

Demolition and Construction Dust Management Guidance

Dust¹ arising from development is additional to background dust concentrations. If not adequately controlled dust emissions from developments will lead to increases in dust concentrations beyond the site boundary, which may affect local amenity and influence local air quality.

It is more effective to address dust emissions at the design and planning stage of new development proposals, than to seek to deal with dust problems retrospectively. Likewise it is more effective to deal with potential dust emissions at source, rather than once airborne.

The level of dust impact is dependent on:

- The scale of any proposal;
- The nature of the proposal;
- The location and sensitivity of receptors;
- The existing dust conditions at the location;
- Local weather patterns;
- Topography.

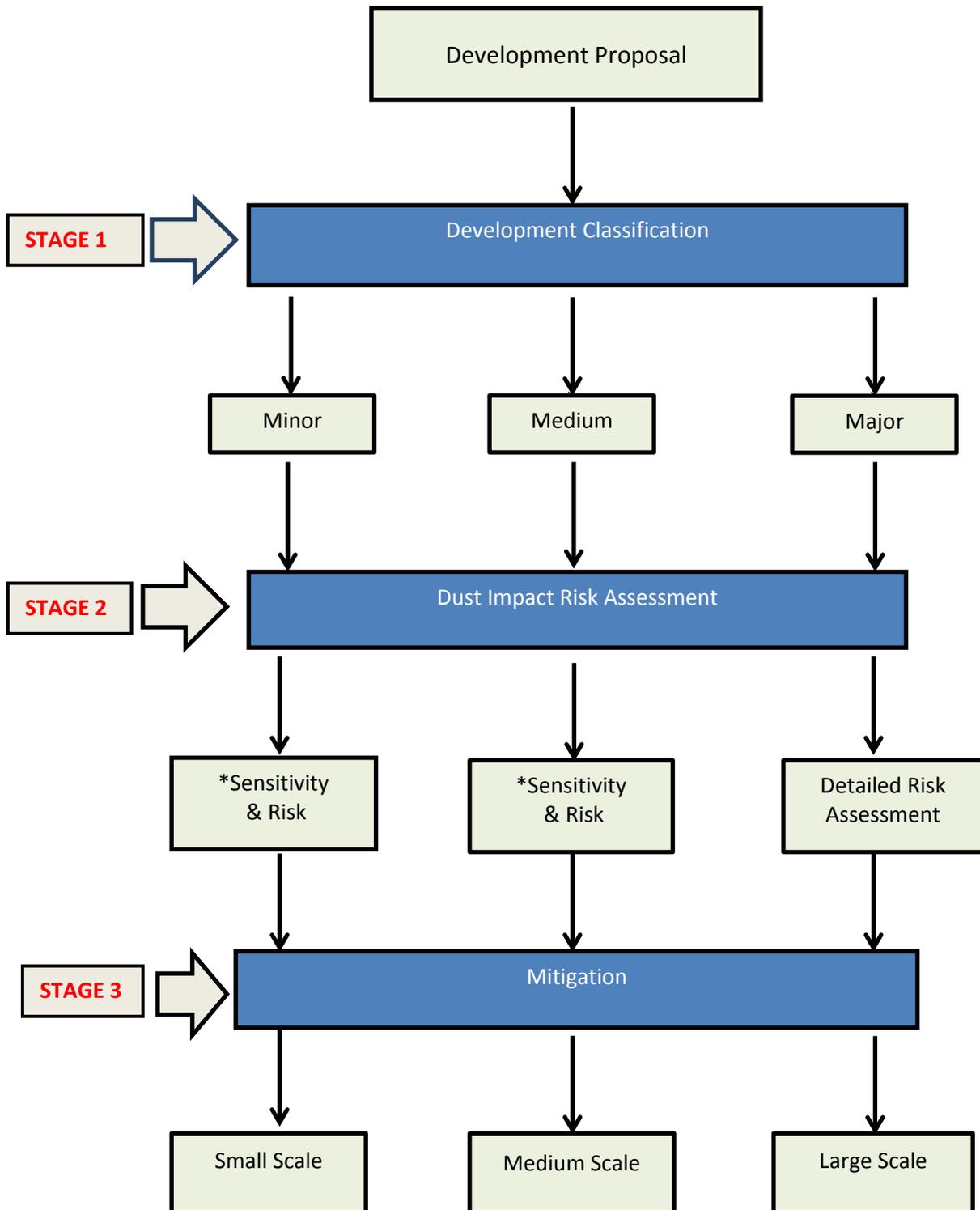
The requirement in most dust related planning conditions for the need to submit a “scheme” or “plan” that is acceptable does not provide sufficient information for the developer to undertake an effective assessment of the likely impact of the proposal, or know what appropriate mitigation measures are required. This leads to further time consuming negotiations that benefits no-one. This short guidance is provided in order to reduce the time taken by all parties and provides a clear understanding of what is required and how it is to be achieved.

Minerals and quarries are specifically identified through the National Planning Policy Framework and National Planning Practice guidance and are not covered by this note.

