P. P. O'CONNOR
Committed To Excellence

Dust, Noise, Vibration Management Plan:

Faraday Tower Demolition Works



Document Reference: C0721-DNVMP-REV-2

Client: The University of Manchester

Employers Agent: Arcadis

Issue	Outline	Prepared by	Date	Reviewed by	Date
0	Initial draft	D Mackinlay	08.06.26		
1	Contract Issue	SY / MOD	19.08.26		
2	Limit levels amended	D Mackinlay	17.09.26		
3	Pendulum Hotel Included	D Mackinlay	09.10.26		
4	Pendulum Response Added	D Mackinlay	20.10.26		

Introduction

This document outlines P.P. O'Connor's proposed approach to the management of dust, noise and vibration resulting from the proposed demolition works at Faraday Tower. This document describes the protection measures that will limit the environmental disturbances associated with the proposed works. This management plan has been prepared to identify mitigation measures to support the demolition process and planning.

Purpose and Scope

This management plan relates to the monitoring and management of dust, noise and vibration emissions of Faraday Tower which is located on the University of Manchester Campus and identifies the control measures to be implemented throughout the duration of the project. The reporting process together with action levels and responses are also identified.

Benefits of an Environmentally Friendly Site

Maintaining an environmentally responsible site will support positive relationships between P.P. O'Connor, the client, local residents, adjacent businesses, regulatory authorities and Manchester City Council, helping the project progress smoothly. Benefits will be delivered at both corporate and project level and include:

- Better local air quality
- Prevention of complaints from local residents due to nuisance (dust, noise, odour, light).
- Reduction in the number of environmental exceedances
- Potential for increased future business due to good reputation
- Materials efficiency and prevention of physical waste,
- Increased energy efficiency
- Improved resource productivity
- Enhanced competitiveness.

Action Plan – Incident Response

Dust

Where visible dust increases without an alarm activation, we will identify the source and increase dust suppression in the affected area or activity.

Where a dust alarm is received, the relevant activity will be paused, additional dust suppression will be applied, and the activity will only recommence once conditions have been reviewed and monitored.

Dust level for **amber** trigger PM10 at 40 µg/m 3.5 m and **red** trigger PM10 at 50 µg/m 3.5 m as per agreed monitoring station points when carrying out dust monitoring. Dust levels will also be visually inspected throughout the project.

Vibration

John Garside Building

The John Garside building is roughly 65m away from the demolition works and experiments which are being carried out within the building are sensitive to vibration. It has been agreed that the limit levels within this building are as shown below:

Green	**trigger – 0 – 2. 49mm/S PPV**
Amber	**trigger – 2.5 – 3.49 mm/s PPV**
Red	**trigger > 3.5 mm/s PPV**

George Begg

The George Begg building is 17m away from the demolition works and the building is used for lectures and is also used to carry out experiments. As George Begg is closer to the demolition works the vibration limit levels are higher and as shown below.

Green	**trigger – 0 – 7.49 mm/S PPV -**
Amber	**trigger – 7.5 – 9.99 mm/s PPV**
Red	**trigger > 10 mm/s PPV**

Action level for **amber** trigger - **7.5 – 9.99 mm/s** PPV and **red** trigger -**10 mm/s** PPV at nearest receptor points when carrying out vibration monitoring. Please note, vibration spikes shall be reviewed looking for continuous durations of greater than 3 seconds to rule out one off spikes which may sit outside of our control.

Pendulum Hotel

The Pendulum Hotel is within 20m of the demolition works at its closest point. The limit levels for the hotel are as shown below.

Green	**trigger – 0 – 7.49 mm/S PPV -**
Amber	**trigger – 7.5 – 9.99 mm/s PPV**
Red	**trigger > 10 mm/s PPV**

Action level for **amber** trigger - **7.5 – 9.99 mm/s** PPV and **red** trigger -**10 mm/s** PPV at nearest receptor points when carrying out vibration monitoring. Please note, vibration spikes shall be reviewed looking for continuous durations of greater than 3 seconds to rule out one off spikes which may sit outside of our control.

Noise

Action level for **amber** trigger +2dBA above baseline levels and **red** trigger +3dBA above baseline levels as per agreed monitoring station points when carrying out continuous noise monitoring.

