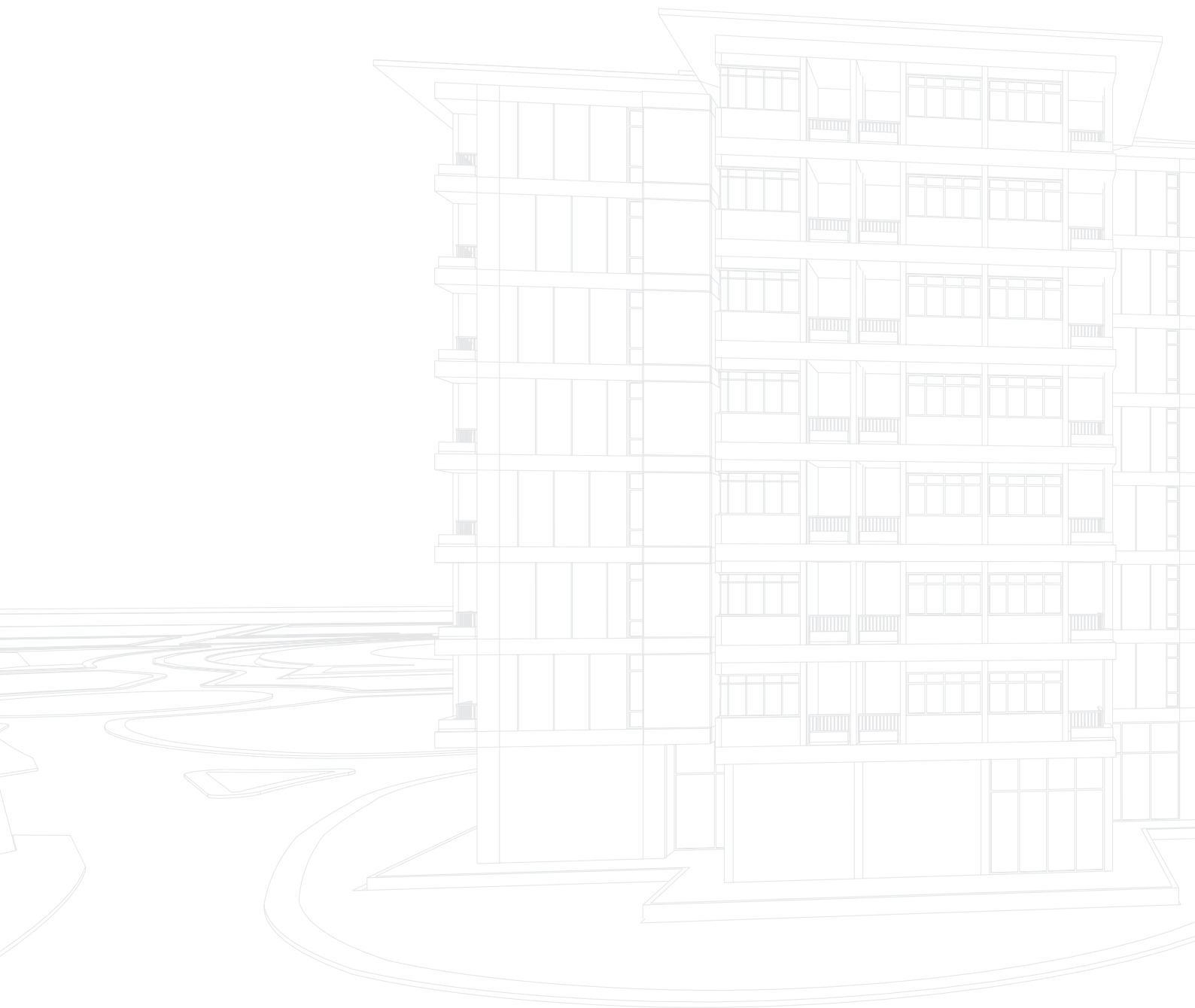




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**MAYOR OF LONDON**

# Construction Code of Practice

January 2022



# Code of Practice

January 2022

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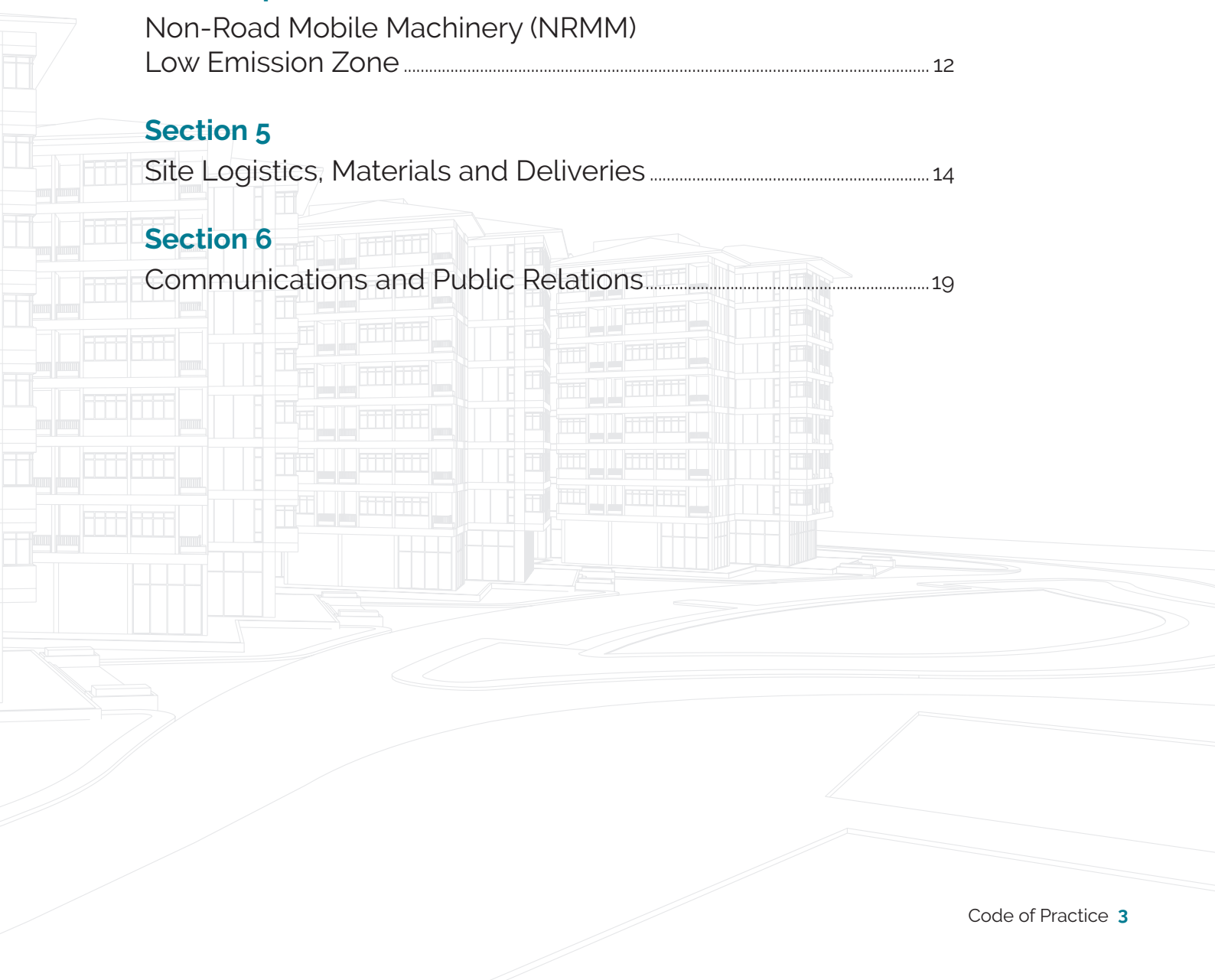
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# Section 1 Outline

## 1.1 Purpose

- 1.1.1** There is a need to ensure that surrounding residents and businesses are protected from environmental disturbance during construction and demolition works. Local Authorities can take formal action if an unreasonable level of disturbance is caused.
- 1.1.2** The *Construction Code of Practice* (the Code) is a policy of this local authority and will be attached to relevant planning approvals and building control applications.
- 1.1.3** Adherence to this Code demonstrates a positive attitude and commitment towards minimising environmental disturbance to sensitive receptors, such as local residents, schools, hospitals and businesses.
- 1.1.4** The purpose of this document is to ensure that disturbances due to noise, vibration, dust, smoke and pollutants are kept to an acceptable level without imposing unnecessary restrictions on contractors.
- 1.1.5** The Code is also intended to provide guidance in those circumstances where there is no need to implement the formal procedures detailed in Section 61 of the Control of Pollution Act 1974.
- 1.1.6** Prior agreement for works involving any deviation from this Code of Practice should be sought from your local authority before those works commence.
- 1.1.7** It is vital that sites consider the combined impact of other developments in the area.

## 1.2 Scope

- 1.2.1** The Code highlights best practice and signposts further guidance for each subject area.
- 1.2.2** The term 'construction works' in this Code applies to all site activities, including demolition and site set-up.
- 1.2.3** The Code provides advice on site logistics and deliveries to ensure that the negative effects of vehicle movements are minimised. Many Local Authorities will now request a formal *Construction Logistics Plan (CLP)*.
- 1.2.4** The Code outlines emission controls for *Non-Road Mobile Machinery (NRMM)*, introduced by the *Greater London Authority (GLA)* to help mitigate the impact of exhaust emissions from construction machinery on air quality.
- 1.2.5** Best practice on noise mitigation is outlined in Section 2, in order to satisfy the demands of the *Control of Pollution Act 1974* Sections 60 & 61 and the *Environmental Protection Act 1990* Section 80.



