Air Quality Monitoring Strategy:

St Pancras Commercial Centre, Camden

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Experts in air quality management & assessment

Document Control

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1 Introduction

1.1 This document sets out an air quality monitoring strategy to be applied during the demolition and construction works associated with the proposed mixed-use development at 63 Pratt Street, Camden, known as the St Pancras Commercial Centre. It has been prepared by Air Quality Consultants Ltd (AQC) on behalf of Camden Property Holdings Limited in order to satisfy Condition 25 of the resolution to grant permission (application reference: 2019/4201/P), which states:

"Air quality monitoring should be implemented on site. No development shall take place until:

a. prior to installing monitors, full details of the air quality monitors have been 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;

b. prior to commencement, evidence has been submitted demonstrating that the monitors have been in place for at least 3 months prior to the proposed implementation date.

The monitors shall be retained and maintained on site for the duration of the development in accordance with the details thus approved."

1.2 In preparing this document, regard has been given to the guidance on monitoring strategies as set out in the Greater London Authority's *Supplementary Planning Guidance for the Control of Dust and Emissions During Construction and Demolition* (GLA, 2014), as well as the Institute of Air Quality Management's *Guidance on the Assessment of Dust from Demolition and Construction v1.1* (IAQM, 2016) and *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites* (IAQM, 2018).

2 Summary of Construction Dust Risk Assessment

2.1 The impacts from the construction phase of the development were previously assessed by AQC in August 2019[1]. This assessment identified the area surrounding the construction site as being of high sensitivity to dust soiling, and medium to high sensitivity in terms of human health (Table 1). The determination of the sensitivity of the area to human health effects takes into account the local background PM_{10} concentrations; in this case between 19 and 20 µg/m^3 (based on roadside and background monitoring undertaken by the London Borough of Camden in 2017).

Table 1: Summary of the Area Sensitivity

Effects Associated With:	Sensitivity of the Surrounding Area	
	On-site Works	Trackout
Dust Soiling	High Sensitivity	High Sensitivity
Human Health	Low Sensitivity	Medium Sensitivity

2.2 The sensitivities identified in Table 1 were combined with the dust emission magnitudes for the scheme to define a risk category to each activity of the construction process. These are detailed in Table 2.

Table 2: Summary of Risk of Impacts Without Mitigation

Source	Dust Soiling	Human Health
Demolition	Medium Risk	Low Risk
Earthworks	Medium Risk	Low Risk
Construction	High Risk	Low Risk
Trackout	High Risk	Medium Risk

2.3 Overall, the area surrounding the construction site is judged to be at medium to high risk of dust soiling, and at low to medium risk of human health impacts. The suggested approach to monitoring detailed in this document has been defined based upon these identified risks.

[1] Air Quality Assessment: St Pancras Commercial Centre, Camden J3747A/1/F2

3 Monitoring Approach

3.1 The GLA Guidance (GLA, 2014) states that, for all demolition and construction sites in London, "*it is essential to monitor for dust generation, including PM_{10}".* Furthermore, it defines the approach to be adopted for monitoring particulate matter (as PM_{10}) for medium and high risk sites, and details the type of monitor to be used to provide high resolution measurements in short time periods (i.e. 15 minute and 1 hour intervals). More specifically, the guidance stipulates the requirement:

"If measuring air quality along a line; Set up a line across the site according to the direction of the prevailing wind; and… operate a minimum of two automatic particulate monitors to measure PM_{10} levels at either end of the line - either inside or outside the site boundary…

If monitoring air quality at sensitive receptors: Identify which location(s) need to be monitored and set up an automatic particulate monitor at each of these to measure representative PM_{10} levels."

3.2 The guidance in the document cited above is founded on a risk-based approach, taking into account the size of the development and the proximity of sensitive receptors. Other issues that should be taken into account are the duration and phasing of the works and the prevailing baseline air quality conditions.

3.3 The proposed development lies within an Air Quality Management Area declared for exceedances of the 24-hour mean PM_{10} and annual mean nitrogen dioxide objectives. PM_{10} concentrations measured by the London Borough of Camden (the Local Planning Authority; LPA) at kerbside, roadside and background locations have been well below the relevant objectives for a number of years (London Borough of Camden, 2020), and concentrations in the vicinity of the site are therefore unlikely to exceed the air quality objectives.

3.4 There are existing residential properties to the east along St Pancras Way, with predominantly commercial properties to the north and south, and a new residential development to the west. The existing and new residential properties are considered to be of high sensitivity to any increase in dust or PM_{10} concentrations.