Note. These are examples only and the trigger levels may vary and will be project specific and defined by the Section 61 agreement with Manchester Council (if required)

Dust, Noise, and Vibration Monitoring

PPOC will install a Proactive Monitoring System, comprising a number of fully automatic continuous environmental monitoring stations located, subject to agreements with Local Planning Authority (LPA) and Stakeholders:

- On the main demolition boundary
- Adjacent to particular sensitive receptors

Mabey Hire noise and vibration equipment will be used throughout the project:



Example of noise monitoring equipment



Example of vibration monitoring equipment

The units will have the ability to automatically upload data to a cloud-based server. The system shall have the capability to send email alerts to the PPOC site manager, HSEQ team and clients representatives warning of any breaches of agreed levels. Warnings are issued on a traffic light system as laid out in the Incident response section below.

The objectives of continuous proactive environmental monitoring for noise, dust and vibration are to:

- Enable and assist the client and project delivery team on evaluating the efficiency of mitigation measures by implementing BPM to control and improve environmental performance on site.
- Enable an understanding on how the measured levels are compared with agreed criteria values and how they are communicated.
- Document and continually report on monitoring requirements, both for demonstrating compliance on a regular basis, and in response to recorded exceedance or complaint.
- Allow the works to be re-assessed in a timely manner in the case of any exceedances to enable control measures to be revised / upgraded and minimise any off site nuisance

The P.P. O'Connor project team will have access to an online portal showing continuous monitoring results.

Implementation

Following agreement with the client the monitoring equipment will be set up on the boundary of our demolition works within. See Fig 1 showing the above ground sensitive receptors directly adjacent to the site boundary.

The placement will consider the adjacent sensitive receptors and other factors including prevailing winds and existing structures / features that may act as acoustic barriers.

Under CDM regulations PPOC, as the Principal Contractor, has a statutory obligation to undertake various duties.

Project Team Responsibilities

HSEQ team

- Produce and communicate this procedure to the project management team as well as ensuring that designated personnel prepare and issue monitoring reports to the client
- Carry out regular periodic audits to ensure compliance with this Environmental Management Plan, and other relevant documents.
- Ensure that equipment for monitoring noise, vibration and dust are serviced and calibrated in accordance with the manufacturer's recommendations.
- Will collate monitoring data and complete the relevant forms and reports for analysis and submittal to the client

Contract Manager

- Ensure that communication and liaison arrangements for organising communications with adjacent neighbours and with the Local Authority with regard to noise, dust and vibration are maintained for the duration of project.
- On receiving monitoring alerts or a complaint, the Project Manager will inform the client and then initiate an investigation on the probable cause of the event and commence reviewing available monitoring data with the Environmental Monitoring Coordinator. The Contract Manager will correlate the time of the event and other pertinent information, including activities on or in the proximity of the site, to determine the probable cause of the alert or complaint. Where this is deemed to have emanated from site activities, propose corrective measures which are to be agreed and approved by the HSEQ team and monitoring consultants as necessary to ensure the implemented remedial actions will satisfy the predictions of preventing future recurrences.

Site Manager / Supervisors

- Monitor daily activities to ensure BPM are followed during all aspects of the works.
- Be on the initial contact for text alerts from the system and will immediately cease works that cause a breach of proposed levels.
- Maintain the works area until the source of the breach has been investigated and eliminated or negated via adopting different works methods or additional controls.

Dust Control and Mitigation

The following mitigation measures will be considered to minimise dust and other emissions from site activities and disruption or nuisance to neighbouring occupiers:

- Fine water spray techniques be deployed as necessary to keep the dust to a minimum.
- The wheels of vehicles leaving site will be cleaned using wheel wash or jet washing system.
- Spraying water at work faces, loading operations and site access roads.
- Dampening of exposed soil and stockpiles if necessary.
- The siting of stockpiles of brick, concrete, soil, and other materials away from dust sensitive areas.
- Regular inspection and cleaning of local highways and site boundaries for dust deposits via mechanical road sweeper.
- No fires on site.
- All site personnel trained in best practice for dust control by regular Environmental Toolbox talks.
- All abrasive cutting will have any dust generated supressed by way of a continual flow of water from proprietary equipment.
- Any abrasive cutting will be undertaken in a designated, isolated area to ensure that any dust generated whilst supressed cannot cause any unnecessary nuisance.

