

April 2016



Code of Construction Practice

Minimising the Impact of Noise, Vibration and Dust

Better city life

www.rbkc.co.uk



THE ROYAL BOROUGH OF
**KENSINGTON
AND CHELSEA**

Contents

Section	Title	Page no
1.0	Introduction	1
2.0	Overview	3
3.0	Purpose of the code	4
4.0	Definitions	5
5.0	Application and scope of the code	7
6.0	General site management	9
7.0	Communication strategies and neighbour liaison	11
8.0	Site characterisation and impact	15
9.0	Permitted hours of work for construction activities	18
10.0	Minimising noise and vibration	22
11.0	Noise and vibration levels	29
12.0	Minimising dust	37
13.0	Legal requirements and Best Practice	41
14.0	Emergencies	46
15.0	Contacts	48
	Appendix 1 – High impact activities Assessment	49
	Appendix 2 – S61 Prior Consent guidance and application form	55
	Appendix 3 – Example S60 ‘Notice Imposing Requirements’	63
	Appendix 4 – List of construction plant: <i>European Directive 2000/14/EC on the noise emission in the environment by equipment for use outdoors</i>	69

1.0 Introduction

Construction work can be noisy, dusty and cause vibrations. It is, however, part and parcel of everyday life. As Kensington and Chelsea is one of the most densely populated parts of the country, where nearly 9,000 people work mainly from home (2011 Census), it is very important that we are able to ensure the negative effects of construction do not cause unnecessary disturbance to the borough's residents and businesses.

This Code of Practice sets out what we expect from anyone having or undertaking construction work in the borough. It emphasises the importance of good communication between contractors and residents, both before and during works, and details the reasonable measures we would expect any contractor to take to mitigate the impact their work will have on those living close by.

It addresses the issue of the cumulative impact of simultaneous construction sites working in close proximity within residential areas, and the difficulties faced by residents exposed to continual construction activity as new developments commence as others are completed.

The Code follows a methodical approach to construction works and sets standards to be followed. It applies specific requirements to anyone carrying out developments within the borough, including the owner or developer as well as contractors. Not all parts of this code will apply to every construction project.

The Code applies Best Practicable Means (BPM) in the context of the local conditions and circumstances of the Royal Borough where there are continual, substantial, high-value construction works, akin to civil engineering projects in densely packed residential areas. We want to promote best practice and will require applicants, developers and contractors to examine and justify their working methods against the Code to ensure that they minimise noise, dust and vibration. The Code acknowledges the need for BPM to be assessed on every site and that there should be the ability for variations to be made on a case-by-case basis.

With regard to financial implications of the Code, consideration has been given to the impact of extending the prohibition on noisy works to include Saturday mornings, and to the further restrictions on 'high impact activities'. This is likely to extend the overall duration of projects and will add to the cost of the development. It is felt that the added cost to developers and contractors is balanced by the significant benefit to residents that will be achieved by having two clear days respite from construction noise.

Advice can be sought from Environmental Health if further guidance is required. Developers and contractors are encouraged to speak to the Council, prior to works starting, to confirm how the Code will apply to their development and to discuss applying for a Prior Consent under S61 of the Control of Pollution Act 1974.

Although this Code gives an outline of legal requirements, it is not an authoritative statement of the law. Where necessary the Royal Borough will not hesitate to enforce statutory powers on property owners as well as developers.

2.0 Overview

The key elements of this Code are:

- Communication strategies and neighbour liaison are the most important factor in minimising complaints and all developers and contractors must prioritise the development of a communication strategy.
- All sites must be assessed and characterised as either Category 1, 2 or 3 (in terms of potential impact), prior to the commencement of works (as per Table 2 within the Code).
- A site's character will determine the extent of neighbour liaison, noise monitoring and whether a S61 Prior Consent is required. Category 1 sites will normally require an application for a S61 Prior Consent to be submitted.
- All construction sites will be subject to control through a notice/consent under S60 or S61 of the Control of Pollution Act 1974.
- All works audible at the site boundary must be carried out within the 'permitted hours'. The Council's 'Permitted Hours for Noisy Works' are:
 - **8am to 6pm: Monday to Friday**
 - **At no time: Saturdays, Sundays and Public Holidays**
- All 'high impact activities' (as defined within the Code, and which includes all demolition and concrete-breaking works) must be carried out within the following 'restricted hours':
 - **9am to noon and 2pm to 5:30pm: Monday to Friday**
 - **At no time: Saturdays, Sundays and Public Holidays**
- The use of powered, percussive-breaking equipment must be avoided where practicable
- Noise levels from all sites should aim to be within a daily limit of 70 dB ($L_{Aeq, 10hr}$) for airborne noise, measured at the nearest occupied premises/site boundary.
- Dust suppression and screening must be carried out to minimise the transfer of dust into neighbouring properties.
- The Code does not apply to 'DIY' works carried out by the occupier of a property.

3.0 Purpose of the Code

The purpose of the Code is to secure the best protection for the Royal Borough's residents during construction projects by:

Raising awareness of the very real problems caused by construction for local communities in our exceptionally densely populated borough

Detailing the legislation dealing with noise and vibration and how the Council will use its powers to mitigate disturbance to residents

Encouraging architects and developers to design the project from the outset so as to minimise the adverse impact on neighbours

Setting out how construction impacts should be assessed and what the Council expects for different degrees of impact

Describing what the Council considers 'best practice' for controlling noise, vibration and dust

Giving guidance on how developers and contractors should engage with the local community and deal with complaints.

4.0 Definitions

4.1 Within the code a number of terms are used, which are defined below:

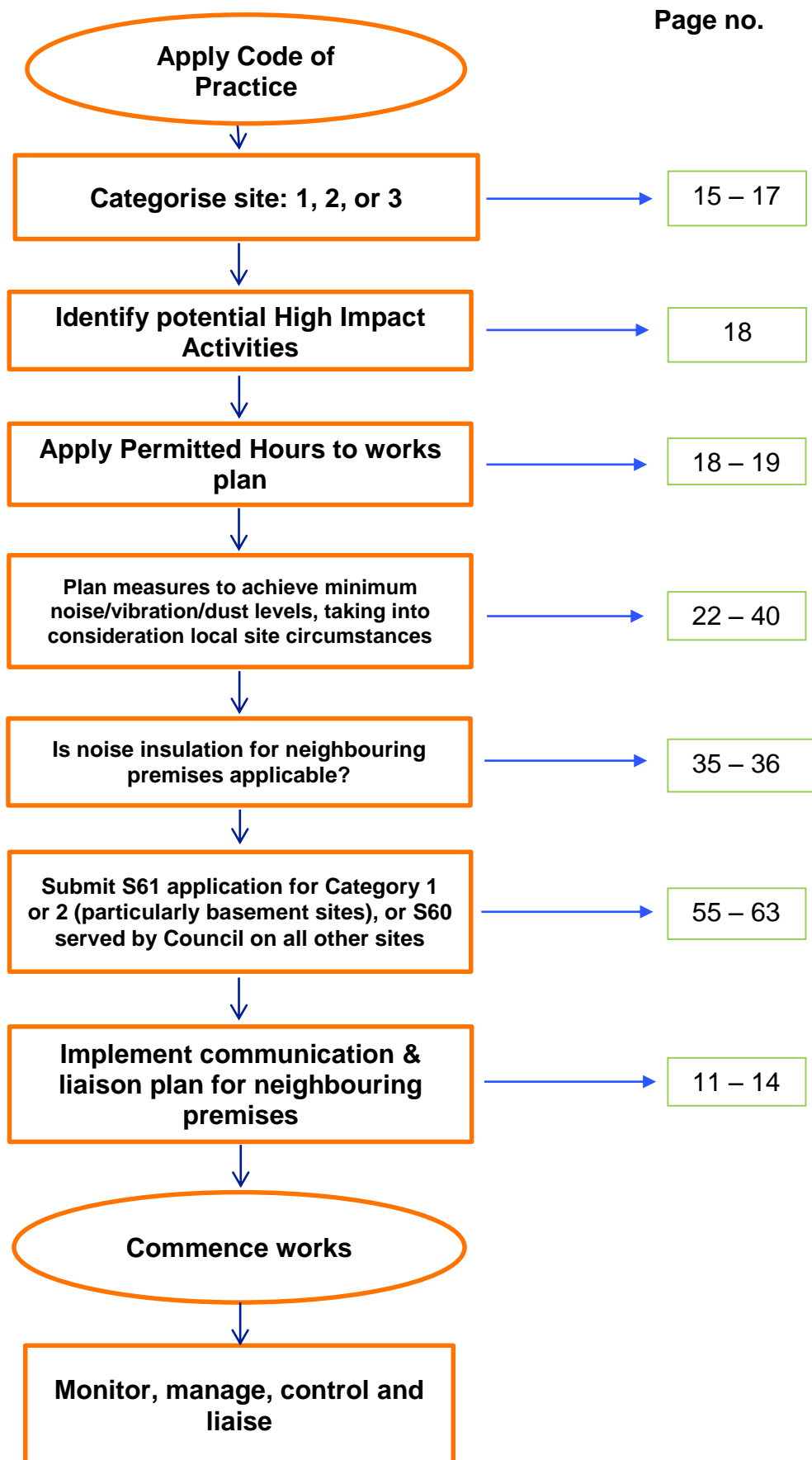
Term	Definition within this Code
Airborne noise	Noise radiated directly from a source, such as a compressor, through the surrounding air.
ATL	Action Trigger Level – a prescribed noise or vibration level at which a review of working methods should be carried out. Used to monitor and manage on-site noise and vibration generation.
Ambient noise level	The totally encompassing noise in a given situation at a given time; usually composed of noise from many sources, near and far, but excluding the noise from the construction site in question.
BPM	Best Practicable Means as defined by s.72 of the Control of Pollution Act 1974
BS5228	British Standard 5228-1 and 2:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites, Parts 1 and 2.
Category 1/2/3 sites	The categorisation within this Code that differentiates sites into three categories depending on the length and nature of the project and its likely impact (in terms of noise, vibration and dust), with Category 1 sites being of the highest potential impact and Category 3 the lowest. See Table 3 (page 17) for further details.
COPA	The Control of Pollution Act 1974
the Council/the borough	The Royal Borough of Kensington and Chelsea
High Impact Activities	Demolition, ground-breaking and excavation works using percussive equipment; percussive piling operations and percussive pile reduction and pile break-out works; percussive and grinding power tools on party walls/floors of adjoining occupied properties; any other construction activity specified by an officer of the Council’s Noise and Nuisance Team.

Term	Definition within this Code
$L_{Aeq, T}$	The continuous equivalent noise level of a time varying noise – the steady noise level which, over the period (T) in question, contains the same amount of (A-weighted) sound energy as the time varying noise, over the same period of time (T).
$L_{Aeq, 10hr}$	The continuous equivalent noise level during the borough's permitted hours: 8am to 6pm, Monday to Friday.
Large Sites	Large sites, as described in the Royal Borough's Local Plan, will generally be developments located in a commercial setting or of the size of an entire or substantial part of an urban block (an 'urban block' is generally bound by roads on all sides and can contain a mix of uses). They should be large enough to accommodate all the plant, equipment and vehicles associated with the development within the site and offer more opportunity to mitigate construction impacts on site
Noisy works	Construction work that is audible at the site boundary.
Neighbouring premises	Any occupied premises, outside or adjoining a site, used as a dwelling, place of worship, educational establishment, sensitive commercial premises or office, hospital or similar institution, or any other property likely to be adversely affected by an increase in noise level.
Permitted Hours	The hours during which noisy construction work, that are audible at the site boundary, may take place: 8am to 6pm, Monday to Friday.
Restricted Hours	The hours during which High Impact Activities, audible at the site boundary, may take place: 9am to noon, and 2pm to 5:30pm, Monday to Friday.
S60 Notice	A 'Notice Imposing Requirements', served by the Council using the powers contained in Section 60(2) of the Control of Pollution Act 1974.
S61 Prior Consent	'Prior Consent for Works on Construction Sites', issued by the Council following an application for a Consent by a developer or contractor, using the powers contained in Section 61 of the Control of Pollution Act 1974.
Site boundary	The boundary line between a construction site and an adjoining neighbouring premises.
Structure-borne noise	Noise which is emitted from a source via the structure of an adjoining building or through the ground.

