

Barrie House

Baseline Dust Monitoring Report

Broxwood View Ltd

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1.0

Introduction

1.0 Introduction

Cundall has been commissioned by Arbitrage Group to carry out baseline and construction dust monitoring for a site in Camden known as Barrie House. Part of this commission is the requirement for a Baseline Dust Monitoring Report.

This report presents the monthly results of the dust monitoring during a baseline period between August and November 2022 and highlights any exceedance of the trigger/action levels.

1.1 London Borough of Camden Requirements

Camden's requirements for real-time dust monitoring are consistent with Camden and GLA policy and industry best practice guidance. These requirements are triggered when an Air Quality Assessment (AQA) for a proposed development finds that there is a medium or high risk of dust impacts (without considering mitigation measures) during demolition or construction.

Real-time dust monitoring can be used to enable effective on-site management of the air quality impacts of demolition and construction activities through comprehensive preventative dust mitigation and, in the case of triggering a dust alert from the monitoring equipment, through the application of additional reactive dust mitigation measures.

Ultimately, the purpose of real-time dust monitoring is to ensure that the air quality impacts of demolition and construction activities are minimised as far as possible for the protection of amenity and health, both for local residents, the general public, and operatives on-site.

1.2 Site Location

The site is located at Barrie House, 29 St Edmund's Terrace NW8 7QH in the London Borough of Camden and is within the Camden Air Quality Management Area (AQMA).

The Site is bound by the following:

- Residential properties (Kingsland) to the north-west and north
- Residential properties of St Edmund's Terrace to the north-east and east
- St Edmund's Terrace to the south-east and south
- Broxwood Way to the south-west

The location of the site is shown in Figure 1-1. Additional context is provided by the aerial image (Figure 1-2).

Site contact details for Cundall staff are provided in the following table.

Site Contact Details	
Name	Jenny Carrington, Principal Consultant
Phone	0121 389 8725
Email	j.carrington@cundall.com
Office Address	4 th Floor, 15 Colmore Row, Birmingham, B3 2BH
Monitoring portal website	https://svannet.com/panel-login.php

