P. P. O'CONNOR
Committed To Excellence

DUST, VIBRATION AND NOISE MANAGEMENT PLAN

Siemens PLC
Sir William Siemens House

SIEMENS

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Introduction

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

Purpose and Scope

This management plan relates to the monitoring and management of dust, noise and vibration emissions at the Siemens building Demolition Works, Road and Car Park Reconfiguration Sir William Siemens House, Manchester Project. Control measures for dust and fine particles are given for specific processes, such as the movement of vehicles and construction plant, materials handling and storage. This Guidance is intended to assist with the control of nuisance dust and fine particle (PM10) emissions, noise and vibration from construction and subsequent demolition activities.

Benefits of an Environmentally Friendly Site

An environmentally friendly site will help to establish good relationships between the P.P. O'Connor, the site owners and operators, local residents, adjacent establishments such as the Spire Hospital and The Birches Specialist School, as well as the regulatory authorities and Manchester City Council, thereby helping projects to run smoothly. Benefits will be felt at both corporate and project levels and include:

- Lessening of the impact on local air quality
- Prevention in the soiling of property, thereby reducing the costs of cleaning
- Prevention in the level of complaint from local residents
- Reduction in the number of environmental offences and hence prosecutions by the Local Authority
- Environmental damage
- Potential for increased future business
- Enjoyment of the benefits of increased profit due to prevention of physical waste, increased energy efficiency, improved resource productivity and enhanced competitiveness.

Action Plan – Incident Response

Dust

Dust alarm trigger level PM10 at 50 µg/m3 5 m from Spire Hospital, neighbouring schools, Lancastrian School and Birches School and Siemens building when carrying out dust monitoring using Micro dust pro, hand held data logging instrument.

Vibration

Action level 5mm/s and 7mm/s at nearest receptor points (Spire Hospital, neighbouring schools, Lancastrian School and Birches School and Siemens building) when carrying out vibration monitoring using RDL/Vibe Monitoring system.

Noise

Action level – +3dBA above baseline levels at nearest receptor points (Spire Hospital, neighbouring schools, Lancastrian School and Birches School and Siemens building) when carrying out attended noise monitoring using Tecpel 331 Sound Level Meter.

Dust Monitoring and Control Measures

Dust monitoring will be carried out throughout the project using a real time hand held data logging instrument for the detection of airborne dusts, fumes and aerosols.

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

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- Maintaining solid 2.4m high Heras fencing with debris netting to confine the dust arisen during demolition works.
- Fine water spray techniques be deployed as they have been for the duration of programme to keep the dust to a minimum.
- The wheels of vehicles leaving site will be cleaned using a 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 dusts sensitive properties.
- Regular inspection and cleaning of local highways and site boundaries for dust deposits.
- Heras fencing with debris netting will be erected around the site.
- No unauthorised burning of any materials 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 below.



Vibration Monitoring and Control Measures

Vibration monitoring will be undertaken periodically throughout the works to ensure compliance with the action plan.

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 away from sensitive receptors during demolition operatives.
- All deliveries to be scheduled to occur during off peak daytime hours only to prevent disturbance to Siemens workers and users of the Spire Hospital.
- Engines to be switched off when waiting during delivery times.

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- 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 a hard copy maintained on site. P. P. O'Connor Project manager will liaise with Environmental Officer to ensure the monitoring is reflective of site activities (i.e. not solely during quiet periods).
- Rubber tracks will be fitted to tracked excavators to ensure that any vibration generated will be dampened.
- Only appropriately sized plant and equipment will be utilised on the project.

Noise Monitoring and Control Measures

Noise monitoring will be undertaken periodically throughout the operation to ensure compliance, this is to be communicated to the clients representative. A sampling technique will be used in accordance with BS 5228 Part 1, Annex G. The ambient noise level will be determined as a reference level before noise monitoring takes place to study new intrusive sound occurrence. Further checks will be made to ensure that the best practicable means measures are being adopted, that any deployed hoardings are effective, that working hours are adhered to.

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 the perimeter of the existing nurse's houses and T2 Building during demolition works.
- 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 Environment Officer.
- 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.
- Where appropriate electrically powered machinery and plant shall be used instead of petrol or diesel powered.
- 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.

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 Environmental Officer will be contacted and updated on the incident/occurrence and attend the site forthwith to thoroughly investigate all circumstances and will collate her report and furnish a copy to the Board of Directors.
- She will visit the site in collaboration with the Project Manager will investigate the work being undertaken, to see if the correct plant and equipment is being used in accordance with the best practice measures.
- 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, Manchester City

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Council 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 P.P. O'Connor SHEQ department, Siemens and Manchester City Council.

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 Project Manager supported by our Environmental Officer.