

**58 ELSWORTHY ROAD** 

LONDON

NW3 3BU

**Movement Monitoring Specification** 

June 2025

20240435



GSE is the trading name of Green Structural Engineering Limited Registered in England No. 06533911 Registered Office: 28 Queensmill Rd, Fulham, SW6 6J5.

# **REVISION HISTORY**

Rev	Purpose	Date	Issued By	Approved
P1	Initial Issue	02/06/2025	MP	TC

#### MONITORING OF ADJOINING PROPERTIES

The proposals are considered low risk in terms of movements to adjoining property party walls. All temporary works arrangements/proposals will be designed to limit movement. We anticipate the movements to be to "Category 1" or less.

See the Building Damage classification table below based on Boscardin and Cording / Burland and Potts.

#### TABLE EXTRACTED FROM BRE DIGEST 251 SHOWING CLASSIFICATION OF DAMAGE

#### Table 1 Classification of visible damage to walls with particular reference to ease of repair of plaster and brickwork or masonry

Crack width is one factor in assessing category of damage and should not be used on its own as a direct measure of it.

Category of damage Ease of repair in italic type

- Hairline cracks of less than about 0.1 mm which are classed as negligible. No action required.
- Fine cracks which can be treated easily using normal decoration. Damage generally restricted to internal wall finishes; cracks rarely visible in external brickwork. Typical crack widths up to 1 mm.
- 2 Cracks easily filled. Recurrent cracks can be masked by suitable linings. Cracks not necessarily visible externally; some external repointing may be required to ensure weather-tightness. Doors and windows may stick slightly and require easing and adjusting. Typical crack widths up to 5 mm.
- 3 Cracks which require some opening up and can be patched by a mason. Repointing of external brickwork and possibly a small amount of brickwork to be replaced. Doors and windows sticking. Service pipes may fracture. Weather-tightness often impaired. Typical crack widths are 5 to 15 mm, or several of, say, 3 mm.
- 4 Extensive damage which requires breaking-out and replacing sections of walls, especially over doors and windows. Windows and door frames distorted, floor sloping noticeably\*. Walls leaning or bulging noticeably\*, some loss of bearing in beams. Service pipes disrupted. Typical crack widths are 15 to 25 mm, but also depends on number of cracks.
- 5 Structural damage which requires a major repair job, involving partial or complete rebuilding. Beams lose bearing, walls lean badly and require shoring. Windows broken with distortion. Danger of instability. Typical crack widths are greater than 25 mm, but depends on number of cracks.

The following outline methodology and "best practice" will be used to monitor and detect movement to the property during the excavation and construction of the proposed basement under 40 Corringham Road. The primary purpose of the monitoring is to observe movement to ensure that it is within the expected ranges and to enable the early detection of unexpected behaviour that will require the rapid implementation of any remedial actions, if necessary (Amber /Red). The Contractor is to be responsible for undertaking the monitoring and issuing to the adjoining Surveyors. The Contractor should monitor the targets on the adjacent party walls for the project as agreed with the PW Engineers / Surveyors.

# Monitoring

www.gseltd.co.uk

The contractor should install the monitoring points on both front, rear elevations and flank wallS as shown Movement Monitoring Locations drawings. Permission will be required for monitoring points on adjoining owner(s) Properties.

Monitoring would be started before the demolition commences so a background set of mean data can be obtained as can the feasible accuracy of the readings. A digital level shall be used to detect settlement at GF whilst an EDM shall be used to record the position three dimensionally of the retro targets fixed to the party walls at the upper levels.

# **Control Stations**

Control stations will be installed on the front and rear boundary wall.

# Levels

Use bar-code staff targets at ground floor level to precisely monitor vertical position.

# **On-plan positions**

Other than the bar-code staffs the contractor will use retro targets which will monitor both the on-plan position and verticality.

# **Frequency of Monitoring**

The frequency of the monitoring shall vary depending on the risk of the activities on site. GSE propose monitoring to be completed on a weekly basis during the substructure works and for post substructure works provide two monthly readings or until two consecutive sets of readings are achieved. This frequency is to be agreed with relevant PW and third party surveyors.

#### **Reporting and Presentation of Information**

The schedule and format of measurements, data processing and reporting should be tabular/ graphical to enable simple interpretation of data. Construction activities should be annotated on the graphical data to assist with the understanding of the cause of any movement. Both displacements and movements from the last survey are to be calculated and presented. Results shall be issued to the adjoining Engineers within 2 days of the survey. The weather conditions shall be recorded at the time of the survey along with any relevant items.

#### Monitoring, reporting and Actions

Trigger Levels:-	Green	< 5mm in any plane x, y, or z
	Amber	≥ 5mm in any plane x, y, or z
	Red	≥ 8mm in any plane x, y, or z

If Amber is reached the project engineer will visit site to establish if the cause is due to the Contractor's construction/demolition method or if it is due to soil movement. If it is due to the Contractor's work method, this will be revised. If it is due to soil movement a geotechnical specialist may need to be notified and the bearing stresses of new foundations re-evaluated. Works will continue however monitoring intervals will be halved until movement is confirmed below amber level.

If red levels are reached all works are to stop immediately and the project Engineer will visit site. An inspection is carried out to the neighbouring property to assess what, if any damage has occurred which will be rectified as outlined in the party wall awards. The project Engineer will visit site to establish if the cause is due to the Contractor's construction method or if it is due to soil movement. If it is due to the Contractors work method, this will be revised. If it is due to soil movement a geotechnical specialist may need to be notified and the bearing stresses re-evaluated.

The party wall checking Engineers will be notified if either Amber or Red trigger levels are reached.

info@gseltd.co.uk

Prepared by	Checked by		
Wankler	ferri		
Matthew Paulden	Toffee Chen		
GREEN STRUCTURAL ENGINEERING LTD	GREEN STRUCTURAL ENGINEERING LTD		
JUNE 2025	JUNE 2025		