HR Wallingford

Mr Charles Rose
Heritage and Conservation Officer
London Borough of Camden
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London
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Your ref 2016/1495/P
Our ref MAM7783

23 June 2016

**Dear Mr Rose,**

**4 Upper Terrace, Hampstead, London: BIA Screening Statement**

I refer to the email dated 3rd June 2016, from the London Borough of Camden to design-NA Architects concerning the above project. HR Wallingford is engaged by Mr Andrew Guy to provide support with respect to possible basement impact issues. We have therefore revisited the BIA screening process as requested.

**Introduction**

This letter provides background information to the planning application for a basement at 4 Upper Terrace, Hampstead. It explains our understanding of the assessment requirements for potential impacts and why we consider that there are no significant groundwater, stability or other water-related impacts associated with either the original basement design, or with the amended design. We refer to the Basement Impact Assessment (BIA) that accompanied the original planning application.

This letter is in effect a Screening Stage BIA for the amended basement design.

**Background - 2013 Planning Permission**

In April 2013 HR Wallingford prepared a detailed BIA in support of the proposed basement construction at 4 Upper Terrace, Hampstead, London. The BIA was submitted as part of the planning application documentation (application 2013/2894/P).

In the Members' Briefing report it was stated that the BIA was "*comprehensive*" and that it and the associated documents "*comprehensively comply with the requirements of policies DP23 and DP27, and CPG4, with particular consideration and analysis of groundwater flows, surface flow and flooding and land stability.*"

Whilst some consultees expressed concerns about various aspects of the basement works the London Borough of Camden (LB of C) considered that "*the proposal would not harm the built and natural environment*". Permission was granted by the LB of C in July 2013.

**CPG4 - Basements and Lightwells**

The development of basements in the LB of C should follow the planning guidance requirements in CPG4 - "*Basements and lightwells*". The version valid at the time of the application was prepared in 2011. An amended version was adopted in September 2013, with a further update being approved in July 2015. Whilst there are changes in much of the document, and some sections have been restructured, it still contains the following 5 stage BIA process:

1. Screening;
2. Scoping;
3. Site investigation / study;
4. Impact assessment;
5. Review.

The screening stage considers a range of issues and seeks to determine whether or not a full BIA is required. This is achieved by considering the following three key elements:

- Groundwater;
- Land stability;
- Surface water flows / flooding.

CPG4 presents a series of screening flow charts for this. These are the same now as in 2013.

If the screening process identifies that there may be concerns then a full BIA is required - normally with a scoping assessment, the collection and review of relevant data and then a detailed impact assessment. Stages 1 to 4 are carried out by the applicant's team. The review of the applicant's BIA (stage 5) is carried out by an independent consultant on behalf of the LB of C.

Whilst there is some additional discussion in the current version - such as more emphasis on the independent verification / review and on the requirements for a Construction Management Plan and for a Basement Construction Plan - the issues to consider in the screening process remain the same.

**Proposed BIA Approach**

For the amendments to the approved proposals for the 4 Upper Terrace basement it is appropriate to take account of the impact assessment work that has previously been done and to consider the first (screening) stage of the current BIA process. This is suggested in an email from the Heritage and Conservation Officer at the LB of C on 03/06/16. If there are no new issues raised and the responses from the previous BIA to any areas of concern are still valid then there is no need to carry out the subsequent stages - for a full BIA to cover the amendments.

It is for the LB of C to determine if an independent review of this screening assessment is required.

**Design Changes**

Construction has been carried out and the actual basement has been extended slightly relative to the previously approved plans - see drawing d-NA UTP 01 100 (P0) for the amended basement plan. It includes a new stairway, which allows for escape from the plant room and from the basement levels. The location of the southern piled wall was amended in order to achieve this.

Key points on the changes are as follows:

- The basement length (from the outside of one piled wall to the outside of the opposite one) has been extended by about 3.5m - from 18.5m to 22m;
- The width of the additional part of the structure is about 7.5m, compared to an external width of about 10m for most of the main structure;
- The basement footprint is enlarged by about 14%;
- The base level of the additional section is the same as the main basement.

**2013 Basement Impact Assessment**

The 2013 HR Wallingford BIA (reference MAM6972_RT001_R02) was prepared in accordance with the requirements of the LB of C development policy on basements and lightwells (DP27) and the 2011 version of the planning guidance requirements for basement and lightwells (CPG4).

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The information in the BIA was prepared by Mike Briggs, MICE - a Chartered Civil Engineer who has 27 years of experience carrying out and managing a wide range of drainage studies, flood risk assessments and other flood studies. He is experienced in the review of existing and proposed basement projects, including the preparation of BIAs for residential basement planning applications.

He drew on information prepared by specialists in relevant fields, including a Chartered Structural Engineer who is a specialist in basements and ground engineering across London and who prepared the Structural Engineer's Report that formed Appendix B of the BIA. Other information used in the report was prepared by a Chartered Geologist. Mike Briggs has prepared this new statement, supported by some members of the original team.

Data from various sources was collated and reviewed, to inform the BIA process. The BIA report contains references to other useful information - including a detailed ground investigation report and a Geotechnical Interpretative Report, which included discussion of potential hydrogeological impacts.

Because data had been collected prior to commencing the BIA it was appropriate to report on the first 4 stages of the BIA approach in one combined document. Each screening issue in CPG4 was considered and was commented on. Where appropriate, supporting information - such as the ground investigation report and the Geotechnical Interpretative Report - were referred to.

Whilst the main groundwater level was identified as being well below the basement level it was anticipated that some local and seasonal perched groundwater might be encountered.

