

**AIR QUALITY DUST MONITORING PLAN  
CASTLEWOOD HOUSE & MEDIUS HOUSE,  
NEW OXFORD STREET, LONDON**

**REC REFERENCE: AQ107907R1**







**REPORT PREPARED FOR: ROYAL LONDON**

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**DELIVERING ENVIRONMENTAL  
AND RISK MANAGEMENT SOLUTIONS**



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## 1. INTRODUCTION

### 1.1 Background

Resource and Environmental Consultants (REC) Ltd was commissioned by Royal London to produce an Air Quality Dust Monitoring Plan to support discharging a planning condition for the proposed development at Castlewood House & Medius House, New Oxford Street, London.

Following submission of the application (ref: 2017/0618/P), it is understood that an Air Quality Dust Monitoring Plan is required to support the discharge of a planning condition set out by the London Borough of Camden (LBoC). Condition 35 is detailed below.

*"Prior to the commencement of development within the relevant phase (a) Castlewood House; (b) Medius House, full details of the air quality monitors shall be submitted to and approved by the local planning authority in writing. Such details shall include the location, number and specification of the monitors, including evidence of the fact that they have been installed in line with guidance outlined in the GLA's Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance and have been in place for 3 months prior to the proposed commencement date. The monitors shall be retained and maintained on site for the duration of the development in accordance with the details thus approved."*

An Air Quality Dust Monitoring Plan has been prepared to confirm the number, locations and specifications of the proposed air quality dust monitors at the development site to ensure that the dust monitors are installed to the most suitable locations during the construction phase of the development.

### 1.2 Site Location and Context

The site is located at Castlewood House & Medius House at land off New Oxford Street, London at approximate National Grid Reference (NGR): 529970, 181380. Reference should be made to Figure 1 within Appendix I for a location plan.

The proposals comprise the demolition of existing office building at Castlewood House (Class B1), and erection of an 11 storey office building (Class B1) with retail and restaurant uses (Class A1/A3) at ground floor level; enlargement of existing double basement level and formation of roof terraces and rooftop plant along with associated highways, landscaping, and public realm improvement works. Partial demolition of Medius House with retention of the existing façade, and erection of a two storey roof extension including private roof terraces, in connection with the change of use of the building from office (Class B1) and retail (Class A1) to provide 18 affordable housing units (Class C3) at upper floor levels with retained retail use at ground floor level.

The potential for dust to impact at sensitive locations depends significantly on the meteorology, particularly wind direction, during emissions. In order to consider prevailing conditions at the site a review of meteorological data was undertaken. The closest observation station to the site is London City Airport meteorological station, which is approximately 13km east of the development. It is considered that conditions are likely to be reasonably similar over a distance of this magnitude and the information is a suitable source of data for an assessment of this nature. As shown in Figure 2 within Appendix I, the predominant wind direction is from the south-west. As such, receptors to the



north-east of the site are at most risk of potential dust impacts during the construction phase.

The site is located to the north, east and north-east of several residential units. As such, there is the potential for dust impacts at sensitive receptors during the construction phase of the development.

This Air Quality Dust Monitoring Plan identifies the most suitable locations for the air quality dust monitors to ensure they are located in the most sensitive locations to potential dust emissions during the construction phase.

### **1.3 Limitations**

This report has been produced in accordance with REC's standard terms of engagement. REC has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from REC; a charge may be levied against such approval.



## **2. PROJECT OVERVIEW**

### **2.1 Description of the Works**

As part of the development proposals, the existing building at Castlewood House will be demolished in order for one new 11 storey building to be constructed. Additionally, the existing building at Medius House will be partially demolished with retention of the existing facade in order for a 2 storey roof extension to be constructed. The construction compound and associated stores will be located at the discretion of the developer, but should be located as far as practicably possible from sensitive receptor locations.

### **2.2 Programme of Works**

Construction activities at Castlewood House and Medius House will be undertaken concurrently, however the Medius House timeframe is likely to be shorter. During the construction phase of both Castlewood House and Medius House, the programme will be continuous.

