



## **Construction Dust Monitoring: St Pancras Commercial Centre, Camden**

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February 2021



Experts in air quality  
management & assessment

## Document Control

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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 This report presents the dust monitoring results for the third month of the baseline monitoring period from 18<sup>th</sup> January 2021 to 17<sup>th</sup> February 2021 and a summary of the full three-month baseline monitoring period from 18<sup>th</sup> November 2020 to 17<sup>th</sup> February 2021.

## 2 Monitoring Methodology

### Monitoring Method

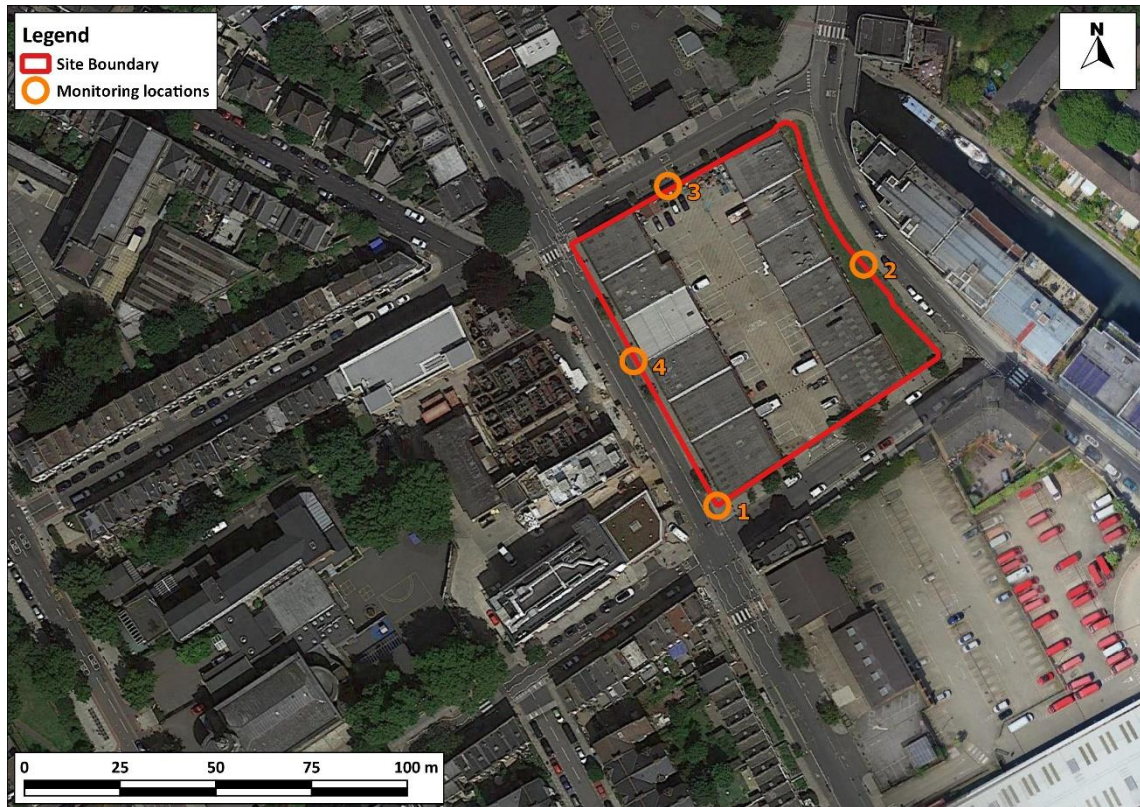
- 2.1 Monitoring is undertaken using four MCERTS certified Osiris instruments to measure concentrations of particulate matter. The Osiris instruments measure concentrations of particulate matter less than 10 micrometres in aerodynamic diameter, which is known as 'PM<sub>10</sub>'. The monitoring is continuous, 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 PM<sub>10</sub> concentrations greater than 250 µg/m<sup>3</sup> are recorded during a 15-minute averaging period, or greater than 190 µg/m<sup>3</sup> 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 PM<sub>10</sub> 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

#### Third month of baseline monitoring

- 3.1 Monitoring data for the period 18<sup>th</sup> January 2021 – 17<sup>th</sup> February 2021 are shown in Figure 2 and Figure 3, and summarised in Table 1.

