Noise, Dust and Vibration Management Plan

TVC0024 – Harefield School, Northwood Road – Rev 04

1. Introduction

This management plan addresses the potential for the Harefield School Northwood Road project to impact on the local area and adjacencies, and address any issues found with mitigation and measuring methods to avoid a detrimental impact.

Receptors to this noise and vibration from the project include:

- Domestic properties to Northwood Road
- Domestic properties to Northwood Way
- Nature conversation area at Shepherds Hill House
- The Harefield Academy

2. Project Details

1.1. Existing Environment

- Harefield School, Northwood Road.
- Existing accommodation block, hard and soft landscaping, parking, and MUGA pitches.
- Located on the grounds of Harefield Academy.
- No access to existing academy grounds

1.2. Ground Conditions

- Mostly made-up ground with tarmac or paving.
- Small areas of grassed and shrubbed grounds.
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3. Roles and Responsibilities

The following people have environmental responsibilities for the project.

ISG Project role	Nominated Person
Project Director	Richard Slade
Project Management Lead	Ben Palmer
Sustainability Manager	Hannah Thorne

Project Director

The Project Director is responsible for ensuring that the construction programme is carried out with effective and efficient consideration of the environment, neighbours and in line with corporate sustainability requirements.

Project Manager

The Project Manager is responsible to the Project Director for:

- ensuring all aspects of work on site are carried out with effective and efficient consideration of the environment and in line with this plan.
- ensuring that suitable project and trade contractor resources are applied to environmental protection.
- ensuring the review of Trade Contractor Method Statements to ensure adequate measures are taken to limit construction impacts.

- ensuring that the necessary environmental licenses, permits or exemptions are in place.
- making sure an appropriate spill kit procedure is in place and procedure is drilled.
- Report to the project team regarding nuisance issues
- ensure all complaints are recorded and appropriately responded to
- Liaise with ISG PR department and project team regarding media attention
- Liaise with H&S Manager regarding accidents, HSE interfaces and environmental issues
- Advise the project team and subcontractors regarding the contents of this plan
- Chair project meetings
- Act as the point of contact with local stakeholders and attend local resident meetings
- Input to local resident's newsletter where appropriate

Construction Manager

- Liaise with subcontractors regarding activities likely to impact upon the project neighbours and neighbour complaints received
- Assist external bodies such as Environmental Health Officer as required
- Monitor compliance with the requirements of this plan and company procedures
- Compile the local resident's newsletter

Project Sustainability Manager

Has the authority to establish and continually review systems, procedures, specifications and approvals to provide and maintain an effective EMS, which will satisfy both internal and external parties. Responsibilities include:

- ensuring the environmental management system requirements are established, implemented and maintained in accordance with the ISO 14001 standard and any other requirements;
- advise management on all areas of waste management, water management and other general environmental issues;
- ensure the Company and projects are kept up to date with applicable environmental legislation;
- reporting on the performance of the environmental management system to top management for review and as a basis for improvement of the EMS;
- ensuring that all operations activities are carried out with due regard for protection of the environment;
- Ensure internal audits are carried out on the EMS and non-conformances are reported to the relevant personnel for corrective action; and
- Provision of environmental awareness training.

4. Scope and Methodology of Works

- *Demolition of existing structure and removal of foundations.*
- *Below ground drainage including attentusation tank.*
- *Install of piling and substructure*
- *Install of structural frame and façade*
- *Fit out of internal structure with finishes and MEP packages*
- *Soft and Hard landscaping to existing a new areas.*
- *Suite of play equipment and street furniture.*

5. Plant & Equipment

Plant Type	Sound Power Level (LWA)	% on time	Number of plant
Telehandler	71db	50%	1
Excavator	74db	70%	3
Dumper	78db	50%	2
MEWP	78db	50%	4
Mobile crane	78db	70%	1
Piling	80db	60%	1
Concrete Breaker – excavator mounted	93db	60%	1
Vibraitng Roller	80db	30%	1
Concrete Pump	82db	50%	1
Cocnrete mixing truck	75db	30%	2
Concrete vibrator	78db	20%	3
Vibrating plate	78db	30%	2
Road Planer	82db	70%	1
Ashpalt Paver	74db	70%	1
Waste delivery vehciles	78db	5%	1
Muck away vehicle	79db	30%	8
General delivery vehicles	82db	10%	2
Concrete cutting	87db	60%	1
Angle grinder	80db	5%	4

6. Programme

April 2024 to September 2025

April to June 2024 – Site establishment, service diversion.

May to August 2024 – Soft strip and demolition

August to October 2024 – Pilling, foundations and concrete pours

October 2024 to January 2025– Frame ertection and 1st floor concrete

January to July 2025 – Roofing works

November 2024 to July 2025 – Façade, brickwork, windows, and curtain walling

November 2024 to January 2025 – Scaffolding

January to September 2025 – ground floor fit out

February to September 2025 – First floor fit out

May to September 2025 – External works

7. Operating Hours

a. Controlling Working Hours

Site hours will be 0800 to 1800 Monday to Friday, 0800 to 1300 Saturday. No work on Sunday or bank holidays.

Extended working times and weekends as required.

b. Logistics

Details of the general logistics expected during the project, for example;

- Delivery times are to be between 0830 to 1430 / 1530 to 1800, unless required by exception
- Restrictions on access: access is to be by the Northwood road access point only.
- Waiting and loading areas: waiting / holding area in layby outside Denham village.
- Waste collection and storage: in dedicated storage area.

c. Access and Egress of Operatives

Include details on the access and egress points for site staff;

- Locations of access: from Northwood road site access point.
- Systems used for security access: Datascope access controlled.