5.0 Application and scope of the Code

- 5.1 This Code is applicable to all forms of construction activity carried out within the borough, as defined under S60(1) of the Control of Pollution Act (COPA):
- a) The erection, construction, alteration, repair or maintenance of buildings, structures or roads
 - b) Breaking up, opening or boring under any road or adjacent land in connection with the construction, inspection, maintenance or removal of works
 - c) Demolition or dredging works
 - d) Whether or not also comprised in paragraph (a), (b) or (c) above, any work of engineering construction
- 5.2 The requirements and guidance within the Code should be considered at the design and planning phases of a project to ensure that unforeseen costs and delays are not encountered once works have commenced. Developers and contractors should enter into discussions with the Council, and those persons (such as residents) who are or will be affected by the construction work, at an early stage to consider construction methods and whether they represent (in the context of a particular site) best practice in terms of minimising noise, vibration and dust.
- 5.3 The Code has been drafted in order ensure the minimum disturbance to the borough's residents from construction works and to encourage developers and contractors to act as good neighbours throughout projects. It is important that the requirements of the Code are communicated to all site managers, workers and sub-contractors.
- 5.4 'DIY' works – minor works, carried out by the occupier of a property – are not within the scope of the Code unless the works are of a similar scale and nature to those carried out on a typical construction site where work is being carried out by contractors.
- 5.5 Statutory Undertakers – agencies and companies that have a special legal status granted via an Act of Parliament, such as Network Rail, London Underground and other utilities and telecoms companies – are exempt from the duty within COPA to employ Best Practicable Means to minimise noise and vibration if it is not compatible with a duty (such as to operate a railway or to provide a mains water supply) imposed on them by law as a statutory undertaker. However, they should comply with the requirements of the Code as far as possible.

Overview of the application of the Code



6.0 General site management

- 6.1 To comply with the Code of Practice, the Council strongly advises that contractors appointed by the developer or owner of the premises are accredited, and work in accordance with, CHAS (Contractors Health and Safety Assessment Scheme) and the Considerate Constructors Scheme (CCS), or similar schemes. For all basement sites, the Council's planning department requires that contractors are members of the CCS.
- 6.2 Contractors should ensure that work is carried out in accordance with the CITB (Construction Industry Training Board) scheme (or similar schemes) and that all site operatives and management hold one of the following cards or other CITB recognises cards:
- CSCS (site operatives)
 - CPCS (plant operatives)
 - CISRS (scaffolders)
 - CCDO (demolition)
 - NRSWA (street works)
- 6.3 Site managers should have taken the five days SMSTS (Site Managers Safety Training Scheme) and carry a CSCS Gold Card (as a minimum). There should be at least one qualified First Aider on site.
- 6.4 Contractors must comply with all health and safety legislation including the Construction (Design and Management) Regulations ('CDM Regulations').
- 6.5 Contractors should be experienced in the type of works they are engaged to carry out, and have well-developed practices to minimise disturbance to neighbouring residents.
- 6.6 Contractors should promote a positive and enduring impression through good site management.
- 6.7 Contractors shall ensure that the site is well managed and that they fully address environmental concerns such as noise, dust, waste and pests, and the impact on neighbours and the public at all times.
- 6.8 Contractors must ensure that they comply with Construction Traffic Management Plans (CTMP) and the Highway Code to minimise the impact of deliveries. Works cannot commence on site until a CTMP has been submitted and approved.

- 6.9 Contractors shall ensure that the surrounding area is kept clean, free from dust, obstruction and hazards.
- 6.10 Contractors shall ensure that all staff on site are managed, do not shout or play amplified music, and are courteous and respectful. Contact details (including both head office and site information) for the developer, main contractor and site foreman should be made available on the site hoarding, with a 24-hour contact number provided for any emergencies.

Considerate Constructors Scheme

The Considerate Constructors Scheme is a non-profit making, independent organisation founded in 1997 by the construction industry. The Scheme's overriding aim is to improve the image of the construction industry by encouraging construction sites, companies and suppliers to voluntarily register with the Scheme and agree to abide by its Code of Considerate Practice. By registering with the Scheme and adopting its Code of Practice, contractors and sites commit to the following five principles:

- to care about appearance
- respect the community
- protect the environment
- secure everyone's safety
- value their workforce

The Scheme includes the following basic expectations, which directly relate to the aims of this document:

- ensuring that the external appearance of sites enhances the image of the industry
- being organised, clean and tidy
- enhancing the appearance of facilities, stored materials, vehicles and plant
- raising the image of the workforce by their appearance
- informing, respecting and showing courtesy to those affected by the work
- minimising the impact of deliveries, parking and work on the public highway
- identifying, managing and promoting environmental issues

7.0 Communication strategies and neighbour liaison

KEY POINTS:

- the most important factor in minimising complaints
- development of a strategy must be prioritised by all developers and contractors

7.1 Communication measures

- 7.1.1 A key factor in ensuring that the effect of any construction activity on the occupiers of neighbouring premises is minimised is a good communication strategy. This is what developers and contractors should focus on before construction work begins and during the project itself.
- 7.1.2 Liaison with the occupiers of neighbouring properties should take place before work gets underway and good communication must continue throughout the works. Disruption during a construction project may be unavoidable, but the impact will be reduced if neighbouring occupiers are consulted and informed about problems and potential solutions during each phase of the works. Often minor changes to working patterns, schedules or methods can significantly improve the experience for neighbours; contractors are therefore strongly encouraged to have a dialogue with affected occupiers throughout a project to determine what changes can be accommodated.
- 7.1.3 The extent of any liaison with the occupiers of neighbouring premises will depend upon the impact rating of the site (Category 1, 2 or 3 – see Table 2 on page 16 for details). Depending on the size of the site and impact of the project, the scale of the liaison may range from the directly adjoining neighbours for a small site, to a whole street(s) for very large developments.

7.2 General requirements – before submitting a planning application

- 7.2.1 For all projects that are assessed as being Category 1 or 2 sites, the architect or owner/developer should contact the occupiers of neighbouring premises and local residents' groups (where they exist) to notify them that construction works are proposed prior to the submission of a planning application. Contact details should be provided to enable the occupiers of neighbouring premises to have the opportunity to discuss the plans and to raise any concerns regarding noise and

disruption during the construction process so that these can be addressed at an early stage.

7.2.2 Planning applications that include significant construction work will usually be required to submit a Construction Method Statement, which should include any proposed noise, vibration and dust mitigation measures. Draft versions of this plan should be circulated to neighbouring residents; they should be made aware of the proposed mitigation measures in particular so that they can comment on this aspect and raise any specific issues that may require further consideration. Applicants should include details of consultation undertaken, issues raised and the applicant's response, including action to be taken or changes to be made or reasons why these were not accepted. Applications for basements must comply with the Council's Basement Supplementary Planning Document (SPD).

7.3 General requirements – before works commence

7.3.1 The occupiers of neighbouring premises must be informed of any works, within a reasonable time period before they start, to provide as much notice as possible of any unavoidable noise or vibration they are likely to be exposed to.

7.3.2 The following **key project information** is expected to be provided:

- the anticipated start and end date of the work
- the nature of the project
- the hours of work
- the principal stages of the project i.e. demolition, ground works, construction
- all operations that have potential to cause disturbance from noise and vibration
- approximate start and end dates of potentially noisy works
- outline details of noise and vibration mitigation steps that are to be used
- contact names and numbers of appropriate project and site personnel: developer; project manager; site manager/foreman; community liaison manager (large projects)

7.3.3 When advising the occupiers of neighbouring premises of works that, despite the use of Best Practicable Means (BPM), have the potential to cause significant

disturbance, such as concrete breaking, developers and contractors should provide the following information to neighbouring residents:

- a brief explanation of the works, and why they are necessary
- an explanation as to why quieter methods of working are not practicable
- a brief description of the character and pattern of any noise and/or vibration that might occur as a result of the works
- the general working hours of the site (ensuring they are compliant with the Council's requirements)
- the noise/vibration mitigation measures that will be in place, including respite breaks/quiet periods and noise screens/barriers
- the scheduled completion of that phase of works
- any changes to the work schedule

7.3.4 It recommended that during liaison with the occupiers of neighbouring premises the following information, which may influence schedules and work patterns for noisy work, be obtained:

- details of any vulnerable persons in neighbouring properties who may have special needs
- special occasions such as wakes, wedding receptions, children's birthday parties, etc
- home working days and/or hours

7.4 Dealing with complaints

7.4.1 The contractor is responsible for responding to complaints within an adequate time frame and where appropriate providing details of corrective action taken. On Category 1 sites, there should be regular meetings and correspondence between the contractor and the Council to monitor the progress of the works, to consider any concerns or complaints and to review noise monitoring results and, for all Category 1 sites, meetings should be held with residents and neighbours to review these results.

Table 1

Site category (see p.15-17)	Recommended communication measures and liaison strategy
3	<ul style="list-style-type: none"> • Contractor details, contact details for site manager, duration of project and site working hours displayed clearly on site hoarding • Person appointed to deal with complaints • All staff and subcontractors briefed on noise mitigation and permitted hours for noisy works, including restricted hours for High impact activities
2	<p>All Category 3 site measures and:</p> <ul style="list-style-type: none"> • Letter drops to the occupiers of neighbouring premises before work begins giving the following information: <ul style="list-style-type: none"> ➢ the start date, duration and nature of the project ➢ the principal stages of the project ➢ all significant operations that have potential to cause disturbance from noise and vibration ➢ approximate start and end dates of potentially disruptive works ➢ outline details of noise and vibration mitigation steps that are to be used ➢ contact names and numbers of appropriate site personnel • Liaison with neighbouring construction sites to co-ordinate works as far as practicable in order to minimise disruption to residents
1	<p>All Category 2 and 3 site measures and:</p> <ul style="list-style-type: none"> • Establish contact with the relevant residents' association, where they exist • Meetings with residents/other affected occupiers at appropriate intervals including before work begins • Minutes of meeting and agreed actions circulated to residents • Website with site information (where agreed with the Council) and contact email address provided

8.0 Site characterisation and impact

KEY POINTS:

- **all sites must be assessed and characterised as being within Category 1, 2 or 3 prior to the commencement of works, as per Tables 2 and 3**
- **site character will determine the minimum extent of neighbour liaison, noise monitoring and whether a S61 Prior Consent is required**

- 8.1 At the planning stage and prior to any work beginning on site, developers and contractors must liaise with the Council's Noise and Nuisance Team in order to agree best practice and noise mitigation measures, community liaison and to confirm the borough's requirements regarding working hours. It should also be the stage at which consideration must be given to submitting an Application for Prior Consent (under S61 Control of Pollution Act 1974) to the Council – see page 16 and Appendix 2 for further details.
- 8.2 The scope of community liaison, noise mitigation and restriction of working hours will be dependent on the impact the project will have on neighbouring premises. The impact an individual site will have on neighbouring premises will be dependent on a number of factors including:
- the nature of the works
 - the methods and techniques to be employed
 - the plant and equipment that will be used and level of noise they will produce
 - the duration of the proposed works
 - the number and proximity of neighbouring premises
 - the existing level of ambient noise
 - the number and type of construction sites operating in the vicinity
- 8.3 The proposed site should be assessed against the triggers/indicators in Table 2 to determine the project's appropriate site category: Category 1, 2 or 3.

8.4 Developers and contractors should agree the site categorisation at the earliest possible stage with the Council – see Table 3 for site categorisation criteria.

