



Construction Dust Monitoring: St Pancras Commercial Centre, Camden

January 2021



Experts in air quality
management & assessment

Document Control

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Job Number	J3747
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Document Status and Review Schedule

Report No.	Date	Status	Reviewed by
J3747A/Dec20/F1	18 January 2021	Final	Dr Denise Evans (Associate Director)

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1 Introduction

- 1.1 An Air Quality Monitoring Strategy was prepared by Air Quality Consultants Ltd (AQC) in November 2020 (AQC, 2020) for the proposed mixed-use development at 63 Pratt Street, Camden, known as the St Pancras Commercial Centre. This was submitted to, and approved by, the London Borough of Camden Council. The document sets out the requirements for the monitoring of particulate matter with a diameter of less than 10 microns (PM_{10}) to be undertaken at four locations throughout the demolition and construction work, and for three months in advance of commencement of the works.
- 1.2 Work at the St Pancras Campus is expected to begin in February 2021. The anticipated end of on-site works is February 2024. This report presents the dust monitoring results for the second month of the baseline monitoring period from 18th December 2020 to 17th January 2021.

2 Monitoring Methodology

Monitoring Method

- 2.1 Monitoring is undertaken using four MCERTS certified Osiris instruments to measure concentrations of particulate matter. The Osiris instruments measure concentrations of particulate matter less than 10 micrometres in aerodynamic diameter, which is known as 'PM₁₀'. The monitoring is continuous, operating 24 hours a day, 7 days a week. Where data capture is less than 90%, an explanation for the data loss is provided, where possible.
- 2.2 Further details of the Osiris monitoring method are described in Appendix A1.

Assessment Level

- 2.3 The Osiris monitors are set up to raise an alert if PM₁₀ concentrations greater than 250 µg/m³ are recorded during a 15-minute averaging period, or greater than 190 µg/m³ during a 1-hour averaging period. The former trigger level is based on criteria recommended in the GLA SPG on Construction Dust (GLA, 2014) and the latter is based on criteria recommended in the IAQM Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites v1.1 (IAQM, 2018). This is to help identify when abnormal levels of particulate matter may be being produced by the construction activities carried out. Instances of PM₁₀ concentrations greater than the trigger levels above are investigated, and action is taken, if required, to stop dusty site activities.

Monitoring Locations

- 2.4 There are four Osiris monitors installed, the current locations of which are shown in Figure 1. Photographs of the precise locations are shown in Appendix A2. The locations of the monitors were discussed and agreed with the London Borough of Camden in November 2020 during the preparation of the Air Quality Monitoring Strategy.

