Dust Management Plan

Reference:	**EEMC-DMP001-134 Rev01**
Project:	**Castlewood House and Medius House**
Client:	**Deconstructuk Ltd**

DOCUMENT REFERENCE: EEMC-DMP001-Castlewood-134 Rev01

REVIEW AND AUTHORISATION		
Prepared By Emma Howard	**Position** Environmental Consultant	**Date** 16th August 2019
Reviewed By Matt Robinson	**Position** Senior Consultant	**Date** 19th August 2019
Approved By Ian Hooper	**Position** Principal Acoustic Consultant	**Date** 19th August 2019

AMENDMENT HISTORY			
Issue	**Status**	**Description**	**Date**
00	DRAFT	First Draft	19th August 2019
01	Revision	First Revision	11th September 2019

1. Introduction

1.1. Deconstructuk Ltd has been appointed to undertake demolition and construction at the Castlewood House and Medius House Project located in the London Borough of Camden. Deconstructuk Ltd have commissioned European Environmental Monitoring and Consultancy (EEMC) to prepare a Dust Management Plan for the project.

1.2. (EEMC) Limited has extensive experience in providing noise, vibration and air quality monitoring and consultancy services to major construction and infrastructure projects and has worked on some challenging developments in London and the UK.

1.3. EEMC has prepared this Dust Management Plan following meetings and communications with Deconstructuk. The Dust Management Plan has been prepared to show compliance with and to discharge Planning condition 35 of Planning Decision 2017/0618/P.

1.4. This document will be attached to the CMP for the project to show compliance with the requirements of Sections 33, and 35 dust, and 37 and 38 of the Construction Management Plan pro forma and ‘Camden’s Minimum Requirements for Building Construction’.

2. Legislation and Guidance

2.1. UK Legislation

2.1.1. The Air Quality Standards Regulations (2010) states seven main pollutants and gives target values for each. PM_{10} is one of these seven pollutants and has been given an annual mean of 40 µg/m^3 and a 24 hour mean that is not to be exceeded more than 35 times a year of 50 µg/m^3.

2.1.2. 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites (v1.1 2018)' a document produced by the Institute of Air Quality Management (IAQM) is a document that advises on appropriate Action Levels for construction sites. The document states that:

'*The Site Action Levels set out below are recommended. These will be reviewed in the future as additional information becomes available.*

PM_{10} Concentrations: 190 µg/m^3 averaged over a 1-hour period.'

It is noted that the IQAM guidance was updated and the previous 2012 document provided the following guidance of Action Levels:

'*The Site Action Levels set out below are recommended. These will be reviewed in the future as additional information becomes available.*

PM_{10} Concentrations: 250 µg/m^3 averaged over a 15-minute period.'

2.1.3. The Control of Dust and Emissions During Construction and Demolition (2014) is the Supplementary Planning Guidance (SPG) document from the Greater London Authority which outlines the methodology for a Dust Risk Assessment and monitoring.

The guidance in the SPG guidance document has been used to undertake a Risk Assessment of the dust impact from each phase of the project. The SPG document also provides guidance on mitigation measures, dependant on the risk categories.

2.2. Local Authority

2.2.1. The London Borough of Camden (LBC) is the local authority for the Castlewood House and Medius House project. LBC have a Core Strategy document that '*designate(s) Central London as a Clear Zone Region to reduce congestion, promote walking and cycling and improve air quality'*, and they have also implemented '*Camden's Air Quality Action Plan which aims to reduce air pollution levels'*. LBC also have a Local Plan which has been drafted and the draft submission has been deemed "'*sound' with subject to modifications".*

2.2.2. The London Borough of Camden requires compliance with the guidance of the GLA document 'The Control of Dust and Emissions During Demolition and Construction 2014 SPG'.

2.2.3. The London Borough of Camden requires compliance with the relevant sections of 'Camden's Minimum Requirements for Building Construction' regarding Dust Levels.