Table 2

Site Categorisation	Section 61 Application
Category 1 site	Should be submitted
Category 2 site	Should be considered
Category 3 site	Not required

Table 3

	Table 3			
Site Categorisation	Category triggers/indicators			
	Scale/Nature of Project	Site activities and plant	Project duration	Number, sensitivity and proximity of premises and existing noise levels
<p>CATEGORY 1</p>	<ul style="list-style-type: none"> • Full demolition and re-construction of a property • Basement excavation or extension • Use of full-size piling rig for three months or more 	<ul style="list-style-type: none"> • Demolition of reinforced concrete; break-up of significant areas of concrete; percussive breaking methods used • Significant use of full-sized piling equipment (CFA, Secant, etc) • Pile reduction using percussive methods • Tracked-plant and non-handheld breaking equipment. • Pneumatic tools/breaking equipment • Significant bulk excavation (i.e. 5m+ depth) using excavators • Significant on-site cutting of steelwork and rebars • Six months plus of concrete pours • On-site permitted concrete crushing Environmental Permitting (England and Wales) Regulations 2010) • Limited/no connection to the grid – significant use of generators/compressor plant 	<p>12 months+</p>	<ul style="list-style-type: none"> • Shared party wall • Site wholly within a residential area • Three or more Category 1 or Category 2 sites within 50 metres • Existing ambient noise levels are low: site away from trunk routes main roads, railways and other noise sources • Site adjoins a school, hospital, care home or similar sensitive site
<p>CATEGORY 2</p>	<ul style="list-style-type: none"> • Partial demolition • Multi-floor above-ground extension • Minor basement extension within property curtilage - estimated volume of excavated basement material less than 50 m³ 	<ul style="list-style-type: none"> • Bulk excavation by hand • Limited use of percussive breaking methods; demolition mainly by pulverising and munching equipment, or hand tools • Use of electrically power equipment rather than pneumatic tools • Mains power available; limited use of generators • Up to six months of concrete pouring • Percussive works on party wall for significant periods 	<p>Three to 12 months</p>	<ul style="list-style-type: none"> • Predominantly residential area
<p>CATEGORY 3</p>	<ul style="list-style-type: none"> • Internal refurbishment works • Cosmetic external works 	<ul style="list-style-type: none"> • Mainly decorative: plastering, painting, fitting out works • Generally non-structural in nature • Building envelope intact during works • Some noisy works, but limited to small-scale carpentry, electrical and plumbing and fit-out works using handheld power tools • Mains power available • less than one month of concrete pouring 	<p>under three months</p>	<ul style="list-style-type: none"> • Detached property • Mixed residential/commercial area • Site located on trunk route or main road, and/or adjacent to railways line • No other Category 1 or Category 2 sites within 50 metres

9.0 Permitted hours of work for construction activities

KEY POINTS:

- **noisy works audible at the Site Boundary must be carried out within the 'Permitted Hours'**
- **all 'High Impact Activities' must be carried out within the 'Restricted Hours'**

9.1 The following Permitted Hours for 'noisy works' apply to construction work audible at the Site Boundary (or, in occasional circumstances and as agreed with the Council, at the boundary with the nearest occupied property).

9.2 The Permitted Hours for 'noisy works are:

PERMITTED HOURS FOR NOISY WORKS

8am to 6pm
At no time

Monday to Friday
Saturday, Sunday and Public Holidays

9.3 The collection of construction and demolition waste and the delivery of concrete are also defined as noisy work/site activities that will not be permitted other than during the permitted hours. This will also enable parking suspensions and skip licences to be limited to these working hours.

9.4 In addition to the above permitted hours, further restrictions are placed on works deemed to be of '**High Impact Activities**' in terms of the level of disturbance caused to neighbouring residents and businesses. This is to ensure that nearby occupiers have sufficient breaks from activities that can be extremely disruptive.

9.5 Works and processes have been deemed 'High Impact Activities' on the following basis:

- Noise data within Table C of BS5228, examples given in Appendix 1, indicates that if the equipment was used continuously for two hours it would likely produce noise levels in excess of 70 dB ($L_{Aeq,10hr}$) at the nearest occupied premises.
- The character of the noise produced by the process (e.g. highly impulsive, low frequency, etc.) is particularly disturbing.

- Significant structure-borne noise and vibration, that is difficult to suppress, will be generated in adjoining properties.

Potential High Impact Activities:

- **Demolition, ground-breaking and excavation works using percussive equipment;**
- **Percussive piling operations and percussive pile reduction and pile break-out works;**
- **Percussive and grinding power tools on party walls/floors of adjoining occupied properties;**
- **Any other construction activity specified by an officer of the Council's Noise and Nuisance Team**

9.6 The restricted hours of work for high activities works are:

RESTRICTED HOURS FOR HIGH IMPACT ACTIVITIES

**9am to noon and 2pm to 5:30pm
At no time**

**Monday to Friday
Saturdays, Sundays and Public Holidays**

- 9.7 There may be sites where, following discussion and agreement with the affected occupiers of neighbouring premises, high impact activities can take place throughout the normal permitted hours without restriction or with shorter breaks due to the individual circumstances of the occupiers. The process of establishing alternative or extended working hours for high impact work should begin at an early stage and must, when agreement cannot be reached, include liaison with the Council.
- 9.8 If it can be demonstrated that due to the distance to the nearest occupied premises, or through the use of noise mitigation measures and best practice, noise levels (both airborne and structure-borne) from 'high impact activities' can be kept below 70 dB ($L_{Aeq,10hr}$), then restricted hours may not apply. Evidence will be required to be

submitted to the Noise and Nuisance team for review prior to commencement in order to determine whether the restrictions will apply.

Exceptions to the Code

9.9 The Council acknowledges the need for Best Practicable Means (BPM) in the assessment of every site and the ability, in some circumstance, for variations to be made with regard to the individual sites:

- Projects and other essential works carried out by Statutory Undertakers such as: Crossrail, Thames Tideway Tunnel, London Underground and National Rail works, TfL trunk route maintenance and road improvement works where it is essential that contractors are not encumbered by restrictions that would unreasonably delay the progress of works that have significant public benefits. Much of the flexibility that must be given is a matter of law, and not a matter of choice. Whilst the Council will still seek to ensure that the occupiers of neighbouring premises are protected as far as practicable, it will also have to consider the utility of the works and their wider context. It will also need to consider other neighbouring boroughs where works cross local authority boundaries and where collective agreements on working methods, noise levels and hours have been agreed between the boroughs and those carrying out the works.
- Sites where, following discussion and agreement with the affected occupiers of neighbouring premises, high impact activities can take place throughout the normal permitted hours without restriction or with shorter breaks due to the individual circumstances of the occupiers. The process of establishing alternative or extended working hours for high impact activities should begin at an early stage and must include liaison with the Council.
- 'Large Sites', as described in the Royal Borough's Local Plan (Section 34.3.56), will generally be developments located in a commercial setting or of the size of an entire or substantial part of an urban block (an 'urban block' is generally bound by roads on all sides and can contain a mix of uses). They should be large enough to accommodate all the plant, equipment and vehicles associated with the development within the site and offer more opportunity to mitigate construction impacts on site. Works on such sites will be considered as part of a S61 application and balanced against the disruption that large-scale construction will cause the neighbours.
- Additional consideration will be given to Large Sites where large redevelopment projects would benefit from shorter timescales enabling the overall project to be completed in a shorter time allowing people who have been asked to move out of

their homes during the project are able to return to their homes in less time. The Council will be mindful of its general duty to promote wellbeing and obligations attached to the planning permission granted for the development as well as the specific circumstances of the site and its location.

10.0 Minimising noise and vibration

KEY POINTS:

- **the quietest available equipment and methods must be used in conjunction with noise barriers and mitigation measures**
- **the use of percussive breaking equipment must be avoided wherever possible**
- **robust justification must be provided in circumstances where quieter method of working are deemed not practicable**

General requirements

- 10.1 The Council requires that the best practicable means should be employed at all times to reduce noise to a minimum. As detailed in this Code, Section 72 of the Control of Pollution Act 1974 provides the definition of 'best practicable means'.

Simple measures to reduce the noise levels on site include:

- hiring equipment from reputable companies who can supply new, well-maintained plant.
- locating noise-generating fixed plant as far away from sensitive premises as possible
- arranging for materials, such as flagstones and steelwork, to be cut off-site where practicable
- ensuring that an appropriate electricity supply exists before any work involving demolition or excavation starts, so that generators are not necessary
- avoiding the unnecessary revving of engines, motor-driven tools and equipment
- switching off plant, vehicles and equipment when they are not in use

Simple measures to reduce the noise levels on site include:

- the use of rubber-lined chutes and dumpers to reduce impact noise
- the use of electrically-driven conveyors and concrete mixers
- the use of temporary builder's power supply instead of electrical generators
- effective use of temporary noise screens and barriers
- staff and management 'quiet practices' training
- ensuring site vehicles (and suppliers vehicle fleets) are fitted with broadband white noise reversing alarms
- ensuring the movement of plant and vehicles onto and around a site,

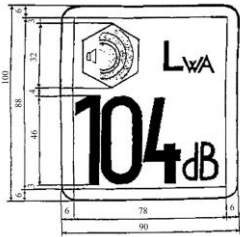
General requirements – plant, machinery and equipment

10.2 The use of mechanical/powered plant and equipment is the main source of noise from construction sites. It is therefore essential that the quietest equipment is selected and that it is well maintained in accordance with the manufacturer's instructions.

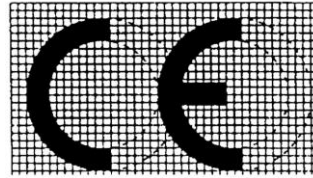
European Directive 2000/14/EC on the noise emission in the environment by equipment for use outdoors harmonizes noise emission limits and labelling requirements (at the point of manufacture) for certain types of equipment across the EU in order to protect the environment and persons. 57 types of equipment are covered by the labelling requirements of the Directive, with 22 having noise emission limits that must be complied with by the manufacturer.

10.3 All relevant equipment must bear the CE marking and the indication of the guaranteed sound power level (and should be accompanied by an EC declaration of conformity).

- 10.4 Contractors must ensure that any equipment covered by the Directive displays the following models of the CE Marking of Conformity and of the indication of the guaranteed sound power level:



Sound power guarantee label



CE Marking of Conformity

- 10.5 Appendix 4 lists the construction equipment that must comply with the stated noise emission limits within Directive.
- 10.6 All plant and machinery must be properly silenced and maintained in accordance with the manufacturers' instructions and, where no noise emission limit is set by the EU Directive, it should comply with the generic plant noise emissions in Annex C of BS 5228.
- 10.7 It is recommended that plant and equipment in frequent use is replaced every three years to ensure that noise levels are minimised by using the most efficient and well-maintained machinery.
- 10.8 All plant and machinery must also comply with the Non-Road Mobile Machinery (Emission of Gaseous and Particulate Pollutants) (Amended) Regulations 2014 in relation to emissions.

Noise mitigation measures – acoustic enclosures, sheds and screens

Annex B of BS 5228 provides practical guidance on methods of reducing noise, both at the source and along the transmission path. Correctly designed and installed acoustic sheds, enclosures and screens can achieve reductions in noise levels of 5 to 15 dB (A-Weighted). Developers and contractors should consult the specifications contained within Annex B when designing noise mitigation measures such as acoustic sheds, enclosures and screens.

A number of manufacturers now supply lightweight weatherproof acoustic fencing panels that can be attached to temporary metal fencing that is found on many construction sites, and which can achieve noise reduction levels of 10 to 15 dB(A). Panels can be attached in multiple layers to achieve higher levels of attenuation around particularly loud noise sources. These systems are relatively mobile, allowing noise screening to be moved as works progress (i.e. around concrete breakers and angle grinders) and to be adjusted as a project progresses and site circumstances change.

Key construction processes and equipment

This section details the methods that architects, developers and contractors should consider when planning projects in order to minimise noise and vibration from the construction processes that have been identified as often requiring the use of plant, equipment and techniques causing significant disturbance to surrounding residents

Demolition

- 10.9 Contractors carrying out demolition works should utilise non-percussive techniques (e.g. electric and hydraulic pulverisers) where practicable.
- 10.10 Equipment that demolishes structures by crushing, bending, shearing, cutting or hydraulic splitting should be used. Specifically, structural concrete and superstructures should be demolished using equipment fitted with 'pulveriser'/'munching' attachments.
- 10.11 Where practicable, building elements should be detached from a structure and lowered to ground level.

Concrete breaking and floor slab removal

- 10.12 As with demolition works, the breaking-up of concrete and the removal of floor slabs must be carried out using non-percussive techniques where practicable. Where

practicable, slabs should be levered from their position/location, removed from site and broken- up/crushed off-site. Where this is not practicable and where the structural transmission of noise and vibration generated by percussive breaking into adjoining premises is likely, concrete slabs should be cut and separated around their perimeter to isolate the slab from the rest of the structure.

