

**London Borough of Camden**

**3 Park Village West  
London, NW1 4AE**

**ASSESSMENT OF DOCUMENTATION SUBMITTED  
TO SUPPORT PLANNING APPLICATION 2012/5182/P**

**June 2013**



**Geotechnical Consulting Group  
52A Cromwell Road, London SW7 5BE  
Tel: +44 (0) 2075818348  
Fax: +44 (0) 2075840157  
Web: [www.gcg.co.uk](http://www.gcg.co.uk)**

**London Borough of Camden.****3 Park Village West, NW1 4AE****Assessment of documentation submitted to support planning application  
2012/5182/P****June 2013****TABLE OF CONTENT**

1. Introduction.....	2
2. Documentation.....	2
3. Review Requirements.....	3
4. Basement Impact Assessment (BIA).....	4
4.1. Assessment of methodology.....	6
4.2. Requirements of DP27.....	6
5. Compliance with requirements.....	7
6. Neighbours' concerns.....	7
7. Review requirements in relation to objections.....	8
8. Conclusion.....	9
9. References.....	11

*This report (as well as any letters, information, opinions and advice provided to you) is the sole property of Geotechnical Consulting Group LLP and is and must remain strictly private and confidential at all times. The possession of this document does not, in any manner, constitute a right to reproduce or disclose the whole or any part of it to any third party. Neither the report nor any information contained in it should be used by anyone other than London Borough of Camden and can only be used by London Borough of Camden for the purpose for which it was originally proposed. Geotechnical Consulting Group LLP is not responsible for information used in this report which has been supplied to it by London Borough of Camden or any other third party. This report does not constitute or represent verification for purpose. The report should not be reproduced (in whole or in part), referred to in any other document or made available to any third party (in any format) without the prior written consent of Geotechnical Consulting Group LLP.*

**London Borough of Camden.**

**3 Park Village West, NW1 4AE**

**Independent assessment of documentation submitted to support planning application 2012/5182/P**

**June 2013**

**1. Introduction**

A planning application has been submitted to London Borough of Camden for the creation of a new basement and various other works at 3 Park Village West, London NW1 4AE. Supporting documentation has been submitted with the application, including a Basement Impact Assessment report and an Addendum to Basement Impact Assessment report. Objections to the proposals have been raised by neighbours, in the form of two technical reports which have been prepared and submitted to the planning authority.

London Borough of Camden (LBC) have 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, and to review the objections raised, to establish whether these are reasonable, and whether the planning applicant has put in place adequate measures to address these issues.

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

- Design and access statement. 3 Park Village West, produced by Belsize architects. (Undated).
- 3 Park Village West London NW1 4AE. Basement Impact Assessment Report, GB/8409-BIA-Version 2.0. Dated September 2012. Produced by Taylor Whalley Spyra.
- 3 Park Village West London NW1 4AE. Addendum to Basement Impact Assessment Report, GB/8409-BIA\_ADDENDUM-Version 1.0. Dated January 2013. Produced by Taylor Whalley Spyra.

The following documents submitted in opposition to the proposed scheme were reviewed:

- 3 Park Village West London NW1 4AE. Review of planning application 2012/5182/P to Camden Council with respect to Camden development Policy DP27. Report reference G1212-RP-01-E1. Edition E1 dated 23/11/12. Produced by Eldred Geotechnics Ltd.
- 3 Park Village West London NW1 4AE. Review of planning application 2012/5182/P to Camden Council with respect to Camden development Policy DP27. Report reference G1212-RP-02-E1. Edition E1 dated 08/02/13. Produced by Eldred Geotechnics Ltd.

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, Issue01, November 2010 ('The ARUP report').
- Camden Planning Guidance, basements and lightwells, CPG4
- Camden Development Policy DP27: Basements and lightwells.