Table 1-1: Site Contact Details

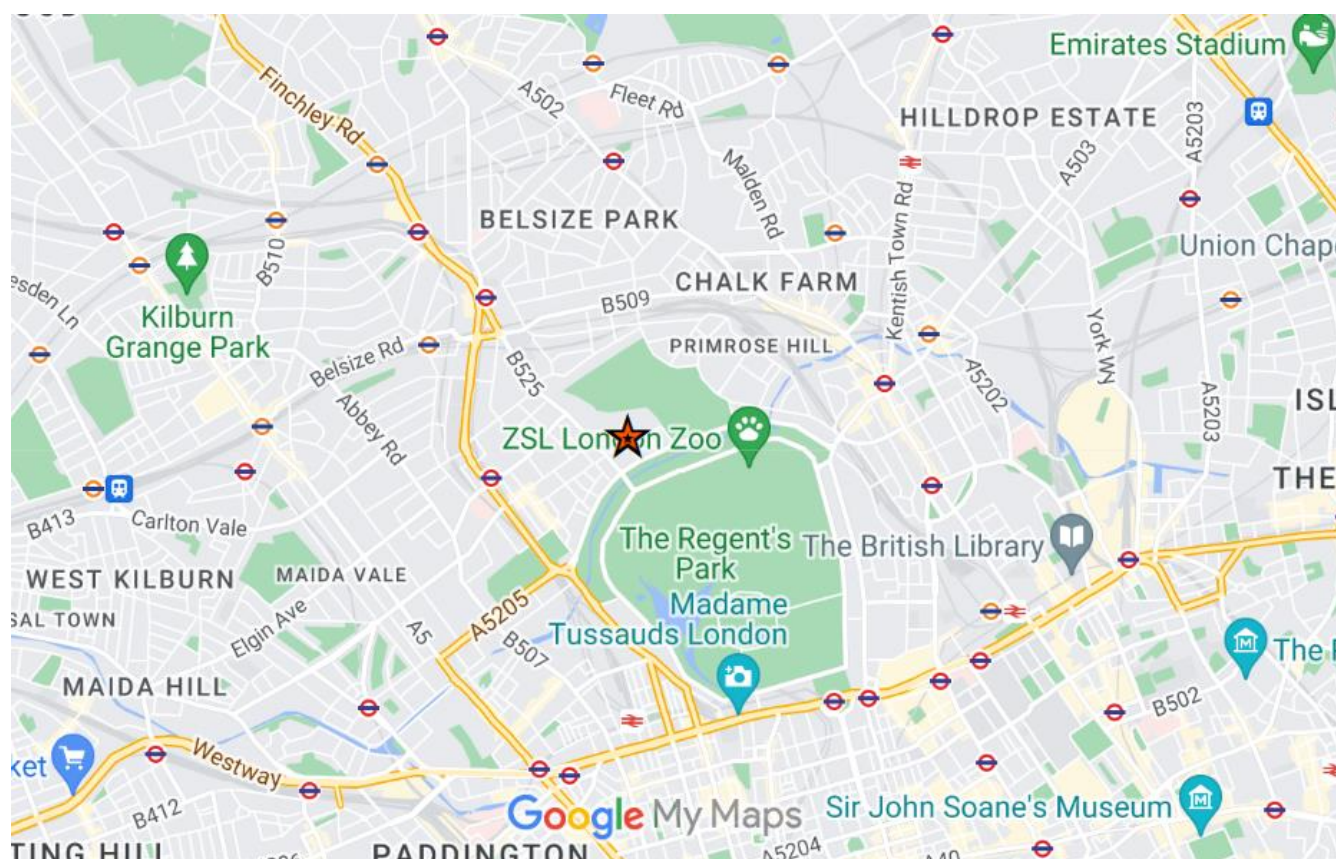


Figure 1-1: Location of the Development Site (Courtesy of Google Maps)



Figure 1-2: Aerial Image (Courtesy of Google Maps)

1.3 Proposed Development

Cundall has been commissioned by Arbitrage Group to undertake dust monitoring to obtain baseline information and during the demolition and construction of the residential development at Barrie House, 29 St Edmund's Terrace, NW8 7QH.

The Proposed Development requires the demolition of the Porter's Lodge. The proposed dates for demolition and construction are to be confirmed. It is understood that works are likely to commence early in 2023.

1.4 Site updates and works taken place during this monitoring period

There has been no on-site works during this baseline monitoring period.

1.5 Baseline Monitoring Summary

- There were no exceedances of the 15-min or one-hour action trigger levels at either monitoring position.
- Data coverage was 88% at Position 1 and 97% at Position 2

2.0

Monitoring Methodology

2.0 Monitoring Methodology

2.1 Agreed Scope of Work

The objective for monitoring airborne particulate matter during the demolition and construction phase is to ensure that the dust mitigation measures as outlined in the dust management plan (DMP) or CEMP is effective in suppressing any particles or dust generated by the activities on site. Where the monitoring indicates higher levels than those above action levels, further mitigation would be put in place to ensure that the trigger level i.e., limit) is not breached. This will protect the local environment and sensitive receptors from exposure to dust nuisance or elevated level of PM₁₀.

The dust monitoring will be carried out in accordance with the latest available guidance, and in particular Greater London Authority (GLA) guidance The Control of Dust and Emissions during Construction and Demolition SPG (July 2014).

The scope of works outlined and agreed with Camden Council can be summarised as follows:

- **Sensitive receptors** - There are several residential receptors surrounding the site.
- **Parameters** - Camden Council have confirmed they require PM₁₀ monitoring in the form of two real-time MCERTs indicative level automatic monitors.
- **Number of monitoring equipment units** (automatic samplers) required - Camden Council have confirmed they require two continuous monitors.
- **Monitoring locations**, taking into account possible locations for unforeseen future sensitive receptors there is a requirement for one monitor upwind and one downwind. The installed monitoring locations have been agreed with Camden Council.
- **Duration** - Camden Council have outlined in their planning condition that monitoring needs to commence 3 months prior to the commencement of any on-site demolition/construction activities).
- **Action and trigger levels** - Camden Council have stipulated they must be informed of any exceedance and provided with an explanation as to the works that were occurring at site at the time and what mitigation measures were subsequently used to combat this.
- **Content and frequency of monitoring reports** – monthly reports are required

2.2 Monitoring Equipment

2.2.1 Dust Monitors

Two real-time continuous dust monitors have been selected for monitoring PM₁₀ concentrations during baseline, demolition and construction periods. These are ES-642 remote dust monitors which enable MCERTs indicative monitoring of PM₁₀ concentrations using highly sensitive forward scatter laser nephelometers with a measurement range of 0 to 100mg/m³ (0 to 100,000µg/m³).

2.2.2 Weather Station

Weather data has been obtained from RAF Northolt weather station. This station is located 17km to the west of the site.

2.2.3 Maintenance and Calibration of Monitors

The equipment will be serviced, calibrated and maintained in accordance with the manufacturer's recommendations.

All monitors have been calibrated prior to installation. Calibration is required after two years, so will not be required during the proposed monitoring period.

Should any maintenance be required during the monitoring period, a short period of down-time will occur during the servicing period, but this should not compromise the integrity of the monitoring programme.

The quality of the monitoring data gathered will go through the quality assurance/quality control procedures as set out by Defra.

