

12382 /BC
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GREEN
STRUCTURAL
ENGINEERING

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By Email Only

Dear Paul,

RE: 20 PLATT'S LANE NW3 7NS – BIA QUERIES

Further to recent emails we have reviewed the comments from Seamus Lefroy-Brooks and our response to the issues raised are given below. For ease of reference we have repeated the query.

- A. Temporary works methodology stating that underpins will be undertaken using an Observational Method with ground conditions recorded as they are exposed to confirm design assumptions or modify the design as necessary. This will include contingency planning should ground conditions differ from those previously encountered.

The design and construction of the proposed underpinning works will be carried out in accordance with the general principles of the Observational Method in accordance with CIRIA Report 185 [The Observational Method in ground engineering – principles and applications, published 1999].

The design carried out to date has been based on a review of the general site geology, using information from the British Geological Survey and other boreholes in the vicinity, and a site specific Geotechnical Site Investigation to confirm the general nature of the underlying strata.

During the works the soil conditions will be monitored on a daily at the start and end of each working shift by the site foreman and weekly by the supervising engineer. The soil conditions will be recorded for each pin excavation and the information circulated to relevant parties on a weekly basis.

Any variations in the soil conditions from that previously encountered during the ground investigations will be dealt with by the control procedure set out in the next section.

At all stages during the works movement monitoring of the existing building and those adjacent will be carried out on a regular basis to suit the works be carried out. The scope of the monitoring and its frequency will be agreed under the Party Wall Act and typically will occur weekly or twice weekly during the structural works and fortnightly during the non-structural works.

The results of the movement monitoring will be circulated to all relevant parties under the Party Wall Agreement.

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B. A contingency plan and monitoring strategy detailing the approach to be taken if ground conditions differ from those anticipated (i.e. high infiltration rate and associated instability in excavations), specifically for groundwater control:

To deal with potential variability in the ground conditions, in particular the presence of groundwater in sand layers within the Claygate Beds, the following control procedure will be implemented once construction starts.

- i) As part of the Party Wall Awards, and based on the detailed design, the trigger levels for the soil monitoring will be agreed with all relevant parties.
- ii) Based on the geotechnical information from the site borehole the following trigger levels are assumed:

	GROUND CONDITIONS	GROUNDWATER CONDITIONS	MONITORING PROCEDURE	Contingency plan
GREEN	Ground is London Clay	Ground 'damp' with no visible seepage.	Site records issued to design team as normal procedure.	None required.
AMBER	Clear and distinct sand layers, <50mm thick and dry or damp, in a clay matrix encountered.	Visible seepage Controllable with local site sumps and pumping.	Engineer informed immediately water ingress encountered.	Install sump pump system, consider sacrificial trench sheets.
RED	Distinct sand layers, >50mm in thickness and wet, encountered.	Water ingress greater than 4l/hr/m run	Engineer and geotechnical engineer informed immediately, excavation stopped and implementation of contingency measures.	Open excavations on party wall limited to one underpin at a time; and Hole backfilled and/or localised permeation grouting undertaken; Sacrificial trench sheet used and sump pump capacity increased.

- iii) On a twice daily basis, at the start and finish of each shift, the contractor's site representative will inspect all excavations being undertaken at that time and record the excavation location, depth of excavation, ground conditions, groundwater conditions and any variation or anomalies found.
- iv) No excavations will be left open over weekends.
- v) The supervising engineer will review the site information and movement monitoring results on a regular basis. Typically least twice weekly for the green and amber states and daily for red state.
- vi) The supervising engineer will visit site on an agreed schedule to inspect the excavations underway and inspect the works already carried out. A formal record of the visit and any comments is to be issued to all relevant parties.

vii) If any significant variation in the ground conditions or excessive (greater than 4l/hr/m run) groundwater is encountered the supervising engineer is to be informed and the works stopped in the excavation with all necessary temporary propping installed to maintain stability.

If required the excavation is to be backfilled in compacted excavated material to maintain stability.

Initially it is assumed that the supervising engineer will be contacted by telephone and/or email and if necessary visit site to inspect.

viii) The supervising engineer will review the change in geological or hydrological conditions against those assumed in the structural design and seek the input of CGL, where appropriate.

ix) Construction Methodology reviewed and agreed with all relevant parties.

x) Works continue.

C. Confirmation that the temporary works will be approved by suitably qualified geotechnical and structural engineers

The temporary works scheme will be reviewed by the supervising engineer.

In addition the temporary works design will, as part of the Party Wall Awards, be submitted to the adjoining owners whose checking engineers will review and comment upon the scheme on behalf of the adjoining owners.

I hope this allows you to proceed, but please contact me if there are any questions on the above.

Yours sincerely,



Brian Cochrane

Green Structural Engineering Ltd

cc - Adam Cadman, CGL