

SEFTON MBC

THE CONTROL OF DUST AND EMISSIONS FROM CONSTRUCTION AND DEMOLITION ACTIVITIES

CODE OF PRACTICE

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1. **IMPACT OF AIR POLLUTION FROM CONSTRUCTION AND DEMOLITION SITES**

There are a number of sources of dust and emissions from construction activities that can release a range of particles. This document refers to the following particles in a standard format throughout:

Dust – defined as all particulate matter up to 75 µm in diameter (according to BS6069) and comprising both suspended and deposited dust.

PM₁₀ – a mass fraction of airborne particles with an aerodynamic diameter of 10 microns or less. It is comprised of coarse particles (2.5 - 10µm in diameter), which are primarily from non-combustion sources and fine particles (less than 2.5µm), which includes combustion processes or are formed in the atmosphere through the chemical reaction of primary emissions of gases.

Particulate matter includes a wide range of sizes and types of particles and will vary in composition from place to place and time to time.

Most dust particles are too big to be inhaled but can cause eye, nose and throat irritation and lead to deposition on cars, windows and property. PM₁₀ is of more concern to human health as the particles can enter the lungs, causing breathing and respiratory problems, with long-term health effects dominated by cardiovascular rather than respiratory problems. The PM₁₀ size fraction is associated with a range of effects on health including respiratory and cardiovascular systems (i.e. asthma) and mortality (deaths brought forward). Particles can also carry adhered carcinogenic compounds into the lungs. The most vulnerable people are the elderly, the very young and those with existing heart and lung conditions.

The detrimental health impacts of PM₁₀ are not confined to the construction site. These particles can travel further than coarser dust and so can effect the health of people living and working in the surrounding area of the site.

Emissions of particles and dust from construction can also have an impact on indoor air quality in the neighbouring area. The Committee on the Medical Effects of Air Pollution (COMEAP), a Department of Health expert group, has stated that it must be recognised that the indoor environment is not free of air pollutants with many pollutants generated outdoors penetrating indoors.

LEGAL CONTROLS

All new developments that require planning permission from Sefton Council may be subject to the requirements of this code of practice. It is important for the developer to discuss the activities on site and agree what controls will be needed on site.

Depending on the size of the development and potential impact conditions may be applied to the planning permission to control emissions from the site.

Planning Conditions

Recent guidelines in PPS23 set out the governments policies on Pollution Control and Planning annex 1, paragraph 1.48 regarding planning conditions states “planning conditions could be used in respect of impacts such as noise, vibrations, odour, air pollutants and dust from certain phases of the demolition and construction”. Example planning conditions are contained in appendix 1.

Environmental Protection Act 1990

Under Part III of the Environmental Protection Act (EPA) 1990, emission of dust, fumes and other effluvia from construction sites can be identified as a statutory nuisance if prejudicial to health or a nuisance. Control of a statutory nuisance is contained within Section 80 and a local authority is under a mandatory duty to serve an abatement notice on the person responsible for the nuisance if it is satisfied a statutory nuisance exists or is likely to occur or recur. The requirements to comply with this code of practice may be included in the schedule of any abatement notice served.

Health and Safety at Work Act 1974

The provisions of the Health and Safety at Work Act 1974 apply at all times on demolition and construction sites. The Health and Safety Executive (HSE) is the enforcing authority.

Research is continuing into the health effects of airborne pollutants and exposure to PM₁₀ though evidence is emerging that small particles within this fraction – below PM_{2.5} – may be the most harmful. As a first step to protect a worker’s health and safety, emissions of airborne pollutants should always be minimised. However, where this cannot be achieved personal protective equipment should be provided and used. Proper planning should be undertaken and appropriate mitigation decided for demolition and construction projects that will potentially generate large quantities of dust or emissions.

The Building Act 1984

This Act and subsequent Building Regulations 2000 aim to ensure the safety of those within and close to a building during works. They are the main mechanism for a LPA to control the impact of demolition. Under the regulations the LPA must be informed of any proposed demolition at least six weeks before work is due to begin. It will then grant a notice for demolition prior to work commencing. Section 82(J) of the Building Act 1984 can be used by the LPA to place conditions on the demolition notice to ensure that effective dust management options are undertaken.

To facilitate a smooth application process, developers should consider and suggest to the LPA management techniques for dust control during demolition prior to their application.

EMISSION IMPACT ASSESSMENT

The potential for a demolition or construction site to impact at sensitive receptors is dependant on many factors, which include the following:

- Location of the building site
- Proximity of sensitive receptors
- Whether demolition will need to take place
- Extent of any intended excavation
- Nature, location and size of stockpiles and the length of time they are to be on-site
- Occurrence and scale of dust generating activities – including cutting, grinding and sawing
- Necessity for on-site concrete crusher or cement batcher
- Number and type of vehicles and plant required on-site
- Potential for dirt or mud to be made airborne through vehicle movements and;
- Weather conditions.

The guidelines, below, illustrate what criteria a developer and LPA can use to assess the risk posed by a demolition or construction site. The following pages go further and recommend methods to mitigate specific risks.

Potential risk of site

Low Risk

Development of up to 10 properties with a potential for emissions and dust to have an infrequent impact on sensitive receptors.

Medium Risk

Development of up to 100 properties with a potential for emissions and dust to have an intermittent or likely impact on sensitive receptors.

High Risk

Development over 100 properties and with a potential for emissions and dust to have a significant impact on sensitive receptors.

The developer should assess which category their site falls into and the following mitigation measures will then be needed.