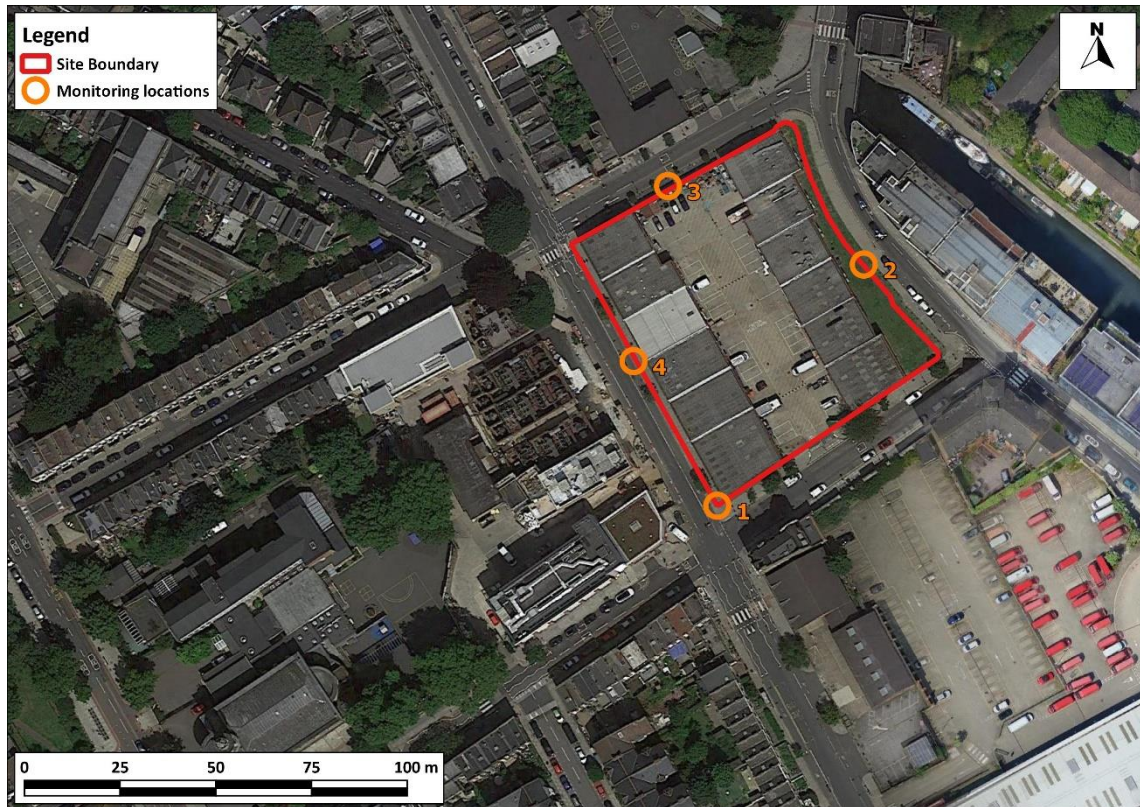


Figure 1: Dust Monitor Locations

Imagery ©2020 The GeoInformation Group.

3 Monitoring Results

3.1 Monitoring statistics are presented in Table 1, and are shown in Figure 2 and Figure 3.

Table 1: PM₁₀ Monitoring Statistics

Monitor	Averaging Period	Average Concentration (µg/m ³)	Highest Concentration (µg/m ³)	Date and Time of Highest Concentration	Data Capture (%)
St Pancras CC 1 (South)	1 hour	8.1	47.1	05/01/2021 15:00	100.0
	15 mins	8.1	162.1	05/01/2021 16:00	100.0
St Pancras CC 2 (East)	1 hour	9.6	70.8	15/01/2021 15:00	100.0
	15 mins	9.6	239.1	12/01/2021 09:00	100.0
St Pancras CC 3 (North)	1 hour	6.9	45.4	11/01/2021 11:00	100.0
	15 mins	6.9	99.3	23/12/2020 18:30	100.0
St Pancras CC 4 (West)	1 hour	7.2	35.6	21/12/2020 08:00	100.0
	15 mins	7.2	136.8	21/12/2020 08:30	100.0

3.2 Data capture was 100% all at monitors. There were no exceedances of either of the PM₁₀ trigger levels at any monitor.

