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8 Agamemnon Road, London NW6 1DY

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12985-31
Revision: D2

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Appendix

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 8 Agamemnon Road, London, NW6 1DY (planning reference 2018/5338/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 reviewed it against an agreed audit checklist.

1.4. The Basement Impact Assessment (BIA) authors have suitable qualifications.

1.5. The building concerned and both neighbouring buildings are not listed properties. The existing property is a terraced three storey house. The proposal involves the extension of a part basement to create a larger, deeper basement extending into the rear garden.

1.6. A site specific ground investigation has been carried out to identify the existing foundation arrangements and the ground conditions have been identified as Made Ground overlying London Clay.

1.7. Reinforced concrete underpin retaining walls and a reinforced concrete slab will be used to form the basement structure. Geotechnical parameters for retaining wall design have been presented.

1.8. Outline permanent and temporary structural drawings confirming dimensions, sequencing and propping arrangements have been provided. An outline construction program has also been provided.

1.9. A ground movement assessment has been produced which identified the impact on the surrounding properties as being Burland Category 0 (Negligible) to Burland Category 1 (Very Slight). This is accepted. However potential damage to the highway and underlying utility assets should be assessed, as applicable.

1.10. An outline movement monitoring strategy has been presented.

1.11. The proposal will result in an increase in the area of hardstanding. SUDS is proposed to mitigate any increase in off-site discharge flow rate to sewers. A drainage scheme should be agreed with Thames Water and LBC. There will be no impact to the wider hydrological environment.

1.12. It is accepted that the proposal does not adversely impact groundwater flow and there will be no hydrogeological impact. However, shallow perched water may be encountered during basement construction which should be appropriately controlled to prevent stability impacts.

1.13. The site is within an area historically known to have flooded from surface water, and groundwater flooding has been reported within 150m of the site. Flood risk mitigation measures are proposed, which should be adopted within the final design.

1.14. It is accepted that there are no ground stability issues associates with slopes.

1.15. Queries and requests for further information are discussed in Section 4 and summarised in Appendix 2. Until the additional information requested is provided, the BIA does not meet the requirements of CPG Basements.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 27th November 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 8 Agamemnon Road, NW6 1DY, reference 2018/5338/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 Basements.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.
- Local Plan 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 *"Change of use from 6 x studio flats and 2 x bedsits to 4 x 2 bed flats; extensions of existing basement, including new front and rear light wells; excavation of existing basement to lower floor by 1.0m; erection of single storey rear extension at ground floor level; erection of front bin store, cycle storage and boundary wall."*

The Audit Instruction confirmed that 133 Arlington Road is a listed building or neighbours a listed building.

2.6. CampbellReith accessed LBC's Planning Portal on 25th July 2018 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment (Redacted)
- Basement Impact Assessment Appendices A and B
- Basement Impact Assessment Appendices B and C (Redacted)
- Basement Impact Assessment Appendices C and D (Redacted)
- Basement Impact Assessment Appendices E F and G (Redacted)
- Basement Impact Assessment Appendix D Environmental Data
- Basement Impact Assessment Appendix E Historic Maps (1)
- Basement Impact Assessment Appendix E Historic Maps
- Design and Access Statement
- Existing Elevations and Sections
- Existing Floor Plans and Block Plan
- Geo-environmental Interpretive Report (Redacted)
- Proposed Elevations and Sections
- Proposed Floor Plans

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	Refer first page of the BIA
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 plan/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	A justification statement is generally provided for 'no' answers
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	A justification statement is generally provided for 'no' answers
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	A justification statement is generally provided for 'no' answers
Is a conceptual model presented?	Yes	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Ground Investigation and Basement Impact assessment.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Ground Investigation and Basement Impact assessment.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Ground Investigation and Basement Impact assessment.
Is factual ground investigation data provided?	Yes	BIA and appendix A
Is monitoring data presented?	Yes	
Is the ground investigation informed by a desk study?	Yes	BIA and appendices B through E
Has a site walkover been undertaken?	Yes	BIA and Appendix A
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Presence of basements not confirmed but neighbouring structures discussed and conservative assumptions made for GMA.
Is a geotechnical interpretation presented?	Yes	BIA and Appendix F
Does the geotechnical interpretation include information on retaining wall design?	Yes	
Are reports on other investigations required by screening and scoping presented?	Yes	
Are the baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	Yes	Assumptions discussed for stability and hydrogeological assessments
Is an Impact Assessment provided?	Yes	

Item	Yes/No/NA	Comment
Are estimates of ground movement and structural impact presented?	Yes	Ground movement assessment provided
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	Structural propping, SUDS, flood risk mitigation measures, temporary groundwater control
Has the need for monitoring during construction been considered?	Yes	Outline strategy provided
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?	No	Nearby services to be identified and potential damage assessed.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	Outline SUDs proposed. Design to be confirmed with Thames Water and LBC.
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	
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA) has been carried out by Chelmer Global Ltd. The authors have suitable qualifications.

4.2. The property forms part of a terraced row of houses, none of which are listed buildings.

4.3. The existing property is described as being a three storey mid terrace house plus an existing partial basement under the front North East portion of the house. The basement is at approximately 1.8m below ground. The construction is not described and is assumed to be load bearing masonry and timber floors. There is evidence of cracking to the front and rear walls of the building.

