

**124a St Pancras Way, London
NW1 9NB**

**Basement Impact Assessment
Audit**

For

London Borough of Camden

Project Number: 12727-76

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May 2018

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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 124a St Pancras Way, London NW1 9NB (planning reference 2018/1137/P & 2018/1021/L). 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 reviewed it against an agreed audit check list.
- 1.4. The Basement Impact Assessment (BIA) has been carried out by established firm of geotechnical consultants, and the individuals concerned in its production have suitable qualifications.
- 1.5. The basement proposal involves Grade II listed property along with the rest of the Georgian terrace block No. 108-132 and is located within the Jeffrey Street Conservation Area.
- 1.6. The site comprises a mid-terrace residential property, and the proposed development includes the extension of the existing basement level to the rear garden.
- 1.7. An appropriate site specific SI has been carried out.
- 1.8. The formation level of the proposed basement will be within the London Clay
- 1.9. It is likely that the ground water table will be encountered during basement foundation excavation. Water control measures proposal to be submitted.
- 1.10. Damage Category 1 ('very slight') is predicted to the 122, 124 and 126 St Pancras Way properties, which is within the limits of the maximum permitted category allowed by LBC.
- 1.11. Formal ground movement monitoring strategy to submitted.
- 1.12. It is accepted that the impermeable area is not changing.
- 1.13. An outline construction plan covering key phases has been presented.
- 1.14. A structural proposal including an outline structural calculations for the basement retaining walls and proposed structural drawings for the construction of the basement to be submitted.

- 1.15. Evidence of correspondence with Network Rail and Transport for London (TfL) asset protection departments to be submitted confirming their interest in assessing the proposal or otherwise.
- 1.16. Impact on the ground water will be reassessed following submission of the structural proposal.
- 1.17. It is accepted that the surrounding slopes to the development site are stable.
- 1.18. It is accepted that the development is not in an area subject to flooding.
- 1.19. A number of queries for additional information are listed in appendix 2.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 13th March 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 124a St Pancras Way, London NW1 9NB (2018/1137/P & 2018/1021/L).
- 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 Basements: Basements and Lightwells.
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
 - 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;
 - 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 rear garden and erection of single storey rear extension at lower ground floor level."*
- 2.6. The Audit Instruction also confirmed 124a St Pancras Way involves Grade II listed property along with the rest of the Georgian terrace block No. 108-132.

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

- Basement Impact Assessment Report (BIA) by CGL, dated April 2017, Ref. CG/28111
- Planning Application Drawings by A-Zero Architects, dated March 2018 and consisting of
 - Location Plan
 - Existing Plans and Sections
 - Proposed Plans and Sections
- Design & Access Statement by A-Zero Architects dated February 2018
- Asset location search, ref ALS/ALS Standard/2017_3580502
- Heritage Statement by Heritage Collective, dated December 2017, Ref. 3556A
- Planning Comments and Response

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	Work programme for construction to be provided
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	Yes, however following the submission of the structural proposal the ground water flow will be reassessed.
Are suitable plan/maps included?	Yes	Sufficient factual data has been presented.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	Sufficient factual data has been presented.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Sufficient factual data has been presented.
Hydrogeology Screening: [Ground Water Flow] Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Yes, however following the submission of the structural proposal ground water flow will be reassessed.
Hydrology Screening: [Flooding] Have appropriate data sources been consulted? Is justification provided for 'No' answers? Please check the maps included in the Camden SFRA for groundwater and sewer flooding and also local flood risk zones within Camden.	Yes	Sufficient factual data has been presented.
Is a conceptual model presented?	Yes	Ground water monitoring is suggested over longer period of time.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	No scoping has been identified as part of the screening process
Hydrogeology Scoping Provided?	No	No scoping has been identified as part of the screening process

