Dust Management Plan: Charville Children's Homes, Charville Lane, Hayes

January 2024

Experts in air quality management & assessment

Document Control

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Job Number	J10/15087A/10

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Document Status and Review Schedule

Report No.	Date	Status	Reviewed by
J10/15087A/10A/1/F1	12 January 2024	Final Report	Martin Peirce (Associate Director)

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Contents

1 Introduction

1.1 This document sets out the Dust Management Plan (DMP) for the redevelopment of an existing children's home to provide new residential institution development (Use Class C2) at Charville Children's Homes, Charville Lane, Hayes (application reference: 26544/APP/2023/2303). It has been prepared by Air Quality Consultants Ltd on behalf of Bugler Developments. The DMP has been produced to satisfy condition 14 of the planning permission for the development, which states:

"No development shall commence until a plan to demonstrate compliance with the GLA's supplementary planning guidance "Control of Dust and Emissions During Construction and Demolition dated July 2014 (SPG)(or subsequent), has been submitted to, and approved in writing by the Local Planning Authority. The demolition and construction shall be carried out in accordance with these approved details.

REASON
To reduce the impact on air quality in accordance with the Policy DMEI 14 of the Hillingdon Local Plan: Part Two – Development Management Policies (2020) and Policies D13 and D14 of the London Plan (2021)."

1.2 The DMP describes the measures to be applied to minimise the risk of dust impacts during the whole of the construction works. The package of measures presented in Section 2 is based on the results of a risk assessment of potential impacts of dust and fine particulate matter (PM_{10}) emissions from the construction activities. The risk assessment has been carried out by XCO_2 (XCO2, 2023), following the methodology published by the Institute of Air Quality Management (IAQM) (2016), upon which the Greater London Authority's (GLA) Supplementary Planning Guidance (SPG) on The Control of Dust and Emissions During Construction and Demolition (2014) has been based. The risk assessment is reproduced in Appendix A5. The findings, in terms of the risk rating for each stage of the works without mitigation, are summarised in Table 8 of Appendix A5. The XCO_2 assessment includes a detailed summary of the works to be carried out and the potential sources of dust emissions during each stage, given in Table 7 of Appendix A5. It also provides a summary of the sensitivity of relevant receptors to health and dust soiling impacts, given in Table 6 of Appendix A5.

1.3 The risk ratings without mitigation, taken from the XCO_2 report, are summarised in Table 1 below.

Table 1: Summary of Risk of Impacts Without Mitigation

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

1.4 The IAQM guidance is clear that, with appropriate mitigation in place, the impacts of construction dust will normally be 'not significant'. The aim of the assessment set out in Appendix A5 is thus to determine the appropriate level of mitigation so as to ensure that impacts will normally not be significant. The best-practice mitigation measures set out in Section 2 are based on those presented within the original air quality assessment from XCO_2 (XCO2, 2023) which were in turn based on those set out in the GLA's SPG. They are considered appropriate to mitigate the level of risk set out in Table 1, with some being clear that they are only required during certain stages of the works. It should be noted that the GLA's SPG states that Low Risk sites do not require dust or fine particulate matter to be continuously monitored.

1.5 In regard to air pollutants other than dust, the air quality assessment from XCO_2 (XCO2, 2023) did not identify a need for any mitigation measures during the construction phase, so these are not considered further in this DMP.

1.6 Responsibilities for the Dust Management Plan and the day-to-day actions to prevent dust issues are set out in Section 3. The monitoring to be undertaken is set out in Section 4. Section 5 sets out how the responsible person will respond to any dust events.

1.7 The DMP does not cover issues related to any contaminated materials. It is expected that these will be dealt with following standard methods.

2 Dust Management Measures to be Applied

Most of the mitigation measures set out below are derived from the GLA's Supplementary Planning Guidance on the Control of Dust and Emissions from Construction and Demolition (GLA, 2014). The best-practice measures set out in the guidance have been refined and added to, as necessary, in liaison with the construction contractor. The measures set out are considered to sufficient as to ensure that any dust impacts during the construction works will be 'not significant'. However, the Dust Management Plan is a living document and should be amended as necessary should additional measures be identified as being required.

