Network Building, 95-100 Tottenham Court Road

Air Particle (Dust) Baseline Monitoring Report (24 March 2022 to 23 June 2022)

29704/APR01

23 June 2022

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Air Particle (Dust) Monitoring Report
29704/AP01

Document Control

Rev	Date	Comment	Prepared by	Authorised by
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Hann Tucker Associates

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1.0 Introduction

Demolition and construction works are due to take place at Network Building, 95-100 Tottenham Court Road.

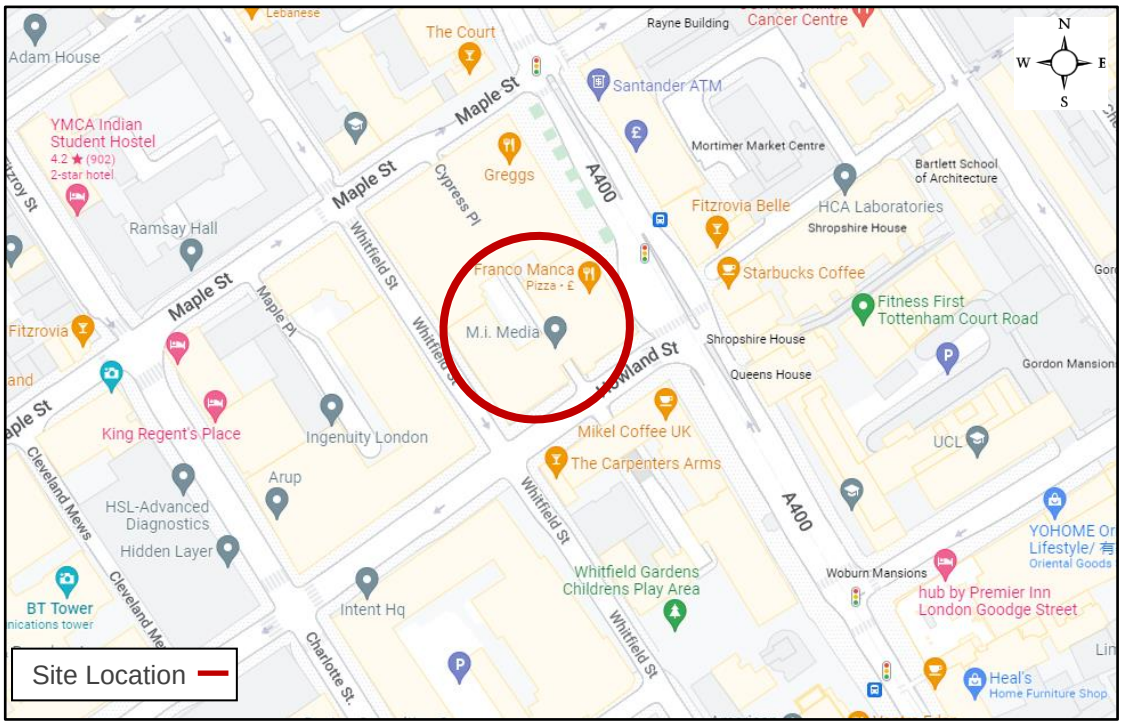
Hann Tucker Associates have been appointed to undertake unmanned air particulate (dust) monitoring at Network Building, 95-100 Tottenham Court Road, in order to establish the baseline dust levels prior to the commencement of project works at the aforementioned site.

This report presents the procedures employed for the monitoring and the data obtained during the baseline monitoring period spanning 24 March 2022 to 23 June 2022.

2.0 Site Description

2.1 Location

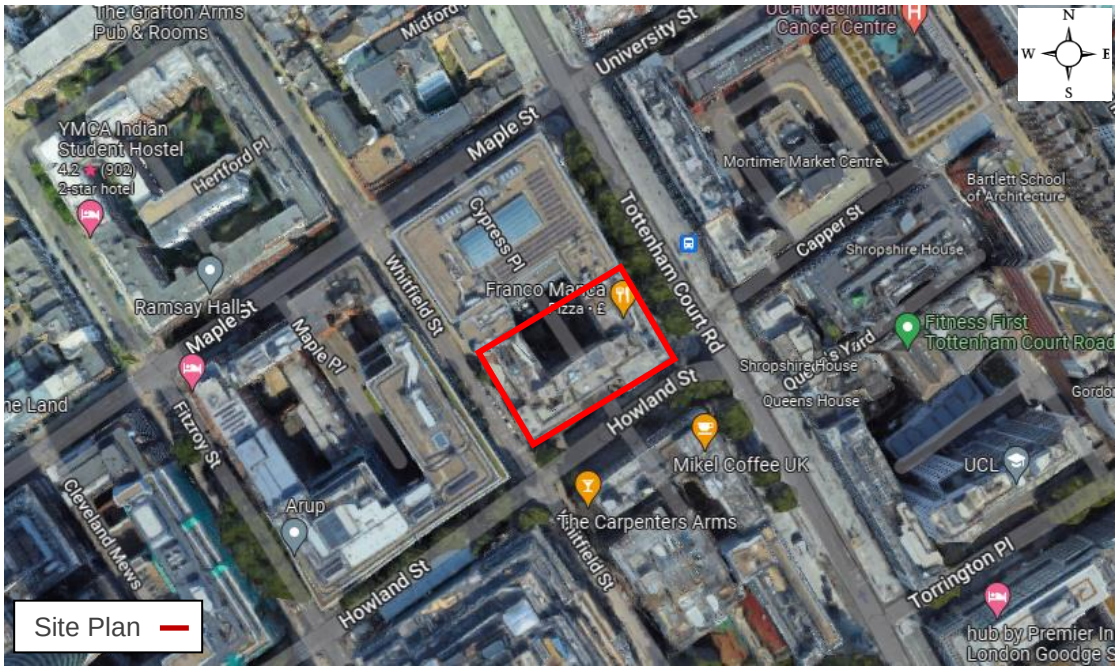
The site is located at 95-100 Tottenham Court Road and falls within the jurisdiction of Camden London Borough Council. See Location Map below.



