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Ref 50364/1

Safina Haleema
56A King Henry's Road
London
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Dear Safina

RE: Review of Basement Impact Assessment for 56A King Henry's Road

Introduction

The scope of this letter is to critically review the existing BIA for 56A King Henry's Road by Ecos Maclean, Reference 18024, dated 21st January 2019, against the Camden Planning Guidance CPG4 Basements and Lightwells. This review has been carried out by appropriately experienced chartered professional for each of the areas of interest: land stability, hydrology and hydrogeology.
The hydrology and hydrogeology aspects are covered by separate reports.

The appendices were not included with the BIA report and it is understood that it is not possible to obtain these which included the site investigation report.

This letter has been formatted by assessing each section in turn and making the relevant comments in relation to the section if necessary. The BIA report has been compiled in accordance with CPG4 where each question from the slope stability, surface water and groundwater sections have been answered. This letter covers land stability only.

Land Stability Review

Section 1: Introduction
The BIA report was undertaken by Mr N Maclean BSc, Principal Engineer with nearly 50 years of experience practicing civil and structural engineer and reviewed by Mr R. Gulhane Meng MICE, a civil and structural engineer with over 50 years of experience. Qualifications required to carry out a Basement Impact Assessment include being a Member of the Institution of Civil Engineers (MICE) or a Chartered Geologist (CGeol). This letter by GPCL has been written by Jon Smithson who is a Chartered Geologist with over 30 years' experience.

Section 2.4: Topography

The distance between the proposed basement and the railway is not discussed, however, it appears to be less than 10m away from the proposed basement. Section 1 details that the railway has a 7m high retaining wall and a covenant that restricts load in this area, however, it is not discussed further in the report.

Section 2.6: Site Investigation

One trial pit was excavated as part of the ground investigation at the site, to establish the soil conditions and the presence of piles. The trial pit log is part of the appendix to the BIA which has not been made available.

No laboratory tests appear to have been carried out, however, the report assumes low-medium volume change potential for London Clay. In the absence of testing it should be assumed that the London Clay Formation has medium to high volume change potential.

The report described the London Clay as stiff brown clay, however, it is more likely to be firm when weathered to brown. The depth of the investigated strata was not detailed.

The report does not detail the Made Ground in enough detail such as depth and constituents to understand the characteristic and parameters to be used in any assessments. Excavation stability is not discussed.

Section 4.2: Groundwater

No groundwater is present, so no significant risk was identified. It is noted that no perched water was recorded in the open trial pit over a period of two months from the start of the investigation in August 2018. The Made Ground is noted to be granular which could be a pathway for groundwater flow. The monitoring being over a period of unusually dry weather. It is possible that there is a temporary, seasonal perched water table at the Made Ground /London interface. It should be assumed that water may be present during construction and should be managed accordingly.

Section 4.3: Slope Stability

The BIA states that the site is not in over-consolidated London Clay, merely the weathered brown London Clay. This is not technically correct. The stiff grey clay will underly the weathered brown clay. London Clay has been over-consolidated.

The BIA states that 80m^2 up to 3m in depth is to be excavated and that this is not considered to be a large amount of material to cause volume change potential. This comment is considered to be not relevant. The risk from high volume change potential is related to varying moisture contents which is impacted seasonally by proximity to ground level (uppermost 1m of soil) and trees (more than 6m). However, based on the depth of the basement slab and the lack of trees, the volume change potential of the London Clay is unlikely to be an issue at the site. The potential for the effect on foundations should be taken into account in design.

Section 4.5: Conceptual Site Model

The risk of burst water pipes or any perched water through the Made Ground is not considered as a risk in the report. Waterproofing is not mentioned, although we have not seen any detailed design drawings. Full depth waterproofing with one-way pumps are recommended for any residential basements, particularly for those with bedrooms.

The potential for impact on the railway has not been discussed.

Section 4.6.1: Existing

An existing basement is mentioned, however, the drawings do not indicate an existing basement. The following section on the proposed design only indicates the construction of a lightwell.

Section 5.2: Subterranean (Groundwater) Flow

The BIA states that the London Clay presents almost a complete barrier to groundwater. Whilst significant groundwater flows are not anticipated through the London Clay the design of the basement should account for the presence of groundwater both within the Made Ground and the London Clay.

Section 5.3: Slope (Land Stability) Assessment

No mention of the stability impacts to the railway have been discussed.

Conclusion and Recommendations

The Basement Impact Assessment by Ecos Maclean appears to have covered most aspects. The BIA has not been issued with the appendices to confirm some of the reasoning and conclusions.

It is recommended that a ground investigation should ideally be carried out to enable a more robust assessment of the ground risks related to the proposed basement construction. This should include for testing to determine the volume change potential of the London Clay, the concrete class for the site in regard to potential sulphates and the nature and depth of Made Ground and the engineering properties of the London Clay.

The construction of the basement is unlikely to have significant effect on the railway retaining wall, however the design process should include the development of long sections which indicate the nature and proximity of the retaining wall. As a minimum this process should include an overview assessment by a geotechnical engineer in conjunction with ground investigation data acquired.

It is recommended that the basement be constructed to be fully waterproof.

Please do not hesitate to contact me if you wish to discuss.

Yours sincerely

Jon Smithson, BSc, MSc, CGeol, FGS

Director