London Borough of Camden

61 Bayham Place
London, NW1 0ET

ASSESSMENT OF DOCUMENTATION SUBMITTED TO SUPPORT PLANNING APPLICATION 2014/6837/P

April 2015

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London Borough of Camden.

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1. Introduction

A planning application has been submitted to London Borough of Camden for the redevelopment of 61 Bayham Place, NW1 0ET, to include construction of a basement under the existing structure. Supporting documentation has been submitted with the application, including a Basement Impact Assessment (BIA) report.

London Borough of Camden (LBC) has commissioned Geotechnical Consulting Group LLP (GCG) to undertake a review of the documentation submitted in support of the planning application to confirm whether it meets the requirements of the planning process. GCG are also to review the objections raised against the scheme by local residents and establish whether these raise reasonable concerns that need to be addressed prior to award of planning permission, or require specific measures or methodologies to be implemented after planning permission is granted.

All information and documentation has been provided by LBC, either directly, or by reference to LBC documentation and application details available from the Council's website.

2. Documentation

The principal documentation submitted as part of the planning application and subject to review includes the following:

- Basement Impact Assessment for 61 Bayham Place, London NW1 0ET. Issue 2. Dated 15 October 2014. By Ellis & Moore consulting engineers.

The full list of documents supporting the BIA submission reviewed is provided in the reference list at the end of this report.

The following LBC documents were referred to, to form the basis of the review of the planning submission documents:

- Camden geological, hydrogeological and hydrological study; Guidance for subterranean development, Issue 01, November 2010 ('The Arup Report').

- Camden Planning Guidance, basements and lightwells, CPG4, 2013.

- Camden Development Policy DP27: Basements and lightwells.

3. Review Requirements

The review requirements were defined in the instruction issued by LBC as to determine whether:

1. the submission contains a Basement Impact Assessment, which has been prepared in accordance with the processes and procedures set out in Camden Planning Guidance 4, 2013.

2. the methodologies have been appropriate to the scale of the proposals and the nature of the site;

3. the conclusions have been arrived at based on all necessary and reasonable evidence and considerations, in a reliable, transparent manner, by suitably qualified professionals, with sufficient attention paid to risk assessment and use of conservative engineering values/estimates;

4. the conclusions are sufficiently robust and accurate and are accompanied by sufficiently detailed amelioration/mitigation measures to ensure that the grant of planning permission would accord with DP27, in respect of

    a. maintaining the structural stability of the building and any neighbouring properties;

    b. avoiding adverse impact on drainage and run-off or causing other damage to the water environment; and

    c. avoiding cumulative impacts on structural stability or the water environment in the local area.

4. Basement Impact Assessment (BIA)

The requirements of a BIA are set out in CPG4 and fully detailed in Section 6 of the 'Arup Report'. A BIA requires five Stages, as follows:

- Stage 1 – Screening
- Stage 2 – Scoping
- Stage 3 – Site Investigation and study
- Stage 4 – Impact assessment
- Stage 5 – Review and decision making (undertaken by LBC).

Stage 1 is where matters of concern are investigated and the requirement for a full BIA is established. Three main issues are required to be considered: surface flow and flooding, slope stability, and subterranean flow. Each of these issues is covered by a separate screening flowchart (included as Figures 1 to 3 in CPG4) to assist the screening process, whereby a series of questions are posed regarding the site and the proposed development.

The BIA states that a Stage 1 screening has been undertaken, but only the answers to the subterranean flow screening chart are included within the document. Based on these answers, it is stated that "a BIA is necessary because of groundwater potential".

The BIA does not include answers to the slope stability screening flowchart or the surface flow and flooding screening flowchart.

CPG4, clause 2.15 states "At the screening stage you will clearly need to set out why or why not a full BIA is required. This will need to include an assessment against the flowcharts below and be presented along with the information set out at the end of Paragraph 233 of the Camden Geological, Hydrogeological and Hydrological Study."

While the applicant has clearly stated that a BIA is required due to "groundwater potential", there is no evidence that an assessment against the other flowcharts has been completed. It is therefore considered that the BIA does not conform to the requirements of CPG4.

Stage 2 requires that the potential impacts of each of the matters of concern from Stage 1 be identified.

The only issue of concern identified from the subterranean flow flowchart is that the proposed basement may extend beneath the water table. A number of other issues are also discussed, which suggest that the surface flow and flooding flowchart and the slope stability flowchart were reviewed, but it is not demonstrated that all of the issues in the three flow charts have been properly assessed.

Stage 2 of the assessment is therefore present, but is considered to be deficient.