Location Map (Map data ©Google)

2.2 Description

Network Building, 95-100 Tottenham Court Road is situated approximately halfway between Goodge Street and Warren Street tube stations. The current building comprises 6No. storeys, mostly used as office and retail space. The plan is to demolish the existing building to replace it with a 9No. storey modern commercial building, which includes contemporary office space and high-quality retail space fronting Tottenham Court Road. The surrounding area contains a mixture of building type, including residential buildings, offices, restaurants, retail space and banks.



Site Plan (Imagery ©2022 Bluesky, Getmapping Plc, Infoterra & Bluesky, MAxar Technologies, The Geoinformation Group. Map data ©2022 Google)

3.0 Methodology

3.1 Equipment

Electronic automated air particle monitors were installed at the development site, and were continuously maintained, since 24 March 2022.

The airborne particle monitoring instruments use proprietary nephelometers, where a pump continuously draws an air sample through the nephelometer which analyses the individual particles as they pass through a laser beam. These same particles are then collected on the reference filter.

The airborne particle monitors are sensitive to airborne particle concentrations down to a fraction of a microgram per cubic metre and the dedicated microprocessor can analyse individual particles even if there are millions per litre. This allows size fractions to be determined at concentrations up to several µg/m^3. Above this level there is an indicator range which can be used without sizing up to 60µg/m^3.

The instruments feature internal data logging for the particle concentrations.

The following equipment was used for the baseline monitoring:

- 2No. Turnkey OSIRIS Monitors.

Each air particle meter was located in an environmental case.

3.2 Procedure

Fully automated air particle measurements were undertaken from 24 March 2022 to 23 June 2022.

The airborne particle monitors measure and report information for total, 10µm, 2.5µm and 1µm size particles. The units have been set to sample continuously and present 15-minute average readings.

3.3 Measurement Positions

The air particle measurements were undertaken at 2No. positions as described in the table below and shown in on the site plan in Appendix B.

Position No	Description
1	The monitor was located approximately 4m above ground-level, towards the south-west of the existing structure. The monitor was fixed to the masonry of 78 Whitfield Street via a metal bracket, which extended approximately 0.5m from the façade of the building. This position was chosen to best represent the dust levels experienced by receptors to the south and west of the development.
2	The monitor was located approximately 4m above ground-level, towards the north-east corner of the existing structure. The monitor was fixed to the masonry above the retail unit for Pret-A-Manger via a metal bracket, which extended approximately 0.5m from the façade of the building. This position was chosen to best represent the dust levels experienced by receptors to the north and east of the development.

Each air particle monitor was calibrated prior to the commencement of monitoring. This calibration is regularly checked and maintained by the equipment manufacturer.

4.0 Results

The measured 15-minute mean PM10 concentration levels are presented on the enclosed Time History Graphs 29704/ATH1.1 – 28294/ATH1.6.

The maximum measured 15-minute mean PM10 concentration levels during site working hours are presented within Appendix C.

5.0 Discussion

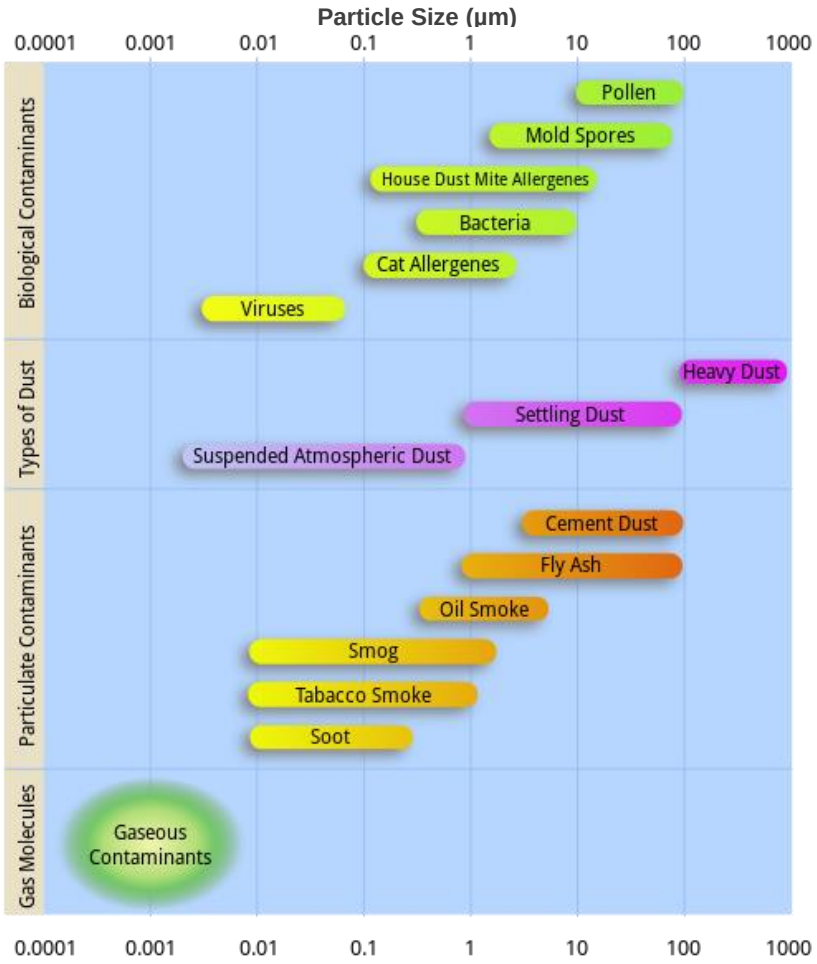
Baseline air particle monitoring has been undertaken at Network Building, 95-100 Tottenham Court Road during the period of 24 March 2022 to 23 June 2022.

