



128-130 GRAFTON ROAD, LONDON, NW5  
4BABasement Impact Assessment: Land Stability  
Screening and Scoping Report  
September 2017



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**128-130 GRAFTON ROAD, LONDON, NW5 4BA**  
**Basement Impact Assessment: Land Stability Screening and Scoping**  
**Report 40213-1**

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## 1 Introduction

Ground and Project Consultants Ltd have been instructed by Southend Point Ltd (SPL) to undertake the screening and scoping for land stability element of a Basement Impact Assessment, for 128-130 Grafton Road, London, NW5 4BA. The property is located in the Borough of Camden, London in the Gospel Oak ward, its location is indicated on Figure 1.



Figure 1: Site Location

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## **2 Scope and Objective**

The scope of this report and approach are as follows:

- A review of the existing data supplied by the client has been carried out, including the proposal drawings produced to date, photos of the building and other freely available data such as BGS geological information and purchased environmental data.
- In line with the methodology set out in the London Borough of Camden guidance, CPG4, latest revision:
  - An assessment of the published and encountered geology
  - Responses to the Screening questions
  - Development of Scoping Issues
  - Recommendations for further work to address relevant issues.

The report has not considered contaminated land aspects of the site, these are addressed in a separate report.

The report assumes the full involvement of a suitably qualified and experienced Structural Engineer in the design and supervision of the basement construction.

This report and the work to support it, have been carried out by Jon Smithson who is a Director of Ground and Project Consultants Ltd and is a Chartered Geologist (CGeol) with over 30 years' experience.

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### 3 BIA Screening for Slope/Land Stability

A screening exercise has been carried out as per the guidance in CPG4 as follows:

Question	Answer	Action/ Comment
<b>Question 1:</b> Does the existing site include slopes, natural or manmade, greater than 7 degrees? (approximately 1 in 8)	No. The ground surface at site is relatively level.	None
<b>Question 2:</b> Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7deg? (approximately 1 in 8)	No. There are no planned significant changes in surface profile.	None
<b>Question 3:</b> Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7deg? (approximately 1 in 8)	No. There are no railway cuttings in the immediate vicinity. The close by railway line is on a bridge	None
<b>Question 4:</b> Is the site within a wider hillside setting in which the general slope is greater than 7 degrees? (approximately 1 in 8)	No, the slope in the area is less than 1 in 50 (2°) based on published Ordnance Survey data. This is confirmed by figure 16 from the Arup Report	None
<b>Question 5:</b> Is the London Clay the shallowest strata at the site?	Yes: The geological maps indicate London Clay is the shallowest deposit. There are potential Head deposits indicated to the North	The engineering significance of the site geology is further discussed in the Scoping assessment
<b>Question 6:</b> Will any tree/s 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? (Note that consent is required from LB Camden to undertake work to any tree/s protected by a Tree Protection Order or to tree/s in a Conservation Area if the tree is over certain dimensions).	It is understood that there are no trees at the property, however there are trees close by in the street and at the front of neighbouring properties to the south.	The engineering significance of the site geology is further discussed in the Scoping assessment
<b>Question 7:</b> Is there a history of seasonal shrink-swell	None known. It is understood that the existing	The engineering significance of the site

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subsidence in the local area, and/or evidence of such effects at the site?	buildings at site are in good condition given their age and show only minor signs of distress	geology is further discussed in the Scoping assessment
<b>Question 8:</b> Is the site within 100m of a watercourse or a potential spring line?	No: Two tributaries to the 'Lost' River Fleet run approximately 100-200m east and west of the property.	Confirm with Hydrology Report
<b>Question 9:</b> Is the site within an area of previously worked ground?	Worked ground is indicated close by the East	The engineering significance of the site geology is further discussed in the Scoping assessment
<b>Question 10:</b> Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No: the London Clay is non-productive strata	None
<b>Question 12:</b> Is the site within 5m of a highway or pedestrian right of way?	Yes	This is further discussed in the Impact Assessment. Health Safety and environmental measures will be required to be integrated into the building contractor's methods of working
<b>Question 13:</b> Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	Yes, it is understood that the adjoining properties do not have basements	This is further discussed in the Scoping Assessment.
<b>Question 14:</b> Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?	No, the LNWR main line is overground and around 40m to the East	None

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## 4 Site Information

### i. Existing Property and Basement Proposals

The property at 128-130 Grafton Road is located on the east side of the road. The property is around 1.4 km North of Regent's Park and 900m north of Camden Locks.

The National Grid reference for the property is TQ 28495 85038. The location of the property is indicated in Figure 1 above.

