

30 Glenilla Road  
London, NW3 4AN

Basement Impact Assessment  
Audit

For  
London Borough of Camden

Project Number: 12727-73  
Revision: D2

June 2018

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### Document Details

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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 (BIA) submitted as part of the Planning Submission documentation for 30 Glenilla Road (Camden planning reference 2018/0932/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 check list.
- 1.4. The qualifications of the individuals involved in the BIA meet Camden Planning Guidance requirements.
- 1.5. It is stated the basement is to be constructed using a secant piled wall and sketches indicating the construction sequence were included in the CMS.
- 1.6. Contradictory information was given in the BIA on the increase in the area of hardstanding and it is requested this be made consistent. This issue is still not addressed.
- 1.7. The revised CMS concludes the risk of flooding is low as discussed in Section 4. Evidence has not been provided to support this conclusion and this is requested.
- 1.8. An outline drainage strategy has not been presented as requested following the initial audit.
- 1.9. The presence or absence of basements beneath the neighbouring properties has been confirmed in the revised documents as requested.
- 1.10. It was requested that a utilities search be undertaken to allow an assessment of the potential impact of the proposals to be made. This issue has not been addressed.
- 1.11. The BIA identifies the presence of trees within the site although it is stated these would not be affected by the construction proposals which is confirmed in the arboricultural assessment.
- 1.12. The GMA still does not reflect the proposed construction methodology and is to be reassessed as discussed in Section 4.
- 1.13. An outline monitoring strategy with trigger levels based on the updated GMA are requested as previously requested following the initial audit.

- 1.14. It is accepted that there are no slope stability concerns regarding the basement development.
- 1.15. Queries and requests for information are summarised in Appendix 2. Until the additional information and further assessments requested are presented, the BIA does not meet the requirements of the Camden Planning Guidance.

## 2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 30 Glenilla Road, London NW3 4AN (Reference: 2018/0932/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 2018.
  - 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,
  - d) 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 *"Demolition of existing dwelling house and erection of four storey replacement dwelling house with single storey basement and associated hard and soft landscaping works, including erection of garden room to rear and bin store to front of property."*
- 2.6. The audit instruction also confirmed that the proposal does not involve any listed building.
- 2.7. CampbellReith accessed LBC's Planning Portal on 2 May 2018 and gained access to the following relevant documents for audit purposes:

- Construction Method Statement/Basement Impact Assessment Report (BIA) by Davis Maguire (DMAG-1650-CMS), dated February 2018.
- Desk Study & Ground Investigation Report by GEA Ltd (Ref. J17299), dated February 2018.
- Ben Adam’s Architects Planning Application drawings:
  - Proposed site plan and ground floor (P004/A)
  - Proposed basement plan (P199)
  - Proposed ground floor plan (P200)
  - Proposed section A-A (P500)
  - Proposed section B-B (P501)
  - Proposed north east Elevation (P400)
  - Proposed south elevation (P403)
  - Proposed north west Elevation (P401)
  - Proposed south east Elevation (P402)
  - Existing section A-A (P130/A)
  - Existing ground floor plan (P100/A)
  - Existing north west elevation (P121/A)
  - Existing north east elevation (P120/A)
  - Existing south west elevation (P123/A)
  - Existing south east elevation (P122/A)
- Design and access statement (Ben Adams Architects, 17-058, February 2018)
- Arboricultural Assessment (Arboricultural Solutions LLP, November 2016)

2.8. The following documents were updated in response to the queries raised and comments on the initial audit. These were received via email from the planning officer on 10 June 2018. The documents are available on the planning portal and have therefore not been included on Appendix 3.

- Desk Study & Ground Investigation Report by GEA Ltd (Ref. J17299), dated 8 June 2018 (Issue No 2).
- Construction Method Statement/Basement Impact Assessment Report (BIA) by Davis Maguire (DMAG-1650-CMS), dated June 2018 (Revision PO3).