# Section 2 Noise and Vibration

## 2.1 Hours of work

**2.1.1** Where there are surrounding sensitive receptors, including residential and commercial premises likely to be affected by noise, the hours of noisy works shall normally be restricted to:

Monday-Friday: 08:00-18:00

Saturday: 08:00-13:00

Sunday and Bank Holidays: No noisy activities on site

**2.1.2** Scaffolding is considered as noisy work and contractors should adhere to the hours above.

**2.1.3** The Local Authority may set additional conditions, for example where planning conditions further limit hours of work, or formal Section 61 agreements apply.

**2.1.4** Instructions should be given to ensure that vehicles and plant arriving at and leaving the site comply with the stated hours of work, unless a specific alternative agreement has been reached with the Local Authority.

**2.1.5** Where particularly noisy works are scheduled and there will be a direct impact upon surrounding properties within specified times, the site manager should make contact with local residents to consult on the duration, extent and impact of the works to see if an informal agreement can be reached to minimise the duration of these works or carry them out at specific times.

**2.1.6** Dependent on the nature of the works, the Local Authority may require monitoring of noise and vibration. These arrangements will need to be discussed and agreed prior to the commencement of any work carried out on site.

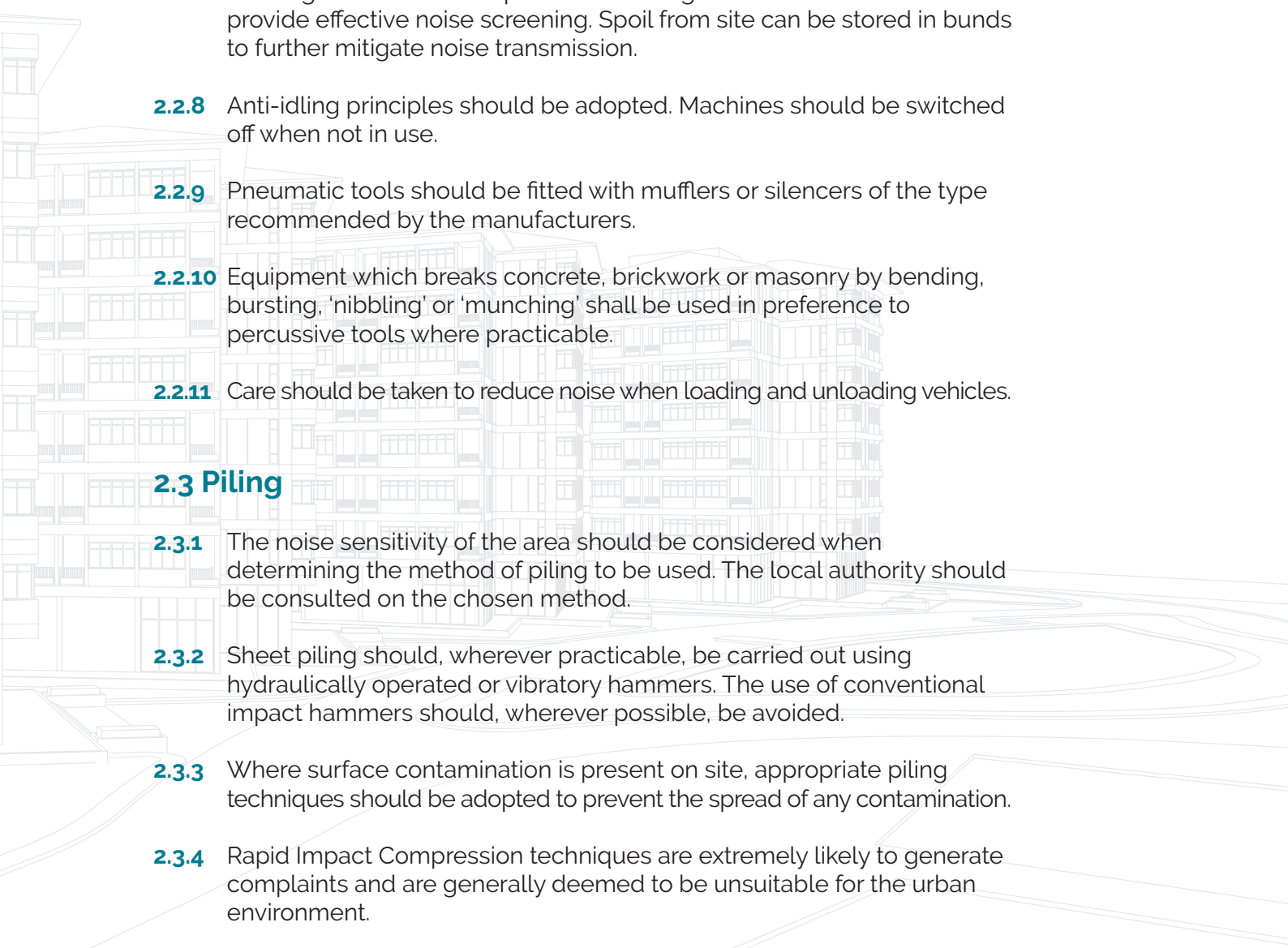
**2.1.7** The noise impact of any method of work should always be considered, and minimised where it is practicable to do so.