2.3 Monitoring Locations

The proposed monitoring locations were presented in the Risk Assessment Method Statement (RAMS) submitted to Camden Council and have been agreed with the relevant Environmental Health Officer.

Location photos and a map showing the accurate installed measurement positions is presented in Appendix A and further details are provided below:

- **Measurement Position 1:** The ES-642 PM₁₀ Position 1 is located in the north-west of the site, between the car park and boundary landscaped area.
- **Measurement Position 2:** The ES-642 PM₁₀ monitor is Position 2 is located in the south-west area of the site on temporary timber hoarding.
- **Meteorological station:** Meteorological data has been obtained from a nearby weather station at RAF Northolt Meteorological Station¹.

2.4 Recording of Data

An automatic remote logging system has been set up, such that all data monitored on-site can be accessed in real-time. Airborne particulate matter concentration data will be collected on a regular basis (e.g., once every five minutes) throughout the whole monitoring period. The live and historic data can be accessed remotely via the internet.

2.5 Trigger and Action Levels

In accordance with Camden Council's requirements, early warning 'alert' and 'action' levels have been set and are presented in Table 1 below. The alert and action levels for PM₁₀ (confirmed by the EHO to be 190g/m³ over a 15-minute mean as per a study by Kings College London) will be set up. Once an exceedance is detected, a text and/or e-mail alert (to be confirmed), will be sent to all appropriate people on the designated contact list (e.g., site manager, Cundall staff, the Camden Council). This will provide notification of the incident, thereby enabling appropriate remedial action to be taken in a timely and efficient manner.

Trigger / Action Level	Trigger / Action Dust Level (µg/m ³)
Alert level (as a 15-minute average)	150 µg/m ³
Action Level (as a 15-minute average)	250 µg/m ³
Action Level (as a 1-hour average)	190 µg/m ³

Table 2-1: Trigger and Action Level for PM₁₀

¹ Due to data capture issues with the Maximet located in Ealing (NGR 521214, 180640), wind data has been obtained from RAF Northolt. The data capture for the Maximet is currently being resolved and we intend to revert back to obtaining weather station data from the Maximet during the demolition and construction period.

3.0

Monitoring Results

3.0 Monitoring Results

3.1 15-minute average PM₁₀

A summary of 15-minute average PM₁₀ levels are presented in Table 3-1 and Table 3-2 for Positions 1 and 2.

Week Commencing	Max (µg/m ³)	Min (µg/m ³)	Average (µg/m ³)	Number of Exceedance ≥ 190µg/m ³ (1 hour mean)	Number of Exceedance ≥ 150(µg/m ³ Trigger Level	Number of Exceedance ≥ 250(µg/m ³ Action Level	Data Capture (%)
17/08/2022-23/08/2022	62	1	7.4	0	0	0	87.2
24/08/2022-30/08/2022	11	1	5.0	0	0	0	56.4
31/08/2022-06/09/2022	7	3	4.3	0	0	0	5.1
07/09/2022-13/09/2022	21	1	6.0	0	0	0	100
14/09/2022-20/09/2022	11	1	3.6	0	0	0	100
21/09/2022-27/09/2022	19	2	4.9	0	0	0	100
28/09/2022-04/10/2022	22	1	6.4	0	0	0	99.4
05/10/2022-11/10/2022	18	1	6.6	0	0	0	100
12/10/2022-18/10/2022	17	2	7.0	0	0	0	100
19/10/2022-25/10/2022	114	1	8.0	0	0	0	99.4
26/10/2022-01/11/2022	15	1	7.0	0	0	0	99.7
02/11/2022-08/11/2022	18	1	6.4	0	0	0	100
09/11/2022-15/11/2022	41	1	9.9	0	0	0	99.3
16/11/2022-22/11/2022	20	1	4.9	0	0	0	90.2

Table 3-1: Summary of dust monitoring results (Measurement Position 1)

Week Commencing	Max (µg/m ³)	Min (µg/m ³)	Average (µg/m ³)	Number of Exceedance ≥ 190µg/m ³ (1 hour mean)	Number of Exceedance ≥ 150(µg/m ³ Trigger Level	Number of Exceedance ≥ 250(µg/m ³ Action Level	Data Capture (%)
17/08/2022-23/08/2022	59	1	7.3	0	0	0	100
24/08/2022-30/08/2022	11	1	4.3	0	0	0	100
31/08/2022-06/09/2022	34	2	6.7	0	0	0	100
07/09/2022-13/09/2022	24	1	5.8	0	0	0	100
14/09/2022-20/09/2022	12	1	3.5	0	0	0	100
21/09/2022-27/09/2022	17	2	4.9	0	0	0	99.9
28/09/2022-04/10/2022	18	1	6.3	0	0	0	100
05/10/2022-11/10/2022	20	1	6.6	0	0	0	100
12/10/2022-18/10/2022	17	2	7.0	0	0	0	100
19/10/2022-25/10/2022	92	1	7.8	0	0	0	99.9
26/10/2022-01/11/2022	16	1	6.9	0	0	0	99.6
02/11/2022-08/11/2022	20	1	6.2	0	0	0	100
09/11/2022-15/11/2022	45	1	9.9	0	0	0	100
16/11/2022-22/11/2022	19	1	4.8	0	0	0	60.1

