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13 Langland Gardens, NW3 6QD

Basement Impact Assessment Audit

For

London Borough of Camden

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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 13 Langland Gardens, NW3 6QD (planning reference 2015/4547/P). The basement is considered to fall within Category A 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 Taylor Whalley Spyra Consulting Civil and Structural Engineers. The qualifications of the author have not been stated, this should be included in the BIA.

1.5. The proposal is to increase the depth of the existing basement by underpinning the existing footings and carrying out a reduced dig varying between 1.0-2.0m to the entire basement, to allow for the space to be converted into a two bedroom flat. It is also proposed to extend the basement to form two front light wells for use as a bike store. A new concrete retaining wall will be constructed to the rear of the building to allow for the basement to be extended up to 2.23m into the rear garden with the construction of two rear light wells and an extension to the upper ground floor.

1.6. A Ground Movement Assessment (GMA) has not been undertaken. Negligible ground movement estimates have been assumed however a more accurate assessment of the induced ground movements is suggested.

1.7. It is recommended that the impact from the basement excavation and construction on the neighbouring properties be assessed in further detail, in particularly No.11 Langland Gardens which shares the party wall which is to be underpinned and No. 15 Langland Gardens which is within 6m of the proposed basement alternations. Further investigation of the foundations to the surrounding properties is also recommended. Proposals should be put in place for providing a movement monitoring strategy during excavation and construction, to the neighbouring properties and infrastructure. Prediction of the damage category to the neighbouring properties and upper floor flats should also be assessed.

1.8. It is accepted that the street is at low risk of surface water flooding.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 16 December 2015 to carry out a Category A Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 13 Langland Gardens, London, NW3 6QD (planning reference 2015/4547/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) 4: Basements and Lightwells.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.

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.

2.5. The BIA should 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.

2.6. LBC's Audit Instruction described the planning proposal as *"Excavation of the existing basement to create a 2-bed unit including an extension at upper ground level to the rear of the property incorporating new windows to the rear and side elevation and light well to the front."*

2.7. The Audit Instruction also confirmed 13 Langland Gardens does not involve, or neighbour, listed buildings.

2.8. CampbellReith accessed LBC's Planning Portal on 13 January 2016 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment Report (BIA) – Taylor Whalley Spyra dated June 2015
- Planning Application Drawings, dated January 2014, consisting of
  - Location Plan
  - Existing Plans, Sections and Elevations
  - Proposed Plans, Sections and Elevations
- Design & Access Statement dated October 2015
- Planning Comments and Response
- BIA – Letter from TWS with Additional Information dated 7 January 2016

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No	The BIA Author's qualifications have not been stated.
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?	No	Justification has not been provided for all 'No' answers. Q6: Architectural Report referenced but not provided. Q13: No information provided on foundations to neighbouring properties.
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?	No	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	No	BIA does not identify need for scoping; however this is not accepted.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	BIA does not identify need for scoping.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	BIA does not identify need for scoping.
Is factual ground investigation data provided?	No	Limited site investigation in the form of foundation investigation pits has been carried out. Geological information based on desk study.
Is monitoring data presented?	No	No groundwater was noted in trial holes.
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?	No	The impact on neighbouring properties has not been taken into consideration; and the presence/absence of neighbouring basements has not been stated.
Is a geotechnical interpretation presented?	No	
Does the geotechnical interpretation include information on retaining wall design?	No	
Are reports on other investigations required by screening and scoping presented?	No	Screening refers to 'Architectural Report'; this report has not been provided.
Are baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	No	Clarification is required
Is an Impact Assessment provided?	No	

Item	Yes/No/NA	Comment
Are estimates of ground movement and structural impact presented?	No	
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	The need for mitigation has been considered; however a ground movement assessment should be provided to inform the mitigation measures required to the adjoining property.
Has the need for monitoring during construction been considered?	No	Proposals for monitoring of neighbouring properties and infrastructure should be included in the BIA.
Have the residual (after mitigation) impacts been clearly identified?	No	No assessment of the residual impact on neighbouring properties has been considered.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	However, predicted ground movements require further consideration.
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	
Does report state that damage to surrounding buildings will be no worse than Burland Category 2?	No	Limited to the party wall. Predicted damage assessment for all neighbouring properties required.
Are non-technical summaries provided?	No	

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA) has been carried out by Taylor Whalley Spyra Consulting Civil and Structural Engineers. The qualifications of the author have not been stated, therefore it is not known if the author's qualifications are in compliance with the requirements of CPG4.

4.2. The LBC Instruction to proceed with the audit identified that the basement proposal neither involved a listed building nor is adjacent to listed buildings. The Design & Access Statement identified that 13 Langland Gardens is located in the Redington Frognal Conservation Area.

4.3. 13 Langland Gardens is semi-detached house divided into three flats. The upper ground floor flat has direct access to the existing basement, which has a restricted ceiling height. The proposal is to increase the depth of the existing basement by underpinning the existing footings in a 'hit and miss' sequence, installing temporary propping and carrying out a reduced dig varying between 1.0-2.0m to the entire basement. The proposal is to allow for the space to be converted into a two bedroom flat. It is also proposed to extend the basement to form two front light wells with a bike store. A new concrete retaining wall will be constructed to the rear of the building to allow for the basement to be extended up to 2.23m into the rear garden with the construction of two rear light wells and an extension to the upper ground floor.

