

AIR QUALITY DUST MANAGEMENT PLAN

One Vinyl Square, Hayes



Contents

Contents

Contents	2
1. Introduction	4
1.1 Description of proposed works.....	4
1.2 Description of the site	5
2. Schedule Dust and Emissions Generating Activities	6
2.1 Key activities for dust suppression	6
3. Dust Risk Assessment.....	7
3.1 Introduction.....	7
3.2 Phases	8
2.2.1 Dust Emission Magnitude.....	8
2.2.1.1 Earthworks phase	8
Earthworks Phase Dust Emission Magnitude.....	8
2.2.1.2 Construction phase.....	9
Construction Phase Dust Emission Magnitude	9
2.2.1.3 Track-out phase	9
Track-out Phase Dust Emission Magnitude.....	9
2.2.1.4 Dust Emission Magnitude for all phases	10
2.3 Area sensitivity.....	10
2.3.1 Sensitivity of People to Dust Soiling Effects	11
2.3.2 Sensitivities of People to the Health Effects of PM10.....	11
2.3.3 Sensitivities of Receptors to Ecological Effects	12
2.3.4 Overall Area Sensitivity	12
2.4 Dust and Soiling effects on people and property	12
2.5 Human health impacts.....	13
2.6 Ecological Impacts.....	Error! Bookmark not defined.
2.7 Risk of Impacts.....	14
3 Mitigation Measures	15
3.1 Site inspections	16
3.1.1.2 Site maintenance	16
3.1.1.3 Dealing with spillages	16
3.1.1.4 Reducing emissions from vehicles	Error! Bookmark not defined.
3.1.1.5 Reducing vehicle idling	Error! Bookmark not defined.
3.1.1.6 Construction Traffic	Error! Bookmark not defined.
3.1.2 Operations	17
3.1.2.2 Cutting, grinding and sawing	17
3.1.2.3 Chutes, conveyors and skips	17
3.1.3 Waste Management	18
3.1.4 Measures specific to construction.....	18
3.1.5 Measures Specific to Earthworks	18
3.1.6 Measures Specific to Track Out	18

4	Fuel Storage	19
5	Site Monitoring	19
6	Site Inspections and Logging.....	20
7	Non-Road Mobile Machinery (NRMM).....	20
	Appendix A- Mitigation Measures	21

1. Introduction

The Air Quality Dust Management Plan is in place to ensure that minimal emissions are made during the duration of the project. This plan covers the risk assessment and mitigation measures required for the proposed development at One Vinyl Square, Blyth Road, Hayes is in accordance with the planning application granted by the Council of the London Borough of Hillingdon ref. 59872/APP/2019/3852

The document follows the methodology described by The Control of Dust and Emissions during Construction and Demolition SPG, July 2014, Mayor of London and considers the guidance set out by the Institute of Air Quality Management (IAQM) and any recommendations given in Geotechnical Environmental Investigation carried out by RPS Heath, Safety & Environment.

1.1 Description of proposed works

Design & construction of new 10-storey RC frame building comprising 134 homes, consisting of a mix of studios, one bedroom apartments, two bedroom apartments, three bedroom apartments and three bedroom marionettes, 395m² GIA of commercial space, 67 car parking spaces, 238 cycle parking spaces and associated landscaping.