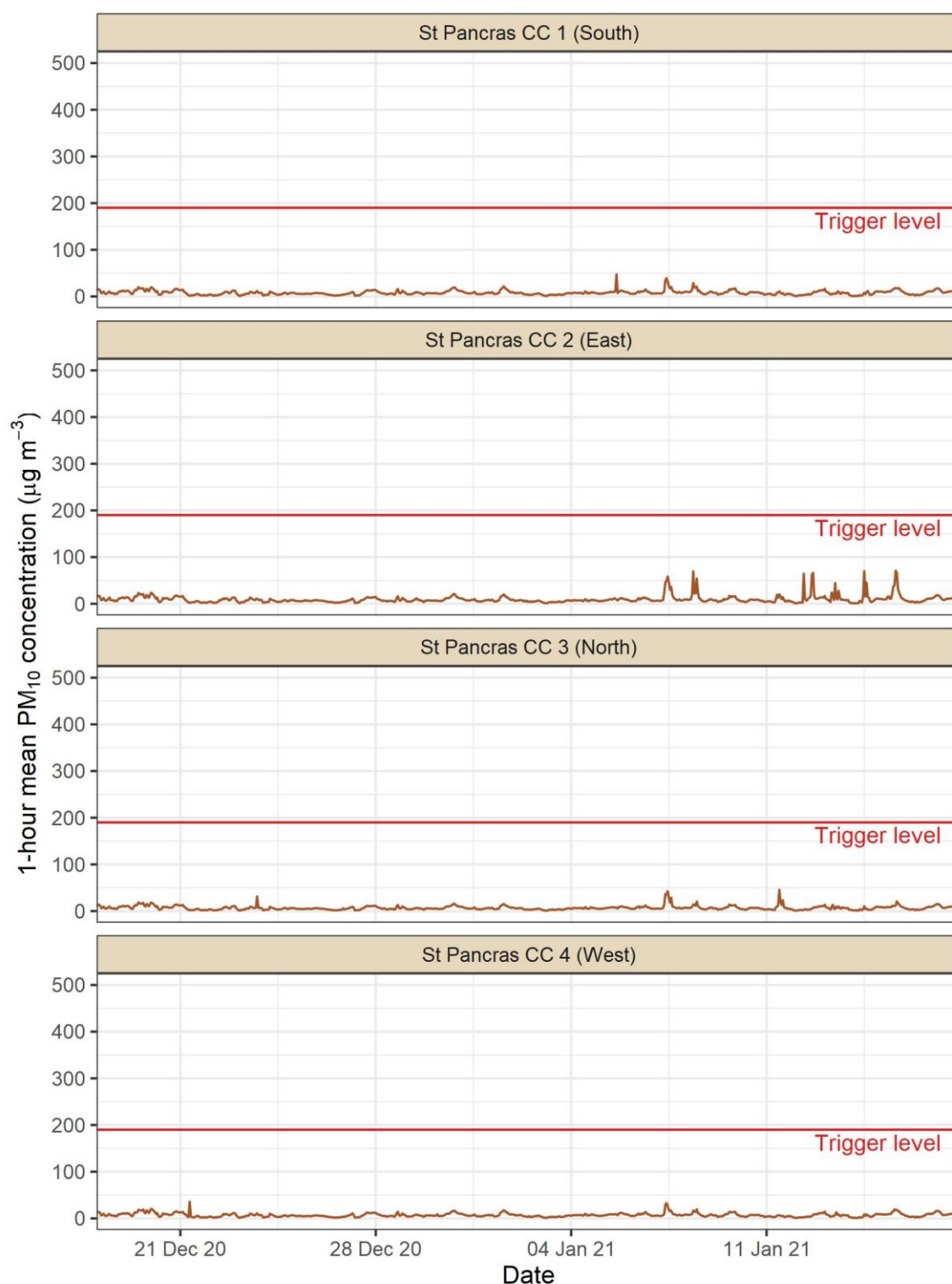


Figure 2: 1-hour Mean PM₁₀ concentrations at St Pancras Commercial Centre

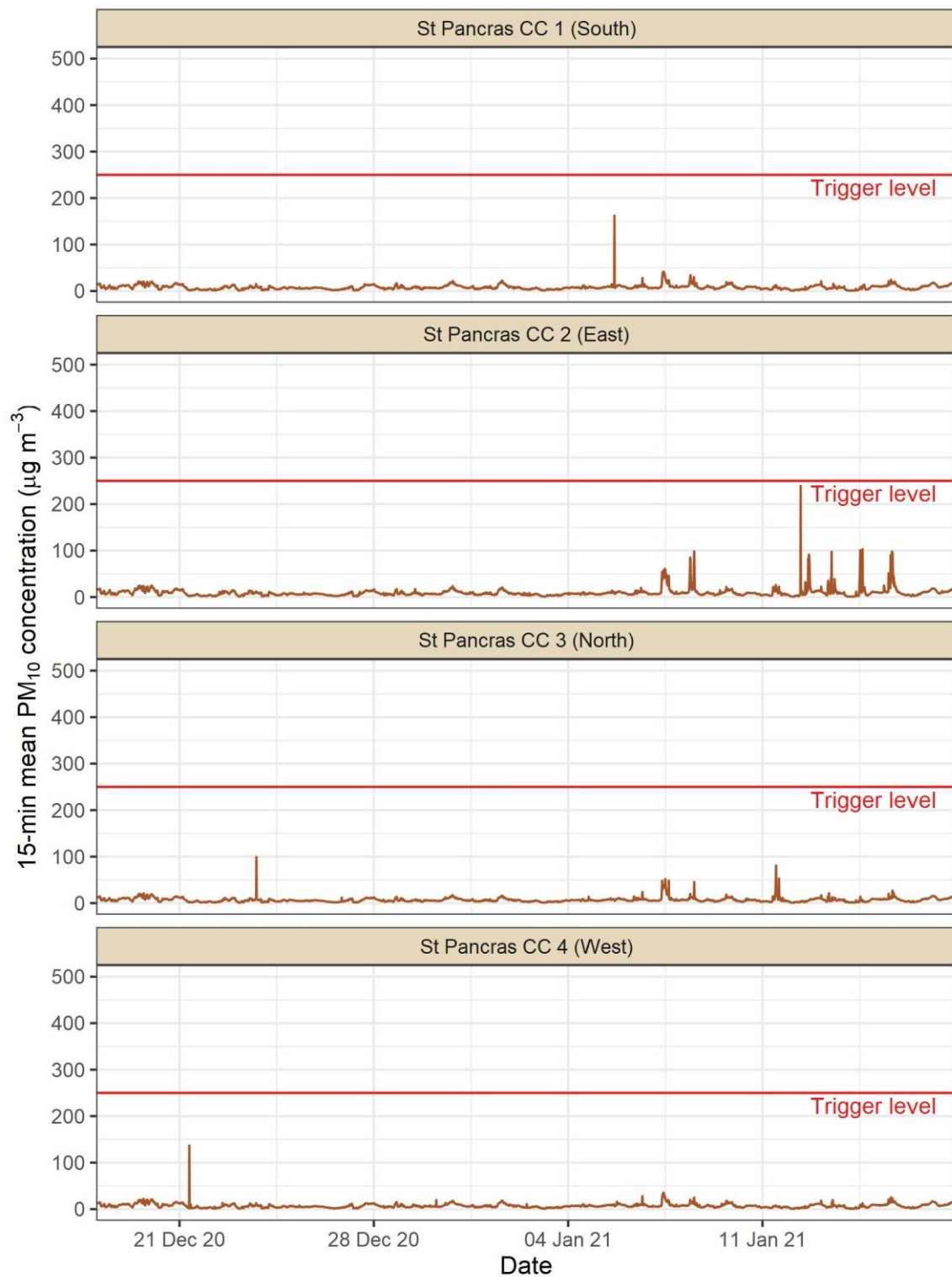


Figure 3: 15-minute Mean PM₁₀ concentrations at St Pancras Commercial Centre

4 Conclusions

- 4.1 Data capture at the monitors deployed at St Pancras Commercial Centre was 100% from 18th December 2020 to 17th January 2021.
- 4.2 There were no recorded exceedances of either of the PM₁₀ alert levels in that period.

5 References

AQC (2020) *Air Quality Monitoring Strategy: St Pancras Commercial Centre, Camden* (J3747A/1/F2; 3 November 2020).

GLA (2014) *The Control of Dust and Emissions from Construction and Demolition SPG*, Available: <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance-and-spgs/control-dust-and>.

IAQM (2018) *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites v1.1*, Available: http://iaqm.co.uk/text/guidance/guidance_monitoring_dust_2018.pdf.

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A1 Air Quality Monitoring Methodology - Osiris

- A1.1 The Osiris air quality monitoring units measure concentrations of particulate matter with a diameter of less than 10 micrometres, known as PM₁₀.
- A1.2 The Osiris monitors are operated continuously and work by pumping air through a heated inlet to remove moisture, and past an optical sensor which measures the concentration of PM₁₀ in the sampled air.
- A1.3 The Osiris monitors are set up to record average PM₁₀ measurements every 15 minutes, which are sent via a mobile connection to an online database which stores the recorded data. Concentrations are recorded in micrograms of PM₁₀ per cubic metre of air (µg/m³).
- A1.4 The Osiris monitors are all subject to the following routine checks and maintenance:
- Daily online checks of monitoring data and power connection;
 - Quarterly filter changes; and
 - Annual monitor servicing.
- A1.5 The dates of most recent filter changes and annual servicing are presented in Table A1.1

Table A1.1: Monitor maintenance

Monitor	Last Filter Change	Last Annual Servicing
St Pancras CC 1 (South)	17/11/2020	25/02/2020