Key conclusions from the BIA were as follows:

1. The detailed assessment showed that the basement would not affect the amount of water or where and how it flowed through the ground. No impacts on the local aquifer were expected;
2. The designs for the permanent and temporary works and the methods of construction were considered in detail, with plans for a staged construction process being developed;
3. There were no slope stability issues of concern;
4. There were no significant issues with trees at or near 4 Upper Terrace;
5. There were no issues anticipated with key underground services running close to the site;
6. There were no changes to surface water runoff volumes and to discharge rates;
7. There would be no changes to flood risks at the site or elsewhere;

**It was concluded that the proposed basement development met the relevant requirements of DP27 and that it should be approved with respect to CPG4.**

Planning permission was granted and the basement has been constructed.

### Amended Basement Design - Review of Screening Issues

For the amended proposals the screening requirements of CPG4 have been reviewed. This was based on the three key areas, the flow charts and the associated information. In the majority of case there is no change in the findings with the amended basement details. The findings of this are summarised in the tables below. A brief commentary is given where there was originally, or where there now is an answer of: "Yes", "Possibly" or "Unknown". The findings are as follows:

| **Subterranean flow (groundwater)** |
|---|
| **Q1a - aquifer: Yes:** Camden considers all sites which do not outcrop with London Clay to be above an aquifer. The site area is a surface outcrop of the Bagshot Beds (depth approx. 20m), but analysis indicates that no impacts on the Bagshot Beds aquifer were expected. **There is no increased risk for the amended proposal.** |

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| **Q1b - water table surface: Possibly:** The basement is well above the main groundwater level. Whilst there was some possible evidence of local perched groundwater this was not a significant issue. The basement structure would not act as a barrier to flows, with no anticipated impacts. This proved to be the case during the construction. **There is no increased risk for the amended proposal.** |
| **Q2 - watercourses, etc.: No:** Since the preparation of the BIA a well has been identified at Admiral's Walk (about 130m away). However, this is too far away to have an influence on groundwater levels at 4 Upper Terrace. **There is no increased risk for the amended proposal.** |
| **Q3 - Q6: No:** No need to consider matters further. |
| **Summary**<br>**This section of the BIA identified that there were no significant issues related to groundwater flows. This remains the case with the amended basement details, with no increases in risk.** |

| **Land Stability** |
|---|
| **Q3: nearby slope > 7°: Yes:** A small area north of the site with a slope > 7°. The basement construction would not cause any stability problems. **There is no increased risk for the amended proposal.** |
| **Q10: Aquifer: Yes / unknown:** See comments on aquifer above. Possibility of local perched water, requiring limited construction dewatering. Only a minor ingress of water anticipated during construction. During construction this proved to be as expected. **There is no increased risk for the amended proposal.** |
| **Q12: pedestrian right of way: Yes:** Pedestrian right of way at rear of property and highway plus a footpath at the front. No critical infrastructure identified at the site or in the surrounding area. **There is no increased risk for the amended proposal.** |
| **Q13: differential foundation depths: Yes:** The only property adjacent to the construction area is 4 Upper Terrace. The excavation depth is greater than the original basement and the foundations of this and nearby buildings. There was careful consideration by the geotechnical and structural design teams regarding the design of temporary and permanent works, ensuring the stability of the existing structures. This information was presented with the BIA. The details of the necessary temporary works were updated as part of the development of the amended design and the construction plans. There were no reported site problems during the construction. **A review of the amended proposals, the foundations and the support measures meant that there was no increased risk for the amended proposal.** |
| **All other Qs: No:** No need to consider matters further. No anticipated changes to these with the amended design. |
| **Summary**<br>**This section of the assessment identified the need to provide suitable support to the adjacent building (4 Upper Terrace) and this was fully addressed in the Structural Engineer's report. The principles remained the same for a slightly longer structure, with the details being amended as appropriate. Thus, there was no increase in risk.** |

| **Surface flow and flooding** |
|---|
| **Q1 - Q6: No:** No need to consider matters further. No anticipated change with the amended design. |
| **Summary**<br>**This section of the assessment identified no significant issues related to surface flows and flooding. There was no increase in the risk associated with the amended basement.** |

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**Construction**

During the construction of the basement, piles were formed around the area of the basement, providing support to the excavation. Underpinning of the parts of the existing property was also provided.

There were no problems of water inflow during the excavation and construction work. The only inflow of groundwater was reported to be minor seepage in the lower part of the excavation. This was consistent with the expected groundwater conditions and did not cause problems with the construction.

**Conclusions**

- Whilst there have been updates to CPG4 the fundamental assessment requirements remain.
- All issues of potential concern at the original screening stage were either demonstrated to not be matters of concern or were addressed in the BIA and associated documentation.
- The amended basement design represents only a modest increase in the overall footprint of the structure in the ground (+14%). There is no increase in the depth of the structure.
- The larger basement does not result in any additional areas of potential impact or areas of concern that would need investigation within a new BIA. Thus, the original detailed BIA remains valid, without the need for a new detailed BIA.
- Whilst the amendments required changes to some of the proposed support arrangements for the excavation and for adjacent buildings these were matters of detail - addressed as part of the detailed design and construction planning processes.
- Thus, any impacts of the design changes are negligible.

**Based on the comments in this screening statement we have concluded that there is no need to progress the BIA beyond this screening stage.**

**The basement details meet the requirements of the LB of C policy on Basements and Lightwells (DP27), with it being confirmed that it "*does not cause harm to the built and natural environment and local amenity and does not result in flooding or ground instability*". Thus, there is no reason why planning approval is not granted due to the impact of the basement construction**

Yours sincerely

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