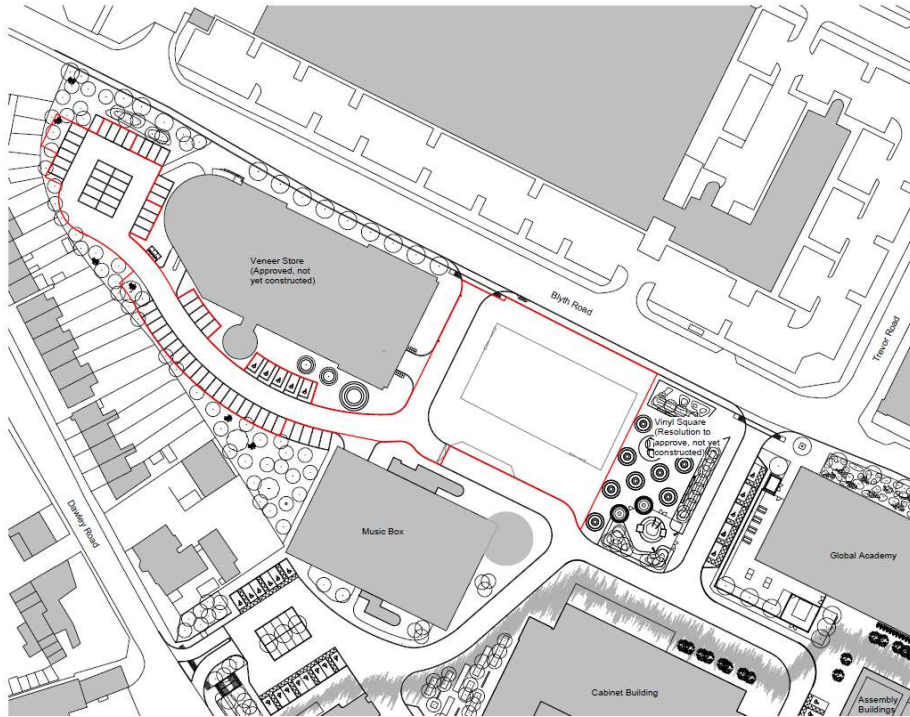
Due to the nature of the works, there will be several activities that will produce nuisance dust and emissions that will need to be assessed and controlled. Activities that will emit dust and emissions will be the groundworks, deliveries, construction, and some fit out work. Each element of the project will need to be individually assessed for dust and emissions and the necessary controls implemented to avoid causing any nuisance to the residents or environment.

1.2 Description of the site

The site is located on Blyth Road, in the town of Hayes in the London Borough of Hillingdon, 21 kilometers from central London. The existing Site comprises a vacant brownfield site, and forms part of the wider TOVF, which has outline planning permission for the delivery of residential and commercial development. The site also includes the surface level car parking to the west of the vacant brownfield site, provided under the wider The Veneer Store detailed permission.



Vehicle access to the development will be taken primarily from Blyth Road, via the access road provided as part of the final highway works brought forward through the TOVF masterplan. The new access road has been largely constructed and will replace the existing access from Blyth Road, located circa 10m to the west. This road will provide access to the car parking proposed to serve the Site.



