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Mr. D. Lazarus
3, Rosemont Road
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15 July 2015

Dear Mr Lazarus,

1 RANULF ROAD – HYDROGEOLOGICAL ASSESSMENT

We have reviewed the hydrogeological condition of the area of No. 1 Ranulf Road in order to assess the potential impact of the proposed basement extension on the local hydrogeology.

We understand that the existing basement, which is currently under most of the main house, will be deepened by approximately 1.5m and it will be extended westwards under the existing garage and to the rear of the house over the existing terrace. The basement plan and sections are shown in the drawings 8776-PA02, 8776-06-C and 8776-07-C prepared by Taylor Whalley Spyra (TWS), who are the structural engineers for the works. The finished floor level of the new basement is about 3m below the ground level at the front of the main house and it is at the same level of the garden to the rear of the terrace.

The western wall of the garage, which is to be the western edge of the new basement, already extends to the foundation level of the existing basement and the level of the terrace at the rear of the house is about 1.5m above the formation level of the new basement. The basement extension will therefore require the deepening of the existing walls by approximately 1m, the formation of a 1m deep concrete mass footing along the perimeter rear edge and the excavation of the ground currently filling the area under the garage and the area of the terrace at the rear of the house. The TWS drawing 8776-06-C shows the existing and proposed levels.

The local topography of the area of the site is a fall towards the south-west with an approximate gradient of 1:10. At the front of the property the ground level is about

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+85mOD and in the rear garden the ground steps down from about +83.6mOD at the rear of the house to about +82mOD at about 5m from the house.

The British Geological Survey (BGS) 1922 map shows that the site is underlain by London Clay and Claygate Member cover the London Clay at about 50m to the east of the house. However, on a smaller scale, the BGS 1982 map shows that the extent of the Claygate Member is wider and reaches the location of the site.

BGS record boreholes from a site in Briardale Gardens, about 250m to the north of the property, describe the presence of 1.5m of Made Ground over weathered London Clay, which is identified from a level of about +82.8mOD. Un-weathered London Clay is identified from +78.2mOD. In a site in Kidderpole Avenue, about 250m to the south-east of the property, the London Clay is encountered under 6m of Claygate Member from about +86mOD.

A number of trial pits have been carried out on site. The deepest of them was sunk at the rear of the garage from a ground level of about +83.6m and extended to 1.5m depth. It showed the presence of brown clay, which has been described as weathered London Clay, to the investigated depth. The clay shows localised lenses of silt, which are typical of the upper lithological unit of the London Clay. No groundwater was encountered nor signs of instability were noted that could suggest the presence of free water.

From the evidence above it appears that the site is underlain by London Clay. If Claygate Member occurred, maybe in some parts of the site, their extent would be probably limited and, given the information on the area, the nature of the Claygate Member would be expected to be very clayey and difficult to distinguish from the London Clay.

The nature of the London Clay in the area of the site is siltier and sandier than the clay generally encountered in Central London, but its permeability is still low and therefore limited water flow could be expected within the clay. Minor horizontal flow could occur within siltier lenses, but this is likely to be localised.

The topography of the area suggests that a large proportion of the local rainfall would follow the natural gradient of the hill side running in the top soil across the top of the London Clay. A stream of the Westbourne River runs parallel to Heath Drive at about 500m to the east of the site and it is likely to represent the preferential path way of groundwater. A proportion of local rainfall will also run off the hard surfaced areas (highways, hard standing gardens, roofs) into the combined sewers.

The brown colours of the clay in the pit sunk in the rear garden and the fact that issues with water ponding have never been identified at the site suggests that the amount of perched water above the London Clay is probably very limited.

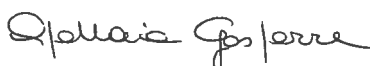
The existing basement at the site already intercepts the perched water above the clay and its extension under the house will not adversely alter the existing situation. The extension at the rear of the house would only locally extend the existing barrier to the most superficial water, but this is unlikely to have significant effects on the local hydrogeology. Water run-off will be collected by gravity drains that will be integrated into the existing drainage pipe system. The current discharge into the existing foul and sewer system will not be altered.

The Environment Agency flood plan shows that the property is in an area at low to medium risk of flooding from surface water. Finchley Road and Platts Lane, nearby, have been affected by floods in 1975 and 2002. Measured have been taken as part of the Camden Flood Risk Management Strategy to alleviate risks in the area.

From the discussion above, we conclude that the proposed basement extension at 1 Ranulf Road is not expected to have adverse effects on the local hydrogeology.

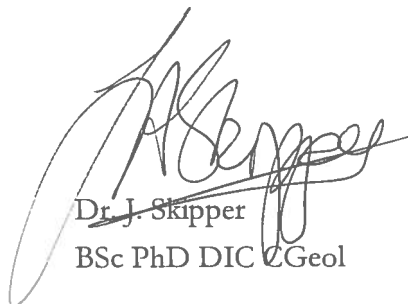
Yours sincerely,

For Geotechnical Consulting Group,



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