The results are presented herein.

Appendix A – Air Particle Monitoring Terminology

PMx

Particulate Matter - Used as a measurement of air particles where x is the size of the particle measured in micrometres (or µm). PM10 describes inhalable particles, with diameters that are 10 micrometres and smaller. Sources include crushing or grinding operations and dust stirred up by vehicles on roads. PM2.5 describes fine particles that are 2.5 micrometres or smaller in diameter and can only be seen with an electron microscope and are able to penetrate to the lungs. Typical sources include all types of combustion, including motor vehicles, power plants and agricultural burning. PM1 describes particles that are 1 micrometre or smaller in diameter. The diagram below shows common airborne particles and their typical sizes along the PM scale.



TSP

Total Suspended Particles - Used as a measure of the mass concentration of particulate matter in the air. TSP covers the full range of particle sizes and is commonly measured alongside PM10 and PM2.5.

Nephelometer	Sometimes referred to as a turbidimeter, these devices are used to measure the concentration of particulates suspended in a fluid. Suspended particulates are measured by employing a light beam and a light detector set to one side (often 90°) of the source beam. Particle density is then a function of the light reflected into the detector from the particles.
Anemometer	Device used for measuring wind speed and direction. Three-cup anemometers, consisting of three hemispherical cups mounted horizontally on a vertical shaft, are currently used as the industry standard for wind resource assessment studies and practice.

Appendix B – Site Plan and Monitoring Positions

Title:
Site Plan Showing Air Particle Monitoring Positions during the Period 24 March 2022 to 23 June 2022
Project:
Network Building, 95-100 Tottenham Court Road
Figure:
29704/APSP1
Scale:
Not to scale

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Appendix C – Maximum Measured 15-Minute Mean PM10 Concentration

The following table presents the maximum 15-minute mean PM10 levels measured during typical site working hours (08:00-18:00) for each of the 2No. positions around the development site during the period 24 March 2022 to 23 June 2022.

Date	Maximum Measured 15-Minute Mean PM10 Concentration (µg/m^3)	
	Position 1	Position 2
Thursday 24 March 2022	28.0	61.7
Friday 25 March 2022	120.3	116.1
Saturday 26 March 2022	56.6	56.3
Sunday 27 March 2022	19.9	23.7
Monday 28 March 2022	69.5	66.0
Tuesday 29 March 2022	88.6	80.0
Wednesday 30 March 2022	91.4	96.4
Thursday 31 March 2022	28.4	33.7
Friday 1 April 2022	18.1	22.1
Saturday 2 April 2022	20.2	23.5
Sunday 3 April 2022	12.5	79.1
Monday 4 April 2022	18.2	21.8
Tuesday 5 April 2022	40.7	46.7
Wednesday 6 April 2022	38.3	43.8
Thursday 7 April 2022	52.3	56.4
Friday 8 April 2022	35.9	35.6
Saturday 9 April 2022	26.3	25.1
Sunday 10 April 2022	20.9	23.5
Monday 11 April 2022	24.5	63.8
Tuesday 12 April 2022	34.1	43.0
Wednesday 13 April 2022	34.6	33.8
Thursday 14 April 2022	39.3	40.6
Friday 15 April 2022	19.7	25.4
Saturday 16 April 2022	89.9	80.9
Sunday 17 April 2022	57.7	58.3
Monday 18 April 2022	27.8	33.3
Tuesday 19 April 2022	22.1	28.4
Wednesday 20 April 2022	40.0	42.9
Thursday 21 April 2022	51.3	54.3
Friday 22 April 2022	41.4	45.8
Saturday 23 April 2022	29.7	28.4