2.2.4. The London Borough of Camden also provides guidance in Amber and Red Alert levels for real-time dust monitoring on Construction and Demolition sites in the Addendum to the Camden Minimum Requirements – CMP Working Framework:

Trigger Values	Amber Alert 15 mins Average	Red Alert 15 mins Average
	150 µg/m^3	250 µg/m^3

3. Baseline Monitoring

3.1. Baseline Monitoring

3.1.1. The purpose of baseline monitoring is to establish existing concentrations of PM10 particulates. Trigger and action level thresholds for the site are absolute levels set within the GLA document *'The Control of Dust and Emissions During Demolition and Construction 2014 SPG'*. The location of the PM10 monitoring positions will consider the sites orientation to prevailing wind direction and sensitive receptors and other factors.

3.1.2. The Monitoring positions that are agreed will remain the same for the baseline monitoring period and throughout the duration of the Castlewood House and Medius House project demolition and construction phases. Historical data on background PM10 concentrations is presented below, Table 1.0.

3.1.3. The duration of the baseline PM10 concentration survey will be agreed. Condition 35 of the Planning Decision requires three months.

3.2. Background Pollutant Concentrations

3.2.1. The London Borough of Camden monitors pollutant concentrations using continuous and periodic methods throughout their area of administration. There are two automatic monitors that measure the concentrations of PM_{10} close to the site. The first is located at Shaftsbury Avenue, approximately 110m south-east of the site, however, this automatic monitor was closed in 2016. The second site is in London Bloomsbury, approximately 640m north-east of the site and this location is still monitoring. The annual mean results from London Bloomsbury in recent years are shown in Table 1.0 below.

Table 1.0 – Automatic Monitoring Results

Site Name		Type	Annual Mean PM_{10} Concentration ($\mu g/m^3$)		
			2016	2017	2018
CD3	Shaftsbury Avenue	Roadside	22.4	-	-
LB	London Bloomsbury	Urban Background	18.6	18.5	17.4

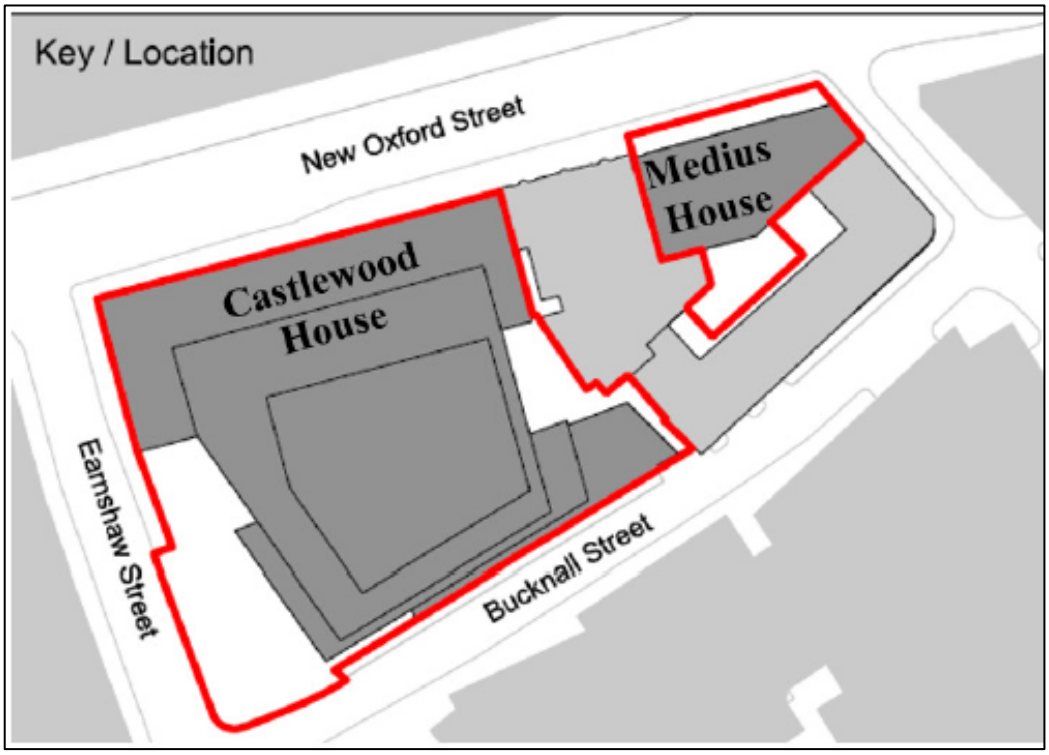
3.2.2. The data for Shaftesbury Avenue location is higher than London Bloomsbury and this is likely to be due to Shaftesbury Avenue location being roadside. It is noted that the general annual mean concentrations appear to be on a slight downward trend.