3.5 The prevailing wind direction in the area is from the southwest (~ 40% of time) with the second most frequent wind direction from the east (~ 13% of time), as shown in the wind roses for 2018 and 2019 at London City Airport (Figure 1).

3.6 It is anticipated that the demolition and construction works will take place for a period of 36 months from 3rd February 2021. The planning condition states that PM_{10} monitoring should commence three months in advance of commencement of the works. It is therefore anticipated that monitoring will commence in November 2020 and continue until termination of the construction works. The proposed date of commencement of monitoring and commencement of site works will be confirmed with the LPA prior to commission.

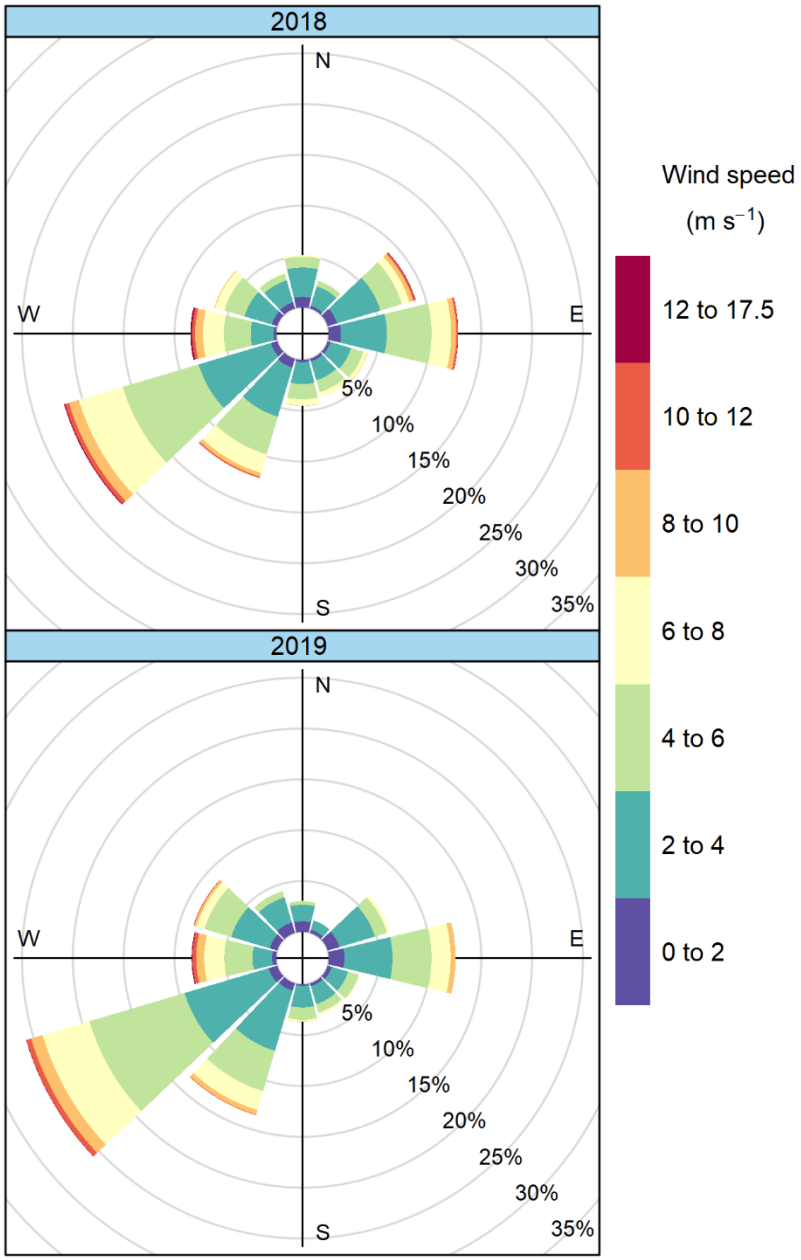

Figure 1: Wind Roses: London City Airport in 2018 (top) and 2019 (bottom)

4 Monitoring strategy

4.1 Continuous PM_{10} monitoring will be undertaken at four locations using four MCERTS certified Osiris particle monitors capable of measuring and logging PM_{10} in real-time, and with the ability to download results from the units in real time using a GSM modem. A meteorological sensor will be installed, collocated with one of the monitors, in order to gather site-specific wind speed and direction data.

