

6 Noise and vibration

KEY MESSAGES:

- The Council will assess the impact of noise and vibration through the consideration of acoustic reports submitted by applicants.
- Noise mitigation (where appropriate) is expected to be incorporated into developments at the design stage.
- The Council will secure mitigation measures through planning condition or legal agreement where necessary.
- The Council will adopt the 'agent of change' principle.

6.1 Noise and vibration can have a significant impact on amenity, quality of life and wellbeing. This section provides guidance regarding the application of Local Plan Policies A4 Noise and vibration and A1 Managing the impact of development, which seek to protect residents of both existing and new residential developments and the occupiers of other noise-sensitive developments from the adverse effects of noise and vibration. Appendix 3 of the Local Plan supports these policies and sets out expected standard in terms of noise and vibration.

6.2 This chapter contains guidance on the following:

- Assessing the impact of noise and vibration
- Acoustic reports
- Internal noise levels and vibration
- Plant and other noise generating equipment
- Food, drink, entertainment and leisure noise
- Delivery management.

Assessing the impact of noise and vibration.

6.3 The Council will assess the impact of noise and vibration through acoustic reports submitted by applicants.

When should acoustic reports be prepared?

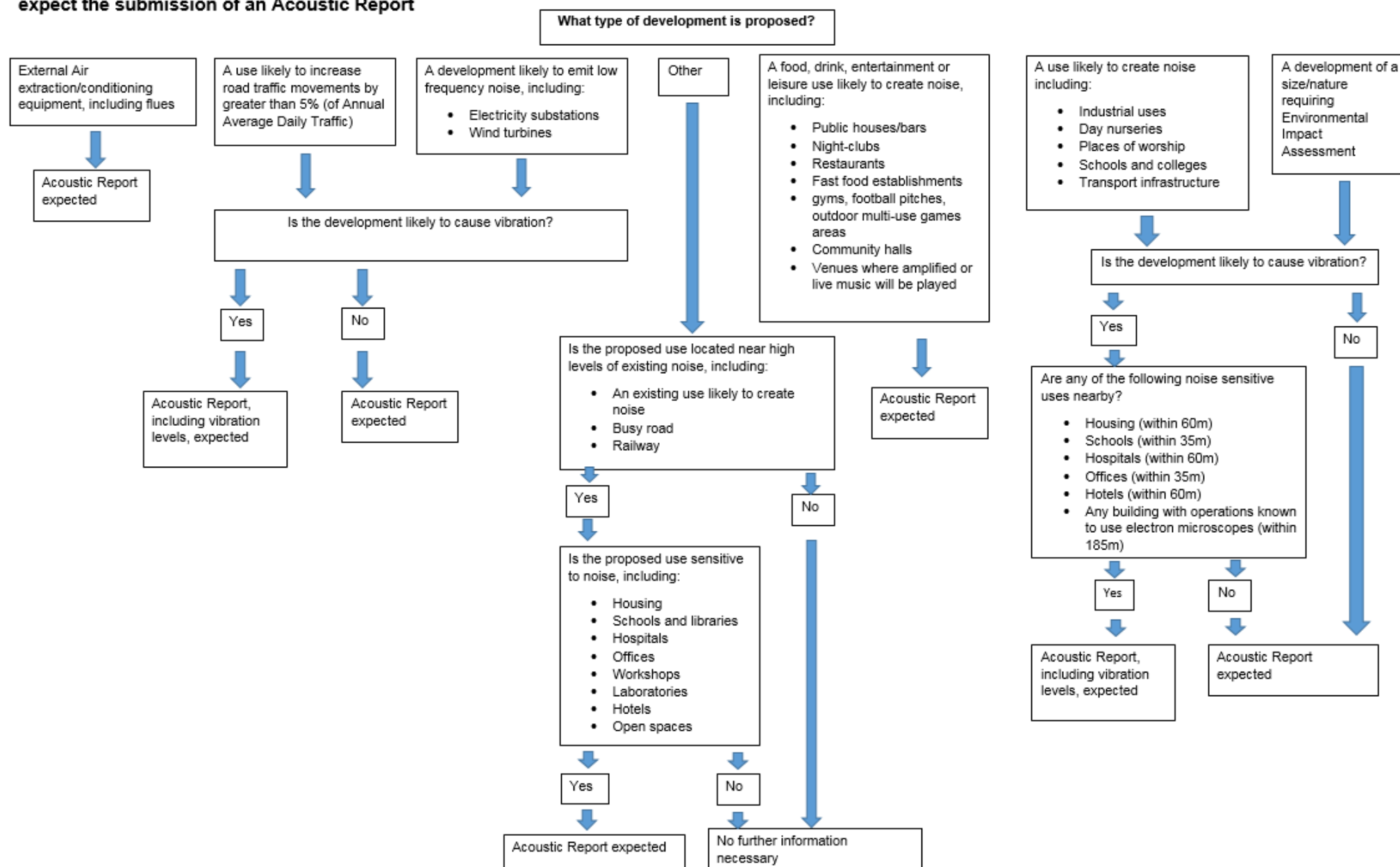
6.4 When a planning application is submitted, an acoustic report should accompany the application where any of the following are proposed:

- plant, ventilation, air extraction or conditioning equipment and flues;
- uses likely to create significant noise such as food/drink/entertainment and leisure uses, industrial uses, day nurseries, places of worship, schools and colleges;
- a noise-sensitive use located in noisy environment (e.g. near to a busy road, railway line, noisy industry)
 - noise sensitive uses include housing, schools/libraries, hospitals, offices, workshops, laboratories, hotels and open spaces.
 - a noisy environment is considered to be an area where non-standard adaptations have to be made to a development in order to prevent harmful or otherwise unwanted effects, such as annoyance or sleep disturbance.

- uses likely to generate a significant amount of traffic (defined as road traffic movements greater than 5% of Annual Average Daily Traffic); and
- developments emitting low frequency noise (e.g. electricity substation).

- 6.5 Diagram 1 below summarises the instances of where an acoustic report is expected and where the report should also consider vibration impacts.
- 6.6 After planning permission is granted, an additional acoustic report should also be submitted to consider the noise impacts of the construction stage as part of Construction Management Plans (CMPs). Please see Camden Planning Guidance relating to CMPs and information on the Council's [website](#) for further information.
- 6.7 Development of a size and/or nature requiring Environmental Impact Assessment (EIA) should also submit an acoustic report.

Diagram 1: Flow chart showing when the Council will expect the submission of an Acoustic Report



Noise and vibration thresholds

- 6.8 When assessing acoustic reports, the Council will consider the reported measurements against the noise thresholds set out in Appendix 3 of the Local Plan. The thresholds are expressed as ‘effect levels’, which sets out a hierarchy of expected changes in behaviour and impact on health and wellbeing in response to increasing noise levels (measured in decibels - dB). The ‘effect levels’ are summarised below and explained in detail in [National Planning Practice Guidance \(NPPG\)](#). The table detailing each ‘effect level’ from NPPG is also set out in Appendix 1 to this guidance for ease of reference.
- No observed effect level (NOEL) – the level below which no effect can be detected on health and quality of life.
 - Lowest observable adverse effect level (LOAEL) – the level above which changes in behaviour (e.g. closing windows for periods of the day) and adverse effects on health (e.g. sleep disturbance) and quality of life can be detected.
 - Significant observed adverse effect level (SOAEL) – the level above which adverse effects on health and quality of life occur. This could include psychological stress, regular sleep deprivation and loss of appetite.
- 6.9 Where appropriate, the Council will also consider the cumulative impact of numerous individual noise sources where noise is known to be an issue. Camden’s town centres for example are known to have a proliferation of air conditioning machinery and contain numerous food, drink, leisure and entertainment uses which all contribute to creating noisy environments.

Mitigating noise impacts

- 6.10 The implications of noise and vibration should be considered at the beginning of the design process so that the impacts of noise and vibration can be minimised. Examples of design features which could reduce noise impacts include (but are not limited to):
- locating noise sensitive areas/rooms away from the parts of the site most exposed to noises;
 - creating setbacks;
 - designing a building so its shape and orientation reflect noise and protect the most sensitive uses;
 - stacking similar rooms (such as kitchens and living rooms) above each other;
 - positioning non-residential uses closer to the noise source in mixed use developments;
 - insulating and soundproofing doors, walls, windows, floors and ceilings;
 - sealing air gaps around windows;
 - double glazing;
 - including architectural fins (where appropriate);
 - laminated glass;
 - anti-vibration foundations;
 - noise barriers such as landscaping, fencing and solid balconies to reflect sound; and
 - incorporating ‘sound proof’ construction/cladding materials.
- 6.11 In instances where noise mitigation is necessary, proposals will be expected to include appropriate attenuation to alleviate or mitigate the impact of noise and

vibrations to an acceptable level. Where noise mitigation has not been proposed adequately, but is considered necessary, the Council will consider the use of planning conditions or a legal agreement. Guidance regarding mitigation can be found within *BS8233:2014 Guidance on sound insulation and noise reduction for buildings*.