### 3. Review Requirements

GCG were instructed to undertake the review of the documentation with a view to ascertain:

1. Whether the planning application submission contains a Basement Impact Assessment (BIA), which has been prepared in accordance with the processes and procedures set out in CPG4.
2. Whether the methodologies are appropriate to the scale of the proposed development and the nature of the site.
3. Whether the conclusions within the submission reports submitted as part of the application are based on all relevant evidence and considerations, and have been determined in a reliable and transparent manner. Further, that they were determined by suitably qualified professionals, with sufficient attention paid to risk assessment and use of conservatism.
4. Whether the conclusions within the reports submitted as part of the application are sufficiently robust and accurate, and contain mitigation measures as appropriate, that planning permission can be granted in accordance with the requirements of DP27, in respect of structural stability of the property for which the application has been submitted and any neighbouring properties, avoiding adversely affecting drainage and the water environment, and avoiding cumulative impact on structural stability or the water environment.
5. Whether the Eldred Geotechnics Ltd reports raised reasonable concerns about the technical content or considerations of the submission that need to be addressed prior to planning permission being granted.

6. Whether the Eldred Geotechnics Ltd reports raised relevant and reasonable considerations about the structural integrity of the road or the neighbouring properties that would benefit from particular construction measures or methodologies in respect of the development prior to or during construction, but which do not need to be implemented prior to granting of planning permission.

#### 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 LB Camden).

The first stage of the BIA methodology is screening, where matters of concern are investigated and the requirement for a full BIA is established. Three main issues are required to be considered: Subterranean flow, slope stability and surface flow and flooding. 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 Basement Impact Assessment Report submitted as part of the planning application includes the screening process, and follows the screening flowcharts from CPG4; it complies with the processes and procedures of CPG4, and it identifies areas that require further investigations.

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

The submitted BIA addresses each of the questions included in the flowcharts from Stage 1, and presents how these will be investigated. All questions from the flowchart are referenced to text within the BIA, providing some further information for those areas identified as needing it, and justification for where issues do not need further development.

However, while the text within the BIA appears to adequately address the questions where no further consideration of the issue is required, there are deficiencies in the submitted data for the issues of concern. As one example, Appendix F of the ARUP report indicates that the potential impact of London Clay as the shallowest strata is seasonal shrink-swell. However, this issue does not appear to have been specifically addressed. It is noted though that CPG4 refers to Appendix F as providing guidance, suggesting that a BIA need not conform precisely to every point listed within the ARUP

report, but rather should address the general topics in a manner appropriate to the proposed development.

The submitted BIA does address the requirements of Stage 2 of the BIA as set out in CPG4 adequately, though imperfectly.

The BIA process requires site investigation and study as Stage 3. The submitted BIA makes reference to a ground investigation undertaken nearby (at No 5 Park Village West) which has been viewed in developing the current application for No 3 Park Village West, and also to proposals to undertake further, site specific, ground investigations. It also appears that desk study information has been consulted, since reference is made to publically available third party boreholes and the geological map for the area. Thus the applicant appears to have an understanding of the ground conditions at the site, and have plans in place to confirm this understanding with site specific intrusive investigations.

The use of desk study data from an almost-adjacent site appears to be adequate for the scale of the development proposed and the current stage of the application, given the ground condition present at this site. The scope of the proposed further investigations seems appropriate to confirm the actual ground conditions for the proposed scheme.

However, from the submitted BIA, it is impossible to confirm whether the proposed intrusive investigation works are sufficient, since there appear to be no documents confirming the ground conditions; there is no desk study report, factual ground investigation report or geotechnical interpretative report. Rather, this data has been summarised to a few paragraphs in the BIA report. Clause 27.2 of the supporting text to DP27 states that "the Council will require evidence...from applicants..."; the documents submitted do not include this evidence and the paragraphs included within the BIA on their own are insufficient to meet the requirement of DP27.

Additionally, while the London Clay is identified as a stratum that restricts groundwater flow, there is still the potential for water pressure within it, and there is no evidence of groundwater pressure monitoring undertaken at the site. Incorrectly assessing the nature water profile in the soil can readily generate numerous problems during both construction and the life of a sub-surface development. The ARUP report provides quite comprehensive guidance on the requirements for monitoring of groundwater conditions.

