Dust and Air Emissions Mitigation Measures — Institute of Air Quality Management

The mitigation measures described below are based on the emerging guidance from the Greater London Council, as part of their revision of the '*The control of dust and emissions from construction and demolition: Best Practice Guidance*' (2006). Until that guidance is published IAQM have produced the following recommended mitigation measures for low, medium, and high risk sites as defined in IAQM's '*Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' (http://www.iaqm.co.uk/guidance.html)*. The measures have been divided into those applicable for all sites, and those applicable to demolition, earthworks, construction and trackout for consistency with the IAQM Guidance. It should be noted that it is difficult to provide generic guidance as each site and its locations is different and professional judgement is required.

Key to tables:

● Highly Recommended

○ Desirable

□ Not applicable

Communications

Mitigation measure	Low Risk	Medium Risk	High Risk
Implement a stakeholder communications plan that includes community engagement before and during work 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 regional office contact information	○	○	●

Dust Management – all sites

Mitigation measure	Low Risk	Medium Risk	High Risk
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, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures will be required (to ensure compliance with the GLA guidance) including vehicles meeting the LEZ requirements and the GLA non-road mobile machinery (NRMM) requirements). The DMP may include monitoring of dust	□	○	●

deposition, dust flux, real-time PM_{10} 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 the complaints log available to the local authority when asked.	●	●	●
Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book.	●	●	●
Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. If the site is within a large AQMA (i.e. larger than 500m from the site), this should be extended to include all other high risk construction sites within the AQMAs. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes).	□	□	●
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.	○	○	●
When activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions increase the frequency of inspections.	□	○	●
Carry out regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary.	□	○	●
Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. A shorter monitoring period or concurrent upwind and downwind monitoring may be agreed by the local authority. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	□	○	●
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. Use intelligent screening where possible – e.g. locating site offices between potentially dusty activities and the receptors.	□	●	●
Erect solid screens or barriers around the site boundary.	□	●	●
Avoid site runoff of water or mud.	●	●	●

Keep site fencing, barriers and scaffolding clean.	○	●	●
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	○	○	●
Depending on the duration that stockpiles will be present and their size - cover, seed, fence or water to prevent wind whipping.	○	○	●
Operating vehicle/machinery and sustainable travel			
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone, where applicable	●	●	●
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.	□	○	●
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads 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)	○	○	●
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	□	○	●
Implement a Travel Plan that supports and encourages sustainable staff travel (public transport, cycling, walking, and car-sharing)	□	○	●
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.	○	●	●
Use enclosed chutes, conveyors and covered skips, where practicable.	○	●	●
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			
Only use registered waste carriers to take waste off-site	●	●	●
Avoid bonfires and burning of waste materials.	●	●	●

Measures specific to demolition

Mitigation measure	Low Risk	Medium Risk	High Risk
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 effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	●	●	●
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	○	●	●

Mitigation measure	Low Risk	Medium Risk	High Risk
Bag and remove any biological debris or damp down such material before demolition.	○	○	○

Measures specific to earthworks

Mitigation measure	Low Risk	Medium Risk	High Risk
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in a small areas during work and not all at once.	□	○	●

Measures specific to construction

Mitigation measure	Low Risk	Medium Risk	High Risk
Avoid scabbling 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.	□	○	●
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	□	○	○

Measures specific to trackout

Mitigation measure	Low Risk	Medium Risk	High Risk
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as soon as practicable 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 log book.	○	○	●
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	□	○	●
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as practicable;	□	●	●
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site).	○	●	●
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. This can be in the form or a static drive through facility or a manually operated power jet.	□	○	●
Access gates to be located at least 10m from receptors where possible.	□	○	○

Key to tables:

● Highly Recommended

○ Desirable

□ Not applicable

Acknowledgements

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