Table 3-2: Summary of dust monitoring results (Measurement Position 2)

3.2 24-hour average PM₁₀

A summary of 24-hour average PM₁₀ levels are presented in Table 3-1 and Table 3-2 for Positions 1 and 2.

Week Commencing	Max (µg/m ³)	Min (µg/m ³)	Average (µg/m ³)	Number of Exceedance ≥ 50(µg/m ³ Trigger Level	Data Capture (%)
17/08/2022-23/08/2022	28	4	9.3	0	100
24/08/2022-30/08/2022	7	3	4.6	0	71.4
31/08/2022-06/09/2022	-	-	-	0	0
07/09/2022-13/09/2022	8	4	5.9	0	100
14/09/2022-20/09/2022	6	2	3.9	0	100
21/09/2022-27/09/2022	8	3	5.1	0	100
28/09/2022-04/10/2022	9	4	6.4	0	100
05/10/2022-11/10/2022	7	3	5.3	0	100
12/10/2022-18/10/2022	11	5	7.6	0	100
19/10/2022-25/10/2022	14	5	8.3	0	100
26/10/2022-01/11/2022	9	5	7	0	100
02/11/2022-08/11/2022	9	3	6.3	0	100
09/11/2022-15/11/2022	20	5	10.6	0	100
16/11/2022-22/11/2022	14	3	6.2	0	86

Table 3-3: Summary of dust monitoring results (Measurement Position 1) – 24-hour average

Week Commencing	Max ($\mu\text{g}/\text{m}^3$)	Min ($\mu\text{g}/\text{m}^3$)	Average ($\mu\text{g}/\text{m}^3$)	Number of Exceedance $\geq 50(\mu\text{g}/\text{m}^3)$ Trigger Level	Data Capture (%)
17/08/2022-23/08/2022	21	4	8.3	0	100
24/08/2022-30/08/2022	7	2	4	0	100
31/08/2022-06/09/2022	13	3	6.6	0	100
07/09/2022-13/09/2022	8	5	6	0	100
14/09/2022-20/09/2022	6	2	3.6	0	100
21/09/2022-27/09/2022	7	3	5	0	100
28/09/2022-04/10/2022	9	4	6.3	0	100
05/10/2022-11/10/2022	7	3	5.4	0	100
12/10/2022-18/10/2022	11	5	7.4	0	100
19/10/2022-25/10/2022	14	5	8.3	0	100
26/10/2022-01/11/2022	9	5	6.7	0	100
02/11/2022-08/11/2022	8	3	5.9	0	100
09/11/2022-15/11/2022	20	5	10.3	0	100
16/11/2022-22/11/2022	7	4	5.0	0	100

Table 3-4: Summary of dust monitoring results (Measurement Position 2) – 24-hour average

3.3 Meteorological Conditions

The windrose in Appendix D presents the measured wind speed and direction for the baseline monitoring period at a meteorological station RAF Northolt.

The winds were predominantly from the south-westerly with low occurrences of north-easterly winds. The average wind speed during this monitoring period was 14.7m/s and a maximum of 94m/s.

4.0

Monitoring Conclusions

4.0 Monitoring Conclusions

4.1 15-minute averaging period

The results of 15-minute averaged data presented in Table 3-1 and Table 3-2 indicate that during the baseline monitoring period there were no exceedances of the lowest alert level ($150\mu\text{g}/\text{m}^3$) for PM_{10} at either measurement Positions. The highest 15-minute mean concentration recorded during the baseline period was $114\mu\text{g}/\text{m}^3$ recorded at Position 1 during week commencing 19th October 2022.

4.2 24-hour averaging period

The results presented in Table 3-3 and Table 3-4 indicate that during the baseline monitoring period there were no exceedances of the 24-hour limit value for PM_{10} ($50\mu\text{g}/\text{m}^3$) at either of the Positions.

The highest concentration recorded over a 24-hour period was $28\mu\text{g}/\text{m}^3$ recorded at Position 1 during week commencing 17th August 2022.

4.3 Data capture

Data coverage was 88% at Position 1 and 97% at Position 2. The lower data capture at Position 1 is due to electrical connectivity issues at the start of the monitoring period. From 7th September data capture at Position 1 has been 99%.