Site Management

- Develop and implement a stakeholder communication plan that includes community engagement before work commences on site;
- display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager;
- display the head or reginal office contact information;
- record and respond to all dust and air quality pollutant emissions complaints;
- make the complaints log available to the local authority when asked;
- carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make the inspection log available to the local authority when asked;
- increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; and
- record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- erect solid screens or barriers around dusty activities or at the site boundary that are at least as high as any stockpiles on site;
- fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- avoid site runoff of water or mud;
- keep site fencing, barriers and scaffolding clean using wet methods;

- remove materials from site as soon as possible, where not being reused;
- cover, seed or fence stockpiles to prevent wind whipping; and
- carry out regular dust soiling checks of buildings within 100 m of site boundary and provide cleaning if necessary.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary – no idling vehicles;
- ensure all on-road vehicles comply with the requirements of the London Low Emission Zone;
- all Non-road Mobile Machinery (NRMM) will comply with the standards set within the GLA's Control of Dust and Emissions During Construction and Demolition SPG. This outlines that all NRMM of net power 37 kW to 560 kW used on the site of a major development in Greater London must meet Stage IIIB of EU Directive 97/68/EC (Directive 97/68/EC of the European Parliament and of the Council, 1997) and its subsequent amendments as a minimum;
- avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable;
- create hardstanding areas that will act as on-site vehicle parking zones;
- transport materials by an all-terrain forklift where appropriate;
- impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes and work areas;
- produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials; and
- implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

Operations

- Form new permanent drains and hardstandings up to and including the tarmac base course as one of the first operations on site. These hardstandings will act further as areas for material storage;
- cutting, grinding or sawing equipment will only be used where fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation will be ensured, using non-potable water where possible and appropriate;

- use enclosed chutes, conveyors and covered skips;
- minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- transport materials using an all-terrain Forklift, with waste then segregated and stored in separate skips or locations and recycled in keeping with the London Borough of Hillingdon recycling policy; and
- ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Reuse and recycle waste to reduce dust from waste materials. In particular, crushed waste from the demolition phase will be recycled as aggregates which will be used during the construction phase; and
- avoid bonfires and burning of waste materials.

Measures Specific to Demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust);
- ensure water suppression is used during demolition operations;
- avoid explosive blasting, using appropriate manual or mechanical alternatives; and
- bag and remove any biological debris, such as Japanese Knotweed, or damp down such material before demolition.

Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces;
- use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil; and
- only remove secure covers in small areas during work and not all at once.

Measures Specific to Construction

- Avoid scabbling (roughening of concrete surfaces), if possible;
- ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;

- ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; and
- for smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures Specific to Trackout

- Use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site;
- avoid dry sweeping of large areas;
- ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport;
- a traffic management plan will be enforced to avoid lots of routes being used over potentially dusty ground; and
- implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

2.1 The following risk factors have also been identified as occurrences that may arise that may require contingency action in order to prevent dust emissions.

Adverse Weather

2.2 During extreme weather conditions, such as long periods of dry weather and/or high wind speeds, there is a risk that dust may be entrained or dispersed over a greater distance. During any such events, water suppression will be used liberally in order to prevent dust emissions beyond the site boundary.

2.3 Short-term weather forecasts should be used to plan future site operations, and hard standing and external bulking bays should be wetted before winds blow towards sensitive receptors to prevent dust annoyance.

3 Responsibilities and Records

Key Responsibilities

Site Manager

3.1 The day-to-day operations at the site will be the responsibility of the Site Manager, who will be responsible for ensuring that the monitoring protocol set out in Section 4, and the response protocols in Section 5 are adhered to. If the monitoring indicates that dust emissions are likely to have an impact on the local community, then the London Borough of Hillingdon will be informed.

