external roof terrace, excavation of garden area, alterations to lower ground and upper ground floor windows, new entrance to lower ground floor flat and associated works."*
- 2.6. The planning portal also confirmed the site lies within Fitzjohns / Netherhall Conservation Area but that the building is not listed.

2.7. CampbellReith accessed LBC's Planning Portal on 14th April 2021 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment (ref LBH4626bia) dated January 2021 by LBHGEO Ltd.
- Proposed elevations, plans and sections dated October 2020 by 5d Architects.
- Arboricultural Impact Assessment Report (ref SMP/27MFD/AIA/01a) dated 21st December 2020 by Landmark Trees.
- Surface water drainage assessment and outline SuDS strategy (ref LBH4626suds) dated January 2021 by LBHGEO Ltd.
- Comments and objections to the proposed development from local residents.

2.8. Following discussion with the BIA authors, CampbellReith were provided with the following relevant documents for audit purposes:

- Basement Impact Assessment (ref LBH4626bia, 2.1) dated 1st June 2021 by LBHGEO Ltd.
- Basement Impact Assessment (ref LBH4626bia, 2.2) dated 7th June 2021 by LBHGEO Ltd.

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	
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	Section 4.1.3 of BIA.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Section 4.1.1 of BIA.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Section 4.1.2 of BIA.
Is a conceptual model presented?	Yes	Section 5 of BIA.

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.2.3 of BIA.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.2.1 of BIA.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.2.2 of BIA.
Is factual ground investigation data provided?	Yes	Section 5 of BIA. The intrusive investigation comprised a single hand-excavated trial pit.
Is monitoring data presented?	No	No groundwater encountered.
Is the ground investigation informed by a desk study?	Yes	Section 3 of BIA.
Has a site walkover been undertaken?	Yes	Section 5 of BIA.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	The BIA states that the lower ground floor and rear patio of No. 29 (the adjoining property) is set at a similar level to that of No. 27. A planning application was recently approved for a single storey lower ground floor extension at No. 29. It is also understood that planning permission for a rear lower ground floor extension (similar in scope to the proposals at No. 27 and No. 29) was also recently granted for No. 25.
Is a geotechnical interpretation presented?	Yes	Bearing capacity should be confirmed by insitu testing in advance of construction, with due regard to ground movements.
Does the geotechnical interpretation include information on retaining wall design?	Yes	

Item	Yes/No/NA	Comment
Are reports on other investigations required by screening and scoping presented?	Yes	An Arboricultural assessment and outline SuDS strategy provided.
Are baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	Section 8 of BIA.
Are estimates of ground movement and structural impact presented?	Yes	Section 7 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	SuDS in regard to loss of permeable site area.
Has the need for monitoring during construction been considered?	No	While not considered in the BIA, monitoring may be required to satisfy any Party Wall award.
Have the residual (after mitigation) impacts been clearly identified?	Yes	To be clarified after responses to queries provided.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	Subject to clarification on impacts from tree removal.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	

Item	Yes/No/NA	Comment
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	Section 7 of BIA. Subject to clarification on impacts from tree removal.
Are non-technical summaries provided?	Yes	Section 8.

4.0 DISCUSSION

- 4.1. The BIA has been prepared by LBHGEO Ltd. The qualifications of the authors are in accordance with CPG guidelines.
- 4.2. The site is occupied by a four-storey semi-detached Victorian building with a lower ground floor set 0.6m lower than the street level. The proposed development comprises the extension of the lower ground floor into the rear garden by up to 6m, with excavations of up to 1.5m.
- 4.3. The BIA states that the lower ground floor and rear patio of No. 29 (the adjoining property) is set at a similar level to that of No. 27. A planning application was recently approved for a single storey lower ground floor extension at No. 29.
- 4.4. The BIA states that the lower ground floor of No. 25 (the neighbouring property) is set approximately 0.3m lower than that of No. 27 but the rear garden and side passage is set higher with a low retaining wall between the two. It is also understood that planning permission for a rear lower ground floor extension (similar in scope to the proposals at No. 27 and No. 29) was also recently granted for No. 25.
- 4.5. The BIA includes the majority of the information required from a desk study in line with the GSD Appendix G1. Whilst utility infrastructure information is not presented, it is noted that the development will be no deeper than the existing foundations, with excavations of limited extent into the bank of the rear garden and therefore unlikely to impact utility connections. However, utility records should be obtained prior to construction to ensure the appropriate diversions are undertaken or protection provided.
- 4.6. The Belsize Tunnels run beneath Nutley Terrace approximately 95m north of the site and therefore are not considered to be impacted by the proposed development.
- 4.7. Consultation of the 'Lost Rivers of London' map has confirmed that a tributary of the lost River Tyburn runs north to south to the east of Fitzjohn's Avenue (200m east) and that a tributary of the lost River Westbourne is located 200m west of the proposed development.
- 4.8. The site is not located within a Local Flood Risk Zone. The site is mostly at a 'very low' risk of flooding from surface water run-off however the rear terraces of Nos. 23 to 41 Maresfield Gardens are indicated to be at 'low' risk at lower ground floor level. The site is not at risk from flooding from reservoirs. Maresfield Gardens did not flood in 1975 or 2002.
- 4.9. Maresfield Gardens is within a Critical Drainage Area (Group 3-005). The proposed development will increase the impermeable area of the site. Mitigation proposals are provided in the SUDS Assessment report, to limit any adverse impact on the hydrology of the area. These include

