

1 Guilford Street, London WC1N 1DR Monitoring Proposal

1 Introduction

The purpose of this proposal is to outline a monitoring system that will measure the effects of the proposed demolition, piling works, excavation and subsequent new construction works on the neighboring structures. Based on an assessment of risk the focus of monitoring will be the single storey extension to number 137 Grays Inn Road which abuts the site.

2 Installation

The monitoring system will consist of 3D Reflective Targets and precise leveling points. Monitoring control stations will be established around the perimeter of the site from which the monitoring targets will be surveyed. Additional survey targets will be placed on surrounding structures outside the sites zone of influence to act as control points, these points will be accurately fixed in a 3 dimensional plane. Access and permission to install these targets will need to be sought from the building owners.

The control targets will be used to establish station coordinates prior to each survey. Their coordinates will be calculated using a resection method undertaken within the survey instrument. This method of control establishment allows for accurate control to be determined without having to rely on a fixed station in close proximity to the site.

3 Reflective Targets

Small reflective monitoring targets are to be installed using an epoxy adhesive. These targets are to be established in the following locations:

- The northern end of the side wall of number 1 Guilford Street along the connecting alleyway wall and remote from the worksite.
- The southern corner of 20 Brownlow Mews and remote from the worksite.
- The rear wall of the number 137 rear extension at ground floor and parapet level. This will need some degree of local opening up to create sightlines for the initial measurements to be taken.

The first two targets provide the control positions and the third set of targets will help measure any movement.

4 Frequency and Duration of Readings

At this stage we anticipate the monitoring frequency to be on a weekly basis during the demolition and construction of the basement. Hence the monitoring will commence well before the installation of the piled wall and any reduced level dig. The full duration of the monitoring is yet to be established but we would anticipate this continuing through to the completion to the structural

works. Additional readings are to be undertaken following any unauthorized excavations or other significant events.

5 Trigger Levels

At the time of writing the latest movement projections at footing level for the rear of number 137 are 7.9mm horizontally and 6.7mm vertically. Final trigger levels to be confirmed following further assessment of the anticipated ground movements by Chelmer Investigations. At this stage the proposed Trigger Levels are as follows:

Amber Trigger Level = 55% of maximum predicted movement

Red Trigger Level = 105% of maximum predicted movement

If survey readings indicating movement in excess of the Amber trigger levels are identified the Project Structural Engineer is to be notified immediately. Additional monitoring is to be put in place with an increased survey frequency as agreed with the Project Engineer. A detailed site inspection is to be undertaken and temporary works procedures on site are to be reviewed and where necessary additional support provided.

Following survey readings indicating movement in excess of the Red trigger level the works to that area of the site are to be suspended immediately and the Project Engineer notified. A full review of the proposed temporary works system will be undertaken and the proposals amended to address any deficiencies. No further works will progress until the revised proposals have been agreed with the Project Engineer. Additional monitoring will be put in place with an increased survey frequency.

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