3.2 If any exceptional dust and/or air emissions occur, or any complaints are received, they will be investigated by the Site Manager or a delegated representative, who will record the complaint. They will then identify the cause, take appropriate measures to reduce emissions in a timely manner, and record the measures taken. This information will be made available to the London Borough of Hillingdon upon request. Section 5 details specific measures that will be taken to address dust issues, and the Appendices to this DMP provide example forms to be used to record dust events.

All Staff

3.3 All staff will be responsible for minimising dust emissions from the site, and will be responsible for reporting dust problems to the Site Manager immediately, on an on-going basis.

3.4 All operational staff will be trained in their responsibilities with regard to dust control at the site. The Site Manager will maintain a statement of training requirements for each operational position, and a record will be kept detailing the training received by each member of staff.

Contacts and Communications

3.5 The name and contact details of the Site Manager will be displayed on the site hoarding. These signs will also include the address and phone number for Bugler Developments UK head office, as well as an 'out of hours' number for direct contact with a Bugler member of staff.

3.6 All complaints will be logged, all actions tracked, and each item closed out to the satisfactory agreement of all parties.

Managing the DMP

3.7 The Site Manager will review the DMP at least once a year, in light of any complaints or issues that have been identified during the previous year. The following issues will be considered during the review:

- effectiveness of mitigation measures employed;
- additional mitigation measures implemented within the previous 12 months;

- complaints received in relation to dust impacts at off-site receptors;
- review of any dust events recorded within the previous 12 months;
- review of the effectiveness of the visual monitoring scheme; and
- review of the effectiveness of personnel training on dust awareness.

3.8 Should any control measures be shown to be failing, or should a need for further control measures be identified, new controls will be agreed and implemented in an updated DMP.

4 Monitoring

Visual Inspections

4.1 A weekly visual inspection of the site will be carried out by the Site Manager, or an appropriately trained operator. The inspection will consist of a walk around the entire perimeter with observations made of any dust emissions. Particular attention will be paid to any areas where professional experience would suggest that current operations have a higher-than-normal risk of dust emissions. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary, with cleaning to be provided if necessary. Inspection results will be recorded and the logs (examples in Appendices A1 and A2) will be made available to the London Borough of Hillingdon when requested. If significant dust is identified beyond the site boundary, a Dust Event Form will be completed (see Appendix A3), and investigation/remedial action will be taken, as outlined in Section 5. The Site Manager will review Dust Event Forms regularly to ensure that any necessary actions have been implemented, and to identify problem areas where additional mitigation against further dust emissions may be necessary.

4.2 The frequency of visual inspections will be increased when activities with a high potential to produce dust are being carried out on site and during periods of adverse weather.

Meteorology

4.3 Meteorological conditions at the time of any significant dust emissions will be recorded in the Dust Event Form.

5 Response and Reporting

5.1 All significant dust events will be investigated, addressed and, if necessary, reported to the London Borough of Hillingdon. The flowchart set out in Figure 1 sets out the approach that will be taken when such events occur.