Figure C-1 and Figure C-2 in Appendix C illustrates the recorded daily (24-hour) PM_{10} and 15-minute mean concentrations at Positions 1 during the baseline monitoring period.

Appendices

Appendix A – Monitoring Locations

Dust Monitoring Positions 1 and 2

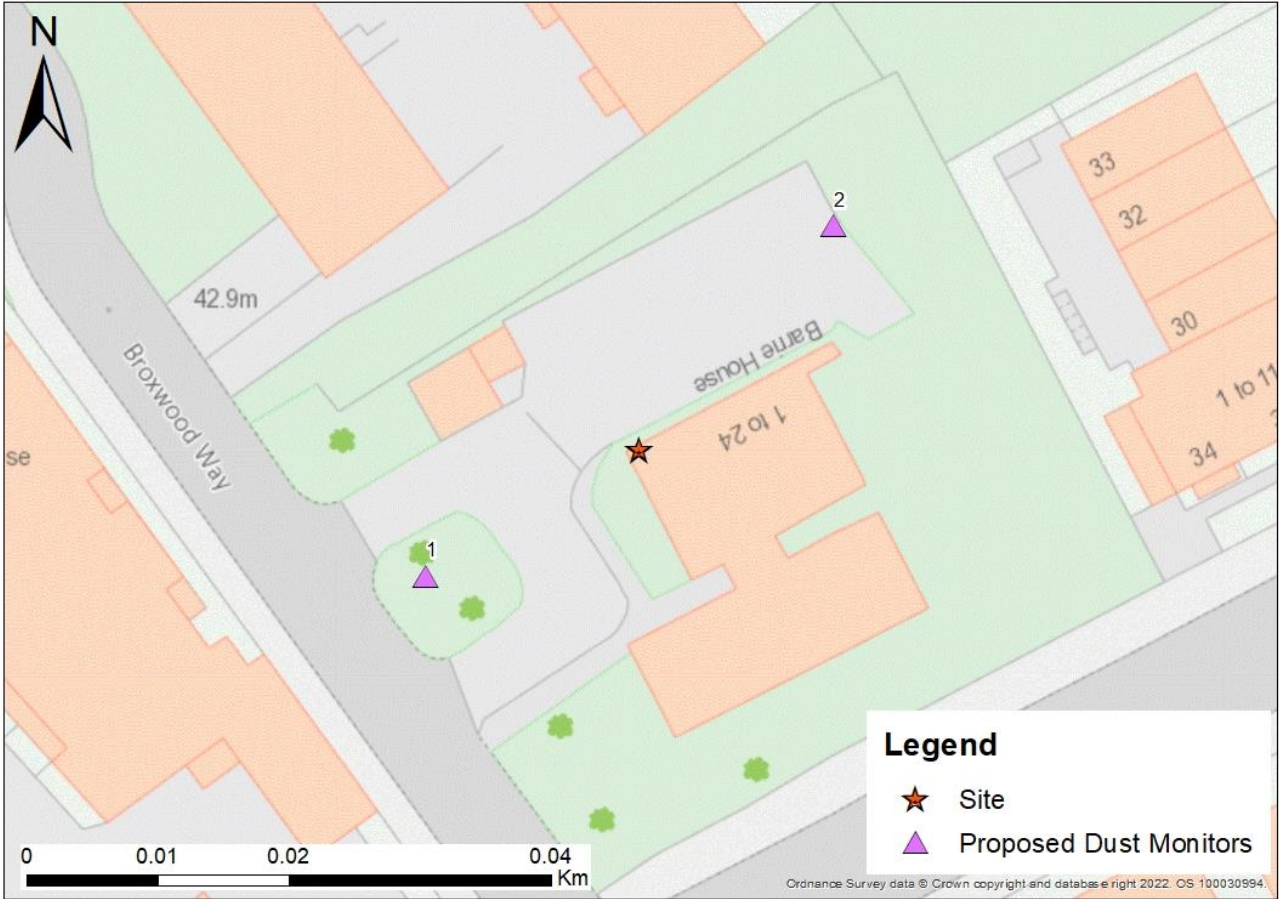


Figure A-1: Monitoring Locations



Figure A-2: Position 1



Figure A-3: Position 2