2. Schedule Dust and Emissions Generating Activities

2.1 Key activities for dust suppression

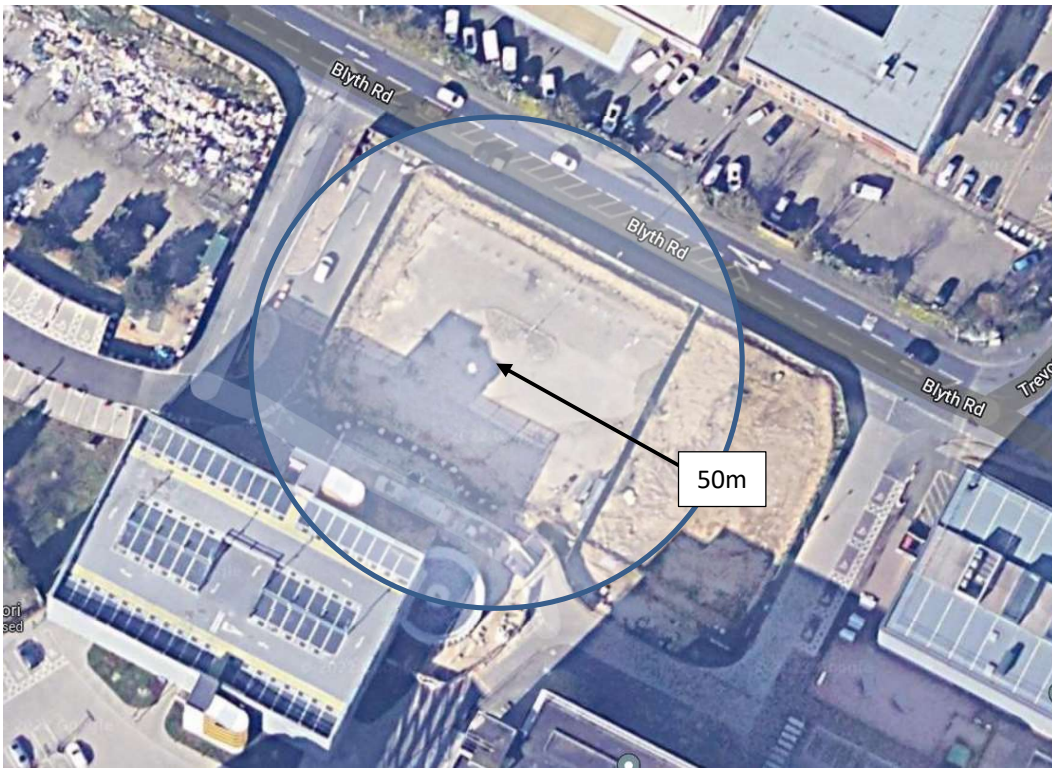
- **Cutting activities:** including concrete, brickwork etc. Cutting will require dust extraction equipment or damping down where appropriate, all activities will be completed away from the site boundary and monitored.
- **Plant Movement:** plant movement of loads leaving the site can cause dust and leave trails of mud from the site, but a wash will be used to clean the wheels of vehicles before they leave site to ensure that no dust or mud leaves site with the vehicles. Loads of waste and other materials particularly as dug material that is dry will be covered prior to leaving site.
- **Exhaust fumes from Vehicles:** Vehicles on site can cause exhaust fumes, vehicle movement on site is restricted to prevent any additional exhaust fumes along with a well-planned traffic management plan to prevent unnecessary movement of vehicles as they leave the site.
- **Wind:** Wind can move dust out of the site and to prevent this all piles and all potential dusty works will be dampened down to prevent emissions
- **Stockpiling/Excavating/Waste removal:** all stockpiles will be dampened down using hoses to prevent any dust leaving site. Stock piling will be kept to a minimum as we try to get the materials taken from the building of site as quickly as possible.

3. Dust Risk Assessment

3.1 Introduction

ARJ Construction Limited have prepared this EMP to be submitted with the planning application in conjunction with an Air Quality Management Plan. The document includes:

- The Risk assessment for each phase of works (earthworks, construction, Trackout), which incorporates the risk evaluation process set out below, and identifies suitable mitigation measures (see Chapter 5) for the relevant level of risk.
- Identification of whether each phase of activity on-site represents a low, medium or high risk by following the guidance as set in “The control of Dust and Emissions during Construction and Demolition SPG,” July 2014, Mayor of London.



A detailed assessment will be carried out as there are ‘human receptors’ with high sensitivity within 50 m of the boundary of the site.

The assessment identifies the Risk levels to receptors during all four phases.

3.2 Phases

The Air Quality (Dust) Risk Assessment considers the following four phases of development:

- Earthworks
- Construction
- Track-out

2.2.1 Dust Emission Magnitude

The dust emission magnitude is based on the scale of the anticipated works and is classified as Small, Medium, or Large. A classification will be noted for each of the four phases.

2.2.1.1 Earthworks phase

Phase Description:

Earthworks primarily cover excavation, haulage, tipping and stockpiling of soil type materials. This includes leveling the site and landscaping.

Earthworks Phase Dust Emission Magnitude

The development is classified as small, and it complies with the relevant criteria:

- total site area 2000m² – 2250m²
- made ground, brickearth, taplow gravel, London Clay formation, Lameth group & upper chalk group.
- <5 heavy earth moving vehicles active at any one time, or
- formation of stockpile enclosures <4m in height
- total material moved <10,000 tonnes (where known, or earthworks during wetter months)



2.2.1.2 Construction phase

Phase Description:

The key issues when determining the potential scale of dust emission during the construction phase include the size of the building(s)/infrastructure, method of construction, construction materials, and the duration of build.