It is anticipated that demolition works will last for approximately 37-weeks. The construction of the substructure and core of the new build is expected to last for 28-weeks and the construction of the superstructure is anticipated to last for 63-weeks. As such, the total period of the construction phase is expected to last for 128-weeks.

### **2.3 Construction Traffic**

It is anticipated that there will be 12 two-way movements of Light Goods Vehicles (LGV) at Castlewood House per day. Additionally, it is estimated that there will be 54 two-way movements of Heavy-Duty Vehicles (HDV) at Castlewood House per day.

At Medius House, it is anticipated that there will be 20 two-way LGV movements and 34 two-way HDV movements per day.

### **2.4 Potential Impacts**

The undertaking of activities such as demolition, excavation, ground works, cutting, construction and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul road and highway surfaces.



### 3. AIR QUALITY DUST MONITORING

#### 3.1 Construction Phase Assessment

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed within the approved Air Quality Assessment (ref: AQ101830r4) in accordance with the methodology outlined within the GLA document 'The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance'<sup>1</sup>.

The results of the construction phase assessment within the approved Air Quality Assessment (ref: AQ101830r4) indicated the potential dust risk for each construction phase activity. A summary of the risks is provided within in Table 1.

**Table 1 Summary of Potential Unmitigated Dust Risks**

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

As indicated in Table 1, the potential risk of dust soiling is **high** for demolition, **low** for earthworks, **medium** for construction and **negligible** from trackout activities. The potential risk of human health impacts is **medium** for demolition, **low** for construction and **negligible** for earthworks and trackout activities.

As such, a number of potential mitigation measures to reduce impacts during the construction phase have been recommended in line with the GLA guidance<sup>1</sup>. The potential mitigation measures can be found in the approved Air Quality Assessment (ref: AQ101830r4).

#### 3.2 Purpose of Air Quality Dust Monitoring

There are a number of objectives that may be considered for undertaking dust monitoring during the construction phase of the development. The Institute of Air Quality Management (IAQM) guidance 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites'<sup>2</sup> suggests the following objectives:

- ▶ To ensure that the construction activities do not give rise to any exceedances of the air quality objectives for particulate matter with an aerodynamic diameter of less than 10µm (PM<sub>10</sub>), or any exceedances of recognised threshold criteria for dust deposition/soiling;
- ▶ To ensure that the agreed mitigation measures to control dust emissions are being applied and are effective;
- ▶ To provide an "alert" system with regard to increased emissions of dust, and a trigger for cessation of site works or application of additional abatement controls;
- ▶ To provide a body of evidence to support the likely contribution of the site works in the event

<sup>1</sup> The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, GLA, 2016.

<sup>2</sup> Guidance on Monitoring in the Vicinity of Demolition and Construction Sites, IAQM, 2018.



- of complaints; and
- ▶ To help to attribute any high levels of dust to specific activities on site in order that appropriate action may be taken.

It should be noted that these objectives are not mutually exclusive however, it may not be necessary to fulfil all of the objectives when carrying out dust monitoring.

### 3.3 Dust Monitoring Stages

It is proposed to undertake air quality dust monitoring at the development site during the following stages:

- ▶ 10-weeks of baseline monitoring to confirm the existing dust conditions in and around the development site; and
- ▶ Monitoring will continue during the construction phase of the entire development. Updates will be made quarterly to review the data and provide any comment, if required.

This approach will allow for the analysis of source contributions to be carried out (i.e. when there are any exceedances of national air quality standards and/or trigger thresholds).

If the monitoring results indicate that further measures are required to mitigate against elevated dust levels on-site then REC Ltd are willing to provide advice on the matter and liaise with the construction contractor and LBoC.

### 3.4 Dust Monitoring Locations

In line with the IAQM guidance<sup>2</sup>, a minimum of two monitoring sites should be established (upwind and downwind) during the construction phase. As indicated in Figure 2 within Appendix I, the predominant wind direction is from the south-west. As such, it is proposed to locate one monitor in the south-west corner of the development site (the corner of Earnshaw Street and Bucknall Street), which is upwind of the prevailing wind. Additionally, it is proposed to locate a second monitor in the north-east corner of the development site (the corner of New Oxford Street and Dyott Street), which is downwind of the prevailing wind.

