

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

REC REFERENCE: 107907

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, Mew 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."

This 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.

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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 façade 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 shorter.

2.2.1 Castlewood House

During the construction phase of Castlewood House, the programme will be continuous. It is anticipated that demolition works will last for approximately 37 weeks and the construction of the new build is anticipated to last for 112 weeks (including a 2 week overlap). As such, the total period of the construction phase is expected to last for 147 weeks.

2.2.2 Medius House

During the construction phase of Medius House, the programme will be continuous. It is anticipated that demolition works will last for approximately 47 weeks and the construction of the new build is anticipated to last for 63 weeks. As such, the total period of the construction phase is expected to last for 110 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'¹.

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 guidance¹. 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'² 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 (PM₁₀) and/or particulate matter with an aerodynamic diameter of less than 2.5µm (PM_{2.5}), 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;

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

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



- ▶ To provide a body of evidence to support the likely contribution of the site works in the event 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:

- ▶ 3-month 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 guidance², 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, along the western boundary of the development site as this would be the closest 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 guidance². This will ensure that there will be full coverage across the site to monitor potential dust emissions during the construction phase.

It should be noted that as the proposed monitoring locations are situated at the edge of 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 guidance². As such, it is proposed to affix monitors to street furniture, such as lamp



posts, where possible.

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 3 Aeroqual AQS 1 Urban Air Quality Monitors at the development site. Please refer to Section 3.4 and Figure 3 within Appendix I for the proposed locations. The AQS 1 Urban Air Quality Monitor can be configured to monitor particulate matter (PM), including total suspended particles (TSP), PM₁₀, PM_{2.5} and particulate matter with an aerodynamic diameter of less than 1µm (PM₁). As such, this will ensure that all potential dust emissions during the construction phase will be monitored at the most sensitive locations.

To ensure the AQS 1 Urban Air Quality Monitor is functioning effectively throughout the whole monitoring period, the monitors will require site visits every 6-months. The site visits will include the check of the flow rate as well as the changing of the purge filters. Gas checks may need to be undertaken annually however, this is dependent on the actual length of the construction phase.

Campbell Associates will be undertaking the dust monitoring and a qualified field engineer will perform any site visits.



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

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
PM	Particulate matter
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10µm
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5µm
PM ₁	Particulate matter with an aerodynamic diameter of less than 1µm
REC	Resource and Environmental Consultants
TSP	Total suspended particles

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Legend

 Site Boundary

Title
Figure 1
Site Location

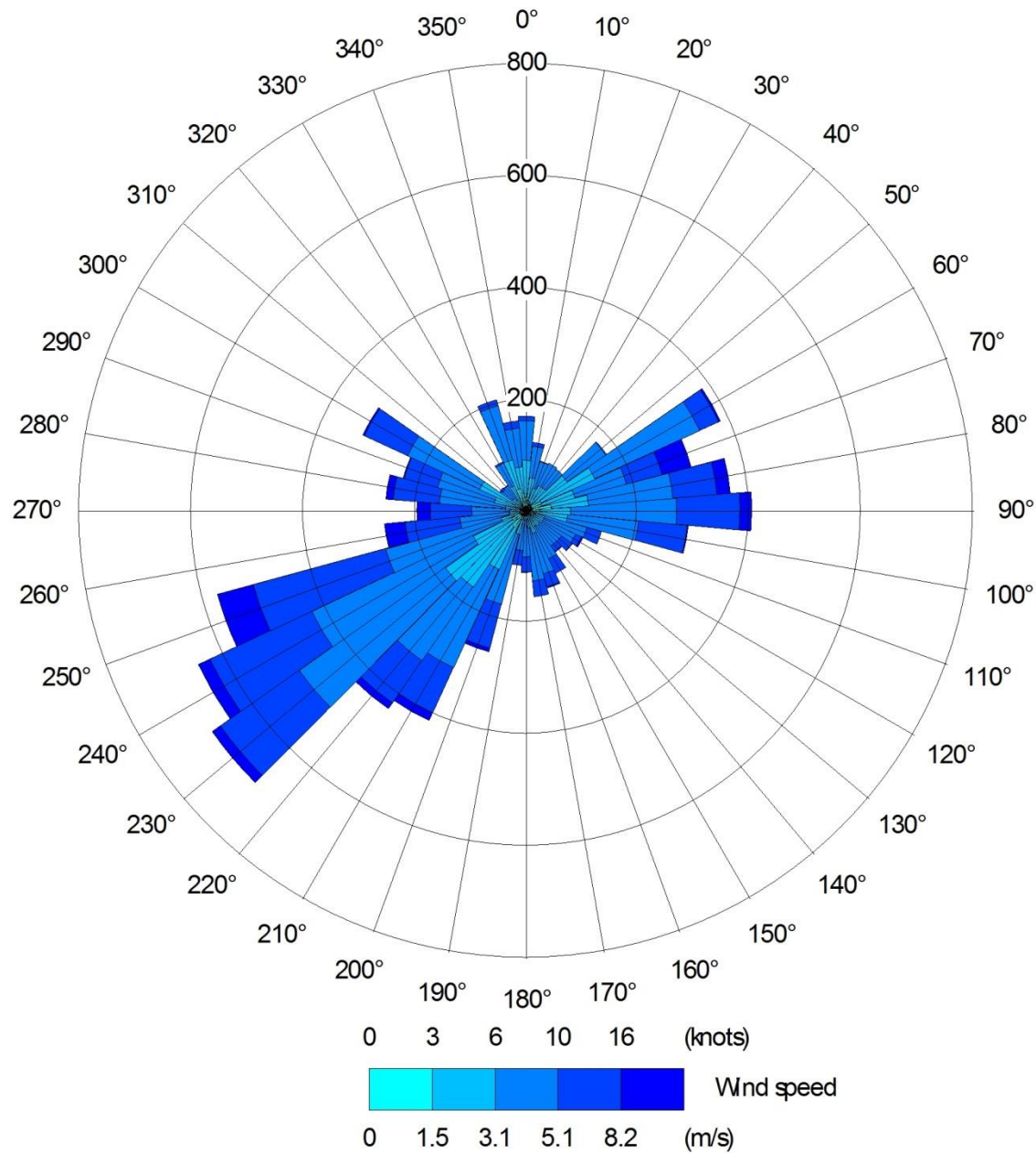
Project
Air Quality Monitoring Plan
Castlewood House & Medius House,
New Oxford Street, London

Project Number
AQ107907

Client
Royal London

Contains Ordnance Survey Data
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Legend

Title
 Figure 2
 Wind Rose 2018
 London City Airport

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



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Legend

-  Site Boundary
-  Proposed Dust Monitoring Locations

Title

Figure 3
Proposed Air Quality Dust
Monitoring Locations

Project

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

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