Construction Phase Dust Emission Magnitude

The proposed development is classified as medium, and it complies with the criteria below:

- total building volume 25,000m³ – 100,000m³
- currently planned for raft or piled construction
- potentially dusty construction material

2.2.1.3 Track-out phase

Phase Description

Factors which determine the risk of dust emissions from Track-out are vehicle size, vehicle speed, vehicle numbers, geology, and duration. Only receptors within 50m of the route(s) used by vehicles on the public highway and up to 500 m from the site entrance(s) are considered to be at risk from the effects of dust.



Track-out Phase Dust Emission Magnitude

The development is considered medium, and it complies with the following criteria:

- 10-50 HDV (>3.5t) outward movements in any one day,
- moderately dusty surface material
- unpaved road length 50 m – 100 m

2.2.1.4 Dust Emission Magnitude for all phases

Overall, the Dust Emission Magnitude for each phase is presented on the table below:

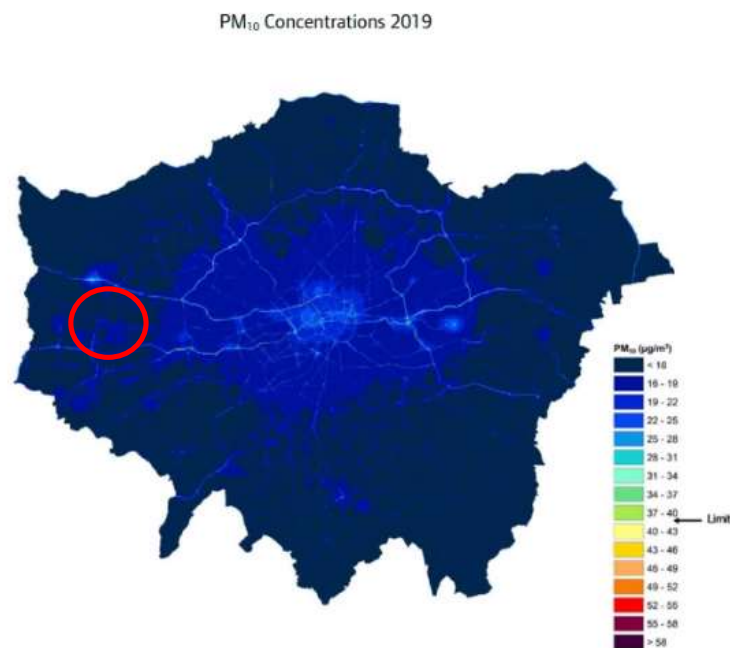
Table – Dust emission magnitude during development phases

Activity	Dust Emission Magnitude
Demolition – N/A	N/A
Earthworks	Small
Construction	Medium
Track-out	Medium

2.3 Area sensitivity

The sensitivity of the area takes account of a number of factors:

- The specific sensitivities of receptors in the area
- The proximity and number of those receptors
- In the case of PM₁₀, the local background concentration and
- Site-specific factors, such as whether there are natural shelters, such as trees or other vegetation, to reduce the risk of wind-blown dust.



<https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019>

The background levels of PM₁₀ based on 2019 data is low and is between 16-19 µg m⁻³

2.3.1 Sensitivity of People to Dust Soiling Effects

There are several 'human receptors' within 50 m of the boundary of the site which include the multi storey car park and commercial spaces but does not include any residential dwellings.



All receptors are assumed to have High Sensitivity, under the following criteria:

- Users can reasonably expect an enjoyment of a high level of amenity or
- The appearance, aesthetics or value of their property would be diminished by soiling and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods as part of the normal pattern of use of the land.
- Indicative examples include dwellings, museums, and other culturally important collections, medium and long term car parks and car showroom.

2.3.2 Sensitivities of People to the Health Effects of PM10:

All receptors are assumed to have High Sensitivity. Typical criteria include

- Locations where members of the public are exposed over a time period relevant to the air quality objective for PM10 (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).
- Indicative examples include residential properties. Hospitals, schools, and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.