As the potential dust risk of dust soiling is **high** for demolition and **medium** for construction activities, as indicated in Table 1, it is proposed to locate an additional monitor, three in total for the whole duration of the construction phase, along the western boundary of the development site as it is the closest on-site location to the most sensitive receptors (the residential units in Centre Point and White Lion House) and subsequently, this location is in line with the IAQM guidance<sup>2</sup>. This will ensure that there will be full coverage across the site to monitor potential dust emissions during the construction phase.

Due to a **high** risk of dust soiling for demolition, it is proposed to locate a fourth monitor situated in the north-east corner of Castlewood House during the demolition phase only. This location is downwind of the prevailing wind, as indicated in Figure 2 within Appendix I, and therefore, impacts at the most sensitive locations have been considered in line with the IAQM guidance<sup>2</sup>.

It should be noted that as the proposed monitoring locations are situated at the site boundary





adjacent to a road they are away from any obstructions and large structures that may interfere with dispersion.

The air inlets of the dust monitors should be located at heights between 1.5m to 4.0m in accordance with the IAQM guidance<sup>2</sup>. A graphical representation of the proposed monitoring locations can be seen in Figure 3 within Appendix I.

### **3.5 Dust Monitor Specifications**

It is proposed to install 4 Environmental DustTrak Aerosol Monitors supplied by TSI Incorporated at the development site with one monitor operational for the demolition period only, as specified in Section 3.4. The Environmental DustTrak Aerosol Monitor is MCERTS certified for particulate monitoring with package solutions for PM<sub>10</sub>. As such, this will ensure that all potential dust emissions during the construction phase will be monitored at the most sensitive locations. Please refer to Section 3.4 and Figure 3 within Appendix I for the proposed monitoring locations.

To ensure the Environmental DustTrak Aerosol Monitors are functioning effectively throughout the whole monitoring period, the monitors will require regular site visits. European Environmental Monitoring and Consultancy (EEMC) and the contractor will be undertaking the dust monitoring and maintenance of the monitors.



#### **4. NON-COMPLIANCE AND/OR RECEIPT OF COMPLAINTS**

If monitoring indicates elevated dust levels (exceedances of air quality standards and/or trigger thresholds) as a result of construction activities or a complaint is received from a local resident, an investigation shall be instigated by the site manager within one working day to identify the cause of the non-compliance/complaint.

Such an investigation may involve the identification and cessation of the activity or activities considered to be the cause of the non-compliance/complaint and/or the investigation of mitigation measures to reduce the dust emissions from the activity or activities. Further mitigation may include:

- ▶ Changing activity method;
- ▶ Screening of dust generating activities;
- ▶ Further cleaning of surfaces;
- ▶ Further dampening down of surfaces;
- ▶ Cessation of activity during certain weather conditions; or
- ▶ Complete cessation of activity until an alternative solution can be identified.

Any deviation from agreed working practices shall be identified immediately and conformance to the working practice reinstated.

Records of any complaints shall be kept in the site log book, including likely causes and mitigation measures to reduce impacts if appropriate. This will be available for inspection by the LBoC upon request.



## 5. ABBREVIATIONS

EEMC	European Environmental Monitoring and Consultancy Limited
HDV	Heavy Duty Vehicles
GLA	Greater London Authority
IAQM	Institute of Air Quality Management
LBoC	London Borough of Camden
LGV	Light Goods Vehicles
NGR	National Grid Reference
PMTotal	Total particulate matter
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter of less than 10µm
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter of less than 2.5µm
PM <sub>1</sub>	Particulate matter with an aerodynamic diameter of less than 1µm
REC	Resource and Environmental Consultants



Air Quality Dust Monitoring Plan  
Castlewood House & Medius House,  
New Oxford Street, London  
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## APPENDIX I FIGURES