MITIGATION MEASURES FOR LOW RISK SITES

Site Planning

- Erect effective barriers around dusty activities or the site boundary
- No bonfires
- Plan site layout- machinery and dust causing activities should be located away from sensitive receptors

Construction Traffic

- All vehicles should switch off engines when not in use – no idling vehicles
- Wash or clean all vehicles effectively before leaving the site if close to sensitive receptors
- All loads entering and leaving site to be covered
- No site runoff of water or mud
- All non road mobile machinery (NRMM) to use ultra low sulphur tax-exempt diesel (ULSD) where available

Demolition Works

- Use water as dust suppressant
- Cutting equipment to use water as suppressant or suitable local exhaust ventilation systems
- Securely cover skips and minimize drop heights

Site Activities

- Minimise dust generating activities
- Use water as dust suppressant where applicable
- Keep stockpiles for the shortest possible time

Mitigation for Medium Risk Sites

Site Planning

- Erect barriers around dusty activities
- No bonfires
- Machinery and dust causing activities should be located away from sensitive receptors
- Identify person in charge
- Hard surface haul roads

Construction Traffic

- All vehicles to switch off engines when not in use, no idling
- Effective vehicle cleaning and specific wheel washing if required
- All dusty loads entering and leaving site to be sheeted
- No site run off or mud
- All non road mobile machinery to use ultra low sulphur tax-exempt diesel where available
- Hard surfacing and effective cleaning of haul routes and appropriate speed limit around site

Demolition Works

- Use water dust suppressant
- All cutting equipment to use water dust suppressant or suitable exhaust filtration system
- Securely cover skips and minimise drop heights
- Wrap buildings to be demolished

Site Activities

- Minimise dust generating activities
- Use water or dust suppressant
- Sheet/cover stockpiles or treat with conditioner
- Only used permitted crusher/screener

Mitigation Measures for High Risk Sites

Site Planning

- Erect solid barriers to site boundary
- No bonfires
- Plan site layout – machinery and dust causing activities should be located away from sensitive receptors
- All site personnel to be fully trained
- Trained and responsible manager on site during working times to maintain logbook and carry out site inspections
- Hard surface site haul routes
- Use nearby rail or waterways for transportation to/from site
- Put in place real-time dust monitors across site

Construction Traffic

- All vehicles to switch off engines when not in use – no idling vehicles
- Effective vehicle cleaning and specific fixed wheel washing on leaving site and damping down of haul routes
- All loads entering and leaving site to be covered
- No site runoff or water or mud
- On-road vehicles to comply to set emissions standards
- All non road mobile machinery (NRMM) to use ultra low sulphur tax-exempt diesel (ULSD) where available and be fitted with appropriate exhaust after-treatment from the approved list
- Minimise movement of construction traffic around site
- Hard surfacing and effective cleaning of haul routes and appropriate speed limit around site

Demolition Works

- Use water as dust suppressant
- Cutting equipment to use water as suppressant or suitable local extract ventilation
- Use enclosed chutes and covered skips
- Wrap building(s) to be demolished

Site Activities

- Minimise dust generating activities
- Use water as dust suppressant where applicable
- Cover, seed or fence stockpiles to prevent wind whipping
- Re-vegetate earthworks and exposed areas
- If applicable, ensure concrete crusher or concrete batcher has permit to operate

Method Statement

A method statement should cover all phases of the development and take account of all contractors or sub-contractors. It should be submitted to the local planning authority (LPA) prior to any works being carried out and include a site elevation and a timetable of dust generating activities accompanied with proposed dust control measures. A Method Statement could be required by the LPA via a condition attached to the planning consent.

The content of a Method Statement will be determined by the site evaluation, but typical features to include are outlined below.

For All Sites

- Summary of work to be carried out
- Description of site layout and access – including proposed haul routes, location of site equipment including supply of water for damping down, source of water (wherever possible from dewatering or extraction), drainage and enclosed areas
- Inventory and timetable of all dust generating activities
- List of all dust and emission control methods to be used
- Details of any fuel storage on site
- Identification of an authorised responsible person on-site for air quality. Ideally this person needs to have knowledge of pollution control and vehicle emissions
- Summary of monitoring protocols and agreed procedure of notification to the local authority nominated person(s)
- A site log book to record details and action taken in response to exceptional incidents or dust-causing episodes. It should also be used to record the results of routine site inspections

Additional Information for High Risk Sites

Details of the contractor's workforce training in areas such as health and safety, best practice methods, site housekeeping, reporting procedures and communication must be made available. All staff should have some training of on site pollution policy, perhaps as part of the site induction training.

The Specific Site Issues

A LPA may also make management of the following issues a condition of a method statement.

Asbestos

For sites with potentially asbestos-containing materials, a separate method statement will need to be produced by a specialist asbestos treatment contractor. An independent professional should approve the statement to ensure that no person at work or member of public is exposed to a harmful release of asbestos during works. Further information on asbestos control is provided and the relevant regulations are outlined.

Demolition

- Developers must notify the Building Control Team of the relevant local authority of any building demolition works under Sections 80 and 81 of the Building Act 1984. Demolition may commence after six weeks has elapsed from the submission of the notification or after the local authority has issued a counter notice, which will require certain tasks to be carried out.
- Developers should consider referring to the demolition protocol set up by the ICE (Institution of Civil Engineers) and CIWM (Institute of Waste Management). This protocol provides best practice on aspects such as building audits and use of recycled materials to be reused on site or elsewhere.

Contaminated Land

Many construction sites in London take place of brownfield sites and it may be appropriate to consider the following.

- Inclusion of contaminated land issues in the method statement, in the context of identifying potential emissions to air and protecting human health.
- Providing details of specific control measures for sites with potential contaminated land issues.
- Developers should refer to legislation and procedures such as EPA 1990, Building Regulations Approved Document C, PPS23 and CLR11 for more information.