2.3.3 Sensitivities of Receptors to Ecological Effects

There are no known receptors within 50m.

2.3.4 Overall Area Sensitivity

The SPG provides tables to calculate the area sensitivity based on the number of receptors, distance from the proposed development and their sensitivity as presented above.

The area sensitivity will be calculated for the following categories:

1. Dust and soiling effects on people and property
2. Human health impacts (based on PM10 concentration increased due to the proposed development)
3. Ecological Impact

2.4 Dust and Soiling effects on people and property

Receptors and their sensitivity and respective distance from the proposed development are used on the table below to determine the area sensitivity. The area is considered of medium Sensitivity.

Table – Sensitivity of the area to dust and soiling effects on people and property

Receptor sensitivity	Number of Receptors	Distance from the source (m) ^c			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High □	Medium □	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

2.5 Human health impacts

Receptors and their sensitivity and respective distance from the proposed development are used on the table below to determine the area sensitivity. The area is considered of Low Sensitivity.

Table – Sensitivity of the area to human health impacts

Receptor sensitivity	Annual Mean PM ₁₀ concentration ^c	Number of Receptors ^D	Distance from the source (m) ^c				
			<20	<50	<100	<200	<350
High	>32 µg/m ³	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32 µg/m ³	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28 µg/m ³	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low	Low
		10-100	Low □	Low □	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	-	>10	High	Medium	Low	Low	Low
	-	1-10	Medium	Low	Low	Low	Low
Low	-	1-10	Low	Low	Low	Low	Low

2.6 Ecological Impacts

Receptors and their sensitivity and respective distance from the proposed development are used on the table below to determine the area sensitivity. The area is considered of Low Sensitivity.

Table - Sensitivity of the area to Ecological Impacts

Receptor sensitivity	Distance from the source (m) ^c	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low □	Low □

2.7 Risk of Impacts

The dust emission magnitude determined above is combined with the sensitivity of the area to determine the risk of impacts with no mitigation applied.

The SPG provides the Risk tables below which will be used to calculate the Risk of Dust Impacts for each of the three phases, i.e., earthworks, construction and Track-out.

Table - Risk of dust impacts – Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

The Earthworks phase Risk matrix for the Receptors/Sensitivity of Area/Dust Emission Magnitude is as follows:

Table - Risk of Dust Impacts on Receptors during Earthworks phase

Receptors	Area Sensitivity	Dust Emission Magnitude	Risk of Dust Impacts Earthworks
Dust Soiling	Medium	Medium	Medium Risk
Human Health	Low	Medium	Low Risk
Ecological	Low	Small	Negligible

Table - Risk of dust impacts – Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

The Construction phase Risk matrix for the Receptors/Sensitivity of Area/Dust Emission Magnitude is as follows:

Table - Risk of Dust Impacts on Receptors during Construction phase

Receptors	Area Sensitivity	Dust Emission Magnitude	Risk of Dust Impacts Construction
Dust Soiling	Medium	Low	Medium Risk
Human Health	Low	Low	Negligible
Ecological	Low	Low	Negligible

Table - Risk of dust impacts – **Track-out**

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

The Track-out phase Risk matrix for the Receptors/Sensitivity of Area/Dust Emission Magnitude is as follows:

Table - Risk of Dust Impacts on Receptors during **Track-out** phase

Receptors	Area Sensitivity	Dust Emission Magnitude	Risk of Dust Impacts Construction
Dust Soiling	Medium	Medium	Medium Risk
Human Health	Medium	Medium	Medium Risk
Ecological	Low	Medium	Low Risk

The results are summarized on the Dusk Risk table below.

Table – Summary Dust Risk Table with no mitigation measures applied

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Track-out
Dust Soiling	N/A	Medium Risk	Medium Risk	Medium Risk
Human Health	N/A	Medium Risk	Negligible	Low Risk
Ecological	N/A	Negligible	Negligible	Low Risk

3 Mitigation Measures

ARJ will implement the appropriate dust and pollution control measures set out below to ensure the air quality impacts of construction are minimized and any mitigation measures employed are effective. Best practice methods will be adopted, and staff will train to ensure these are implemented correctly. This is expected to minimize formation of dust and harmful emissions.

