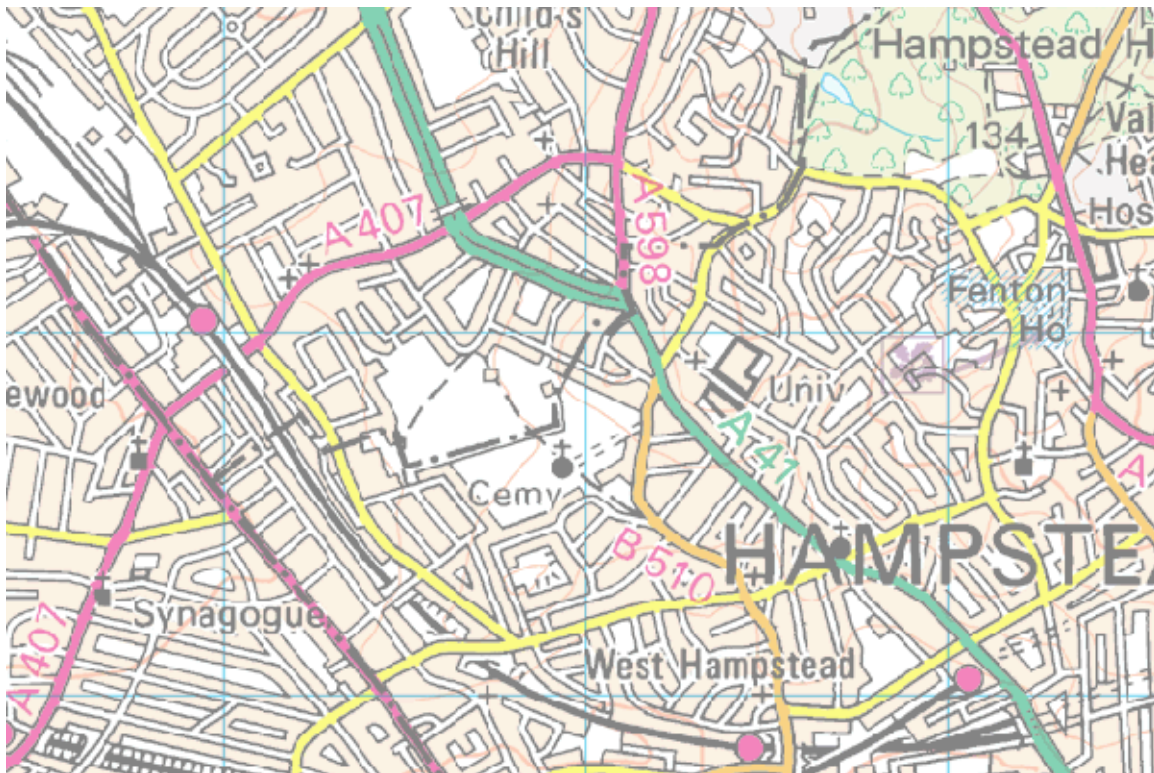


3 Ranulf Road

London

NW2 2BT

Hydrological and Flooding Risk Report



Date Issued:	26.03.2012
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1. INTRODUCTION

London Basement have been commissioned by Kamvari Architects to undertake a flood risk report to assess the impact of the proposed basement construction at 3 Ranulf Road, London NW2 on the local groundwater regime and the risk posed by flooding.

This is in response to changes in the LDF Policy DP23-Water and DP27 Basements and Lightwells, with specific reference to the following section

23.12 Development can have an impact on the water environment beyond the site where it takes place by altering the flow of water above and below ground and changing where water is absorbed or rises to the surface. For example, the construction of a basement could cause surface water flooding if its location forces water to the surface or could cause flooding elsewhere if the movement of water below ground is altered. Changing water movements can alter soil conditions in the wider area. Applications for developments in areas where historic underground streams are known to have been present will be required to include assessments of the potential for, and management of, groundwater flood risk (see our Camden Planning Guidance supplementary document for further information). Basements also affect the ability of the ground to absorb rain when soil is replaced by an impervious structure and can be particularly susceptible to flooding due to their underground location. In certain circumstances the use of basements may be restricted to non-habitable uses. For further detail on our approach to basements please see policy DP27-Basements and lightwells.