### 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	GEA document control. See Audit paragraph 4.1.
Is data required by Cl.233 of the GSD presented?	No	Some of the information provided in GEA report, however, utilities search not undertaken.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	Maps correctly indicating site the site location are now included in the revised Davies Maguire CMS (see Audit paragraph 4.8)
Are suitable plan/maps included?	Yes	Maps correctly indicating site the site location are now included in the revised Davies Maguire CMS.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	As above.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Section 3.1.1 of the GEA initial report made reference to some of the relevant maps but these were not included. Some of these maps are included in the CMS.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	It was stated in Section 3.1.1 of the initial GEA report that the development will result in a change in the proportion of hard surfaced areas. A contradictory response is given in the Surface Flow and Flooding Screening Assessment (see Audit paragraph 4.7) and this has not been addressed.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	As above (see Audit paragraph 4.7).
Is a conceptual model presented?	Yes	Section 7 of the GEA report presents a summary of the ground conditions.



Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.1 of the GEA report.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Section 4.1 of the GEA report.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	Contradictory/incorrect response to Q4 (see Audit paragraph 4.7) which is still not addressed.
Is factual ground investigation data provided?	Yes	GEA report Appendix.
Is monitoring data presented?	Yes	Section 5.4 of the GEA report.
Is the ground investigation informed by a desk study?	Yes	Desk study information presented in Section 2 of the GEA report.
Has a site walkover been undertaken?	Yes	Section 2.1 of the GEA report.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Section 4.5.1 of the revised CMS states No 32 does not comprise a basement with No 28 indicated to include a single storey basement (see Audit paragraph 4.12).
Is a geotechnical interpretation presented?	Yes	Section 8 of the GEA report.
Does the geotechnical interpretation include information on retaining wall design?	Yes	Section 8.1.1 of the GEA report.
Are reports on other investigations required by screening and scoping presented?	No	The BIA identified the need for a Flood Risk Assessment (FRA) and a surface water drainage strategy, however, these are not presented.
Are the baseline conditions described, based on the GSD?	Yes	Presence or absence of neighbouring property basements has now been confirmed following a request on the initial audit report.
Do the base line conditions consider adjacent or nearby basements?	Yes	As above.
Is an Impact Assessment provided?	Yes	Section 10 of the GEA report.

Item	Yes/No/NA	Comment
Are estimates of ground movement and structural impact presented?	Yes	Section 9 of the GEA report, however the assessment does not reflect the proposed construction methodology.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	No	Potential need for a FRA identified but report not presented.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Mentioned in the BIA that this needs consideration, however, not all potential issues have been adequately addressed (see Audit paragraphs 4.11 and 4.17).
Has the need for monitoring during construction been considered?	No	The need for monitoring is briefly mentioned in Section 9.3.2 of the GEA report, however, outline proposals still not presented (see Audit paragraph 4.18).
Have the residual (after mitigation) impacts been clearly identified?	Yes	Section 11 of the GEA report, however FRA not undertaken.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	GMA has been revised, however, this still does not reflect the proposed development (see Audit paragraph 4.16 and 4.17)
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	Not demonstrated (see Audit paragraph 4.9).
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	As above.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	No	Category 2 damage indicated for the front wall to 28b Glenilla Road (see Audit paragraph 4.17).
Are non-technical summaries provided?	Yes	GEA report.