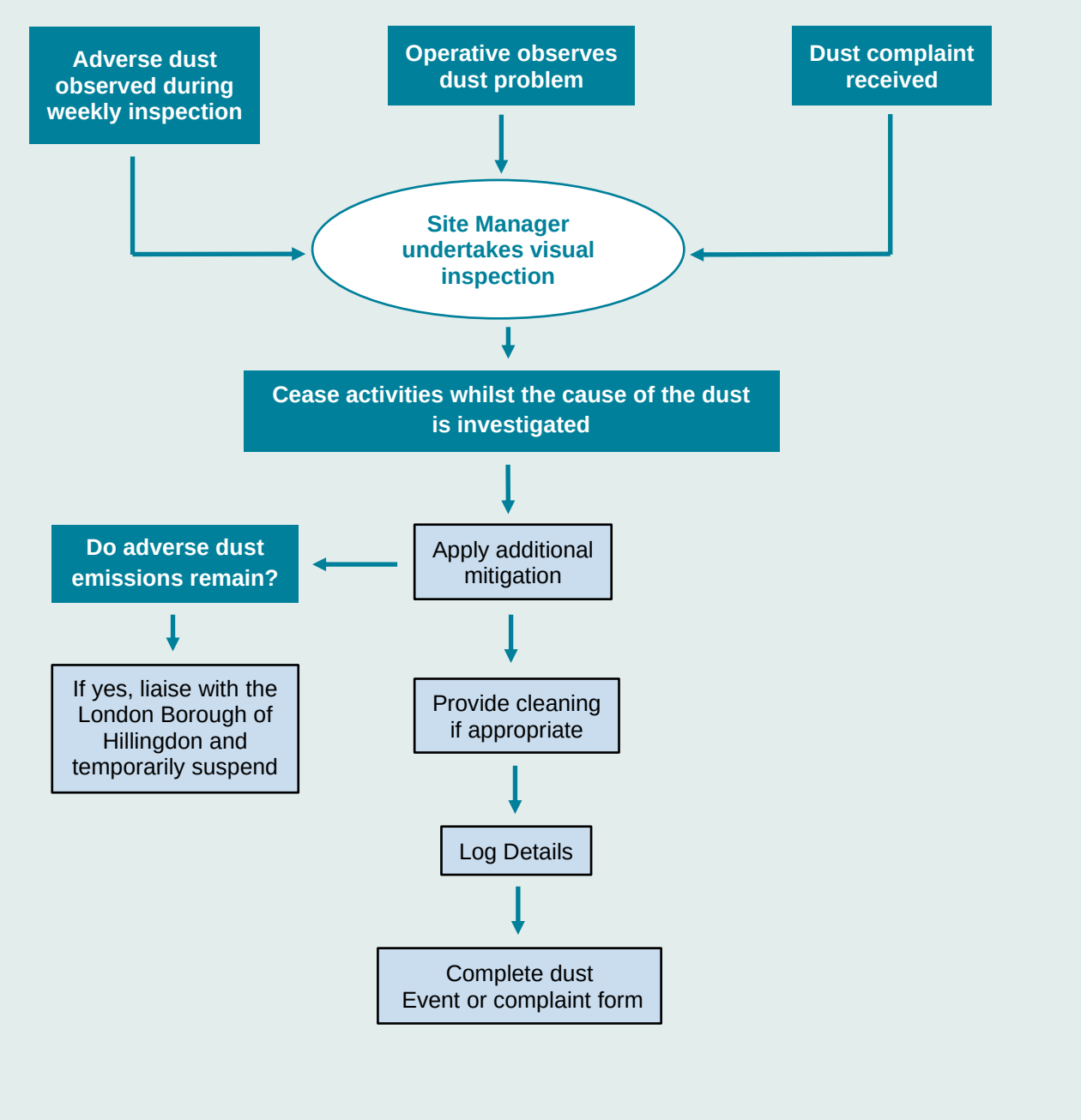

Figure 1: Dust Event Response Flowchart

Dust Event or Complaint Procedure

5.2 If the potential for acceptable dust emissions is identified, either through visible plumes of dust crossing the site boundary or if a complaint is received, the cause will be immediately investigated by the Site Manager or a delegated representative, who will record the event in either the Dust Event Form in Appendix A3 or the Complaint Form in Appendix A4.

5.3 It is the responsibility of the Site Manager to record, respond to and follow up all complaints regarding dust. Site Managers are responsible for ensuring that suitably qualified personnel are available to respond to complaints at all times.

5.4 Investigations will include:

- A review of site activities to identify the cause of the dust complaint/exceedance or event (if possible);
- A review of the dust control measures implemented at the time of the event;
- A review of meteorological conditions at the time of the event;
- Implementation of appropriate measures to reduce emissions in a timely manner;
- Recording the measures taken in the Dust Event Form or Complaint Form, and amending working practices as necessary to avoid a repeat of the incident; and
- The outcome of the investigation will be communicated back to the complainant (if relevant) in a timely manner.

5.5 In the event that significant levels of dust are experienced off-site, additional mitigation measures will be employed. These will include:

- immediate identification of the source of the dust;
- the liberal use of water suppression;
- covering or sheeting sources of unacceptable dust emissions; and
- removal of excessively dusty material from the site.