This report presents the findings of a desk based study of the available ground and groundwater conditions in the surrounding area taking into account published geological records from the British Geological Survey, groundwater conditions from the Environment Agency and the available site investigation information from Chelmer Site Investigations from work carried out in April 2011, the report of this activity can be found in appendix B of this document.

Using this information conclusions are drawn on the possible impact of the proposed basement structure on the local groundwater and drainage regime.

Information regarding the proposed water management systems is presented in appendix C of this report.

It should be noted that this report does not comprise a geotechnical appraisal of the proposed development.

2. SITE LOCATION

2.1 General

The site is located at No. 3 Ranulf Road, London NW2 2BT
A site location is presented in Figure 1.

2.2 Proposed development

The proposals are to create a new basement storey within the demise of the proposed new building.

The property is to be a family dwelling and the additional space is predominantly for recreational and ancillary use and is not intended to be 'habitable' such as a self contained dwelling. As such the risk to life has been considerably reduced.

It is proposed that the new basement will be drained by a surface water pump and 'dual' pumps are to be installed as standard. These are fitted with a high level alarm with battery backup to warn in the event of pump failure. A further battery back up system is available to ensure the pumps continue to operate in the event of mains failure.

Details of the water management systems are presented in appendix C.

3. GEOLOGY AND GROUND CONDITIONS

3.1 Published geology

According to British Geological Survey the site lies on the Claygate Beds overlying the London Clay Formation.

3.1.1 Claygate Beds

17 – 24 m. Interbedded, fine-grained sand, silt and clay.

The lower boundary of the Claygate Beds is drawn at the base of lowest fine-grained sand bed, conformable on silty clay.

3.1.2 London Clay Formation

London Clay Up to 150 m Fine, sandy, silty clay. The London Clay Formation ¹ is an over consolidated firm to very stiff, becoming hard with depth, fissured, blue to grey silty clay of low to very high plasticity. The upper and lower parts may contain silty or fine grained sand partings. It also contains, within it, laminated structured, nodular claystone and rare sand partings. The London Clay is approximately 90m thick in the area. The London Clay is relatively impermeable and this is confirmed by the relatively low permeability typically 1×10^{-9} m/s and lower.

¹ <http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=LASI>

3.2 Available ground investigation information

A site investigation was undertaken by Chelmer Site Investigations under the direction of London Basement. The factual reports is included as Appendix B.

4. GROUNDWATER

4.1 Aquifer classification

Bagshot Formation and Claygate Beds are classified as a Secondary Aquifer (Class A) by the Environment Agency (EA, 2010). These comprise permeable layers capable of supporting water at a local scale.

The Claygate Beds can let some water pass through and therefore springs may be found at the boundary of the Claygate Beds with the impermeable London Clay.

The London Clay is classified as an aquitard, although is slightly more permeable where weathered or where it has a higher proportion of sand.

4.2 Groundwater

The borehole log records no groundwater until a depth of 5.3 m below the ground level. The remarks the borehole log record water seepage at 5,3m and that was moist at the base.

5. CONCLUSIONS

5.1 Current hydrological regime

The ground and groundwater conditions indicate that precipitation falling on the site where not already collected by gulleys from roof and hard standing has and will continue to infiltrate through the made ground and firm clay passing downwards until it reaches the top of the relatively low permeability London Clay Formation where the direction of flow will become lateral. Contribution to local groundwater from vertical infiltration of rainwater is likely to be very limited at this site and the development will not alter this.

The proposed development is outside of 20 metres from either a Canal or Watercourse. Therefore, the likelihood of flooding is minimal. This is confirmed by the Environment Agency as an area which is outside of the floodplain.

5.2 Impact of proposed basement construction

The site investigation data confirms the anticipated shallow depth geology suggested by desk study information.

The site investigation information would suggest that the basement will not encounter groundwater or form an obstruction to regional flow. Furthermore, the available borehole information from the BGS in the area would confirm that groundwater could be expected at 5.3 m or so below which is below the anticipated depth of the proposed construction.