Meteorological Site

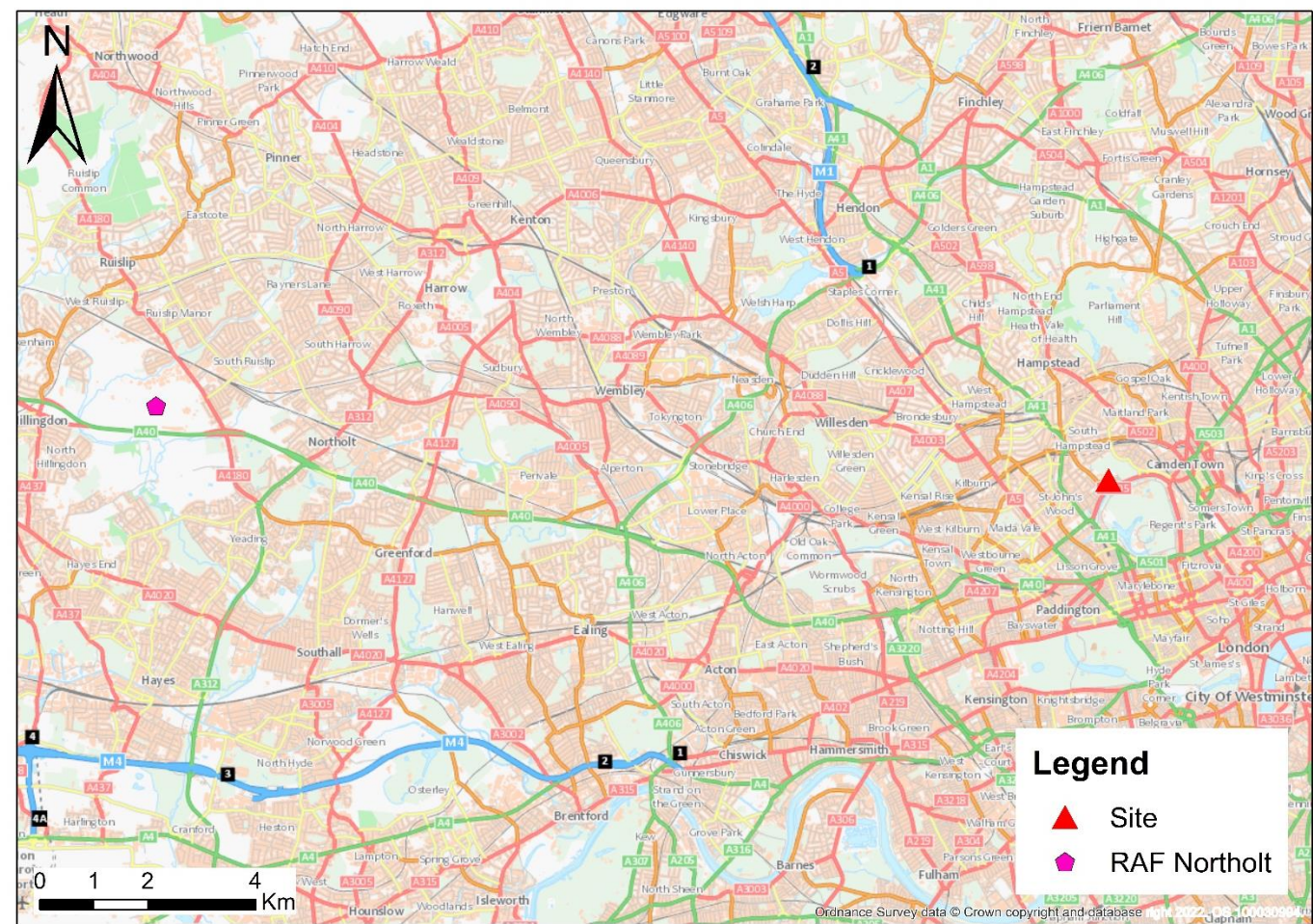


Figure A-4: Location of Meteorological Site

Appendix B – Glossary

Terminology	Description
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10 micrometres
Exceedance	Concentrations of a specified air pollutant greater than the appropriate Air Quality Objective.
µg/m ³	Micrograms (one-millionth of a gram) per cubic metre of air