The desk study / third party data upon which the BIA has been based has not been provided, the site-specific intrusive investigation is promised but not yet undertaken, and there is no groundwater pressure profile for the site included in the BIA submission. It is therefore considered that the submitted BIA does not meet the requirements of Stage 3 of the BIA process as set down in CPG4.

Stage 4 of the BIA process requires an impact assessment, whereby the direct and indirect implications of the proposed project are evaluated. CPG4 requires that "The BIA will comprise a factual report and an interpretative report", the latter to contain detailed site geology, geotechnical properties of the ground and an engineering interpretation of the implications of the ground conditions for the development of the site.

The submitted documents provide a limited interpretation of the ground conditions based on the desk study, but as noted above, there is no factual report, and consequently no full

interpretation. The assessment of the engineering implications is also brief and provides little evidence to support its conclusions.

Overall, the submitted documentation indicates a scheme that appears feasible and appropriate in scale and nature for the site conditions, but which does not comply with the requirements of the BIA process as set down in CPG4.

#### 4.1. Assessment of methodology.

The proposed works involve construction using underpinning techniques of a relatively small, single storey basement in a constrained site with limited access. It is unlikely that heavy plant could access the rear garden. Soil conditions on site appear to be a thin layer of Made Ground overlying London Clay.

Construction of basement extensions under existing structures is routinely undertaken using underpinning techniques, and given the scale of the proposed development, the access constraints and the site geology, the proposed methodology is appropriate to the scale of the proposal and the nature of the site.

#### 4.2. Requirements of DP27.

The proposed development will see the new basement extend beyond the footprint of the existing building, and thus, while the proposed development is quite small in practice, it constitutes a 'larger scheme', as defined by paragraph 27.3 in the supporting text to DP27. DP27 thus requires evidence that the development will "not harm the built and natural environment or local amenity".

It seems unlikely that the proposed methodology would cause such harm, given the scope of proposed works and the ground conditions present. However, the onus is on the applicant to provide evidence to this effect.

The submitted BIA states "...it is envisaged that any structural disturbance to them (*the adjoining properties*) will be Negligible". However, there are no supporting calculations or documentation to justify this statement. In practice, movement (and hence damage) from underpinning is poorly reported, and highly dependent on workmanship, so difficult to reliably predict. However, a one-storey excavation in London Clay is a very 'benign' application of the technique, and movements are likely to be small, so the statement in the BIA about the structural disturbance is not doubted, but it is not proven, as required by CPG4.

Issues of groundwater flow and drainage have been addressed, but the assessment is unsupported by any factual data confirming the pore water pressure distribution of the groundwater on the site. While it seems unlikely that drainage and run-off would be adversely affected, the submitted documentation provides insufficient detail.

The Addendum to the BIA states that the adjacent properties show no sign of distress caused by a similar scheme at No 5 completed "a little over two years ago" and that it has been confirmed that there was no associated damage to No 4. It is further stated that "most of the other properties have a lower ground floor built as part of the existing

buildings, but no basement extension below has been added". The applicant has therefore addressed the issue of cumulative impacts adequately from the point of view of structural stability. Cumulative impact on the water environment seems unlikely, but again, the lack of actual monitoring data means that it cannot be stated that this has been adequately demonstrated.

## 5. Compliance with requirements

In summary of the above, and addressing the first four of the specific review requirements:

1. The planning application does contain a Basement Impact Assessment. This appears to have been prepared with reference to the processes and procedures set out in CPG4. However, the extent of the work undertaken for Stages 3 (Site investigation and study) and 4 (impact assessment) of the BIA appear insufficient to meet the full requirements of a BIA.
2. The methodologies proposed are suitable for the size and nature of the site, and the scope of the development proposed.
3. The author of the Basement Impact Assessment and the Addendum are identified only at Taylor Whalley Spyrá; it is therefore not clear whether the reports have been authored by individuals with the requisite professional qualifications, as per CPG4. Further, the lack of ground investigation data means that it is impossible to determine whether the assessment includes all relevant evidence.
4. The submission documents lack any onsite groundwater monitoring and include insufficient assessment of likely ground movements and resulting potential structural damage, so do not adequately address issues of structural stability and the water environment, with respect to DP27.