## 4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) was undertaken by GEA and the individuals involved hold CEng MICE, CGeol and CWEM MCIWEM qualifications. A construction method statement (CMS) undertaken by Davies Maguire Ltd is presented and the reviewer holds CEng MIStructE qualifications.
- 4.2. The initial GEA report made reference to CPG4: Basements and Lightwells together with the Local Plan (2017) and other guidance documents. It was noted in the initial audit that CPG4 is superseded by Camden Policy Guidance: Basements March 2018 and any future revisions should make reference to this. This has been addressed in the revised documents.
- 4.3. The main BIA was prepared by GEA with the CMS undertaken by Davies Maguire. Following the initial audit, it was requested that the documents be made consistent with each other. The construction methodology in the GEA GMA is inconsistent with other sections of the report and the CMS. This is further discussed below.
- 4.4. The site comprises a two storey detached residential structure with a garden at the rear. The proposed development includes the demolition of existing building and erection of a four storey building with a single storey basement. The depth of excavation is indicated to be 3.40m and the basement is indicated to be constructed using a secant pile wall.
- 4.5. A ground investigation undertaken by GEA Ltd identified Made Ground to a maximum 2.50m bgl underlain by Superficial Deposits described as clay to up to 4.00m bgl overlying the London Clay which was proven to 20m bgl. Groundwater was monitored at c. 0.70m which is within the proposed basement depth.
- 4.6. Groundwater monitoring was undertaken on a single occasion recording the shallowest groundwater levels to be within the Head Deposits at 0.73m bgl at the rear of the house. The screening assessment ruled out groundwater as a potential issues, however, it is stated in the conclusions that *'it may be prudent to carry out a rising head test within the existing standpipes to confirm the likely inflow rate. Shallow inflows of localised perched water are likely to be encountered from within the made ground, which should be adequately controlled through sump pumping [...] It would be prudent to carry out trial pits on the site once the existing house has been demolished to provide further information about the existing groundwater regime [...]'*.
- 4.7. Contradictory information was given on the hydrogeology and hydrology screening assessments. The former stated that there will be an increase in the area of hardstanding whilst it was stated on the latter that there will be no increase. Although the BIA identified the need for a Flood

Risk Assessment (FRA) as discussed below, it was requested that this information be made consistent following the initial audit. This issue is still not addressed.

- 4.8. Although some of the relevant figures/maps from the Arup GSD and other guidance documents were referenced in the initial GEA report, these are not included with the site location indicated to support the statements made in the screening assessments. Nevertheless, the responses are considered to be largely valid. The Davies Maguire report previously included flood risk maps which did not correctly identify the location of the site. This has now been addressed as requested.
- 4.9. The initial BIA confirmed that the proposed development will result in a change in the proportion of hard surface/paved areas that could result in a decreased recharge to the underlying ground and an increase in surface water run-off. The report identified the potential need for a Flood Risk Assessment to be undertaken. The risk of flooding was further assessed Construction Method Statement (CMS) which concluded that this was not required, however, the maps included did not correctly identify the site.
- 4.10. The updated CMS now includes maps which correctly identify the site. No 28, one of the neighbouring properties is indicated to be located in an area of high risk for surface water flooding, although the site itself is not. It should be noted the boundaries of these areas are not exact. The CMS states that the driveway to No 30 is at a similar level to the highway unlike No 28 which has a downward sloping drive which accounts for the high flood risk indicated. A topographic survey has not been presented however to support this statement. The site is not indicated to be susceptible to any other type of flooding.
- 4.11. An outline drainage strategy which was previously requested has not been presented. It is stated in Section 5.8 of the report that initial checks regarding the surface water run-off rate have been undertaken and that a Thames Water pre-development application is recommended to allow Thames Water to determine if the sewer network has sufficient capacity.
- 4.12. Following the initial audit, it was requested that the presence or absence of basements beneath the neighbouring properties and the depths of these where present be confirmed. Section 4.5.1 of the revised CMS states No 32 does not comprise a basement with No 28 indicated to include a single storey basement.
- 4.13. Section 3.4 of the CMS states no LUL infrastructure is present within the vicinity of the site, however, a utilities search does not appear to have been undertaken. A utilities search should be undertaken to allow an assessment of the potential impact of the proposals to be undertaken.