## 2.2 Plant and equipment

**2.2.1** Noisy plant and equipment shall be situated as far as possible from noise-sensitive receptors.

**2.2.2** Plant shall be maintained in good working order so that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum.

**2.2.3** Temporary Electrical Supplies for building sites should be used wherever possible and as early as possible. Where not feasible, evidence of this may be required by Local Authorities.

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- 2.2.4** Generators should only be used for emergencies or where mains power supply is not feasible. If use of a generator is unavoidable, these must comply with the London NRMM Low Emission Zone (see Section 4). Hybrid options should be considered to reduce engine running times. You should consult the local authority if you plan to use a generator continuously on a 24 hour basis.
- 2.2.5** Where practicable, emerging battery-powered, solar, hybrid and hydrogen technologies should be used in preference to diesel combustion engines, as they can significantly reduce both noise and air pollution arising from site.
- 2.2.6** Static machinery should be housed in a suitable acoustic lined enclosure or acoustic shed if situated in noise sensitive areas or operating at unsociable hours.
- 2.2.7** Barriers, such as site huts or partitions should be used to reduce noise reaching sensitive receptors wherever practicable. Additionally, old buildings around the site perimeter waiting to be demolished can provide effective noise screening. Spoil from site can be stored in bunds to further mitigate noise transmission.
- 2.2.8** Anti-idling principles should be adopted. Machines should be switched off when not in use.
- 2.2.9** Pneumatic tools should be fitted with mufflers or silencers of the type recommended by the manufacturers.
- 2.2.10** Equipment which breaks concrete, brickwork or masonry by bending, bursting, 'nibbling' or 'munching' shall be used in preference to percussive tools where practicable.
- 2.2.11** Care should be taken to reduce noise when loading and unloading vehicles.

## **2.3 Piling**

- 2.3.1** The noise sensitivity of the area should be considered when determining the method of piling to be used. The local authority should be consulted on the chosen method.
- 2.3.2** Sheet piling should, wherever practicable, be carried out using hydraulically operated or vibratory hammers. The use of conventional impact hammers should, wherever possible, be avoided.
- 2.3.3** Where surface contamination is present on site, appropriate piling techniques should be adopted to prevent the spread of any contamination.
- 2.3.4** Rapid Impact Compression techniques are extremely likely to generate complaints and are generally deemed to be unsuitable for the urban environment.

# Section 3 Dust and Air Pollution

## 3.1 Dust Risk Assessment

- 3.1.1** Some sites will be required to adhere to a *Dust Risk Assessment* outlining formal dust control measures, agreed with the Local Authority through the planning process. This usually sits within the site's Construction Environmental Management Plan (CEMP). Sites where there are no formal agreements in place should adhere to the principles in this Code.
- 3.1.2** Dust control measures should be proportional to risk, dependant on the proximity of receptors and their sensitivity, as well as the type, scale and duration of works. Detailed guidance on how to carry out a Dust Risk Assessment is available in the Mayor of London's *Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance (2014)*.
- 3.1.3** The control of dust should be considered in any method of works, and dust emissions minimised wherever it is practicable to do so.

## 3.2 Dust suppression

- 3.2.1** Dust pollution should be minimised by the complete screening of the site where practicable, with debris screens, sheets or hoarding at least 2.4m in height. Shielding may not be required in areas where dusty activity is not taking place. Check with the Local Authority for their requirements for the erection of hoarding.
- 3.2.2** If debris is to be stockpiled on site, it must be covered and/or damped down, and should not protrude above site hoarding or dust shielding. Consider enclosing stockpiles or seeding where stockpiles are expected to stay on site for long durations.
- 3.2.3** Ensure that vehicles transporting dusty materials to and from site are adequately sheeted.
- 3.2.4** The handling of spoil should be kept to a minimum. Skips, chutes and conveyors should be completely covered to ensure that dust does not escape, and drop heights minimised to control the fall of materials.
- 3.2.5** Particularly dusty activities should be damped down and carried out as far from sensitive receptors as possible. Ideally, cutting, grinding and sawing should not be conducted on-site and especially not at height. Prefabricated material and modules should be brought in where possible. Some tools and machinery have dust suppression built in, and should be considered where available.