## 6. Neighbours' concerns.

In response to the applicant's submission, concerns have been raised against the scheme on behalf of the occupants of No4 Park Village West, in the form of reports commissioned from Eldred Geotechnics Ltd. Two reports have been produced; the first in response to the original BIA submission, the second in response to the Addendum to the BIA.

The Eldred Geotechnics Ltd reports identify a number of issues which are felt to be the basis of comment or objection.

Reference is made to DP27, and in particular to the requirement for the developer to demonstrate that their proposals will not cause harm. The second of the two Eldred Geotechnical Ltd reports expressly notes that the scheme falls into the category of "larger schemes" as defined in DP27.

Concerns are expressed about the lack of site specific ground and groundwater information, the drainage calculation and the potential for the proposed drainage to cause softening and ground movement, the potential for underpinning under party walls to cause differential movement of neighbouring structures (particularly due to abrupt changes in foundation level resulting from underpinning), the assessment of the current



condition of neighbouring structures, and uncertainties over the propping regime proposed.

The Eldred Geotechnical Ltd reports conclude by stating that there is insufficient information within the BIA to assess the impact of the proposed scheme on the neighbours' property, and hence that the application should not be approved.

As noted above in section 5, the BIA is deficient as regards the provision of site investigation data, including groundwater details.

The concern regarding drainage and the calculation of permeable and impermeable areas is not considered to be a major issue. While there is no ground investigation data, it seems clear the soil at the site is London Clay, so the discussion of "permeable" and "impermeable" areas is misleading; while there will be some infiltration into natural soil which will not occur if there is continuous paving or concrete slab, the soil is not a high permeability soil, into which significant drainage is able to occur. The issue of attenuation of surface flow and sub-surface flow is likely to be more directly affected by the nature and thickness of any Made Ground, and the extent to which the Made Ground is continuous; given the presence of existing lower ground floors, it is unlikely that there is a laterally continuous layer through which shallow sub-surface flow could occur. However, this is an issue that should be addressed in the site investigation and geotechnical interpretative report.

The issue of drainage into the ground, both under current conditions and following the proposed development, depends in part on the current pore water pressure profile in the soil. Again, this is an unknown that should be addressed by the site investigation and interpretation.

The concerns raised about differential movement due to variations in foundation depth due to underpinning are not unique to this project, but are well known, so while the concern is valid, and the submitted BIA document did not address this issue in detail, it is not anticipated that this would provide an insurmountable obstacle to progress of the scheme. The use of underpinning in ground conditions such as are present on site, for the purpose proposed, is a standard methodology, and a suitable construction methodology will be obtainable. Similarly, the lack of clarity in the temporary support scheme needs to be addressed, but does not indicate a fundamental flaw.

## **7. Review requirements in relation to objections.**

The last two review requirements required consideration of the objection raised against the proposal, and the actions required to address the concerns raised.

5. The Eldred Geotechnics Ltd reports raise a number of issues, some of which require addressing prior to granting of planning permission to make the submission compliant with the requirements of CPG4:
  - i. A factual site investigation report should be submitted; the site investigation should be compliant with the requirements of CPG4, following the guidelines set out in the ARUP report.



- ii. A geotechnical interpretative report should be submitted, and ground movement assessment (building damage) calculations should be undertaken to assess the likely effect of the proposed development on the surrounding structures. It should be accepted that such a calculation will need to be based on a number of assumptions, since there is no reliable guidance on ground movements resulting from underpinning.
- iii. Monitoring and reporting of the groundwater should be undertaken as part of the site investigation, including for a sufficient period after the on-site works to establish reliability of the data in the long term, noting that the ground water profile is often disturbed from its natural state during site investigation works, and in London Clay it can take several weeks or more to recover. Completion of the monitoring period should not be required prior to granting of planning permission: that is, a monitoring scheme should be implemented prior to the award of planning approval (as part of the intrusive site investigation), but the monitoring programme does not need to be completed prior to the award of planning consent, as long as it is completed prior to construction start.