Table B-1: Air quality terminology

Appendix C – Dust Monitoring Results

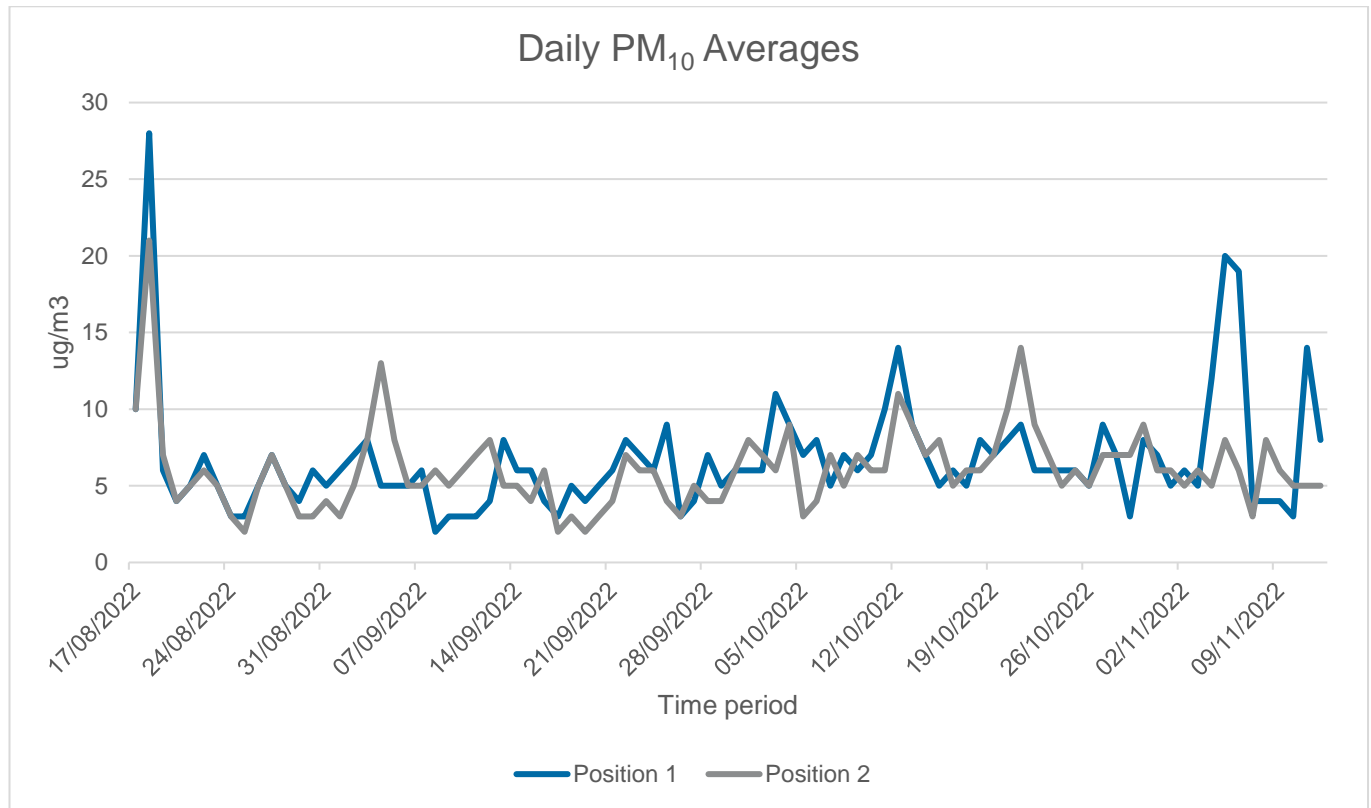


Figure C--1 Daily PM₁₀ Averages

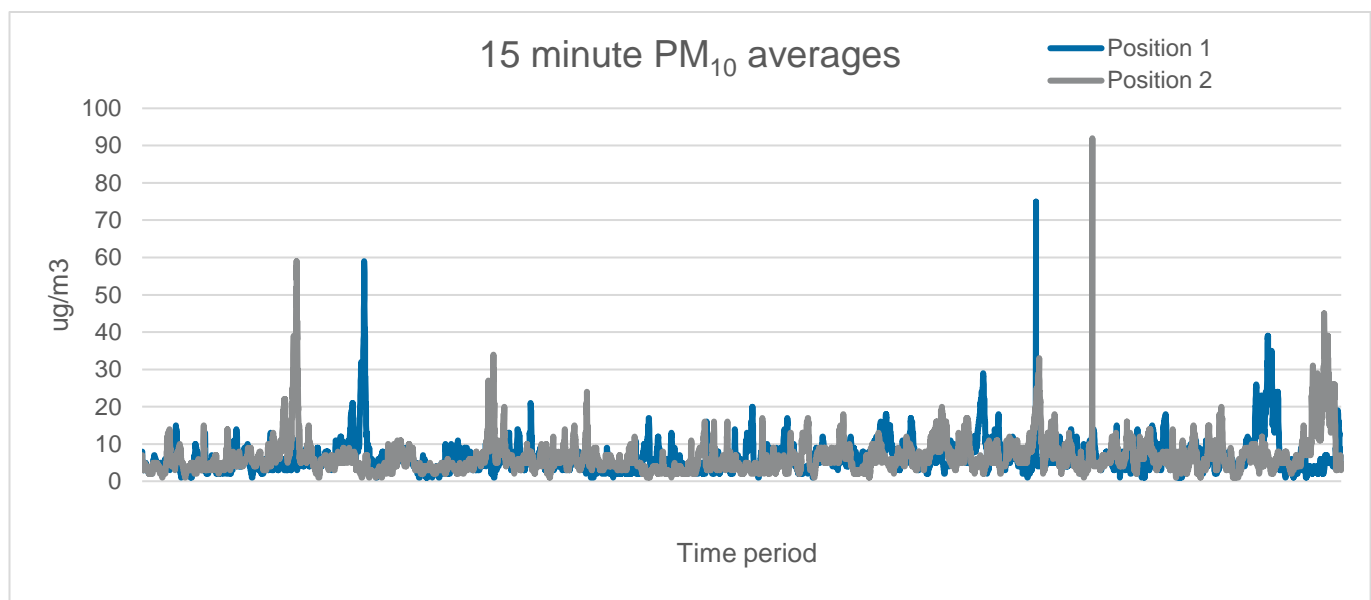