**Table 1: PM<sub>10</sub> Monitoring Statistics**

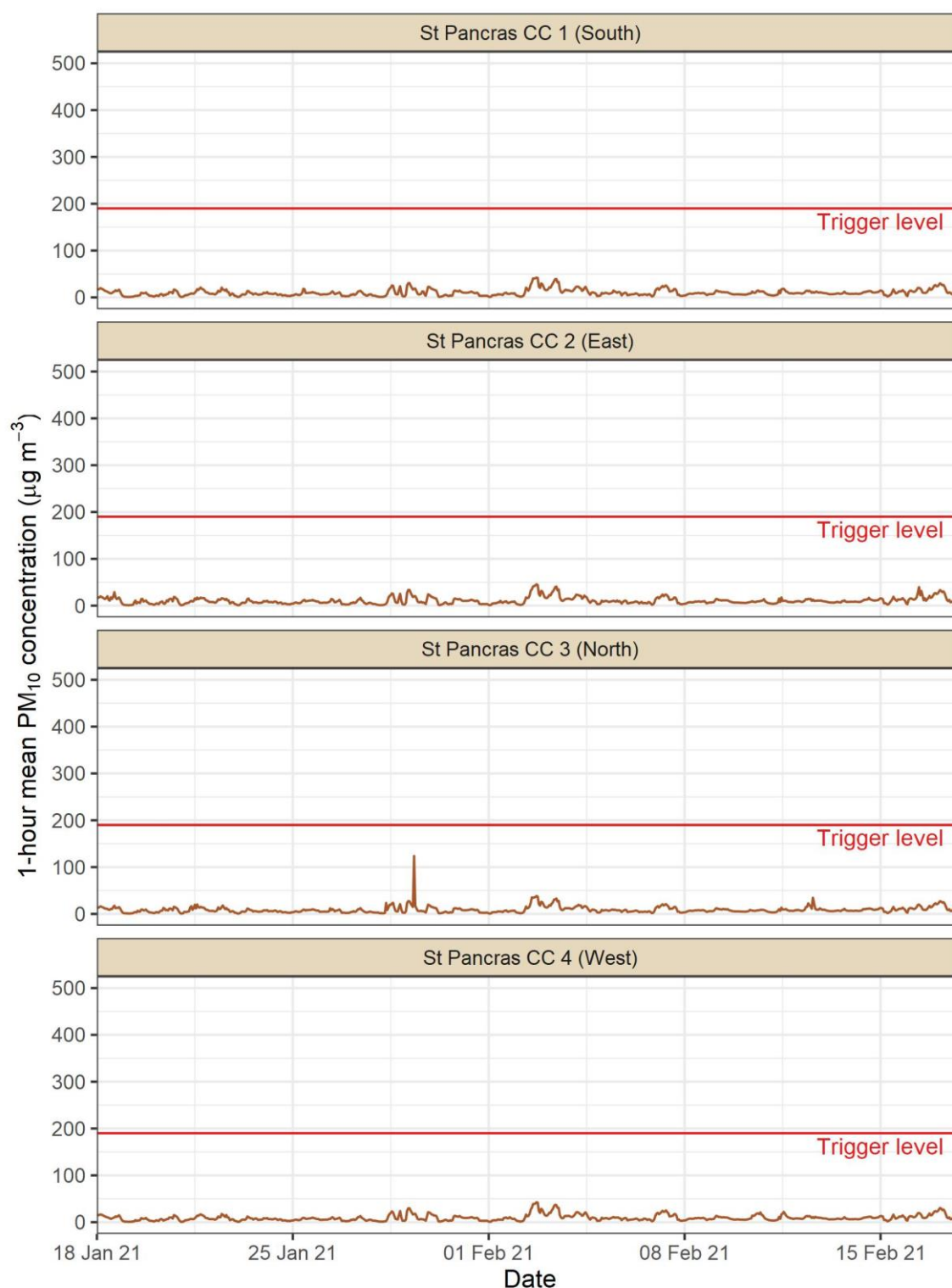
Monitor	Averaging Period	Average Concentration (µg/m <sup>3</sup> )	Highest Concentration (µg/m <sup>3</sup> )	Date and Time of Highest Concentration	Data Capture (%)
St Pancras CC 1 (South)	1 hour	10.3	42.3	02/02/2021 17:00	100
	15 mins	10.3	44.7	02/02/2021 15:00	100
St Pancras CC 2 (East)	1 hour	10.7	45.7	02/02/2021 17:00	100
	15 mins	10.7	49.5	16/02/2021 09:45	100
St Pancras CC 3 (North)	1 hour	9.1	123.8	29/01/2021 08:00	100
	15 mins	9.1	419.5	29/01/2021 08:30	100
St Pancras CC 4 (West)	1 hour	9.4	42.6	02/02/2021 17:00	100
	15 mins	9.4	43.4	02/02/2021 15:00	100