- 3.2.6** The chosen method of dust suppression should be proportional to the scale of the development. Dust suppression techniques can range from hosing down, through mist cannons and on to comprehensive site-wide systems.
- 3.2.7** These measures are also reflected in the Mayor of London's *Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance (2014)*.

### 3.3 Track-out & run-off

- 3.3.1** The contractor shall ensure that the area around the site, including the public highway, is regularly sprayed and swept to prevent any accumulation of dust and dirt and to keep the surrounding area looking presentable.
- 3.3.2** Dusty areas must be damped down before being swept.
- 3.3.3** If possible only hard-standing surfaces should be used for haulage routes, and suitably located wheel wash facilities should be provided on larger sites. Drive-on wheel washing stations are the gold standard, but a manned jet wash is usually sufficient. If in doubt, consult your Local Authority on the method to be used.
- 3.3.4** Run-off from site can block local drainage, spread contaminants and later dry and turn into dust. Control measures need to be in place to prevent muddy/silty water running off site. Wheel wash areas should aim to capture or drain run-off water back onto site. The site or construction area should be bunded to prevent run-off and the spread of any contaminants to local waterways and sewers. COSHH regulations for the storage and use of hazardous substances must be complied with at all times.
- 3.3.5** Muddy sites must provide adequate boot washing facilities for staff.

### 3.4 Concrete batching

- 3.4.1** On-site concrete batching does not usually require a permit as a Part B process, but such activities should still follow best practice guidance. Notify the local authority if a concrete batcher is to be used on site and adopt appropriate control techniques identified in the Process Guidance note PG 3/01(12) *Statutory guidance for blending, packing, loading, unloading and use of cement* published by Defra and available on the GOV.UK website.
- 3.4.2** The batching process should be enclosed until mixing wherever possible, and aggregate stockpiles shielded from wind.

## 3.5 Crushing machinery

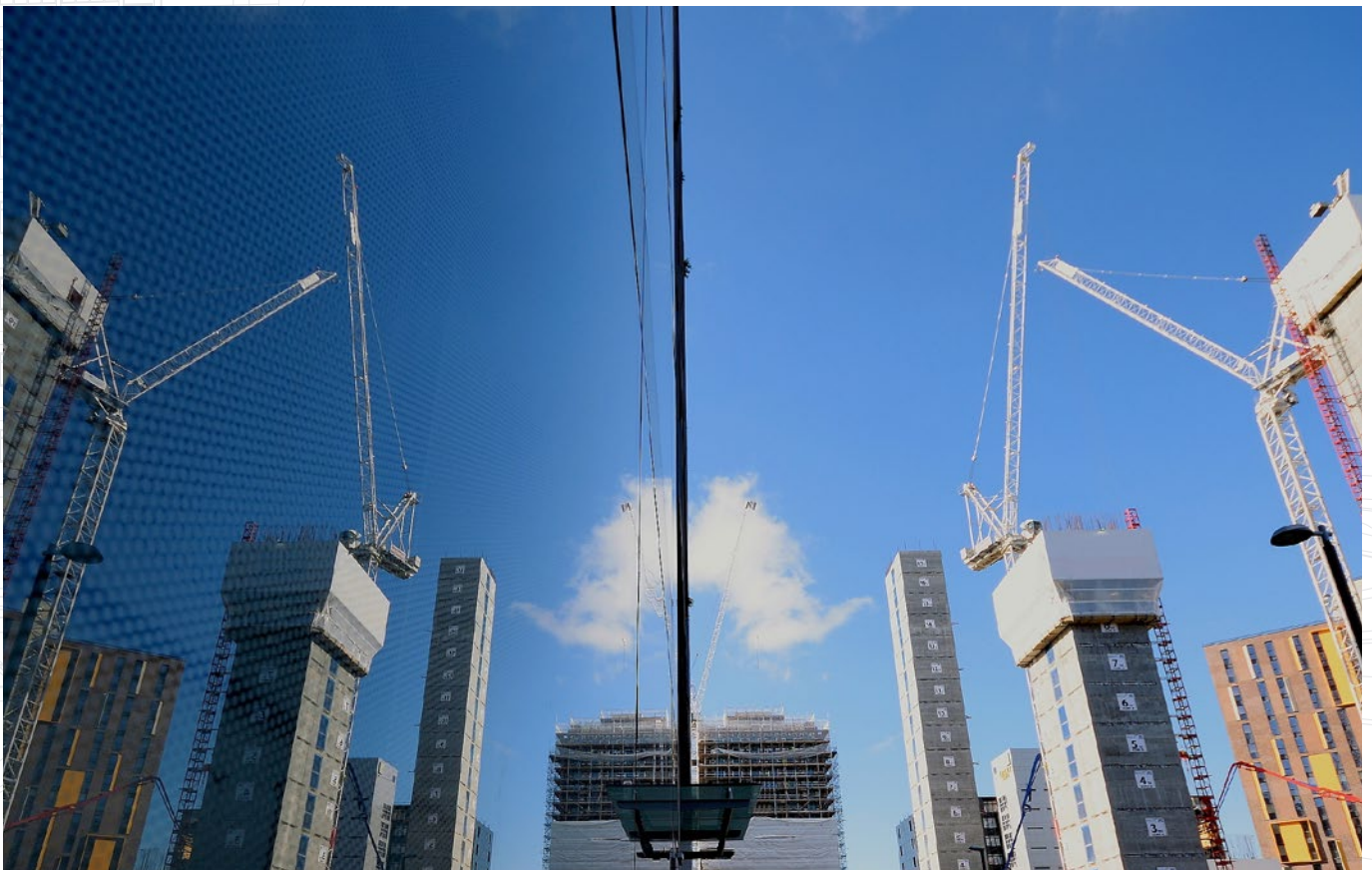
- 3.5.1** Reuse and recycling of materials on site or for neighbouring sites is encouraged where it can reduce the amount of vehicle activity. Where this is planned it should be referenced in any Construction Logistics Plan. Crushing machinery must still comply with the London *NRMM Low Emission Zone* standards outlined in Section 4 of this Code.
- 3.5.2** Any plant used for the crushing of materials should be issued with an Environmental Permit by a Local Authority. All work should be carried out in accordance with the conditions of the Permit. Where plant is used to recycle materials, the appropriate Environmental Permit, or exemption, from the Environment Agency shall be obtained. The process operator should notify the local authority in whose area the process is proposed prior to operation. Sites should keep a copy of the permit on-site and adhere to the conditions of their use at all times.
- 3.5.3** Crushers must be connected to a water supply to suppress dust.
- 3.5.4** More detailed guidance is available in Process Guidance Note 3/16(12) *Statutory guidance for mobile crushing and screening*.