10.13 Where percussive breakers are used, multiple breakers must be employed where practicable in order to minimise the time taken to break concrete and floor slabs. The use of two breakers (rather than one) can halve the time taken to carry out the works while leading to a small (+3 dB) increase in noise levels that are unlikely to be perceived as significant by affected residents. Communication with neighbouring residents during concrete breaking is essential so that works can be planned so as to minimise the disturbance to residents as far as practicable.

Piling

10.14 Common piling methods used within the borough include:

- Traditional augered piling
- Continuous Flight Augered (CFA) piling
- Secant piled walls and diaphragm walls
- Rotary piling

10.15 The majority of piling techniques require the reduction and cropping of individual piles once they have been formed. Traditional pile reduction and cropping involves the use of percussive breakers to trim the concrete down to the required level, which is an inherently noisy process. However, much less disruptive methods are available and **must** be considered at the design and planning stages of projects so that disturbance to residents is minimised.

10.16 Non-percussive pile reduction techniques, which significantly reduce noise levels and which in many cases are quicker than traditional pile reduction carried out with percussive breakers, include hydraulic cropping, the 'Elliott' and 'Recipeux' methods. Contractors must consider the use of these methods and implement them where practicable to demonstrate that best practicable means is being implemented to reduce noise levels.

Excavation/spoil removal

- 10.17 For very small open excavations, or those taking place in restricted spaces with limited headroom, removal of spoil by hand is common. Soil conditions may necessitate the use of pneumatic breakers or high pressure air 'spades' to break-up well consolidated soil for removal, which require the use of compressor plant. When selecting compressor equipment and planning its location, care must be taken to ensure that noise exposure for residents is minimised; the use of purpose-built acoustic enclosures and barriers must be considered.
- 10.18 The use of mechanical plant is envisaged for the excavation of larger volumes of spoil where site conditions permit. Excavation plant must be switched off when not in use and must be subject to regular maintenance checks and servicing.
- 10.19 Spoil conveyors must be electrically powered and the drive motor should be located as far away from neighbouring properties as practicable or fitted with sound insulation treatments. Conveyors must receive daily maintenance checks to ensure that excessive noise (e.g. squeaks from rollers and belts) is not generated; a service contract must be maintained with any conveyor supplier to ensure that worn parts are replaced quickly. Conveyors must be switched off when not in use.

Concrete pours

- 10.20 The size and scale of concrete pours is dictated to a large extent by the design of a building. Care must be taken at an early stage to ensure that the structural design, and resulting construction/daywork joints, are such that the required concrete pours are of a volume that can be completed within permitted hours. A contingency period must also be factored in for events such as concrete pump failures, batching plant delays and traffic congestion affecting deliveries.
- 10.21 In order for concrete deliveries and concrete pours to be completed within the permitted hours contractors must have in place a protocol with the concrete supplier and/or concreting subcontractor to ensure that sufficient contingency is allowed, to consider pour size, delivery times and concrete placement, and mix workability so that works do not overrun the permitted hours.

Steelwork and reinforcing bars

- 10.22 All fabrication and cutting of steelwork should take place off-site. Where this is not practicable, contractors should carry out any cutting within a mobile acoustic enclosure. Reinforcing bars must normally be cut to the required lengths and shapes prior to site delivery to minimise any necessary site trimming. Should site cropping

of rebar be necessary then hydraulic or pneumatic shears should be used in preference to angle grinders.

Electrical generators and air compressors

- 10.23 The use of electrical generators and air compressors at construction sites often cause noise complaints, which is often due to very intrusive low frequency components of the sound that they emit. The low frequency sound that is produced is difficult to control and reduce and can travel considerable distances and penetrate neighbouring buildings without reducing significantly in level. It can cause severe disruption in nearby buildings which is exacerbated by the long periods that the equipment may be in use; it is sometimes also associated with a disturbing ground-borne noise and vibration.
- 10.24 For these reasons, such equipment is not judged to meet Best Practicable Means unless it can be demonstrated that its use is unavoidable. Where it is unavoidable these items of plant must, where practicable, be located within the site itself; they should only be placed on the highway (subject to obtaining the necessary permission and licence from the Council's Highways and Parking departments) when absolutely necessary.
- 10.25 If no mains electricity supply is available at a site at the commencement of works the Council expects contractors to apply for a **temporary builder's power supply** until a permanent supply is installed. This should be arranged well in advance of works commencing to avoid the need for electrical generators on site.
- 10.26 It will need to be demonstrated that all generators or compressors used are the quietest available 'super- or ultra-silent' units that incorporate sound attenuating acoustic enclosures and/or other sound reduction techniques, such as inlet and exhaust sound attenuators and sound insulation and acoustic lagging.
- 10.27 As already highlighted, plant of this type often produces significant levels of low frequency noise; this must be considered when locating the plant and when designing any additional noise mitigation measures. Generators and compressors must be switched off when there is no demand on site.
- 10.28 Consideration must also be given to isolating compressors and generators from the floor to prevent the transmission of ground-borne vibration and noise into adjoining properties.

11.0 Noise and vibration levels

KEY POINTS:

- **airborne noise and vibration monitoring should be carried out on Category 1 sites during noisy phases of work, subject to agreement with the Noise and Nuisance Team**
- **noise levels from all sites should aim to be within a daily level of 70 dB ($L_{Aeq, 10hr}$) for airborne noise at the nearest occupied premises/site Boundary**
- **a first Action Level Trigger of 73 dB ($L_{Aeq, 1hr}$) should be used**

11.1 General requirements – noise levels

11.1.1 For sites categorised as being within ‘Category 1’, the Council will normally require noise limits for airborne noise to be set and monitored. For a ‘Category 2’ site, it is recommended that noise monitoring is considered, particularly during high impact activities such as concrete breaking and demolition.

11.1.2 Unless existing ambient noise levels are already high (>65 dB, $L_{Aeq, 10hr}$), such as sites in mixed commercial/residential areas or those that are close to major roads, noise levels from all sites should aim to be within a daily level of 70 dB ($L_{Aeq, 10hr}$) for airborne noise when measured at the nearest sensitive premises/site boundary. A first Action Level Trigger of 73 dB ($L_{Aeq, 1hr}$) should be used to ensure daily levels are within the 70 dB ($L_{Aeq, 10hr}$) level.

11.1.3 It is acknowledged that structure-borne noise, such as that generated by works directly on to party walls or internal floor slabs shared by multiple properties, is difficult to accurately predict and that there are very few mitigation measures that can be implemented. Additionally, measurement of structure-borne noise levels at the site boundary (or within the nearest occupied premises) poses a number of practical difficulties.

11.1.4 For these reasons, the noise levels and monitoring regimes detailed within this section apply only to airborne noise as measured at the site boundary or free-field one metre from the facade of the nearest occupied premises (or at some other location as agreed with the Council). The impact of structure-borne noise should be

mitigated by employing low-impact techniques and by limiting works to the ‘restricted hours’ for high impact activities.

Table 4

Site Categorisation	Noise monitoring
<div style="border: 1px solid black; background-color: #e67e22; padding: 5px; display: inline-block;">Category 1</div>	<p>Should be carried out – to be agreed with Noise and Nuisance Team</p>
<div style="border: 1px solid black; background-color: #f1c40f; padding: 5px; display: inline-block;">Category 2</div>	<p>Should be considered</p>
<div style="border: 1px solid black; background-color: #27ae60; padding: 5px; display: inline-block;">Category 3</div>	<p>Not required</p>

11.2 Predicting noise levels

11.2.1 Prior to any works starting on a site that requires noise monitoring, a noise survey must be carried out to establish existing ambient noise levels during the hours of construction. This data will allow the likely effects of the various construction activities to be assessed and will determine whether ambient noise levels exceed 65 dB ($L_{Aeq, 10hr}$).

11.2.2 Annex F of BS 5228-1 sets out a number of methods for predicting noise levels from construction activities. These should be used to estimate the likely daily noise level ($L_{Aeq, 10hr}$) at the nearest sensitive premises; a report should also be prepared which includes the details of any predictions and which must include a statement advising whether the 70 dB ($L_{Aeq, 10hr}$) level will be met or not. Any noise predictions, noise survey and report must be prepared by a competent acoustician who is a member of the Institute of Acoustics.

11.2.3 It is anticipated that, in most situations, compliance with the 70 dB ($L_{Aeq, 10hr}$) daily noise level will be achievable through a combination of the use of BPM to minimise noise and the implementation of restricted hours for high impact activities. In circumstances where the daily 70 dB level cannot be met by employing Best

Practicable Means and reasonable breaks in noisy works, then an agreement will be required from the Noise and Nuisance Team on alternate levels and their duration. A daily noise level of 75 dB ($L_{Aeq, 10hr}$) will be considered for high impact activities if it can be demonstrated that BPM has been fully adopted and that breaks in high impact activities, greater than those stipulated within this Code, would unreasonably impede the progress of works.

11.2.4 Situations may arise where daily levels above 75 dB ($L_{Aeq, 10hr}$) are unavoidable (even after employing BPM and reasonable breaks), such as when demolition of reinforced concrete structures takes place in close proximity to neighbouring properties. These activities should be identified at an early stage with an estimate of how long the work will take to complete and the predicted daily noise level.

11.3 Noise monitoring

11.3.1 Where noise limits and monitoring are to be carried out, a noise (and, where necessary, vibration) monitoring protocol and specification must be agreed with the Council prior to works commencing on site. It may only be necessary for monitoring to be carried out during the high impact phases of works. Monitoring should be made available to the Noise and Nuisance Team and any relevant residents' groups.

11.3.2 Annex G of BS 5228 provides guidance on noise monitoring and the methods that can be used depending on the size and context of the site. Two basic monitoring methods are described:

- permanent monitoring of noise levels at fixed locations, which can be routinely checked against the daily noise limits
- sampling techniques used to estimate the $L_{Aeq, T}$ over similar periods

11.3.3 It is acknowledged that permanent monitoring will not always be either practicable or necessary, particularly where noise levels are predicted to be well within the daily noise limit for the majority of the development. It may only be necessary for monitoring to be carried out during 'high impact' works.

11.3.4 For Category 1 sites, with significant noisy works over a long duration, the following noise monitoring scheme is deemed to be appropriate:

Unattended noise monitoring

- Installation of two semi-permanent Class 1 sound level meters at appropriate site boundary locations, continuously monitoring a range of noise metrics, including L_{Max} , L_{Min} , L_{Aeq} , L_{A90} , at 15-minute intervals.

- Provide alerts via SMS when levels breach specified noise levels (first Action Trigger Level - 73dB , $L_{Aeq,1hr}$) or are reaching the daily noise levels (70dB, $L_{Aeq,1hr}$), allowing site staff to undertake immediate investigation and take remedial action where necessary.
- Provision of weekly/monthly reports to the Council on request, detailing daily noise emissions, and listing and discussing of any noise level triggers by text alert.

Attended noise monitoring

- Attended noise monitoring at representative locations for a period of one hour per month for the duration of the high impact work elements of a project.

11.4 General requirements - vibration prediction and limits

11.4.1 Vibration can be a significant source of disturbance for those adjacent to sites. Site circumstances and the nature of works being carried out will determine whether vibration will be significant. Heavy demolition, breaking-up of large areas of concrete (particularly reinforced concrete) in the ground and certain types of piling are typically the processes that generate complaints regarding vibration. Often affected parties will be located in properties that are structurally connected to the development site, by shared foundations or party walls (for example). This provides a transmission pathway for vibration to be transferred into the adjoining property.

11.4.2 Very low magnitude vibrations can be perceptible and can affect the satisfactory performance of certain sensitive activities (e.g. hospitals, recording studios, laboratories). There is often a perception that, if vibrations can be felt, then damage to a property is likely. This can lead to significant concern from the occupiers of neighbouring property that is disproportionate to the actual level of risk; significantly higher levels of vibration, well above the threshold at which they can be felt, are necessary in order for even cosmetic damage to buildings to occur. However, complaints may arise unless prior advice and information on the effects of vibration has been given to neighbouring occupiers. Damage, such as cracking of plastered walls and structures, may occur due to ground movement caused by the construction of basements rather than vibration caused by plant and equipment.