Based on the ground and groundwater conditions at the site, the proposed basement will have no discernable impact on the local hydrology and will therefore not impact or influence neighbouring properties. It is outside of 20 metres from either a Canal or Watercourse. Therefore, the likelihood of flooding is minimal. The flood map from the area is shown in figure 2.

The level used for the 1:200 year flood is considered to be 5.32 AOD.

We have either carried out or received Planning approval for many basement works for example: in Goldhurst Terrace, Willoughby Road, Parliament Hill, Perceval Avenue and Glenilla Road all with AOD's ranging well above the 1:200 year floodplain.

FIGURES

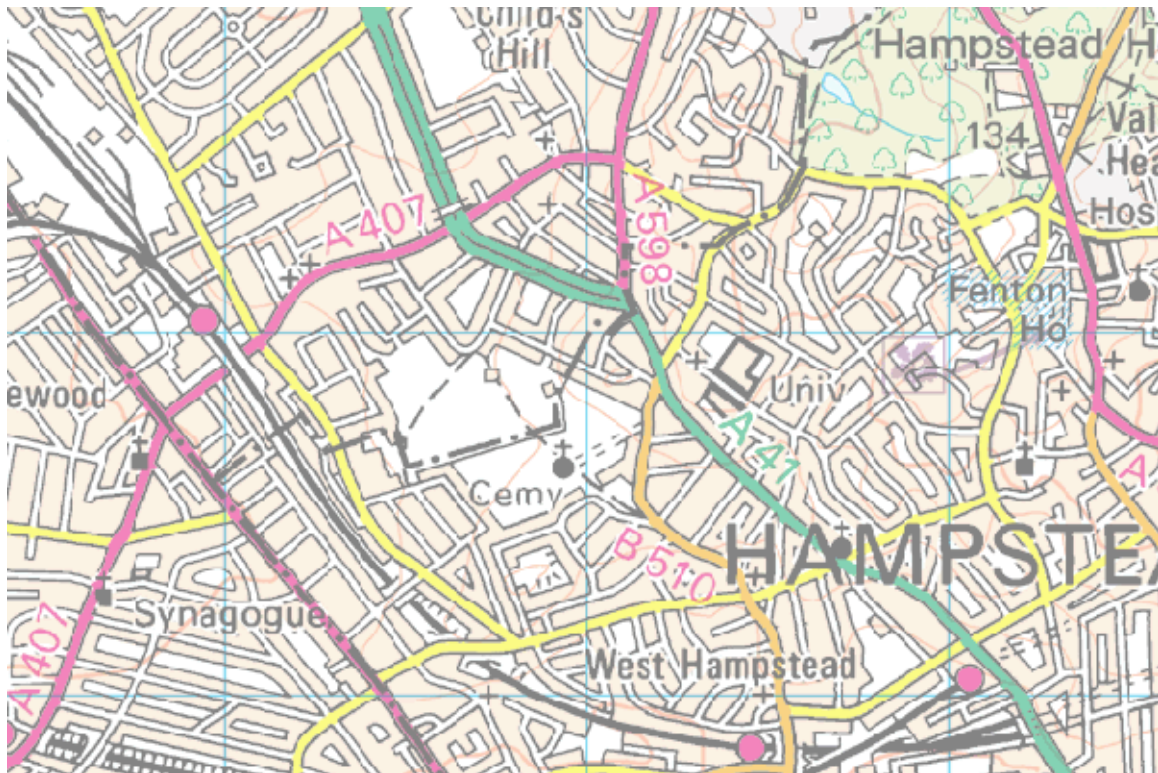
- 1 Site location plan**
- 2 EA flood risk map**

figure 1 - site location map



3 RANULF ROAD
LONDON
NW 8 2BT

figure 2 - EA flood risk map



map of NW2 2BT at scale 1:40,000 map - clearly showing Ranulf Road is not in a flood risk area

Appendices

- A Proposed basement plans**
- B Site investigation records**
- C Water management systems**