5.6 In the event that unacceptable dust emissions continue, despite the additional mitigation measures, consideration should be given to modifying site operations, in liaison with the regulator, and temporarily suspending site operations until the issue can be resolved.

Actions to be taken by the Site Manager

5.7 It is the responsibility of the Site Manager to complete a Dust Complaint Form in the event of a complaint (see Appendix A4). Specific actions include to:

- Note the time, date, name and contact details of any complaint. Note if the complaint has been referred from the local authority. Ask complainant to describe the dust emission or nuisance; is it constat or intermittent, how long has it been going on for, is it worse at any time of day/any day of the week, does it come from an identifiable source;
- Within a day after receipt of a complaint undertake a site inspection. Note all dust producing activities taking place. If the complaint was related to an event in the recent past, note any dust producing activities that were underway at that time, if possible. Implement any remedial action as necessary;
- Within a day after receipt of a complaint visit the area from where the complaint originated to carry out a visual inspection and ascertain if dust is still a problem; and
- If another source of dust other than the construction work is identified as causing the nuisance, verify the source. Photograph the source and emissions.

5.8 Within a week after the initial investigations have been completed, contact the complainant to explain any problems found and remedial actions taken. In addition:

- If necessary, update any relevant mitigation measures to prevent any recurrence of problems;
- Ensure that the local authority is notified that a complaint has been received, what the findings of the investigation were, and any remedial measures taken. This should be done within two weeks of a complaint being received; and
- Inform workers on the site of any complaints, the findings of any investigation and what remedial measures should be taken.

6 References

Directive 97/68/EC of the European Parliament and of the Council (1997).

GLA (2014) *The Control of Dust and Emissions from Construction and Demolition SPG*, [Online], Available: https://www.london.gov.uk/sites/default/files/Dust%20and%20Emissions%20SPG%208%20July%202014_0.pdf.

IAQM (2016) *Guidance on the Assessment of Dust from Demolition and Construction v1.1*.

XCO2 (2023) *Air Quality Assessment Charville Children's Homes, Charville Lane, Hayes*.

7 Glossary

AQC	Air Quality Consultants
Defra	Department for Environment, Food and Rural Affairs
DMP	Dust Management Plan
GLA	Greater London Authority
IAQM	Institute of Air Quality Management
µg/m^3	Microgrammes per cubic metre
NRMM	Non-road Mobile Machinery
PM_{10}	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
$PM_{2.5}$	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
SPG	Supplementary Planning Guidance

8 Appendices

A1 Inspection Checklist

Charville Children's Homes, Charville Lane, Hayes
Inspection Checklist

Period Commencing:								
Inspected Items	Frequency							
Date of Inspection	*Date*							
Person completing the checklist	*Initials*							
Dust being controlled correctly by personnel	Weekly							
Visual inspection of mud/debris on haul routes	Weekly							
Visual inspection of dust soiling on local streets, cars and window sills	Weekly							
Bunded areas not drying out	Weekly							
Forklift operating satisfactorily	Weekly							
Any skip doors operating satisfactorily	Weekly							
Wheelwash being used and operating satisfactorily	Weekly							
Wind sock operating satisfactorily	Weekly							
Dust monitoring equipment operating satisfactorily	Weekly							
Wind direction	Weekly							
Wind speed	Weekly							
Weather forecast	Weekly							

A2 Weekly Inspection Notes

Charville Children's Homes, Charville Lane, Hayes
Weekly Inspection Notes

Period Commencing:
Date
Date
Date
Date
Date
Date
Date
Date
Other Comments:

A3 Dust Event Form

Charville Children's Homes, Charville Lane, Hayes
Dust Event Form

Sheet No.:
Time & date form completed:
Date, time and duration of event:
Location of dust:
Weather conditions (i.e. dry, rain, fog, snow):
Cloud cover (Cloud height (low, high, very high): none, slight, partial complete):
Wind strength (light, steady, strong, gusting):
Wind direction (from/to):
Description of dust event, dust (i.e. colour, particle size) & any other comments:
On-site activities at the time the dust emission occurred:
Has a previous event occurred relating to this source:
Any other relevant information:
Any upwind dust?:
Operating conditions at the time the dust emission occurred:
Any remedial actions taken or to be taken:
Form completed by (name & signature):