11.4.3 British Standard BS 5228-2:2009 provides guideline peak particle velocities (PPV) for assessing the impact of construction vibration; PPV is the preferred metric for assessing the impact on affected residential occupiers:

Table 5

Vibration Level (PPV)	Effect
0.14 mms^{-1}	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3 mms^{-1}	Vibration might be just perceptible in residential environments.
1.0 mms^{-1}	It is likely that vibration at this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.
10.0 mms^{-1}	Vibration is likely to be intolerable for any more than a very brief exposure to this level.

11.4.4 It is acknowledged that the prediction of vibration prior to works commencing is extremely complex and calculating accurate levels in adjoining properties is difficult.

11.4.5 The Council will require vibration monitoring where site activities and circumstances are such that the impact of vibration on occupiers of neighbouring properties is assessed as likely to be significant. Early discussions with the Council should be used to confirm whether vibration is likely to be significant and that monitoring is required.

11.4.6 In terms of human response, demolition or construction vibration is rarely continuous and repetitive but will consist of intermittent events. Continuous flight auger ('CFA') or bored piling rarely generates any significant vibration effects.

11.4.7 Annexe E of BS 5228-2 provides a method for predicting vibration from vibratory/percussive piling and ground compaction works. However, in the absence of any guidance on vibration prediction for other types of work, examples of situations where vibration monitoring is likely to be necessary are:

- heavy demolition and/or concrete breaking works (using percussive breaking equipment) for in excess of 6 weeks, and where there is a structural connection between the development site and a noise-sensitive property
- Displacement piling driven by vibratory or percussive methods: pre-cast concrete driven piles; pressed-in steel sheet piles; driven steel tubes; vibro concrete columns (drive cast insitu), etc.

11.4.8 As regards building damage, BS5228:2009-2 advises the following:

‘Extensive studies carried out in the UK and overseas have shown that documented proof of actual damage to structures or their finishes resulting solely from well-controlled construction and demolition vibrations is rare. There are many other mechanisms which cause damage, especially in decorative finishes, and it is often incorrectly concluded that vibrations from construction and demolition sites are to blame.’

11.4.9 Based upon the guidance within BS 5228-2, sites where significant vibration from work activities is likely to be significant, the following Action Trigger Levels (ATL) 1 and 2 should be adopted to monitor and manage vibration generation:

Table 6

Action Trigger Level (ATL) measured within or at the site boundary (PPV)	Action
3.0 mms ⁻¹	Stop and review works and methodology; reduce work periods before recommencement.
5.0 mms ⁻¹	Stop works, review incident, look at work programme, and agree with Noise & Nuisance Team on a revised methodology where available before recommencing work.

11.4.10 Vibration levels will usually be measured within or at the site boundary and not at dwellings/sensitive receptors. However, it is possible to derive a transfer function between any adjacent dwellings and the associated ATL monitoring position. Transfer functions shall be agreed with the Noise and Nuisance Team.

11.5 Vibration monitoring

- 11.5.1 Where vibration monitoring is considered necessary, technical guidance on how it should be carried out is contained within Section 9 of BS5228-2.
- 11.5.2 As with noise monitoring, the type and scale of any monitoring will be dependent on the size of the project, the nature of the works being carried out and the number and proximity of potential premises. Permanent, unattended fixed monitoring of vibration levels at a number of locations may be appropriate for large sites that will involve significant percussive concrete-breaking and demolition work in close proximity to residential properties. At other, smaller sites, it will be more suitable for attended monitoring of vibration to take place at the beginning of potentially disturbing stages of work (i.e. concrete breaking) to check that levels remain below the agreed vibration limits.
- 11.5.3 The location of any vibration monitoring equipment must be selected on the basis that the vibration levels in these locations are representative of those experienced by the most affected premises.

11.6 Noise insulation for neighbouring premises

- 11.6.1 On large scale projects, where airborne noise levels are predicted to be above acceptable noise levels (i.e. >75 dB, $L_{Aeq, 10hr}$) for prolonged periods despite the employment of BPM and noise mitigation, consideration could be given to the provision of noise insulation (double or secondary glazing) at affected properties.
- 11.6.2 The scheme detailed below is that implemented for the current Crossrail project:

Where the total noise level due to construction of the railway (pre-existing ambient plus airborne Crossrail construction noise), measured or predicted at a point one metre in front of the most exposed of any windows and doors in any façade of a building which is an eligible dwelling, exceeds whichever is the higher of either:

a) any of the following criteria in Table 1:

Or

5 dB above the pre-existing airborne noise level for the corresponding times of day (i.e. the Relevant Time Periods presented in column 2 of Table 1); and for a period of ten or more days of working in any 15 consecutive days or for a total of days exceeding 40 in any six consecutive months.'

The following table extracts the noise insulation trigger level values from the Crossrail scheme, for the relevant time periods for construction work in the Borough

Time	Relevant Time Period	Averaging Time T	Noise Insulation Trigger Level (dB LAeq, T)
Monday to Friday	8am to 6pm	Ten hours	75

The following criteria for re-housing are extracted from the Crossrail scheme:

‘Re-Housing:

Where the total noise level due to construction of the railway (pre-existing ambient plus airborne Crossrail construction noise), measured or predicted at a point one metre in front of the most exposed of any windows and doors in any façade of an eligible dwelling, exceeds whichever is the higher of either:

(a) 10 dB above any of the noise levels in the table above or

(b) 10 dB above the pre-existing airborne noise level for the corresponding time of day

(i.e. the Relevant Time Periods presented in column 2 of Table 1); and for a period of ten or more days of working in any 15 consecutive days or for a total number of days exceeding 40 in any six consecutive months.’

12.0 Minimising dust

KEY POINTS:

- **damping down with appropriate equipment must be carried out during demolition activity and other dusty activities such as stone-cutting**
- **buildings should be encapsulated with scaffolding and sheeting to contain dust within the site**

- 12.1 Within this section, some simple measures are outlined that should be implemented in order to minimise and control dust that arises during construction and demolition work.
- 12.2 The Mayor of London has published supplementary planning guidance (SPG) specifically on this topic: *The Control of Dust and Emissions during Construction and Demolition*. This section incorporates some of the advice contained with the SPG. However, for more detailed, specific guidance on risk assessing sites, control measures and site monitoring for dust generated during construction and demolition, the Mayor's guidance should also be referred to.
- 12.3 In terms of context, the entire borough is within an Air Quality Management Area. A number of activities, such as the excavation and removal of spoil (in dry weather), formation of access into existing structures using cutting equipment, localised demolition and concrete breaking, can potentially generate dust. The Mayor's SPG guidance advises that construction and demolition activities (and the associated vehicles) may be responsible for up to 15 per cent of air pollution emissions within London.
- 12.4 Typical causes of dust complaints within the borough are:
- cutting and grinding of materials, such as flagstones, concrete or brickwork, using disc cutters or angle grinders, without dust suppression (e.g. water spray) or screening
 - demolition activity without the use of dust suppression or encapsulation of the building with scaffolding and sheeting
 - in buildings divided into separate properties, the removal of ceiling plaster structure and failure to fit temporary protective sheeting to the exposed timber

ceiling structure, therefore allowing dust from works to penetrate into the property above

- on larger sites (and principally during periods of prolonged dry weather), dust generated by vehicles moving along haul routes around the site which have not been damped down
- use of rubble/rubbish chutes into uncovered skips

12.5 Other activities that can cause particular risk of high dust level generation are:

- on-site concrete crushing
- demolition activities 20 metres or more above ground
- earthworks (i.e. excavation, haulage, stockpiling) involving clay/silt-type soils, or stockpiling of materials above eight metres in height
- sandblasting or on-site concrete batching
- vehicle/lorry movements such 'muck away' lorries, particularly during prolonged periods of dry weather

12.6 To minimise the amount of dust, the following measures and practices should be implemented:

- Cutting, grinding and sawing should not be conducted on-site; pre-fabricated material and modules should be brought in where practicable.
- Equipment such as disc cutters, table saws, sanders, etc., must be fitted with dust suppression (water spray) or a dust collection facility.
- Water sprays, 'Dust Boss'-type equipment, and pressure washers (which can be used to generate a fine airborne water mist) must be used during demolition work and other activities that generate high levels of dust.
- Stockpiles of sand or similar dust-generating materials must be covered.
- Where ceiling partitions (plasterboard, lath and plaster) are being taken down, and which form a timber party floor/ceiling with an adjoining property, the

exposed structure must be sealed with suitable temporary sheeting to prevent dust being transferred into the adjoining property.

- Buildings must be enclosed with suitable scaffold sheeting, particularly during demolition works and/or where windows have been removed.
- Skips, chutes and conveyors must be completely covered and, if necessary, completely enclosed to ensure that dust does not escape. Similarly, drop heights must be minimised to control the fall of materials and the impact that results.
- Skips must be located within a site where this is possible
- Good housekeeping measures (i.e. regular sweeping, cleaning, vacuuming etc.) must be adopted and implemented by the contractor to ensure that construction sites are in good order.
- Closing of doors and windows (and sealing with tape, if necessary), and sealing of fireplaces/chimneys during particularly dusty internal works, such as demolition.
- Haul routes on open sites must be damped down at regular intervals during periods of dry weather.
- Hoardings, fencing, barriers and scaffolding must be regularly cleaned regularly using wet methods, where practicable, to prevent re-suspension of particulates.
- Cement, sand, fine aggregates and other fine powders must be sealed after use and if necessary stored in enclosed or containers or silos. Where appropriate, materials should be kept damp to reduce the risk of drying out.
- Machinery and dust generating activities must be located away from receptors, where this is possible
- Contact details for the person responsible for dust and emissions generated from the site must be displayed clearly on the site boundary so that local residents and businesses are able to contact the developer and/or contractor to raise any issues that they may have and report complaints.
- Where dust contaminates the common parts of a property, such as when works are being carried out within an individual flat and the dust is not satisfactorily contained, contractors must take responsibility for cleaning these areas.
- Where necessary due to dust contamination, contractors should offer to clean neighbours' property and cars at regular intervals

12.7 On large sites, where there is a high risk that dust will be generated, on-site monitoring of dust/particulate levels may be required (through conditions imposed when planning permission is granted). The exact type of monitoring will depend on identified risk of site, and real-time baseline monitoring may be required prior to start of works. Two real-time monitors, with automatic site trigger alert levels, may be required

13.0 Legal requirements and Best Practicable Means

KEY POINTS:

- all construction sites will be subject to control through a notice/consent under S60 or S61 of the Control of Pollution Act 1974
- contractors and developers must familiarise themselves with the principles of Best Practicable Means and BS 5228

13.1 Specific powers, separate to the statutory nuisance powers used to control other forms of noise, have been developed to deal expressly with noise generated by construction works. The powers are contained with sections 60 and 61 of COPA.

13.2 Section 60 – Notice Imposing Requirements

13.2.1 Section 60 provides control over works in progress or any works that are going to be carried out. The works to which the section applies are:

- a) The erection, construction, alteration, repair or maintenance of buildings, structures or roads
- b) Breaking up, opening or boring under any road or adjacent land in connection with the construction, inspection, maintenance or removal of works
- c) Demolition or dredging works
- d) Whether or not also comprised in paragraph (a), (b) or (c) above, any work of engineering construction

13.2.2 The scope of works to which these powers apply is therefore very wide and may include large and small works, public and private works, from minor household repairs (although not usually DIY works) and improvements to works on the scale of Crossrail and other large infrastructure projects. This Code applies to all of those works outlined above.