- 3.2 Data capture was 100% at all monitors. St Pancras CC 3 (North) monitor measured one exceedance of the PM<sub>10</sub> trigger level for the 15-min averaging period, the details of which are presented in Table 2 below. The exceedance was short in duration and the exact cause is not known; no works were in progress on site at the time of the alert.

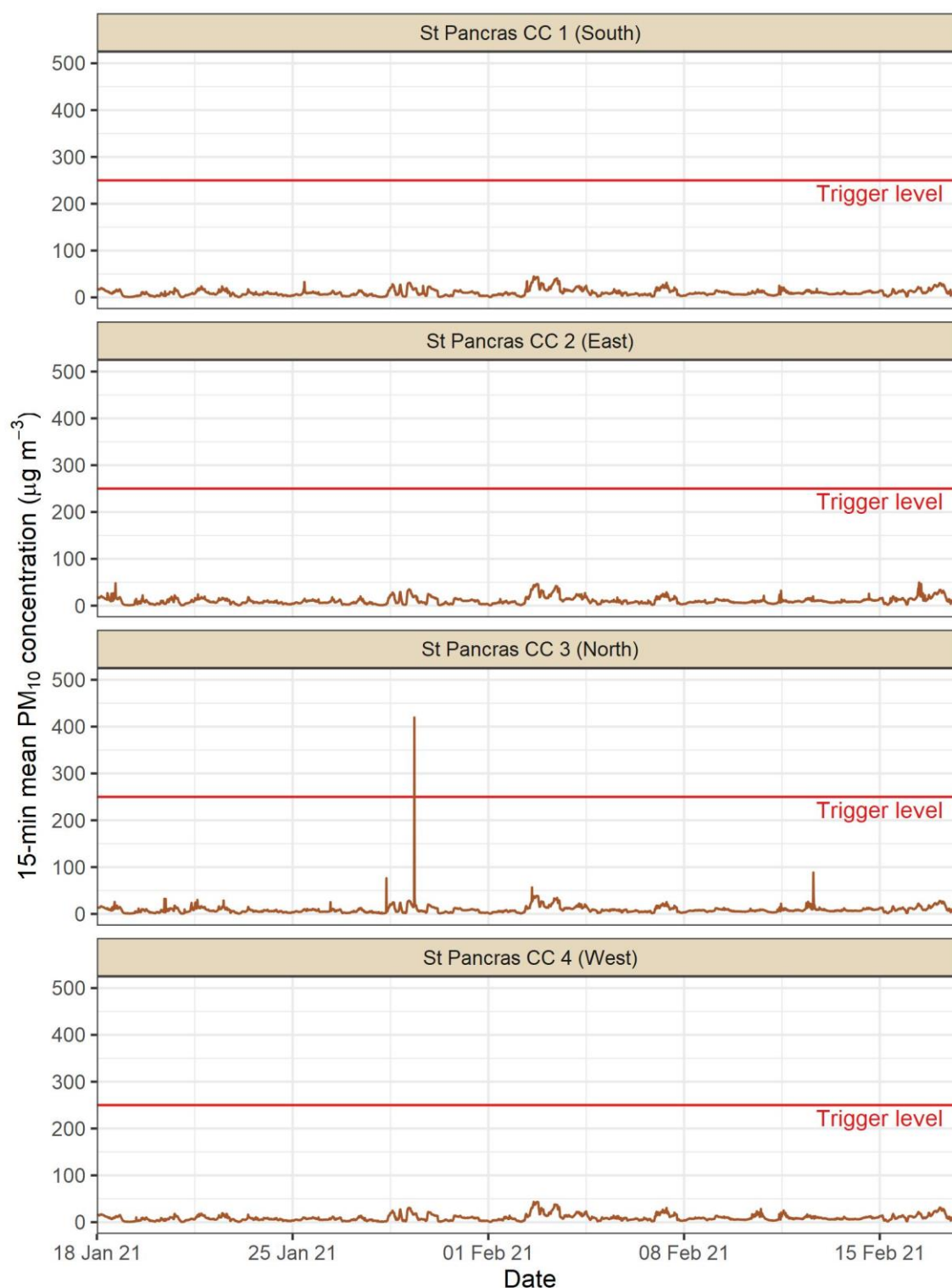
**Table 2: Exceedances of the PM<sub>10</sub> Alert Level**