## 3.6 Air pollution

- 3.6.1** Emphasis should be placed on using methods that do not cause unnecessary emissions (e.g. dust or smoke) in all site activities.
- 3.6.2** Burning of materials is not permitted.
- 3.6.3** Anti-idling principles should be adopted for air quality benefit. Suitable training and instruction should be given and signage erected to remind operators to switch off engines. Local Authorities can provide anti-idling toolkits through their London-wide Idling Action campaigns.
- 3.6.4** To prevent unnecessary pollution, sites should be connected to mains power or a Temporary Electrical Supply at the earliest possible opportunity to reduce the reliance on generators. Generators should only be used for emergencies or where a mains power supply is not feasible and electric hybrid options considered to reduce running times. Evidence of this may be required by Local Authorities. If use of a generator is unavoidable, these must comply with the London NRMM Low Emission Zone (see Section 4).
- 3.6.5** More detailed guidance on reducing emissions from machinery can be found in Section 4.

## 3.7 Air Quality Monitoring

- 3.7.1** Air quality monitoring may be agreed with the Local Authority on some sites, where there is an identified high risk of air quality impacts, including the locations and pollutants to be measured.
- 3.7.2** Continuous monitoring may be required on high risk sites, and levels set whereby emission mitigation measures must be reviewed. Local Authorities may require access to this monitoring data. Where no formal limits have been set vigilance should be kept for high concentrations of airborne dust, and regular checks should be made of the surrounding area for signs of dust escaping site.
- 3.7.3** When problems with dust levels are identified they must be addressed immediately. Mitigations could include addressing the source, suppression, containment or modifying the method of working.
- 3.7.4** Detailed guidance on monitoring best practice can be found in the *Control of Dust and Emissions during Construction and Demolition* Supplementary Planning Guidance on the Mayor of London website, and the *Institute of Air Quality Management (IAQM)* website.



# Section 4 Non-Road Mobile Machinery (NRMM) Low Emission Zone

## 4.1 Scope

- 4.1.1** Non-Road Mobile Machinery (NRMM) is defined as any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road. Generally, this includes all machinery on site that is not a HGV, van or car, even those with road going registration plates, such as forklifts and dumpers, and those that are not self-propelled, such as generators and compressors.
- 4.1.2** The London NRMM emission standards only apply to machinery of net power between 37kW and 560kW.
- 4.1.3** Although the requirements do not apply to all sizes of machinery it is good practice to apply the same standard to all categories of NRMM. Stage V diesel machinery below 37kW is available, as well as electric, diesel hybrid and hydrogen alternatives.
- 4.1.4** Anti-idling principles should also be adopted for the air quality benefit, switching the engine off when the machine is not in use.
- 4.1.5** Alternatives to diesel-powered NRMM should be considered, including electric, hydrogen, and hybrid options.
- 4.1.6** To prevent unnecessary pollution, sites should be connected to mains or temporary power at the earliest opportunity to reduce the reliance on generators and other diesel machinery.