13.2.3 Under S60, the Council may serve a 'Notice Imposing Requirements' as to how the works should be carried out. It is usual to serve a notice on the main contractor (as the 'person carrying out the works') and any other persons 'who appear be responsible for or who have control over the works'. Therefore, as well as the main contractor, other recipients of a notice can include:

- architects
- subcontractors
- developers
- owners – leaseholders/freeholders

13.2.4 Under S60, the Notice can specify the following:

- the plant or machinery which is, or is not, to be used
- the hours during which the works may be carried out
- the level of noise which may be emitted

13.2.5 In acting under this section, local authorities must have regard to:

- the need to protect any persons in the locality from the effects of noise
- the interests of contractors when specifying particular methods of plant/machinery if there are other substantially as effective methods available for minimising noise and which would be more acceptable to them
- any relevant **Code of Practice** issued under the s71 of the Act; and
- and the need to ensure that **Best Practicable Means** (as defined in s72 of the Act) are employed to minimise noise

13.3 Section 61 – Prior Consent for Work on Construction Sites

13.3.1 Under Section 61 of COPA, developers and their contractors may apply for ‘prior consent’ for noise-generating activities during construction work. The application must contain the details of the works to be carried out, the methods by which they are to be carried out, and the steps proposed to minimise noise resulting from the works.

13.3.2 The Council must give consent within 28-days of receipt of the application provided that, if, having considered the ‘best practicable means’ and relevant codes of practice, it would not serve a notice under Section 60. The Council may also attach conditions to the consent and also limit its duration.

13.3.3 As part of the application, developers and contractors normally have to provide predicted noise levels (and sometimes vibration levels) during different stages of the project as well as over the duration of redevelopment period, either at the site boundary or at the nearest noise-sensitive neighbour. The predicted noise levels of the proposed works are frequently used as the basis for setting guideline noise limits which are incorporated as a condition within the consent and which will then require monitoring by the developer over the course of the works.

13.3.4 Actual levels are compared against the predicted levels and, where levels are consistently above the set limits, the contractor must review the works and take action to reduce the noise levels. The results of any noise and vibration monitoring results are shared with the Council, and, for larger projects, shared weekly with residents' groups to enable early action to be taken to mitigate problems, such as changes to working hours, introduction of quiet periods and improved noise reduction measures.

13.3.5 The advantages of applying for a Prior Consent for developers and contractors are clear: it offers an opportunity, within a structured application framework, for noise and vibration-related construction matters to be discussed and agreed prior to works commencing. This can ensure that delays to a project, due to unforeseen restrictions on noisy elements of works being imposed, do not occur as they will have been agreed prior to works commencing.

13.3.6 Whilst the Council cannot compel a developer or contractor to submit an application for a S61 Prior Consent, it is strongly recommended an application is submitted. Table 2 (page 16) should be used to determine when an application should be submitted.

13.3.7 Appendix 2 contains an application form for a S61 Prior Consent.

13.4 Appeals against a S60 Notice or S61 Prior Consent

13.4.1 The Control of Noise (Appeals) Regulations 1975 provide a means for the recipient of a S60 Notice or S61 Prior Consent to appeal to a magistrates' court.

13.4.2. A person or company issued with a S61 Prior Consent can appeal on the following grounds:

(a) that any condition attached or imposed in relation to the consent is not justified by the terms of section 61

(b) that there has been some informality, defect or error in, or in connection with, the consent

- (c) that the requirements of any relevant condition are unreasonable in character or extent, or are unnecessary
- (d) that the time, or, where more than one time is specified, any of the times, within which the requirements of any relevant condition are to be complied with is not reasonably sufficient for the purpose

13.4.3 An applicant for a S61 Prior Consent may also appeal if a local authority does not determine an application within 28-days of its submission.

13.4.4. The recipient of a S60 Notice may appeal on the following grounds:

- (a) that the notice is not justified by the terms of Section 60
- (b) that there has been some informality, defect or error in, or in connection with, that notice
- (c) that the authority have refused unreasonably to accept compliance with alternative requirements, or that the requirements of the notice are otherwise unreasonable in character or extent, or are unnecessary
- (d) that the time, or, where more than one time is specified, any of the times, within which the requirements of the notice are to be complied with is not reasonably sufficient for the purposes
- (e) that the notice should have been served on some person instead of the appellant, being a person who is carrying out, or going to carry out, the works, or is responsible for, or has control over, the carrying out of the works
- (f) that the notice might lawfully have been served on some person in addition to the appellant, being a person who is carrying out, or going to carry out, the works, or is responsible for, or has control over, the carrying out of the works, and that it would have been equitable for it to have been so served
- (g) that the authority have not had regard to some or all of the provisions of Section 60(4)

13.4.5 On appeal, the court may:

- (a) vary the S60 Notice [or the S61 Prior Consent] or any relevant condition in favour of the appellant, in such manner as it thinks fit
- (b) quash any relevant condition
- (c) dismiss the appeal

13.5 Penalty for breaching a S60 Notice or S61 Prior Consent

13.5.1 It is a criminal offence, without reasonable excuse, to contravene any requirement of a S60 Notice or S61 Prior Consent.

13.5.2 The maximum penalty, upon summary conviction in the magistrates' court, for contravening a S60 Notice or S61 Prior Consent is £5,000 for each offence, with a further maximum daily penalty of £50 for each day that the offence continues following conviction.

13.6 Section 71 – Code of Practice (as approved under S71 of COPA)

The current Code of Practice approved under S71 of COPA is British Standard 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites, Parts 1 and 2, which was formally approved by the Secretary of State on 6 April 2015.

13.7 *British Standard (BS) 5228 – Purpose and scope*

13.7.1 This standard provides guidance and recommendations on the prediction, measurement and control of noise (and vibration) on construction sites. It enables the impact of works on neighbouring properties to be assessed and also provides recommendations with regard to the establishment of appropriate and effective liaison between developers, contractors and local authorities.

13.7.2 BS 5228 states 'the intention throughout any construction programme should be to minimise levels of site noise whilst having due regard to the practicability and economic implication of any proposed control or mitigation measures.'

13.8 Section 72 – Best Practicable Means (BPM)

13.8.1 Best Practicable Means is defined in S72 of COPA:

Practicable: reasonably practicable having regard to local conditions/circumstances, current state of technical knowledge and financial implications.

Means: includes the design, installation, maintenance and manner and periods of operation of plant and machinery, and the design, construction and maintenance of buildings and acoustic structures.

13.8.2 COPA restricts the test of BPM if other overriding duties are imposed by law (such as those placed on Statutory Undertakers) and with regard to compatibility with safety and safe working practices.

13.8.3 COPA states that in interpreting BPM, regard must be had to the approved Code of Practice: BS 5228. When controlling noise from construction sites using notices served under S60 of the Act, the Council will therefore be assessing the noise control measures employed by developer and contractors against the guidance provided within BS 5228.

13.9 Section 93 – Power of authorities to obtain information

13.9.1 Section 93 provides local authorities with the power to obtain information which it reasonably considers it needs for the purposes of any function conferred on the authority under COPA. The Council will therefore use this section, where necessary, to obtain information regarding proposed or ongoing construction sites in order to exercise its powers under Sections 60 and 61 of COPA .

13.10 Statutory Nuisance and the Environmental Protection Act 1990 (EPA)

13.10.1 The guidance issued with COPA states that statutory nuisance powers (those relating to noise are now contained within the section 79(g) of the EPA), which are used to deal with a variety of nuisances including noise, should not normally be used for the control of noise on construction sites. The specific powers set out within S60 and S61 of COPA are therefore used within the borough.

13.10.2 However, where excessive dust is generated by construction or demolition works on non-residential construction sites (s79(d) of the Act only applies to a dust nuisance arising on industrial, trade or business premises), and which gives rise to a nuisance in a neighbouring property, the Council is legally obliged to serve an Abatement Notice under s80 of the Act requiring the abatement or restriction of the nuisance. A breach of Abatement Notice by failing to meet some or all of its requirements can result in a maximum fine of £20,000 for each offence.

13.10.3 Where accumulations or deposits of dust arise on residential premises and which are causing a statutory nuisance to neighbouring premises, action may be possible under s79(e) of the Environmental Protection Act.

14.0 Emergencies and other exigencies

- 14.1 It is accepted that during construction projects, works may need to be undertaken at very short notice in response to an emergency situation or unforeseen circumstances, or where works if not completed, it would be unsafe or harmful to the permanent works.
- 14.2 Statutory Undertakers may also be required to carry out works at short notice, and at times when noisy construction activities would normally not be permitted, in order to maintain essential public utilities and services (such as water and electrical supplies, or railway services).
- 14.3 The Council therefore accepts that it may not be reasonable to achieve compliance with some (or all) requirements of the Code during works of an emergency or urgent nature.
- 14.4 However, the Council must be informed as soon as reasonably practicable of the reasons for, and likely duration, of any works such as those outlined above. Should the Council subsequently determine that the emergency work was not for sound engineering or health and safety reasons and could have been reasonably avoided, the matter could result in formal legal proceeding for a breach of either a section 60 Notice or section 61 Prior Consent.

15.0 Contacts

Noise and Nuisance Team
The Royal Borough of Kensington and Chelsea
Council Offices
37 Pembroke Road
London
W8 6PW

Telephone: 020 7361 3002

Email: environmentalhealth@rbkc.gov.uk

Appendix 1 – High Impact Activities assessment

High impact activities assessment - 100% on time 10 hour day (unless noted otherwise)

Construction Process	$L_{Aeq, T}$			$L_{Aeq, 10hrs} \leq 70dB(A)$	$L_{Aeq, 10hrs} \leq 75dB(A)$	$L_{Aeq, 10hrs} \leq 70dB(A)$			Notes on Activity i.e. Mobile plant intermittent mitigating factors	High Impact at ten metres (two hrs)
	10m	20m	30m			two hrs on-time 20% on-time				
	10m	20m	30m			10m	20m	30m		Y/N
Breaking up concrete percussive	92	86	82.5	No	No	85	79	75.5	-	Y
Breaking up concrete pulverising	80	74	70.5	At 30m	At 20m and 30m	73	67	63.5	-	Y
Breaking up brick foundations	90	84	80.5	no	no	83	77	73.5	-	Y
Loading brick rubble	85	79	75.5	No	At 30m	78	72	68.5	-	Y
Breaking and spreading rubble	86	80	76.5	No	No	79	73	69.5	-	Y
Crushing concrete/rubble	83	77	73.5	No	At 30m	76	70	66.5	-	Y
Breaking up/cutting steel	83	77	73.5	No	At 30m	76	70	66.5	-	Y

Construction Process	L _{Aeq, T}			L _{Aeq, 10hrs} ≤70dB(A)	L _{Aeq, 10hrs} ≤75dB(A)	L _{Aeq, 10hrs} ≤70dB(A)			Notes on Activity i.e. Mobile plant intermittent mitigating factors	High Impact at ten metres (two hrs)
	10m	20m	30m			two hrs on-time 20% on-time				
Clearing site tracked excavator – average	76	70	66.5	At 20m and 30m	At 20m and 30m	69	63	59.5	Mobile plant	N
Ground excavation large dozer	80	74	70.5	At 30m	At 20m and 30m	73	67	63.5	Mobile plant	Y
Loading lorries	80	74	70.5	At 30m	At 20m and 30m	73	67	63.5	Intermittent	Y
Distribution of material dump truck tipping fill	79	73	69.5	At 30m	At 20m and 30m	72	66	62.5	Mobile plant	Y
Rolling and compaction dozer towing roller	81	75	71.5	no	At 20m and 30m	74	68	64.5	Mobile plant	Y
Ground investigation drilling	74	68	64.5	At 20m and 30m	yes	67	61	57.5	-	N
Directional drilling	77	71	67.5	At 30m	At 20m and 30m	70	64	60.5	-	N

Construction Process	$L_{Aeq, T}$			$L_{Aeq, 10hrs} \leq 70dB(A)$	$L_{Aeq, 10hrs} \leq 75dB(A)$	$L_{Aeq, 10hrs} \leq 70dB(A)$			Notes on Activity i.e. Mobile plant intermittent mitigating factors	High Impact at ten metres (two hrs)
						two hrs on-time 20% on-time				
	10m	20m	30m			10m	20m	30m		Y/N
Pumping water	65	59	55.5	yes	yes	58	52	48.5	-	N
Pre-cast concrete piling – hydraulic hammer	89	83	79.5	no	no	82	76	72.5	-	Y
Tubular steel piling – hydraulic hammer	88	82	78.5	no	no	81	75	71.5	-	Y
Tubular steel piling hydraulic jacking	69	63	59.5	yes	yes	62	56	52.5	-	N
Sheet steel piling – vibratory	88	82	78.5	no	no	81	75	71.5	-	Y
Sheet steel piling – hydraulic jacking	68.5	62.5	59	yes	yes	61	55	51.5	-	N
Tracked drilling rig piling	82	76	72.5	no	At 30m	75	69	65.5	-	Y

