DIG FOR VICTORY

63 GOLDHURST TERRACE
LONDON, NW6 3HB

Hydro-geological assessment & Flooding risk report

Issued: September 2014
Issued by Alex Efstathiou
Revision: A

1. INTRODUCTION

DFV have been commissioned by Mr and Mrs Cryer to undertake a hydrogeological assessment and flood risk report to assess the impact of the proposed retro fit basement construction at 63 Goldhurst Terrace on the local groundwater regime and the risk posed by flooding.

This is in response to the London Borough of Camden's request for information regarding the impact of the proposed basement on groundwater levels and the possible changes subsequent to construction and the client's consulting engineers request for information regarding the water table and ground conditions.

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 the site specific borehole, carried out in August 2014, (the report of this activity can be found in appendices of this document). Information regarding the proposed water management systems is also presented in the appendices of this report. Using this information conclusions are drawn on the possible impact of the proposed basement structure on the local groundwater and drainage regime in section 5.

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

2. SITE LOCATION

2.1 General

The existing property is a mid-terrace brick built Victorian house.
The site is located at 63 Goldhurst Terrace, London NW6 3HB.
A site location plan can be found in the appendices of this document (Figure 6.1).

2.2 Proposed development

The proposal is to create a new basement storey below the footprint of the existing property complete with lightwells to the front and rear. The property is a family dwelling and the additional space is predominantly for recreational and ancillary use and is not intended to be solely habitable such as a self-contained dwelling.
As such the risk to life has been considerably reduced. Practical measures are taken to reduce the impact of flooding and low level upstands will be formed around the lightwells to reduce the risk of localised flooding.

Basement spaces are drained by a surface water pump and 'dual' pumps are 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 in high risk areas to ensure the pumps continue to operate in the event of mains failure; this is not considered necessary in this proposal and will not be fitted as standard.

Details of the water management systems are presented in appendix 6.4.

Scheme designs for the proposed basement structure are presented in appendix 6.5.

3. GEOLOGY AND GROUND CONDITIONS

3.1 Published geology

The British Geological Survey Map for this area suggests that the site geology comprises of
London Clay.

London Clay Formation

London Clay Up to 150m Fine, sandy, silty clay. The London Clay Formation 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 1x10-9 m/s and lower.

3.2 Site investigation

A borehole investigation was undertaken by Chelmer Site Investigations in August 2014. Other reports to varying depths have been sourced and referenced from historic works previously carried out in the area.
The factual reports are included in Appendix 6.3.

4. GROUNDWATER

4.1 Aquifer classification

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 encountered a slight water seepage at a depth of 2.6m below the ground floor level. This is not expected to be a problem as it was only minor and local.

Historic borehole records in the area found no water at depths of up to 7m below ground level, significantly below the proposed dig depth. A small amount of seepage is to be expected in the course of projects of this nature and would not present any undue challenges to the completion of same.

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 ground 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 to be limited at this site and the development will not alter this.

5.2 Impact of proposed basement construction

The site investigation data confirms the anticipated shallow depth geology suggested by the desk study information. The site investigation information indicates that the basement should not encounter problematic groundwater or form an obstruction to regional flow. Furthermore, the available borehole information from the BGS in the area confirms that groundwater is not expected to a depth of 7m, which is considerably below the anticipated depth of the proposed construction. The level used for the 1:200 year flood is considered to be 5.32 AOD.
The AOD for this property is 39.6m.

The flood map from the area is shown in appendix 6.2. Please also refer to the Surface Water Run-Off Calculation in appendix 6.6.

We have received planning approval and carried out basement works on Goldhurst Terrace itself and roads surrounding the proposed works, including Aberdare Gardens and Canfield
Gardens, all with AOD's ranging well above the 1:200 year floodplain.

5.3 Conclusion

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 a canal or watercourse and consequently the likelihood of flooding is minimal.

6. APPENDICES

6.1 Site location plan

DIG FOR VICTORY

6.2 EA flood risk map

Environment Agency Flood Risk Map of NW6 3HB- any potential flood risk areas would be shown in blue, should there be any risks

6.3 Site investigation reports

6.3.1 British Geological Borehole Report

TQ28SE/ 276
2623.8410
256

GROUND EXPLORATIONS LIMITED

BOREHOLE SECTION SHEET

Date December 19 55

CONTRACT NAME: Swiss Cottage. ORDER NO.

Bored for : Messrs. Goodhart-Rendel & Partners.

Address : Kirkland House, Whitehall S.W1.

Address of Site : Coleridge Gardens

District or Town : Swiss Cottage County : London

Standing Water Level : - below surface Dia. of Borehole : 6 Inches.

Water Struck (1) None (2) (3)

Boring Commenced : 5.12.55 Boring Completed : 6.12.55

Special Remarks :

Jar Samples : 2871 2'0"; 2872 5'0"; 2879 9'0"; 2876 13'0"; 2878 17'0"; 2880 22'0";

Core Samples : 2873 5'6" - 7'0"; 2875 10'0" - 11'6"; 2877 14'6" - 16'0"; 2879 18'6" - 20'0"; 2881 23'6" - 25'0";

Sand/Gravel Samples :

DESCRIPTION OF STRATA	Thickness Feet	Thickness Inches	Depth Below Surface Feet	Depth Below Surface Inches
The descriptions are given in accordance with the Civil Engineering Code of Practice No. 1 "Site Investigations." No responsibility is accepted for these descriptions and clients should examine the samples submitted.				
No. 1 Boring				
Topsoil	1	6	(0-1½) 1	6
Loamy clay	3	6	(1-5) 5	0
Brown clay	20	0	(5-25) 25	0
TOTAL FROM SURFACE ...	25	0	25	0.

This form is to be returned to Head Office immediately the borehole is finished.

Foreman's Signature..... *Date*.....

P. & R. Ltd.—175