Monitor	Averaging Period	Date	Time	PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )
St Pancras CC 3 (South)	15 mins	29/01/2021	08:30	419.5





**Figure 2: 1-hour Mean PM<sub>10</sub> concentrations at St Pancras Commercial Centre**



**Figure 3: 15-minute Mean PM<sub>10</sub> concentrations at St Pancras Commercial Centre**



### Three-month baseline monitoring period

- 3.3 Monitoring statistics for the full baseline monitoring period (18<sup>th</sup> November 2020 – 17<sup>th</sup> February 2021) are shown in Figure 4 and Figure 5, and summarised in Table 4.

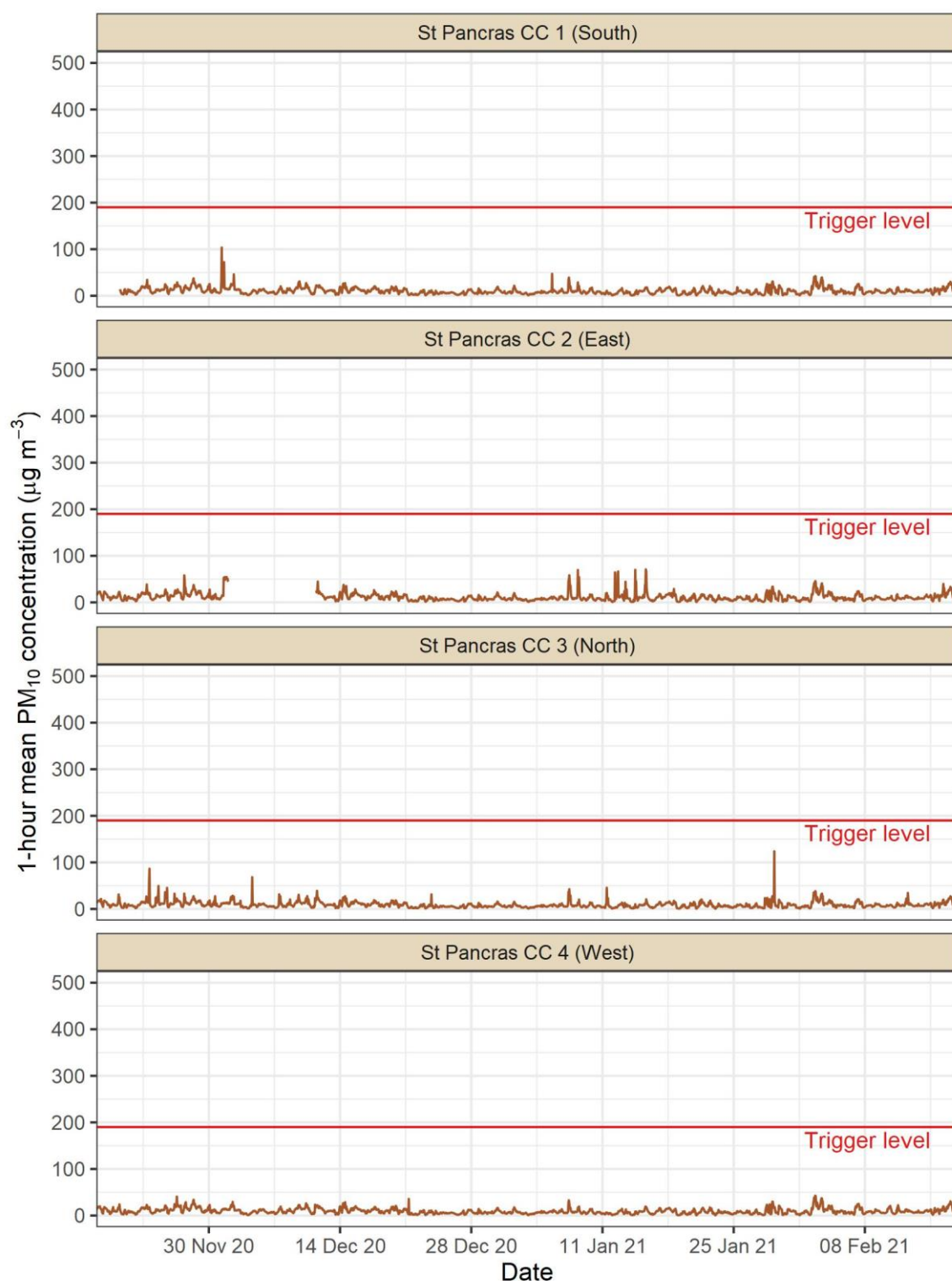
**Table 3: PM<sub>10</sub> Monitoring Statistics**

