



Air Quality and Dust Management Plan



389 Gosbrook
Road,
Reading
RG4 8ED

May 2023

Ref: 23-10763

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1. Introduction

Background

This report has been prepared to support the discharge of planning conditions for permitted development at 389 Gosbrook Road, Reading RG4 8ED.

The proposed development has the potential to cause air quality impacts at sensitive locations during the construction phases. As such, an Air Quality and Dust Management Plan (AQDMP) is required to manage potential effects associated with the construction phase of the scheme.

The AQDMP considers measures to manage the potential for dust soiling and PM₁₀ (human health) impacts for sensitive receptors off-site of the development within 250 m of the site boundaries during the construction phase.

Site Location and Context

The proposals include demolition of an existing building and erection of a new building containing 1 x 2-bed flats and 5 x 1-bed flats with associated car parking (5 spaces of which 1 is a disabled parking bay) and landscaping.

The development has the potential to cause impacts at sensitive locations. These may include fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicles travelling to and from the site during the construction phase. An AQDMP was therefore undertaken to determine potential effects during the construction phase of the scheme. This is detailed in the following Sections.

2. Air Quality and Dust Management Plan

The appropriate dust and pollution control measures set in this AQDMP will ensure the air quality impacts of construction and demolition are minimised and any mitigation measures employed are effective. The measures will be secured by Condition or S106 agreement, as appropriate.

It will be ensured that all contractors follow best practice at all times to control and limit emissions of gaseous and particulate pollutants into the atmosphere from construction and demolition activities, including from vehicles and plant.

The measures are intended to be effective and deliverable and in-line with best practice to deal with the specific air quality problems facing Local Authorities. The focus of the dust and pollution control measures to outlined is to reduce health and dust annoyance impacts on existing local receptors. Potential health impacts from dust emissions to site personnel will be addressed (e.g., through the use of face masks where appropriate) in the site's health and safety documentation.

The following sections identify the activities that are most likely to produce dust, particulate matter and gaseous pollutant emissions and outlines best practice to prevent or minimise emissions.

Site Management

The site management practices set out below will be followed to ensure that the site is responsibly managed during the demolition and construction phases of the development.

Stake Holder Engagement

Those sensitive to potential impacts will be notified and consulted with, and an easy and effective mechanism for communicating their concerns and issues set up, before work commences. This may include establishing a working group, with representatives of the local authority, the local community and the developer, to monitor and discuss any issues arising from the key phases of a development.

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/or contractor to raise any issues that they may have and report complaints. For major developments a person will be responsible for the monitoring and implementation of dust and emissions control measures. A record of all such complaints will be kept and responded to as within timescales to be stipulated by the Local Authority. The log of complaints and action taken will be made available to the Local Authority on request.

The potential cumulative effects of emissions from several development sites will be considered and managed between the sites. Where appropriate, liaison meetings will be held with site managers of other high risk construction sites within 200 m of the site boundary to ensure plans are co-ordinated and dust and particulate matter emissions are minimised.

Site Inspections

The developer and/or contractor 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.

Preparing and Maintaining The Site

The way in which a site is prepared and maintained can have a significant impact on the control of dust and emissions.

Site Layout

When planning construction works it will be aimed to:

- Locate machinery and dust generating activities away from receptors;
- Create a physical distance and/or barrier between dust/emission generating activities and receptors;
- Install solid screens or barriers around dust generating activities.
 - These will be at least as high as any stockpiles onsite;
- Cover or seed stockpiles to prevent wind whipping; and
- Remove loose materials as soon as possible.

Site Maintenance

The construction site will be kept in good order. The following measures will be considered:

- The site or construction area will be bunded to prevent runoff.
 - Runoff and mud will be avoided as it can lead to dust once dry as well as polluting local waterways and sewers;
- Hoardings, fencing, barriers and scaffolding will be regularly cleaned using wet methods, where possible to prevent re-suspension of particulate matter.
 - Developers should collect used water and maximise the use of recycled and non-potable water;
- Regular checks of buildings within 100 m of the site boundary will be carried out to check for soiling due to dust with cleaning carried out where necessary; and
- Require a change of shoes and clothes by staff and visitors before going off-site to reduce the transport of dust or provide cleaning facilities such as showers or boot cleaners.

Dealing with Spillages

Spillages can occur with a wide range of liquid and materials, including those which are hazardous. For all sites the following measures will address this issue:

- Bunded areas will be used wherever practicable;
- Site areas will be regularly inspected for spillages;

- Spillage kits will be readily available;
- Spillages will be cleaned using agreed wet handling methods;
- 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 will be prevented by vacuuming or sweeping regularly, and dealt with in accordance with the Waste Management Licensing Regulations (WMLR), 1994; and
- The Environment Agency or the Health Protection Agency (HPA) will be informed if harmful substances are spilled.

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.

Low Emissions Zone

All mobile vehicles associated with the demolition / construction will comply with the standards of any Low Emission Zone.

Reducing Vehicle Idling

The site will be managed so that vehicles do not have to wait to park safely. However, should vehicles have to wait they will not idle. Generally, if a vehicle is stationary for more than a minute, turning off the engine will reduce emissions and fuel costs.

Diesel or Petrol Generators

Even modern diesel- or petrol-powered plant items emit higher levels of PM and NO_x than electric equivalents. Therefore, wherever possible, renewable, mains or battery powered plant items will be used.