Stage 3 of the BIA process requires site investigation and study. The 'Arup Report' provides guidelines on the scope of the site investigation, with the recommendation that it follows a multi-stage approach of Desk Study, intrusive investigation, monitoring, reporting and interpretation.

The BIA includes a site investigation report, completed by Ground Engineering Limited, dated September 2014. This includes a desk study and reporting on intrusive site investigation works undertaken as part of the proposed development. The scope of the intrusive investigations is very limited, and significantly less than that recommended within the 'Arup Report'. However, given the restricted nature of the site and the limited scale of the development, the scope of the site investigation works undertaken appears to be generally adequate. It is noted, though, that the groundwater monitoring consists of only the observation made during boring and a single post-fieldworks monitoring result. This is inadequate for determining seasonal variation, and since the reading was made in September, is likely showing approximately the seasonal minimum level. Despite this, given the reported geology, significant inflows of groundwater seem unlikely and local dewatering is anticipated to be an adequate and suitable solution.

It is concluded that the BIA does contain a Stage 3 – Site investigation and study, which is adequate for the proposed works, and so in this respect the BIA complies with the requirements of CPG4. Although the BIA site investigation does not comply fully with the guidance in the 'Arup Report', the small scale of the site and the development mean that it is adequate.

Stage 4 of the BIA process requires an impact assessment, whereby the direct and indirect implications of the proposed project are evaluated. This is intended to address those issues identified in the scoping stage.

The information included within the Stage 4 section of the BIA instead provides basic details of construction methodology. There is no impact assessment provided. The BIA does feature a 'conclusions' section where impacts of the proposed works are referred to, and stated as being insignificant. However, there is no documentation to back up these conclusions.

It is concluded that the BIA is insufficient to meet the requirements of CPG4.

5. Assessment of methodology

The proposed works involve the formation of a new basement by means of the installation of underpins through the Made Ground into the London Clay. Typically, this is an appropriate methodology for the scale and form of the proposed development within the ground conditions present at the site.

It is stated that the underpins are to be reinforced concrete pins, constructed in an 'L'-shape, such that they include a starter section of the basement slab. The BIA states that "the excavation will require adequate propping" with the use of sacrificial steel sheets at the rear of the excavation. A Construction Management Plan is include as part of the submission documents; this provides further details of sequencing of the works, and confirms that the structure and newly constructed underpins will be well propped throughout the works.

The methodology is appropriate to the scale of the proposed development and the nature of the site.

6. Basis of BIA conclusions

The conclusions of the BIA have not been obtained in a reliable and transparent manner: two of the three flow charts are not specifically considered and presented within the BIA. It is therefore not possible to confirm whether the conclusions drawn are correct or not.

The BIA has been authored by a named individual author, whose listed professional qualifications (CEng, MICE) meet the requirements for the land stability assessment and the surface flow and flooding assessment, although since the author is also MIStructE, it might be queried as to whether he has the specialism in flood risk management and surface water drainage required for surface flow and flooding. However, the author does not meet the requirements for an individual completing the groundwater flow assessment, which is the only one of the three flow charts to be included in the BIA. CPG4 (clause 2.11) requires that "At each stage in the process the person(s) undertaking the BIA process on your behalf should hold qualifications relevant to the matters being considered", and then goes on to state the requirements.

7. Requirements of DP27

Camden Development Policy DP27 refers to "larger schemes, where the basement development extends beyond the footprint of the original building or is deeper than one full storey below ground level (approximately 3 metres in depth)". The BIA states that the basement is to be constructed to the footprint of the existing property and is to be a single level basement (approximately 3m deep: 2.78m clear height shown for the basement living space). Hence the requirements of 'larger schemes' do not apply. Instead, the submission may be classified as a 'smaller scheme' which "will be expected to submit information which relates to any specific concerns for that particular scheme or location".

Stage 1 of the submitted BIA indicates that the only issues are those connected with sub-surface flow. This issue is addressed in a fragmentary fashion throughout the BIA, with Stage 4 and drawing 14946/SCH/043 (included as part of the BIA) indicating that local dewatering will be used as required, while in the conclusion of the BIA it is stated that the new works will impose no restrictions on the flow of groundwater. While the information related to subterranean flow is thus presented in a disjointed fashion, it is considered that the conclusion that sub-surface flow will not be significantly impacted by the scheme, nor have a significant impact on the scheme, is valid.