Date	Maximum Measured 15-Minute Mean PM10 Concentration (µg/m^3)	
	Position 1	Position 2
Sunday 24 April 2022	68.2	75.0
Monday 25 April 2022	76.8	45.9
Tuesday 26 April 2022	31.3	30.4
Wednesday 27 April 2022	34.7	39.3
Thursday 28 April 2022	23.5	31.3
Friday 29 April 2022	26.1	42.6
Saturday 30 April 2022	35.0	17.1
Sunday 1 May 2022	18.0	20.2
Monday 2 May 2022	27.4	27.5
Tuesday 3 May 2022	55.4	55.8
Wednesday 4 May 2022	74.8	73.3
Thursday 5 May 2022	13.3	18.8
Friday 6 May 2022	37.3	75.6
Saturday 7 May 2022	46.8	8.5
Sunday 8 May 2022	65.0	54.2
Monday 9 May 2022	31.3	33.2
Tuesday 10 May 2022	48.0	28.7
Wednesday 11 May 2022	83.1	62.7
Thursday 12 May 2022	58.8	59.4
Friday 13 May 2022	46.9	59.4
Saturday 14 May 2022	95.0	82.5
Sunday 15 May 2022	103.6	111.7
Monday 16 May 2022	101.1	83.2
Tuesday 17 May 2022	48.6	46.3
Wednesday 18 May 2022	33.4	41.1
Thursday 19 May 2022	29.8	26.4
Friday 20 May 2022	58.1	53.2
Saturday 21 May 2022	56.2	56.2
Sunday 22 May 2022	37.4	34.2
Monday 23 May 2022	34.8	72.7
Tuesday 24 May 2022	17.2	17.1
Wednesday 25 May 2022	38.0	30.3
Thursday 26 May 2022	39.2	42.0
Friday 27 May 2022	42.5	42.7
Saturday 28 May 2022	23.8	24.5
Sunday 29 May 2022	12.6	17.8
Monday 30 May 2022	17.6	38.6
Tuesday 31 May 2022	17.0	17.4

Date	Maximum Measured 15-Minute Mean PM10 Concentration (µg/m^3)	
	Position 1	Position 2
Wednesday 1 June 2022	14.4	15.0
Thursday 2 June 2022	13.6	17.7
Friday 3 June 2022	20.0	26.8
Saturday 4 June 2022	29.4	44.4
Sunday 5 June 2022	38.6	50.6
Monday 6 June 2022	7.9	99.8
Tuesday 7 June 2022	15.2	21.6
Wednesday 8 June 2022	16.9	26.7
Thursday 9 June 2022	31.4	64.6
Friday 10 June 2022	34.8	71.4
Saturday 11 June 2022	22.9	67.6
Sunday 12 June 2022	14.5	46.7
Monday 13 June 2022	7.2	46.0
Tuesday 14 June 2022	11.0	18.0
Wednesday 15 June 2022	28.7	26.3
Thursday 16 June 2022	13.7	27.9
Friday 17 June 2022	23.5	36.4
Saturday 18 June 2022	7.4	24.2
Sunday 19 June 2022	10.3	33.1
Monday 20 June 2022	7.9	27.4
Tuesday 21 June 2022	13.7	67.4
Wednesday 22 June 2022	12.9	19.2
Thursday 23 June 2022	8.1	36.7

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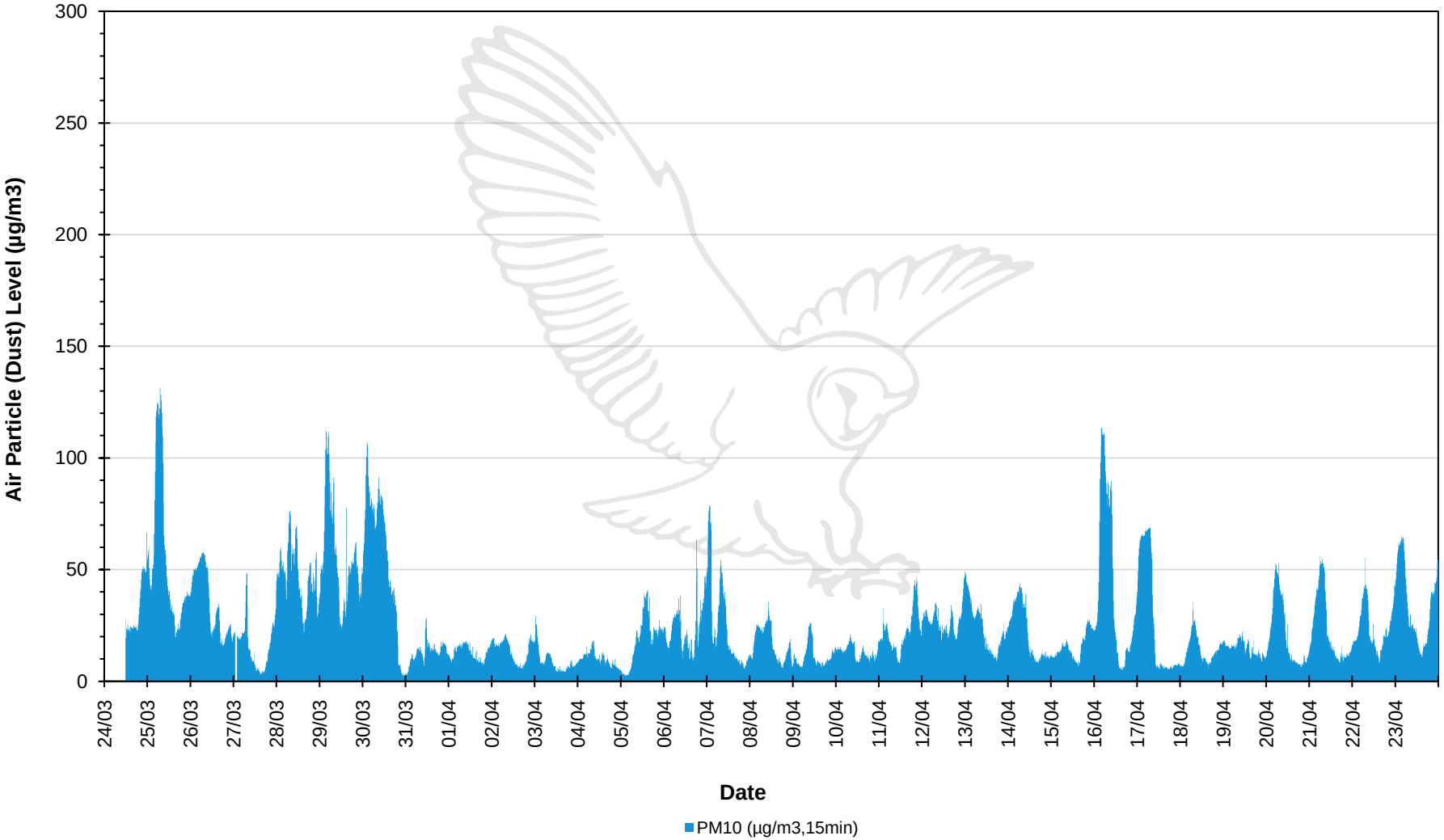
Network Building