A4 Dust Complaint Form

Charville Children's Homes, Charville Lane, Hayes
Dust Complaint Form

Sheet No.:	
Date:	Time & date of complaint:
Name and address of complainant:	
Date, time and duration of offending dust:	
Location of dust, if not at the above address:	
Weather conditions (i.e. dry, rain, fog, snow):	
Cloud cover (Cloud height (low, high, very high): none, slight, partial complete):	
Wind strength (light, steady, strong, gusting):	
Wind direction (from/to):	
Complainant's description of dust & any other comments (i.e. colour, particle size):	
Has complainant previously made complaint relating to the site:	
Any other relevant information:	
Any upwind dust?:	
On-site activities at the time the dust emission occurred:	
Operating conditions at the time the dust emission occurred:	
Any remedial actions taken or to be taken:	
Form completed by (name & signature):	

A5 Construction Dust Risk Assessment

CONSTRUCTION DUST RISK ASSESSMENT

SENSITIVITY OF THE AREA TO DUST IMPACTS

The assessment of dust impacts is dependent on the proximity of the most sensitive receptors to the construction area and existing PM_{10} concentrations (i.e., the potential for additional dust to result in an exceedance of the short or long-term air quality objectives). The mapped background concentrations indicate that even with the additional contribution from traffic on the local road network, PM_{10} concentrations in the area are unlikely to exceed 24 $\mu g/m^3$, the lowest threshold for the assessment of dust impacts on human health.

A summary of the receptor and area sensitivity to health and dust soiling impacts is presented in Table 6.

There are no dust sensitive habitat sites within 50m of the Site; therefore, impacts on ecology have not been considered in the assessment.

Table 6: Sensitivity of Receptors and the Local Area to Dust Impacts

Receptor	Distance from Site Boundary	Number of Receptors	Sensitivity to Health Impacts		Sensitivity to Dust Soiling Impacts	
			Receptor	Area	Receptor	Area
Residential Properties	<20m	10 - 100	High	Low	High	High
	<50m	10 - 100		Low		Medium
	<100m	>100		Low		Medium
Charville Primary School	Approx. 90m	>100	High	Low	High	Medium
Overall Sensitivity of the Area to Dust Impacts			**Low**		**High**	

The precise behaviour of the dust, its residence time in the atmosphere and the distance it may travel before being deposited, will depend upon a number of factors. These include wind direction and strength, local topography and the presence of intervening structures (buildings, etc.) that may intercept dust before it reaches sensitive locations. Furthermore, dust would be naturally suppressed by rainfall.

A wind rose for London Heathrow Airport is presented in Figure 4, which shows that the prevailing wind is from the west and southwest. Receptors to the east and northeast of the site are, therefore, most likely to experience dust impacts during the construction phase.