The existing structure is a single-storey terraced industrial building/warehouse comprising a ground floor and a mezzanine floor, forecourt area and off-street parking for approximately 5 vehicles.

It is currently occupied by E & D Scaffolding Co Ltd.

The building is brick built and is understood to be in overall good condition, with minor signs of distress

It adjoins a large residential scheme on its eastern side (no. 126). There is a single-storey industrial building "Spring Lighting" on its western side (no. 132-134). The properties back onto a significantly larger building fronting Spring Place which is in residential use.

It is proposed to construct a five storey residential building with a basement and roof terrace. The basement will be approximately 3m deep. The footprint of the basement including sunken terraces is approximately 14.1m wide by 16.8m deep with a resultant area of around 237m<sup>2</sup>. The descriptions and dimensions above have been estimated from drawings provided by Redrock Development Group.

It is understood that there are no trees in the existing property. There are some trees close by to the front of the property immediately to the south and trees along the road. Some shrubs may be present. The front of the property is directly adjacent to the pavement.

### ii. Topography

The OS map indicates the property is at around 36m AOD. The ground surface is relatively flat.

### iii. Geology

The available geological mapping (Ref 1.) indicates that the site lies on London Clay. London Clay typically comprises a stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. The base of the London Clay is likely to occur at significant depth below the property. An area of worked ground (the hatched area) is indicated close by to the East and North. An area of potential Head Deposit is shown around 300m to the Northwest. See Figure 2 below.





Figure 2: Geology  
2015

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#### iv. Hydrology and Hydrogeology

The OS Map indicates that there are no surface water bodies in the near vicinity of the site. The Hampstead Ponds are located approximately 1.4km to the NW. Tributaries of the 'lost' River Fleet are understood to run in culvert around 100-200m to the east and west of the site.

The underlying London Clay is classified by the Environment Agency as unproductive strata (rock layers with low permeability and negligible significance for water supply or river base flow). The site is not within a source protection zone of a public water supply. There are no ground or surface water abstraction licences within 250m of the site.

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## 5 Scoping Assessment

From the screening assessment carried out in Section 3 it is considered, based on the information available at this stage, that the construction of a basement at 128-130 Grafton Road is viable subject to further assessments and appropriate design and construction considerations. The following issues have been carried forward for scoping:

- 1) London Clay is the shallowest (mapped) strata
- 2) Trees are locally present
- 3) Shrink and Swell (although there is no known history the presence of London Clay means that this issue needs to be further assessed)
- 4) The local presence of Worked Ground
- 5) The site is within 5m of the footway
- 6) The neighbouring properties are not known to have basements so that there may be a significant increase of the differential depth of foundations

The following actions are recommended

### i. Ground Investigation

To address the above scoping issues 1, 3, 4, and 6, a ground investigation is recommended. This should take the form of two boreholes drilled by cable tool percussion rig or similar depending upon access constraints. These should be drilled down to a depth of 10m and include in situ testing including SPTs and the taking of samples to allow strength and index tests to be carried out. At least one borehole should include a standpipe piezometer to allow the long term monitoring of groundwater levels.

### ii. Assessment of Trees

The presence of trees close to the property should initially be assessed in detail, in terms of distance and tree type. If appropriate an arboricultural impact assessment should be carried out.

### iii. Health and Safety Management

During the design and construction phases consideration must be given to the safety and well-being of local residents and users of the footway and Grafton Road. Appropriate working methods should be developed by the contractor and reviewed and approved by the supervising architect/engineer.

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## 6 Conclusions

The methodology and approach of CPG4 has been followed in developing this Screening and Scoping study in support of the BIA with respect to Land stability. It is concluded that impact of the construction of the new basement at 128-130 Grafton Road should be further assessed, primarily by means of a Ground Investigation. The screening assessment revealed a number of issues which require further assessment and future impact assessment to inform the design and construction process.

- London Clay is the shallowest (mapped) strata, will likely form the basements formation and the retained soil
- Trees are locally present, will need to be assessed and protected from damage as necessary.
- Shrink and Swell aspects can be investigated as they can be strongly associated with the London Clay.
- The potential presence of Worked Ground will likely be established from the ground investigation
- The site is within 5m of the footway and health and safety considerations will need to be developed during design and construction
- The neighbouring properties are not known to have basements so that there may be a significant increase of the differential depth of foundations. This potential impact can be better assessed once ground conditions are better understood and basement construction processes are developed.

## 7 References

1. BGS Geological Map Sheet 256.
2. Ordnance Survey Map, Explorer 173, London North
3. Arup: Camden Geological, Hydrogeological and Hydrological Study.
4. CPG4: Basements and Lightwells
5. Redrock Development Group: various proposal drawings

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