Position 1

Air Particle (Dust) Level Monitoring

Thursday 24 March 2022 to Saturday 23 April 2022



29704/ATH1.1

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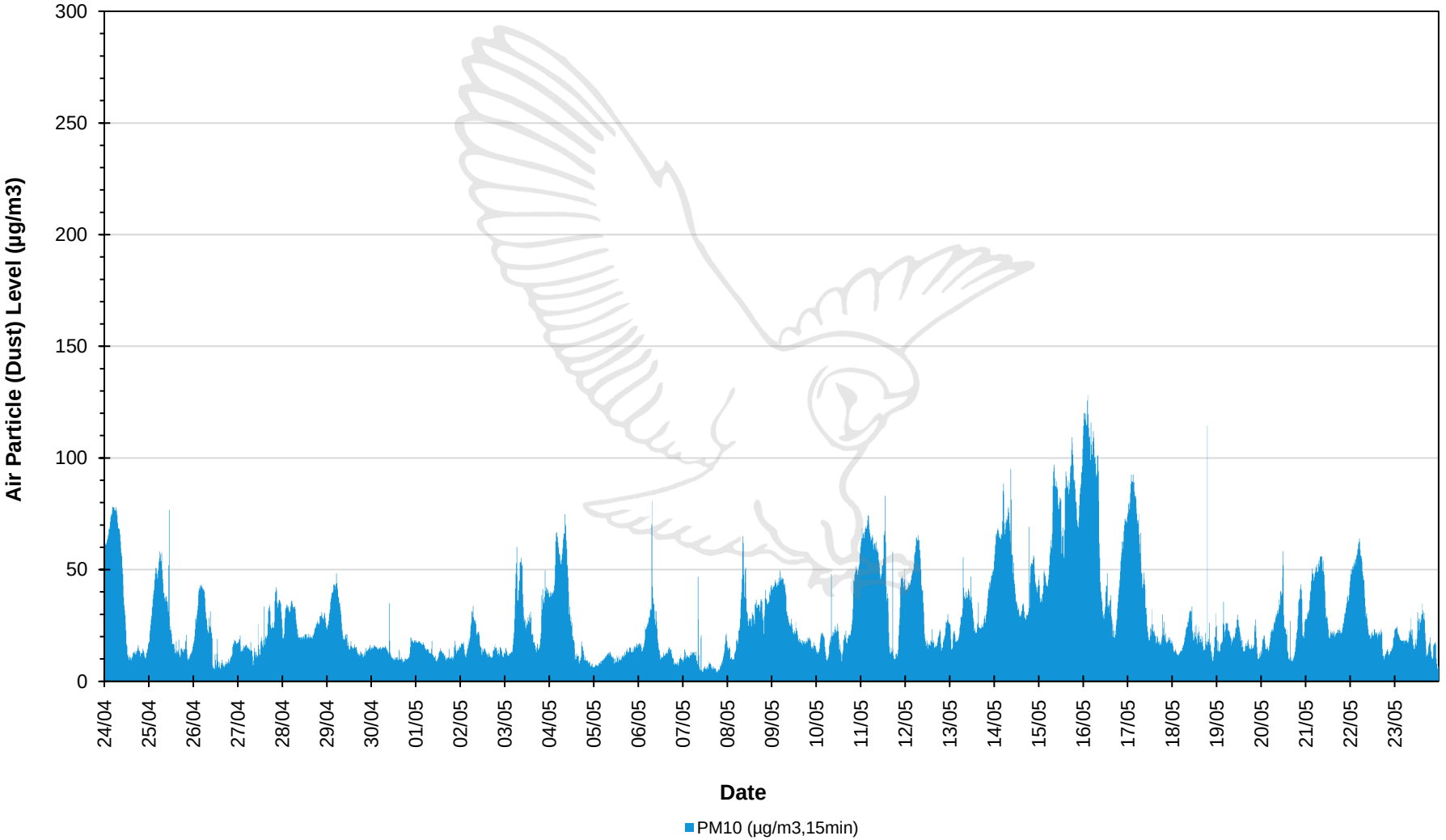
Network Building

