



MOVEMENT MONITORING SPECIFICATION



FOR

**75 BAYHAM STREET
LONDON
NW1 0AA**

**CLIENT: W12 STUDIOS
PROJECT NO: P3096**

January 2017

DOCUMENT CONTROL SHEET

Project Title	75 Bayham Street, London NW1 0AA	Project No.	P3096
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1.0	First Issue	19/01/2017	

1.00 MOVEMENT MONITORING OF ADJOINING BUILDINGS AND STRUCTURES

1.01 Adjoining Properties

The adjoining properties, (No.69, 71, 73 and 77 Bayham Street, No. 6a Pratt Street and No. 1 and 2 Pratt Mews) shall be monitored for line and level during underpinning, excavation and construction of the new basement floor at No. 75 Bayham Street. The monitoring shall be by means of reflective targets, fixed to the adjoining structures, the movements of which shall be measured to an accuracy of +/- 2mm.

1.02 Monitoring Points for the Adjoining properties

The Monitoring Points for the adjoining properties will be positioned as follows:-

- No.69 Bayham Street: inside 75 Bayham Street property on the wall adjoining No.69,
- No.71 Bayham Street: inside 75 Bayham Street property on the wall adjoining No.71,
- No.73 Bayham Street: on front and rear elevations and inside 75 Bayham Street property on the wall adjoining No.73,
- No.77 Bayham Street: on the front elevation and inside 75 Bayham Street property on the wall adjoining No.77,
- No.6a Pratt Street: inside 75 Bayham Street property on the wall adjoining No.6a Pratt Street,
- No.1-2 Pratt Mews: inside 75 Bayham Street property on the wall adjoining No.1-2 Pratt Mews.

The location of the above buildings and post is shown in **Figure 1** below.



Figure 1
Buildings to be monitored
Annotated Land Survey

The proposed locations of monitoring points are shown in **Figure 2** and **Table 1** below. These locations are to be agreed and confirmed as acceptable by the Monitoring Contractor, Michael Alexander and the Adjoining Owner. Position of targets shall take into consideration the monitoring information requirements and the access available to fix and 'sight' the targets.