4.2 The proposed monitoring locations take account of the prevailing wind direction, and the location of sensitive receptors, and are shown in Figure 2. The approximate locations are also shown in Appendix A1. Locations 1 and 4 are situated upwind of the site based on the prevailing south-westerly winds, Location 2 is upwind during the second most frequent (easterly) wind direction. Locations 2, 3 and 4 are near the most sensitive receptors around the site. The locations have been chosen to allow for an upwind / downwind transect across the site, taking account of the prevailing wind direction, and also take account of the closest residential properties to the site. Monitoring at the site boundary, as recommended by the IAQM guidance (IAQM, 2018), will record the highest dust emissions.

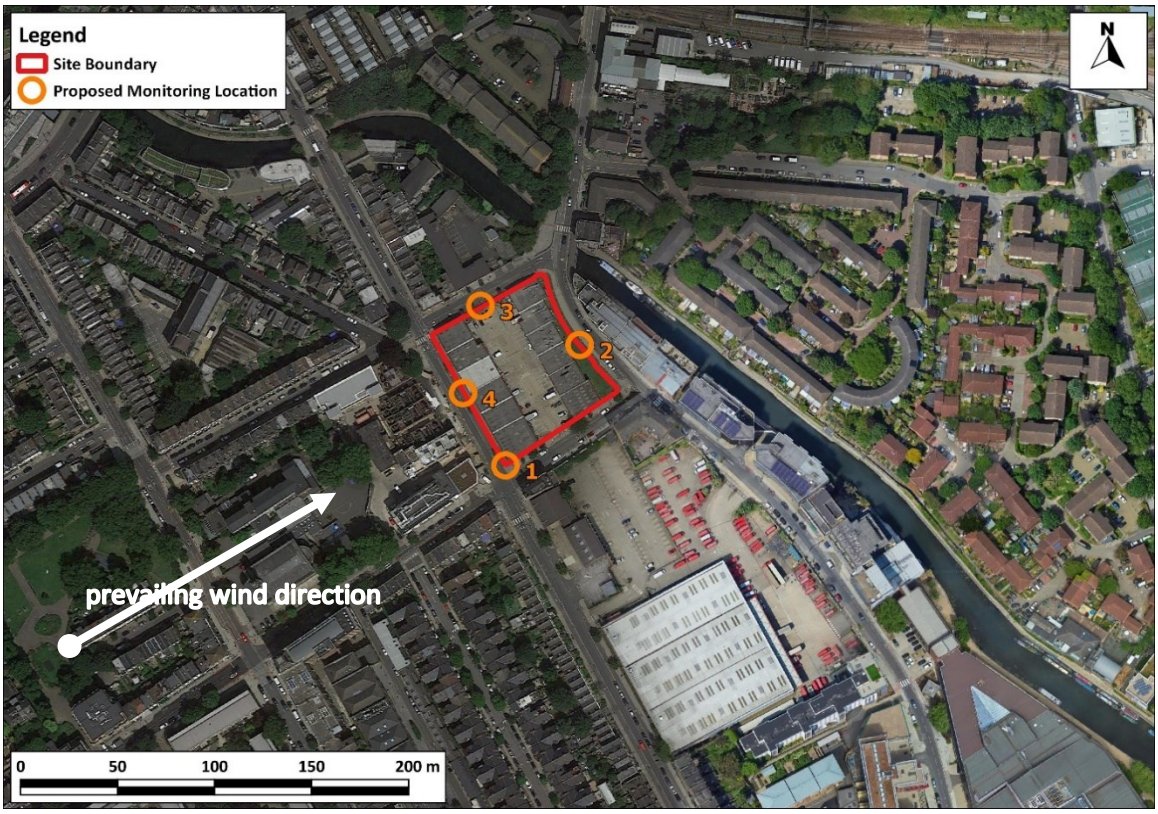

Figure 2: Indicative Dust Monitoring Sites

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4.3 Consistent with the requirements of the IAQM guidance (IAQM, 2018), the sampler inlets will be located in a clear, unobstructed position, with no overhanging trees or other structures. The sampler inlets will be located between approximately 2 to 6 m above ground level. During the baseline monitoring period, the samplers will be located on the façade of the existing building; the inlets will be located above the façade onto which they are secured. Once the hoarding is in place, prior to demolition commencing on site, the monitors will be relocated onto the hoarding as close as possible to their baseline monitoring locations; the inlets will be positioned so that they are above the hoarding, allowing unrestricted movement of air around the inlet, and clear lines of sight to the sources of dust emissions.