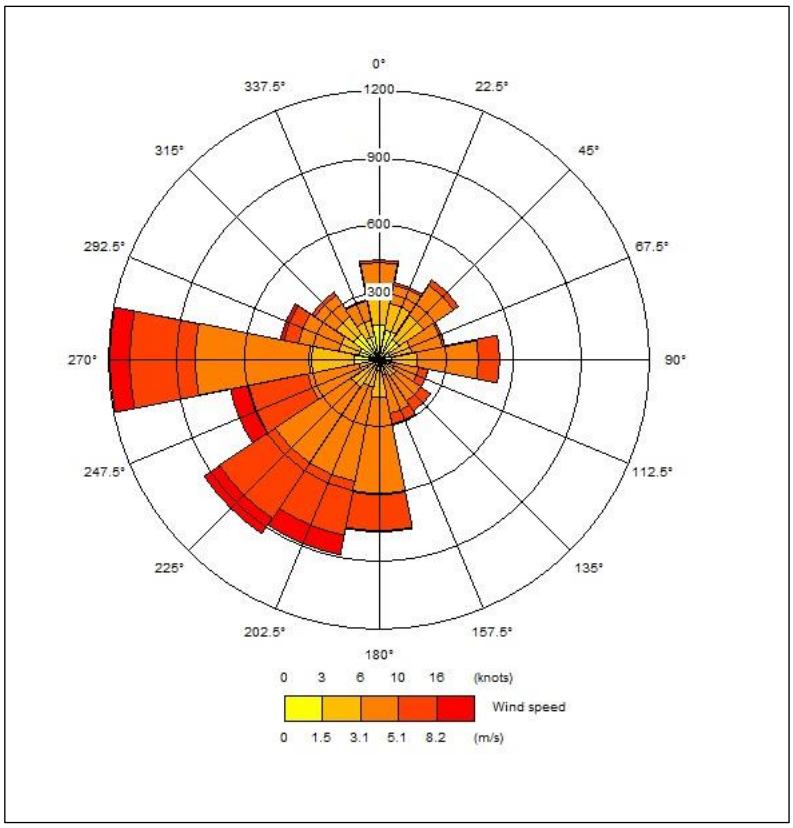

Figure 4: Wind Rose London Heathrow Airport

DUST EMISSION MAGNITUDE

The magnitude of the potential dust emission from earthworks, construction and trackout, has been evaluated using the criteria in Table A5 of Appendix A and is presented in Table 7.

Table 7: Evaluation of Dust Emission Magnitude

Dust Source	IAQM Criteria	Proposed Development	Dust Emission Magnitude
Demolition	Total building volume (m^3)	777	Small
	Potentially dusty material?	Brick	Small
	On-site crushing and screening?	Yes	Large
	Maximum height of demolition activities above ground-level (m)	<10 m	Small
Overall Dust Emission Magnitude from Demolition			**Small**
Whilst crushing and screening will be undertaken on Site, the scale of the works is minor and therefore the dust emission magnitude is expected to be 'small'.			
Earthworks	Site area (m^2)	3,100	Medium
	Soil type?	Unknown, assumed moderately dusty	Medium
	Number of heavy earth moving vehicles active at any one time	<5	Small

Dust Source	IAQM Criteria	Proposed Development	Dust Emission Magnitude
	Maximum bund height (m)	Expected <4m	Small
	Total material moved (tonnes)	< 20,000	Small
	Earthworks during wetter months?	Cannot be guaranteed.	Medium
Overall Dust Emission Magnitude from Earthworks			**Small**
Whilst the soil type is potential dusty, the scale of the works is minor and therefore the dust emission magnitude is expected to be 'small'.			
Construction	Total building volume (m^3)	4,790	Small
	Potentially dusty construction materials?	Brick, concrete	Medium
	On-site concrete batching?	No	-
	Sandblasting?	No	-
Overall Dust Emission Magnitude from Construction			**Small**
Whilst the construction materials are potentially dusty, the scale of the works is very minor and therefore the dust emission magnitude is expected to be 'small'.			
Trackout	Number of outward HGV movements in any one day	Unknown, expected < 5 based on proposed works.	Small
	Dusty surface material?	There are existing areas of hardstanding and therefore limited access over unmade ground.	Small
	Unpaved road length (m)	<50m	Small
Overall Dust Emission Magnitude from Trackout			**Small**

ASSESSMENT OF DUST RISK PRIOR TO MITIGATION

The risk of dust impacts is determined from the sensitivity of the area and the dust emission magnitude, as shown in Tables A6, A7 and A8 of Appendix A. A summary of the potential risk of dust impacts from the development sites, based on a low and high sensitivity of the area to health and dust doing impacts, respectively, is presented in Table 8.

Overall, **there is a 'low to medium' risk of dust impacts, prior to mitigation.**

Table 8: Dust Risk (Pre-Mitigation)

Dust Source	Emission Magnitude	Human Health Risk	Dust Soiling Risk	Overall Risk
Demolition	Small	Negligible	Medium	**Medium**
Earthworks	Small	Negligible	Low	**Low**
Construction	Small	Negligible	Low	**Low**
Trackout	Small	Negligible	Low	**Low**