## 4.2 The requirements

- 4.2.1** Currently all NRMM on construction or demolition sites within Greater London are required to meet at least Emission Stage IIIB and NRMM on all sites within either the Central Activity Zone (CAZ) or Opportunity Areas (OAs) are required to meet at least Emission Stage IV.
- 4.2.2** All developments must register their site, on or prior to commencement, on the Mayor of London NRMM Register here: <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm>. Machine details must also be uploaded to this register, prior to or upon their arrival.
- 4.2.3** Compliance with these standards is the responsibility of the Principal Contractor.

**4.2.4** Compliant equipment is not always readily available. In certain cases older fleet can be retrofitted with additional exhaust filters to bring them into compliance. Any retrofitted emission abatement systems must have appropriate approval from the Energy Savings Trust and reduce both NO<sub>x</sub> and PM emissions to the required levels where possible. A full list of approved products is available here: <https://energysavingtrust.org.uk/service/non-road-mobile-machinery->

**4.2.5** Where compliant equipment or retrofit are not possible, exemptions can be applied for through the NRMM Register. Exemption applications will often be required to include a written statement from the supplier detailing the reasons why compliant machinery cannot be provided. It is the suppliers responsibility to provide this justification, and the Principal Contractors responsibility to apply for the exemption.

**4.2.6** Generators are only manufactured at Emission Stages II, IIIA and V. To be compliant with the NRMM Low Emission Zone you must therefore ask your suppliers for Stage V when bringing a generator to site. If you are unable to source a Stage V generator or equivalent retrofit, written justification must be provided by the supplier detailing the reasons why these options were not possible. If a Stage V generator is possible, it must be used. Cost is not an accepted justification for an exemption except in exceptional circumstances.

**4.2.7** Exemptions are not guaranteed. Submitted evidence is reviewed on a case by case basis taking into account the nature of the request and supply at the time of the exemption request. It is advisable to check availability of compliant equipment with several suppliers.



# Section 5 Site Logistics, Materials and Deliveries

## 5.1 Managing site traffic

**5.1.1** This is an essential part of minimising the impact of a development on the local environment. If managed efficiently, it can also save on costs. When managing site traffic you must aim to minimise:

- Local traffic disruption and congestion
- Danger to other road users, particularly those that are vulnerable
- Damage to road surfaces, kerbs, planted areas and public spaces
- Air pollution and exhaust fumes

**5.1.2** Larger developments should consider improving the local road infrastructure as part of the development with the above concerns in mind.

**5.1.3** Many Local Authorities will now request a Construction Logistics Plan (CLP) approved prior to the commencement of works and normally forming part of the planning permission. This is a document that is used to plan traffic and transport to a site to ensure that the impact is kept to a minimum. These are more likely to be required in areas of high traffic density and where there have been identified air quality issues.

**5.1.4** Where there is no formal requirement for a CLP sites should adhere to the principles within this code as a demonstration of good practice.

## 5.2 Desktop survey

**5.2.1** Preparations must take place before the commencement of work to ensure that developments make the most efficient use of the surrounding road infrastructure.

**5.2.2** Before deciding on the vehicle routes to be used you must first understand the existing road infrastructure at the site location. This is like a risk assessment, but for traffic safety and congestion. You must consider:

- Surrounding road use
- Pinch points
- Traffic restrictions
- Cycle lanes
- Pedestrian walkways
- Vulnerable road users
- The proximity of schools, hospitals, places of worship, residents, and other sensitive receptors.
- Parking restrictions

**5.2.3** To make sure the logistical methods proposed in the CLP are suitable, you shall also need to understand what operations you will need to carry out on site. You need to know:

- What types and size of vehicles will need site access
- The number and frequency of deliveries expected
- Material storage necessities
- Available space on site
- Locations of cranes and major equipment associated with loading and unloading
- Expected changes to the above throughout the course of the development

**5.2.4** When planning the method of works, try to reduce the number of deliveries required to site. You can do this by:

- Recycling and reuse of materials on site
- On-site storage facilities for equipment, tools and materials that would allow reduced trips by suppliers to the site
- Common procurement or consolidated deliveries with other sites in the area
- Large developments may already have a Construction Consolidation Centre set up at a centralised warehouse facility to amalgamate deliveries before transporting a full vehicle of mixed commodities to several sites.
- Prefabrication of modules or structures where feasible.
- Rail, marine and waterway options can reduce congestion on the road. However, these options can be more polluting than cleaner road-going engines. Methods should be chosen carefully with the overall environmental impact in mind.

**5.2.5** Maps and diagrams are essential to clearly demonstrate to site operatives and the Local Authority the logistical arrangements in place. It is recommended that condensed versions are supplied to site operatives specific to the activities they carry out on site.

**5.2.6** If local signage is erected it should be in collaboration with the Local Authority. Arrangements should be made to ensure its' proper removal at completion of works.