Site Action Levels and Reporting

4.4 For PM_{10} measurements, two Site Action Levels (SALs) will be used: 190 µg/m^3 as a 1-hour average (IAQM, 2018), and 250 µg/m^3 as a 15-minute average.

4.5 In the event that either SAL is exceeded, the Site Manager and the LB Camden will be alerted immediately via an automated SMS and/or email alert system, and the following actions taken (further details of the procedure to be adopted following SAL exceedances are detailed in Appendix A2):

- the event will immediately be recorded in a log book, along with the date and time and details of any actions taken on site to reduce emissions;
- an additional assessment of the results will be commissioned to ascertain the potential cause of the exceedance;
- construction activities taking place at the time the SAL was exceeded will be reviewed;
- if necessary, the mitigation measures that are in place will be reviewed and revised; and
- the LPA will be informed of the exceedance automatically (by email to airquality@camden.gov.uk); the Site Manager will also provide details of the actions taken to reduce emissions within 48 hours.

4.6 The LPA will be informed of the outcome of the additional assessment, and advised of any revisions to working practices and mitigation.

4.7 Monthly monitoring summary reports will be prepared and submitted to the Local Planning Authority. These reports will contain the following:

- details of the monitoring equipment used and dates of most recent servicing and calibration;
- site plan of the monitoring locations and recent photographs of the monitors on-site in their current locations;

- PM_{10} trigger levels used;
- summary table of exceedances of the trigger levels during the monitoring period;
- average concentrations of PM_{10} during the monitoring period at each of the monitoring stations;
- graphs of PM_{10} concentrations during the monitoring period;
- valid data capture during the monitoring period;
- details of the works being undertaken on-site during the monitoring period; and
- dust mitigation measures used for preventative and reactive dust mitigation

4.8 Should it be necessary to relocate any of the monitors during the construction programme, the LPA will be notified of any proposed changes in the location and operation of the monitors, and will be allowed to agree the new location(s) prior to relocation.

5 References

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

IAQM. (2016). Guidance on the Assessment of Dust from Demolition and Construction v1.1. Retrieved from http://iaqm.co.uk/guidance/

IAQM. (2018). Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites v1.1. Retrieved from www.iaqm.co.uk/guidance.html

London Borough of Camden. (2020). Air Quality Annual Status Report for 2019.

A1 Proposed Monitoring Locations

Location 1

Figure A1.1: Proposed Monitoring Location – Site 1.