Construction Process	L _{Aeq, T}			L _{Aeq, 10hrs} ≤70dB(A)	L _{Aeq, 10hrs} ≤75dB(A)	L _{Aeq, 10hrs} ≤70dB(A)			Notes on Activity i.e. Mobile plant intermittent mitigating factors	High Impact at ten metres (two hrs)
	10m	20m	30m			two hrs on-time 20% on-time				
CFA piling crawler mounted rig	80	74	70.5	no	At 20m and 30m	73	67	63.5	-	Y
Vibro stone columns	80	74	70.5	At 30m	At 20m and 30m	73	67	63.5	-	Y
Tracked mobile crane piling	70	64	60.5	At 20m and 30m	yes	63	57	53.5	-	N
Distribution of materials wheeled backhoe loader	67	61	57.5	yes	yes	60	54	50.5	-	N
Concrete mixer truck	80	74	70.5	At 30m	At 20m and 30m	73	67	63.5	-	Y
Pumping concrete	82	76	72.5	no	At 30m	75	69	65.5	-	Y
Concreting other poker vibrator	69	63	59.5	yes	yes	62	56	52.5	-	N

Construction Process	L _{Aeq, T}			L _{Aeq, 10hrs} ≤70dB(A)	L _{Aeq, 10hrs} ≤75dB(A)	L _{Aeq, 10hrs} ≤70dB(A)			Notes on Activity i.e. Mobile plant intermittent mitigating factors	High Impact at ten metres (two hrs)
	10m	20m	30m			10m	20m	30m		
Lifting tower crane	76	70	66.5	At 20m and 30m	At 20m and 30m	69	63	59.5	-	N
Trenching	71	65	61.5	At 20m and 30m	yes	64	58	54.5	-	N
Core drilling concrete	85	79	75.5	no	no	78	72	68.5	-	Y
Cutting concrete floor slab circular saw	91	85	81.5	no	no	84	-	-	-	Y
Cutting concrete blocks / paving slabs circular saw	80	74	70.5	At 30m	At 20m and 30m	73	67	63.5	-	Y
Power for site cabins generator	63	57	53.5	yes	yes	56	50	51.5	-	N
Power for welding	66	60	56.5	yes	yes	59	53	49.5	-	N
Power for lighting – generator	65	59	55.5	yes	yes	58	52	48.5	-	N

Construction Process	$L_{Aeq, T}$			$L_{Aeq, 10hrs} \leq 70dB(A)$	$L_{Aeq, 10hrs} \leq 75dB(A)$	$L_{Aeq, 10hrs} \leq 70dB(A)$			Notes on Activity i.e. Mobile plant intermittent mitigating factors	High Impact at ten metres (two hrs)
	10m	20m	30m			two hrs on-time 20% on-time				
	10m	20m	30m			10m	20m	30m		
Pumping water diesel	68	62	58.5	yes	yes	61	55	51.5	-	N
Sweeping and dust suppression road sweeper	76	70	66.5	At 20m and 30m	At 20m and 30m	69	63	59.5	-	N

Appendix 2 – Section 61 Prior Consent application form and guidance

Royal Borough of Kensington and Chelsea

Procedure and Guidance Note for Applications for Prior Consent for Works with regard to noise on Construction Sites under Section 61 of the Control of Pollution Act 1974

1.0 Introduction

Section 61 of the Control of Pollution Act 1974 allows developers and their building contractors to apply for 'Prior Consent' for noise generating activities during the construction phase of a development.

This proactive approach requires the assessment of the construction working methods that will be used to undertake the work and the prediction of likely construction noise levels at sensitive receptors. It is intended to manage the generation of construction noise using the 'best practicable means' available to complete the works.

This guidance document provides a template for submitting s61 applications.

Developers and building contractors should familiarise themselves with both Section 60 and 61 of the Act before submitting an Application. No Prior Consent will be issued if construction, including demolition work (other than minor preparatory or enabling work agreed in advance), has already commenced. If works have started, then the Council is likely to serve s60 notice setting out its own terms and conditions.

Any application must be received by the address below at least 28 days before any works commence. Applications can be submitted by hand by post or email.

2.0 Process

You should engage an acoustic consultant experienced in construction noise and vibration assessment and prediction to complete your s61 application. Annex A provides a template which can be adapted for your project and that sets out the information we would expect to receive.

You are advised to contact the Environmental Health Department on 020 7361 3002 well in advance of the project commencement date. We can discuss the detail that you will be required to be submit as part of your application and answer any questions you may have.

Key considerations:

1. To assess the impact of noisy work baseline levels of ambient noise and vibration on the Site boundary should be established. This data may be available from work carried out for the planning application stage of the development. The measured noise and vibration data should include results for periods during which the works will be carried out.
2. Predictions of construction noise should be calculated at one metre, free field, from the facades of the worst affected (generally the nearest) sensitive receptors, thus allowing for a 'worst case scenario' noise assessment to be made.

When considering your building programme, please be aware that we recommend that you submit your application in draft format by hand email or post before the 28 day assessment period as above. This will enable the Officer dealing with your Application to send you a draft format of the Prior Consent Notice for your comment.

The address to send applications to is:

**Noise and Nuisance Team
The Royal Borough of Kensington and Chelsea
Council Offices
37 Pembroke Road
London
W8 6PW**

Email: environmentalhealth@rbkc.gov.uk
Tel: 020 7341 5640

S61 Application Template

PROJECT: _____

Control of Pollution Act 1974

Application Form for Section 61 Prior Consent

Applicant's reference: _____ _____	Application for Section 61 Consent for the works on site: _____ _____ _____
RBKC Reference: _____	From: _____ to: _____

To the Royal Borough of Kensington and Chelsea

We hereby make application for prior consent in respect of works to be carried out on the _____ project, specified below, under Section 61 of the Control of Pollution Act 1974.

Signed: _____

Name of signatory: _____

Position: _____

Date: _____

Applicant: _____

Registered Office address:

Project Office for Correspondence and Site Office Postal address:

Telephone no. _____ **Email:** _____

Section heading	This column provides guidance on the type of information we would expect to receive. A summary should be provided in the table below, but the detail should be submitted in an appendix which matches the section heading number.
1. Site address	Address of location of proposed works
2. Name and address of main contractor and contact names on Site	
3. Liaison	<p>In accordance with the advice and guidelines contained within Section 5.0 and Table 1 of the Code of Construction Practice, this section should detail arrangements for liaison with residential neighbours, shops and businesses, schools, etc.</p> <p>e.g.</p> <p>'The project will have a dedicated Community Relations Manager. There will be a project email and a "hotline" for residents and neighbours to contact Site. Newsletters on progress and upcoming works will be distributed as necessary'. The development may even consider setting up a website.</p>
4. Outline description of work and site layout plan	<p>Summary of works</p> <p>Detailed description and site layout plan to be attached as an appendix labelled to match the section number (in this case it would be Appendix 4).</p>
5. Site categorisation:	Category 1 or Category 2, as described in Section 8.0 and Table 3
6. Programme	<p>Time period for consent application: from: _____ to: _____</p> <p>The works covered by this application are programmed to be completed by:</p> <p>The overall construction programme for the whole development is to run until _____</p> <p>Detailed programme attached as appendix : Include construction phase and dates; for instance:</p>

	Activity	Start date	End date
	Above ground demolition		
	Slab breakout		
	Piling		
	Capping beam		
	Excavation		
7. Construction methods to be used in each stage of development	<p>This section should include the following information, the detail of which should be submitted in an appendix labelled to match the section number (Appendix 7).</p> <p>Please note, the appendix should explain the construction methods and methodology to be used, for example:</p> <p>If Secant Wall Piling is to be used CFA and LDP rigs will install the secant wall piles around the perimeter of the project boundary. In general, female (primary) piles will be installed on the first two days of the week followed by three days installing the reinforced male (secondary) piles. The CFA piles are not cased which makes their installation quicker and quieter. They are purely rotary and not percussive. The LDP rig is used for better accuracy to provide the verticality required for the structural wall and to ensure that all the piles meet at the required depth. The LDP rig is the only suitable piece of plant for reaching over 20m in depth. The piles are 35m in depth. The pump and agitator are required on site to provide a continuous supply for the whole pile and prevent delays from concrete wagon deliveries. The pump is required to place concrete to the top of the rig and down the stem (approx 25m in height) to the toe of the pile. Using the CFA and LDP rigs in tandem halves the programme compared to just using LDP method.</p> <p>Pile Breakdown</p> <p>When piling, the top metre of pile is often contaminated concrete, i.e filled with earth, rubble and arisings and not compacted as much as it should be. Therefore the structural engineers insist on the tops of the piles being broken down. The top of the reinforcement cage that gets cast within the pile has foam around the bars to aid in the easy removal of this section of concrete. A bursting method is utilised that enables this top section of pile to be removed, relatively quietly using hydraulics. However, the bursting tool itself is not all that accurate and therefore final trimming of the pile will need to be done by hand held pneumatic breakers. The male piles, which are harder, will have a hydraulic pile cruncher used for the majority of the break down work.</p>		

<p>8. High impact activities Restricted to Monday – Friday 9am to noon and 2pm to 5.30pm</p>	<p>Detail those works that fall within the definition provided within Section 9.0 of the Code of Construction Practice.</p>
<p>9. Hours of work</p>	<p>Monday to Friday 8am to 6pm There will be no work activity on Saturdays, Sundays or Public Holidays or outside the periods above that will be audible at the site boundary.</p> <p>Restricted hours for High impact activities: Monday to Friday 9am to noon and 2pm to 5.30pm.</p>
<p>10. Number, type and make of plant and machinery (including heavy vehicles) stating source Sound Power Levels Source-terms can be extracted from British Standard 5228-1 and 2:2009+A1:2014, code of practice for noise and vibration control on construction and open sites – Part 1: Noise. Or from measured noise data.</p>	<p>The plant and equipment for the work activities must be included in Appendix 10 The works activities might be described as follows:</p> <ul style="list-style-type: none"> - Activity 1...demolition..... - Activity 2...piling mat..... - Activity 3...piling..... - Activity 4...pile break down... - Activity 5...capping beam.... - Activity 6..... - Activity 7..... - Activity 8..... - Activity 9..... - Etc
<p>11. Predicted Noise Levels</p>	<p>Appendix 11 should contain detailed construction noise calculations at sensitive facades. These should include the cumulative effects of noise from a</p>

	number of activities taking place simultaneously at different locations on the site impacting on sensitive receptors.
12. Proposed steps to minimise noise and vibration.	With reference to BS 5228 and Section 9.0 of the Code of Construction Practice, provide a summary of the proposed mitigation; Appendix 12 should describe these in more detail.
13. Monitoring regime	<p>For Category 1 sites, and where agreed with the Noise and Nuisance Team, it is expected that noise levels will be measured and continuously monitored at locations to be agreed and in line with the guidance and limits specified in Section 10.0 of the Code of Construction Practice. Also during demolition, piling and excavation, vibration should be monitored in terms of ppv. Vibration monitoring may be required at other times as reasonably requested by the Noise and Nuisance Team.</p> <p>Please provide further detail in Appendix 13</p>
14. Dispensations (or derogation)	<p>Should a change to the working methods be required which was not foreseen at the time of the original Section 61 application, and which would affect the predicted noise levels in the application, then a dispensation application will be required and submitted to the Royal Borough of Kensington and Chelsea. The dispensation application will set out the reasons for any changes, and give the resulting/revised predicted noise levels and BPM measures as appropriate.</p> <p>A template dispensation application form is available from the Council's website.</p>
15. Variations	<p>Where there are required changes of a minor nature which are not expected to affect the overall predicted noise levels presented in this application, then a variation must be sought. The variation mechanism will be invoked for typical situations such as: change in type or quantity of plant, approval of out of hour's deliveries and works, and change in works programme. Refer to Annex B.</p> <p>A template variation application form is available on the Council's website.</p>
16. Over Runs	<p>If work unexpectedly has to be carried out after 6pm, the site will telephone the EHO as soon as possible with the following details:</p> <ul style="list-style-type: none"> - Contact on site - Works to be undertaken - Mitigation measures - Predicted time of finish