6. The following issues raised by the Eldred Geotechnics Ltd reports require addressing prior to commencing construction, but do not need to be implemented prior to granting of planning permission; satisfactorily addressing these points should be made a condition of any planning consent:
- i. As per point (iii) above, monitoring of the groundwater needs to be completed.
  - ii. The method, sequence and extent of the underpinning need to be fully established, with the potential for damage to neighbouring properties clearly identified and effectively mitigated.
  - iii. The temporary support measures need to be fully developed, such that it is shown that all excavations and other works will be adequately supported at all times.

Given the apparent ground conditions present on the site, which are not anticipated to show significant lateral variability, and the nature and scale of the works proposed, the applicant may be able to produce an adequate geotechnical interpretative and ground movement assessment report from the available third party / desk study data (including the ground investigation from No5). Such a report might be sufficient to address the issues requiring attention prior to award of planning permission, subject to the site-specific investigation being completed prior to construction starting, and also that the site-specific data confirms the validity of the desk study data.

Additionally, it may be sensible to undertake a pre-condition survey of the neighbouring properties, if this is acceptable to all parties concerned, since this will form a reliable baseline to establish whether damage has occurred during construction, and so may reduce the possibility of dispute post construction.

## 8. Conclusion

GCG were appointed by London Borough of Camden to review documentation relating to planning application 2012/5182/P for 3 Park Village West, to determine compliance with the requirements of CPG4 and DP27, and to identify issues raised in objection to the

proposed scheme in expert reports commissioned on behalf of the neighbours that needed to be addressed either prior to the award of planning permission, or as conditions to be attached to such permission being granted.

In general, while the proposed scheme looks viable and appropriate in scale and methodology, the applicant's submission is currently insufficiently comprehensive to meet the requirements of CPG4. However, it is believed that submission of additional documentation by the applicant would be an appropriate manner of progressing the application. The provision of a ground investigation report or at least a comprehensive desk study, with accompanying interpretation and assessment of ground movements due to the proposed works, would address the main points of concern.

This report was completed by Dr Phil Smith on behalf of GCG LLP; the report was peer reviewed by Dr Felix Schroeder 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

Felix Schroeder: MEng, PhD, DIC, CEng, MICE

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

## 9. References

The following documentation was reviewed:

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

- Design and access statement, 3 Park Village West, London NW1, produced by Belsize architects.
- 3 Park Village West, London, NW1 4AE. Basement Impact Assessment. GB/8409-BIA-Version 2.0. Dated September 2012. Produced by Taylor Whalley Spyra.
- 3 Park Village West, London, NW1 4AE. Addendum to Basement Impact Assessment. GB/8409-BIA\_ADDENDUM-Version 1.0. Dated January 2013. Produced by Taylor Whalley Spyra.

Reports submitted in objection to proposed scheme:

- 3 Park Village West NW1 4AE. Review of planning application 2012/5182/P to Camden Council with respect to Camden development Policy DP27. Report reference G1212-RP-01-E1. Edition E1 dated 23/11/12. Produced by Eldred Geotechnics Ltd.
- 3 Park Village West NW1 4AE. Review of planning application 2012/5182/P to Camden Council with respect to Camden development Policy DP27. Report reference G1212-RP-02-E1. Edition E1 dated 08/02/13. Produced by Eldred Geotechnics Ltd.

Additional documentation reviewed:

- Camden geological, hydrogeological and hydrological study; Guidance for subterranean development, Issue01, November 2010 ('The ARUP report').
- Camden Planning Guidance, basements and lightwells, CPG4
- Camden Development Policy DP27: Basements and lightwells