**Legend**

 Site Boundary

**Title**  
Figure 1  
Site Location

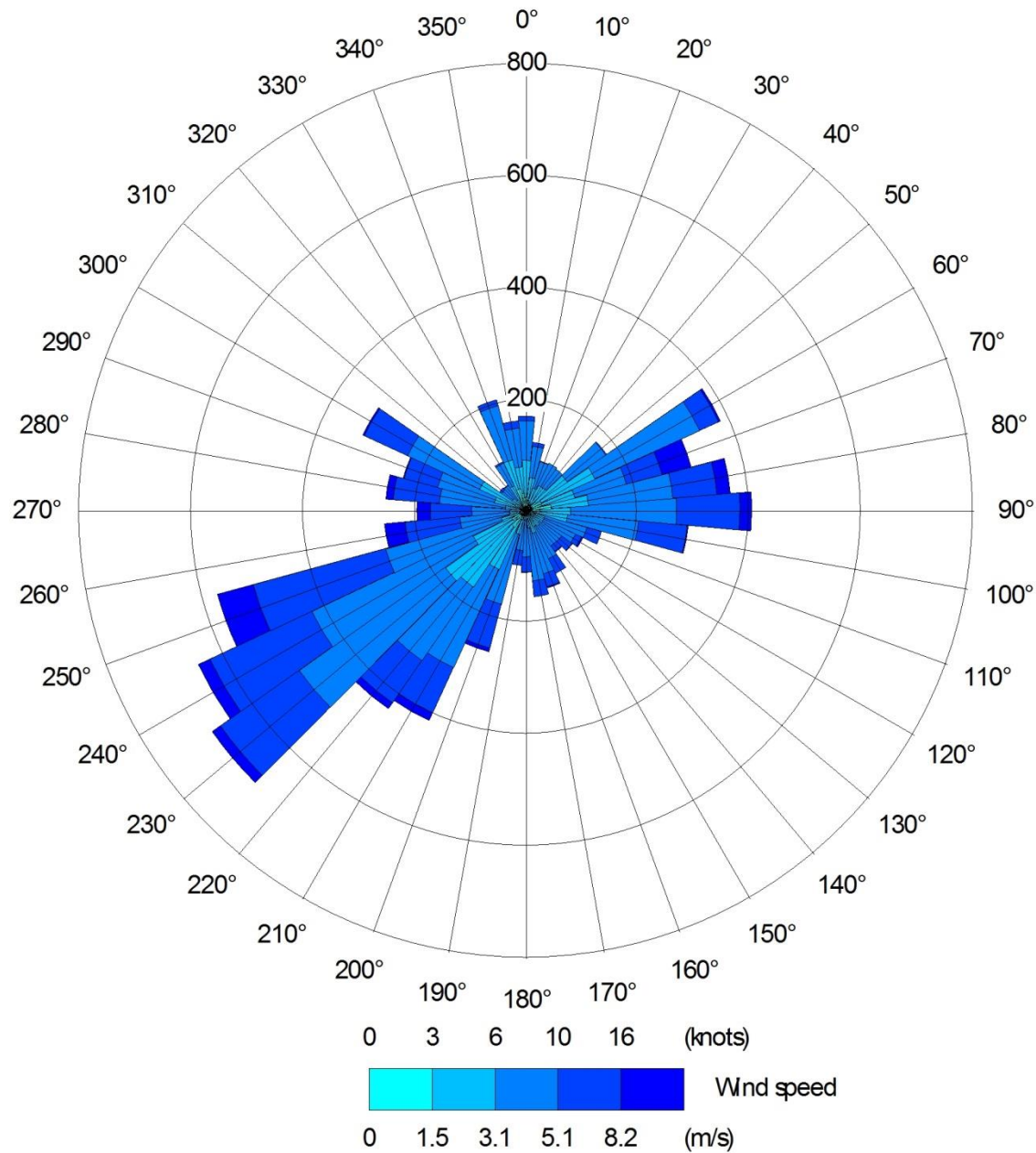
**Project**  
Air Quality Monitoring Plan  
Castlewood House & Medius House,  
New Oxford Street, London

**Project Number**  
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**Client**  
Royal London

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**Legend**

**Title**  
 Figure 2  
 Wind Rose 2018  
 London City Airport



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**Legend**

-  Site Boundary
-  Proposed Dust Monitoring Locations

**Title**

Figure 3  
Proposed Air Quality Dust  
Monitoring Locations

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