4. Site Location and Receptors

4.1. Site Location

4.1.1. The site is bounded by New Oxford Street to the north, Dyott Street to the east, directly to the south is a warehouse building facing onto Bucknall Street and Earnshaw Street to the west. In between Castlewood House and Medius House is Toni and Guy Training Centre. Figure 1 depicts the sites location.

Figure 1 – Site Location



4.2. Sensitive Receptors

4.2.1. There are no ecological receptors within a 350m radius of the site, so these are not explored any further in this section. Table 2.0 shows the approximate number of residential receptors within a 350m^2 radius. It is worth noting that there are many commercial receptors in the vicinity as well.

Table 2.0 – Dust Sensitive Receptors Close to Site

Distance from Site Boundary (m)	Approximate Number of Residential Receptors
Less than 20	Less than 10
20-50	Less than 10
50-100	10-100
100-350	More than 100

4.2.2. The nearest receptors with the potential to be affected by site activities are:

1. Toni & Guy Academy Building
2. Bucknall Street Warehouse
3. The Google Building (1-13 St Giles Street) and associated tenants
4. St Giles complex public realm
5. 55 New Oxford Street and Associated tenants

6. Centrepoint Complex
7. 100 New Oxford Street
8. 80 New Oxford Street
9. 108 New Oxford Street

These receptors are shown in relation to the site in Figure 2 below.

Figure 2 – Map Showing Most Sensitive Receptors

5. Dust Risk Assessment

5.1. Overview

5.1.1. The potential air quality impacts from the Castlewood House and Medius House project are assessed in the risk assessment from the *'The Control of Dust and Emissions During Demolition and Construction 2014 SPG'.*

5.1.2. The Risk Assessment for this site has been completed at Planning Stage and included in the Air Quality Assessment (AQA) prepared by REC. This section summarises this assessment and updates where necessary.

5.2. **Step 1**

5.2.1. Several sensitive receptors have been identified near the site and this requires, a detailed assessment of dust impacts on people. This will be explored in the following assessment.

5.2.2. No ecological receptors have been identified within a 50m radius of the site, or within 500m of Trackout, ecological factors will not be considered.

5.3. **Step 2A**

5.3.1. The Air Quality Risk Assessment has been assessed for each phase of development. The potential dust emission magnitude for each phase is summarised in Table 3.0 below.

Table 3.0 – The Dust Emission Magnitudes for Each Phase

Phase	Magnitude	Criteria
Demolition	Large	Demolition activities are expected to include works at heights greater than 20m and include potentially dusty works like concrete.
Earthworks	Small	The site is estimated to cover a total area of less than 2,500m^2
Construction	Large	The total building volume is likely to be greater than 100,000m^2
Trackout	Small	It is likely that there will be less than 50m of unpaved road.

5.4. **Step 2B**

5.4.1. The sensitivity of the area takes account of several factors including:

- Specific sensitivities of receptors in the area;
- Proximity and number of these receptors;
- Local background PM10 concentrations;

The sensitivity of receptors to dust soiling effects and the effects to human health as a result of PM_{10} are considered. These impacts remain the same for each of the four phases of the project.

5.4.2. The sensitivity of the area in relations to dust soiling effects and the effects on human health are shown in Table 4.0 below.