There is no ground movement assessment and hence no assessment of potential damage to 61 Bayham Place or the neighbouring structures. Since the proposals involve underpinning of party walls, there is a clear potential for ground movements to directly affect neighbouring properties, and this appears to be the most significant issue associated with the proposed basement excavation. The conclusions of the BIA acknowledge the "possibility that as a result of the work there will be some minor cracking in the existing building", but do not specifically address potential damage of the neighbouring buildings. It is stated that "there should be no residual issues affecting the property or the land surrounding the building", but there is no justification to support this statement.

Due to the absence of a ground movement / damage assessment for the neighbouring structures, it is considered that the requirements of DP27 are not met.

8. Neighbours' concerns

A single respondent's objection is present on the planning portal page for this scheme. In relation to the proposed basement, the objection is based on generic concerns regarding possible ground movements and resulting building damage. As noted above, these are valid concerns, and should be addressed by an appropriate movement / damage assessment.

9. Assessment and Recommendations

It is considered that the submitted documentation fails to comply with CPG4 and DP27, and that a number of significant issues should be addressed before the planning process should progress.

1. To comply with the requirements of CPG4, all three flow charts need to be completed and included within Stage 1 of the BIA. Any 'issues of concern'

identified from the flow charts need to be specifically addressed in Stage 2 of the BIA.
2. To comply with the requirements of CPG4, the BIA needs to be authored or checked by individuals that between them meet all of the professional qualification requirements.
3. To comply with DP27, a ground movement / building damage assessment needs to be undertaken to demonstrate what impact the scheme is predicted to have on the neighbouring buildings.

10. Conclusion

GCG were appointed by London Borough of Camden to review Basement Impact Assessment documentation relating to planning application 2014/6837/P for 61 Bayham Place NW1 0ET, to determine compliance with the requirements of CPG4 and DP27.

Geotechnically, the proposed scheme appears viable, with an appropriate general methodology for construction having been selected. However, the submitted BIA fails to include all the details required as part of Stage 1, which potentially also renders Stage 2 unsound. Also, the author of the BIA lacks some of the professional qualifications required.

The BIA fails to address issues of ground movement and building damage of the surrounding structures. The proposed scale and methodology of works are typical of such works being successfully undertaken in London. Hence, movements are anticipated to be small, with resulting damage anticipated to be tolerable. However, an estimate of movement and damage should be undertaken to confirm this, and to provide a benchmark against which actual ground movements that occur during the works can be compared, so that the works can be well controlled.

It is considered that the application is currently not compliant with CPG4 and DP27.

Recommendations are made as to the minimum additional works and documentation required to achieve compliance with the planning documents' BIA requirements.

This report was completed by Dr Phil Smith on behalf of GCG LLP; the report was peer reviewed by Dr Gary Choy and Dr Jackie Skipper, both of GCG.

The author's and reviewers' technical and professional qualifications are as follows:

Phil Smith: BEng, MSc, PhD, DIC

Gary Choy: BEng, PhD, CEng, MICE

Jackie Skipper: BSc, PhD, DIC, CGeol, FGS.

11. References

The following documentation was reviewed:

Information submitted by the applicant to LBC, and downloaded from the LBC 'planning portal' website or provided directly by LBC to GCG:

- Basement Impact Assessment for 61 Bayham Place, London NW1 0ET. Issue 2. Dated 15 October 2014. By Ellis & Moore consulting Engineers.
- Design and Access Statement. 61 Bayham Place, Camden, London NW1 0ET. 18th November 2014. By TD Arch Chartered Architects. Reference 1767.DAS.
- Construction Management Plan: 61 Bayham Place, Camden NW1. By TD Arch Chartered Architects. Undated.
- Site Investigation Report, 61 Bayham Place, London NW1. Report Reference No. C13359. Dated September 2014. By Ground Engineering Limited.

List of drawings reviewed:

- 1767-EX-01: Existing Plans, Elevations and Section (dated 18 September 2014)
- 1767-P-01: Proposed Basement and Ground Floor (dated 25 September 2014)
- 1767-P-02A: Proposed First Floor and Roof Plan (Revision A dated 19 November 2014)
- 1767-P-05A: Proposed Section AA (Revision A dated 19 November 2014)
- 1767-P-01: Proposed Basement and Ground Floor (dated 25 September 2014)
- 1767-P-01: Proposed Basement and Ground Floor (dated 25 September 2014)

Objections to the scheme:

The consultation responses present on the 'planning portal' website were reviewed.

Additional documentation reviewed:

- Camden geological, hydrogeological and hydrological study; Guidance for subterranean development, Issue 01, November 2010 ('The Arup Report').
- Camden Planning Guidance, basements and lightwells, CPG4, 2013.
- Camden Development Policy DP27: Basements and lightwells. (Camden Development Policies 2010-2025).