Position 1

Air Particle (Dust) Level Monitoring

Sunday 24 April 2022 to Tuesday 24 May 2022



29704/ATH1.2

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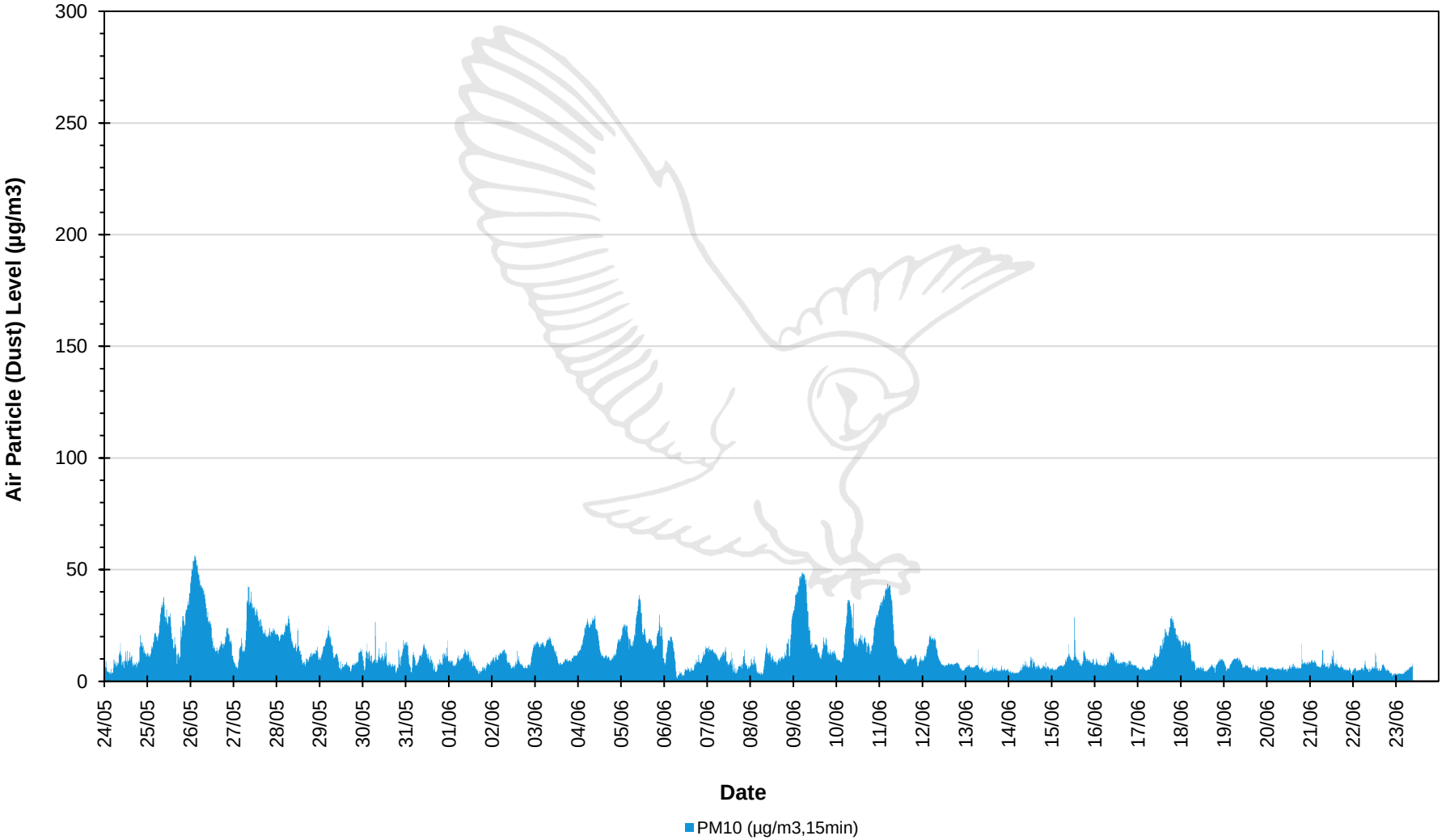
Network Building