Table 4.0 – The Sensitivity of the Area for effect

Impact	Sensitivity	Criteria
Dust Soiling	Medium	There are between 10-100 receptors within 50m of the site.
Human Health	Low	The annual mean of PM_{10} is below 24µg/m^3 and there are between 1-10 receptors within 20m of the site. The receptors will be expecting to enjoy a reasonable level of amenity.

5.5. Step 2C

5.5.1. The sensitivity of the area for both impacts is compared against the dust emission magnitude to achieve a risk category for each phase. The risk categories are summarised in Table 5.0 below.

Table 5.0 – Summary of Unmitigated Dust Risk Categories for Each Phase

Phase	Risk	
	Dust Soiling	Human Health
Demolition	High Risk	Low Risk
Earthworks	Low Risk	Negligible
Construction	Medium Risk	Low Risk
Trackout	Negligible	Negligible

5.6. Dust Mitigation Measures

5.6.1. The GLA guidance provides several potential mitigation measures to reduce impacts during all four phases; demolition, earthworks, construction and trackout. Table 6.0 below summarises the mitigations measures required for the Castlewood House and Medius House Project based on the Dust Risk Assessment. No additional mitigation measures are proposed for the earthworks or trackout phases due to these being low risk phases.

Table 6.0 – Highly Recommended Fugitive Dust Mitigation Measures

Phase	Control Measure
Mitigation Measures Relevant for Demolition, Earthworks, Construction and Trackout	
Site Management	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site
	Develop a Dust Management Plan
	Display the name and contact details of a person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.
	Display the head or regional office contact information
	Record and respond to all dust and air quality pollutant emissions complaints.
	Make a complaint log available to the local authority when asked.
	Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection results, and make an inspection log available to the local authority when asked.
	Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions are being carried out, and during prolonged dry or windy conditions.
	Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.
	Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised.
Preparing and Maintaining the Site	Plan site layout: machinery and dust causing activities should be located away from receptors.
	Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.
	Fully enclosed site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
	Avoid site runoff of water or mud
	Keep site fencing, barriers and scaffolding clean using wet methods.
	Remove materials from site as soon as possible.
	Cover, seed or fence stockpiles to prevent wind whipping.
	Carry out regular dust soiling checks or building within 100m of site boundary and cleaning to be provided if necessary

Phase	Control Measure
	Agree monitoring locations with the Local Authority
	Where possible, commence baseline monitoring at least three months before phase begins.
	Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly.
Operating Vehicle/Machinery and Sustainable Travel	Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone
	Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance
	Ensure all vehicles switch off engines when stationary – no idling vehicles.
	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible.
	Impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking and car-sharing).
Operations	Only use cutting, grinding or sawing equipment fitting or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems
	Ensure an adequate water supply on the site for effective dust/ particulate matter mitigation (using recycled water where possible).
	Use enclosed chutes, conveyors and covered skips.
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
	Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste Management	Reuse and recycle waste to reduce dust from waste materials
	Avoid bonfires and burning of waste materials

Phase	Control Measure
Measures Specific to Demolition	
Demolition	Soft strip inside buildings before demolition (retaining the walls and windows in the rest of the building where possible, to provide a screen against dust).
	Ensure water suppression is used during demolition operations
	Avoid explosive blasting, use appropriate manual or mechanical alternatives.
	Bag and remove any biological debris or damp down such materials before demolition.
Measures Specific to Construction	
Construction	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a process, in which case ensure that appropriate additional control measures are in place, such as sheeting.

5.6.2. With the relevant mitigation measures outlined in Table 6.0 implemented, the residual effect from all dust generating activities is predicted to be not significant, in accordance with the GLA guidance.

6. Monitoring Plan

6.1. Dust (PM_{10}) Monitoring

6.1.1. The Dust (PM10) monitors to be installed are MCerts compliant instruments meeting the requirements for Indicative Ambient Particulate Monitors. They are housed in secure environmental enclosures. Each monitor is fitted with a modem to allow data-streaming to an online web portal. The monitors sample PM10 concentrations in air in real-time and provide an average reading over 1-minute measurement periods.

