



Good Practice Guide for Construction and Demolition Environmental Management



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Practice Guide for Construction and Demolition.

In order to ensure that demolition and construction work does not have an adverse impact on those living and working nearby, the following best practice guidance has been developed. All construction and demolition work has the potential to have adverse environmental impacts no matter what the scale. The following best practice guide sets out the measures which all developers should consider prior to commencement of work and provides further recommendations for the control of noise, vibration and air pollution.

Prior to the commencement of work on the site a construction and demolition plan must be developed. When developing the construction and demolition plan reference must be made to the requirements of this document

Disclaimer: This Guide does not constitute an Approved Code of Practice and it neither replaces nor provides an authoritative statement of the law or of the policies and standards of any local authority on which users should take their own advice as appropriate.

Regardless of the risk category initially assigned to a development on receipt of a complaint additional control measures may be required.

This Guide has been produced with reference to the London Good Practice Guide: Noise and Vibration Control for Demolition and Construction produced by the London Authorities Noise Action Forum, July 2016.

Early Planning During the Design Phase

During the design phase it is recommended that the constructability of any proposals considers, among other things, the practicality of employing measures that can be incorporated to minimise noise and vibration and dust nuisance.

In many cases, simple measures can be highly effective if properly planned. For example, the provision of electrical power on site can be used to avoid the later use of generators. Demolishing structures in a manner which means that any structure providing screening to neighbouring properties remains in place as long as practicable, thus minimising the noise level at that neighbouring property.

In controlling the noise from construction sites the choice of plant (i.e. controlling noise and vibration at source) and obstructing the path of noise to the receiver through the introduction of hoardings / acoustic barriers / layout design etc., are the primary considerations which need to be planned early on in the development process.

The hours of work also need to be considered in order to mitigate the effects of the noise and vibration on sensitive receptors.

The risk assessment approach described in 'Risk Assessment Approach' set out below, can further assist in early planning of construction works.

Risk Assessment

A risk based approach is to be used taking into account the locality, nature of the work and the expected duration of the work.

Risk Assessment A – Locality/Site Information

The site should be assessed in relation to the duration of the work, distance to sensitive receptors, ambient noise levels and working hours. Tick the field most likely to apply and add up the number of ticks in each column.

Risk Assessment B - Work Information

Tick the field that is most likely to represent the works in each category, add up the total number of ticks in each column.

Total Risk Assessment

The table 'total risk assessment' contains the sub-total numbers from 'Risk Assessment A and B. The column in total risk assessment with the most ticks indicates the risk category that should be employed for the site.

If two risk categories have an equal number of ticks, the higher category of the two shall apply. Once the risk category is known the 'good practice measures' outlined in this guide shall be employed

1. Locality

Identify those who may be affected by noise, including particularly sensitive locations (hospitals/schools) and determine ambient noise levels (noise maps or noise monitoring)

	Low	Medium	High
Expected duration of work			
Less than 6 months			
6 months to 12 months			
Over 12 months			
Proximity of nearest sensitive receptors			
Greater than 50 metres from site			
Between 25m and 50m			
Less than 25 metres			
Hospital or school within 100 metres			
Day time ambient noise levels			
High ambient noise levels (>65dB(A))			
Medium ambient noise levels (55-65dB(A))			
Low ambient noise levels (<55dB(A))			
Working Hours			
7am – 6pm Mon-Fri; 8am-1pm Sat			
Some extended evening or weekend work			
Some night time working, including likelihood of concrete power floating at night			
SUBTOTAL A			

	Low	Medium	High
Location of works			
Majority within existing building			
Majority External			
External Demolition			
Limited to two weeks			
Between 2 weeks and 3 months			
Over three months			
Ground Works			
Basement level planned			
Non-percussive methods only			
Percussive methods for less than 3 months			
Percussive methods for more than 3 months			
Piling			
Limited to one week			
Bored Piling Only			
Impact or vibratory piling			
Vibration generating activities			
Limited to less than 1 week			
Between 1 week and 1 month			
Greater than 1 month			
SUBTOTAL B			

	Low	Medium	High
Risk Assessment A			
Risk Assessment B			
Total			

The column in total risk assessment with the most ticks indicates the risk category that should be employed for the site.

1. General Considerations

All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.	All sites
Good Quality site hoarding should be erected, designed to maximise the reduction in noise levels	Medium and high risk sites
The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work	Medium and high risk sites
The site entrance shall be located to minimise disturbance to noise sensitive receptors, subject to traffic restrictions	Medium and high risk sites
Internal haul routes shall be maintained and steep gradients shall be avoided, where possible	Medium and high risk sites
Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management(i.e. road closure) or health and reasons (application must be made to DLR a minimum of 4 days prior to proposed works)	All sites
Use rubber linings in chutes, dumpers and hoppers to reduce impact noise	Medium and high risk sites
Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements	Medium and high risk sites
No materials shall be burned on site	All sites
Adequate dust/debris screening should be in place at the site boundary to contain and minimise the amount of windblown dust. This must be maintained in good condition at all times.	Medium and high risk sites
All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered during transit on and off site.	All sites
The site shall be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather. Where dust is likely to be a persistent problem a water spray system e.g. (IBC tanks fitted with hoses) must be put in place from the commencement of the works where required.	All sites
Dust suppression equipment must be used when point source emissions are likely.	All sites
The entry and exit points to the site should be constructed of hard standing which is regularly dampened to minimise dust emissions.	Medium and high risk sites
Use of road sweeper and/or hand held dust vacuums as required to wash external site perimeter to include pavements.	All sites
Implementation of a detailed complaints recording and handling procedure	All sites

