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Bruce Huxtable
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47-51 Great Suffolk Street
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03 June 2014

Dear Bruce,

5 KEMPLAY ROAD

Further to your email dated 2nd June 2014, we have reviewed the independent reviewers' comments (Independent assessment of basement impact assessment for planning application 2013/7906/P at 5 Kemplay Road, London NW3 1TA, LBH4212 dated March 2014) with respect to the hydrogeological impact assessment of the proposed basement at 5 Kemplay Road.

We have now reviewed the ground water monitoring data up to April 2014 and carried out a simplified (reasonably conservative) seepage analyses to assess the potential effect of the new basement considering the existing basements underneath the adjacent properties 1 and 3 Kemplay Road.

The site-specific groundwater monitoring data between September 2013 and April 2014 indicated standing water levels fluctuating between +82.18mOD and +83.65mOD. The five sets of groundwater level readings taken between the above mentioned dates suggested a worst hydraulic gradient of about 1 in 50 flowing from south to north i.e. approximately perpendicular to the longer sides of the proposed basement.

The OS map (1:25,000 OS Explorer 173, London North) indicates that the topography of the area dips to the southeast at a gradient of approximately 1 in 16. The BGS map (1:50,000 BGS North London, England and Wales, Sheet 256) indicates that the surface of London Clay dips to the southeast at a gradient of approximately 1 in 200.

The seepage analysis has been carried out using GEO-SLOPE finite element program SEEP/W. Steady-state conditions have been assumed. An area in plan with approximate dimensions 220m by 210m has been analysed i.e. approximately 100m all-round the proposed basement to eliminate any unwanted boundary effects. It has been assumed that an impermeable basement sits into a semi-infinite soil layer across which water is free to flow. Conservatively, the soil is assumed to be fully saturated and is analysed for two permeability values (i.e. 10^{-3} m/s and 10^{-7} m/s) independently of the pore water pressure. The direction of groundwater flow has been conservatively assumed to be perpendicular to the longer sides of the proposed basement.

For the seepage analysis, groundwater level is assumed to be +86m OD (i.e. 4.2m above the formation level of new basement) at 100m away on the upstream side and +81.8m OD (i.e. 0m above the formation level) at approximately 100m downstream side of the proposed basement. These levels are based on the critical hydraulic gradient of 1 in 50 (i.e. 1m drop in head over 50m in the direction of flow), which was established based on the gradient the London Clay surfaces in this area together with the groundwater levels measured across the site in three boreholes.

The results of the worst case scenario are shown in Figure 1 as a change of water head across the site. The construction of new basement causes an increase in water head of less than 0.5m immediately adjacent to the upstream face of new basement. On the sides of the basements, water pressure increase is typically less than 0.2m, and reduces with distance from the 'upstream' wall. Consequently, it appears that the water flow regime is slightly altered by the presence of new basement only across a limited area that has a radius of about 20m around the edges of the new basement. On the basis of this analysis, the impact of the new basement on the general hydrogeology of the area is very slight and has negligible impact on the neighbouring properties.

Also, it should be noted that this analysis do not consider the holes in the sheet pile wall therefore the water pressure increases noted above are conservative estimates.

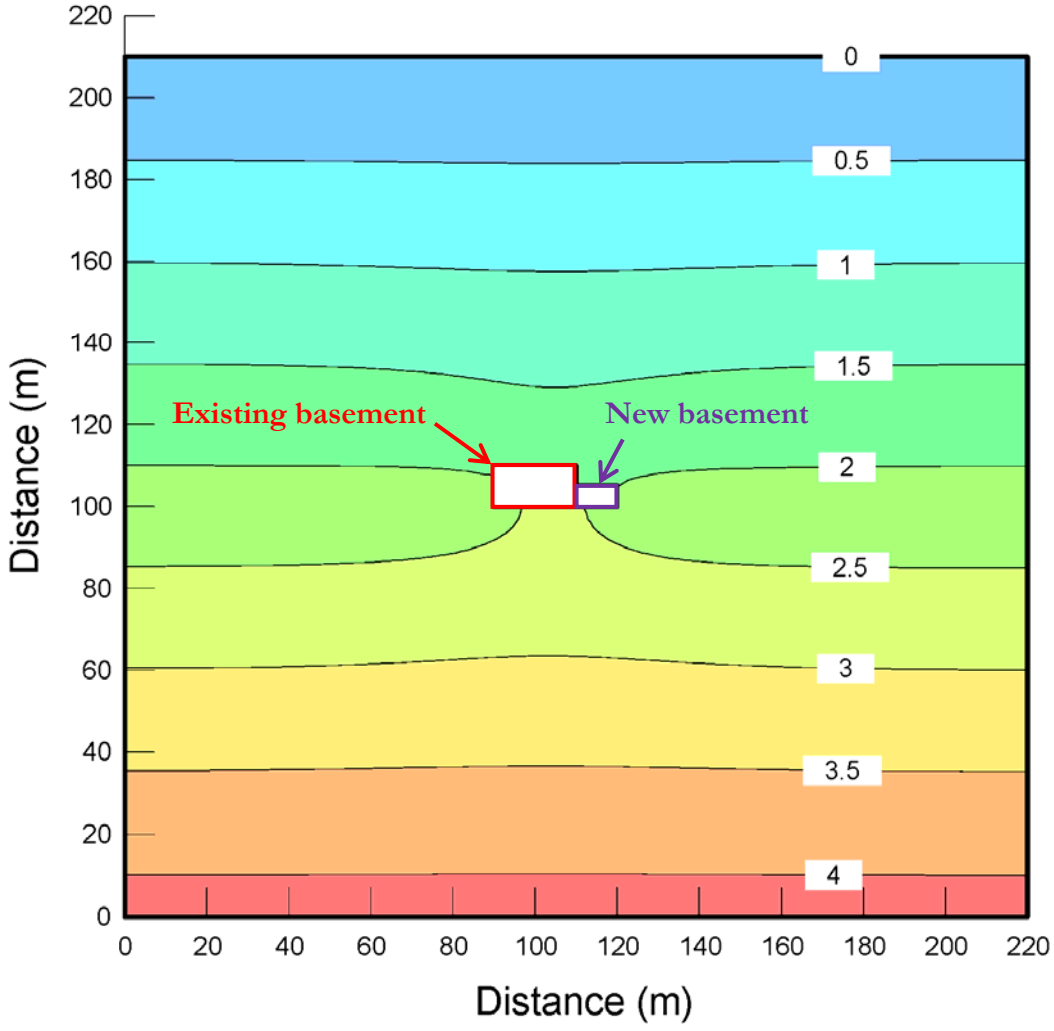

Figure 1: Results of the seepage analysis (worst case)

Yours sincerely,

For Geotechnical Consulting Group,

03/06/14

Dr. Chandra Abbireddy

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