attenuation storage tanks beneath the permeable paving of the rear patio and blue roof storage. Final proposed drainage designs will require approval from LBC and Thames Water.

- 4.10. There will be no impact to the wider hydrological environment.
- 4.11. A site investigation was undertaken by LBHGEO Ltd in January 2021 comprising a single hand-excavated trial pit at the rear elevation of the building to expose the existing foundations and confirm the ground conditions beneath the site. The ground conditions comprise Made Ground over London Clay with the existing property being supported by brick foundations (extending to approximately 800mm depth) sitting directly upon the London Clay. No groundwater was encountered during the excavation of the trial pit. The London Clay has been identified as unproductive strata and it is accepted that there is no local or wider impact on subterranean flows from the basement proposals.
- 4.12. Geotechnical interpretation for retaining wall design and a preliminary bearing capacity for the soils at proposed foundation level is provided. Bearing capacity should be confirmed by insitu testing in advance of construction, with due regard to ground movements and requirements for mitigating damage to adjacent structures.
- 4.13. The proposed construction methodology and sequence is provided, comprising reinforced concrete retaining walls constructed in a hit and miss sequence. It's noted that the proposed structure is likely to be lightly loaded.
- 4.14. The screening section of the BIA indicates the area to be prone to seasonal shrink-swell soil movements which can result in impacts to foundations. The Arboricultural Impact Assessment indicates a Crab Apple tree, a Cotoneaster and a Cherry tree will be felled as part of the proposed development. The BIA states that the new foundations should be taken beyond the depth of likely volume change in accordance with NHBC guidance. No adverse impacts to the foundations of the adjacent buildings are predicted, considering the proximity and level difference from the trees to the neighbouring structures.
- 4.15. Category 0 damage (Negligible) in accordance with the Burland Scale is predicted to neighbouring structures due to ground movements generated by the proposed construction and excavation works. This is accepted, assuming good workmanship and control of construction works.
- 4.16. The BIA states that structural monitoring is currently not proposed, given the scale of the proposed works. It is noted that LBC requires Construction Management Plans to include provisions for monitoring of the surrounding structures to ensure that building damage will be within the limits determined in the BIA. This may be agreed as part of the Party Wall award.

5.0 CONCLUSIONS

- 5.1. The qualifications of the authors are in accordance with LBC guidance.
- 5.2. The BIA includes the majority of the information required from a desk study in line LBC guidance.
- 5.3. A site investigation indicates the ground conditions comprise Made Ground over London Clay. No groundwater was encountered. There will be no impact to the wider hydrogeological environment.
- 5.4. Geotechnical interpretation is presented.
- 5.5. The Arboricultural Impact Assessment indicates trees will be felled as part of the proposed development. The assessment predicts no adverse impacts to the foundations of the adjacent buildings.
- 5.6. Category 0 damage (Negligible) in accordance with the Burland Scale is predicted to neighbouring structures due to ground movements generated by the proposed construction and excavation works.
- 5.7. The site is not located within a Local Flood Risk Zone. Standard flood risk mitigation measures should be adopted.
- 5.8. Maresfield Gardens is within a Critical Drainage Area (Group 3-005). The proposed development will increase the impermeable area of the site. Mitigation is proposed in the form of attenuation SUDS. There will be no impact to the wider hydrological environment.
- 5.9. The BIA meets the requirements of CPG: Basements.

Appendix 1: Residents' Consultation Comments

Consultation Comments

Surname	Address	Date	Issue raised	Response
Isaacs	25 Maresfield Gardens	11 th March 2021	Concerns about potential hydrological impacts.	As discussed in Section 4, a surface water drainage assessment has been undertaken and mitigation measures will be included in the development to control surface water run-off rates.

Appendix 2: Audit Query Tracker

None

Appendix 3: Supplementary Supporting Documents

None

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