St Pancras CC 2 (East)	17/11/2020	25/02/2020
St Pancras CC 3 (North)	17/11/2020	19/10/2020
St Pancras CC 4 (West)	17/11/2020	23/09/2020

- A1.6 It is desirable to achieve over 90% successful data capture on the Osiris monitors. An overall data capture rate of 100% is ideal; however, best practice guidance acknowledges that monitoring methods such as the Osiris can be prone to occasional power losses, communication errors and erroneous readings, which result in data capture lower than 100%. Successful data capture greater than 90% represents a high performance with no devaluation of the monitoring results. Where data capture is less than 90% in any monitoring period, justification as to the reasons for the low data capture are to be provided.
- A1.7 The Osiris monitors are set up so that they send an automated alert message to the St Pancras Commercial Centre site manager, air quality specialists and the London Borough of Camden (airquality@camden.gov.uk) if either 15-minute or 1-hour PM₁₀ concentrations exceed their respective set level known as a 'Site Action Level'.

- A1.8 The purpose of the Site Action Level is to provide a warning of unusually high concentrations of PM₁₀, which may be an indication that dust is being produced by site works, but might also indicate other causes such as regional dust episodes (e.g. Saharan dust clouds) and other local dust and PM₁₀ sources such as road traffic, roadworks and utility works, bonfires, or adjacent construction sites. Dry and windy weather conditions are often the cause of high dust and PM₁₀ levels.
- A1.9 When a Site Action Level message is received, it is immediately investigated, logged and reported, in line with the Air Quality Monitoring Strategy (AQC, 2020). If site works are identified as a possible contributory factor in the high PM₁₀ levels, then remedial action is taken. This might include using additional dust mitigation measures, relocating or stopping the dusty activity.

A2 Monitor Locations



Figure A2.1: St Pancras CC 1 (South)



Figure A2.2: St Pancras CC 2 (East)



Figure A2.3: St Pancras CC 3 (North)



Figure A2.4: St Pancras CC 4 (West)