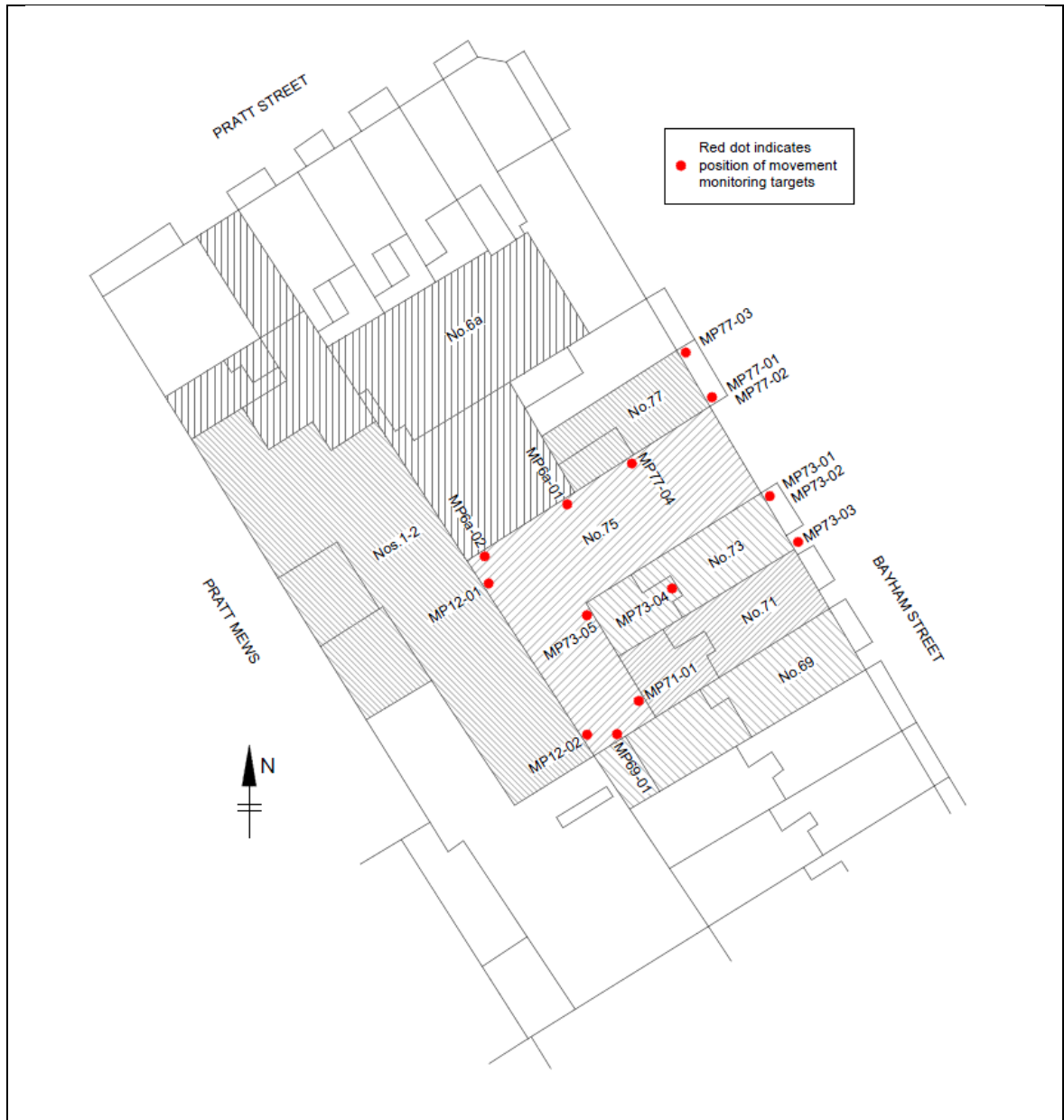


Figure 2
Monitoring point location plan

Monitoring Point Reference Number	Building address	Height from ground floor (m)
MP 69-01	No.69 Bayham Street	4.6m (or eaves level)
MP 71-01	No.71 Bayham Street	4.6m (or eaves level)
MP 73-01	No.73 Bayham Street	3.0m (or first floor level)
MP 73-02	No.73 Bayham Street	9.2m (or eaves level)
MP 73-03	No.73 Bayham Street	9.2m (or eaves level)
MP 73-04	No.73 Bayham Street	9.2m (or eaves level)
MP 73-05	No.73 Bayham Street	4.6m (or eaves level)

MP 77-01	No.77 Bayham Street	3.0m (or first floor level)
MP 77-02	No.77 Bayham Street	9.2m (or eaves level)
MP 77-03	No.77 Bayham Street	9.2m (or eaves level)
MP 77-04	No.77 Bayham Street	4.6m (or eaves level)
MP 6a-01	No.6a Pratt Street	4.6m (or eaves level)
MP 6a-02	No.6a Pratt Street	4.6m (or eaves level)
MP 12-01	No.1-2 Pratt Mews	4.6m (or eaves level)
MP 12-02	No.1-2 Pratt Mews	4.6m (or eaves level)

Table 1
Suggested height for Monitoring Points

2.00 RECORDING OF RESULTS

2.01 All readings shall be presented in an electronic format on drawings and schedules and emailed to all interested parties, within 24 hours of taking the reading. The presentation shall provide an absolute value, as well as the relative movement to the previous reading and cumulative movement to the initial reading. Refer to **Table 2** for a suggested format for illustrating monitoring results.

Monitoring Point	Original Coordinate Readings (m)	Current Coordinate Readings (m)	Difference Between Current and Original Readings (mm)	Difference Between Current and Previous Readings (mm)	Axes
	Date: DD/MM/YY	Date: DD/MM/YY			
MP 77-01					X
					Y
					Z
MP 77-02					X
					Y
					Z
MP 77-xx					X
					Y
					Z

Table 2
Suggested Format for Monitoring Records

The monitoring results shall also be clearly presented on relevant graphs with axes clearly identified and units displayed. These graphs will illustrate the trigger value limits, to enable quick reading of the monitoring results.

All monitored displacements will be displayed in millimetres.

2.02 If a cumulative movement of any of the monitoring points reaches the "Trigger Value", Works shall be stopped and appropriate Action shall be taken. The Action will be dependent on the direction of movement and the activity being carried out at the time.

