

# 77 Lawn Road

Basement Impact Assessment

10 March 2016 . 2716 RPT Basement Impact Assessment [00]

Background

This document has been prepared for the sole benefit, use and information of Laura Bolohan and for the purposes set out in the following pages.

The liability of Momentum Consulting Engineers Ltd in respect of the information contained in the document will not extend to any third party.

Background

This report has been produced in support of the householder planning application at 77 Lawn Road, London NW3.

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Issue History

Rev.	Date	Comments
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## Introduction

### Background

The following report is in support of the householder planning application at 77 Lawn Road, London NW3.

### Scope and limitations

This construction method statement is produced for submission to the London Borough of Camden planning department for planning application only and should not be used for any other purposes, eg. Party Wall Awards.

The report contains the following:

- A description of the existing site conditions
- A description of the site geology and hydrology by Southern Testing
- Structural proposals for a new basement below an existing ground floor and load bearing walls to the property.

The report has been produced in accordance with the guidance given within the Camden planning documents defined below

- Camden Planning Guidance Document CPG4: Basements & lightwells
- Camden Geological, Hydrogeological Study
- Camden development Policy DP27: Basements and lightwells

### Qualifications

The building structure and geotechnical considerations have been carried out by the following companies and engineers:

Structural design work

Richard Heath MEng MStructE, a chartered engineer (CEng) and a director of Momentum Consulting Engineers Ltd.

Geotechnical investigation and interpretation

S Marshall BSc FGS and D Vooght MSc of Southern Testing

### Site description

Topography

The site slopes down from the west towards Lawn road and the eastern site boundary, approximately 77m above sea level.

Roads and surroundings

The site is bounded by Lawn Road to the East, 78 Lawn Road to the South, 4 Downside Crescent to the West and 76 Lawn Road to the North



Aerial view of site showing boundary of proposed development

Existing buildings/construction

The site is occupied by 77 Lawn Road, which is a two storey semi-detached residential house facing Lawn Road. It is proposed to construct a single storey basement extension, extending beyond the full footprint of the existing structure onsite. The structure of the new basement is outlined in the construction section of this document.

Summary of mitigation

TBC and co-ordinated with contractor

Geology

Two borehole and four trial pit records are available in the report of a site investigation carried out by Southern Testing, which show the underlying bedrock to be London Clay Formation, with a covering of Made Ground.

Hydrology

It is anticipated that rainfall/precipitation onto the site will locally infiltrate directly into the ground. Infiltration into the ground is expected to collect as perched water within the superficial deposits overlying the London Clay within the depth of the proposed construction.

As noted in the site investigation, groundwater ingress is not expected to be a significant problem in terms of dewatering issues etc. during construction, although some allowances for dewatering from perched sources should be made. The site investigation also notes that in the long term, the proposed development will not result in any specific issues relating to hydrogeology of the site.

Flood risk: Zone 1 Low Probability

“There are no restrictions placed on development within Zone 1 Low Probability by PPS25. Consideration must be given to the potential risk of flooding from other sources, ensuring that future development is not inadvertently placed at risk. It is also essential to ensure that future development does not exacerbate the current risk posed to the existing built environment. “

“LBC is distinctive in its lack of main rivers and resultant location entirely within Fluvial Flood Zone 1, where all areas have a less than 1 in 1000 annual probability of flooding from fluvial sources, as classified by the Environment Agency. However whilst the risk of flooding from fluvial sources is negligible within LBC, there is a risk of flooding from other sources such as surface water, groundwater, sewers and artificial sources such as reservoirs and canals. “

From the SFRA maps, the site is shown to be outside the critical drainage areas and outside of any local flood risk zones.

### Site Constraints

The site is occupied by an existing building to remain. Therefore, there will be a risk of encountering some existing strip footings or backfilled basements/cellars when excavating for the basement and/or piling the foundations.

### Ordinance

A bomb map has been included as part of the site investigation. Reference should be made to this document before commencing excavation.

Basement impact assessment

Screening

The following screening assessment provides a useful framework for assessing the potential impacts of proposed basement developments in London. Aspects where the screening assessment identifies a potential impact are brought forward to scoping.

Groundwater flow screening

Is the site located directly above an aquifer?	No - Predominantly clayey sequence up to 140 m thick confining underlying aquifers. Occasional springs at base have very hard water. Nearest aquifer 1000m away (see Appendix A)
Will the proposed basement extend beneath the water table surface?	No - Water was encountered in groundwater monitoring. As the site is not over an aquifer, this water is likely to be limited perched water in the superficial deposits above the London Clay Formation, and is not considered to pose a significant issue.
Is the site within 100m of a watercourse, well (used/ disused) or potential spring line?	No - nearest watercourse is approximately 6500m away (see Appendix A)
Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	Yes – the building footprint increases from approximately 112 sqm to 154 sqm.
As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDS)?	No - all of the surface water run-off will be attenuated to 50% of the current level then directed into the main sewer along Lawn Road
Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than, the mean water level in any local pond or spring line?	No - There are no surface water features within 100m of the site.

Ground stability screening

Does the existing site include slopes, natural or manmade, greater than 7°?	Yes - The topography of the site slopes down from the west towards Lawn road and the eastern site boundary. A 1m tall retaining wall is present along the eastern site boundary and the subject property (77 Lawn Road) is approximately 1.5m higher than Lawn Road.
Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?	No
Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?	Yes - The adjacent properties on either side will have similar topography to the site.
Is the site within a wider hillside setting in which the general slope is greater than 7°?	No - the wider hillside setting has an approximate gradient of 2.1°
Is the London Clay the shallowest strata at the site?	No – borehole records show a covering of Made Ground over London Clay
Will any trees be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?	TBC - Tree in the rear garden at the South East of the property is close to the proposed basement excavation. It is not known whether there will be a tree protection zone around this tree.
Is there a history of seasonal shrink-swell subsidence in the local area and/or evidence of such effects at the site?	No - Atterberg Limit tests were carried out and samples are classified as being NHBC HIGH Volume Change Potential (VCP) but there is no sign of subsidence to this building
Is the site within 100 m of a watercourse or potential spring line?	No
Is the site within an area of previously worked ground?	Yes - the new basement will be constructed below the existing building
Is the site within an aquifer?	No
Is the site within 50m of Hampstead Heath Ponds?	No - Hampstead Heath ponds are approximately 800m from the site
Is the site within 5m of a highway or pedestrian right of way?	No - the main basement excavation is 9.5m from the back edge of the pavement on Lawn Road. There will be some excavation for a bin store closer to the pavement, but this will still be 7m away.

Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	Yes - The form and level of the adjacent properties’ foundations are to be confirmed. The proposed single-storey basement is next to the building to the South. The proposed basement structure will underpin the party wall with the adjacent property. The proposed basement retaining wall will have to be designed to carry vertical loading and surcharge loading from the neighbouring property.
Is the site over (or within the exclusion zone of) any tunnels, eg railway lines?	No - the site is approximately 180m away from the nearest train line.