

Martin Redston Associates

Consulting Civil & Structural Engineers

mredston@compuserve.com



3 Edward Square, London N1 0SP

Tel: 020 7837 5377 Fax: 020 7837 3211

6 Hale Lane London NW7 3NX

Tel: 020 8959 1666 Fax: 020 8906 8503



Our ref: 11.206

19th July 2011

Michael Eales
Briffa Phillips Architects
19-21 Holywell Hill,
St Albans,
AL1 1EZ

Dear Mr Eales,

33 Holmdale Road, London NW6

Introduction

The property will be constructed on an infill site at the above address. In view of the inclusion of Holmdale Road in Camden's Planning Guidelines as part of a flood risk area, we have included a Hydrogeological Assessment in accordance with current guidelines published by Camden Council in the last few months.

Planning Policy Context

Camden Planning Guidance (December 2006) and Camden Local Development Framework (January 2010), require all proposed developments to consider the affects of ground and surface water flooding. Consideration is also required of drainage systems to ensure that they do not affect neighbouring properties or the local water environment as a result of any changes to subterranean ground water. It is also indicated in the Planning Guidance document that local storm water drains in the area are known to run to capacity during periods of high rainfall. It is understood that the Planning policy is to ensure that flooding is minimised and if possible prevented when new developments are constructed.

Site Description

The property is situated at the corner bend between numbers 31, a house and 35 a block of flats. Holmdale Road rises up towards Mill Lane, which represents the half way point down the slope extending down from the reservoir in Hillfield Road to the North and the Corner of the high ground of Hampstead Heath further away. The site previously was developed with terraced housing but it is understood that these were demolished prior to 1956 when a new block of flats was developed on the adjoining site.

The development comprises a detached three-storey house, The site is relatively flat with but the new access will be at lower ground level. The proposed lower ground floor level scheme will follow the footprint of the existing site. The proposed lower ground floor level will be situated approximately one metre below pavement level. Details of the proposed developments are set out in Briffa Phillips Architects drawings.

A Soil Investigation report was prepared in August 2007 by Geo-Environmental Investigations Ltd. This indicated that there had previously been masonry buildings on the site and that the ground conditions were predominantly London Clay without any water ingress in the borehole.

Ground Conditions

As indicated above the site is undeveloped and by reference to the One Inch Geological Survey Map of the Area it was established that London Clay Formation, with 0.8 metres of Made Ground at the surface, underlies the site. A soil investigation was commissioned and a full description and Borehole Logs can be found in the Soil Report in **Appendix A**. These clay materials were verified during the construction process together with the remains of original foundations and the remainder of a previous house on the site

The Soil Report states that:

No groundwater was encountered in any of the excavations. The site does not lie within any fluvial floodplains

Further trial pits were excavated on 27th May 2011 and left open for twenty four hours overnight. No water was encountered in these excavations.

Hydrogeology

The underlying London Clay Formation is classified as a non-aquifer. This is defined as a formation that is generally regarded as containing insignificant quantities of mobile groundwater. However minor groundwater flows through such formations, although imperceptible can take place but is likely to reduce the amount of surface water flow during periods of high rainfall.

Hydrology

From experience during previous high rainfall events, it is considered that local surface water drainage is affected by rainfall runoff from Hampstead, which then diverts either side of the Haverstock Hill crest, just South of Pond Street /Lyndhurst Road junction. Water can then flow down Finchley Road and Mill Lane into Holmdale Road. Local drainage sewers are known to be running at capacity, and therefore flooding can take place along the roadway. On the basis that the predominantly London Clay Formation and low permeability nature of the near-surface soils, coupled with the fact that the Site is at the crest of the hill, it is expected that there is very limited surface water infiltration potential. On this basis it is likely that groundwater flow rates in the vicinity of the property will be very low. It should also be recognised that the considerable urban development of the area will have already limited surface water infiltration by the addition of structures and hard landscaping.

Overall groundwater flow rates in the near surface soils are expected to be very low; this is confirmed by the noted general absence of groundwater inflows into the boreholes and trial pits.

Construction Methods

Structural drawings and details have been prepared (Drawing 11.206/1) indicating the full methodology of bored piling and construction of reinforced concrete retaining walls below the building and around the site. Light wells at the front are bounded by retaining walls which restrain the remaining ground between the building and the road. The below ground structures will be made watertight by the inclusion of water resisting concrete and by the addition of a proprietary waterproofing system (Sika or similar). This waterproofing system will be specified as a series of inert water resisting cement render layers applied directly to the concrete surfaces to ensure that moisture remains outside the curtilage of the new structure. See **Appendix B** for information on the water resisting cement.

Conclusion

From the above information it is clear that the current ground water levels are below the proposed new basement structure. Boreholes and trial pits indicate that water is not rising to the level of the new lower ground floor slab. The current surface runoff flow of water during periods of high rainfall will remain similar to that existing following the construction of the new lower ground level. Moisture entering the ground around the building will be diverted away to the existing drainage system in a similar manner to that which currently exists. By installing an inert concrete and cement rendered structure there will be no requirements for additional pumping or drainage into the Local Authority sewer system during normal basement use.

The construction of this lower ground floor level will have little or no effect on existing drainage and ground water flows around the property.

Yours sincerely,



M A Redston