Item	Yes/No/NA	Comment
Is scoping consistent with screening outcome?		
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	No scoping has been identified as part of the screening process
Is factual ground investigation data provided?	Yes	
Is monitoring data presented? [Refers to monitoring of ground water levels]	Yes	Ground water monitoring is suggested over longer period of time.
Is the ground investigation informed by a desk study?	Yes	Yes, however further intrusive investigation is recommended.
Has a site walkover been undertaken?	Yes	Exact date of the site walkover has not been specified, however key points have been described and pictures taken of the site.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	
Is a geotechnical interpretation presented?	Yes	However, further geotechnical tests are recommended to confirm the ground conditions and soil properties.
Does the geotechnical interpretation include information on retaining wall design? [Please check that this includes stiffness parameters (E) for the various strata encountered]	Yes	Structural design for retaining wall to be submitted.
Are reports on other investigations required by screening and scoping presented?	Yes	Basement Impact Assessment for the developed and neighbouring properties.
Are the baseline conditions described, based on the GSD? [This relates to the existing conditions such as site layout, neighbouring properties including whether or not they have basements, geology, groundwater level etc]	Yes	
Do the base line conditions consider adjacent or nearby basements?	Yes	

Item	Yes/No/NA	Comment
Is an Impact Assessment provided?	Yes	Impact Assessment provided for adjacent properties 122, 124 and 126 St Pancras Way
Are estimates of ground movement and structural impact presented? [This should include estimated heave movements from the excavation and vertical & horizontal movements from excavation and underpinning/pile installation. Impact on the surrounding roadways if applicable should also be indicated.]	Yes	
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?	No	
Has the need for monitoring during construction been considered? [Refers to monitoring of neighbouring structures for movement]	Yes	Detailed proposal for monitoring strategy to be submitted including temporary works
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? [Check the ground movement assessment before answering this question to make sure the assumptions made and calculations are reasonable and correct. If the GMA includes hand calculations or modelling from geotechnical software that you are unfamiliar with, please ask a member of the geotech team to review this for you]	Yes	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	The impermeable area is not changing
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	

Item	Yes/No/NA	Comment
[If the answer to either of the above 2 questions is a no, then this will be a no too]		
Does report state that damage to surrounding buildings will be no worse than Burland Category 2? [If the predicted damage is more than Category 0, further mitigation measures are required (see Section 3.30 on Pg 20 of CPG4 2015)]	Yes	Category 1 Damage predicted for 122, 124 and 126 St Pancras Way
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by established firm of geotechnical consultants, Geotechnical & Environmental Associates (GEA) and the individuals concerned in its production have suitable qualifications.
- 4.2. The LBC Instruction to proceed with the audit identified that the basement proposal involves Grade II listed property along with the rest of the Georgian terrace block No. 108-132. The application site is located within the Jeffrey Street Conservation Area.
- 4.3. The site comprises a mid-terrace residential property with three above ground storey. The application has been made for the lower ground floor flat, which includes an existing single basement of reduced height 1.6m bgl, a rear garden and a lightwell to the front. There is a secondary access to the front of the property.
- 4.4. The proposed development includes the extension of the existing basement level to cover the whole of the building footprint and approximately 16m² of the rear garden, including a patio at basement level and steps leading up to the garden. The proposed rear garden extension will extend 2.1m from the line of the existing bathroom lean-to extension. Due to the level of the rear extension, the rear-most part of the proposed basement will be founded at some 1.7m below existing basement level.
- 4.5. The BIA submissions include land Stability, Hydrogeology and Hydrology screening, relevant site investigations and impact assessment as defined and required in the LBC 'Camden Planning Guidance Basements'.
- 4.6. Lower ground floor or basement levels similar to the subject site have been confirmed to the neighbouring properties. Those are of the original extent and have not been modified recently.
- 4.7. A site specific ground investigation was conducted by GEA in in October 2016 and comprised one window sampler borehole (WS1) to 8.45m bgl and five hand-excavated foundation inspection pits (TP2 to TP6). The ground conditions encountered during the intrusive investigation corresponded to the published geology. Underlying the Made Ground, a 0.9m thick layer of brown, silty clay was identified. This was in turn underlain by 0.25m of possible flint gravel. The Weathered London Clay Formation was encountered at a depth of 2.15m bgl. The London Clay Formation was proven up to the depth of the borehole at 8m bgl, and is anticipated to be between 30m and 50m thick based on geological records. It is recommended in the BIA, that ground conditions to be confirmed on site and soil samples to be obtained for geotechnical laboratory testing.
- 4.8. Considering the ground condition, the formation level of the proposed basement is within the London Clay, which is considered as the non-productive strata.