Monitor	Averaging Period	Average Concentration (µg/m <sup>3</sup> )	Highest Concentration (µg/m <sup>3</sup> )	Date and Time of Highest Concentration	Data Capture (%)
St Pancras CC 1 (South)	1 hour	10.4	103.5	01/12/2020 09:00	97
	15 mins	10.4	162.1	05/01/2021 16:00	97
St Pancras CC 2 (East)	1 hour	11.5	70.8	15/01/2021 15:00	90
	15 mins	11.5	239.1	12/01/2021 09:00	90
St Pancras CC 3 (North)	1 hour	9.2	123.8	29/01/2021 08:00	100
	15 mins	9.2	419.5	29/01/2021 08:30	100
St Pancras CC 4 (West)	1 hour	9.4	42.6	02/02/2021 17:00	100
	15 mins	9.4	136.8	21/12/2020 08:30	100

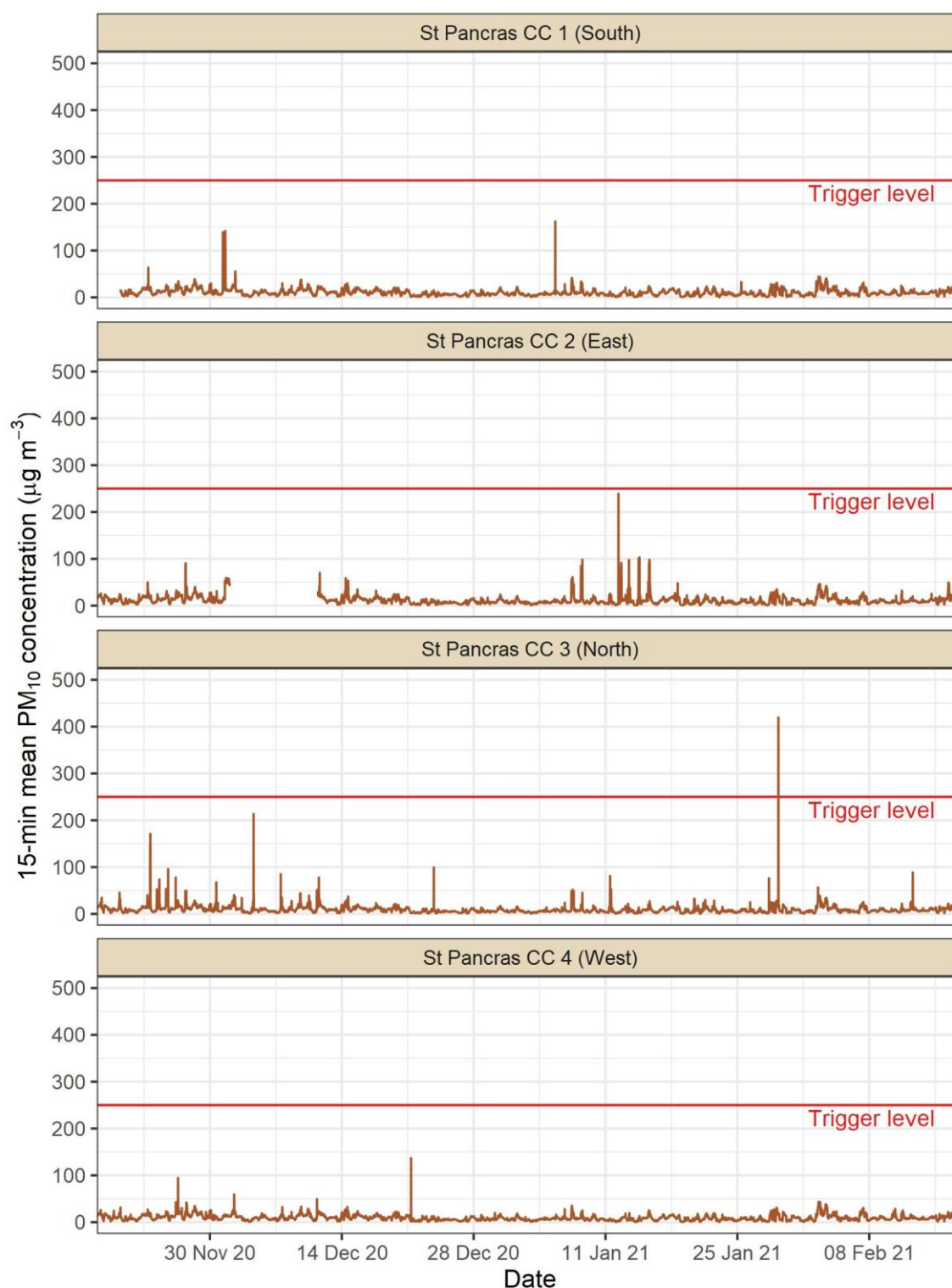
- 3.4 Data capture was 90% or greater at all monitors. The St Pancras CC 3 (North) monitor measured one exceedance of the PM<sub>10</sub> trigger level for the 15-min averaging period, the details of which are presented in Table 4 below.

**Table 4: Exceedances of the PM<sub>10</sub> Alert Level**

Monitor	Averaging Period	Date	Time	PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )
St Pancras CC 3 (South)	15 mins	29/01/2021	08:30	419.5



**Figure 4: 1-hour Mean PM<sub>10</sub> concentrations at St Pancras Commercial Centre**



**Figure 5: 15-minute Mean PM<sub>10</sub> concentrations at St Pancras Commercial Centre**

## 4 Conclusions

- 4.1 Data capture at the monitors deployed at St Pancras Commercial Centre was 100% in the third month of baseline monitoring (18<sup>th</sup> January 2021 – 17<sup>th</sup> February 2021).
- 4.2 There was a total of one exceedance of the PM<sub>10</sub> alert level for the 15-min averaging period at the St Pancras CC 3 (North) monitor in that period, which is unrelated to activities on the development site.

## 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](http://iaqm.co.uk/text/guidance/guidance_monitoring_dust_2018.pdf).

## 6 Appendices

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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 PM<sub>10</sub>.
- 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 PM<sub>10</sub> in the sampled air.
- A1.3 The Osiris monitors are set up to record average PM<sub>10</sub> 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 PM<sub>10</sub> per cubic metre of air (µg/m<sup>3</sup>).
- 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 PM<sub>10</sub> 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 PM<sub>10</sub>, 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 PM<sub>10</sub> 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 PM<sub>10</sub> 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 PM<sub>10</sub> 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)**