6.1.2. The specification for the proposed monitors, type TSI DustTrak II is provided as an Appendix to this document.

6.1.3. The monitoring system will be configured with trigger levels that will send email alerts when these levels are reached or exceeded at each of the monitoring positions. The site management team can then review site activities and identify any available practicable further mitigation measures that could be implemented.

6.1.4. The dust monitors will require periodic on-site maintenance as required, typically once every 3-6 months.

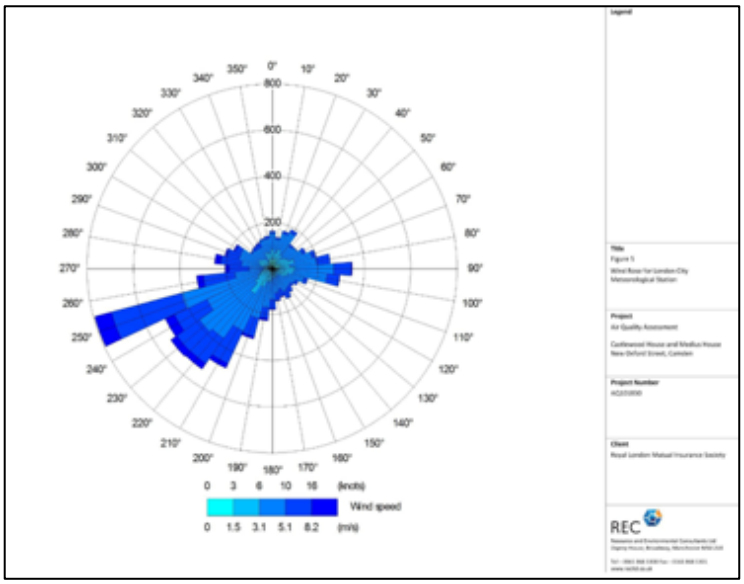
6.1.5. Noise and vibration monitoring will also be undertaken as required.

6.2. Monitors

6.2.1. Camden's Construction Management Plan for the Castlewood House and Medius House project, Section 38 states 'if the site is a "High Risk Site", 4 real time dust monitors will be required'.

6.2.2. The four Dust (PM10) monitors will be installed in appropriate locations that are in-line with the prevailing wind direction. This should indicate the difference upwind and downwind of the site during the works and difference from the surrounding ambient baseline. Figure 3 shows the prevailing wind from London City Meteorological Station as taken from the REC AQA.

Figure 3 – London City Meteorological Station Prevailing Wind



The prevailing wind for the area is South-Westerly.

6.3. Monitoring Locations

6.3.1. Figure 4 shows the baseline monitoring locations for the Castlewood House and Medius House project as provided by the Client and understood to be agreed with the London Borough of Camden.

Figure 4 – Baseline Dust Monitoring Locations

6.3.2. Dust (PM10) monitors were installed for baseline monitoring on the 31st August 2019. Images of the installations are shown below.

Images 1 & 2 - DMP1 and DMP2:

Images 3 & 4 – DMP3 and DMP4:

Monitoring locations, including access, fixings and power, were provided by the client. Where possible monitoring positions will remain throughout the planned works. Where movements are required these will be within 10m of the existing locations and at comparable installation heights.

6.3.3. As far as was reasonably practicable for the baseline exercise the dust (PM10)monitors have been installed in line with the IAQM Guidance on AQ Monitoring in the Vicinity of Demolition and Construction Sites. This guidance states the following:

"Sampler inlets should be located in a clear, unobstructed position, and some metres away from any large structures (such as walls of buildings) that might interrupt airflow; immediately above should be open to the sky (free in an arc of at least 270°), with no overhanging trees or other structures. To measure airborne dust concentrations, the sampler head should ideally be located between 1.5 to 4m above ground level as suggested in the 2008 Ambient Air Quality Directive (2008/50/EC)."

6.4 **Reporting**

6.3.4. Reports prepared on a monthly basis in EEMC preferred format and issued as PDF documents. The reports will show the measured PM10 data against the 150µg/m^3 Trigger and the 250 µg/m^3 Action Levels and will refer to any exceedances of these alert levels in the reports.