- 4.9. Following the site works, the groundwater levels monitoring was carried out over two return trips on 15 and 31 March 2017. Groundwater monitoring undertaken on 15 March 2017 recorded a groundwater level of 1.86m bgl, which raised to 1.21m bgl during a subsequent visit. It is recommended the ground water monitoring standpipe to be undertaken during longer period of time to determine perched water/groundwater levels.
- 4.10. Ground water is expected to be encountered during excavation works and the basement construction. It has been stated that the design of perched water control measures should be undertaken by a suitably qualified and experienced contractor. Ground water control measures proposal to be submitted.
- 4.11. Combined impacts of short-term, long-term ground movements and settlement due to workmanship has been considered to determine the overall ground movement for the 126 St Pancras and neighbouring properties. Calculations indicate that ground movement can be controlled to those values predicted to for Damage Category 1 ('very slight') for Nos 122, 124 and 126 St Pancras Way.
- 4.12. BIA recommends that formal monitoring strategy to be implemented on site, however does not provides details. As the property and all the block of terrace are grade II listed buildings a formal ground movement monitoring strategy to be submitted to demonstrate the horizontal movements are limited to the predicted values of 3.0mm along the rear walls of Nos. 122 and 126 St Pancras Way, 6.5mm along the rear wall of No. 124 St Pancras Way and 1.8mm along the party wall with the rear extension of No. 126 St Pancras Way.
- 4.13. BIA stated, that Good quality workmanship with staged propping of underpins is essential in controlling horizontal movements and rotation. Suitable propping to be installed at the top of the excavation to prevent loss of the granular Made Ground around the existing foundations. It is critical that the basement wall is propped over the long term (i.e. with the floor slab) to prevent long term deflection. Formal ground movement monitoring strategy to submitted.
- 4.14. Currently the rear garden is all paved, therefore there will be no change in the proportion of hard surfaced/paved area. The development will be utilising the same connection with the local sewer system. Moreover, as the site is overlaid by London Clay, soakaways are not effective due to low infiltration rates.
- 4.15. An outline construction plan coving key phases of work has been provided as an additional information submitted to the Officer and forms part of the Appendix 3 of the audit.
- 4.16. No structural proposal has been submitted to support the submission including an outline structural calculations for the basement retaining walls, temporary works and proposed

structural drawings for the construction of the basement. These should be submitted to demonstrate the feasibility of the proposed basement structure.

- 4.17. Evidence of correspondence with Network Rail and Transport for London (TfL) asset protection departments to be submitted confirming their interest in assessing the proposal or otherwise.
- 4.18. The site is not indicated to lie within a groundwater Source Protection Zone (SPZ). The Regent's Canal is located approximately 300m south of the site. The Hampstead Ponds are 2.3km to the northwest of the site.
- 4.19. It is accepted that there are no slope stability concerns regarding the proposed development and as it is located within Flood Zone 1 ("low probability"), it is not in an area prone to flooding.
- 4.20. Impact on the ground water will be reassessed following submission of the structural proposal.
- 4.21. Given the above it cannot be confirmed that the proposal confirms to the requirements of CPG4. A number of queries have been summarised in appendix 2.