- Sheeting of all wagons leaving site carrying loose aggregate deconstruction material such as soil and hardcore which can be seen in the picture.
- Erecting windbreak netting around material stockpiles and vehicle loading/unloading areas, where required.



Vibration Control and Mitigation

P. P. O'Connor will use best practicable means to minimise vibration from the works including;

- Site personnel will be instructed on environmental matters and best practicable means to reduce vibration during the site induction.
- Sensitive location of drop zones and loading areas etc. away from sensitive receptors.
- All deliveries to be scheduled to occur during off peak daytime hours only to prevent disturbance to the local community.
- Engines to be switched off when waiting during delivery times.
- Monitoring will be carried out in accordance with the projects requirements to be agreed with the client's representative.
- Environmental monitoring records are kept electronically and available at all times.
- Only appropriately sized plant and equipment will be utilised on the project.
- Crushed concrete mats utilised to absorb energy from demolition arisings.
- Hydraulic powered Pulverisers and shears will be used when practicable (in lieu of pneumatic hammers).

Noise Control and Mitigation

P. P. O'Connor will use best practicable means to minimise noisy works including;



- Stationary plant such as generators will be located as far as practicably away from the nearest sensitive receptor.
- Plant will be used in accordance with the manufacturers' recommendations.
- Appropriate screens or enclosures will be provided where practicable, around plant and machinery and work area perimeters.
- Radios will not be permitted to be used anywhere on site.
- All engines will be turned off when not in use.
- All operatives will be issued with hearing protection to be worn if exposed to noise above 85 decibels.

- Hearing protection zones will be put in place using signage in areas suspected to have noise over 85 decibels. This will be confirmed by a noise assessment completed by the HSEQ team.
- P. P. O'Connor will only use plant and vehicles that are in good repair and conform to the manufacturer or legislative/British Standard emission standards BS 5228-2:2009.
- Plant maintenance and defect reports shall be held on site in designated file.
- Wherever possible, plant shall not be left running when not directly in use.
- P. P. O'Connor will ensure that all moving plant will have white noise reversing alarms, which are inherently quieter than those of standard manufacture.
- Hydraulic breakers, pneumatic drills and other noisy appliances will not be used outside the working hours agreed with the Local Planning Authority (LPA) without prior acceptance / agreement by the client and the LPA.

Incident Response

Incidents where action levels (as listed above in Action Plan – Incident Response) are exceeded will be responded to as follows;

- If during site activities action levels are exceeded this will be reported to the Project Manager.
- P.P. O'Connor's HSEQ team will investigate the incident and will collate the report and supply a copy to the Board of Directors, the client and the EHO as necessary.
- If the work, plant, and equipment are not being used correctly the works will be stopped and corrective action taken.
- If high readings are being caused due to unforeseen circumstances and the correct methodology/plant and best practice measures are being carried out, the client, and neighbours will be notified, and the reasons and timescales of nuisance works will be explained.
- Further monitoring will be carried out in accordance with the corrective action to ensure works proceed within the action levels, Records of any such incident and action taken are to be kept on site and communicated to all site personnel and the client.

Incidents where comments and observations are received;

- All comments and observations received will be recorded, in a site comments and observations book retained in the site office.
- Comments and observations will be investigated, and any corrective action implemented, and feedback given to any negative comment.
- The client will be advised of any negative comment and actions taken to investigate the validity and any actions which have been put in place to rectify the situation if this is found necessary. This may include local monitoring. Noise, vibration and dust comments and observations received will be dealt with by the Site Manager supported by the HSEQ team.

The categories for monitoring and reporting amber and red level responses are outlined below:

John Garside Building

GREEN 0- 2.9 mm/s PPV – All monitoring data is within acceptable levels –

- No action required
- Continue demolition works as per PPOC RAMS

AMBER LEVEL – 2.5 – 3.49 mm/s PPV – Measured Vibration levels Alert - indicating exceedance of this threshold

- Proceed with caution
- Vibration is above expected theoretical levels
- PPOC Site Manager to review demolition activities and consult with Andun Engineering

RED LEVEL – > 3.5 mm/s PPV – Measured Vibration levels Alert - indicating exceedance of this threshold –

- Stop activities that are causing vibration.
- Vibration has reached agreed limit.
- PPOC site manager to consult with PPOC Contracts Manager and Andun Engineering
- Review Work Practices and agree methodology before proceeding
- Consult with stakeholders to check sensitive equipment