The level of impact and mitigation information required within this framework is achieved through the process illustrated in the flow chart overleaf.

¹ ‘Dust’ in this guidance refers to particles that give rise to soiling, to human health and ecological effects.

The Dust Management Assessment and Mitigation Flow Chart



*There is no safe level for exposure to fine particulate pollution. However, all applications must ensure as a minimum a proposal does not expose existing or future residents to levels of pollutants above the Air Quality Objectives.

ASSESSMENT & MITIGATION

A three stage process is described to provide sufficient information to enable the identification of appropriate mitigation measures to ensure the minimisation of dust impact on local receptors and air quality. The stages are:

- 1) Scale of the proposal for dust generation;
- 2) A dust impact risk assessment;
- 3) Appropriate mitigation measure implementation listing.

Five site activities are recognised as potential for dust generation:

- Demolition;
- Earthworks;
- Construction;
- Trackout (off-site vehicle movements);
- Non-road Mobile Machinery (NRMM).

NRMM Requirements

NRMM refers to machinery that is: not intended for carrying passengers or goods on the road and installed with a combustion engine (either spark ignition or compression ignition). Examples on construction/demolition activities include (but not limited to): generators, bulldozers, pumps, construction machinery, mobile cranes, fork lifts, industrial trucks.

NRMM emissions are regulated by European Directive (EU 97/68/EC) as amended and enforced through the Road Mobile Machinery (Emission of Gaseous and Particulate Pollutants) Regulation 1999 as amended. A tightening of emissions is required through a progressive staged implementation (Stages 1 – V) by 2020.

NRMM Control

The NRMM standards apply to machinery of net power between 37kW and 560kW of variable and constant speed engines for NOx and Particulate Matter. These are:

- Sites classified as MEDIUM development are required to meet Stage IIA of the Directive as a minimum;
- Sites classified as LARGE will meet Stage IIB.

From 2020:

- Any construction/demolition site using NRMM will meet Stage IIB of the Directive, and;
- MEDIUM and MAJOR classified sites will meet Stage IV.

This is achievable by: re-organisation of NRMM equipment; replacement of non-compliant equipment; retrofit abatement technologies to non-compliant equipment; engine replacement. Exemption will only be allowed if: no compliant machinery is available or comprehensive retrofit is not feasible.

1) SCALE OF PROPOSAL

The size of any proposal will determine the level of potential dust emission. Using the site activities, the table below classifies the scale of a proposal as Small, Medium and Large.

ACTIVITY	CRITERIA	SCALE
Demolition	<20,000m ³ total volume of structure working at <10m above ground.	Small
	20,000m ³ -50,000m ³ total volume of structure working at 10m-20m above ground.	Medium
	>50,000m ³ total volume of structure working >20m above ground.	Large
Earthworks	<2,500m ² total site area using <5 heavy moving vehicles.	Small
	2,500m ² -10,000m ² total site area, 5-10 heavy moving vehicles.	Medium
	>10,000m ² total site area >10 heavy moving vehicles.	Large
Construction	<25,000m ³ construction material. <10 dwellings.	Small
	25,000m ³ -100,000m ³ construction material. 10-50 dwellings.	Medium
	>100,000m ³ construction material. >50 dwellings.	Large
Trackout	<10 HDV (>3.5t) outward movements off-site in any one day.	Small
	10-50 HDV (>3.5t) outward movements in any one day.	Medium
	>50 HDV (>3.5t) outward movements in any one day.	Large

Whichever is the largest will be the overall scale.

2) DUST IMPACT RISK ASSESSMENT

The potential risk of dust impacting on receptors requires assessing to enable to gauge the level of required mitigation. The level of dust impact is associated with:

- The number, location and sensitivity of receptors;
- The type, location and frequency of site activity;
- The scale of the development.

Further information and reference is available at the Institute of Air Quality Management (IAQM) [Guidance](#) and the Mayor of London Control of Dust Supplementary Planning Guidance [London Guidance](#).

Small and Medium Risk Assessment

The number and degree of sensitive receptors in proximity to the proposal works are used to determine the level of risk.

Sensitive Receptors for SMALL and MEDIUM Proposals

High Sensitivity	Medium Sensitivity	Low Sensitivity
Hospitals and clinics	Schools	Farms
Hi-Tech industries	Residential Areas	Light & Heavy Industry
Painting & furnishing	Food Retailers	Outdoor Storage
Food Processing	Greenhouses & Nurseries	
	Horticultural Land	
	Offices	

Assessment of the dust impact risk for SMALL and MEDIUM proposals:

Sensitive Receptors	Number of Total Receptors	Distance from Source (m)		
		<20	<50	<100
High	>50	Large	Large	Medium
	10-50	Large	Medium	Small
	1-10	Medium	Small	Small
Medium	>1	Medium	Small	Small
Low	>1	Small	Small	Small

The highest outcome will be the overall level of risk

Assessment of the dust impact risk for designated LARGE proposals should follow the IAQM [Guidance](#)

3) MITIGATION MEASURES

The outcome of the scaling and risk assessment will identify the level of likely impact on the local amenity and air quality and the required level of mitigation. The mitigation is listed in any dust management plan or dust minimisation scheme together with responsibility for each measure implementation and control.