	<p>Over runs will only be approved on the basis that for Health and Safety or safe engineering reasons, the works cannot be practically completed in the normal working day and/or the out of hours activities applied for would have acceptable minor noise impacts . The reason for an over run will be fully explained on this basis.</p> <p>All overruns will be logged.</p> <p>If timing allows, contact neighbours and inform them</p> <p>To prevent over-runs subcontractors will include controls on working hours and deliveries in their method statements. See example Notice Annex B condition 5.4</p>
<p>17. List of Plans and Appendices attached</p>	<p>Appendix 4: Site Layout Plan Appendix 7: Methods of Working Appendix 10: Plant and Equipment Appendix 11: Predicted Noise Levels Appendix 12: Proposed Steps to Minimise Noise and Vibration Appendix 13: Monitoring Regime</p>

Appendix 3 – S60 Notice Imposing Requirements (example copy)

Reference No:

**Control of Pollution Act 1974, S.60
Control of Noise on Construction Sites:
Notice Imposing Requirements**

To:

Whereas it appears to the **Royal Borough of Kensington and Chelsea** that works to which Section 60 of the Control of Pollution Act 1974 applies, namely:

The erection, construction, alteration, demolition, repair or maintenance of buildings, structures, or roads and/or the breaking up, opening or boring under any road or adjacent land in connection with the construction, inspection, maintenance or removal of works and/or work of engineering construction (whether or not specified in the foregoing) are being, or are intended to be carried out, on the premises known as:

Notice is hereby given that the following requirements must be complied with in connection with the carrying out of such works:

Hours of Work

1. All works (except those listed in no. 2 below) and ancillary operations which are audible at the site boundary, or at such other place as may be agreed with the Council, shall be carried out only between the hours of 8 am and 6 pm, Monday to Friday and at no time on Saturdays, Sundays and Public Holidays.
2. All percussive demolition works, piling and all pile breaking-out, pile reduction work, and concrete break-out and removal, shall only be carried out between 9am and noon, and 2pm and 5.30pm on Monday to Friday and at no time on Saturdays, Sundays and Public Holidays.

Project Management and Noise Mitigation

3. If, in the opinion of the site management, that to comply with Health and Safety requirements, (including to make works safe), codes of safe working and traffic management requirements, construction works and associated operations from time to time can only be undertaken outside of these hours, then prior approval must be sought from the Noise and Nuisance Team (telephone: 020 7361 3002 and email ehemails@rbkc.gov.uk) and given in writing by email before works can commence outside the hours stipulated in (1) above.
4. The best practicable means to reduce noise to a minimum, as defined in Section 72 of the Control of Pollution Act 1974, shall be employed at all times.

5. All pile breaking-out, pile reduction work, and concrete break-out and removal shall be carried out using equipment that breaks concrete by bending, shearing, cutting, crushing or hydraulic splitting, or such other equipment as approved by the Royal Borough, rather than by percussion, unless otherwise agreed to by the Council.
6. All pile breaking-out, pile reduction work, and concrete break-out and removal shall be carried out, where reasonable and practicable, within a portable acoustic enclosure. The enclosure shall be three-sided with a roof or such other acoustic enclosure as approved by the Royal Borough.
7. All plant and machinery in use, including mechanical plant for excavation, shall be properly silenced and maintained in accordance with the manufacturers' instructions and comply with the generic plant noise emissions in British Standard 5228-1 +A1:2014.
8. There shall be no percussive pile driving on the site. Any piling shall be by continuous flight augur or similar to minimise noise and vibration as far as practicable.
9. The site shall be enclosed, where practicable, with hoarding that is a minimum of 4.5 metre in height, timber framed and plywood faced to a thickness of not less than 18mm. The 18mm plywood sheets shall be screwed to the hoarding with additional timber strips fixed over all joints to eliminate noise escape.
10. Audible reversing alarms, which are likely to cause disturbance and annoyance to the occupants of surrounding premises, should be avoided wherever possible. Where practicable, alternative reversing warning systems should be employed to reduce the impact of noise outside sites.
11. All personnel shall be instructed on Best Practicable Means ('BPM') measures to limit noise and vibration and the specific conditions arising from this Notice.
12. The recipient of this Notice will retain full control over and responsibility for subcontractors working on the site and shall make them fully aware of the requirements of this Section 60 Notice.

Concrete pours

13. Concrete pours: In order to avoid overruns past the hours stipulated in condition 1 the pour size and concrete workability shall be considered. The Site shall enter into a written protocol with the concrete supplier regarding timing of deliveries to ensure works can be completed within the permitted hours.
14. For basement works concrete shall be placed by gravity feed wherever practicable. Failing this the position and location and acoustic shielding of any concrete pumps shall be as agreed with Director of Environmental Health or officers nominated by him.
15. Wherever excavated material is to be removed by conveyor the conveyor shall be electrically powered.

Vehicle Movements and Site Deliveries

16. There shall be no lorry movements to and from and at the Site otherwise than as follows:

Between 8am and 6pm Mondays to Fridays. There shall be no lorry movements on Saturdays, Sundays and Public Holidays.

Community liaison, Site Information and Contacts

17. A designated complaints/incidents logbook or register must be maintained at the site, available for inspection by an officer of the Noise and Nuisance Team. The logbook shall record:

- a. The nature of the complaint
- b. The cause; and, where appropriate
- c. The remedial action taken

18. The recipient shall ensure that contact details are given for a nominated and properly authorised person to receive telephone calls at all times when site works are in progress to deal with enquiries and complaints from local residents. The telephone number (and any changes to it) shall be provided to members of the local community affected by the works. It shall also be notified to the Environmental Health Department.

19. A site board, accessible to the general public, shall be erected outside the site, which shall identify the main contractor's name and address, and site manager's name and contact telephone number. The board shall also explain to the general public the permitted hours stipulated for noisy operations audible at the site boundary as per Conditions 1 and 2.

20. Any deviation from these conditions shall be notified to the Noise and Nuisance Team on 020 7361 3002, or by email at environmentalhealth@rbkc.gov.uk.

In the event of an appeal this notice shall not be suspended until the appeal has been abandoned or decided by the Court as, in the opinion of the Council, the noise to which this notice relates is likely to be of a limited duration such that suspension would render the notice of no practical effect.

If you contravene without reasonable excuse any requirement of this notice you will be guilty of an offence against Part III of the Control of Pollution Act 1974 and on summary conviction will be liable (a) in the case of a first offence to a fine not exceeding level 5 on the standard scale, and (b) in the case of a second or subsequent offence to a fine not exceeding Level 5 on the standard scale together, in any case, with a further fine not exceeding £50 for each day on which the offence continues after conviction.

Date:

**Mr Nicholas Austin
Director for Environmental Health**

Noise and Nuisance Team
Environmental Health Service Group
Council Offices, 37 Pembroke Road
London W8 6PW
Officer dealing with it is:
Telephone:
Email:

NB: The person served with this notice may appeal against the notice to a Magistrates' Court within 21 days from the date of service of the notice. (See notes overleaf)

NOTES

The Control of Noise (Appeals) Regulations 1975 provide as follows:

Appeals under Section 60(7)

- 5.(1) The provisions of this regulation shall apply to an appeal brought by any person under sub-section (7) of Section 60 (control of noise on construction sites) against a notice served upon him by a local authority under that section.
- 5.(2) The grounds on which a person served with such a notice may appeal under the said sub-section (7) may include any of the following grounds which are appropriate in the circumstances of the particular case:
- (a) that the notice is not justified by the terms of Section 60
 - (b) that there has been some informality, defect or error in, or in connection with, that notice
 - (c) that the authority have refused unreasonably to accept compliance with alternative requirements, or that the requirements of the notice are otherwise unreasonable in character or extent, or are unnecessary
 - (d) that the time, or, where more than one time is specified, any of the times, within which the requirements of the notice are to be complied with is not reasonably sufficient for the purposes
 - (e) that the notice should have been served on some person instead of the appellant, being a person who is carrying out, or going to carry out, the works, or is responsible for, or has control over, the carrying out of the works
 - (f) that the notice might lawfully have been served on some person in addition to the appellant, being a person who is carrying out, or going to carry out, the works, or is responsible for, or has control over, the carrying out of the works, and that it would have been equitable for it to have been so served;
 - (g) that the authority have not had regard to some or all of the provisions of Section 60(4).
- 5.(3) If and so far as an appeal is based on the ground of some informality, defect or error, or in connection with, the notice, the Court shall dismiss the appeal, if it is satisfied that the informality, defect or error was not a material one.
- 5.(4) Where the grounds upon which an appeal is brought include a ground specified in paragraph 2(e) or (f) above, the appellant shall serve a copy of his notice of appeal on any other person referred to, and in the case of any appeal to which this regulation applies he may serve a copy of this notice of appeal on any other person having an estate or interest in the premises in question.
- 5.(5) On the hearing of the appeal the Court may:

- (a) quash the notice to which the appeal relates, or
- (b) vary the notice in favour of the appellant in such manner as it thinks fit, or
- (c) dismiss the appeal

and a notice which is varied under sub-paragraph (b) above shall be final and shall otherwise have effect, as so varied, as if it had been so made by the local authority.

Suspension of Notices

10.(1) Subject to paragraph (2) of this Regulation, where an appeal is brought against a notice served under Section 58, 60 or 66, and -

- (a) the noise to which the notice relates is the noise caused in the course of the performance of some duty imposed by law on the appellant, or
- (b) compliance with the notice would involve any person in expenditure on the carrying out of works before the hearing of the appeal; the notice shall be suspended until the appeal has been abandoned or decided by the Court

10.(2) A notice to which this regulation applies shall not be suspended if in the opinion of the local authority -

- (a) the noise to which the notice relates:
 - (i) is injurious to health, or
 - (ii) is likely to be of a limited duration such that suspension of the notice would render the notice of no practical effect, or
- (b) the expenditure which would be incurred by any such person in the carrying out of works in compliance with the notice before any appeal has been decided would not be disproportionate to the public benefit to be expected in that period from such compliance

and the notice includes a statement that it shall have effect notwithstanding any appeal to a magistrates' court which has not been decided by the Court.

10.(3) Save as provided in this Regulation a notice under Part III of the Act shall not be suspended by reason only of the bringing of an appeal to a Magistrates' Court or the Secretary of State.

Appendix 4 – European Directive 2000/14/EC

The following construction equipment must comply with the stated noise emission limits within European Directive 2000/14/EC:

- builders' hoists for the transport of goods (combustion-engine driven)
- compaction machines (only vibrating and non-vibrating rollers, vibratory plates and vibratory rammers)
- compressors (< 350 kW)
- concrete-breakers and picks, hand-held
- construction winches (combustion-engine driven)
- dozers (< 500 kW)
- dumpers (< 500 kW)
- excavators, hydraulic or rope-operated (< 500 kW)
- excavator-loaders (< 500 kW)
- graders (< 500 kW)
- hydraulic power packs
- mobile cranes
- motor hoes (< three kW)
- paver-finishers (excluding paver-finishers equipped with a high compaction screed)
- power generators (< 400 kW)
- tower cranes

11.2.6 The following construction equipment is must comply with the noise emission labelling requirements within the Directive:

- aerial access platforms with combustion engine
- builders' hoists for the transport of goods (with electric motor)
- building site band saw machines
- building site circular saw benches
- combined high pressure flushers and suction vehicles
- concrete or mortar mixers
- construction winches (with electric motor)
- conveying and spraying machines for concrete and mortar

- conveyor belts
- equipment for loading and unloading silos or tanks on trucks
- high pressure water jet machines
- hydraulic hammers
- joint cutters
- paver-finishers (equipped with a high-compaction screed)
- piling equipment
- road milling machines
- trenchers
- truck mixers
- water pump units (not for use under water)



**Noise and Nuisance Team
The Royal Borough of Kensington and Chelsea
Council Offices
37 Pembroke Road
London
W8 6PW**

Telephone: 020 7361 3002

Email: environmentalhealth@rbkc.gov.uk