These measures are summarized below, and they are divided according to key construction stages and site risk. All measures are compulsory for site staff unless not feasible and alternative arrangements are agreed with site management. These measures are intended to be effective and deliverable and in-line with best practice.

The focus of the dust and pollution control measures to be outlined is to reduce health and dust annoyance impacts on existing local receptors. Potential health impacts from dust emissions to site personnel will also be considered and included in the site's health and safety documentation.

Contact details for the person responsible for dust and emissions generated from the site will be displayed on the site boundary so that local residents and businesses are able to contact the developer and contractor to raise any issues that they may have and report complaints. Site management has the authority to deal with complaints.

3.1 Site inspections

ARJ will actively monitor the site to ensure the control of dust and emissions. Dry and windy conditions increase the likelihood of dust and emissions being produced and dispersed, so extra site monitoring will take place during these times.

3.1.1 Preparing and maintaining the site

3.1.1.1 Site layout

- Machinery and dust generating activities will be located within the development enclosure and away from receptors as far as possible.
- Active water-based dust suppression.
- Solid screens and/or monarflex sheeting will be used to enclose the site. Additional barriers will be provided around dust generating activities.
- Materials will be always covered to prevent wind whipping
- Site will be cleaned daily, and any loose materials will be removed as soon as possible, and any hard standings kept dampened down.

3.1.1.2 Site maintenance

- ARJ will keep their construction site clean and in good order. Measures will include:
- Controlling runoff and mud as it can lead to dust once dry which could become airborne:
- Hoardings, fencing, barriers and scaffolding will be regularly cleaned as required.

3.1.1.3 Dealing with spillages

Spillages can occur with a wide range of liquid and materials. The following measures will address this issue:

- Trade effluent from cleaning vehicles will be contained and then removed from site. Run off will not be allowed to enter public highways or watercourses
- Use bunded areas wherever practicable and bunded bowsters
- Regularly inspect the site area for spillages
- Have spillage kits readily available
- Vacuum or sweep regularly to prevent the build-up of fine waste dust material, which has spilled on the site and is designated as waste that is no longer fit for use.

3.1.1.4 Reducing emissions from vehicles

Emissions from vehicles associated with construction sites can significantly add to levels of local air pollution, so it is important that best practice is employed to reduce these.

All mobile vehicles associated with the construction will comply with the standards of the London Low Emission Zone and will be registered with the Non-Road Mobile Machinery (NRMM) requirements. Delivery vehicles and vans etc. will need to comply with the latest euro codes as applicable.

3.1.1.5 Reducing vehicle idling

Site management will work with suppliers and other contractors to ensure that vehicles do not have to wait. Vehicles will be arranged on a just in time basis which will be necessary considering the nature of the site, the access routes, and the environment. Vehicles will not be permitted to block the access road or the local paths or roadways.

If vehicles must load/unload they will not stay idle unless required to safely operate the vehicle.

3.1.1.6 Construction Traffic

A site-specific Construction Traffic Management Plan has been developed to evaluate the impact to the local environment. Generally, site management is responsible to ensure deliveries and removals are managed so that they are made when they are most needed, at times when they will contribute less to congestion and at locations where loading and unloading can take place safely. Deliveries will be consolidated so fewer journeys are needed.

These measures will reduce congestion in the local area and inconvenience to local road use.

3.1.2 Operations

3.1.2.1 Diesel or petrol generators

Generators will generally be avoided. Use will be allowed only in emergencies and site management will approve use only when no other option is available.

3.1.2.2 Cutting, grinding, and sawing

Cutting, grinding, and sawing will be reduced. Where possible, materials will be prepared off-site. In cases where such work must take place, spraying water over the material as it is being cut will greatly reduce the amount of dust generated.