The Met Office now offer a specific construction site weather report to enable a more effective site environmental management programme [Met Office Construction Site Weather Reports](#)

REQUIRED MITIGATION MEASURES

Measure	Scale and Risk		
	Small	Medium	Large
Develop and implement a stakeholder communications 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 regional office contact information		✓	✓
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 log available to LPA if required.		✓	✓
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 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. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.			✓
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 should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary.		✓	✓
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.		✓	✓
Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.			✓
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 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 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.	✓	✓	✓
Cover, seed or fence stockpiles to prevent wind whipping.		✓	✓
Ensure all NRMM meet the required emission standards.		✓	✓
Ensure all vehicles switch off engines when stationary - no idling vehicles.	✓	✓	✓

Measure	Scale and Risk		
	Small	Medium	Large
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 unsurfaced 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).			✓
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.	✓	✓	✓
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.	✓	✓	✓
Avoid bonfires and burning of waste materials.	✓	✓	✓
DEMOLITION SPECIFIC			
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.		✓	✓
Bag and remove any biological debris or damp down such material before demolition.	✓	✓	✓
EARTHWORKS SPECIFIC			
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.			✓
Only remove the cover in small areas during work and not all at once			✓

Measure	Scale and Risk		
	Small	Medium	Large
CONSTRUCTION SPECIFIC			
All contractors and sub-contractors to be made aware of and sign-up to the dust management scheme.	✓	✓	✓
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.		✓	✓
TRACKOUT SPECIFIC			
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.		✓	✓
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	✓	✓	✓
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.		✓	✓
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.		✓	✓
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).		✓	✓
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.			✓

APPENDIX 1

The Town and Country Planning (Use Classes) Order 1987 (as amended)

- **A1 Shops** - Shops, retail warehouses, hairdressers, undertakers, travel and ticket agencies, post offices (but not sorting offices), pet shops, sandwich bars, showrooms, domestic hire shops, dry cleaners, funeral directors and internet cafes.
- **A2 Financial and professional services** - Financial services such as banks and building societies, professional services (other than health and medical services) including estate and employment agencies and betting offices.
- **A3 Restaurants and cafés** - For the sale of food and drink for consumption on the premises - restaurants, snack bars and cafes.
- **A4 Drinking establishments** - Public houses, wine bars or other drinking establishments (but not night clubs).
- **A5 Hot food takeaways** - For the sale of hot food for consumption off the premises.
- **B1 Business** - Offices (other than those that fall within A2), research and development of products and processes, light industry appropriate in a residential area.
- **B2 General Industrial** - Use for industrial process other than one falling within class B1 (excluding incineration purposes, chemical treatment or landfill or hazardous waste).
- **B8 Storage or distribution** - This class includes open air storage.
- **C1 Hotels** - Hotels, boarding and guest houses where no significant element of care is provided (excludes hostels).
- **C2 Residential institutions** - Residential care homes, hospitals, nursing homes, boarding schools, residential colleges and training centres.
- **C2A Secure Residential Institution** - Use for a provision of secure residential accommodation, including use as a prison, young offenders institution, detention centre, secure training centre, custody centre, short term holding centre, secure hospital, secure local authority accommodation or use as a military barracks.
- **C3 Dwelling houses** - this class is formed of 3 parts:
 - C3(a) covers use by a single person or a family (a couple whether married or not, a person related to one another with members of the family of one of the couple to be treated as members of the family of the other), an employer and certain domestic employees (such as an au pair, nanny, nurse, governess, servant, chauffeur, gardener, secretary and personal assistant), a carer and the person receiving the care and a foster parent and foster child.
 - C3(b): up to six people living together as a single household and receiving care e.g. supported housing schemes such as those for people with learning disabilities or mental health problems.
 - C3(c) allows for groups of people (up to six) living together as a single household. This allows for those groupings that do not fall within the C4 HMO definition, but which fell within the previous C3 use class, to be provided for i.e. a small religious community may fall into this section as could a homeowner who is living with a lodger.
- **C4 Houses in multiple occupation** - small shared houses occupied by between three and six unrelated individuals, as their only or main residence, who share basic amenities such as a kitchen or bathroom.
- **D1 Non-residential institutions** - Clinics, health centres, crèches, day nurseries, day centres, schools, art galleries (other than for sale or hire), museums, libraries, halls, places of worship, church halls, law court. Non-residential education and training centres.
- **D2 Assembly and leisure** - Cinemas, music and concert halls, bingo and dance halls (but not night clubs), swimming baths, skating rinks, gymnasiums or area for indoor or outdoor sports and recreations (except for motor sports, or where firearms are used).
- **Sui Generis** - Certain uses do not fall within any use class and are considered 'sui generis'. Such uses include: theatres, houses in multiple occupation, hostels providing no significant element of care, scrap yards. Petrol filling stations and shops selling and/or displaying motor vehicles. Retail warehouse clubs, nightclubs, launderettes, taxi businesses, amusement centres and casinos.