4.4. Limited site investigations in the form of foundation investigation pits have been carried out to a maximum depth of 2.0m. The BIA states that the pits show Made Ground up to a depth of 0.6m underlain by Claygate Beds. This is in line with local geological maps and British Geological Survey borehole records for the area.

4.5. Trial holes undertaken did not encounter any groundwater. Groundwater monitoring has not been carried out. It is accepted that the proposed basement is unlikely to encounter the groundwater table.

4.6. Claygate Beds have a high shrink-swell potential however this is not deemed to be significant with regard to the proposed works.

4.7. The damage category to the existing building for the proposed development is estimated to be Category 1 on the Burland Damage Scale. Prediction of the damage category to the neighbouring properties and upper floor flats should also be assessed.

4.8. It is noted on the 'Proposed Lower Ground Floor' drawing 13CLANPL100, that a number of columns and walls are to be removed. It is recommended that a review of these superstructure alterations be undertaken, to assess their impact on the existing foundation loadings.

4.9. It is accepted that the street is at low risk of surface water flooding. It is noted that according to the Camden Geological, Hydrogeological and Hydrological Study Flood Map, the street flooded in 1975 but not in 2002. The BIA states that within Camden Flood Risk Management Strategy that works by Thames Water have been undertaken to alleviate flood risk within this area. The EA flood plan also confirms that the property is in an area of low to medium risk with no specific local issues highlighted.

4.10. It is recommended that the impact from the basement excavation and construction on the neighbouring properties be assessed in further detail, in particularly No.11 Langland Gardens which shares the party wall which is to be underpinned and No. 15 Langland Gardens which is within 6m of the proposed basement alternations. Further investigation of the foundations to the surrounding properties is also recommended. Proposals should be put in place for providing a movement monitoring strategy during excavation and construction, to the neighbouring properties.

4.11. It is accepted that there are no slope stability concerns regarding the proposed development.

4.12. It is accepted that any increase in hardstanding will be negligible and is unlikely to affect the adjacent properties and will not impact the wider hydrogeology of the area.

4.13. Indicative calculations and associated temporary works for the retaining wall design to the lightwells should be submitted with the BIA.

5.0 CONCLUSIONS

5.1. The Basement Impact Assessment (BIA) has been carried out by Taylor Whalley Spyra Consulting Civil and Structural Engineers. The qualifications of the author should be included within the BIA. The author(s) qualifications should be in compliance with the requirements of CPG4.

5.2. The BIA states that the underpins will be founded in the Claygate Beds.

5.3. The Claygate Beds have a high shrink-swell potential however this is not deemed to be significant with regard to the proposed works.

5.4. It is accepted that the proposed basement is unlikely to encounter the groundwater table.

5.5. Prediction of the damage category to the neighbouring properties, upper floor flats and adjoining infrastructure should also be untaken for inclusion in the BIA. No proposals are provided for a movement monitoring strategy during excavation and construction, this should be rectified.

5.6. It is recommended that the impact from the basement excavation and construction on the neighbouring properties be assessed in further detail. Further investigation of the foundations to the surrounding properties is also recommended. Proposals should be put in place for providing a movement monitoring strategy during excavation and construction, to the neighbouring properties.

5.7. Indicative calculations and associated temporary works for the retaining wall design to the lightwells should be submitted with the BIA.

5.8. It is recommended that a review of the superstructure alterations at lower ground floor be undertaken, to assess the impact of these alterations on the existing foundation loadings.

5.9. It is accepted that the street is at low risk of surface water flooding.

5.10. It is accepted that there are no slope stability concerns regarding the proposed development.

5.11. It is accepted that any increase in hardstanding will be negligible and is unlikely to affect the adjacent properties and will not impact the wider hydrogeology of the area.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Chung	15 Langland Gardens, NW3	10/12/15	Subsidence and damp Potential damage to adjoining buildings	Further information required with respect to building damage assessment and temporary and permanent works. The proposed development is unlikely to encounter the groundwater table hence the proposed works will not impact the wider hydrogeology of the area.
The Heath & Hampstead Society	NW3 1XD	3/11/15	Subsoil Problems	The existing and proposed foundations are founded in the Claygate Beds. The proposed underpinning is unlikely to encounter the groundwater table. The Claygate Beds have a high shrink-swell potential however this is not significant with regard to the proposed works. There are no slope stability concerns regarding the proposed development.
The Heath & Hampstead Society	NW3 1XD	3/11/15	Flooding	The street is at low risk of surface water flooding. It is noted that according to the Camden Geological, Hydrogeological and Hydrological Study Flood Map that the street flooded in 1975 but not in 2002. The BIA states that within Camden Flood Risk Management Strategy that works by Thames Water have been undertaken to alleviate flood risk within this area. The EA flood plan also confirms that the property is in an area of low to medium risk with no specific local issues highlighted.
The Heath & Hampstead Society	NW3 1XD	3/11/15	Potential damage to adjoining buildings	Refer to similar comment above.

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	BIA	Qualifications of the BIA author	Open	
2	Stability	Damage Category Assessment for neighbouring properties within 6.0m of the proposed development.	Open	
3	Stability	Movement Monitoring Strategy to neighbouring properties and upper floor flats to be provided.	Open	
4	Stability	Indicative calculations and associated temporary works for the retaining wall design to the lightwells should be submitted.	Open	
5	Stability	Assessment of superstructure alterations on existing foundation loadings	Open	

Appendix 3: Supplementary Supporting Documents

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