Operations

Cutting, Grinding and Sawing

Ideally, cutting, grinding and sawing will not be conducted on-site and prefabricated material and modules will be brought in where possible. In cases where such work must take place, spraying water, preferably from a water efficient spray pump, over the material as it is being cut greatly reduces the amount of dust generated.

Scabbling is the process of grinding concrete using a machine tipped with steel or carbide material to rapidly pound it. The following measures will be in place to comply with best practice:

- Pre-wash work surfaces;
- Screen off work areas; and

- Sweeping away.

Mobile Crushing Plant

This is an inherently dusty activity and will often take place on the sites normally classed as medium- or high-risk dust emission sites. Where it is undertaken, the following measures will be adopted:

- The Local Authority will be notified if a crusher is to be used.
 - Mobile crushing plants are authorised as Part B processes under the Environmental Protection Act, by the authority where they are registered (rather than the authority in whose area they are used), even if they are only temporary;
- A copy of the permit will be kept on-site, and the conditions of their use adhered to at all times, and
- Best available techniques in accordance with the Process Guidance note PG 3/16 (04) will be used at all times.

Concrete Batching

As for mobile crushing plants, construction sites with concrete batching plants will often be categorised as medium- or high-risk. Where it is undertaken, such plant will be treated as an authorised Part B processes even if temporary, and the following best practice employed:

- The Local Authority will be notified if a concrete batcher is to be used on site;
- Best available techniques identified in the Process Guidance note PG 3/1 (04) will be used; and
- These processes will be carried out in an enclosure, wherever possible.

Chutes, Conveyors and Skips

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

Waste Management

Bonfires

Local Authorities set conditions that prevent bonfires on-site. Taking into account the Clean Air Act 1993 and nuisance legislation (Environmental Protection Act 1990):

- No burning of any material will be undertaken on-site; and
- Any excess material will be reused or recycled on or off-site in accordance with appropriate legislation.

Mitigation Measures Specific to Demolition

Demolition activities can generate significant dust and also cause resuspension of dust currently within the building. Soft stripping is an effective way of screening dust and preventing dispersion. Water suppression will be used to damp down dust and other debris that could generate dust, and, where practical, manual or mechanical demolition techniques will be used. Blasting will be avoided in order to control dust.

Mitigation Measures Specific to Earthworks

It is important that cement, sand, fine aggregates and other fine powders are sealed after use and if necessary stored in enclosed or banded containers or silos. Some materials will be kept damp to reduce the risk of drying out.

Mitigation Measures Specific to Trackout

Haul Routes

Unpaved haul routes can account for a significant proportion of fugitive dust emissions, especially in dry or windy conditions, when the generation of dust through the movement of vehicles is exacerbated. To comply with good practice, as far as possible ensure hard surfaces or paving will be used for all haul routes, even if routes are temporary.

It is important that haul routes and local access roads are kept free of dust as far as possible and are swept regularly. Where possible, this will be water-assisted to increase damping down. However, care will be taken to not to contaminate sewers or local waterways.

Wheel Washing

Vehicles – in particular wheels – will be washed or cleaned before leaving the site. Where appropriate, wheel wash facilities will be installed, preferably with the application of rumble grids to dislodge accumulated dust and mud. Ideally the route from the wheel wash to the public road will be a paved. Where layout permits, the site access gates will be located at least 10m from receptors.

Covering Vehicles

All vehicles carrying dusty materials will be securely covered before leaving the site, to prevent dust spilling on the road and being swept away by the wind.

Mitigation Measures

The dust and emissions control measures set out below **will be implemented** to ensure the air quality and dust impacts of construction and demolition are minimised.

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.

Commented [MC1]: Where a Stakeholder Communications Plan does not exist we are happy to provide a scope of work and fee for this requirement.

- 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 regional office contact information.
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk. The DMP may include monitoring of dust deposition, dust flux, real time PM₁₀ continuous monitoring and/or visual inspections.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make a complaints log available to the Local Authority when asked.
- Record any exceptional incidents that cause dust and/or air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the logbook.

Monitoring

- 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.
- 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.
- Agree dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations with the Local Authority. Where possible baseline monitoring will commence at least three months before work commences on site or, if it a large site, before work on a phase commences.

Commented [MC2]: Where an Air Quality Monitoring Plan does not exist we are happy to provide a scope of work and fee for this requirement.

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 dust activities or the site boundary that are, at least, as high as any stockpiles on site.
- Fully enclosure 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 that have a potential to produce dust from site as soon as possible, unless being re-used on site.
- Cover, seed, or fence stockpiles to prevent wind whipping.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirement of the any Low Emission Zone.
- Ensure all non-road mobile machinery (NRMM) comply with the relevant standards.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.

Commented [MC3]: Where a Construction Logistics Plan does not exist we are happy to provide a scope of work and fee for this requirement.

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.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and 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.
- 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

- Avoid bonfires and burning of waste materials.

Measures Specific to Demolition

- Ensure effective water suppression is used during demolition operations.

- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

The dust and emission control measures set out below **will be implemented as required** to ensure the air quality and dust impacts of construction and demolition are minimised.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.

Operating Vehicle/Machinery and Sustainable Travel

- 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).
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

Commented [MC4]: Where a Construction Phase Travel Plan does not exist we are happy to provide a scope of work and fee for this requirement.

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).

Measures Specific to Construction

- Avoid scabbling (roughening of concrete surfaces) if possible.
- 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.

Measures Specific to Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.

- Record all inspections of haul routes and any subsequent action in a site logbook.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).