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Location 2

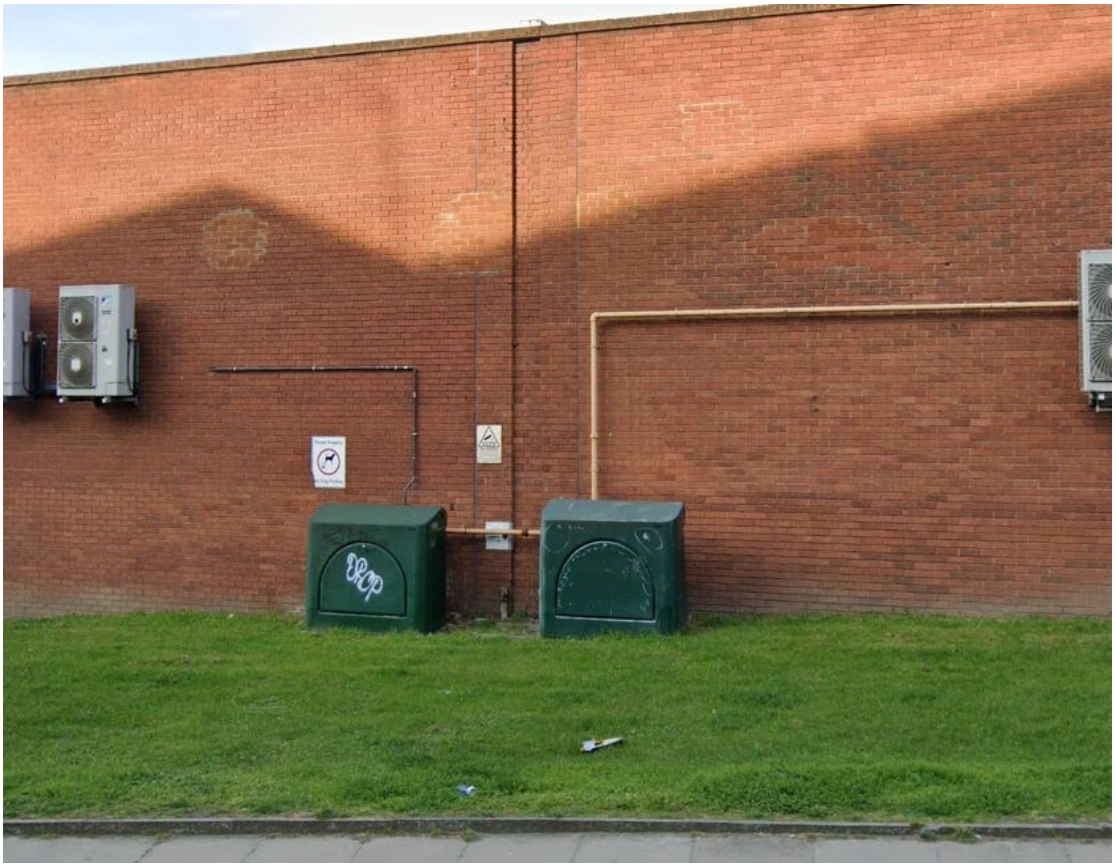

Figure A1.2: Proposed Monitoring Location – Site 2.

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Location 3

Figure A1.3: Proposed Monitoring Location – Site 3.

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Location 4

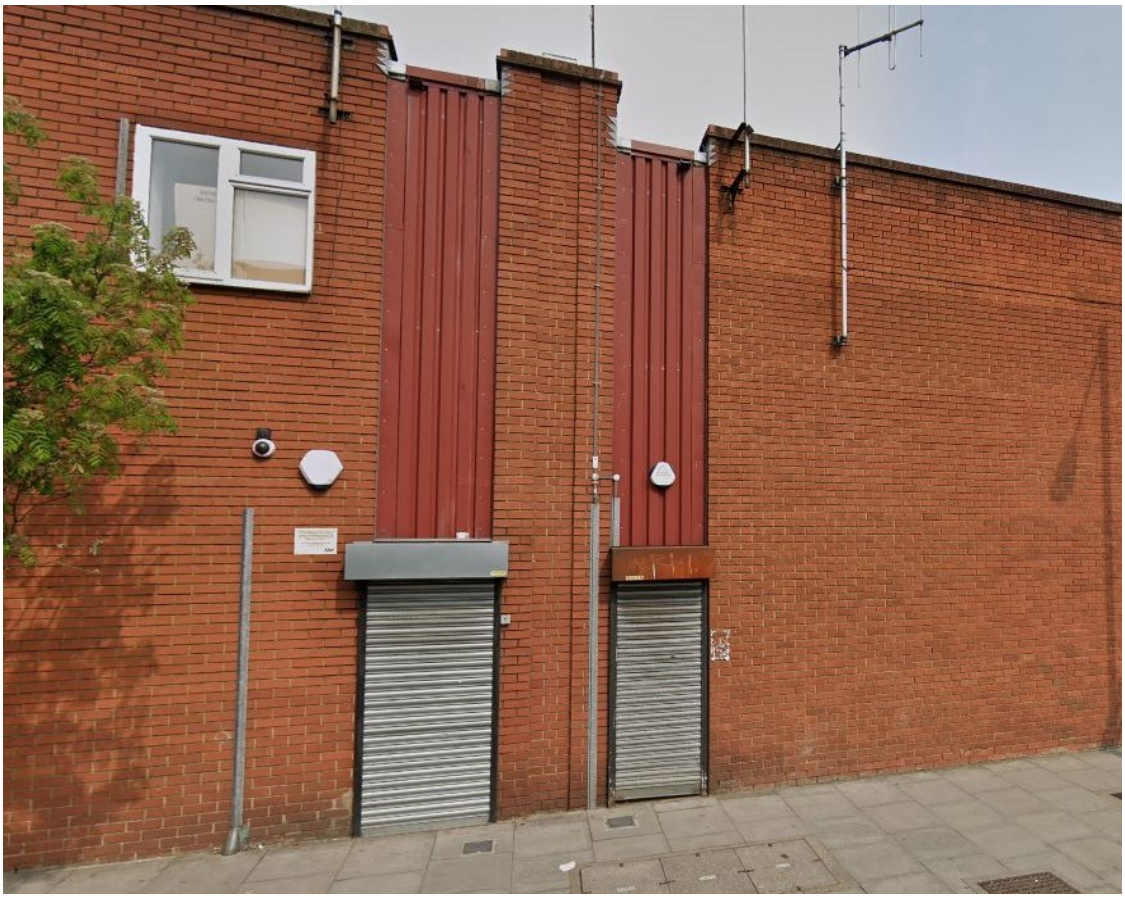

Figure A1.4: Proposed Monitoring Location – Site 4.