6.3.5. In the event of a dust incident or complaint the form in in Appendix 2 will be completed for submission to LBC when requested.

Appendix 1

Installed Dust (PM10) monitor type:
TSI MCerts DustTrak II PM10 Particulate Monitor, with web-based data interface.

ENVIRONMENTAL DUSTTRAK™ AEROSOL MONITORS

MODELS EDTPM2.5/EDTPM10/EDTDRX

REAL-TIME DUST MONITORING FOR ANY OUTDOOR ENVIRONMENT

The Environmental DustTrak™ Aerosol Monitor is built upon proven DustTrak technology that thousands of people use every day. It is a reliable solution to easily and accurately facilitate long-term outdoor environmental monitoring. Packaged in three convenient system configurations, each is fit for purpose dependent upon what mass fraction you want to measure. The compact, weather-proof enclosure houses the newly enhanced Environmental DustTrak Photometer along with other newly designed key components, including long-life pump, built-in auto zero module, and optional heated inlet and internal heater accessories. Combine all that with the Cloud Data Management System, the Environmental DustTrak Monitor is the most efficient, flexible, and affordable solution for providing real-time access to dust measurement data.

Features and Benefits

+ Conveniently packaged solutions for measurement of PM10, PM2.5, or simultaneous PMTotal, PM10, PM2.5 and PM1.0
+ Robust design enables long-term runtime in environments from -4 to 122°F (-20 to 50°C)*
+ Field-replaceable, longer-life pump increases measurement uptime (life expectancy >10,000 hours)
+ Optional heated inlet sample conditioning improves measurement accuracy in humid environments >50% RH
+ Real-time access to secure data and sophisticated alert system via the Cloud Data Management System
+ MCERTS models available for PM10, PM2.5, and both PM10 and PM2.5

* Requires internal heater option

Applications

+ Fugitive emissions monitoring
+ Site perimeter monitoring
+ Fence-line monitoring
+ Environmental remediation
+ Construction and mining sites
+ Hazardous waste sites
+ Dust control operations

MCERTS
Sira MC160316/XX
Sira MC160317/XX
Sira MC160318/XX

UNDERSTANDING, ACCELERATED

Appendix 2

Incident/Complaint Recording Form

Incident/Complaints Form						
Incident/Complaint Reference No		**Date:**		**Time:**		
YES/NO	**Noise :**					
	Logger Location:					
	Trigger Level: dB(A) ($L_{eq\ 15\ min}$)					
	Action Level: dB(A) ($L_{eq\ 1\ Hour}$)					
	Level of Exceedance:					
YES/NO	**Vibration:**					
	Logger Location:					
	Trigger Level: PPV mm/s					
	Action Level: PPV mm/s					
	Level of Exceedance:					
YES/NO	**Dust:**					
	Logger Location:					
	Trigger Level: mg/m3 15 min					
	Action Level: mg/m3 15 min					
	Level of Exceedance:					

Complaint Notification			
Contract/Project Name: **######**			Contract/Project Number: **######**
Date: **##/##/2019**	Time: **##:##**		Received by: **######**
Complainants Name: **#### ###**			Telephone Number: **#######**
Complainants Address:			Weather Conditions: **#########**

Type of Complaint (Tick Appropriate Box)							
Noise		Dust	**#**	Highways		Vibration	
Other (Specify)							

Description of Complaint: ########

Action Taken: ########

Site Assistance/Advice Requested?	**###** (If Yes Who?)	**##### #####**
Is the Complaint considered:	Justified		Unsubstantiated		Unfounded	**#**

Signed:	**### ###**	Print Name	**#### ####**	Date	**##/##/19**
Copy to:	Operations Director	**#**	EHO	**#**	Client	**#**

Note: "London Borough of Camden have a designated Environmental Health Enforcement Officer (EHO) for noise, dust, vibration and other environmental pollution matters relating to this project.