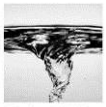
5 Nutley Terrace

Methodology Report on Monitoring Local Ground Conditions, Water Movement, Subsidence and Drainage

Ref No: **22100**

Date: February 2012



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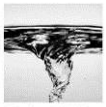


1.0 INTRODUCTION

The proposed scheme involves the construction of two new town houses and basements on the site of existing garages at 5 Nutley Terrace, Hampstead, London NW3 5BX.

The scheme is located in a residential area of Hampstead, north London. It is situated immediately north of Nutley Terrace (which marks the southern boundary of the site) with adjacent residential properties present on either side. An overgrown area containing numerous trees and shrubs comprises the northern site boundary and the area immediately north of the site.

Ground levels in the site area fall from north to south. The site is roughly rectangular in shape measuring approximately 25m (E-W) x 14m (N-S) at its widest. The site currently comprises of 3No. lock-up garages across the eastern half of the site with an open concreted area [site of 3no. former garages, now demolished] forming the western half. The majority of the site is flat and level with a similar elevation to the Nutley Terrace, however, the northern and eastern areas of the site comprise a concrete retaining wall which varies in height from c.2.0m (in the eastern area) to c.2.75m (in the western area).

Since September 2011, the London Borough of Camden require all developments that include new or extended basements should include a statement on meeting the terms of DP27. The guidelines for basement excavation require that consideration should be given to the proposals for monitoring local ground conditions, water movement, subsidence and drainage.

This following report addresses these issues and treats each as follows.

2.0 MONITORING LOCAL GROUND CONDITIONS

It is proposed to carry out the basement excavation by constructing a secant piled wall along the new perimeter. In one or two locations, consideration has also been given to localised underpinning to reduce the thickness of the basement wall make ups where necessary.

To ensure that local ground conditions are not adversely affected during the construction works, the following monitoring regime is envisaged:

- A professional topographical survey of the site will be executed and local spot levels around the perimeter of the excavation will be recorded.
- Positional studs will then be cast in temporary concrete bases at set locations around the perimeter of the proposed excavation.
- As work progresses these perimeter levels will be checked on a regular basis to monitor for any vertical or horizontal movements.
- A log will be kept and if any movement is recorded by the survey, the contractor will notify the Engineer to attend site to consider and remedy the cause.

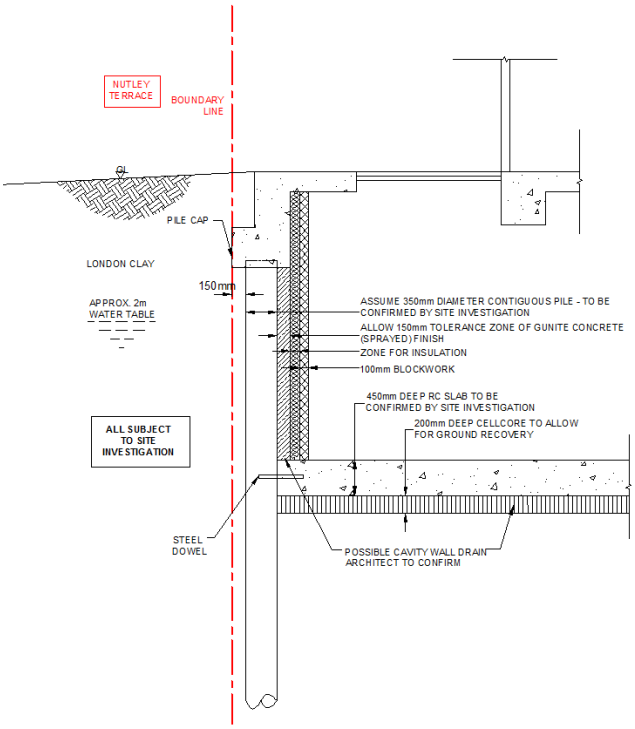
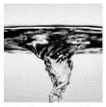


Figure 1: Section of Front Roadside Boundary.



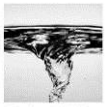
3.0 WATER MEASUREMENTS

During the Site Investigation, local standpipes were inserted on the perimeter of the site to record the existing water levels. The site investigation shows a relatively shallow groundwater table beneath the site fluctuating between approximately 1.87m and 1.96m.

The existing water level envelope is thus established prior to work commencing on site. Standpipes will subsequently be monitored during the construction works to ensure that there are no significant variations to the level previously recorded.

If changes occur that are unexpected or non-seasonal, work will be halted so that the cause and nature of ingress can be established.

Furthermore, during the excavation and construction of the basement any water ingress will be dealt with by the construction of a localised sump and pump operation.

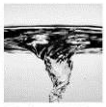


4.0 MONITORING OF SUBSIDENCE

Before construction commences, the levels of the local ground, boundary walls and the adjacent properties will be established. As well as the levels, specific markers will be set on the boundary and party walls.

The level and location of the established markers will be logged and checked regularly during construction so that any movements can be identified and dealt with accordingly.

If settlement/ subsidence is observed, works will be halted until the cause of the movement is established and remedied.



5.0 DRAINAGE OF SITE DURING CONSTRUCTION

Utilising the secant piling technique, a water tight box will be constructed in the excavation. The base of the excavation will be constructed with a collection slope so that any rain water or lateral water ingress will be directed to the sump pump. The flow of any water ingress on site will be under gravity to the sump. Water will be removed from the sump using suitable suction or submersible pumps not by bailing. The purpose of the pump will be as follows:

- Collect surface water run-off channelled to it by means of channels for discharge.
- Collect and discharge any lateral water ingress associated with the excavation of the basement.