George Begg Building & Pendulum Hotel

GREEN 0 - 7.49 mm/s PPV – All monitoring data is within acceptable levels –

- No action required
- Continue demolition works as per PPOC RAMS

AMBER LEVEL – 7.5 – 9.99 mm/s PPV – Measured Vibration levels Alert - indicating exceedance of this threshold

- Proceed with caution
- Vibration is above expected theoretical levels
- PPOC Site Manager to review demolition activities and consult with Andun Engineering

RED LEVEL – > 10 mm/s PPV – Measured Vibration levels Alert - indicating exceedance of this threshold –

- Stop activities that are causing vibration.
- Vibration has reached agreed limit.
- PPOC site manager to consult with PPOC Contracts Manager and Andun Engineering
- Review Work Practices and agree methodology before proceeding
- Consult with stakeholders to check sensitive equipment

Reporting Requirements

The results of the environmental monitoring will be reported on a monthly basis to key stakeholders unless agreed and instructed otherwise by the client. These can be cross referenced against site activities as detailed in site diary records from PPOC, should this be deemed necessary. The monitoring report will show both the trigger and actions levels and measurement data taken during working and non-working hours. Where monitoring values have exceeded trigger and action levels, a brief description of the reason(s) for this will be provided, together with any available mitigation taken to prevent recurrence.

Name	Company	Role	Email	Phone
Wojciech Przytulski	PPOC	Site Manager	Wojciech.przytulski@ppoconnor.co.uk	07985142945
Daniel Mackinlay	PPOC	Contract Manager	Daniel.mackinlay@ppoconnor.co.uk	07379445013
Lucy Townsend	Arcadis	Client Project Manager	lucy.townsend@arcadis.com	07534241061

Odours

As no biological processes are planned during the works, the main potential sources of odour are:

- Fuels used for plant and machinery
- Fumes from hot works
- Canteen / Welfare waste

The following measures will be implemented to control and minimise odours. Diesel will be stored in a dedicated tank / bowser (double bunded), located within the Principal Contractors Compound away from sensitive receptors. The storage of fuel will not result in any odour emissions as the fuel will be contained within a dedicated tank. Fugitive odour release may occur during re- filling of the tank and filling of machines/plant from the tank. However, these events will be of short duration and infrequent.

The following specific measures will be undertaken:

- Processing of material takes places with local water suppression in place (as required).
- The stockpile materials shall be located in places not exposed to windy weather conditions. (As far as reasonably practicable).
- Storage of stockpiled processed material on site will be kept for limited time.
- Latest innovation on dust suppression controls will be utilised at this project
- Ensuring project personnel used dedicated locked / sealed skips for canteen and welfare waste
- Hot Works / Flame cutting operations will be undertaken only by experienced operatives, away from sensitive receptors.

Site Personnel Briefings

Operatives will be briefed on the requirements to keep noise and vibration to a minimum in their induction training and through method statement briefings.

To maintain environmental standards, PPOC will ensure all site personnel understand the company's environmental requirements and their individual responsibilities.

PPOC will aim to keep levels of noise, dust, and vibration to a minimum from its activities on the site by ensuring that:

- All subcontractors are aware of and comply with the requirements of the project DNVMP and the full terms and conditions described within the project EMP.
- Resources (personnel and financial) are available to meet the environmental management requirements for this project.
- Corrective actions are implemented without undue delay and investigations carried out.
- Records and other relevant documentation are maintained.
- Continuous communication is kept with the adjacent occupiers and the local authority.
- Complaints and queries are to be addressed as soon as it is practicable.
- Exclusion zones will be established, if noise levels exceed 80 decibels operatives will be provided with appropriate hearing protection. If the noise levels exceed 85 decibels all personnel will need to use appropriate hearing protection.

Quality Assurance

Regular audits will be undertaken to ensure that monitoring and reporting is carried out in accordance with this procedure. Records of calibration and monitoring activities will be maintained in electronic format and are subject to document control as per project procedures. The supplier of all monitors will ensure they are maintained and calibrated throughout the duration of the project.

Audit

The DNVMP will be reviewed and accepted by the client prior to demolition works commencing and will be audited and reviewed periodically as part as the quality audit programme.

Non-conformances will be corrected immediately followed by a management review meeting. A copy of all audits carried out on the site will be filed in accordance with quality management system requirements.