- 4.14. It is stated in the BIA and CMS that although trees are present within the site, these would not be affected by the construction proposals. One tree has been recommended for removal due to its poor condition, while the rest of the trees surveyed can be retained with tree protection installed.
- 4.15. Outline structural proposals were presented on sketches which also indicate temporary propping in the initial CMS. Outline calculations or details including the proposed wall depth were however not included. The revised GEA report text indicates 450mm piles extending to 6m depth, however, the analysis is inconsistent as discussed below.
- 4.16. A Ground Movement Assessment (GMA) was undertaken by GEA Ltd, however, this was based on reinforced concrete walls rather than the secant piled wall indicated in the CMS. It was requested that a revised GMA based on the proposed construction methodology and taking into consideration the structural proposals (such as whether vertical loads are to be supported on the wall) be presented.
- 4.17. A revised GMA has been presented in the GEA report, however, this is still inconsistent. The CMS and the GEA report text indicate a secant piled wall, however, the ground movement analysis undertaken using Oasys Xdisp for the installation movements indicates a contiguous wall. Additionally Category 2 (slight) damage is indicated for one of the walls to No 28b. Camden Planning Guidance basement documents requires damage to be limited to Category 1.
- 4.18. The need for movement monitoring was considered in the GMA output, however outline proposals with trigger levels were not presented. This is still not provided despite being requested following the initial audit.
- 4.19. An indicative works programme is now included as required by the planning guidance. A detailed programme should be submitted by the appointed contractor at a later date.
- 4.20. It is accepted that there are no slope stability concerns regarding the basement development.

## **5.0 CONCLUSIONS**

- 5.1. The qualifications of the individuals involved in the BIA meet Camden Planning Guidance requirements.
- 5.2. It is stated the basement is to be constructed using a secant piled wall and sketches indicating the construction sequence were included in the CMS.
- 5.3. Contradictory information was given in the BIA on the issue of an increase in the area of hardstanding and it is requested this be made consistent. This issue is still not addressed.
- 5.4. The revised CMS concludes the risk of flooding is low as discussed in Section 4. However, a topographic survey has not been presented to support this statement. An outline drainage strategy has not been presented as requested following the initial audit.
- 5.5. The presence or absence of basements beneath the neighbouring properties have been confirmed in the revised documents as requested.
- 5.6. A utilities search should be undertaken to allow an assessment of the potential impact of the proposals to be undertaken.
- 5.7. The BIA identifies the presence of trees within the site although it is stated these would not be affected by the construction proposals which is confirmed in the arboricultural assessment.
- 5.8. The GMA still does not reflect the proposed construction methodology and is to be reassessed.
- 5.9. An outline monitoring strategy with trigger levels based on the updated GMA are requested as previously stated in the initial audit.
- 5.10. It is accepted that there are no slope stability concerns regarding the basement development.
- 5.11. Queries and requests for information are summarised in Appendix 2. Until the additional information and further assessments requested are presented, the BIA does not meet the requirements of the Camden Planning Guidance.

## **Appendix 1: Residents' Consultation Comments**

None

## **Appendix 2: Audit Query Tracker**



Audit Query Tracker\*

Query No	Subject	Query	Status	Date closed out
1	BIA format	Planning guidance referenced in the BIA superseded.	Closed - Current Planning guidance now correctly referenced. See Audit paragraph 4.2.	27/06/18
2	BIA format	Outline construction programme not presented.	Closed - Presented in revised CMS. See Audit paragraph 4.19.	27/06/18
3	BIA format/hydrology/hydrogeology.	Contradictory information on the increase in paved areas.	Open – to be made consistent as per Audit paragraph 4.7 as previously requested.	
4	BIA format	Utility search not undertaken.	Open – to be undertaken to allow impacts to be assessed.	
5	Hydrology	Site incorrectly identified on flood risk maps, no FRA and drainage strategy.	Maps identifying correct site location now included. Flood risk assessed in updated CMS.  Open- Topographic survey to be provide to support conclusions relating to surface water flood risk. Drainage strategy still not included.	
6	Stability	No outline retaining wall calculations.	Open – Preliminary retaining wall design included as part of GMA however this is inconsistent with proposals. See Audit paragraph 4.15.	
7	Stability	GMA not based on proposed construction methodology. Revised GMA should be provided.	Open - GMA updated but still inconsistent with proposals. Damage category exceeds limits of Camden Planning Guidance. See Audit paragraph 4.16 and 4.17.	
8	Stability	Monitoring proposal.	Open – Outline proposal with trigger values based on updated GMA to be presented. See Audit paragraph 4.18.	

\* Please provide complete and clear responses to the queries/comments summarised above and discussed in Section 4. Where the supporting documents are updated or revised, please provide a covering email or letter to indicate these sections.

### **Appendix 3: Supplementary Supporting Documents**

None

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