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The Hall School  
23 Crossfield Road  
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## Movement Monitoring Report

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## 1.0 Introduction

1.1 Elliott Wood Partnership Ltd has been appointed to act as structural and civil engineers for the proposed redevelopment of the Hall School site, further details of which can be found in the 'Structural and Civil Engineering Planning Report and Basement Impact Assessment'. This report sets out the proposed movement monitoring regime to be carried out during the works. It will be updated to incorporate any specific requirements or trigger level limits agreed under the Party Wall Awards.

## 2. General

2.1. The contractor shall be responsible for establishing and setting out all levels and data in order to coordinate any work with the future proposed constructions.

2.2. The integrity of the excavation is to be maintained by the contractor at all times.

2.3. The contractor shall take all necessary precautions to ensure that noise, dust and vibration as a result of the works are kept to a minimum.

## 3. Monitoring of Perimeter Wall Structures

3.1. The contractor is to identify all buried services provide a schedule of conditions of all adjacent properties with photographs agreed with the CA and relevant wall surveyors prior to works commencing.

3.2. Any cracks to the fabric of the adjacent structures of perimeter retained walls are to have graduated tell tales applied prior to commencement of all demolition works, or as they are uncovered, subject to the contractor gaining approval from the respective party wall surveyors.

3.3. In accordance with the Burland Category of Damage, the category of damage shall not exceed "1 - Very Slight". This limits crack width to 1mm and tensile strain to 0.05-0.075.

3.4. The perimeter walls shall be monitored regularly for signs of movement via the following methods.

3.4.1. Visual inspection

3.4.2. Accurate survey techniques

3.4.3. Graduated tell tales

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- 3.5. Movement shall be measured with the use of prism reflector targets allowing measurement of movement in all three directions using an electronic distance measuring instrument (EDM). Location of monitoring targets shall be agreed prior to commencing works and shall be recorded on survey drawings and results tabulated and presented graphically and submitted to the CA on a weekly basis.
- 3.6. During demolition, excavation and basement works, visual monitoring should be carried out daily in conjunction with measured monitoring in the morning and evening. Once basement works have been completed, measured monitoring to be carried out weekly whilst daily visual monitoring should be maintained.
- 3.7. Monitoring of movement shall have a minimum accuracy of  $\pm 1\text{mm}$ . Monitoring cracks shall have a minimum accuracy of  $\pm 0.2\text{mm}$ .
- 3.8. Exact monitoring positions to be agreed with the contractor/surveyor to permit a line of sight. 3-D monitoring to be undertaken weekly by an independent survey company during the main demolition and construction works until the demolition and basement works are complete. Following this, monitoring should continue on a monthly basis. During the defects/liability period, two measurements should be taken at least six months apart.

#### 4. Trigger Levels

- 4.1. Monitoring to be undertaken for a suitable period prior to main excavation works commencing to enable base movement due to daily thermal effects to be established.
- 4.2. Readings should be taken at the same time each day to minimise the effects of temperature fluctuations.
- 4.3. Frequency of monitoring to be in accordance with CIRIA Guide C579.
- 4.4. Lateral or vertical movements and deflections of the perimeter retained party walls and adjacent structures above those due to thermal effects will be monitored based on a traffic light system to be proposed by the contractor based on the following trigger points (to be agreed with party wall surveyor):

Adjacent to Contiguous Piled Wall			
LEVEL	ALLOWABLE HORIZONTAL MOVEMENT	ALLOWABLE VERTICAL MOVEMENT	ACTIONS TO BE TAKEN
Green	Up to 13mm	Up to 7mm	Site works and frequency of monitoring can proceed as normal.
Amber	Exceeding 13mm but less than 18mm	Exceeding 7mm but less than 12mm	Monitoring frequency is increased and a meeting is to be convened to review working procedure and assumptions.
Red	Exceeding 18mm	Exceeding 12mm	All work to be immediately ceased and a meeting is to be convened to identify reasons for the exceedance of the limit and to discuss remedial actions that may be required.

Adjacent to Underpinning Section			
LEVEL	ALLOWABLE HORIZONTAL MOVEMENT	ALLOWABLE VERTICAL MOVEMENT	ACTIONS TO BE TAKEN
Green	Up to 6mm	Up to 4mm	Site works and frequency of monitoring can proceed as normal.
Amber	Exceeding 6mm but less than 9mm	Exceeding 4mm but less than 6mm	Monitoring frequency is increased and a meeting is to be convened to review working procedure and assumptions.
Red	Exceeding 9mm	Exceeding 6mm	All work to be immediately ceased and a meeting is to be convened to identify reasons for the exceedance of the limit and to discuss remedial actions that may be required.

Adjacent to Secant Piled Wall			
LEVEL	ALLOWABLE HORIZONTAL MOVEMENT	ALLOWABLE VERTICAL MOVEMENT	ACTIONS TO BE TAKEN
Green	Up to 10mm	Up to 8mm	Site works and frequency of monitoring can proceed as normal.
Amber	Exceeding 10mm but less than 14mm	Exceeding 8mm but less than 12mm	Monitoring frequency is increased and a meeting is to be convened to review working procedure and assumptions.
Red	Exceeding 14mm	Exceeding 12mm	All work to be immediately ceased and a meeting is to be convened to identify reasons for the exceedance of the limit and to discuss remedial actions that may be required.

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