Position 1

Air Particle (Dust) Level Monitoring

Tuesday 24 May 2022 to Thursday 23 June 2022



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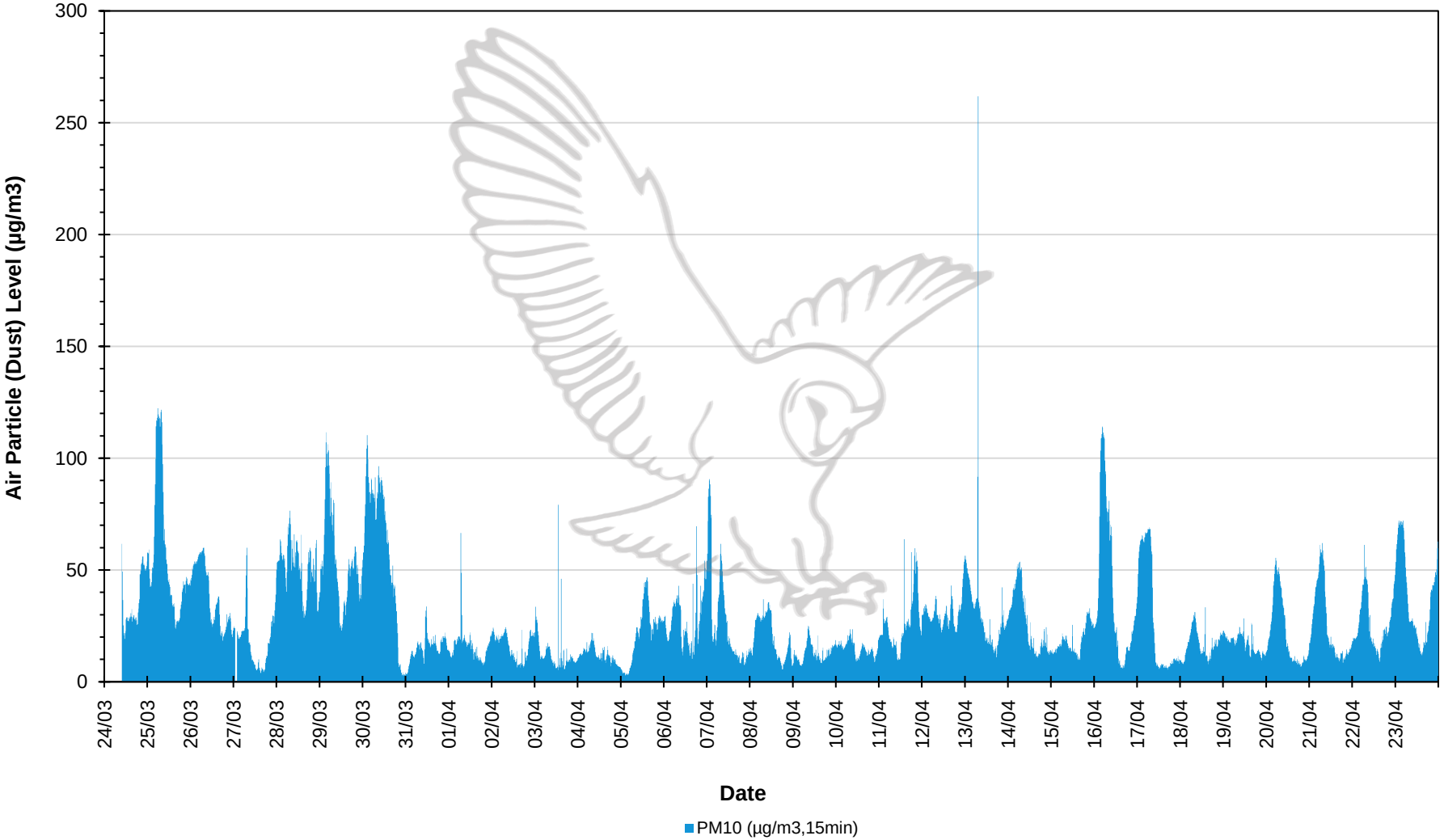
Position 2

Air Particle (Dust) Level Monitoring

Thursday 24 March 2022 to Saturday 23 April 2022



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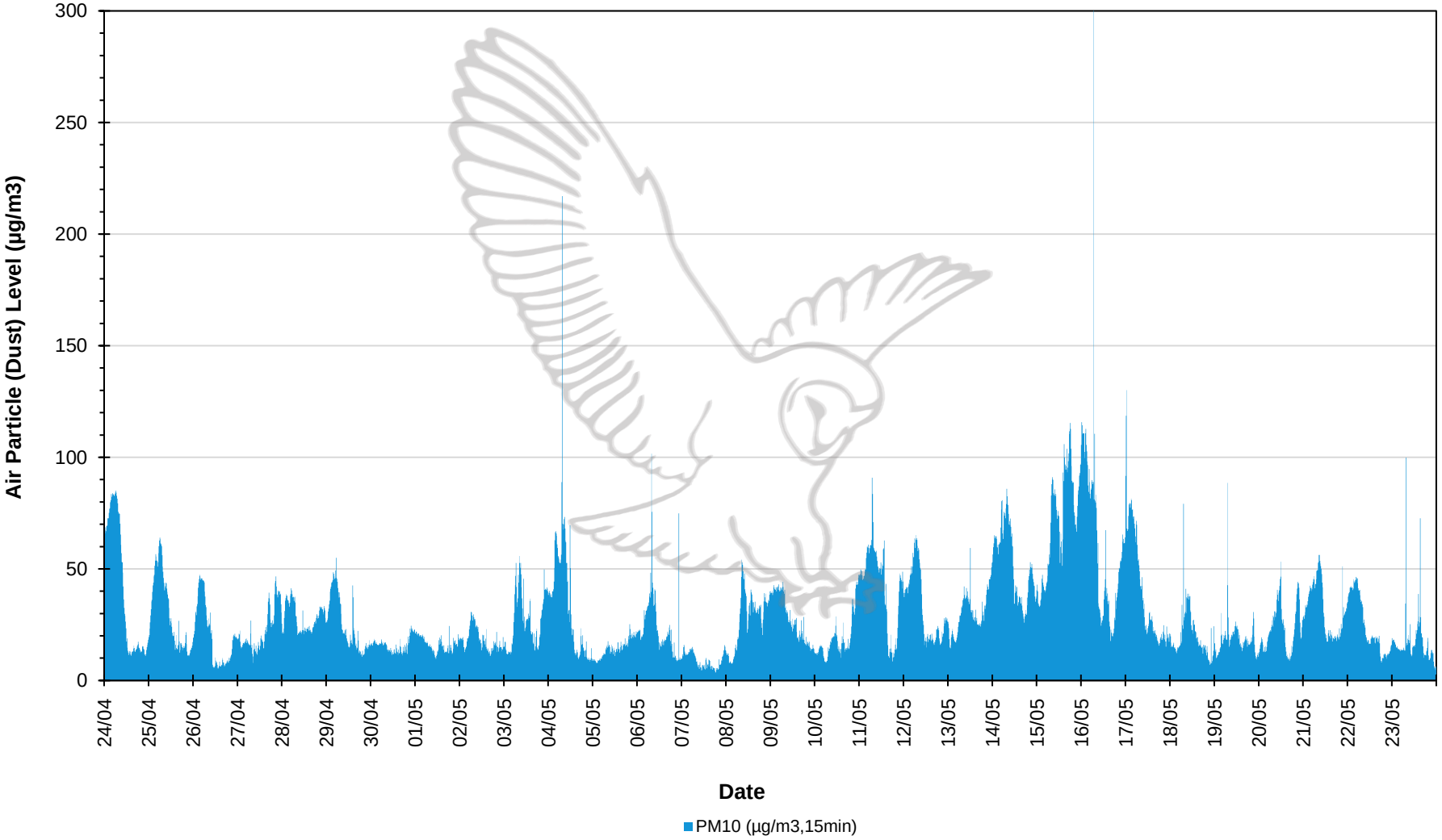
Network Building