Figure C--2 15-minute PM₁₀ averages

Appendix D – Windrose

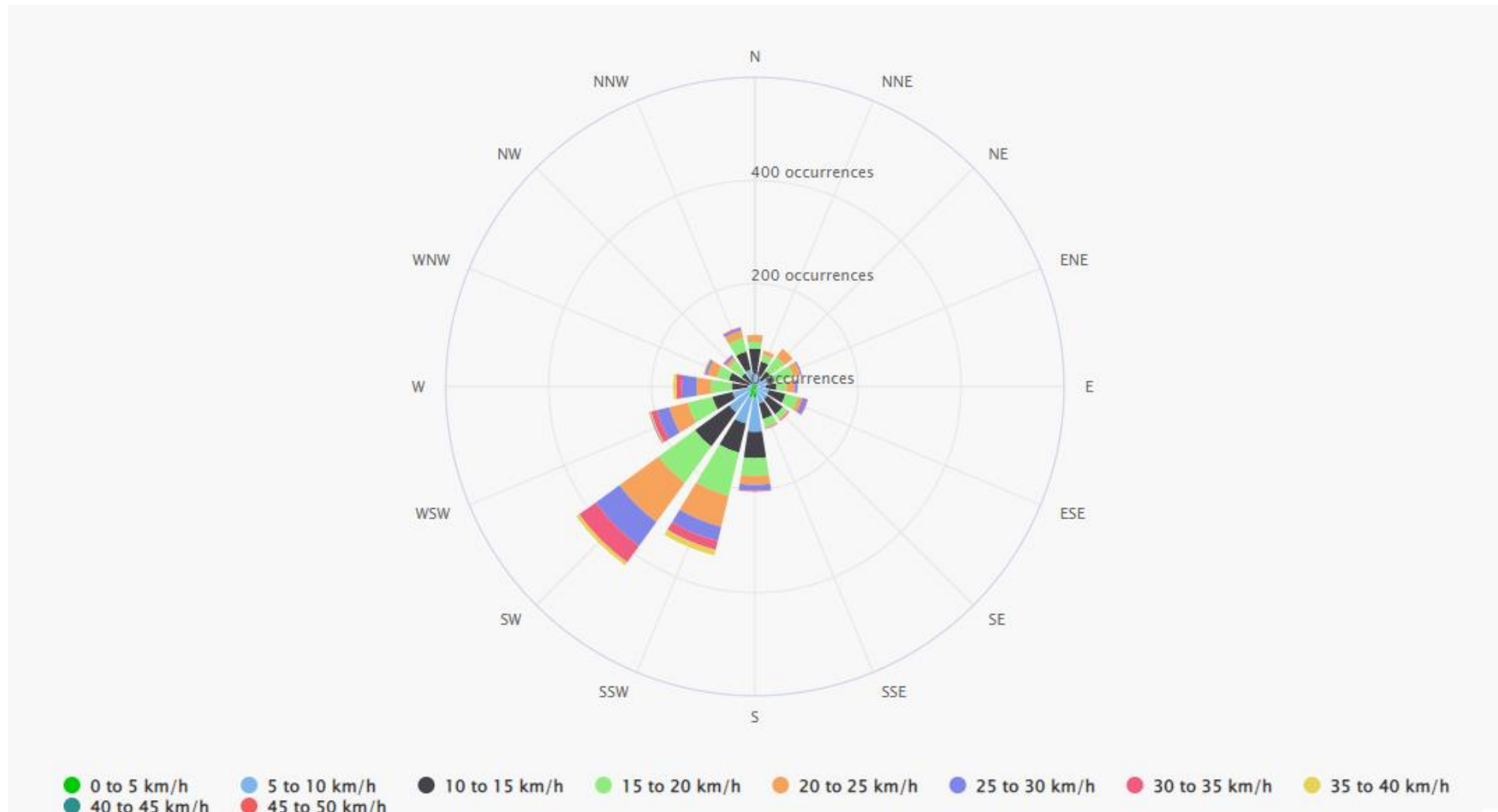


Figure D-1 Windrose for RAF Northolt

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