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A2 Procedure for Site Action Level Exceedances

A2.1 Further to the information detailed in Paragraph 4.5, details of the procedure to be adopted following a dust event or a measured exceedance of the SAL are shown in Figure A2.1.

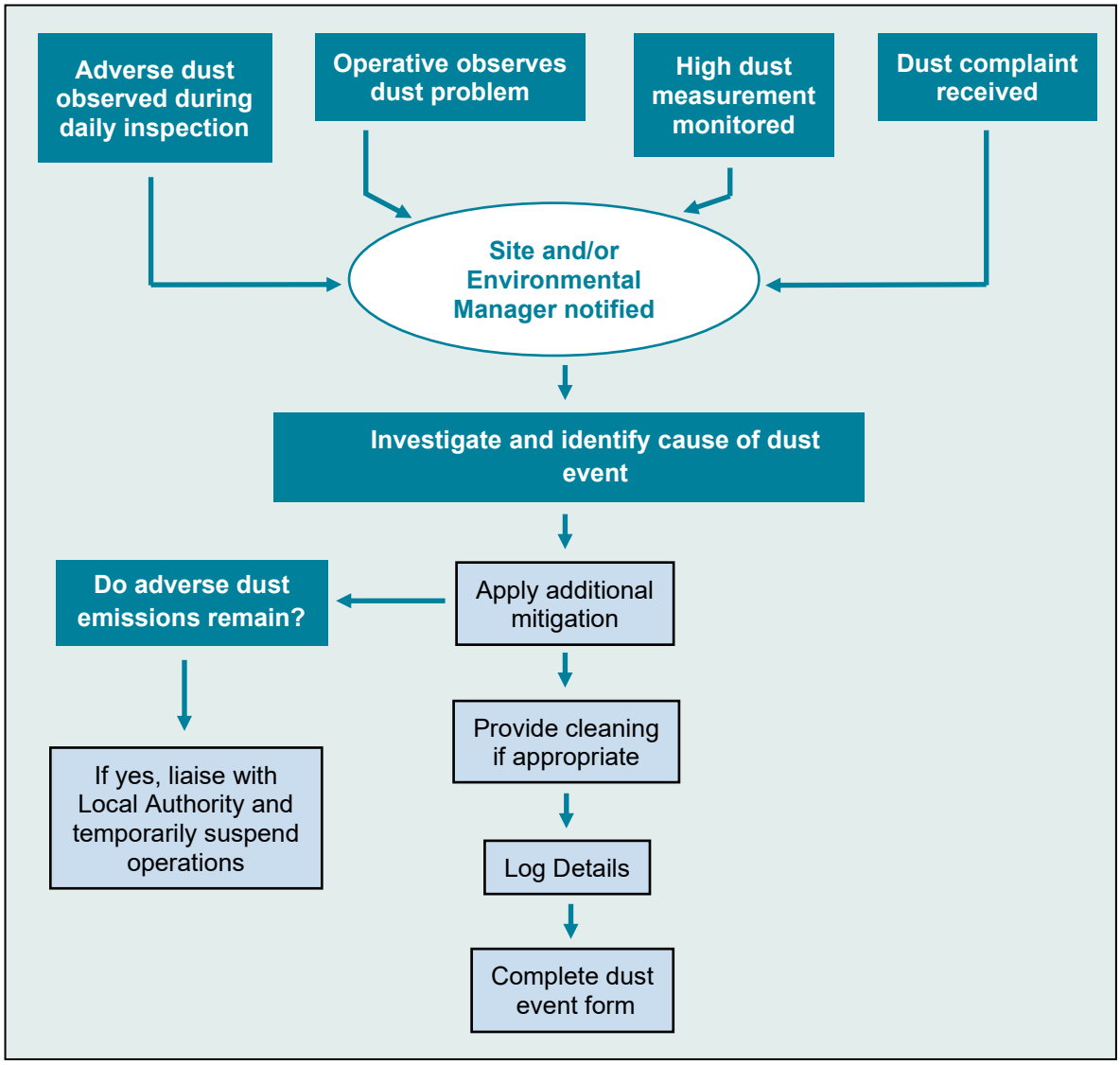

Figure A2.1: Dust Event Response Flowchart