6.12 Examples of mitigation include:

- reducing the noise emitted at its point of generation (e.g. by using quiet machines and/or quiet methods of working);
- containing the noise generating equipment (e.g. by insulating buildings which house machinery and/or providing purpose-built barriers around the site);
- protecting any surrounding noise-sensitive buildings (e.g. by improving sound insulation in these buildings and/or screening them by purpose-built barriers);
- ensuring an adequate distance between source and noise-sensitive buildings or areas;
- screening by natural barriers, buildings, or non-critical rooms in the development.
- limiting the operating time of the source;
- restricting activities allowed on the site;
- specifying an acceptable noise limit;
- restricting window openings;
- sound proofing internal and external walls; and
- using cladding specifically designed for sound reduction.

Agent of change principle

6.13 In order so existing businesses do not have unreasonable restrictions put onto them because of changes in nearby land uses, the Council will apply the 'agent of change' principle. The 'agent of change' principle identifies the person or business responsible for the change is also responsible for managing the impact of the change.

6.14 Noise sensitive uses proposed near to existing uses/businesses likely to create significant noise should therefore include necessary features to mitigate the anticipated noise and vibration effects of the existing use/business nearby.

Acoustic reports

6.15 Camden's noise and vibration thresholds in Appendix 3 of the Local Plan provide the starting point for developing acoustic reports relating to:

- vibration;
- developments likely to be sensitive to noise;
- industrial and commercial noise; and
- entertainment noise.

6.16 Developers should also seek guidance from the Council's Noise team prior to any acoustic work being carried out in order so they can advise on the best methodology for the proposed development and any bespoke reporting for developments that may fall outside of the above categories.

The Camden Council Noise team can be contacted at
RegulatoryServices@camden.gov.uk

6.17 Assessments should be carried out and produced by a suitably qualified and competent consultant and conform to the standards in *BS7445 1-3:2003 Description and measurement of environmental noise* (or any later replacement guidance).

- 6.18 As assessment and guidance for noise and vibration control is always evolving, applicants must ensure that they consider amendments or updates to existing noise guidance. Where there is uncertainty, they should contact the Council's Noise team for clarification.
- 6.19 The appropriate amount and detail of information required will depend on the specific circumstances of a proposal. Details and information forming the minimum requirements for specific types of development can be provided by the Council's Noise team.
- 6.20 The minimum below information is expected to be submitted as part of an acoustic report:
- description of the proposal;
 - description of the site and surroundings, a site map showing noise and vibration sources and measurement locations;
 - background noise levels measured over a minimum of 24 hours;
 - details of instruments and methodology used for noise measurements (including reasons for settings and descriptors used, calibration details);
 - details of the plant or other source of noise and vibration both on plan and elevations and manufacturers specifications;
 - noise or vibration output from proposed plant or other source of noise and vibration, including:
 - noise or vibration levels;
 - frequency of the output; and
 - length of time of the output.
 - features of the noise or vibration e.g. impulses, distinguishable continuous tone, irregular bursts;
 - specification of the plant, supporting structure, fixtures and finishes;
 - location of noise sensitive uses and neighbouring windows;
 - details of measures to mitigate noise and vibration;
 - details of any associated work including acoustic enclosures and/or screening;
 - cumulative noise levels; and;
 - hours/days of operation.
- 6.21 In order to demonstrate all the above has been submitted, a copy of the Council's acoustic report [Checklist](#) should also be submitted along with the report.

Internal noise levels and vibration

Internal noise levels

- 6.22 The requirements of the Building Regulations are usually adequate for the sound insulation between floors and walls of adjoining dwellings, making planning conditions unnecessary.
- 6.23 The requirements of the Building Regulations are however likely to be inadequate in instances where:
- a new commercial use likely to generate noise adjoins an existing residential building (and vice versa); and/or
 - a change of use will result in a residential development being sited in a noisy environment.

- 6.24 Where such development is proposed, the Council is likely to use planning conditions requiring substantially enhanced sound insulation of relevant walls, floors and ceilings compared to the minimum specifications of the Building Regulations. In proposing conditions, the Council will consider guidance available within *BS8233:2014 Guidance on sound insulation and noise reduction for buildings*, [Guidelines for Community Noise \(1999\)](#) and [Night Noise Guidelines for Europe \(2009\)](#) published by the World Health Organisation.