If scabbling (grinding concrete using a machine tipped with steel or carbide material) is required, the following measures will be in place to comply with best practice:

- Pre-wash work surfaces
- Screen off work area
- sweeping away or use electric vacuum

3.1.2.3 Chutes, conveyors and skips

Skips, chutes and the electric conveyor belt will be completely covered and, if necessary, completely enclosed to ensure that dust does not escape. Similarly, drop heights will be minimized to control the fall of materials.

3.1.3 Waste Management

- No burning of any material is permitted on-site
- Any excess material should be reused or recycled on or off-site in accordance with appropriate legislation
- Site management will identify the waste types that are likely to be produced and aim to reduce the amount of waste as much as possible, through identifying routes to reuse or recycle materials. Site Management will refer to the Waste and Resources Action program (WRAP www.wrap.org.uk) which provides a list of ten quick wins for reducing and re-using waste
- Control access to storage areas to minimize risk of theft or damage
- Set up a dedicated store for timber, from which workers can re-use supplies
- Store any materials away from sensitive locations in fenced off areas
- Employ a just-in-time policy to deliver materials in order to reduce the storage time on-site
- Recycled materials will be used where possible and any materials used on site will be recycled rather than disposed of (including timber, aggregates, soil, bricks, masonry, concrete).

3.1.4 Measures specific to construction

- Store materials to prevent deterioration and damage such as cement and other dusty materials
- Use suppression and extraction to control dusty activities
- Do not let concrete dry out and remove from site
- Keep hard standing areas dampened down

For a comprehensive table of mitigation measures for Low, Medium and High-Risk Sites please refer to Appendix A.

3.1.5 Measures Specific to Earthworks

- Keep dry areas dampened down when plant is moving around
- Cover muck away vehicles prior to leaving site
- Permits for pumping / over pumping
- Contain and manage any spillages
- Store fuel etc. in bunded bowser

For a comprehensive table of mitigation measures for Low, Medium and High-Risk Sites please refer to Appendix A.

3.1.6 Measures Specific to Track Out

- Vehicles only to attend site at agreed time in line with council restrictions, i.e., between 8am – 6pm
- Clean vehicles before leaving site so they do not spoil the local highway
- Only use the access road as indicated on the traffic management plan
- Keep speed low
- Avoid speeding and over revving

For a comprehensive table of mitigation measures for Low, Medium and High-Risk Sites please refer to Appendix A.

4 Fuel Storage

Fuels will be stored in double bunded containers or be stored on a bund with plant nappies available during re fuelling and topping up to prevent pollutants escaping into the surrounding area, there will also be a fire point and spill kit station located in the immediate vicinity of the fuel storage. We will also review any drainage maps to ensure that these items are not stored close to or near a potential pathway to become a pollutant.

COSHH will be stored in a locked container and all items will be stored on bunds to ensure that they do not leak on to the surrounding area. Spill kit stations and fire stations will be placed in close proximity to ensure in the event of an accident it can be dealt with quickly and efficiently.

Spillages as covered in the Environmental Management Plan will be trained out so that all staff members are aware of how to tackle a spill in the event of a spill taking place on a site. This training will take place at induction and annually after to ensure that everyone on site is competent on clearing and preventing a spill.

5 Site Monitoring

The correct implementation of the best practice methods identified above is expected to minimize the formation of dust and harmful emissions from the proposed development.

In addition, continuous site monitoring will allow the developer to manage the generation of dust including PM10 and PM2.5 and NOx emissions during construction. The site is considered to be Medium Risk. For a Medium Risk site, the Control of Dust and Emissions during Construction SPG July 2014 recommends to:

- Take into account the impact of air quality and dust on occupational exposure standards to minimize worker exposure and breaches of air quality objectives that may occur outside the site boundary, such as by visual assessment
- Keep an accurate log of complaints from the public, and the measures taken to address any complaints, where they were required.
- Determine the prevailing wind direction across the site using data from a nearby weather station¹⁷.
- 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 three automatic particulate monitors to measure PM10 levels at either end of the line - either inside or outside the site boundary. These instruments should provide data that can be downloaded in real-time by the local authority; and
- 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 PM10 levels. These instruments should provide data that can be downloaded in real-time by the local authority.
 - If required, supplement monitoring with handheld monitors to get on the- spot readings at selected points, such as close to sensitive receptors; and
 - Consider also monitoring dust deposition and soiling rates as these can be used to indicate nuisance.