8. Control of Noise

a. Noise Predictions and Significance of Effects

The site area is situated between Northwood road and Harefield academy. On the other side of Northwood road are a number of domestic properties.

Proximity to the live academy poses a potential issue for the production of noise but site activities, in particular noise from demolition and concrete breaking.

b. Proposed Noise Mitigation Measures

The domestic properties on the other side of Northwood road are screened from the site by a mature shrubbed boundary which will provide screening from noise.

Works around the boundary to the academy are to be considered for noise impact and localised screening will be required for certain activities.

Sensitive period time table will be issued by the academy and works around these times will be adjusted to prevent excessive noise from reaching the academy.

Where possible lesser noise generating techniques and equipment will be used.

Where required out of school hours working will be employed to limited noise production during school times.

c. Noise Monitioring

The noise, vibration and air quality levels will be monitored periodically during the enabling, and demolition phases of the development. Noise monitoring equipment will be held by the site team who will make regular patrols to monitor noise levels as the works progresses.

9. Control of Vibration

Proposed Vibration Mitigation Measures

Use equipment that crushes, bursts or “nibbles” concrete in preference to percussive tools where practicable.
Shutting down or throttling down machines in intermittent use.
Restrictions on working hours, for particularly noisy activities.
Regular maintenance of plant in accordance with manufactures’ instructions.
Regular communications held between contractors, local authority officers and neighbours.
Trigger levels will be set and monitored daily and if they are exceeded then a revised method of working will be used.
Reviewing techniques, especially in response to exceeding of the action level and / or complaints

Vibration Monitoring

To ensure best practice monitoring of vibration at site, units capable of continuous monitoring that also allows the user to set threshold parameters for impulse triggered monitoring, with live monitoring shall be used at this project.
Compatible software is used to interrogate the instrument and provide readings of the vibration level at that location which is measured in terms of Peak Particle Velocity (PPV) with units in mm/s.
The table below highlight human perception of vibration as stated within BS5228-2:2009 Part 2

Table 2 – Guidance on Effects of Vibration

Vibration Level	Effect
0.14mm/s	Vibration might be just perceptible in the most sensitive situation for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration
0.3mm/s	Vibration might be just perceptible in residential environments
1.0mm/s	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.
10mm/s	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments.

Vibration Trigger Levels	
Acceptable vibration levels at Basement or Ground Floor monitor	≤1mm/s
First trigger level (Report) at Basement or Ground Floor monitor	≤3mm/s
Second trigger level (Action) at Basement or Ground Floor monitor	≤5mm/s

Acceptable Vibration Level
This is the vibration level that should not be breached by day to day activity on site. If it is thought that activity on site if to be in breach of this level, then this shall be communicated to the surrounding residents via the monthly newsletter outlining the work to be undertaken and the length of works.
First Trigger Level
If the first trigger level is breached the site team are to produce a record sheet which identifies the vibration level, site activity as the time of the breach which is to include a site photograph taken within 10 minutes of the trigger level breach.
Second Trigger Level
If the second trigger level is breached the site team are to halt site activity and undertake a brief investigation into current site activity. This investigation will include a review of the vibration level reached, site activity being undertaken, plant being used for the site operation and if possible, contact should be made to the resident where the breach was achieved. Site work will not commence until the site team are assured that the level will not be achieved once work commences.

Vibration Levels Required for Cosmetic Damage to Occur

The table below taken from British Standard provides the British Standard BS5228-2:2009 Part 2 states the vibration and frequency levels required for cosmetic damage to occur in non-residential and residential buildings.

Vibration and Frequencies required for Cosmetic Damage

Type of Building	Peak component particle velocity in frequency range of predominant pulse	
	4 Hz to 15 Hz	15Hz and above
Reinforced or framed structures & Industrial and heavy commercial buildings	50mm/s at 4 Hz and above	50mm/s at 15 Hz and above
Unreinforced or light framed structures & Residential or light commercial buildings	15mm/s at 4 Hz increasing to 20mm/s at 15 Hz	20mm/s at 15 Hz increasing to 50mm/s at 15 Hz

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10. Control of Emissions to Air

a. Emissions from Plant & Machinery

The project will comply with the GLA Supplementary Planning Guidance: Control of Dust and Emissions during Construction and Demolition (July 2014). Non Road Mobile Machinery (NRMM) requirements will be met to Stage IIIB of the EU Directive 97/68/EC (and its subsequent amendments) as a minimum. Records will be retained on the Register of Plant and Equipment.

These works are to be completed in line with the London Freight Plan, 'The control of dust and emissions from construction and demolition' Supplementary Planning Guidance, BRE Pollution Control Guides 'Controlling particles and noise pollution from construction sites' and 'Controlling particles, vapour and noise pollution from construction sites' along with IAQM guidelines

b. Dust Monitioring

The noise, vibration and air quality levels will be monitored periodically during the enabling, and demolition phases of the development.

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11. Liaison and Consultation Strategy

a. Site Neighbours Communications

Public liaison and consultation will be completed with the site team via leaflet drops, on site events and via site contact details provided externally.

b. Complaints Procedure

Public complaints and feedback will be accepted and communicated in a number of ways:

- *Externally mounted site team contact board*
- *Externally mounted external ISG complaints number*
- *Externally mount CCS contact detail*
- *Public newsletter with contact details within*
- *On site availability of the ISG team to accept complaints and feedback.*

To accompany this the ISG complaints tracker will be used to monitor and close out any complaints or feedback raised.

c. Noticeboard

Site will display and external notice board on the outside of the hoarding.