5.0 CONCLUSIONS

- 5.1. The Basement Impact Assessment (BIA) has been carried out by established firm of geotechnical consultants, and the individuals concerned in its production have suitable qualifications.
- 5.2. The basement proposal involves Grade II listed property along with the rest of the Georgian terrace block No. 108-132 and is located within the Jeffrey Street Conservation Area.
- 5.3. The site comprises a mid-terrace residential property with three above ground storey. The application has been made for the lower ground floor flat, which includes an existing single basement of reduced height 1.6m bgl, a rear garden and a lightwell to the front and a secondary access to the front of the property.
- 5.4. The proposed development includes the extension of the existing basement level to cover the whole of the building footprint and a rear garden extension, which will project 2.1m from the line of the existing bathroom lean-to extension. The rear-most part of the proposed basement will be founded at some 1.7m below existing basement level.
- 5.5. The BIA submissions include land Stability, Hydrogeology and Hydrology screening, relevant site investigations and impact assessment as defined and required in the LBC 'Camden Planning Guidance Basements'.
- 5.6. A site specific ground investigation was conducted and comprised one window sampler borehole and five hand-excavated foundation inspection pits. Ground monitoring has been undertaken over two return visits, however it is recommended the ground water monitoring to be undertaken during longer period time.
- 5.7. Considering the ground condition, the formation level of the proposed basement is within the London Clay, which is considered as non-productive strata.
- 5.8. Ground water is expected to be encountered during excavation works and the basement construction. Water control measures proposal to be submitted.
- 5.9. Damage Category 1 ('very slight') is predicted to the 122, 124 and 126 St Pancras Way properties.
- 5.10. Formal ground movement monitoring strategy to submitted.
- 5.11. It is accepted that there will be no change in the proportion of hard surface/paved area. The development will be utilising the same connection with the local sewer system.
- 5.12. An outline construction plan covering key phases has been presented.

- 5.13. A structural proposal including an outline structural calculations for the basement retaining walls and proposed structural drawings for the construction of the basement to be submitted.
- 5.14. Evidence of correspondence with Network Rail and Transport for London (TfL) asset protection departments to be submitted confirming their interest in assessing the proposal or otherwise.
- 5.15. Impact on the ground water will be reassessed following submission of the structural proposal.
- 5.16. It is accepted that there are no slope stability concerns regarding the proposed development and it is not in an area prone to flooding.
- 5.17. Given the above it cannot be confirmed that the proposal confirms to the requirements of CPG4. A number of queries have been summarised in appendix 2.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments [\[Request 'relevant comments' from the Case Officer\]](#)

Surname	Address	Date	Issue raised	Response
Alison Ball	126 St Pancras Way	April 2018	Stability issue	Refer to Section 4 for comments

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Structural Proposal	An outline structural calculations for the basement retaining walls and proposed structural drawings for the construction of the basement to be submitted.	Open	
2	Stability	The proposal for ground monitoring strategy be submitted.	Open	
	Stability	Temporary Works to be submitted.	Open	
3	Stability	A proof of contact with Network Rail and Transport for London (TfL) assets to be submitted confirming vicinity of the site.	Open	
4	Stability	Ground water exclusion measures to be submitted.	Open	

Appendix 3: Supplementary Supporting Documents

1. Extract from audit instruction showing outline construction plan

Additional BIA components (added during Audit)			
Item provided	Yes/No/NA ²		Comment
7.	Yes		The final construction programme will necessarily come from the main contractor, but tender documents will assume the following timescales. <ul style="list-style-type: none"> • Demolition and site set up: 6 weeks • Basement construction: 5 months • Above ground construction: 14 months
11.	Yes		Letters have been sent to the adjoining owners and a copy of the letter is included with our latest planning submission.
14.	Yes		The basement excavation and works in connection with the proposed development are limited to the basement footprint. Enabling works such as protective hoarding on neighbours' land, if any, would be dealt with under the Party Wall etc Act 1996. The "effect" on neighbouring properties of the basement excavation is assessed in the BIA.

Notes:

¹ NB DP27 also requires consideration of architectural character, impacts on archaeology, amenity and other matters which are not covered by this checklist.

² Where response is 'no' or 'NA', an explanation is required in the Comment section.

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