Position 2

Air Particle (Dust) Level Monitoring

Sunday 24 April 2022 to Tuesday 24 May 2022



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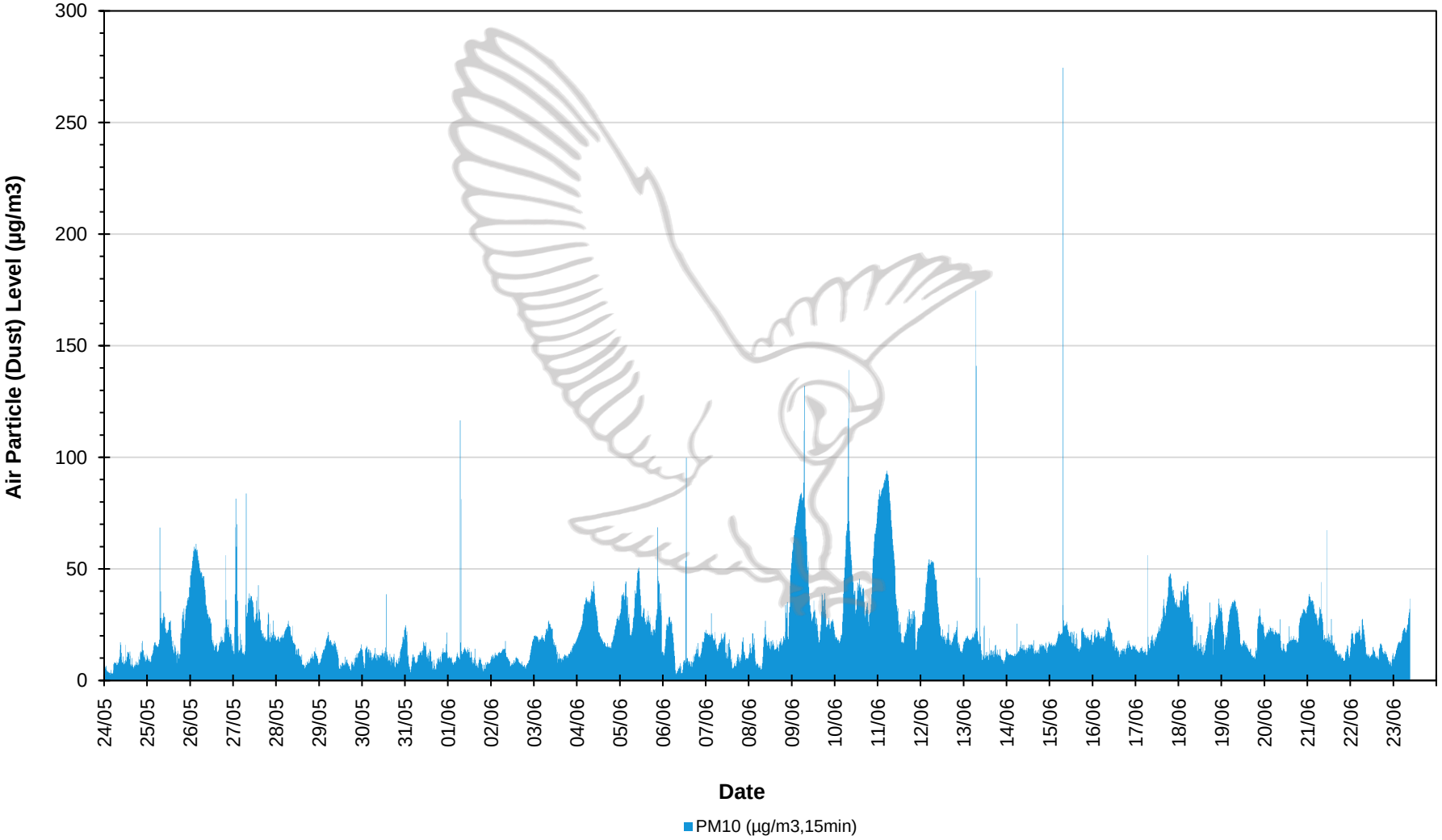
Network Building

Position 2

Air Particle (Dust) Level Monitoring

Tuesday 24 May 2022 to Thursday 23 June 2022



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