4.4. The proposal involves the extension of the existing partial basement and the creation of a new basement at approximately 2,900mm below ground level (bgl). The new basement is to occupy the entire footprint of the existing building and extend past the rear line of the building to create a basement and ground floor extension. An outdoor terrace at basement level is to be created in the Southern section of the property.

4.5. A site specific ground investigation has been carried out which consisted of 2no boreholes to a depth of 6m bgl; borehole 1 at the front of the property and borehole 2 at the rear. Four trial pits to determine existing foundation conditions were also carried out. Groundwater was not encountered during the initial visit. Three further monitoring visits were conducted. The shallowest standing water level was measured at 2.47m bgl.

4.6. The underlying ground conditions were identified as Made Ground to depths of between 0.6m to 2.0m bgl, overlaying weathered London Clay to the depth of the investigation.

4.7. Basement retaining wall construction utilising sequenced / hit and miss reinforced concrete underpinning is envisaged in the BIA. Geotechnical parameters for retaining wall design presented.

4.8. The BIA acknowledges the potential for heave due to the basement excavation, which should be reflected in the final basement slab design.

4.9. Outline permanent and temporary structural drawings confirming dimensions, sequencing and propping arrangements have been provided.

4.10. A ground movement assessment has been undertaken to calculate ground movements generated by the proposal and the consequential impact on the immediate neighbouring properties. The impact on all neighbouring building elements is identified as being Burland Category 0 (Negligible) and Burland Category 1 (Very Slight). This is accepted for the

neighbouring properties. However the assessment makes no statement in regard to potential damage to the highway and underlying utility assets, which should be identified and impacts assessed as applicable.

4.11. A movement monitoring proposal is included in the BIA. Appropriate trigger levels and corresponding actions appropriate to the movement figures calculated in the GMA has been suggested. A monitoring strategy should be adopted under the Party Wall Act.

4.12. It is accepted that there are no ground stability issues associated with slopes.

4.13. A construction programme detailing key dates and timelines has been presented.

4.14. The BIA notes that no transport assets are expected to be encountered. Utility assets should be identified and impacts assessed, as applicable (as 4.10).

4.15. The site is directly underlain by the London Clay Formation. This is designated as unproductive strata. No significant groundwater flow is expected to occur beneath the site. However, allowance is made for local perched water and dewatering during construction may be necessary, to maintain stability.

4.16. The proposed terrace at basement level together with the area of decking/paving at ground level, and the 1st floor terrace, increase the impermeable surface area of the site. Options for various SUDs measures that could be used to reduce runoff rates have been presented, in order to meet policy requirements. A drainage scheme should be agreed with Thames Water and LBC. There will be no impact to the wider hydrological environment.

4.17. Although identified as being within an area of low risk for surface water flooding from Environment Agency data, the site is within an area historically known to have flooded from surface water, and groundwater flooding has been reported within 150m of the site. Flood risk mitigation measures are proposed, which should be adopted within the final design.

5.0 CONCLUSIONS

5.1. The Basement Impact Assessment (BIA) authors have suitable qualifications.

5.2. The proposal involves the extension of a part basement to create a larger, deeper basement extending into the rear garden.

5.3. The ground conditions have been identified as Made Ground overlying London Clay.

5.4. Reinforced concrete underpin retaining walls and a reinforced concrete slab will be used to form the basement structure. Outline permanent and temporary structural drawings confirming dimensions, sequencing and propping arrangements have been provided.

5.5. An outline construction program has been provided.

5.6. Suitable methodology showing appropriate temporary propping arrangements has been submitted.

5.7. The impact on the surrounding properties is assessed as being Burland Category 0 (Negligible) to Burland Category 1 (Very Slight). This is accepted.

5.8. Potential damage to the highway and underlying utility assets should be identified and impacts assessed as applicable. Should utility assets be identified, protection requirements should be discussed with the asset owners.

5.9. An outline movement monitoring strategy has been presented.

5.10. It is accepted that the proposal does not adversely impact groundwater flow and there will be no hydrogeological impact

5.11. SUDS is proposed to mitigate any increase in off-site discharge flow rate to sewers. A drainage scheme should be agreed with Thames Water and LBC. There will be no impact to the wider hydrological environment.

5.12. Flood risk mitigation measures are proposed, which should be adopted within the final design.

5.13. Queries and requests for further information are summarised in Appendix 2. Until the additional information requested is provided, the BIA does not meet the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Newman	-	09/12/2018	Structural integrity and flood risk	See Audit paragraphs 4.7 and 4.17
Sussums	-	11/12/2018	Structural integrity	See Audit paragraph 4.7
Brown	-	14/12/2018	Structural integrity	See Audit paragraphs 4.7 to 4.11
Taylor	-	18/12/2018	Structural integrity and flood risk	See Audit paragraphs 4.7 to 4.11 and 4.17

Appendix 2: Audit Query Tracker

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Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Programme	Construction programme detailing key dates and timelines to be submitted.	Closed	12/02/2019
2	Stability	The GMA makes no statement in regard to potential damage to the highway and underlying utility assets, which should be identified and impacts assessed as applicable.	Open	
3	Stability	Outline permanent and temporary structural drawings should be provided, to confirm dimensions, sequencing and propping arrangements.	Closed	12/02/2019

Appendix 3: Supplementary Supporting Documents

None

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