## 5.3 Site access and egress

- 5.3.1** In addition to the impacts in the immediate vicinity of site, knock-on effects beyond the site should be considered.
- 5.3.2** Locate site entrances, exits and loading points appropriately with haulage routes in mind.
- 5.3.3** Check that the chosen haulage routes are compatible with the vehicle types accessing the site.
- 5.3.4** Where vehicle queuing cannot be avoided, this should not take place in the road or parking in such a way that will block footpaths or cycle lanes, or damage the public highway. Grass verges and kerbstones are especially prone to damage.
- 5.3.5** Consider whether there are areas that can be used as holding points on approach to the site. Such facilities enable delivery vehicles to wait safely and out of the way before being called over to deliver or collect materials.

## 5.4 Deliveries, collections, loading and unloading

- 5.4.1** Deliveries and collections should take place within the permitted hours for noisy works.
- 5.4.2** Delivery times should take into account any area-specific issues, such as commuter traffic, transport hubs and schools.
- 5.4.3** Where appropriate, use of a booking system to stagger deliveries can help avoid queuing and congestion. In order to be effective there should be consequences for deliveries not adhering to the chosen booking system.
- 5.4.4** Employ appropriately trained traffic marshals and banksmen to implement all necessary safety precautions on site and at the recognised access, exit and vehicle holding points.
- 5.4.5** Wherever possible, ensure heavy-duty equipment required for loading and unloading (e.g. Cranes, Forklifts, Telehandlers, etc.) is parked on site when not in use. Avoid parking heavy-duty equipment in the road or in such a way that it will block footpaths or cycle lanes, or damage the public highway or grass verges.
- 5.4.6** Use of local suppliers should be considered to reduce the distance travelled by delivery vehicles. This can also help to speed up delivery times and feed into the local economy.
- 5.4.7** Sharing suppliers with surrounding sites is also considered good practice.



## 5.5 Supply chain management

**5.5.1** The party responsible for control of logistical operations should be clear.

**5.5.2** Various standards and tools are available to help developers and contractors demonstrate their commitment to good practice. For example:

- Responsible contractors shall be expected to obtain Bronze membership of the *Fleet Operators Recognition Scheme* (FORS) as a minimum, in order to demonstrate that their suppliers are committed to safer and more efficient operations.
- *Transport for London* (TfL) use the *Standard for construction logistics: managing Work Related Road Risk* (WRRR), which requires fleet operators to comply with FORS Silver standard.
- Anti-idling toolkits are available through the London-wide *Idling Action* campaign.

**5.5.3** All construction site road vehicles should comply with the London Low Emission Zone (LEZ) and Ultra Low Emission Zone (ULEZ) where these standards apply.

**5.5.4** Zero emission technologies for delivery vehicles should be considered as they emerge, such as electric vans for smaller deliveries.



## 5.6 Staff travel plan

- 5.6.1** Sites should facilitate the use of low emission modes of transport and promote their use wherever possible.
- 5.6.2** Some sites may be required to create a formal staff travel plan to show how staff propose to travel to and from work. It must include specific measures as to how walking, cycling, public transport and car shares shall be promoted. This should also include an appropriate monitoring regime with set targets.
- 5.6.3** Public transport links to the site should be highlighted to staff. Consider signage and using tools such as isochrone maps. Large developments may create sufficient demand to justify the creation of new transport services. Consult Transport for London (TfL) if you feel this could be effective.
- 5.6.4** Staff-specific transport such as a minibus can be beneficial if transport links are far away or disrupted.
- 5.6.5** Bike sheds should be provided on site in a safe, secure location with adequate capacity for staff demand.



# Section 6 Communications and Public Relations

## 6.1 Communication and Public Relations

- 6.1.1** Managing communications and neighbour relations is vital to all developments.
- 6.1.2** Neighbours surrounding sites are often subjected to additional noise, dust, fumes and traffic movements. Often, unresolved disputes can escalate and in many cases play out in the public eye.
- 6.1.3** Before works commence, identify and engage with those that your development is likely to impact. This includes any person or premises in the immediate vicinity of site, but most especially:
- Vulnerable groups
  - Schools
  - Hospitals
  - Local businesses
  - Local representatives, including residents associations and elected members
- 6.1.4** Introduce the development and those responsible for managing it, at the earliest stage possible, by letter, in person or by email.
- 6.1.5** Provide regular updates to neighbours on progress of the work. Give as much notice as possible before carrying out particularly impactful works such as breaking or piling, to allow those concerned to factor this into their household plans.
- 6.1.6** Ensure there is an effective complaints procedure for concerns to be flagged and an opportunity to resolve these early on. Sites are encouraged to have named contacts for handling complaints.
- 6.1.7** Where monitoring for noise or air quality is in place, results should be shared with key stakeholders.
- 6.1.8** Large developments are encouraged to have community events.



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