Vibration

- 6.25 Vibrations transmitted through the structure of a building can be detected by its occupants and can result in adverse effects. Depending on the timing and the nature of the vibration, occupants may have disturbed sleep or struggle to work efficiently. Vibration at higher magnitudes can even act to damage a building over time.
- 6.26 When assessing the impact of vibration, the Council will expect the vibration thresholds within Camden Local Plan Appendix 3 not be exceeded and consider guidance from *B6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings Part 1: Vibration sources other than blasting'*.

Plant and other noise generating equipment

- 6.27 Developments proposing plant, ventilation, air extraction or conditioning equipment and flues will need to provide the system's technical specifications to the Council accompanying any acoustic report. '*BS4142 Method for rating Industrial and Commercial Sound*' contains guidance and standards which should also be considered within the acoustic report.
- 6.28 There are however likely to be instances where the Council will consider that a BS4142 assessment alone is not sufficient to provide all the information necessary. Plant such as electrical substations for example, may meet BS4142 standards, but are also known to emit low frequency noise, which also needs to be considered. Developers are therefore encouraged to discuss proposals of this nature with the Council's Noise team before preparing their acoustic report - Email: RegulatoryServices@camden.gov.uk.
- 6.29 Plant, ventilation, air extraction or conditioning equipment and flues can cause disturbance to residential properties. The Council would therefore welcome the use of long-term maintenance agreements to ensure that equipment maintains acceptable noise levels over its lifetime and the use of timers to limit any unnecessary operation of the equipment.

Food, drink, entertainment and leisure noise

- 6.30 Food, drink, entertainment and leisure uses can pose particular difficulties in terms of noise and disturbance, as their peak operating time is usually in the evening and late at night.
- 6.31 Where such uses are proposed, access routes, outdoor standing/seating areas, smoking areas, pub gardens, etc. should be sited away from noise sensitive facades and/or effectively screened.
- 6.32 The Council expects the noise impacts of these uses to be considered within an acoustic report. Assessments of noise from entertainment and leisure premises must include consideration of amplified and unamplified music, human voices, footfall, vehicle movements and other general activity. Developers should contact the Council's Noise team to discuss the most appropriate methodologies to undertake the assessment.

- 6.33 Principally, in order to manage food, drink, entertainment and leisure noise, the Council will consider the use of planning conditions to control aspects such as (but not limited to):
- opening times;
 - amplified music (e.g. times when music can be played and maximum volumes); and
 - restrictions on times where outdoor standing/seating areas can be used.
- 6.34 In line with Local Plan policies TC4 and C5, the Council will also consider the use of management plans secured through a section 106 legal agreement, which may include elements principally seeking to manage noise off-site. Examples could include:
- staff training;
 - positioning queues away from residential buildings; and
 - ensuring that bottles and cans are not disposed of in outdoor bins areas late at night.

In order for existing businesses to continue operating without restriction, in instances where a noise sensitive use is proposed near to an existing food, drink, entertainment or leisure venue known to generate noise and vibration, the Council will apply the 'agent of change' principle (referred to in Section 1). Within Camden, this will often mean that residential development will be expected to include sufficient insulation to mitigate the anticipated noise and vibration effects of a nearby food, drink, entertainment or leisure venue.

Delivery management

- 6.35 Deliveries and collections can cause disruption to nearby residential properties. When preparing Delivery and Servicing Management Plans, in order to reduce noise impacts regard should be given to the following:
- [Noise Abatement Society's Silent Approach Quiet Night Time Delivery Scheme](#);
 - Guidance published by [Transport for London](#) regarding retiming and consolidating deliveries;
 - [Freight Transport Association Guidance Delivering the Goods – a toolkit for improving night-time deliveries](#); and
 - Camden Local Plan Policy T4 Sustainable movement of goods and materials and associated Camden Planning Guidance to reduce the number of overall deliveries.
- 6.36 The Council expects that deliveries and refuse collections to be carried out between 08:00-20:00hrs. Developments requiring deliveries outside of these times should provide an acoustic report to demonstrate there will be no adverse impact in relation to noise, with particular reference to residential occupiers as a result of these activities. When preparing the assessment, regard should be given to *BS4142 Method for rating and assessing industrial and commercial sound*. Developers are however encouraged to discuss their proposals with the Council's Noise team before conducting their acoustic report. (Email: RegulatoryServices@camden.gov.uk.)