2. Plant

Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC	All sites
Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer	All sites
Use all plant and equipment only for the tasks for which it has been designed	All sites
Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum	All sites
Power all plant by mains electricity where possible rather than generators	Medium and high risk sites
Maximise screening from existing features or structures and employ the use of partial or full enclosures for plant	Medium and high risk sites
Locate movable plant away from noise sensitive receptors	All sites

3. Vehicle activity

Ensure all vehicle movements (on site) occur within normal working hours. (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons)	All sites
Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off.	Medium and high risk sites
Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements	Medium and high risk sites
Plan the site layout to ensure that reversing is kept to a minimum	Medium and high risk sites
Where reversing is required use broadband reverse sirens or where it is safe to do so, disengage all sirens and use trained banks-men	Medium and high risk sites
Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also be carried out by the developer, as required by mechanical road sweepers	Medium and high risk sites

4. Demolition Phase

Employ the use of acoustic screening; this can include planning the demolition sequence to utilise screening afforded by buildings to be demolished.	Medium and high risk sites
If working out of hours for Health and Safety reasons (following approval by DLR) limit demolition activities to low level noise activity unless absolutely unavoidable)	All sites
Use low impact demolition methods such as non-percussive plant where practicable	Medium and high risk sites
Use rotary drills and ‘bursters’ activated by hydraulic or electrical power or chemically based expansion compounds to facilitate fragmentation and excavation of hard material.	Medium and high risk sites
Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings where possible through cutting any vibration transmission path, or by structural separation of buildings	Medium and high risk sites
Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site.	High risk sites

5. Ground Works and Piling Phase

The following hierarchy of groundwork/piling methods should be used if ground conditions, design and safety allows: <ul style="list-style-type: none"> • pressed in methods, e.g., hydraulic jacking • Auger/bored piling • Diaphragm walling • Vibratory piling or vibro-replacement • Driven Piling or dynamic consolidation 	Medium and high risk sites
The location and layout of the piling plant should be designed to minimise potential noise impact of generators and motors	Medium and high risk sites
Where impact piling is the only option utilise a non-metallic dolly between the hammer and driving helmet or enclose the hammer and helmet with an acoustic shroud	Medium and high risk sites
Consider concrete pour sizes and pump locations. Plan the start of concrete pours as early as possible, subject to DLR approval, to avoid time overruns	Medium and high risk sites
Where obstructions are encountered, work should be stopped and a review undertaken to ensure that work methods that minimise noise are used.	Medium and high risk sites
When using an auger piling rig do not dislodge material from the auger by rotating it back and forth. Use alternate methods where safe to do so.	Medium and high risk sites
Prepare pile caps using methods which minimise the use of breakers, e.g., use hydraulic splitters to crack the top of the pile.	Medium and high risk sites

6. Monitoring

Establish pre-existing levels of ambient noise by baseline monitoring or use of the noise maps.	Medium and high risk sites
Carry out regular on site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include; <ul style="list-style-type: none"> • Hours of work • Presence of mitigation measures • Number and type of plant • Construction methods Site reviews must be recorded and made available for inspection	Medium and high risk sites
Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to DLR at agreed intervals and in an agreed format. To comply with this the following must take place. <ul style="list-style-type: none"> • The initial monitoring locations must be agreed with officers of DLR and must remain in situ, unless agreed otherwise. If additional monitoring is required the new locations must be agreed with DLR. • The results of the monitoring must be forwarded to officers of DLR Environmental Enforcement Section every two weeks in the following format: <ol style="list-style-type: none"> 1. <i>Provide the construction noise level as defined in British Standard 5228 and the peak particle velocity readings for the hours of operation of the site. This will include the construction noise level for any overtime period worked outside of normal working hours.</i> 2. <i>Provide a report detailing and discussing the noise and vibration levels over the reporting period.</i> 3. <i>If a breach is recorded the follow up action that took place to prevent any further breaches must be included in the report.</i> 4. <i>This information must be provided in electronic format If results are required owing to complaints the results will be provided as soon as possible by the contractor to DLR.</i> 	Medium and high risk sites
Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM	Medium and high risk sites
The 'ABC' Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and night time work.	Medium and high risk sites
Vibration levels are recommended to be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value residents must be warned and an explanation given.	Medium and high risk sites
Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying	All sites

neighbouring properties or pathways, in so far as possible Street and footpath cleaning must be undertaken during the demolition and ground works phase	
The following air quality monitoring procedures must be applied: <ol style="list-style-type: none"> 1. Continuous real time particulate (i.e. PM10 and PM2.5) monitoring along the site boundary must be undertaken during any demolition, ground works or during a construction phase which DLR deems necessary. The location of particulate monitors to be agreed with DLR prior to installation. The results of the monitoring shall be made available to DLR on request in an agreed format. 1. Dust deposition monitoring must be undertaken using a methodology agreed in advance with DLR 	Medium and high risk sites

7. Liaison with Local Community and Businesses

Appointment of a Liaison Officer as a single point of contact to engage with the local community and respond to concerns	Medium and high risk sites
Keeping local residents and businesses informed of progress and timing of particular construction activities that may impact on them, including any special permissions given for out of hours work.	Medium and high risk sites
A copy of this plan must be sent to DLR as a matter of urgency in the case of sites 14 days in advance of commencement of works for any site	High risk sites
Send regular updates at appropriate intervals to all identified affected neighbours/ businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website including weekly noise monitoring reports	High risk sites

8. Complaints Handling

Maintenance of a site complaints log detailing <ol style="list-style-type: none"> 1. Name and address of complainant 2. Time and date complaint was made 3. Date, time and duration of noise, or other issues complained of 4. Characteristics of nuisance, such as noise rumble, clatters, intermittent, etc. 5. Likely cause or source of nuisance 6. Weather conditions, such as wind speed and direction 7. Investigative and follow -up actions, including response sent to complainant 	All sites
Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding	All sites