Fig 1. Above Ground Sensitive Receptors

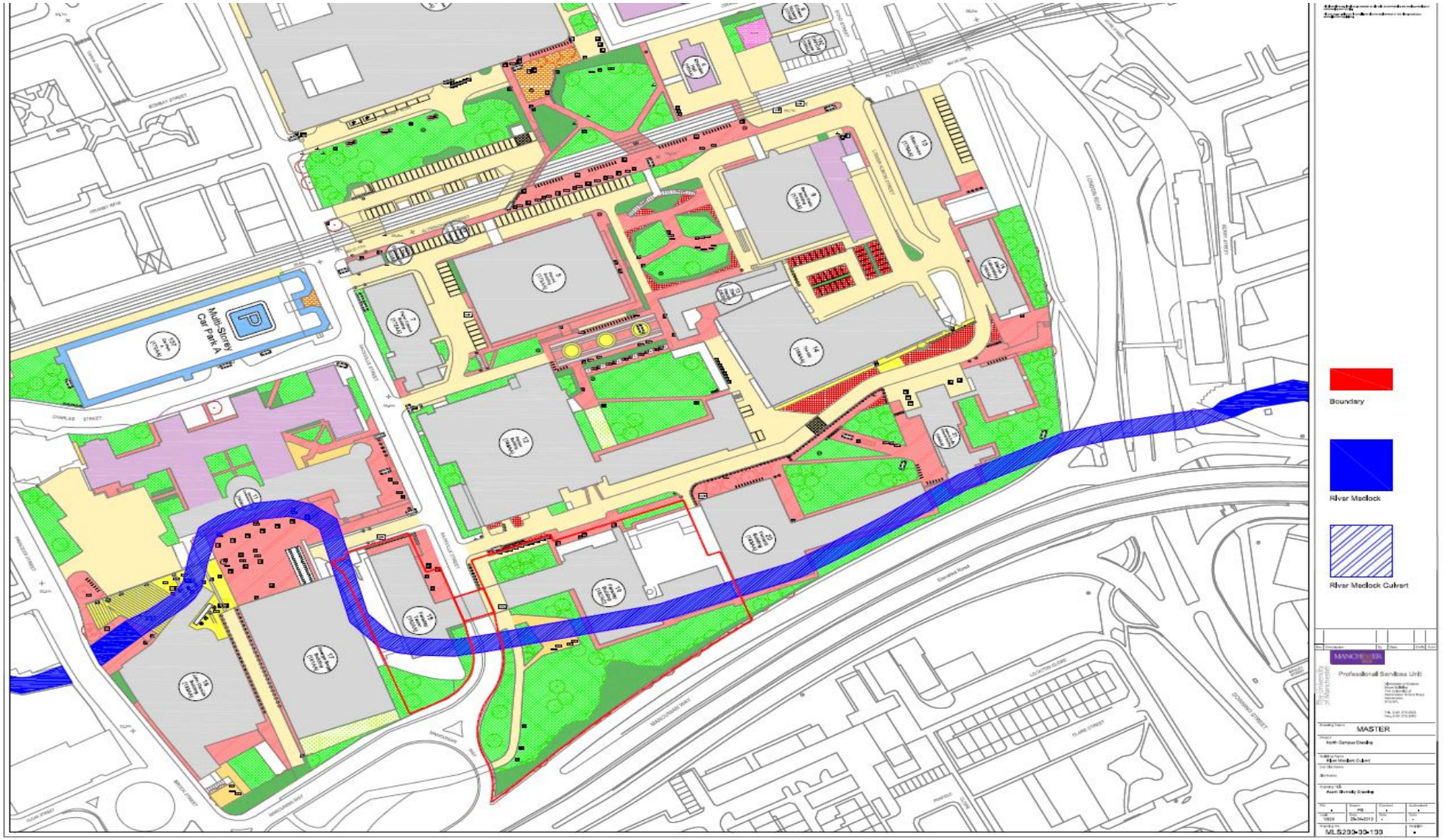


Fig 2. Minimum DN & V Monitoring Points

Further to instruction received from Jasmine Gallagher, Gleeds, 14.08.26, PPOC shall provide an additional noise and vibration monitors for the duration on the project. Location for these monitors to be agreed with the client pre-commencement of the works.