6 Site Inspections and Logging

The site manager will inspect the works daily to ensure that all mitigation and monitoring measures are being implemented. This will be visually inspected daily and added to the daily diary which shall record the weather, wind speed and direction, activities, controls measures and any issues or complaints.

General site inspections which include dust control and monitoring will be recorded in the Site Managers Weekly Inspection which shall be supported by biweekly inspections carried out by the SHEQ Advisor.

7 Non-Road Mobile Machinery (NRMM)

Non-Road Mobile Machinery (NRMM) is a broad category which includes mobile machines, and transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads.

NRMM, particularly from the construction sector, is a significant contributor to London's air pollution. The NRMM Low Emission Zone uses the Mayor and London Borough's planning powers to control emissions from NRMM used on construction sites.

In a similar way to the Ultra-Low Emission Zone, the NRMM Low Emission Zone requires that all engines with a power rating between 37 kW and 560 kW meet an emission standard based on the engine emission "stage".

The standards that need to be met depend on where the construction site is:

The current standards are stage IV for construction machinery operating in the Central Activities Zone and Opportunity Areas (including Canary Wharf) and stage IIIB in the rest of London.

Stages IIIB and IV have not been defined for machines with constant speed engines, such as generators. This means that these machines will need to meet stage V.

Stage IV has also not been directly defined for variable speed engines smaller than 56 kW. In most cases these engines will need to meet stage V if they are in the Central Activities Zone and Opportunity Areas (OAs).

Under the NRMM practical guide, the project will be defined as a Major Development.

The site and all plant & equipment will be registered on the NRMM register.

Appendix A - Mitigation Measures

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Site management			
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.		XX	XX
Develop a Dust Management Plan.		XX	XX
Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.	XX	XX	XX
Display the head or regional office contact information.	XX	XX	XX
Record and respond to all dust and air quality pollutant emissions complaints.	XX	XX	XX
Make a complaints log available to the local authority when asked.	XX	XX	XX
Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.	XX	XX	XX
Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions.	XX	XX	XX
Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.	XX	XX	XX

XX: Highly recommended, X: Desirable

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly.		XX	XX
Operating vehicle/machinery and sustainable travel			
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone.	XX	XX	XX
Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance.	XX	XX	XX
Ensure all vehicles switch off engines when stationary – no idling vehicles.	XX	XX	XX
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible.	XX	XX	XX
Impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	X	X	XX
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.		XX	XX
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	XX	XX	XX
Operations			
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	XX	XX	XX

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).	XX	XX	XX
Use enclosed chutes, conveyors and covered skips.	XX	XX	XX
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	XX	XX	XX
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.		XX	XX
Waste management			
Reuse and recycle waste to reduce dust from waste materials	XX	XX	XX
Avoid bonfires and burning of waste materials.	XX	XX	XX

Measures specific to Earthworks

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces.		X	XX
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil.		X	XX
Only remove secure covers in small areas during work and not all at once.		X	XX

Measures specific to Construction

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Avoid scabbling (roughening of concrete surfaces) if possible	X	X	XX
Ensure sand and other aggregates are stored in banded 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	X	XX	XX
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.		X	XX
For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.		X	X

Measures specific to Track-out

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site.	X	XX	XX
Avoid dry sweeping of large areas.	X	XX	XX
Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.	X	XX	XX
Record all inspections of haul routes and any subsequent action in a site log book.		XX	XX
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems and regularly cleaned.		XX	XX
Inspect haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;		XX	XX
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	X	XX	XX
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.		XX	XX
Access gates to be located at least 10m from receptors where possible.		XX	XX
Apply dust suppressants to locations where a large volume of vehicles enter and exit the construction site		X	XX