2.03 An initial set of monitoring readings shall be taken following installation of all target points.

A second set of monitoring readings shall be taken prior to commencement of works. The second set of readings will establish the differences which can be attributed to the accuracy of readings, seasonal variation in the ground conditions, and thermal/moisture movement in the buildings, when no significant works have been carried out.

Subsequent monitoring readings shall be taken at intervals stated in Clause 3.02, which correspond to the relevant construction works occurring at that period of time.

2.04 The monitoring results shall be forwarded by Michael Alexander to the Building Owner's Surveyor, Adjoining Owner's Surveyor and his Advising Structural Engineer, within 48 hours of recording.

3.00 CONSTRUCTION PROGRAMME & MONITORING FREQUENCY

3.01 Construction Programme

The main items from the Preliminary Construction Programme are summarised in the Table below. The dates are indicative only, but will be updated to correspond to the latest Construction Programme, when received.

ACTIVITY	START DATE	END DATE
Underpinning	TBC	TBC
Excavation	TBC	TBC
Basement Floor Slab	TBC	TBC

Construction Programme

3.02 Proposed Frequency of Readings of Monitoring Points on Adjoining Properties

During Construction - commencement to completion of construction of Lower Ground Floor Slab.

- Generally the readings shall be taken at 2 weekly intervals.
- However monitoring of the proposed underpinning will be carried out daily

Post Construction:

- A final set of readings shall be taken 4 weeks after completion of construction of the overall structure.

4.00 INTERPRETATION & ACTION

4.01 Trigger Levels

The following system of control shall be employed. The Trigger value, at which the appropriate action shall be taken, for each section, is given in Clause 4.02

AMBER: Increase monitoring frequency and undertake a detailed review of construction methods. Prepare a revised method of working.

RED: Stop any further excavation. Make safe the excavation. Review monitoring regime and implement revised plan of works.

4.02 The Trigger Levels shall be as follows:

Adjoining Property No. 69 Bayham Street

X-axis (along the plane of the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Y-axis (perpendicular to the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Z-axis (level vertically)	Amber:	+/- 5 mm
	Red:	+/- 7 mm

Adjoining Property No. 71 Bayham Street

X-axis (along the plane of the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Y-axis (perpendicular to the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Z-axis (level vertically)	Amber:	+/- 5 mm
	Red:	+/- 7 mm

Adjoining Property No. 73 Bayham Street

X-axis (along the plane of the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Y-axis (perpendicular to the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Z-axis (level vertically)	Amber:	+/- 5 mm
	Red:	+/- 7 mm

Adjoining Property No. 77 Bayham Street

X-axis (along the plane of the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Y-axis (perpendicular to the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Z-axis (level vertically)	Amber:	+/- 5 mm
	Red:	+/- 7 mm

Adjoining Property No. 6a Pratt Street

X-axis (along the plane of the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Y-axis (perpendicular to the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Z-axis (level vertically)	Amber:	+/- 5 mm
	Red:	+/- 7 mm

Adjoining Property No. 1-2 Pratt Mews

X-axis (along the plane of the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Y-axis (perpendicular to the wall)	Amber:	+/- 5 mm
	Red:	+/- 7 mm
Z-axis (level vertically)	Amber:	+/- 5 mm
	Red:	+/- 7 mm

4.03 Action

Any movements which exceed the **Amber** Trigger Levels shall be immediately reported to Michael Alexander.

In the event of movements exceeding the **Amber** Trigger Levels, the proposed frequency of readings of Monitoring Points on the Adjoining Property shall be increased.

Representatives from Michael Alexander and the Adjoining Owner Representatives' shall then meet on site, as soon as practicable, to review the works being carried out, to inspect the property and to decide and agree on the appropriate Action to be taken.

If **Amber** level is reached and it is assessed that vertical movements are predominantly caused by underpinning works, rather than being related to any significant component of seasonal movement, works should be stopped as if **Red** Trigger Level was exceeded.

Any movements which exceed the **Red** Trigger Levels shall be immediately reported to Michael Alexander and appropriate action will be agreed and a meeting will be convened with the Adjoining Owners' Representatives.

4.04 Cessation of Works due to Unforeseen Circumstances

If the programme is revised significantly, the Monitoring Regime will be re-evaluated in conjunction with Michael Alexander and the Adjoining Owners' Representatives.